Vehicle Research and Test Center
2000 MCI 102EL3 Motorcoach into a
Flat Frontal Barrier
TRC Inc. Test Number: 071214

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Section 1.0

Purpose and Test Procedure

Purpose

This flat frontal barrier impact test was conducted for the National Highway Traffic Safety Administration (NHTSA) and Vehicle Research and Test Center (VRTC) by Transportation Research Center Inc. (TRC Inc.).

The test mode was defined as the vehicle moving at 48.3 km/h striking the flat frontal barrier at an impact angle of 0 degrees. The purpose of this test was to determine the crash pulse for a 2000 MCI 102EL3 Motorcoach, in the flat frontal barrier impact mode, with both belted and unbelted dummies.

Test Procedure

This test was conducted in accordance with VRTC instructions for a flat frontal barrier impact test. Data was obtained relative to FMVSS 208, "Occupant Crash Protection" (December 18, 2001), FMVSS 207, “Seating Systems”, and FMVSS 210, “Seat Belt Assemblies”.

The subject vehicle, a 2000 MCI 102EL3 Motorcoach, was instrumented with fifteen (15) accelerometers to measure longitudinal, lateral and vertical axis accelerations, see Figure 1-1 for accelerometer locations. The Row 4 right, Row 5 left, Row 6 right, Row 9 right, Row 11 right, and Row 13 right passengers’ left and right lap belts were instrumented with load cells. The vehicle’s actual impact velocity was 48.8 km/h.

Seventeen (17) 50th percentile adult male Hybrid III dummies, three (3) 5th percentile adult female dummies, and two (2) 95th percentile adult male Hybrid III dummies were placed in the vehicle’s left and right designated seating positions. The dummies were positioned according to NHTSA Laboratory Test Procedure TP-208-12. See Figure 1-2 seating chart for seat belt information.

The 50th percentile male dummies were seated in left side Rows 5 left, 8 left, 10 left and right, 12 left, right side Rows 4 left and right, 5 left and right, 6 left and right, 7 left and right, 9 right, 11 left and right, and 13 right. The 5th percentile female dummies were seated in left side Rows 5 right, 12 right, and right side Row 13 left. The 95th dummies were seated in left side Row 8 right and right side Row 9 left.

The left side Row 4 (MCI seat) and left side Row 6 (Freedman seat) were reinforced with two (2) T-bolts through the side seat rail and two (2) T-bolts through the bottom seat rail (see photos A-18 and A-34). The remaining seats were kept in their original manufacturer reinforcement condition.

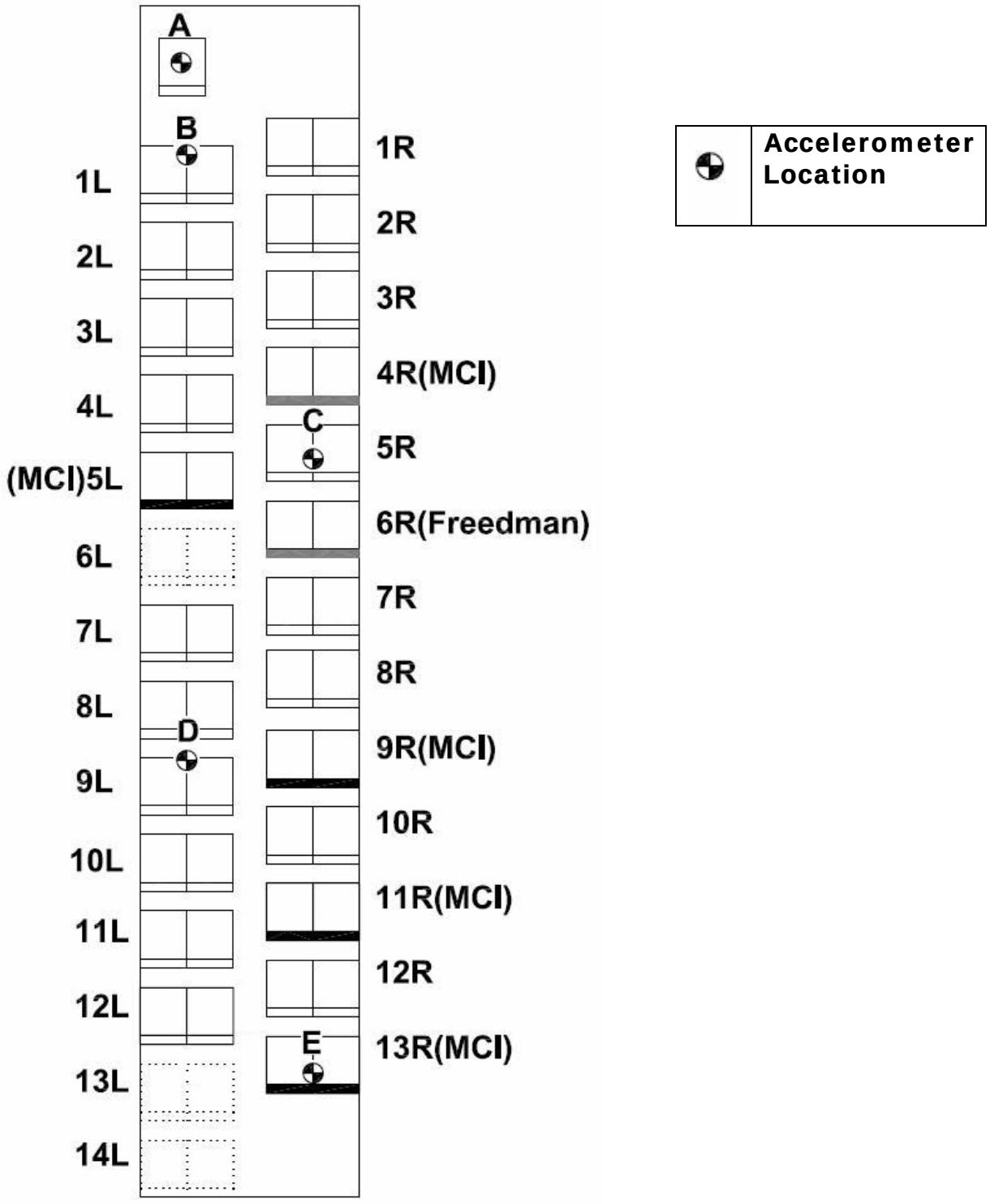


Figure 1-1 Accelerometer Locations

The following seats had 3-point lap and shoulder belts: Rows 4 right side, 6 right side, 9 right side, 11 right side and 13 right side. The Row 5 left side seats had only lap belts. The rest of the seats were unbelted.

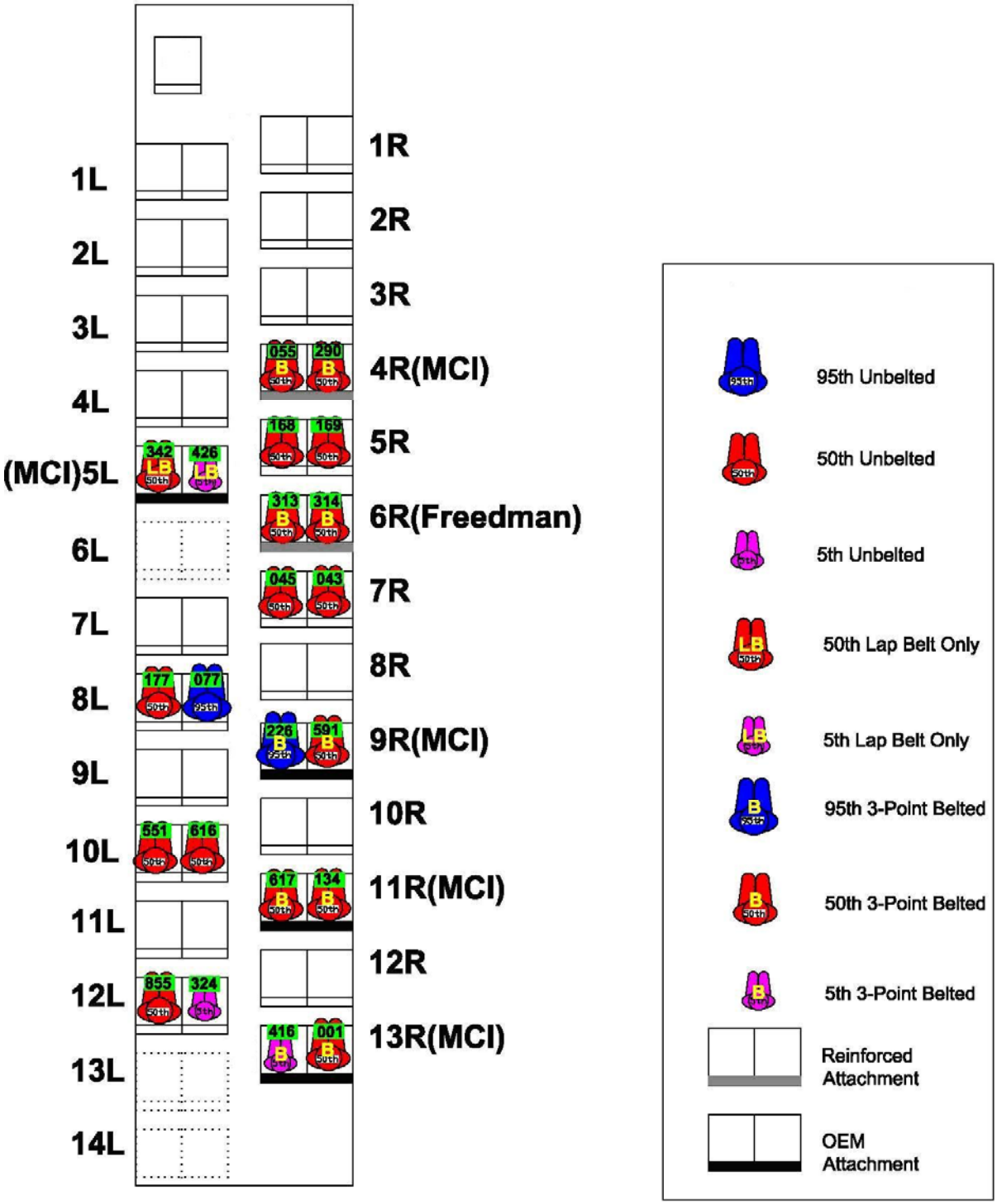


Figure 1-2 Seating Chart and Seat Belt

The vehicle's right side Rows 4, 5, 6, 7, 9, and 11 and left side Rows 8, 10, and 12 left and right passenger dummies were instrumented with an array of three (3) accelerometers in the head, upper neck moment and force load cells, three (3) accelerometers in the chest, a chest deflection potentiometer, and left and right femur load cells to measure axial forces.

The vehicle's left side Row 5 and right side Row 13 left and right passenger dummies were instrumented with an array of six (6) accelerometers in the head (primary and redundant) and six (6) chest (primary and redundant) accelerometers to measure longitudinal, lateral, and vertical accelerations, six (6) upper neck moment and force load cells, left and right femur load cells to measure axial forces, and a chest deflection potentiometer.

The 381 data channels were digitally sampled and recorded at 12,500 samples per second and processed per SAE J211 March 1995.

The crash event was recorded by one (1) real-time panning motion picture camera and nineteen (19) high-speed digital motion picture cameras. The pre-test and post-test conditions were recorded by one (1) real-time motion picture camera.

The test summary data is presented in Section 2.0. The occupant data summaries are presented in Section 3.0. The occupant, camera, and vehicle measurements are presented in Section 4.0. Appendix A contains the still photographic prints. Appendix B contains the dummy and vehicle data plots. Appendix C contains the pre-test dummy verification data. Appendix D contains miscellaneous test information.

Section 2.0

Flat Frontal Barrier Test Summary

Dummy Kinematics and Sequence of Events

Dummy Seating Location	Event	Approximate Time in ms
Right Side Row 4 Left Seat #005 3 Pt Belt	Knee contact with seat in front	135
	Head contact with seat in front	198
	Overhead luggage compartment contact with back of skull	290
	Dummy remained seated throughout the event	
Right Side Row 4 Right Seat #290 3 Pt Belt	Head contact with seat in front	172
	Knee contact with seat in front	188
	Overhead luggage compartment contact with back of skull	303
	Dummy remained seated throughout the event	
Right Side Row 5 Left Seat #168 Unbelted	Knee contact with seat in front	150
	Head contact with seat in front	167
	Overhead luggage compartment contact with back of skull	264
	Dummy landed in isle between seats 4L and 5R after the event ended	
Right Side Row 5 Right Seat #169 Unbelted	Knee contact with seat in front	134
	Head contact with seat in front	153
	Overhead luggage compartment contact with back of skull	270
	Dummy landed in between seats 4R and 5R after the event ended	
Left Side Row 5 Left Seat #342 Lap Belt	Knee contact with seat in front	120
	Head contact with seat in front	151
	Dummy remained seated throughout the event	
Left Side Row 5 Right Seat #426 Lap Belt	Knee contact with seat in front	125
	Head contact with seat in front	147
	Dummy remained seated throughout the event	
Right Side Row 6 Left Seat #313 3 Pt Belt	Head contact with seat in front	190
	Back skull contact with dummy in seat 7R-left	322
	Dummy remained seated throughout the event	
Right Side Row 6 Right Seat #314 3 Pt Belt	Head contact with seat in front	186
	Back of head contact with seat after rebound	369
	Dummy remained seated throughout the event	
Right Side Row 7 Left Seat #045 Unbelted	Knee contact with seat in front	100
	Head contact with seat in front	173
	Back of head contact with dummy in 6R-Left	322
	Front of head contact with overhead luggage compartment	338
	Dummy final location was in 6L	
Right Side Row 7 Right Seat #043 Unbelted	Knee contact with seat in front	100
	Head contact with seat in front	161
	Back of head contact with overhead luggage compartment	318
	Dummy final location in 7R seating area	
Left Side Row 8 Left Seat #177 Unbelted	Knee contact with seat in front	120
	Head contact with seat in front	161
	Dummy final location in the space between 8L and 7L	

Dummy Kinematics and Sequence of Events, Continued

Left Side Row 8 Right Seat #077 Unbelted	Knee contact with seat in front	112
	Head Contact with seat in front	178
	Top of Head contact with overhead luggage compartment	361
	Dummy final location in between 7L and 7R	
Right Side Row 9 Left Seat #226 3 Pt Belt	Knee contact with seat in front	108
	Head contact with seat in front	183
	Left Knee secondary contact with seat in front	397
	Overhead luggage compartment contact with head left side	839
	Dummy remained seated throughout the event	
Right Side Row 9 Right Seat #591 3 Pt Belt	Left Knee Contact with seat in front	139
	Back of head contact with 9R-Right seat	249
	Overhead luggage compartment contact with top of head	860
	Dummy remained seated throughout the event	
Left Side Row 10 Left Seat #551 Unbelted	Knee contact with seat in front	108
	Head contact with seat in front	174
	Dummy remained in its seat after the event	
Left Side Row 10 Right Seat #616 Unbelted	Knee contact with seat in front	125
	Head contact with seat in front	182
	Dummy remained in its seat after the event	
Right Side Row 11 Left Seat #617 3 Pt Belt	Knee contact with seat in front	150
	Head contact with seat in front	199
	Overhead luggage compartment contact with top of head	881
	Dummy remained seated throughout the event	
Right Side Row 11 Right Seat #134 3 Pt Belt	Knee contact with seat in front	132
	Head contact with seat in font	125
	Overhead luggage compartment contact with top of head	875
	Dummy remained seated throughout the event	
Left Side Row 12 Left Seat #855 Unbelted	Knee contact with seat in front	104
	Head contact with seat in front	168
	Dummy final position on top of 11R-Left	
Left Side Row 12 Right Seat #324 Unbelted	Knee contact with seat in front	120
	Head contact with seat in front	165
	Dummy final position in between 12L and 12R	
Right Side Row 13 Left Seat #416 3 Pt Belt	Knee contact with seat in front	138
	Dummy remained seated throughout the event	
Right Side Row 13 Right Seat #001 3 Pt Belt	Knee contact with seat in front	144
	Dummy remained seated throughout the event	

Test Results Summary

This 48.8 km/h flat frontal barrier impact test was conducted by TRC Inc. on December 14, 2007.

The subject test vehicle, a 2000 MCI 102EL3 Motorcoach, was equipped with a longitudinally-placed engine, automatic transmission, power steering, and power brakes. The vehicle's test weight was 42,720.0 kg. The vehicle's impact speed was 48.8 km/h.

Injury Criteria Data Summary		
	S/N 055	S/N 290
	Right Side Row 4 Left Seat 3-pt. Belt	Right Side Row 4 Right Seat 3-pt. Belt
HIC (15 ms)	439	75
HIC (36 ms)	439	75
Chest 3 ms (g)	25.5	15.1
Chest Deflection (mm)	-8	-13
Upper Neck		
Neck Tension-Flexion	0.16	0.92[1]
Neck Tension-Extension	0.17	2.68[1]
Neck Compression-Flexion	0.83	1.01[1]
Neck Compression-Extension	0.42	2.83[1]
Neck Tension (N)	899	492
Neck Compression (N)	-4,389	-1,268
Left Femur (N)	-1,036	-330
Right Femur (N)	-1,142	-182

[1] Upper neck moment Y-axis used in calculation recorded questionable data.

Injury Criteria Data Summary, Continued		
	S/N 168	S/N 169
	Right Side Row 5 Left Seat Unbelted	Right Side Row 5 Right Seat Unbelted
HIC (15 ms)	1,308	844
HIC (36 ms)	1,308	844
Chest 3 ms (g)	19.7	21.4
Chest Deflection (mm)	3	2
Upper Neck		
Neck Tension-Flexion	0.18	0.22
Neck Tension-Extension	0.09	0.51
Neck Compression-Flexion	0.39	0.56
Neck Compression-Extension	0.97	0.43
Neck Tension (N)	1,085	1,796
Neck Compression (N)	-3,929	-2,217
Left Femur (N)	-2,937	-3,387
Right Femur (N)	-1,910	-1,228

Injury Criteria Data Summary, Continued		
	S/N 342 Left Side Row 5 Left Seat Lap Belt	S/N 426 Left Side Row 5 Right Seat Lap Belt
HIC (15 ms)	785	1,356
HIC (36 ms)	785	1,356
Chest 3 ms (g)	25.1	24.2
Chest Deflection (mm)	3	4
Upper Neck		
Neck Tension-Flexion	0.32	0.41[1]
Neck Tension-Extension	0.40	1.95[1]
Neck Compression-Flexion	0.11	3.65[1]
Neck Compression-Extension	0.20	4.75[1]
Neck Tension (N)	1,865	6,152[1]
Neck Compression (N)	-826	-13,348[1]
Left Femur (N)	-631	-354
Right Femur (N)	-2,569	-168

[1] Neck F_z channel used in calculation recorded questionable data.

Test Results Summary, Continued

Injury Criteria Data Summary, Continued		
	S/N 313	S/N 314
	Right Side Row 6 Left Seat 3-pt. Belt	Right Side Row 6 Right Seat 3-pt. Belt
HIC (15 ms)	204	157
HIC (36 ms)	204	157
Chest 3 ms (g)	15.9	19.8
Chest Deflection (mm)	-14	-7
Upper Neck		
Neck Tension-Flexion	0.16	0.20
Neck Tension-Extension	0.15	0.09
Neck Compression-Flexion	0.65	0.68
Neck Compression-Extension	0.05	0.05
Neck Tension (N)	651	945
Neck Compression (N)	-3,497	-3,823
Left Femur (N)	-9	-39
Right Femur (N)	-22	-66

Injury Criteria Data Summary, Continued		
	S/N 045 Right Side Row 7 Left Seat Unbelted	S/N 043 Right Side Row 7 Right Seat Unbelted
HIC (15 ms)	613	728
HIC (36 ms)	613	728
Chest 3 ms (g)	18.7	28.3
Chest Deflection (mm)	-4	-16
Upper Neck		
Neck Tension-Flexion	0.13	0.26
Neck Tension-Extension	0.42	0.42
Neck Compression-Flexion	0.41	0.50
Neck Compression-Extension	0.53	0.24
Neck Tension (N)	1,683	1,708
Neck Compression (N)	-2,086	-2,384
Left Femur (N)	-3,652	-3,829
Right Femur (N)	-1,971	-2,886

Injury Criteria Data Summary, Continued		
	S/N 177 Left Side Row 8 Left Seat Unbelted	S/N 077 Left Side Row 8 Right Seat Unbelted
HIC (15 ms)	700	754
HIC (36 ms)	700	754
Chest 3 ms (g)	17.6	13.5
Chest Deflection (mm)	5	-20
Upper Neck		
Neck Tension-Flexion	0.34	0.11
Neck Tension-Extension	0.65	0.48
Neck Compression-Flexion	0.14	0.10
Neck Compression-Extension	1.35	0.57
Neck Tension (N)	1,941	1,354
Neck Compression (N)	-3,440	-2,981
Left Femur (N)	-2,683	-6,609
Right Femur (N)	-3,468	-4,041

Injury Criteria Data Summary, Continued		
	S/N 226 Right Side Row 9 Left Seat 3-pt. Belt	S/N 591 Right Side Row 9 Right Seat 3-pt. Belt
HIC (15 ms)	349	118
HIC (36 ms)	349	118
Chest 3 ms (g)	15.6	15.1
Chest Deflection (mm)	-15	-14
Upper Neck		
Neck Tension-Flexion	0.10	0.23
Neck Tension-Extension	0.20	0.12
Neck Compression-Flexion	0.51	0.72
Neck Compression-Extension	0.48	0.20
Neck Tension (N)	1,140	692
Neck Compression (N)	-3,780	-3,123
Left Femur (N)	-1,130	-792
Right Femur (N)	-3,124	-48

Injury Criteria Data Summary, Continued		
	S/N 551 Left Side Row 10 Left Seat Unbelted	S/N 616 Left Side Row 10 Right Seat Unbelted
HIC (15 ms)	336	570
HIC (36 ms)	336	570
Chest 3 ms (g)	17.4	1,312.9[1]
Chest Deflection (mm)	5	-89[2]
Upper Neck		
Neck Tension-Flexion	0.41	2.50[3]
Neck Tension-Extension	0.28	2.73[3]
Neck Compression-Flexion	0.43	2.75[3]
Neck Compression-Extension	0.45	2.41[3]
Neck Tension (N)	2,489	13,358[3]
Neck Compression (N)	-2,495	-13,336[3]
Left Femur (N)	-5,880	-3,033
Right Femur (N)	-4,254	-13,789[4]

[1] Chest X, Y, and Z acceleration channels used in calculation recorded questionable data.
[2] Chest deflection channel recorded questionable data.
[3] F_z and M_y channels used in calculation recorded questionable data.
[4] F_z channel recorded questionable data.

Test Results Summary, Continued

Injury Criteria Data Summary, Continued		
	S/N 617	S/N 134
	Right Side Row 11 Left Seat 3-pt. Belt	Right Side Row 11 Right Seat 3-pt. Belt
HIC (15 ms)	30	38
HIC (36 ms)	33	78
Chest 3 ms (g)	13.7	15.0
Chest Deflection (mm)	-11	-17
Upper Neck		
Neck Tension-Flexion	0.12	0.25
Neck Tension-Extension	0.06	0.14
Neck Compression-Flexion	0.31	0.03
Neck Compression-Extension	0.06	0.10
Neck Tension (N)	416	779
Neck Compression (N)	-1,666	-72
Left Femur (N)	-511	-486
Right Femur (N)	-1,029	-1,538

Injury Criteria Data Summary, Continued		
	S/N 855 Left Side Row 12 Left Seat Unbelted	S/N 324 Left Side Row 12 Right Seat Unbelted
HIC (15 ms)	210	1,959
HIC (36 ms)	210	1,959
Chest 3 ms (g)	14.8	22.3
Chest Deflection (mm)	3	85[1]
Upper Neck		
Neck Tension-Flexion	0.28	0.71
Neck Tension-Extension	0.30	0.36
Neck Compression-Flexion	0.36	0.67
Neck Compression-Extension	0.34	0.03
Neck Tension (N)	1,894	1,005
Neck Compression (N)	-1,828	-682
Left Femur (N)	-6,230	-4,149
Right Femur (N)	-4,505	-2,922

[1] Chest deflection channel recorded questionable data.

Injury Criteria Data Summary, Continued		
	S/N 416 Right Side Row 13 Left Seat 3-pt. Belt	S/N 001 Right Side Row 13 Right Seat 3-pt. Belt
HIC (15 ms)	14	27
HIC (36 ms)	29	52
Chest 3 ms (g)	12.2	13.4
Chest Deflection (mm)	-14	-16
Upper Neck		
Neck Tension-Flexion	0.18	0.19
Neck Tension-Extension	0.19	0.10
Neck Compression-Flexion	0.20	0.05
Neck Compression-Extension	0.04	0.09
Neck Tension (N)	446	698
Neck Compression (N)	-210	-309
Left Femur (N)	-34	-354[1]
Right Femur (N)	-195	-1,602

[1] Channel recorded questionable data.

Data Acquisition Explanations

Electronic data anomalies are summarized below:

Channel Number	Sensor Type	Sensor Location	Sensor Attachment (Name)	Axis	Problem/Action
22	Moment	Dummy	12NECKUP00H3MOXA	X	Over scaled and recorded questionable data throughout the event.
23	Moment	Dummy	12NECKUP00H3MOYA	Y	Over scaled and recorded questionable data throughout the event. This affected the NIJ calculation.
88	Force	Dummy	16NECKUP00HFFOXA	X	Recorded questionable data between 125-250 ms.
89	Force	Dummy	16NECKUP00HFFOYA	Y	Recorded questionable data throughout the event.
90	Force	Dummy	16NECKUP00HFFOZA	Z	Over scaled and recorded questionable data throughout the event.
152	Force	Dummy	21NECKUP00H3FOYA	Y	Spikes in data throughout the event.
177	Force	Dummy	22FEMRRL00H3FOZA	Z	Over scaled and recorded questionable data throughout the event.
241	Force	Dummy	27NECKUP00H3FOXA	X	Over scaled and recorded questionable data between 250-500 ms. This affected the NIJ calculations.
242	Force	Dummy	27NECKUP00H3FOYA	Y	Over scaled and recorded questionable data throughout the event.
243	Force	Dummy	27NECKUP00H3FOZA	Z	Over scaled and recorded questionable data throughout the event.

Electronic data anomalies are summarized below:

Channel Number	Sensor Type	Sensor Location	Sensor Attachment (Name)	Axis	Problem/Action
247	Accel	Dummy	27CHSTCG00H3ACXA	X	Over scaled and recorded questionable data throughout the event. This affected the chest clip calculation.
248	Accel	Dummy	27CHSTCG00H3ACYA	Y	Over scaled and recorded questionable data throughout the event. This affected the chest clip calculation.
249	Accel	Dummy	27CHSTCG00H3ACZA	Z	Over scaled and recorded questionable data throughout the event. This affected the chest clip calculation.
250	Deflec.	Dummy	27CHST0000H3DSXA	X	Over scaled and recorded questionable data throughout the event. This affected the chest clip calculation.
252	Force	Dummy	27FEMRRL00H3FOZA	Z	Over scaled and recorded questionable data throughout the event.
310	Deflec.	Dummy	32CHST0000HFDSXA	X	Over scaled and recorded questionable data throughout the event.
329	Accel	Dummy	33 CHSTCGRDHFACYP	Y	Recorded questionable data throughout the event. This affected the chest clip calculation.

Electronic data anomalies are summarized below:

Channel Number	Sensor Type	Sensor Location	Sensor Attachment (Name)	Axis	Problem/Action
338	Accel	Dummy	34HEADCGRDH3ACYP	Y	Recorded questionable data throughout the event. This affected the HIC redundant calculation.
339	Accel	Dummy	34HEADCGRDH3ACZP	Z	Recorded questionable data throughout the event. This affected the HIC redundant calculation.
353	Force	Dummy	34FEMRLL00H3FOZA	Z	Recorded questionable data throughout the event.
355	Accel	Vehicle	11SEAT000000ACXA	X	Over scaled and recorded questionable data throughout the event.
356	Accel	Vehicle	11SEAT000000ACYA	Y	Over scaled and recorded questionable data throughout the event.
357	Accel	Vehicle	11SEAT000000ACZA	Z	Over scaled and recorded questionable data throughout the event.
358	Accel	Vehicle	10FRAMLEFR00ACXA	X	Over scaled and recorded questionable data throughout the event.
373		Vehicle	16SEBE0000B5FO0A		Over scaled and recorded questionable data throughout the event.

Table 1 Crash Test Summary

Test mode:	Flat Frontal Barrier
Test date:	12/14/07
Test time:	14:57
Ambient temperature:	21° C
Year/make/model/body style:	2000/MCI/102EL3/Motorcoach Bus
Test weight:	42720.0 kg
Impact angle[1]:	0°
Impact velocity[2]:	Primary = 48.9 km/h Secondary = 48.8 km/h
Total number of data channels:	382
Number of cameras:	
High-speed digital:	19
Real-time:	1

[1] With respect to tow track centerline.
[2] Speed trap measurement (± .08 km/h accuracy)

Table 2 General Test and Vehicle Parameter Data

Year/make/model/body style:	2000/MCI/102EL3/Motorcoach Bus
VIN:	1M8TRMPA2YP061004
Model year:	2000
Body style:	Bus
Color:	Gold & Black
Engine data:	
Cylinders:	6
Displacement	12.7 L
Type:	Inline
Placement:	Longitudinally-placed
Transmission data:	_6_ speed, __ manual, _X_ automatic, ___ overdrive
Final drive:	__ FWD, __ RWD, _X_ 4WD
Date vehicle received:	11/20/2007
Odometer reading:	299,587 miles
Dealer's name and address:	Vehicle supplied by VRTC

Accessories:

Power steering	Yes	Automatic transmission	Yes
Power brakes	Yes	Automatic speed control	Yes
Power seats	No	Tilting steering wheel	Yes
Power windows	No	Telescoping steering wheel	Yes
Tinted glass	Yes	Air conditioning	Yes
Radio	Yes	Anti-skid brake	Yes
Clock	Yes	Rear window defroster	No
Other	TV	Power door locks	Yes

Certification data from vehicle's label:[1]

Vehicle manufactured by:		N/A
Date of manufacture:		N/A
VIN:		N/A
GVWR:		N/A lbs. (N/A kg)
GAWR:	Front:	N/A lbs. (N/A kg)
	Rear:	N/A lbs. (N/A kg)

[1] The vehicle did not contain a label stating certification data.

Table 2 General Test and Vehicle Parameter Data, Continued

Tires on vehicle (mfr., line, size): Goodyear, G409, 315/80R22.5

Tire pressure with maximum capacity vehicle load:
Front: 130 psi (896 kPa)
Rear: 120 psi (827 kPa)

Spare tire (mfr., line, size): Goodyear, G409, 315/80R22.5

Type of seats: Bucket

Location of "Recommended Tire Pressure" label:[1]

N/A

Data from vehicle's "Recommended Tire Pressure" label:[1]

Recommended tire size: N/A

Recommended cold tire pressure: Front: N/A psi (N/A kPa)
Rear: N/A psi (N/A kPa)

Seating capacity: Front: N/A
Mid: N/A
Rear: N/A
Total: N/A

Vehicle capacity weight: N/A lbs. (N/A kg)

Rated cargo/luggage weight: N/A lbs. (N/A kg)

Test vehicle attitude:

Pre-test attitude:	LF	1185 mm;	RF	1160 mm;	LR	985 mm;	RR 941 mm
Post-test attitude:[2]	LF	mm;	RF	mm;	LR	mm;	RR mm

[1] The vehicle did not contain a label stating tire and capacity data.
[2] Vehicle returned to VRTC before measurements could be taken.

Table 2 General Test and Vehicle Parameter Data Continued

Weight of test vehicle as received (with maximum fluids)=UDW:

Total front weight	10,530 lbs
Total rear weight	27,470 lbs
Total delivered weight	37,990 lbs

Calculation of test vehicle's target test weight:

Total Delivered Weight (UDW) =	37,990 lbs
Rated Cargo/Luggage Weight (RCLW)[1] =	300 lbs
Weight of 3 Part 572O Dummies @ 117 lbs =	351 lbs
Weight of 2 95th Dummies @ 233 lbs =	466 lbs
Weight of 17 Part 572E Dummies @ 181 lbs =	3,077 lbs
Target test weight =	42,184 lbs

Weight of test vehicle with required dummies and cargo weight:

Right front	6180.0 lbs	Rear axle	30490 lbs
Left front	6050.0 lbs		
Total front weight	12230.0 lbs	(28.6% of total vehicle weight)	
Total rear weight	30490.0 lbs	(71.4% of total vehicle weight)	
Total test weight	42720.0 lbs		

Weight of ballast secured in vehicle: None

Components removed to meet target test weight: None

Fuel System Data:

Usable fuel system capacity	182.0 liters (from owner's manual)
Actual test volume:	44.0 liters (% of usable)

[1] Cargo weight for multipurpose passenger vehicles, trucks, and buses is the vehicle's rated cargo and luggage weight from the vehicle's label or 300 pounds, whichever is less.

Table 3 Post-Impact Data

Test number:	071214
Test date:	12/14/07
Test time:	14:57
Test type:	Flat frontal barrier
Impact angle:	0°
Ambient temperature at impact area:	21° C
Impact velocity:	
Primary:	48.9 km/h
Secondary	48.8 km/h
Required impact velocity range:	45.1 to 51.5 km/h
Distance from vehicle to barrier:	
Entering velocity trap:	660 mm
Exiting velocity trap:	50 mm, approximately

Figure 1 Impact Velocity Measurement System

The vane clears the final emitter/receiver pair approximately 50 millimeters before impact.

The emitter/receiver pairs have 610-millimeter spacing.

Figure 2 Vehicle Accelerometer Locations

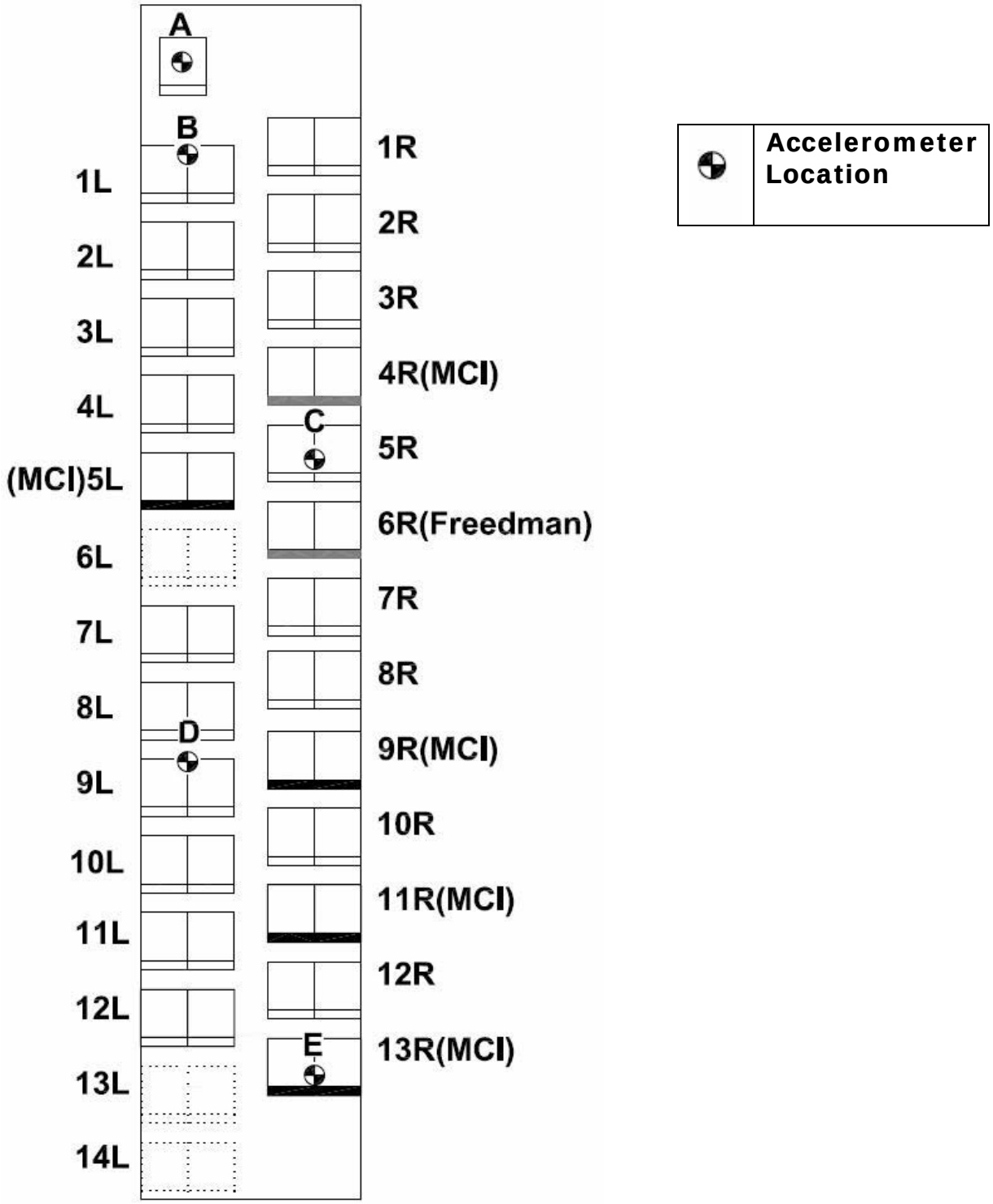


Table 4 Vehicle Accelerometer Data Summary

Accel. No.	Location		Positive Direction Max. (g)	Positive Direction Time (ms)	Negative Direction Max. (g)	Negative Direction Time (ms)
A	Driver Seat of Bus[1]	X	2160.5	88.7	2149.4	105.0
		Y	2195.2	101.0	634.2	154.8
		Z	2128.6	63.1	2077.8	263.0
		R	3690.3	64.0		
B	Front Left of Bus[1]	X	120.9	386.8	2109.9	145.3
		Y	1684.8	183.7	614.7	383.0
		Z	2162.0	185.2	2190.6	193.1
		R	3404.5	184.8		
C	Middle Front Right of Bus	X	2.6	224.2	12.1	132.6
		Y	9.7	157.7	6.3	119.3
		Z	10.3	108.4	16.2	139.4
		R	17.9	139.3		
D	Middle Rear Left of Bus	X	2.1	223.2	12.4	130.7
		Y	2.6	314.4	13.7	179.4
		Z	4.5	230.2	6.2	130.1
		R	14.5	179.4		
E	Rear Right of Bus	X	3.5	222.8	12.5	19.4
		Y	2.6	133.2	2.9	139.4
		Z	6.0	144.2	27.5	226.2
		R	27.6	226.2		

Reference: X: + Forward From Rear Bumper
Y: + Rightward From Vehicle Centerline
Z: + Downward From Ground Level

For acceleration data sign convention see Report Sign Convention in Appendix D.

[1] See Data Acquisition Explanations.

Section 3.0

Summary of Occupant Data

Table 5 Dummy Accelerometer Data Summary

Dummy Serial Number: 055
Seating Location: Right Side Row 4, Left Seat, 3-pt. Belt

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Head Acceleration	X	96.3	291.7	24.0	198.9
	Y	11.3	199.7	105.8	291.7
	Z	66.6	291.4	11.0	295.9
	R	157.2	291.6		
Neck Force	X	9.9	49.3	987.8	228.2
	Y	607.9	294.3	190.9	244.2
	Z	898.9	303.1	4388.5	209.0
Neck Moment	X	30.1	311.8	97.9	212.0
	Y	47.4	237.1	18.8	294.8
	Z	31.4	242.8	6.5	298.0
Chest Acceleration	X	4.1	301.8	21.1	201.1
	Y	3.5	198.7	5.1	302.7
	Z	18.0	202.2	10.2	111.8
	R	27.4	202.0		
Chest Deflection	X	0.3	43.8	7.8	132.6
Left Femur Force	Z	1221.5	120.6	1036.5	227.1
Right Femur Force	Z	777.6	89.6	1142.4	135.4

Table 5 Dummy Accelerometer Data Summary, Continued

Dummy Serial Number: 290
Seating Location: Right Side Row 4, Right Seat, 3-pt. Belt

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Head Acceleration	X	24.5	303.6	39.9	172.7
	Y	16.8	217.0	12.7	307.4
	Z	18.7	217.0	2.6	305.1
	R	40.4	172.7		
Neck Force	X	247.5	234.2	525.6	445.4
	Y	433.6	327.7	253.7	219.4
	Z	492.0	200.9	1267.6	178.6
Neck Moment	X	286.6	182.4	283.9	277.7
	Y	272.6	158.2	369.3	159.3
	Z	8.8	247.0	7.7	209.6
Chest Acceleration	X	1.2	378.5	13.3	123.4
	Y	4.6	223.3	3.6	142.2
	Z	12.8	219.6	10.3	154.1
	R	15.8	153.4		
Chest Deflection	X	0.4	44.0	12.7	132.4
Left Femur Force	Z	758.9	128.1	329.5	187.9
Right Femur Force	Z	1169.1	135.9	181.9	446.1

Table 5 Dummy Accelerometer Data Summary, Continued

Dummy Serial Number: 168
Seating Location: Right Side Row 5, Left Seat, Unbelted

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Head Acceleration	X	10.1	300.6	262.7	167.9
	Y	20.4	168.1	65.7	264.5
	Z	180.9	264.6	34.8	170.2
	R	264.6	167.9		
Neck Force	X	1416.2	189.4	82.1	432.0
	Y	148.3	307.6	1403.7	229.9
	Z	1085.3	175.8	3928.9	283.1
Neck Moment	X	53.5	244.0	80.2	288.7
	Y	98.6	189.0	38.0	287.9
	Z	2.4	120.6	52.9	285.6
Chest Acceleration	X	10.8	267.0	14.3	197.8
	Y	2.7	204.6	1.9	121.6
	Z	22.4	169.3	15.2	112.6
	R	23.5	169.4		
Chest Deflection	X	2.9	192.6	2.2	346.0
Left Femur Force	Z	727.8	107.5	2936.8	189.8
Right Femur Force	Z	1259.5	138.3	1909.8	168.4

Table 5 Dummy Accelerometer Data Summary, Continued

Dummy Serial Number: 169
Seating Location: Right Side Row 5, Right Seat, Unbelted

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Head Acceleration	X	115.0	271.8	200.5	153.6
	Y	10.5	167.7	36.4	153.3
	Z	54.4	280.0	44.6	156.1
	R	203.5	153.6		
Neck Force	X	2885.7	185.0	808.4	280.4
	Y	322.0	154.1	734.3	224.5
	Z	1796.5	280.2	2216.7	274.3
Neck Moment	X	39.4	225.4	19.1	280.2
	Y	156.2	185.4	47.5	280.4
	Z	3.7	160.4	21.6	226.5
Chest Acceleration	X	9.9	279.9	15.2	174.2
	Y	5.2	280.2	2.9	118.5
	Z	17.2	154.9	18.5	111.4
	R	21.9	176.6		
Chest Deflection	X	1.8	174.6	1.4	283.4
Left Femur Force	Z	858.6	113.4	3386.8	193.6
Right Femur Force	Z	1088.3	112.4	1227.6	157.8

Table 5 Dummy Accelerometer Data Summary, Continued

Dummy Serial Number: 342
Seating Location: Left Side Row 5, Left Seat, Lap Belt

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Head Acceleration	X	36.5	291.7	194.7	151.4
	Y	4.7	284.9	11.7	341.4
	Z	31.7	147.4	29.1	152.5
	R	194.9	151.4		
Head Redundant Acceleration	X	36.6	291.6	194.8	151.4
	Y	4.6	284.4	11.8	341.4
	Z	32.3	156.7	29.6	152.5
	R	195.0	151.4		
Neck Force	X	2004.5	151.5	241.4	313.2
	Y	162.2	305.1	262.0	211.9
	Z	1864.5	156.6	825.9	148.9
Neck Moment	X	16.9	306.6	7.5	163.8
	Y	59.8	153.0	37.2	192.2
	Z	9.1	287.4	17.8	227.8
Chest Acceleration	X	2.8	247.9	21.8	167.4
	Y	4.8	170.2	1.8	271.4
	Z	19.9	165.2	6.5	101.2
	R	26.1	166.8		
Chest Redundant Acceleration	X	3.1	247.8	21.5	167.4
	Y	4.8	170.2	1.8	311.7
	Z	20.1	165.2	6.5	101.2
	R	26.0	166.8		
Chest Deflection	X	2.9	170.8	0.1	442.4
Left Femur Force	Z	959.3	130.6	630.8	120.3
Right Femur Force	Z	712.6	180.2	2569.3	121.3

Table 5 Dummy Accelerometer Data Summary, Continued

Dummy Serial Number: 426
Seating Location: Left Side Row 5, Right Seat, Lap Belt

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Head Acceleration	X	13.5	186.4	238.8	147.6
	Y	7.6	169.0	4.1	210.6
	Z	43.9	152.8	59.0	148.4
	R	239.2	147.6		
Head Redundant Acceleration	X	12.9	187.3	240.0	147.6
	Y	7.8	169.6	4.0	209.7
	Z	44.9	152.8	57.8	148.4
	R	240.4	147.6		
Neck Force	X	2169.0	157.7	1615.1	206.9
	Y	7673.1	403.3	5513.9	248.2
	Z	6152.2	197.7	13348.0	157.8
Neck Moment	X	14.9	175.5	16.3	213.9
	Y	30.4	241.8	76.8	196.2
	Z	4.9	174.7	10.0	194.2
Chest Acceleration	X	13.3	236.4	32.1	129.1
	Y	5.8	233.5	4.8	232.0
	Z	21.2	148.4	10.6	127.8
	R	32.2	129.1		
Chest Redundant Acceleration	X	14.1	236.4	33.5	129.1
	Y	5.9	233.5	5.0	232.0
	Z	21.5	148.4	10.2	127.8
	R	33.5	129.1		
Chest Deflection	X	4.3	175.2	0.7	499.8
Left Femur Force	Z	765.3	111.8	354.3	211.0
Right Femur Force	Z	730.1	137.9	168.1	241.0

Table 5 Dummy Accelerometer Data Summary, Continued

Dummy Serial Number: 313
Seating Location: Right Side Row 6, Left Seat, 3-pt. Belt

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Head Acceleration	X	110.1	322.7	48.5	191.0
	Y	11.8	190.5	29.6	322.8
	Z	64.8	189.9	30.6	192.2
	R	115.7	322.7		
Neck Force	X	89.6	312.3	699.0	192.2
	Y	180.6	249.3	118.9	190.8
	Z	651.4	324.2	3496.6	190.5
Neck Moment	X	11.1	250.6	17.7	195.1
	Y	25.7	188.6	15.7	323.0
	Z	4.3	264.4	8.3	364.7
Chest Acceleration	X	4.4	194.6	18.1	191.0
	Y	4.7	210.7	2.7	328.3
	Z	19.3	191.0	3.5	109.4
	R	26.5	191.0		
Chest Deflection	X	0.5	47.0	14.5	174.9
Left Femur Force	Z	1193.3	148.2	9.3	296.9
Right Femur Force	Z	804.1	146.5	21.7	440.7

Table 5 Dummy Accelerometer Data Summary, Continued

Dummy Serial Number: 314
Seating Location: Right Side Row 6, Right Seat, 3-pt. Belt

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Head Acceleration	X	36.6	369.8	46.1	186.2
	Y	30.7	186.1	20.0	369.7
	Z	123.7	186.1	47.5	187.7
	R	133.2	186.1		
Neck Force	X	118.7	377.0	678.8	188.3
	Y	124.6	288.6	300.7	188.6
	Z	944.6	195.8	3822.6	186.6
Neck Moment	X	13.8	374.8	26.3	195.3
	Y	29.4	130.1	9.2	70.9
	Z	3.4	288.8	4.4	235.4
Chest Acceleration	X	1.5	388.9	21.5	187.1
	Y	2.1	195.8	2.1	383.8
	Z	27.4	187.1	6.6	165.6
	R	34.8	187.1		
Chest Deflection	X	0.2	59.9	7.1	217.4
Left Femur Force	Z	625.2	141.3	38.9	298.3
Right Femur Force	Z	832.7	141.2	65.7	320.6

Table 5 Dummy Accelerometer Data Summary, Continued

Dummy Serial Number: 045
Seating Location: Right Side Row 7, Left Seat, Unbelted

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Head Acceleration	X	36.6	322.6	165.3	173.4
	Y	53.7	334.2	48.3	322.6
	Z	56.5	322.4	41.5	174.4
	R	167.7	173.4		
Neck Force	X	1448.0	207.7	696.6	322.9
	Y	418.7	312.3	730.3	225.6
	Z	1683.2	187.4	2085.9	323.7
Neck Moment	X	42.1	301.6	33.9	315.2
	Y	81.7	209.8	40.3	326.6
	Z	4.1	187.9	20.8	325.2
Chest Acceleration	X	23.3	297.5	17.5	178.2
	Y	3.4	330.2	4.0	298.1
	Z	20.7	174.1	16.9	110.5
	R	26.0	297.6		
Chest Deflection	X	2.7	125.9	3.7	202.2
Left Femur Force	Z	361.0	88.6	3652.3	192.0
Right Femur Force	Z	402.3	92.0	1971.5	167.9

Table 5 Dummy Accelerometer Data Summary, Continued

Dummy Serial Number: 043
Seating Location: Right Side Row 7, Right Seat, Unbelted

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Head Acceleration	X	42.0	318.6	146.7	161.4
	Y	18.6	161.3	24.6	369.6
	Z	15.7	308.6	37.3	162.2
	R	150.2	161.4		
Neck Force	X	1065.2	181.8	593.3	320.4
	Y	2867.2	376.1	1991.0	301.4
	Z	1708.4	159.3	2384.4	208.6
Neck Moment	X	24.0	310.7	22.6	320.2
	Y	93.8	243.5	37.1	327.8
	Z	5.8	176.8	12.0	416.4
Chest Acceleration	X	19.8	298.6	25.3	171.4
	Y	8.5	297.6	6.8	310.5
	Z	20.7	161.9	13.5	117.0
	R	30.1	171.8		
Chest Deflection	X	2.1	124.0	16.2	189.3
Left Femur Force	Z	235.4	94.4	3829.5	181.5
Right Femur Force	Z	214.7	95.8	2885.9	178.3

Table 5 Dummy Accelerometer Data Summary, Continued

Dummy Serial Number: 177
Seating Location: Left Side Row 8, Left Seat, Unbelted

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Head Acceleration	X	122.1	342.9	127.2	161.1
	Y	25.7	234.7	45.1	343.3
	Z	65.7	352.1	25.2	162.2
	R	132.9	342.9		
Neck Force	X	1095.6	161.3	1531.2	352.6
	Y	438.2	346.0	268.0	217.6
	Z	1941.4	165.5	3440.0	363.0
Neck Moment	X	17.8	270.6	43.0	347.9
	Y	34.6	163.3	125.1	363.2
	Z	15.5	299.0	30.3	224.5
Chest Acceleration	X	11.6	352.1	17.2	165.4
	Y	4.4	352.6	3.3	170.1
	Z	17.4	346.6	17.8	113.2
	R	19.0	113.3		
Chest Deflection	X	5.5	173.0	1.8	220.6
Left Femur Force	Z	1135.7	114.6	2683.0	179.7
Right Femur Force	Z	13619.6	300.2	3467.7	114.1

Table 5 Dummy Accelerometer Data Summary, Continued

Dummy Serial Number: 077
Seating Location: Left Side Row 8, Right Seat, Unbelted

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Head Acceleration	X	42.6	361.3	230.5	179.0
	Y	37.4	178.9	8.9	370.4
	Z	31.9	360.3	47.6	180.1
	R	235.2	179.0		
Neck Force	X	514.9	179.0	581.5	367.8
	Y	259.2	161.4	431.8	370.5
	Z	1354.4	182.2	2981.0	363.5
Neck Moment	X	20.8	165.8	18.3	213.1
	Y	37.8	247.2	73.2	186.9
	Z	9.3	270.1	19.7	215.6
Chest Acceleration	X	4.2	373.7	13.9	198.7
	Y	4.1	130.9	2.3	362.9
	Z	14.1	179.7	6.4	109.8
	R	18.1	179.5		
Chest Deflection	X	2.9	126.3	20.3	202.4
Left Femur Force	Z	325.2	104.8	6609.0	112.2
Right Femur Force	Z	474.0	207.9	4040.9	112.0

Table 5 Dummy Accelerometer Data Summary, Continued

Dummy Serial Number: 226
Seating Location: Right Side Row 9, Left Seat, 3-pt. Belt

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Head Acceleration	X	3.0	411.2	152.0	183.0
	Y	15.8	183.1	5.6	187.2
	Z	59.5	183.0	35.9	184.6
	R	162.1	183.0		
Neck Force	X	549.3	187.0	108.3	337.7
	Y	227.0	207.7	134.6	292.0
	Z	1139.6	187.8	3779.9	183.5
Neck Moment	X	10.1	152.2	31.6	200.8
	Y	41.5	228.1	9.5	192.3
	Z	6.4	272.2	17.1	221.9
Chest Acceleration	X	2.4	187.5	22.8	183.7
	Y	2.7	221.8	3.9	158.7
	Z	17.2	183.8	6.3	187.5
	R	28.6	183.8		
Chest Deflection	X	0.0	51.6	15.2	194.8
Left Femur Force	Z	1436.1	156.2	1129.8	108.5
Right Femur Force	Z	854.5	188.6	3124.0	110.1

Table 5 Dummy Accelerometer Data Summary, Continued

Dummy Serial Number: 591
Seating Location: Right Side Row 9, Right Seat, 3-pt. Belt

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Head Acceleration	X	49.4	249.5	16.2	190.1
	Y	7.8	258.0	13.4	249.3
	Z	60.0	249.4	13.6	259.1
	R	76.8	249.4		
Neck Force	X	255.4	256.2	615.2	189.2
	Y	251.1	255.9	60.0	473.4
	Z	692.2	178.5	3123.0	256.9
Neck Moment	X	9.6	271.6	10.4	259.4
	Y	79.5	259.4	13.9	388.7
	Z	6.3	257.7	3.6	319.4
Chest Acceleration	X	3.5	275.5	14.0	144.9
	Y	2.4	145.4	1.4	279.7
	Z	12.6	251.2	6.6	136.6
	R	15.5	145.1		
Chest Deflection	X	0.3	60.6	14.1	196.4
Left Femur Force	Z	490.3	127.7	791.6	140.0
Right Femur Force	Z	1007.7	145.0	48.5	268.1

Table 5 Dummy Accelerometer Data Summary, Continued

Dummy Serial Number: 551
Seating Location: Left Side Row 10, Left Seat, Unbelted

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Head Acceleration	X	17.0	202.2	126.1	175.0
	Y	3.5	195.8	7.0	177.8
	Z	27.3	372.0	33.8	175.8
	R	127.2	175.0		
Neck Force	X	1305.4	200.2	214.4	500.0
	Y	151.7	183.3	121.3	461.4
	Z	2489.1	181.0	2495.3	377.6
Neck Moment	X	10.6	203.8	18.7	401.1
	Y	42.4	200.2	22.8	168.2
	Z	7.8	197.0	6.9	447.9
Chest Acceleration	X	1.6	264.3	17.3	178.9
	Y	5.9	109.6	2.9	162.2
	Z	14.6	186.1	12.1	111.2
	R	18.6	186.0		
Chest Deflection	X	4.9	184.8	0.1	76.4
Left Femur Force	Z	332.2	104.2	5880.5	108.5
Right Femur Force	Z	267.8	240.8	4254.0	111.3

Table 5 Dummy Accelerometer Data Summary, Continued

Dummy Serial Number: 616
Seating Location: Left Side Row 10, Right Seat, Unbelted

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Head Acceleration	X	12.9	209.8	140.2	183.0
	Y	13.1	182.2	4.0	245.0
	Z	23.2	178.2	37.8	183.8
	R	143.4	183.0		
Neck Force	X	5680.7	489.9	8902.1	247.0
	Y	7990.2	393.9	8894.7	241.3
	Z	13357.6	422.5	13335.8	238.0
Neck Moment	X	17.3	304.1	11.5	232.2
	Y	65.8	207.9	23.9	174.1
	Z	3.7	214.6	11.7	319.4
Chest Acceleration	X	794.0	184.0	83.9	500.0
	Y	33.0	201.8	780.3	204.6
	Z	778.7	190.5	24.3	187.7
	R	1328.6	204.6		
Chest Deflection	X	3.9	203.1	88.5	204.0
Left Femur Force	Z	473.9	110.2	3033.1	166.5
Right Femur Force	Z	13512.6	304.8	13788.7	264.4

Table 5 Dummy Accelerometer Data Summary, Continued

Dummy Serial Number: 617
Seating Location: Right Side Row 11, Left Seat, 3-pt. Belt

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Head Acceleration	X	1.0	314.6	33.3	199.4
	Y	1.4	428.2	3.9	199.1
	Z	27.1	198.5	4.9	287.2
	R	40.8	198.6		
Neck Force	X	52.8	296.3	371.5	148.3
	Y	67.9	420.6	124.3	199.1
	Z	416.3	191.0	1665.7	200.2
Neck Moment	X	4.9	78.4	9.8	211.5
	Y	21.9	206.5	6.6	351.1
	Z	1.9	159.5	5.4	199.9
Chest Acceleration	X	0.3	453.1	13.1	143.4
	Y	1.3	59.1	6.1	140.8
	Z	9.5	199.8	7.9	285.4
	R	14.3	199.8		
Chest Deflection	X	0.0	39.8	11.4	147.7
Left Femur Force	Z	1224.3	148.6	511.3	149.0
Right Femur Force	Z	623.5	113.4	1029.5	150.6

Table 5 Dummy Accelerometer Data Summary, Continued

Dummy Serial Number: 134
Seating Location: Right Side Row 11, Right Seat, 3-pt. Belt

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Head Acceleration	X	7.1	276.2	17.3	188.8
	Y	2.1	124.1	2.6	276.1
	Z	18.6	168.6	2.1	285.4
	R	24.1	168.6		
Neck Force	X	174.0	285.8	652.8	193.3
	Y	86.1	120.9	70.3	276.1
	Z	779.2	169.0	72.4	285.5
Neck Moment	X	5.0	117.8	6.7	288.2
	Y	40.0	186.0	14.8	300.5
	Z	3.4	359.1	2.5	287.5
Chest Acceleration	X	0.4	472.3	15.0	133.8
	Y	3.0	164.1	2.9	267.8
	Z	7.0	182.0	6.4	281.4
	R	15.5	133.9		
Chest Deflection	X	0.0	48.6	17.0	181.2
Left Femur Force	Z	745.2	120.0	486.0	143.0
Right Femur Force	Z	649.1	93.4	1538.0	132.8

Table 5 Dummy Accelerometer Data Summary, Continued

Dummy Serial Number: 855
Seating Location: Left Side Row 12, Left Seat, Unbelted

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Head Acceleration	X	18.5	199.7	60.7	168.2
	Y	9.7	299.1	6.5	313.6
	Z	15.4	157.4	20.8	170.2
	R	64.2	170.3		
Neck Force	X	1882.1	197.4	68.1	160.9
	Y	240.4	299.1	122.4	393.9
	Z	1894.1	173.0	1828.1	295.4
Neck Moment	X	4.7	159.0	39.3	342.6
	Y	82.6	197.8	26.4	394.2
	Z	12.6	202.5	16.9	426.9
Chest Acceleration	X	2.4	257.9	15.9	173.7
	Y	4.0	105.6	2.6	178.2
	Z	8.6	158.2	8.7	106.3
	R	16.0	173.6		
Chest Deflection	X	3.4	177.8	1.8	363.7
Left Femur Force	Z	368.6	304.7	6229.6	104.5
Right Femur Force	Z	206.5	477.1	4505.4	106.5

Table 5 Dummy Accelerometer Data Summary, Continued

Dummy Serial Number: 324
Seating Location: Left Side Row 12, Right Seat, Unbelted

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Head Acceleration	X	4.9	145.6	557.9	165.4
	Y	75.1	165.8	69.7	165.4
	Z	67.8	165.5	115.8	165.8
	R	563.6	165.4		
Neck Force	X	3645.9	165.5	111.4	255.8
	Y	313.9	325.4	150.0	165.4
	Z	1004.9	171.4	682.4	186.1
Neck Moment	X	8.3	177.9	11.3	326.3
	Y	109.8	187.4	19.0	163.7
	Z	12.5	405.6	2.6	165.0
Chest Acceleration	X	2.5	258.1	28.0	173.0
	Y	3.5	129.5	2.3	291.9
	Z	18.7	175.0	4.6	121.8
	R	29.4	173.0		
Chest Deflection	X	84.5	325.9	84.3	429.3
Left Femur Force	Z	200.9	303.4	4148.8	126.3
Right Femur Force	Z	125.7	113.2	2922.2	120.7

Table 5 Dummy Accelerometer Data Summary, Continued

Dummy Serial Number: 416
Seating Location: Right Side Row 13, Left Seat, 3-pt. Belt

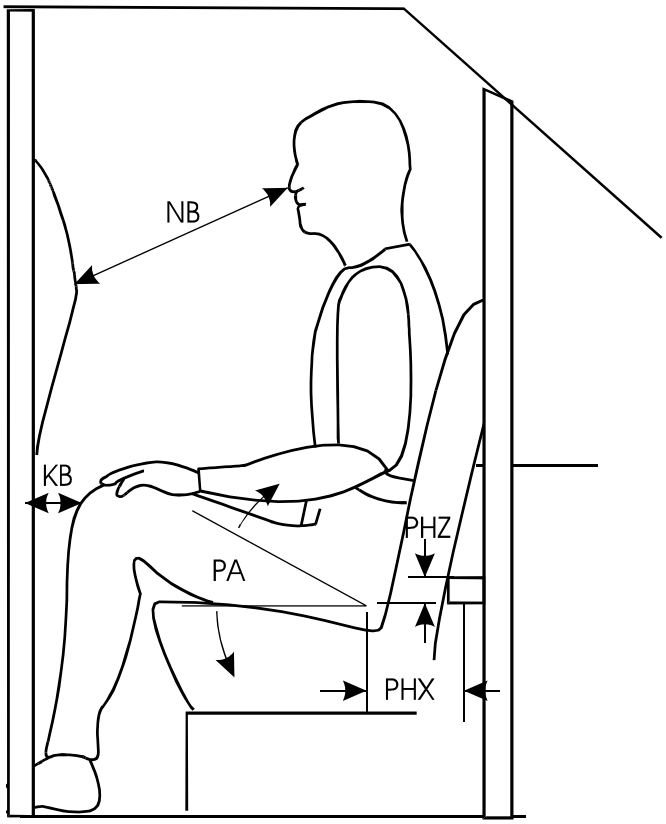
		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Head Acceleration	X	4.0	452.7	11.2	128.7
	Y	1.0	103.2	1.4	414.5
	Z	12.6	131.7	6.2	271.8
	R	16.5	135.4		
Head Redundant Acceleration	X	2.0	363.8	12.6	164.7
	Y	1.1	102.8	1.2	412.4
	Z	12.5	132.4	6.2	271.8
	R	16.8	131.7		
Neck Force	X	55.5	363.9	315.1	162.9
	Y	45.7	407.4	46.8	170.1
	Z	445.6	142.6	210.4	271.8
Neck Moment	X	4.4	162.6	3.4	197.9
	Y	19.9	284.9	10.6	376.6
	Z	1.6	145.5	2.0	232.6
Chest Acceleration	X	0.5	460.8	11.9	118.7
	Y	1.6	229.6	4.6	161.5
	Z	5.8	176.9	11.4	267.4
	R	12.5	144.2		
Chest Redundant Acceleration	X	0.7	453.0	12.5	144.6
	Y	31.1	459.0	922.8	456.5
	Z	6.0	176.7	11.3	268.4
	R	922.8	456.5		
Chest Deflection	X	0.1	45.2	13.5	146.1
Left Femur Force	Z	868.1	135.1	34.0	200.6
Right Femur Force	Z	656.8	130.6	195.1	138.2

Table 5 Dummy Accelerometer Data Summary, Continued

Dummy Serial Number: 001
Seating Location: Right Side Row 13, Right Seat, 3-pt. Belt

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Head Acceleration	X	1.7	353.0	12.8	193.5
	Y	3.2	121.0	2.2	210.8
	Z	16.7	175.0	7.7	267.4
	R	20.5	164.2		
Head Redundant Acceleration	X	2.0	347.0	13.6	193.6
	Y	0.4	93.0	27.9	499.1
	Z	128.9	205.3	6.7	270.0
	R	129.9	205.3		
Neck Force	X	62.2	352.3	495.5	194.9
	Y	124.1	122.8	98.3	207.6
	Z	697.6	161.7	308.7	268.5
Neck Moment	X	9.5	125.8	7.8	209.6
	Y	28.6	185.1	9.1	356.8
	Z	4.1	115.2	3.0	357.7
Chest Acceleration	X	1.6	267.2	13.5	129.8
	Y	1.8	165.4	3.5	267.4
	Z	7.9	179.1	11.5	260.6
	R	13.8	130.0		
Chest Redundant Acceleration	X	2.0	333.9	13.8	135.4
	Y	2.1	165.0	3.9	264.0
	Z	8.0	180.2	11.9	261.7
	R	14.2	135.4		
Chest Deflection	X	0.0	25.2	16.3	179.2
Left Femur Force	Z	1979.9	266.6	353.8	95.2
Right Femur Force	Z	640.9	109.0	1602.5	144.6

Figure 3 Dummy Seating Position Dimensions



Note: All measurements are in millimeters with tolerance of ±0.1 mm

Measurement	Right Side Row 4L #055	Right Side Row 4R #290
SRP Z	390	390
SRP X	60	60
Head X	45	45
Head Z	1142	1139
Knee X	494	494
Knee Z	520	517
PHX	93	N/A
PHZ	486	N/A
PA°	15.7	N/A
KB	225	222
NB	500	517

Figure 3 Dummy Seating Position Dimensions, Continued

Note: All measurements are in millimeters with tolerance of ±0.1 mm

Measurement	Right Side Row 5L #168	Right Side Row 5R #169
SRP Z	458	458
SRP X		
Head X	79	95
Head Z	1100	1110
Knee X	545	545
Knee Z	520	520
PHX	146	N/A
PHZ	456	N/A
PA°	18.2	N/A
KB	225	224
NB	410	407

Note: All measurements are in millimeters with tolerance of ±0.1 mm

Measurement	Left Side Row 5L #342	Left Side Row 5R #426
SRP Z	400	400
SRP X	70	70
Head X	0	0
Head Z	1162	1080
Knee X	560	500
Knee Z	525	530
PHX	N/A	130
PHZ	N/A	514
PA°	N/A	23.5
KB	160	230
NB	500	525

Note: All measurements are in millimeters with tolerance of ±0.1 mm

Measurement	Right Side Row 6L #313	Right Side Row 6R #314
SRP Z	275	275
SRP X		
Head X	120	128
Head Z	1136	1143
Knee X	520	515
Knee Z	521	523
PHX	132	N/A
PHZ	455	N/A
PA°	14.7	N/A
KB	240	204
NB	500	500

Figure 3 Dummy Seating Position Dimensions, Continued

Note: All measurements are in millimeters with tolerance of ±0.1 mm

Measurement	Right Side Row 7L #045	Right Side Row 7R #043
SRP Z	460	460
SRP X		
Head X	50	76
Head Z	1110	1106
Knee X	557	480
Knee Z	518	519
PHX	157	N/A
PHZ	433	N/A
PA°	23.3	N/A
KB	122	135
NB	530	490

Note: All measurements are in millimeters with tolerance of ±0.1 mm

Measurement	Left Side Row 8L #177	Left Side Row 8R #077
SRP Z	460	460
SRP X		
Head X	85	110
Head Z	1124	1155
Knee X	560	560
Knee Z	540	555
PHX	N/A	114
PHZ	N/A	447
PA°	N/A	12
KB	170	170
NB	483	480

Note: All measurements are in millimeters with tolerance of ±0.1 mm

Measurement	Right Side Row 9L #226	Right Side Row 9R #591
SRP Z	390	390
SRP X	74	74
Head X	0	-20
Head Z	1175	1154
Knee X	525	480
Knee Z	557	510
PHX	80	N/A
PHZ	489	N/A
PA°	16.4	N/A
KB	140	190
NB	525	525

Figure 3 Dummy Seating Position Dimensions, Continued

Note: All measurements are in millimeters with tolerance of ±0.1 mm

Measurement	Left Side Row 10L #551	Left Side Row 10R #616
SRP Z	470	470
SRP X		
Head X	25	50
Head Z	1078	1109
Knee X	570	555
Knee Z	523	537
PHX	N/A	177
PHZ	N/A	455
PA°	N/A	20.1
KB	170	180
NB	516	502

Note: All measurements are in millimeters with tolerance of ±0.1 mm

Measurement	Right Side Row 11L #617	Right Side Row 11R #134
SRP Z	400	400
SRP X	75	75
Head X	-27	-47
Head Z	1155	1135
Knee X	477	532
Knee Z	530	525
PHX	88	N/A
PHZ	495	N/A
PA°	19.5	N/A
KB	170	180
NB	510	528

Note: All measurements are in millimeters with tolerance of ±0.1 mm

Measurement	Left Side Row 12L #855	Left Side Row 12R #324
SRP Z	465	465
SRP X		
Head X	30	30
Head Z	1100	1008
Knee X	564	512
Knee Z	522	467
PHX	N/A	172
PHZ	N/A	438
PA°	N/A	17
KB	160	235
NB	500	475

Figure 3 Dummy Seating Position Dimensions, Continued

Note: All measurements are in millimeters with tolerance of ±0.1 mm

Measurement	Right Side Row 13L #416	Right Side Row 13R #001
SRP Z	395	395
SRP X	73	73
Head X	-35	-15
Head Z	1063	1128
Knee X	455	510
Knee Z	526	556
PHX	115	N/A
PHZ	513	N/A
PA°	19	N/A
KB	240	140
NB	520	503

Section 4.0

Camera Information

Figure 3 Camera Positions

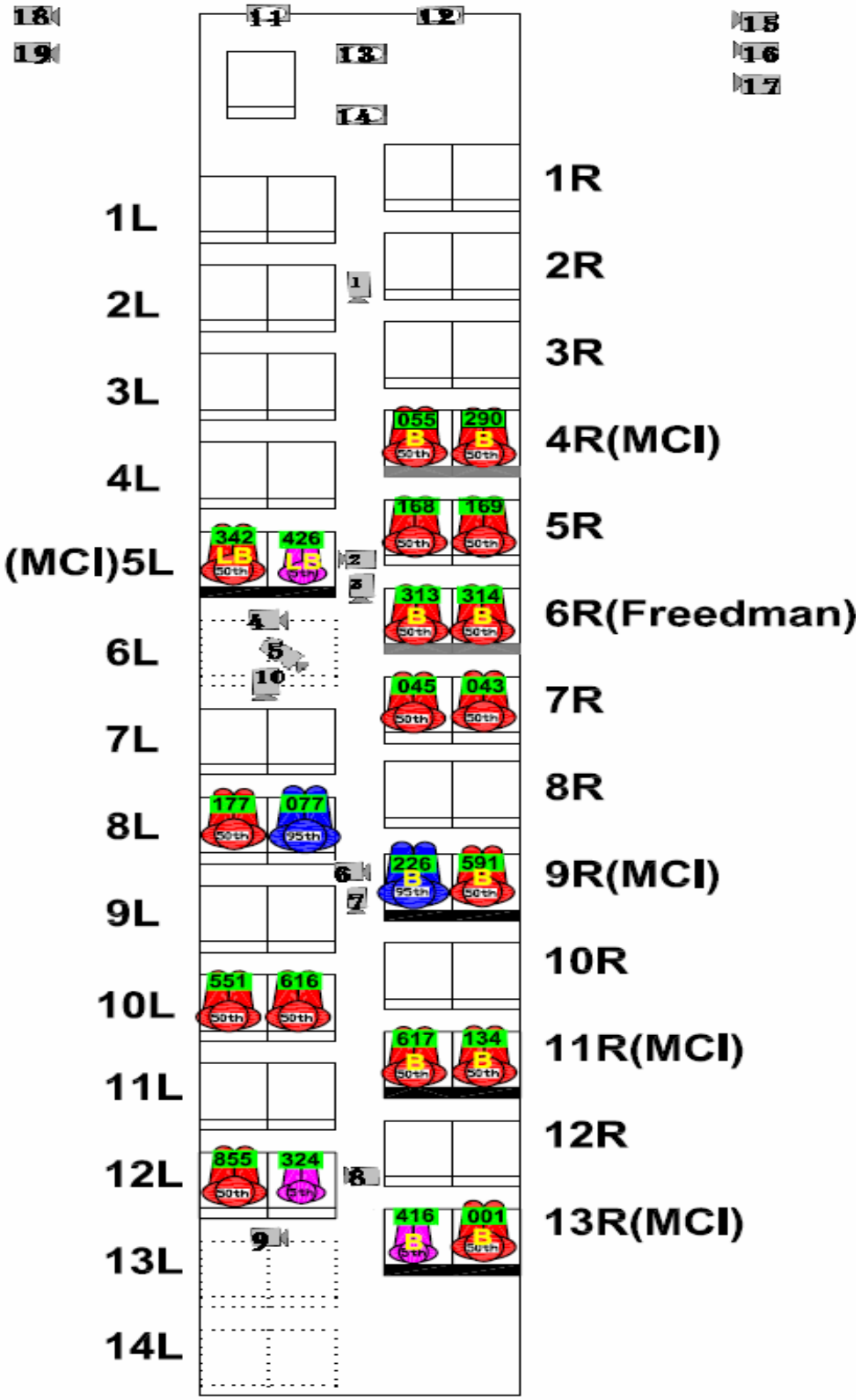


Table 6 Camera Information

No.	Camera View	Camera Type	Lens (mm)	Speed (fps)
1	Onboard roof-mounted between 2L and 2R overview looking back	Redlake-LE	6.5	1000
2	Onboard roof-mounted between 5L and 5R looking left at dummies seated in 5L	Redlake-LE	4.8	1000
3	Onboard roof-mounted between 5L and 5R overview looking back[1]	Redlake-LE	6.5	1000
4	Onboard floor-mounted in location 6L looking right at dummies seated in 6R	G2	12.5	1000
5	Onboard floor-mounted in location 6L looking diagonally at dummies seated in 7R	Redlake-LE	12.5	1000
6	Onboard roof-mounted between 9L and 9R looking right at dummies seated in 9R	G2	7.5	1000
7	Onboard roof-mounted between 9L and 9R looking back	G2	8	1000
8	Onboard roof-mounted between 12L and 12R looking left at dummies seated in 12L	Redlake-LE	6.5	1000
9	Onboard floor-mounted in location 13L looking right at dummies in 13R[1]	Redlake-LE	4.8	1000
10	Onboard floor-mounted in location 6L looking back at dummies seated in 8L and 10L[1]	Redlake-LE	12.5	1000
11	Offboard overhead view	Visario	8	1000
12	Offboard overhead view	Visario	8	1000
13	Offboard underbody view	Redlake-LE	12.5	1000
14	Offboard underbody view	Redlake-LE	25	1000
15	Offboard right side view	Visario	12.5	1000
16	Offboard right side view	Visario	12.5	1000
17	Offboard right side view	Visario	12.5	1000
18	Offboard left side view	Redlake-LE	12.5	1000
19	Offboard left side view	Visario	12.5	1000
20	Real-time panning	Canon		24

[1] Camera did not record the entire event.

Appendix A

Photographs

Figure A-1 Pre-Test Front View

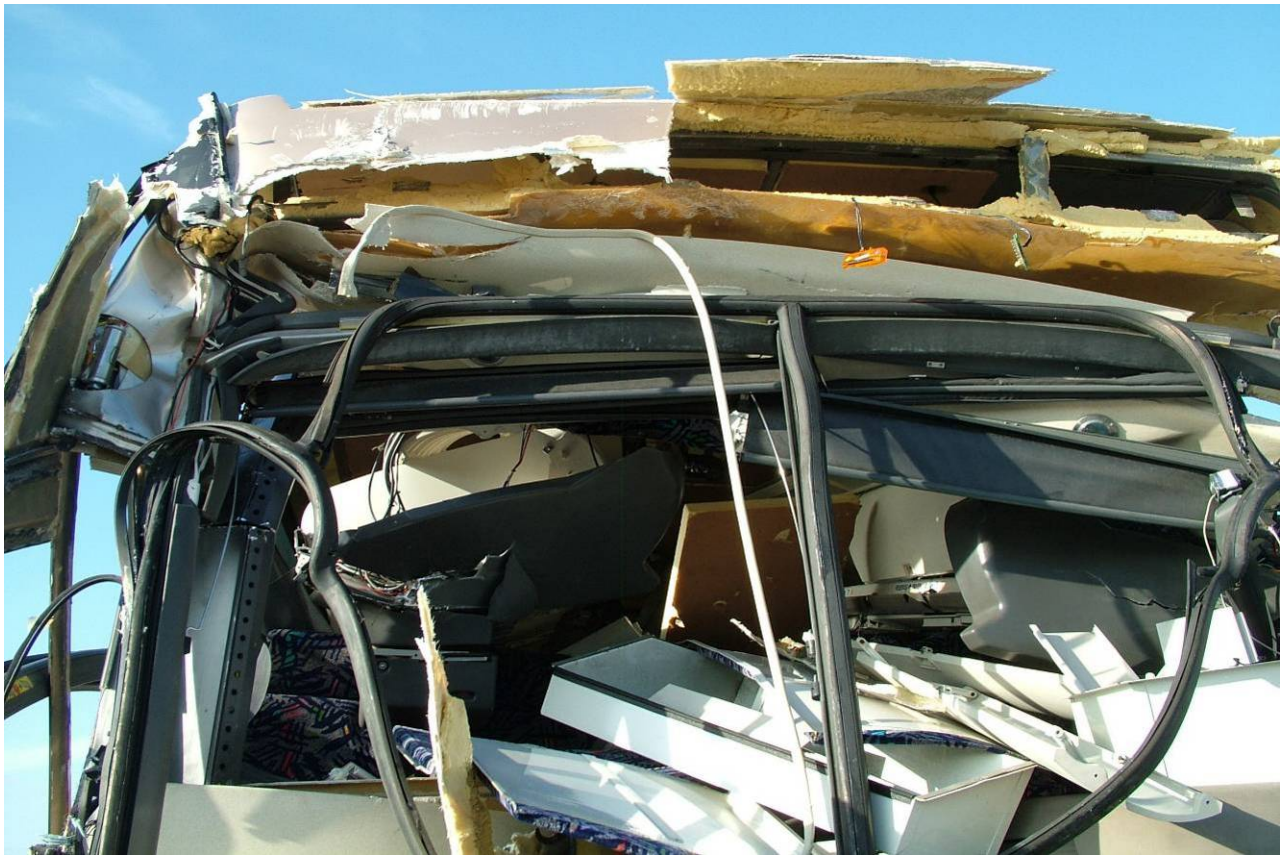


Figure A-2 Post-Test Front View

Figure A-3 Pre-Test Left Front View

Figure A-4 Post-Test Left Front View

Figure A-5 Post-Test Left Front Close-Up View

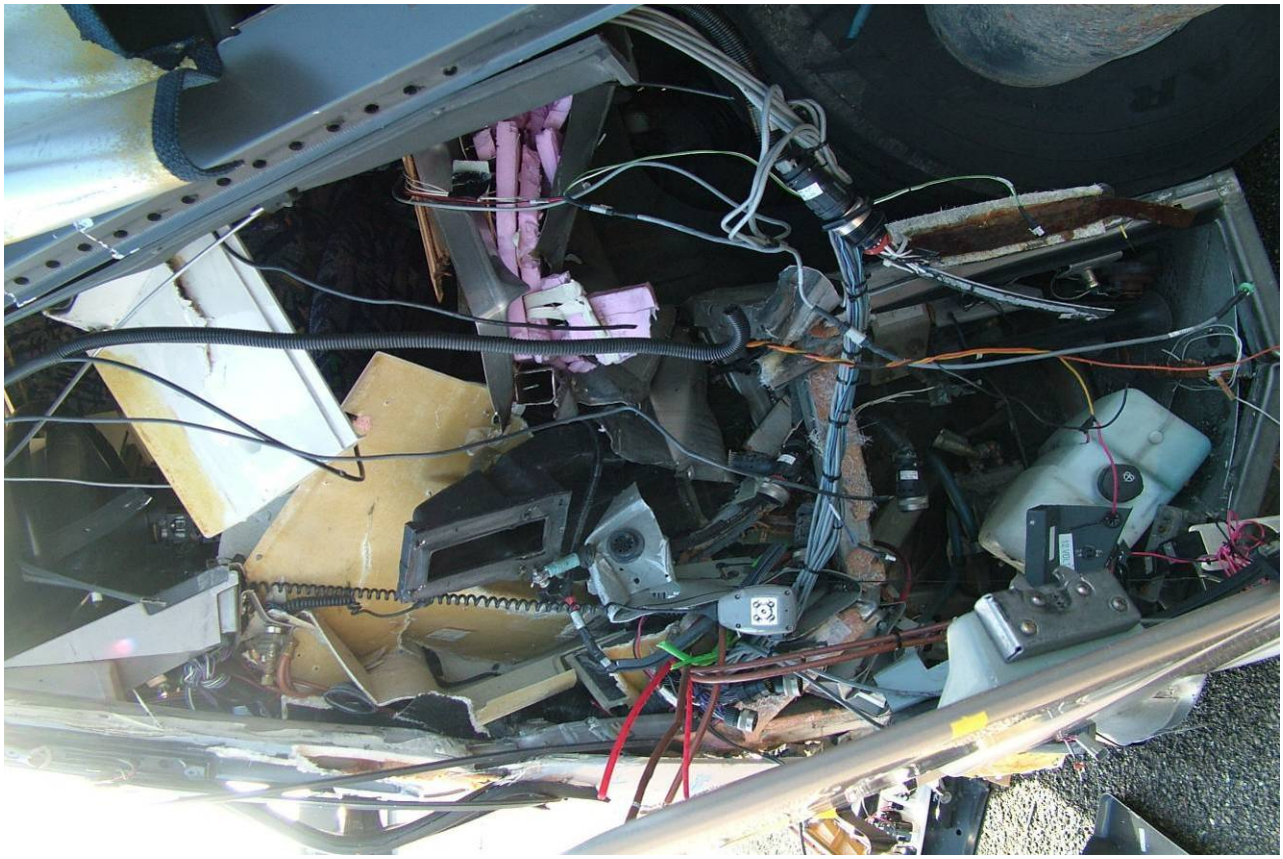


Figure A-6 Post-Test Left Front Tight View

Figure A-7 Pre-Test Left Side View

Figure A-8 Post-Test Left Side View

Figure A-9 Pre-Test Left Side Front Half View

Figure A-10 Post-Test Left Side Front Close-Up View

Figure A-11 Post-Test Left Side Front Tight View

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Figure A-12 Pre-Test Left Rear View

Figure A-13 Post-Test Left Rear View

Figure A-14 Pre-Test Rear View

Figure A-15 Post-Test Rear View

Figure A-16 Pre-Test Right Rear View

Figure A-17 Post-Test Right Rear View

Figure A-18 Pre-Test Right Side View

Figure A-19 Post-Test Right Side View

Figure A-20 Pre-Test Right Front View

Figure A-21 Post-Test Right Front View

Figure A-22 Pre-Test Right Side Door View

Figure A-23 Post-Test Right Side Door View

Figure A-24 Post-Test Right Side Front Tight View

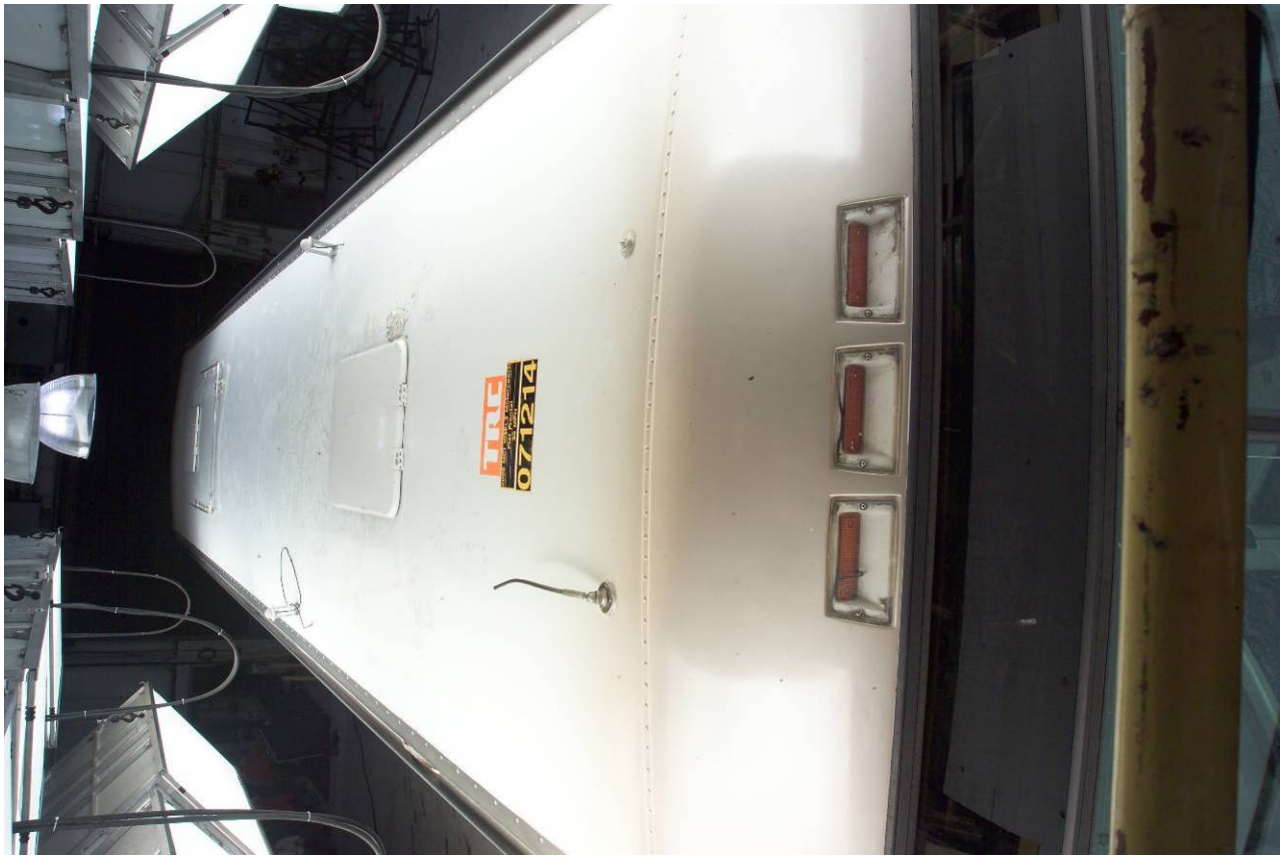

Figure A-25 Pre-Test Overhead View

Figure A-26 Pre-Test Cargo Area - View 1

Figure A-27 Pre-Test Cargo Area - View 2

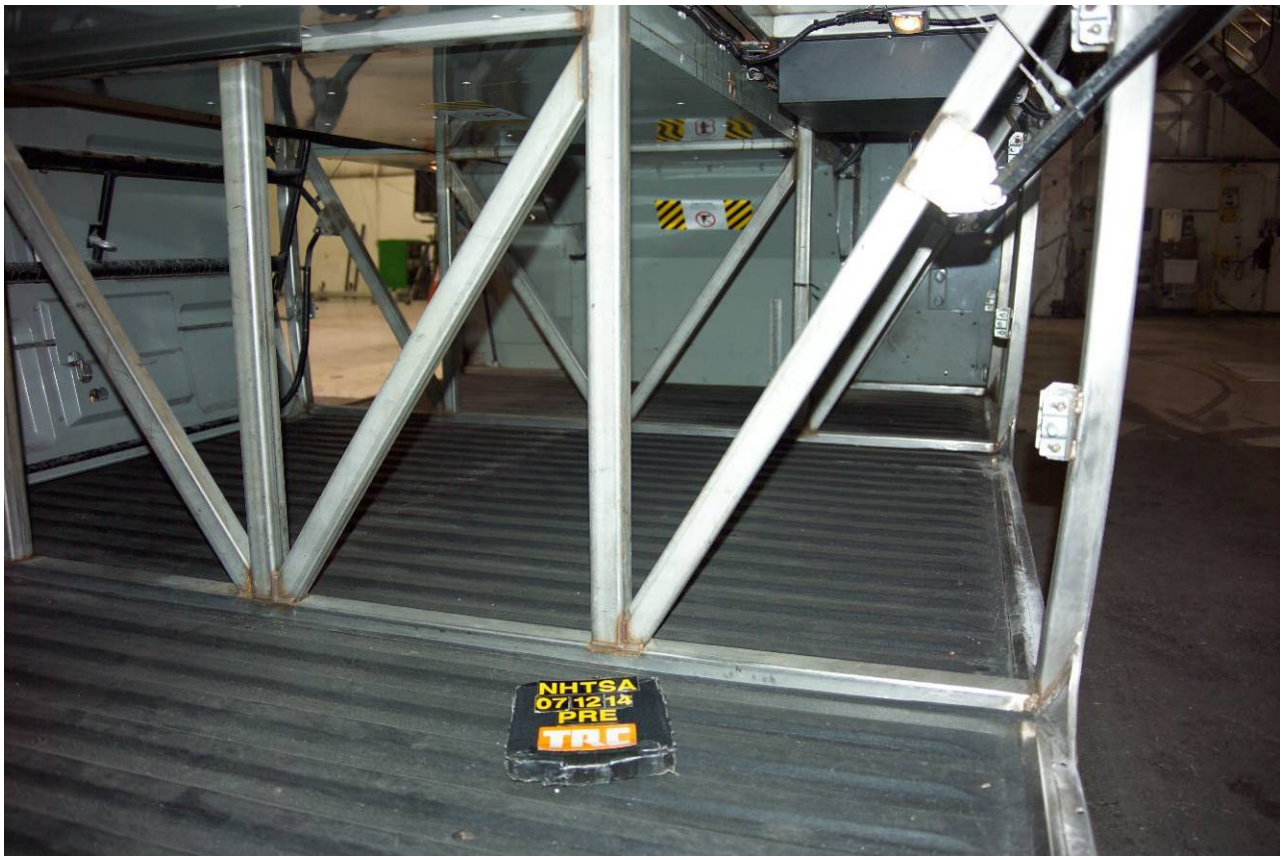

Figure A-28 Pre-Test Cargo Area - View 3

Figure A-29 Pre-Test Cargo Area - View 4

Figure A-30 Pre-Test Cargo Area - View 5

Figure A-31 Pre-Test Cargo Area - View 6

Figure A-32 Post-Test Cargo Area - View 1

Figure A-33 Post-Test Cargo Area - View 2

Figure A-34 Post-Test Cargo Area - View 3

Figure A-35 Post-Test Cargo Area - View 4

Figure A-36 Post-Test Cargo Area - View 5

Figure A-37 Post-Test Cargo Area - View 6

Figure A-38 Post-Test Cargo Area - View 7

Figure A-39 Post-Test Cargo Area - View 8

Figure A-40 Post-Test Cargo Area - View 9

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Figure A-41 Pre-Test Underbody Photo Pit View - Front

Figure A-42 Pre-Test Underbody Photo Pit View - Mid Front

Figure A-43 Pre-Test Underbody Photo Pit View - Mid Rear

Figure A-44 Pre-Test Underbody Photo Pit View - Rear

Figure A-45 Pre-Test Engine Compartment View

Figure A-46 Post-Test Engine Compartment View

Figure A-47 Pre-Test Windshield - Front View

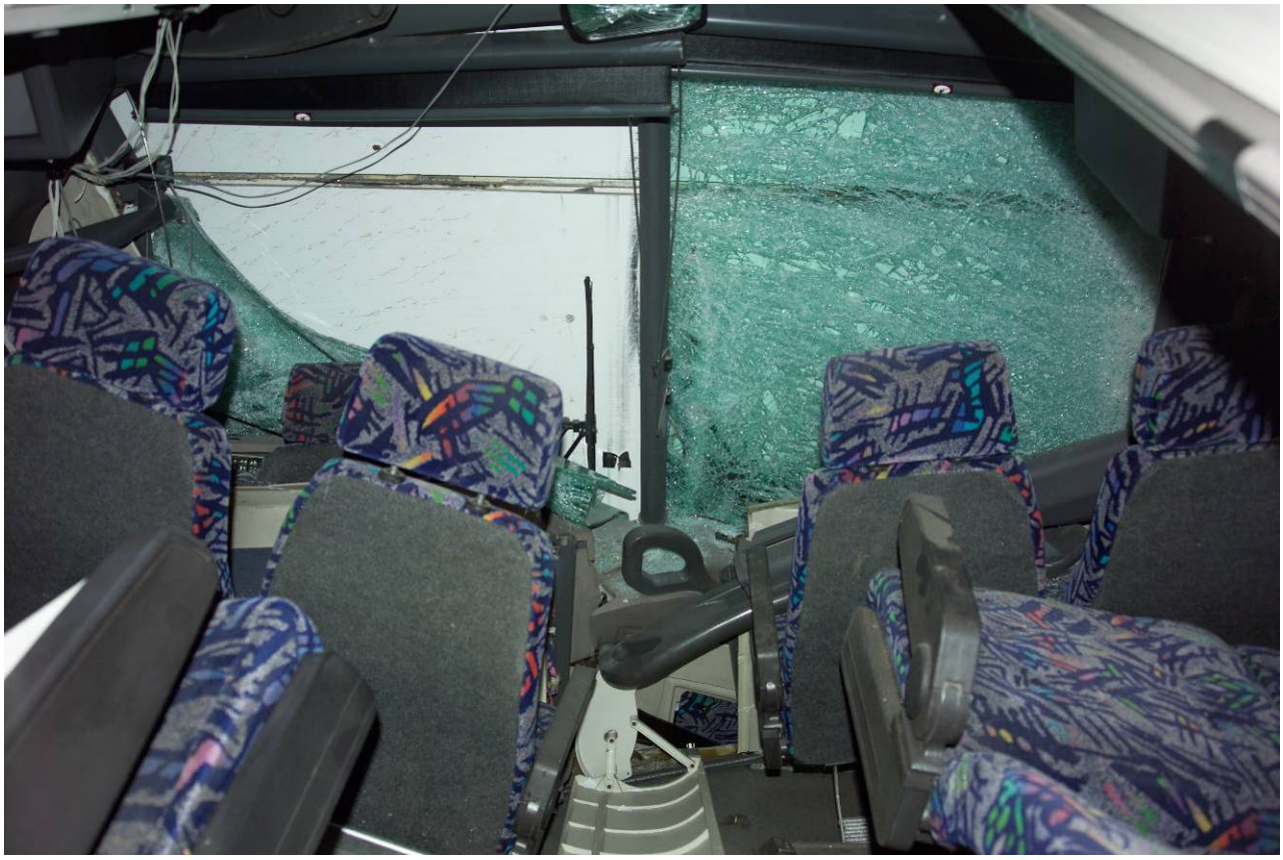

Figure A-48 Post-Test Windshield - Front View

Figure A-49 Pre-Test Windshield - Left View

Figure A-50 Post-Test Windshield - Left View

Figure A-51 Pre-Test Windshield - Right View

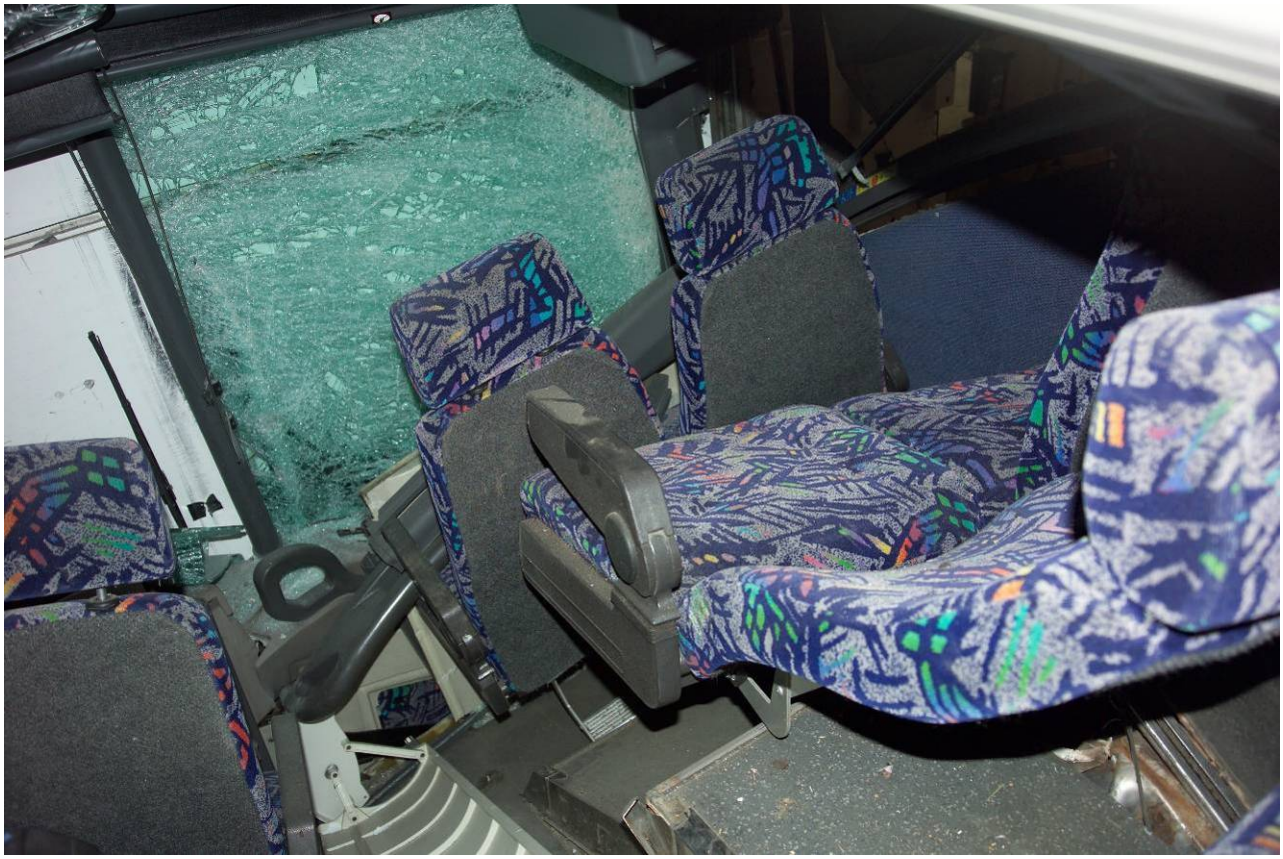

Figure A-52 Post-Test Windshield - Right View

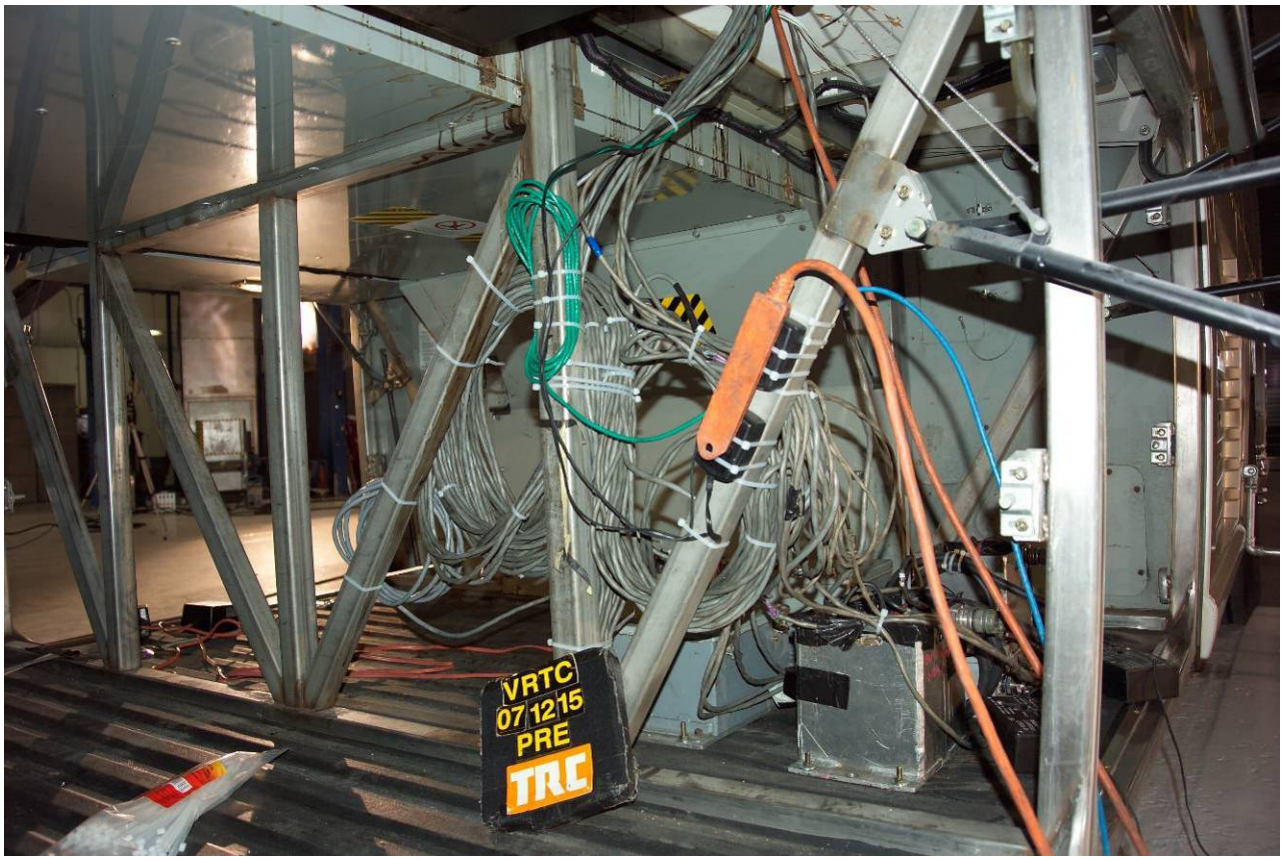

Figure A-53 Pre-Test Instrumentation View

Figure A-54 Pre-Test Certification Label View

Figure A-55 Pre-Test Bus Interior View Without Dummies

Figure A-56 Post-Test Bus Interior View Without Dummies - View 1

Figure A-57 Post-Test Bus Interior View Without Dummies - View 2

Figure A-58 Post-Test Bus Interior View Without Dummies - View 3

Figure A-59 Post-Test Bus Interior View Without Dummies - View 4

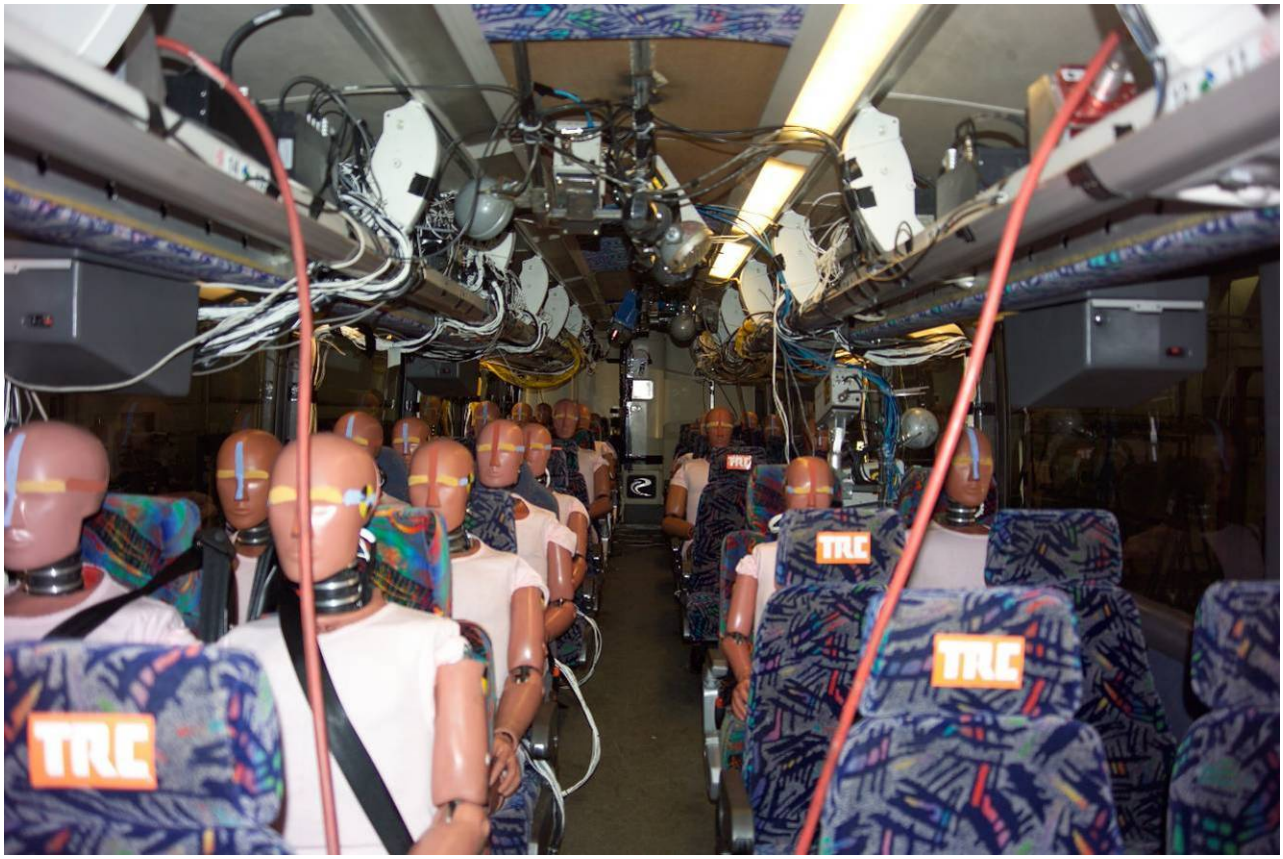

Figure A-60 Pre-Test View Of Bus Interior With Dummies Upstream View

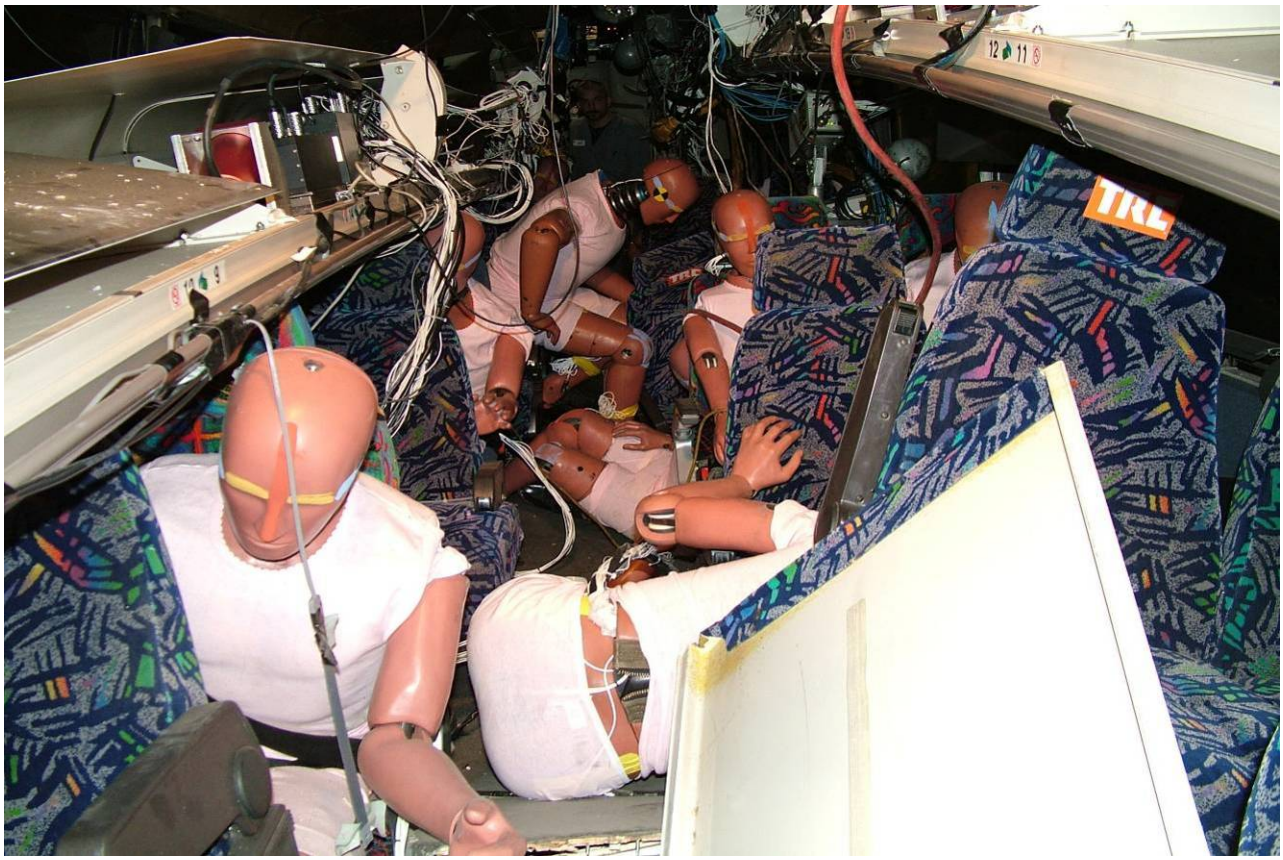

Figure A-61 Post-Test Upstream View Of Bus Interior With Dummies - View 1

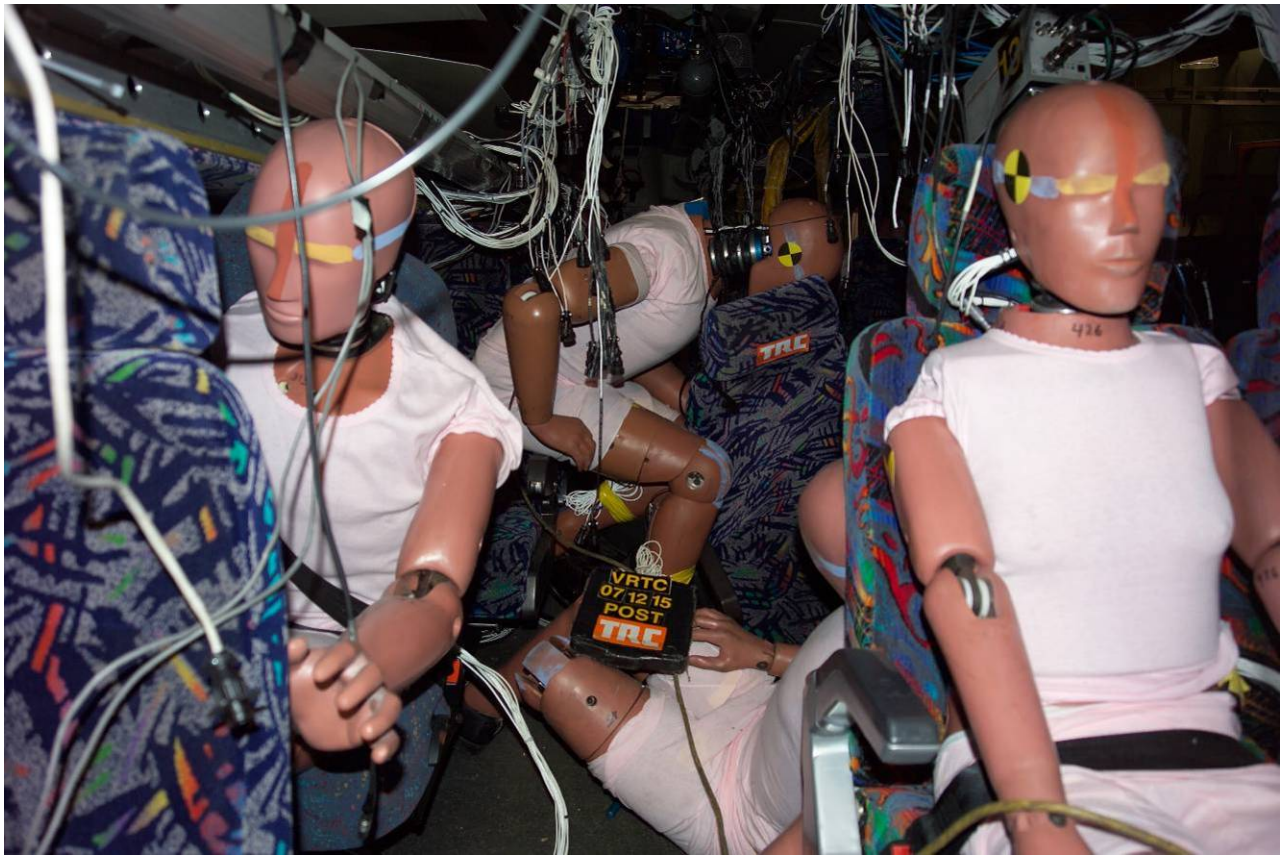

Figure A-62 Post-Test Upstream View Of Bus Interior With Dummies - View 2

Figure A-63 Pre-Test Upstream View Of Bus Interior With Dummies Left Side Front Half

Figure A-64 Post-Test Upstream View Of Bus Interior With Dummies Left Side Front Half

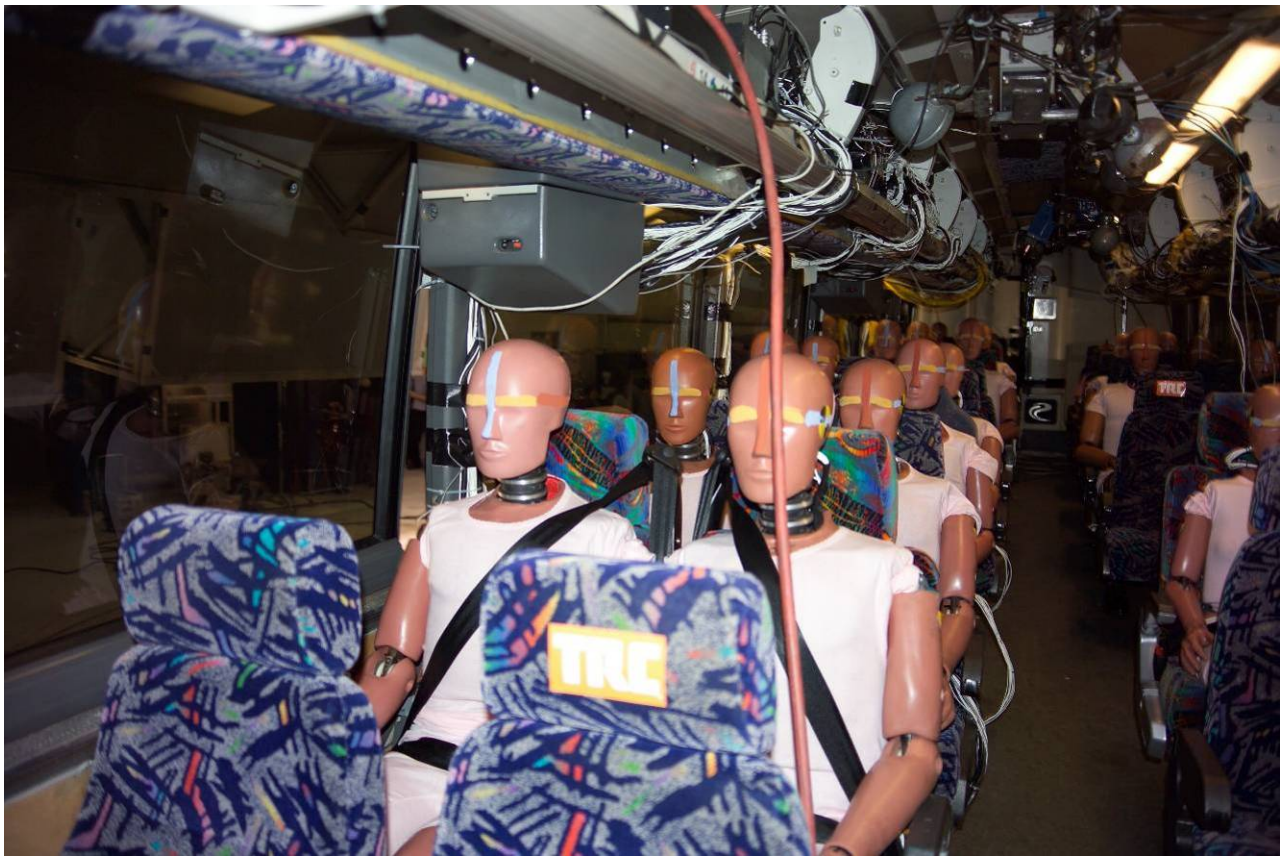

Figure A-65 Pre-Test Upstream View Of Bus Interior With Dummies Right Side Front Half

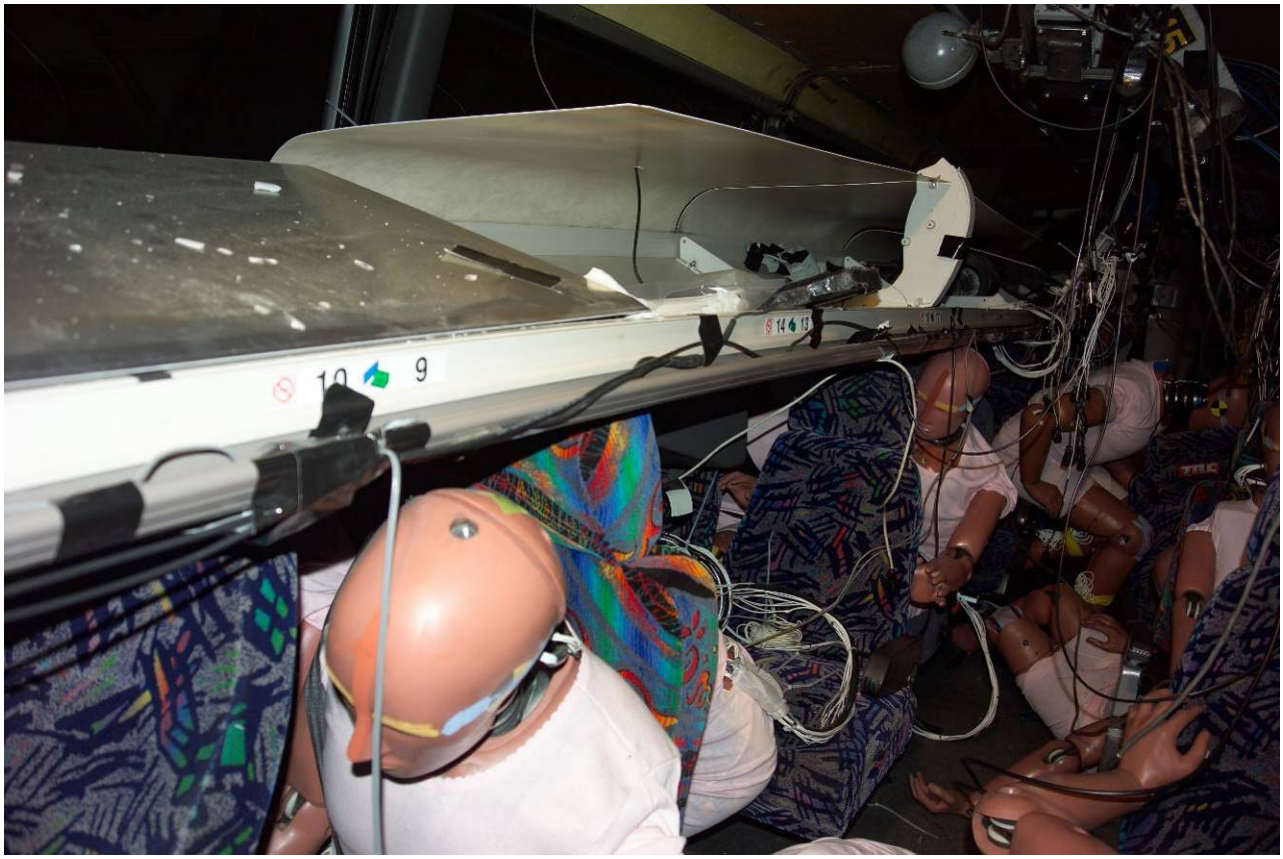

Figure A-66 Post-Test Upstream View Of Bus Interior With Dummies Right Side Front Half

Figure A-67 Pre-Test Upstream View Of Bus Interior With Dummies Left Side Back Half

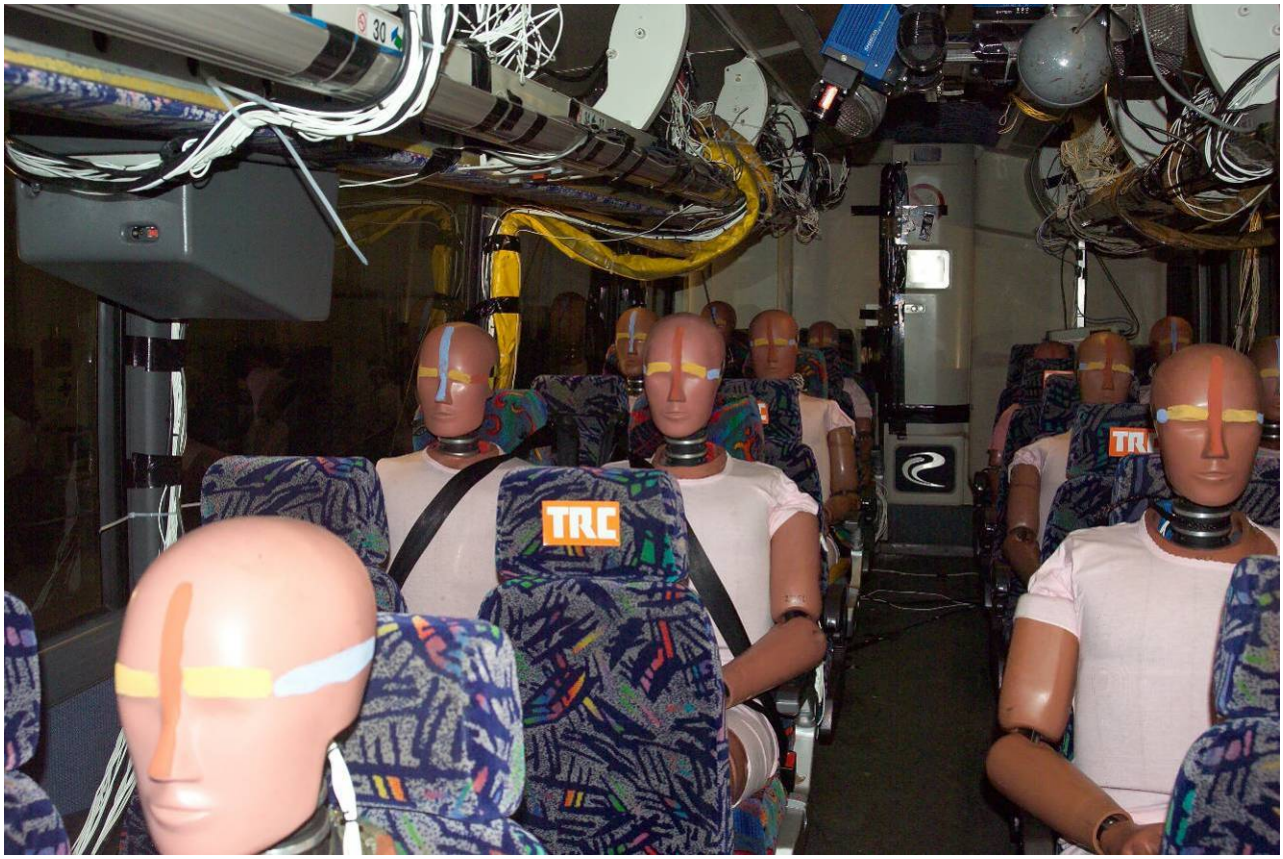

Figure A-68 Pre-Test Upstream View Of Bus Interior With Dummies Right Side Back Half

Figure A-69 Pre-Test Downstream View Of Bus Interior With Dummies View

Figure A-70 Post-Test Downstream View Of Bus Interior With Dummies View

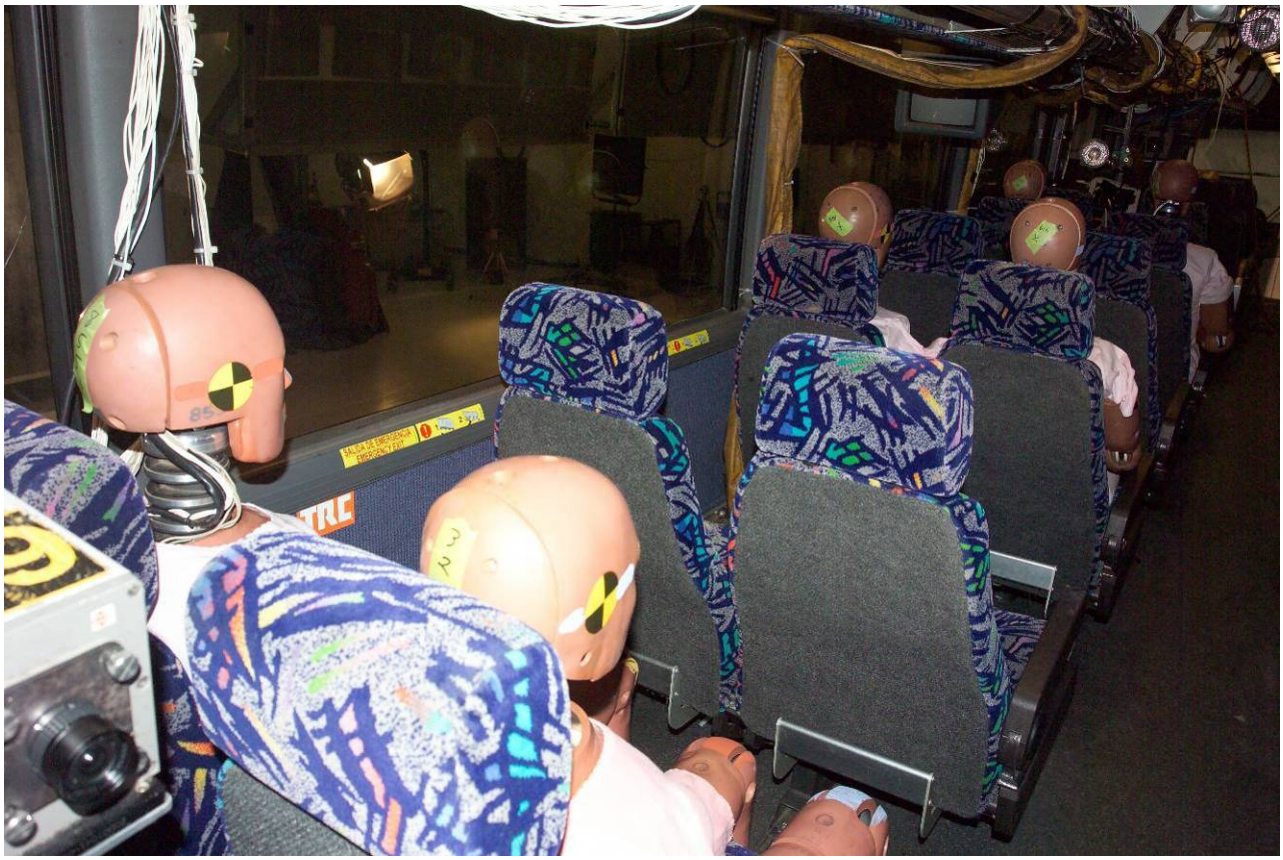

Figure A-71 Pre-Test Downstream View Of Bus Interior With Dummies Left Side Back Half

Figure A-72 Post-Test Downstream View Of Bus Interior With Dummies Left Side Back Half

Figure A-73 Pre-Test Downstream View Of Bus Interior With Dummies Right Side Back Half

Figure A-74 Post-Test Downstream View Of Bus Interior With Dummies Right Side Back Half 1

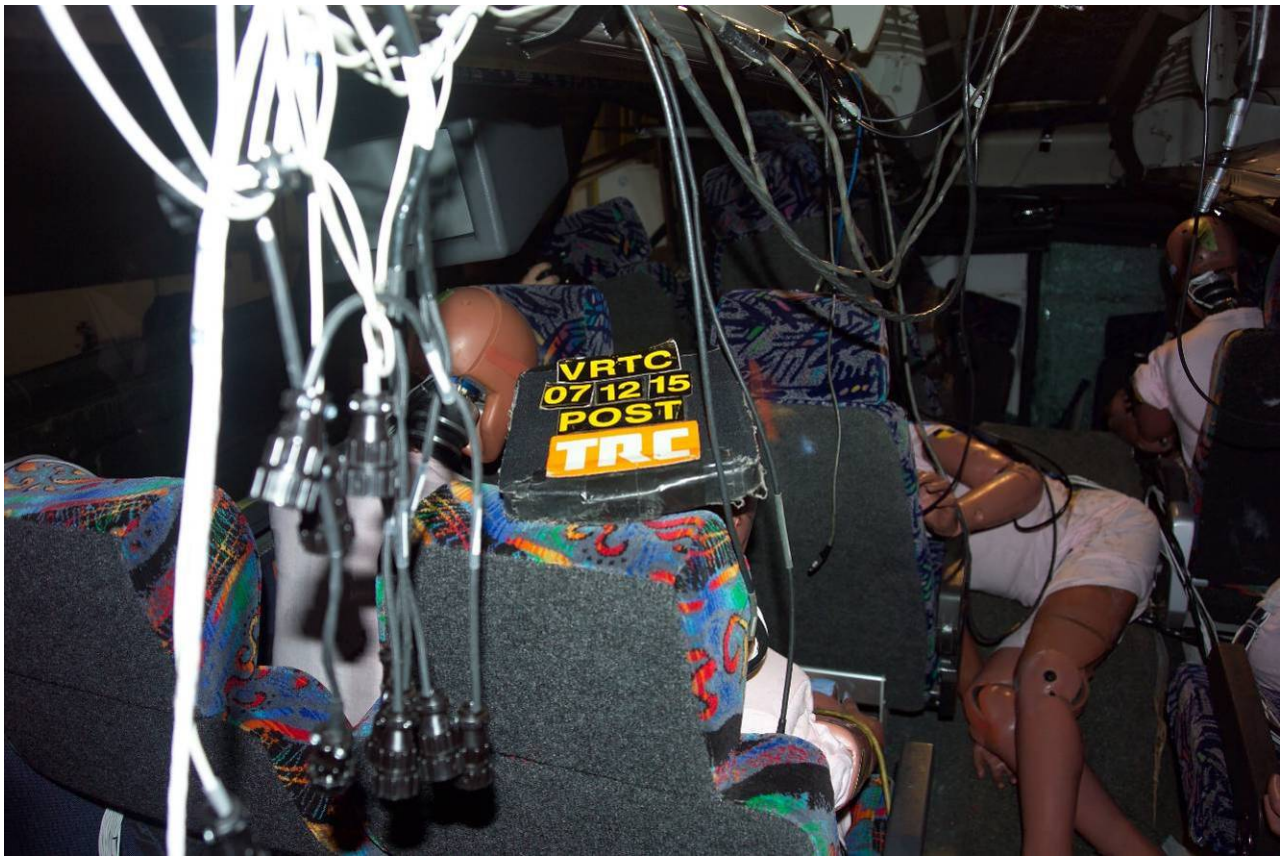

Figure A-75 Post-Test Downstream View Of Bus Interior With Dummies Right Side Back Half 2

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Figure A-76 Pre-Test Downstream View Of Bus Interior With Dummies Left Side Front Half

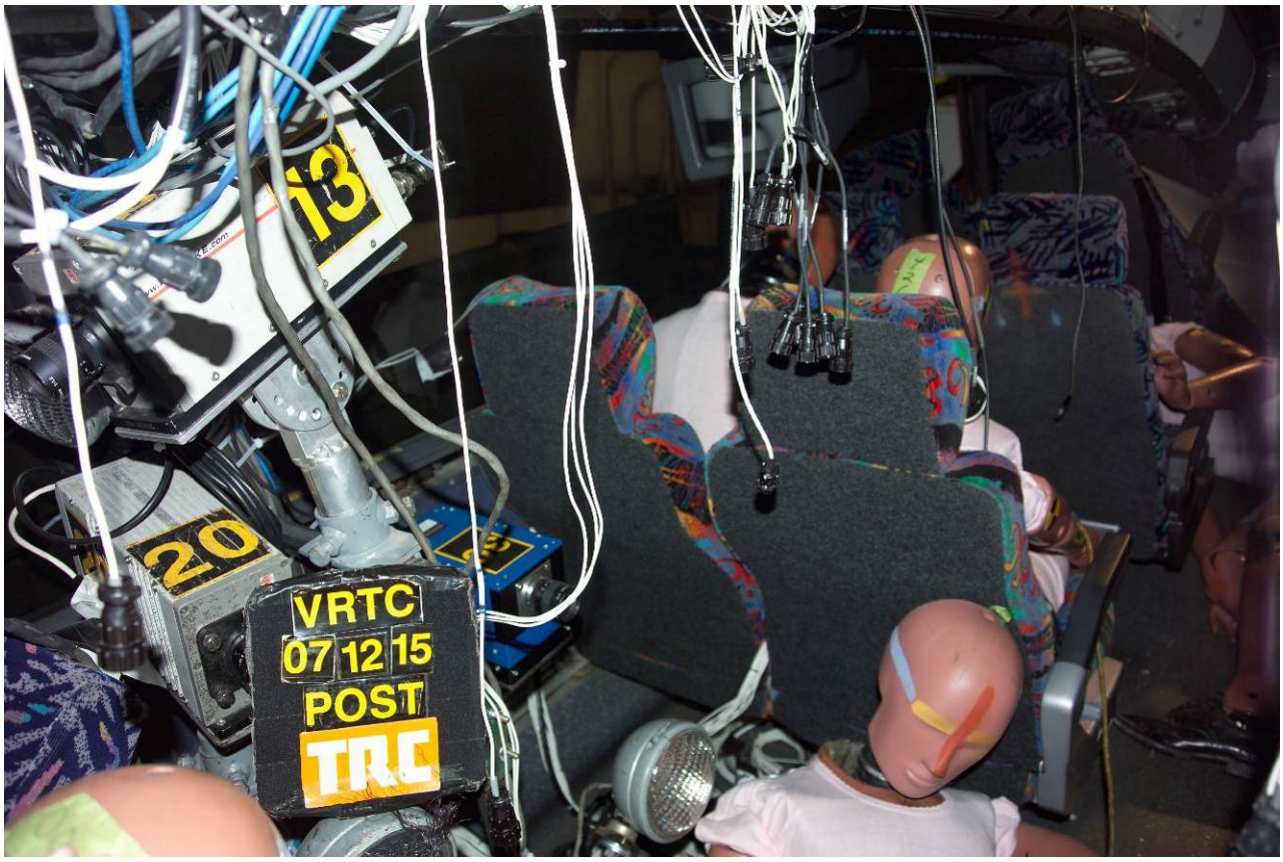

Figure A-77 Post-Test Downstream View Of Bus Interior With Dummies Left Side Front Half 1

Figure A-78 Post-Test Downstream View Of Bus Interior With Dummies Left Side Front Half 2

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Figure A-79 Pre-Test Downstream View Of Bus Interior With Dummies Right Side Front Half

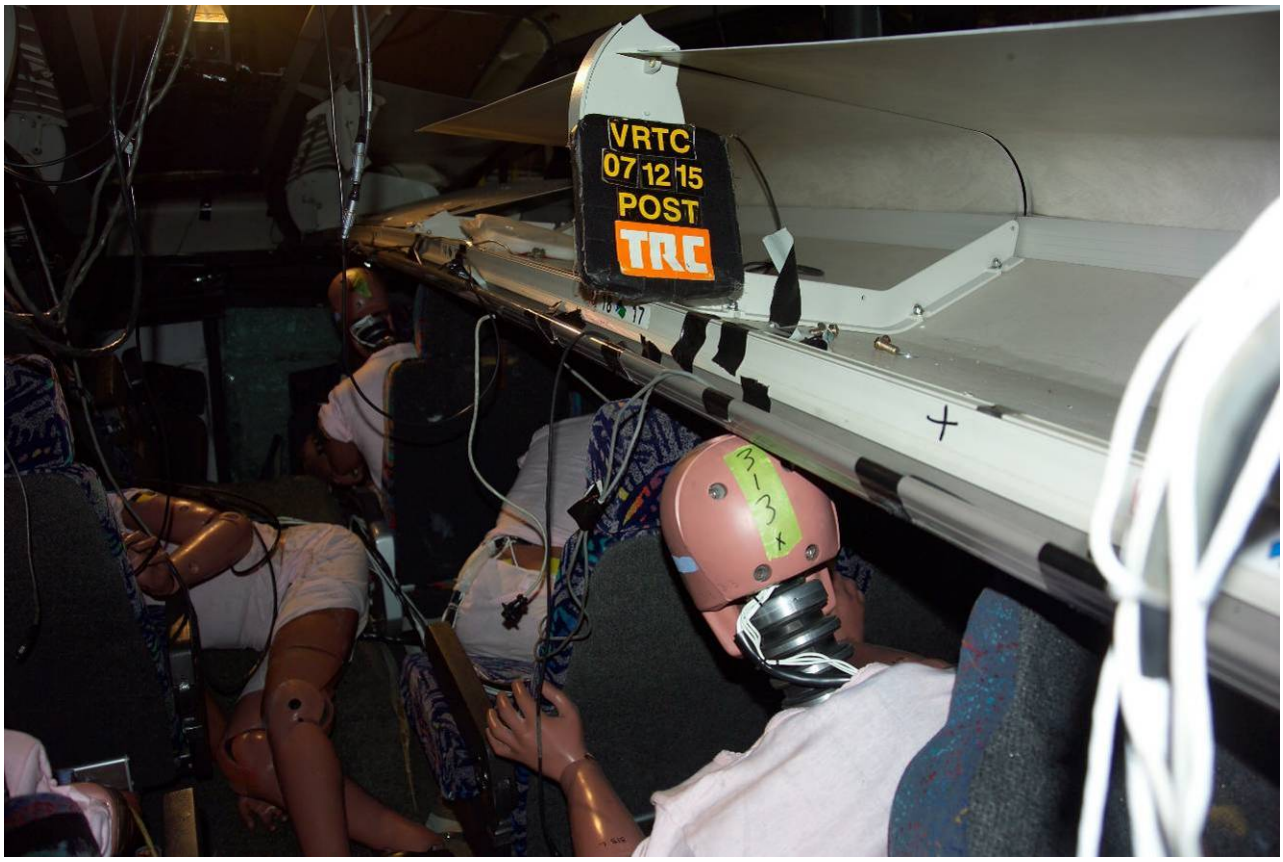

Figure A-80 Post-Test Downstream View Of Bus Interior With Dummies Right Side Front Half 1

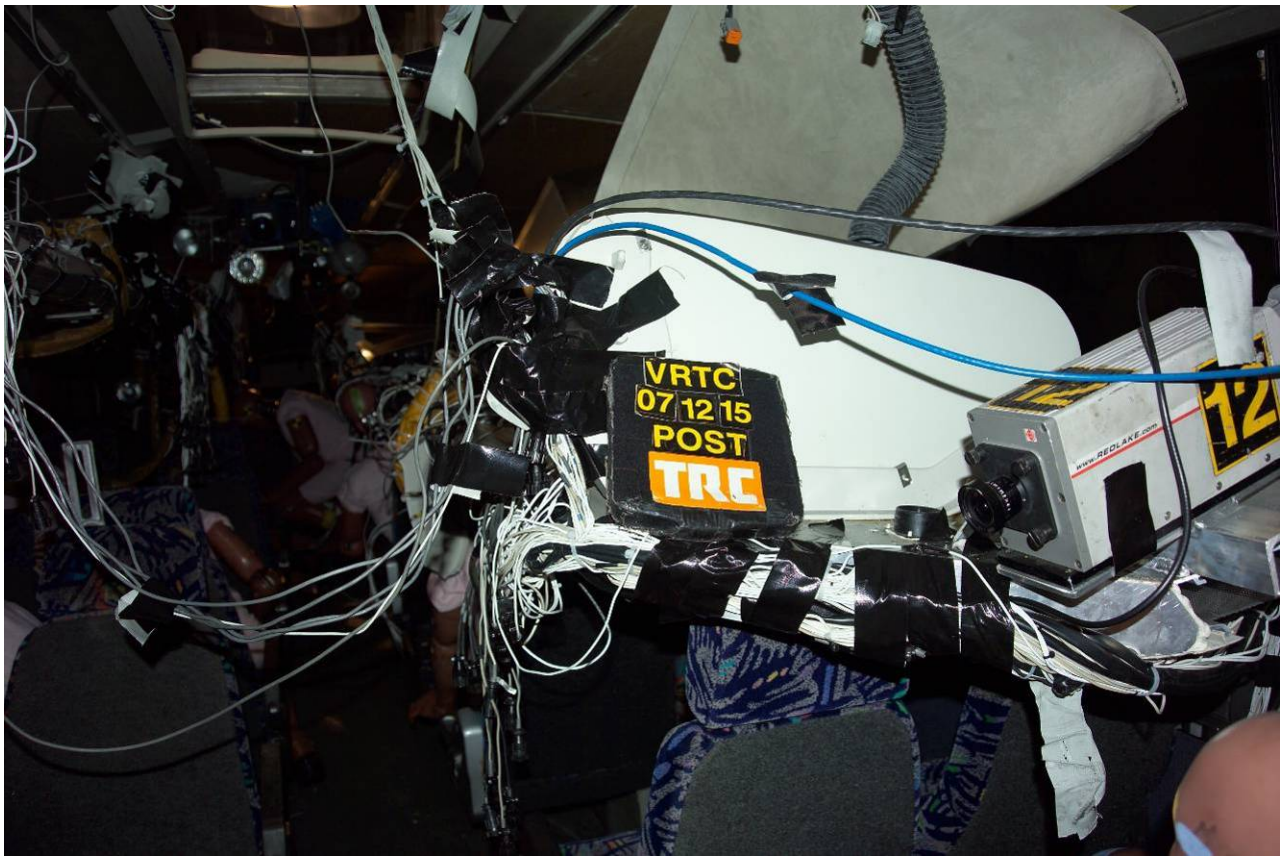

Figure A-81 Post-Test Downstream View Of Bus Interior With Dummies Right Side Front Half 2

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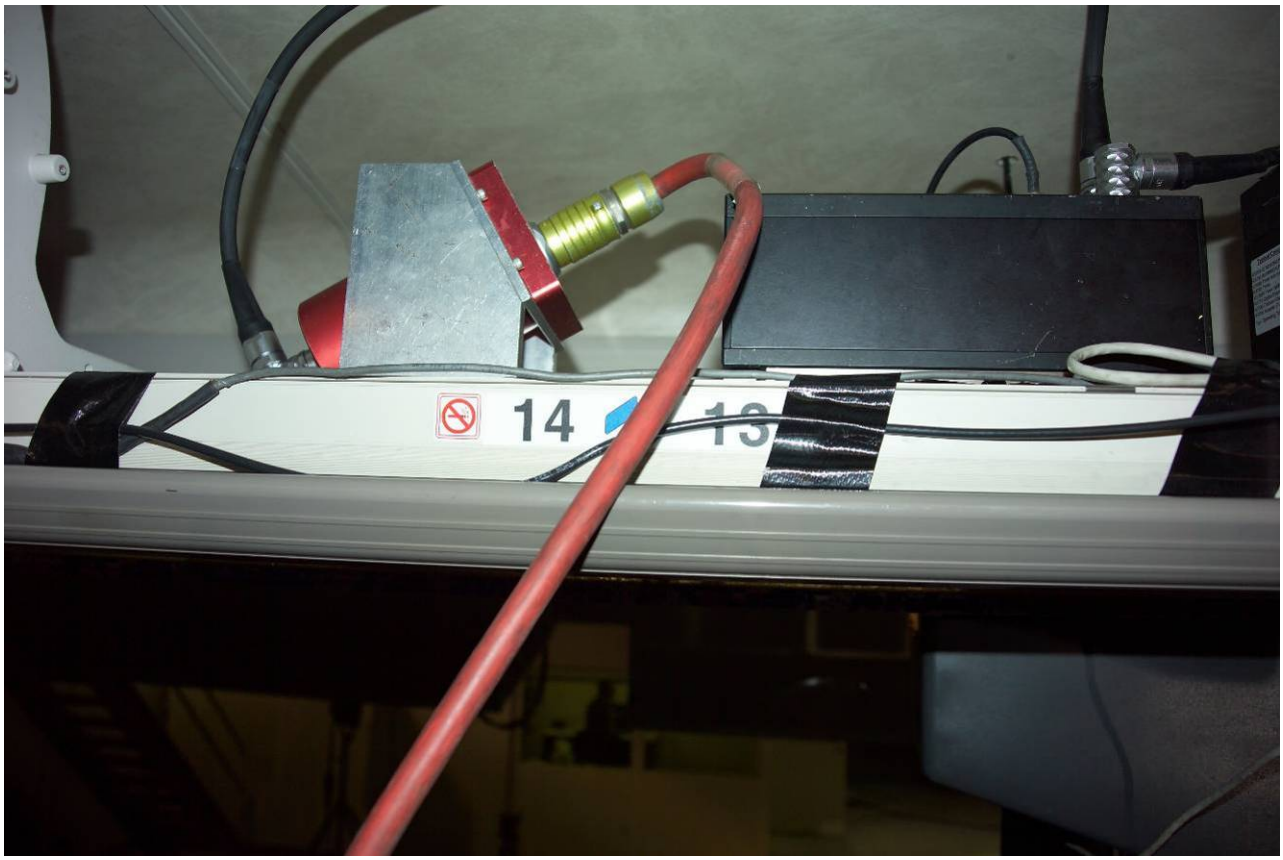

Figure A-82 Pre-Test Seat 13 and 14 Marker View

Figure A-83 Pre-Test Row 4 Right Side Mark

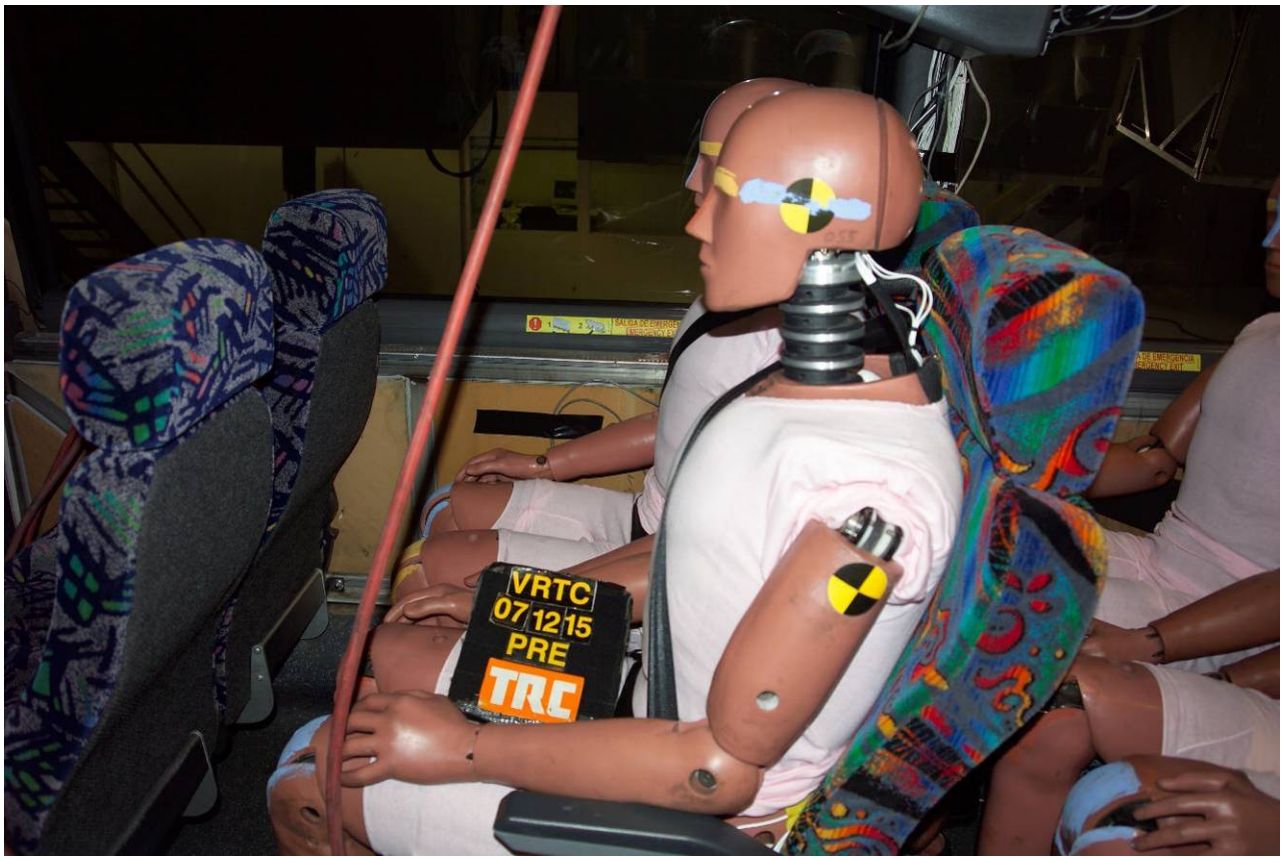

Figure A-84 Pre-Test Row 4 Right Side Dummies Orthogonal View

Figure A-85 Pre-Test Row 4 Right Side Outboard Dummy Position View

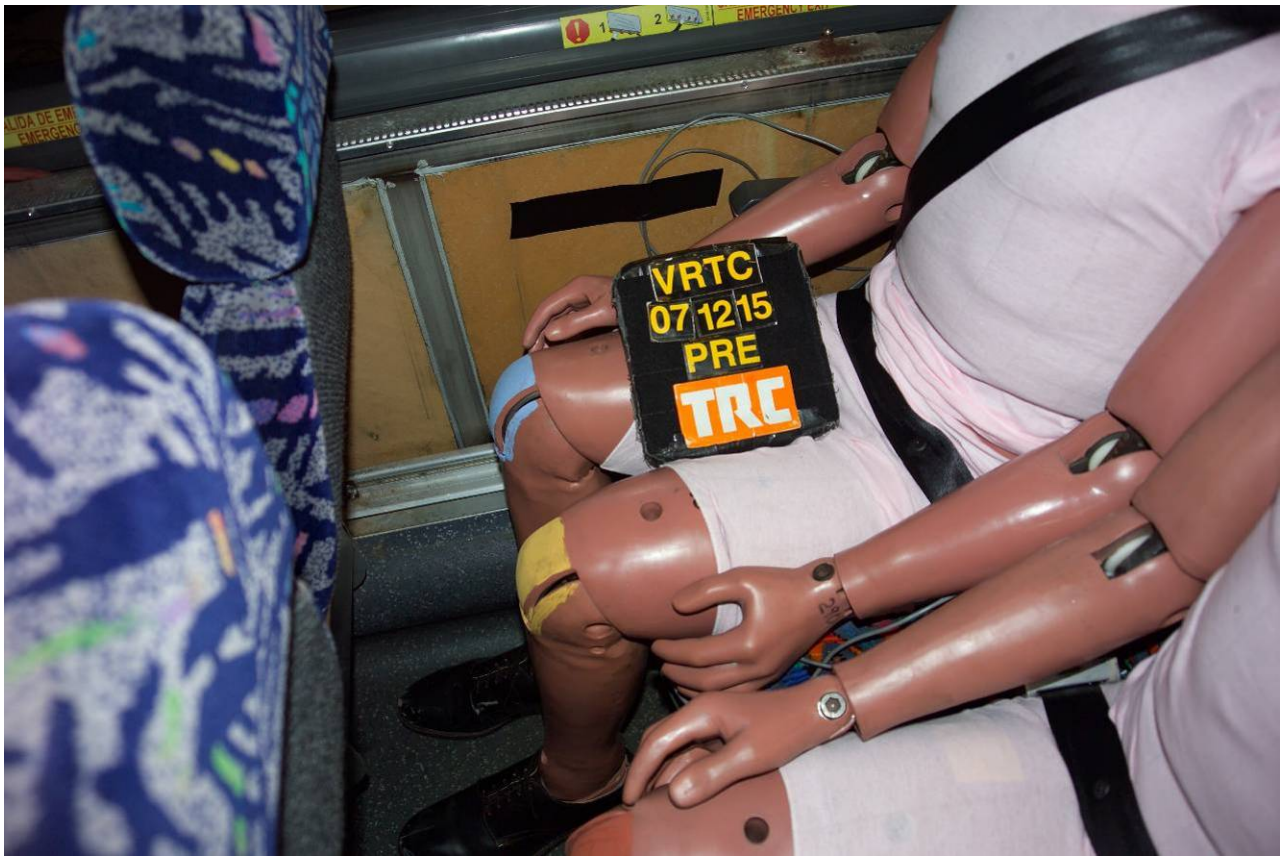

Figure A-86 Pre-Test Row 4 Right Side Outboard Dummy Legs/Feet Position View

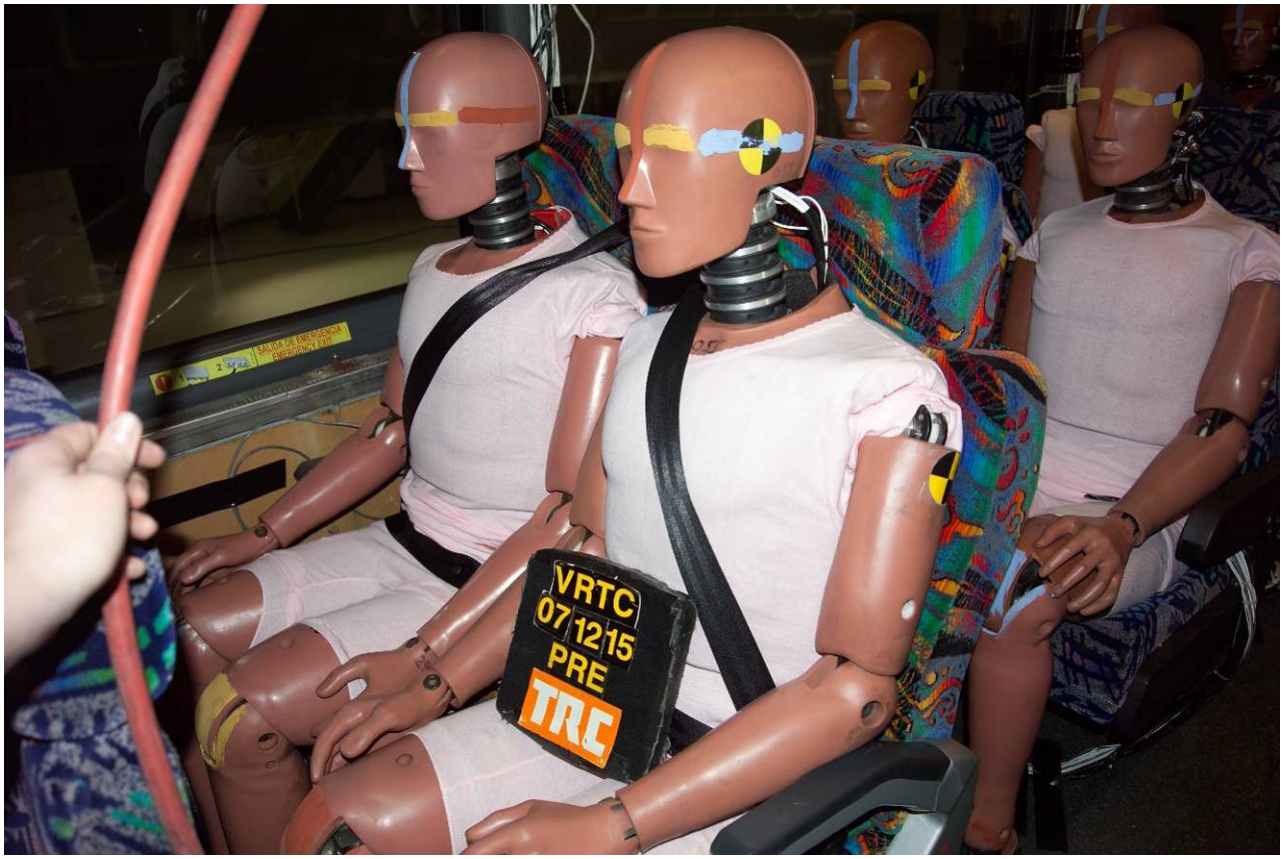

Figure A-87 Pre-Test Row 4 Right Side Inboard Dummy Position View

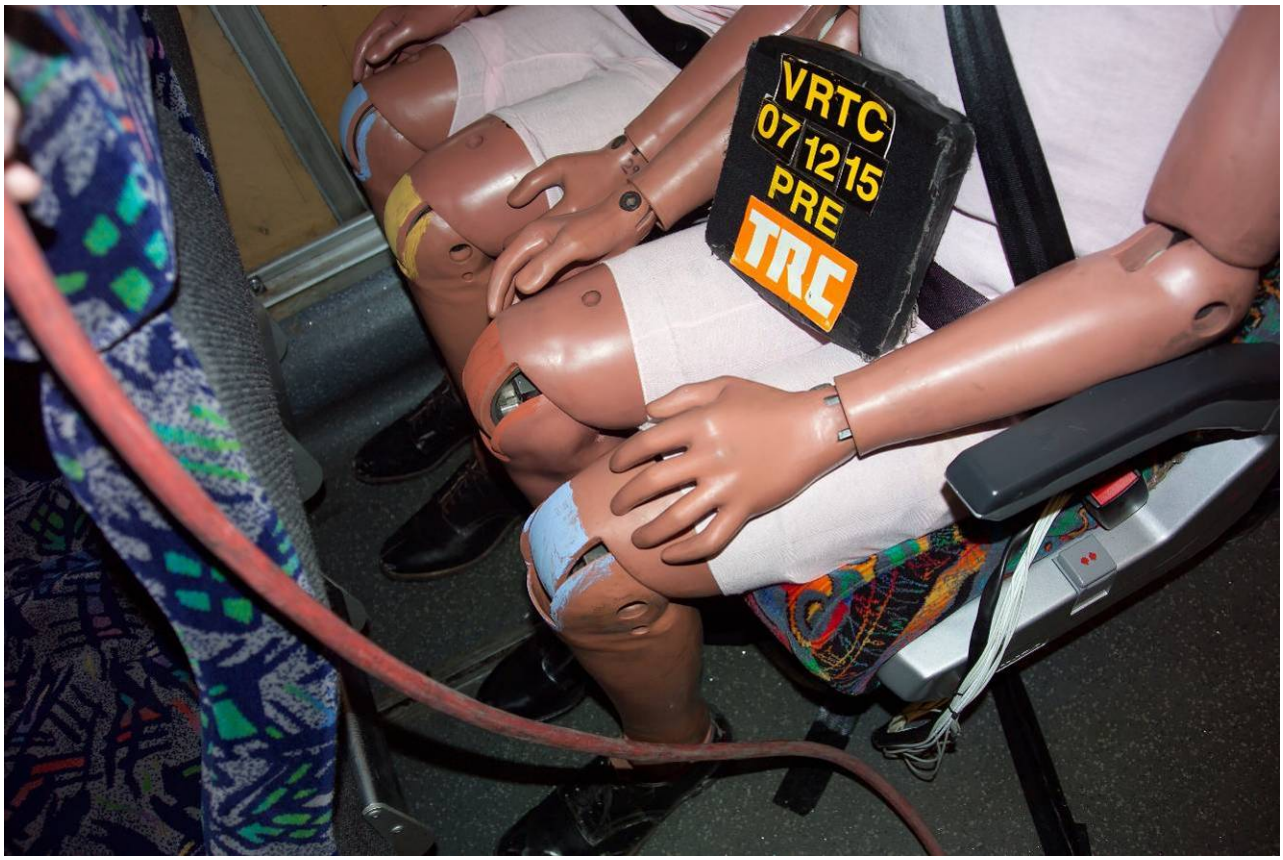

Figure A-88 Pre-Test Row 4 Right Side Inboard Dummy Legs/Feet Position View

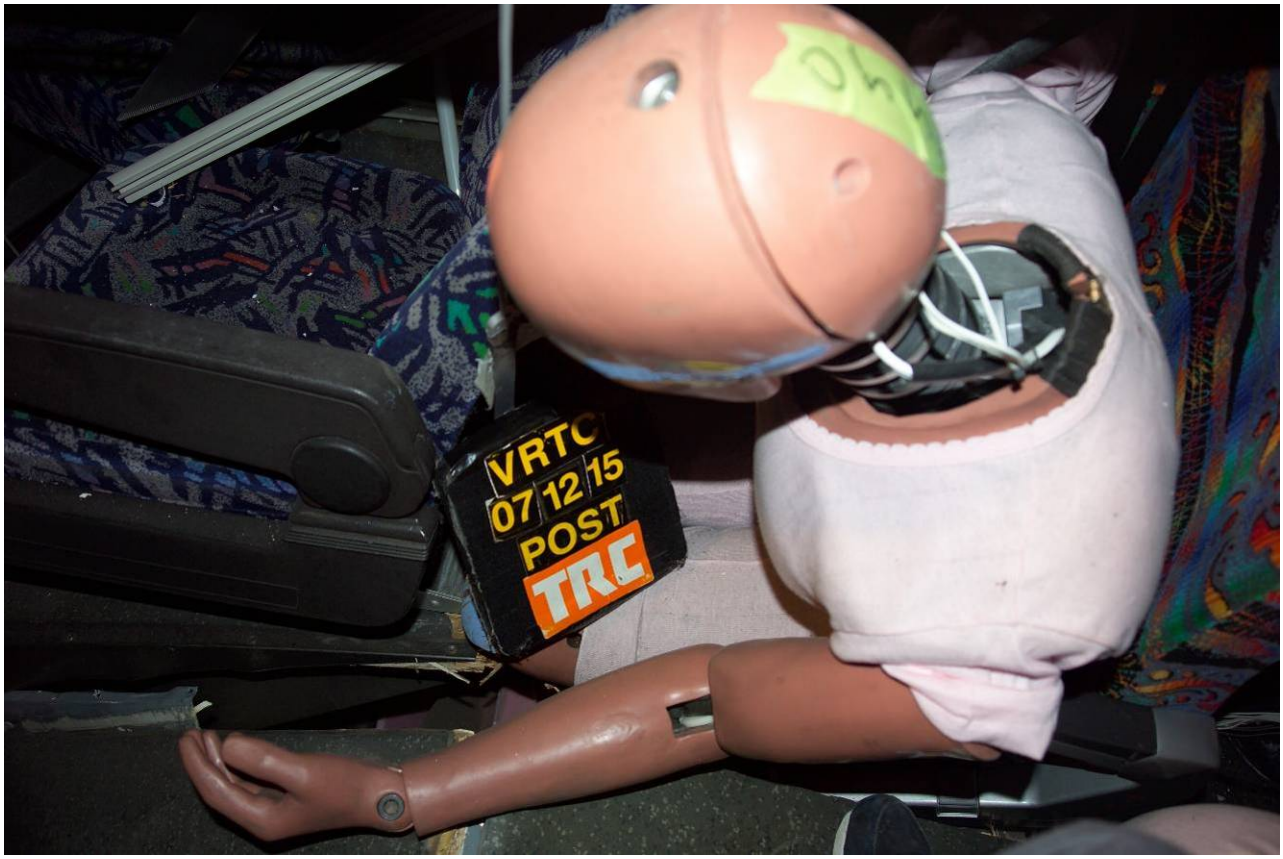

Figure A-89 Post-Test Row 4 Right Side Inboard Dummy Resting Position View

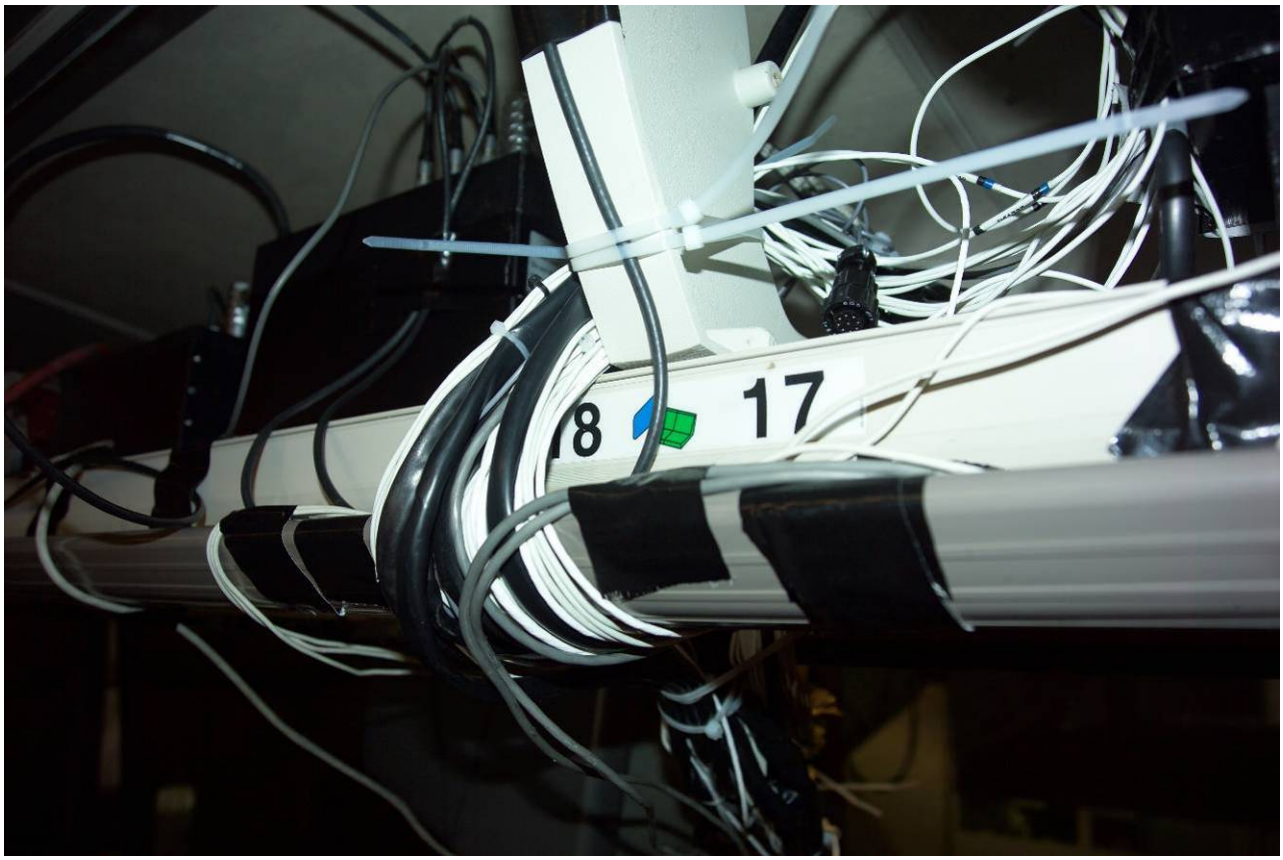

Figure A-90 Pre-Test Seat 17 and 18 Marker View

Figure A-91 Pre-Test Row 5 Right Side Mark

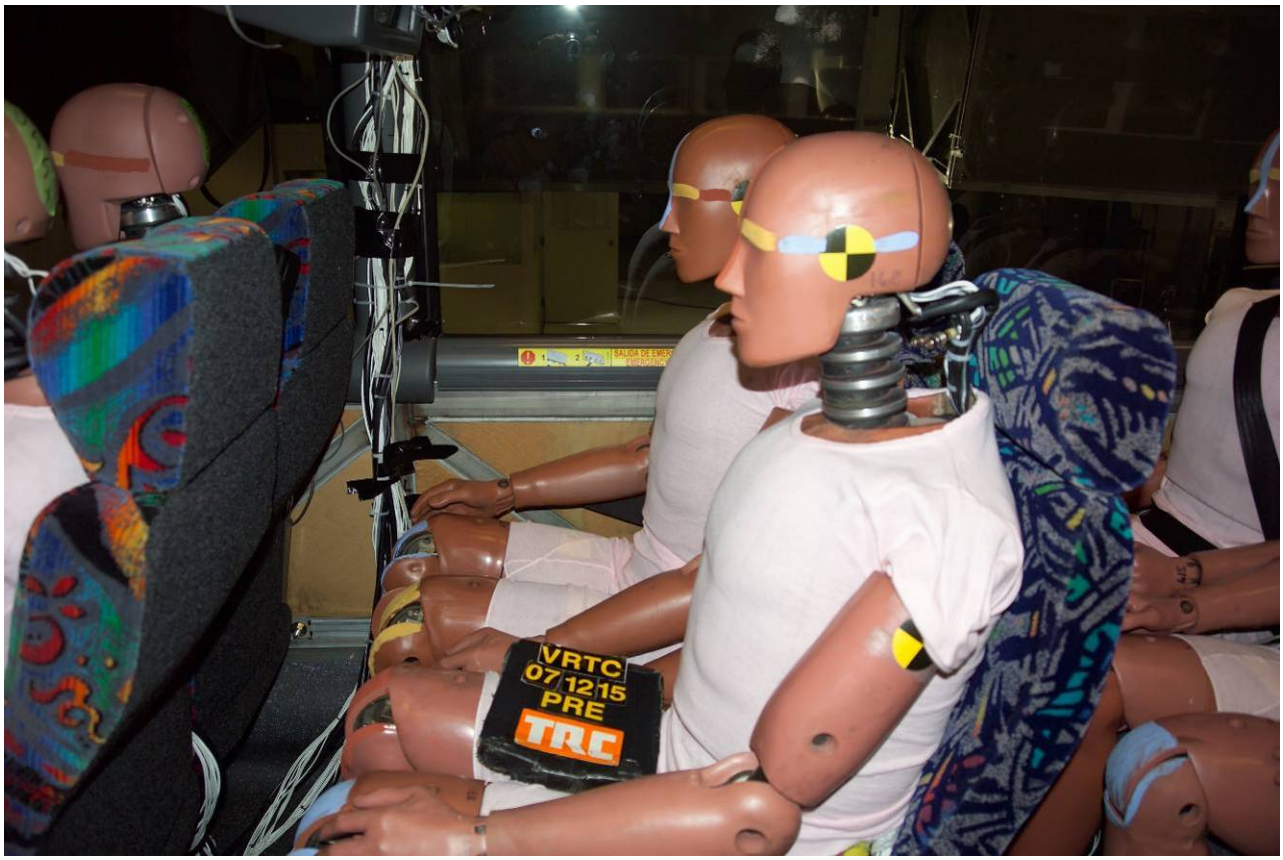

Figure A-92 Pre-Test Row 5 Right Side Dummies Orthogonal View

Figure A-93 Pre-Test Row 5 Right Side Outboard Dummy Position View

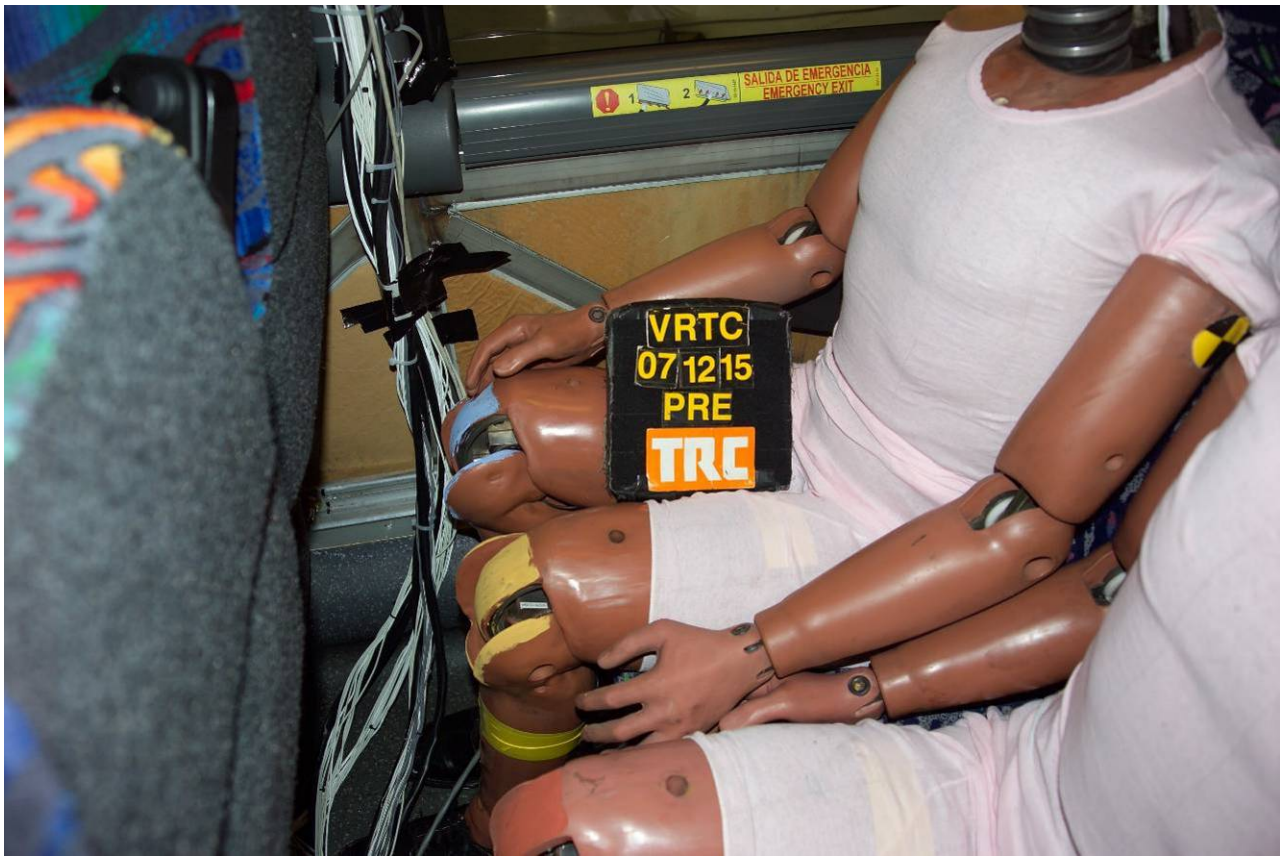

Figure A-94 Pre-Test Row 5 Right Side Outboard Dummy Legs/Feet Position View

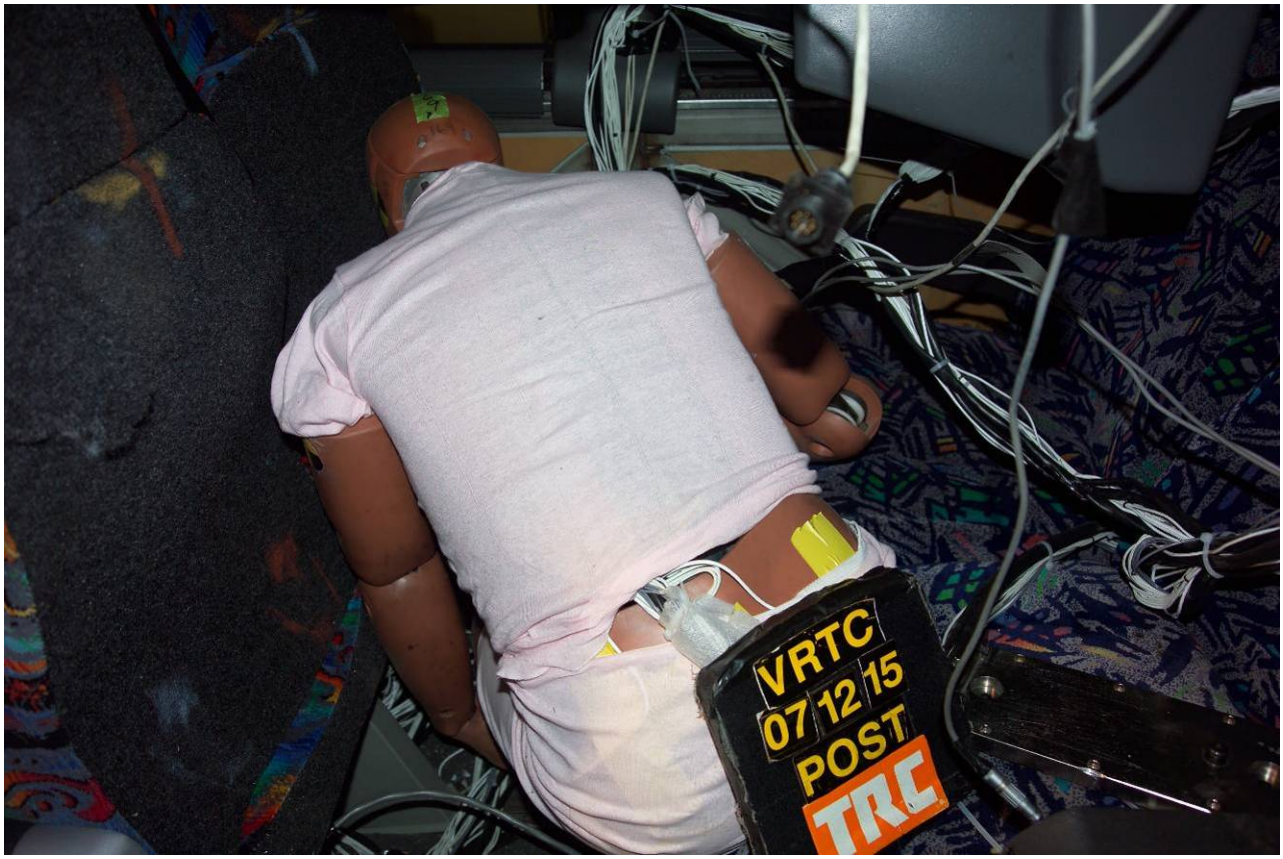

Figure A-95 Post-Test Row 5 Right Side Outboard Dummy Resting Position View

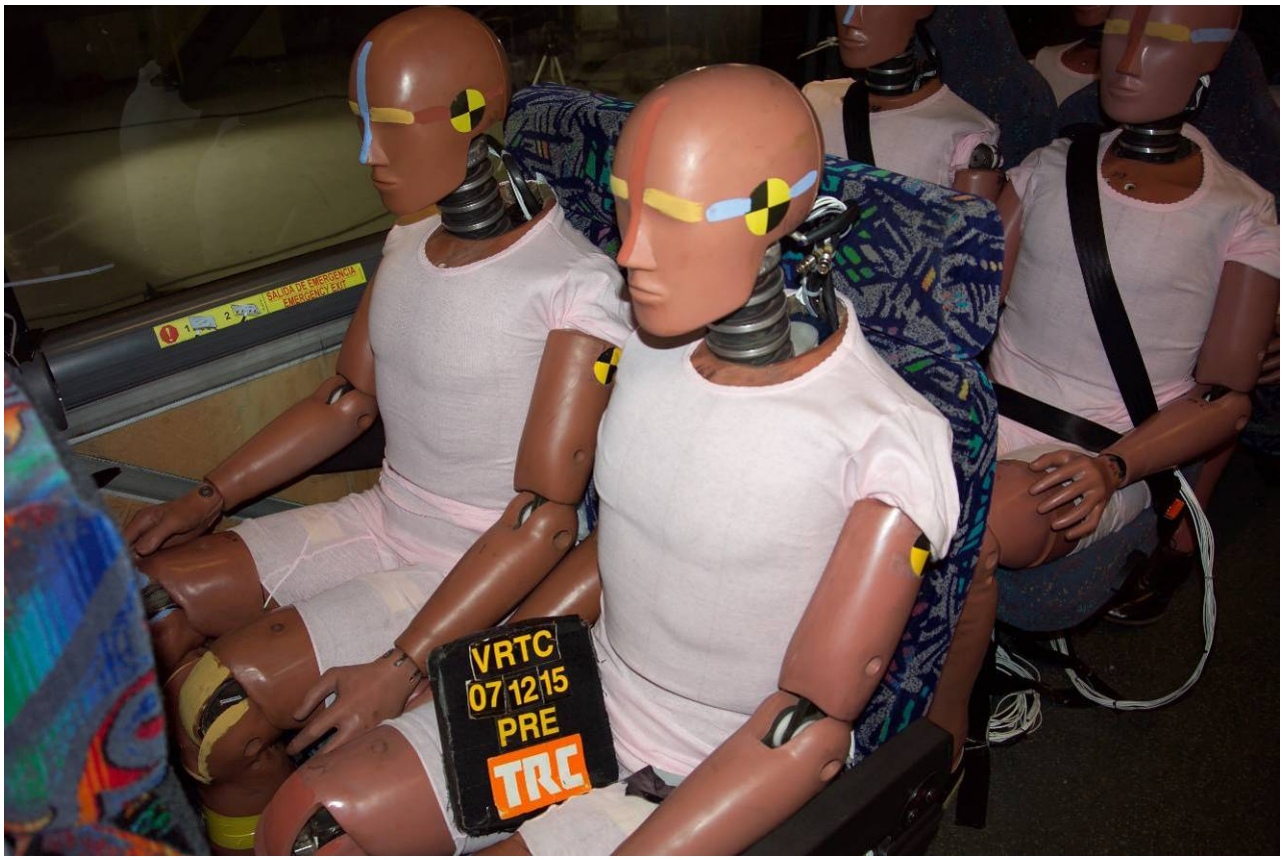

Figure A-96 Pre-Test Row 5 Right Side Inboard Dummy Position View

Figure A-97 Pre-Test Row 5 Right Side Inboard Dummy Legs/Feet Position View

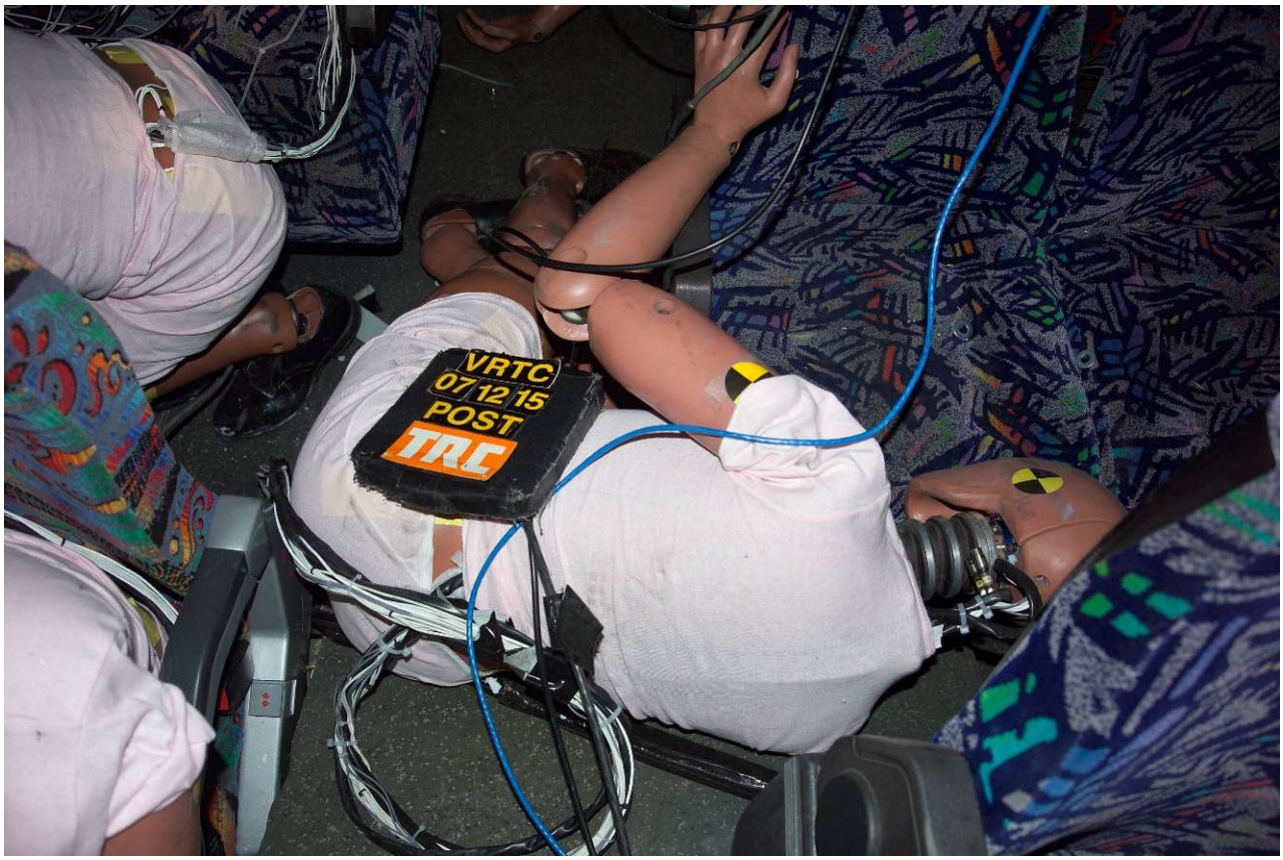

Figure A-98 Post-Test Row 5 Right Side Inboard Dummy Resting Position - View 1

Figure A-99 Post-Test Row 5 Right Side Inboard Dummy Resting Position - View 2

Figure A-100 Post-Test Row 5 Right Side Dummy Contact

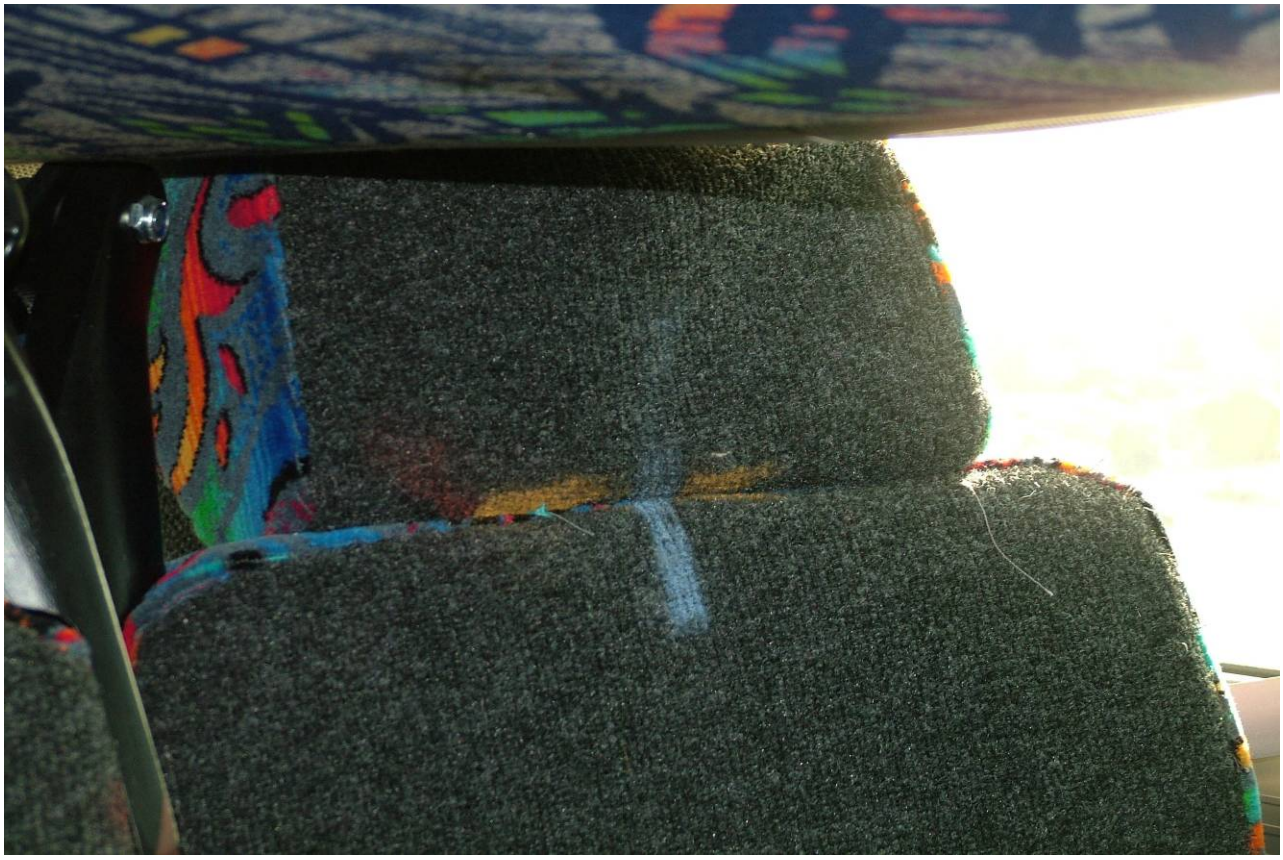

Figure A-101 Post-Test Row 5 Right Side Outboard Dummy Head Contact

Figure A-102 Post-Test Row 5 Right Side Outboard Dummy Knee Contact

Figure A-103 Post-Test Row 5 Right Side Inboard Dummy Head Contact

Figure A-104 Post-Test Row 5 Right Side Inboard Dummy Knee Contact

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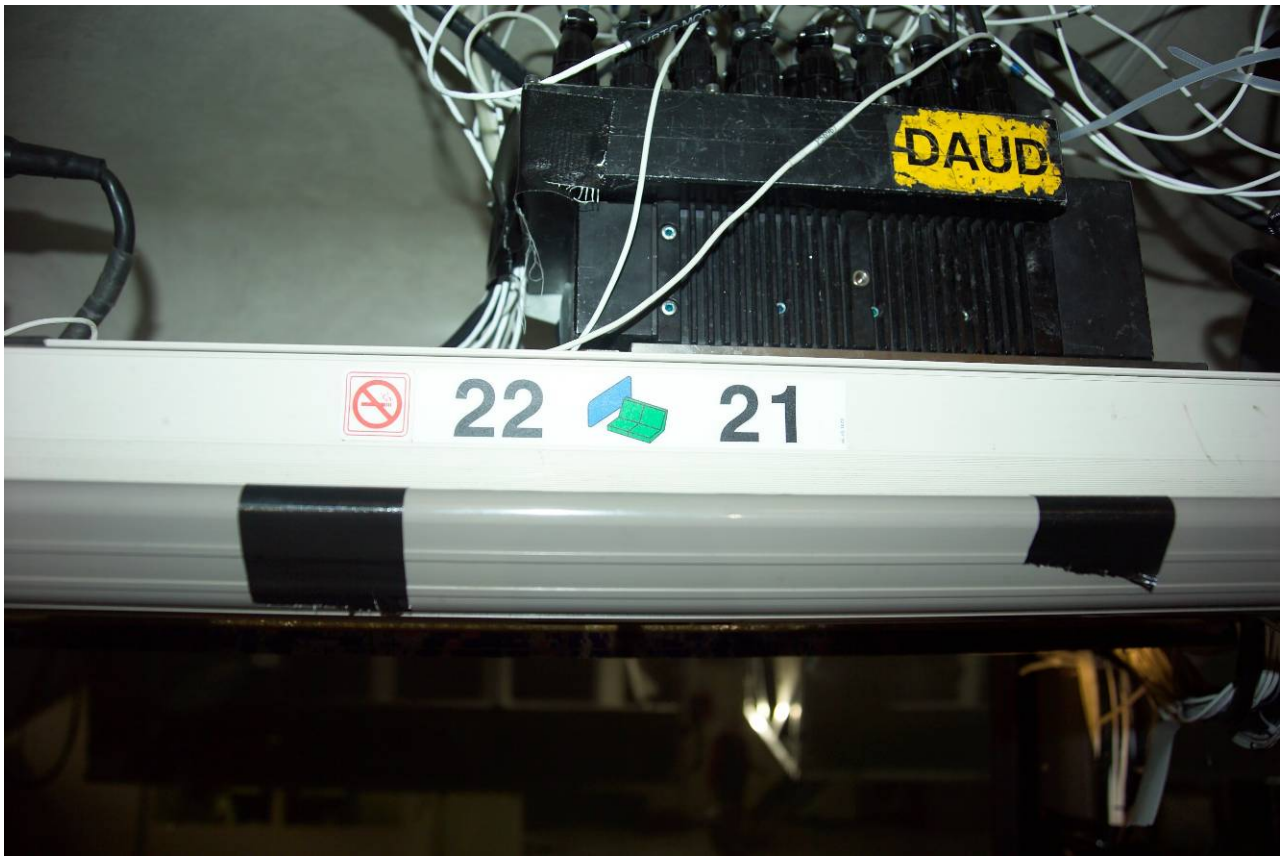

Figure A-105 Pre-Test Seat 21 and 22 Marker View

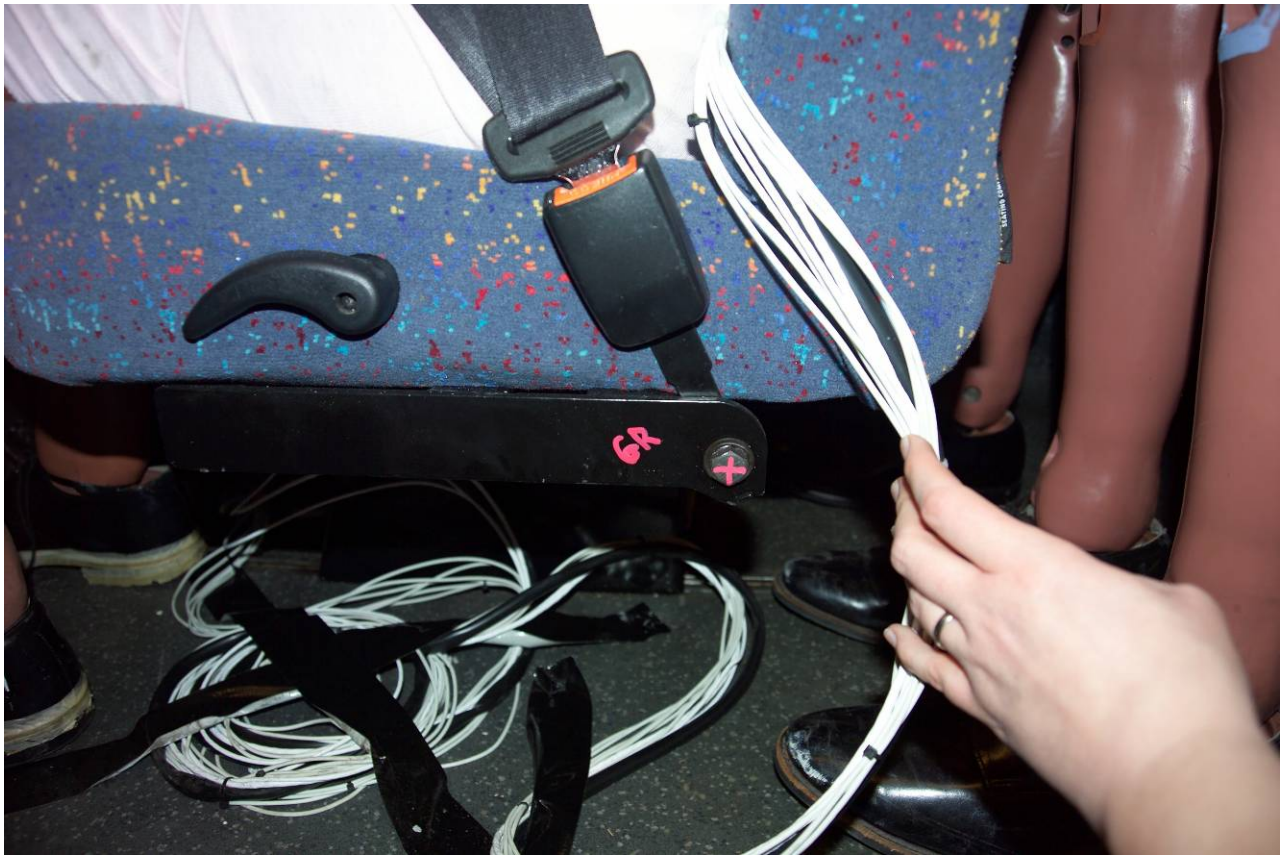

Figure A-106 Pre-Test Row 6 Right Side Mark

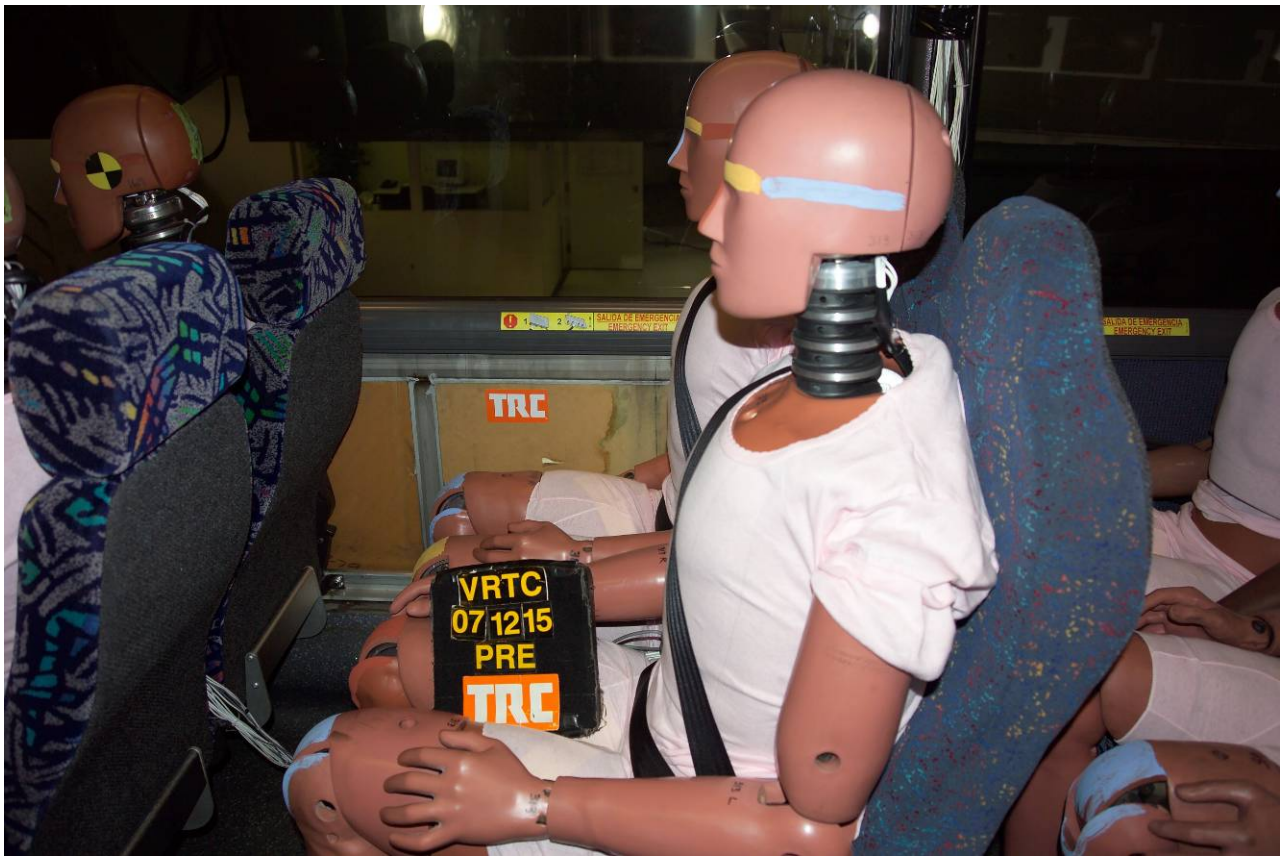

Figure A-107 Pre-Test Row 6 Right Side Dummies Orthogonal View

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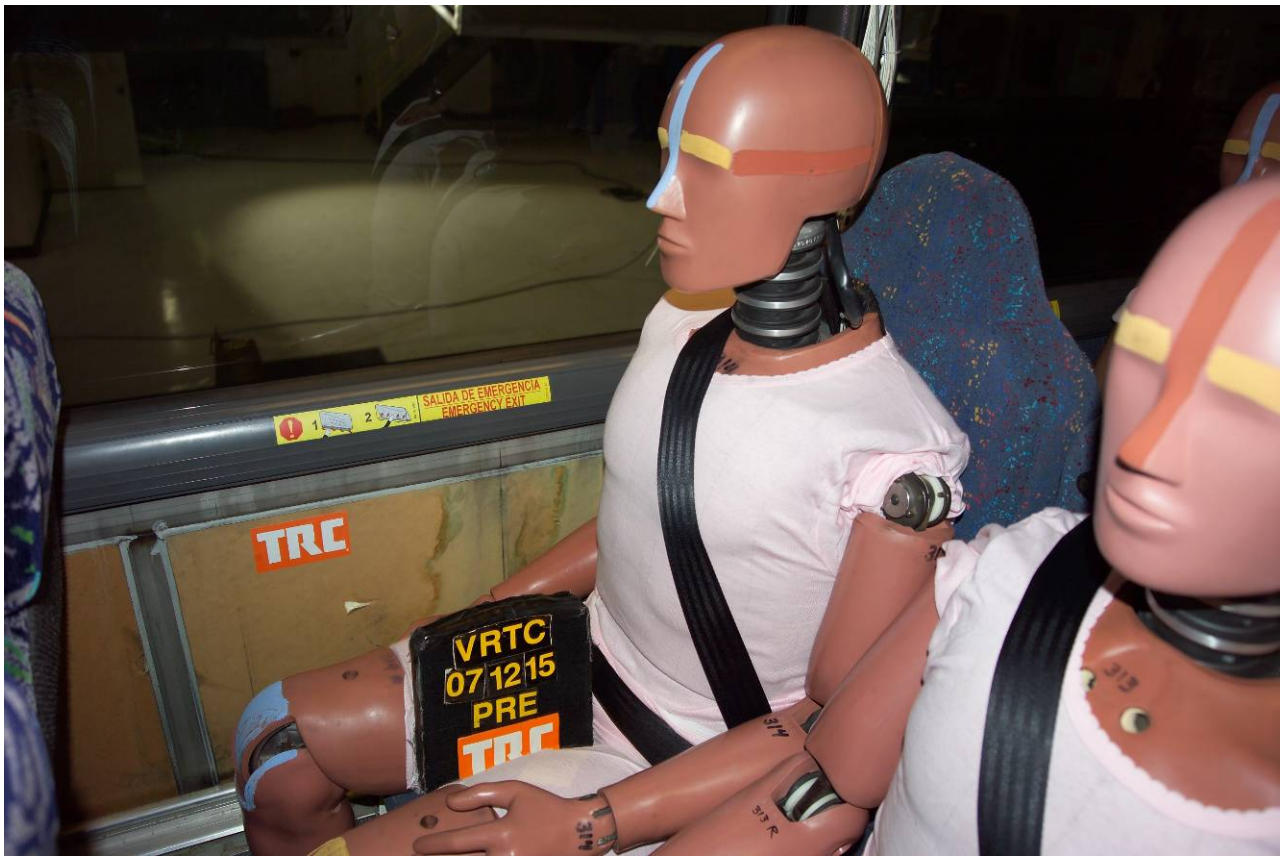

Figure A-108 Pre-Test Row 6 Right Side Outboard Dummy Position View

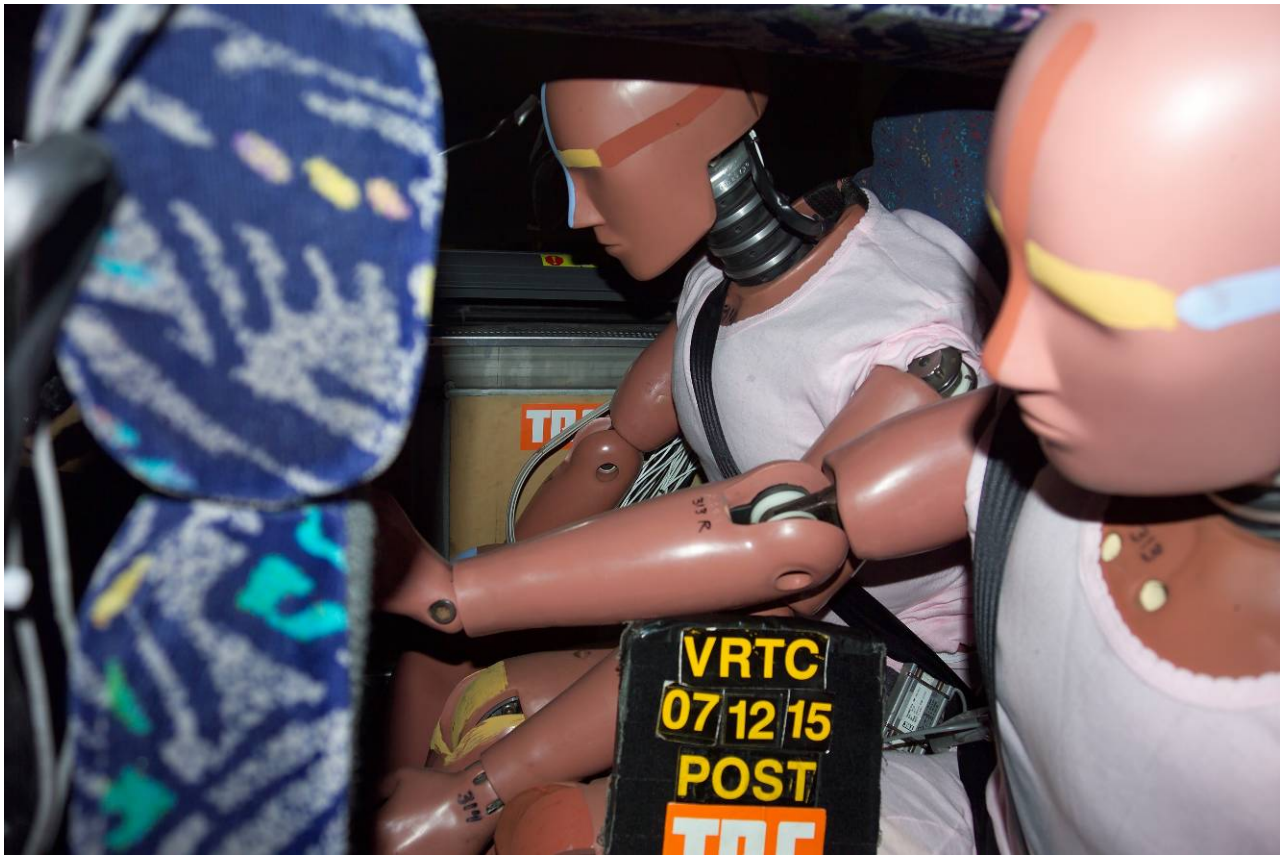

Figure A-109 Post-Test Row 6 Right Side Outboard Dummy Resting Position View

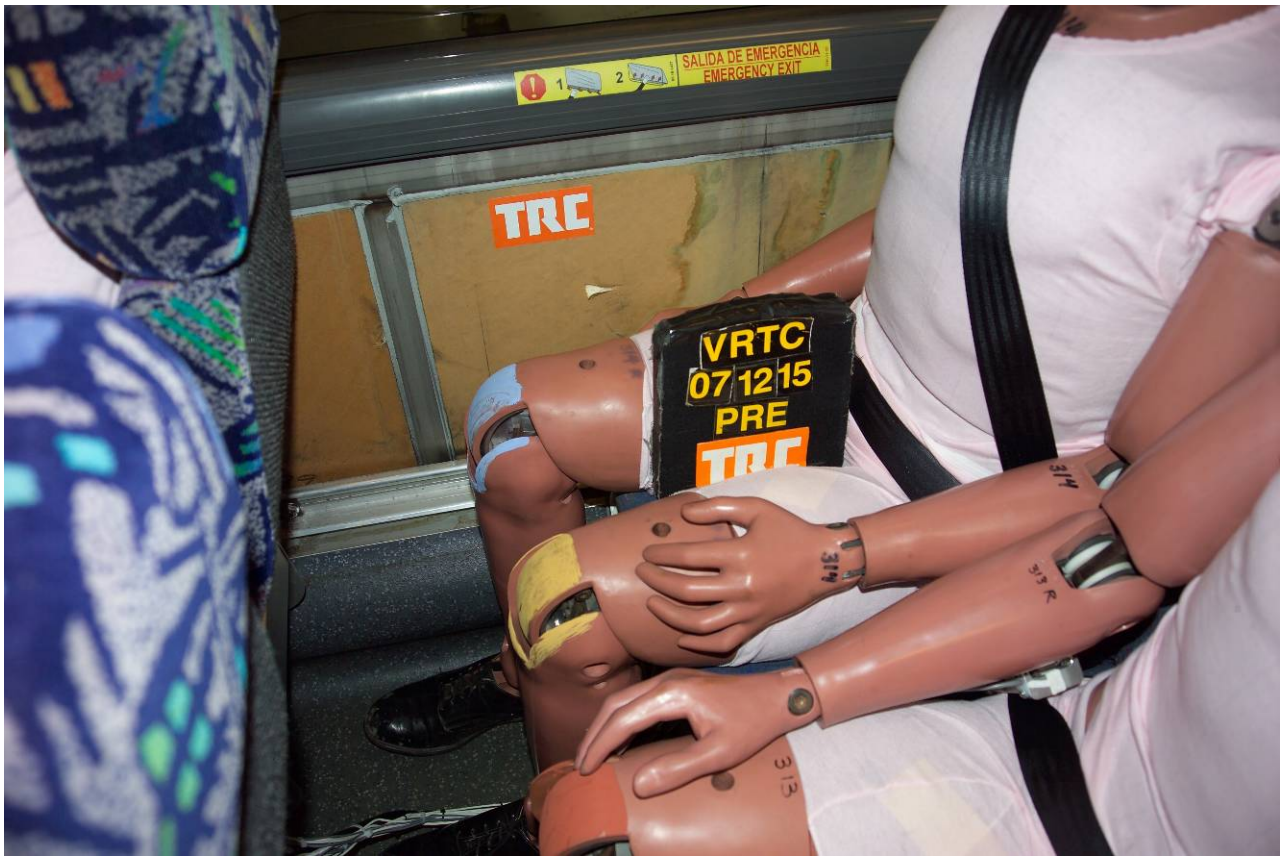

Figure A-110 Pre-Test Row 6 Right Side Outboard Dummy Legs/Feet Position View

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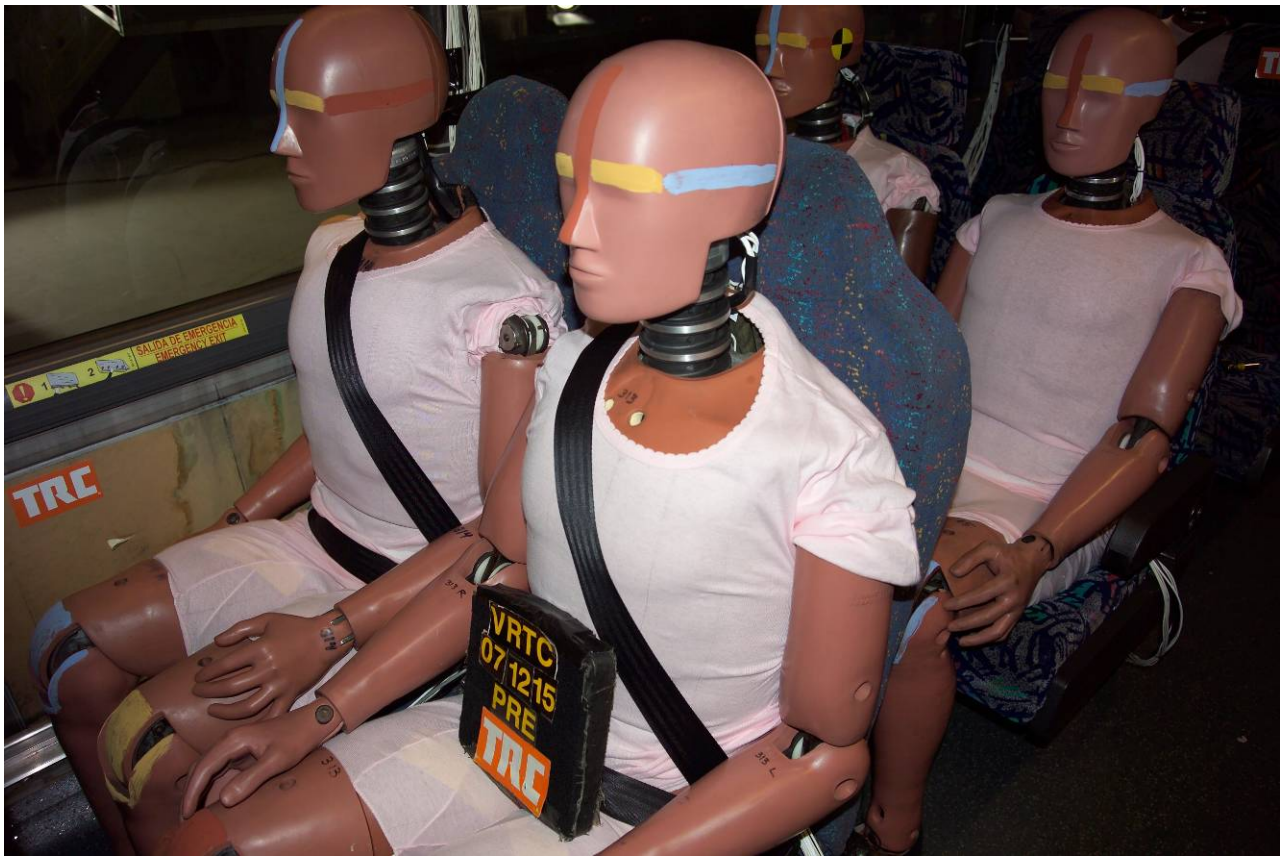

Figure A-111 Pre-Test Row 6 Right Side Inboard Dummy Position View

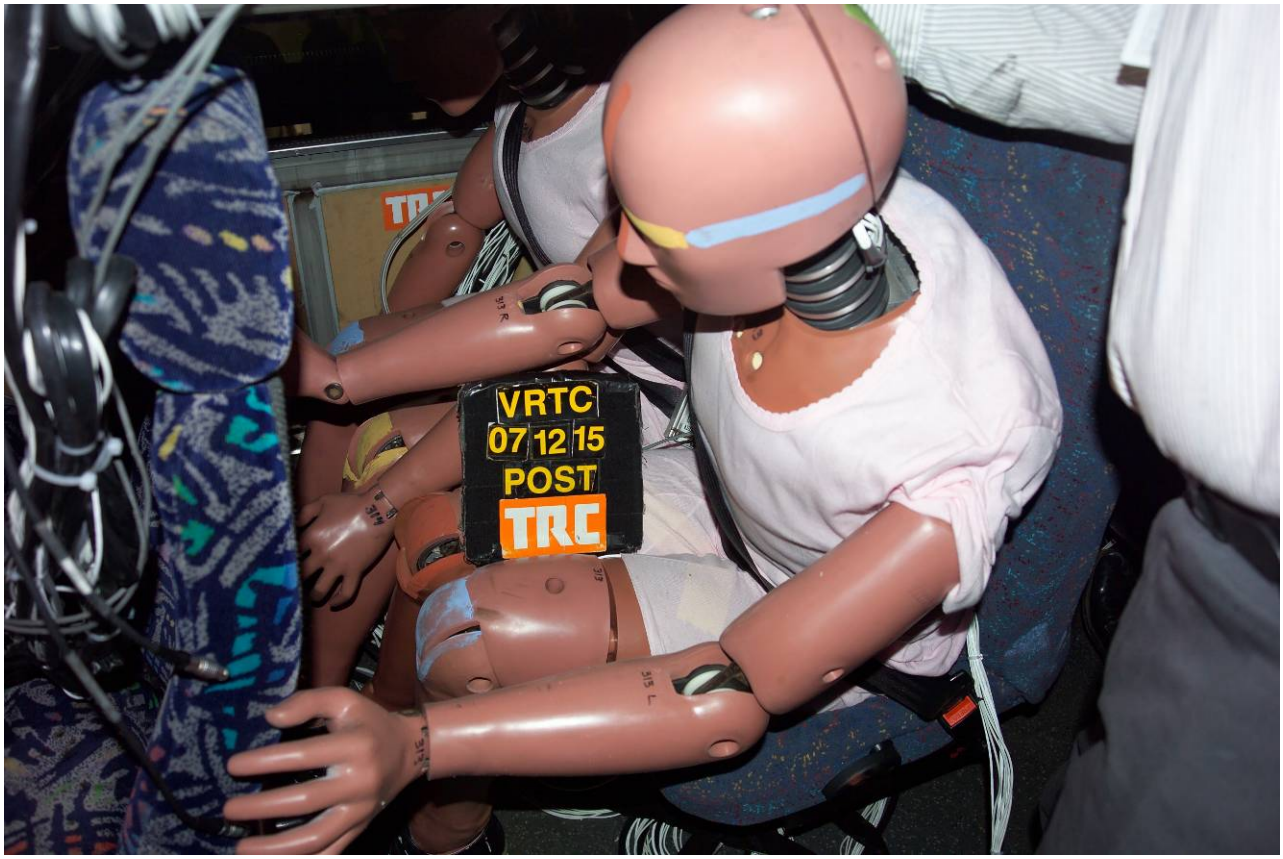

Figure A-112 Post-Test Row 6 Right Side Inboard Dummy Resting Position View

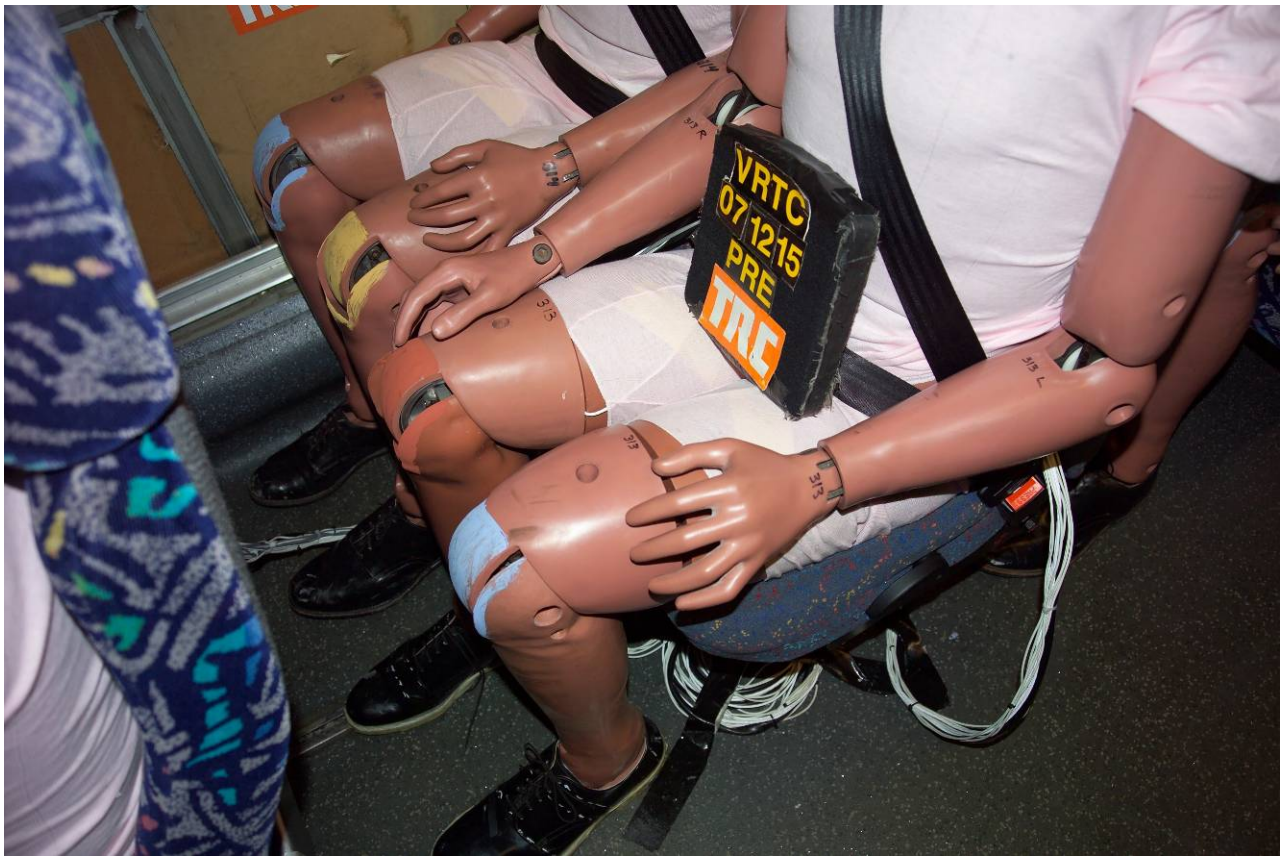

Figure A-113 Pre-Test Row 6 Right Side Inboard Dummy Legs/Feet Position View

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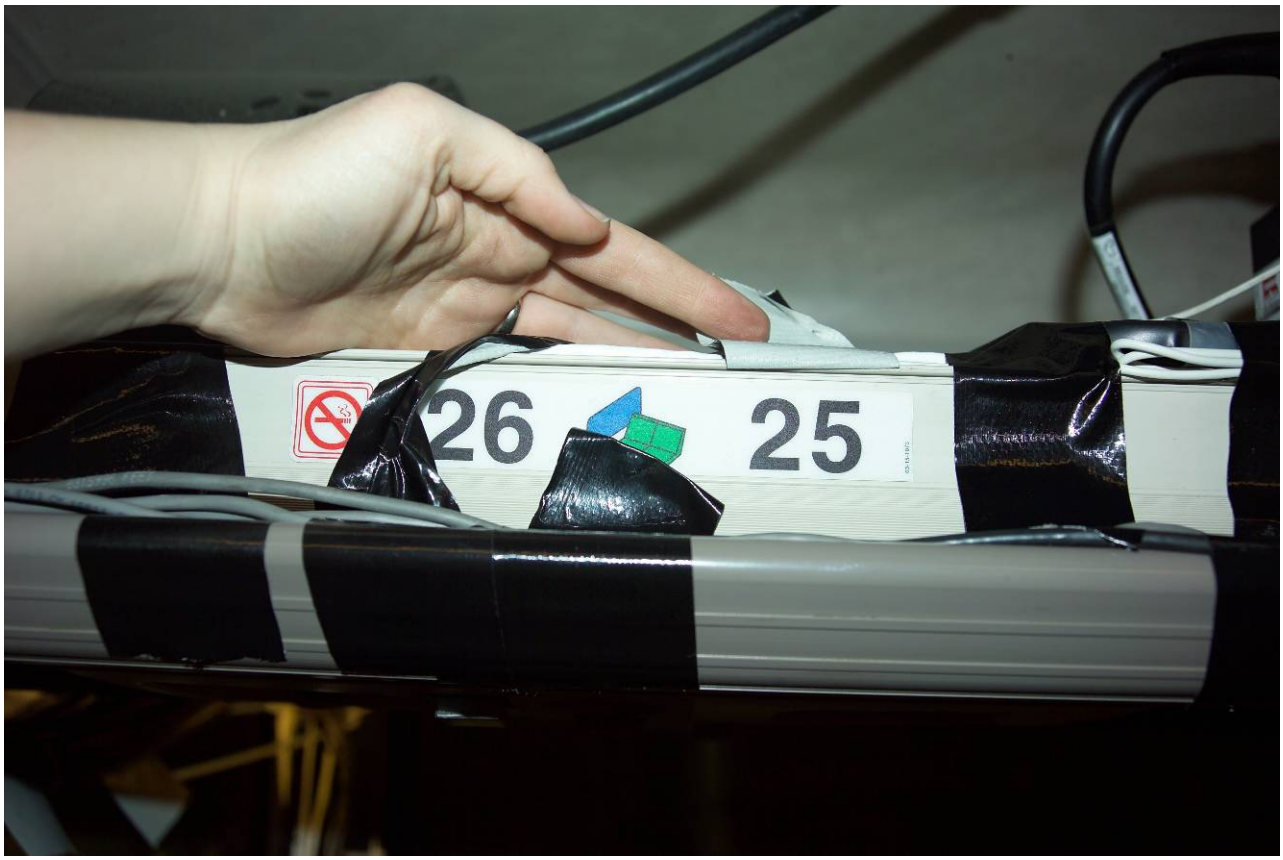

Figure A-114 Pre-Test Seat 25 and 26 Marker View

Figure A-115 Pre-Test Row 7 Right Side Mark

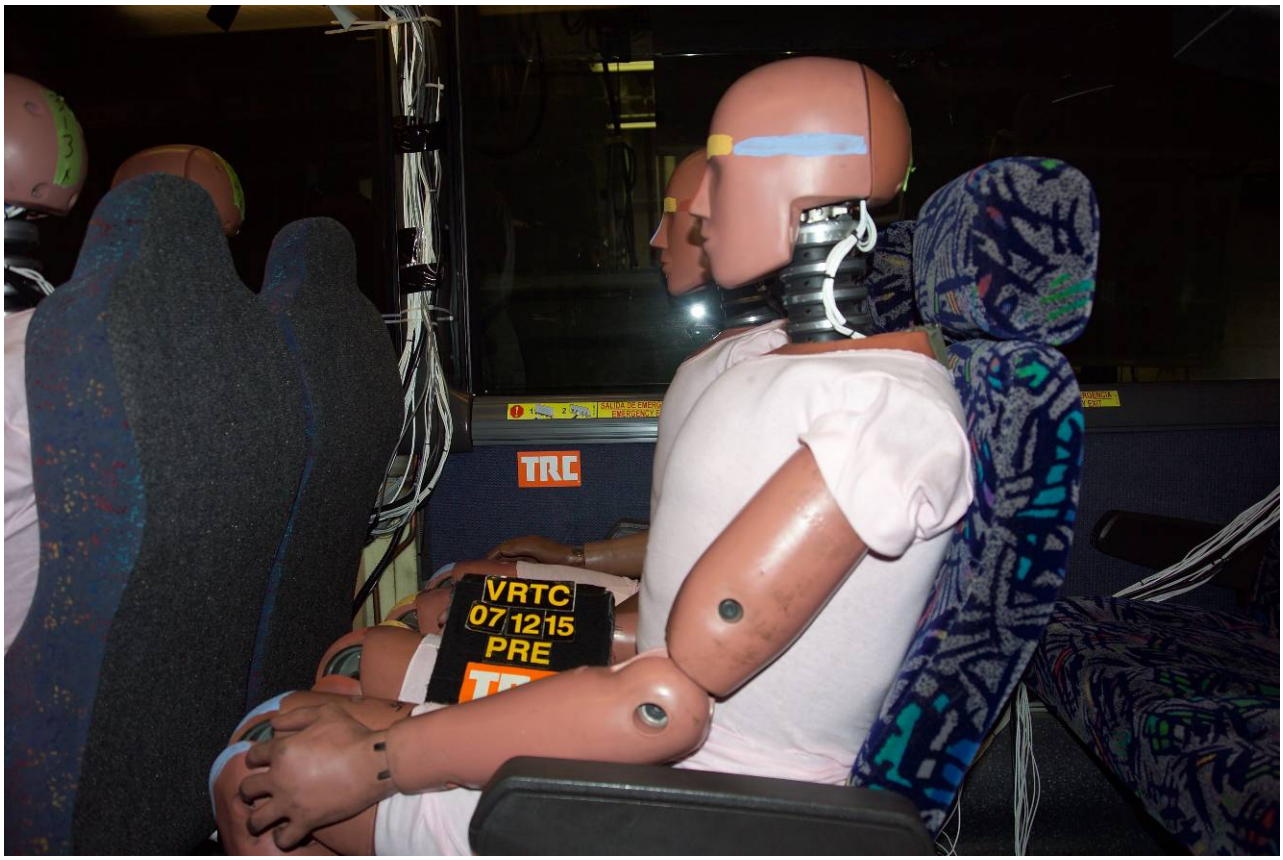

Figure A-116 Pre-Test Row 7 Right Side Dummies Orthogonal View

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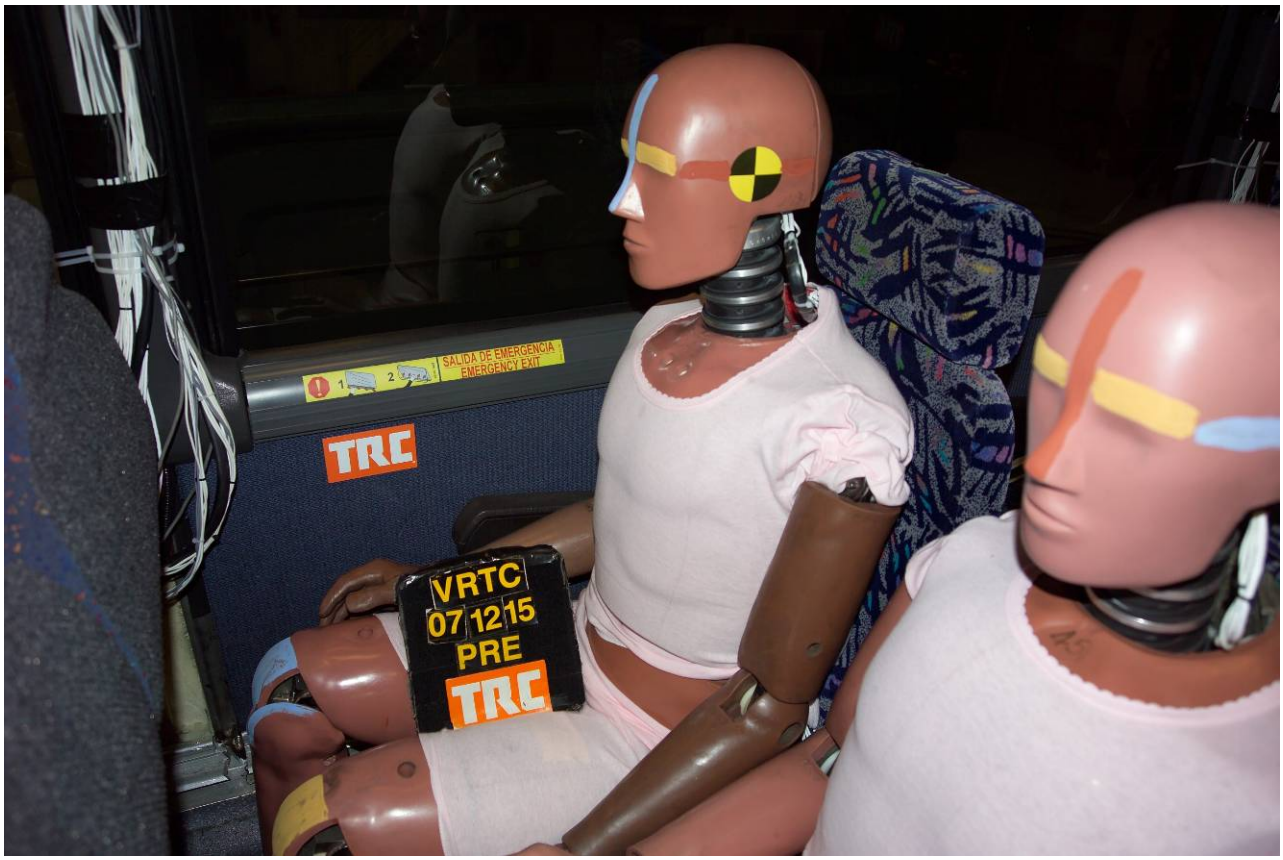

Figure A-117 Pre-Test Row 7 Right Side Outboard Dummy Position View

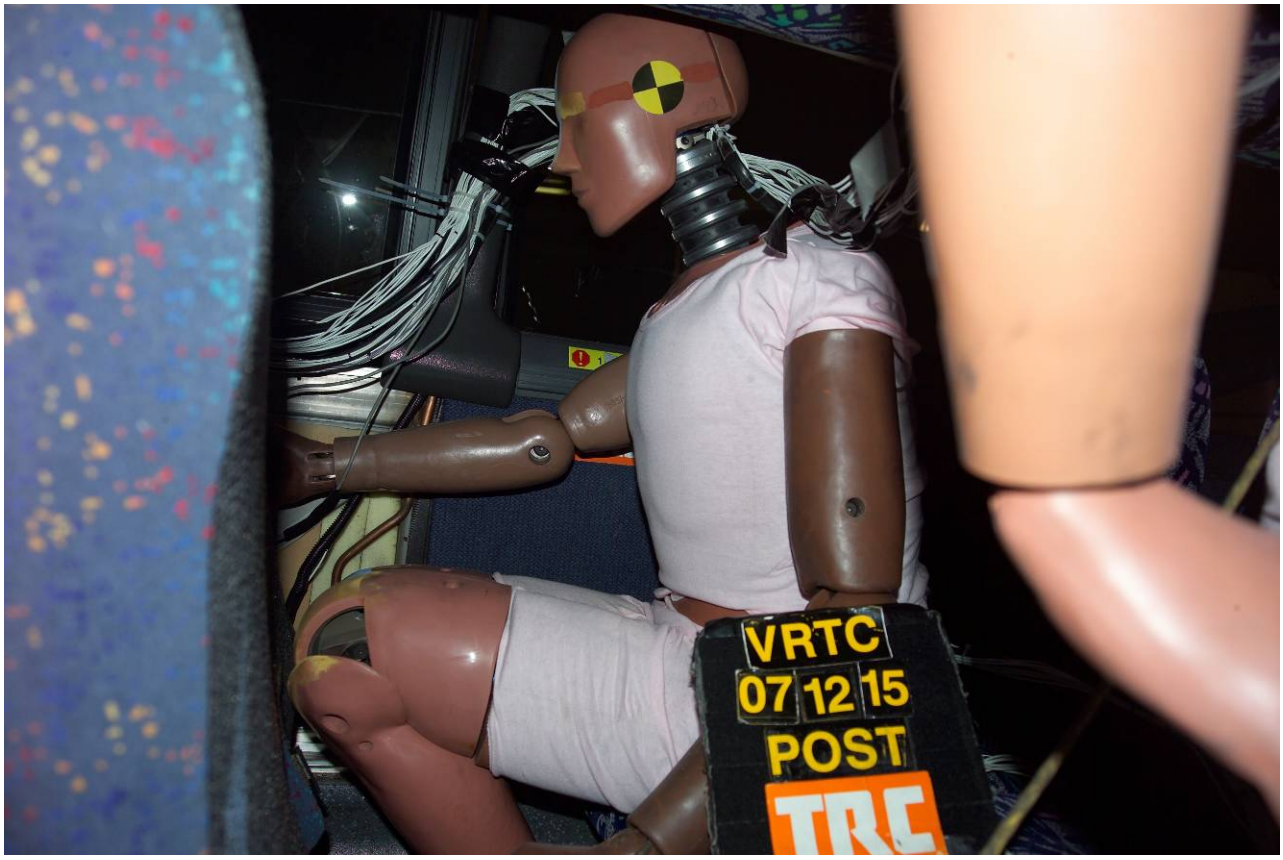

Figure A-118 Post-Test Row 7 Right Side Outboard Dummy Resting Position View

Figure A-119 Pre-Test Row 7 Right Side Outboard Dummy Legs/Feet Position View

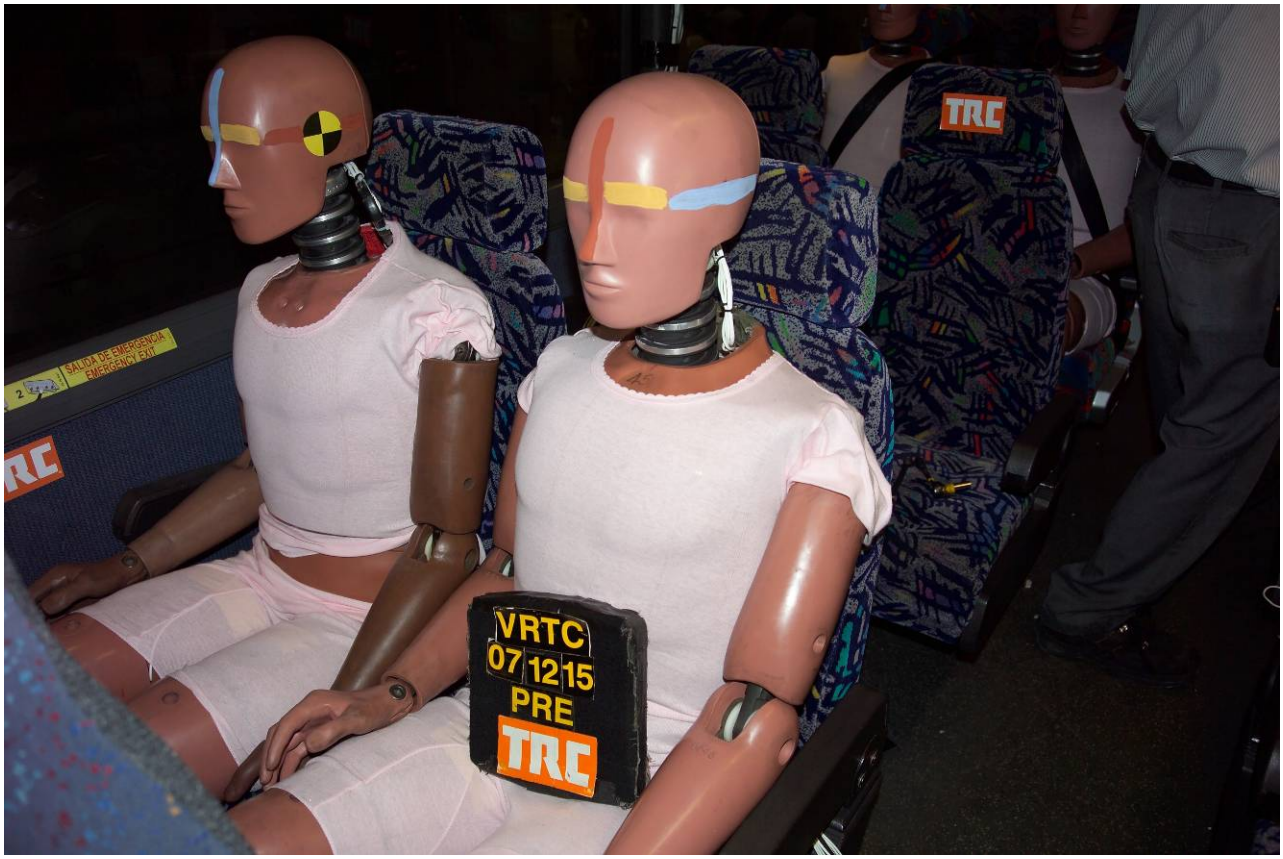

Figure A-120 Pre-Test Row 7 Right Side Inboard Dummy Position View

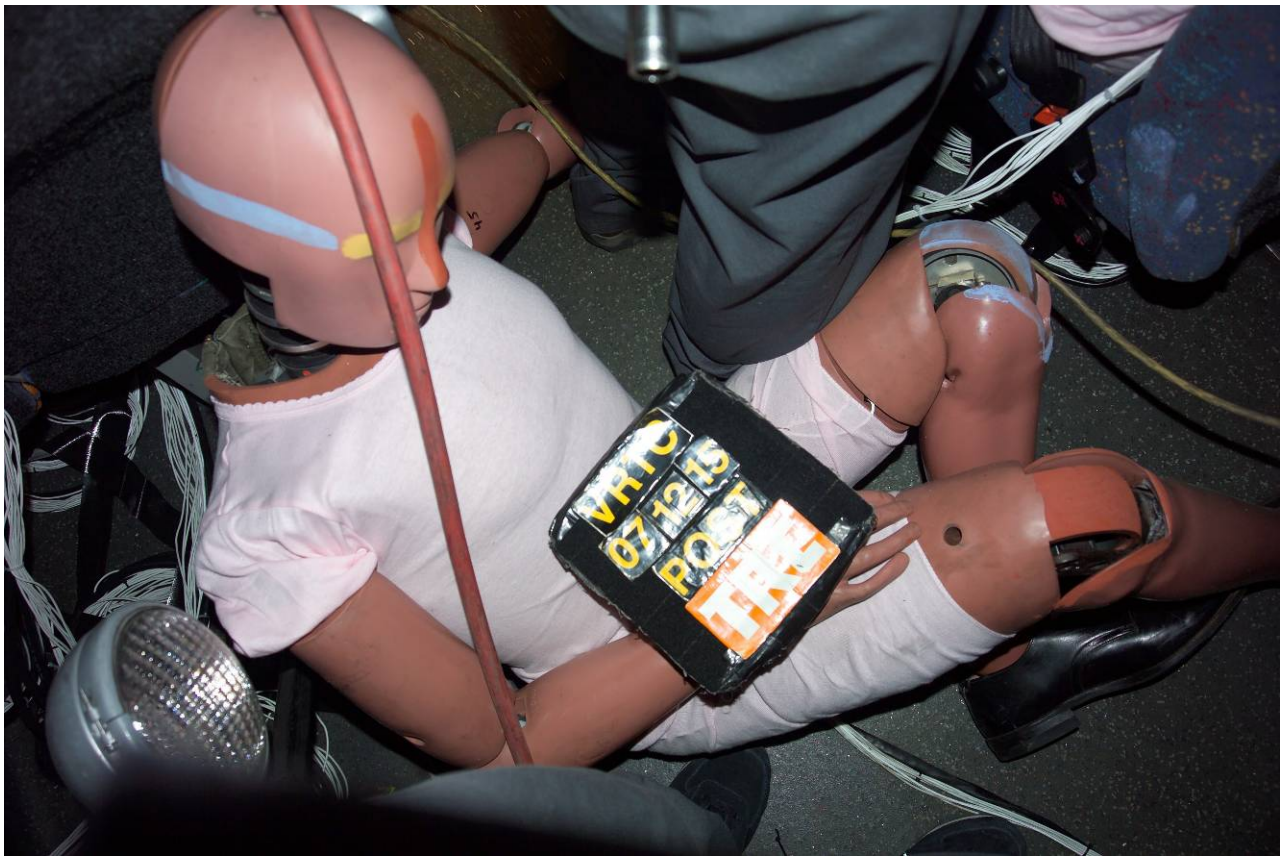

Figure A-121 Post-Test Row 7 Right Side Inboard Dummy Resting Position - View 1

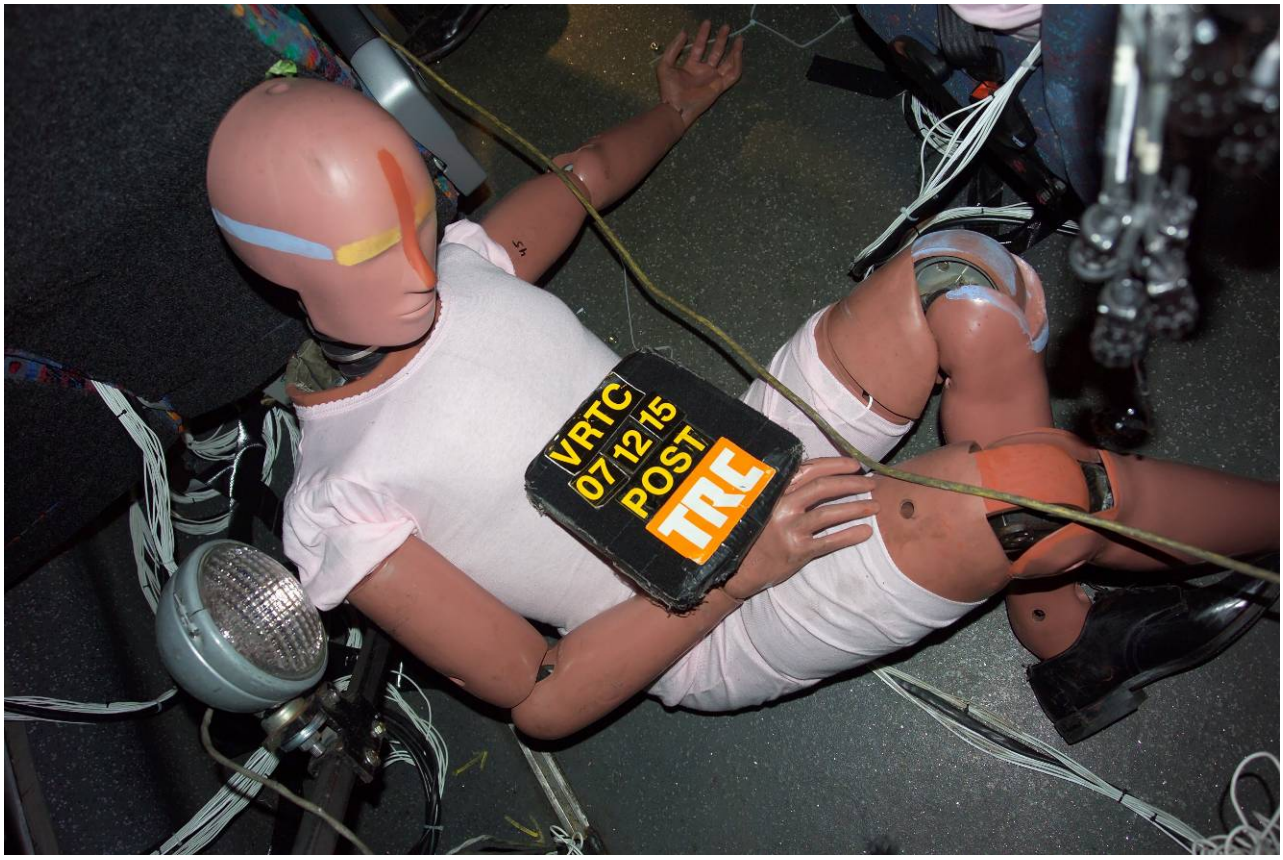

Figure A-122 Post-Test Row 7 Right Side Inboard Dummy Resting Position - View 2

Figure A-123 Pre-Test Row 7 Right Side Inboard Dummy Legs/Feet Position View

Figure A-124 Post-Test Row 7 Right Side Dummy Contact

Figure A-125 Post-Test Row 7 Right Side Outboard Dummy Head Contact

Figure A-126 Post-Test Row 7 Right Side Outboard Dummy Knee Contact

Figure A-127 Post-Test Row 7 Right Side Inboard Dummy Head Contact

Figure A-128 Post-Test Row 7 Right Side Inboard Dummy Knee Contact

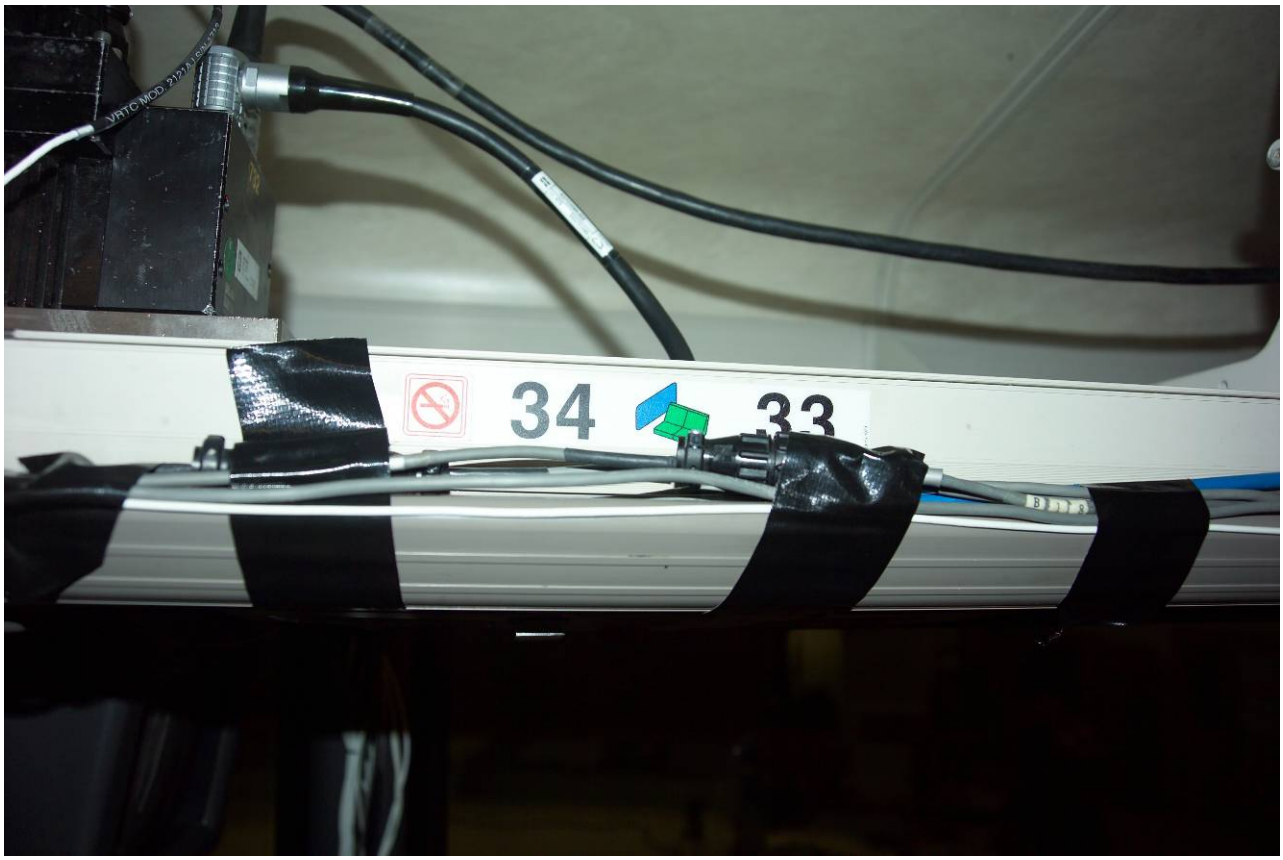

Figure A-129 Pre-Test Seat 33 and 34 Marker View

Figure A-130 Pre-Test Row 9 Right Side Mark

Figure A-131 Pre-Test Row 9 Right Side Outboard Dummy Position View

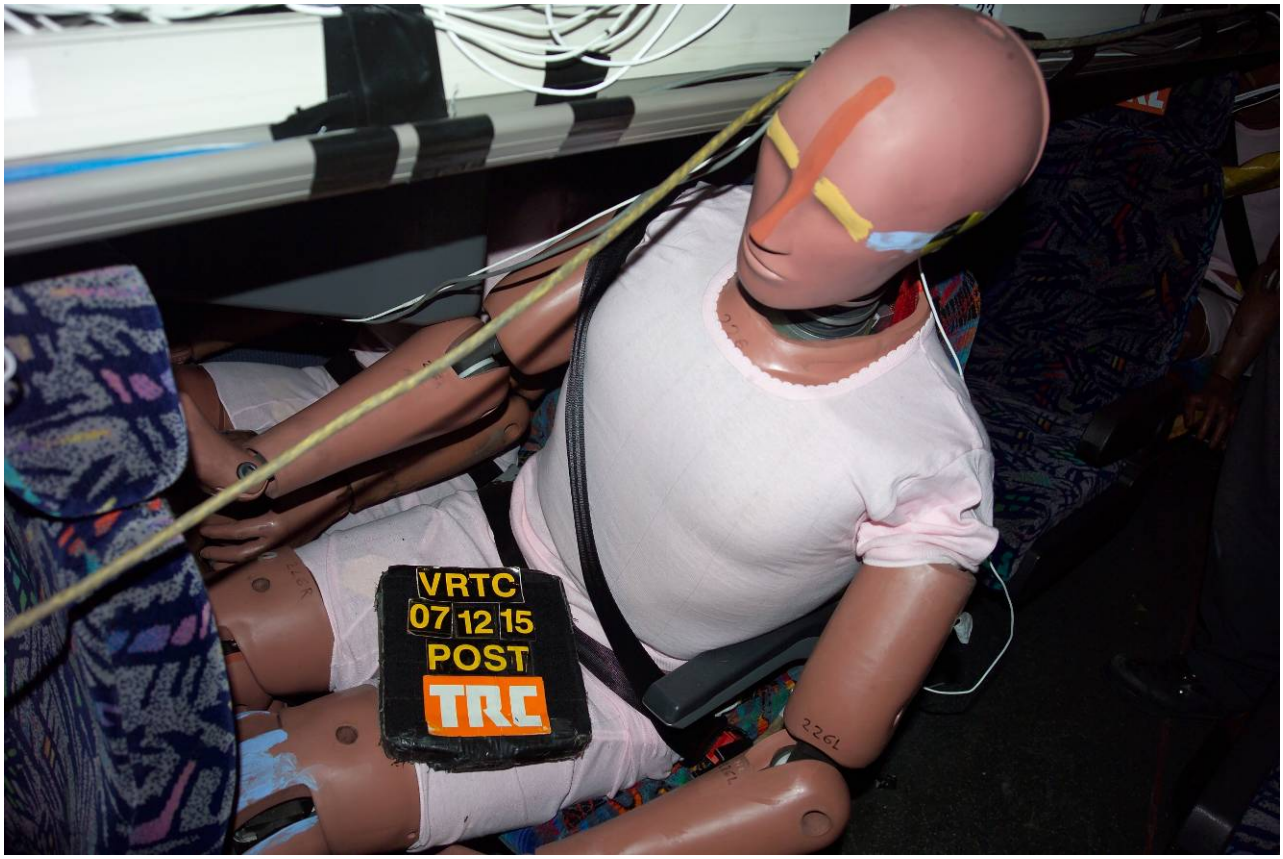

Figure A-132 Post-Test Row 9 Right Side Outboard Dummy Resting Position View

Figure A-133 Pre-Test Row 9 Right Side Outboard Dummy Legs/Feet Position View

Figure A-134 Pre-Test Row 9 Right Side Inboard Dummy Position View

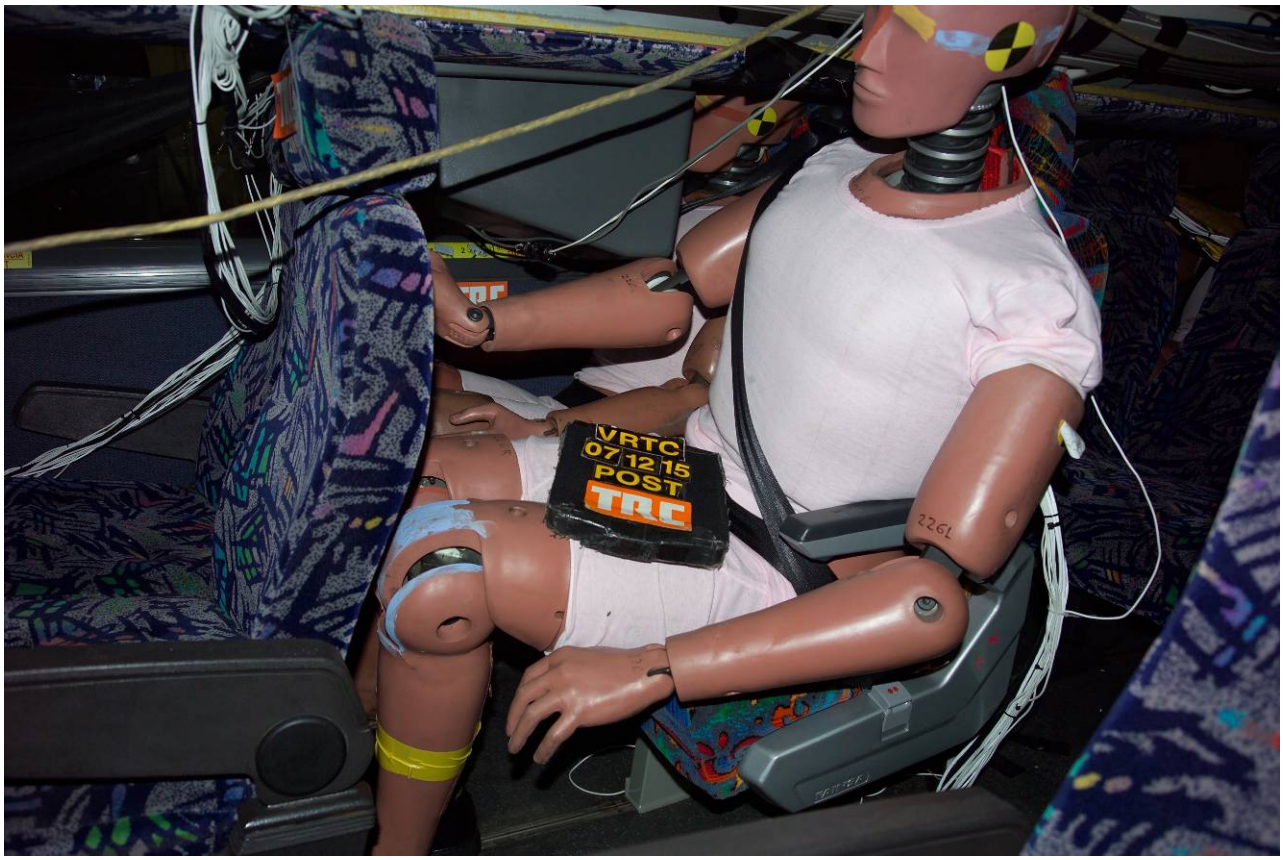

Figure A-135 Post-Test Row 9 Right Side Inboard Dummy Resting Position - View 1

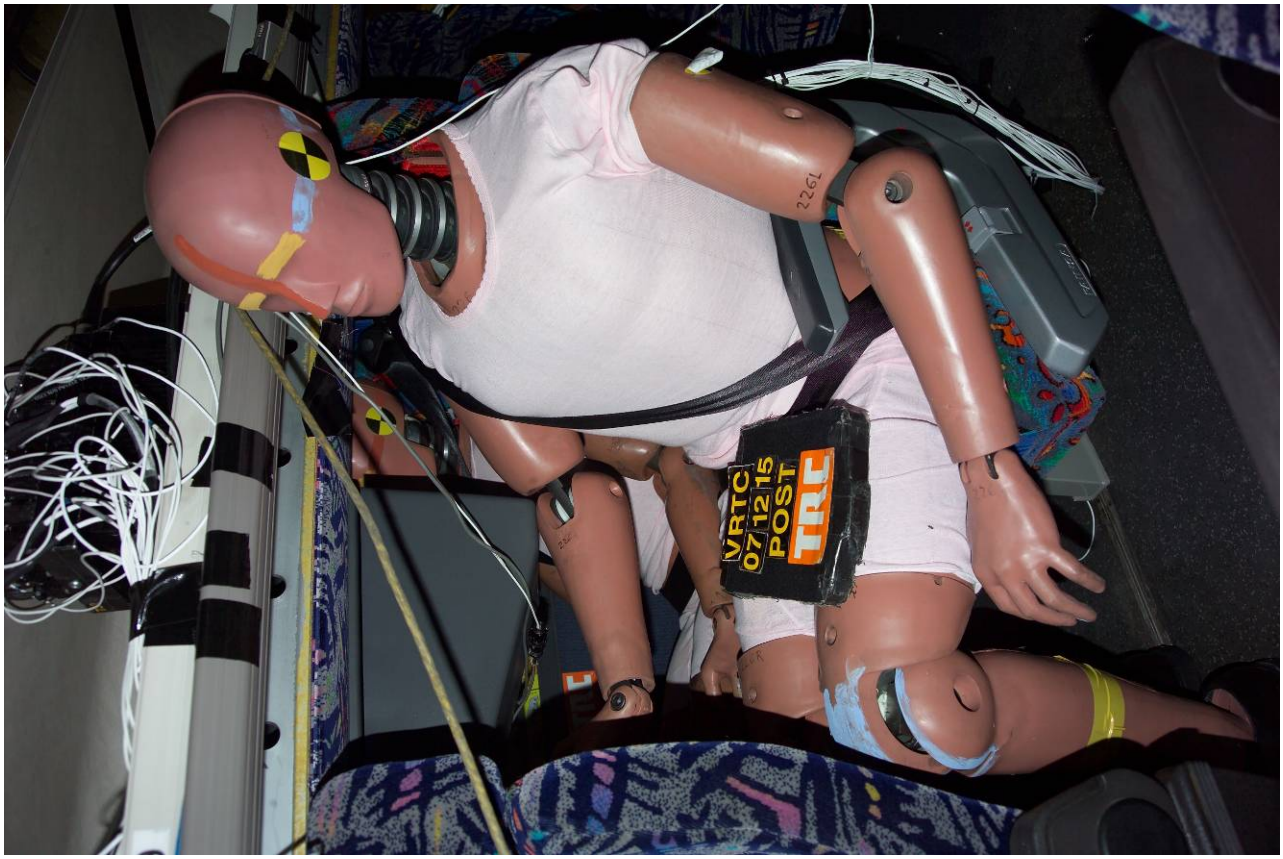

Figure A-136 Post-Test Row 9 Right Side Inboard Dummy Resting Position - View 2

Figure A-137 Pre-Test Row 9 Right Side Inboard Dummy Legs/Feet Position View

Figure A-138 Post-Test Row 9 Right Side Inboard Dummy Head Contact View

Figure A-139 Post-Test Row 9 Right Side Inboard Dummy Knee Contact - View 1

Figure A-140 Post-Test Row 9 Right Side Inboard Dummy Knee Contact - View 2

Figure A-141 Pre-Test Seat 41 and 42 Marker View

Figure A-142 Pre-Test Row 11 Right Side Mark

Figure A-143 Pre-Test Row 11 Right Side Dummies Orthogonal View

Figure A-144 Pre-Test Row 11 Right Side Outboard Dummy Position View

Figure A-145 Pre-Test Row 11 Right Side Outboard Dummy Legs/Feet Position View

Figure A-146 Pre-Test Row 11 Right Side Inboard Dummy Position View

Figure A-147 Post-Test Row 11 Right Side Inboard Dummy Resting Position - View 1

Figure A-148 Post-Test Row 11 Right Side Inboard Dummy Resting Position - View 2

Figure A-149 Pre-Test Row 11 Right Side Inboard Dummy Legs/Feet Position View

Figure A-150 Pre-Test Seat 49 and 50 Marker View

Figure A-151 Pre-Test Row 13 Right Side Mark

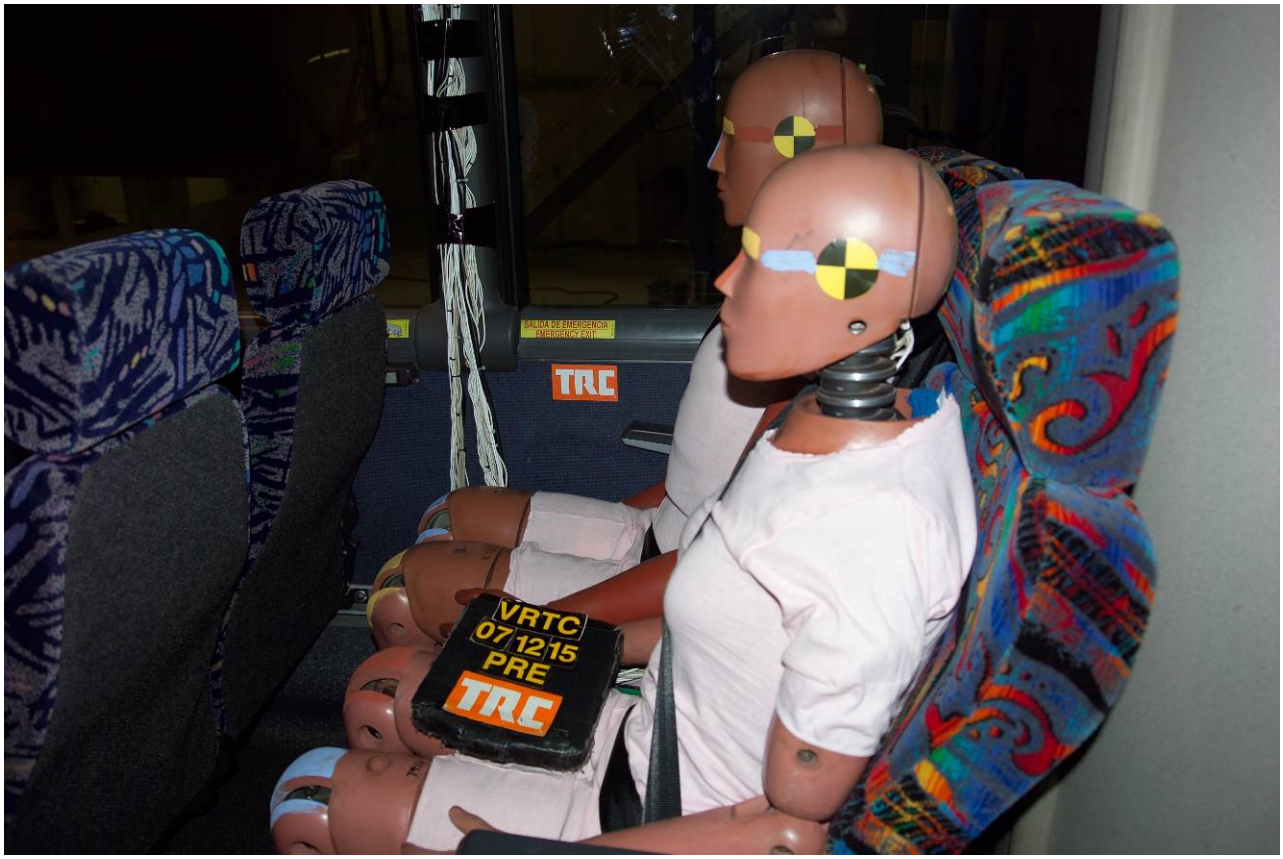

Figure A-152 Pre-Test Row 13 Right Side Dummies Orthogonal View

Figure A-153 Pre-Test Row 13 Right Side Outboard Dummy Position View

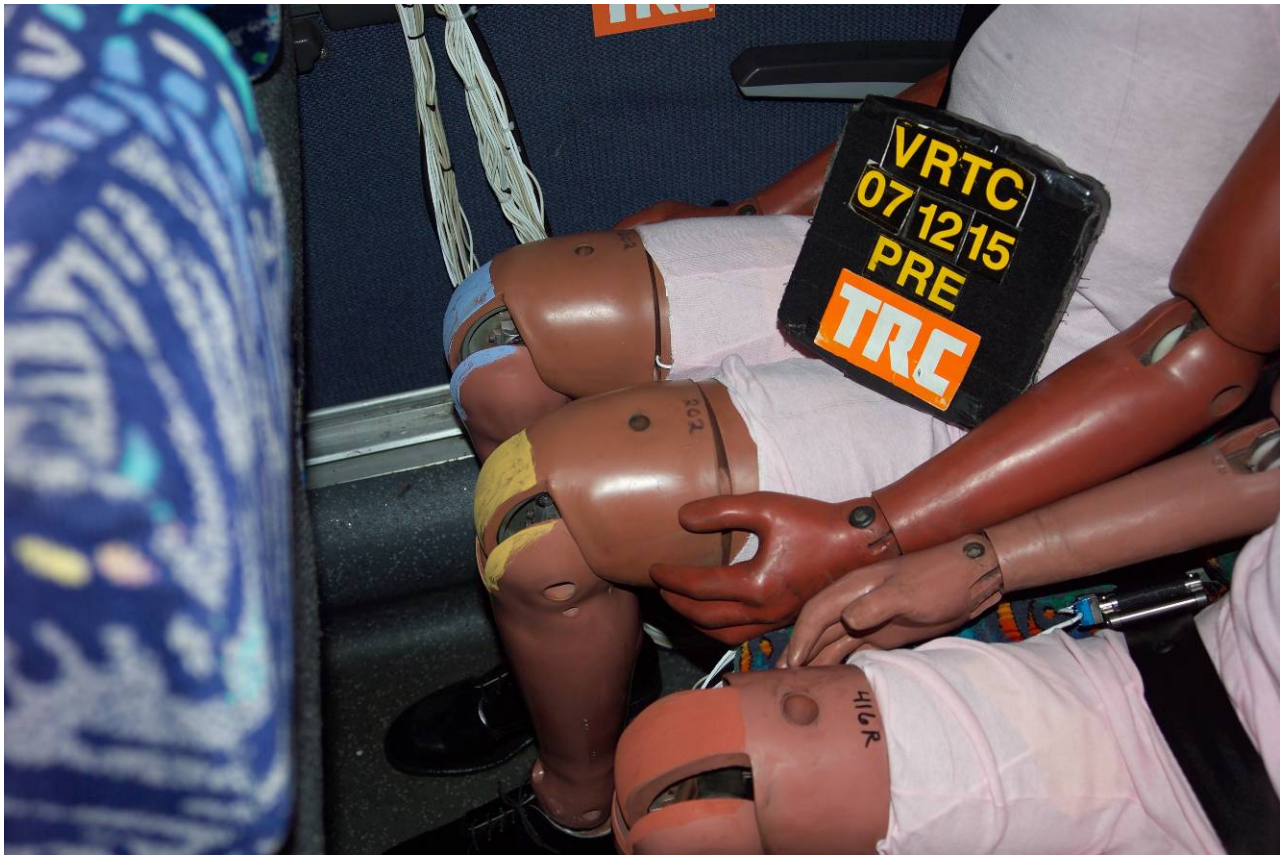

Figure A-154 Pre-Test Row 13 Right Side Outboard Dummy Legs/Feet Position View

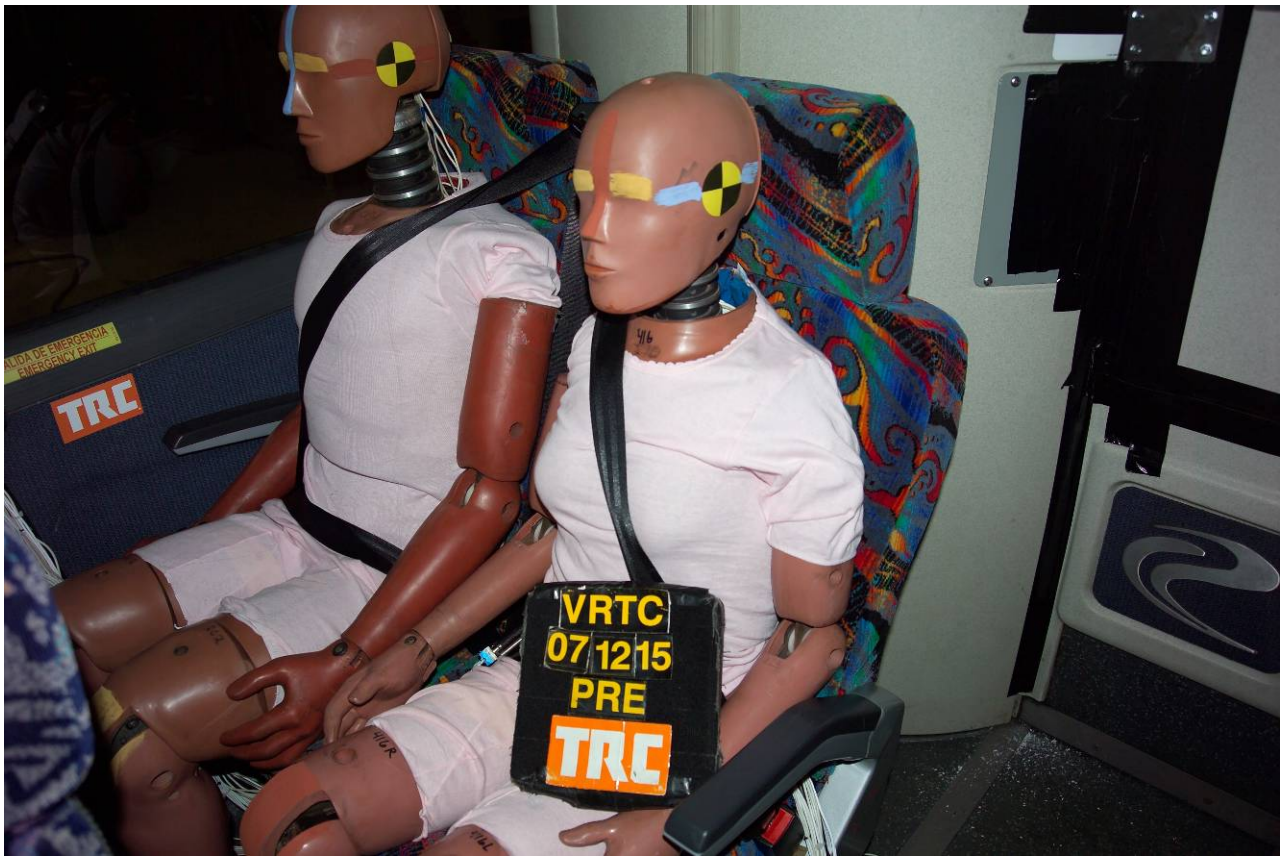

Figure A-155 Pre-Test Row 13 Right Side Inboard Dummy Position View

Figure A-156 Post-Test Row 13 Right Side Inboard Dummy Resting Position View

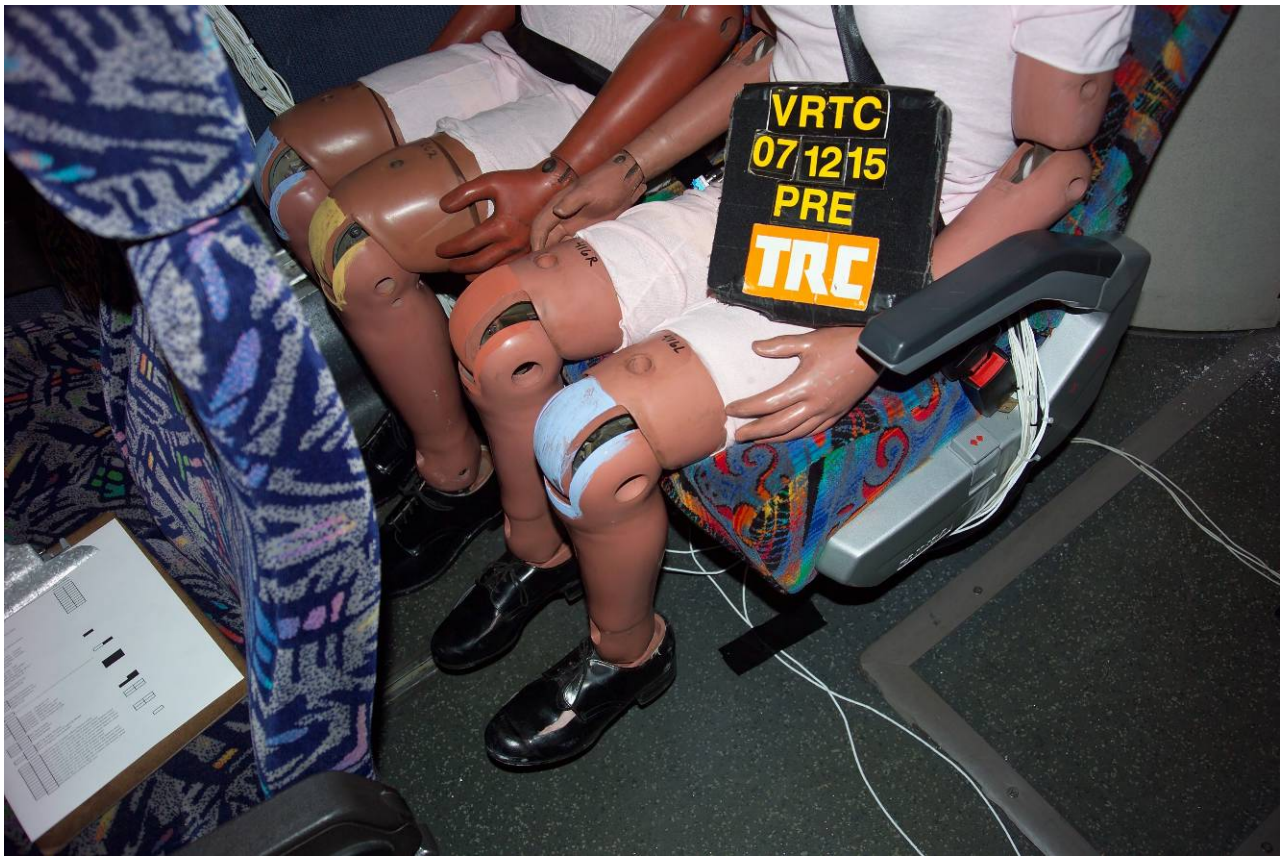

Figure A-157 Pre-Test Row 13 Right Side Inboard Dummy Legs/Feet Position View

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Figure A-158 Post-Test Row 13 Right Side Outboard Dummy Knee Contact - View 1

Figure A-159 Post-Test Row 13 Right Side Outboard Dummy Knee Contact - View 2

Figure A-160 Pre-Test Seat 19 and 20 Marker View

Figure A-161 Pre-Test Row 5 Left Side Mark

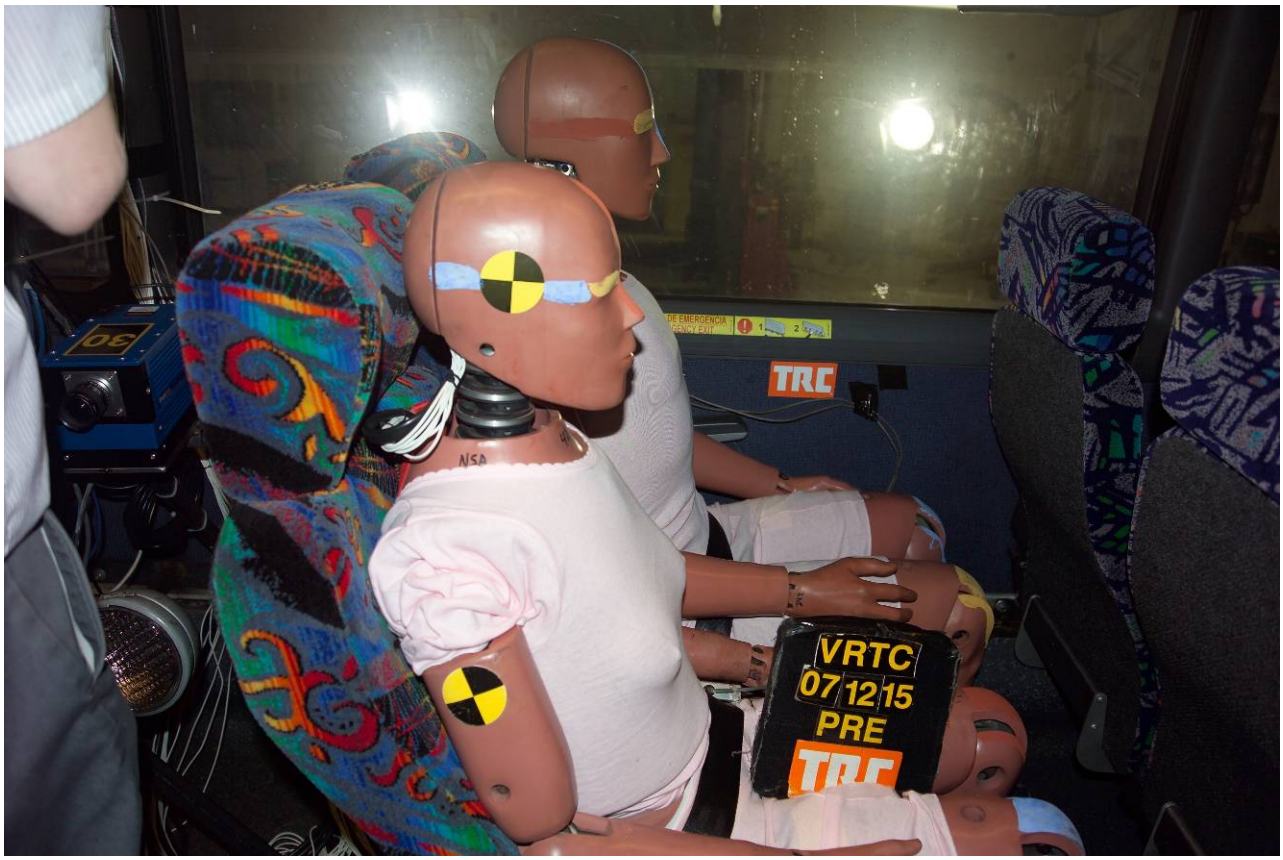

Figure A-162 Pre-Test Row 5 Left Side Dummies Orthogonal View

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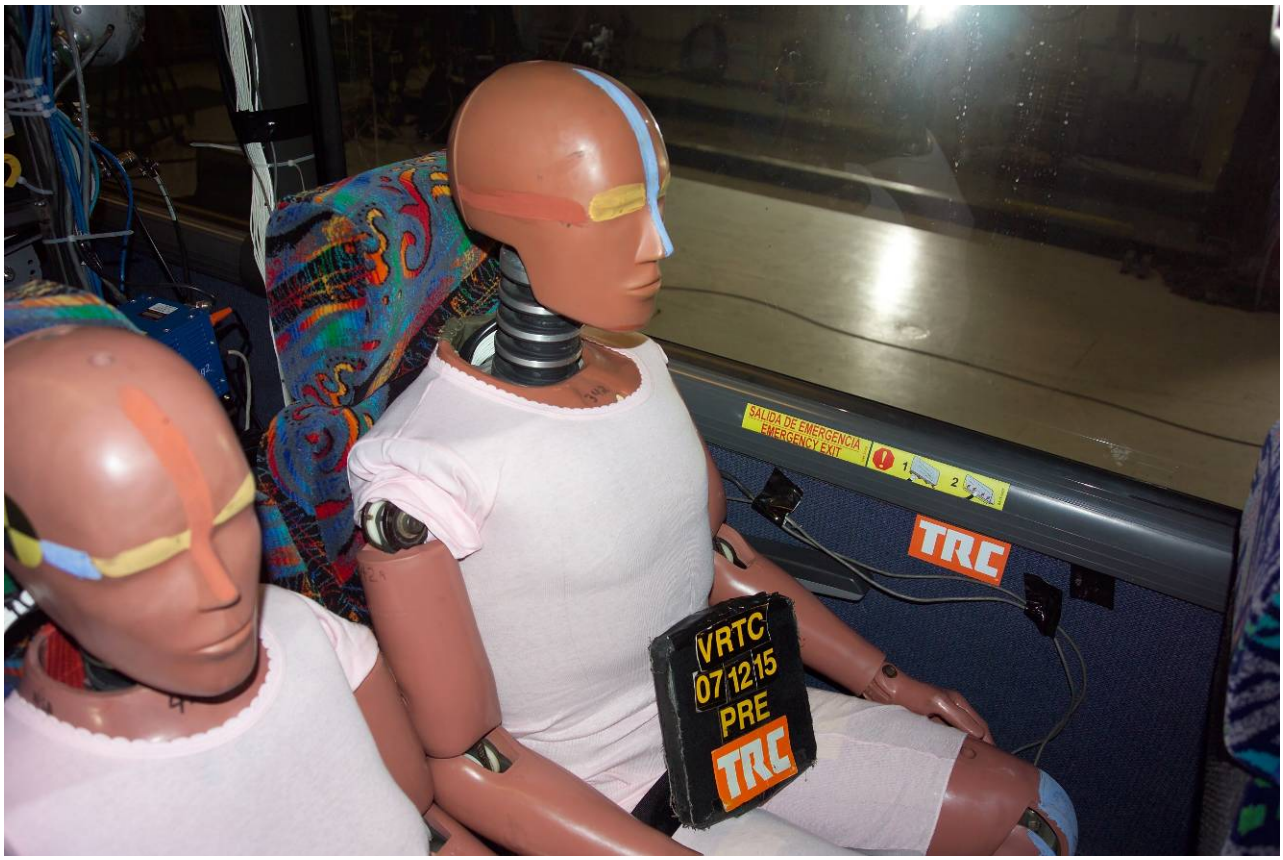

Figure A-163 Pre-Test Row 5 Left Side Outboard Dummy Position View

Figure A-164 Post-Test Row 5 Left Side Outboard Dummy Resting Position View

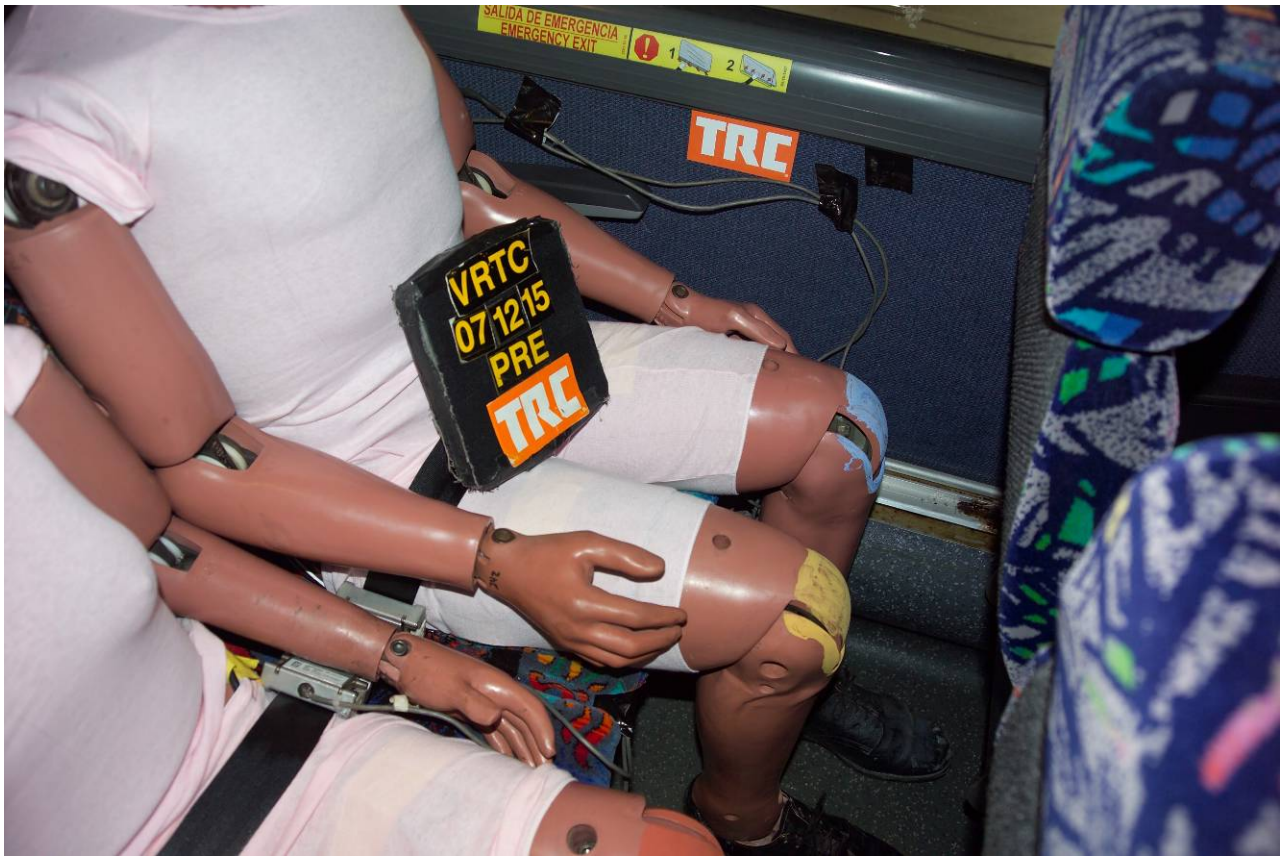

Figure A-165 Pre-Test Row 5 Left Side Outboard Dummy Legs/Feet Position View

Figure A-166 Post-Test Row 5 Left Side Outboard Dummy Legs/Feet Position View

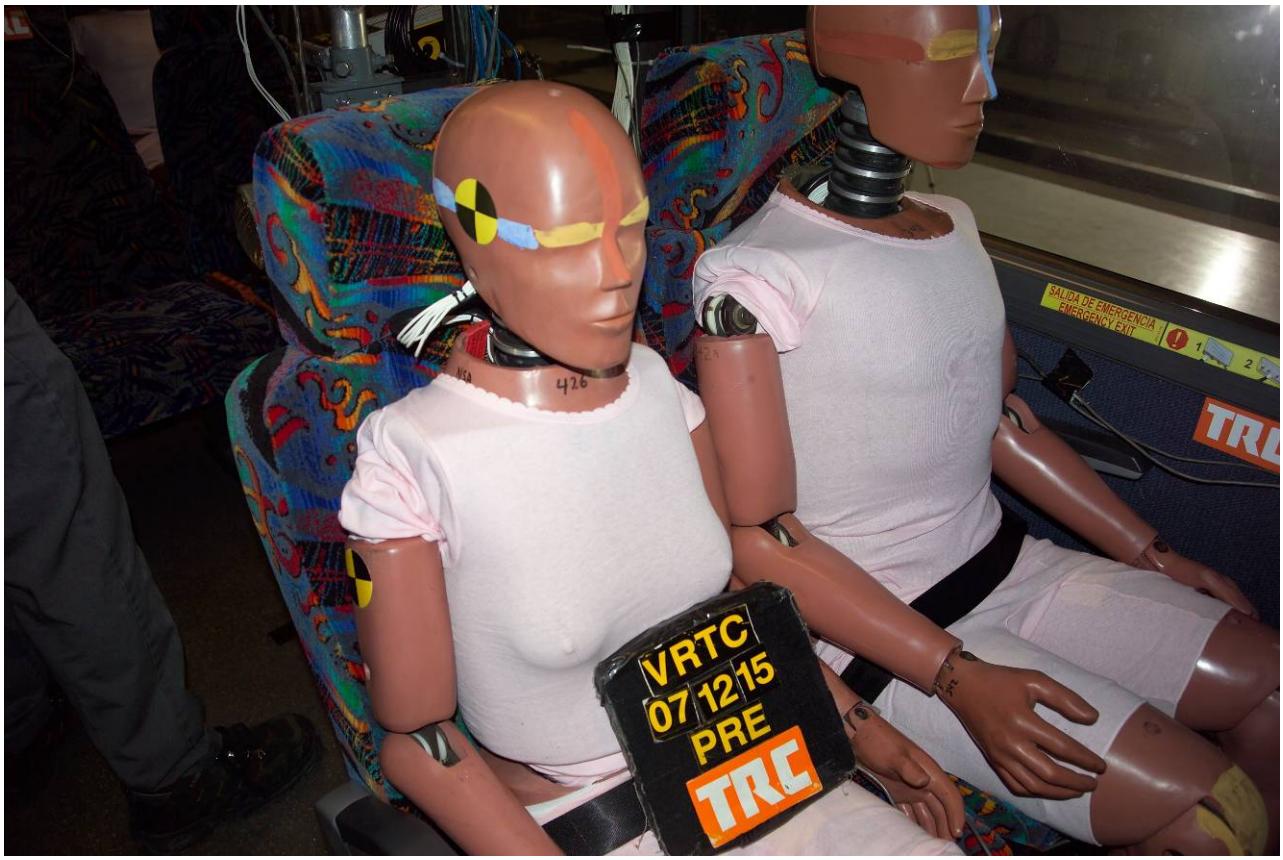

Figure A-167 Pre-Test Row 5 Left Side Inboard Dummy Position View

Figure A-168 Post-Test Row 5 Left Side Inboard Dummy Resting Position - View 1

Figure A-169 Post-Test Row 5 Left Side Inboard Dummy Resting Position - View 2

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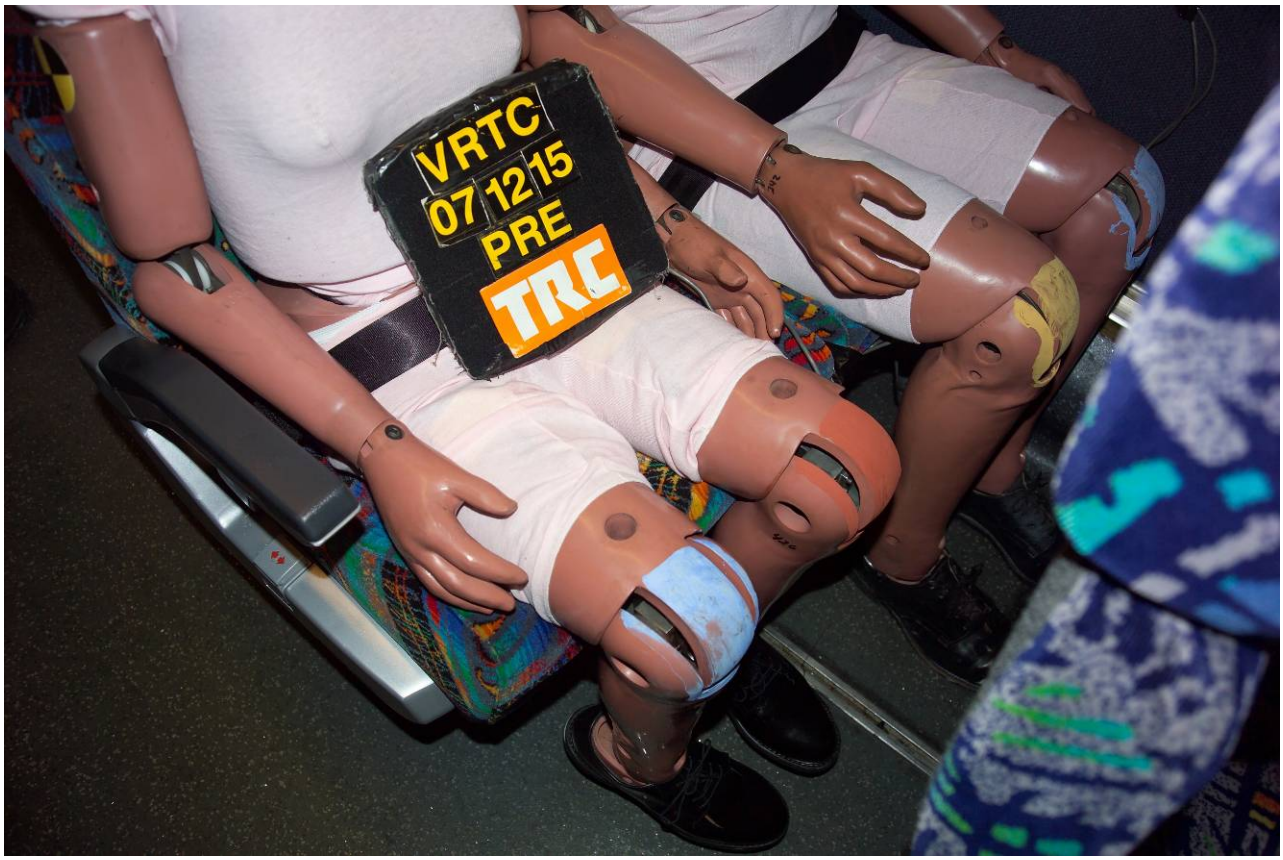

Figure A-170 Pre-Test Row 5 Left Side Inboard Dummy Legs/Feet Position View

Figure A-171 Post-Test Row 5 Left Side Inboard Dummy Legs/Feet Position View

Figure A-172 Post-Test Row 5 Left Side Dummy Contact View

Figure A-173 Post-Test Row 5 Left Side Outboard Dummy Knee Contact View

Figure A-174 Post-Test Row 5 Left Side Inboard Dummy Head Contact View

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Figure A-175 Pre-Test Seat 31 and 32 Marker View

Figure A-176 Pre-Test Row 8 Left Side Mark

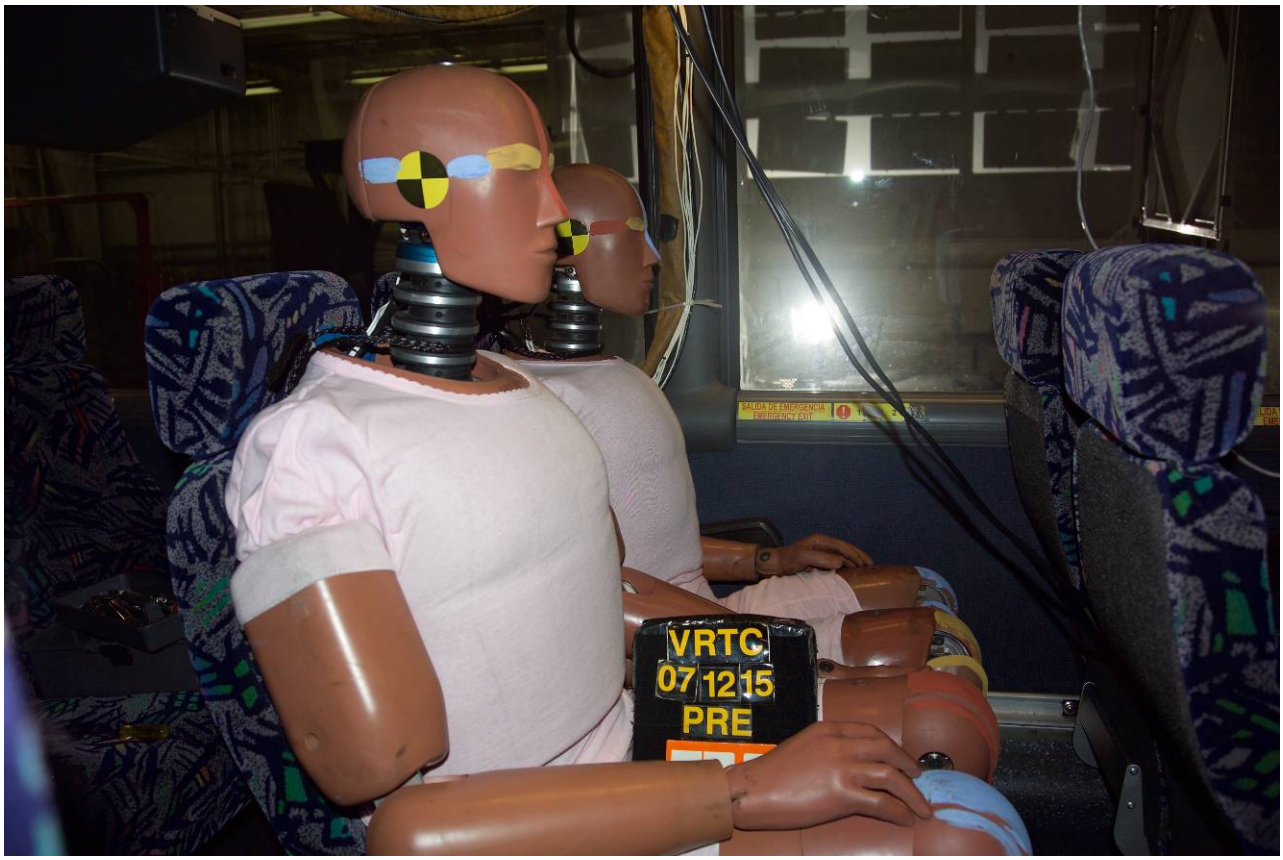

Figure A-177 Pre-Test Row 8 Left Side Dummies Orthogonal View

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Figure A-178 Pre-Test Row 8 Left Side Outboard Dummy Position View

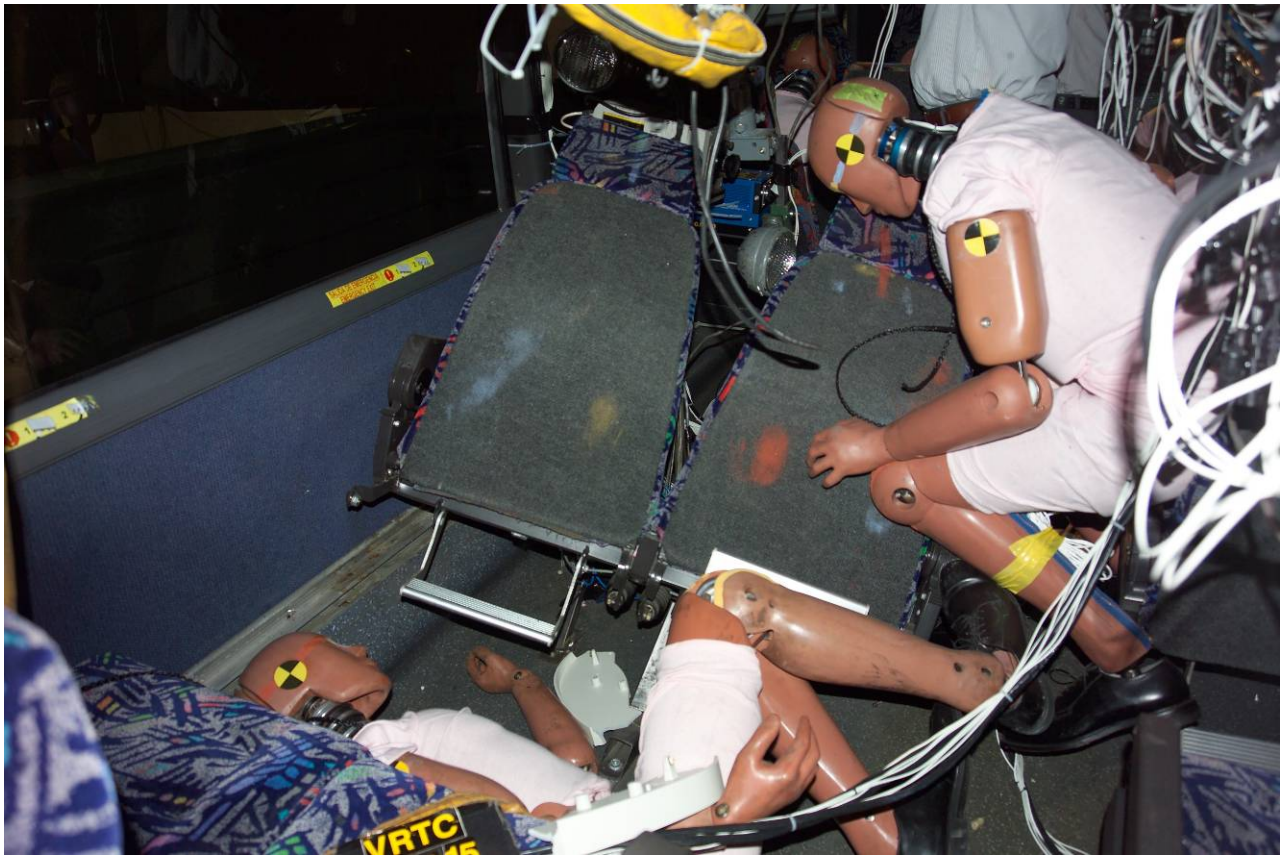

Figure A-179 Post-Test Row 8 Left Side Outboard Dummy Resting Position View

Figure A-180 Pre-Test Row 8 Left Side Outboard Dummy Legs/Feet Position View

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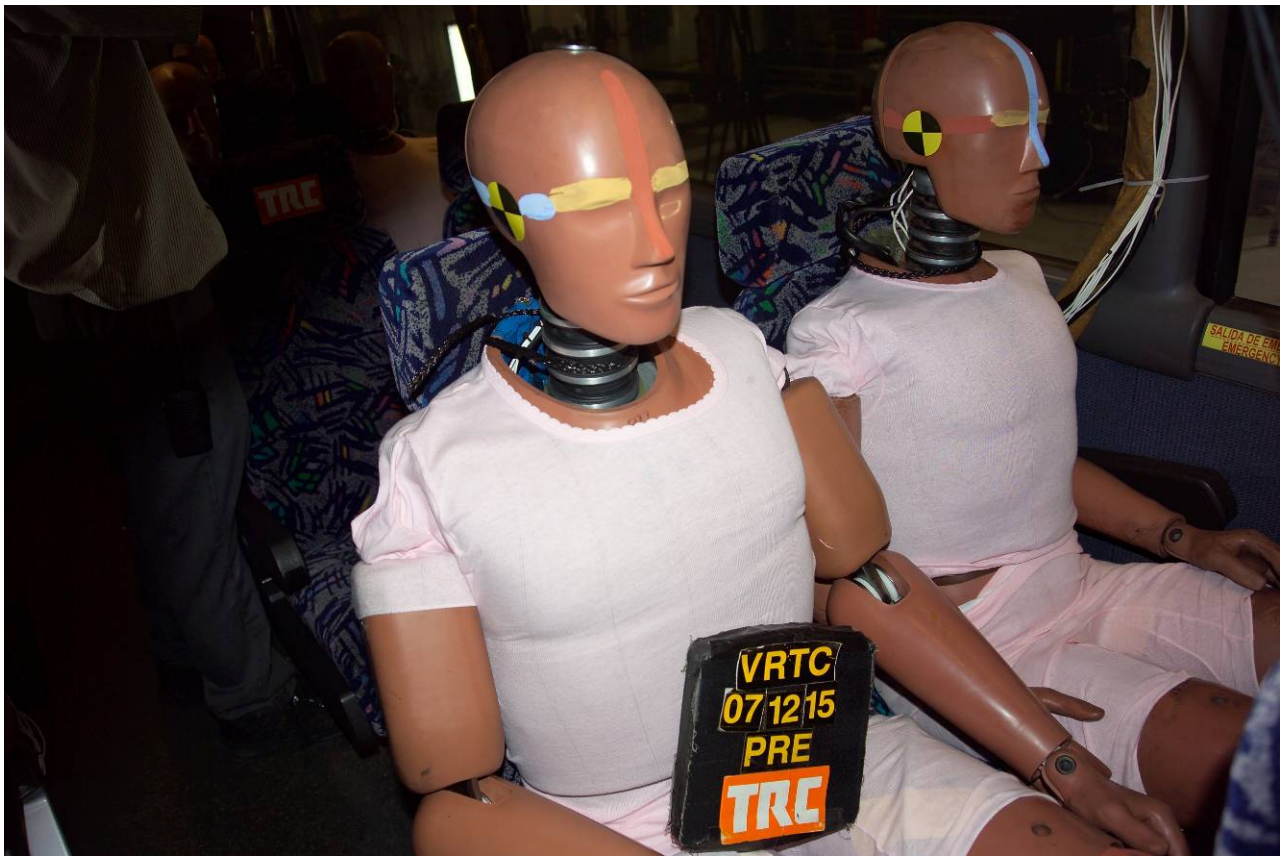


Figure A-181 Pre-Test Row 8 Left Side Inboard Dummy Position View

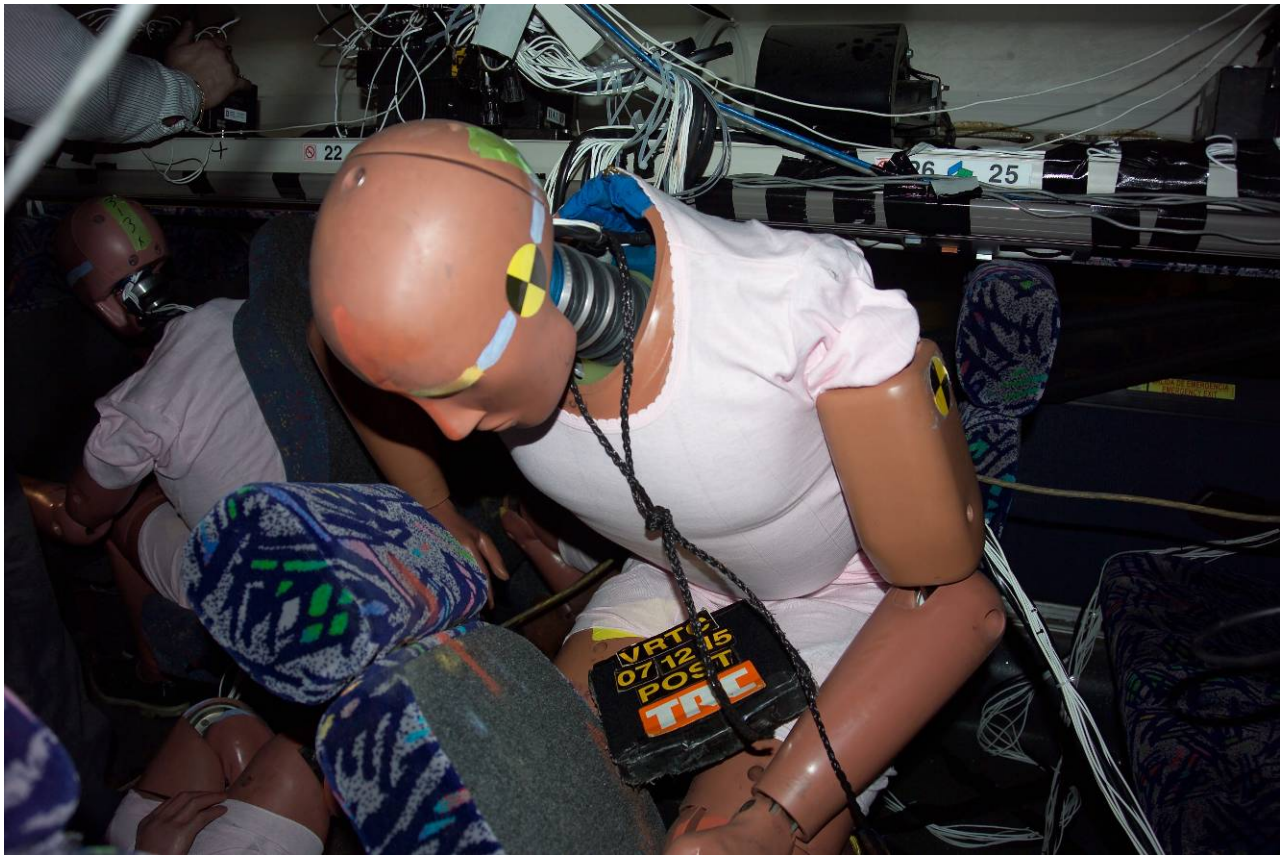


Figure A-182 Post-Test Row 8 Left Side Inboard Dummy Resting Position View

Figure A-183 Pre-Test Row 8 Left Side Inboard Dummy Legs/Feet Position View

Figure A-184 Pre-Test Row 8 Left Side Dummy Contact

Figure A-185 Pre-Test Row 8 Left Side Outboard Dummy Head Contact View

Figure A-186 Pre-Test Row 8 Left Side Outboard Dummy Knee Contact View

Figure A-187 Pre-Test Row 8 Left Side Inboard Dummy Head Contact View

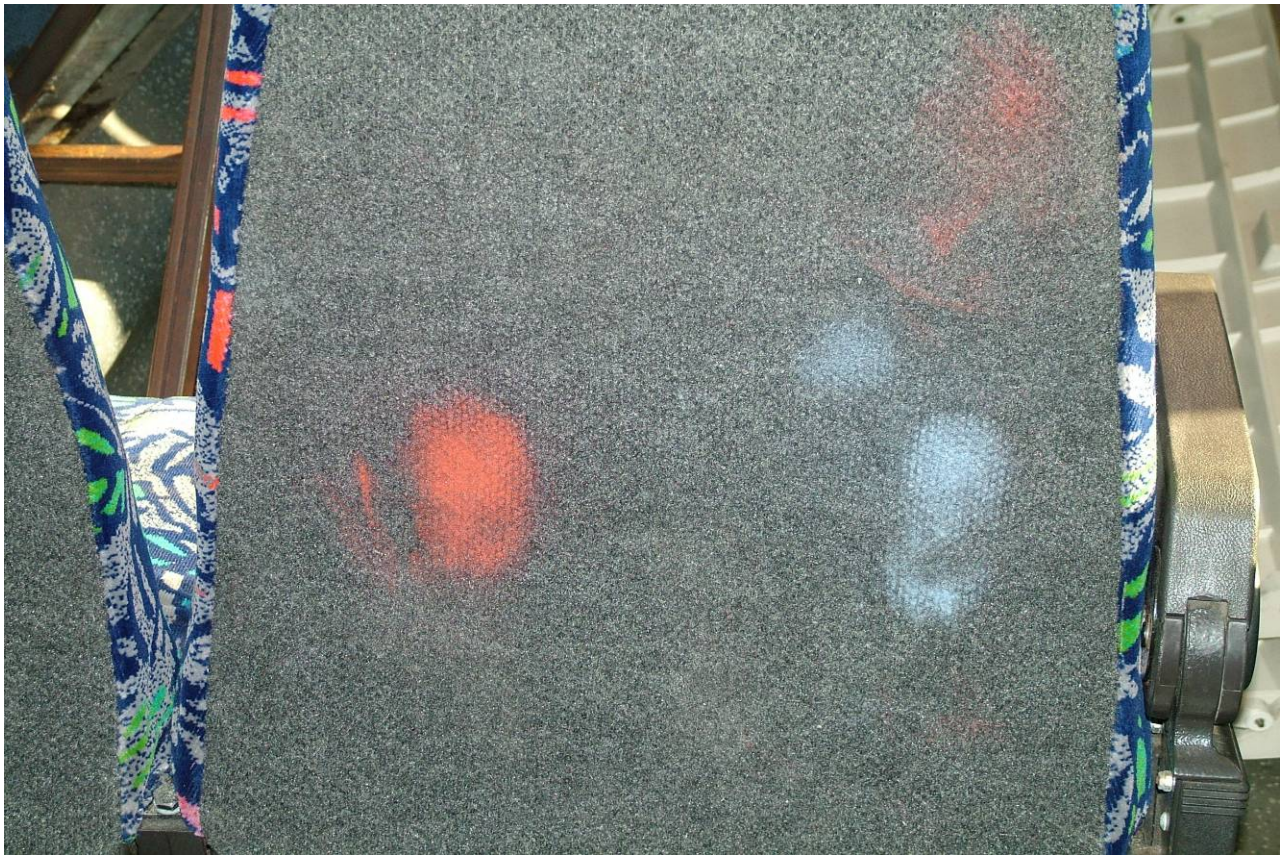


Figure A-188 Pre-Test Row 8 Left Side Inboard Dummy Knee Contact View

Figure A-189 Pre-Test Row 8 Left Side Seat Anchorage Damage - View 1

Figure A-190 Pre-Test Row 8 Left Side Seat Anchorage Damage - View 2

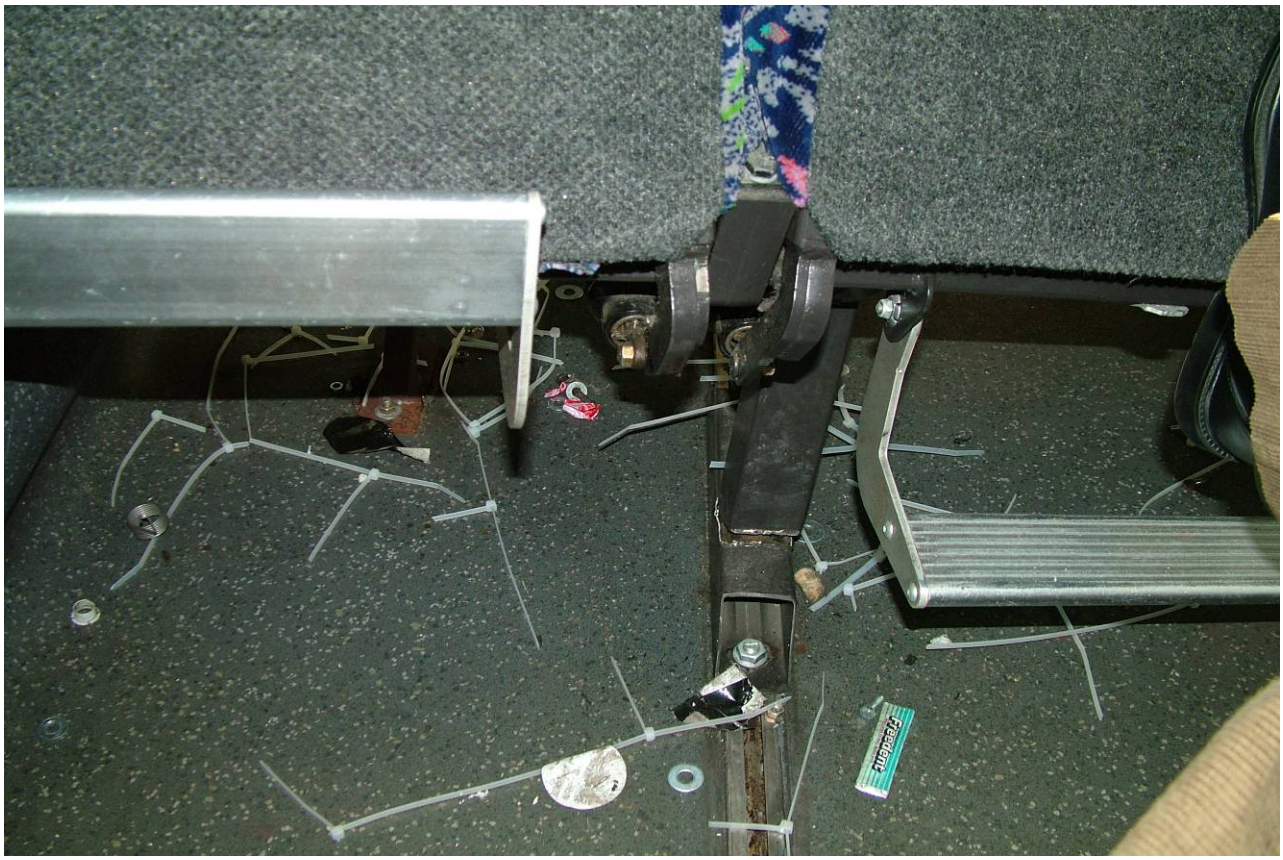


Figure A-191 Pre-Test Row 8 Left Side Seat Anchorage Damage - View 3

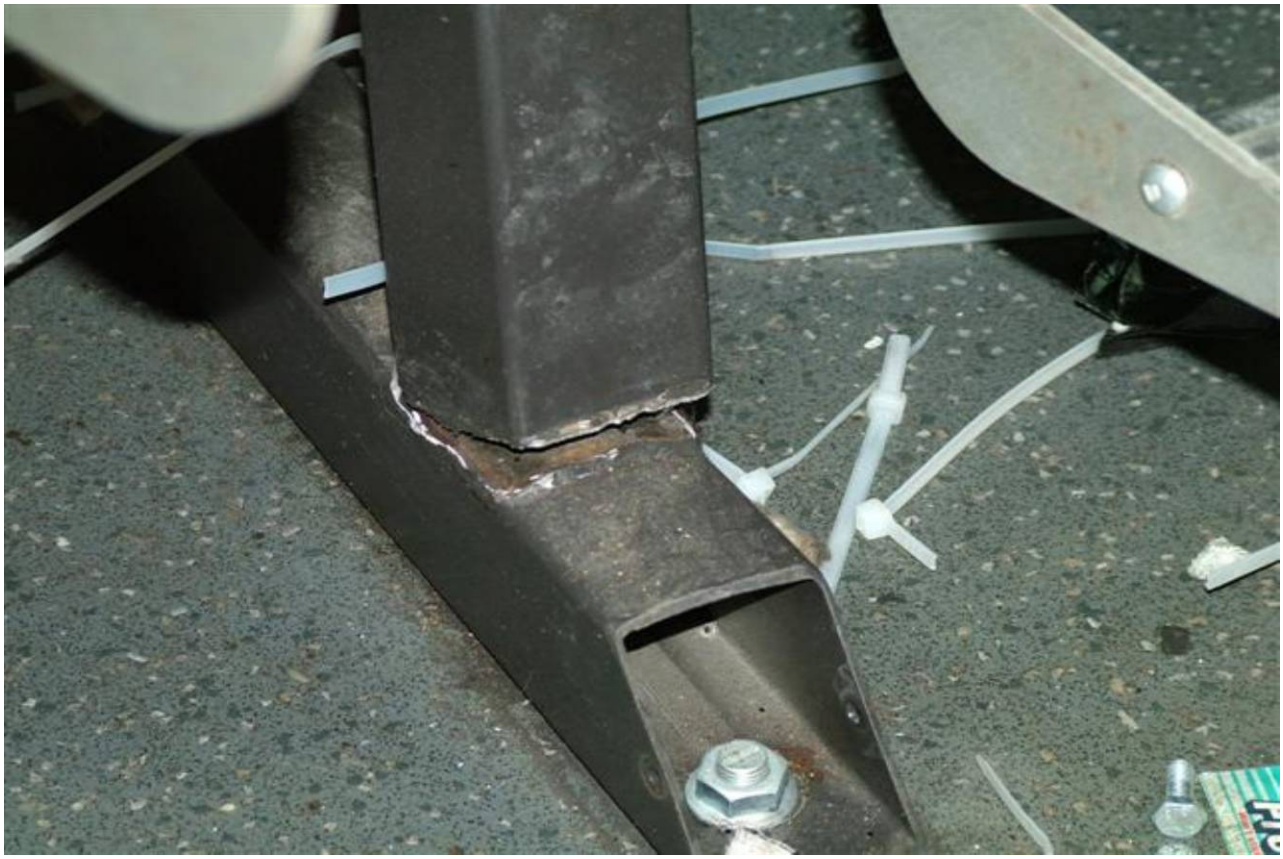


Figure A-192 Pre-Test Row 8 Left Side Seat Anchorage Damage - View 4

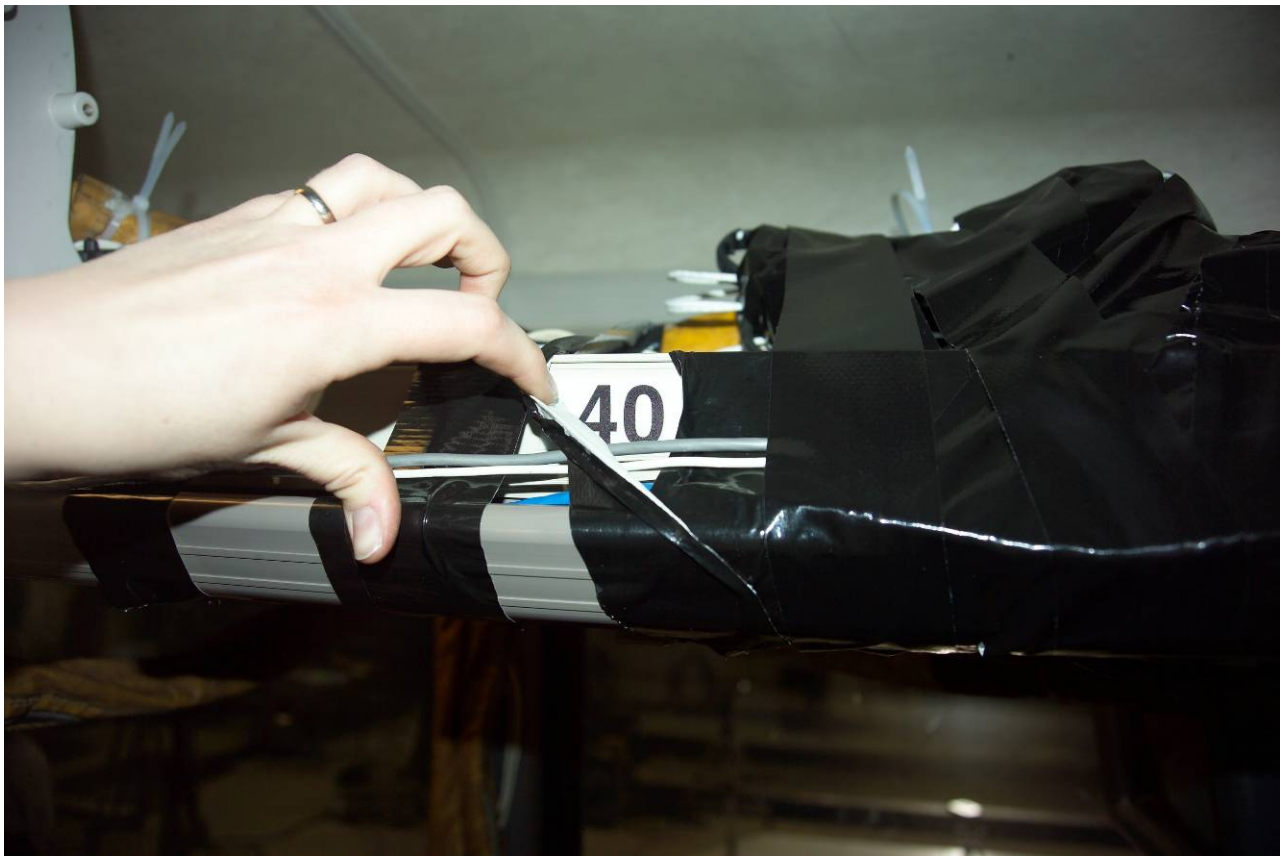


Figure A-193 Pre-Test Seat 39 and 40 Marker View

Figure A-194 Pre-Test Row 10 Left Side Mark

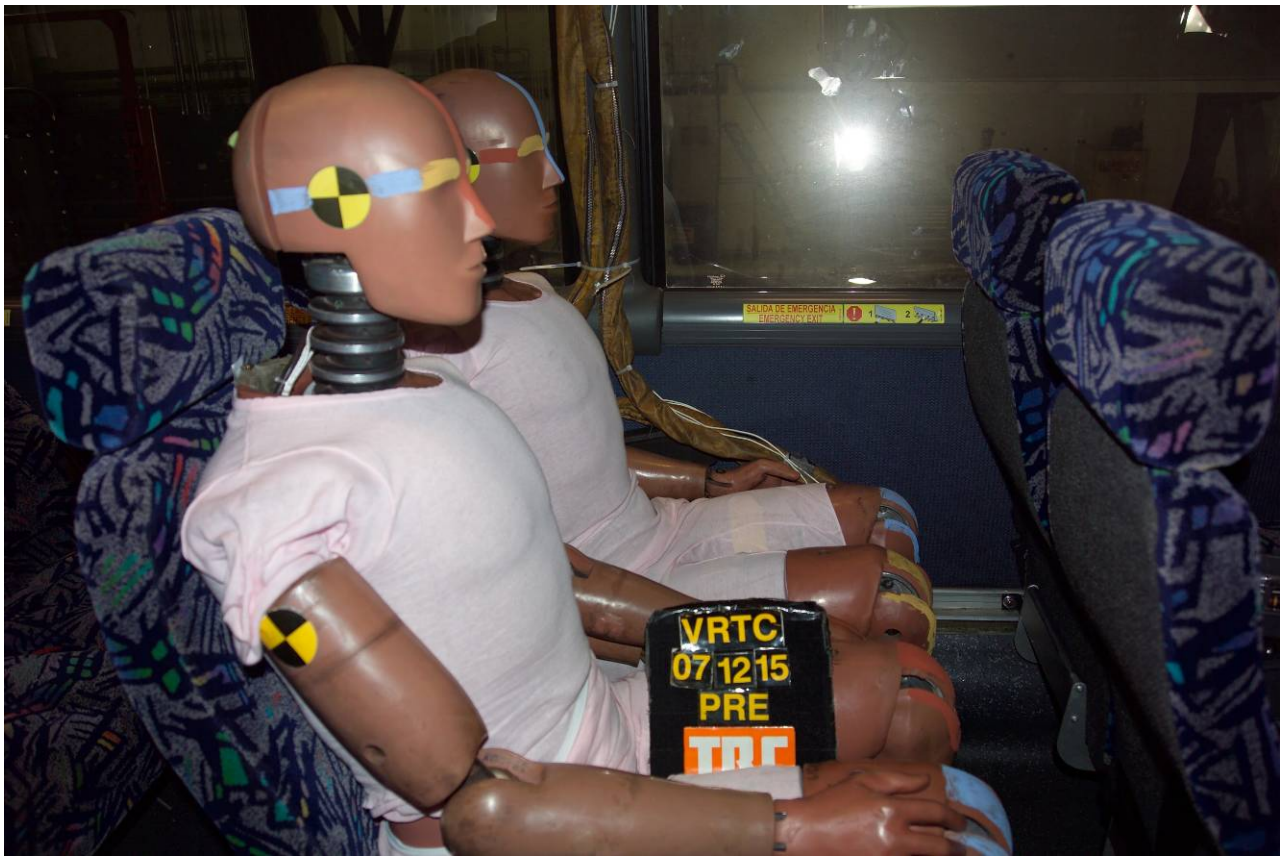


Figure A-195 Pre-Test Row 10 Left Side Dummies Orthogonal View

Figure A-196 Pre-Test Row 10 Left Side Outboard Dummy Position View

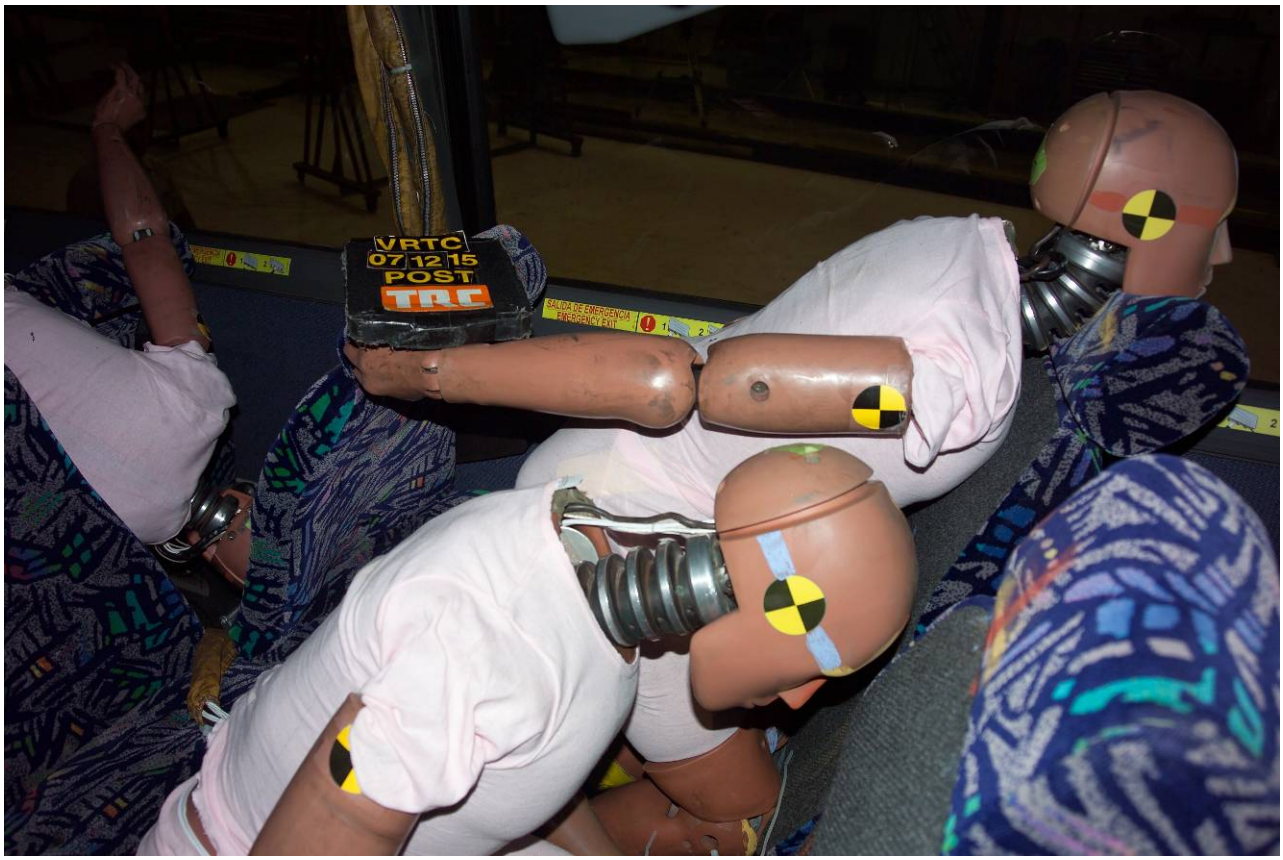


Figure A-197 Post-Test Row 10 Left Side Outboard Dummy Resting Position - View 1

Figure A-198 Post-Test Row 10 Left Side Outboard Dummy Resting Position - View 2

Figure A-199 Post-Test Row 10 Left Side Outboard Dummy Resting Position - View 3

Figure A-200 Pre-Test Row 10 Left Side Outboard Dummy Legs/Feet Position View

Figure A-201 Pre-Test Row 10 Left Side Inboard Dummy Position View

Figure A-202 Post-Test Row 10 Left Side Inboard Dummy Resting Position View

Figure A-203 Pre-Test Row 10 Left Side Inboard Dummy Legs/Feet Position View

Figure A-204 Pre-Test Row 10 Left Side Dummy Contact

Figure A-205 Pre-Test Row 10 Left Side Outboard Dummy Head Contact View

Figure A-206 Pre-Test Row 10 Left Side Outboard Dummy Knee Contact View

Figure A-207 Pre-Test Row 10 Left Side Inboard Dummy Head Contact View

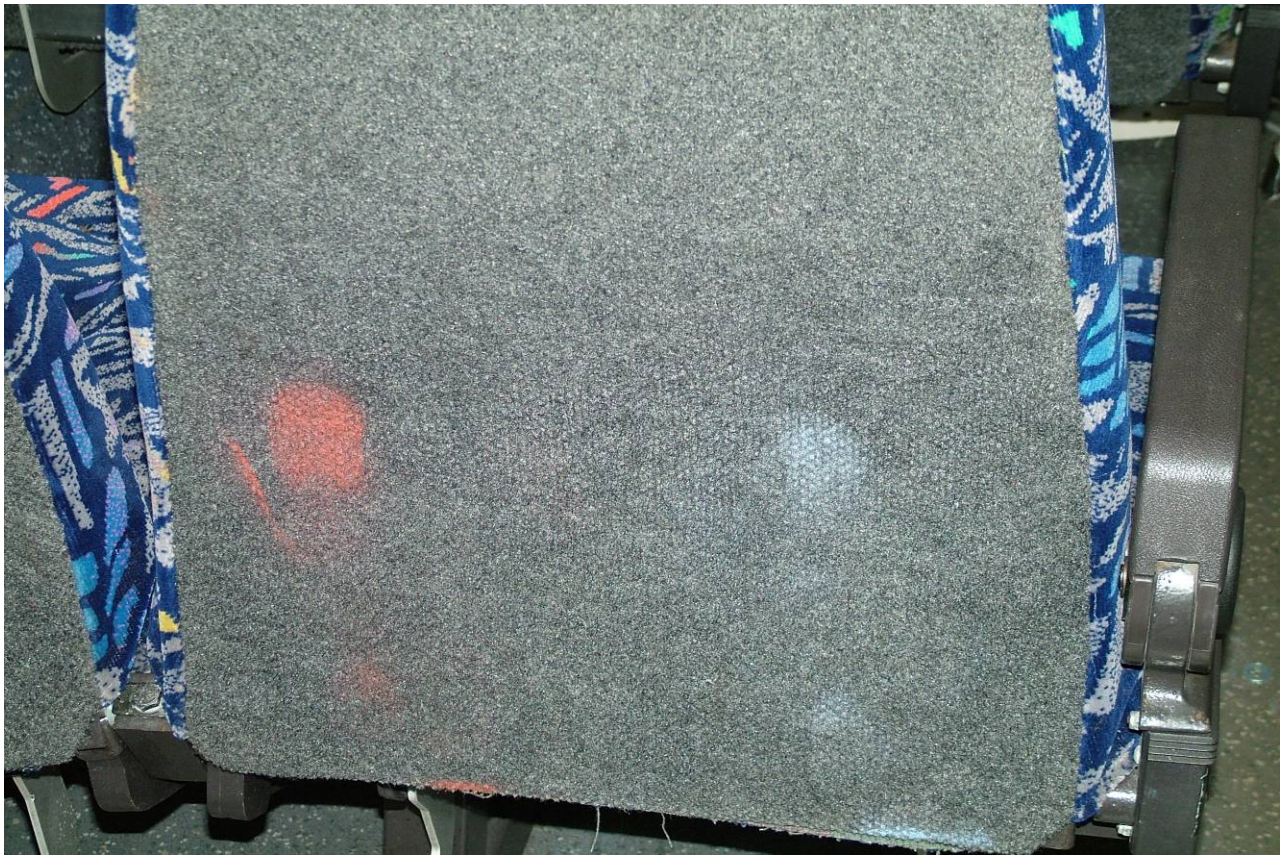


Figure A-208 Pre-Test Row 10 Left Side Inboard Dummy Knee Contact View

Figure A-209 Pre-Test Seat 47 and 48 Marker View

Figure A-210 Pre-Test Row 12 Left Side Mark

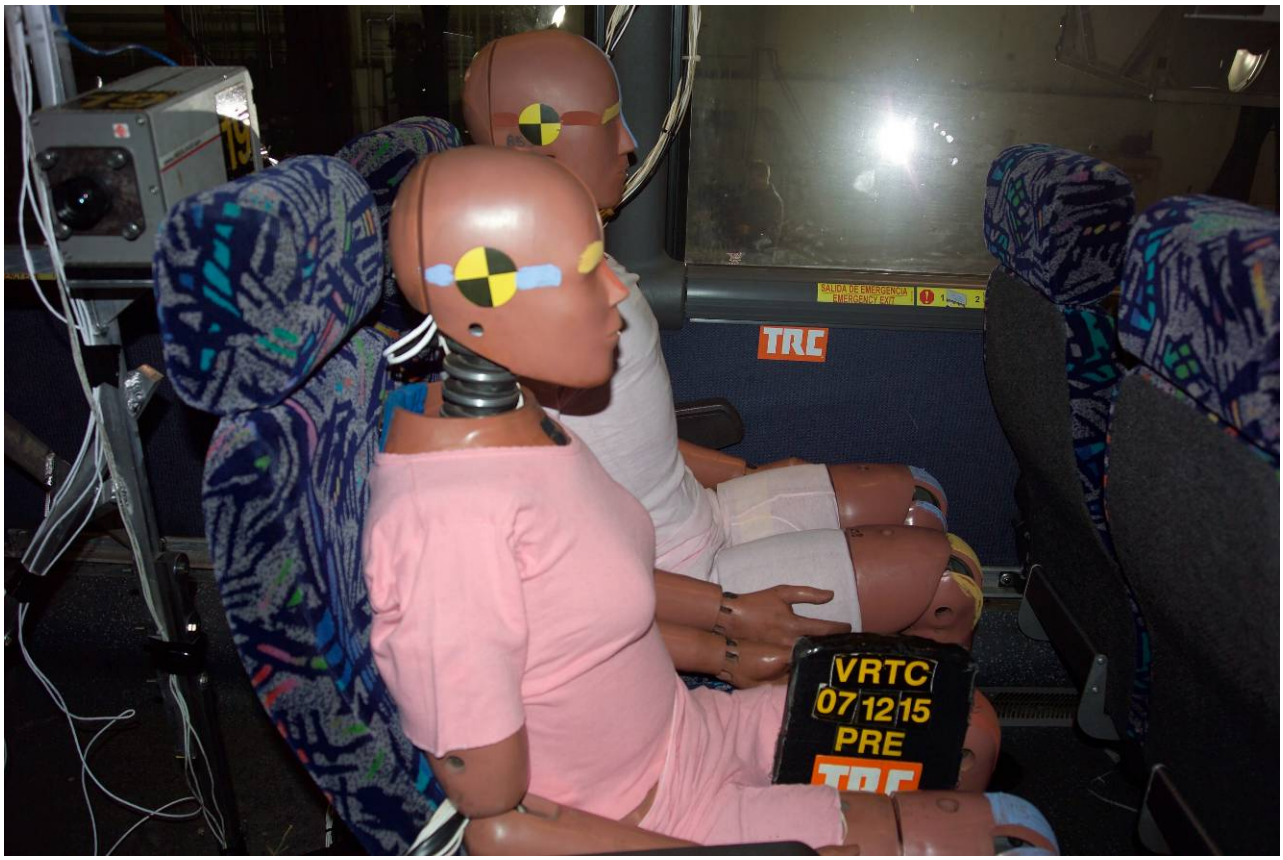


Figure A-211 Pre-Test Row 12 Left Side Dummies Orthogonal View

Figure A-212 Post-Test Row 12 Left Side Dummies/Seats Orthogonal View

Figure A-213 Pre-Test Row 12 Left Side Outboard Dummy Position View

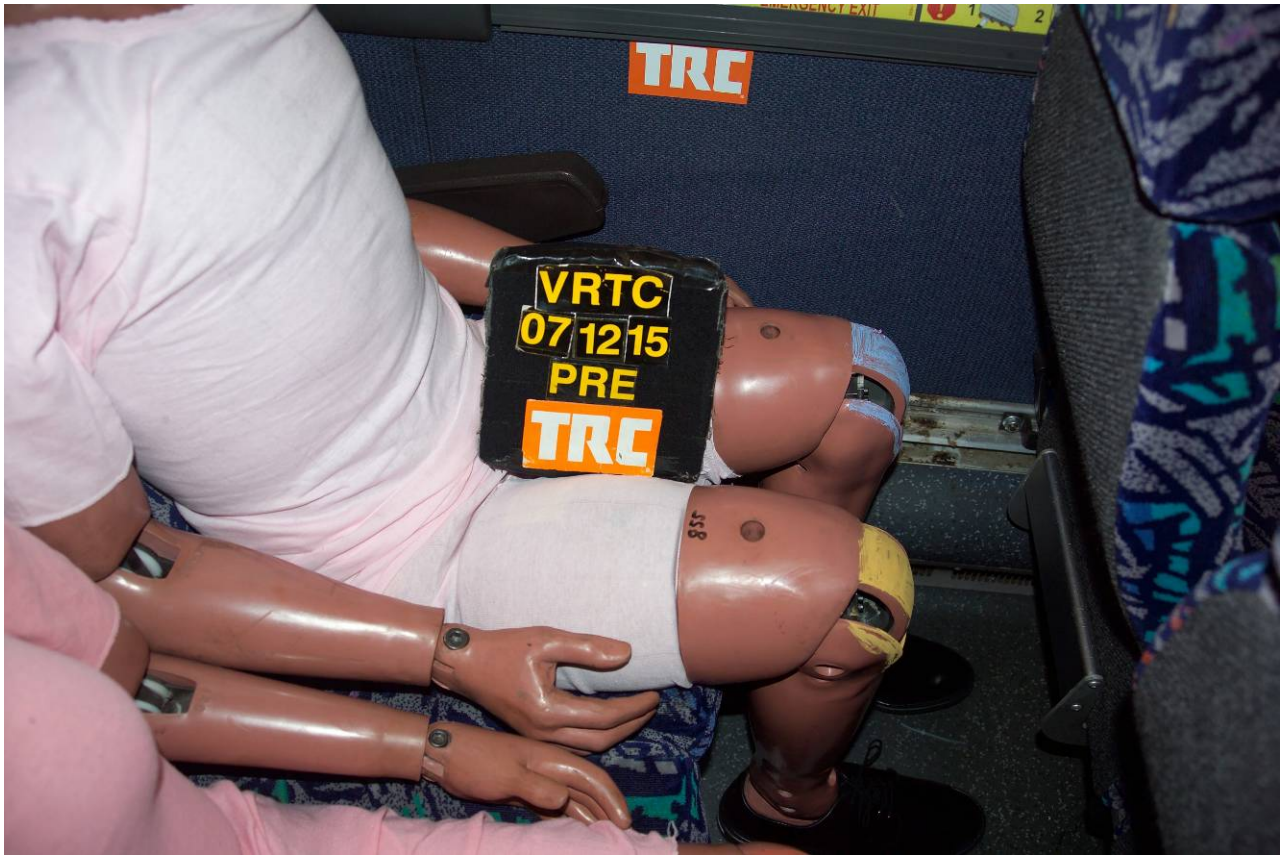


Figure A-214 Pre-Test Row 12 Left Side Outboard Dummy Legs/Feet Position View

Figure A-215 Pre-Test Row 12 Left Side Inboard Dummy Position View

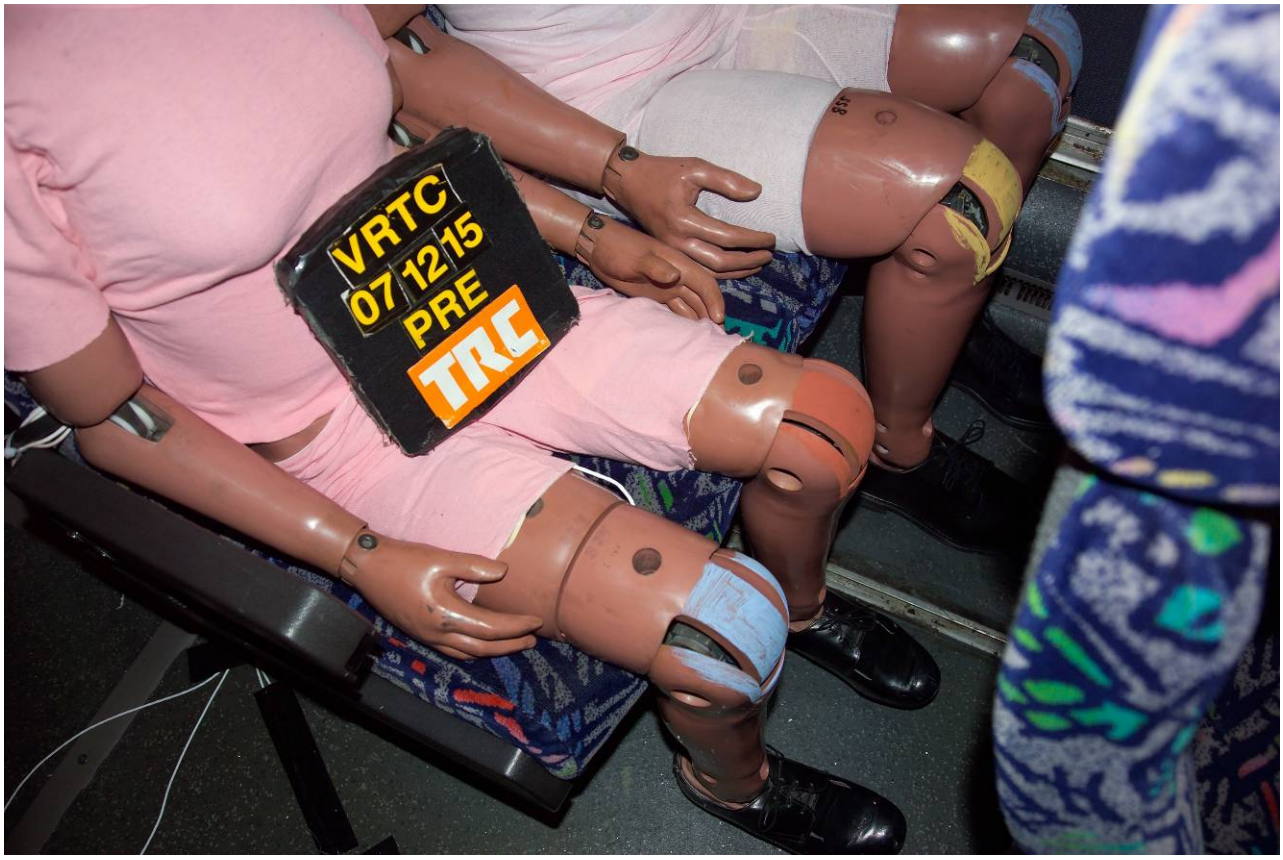


Figure A-216 Pre-Test Row 12 Left Side Inboard Dummy Legs/Feet Position View

Figure A-217 Post-Test Row 12 Left Side Outboard & Inboard Dummy Resting Positions - View 1

Figure A-218 Post-Test Row 12 Left Side Outboard & Inboard Dummy Resting Positions - View 2

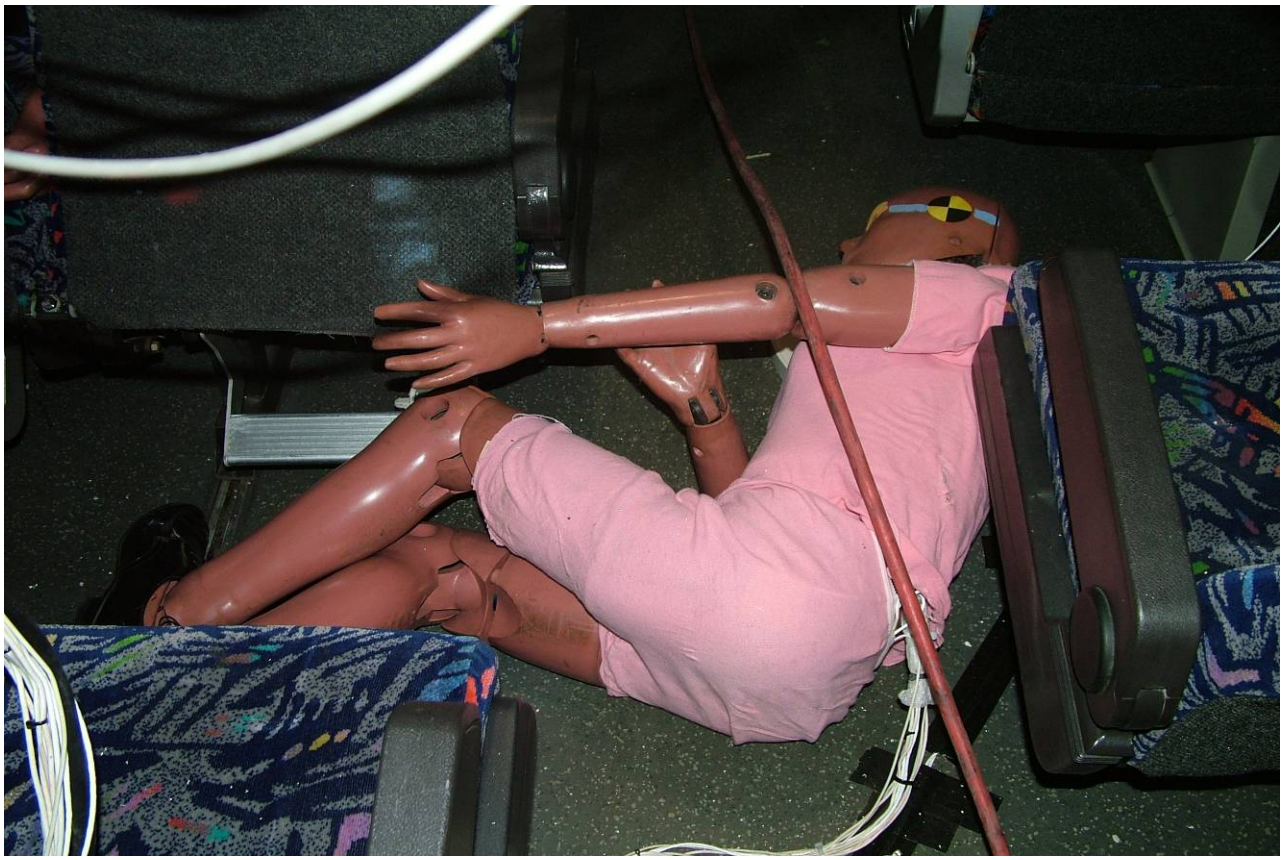


Figure A-219 Post-Test Row 12 Left Side Outboard & Inboard Dummy Resting Positions - View 3

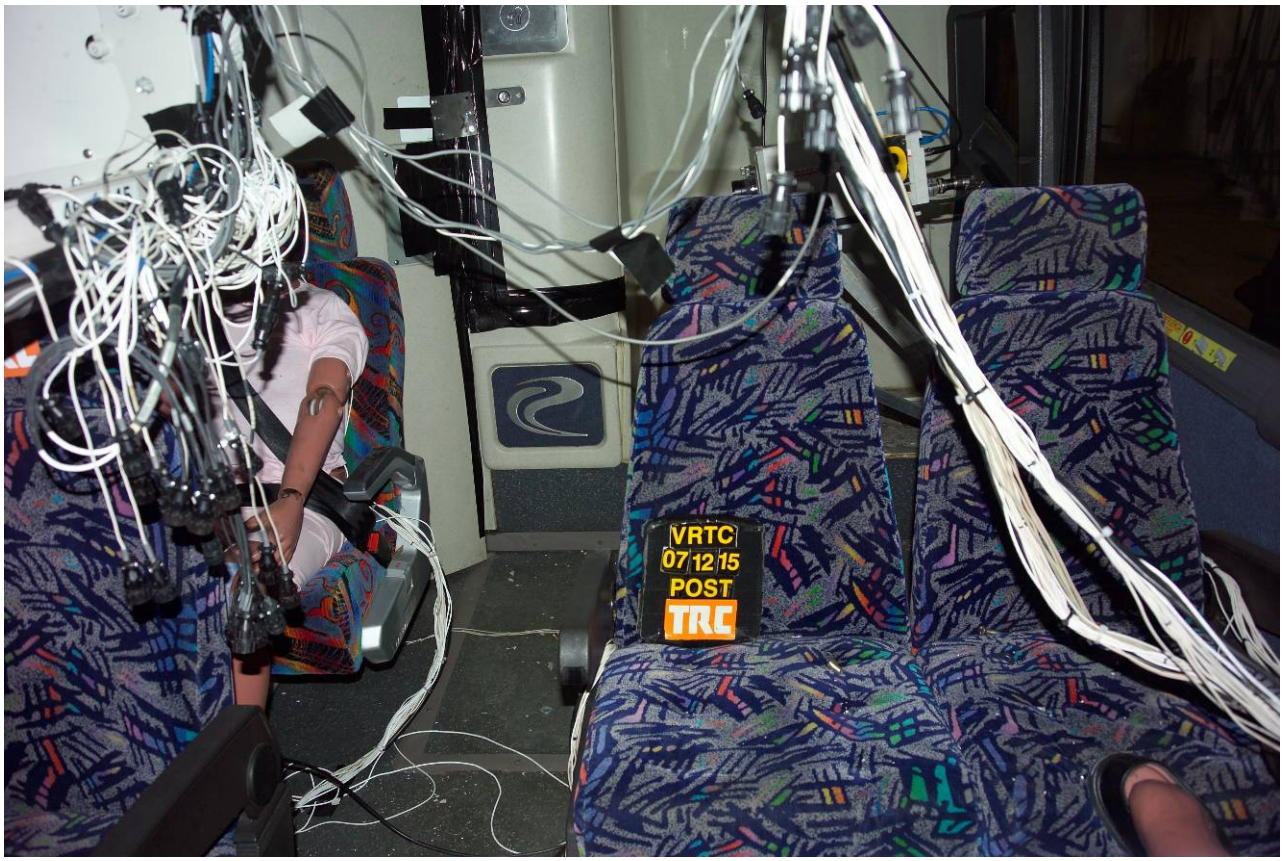


Figure A-220 Post-Test Row 12 Left Side Seats View

Figure A-221 Post-Test Row 12 Left Side Dummy Contacts

Figure A-222 Post-Test Row 12 Left Side Outboard Dummy Knee Contact View

Figure A-223 Post-Test Row 12 Left Side Inboard Dummy Head Contact View

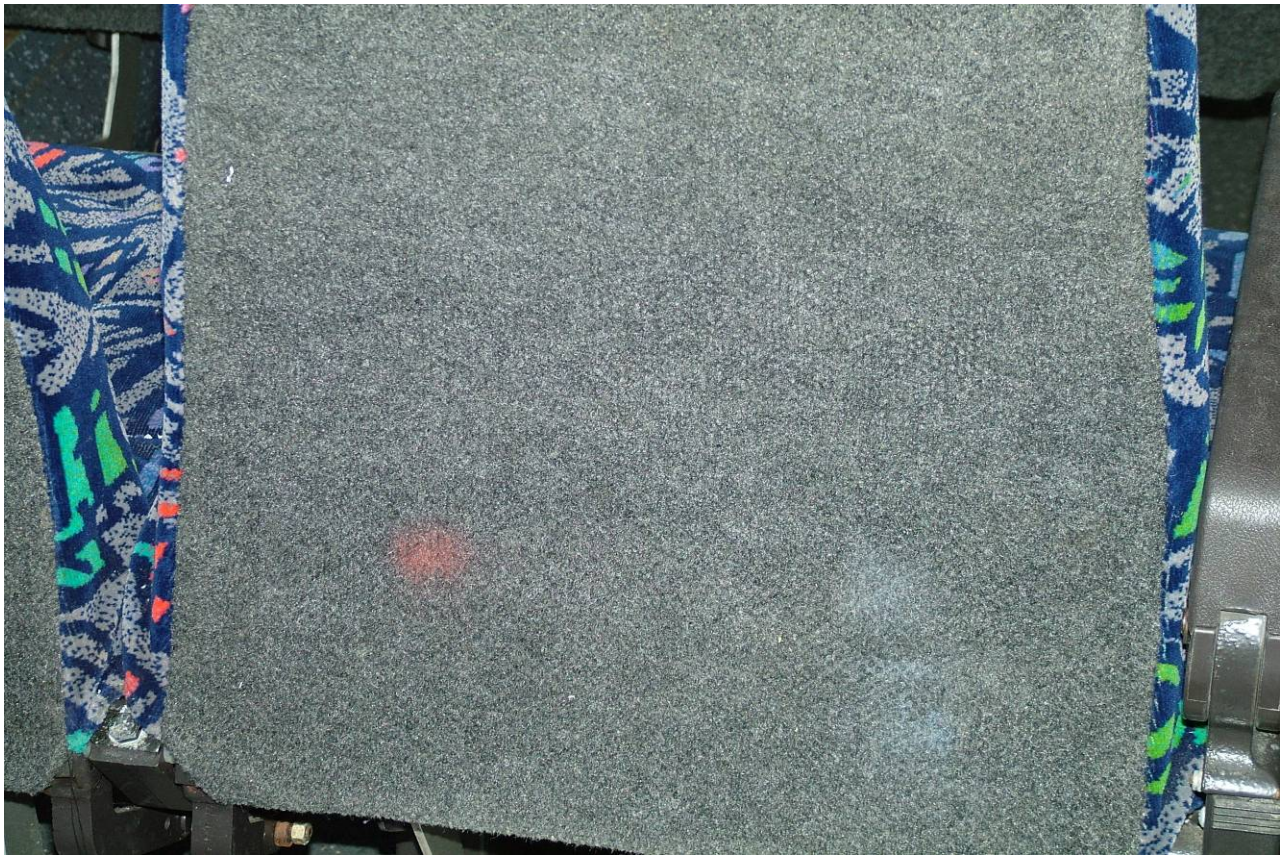


Figure A-224 Post-Test Row 12 Left Side Inboard Dummy Knee Contact View

Figure A-225 Post-Test Seat Damage - View 1

Figure A-226 Post-Test Seat Damage - View 2

Figure A-227 Post-Test Seat Damage - View 3

Figure A-228 Post-Test Seat Belt Damage - View 1

Figure A-229 Post-Test Seat Belt Damage - View 2

Figure A-230 Post-Test Seat Belt Damage - View 3

Figure A-231 Post-Test Seat Belt Damage - View 4

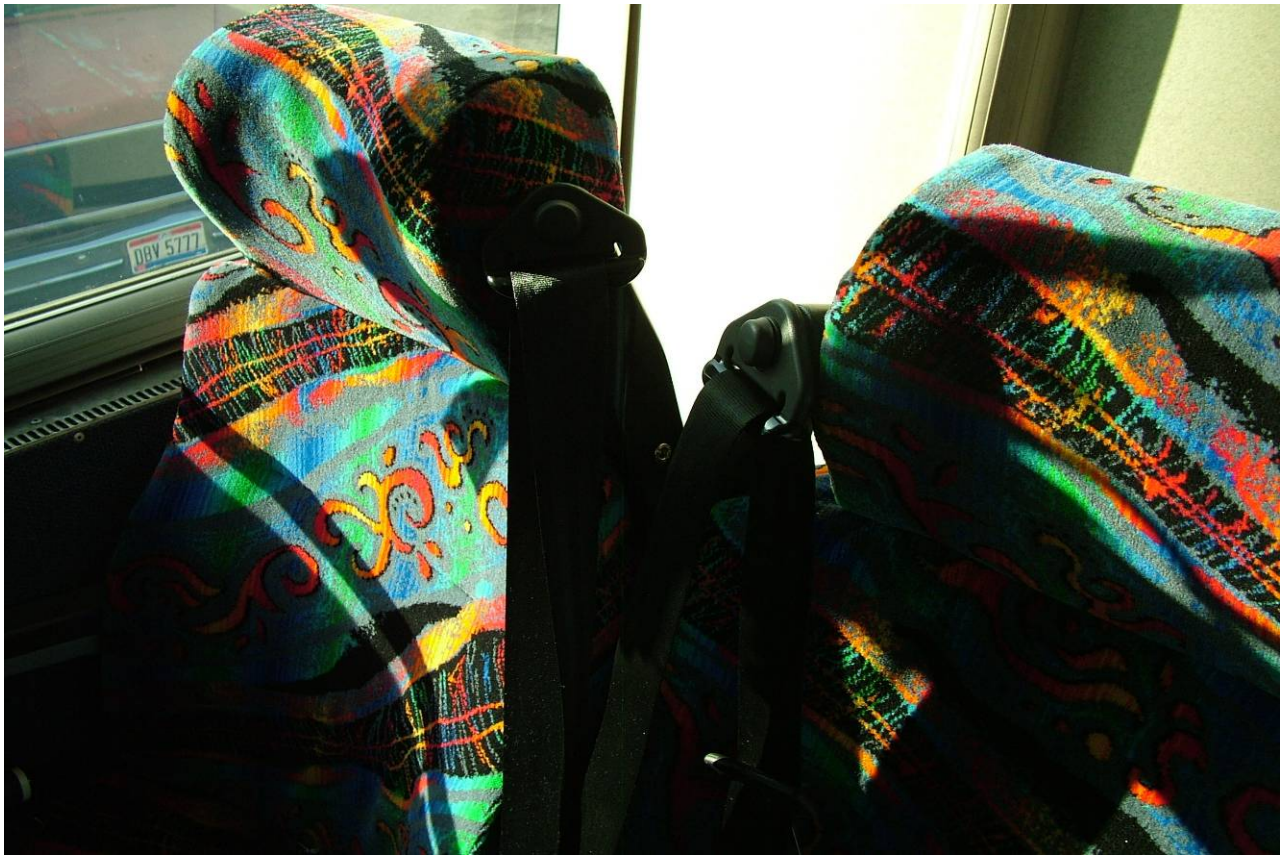


Figure A-232 Post-Test Seat Belt Damage - View 5

Figure A-233 Post-Test Seat Belt Damage - View 6

Figure A-234 Post-Test Bus Frame Damage View

Appendix B

Data Plots

Dummy Injury Plots

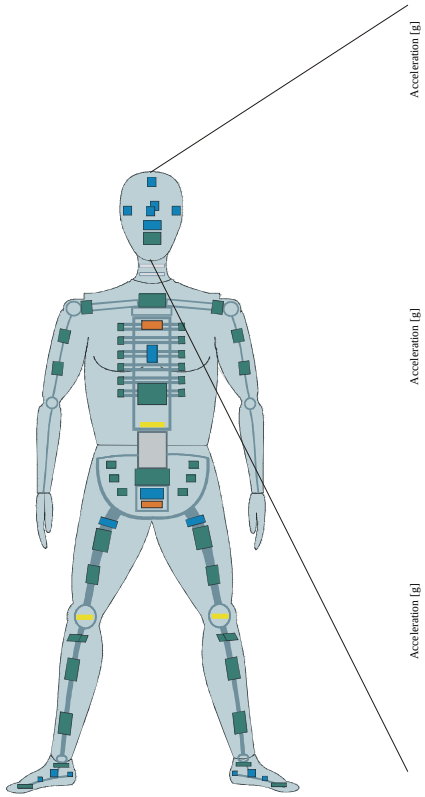
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

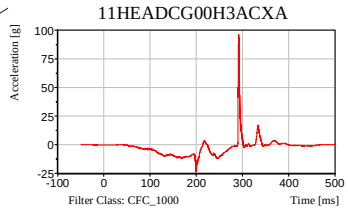
Head Injury Criterion (HIC)

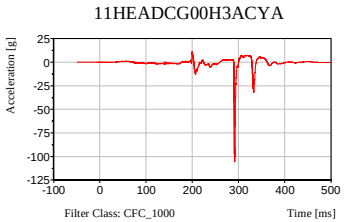
Date: 12/14/2007
Time: 9:12

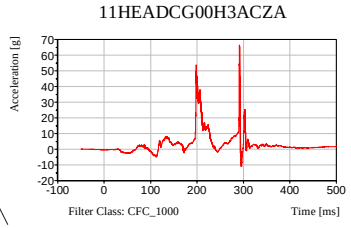
Customer: VRTC

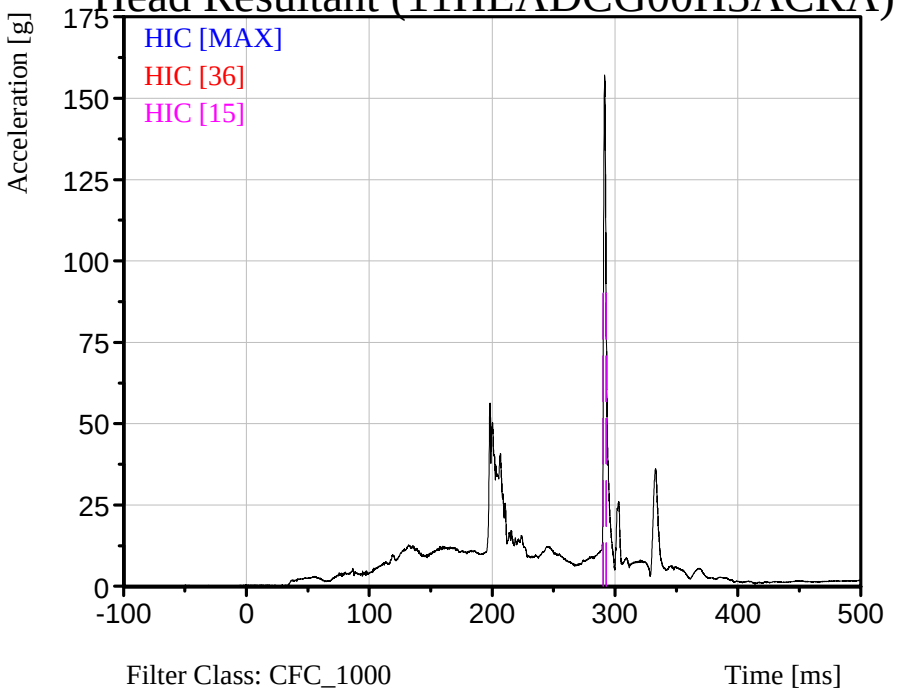
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 439.05	290.56 ms	293.04 ms	124.13 g
HIC [36] = 439.05	290.56 ms	293.04 ms	124.13 g
HIC [15] = 439.05	290.56 ms	293.04 ms	124.13 g

Dummy:HIII 50th Male
Seating Position:
Right Side Row 4 Left Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

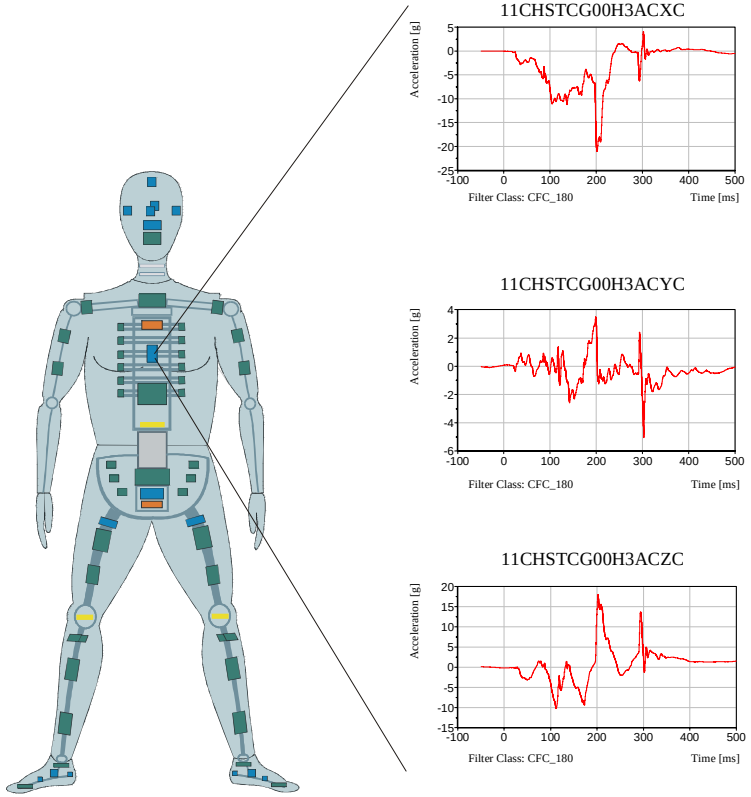
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

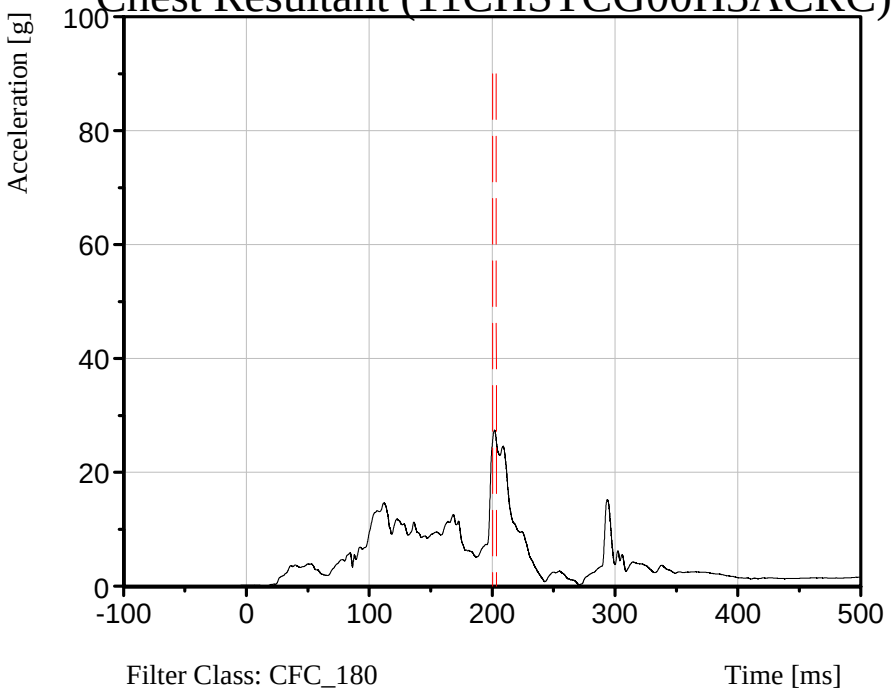
3 ms Duration Acceleration (Chest)

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 25.51 g	200.42 ms	203.42 ms
Chest Severity Index = 88.32		

Dummy:HIII 50th Male
Seating Position:
Right Side Row 4 Left Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

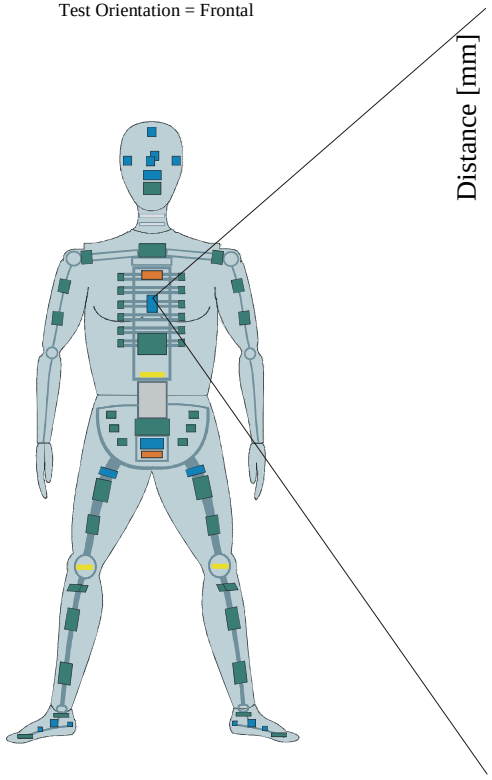
Chest Deflection

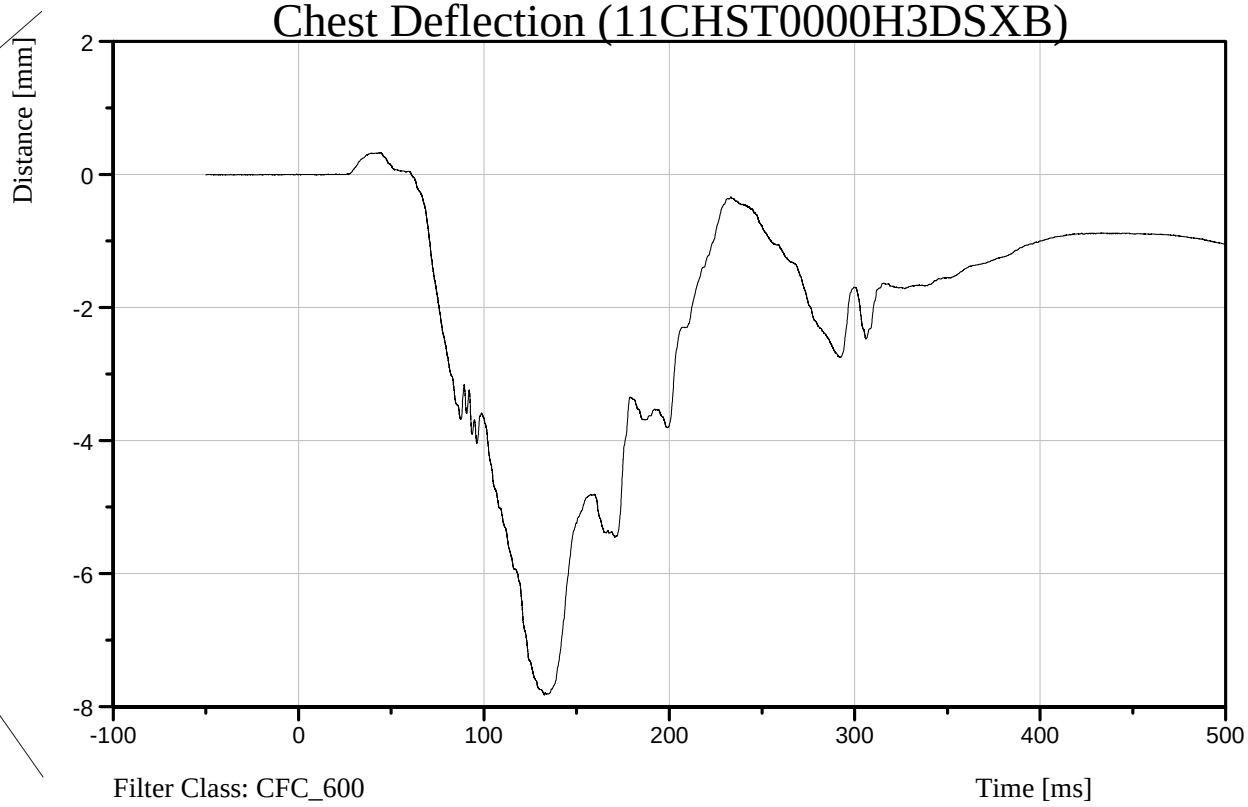
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 50th Male
Seating Position:
Right Side Row 4 Left Seat

[Max.] 0.33 mm at 43.84 ms
[Min.] -7.82 mm at 132.56 ms

ChestDeflection Source Code : Min/Max of 11CHST0000H3DSXB (CFC_600)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph
Neck Moment about the Occipital Condyle (NECK OM)

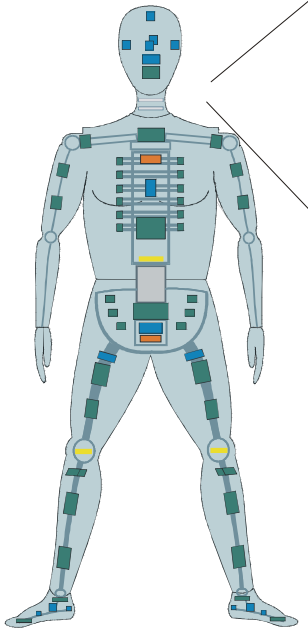
Date: 12/14/2007
Time: 9:12

Customer: VRTC

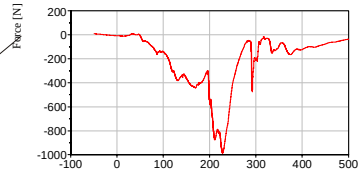
TRC Inc. Test Lab: CTF

Test Number: 071214

Test Orientation = Frontal

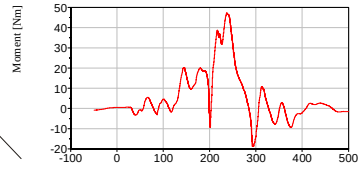


11NECKUP00H3FOXB



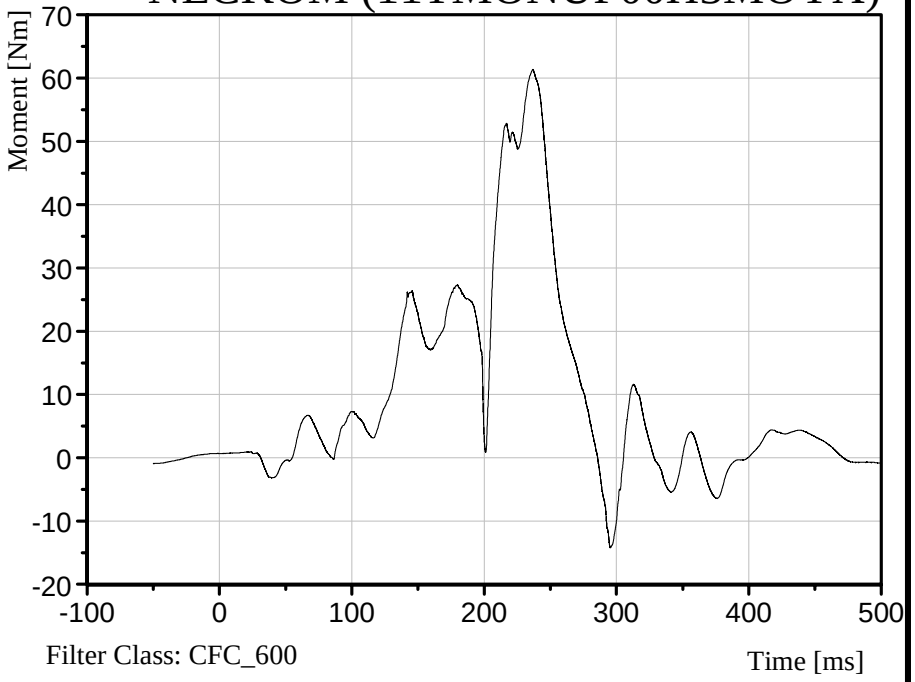
Filter Class: CFC_600

11NECKUP00H3MOYB



Filter Class: CFC_600

NECKOM (11TMONUP00H3MOYX)



Filter Class: CFC_600

Dummy:HIII 50th Male
Seating Position:
Right Side Row 4 Left Seat

Neck OM Source Code: My - (D*Fx)

[Max.] 61.39 Nm at 237.04 ms
[Min.] -14.22 Nm at 295.60 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

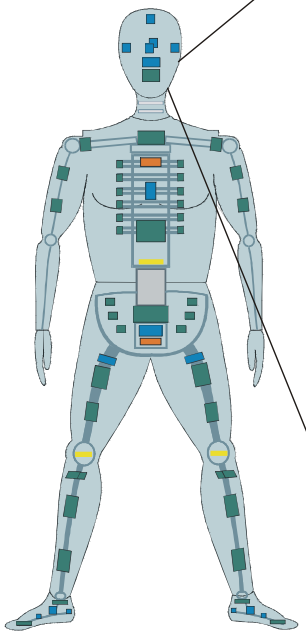
Neck Injury Predictor (NIJ)

Date: 12/14/2007
Time: 9:12

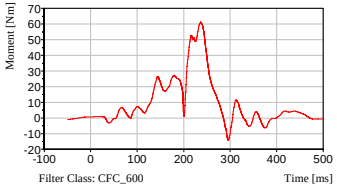
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

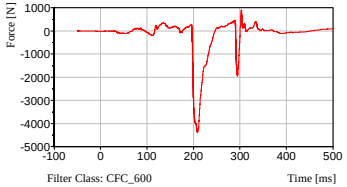
Test Orientation = Frontal
Fzc(Tension) = 6806
Fzc(Compression) = 6160
Myc(Extension) = 135
Myc(Flexion) = 310



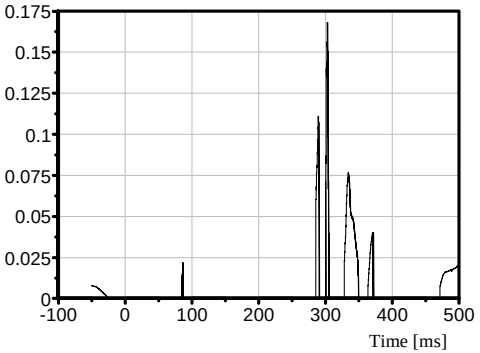
11TMONUP00H3MOYX



11NECKUP00H3FOZB

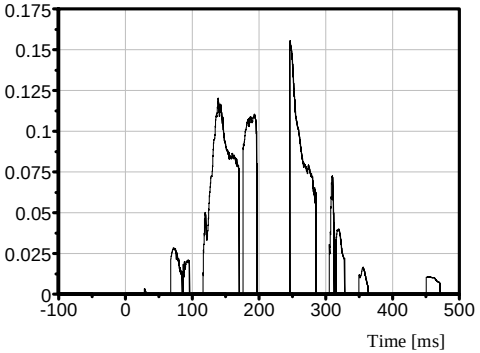


11NIJCUPTEH300YX



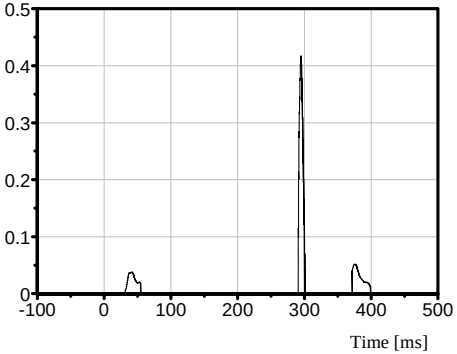
Max [NTE] 0.1681 at 303.04 ms

11NIJCUPTFH300YX



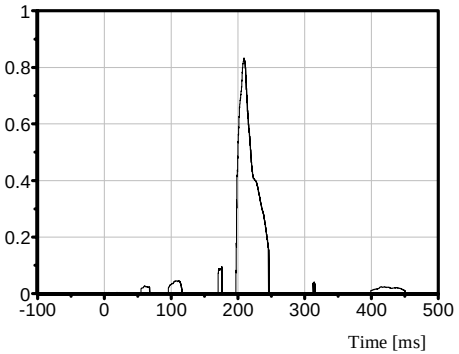
Max [NTF] 0.1557 at 246.72 ms

11NIJCUPCEH300YX



Max [NCE] 0.4173 at 295.12 ms

11NIJCUPCFH300YX



Max [NCF] 0.8335 at 209.12 ms

Dummy:HIII 50th Male
Seating Position:
Right Side Row 4 Left Seat

NIJ Source Code: (Fz/Fzc)+(My/Myc)

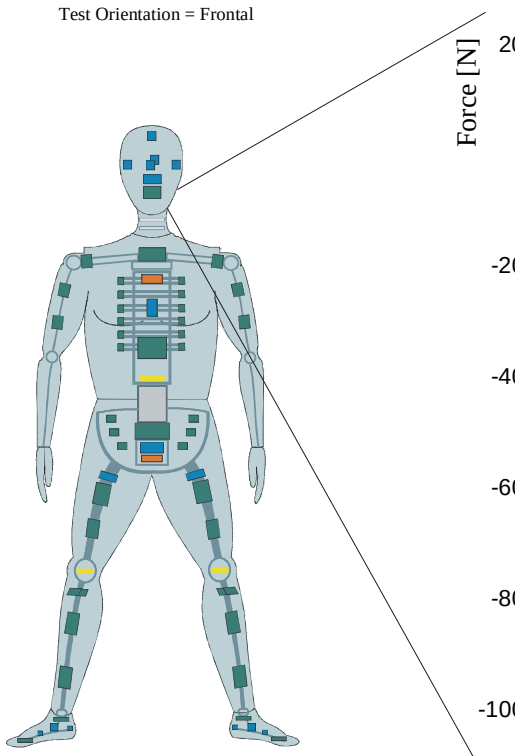
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

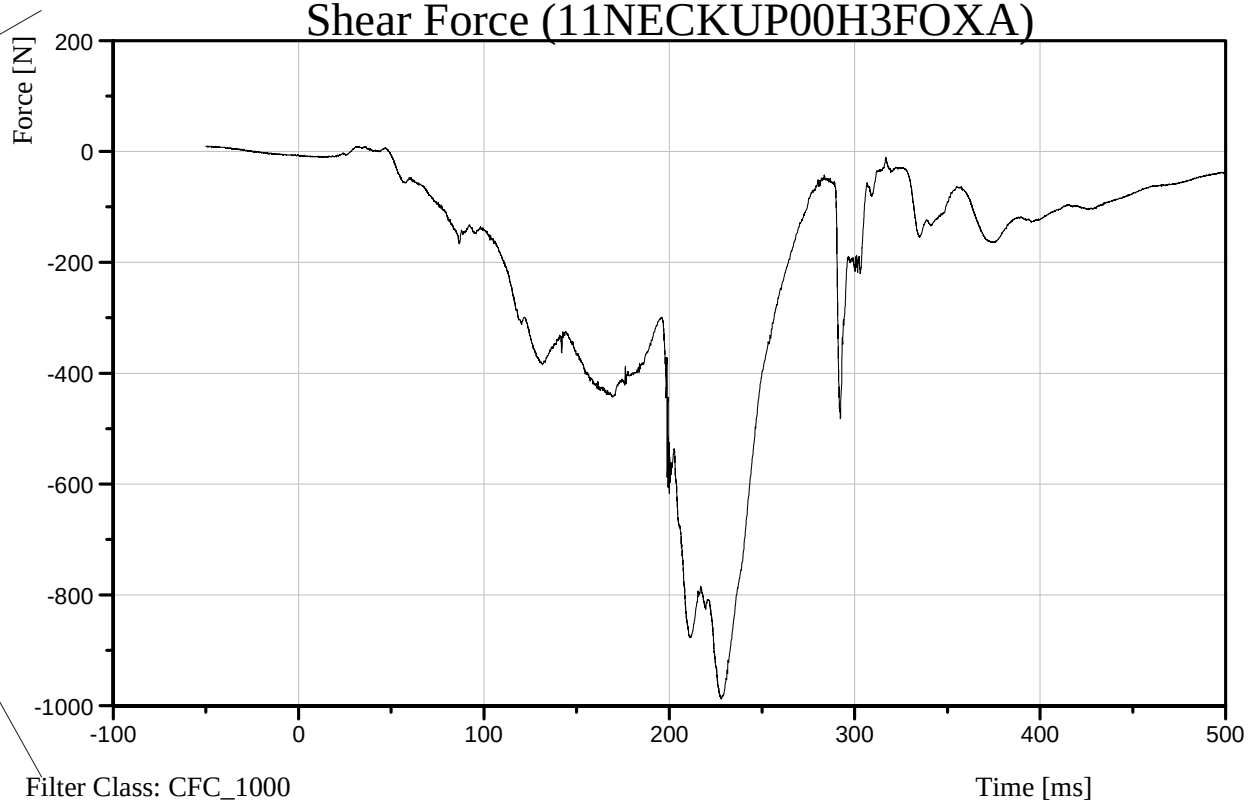
Neck Shear Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Right Side Row 4 Left Seat

[Max.] 9.90 N at -49.28 ms
[Min.] -987.81 N at 228.16 ms

Neck Shear Force Source Code: Min/Max of 11NECKUP00H3FOXA

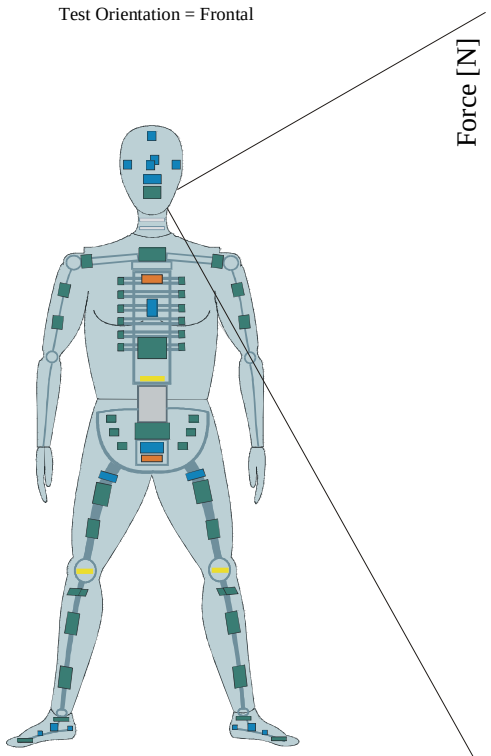
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

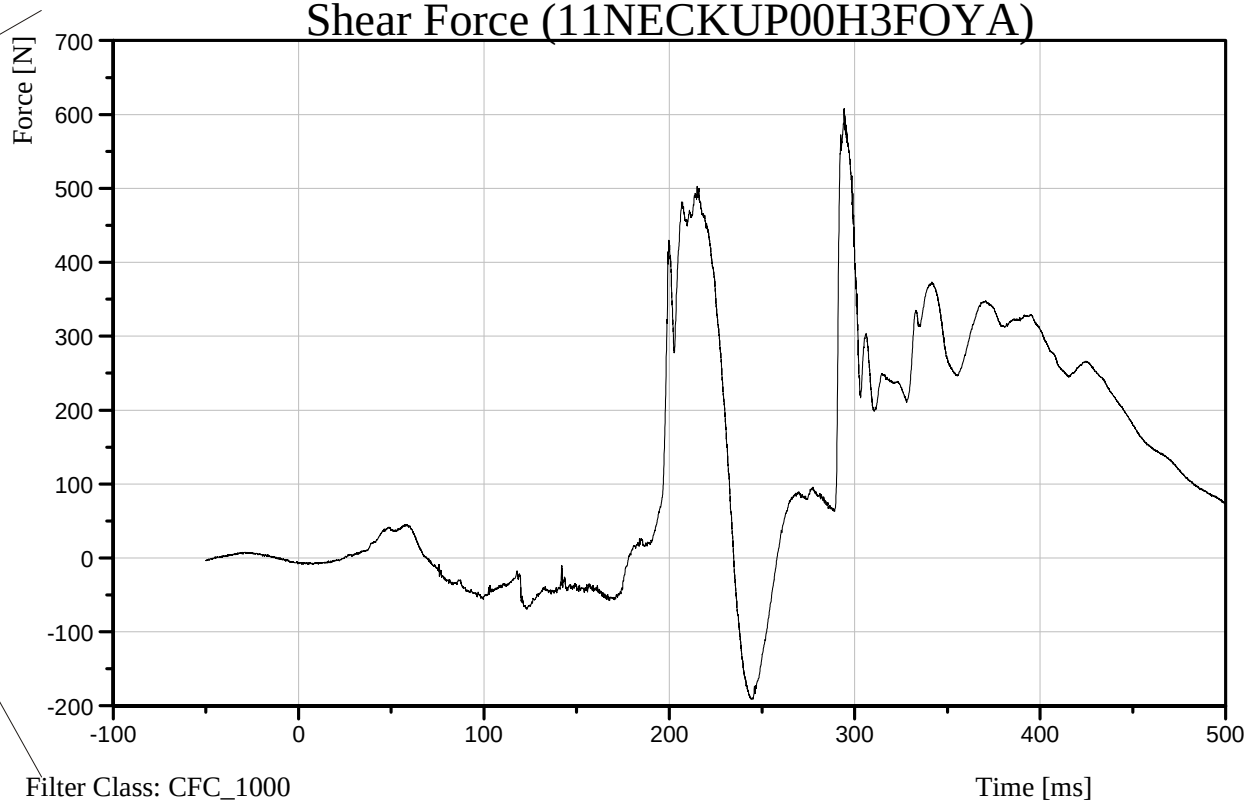
Neck Shear Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Right Side Row 4 Left Seat

[Max.] 607.91 N at 294.32 ms
[Min.] -190.94 N at 244.16 ms

Neck Shear Force Source Code: Min/Max of 11NECKUP00H3FOYA

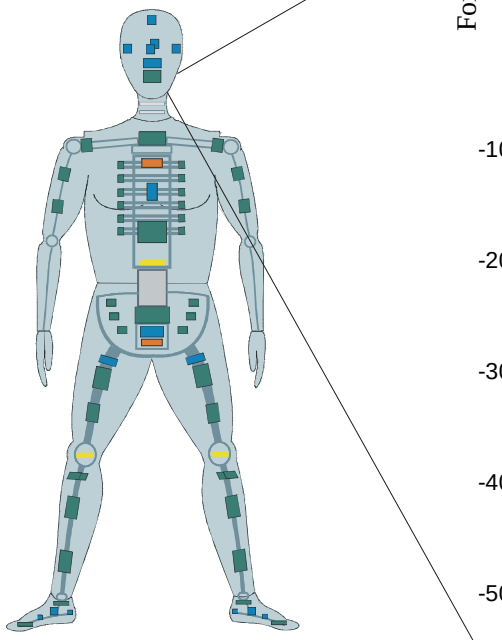
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

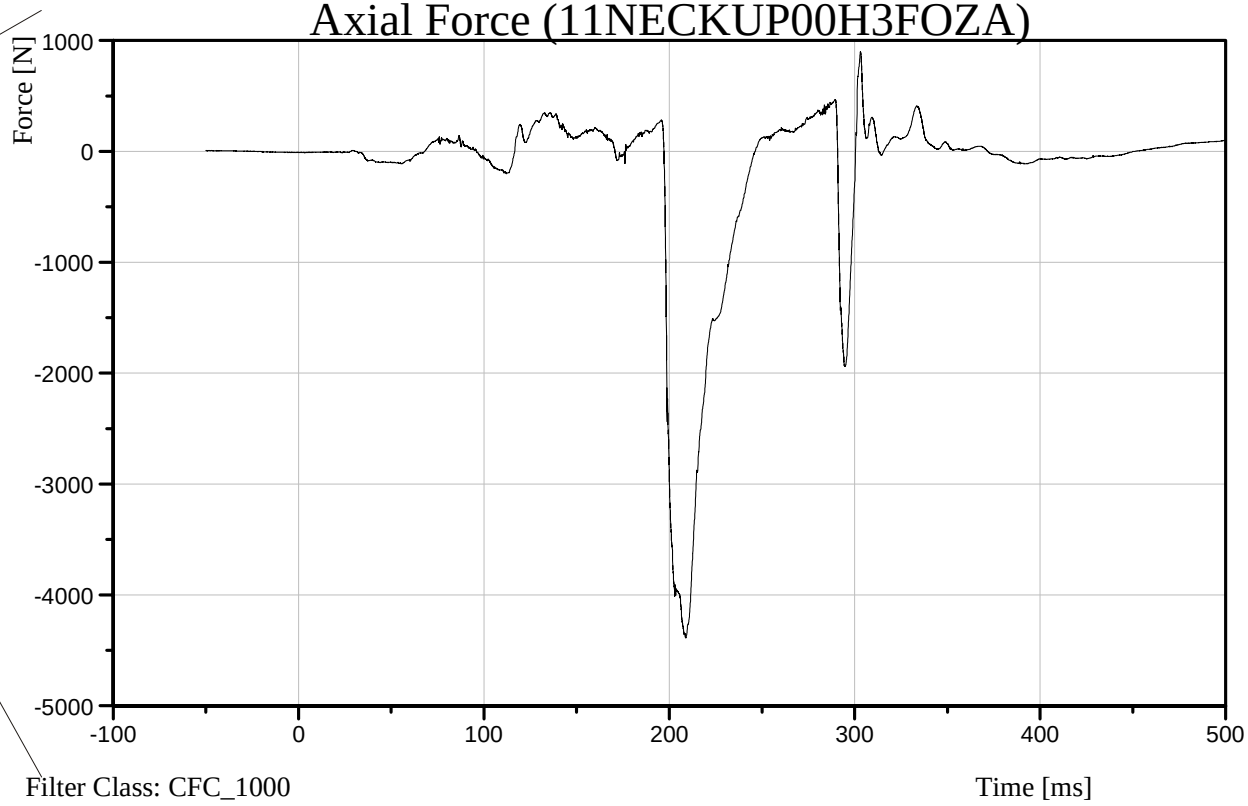
Neck Axial Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Right Side Row 4 Left Seat

[Max.] 898.92 N at 303.12 ms
[Min.] -4,388.50 N at 208.96 ms

Neck Axial Force Source Code: Min/Max of 11NECKUP00H3FOZA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

Femur Load

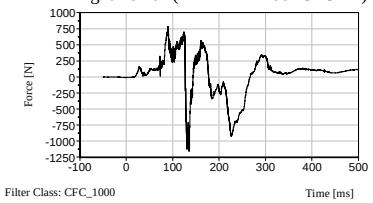
Date: 12/14/2007
Time: 9:12

Customer: VRTC

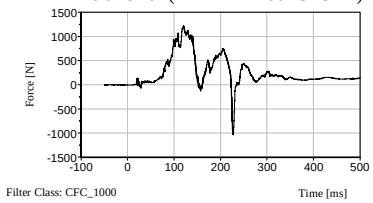
TRC Inc. Test Lab: CTF

Test Number: 071214

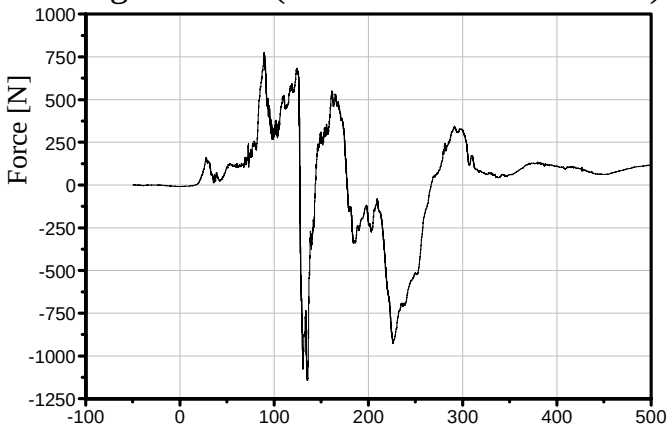
Right Femur (11FEMRRL00H3FOZA)



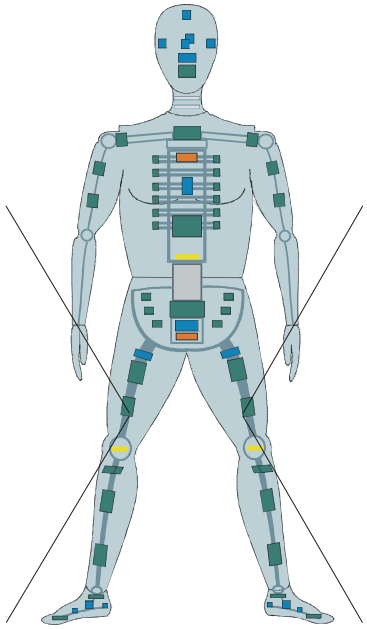
Left Femur (11FEMRLL00H3FOZA)



Right Femur (11FEMRRL00H3FOZB)

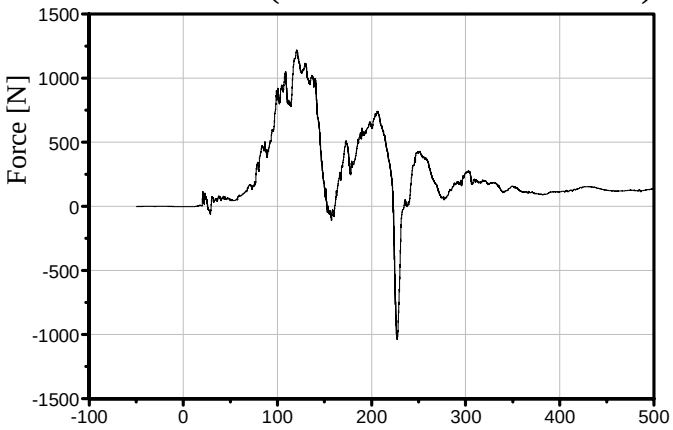


Max [Tension] 777.58 N at 89.60 ms
Min [Compression] -1,142.40 N at 135.36 ms



Dummy:HIII 50th Male
Seating Position:
Right Side Row 4 Left Seat

Left Femur (11FEMRLL00H3FOZB)



Max [Tension] 1,221.49 N at 120.56 ms
Min [Compression] -1,036.45 N at 227.12 ms

Femur Load Source Code : Min/Max of 11FEMRRL00H3FOZB and 11FEMRLL00H3FOZB (CFC 600)

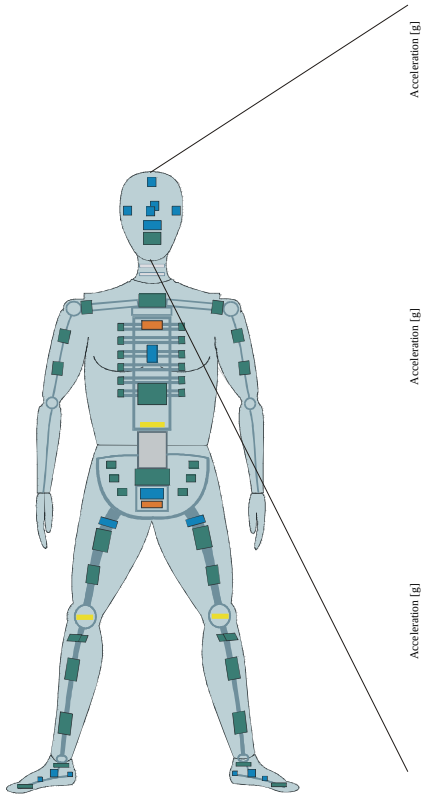
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

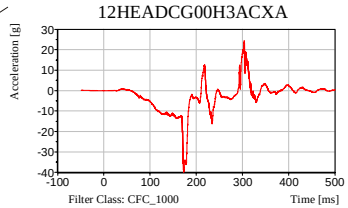
Head Injury Criterion (HIC)

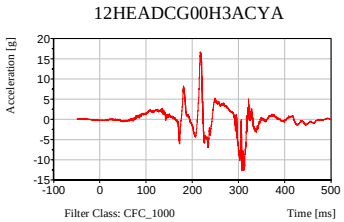
Date: 12/14/2007
Time: 9:12

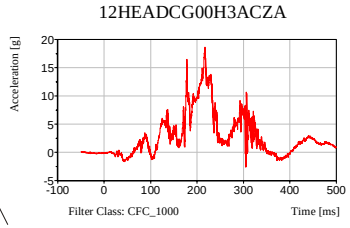
Customer: VRTC

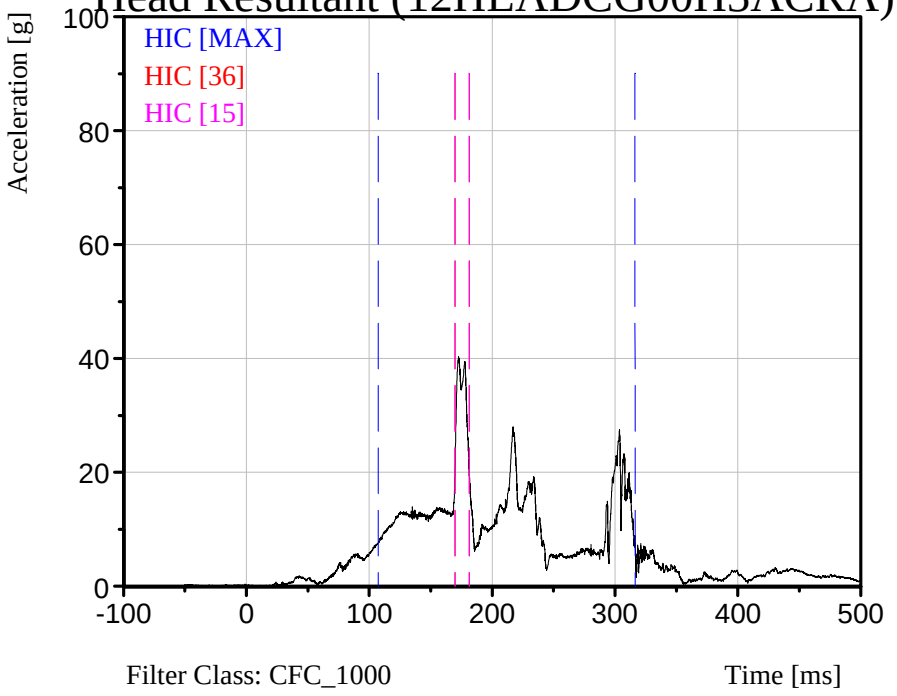
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 120.74	107.36 ms	316.40 ms	12.72 g
HIC [36] = 77.26	169.84 ms	181.44 ms	33.74 g
HIC [15] = 77.26	169.84 ms	181.44 ms	33.74 g

Dummy:HIII 50th Male
Seating Position:
Right Side Row 4 Right Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

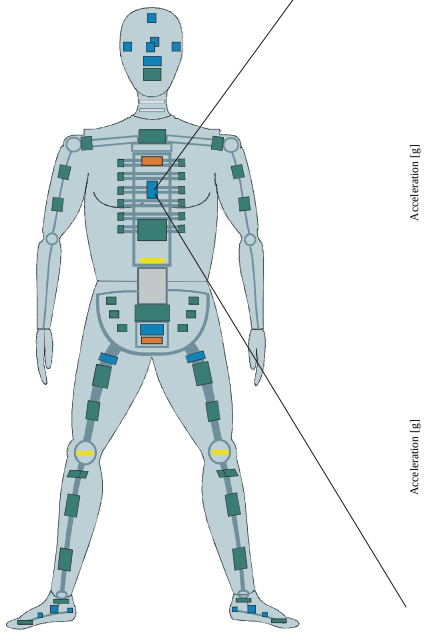
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

3 ms Duration Acceleration (Chest)

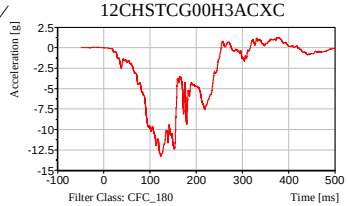
Date: 12/14/2007
Time: 9:12

Customer: VRTC

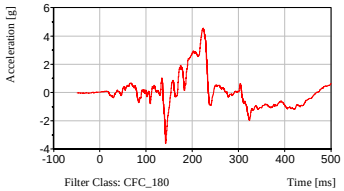
TRC Inc. Test Lab: CTF
Test Number: 071214



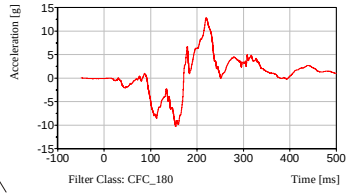
12CHSTCG00H3ACXC



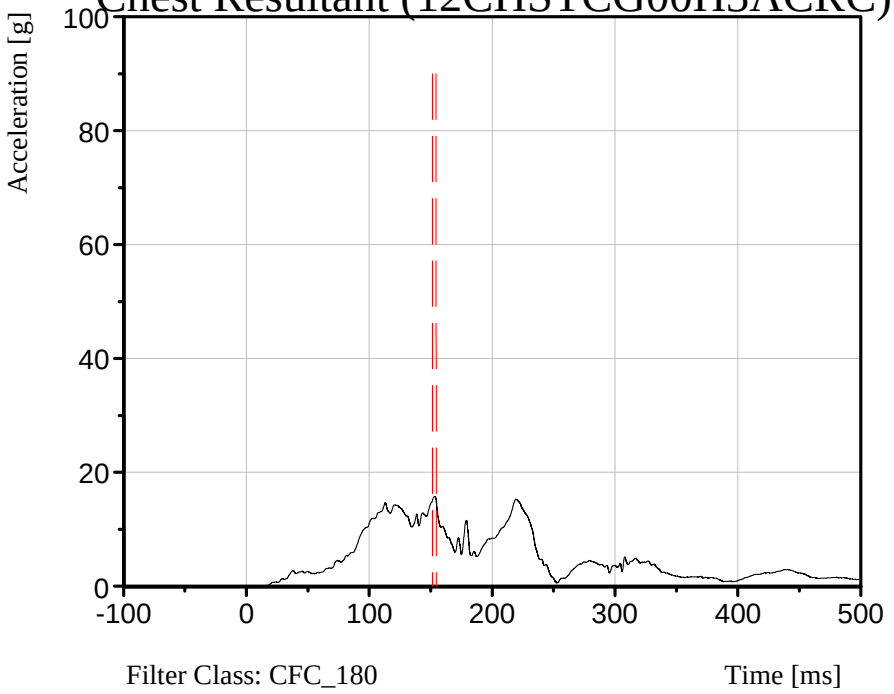
12CHSTCG00H3ACYC



12CHSTCG00H3ACZC



Chest Resultant (12CHSTCG00H3ACRC)



	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 15.10 g	151.46 ms	154.46 ms
Chest Severity Index = 68.24		

Dummy:HIII 50th Male
Seating Position:
Right Side Row 4 Right Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

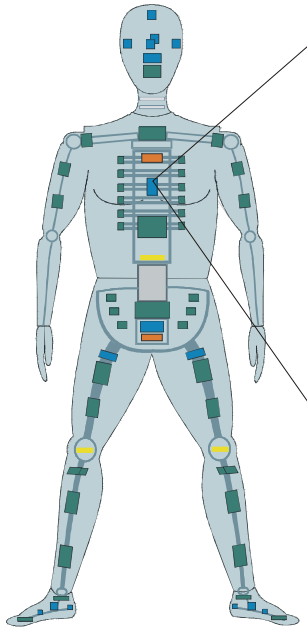
Chest Deflection

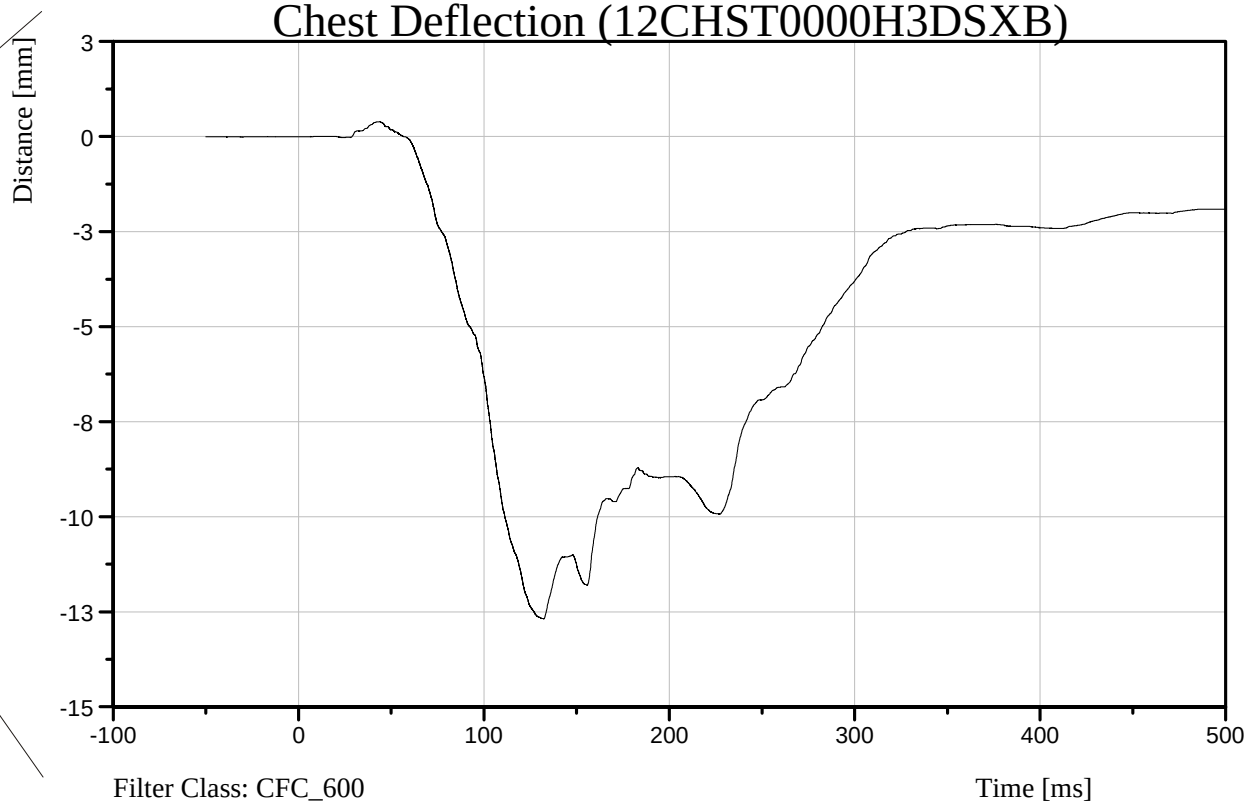
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 50th Male
Seating Position:
Right Side Row 4 Right Seat

[Max.] 0.40 mm at 44.00 ms
[Min.] -12.68 mm at 132.40 ms

ChestDeflection Source Code : Min/Max of 12CHST0000H3DSXB (CFC_600)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph
Neck Moment about the Occipital Condyle (NECK OM)

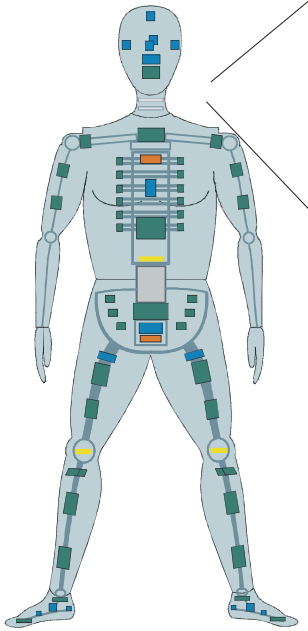
Date: 12/14/2007
Time: 9:12

Customer: VRTC

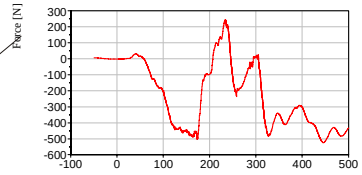
TRC Inc. Test Lab: CTF

Test Number: 071214

Test Orientation = Frontal

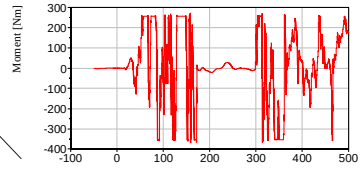


12NECKUP00H3FOXB



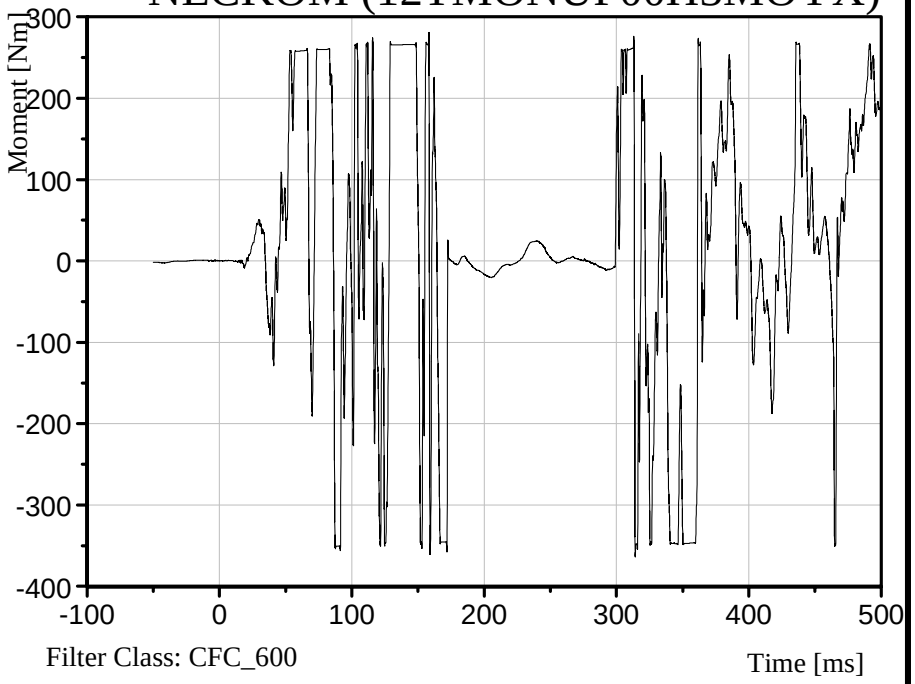
Filter Class: CFC_600

12NECKUP00H3MOYB



Filter Class: CFC_600

NECKOM (12TMONUP00H3MOYX)



Filter Class: CFC_600

Dummy:HIII 50th Male
Seating Position:
Right Side Row 4 Right Seat

[Max.] 281.02 Nm at 158.24 ms
[Min.] -363.77 Nm at 314.16 ms

Neck OM Source Code: My - (D*Fx)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

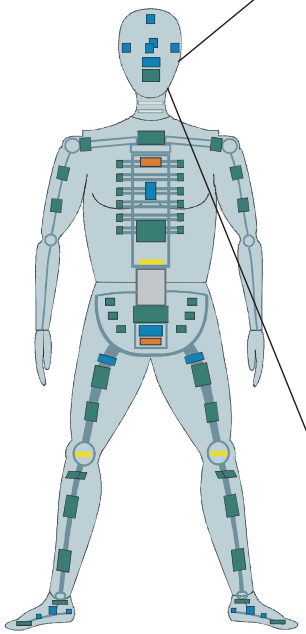
Neck Injury Predictor (NIJ)

Date: 12/14/2007
Time: 9:12

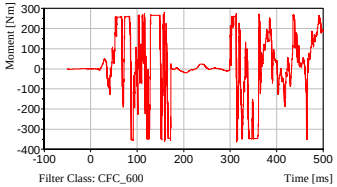
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

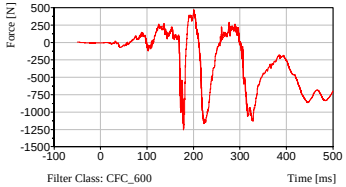
Test Orientation = Frontal
Fzc(Tension) = 6806
Fzc(Compression) = 6160
Myc(Extension) = 135
Myc(Flexion) = 310



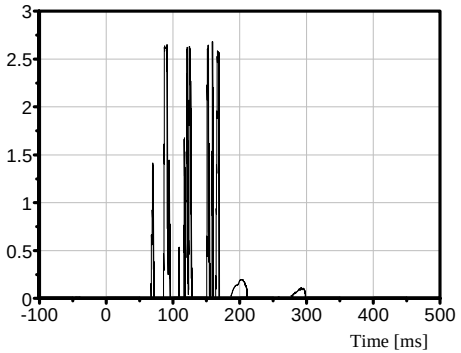
12TMONUP00H3MOYX



12NECKUP00H3FOZB

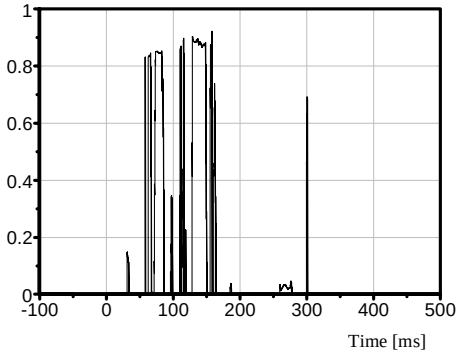


12NIJCUPTEH300YX



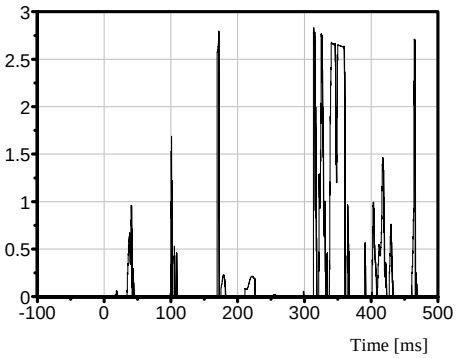
Max [NTE] 2.6805 at 159.28 ms

12NIJCUPTFH300YX



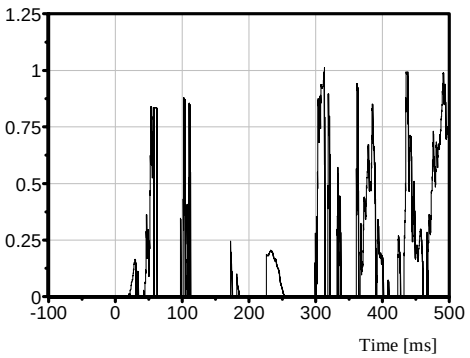
Max [NTF] 0.9219 at 158.24 ms

12NIJCUPCEH300YX



Max [NCE] 2.8329 at 314.16 ms

12NIJCUPCFH300YX



Max [NCF] 1.0115 at 313.20 ms

Dummy:HIII 50th Male
Seating Position:
Right Side Row 4 Right Seat

NIJ Source Code: (Fz/Fzc)+(My/Myc)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

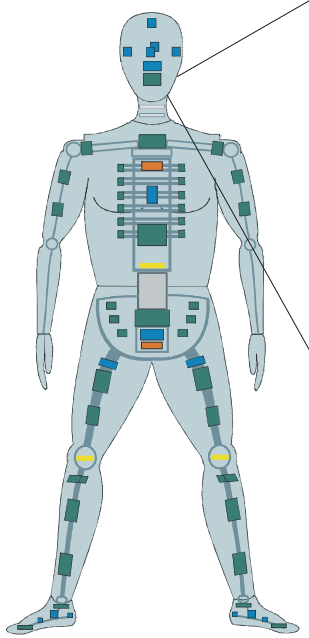
Neck Shear Force

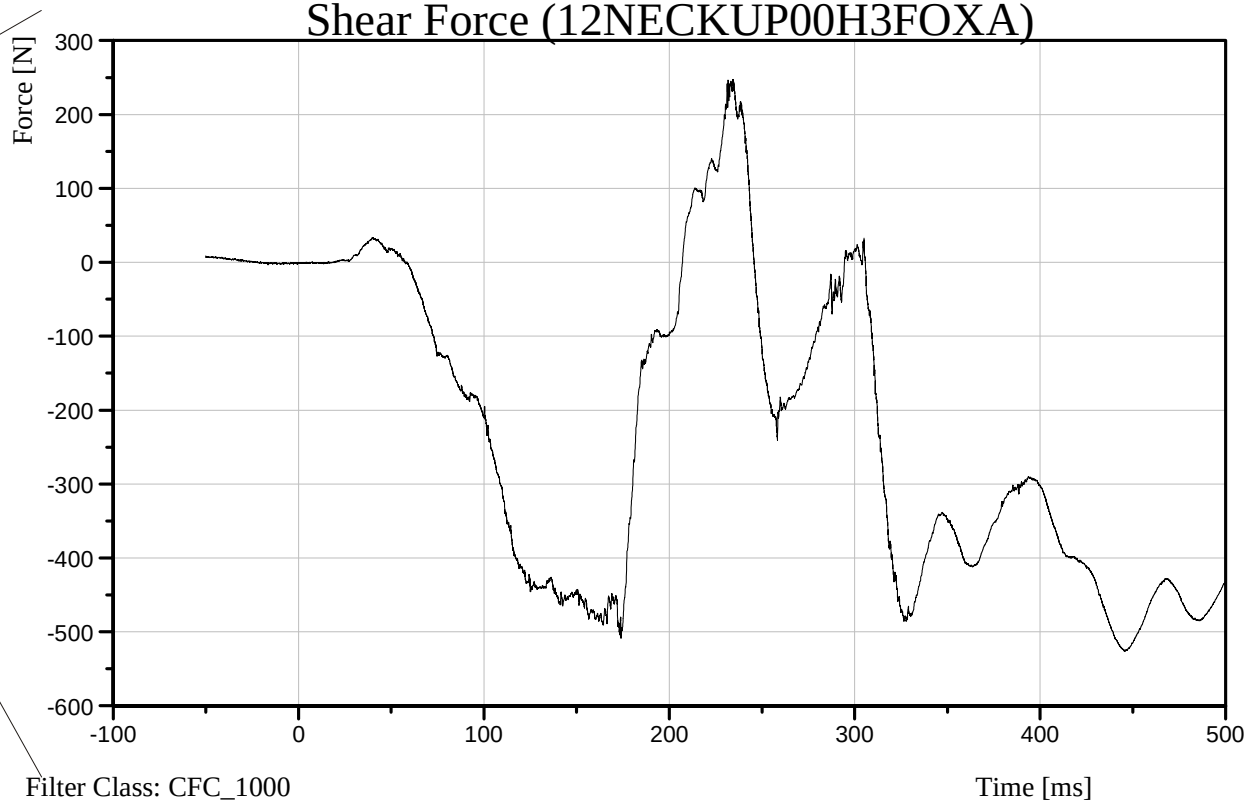
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 50th Male
Seating Position:
Right Side Row 4 Right Seat

[Max.] 247.45 N at 234.24 ms
[Min.] -525.58 N at 445.36 ms

Neck Shear Force Source Code: Min/Max of 12NECKUP00H3FOXA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

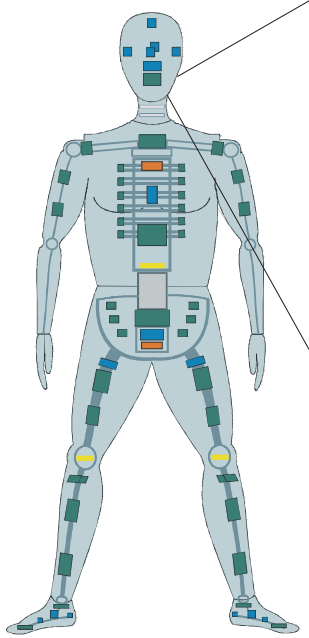
Neck Shear Force

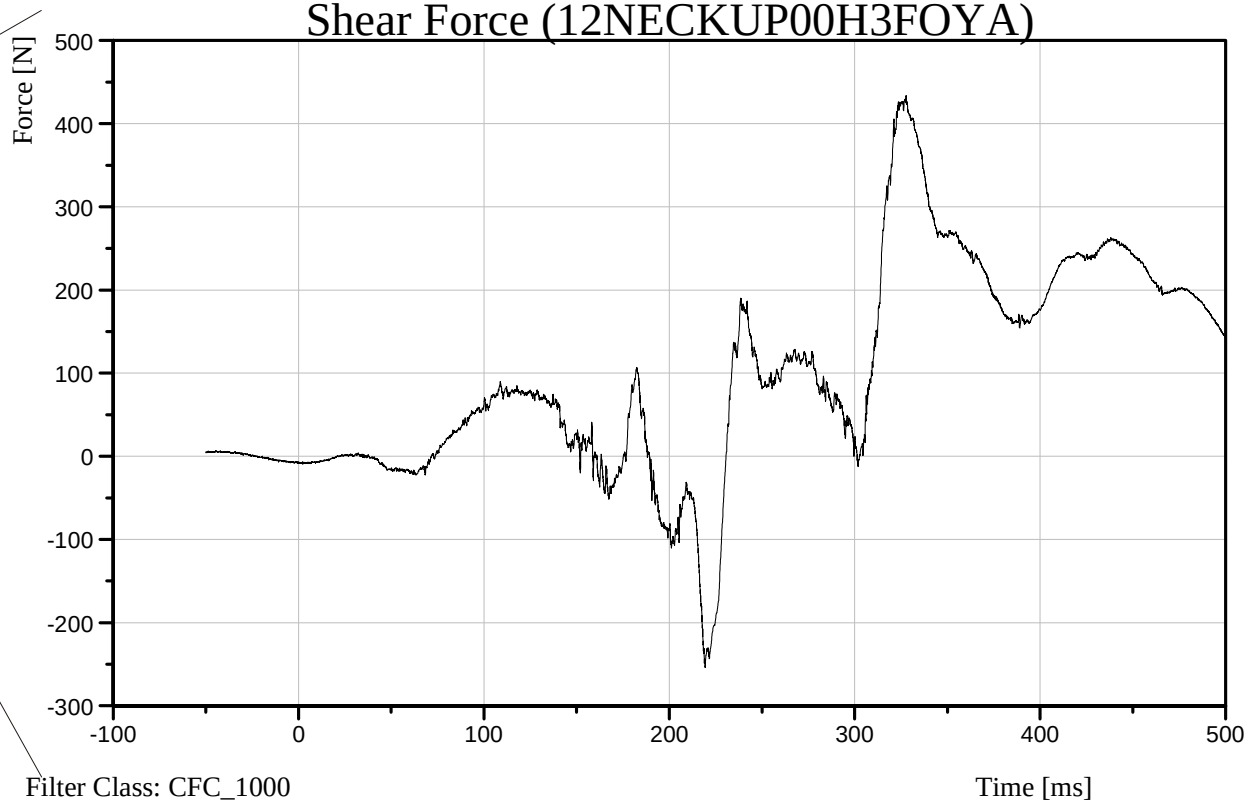
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 50th Male
Seating Position:
Right Side Row 4 Right Seat

[Max.] 433.63 N at 327.68 ms
[Min.] -253.73 N at 219.36 ms

Neck Shear Force Source Code: Min/Max of 12NECKUP00H3FOYA

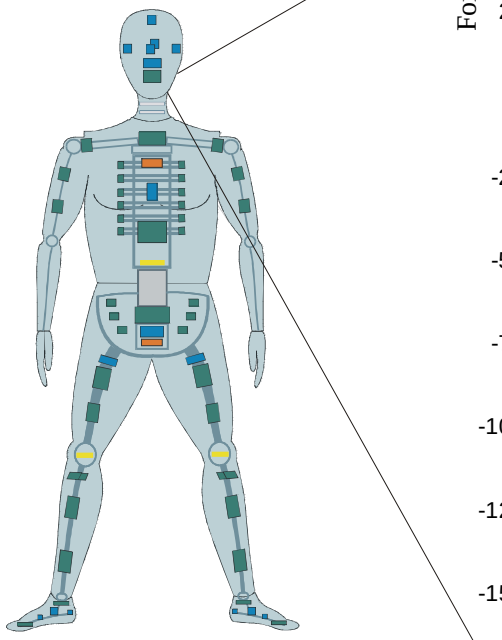
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

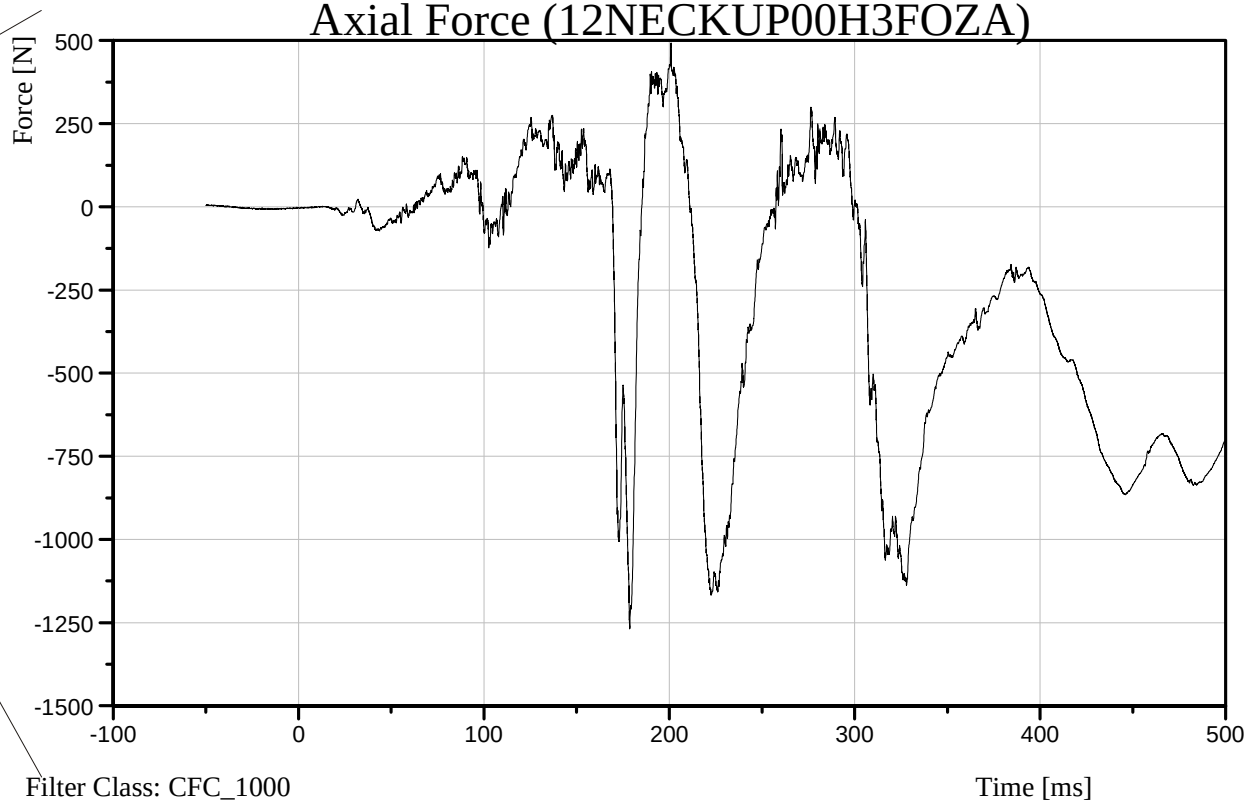
Neck Axial Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Right Side Row 4 Right Seat

[Max.] 492.02 N at 200.88 ms
[Min.] -1,267.57 N at 178.64 ms

Neck Axial Force Source Code: Min/Max of 12NECKUP00H3FOZA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

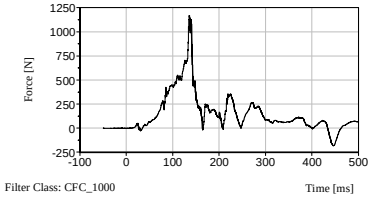
Femur Load

Date: 12/14/2007
Time: 9:12

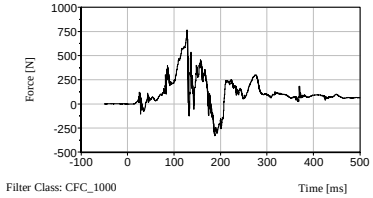
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

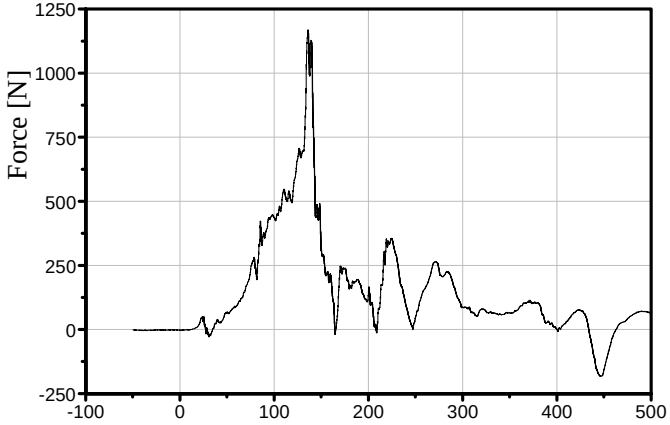
Right Femur (12FEMRRL00H3FOZA)



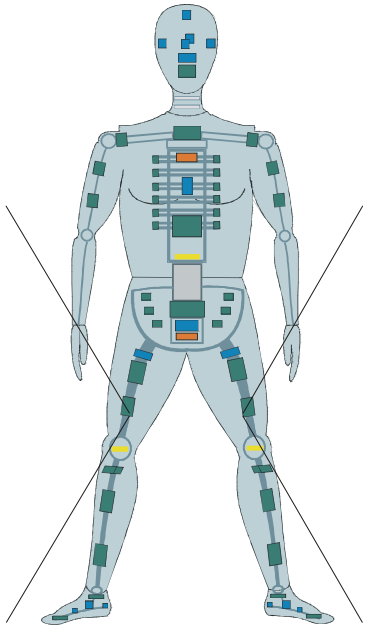
Left Femur (12FEMRLL00H3FOZA)



Right Femur (12FEMRRL00H3FOZB)

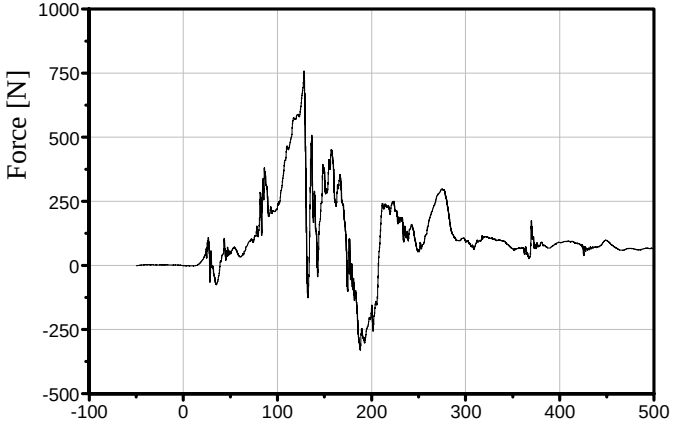


Max [Tension] 1,169.11 N at 135.92 ms
Min [Compression] -181.92 N at 446.08 ms



Dummy:HIII 50th Male
Seating Position:
Right Side Row 4 Right Seat

Left Femur (12FEMRLL00H3FOZB)



Max [Tension] 758.87 N at 128.08 ms
Min [Compression] -329.53 N at 187.92 ms

Femur Load Source Code : Min/Max of 12FEMRRL00H3FOZB and 12FEMRLL00H3FOZB (CFC 600)

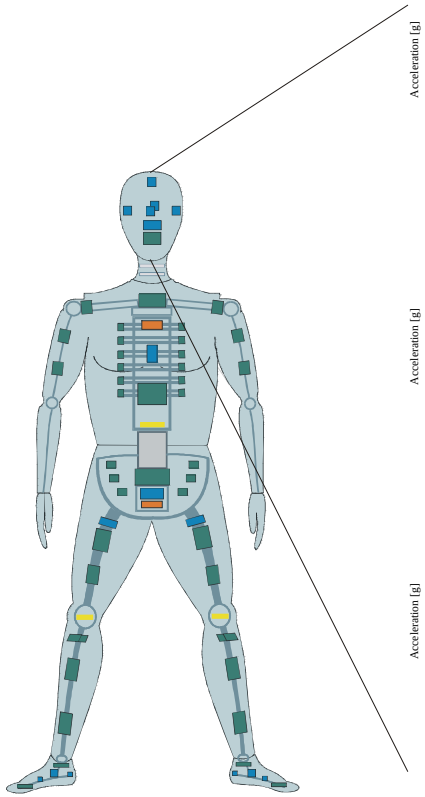
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

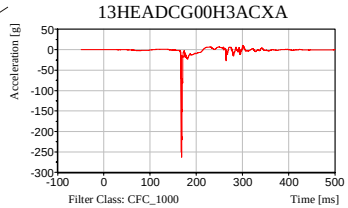
Head Injury Criterion (HIC)

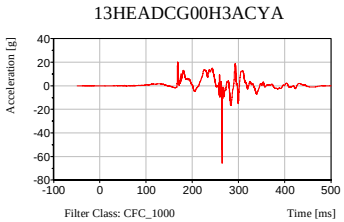
Date: 12/14/2007
Time: 9:12

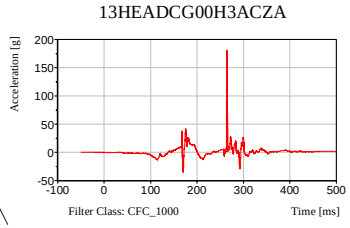
Customer: VRTC

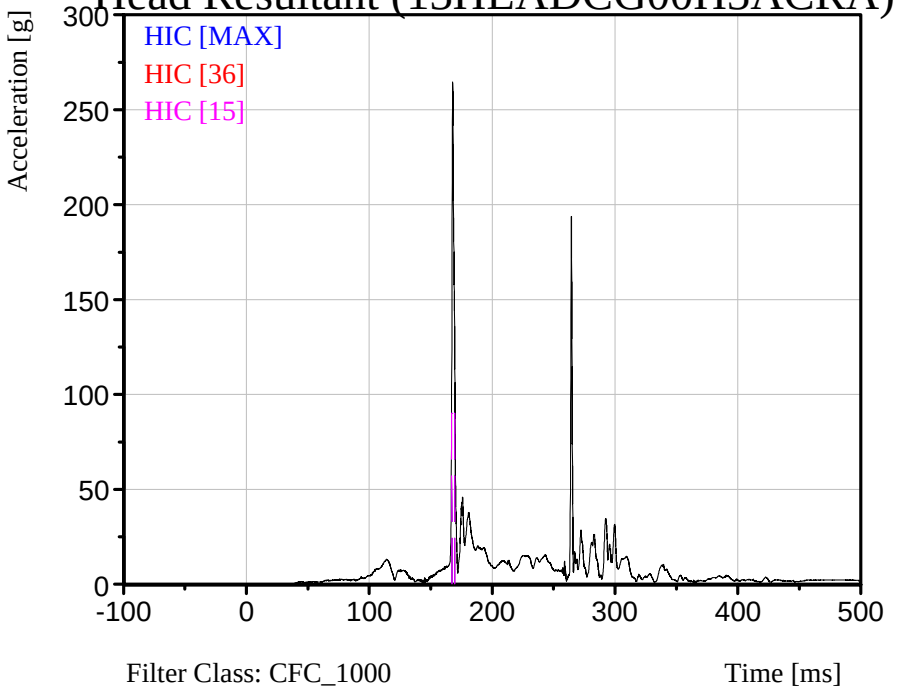
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 1,308.49	167.20 ms	169.60 ms	194.65 g
HIC [36] = 1,308.49	167.20 ms	169.60 ms	194.65 g
HIC [15] = 1,308.49	167.20 ms	169.60 ms	194.65 g

Dummy:HIII 50th Male
Seating Position:
Right Side Row 5 Left Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

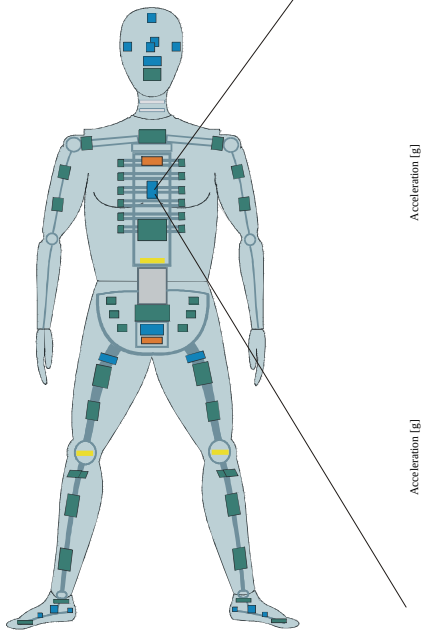
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

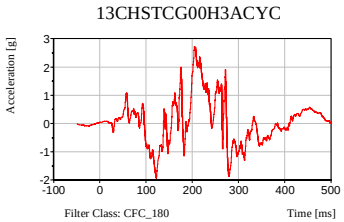
3 ms Duration Acceleration (Chest)

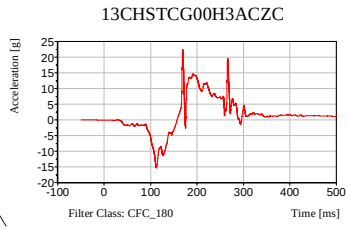
Date: 12/14/2007
Time: 9:12

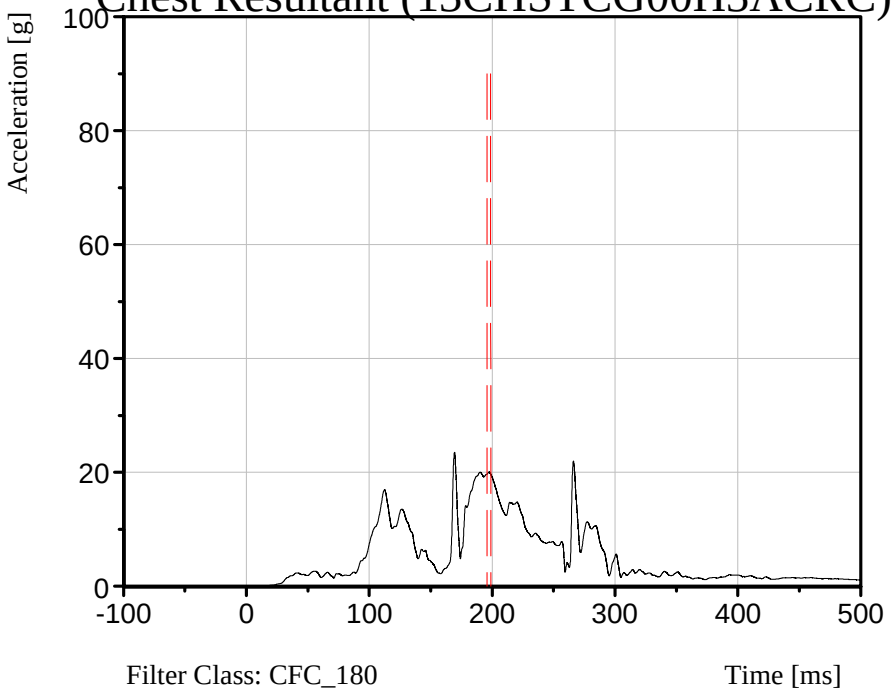
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214









	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 19.70 g	195.92 ms	198.92 ms

Chest Severity Index = 104.88

Dummy:HIII 50th Male
Seating Position:
Right Side Row 5 Left Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

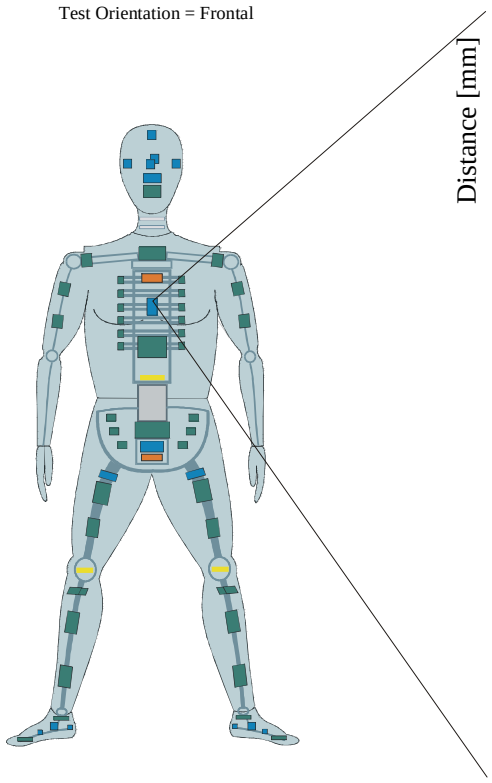
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

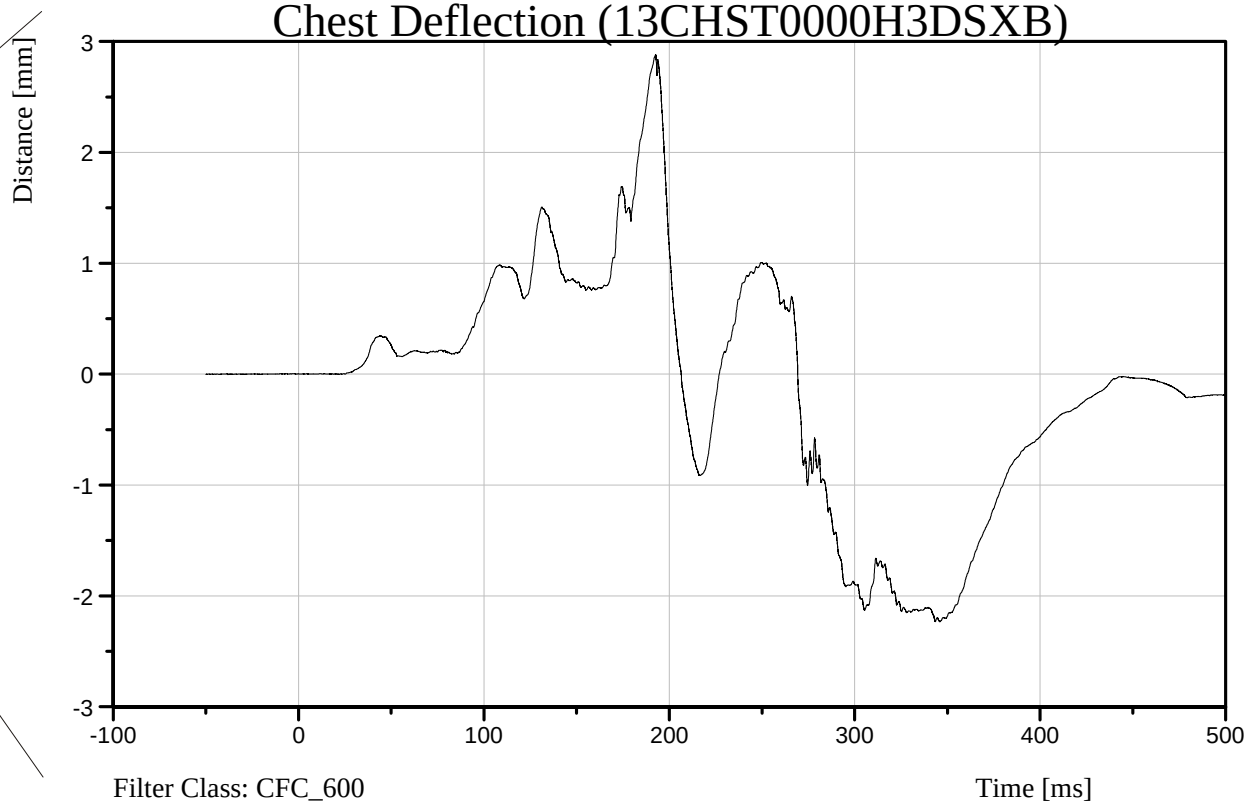
Chest Deflection

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Right Side Row 5 Left Seat

[Max.] 2.88 mm at 192.64 ms
[Min.] -2.23 mm at 346.00 ms

ChestDeflection Source Code : Min/Max of 13CHST0000H3DSXB (CFC_600)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph
Neck Moment about the Occipital Condyle (NECK OM)

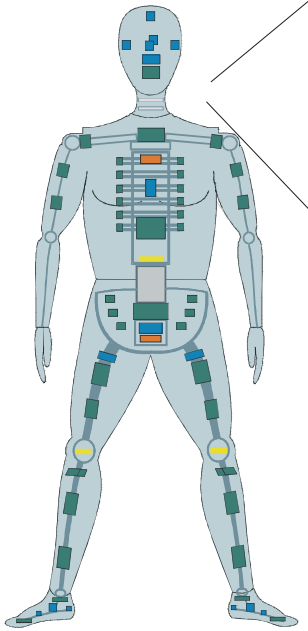
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 071214

Test Orientation = Frontal



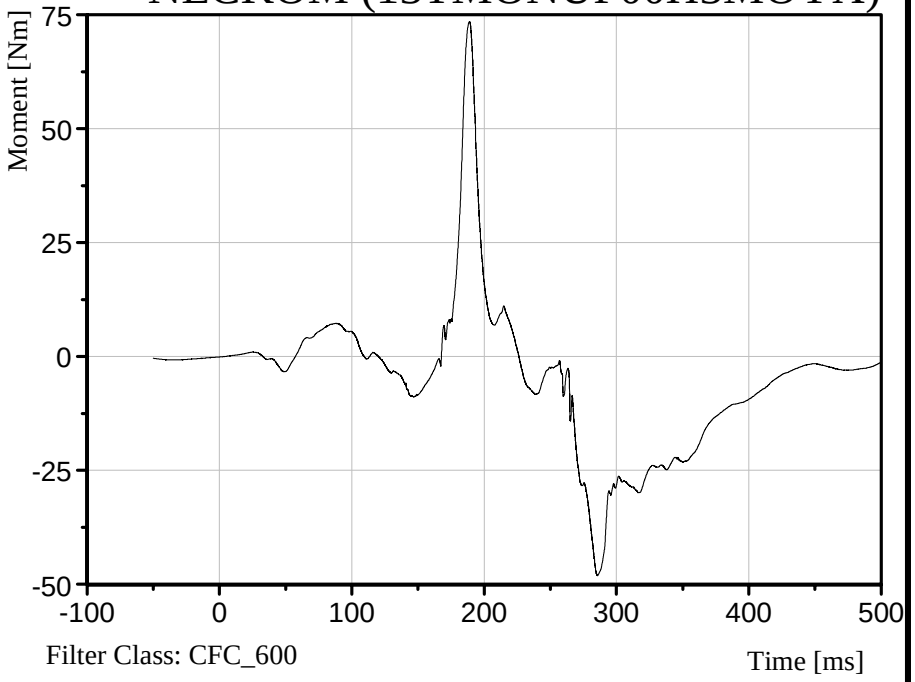
13NECKUP00H3FOXB

Filter Class: CFC_600

13NECKUP00H3MOYB

Filter Class: CFC_600

NECKOM (13TMONUP00H3MOYX)



Dummy:HIII 50th Male
Seating Position:
Right Side Row 5 Left Seat

Neck OM Source Code: My - (D*Fx)

[Max.] 73.53 Nm at 188.96 ms
[Min.] -48.11 Nm at 285.76 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

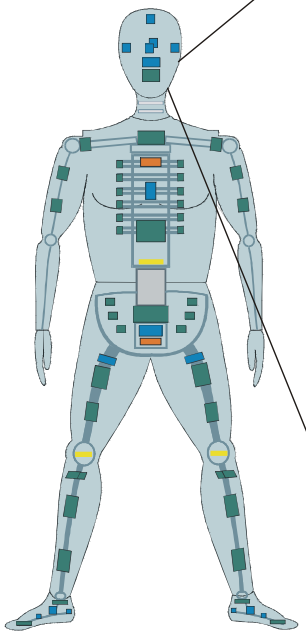
Neck Injury Predictor (NIJ)

Date: 12/14/2007
Time: 9:12

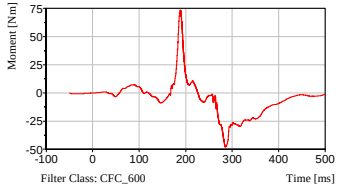
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

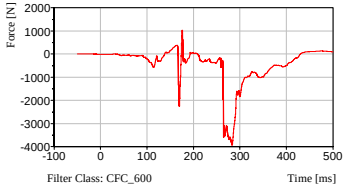
Test Orientation = Frontal
Fzc(Tension) = 6806
Fzc(Compression) = 6160
Myc(Extension) = 135
Myc(Flexion) = 310



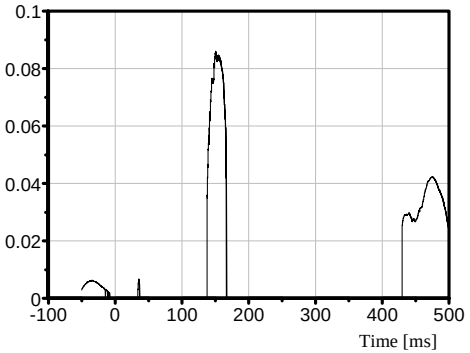
13TMONUP00H3MOYX



13NECKUP00H3FOZB

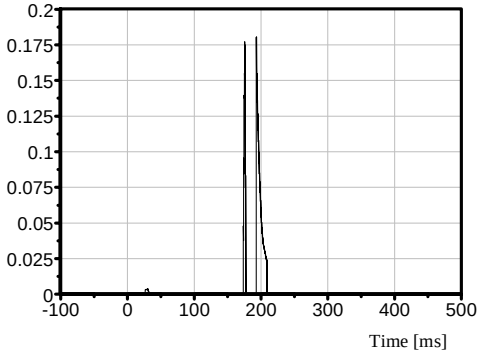


13NIJCUPTEH300YX



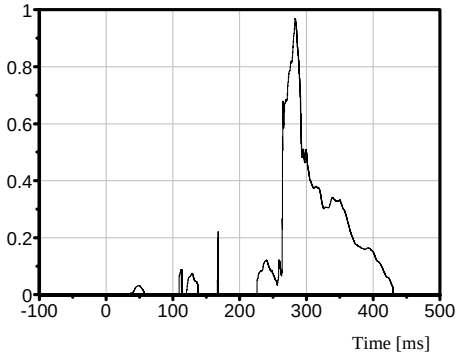
Max [NTE] 0.0861 at 150.80 ms

13NIJCUPTFH300YX



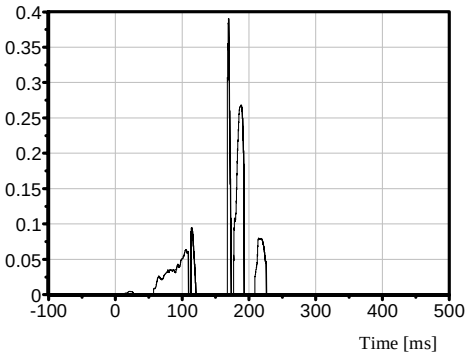
Max [NTF] 0.1807 at 193.28 ms

13NIJCUPCEH300YX



Max [NCE] 0.9692 at 283.52 ms

13NIJCUPCFH300YX



Max [NCF] 0.3906 at 169.68 ms

Dummy:HIII 50th Male
Seating Position:
Right Side Row 5 Left Seat

NIJ Source Code: (Fz/Fzc)+(My/Myc)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

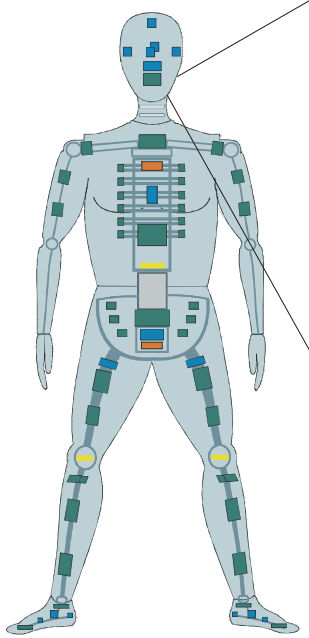
Neck Shear Force

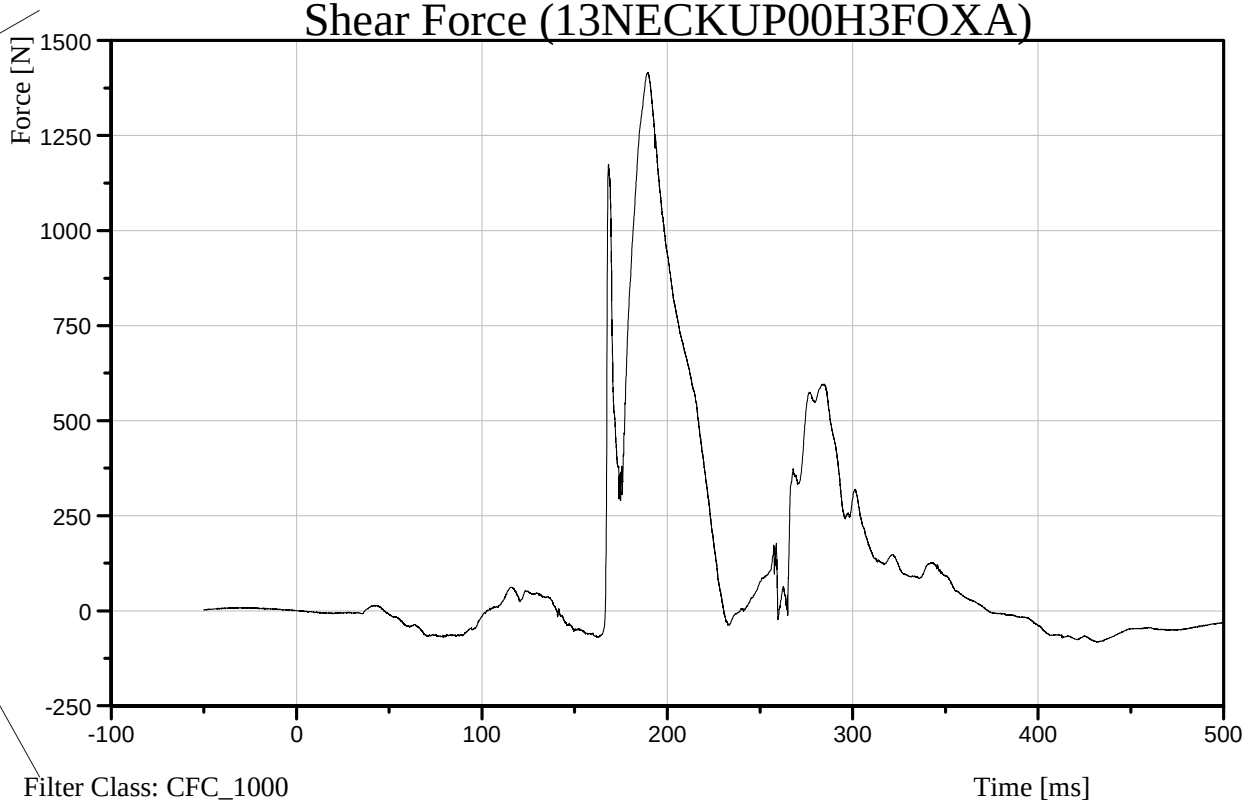
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 50th Male
Seating Position:
Right Side Row 5 Left Seat

[Max.] 1,416.21 N at 189.44 ms
[Min.] -82.06 N at 432.00 ms

Neck Shear Force Source Code: Min/Max of 13NECKUP00H3FOXA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

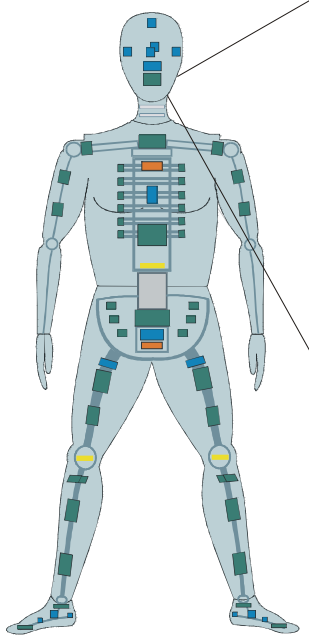
Neck Shear Force

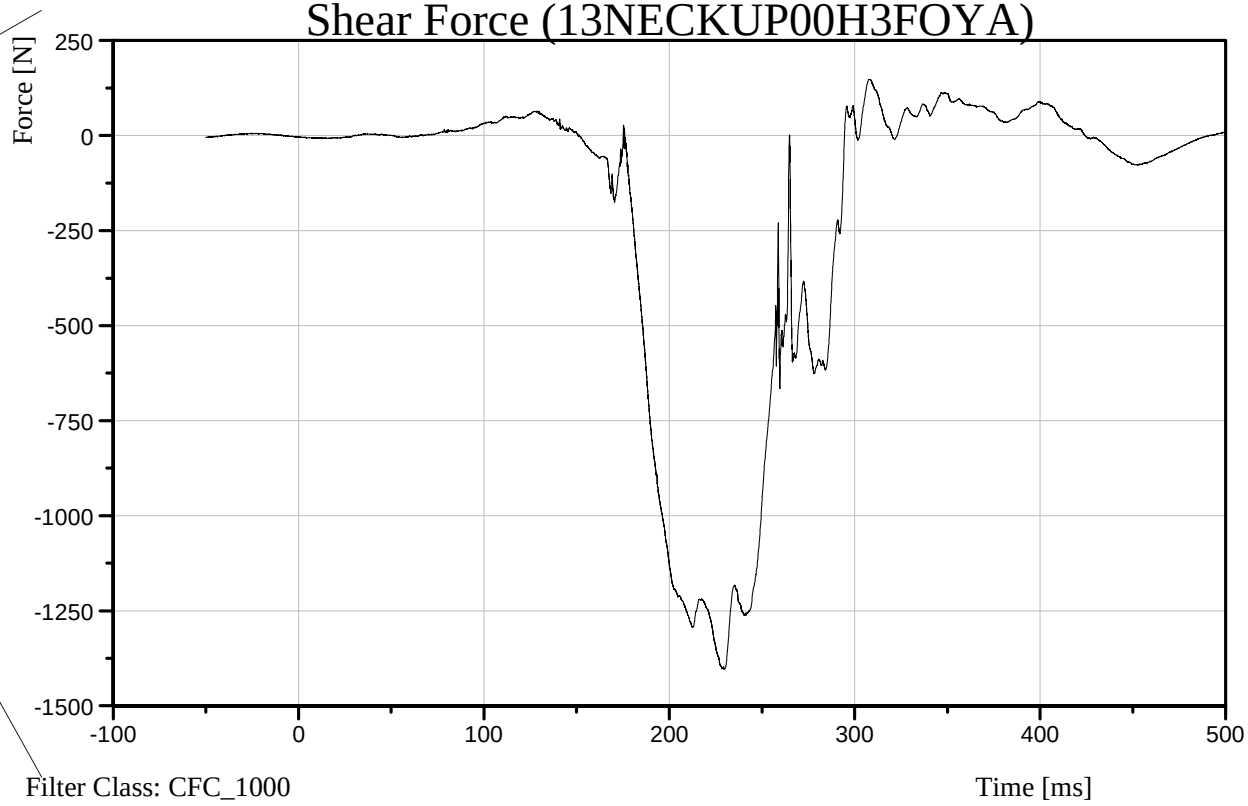
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 50th Male
Seating Position:
Right Side Row 5 Left Seat

[Max.] 148.29 N at 307.60 ms
[Min.] -1,403.72 N at 229.92 ms

Neck Shear Force Source Code: Min/Max of 13NECKUP00H3FOYA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

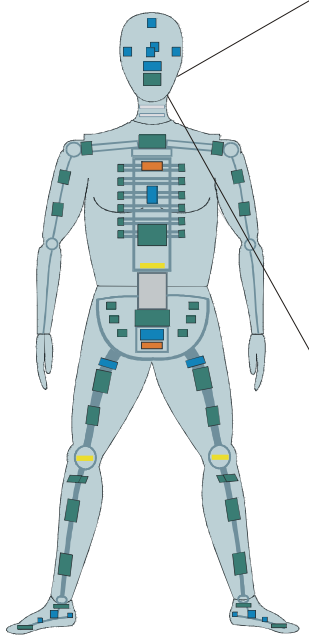
Neck Axial Force

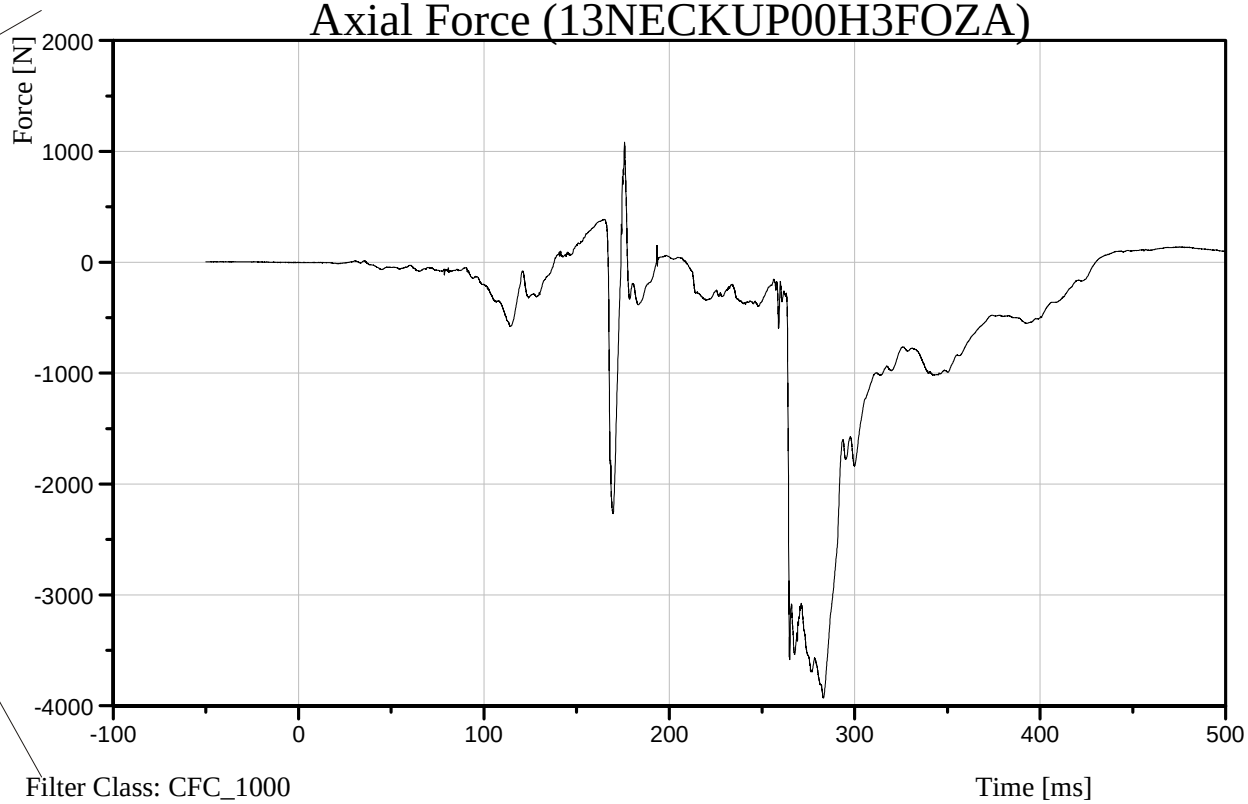
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 50th Male
Seating Position:
Right Side Row 5 Left Seat

[Max.] 1,085.32 N at 175.84 ms
[Min.] -3,928.94 N at 283.12 ms

Neck Axial Force Source Code: Min/Max of 13NECKUP00H3FOZA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

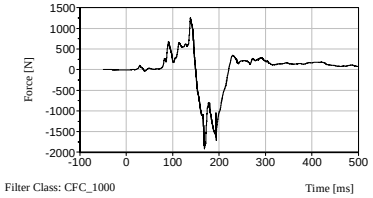
Femur Load

Date: 12/14/2007
Time: 9:12

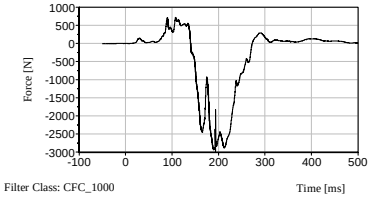
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

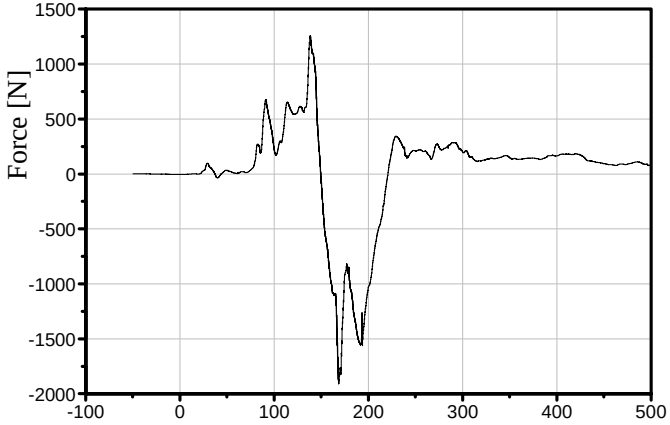
Right Femur (13FEMRRL00H3FOZA)

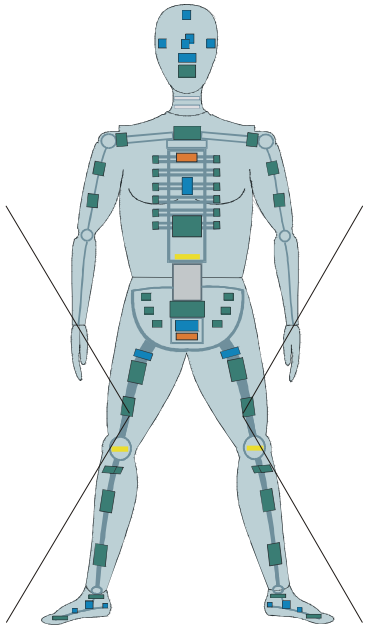


Left Femur (13FEMRLL00H3FOZA)

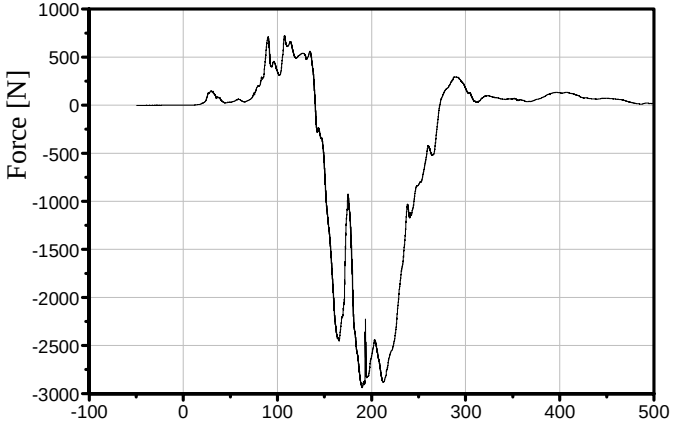


Right Femur (13FEMRRL00H3FOZB)





Left Femur (13FEMRLL00H3FOZB)



Max [Tension] 1,259.52 N at 138.32 ms
Min [Compression] -1,909.76 N at 168.40 ms

Dummy:HIII 50th Male
Seating Position:
Right Side Row 5 Left Seat

Max [Tension] 727.76 N at 107.52 ms
Min [Compression] -2,936.75 N at 189.76 ms

Femur Load Source Code : Min/Max of 13FEMRRL00H3FOZB and 13FEMRLL00H3FOZB (CFC 600)

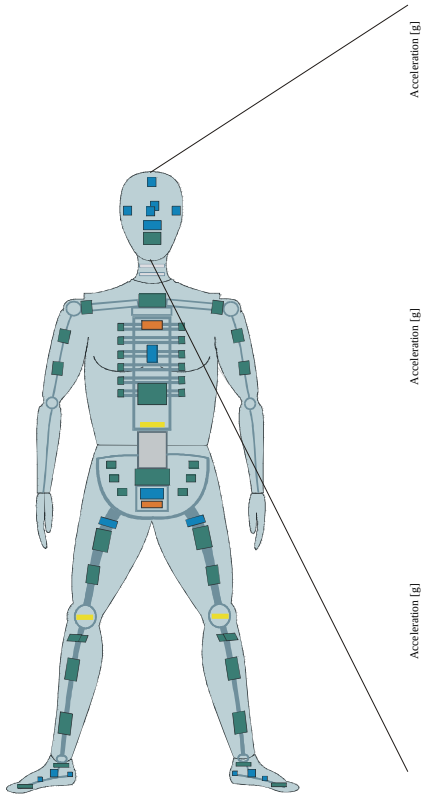
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

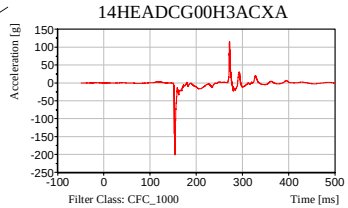
Head Injury Criterion (HIC)

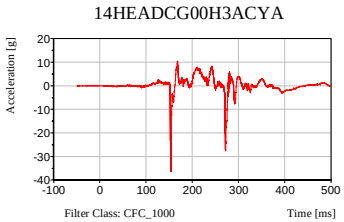
Date: 12/14/2007
Time: 9:12

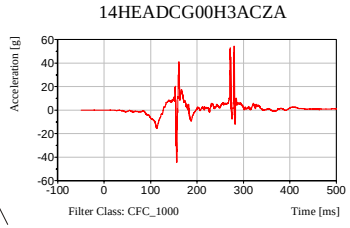
Customer: VRTC

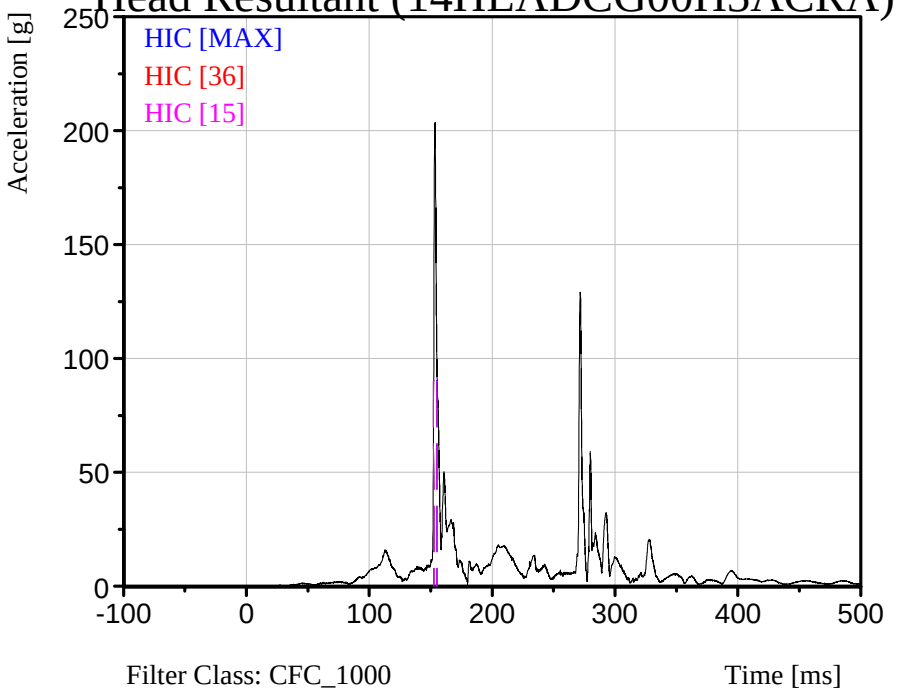
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 843.77	152.48 ms	155.20 ms	155.49 g
HIC [36] = 843.77	152.48 ms	155.20 ms	155.49 g
HIC [15] = 843.77	152.48 ms	155.20 ms	155.49 g

Dummy:HIII 50th Male
Seating Position:
Right Side Row 5 Right Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

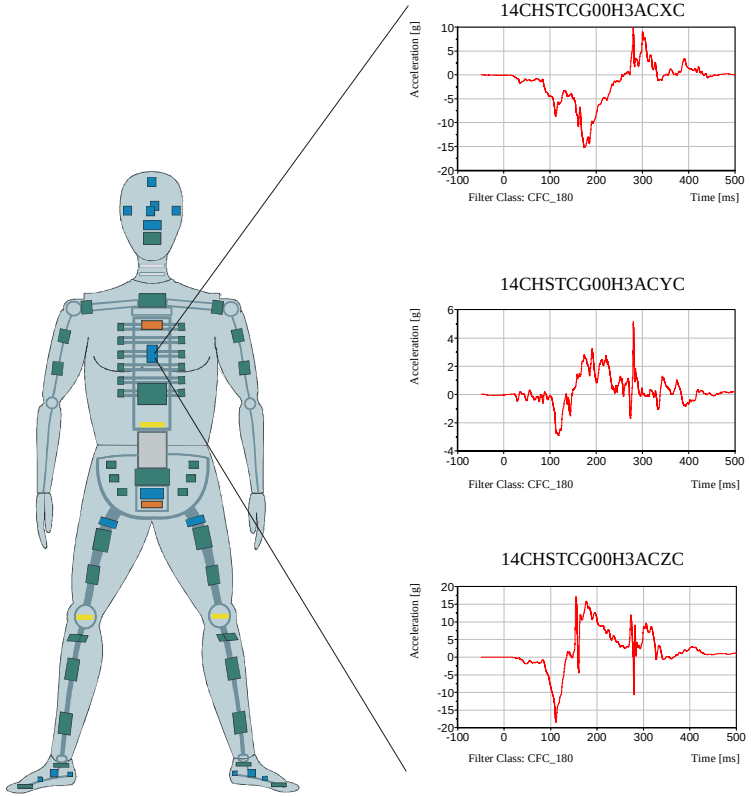
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

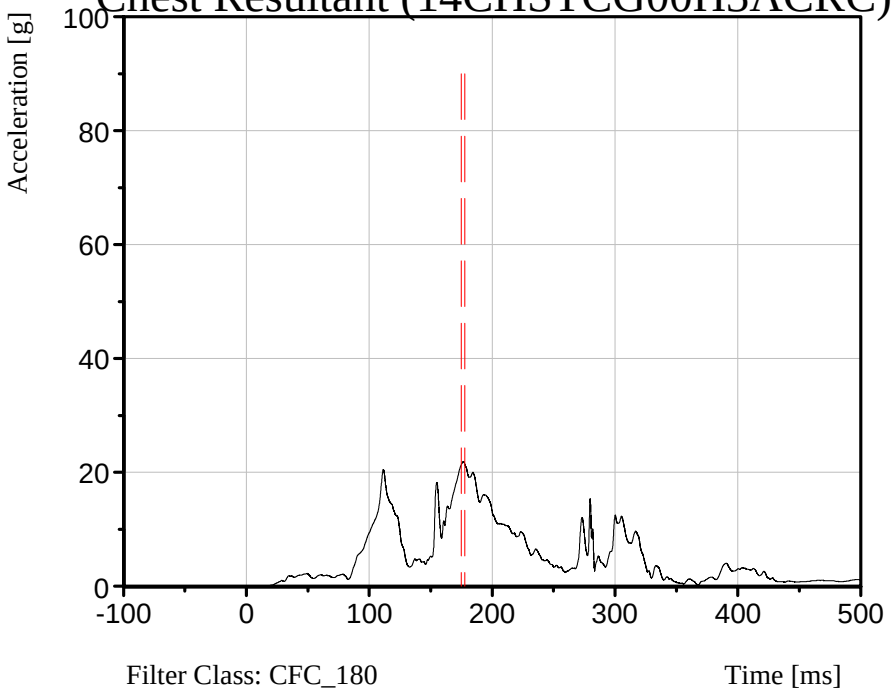
3 ms Duration Acceleration (Chest)

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 21.35 g	174.96 ms	177.96 ms

Chest Severity Index = 102.71

Dummy:HIII 50th Male
Seating Position:
Right Side Row 5 Right Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

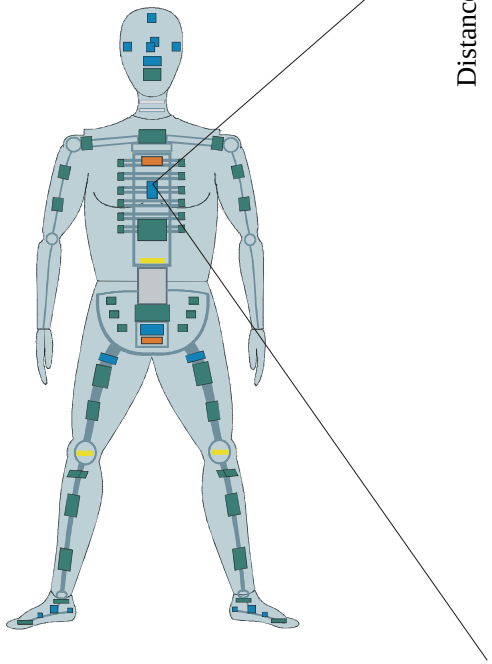
Chest Deflection

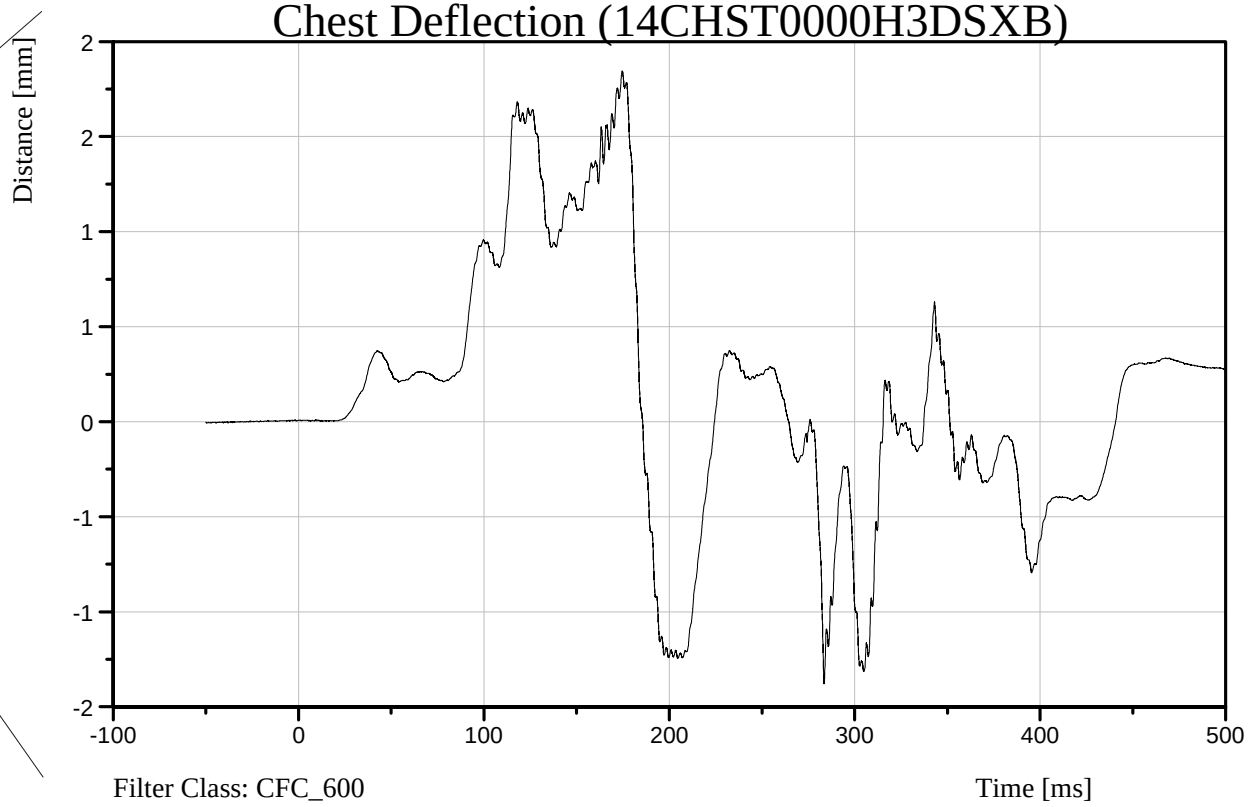
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 50th Male
Seating Position:
Right Side Row 5 Right Seat

[Max.] 1.84 mm at 174.56 ms
[Min.] -1.38 mm at 283.44 ms

ChestDeflection Source Code : Min/Max of 14CHST0000H3DSXB (CFC_600)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph
Neck Moment about the Occipital Condyle (NECK OM)

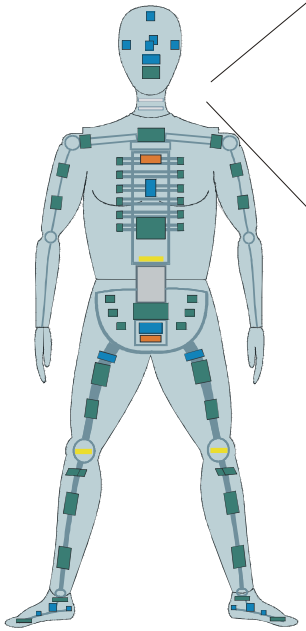
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 071214

Test Orientation = Frontal



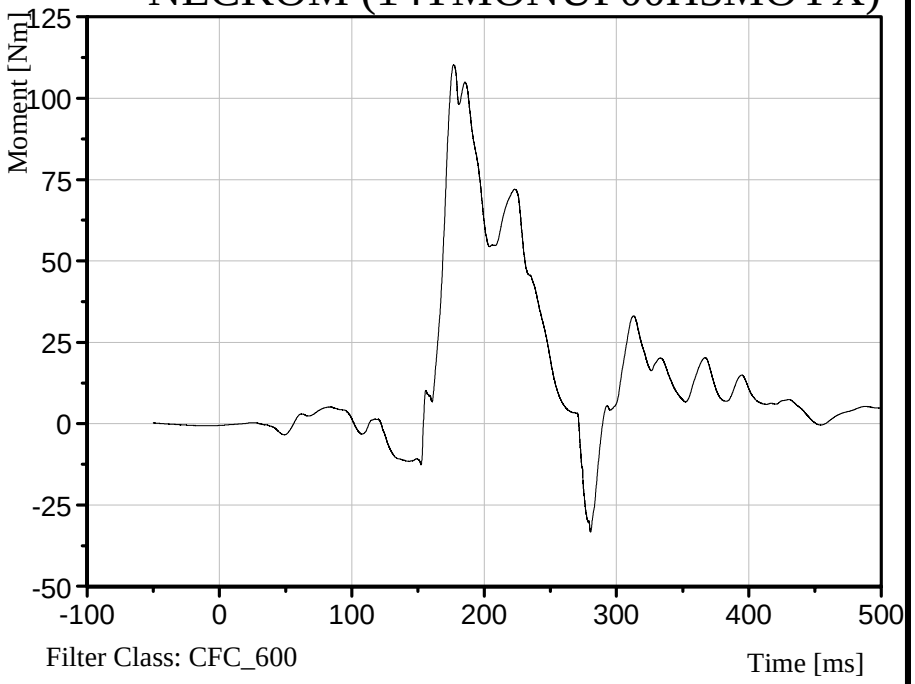
14NECKUP00H3FOXB

Filter Class: CFC_600

14NECKUP00H3MOYB

Filter Class: CFC_600

NECKOM (14TMONUP00H3MOYX)



Filter Class: CFC_600

Dummy:HIII 50th Male
Seating Position:
Right Side Row 5 Right Seat

Neck OM Source Code: My - (D*Fx)

[Max.] 110.24 Nm at 176.96 ms
[Min.] -33.20 Nm at 280.48 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

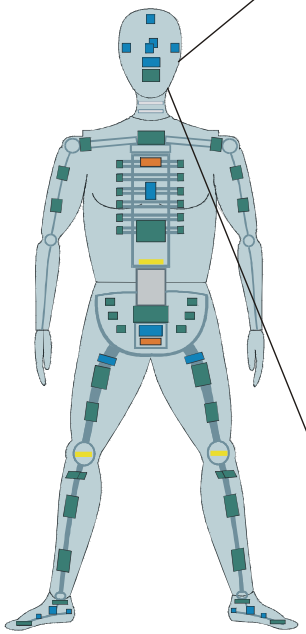
Neck Injury Predictor (NIJ)

Date: 12/14/2007
Time: 9:12

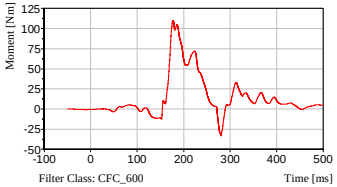
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

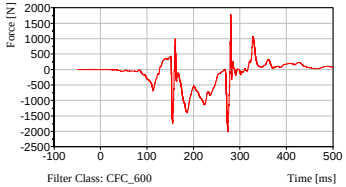
Test Orientation = Frontal
Fzc(Tension) = 6806
Fzc(Compression) = 6160
Myc(Extension) = 135
Myc(Flexion) = 310



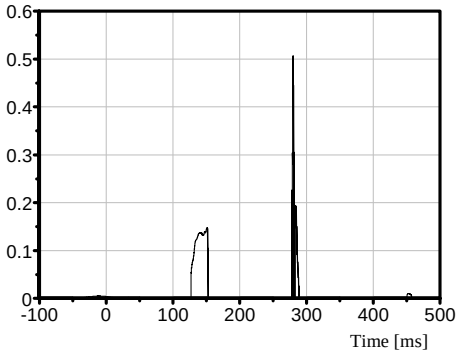
14TMONUP00H3MOYX



14NECKUP00H3FOZB

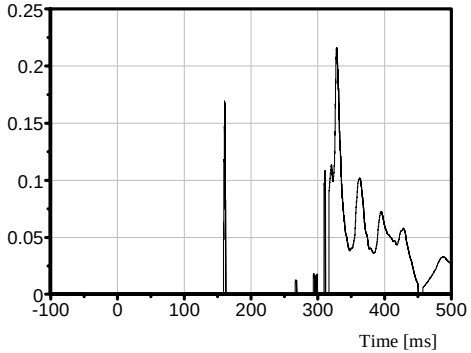


14NIJCUPTEH300YX



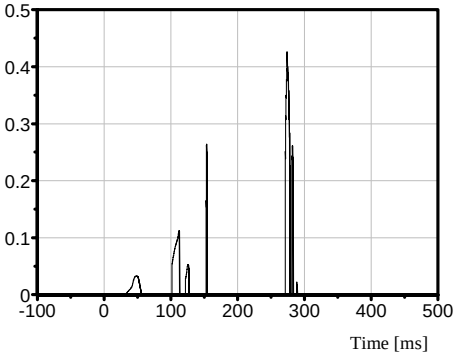
Max [NTE] 0.5065 at 280.16 ms

14NIJCUPTFH300YX



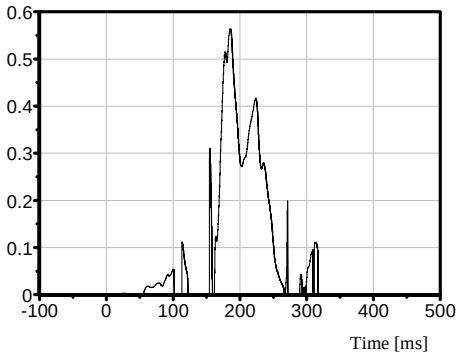
Max [NTF] 0.2165 at 328.40 ms

14NIJCUPCEH300YX



Max [NCE] 0.4266 at 274.32 ms

14NIJCUPCFH300YX



Max [NCF] 0.5649 at 186.08 ms

Dummy:HIII 50th Male
Seating Position:
Right Side Row 5 Right Seat

NIJ Source Code: (Fz/Fzc)+(My/Myc)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

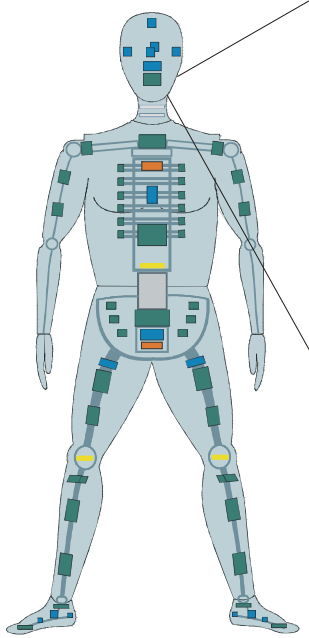
Neck Shear Force

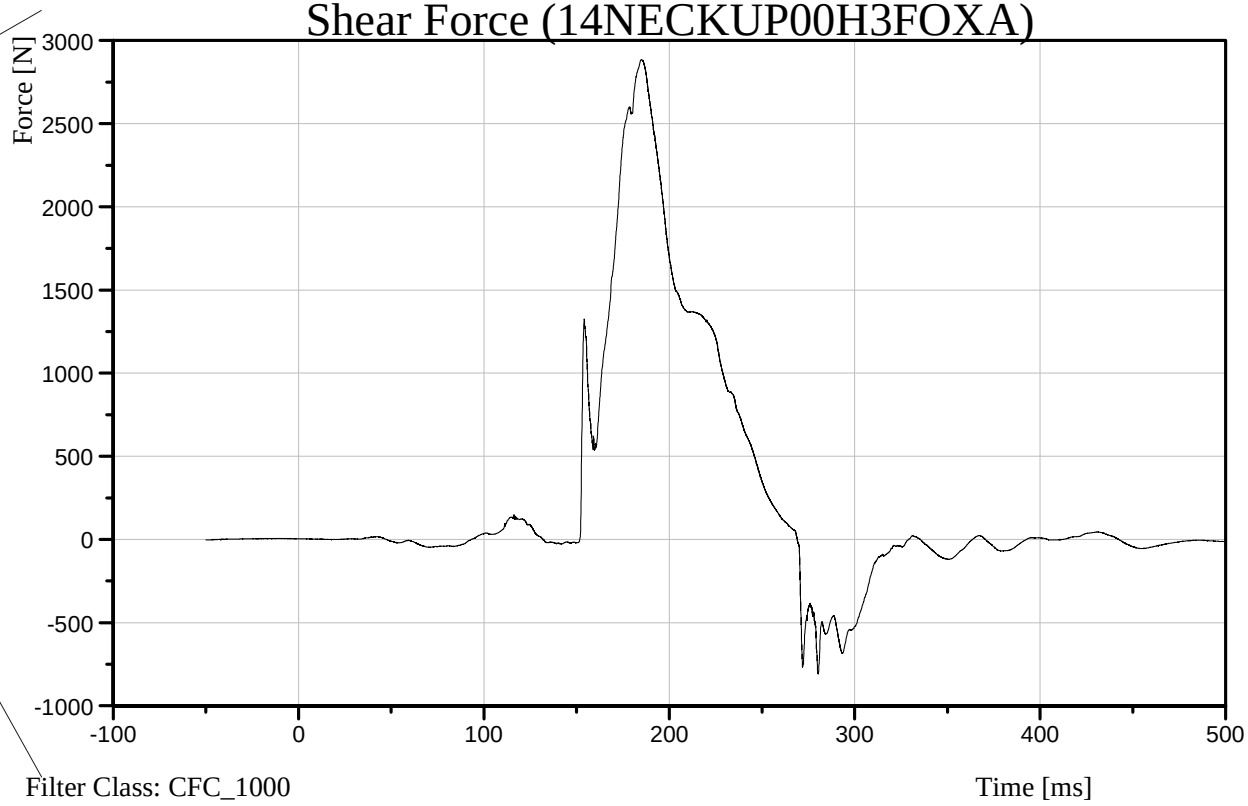
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 50th Male
Seating Position:
Right Side Row 5 Right Seat

[Max.] 2,885.68 N at 184.96 ms
[Min.] -808.43 N at 280.40 ms

Neck Shear Force Source Code: Min/Max of 14NECKUP00H3FOXA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

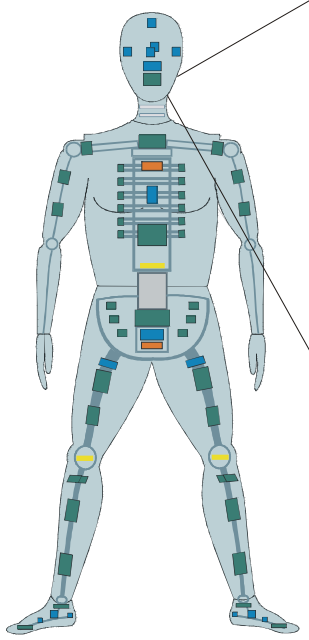
Neck Shear Force

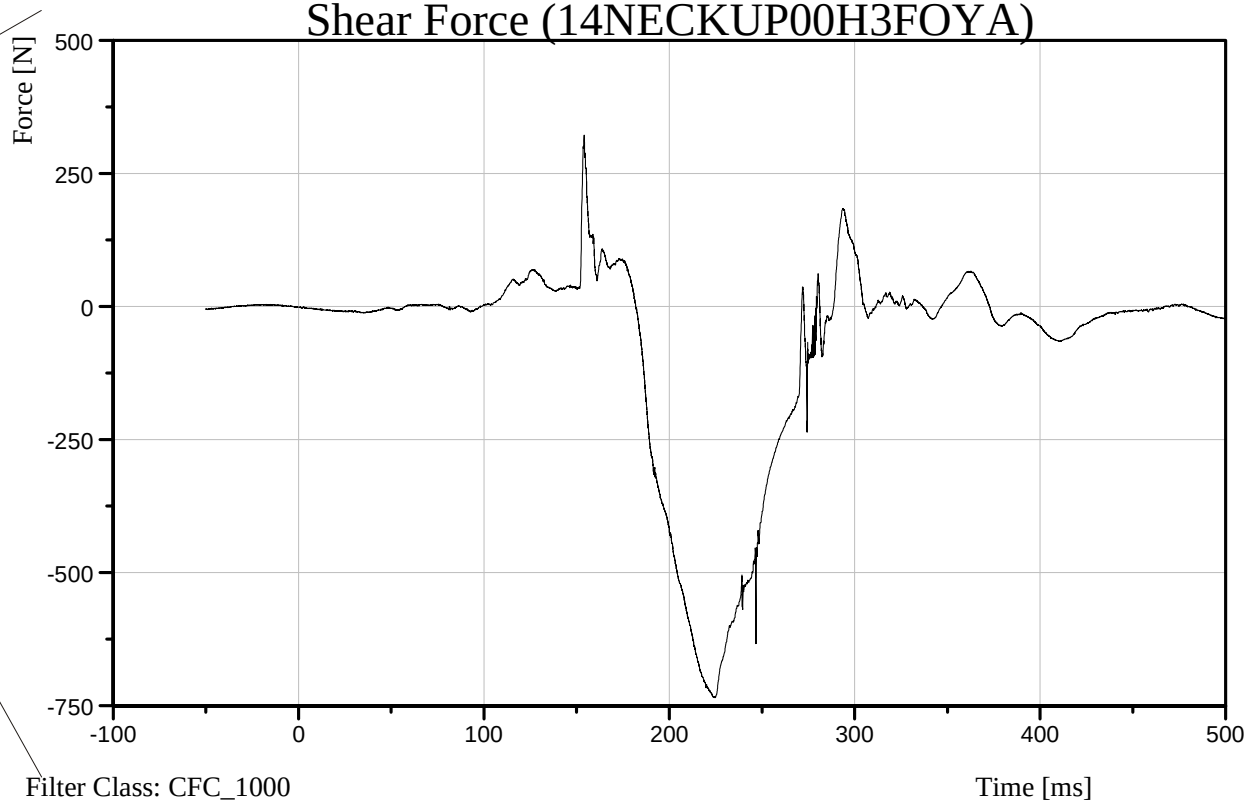
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 50th Male
Seating Position:
Right Side Row 5 Right Seat

[Max.] 322.00 N at 154.08 ms
[Min.] -734.32 N at 224.48 ms

Neck Shear Force Source Code: Min/Max of 14NECKUP00H3FOYA

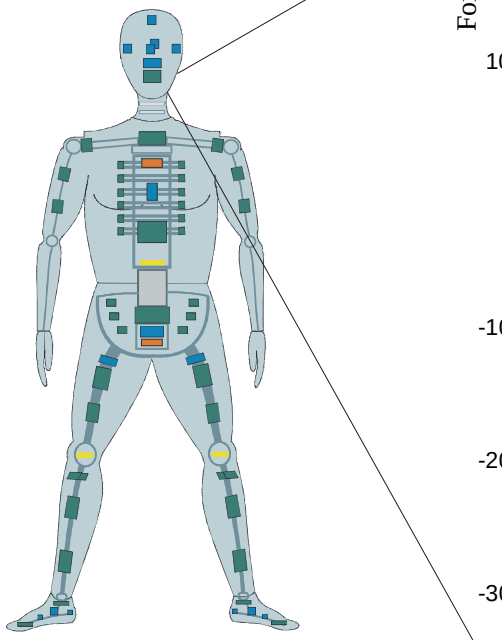
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

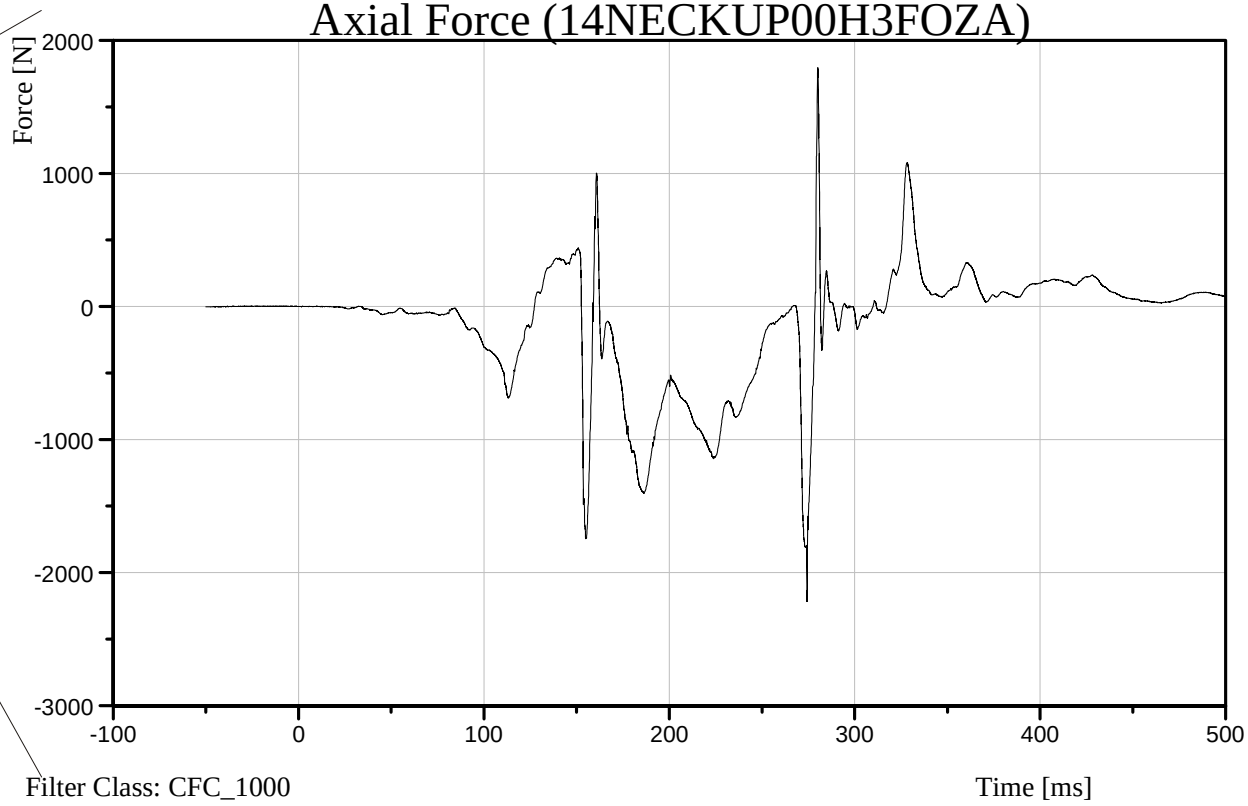
Neck Axial Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Right Side Row 5 Right Seat

[Max.] 1,796.45 N at 280.16 ms
[Min.] -2,216.72 N at 274.32 ms

Neck Axial Force Source Code: Min/Max of 14NECKUP00H3FOZA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

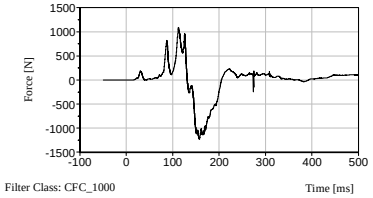
Femur Load

Date: 12/14/2007
Time: 9:12

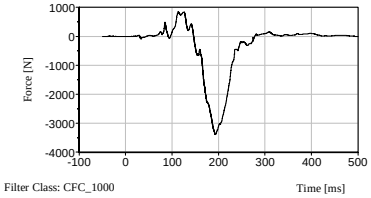
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

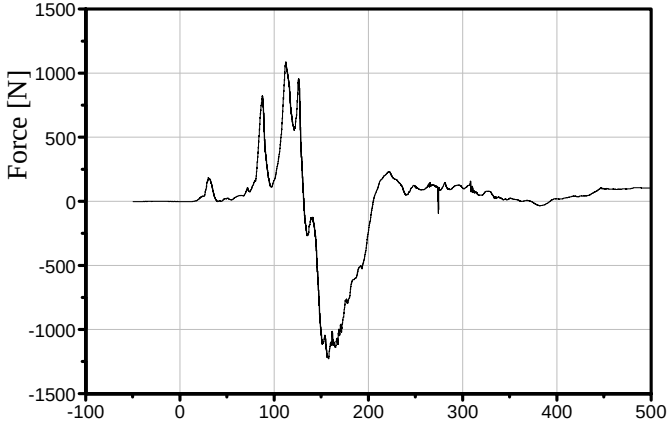
Right Femur (14FEMRRL00H3FOZA)

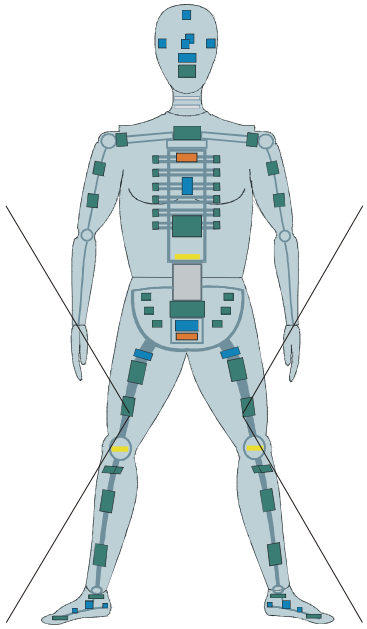


Left Femur (14FEMRLL00H3FOZA)

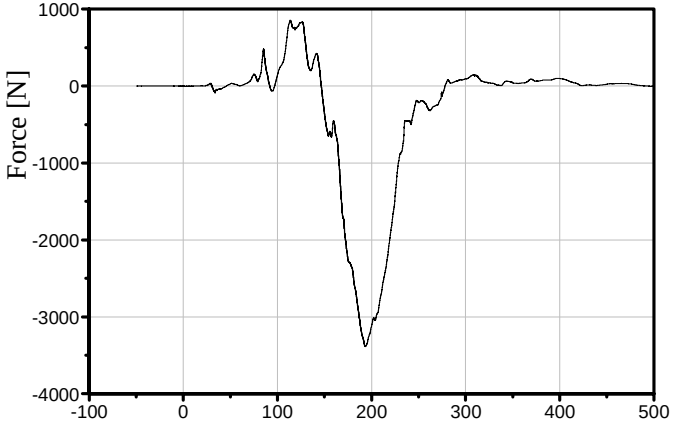


Right Femur (14FEMRRL00H3FOZB)





Left Femur (14FEMRLL00H3FOZB)



Max [Tension] 1,088.26 N at 112.40 ms
Min [Compression] -1,227.63 N at 157.84 ms

Dummy:HIII 50th Male
Seating Position:
Right Side Row 5 Right Seat

Max [Tension] 858.56 N at 113.44 ms
Min [Compression] -3,386.83 N at 193.60 ms

Femur Load Source Code : Min/Max of 14FEMRRL00H3FOZB and 14FEMRLL00H3FOZB (CFC 600)

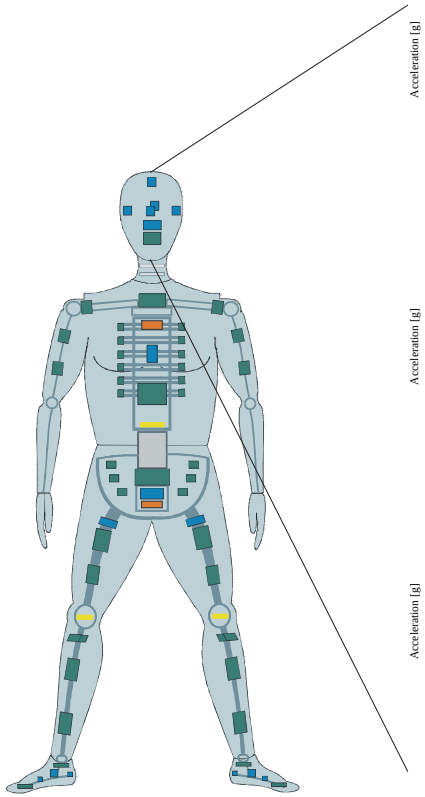
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

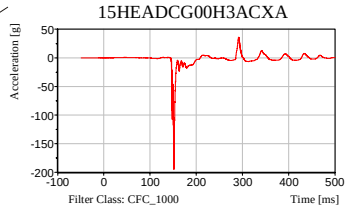
Head Injury Criterion (HIC)

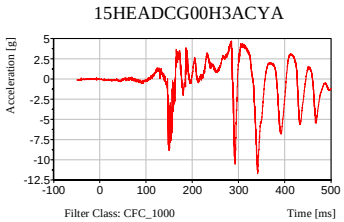
Date: 12/14/2007
Time: 9:12

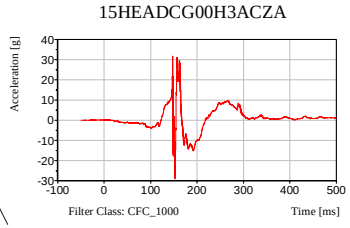
Customer: VRTC

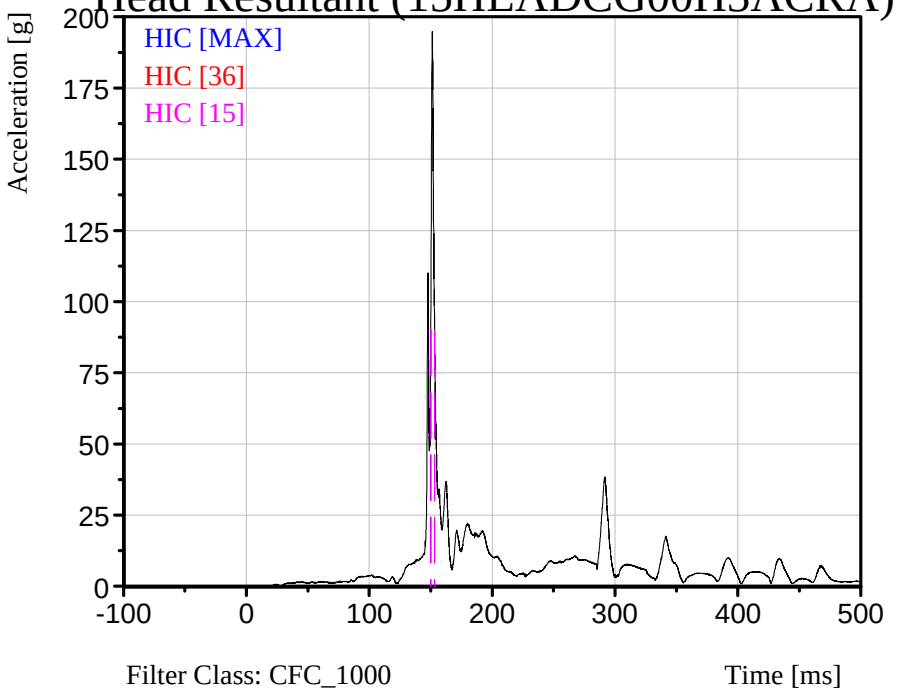
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 785.18	150.08 ms	153.20 ms	143.22 g
HIC [36] = 785.18	150.08 ms	153.20 ms	143.22 g
HIC [15] = 785.18	150.08 ms	153.20 ms	143.22 g

Dummy:HIII 50th Male
Seating Position:
Left Side Row 5 Left Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

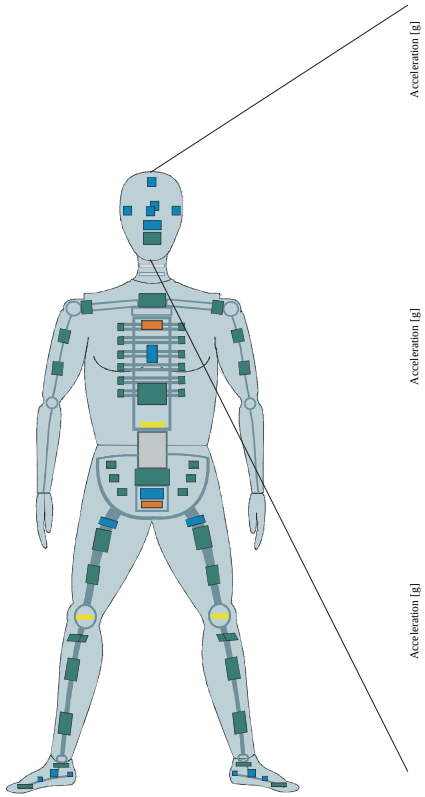
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

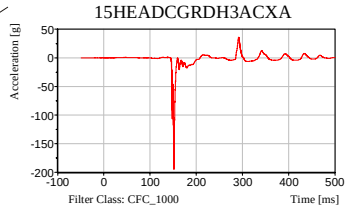
Head Injury Criterion (HIC)

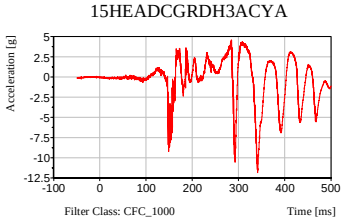
Date: 12/14/2007
Time: 9:12

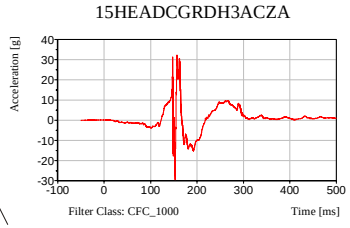
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

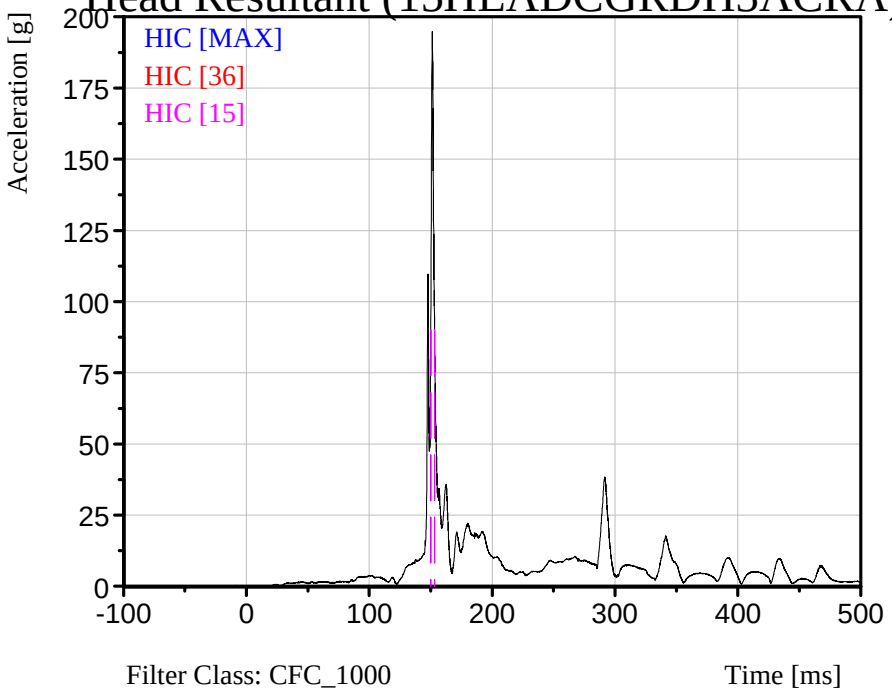








Head Resultant (15HEADCGRDH3ACRA)



	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 783.08	150.08 ms	153.20 ms	143.06 g
HIC [36] = 783.08	150.08 ms	153.20 ms	143.06 g
HIC [15] = 783.08	150.08 ms	153.20 ms	143.06 g

Dummy:HIII 50th Male
Seating Position:
Left Side Row 5 Left Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

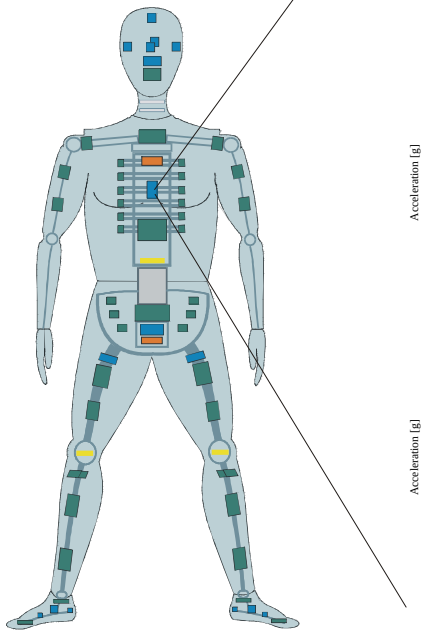
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

3 ms Duration Acceleration (Chest)

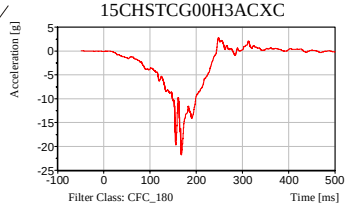
Date: 12/14/2007
Time: 9:12

Customer: VRTC

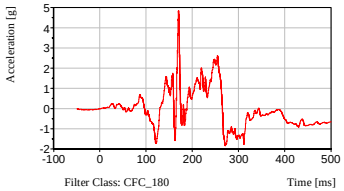
TRC Inc. Test Lab: CTF
Test Number: 071214



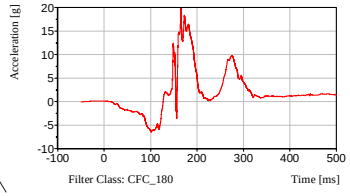
15CHSTCG00H3ACXC



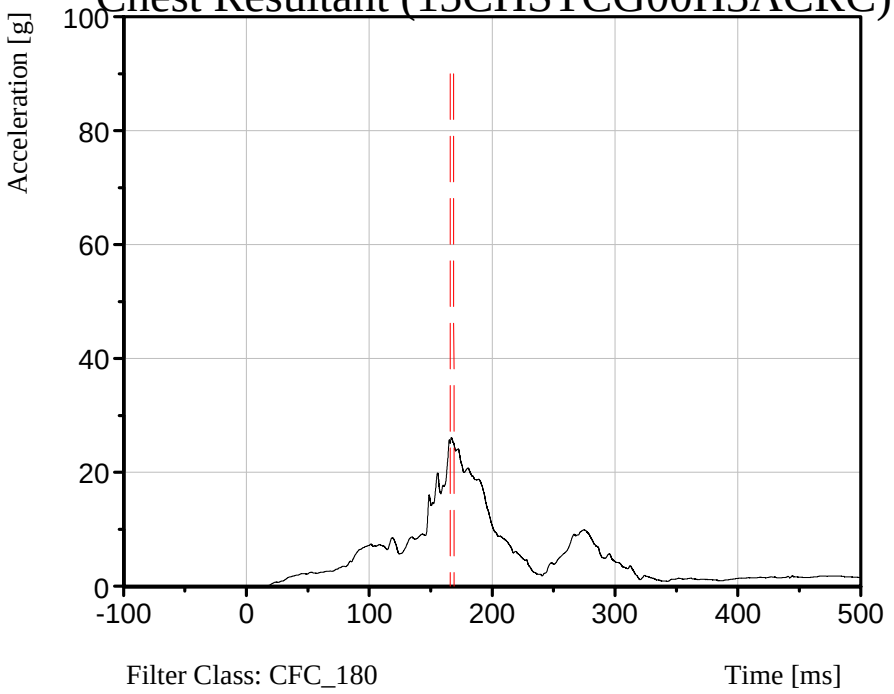
15CHSTCG00H3ACYC



15CHSTCG00H3ACZC



Chest Resultant (15CHSTCG00H3ACRC)



	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 25.10 g	165.88 ms	168.88 ms

Chest Severity Index = 110.09

Dummy:HIII 50th Male
Seating Position:
Left Side Row 5 Left Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

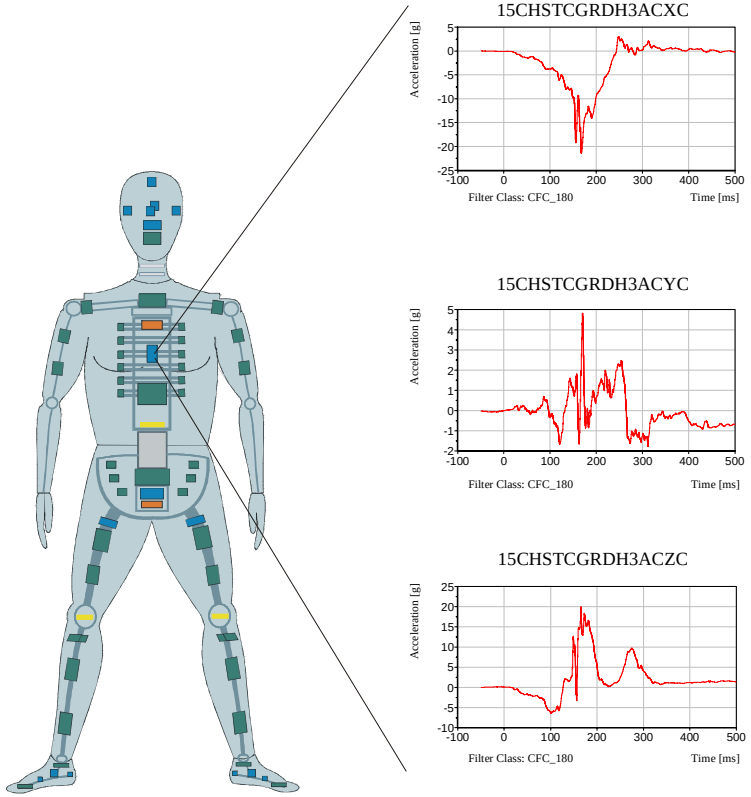
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

3 ms Duration Acceleration (Chest)

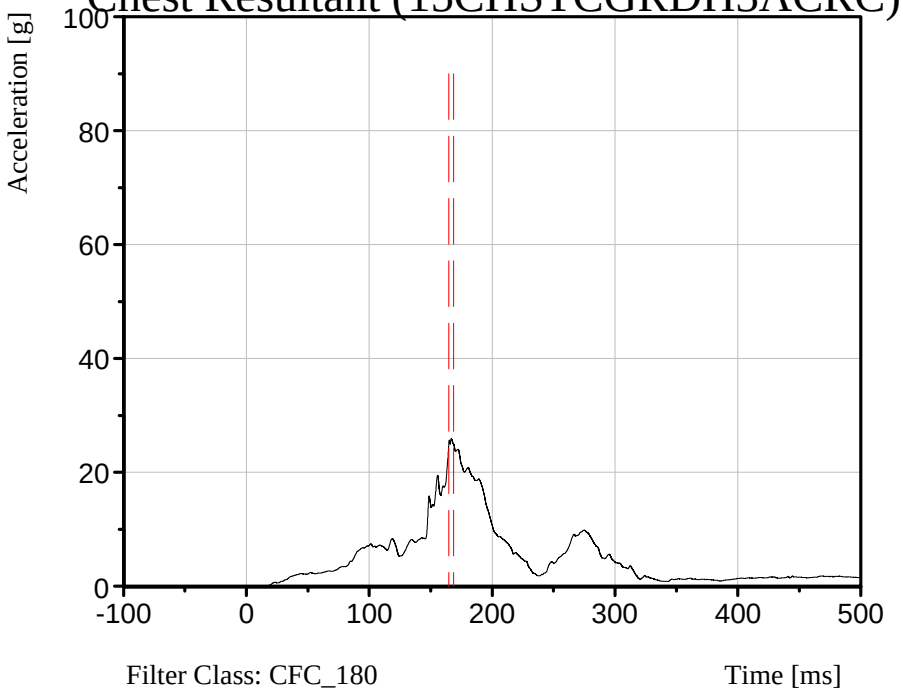
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214



Chest Resultant (15CHSTCGRDH3ACRC)



	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 25.01 g	164.74 ms	168.76 ms
Chest Severity Index = 107.69		

Dummy:HIII 50th Male
Seating Position:
Left Side Row 5 Left Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

071214

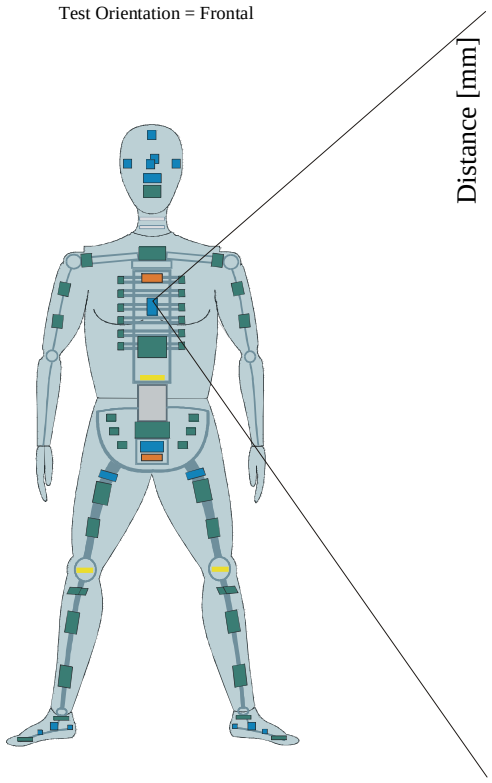
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

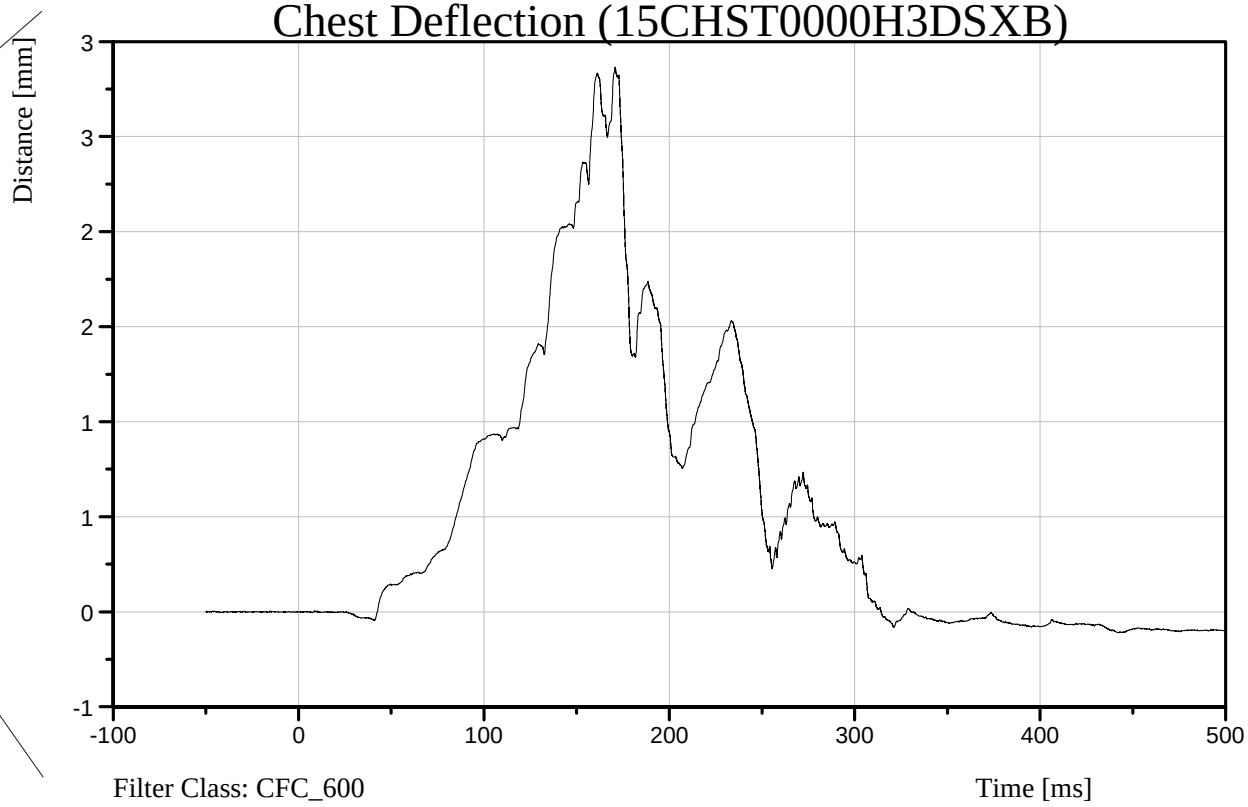
Chest Deflection

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Left Side Row 5 Left Seat

[Max.] 2.86 mm at 170.80 ms
[Min.] -0.11 mm at 442.40 ms

ChestDeflection Source Code : Min/Max of 15CHST0000H3DSXB (CFC_600)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph
Neck Moment about the Occipital Condyle (NECK OM)

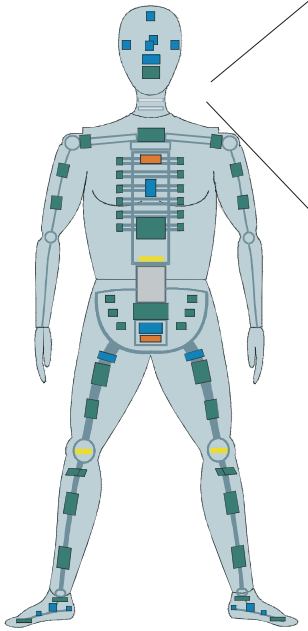
Date: 12/14/2007
Time: 9:12

Customer: VRTC

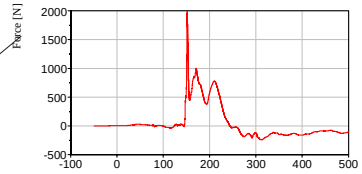
TRC Inc. Test Lab: CTF

Test Number: 071214

Test Orientation = Frontal

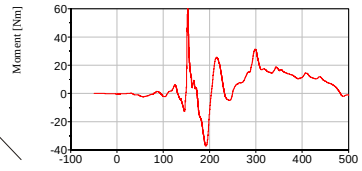


15NECKUP00H3FOXB



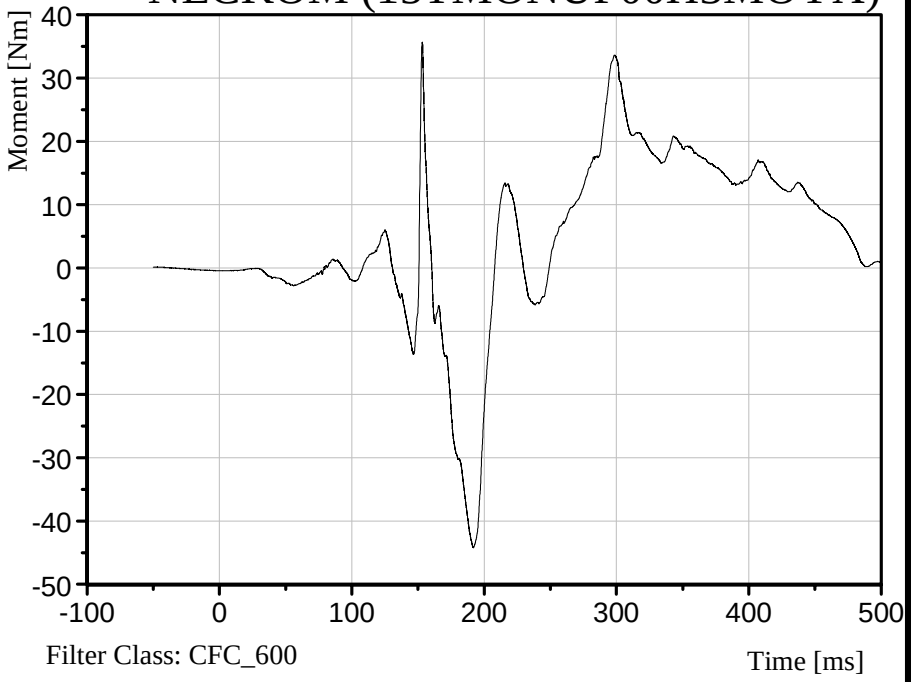
Filter Class: CFC_600

15NECKUP00H3MOYB



Filter Class: CFC_600

NECKOM (15TMONUP00H3MOYX)



Filter Class: CFC_600

Dummy:HIII 50th Male
Seating Position:
Left Side Row 5 Left Seat

Neck OM Source Code: My - (D*Fx)

[Max.] 35.70 Nm at 153.28 ms
[Min.] -44.20 Nm at 192.08 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

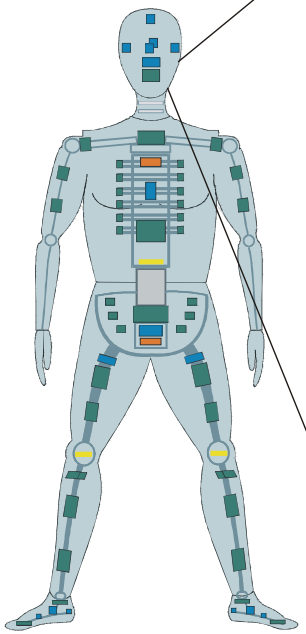
Neck Injury Predictor (NIJ)

Date: 12/14/2007
Time: 9:12

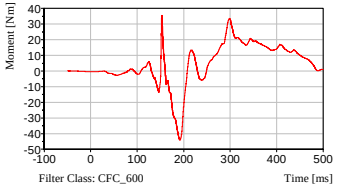
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal
Fzc(Tension) = 6806
Fzc(Compression) = 6160
Myc(Extension) = 135
Myc(Flexion) = 310

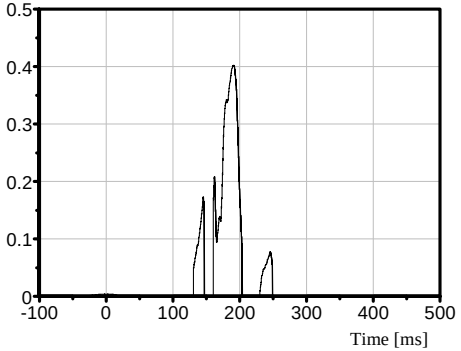


15TMONUP00H3MOYX



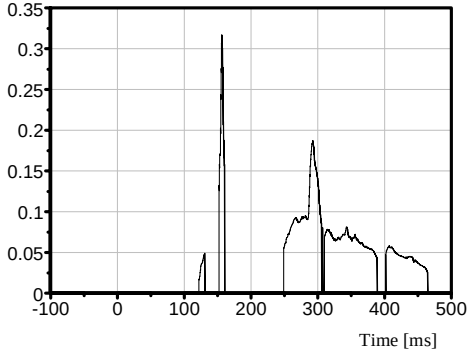
15NECKUP00H3FOZB

15NIJCUPTEH300YX



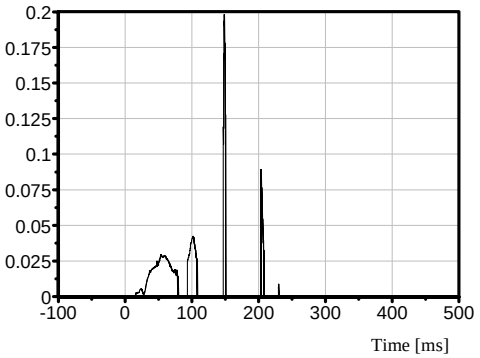
Max [NTE] 0.4025 at 191.36 ms

15NIJCUPTFH300YX



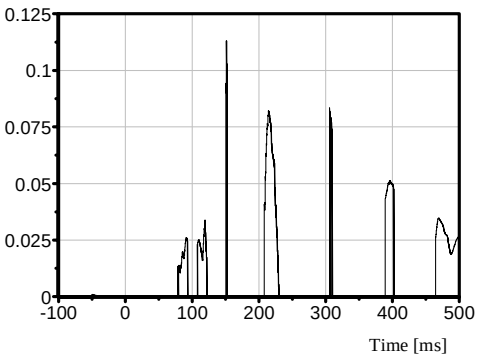
Max [NTF] 0.3172 at 156.64 ms

15NIJCUPCEH300YX



Max [NCE] 0.1982 at 148.72 ms

15NIJCUPCFH300YX



Max [NCF] 0.1131 at 151.60 ms

Dummy:HIII 50th Male
Seating Position:
Left Side Row 5 Left Seat

NIJ Source Code: (Fz/Fzc)+(My/Myc)

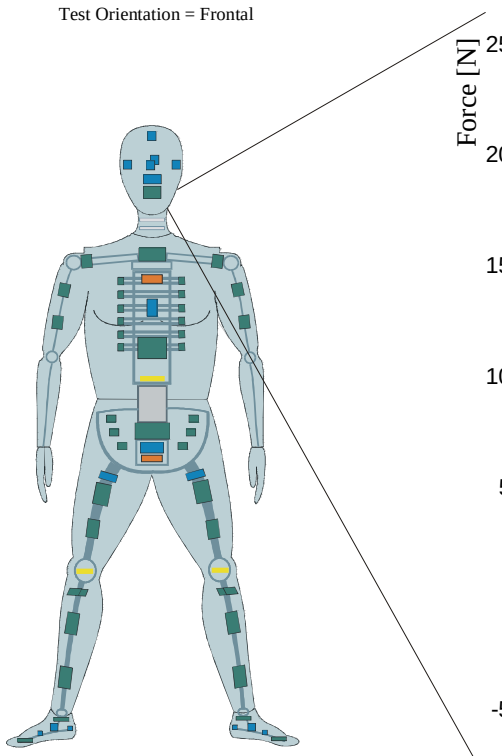
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

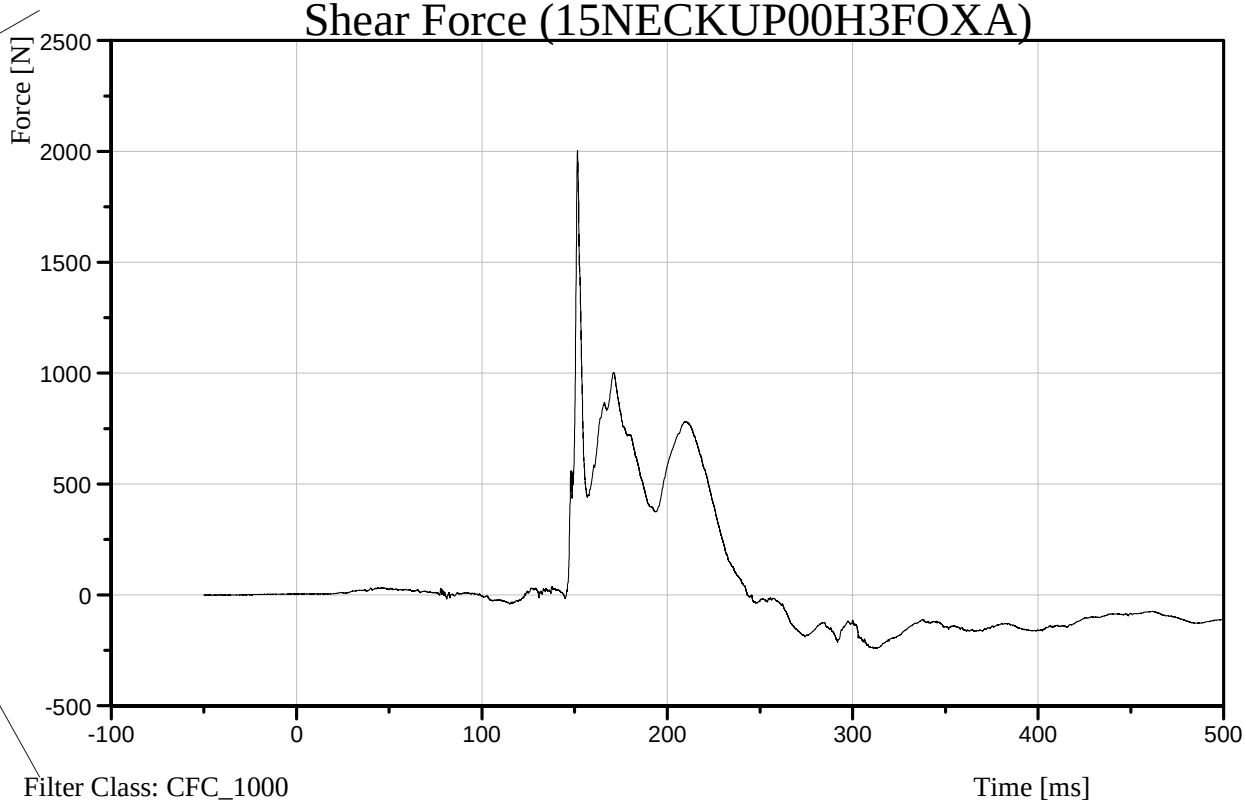
Neck Shear Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Left Side Row 5 Left Seat

Neck Shear Force Source Code: Min/Max of 15NECKUP00H3FOXA

[Max.] 2,004.45 N at 151.52 ms
[Min.] -241.40 N at 313.20 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

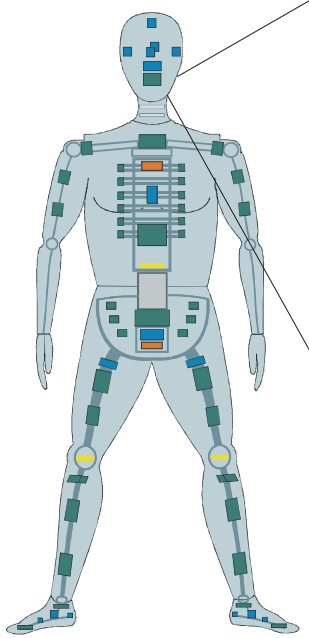
Neck Shear Force

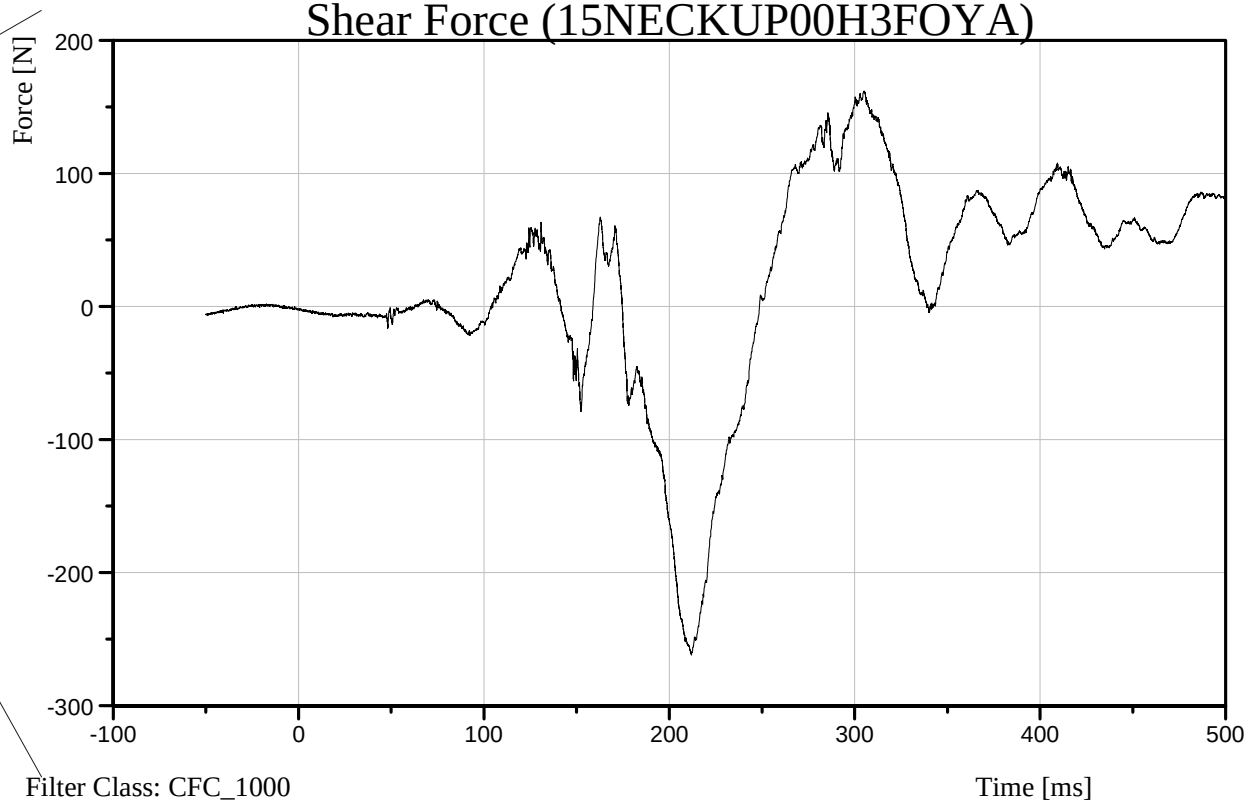
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 50th Male
Seating Position:
Left Side Row 5 Left Seat

[Max.] 162.18 N at 305.12 ms
[Min.] -261.96 N at 211.92 ms

Neck Shear Force Source Code: Min/Max of 15NECKUP00H3FOYA

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

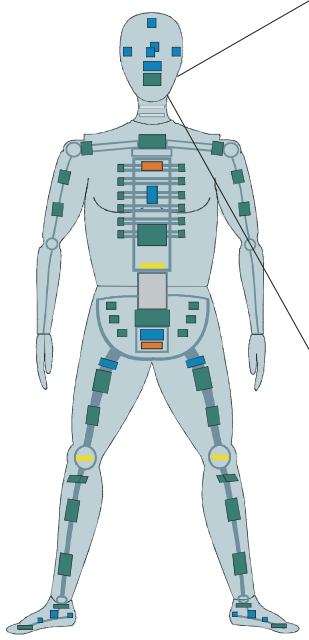
Neck Axial Force

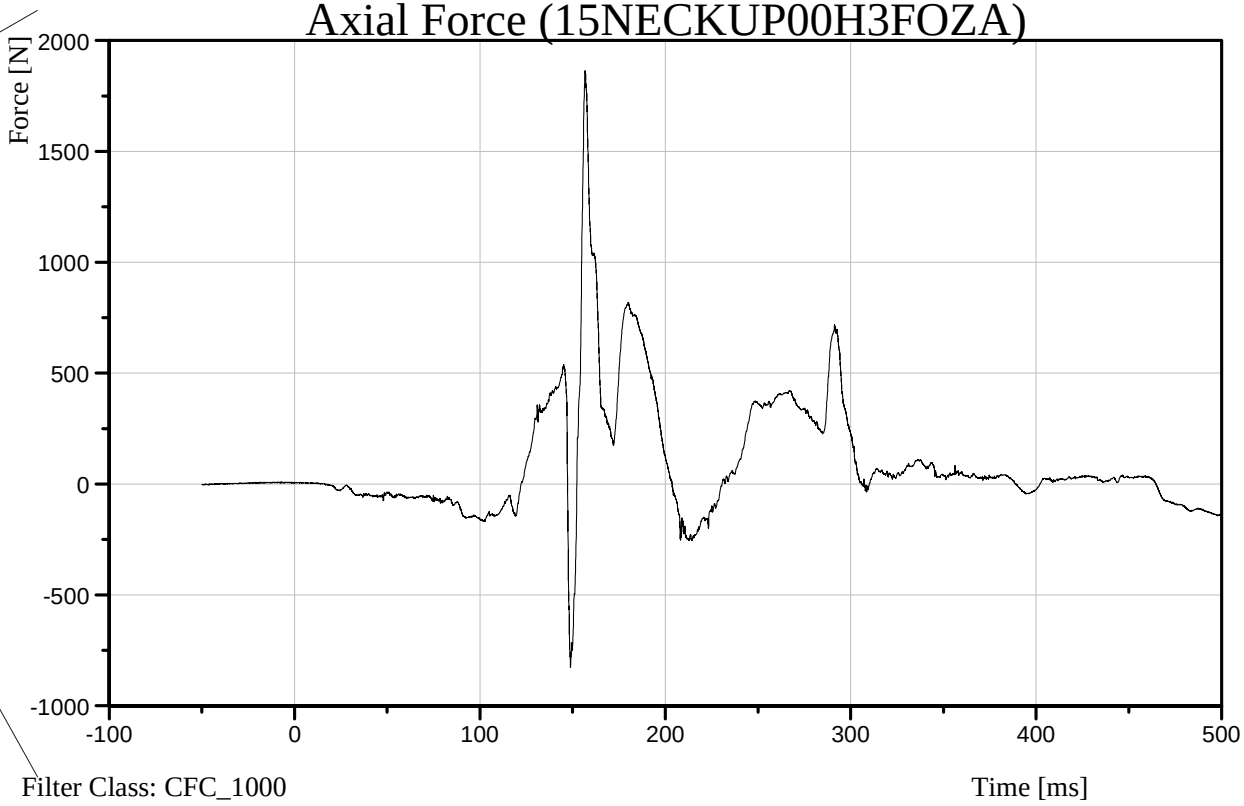
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 50th Male
Seating Position:
Left Side Row 5 Left Seat

[Max.] 1,864.52 N at 156.64 ms
[Min.] -825.91 N at 148.88 ms

Neck Axial Force Source Code: Min/Max of 15NECKUP00H3FOZA

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

Femur Load

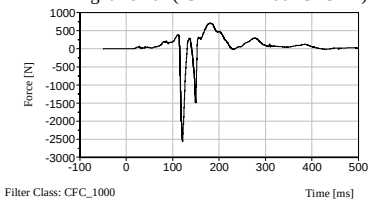
Date: 12/14/2007
Time: 9:12

Customer: VRTC

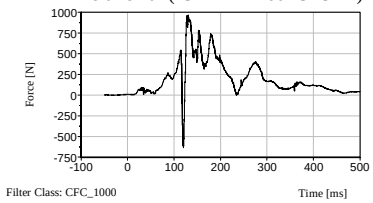
TRC Inc. Test Lab: CTF

Test Number: 071214

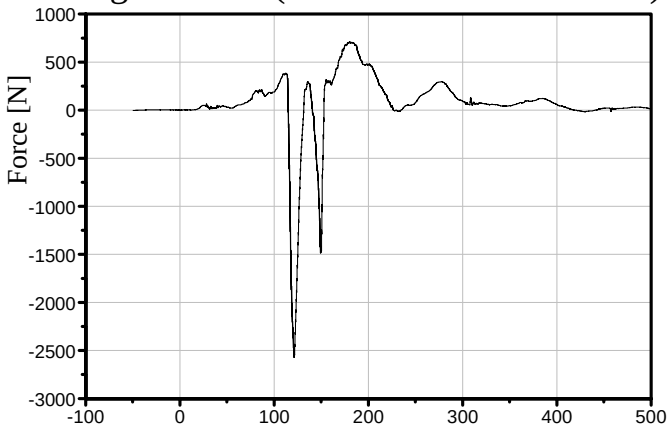
Right Femur (15FEMRRL00H3FOZA)



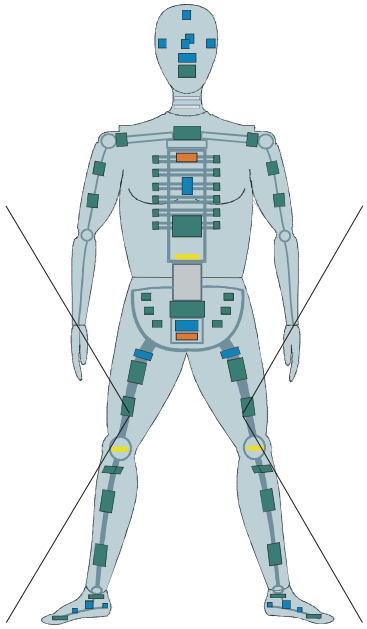
Left Femur (15FEMRLL00H3FOZA)



Right Femur (15FEMRRL00H3FOZB)

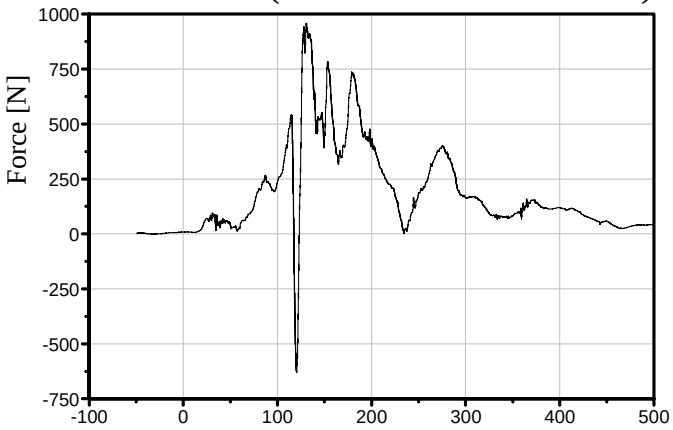


Max [Tension] 712.56 N at 180.24 ms
Min [Compression] -2,569.26 N at 121.28 ms



Dummy:HIII 50th Male
Seating Position:
Left Side Row 5 Left Seat

Left Femur (15FEMRLL00H3FOZB)



Max [Tension] 959.32 N at 130.56 ms
Min [Compression] -630.85 N at 120.32 ms

Femur Load Source Code : Min/Max of 15FEMRRL00H3FOZB and 15FEMRLL00H3FOZB (CFC 600)

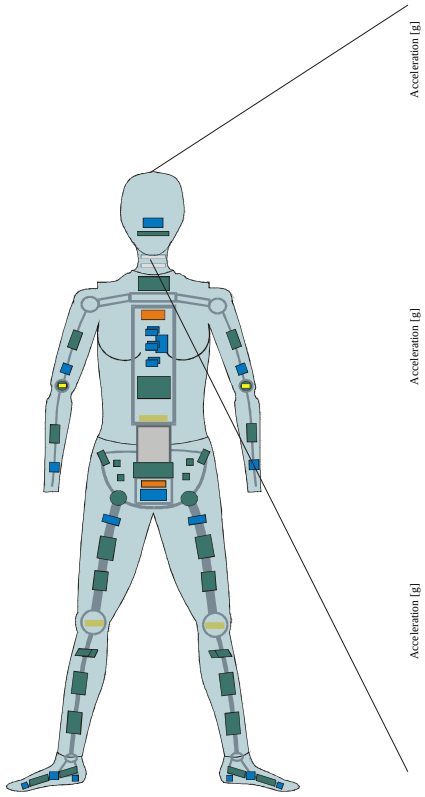
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

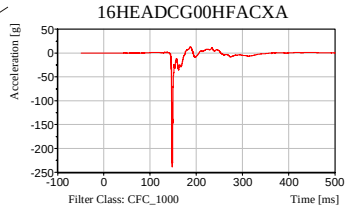
Head Injury Criterion (HIC)

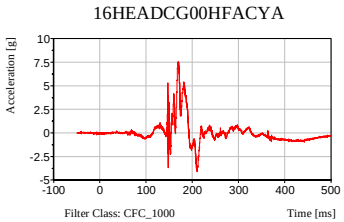
Date: 12/14/2007
Time: 9:12

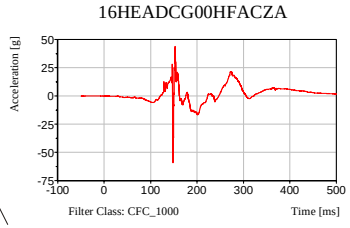
Customer: VRTC

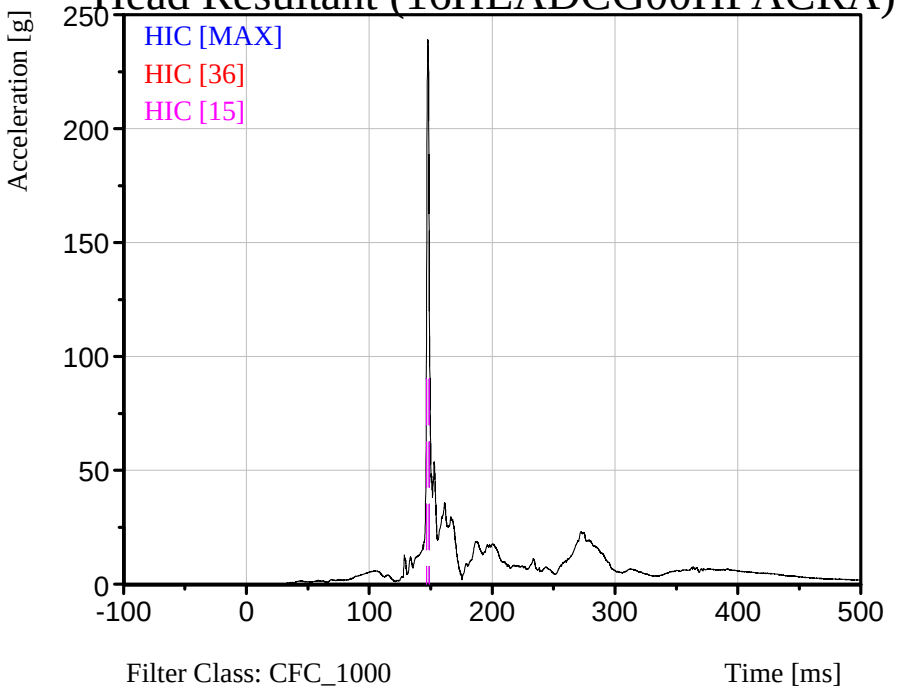
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 1,356.42	146.64 ms	149.04 ms	197.36 g
HIC [36] = 1,356.42	146.64 ms	149.04 ms	197.36 g
HIC [15] = 1,356.42	146.64 ms	149.04 ms	197.36 g

Dummy:HIII 5th Female
Seating Position:
Left Side Row 5 Right Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

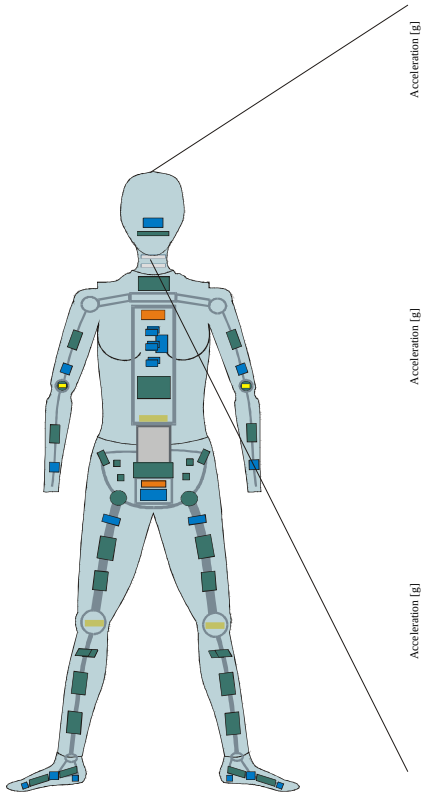
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

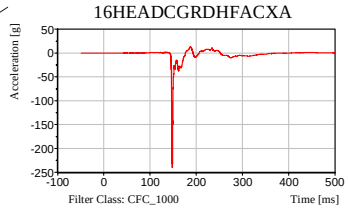
Head Injury Criterion (HIC)

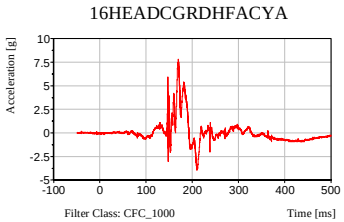
Date: 12/14/2007
Time: 9:12

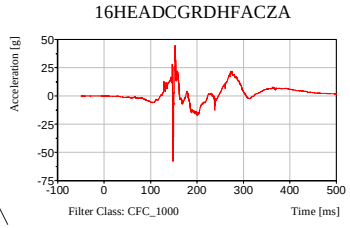
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

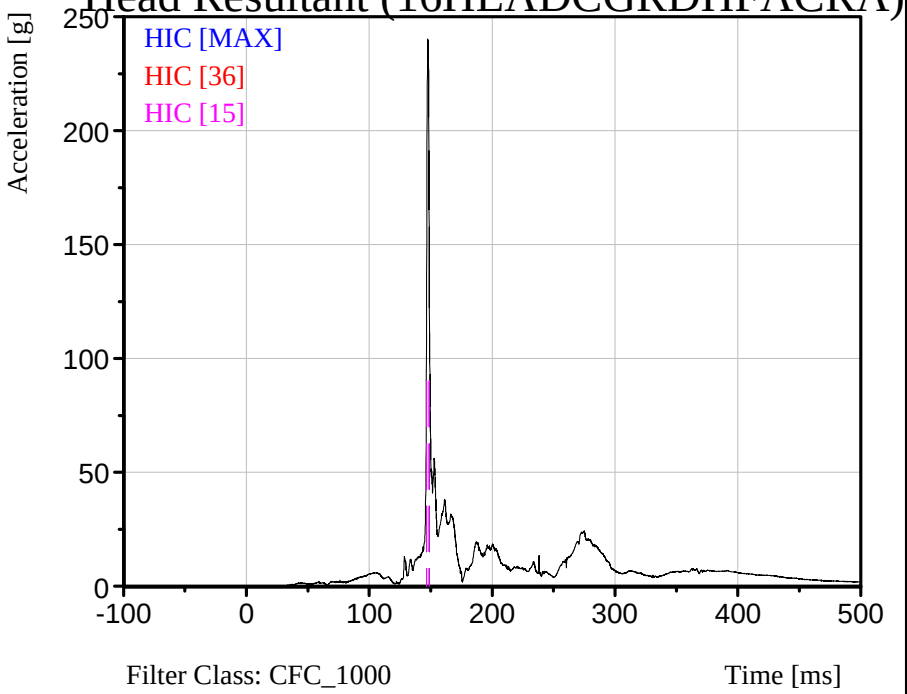








Head Resultant (16HEADCGRDHFACRA)



	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 1,377.84	146.64 ms	149.04 ms	198.61 g
HIC [36] = 1,377.84	146.64 ms	149.04 ms	198.61 g
HIC [15] = 1,377.84	146.64 ms	149.04 ms	198.61 g

Dummy:HIII 5th Female
Seating Position:
Left Side Row 5 Right Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

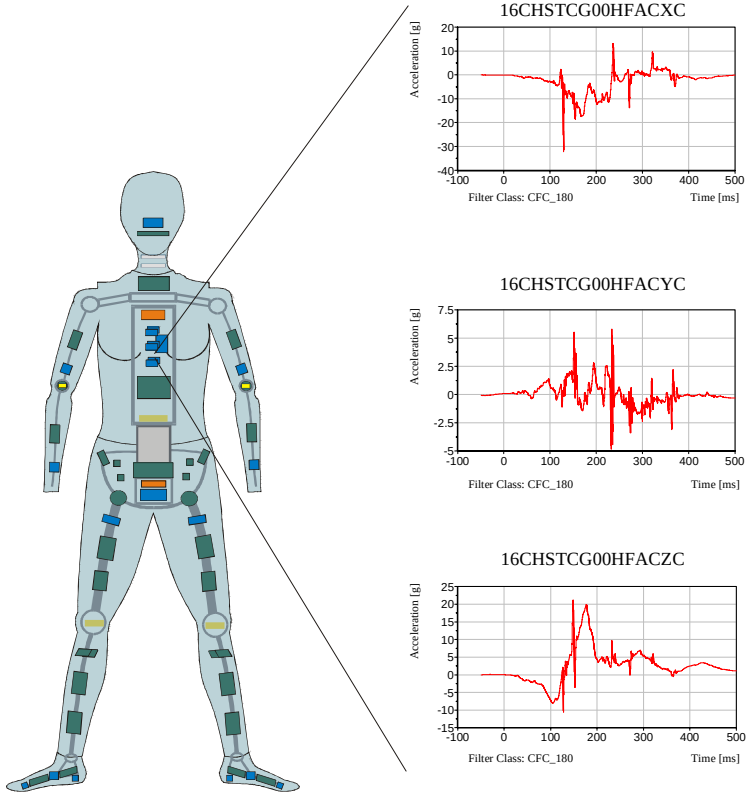
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

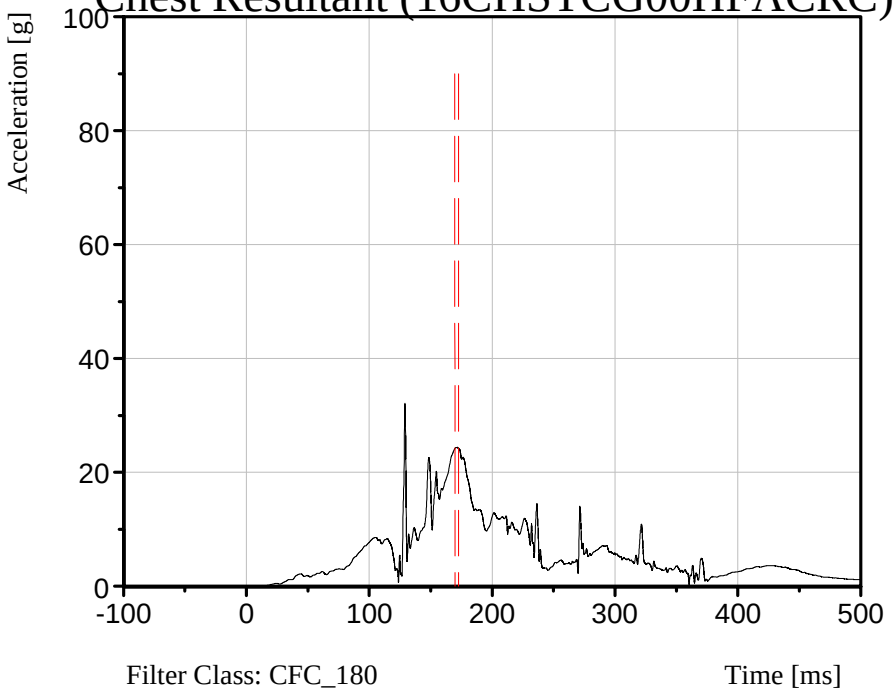
3 ms Duration Acceleration (Chest)

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 24.23 g	169.79 ms	172.79 ms

Chest Severity Index = 116.83

Dummy:HIII 5th Female
Seating Position:
Left Side Row 5 Right Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

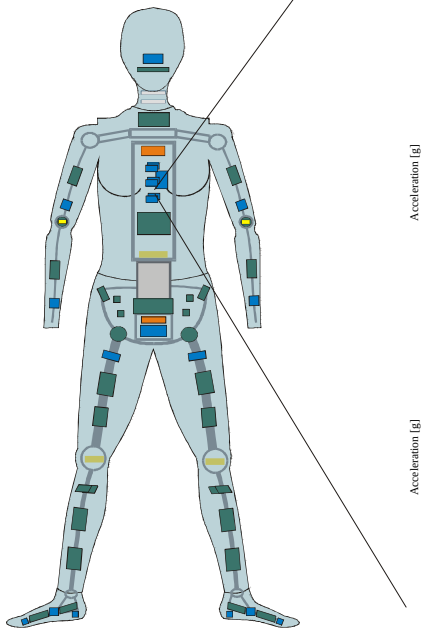
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

3 ms Duration Acceleration (Chest)

Date: 12/14/2007
Time: 9:12

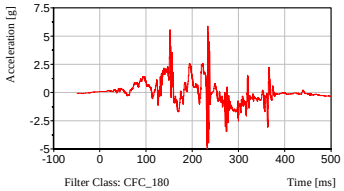
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214



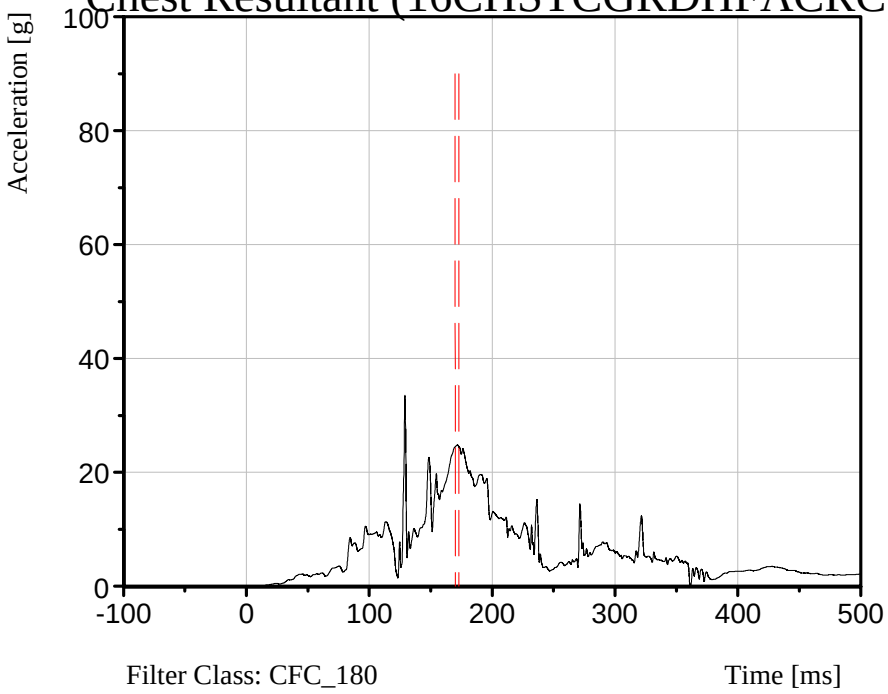
16CHSTCGRDHFACXC

16CHSTCGRDHFACYC



16CHSTCGRDHFACZC

Chest Resultant (16CHSTCGRDHFACRC)



	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 24.50 g	170.02 ms	173.02 ms

Chest Severity Index = 140.10

Dummy:HIII 5th Female
Seating Position:

Left Side Row 5 Right Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

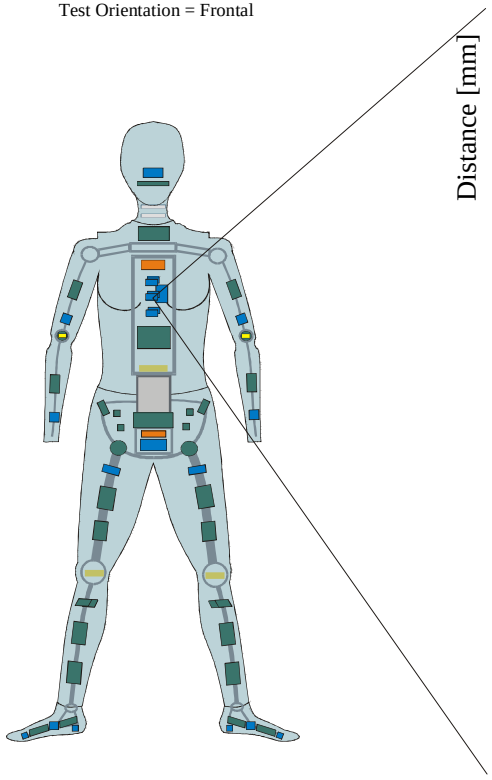
Chest Deflection

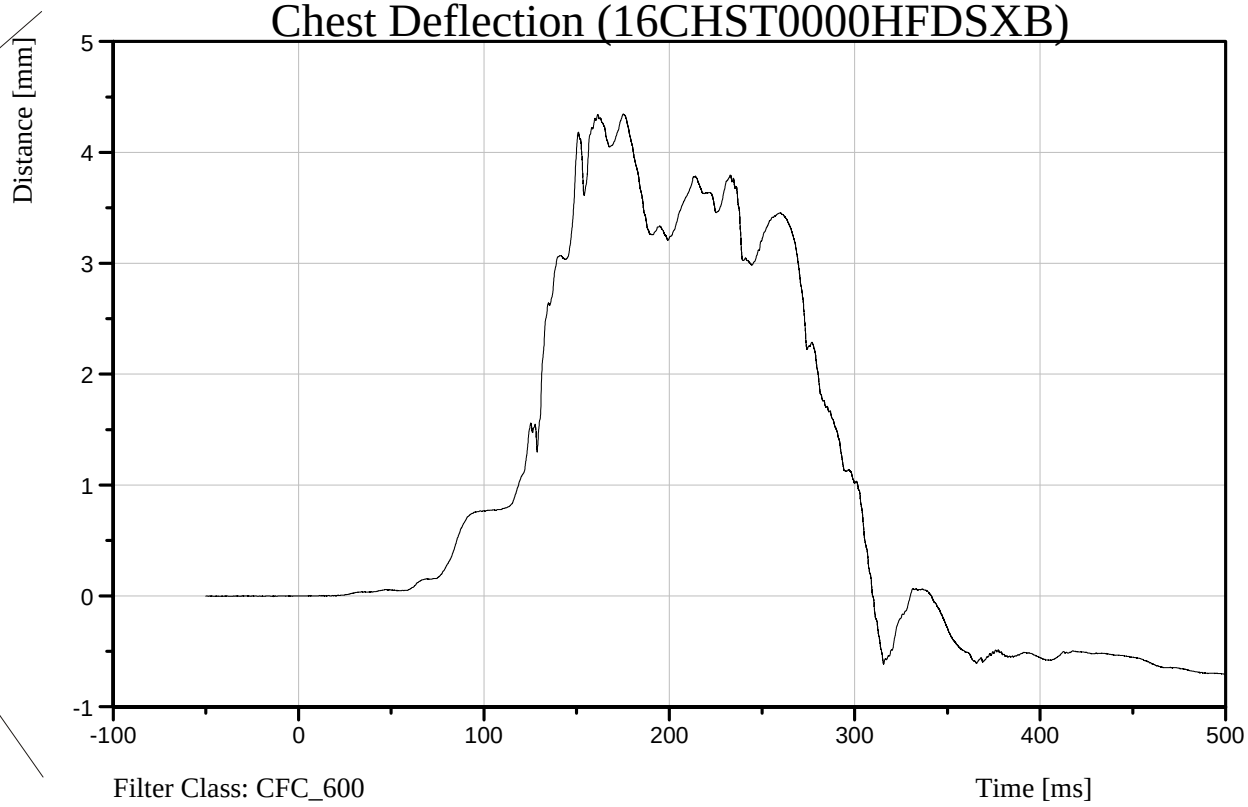
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 5th Female
Seating Position:
Left Side Row 5 Right Seat

[Max.] 4.35 mm at 175.20 ms
[Min.] -0.71 mm at 499.84 ms

ChestDeflection Source Code : Min/Max of 16CHST0000HFDSXB (CFC_600)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph
Neck Moment about the Occipital Condyle (NECK OM)

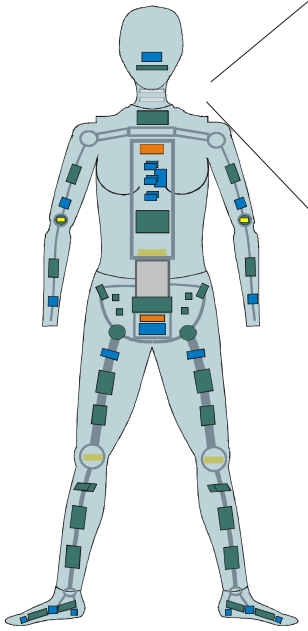
Date: 12/14/2007
Time: 9:12

Customer: VRTC

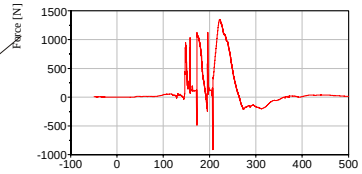
TRC Inc. Test Lab: CTF

Test Number: 071214

Test Orientation = Frontal

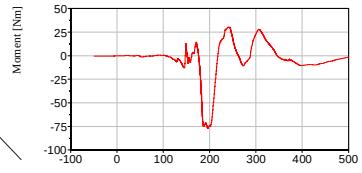


16NECKUP00HFFOXB



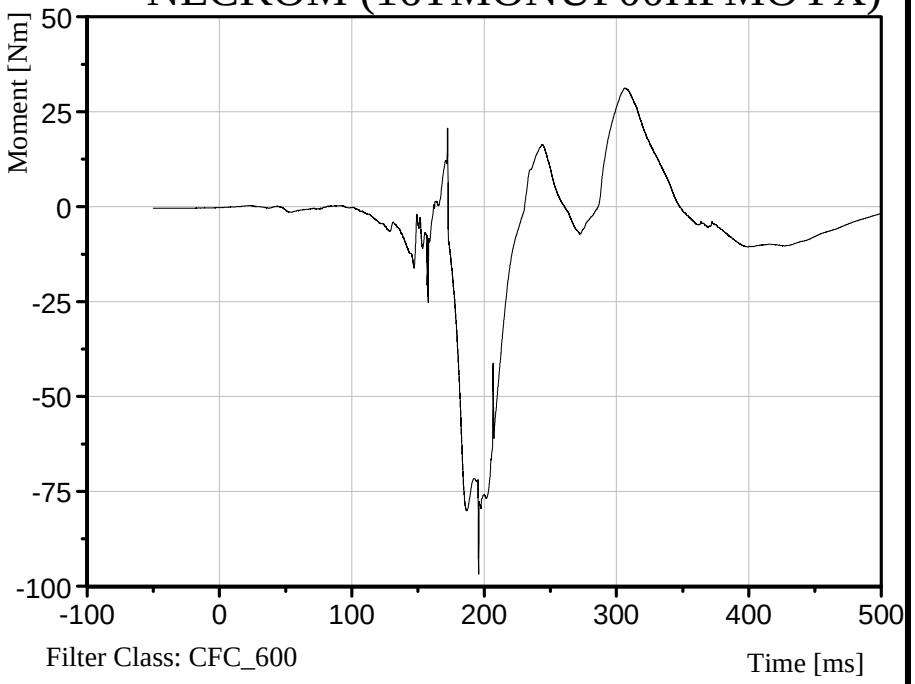
Filter Class: CFC_600

16NECKUP00HFMOYB



Filter Class: CFC_600

NECKOM (16TMONUP00HFMOYX)



Filter Class: CFC_600

Dummy:HIII 5th Female
Seating Position:
Left Side Row 5 Right Seat

Neck OM Source Code: My - (D*Fx)

[Max.] 31.24 Nm at 306.24 ms
[Min.] -96.76 Nm at 195.92 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

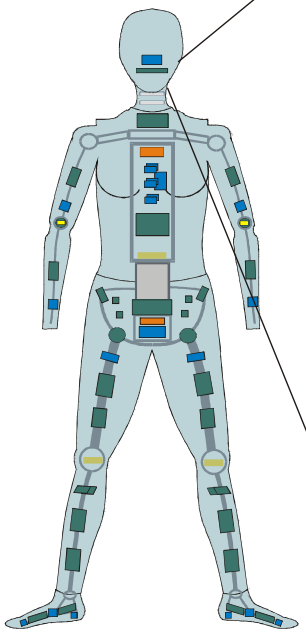
Neck Injury Predictor (NIJ)

Date: 12/14/2007
Time: 9:12

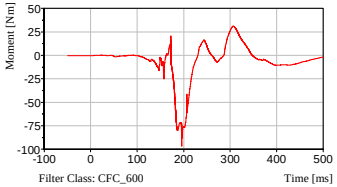
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

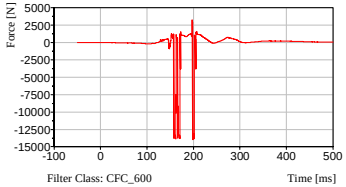
Test Orientation = Frontal
Fzc(Tension) = 4287
Fzc(Compression) = 3880
Myc(Extension) = 67
Myc(Flexion) = 155



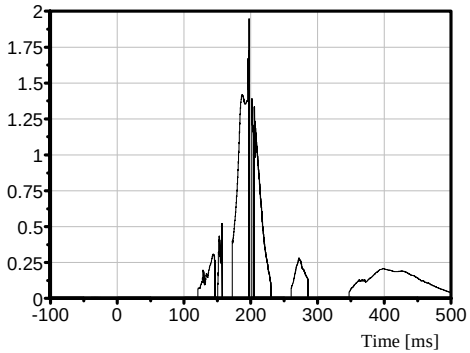
16TMONUP00HFMOYX



16NECKUP00HFFOZB

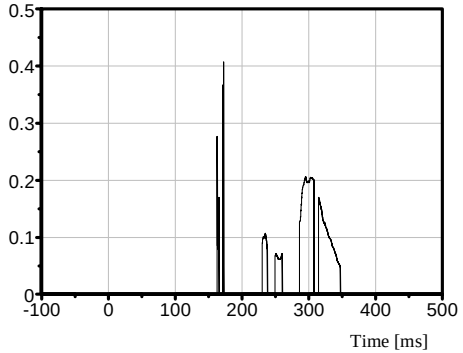


16NIJCUPTEHF00YX



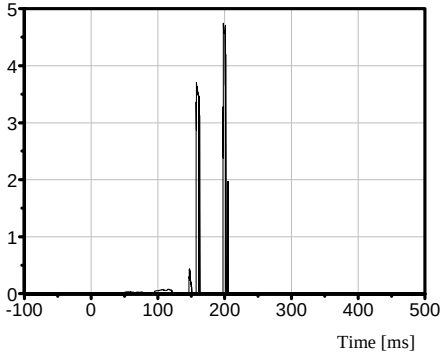
Max [NTE] 1.9476 at 197.52 ms

16NIJCUPTFHF00YX



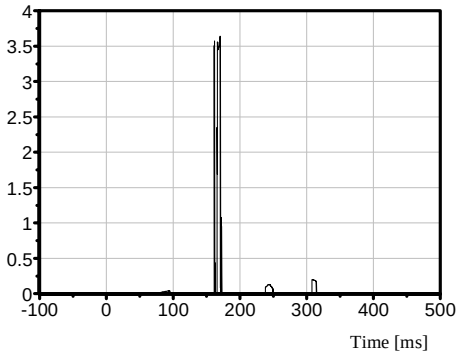
Max [NTF] 0.4073 at 172.64 ms

16NIJCUPCEHF00YX



Max [NCE] 4.7472 at 198.24 ms

16NIJCUPCFHF00YX



Max [NCF] 3.6452 at 170.72 ms

Dummy:HIII 5th Female
Seating Position:
Left Side Row 5 Right Seat

NIJ Source Code: (Fz/Fzc)+(My/Myc)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

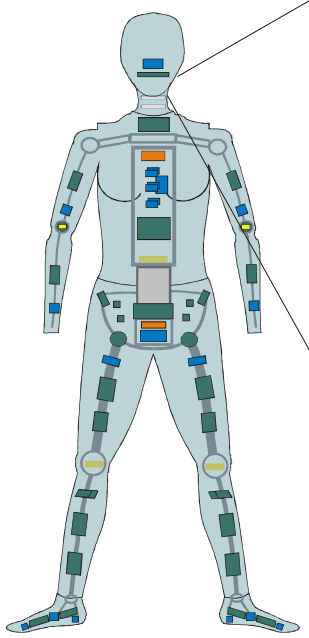
Neck Shear Force

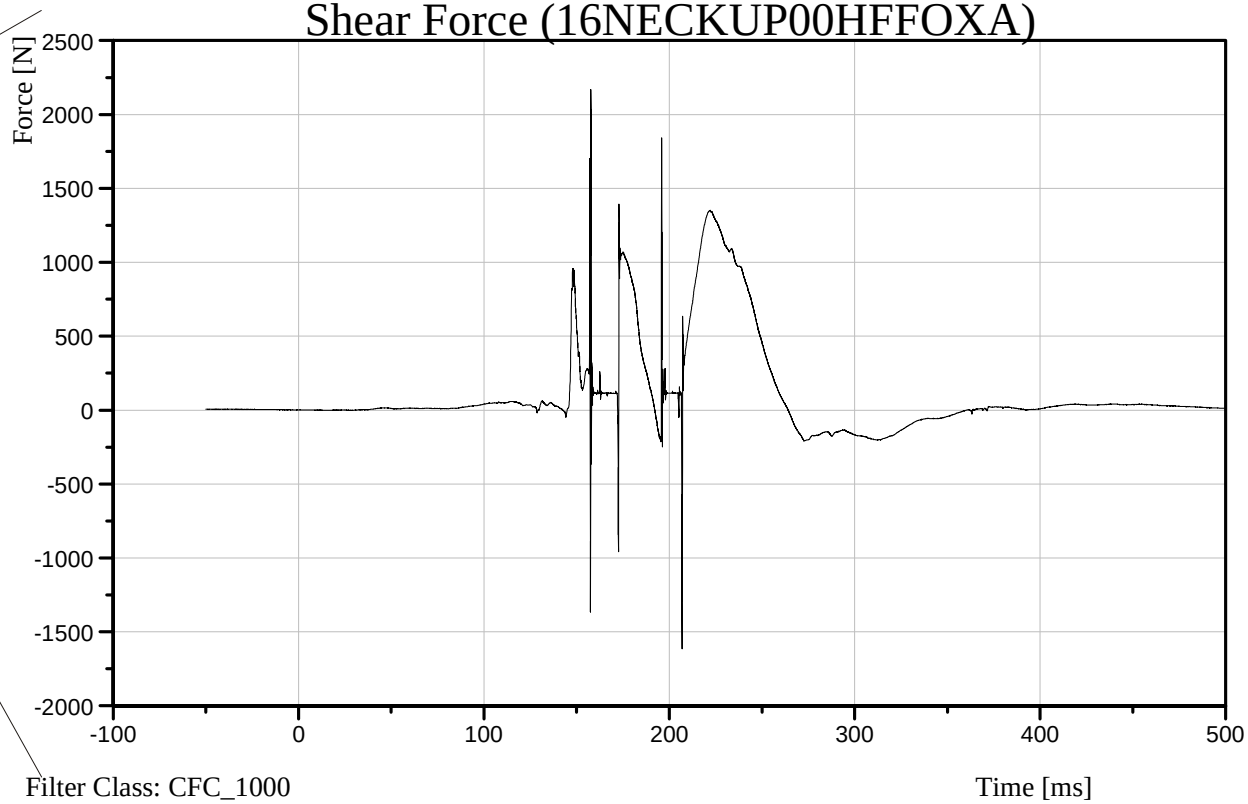
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 5th Female
Seating Position:
Left Side Row 5 Right Seat

[Max.] 2,169.03 N at 157.68 ms
[Min.] -1,615.10 N at 206.88 ms

Neck Shear Force Source Code: Min/Max of 16NECKUP00HFFOXA

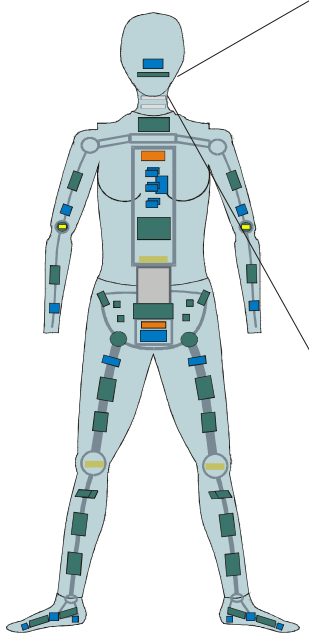
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

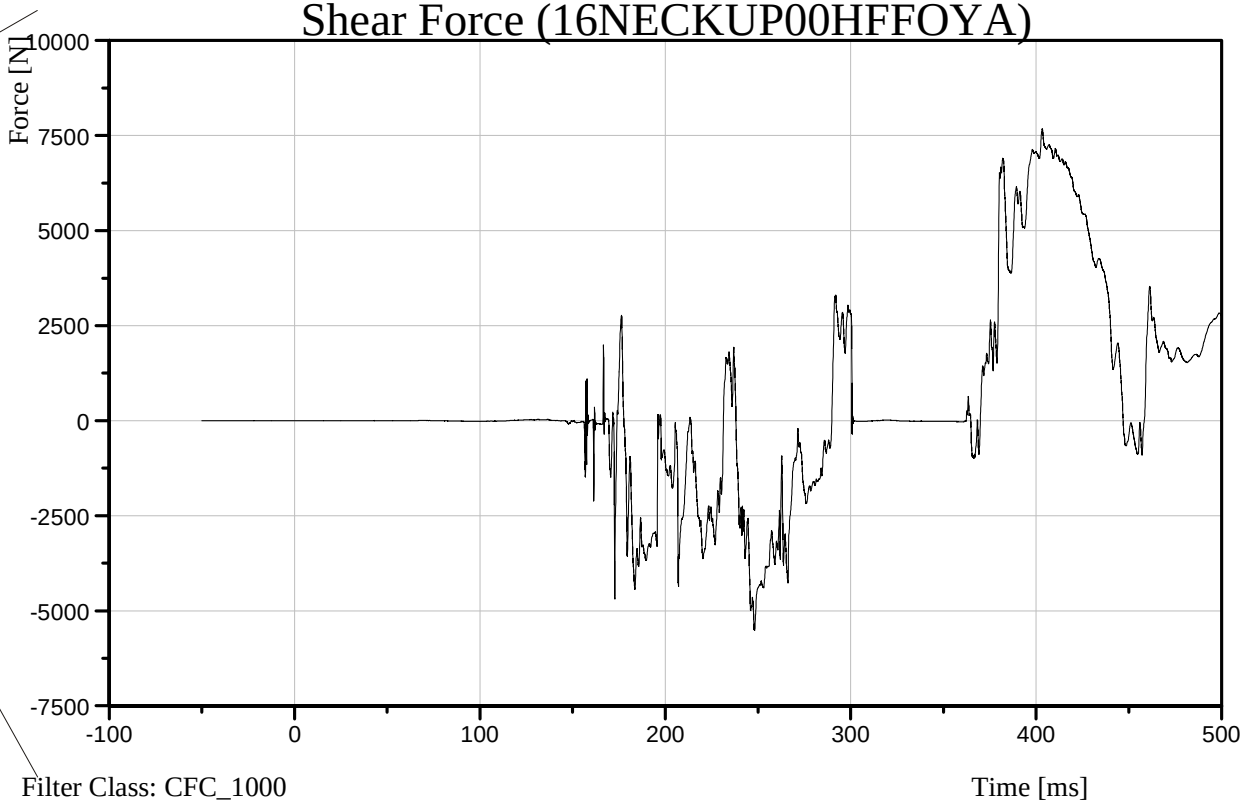
Neck Shear Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 5th Female
Seating Position:
Left Side Row 5 Right Seat

[Max.] 7,673.13 N at 403.28 ms
[Min.] -5,513.88 N at 248.16 ms

Neck Shear Force Source Code: Min/Max of 16NECKUP00HFFOYA

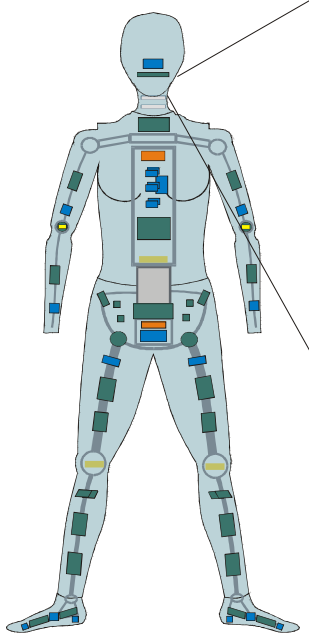
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

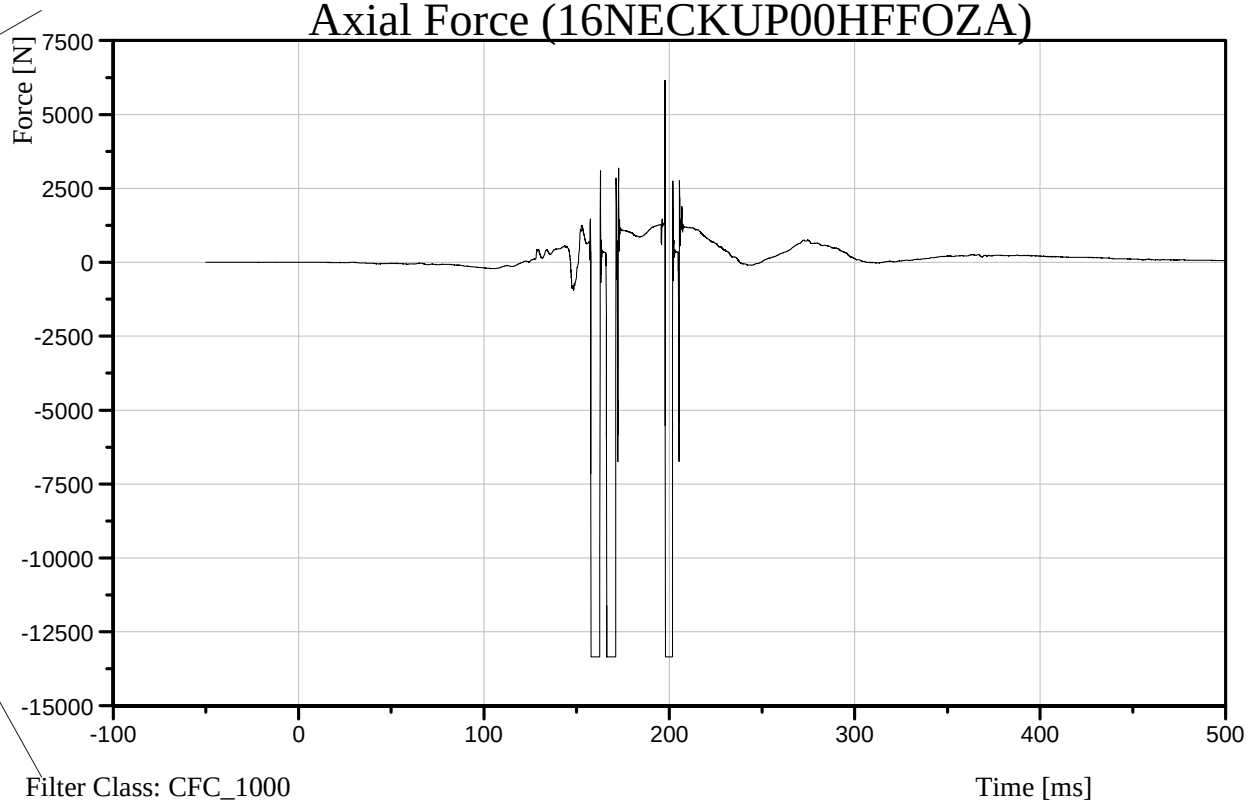
Neck Axial Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 5th Female
Seating Position:
Left Side Row 5 Right Seat

[Max.] 6,152.23 N at 197.68 ms
[Min.] -13,347.97 N at 157.76 ms

Neck Axial Force Source Code: Min/Max of 16NECKUP00HFFOZA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

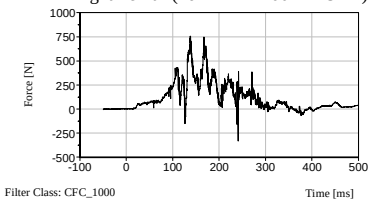
Femur Load

Date: 12/14/2007
Time: 9:12

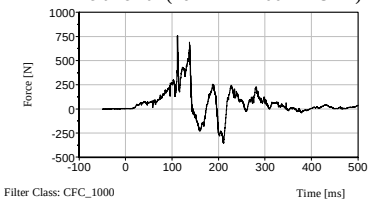
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

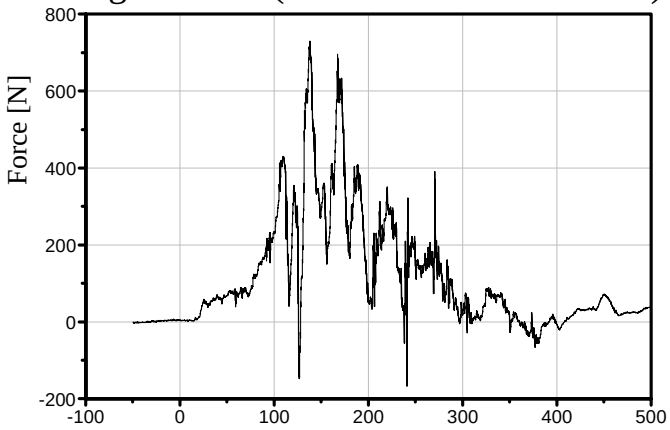
Right Femur (16FEMRRL00HFFOZA)

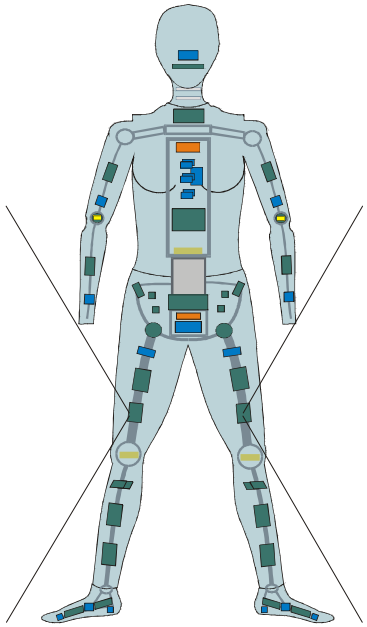


Left Femur (16FEMRLL00HFFOZA)

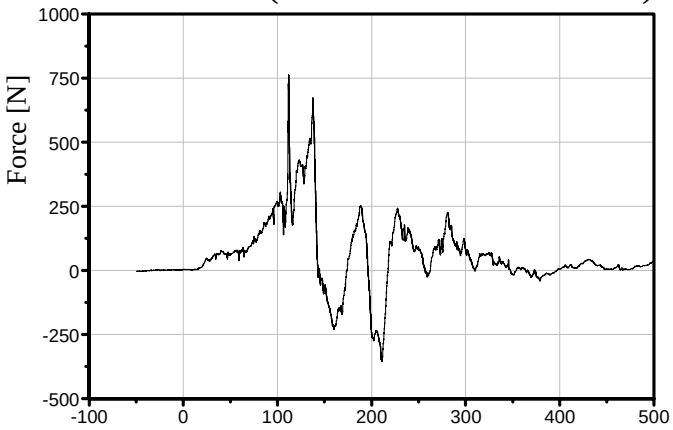


Right Femur (16FEMRRL00HFFOZB)





Left Femur (16FEMRLL00HFFOZB)



Max [Tension] 730.14 N at 137.92 ms
Min [Compression] -168.13 N at 241.04 ms

Dummy:HIII 5th Female
Seating Position:
Left Side Row 5 Right Seat

Max [Tension] 765.28 N at 111.76 ms
Min [Compression] -354.31 N at 210.96 ms

Femur Load Source Code : Min/Max of 16FEMRRL00HFFOZB and 16FEMRLL00HFFOZB (CFC 600)

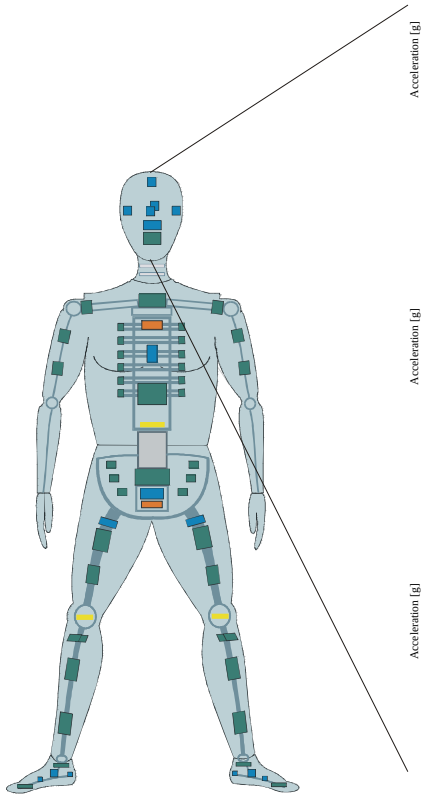
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

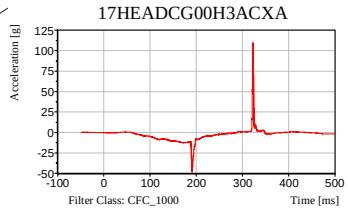
Head Injury Criterion (HIC)

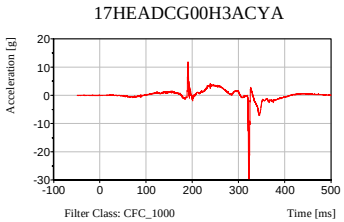
Date: 12/14/2007
Time: 9:12

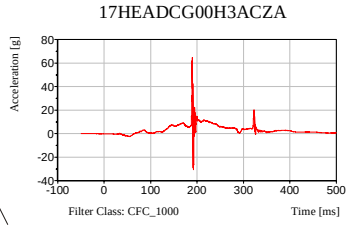
Customer: VRTC

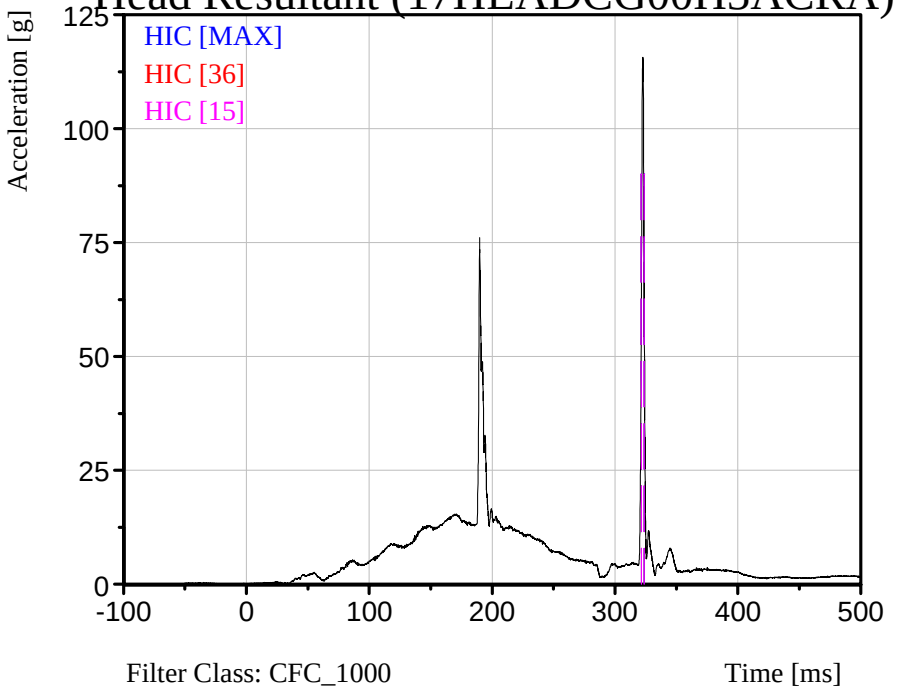
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 203.77	321.44 ms	323.92 ms	91.27 g
HIC [36] = 203.77	321.44 ms	323.92 ms	91.27 g
HIC [15] = 203.77	321.44 ms	323.92 ms	91.27 g

Dummy:HIII 50th Male
Seating Position:
Right Side Row 6 Left Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

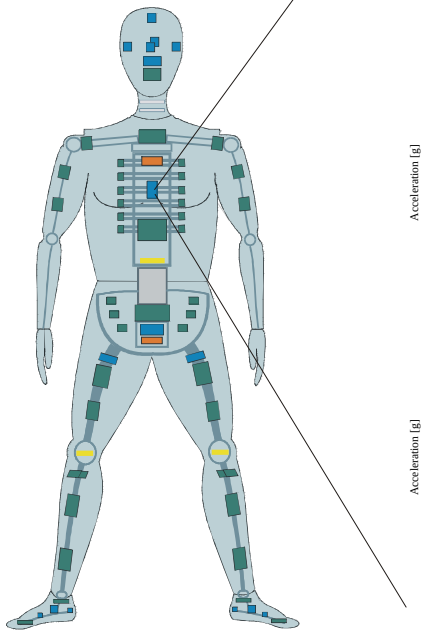
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

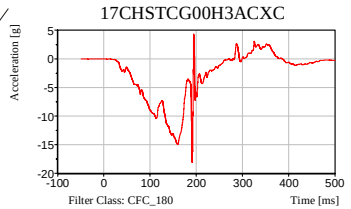
3 ms Duration Acceleration (Chest)

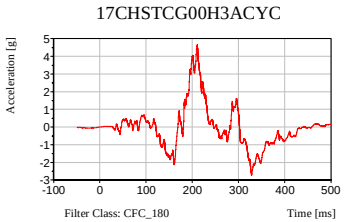
Date: 12/14/2007
Time: 9:12

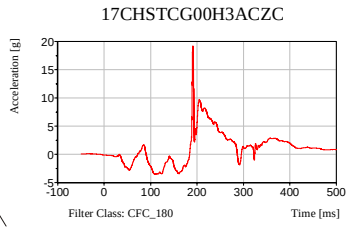
Customer: VRTC

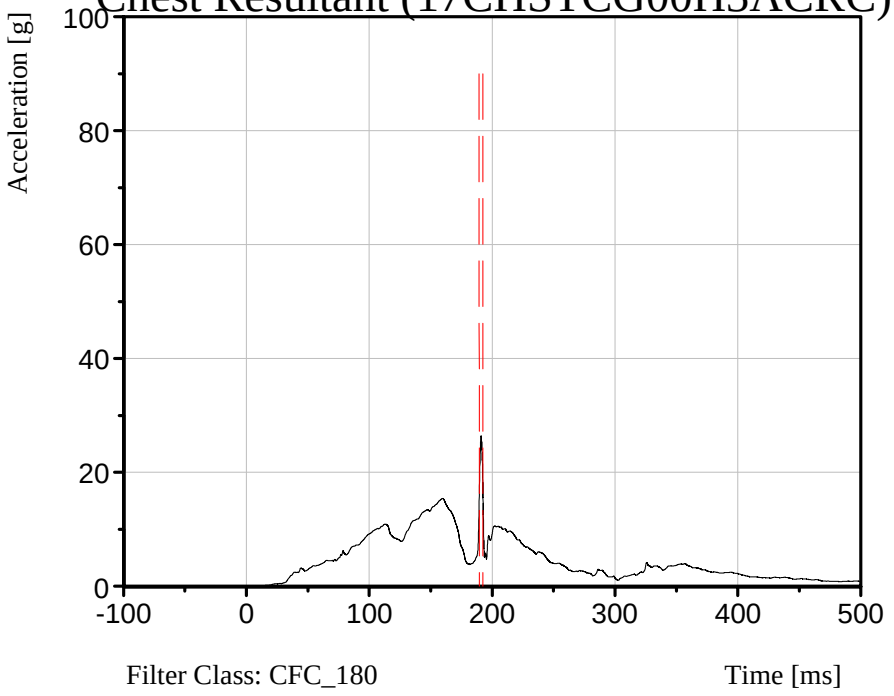
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 15.94 g	189.61 ms	192.61 ms
Chest Severity Index = 60.95		

Dummy:HIII 50th Male
Seating Position:
Right Side Row 6 Left Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

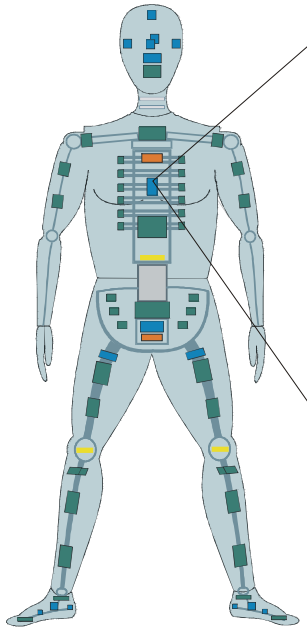
Chest Deflection

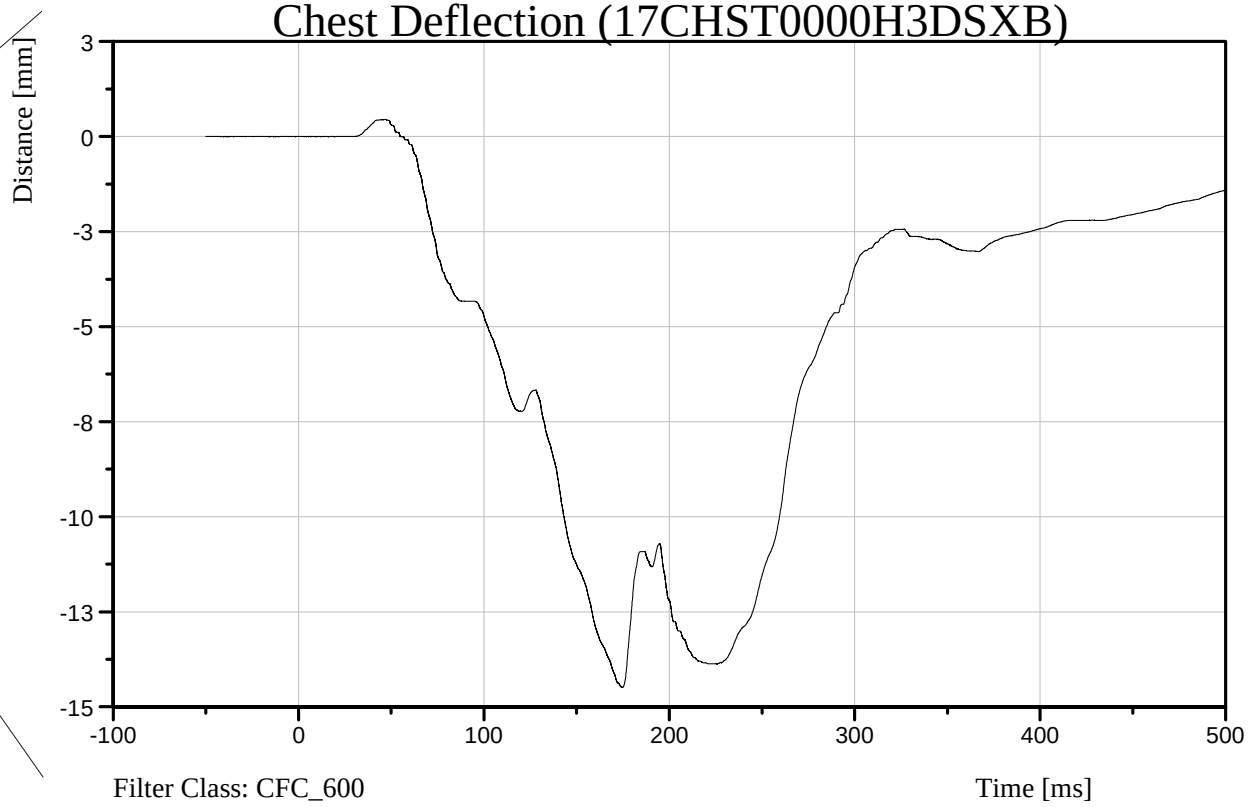
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 50th Male
Seating Position:
Right Side Row 6 Left Seat

[Max.] 0.45 mm at 47.04 ms
[Min.] -14.49 mm at 174.88 ms

ChestDeflection Source Code : Min/Max of 17CHST0000H3DSXB (CFC_600)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph
Neck Moment about the Occipital Condyle (NECK OM)

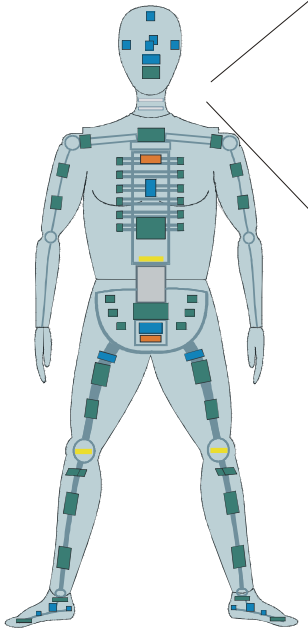
Date: 12/14/2007
Time: 9:12

Customer: VRTC

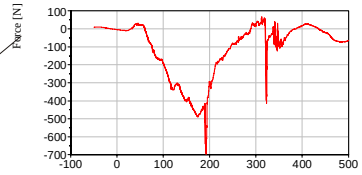
TRC Inc. Test Lab: CTF

Test Number: 071214

Test Orientation = Frontal

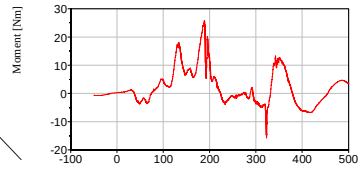


17NECKUP00H3FOXB



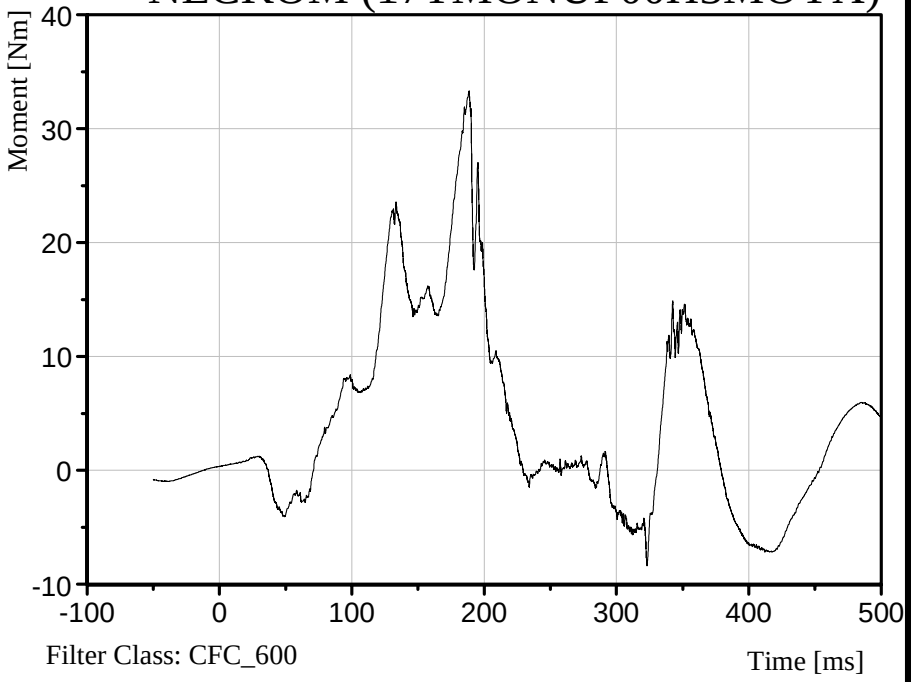
Filter Class: CFC_600

17NECKUP00H3MOYB



Filter Class: CFC_600

NECKOM (17TMONUP00H3MOYX)



Filter Class: CFC_600

Dummy:HIII 50th Male
Seating Position:
Right Side Row 6 Left Seat

[Max.] 33.32 Nm at 188.72 ms
[Min.] -8.37 Nm at 323.04 ms

Neck OM Source Code: My - (D*Fx)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

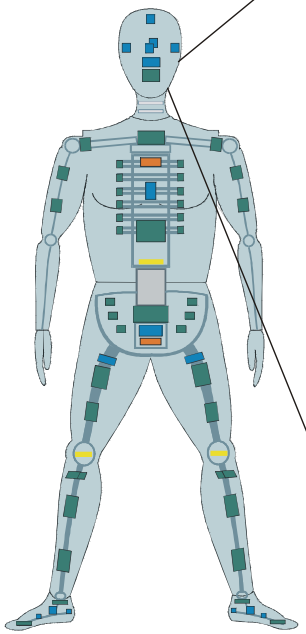
Neck Injury Predictor (NIJ)

Date: 12/14/2007
Time: 9:12

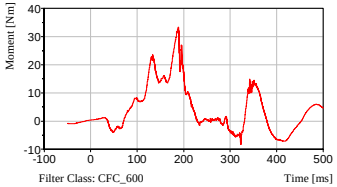
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

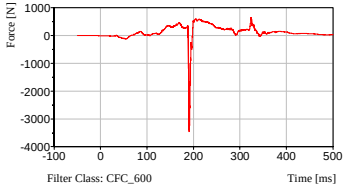
Test Orientation = Frontal
Fzc(Tension) = 6806
Fzc(Compression) = 6160
Myc(Extension) = 135
Myc(Flexion) = 310



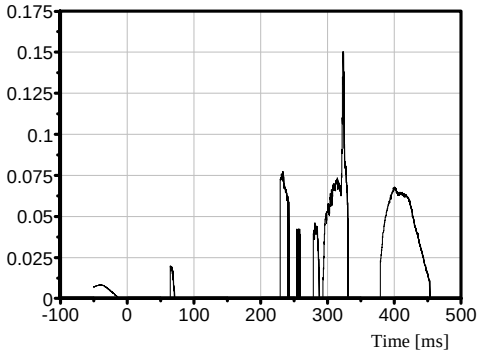
17TMONUP00H3MOYX



17NECKUP00H3FOZB

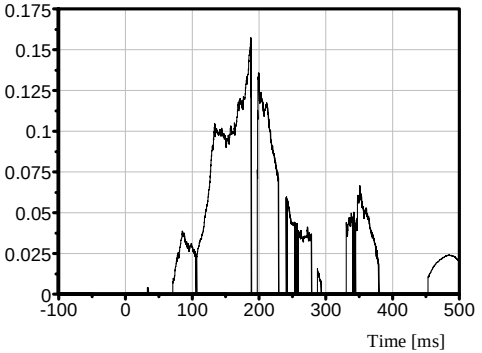


17NIJCUPTEH300YX



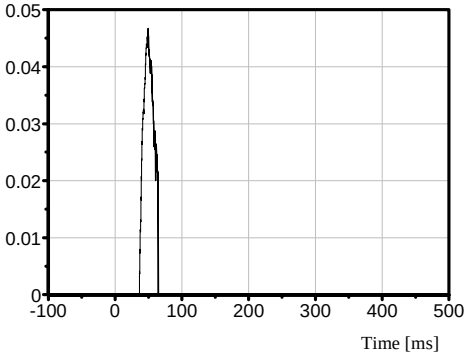
Max [NTE] 0.1506 at 323.60 ms

17NIJCUPTFH300YX



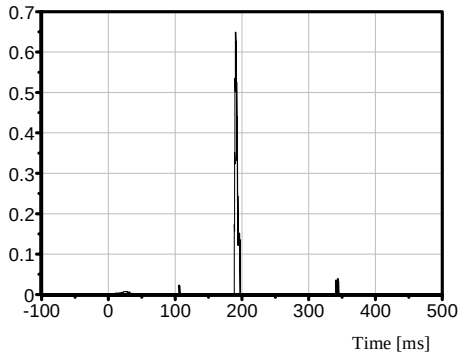
Max [NTF] 0.1574 at 187.92 ms

17NIJCUPCEH300YX



Max [NCE] 0.0467 at 49.60 ms

17NIJCUPCFH300YX



Max [NCF] 0.6498 at 190.56 ms

Dummy:HIII 50th Male
Seating Position:
Right Side Row 6 Left Seat

NIJ Source Code: (Fz/Fzc)+(My/Myc)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

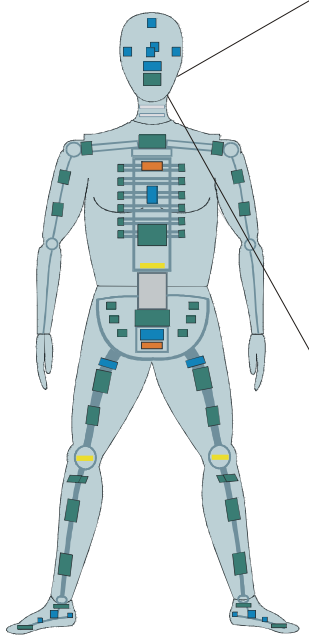
Neck Shear Force

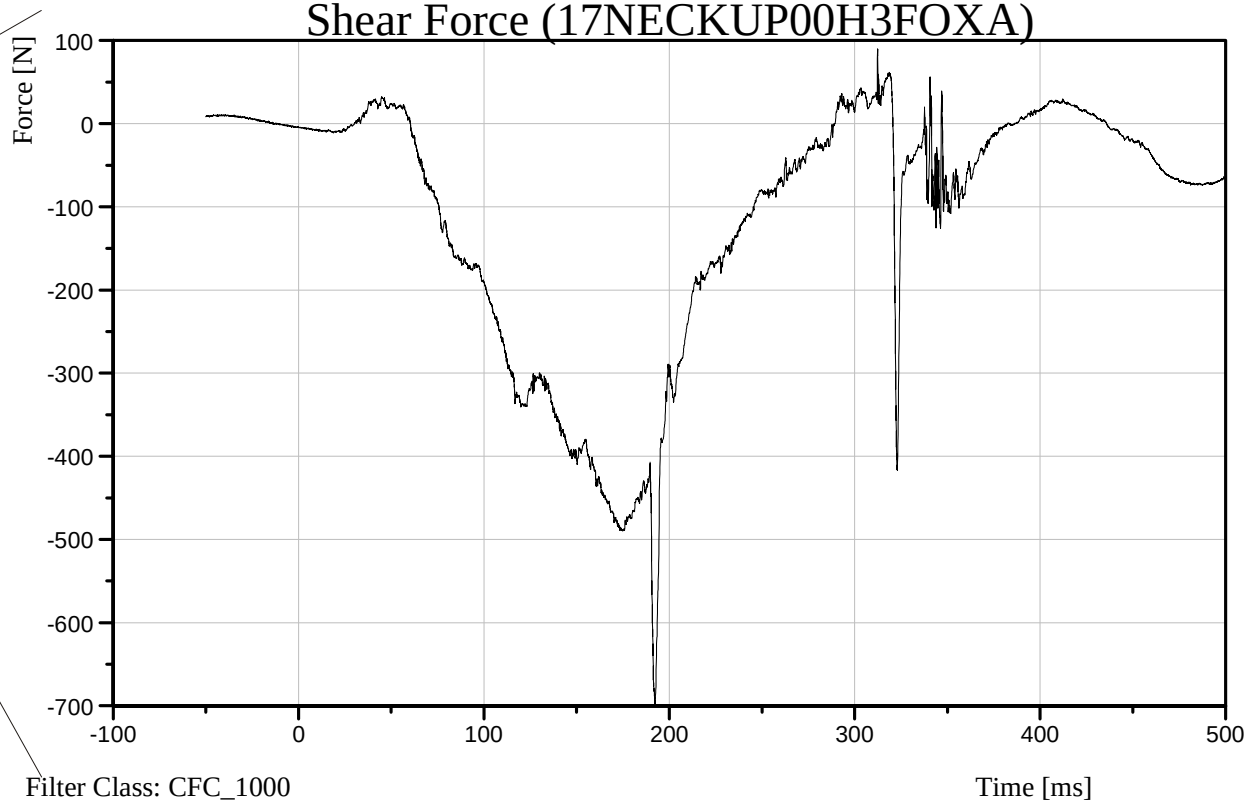
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 50th Male
Seating Position:
Right Side Row 6 Left Seat

[Max.] 89.57 N at 312.32 ms
[Min.] -698.98 N at 192.24 ms

Neck Shear Force Source Code: Min/Max of 17NECKUP00H3FOXA

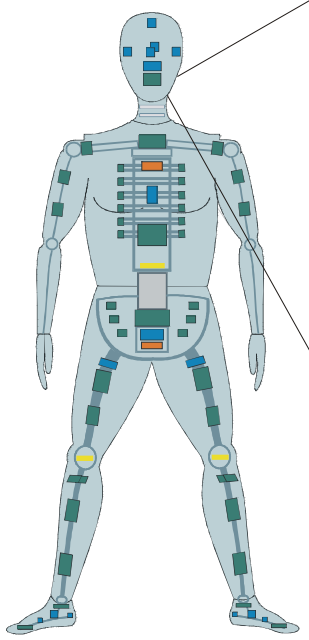
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

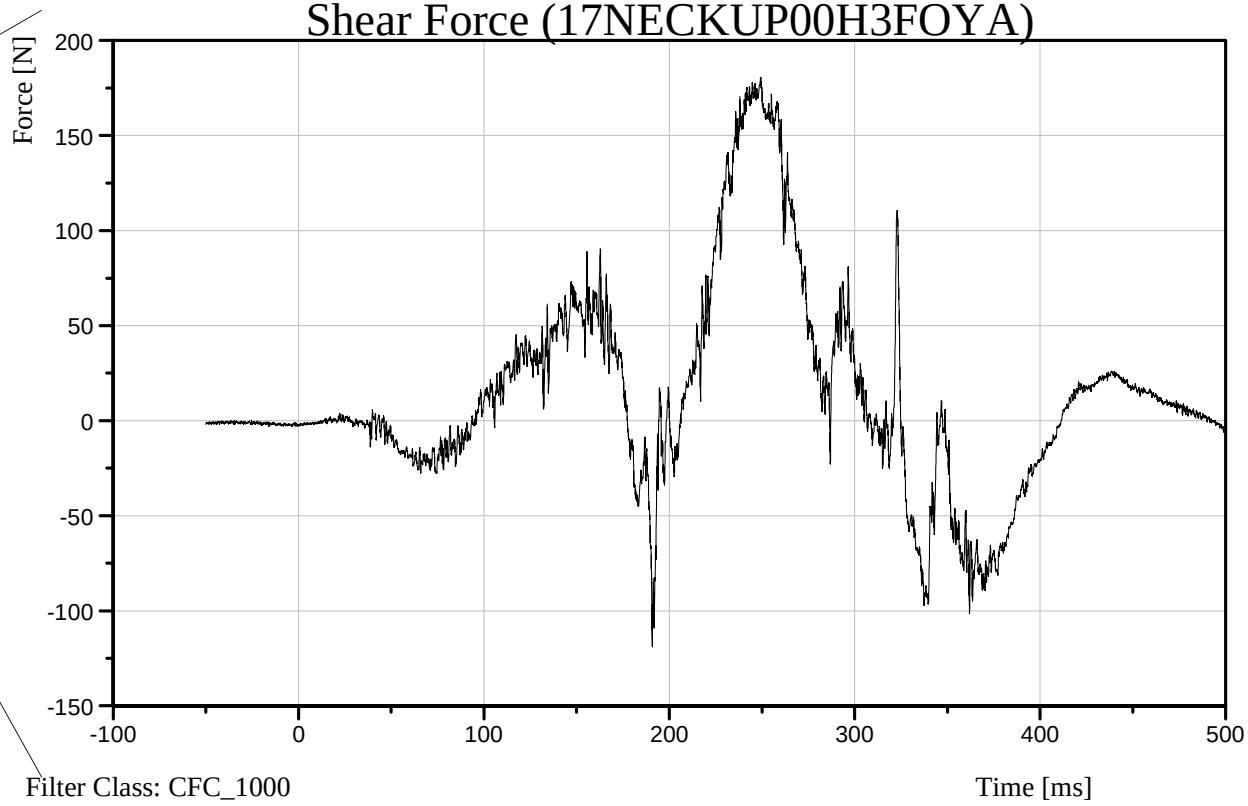
Neck Shear Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Right Side Row 6 Left Seat

[Max.] 180.60 N at 249.28 ms
[Min.] -118.94 N at 190.80 ms

Neck Shear Force Source Code: Min/Max of 17NECKUP00H3FOYA

071214

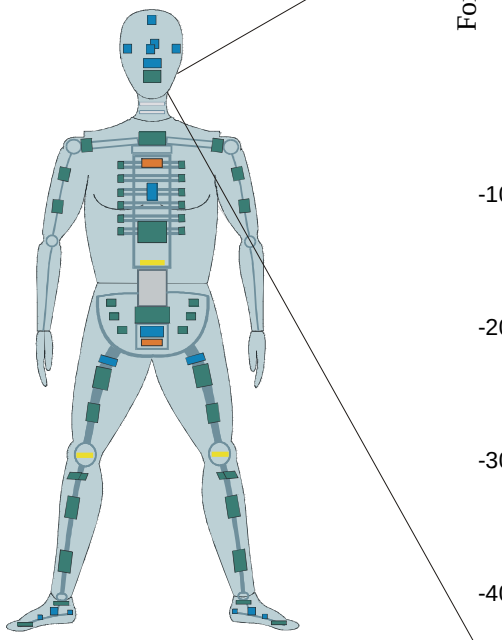
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

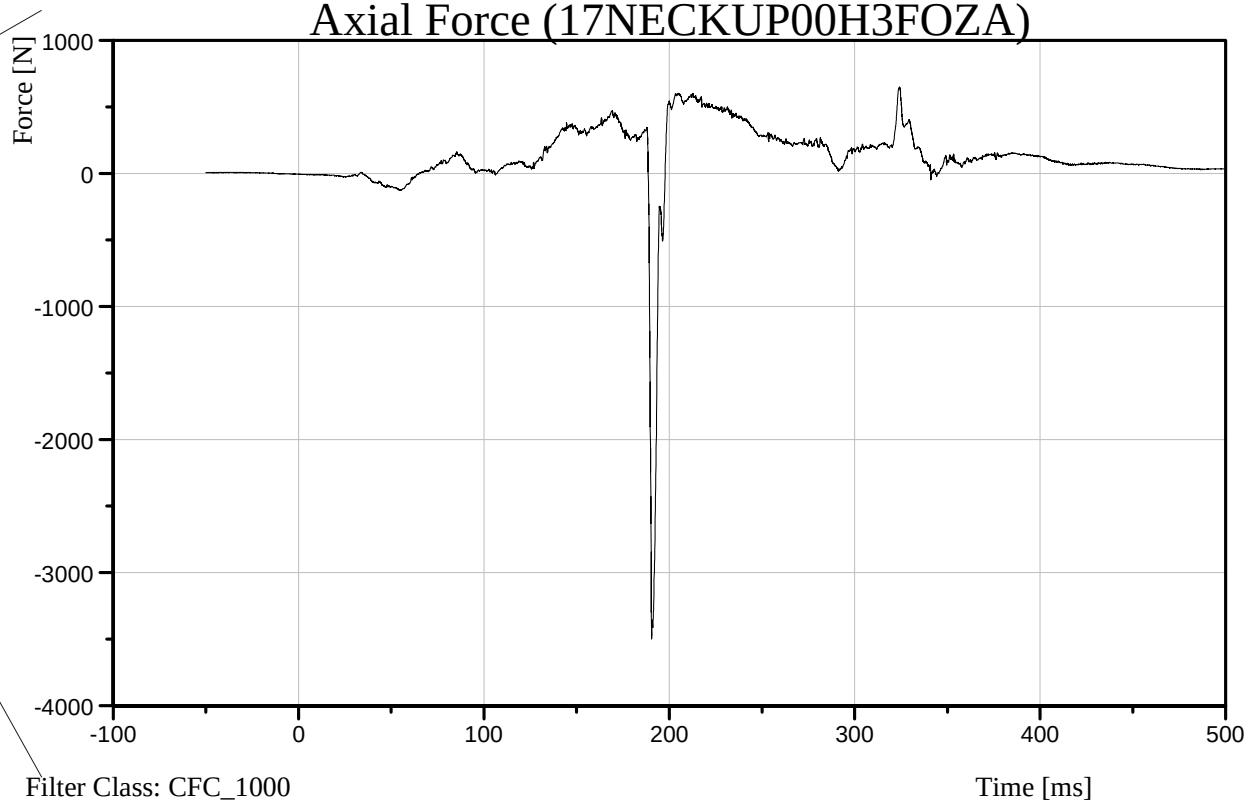
Neck Axial Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Right Side Row 6 Left Seat

[Max.] 651.36 N at 324.16 ms
[Min.] -3,496.58 N at 190.48 ms

Neck Axial Force Source Code: Min/Max of 17NECKUP00H3FOZA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

Femur Load

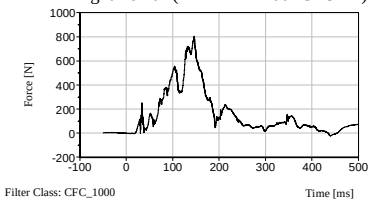
Date: 12/14/2007
Time: 9:12

Customer: VRTC

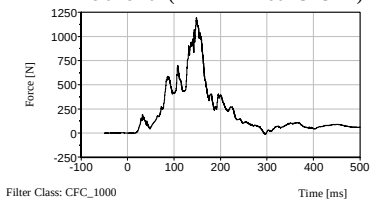
TRC Inc. Test Lab: CTF

Test Number: 071214

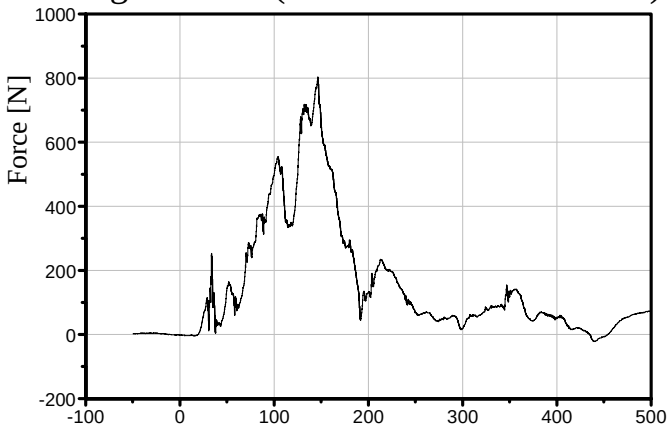
Right Femur (17FEMRRL00H3FOZA)



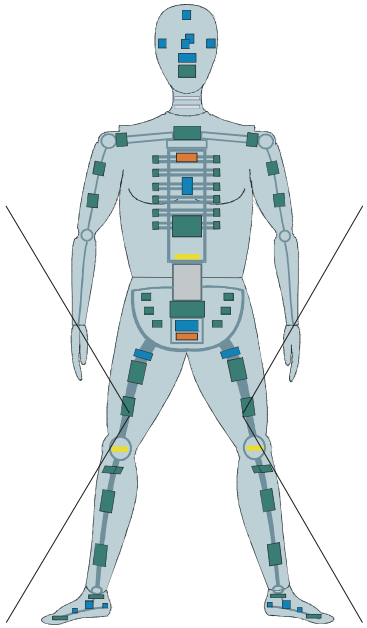
Left Femur (17FEMRLL00H3FOZA)



Right Femur (17FEMRRL00H3FOZB)

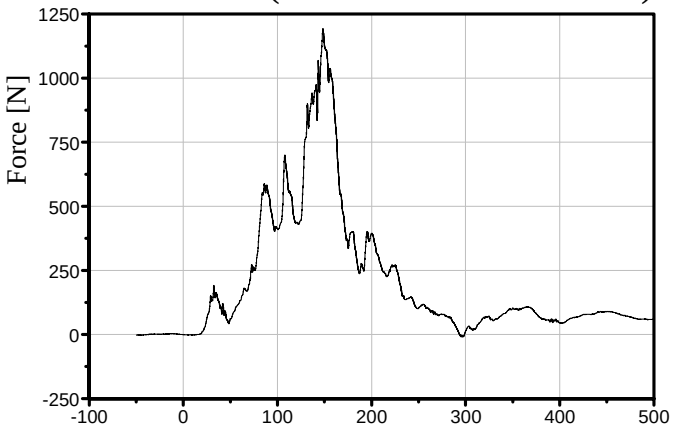


Max [Tension] 804.14 N at 146.48 ms
Min [Compression] -21.70 N at 440.72 ms



Dummy:HIII 50th Male
Seating Position:
Right Side Row 6 Left Seat

Left Femur (17FEMRLL00H3FOZB)



Max [Tension] 1,193.33 N at 148.24 ms
Min [Compression] -9.30 N at 296.88 ms

Femur Load Source Code : Min/Max of 17FEMRRL00H3FOZB and 17FEMRLL00H3FOZB (CFC 600)

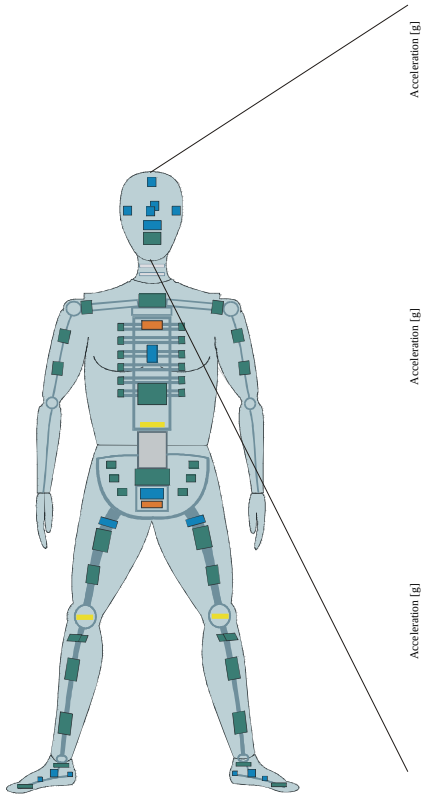
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

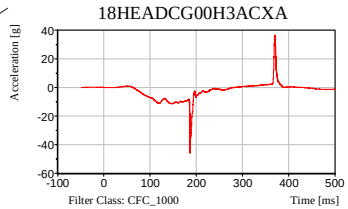
Head Injury Criterion (HIC)

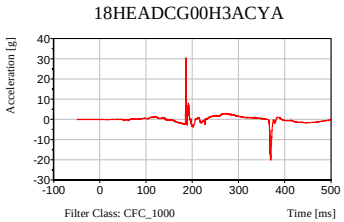
Date: 12/14/2007
Time: 9:12

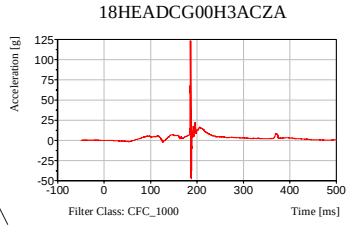
Customer: VRTC

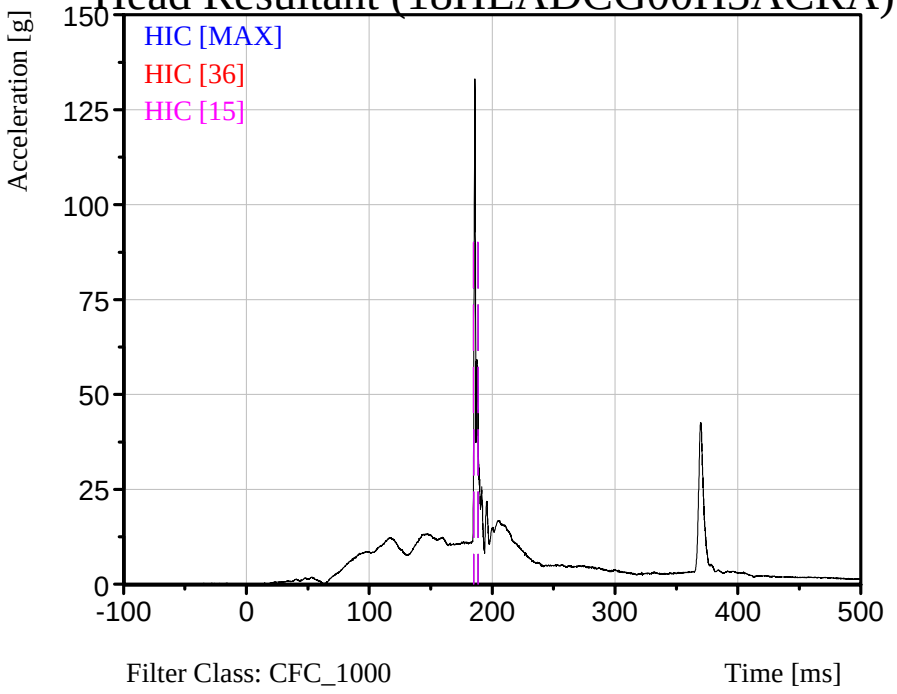
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 157.21	185.04 ms	188.48 ms	72.41 g
HIC [36] = 157.21	185.04 ms	188.48 ms	72.41 g
HIC [15] = 157.21	185.04 ms	188.48 ms	72.41 g

Dummy:HIII 50th Male
Seating Position:
Right Side Row 6 Right Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

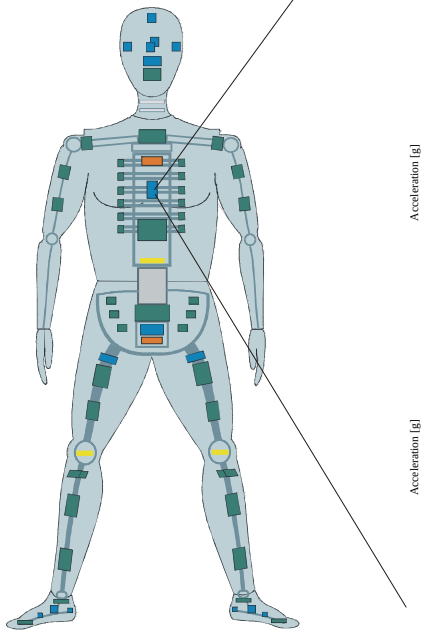
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

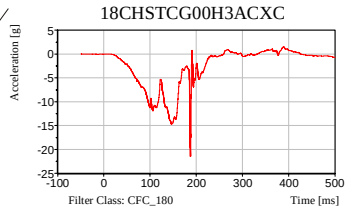
3 ms Duration Acceleration (Chest)

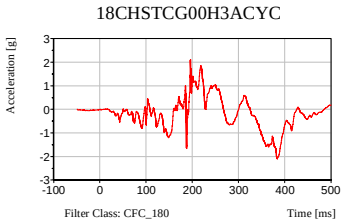
Date: 12/14/2007
Time: 9:12

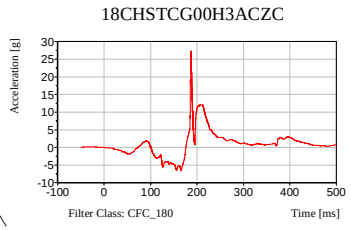
Customer: VRTC

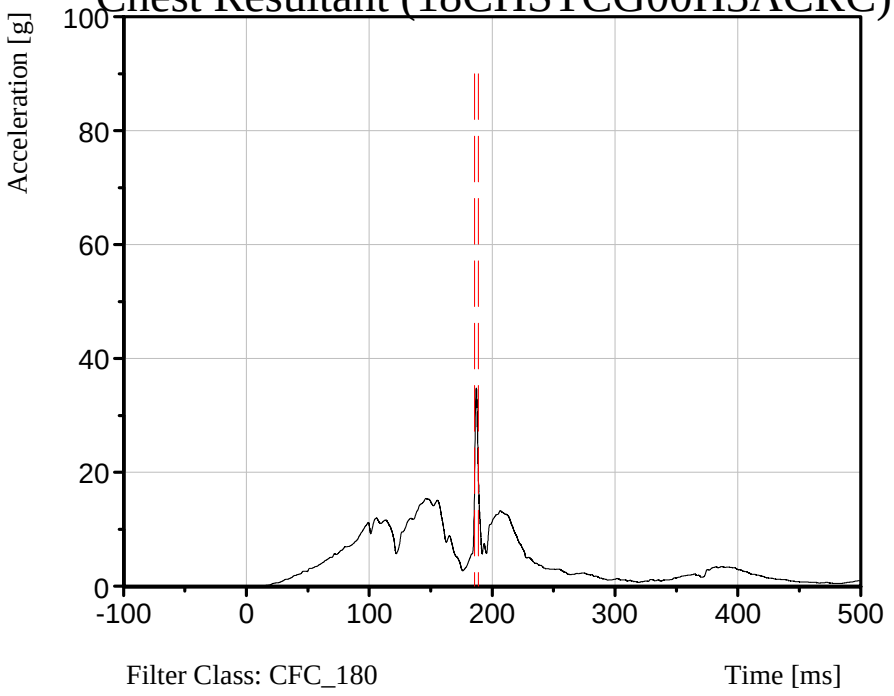
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 19.78 g	185.82 ms	188.82 ms
Chest Severity Index = 71.12		

Dummy:HIII 50th Male
Seating Position:
Right Side Row 6 Right Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

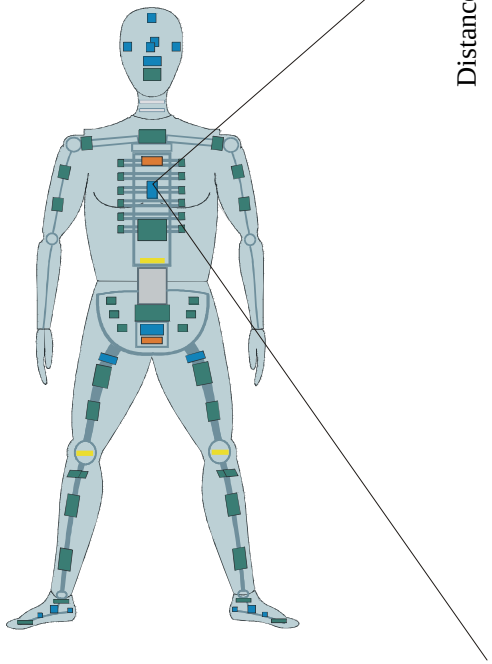
Chest Deflection

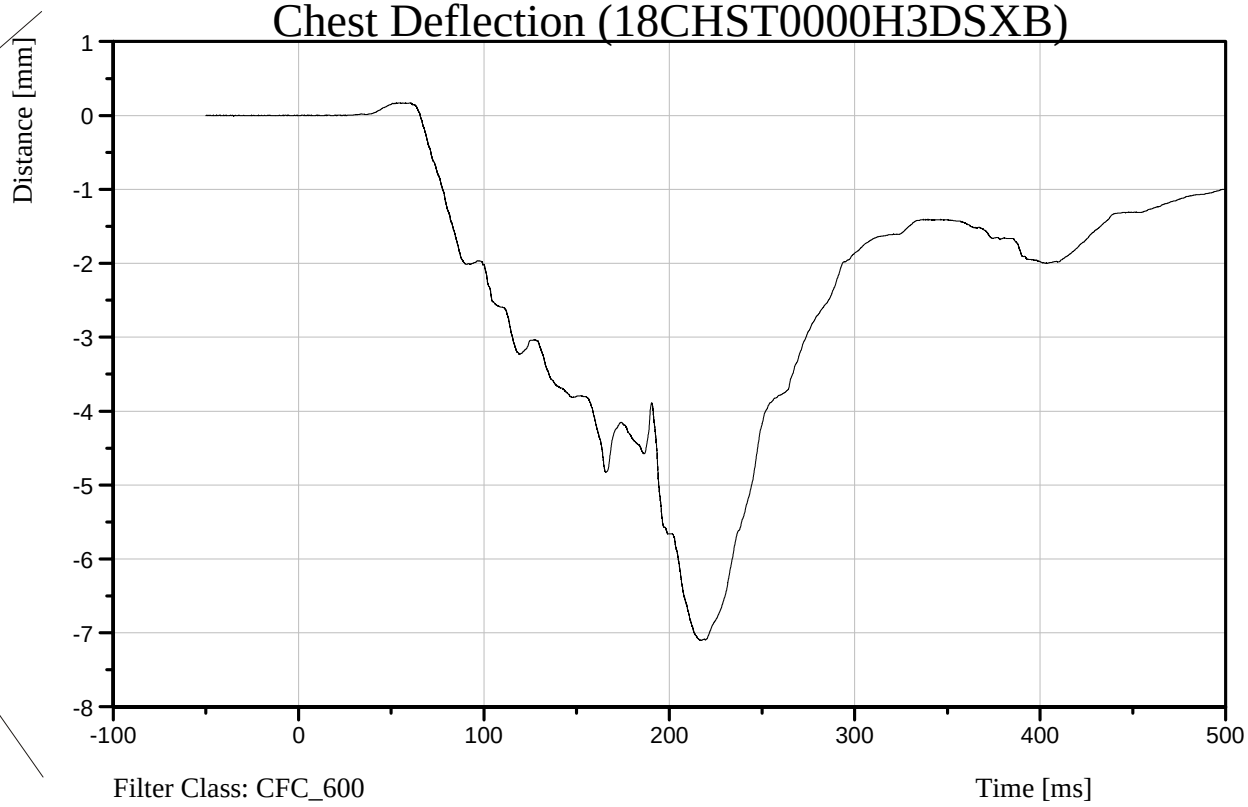
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 50th Male
Seating Position:
Right Side Row 6 Right Seat

[Max.] 0.17 mm at 59.92 ms
[Min.] -7.10 mm at 217.36 ms

ChestDeflection Source Code : Min/Max of 18CHST0000H3DSXB (CFC_600)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph
Neck Moment about the Occipital Condyle (NECK OM)

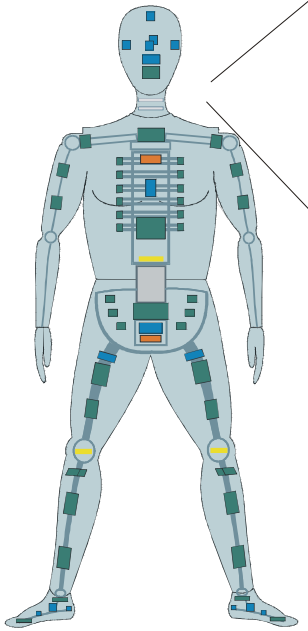
Date: 12/14/2007
Time: 9:12

Customer: VRTC

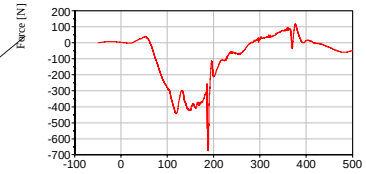
TRC Inc. Test Lab: CTF

Test Number: 071214

Test Orientation = Frontal

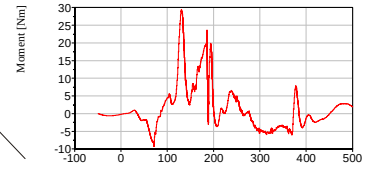


18NECKUP00H3FOXB



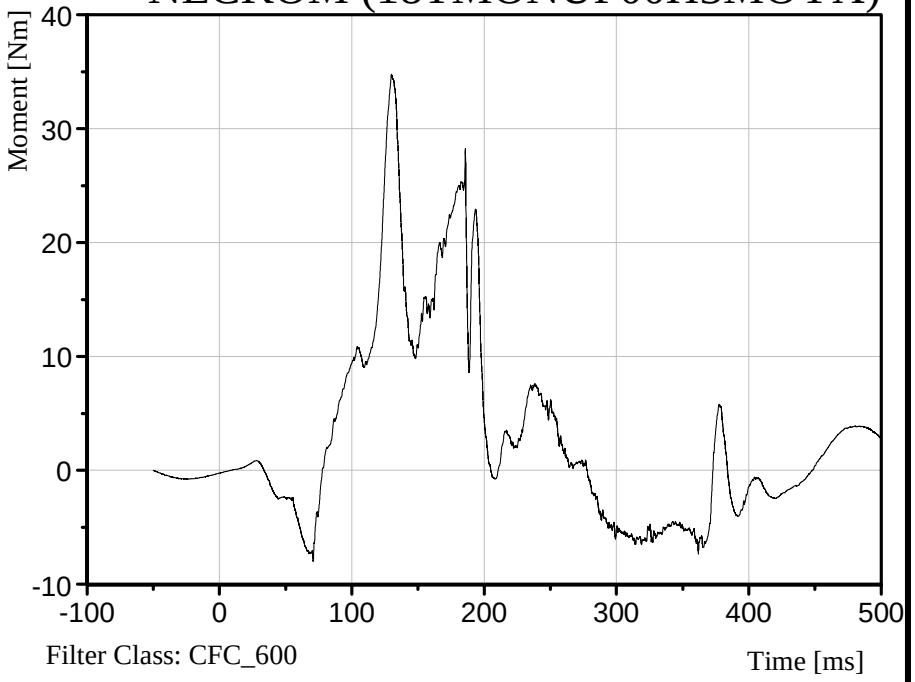
Filter Class: CFC_600

18NECKUP00H3MOYB



Filter Class: CFC_600

NECKOM (18TMONUP00H3MOYX)



Filter Class: CFC_600

Dummy:HIII 50th Male
Seating Position:
Right Side Row 6 Right Seat

Neck OM Source Code: My - (D*Fx)

[Max.] 34.78 Nm at 130.00 ms
[Min.] -7.95 Nm at 70.88 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

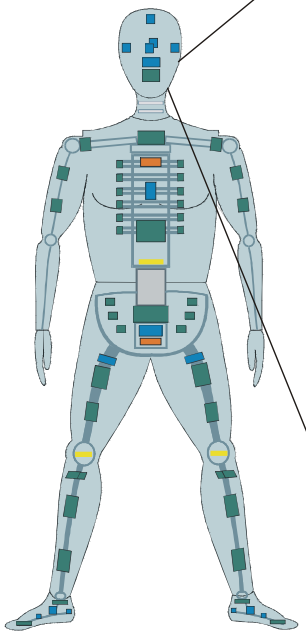
Neck Injury Predictor (NIJ)

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

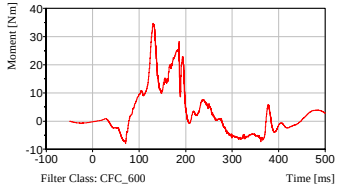
Test Orientation = Frontal
Fzc(Tension) = 6806
Fzc(Compression) = 6160
Myc(Extension) = 135
Myc(Flexion) = 310



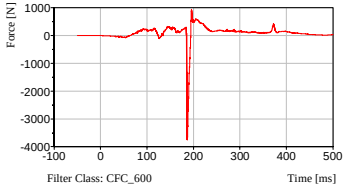
Dummy:HIII 50th Male
Seating Position:
Right Side Row 6 Right Seat

NIJ Source Code: (Fz/Fzc)+(My/Myc)

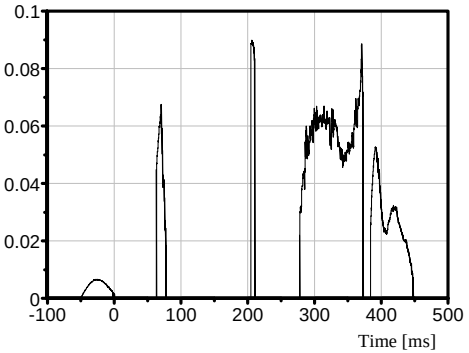
18TMONUP00H3MOYX



18NECKUP00H3FOZB

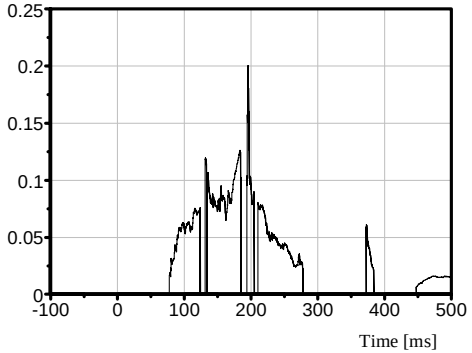


18NIJCUPTEH300YX



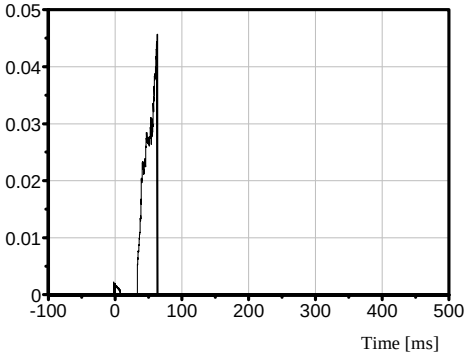
Max [NTE] 0.0898 at 206.08 ms

18NIJCUPTFH300YX



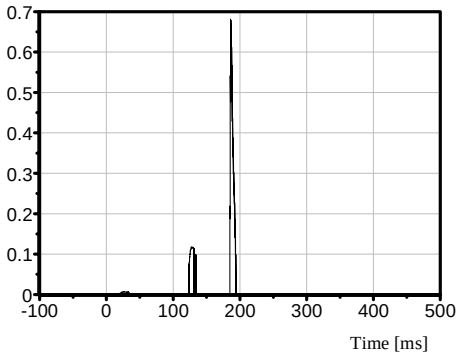
Max [NTF] 0.2005 at 195.68 ms

18NIJCUPCEH300YX



Max [NCE] 0.0457 at 63.60 ms

18NIJCUPCFH300YX



Max [NCF] 0.6827 at 186.32 ms

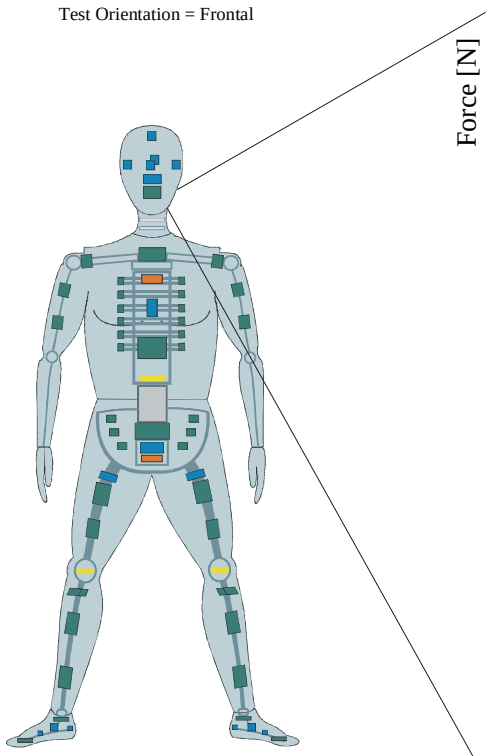
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

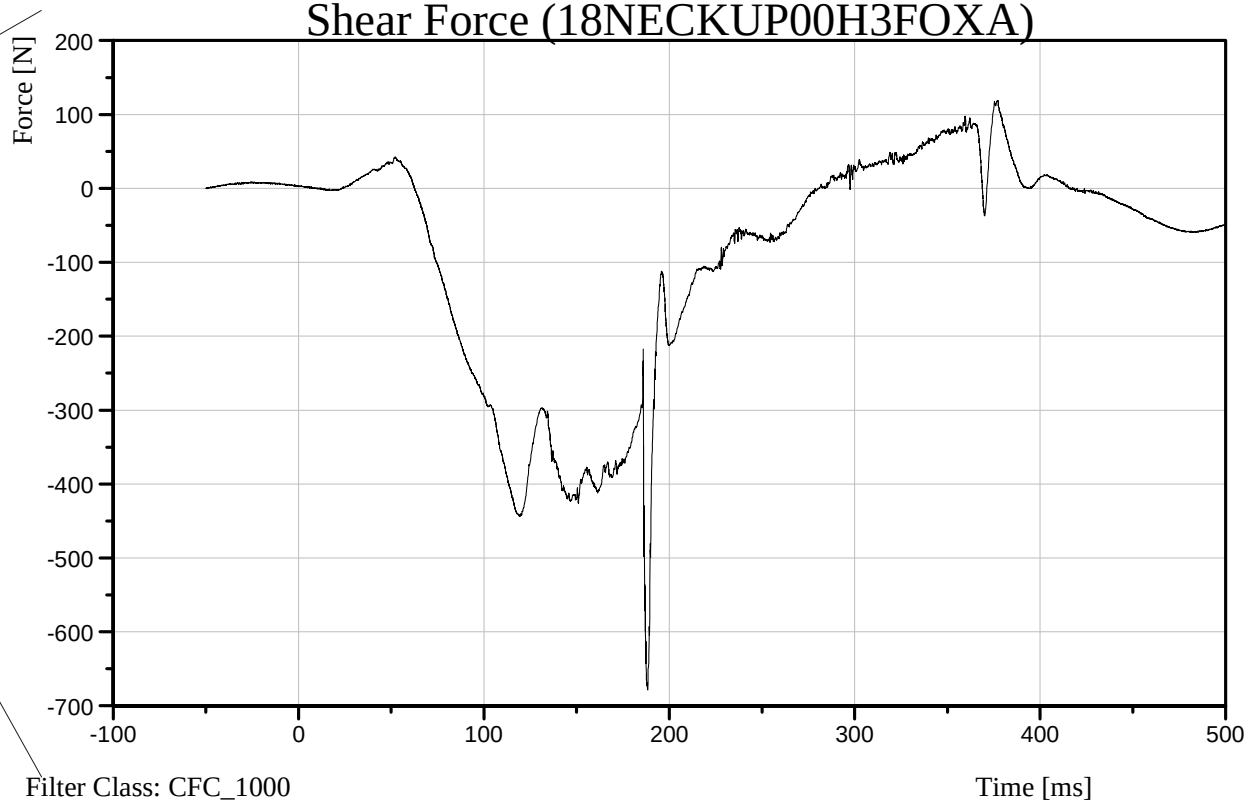
Neck Shear Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Right Side Row 6 Right Seat

[Max.] 118.74 N at 377.04 ms
[Min.] -678.79 N at 188.32 ms

Neck Shear Force Source Code: Min/Max of 18NECKUP00H3FOXA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

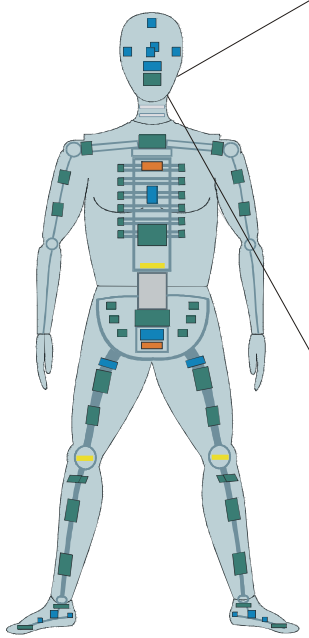
Neck Shear Force

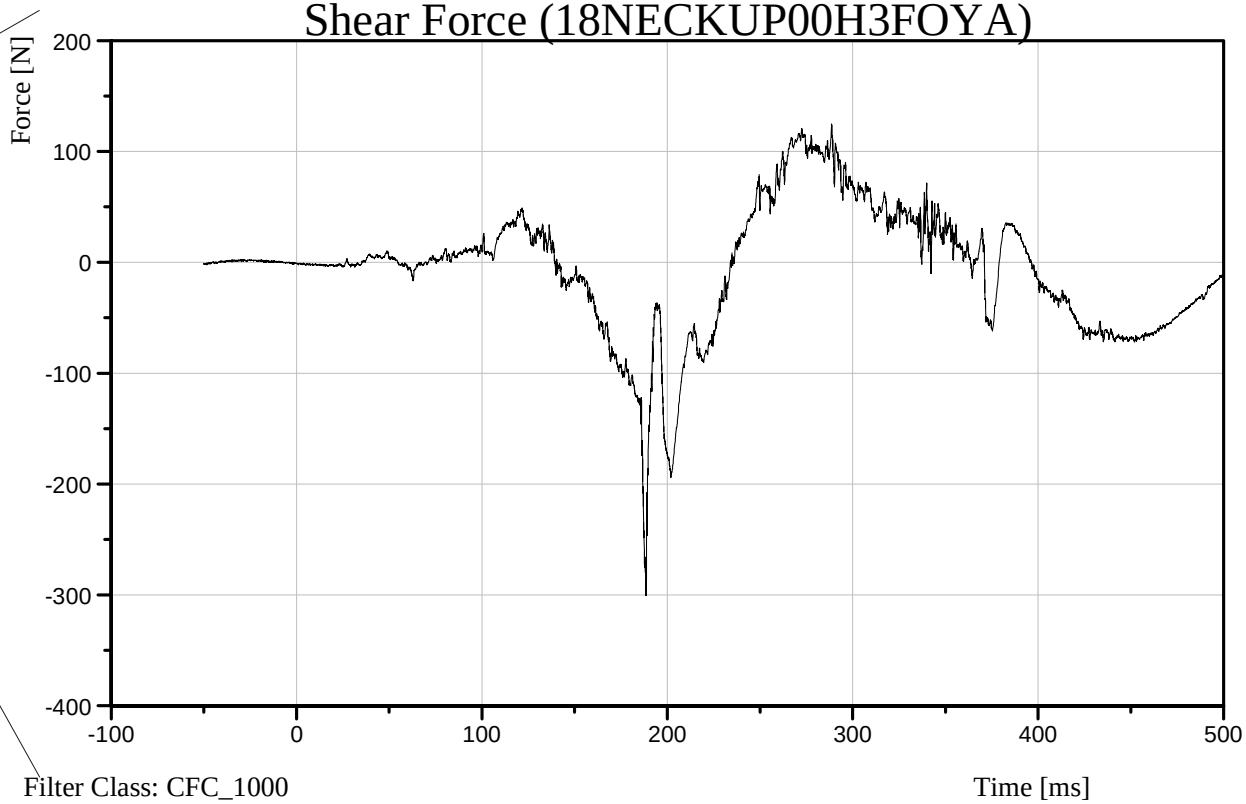
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 50th Male
Seating Position:
Right Side Row 6 Right Seat

[Max.] 124.61 N at 288.56 ms
[Min.] -300.70 N at 188.64 ms

Neck Shear Force Source Code: Min/Max of 18NECKUP00H3FOYA

071214

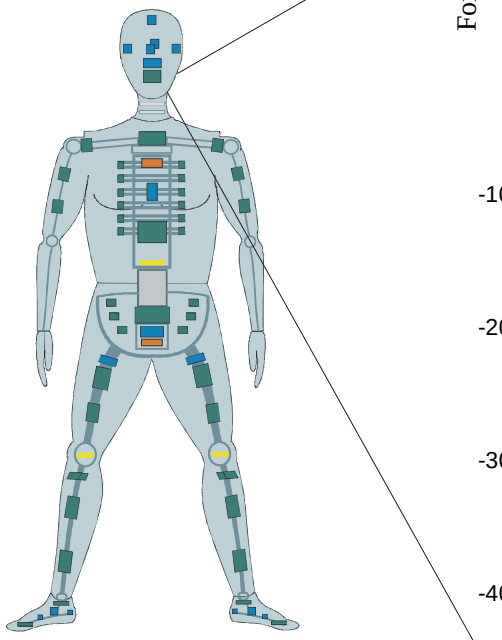
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

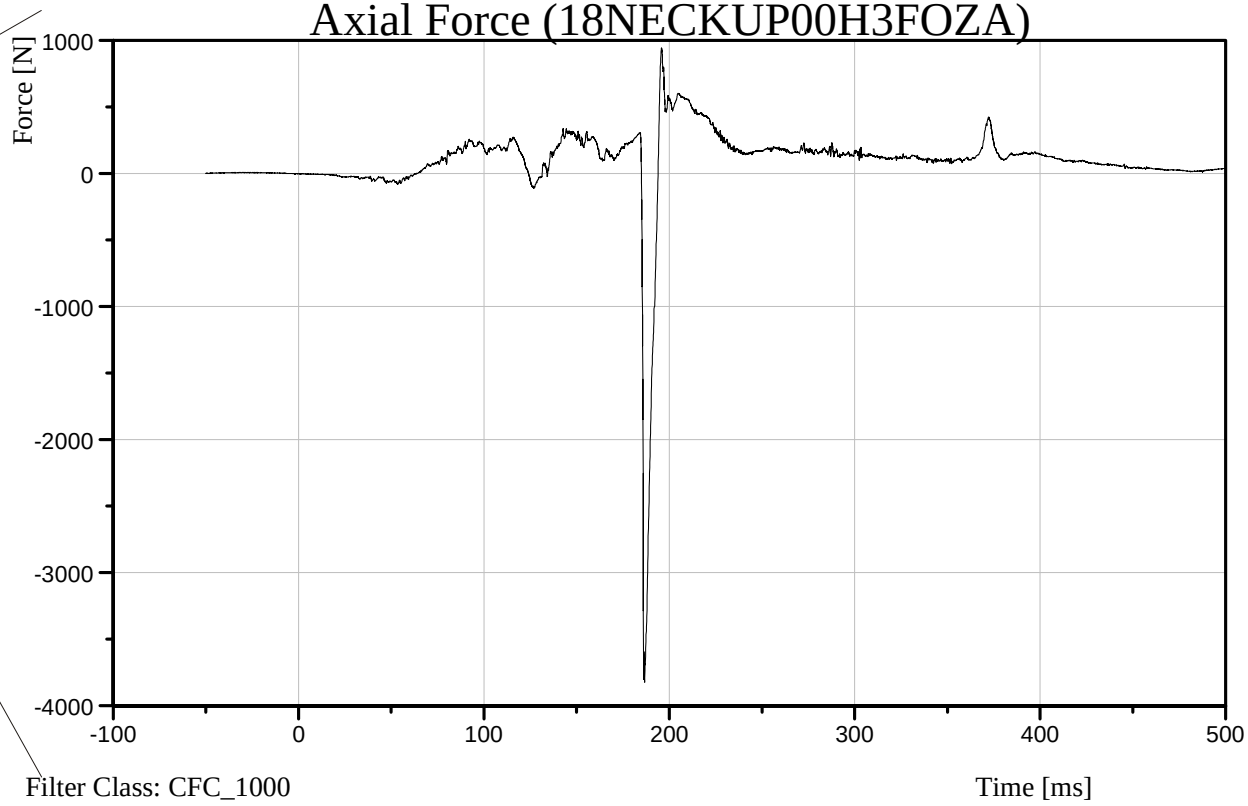
Neck Axial Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Right Side Row 6 Right Seat

[Max.] 944.63 N at 195.76 ms
[Min.] -3,822.64 N at 186.64 ms

Neck Axial Force Source Code: Min/Max of 18NECKUP00H3FOZA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

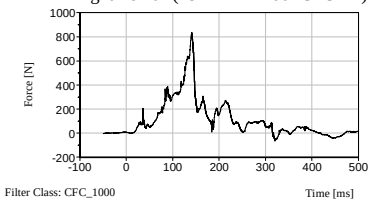
Femur Load

Date: 12/14/2007
Time: 9:12

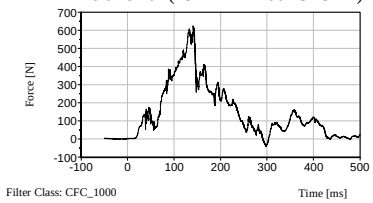
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

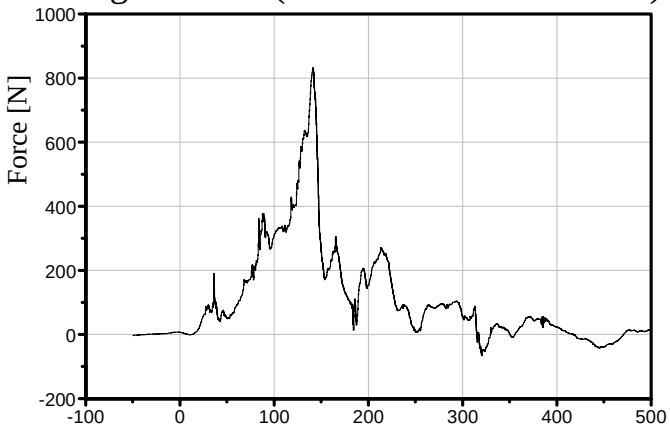
Right Femur (18FEMRRL00H3FOZA)

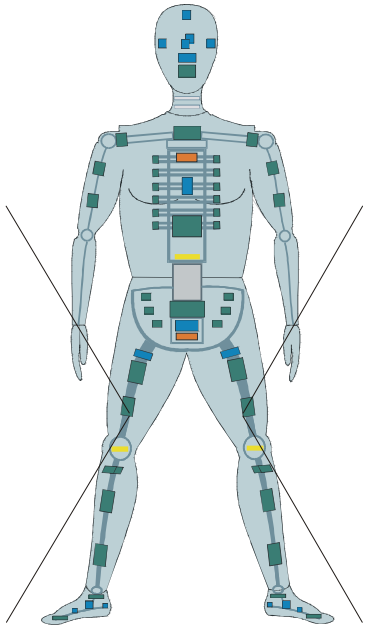


Left Femur (18FEMRLL00H3FOZA)

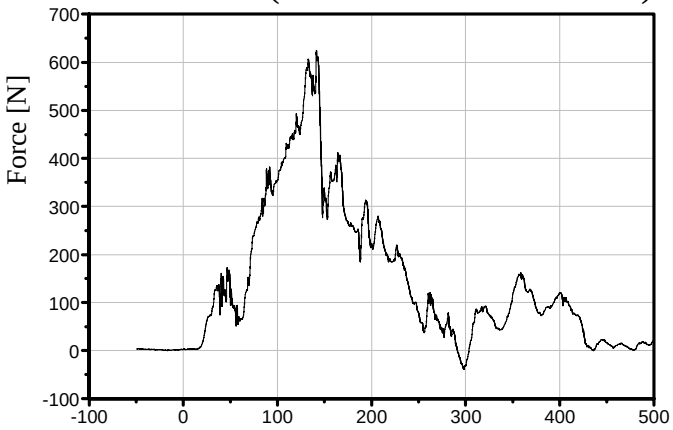


Right Femur (18FEMRRL00H3FOZB)





Left Femur (18FEMRLL00H3FOZB)



Max [Tension] 832.73 N at 141.20 ms
Min [Compression] -65.70 N at 320.56 ms

Dummy:HIII 50th Male
Seating Position:
Right Side Row 6 Right Seat

Max [Tension] 625.22 N at 141.28 ms
Min [Compression] -38.86 N at 298.32 ms

Femur Load Source Code : Min/Max of 18FEMRRL00H3FOZB and 18FEMRLL00H3FOZB (CFC 600)

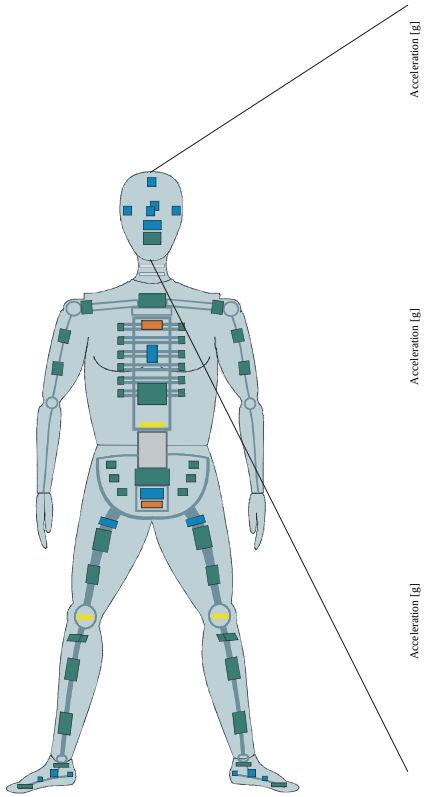
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

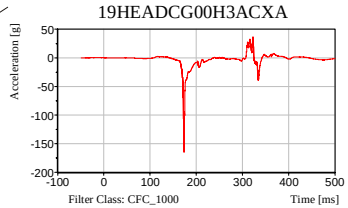
Head Injury Criterion (HIC)

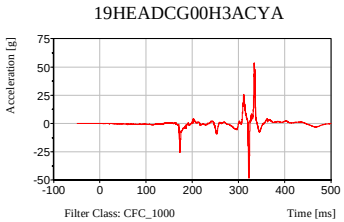
Date: 12/14/2007
Time: 9:12

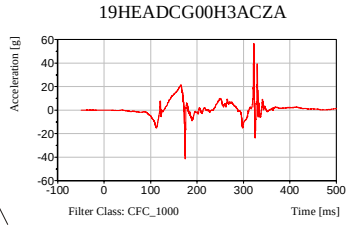
Customer: VRTC

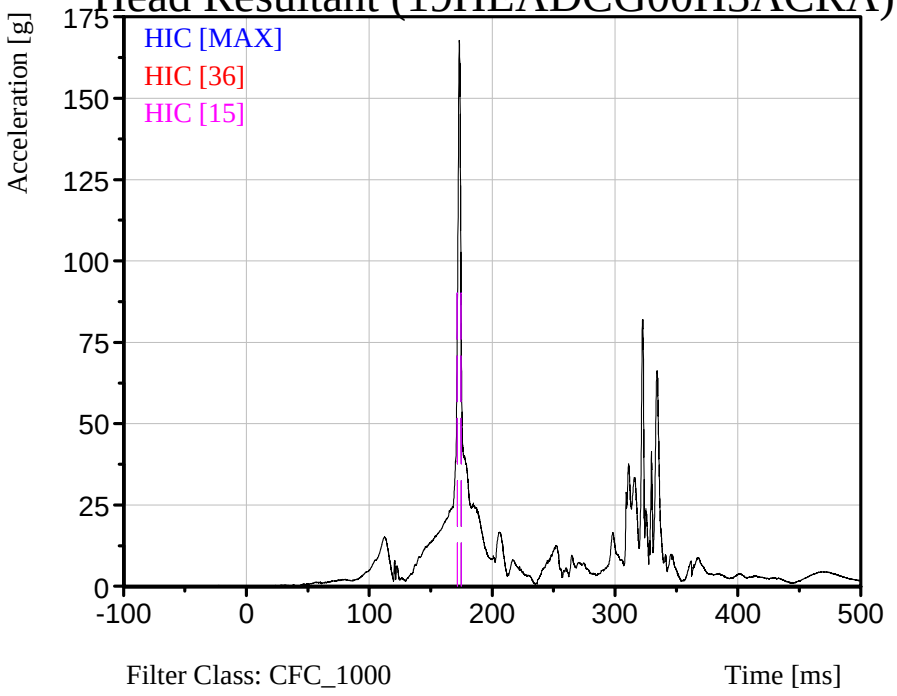
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 612.81	171.76 ms	174.88 ms	129.72 g
HIC [36] = 612.81	171.76 ms	174.88 ms	129.72 g
HIC [15] = 612.81	171.76 ms	174.88 ms	129.72 g

Dummy:HIII 50th Male
Seating Position:
Right Side Row 7 Left Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

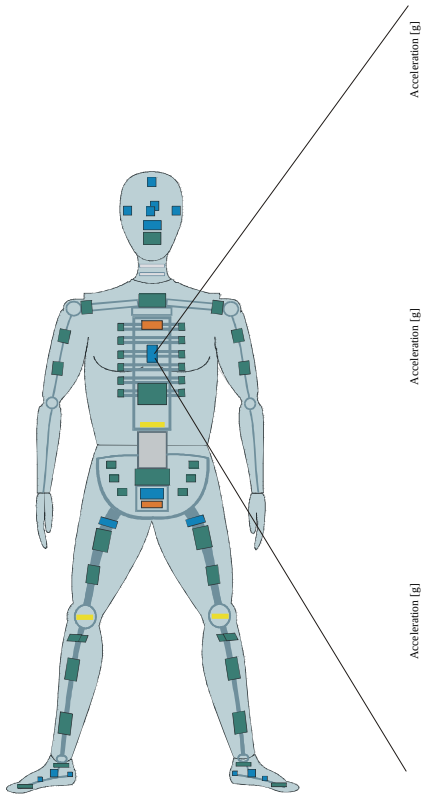
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

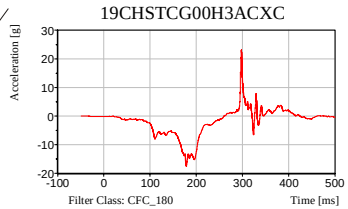
3 ms Duration Acceleration (Chest)

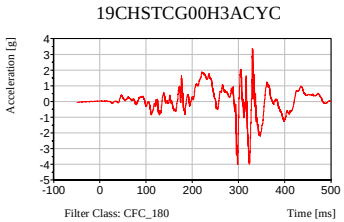
Date: 12/14/2007
Time: 9:12

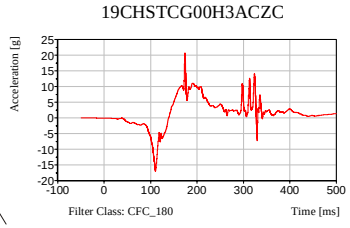
Customer: VRTC

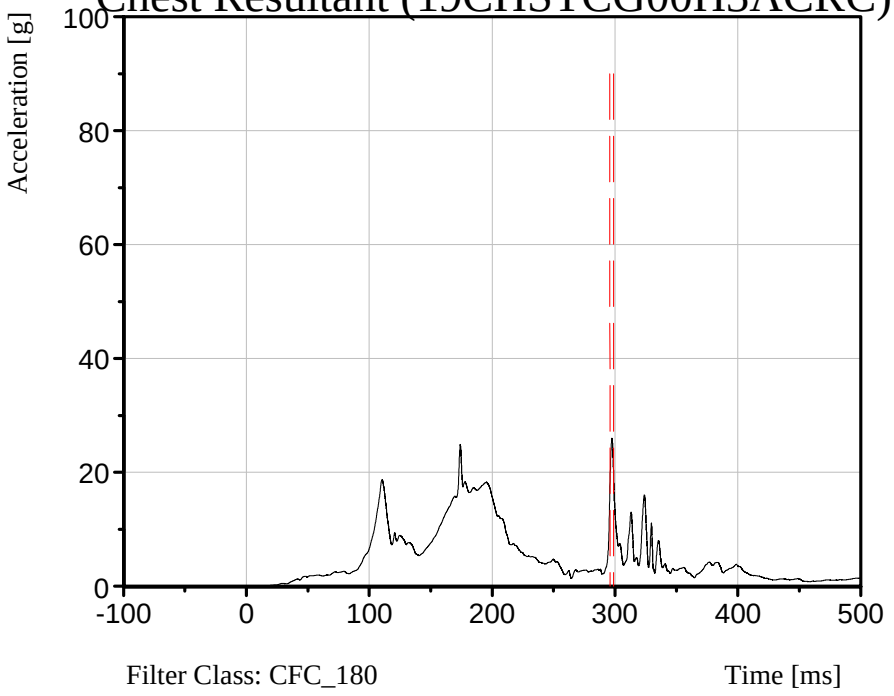
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 18.68 g	296.03 ms	299.03 ms
Chest Severity Index = 97.08		

Dummy:HIII 50th Male
Seating Position:
Right Side Row 7 Left Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

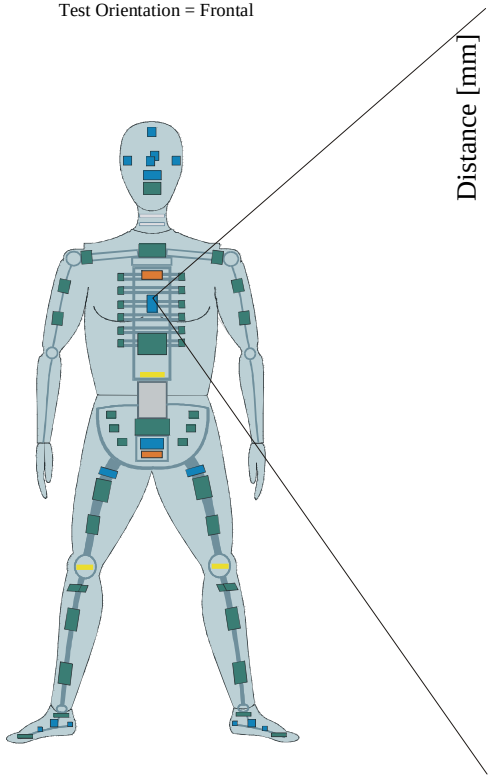
Date: 12/14/2007
Time: 9:12

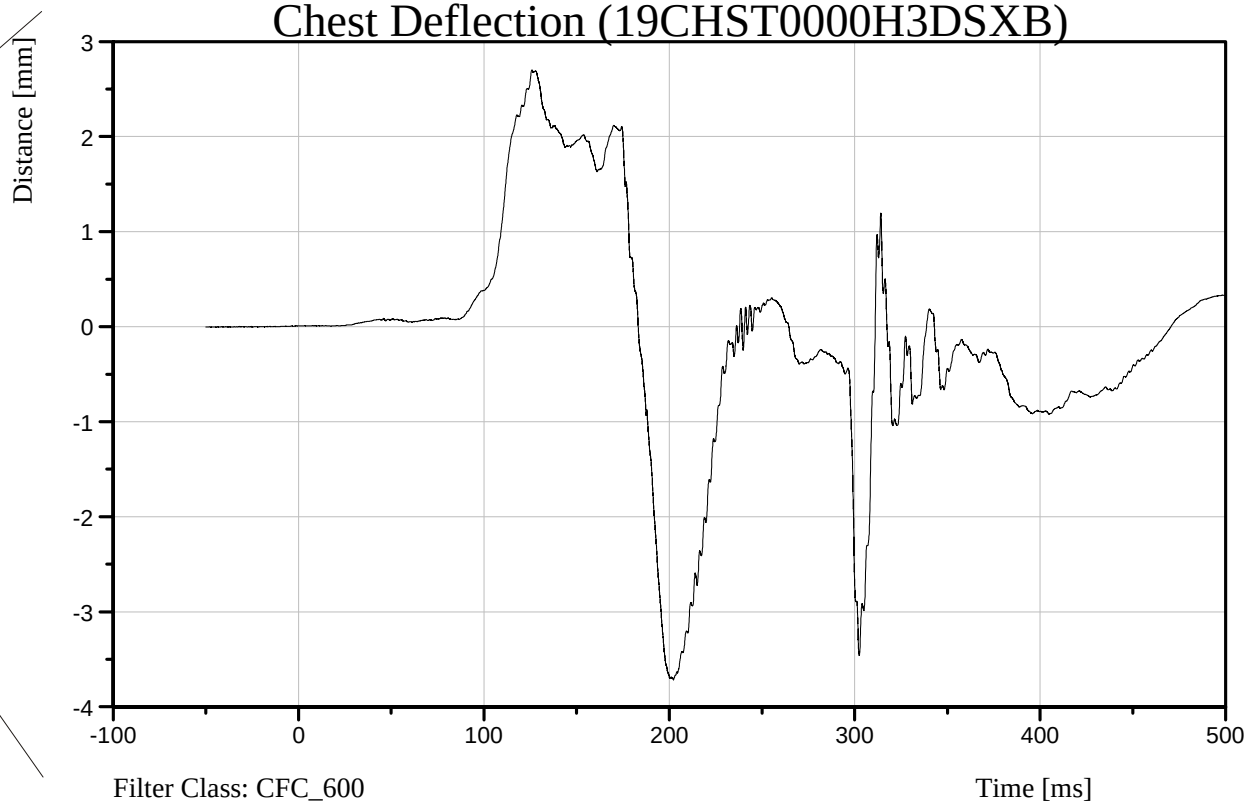
Chest Deflection

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 50th Male
Seating Position:
Right Side Row 7 Left Seat

[Max.] 2.70 mm at 125.92 ms
[Min.] -3.72 mm at 202.24 ms

ChestDeflection Source Code : Min/Max of 19CHST0000H3DSXB (CFC_600)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph
Neck Moment about the Occipital Condyle (NECK OM)

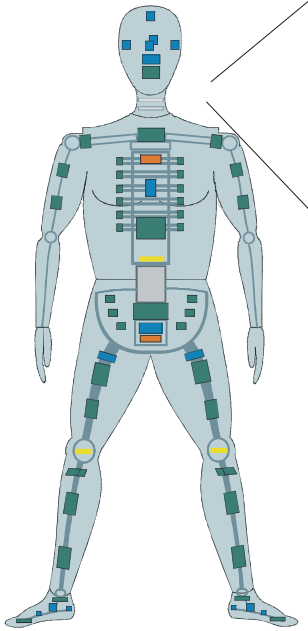
Date: 12/14/2007
Time: 9:12

Customer: VRTC

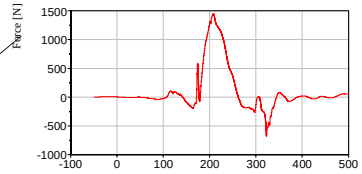
TRC Inc. Test Lab: CTF

Test Number: 071214

Test Orientation = Frontal

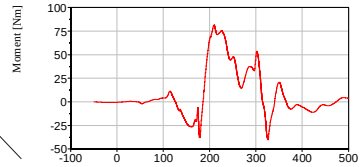


19NECKUP00H3FOXB



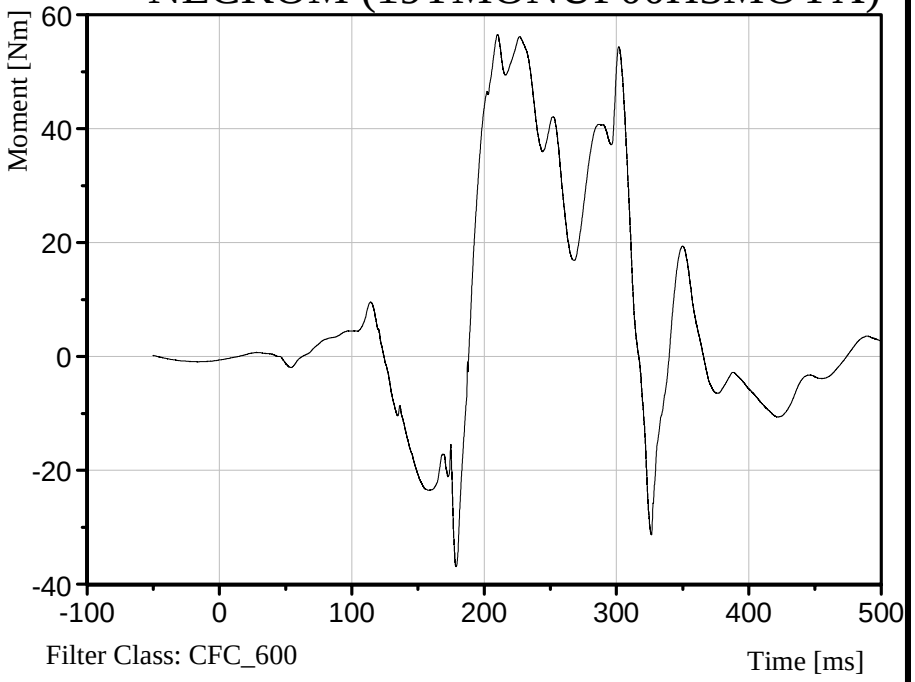
Filter Class: CFC_600

19NECKUP00H3MOYB



Filter Class: CFC_600

NECKOM (19TMONUP00H3MOYX)



Filter Class: CFC_600

Dummy:HIII 50th Male
Seating Position:
Right Side Row 7 Left Seat

Neck OM Source Code: My - (D*Fx)

[Max.] 56.54 Nm at 210.08 ms
[Min.] -36.90 Nm at 178.88 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

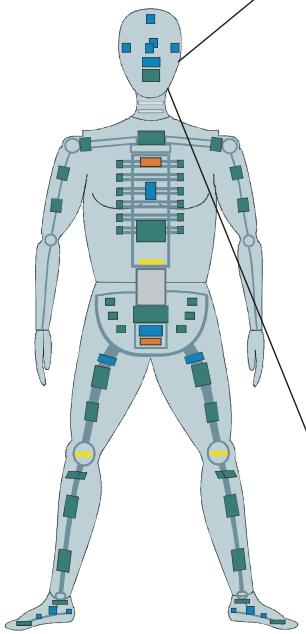
Neck Injury Predictor (NIJ)

Date: 12/14/2007
Time: 9:12

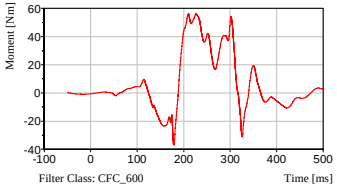
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

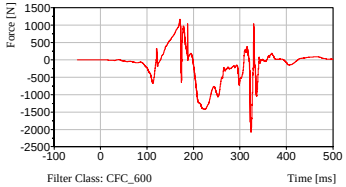
Test Orientation = Frontal
Fzc(Tension) = 6806
Fzc(Compression) = 6160
Myc(Extension) = 135
Myc(Flexion) = 310



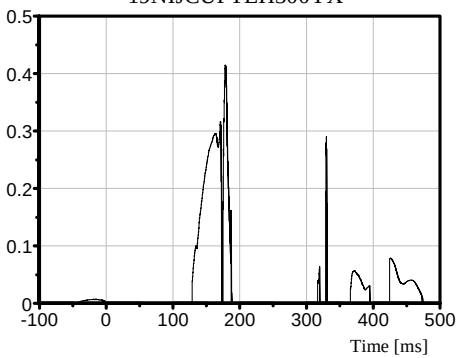
19TMONUP00H3MOYX



19NECKUP00H3FOZB

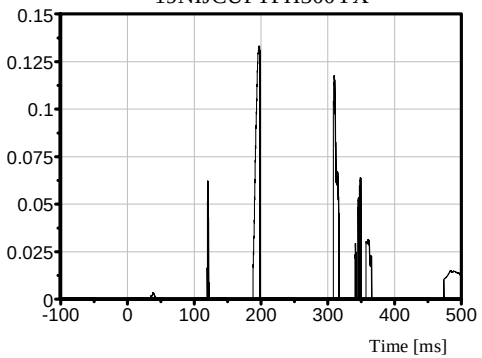


19NIJCUPTEH300YX



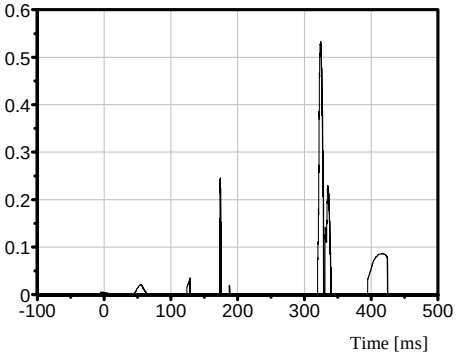
Max [NTE] 0.4150 at 178.80 ms

19NIJCUPTFH300YX



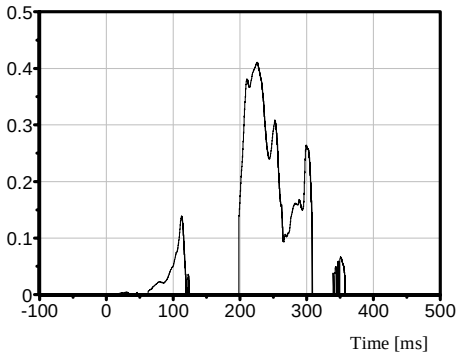
Max [NTF] 0.1333 at 197.12 ms

19NIJCUPCEH300YX



Max [NCE] 0.5329 at 324.32 ms

19NIJCUPCFH300YX



Max [NCF] 0.4111 at 226.08 ms

Dummy:HIII 50th Male
Seating Position:
Right Side Row 7 Left Seat

NIJ Source Code: (Fz/Fzc)+(My/Myc)

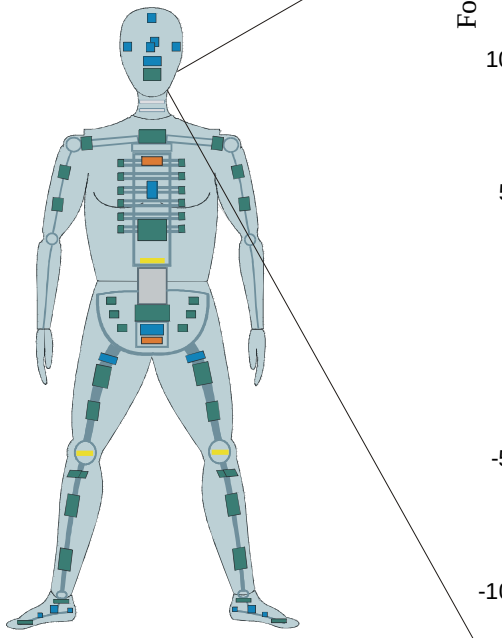
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

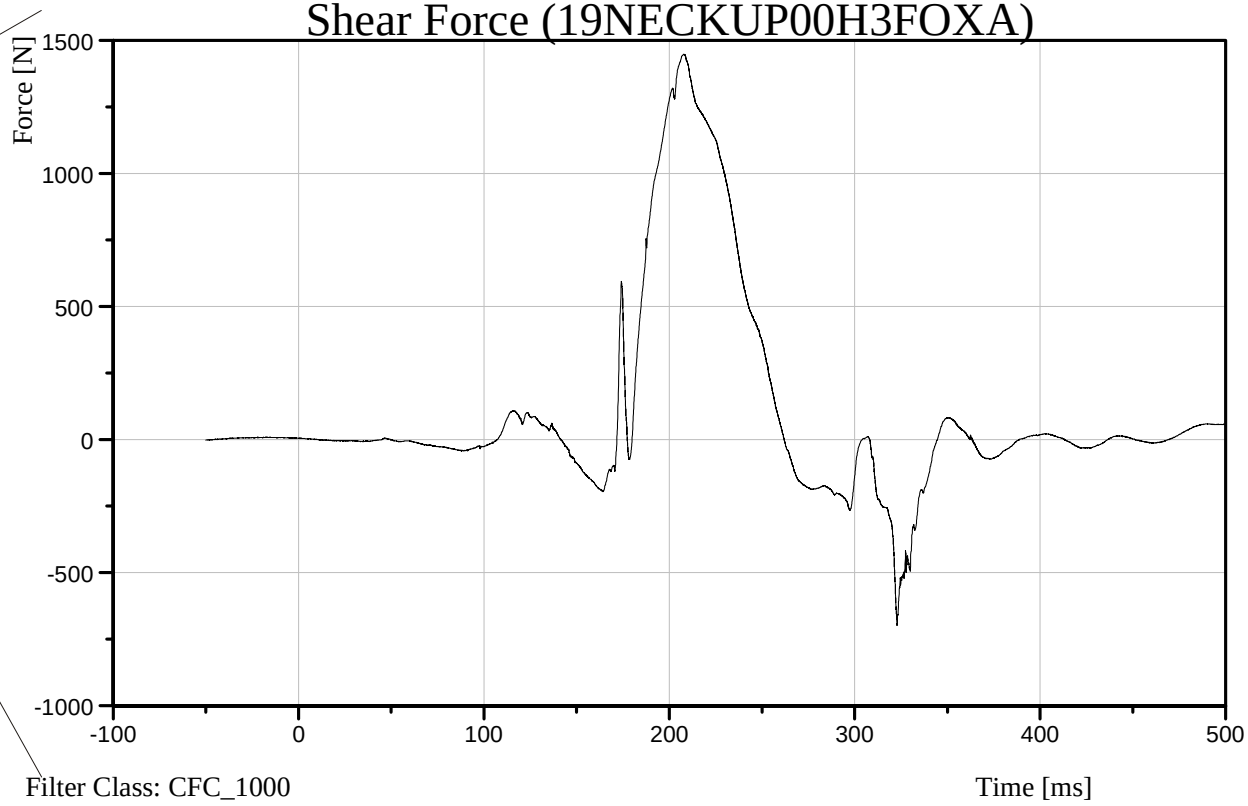
Neck Shear Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Right Side Row 7 Left Seat

[Max.] 1,447.98 N at 207.68 ms
[Min.] -696.63 N at 322.88 ms

Neck Shear Force Source Code: Min/Max of 19NECKUP00H3FOXA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

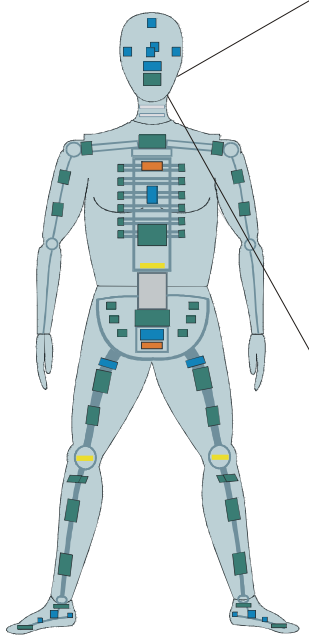
Neck Shear Force

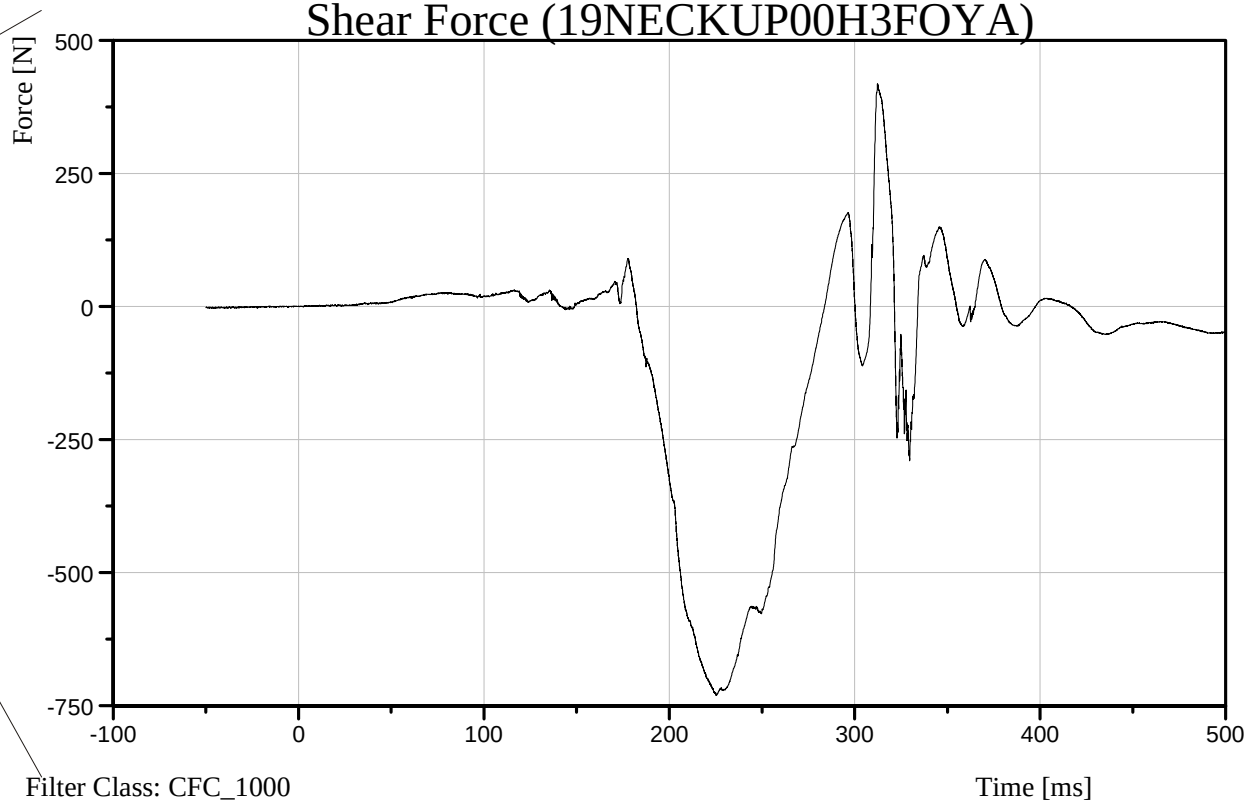
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 50th Male
Seating Position:
Right Side Row 7 Left Seat

[Max.] 418.66 N at 312.32 ms
[Min.] -730.25 N at 225.60 ms

Neck Shear Force Source Code: Min/Max of 19NECKUP00H3FOYA

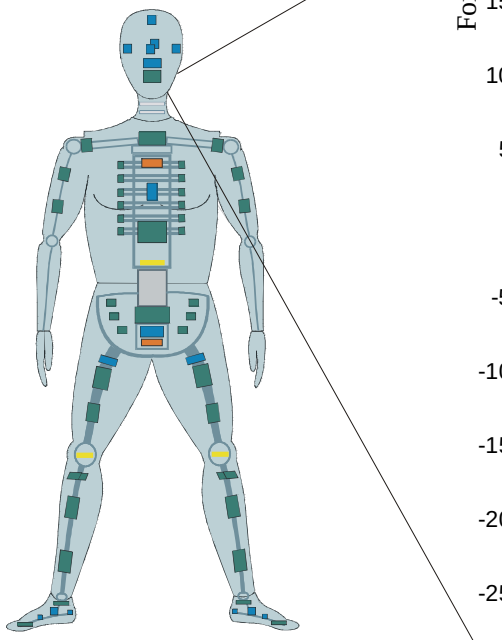
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

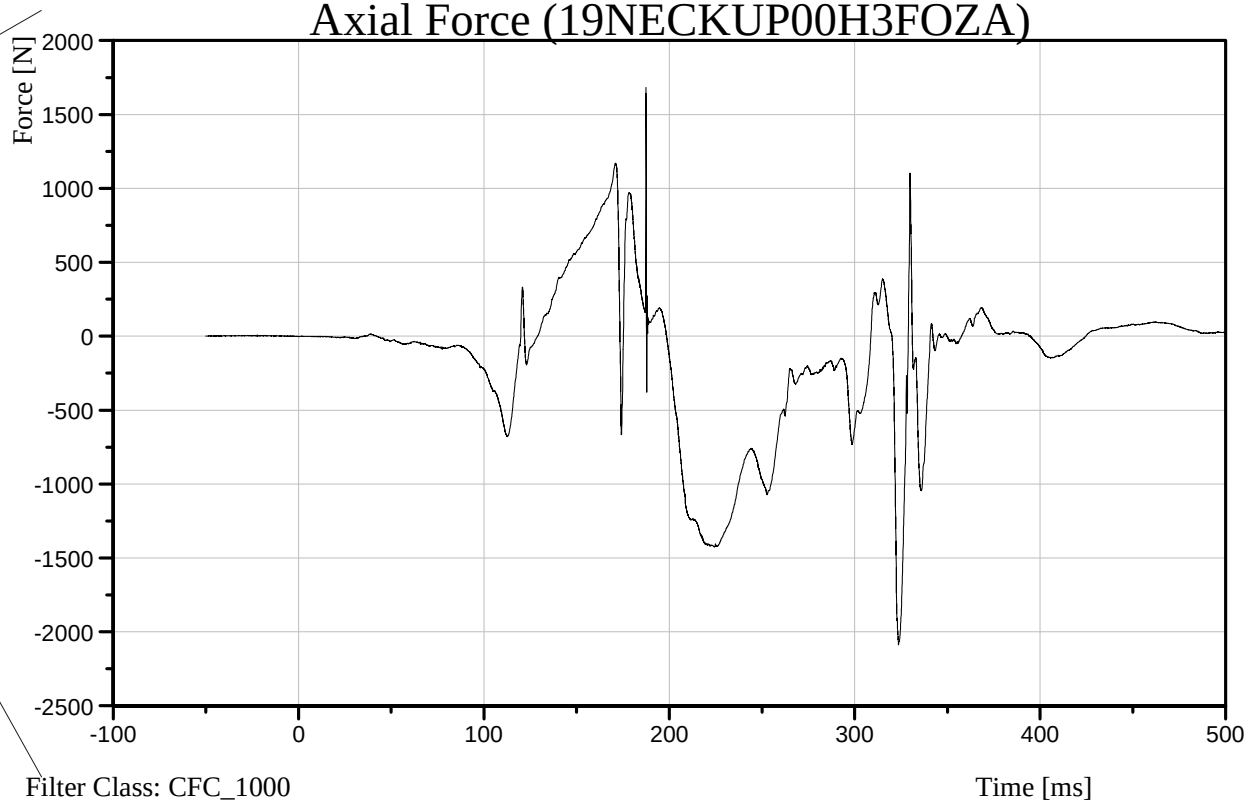
Neck Axial Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Right Side Row 7 Left Seat

[Max.] 1,683.18 N at 187.44 ms
[Min.] -2,085.92 N at 323.68 ms

Neck Axial Force Source Code: Min/Max of 19NECKUP00H3FOZA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

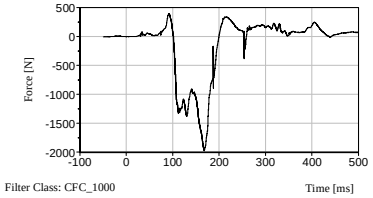
Femur Load

Date: 12/14/2007
Time: 9:12

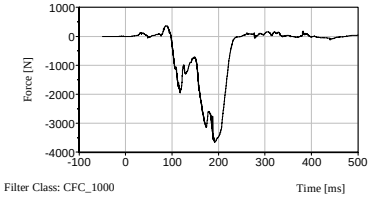
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

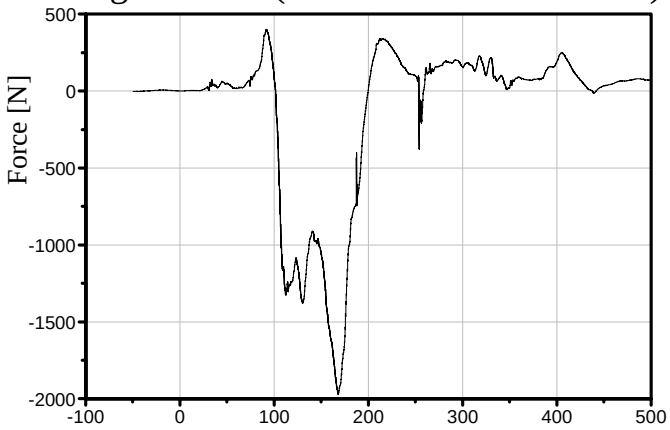
Right Femur (19FEMRRL00H3FOZA)

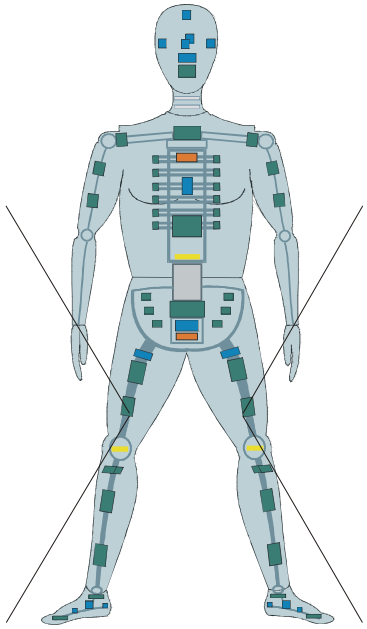


Left Femur (19FEMRLL00H3FOZA)

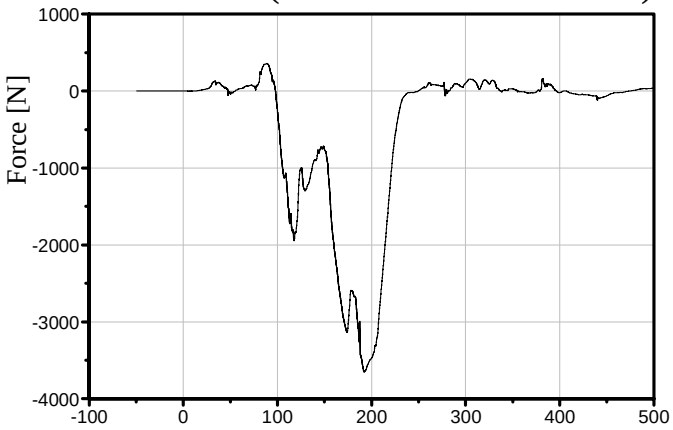


Right Femur (19FEMRRL00H3FOZB)





Left Femur (19FEMRLL00H3FOZB)



Max [Tension] 402.28 N at 92.00 ms
Min [Compression] -1,971.48 N at 167.92 ms

Dummy:HIII 50th Male
Seating Position:
Right Side Row 7 Left Seat

Max [Tension] 360.96 N at 88.56 ms
Min [Compression] -3,652.27 N at 192.00 ms

Femur Load Source Code : Min/Max of 19FEMRRL00H3FOZB and 19FEMRLL00H3FOZB (CFC 600)

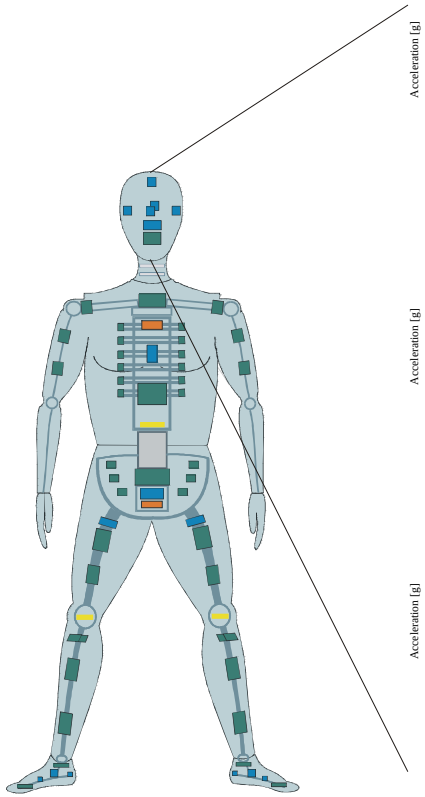
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

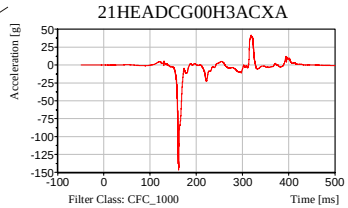
Head Injury Criterion (HIC)

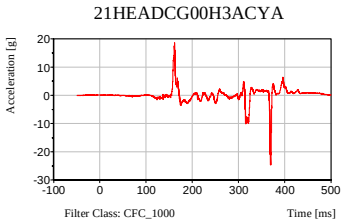
Date: 12/14/2007
Time: 9:12

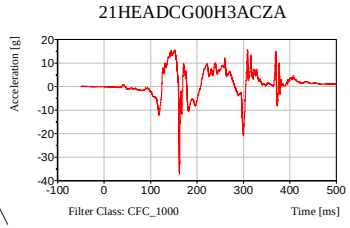
Customer: VRTC

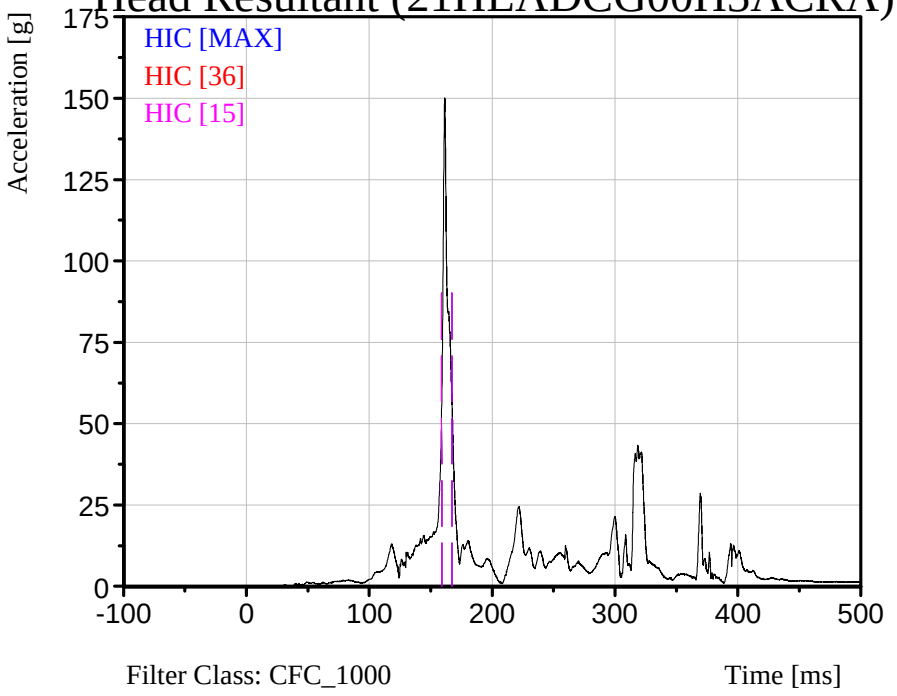
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 728.31	159.04 ms	167.36 ms	94.45 g
HIC [36] = 728.31	159.04 ms	167.36 ms	94.45 g
HIC [15] = 728.31	159.04 ms	167.36 ms	94.45 g

Dummy:HIII 50th Male
Seating Position:
Right Side Row 7 Right Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

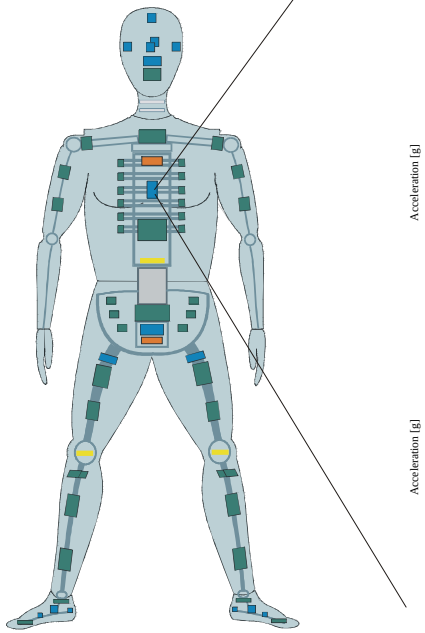
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

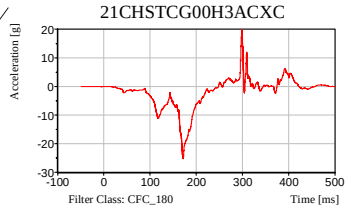
3 ms Duration Acceleration (Chest)

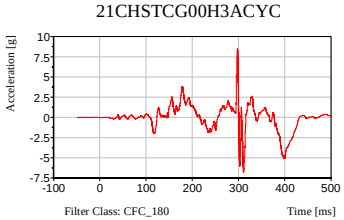
Date: 12/14/2007
Time: 9:12

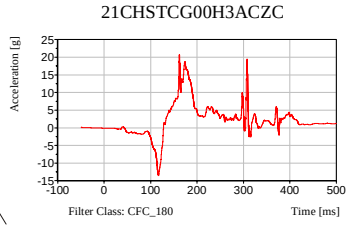
Customer: VRTC

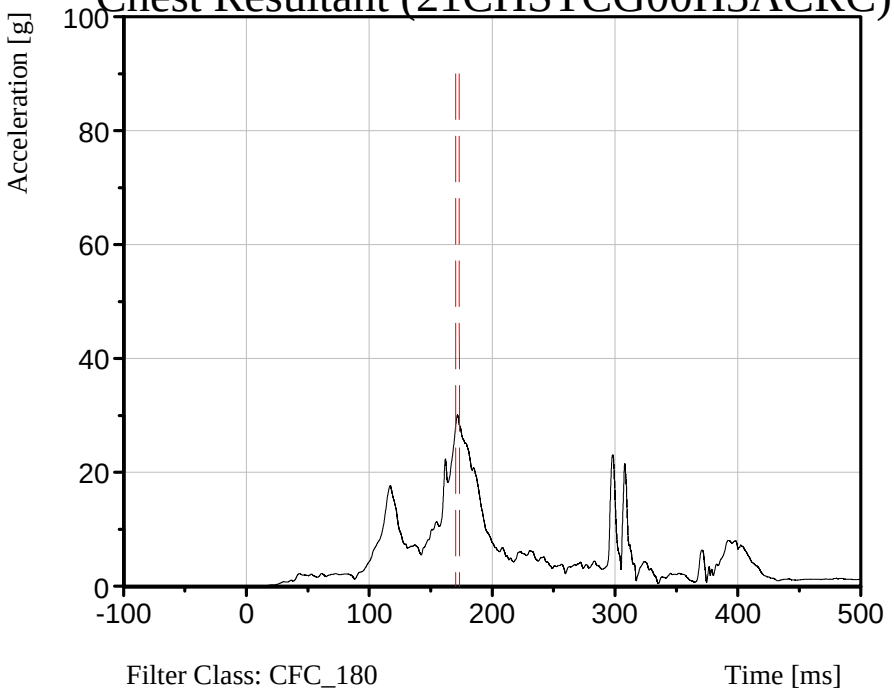
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 28.32 g	170.47 ms	173.47 ms

Chest Severity Index = 127.81

Dummy:HIII 50th Male
Seating Position:
Right Side Row 7 Right Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

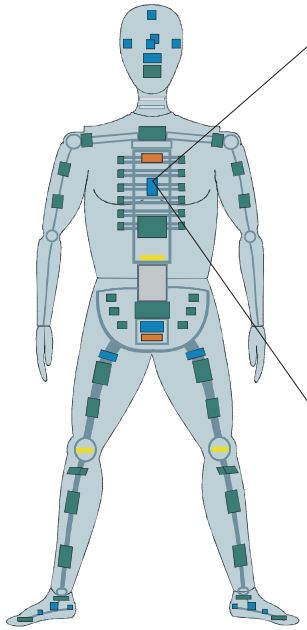
Chest Deflection

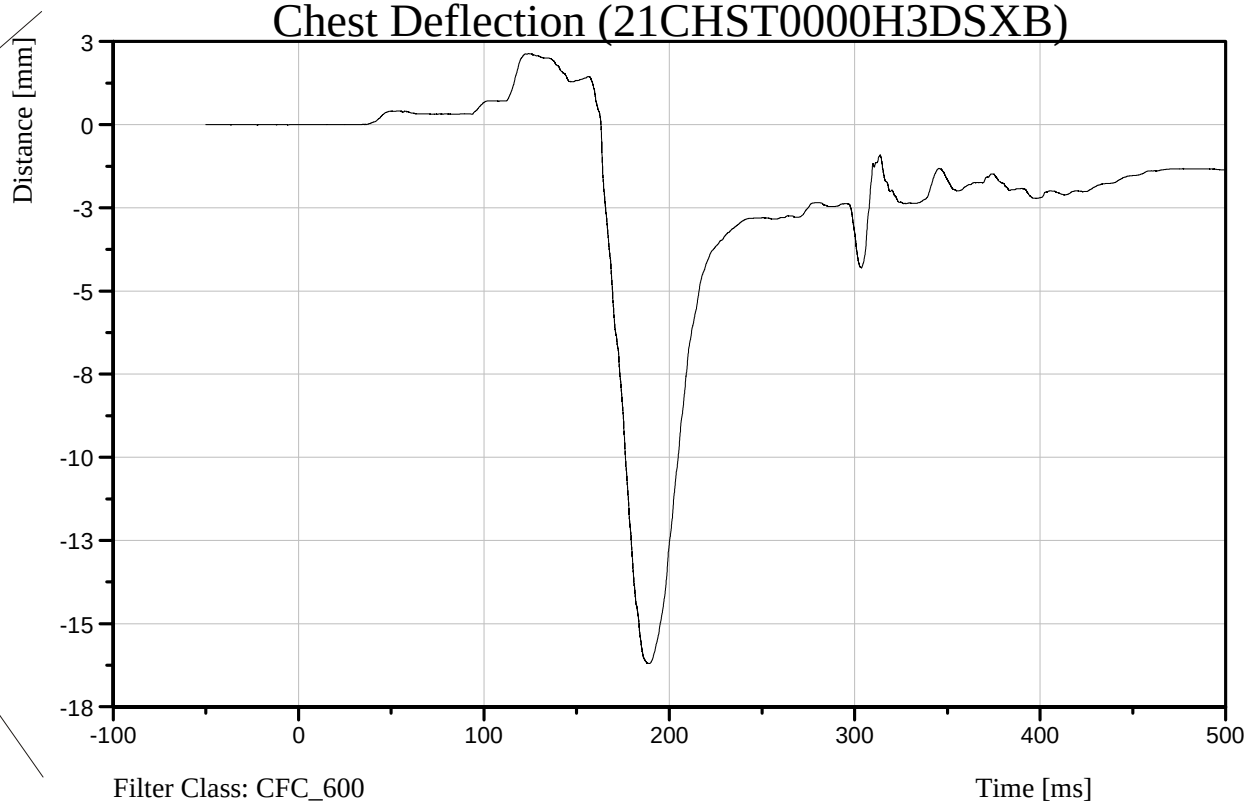
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 50th Male
Seating Position:
Right Side Row 7 Right Seat

[Max.] 2.14 mm at 124.00 ms
[Min.] -16.20 mm at 189.28 ms

ChestDeflection Source Code : Min/Max of 21CHST0000H3DSXB (CFC_600)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph
Neck Moment about the Occipital Condyle (NECK OM)

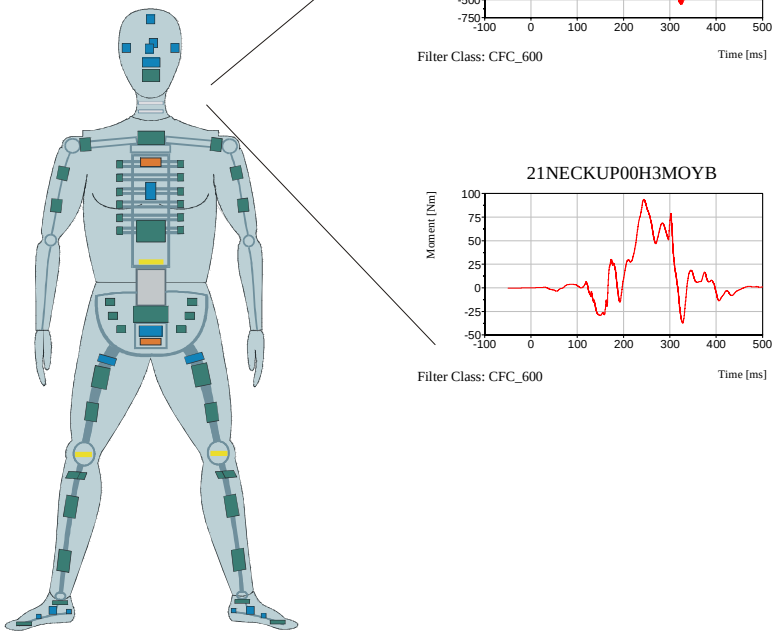
Date: 12/14/2007
Time: 9:12

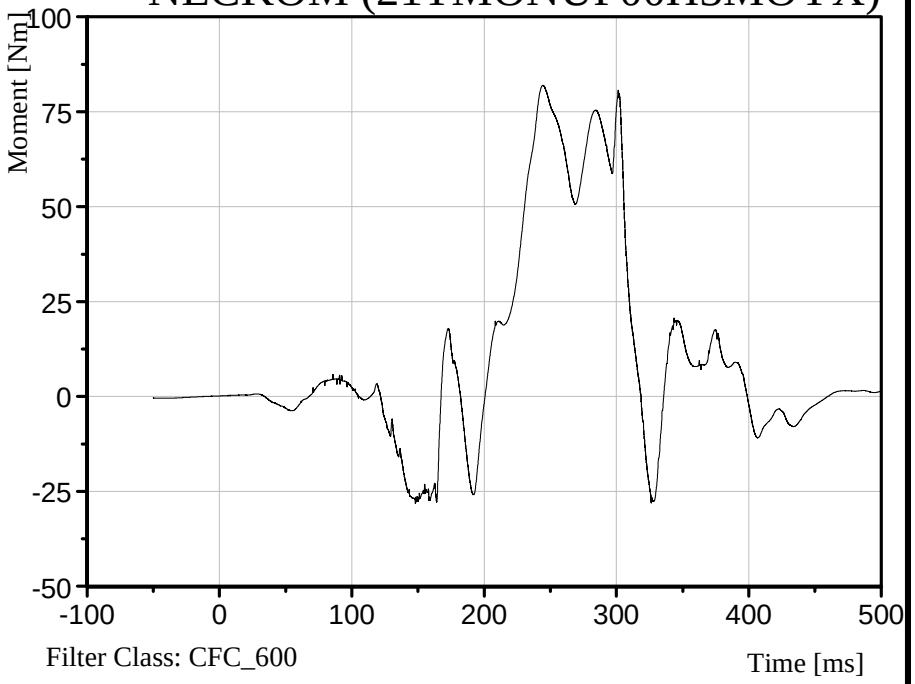
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 50th Male
Seating Position:
Right Side Row 7 Right Seat

Neck OM Source Code: My - (D*Fx)

[Max.] 81.97 Nm at 244.48 ms
[Min.] -28.14 Nm at 148.24 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

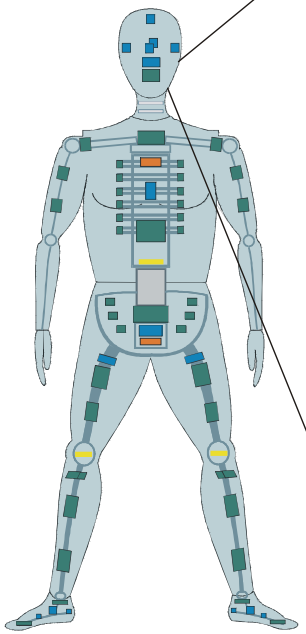
Neck Injury Predictor (NIJ)

Date: 12/14/2007
Time: 9:12

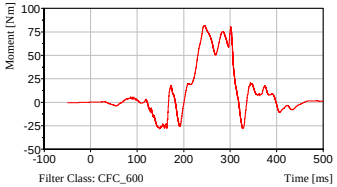
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

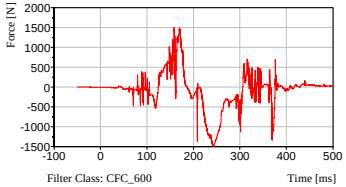
Test Orientation = Frontal
Fzc(Tension) = 6806
Fzc(Compression) = 6160
Myc(Extension) = 135
Myc(Flexion) = 310



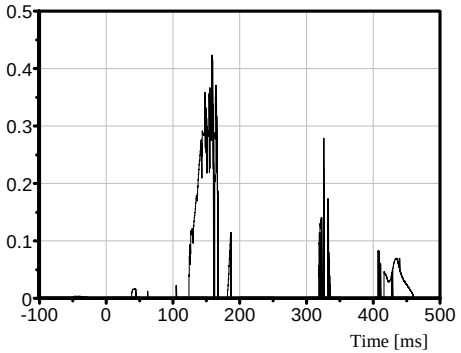
21TMONUP00H3MOYX



21NECKUP00H3FOZB

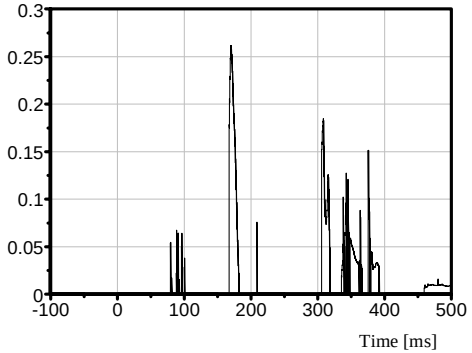


21NIJCUPTEH300YX



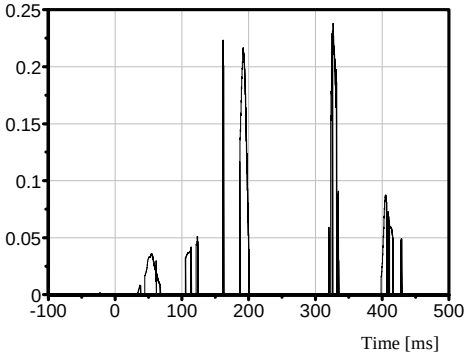
Max [NTE] 0.4237 at 158.56 ms

21NIJCUPTFH300YX



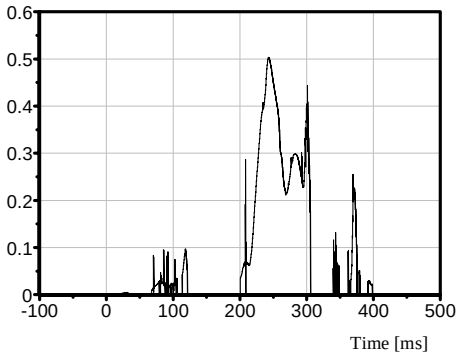
Max [NTF] 0.2619 at 170.32 ms

21NIJCUPCEH300YX



Max [NCE] 0.2383 at 326.64 ms

21NIJCUPCFH300YX



Max [NCF] 0.5033 at 242.88 ms

Dummy:HIII 50th Male
Seating Position:
Right Side Row 7 Right Seat

NIJ Source Code: (Fz/Fzc)+(My/Myc)

071214

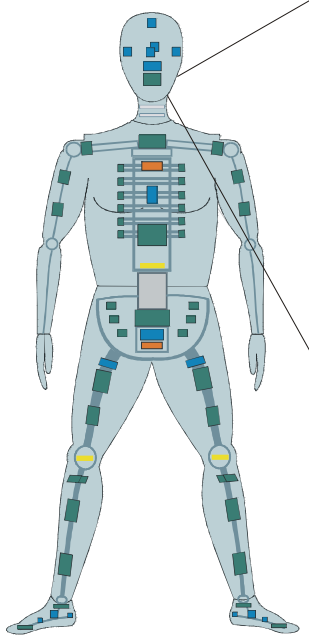
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

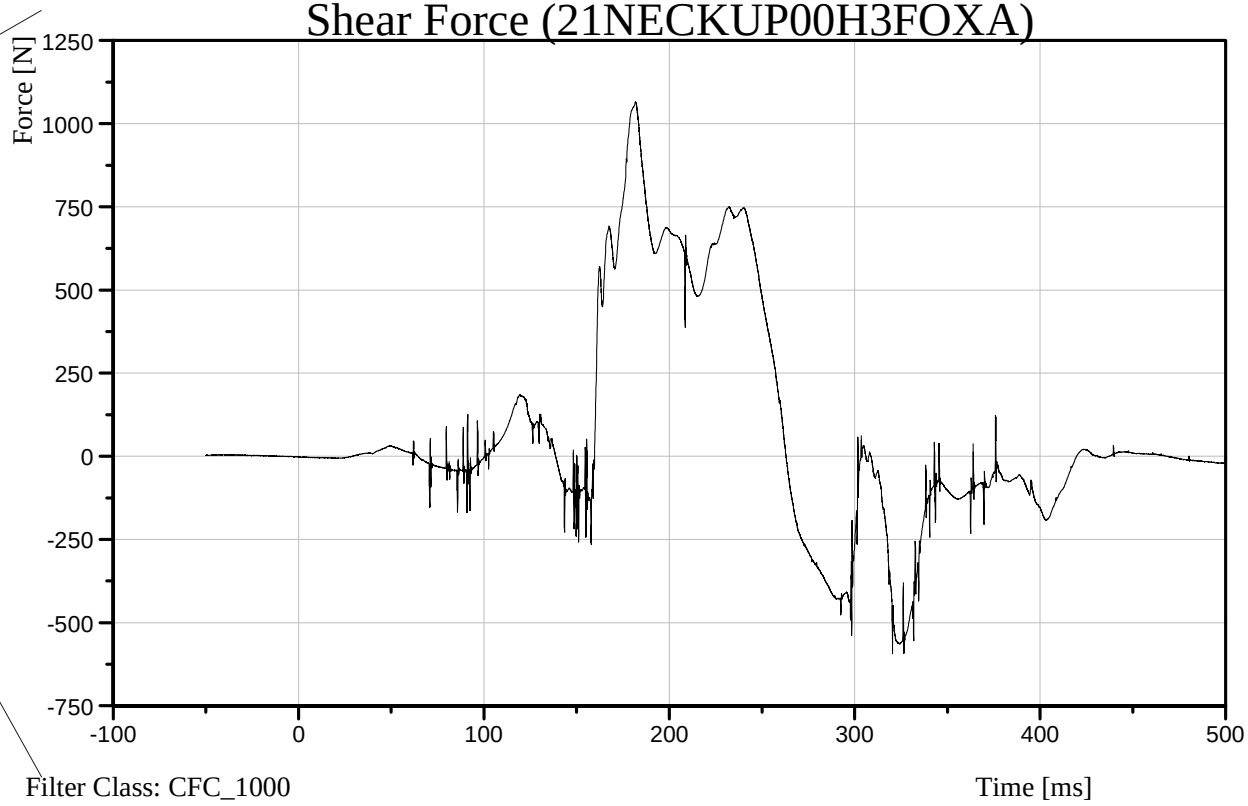
Neck Shear Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Right Side Row 7 Right Seat

[Max.] 1,065.19 N at 181.76 ms
[Min.] -593.30 N at 320.40 ms

Neck Shear Force Source Code: Min/Max of 21NECKUP00H3FOXA

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

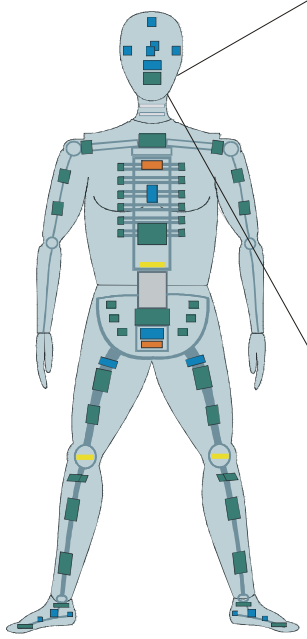
Neck Shear Force

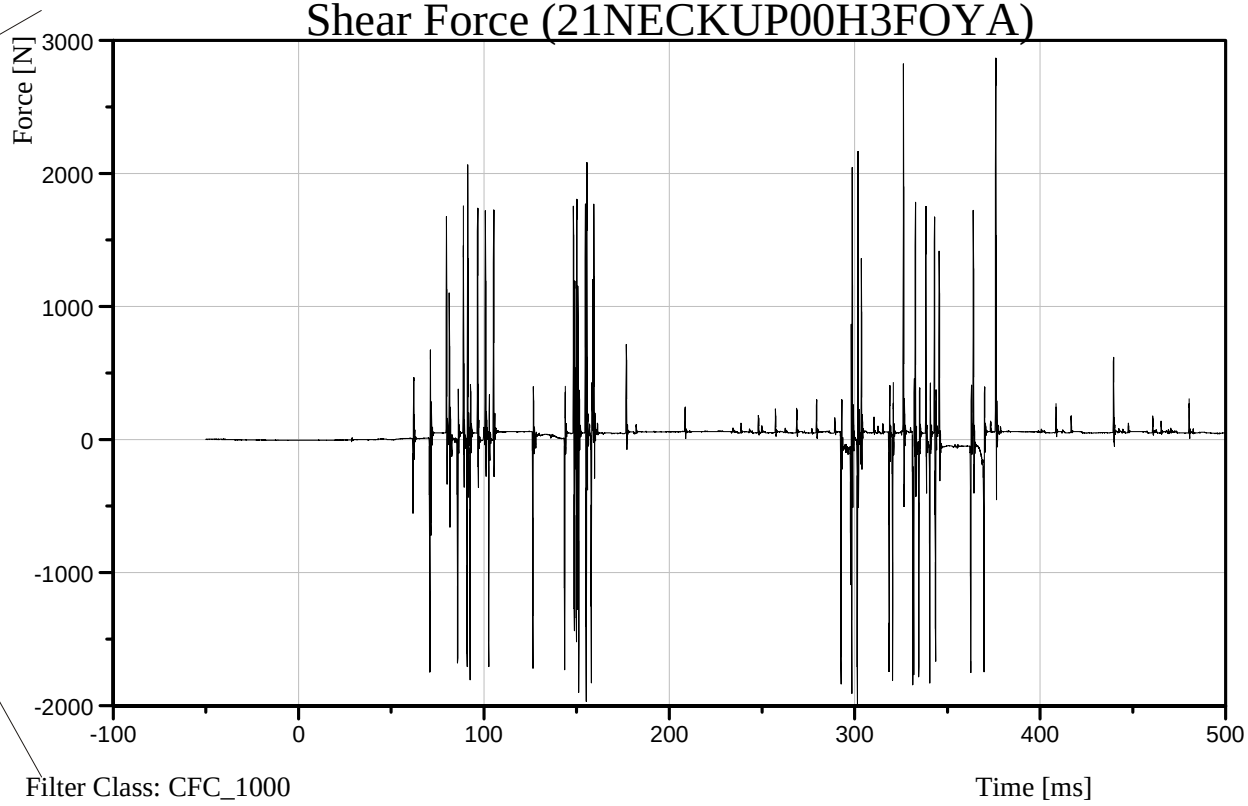
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 50th Male
Seating Position:
Right Side Row 7 Right Seat

[Max.] 2,867.21 N at 376.08 ms
[Min.] -1,991.03 N at 301.44 ms

Neck Shear Force Source Code: Min/Max of 21NECKUP00H3FOYA

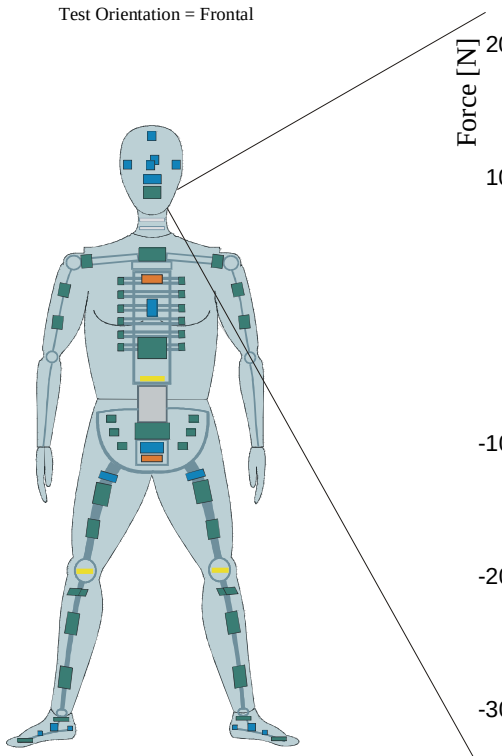
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

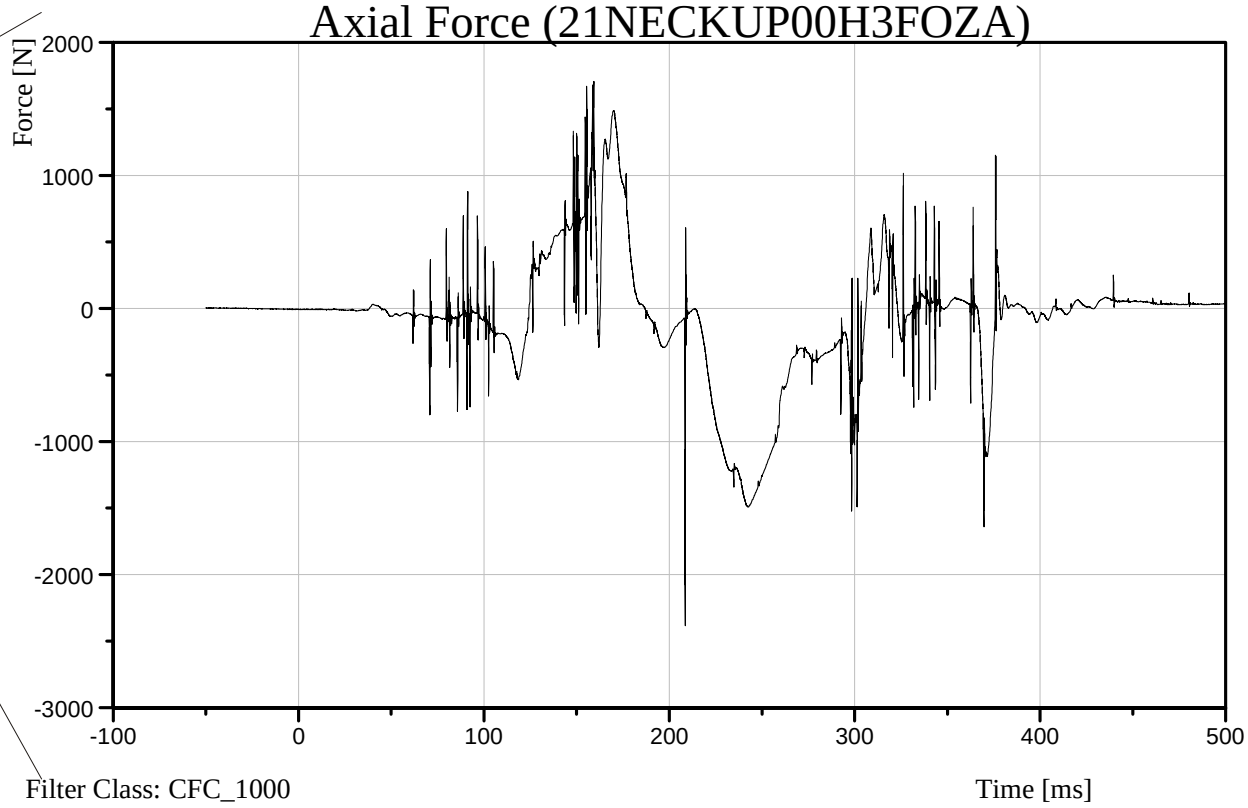
Neck Axial Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Right Side Row 7 Right Seat

[Max.] 1,708.45 N at 159.28 ms
[Min.] -2,384.35 N at 208.56 ms

Neck Axial Force Source Code: Min/Max of 21NECKUP00H3FOZA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

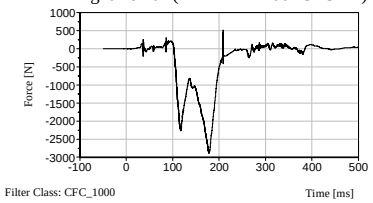
Femur Load

Date: 12/14/2007
Time: 9:12

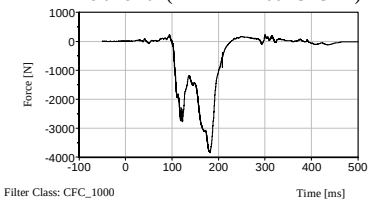
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

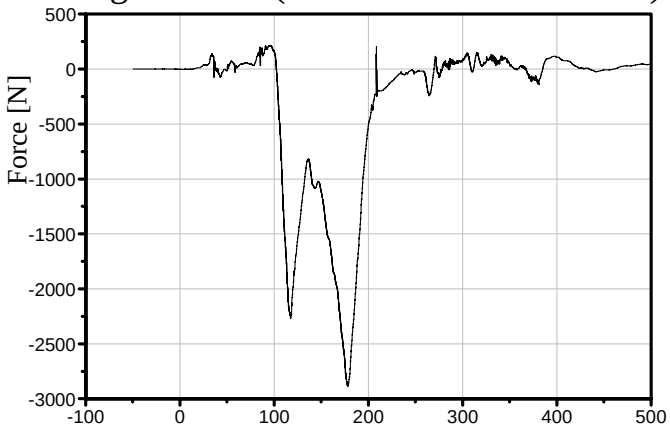
Right Femur (21FEMRRL00H3FOZA)



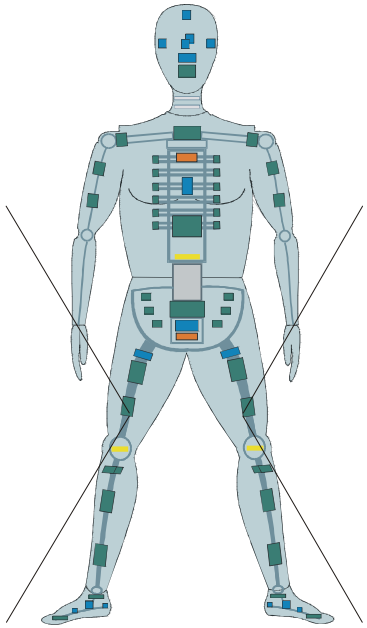
Left Femur (21FEMRLL00H3FOZA)



Right Femur (21FEMRRL00H3FOZB)

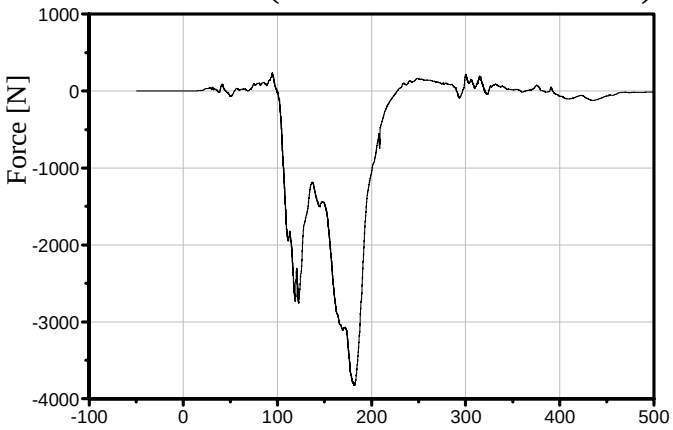


Max [Tension] 214.71 N at 95.76 ms
Min [Compression] -2,885.95 N at 178.32 ms



Dummy:HIII 50th Male
Seating Position:
Right Side Row 7 Right Seat

Left Femur (21FEMRLL00H3FOZB)



Max [Tension] 235.43 N at 94.40 ms
Min [Compression] -3,829.49 N at 181.52 ms

Femur Load Source Code : Min/Max of 21FEMRRL00H3FOZB and 21FEMRLL00H3FOZB (CFC 600)

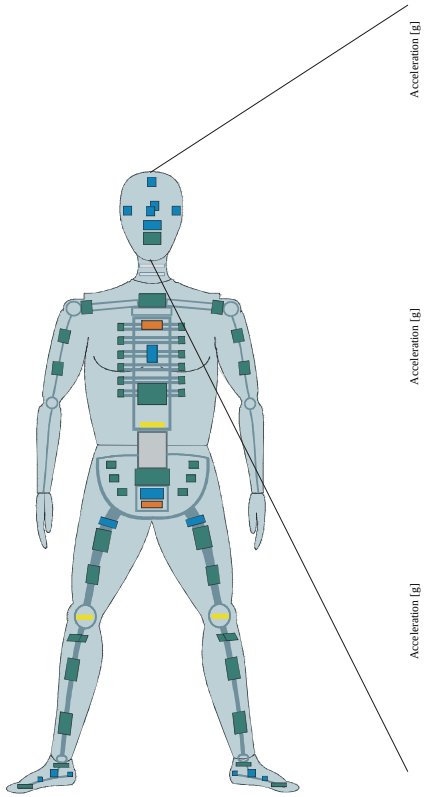
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

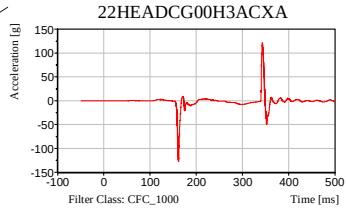
Head Injury Criterion (HIC)

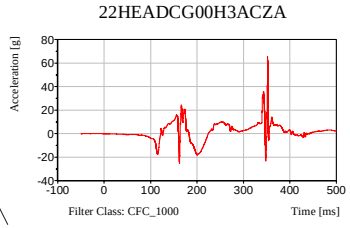
Date: 12/14/2007
Time: 9:12

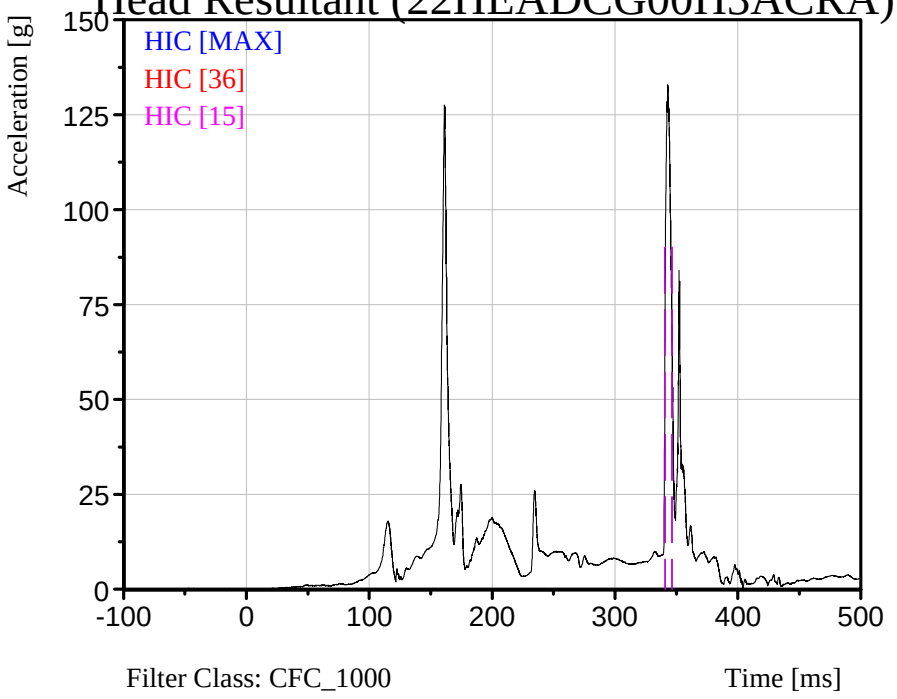
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214









	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 700.05	340.72 ms	346.56 ms	106.96 g
HIC [36] = 700.05	340.72 ms	346.56 ms	106.96 g
HIC [15] = 700.05	340.72 ms	346.56 ms	106.96 g

Dummy:HIII 50th Male
Seating Position:
Left Side Row 8 Left Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

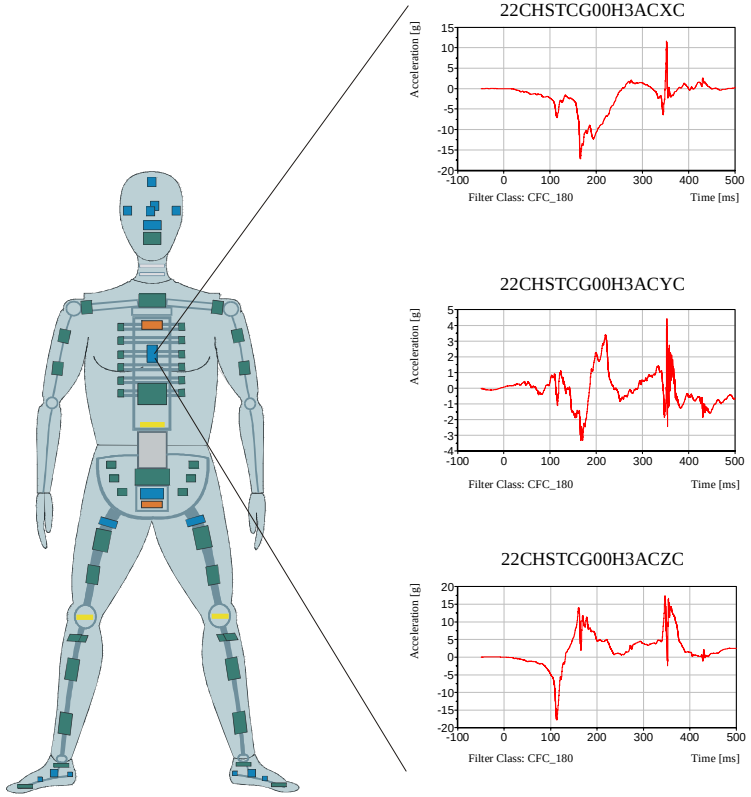
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

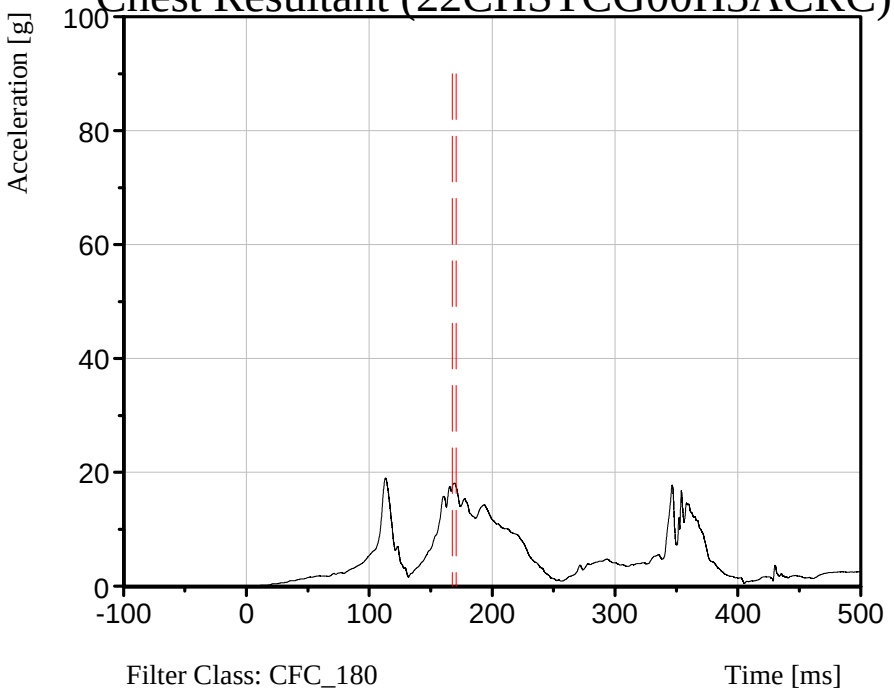
3 ms Duration Acceleration (Chest)

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 17.55 g	167.69 ms	170.69 ms
Chest Severity Index = 79.71		

Dummy:HIII 50th Male
Seating Position:
Left Side Row 8 Left Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

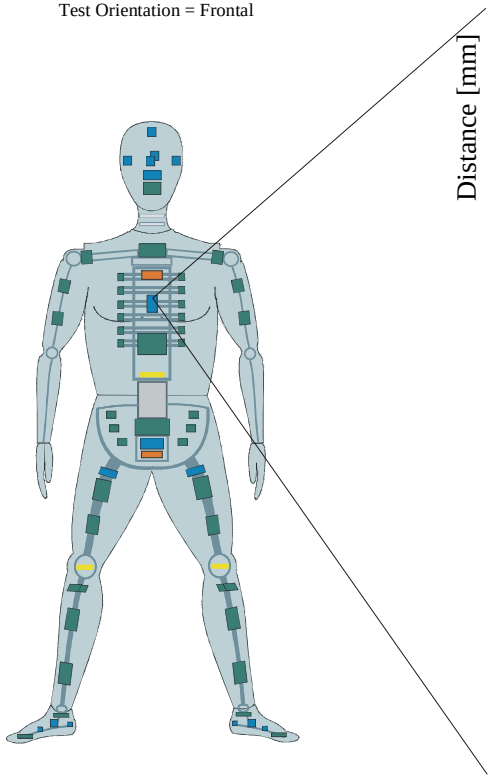
Chest Deflection

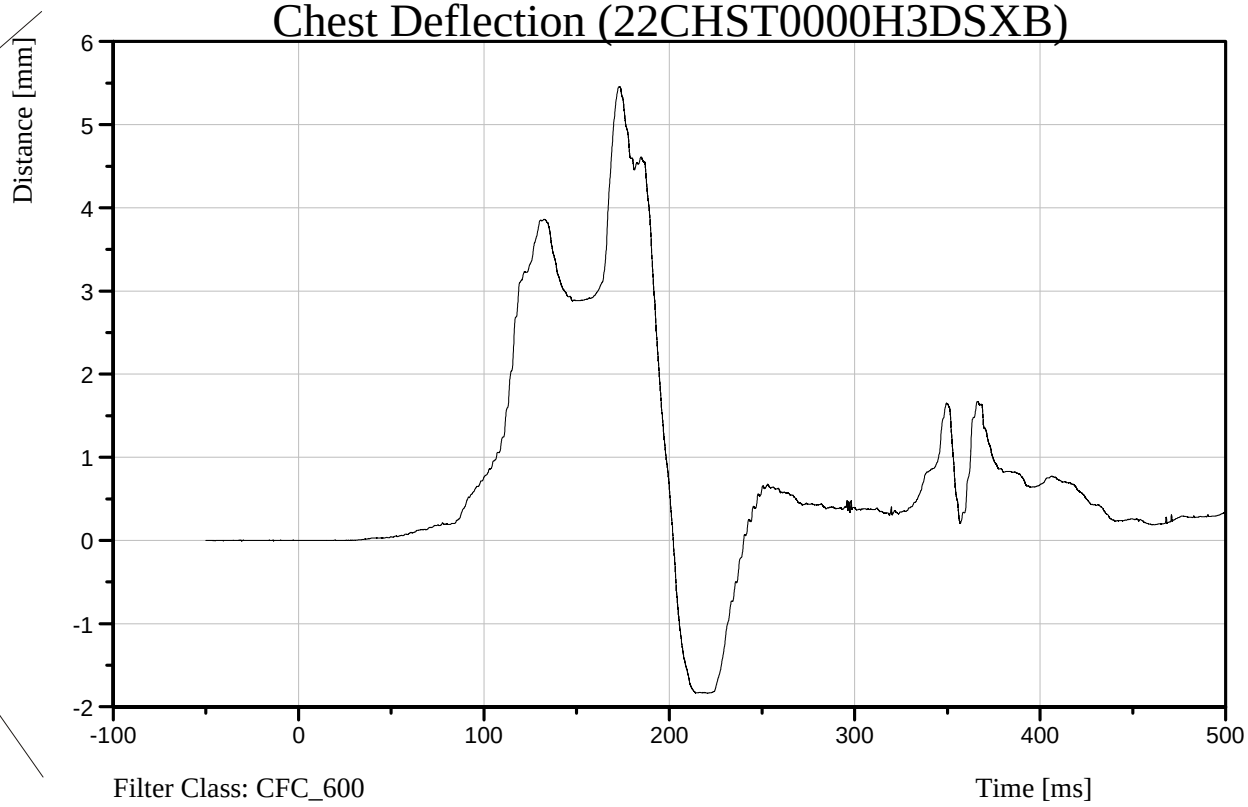
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 50th Male
Seating Position:
Left Side Row 8 Left Seat

[Max.] 5.46 mm at 172.96 ms
[Min.] -1.84 mm at 220.56 ms

ChestDeflection Source Code : Min/Max of 22CHST0000H3DSXB (CFC_600)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph
Neck Moment about the Occipital Condyle (NECK OM)

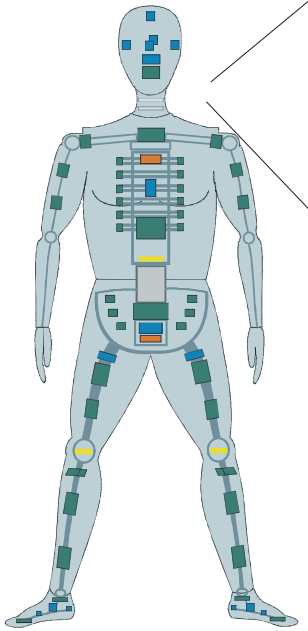
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 071214

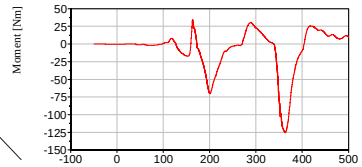
Test Orientation = Frontal



22NECKUP00H3FOXB

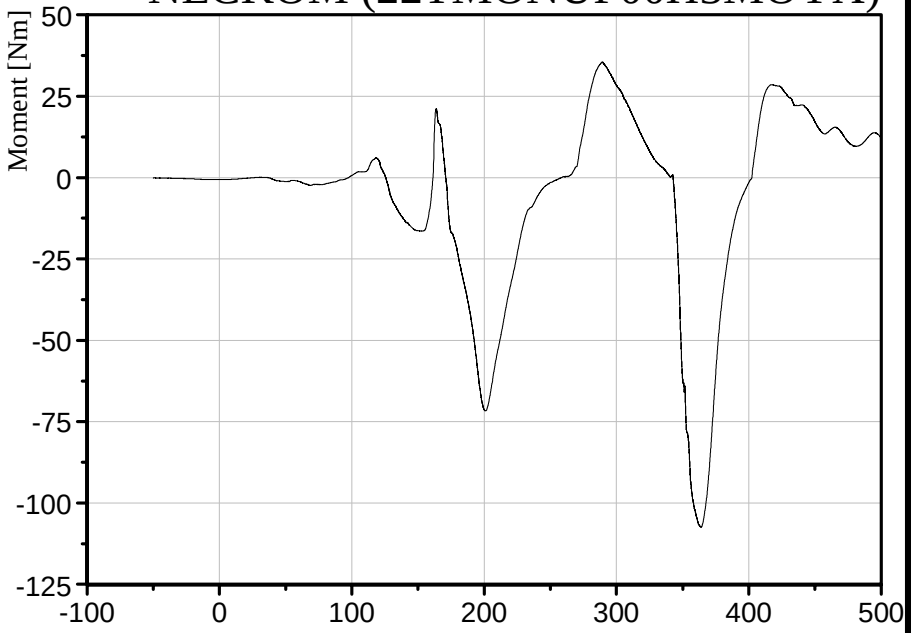
Filter Class: CFC_600

22NECKUP00H3MOYB



Filter Class: CFC_600

NECKOM (22TMONUP00H3MOYX)



Filter Class: CFC_600

Dummy:HIII 50th Male
Seating Position:
Left Side Row 8 Left Seat

Neck OM Source Code: My - (D*Fx)

[Max.] 35.47 Nm at 289.44 ms

[Min.] -107.39 Nm at 364.16 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

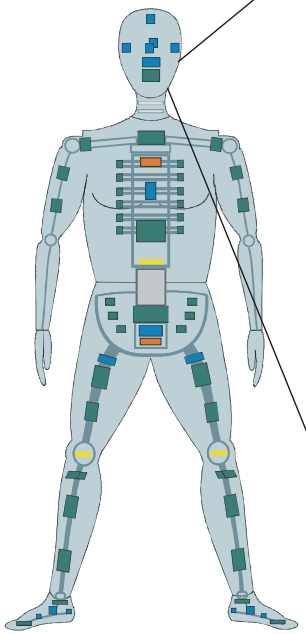
Neck Injury Predictor (NIJ)

Date: 12/14/2007
Time: 9:12

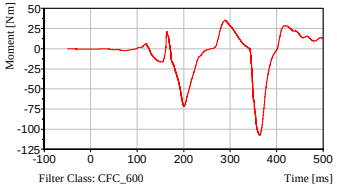
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

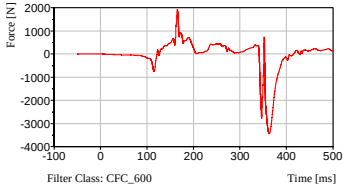
Test Orientation = Frontal
Fzc(Tension) = 6806
Fzc(Compression) = 6160
Myc(Extension) = 135
Myc(Flexion) = 310



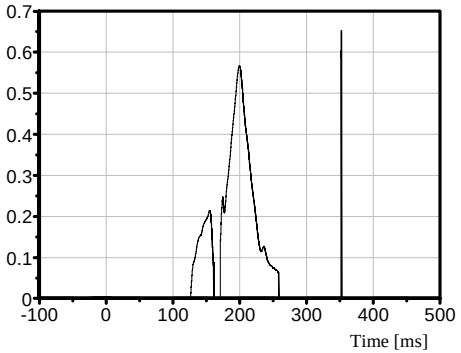
22TMONUP00H3MOYX



22NECKUP00H3FOZB

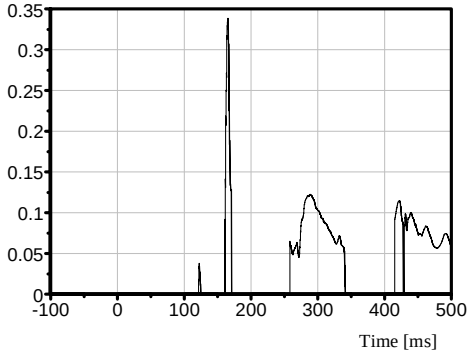


22NIJCUPTEH300YX



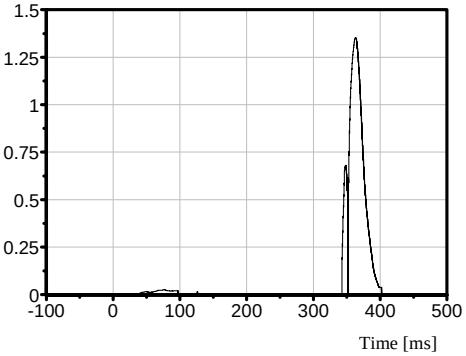
Max [NTE] 0.6533 at 352.48 ms

22NIJCUPTFH300YX



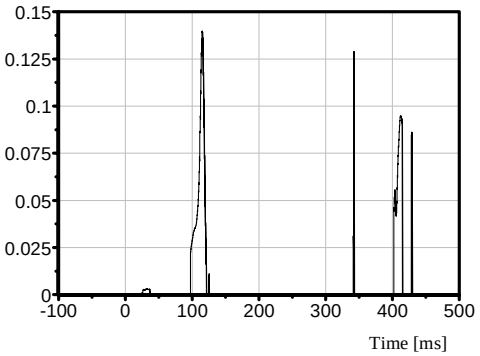
Max [NTF] 0.3387 at 165.52 ms

22NIJCUPCEH300YX



Max [NCE] 1.3522 at 363.28 ms

22NIJCUPCFH300YX



Max [NCF] 0.1399 at 115.28 ms

Dummy:HIII 50th Male
Seating Position:
Left Side Row 8 Left Seat

NIJ Source Code: (Fz/Fzc)+(My/Myc)

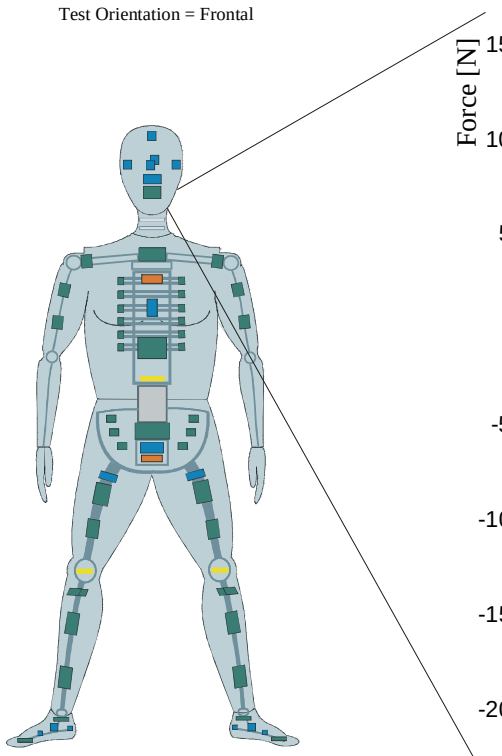
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

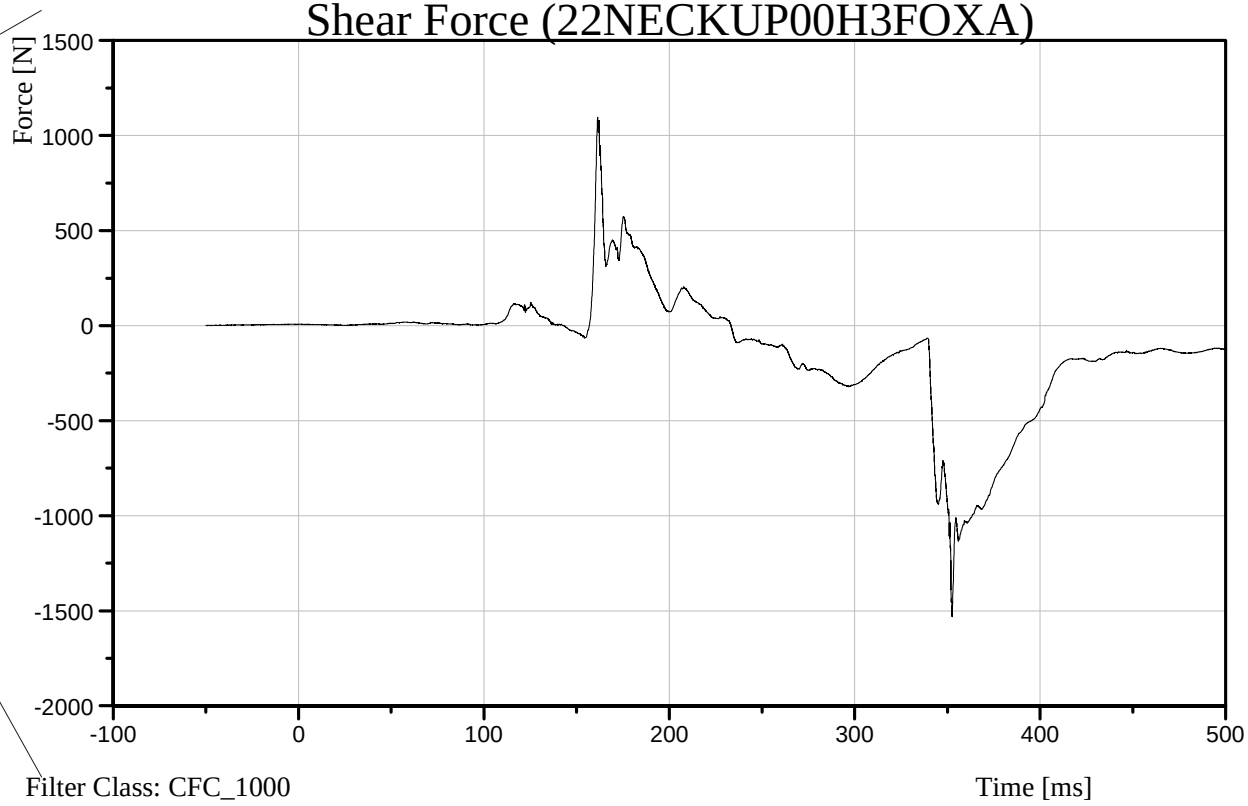
Neck Shear Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Left Side Row 8 Left Seat

[Max.] 1,095.61 N at 161.28 ms
[Min.] -1,531.19 N at 352.64 ms

Neck Shear Force Source Code: Min/Max of 22NECKUP00H3FOXA

B-102

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

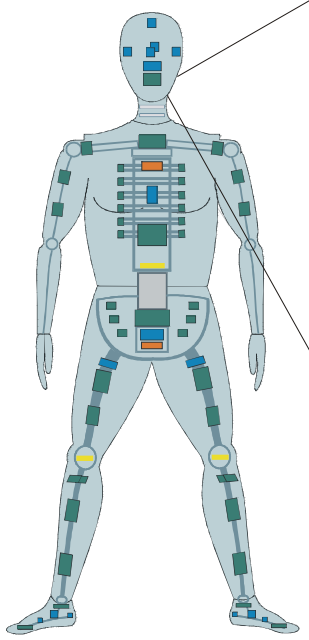
Neck Shear Force

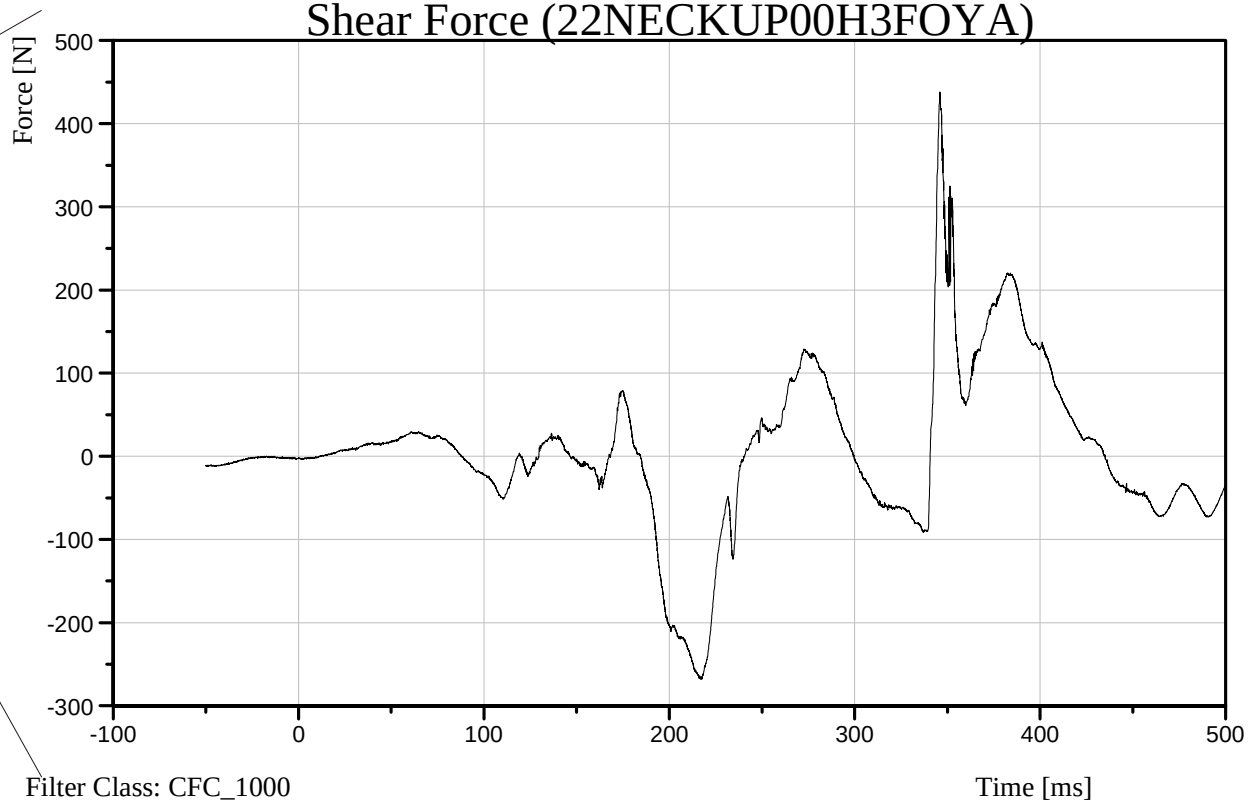
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 50th Male
Seating Position:
Left Side Row 8 Left Seat

[Max.] 438.16 N at 346.00 ms
[Min.] -268.05 N at 217.60 ms

Neck Shear Force Source Code: Min/Max of 22NECKUP00H3FOYA

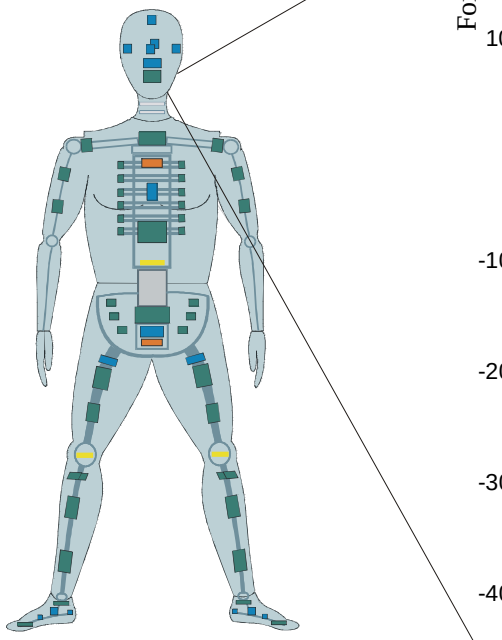
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

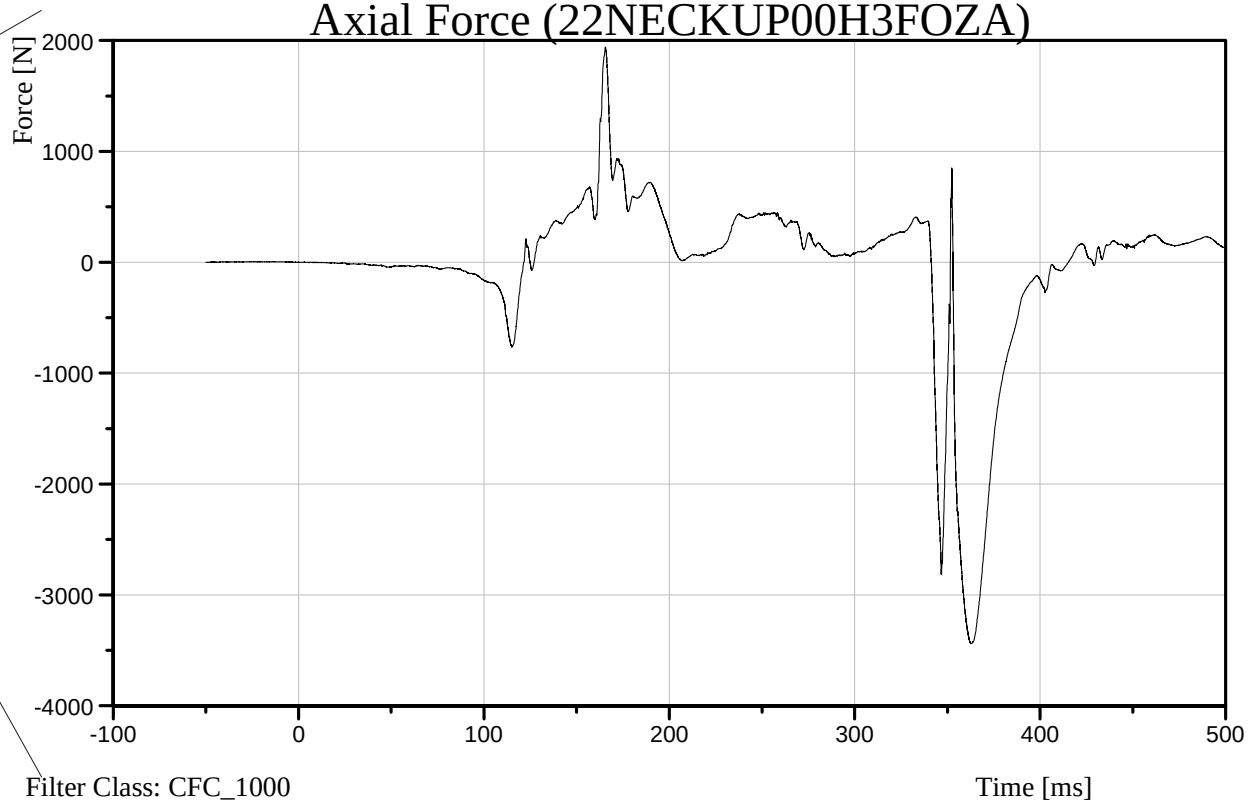
Neck Axial Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Left Side Row 8 Left Seat

[Max.] 1,941.39 N at 165.52 ms
[Min.] -3,439.98 N at 362.96 ms

Neck Axial Force Source Code: Min/Max of 22NECKUP00H3FOZA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

Femur Load

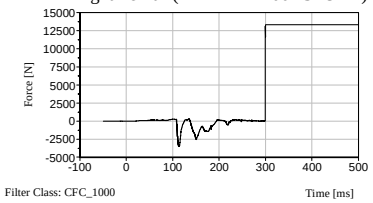
Date: 12/14/2007
Time: 9:12

Customer: VRTC

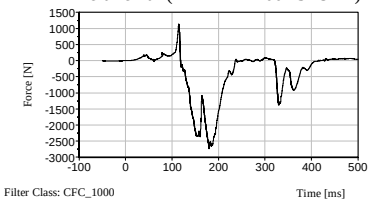
TRC Inc. Test Lab: CTF

Test Number: 071214

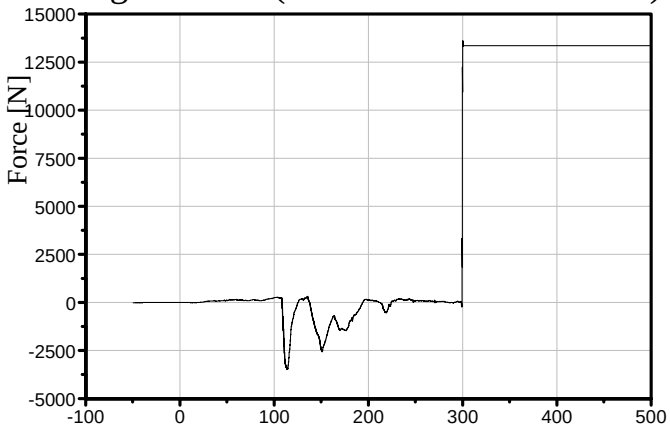
Right Femur (22FEMRRL00H3FOZA)

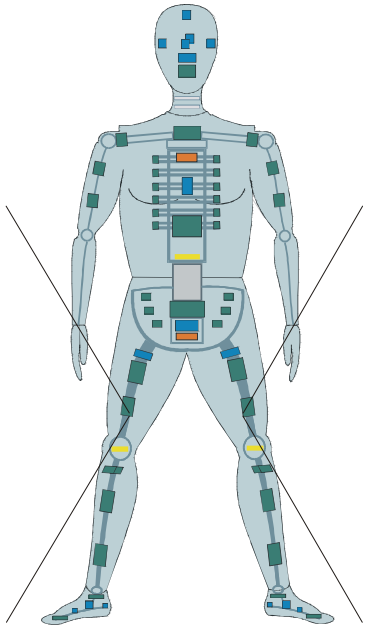


Left Femur (22FEMRLL00H3FOZA)

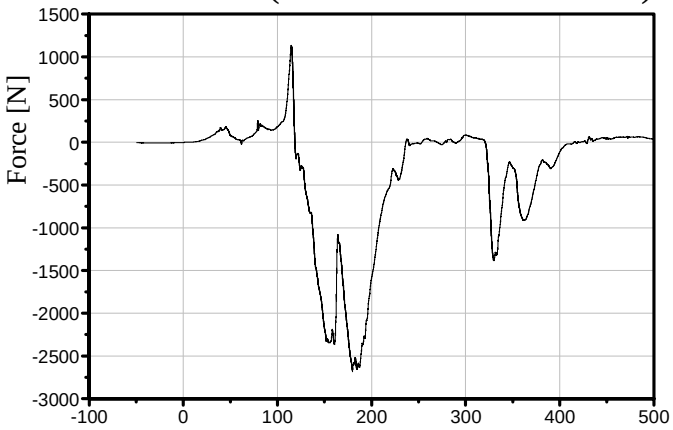


Right Femur (22FEMRRL00H3FOZB)





Left Femur (22FEMRLL00H3FOZB)



Max [Tension] 13,619.56 N at 300.16 ms
Min [Compression] -3,467.68 N at 114.08 ms

Dummy:HIII 50th Male
Seating Position:
Left Side Row 8 Left Seat

Max [Tension] 1,135.66 N at 114.56 ms
Min [Compression] -2,683.03 N at 179.68 ms

Femur Load Source Code : Min/Max of 22FEMRRL00H3FOZB and 22FEMRLL00H3FOZB (CFC 600)

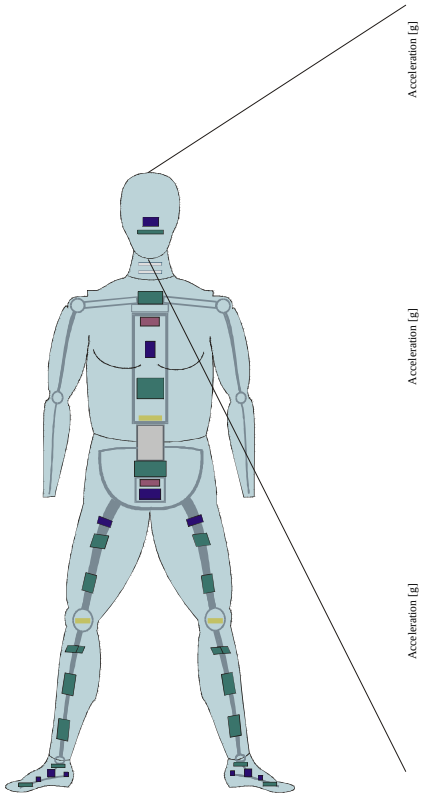
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

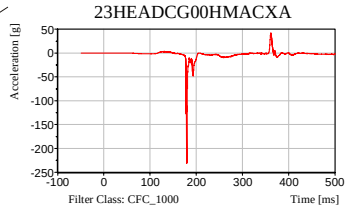
Head Injury Criterion (HIC)

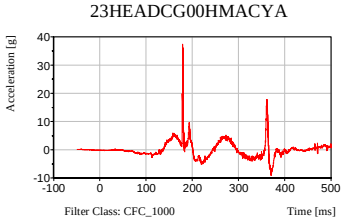
Date: 12/14/2007
Time: 9:12

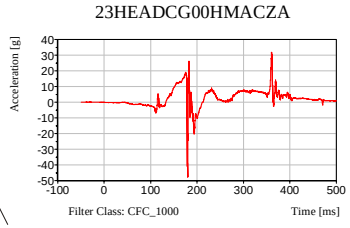
Customer: VRTC

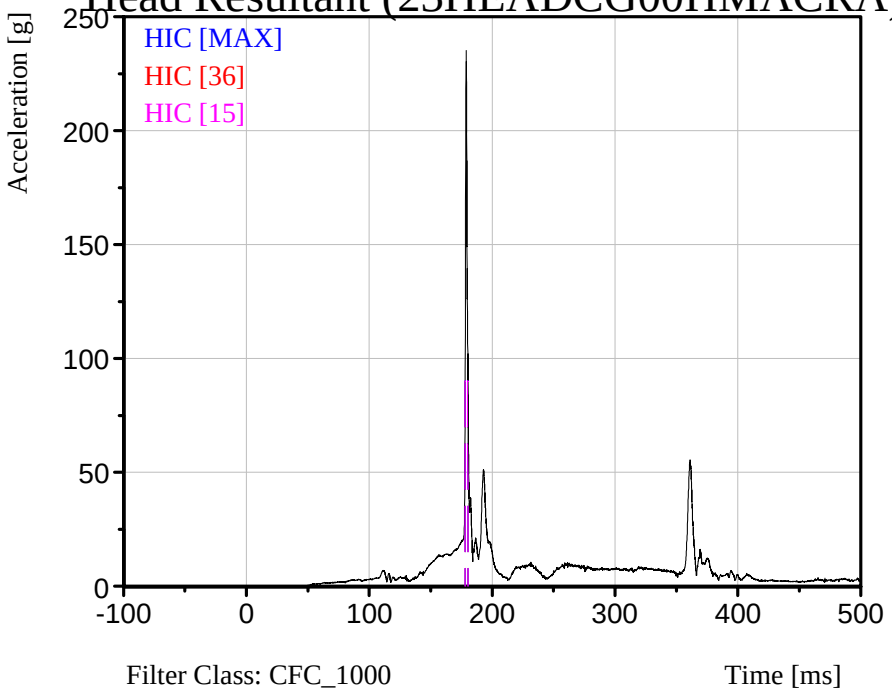
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 753.82	178.16 ms	180.24 ms	164.81 g
HIC [36] = 753.82	178.16 ms	180.24 ms	164.81 g
HIC [15] = 753.82	178.16 ms	180.24 ms	164.81 g

Dummy:HIII 95th Male
Seating Position:
Left Side Row 8 Right Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

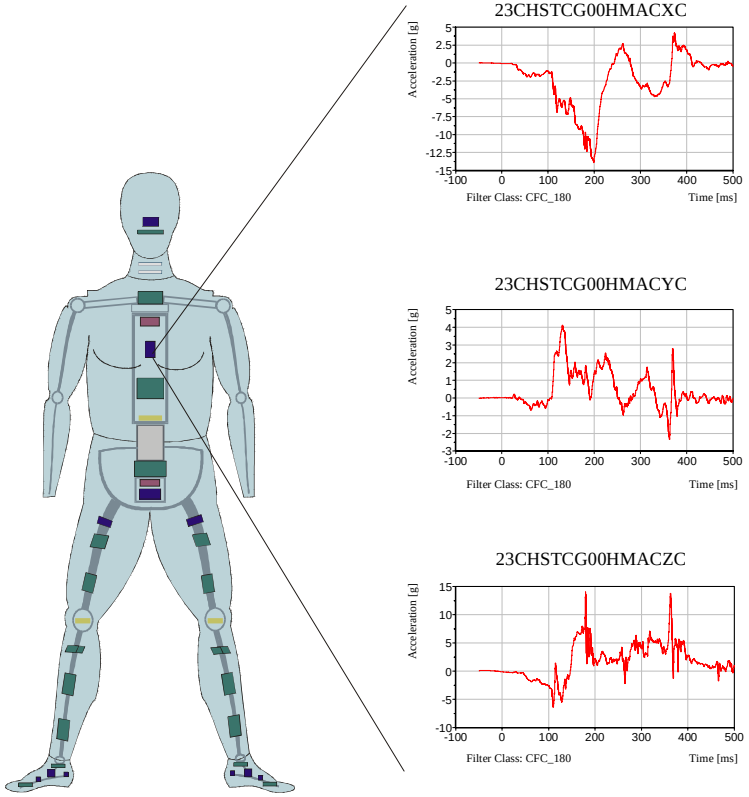
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

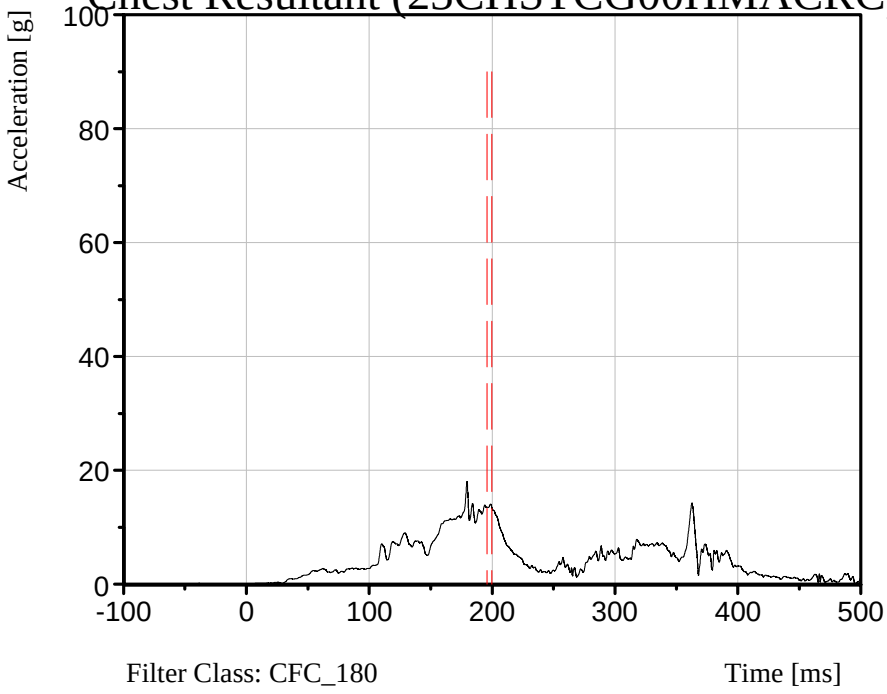
3 ms Duration Acceleration (Chest)

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 13.49 g	195.87 ms	199.85 ms
Chest Severity Index = 49.52		

Dummy:HIII 95th Male
Seating Position:
Left Side Row 8 Right Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

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071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

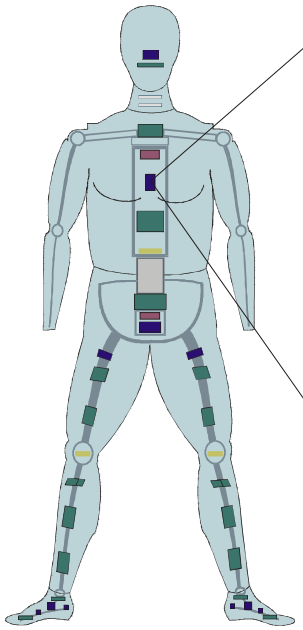
Chest Deflection

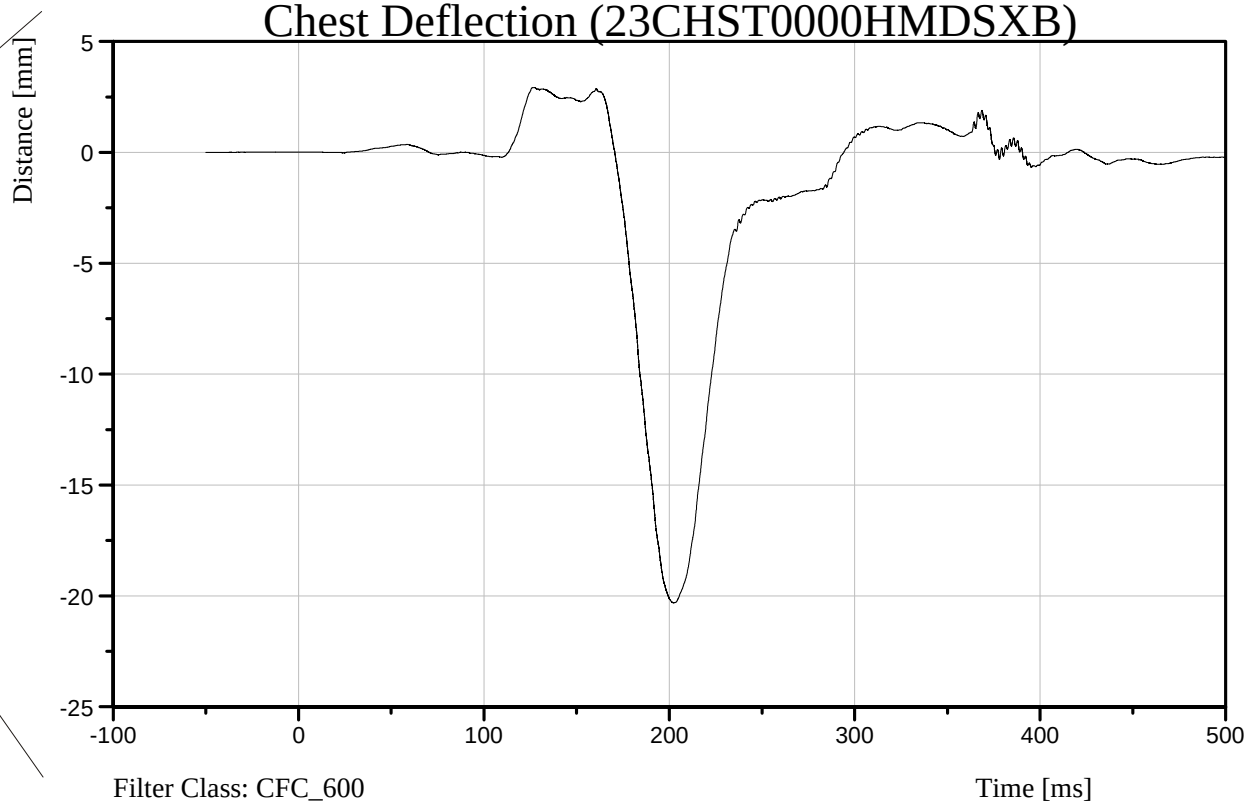
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 95th Male
Seating Position:
Left Side Row 8 Right Seat

[Max.] 2.92 mm at 126.32 ms
[Min.] -20.31 mm at 202.40 ms

ChestDeflection Source Code : Min/Max of 23CHST0000HMDSXB (CFC_600)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph
Neck Moment about the Occipital Condyle (NECK OM)

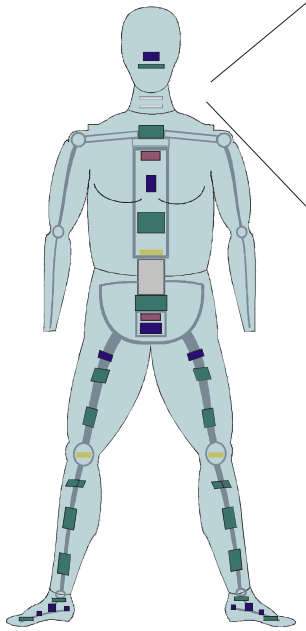
Date: 12/14/2007
Time: 9:12

Customer: VRTC

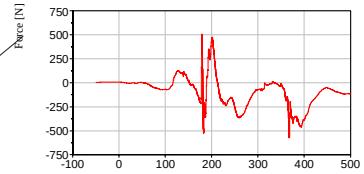
TRC Inc. Test Lab: CTF

Test Number: 071214

Test Orientation = Frontal

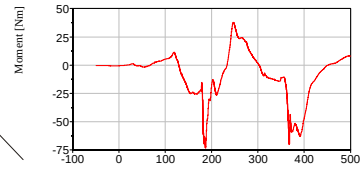


23NECKUP00HMFOXB



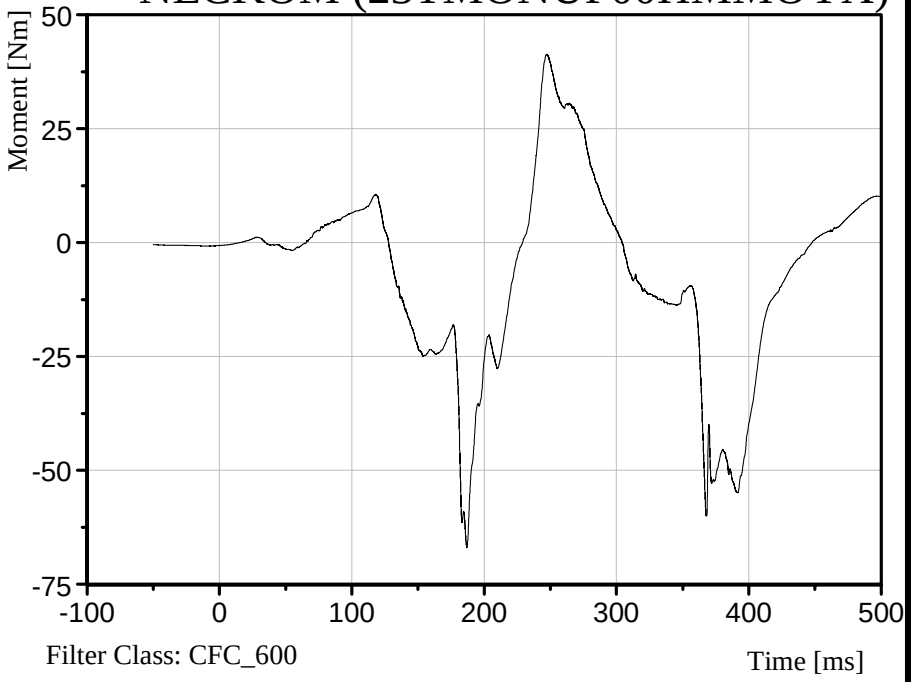
Filter Class: CFC_600

23NECKUP00HMMOYB



Filter Class: CFC_600

NECKOM (23TMONUP00HMMOYX)



Filter Class: CFC_600

Dummy:HIII 95th Male
Seating Position:
Left Side Row 8 Right Seat

Neck OM Source Code: My - (D*Fx)

[Max.] 41.31 Nm at 247.36 ms
[Min.] -66.91 Nm at 187.04 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

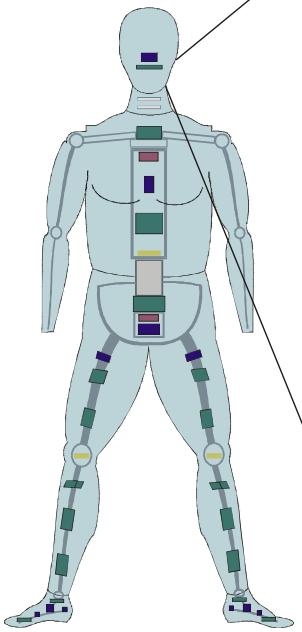
Neck Injury Predictor (NIJ)

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

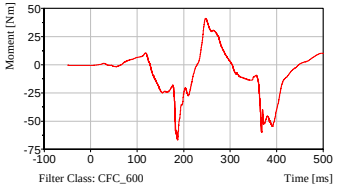
Test Orientation = Frontal
Fzc(Tension) = 8216
Fzc(Compression) = 7440
Myc(Extension) = 179
Myc(Flexion) = 415



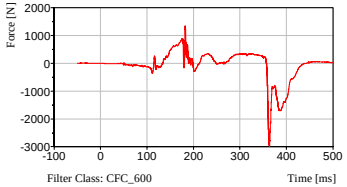
Dummy:HIII 95th Male
Seating Position:
Left Side Row 8 Right Seat

NIJ Source Code: (Fz/Fzc)+(My/Myc)

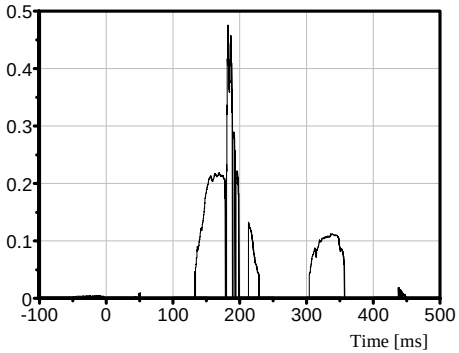
23TMONUP00HMMOYX



23NECKUP00HMFOZB

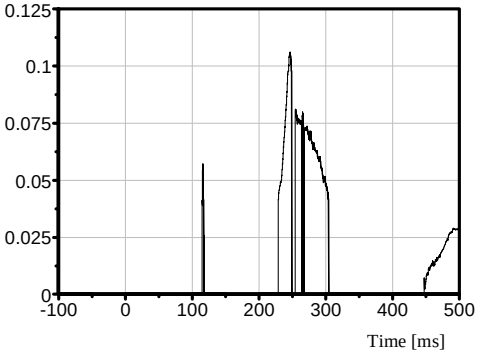


23NIJCUPTEHM00YX



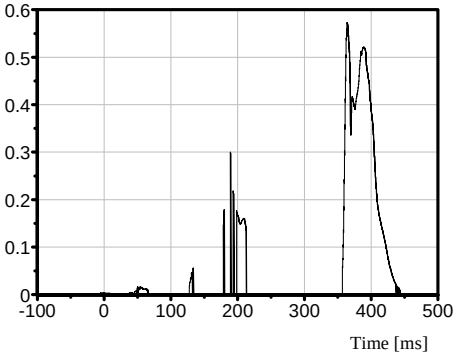
Max [NTE] 0.4762 at 182.64 ms

23NIJCUPTFHM00YX



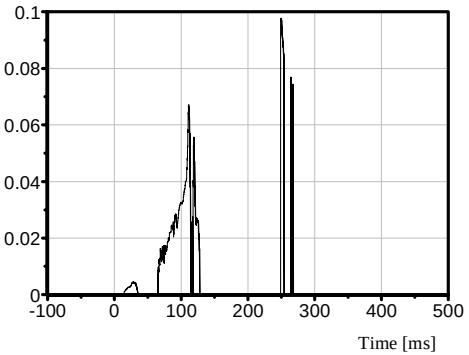
Max [NTF] 0.1062 at 246.72 ms

23NIJCUPCEHM00YX



Max [NCE] 0.5730 at 364.32 ms

23NIJCUPCFHM00YX



Max [NCF] 0.0978 at 249.84 ms

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071214

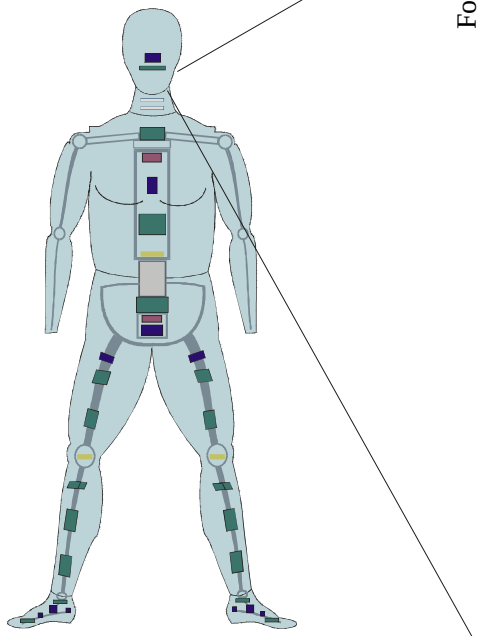
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

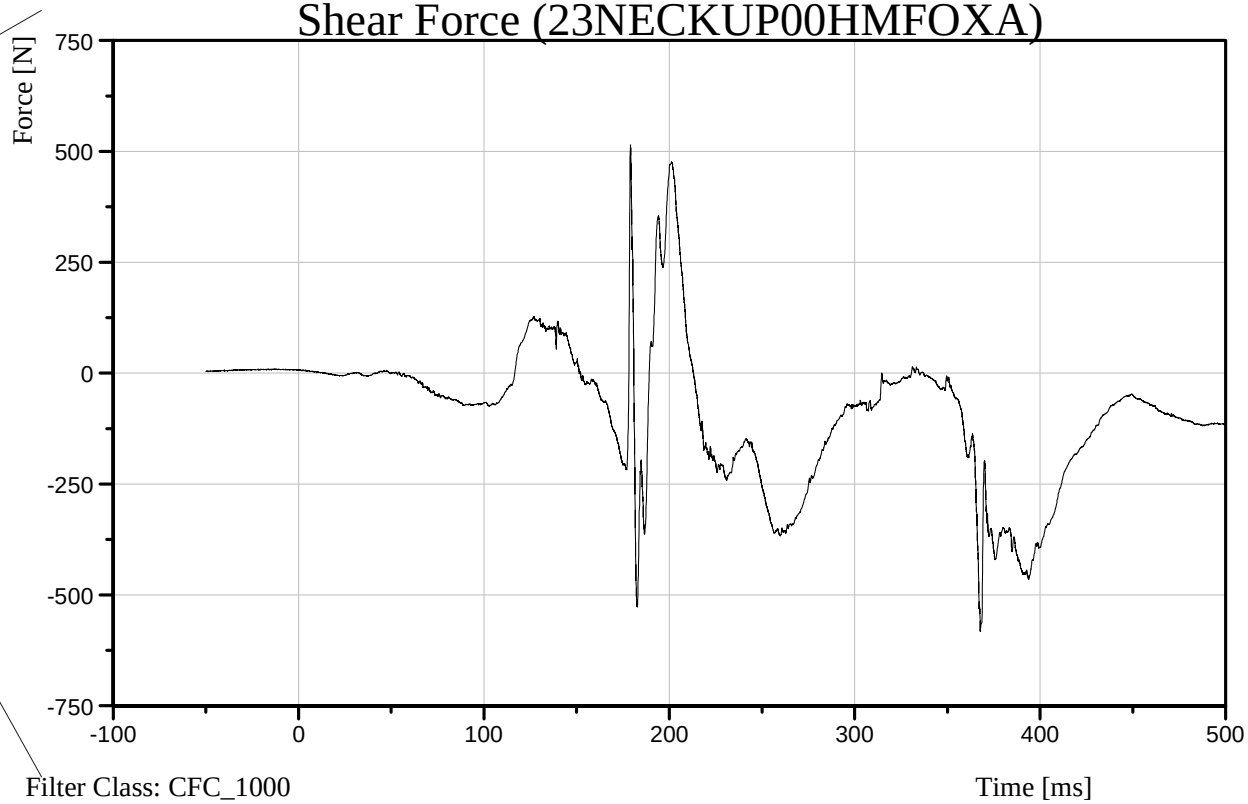
Neck Shear Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 95th Male
Seating Position:
Left Side Row 8 Right Seat

[Max.] 514.86 N at 179.04 ms
[Min.] -581.46 N at 367.76 ms

Neck Shear Force Source Code: Min/Max of 23NECKUP00HMFOXA

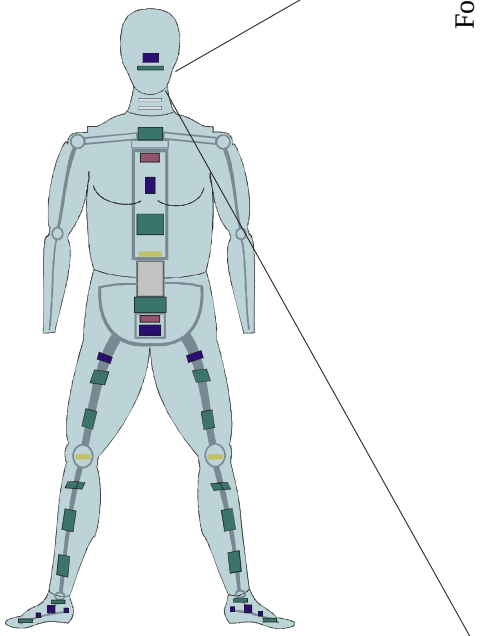
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

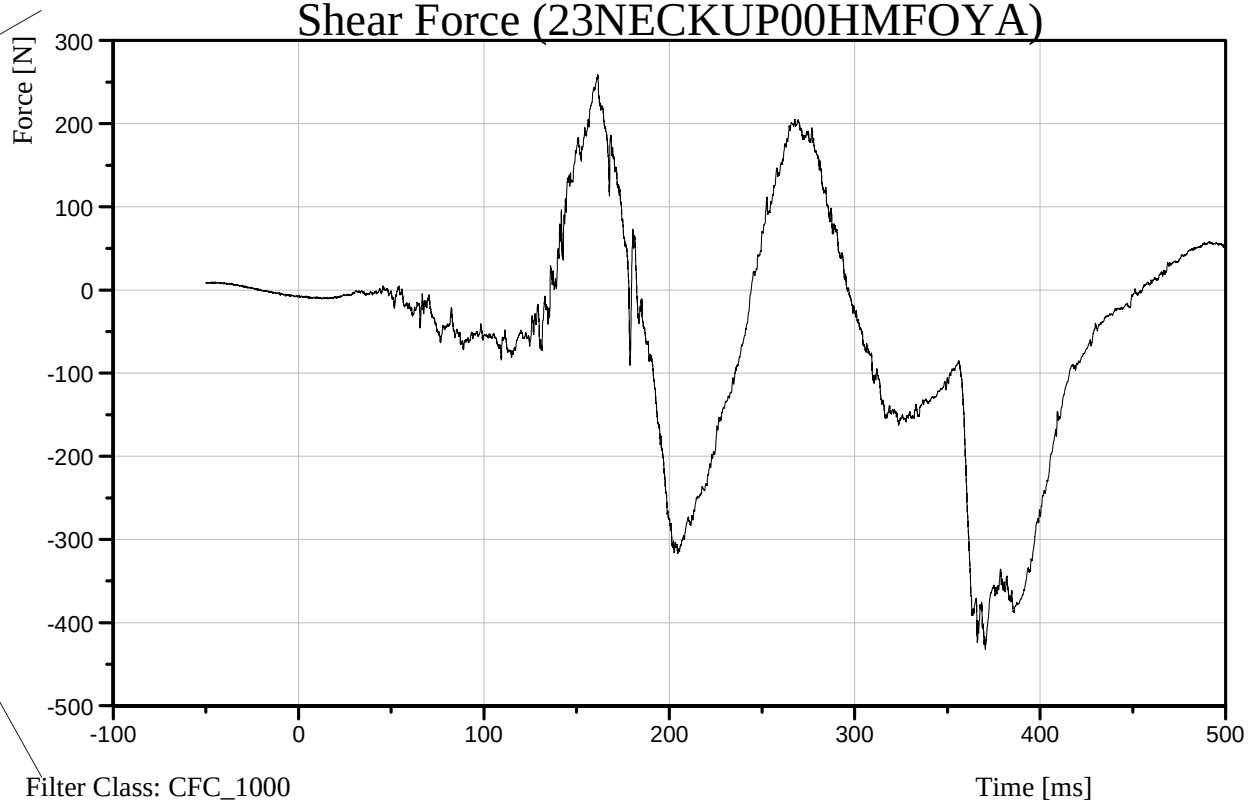
Neck Shear Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 95th Male
Seating Position:
Left Side Row 8 Right Seat

[Max.] 259.16 N at 161.44 ms
[Min.] -431.78 N at 370.48 ms

Neck Shear Force Source Code: Min/Max of 23NECKUP00HMFOYA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

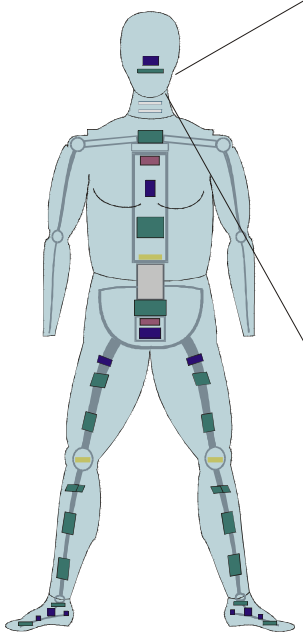
Neck Axial Force

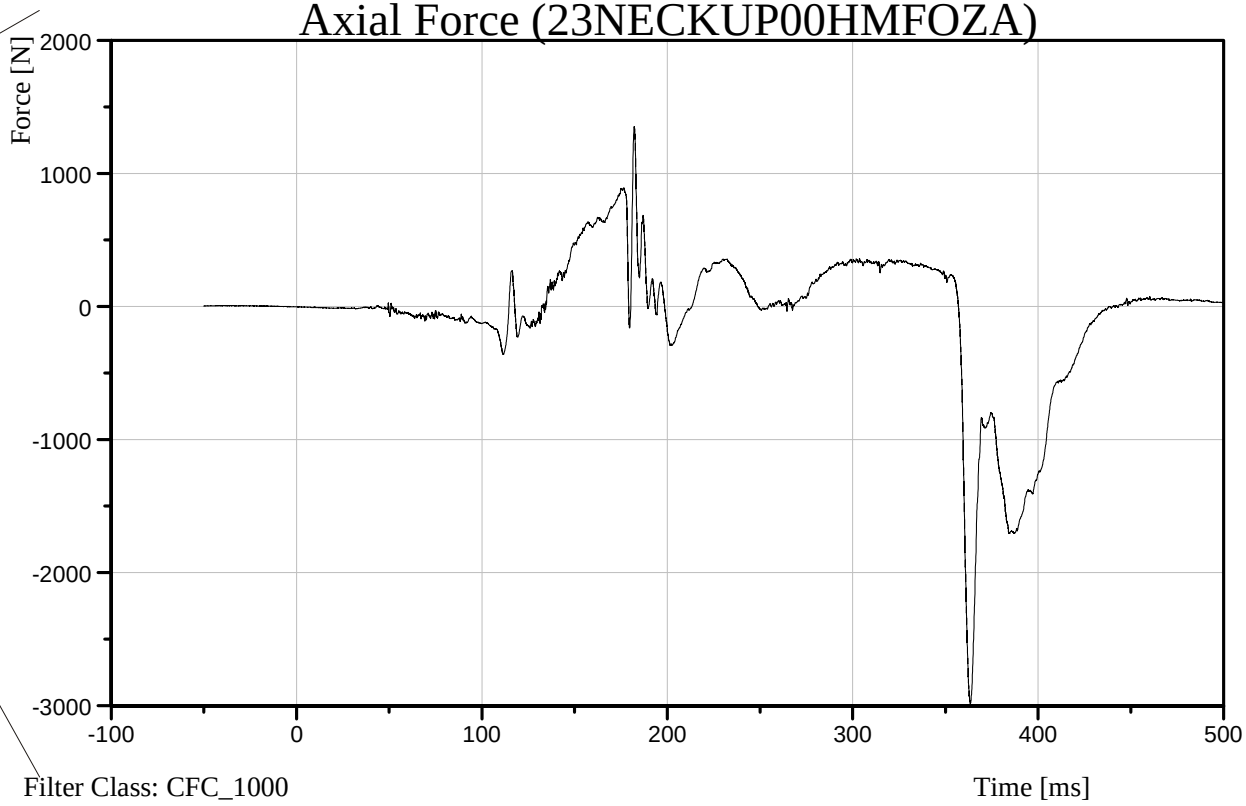
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 95th Male
Seating Position:
Left Side Row 8 Right Seat

[Max.] 1,354.44 N at 182.16 ms
[Min.] -2,981.01 N at 363.52 ms

Neck Axial Force Source Code: Min/Max of 23NECKUP00HMFOZA

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

Femur Load

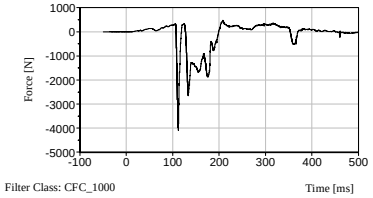
Date: 12/14/2007
Time: 9:12

Customer: VRTC

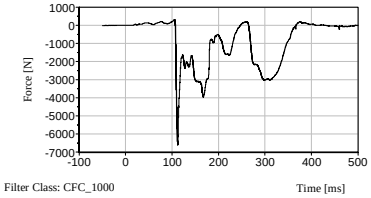
TRC Inc. Test Lab: CTF

Test Number: 071214

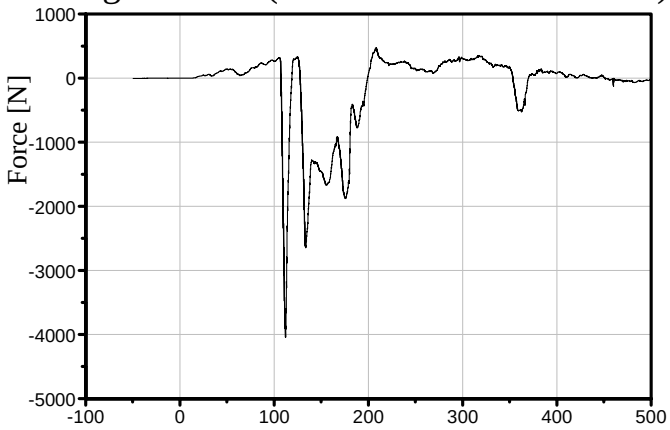
Right Femur (23FEMRRL00HMFOZA)

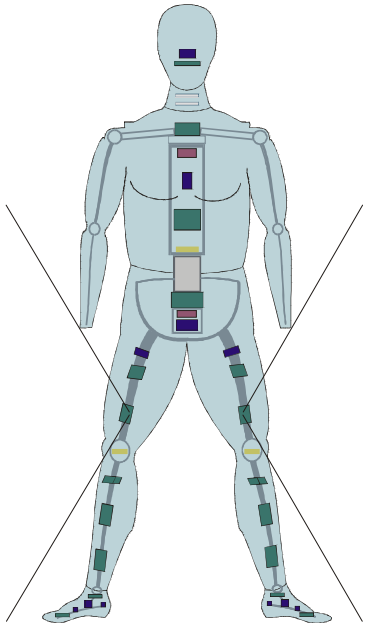


Left Femur (23FEMRLL00HMFOZA)

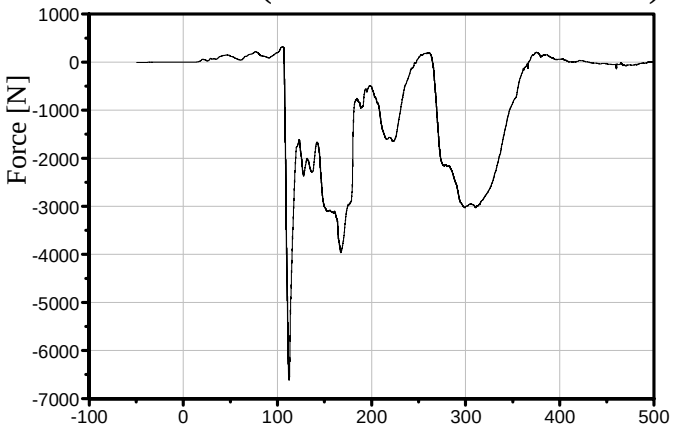


Right Femur (23FEMRRL00HMFOZB)





Left Femur (23FEMRLL00HMFOZB)



Max [Tension] 473.98 N at 207.92 ms
Min [Compression] -4,040.88 N at 112.00 ms

Dummy:HIII 95th Male
Seating Position:
Left Side Row 8 Right Seat

Max [Tension] 325.21 N at 104.80 ms
Min [Compression] -6,608.95 N at 112.24 ms

Femur Load Source Code : Min/Max of 23FEMRRL00HMFOZB and 23FEMRLL00HMFOZB (CFC 600)

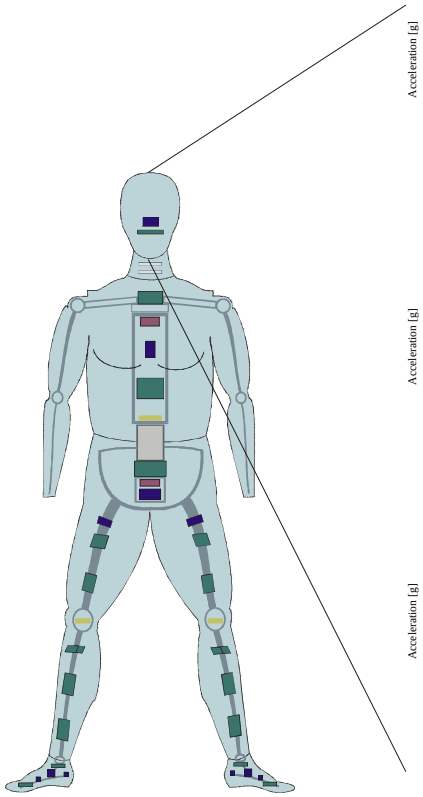
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

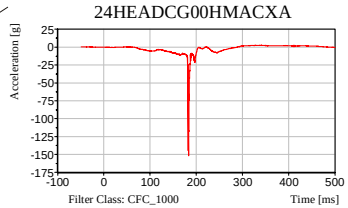
Head Injury Criterion (HIC)

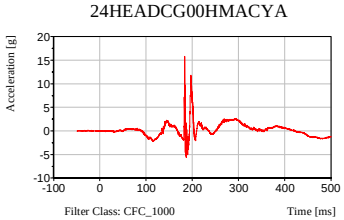
Date: 12/14/2007
Time: 9:12

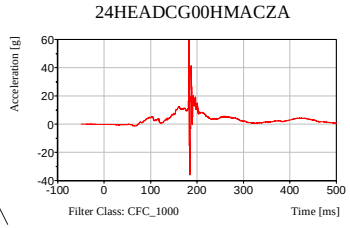
Customer: VRTC

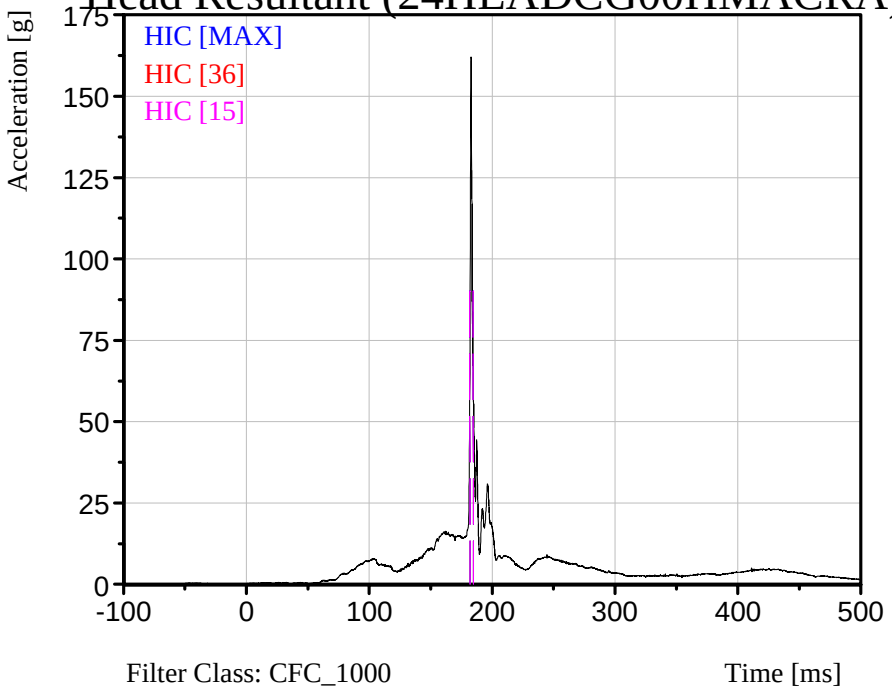
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 348.89	181.92 ms	184.72 ms	107.97 g
HIC [36] = 348.89	181.92 ms	184.72 ms	107.97 g
HIC [15] = 348.89	181.92 ms	184.72 ms	107.97 g

Dummy:HIII 95th Male
Seating Position:
Right Side Row 9 Left Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

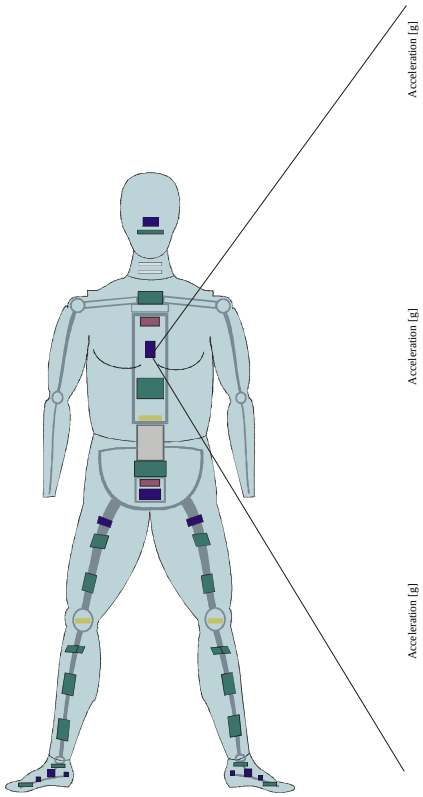
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

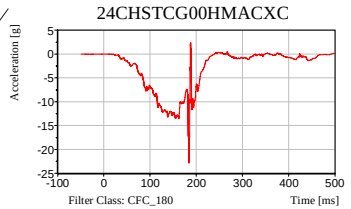
3 ms Duration Acceleration (Chest)

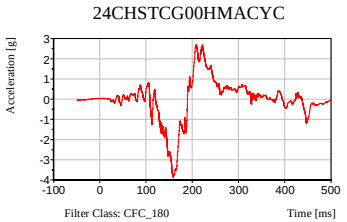
Date: 12/14/2007
Time: 9:12

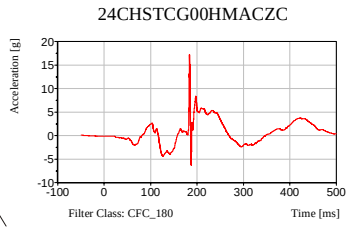
Customer: VRTC

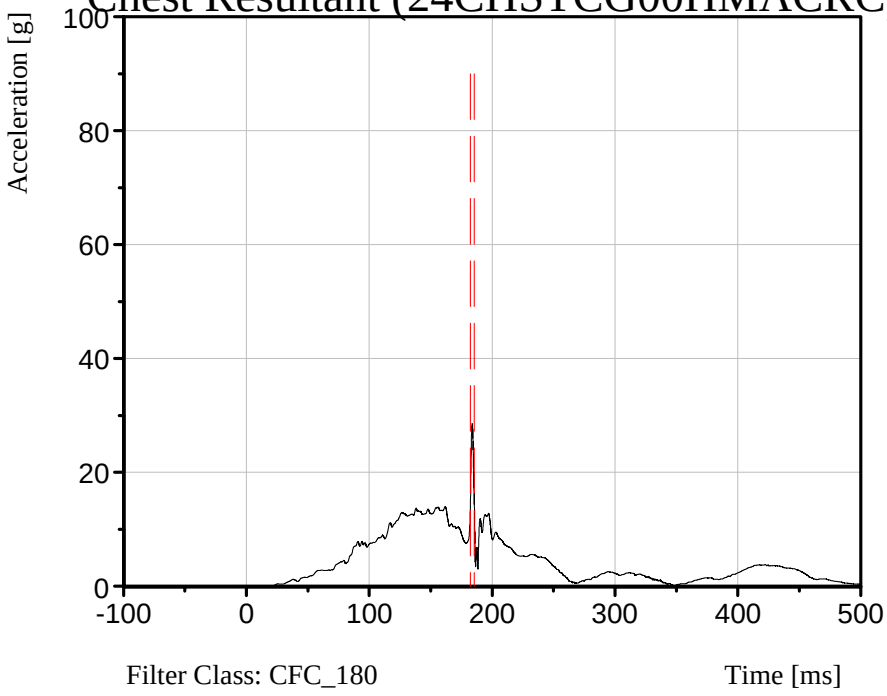
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 15.57 g	182.43 ms	185.43 ms
Chest Severity Index = 60.27		

Dummy:HIII 95th Male
Seating Position:
Right Side Row 9 Left Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

B-116

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

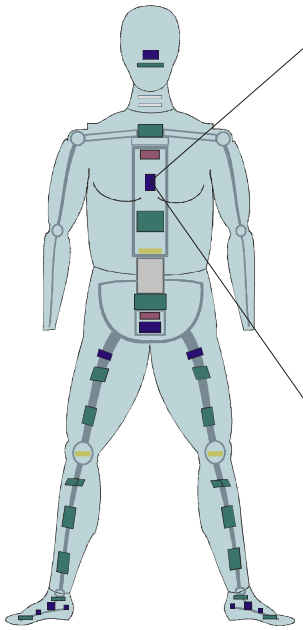
Chest Deflection

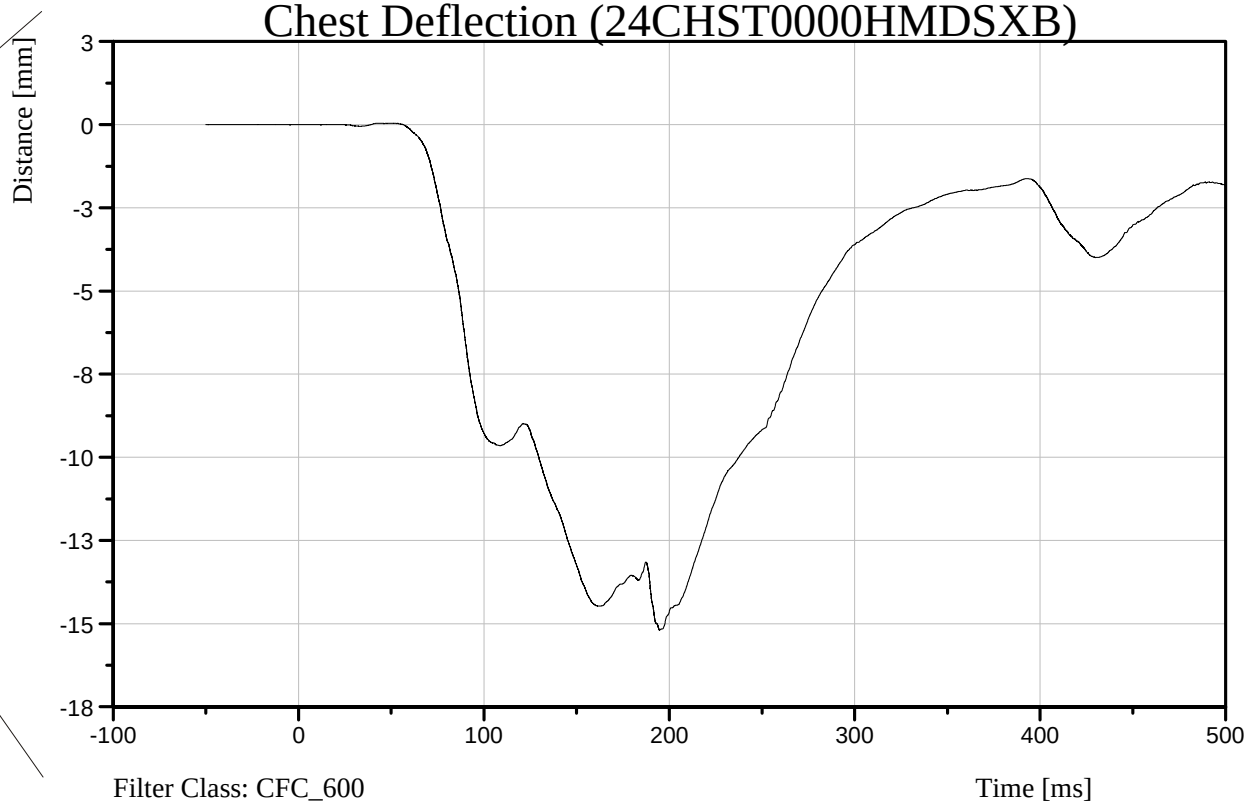
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 95th Male
Seating Position:
Right Side Row 9 Left Seat

[Max.] 0.05 mm at 51.60 ms
[Min.] -15.19 mm at 194.80 ms

ChestDeflection Source Code : Min/Max of 24CHST0000HMDSXB (CFC_600)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph
Neck Moment about the Occipital Condyle (NECK OM)

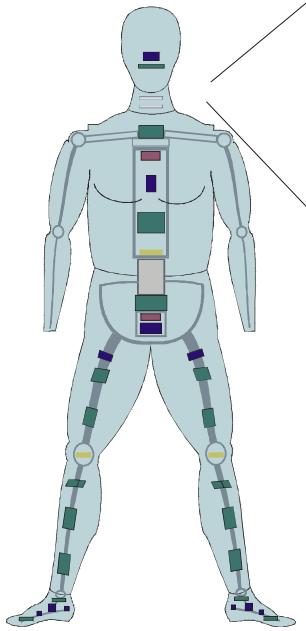
Date: 12/14/2007
Time: 9:12

Customer: VRTC

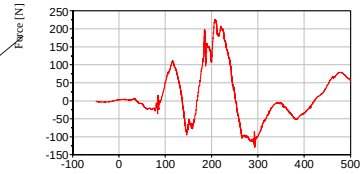
TRC Inc. Test Lab: CTF

Test Number: 071214

Test Orientation = Frontal



24NECKUP00HMFOXB

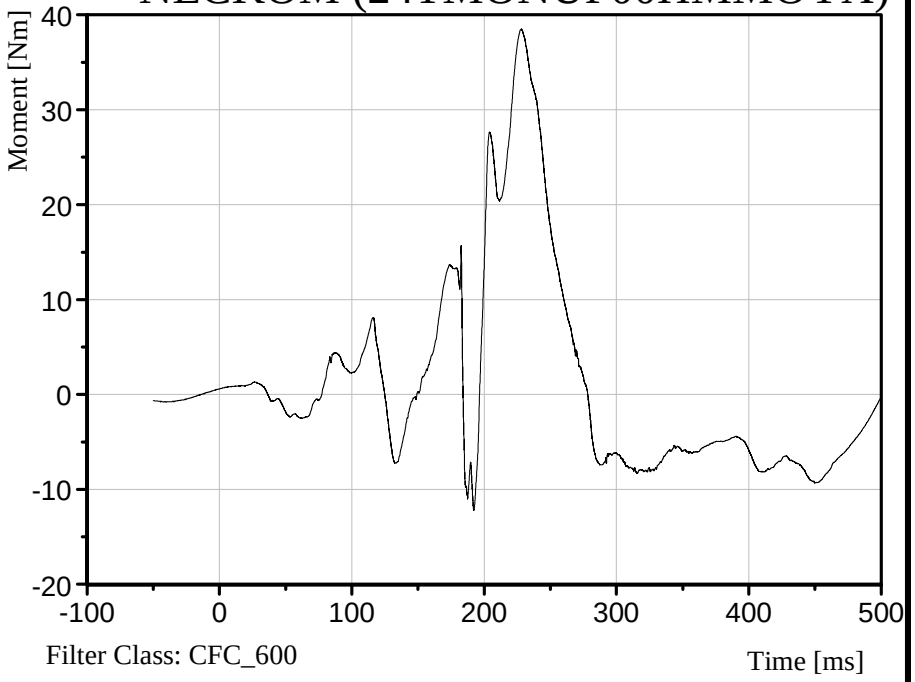


Filter Class: CFC_600

24NECKUP00HMMOYB

Filter Class: CFC_600

NECKOM (24TMONUP00HMMOYX)



Filter Class: CFC_600

Dummy:HIII 95th Male
Seating Position:
Right Side Row 9 Left Seat

Neck OM Source Code: My - (D*Fx)

[Max.] 38.50 Nm at 228.16 ms
[Min.] -12.18 Nm at 192.32 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

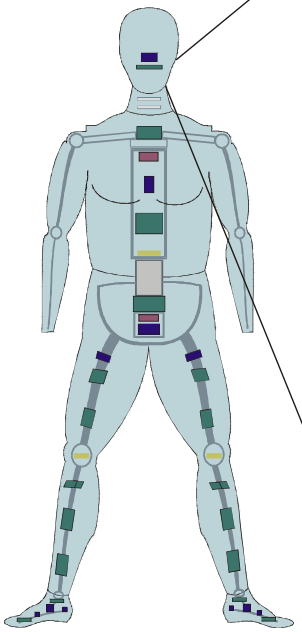
Neck Injury Predictor (NIJ)

Date: 12/14/2007
Time: 9:12

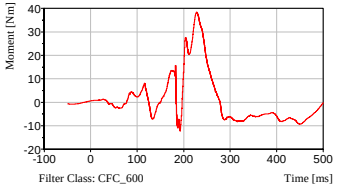
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal
Fzc(Tension) = 8216
Fzc(Compression) = 7440
Myc(Extension) = 179
Myc(Flexion) = 415

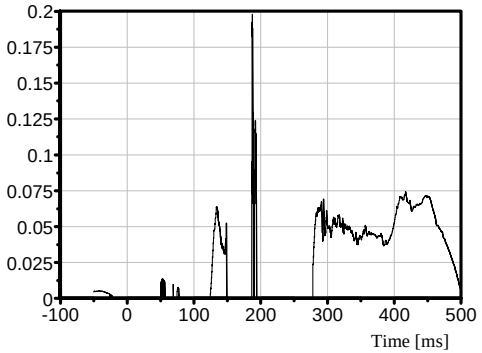


24TMONUP00HMMOYX



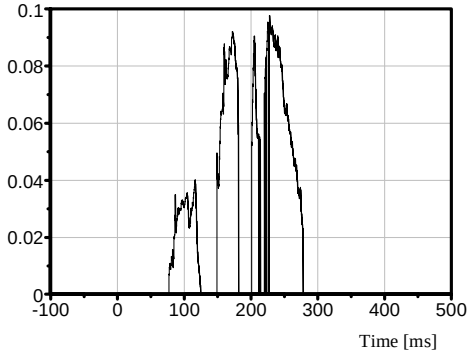
24NECKUP00HMFOZB

24NIJCUPTEHM00YX



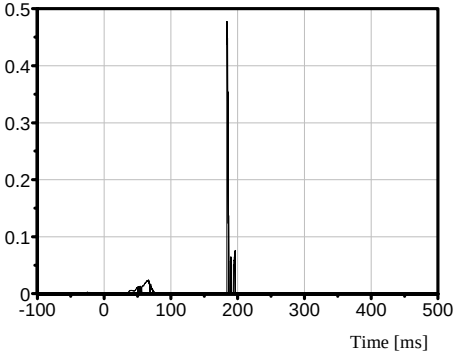
Max [NTE] 0.1980 at 187.68 ms

24NIJCUPTFHM00YX



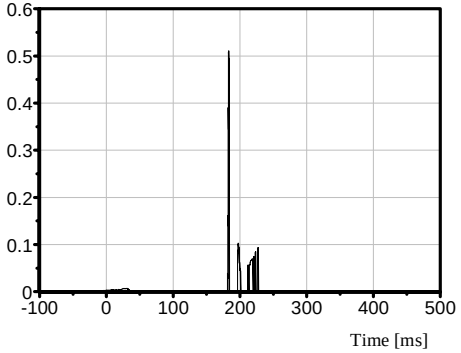
Max [NTF] 0.0977 at 228.08 ms

24NIJCUPCEHM00YX



Max [NCE] 0.4775 at 184.24 ms

24NIJCUPCFHM00YX



Max [NCF] 0.5109 at 183.52 ms

Dummy:HIII 95th Male
Seating Position:
Right Side Row 9 Left Seat

NIJ Source Code: (Fz/Fzc)+(My/Myc)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

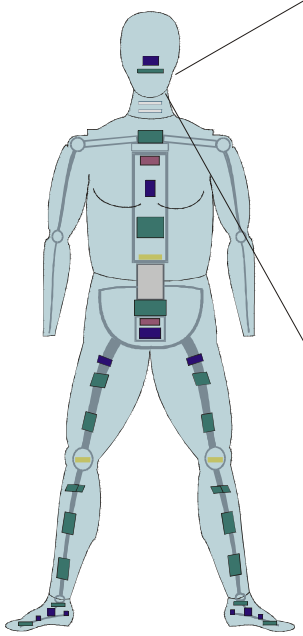
Neck Shear Force

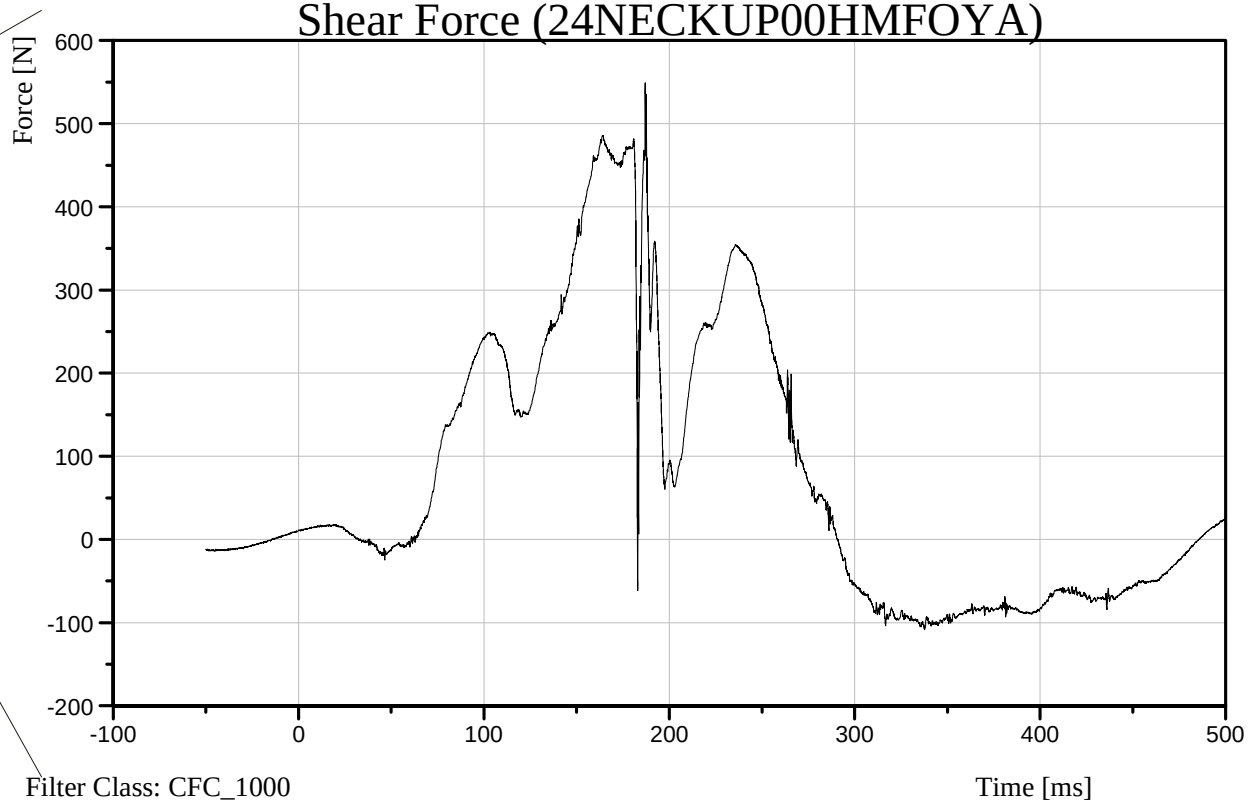
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 95th Male
Seating Position:
Right Side Row 9 Left Seat

[Max.] 549.30 N at 187.04 ms
[Min.] -108.30 N at 337.68 ms

Neck Shear Force Source Code: Min/Max of 24NECKUP00HMFOYA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

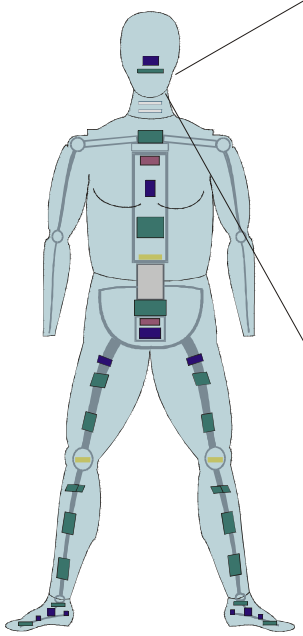
Neck Shear Force

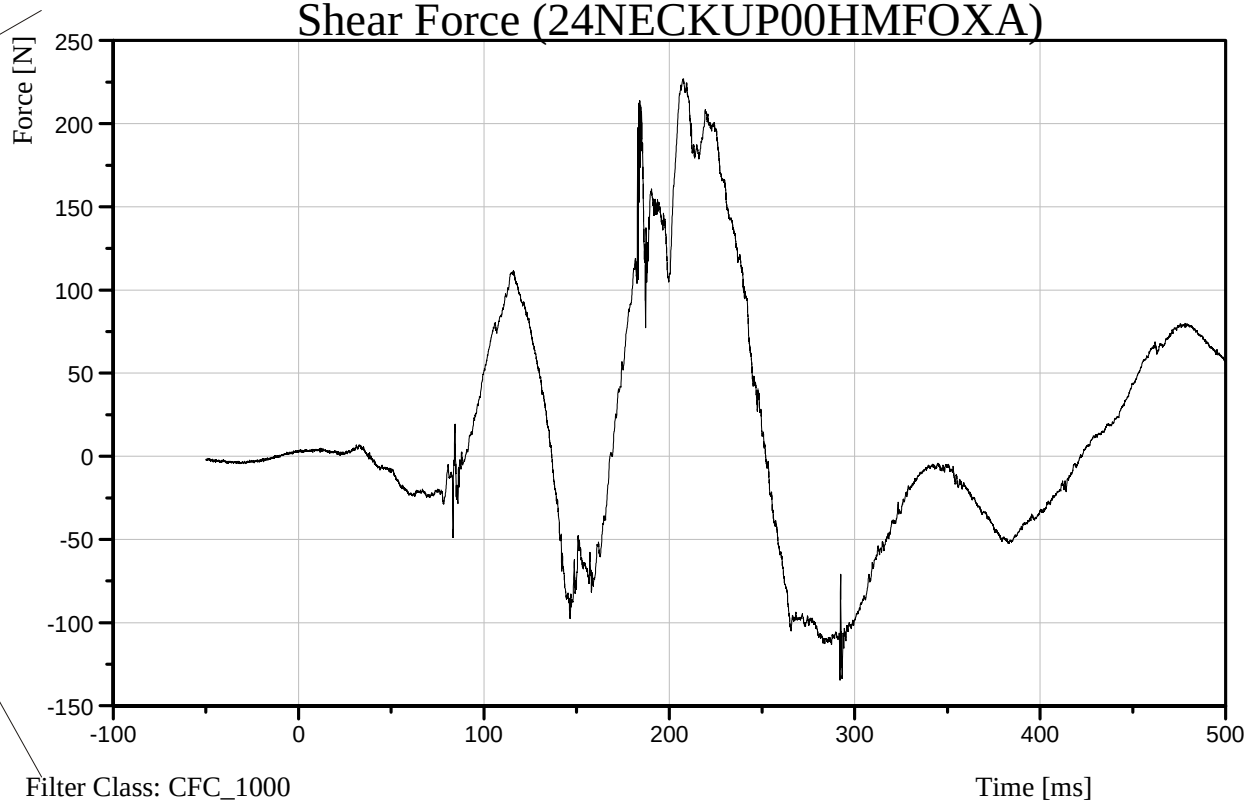
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 95th Male
Seating Position:
Right Side Row 9 Left Seat

[Max.] 227.05 N at 207.68 ms
[Min.] -134.63 N at 292.00 ms

Neck Shear Force Source Code: Min/Max of 24NECKUP00HMFOXA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

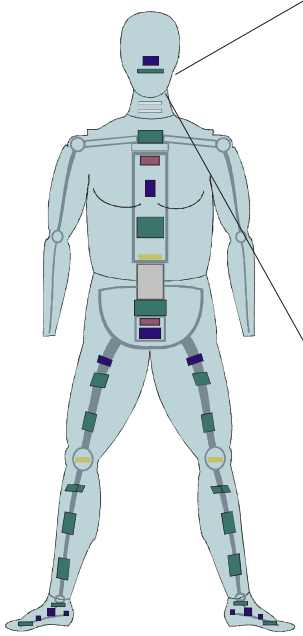
Neck Axial Force

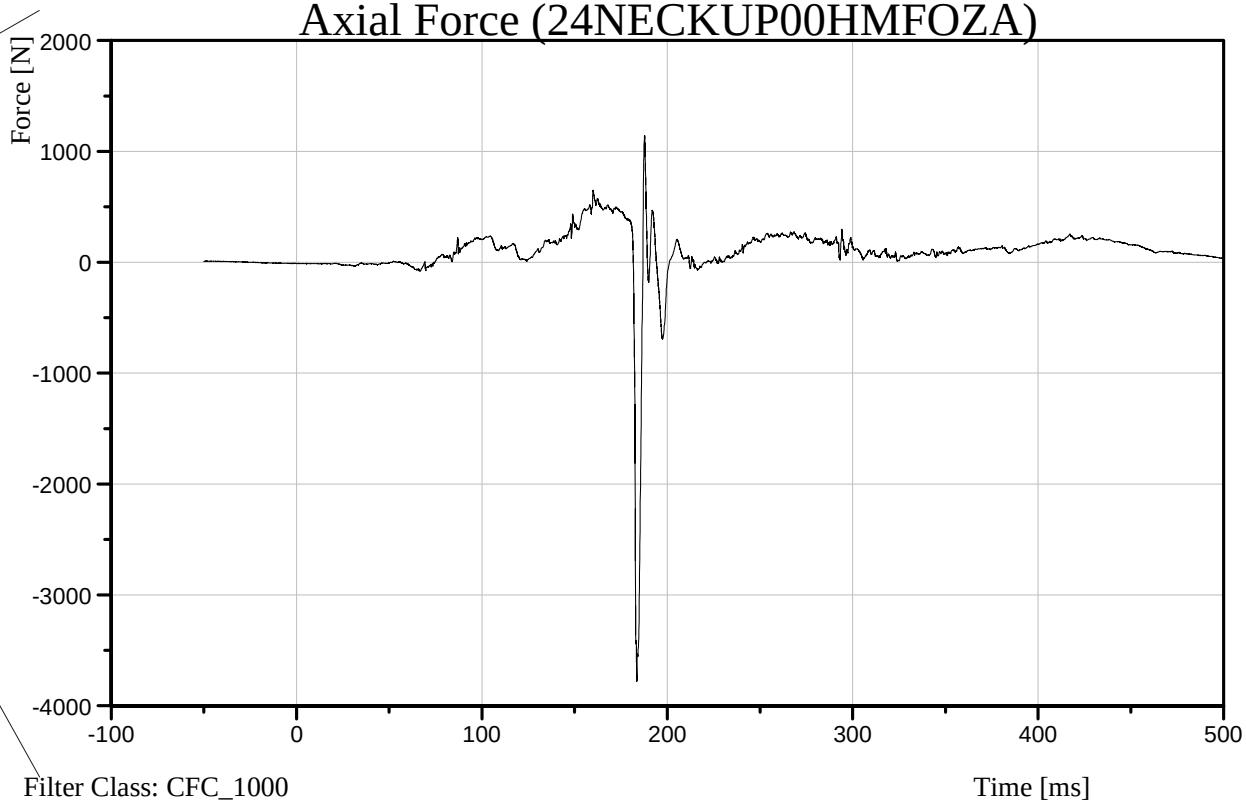
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 95th Male
Seating Position:
Right Side Row 9 Left Seat

[Max.] 1,139.57 N at 187.76 ms
[Min.] -3,779.88 N at 183.52 ms

Neck Axial Force Source Code: Min/Max of 24NECKUP00HMFOZA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

Femur Load

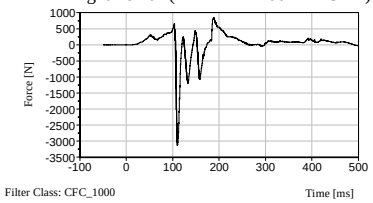
Date: 12/14/2007
Time: 9:12

Customer: VRTC

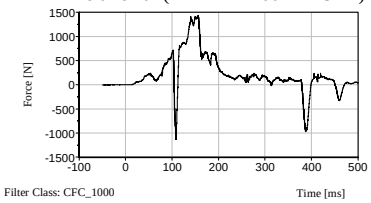
TRC Inc. Test Lab: CTF

Test Number: 071214

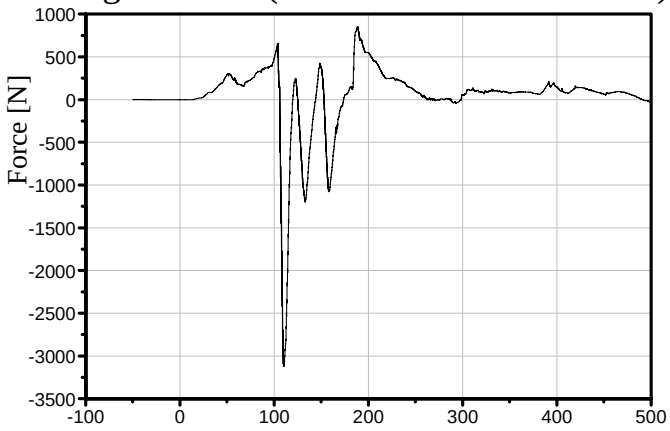
Right Femur (24FEMRRL00HMFOZA)

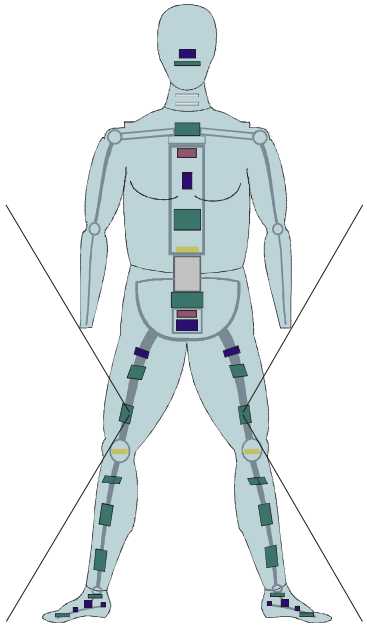


Left Femur (24FEMRLL00HMFOZA)

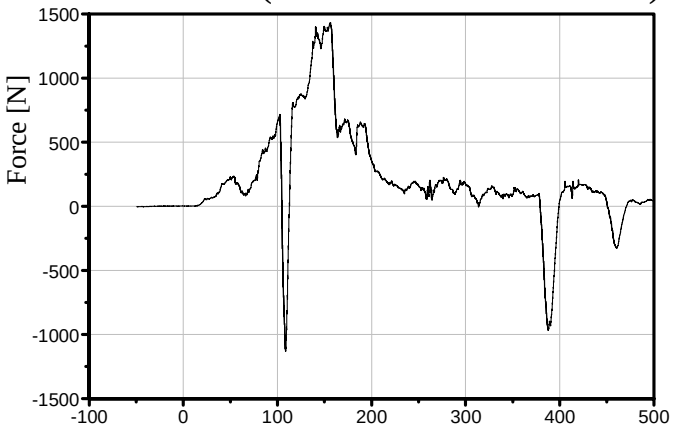


Right Femur (24FEMRRL00HMFOZB)





Left Femur (24FEMRLL00HMFOZB)



Max [Tension] 854.48 N at 188.56 ms
Min [Compression] -3,123.96 N at 110.08 ms

Dummy:HIII 95th Male
Seating Position:
Right Side Row 9 Left Seat

Max [Tension] 1,436.09 N at 156.16 ms
Min [Compression] -1,129.83 N at 108.48 ms

Femur Load Source Code : Min/Max of 24FEMRRL00HMFOZB and 24FEMRLL00HMFOZB (CFC 600)

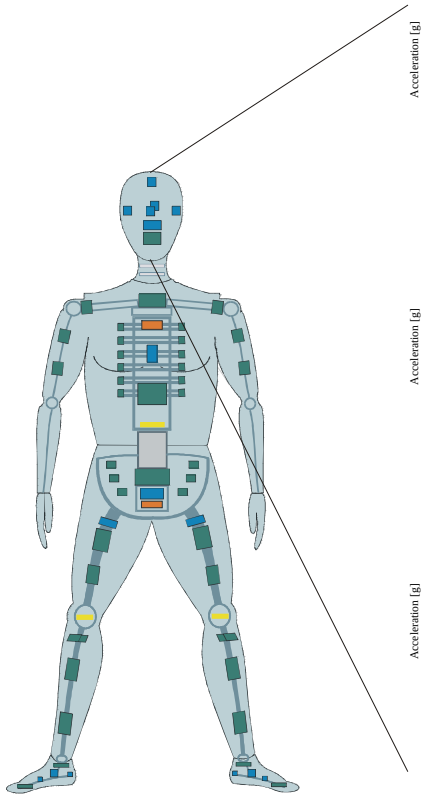
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

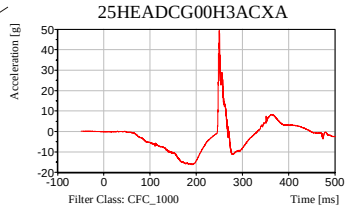
Head Injury Criterion (HIC)

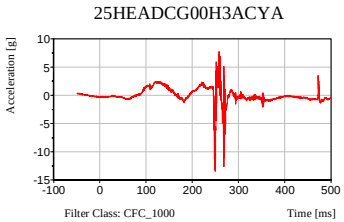
Date: 12/14/2007
Time: 9:12

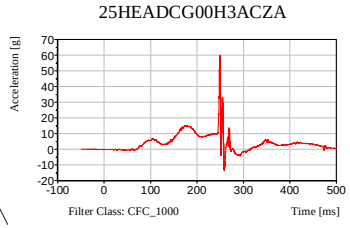
Customer: VRTC

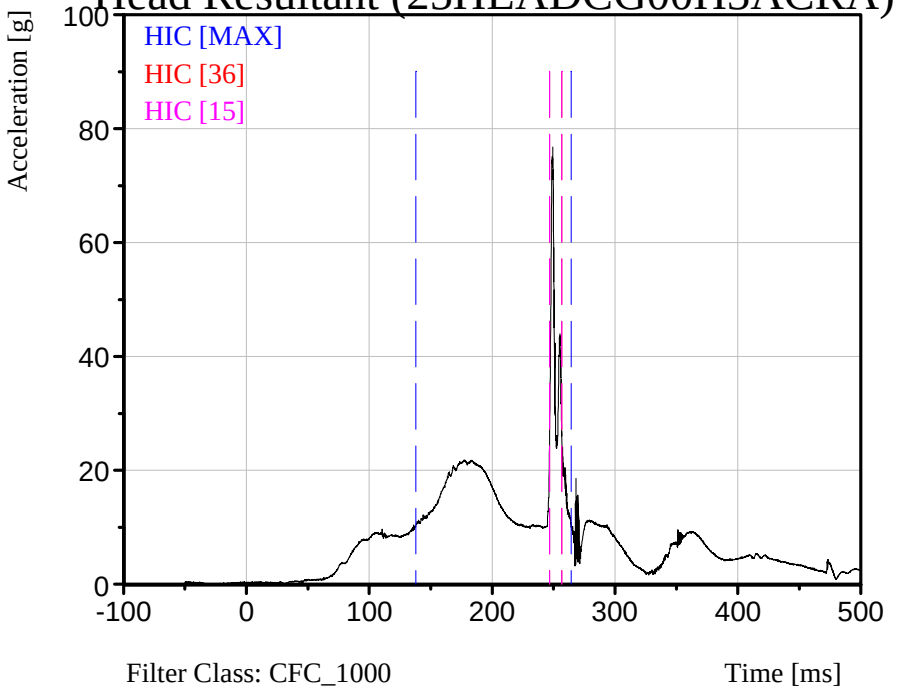
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 156.40	138.00 ms	264.40 ms	17.25 g
HIC [36] = 117.91	246.80 ms	256.88 ms	42.26 g
HIC [15] = 117.91	246.80 ms	256.88 ms	42.26 g

Dummy:HIII 50th Male
Seating Position:
Right Side Row 9 Right Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

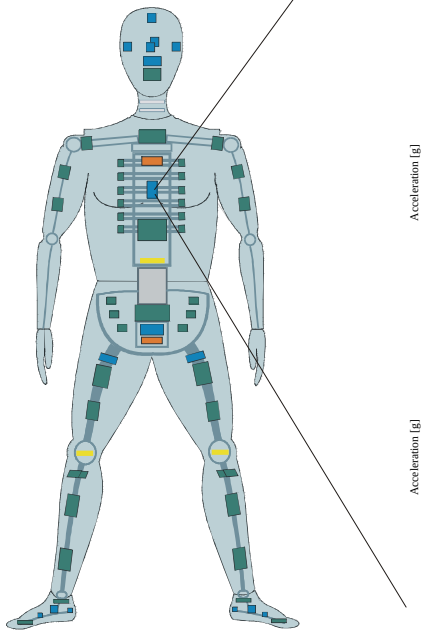
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

3 ms Duration Acceleration (Chest)

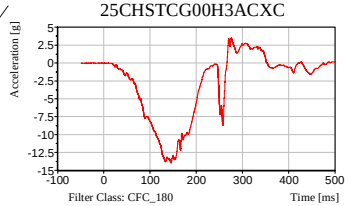
Date: 12/14/2007
Time: 9:12

Customer: VRTC

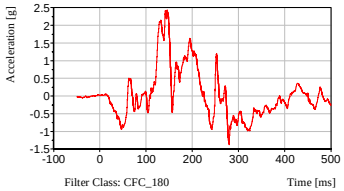
TRC Inc. Test Lab: CTF
Test Number: 071214



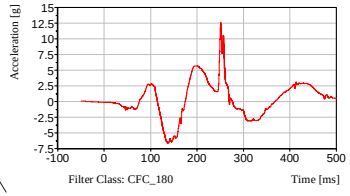
25CHSTCG00H3ACXC



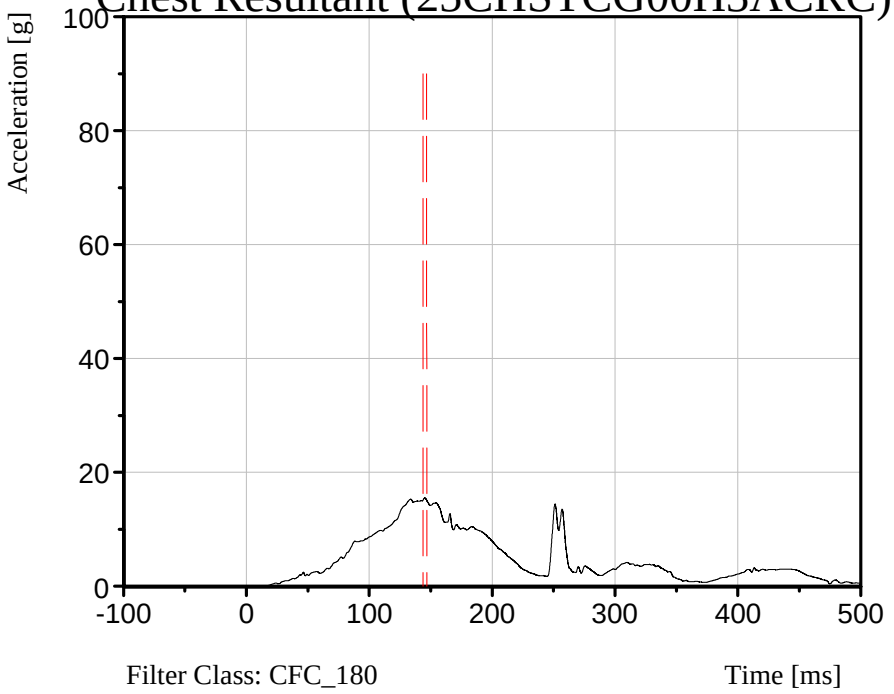
25CHSTCG00H3ACYC



25CHSTCG00H3ACZC



Chest Resultant (25CHSTCG00H3ACRC)



	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 15.12 g	143.80 ms	146.80 ms
Chest Severity Index = 64.52		

Dummy:HIII 50th Male
Seating Position:
Right Side Row 9 Right Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

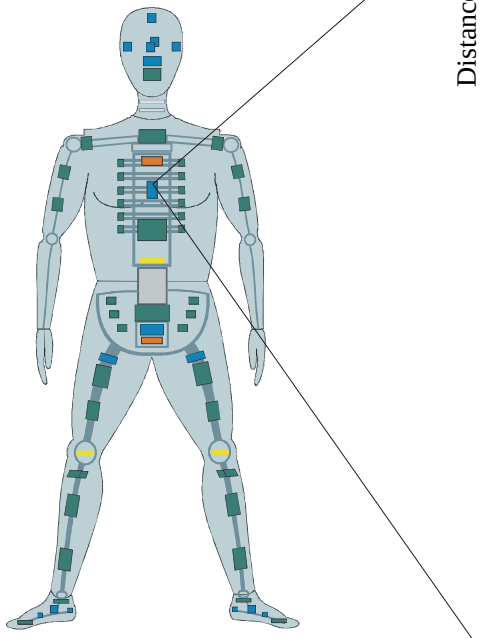
Chest Deflection

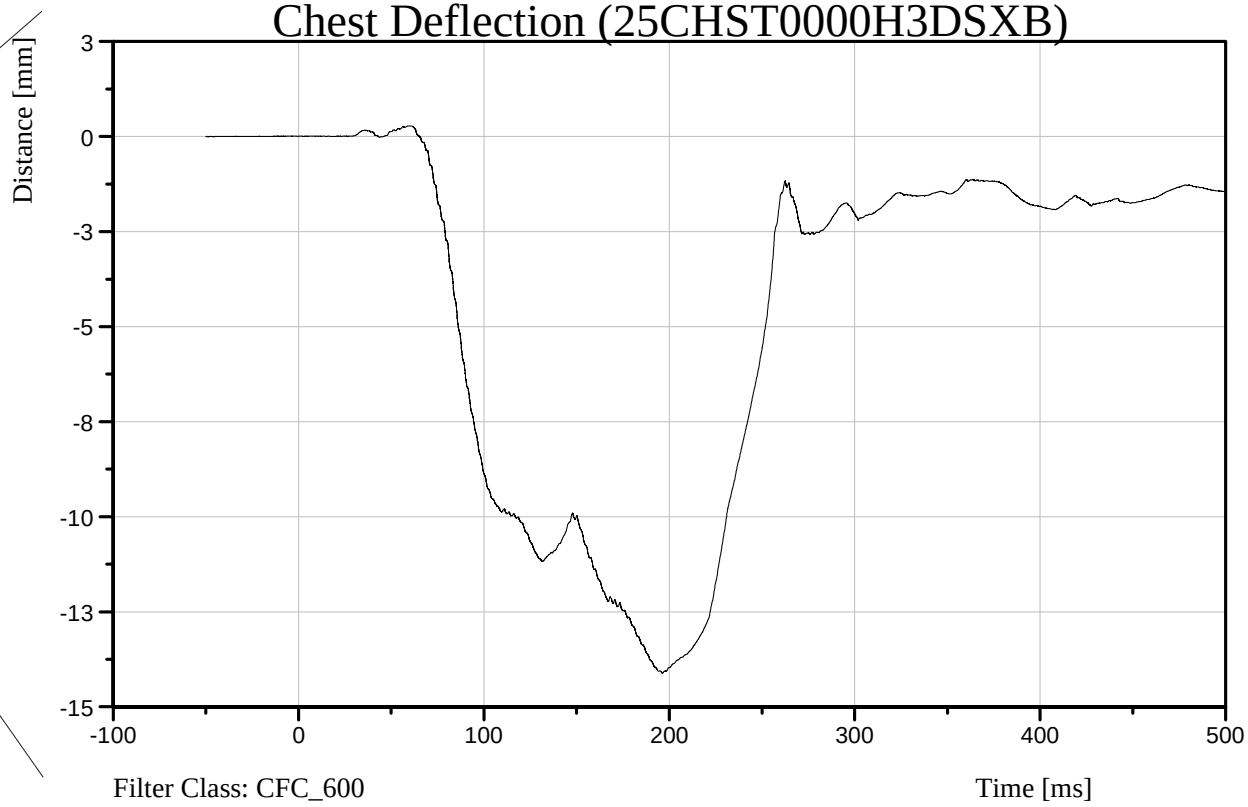
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 50th Male
Seating Position:
Right Side Row 9 Right Seat

[Max.] 0.28 mm at 60.56 ms
[Min.] -14.11 mm at 196.40 ms

ChestDeflection Source Code : Min/Max of 25CHST0000H3DSXB (CFC_600)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph
Neck Moment about the Occipital Condyle (NECK OM)

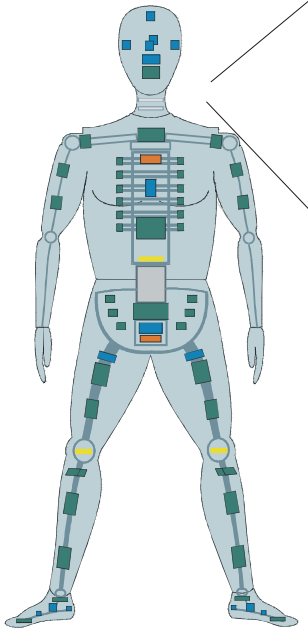
Date: 12/14/2007
Time: 9:12

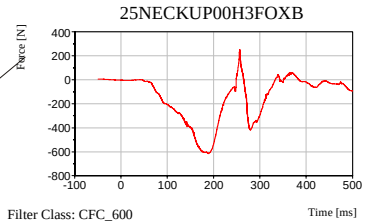
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 071214

Test Orientation = Frontal

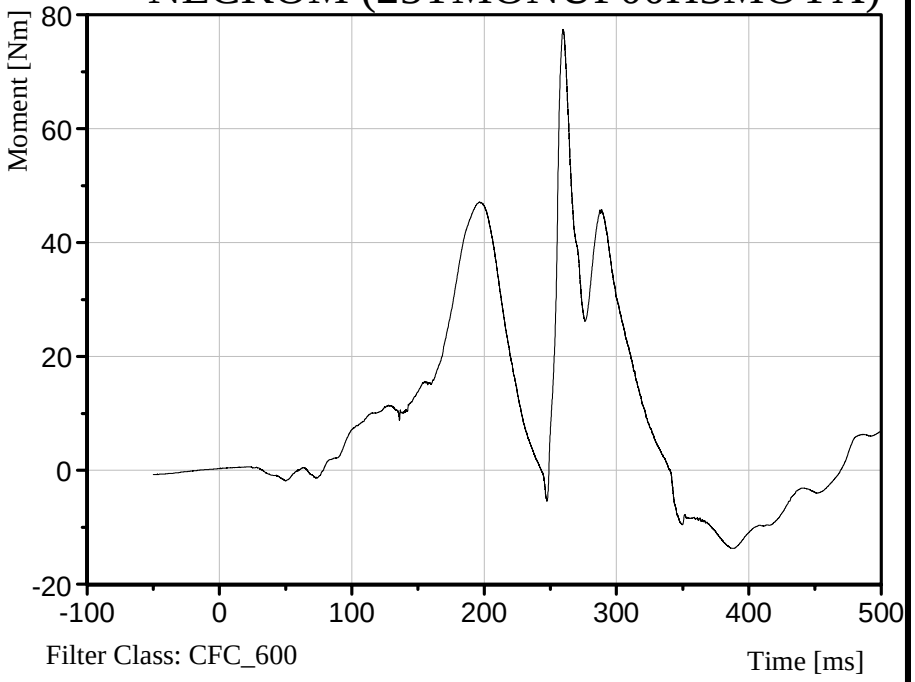




Filter Class: CFC_600

Filter Class: CFC_600

NECKOM (25TMONUP00H3MOYX)



Filter Class: CFC_600

Dummy:HIII 50th Male
Seating Position:
Right Side Row 9 Right Seat

Neck OM Source Code: My - (D*Fx)

[Max.] 77.48 Nm at 259.60 ms
[Min.] -13.70 Nm at 387.60 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

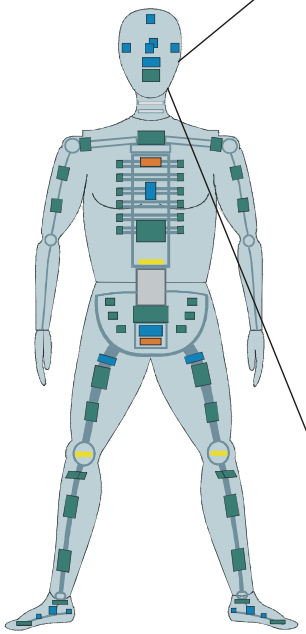
Neck Injury Predictor (NIJ)

Date: 12/14/2007
Time: 9:12

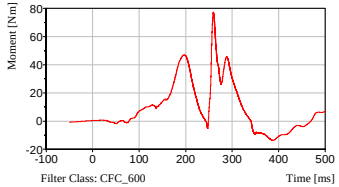
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

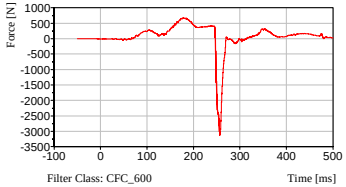
Test Orientation = Frontal
Fzc(Tension) = 6806
Fzc(Compression) = 6160
Myc(Extension) = 135
Myc(Flexion) = 310



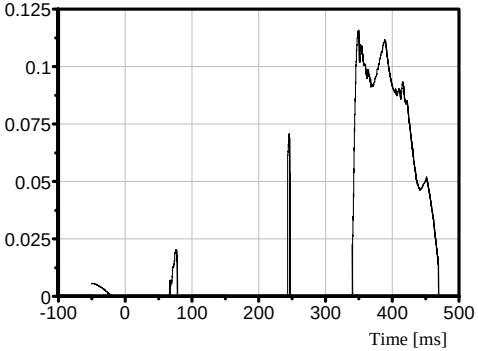
25TMONUP00H3MOYX



25NECKUP00H3FOZB

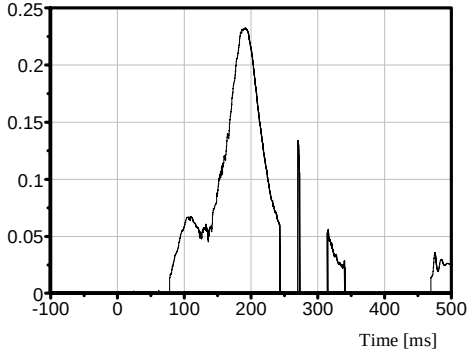


25NIJCUPTEH300YX



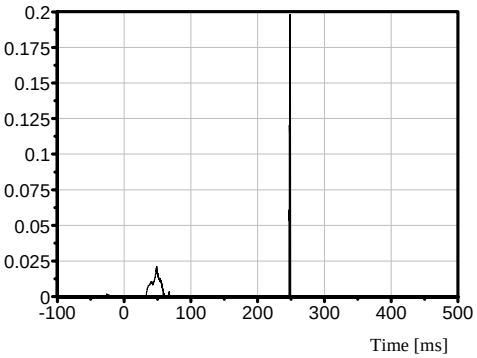
Max [NTE] 0.1158 at 350.08 ms

25NIJCUPTFH300YX



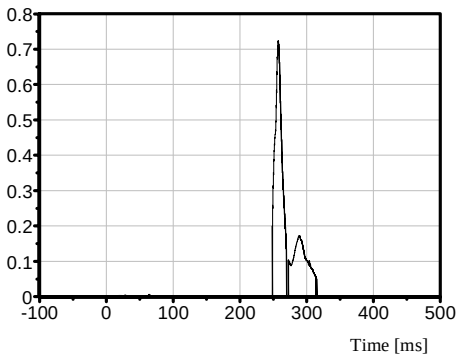
Max [NTF] 0.2327 at 192.08 ms

25NIJCUPCEH300YX



Max [NCE] 0.1982 at 248.88 ms

25NIJCUPCFH300YX



Max [NCF] 0.7243 at 257.52 ms

Dummy:HIII 50th Male
Seating Position:
Right Side Row 9 Right Seat

NIJ Source Code: (Fz/Fzc)+(My/Myc)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

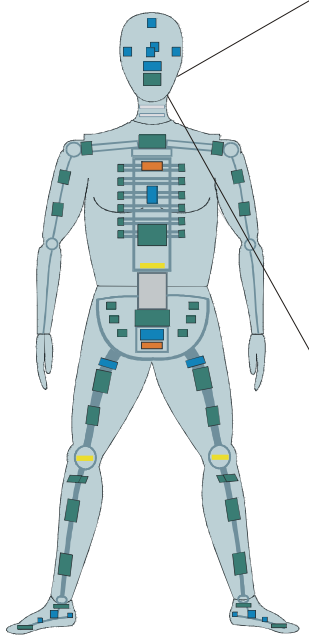
Neck Shear Force

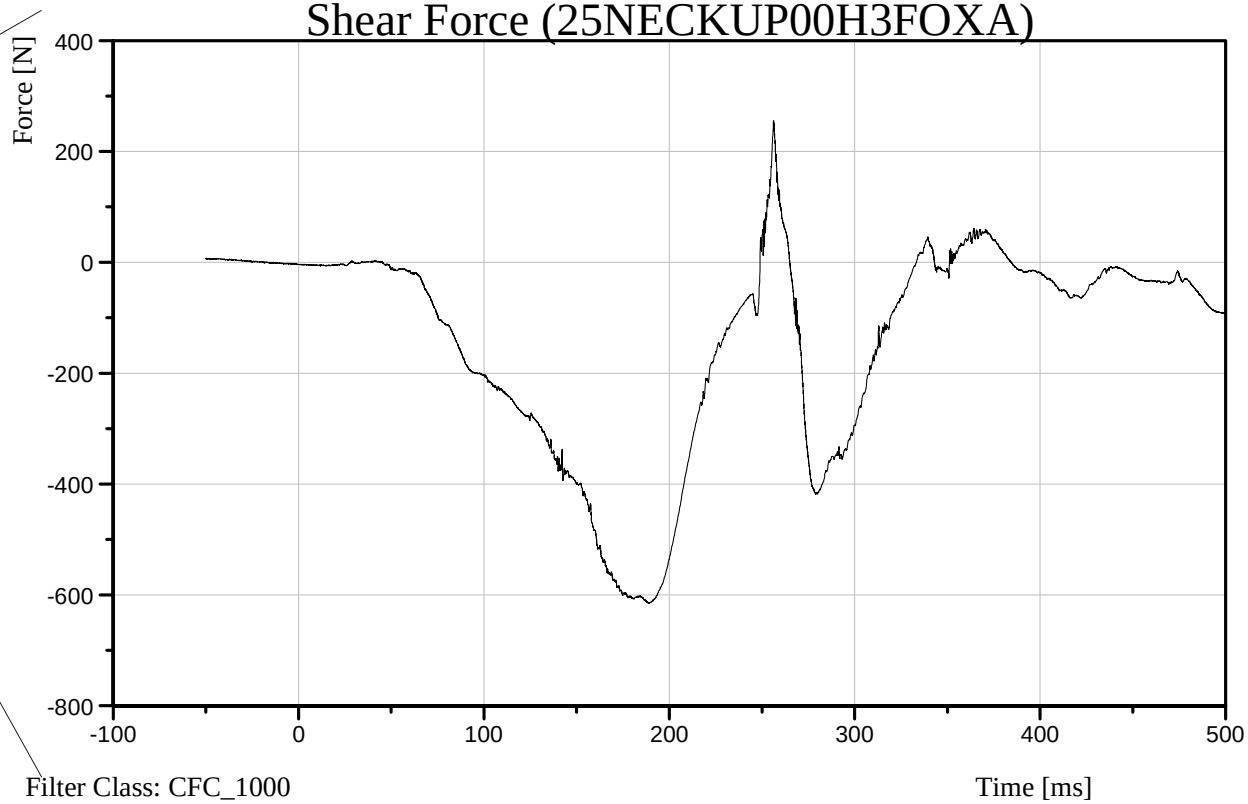
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 50th Male
Seating Position:
Right Side Row 9 Right Seat

[Max.] 255.37 N at 256.24 ms
[Min.] -615.20 N at 189.20 ms

Neck Shear Force Source Code: Min/Max of 25NECKUP00H3FOXA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

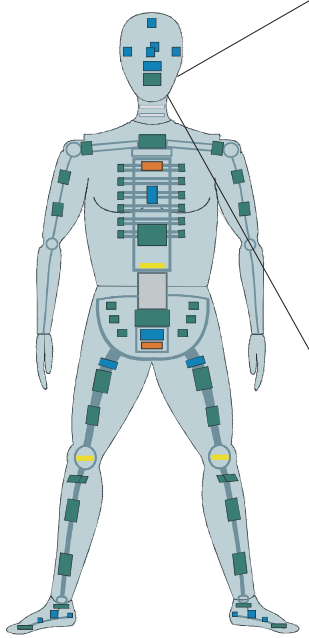
Neck Shear Force

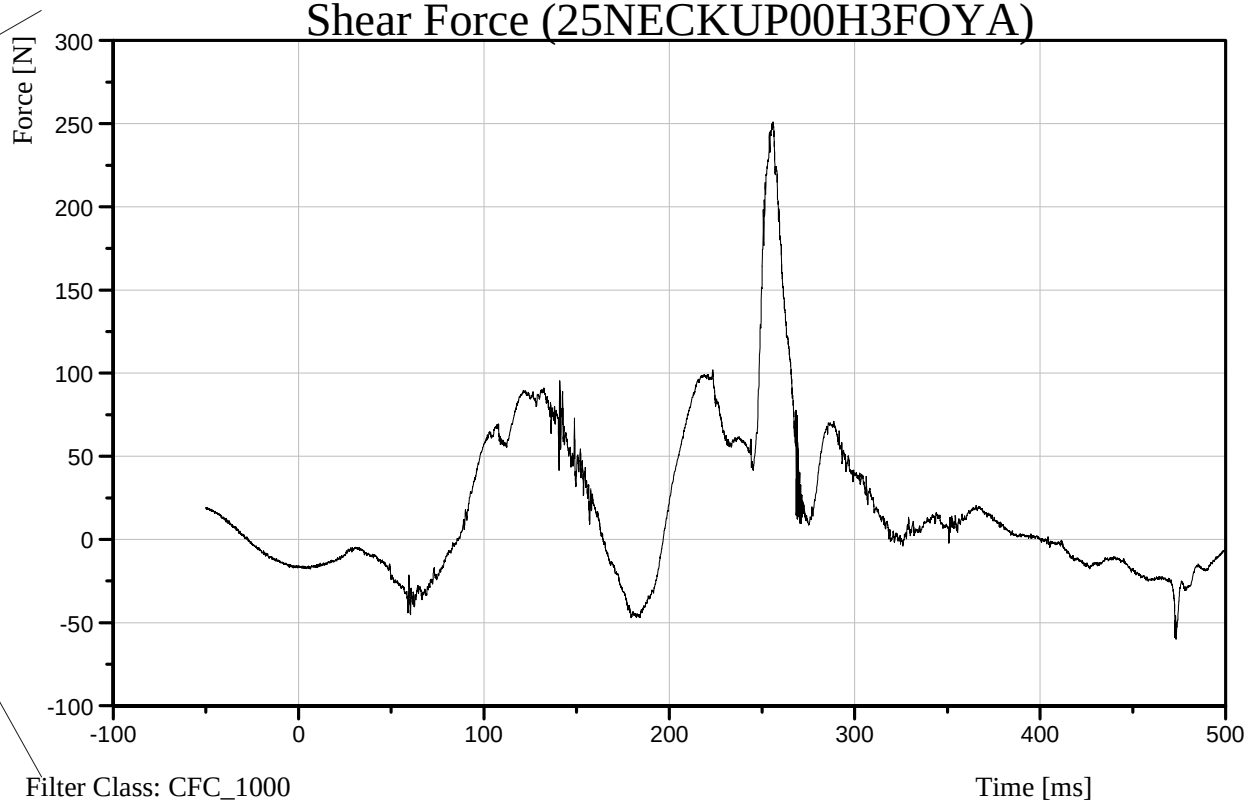
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 50th Male
Seating Position:
Right Side Row 9 Right Seat

[Max.] 251.11 N at 255.92 ms
[Min.] -59.96 N at 473.44 ms

Neck Shear Force Source Code: Min/Max of 25NECKUP00H3FOYA

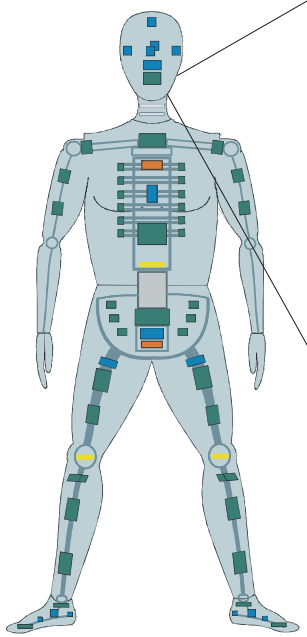
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

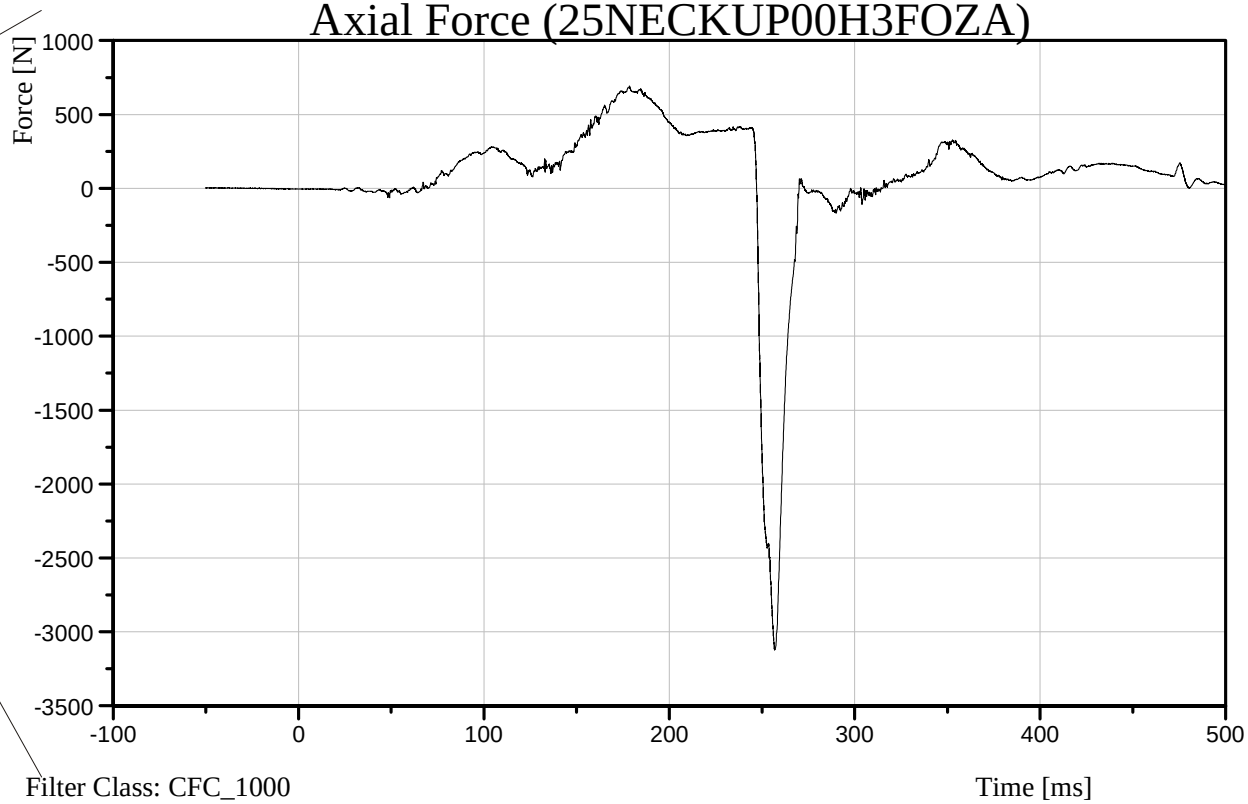
Neck Axial Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Right Side Row 9 Right Seat

[Max.] 692.15 N at 178.48 ms
[Min.] -3,122.97 N at 256.88 ms

Neck Axial Force Source Code: Min/Max of 25NECKUP00H3FOZA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

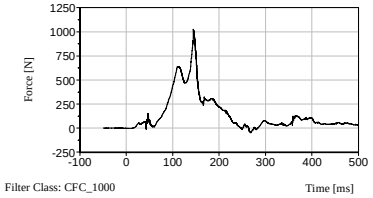
Femur Load

Date: 12/14/2007
Time: 9:12

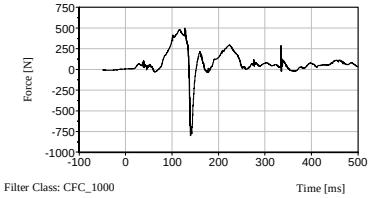
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

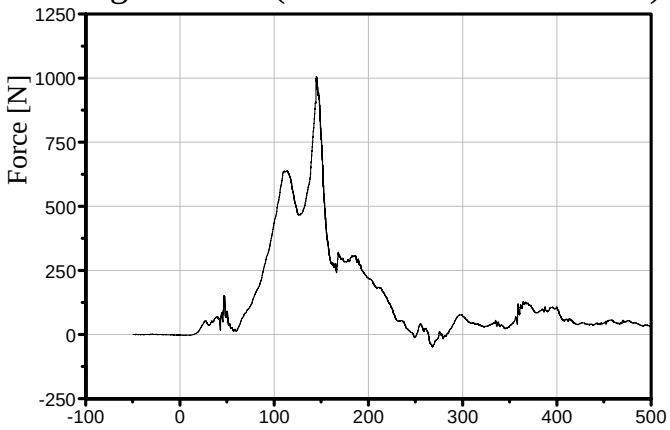
Right Femur (25FEMRRL00H3FOZA)

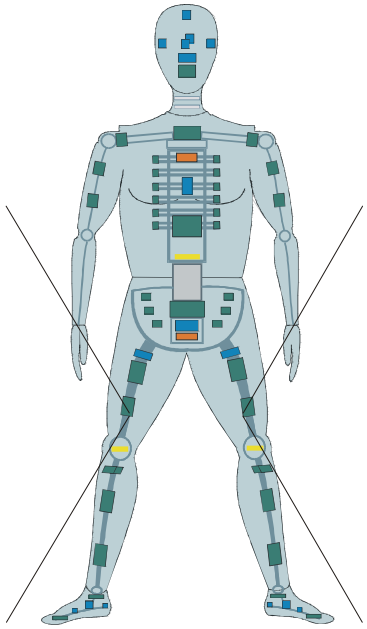


Left Femur (25FEMRLL00H3FOZA)

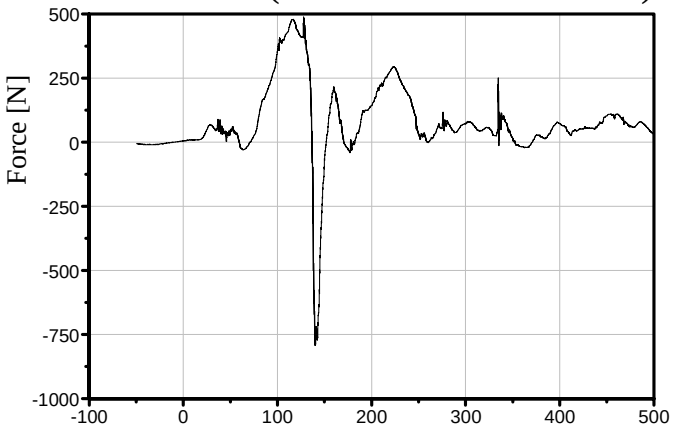


Right Femur (25FEMRRL00H3FOZB)





Left Femur (25FEMRLL00H3FOZB)



Max [Tension] 1,007.70 N at 144.96 ms
Min [Compression] -48.48 N at 268.08 ms

Dummy:HIII 50th Male
Seating Position:
Right Side Row 9 Right Seat

Max [Tension] 490.30 N at 127.68 ms
Min [Compression] -791.59 N at 140.00 ms

Femur Load Source Code : Min/Max of 25FEMRRL00H3FOZB and 25FEMRLL00H3FOZB (CFC 600)

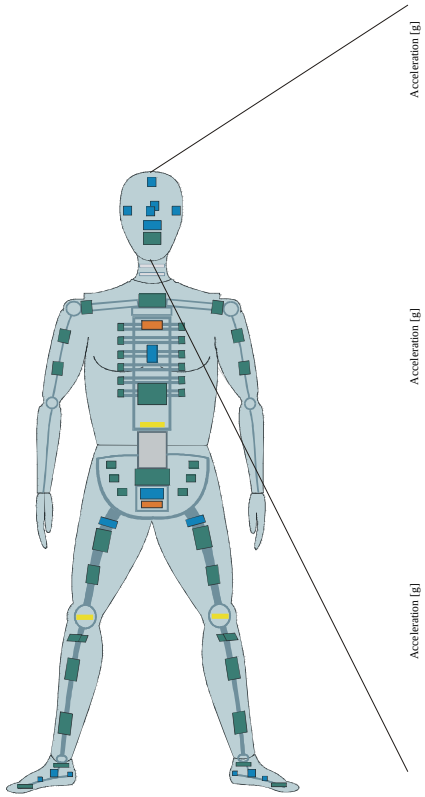
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

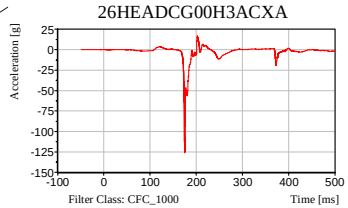
Head Injury Criterion (HIC)

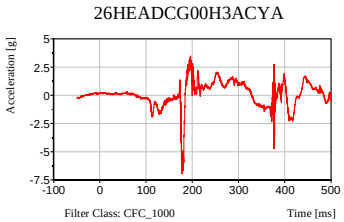
Date: 12/14/2007
Time: 9:12

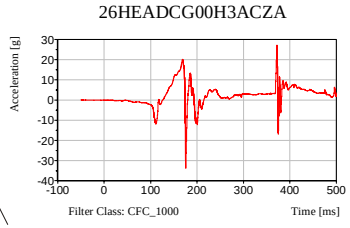
Customer: VRTC

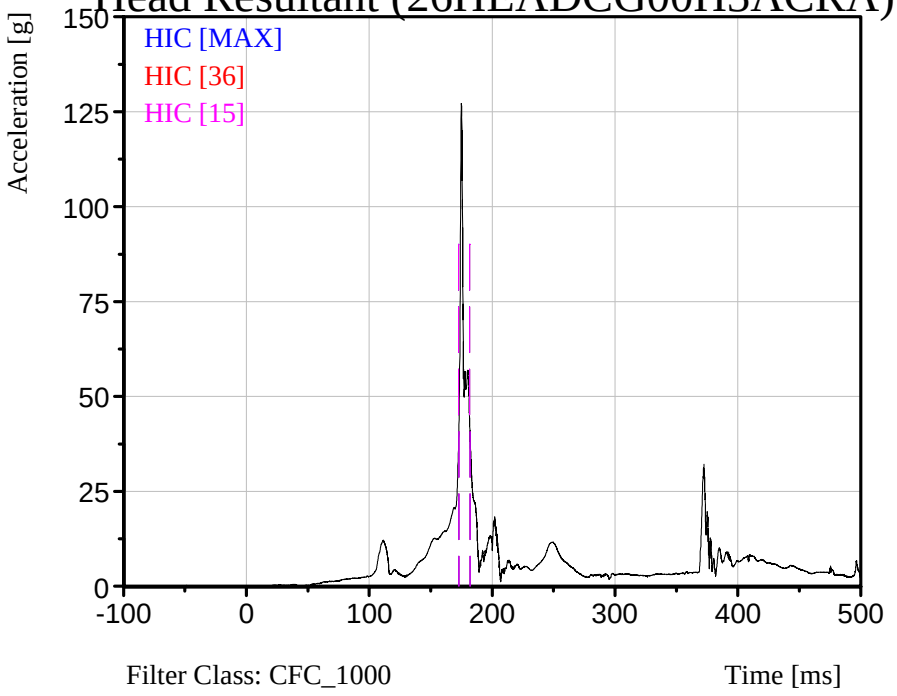
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 336.33	172.88 ms	181.92 ms	67.10 g
HIC [36] = 336.33	172.88 ms	181.92 ms	67.10 g
HIC [15] = 336.33	172.88 ms	181.92 ms	67.10 g

Dummy:HIII 50th Male
Seating Position:
Left Side Row 10 Left Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

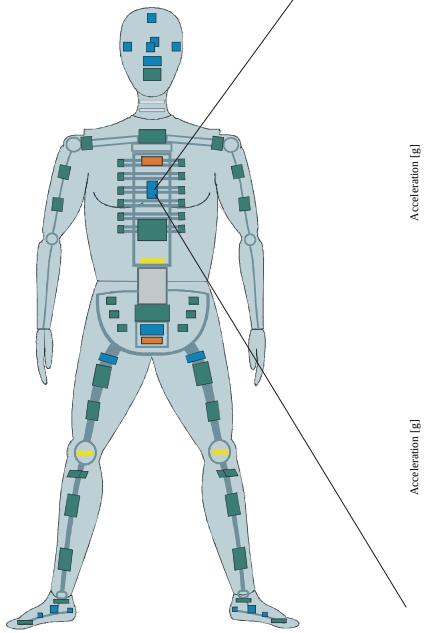
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

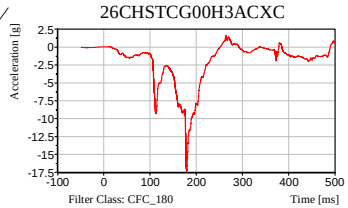
3 ms Duration Acceleration (Chest)

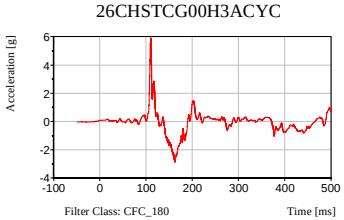
Date: 12/14/2007
Time: 9:12

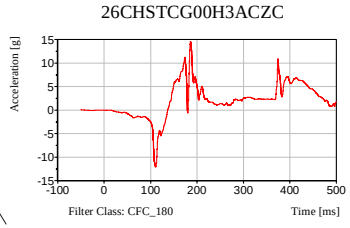
Customer: VRTC

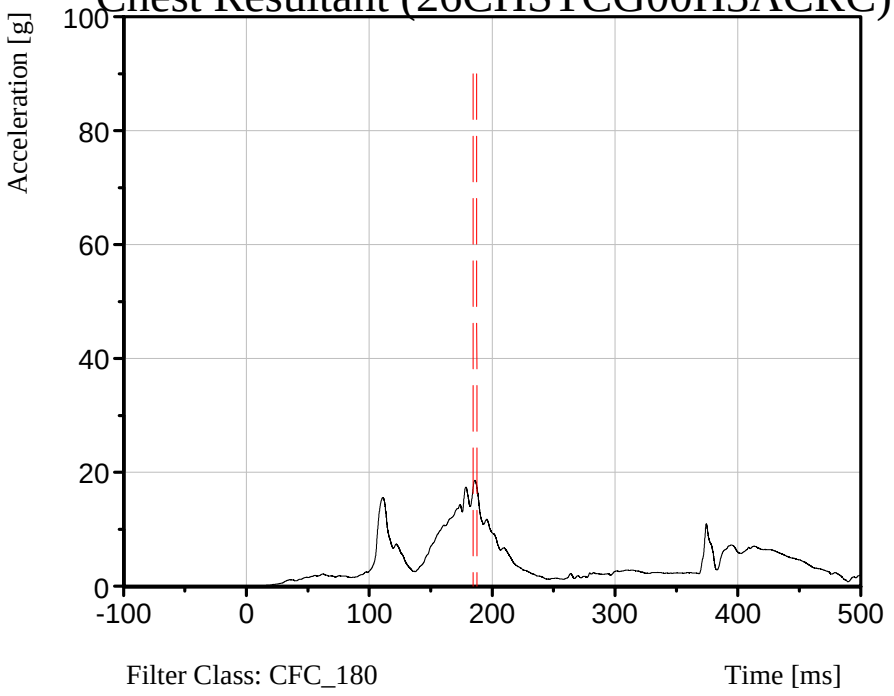
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 17.40 g	184.61 ms	187.61 ms
Chest Severity Index = 51.54		

Dummy:HIII 50th Male
Seating Position:
Left Side Row 10 Left Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

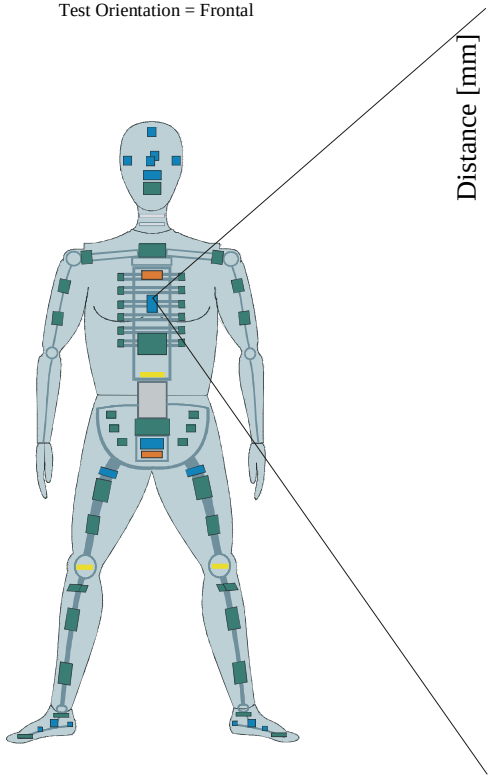
Chest Deflection

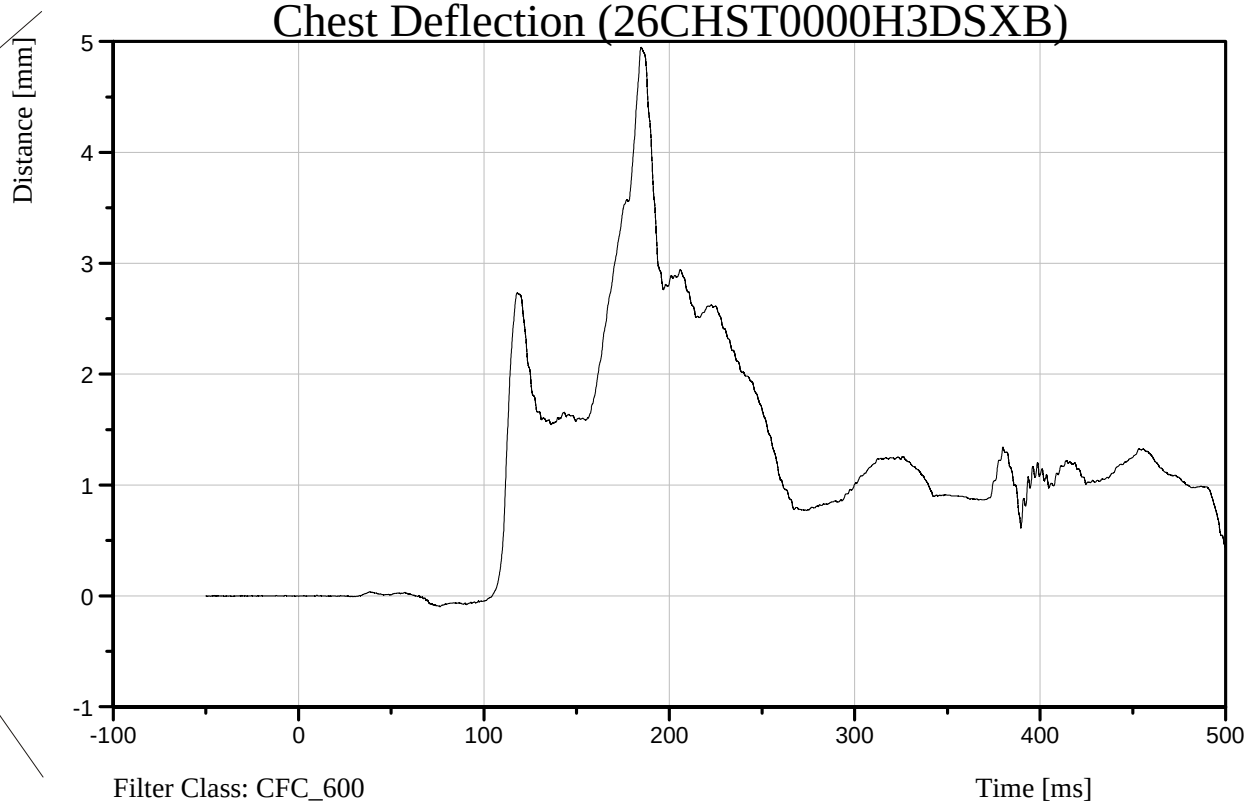
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 50th Male
Seating Position:
Left Side Row 10 Left Seat

[Max.] 4.95 mm at 184.80 ms
[Min.] -0.10 mm at 76.40 ms

ChestDeflection Source Code : Min/Max of 26CHST0000H3DSXB (CFC_600)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph
Neck Moment about the Occipital Condyle (NECK OM)

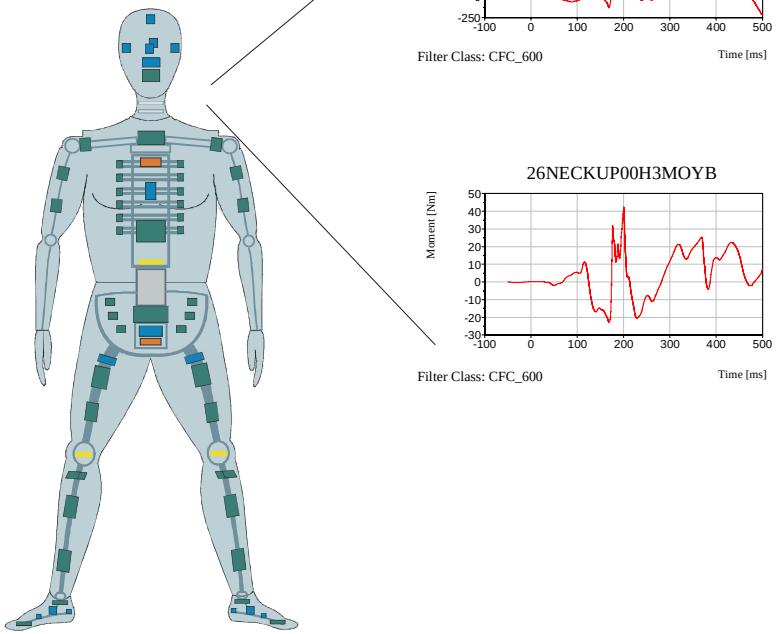
Date: 12/14/2007
Time: 9:12

Customer: VRTC

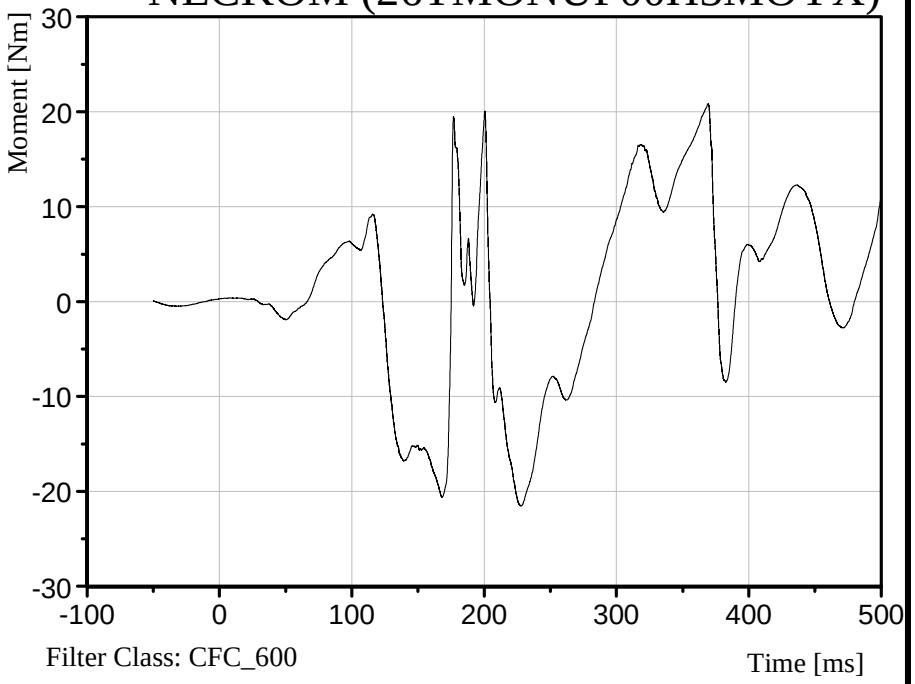
TRC Inc. Test Lab: CTF

Test Number: 071214

Test Orientation = Frontal



NECKOM (26TMONUP00H3MOYX)



Dummy:HIII 50th Male
Seating Position:
Left Side Row 10 Left Seat

Neck OM Source Code: My - (D*Fx)

[Max.] 20.86 Nm at 369.20 ms
[Min.] -21.54 Nm at 227.68 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

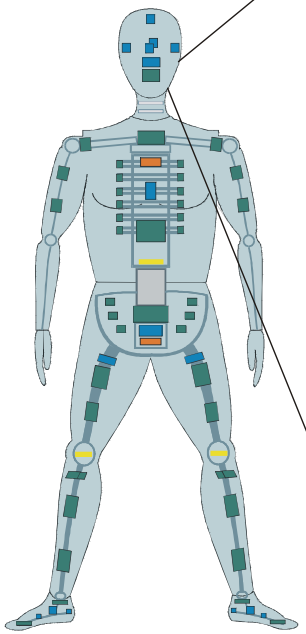
Neck Injury Predictor (NIJ)

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

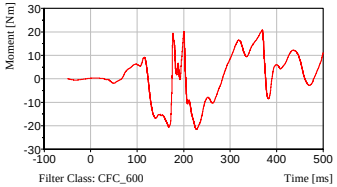
Test Orientation = Frontal
Fzc(Tension) = 6806
Fzc(Compression) = 6160
Myc(Extension) = 135
Myc(Flexion) = 310



Dummy:HIII 50th Male
Seating Position:
Left Side Row 10 Left Seat

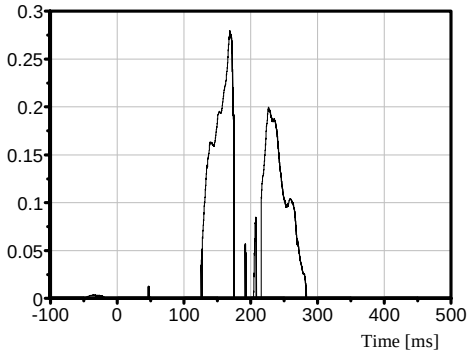
NIJ Source Code: (Fz/Fzc)+(My/Myc)

26TMONUP00H3MOYX



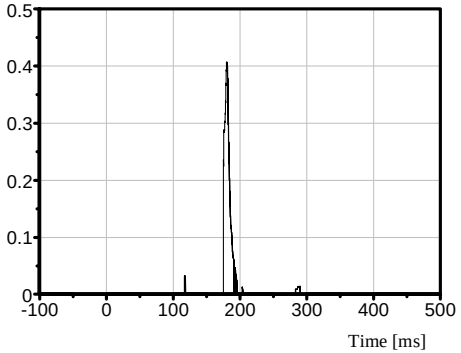
26NECKUP00H3FOZB

26NIJCUPTEH300YX



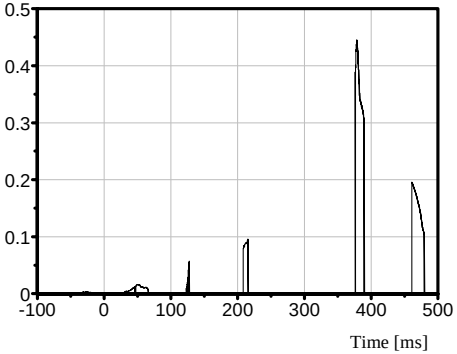
Max [NTE] 0.2799 at 168.80 ms

26NIJCUPTFH300YX



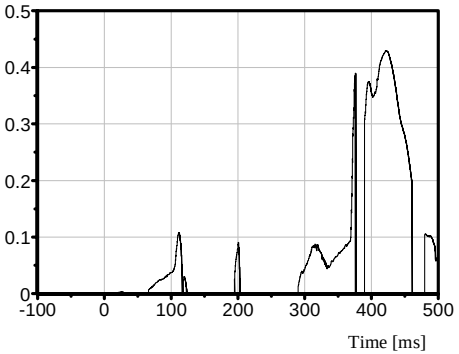
Max [NTF] 0.4075 at 180.40 ms

26NIJCUPCEH300YX



Max [NCE] 0.4452 at 378.64 ms

26NIJCUPCFH300YX



Max [NCF] 0.4293 at 421.28 ms

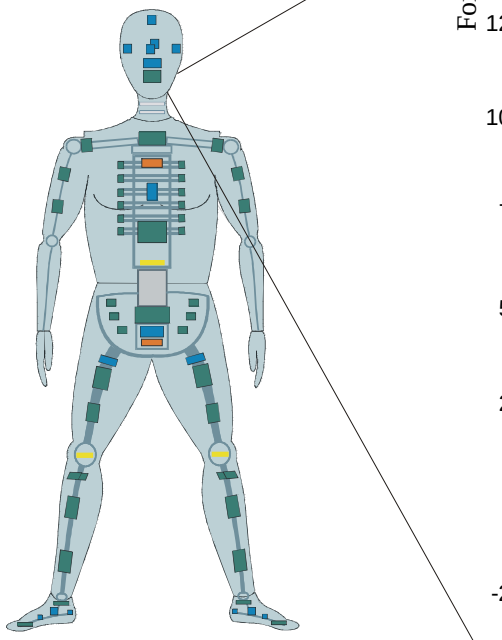
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

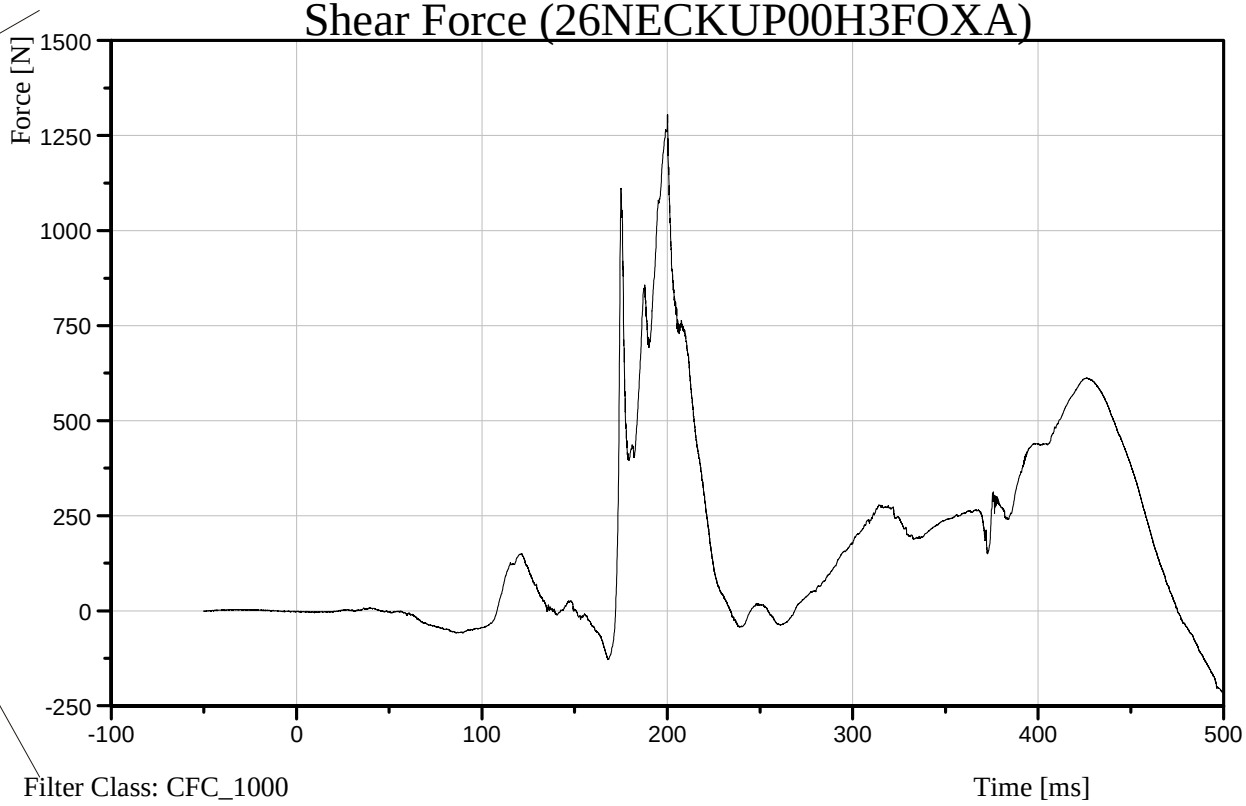
Neck Shear Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Left Side Row 10 Left Seat

[Max.] 1,305.38 N at 200.16 ms
[Min.] -214.36 N at 500.00 ms

Neck Shear Force Source Code: Min/Max of 26NECKUP00H3FOXA

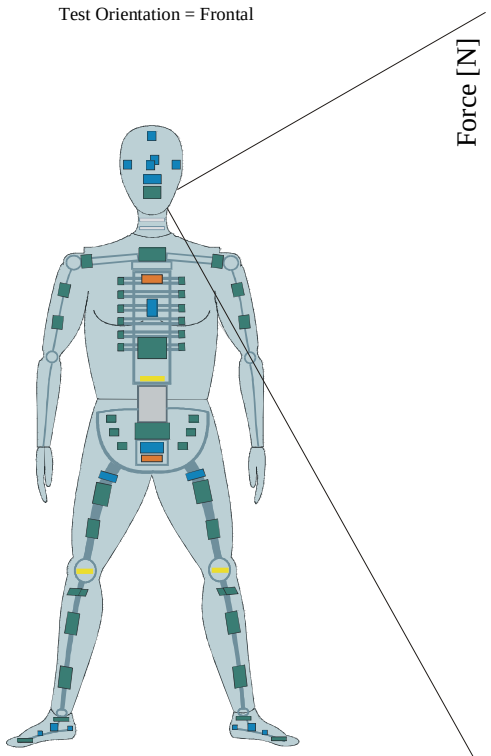
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

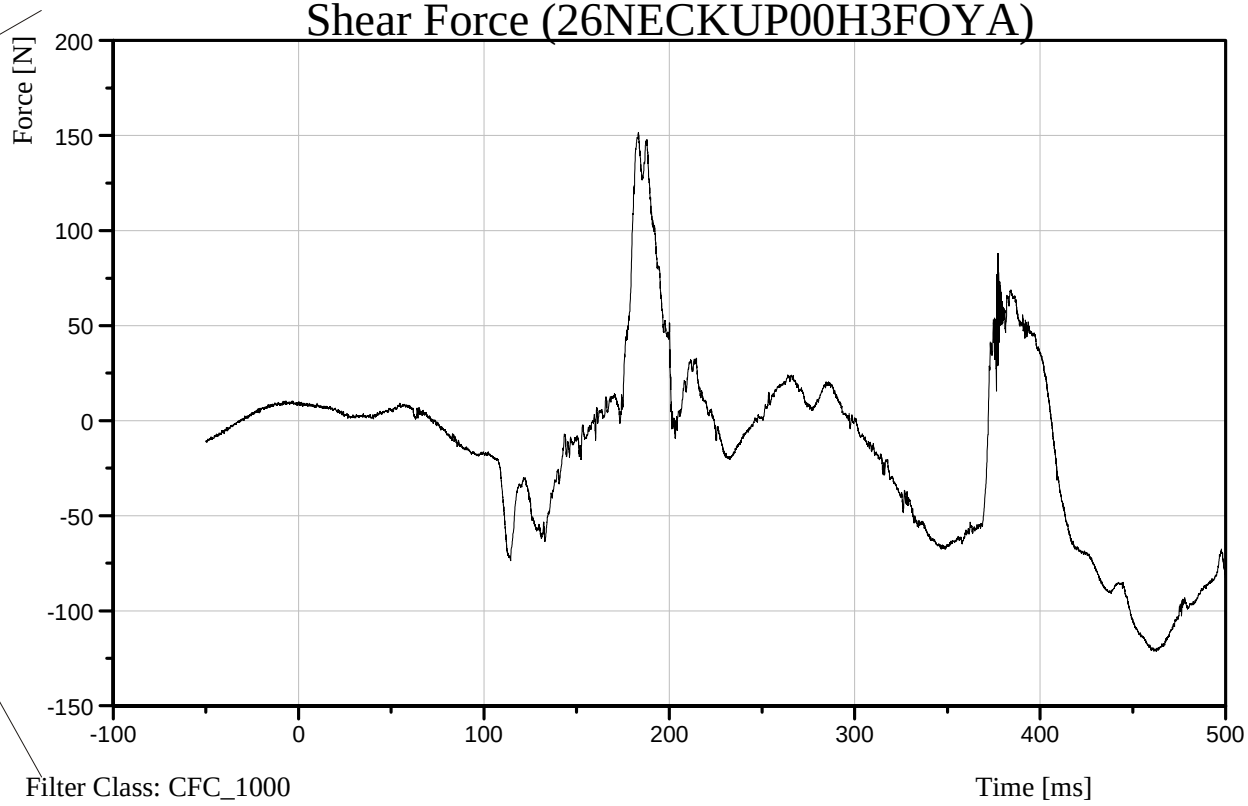
Neck Shear Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Left Side Row 10 Left Seat

[Max.] 151.74 N at 183.28 ms
[Min.] -121.34 N at 461.44 ms

Neck Shear Force Source Code: Min/Max of 26NECKUP00H3FOYA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

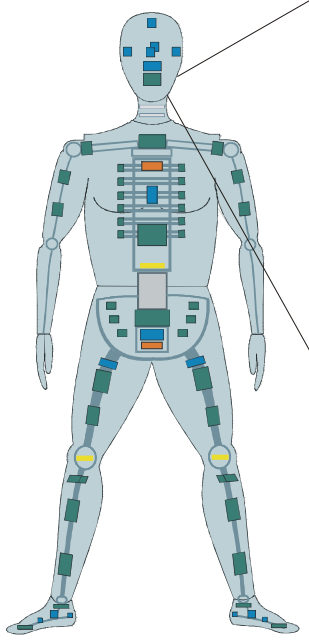
Neck Axial Force

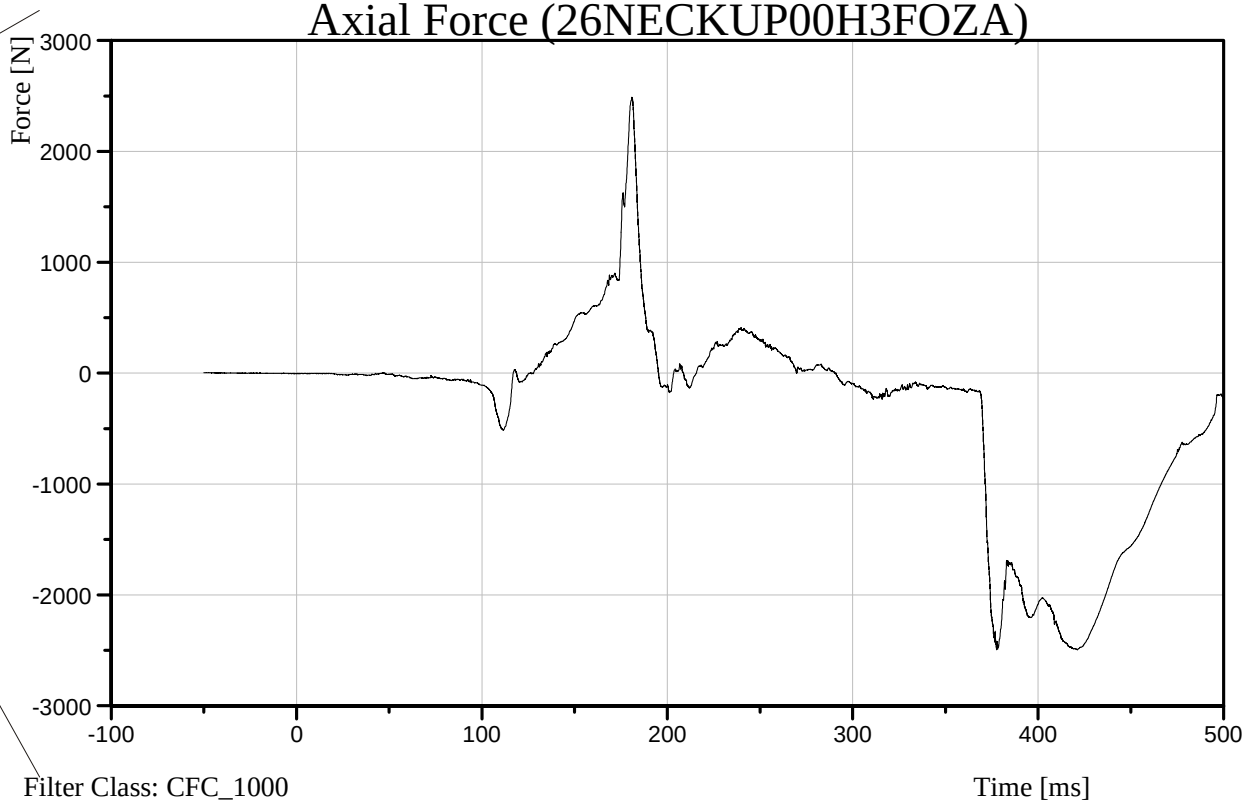
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 50th Male
Seating Position:
Left Side Row 10 Left Seat

[Max.] 2,489.07 N at 180.96 ms
[Min.] -2,495.29 N at 377.60 ms

Neck Axial Force Source Code: Min/Max of 26NECKUP00H3FOZA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

Femur Load

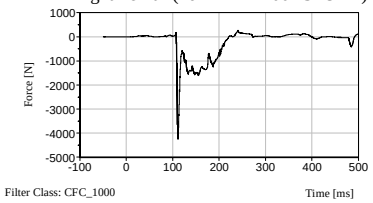
Date: 12/14/2007
Time: 9:12

Customer: VRTC

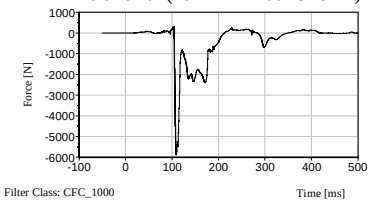
TRC Inc. Test Lab: CTF

Test Number: 071214

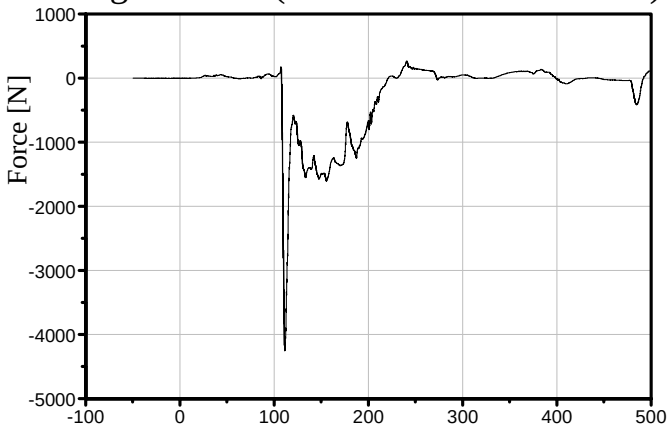
Right Femur (26FEMRRL00H3FOZA)

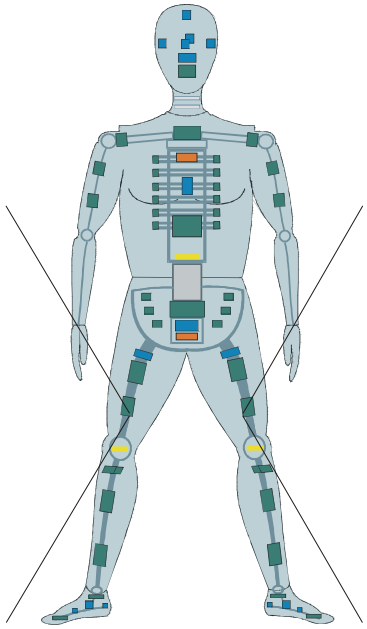


Left Femur (26FEMRLL00H3FOZA)

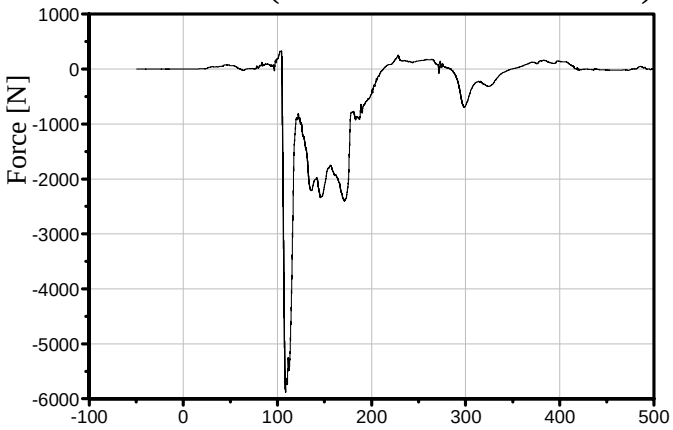


Right Femur (26FEMRRL00H3FOZB)





Left Femur (26FEMRLL00H3FOZB)



Max [Tension] 267.81 N at 240.80 ms
Min [Compression] -4,254.01 N at 111.28 ms

Dummy:HIII 50th Male
Seating Position:
Left Side Row 10 Left Seat

Max [Tension] 332.24 N at 104.16 ms
Min [Compression] -5,880.47 N at 108.48 ms

Femur Load Source Code : Min/Max of 26FEMRRL00H3FOZB and 26FEMRLL00H3FOZB (CFC 600)

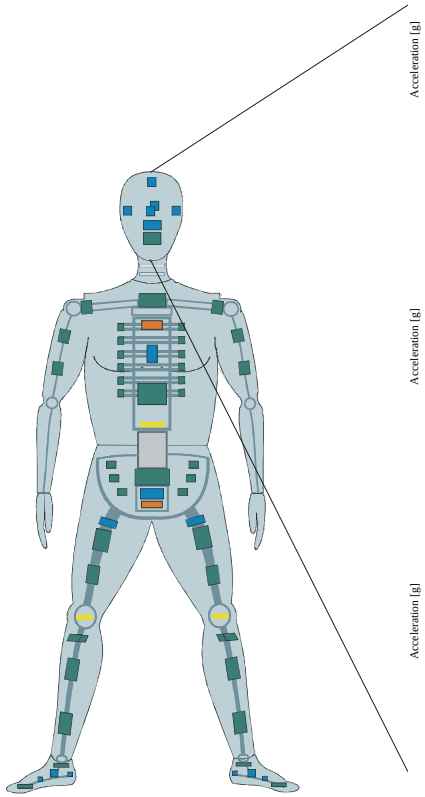
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

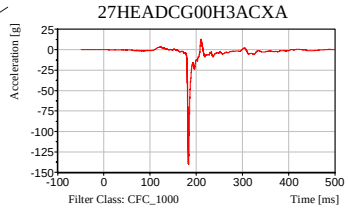
Head Injury Criterion (HIC)

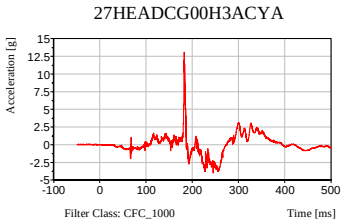
Date: 12/14/2007
Time: 9:12

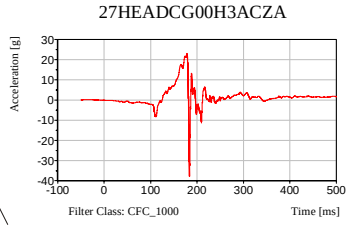
Customer: VRTC

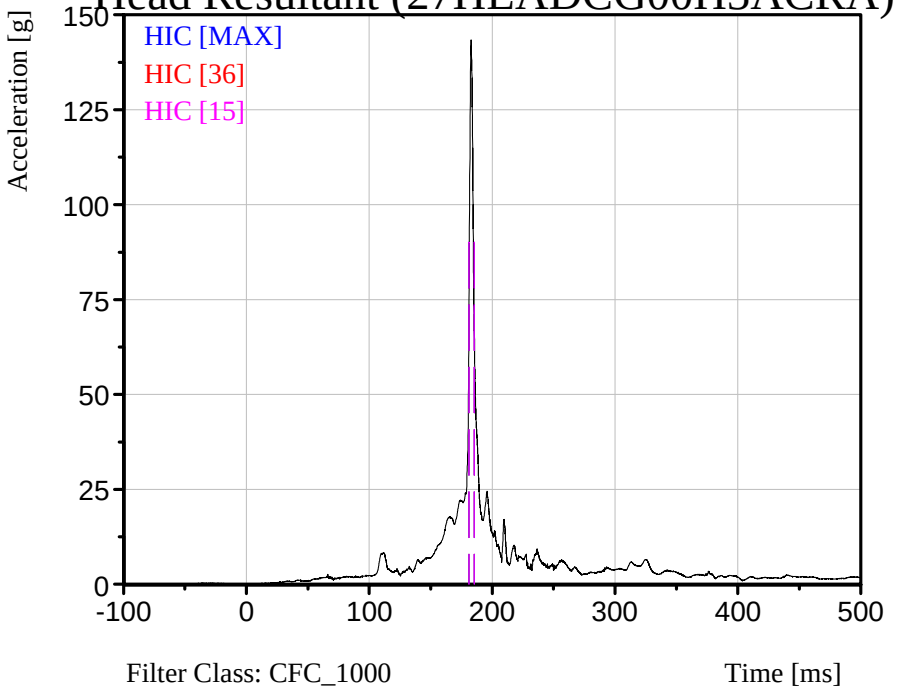
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 570.01	181.12 ms	185.52 ms	110.12 g
HIC [36] = 570.01	181.12 ms	185.52 ms	110.12 g
HIC [15] = 570.01	181.12 ms	185.52 ms	110.12 g

Dummy:HIII 50th Male
Seating Position:
Left Side Row 10 Right Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

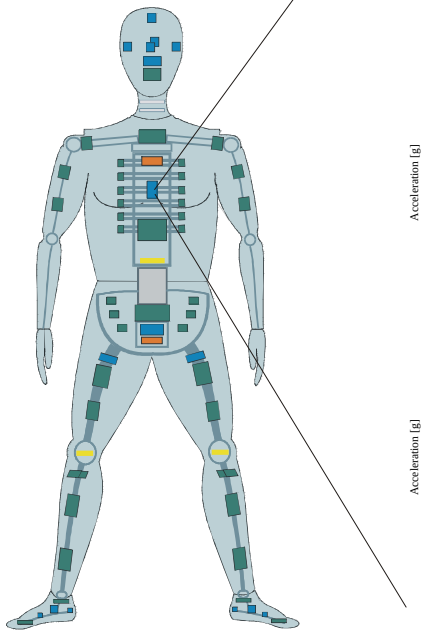
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

3 ms Duration Acceleration (Chest)

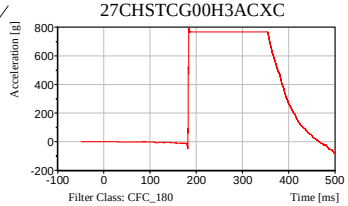
Date: 12/14/2007
Time: 9:12

Customer: VRTC

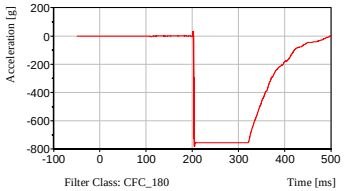
TRC Inc. Test Lab: CTF
Test Number: 071214



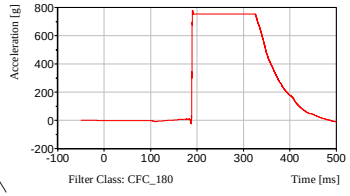
27CHSTCG00H3ACXC



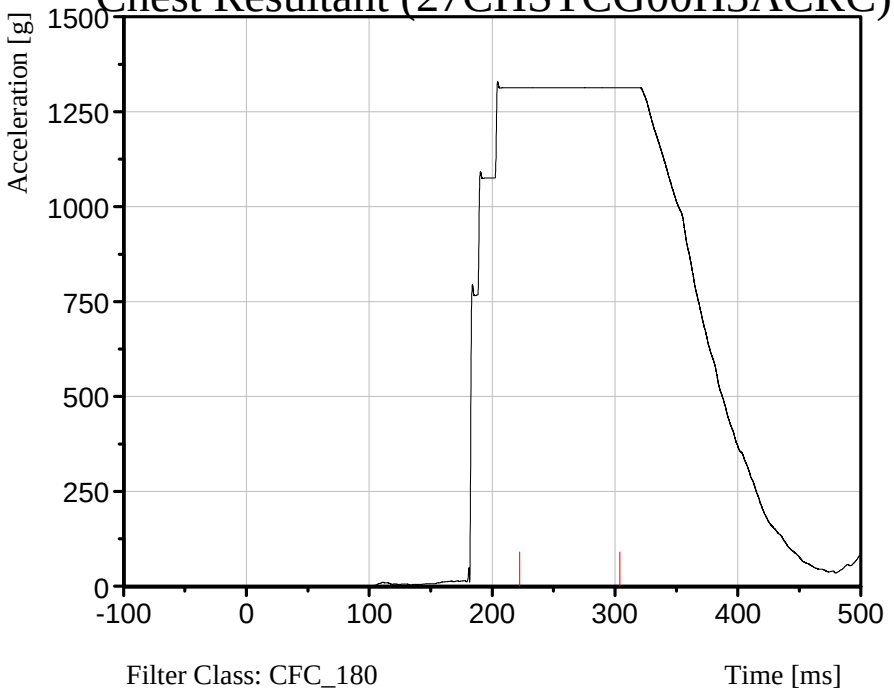
27CHSTCG00H3ACYC



27CHSTCG00H3ACZC



Chest Resultant (27CHSTCG00H3ACRC)



	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 1,312.93 g	222.48 ms	304.00 ms

Chest Severity Index = 10,078,263.11

Dummy:HIII 50th Male
Seating Position:
Left Side Row 10 Right Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

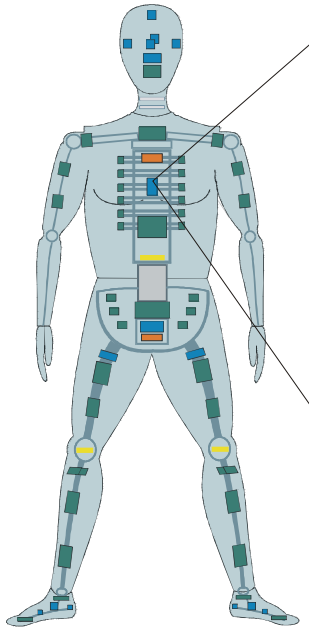
Chest Deflection

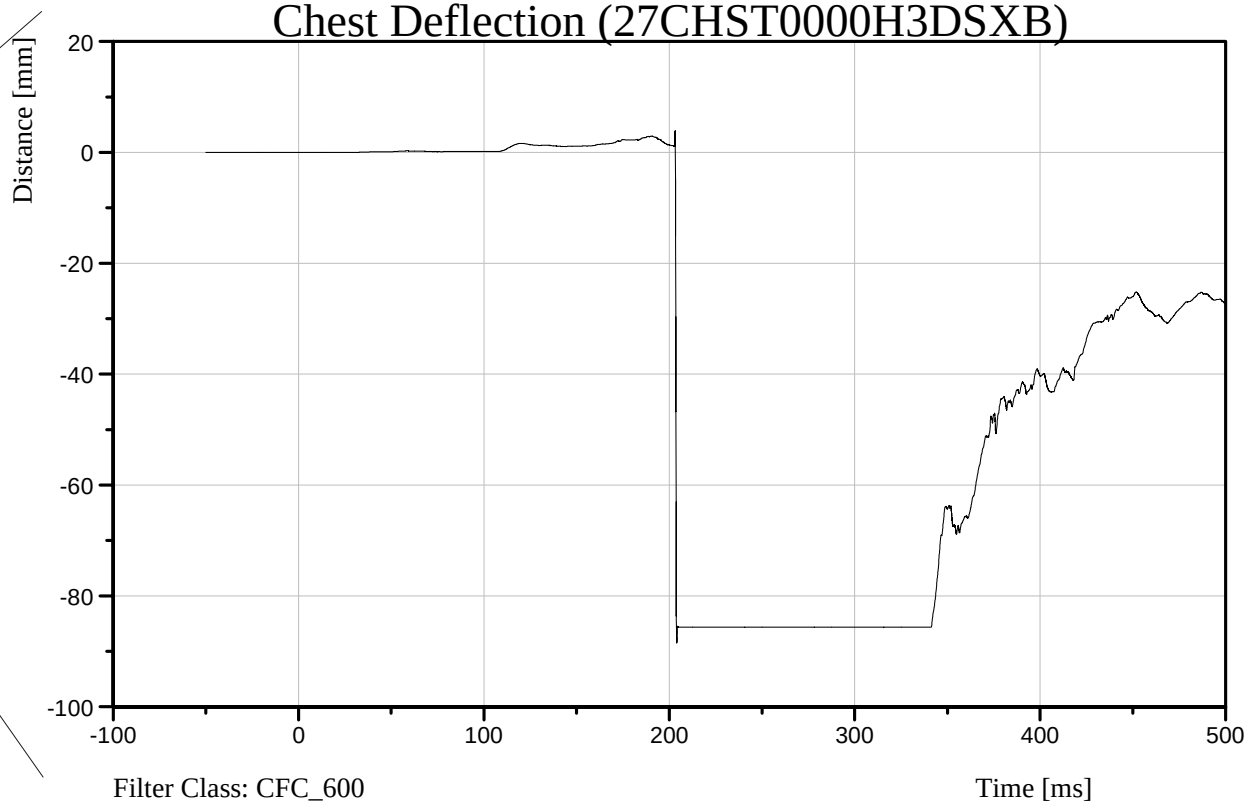
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 50th Male
Seating Position:
Left Side Row 10 Right Seat

[Max.] 3.91 mm at 203.12 ms
[Min.] -88.50 mm at 204.00 ms

ChestDeflection Source Code : Min/Max of 27CHST0000H3DSXB (CFC_600)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph
Neck Moment about the Occipital Condyle (NECK OM)

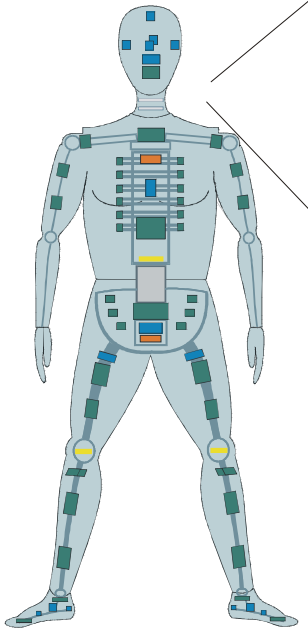
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 071214

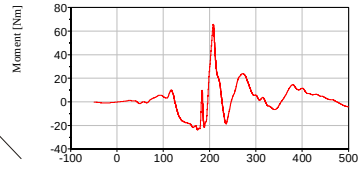
Test Orientation = Frontal



27NECKUP00H3FOXB

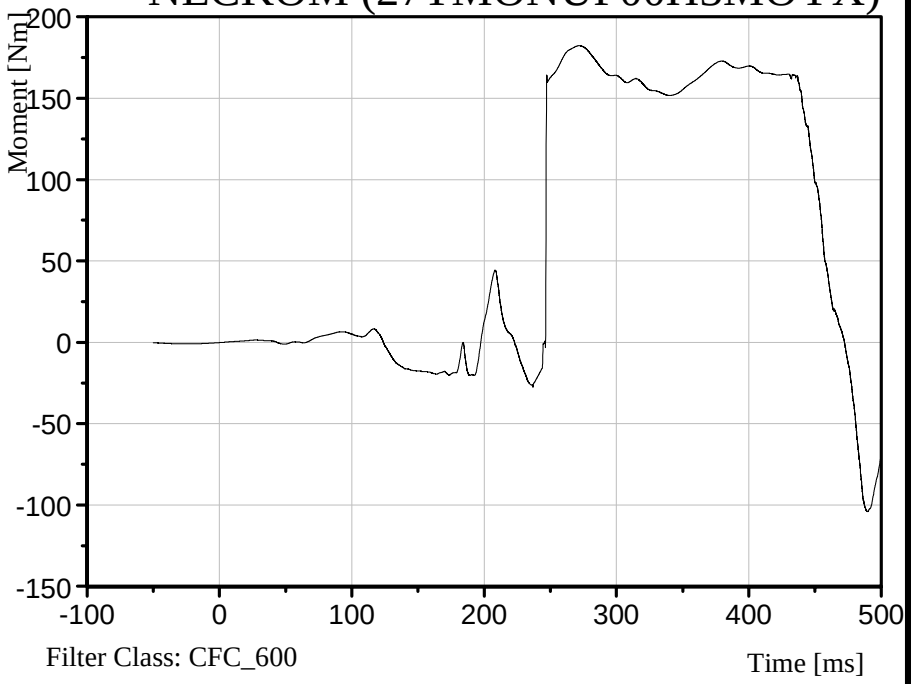
Filter Class: CFC_600

27NECKUP00H3MOYB



Filter Class: CFC_600

NECKOM (27TMONUP00H3MOYX)



Filter Class: CFC_600

Dummy:HIII 50th Male
Seating Position:
Left Side Row 10 Right Seat

Neck OM Source Code: My - (D*Fx)

[Max.] 182.31 Nm at 271.84 ms
[Min.] -104.04 Nm at 490.00 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

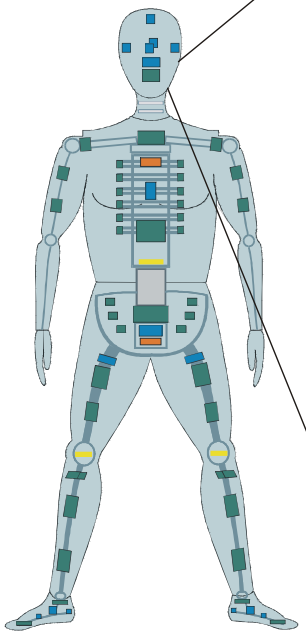
Neck Injury Predictor (NIJ)

Date: 12/14/2007
Time: 9:12

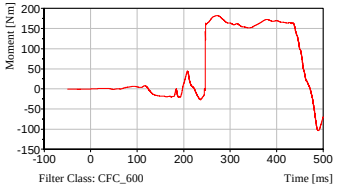
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

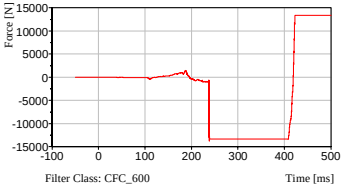
Test Orientation = Frontal
Fzc(Tension) = 6806
Fzc(Compression) = 6160
Myc(Extension) = 135
Myc(Flexion) = 310



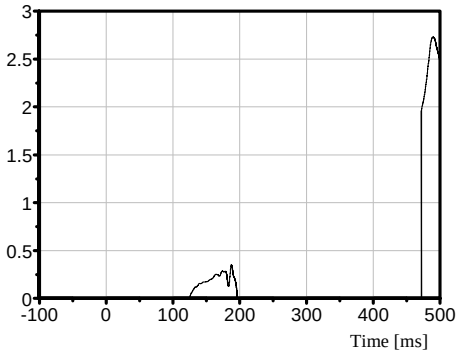
27TMONUP00H3MOYX



27NECKUP00H3FOZB

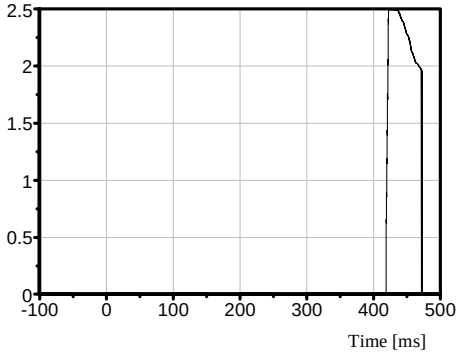


27NIJCUPTEH300YX



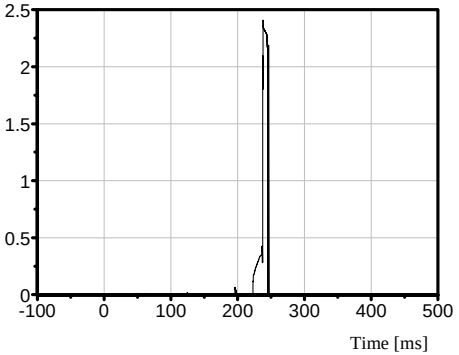
Max [NTE] 2.7333 at 490.00 ms

27NIJCUPTFH300YX



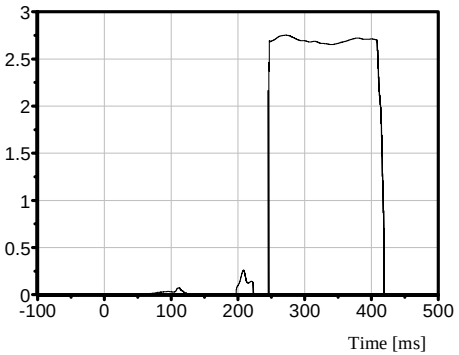
Max [NTF] 2.4996 at 422.80 ms

27NIJCUPCEH300YX



Max [NCE] 2.4105 at 238.24 ms

27NIJCUPCFH300YX



Max [NCF] 2.7530 at 271.84 ms

Dummy:HIII 50th Male
Seating Position:
Left Side Row 10 Right Seat

NIJ Source Code: (Fz/Fzc)+(My/Myc)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

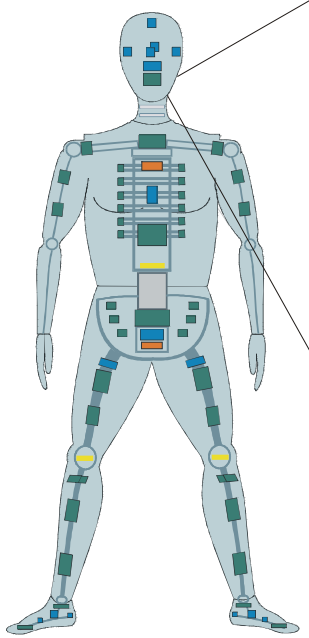
Neck Shear Force

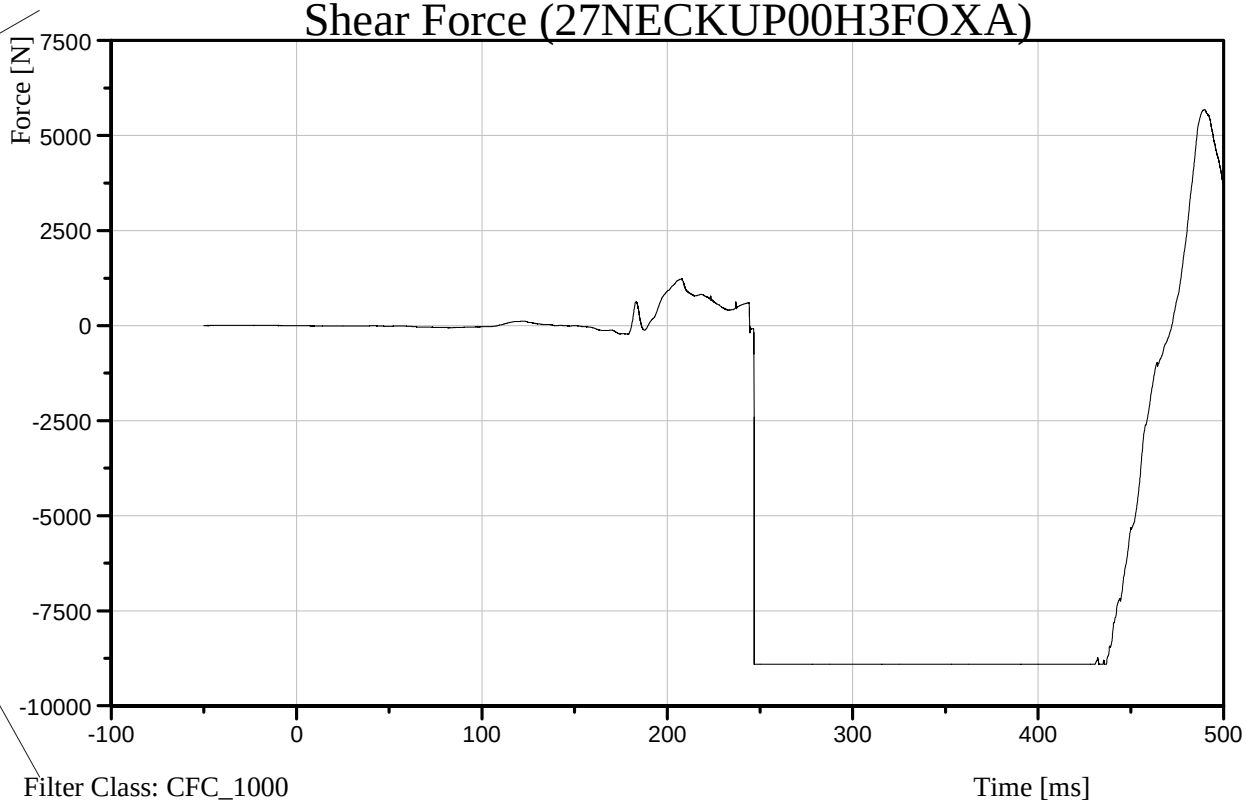
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 50th Male
Seating Position:
Left Side Row 10 Right Seat

[Max.] 5,680.68 N at 489.92 ms
[Min.] -8,902.14 N at 246.96 ms

Neck Shear Force Source Code: Min/Max of 27NECKUP00H3FOXA

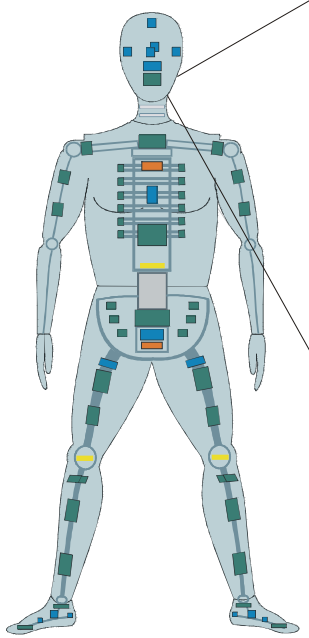
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

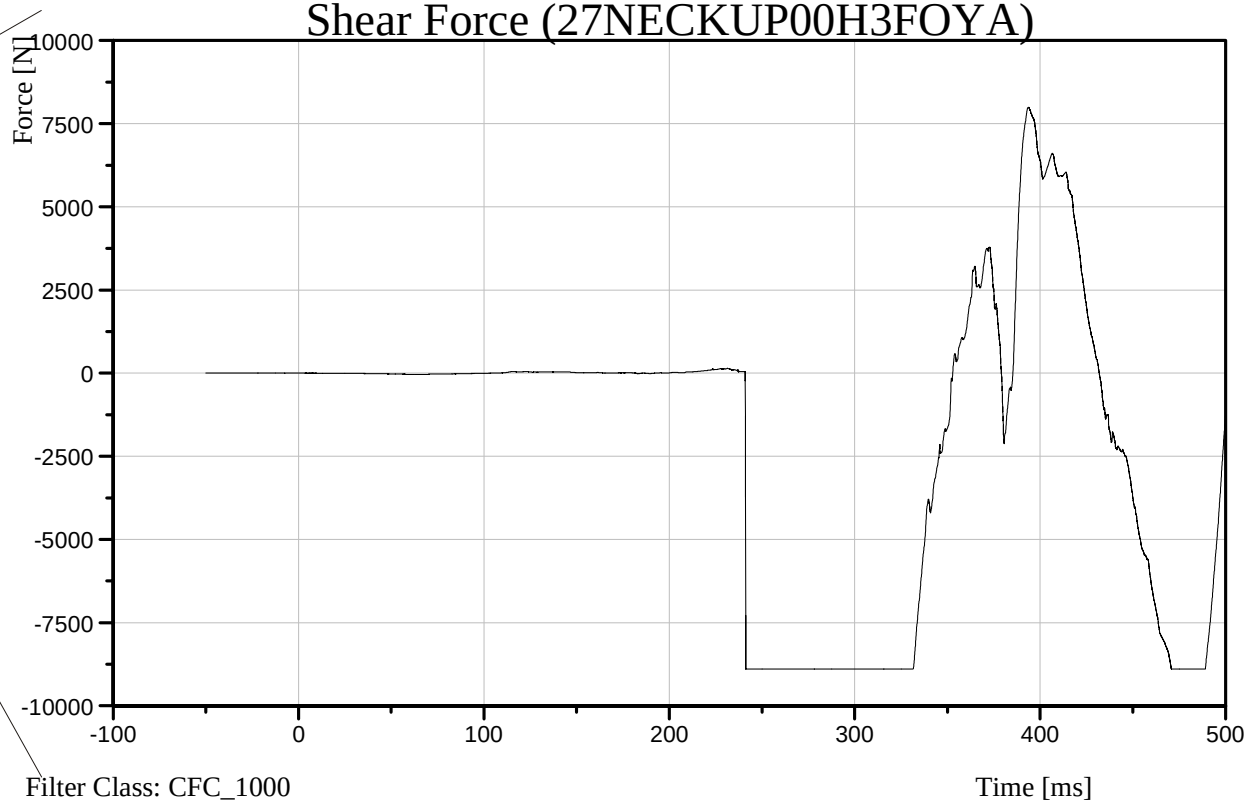
Neck Shear Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Left Side Row 10 Right Seat

[Max.] 7,990.18 N at 393.92 ms
[Min.] -8,894.67 N at 241.28 ms

Neck Shear Force Source Code: Min/Max of 27NECKUP00H3FOYA

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

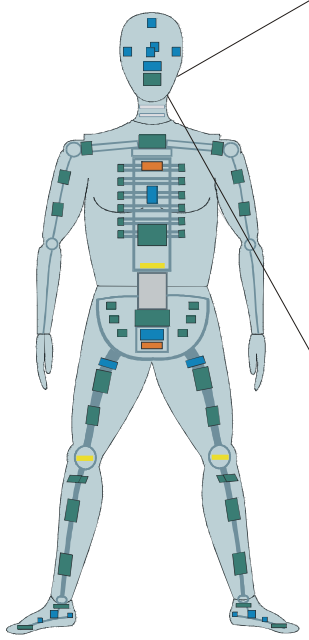
Neck Axial Force

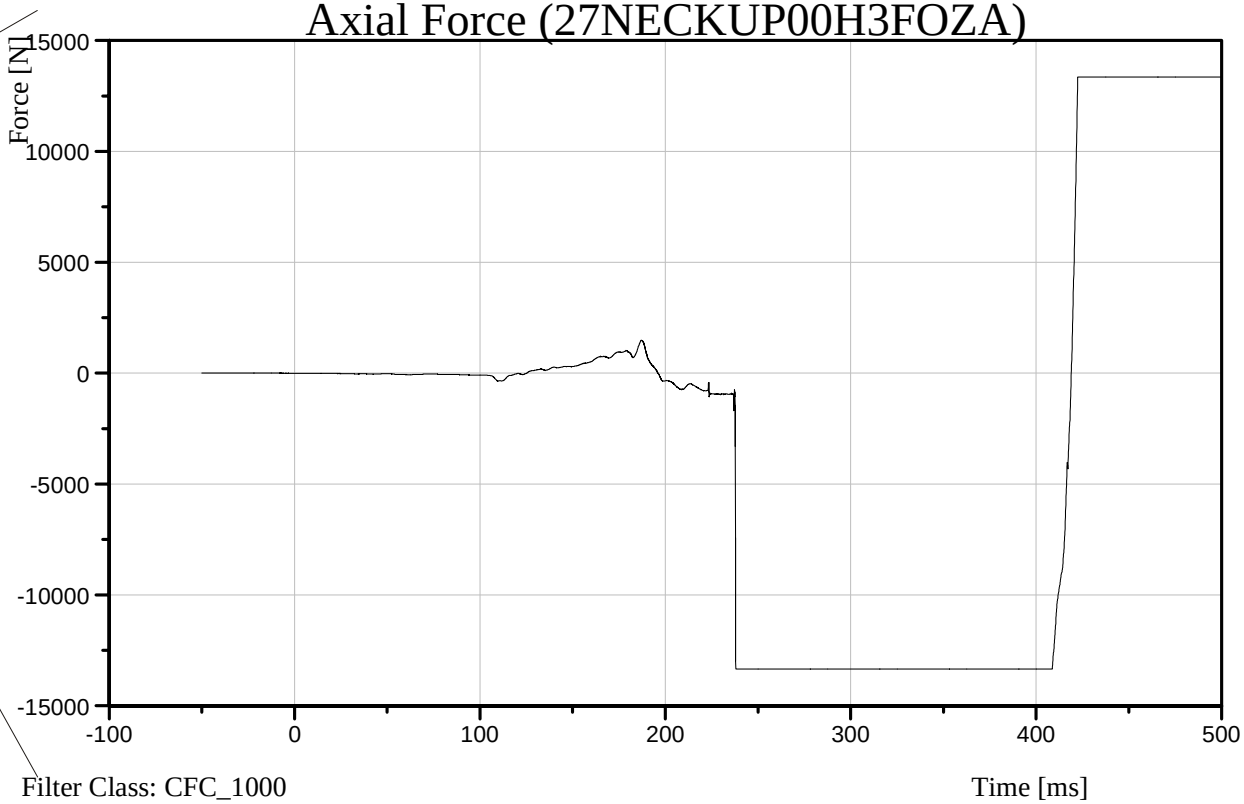
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 50th Male
Seating Position:
Left Side Row 10 Right Seat

[Max.] 13,357.62 N at 422.48 ms
[Min.] -13,335.81 N at 238.00 ms

Neck Axial Force Source Code: Min/Max of 27NECKUP00H3FOZA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

Femur Load

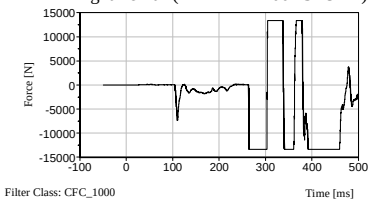
Date: 12/14/2007
Time: 9:12

Customer: VRTC

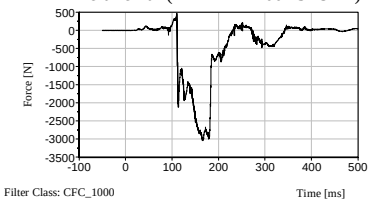
TRC Inc. Test Lab: CTF

Test Number: 071214

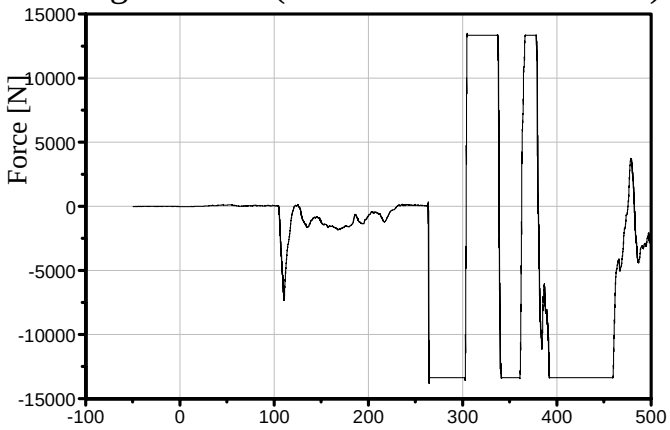
Right Femur (27FEMRRL00H3FOZA)

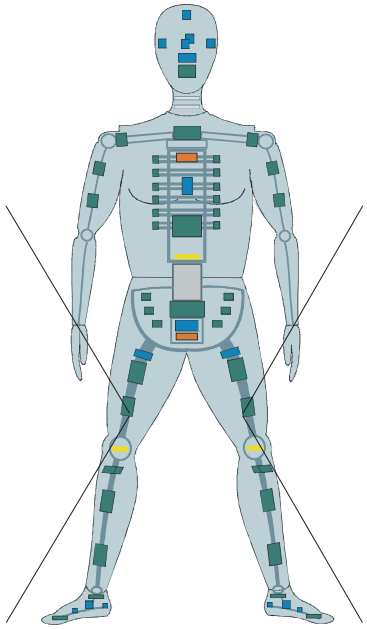


Left Femur (27FEMRLL00H3FOZA)

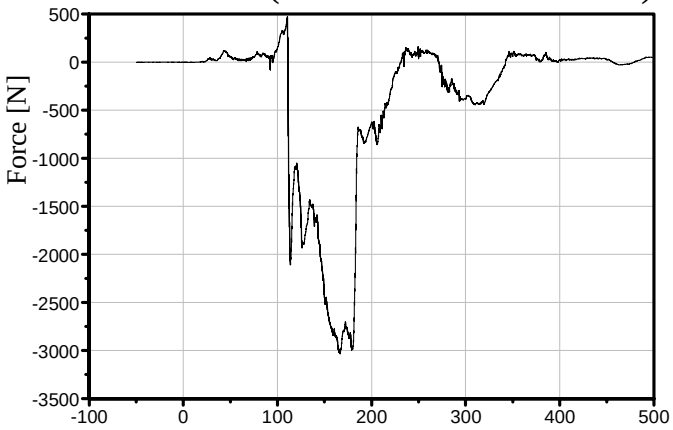


Right Femur (27FEMRRL00H3FOZB)





Left Femur (27FEMRLL00H3FOZB)



Max [Tension] 13,512.64 N at 304.80 ms
Min [Compression] -13,788.75 N at 264.40 ms

Dummy:HIII 50th Male
Seating Position:
Left Side Row 10 Right Seat

Max [Tension] 473.95 N at 110.24 ms
Min [Compression] -3,033.15 N at 166.48 ms

Femur Load Source Code : Min/Max of 27FEMRRL00H3FOZB and 27FEMRLL00H3FOZB (CFC 600)

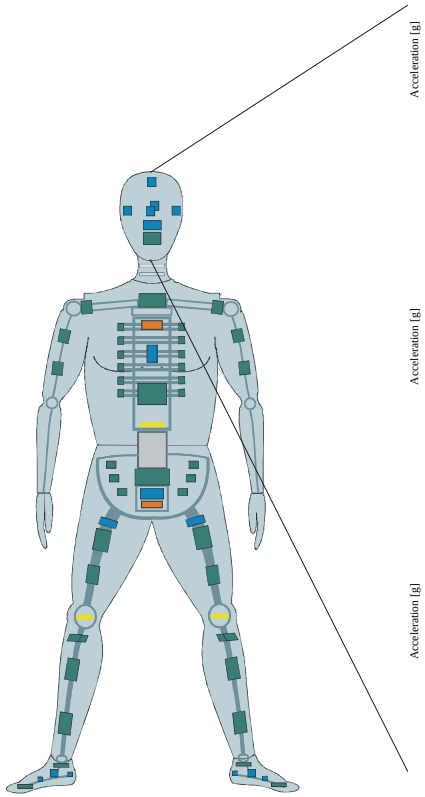
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

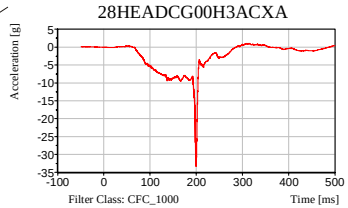
Head Injury Criterion (HIC)

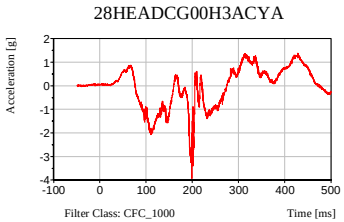
Date: 12/14/2007
Time: 9:12

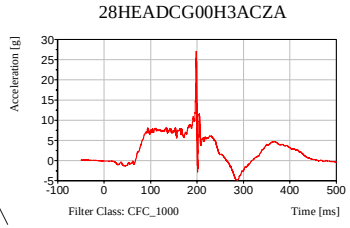
Customer: VRTC

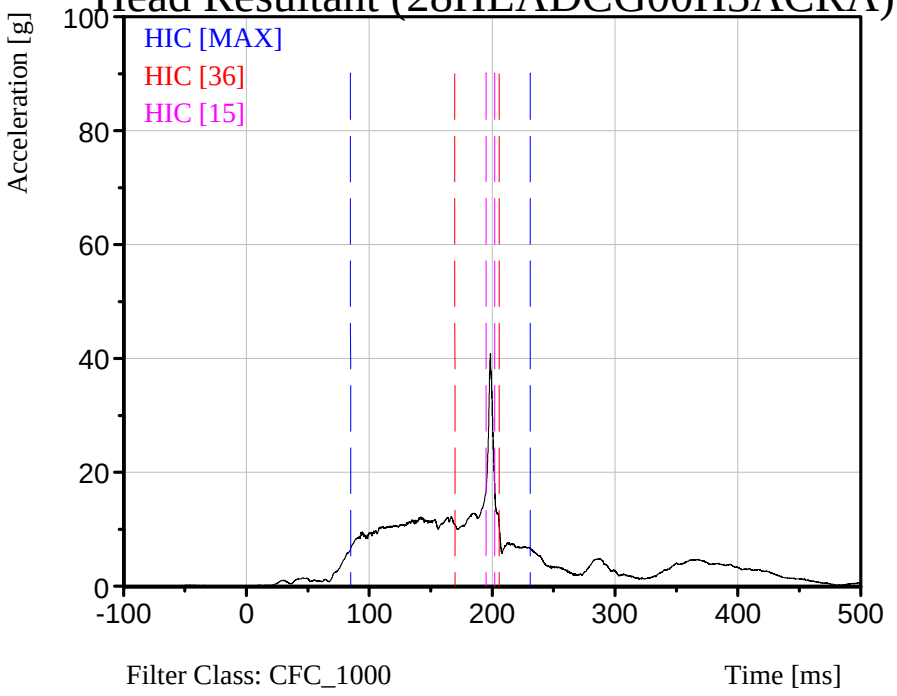
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 59.62	84.88 ms	231.12 ms	11.07 g
HIC [36] = 33.02	169.76 ms	205.76 ms	15.30 g
HIC [15] = 29.57	195.04 ms	202.16 ms	27.89 g

Dummy:HIII 50th Male
Seating Position:
Right Side Row 11 Left Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

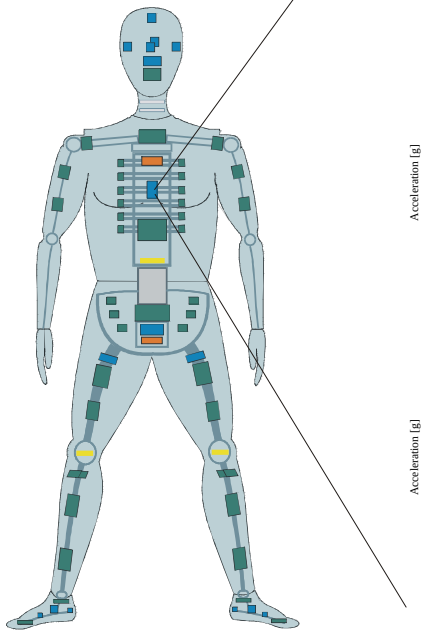
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

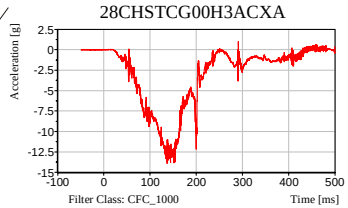
3 ms Duration Acceleration (Chest)

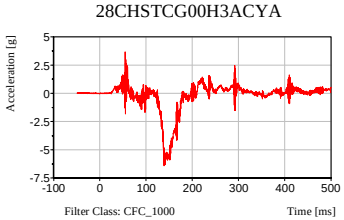
Date: 12/14/2007
Time: 9:12

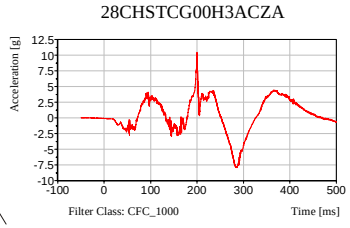
Customer: VRTC

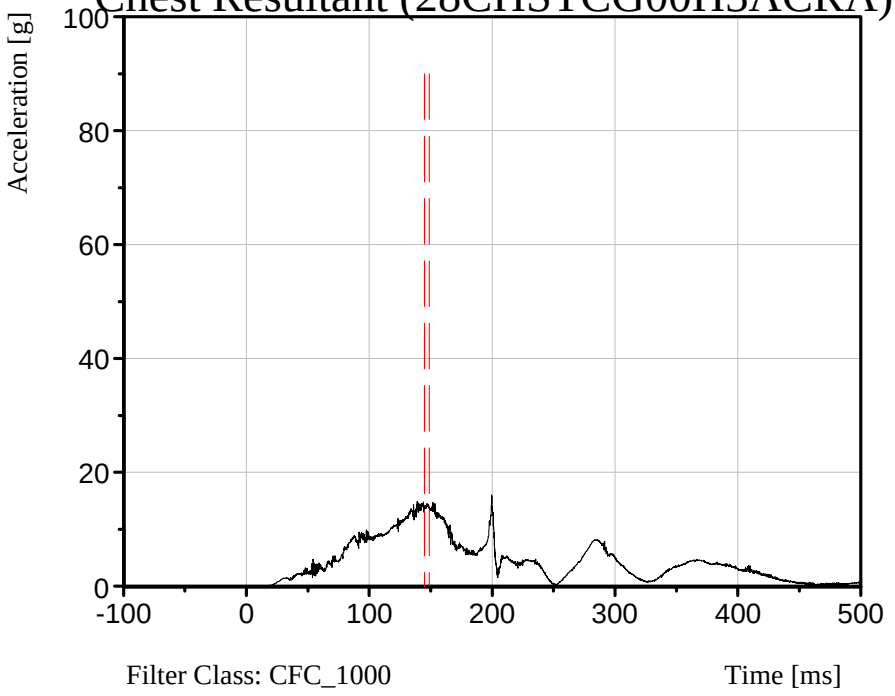
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 13.71 g	145.01 ms	148.98 ms
Chest Severity Index = 49.71		

Dummy:HIII 50th Male
Seating Position:
Right Side Row 11 Left Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

B-152

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

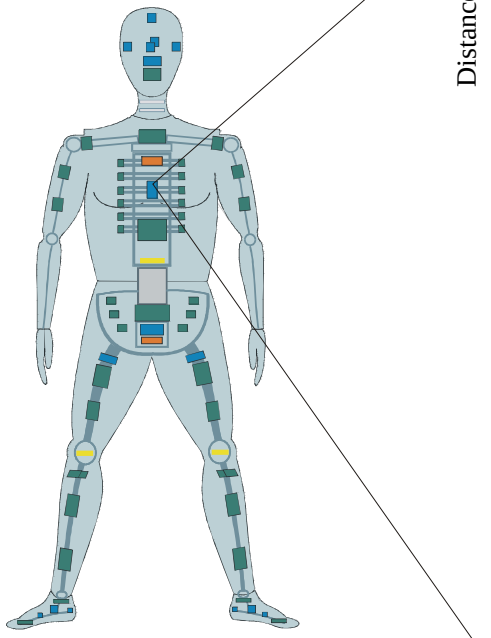
Chest Deflection

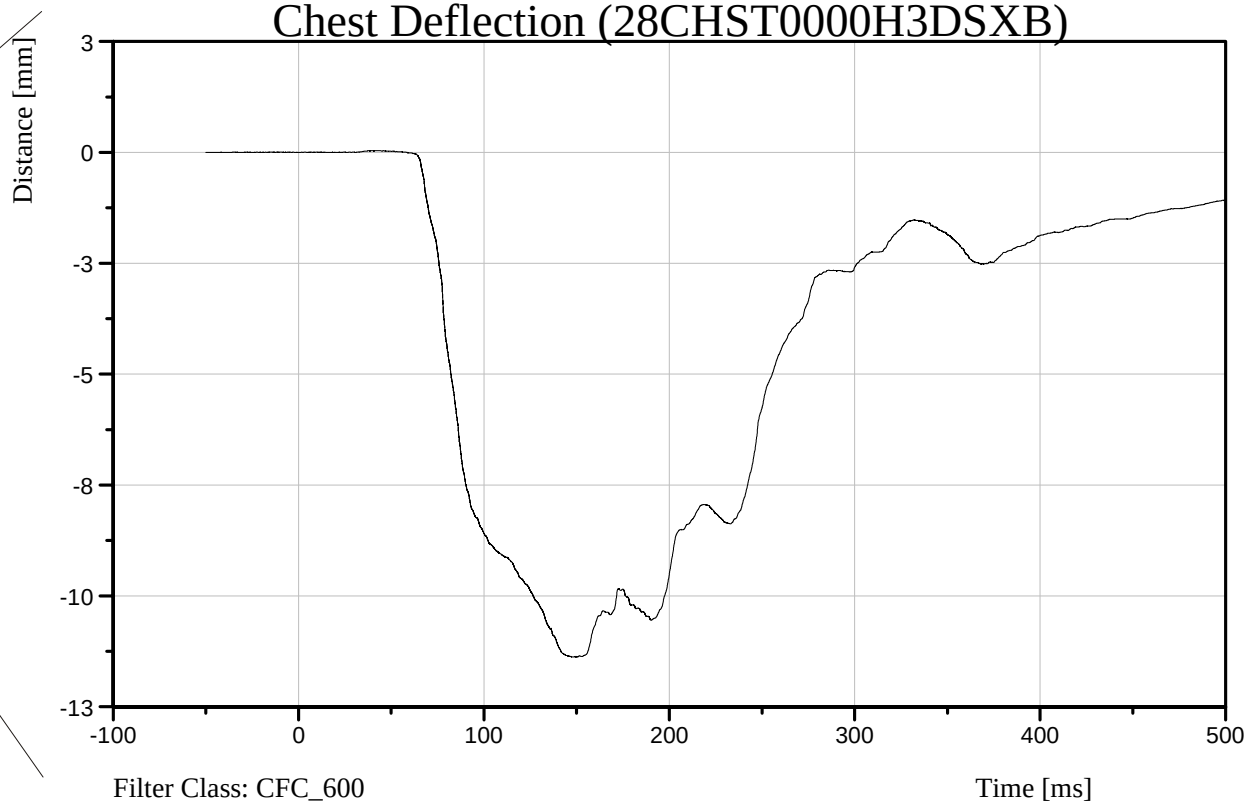
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 50th Male
Seating Position:
Right Side Row 11 Left Seat

[Max.] 0.04 mm at 39.76 ms
[Min.] -11.38 mm at 147.68 ms

ChestDeflection Source Code : Min/Max of 28CHST0000H3DSXB (CFC_600)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph
Neck Moment about the Occipital Condyle (NECK OM)

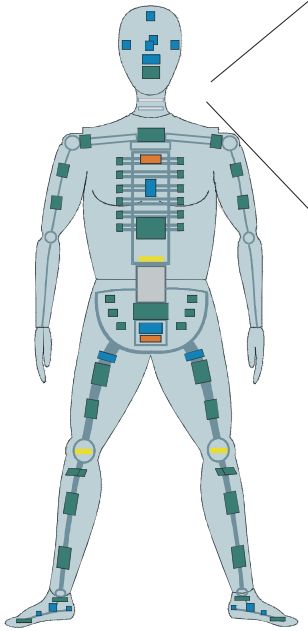
Date: 12/14/2007
Time: 9:12

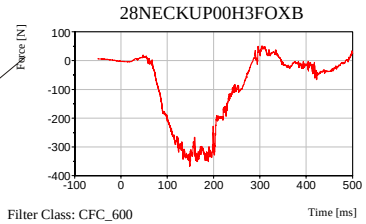
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 071214

Test Orientation = Frontal

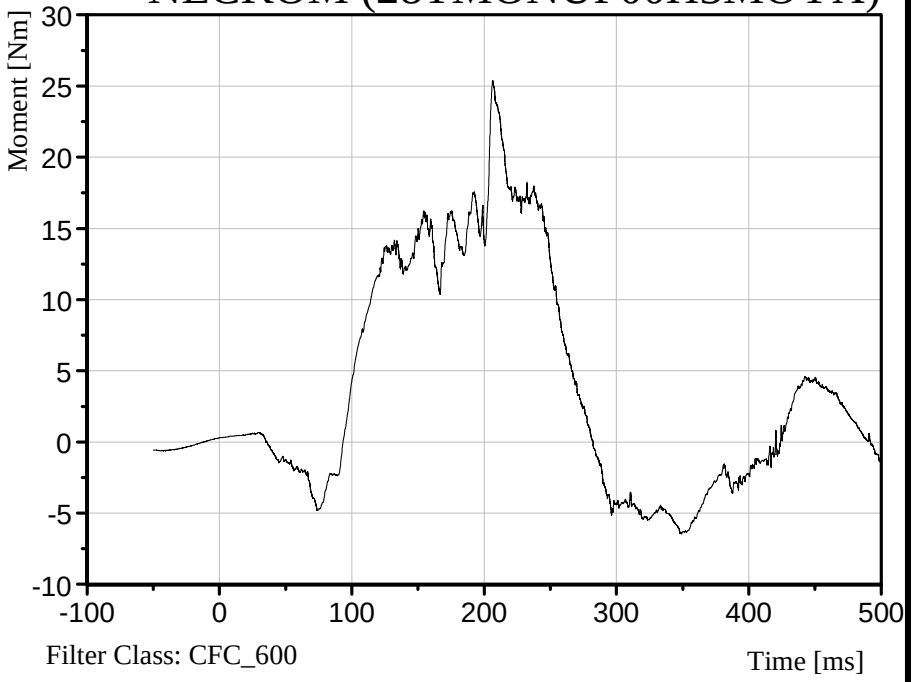




Filter Class: CFC_600

Filter Class: CFC_600

NECKOM (28TMONUP00H3MOYX)



Filter Class: CFC_600

Dummy:HIII 50th Male
Seating Position:
Right Side Row 11 Left Seat

Neck OM Source Code: My - (D*Fx)

[Max.] 25.40 Nm at 206.48 ms
[Min.] -6.43 Nm at 349.28 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

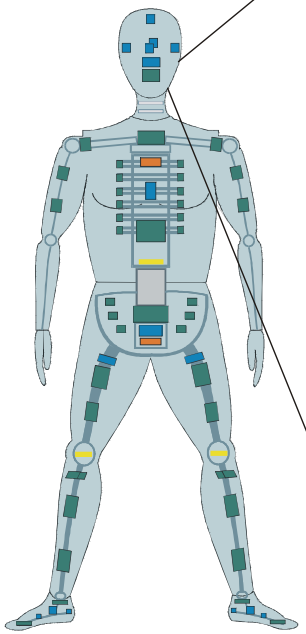
Neck Injury Predictor (NIJ)

Date: 12/14/2007
Time: 9:12

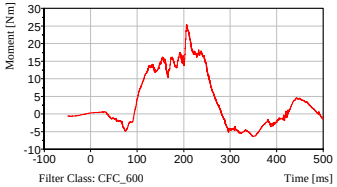
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

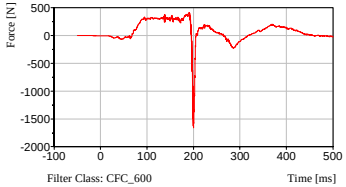
Test Orientation = Frontal
Fzc(Tension) = 6806
Fzc(Compression) = 6160
Myc(Extension) = 135
Myc(Flexion) = 310



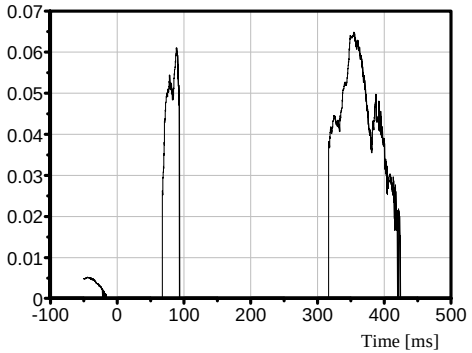
28TMONUP00H3MOYX



28NECKUP00H3FOZB

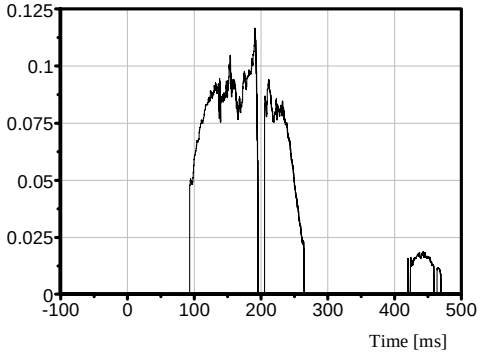


28NIJCUPTEH300YX



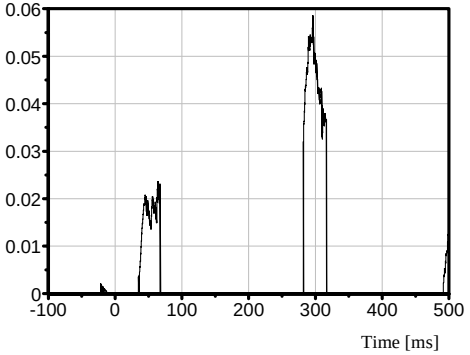
Max [NTE] 0.0648 at 354.72 ms

28NIJCUPTFH300YX



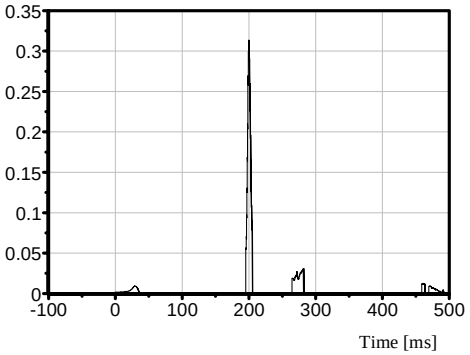
Max [NTF] 0.1168 at 191.28 ms

28NIJCUPCEH300YX



Max [NCE] 0.0586 at 296.32 ms

28NIJCUPCFH300YX



Max [NCF] 0.3140 at 200.16 ms

Dummy:HIII 50th Male
Seating Position:
Right Side Row 11 Left Seat

NIJ Source Code: (Fz/Fzc)+(My/Myc)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

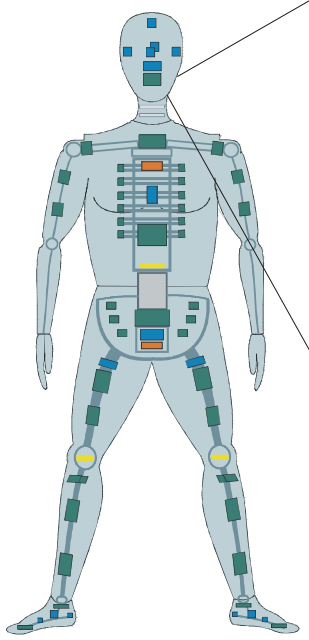
Neck Shear Force

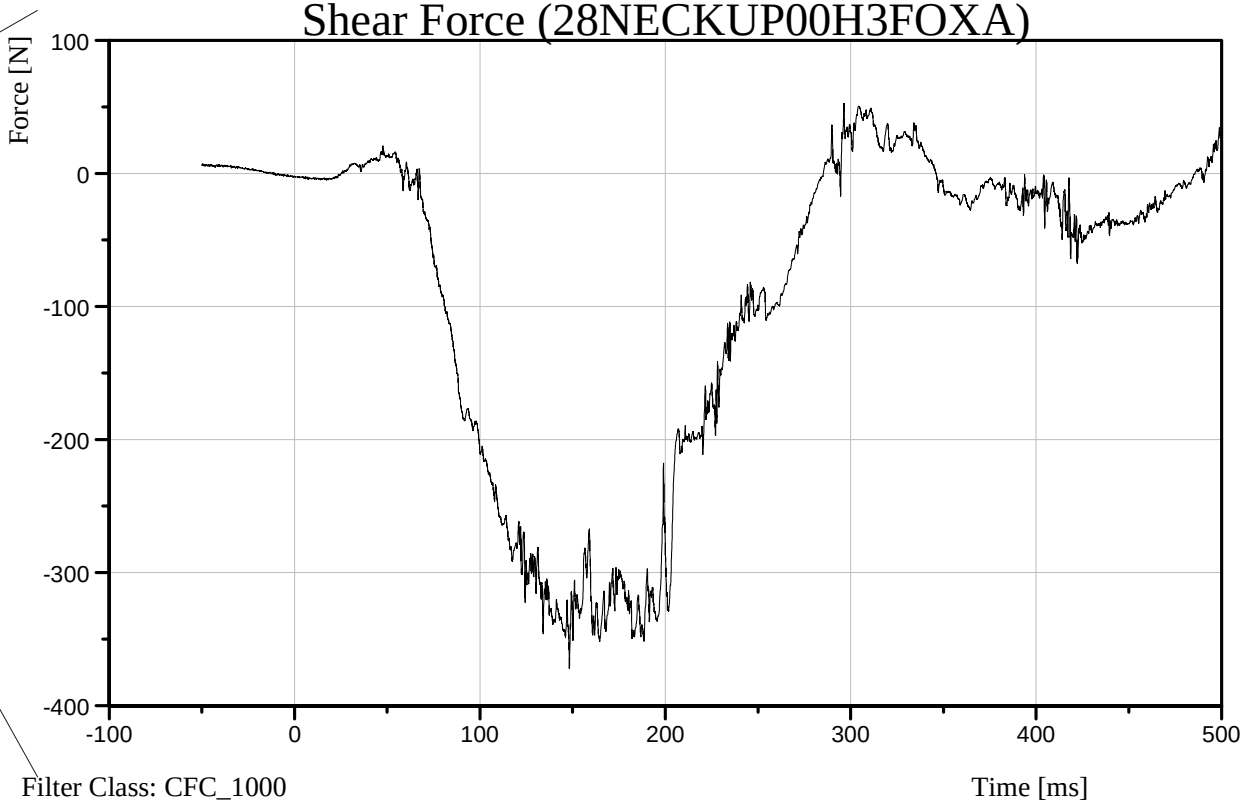
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 50th Male
Seating Position:
Right Side Row 11 Left Seat

[Max.] 52.81 N at 296.32 ms
[Min.] -371.52 N at 148.32 ms

Neck Shear Force Source Code: Min/Max of 28NECKUP00H3FOXA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

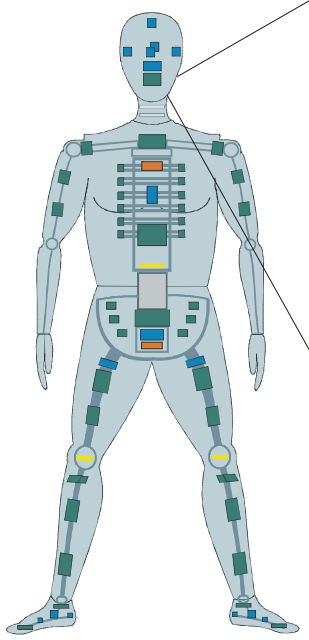
Date: 12/14/2007
Time: 9:12

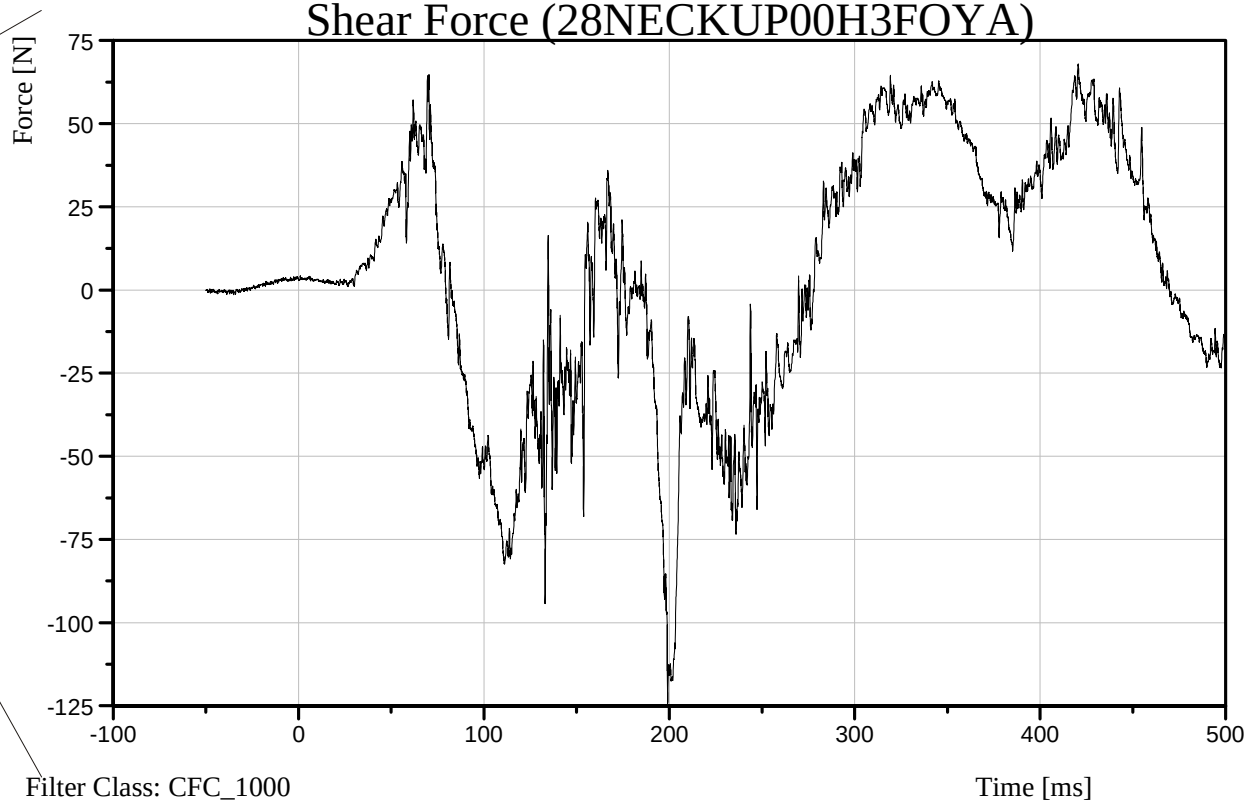
Neck Shear Force

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 50th Male
Seating Position:
Right Side Row 11 Left Seat

[Max.] 67.93 N at 420.56 ms
[Min.] -124.34 N at 199.12 ms

Neck Shear Force Source Code: Min/Max of 28NECKUP00H3FOYA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

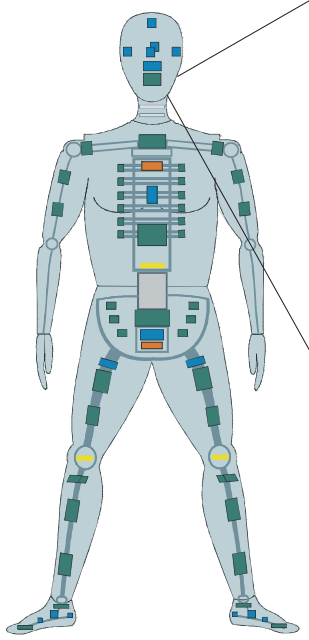
Neck Axial Force

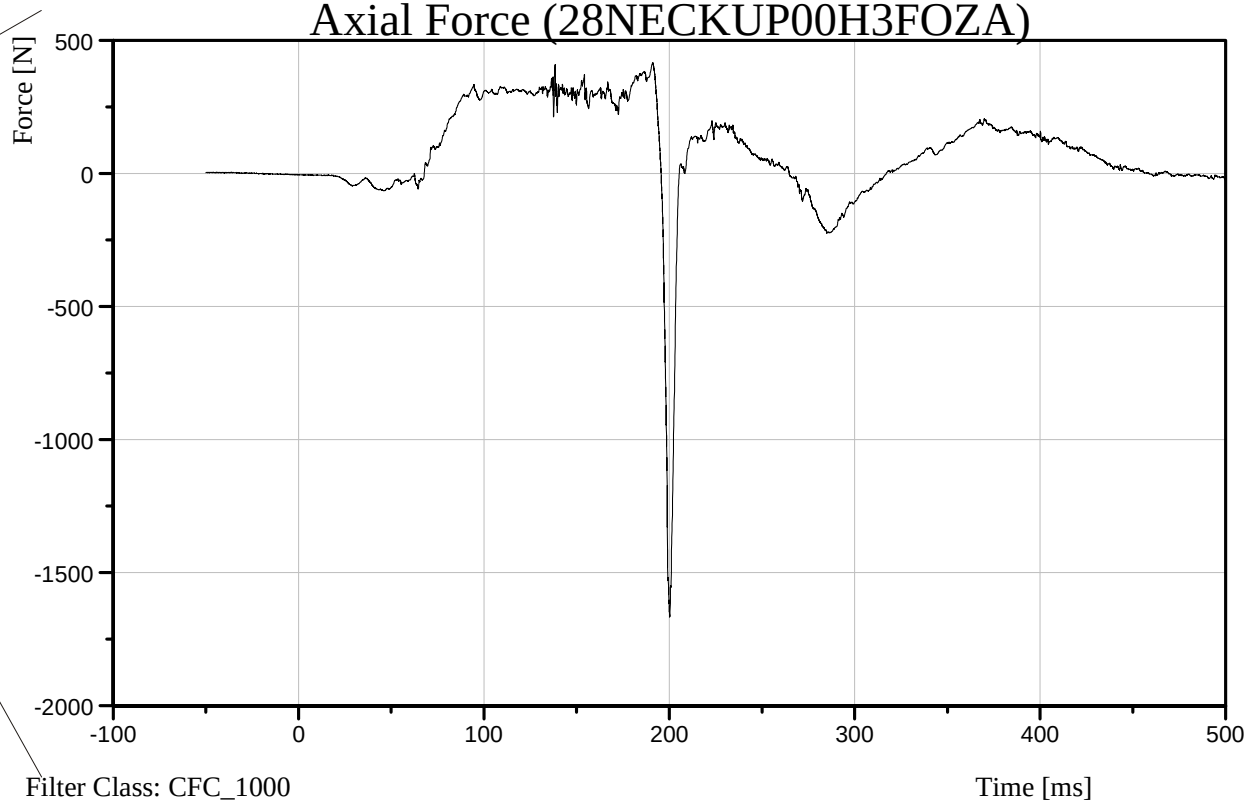
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 50th Male
Seating Position:
Right Side Row 11 Left Seat

[Max.] 416.26 N at 191.04 ms
[Min.] -1,665.74 N at 200.24 ms

Neck Axial Force Source Code: Min/Max of 28NECKUP00H3FOZA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

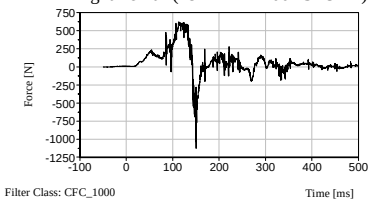
Femur Load

Date: 12/14/2007
Time: 9:12

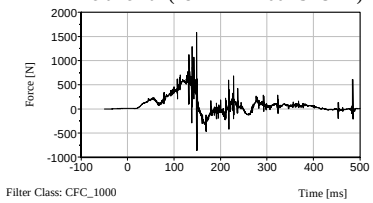
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

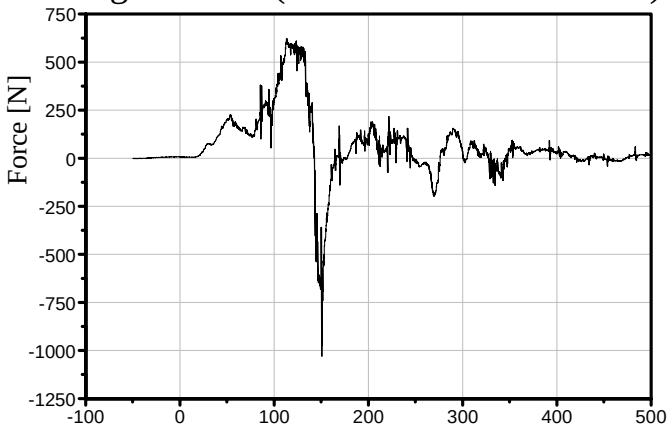
Right Femur (28FEMRRL00H3FOZA)

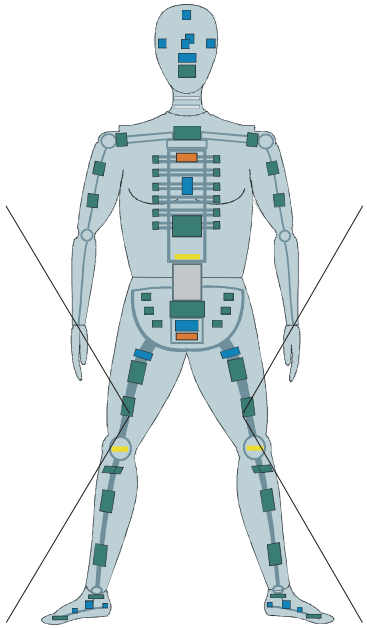


Left Femur (28FEMRLL00H3FOZA)

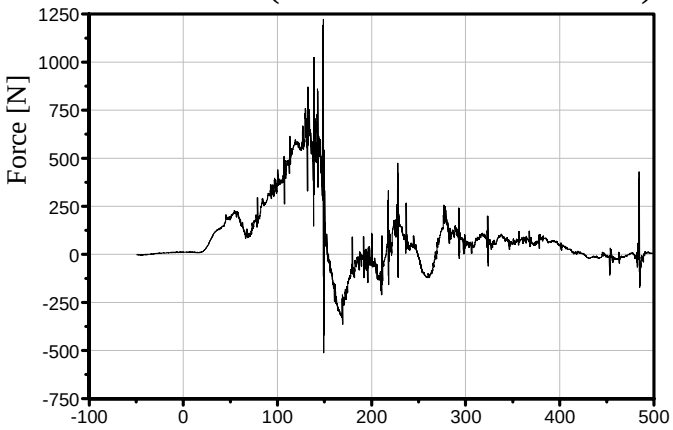


Right Femur (28FEMRRL00H3FOZB)





Left Femur (28FEMRLL00H3FOZB)



Max [Tension] 623.46 N at 113.36 ms
Min [Compression] -1,029.47 N at 150.64 ms

Dummy:HIII 50th Male
Seating Position:
Right Side Row 11 Left Seat

Max [Tension] 1,224.33 N at 148.56 ms
Min [Compression] -511.35 N at 149.04 ms

Femur Load Source Code : Min/Max of 28FEMRRL00H3FOZB and 28FEMRLL00H3FOZB (CFC 600)

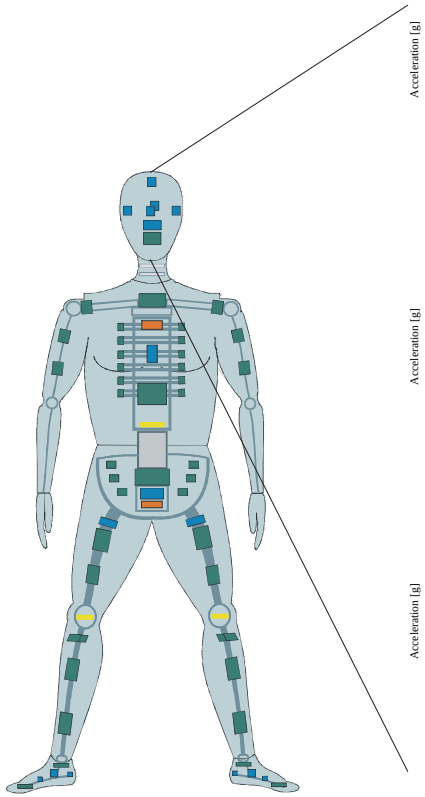
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

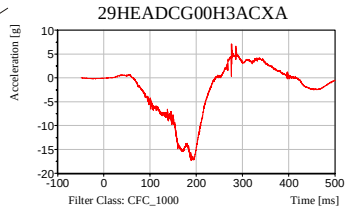
Head Injury Criterion (HIC)

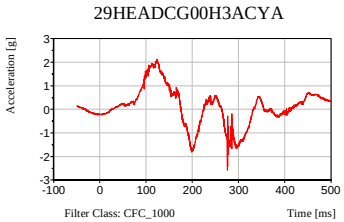
Date: 12/14/2007
Time: 9:12

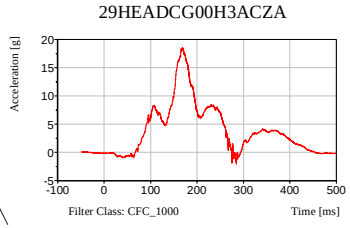
Customer: VRTC

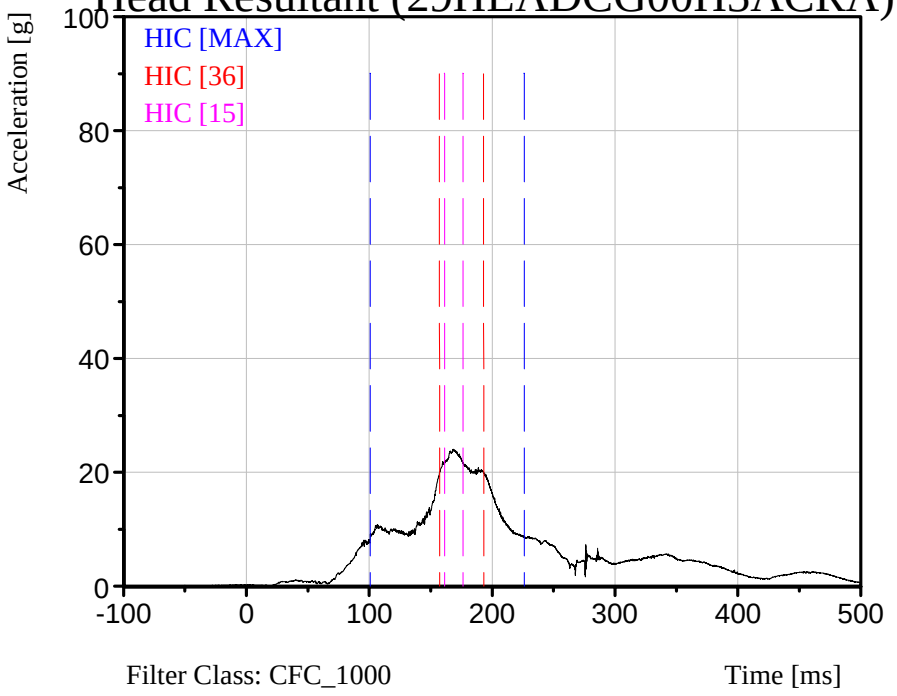
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 99.88	100.80 ms	226.24 ms	14.46 g
HIC [36] = 77.89	157.28 ms	193.28 ms	21.58 g
HIC [15] = 38.08	161.36 ms	176.40 ms	22.98 g

Dummy:HIII 50th Male
Seating Position:
Right Side Row 11 Right Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

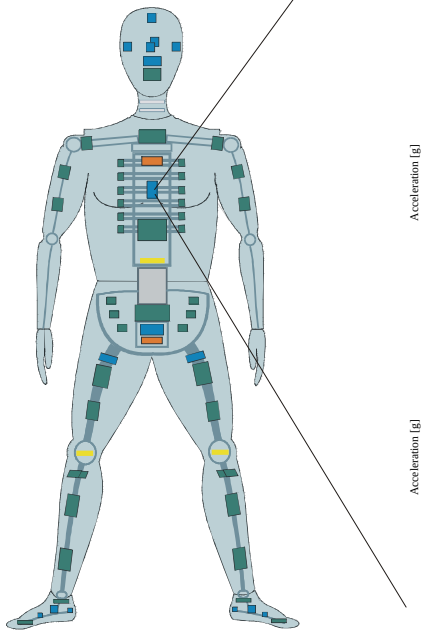
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

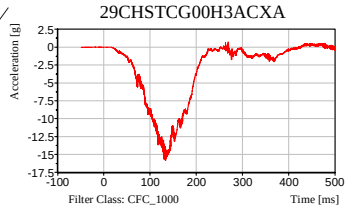
3 ms Duration Acceleration (Chest)

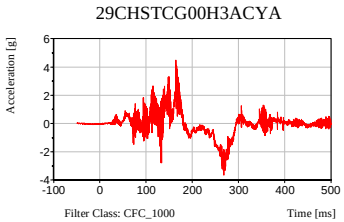
Date: 12/14/2007
Time: 9:12

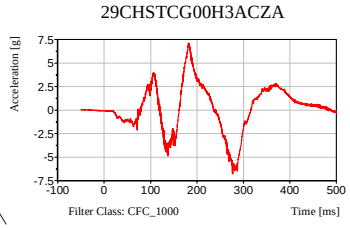
Customer: VRTC

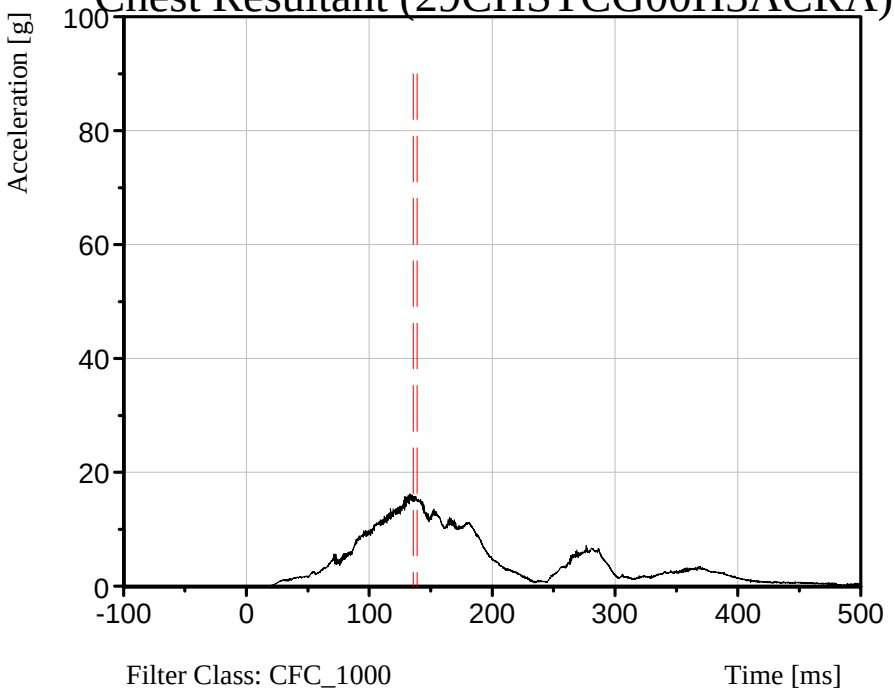
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 14.98 g	135.80 ms	139.03 ms
Chest Severity Index = 56.80		

Dummy:HIII 50th Male
Seating Position:
Right Side Row 11 Right Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

B-161

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

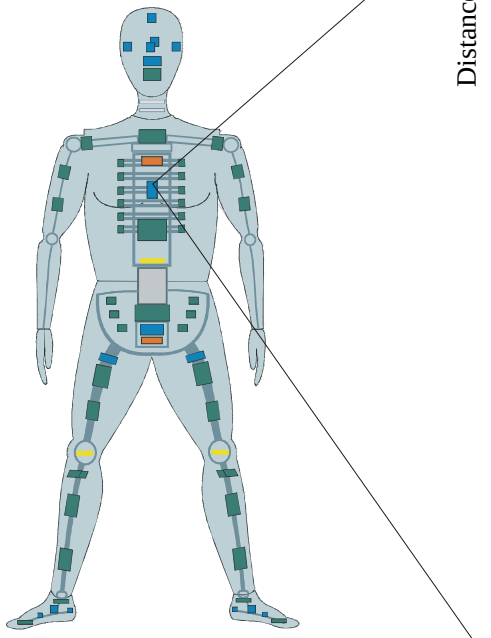
Chest Deflection

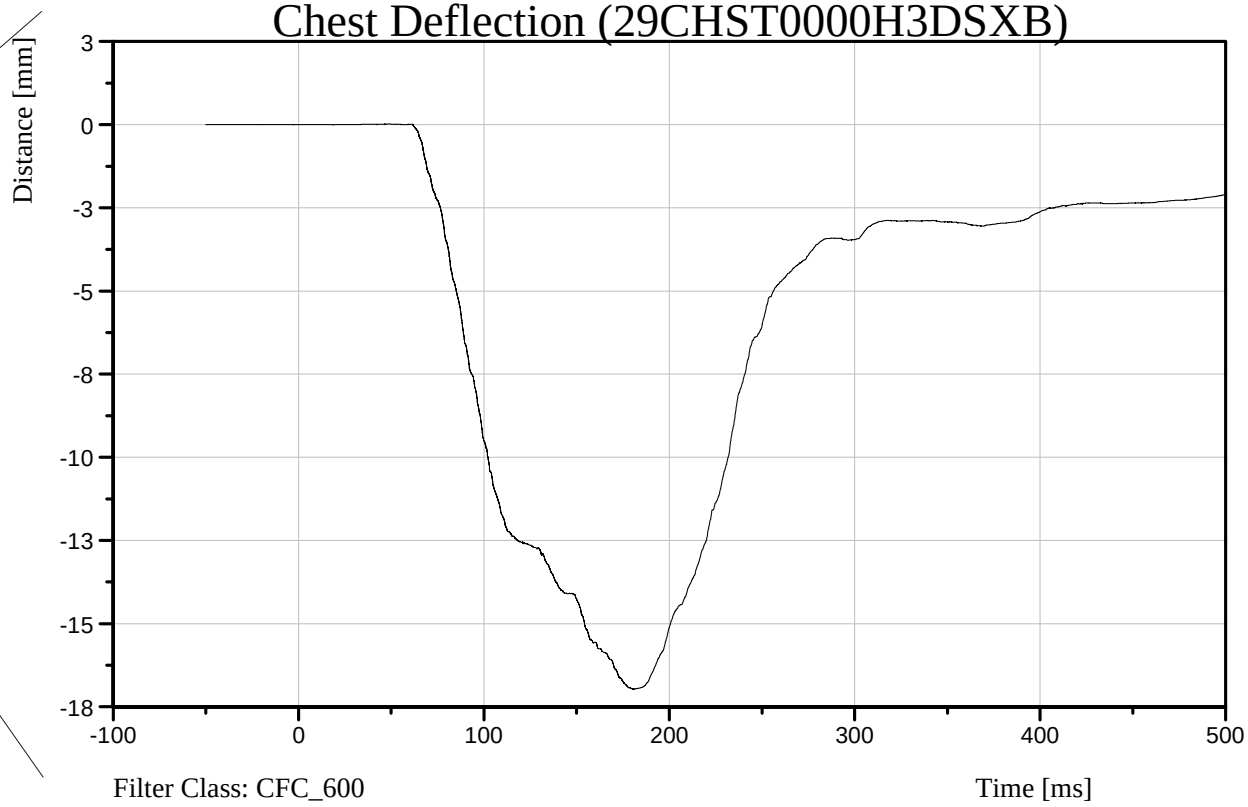
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 50th Male
Seating Position:
Right Side Row 11 Right Seat

[Max.] 0.02 mm at 48.56 ms
[Min.] -16.97 mm at 181.20 ms

ChestDeflection Source Code : Min/Max of 29CHST0000H3DSXB (CFC_600)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph
Neck Moment about the Occipital Condyle (NECK OM)

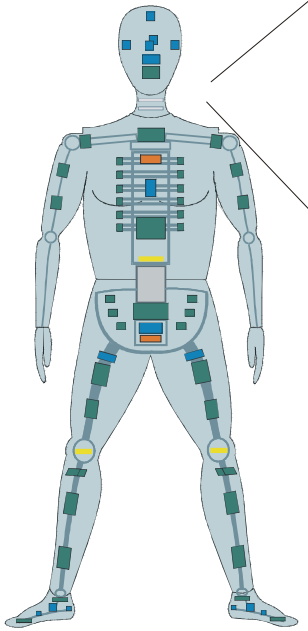
Date: 12/14/2007
Time: 9:12

Customer: VRTC

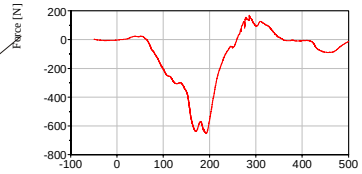
TRC Inc. Test Lab: CTF

Test Number: 071214

Test Orientation = Frontal

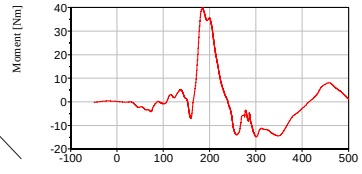


29NECKUP00H3FOXB



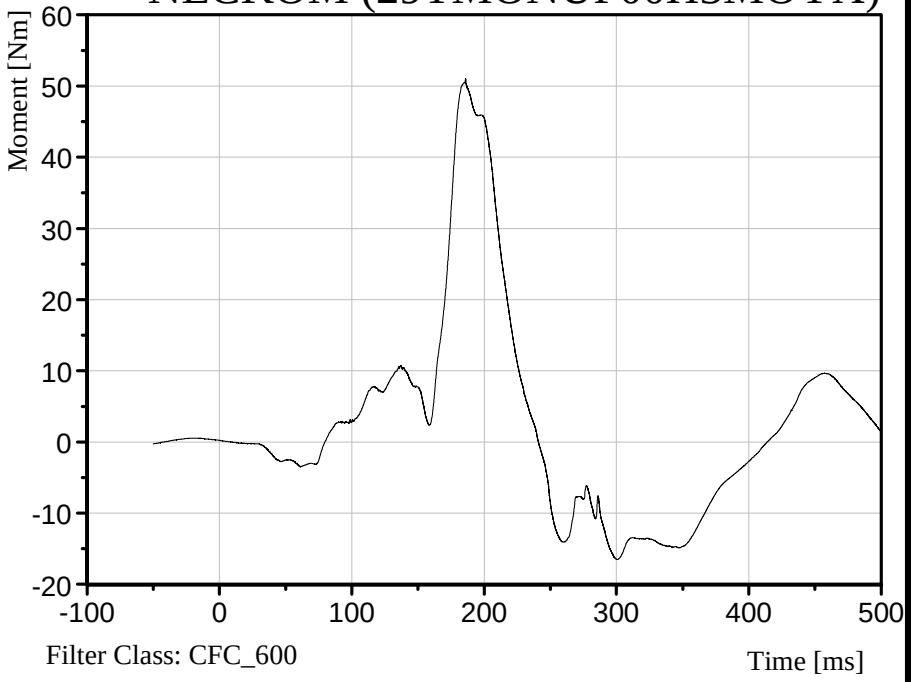
Filter Class: CFC_600

29NECKUP00H3MOYB



Filter Class: CFC_600

NECKOM (29TMONUP00H3MOYX)



Filter Class: CFC_600

Dummy:HIII 50th Male
Seating Position:
Right Side Row 11 Right Seat

[Max.] 51.05 Nm at 186.00 ms
[Min.] -16.49 Nm at 300.56 ms

Neck OM Source Code: My - (D*Fx)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

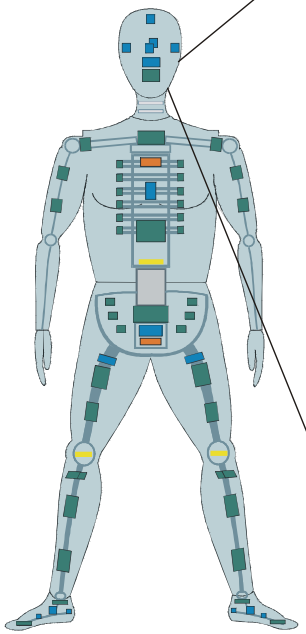
Neck Injury Predictor (NIJ)

Date: 12/14/2007
Time: 9:12

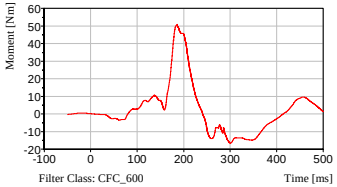
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal
Fzc(Tension) = 6806
Fzc(Compression) = 6160
Myc(Extension) = 135
Myc(Flexion) = 310

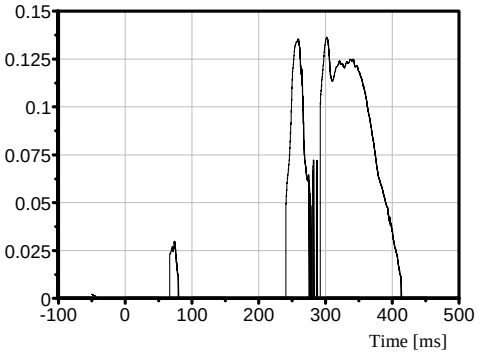


29TMONUP00H3MOYX



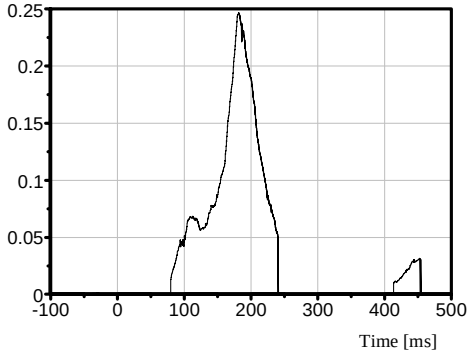
29NECKUP00H3FOZB

29NIJCUPTEH300YX



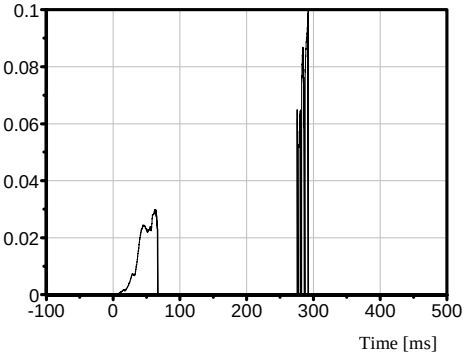
Max [NTE] 0.1364 at 302.08 ms

29NIJCUPTFH300YX



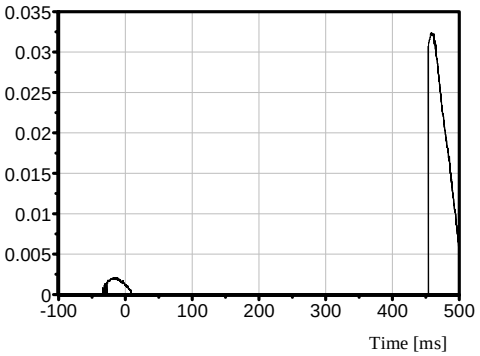
Max [NTF] 0.2467 at 181.76 ms

29NIJCUPCEH300YX



Max [NCE] 0.0997 at 292.40 ms

29NIJCUPCFH300YX



Max [NCF] 0.0324 at 458.32 ms

Dummy:HIII 50th Male
Seating Position:
Right Side Row 11 Right Seat

NIJ Source Code: (Fz/Fzc)+(My/Myc)

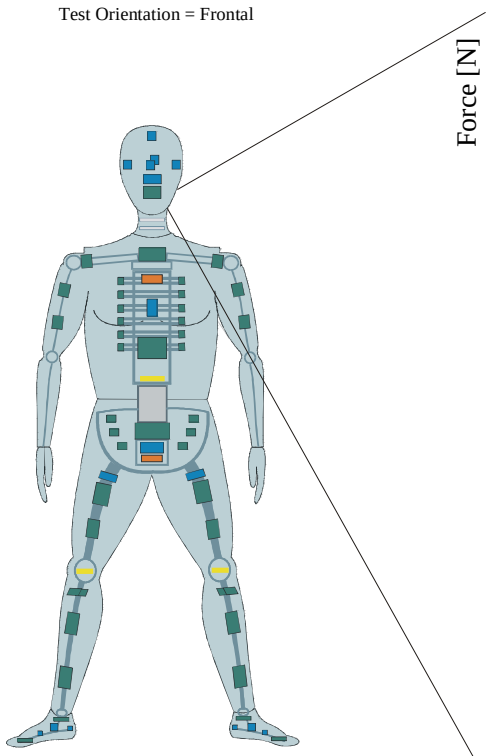
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

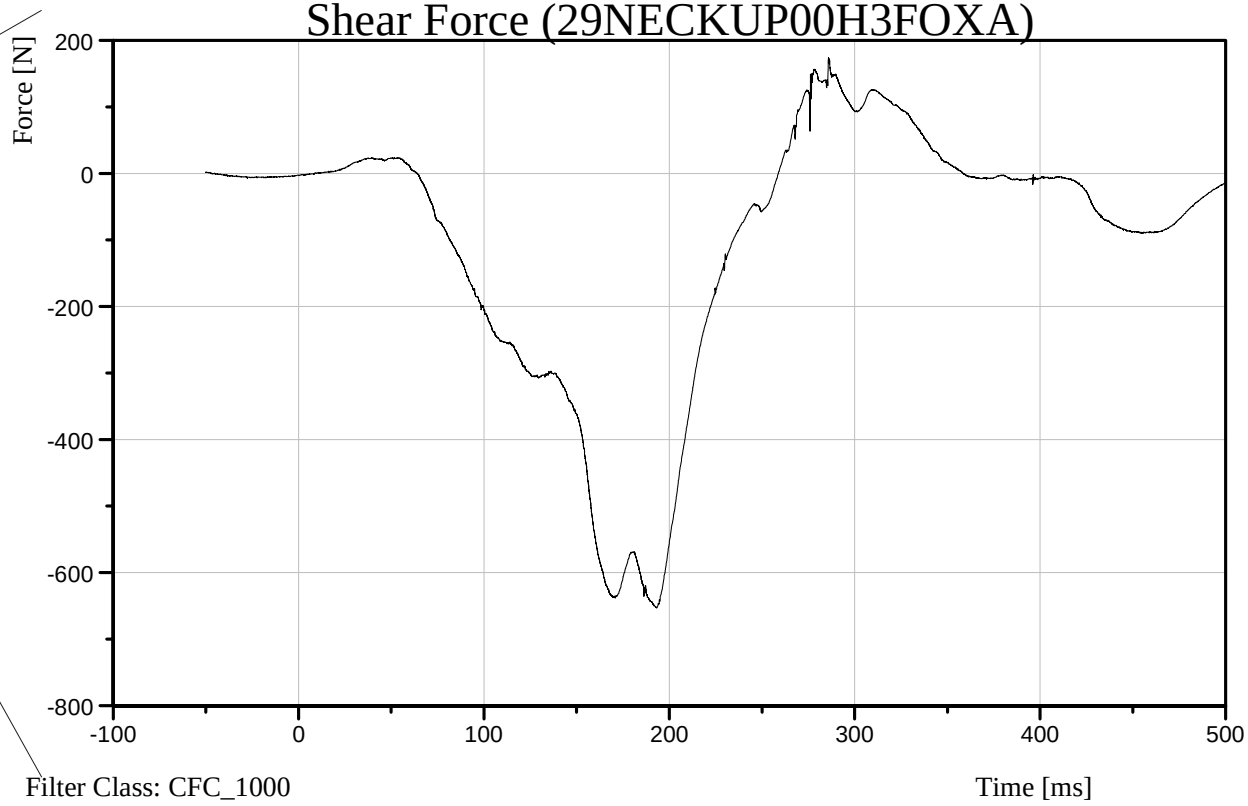
Neck Shear Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Right Side Row 11 Right Seat

[Max.] 174.02 N at 285.84 ms
[Min.] -652.85 N at 193.28 ms

Neck Shear Force Source Code: Min/Max of 29NECKUP00H3FOXA

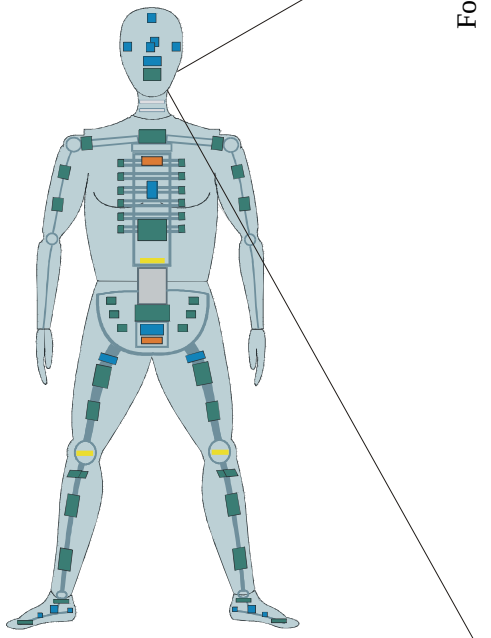
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

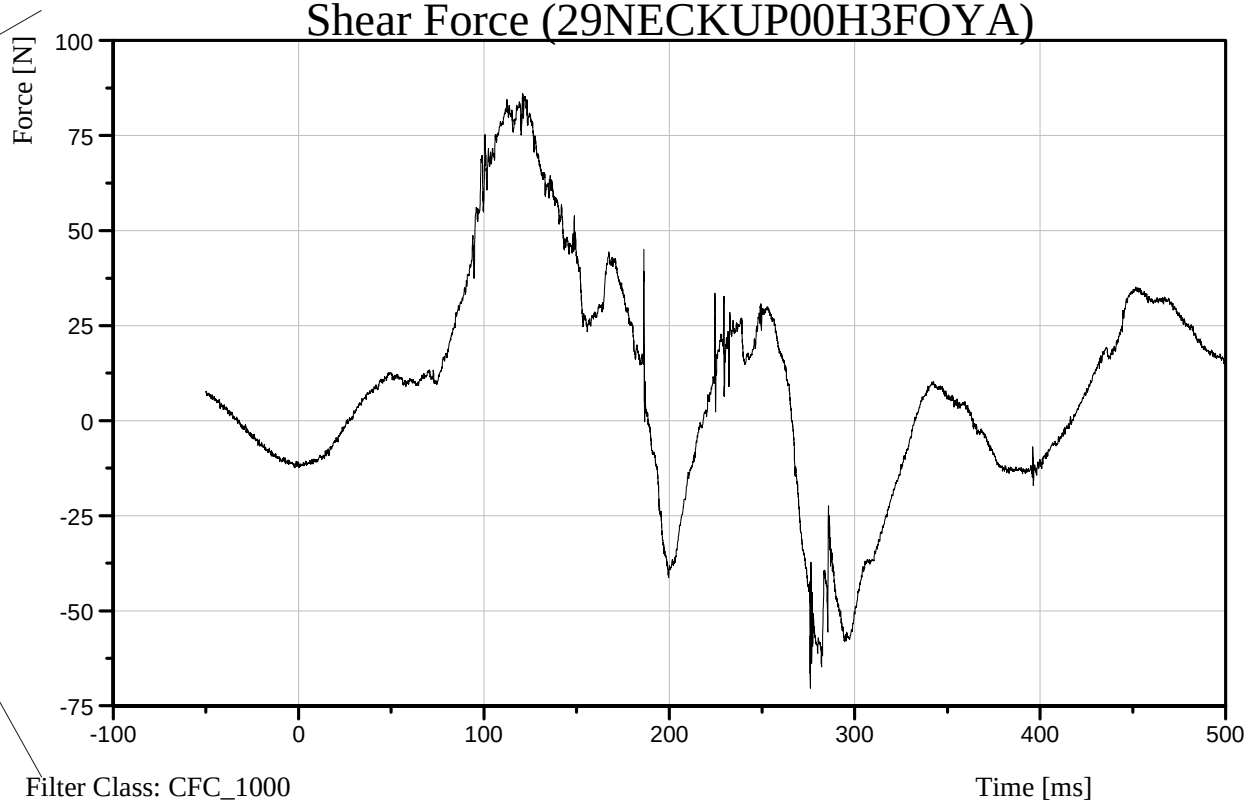
Neck Shear Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Right Side Row 11 Right Seat

[Max.] 86.10 N at 120.88 ms
[Min.] -70.35 N at 276.08 ms

Neck Shear Force Source Code: Min/Max of 29NECKUP00H3FOYA

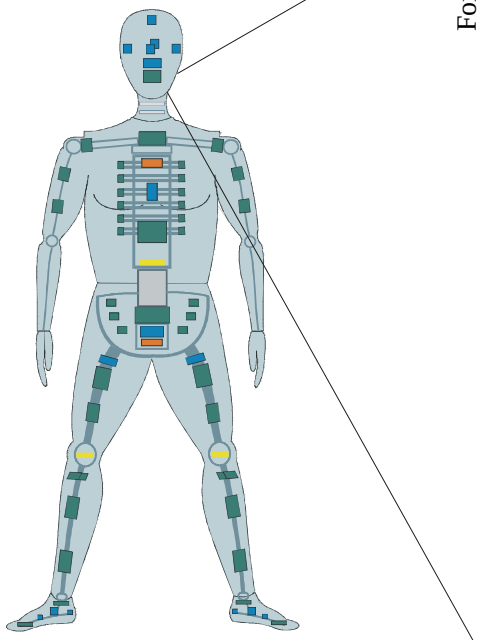
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

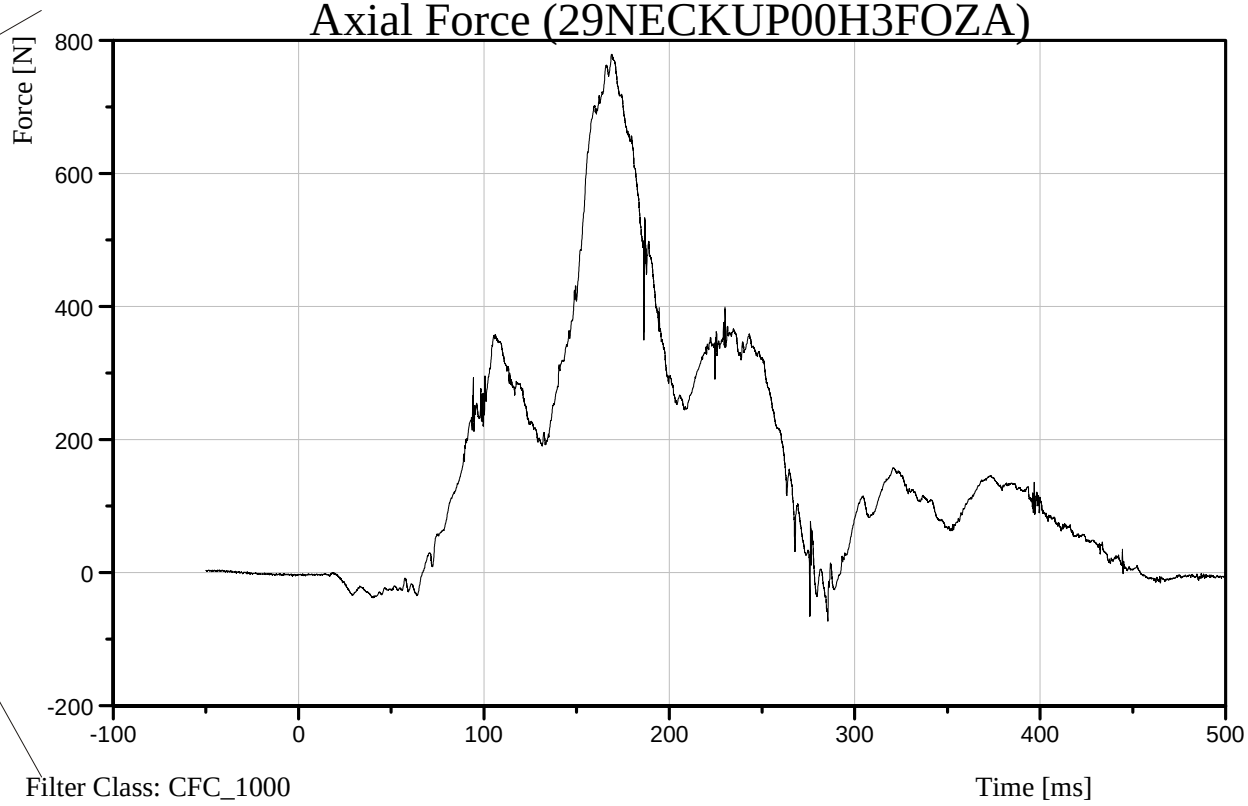
Neck Axial Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Right Side Row 11 Right Seat

[Max.] 779.16 N at 168.96 ms
[Min.] -72.42 N at 285.52 ms

Neck Axial Force Source Code: Min/Max of 29NECKUP00H3FOZA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

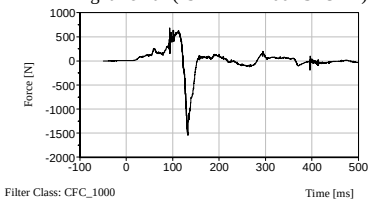
Femur Load

Date: 12/14/2007
Time: 9:12

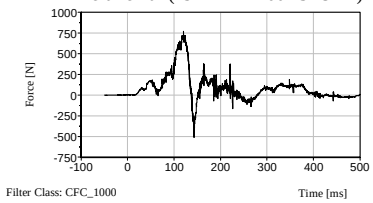
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

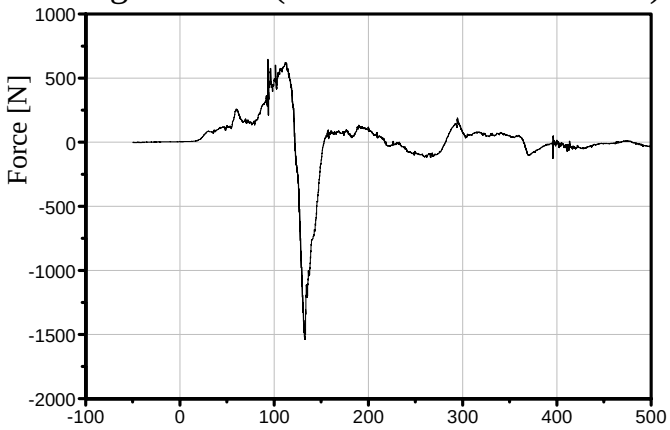
Right Femur (29FEMRRL00H3FOZA)

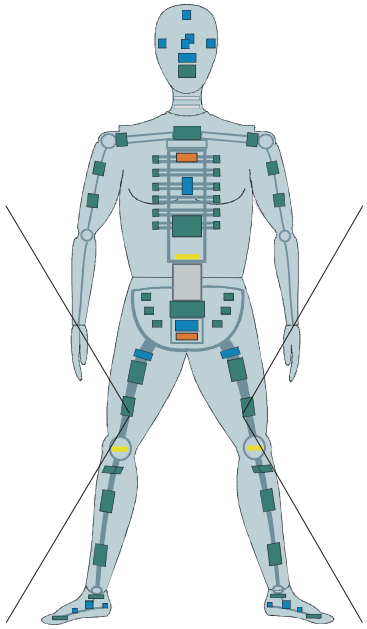


Left Femur (29FEMRLL00H3FOZA)

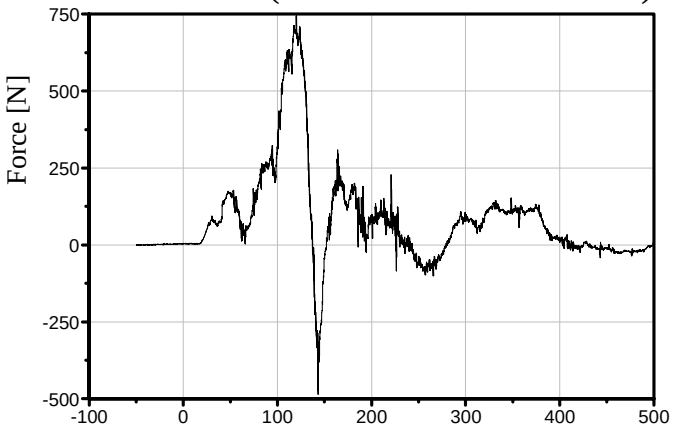


Right Femur (29FEMRRL00H3FOZB)





Left Femur (29FEMRLL00H3FOZB)



Max [Tension] 649.09 N at 93.44 ms
Min [Compression] -1,537.98 N at 132.80 ms

Dummy:HIII 50th Male
Seating Position:
Right Side Row 11 Right Seat

Max [Tension] 745.23 N at 120.00 ms
Min [Compression] -485.96 N at 143.04 ms

Femur Load Source Code : Min/Max of 29FEMRRL00H3FOZB and 29FEMRLL00H3FOZB (CFC 600)

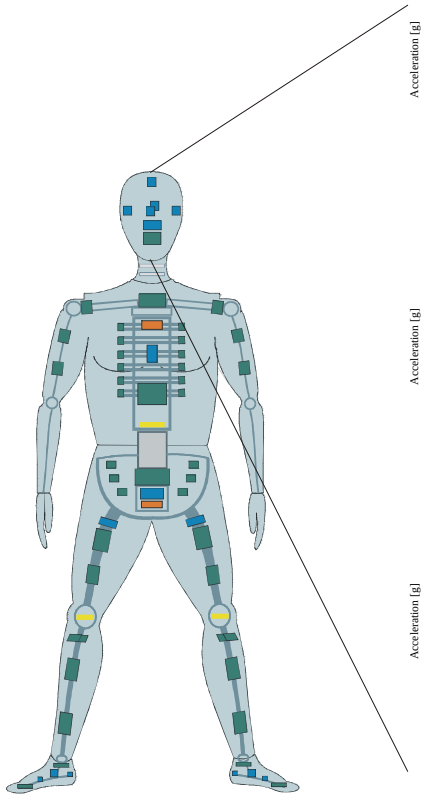
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

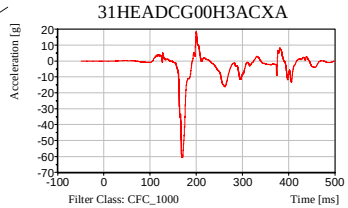
Head Injury Criterion (HIC)

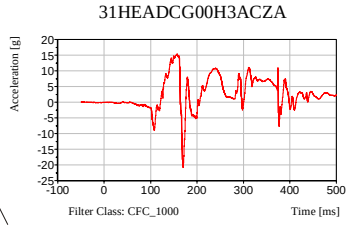
Date: 12/14/2007
Time: 9:12

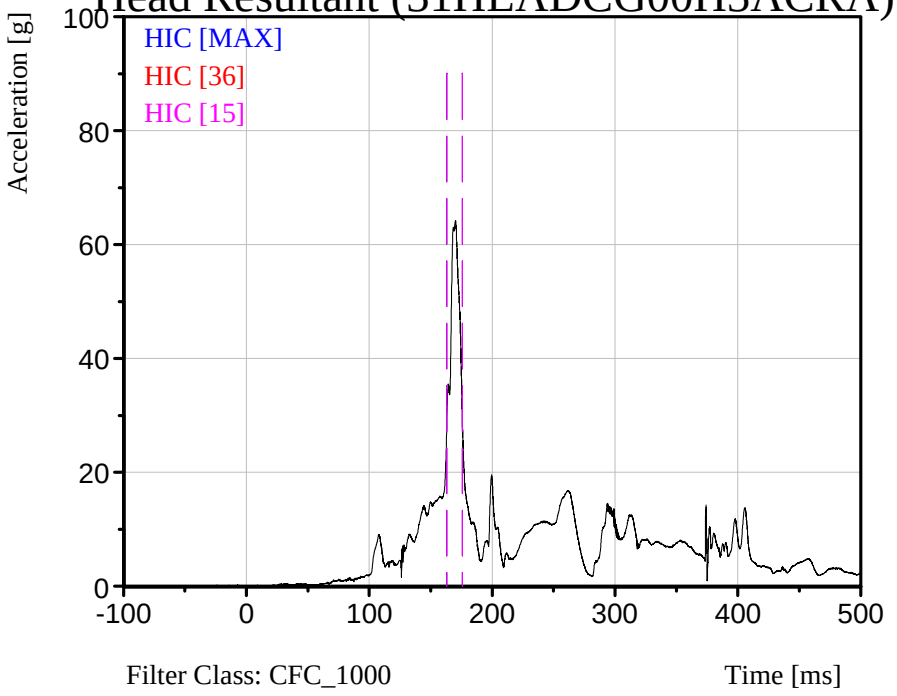
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214









	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 209.65	163.20 ms	175.76 ms	48.74 g
HIC [36] = 209.65	163.20 ms	175.76 ms	48.74 g
HIC [15] = 209.65	163.20 ms	175.76 ms	48.74 g

Dummy:HIII 50th Male
Seating Position:
Left Side Row 12 Left Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

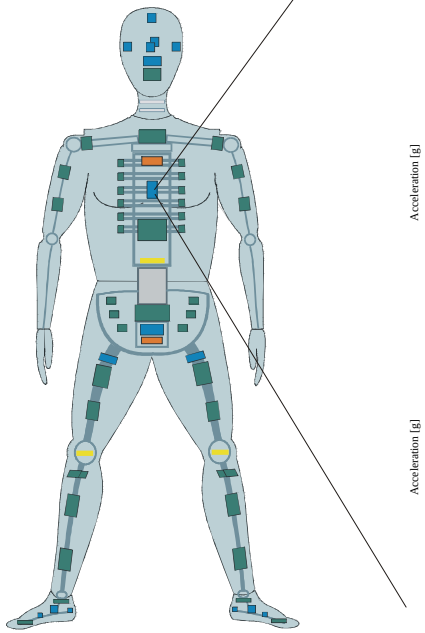
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

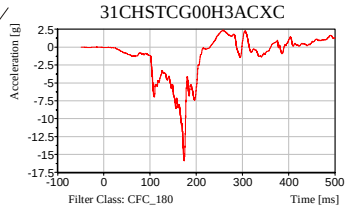
3 ms Duration Acceleration (Chest)

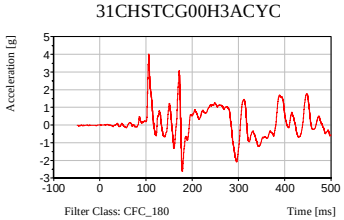
Date: 12/14/2007
Time: 9:12

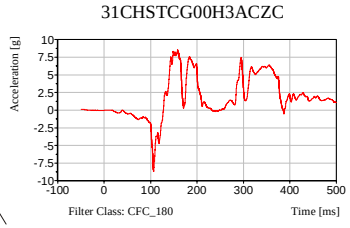
Customer: VRTC

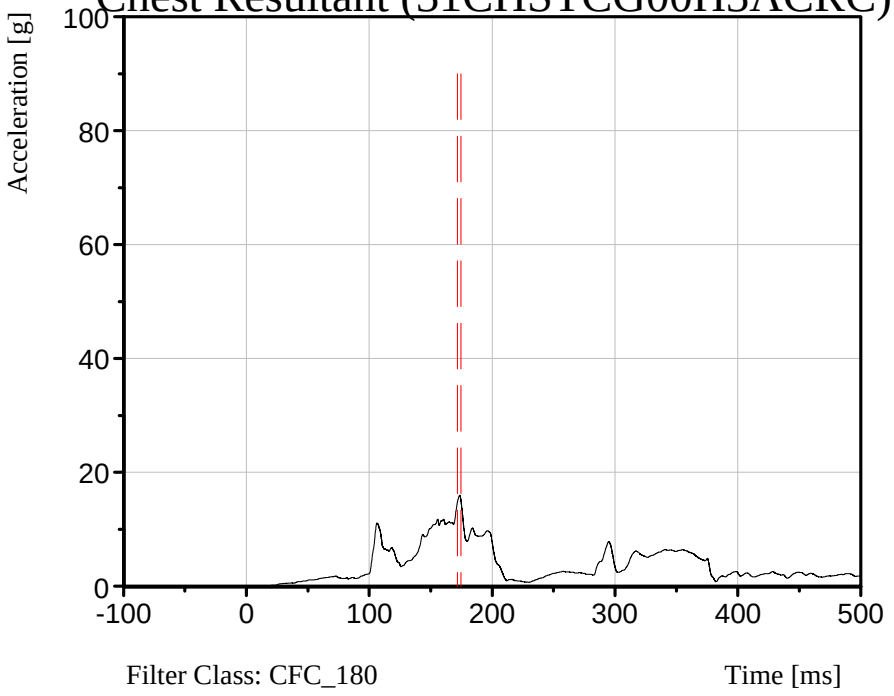
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 14.80 g	171.84 ms	174.84 ms
Chest Severity Index = 34.29		

Dummy:HIII 50th Male
Seating Position:
Left Side Row 12 Left Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

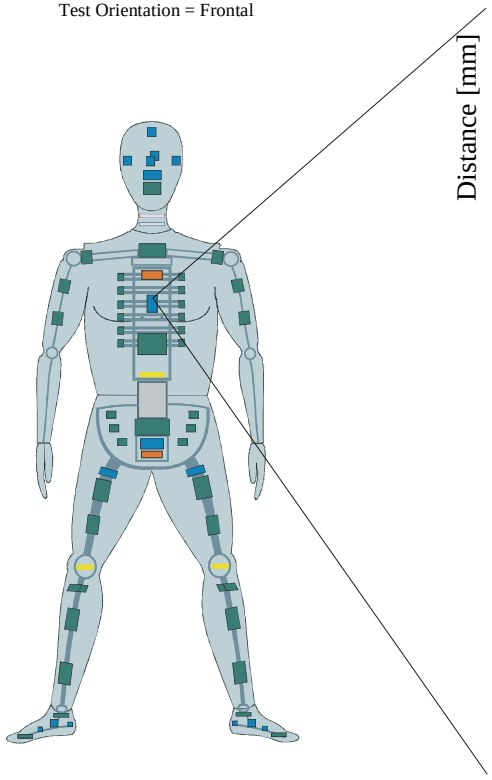
Chest Deflection

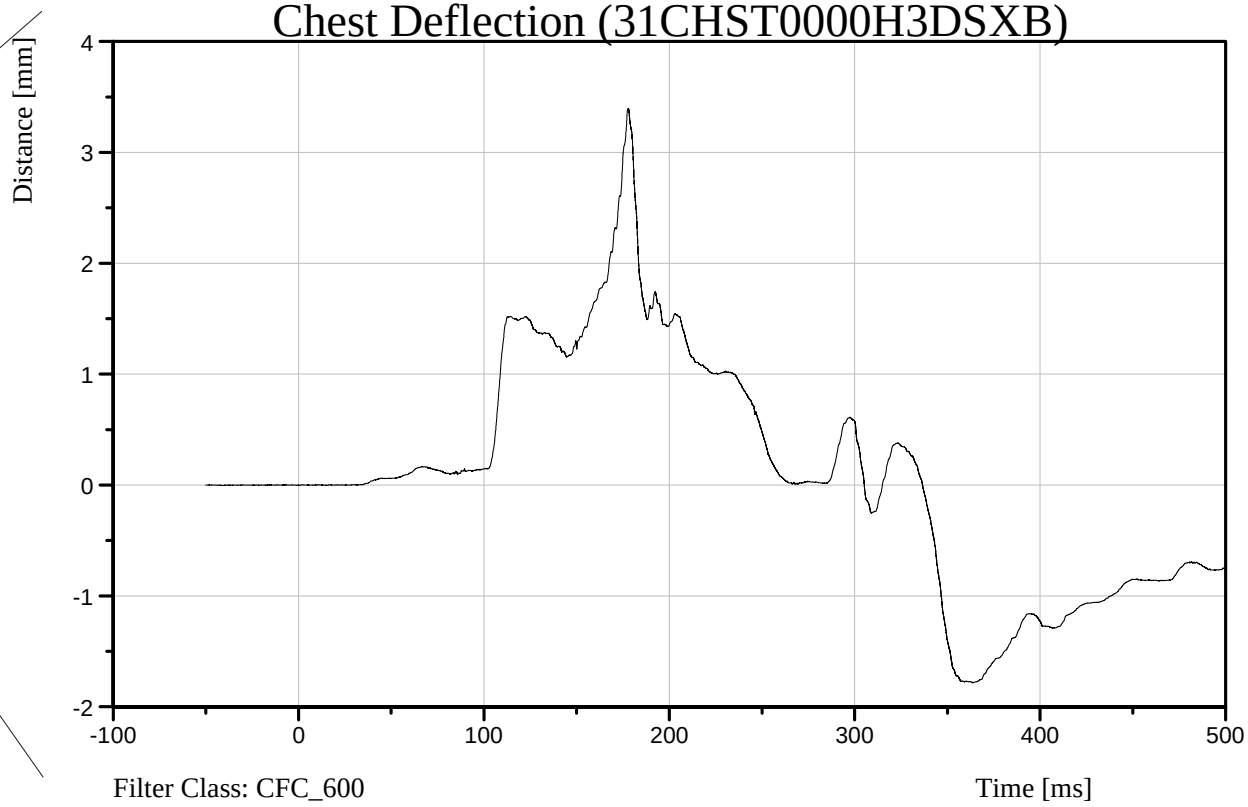
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 50th Male
Seating Position:
Left Side Row 12 Left Seat

[Max.] 3.40 mm at 177.76 ms
[Min.] -1.78 mm at 363.68 ms

ChestDeflection Source Code : Min/Max of 31CHST0000H3DSXB (CFC_600)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph
Neck Moment about the Occipital Condyle (NECK OM)

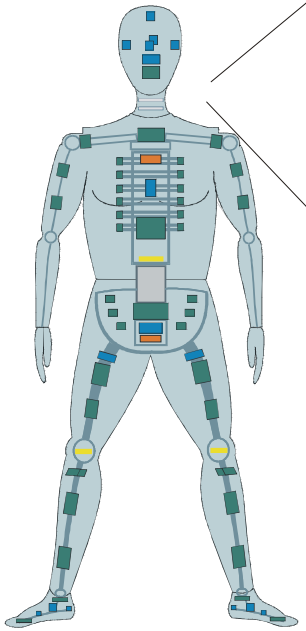
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 071214

Test Orientation = Frontal



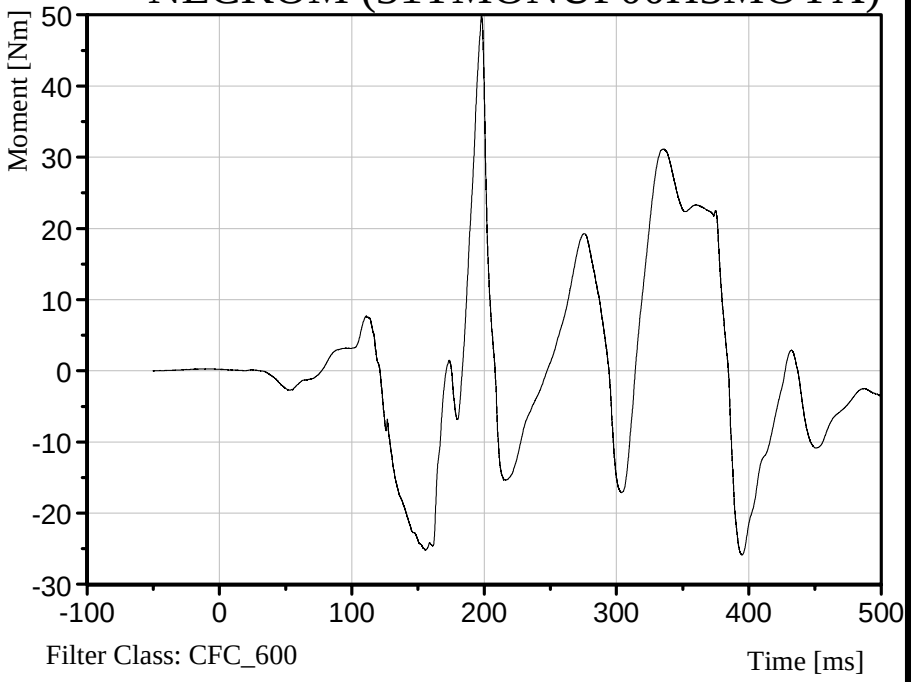
31NECKUP00H3FOXB

Filter Class: CFC_600

31NECKUP00H3MOYB

Filter Class: CFC_600

NECKOM (31TMONUP00H3MOYX)



Filter Class: CFC_600

Dummy:HIII 50th Male
Seating Position:
Left Side Row 12 Left Seat

Neck OM Source Code: My - (D*Fx)

[Max.] 49.87 Nm at 198.08 ms
[Min.] -25.85 Nm at 395.04 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

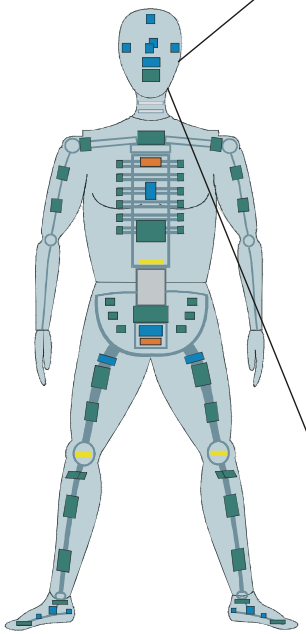
Neck Injury Predictor (NIJ)

Date: 12/14/2007
Time: 9:12

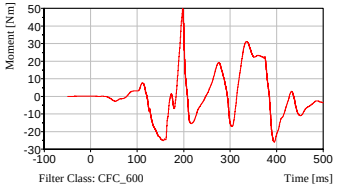
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

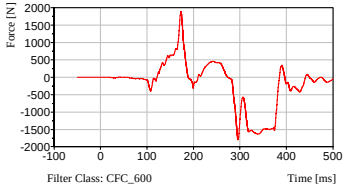
Test Orientation = Frontal
Fzc(Tension) = 6806
Fzc(Compression) = 6160
Myc(Extension) = 135
Myc(Flexion) = 310



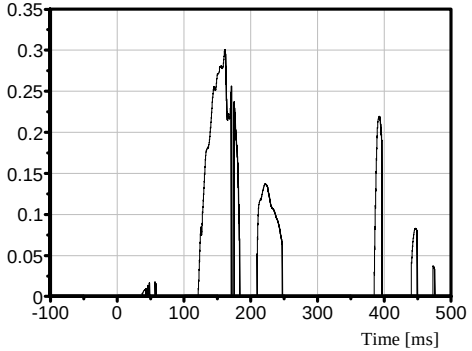
31TMONUP00H3MOYX



31NECKUP00H3FOZB

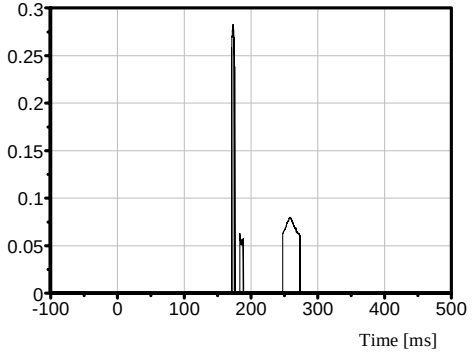


31NIJCUPTEH300YX



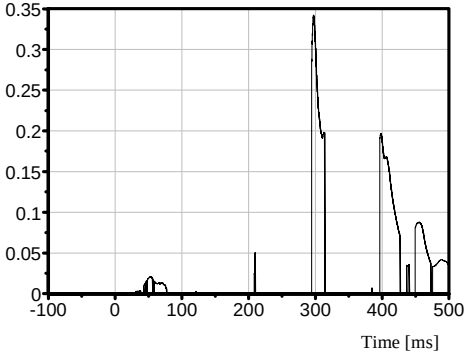
Max [NTE] 0.3012 at 161.76 ms

31NIJCUPTFH300YX



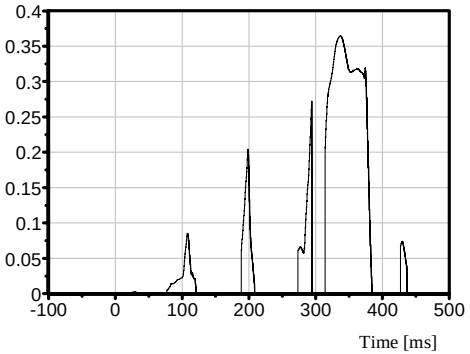
Max [NTF] 0.2827 at 173.20 ms

31NIJCUPCEH300YX



Max [NCE] 0.3422 at 297.28 ms

31NIJCUPCFH300YX



Max [NCF] 0.3648 at 337.60 ms

Dummy:HIII 50th Male
Seating Position:
Left Side Row 12 Left Seat

NIJ Source Code: (Fz/Fzc)+(My/Myc)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

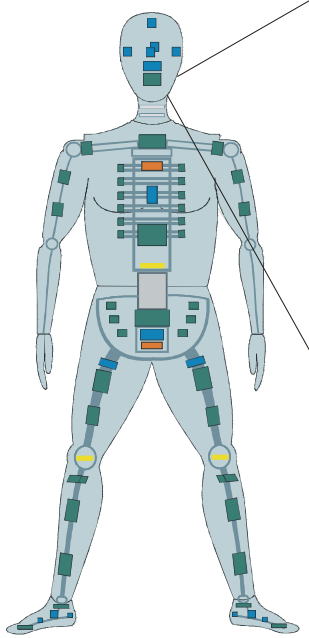
Neck Shear Force

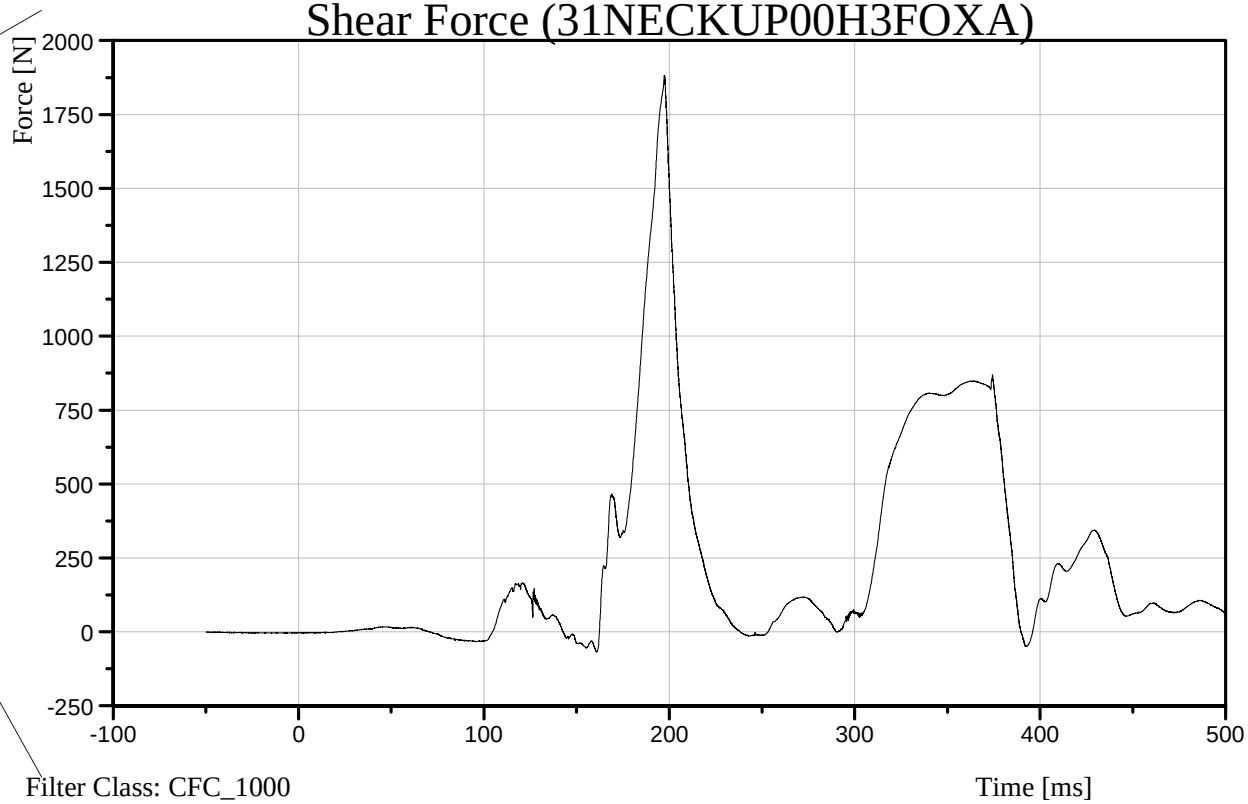
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 50th Male
Seating Position:
Left Side Row 12 Left Seat

[Max.] 1,882.09 N at 197.36 ms
[Min.] -68.12 N at 160.88 ms

Neck Shear Force Source Code: Min/Max of 31NECKUP00H3FOXA

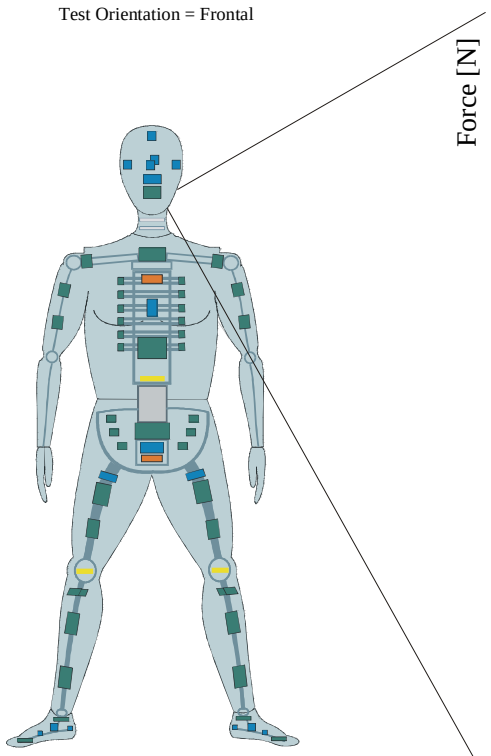
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

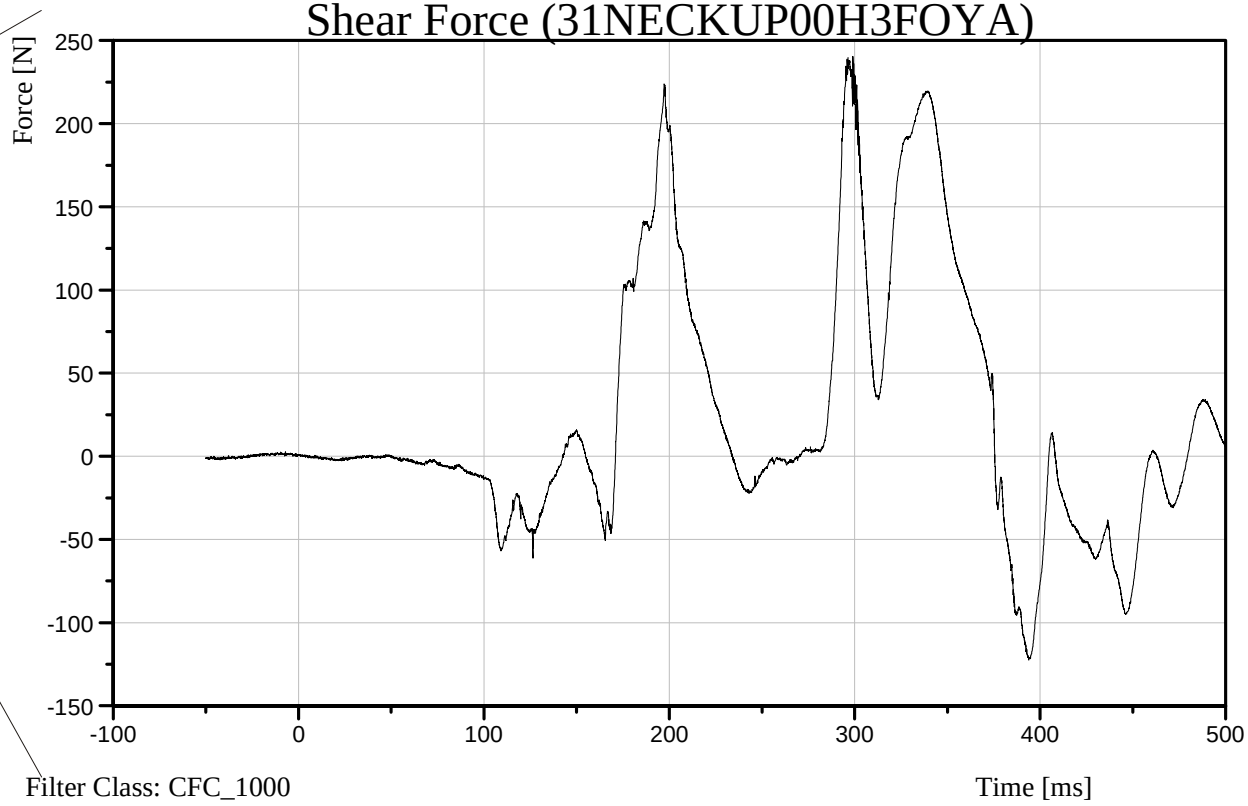
Neck Shear Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Left Side Row 12 Left Seat

[Max.] 240.40 N at 299.12 ms
[Min.] -122.43 N at 393.92 ms

Neck Shear Force Source Code: Min/Max of 31NECKUP00H3FOYA

071214

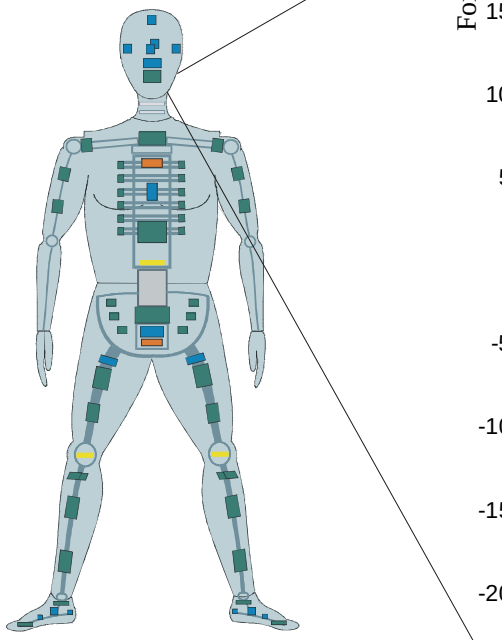
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

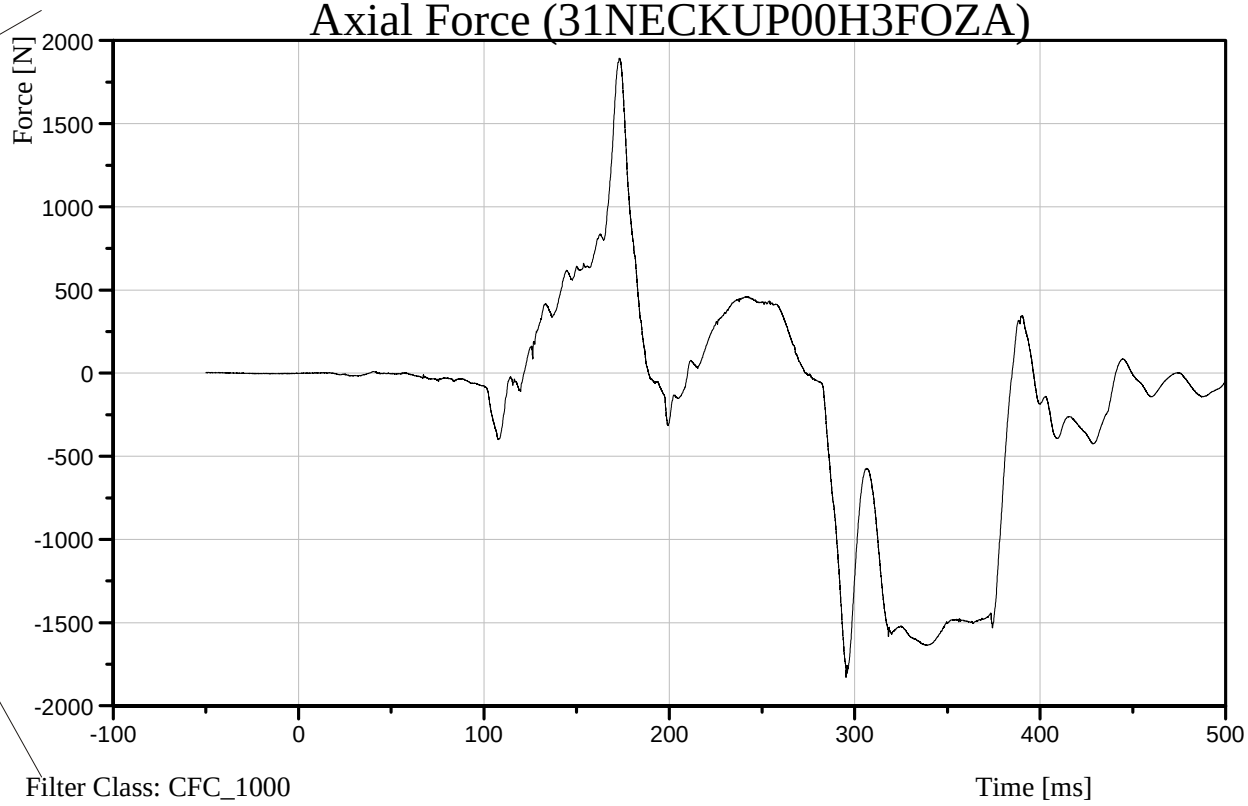
Neck Axial Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Left Side Row 12 Left Seat

[Max.] 1,894.10 N at 172.96 ms
[Min.] -1,828.11 N at 295.36 ms

Neck Axial Force Source Code: Min/Max of 31NECKUP00H3FOZA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

Femur Load

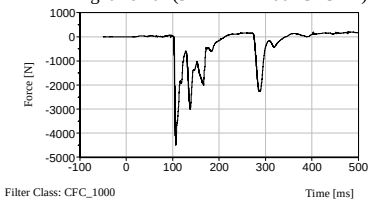
Date: 12/14/2007
Time: 9:12

Customer: VRTC

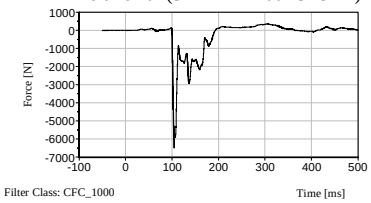
TRC Inc. Test Lab: CTF

Test Number: 071214

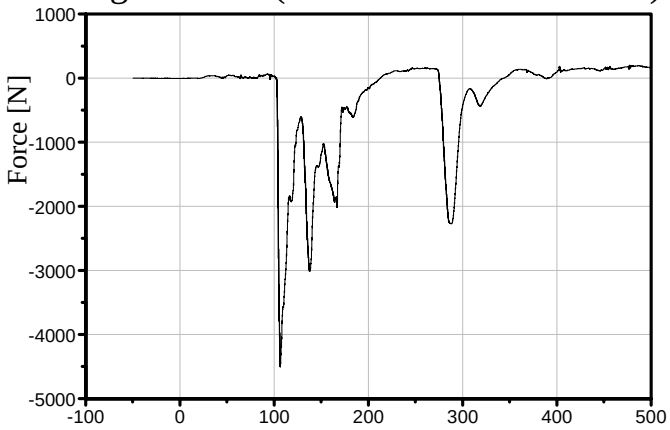
Right Femur (31FEMRRL00H3FOZA)

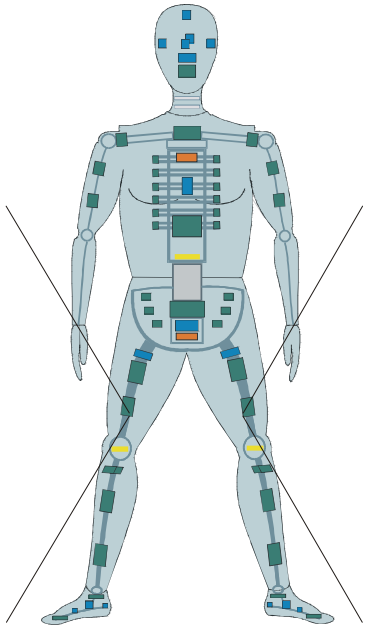


Left Femur (31FEMRLL00H3FOZA)

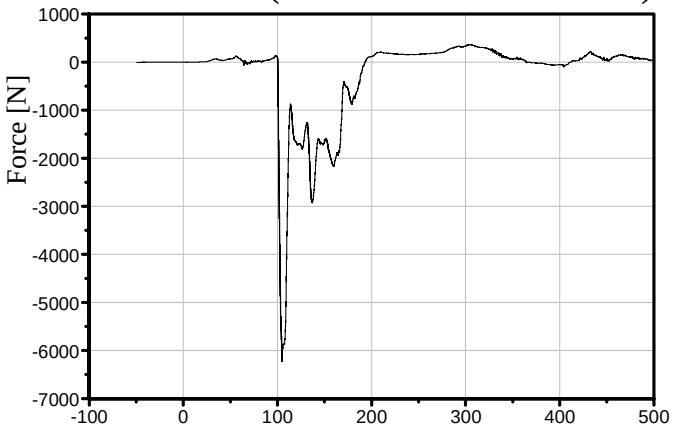


Right Femur (31FEMRRL00H3FOZB)





Left Femur (31FEMRLL00H3FOZB)



Max [Tension] 206.48 N at 477.12 ms
Min [Compression] -4,505.35 N at 106.48 ms

Dummy:HIII 50th Male
Seating Position:
Left Side Row 12 Left Seat

Max [Tension] 368.55 N at 304.72 ms
Min [Compression] -6,229.63 N at 104.48 ms

Femur Load Source Code : Min/Max of 31FEMRRL00H3FOZB and 31FEMRLL00H3FOZB (CFC 600)

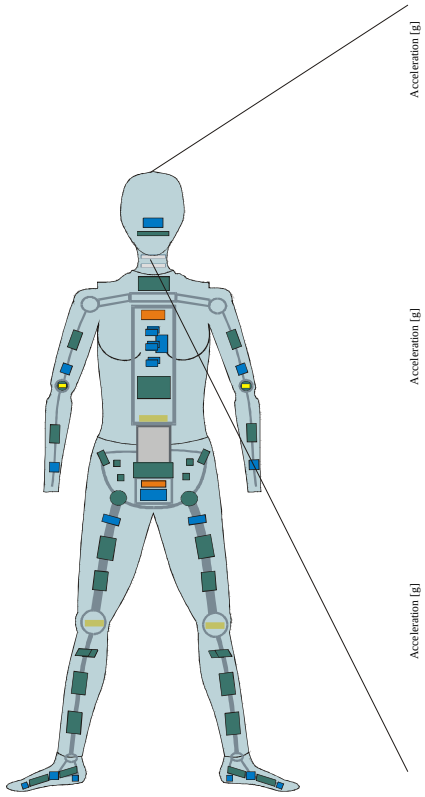
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

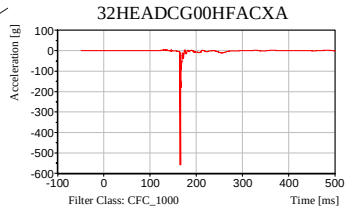
Head Injury Criterion (HIC)

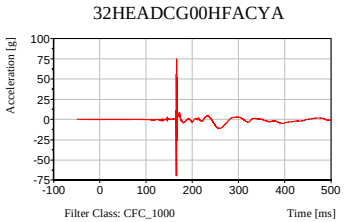
Date: 12/14/2007
Time: 9:12

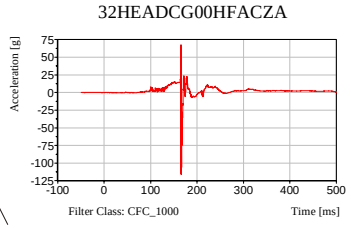
Customer: VRTC

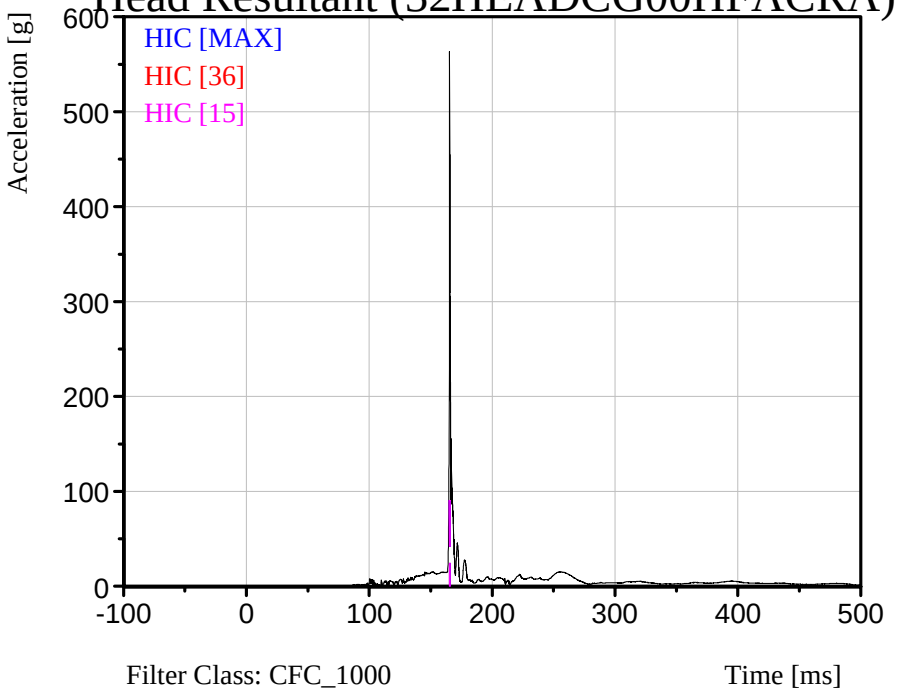
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 1,958.93	165.20 ms	165.92 ms	359.47 g
HIC [36] = 1,958.93	165.20 ms	165.92 ms	359.47 g
HIC [15] = 1,958.93	165.20 ms	165.92 ms	359.47 g

Dummy:HIII 5th Female
Seating Position:
Left Side Row 12 Right Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

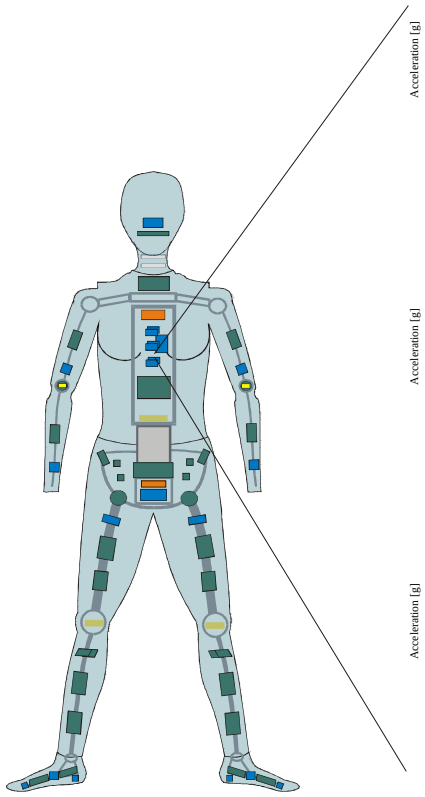
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

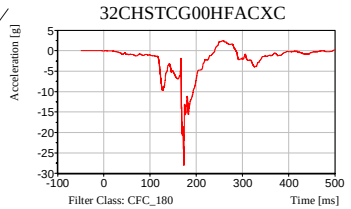
3 ms Duration Acceleration (Chest)

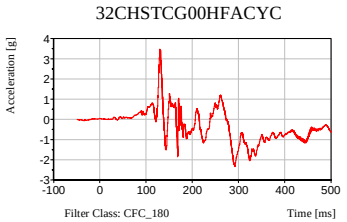
Date: 12/14/2007
Time: 9:12

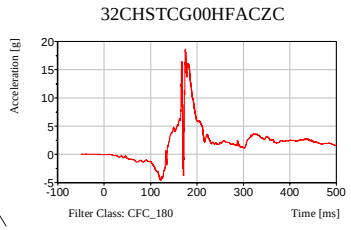
Customer: VRTC

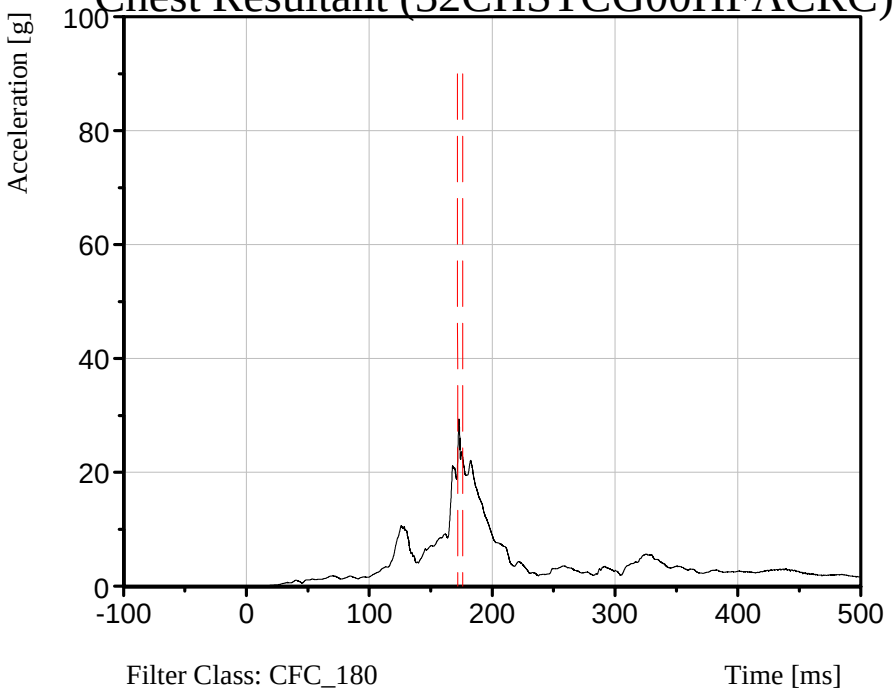
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 22.31 g	172.03 ms	176.19 ms
Chest Severity Index = 66.72		

Dummy:HIII 5th Female
Seating Position:
Left Side Row 12 Right Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

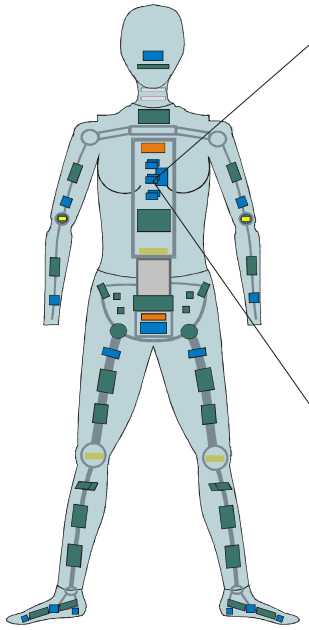
Chest Deflection

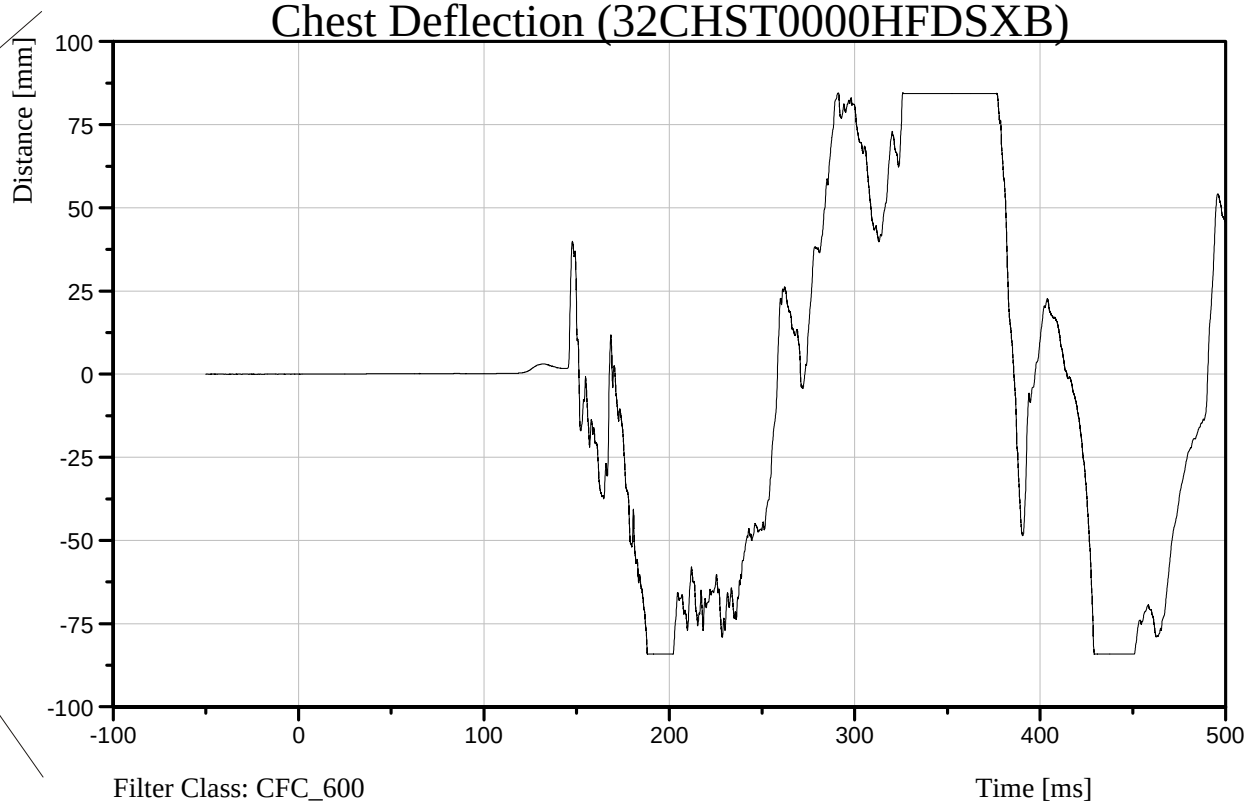
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 5th Female
Seating Position:
Left Side Row 12 Right Seat

[Max.] 84.54 mm at 325.92 ms
[Min.] -84.29 mm at 429.28 ms

ChestDeflection Source Code : Min/Max of 32CHST0000HFDSXB (CFC_600)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph
Neck Moment about the Occipital Condyle (NECK OM)

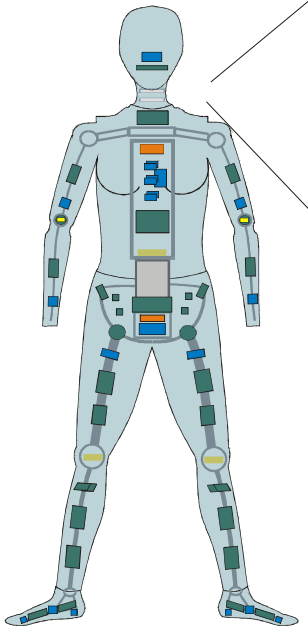
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 071214

Test Orientation = Frontal



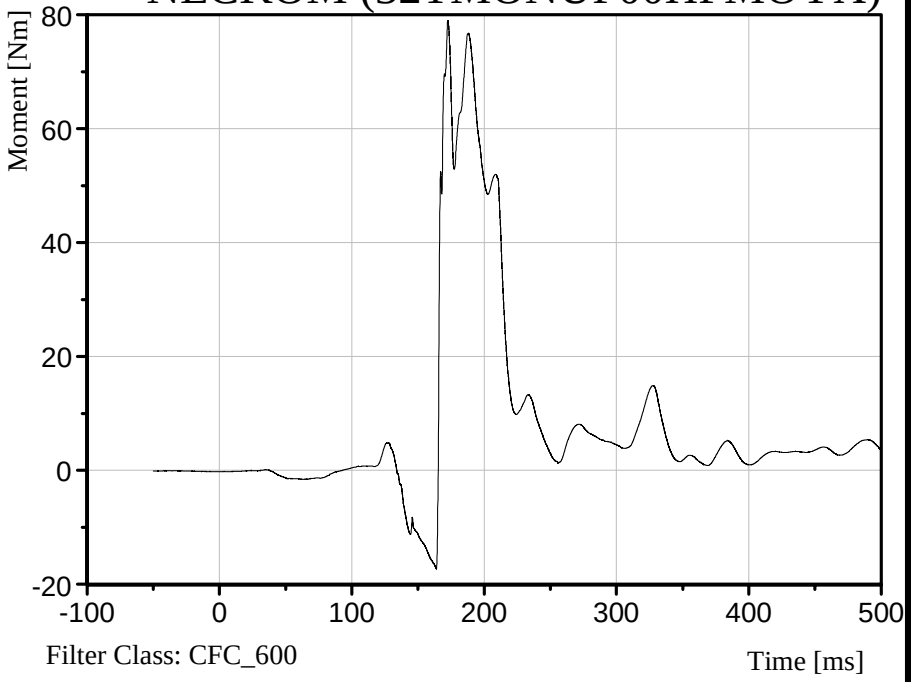
32NECKUP00HFFOXB

Filter Class: CFC_600

32NECKUP00HFMOYB

Filter Class: CFC_600

NECKOM (32TMONUP00HFMOYX)



Filter Class: CFC_600

Dummy:HIII 5th Female
Seating Position:
Left Side Row 12 Right Seat

Neck OM Source Code: My - (D*Fx)

[Max.] 79.00 Nm at 172.64 ms
[Min.] -17.26 Nm at 163.92 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

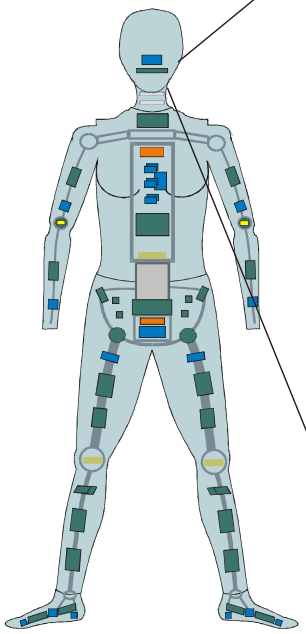
Neck Injury Predictor (NIJ)

Date: 12/14/2007
Time: 9:12

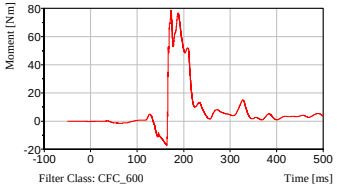
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

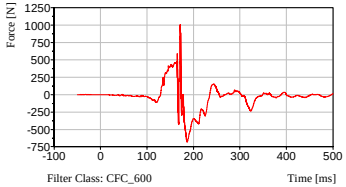
Test Orientation = Frontal
Fzc(Tension) = 4287
Fzc(Compression) = 3880
Myc(Extension) = 67
Myc(Flexion) = 155



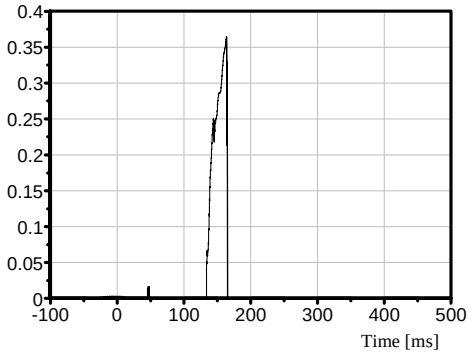
32TMONUP00HFMOYX



32NECKUP00HFFOZB

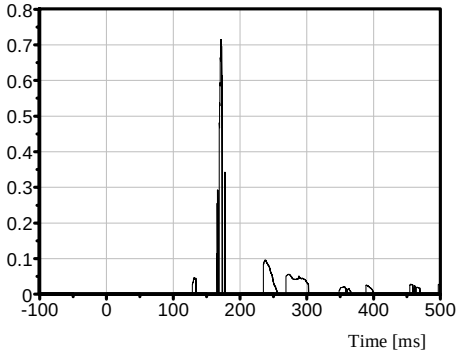


32NIJCUPTEHF00YX



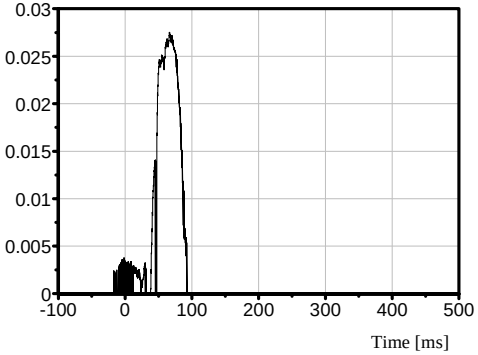
Max [NTE] 0.3646 at 163.92 ms

32NIJCUPTFHF00YX



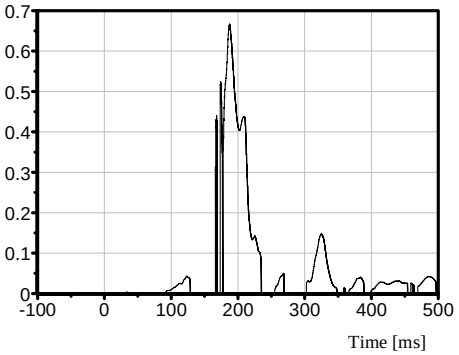
Max [NTF] 0.7148 at 171.92 ms

32NIJCUPCEHF00YX



Max [NCE] 0.0275 at 66.64 ms

32NIJCUPCFHF00YX



Max [NCF] 0.6676 at 187.44 ms

Dummy:HIII 5th Female
Seating Position:
Left Side Row 12 Right Seat

NIJ Source Code: (Fz/Fzc)+(My/Myc)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

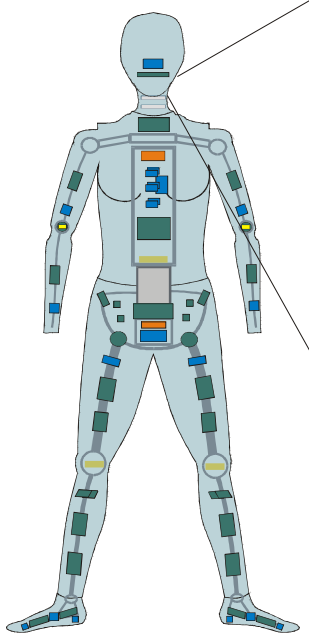
Neck Shear Force

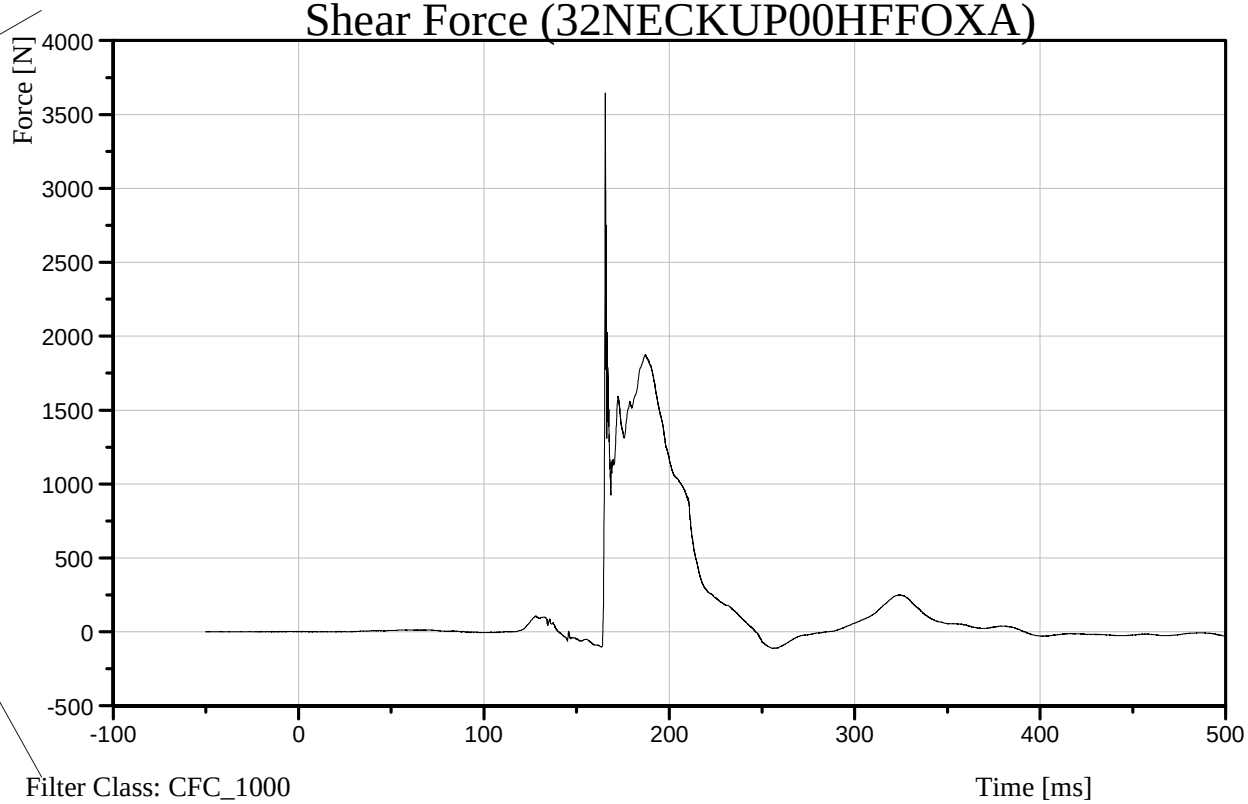
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 5th Female
Seating Position:
Left Side Row 12 Right Seat

[Max.] 3,645.85 N at 165.52 ms
[Min.] -111.38 N at 255.76 ms

Neck Shear Force Source Code: Min/Max of 32NECKUP00HFFOXA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

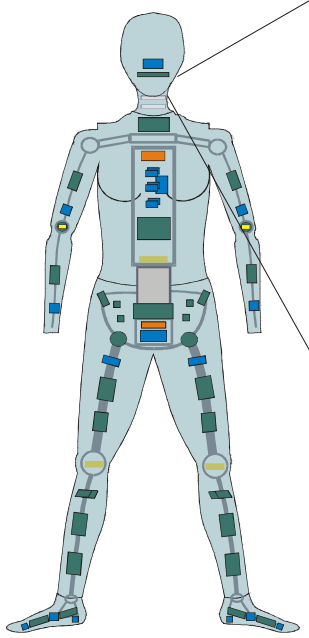
Neck Shear Force

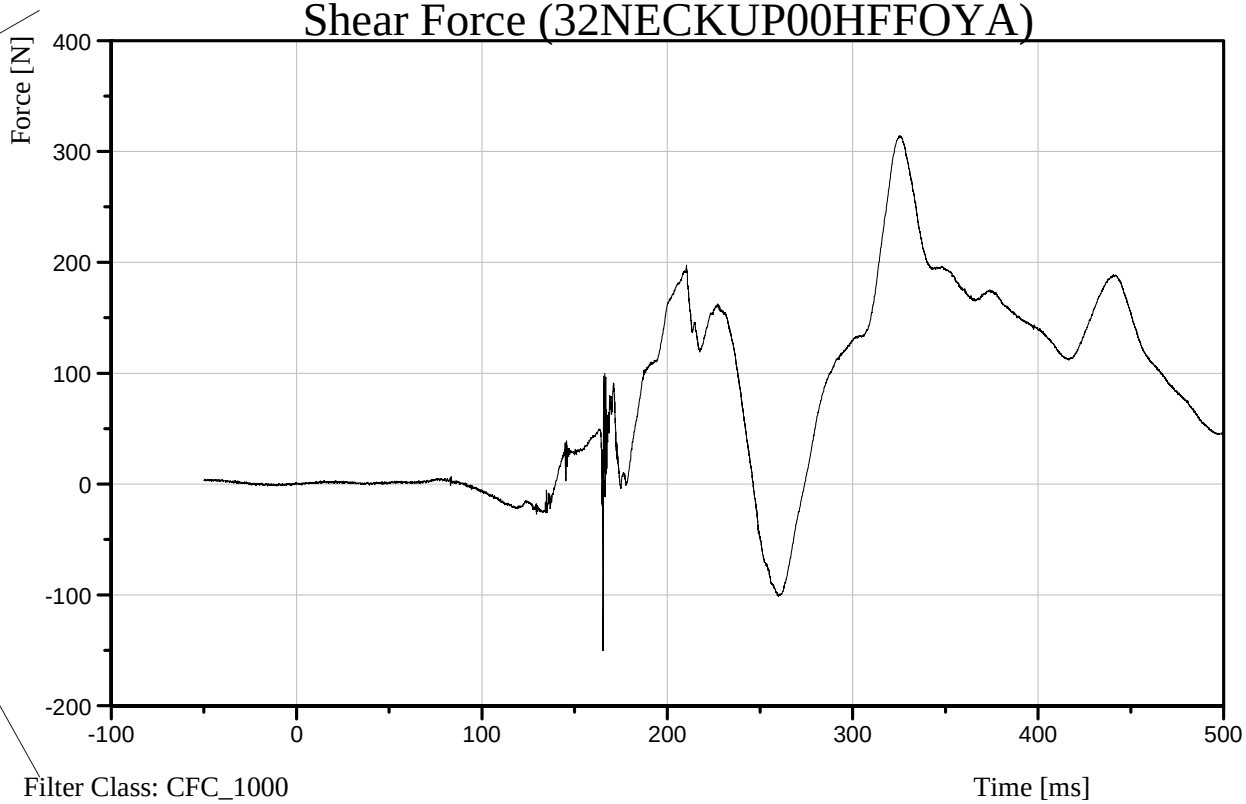
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 5th Female
Seating Position:
Left Side Row 12 Right Seat

[Max.] 313.94 N at 325.44 ms
[Min.] -149.98 N at 165.36 ms

Neck Shear Force Source Code: Min/Max of 32NECKUP00HFFOYA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

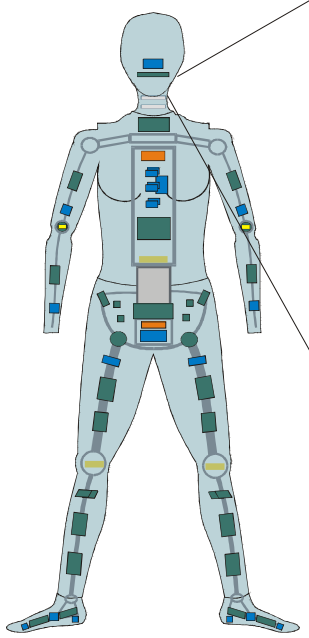
Neck Axial Force

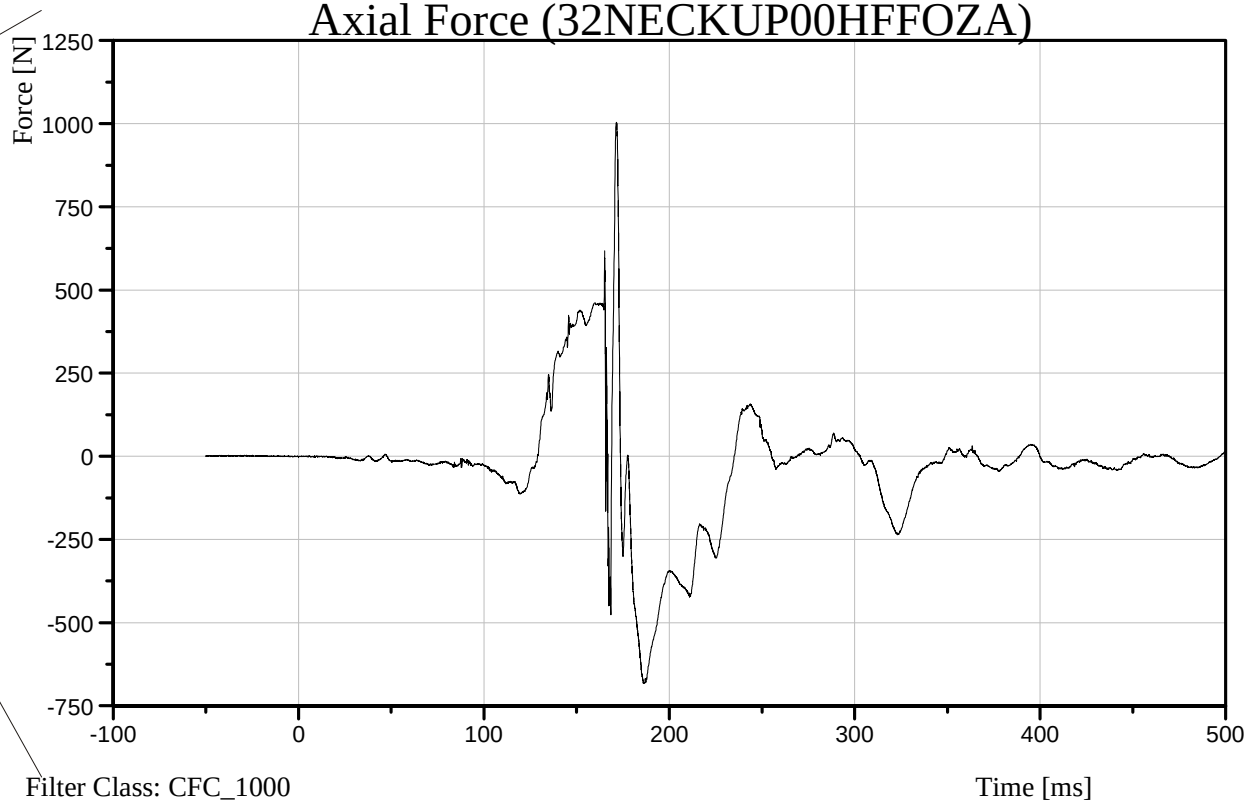
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 5th Female
Seating Position:
Left Side Row 12 Right Seat

[Max.] 1,004.88 N at 171.44 ms
[Min.] -682.36 N at 186.08 ms

Neck Axial Force Source Code: Min/Max of 32NECKUP00HFFOZA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

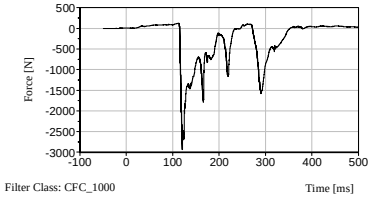
Femur Load

Date: 12/14/2007
Time: 9:12

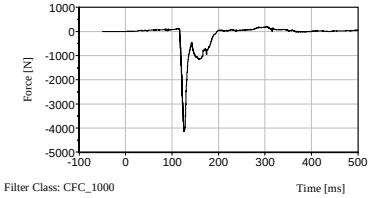
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

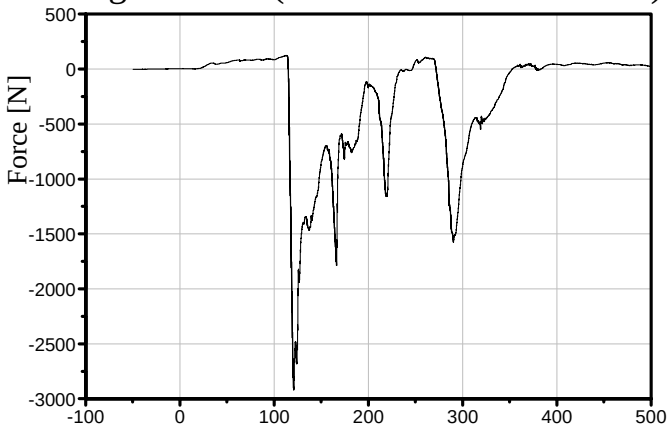
Right Femur (32FEMRRL00HFFOZA)

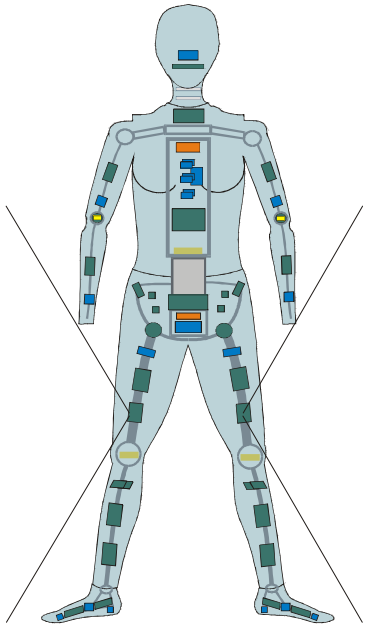


Left Femur (32FEMRLL00HFFOZA)

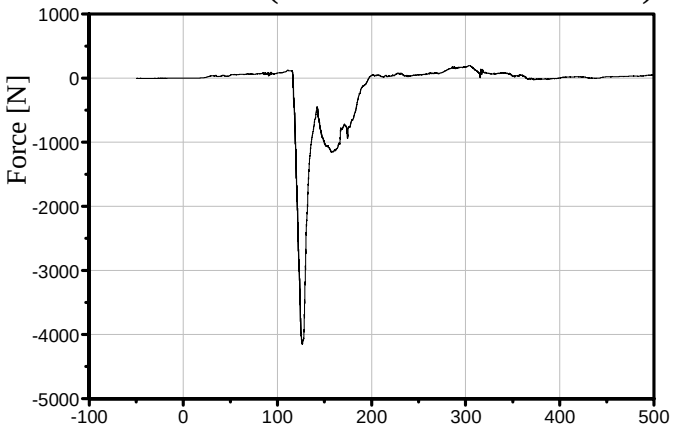


Right Femur (32FEMRRL00HFFOZB)





Left Femur (32FEMRLL00HFFOZB)



Max [Tension] 125.73 N at 113.20 ms
Min [Compression] -2,922.15 N at 120.72 ms

Dummy:HIII 5th Female
Seating Position:
Left Side Row 12 Right Seat

Max [Tension] 200.94 N at 303.36 ms
Min [Compression] -4,148.77 N at 126.32 ms

Femur Load Source Code : Min/Max of 32FEMRRL00HFFOZB and 32FEMRLL00HFFOZB (CFC 600)

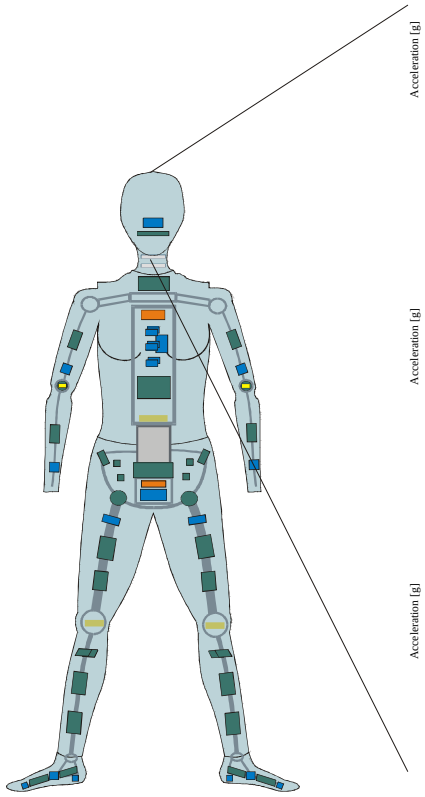
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

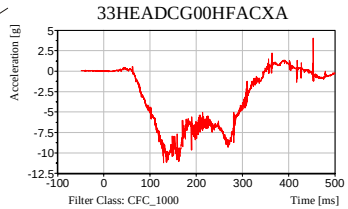
Head Injury Criterion (HIC)

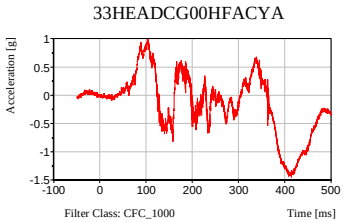
Date: 12/14/2007
Time: 9:12

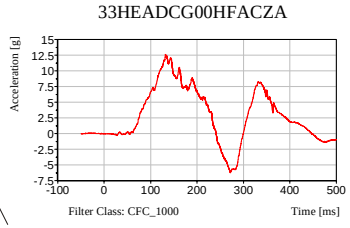
Customer: VRTC

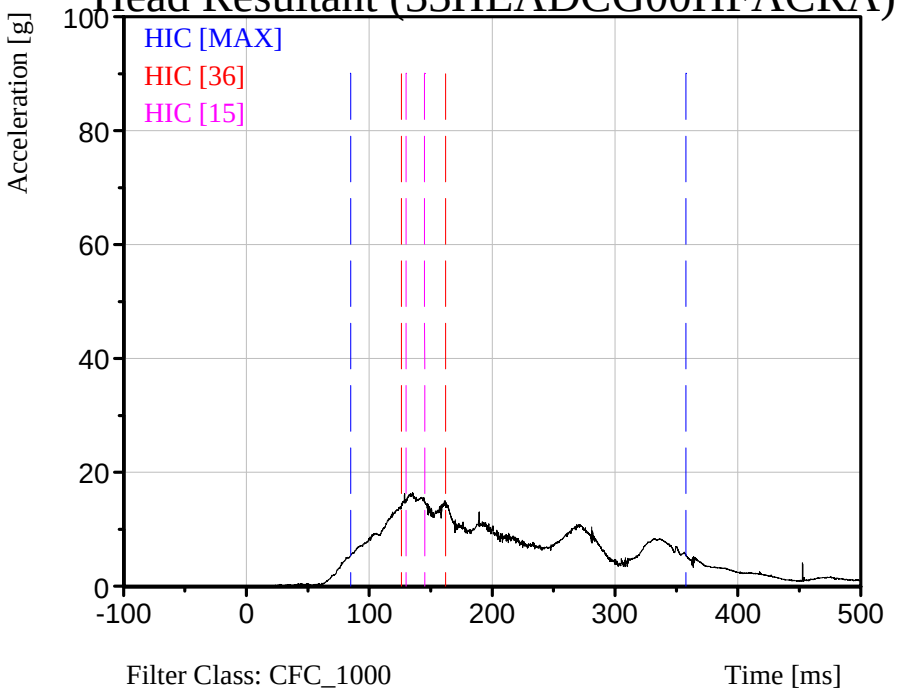
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 67.89	84.96 ms	357.92 ms	9.08 g
HIC [36] = 28.86	126.24 ms	162.24 ms	14.51 g
HIC [15] = 14.37	130.08 ms	145.12 ms	15.56 g

Dummy:HIII 5th Female
Seating Position:
Right Side Row 13 Left Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

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071214

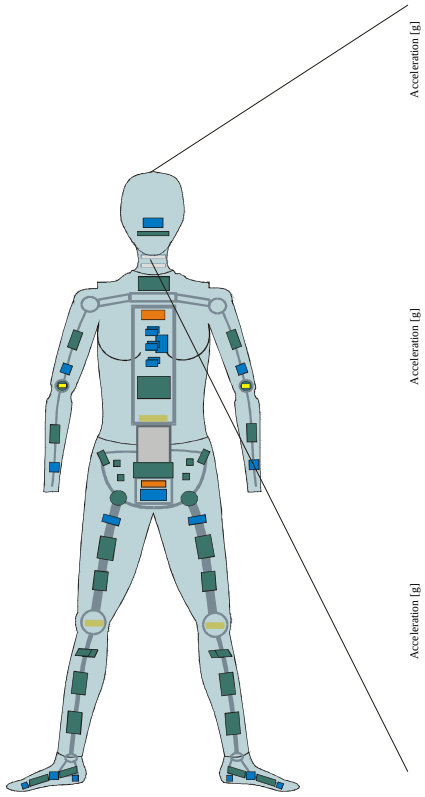
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

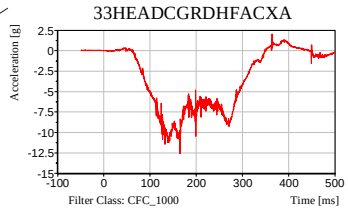
Head Injury Criterion (HIC)

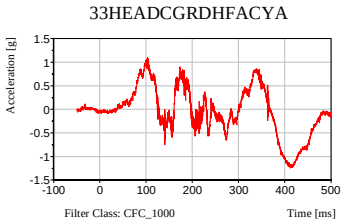
Date: 12/14/2007
Time: 9:12

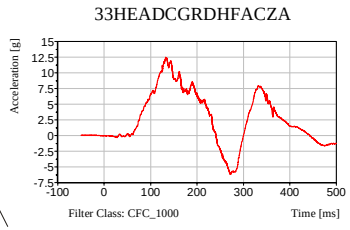
Customer: VRTC

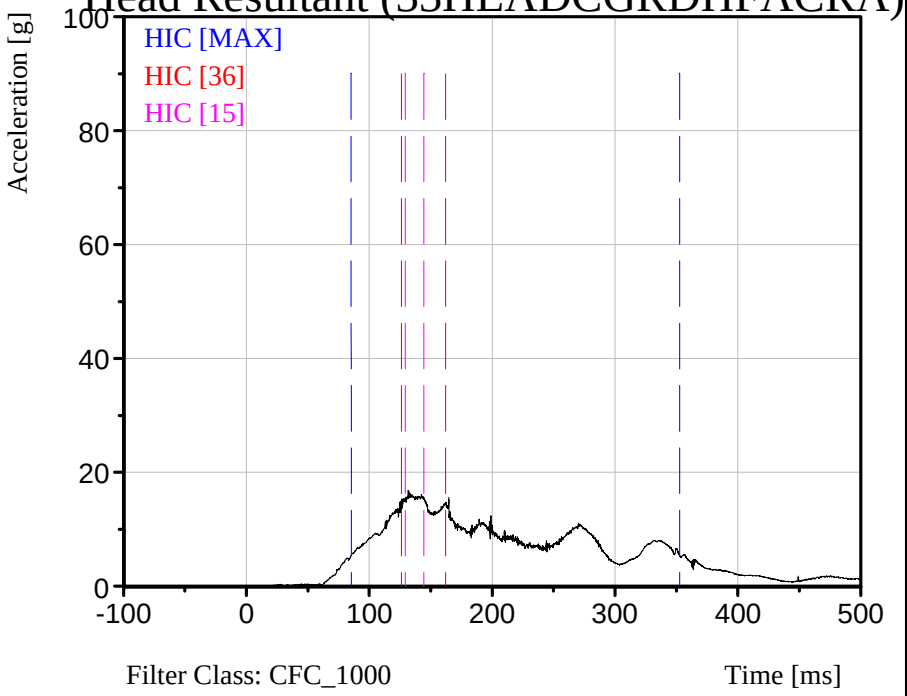
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 66.92	85.44 ms	352.64 ms	9.11 g
HIC [36] = 29.14	126.32 ms	162.32 ms	14.56 g
HIC [15] = 14.68	129.44 ms	144.48 ms	15.70 g

Dummy:HIII 5th Female
Seating Position:
Right Side Row 13 Left Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

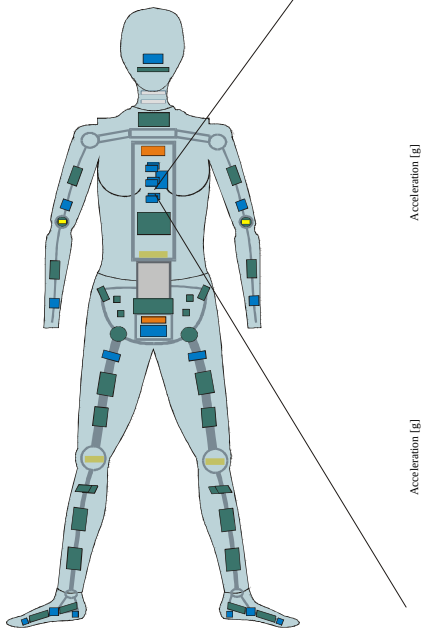
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

3 ms Duration Acceleration (Chest)

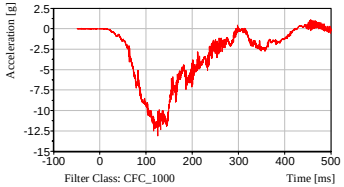
Date: 12/14/2007
Time: 9:12

Customer: VRTC

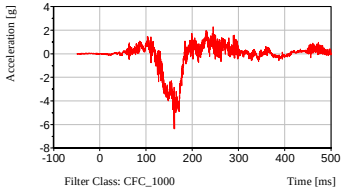
TRC Inc. Test Lab: CTF
Test Number: 071214



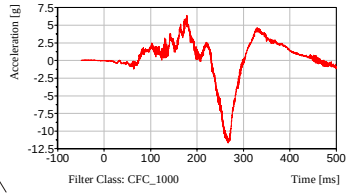
33CHSTCG00HFACXA



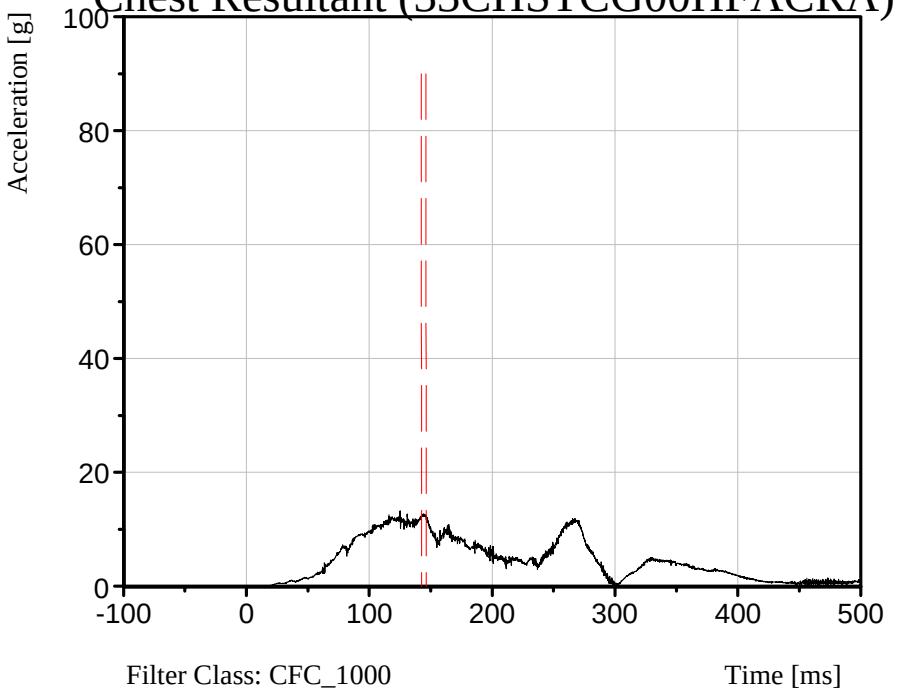
33CHSTCG00HFACYA



33CHSTCG00HFACZA



Chest Resultant (33CHSTCG00HFACRA)



	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 12.23 g	142.59 ms	146.23 ms
Chest Severity Index = 49.76		

Dummy:HIII 5th Female
Seating Position:
Right Side Row 13 Left Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

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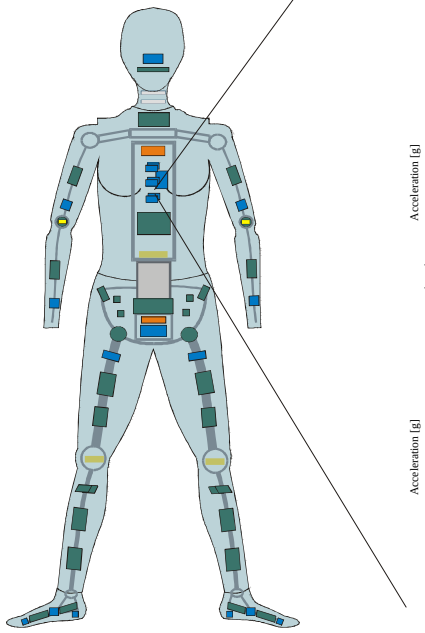
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

3 ms Duration Acceleration (Chest)

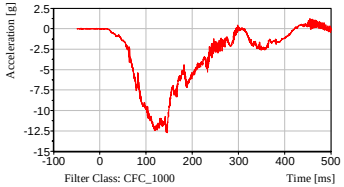
Date: 12/14/2007
Time: 9:12

Customer: VRTC

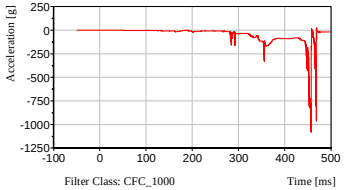
TRC Inc. Test Lab: CTF
Test Number: 071214



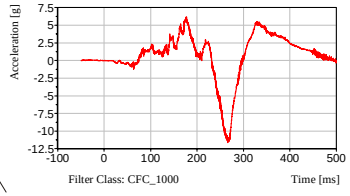
33CHSTCGRDHFACXA



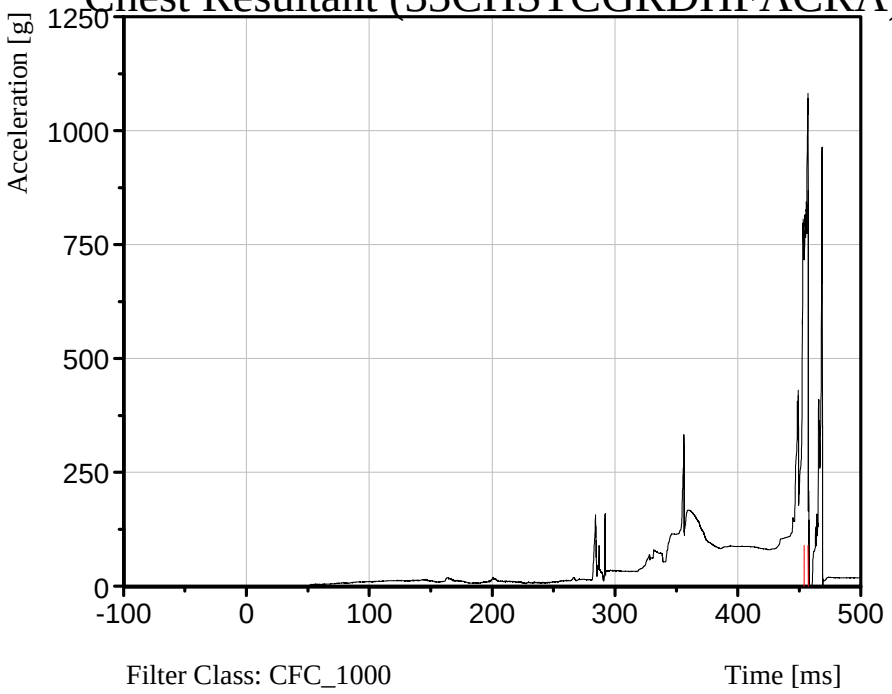
33CHSTCGRDHFACYA



33CHSTCGRDHFACZA



Chest Resultant (33CHSTCGRDHFACRA)



	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 733.65 g	454.02 ms	457.32 ms

Chest Severity Index = 142,334.74

Dummy:HIII 5th Female
Seating Position:
Right Side Row 13 Left Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

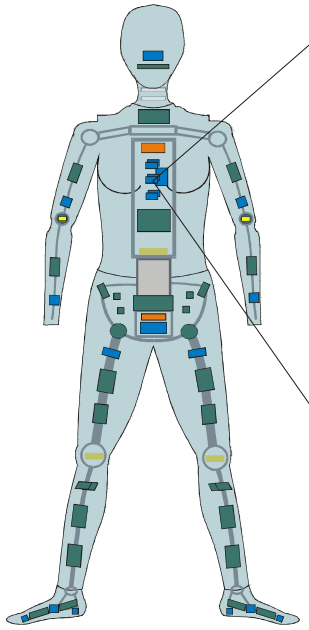
Chest Deflection

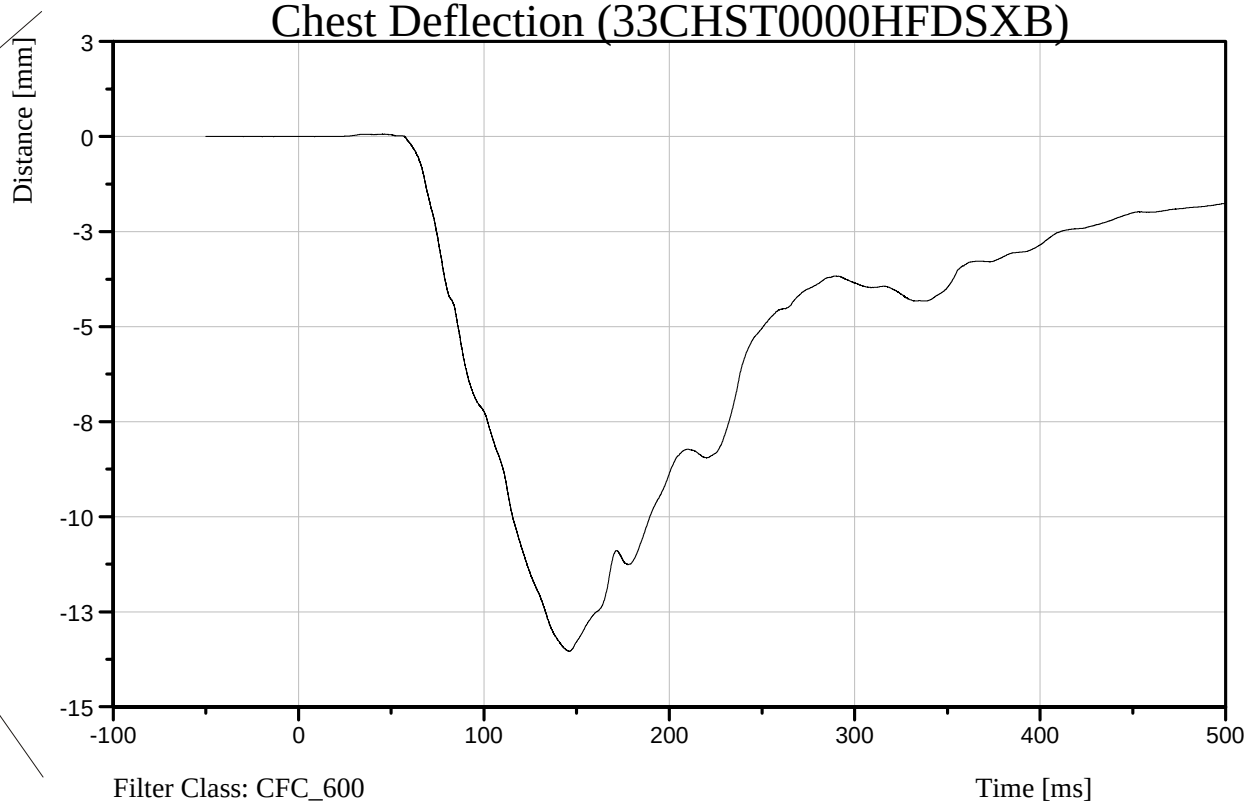
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 5th Female
Seating Position:
Right Side Row 13 Left Seat

[Max.] 0.06 mm at 45.20 ms
[Min.] -13.54 mm at 146.08 ms

ChestDeflection Source Code : Min/Max of 33CHST0000HFDSXB (CFC_600)

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph
Neck Moment about the Occipital Condyle (NECK OM)

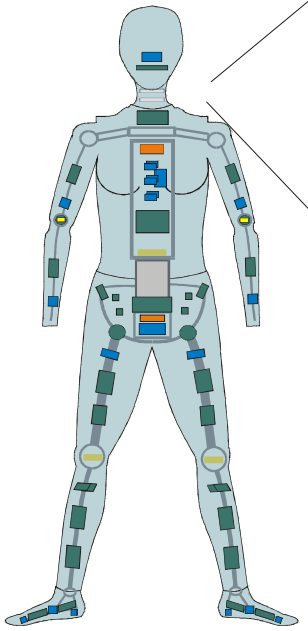
Date: 12/14/2007
Time: 9:12

Customer: VRTC

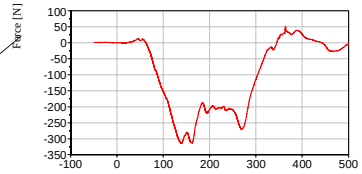
TRC Inc. Test Lab: CTF

Test Number: 071214

Test Orientation = Frontal



33NECKUP00HFFOXB

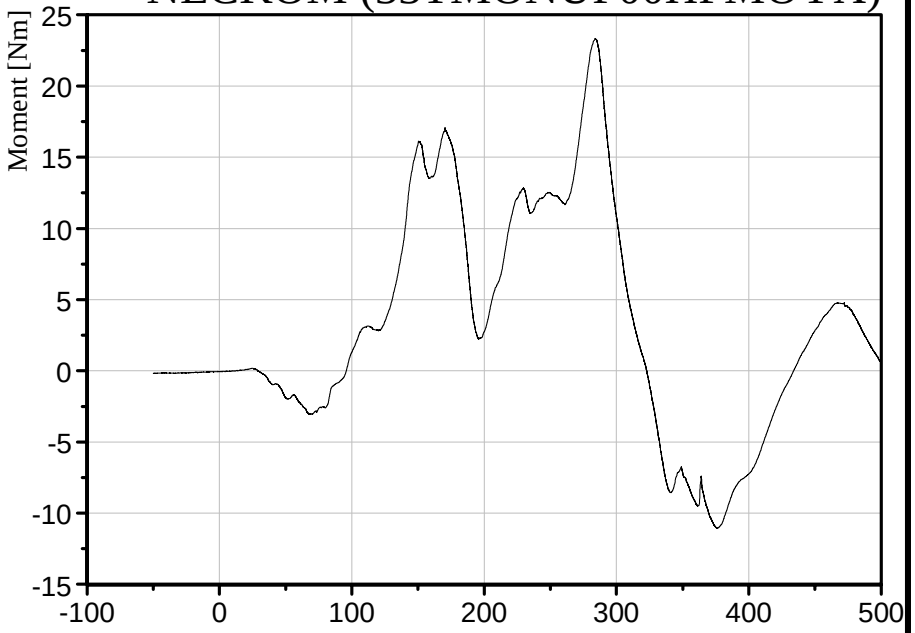


Filter Class: CFC_600

33NECKUP00HFMOYB

Filter Class: CFC_600

NECKOM (33TMONUP00HFMOYX)



Filter Class: CFC_600

Dummy:HIII 5th Female
Seating Position:
Right Side Row 13 Left Seat

[Max.] 23.34 Nm at 283.92 ms
[Min.] -11.05 Nm at 376.56 ms

Neck OM Source Code: My - (D*Fx)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

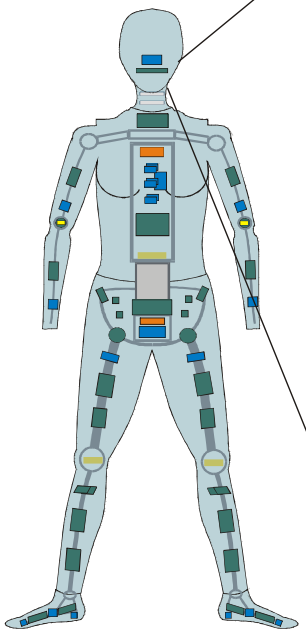
Neck Injury Predictor (NIJ)

Date: 12/14/2007
Time: 9:12

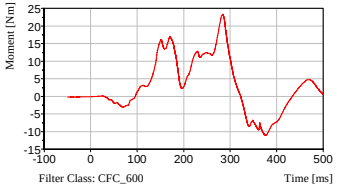
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

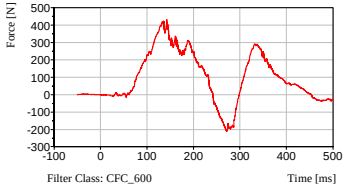
Test Orientation = Frontal
Fzc(Tension) = 4287
Fzc(Compression) = 3880
Myc(Extension) = 67
Myc(Flexion) = 155



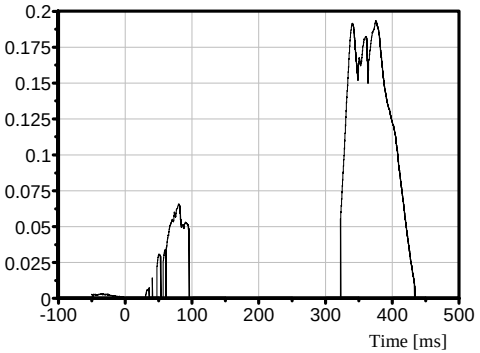
33TMONUP00HFMOYX



33NECKUP00HFFOZB

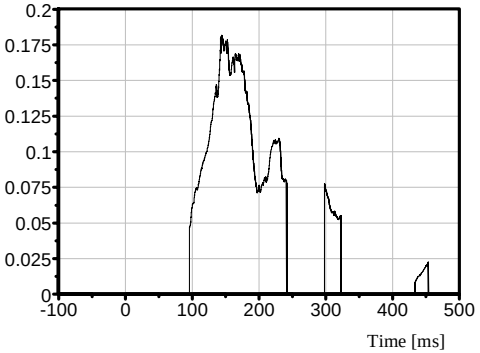


33NIJCUPTEHF00YX



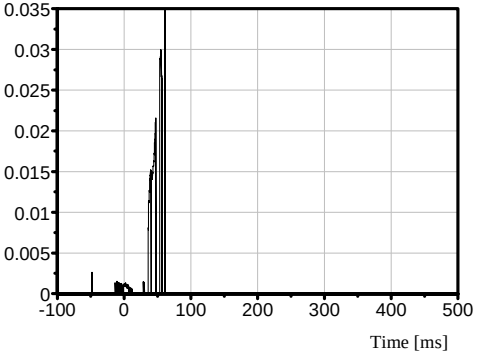
Max [NTE] 0.1934 at 375.60 ms

33NIJCUPTFHF00YX



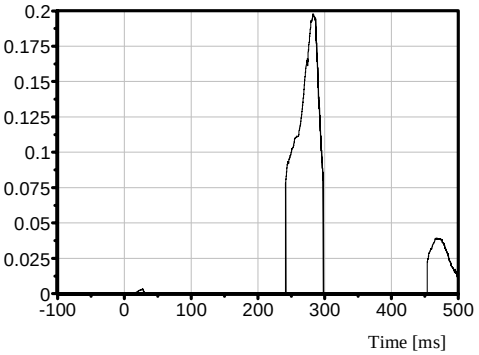
Max [NTF] 0.1819 at 144.56 ms

33NIJCUPCEHF00YX



Max [NCE] 0.0350 at 61.52 ms

33NIJCUPCFHF00YX



Max [NCF] 0.1979 at 282.80 ms

Dummy:HIII 5th Female
Seating Position:
Right Side Row 13 Left Seat

NIJ Source Code: (Fz/Fzc)+(My/Myc)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

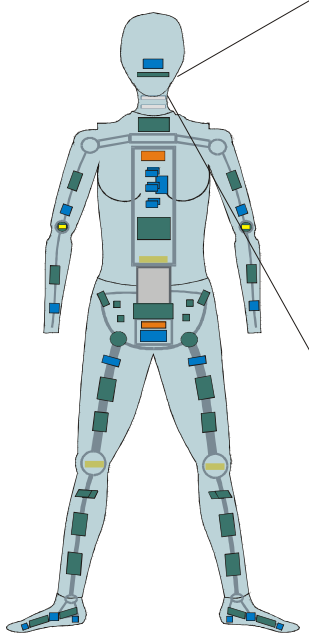
Neck Shear Force

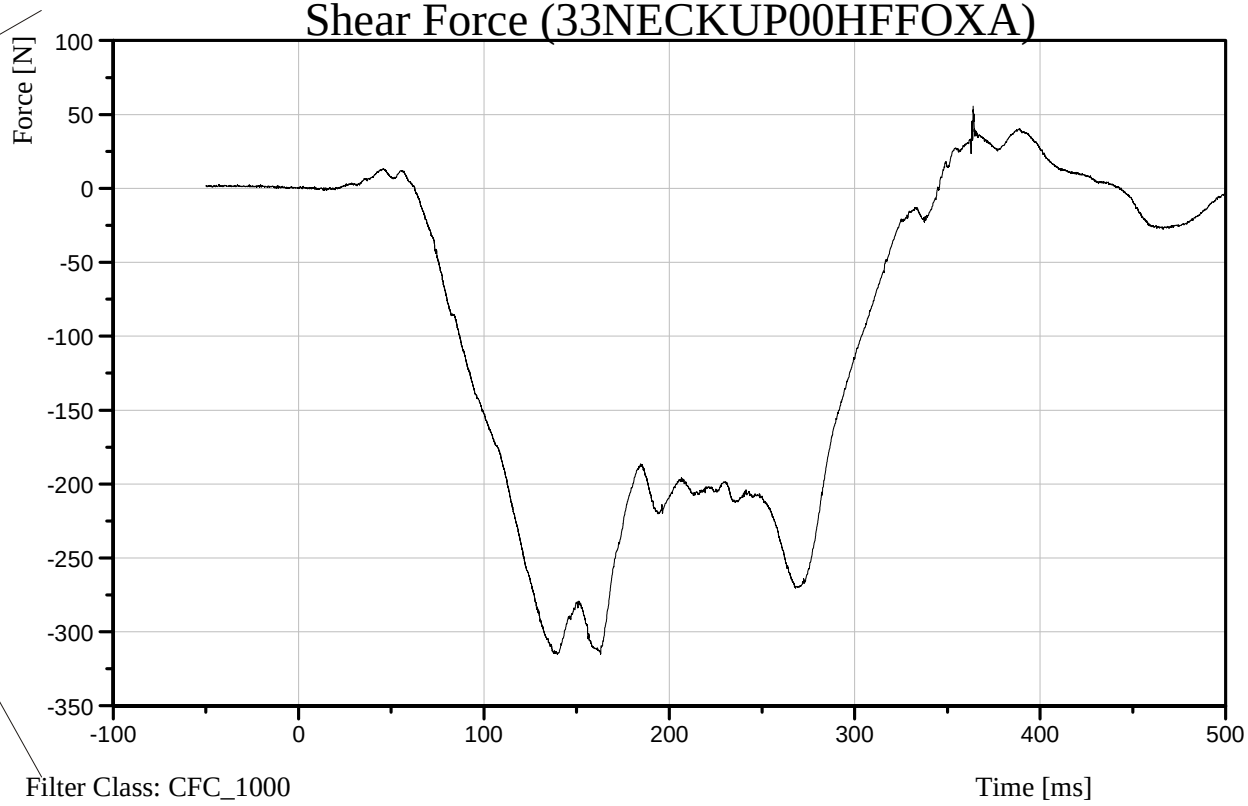
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 5th Female
Seating Position:
Right Side Row 13 Left Seat

[Max.] 55.51 N at 363.92 ms
[Min.] -315.06 N at 162.88 ms

Neck Shear Force Source Code: Min/Max of 33NECKUP00HFFOXA

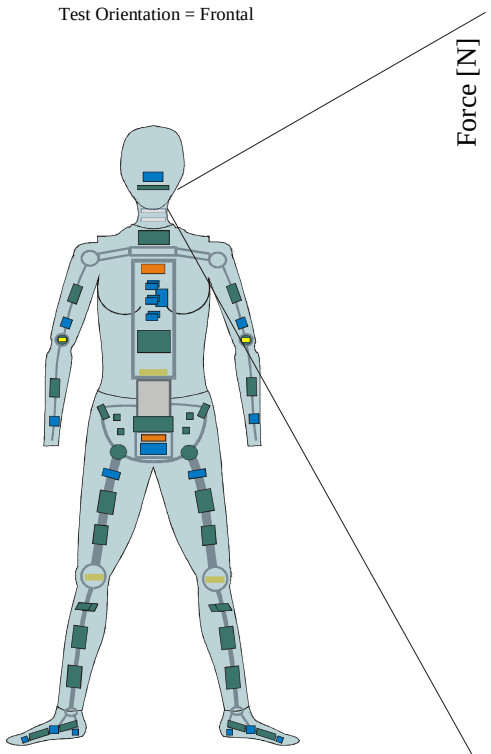
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

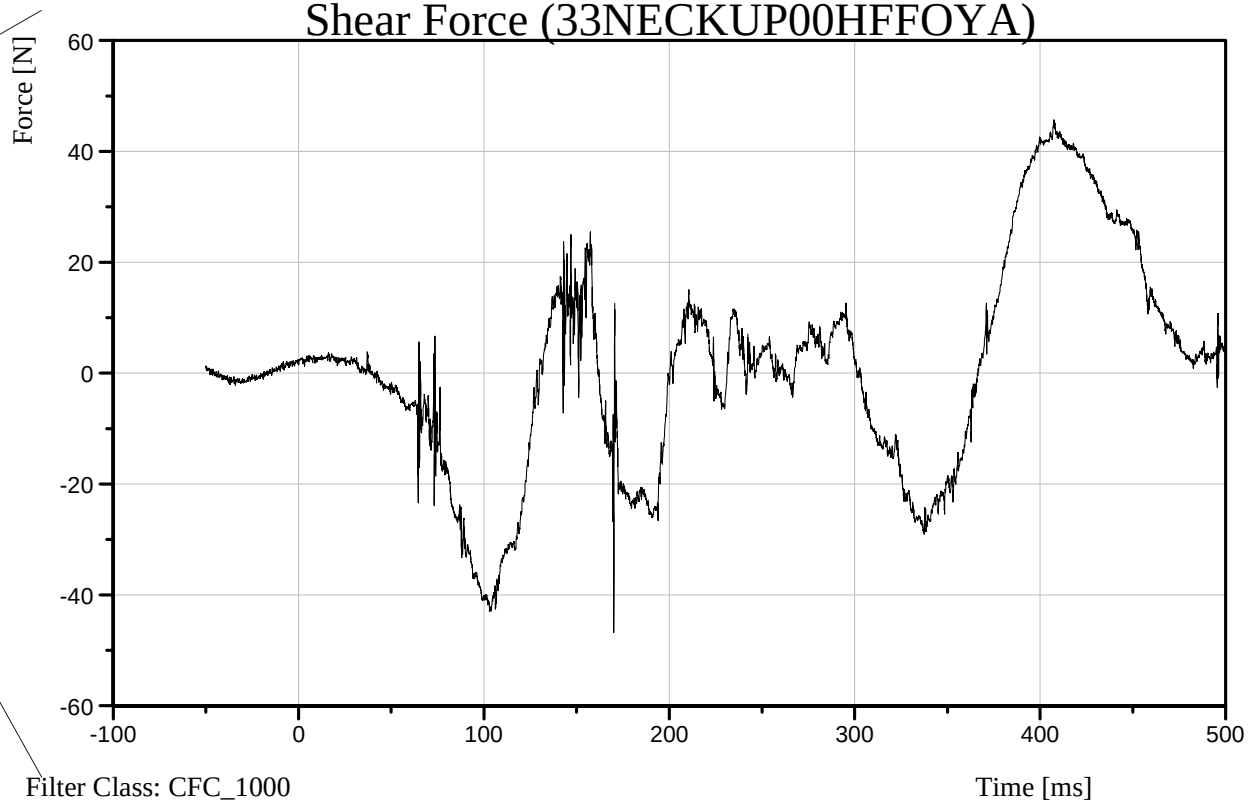
Neck Shear Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Filter Class: CFC_1000

Dummy:HIII 5th Female
Seating Position:
Right Side Row 13 Left Seat

[Max.] 45.74 N at 407.44 ms
[Min.] -46.80 N at 170.08 ms

Neck Shear Force Source Code: Min/Max of 33NECKUP00HFFOYA

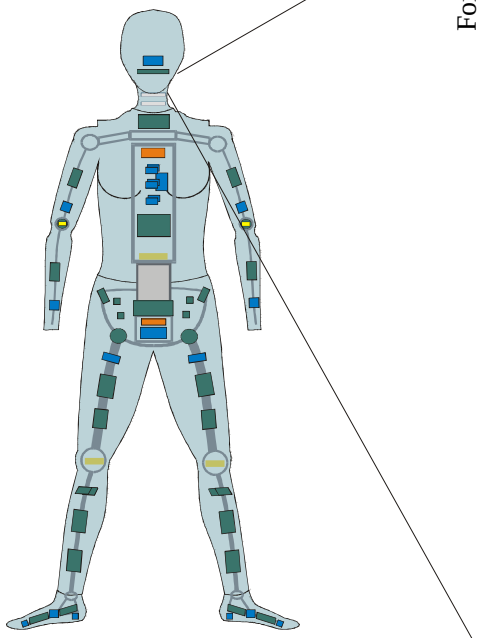
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

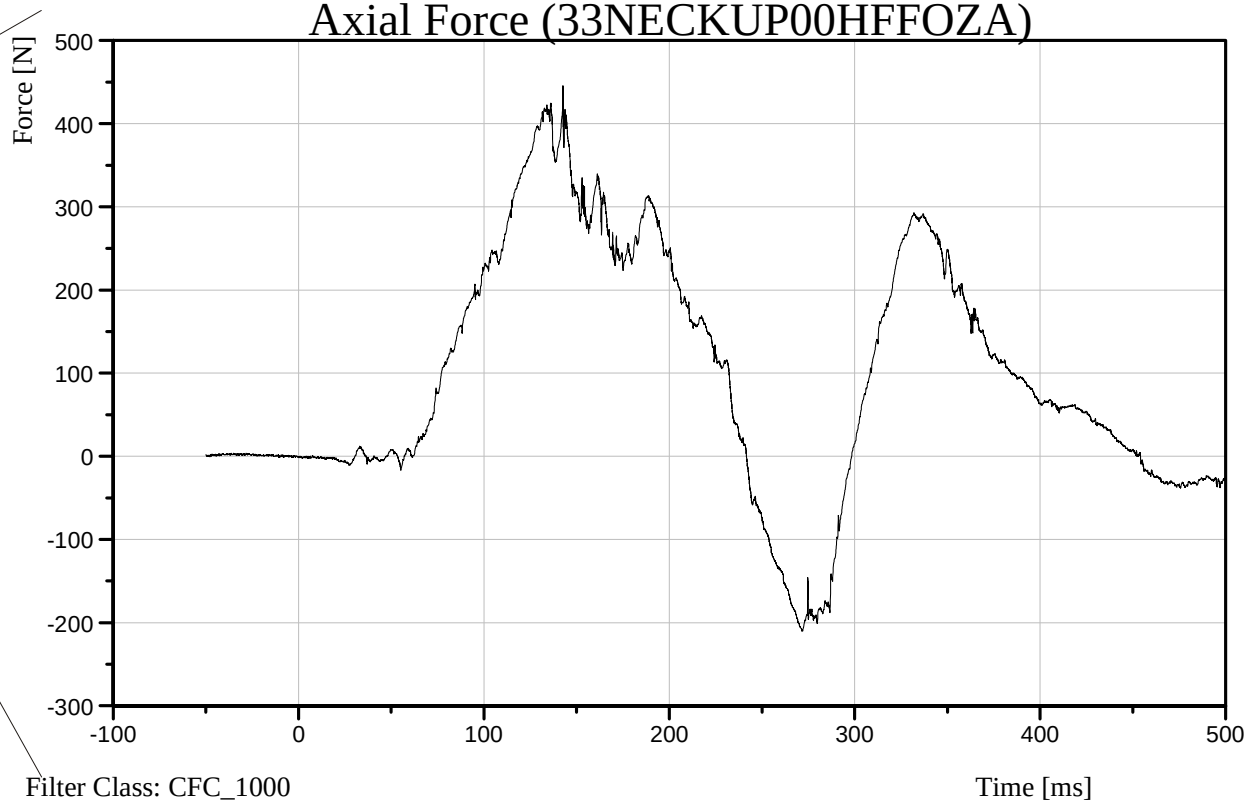
Neck Axial Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 5th Female
Seating Position:
Right Side Row 13 Left Seat

[Max.] 445.64 N at 142.64 ms
[Min.] -210.35 N at 271.84 ms

Neck Axial Force Source Code: Min/Max of 33NECKUP00HFFOZA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

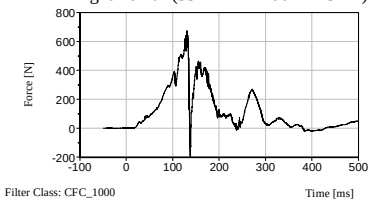
Femur Load

Date: 12/14/2007
Time: 9:12

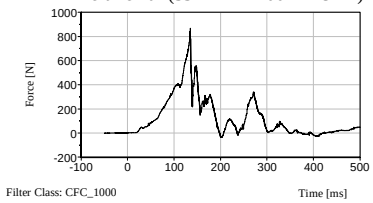
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

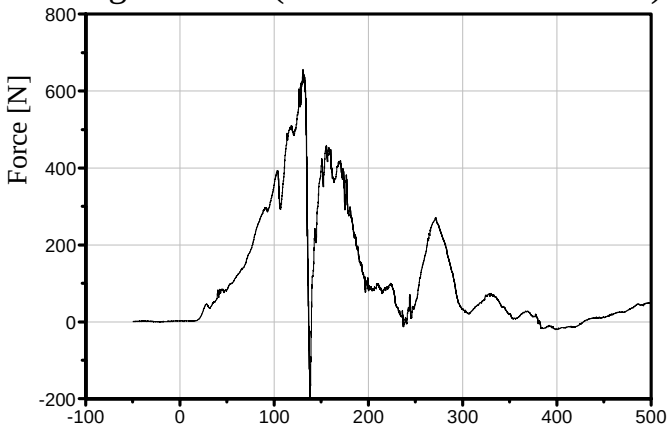
Right Femur (33FEMRRL00HFFOZA)

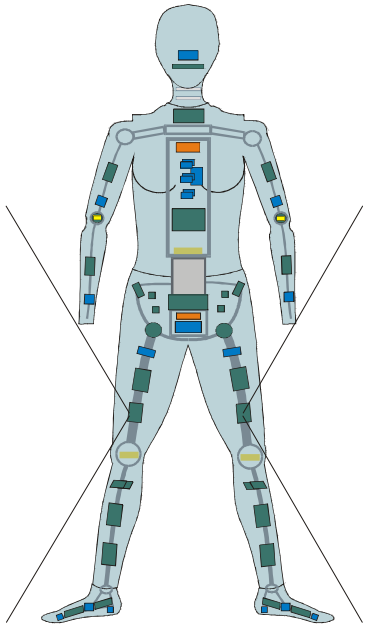


Left Femur (33FEMRLL00HFFOZA)

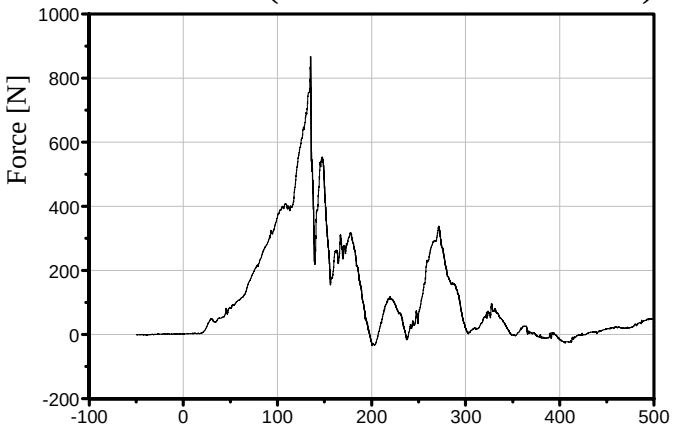


Right Femur (33FEMRRL00HFFOZB)





Left Femur (33FEMRLL00HFFOZB)



Max [Tension] 656.76 N at 130.64 ms
Min [Compression] -195.08 N at 138.16 ms

Dummy:HIII 5th Female
Seating Position:
Right Side Row 13 Left Seat

Max [Tension] 868.05 N at 135.12 ms
Min [Compression] -34.01 N at 200.64 ms

Femur Load Source Code : Min/Max of 33FEMRRL00HFFOZB and 33FEMRLL00HFFOZB (CFC 600)

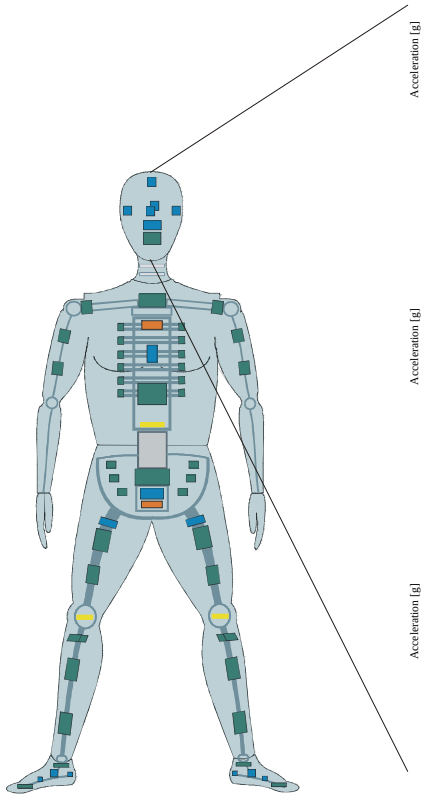
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

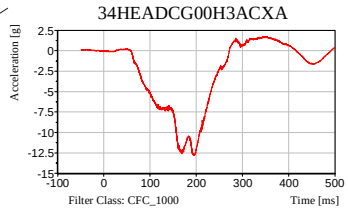
Head Injury Criterion (HIC)

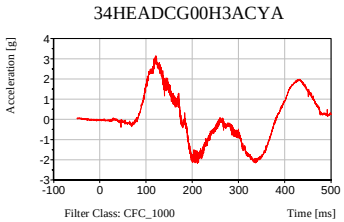
Date: 12/14/2007
Time: 9:12

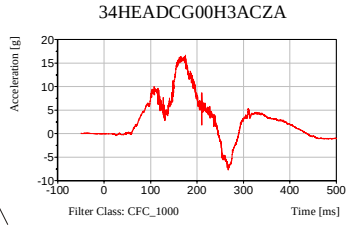
Customer: VRTC

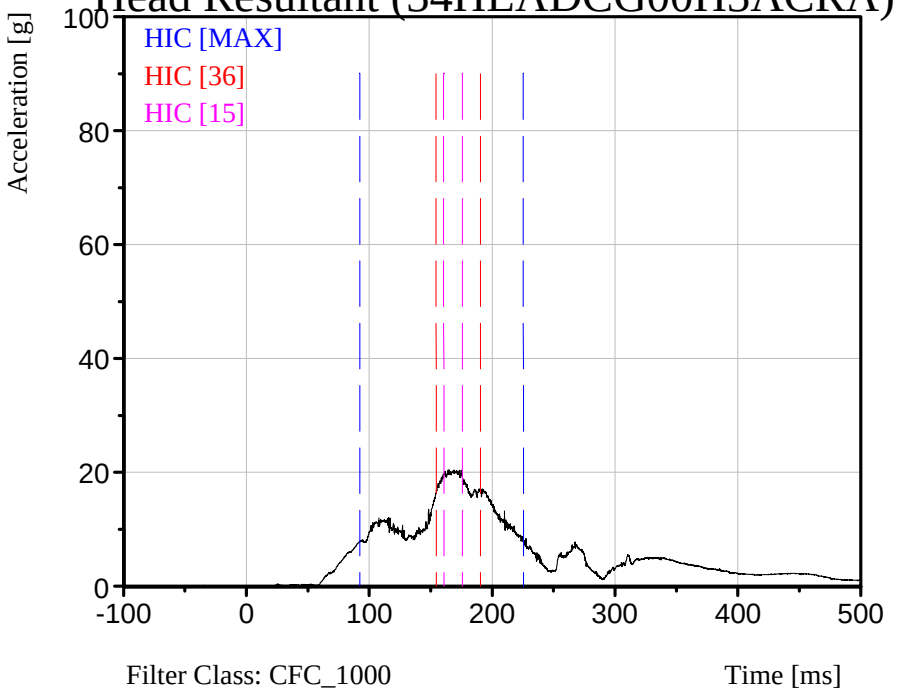
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 80.21	92.32 ms	225.52 ms	12.94 g
HIC [36] = 52.34	154.48 ms	190.48 ms	18.40 g
HIC [15] = 26.62	160.72 ms	175.76 ms	19.91 g

Dummy:HIII 50th Male
Seating Position:
Right Side Row 13 Right Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

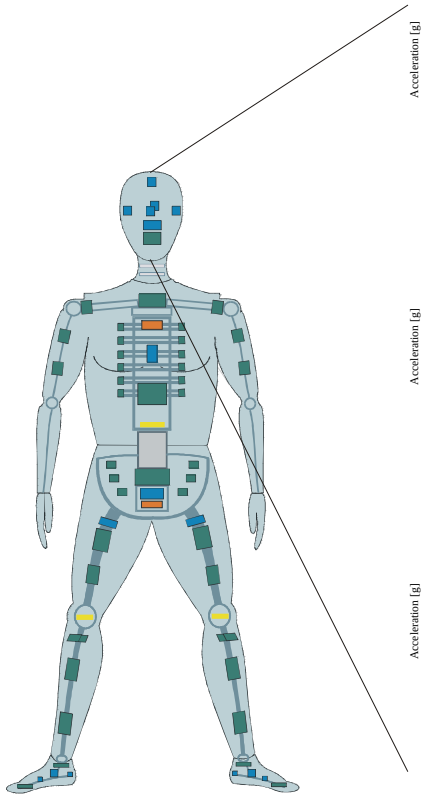
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

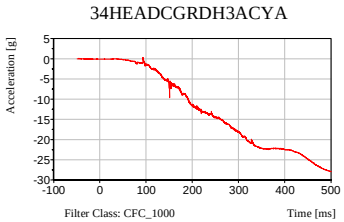
Head Injury Criterion (HIC)

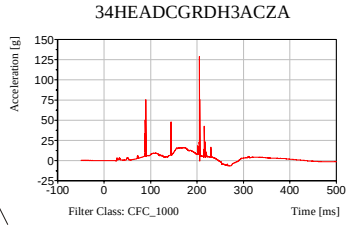
Date: 12/14/2007
Time: 9:12

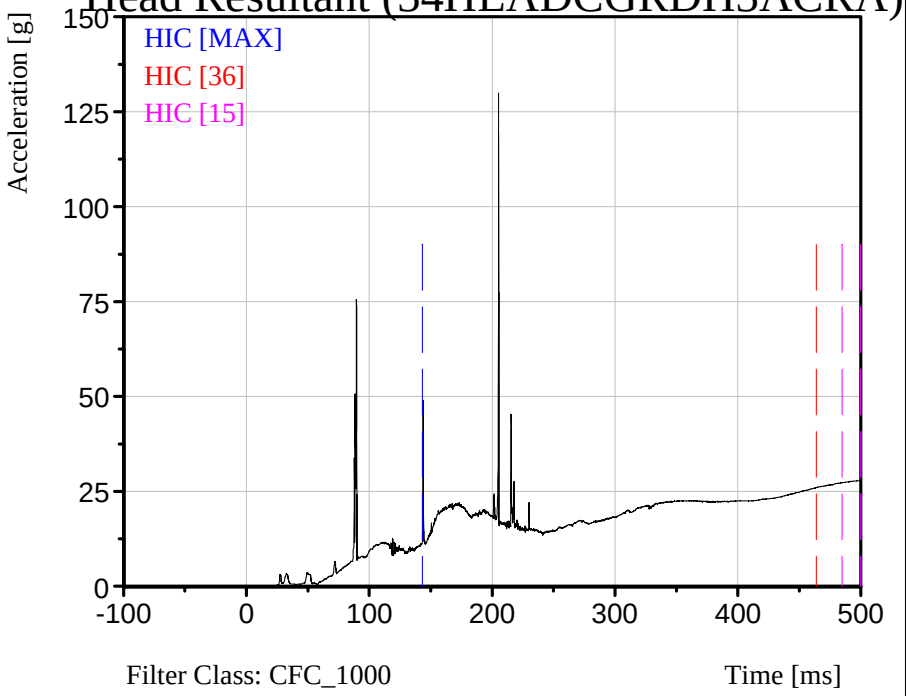
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214









	T1 (Begin)	T2 (End)	Avg. g T1 to T2
HIC [Max.] = 705.02	143.28 ms	500.00 ms	20.81 g
HIC [36] = 137.50	464.00 ms	500.00 ms	27.09 g
HIC [15] = 60.36	484.96 ms	500.00 ms	27.63 g

Dummy:HIII 50th Male
Seating Position:
Right Side Row 13 Right Seat

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

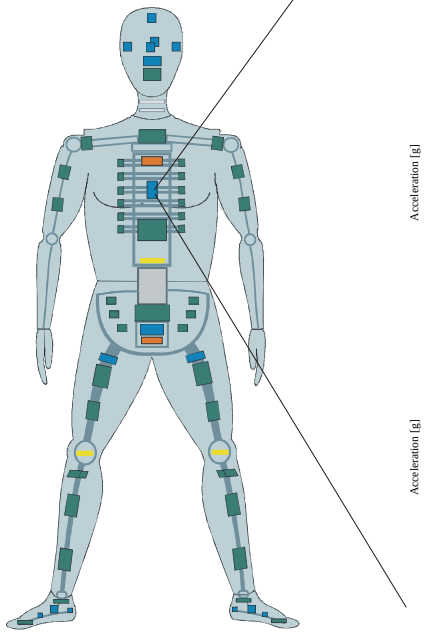
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

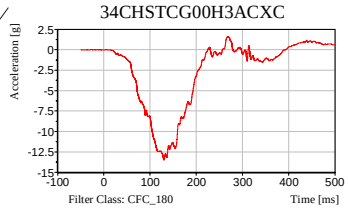
3 ms Duration Acceleration (Chest)

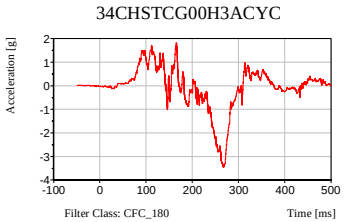
Date: 12/14/2007
Time: 9:12

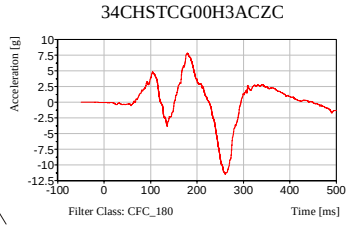
Customer: VRTC

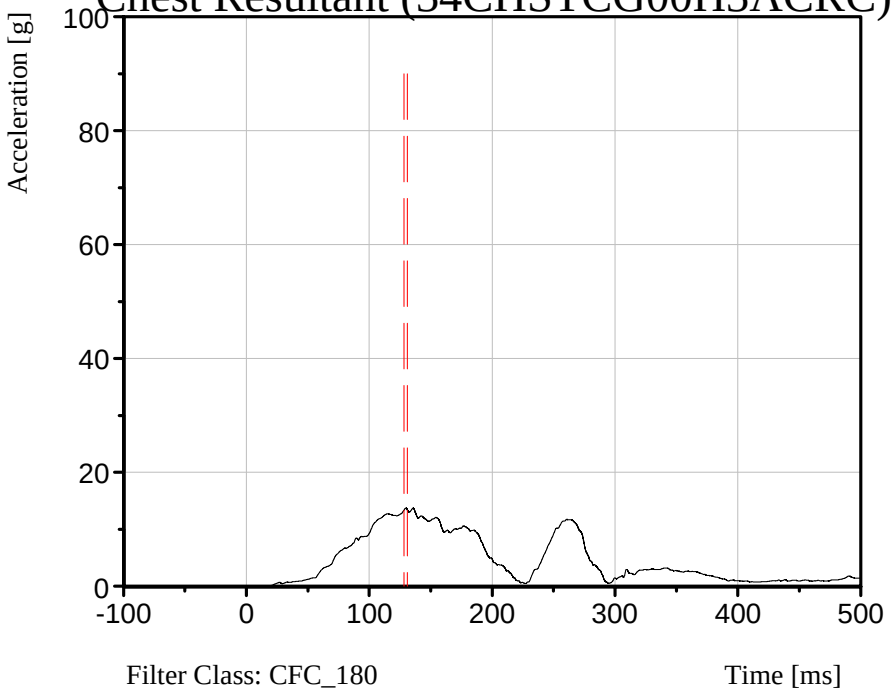
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 13.37 g	128.21 ms	131.21 ms
Chest Severity Index = 59.44		

Dummy:HIII 50th Male
Seating Position:
Right Side Row 13 Right Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

B-200

071214

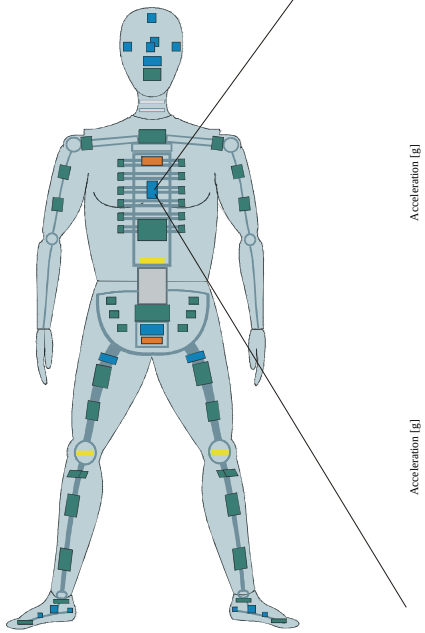
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

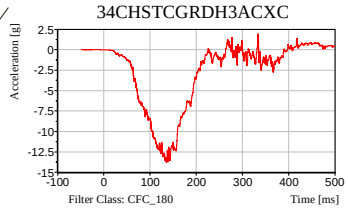
3 ms Duration Acceleration (Chest)

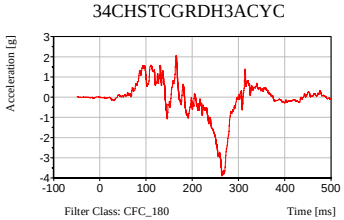
Date: 12/14/2007
Time: 9:12

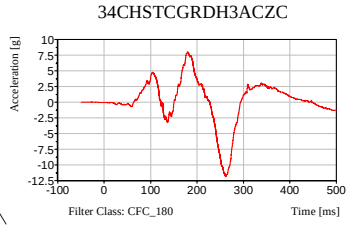
Customer: VRTC

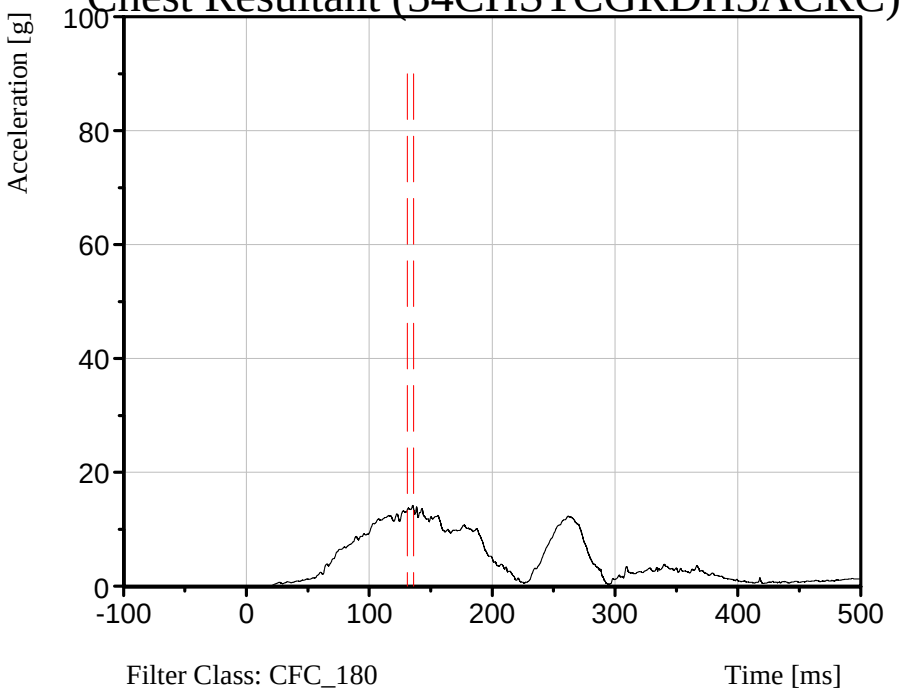
TRC Inc. Test Lab: CTF
Test Number: 071214











	T1 (Begin)	T2 (End)
3 ms Duration Acceleration = 13.46 g	131.06 ms	136.32 ms
Chest Severity Index = 61.05		

Dummy:HIII 50th Male
Seating Position:
Right Side Row 13 Right Seat

3 ms Duration Acceleration Source Code : vbScript w/DIAdem 9.0

B-201

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

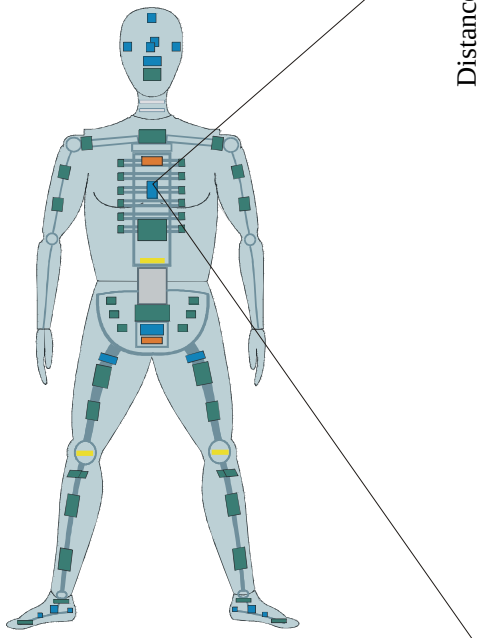
Chest Deflection

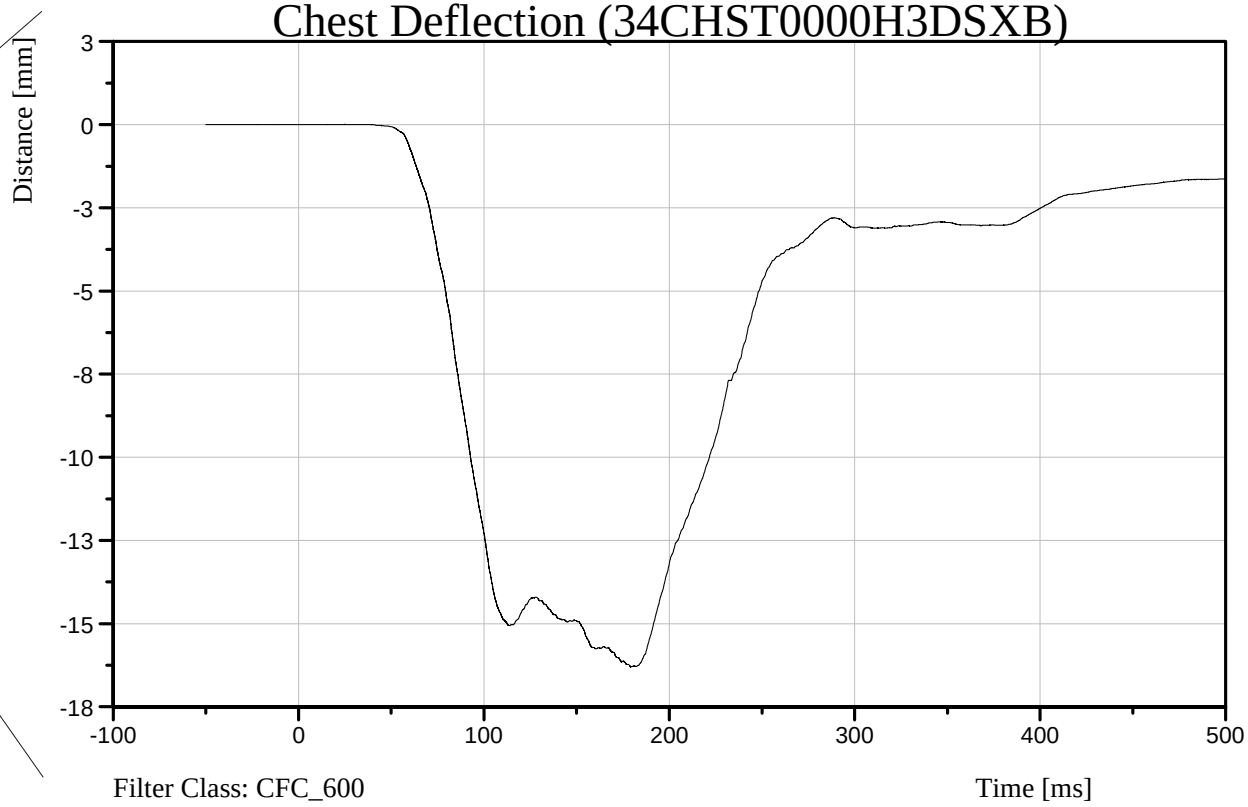
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Dummy:HIII 50th Male
Seating Position:
Right Side Row 13 Right Seat

[Max.] 0.01 mm at 25.20 ms
[Min.] -16.30 mm at 179.20 ms

ChestDeflection Source Code : Min/Max of 34CHST0000H3DSXB (CFC_600)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph
Neck Moment about the Occipital Condyle (NECK OM)

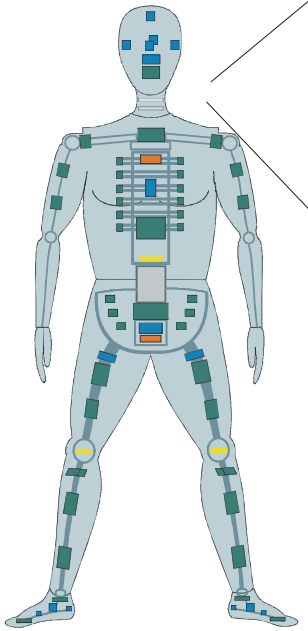
Date: 12/14/2007
Time: 9:12

Customer: VRTC

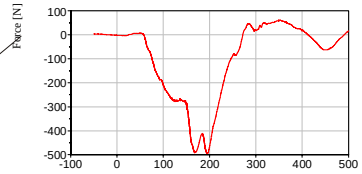
TRC Inc. Test Lab: CTF

Test Number: 071214

Test Orientation = Frontal



34NECKUP00H3FOXB

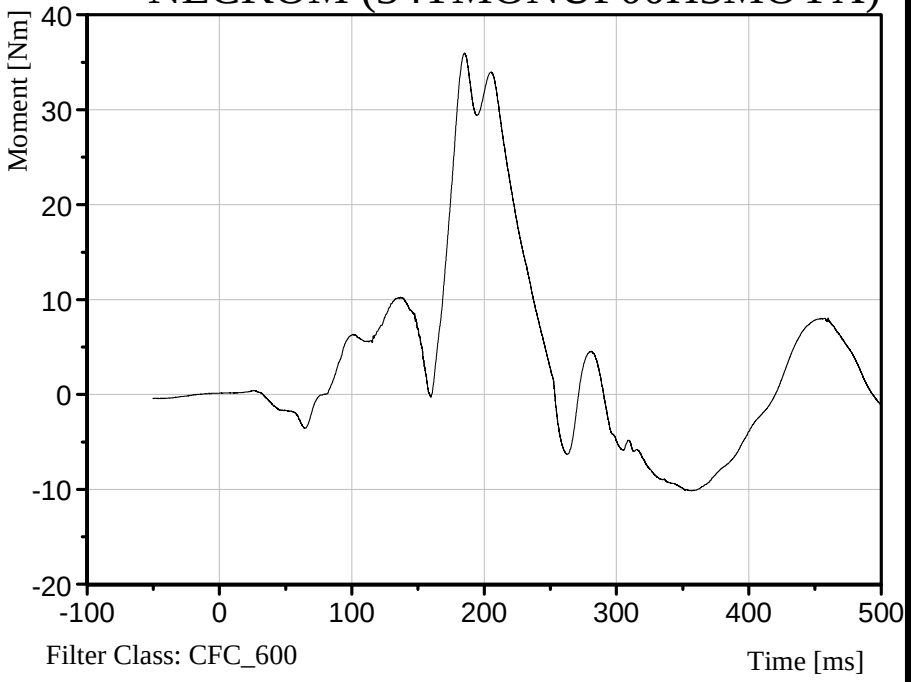


Filter Class: CFC_600

34NECKUP00H3MOYB

Filter Class: CFC_600

NECKOM (34TMONUP00H3MOYX)



Filter Class: CFC_600

Dummy:HIII 50th Male
Seating Position:
Right Side Row 13 Right Seat

Neck OM Source Code: My - (D*Fx)

[Max.] 35.97 Nm at 185.28 ms
[Min.] -10.13 Nm at 356.48 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

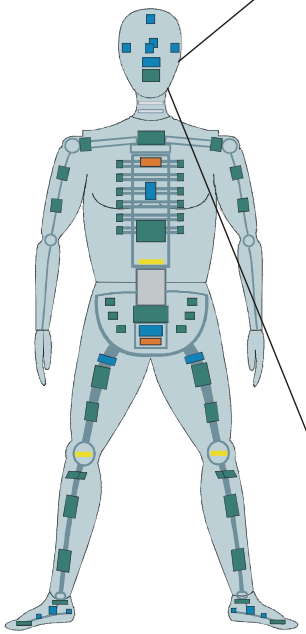
Neck Injury Predictor (NIJ)

Date: 12/14/2007
Time: 9:12

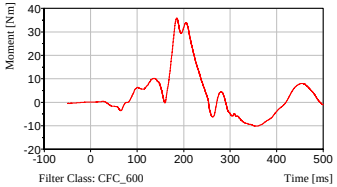
Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

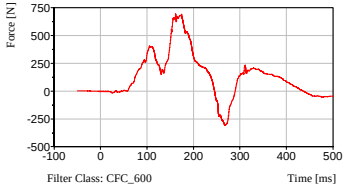
Test Orientation = Frontal
Fzc(Tension) = 6806
Fzc(Compression) = 6160
Myc(Extension) = 135
Myc(Flexion) = 310



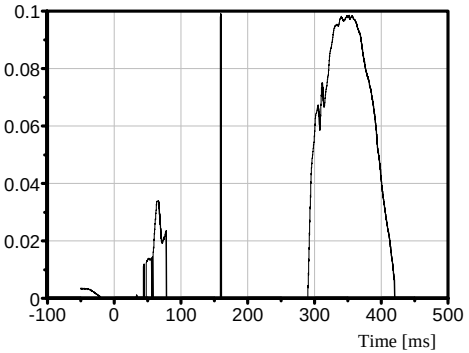
34TMONUP00H3MOYX



34NECKUP00H3FOZB

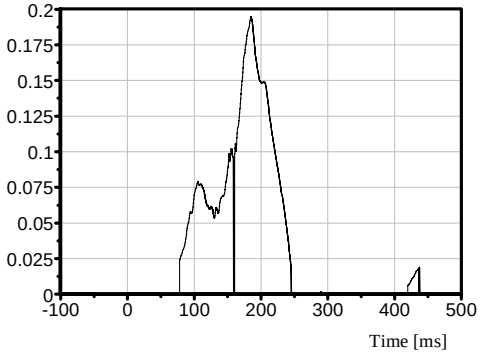


34NIJCUPTEH300YX



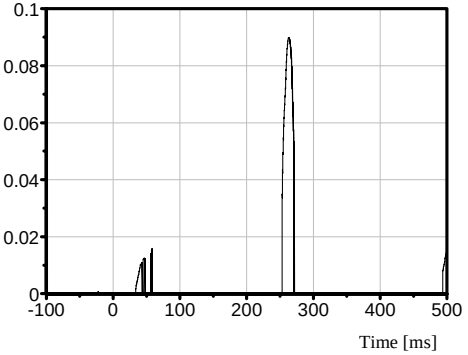
Max [NTE] 0.0990 at 159.92 ms

34NIJCUPTFH300YX



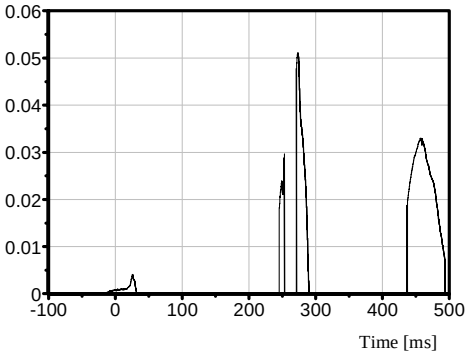
Max [NTF] 0.1947 at 185.20 ms

34NIJCUPCEH300YX



Max [NCE] 0.0899 at 262.96 ms

34NIJCUPCFH300YX



Max [NCF] 0.0511 at 273.60 ms

Dummy:HIII 50th Male
Seating Position:
Right Side Row 13 Right Seat

NIJ Source Code: (Fz/Fzc)+(My/Myc)

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

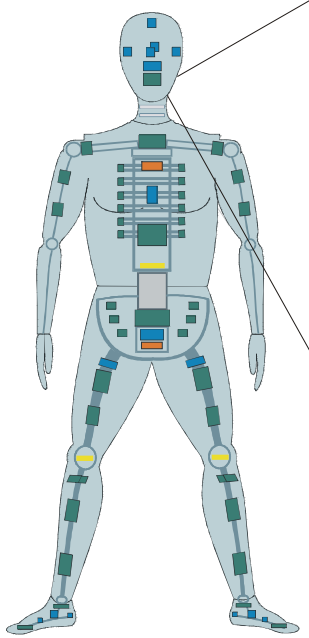
Neck Shear Force

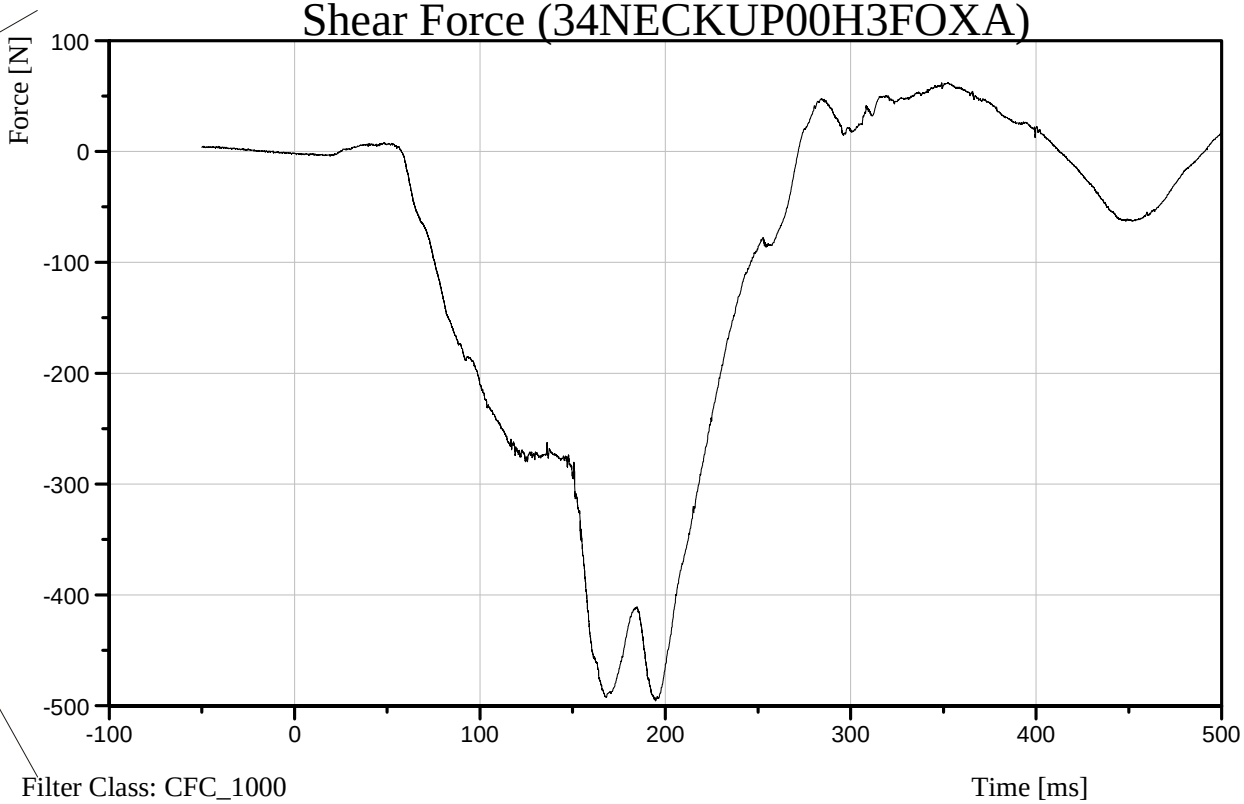
Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214

Test Orientation = Frontal





Filter Class: CFC_1000

Dummy:HIII 50th Male
Seating Position:
Right Side Row 13 Right Seat

[Max.] 62.20 N at 352.32 ms
[Min.] -495.50 N at 194.88 ms

Neck Shear Force Source Code: Min/Max of 34NECKUP00H3FOXA

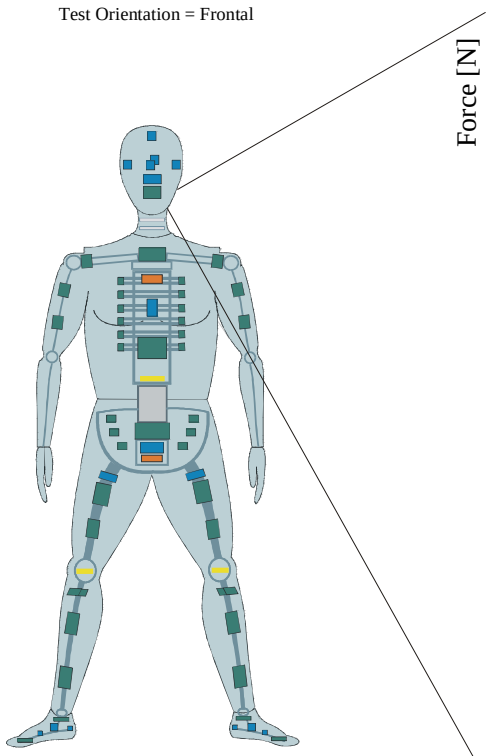
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

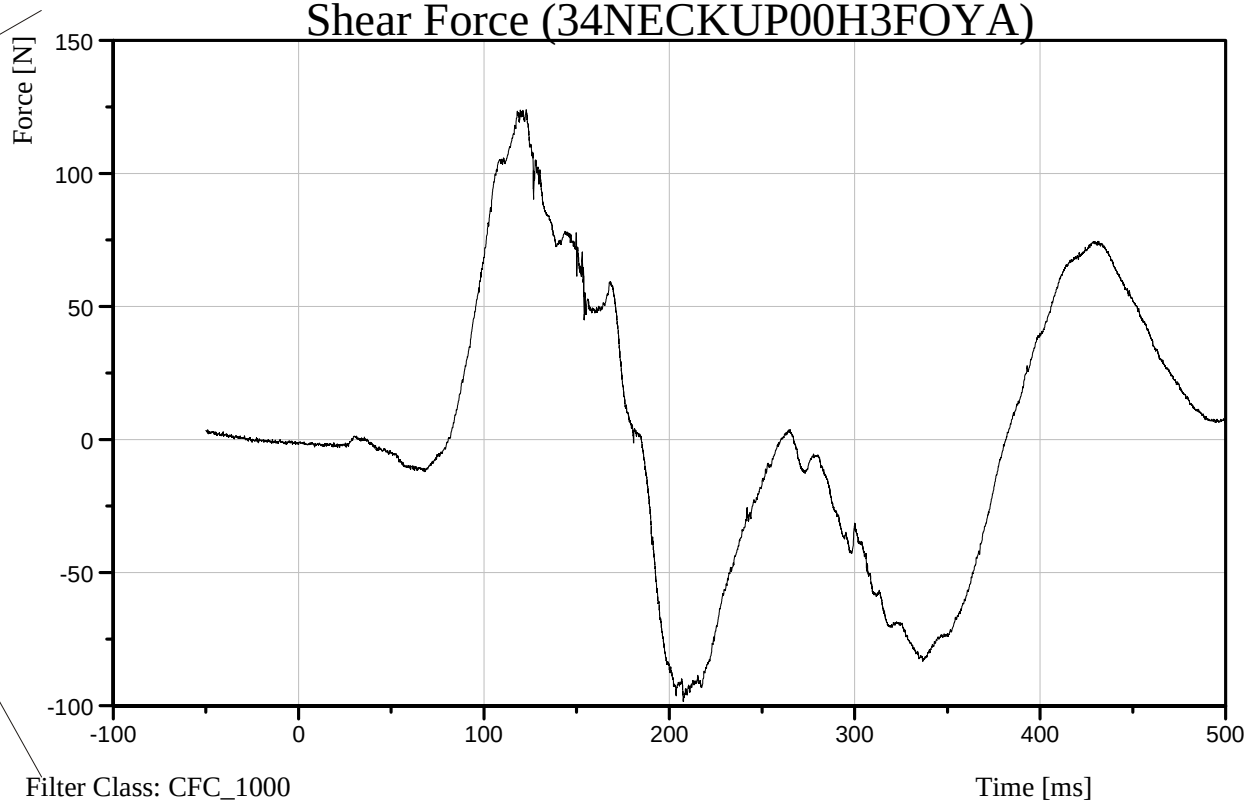
Neck Shear Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Right Side Row 13 Right Seat

[Max.] 124.06 N at 122.80 ms
[Min.] -98.31 N at 207.60 ms

Neck Shear Force Source Code: Min/Max of 34NECKUP00H3FOYA

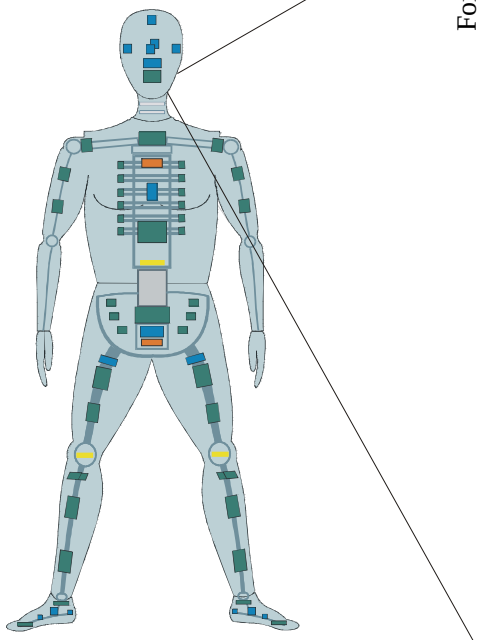
2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

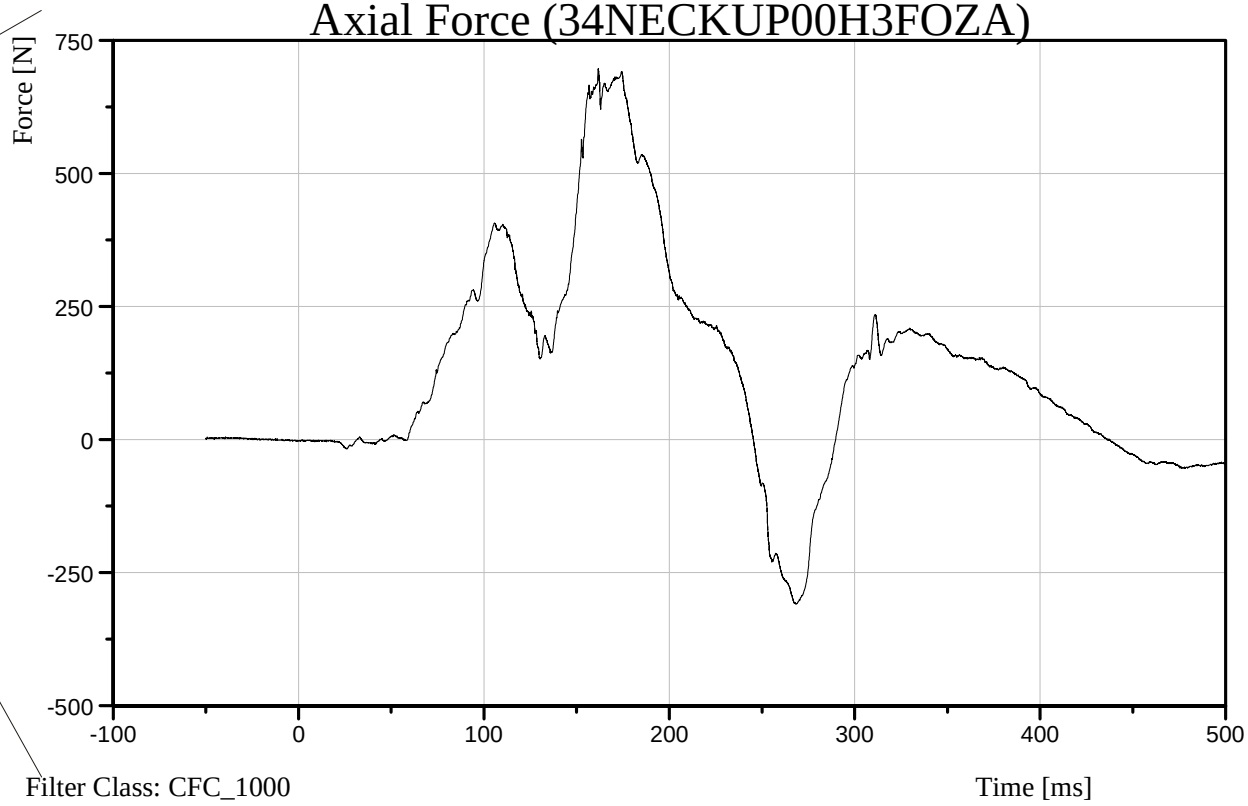
Neck Axial Force

Date: 12/14/2007
Time: 9:12

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 071214





Dummy:HIII 50th Male
Seating Position:
Right Side Row 13 Right Seat

[Max.] 697.57 N at 161.68 ms
[Min.] -308.68 N at 268.48 ms

Neck Axial Force Source Code: Min/Max of 34NECKUP00H3FOZA

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

Femur Load

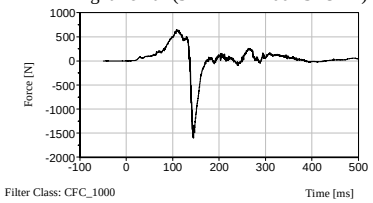
Date: 12/14/2007
Time: 9:12

Customer: VRTC

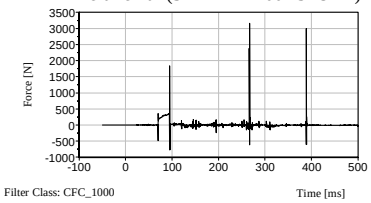
TRC Inc. Test Lab: CTF

Test Number: 071214

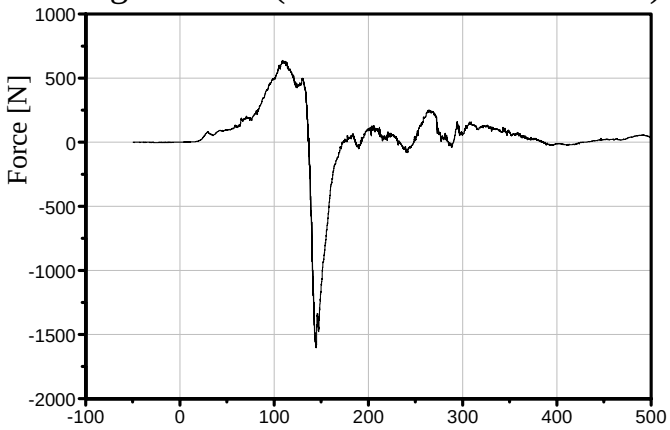
Right Femur (34FEMRRL00H3FOZA)

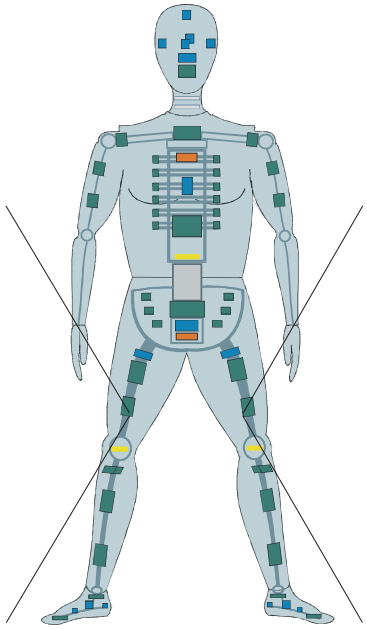


Left Femur (34FEMRLL00H3FOZA)

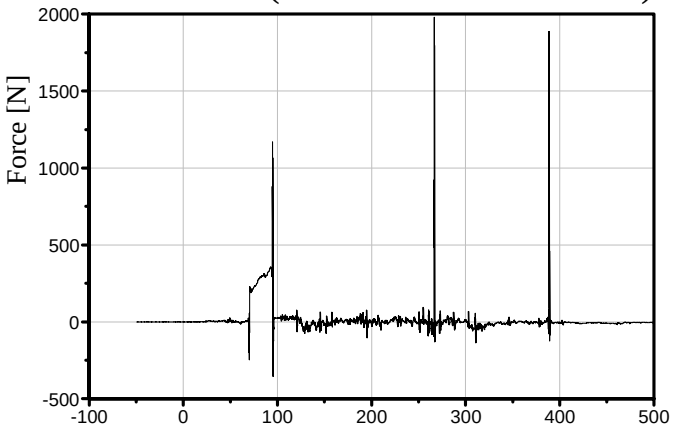


Right Femur (34FEMRRL00H3FOZB)





Left Femur (34FEMRLL00H3FOZB)



Max [Tension] 640.90 N at 109.04 ms
Min [Compression] -1,602.46 N at 144.56 ms

Dummy:HIII 50th Male
Seating Position:
Right Side Row 13 Right Seat

Max [Tension] 1,979.92 N at 266.64 ms
Min [Compression] -353.76 N at 95.20 ms

Femur Load Source Code : Min/Max of 34FEMRRL00H3FOZB and 34FEMRLL00H3FOZB (CFC 600)

Dummy and Vehicle Data Plots

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

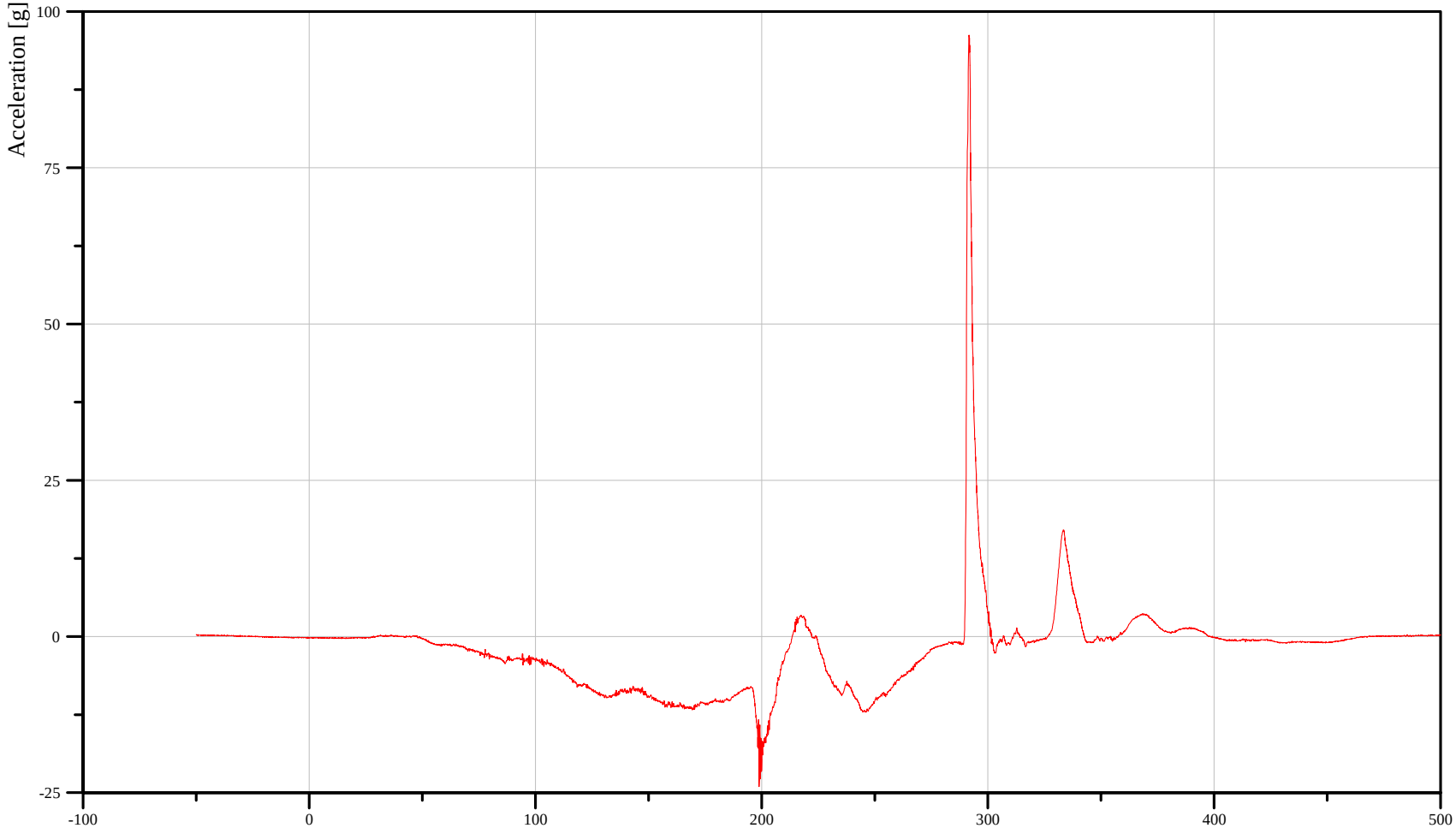
Date: 12/14/2007
Time: 9:12

4R-Left Head X-Axis Acceleration

Customer: VRTC

11HEADCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-24.04 g at 198.88 ms

Max. Value
96.28 g at 291.68 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

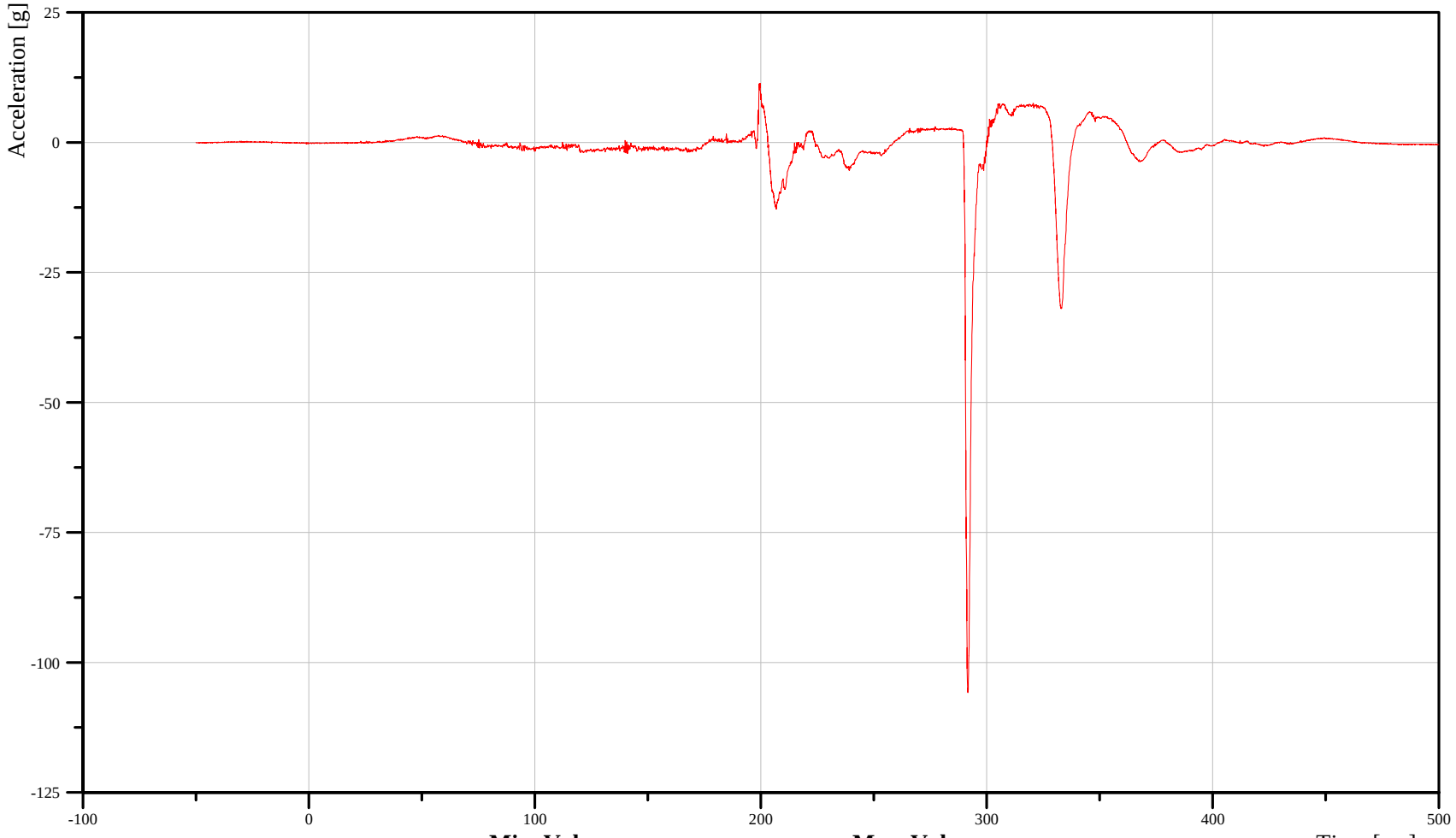
Date: 12/14/2007
Time: 9:12

4R-Left Head Y-Axis Acceleration

Customer: VRTC

11HEADCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-105.79 g at 291.68 ms

Max. Value
11.33 g at 199.68 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

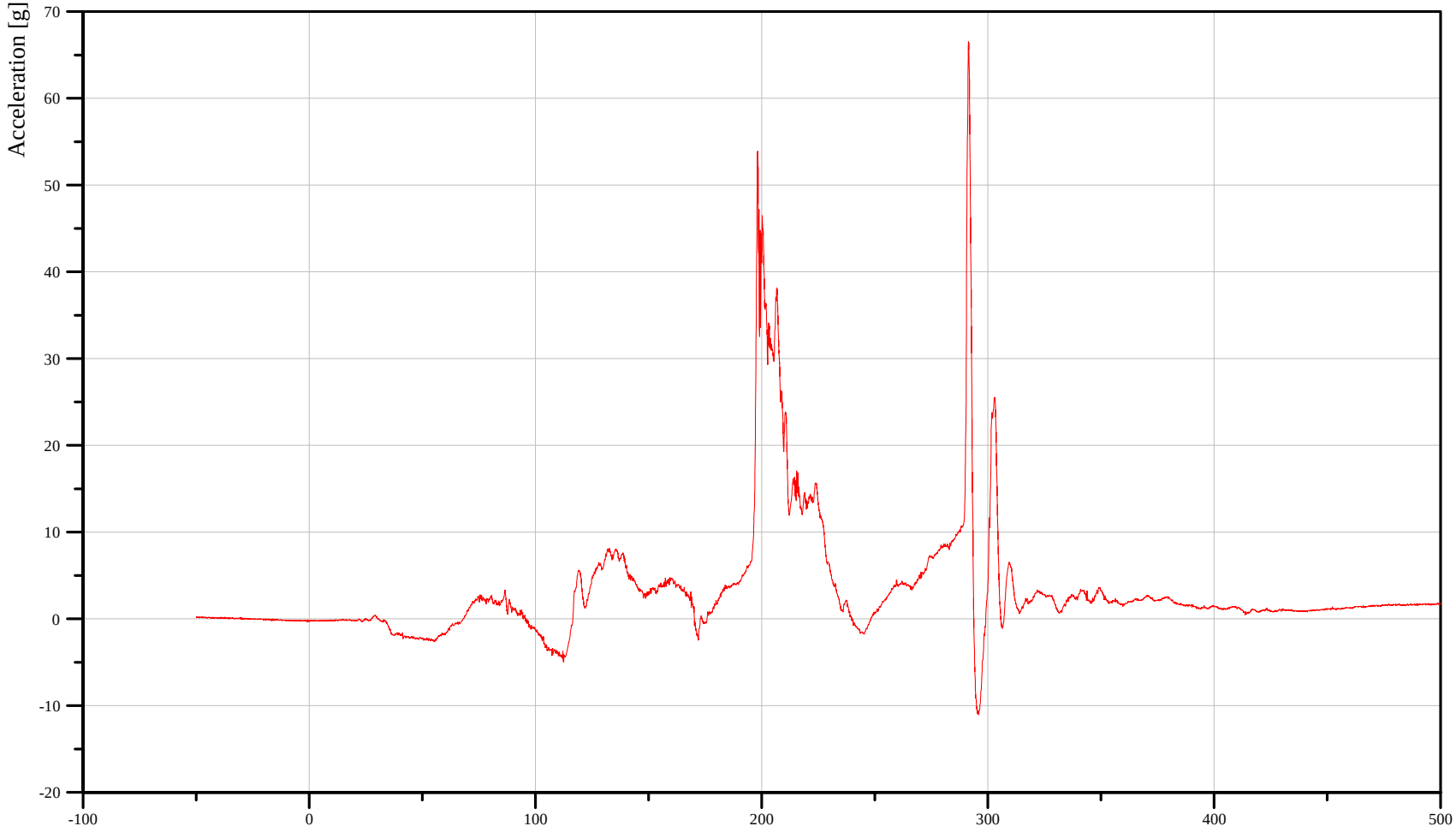
Date: 12/14/2007
Time: 9:12

4R-Left Head Z-Axis Acceleration

Customer: VRTC

11HEADCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-11.02 g at 295.92 ms

Max. Value
66.55 g at 291.44 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

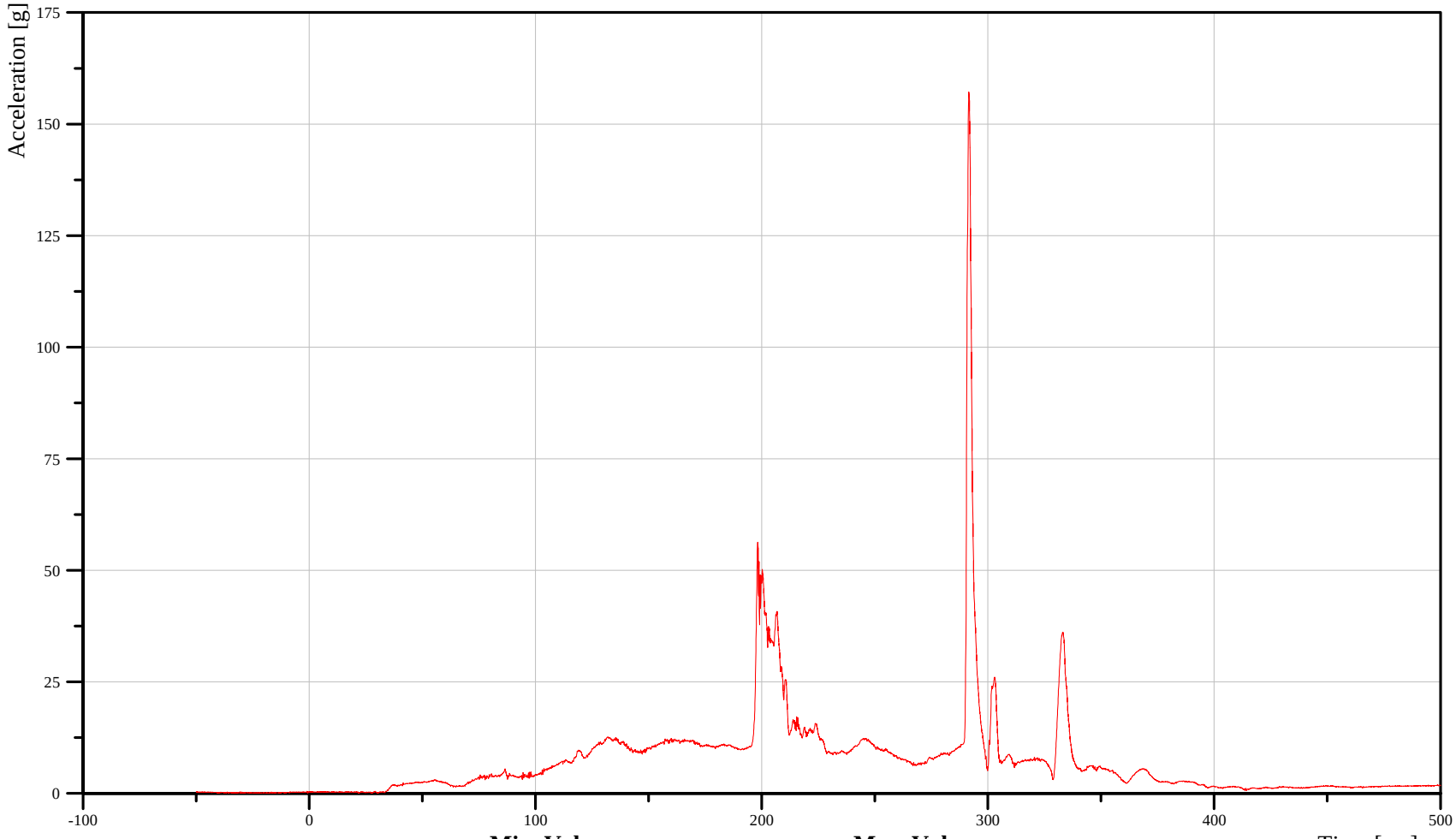
Date: 12/14/2007
Time: 9:12

4R-Left Head Resultant Acceleration

Customer: VRTC

11HEADCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.06 g at -29.20 ms

Max. Value
157.21 g at 291.60 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

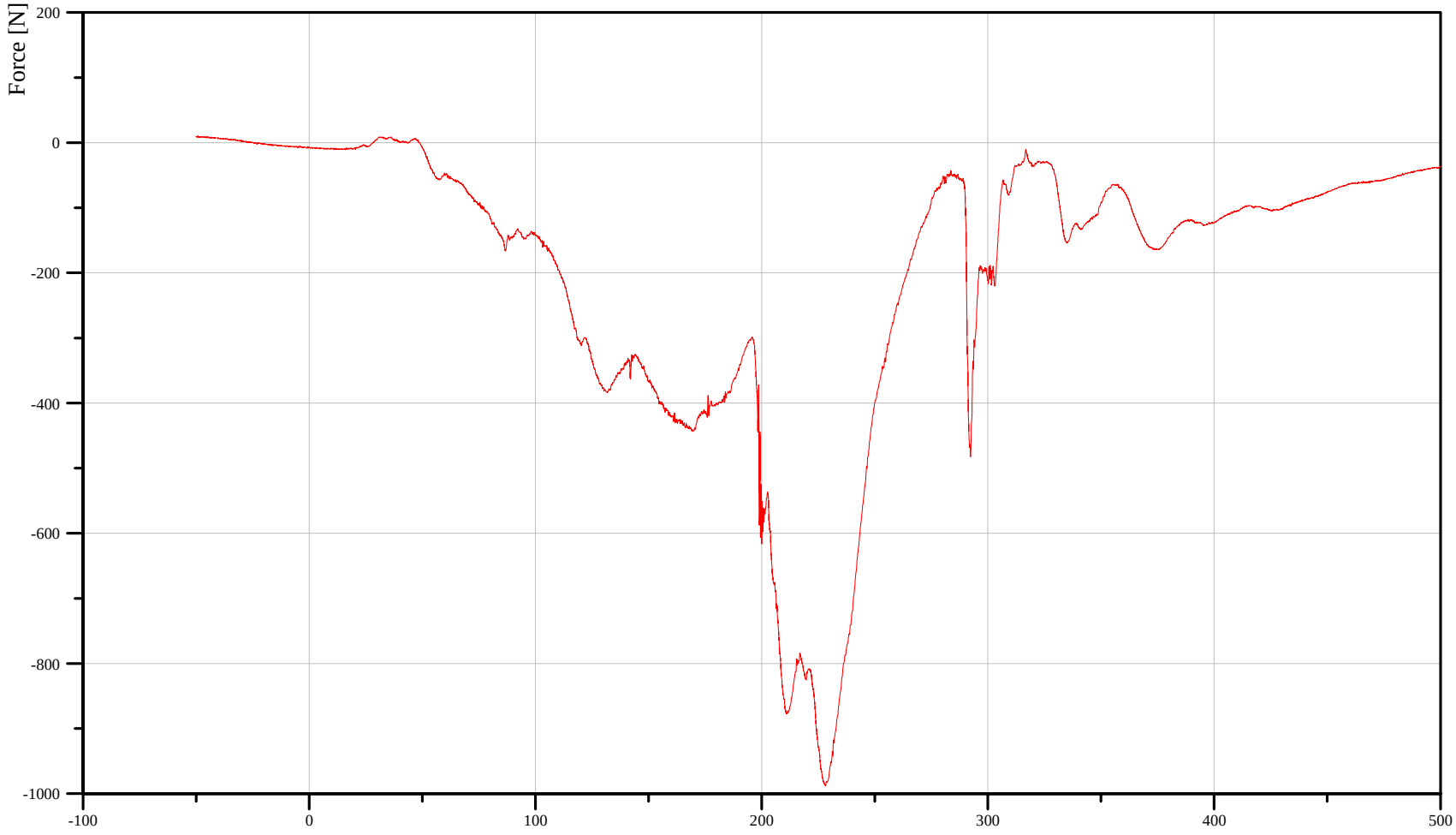
4R-Left Neck Force X

Date: 12/14/2007
Time: 9:12

Customer: VRTC

11NECKUP00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-987.81 N at 228.16 ms

Max. Value
9.90 N at -49.28 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

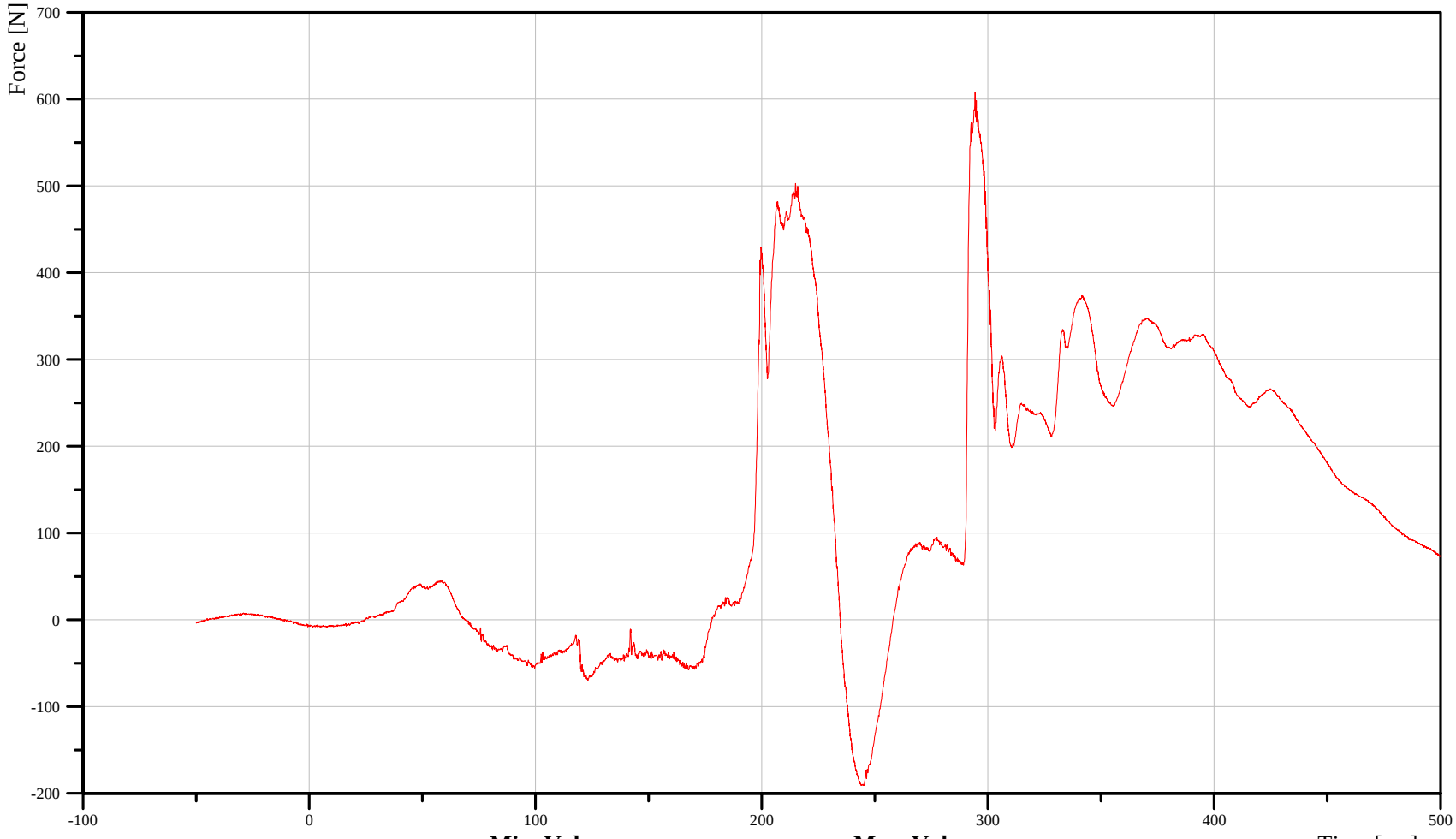
4R-Left Neck Force Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

11NECKUP00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-190.94 N at 244.16 ms

Max. Value
607.91 N at 294.32 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

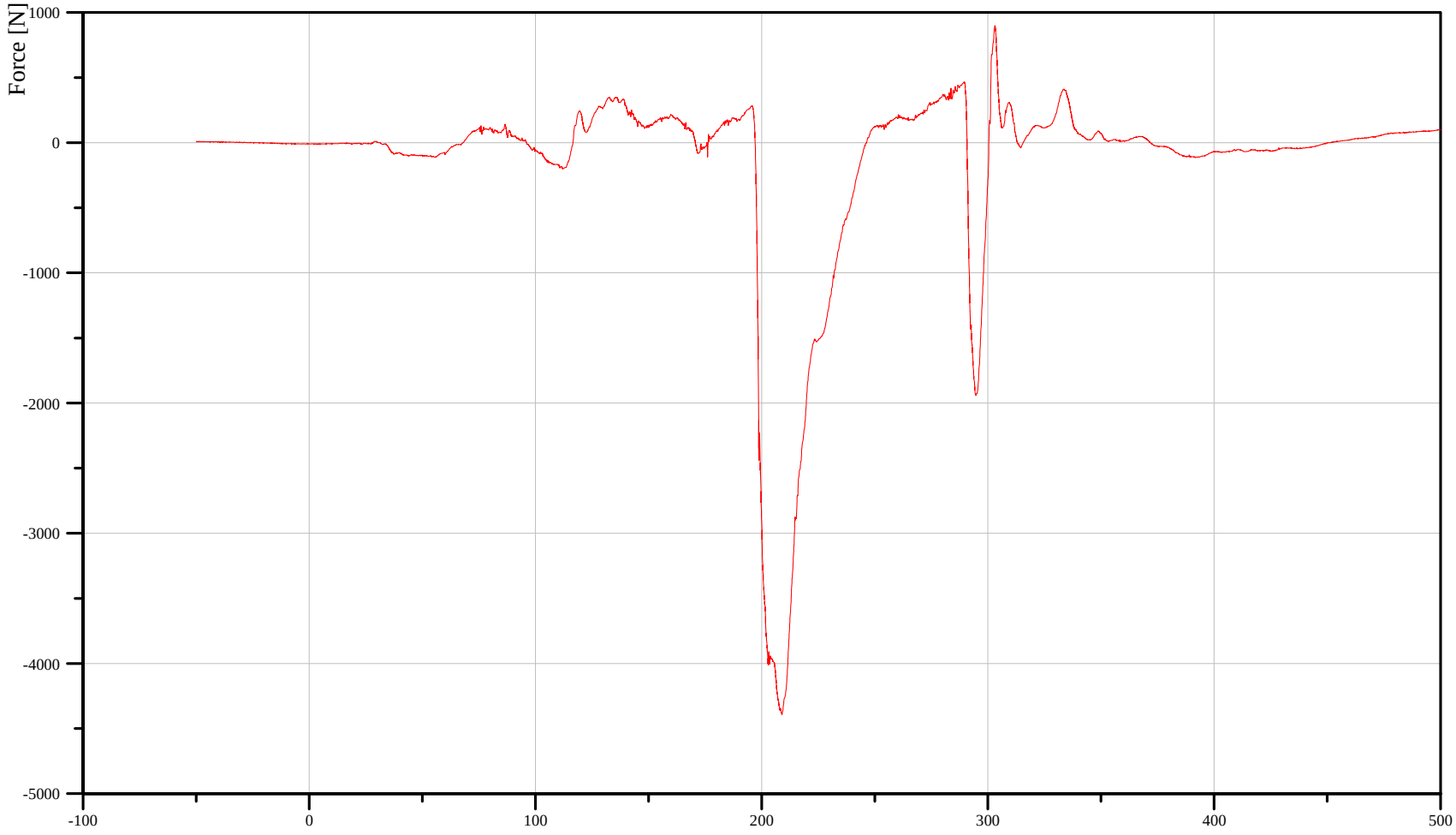
4R-Left Neck Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

11NECKUP00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-4,388.50 N at 208.96 ms

Max. Value
898.92 N at 303.12 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

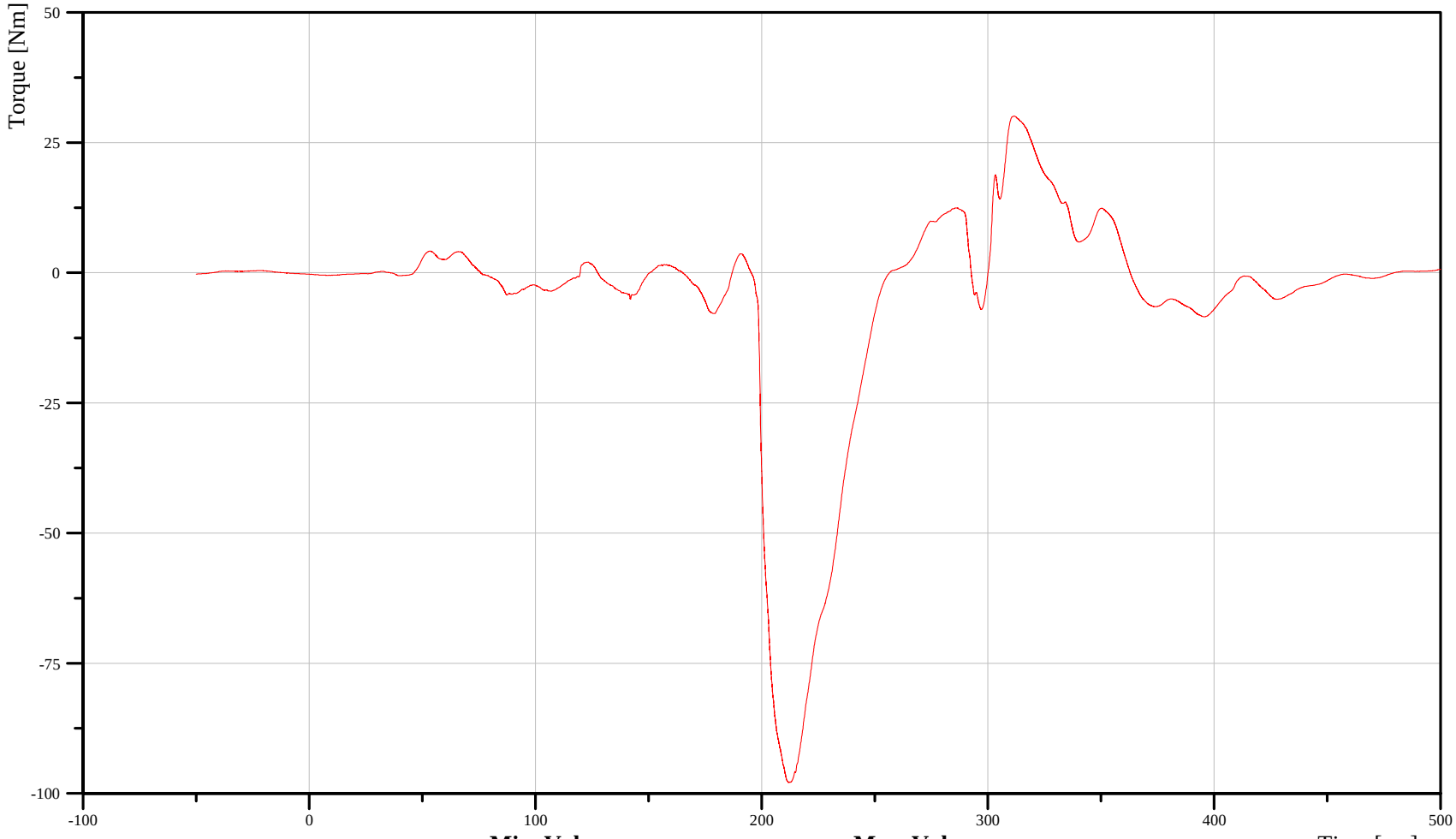
4R-Left Neck Moment X

Date: 12/14/2007
Time: 9:12

Customer: VRTC

11NECKUP00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-97.94 Nm at 212.00 ms

Max. Value
30.08 Nm at 311.76 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

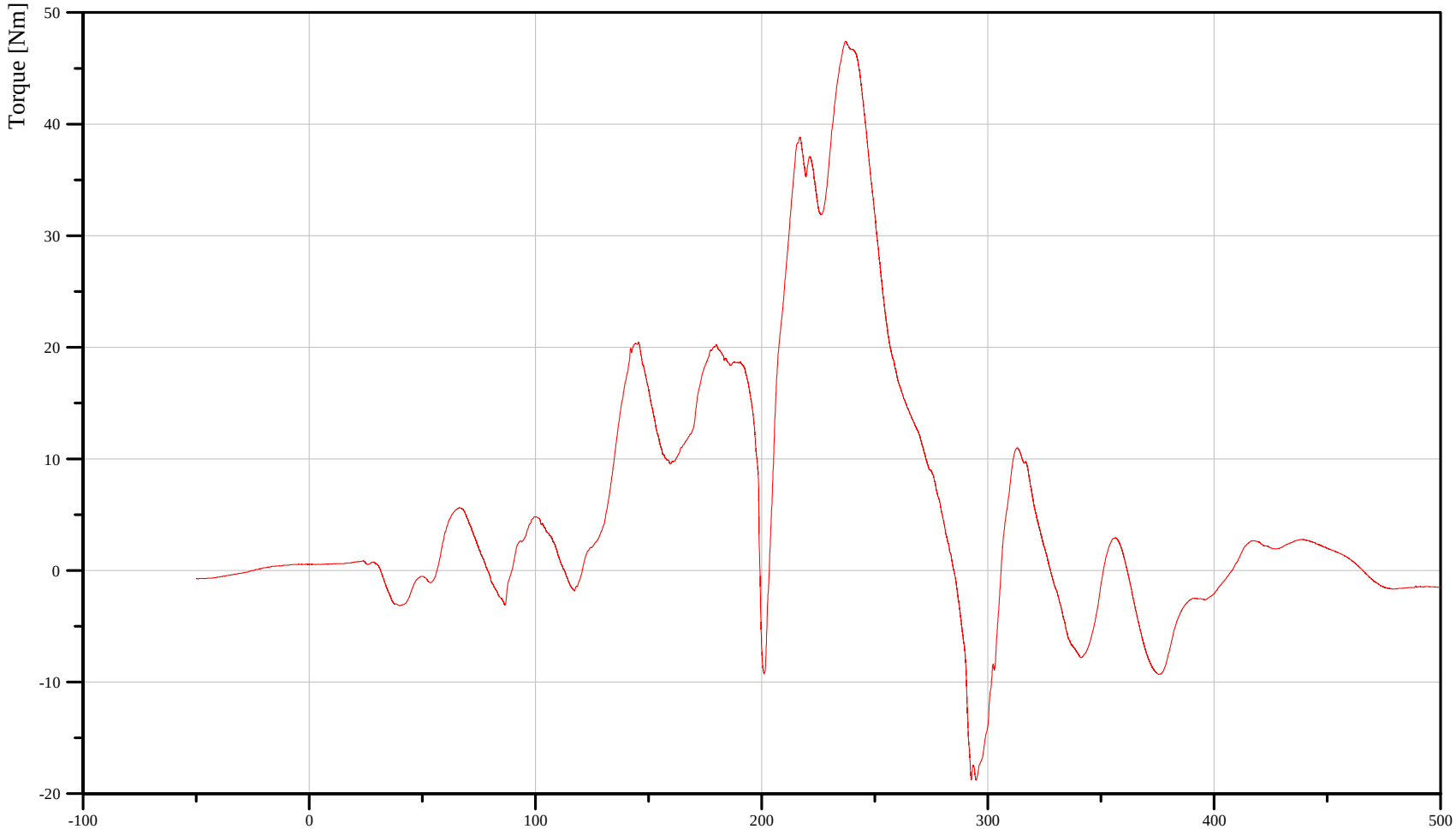
4R-Left Neck Moment Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

11NECKUP00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-18.78 Nm at 294.80 ms

Max. Value
47.42 Nm at 237.12 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

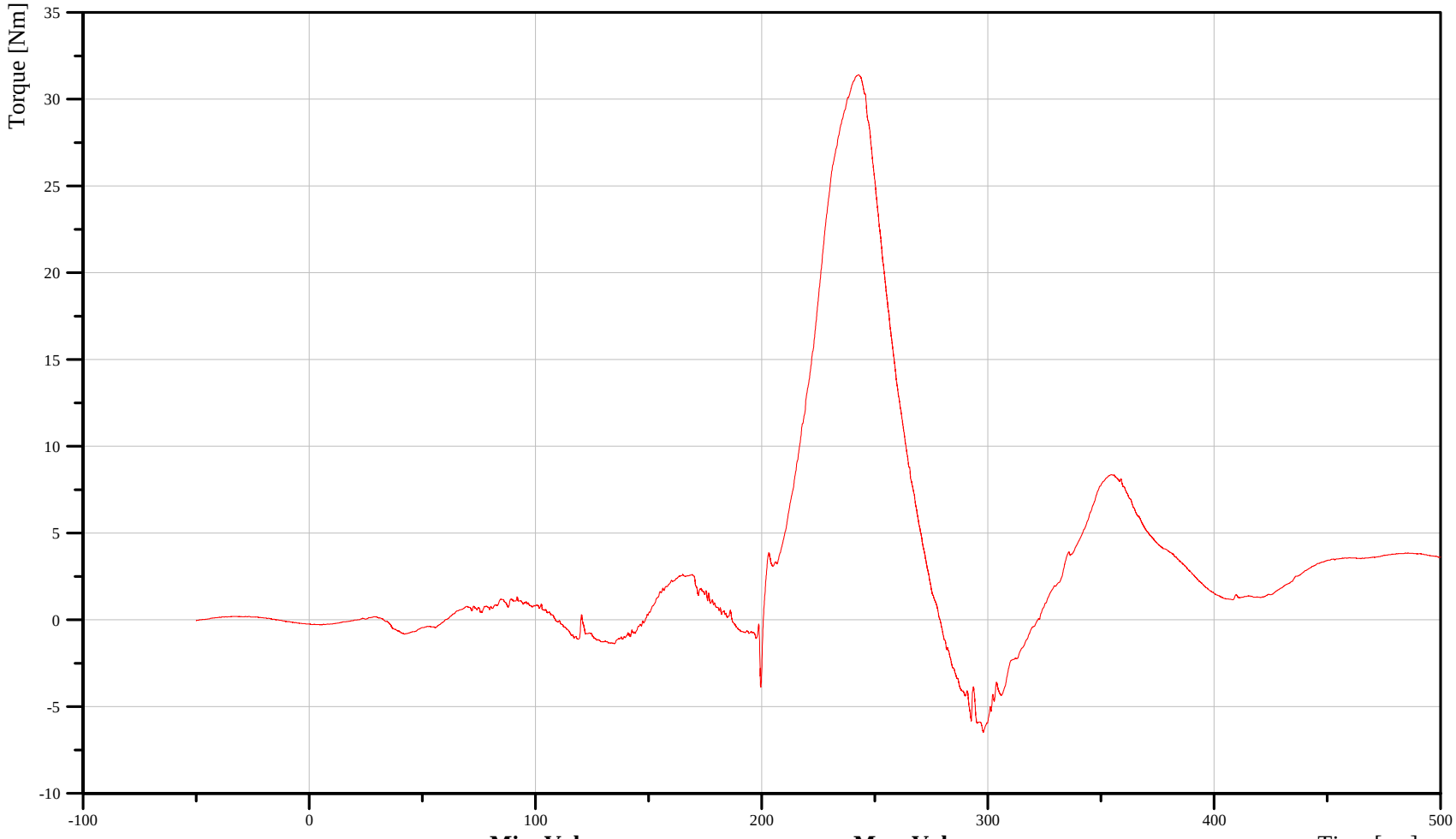
4R-Left Neck Moment Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

11NECKUP00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-6.46 Nm at 298.00 ms

Max. Value
31.41 Nm at 242.80 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

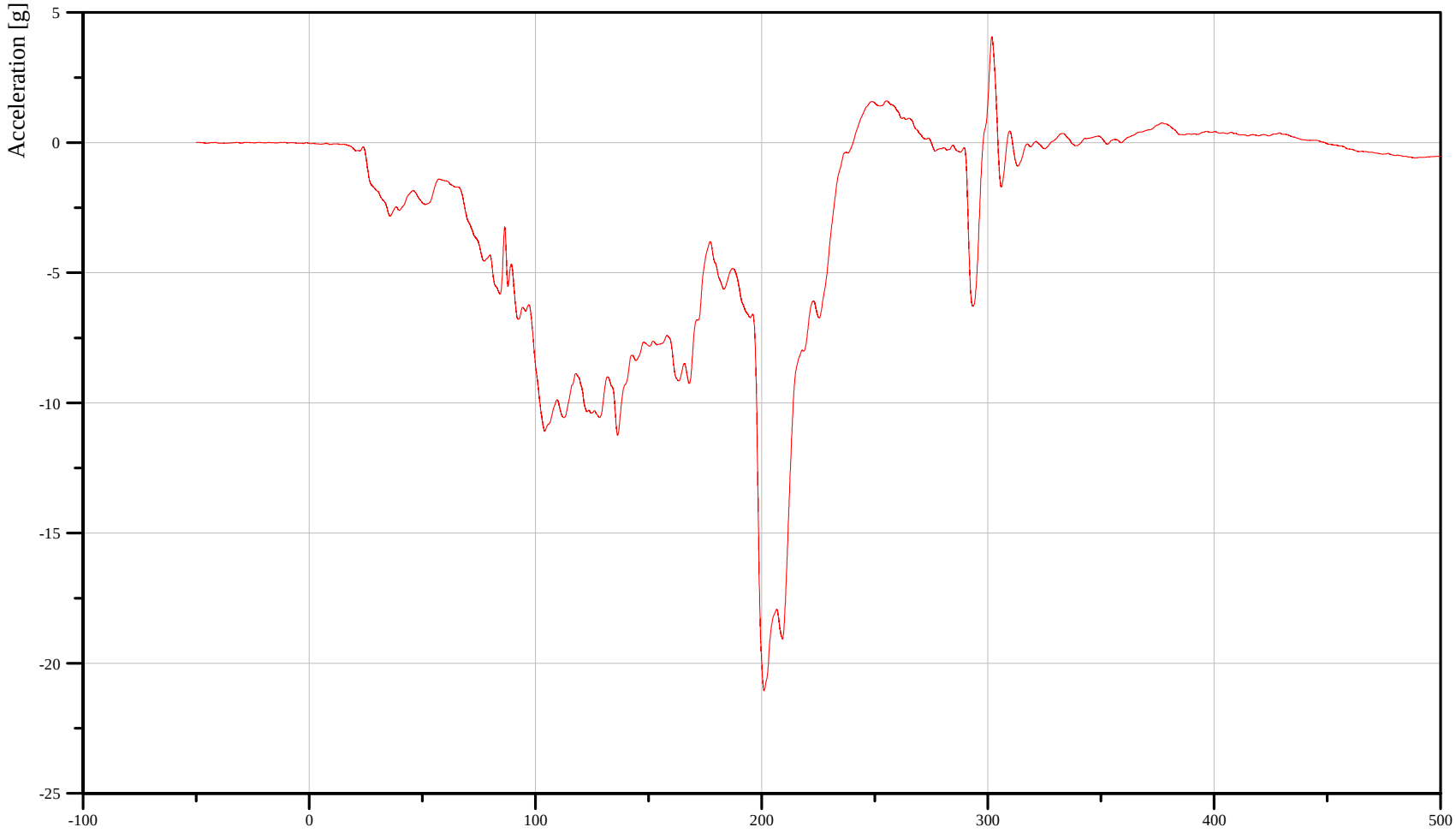
4R-Left Chest X-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

11CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-21.05 g at 201.12 ms

Max. Value
4.07 g at 301.76 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

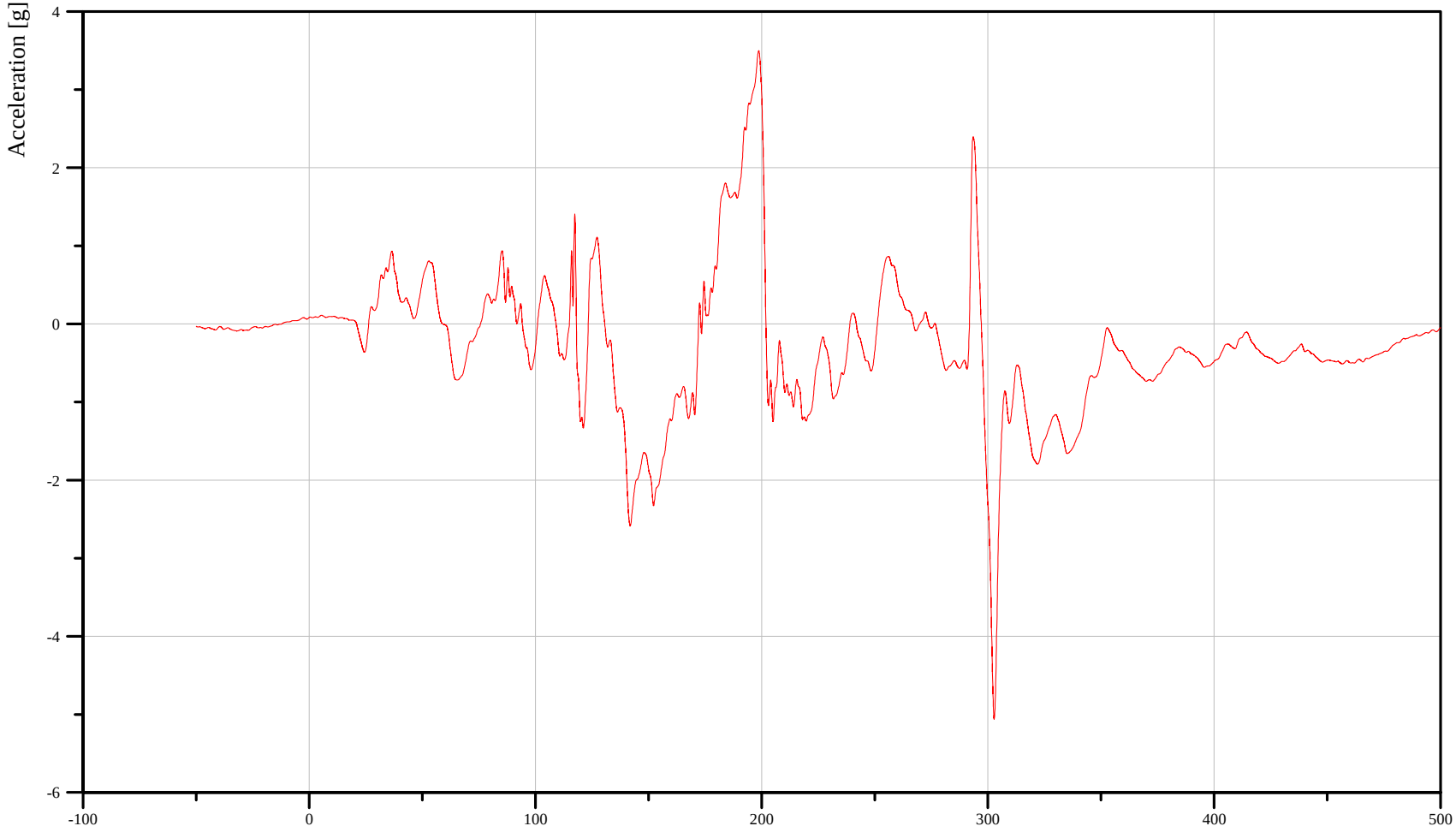
Date: 12/14/2007
Time: 9:12

4R-Left Chest Y-Axis Acceleration

Customer: VRTC

11CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-5.06 g at 302.72 ms

Max. Value
3.50 g at 198.72 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

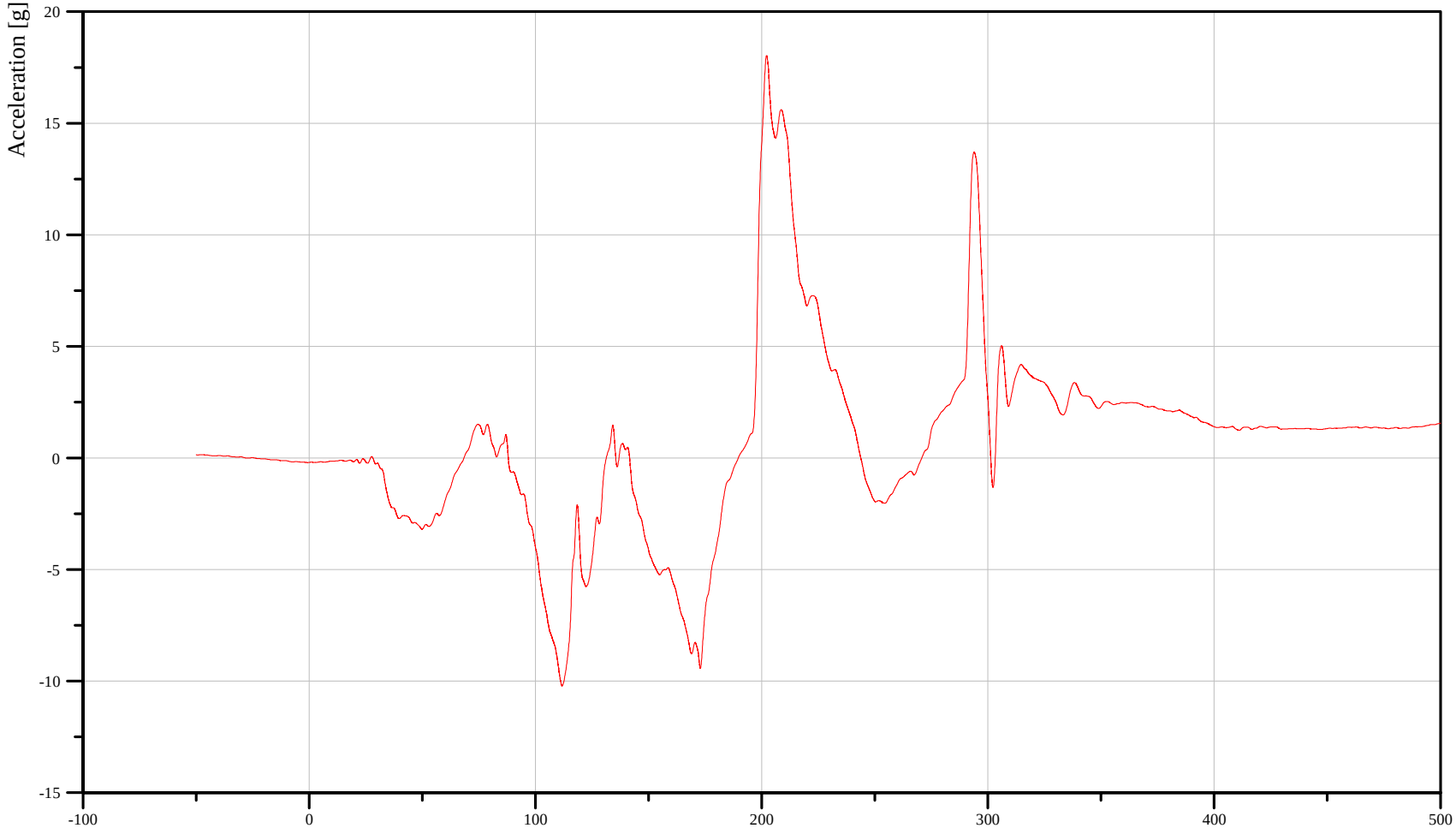
Date: 12/14/2007
Time: 9:12

4R-Left Chest Z-Axis Acceleration

Customer: VRTC

11CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-10.21 g at 111.84 ms

Max. Value
18.03 g at 202.16 ms

B-222

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

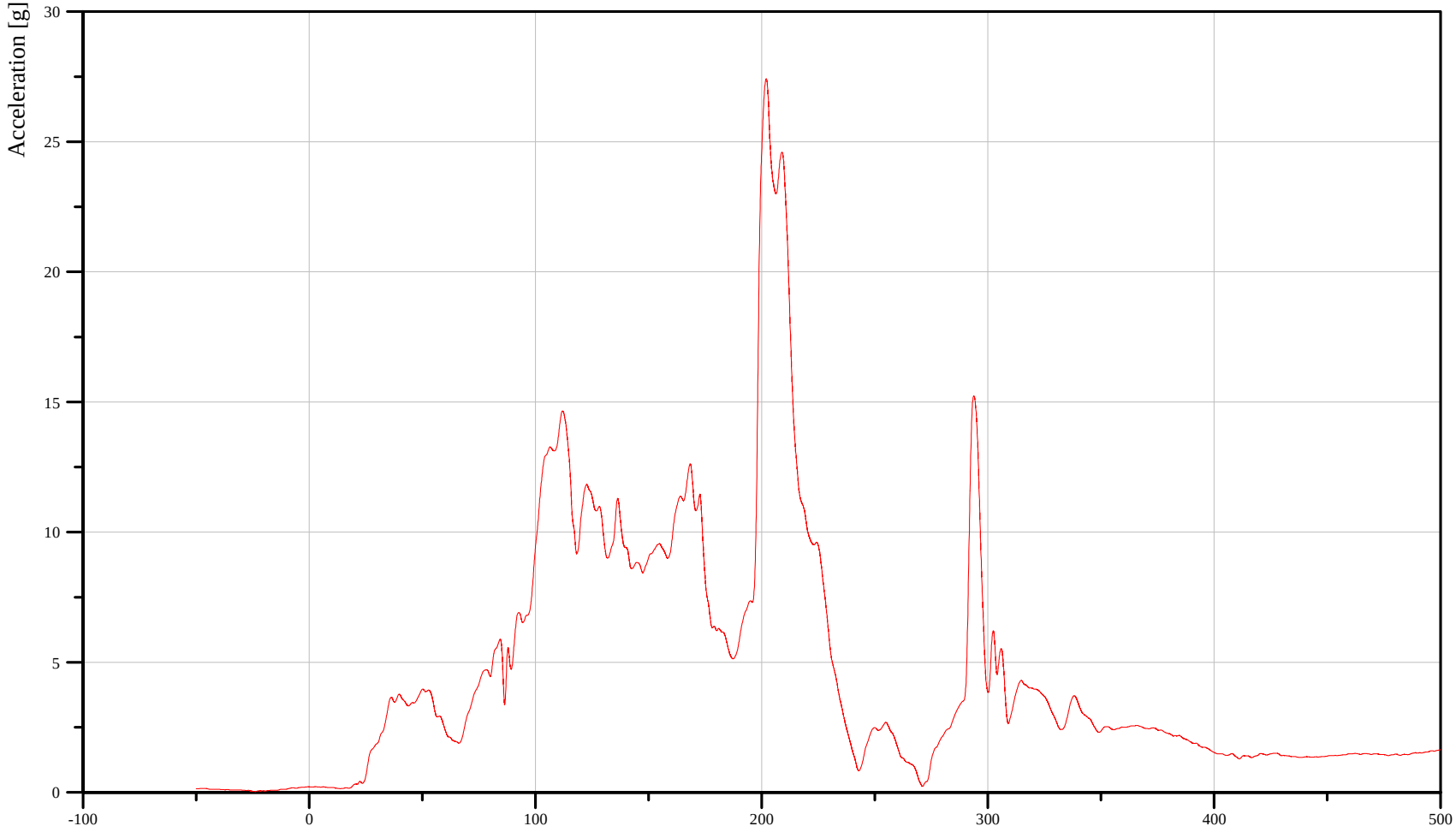
Date: 12/14/2007
Time: 9:12

4R-Left Chest Resultant Acceleration

Customer: VRTC

11CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.03 g at -23.76 ms

Max. Value
27.42 g at 202.00 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

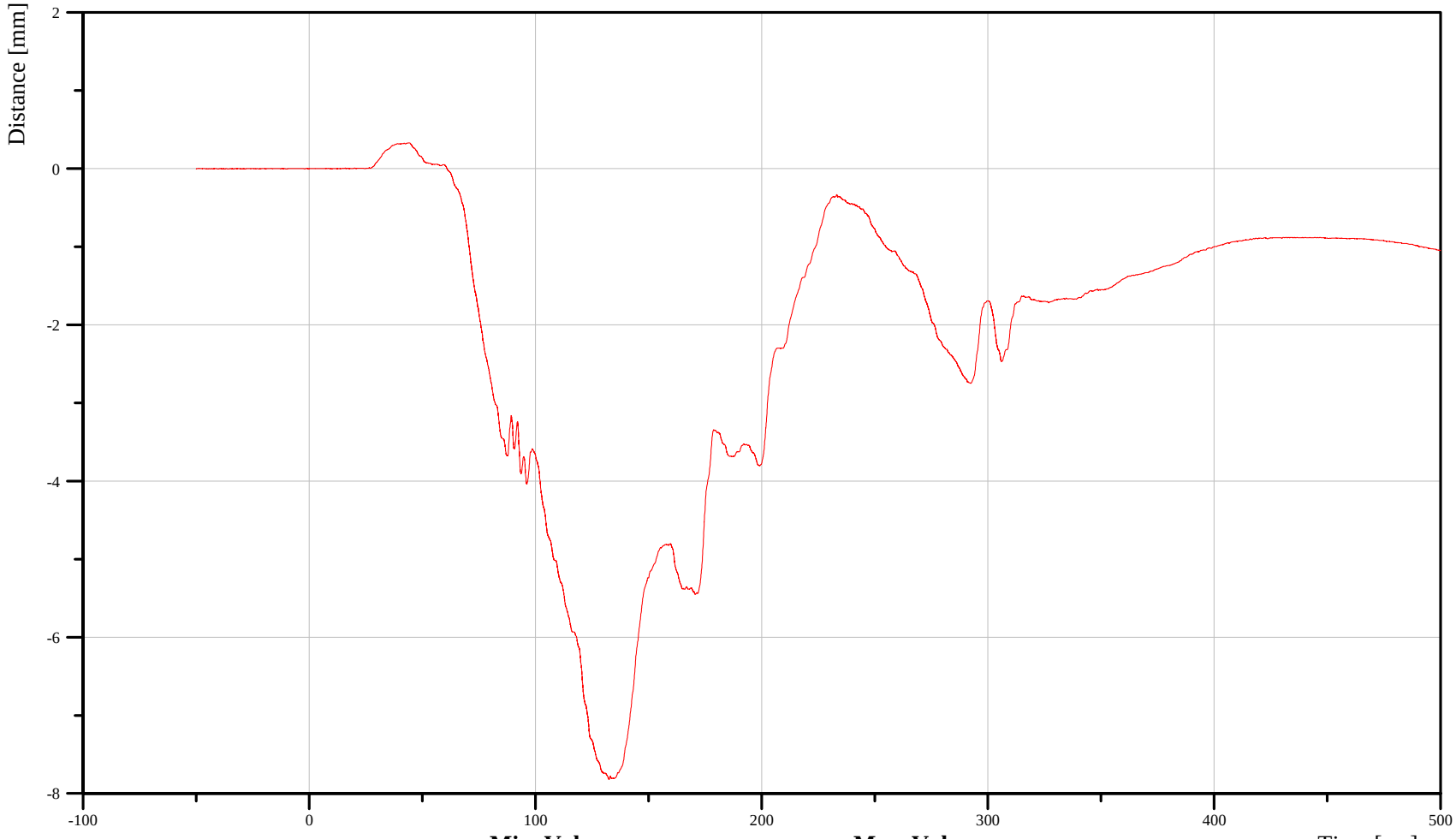
Date: 12/14/2007
Time: 9:12

4R-Left Chest X-Axis Deflection

Customer: VRTC

11CHST0000H3DSXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-7.82 mm at 132.56 ms

Max. Value
0.33 mm at 43.84 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

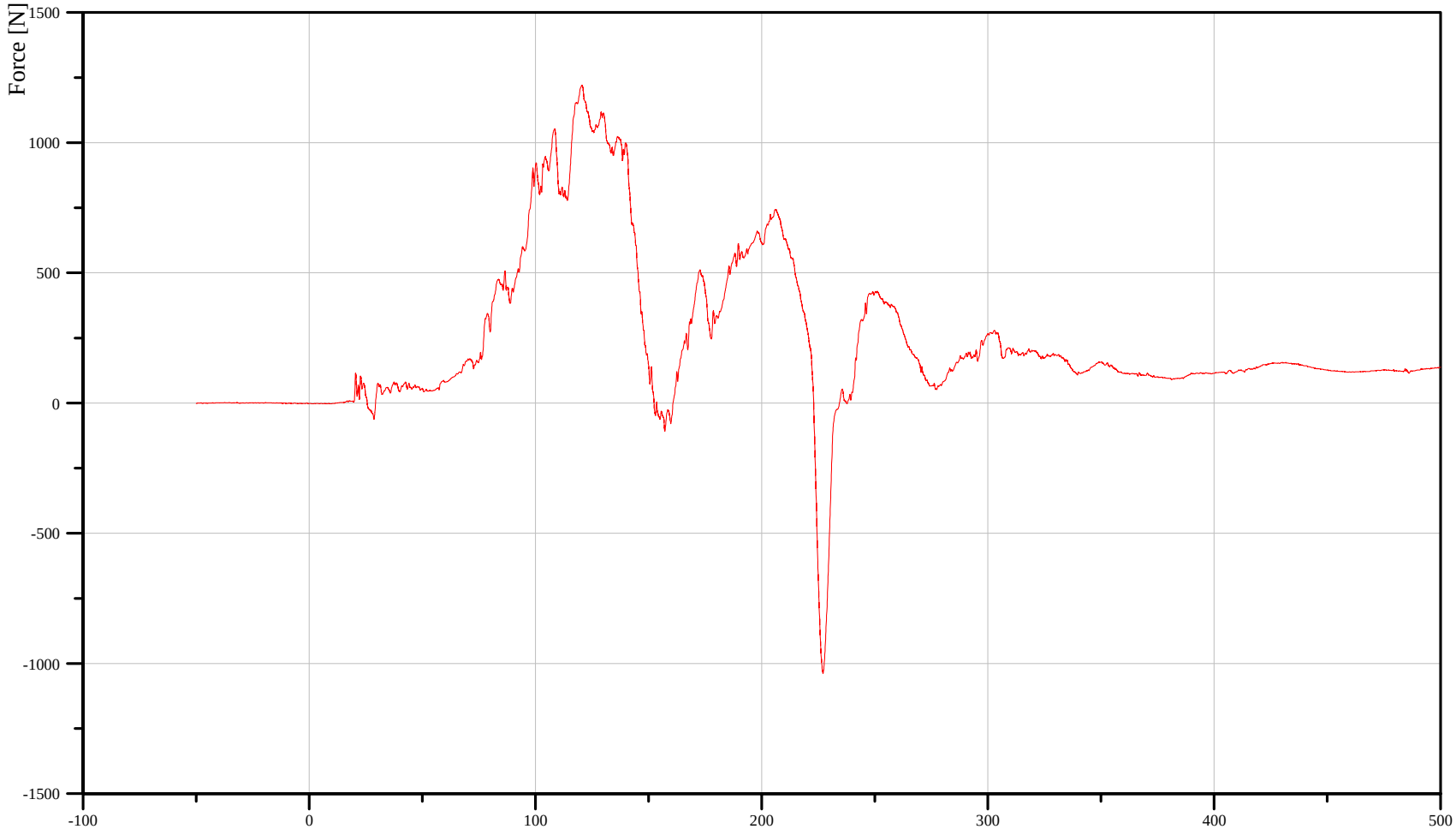
Date: 12/14/2007
Time: 9:12

4R-Left Left Femur Force Z

Customer: VRTC

11FEMRLL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-1,036.45 N at 227.12 ms

Max. Value
1,221.49 N at 120.56 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

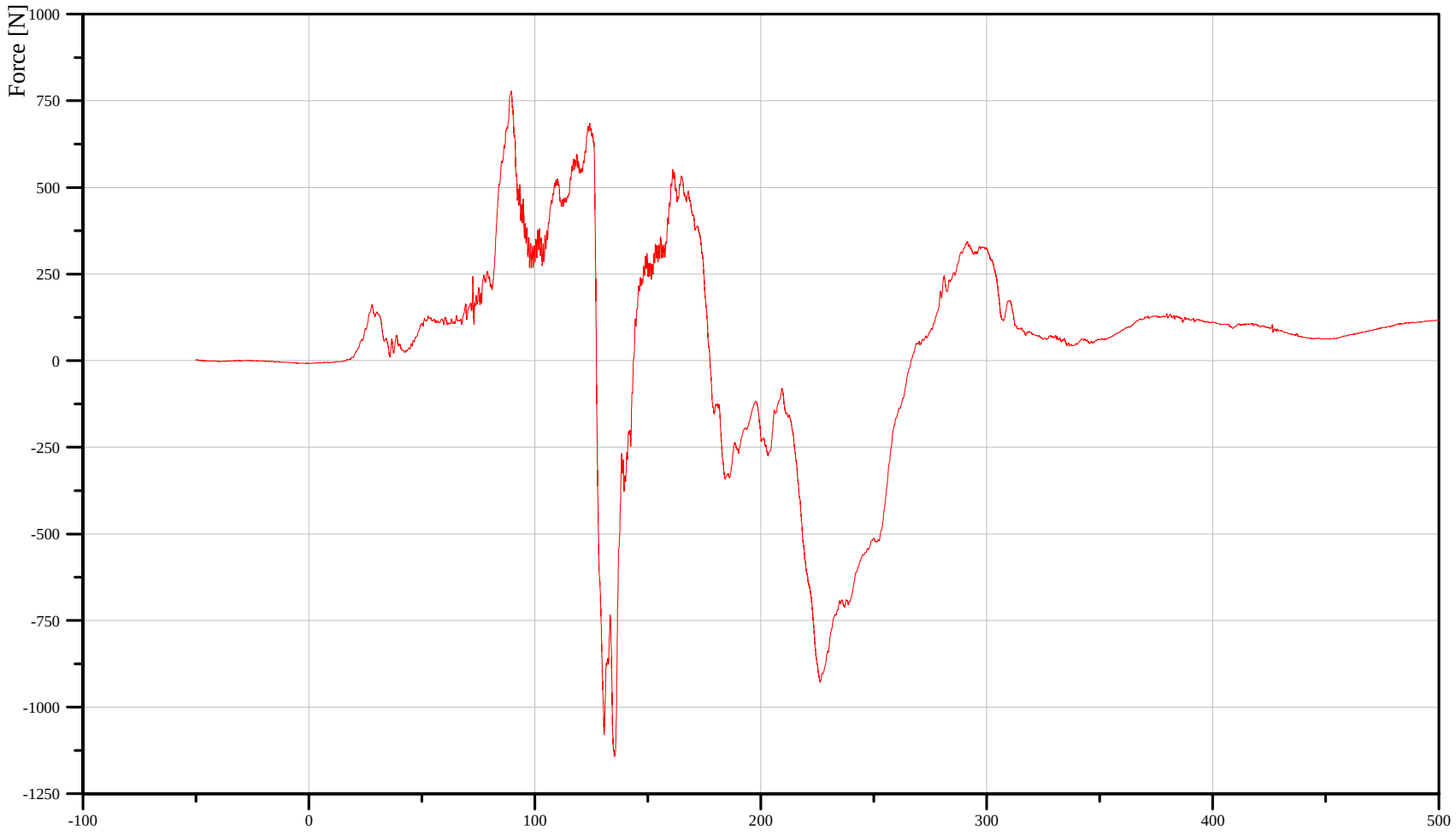
Date: 12/14/2007
Time: 9:12

4R-Left Right Femur Force Z

Customer: VRTC

11FEMRRL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-1,142.40 N at 135.36 ms

Max. Value
777.58 N at 89.60 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

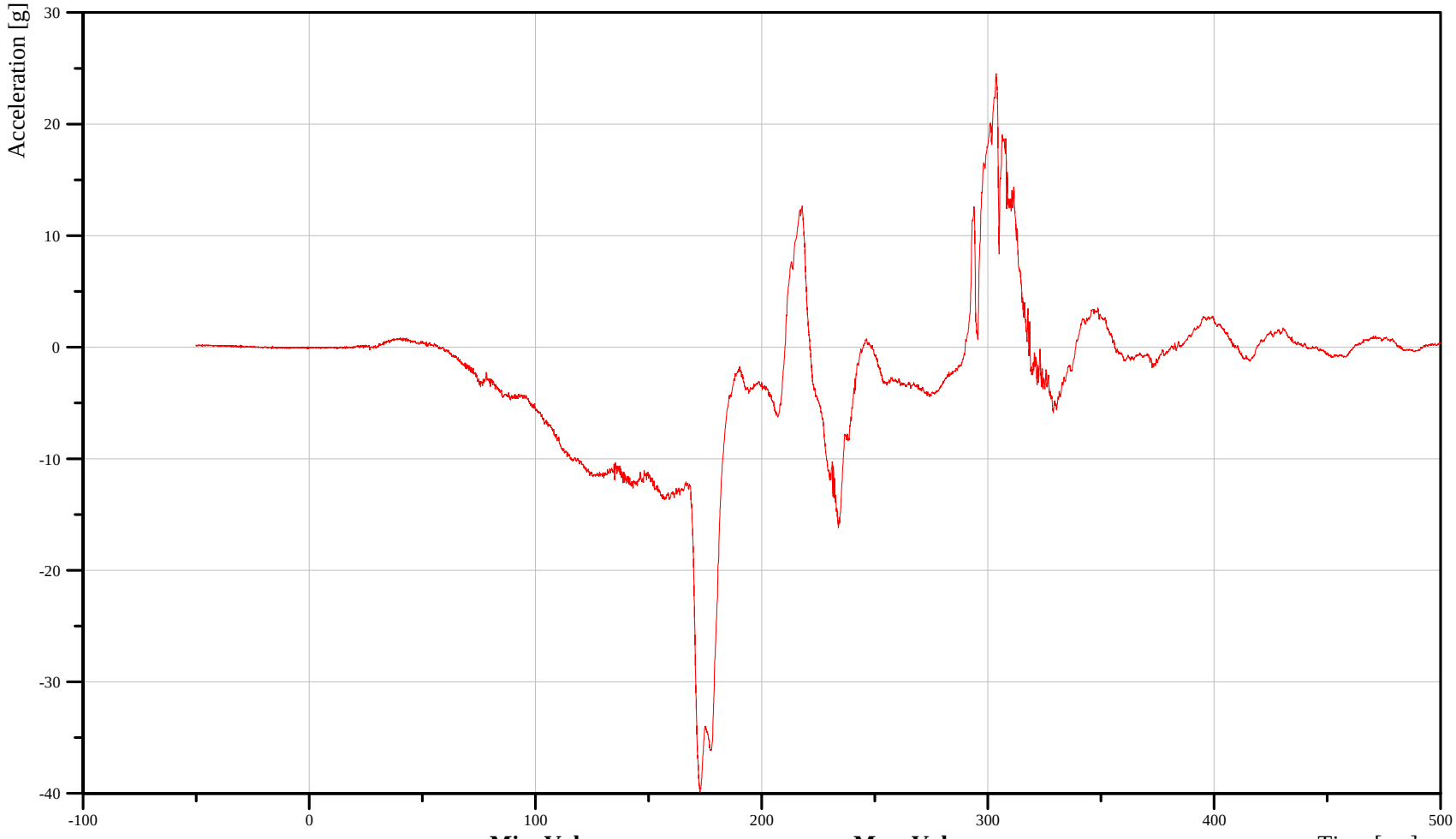
4R-Right Head X-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

12HEADCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-39.89 g at 172.72 ms

Max. Value
24.51 g at 303.60 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

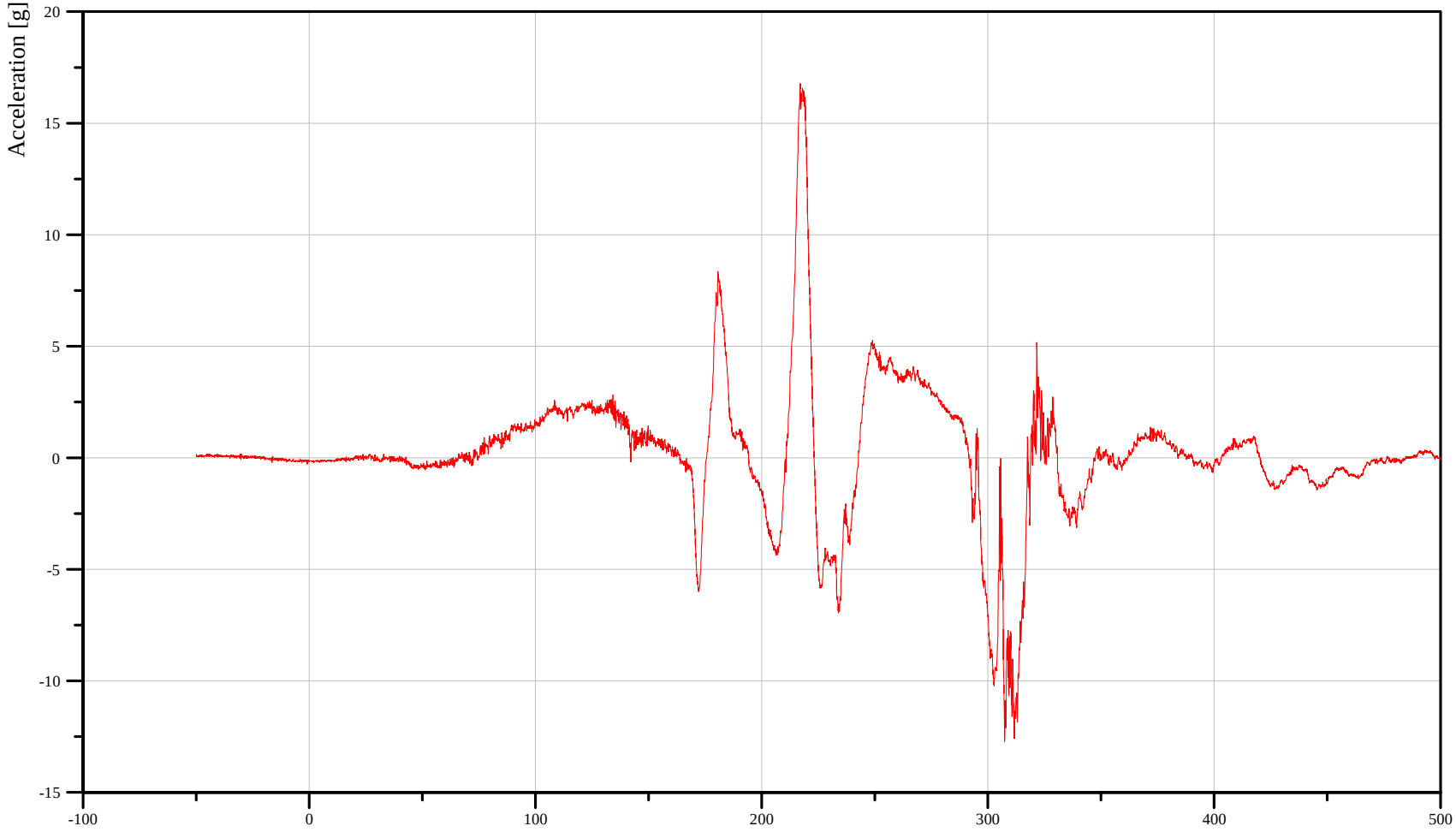
Date: 12/14/2007
Time: 9:12

4R-Right Head Y-Axis Acceleration

Customer: VRTC

12HEADCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-12.71 g at 307.36 ms

Max. Value
16.77 g at 217.04 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

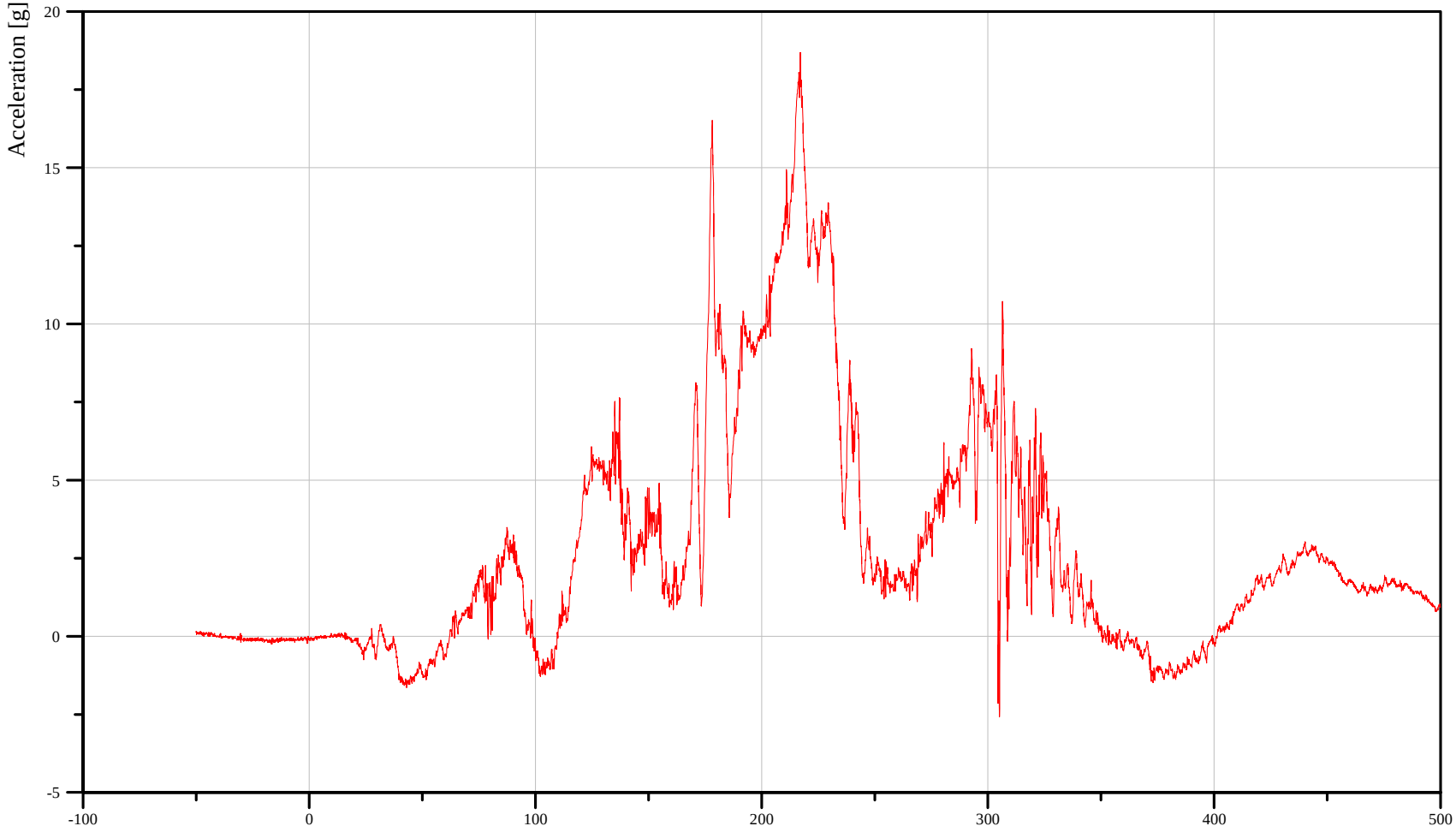
Date: 12/14/2007
Time: 9:12

4R-Right Head Z-Axis Acceleration

Customer: VRTC

12HEADCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-2.58 g at 305.12 ms

Max. Value
18.69 g at 217.04 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

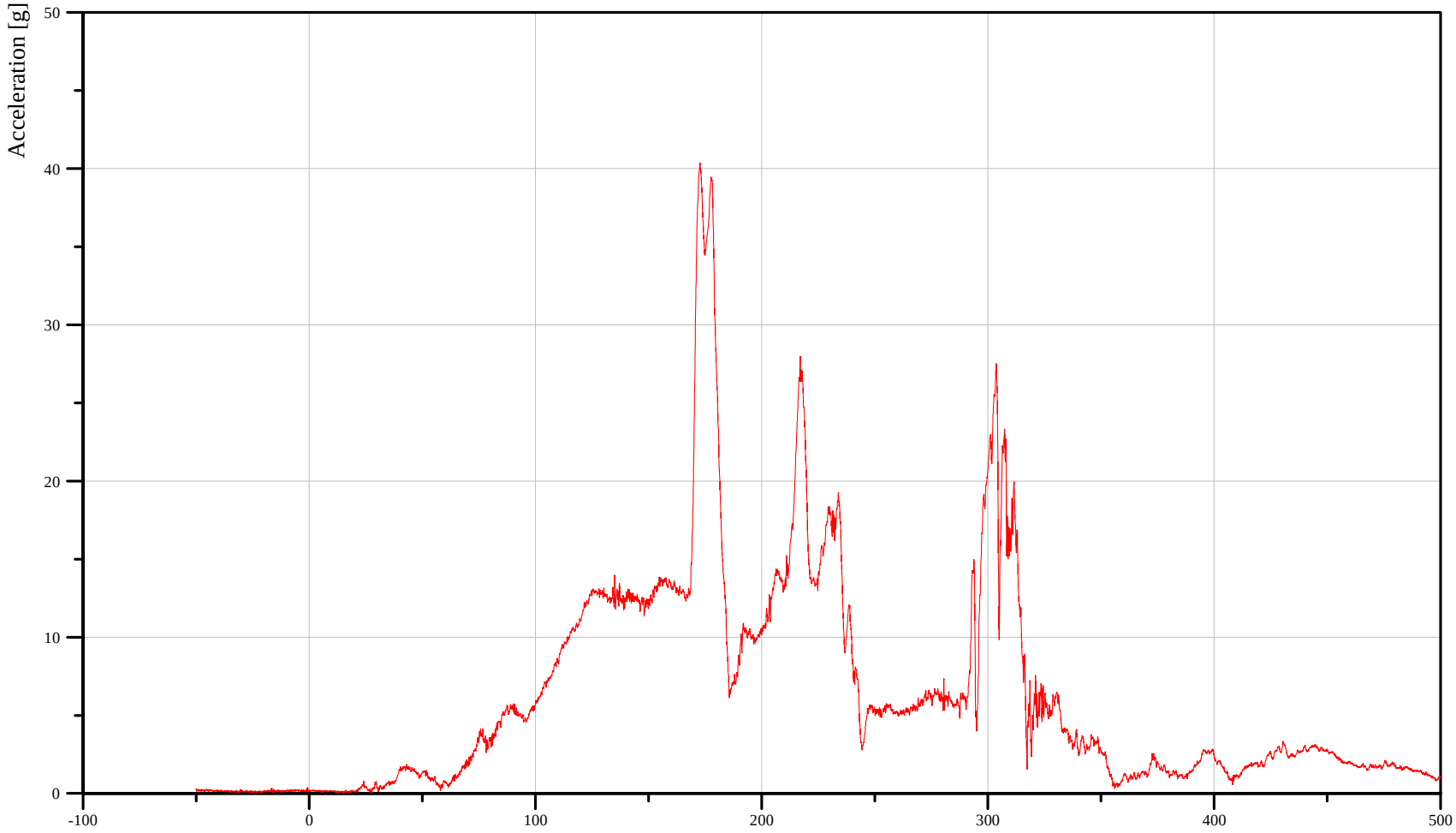
Date: 12/14/2007
Time: 9:12

4R-Right Head Resultant Acceleration

Customer: VRTC

12HEADCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.02 g at 12.56 ms

Max. Value
40.35 g at 172.72 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

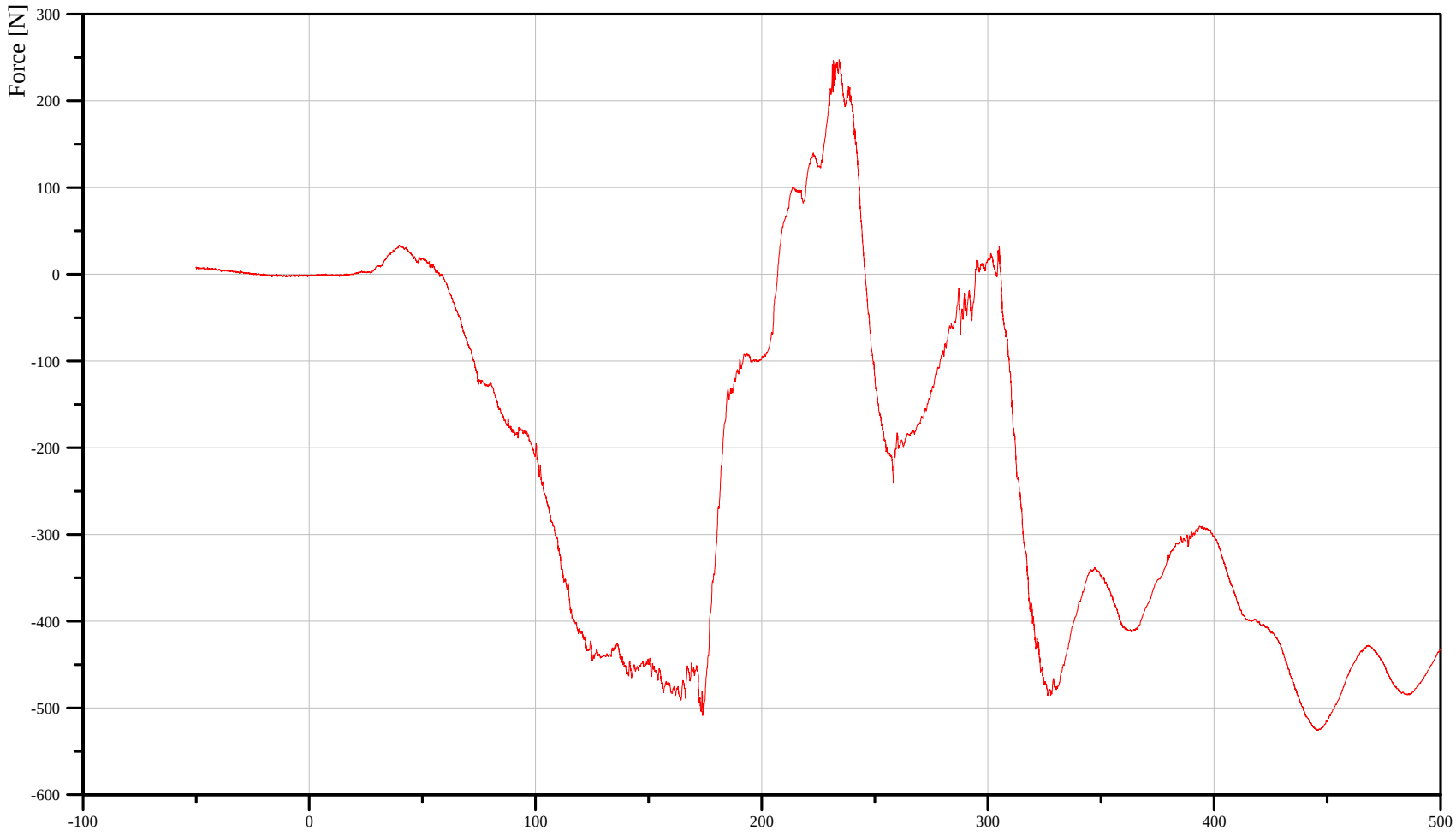
4R-Right Neck Force X

Date: 12/14/2007
Time: 9:12

Customer: VRTC

12NECKUP00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-525.58 N at 445.36 ms

Max. Value
247.45 N at 234.24 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

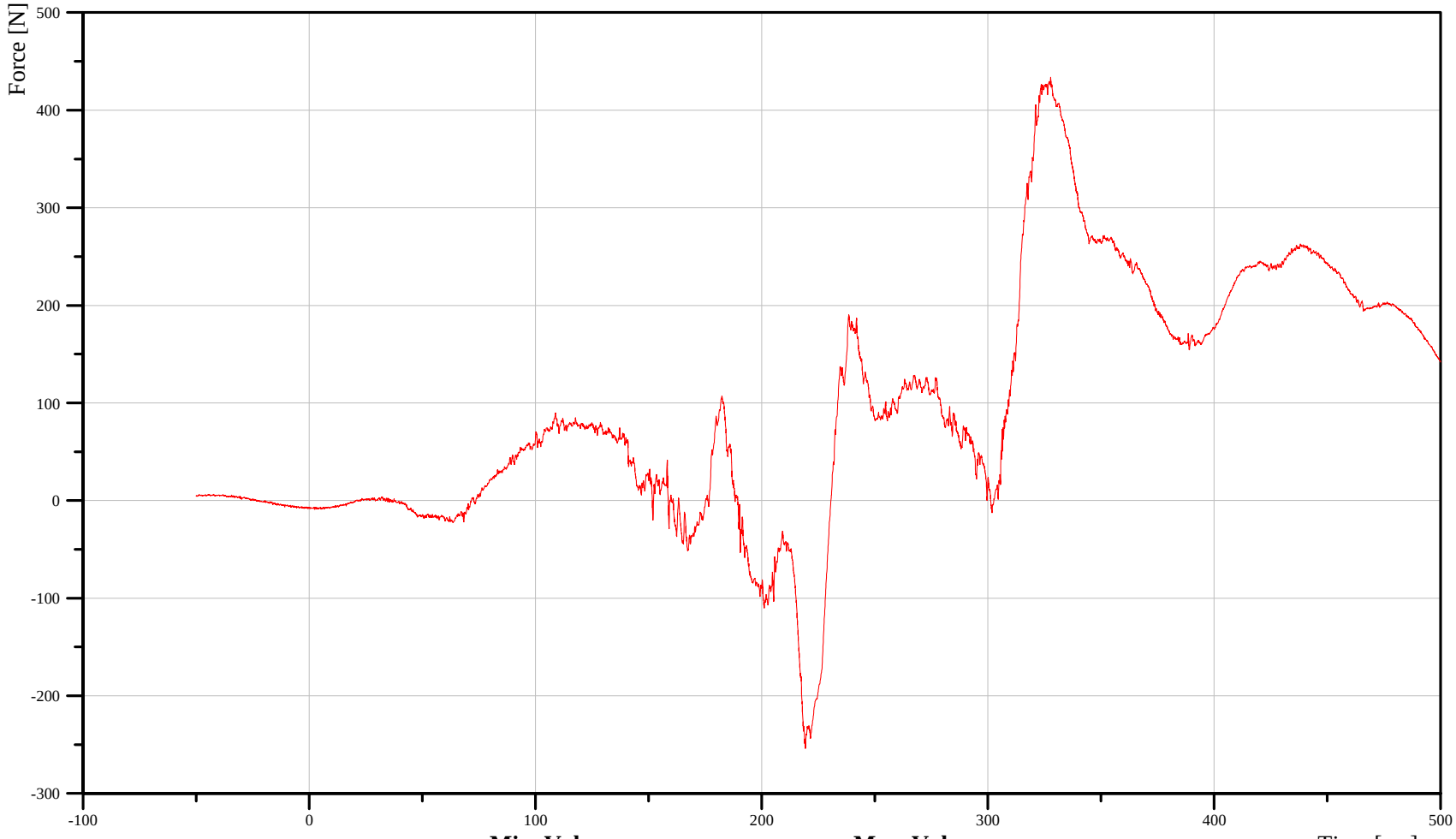
4R-Right Neck Force Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

12NECKUP00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-253.73 N at 219.36 ms

Max. Value
433.63 N at 327.68 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

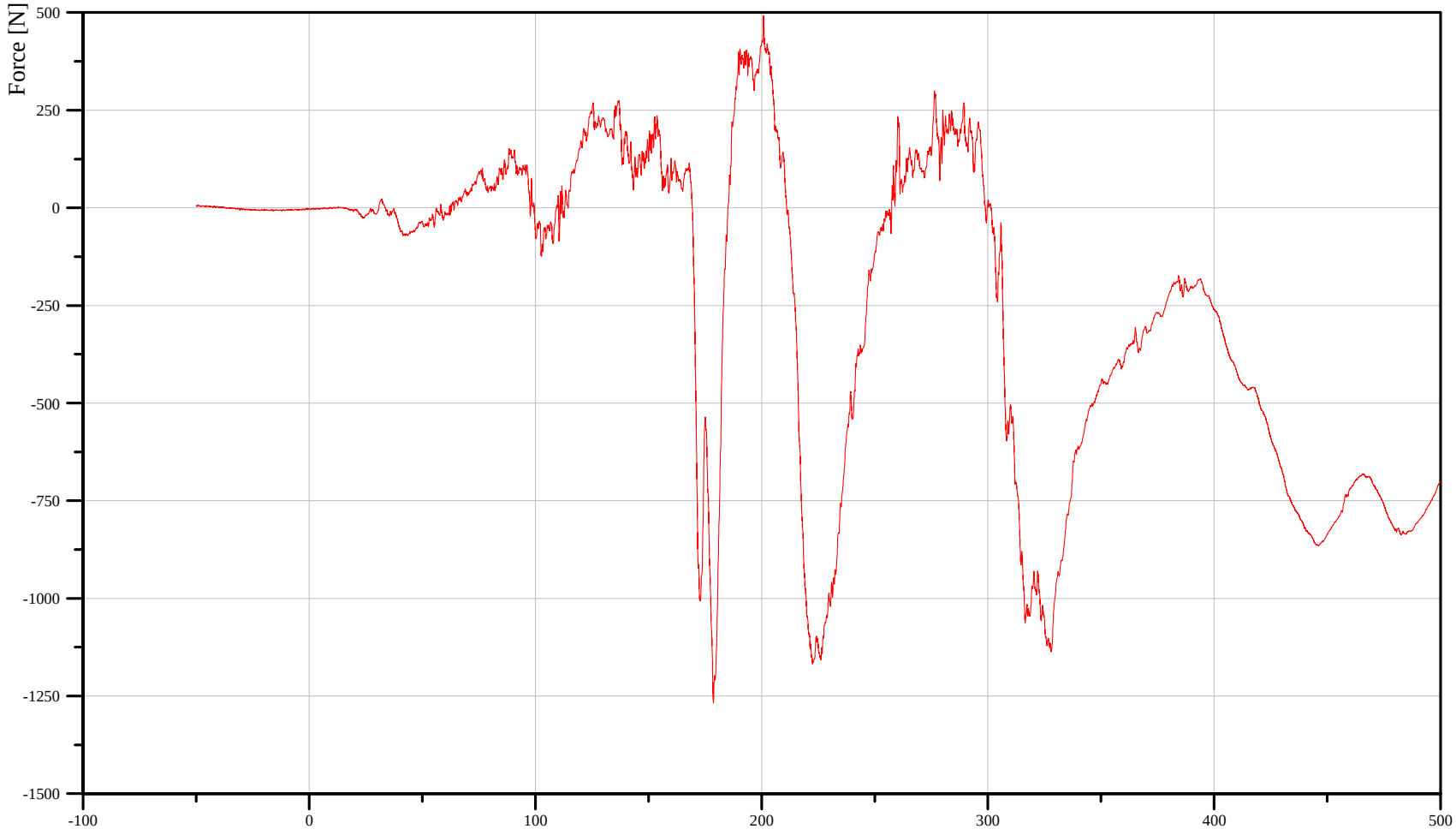
4R-Right Neck Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

12NECKUP00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-1,267.57 N at 178.64 ms

Max. Value
492.02 N at 200.88 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

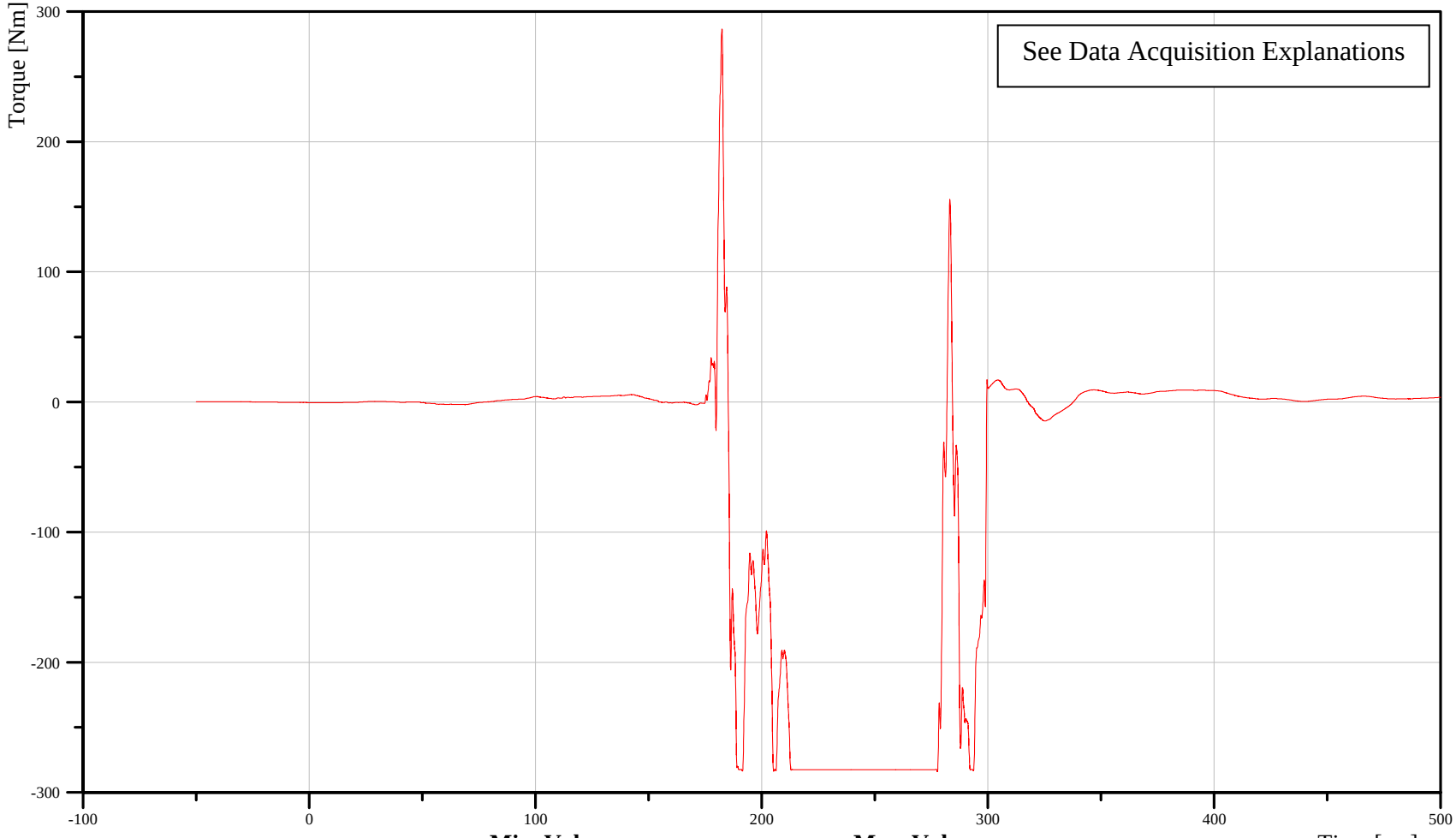
Date: 12/14/2007
Time: 9:12

4R-Right Neck Moment X

Customer: VRTC

12NECKUP00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-283.93 Nm at 277.68 ms

Max. Value
286.63 Nm at 182.40 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

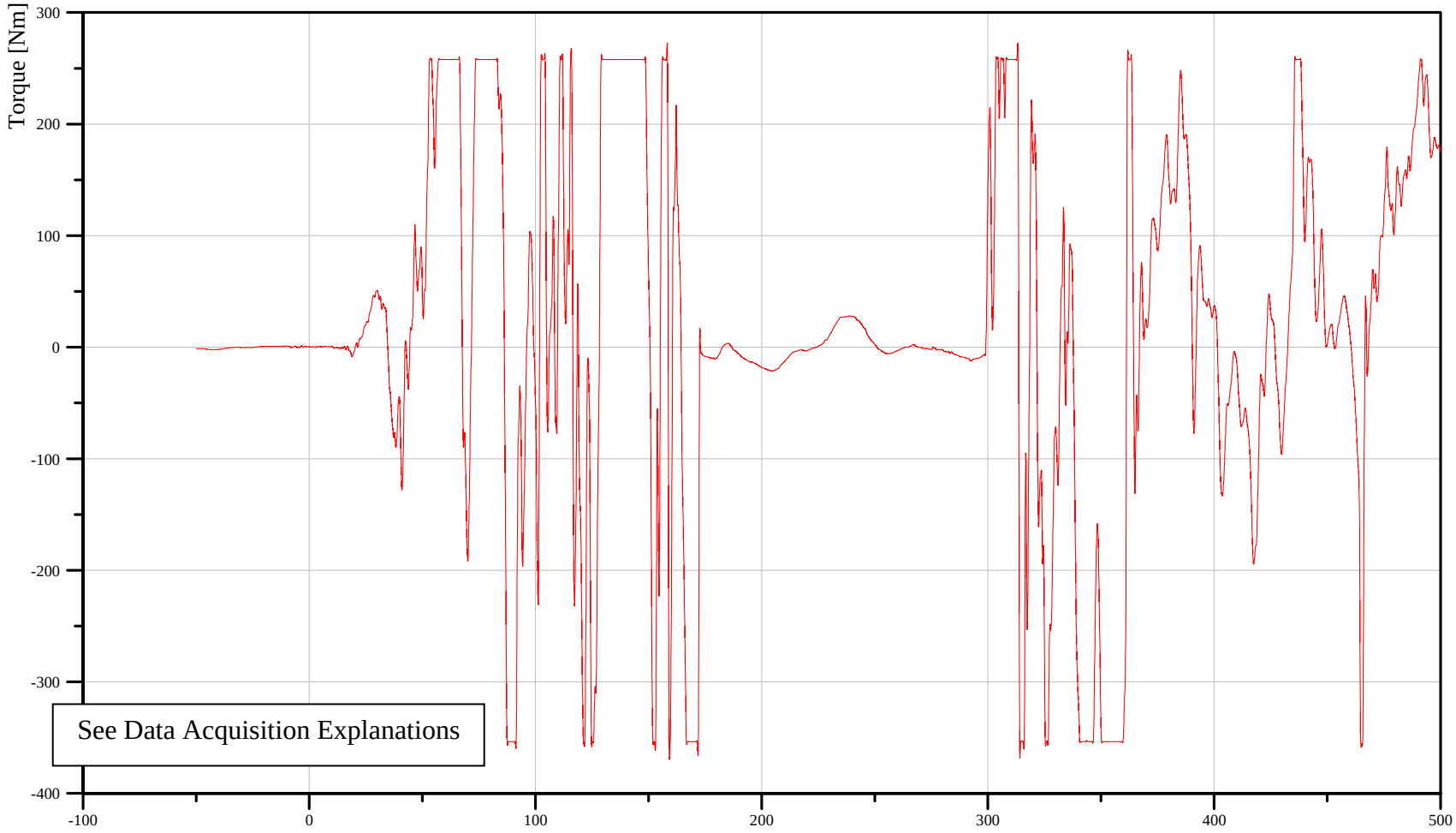
4R-Right Neck Moment Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

12NECKUP00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-369.26 Nm at 159.28 ms

Max. Value
272.62 Nm at 158.24 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

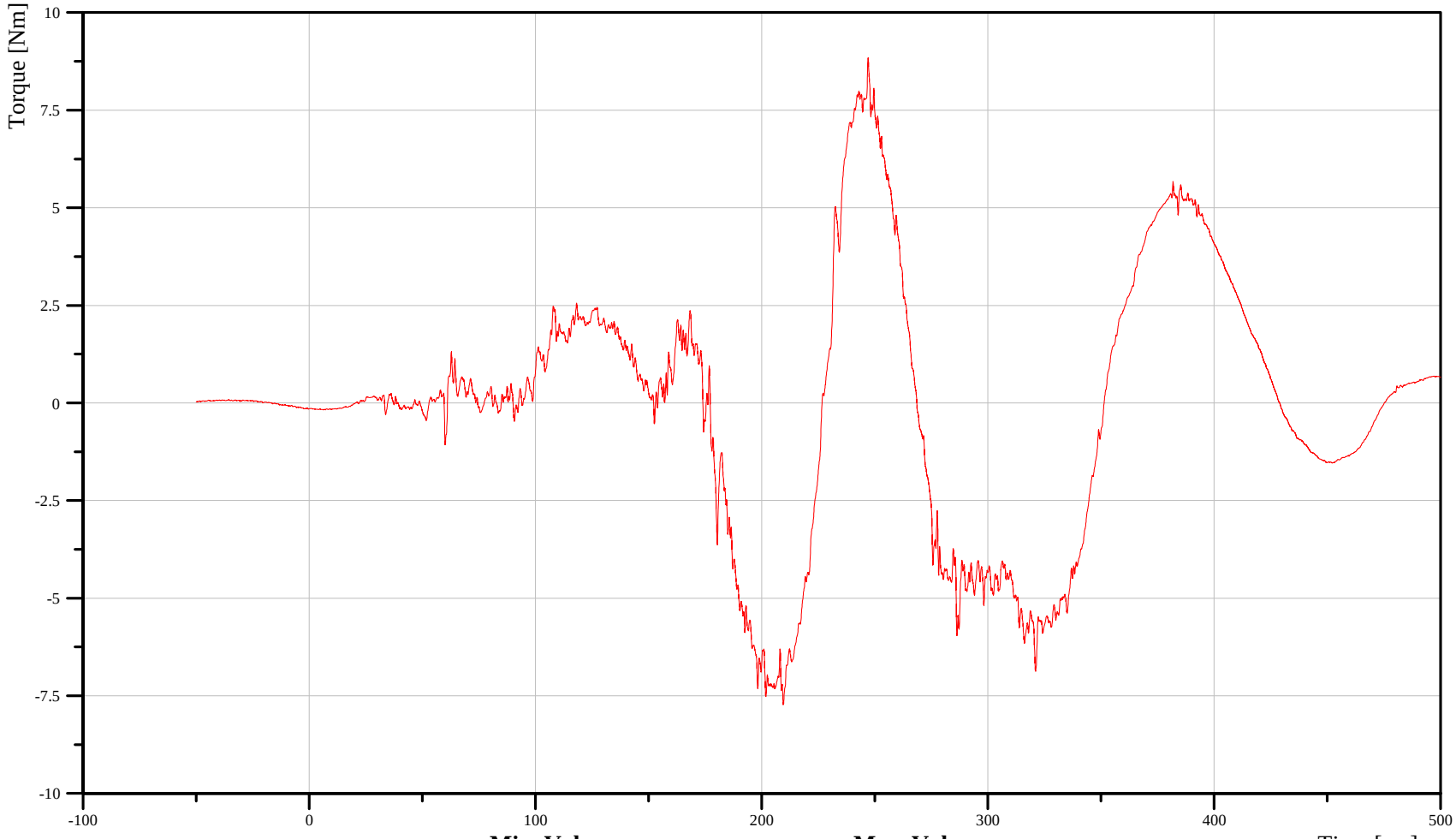
4R-Right Neck Moment Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

12NECKUP00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-7.73 Nm at 209.60 ms

Max. Value
8.84 Nm at 247.04 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

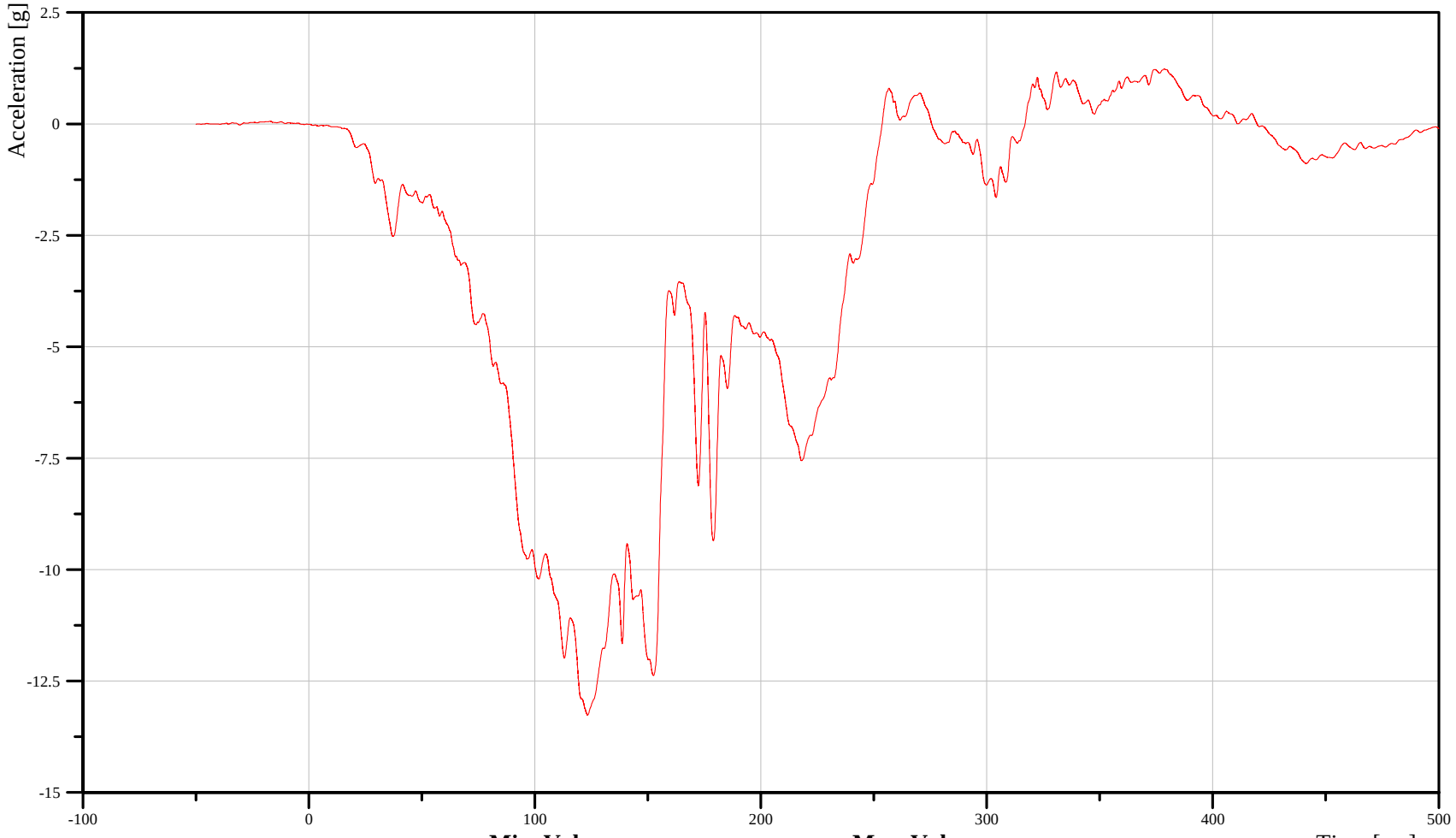
Date: 12/14/2007
Time: 9:12

4R-Right Chest X-Axis Acceleration

Customer: VRTC

12CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-13.26 g at 123.36 ms

Max. Value
1.23 g at 378.48 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

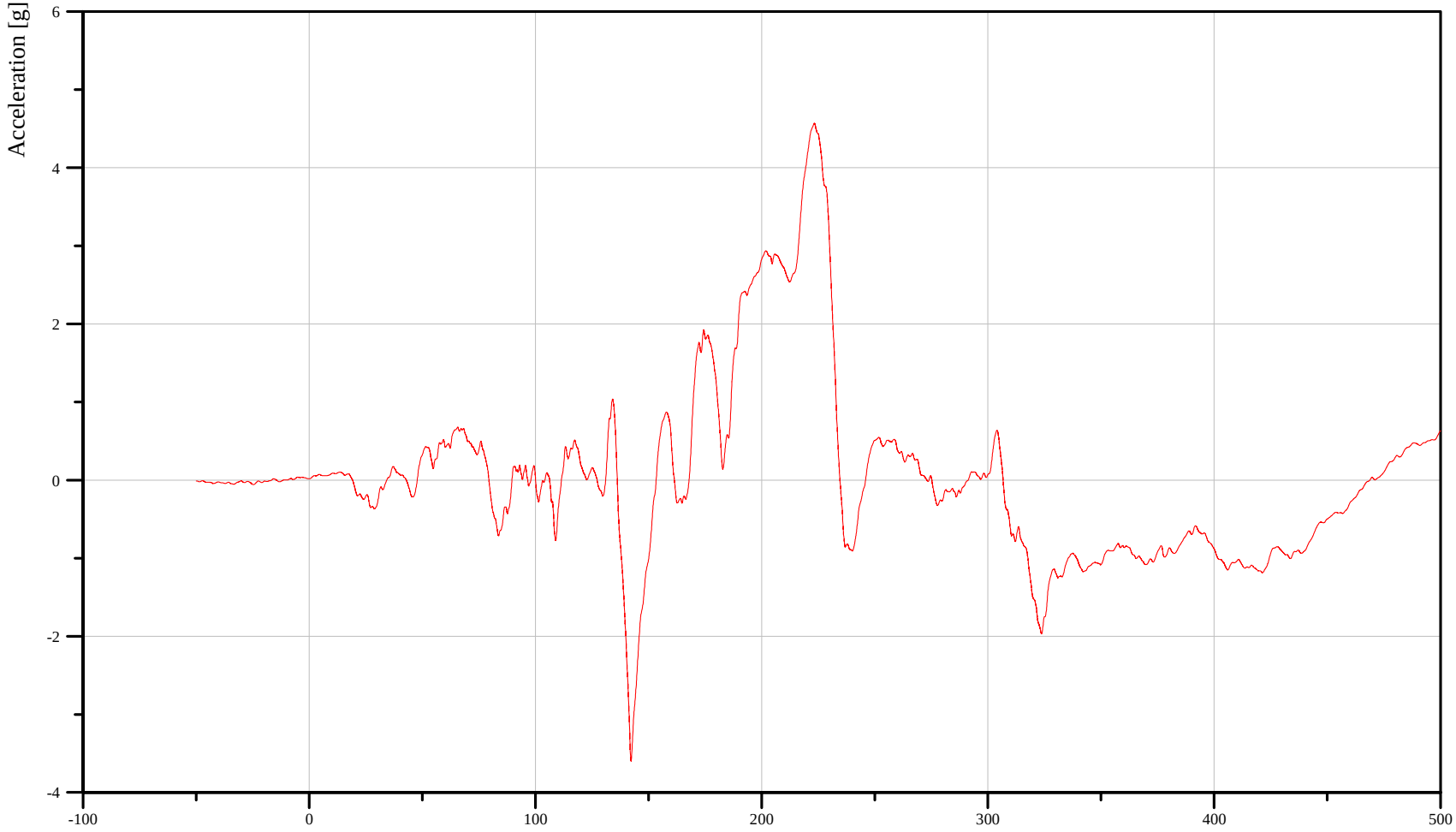
Date: 12/14/2007
Time: 9:12

4R-Right Chest Y-Axis Acceleration

Customer: VRTC

12CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-3.60 g at 142.24 ms

Max. Value
4.57 g at 223.28 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

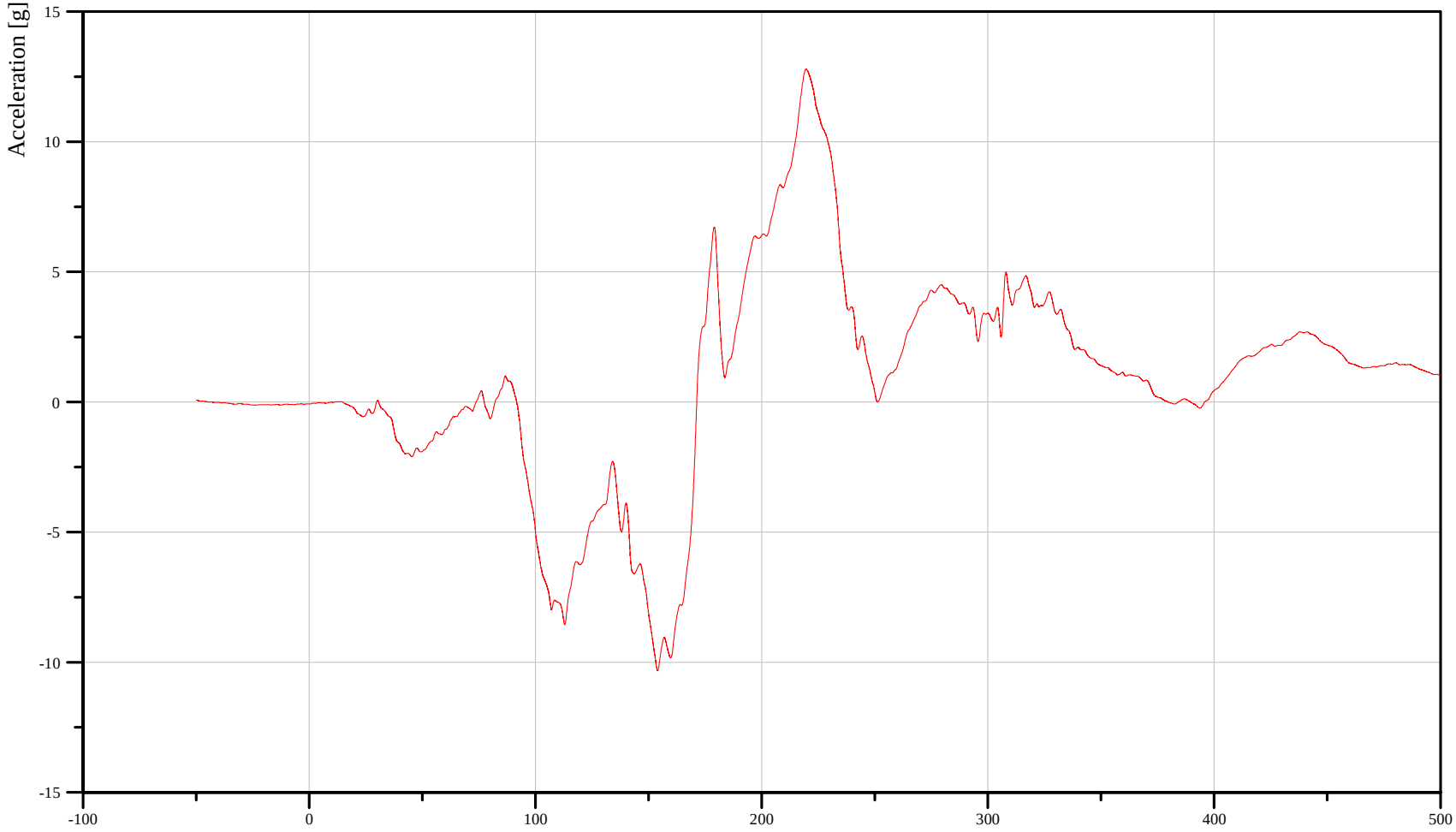
Date: 12/14/2007
Time: 9:12

4R-Right Chest Z-Axis Acceleration

Customer: VRTC

12CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-10.32 g at 154.08 ms

Max. Value
12.79 g at 219.60 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

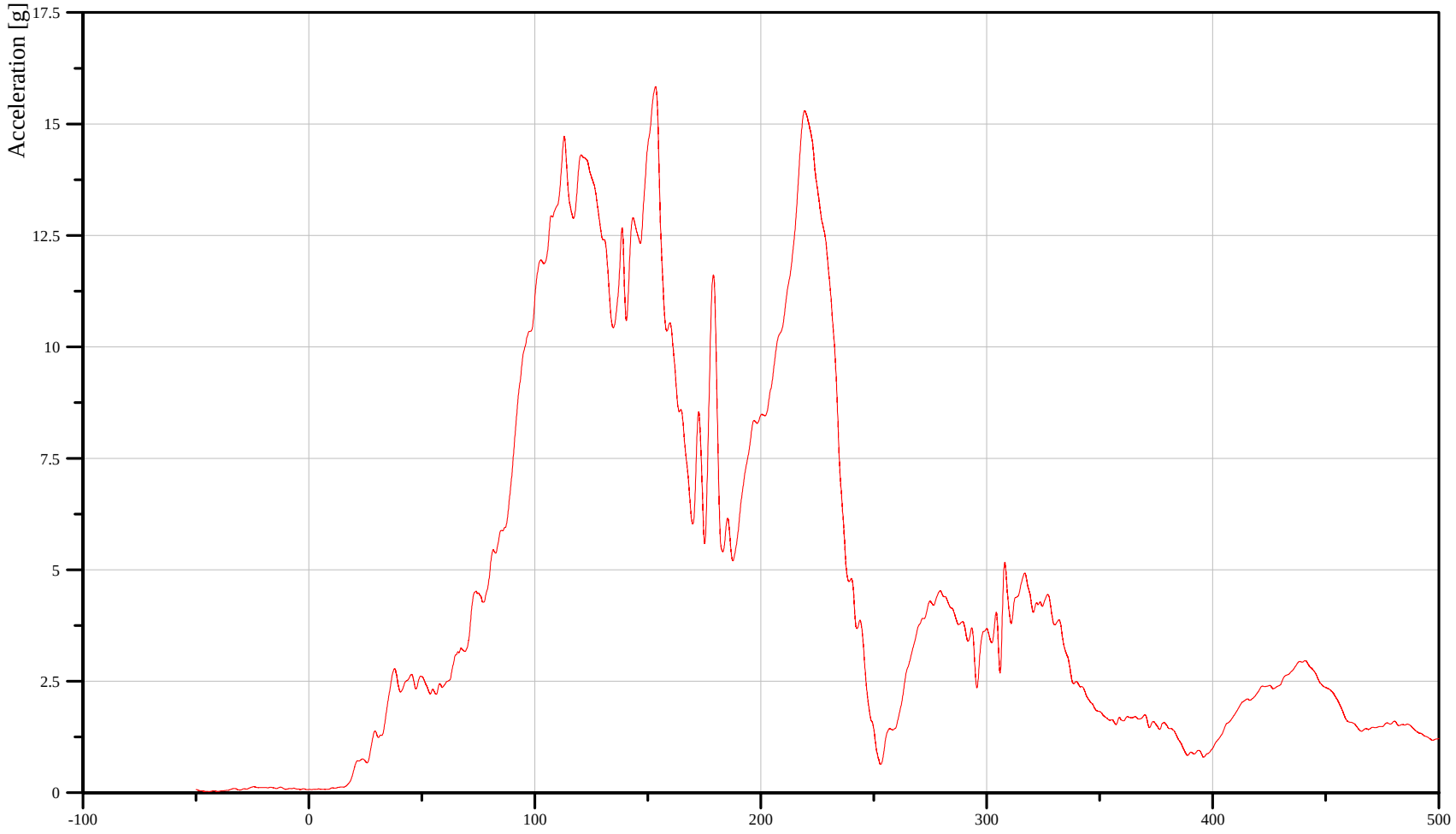
Date: 12/14/2007
Time: 9:12

4R-Right Chest Resultant Acceleration

Customer: VRTC

12CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.03 g at -44.16 ms

Max. Value
15.84 g at 153.44 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

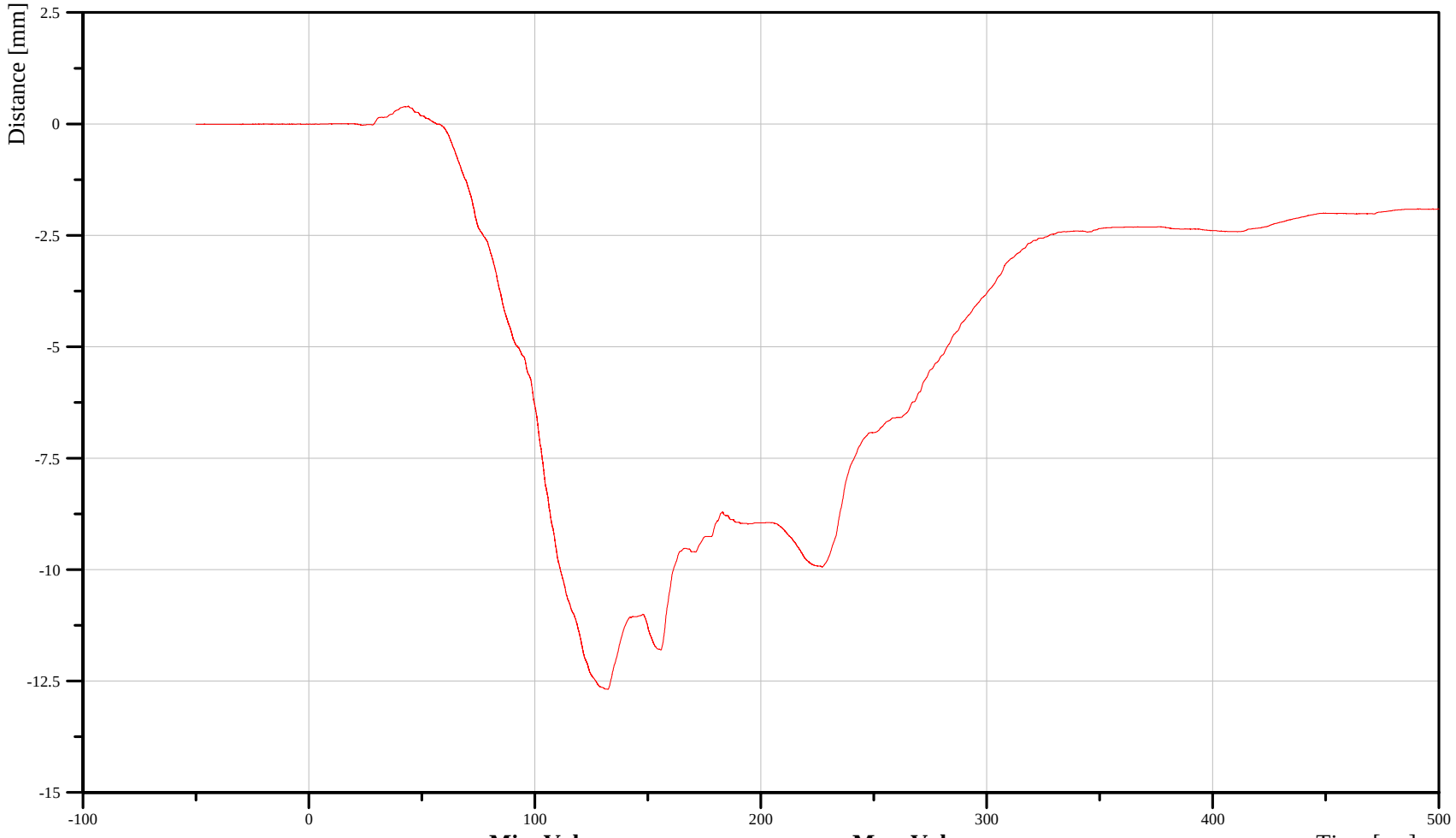
Date: 12/14/2007
Time: 9:12

4R-Right Chest X-Axis Deflection

Customer: VRTC

12CHST0000H3DSXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-12.68 mm at 132.40 ms

Max. Value
0.40 mm at 44.00 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

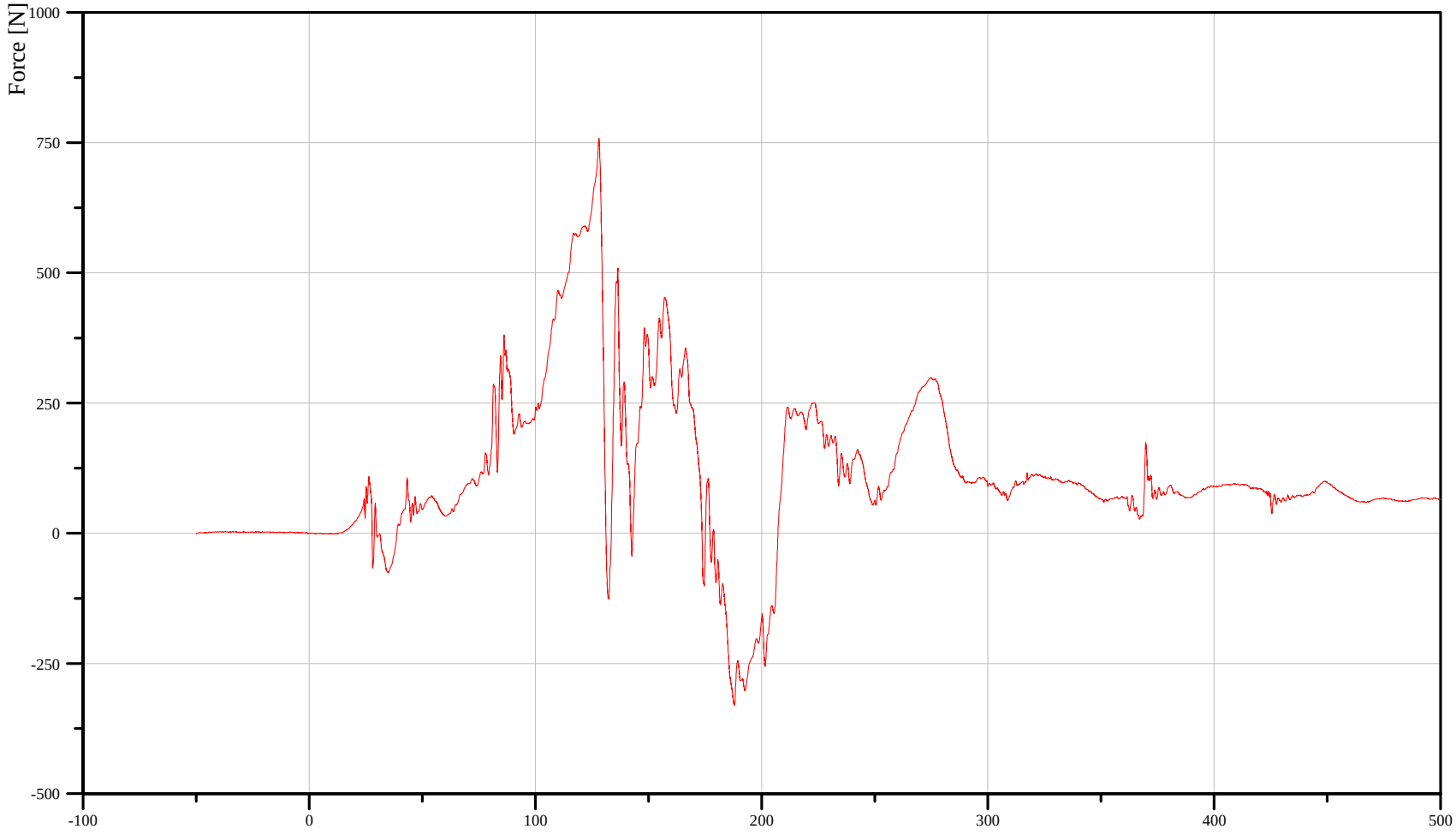
Date: 12/14/2007
Time: 9:12

4R-Right Left Femur Force Z

Customer: VRTC

12FEMRLL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-329.53 N at 187.92 ms

Max. Value
758.87 N at 128.08 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

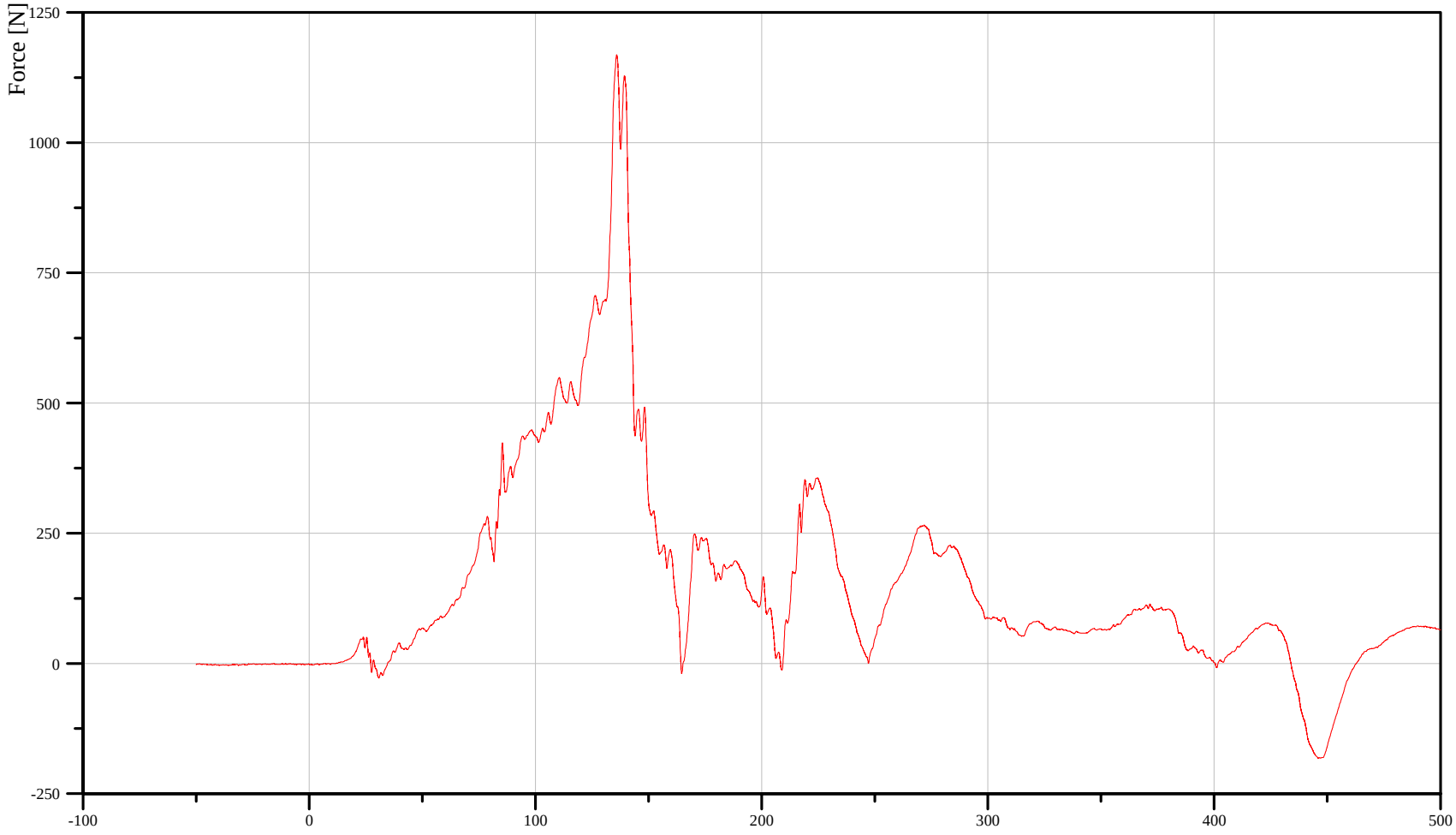
Date: 12/14/2007
Time: 9:12

4R-Right Right Femur Force Z

Customer: VRTC

12FEMRRL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-181.92 N at 446.08 ms

Max. Value
1,169.11 N at 135.92 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

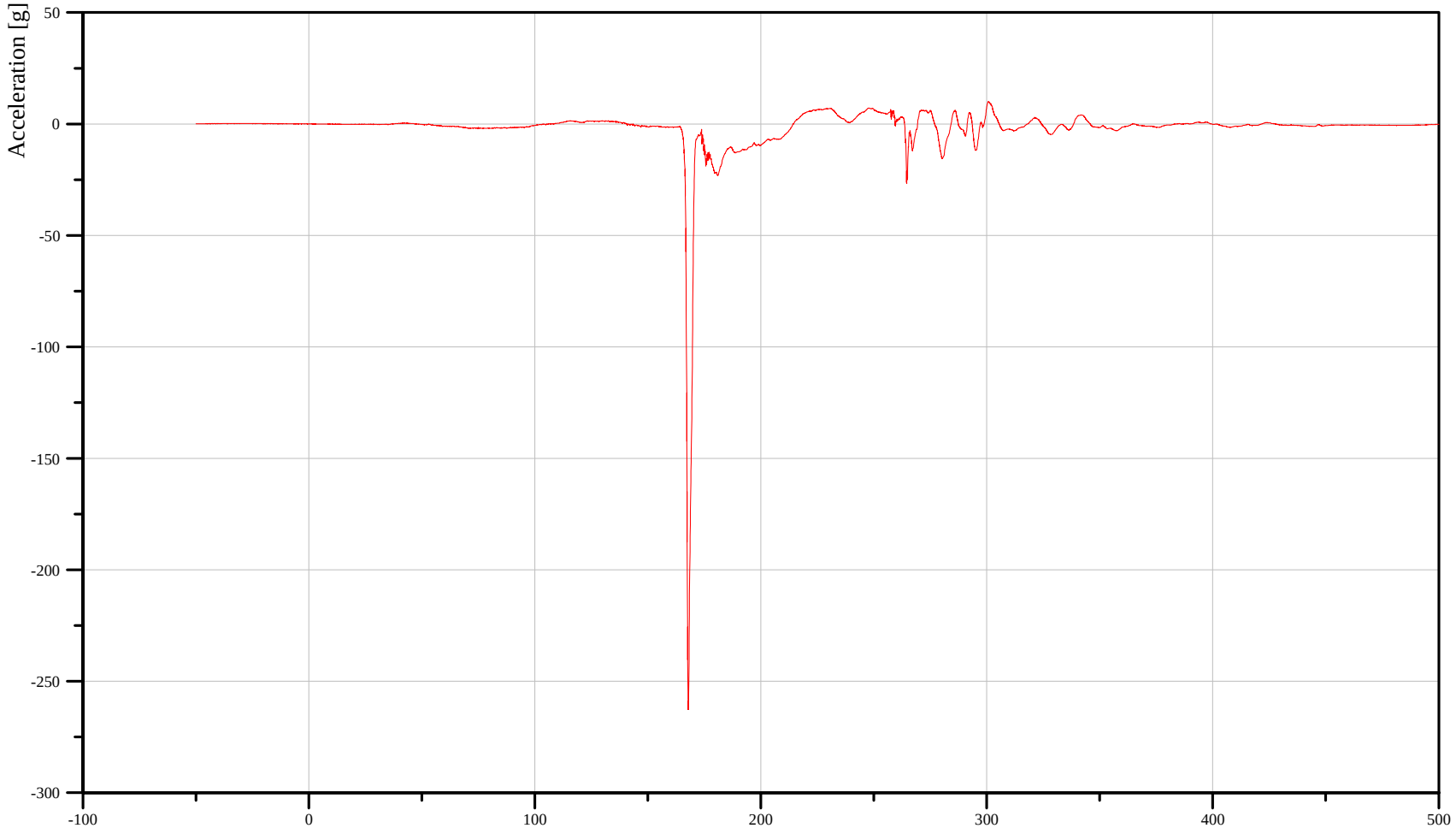
Date: 12/14/2007
Time: 9:12

5R-Left Head X-Axis Acceleration

Customer: VRTC

13HEADCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-262.67 g at 167.92 ms

Max. Value
10.09 g at 300.64 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

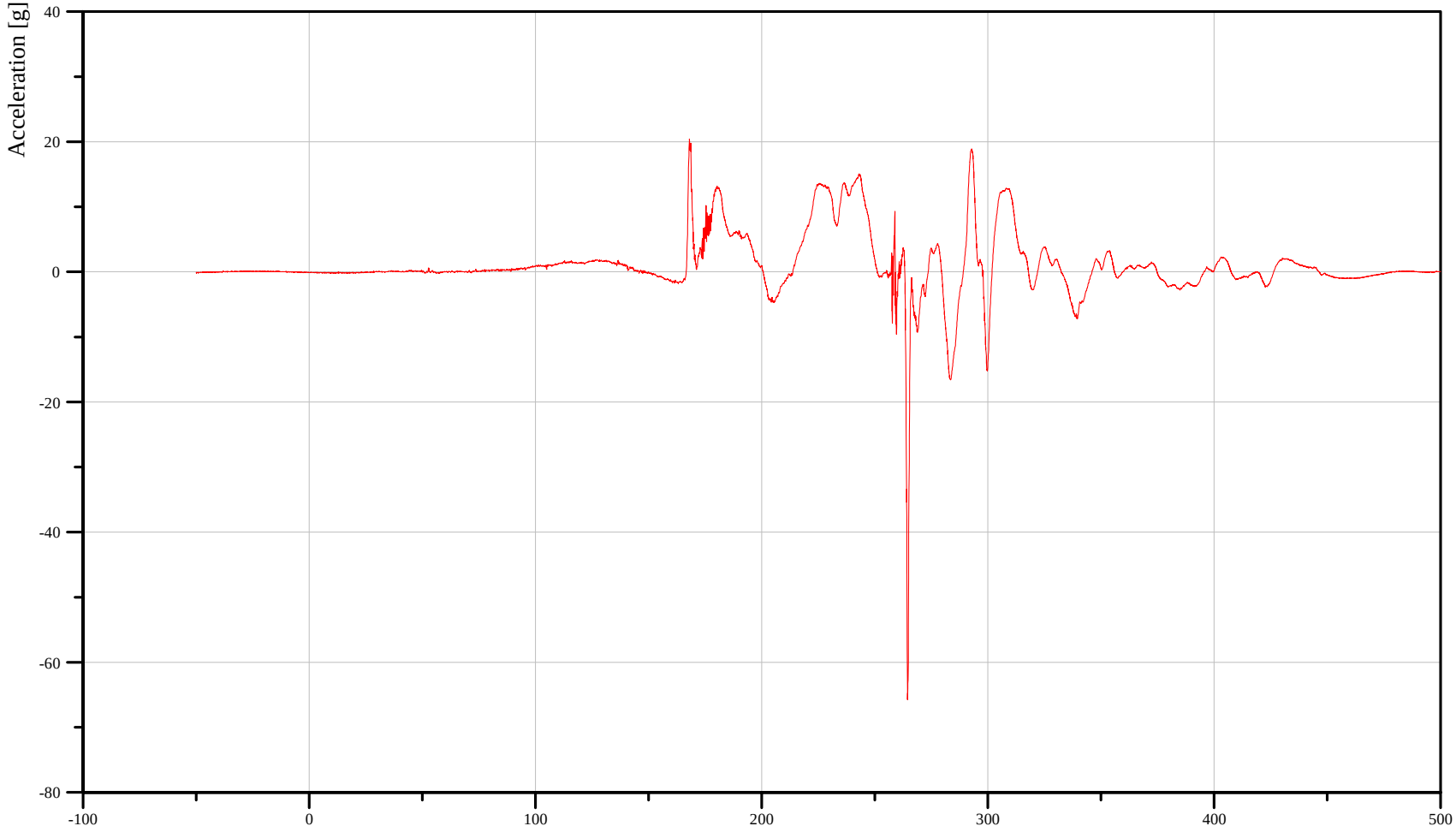
Date: 12/14/2007
Time: 9:12

5R-Left Head Y-Axis Acceleration

Customer: VRTC

13HEADCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-65.72 g at 264.48 ms

Max. Value
20.43 g at 168.08 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

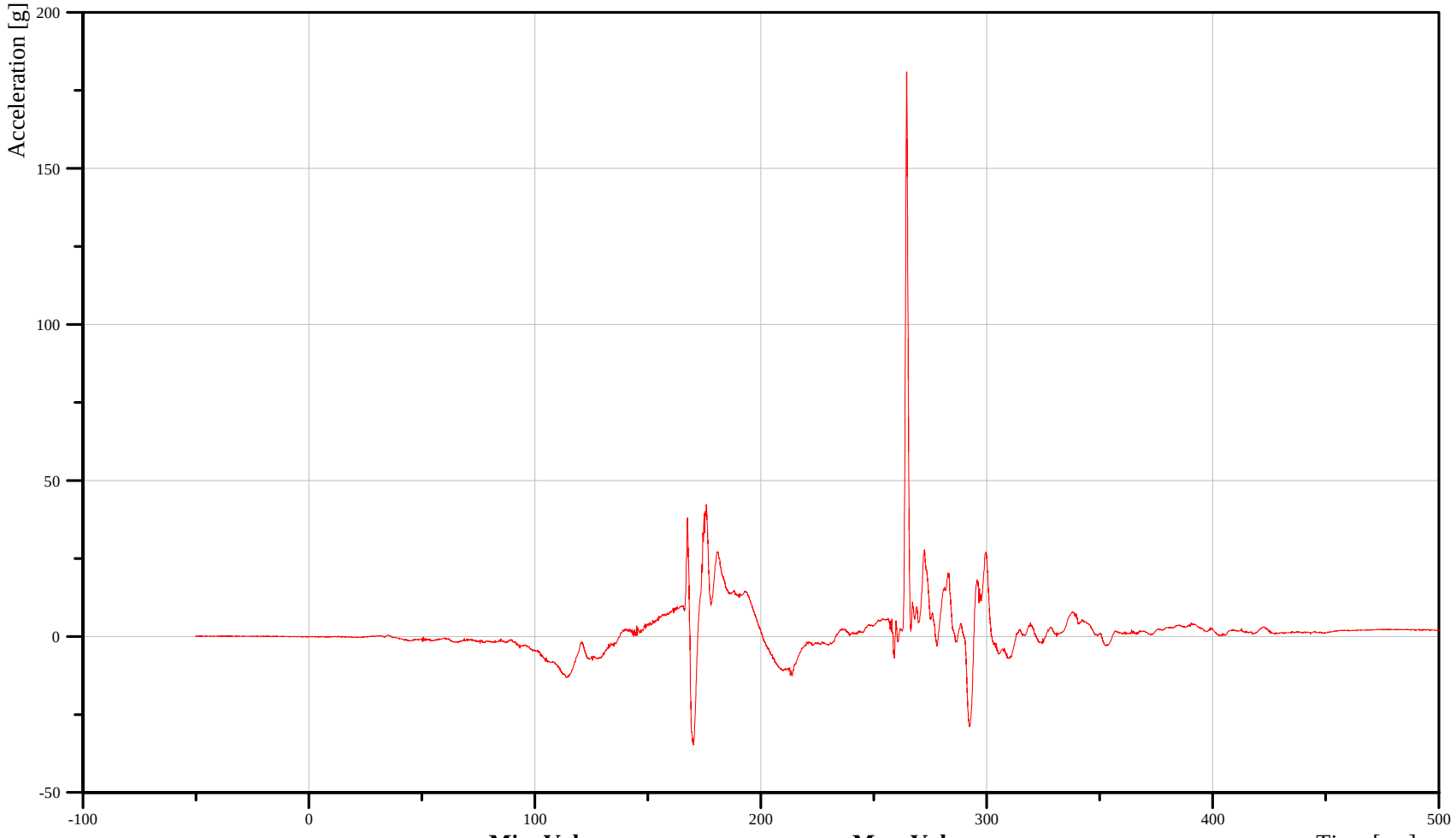
Date: 12/14/2007
Time: 9:12

5R-Left Head Z-Axis Acceleration

Customer: VRTC

13HEADCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-34.78 g at 170.24 ms

Max. Value
180.93 g at 264.56 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

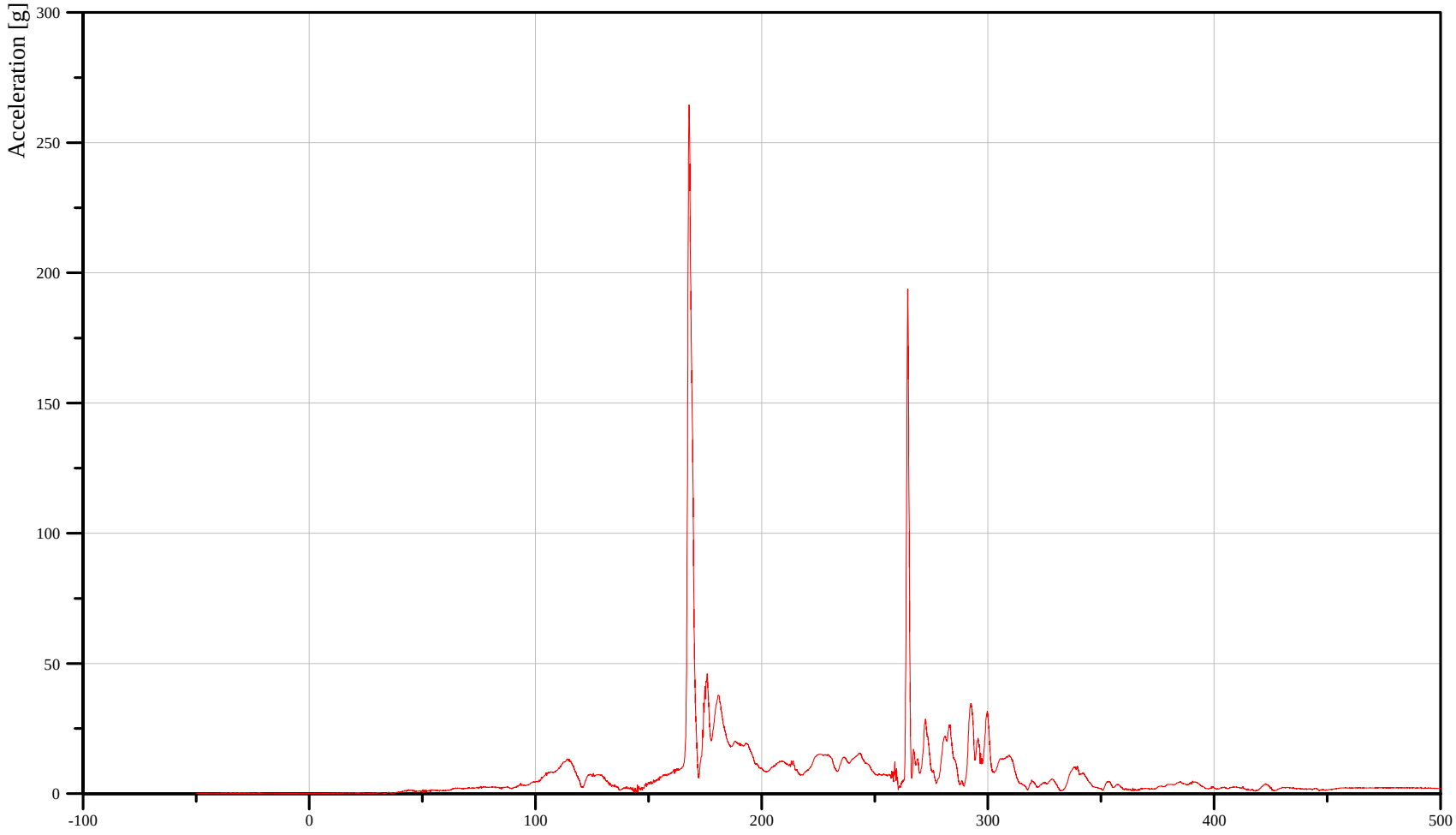
Date: 12/14/2007
Time: 9:12

5R-Left Head Resultant Acceleration

Customer: VRTC

13HEADCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.03 g at -5.68 ms

Max. Value
264.60 g at 167.92 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

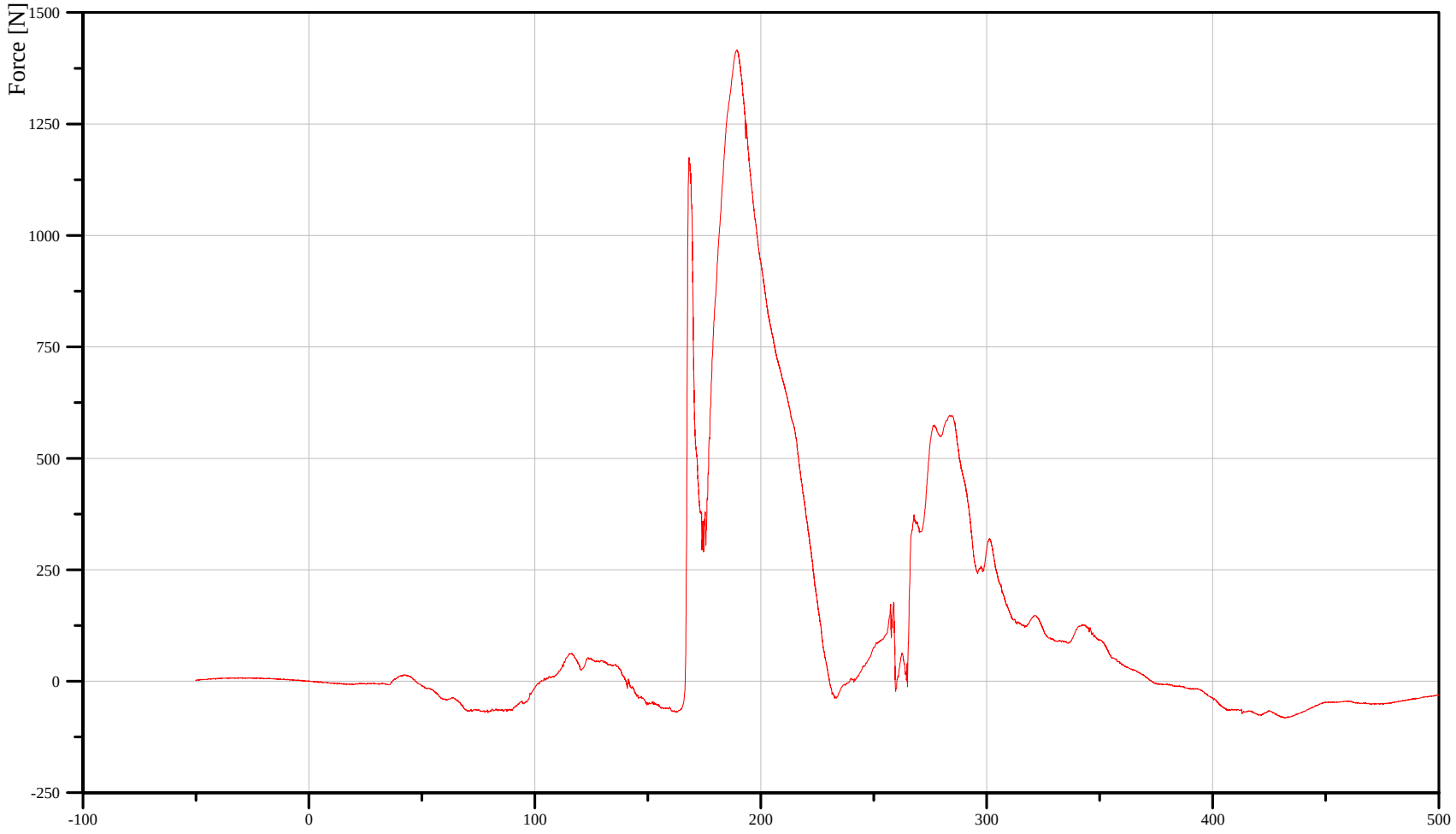
5R-Left Neck Force X

Date: 12/14/2007
Time: 9:12

Customer: VRTC

13NECKUP00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-82.06 N at 432.00 ms

Max. Value
1,416.21 N at 189.44 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

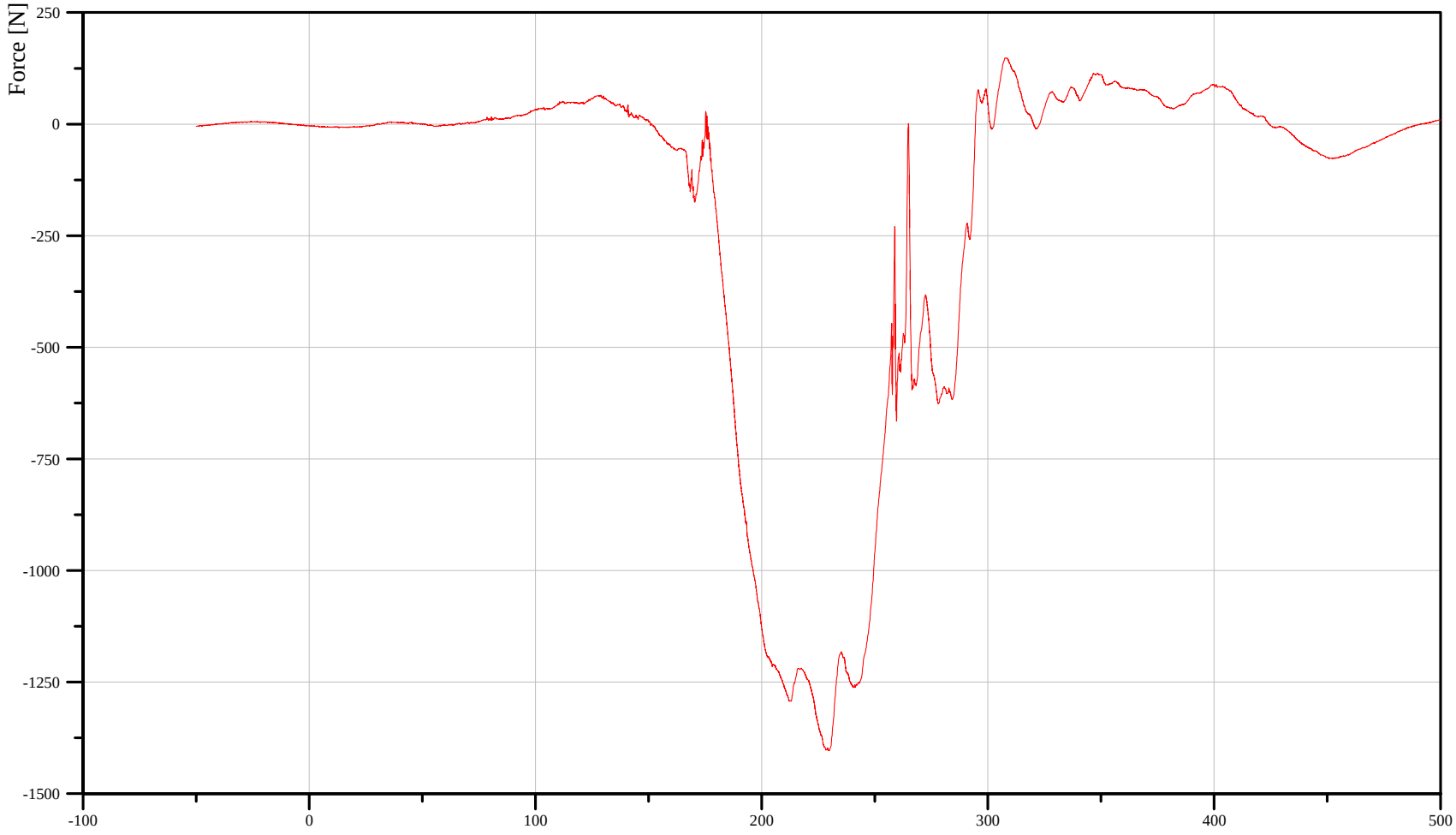
5R-Left Neck Force Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

13NECKUP00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-1,403.72 N at 229.92 ms

Max. Value
148.29 N at 307.60 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

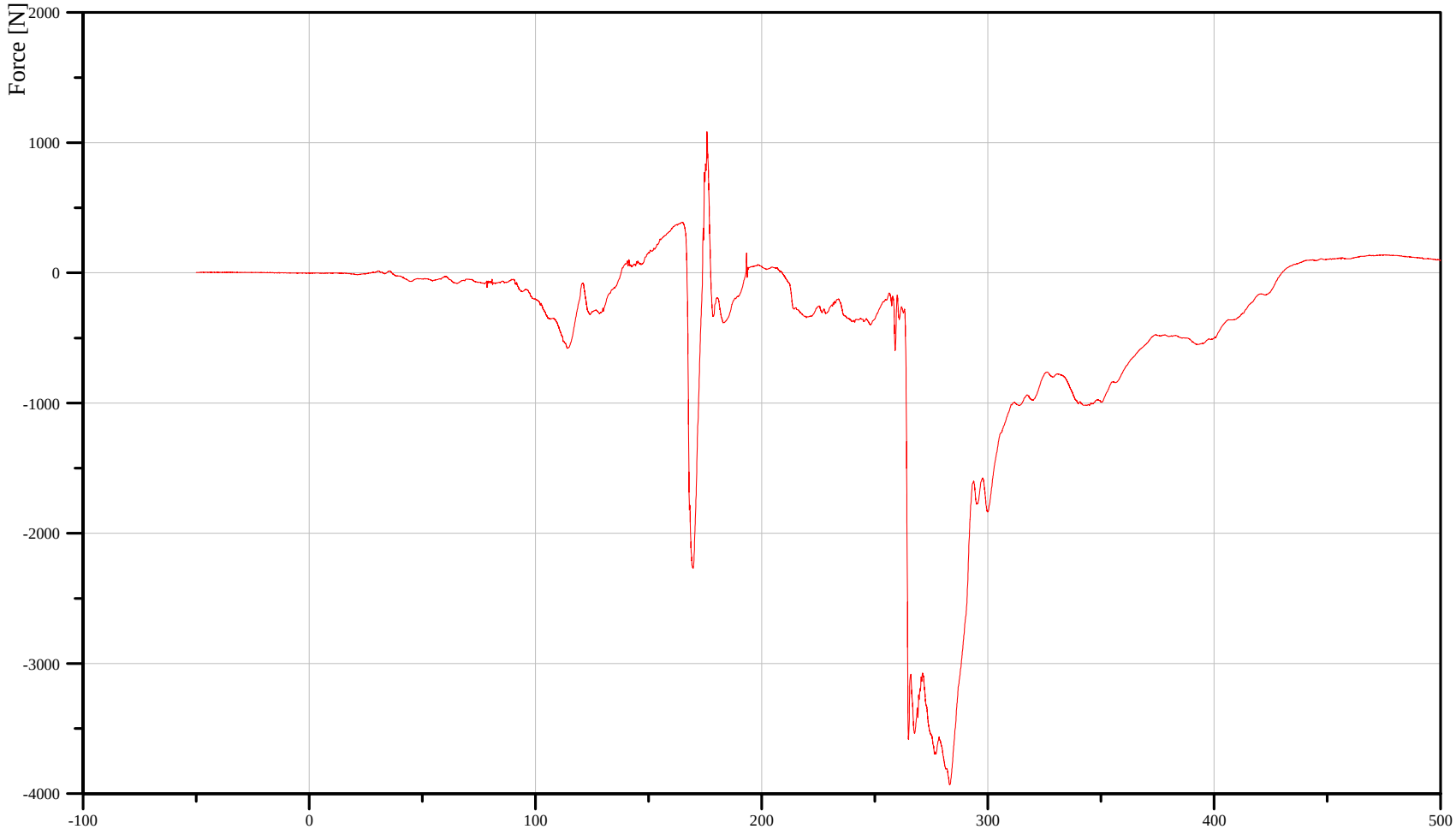
5R-Left Neck Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

13NECKUP00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-3,928.94 N at 283.12 ms

Max. Value
1,085.32 N at 175.84 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

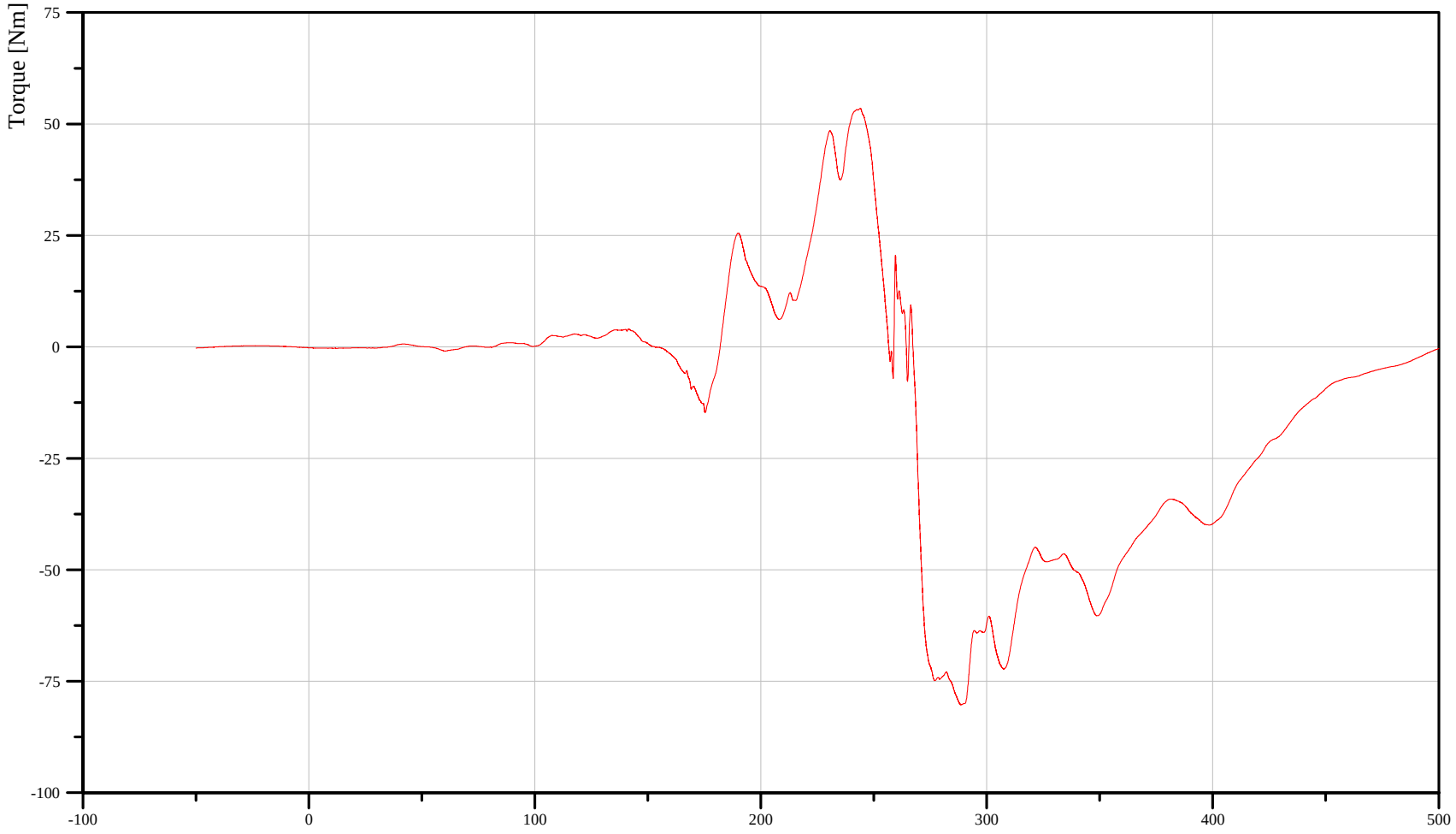
5R-Left Neck Moment X

Date: 12/14/2007
Time: 9:12

Customer: VRTC

13NECKUP00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-80.24 Nm at 288.72 ms

Max. Value
53.52 Nm at 244.00 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

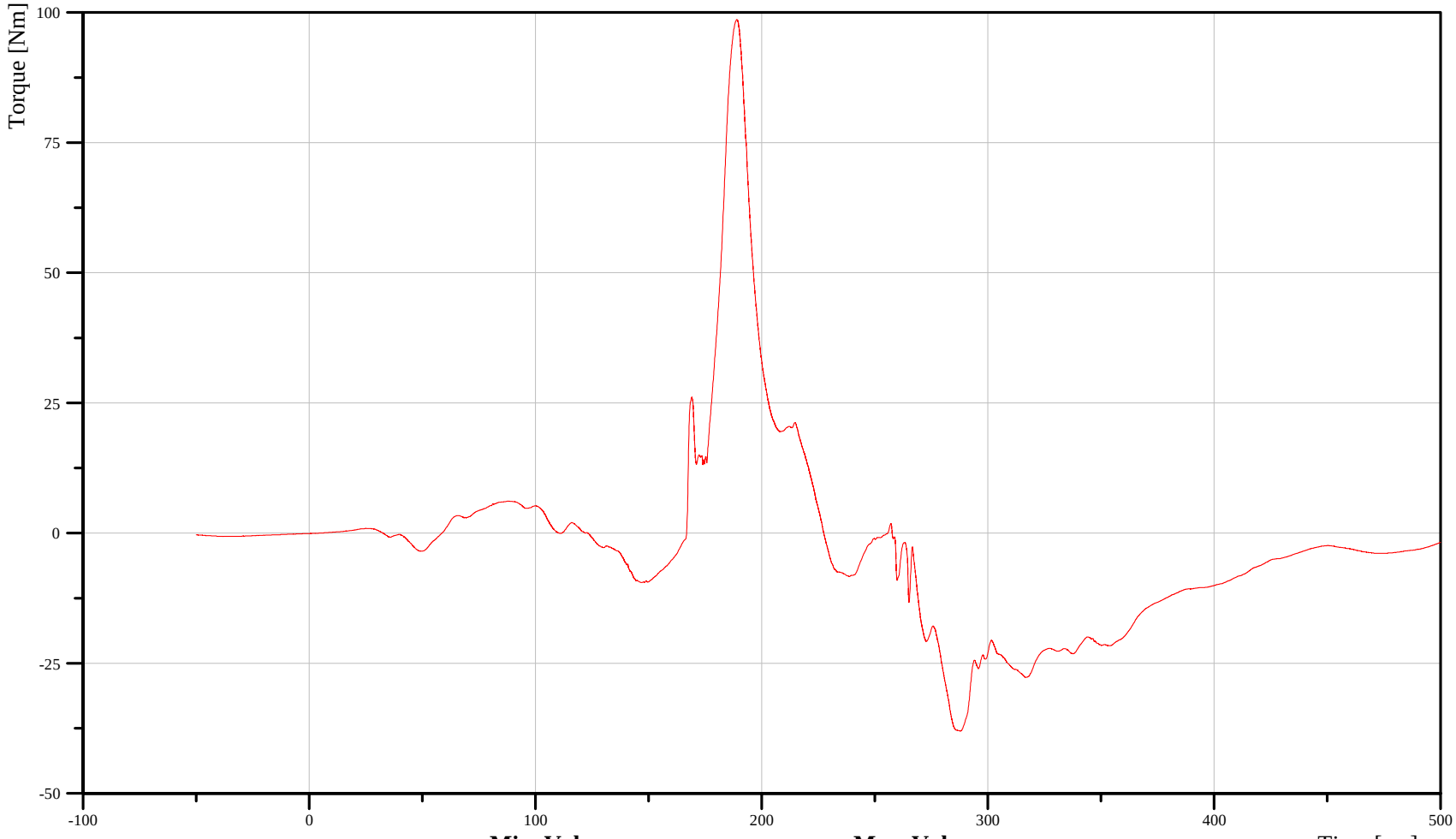
Date: 12/14/2007
Time: 9:12

5R-Left Neck Moment Y

Customer: VRTC

13NECKUP00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-38.00 Nm at 287.92 ms

Max. Value
98.65 Nm at 189.04 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

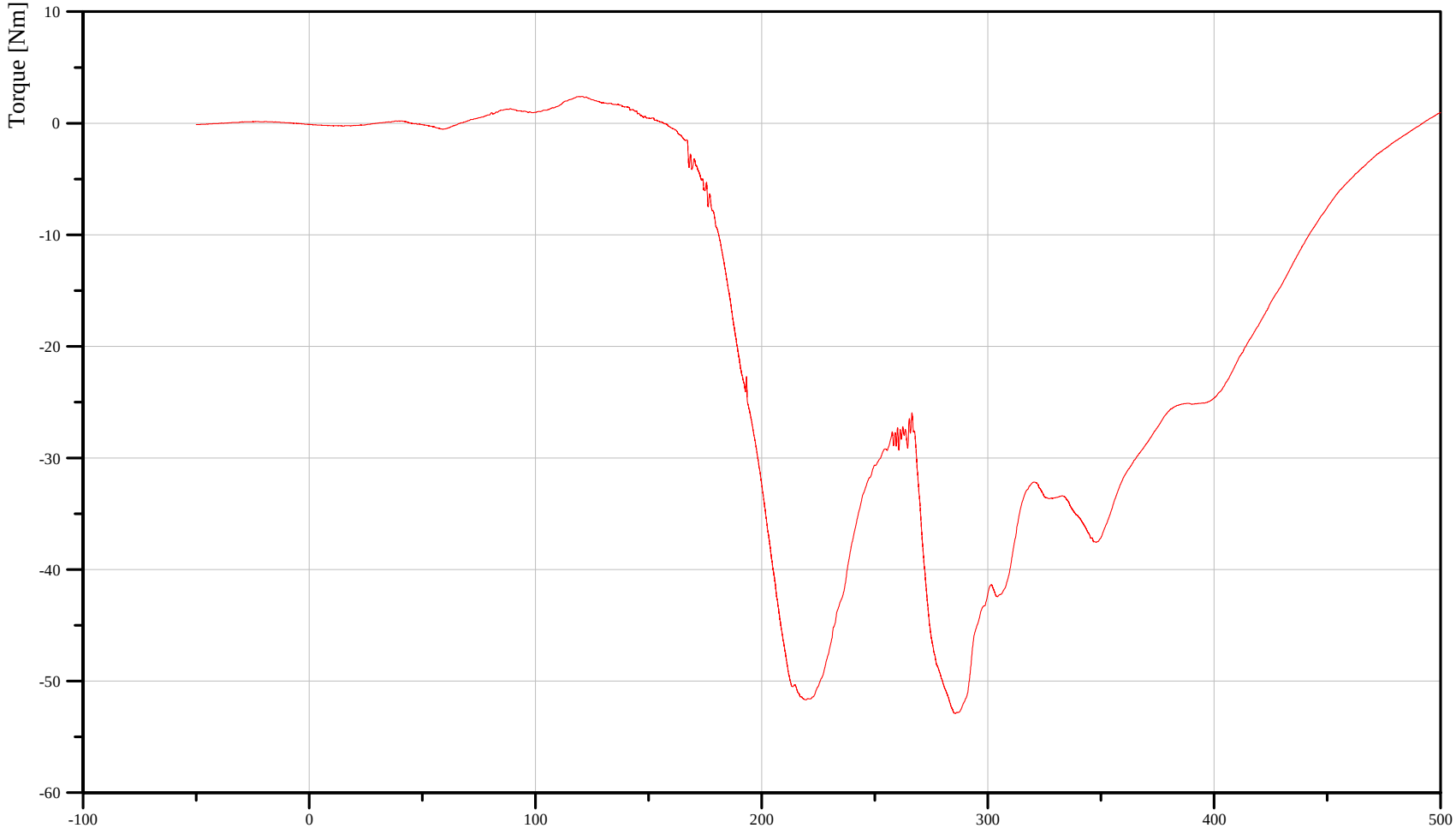
5R-Left Neck Moment Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

13NECKUP00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-52.89 Nm at 285.60 ms

Max. Value
2.40 Nm at 120.64 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

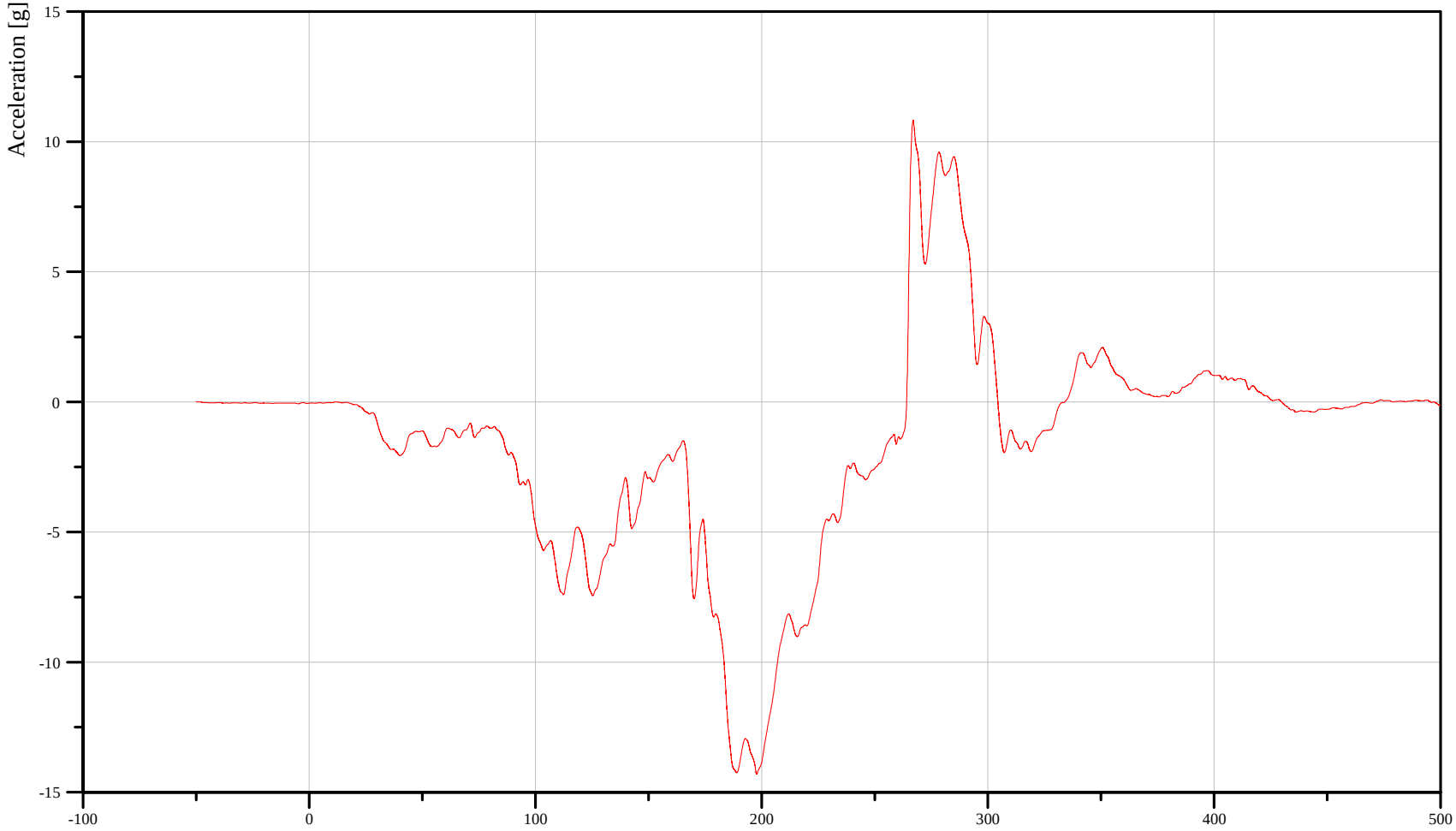
Date: 12/14/2007
Time: 9:12

5R-Left Chest X-Axis Acceleration

Customer: VRTC

13CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-14.30 g at 197.84 ms

Max. Value
10.83 g at 266.96 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

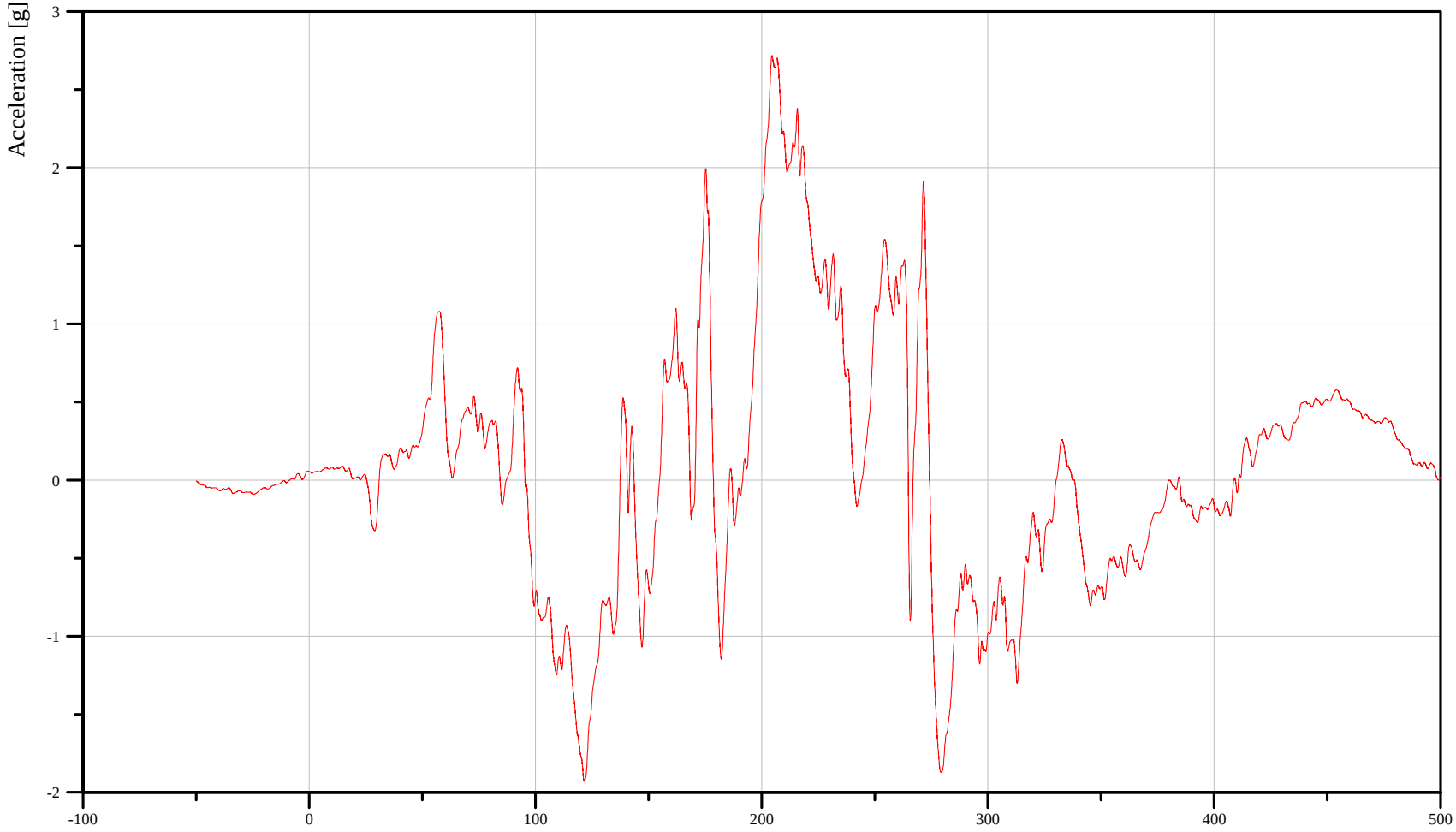
Date: 12/14/2007
Time: 9:12

5R-Left Chest Y-Axis Acceleration

Customer: VRTC

13CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-1.93 g at 121.60 ms

Max. Value
2.72 g at 204.56 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

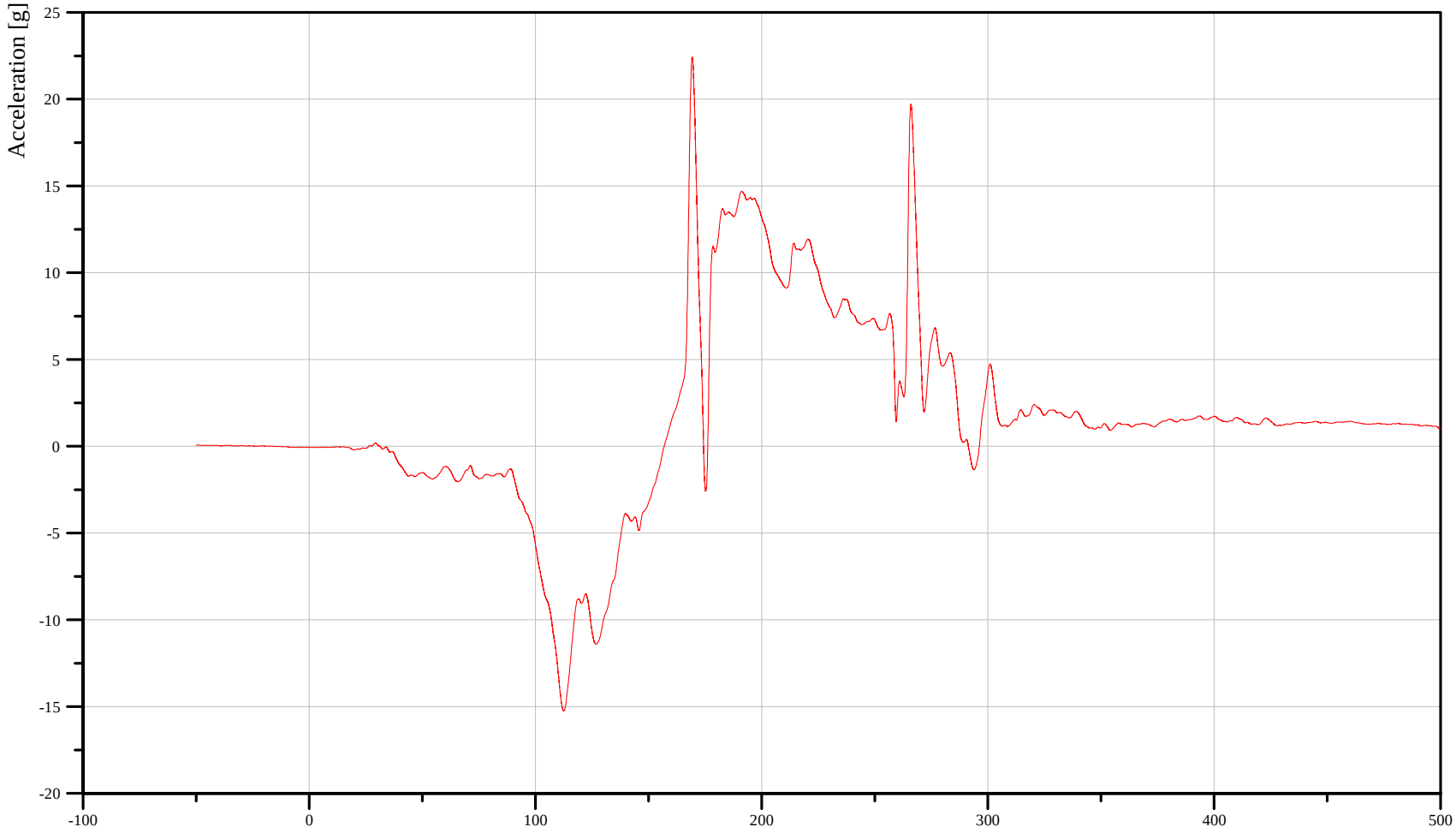
Date: 12/14/2007
Time: 9:12

5R-Left Chest Z-Axis Acceleration

Customer: VRTC

13CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-15.25 g at 112.56 ms

Max. Value
22.44 g at 169.28 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

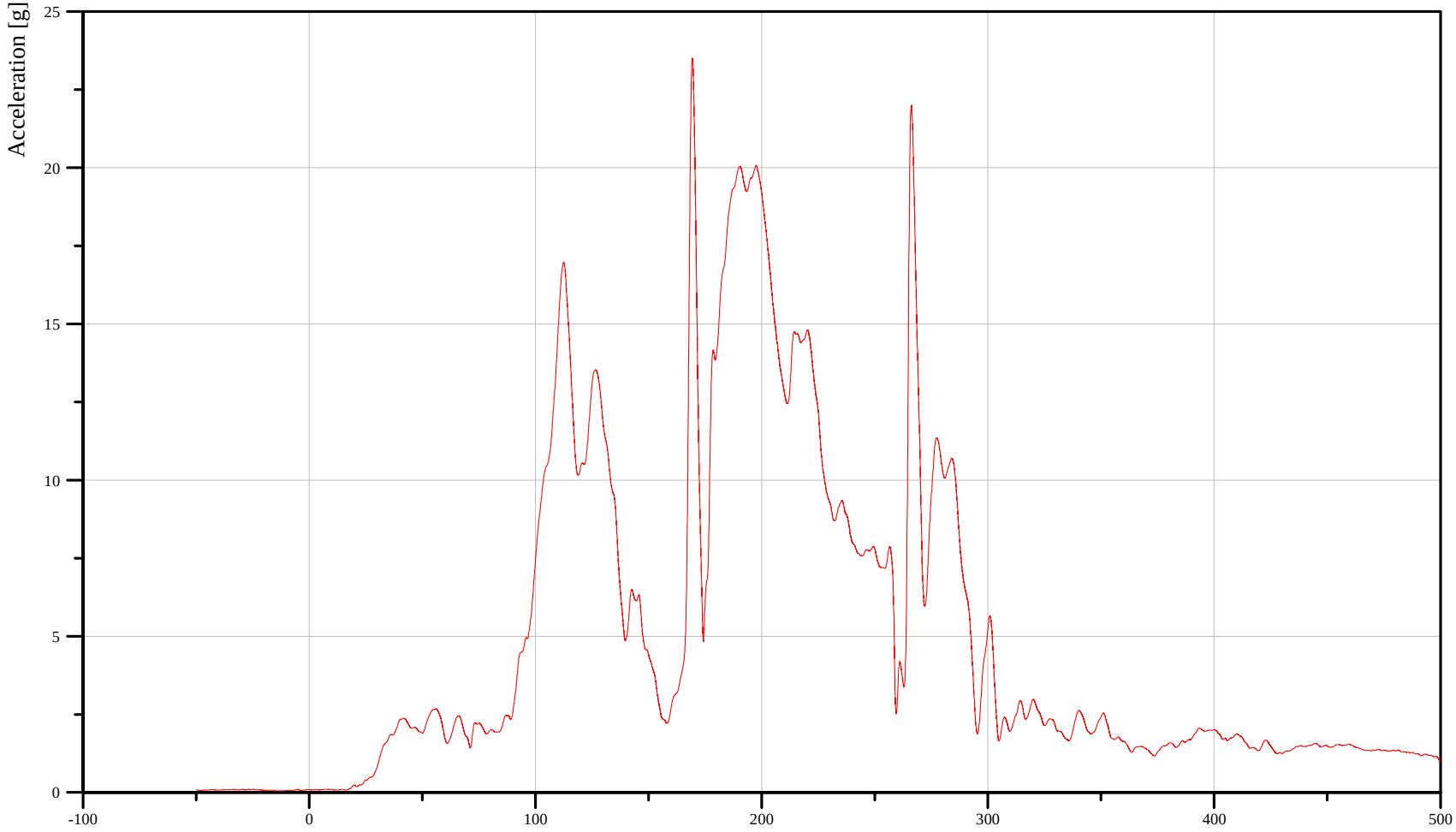
Date: 12/14/2007
Time: 9:12

5R-Left Chest Resultant Acceleration

Customer: VRTC

13CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.05 g at -12.24 ms

Max. Value
23.52 g at 169.36 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

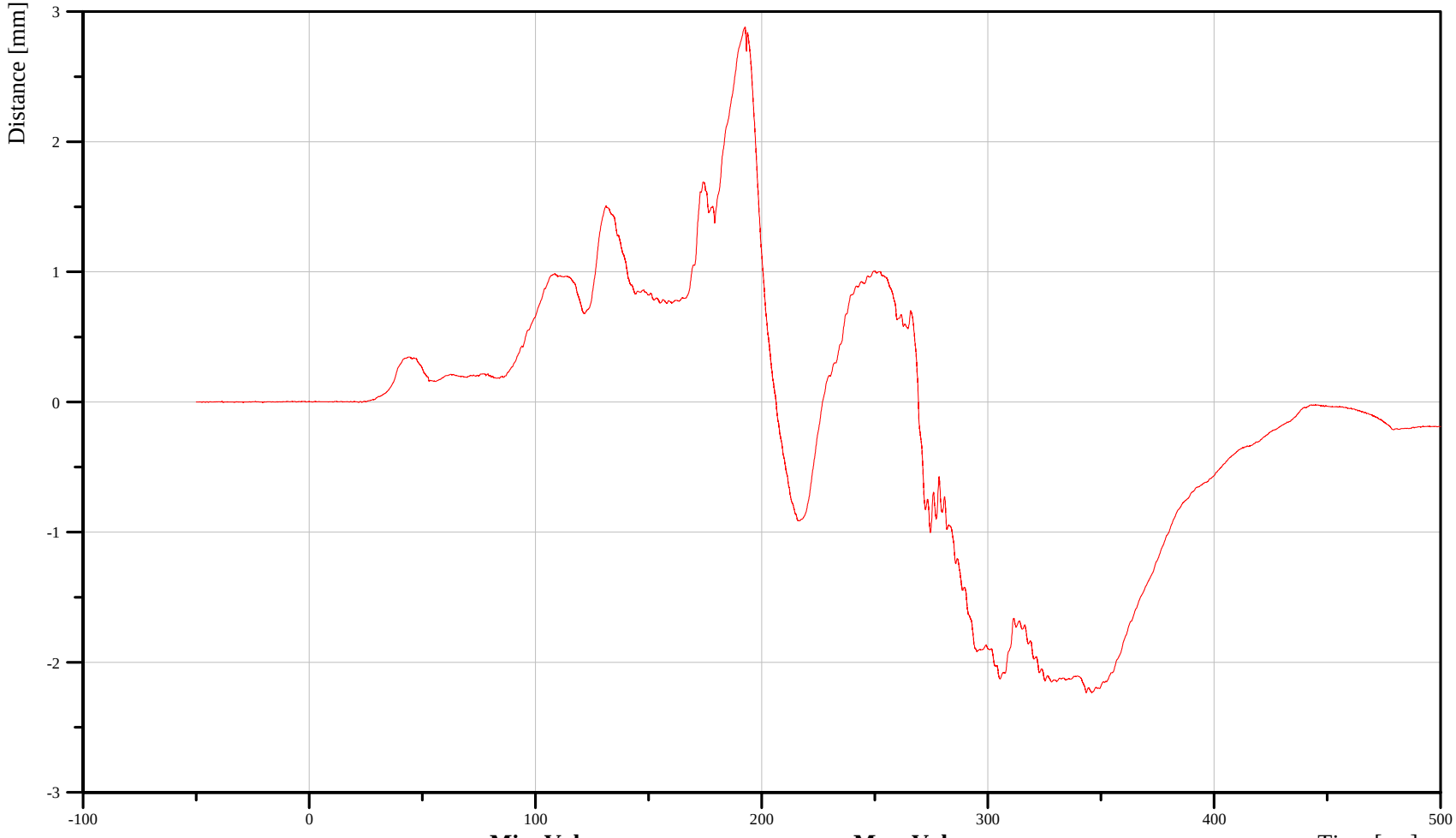
Date: 12/14/2007
Time: 9:12

5R-Left Chest X-Axis Deflection

Customer: VRTC

13CHST0000H3DSXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-2.23 mm at 346.00 ms

Max. Value
2.88 mm at 192.64 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

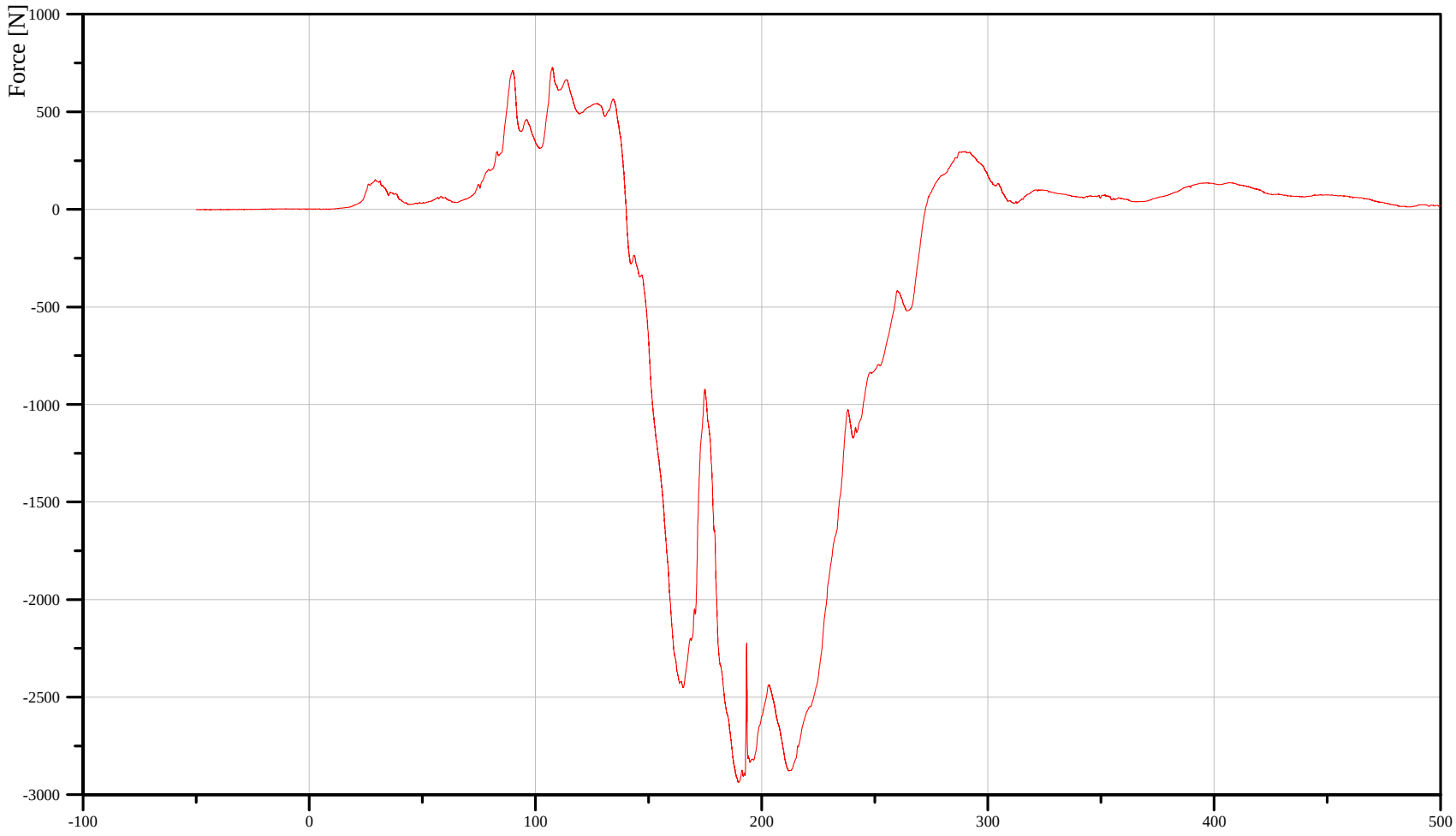
Date: 12/14/2007
Time: 9:12

5R-Left Left Femur Force Z

Customer: VRTC

13FEMRLL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-2,936.75 N at 189.76 ms

Max. Value
727.76 N at 107.52 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

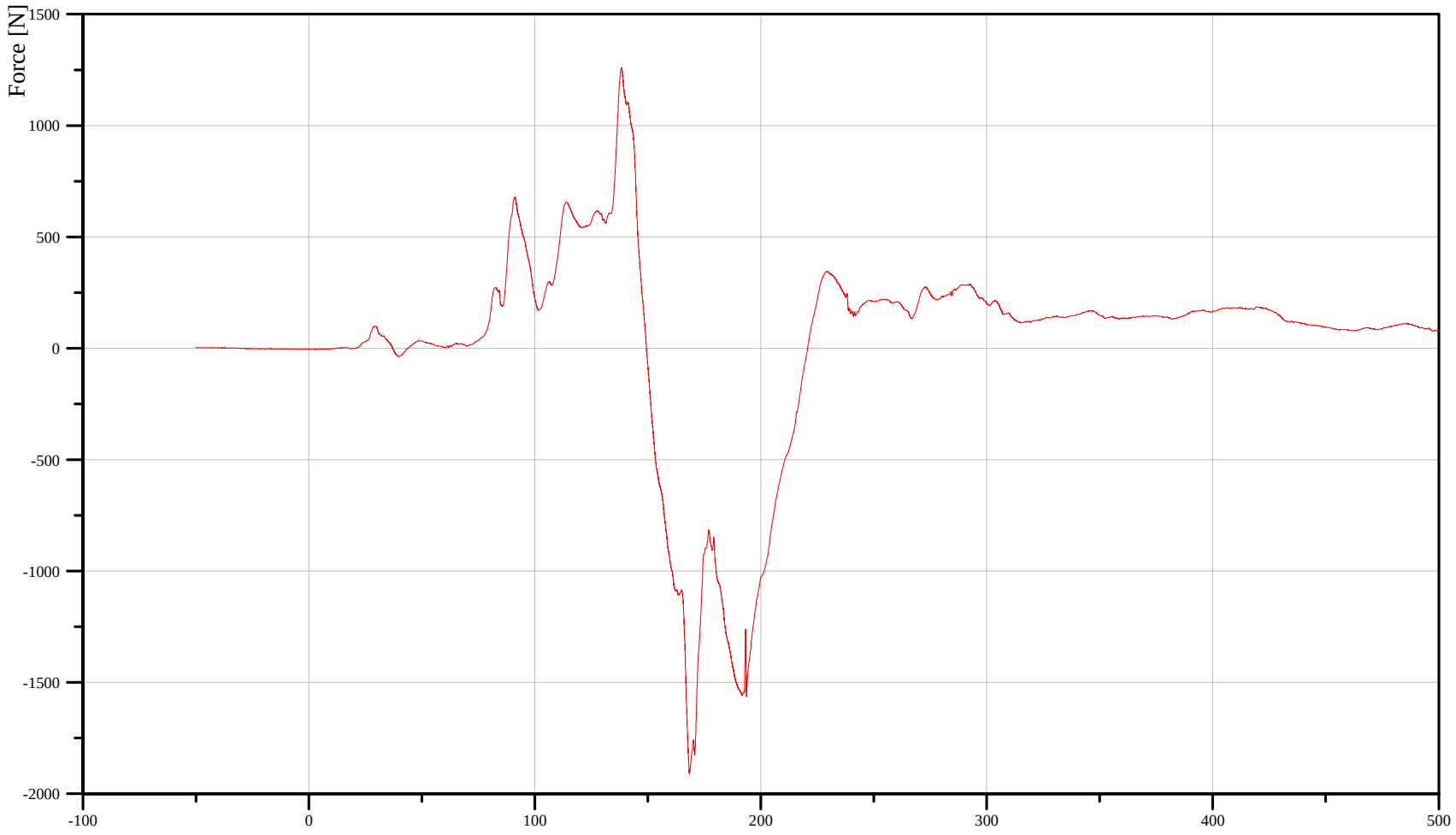
Date: 12/14/2007
Time: 9:12

5R-Left Right Femur Force Z

Customer: VRTC

13FEMRRL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-1,909.76 N at 168.40 ms

Max. Value
1,259.52 N at 138.32 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

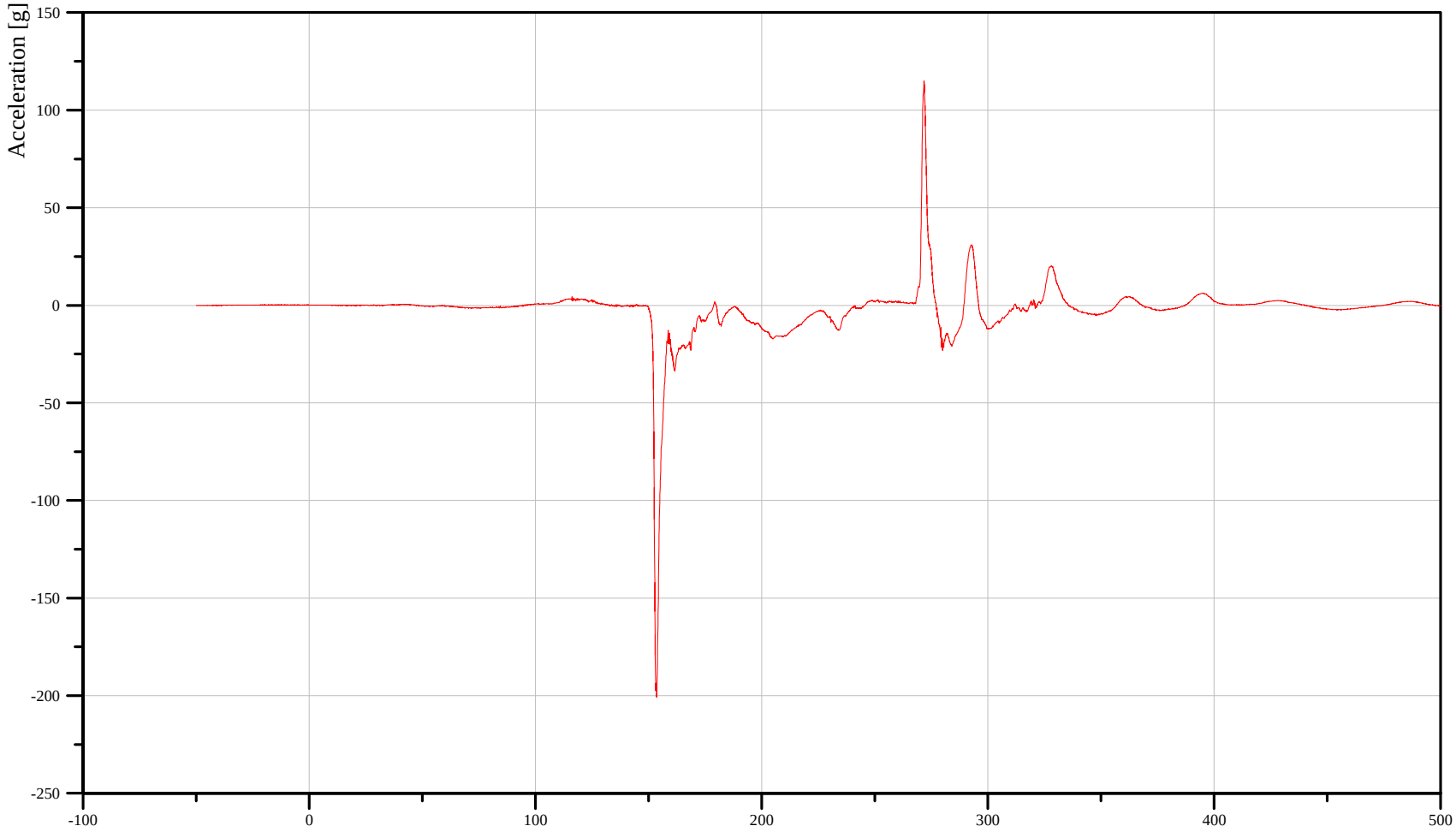
Date: 12/14/2007
Time: 9:12

5R-Right Head X-Axis Acceleration

Customer: VRTC

14HEADCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-200.53 g at 153.60 ms

Max. Value
115.02 g at 271.84 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

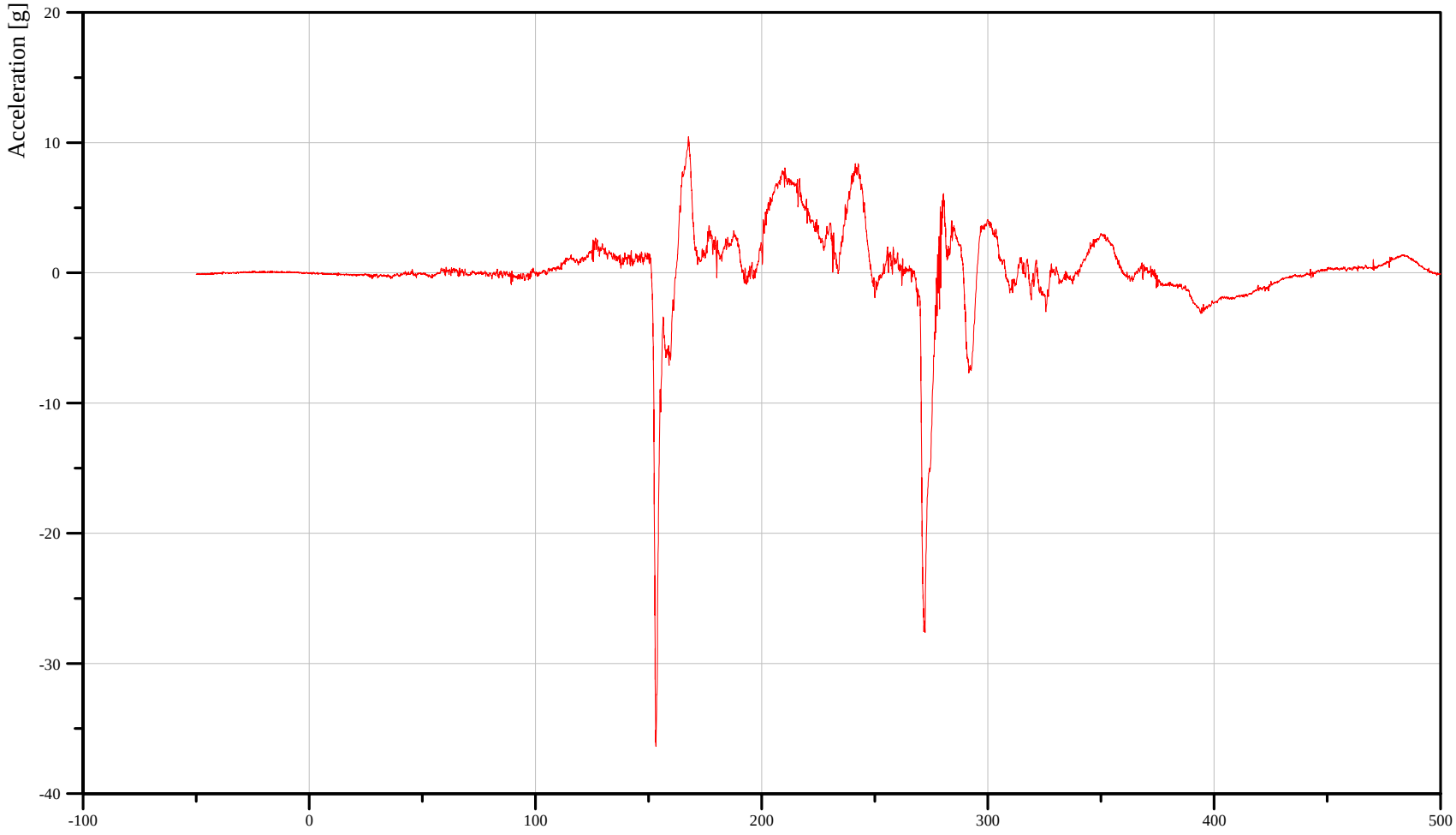
5R-Right Head Y-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

14HEADCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-36.38 g at 153.28 ms

Max. Value
10.47 g at 167.68 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

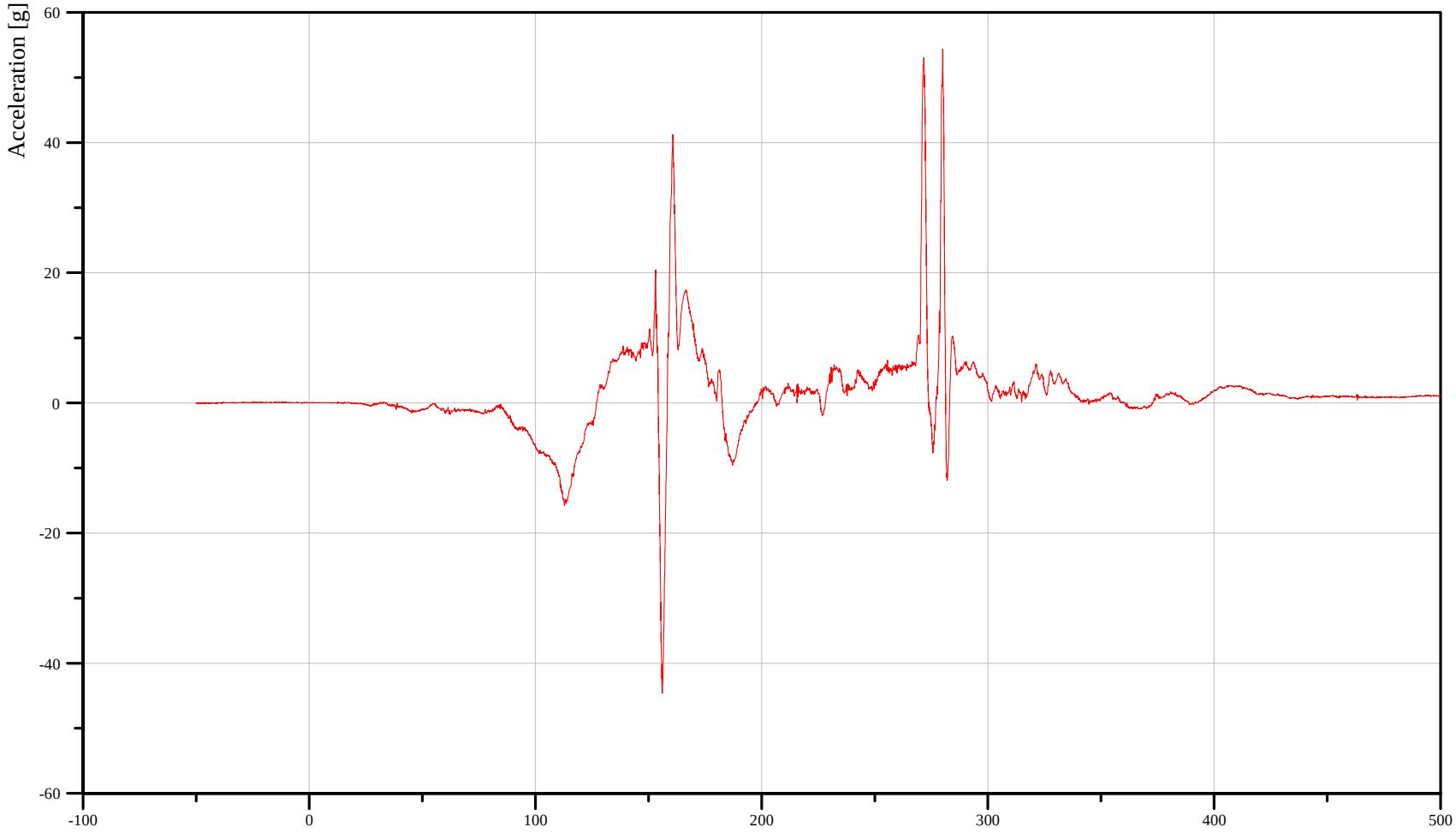
Date: 12/14/2007
Time: 9:12

5R-Right Head Z-Axis Acceleration

Customer: VRTC

14HEADCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-44.59 g at 156.08 ms

Max. Value
54.38 g at 280.00 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

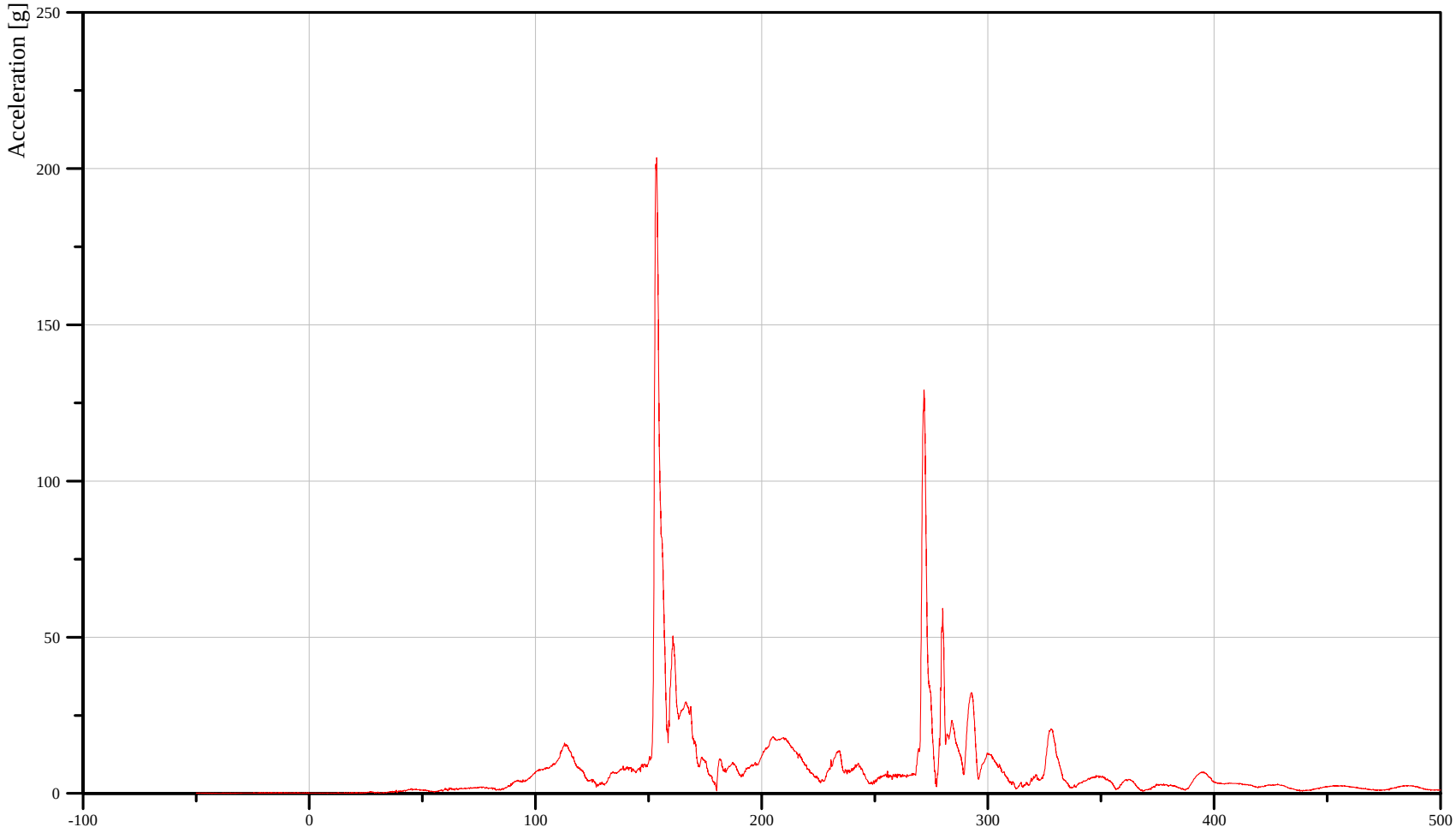
Date: 12/14/2007
Time: 9:12

5R-Right Head Resultant Acceleration

Customer: VRTC

14HEADCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.00 g at -43.44 ms

Max. Value
203.55 g at 153.60 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

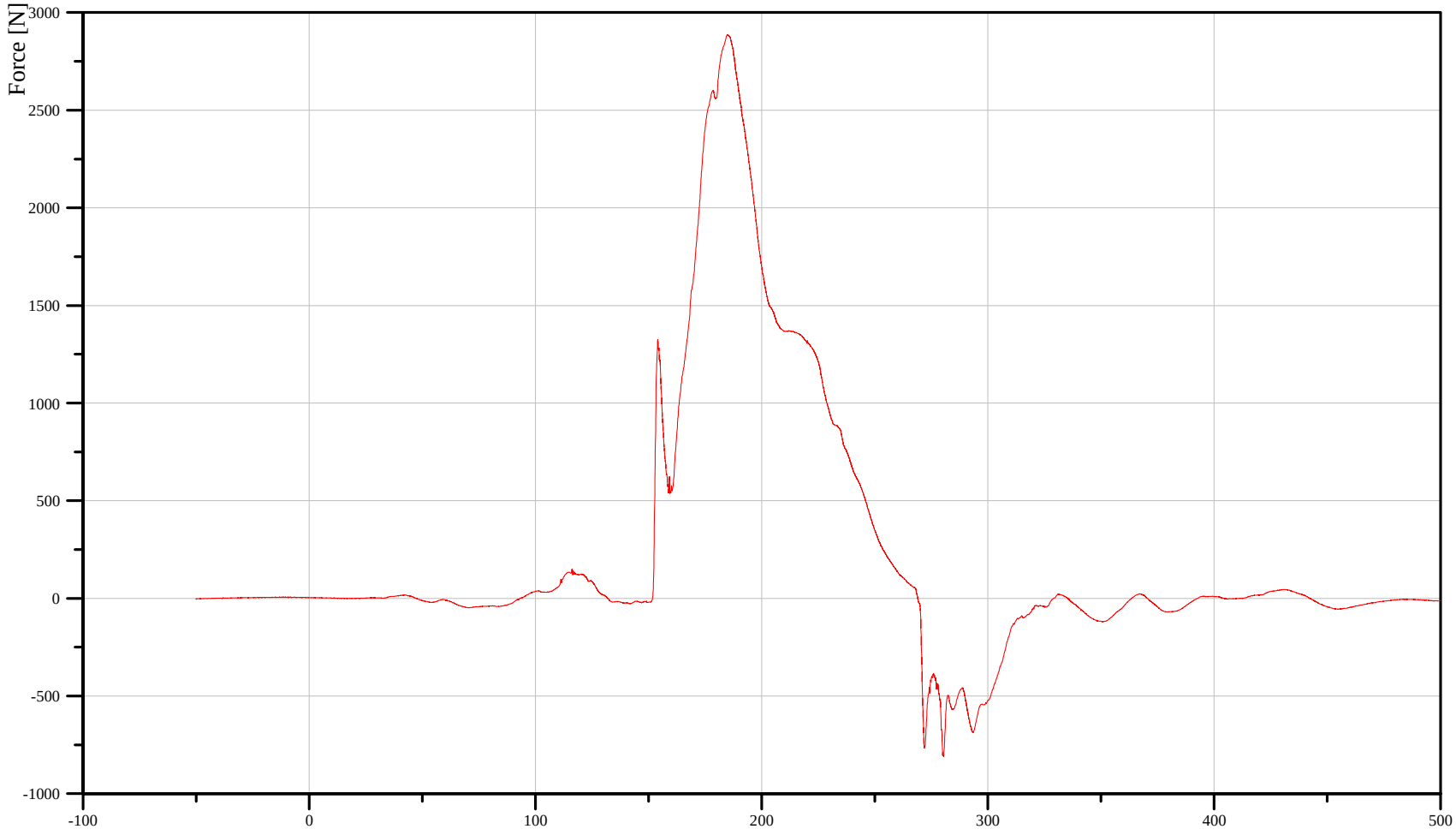
Date: 12/14/2007
Time: 9:12

5R-Right Neck Force X

Customer: VRTC

14NECKUP00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-808.43 N at 280.40 ms

Max. Value
2,885.68 N at 184.96 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

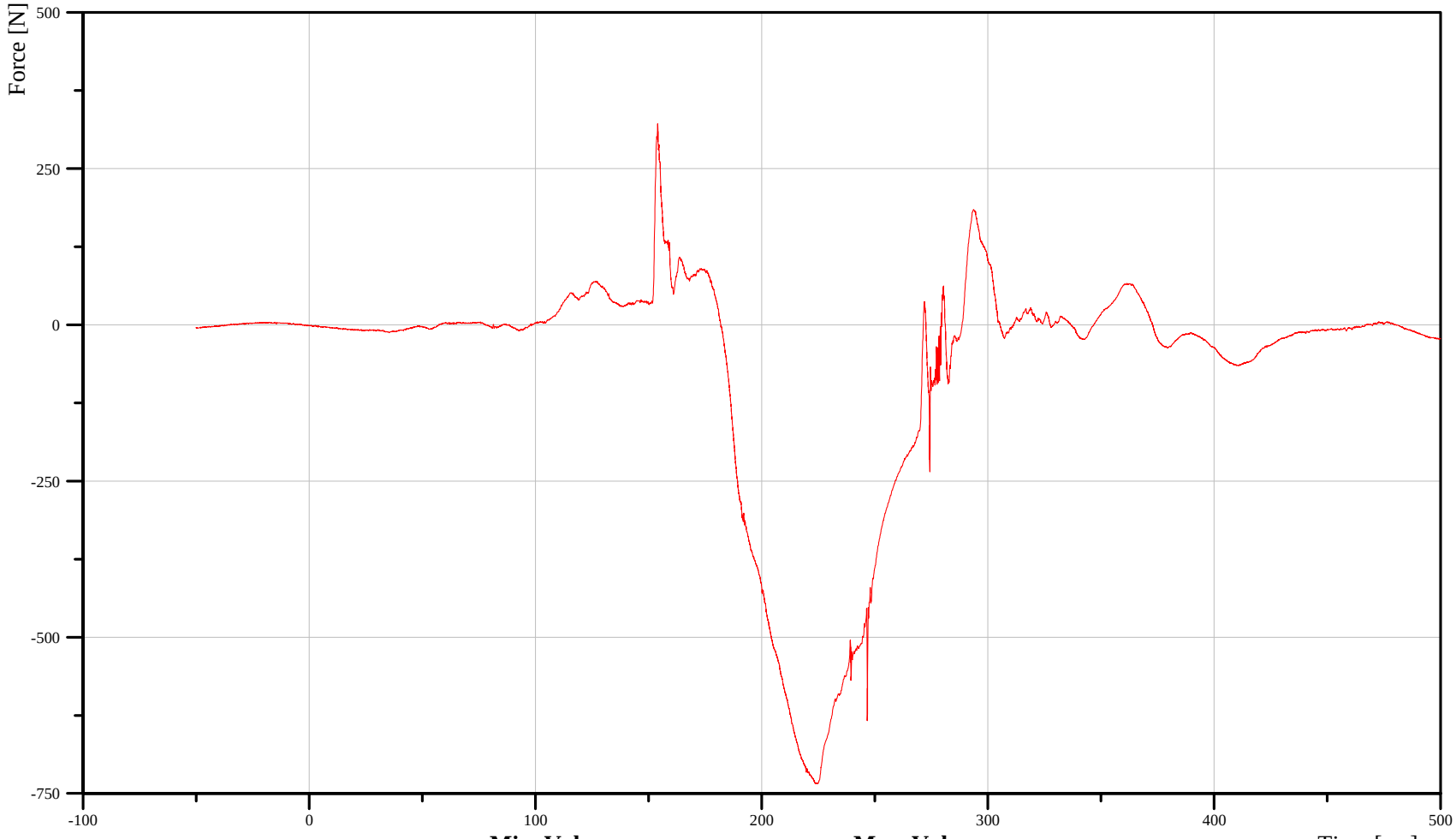
5R-Right Neck Force Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

14NECKUP00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-734.32 N at 224.48 ms

Max. Value
322.00 N at 154.08 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

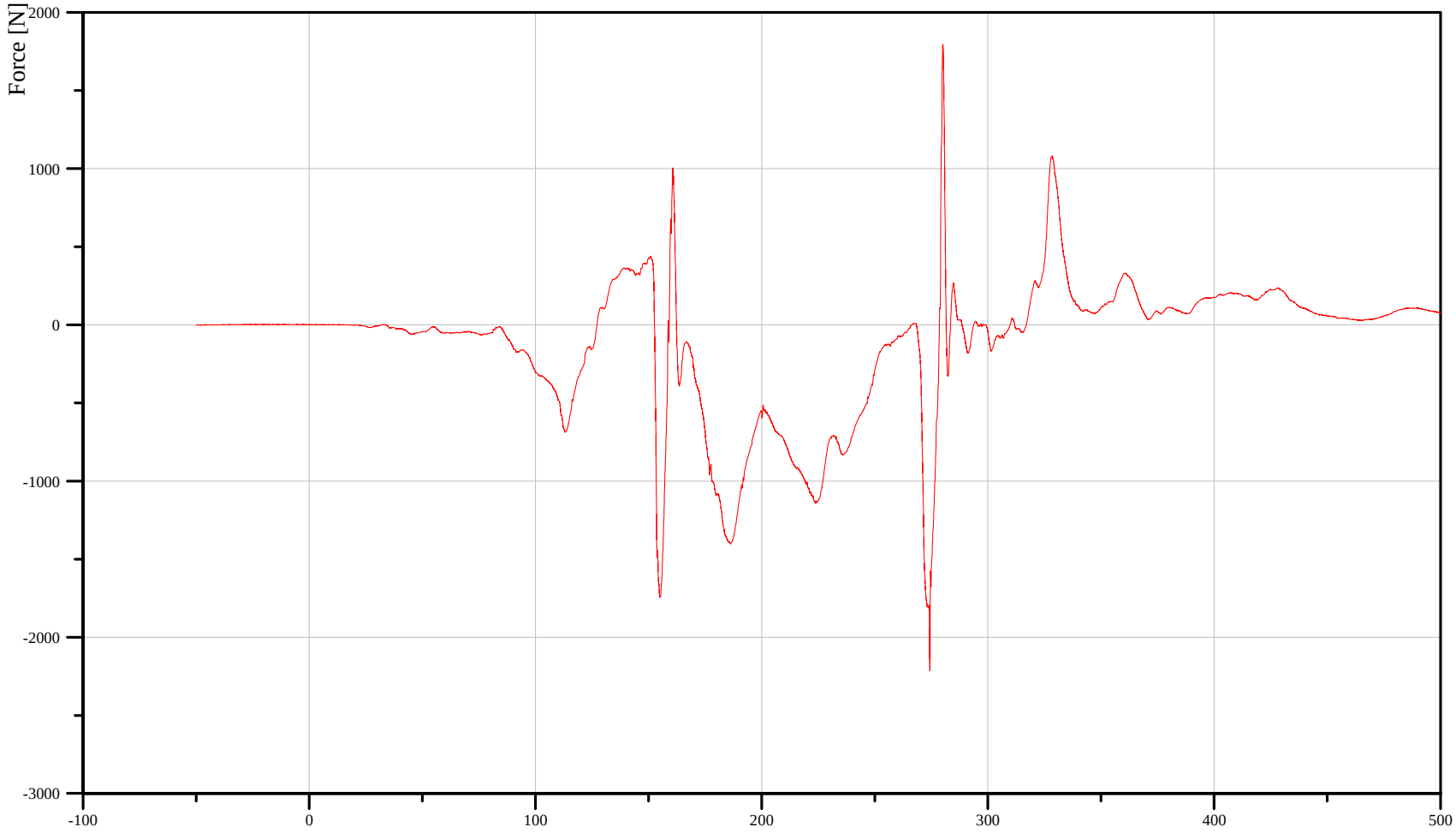
5R-Right Neck Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

14NECKUP00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-2,216.72 N at 274.32 ms

Max. Value
1,796.45 N at 280.16 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

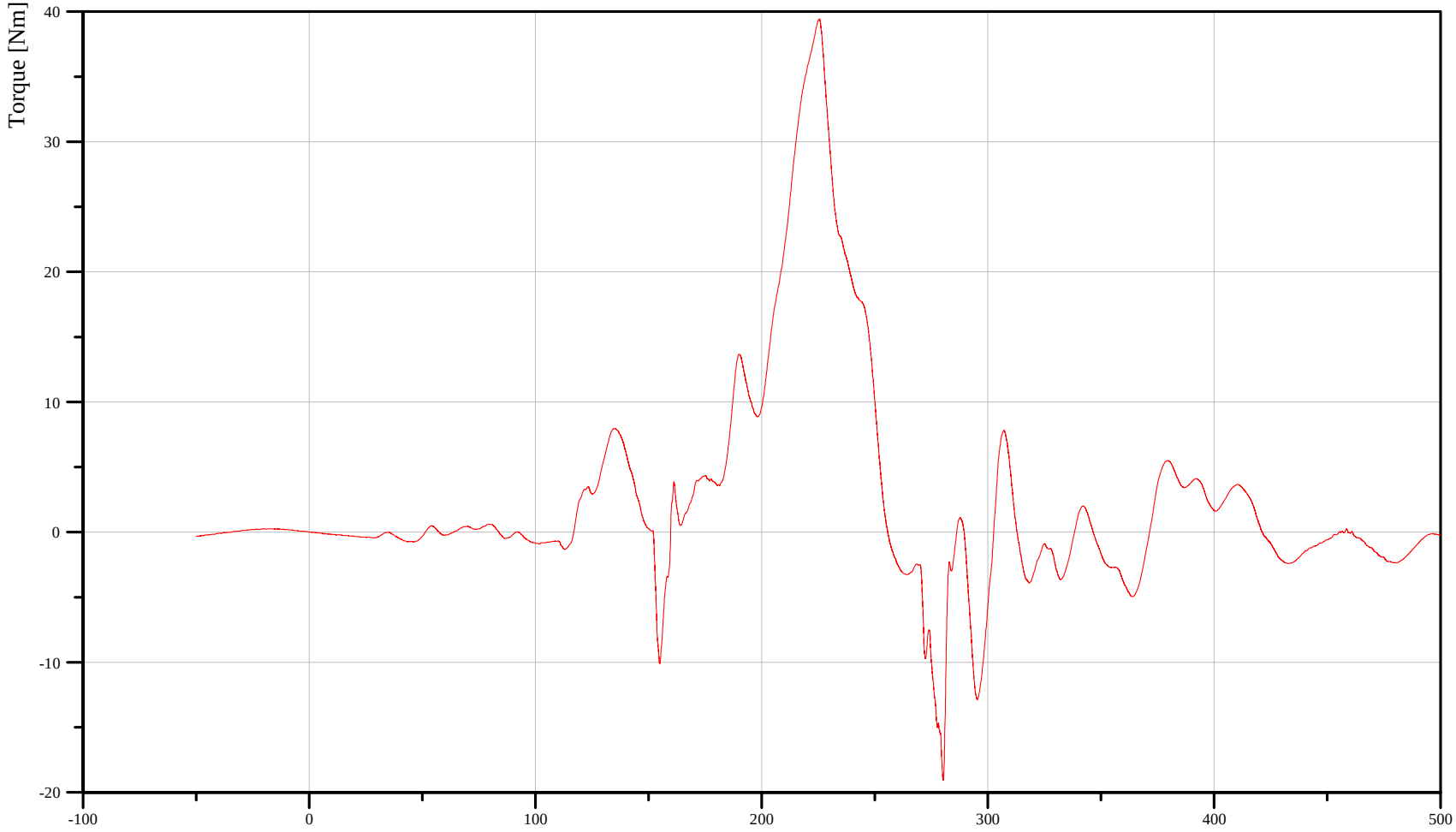
Date: 12/14/2007
Time: 9:12

5R-Right Neck Moment X

Customer: VRTC

14NECKUP00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-19.07 Nm at 280.24 ms

Max. Value
39.43 Nm at 225.44 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

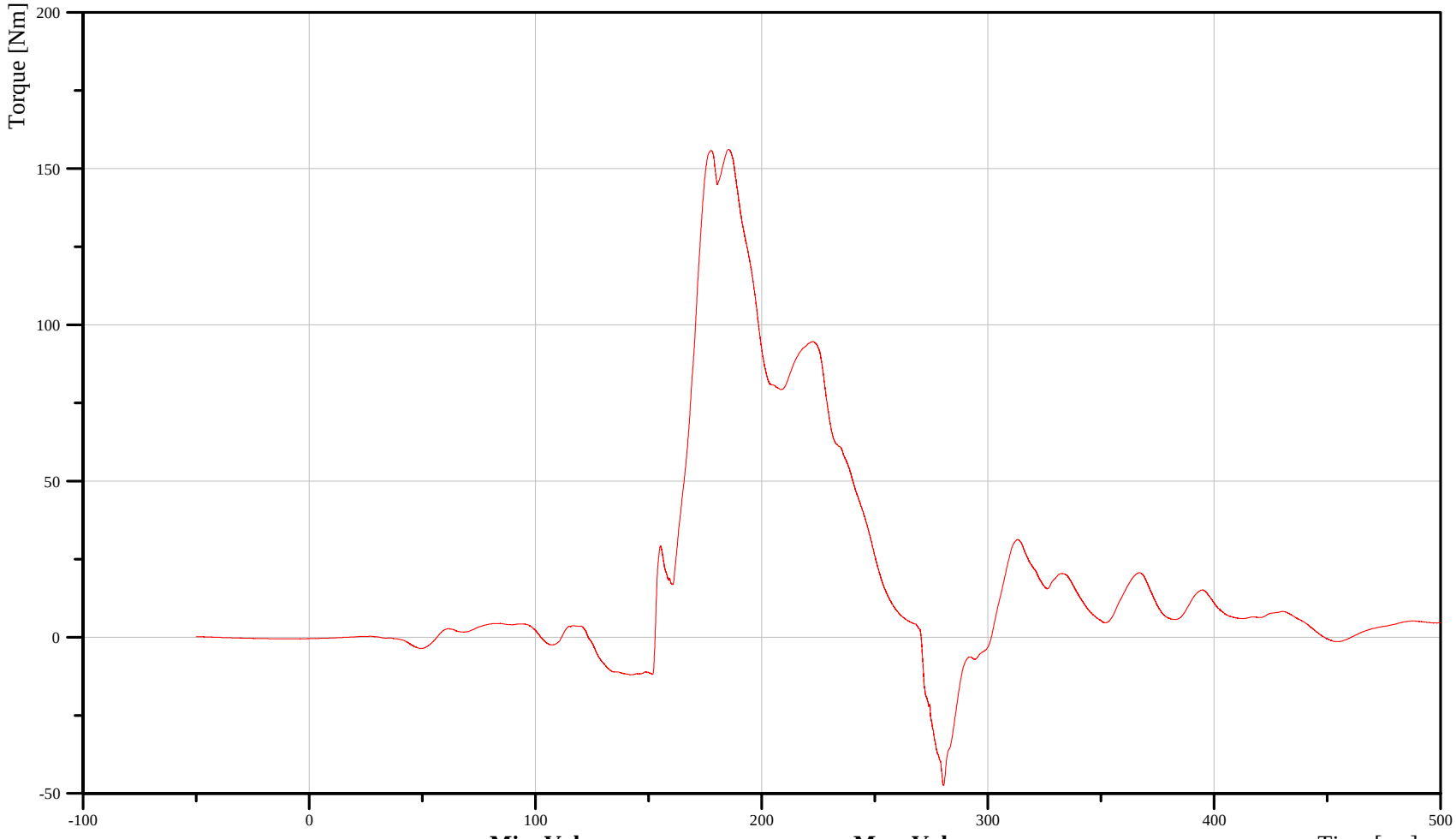
5R-Right Neck Moment Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

14NECKUP00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-47.50 Nm at 280.40 ms

Max. Value
156.18 Nm at 185.36 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

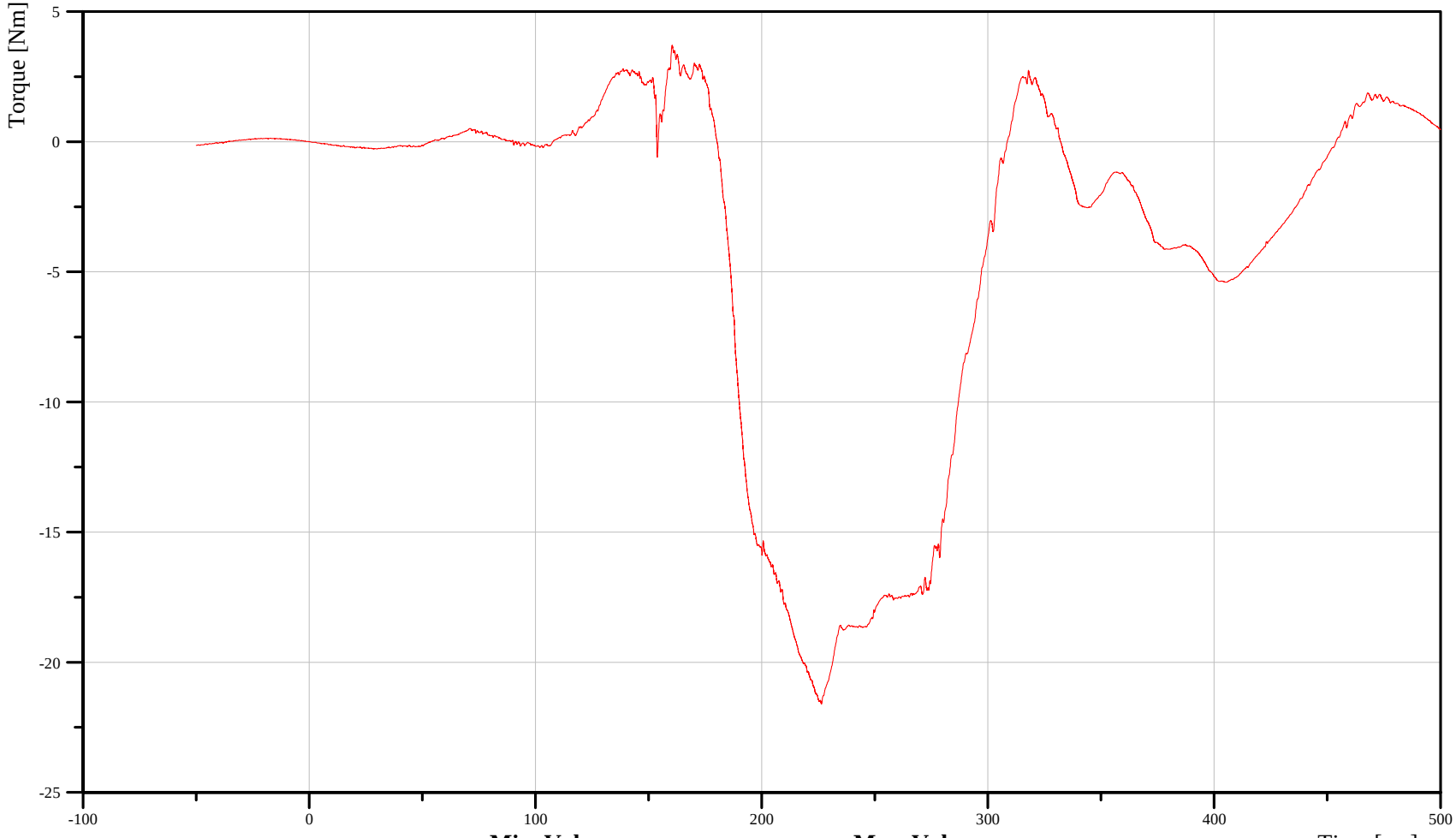
5R-Right Neck Moment Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

14NECKUP00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-21.60 Nm at 226.48 ms

Max. Value
3.71 Nm at 160.40 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

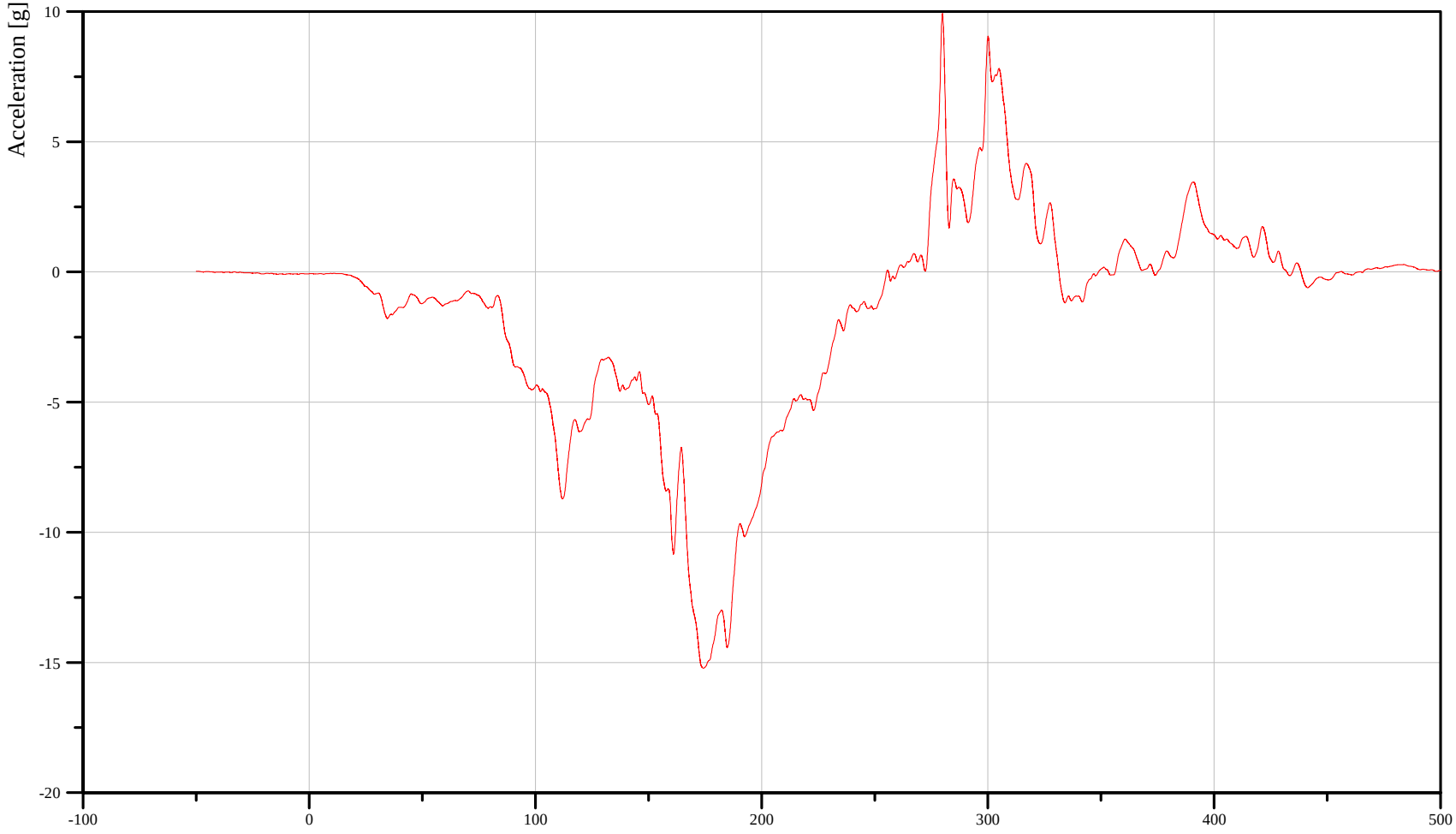
Date: 12/14/2007
Time: 9:12

5R-Right Chest X-Axis Acceleration

Customer: VRTC

14CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-15.22 g at 174.24 ms

Max. Value
9.93 g at 279.92 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

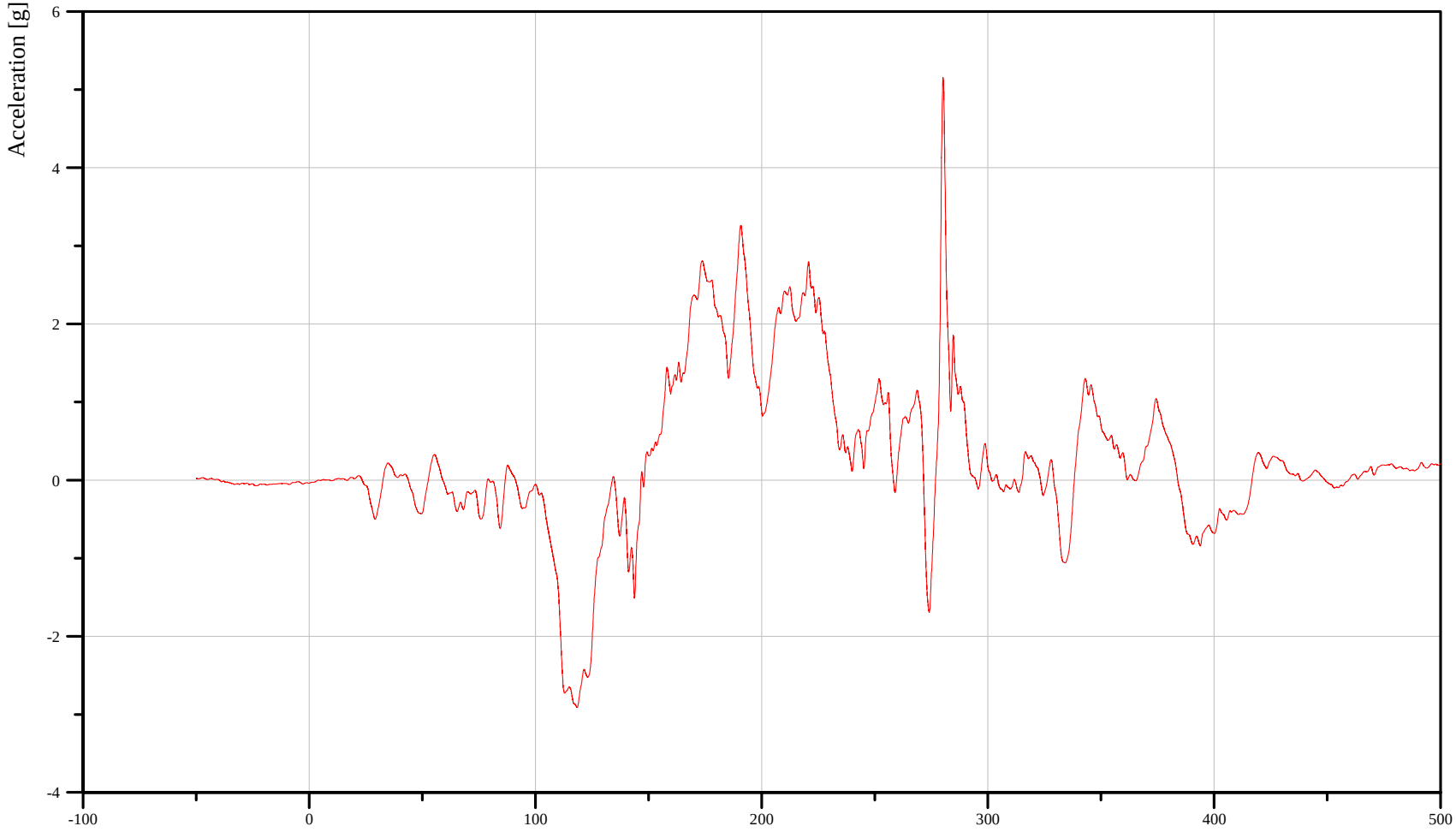
Date: 12/14/2007
Time: 9:12

5R-Right Chest Y-Axis Acceleration

Customer: VRTC

14CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-2.91 g at 118.48 ms

Max. Value
5.16 g at 280.16 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

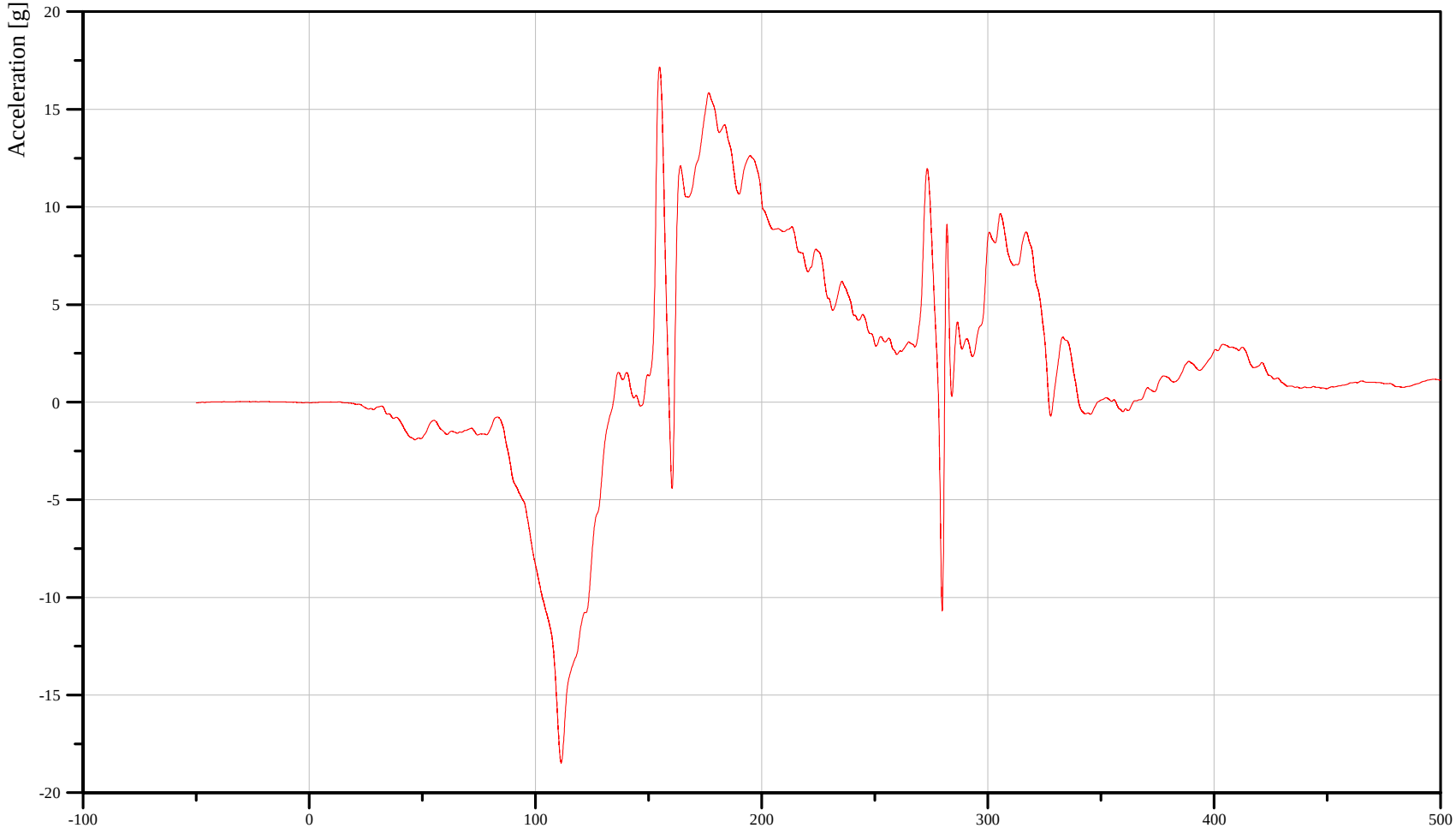
Date: 12/14/2007
Time: 9:12

5R-Right Chest Z-Axis Acceleration

Customer: VRTC

14CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-18.48 g at 111.36 ms

Max. Value
17.17 g at 154.88 ms

B-273

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

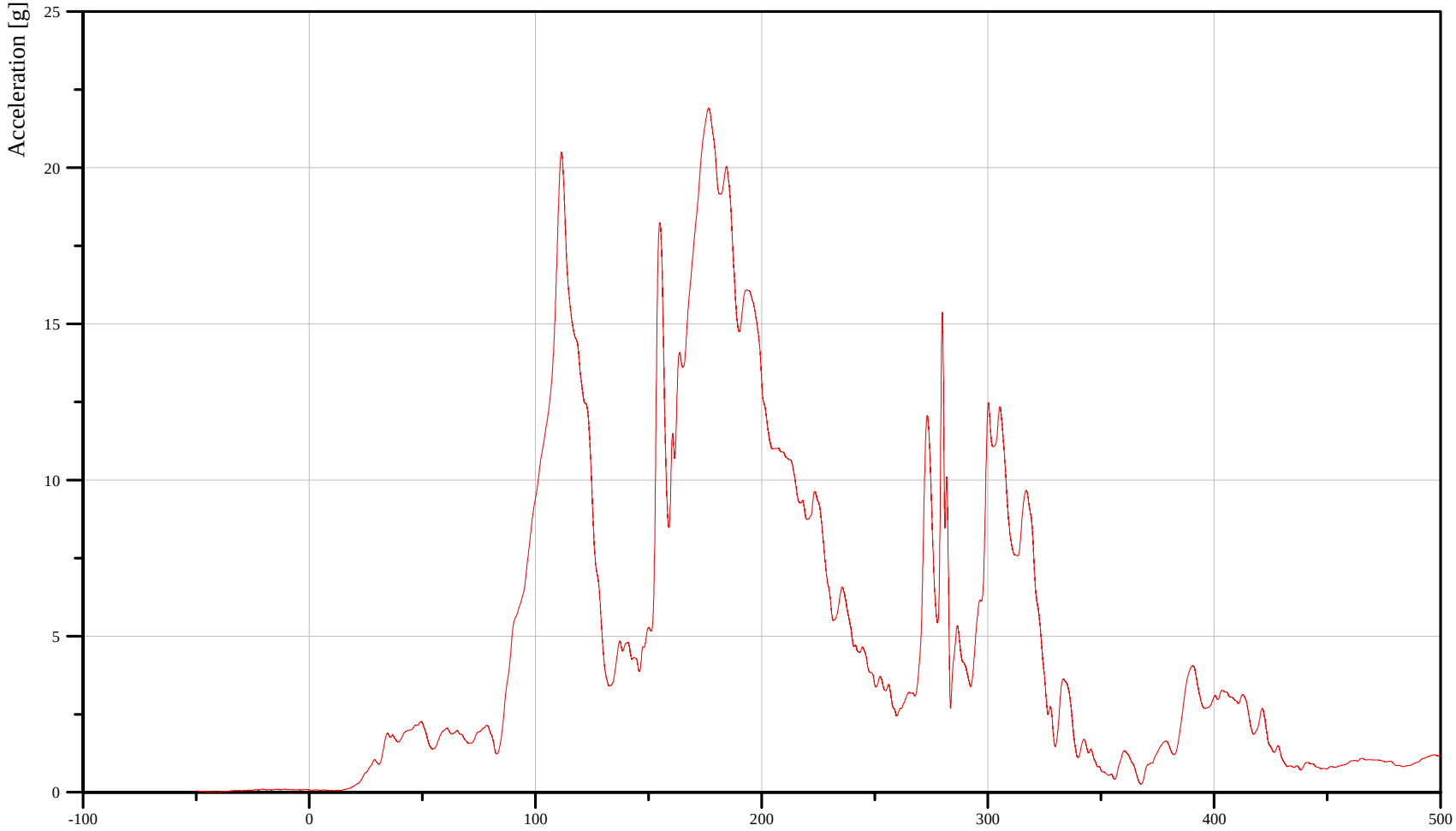
Date: 12/14/2007
Time: 9:12

5R-Right Chest Resultant Acceleration

Customer: VRTC

14CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.01 g at -39.68 ms

Max. Value
21.92 g at 176.56 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

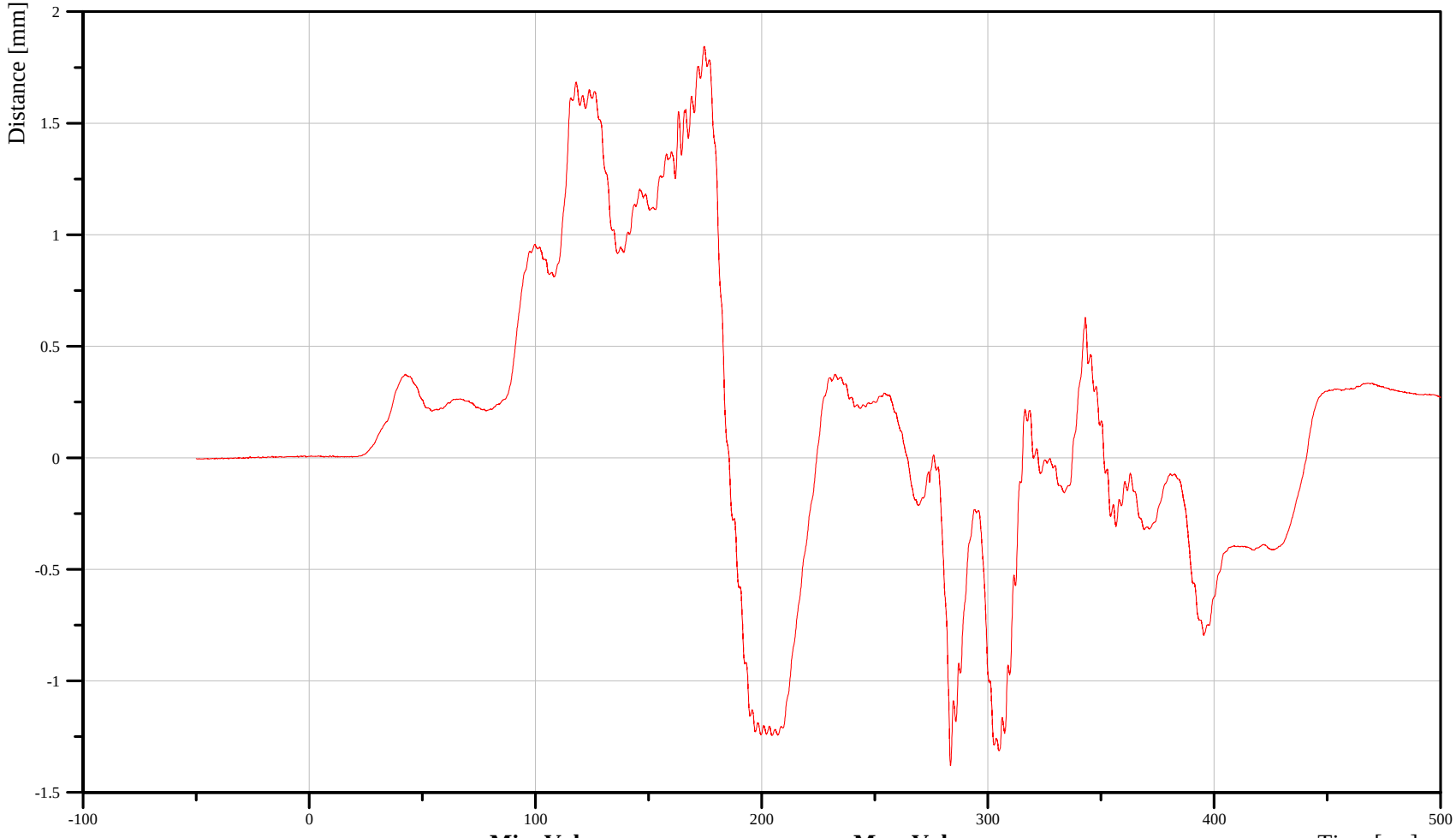
Date: 12/14/2007
Time: 9:12

5R-Right Chest X-Axis Deflection

Customer: VRTC

14CHST0000H3DSXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-1.38 mm at 283.44 ms

Max. Value
1.84 mm at 174.56 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

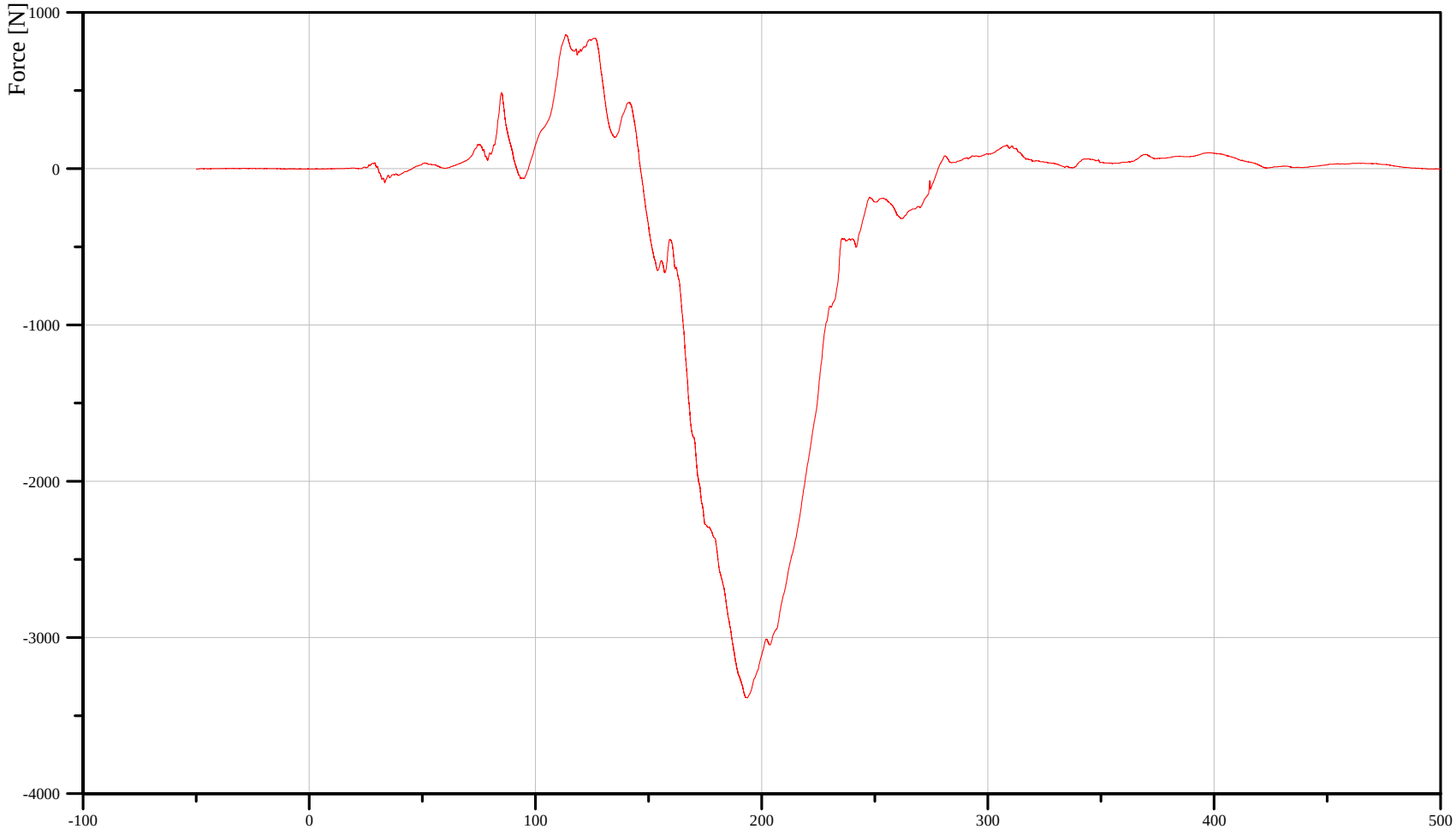
Date: 12/14/2007
Time: 9:12

5R-Right Left Femur Force Z

Customer: VRTC

14FEMRLL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-3,386.83 N at 193.60 ms

Max. Value
858.56 N at 113.44 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

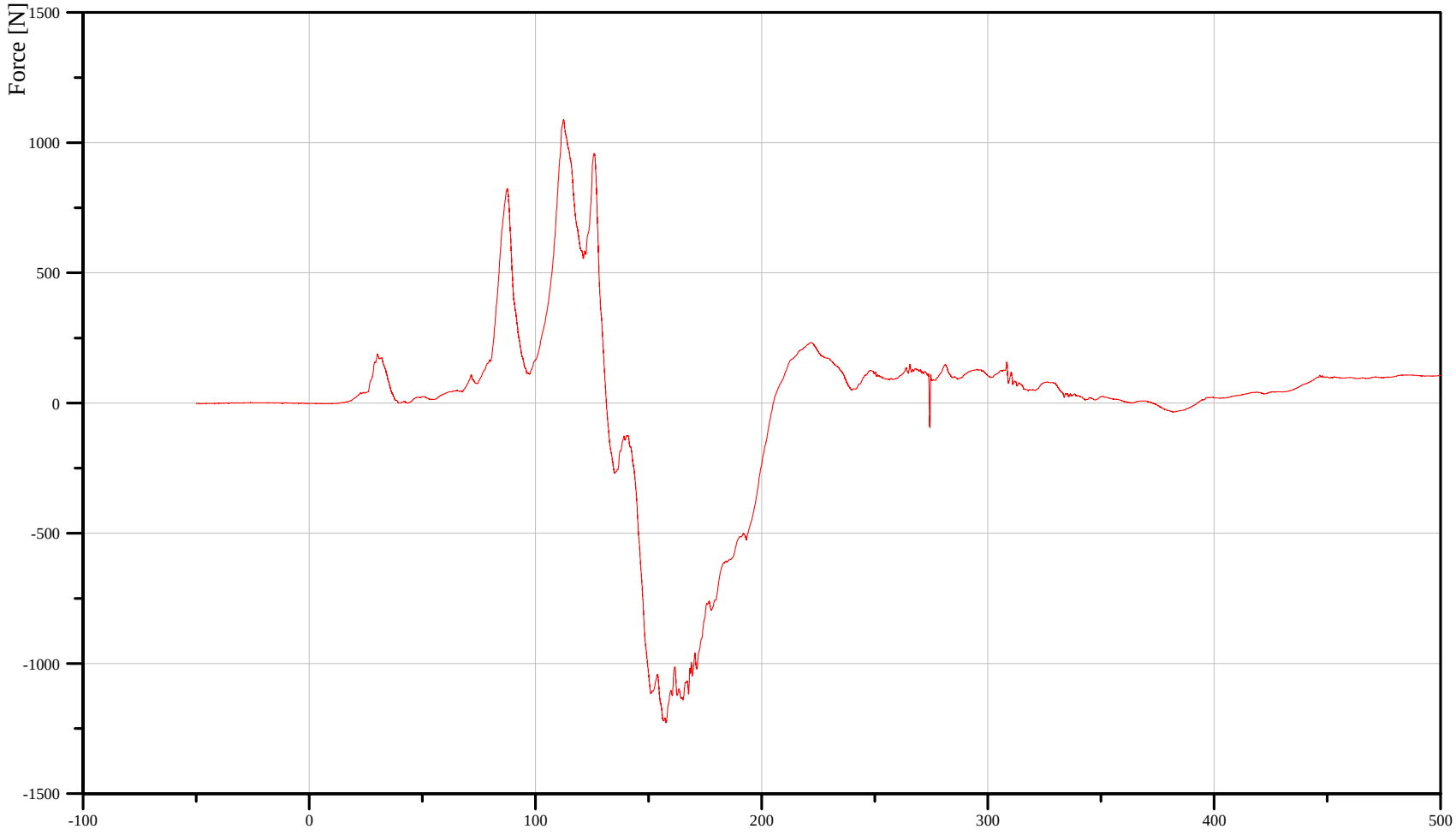
5R-Right Right Femur Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

14FEMRRL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-1,227.63 N at 157.84 ms

Max. Value
1,088.26 N at 112.40 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

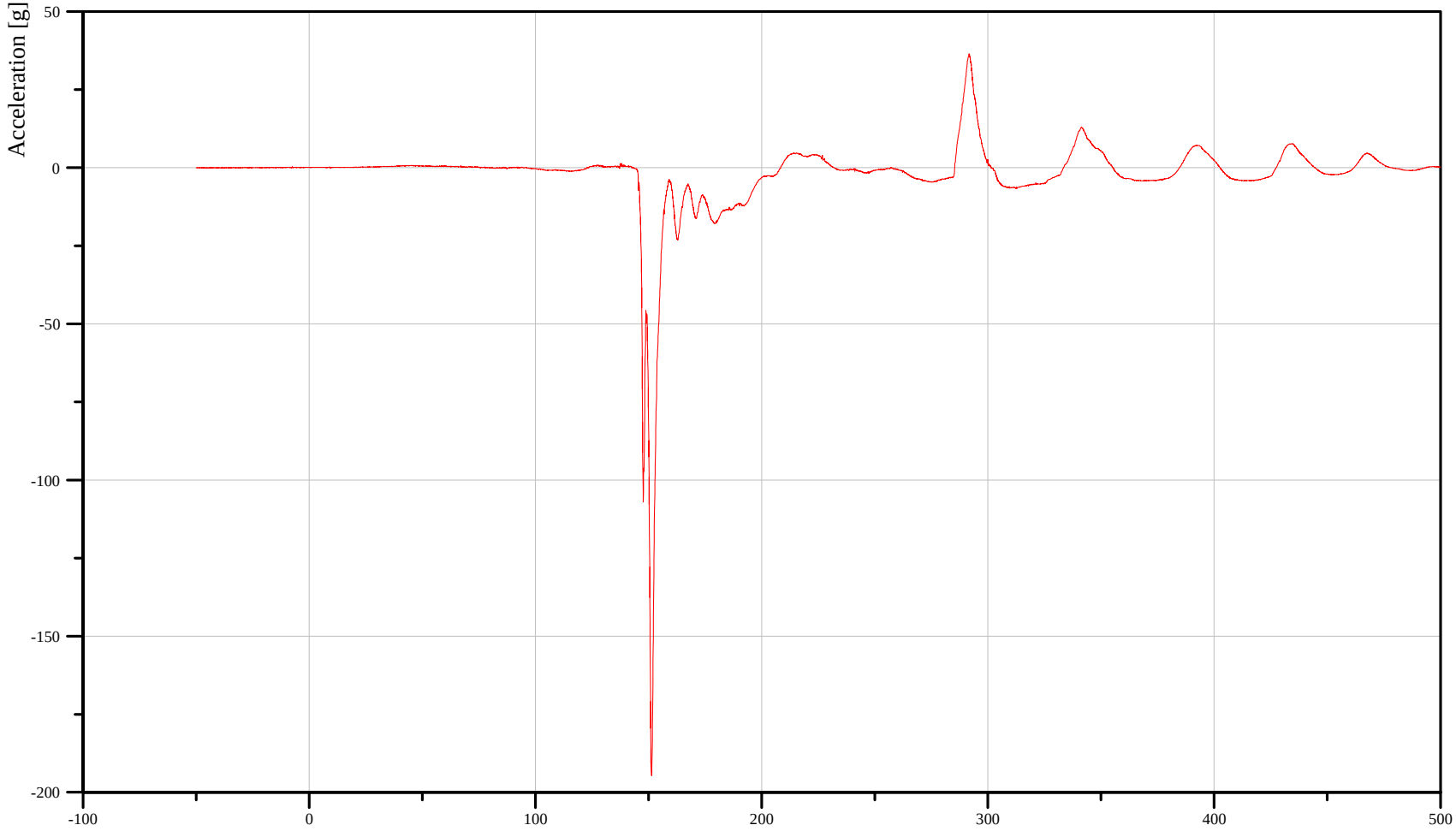
Date: 12/14/2007
Time: 9:12

5L-Left Head X-Axis Acceleration

Customer: VRTC

15HEADCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-194.71 g at 151.36 ms

Max. Value
36.50 g at 291.68 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

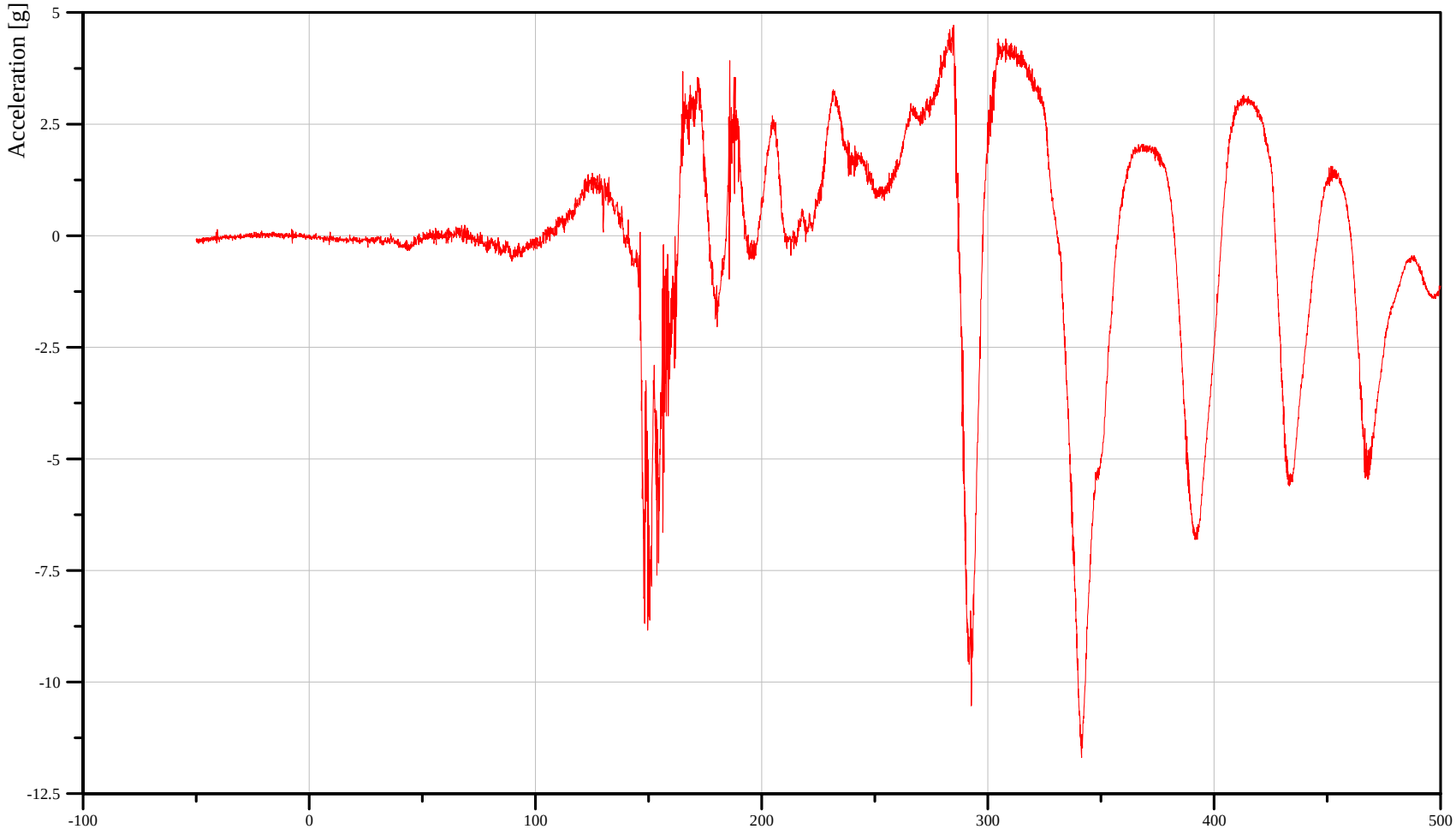
Date: 12/14/2007
Time: 9:12

5L-Left Head Y-Axis Acceleration

Customer: VRTC

15HEADCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-11.69 g at 341.36 ms

Max. Value
4.72 g at 284.88 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

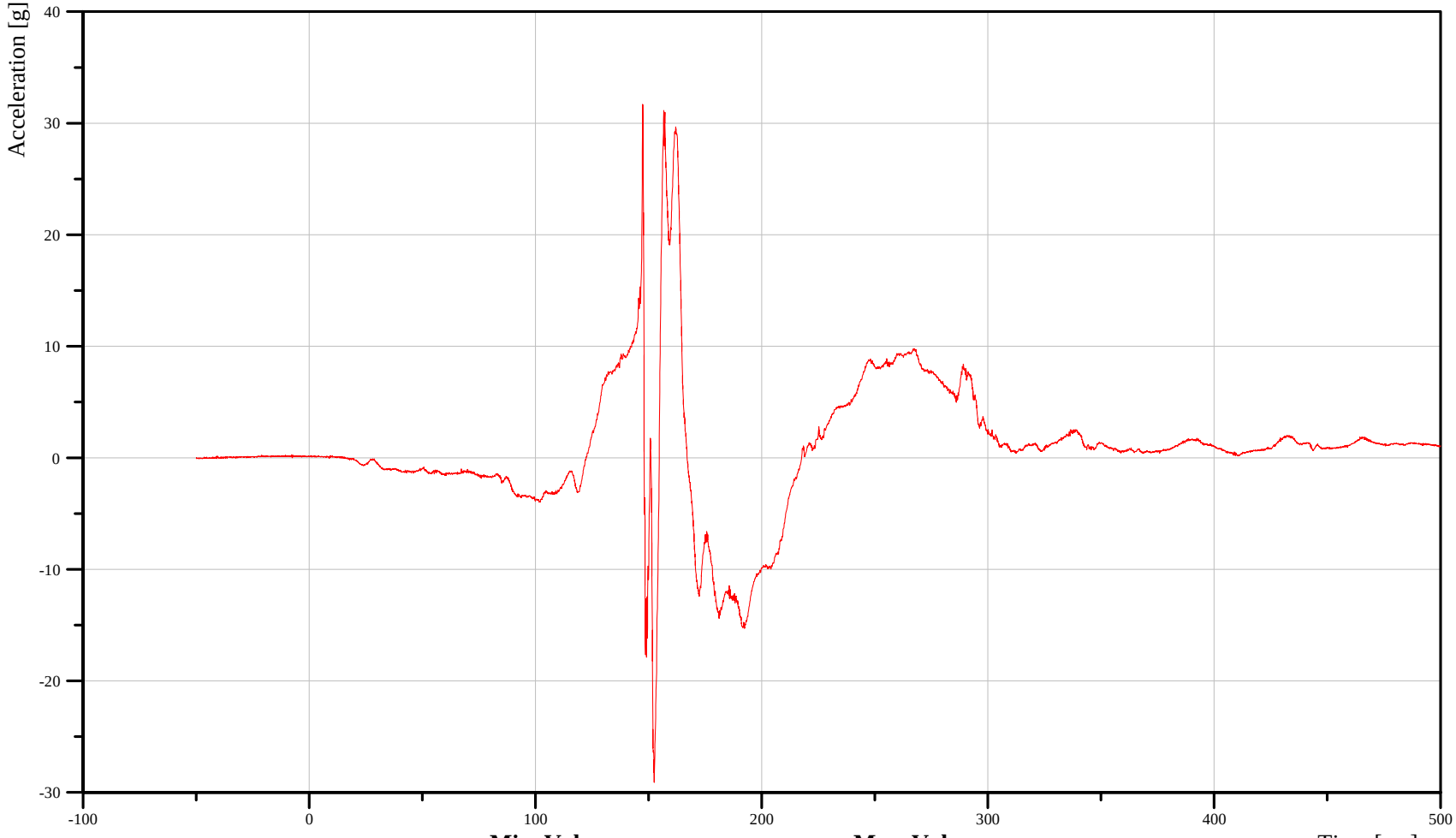
Date: 12/14/2007
Time: 9:12

5L-Left Head Z-Axis Acceleration

Customer: VRTC

15HEADCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-29.11 g at 152.48 ms

Max. Value
31.71 g at 147.44 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

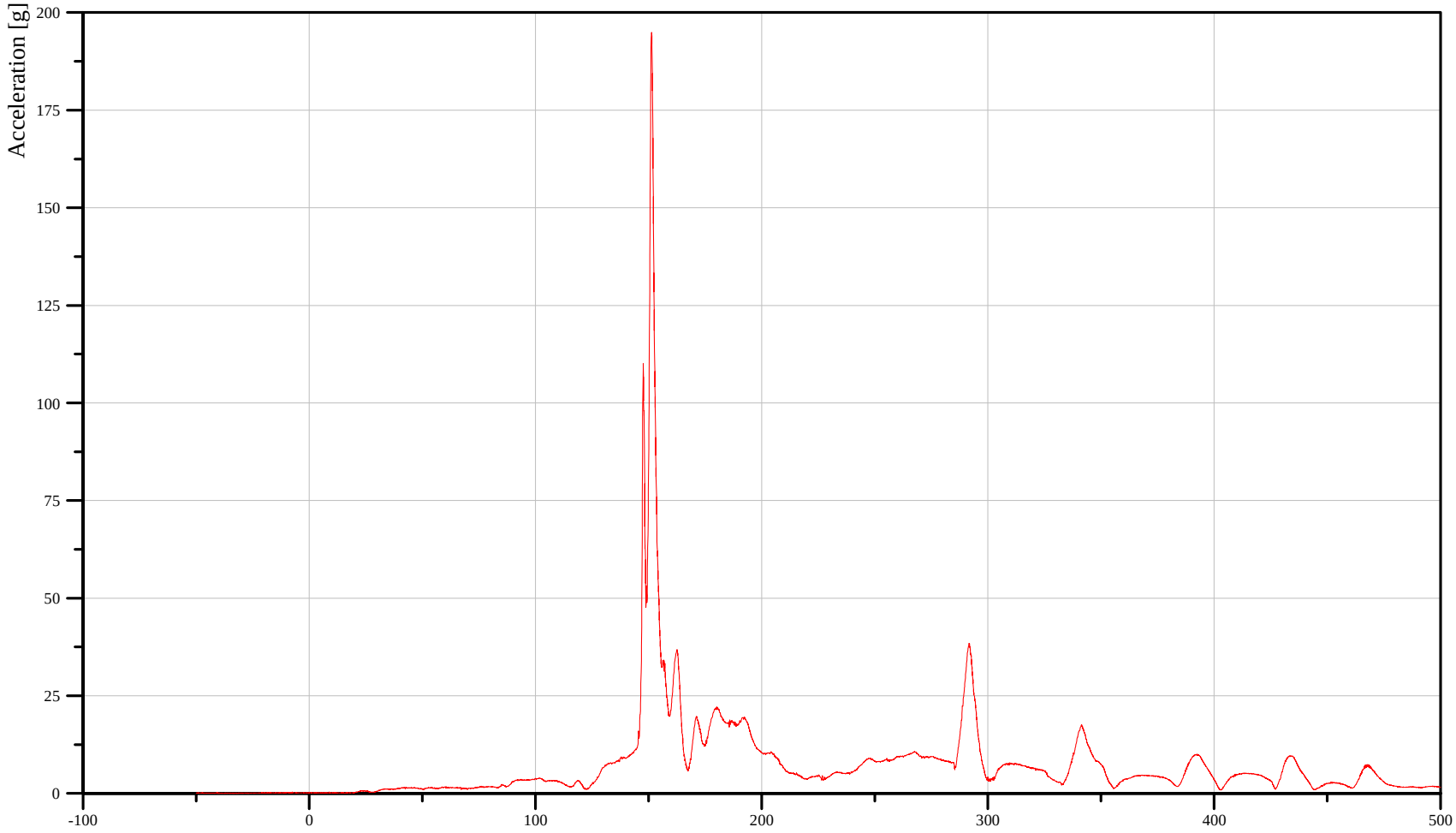
Date: 12/14/2007
Time: 9:12

5L-Left Head Resultant Acceleration

Customer: VRTC

15HEADCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.02 g at -34.48 ms

Max. Value
194.91 g at 151.36 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

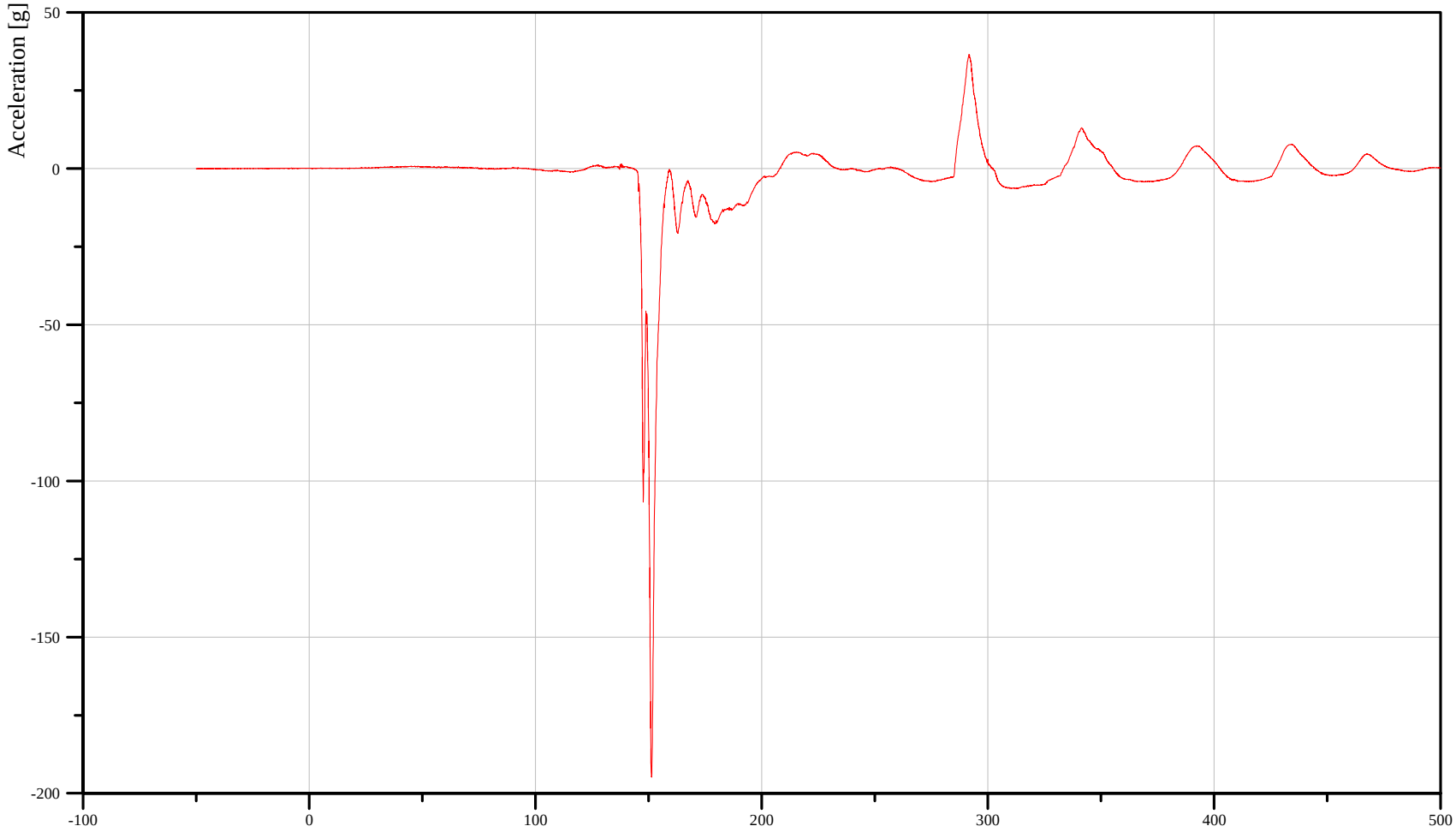
Date: 12/14/2007
Time: 9:12

5L-Left Head Redundant X-Axis Acceleration

Customer: VRTC

15HEADCGRDH3ACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-194.76 g at 151.36 ms

Max. Value
36.60 g at 291.60 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

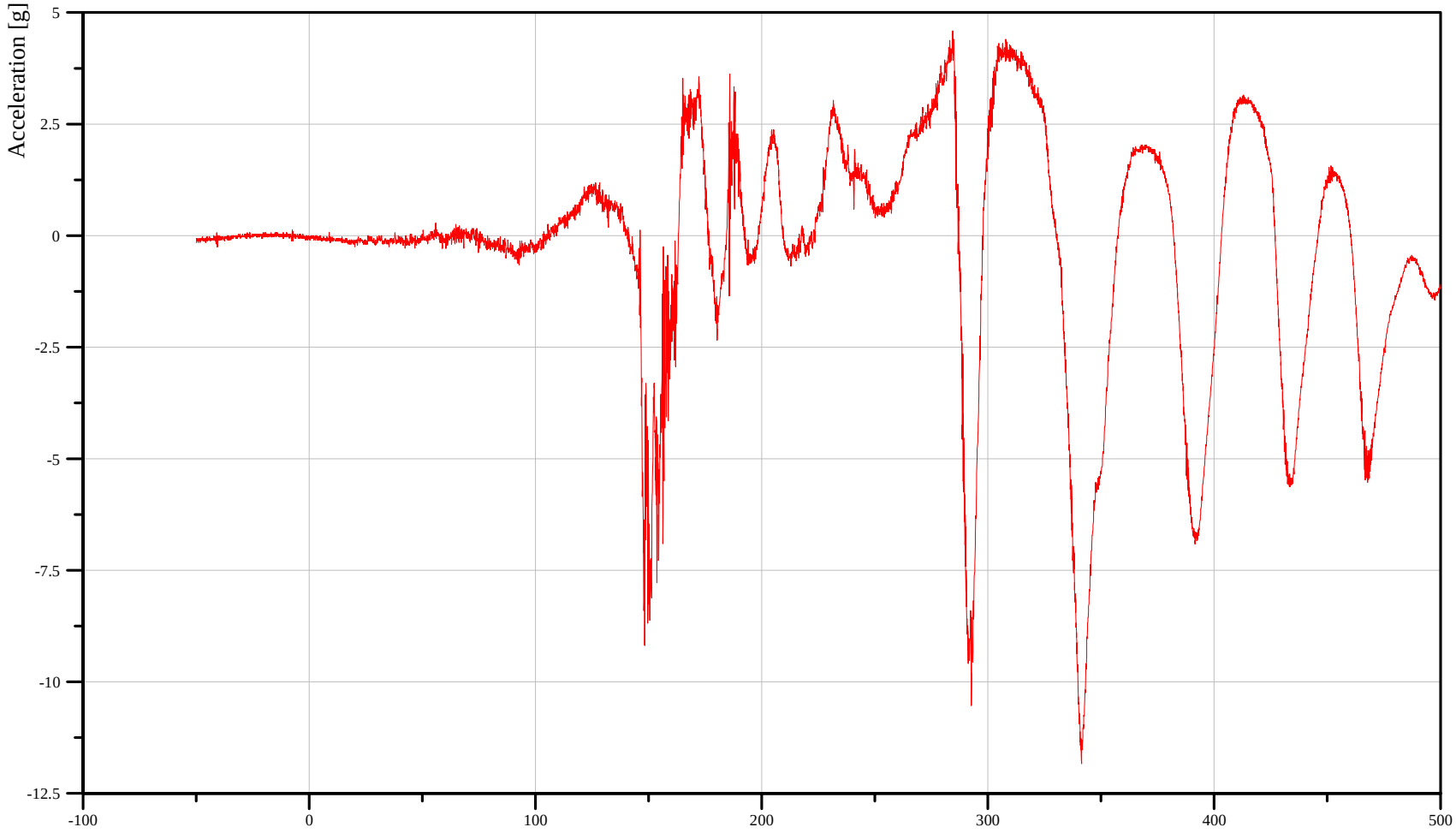
Date: 12/14/2007
Time: 9:12

5L-Left Head Redundant Y-Axis Acceleration

Customer: VRTC

15HEADCGRDH3ACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-11.84 g at 341.36 ms

Max. Value
4.59 g at 284.40 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

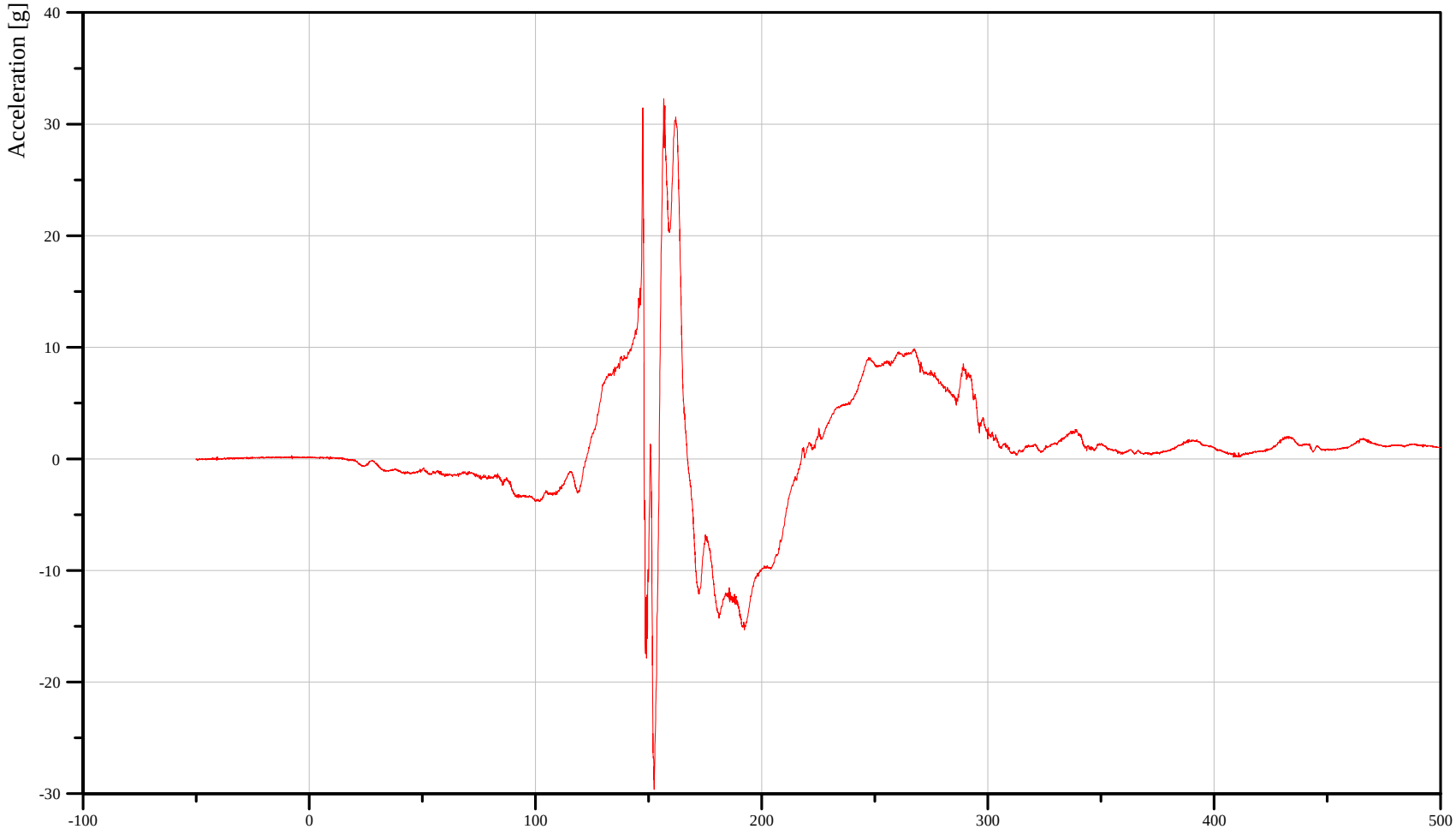
Date: 12/14/2007
Time: 9:12

5L-Left Head Redundant Z-Axis Acceleration

Customer: VRTC

15HEADCGRDH3ACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-29.62 g at 152.48 ms

Max. Value
32.28 g at 156.72 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

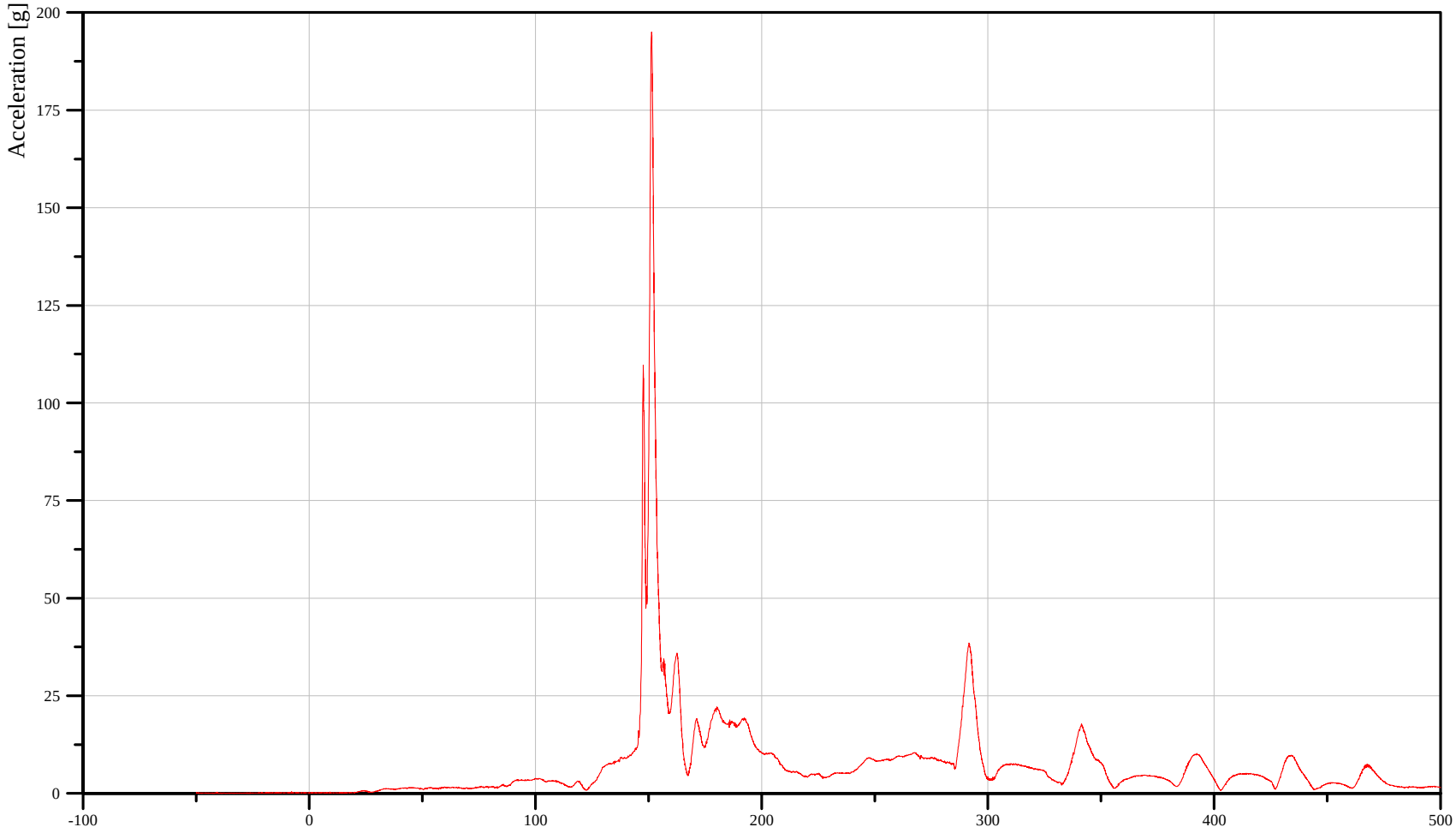
Date: 12/14/2007
Time: 9:12

5L-Left Head Redundant Resultant Acceleration

Customer: VRTC

15HEADCGRDH3ACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.01 g at -35.44 ms

Max. Value
194.98 g at 151.36 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

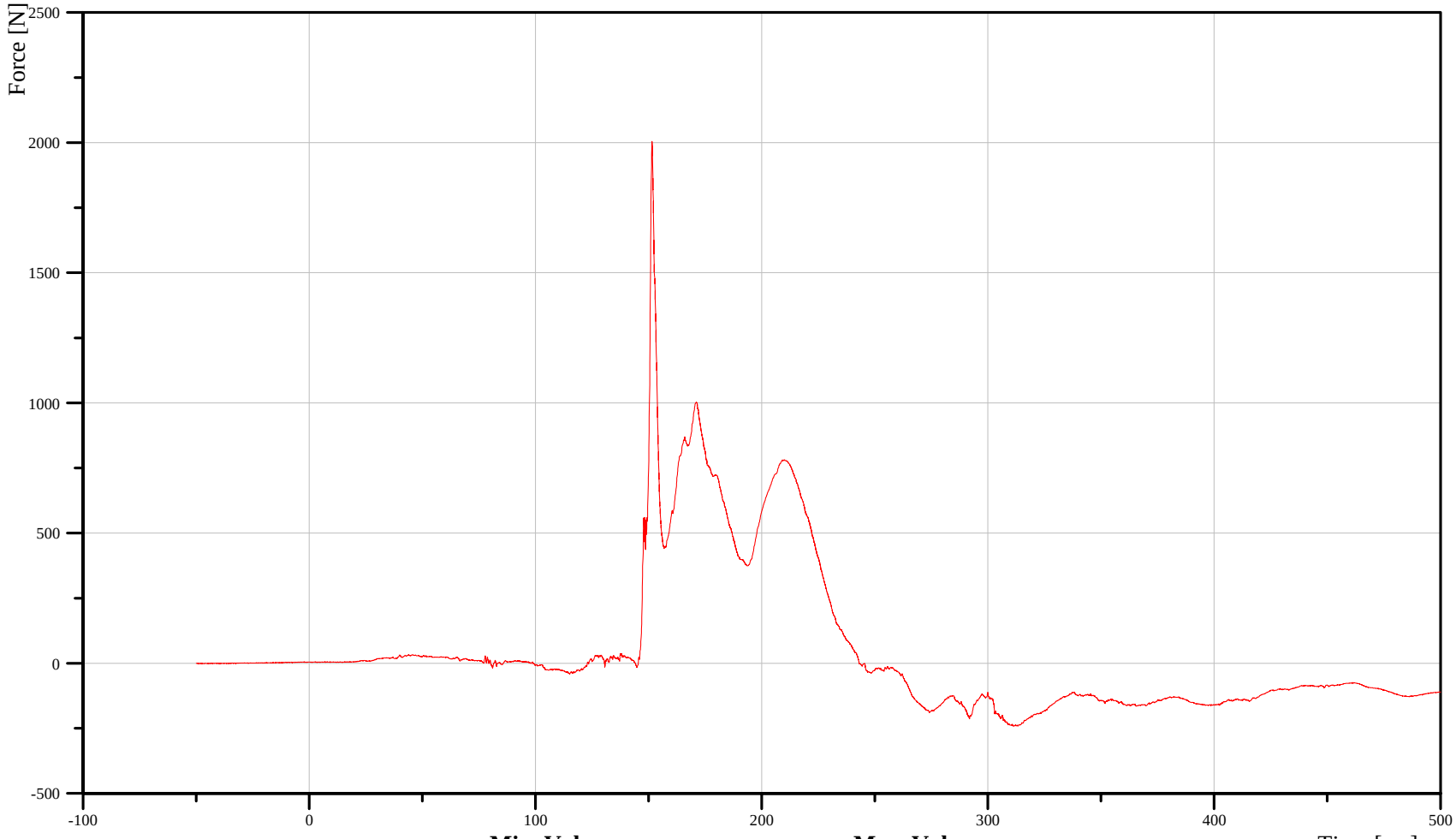
5L-Left Neck Force X

Date: 12/14/2007
Time: 9:12

Customer: VRTC

15NECKUP00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-241.40 N at 313.20 ms

Max. Value
2,004.45 N at 151.52 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

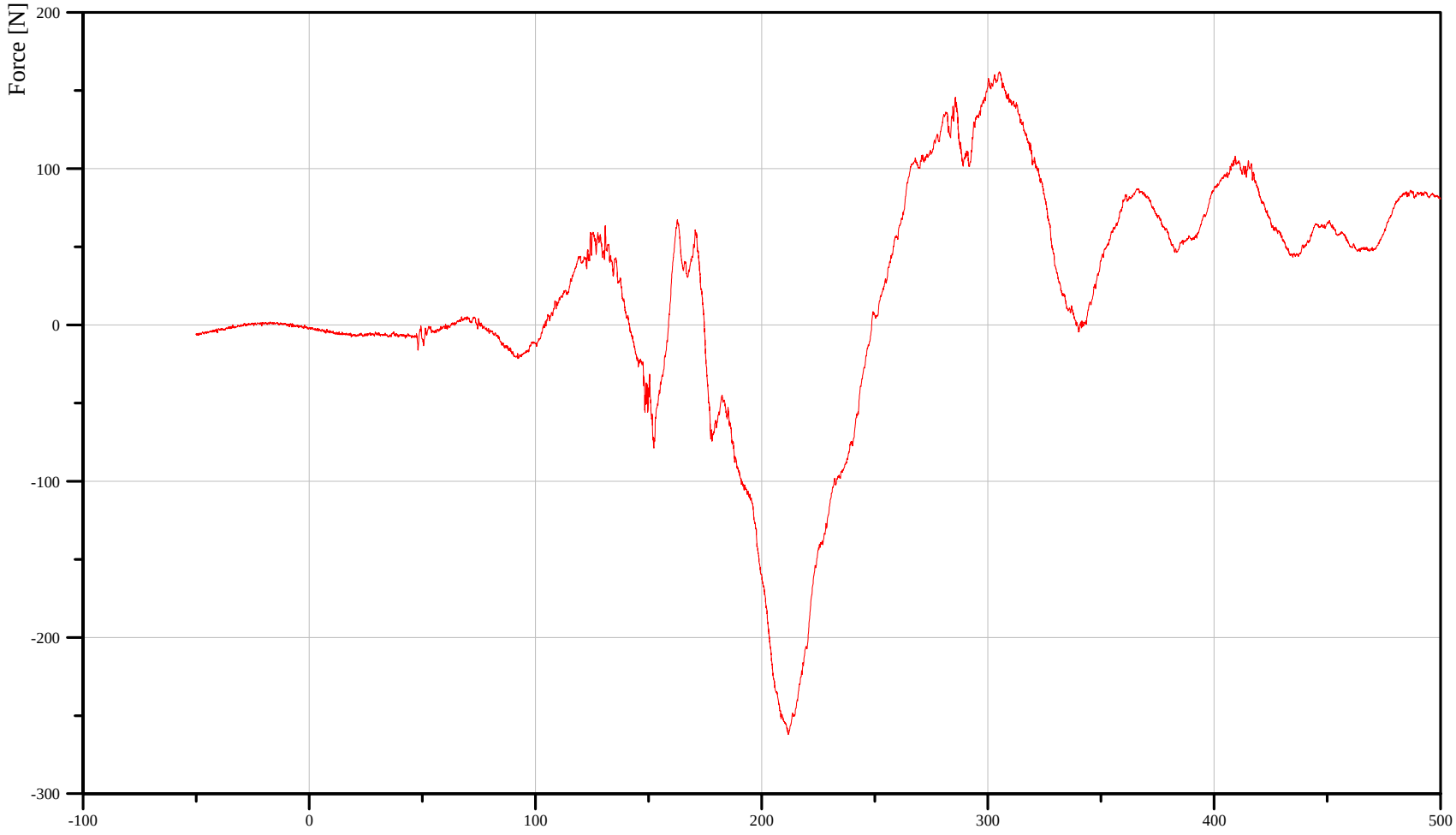
5L-Left Neck Force Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

15NECKUP00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-261.96 N at 211.92 ms

Max. Value
162.18 N at 305.12 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

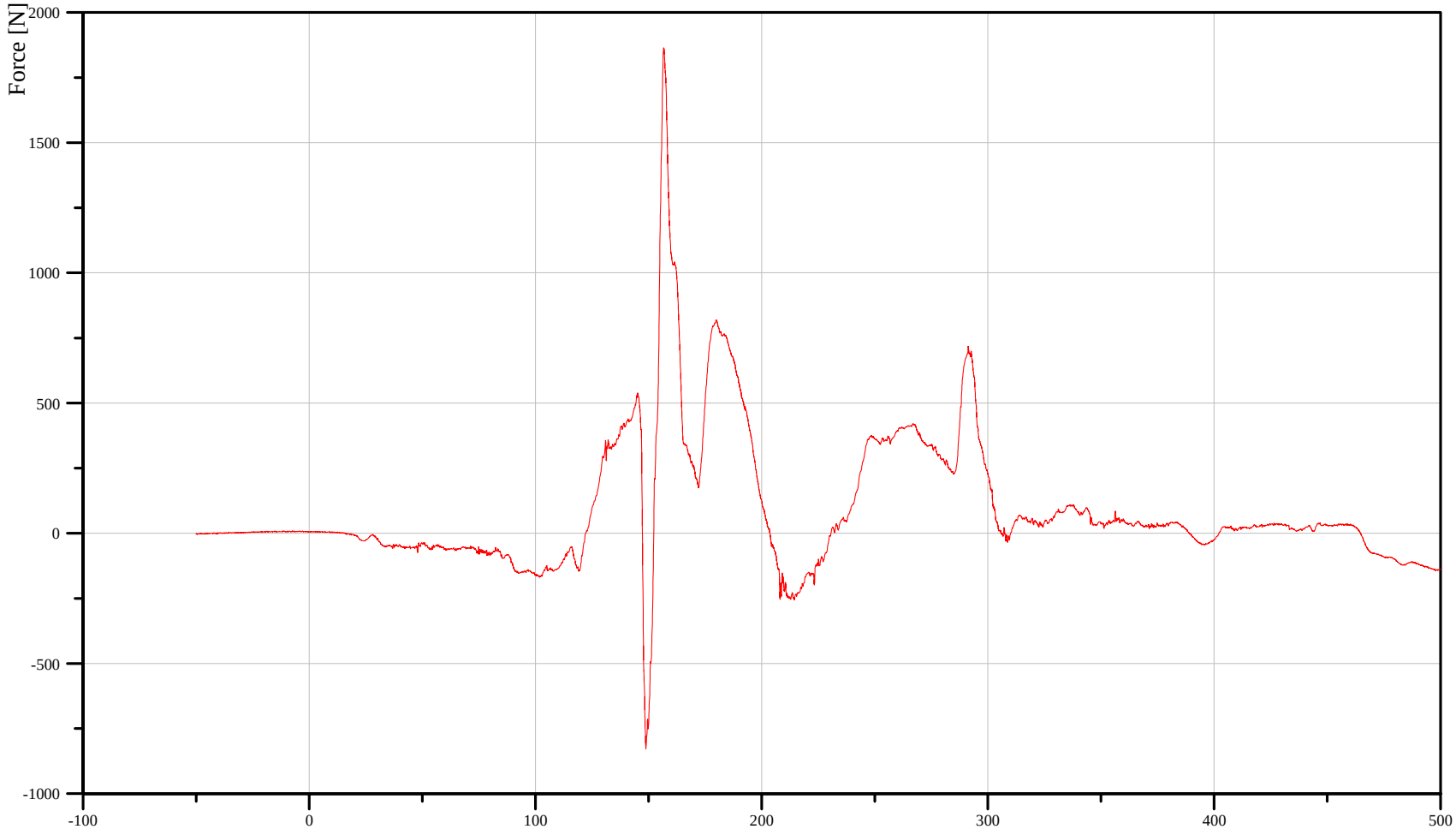
5L-Left Neck Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

15NECKUP00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value	Max. Value
-825.91 N at 148.88 ms	1,864.52 N at 156.64 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

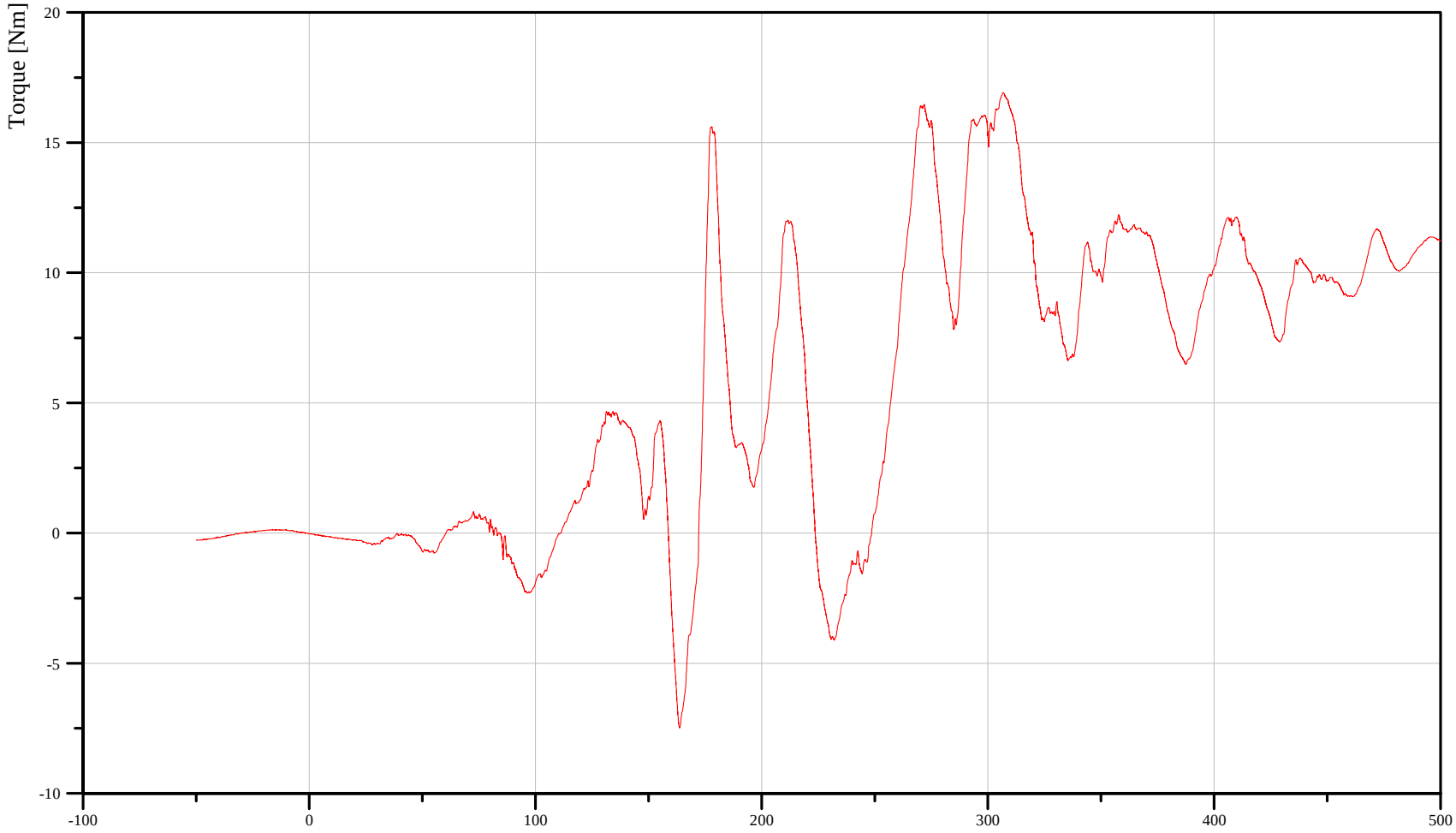
Date: 12/14/2007
Time: 9:12

5L-Left Neck Moment X

Customer: VRTC

15NECKUP00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-7.49 Nm at 163.76 ms

Max. Value
16.92 Nm at 306.64 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

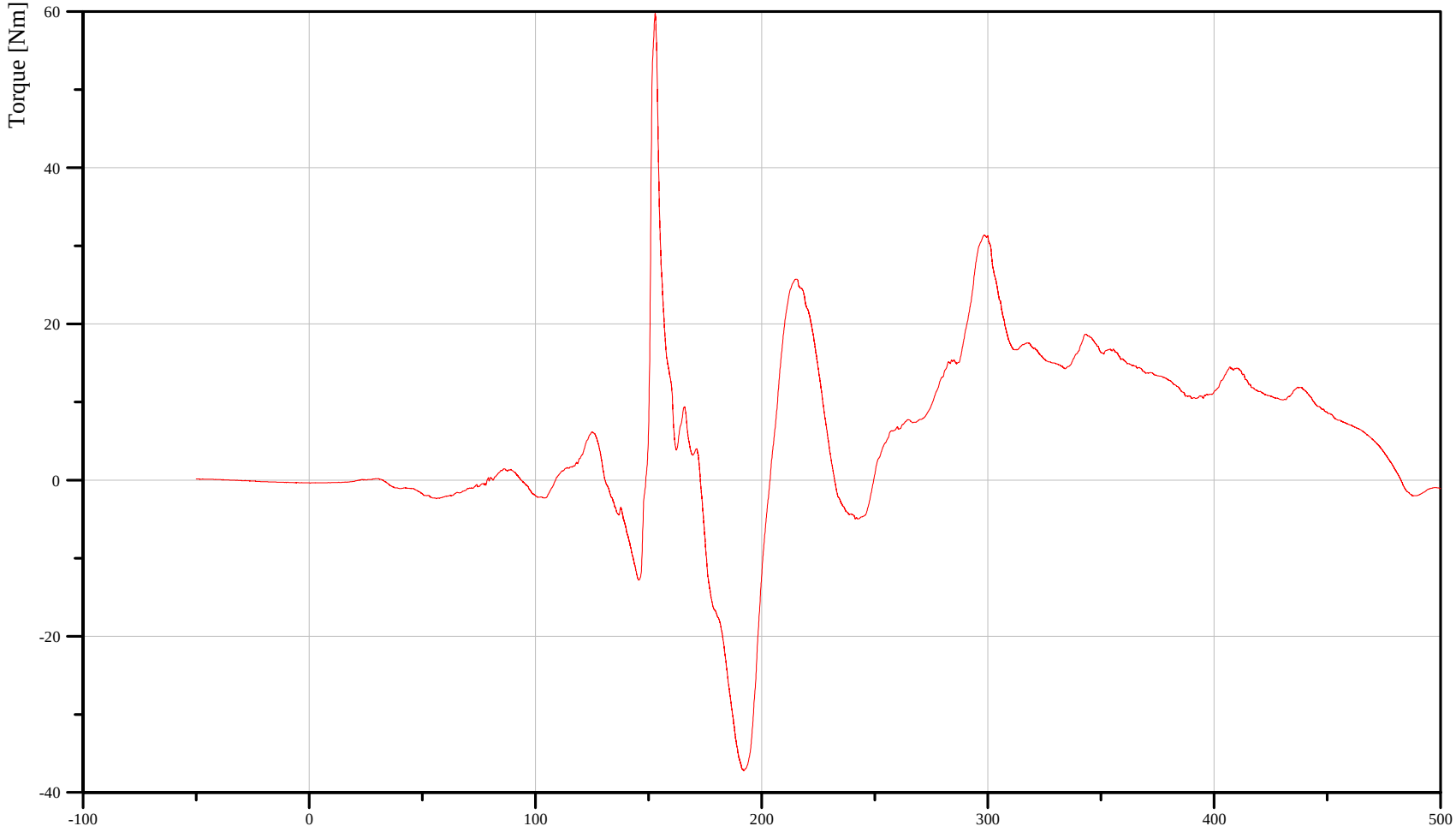
Date: 12/14/2007
Time: 9:12

5L-Left Neck Moment Y

Customer: VRTC

15NECKUP00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-37.22 Nm at 192.16 ms

Max. Value
59.79 Nm at 152.96 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

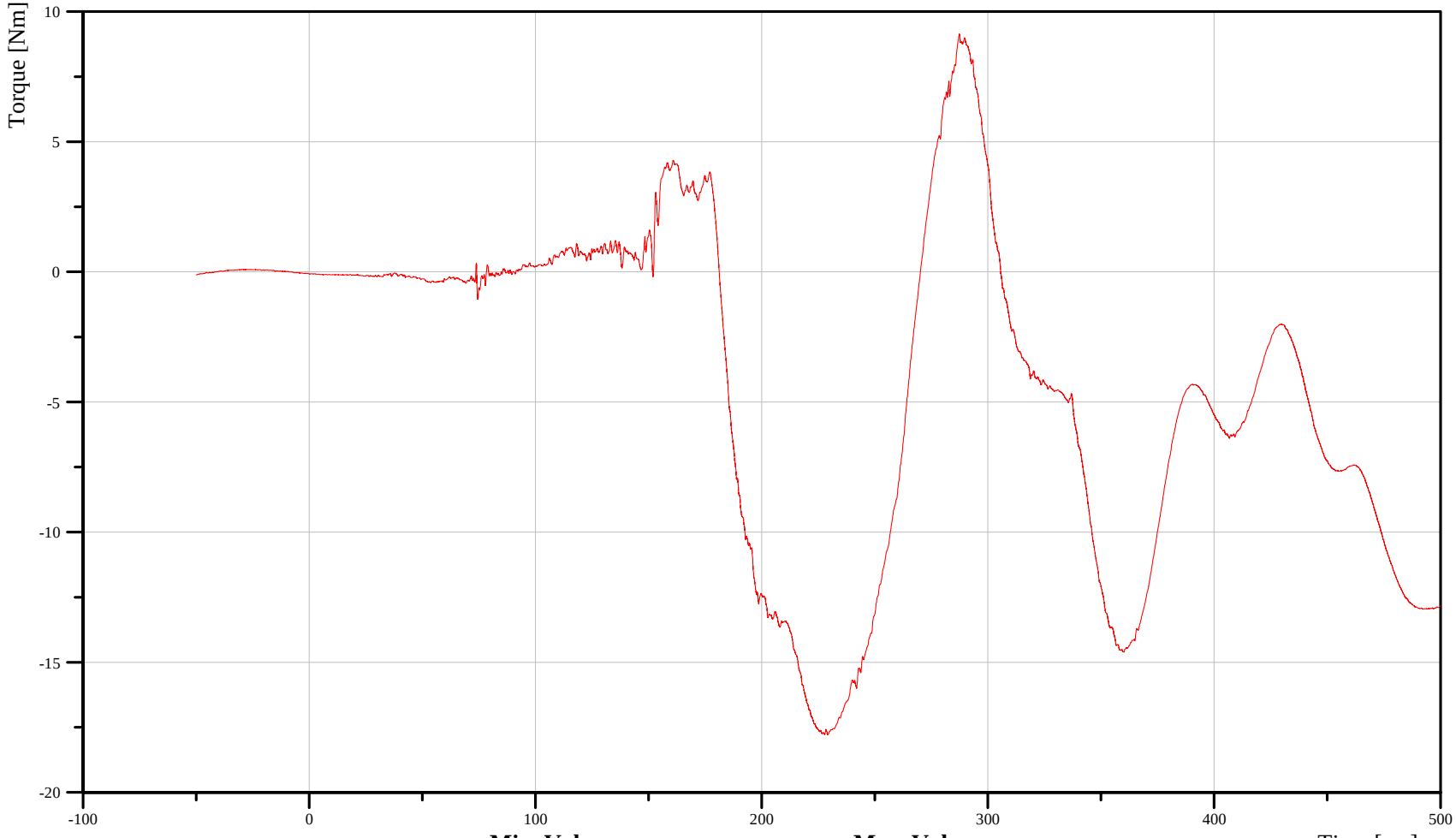
Date: 12/14/2007
Time: 9:12

5L-Left Neck Moment Z

Customer: VRTC

15NECKUP00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-17.78 Nm at 227.84 ms

Max. Value
9.14 Nm at 287.36 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

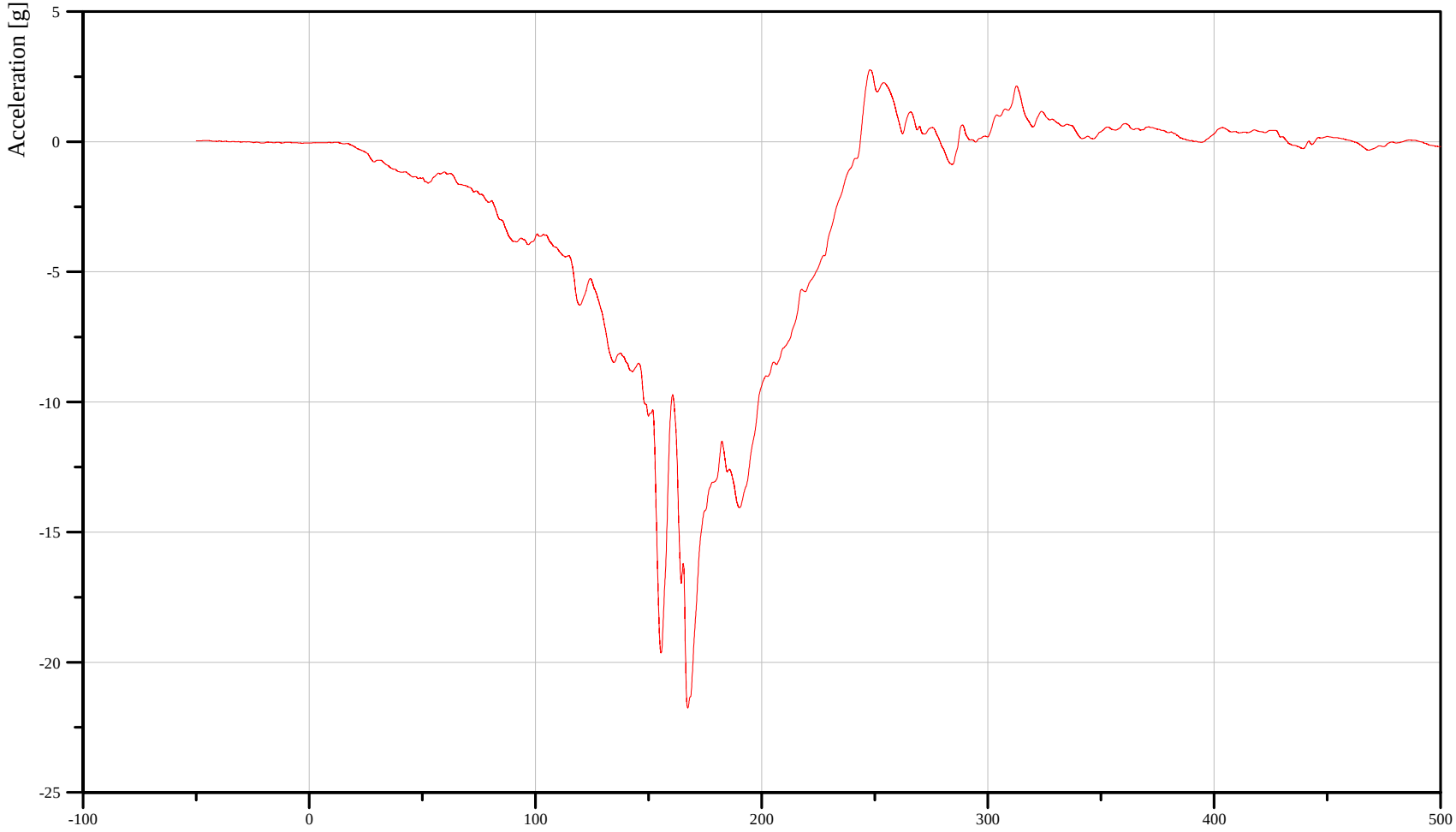
Date: 12/14/2007
Time: 9:12

5L-Left Chest X-Axis Acceleration

Customer: VRTC

15CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-21.75 g at 167.36 ms

Max. Value
2.77 g at 247.92 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

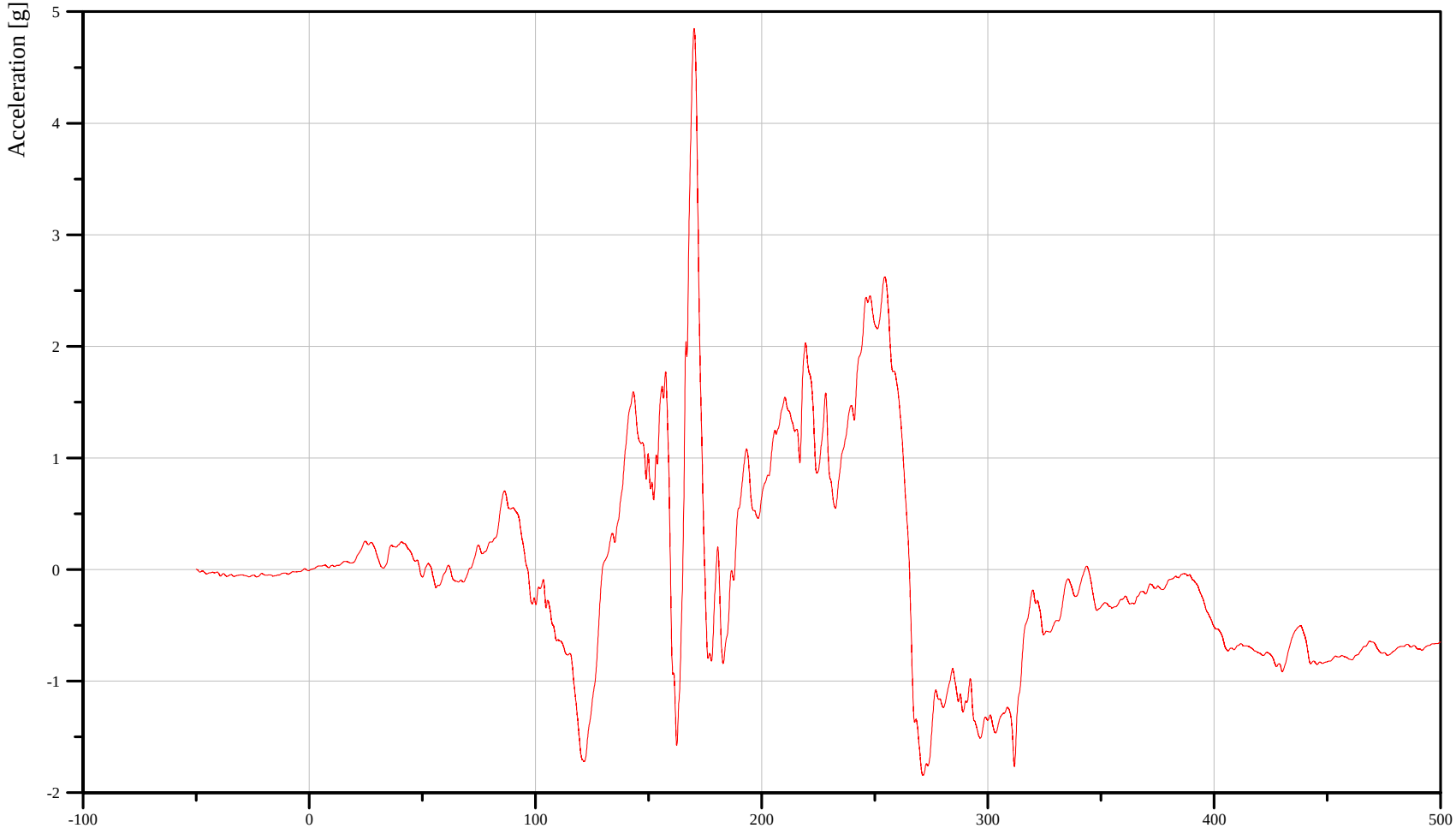
Date: 12/14/2007
Time: 9:12

5L-Left Chest Y-Axis Acceleration

Customer: VRTC

15CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-1.84 g at 271.44 ms

Max. Value
4.85 g at 170.16 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

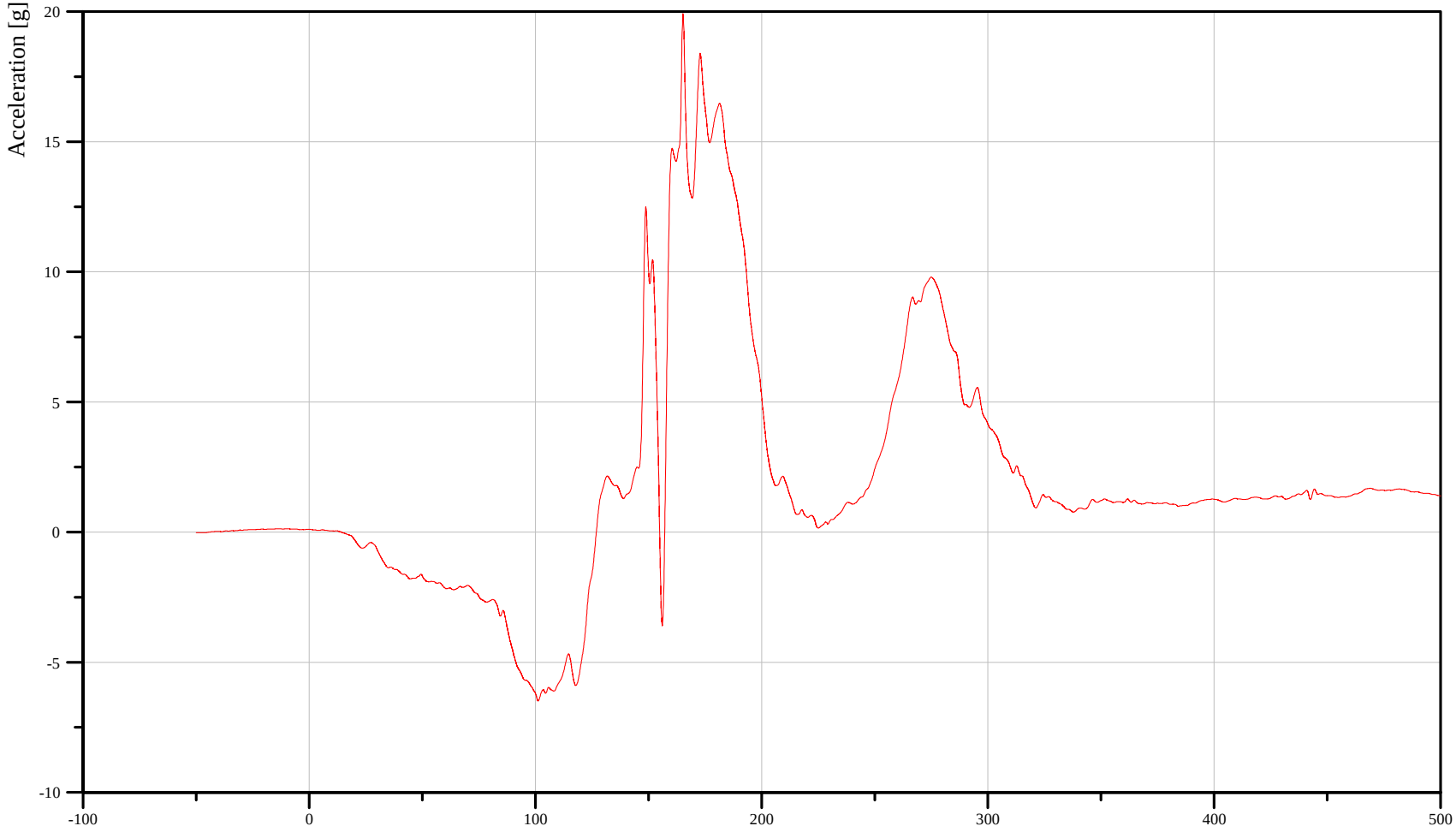
Date: 12/14/2007
Time: 9:12

5L-Left Chest Z-Axis Acceleration

Customer: VRTC

15CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-6.48 g at 101.20 ms

Max. Value
19.93 g at 165.20 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

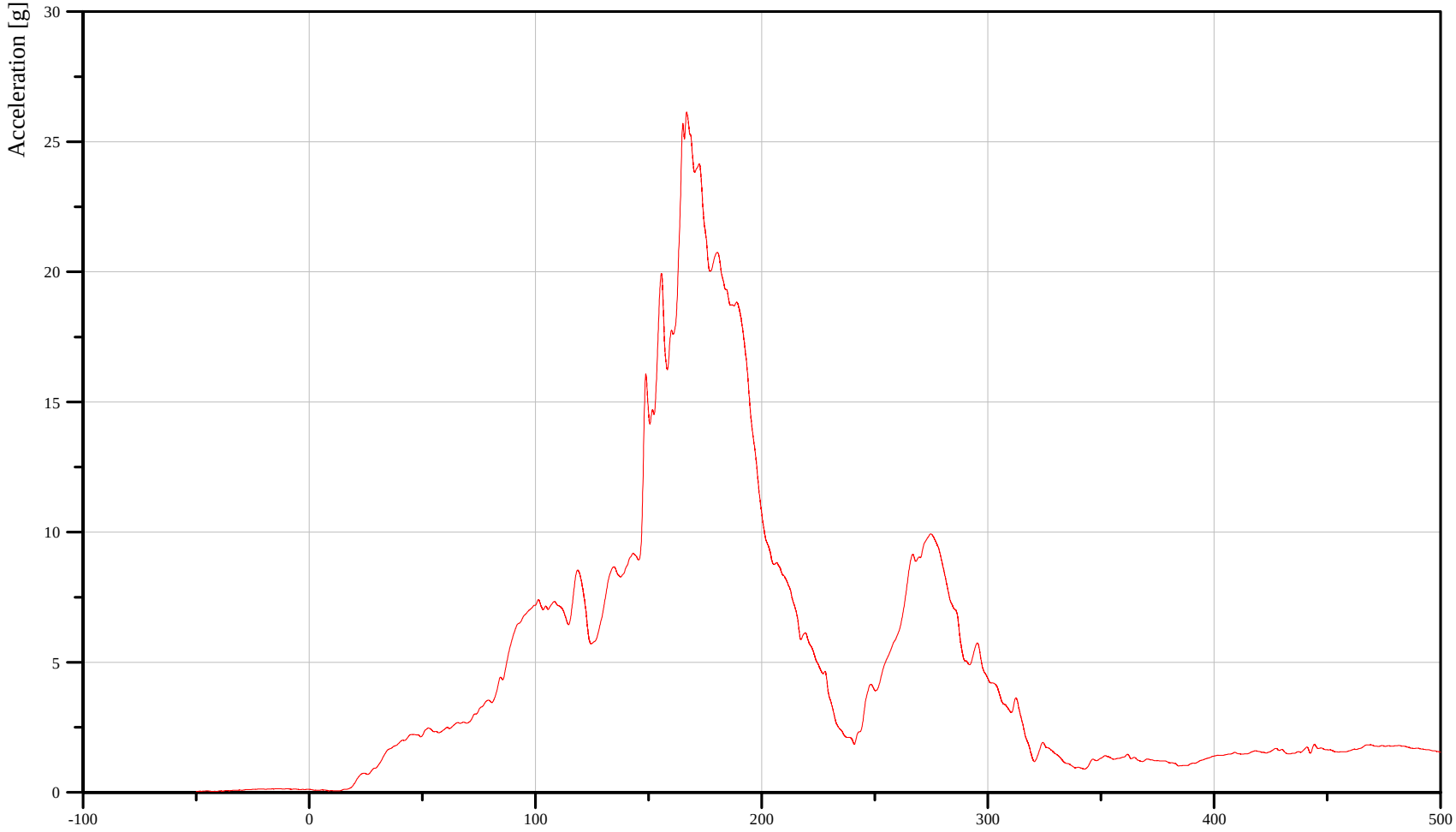
Date: 12/14/2007
Time: 9:12

5L-Left Chest Resultant Acceleration

Customer: VRTC

15CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.04 g at -42.72 ms

Max. Value
26.15 g at 166.80 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

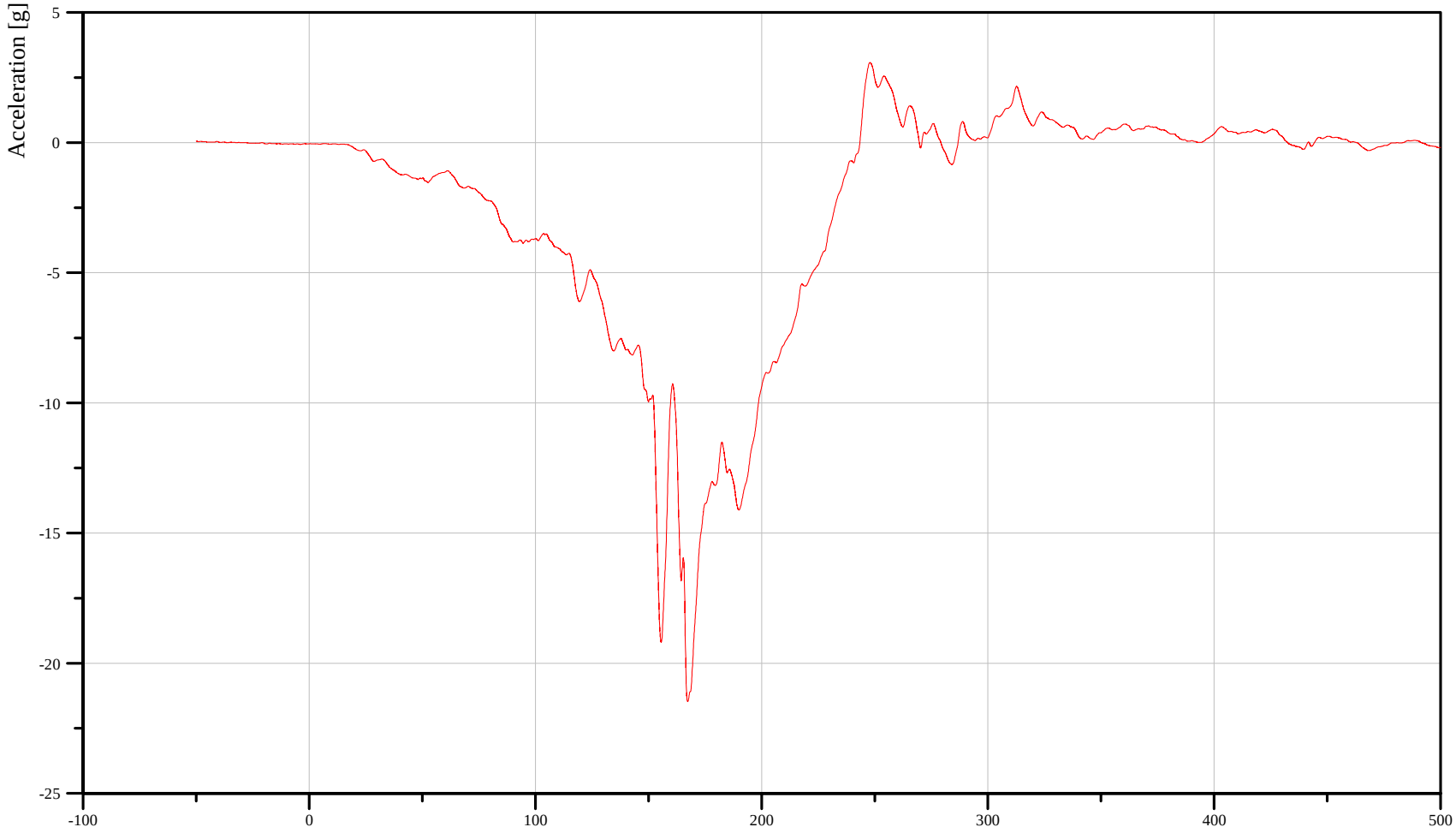
Date: 12/14/2007
Time: 9:12

5L-Left Chest Redundant X-Axis Acceleration

Customer: VRTC

15CHSTCGRDH3ACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-21.47 g at 167.36 ms

Max. Value
3.08 g at 247.84 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

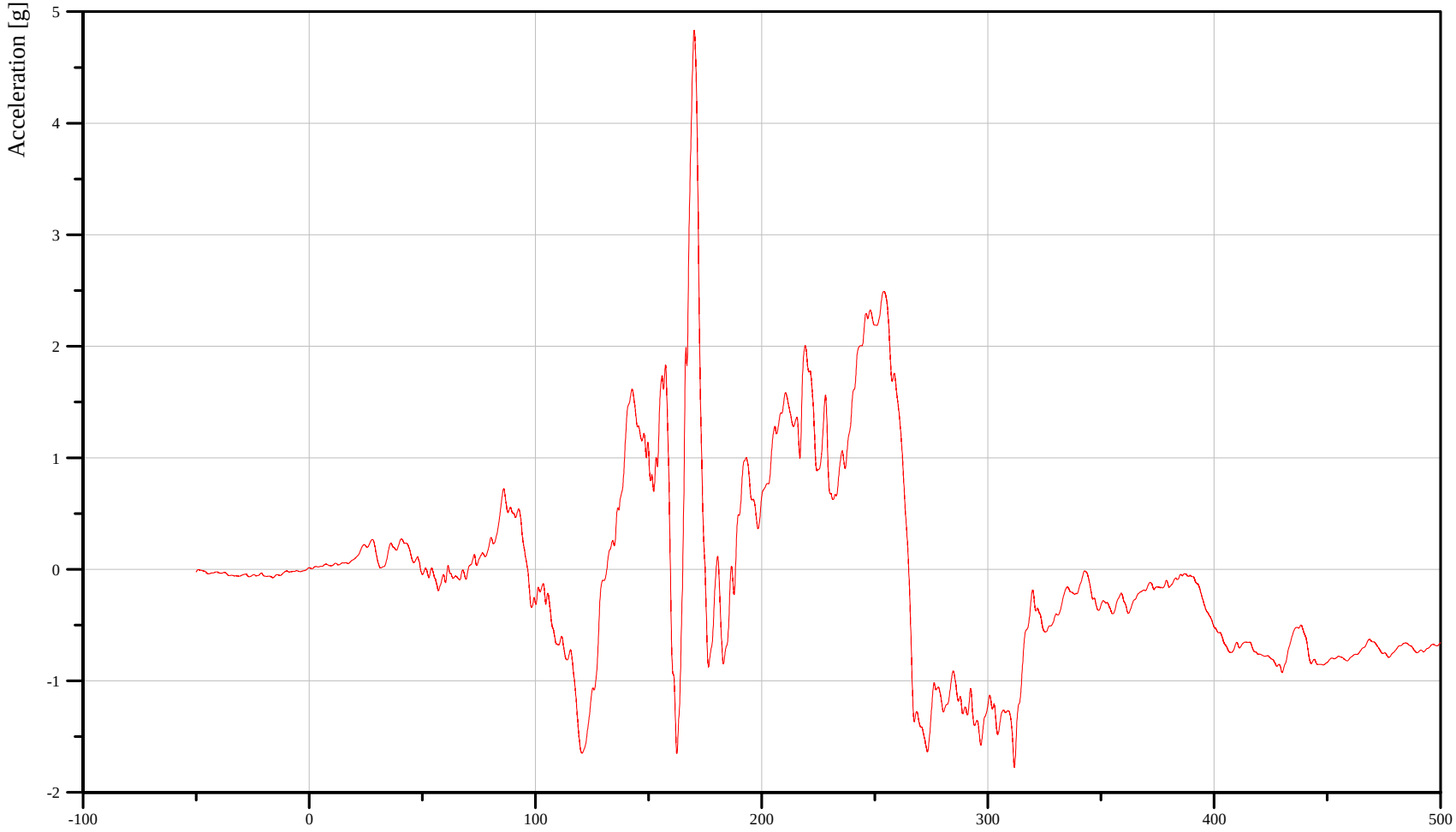
Date: 12/14/2007
Time: 9:12

5L-Left Chest Redundant Y-Axis Acceleration

Customer: VRTC

15CHSTCGRDH3ACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-1.78 g at 311.68 ms

Max. Value
4.83 g at 170.16 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

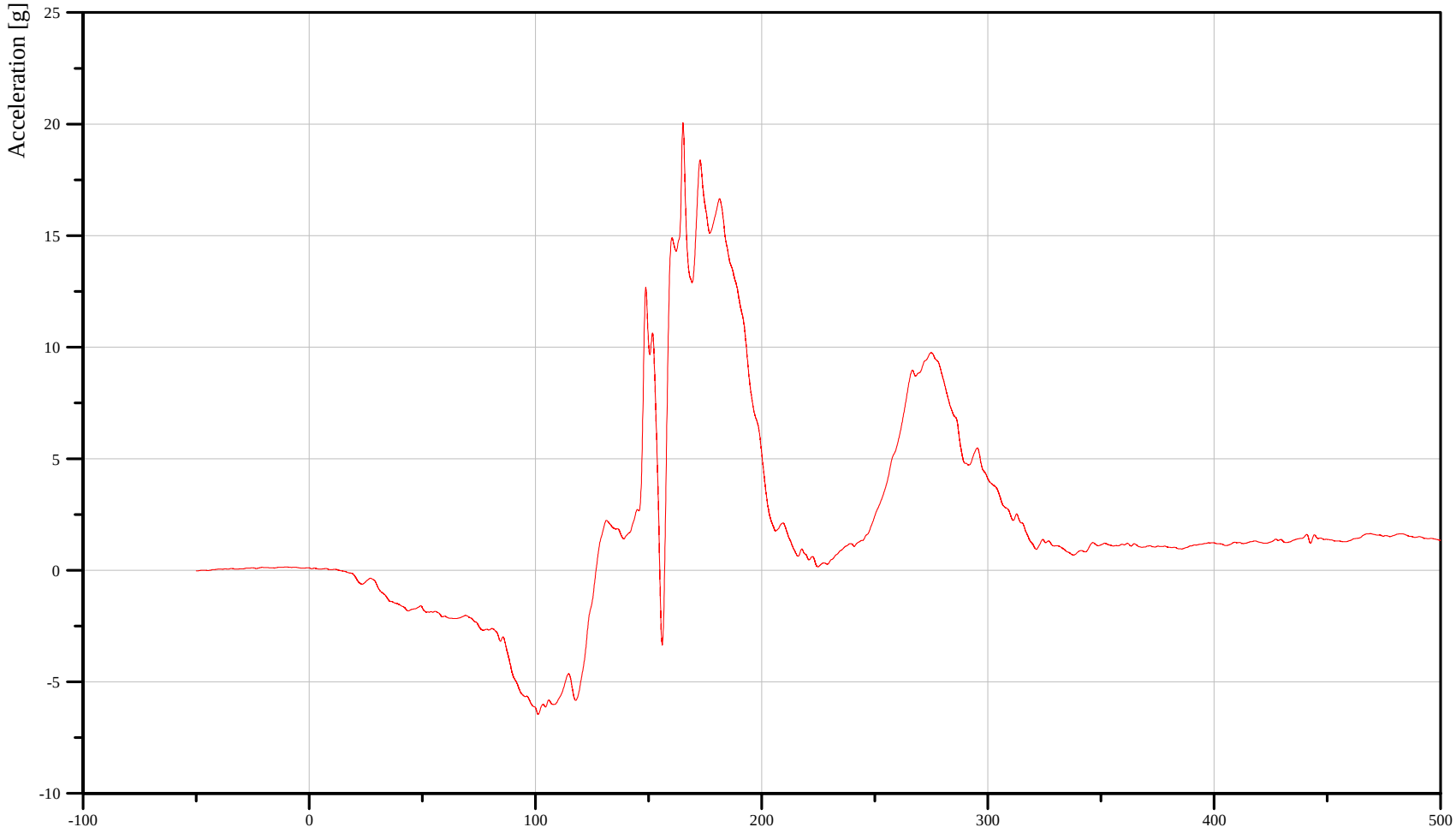
Date: 12/14/2007
Time: 9:12

5L-Left Chest Redundant Z-Axis Acceleration

Customer: VRTC

15CHSTCGRDH3ACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-6.46 g at 101.20 ms

Max. Value
20.06 g at 165.20 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

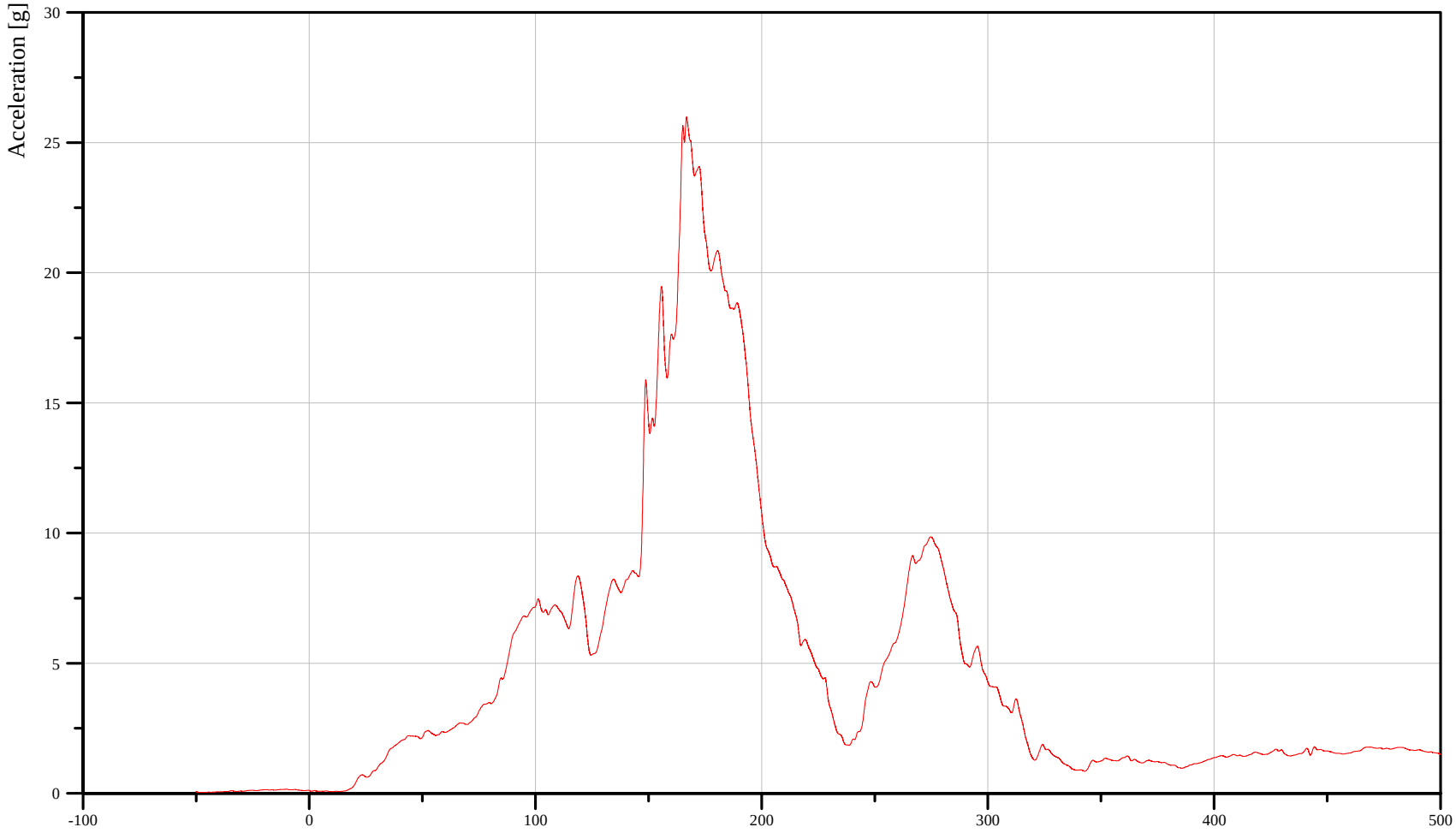
Date: 12/14/2007
Time: 9:12

5L-Left Chest Redundant Resultant Acceleration

Customer: VRTC

15CHSTCGRDH3ACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.04 g at -46.72 ms

Max. Value
25.99 g at 166.80 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

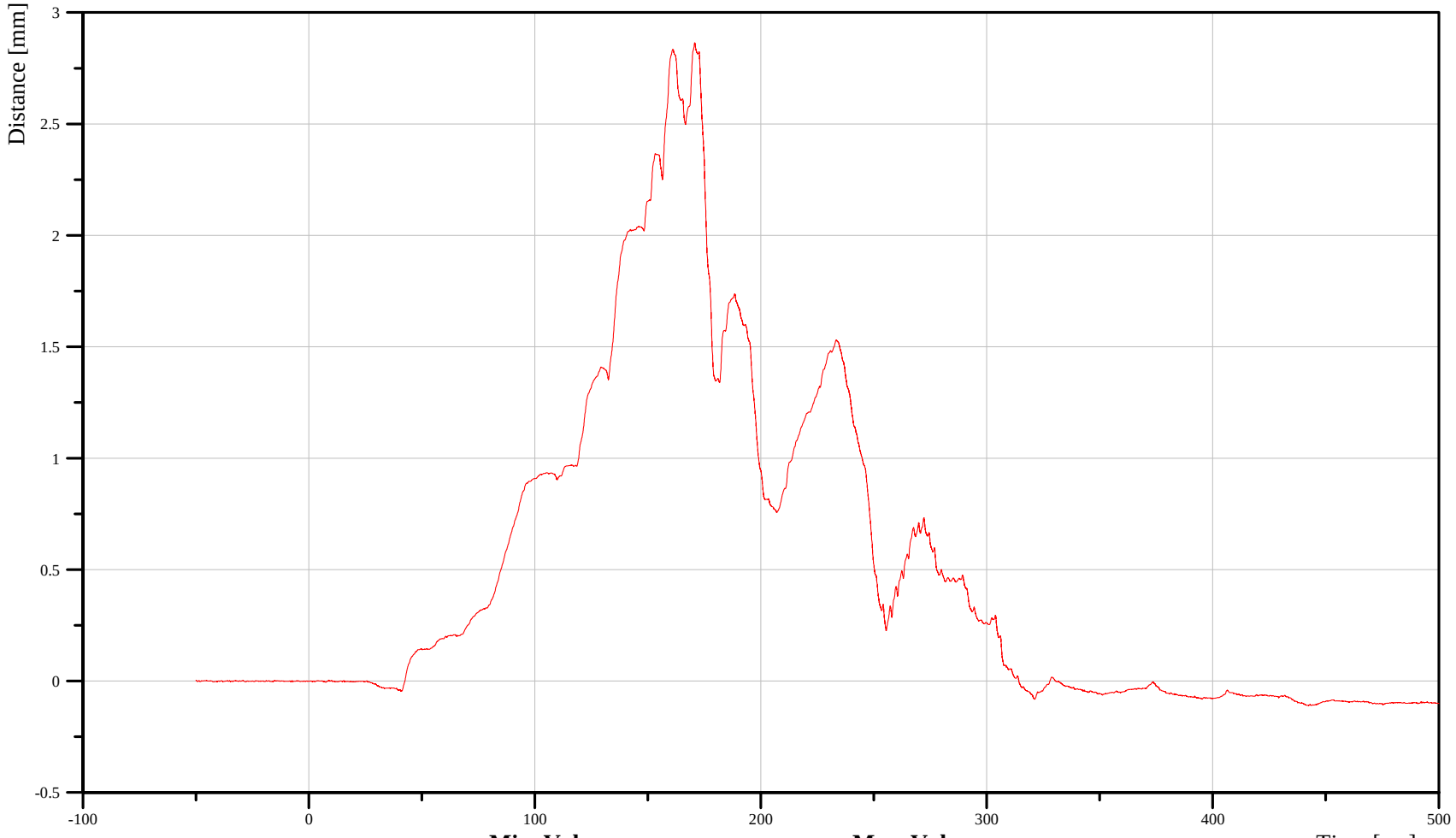
Date: 12/14/2007
Time: 9:12

5L-Left Chest X-Axis Deflection

Customer: VRTC

15CHST0000H3DSXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-0.11 mm at 442.40 ms

Max. Value
2.86 mm at 170.80 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

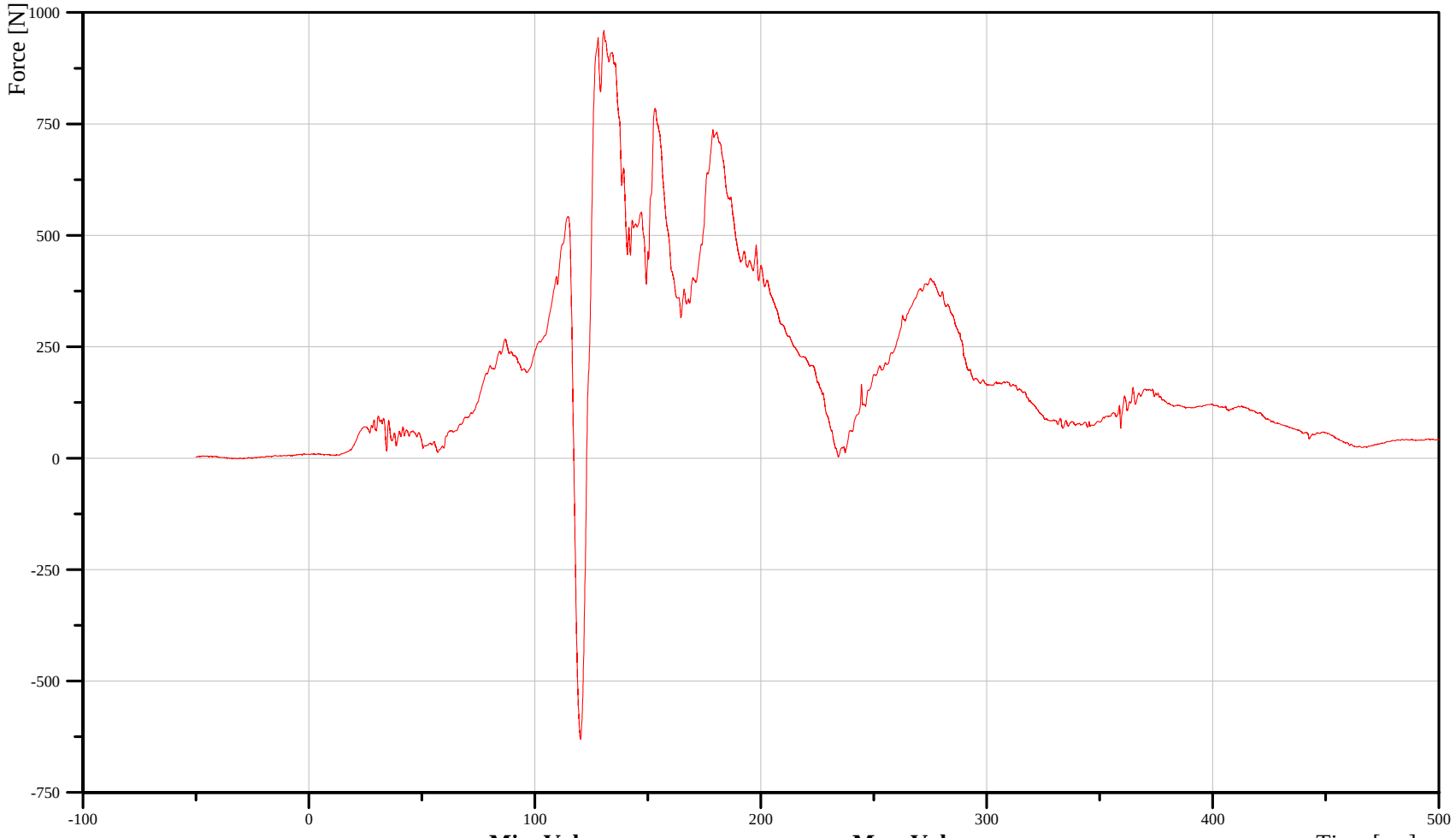
Date: 12/14/2007
Time: 9:12

5L-Left Left Femur Force Z

Customer: VRTC

15FEMRLL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-630.85 N at 120.32 ms

Max. Value
959.32 N at 130.56 ms

B-301

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

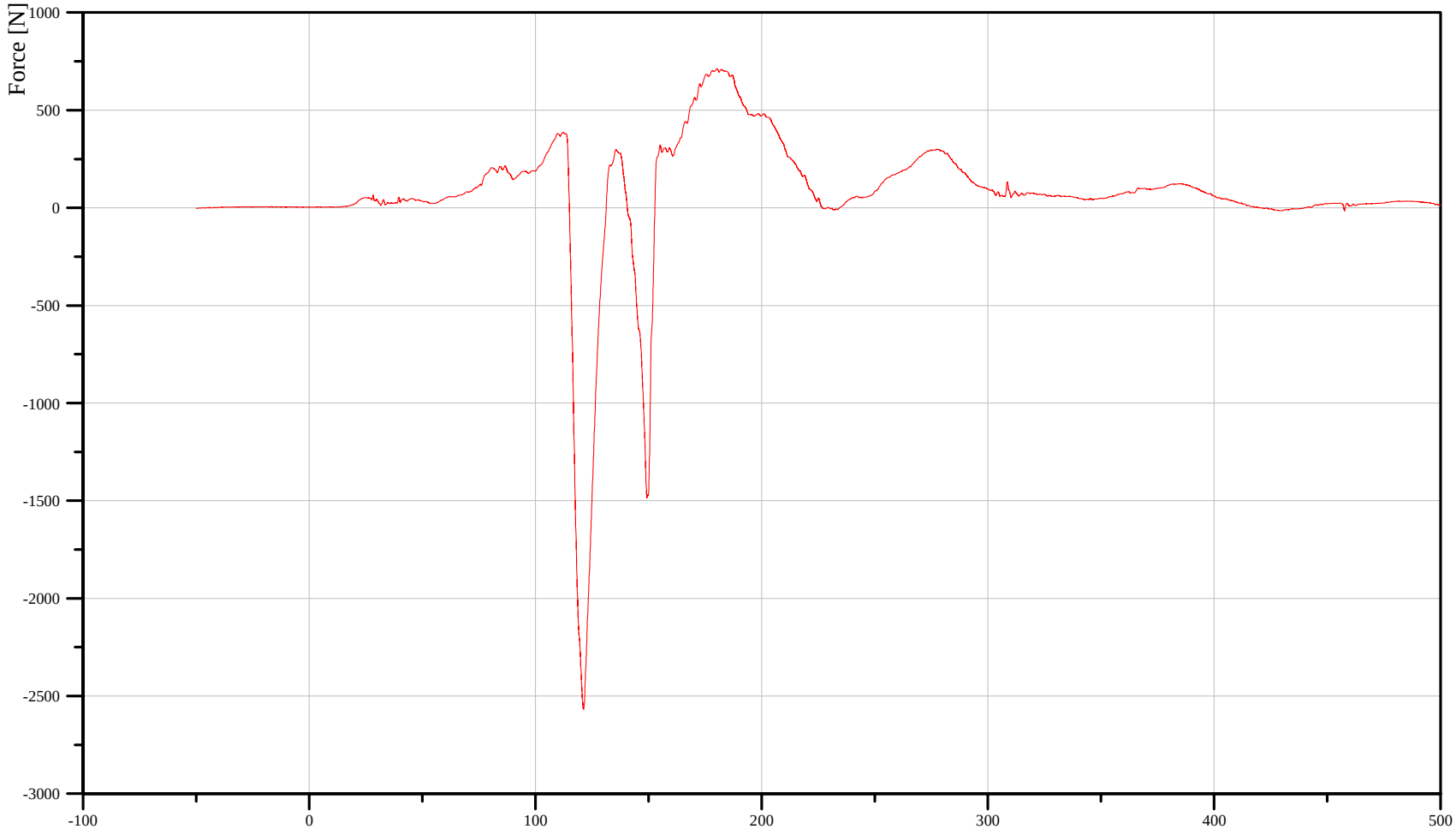
Date: 12/14/2007
Time: 9:12

5L-Left Right Femur Force Z

Customer: VRTC

15FEMRRL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-2,569.26 N at 121.28 ms

Max. Value
712.56 N at 180.24 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

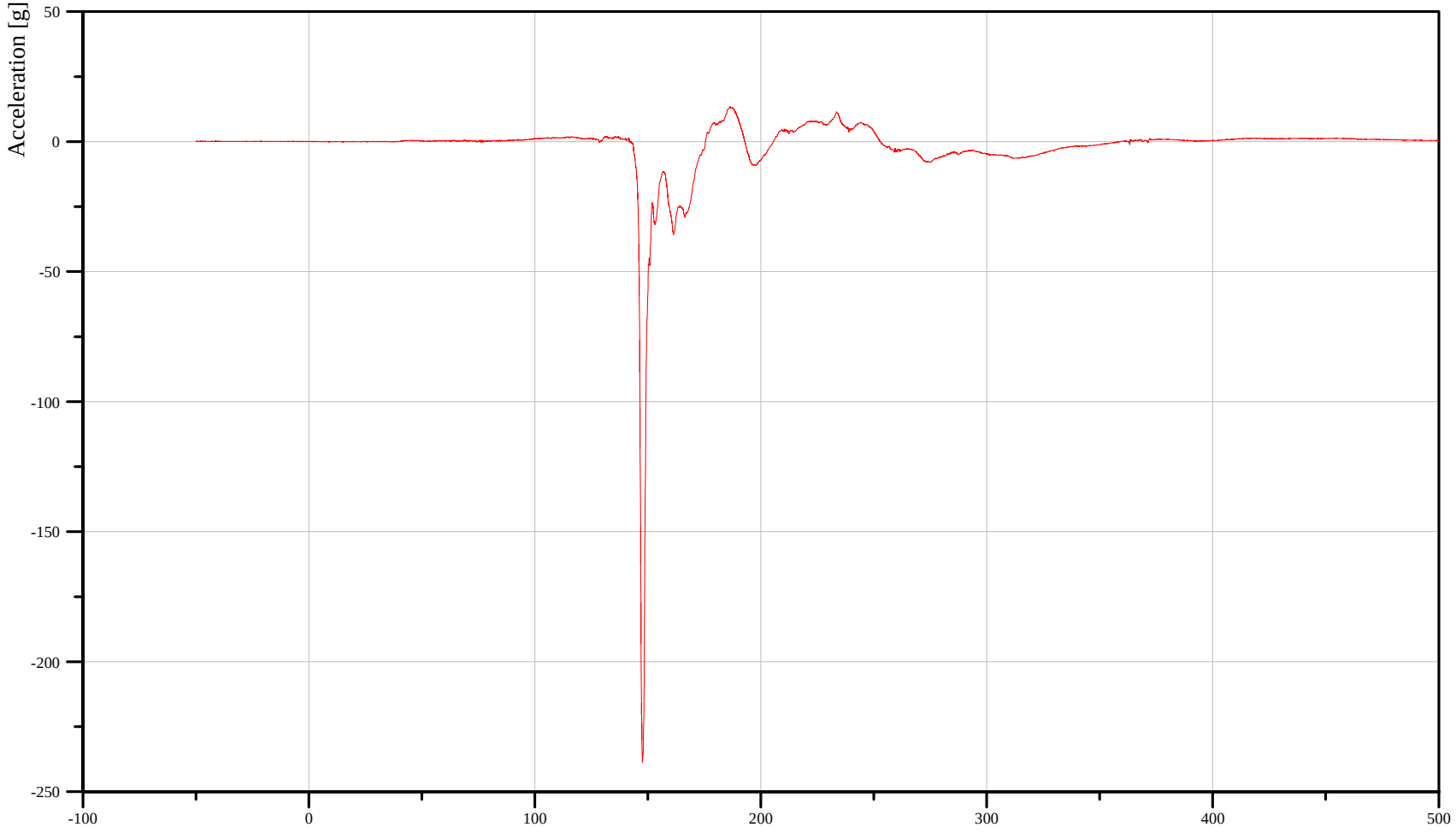
Date: 12/14/2007
Time: 9:12

5L-Right Head X-Axis Acceleration

Customer: VRTC

16HEADCG00HFACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-238.76 g at 147.60 ms

Max. Value
13.46 g at 186.40 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

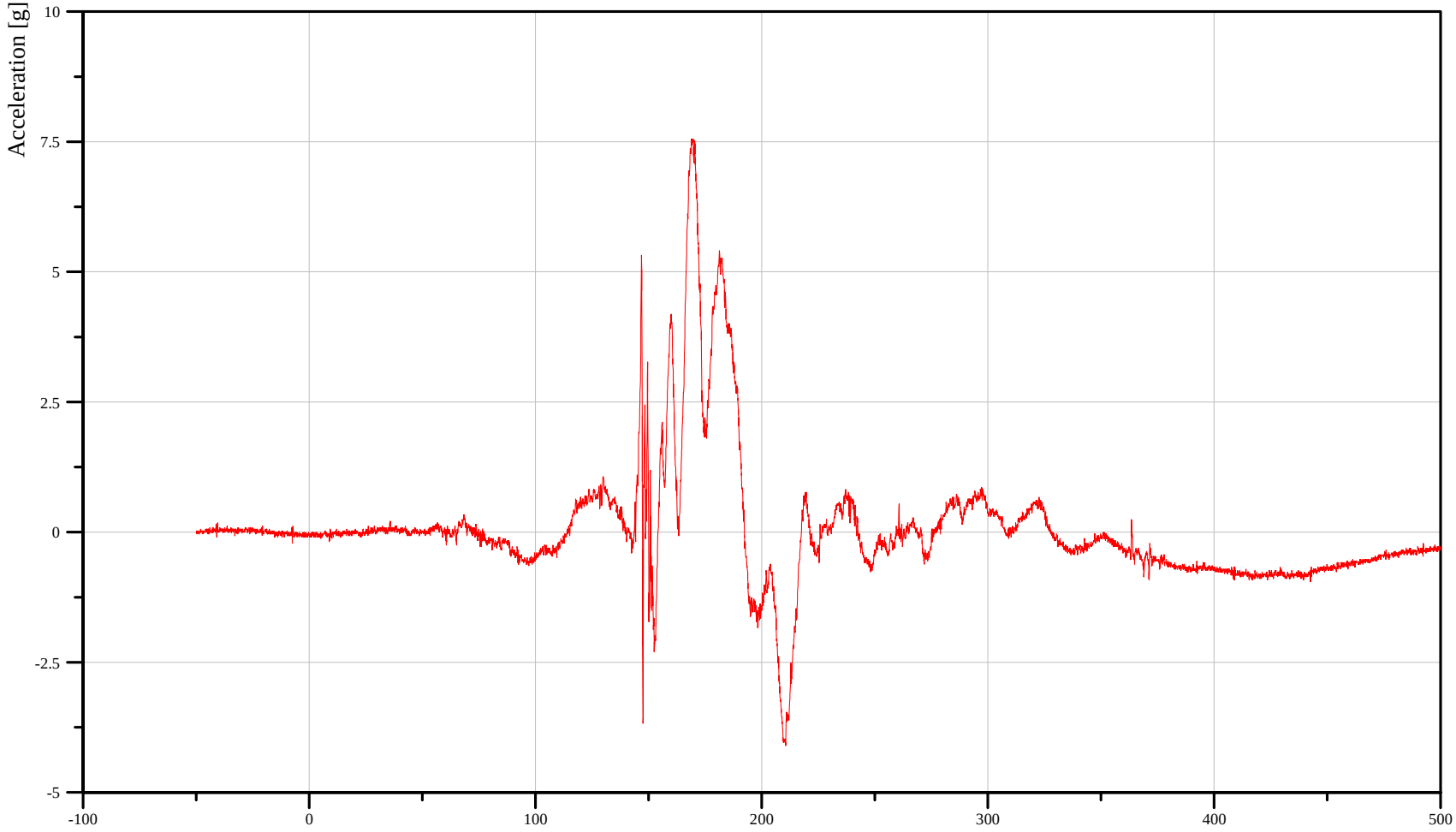
Date: 12/14/2007
Time: 9:12

5L-Right Head Y-Axis Acceleration

Customer: VRTC

16HEADCG00HFACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-4.10 g at 210.56 ms

Max. Value
7.55 g at 168.96 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

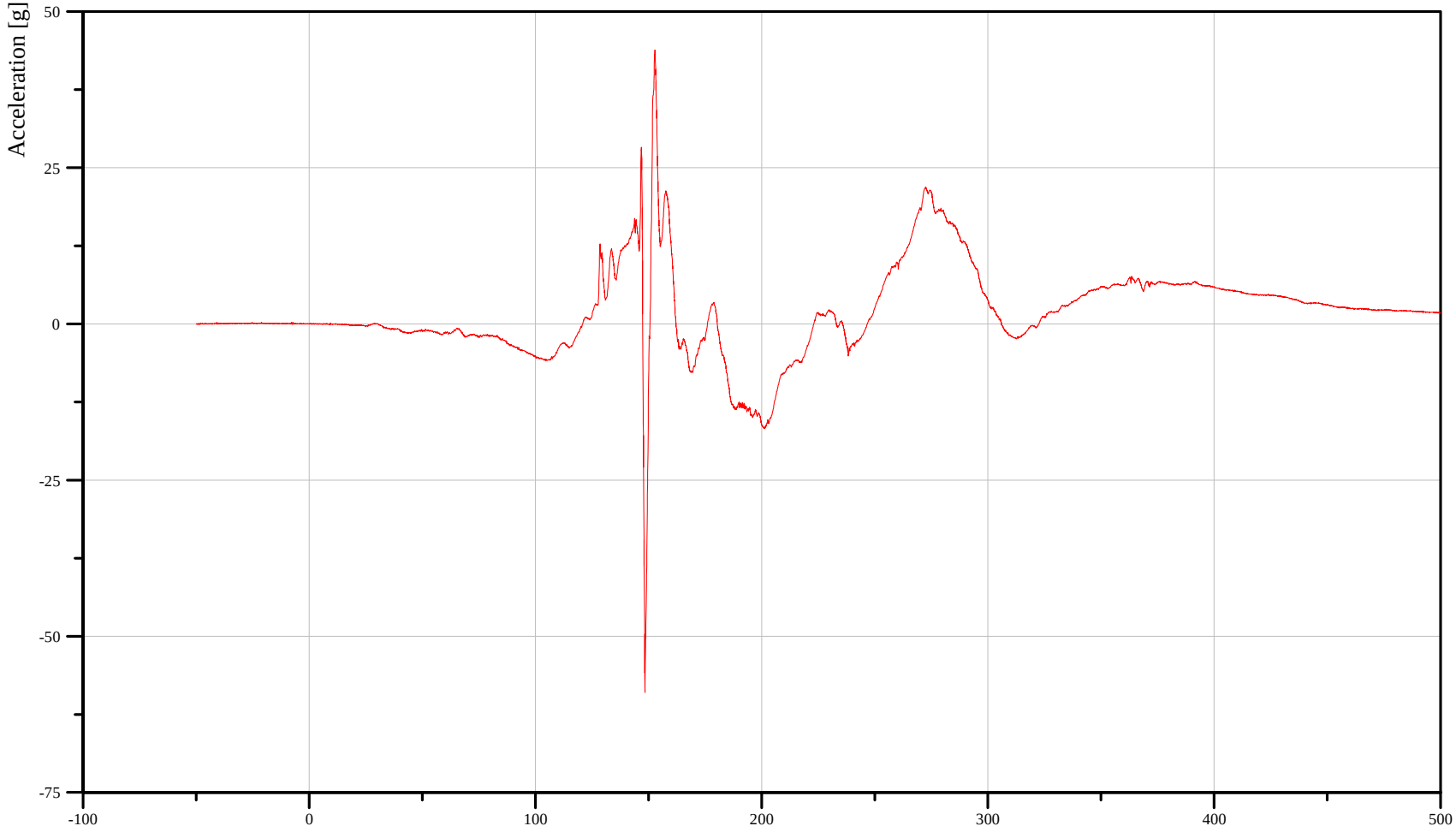
Date: 12/14/2007
Time: 9:12

5L-Right Head Z-Axis Acceleration

Customer: VRTC

16HEADCG00HFACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-58.98 g at 148.40 ms

Max. Value
43.85 g at 152.80 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

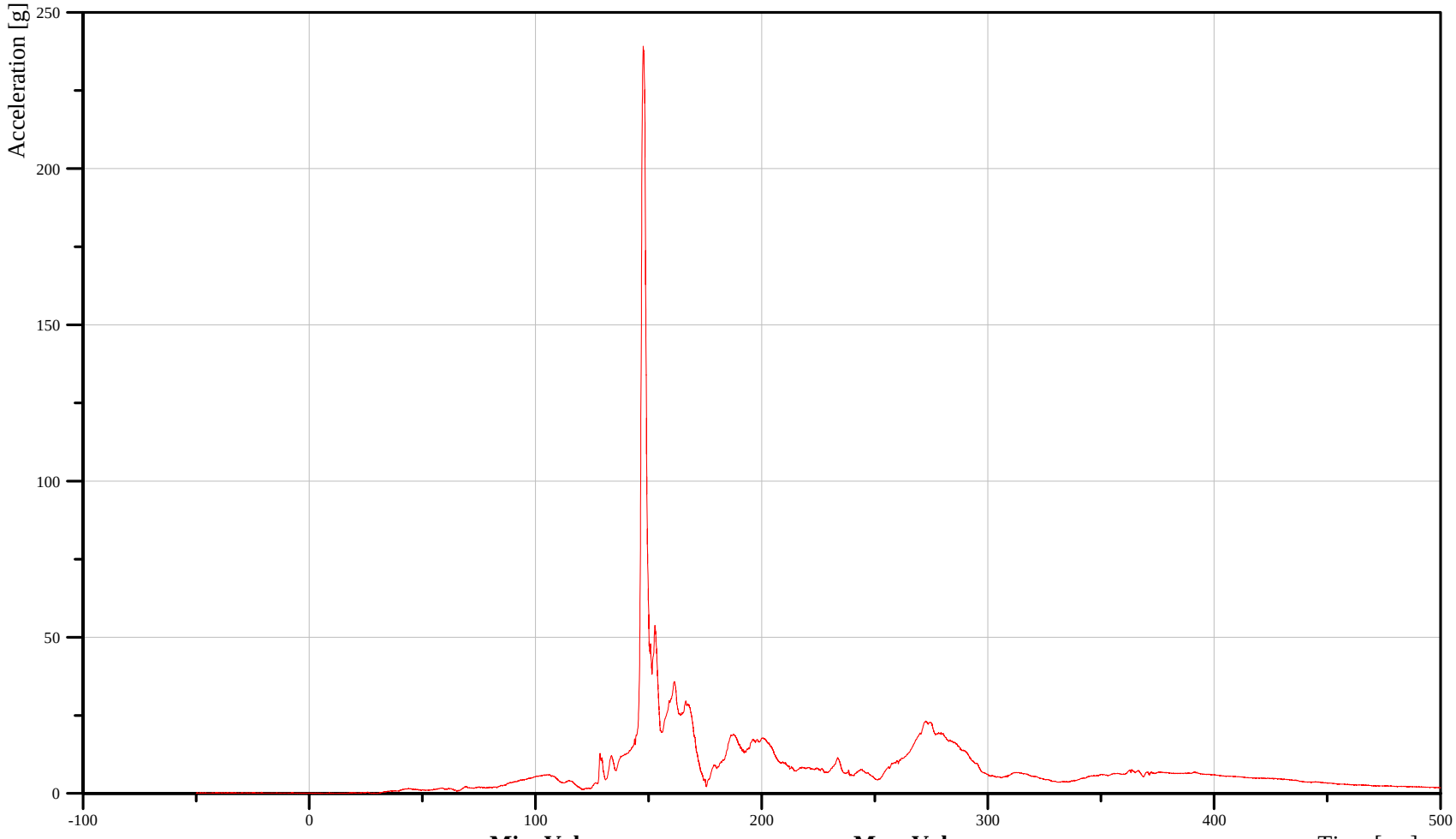
Date: 12/14/2007
Time: 9:12

5L-Right Head Resultant Acceleration

Customer: VRTC

16HEADCG00HFACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.01 g at 10.24 ms

Max. Value
239.21 g at 147.60 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

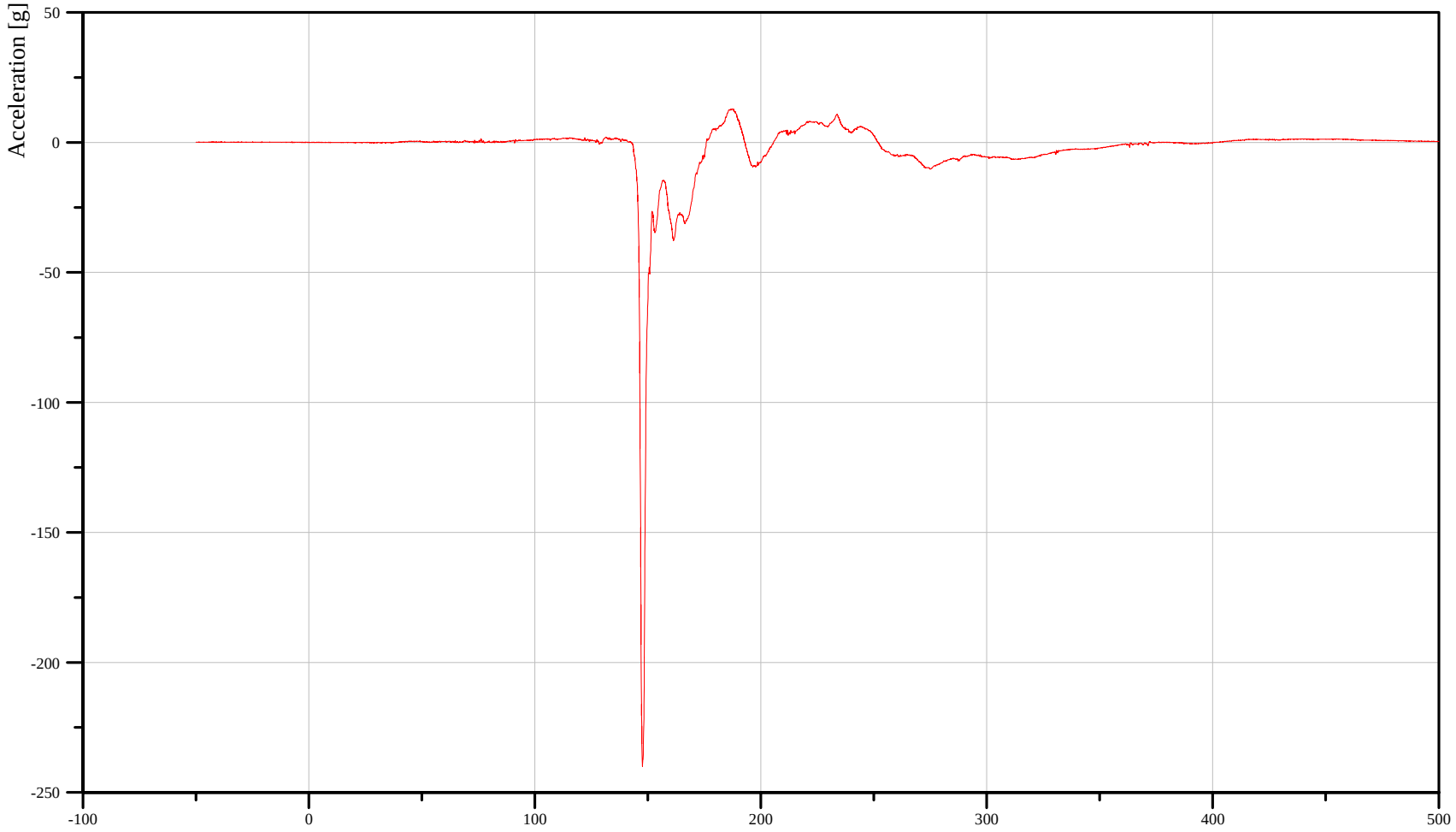
Date: 12/14/2007
Time: 9:12

5L-Right Head Redundant X-Axis Acceleration

Customer: VRTC

16HEADCGRDHFACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-240.00 g at 147.60 ms

Max. Value
12.90 g at 187.28 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

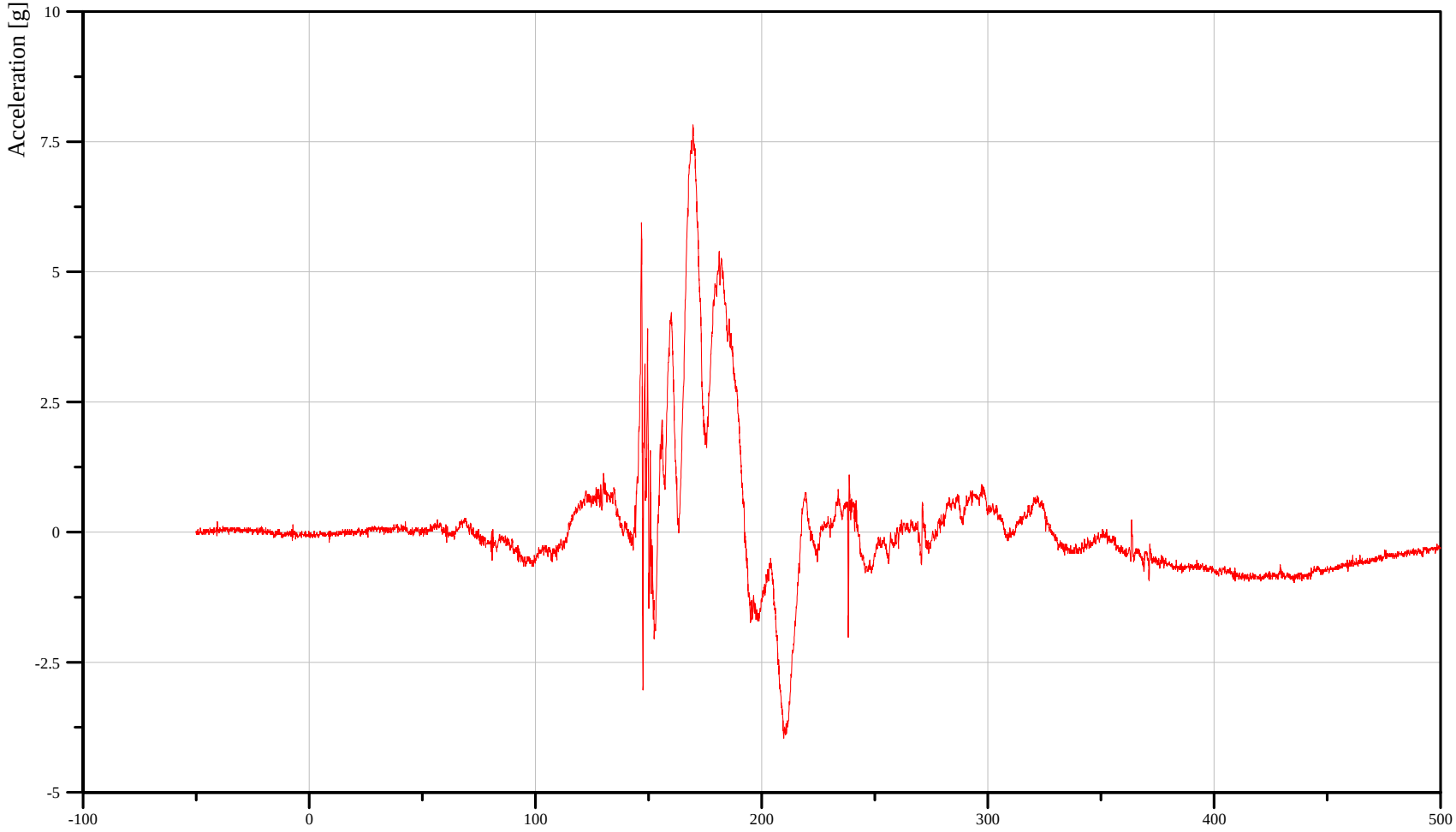
Date: 12/14/2007
Time: 9:12

5L-Right Head Redundant Y-Axis Acceleration

Customer: VRTC

16HEADCGRDHFACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-3.96 g at 209.68 ms

Max. Value
7.83 g at 169.60 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

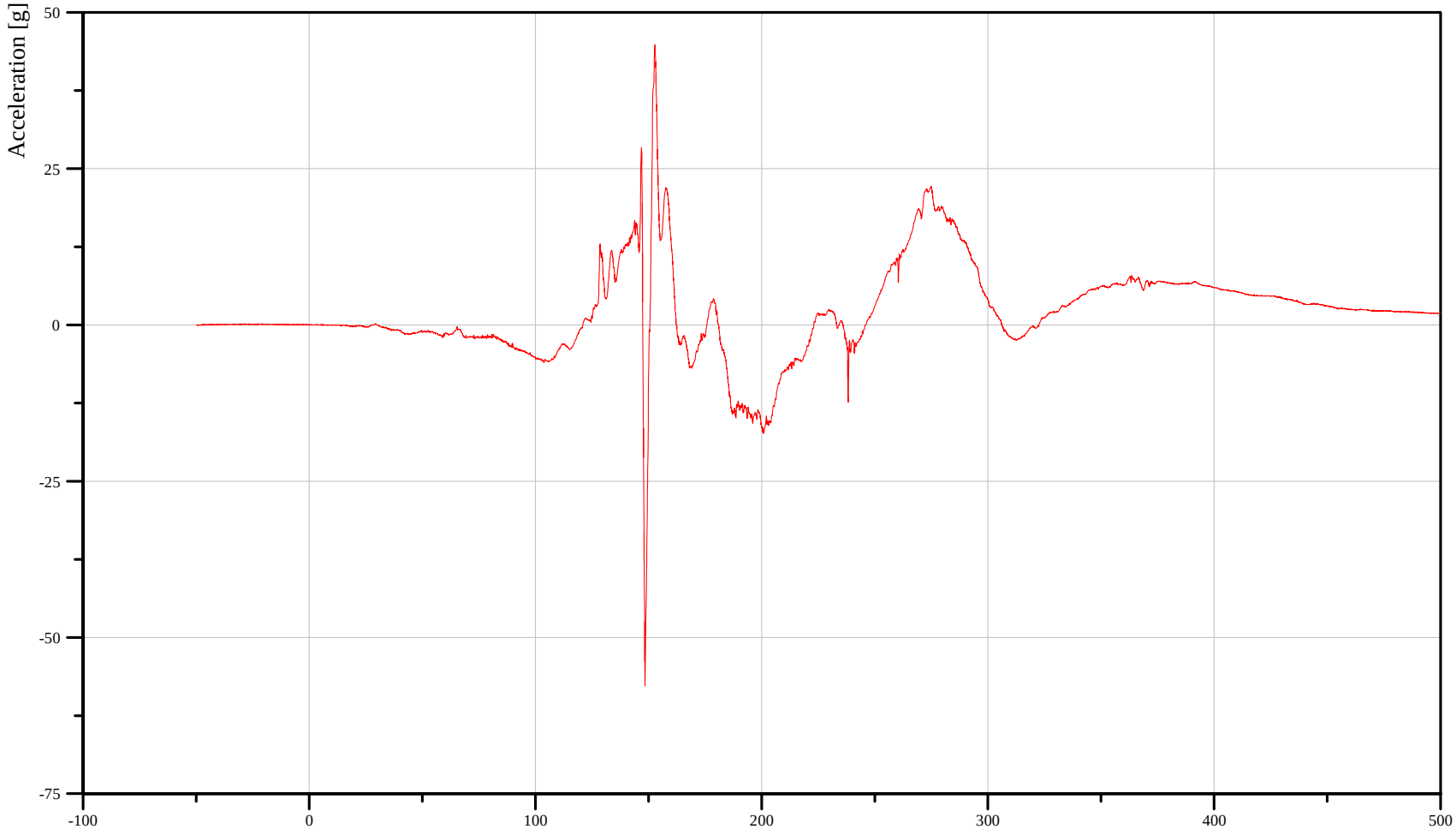
Date: 12/14/2007
Time: 9:12

5L-Right Head Redundant Z-Axis Acceleration

Customer: VRTC

16HEADCGRDHFACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-57.75 g at 148.40 ms

Max. Value
44.88 g at 152.80 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

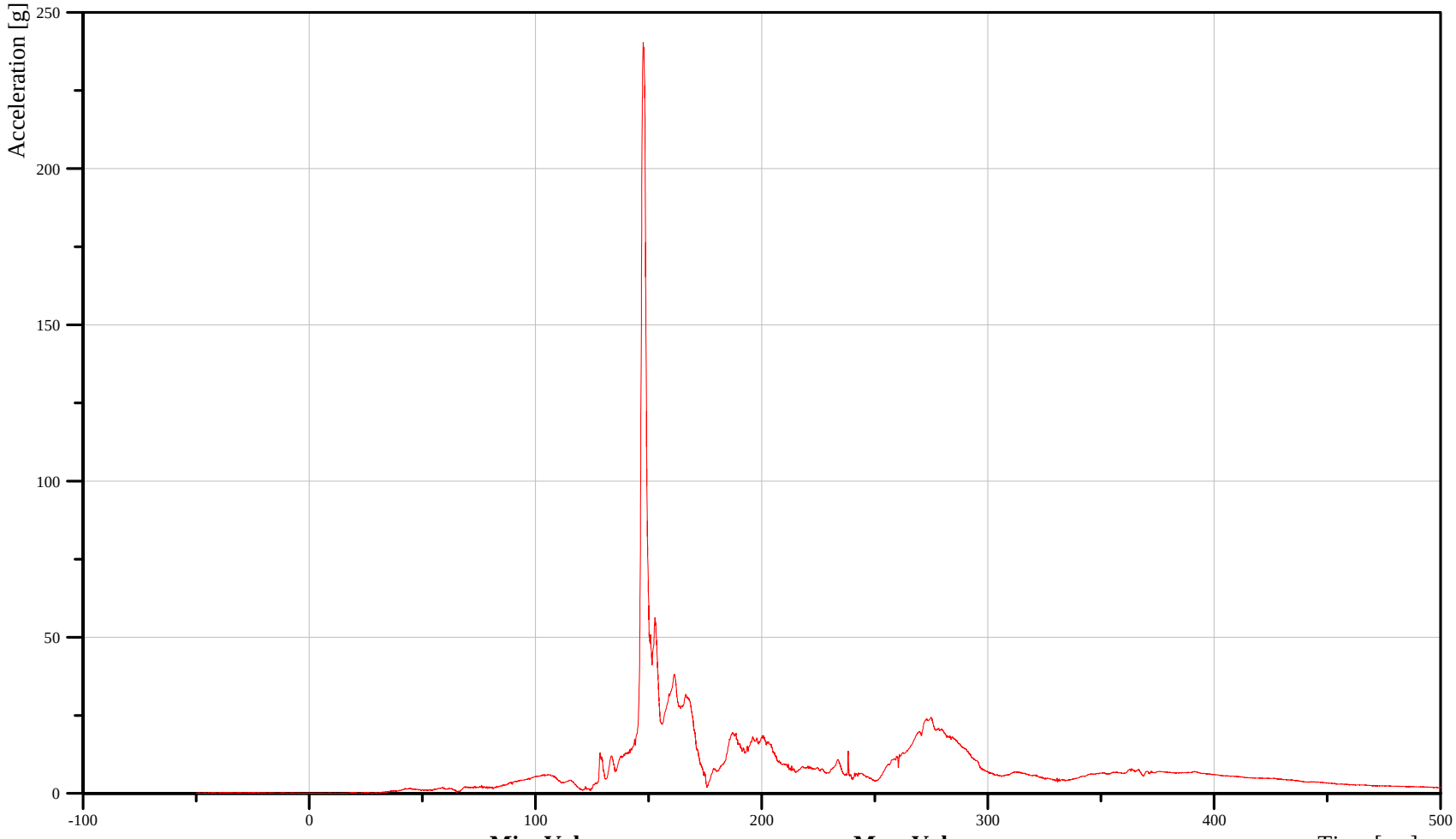
Date: 12/14/2007
Time: 9:12

5L-Right Head Redundant Resultant Acceleration

Customer: VRTC

16HEADCGRDHFACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.02 g at 14.48 ms

Max. Value
240.36 g at 147.60 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

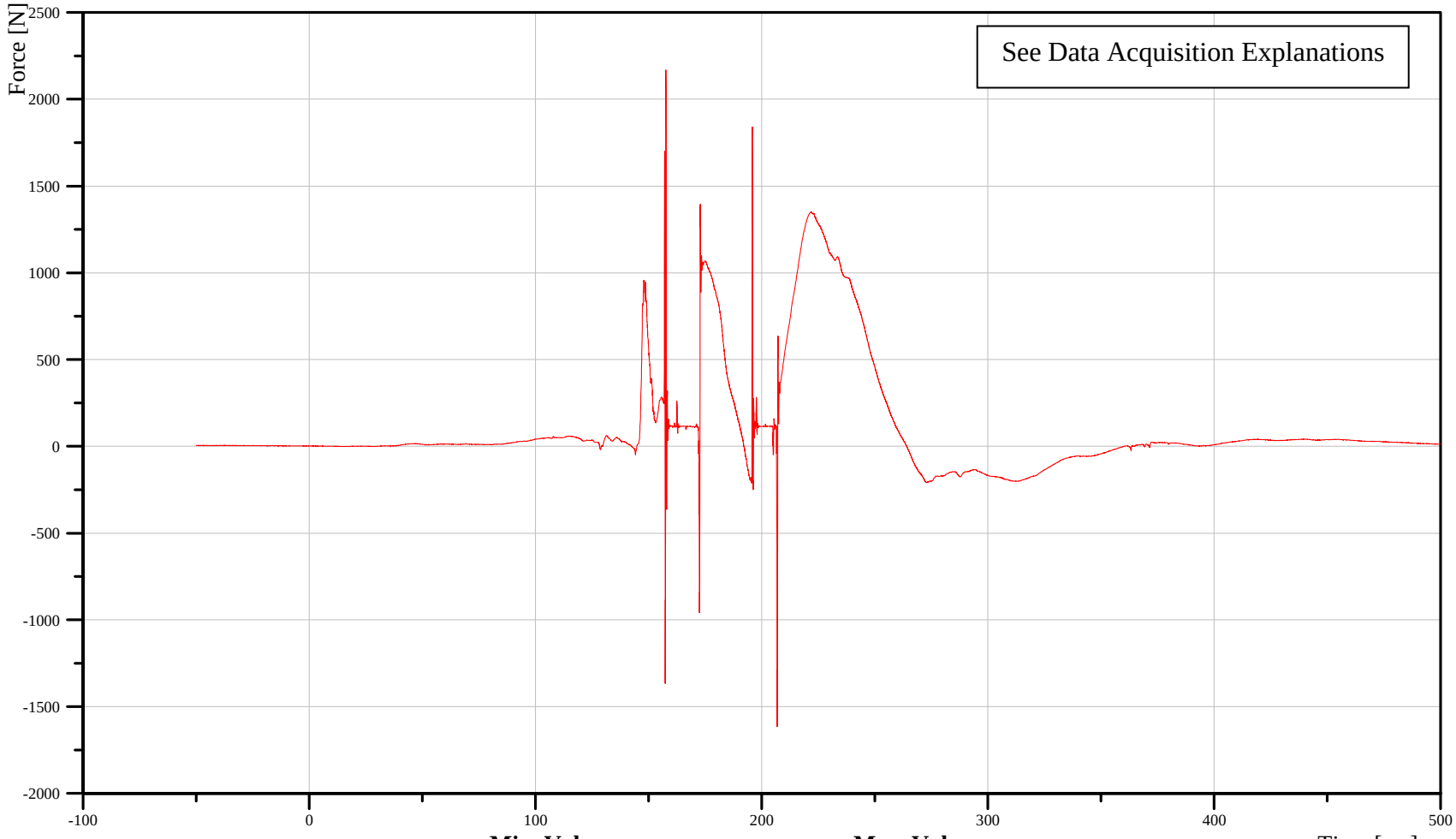
Date: 12/14/2007
Time: 9:12

5L-Right Neck Force X

Customer: VRTC

16NECKUP00HFFOXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-1,615.10 N at 206.88 ms

Max. Value
2,169.03 N at 157.68 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

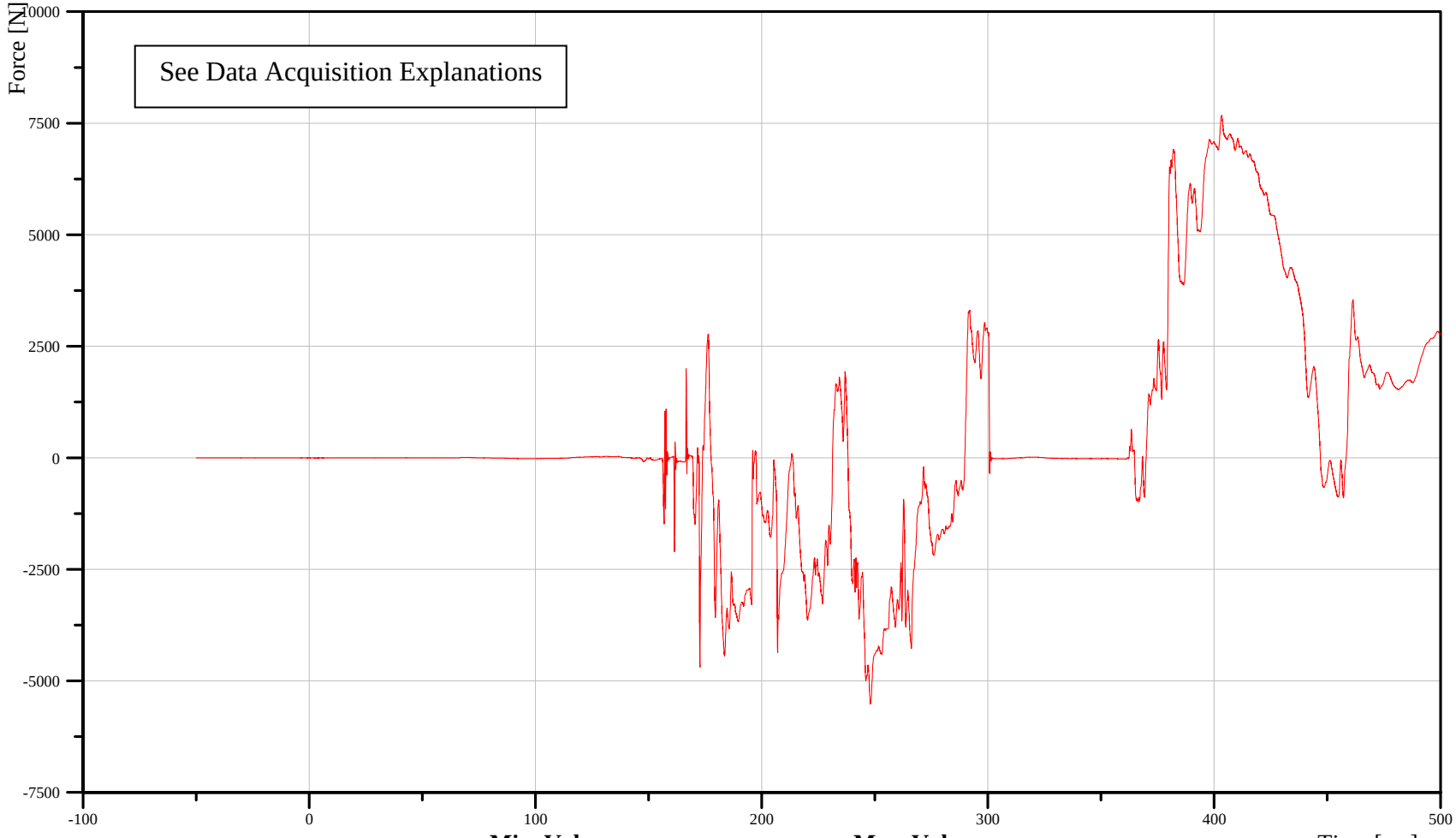
Date: 12/14/2007
Time: 9:12

5L-Right Neck Force Y

Customer: VRTC

16NECKUP00HFFOYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-5,513.88 N at 248.16 ms

Max. Value
7,673.13 N at 403.28 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

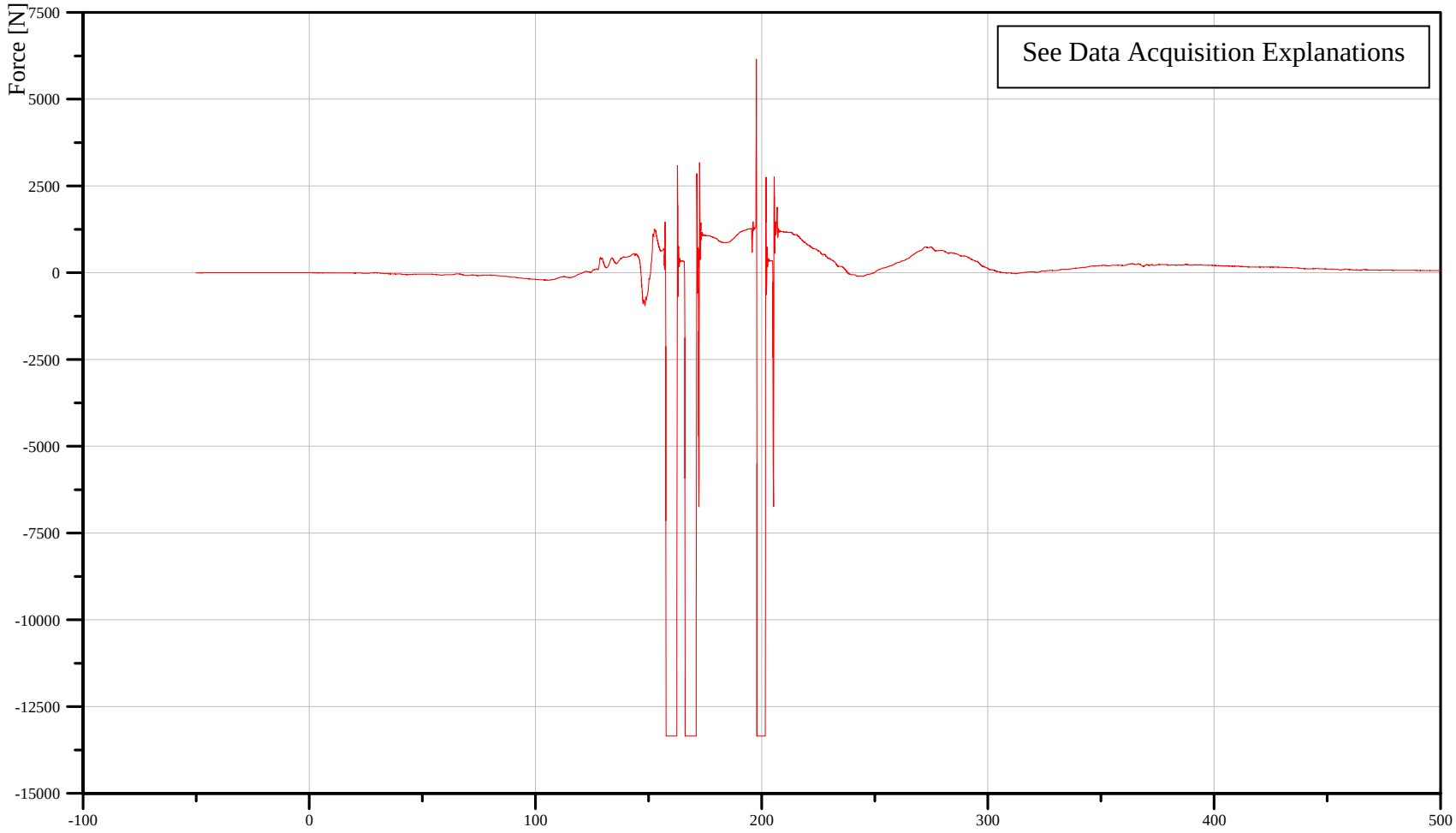
Date: 12/14/2007
Time: 9:12

5L-Right Neck Force Z

Customer: VRTC

16NECKUP00HFFOZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-13,347.97 N at 157.76 ms

Max. Value
6,152.23 N at 197.68 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

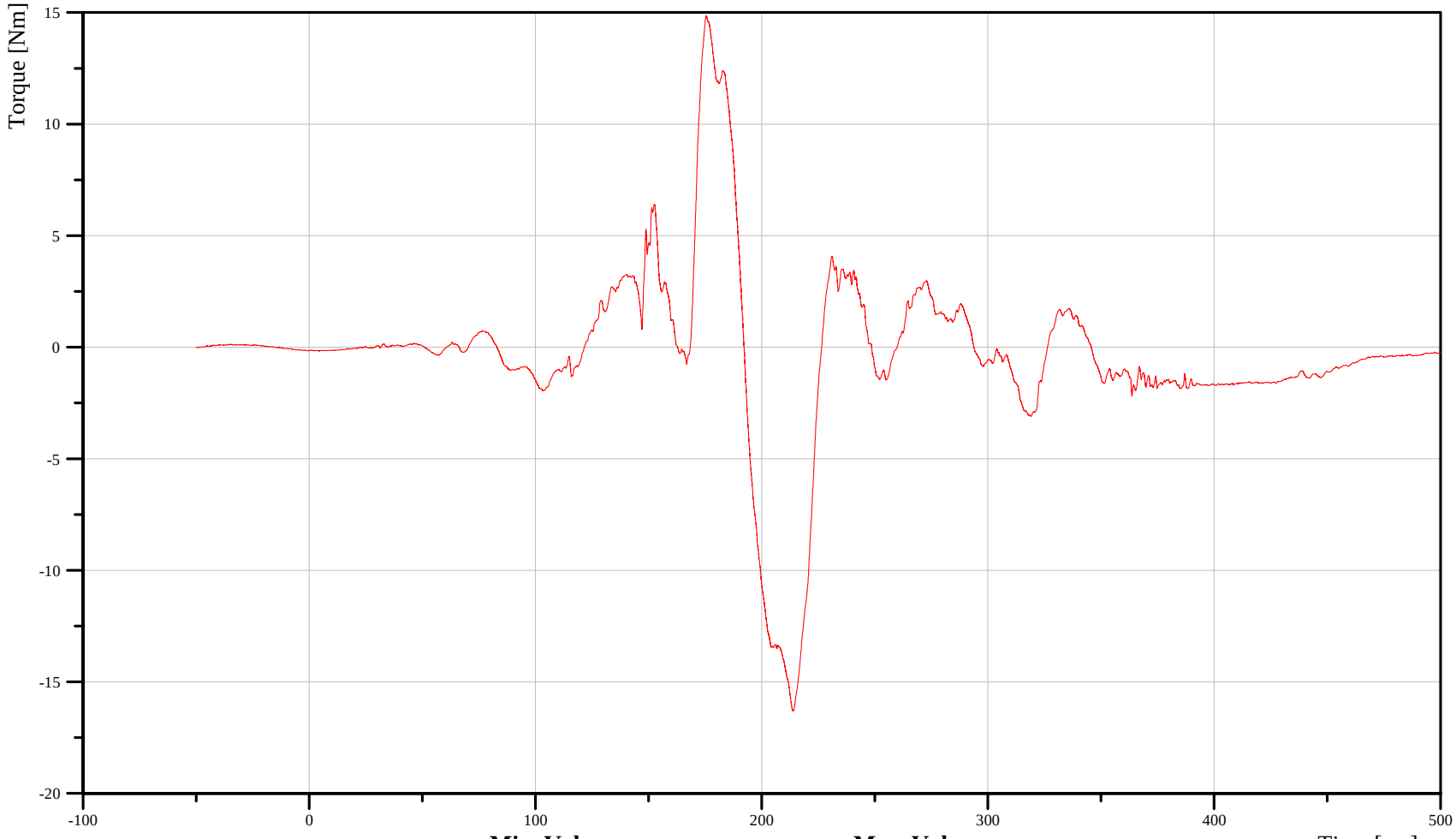
Date: 12/14/2007
Time: 9:12

5L-Right Neck Moment X

Customer: VRTC

16NECKUP00HFMOXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-16.32 Nm at 213.92 ms

Max. Value
14.86 Nm at 175.52 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

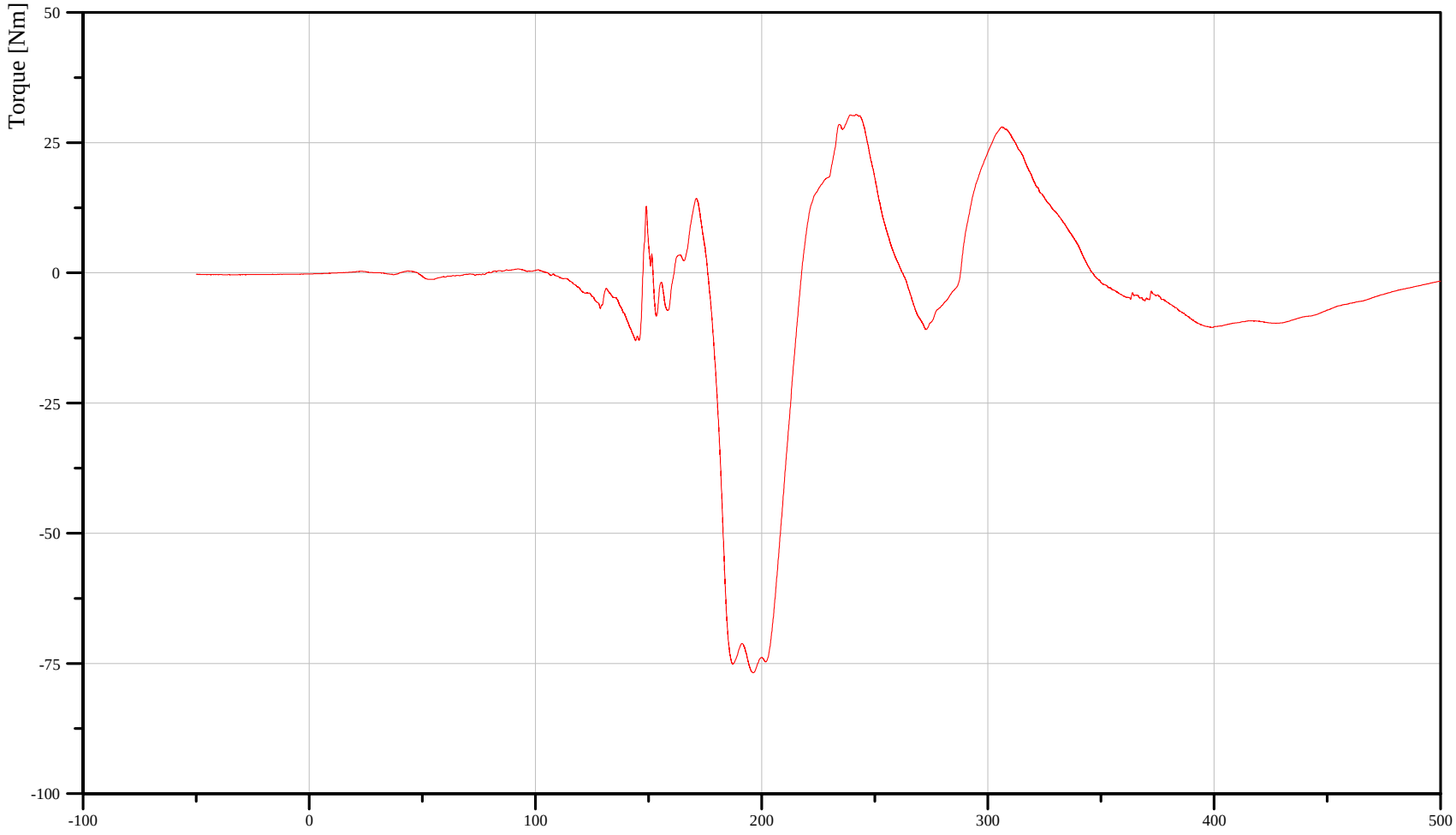
5L-Right Neck Moment Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

16NECKUP00HFMOYB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-76.79 Nm at 196.24 ms

Max. Value
30.42 Nm at 241.76 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

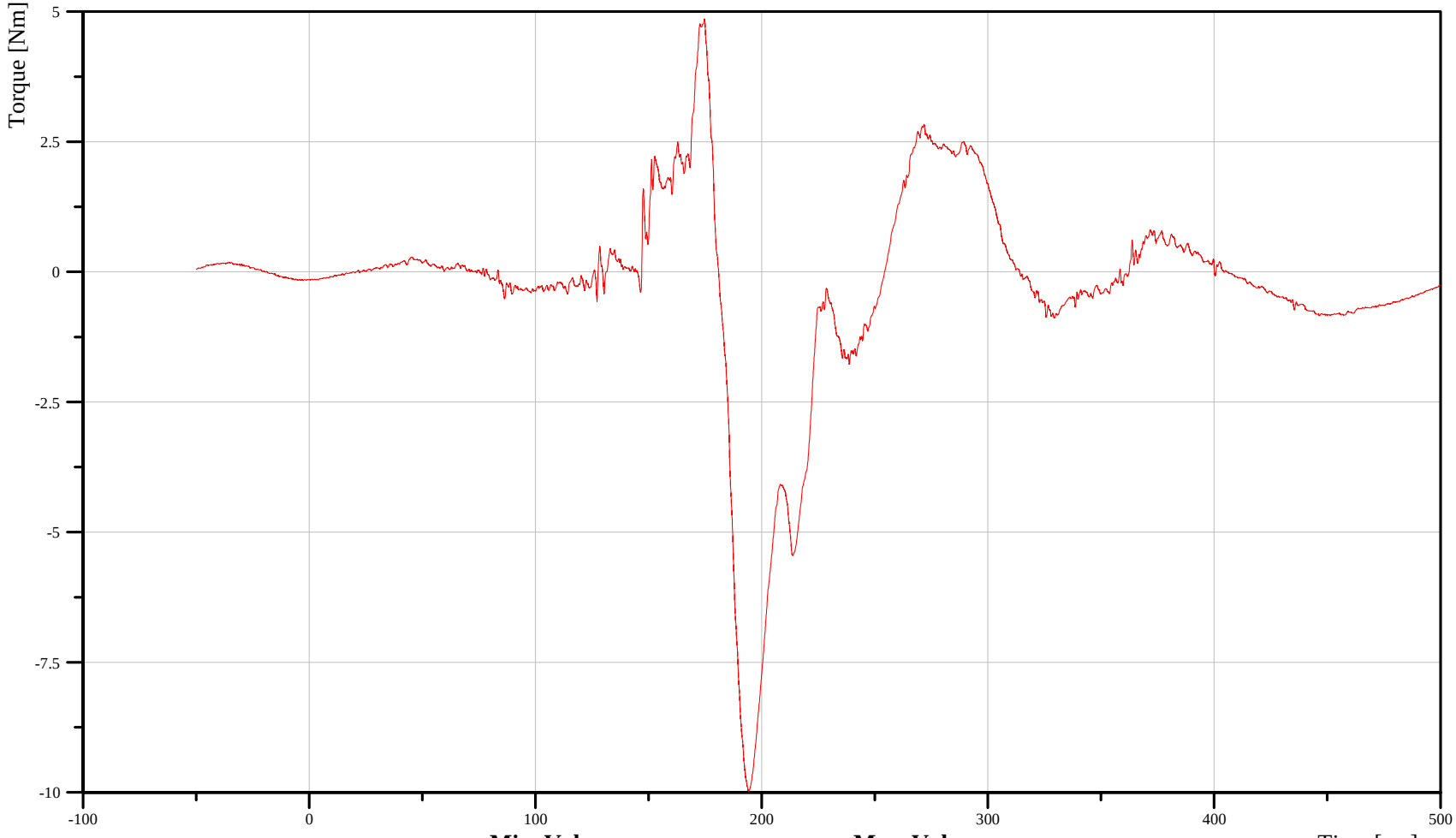
5L-Right Neck Moment Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

16NECKUP00HFMOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-9.98 Nm at 194.24 ms

Max. Value
4.86 Nm at 174.72 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

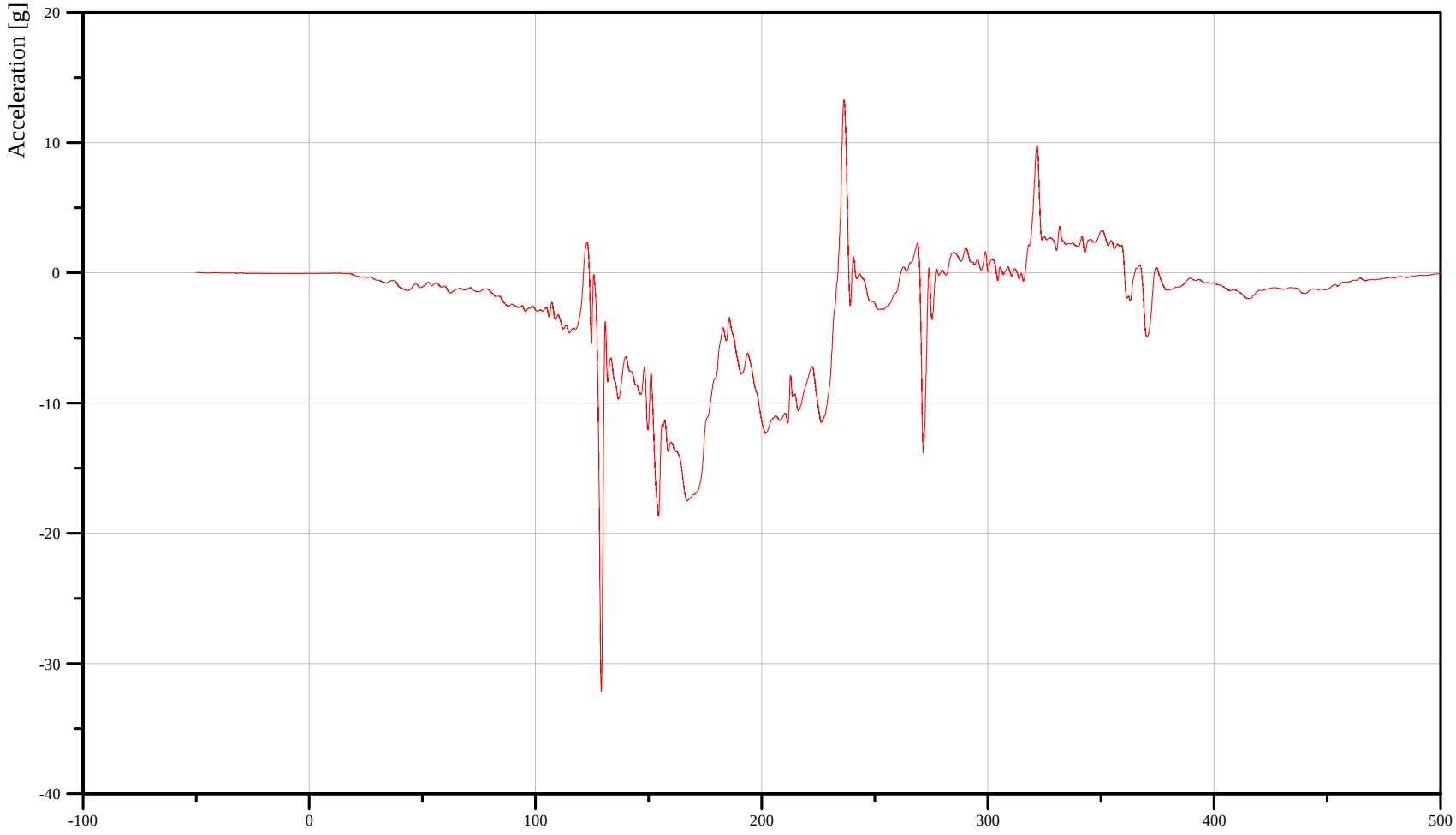
Date: 12/14/2007
Time: 9:12

5L-Right Chest X-Axis Acceleration

Customer: VRTC

16CHSTCG00HFACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-32.13 g at 129.12 ms

Max. Value
13.28 g at 236.40 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

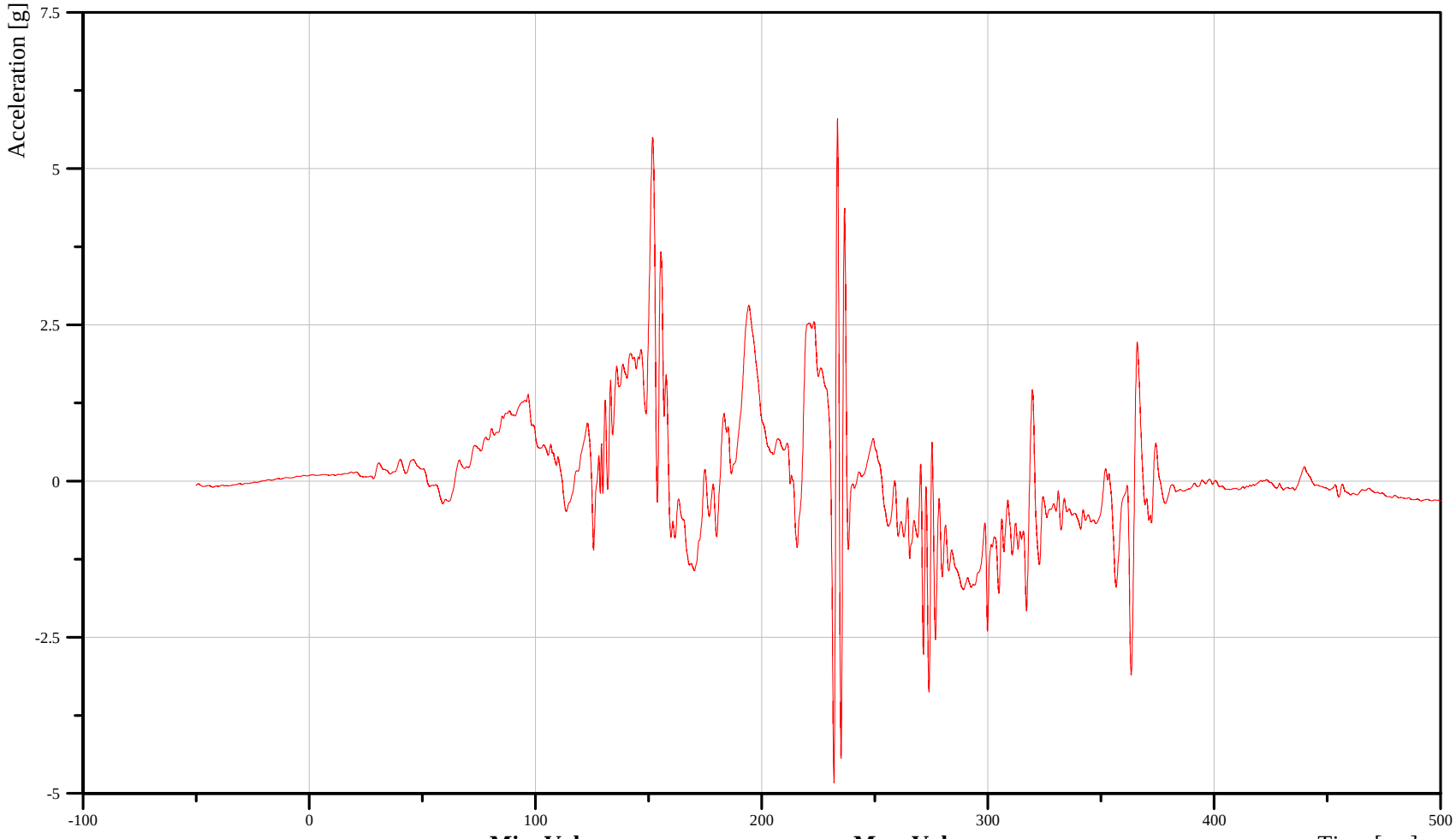
Date: 12/14/2007
Time: 9:12

5L-Right Chest Y-Axis Acceleration

Customer: VRTC

16CHSTCG00HFACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-4.83 g at 232.00 ms

Max. Value
5.80 g at 233.52 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

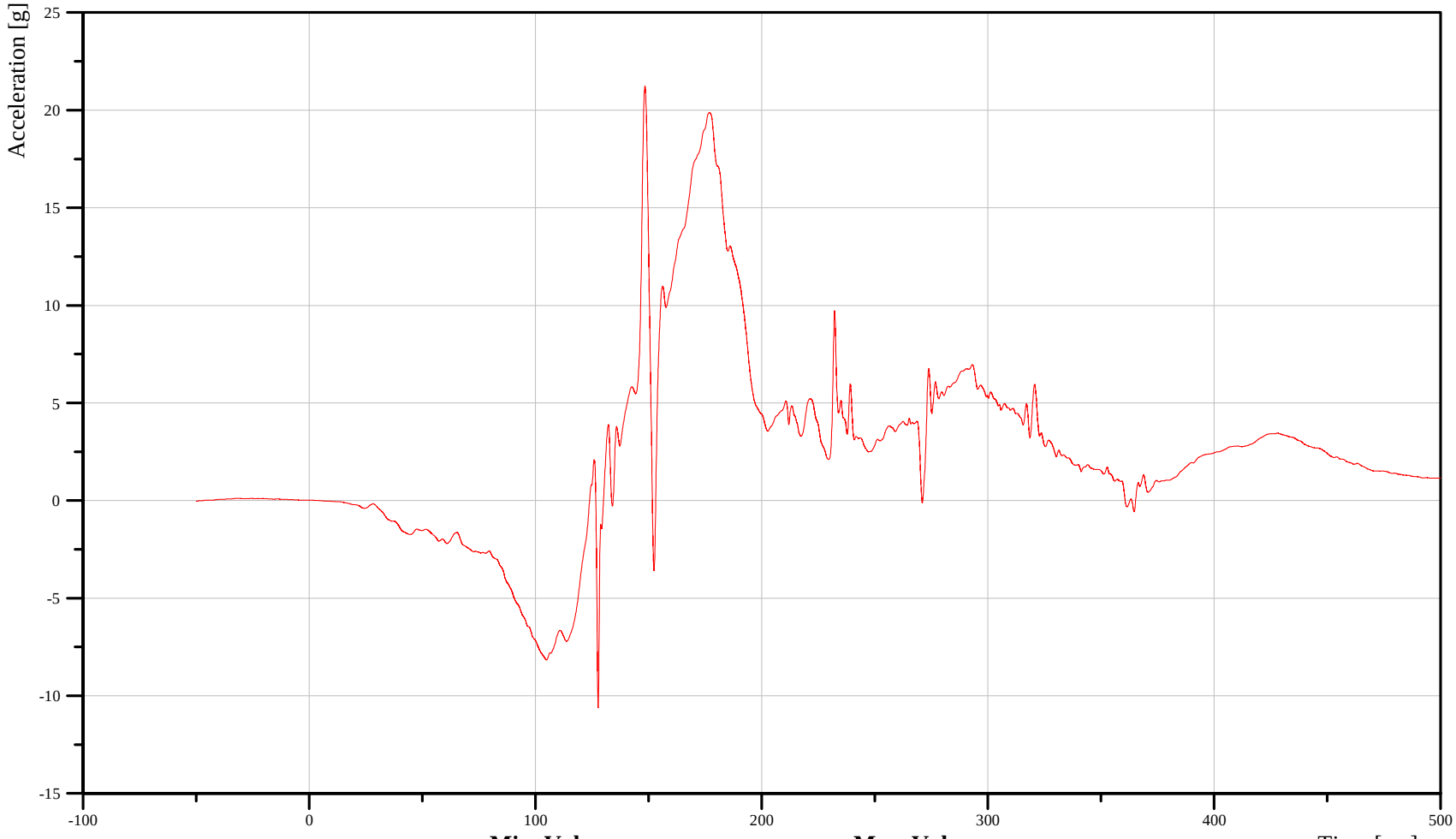
Date: 12/14/2007
Time: 9:12

5L-Right Chest Z-Axis Acceleration

Customer: VRTC

16CHSTCG00HFACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-10.63 g at 127.76 ms

Max. Value
21.24 g at 148.40 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

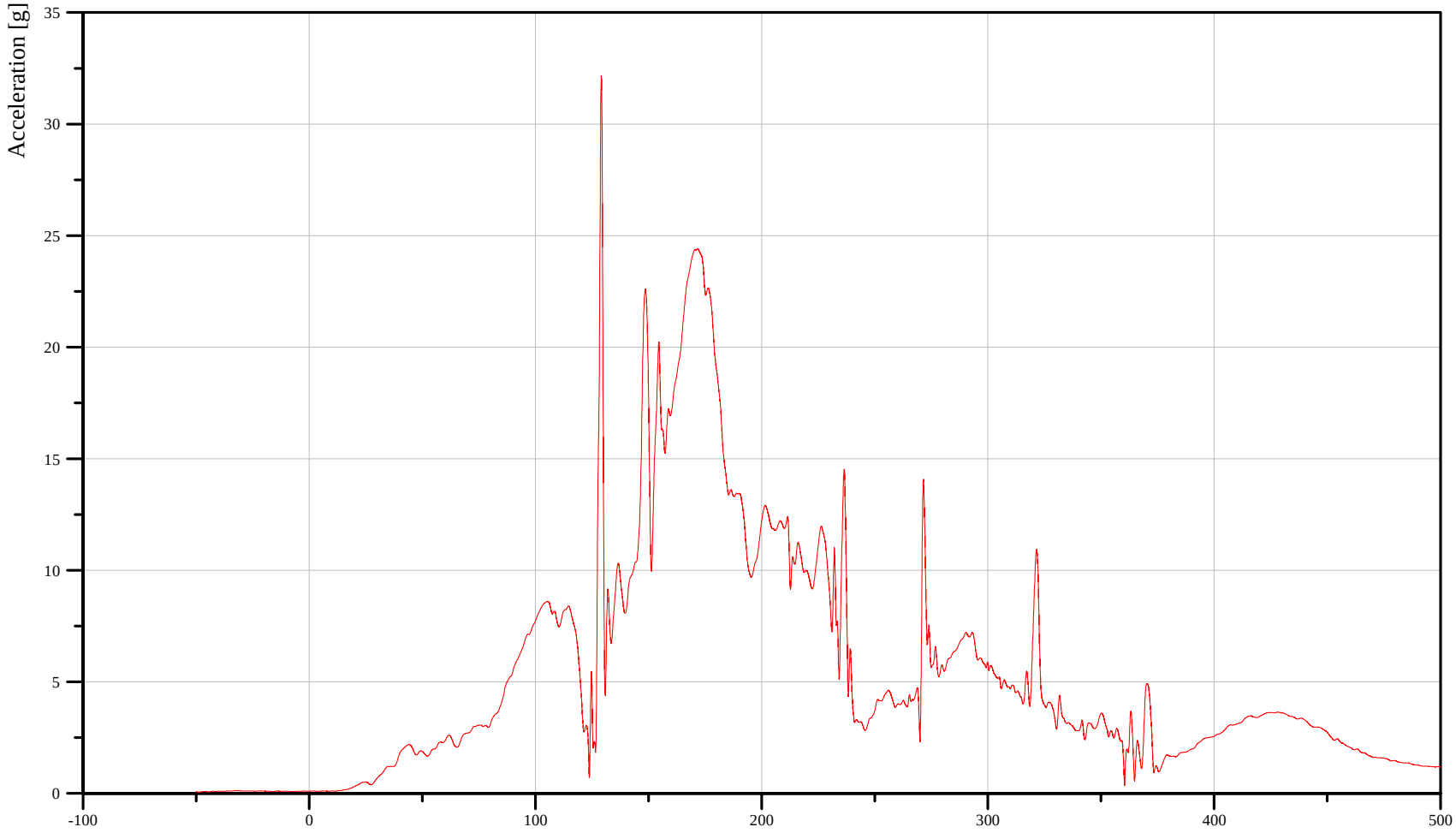
Date: 12/14/2007
Time: 9:12

5L-Right Chest Resultant Acceleration

Customer: VRTC

16CHSTCG00HFACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.06 g at -48.64 ms

Max. Value
32.16 g at 129.12 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

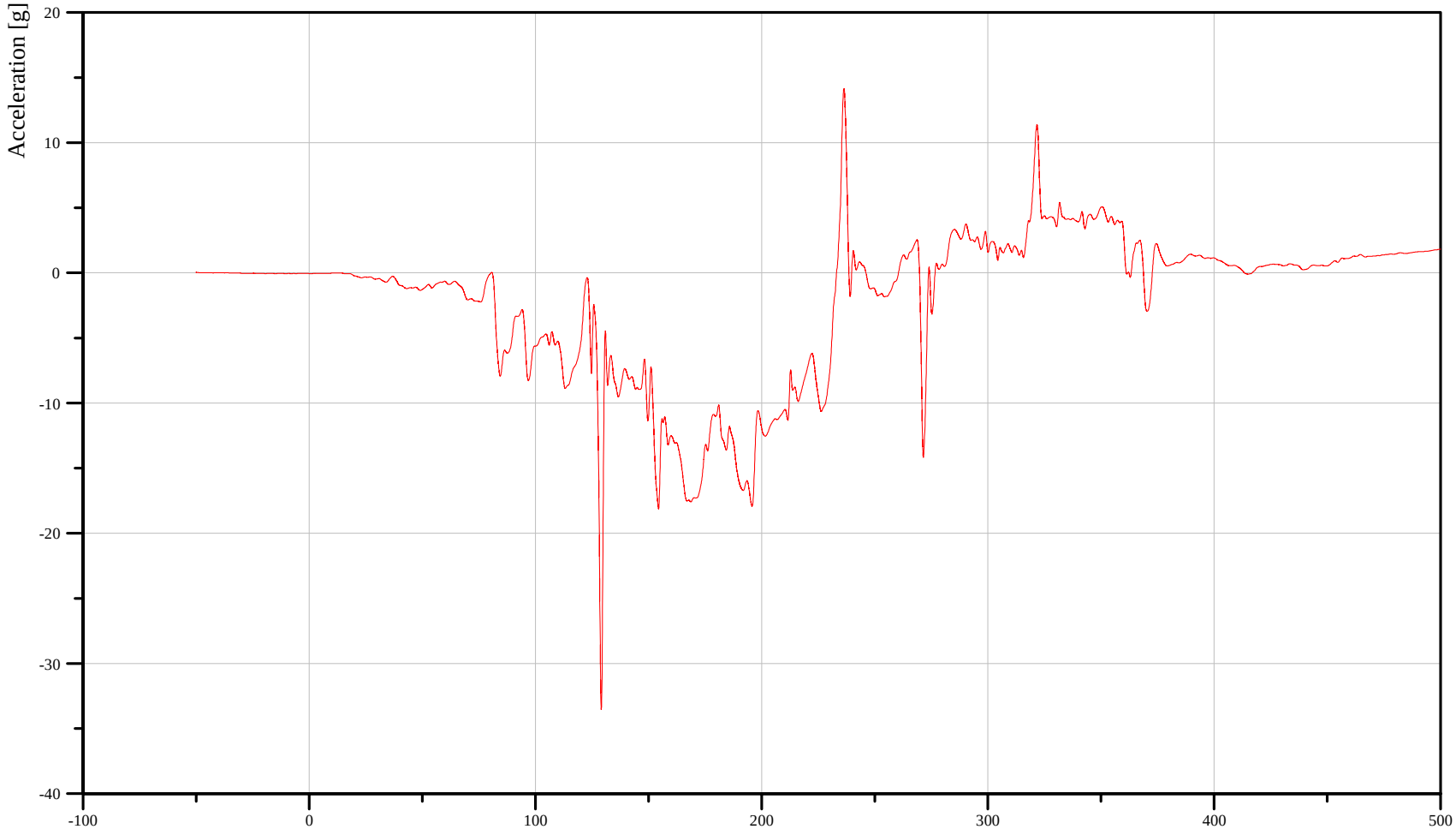
Date: 12/14/2007
Time: 9:12

5L-Right Chest Redundant X-Axis Acceleration

Customer: VRTC

16CHSTCGRDHFACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-33.52 g at 129.12 ms

Max. Value
14.14 g at 236.40 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

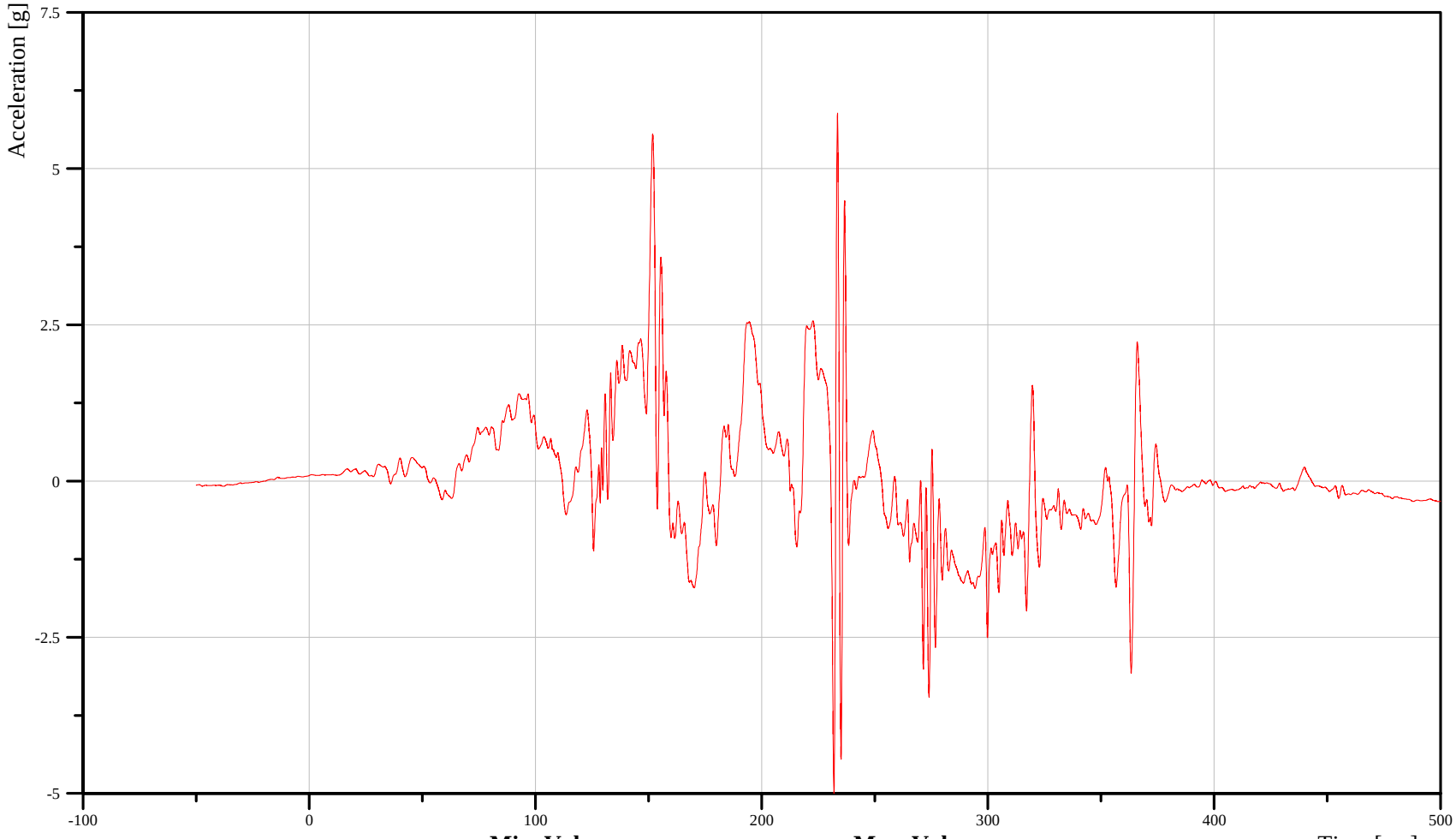
Date: 12/14/2007
Time: 9:12

5L-Right Chest Redundant Y-Axis Acceleration

Customer: VRTC

16CHSTCGRDHFACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-5.00 g at 232.00 ms

Max. Value
5.89 g at 233.52 ms

B-322

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

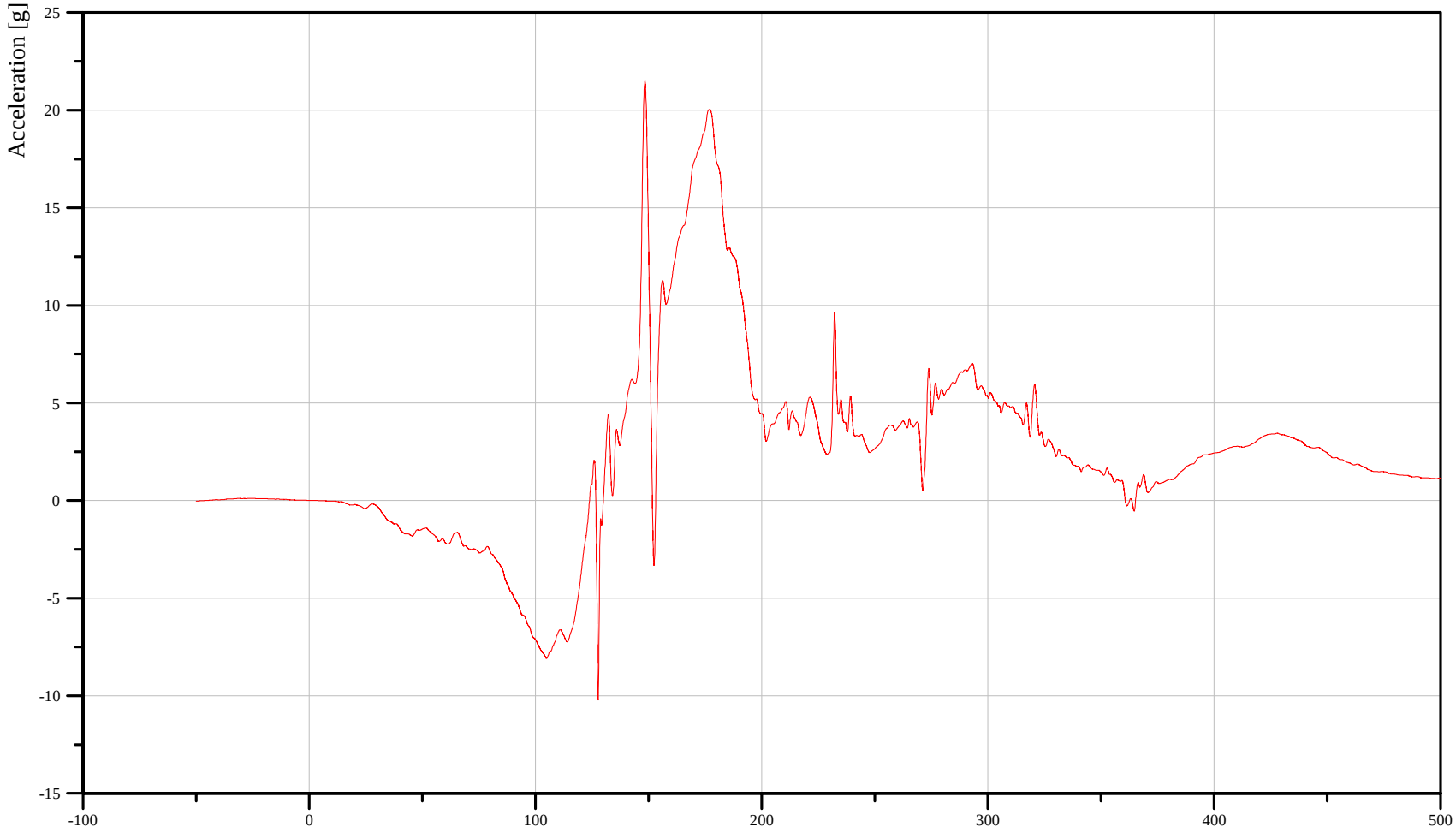
Date: 12/14/2007
Time: 9:12

5L-Right Chest Redundant Z-Axis Acceleration

Customer: VRTC

16CHSTCGRDHFACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-10.21 g at 127.76 ms

Max. Value
21.50 g at 148.40 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

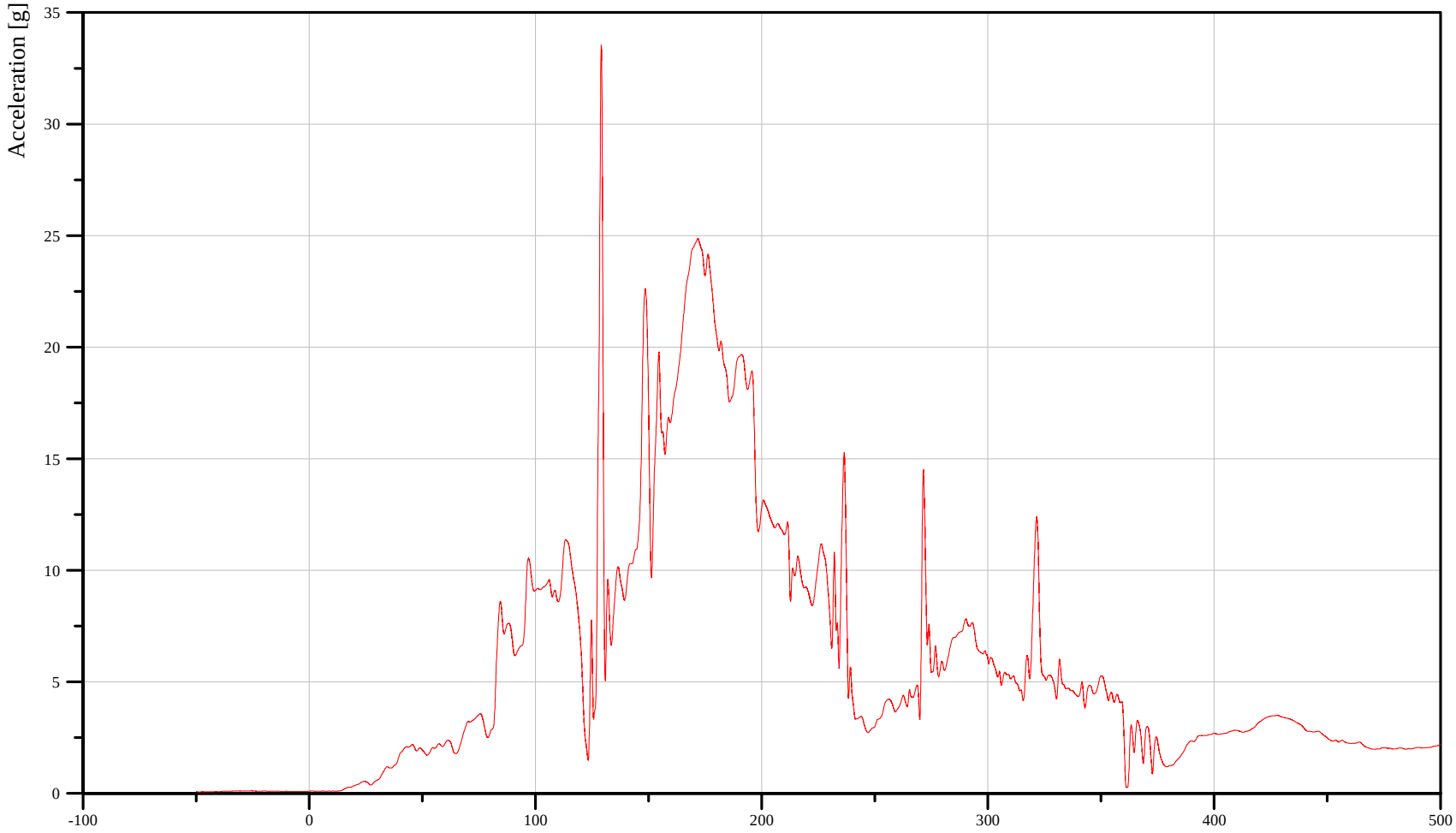
Date: 12/14/2007
Time: 9:12

5L-Right Chest Redundant Resultant Acceleration

Customer: VRTC

16CHSTCGRDHFACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.06 g at -48.56 ms

Max. Value
33.54 g at 129.12 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

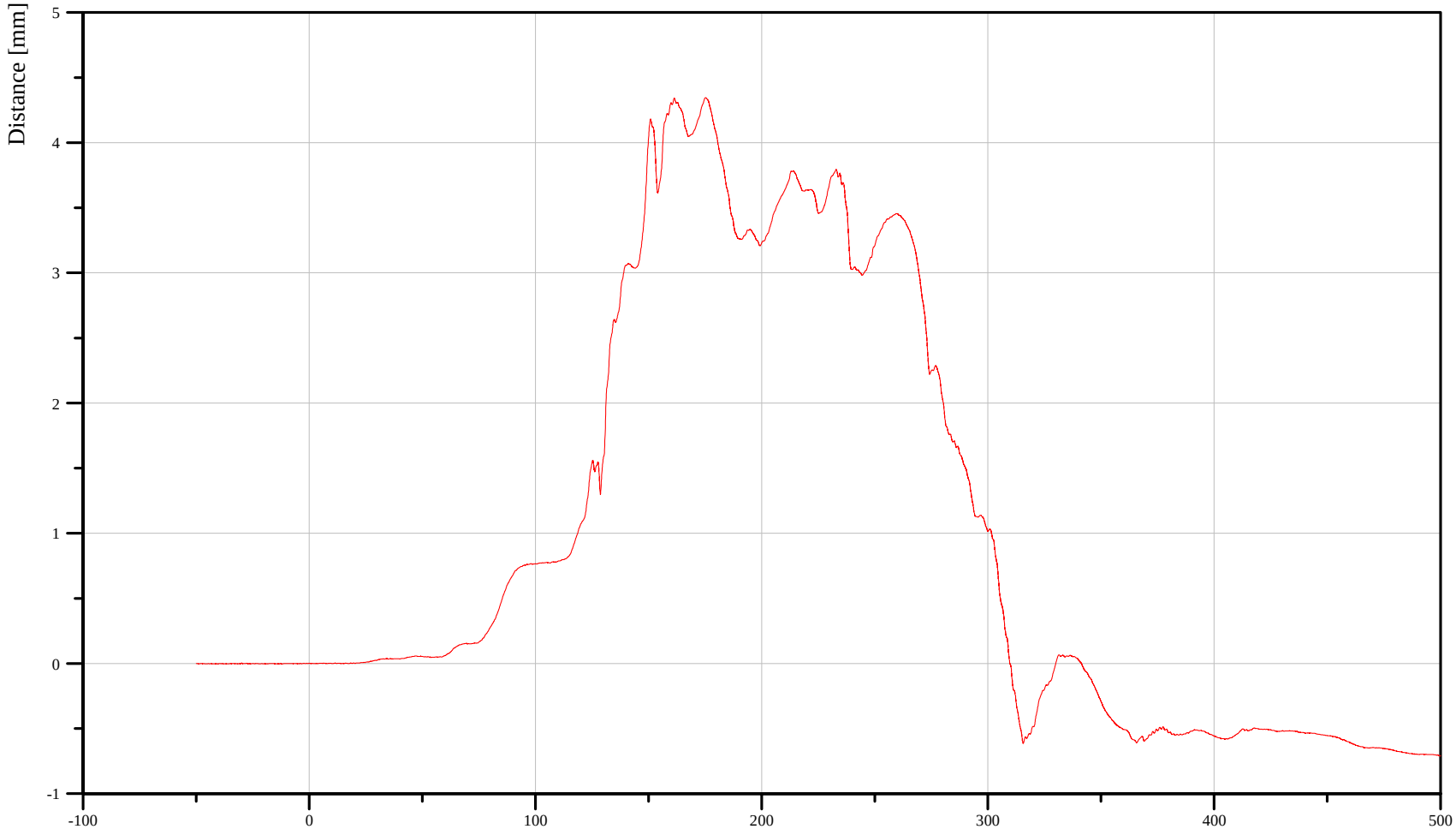
Date: 12/14/2007
Time: 9:12

5L-Right Chest X-Axis Deflection

Customer: VRTC

16CHST0000HFDSXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-0.71 mm at 499.84 ms

Max. Value
4.35 mm at 175.20 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

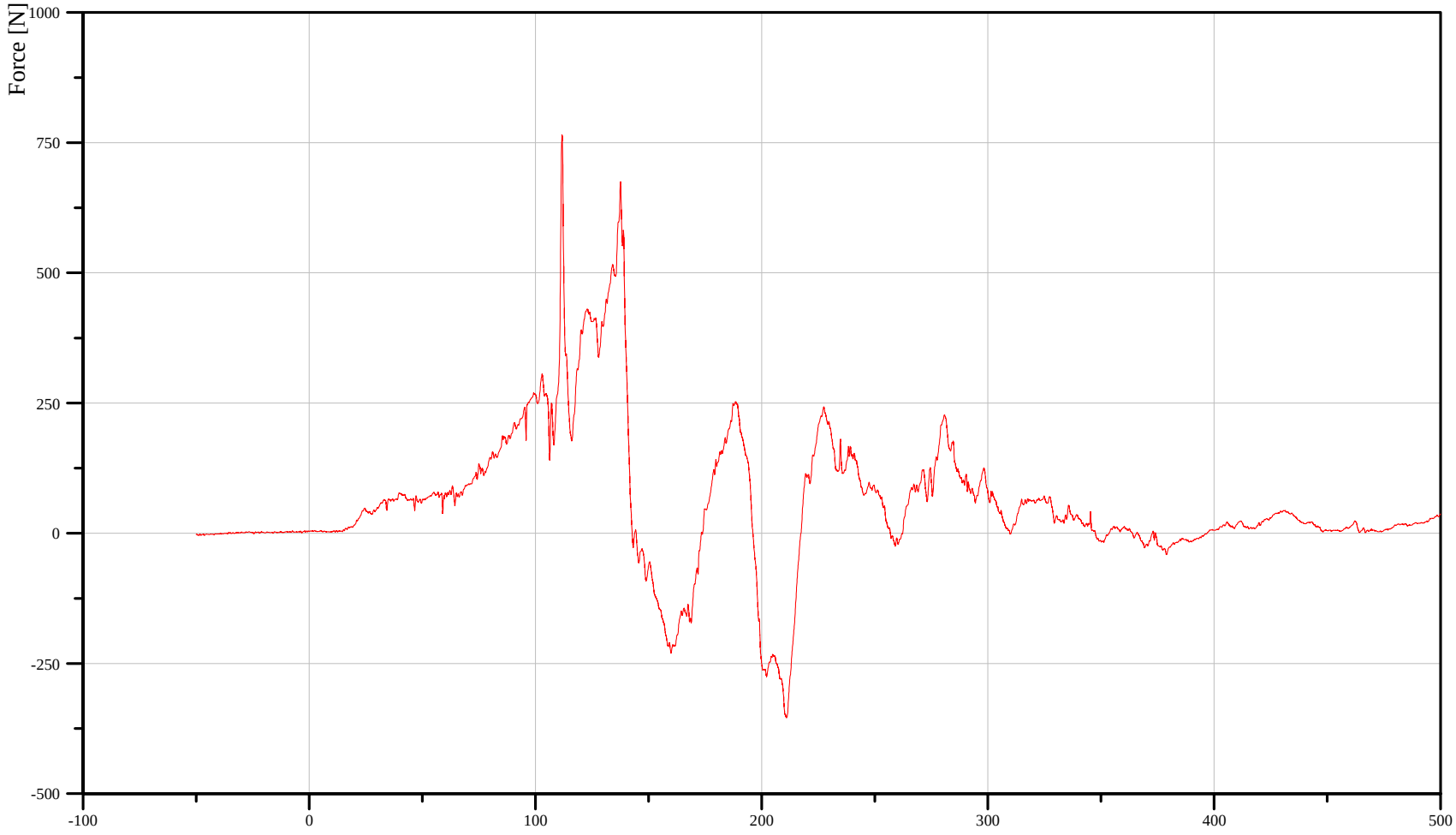
Date: 12/14/2007
Time: 9:12

5L-Right Left Femur Force Z

Customer: VRTC

16FEMRLL00HFFOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-354.31 N at 210.96 ms

Max. Value
765.28 N at 111.76 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

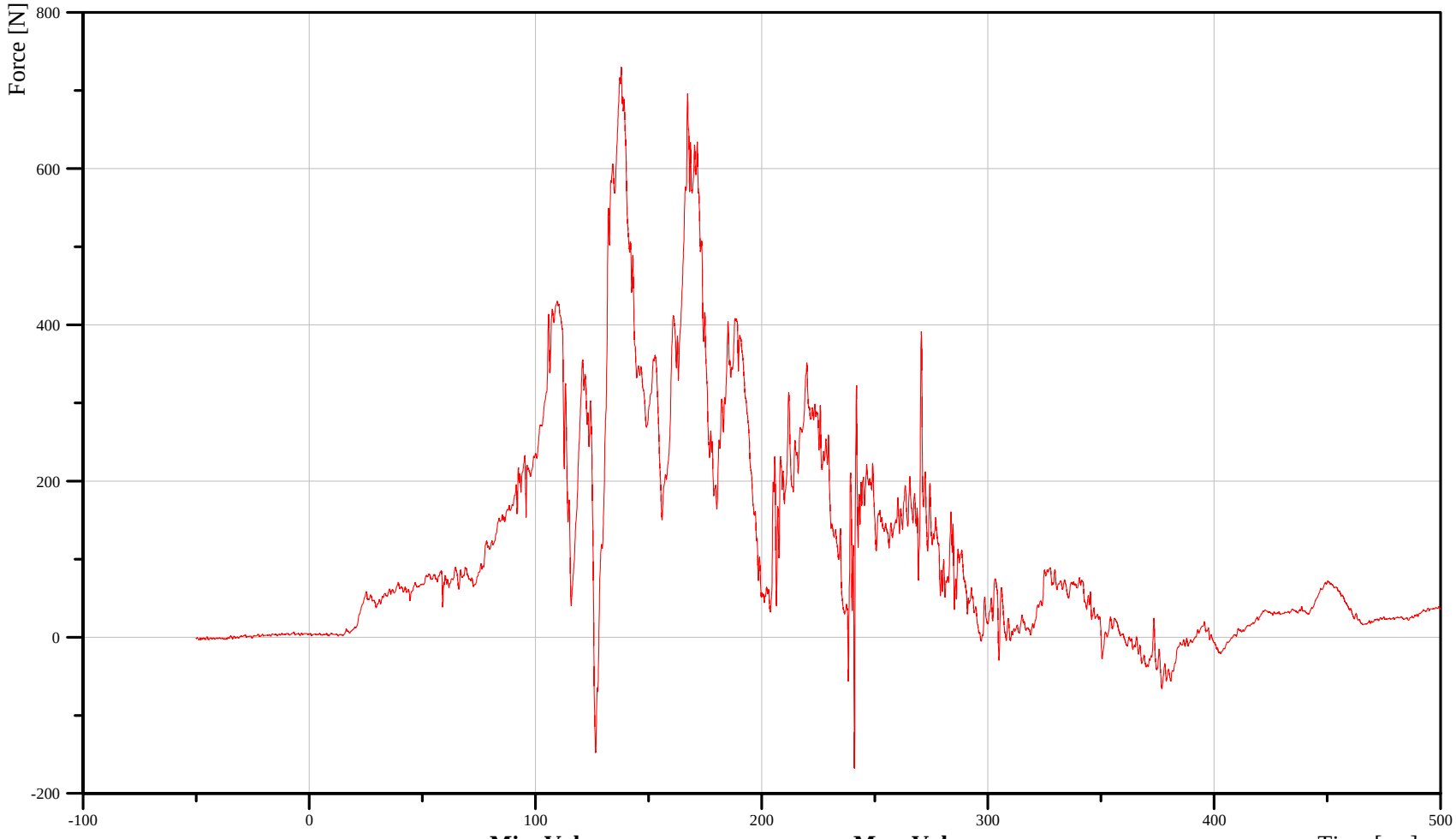
5L-Right Right Femur Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

16FEMRRL00HFFOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-168.13 N at 241.04 ms

Max. Value
730.14 N at 137.92 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

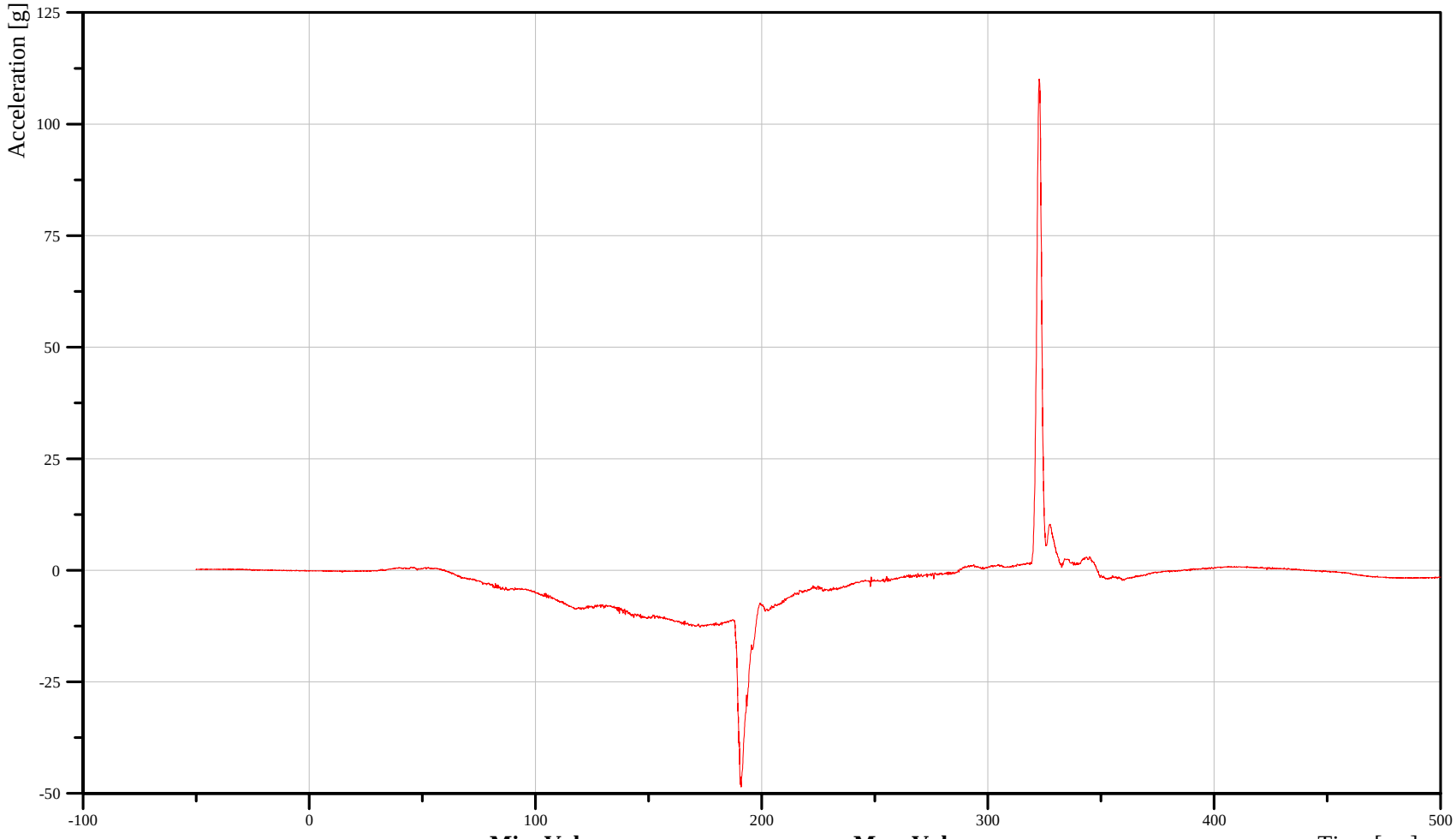
Date: 12/14/2007
Time: 9:12

6R-Left Head X-Axis Acceleration

Customer: VRTC

17HEADCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-48.52 g at 190.96 ms

Max. Value
110.05 g at 322.72 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

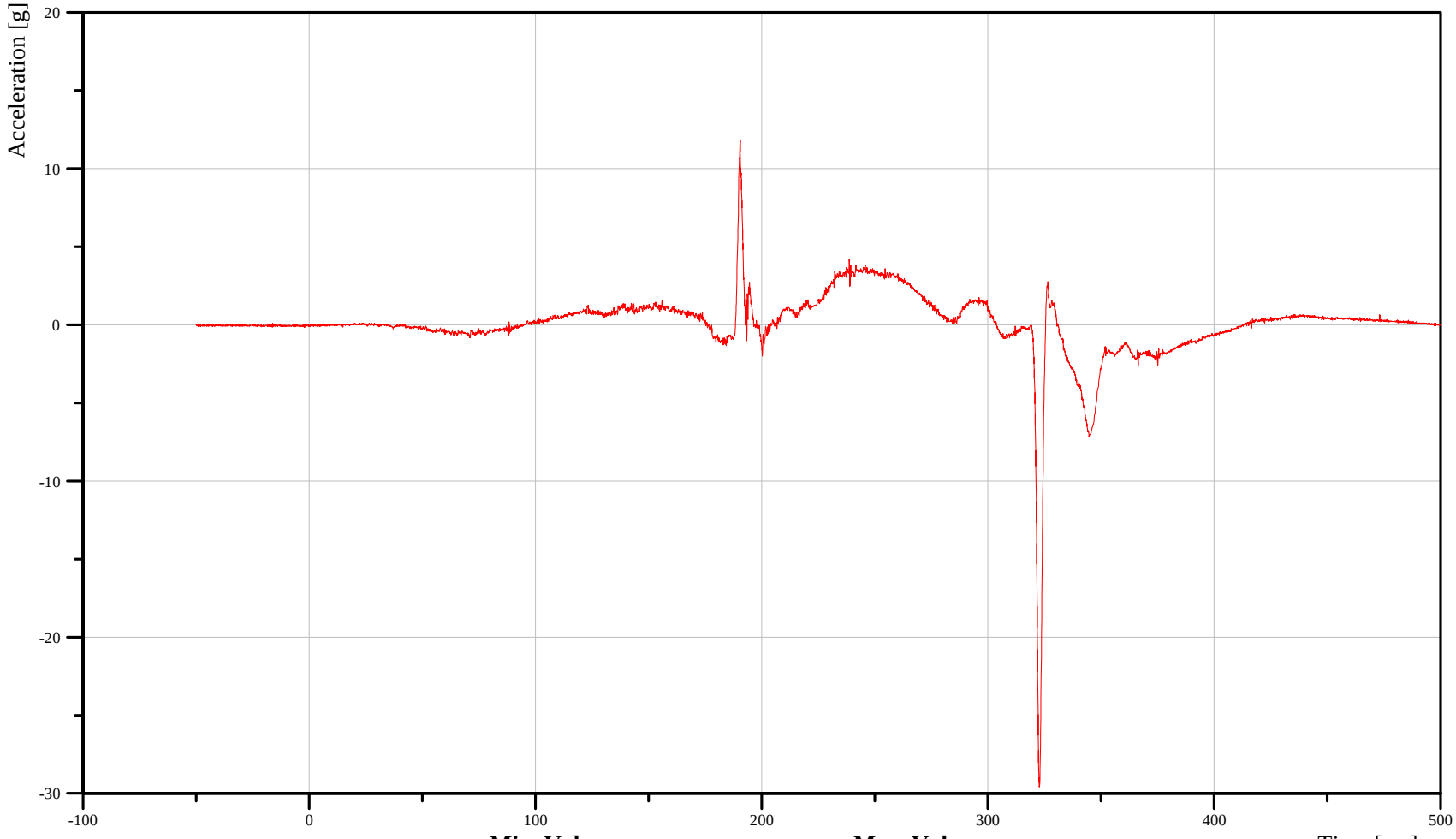
Date: 12/14/2007
Time: 9:12

6R-Left Head Y-Axis Acceleration

Customer: VRTC

17HEADCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-29.57 g at 322.80 ms

Max. Value
11.82 g at 190.48 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

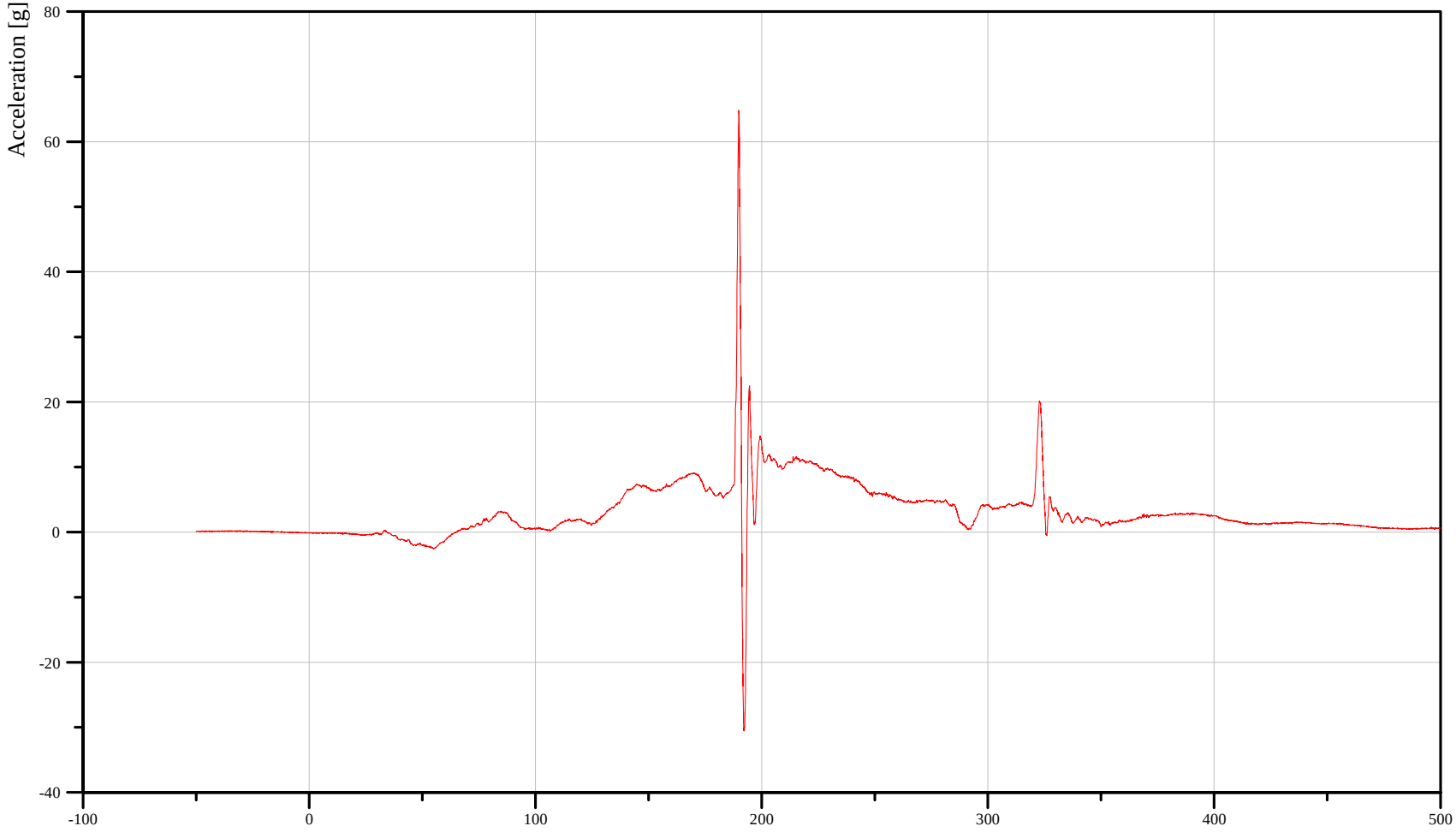
Date: 12/14/2007
Time: 9:12

6R-Left Head Z-Axis Acceleration

Customer: VRTC

17HEADCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-30.56 g at 192.24 ms

Max. Value
64.81 g at 189.92 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

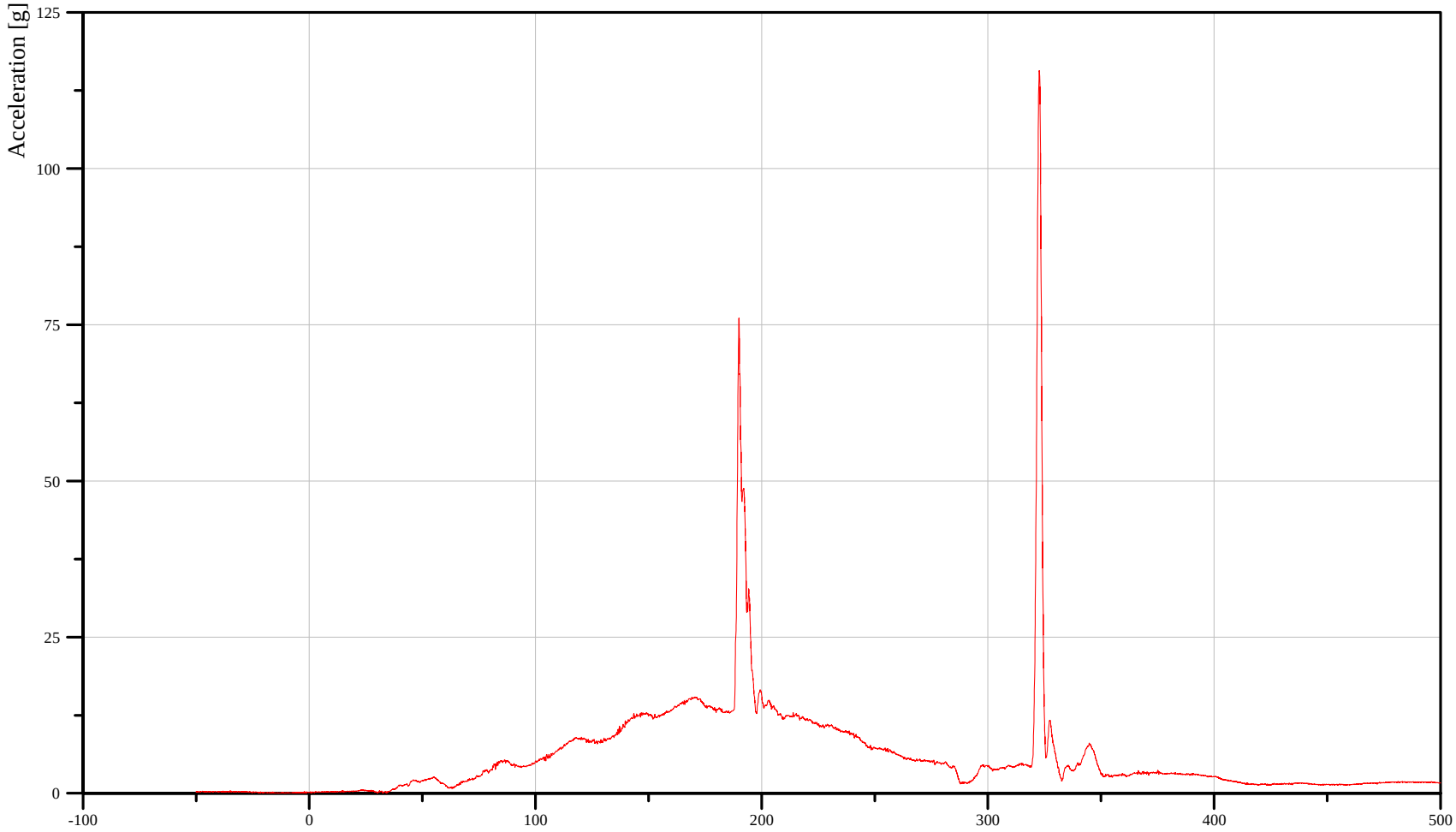
Date: 12/14/2007
Time: 9:12

6R-Left Head Resultant Acceleration

Customer: VRTC

17HEADCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.03 g at -1.84 ms

Max. Value
115.68 g at 322.72 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

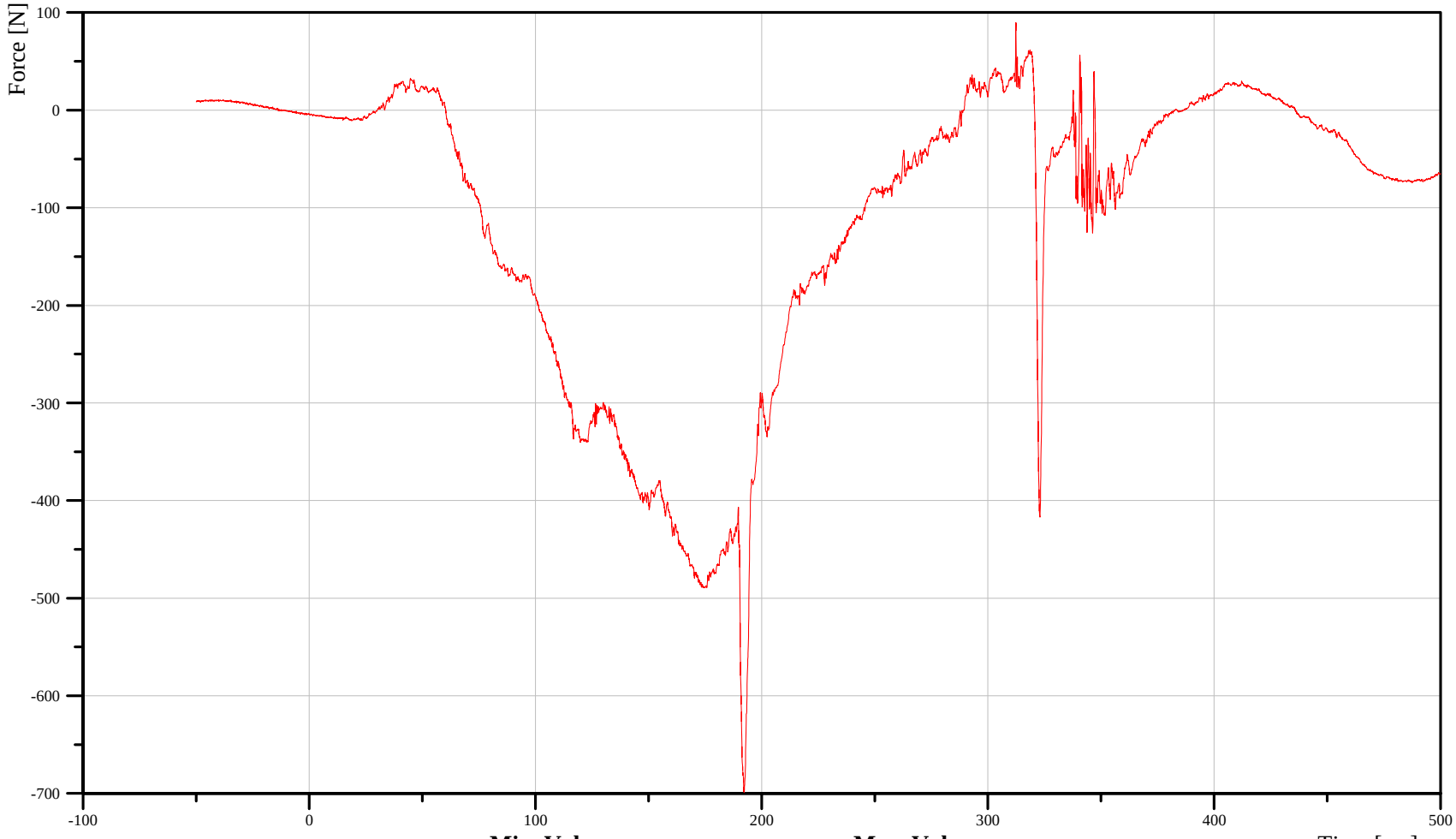
6R-Left Neck Force X

Date: 12/14/2007
Time: 9:12

Customer: VRTC

17NECKUP00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-698.98 N at 192.24 ms

Max. Value
89.57 N at 312.32 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

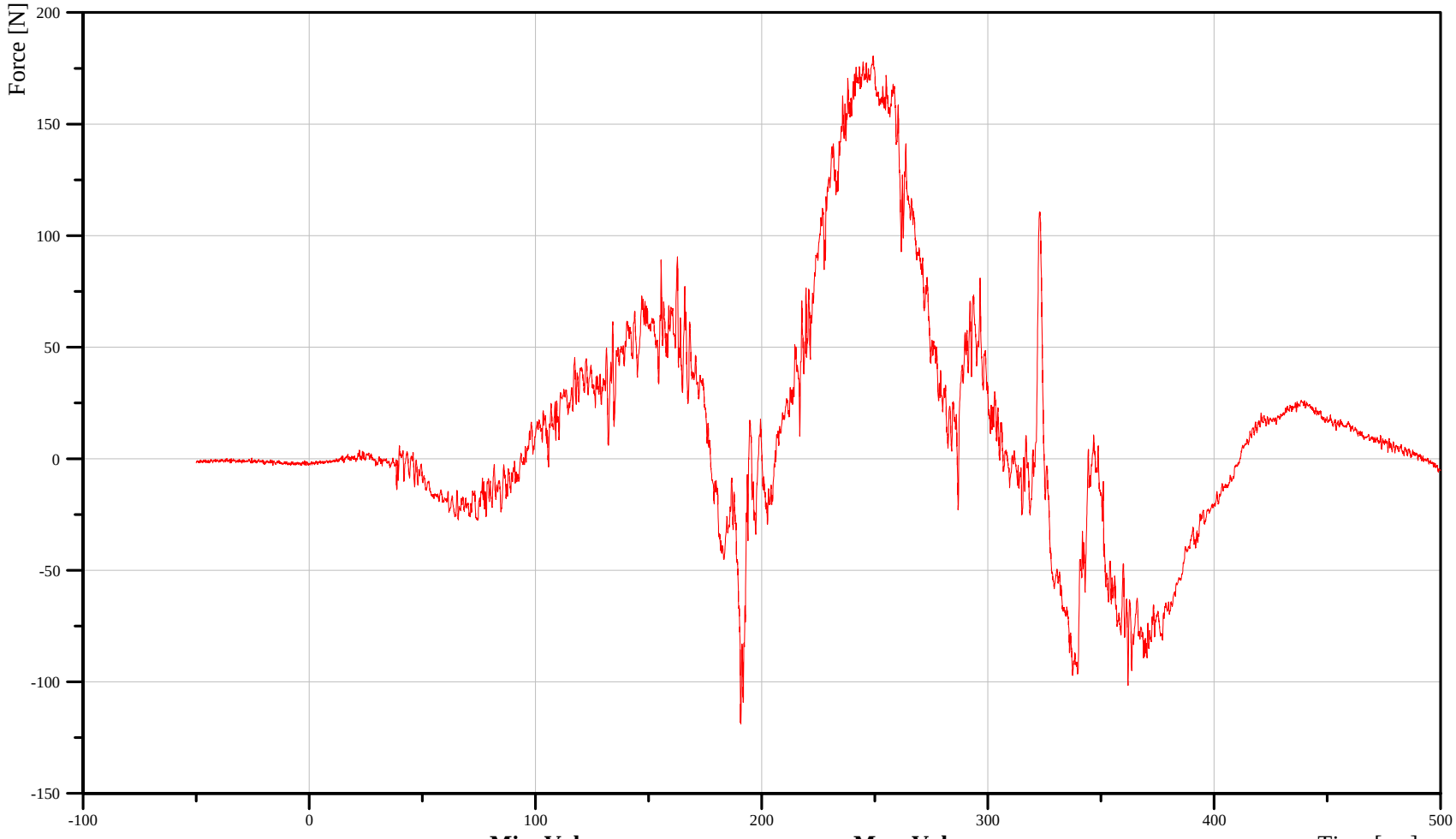
6R-Left Neck Force Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

17NECKUP00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-118.94 N at 190.80 ms

Max. Value
180.60 N at 249.28 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

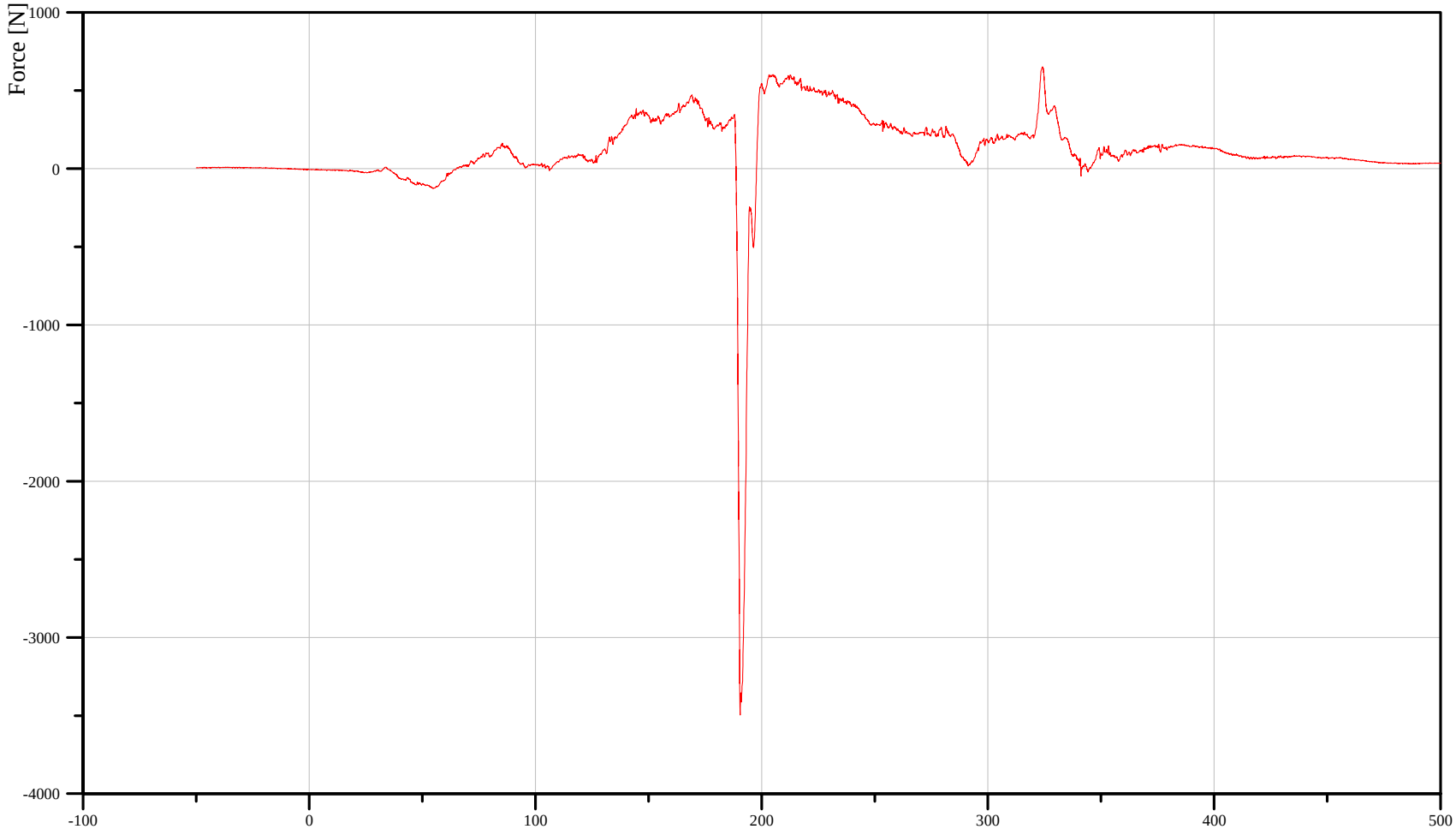
6R-Left Neck Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

17NECKUP00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-3,496.58 N at 190.48 ms

Max. Value
651.36 N at 324.16 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

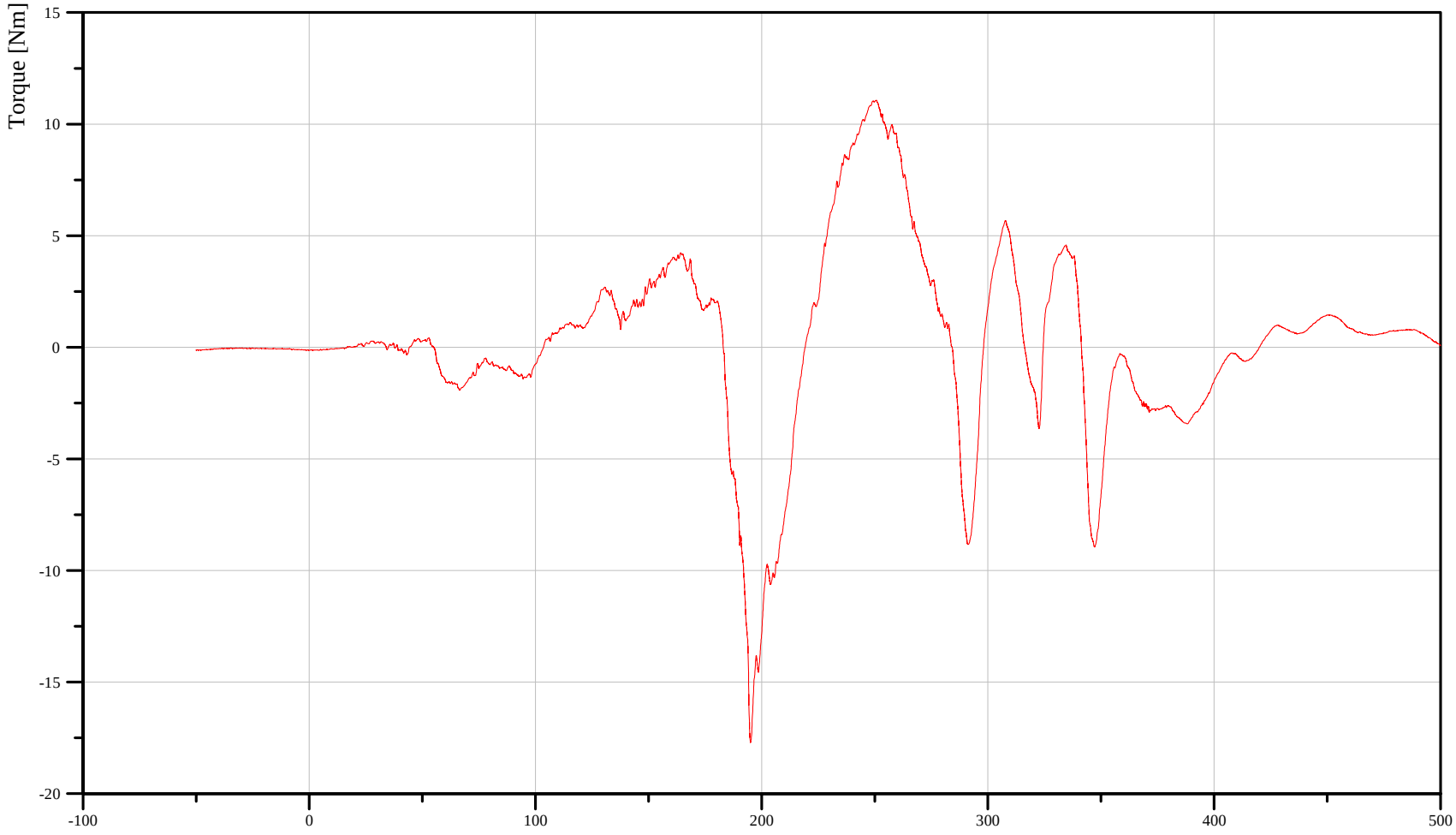
6R-Left Neck Moment X

Date: 12/14/2007
Time: 9:12

Customer: VRTC

17NECKUP00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-17.70 Nm at 195.12 ms

Max. Value
11.06 Nm at 250.64 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

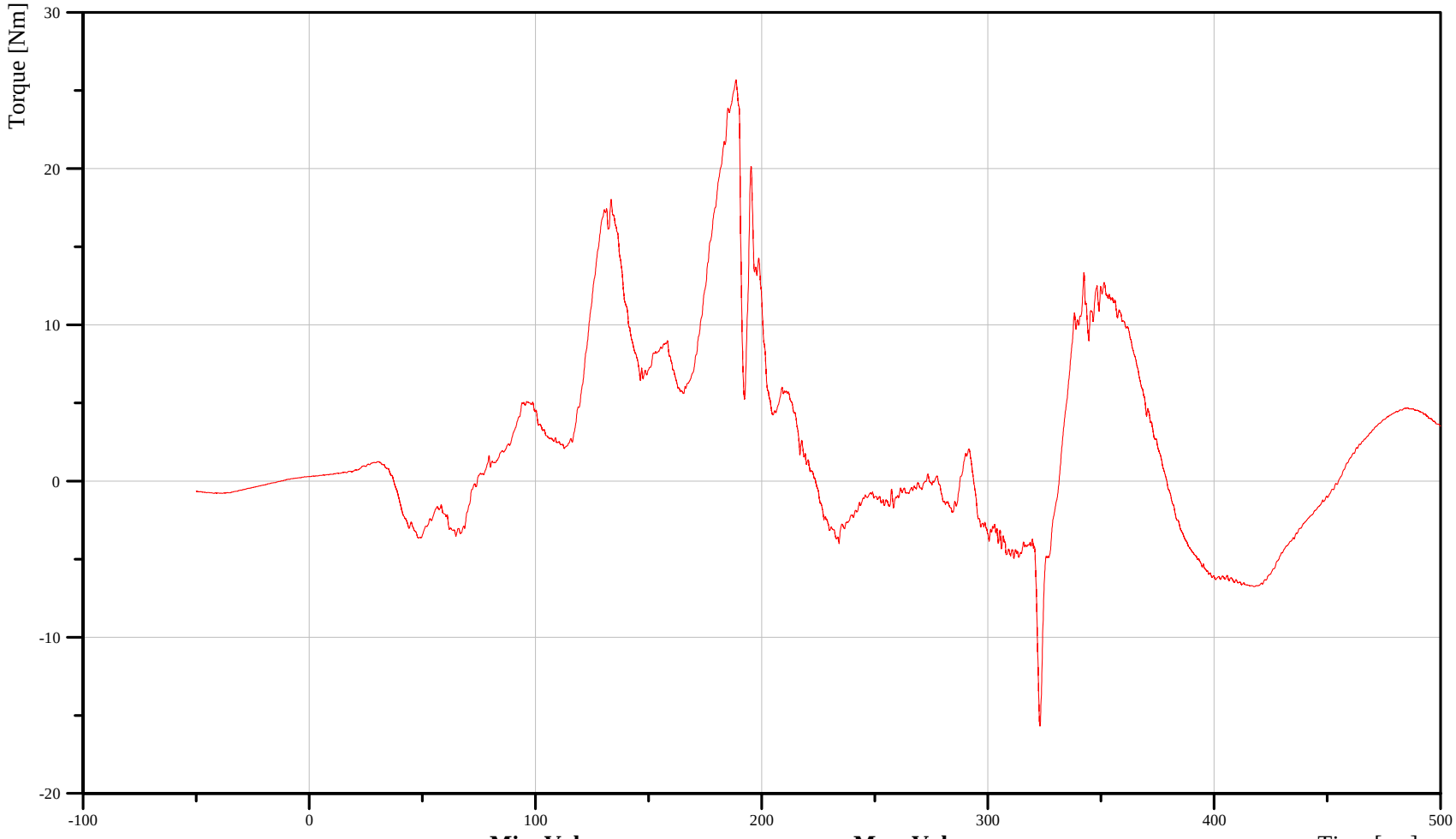
6R-Left Neck Moment Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

17NECKUP00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-15.70 Nm at 323.04 ms

Max. Value
25.69 Nm at 188.64 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

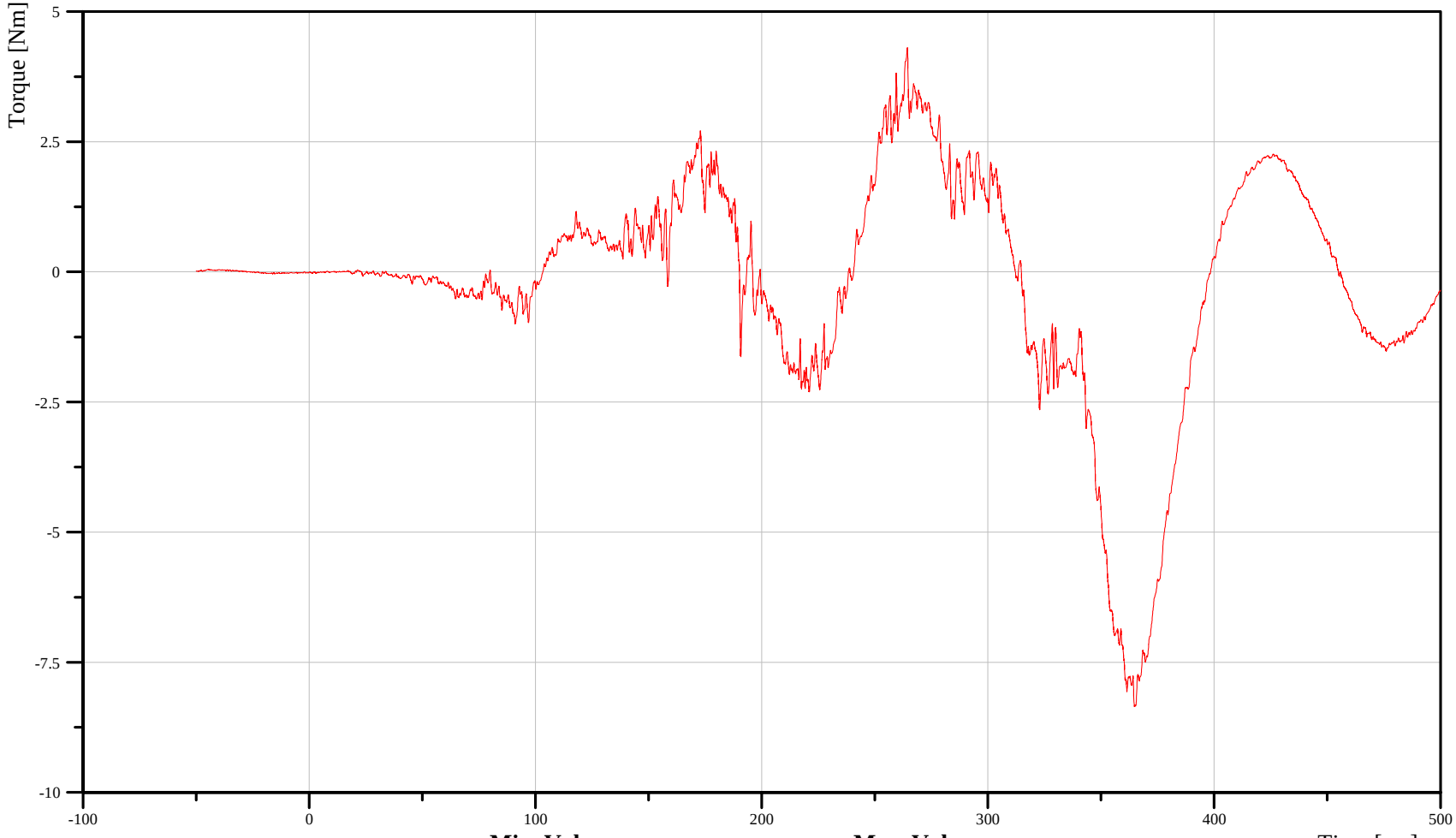
Date: 12/14/2007
Time: 9:12

6R-Left Neck Moment Z

Customer: VRTC

17NECKUP00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-8.35 Nm at 364.72 ms

Max. Value
4.31 Nm at 264.40 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

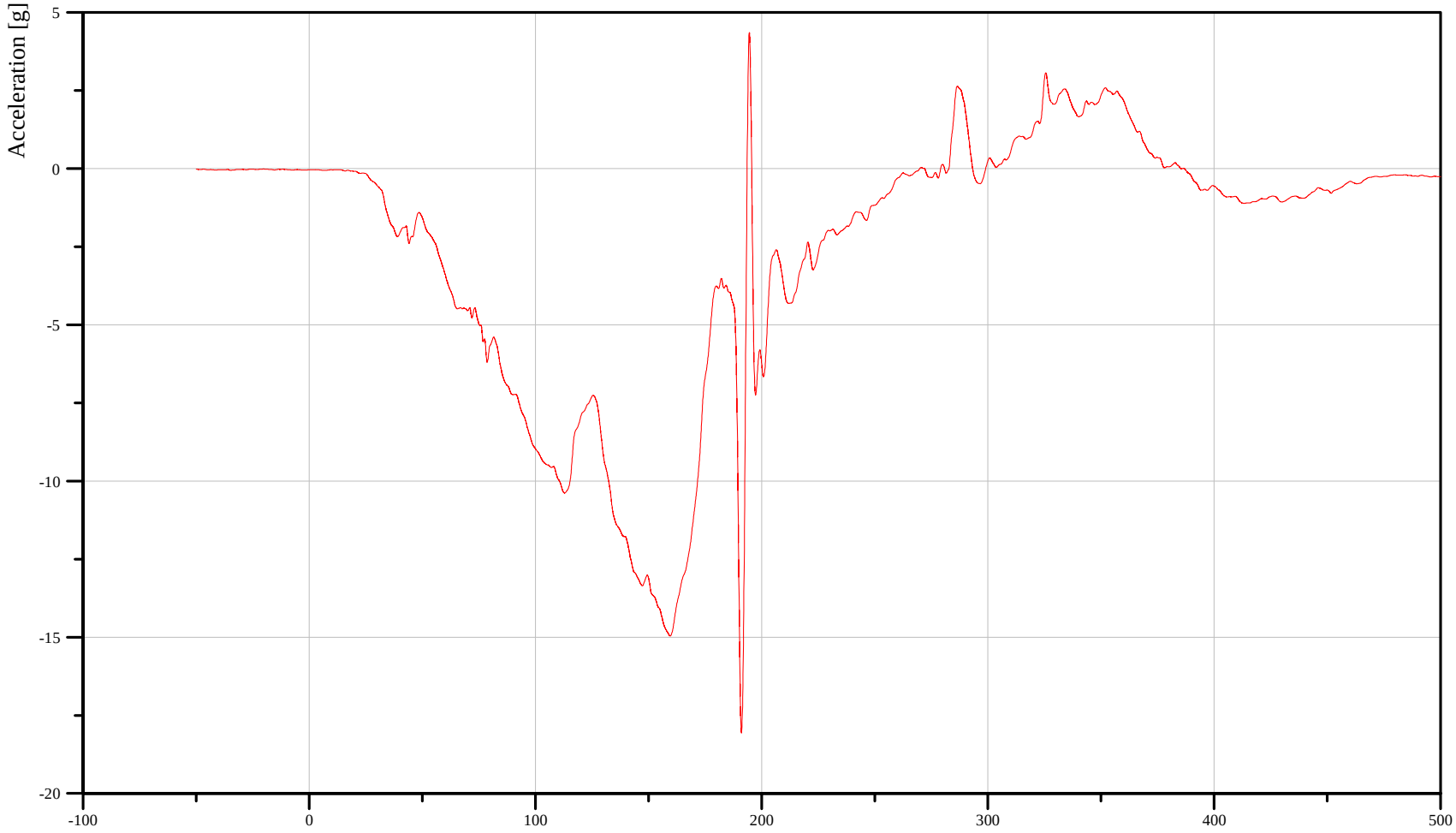
6R-Left Chest X-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

17CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-18.06 g at 191.04 ms

Max. Value
4.36 g at 194.56 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

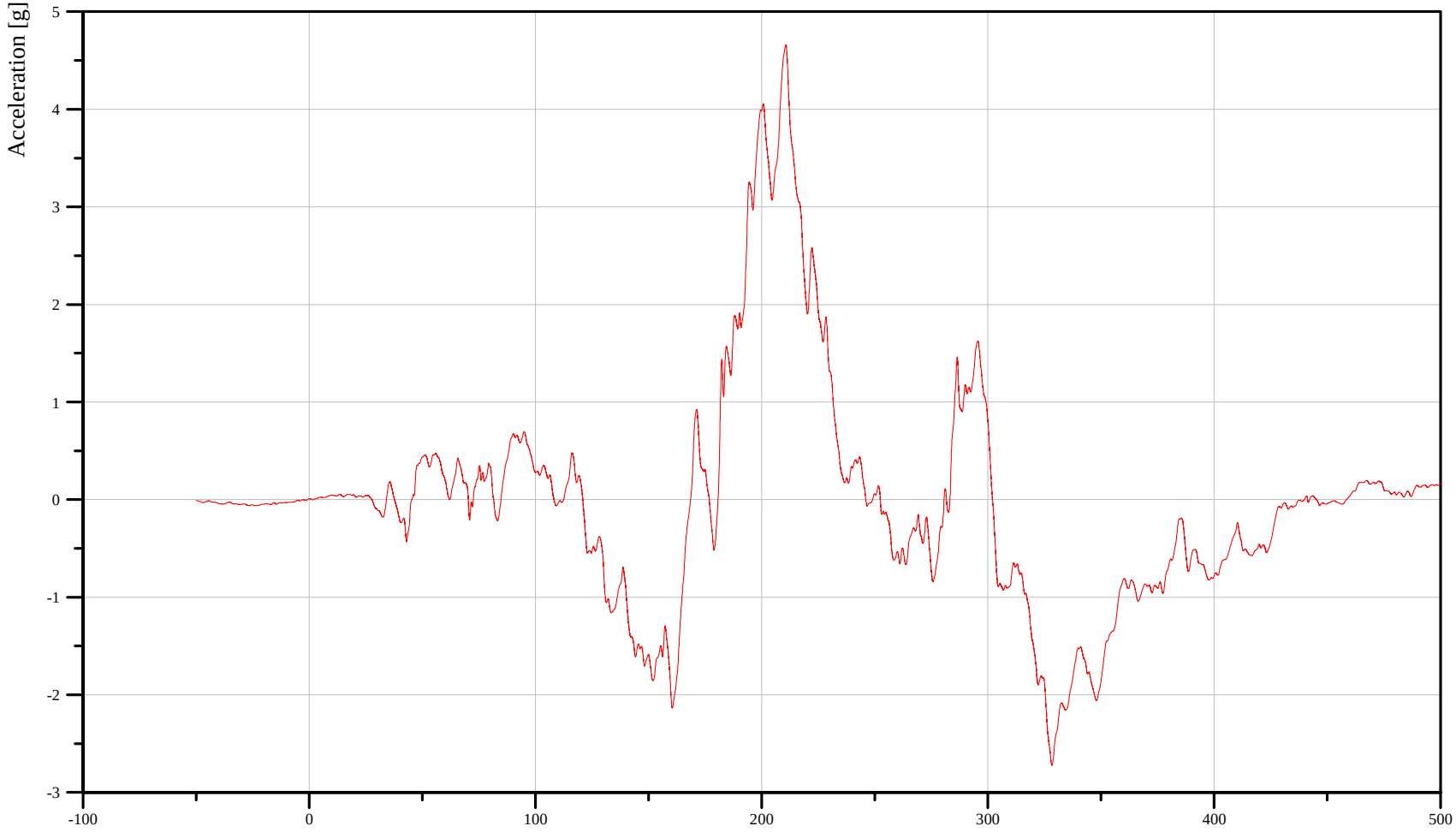
Date: 12/14/2007
Time: 9:12

6R-Left Chest Y-Axis Acceleration

Customer: VRTC

17CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-2.72 g at 328.32 ms

Max. Value
4.66 g at 210.72 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

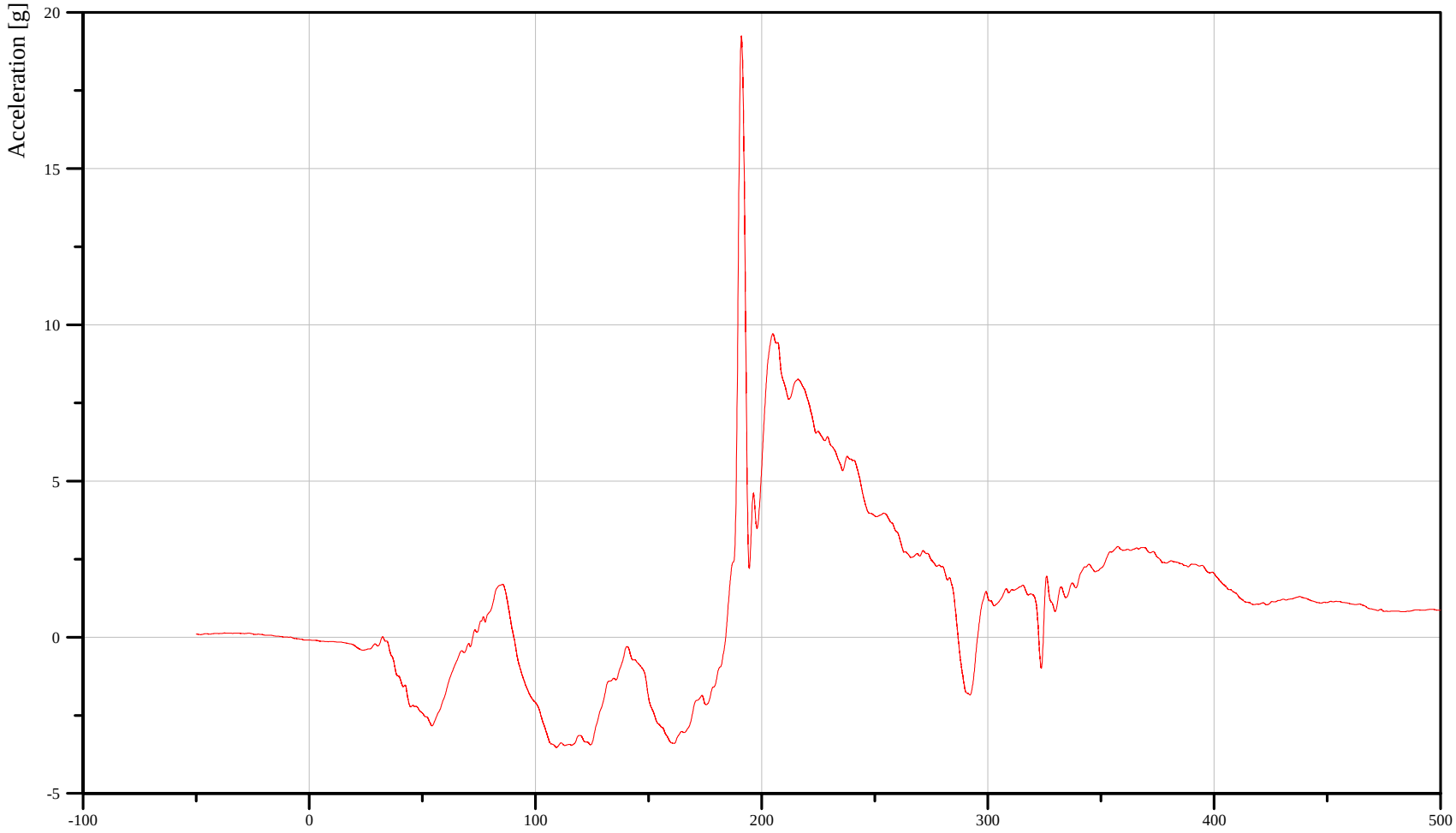
Date: 12/14/2007
Time: 9:12

6R-Left Chest Z-Axis Acceleration

Customer: VRTC

17CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-3.52 g at 109.36 ms

Max. Value
19.25 g at 191.04 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

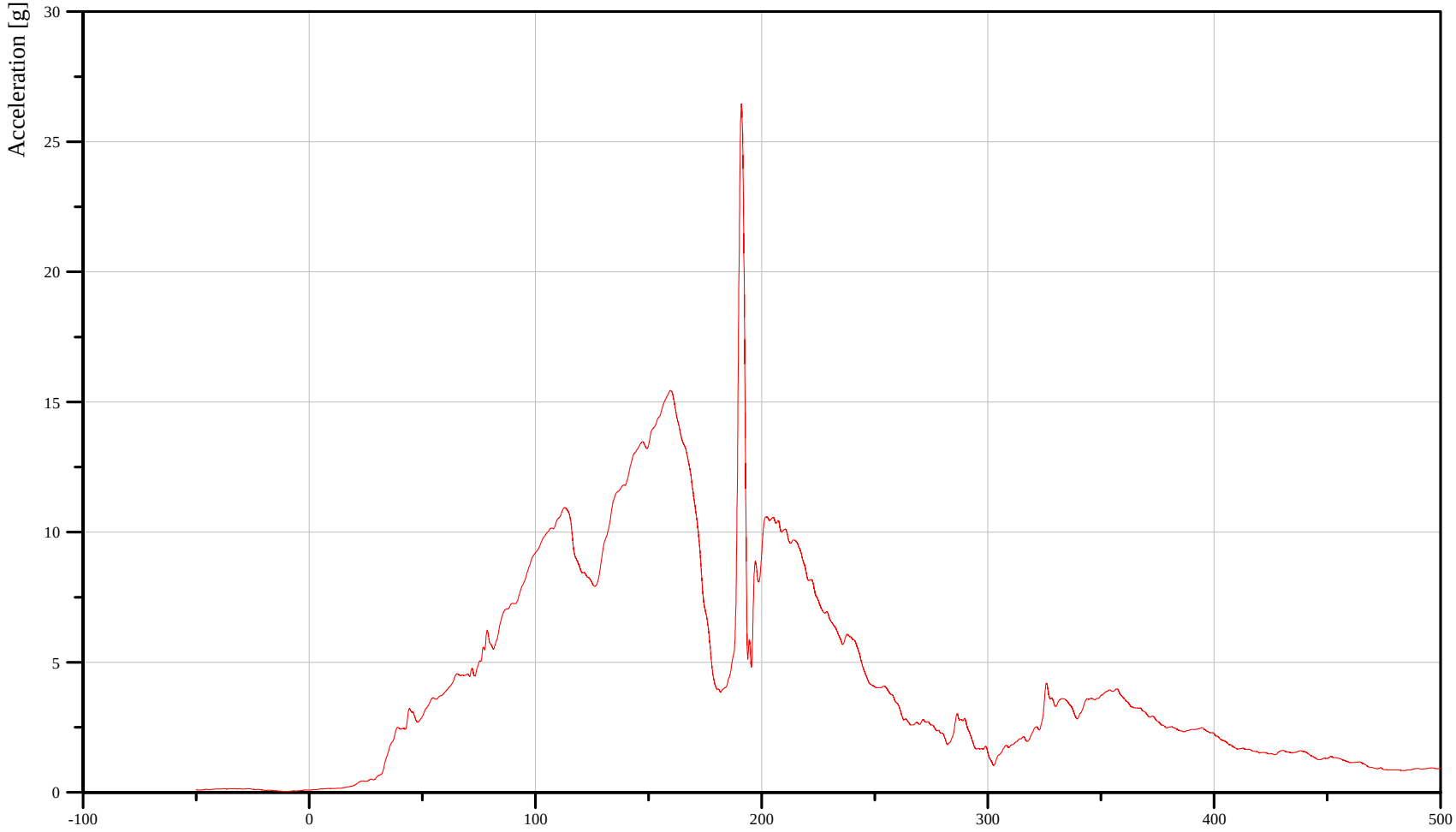
Date: 12/14/2007
Time: 9:12

6R-Left Chest Resultant Acceleration

Customer: VRTC

17CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.04 g at -11.20 ms

Max. Value
26.46 g at 191.04 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

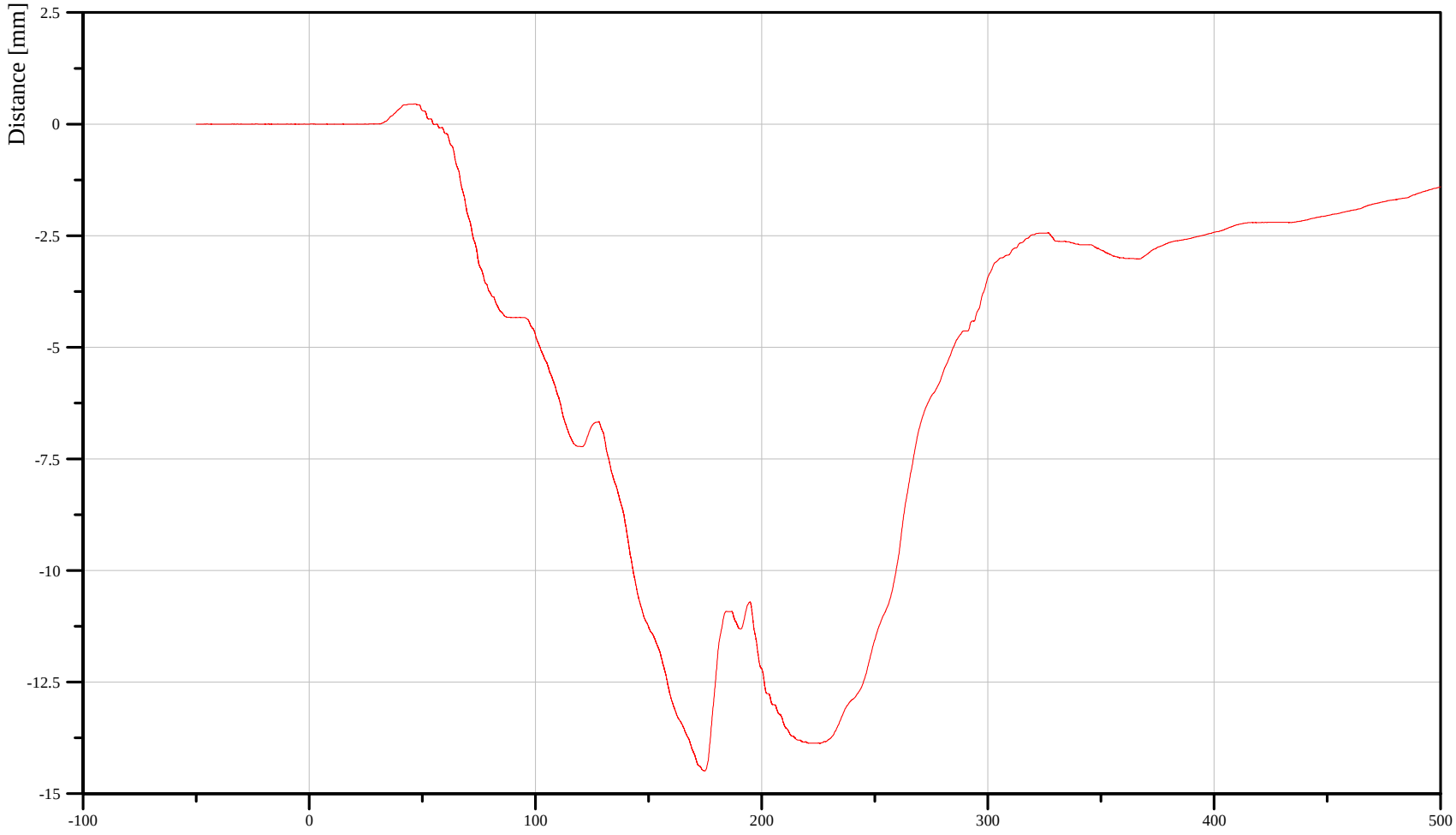
6R-Left Chest X-Axis Deflection

Date: 12/14/2007
Time: 9:12

Customer: VRTC

17CHST0000H3DSXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-14.49 mm at 174.88 ms

Max. Value
0.45 mm at 47.04 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

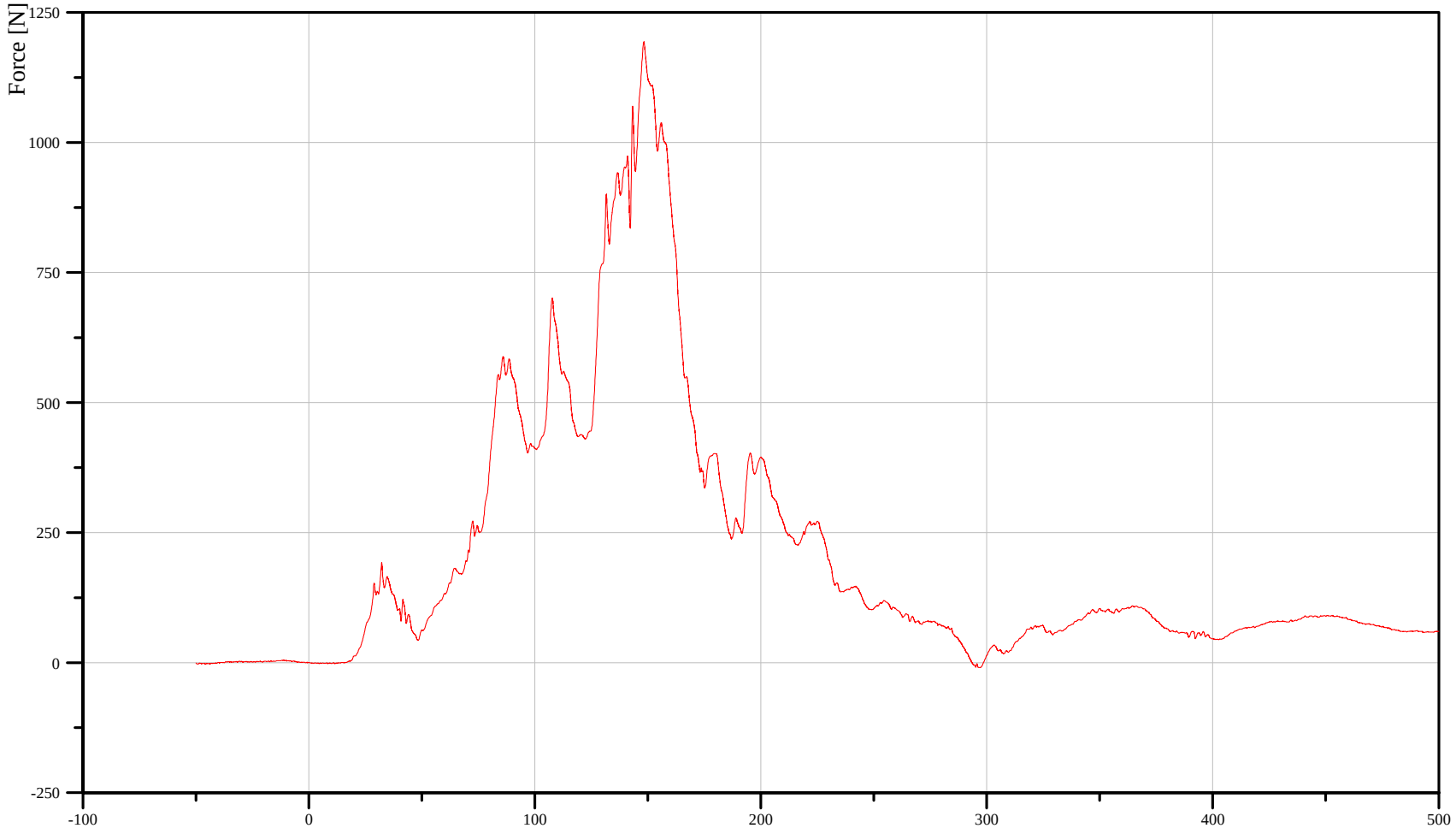
Date: 12/14/2007
Time: 9:12

6R-Left Left Femur Force Z

Customer: VRTC

17FEMRLL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-9.30 N at 296.88 ms

Max. Value
1,193.33 N at 148.24 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

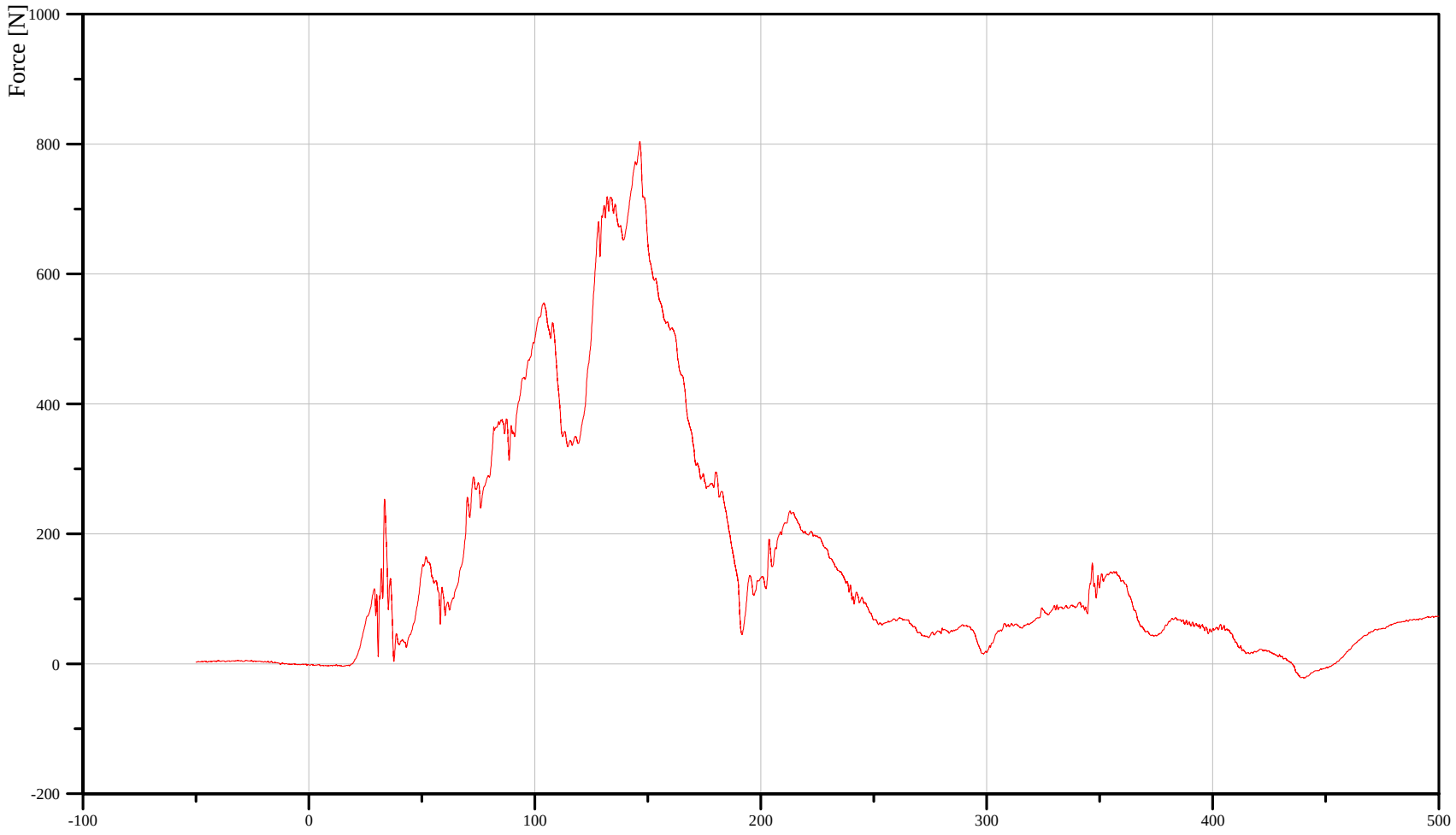
Date: 12/14/2007
Time: 9:12

6R-Left Right Femur Force Z

Customer: VRTC

17FEMRRL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-21.70 N at 440.72 ms

Max. Value
804.14 N at 146.48 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

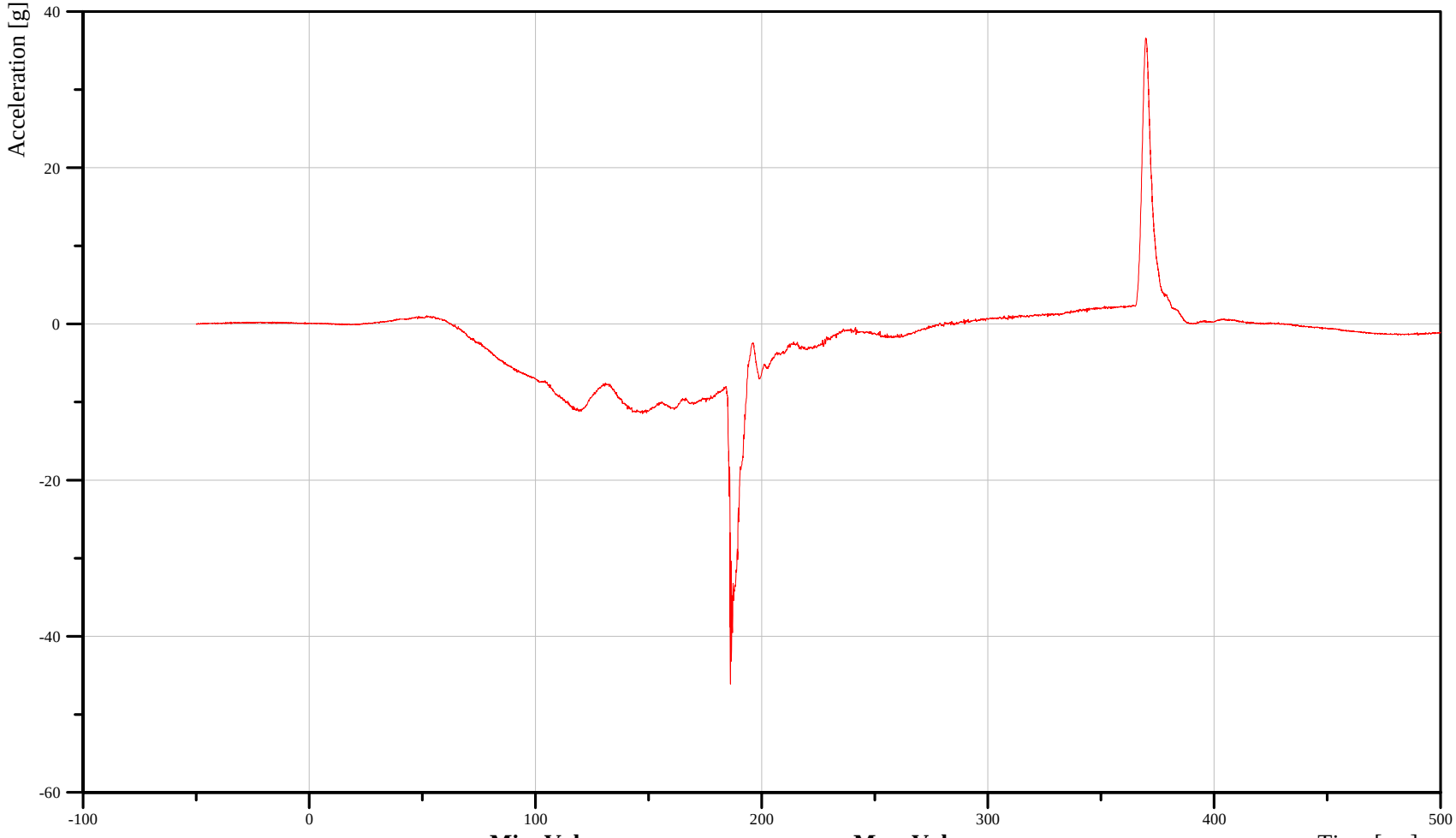
Date: 12/14/2007
Time: 9:12

6R-Right Head X-Axis Acceleration

Customer: VRTC

18HEADCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-46.11 g at 186.16 ms

Max. Value
36.62 g at 369.76 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

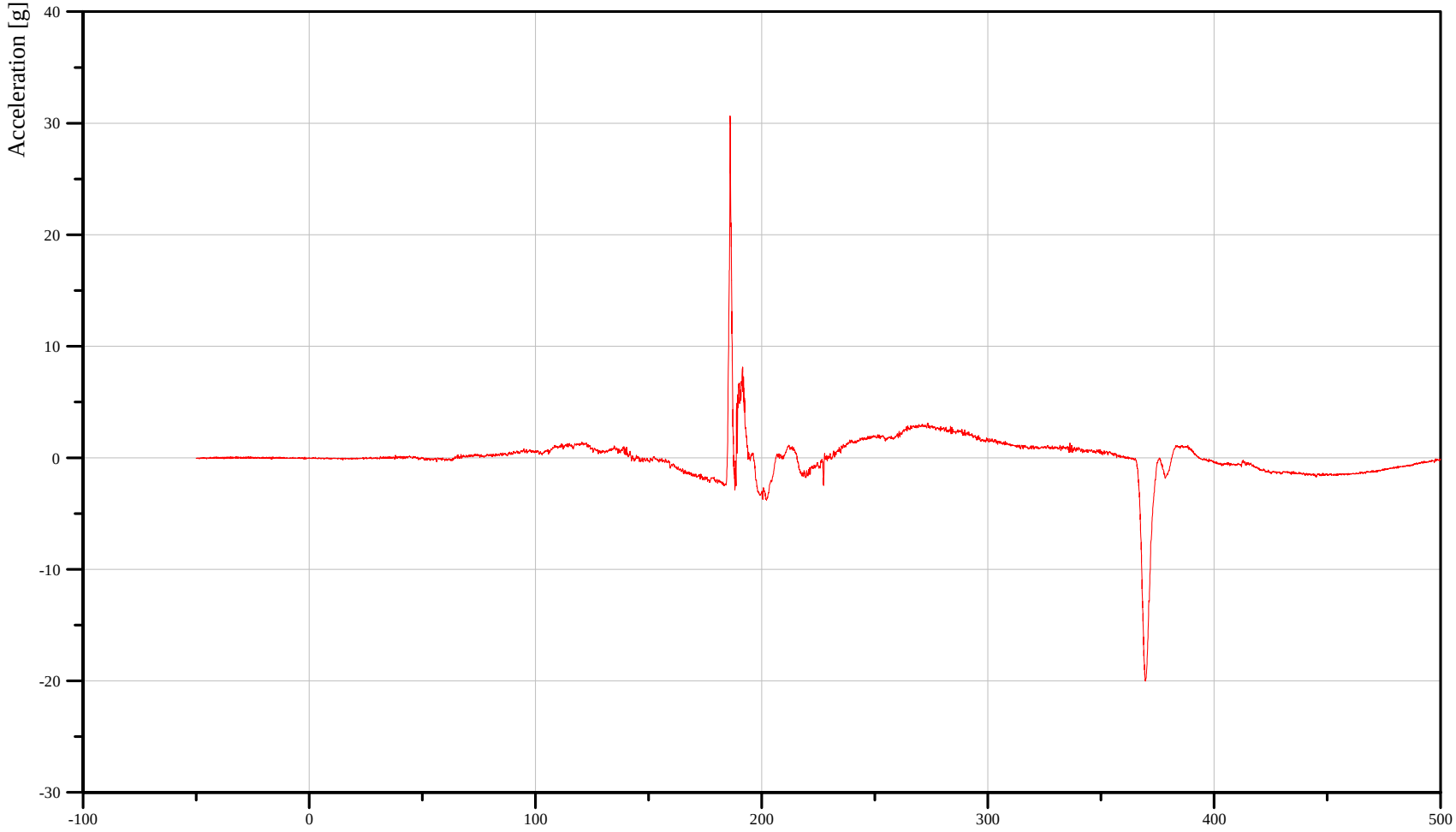
Date: 12/14/2007
Time: 9:12

6R-Right Head Y-Axis Acceleration

Customer: VRTC

18HEADCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-20.02 g at 369.68 ms

Max. Value
30.65 g at 186.08 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

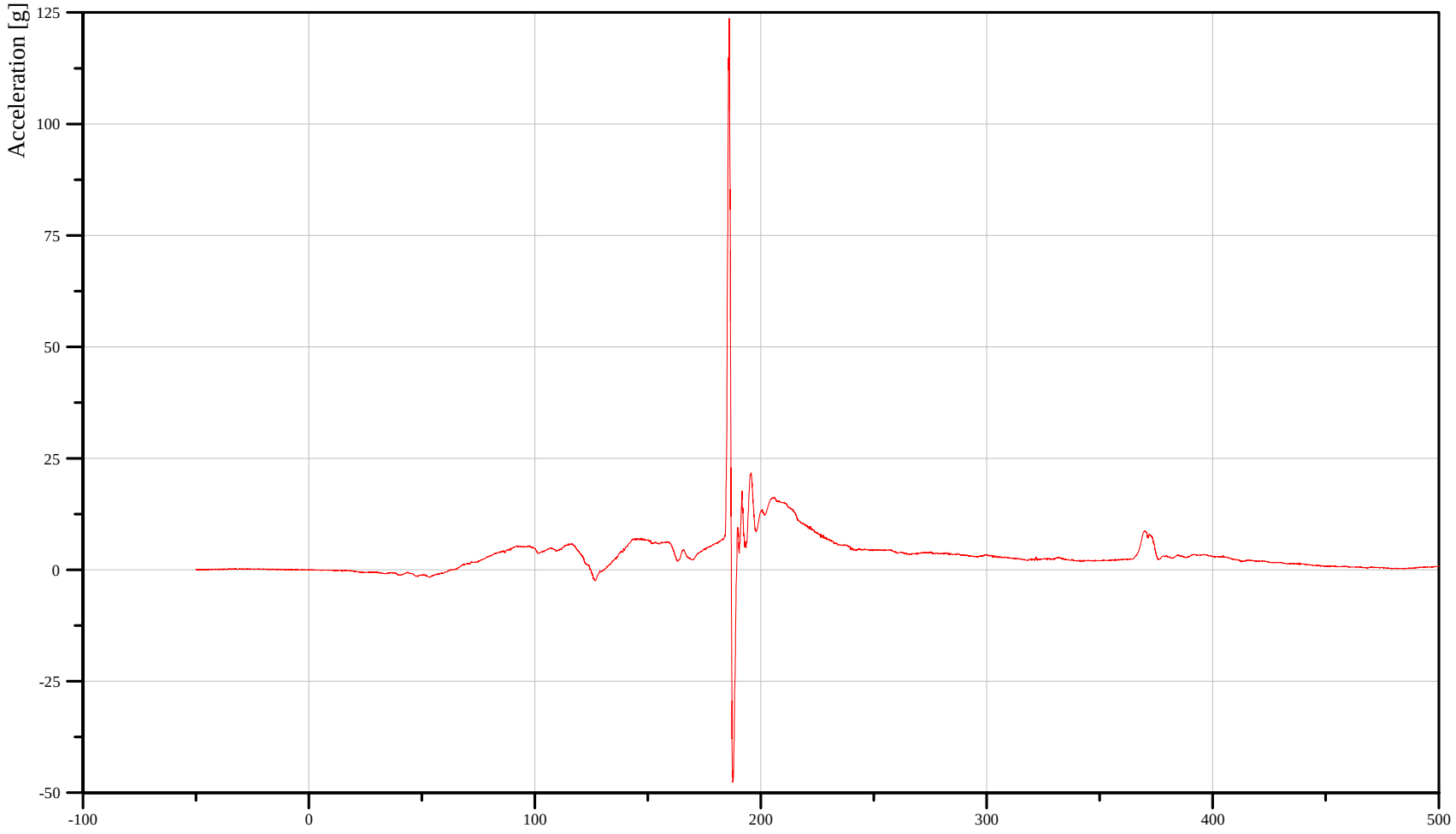
6R-Right Head Z-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

18HEADCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-47.54 g at 187.68 ms

Max. Value
123.67 g at 186.08 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

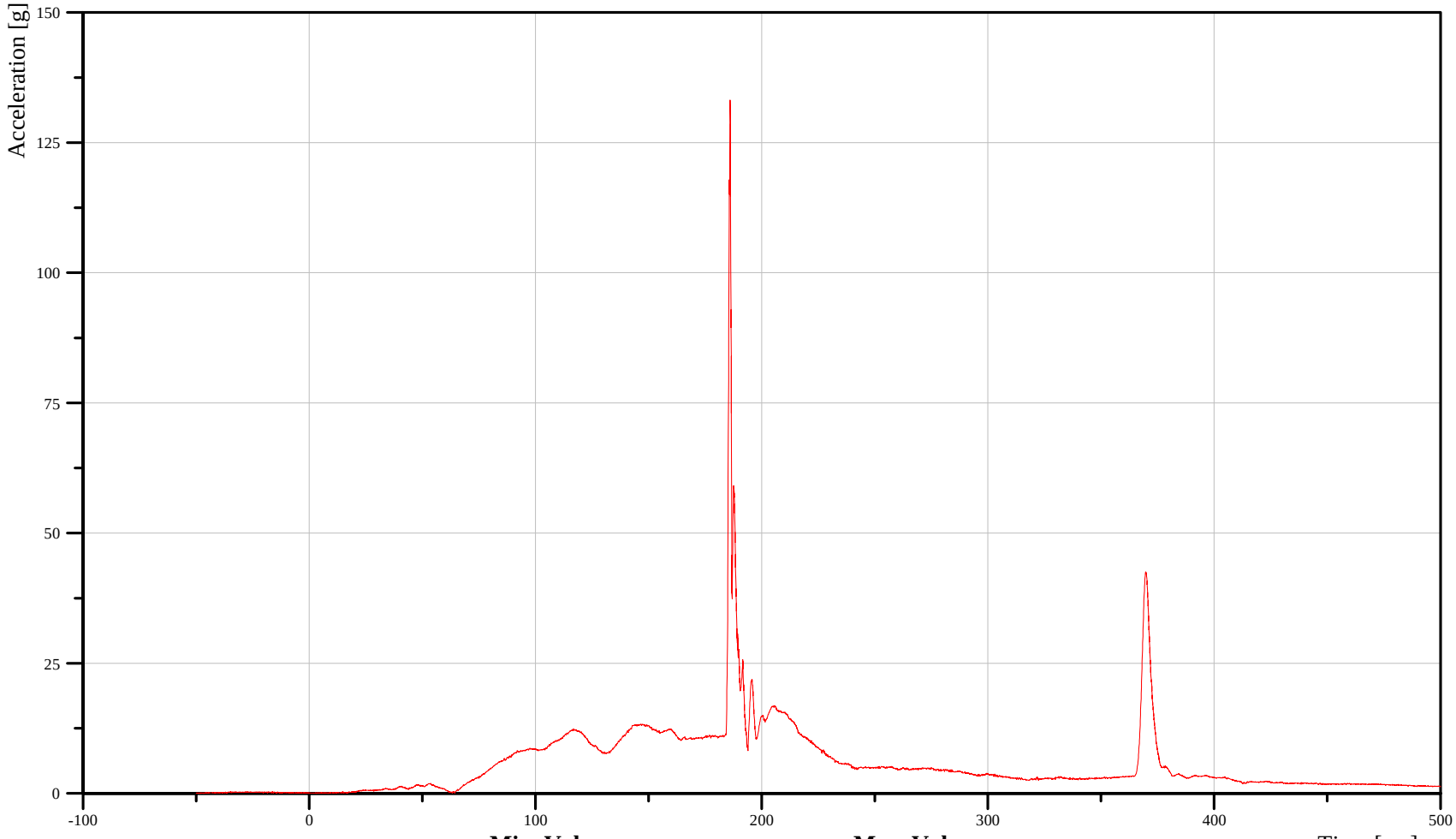
6R-Right Head Resultant Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

18HEADCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.02 g at -49.52 ms

Max. Value
133.17 g at 186.08 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

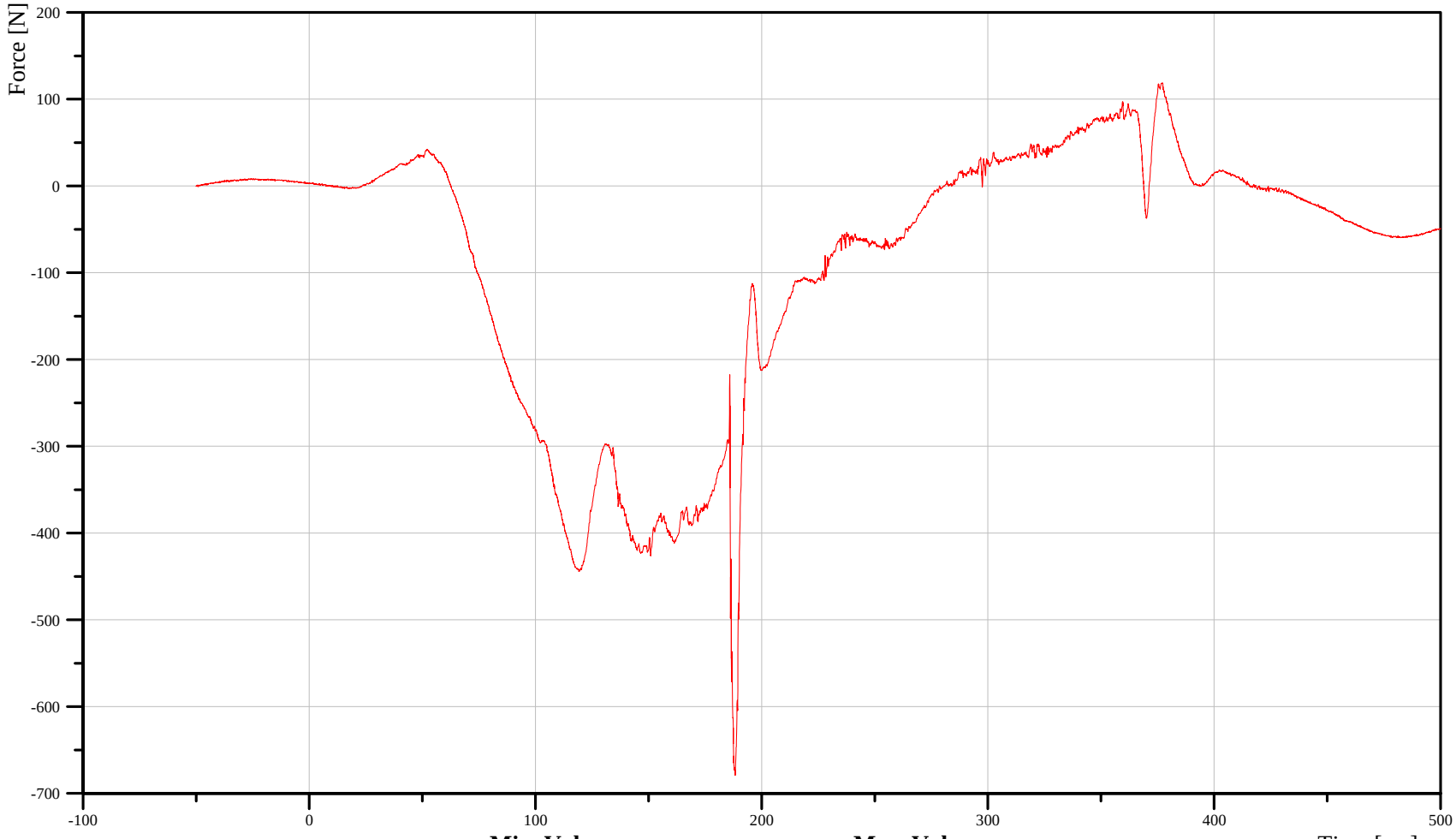
6R-Right Neck Force X

Date: 12/14/2007
Time: 9:12

Customer: VRTC

18NECKUP00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-678.79 N at 188.32 ms

Max. Value
118.74 N at 377.04 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

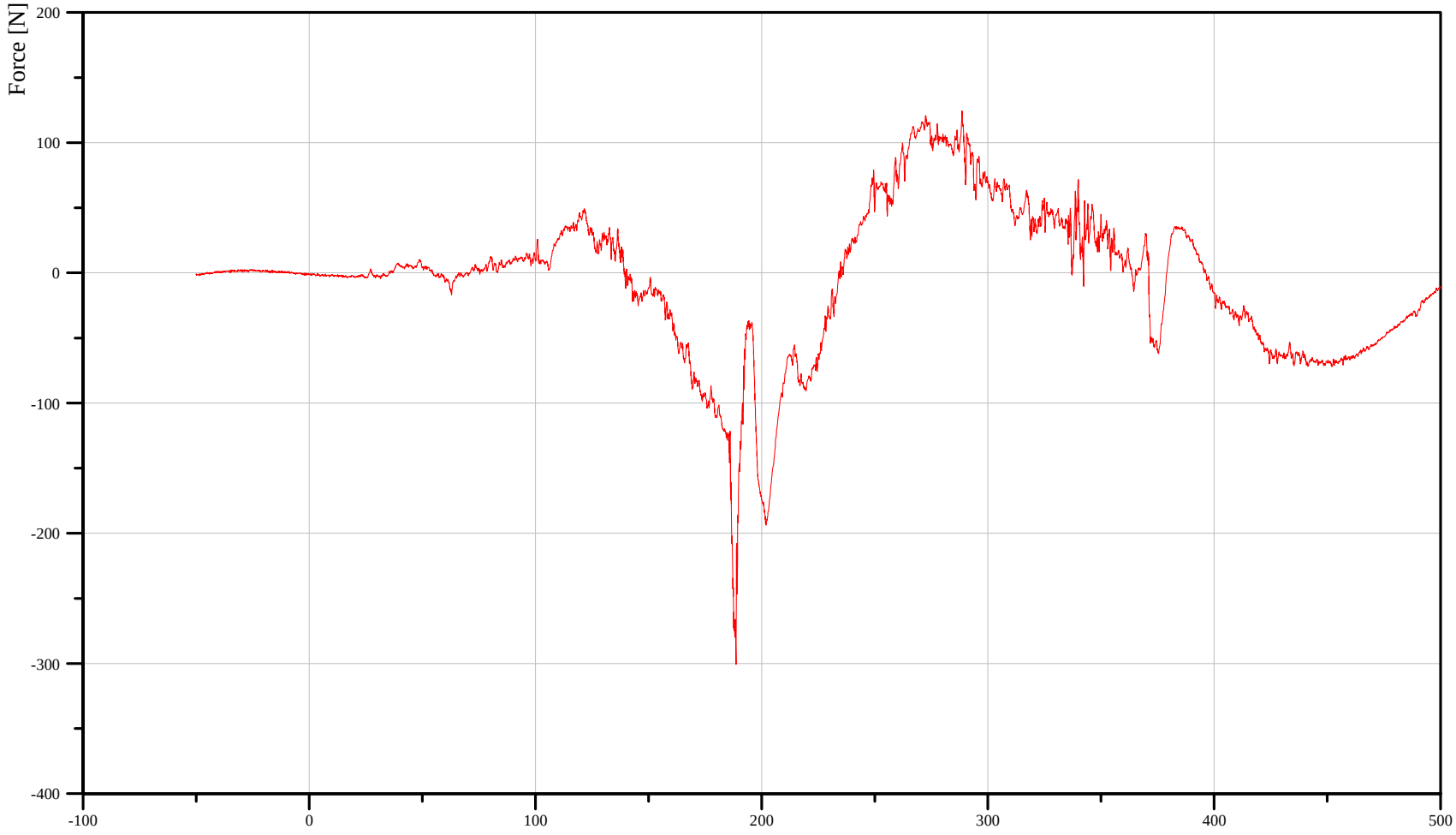
6R-Right Neck Force Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

18NECKUP00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-300.70 N at 188.64 ms

Max. Value
124.61 N at 288.56 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

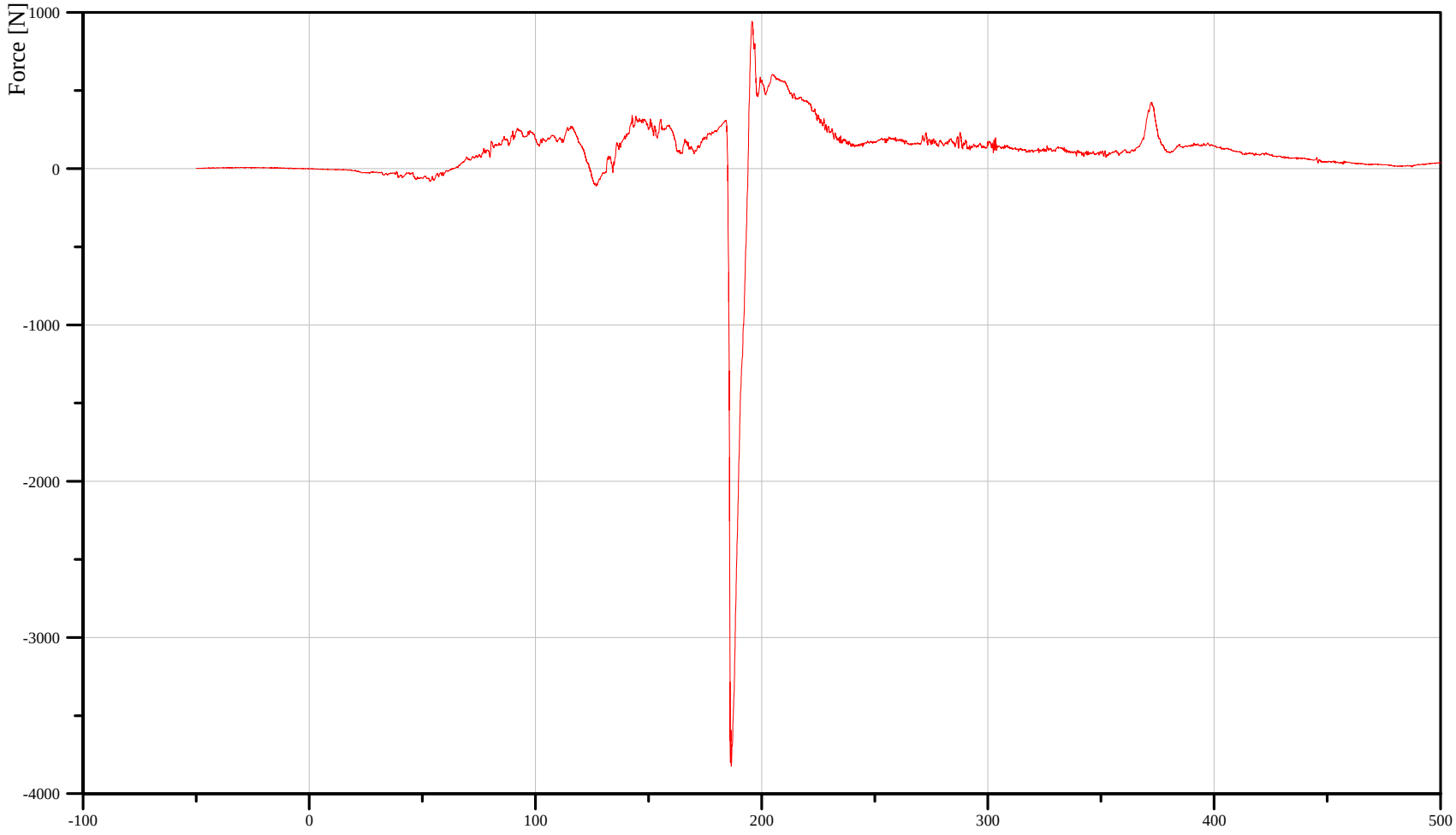
6R-Right Neck Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

18NECKUP00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-3,822.64 N at 186.64 ms

Max. Value
944.63 N at 195.76 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

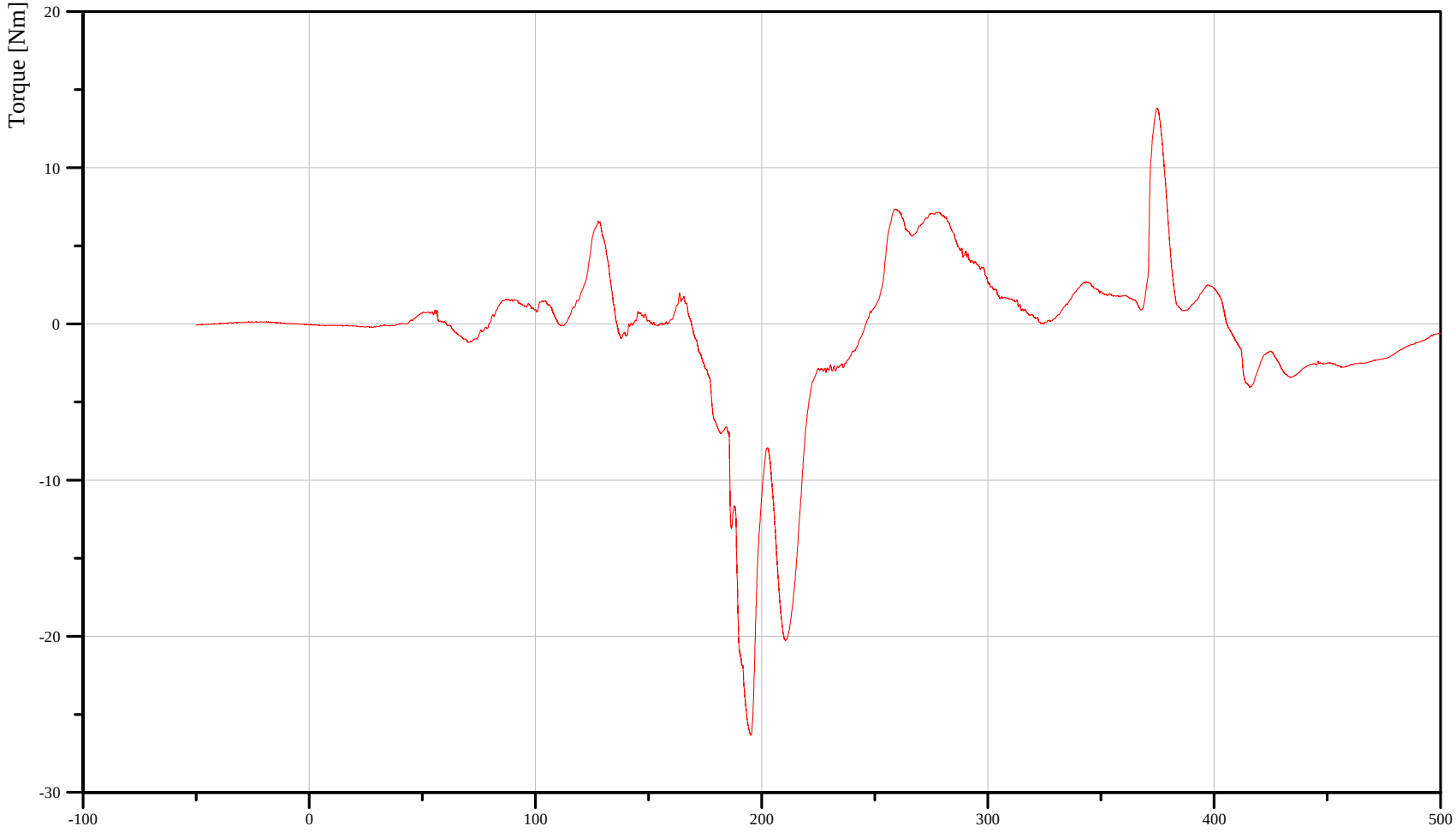
Date: 12/14/2007
Time: 9:12

6R-Right Neck Moment X

Customer: VRTC

18NECKUP00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-26.34 Nm at 195.28 ms

Max. Value
13.81 Nm at 374.80 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

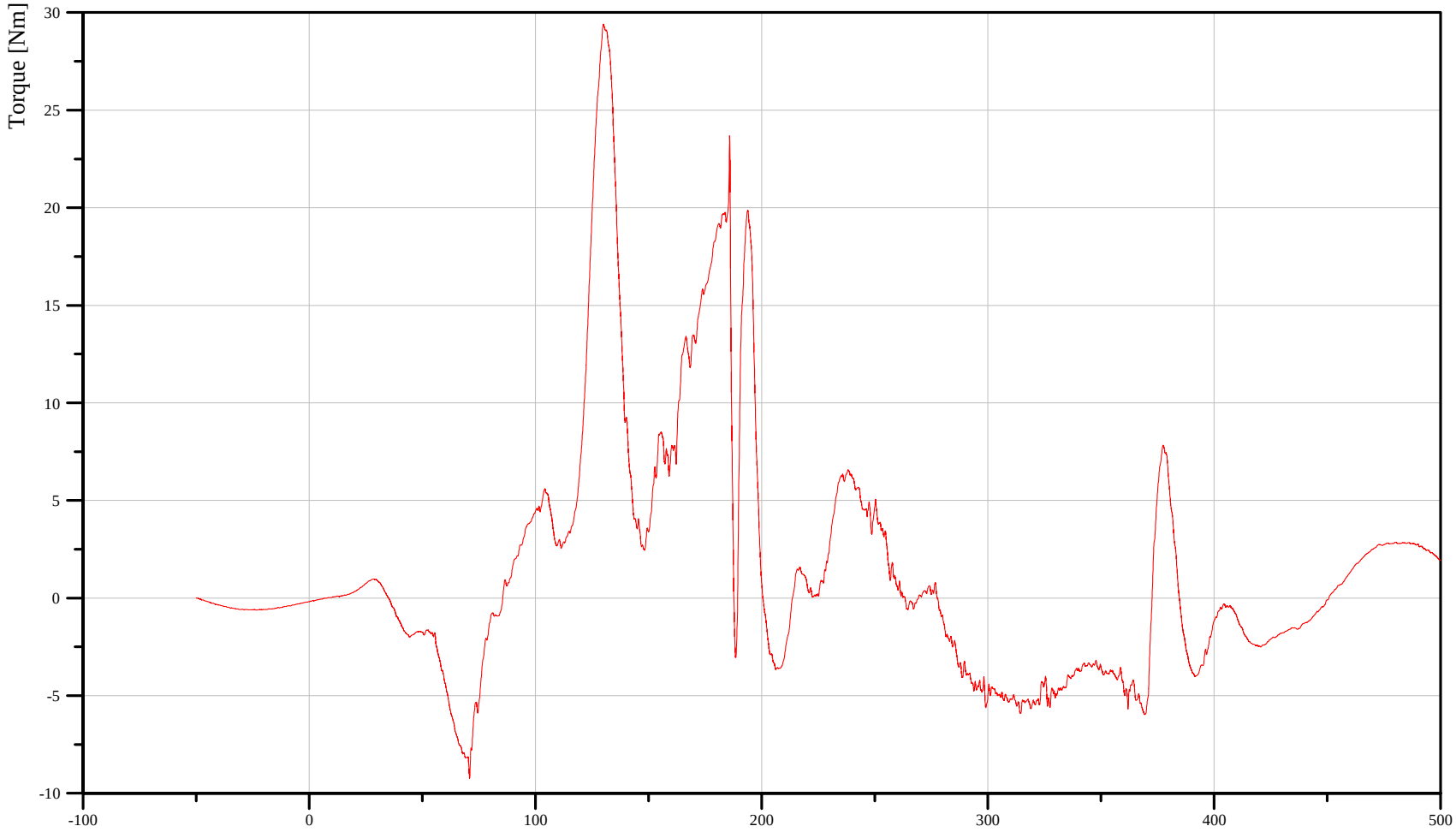
Date: 12/14/2007
Time: 9:12

6R-Right Neck Moment Y

Customer: VRTC

18NECKUP00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-9.23 Nm at 70.88 ms

Max. Value
29.41 Nm at 130.08 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

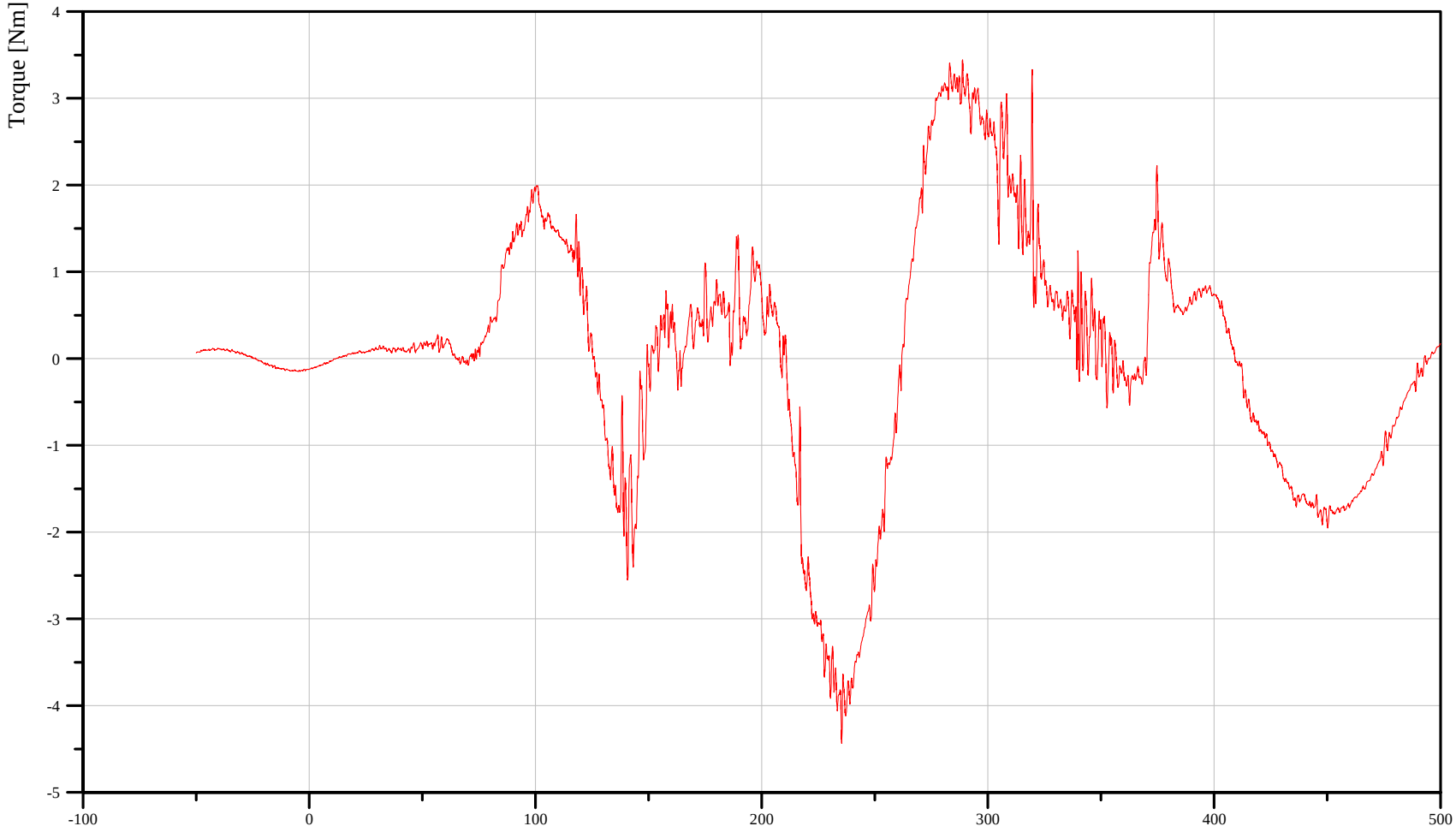
Date: 12/14/2007
Time: 9:12

6R-Right Neck Moment Z

Customer: VRTC

18NECKUP00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-4.43 Nm at 235.36 ms

Max. Value
3.45 Nm at 288.80 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

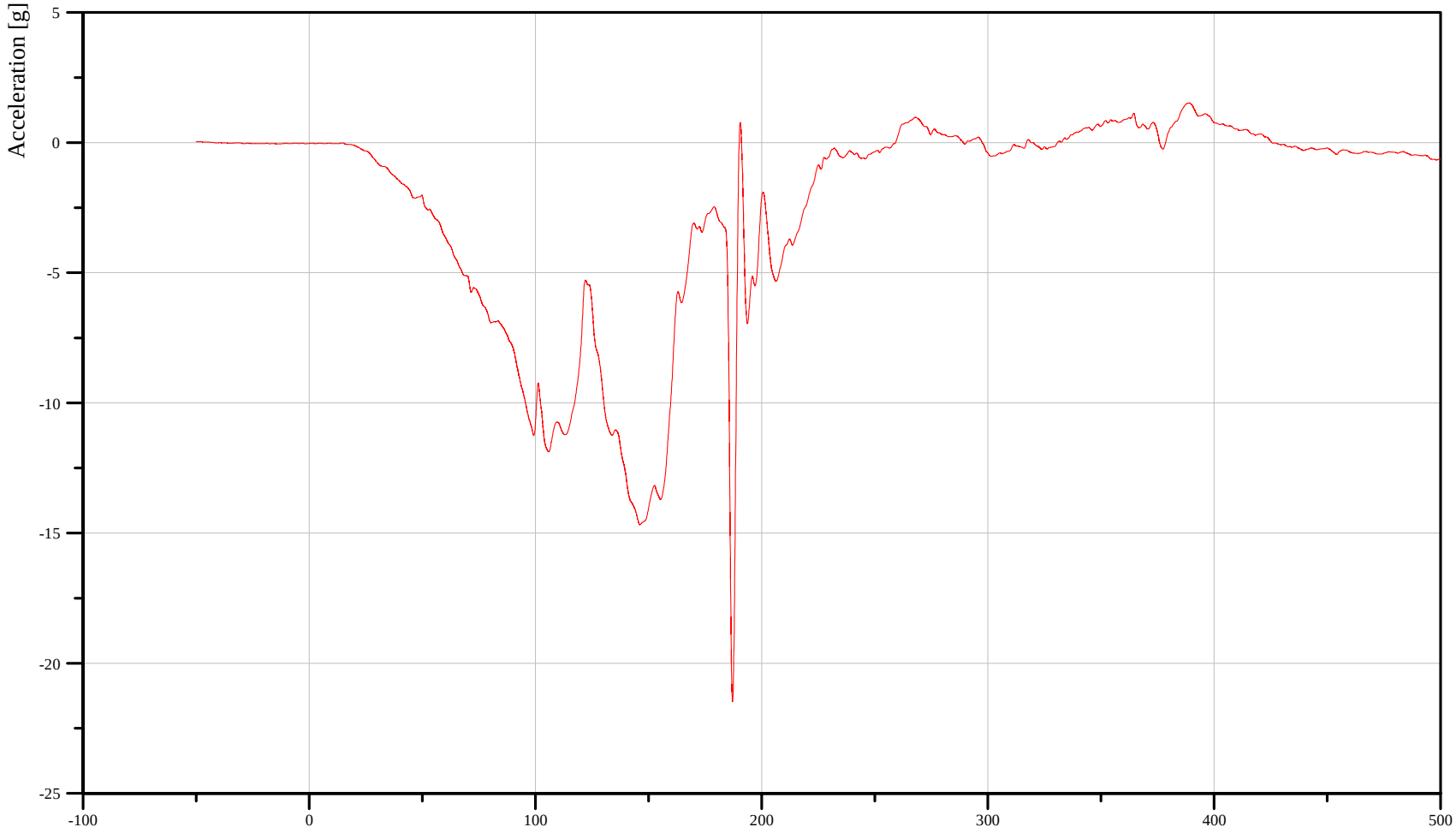
Date: 12/14/2007
Time: 9:12

6R-Right Chest X-Axis Acceleration

Customer: VRTC

18CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-21.48 g at 187.12 ms

Max. Value
1.53 g at 388.88 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

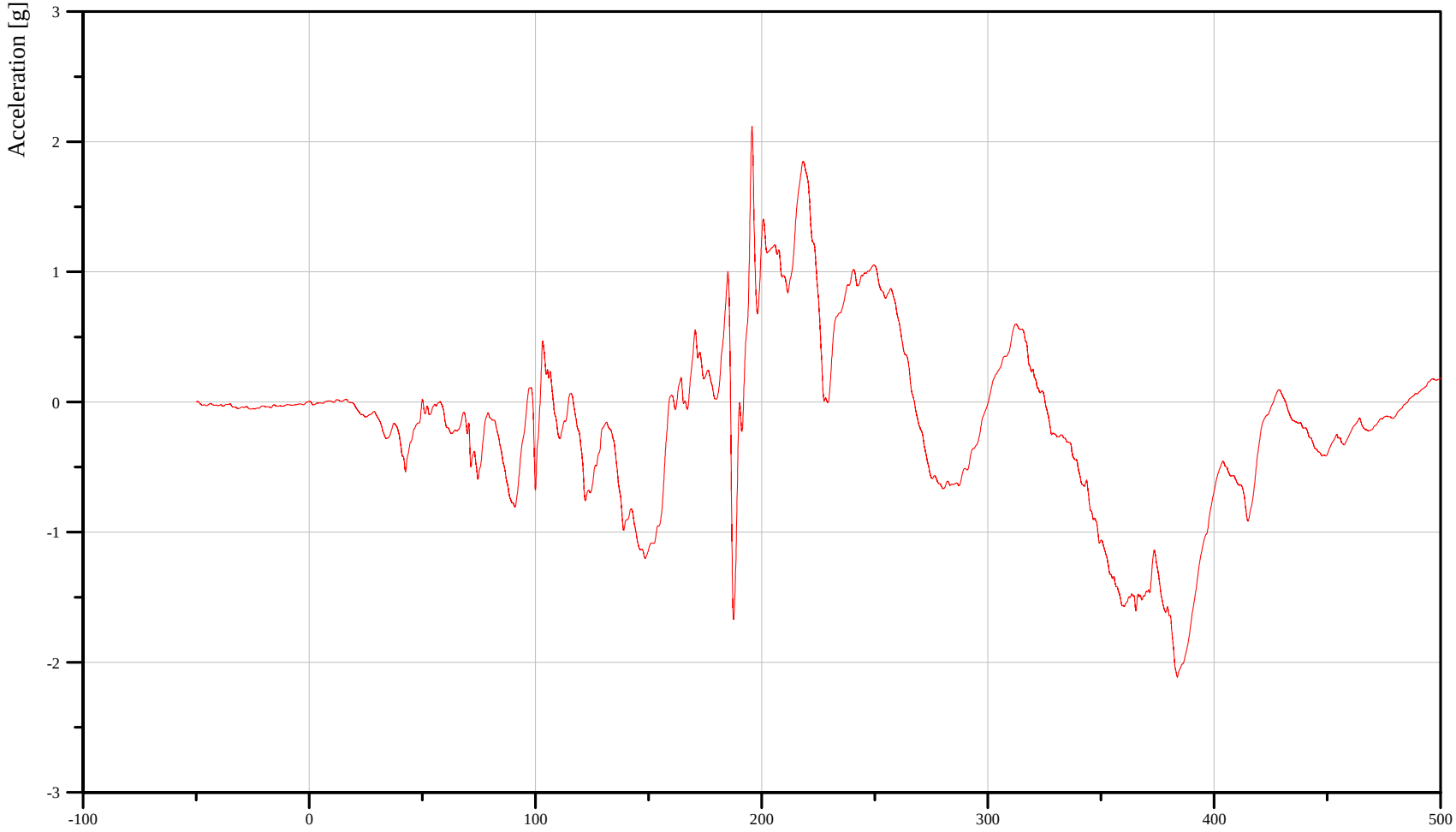
Date: 12/14/2007
Time: 9:12

6R-Right Chest Y-Axis Acceleration

Customer: VRTC

18CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-2.11 g at 383.76 ms

Max. Value
2.12 g at 195.76 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

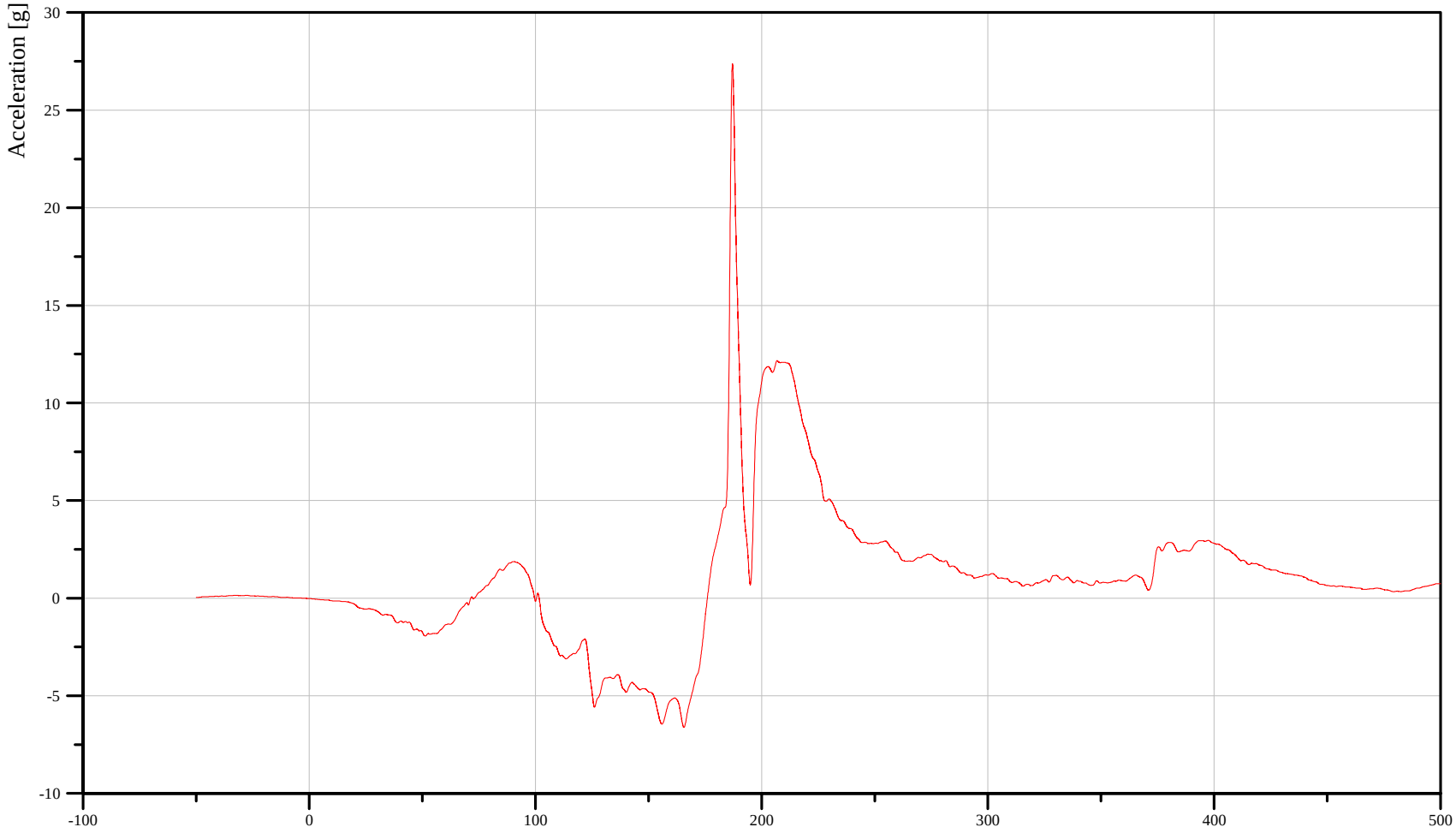
Date: 12/14/2007
Time: 9:12

6R-Right Chest Z-Axis Acceleration

Customer: VRTC

18CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-6.61 g at 165.60 ms

Max. Value
27.37 g at 187.12 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

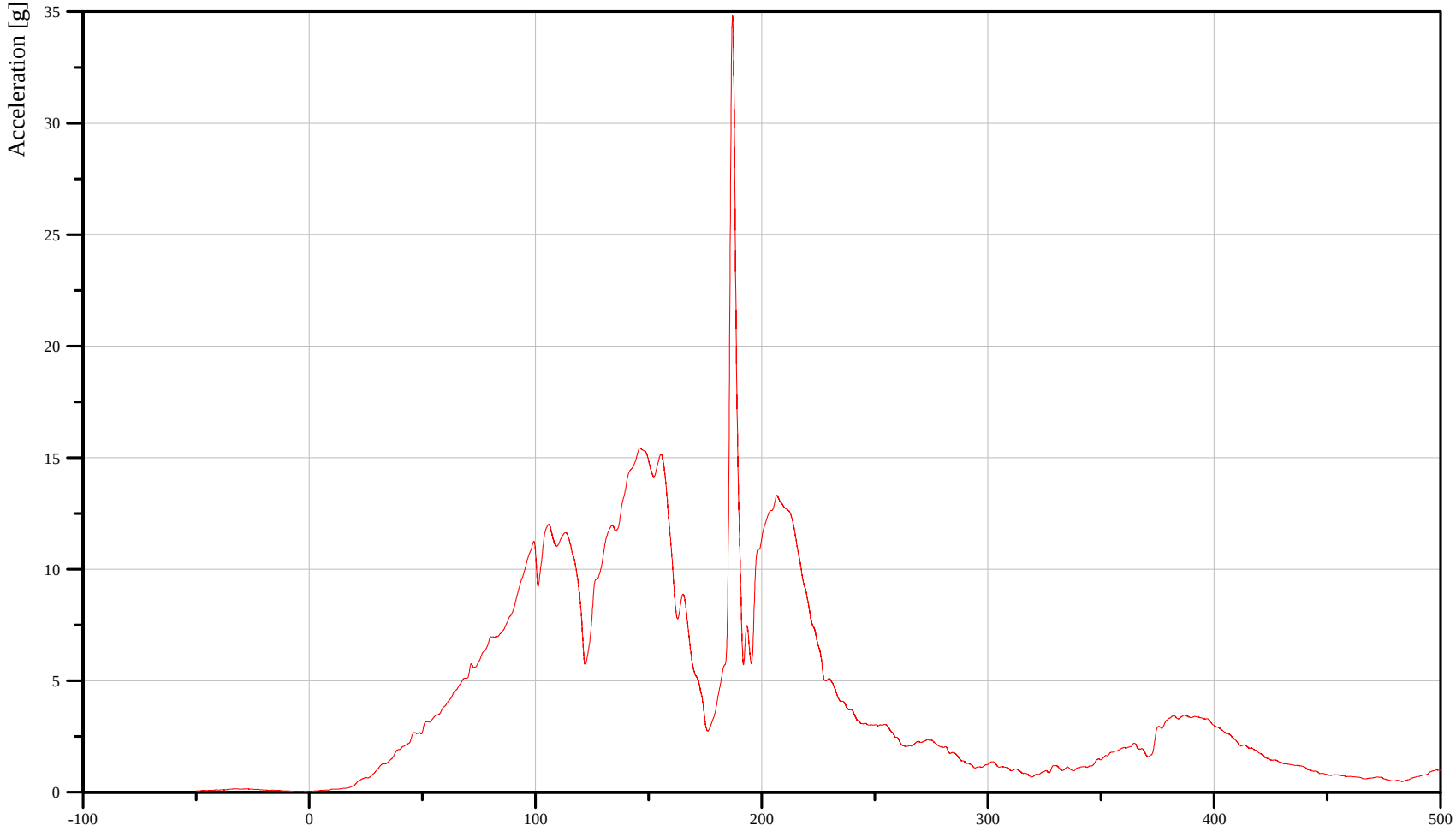
Date: 12/14/2007
Time: 9:12

6R-Right Chest Resultant Acceleration

Customer: VRTC

18CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.03 g at -3.20 ms

Max. Value
34.82 g at 187.12 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

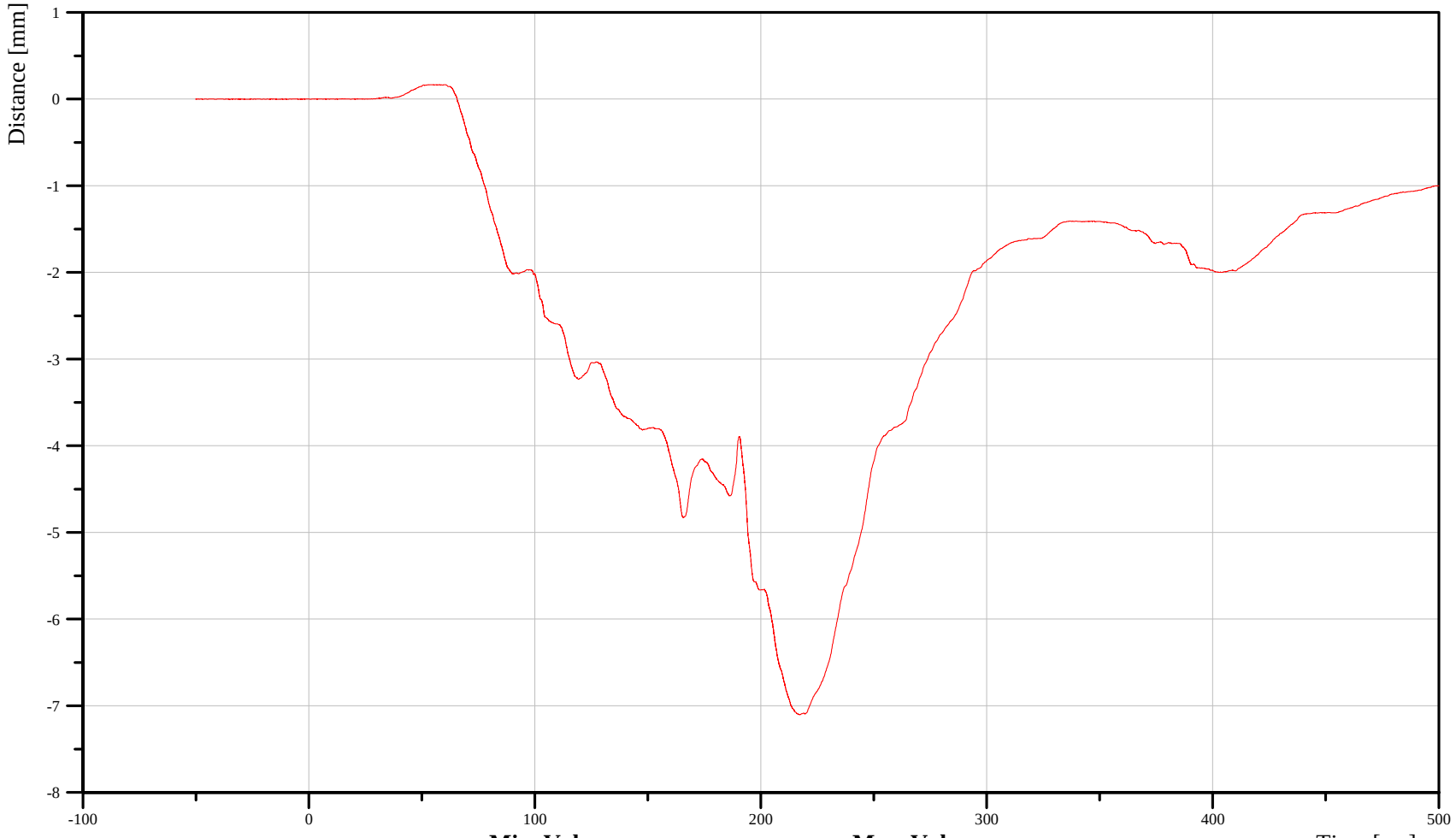
Date: 12/14/2007
Time: 9:12

6R-Right Chest X-Axis Deflection

Customer: VRTC

18CHST0000H3DSXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-7.10 mm at 217.36 ms

Max. Value
0.17 mm at 59.92 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

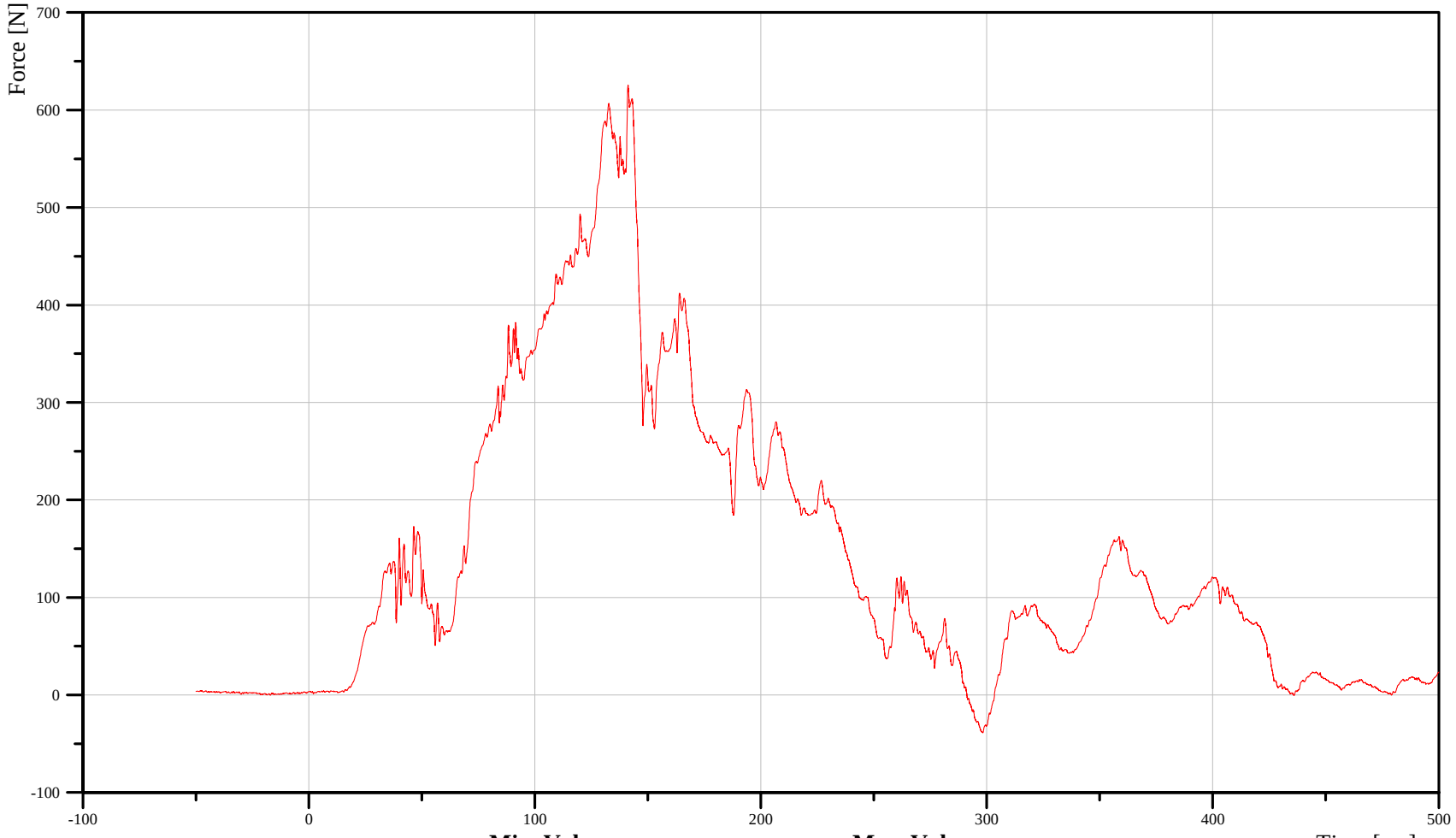
Date: 12/14/2007
Time: 9:12

6R-Right Left Femur Force Z

Customer: VRTC

18FEMRLL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-38.86 N at 298.32 ms

Max. Value
625.22 N at 141.28 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

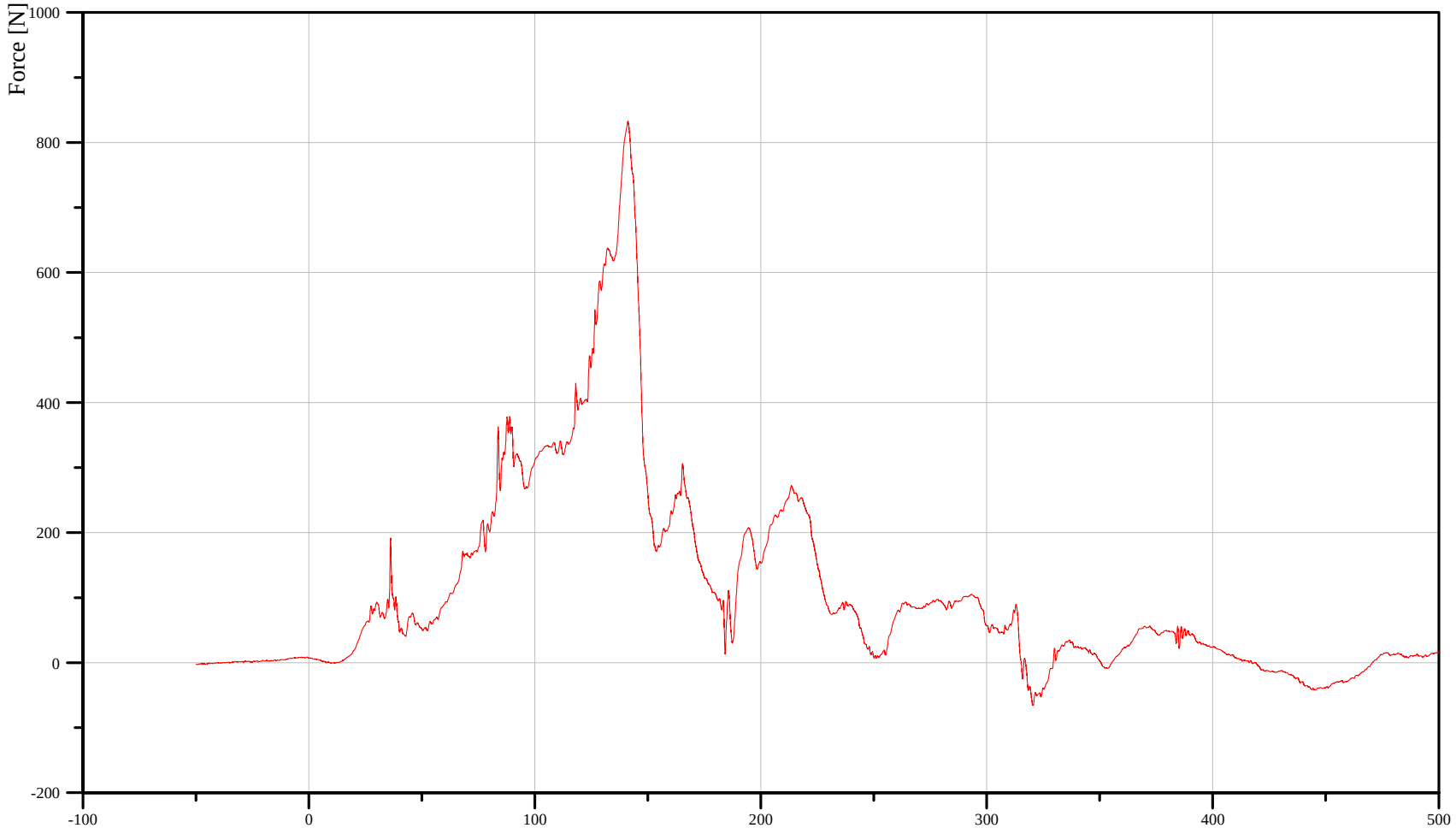
Date: 12/14/2007
Time: 9:12

6R-Right Right Femur Force Z

Customer: VRTC

18FEMRRL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-65.70 N at 320.56 ms

Max. Value
832.73 N at 141.20 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

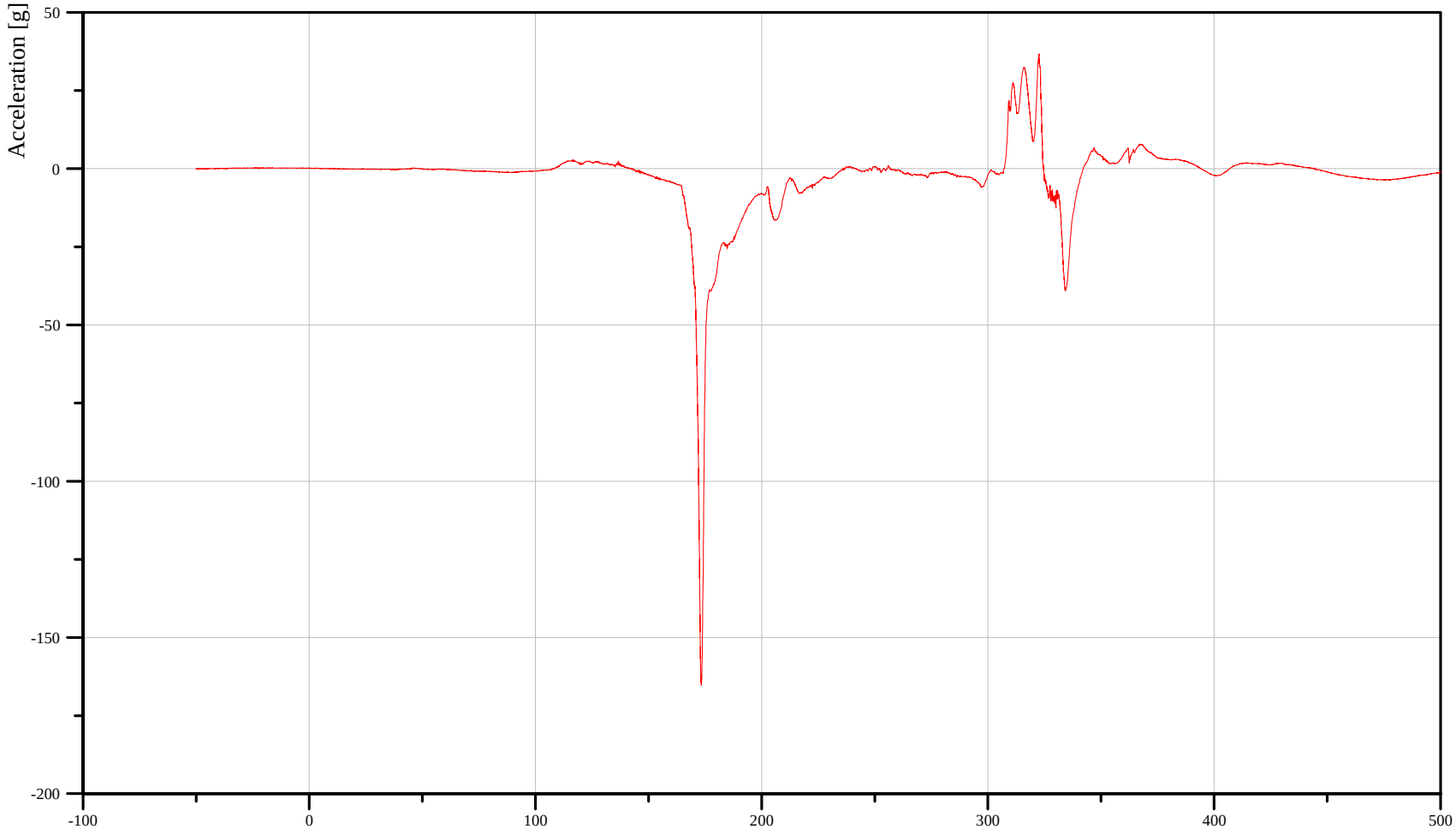
Date: 12/14/2007
Time: 9:12

7R-Left Head X-Axis Acceleration

Customer: VRTC

19HEADCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-165.32 g at 173.36 ms

Max. Value
36.64 g at 322.56 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

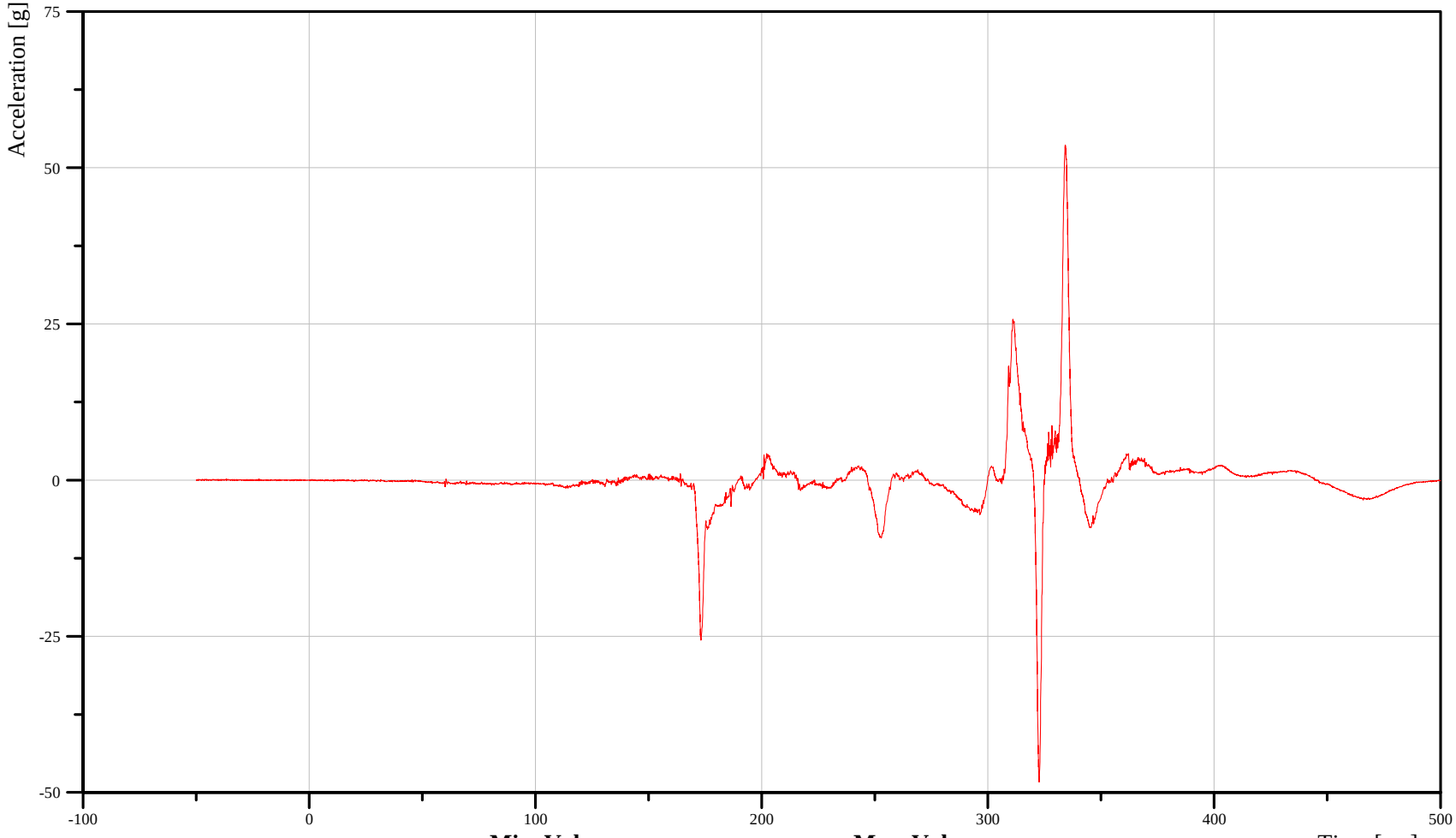
Date: 12/14/2007
Time: 9:12

7R-Left Head Y-Axis Acceleration

Customer: VRTC

19HEADCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-48.32 g at 322.64 ms

Max. Value
53.65 g at 334.24 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

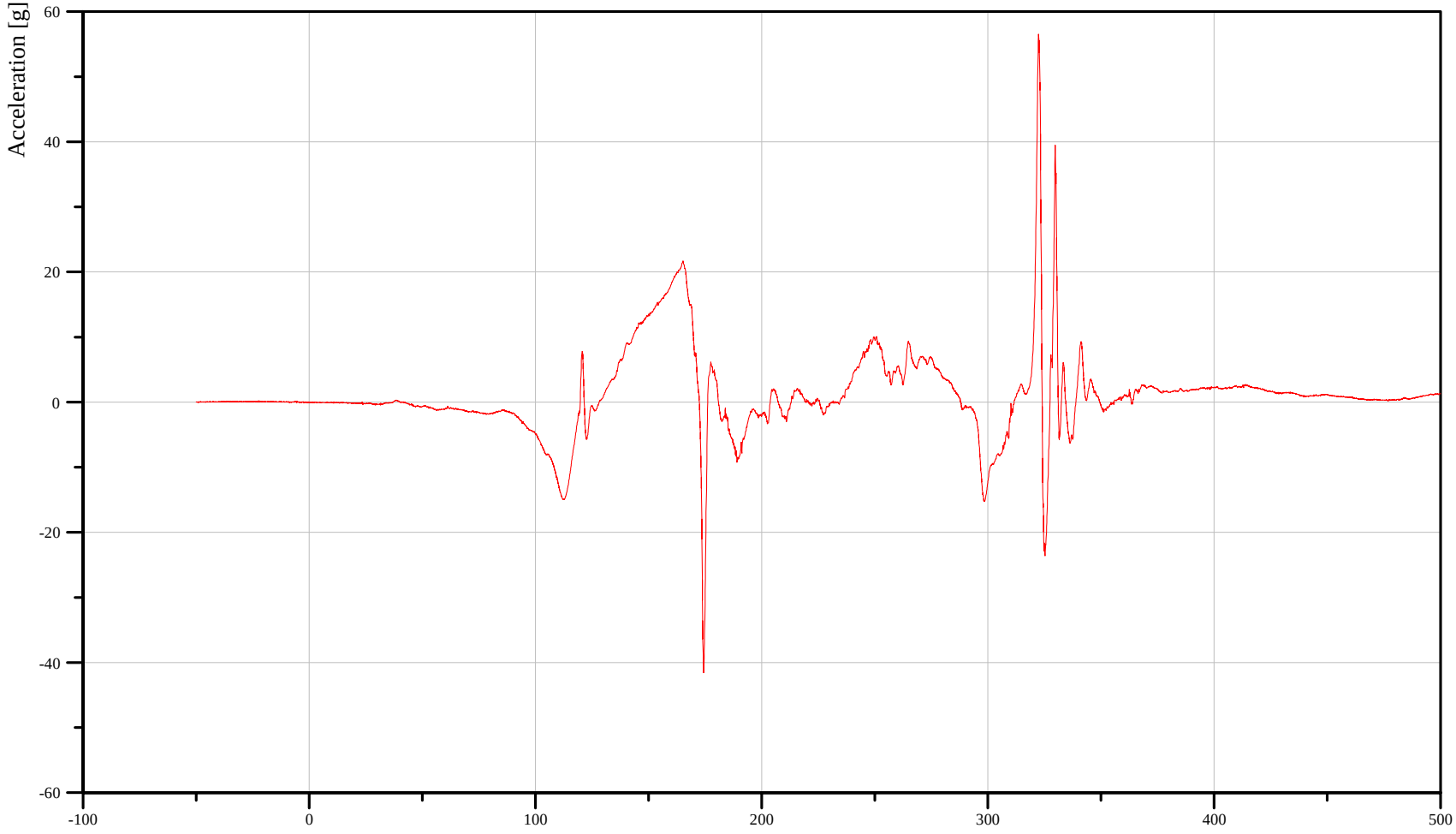
Date: 12/14/2007
Time: 9:12

7R-Left Head Z-Axis Acceleration

Customer: VRTC

19HEADCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-41.54 g at 174.40 ms

Max. Value
56.54 g at 322.40 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

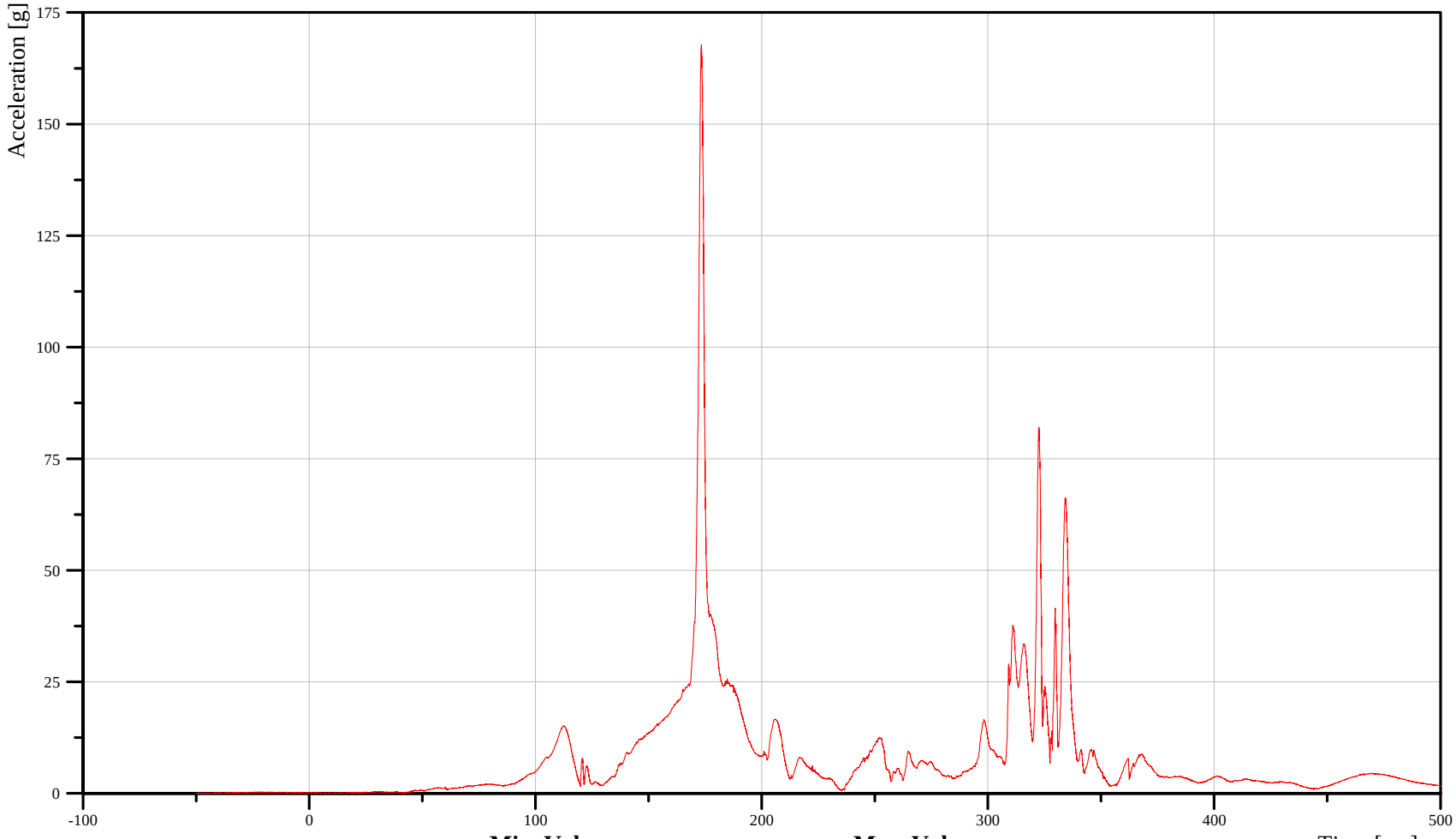
Date: 12/14/2007
Time: 9:12

7R-Left Head Resultant Acceleration

Customer: VRTC

19HEADCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.02 g at -50.00 ms

Max. Value
167.73 g at 173.36 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

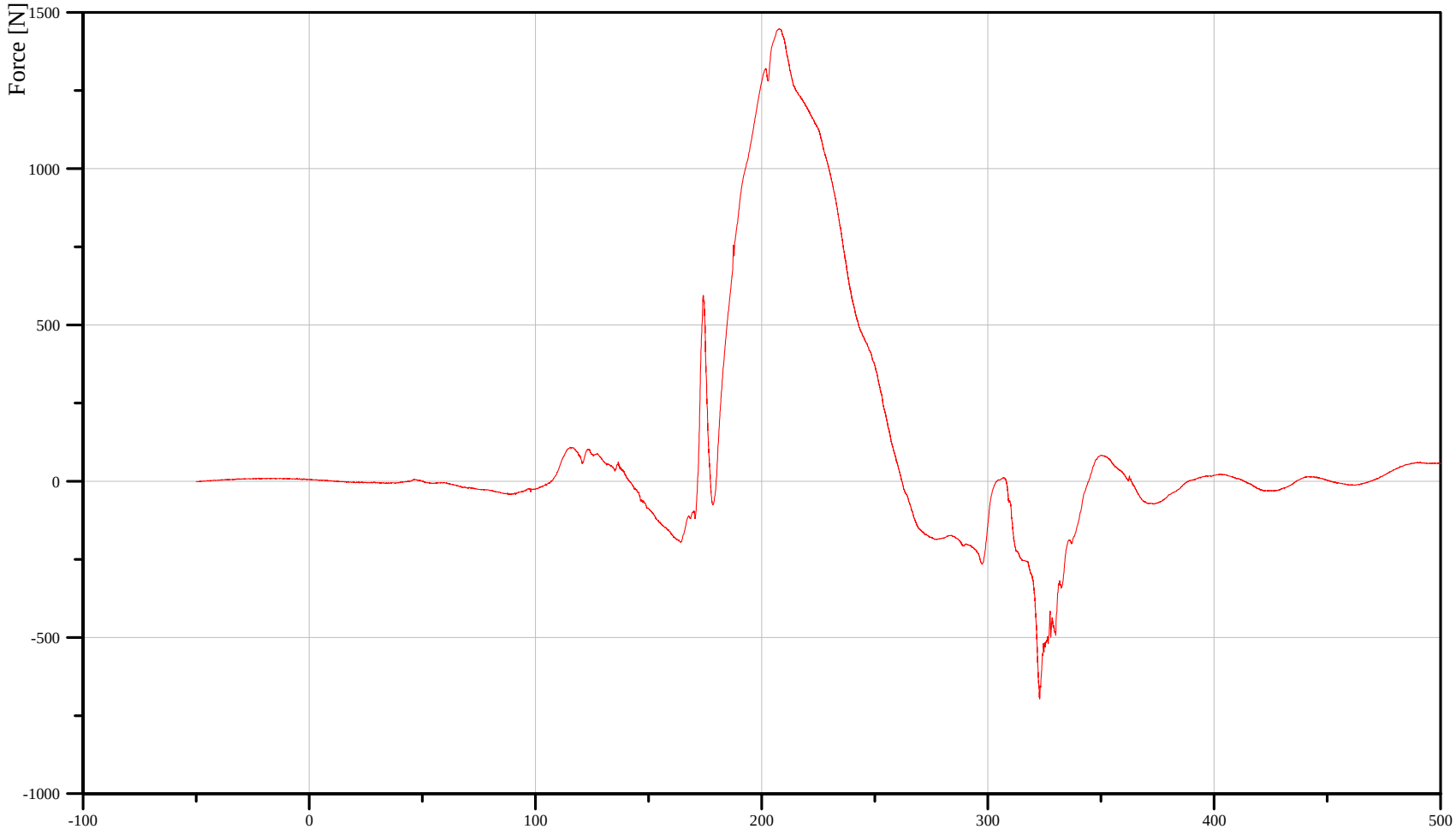
Date: 12/14/2007
Time: 9:12

7R-Left Neck Force X

Customer: VRTC

19NECKUP00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-696.63 N at 322.88 ms

Max. Value
1,447.98 N at 207.68 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

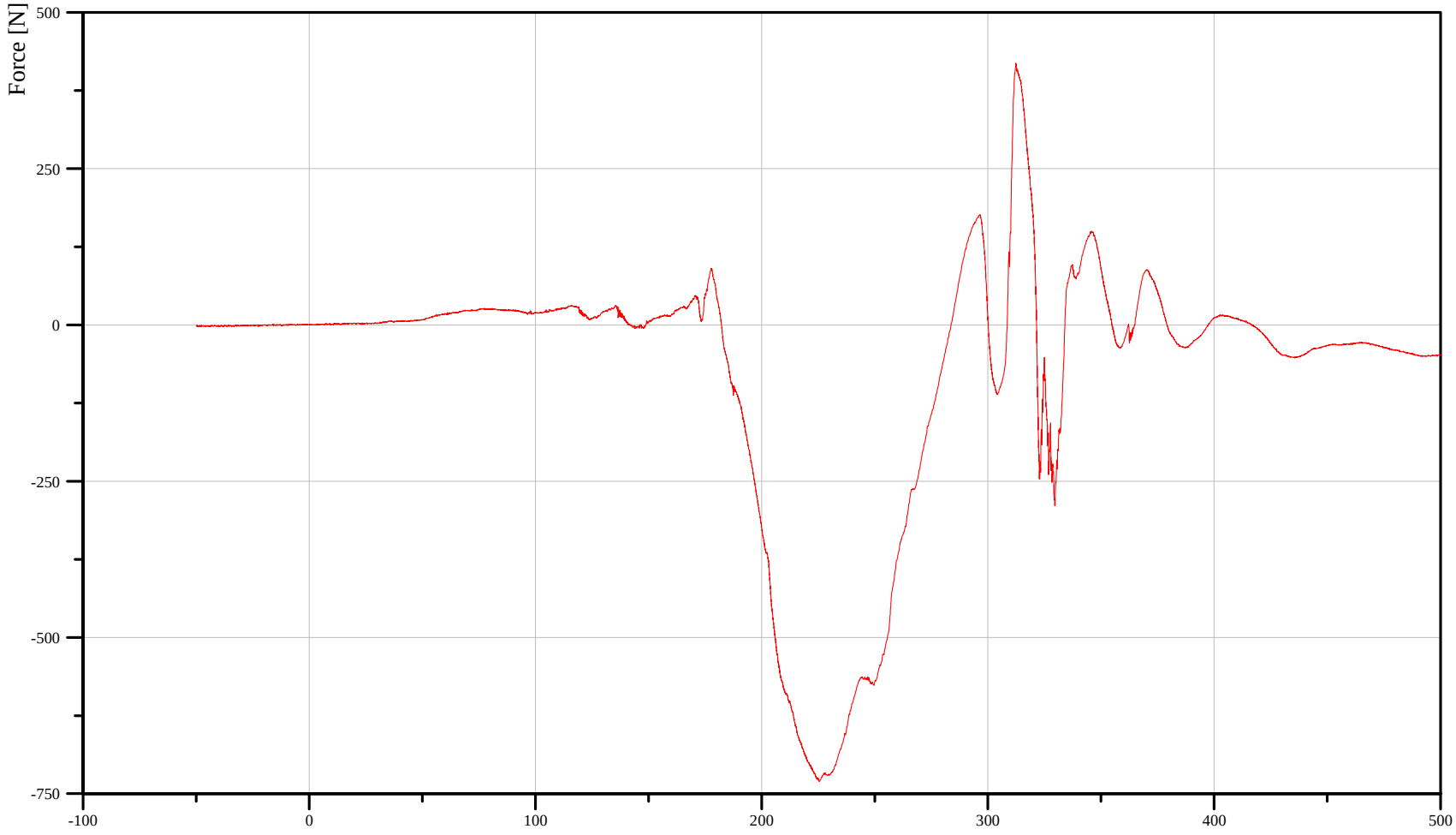
7R-Left Neck Force Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

19NECKUP00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-730.25 N at 225.60 ms

Max. Value
418.66 N at 312.32 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

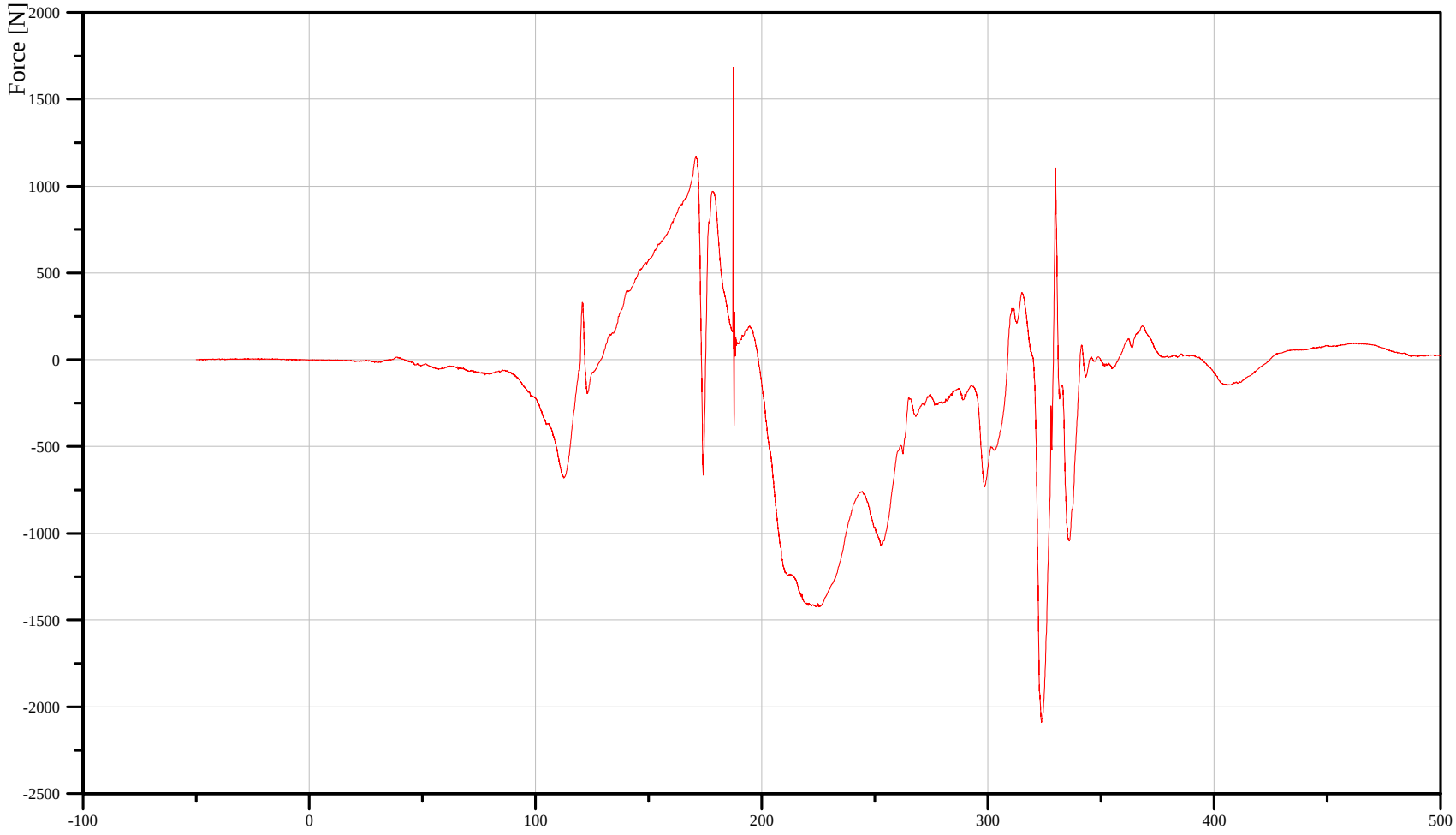
7R-Left Neck Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

19NECKUP00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-2,085.92 N at 323.68 ms

Max. Value
1,683.18 N at 187.44 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

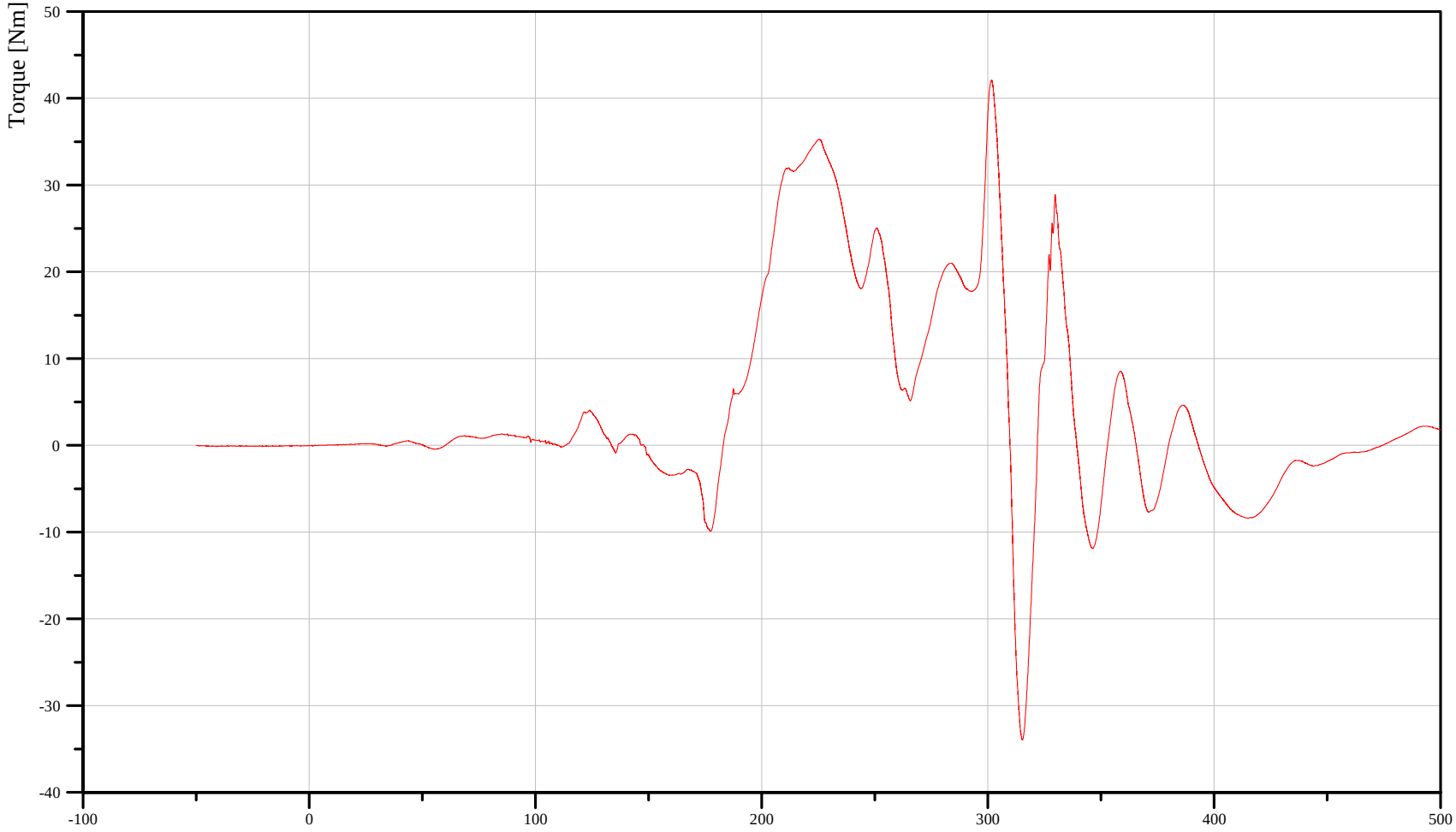
Date: 12/14/2007
Time: 9:12

7R-Left Neck Moment X

Customer: VRTC

19NECKUP00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-33.94 Nm at 315.20 ms

Max. Value
42.13 Nm at 301.60 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

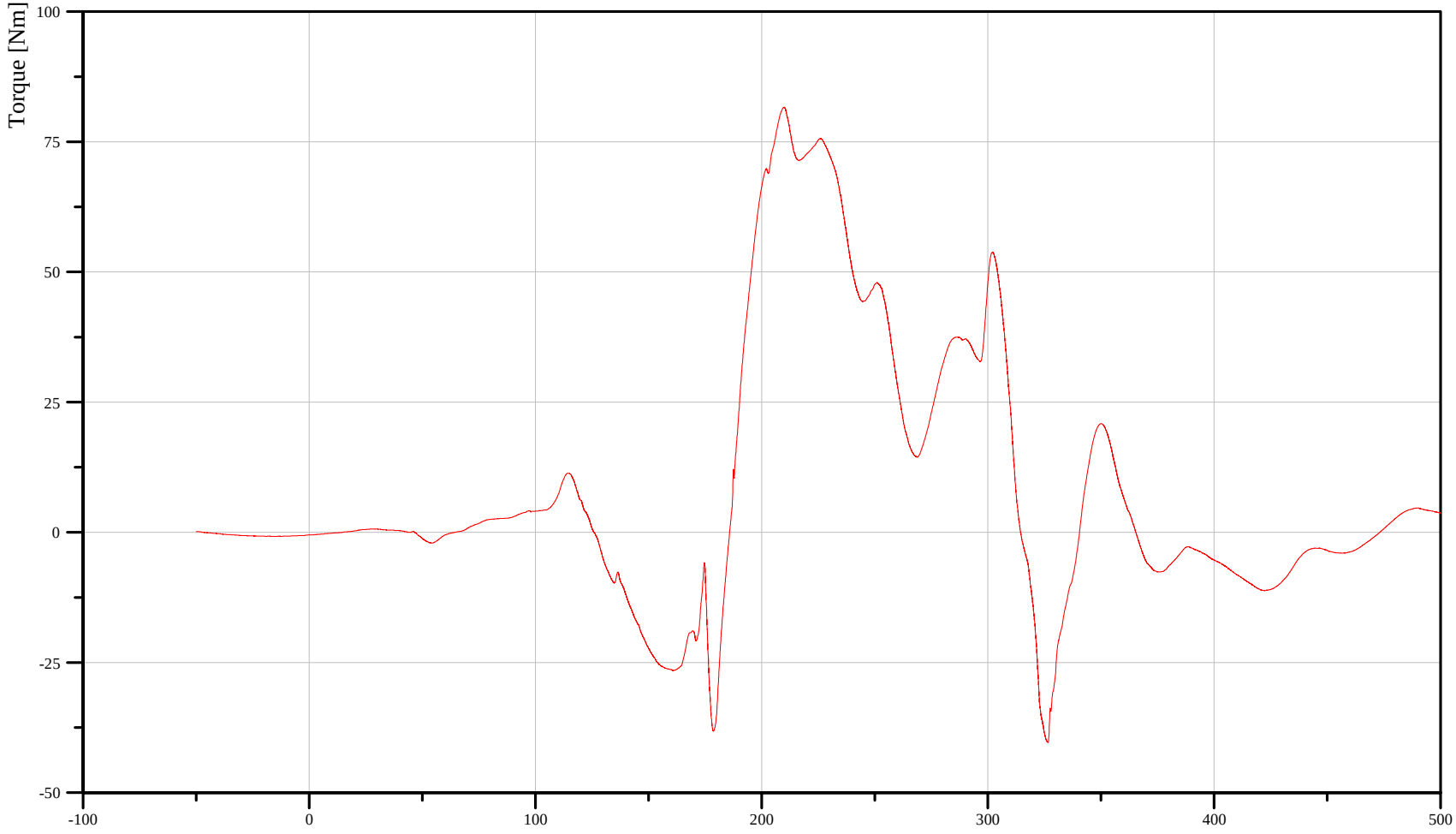
Date: 12/14/2007
Time: 9:12

7R-Left Neck Moment Y

Customer: VRTC

19NECKUP00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-40.34 Nm at 326.56 ms

Max. Value
81.67 Nm at 209.84 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

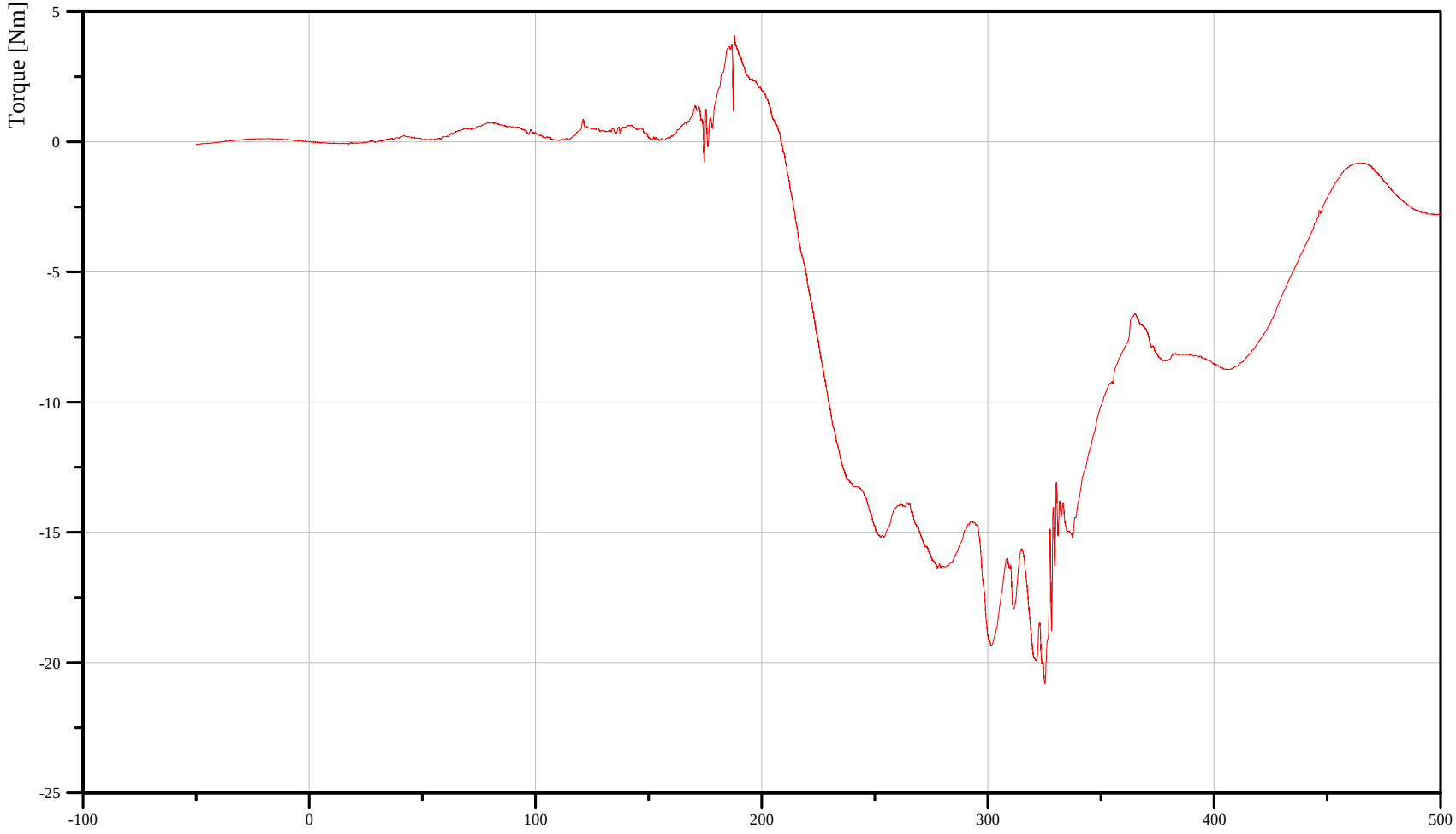
Date: 12/14/2007
Time: 9:12

7R-Left Neck Moment Z

Customer: VRTC

19NECKUP00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-20.82 Nm at 325.20 ms

Max. Value
4.08 Nm at 187.92 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

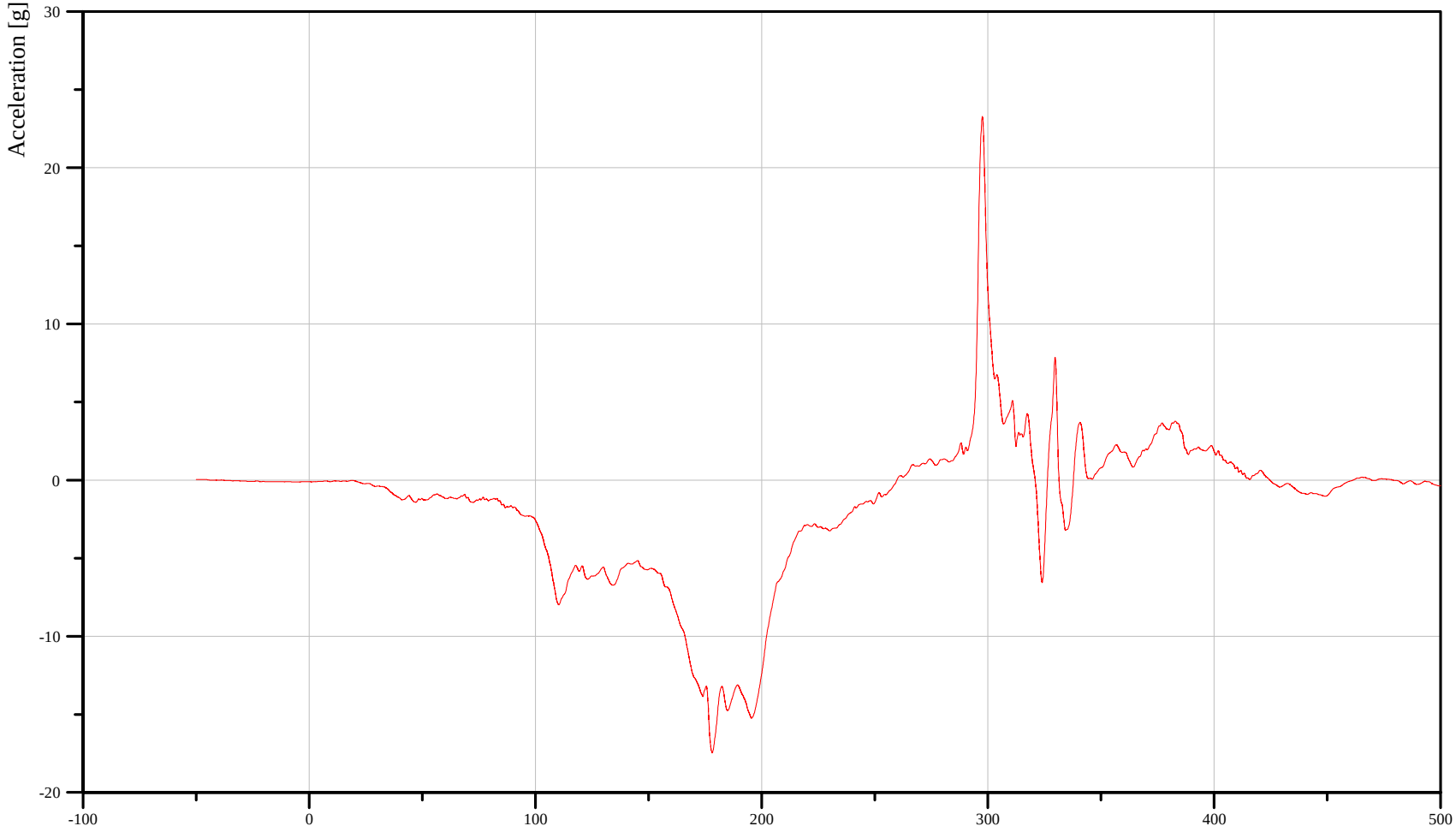
Date: 12/14/2007
Time: 9:12

7R-Left Chest X-Axis Acceleration

Customer: VRTC

19CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-17.45 g at 178.16 ms

Max. Value
23.30 g at 297.52 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

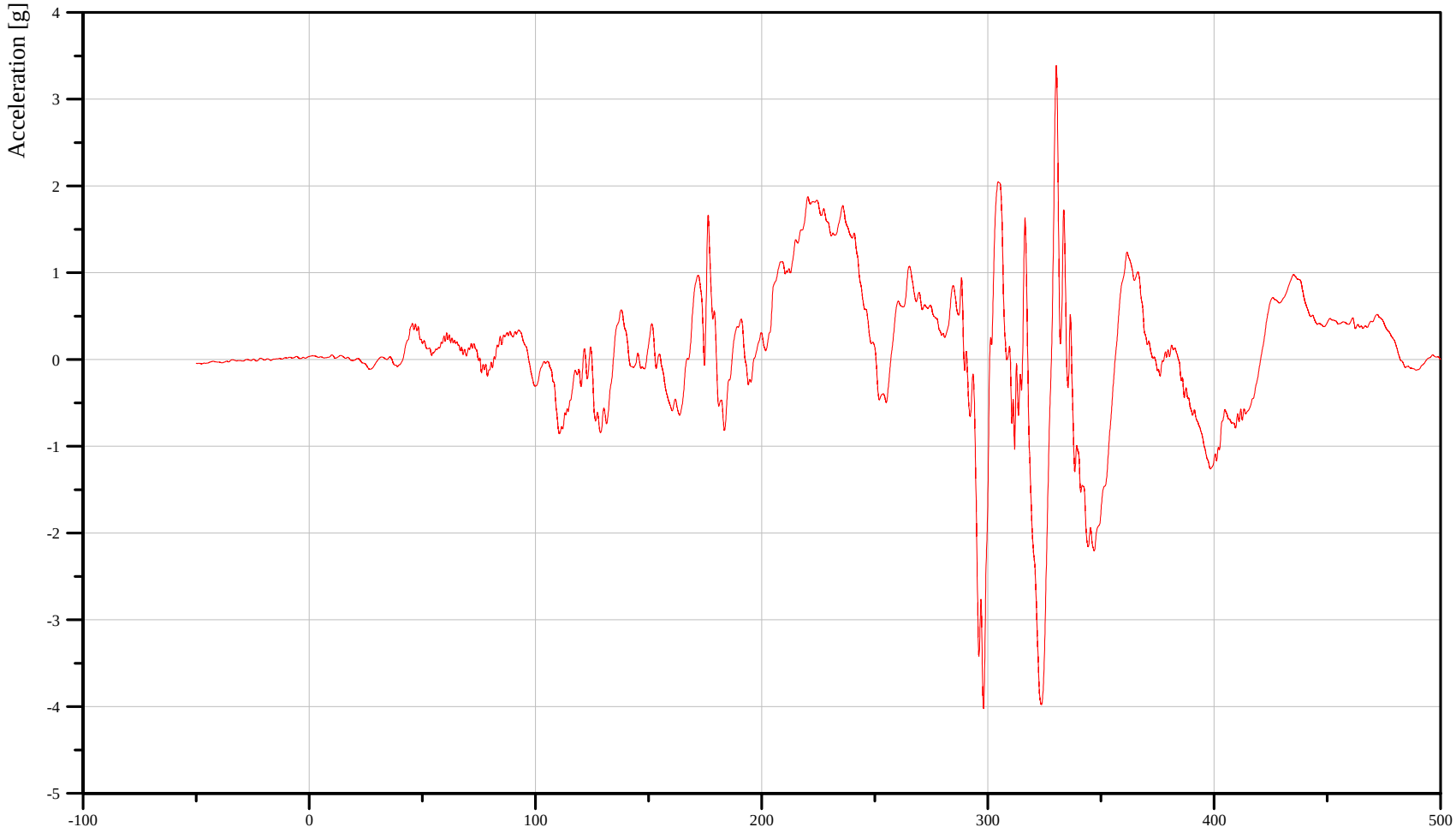
Date: 12/14/2007
Time: 9:12

7R-Left Chest Y-Axis Acceleration

Customer: VRTC

19CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-4.02 g at 298.08 ms

Max. Value
3.39 g at 330.24 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

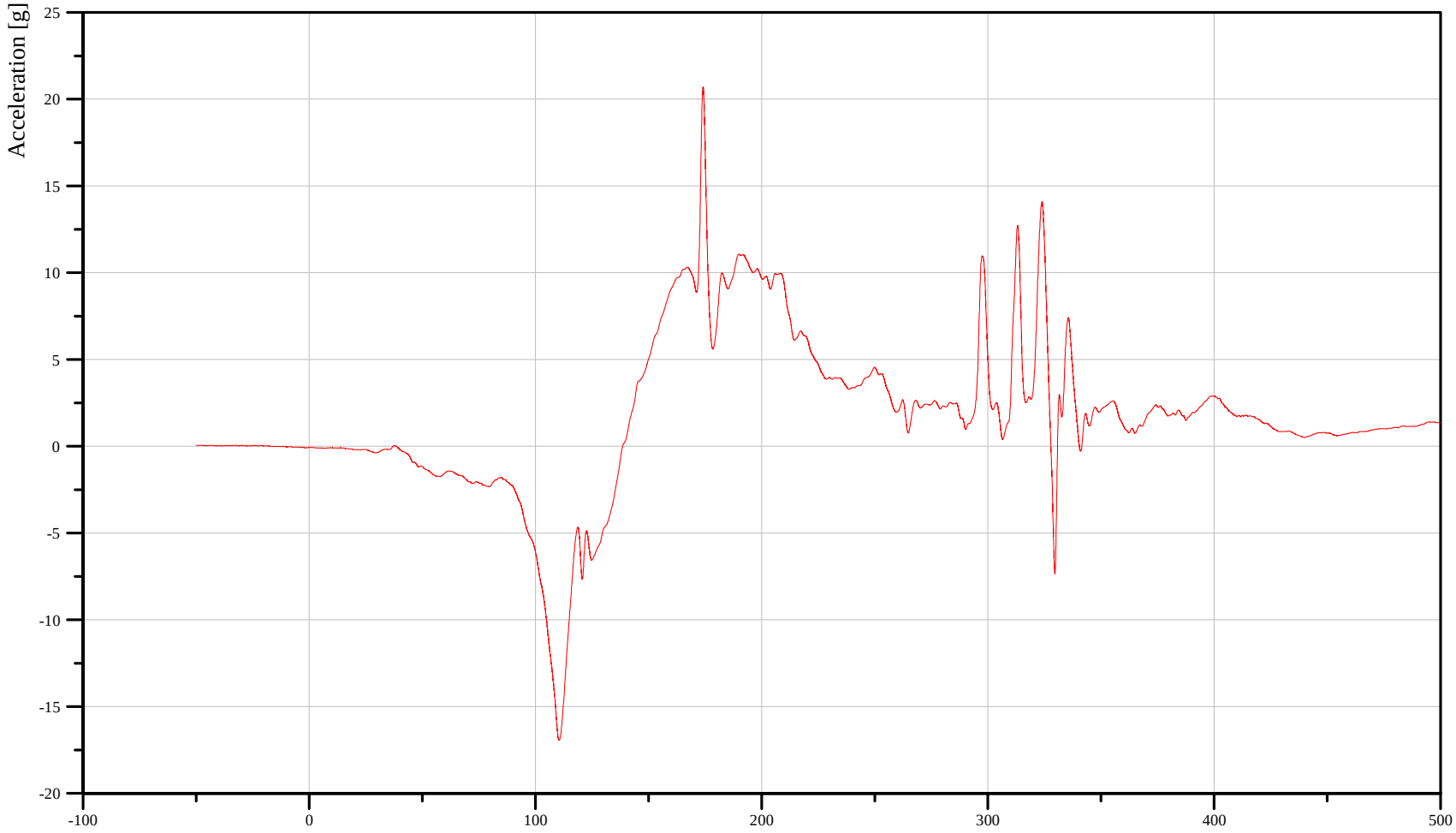
Date: 12/14/2007
Time: 9:12

7R-Left Chest Z-Axis Acceleration

Customer: VRTC

19CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-16.94 g at 110.48 ms

Max. Value
20.72 g at 174.08 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

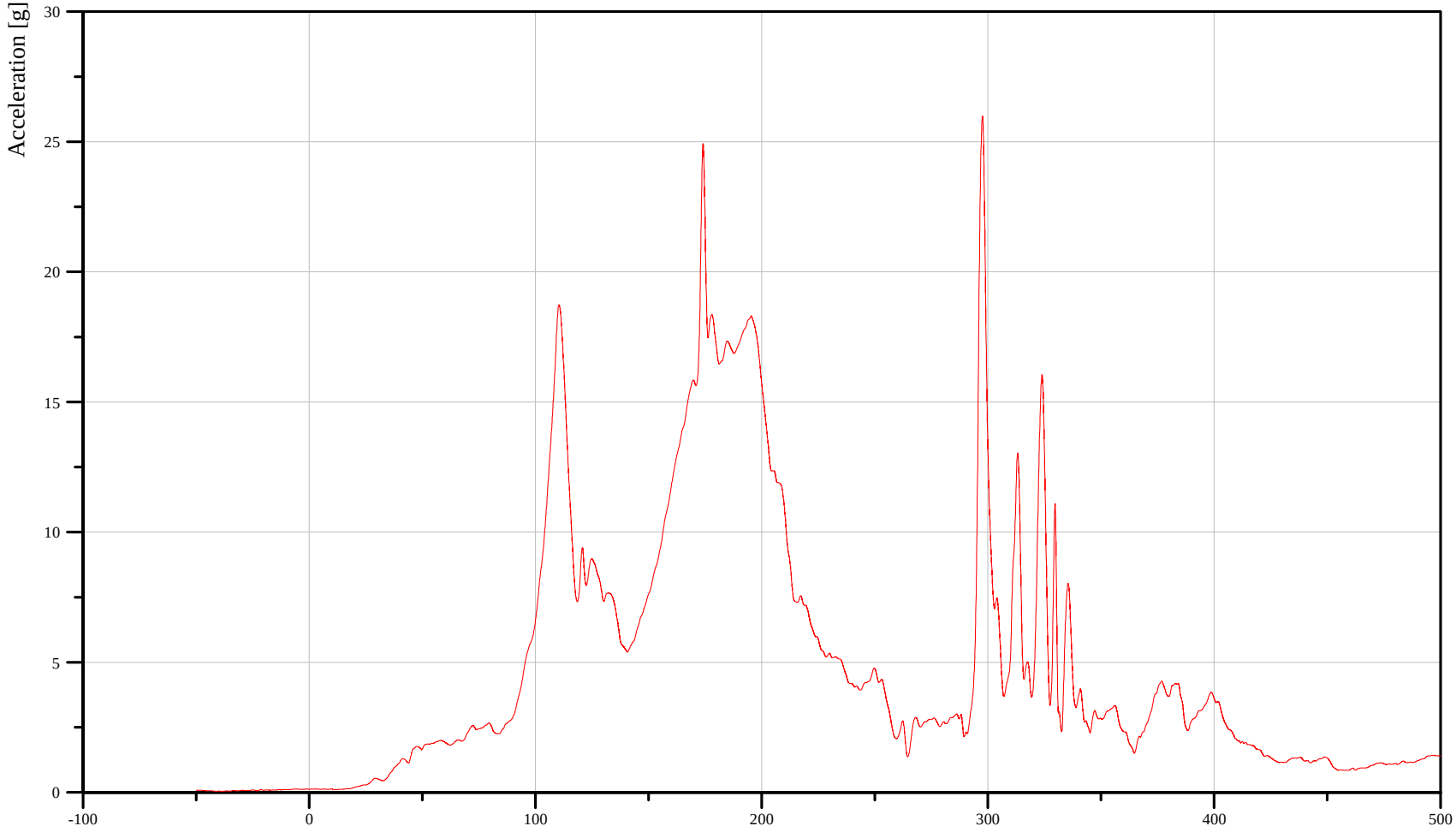
Date: 12/14/2007
Time: 9:12

7R-Left Chest Resultant Acceleration

Customer: VRTC

19CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.04 g at -41.12 ms

Max. Value
26.00 g at 297.60 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

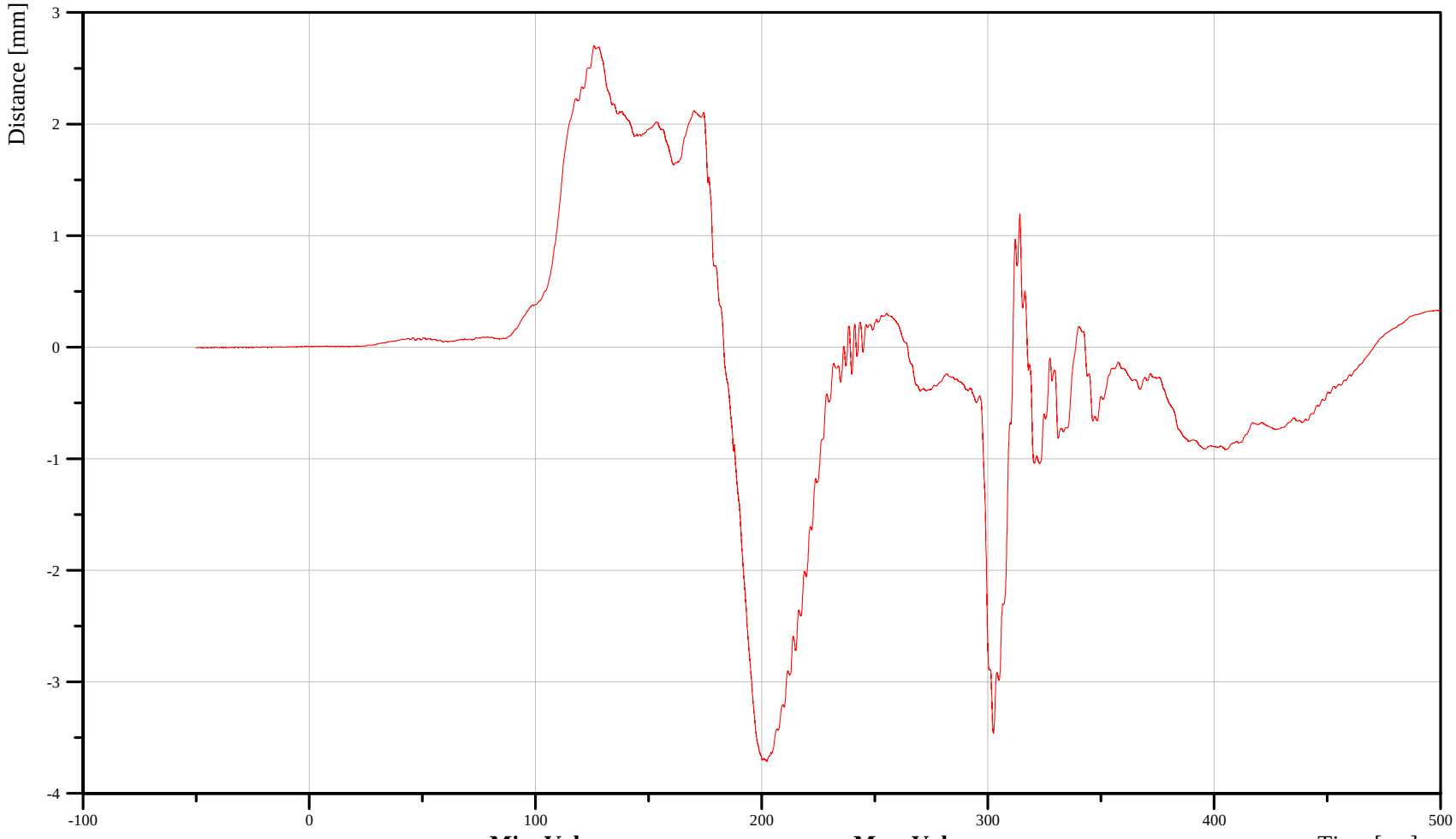
Date: 12/14/2007
Time: 9:12

7R-Left Chest X-Axis Deflection

Customer: VRTC

19CHST0000H3DSXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-3.72 mm at 202.24 ms

Max. Value
2.70 mm at 125.92 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

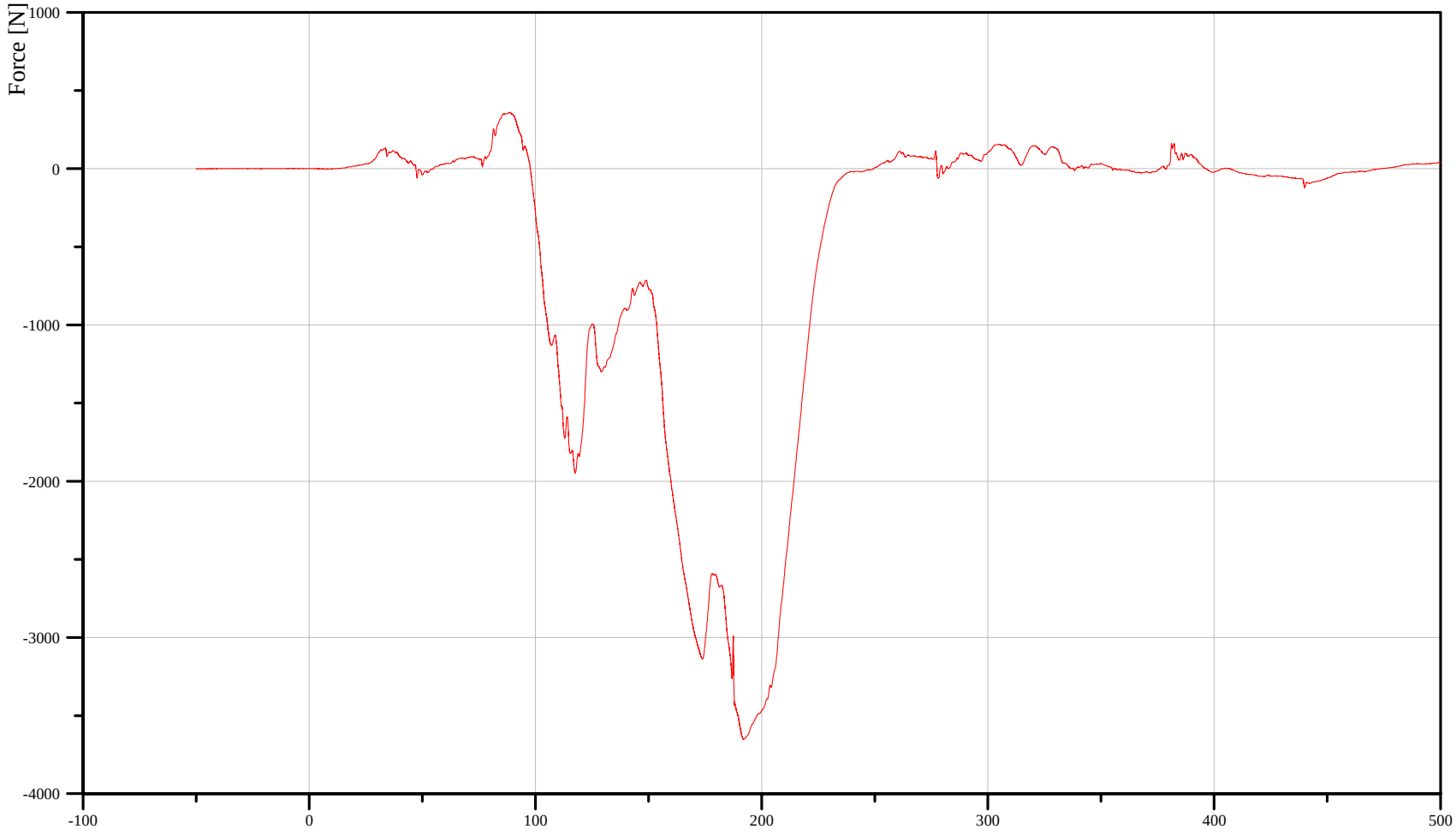
Date: 12/14/2007
Time: 9:12

7R-Left Left Femur Force Z

Customer: VRTC

19FEMRLL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-3,652.27 N at 192.00 ms

Max. Value
360.96 N at 88.56 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

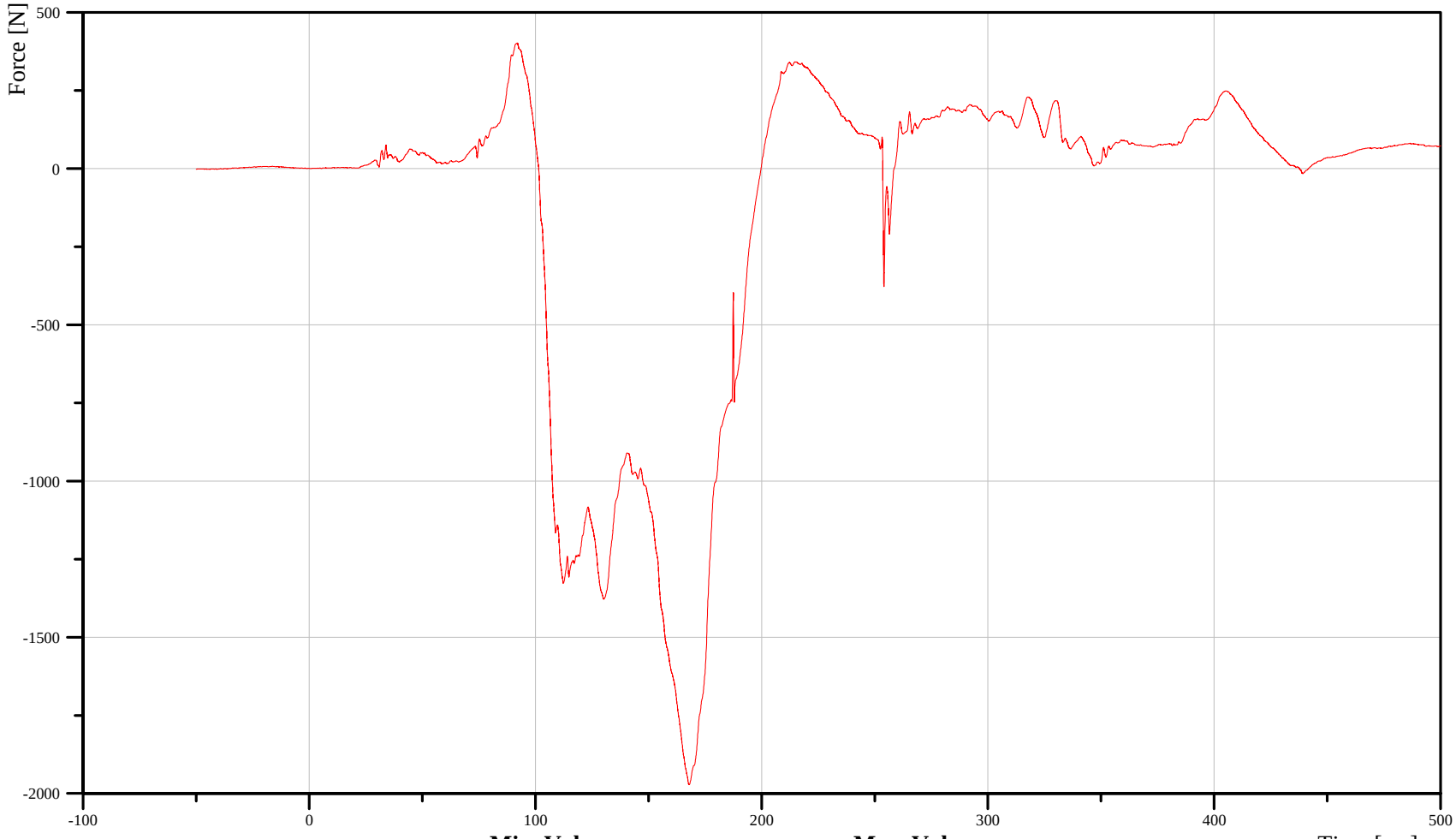
Date: 12/14/2007
Time: 9:12

7R-Left Right Femur Force Z

Customer: VRTC

19FEMRRL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-1,971.48 N at 167.92 ms

Max. Value
402.28 N at 92.00 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

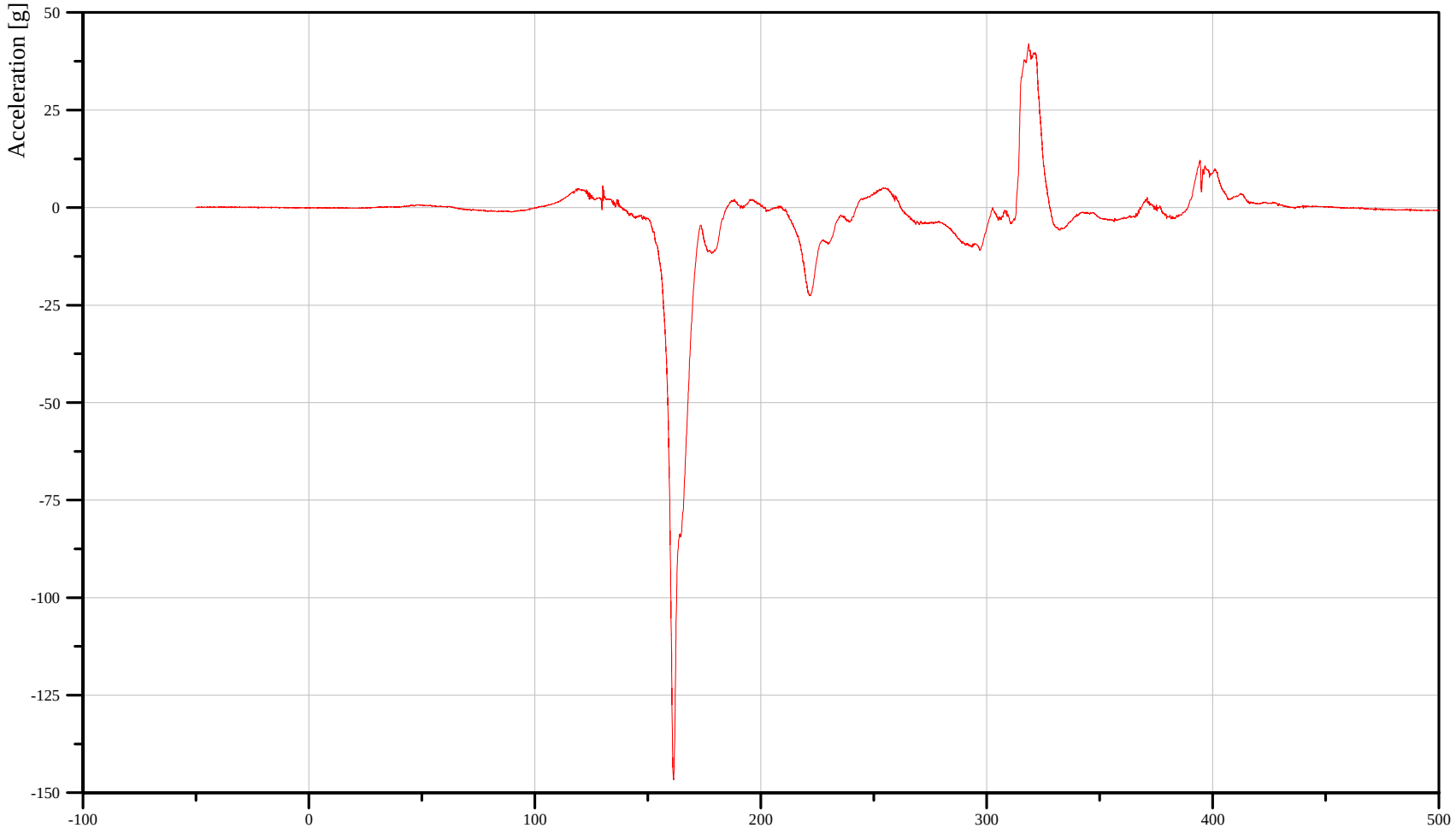
Date: 12/14/2007
Time: 9:12

7R-Right Head X-Axis Acceleration

Customer: VRTC

21HEADCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-146.71 g at 161.36 ms

Max. Value
41.99 g at 318.56 ms

B-379

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

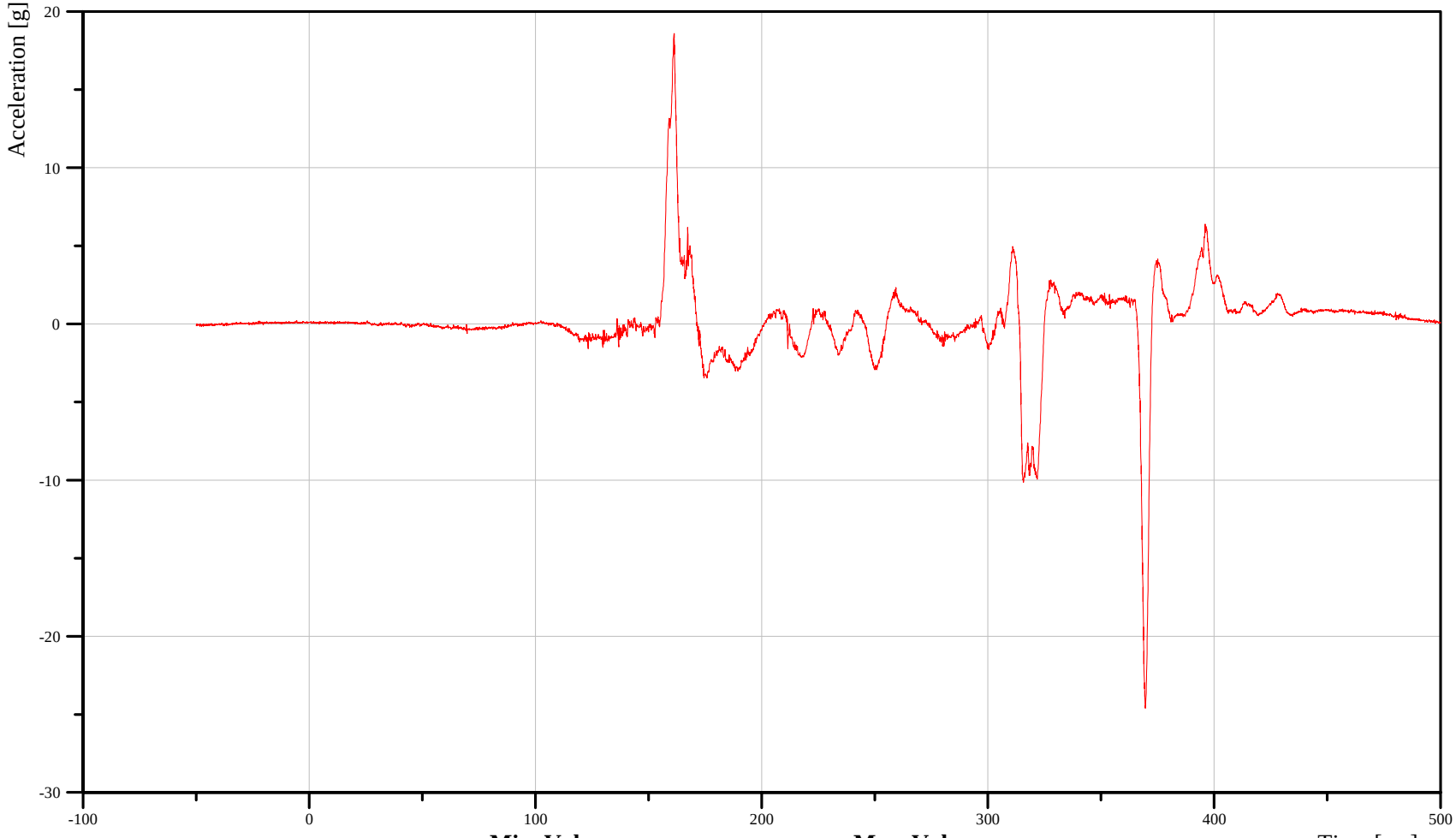
Date: 12/14/2007
Time: 9:12

7R-Right Head Y-Axis Acceleration

Customer: VRTC

21HEADCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-24.58 g at 369.60 ms

Max. Value
18.59 g at 161.28 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

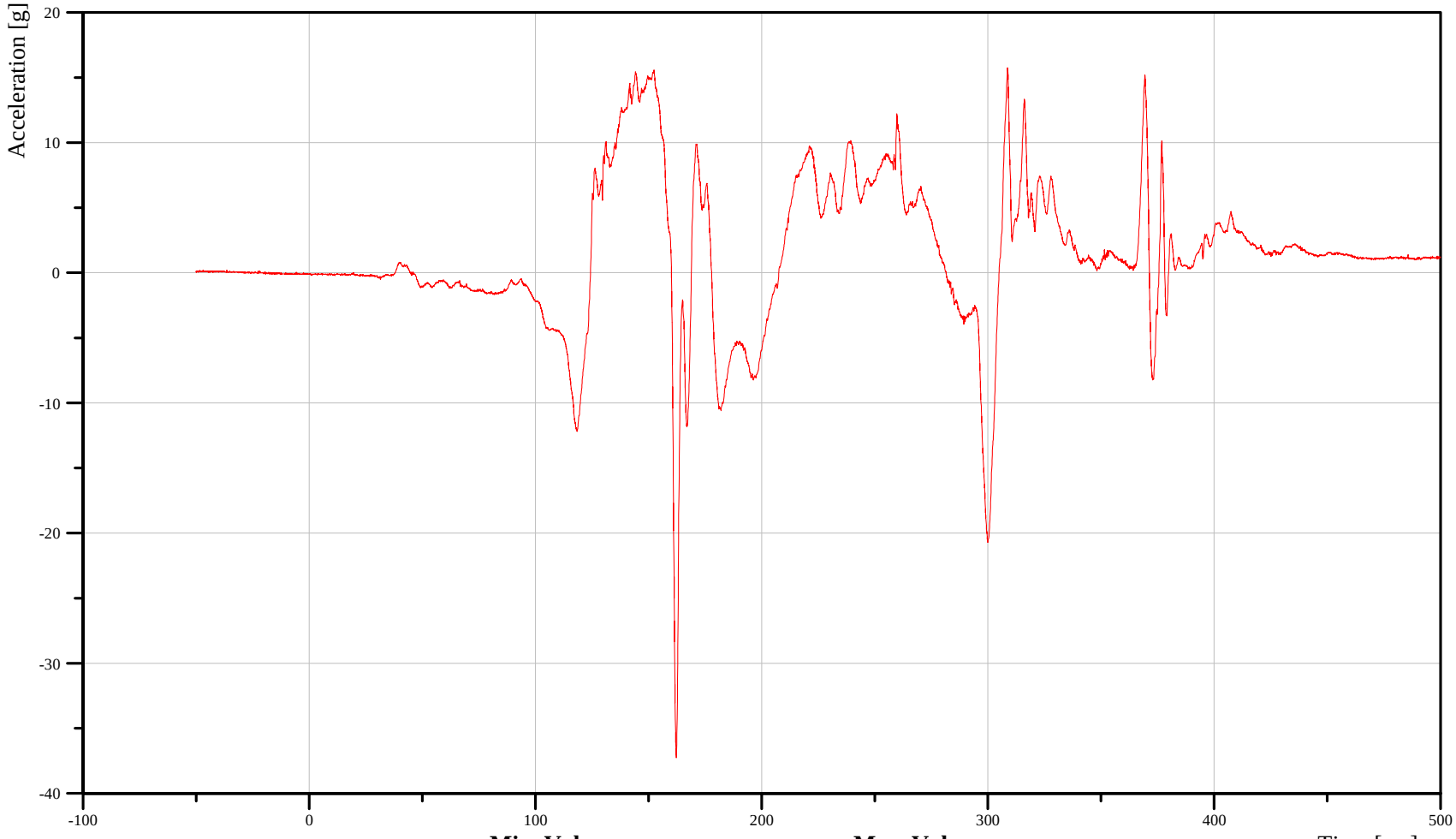
Date: 12/14/2007
Time: 9:12

7R-Right Head Z-Axis Acceleration

Customer: VRTC

21HEADCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-37.27 g at 162.24 ms

Max. Value
15.74 g at 308.64 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

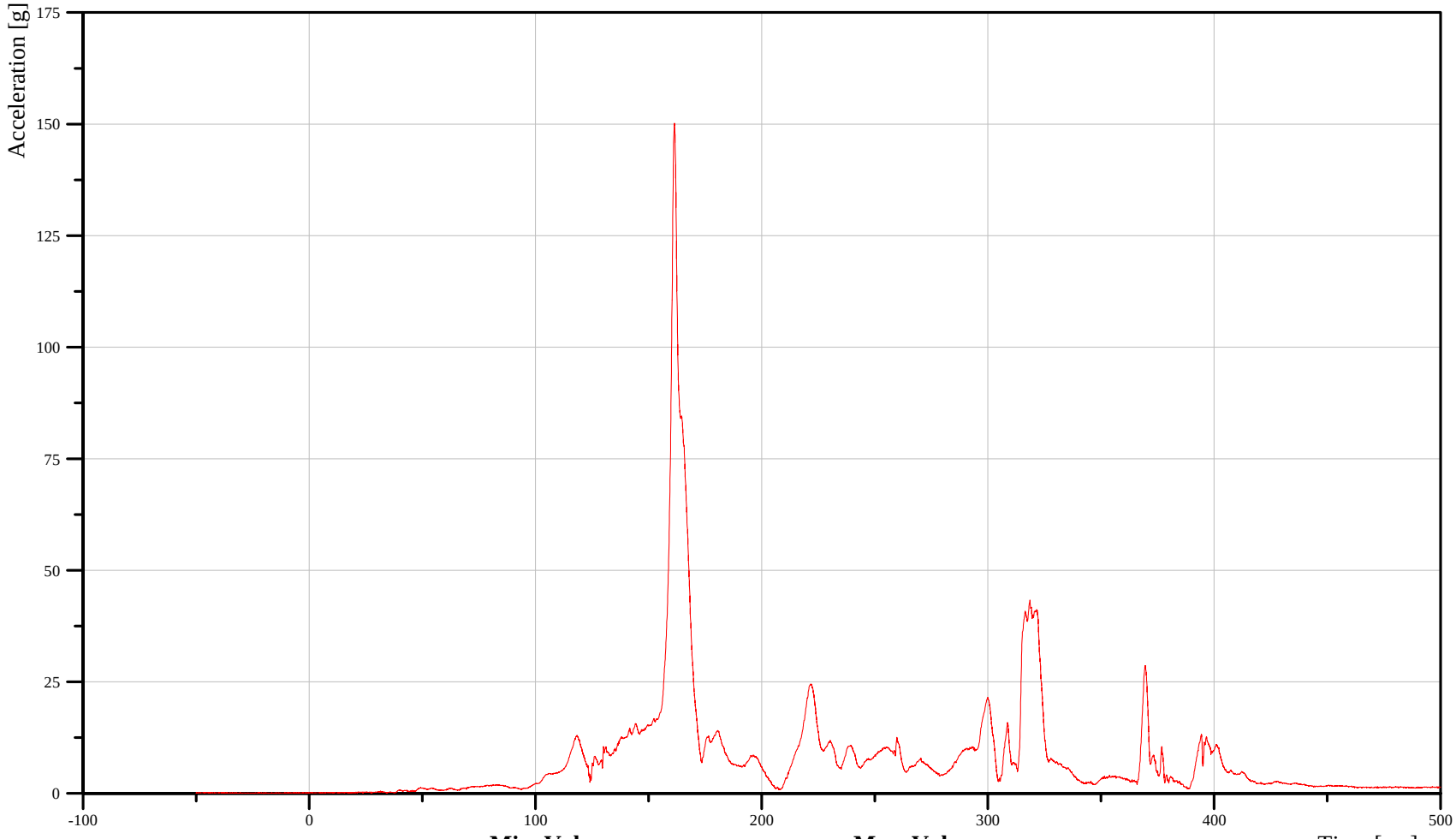
Date: 12/14/2007
Time: 9:12

7R-Right Head Resultant Acceleration

Customer: VRTC

21HEADCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.02 g at -28.16 ms

Max. Value
150.16 g at 161.44 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

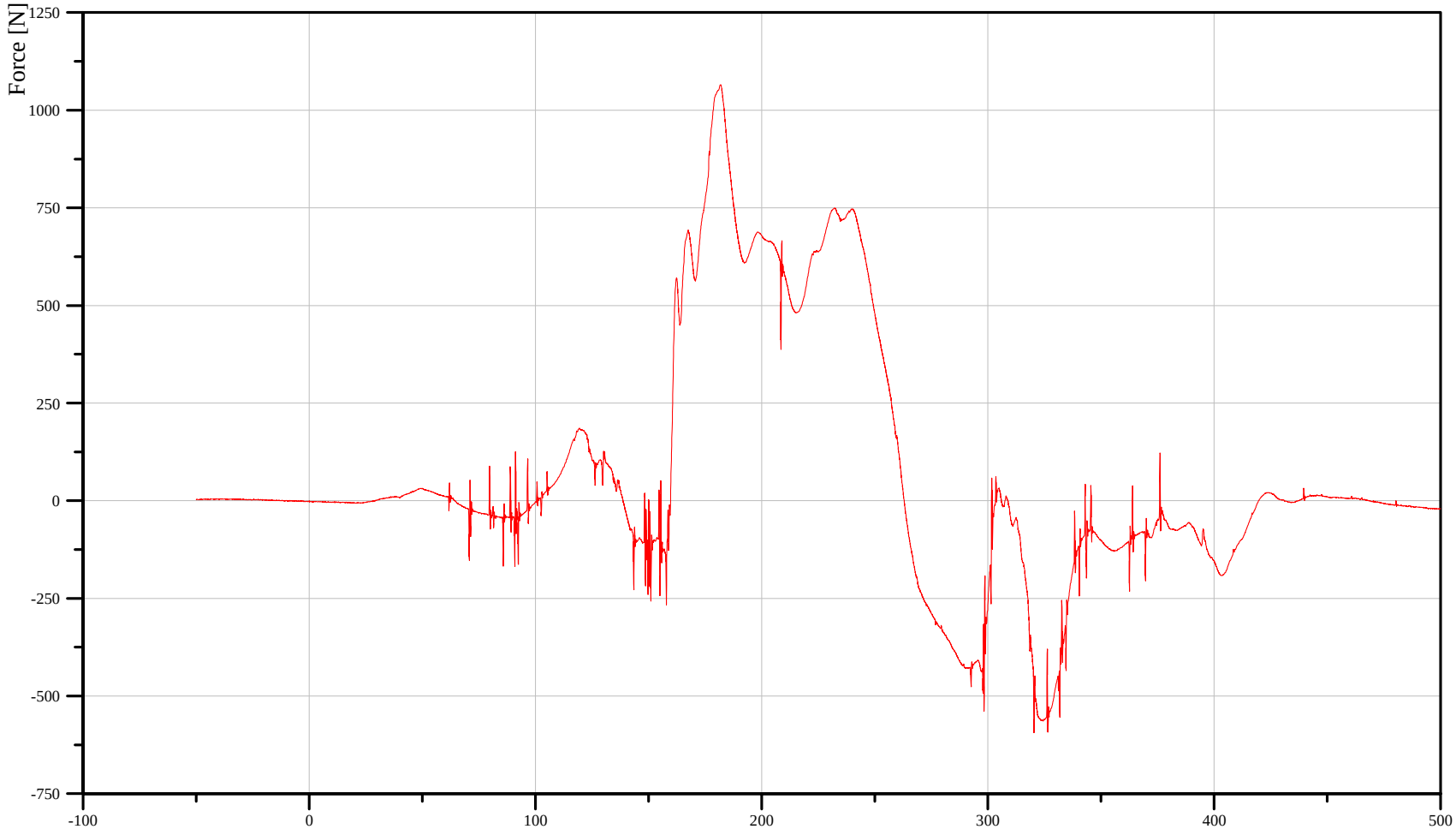
Date: 12/14/2007
Time: 9:12

7R-Right Neck Force X

Customer: VRTC

21NECKUP00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-593.30 N at 320.40 ms

Max. Value
1,065.19 N at 181.76 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

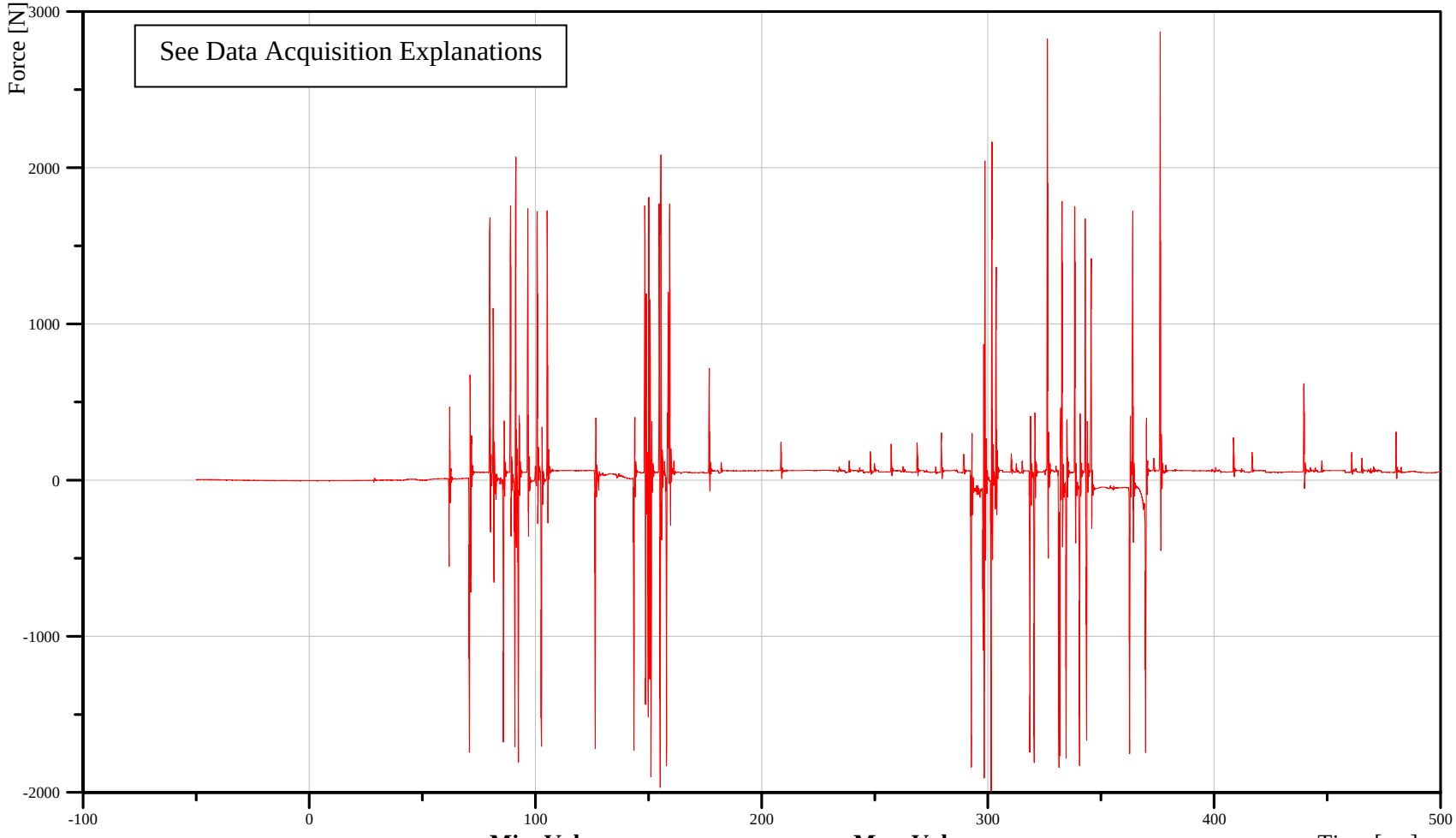
Date: 12/14/2007
Time: 9:12

7R-Right Neck Force Y

Customer: VRTC

21NECKUP00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-1,991.03 N at 301.44 ms

Max. Value
2,867.21 N at 376.08 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

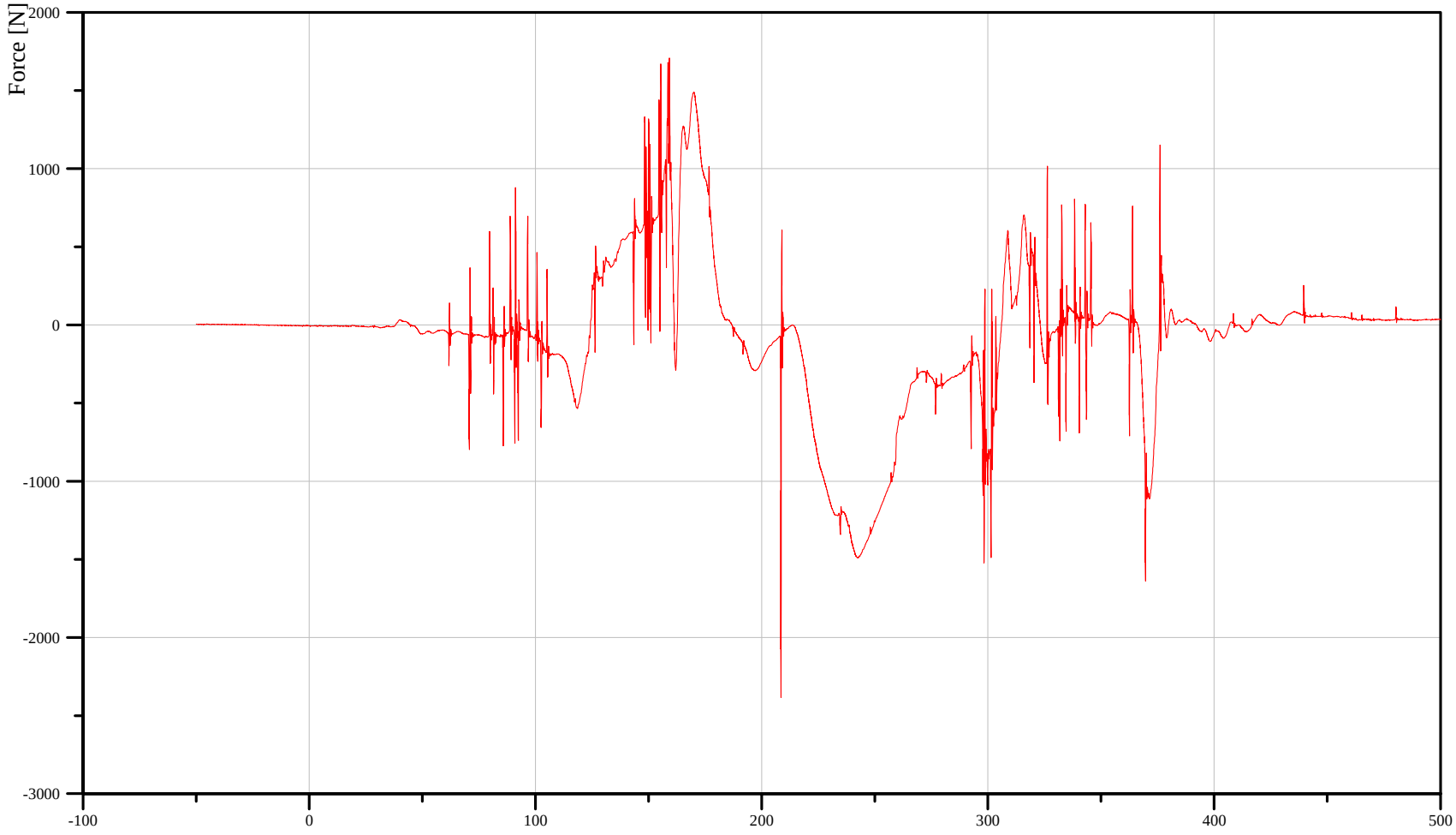
7R-Right Neck Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

21NECKUP00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-2,384.35 N at 208.56 ms

Max. Value
1,708.45 N at 159.28 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

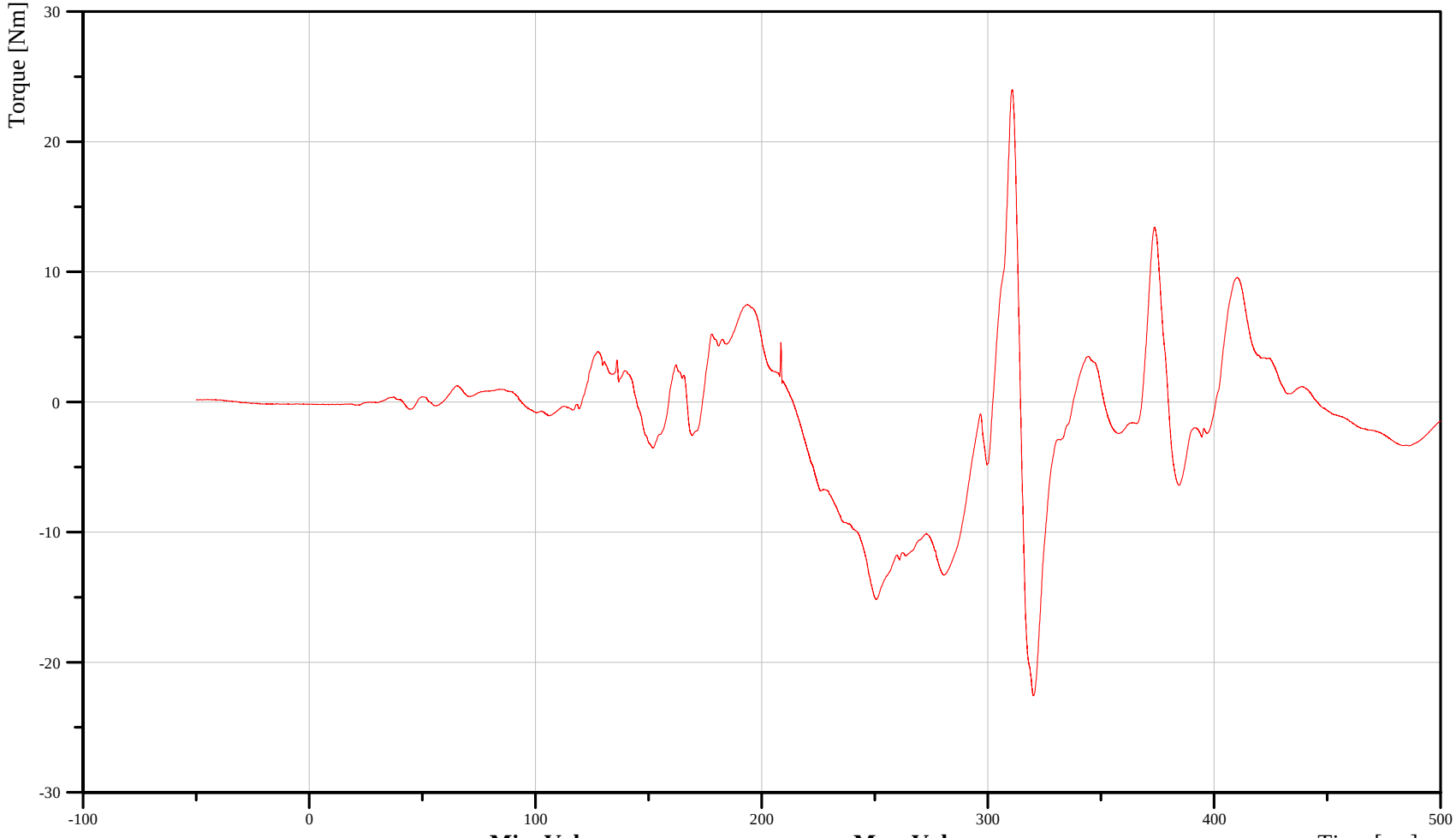
Date: 12/14/2007
Time: 9:12

7R-Right Neck Moment X

Customer: VRTC

21NECKUP00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-22.57 Nm at 320.16 ms

Max. Value
24.01 Nm at 310.72 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

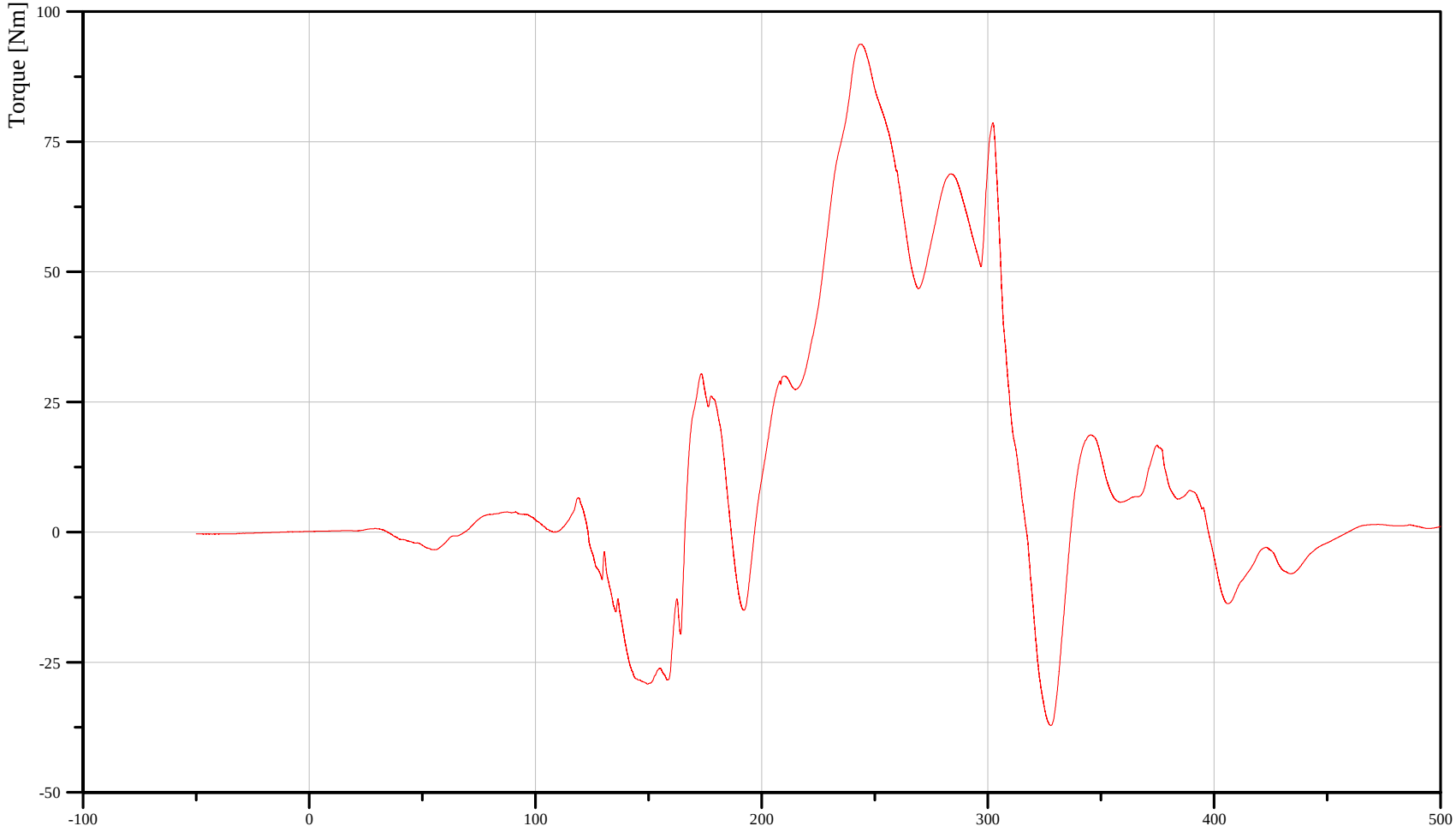
Date: 12/14/2007
Time: 9:12

7R-Right Neck Moment Y

Customer: VRTC

21NECKUP00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-37.14 Nm at 327.76 ms

Max. Value
93.75 Nm at 243.52 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

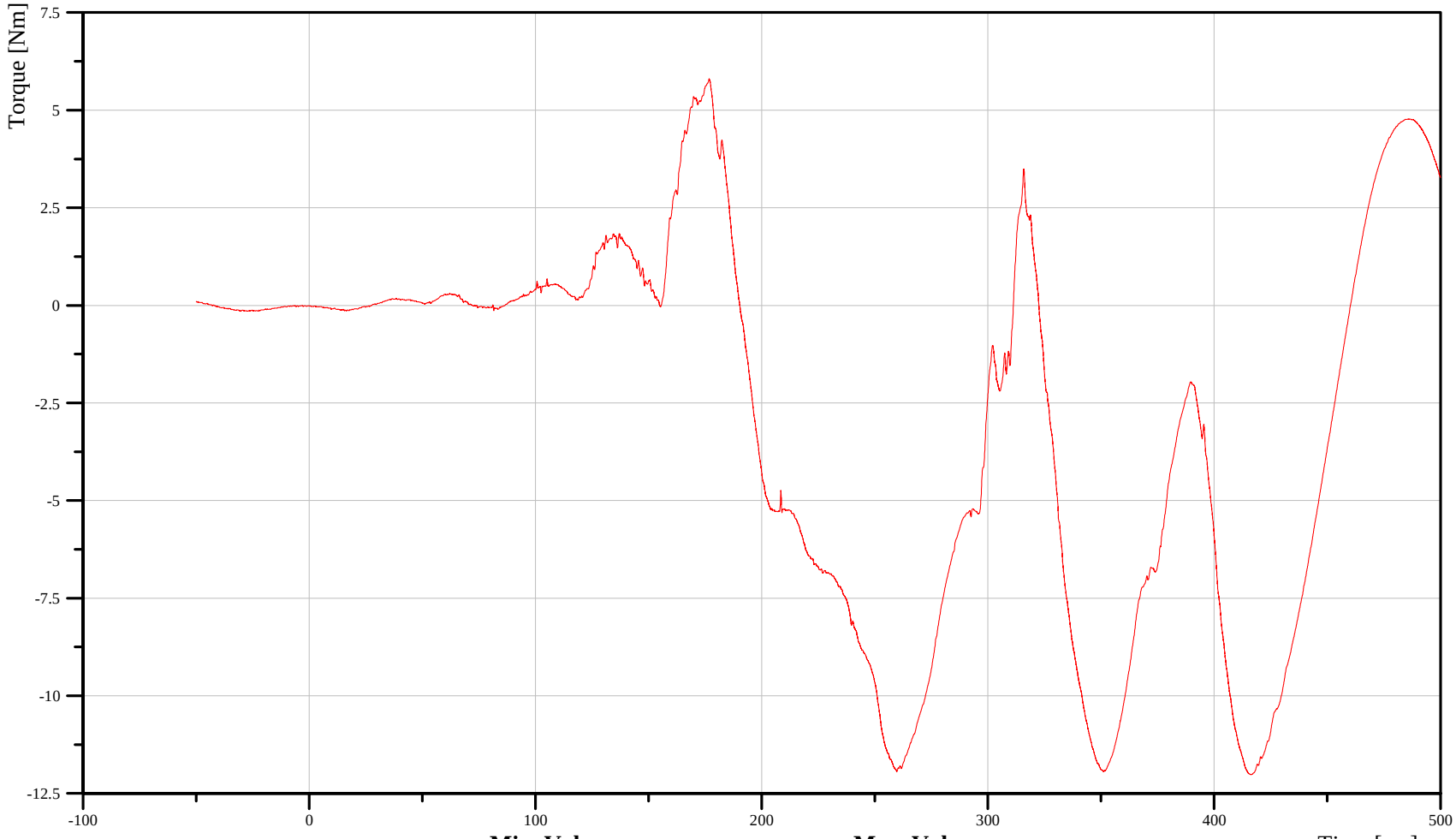
Date: 12/14/2007
Time: 9:12

7R-Right Neck Moment Z

Customer: VRTC

21NECKUP00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-12.01 Nm at 416.40 ms

Max. Value
5.80 Nm at 176.80 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

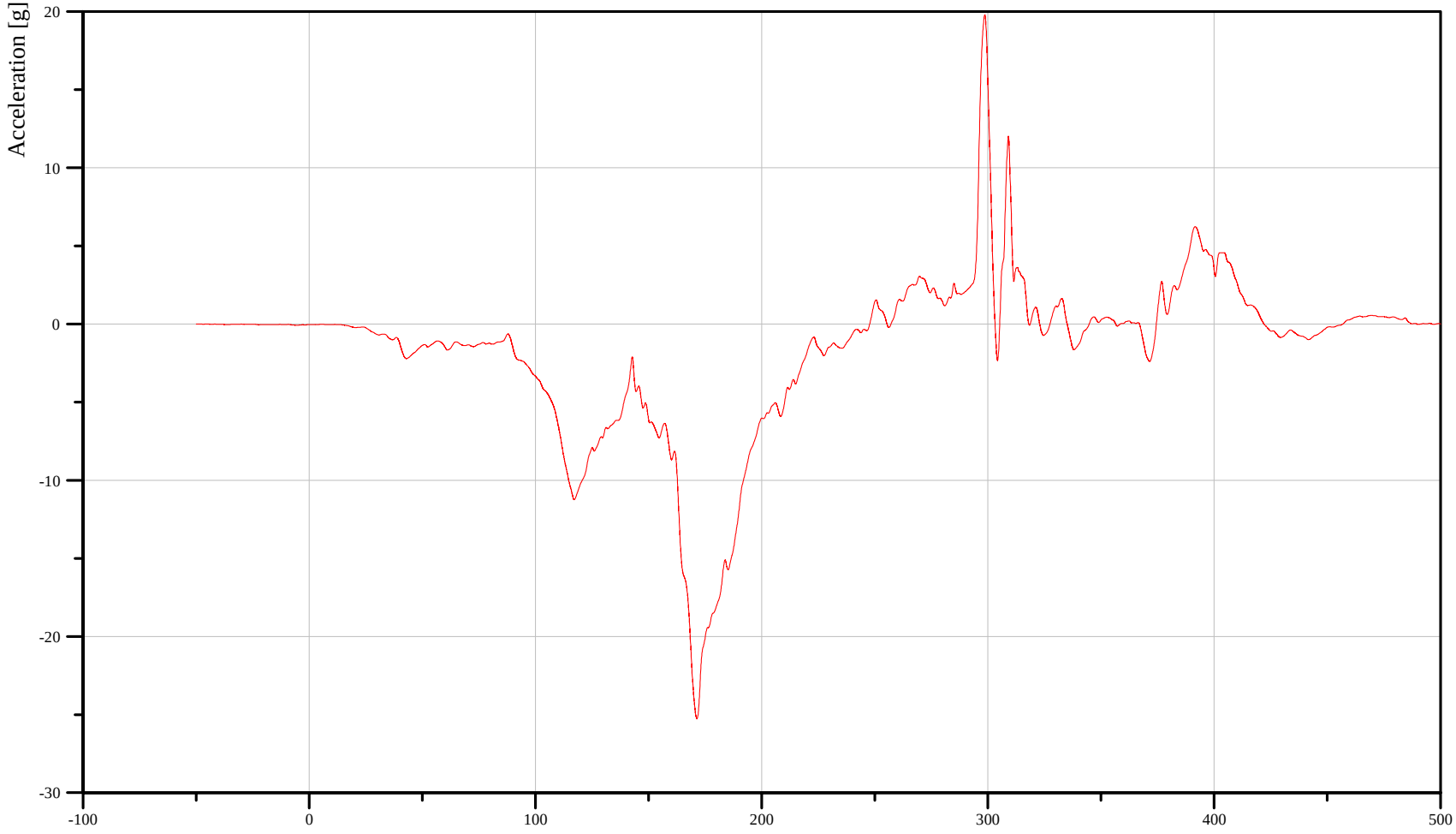
Date: 12/14/2007
Time: 9:12

7R-Right Chest X-Axis Acceleration

Customer: VRTC

21CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-25.25 g at 171.44 ms

Max. Value
19.80 g at 298.64 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

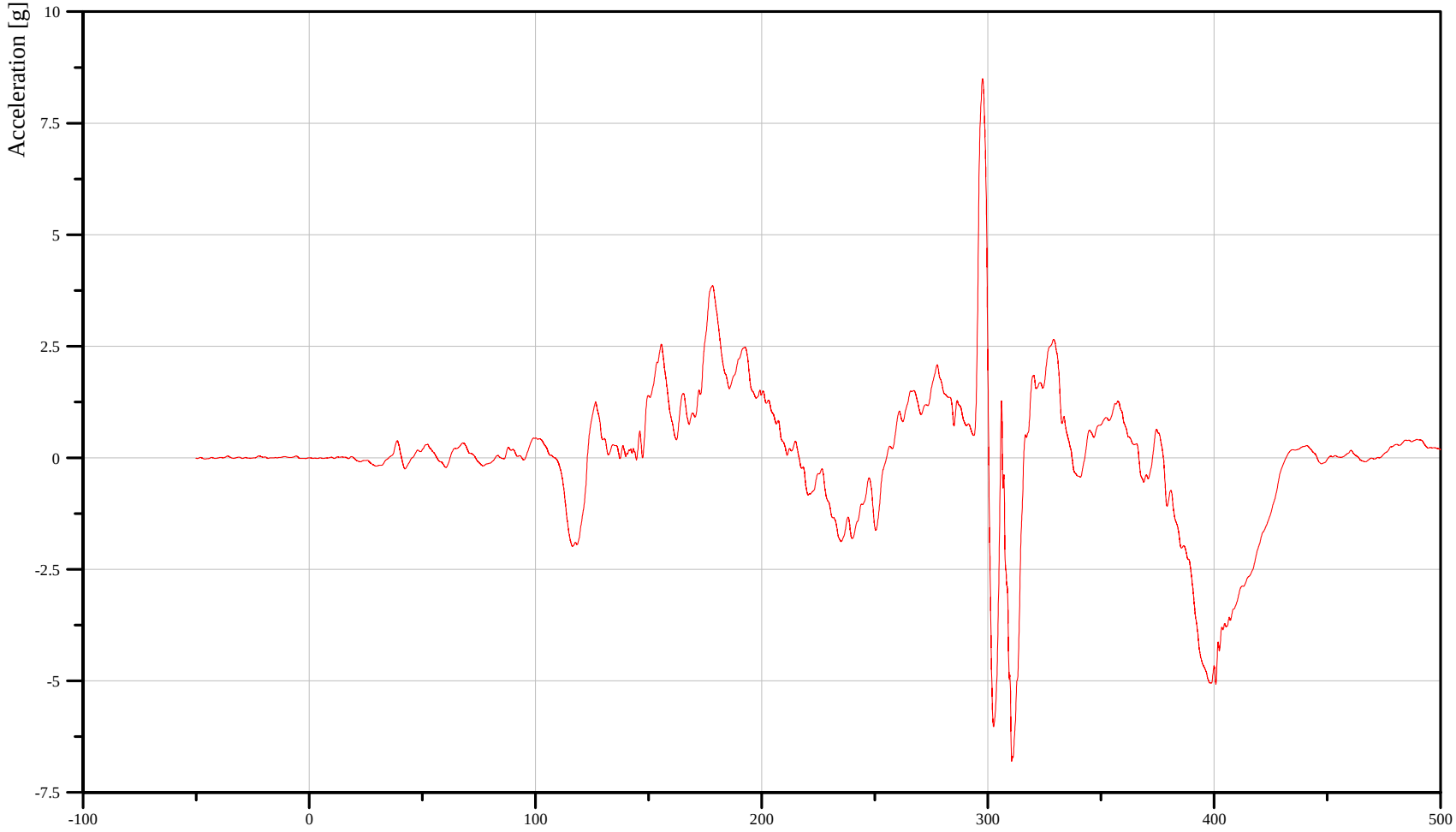
Date: 12/14/2007
Time: 9:12

7R-Right Chest Y-Axis Acceleration

Customer: VRTC

21CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-6.80 g at 310.48 ms

Max. Value
8.50 g at 297.60 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

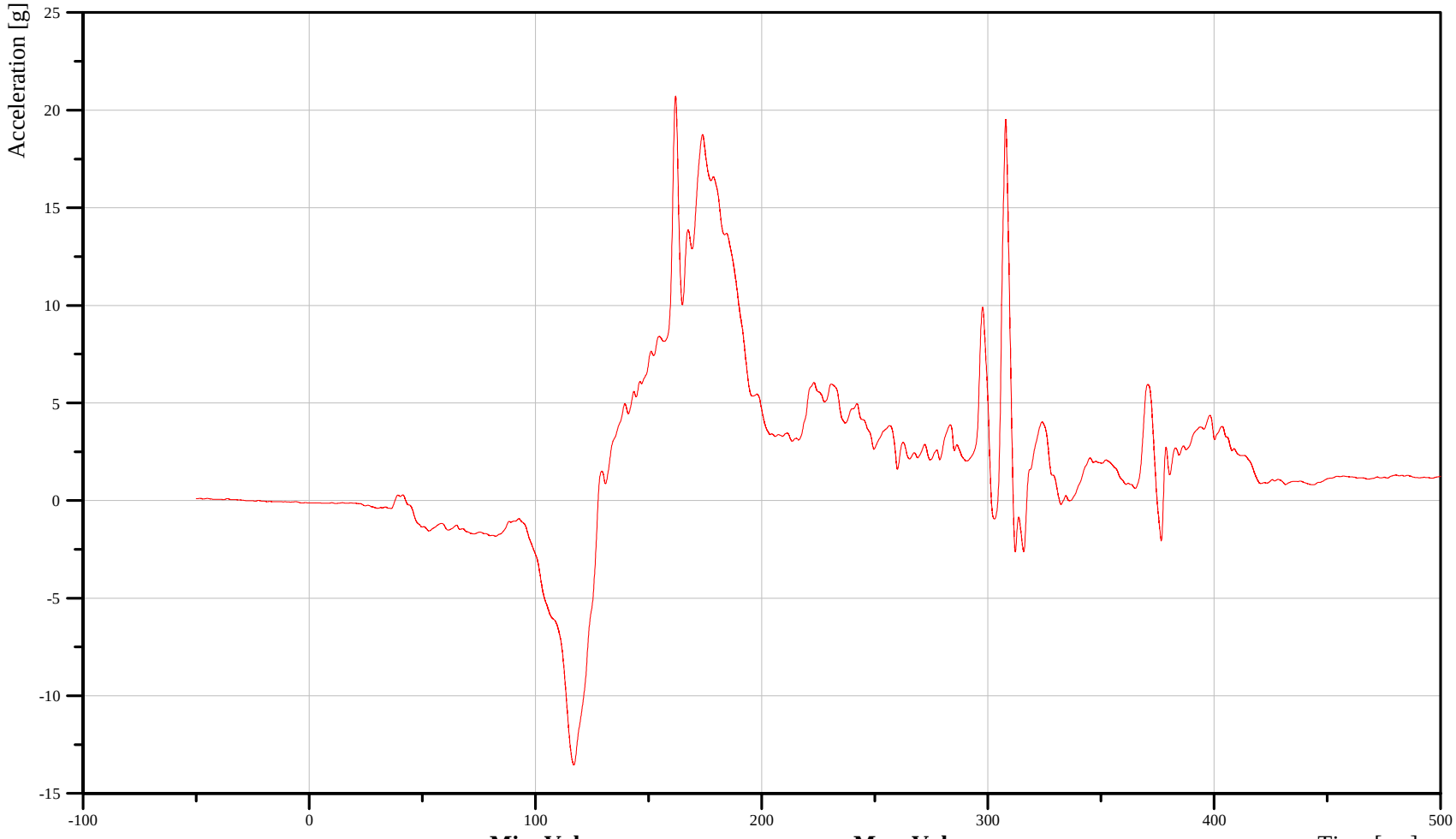
Date: 12/14/2007
Time: 9:12

7R-Right Chest Z-Axis Acceleration

Customer: VRTC

21CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-13.54 g at 117.04 ms

Max. Value
20.72 g at 161.92 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

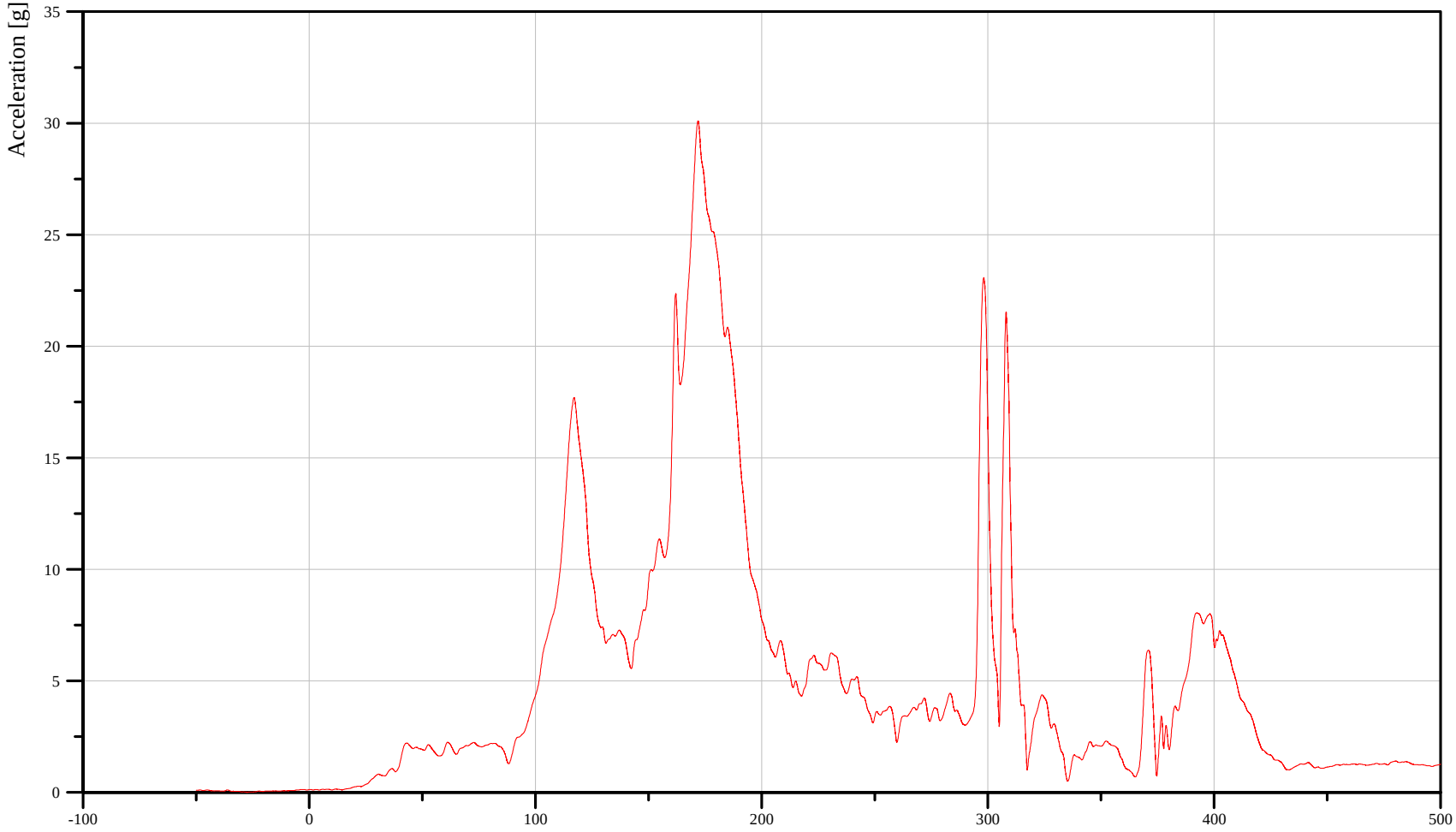
Date: 12/14/2007
Time: 9:12

7R-Right Chest Resultant Acceleration

Customer: VRTC

21CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.01 g at -27.36 ms

Max. Value
30.10 g at 171.84 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

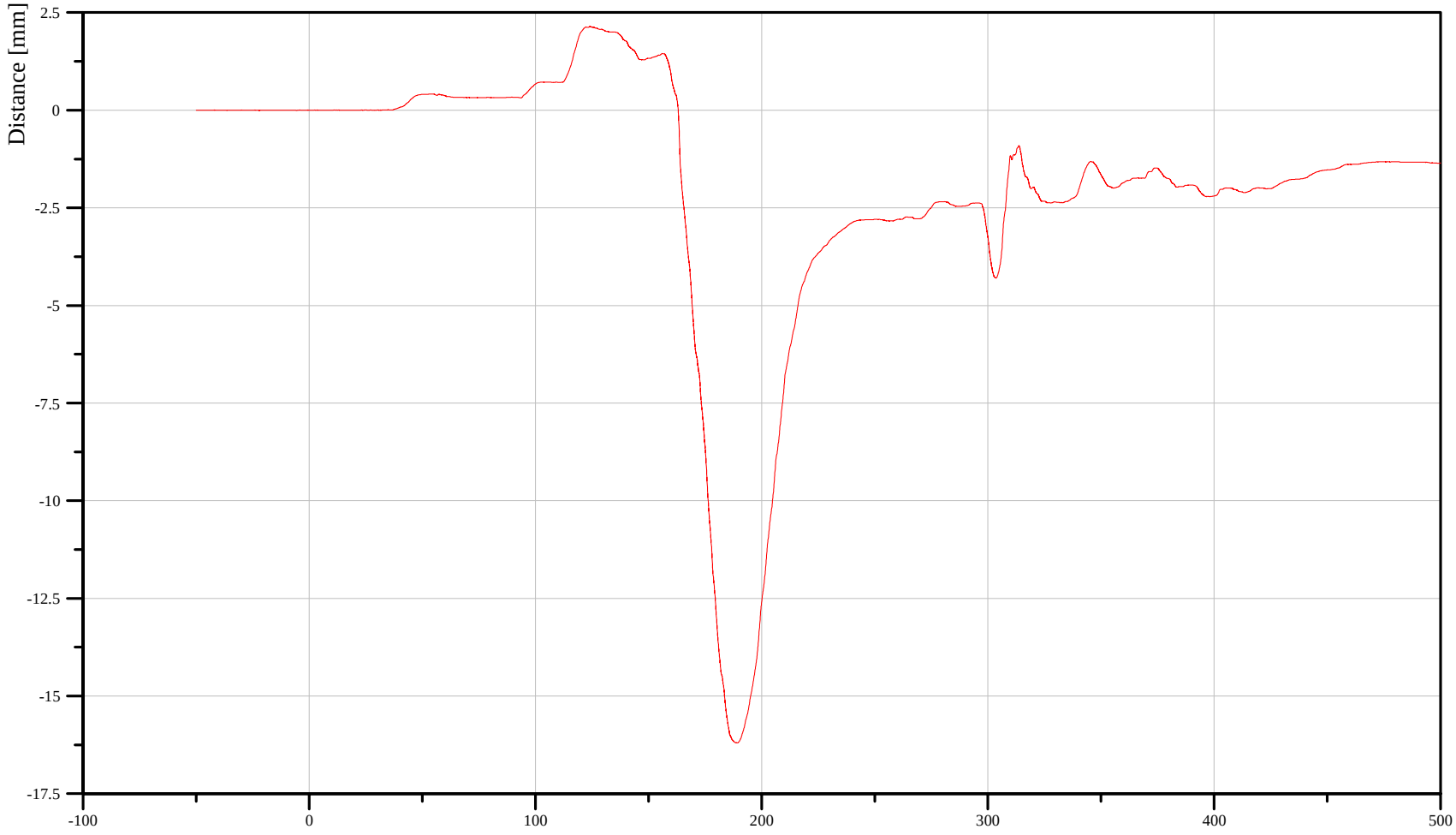
Date: 12/14/2007
Time: 9:12

7R-Right Chest X-Axis Deflection

Customer: VRTC

21CHST0000H3DSXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-16.20 mm at 189.28 ms

Max. Value
2.14 mm at 124.00 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

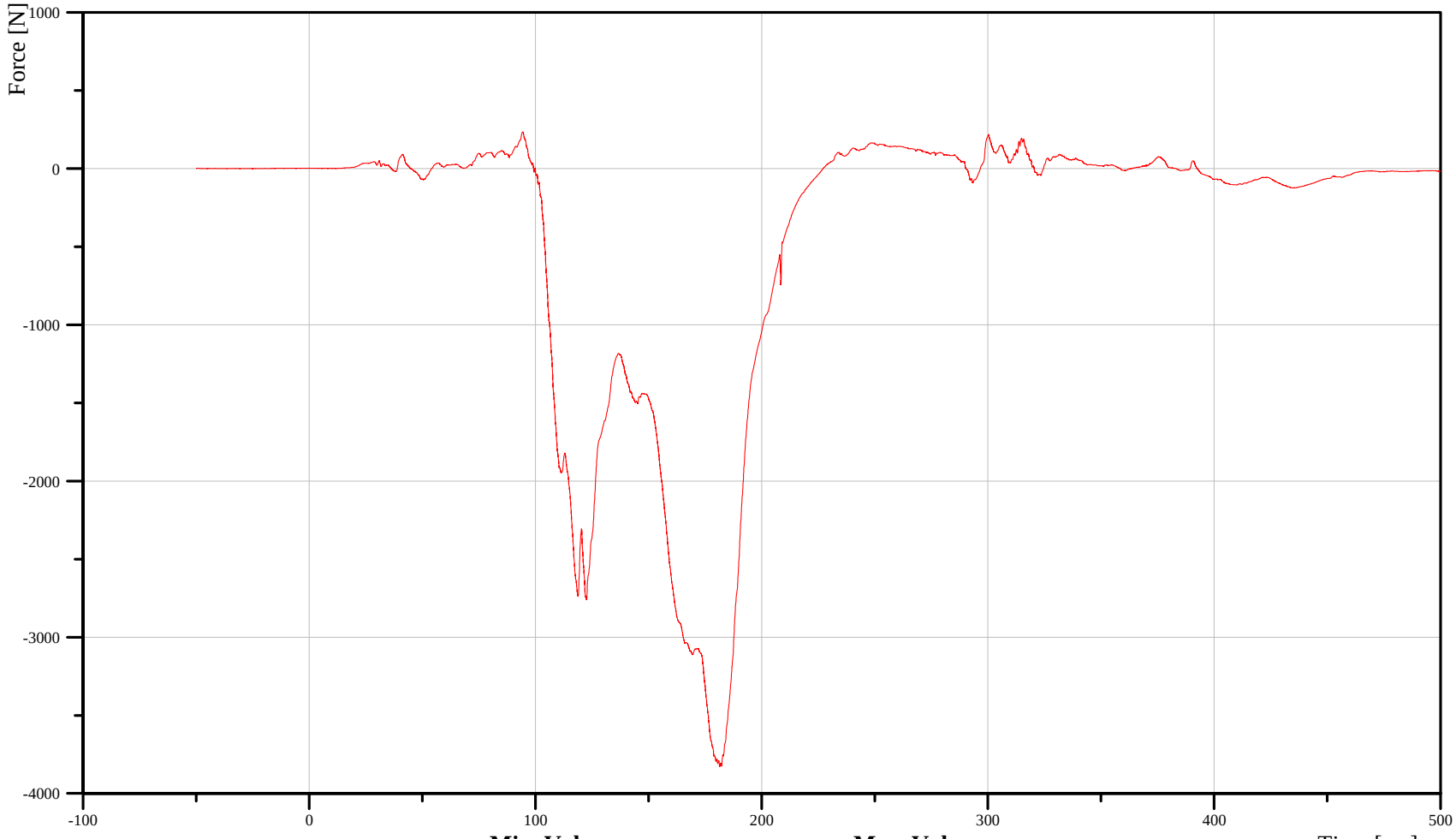
Date: 12/14/2007
Time: 9:12

7R-Right Left Femur Force Z

Customer: VRTC

21FEMRLL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-3,829.49 N at 181.52 ms

Max. Value
235.43 N at 94.40 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

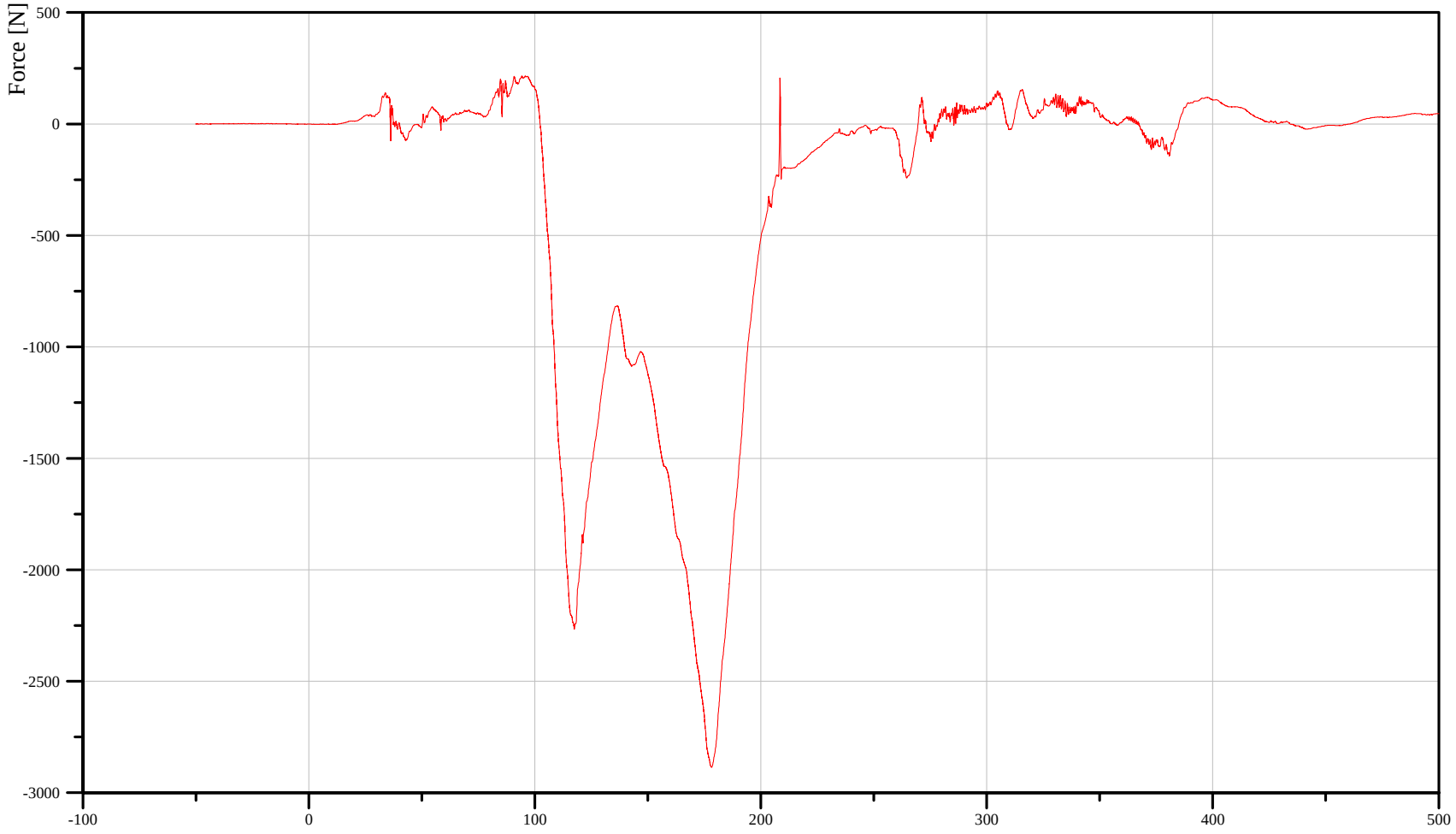
Date: 12/14/2007
Time: 9:12

7R-Right Right Femur Force Z

Customer: VRTC

21FEMRRL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-2,885.95 N at 178.32 ms

Max. Value
214.71 N at 95.76 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

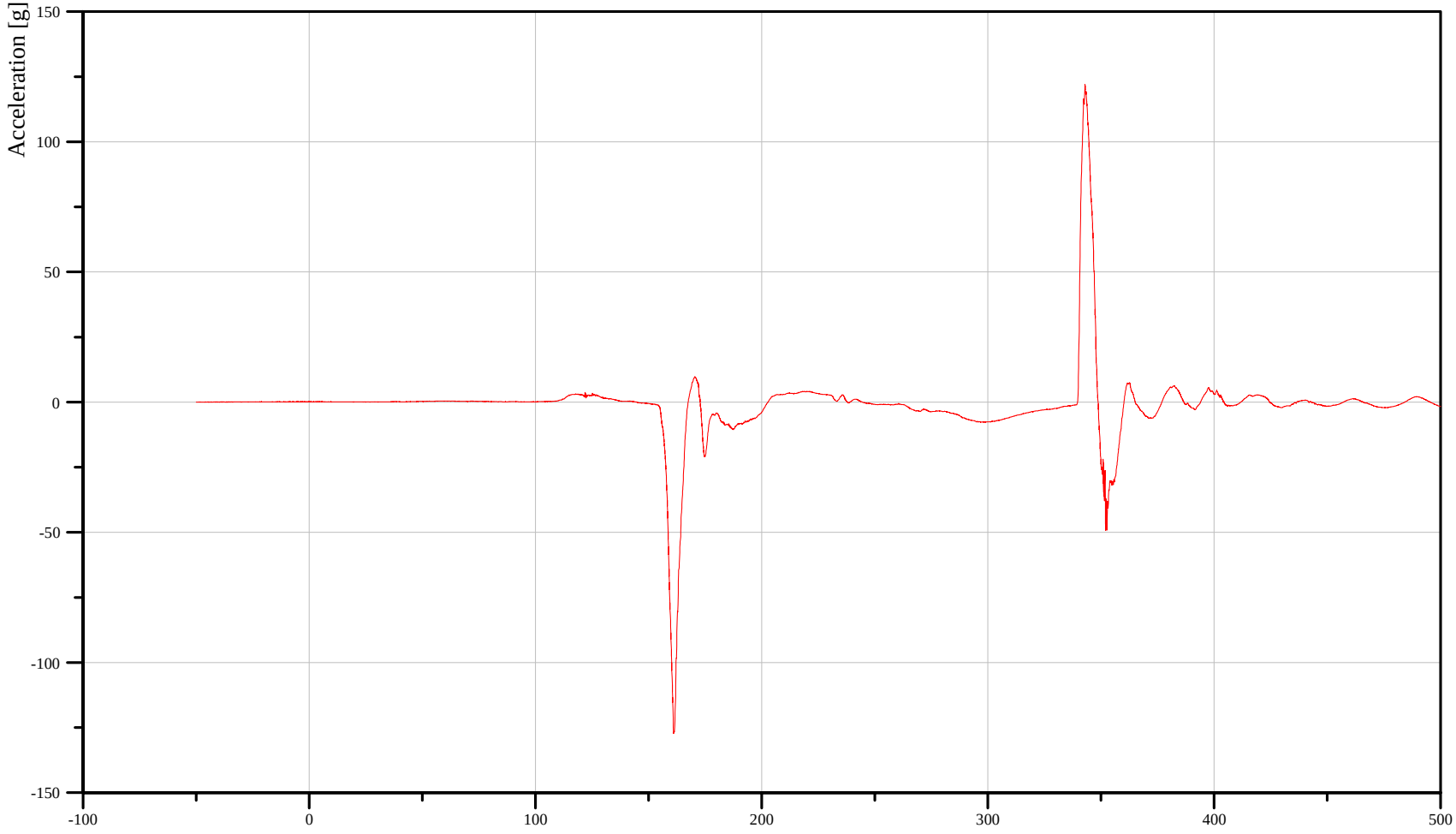
Date: 12/14/2007
Time: 9:12

8L-Left Head X-Axis Acceleration

Customer: VRTC

22HEADCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-127.19 g at 161.12 ms

Max. Value
122.08 g at 342.88 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

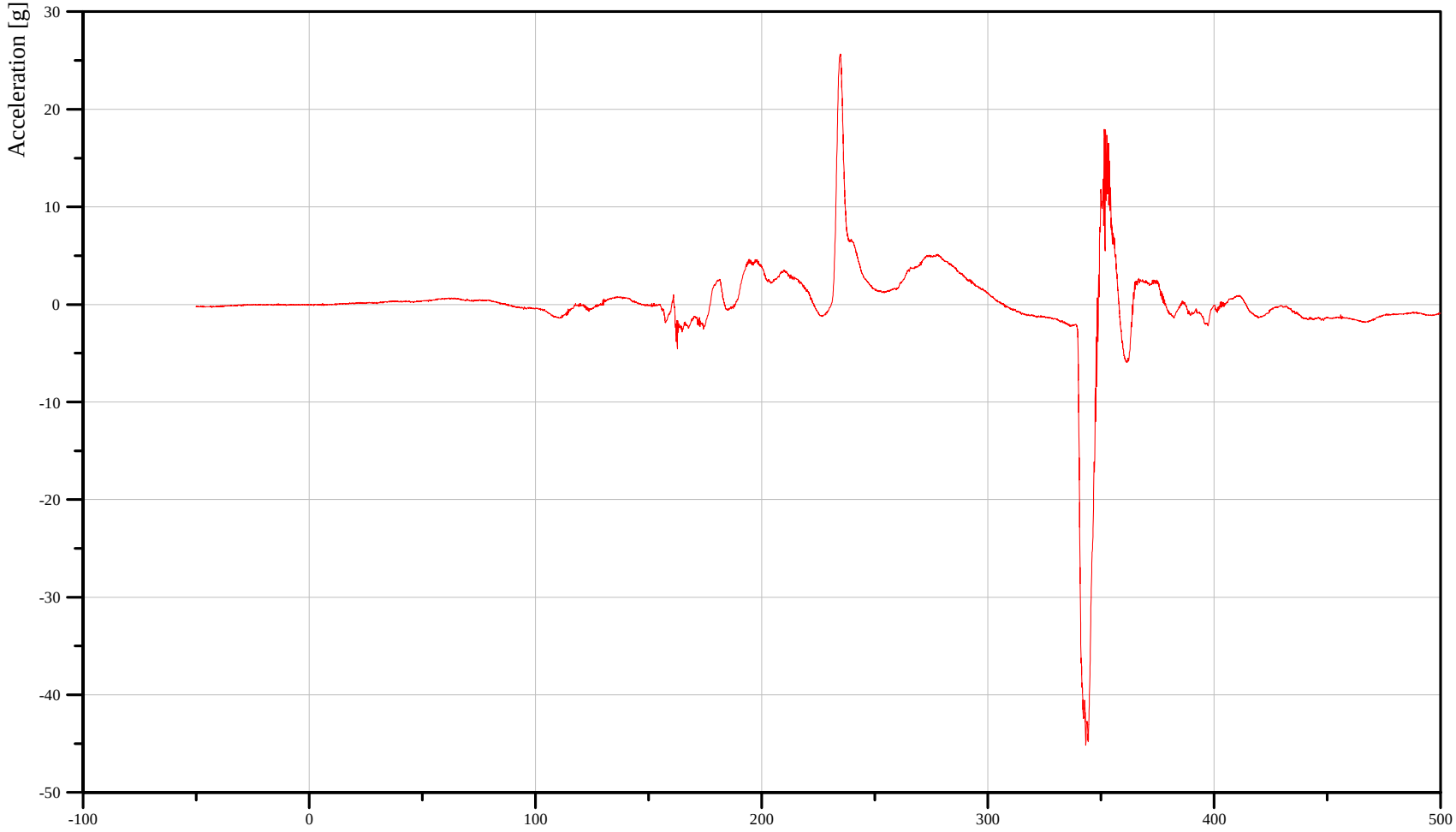
Date: 12/14/2007
Time: 9:12

8L-Left Head Y-Axis Acceleration

Customer: VRTC

22HEADCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-45.15 g at 343.28 ms

Max. Value
25.66 g at 234.72 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

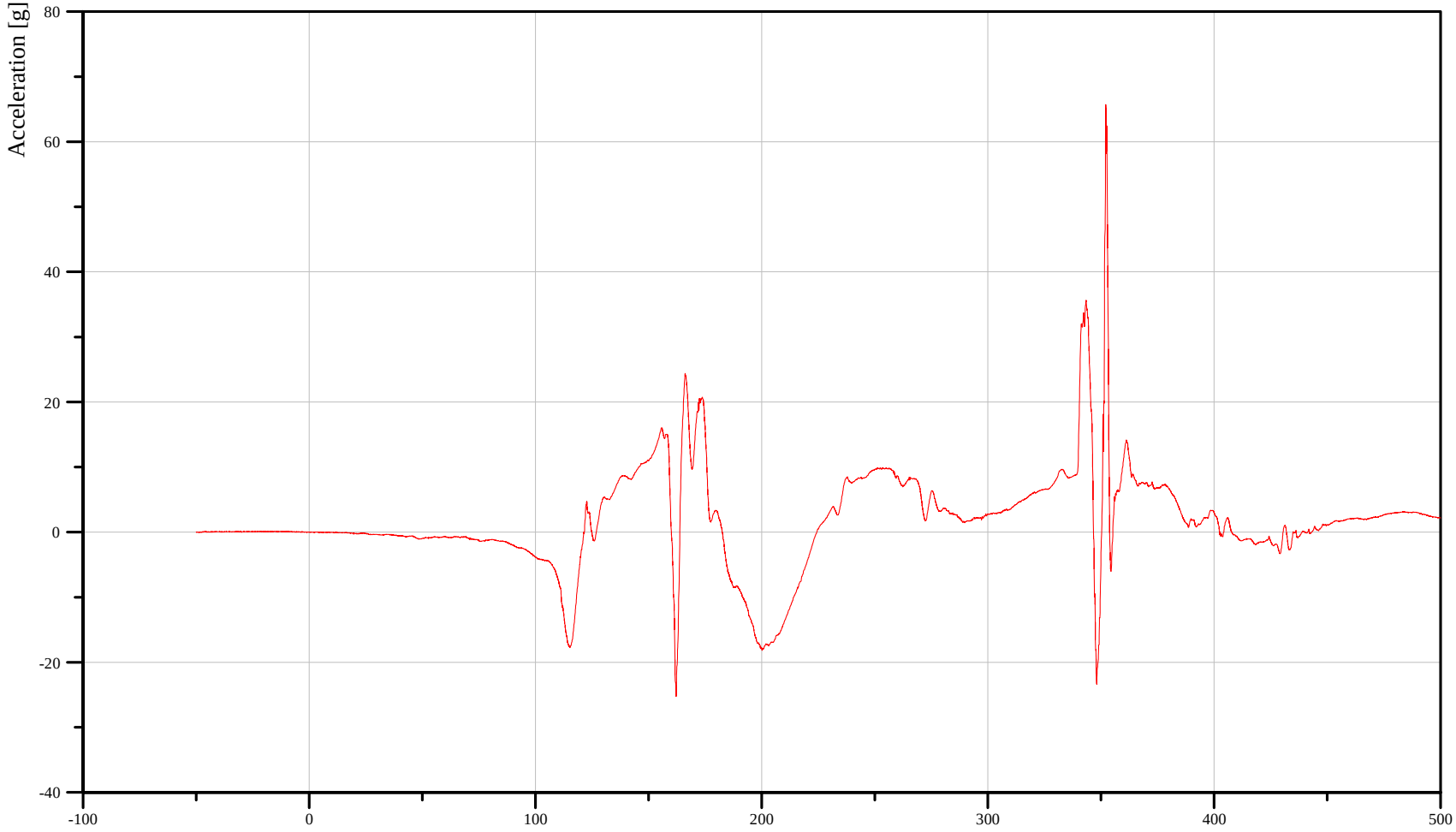
Date: 12/14/2007
Time: 9:12

8L-Left Head Z-Axis Acceleration

Customer: VRTC

22HEADCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-25.20 g at 162.24 ms

Max. Value
65.74 g at 352.08 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

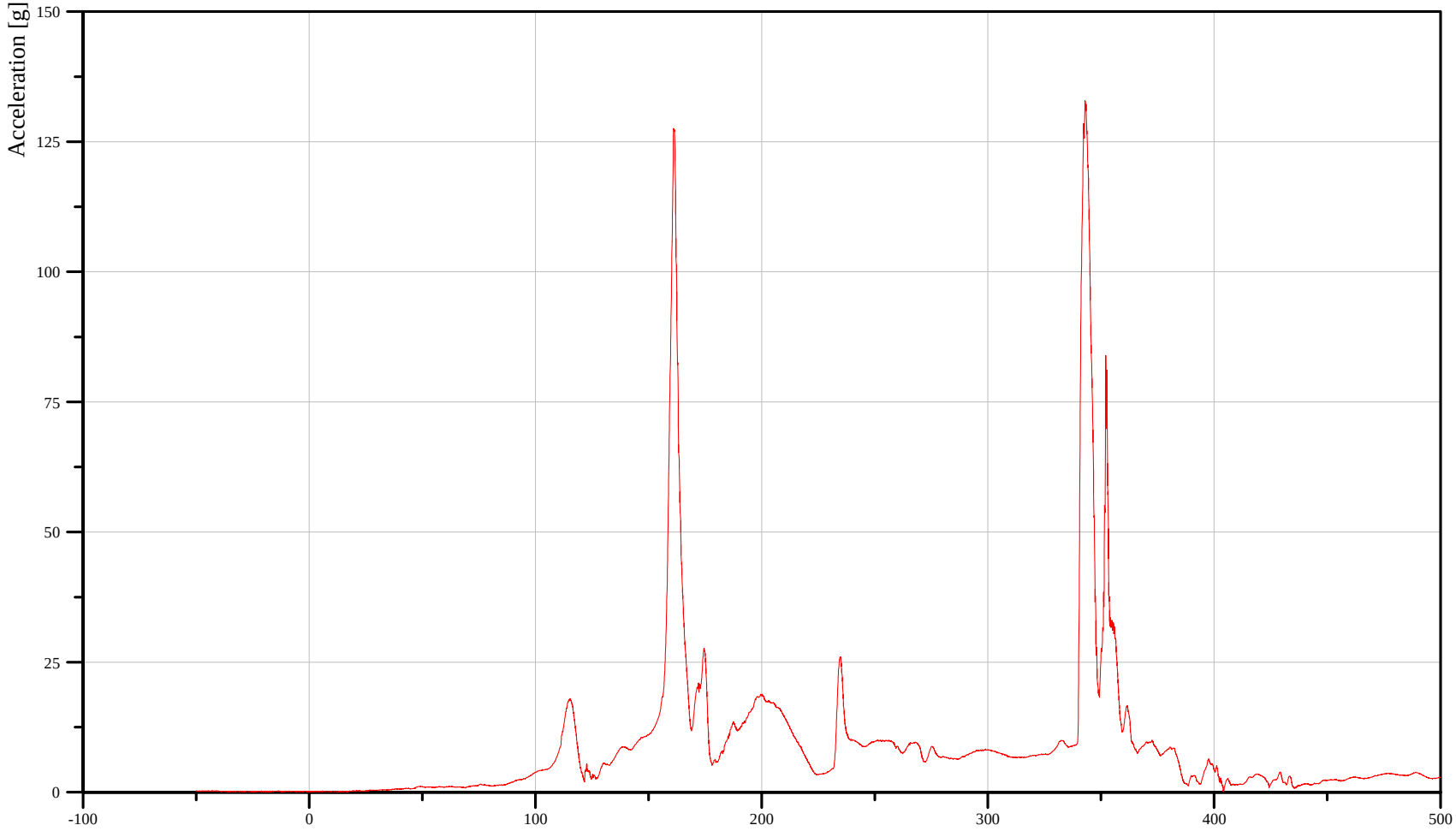
Date: 12/14/2007
Time: 9:12

8L-Left Head Resultant Acceleration

Customer: VRTC

22HEADCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.09 g at 12.72 ms

Max. Value
132.88 g at 342.88 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

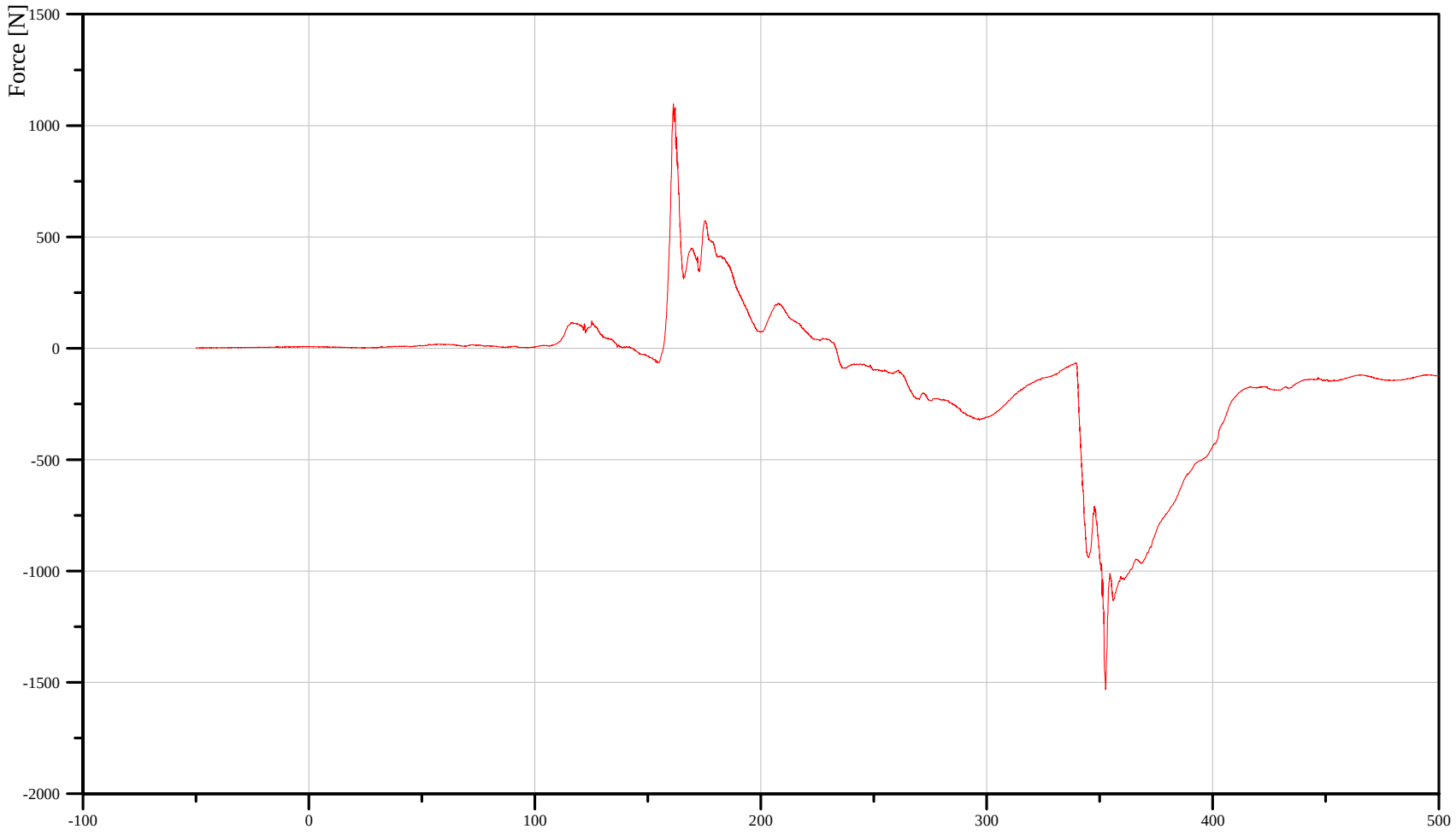
8L-Left Neck Force X

Date: 12/14/2007
Time: 9:12

Customer: VRTC

22NECKUP00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-1,531.19 N at 352.64 ms

Max. Value
1,095.61 N at 161.28 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

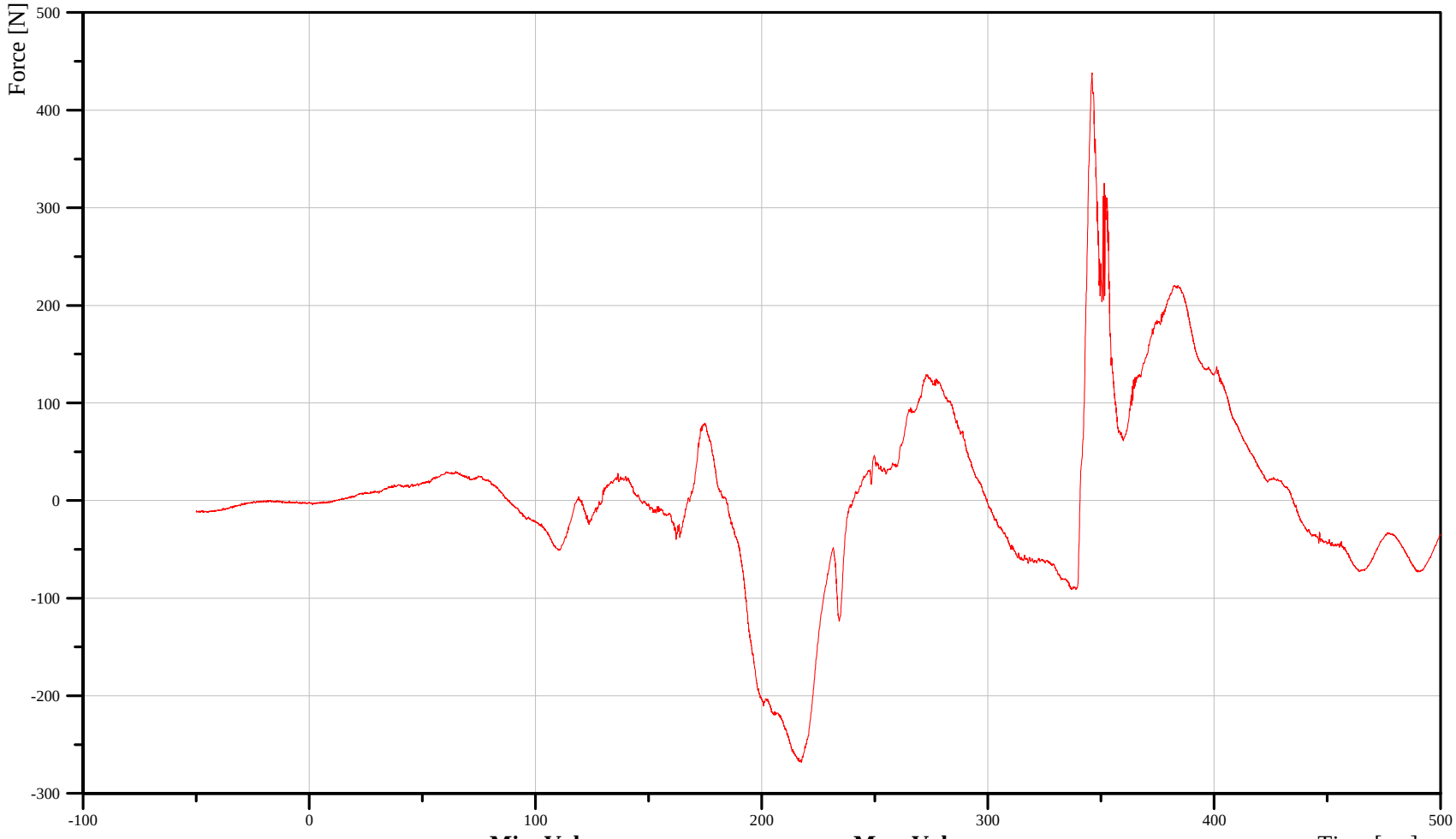
8L-Left Neck Force Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

22NECKUP00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-268.05 N at 217.60 ms

Max. Value
438.16 N at 346.00 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

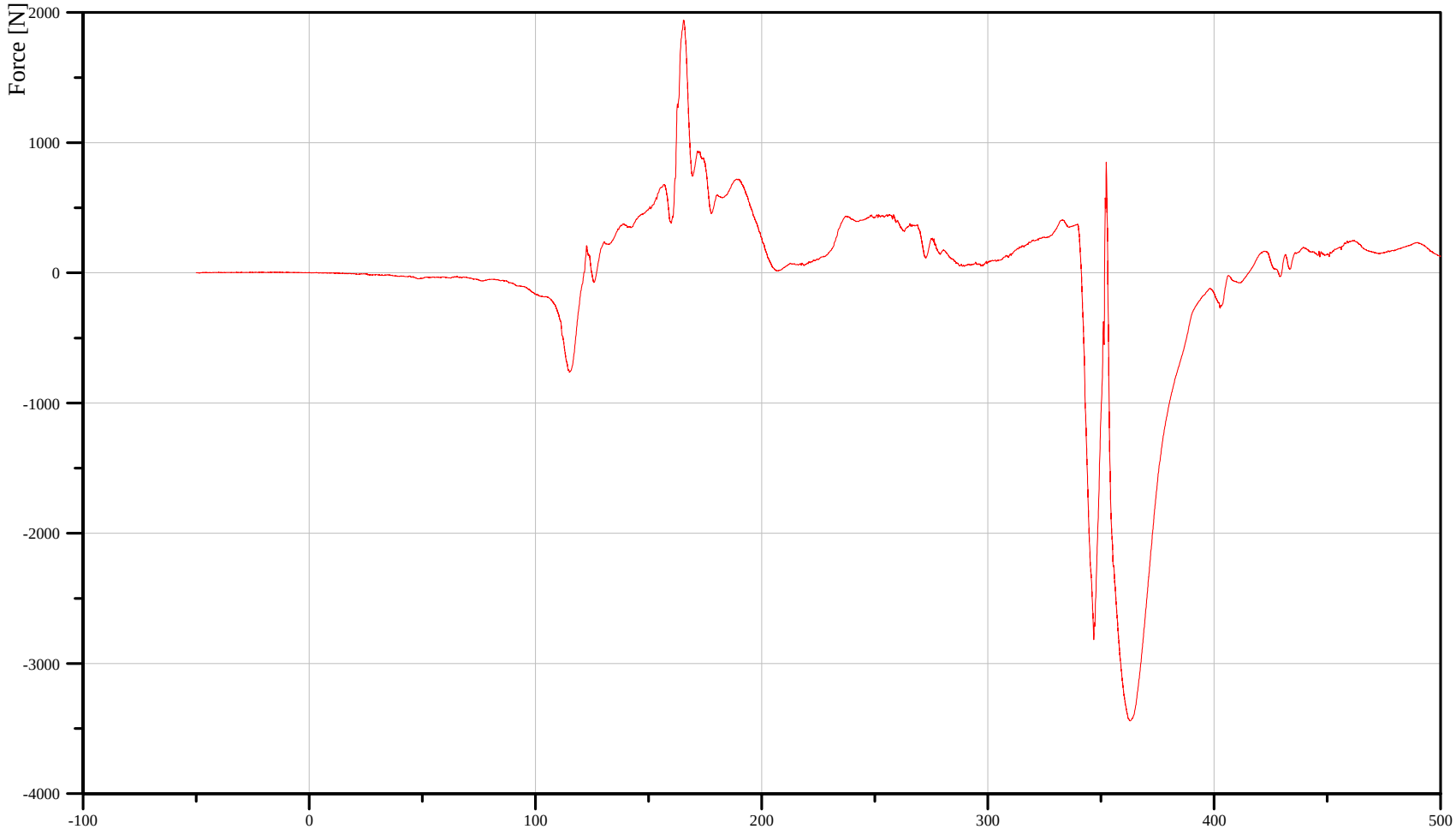
Date: 12/14/2007
Time: 9:12

8L-Left Neck Force Z

Customer: VRTC

22NECKUP00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value	Max. Value
-3,439.98 N at 362.96 ms	1,941.39 N at 165.52 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

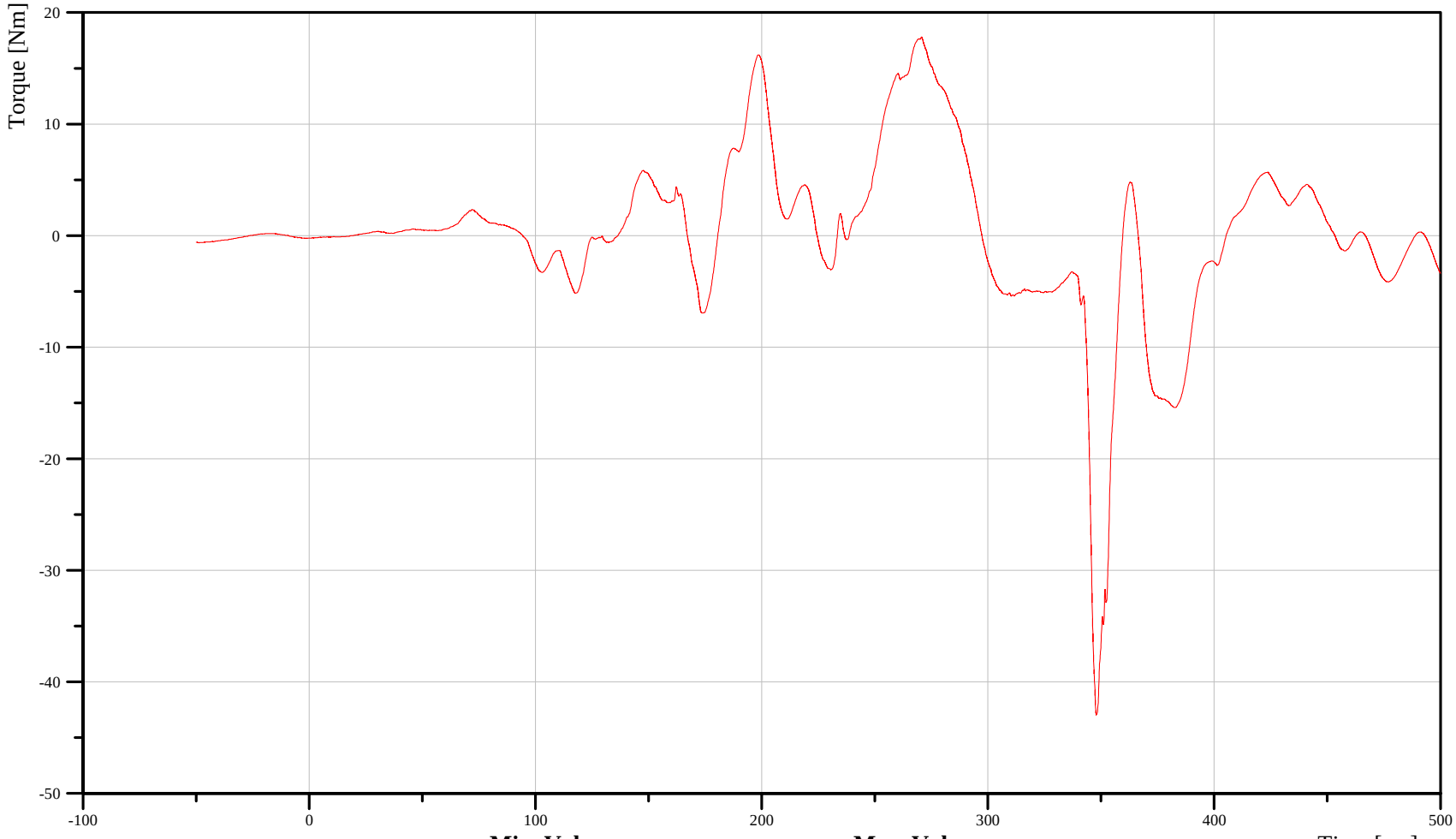
Date: 12/14/2007
Time: 9:12

8L-Left Neck Moment X

Customer: VRTC

22NECKUP00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-42.96 Nm at 347.92 ms

Max. Value
17.81 Nm at 270.64 ms

B-403

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

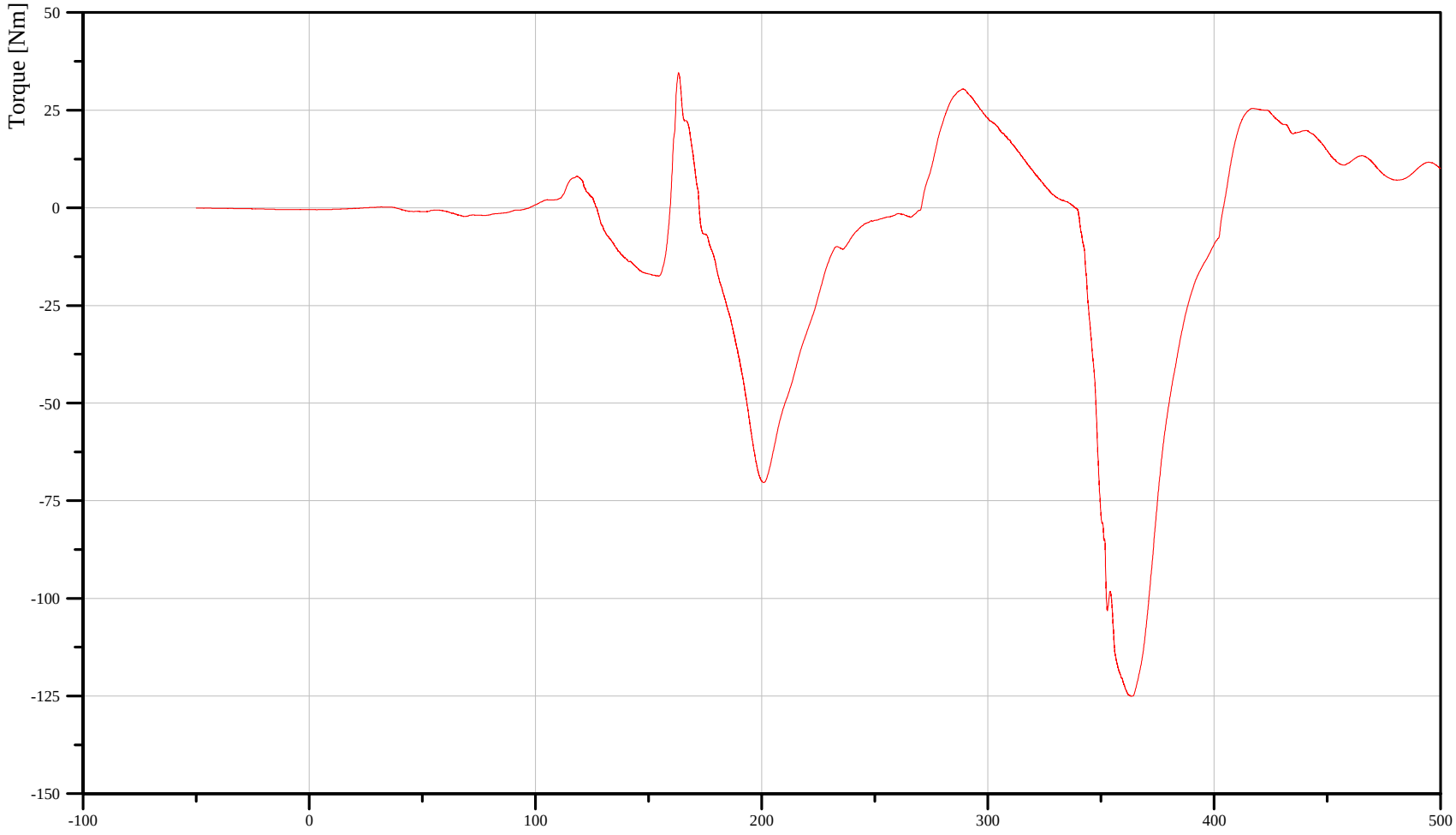
Date: 12/14/2007
Time: 9:12

8L-Left Neck Moment Y

Customer: VRTC

22NECKUP00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-125.06 Nm at 363.20 ms

Max. Value
34.62 Nm at 163.28 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

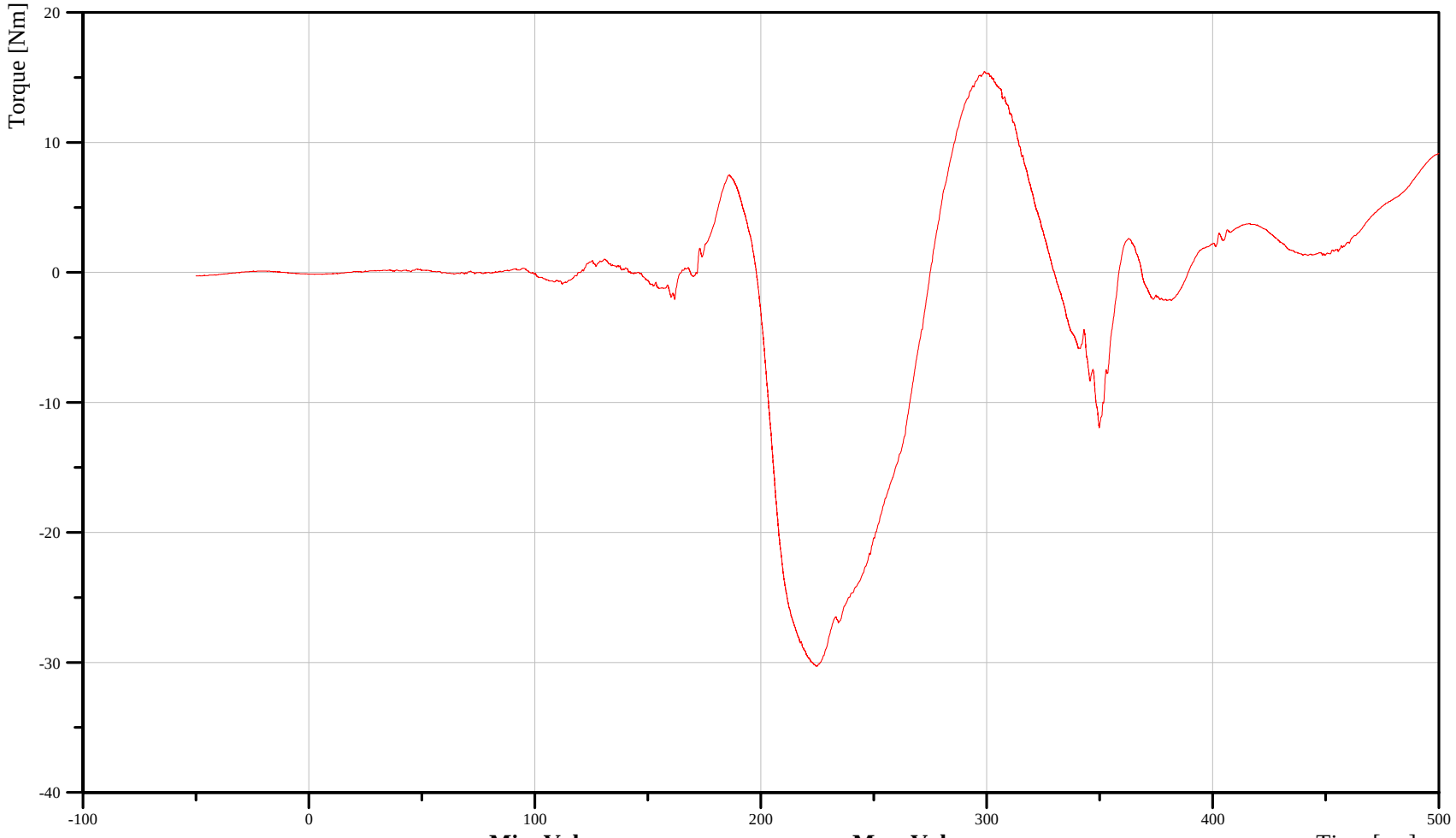
Date: 12/14/2007
Time: 9:12

8L-Left Neck Moment Z

Customer: VRTC

22NECKUP00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-30.29 Nm at 224.48 ms

Max. Value
15.48 Nm at 298.96 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

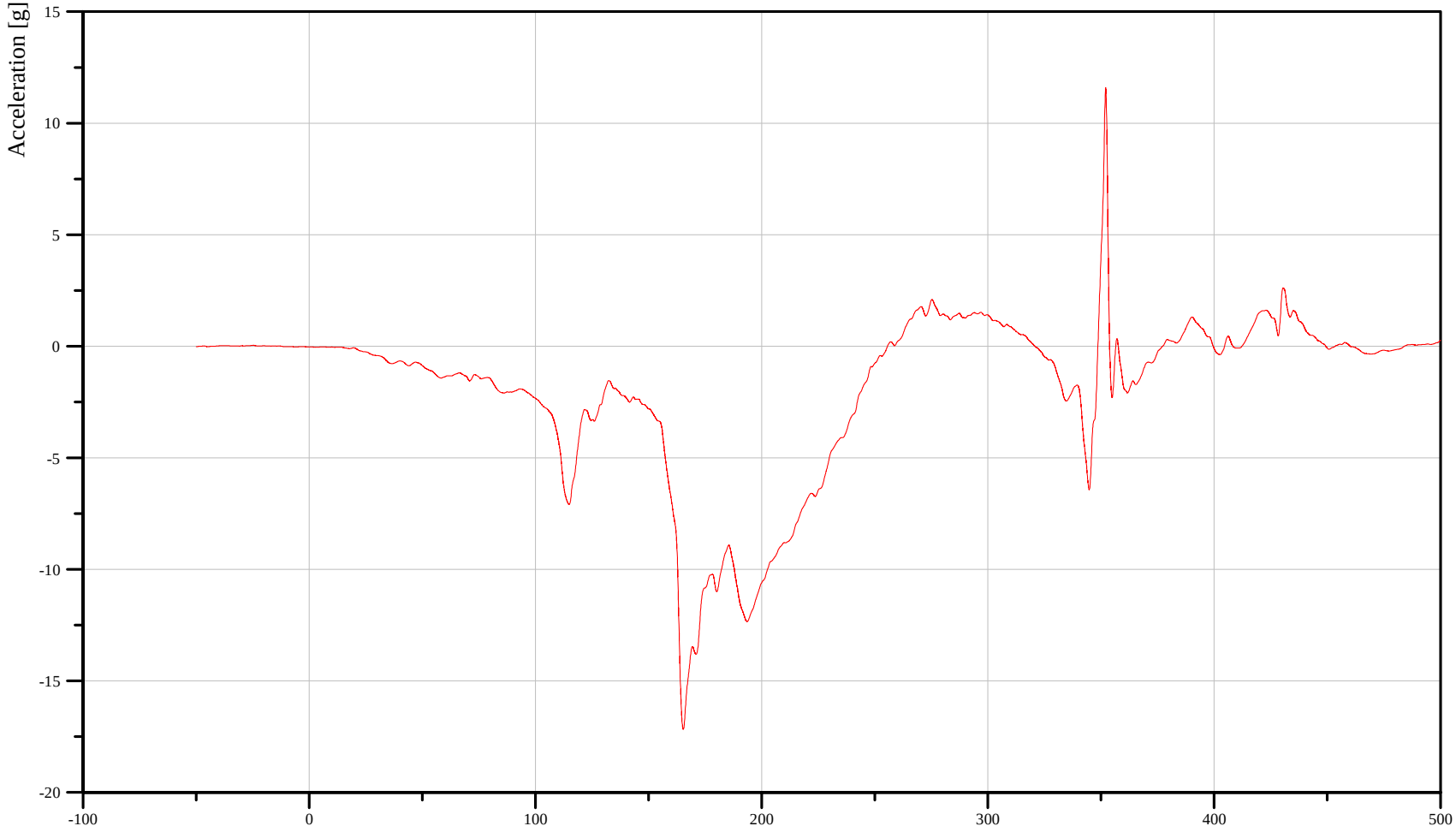
Date: 12/14/2007
Time: 9:12

8L-Left Chest X-Axis Acceleration

Customer: VRTC

22CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-17.18 g at 165.36 ms

Max. Value
11.59 g at 352.08 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

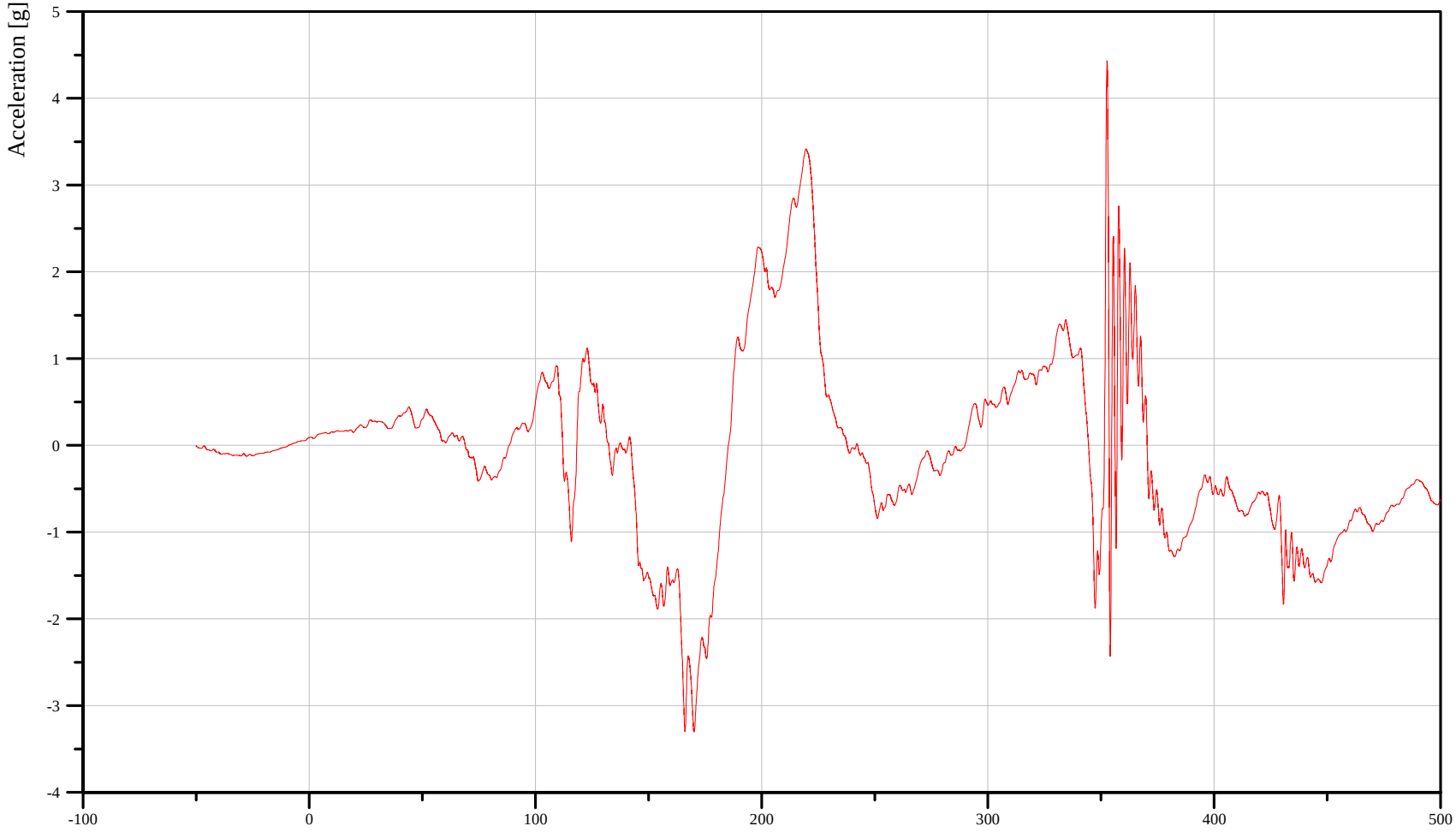
Date: 12/14/2007
Time: 9:12

8L-Left Chest Y-Axis Acceleration

Customer: VRTC

22CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-3.30 g at 170.08 ms

Max. Value
4.44 g at 352.64 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

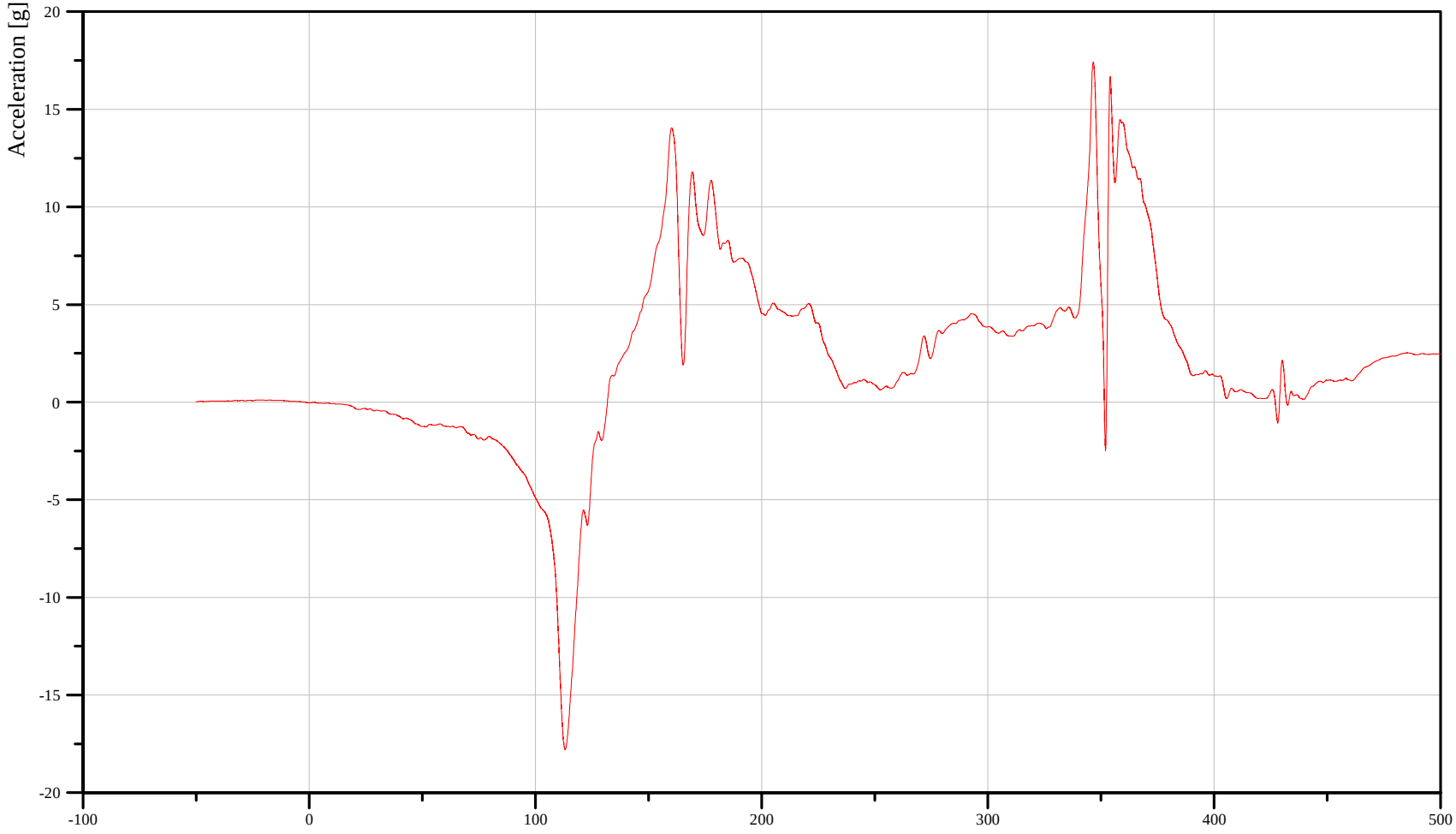
Date: 12/14/2007
Time: 9:12

8L-Left Chest Z-Axis Acceleration

Customer: VRTC

22CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-17.79 g at 113.20 ms

Max. Value
17.42 g at 346.56 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

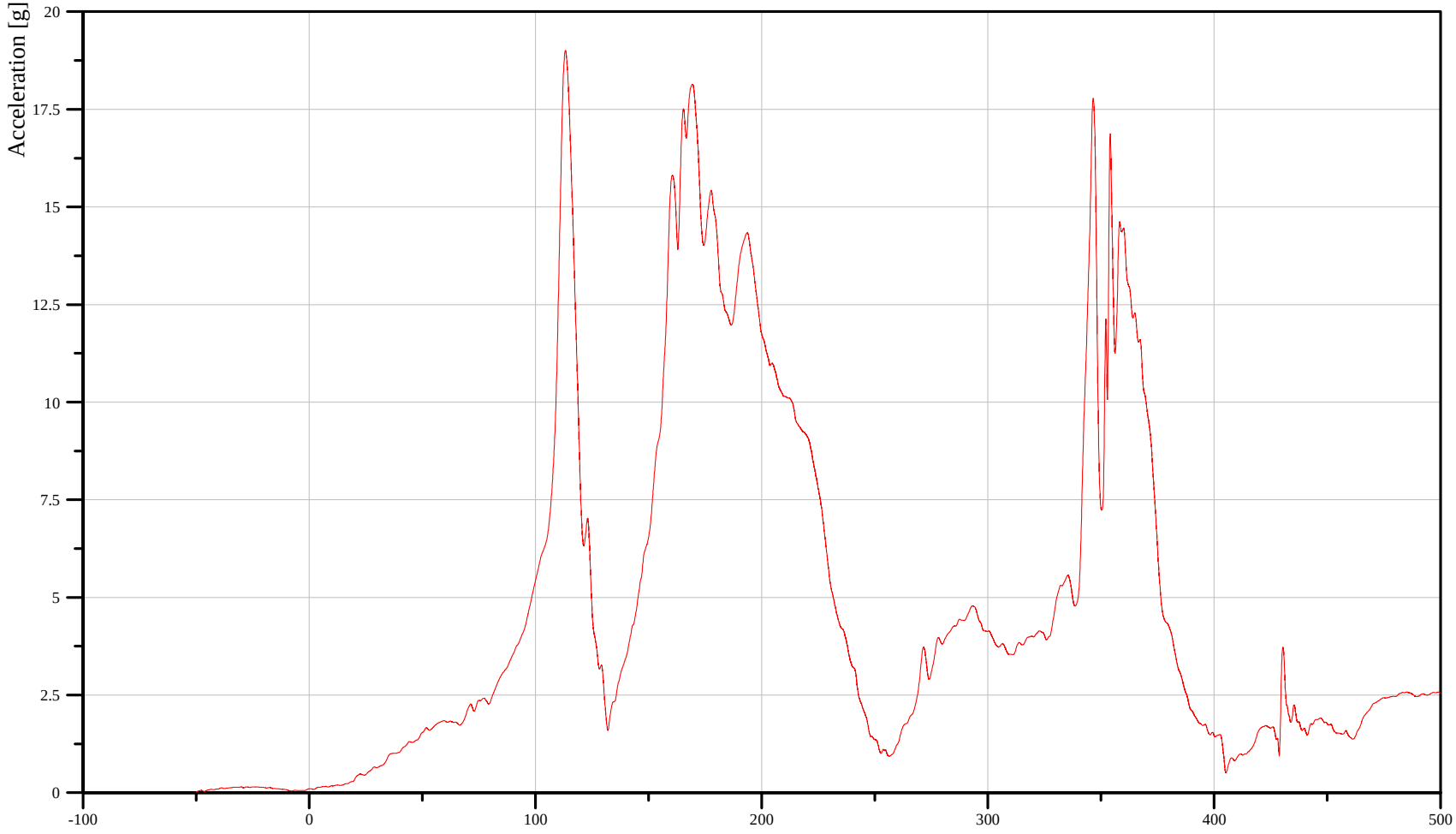
Date: 12/14/2007
Time: 9:12

8L-Left Chest Resultant Acceleration

Customer: VRTC

22CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.02 g at -50.00 ms

Max. Value
19.00 g at 113.28 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

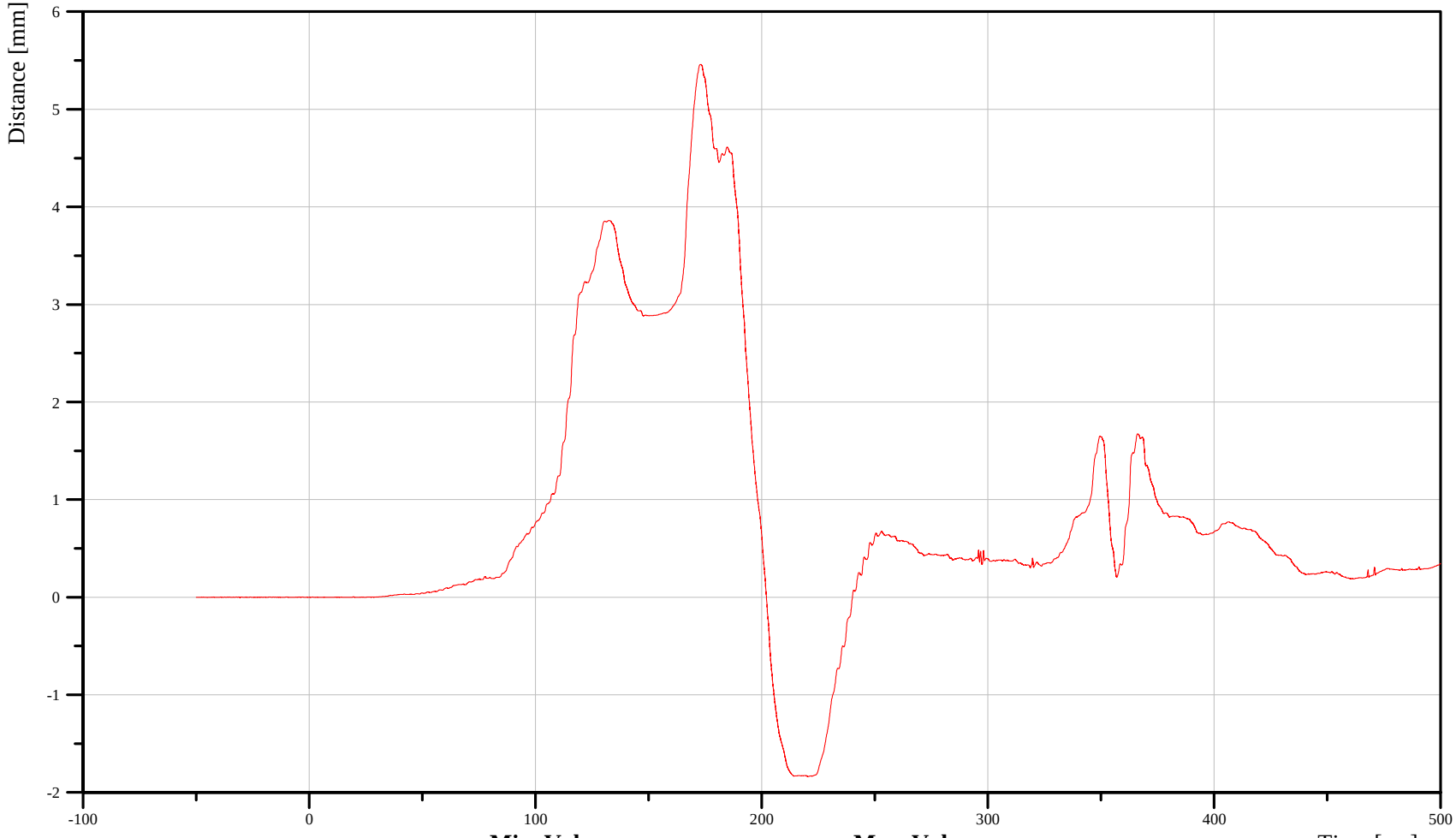
Date: 12/14/2007
Time: 9:12

8L-Left Chest X-Axis Deflection

Customer: VRTC

22CHST0000H3DSXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-1.84 mm at 220.56 ms

Max. Value
5.46 mm at 172.96 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

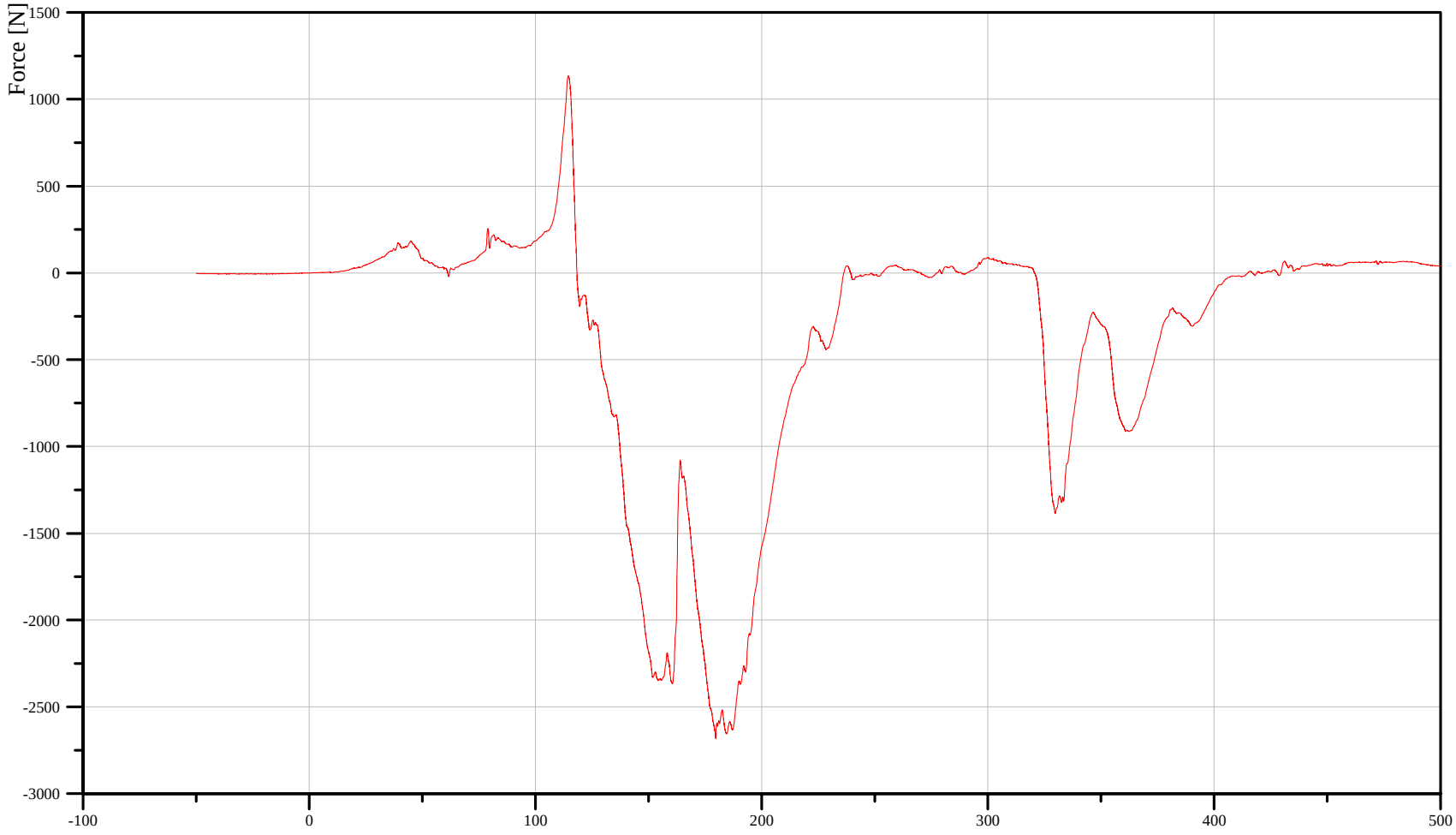
Date: 12/14/2007
Time: 9:12

8L-Left Left Femur Force Z

Customer: VRTC

22FEMRLL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-2,683.03 N at 179.68 ms

Max. Value
1,135.66 N at 114.56 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

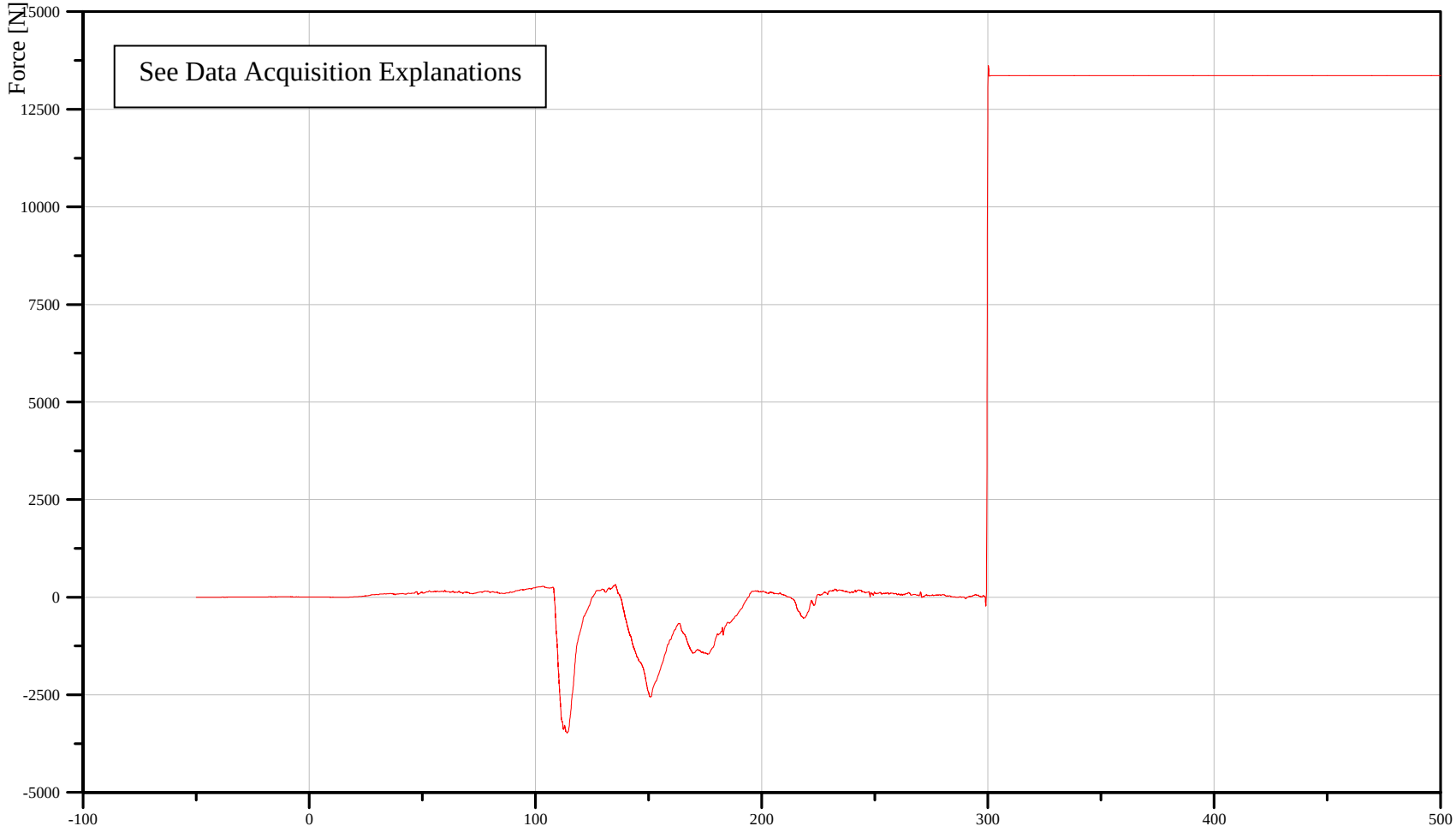
Date: 12/14/2007
Time: 9:12

8L-Left Right Femur Force Z

Customer: VRTC

22FEMRRL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-3,467.68 N at 114.08 ms

Max. Value
13,619.56 N at 300.16 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

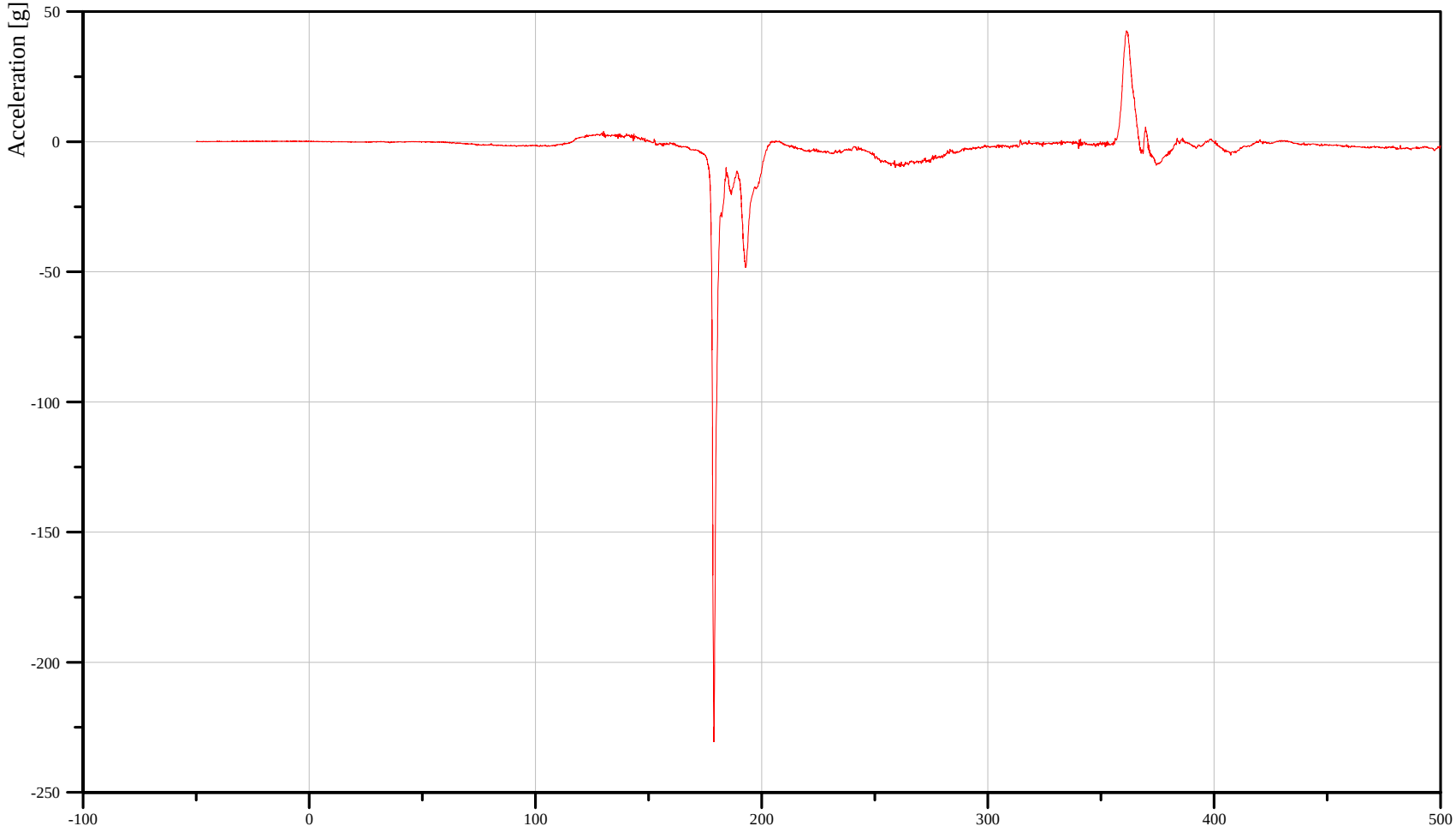
Date: 12/14/2007
Time: 9:12

8L-Right Head X-Axis Acceleration

Customer: VRTC

23HEADCG00HMACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-230.51 g at 178.96 ms

Max. Value
42.60 g at 361.28 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

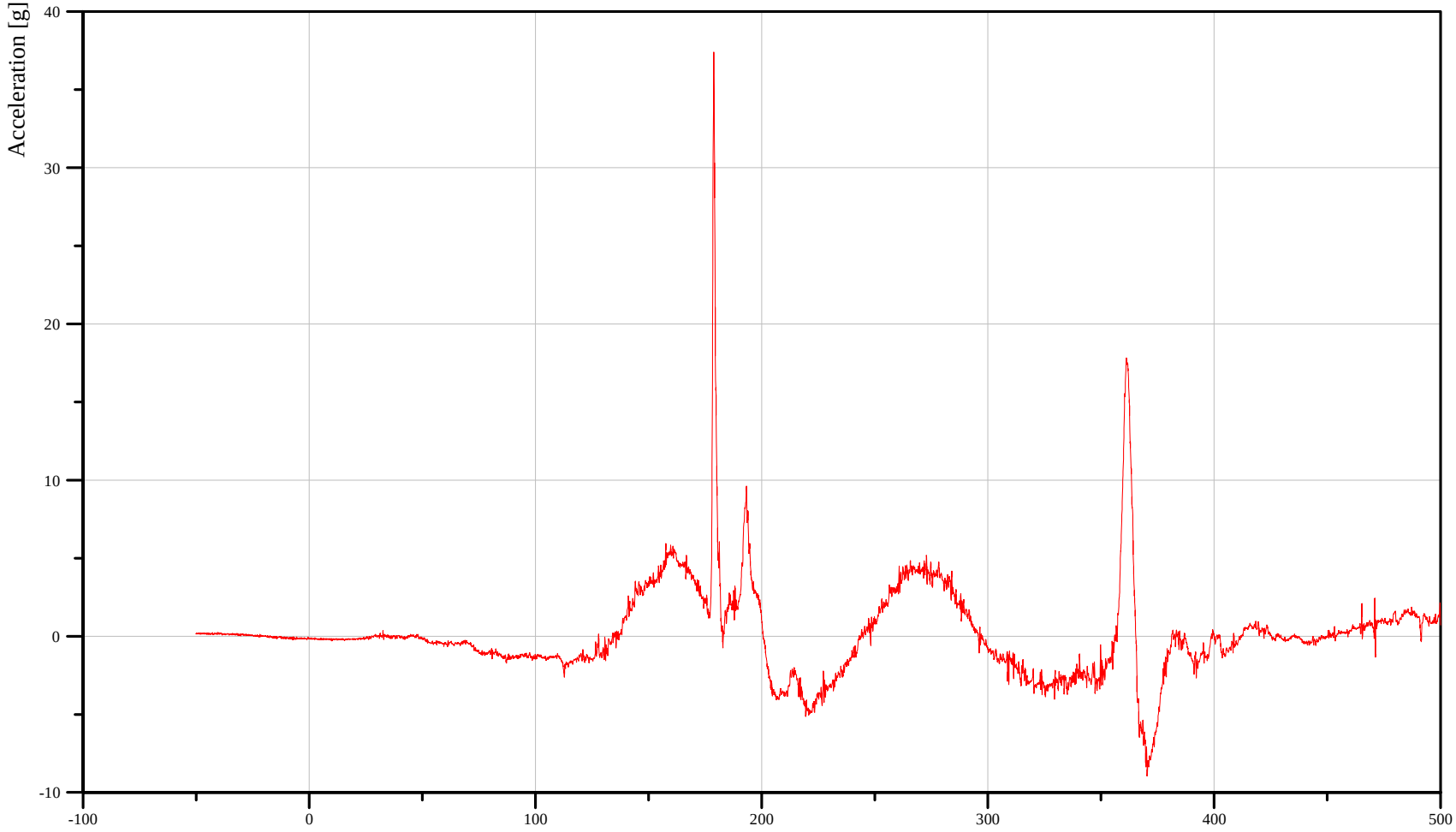
Date: 12/14/2007
Time: 9:12

8L-Right Head Y-Axis Acceleration

Customer: VRTC

23HEADCG00HMACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-8.94 g at 370.40 ms

Max. Value
37.41 g at 178.88 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

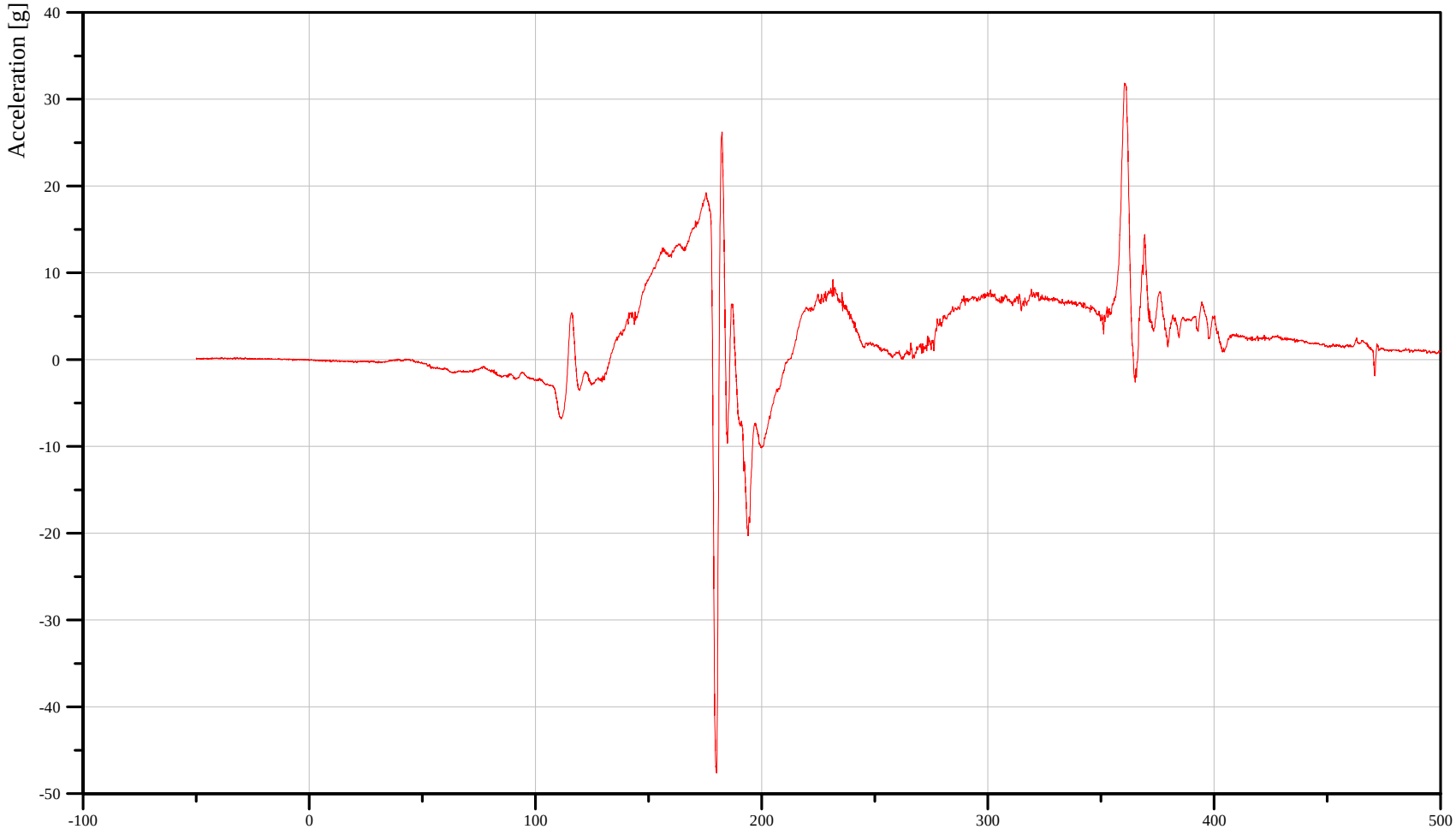
Date: 12/14/2007
Time: 9:12

8L-Right Head Z-Axis Acceleration

Customer: VRTC

23HEADCG00HMACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-47.63 g at 180.08 ms

Max. Value
31.86 g at 360.32 ms

B-415

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

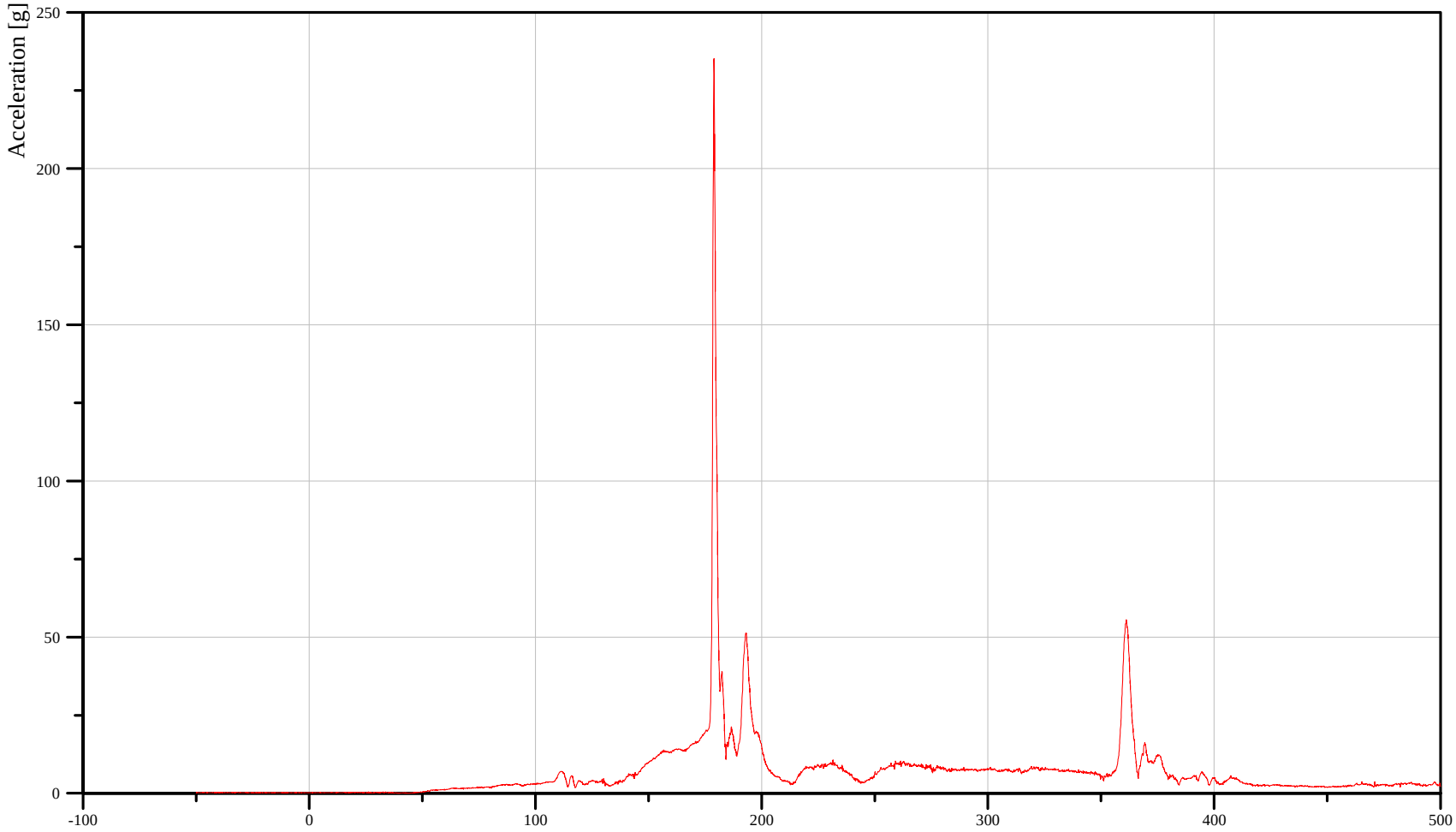
Date: 12/14/2007
Time: 9:12

8L-Right Head Resultant Acceleration

Customer: VRTC

23HEADCG00HMACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.01 g at 39.84 ms

Max. Value
235.21 g at 178.96 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

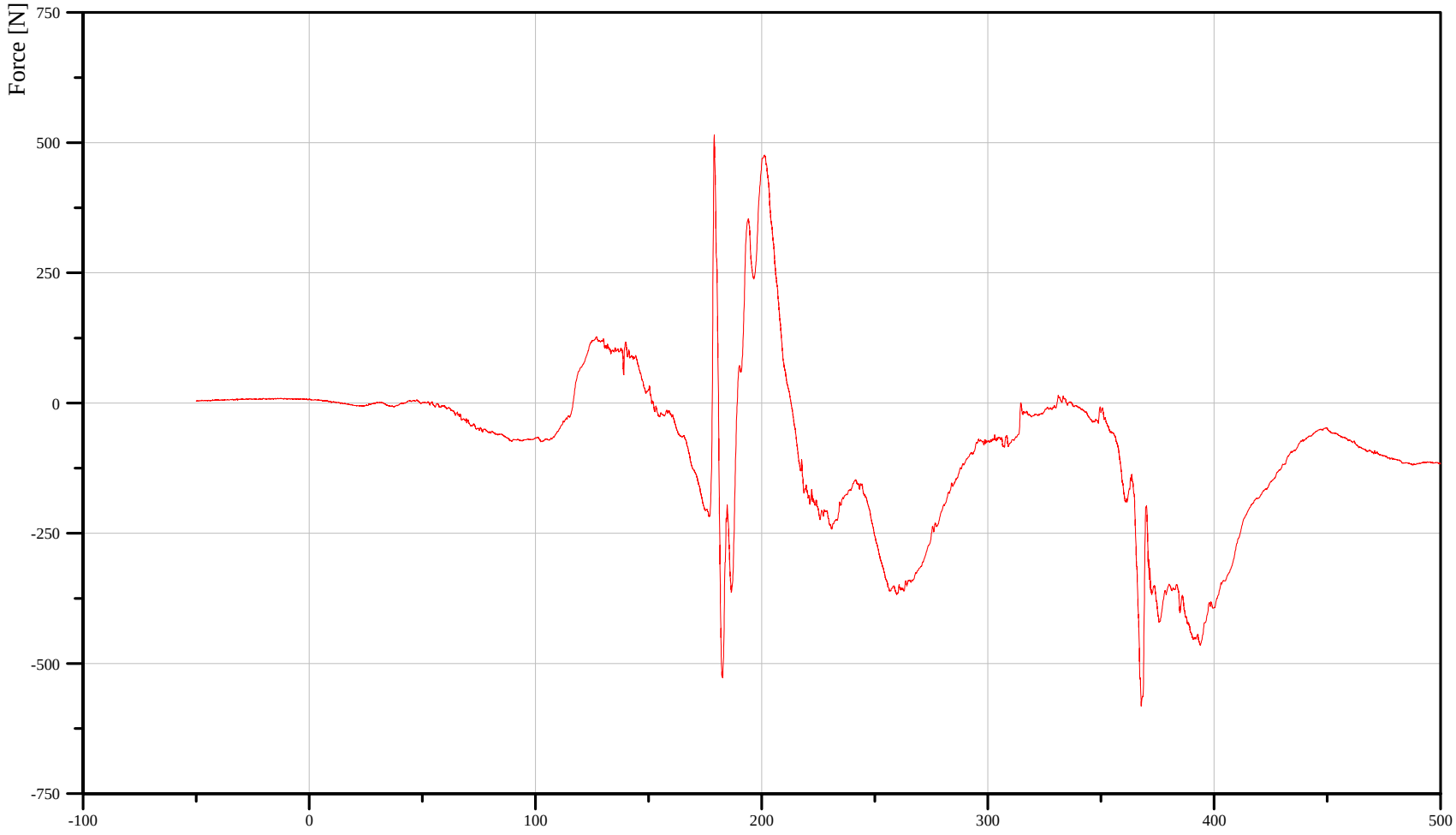
Date: 12/14/2007
Time: 9:12

8L-Right Neck Force X

Customer: VRTC

23NECKUP00HMFOXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-581.46 N at 367.76 ms

Max. Value
514.86 N at 179.04 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

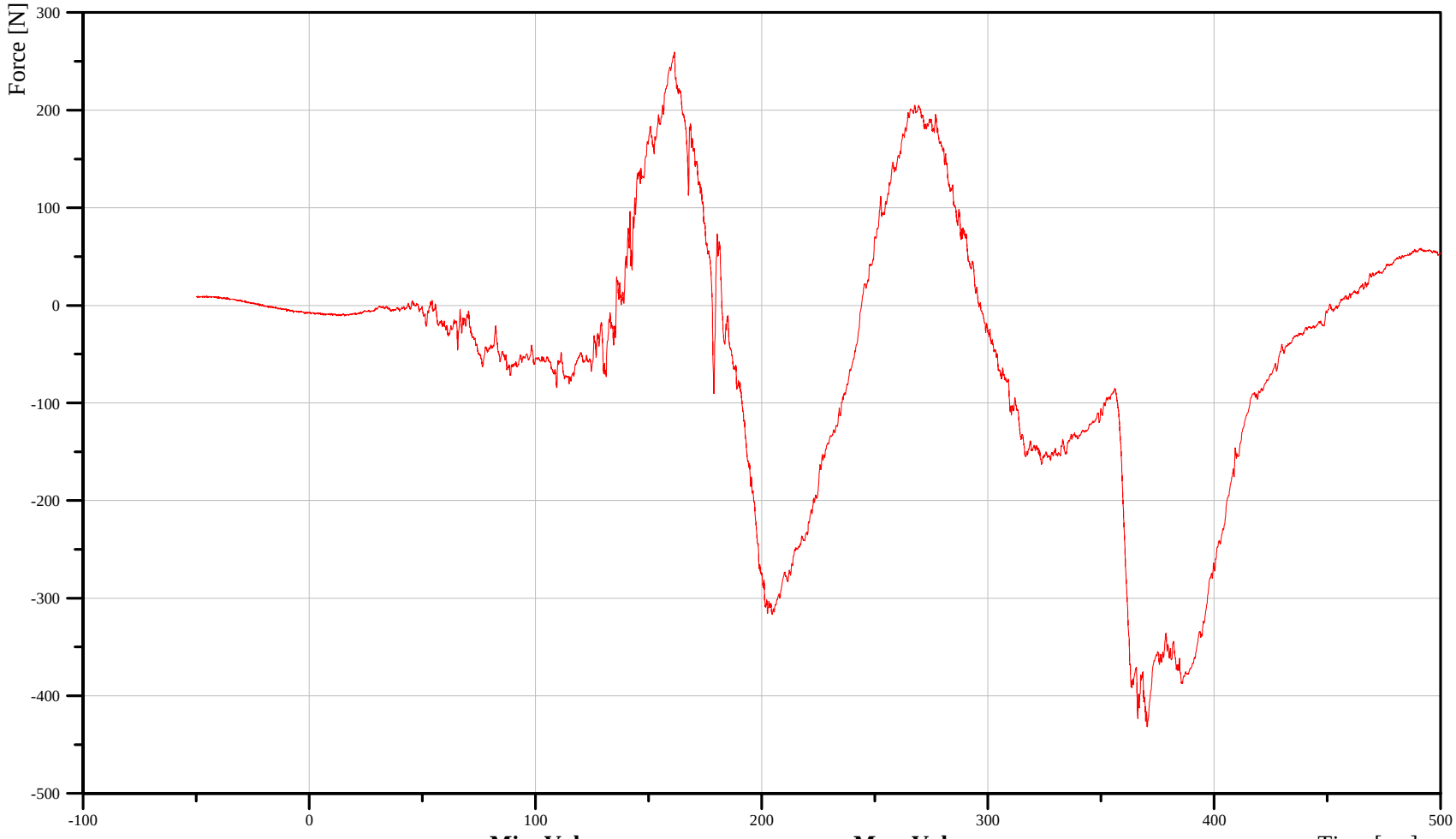
Date: 12/14/2007
Time: 9:12

8L-Right Neck Force Y

Customer: VRTC

23NECKUP00HMFOYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-431.78 N at 370.48 ms

Max. Value
259.16 N at 161.44 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

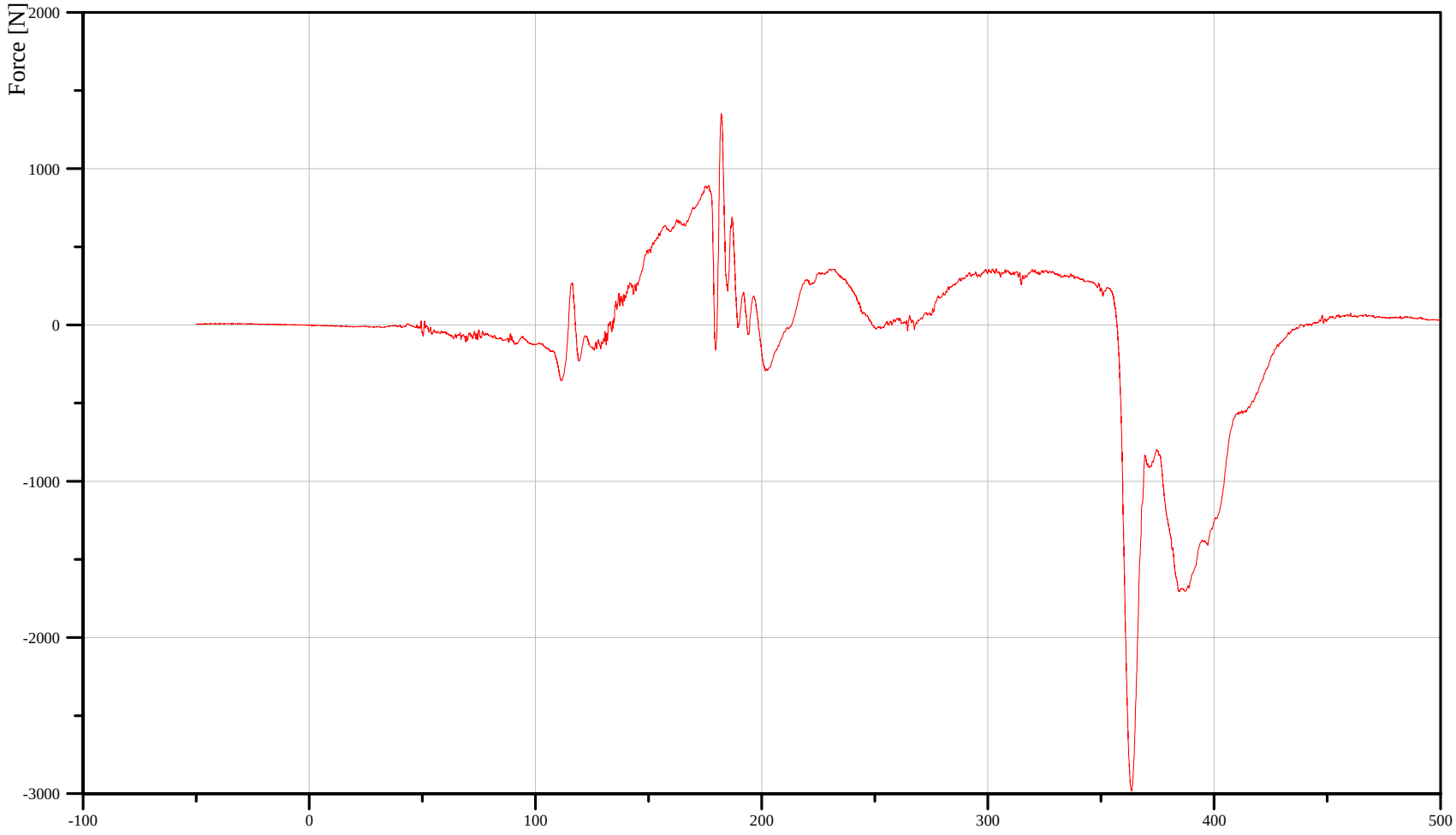
8L-Right Neck Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

23NECKUP00HMFOZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-2,981.01 N at 363.52 ms

Max. Value
1,354.44 N at 182.16 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

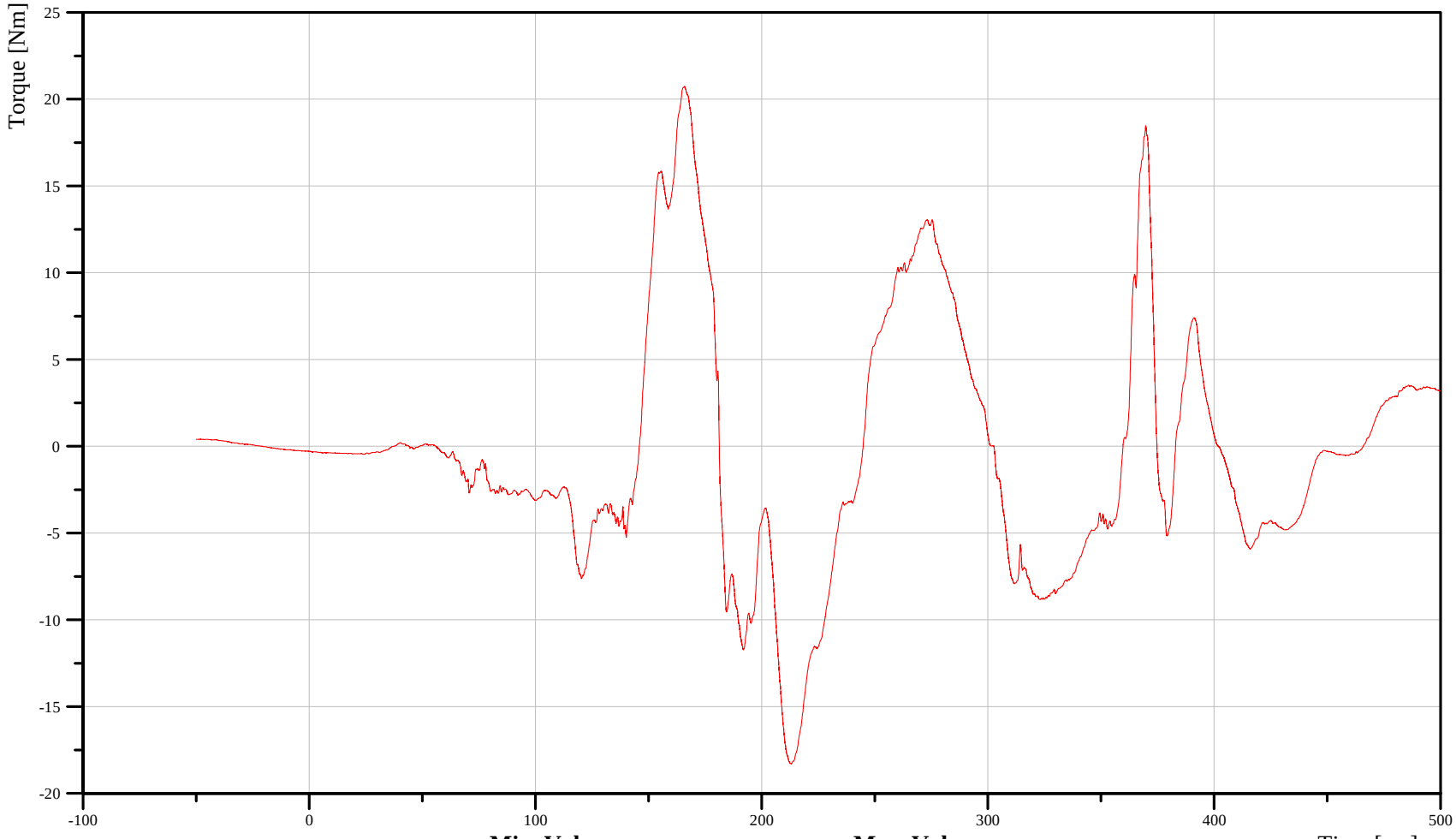
Date: 12/14/2007
Time: 9:12

8L-Right Neck Moment X

Customer: VRTC

23NECKUP00HMMOXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-18.29 Nm at 213.12 ms

Max. Value
20.75 Nm at 165.84 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

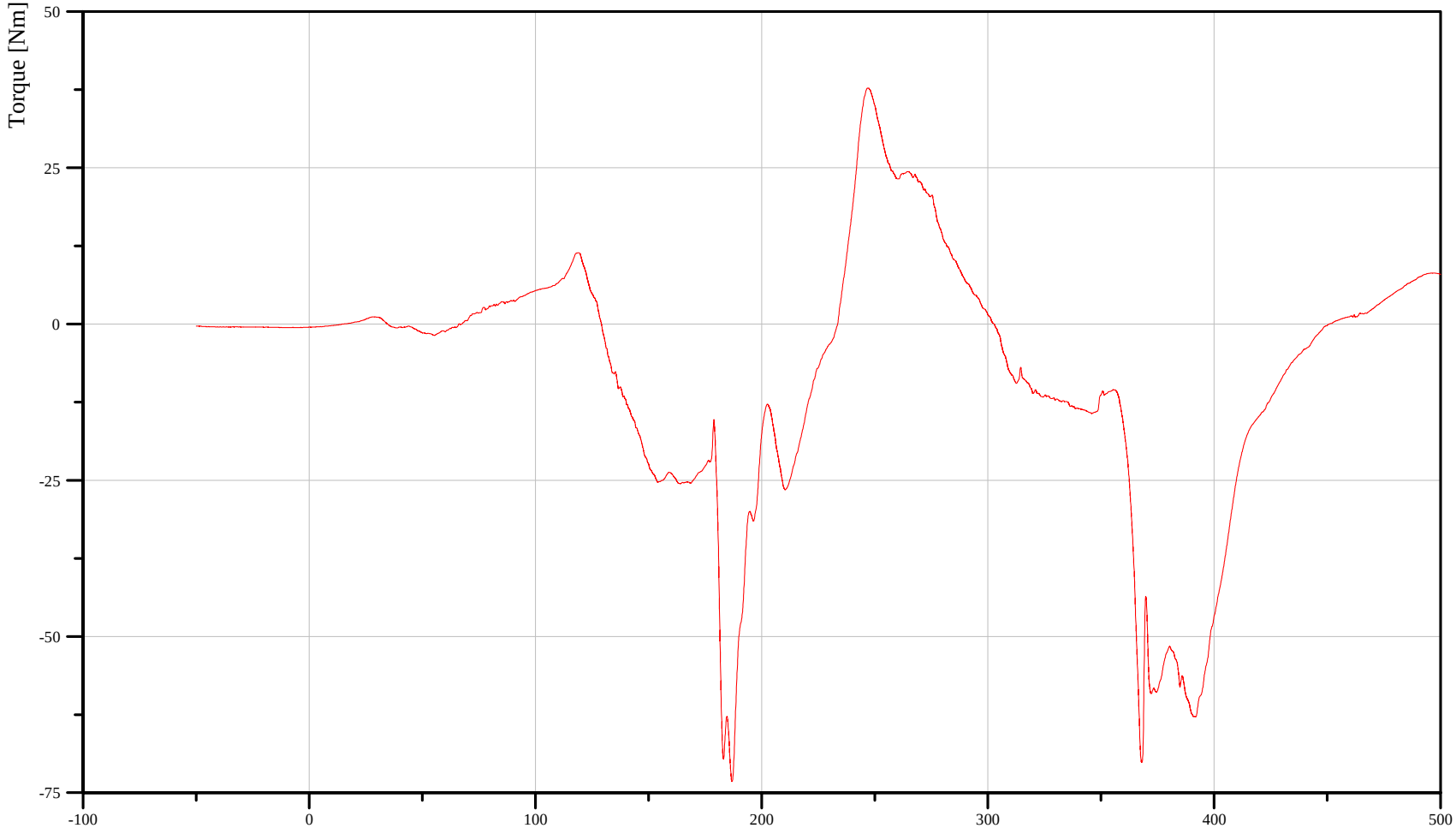
Date: 12/14/2007
Time: 9:12

8L-Right Neck Moment Y

Customer: VRTC

23NECKUP00HMMOYB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-73.19 Nm at 186.88 ms

Max. Value
37.77 Nm at 247.20 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

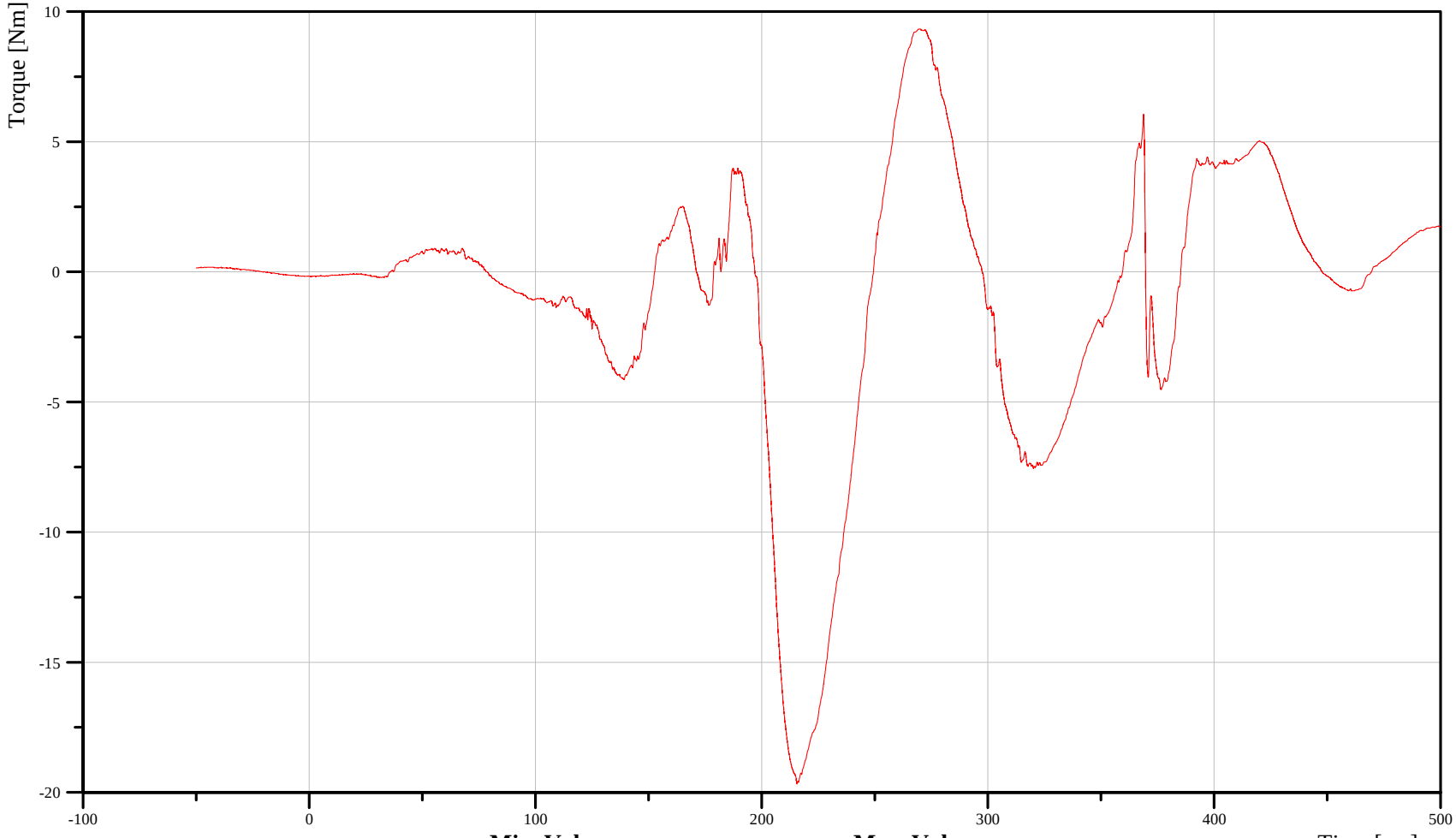
Date: 12/14/2007
Time: 9:12

8L-Right Neck Moment Z

Customer: VRTC

23NECKUP00HMMOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-19.67 Nm at 215.60 ms

Max. Value
9.33 Nm at 270.08 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

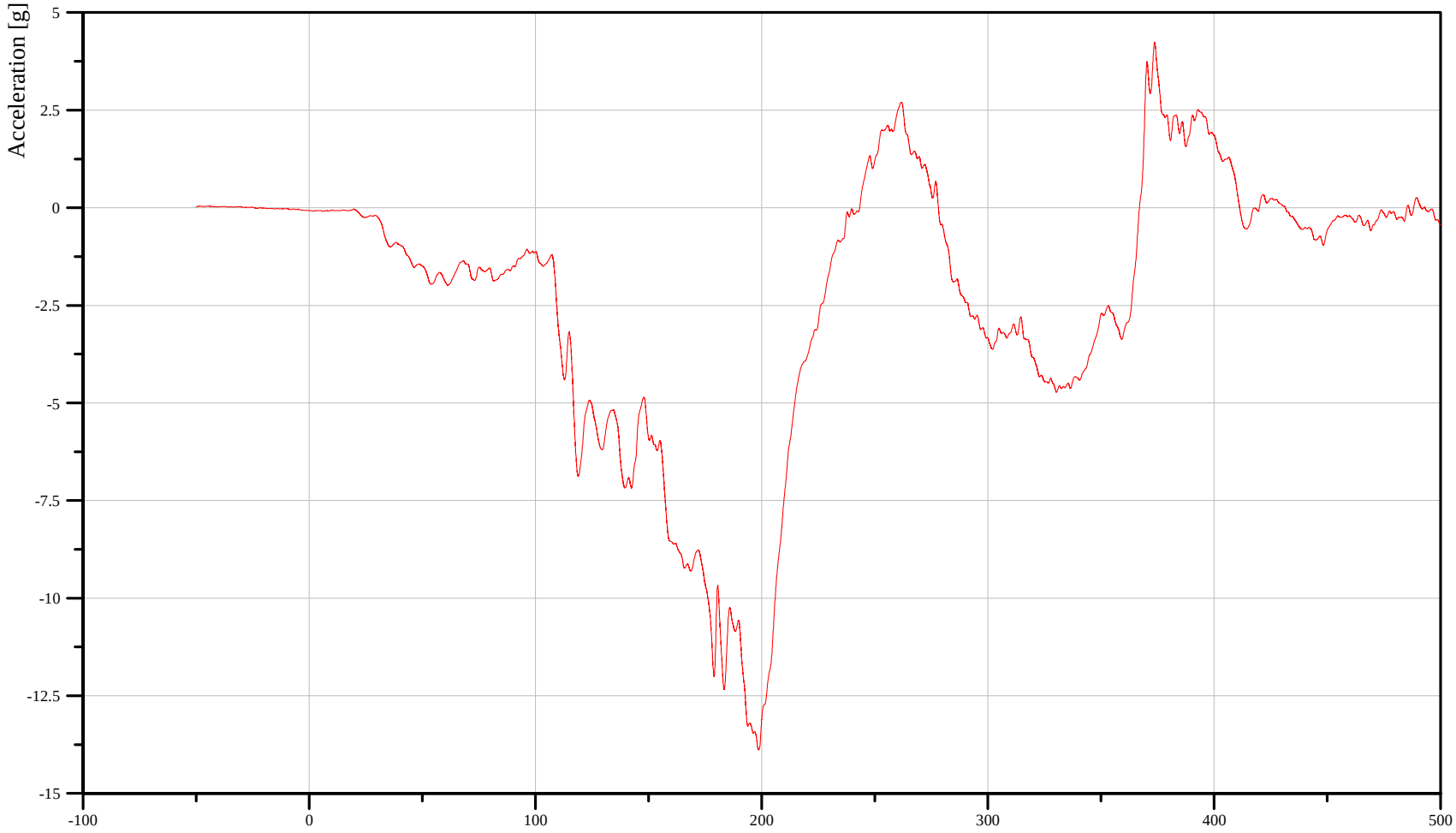
Date: 12/14/2007
Time: 9:12

8L-Right Chest X-Axis Acceleration

Customer: VRTC

23CHSTCG00HMACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-13.89 g at 198.72 ms

Max. Value
4.24 g at 373.68 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

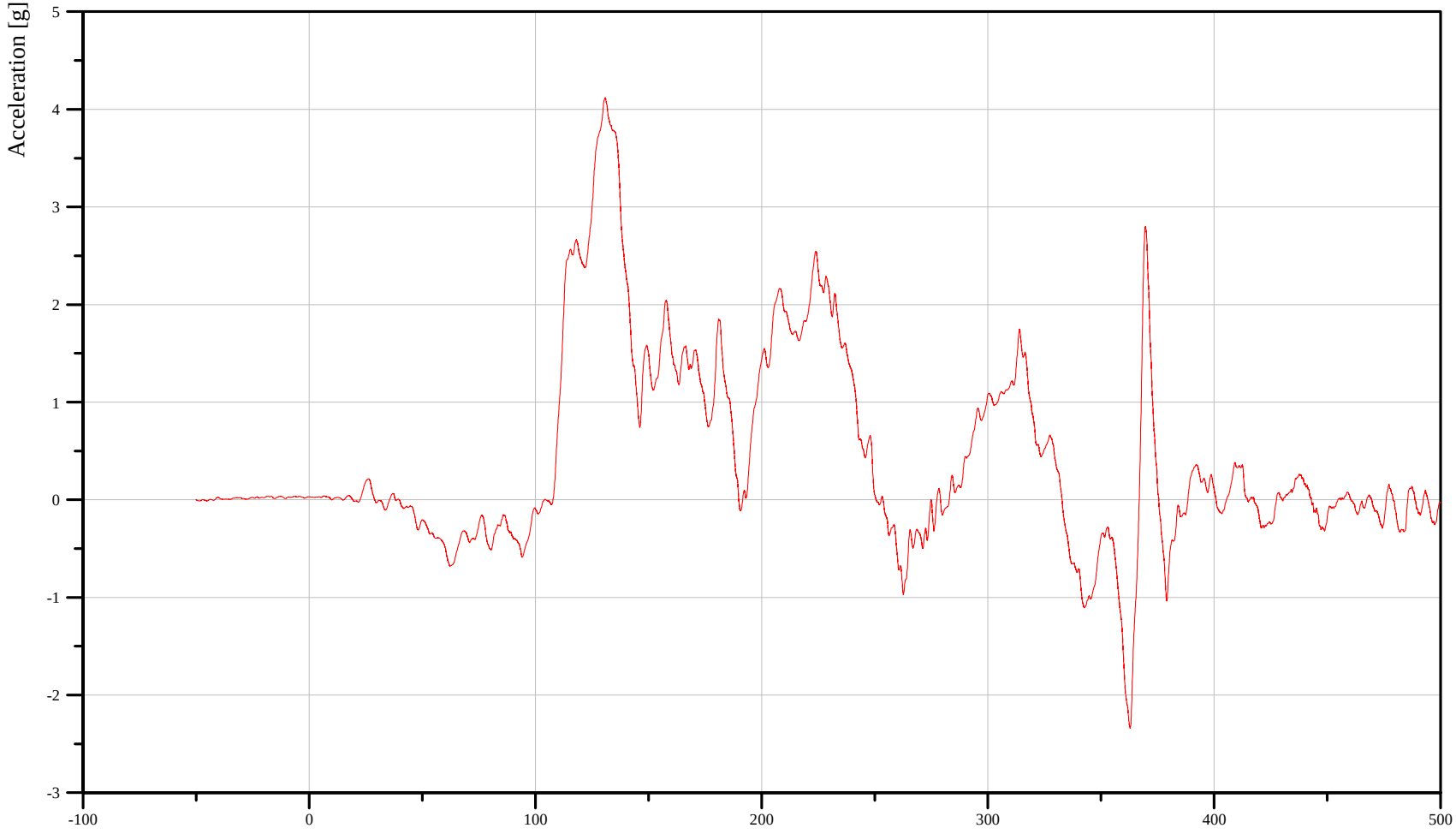
Date: 12/14/2007
Time: 9:12

8L-Right Chest Y-Axis Acceleration

Customer: VRTC

23CHSTCG00HMACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-2.34 g at 362.88 ms

Max. Value
4.12 g at 130.88 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

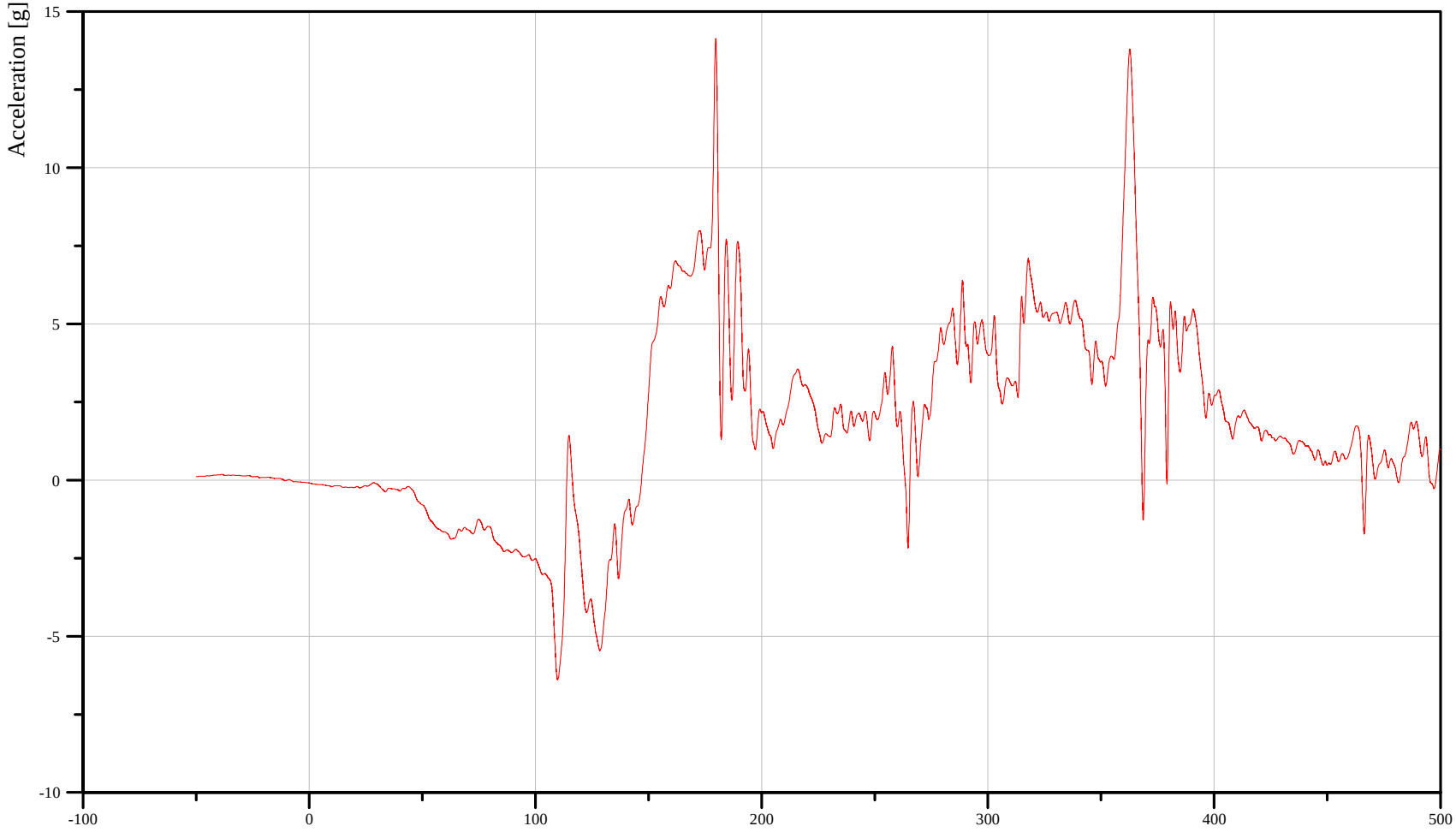
Date: 12/14/2007
Time: 9:12

8L-Right Chest Z-Axis Acceleration

Customer: VRTC

23CHSTCG00HMACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-6.40 g at 109.84 ms

Max. Value
14.13 g at 179.68 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

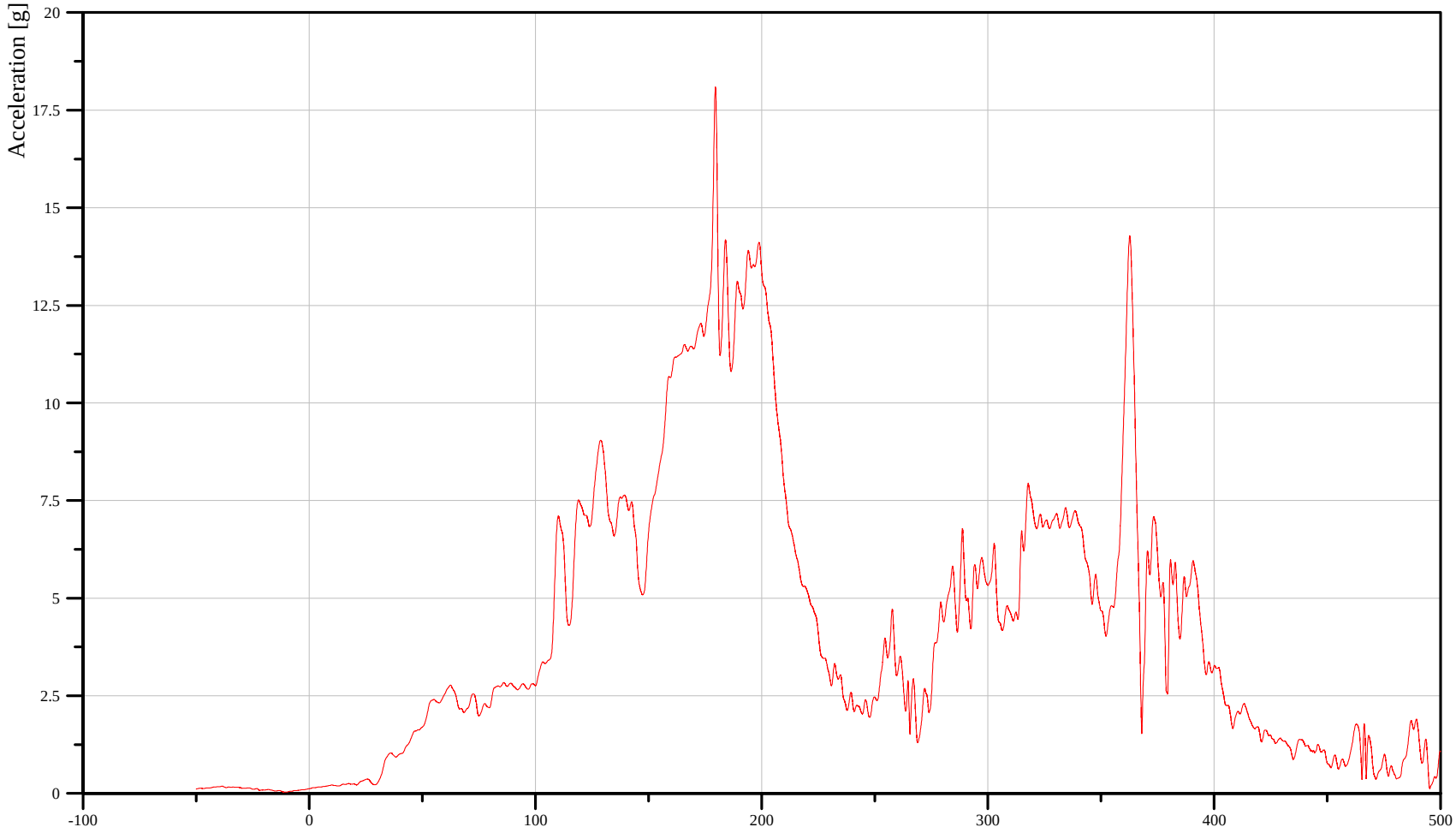
Date: 12/14/2007
Time: 9:12

8L-Right Chest Resultant Acceleration

Customer: VRTC

23CHSTCG00HMACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.03 g at -10.00 ms

Max. Value
18.09 g at 179.52 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

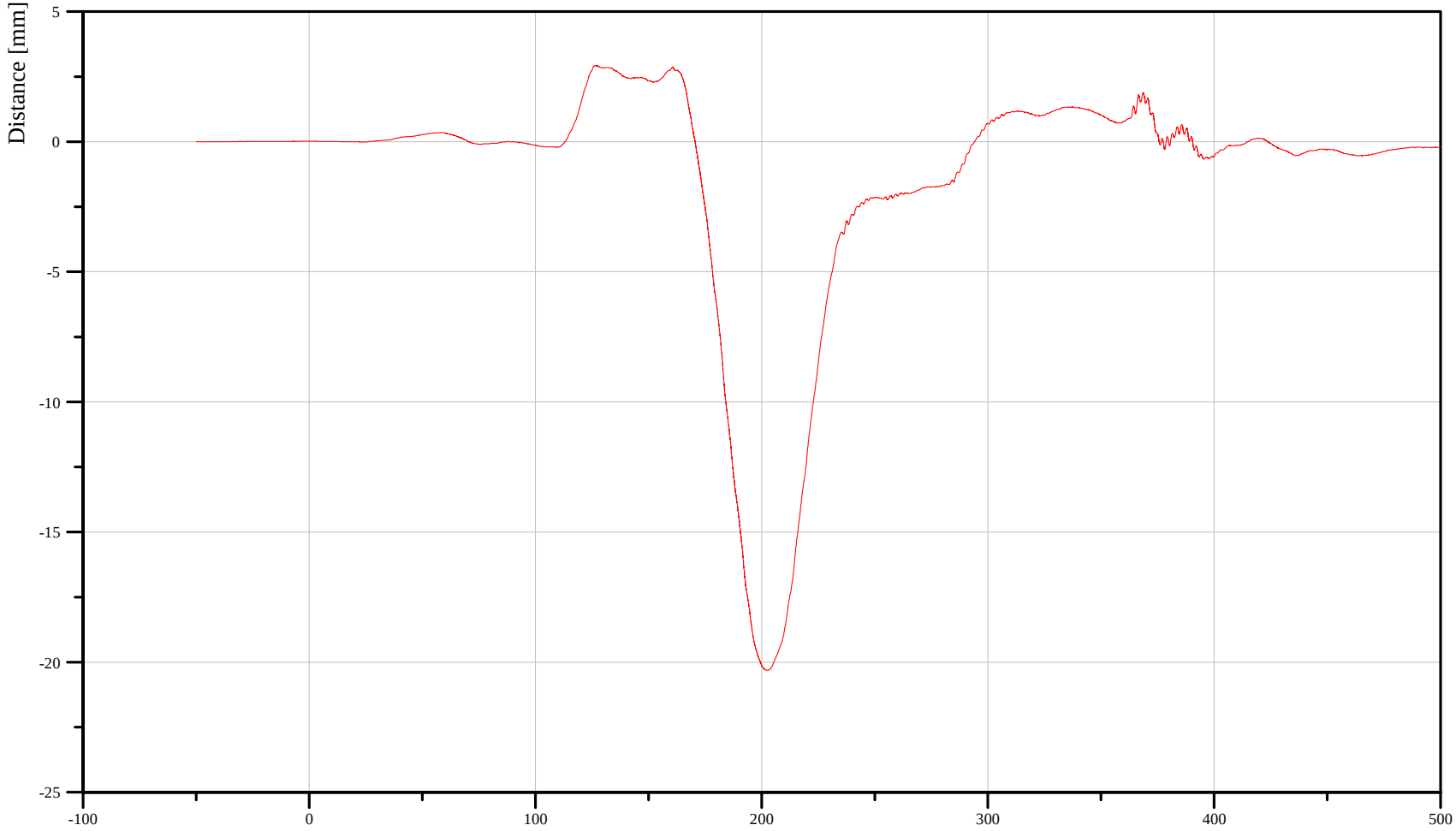
Date: 12/14/2007
Time: 9:12

8L-Right Chest X-Axis Deflection

Customer: VRTC

23CHST0000HMDSXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-20.31 mm at 202.40 ms

Max. Value
2.92 mm at 126.32 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

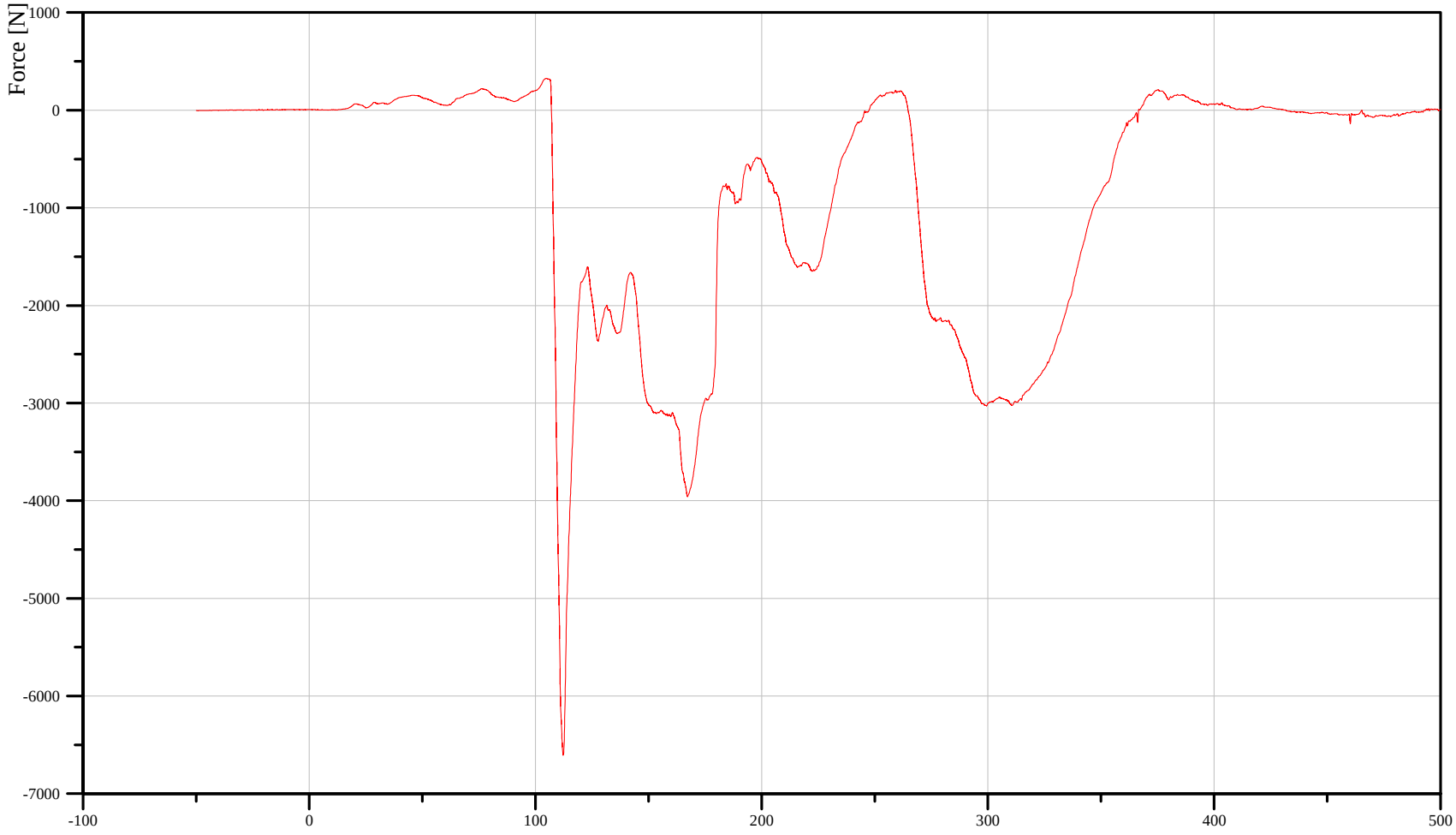
Date: 12/14/2007
Time: 9:12

8L-Right Left Femur Force Z

Customer: VRTC

23FEMRLL00HMFOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-6,608.95 N at 112.24 ms

Max. Value
325.21 N at 104.80 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

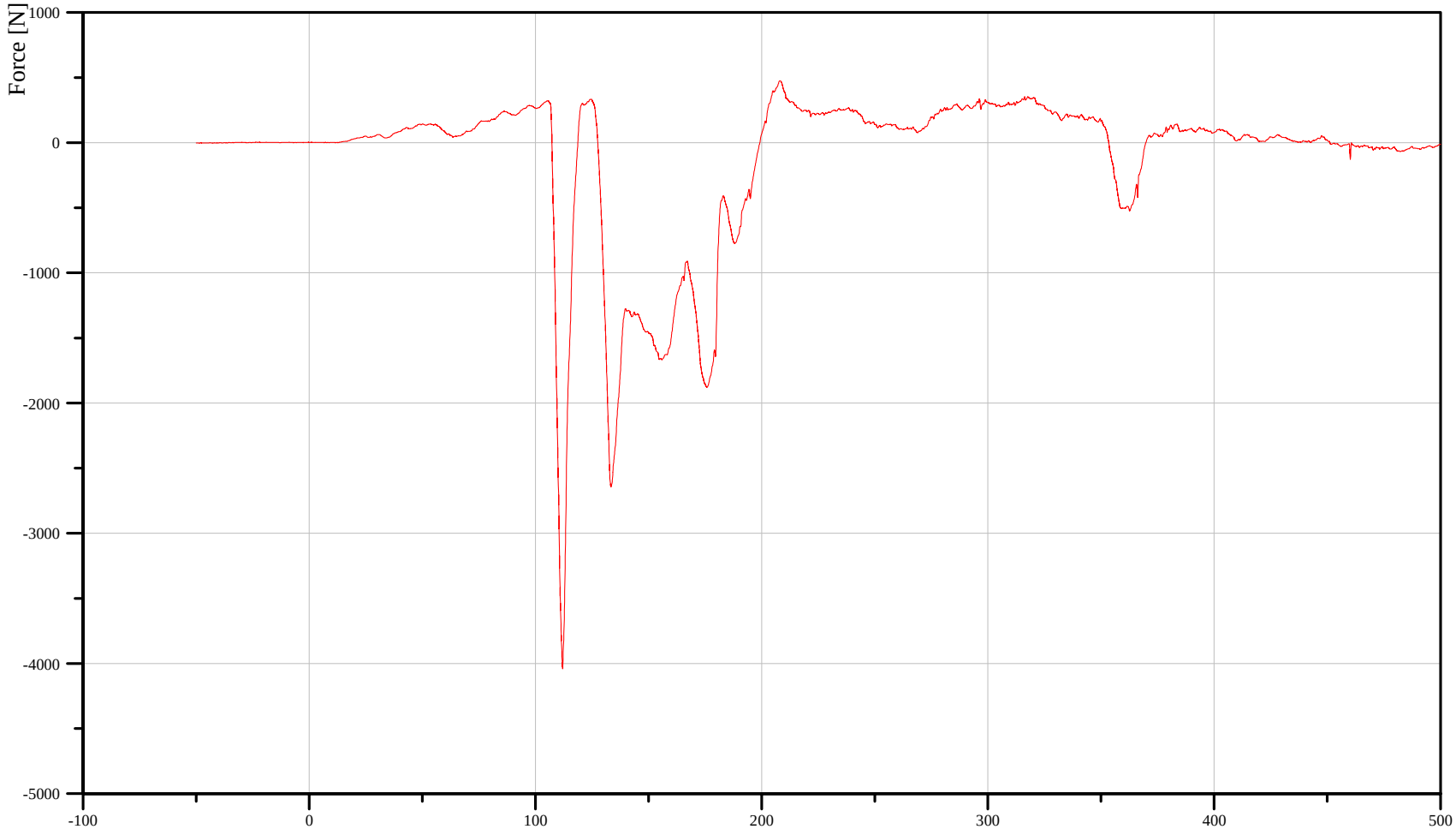
Date: 12/14/2007
Time: 9:12

8L-Right Right Femur Force Z

Customer: VRTC

23FEMRRL00HMFOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-4,040.88 N at 112.00 ms

Max. Value
473.98 N at 207.92 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

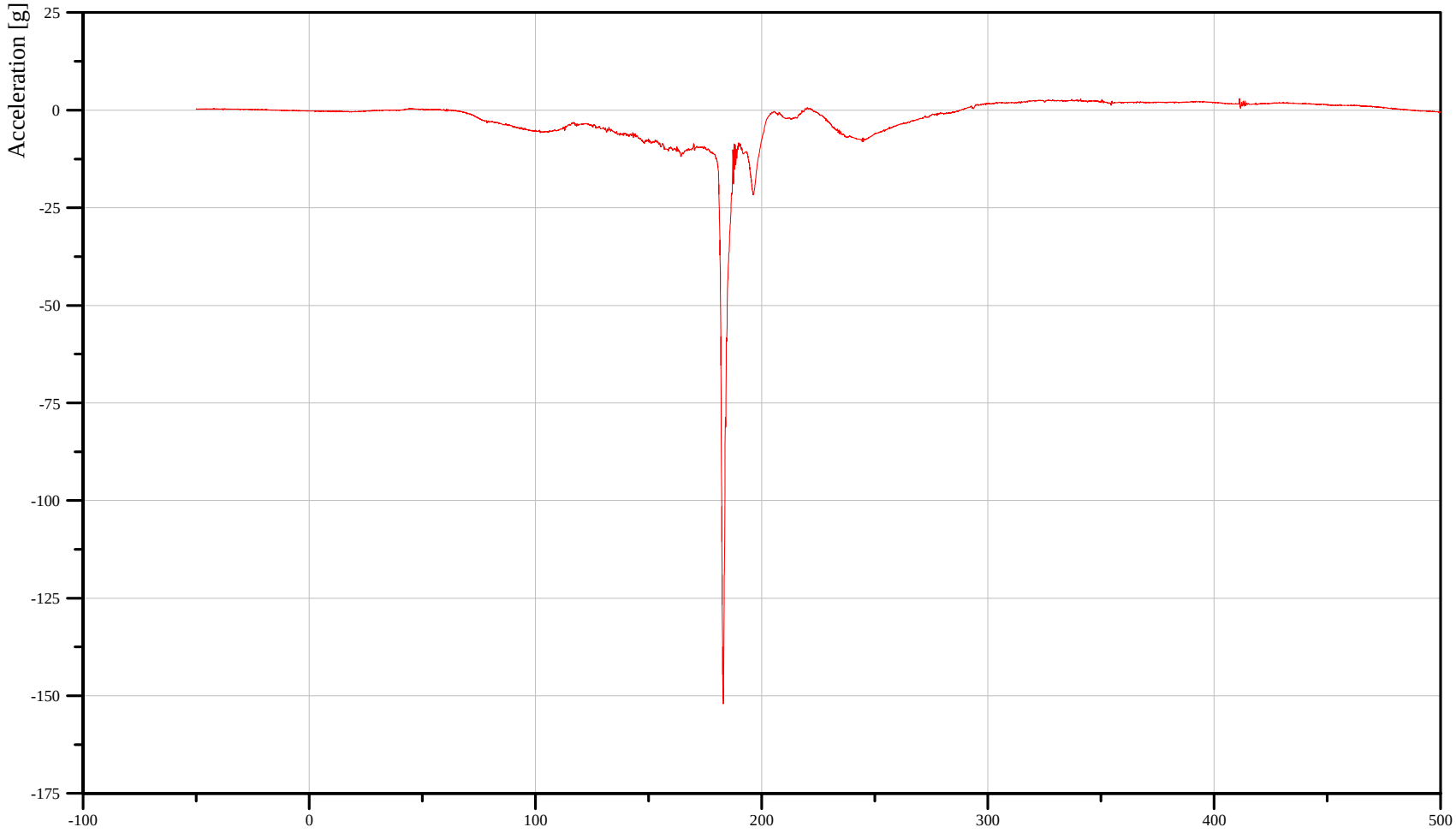
Date: 12/14/2007
Time: 9:12

9R-Left Head X-Axis Acceleration

Customer: VRTC

24HEADCG00HMACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-152.05 g at 183.04 ms

Max. Value
2.96 g at 411.20 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

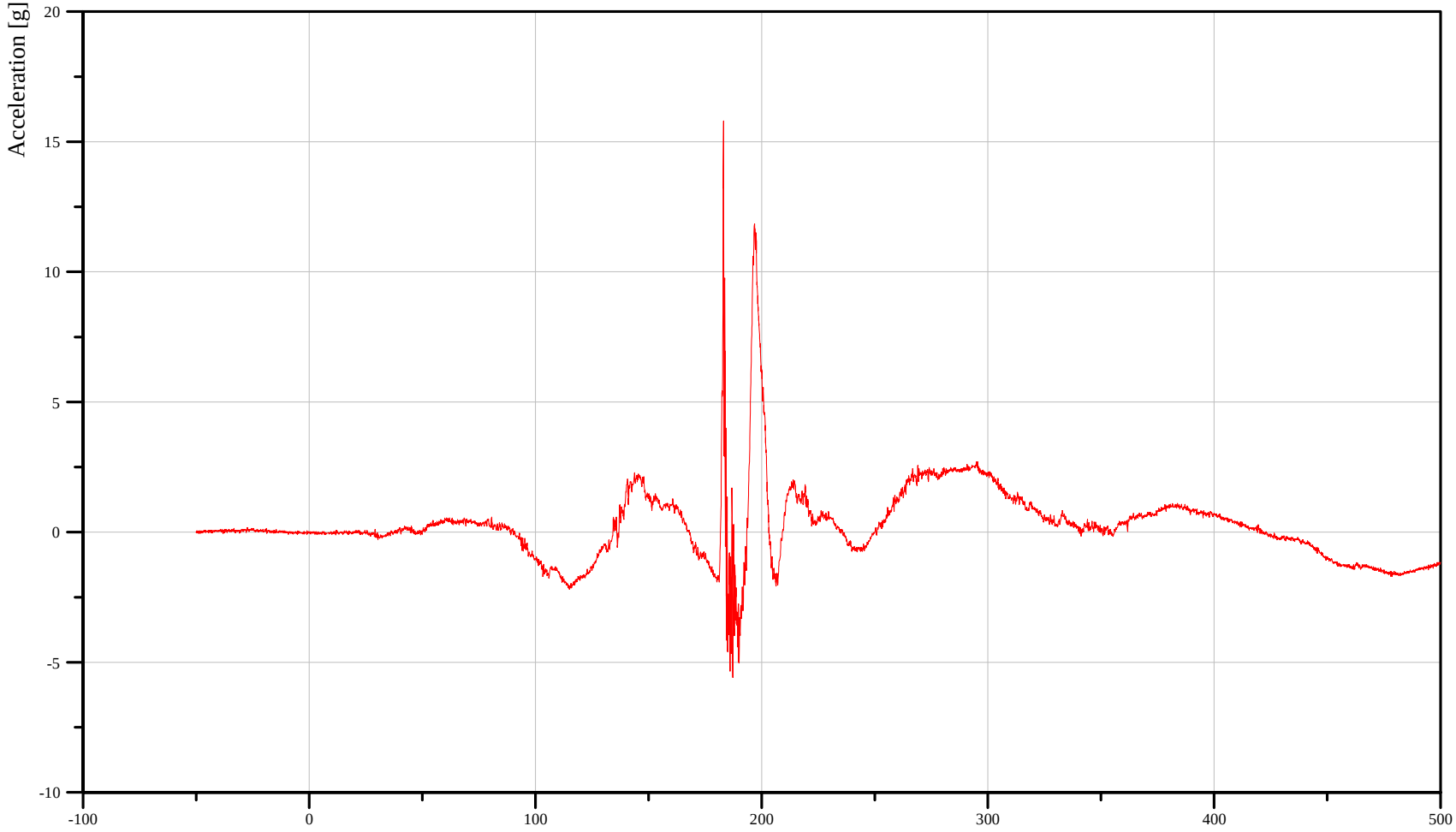
Date: 12/14/2007
Time: 9:12

9R-Left Head Y-Axis Acceleration

Customer: VRTC

24HEADCG00HMACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-5.59 g at 187.20 ms

Max. Value
15.80 g at 183.12 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

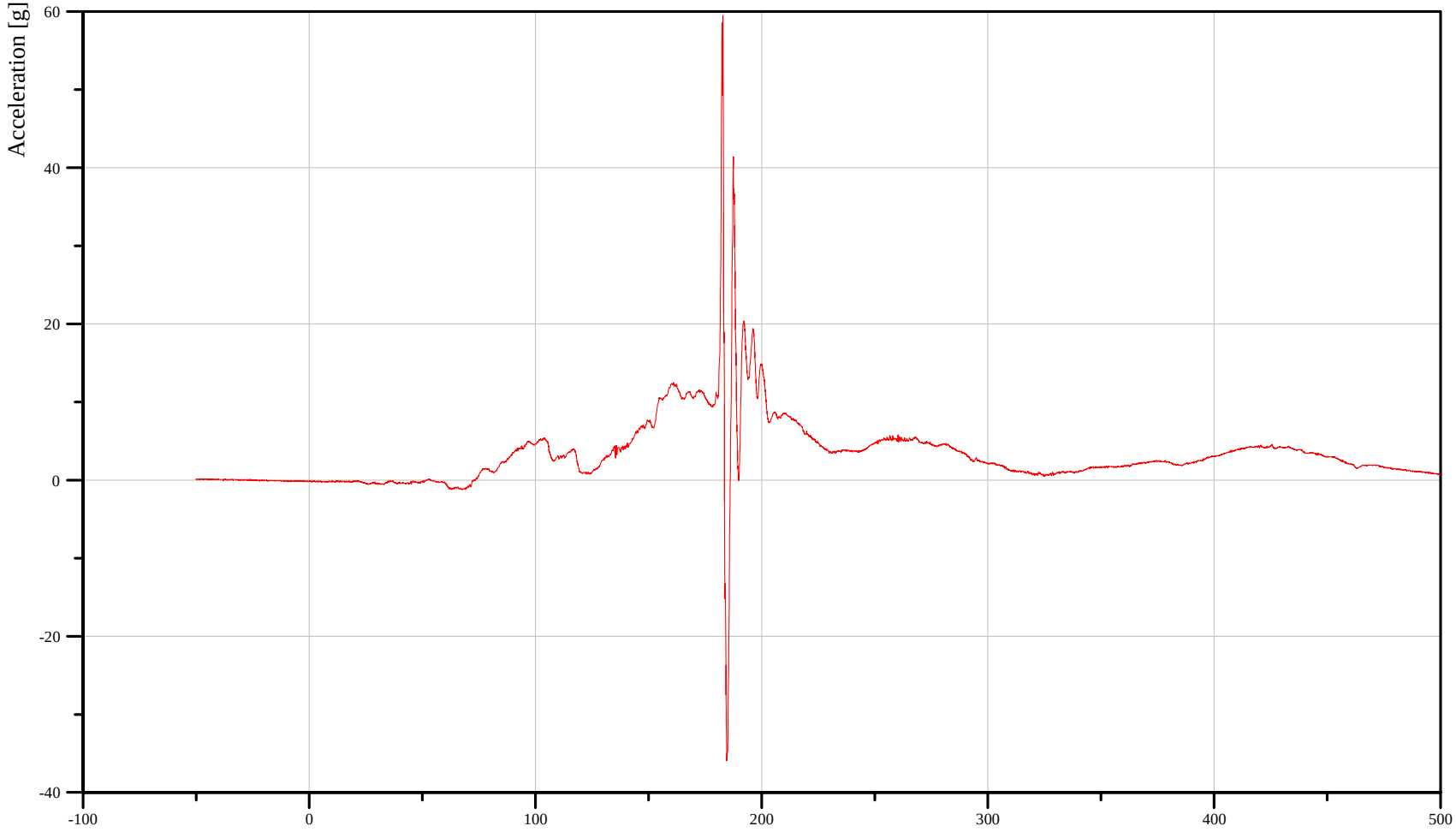
9R-Left Head Z-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

24HEADCG00HMACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-35.94 g at 184.64 ms

Max. Value
59.50 g at 182.96 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

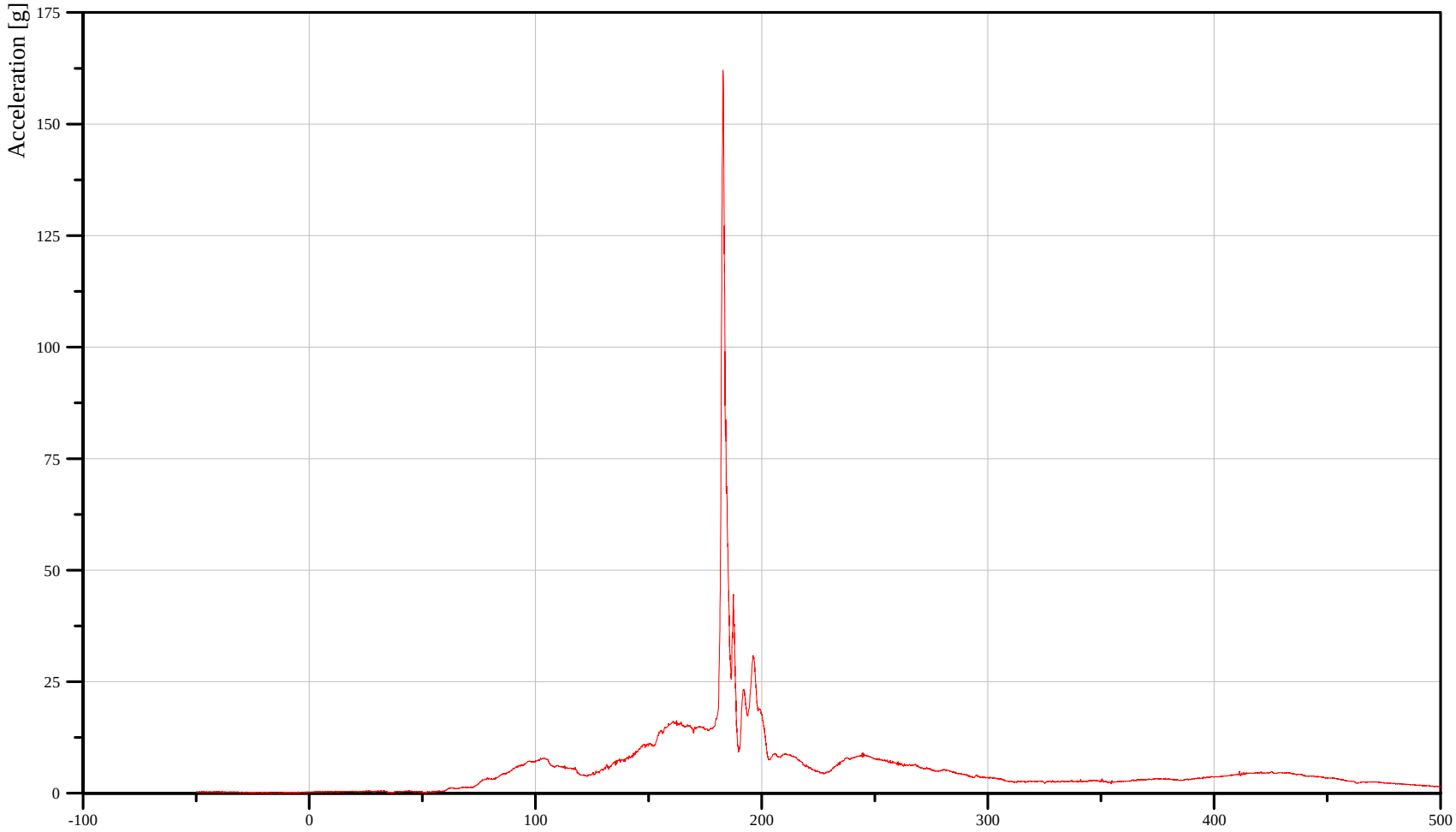
Date: 12/14/2007
Time: 9:12

9R-Left Head Resultant Acceleration

Customer: VRTC

24HEADCG00HMACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.03 g at -13.92 ms

Max. Value
162.10 g at 182.96 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

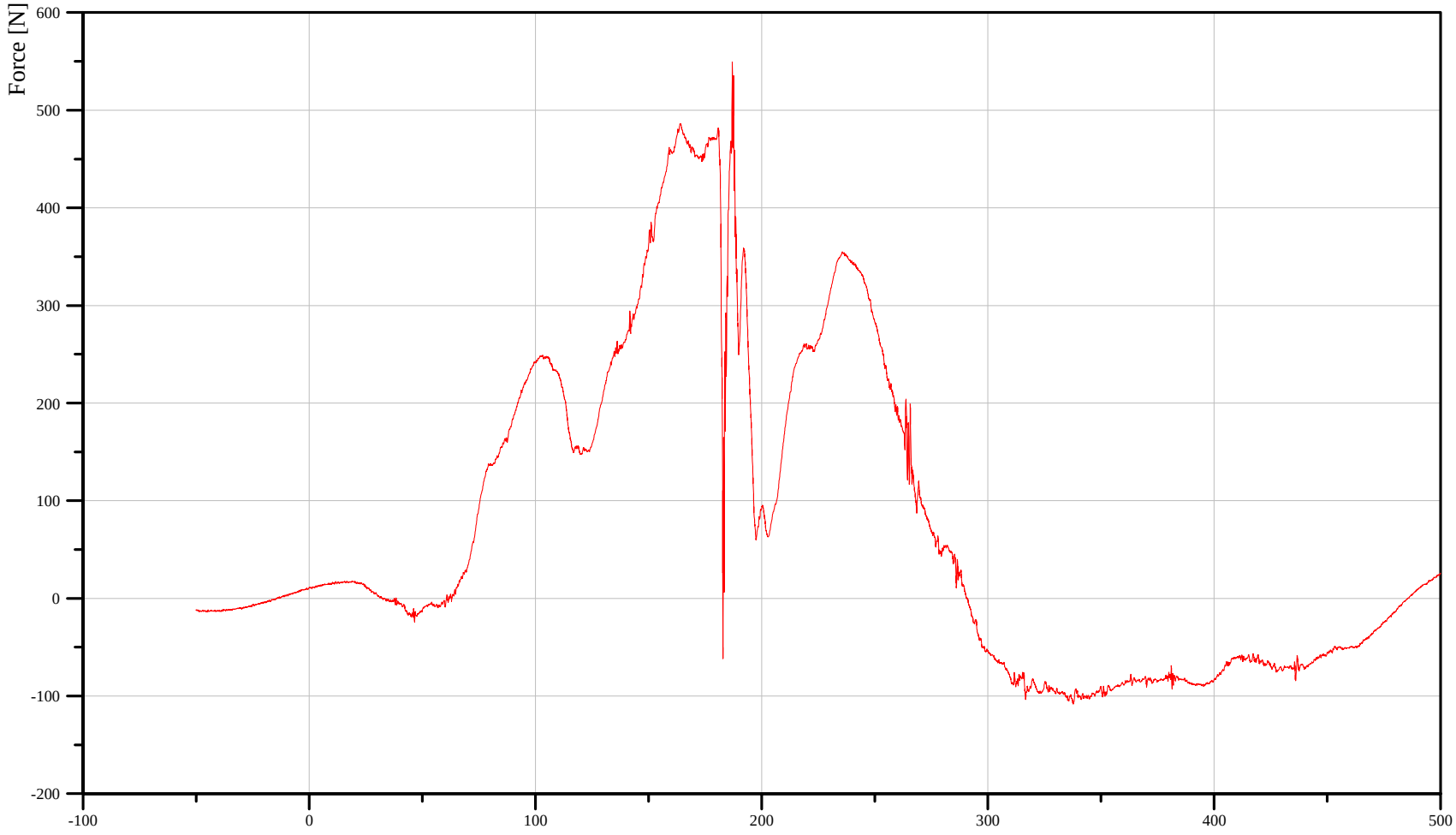
Date: 12/14/2007
Time: 9:12

9R-Left Neck Force X

Customer: VRTC

24NECKUP00HMFOYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-108.30 N at 337.68 ms

Max. Value
549.30 N at 187.04 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

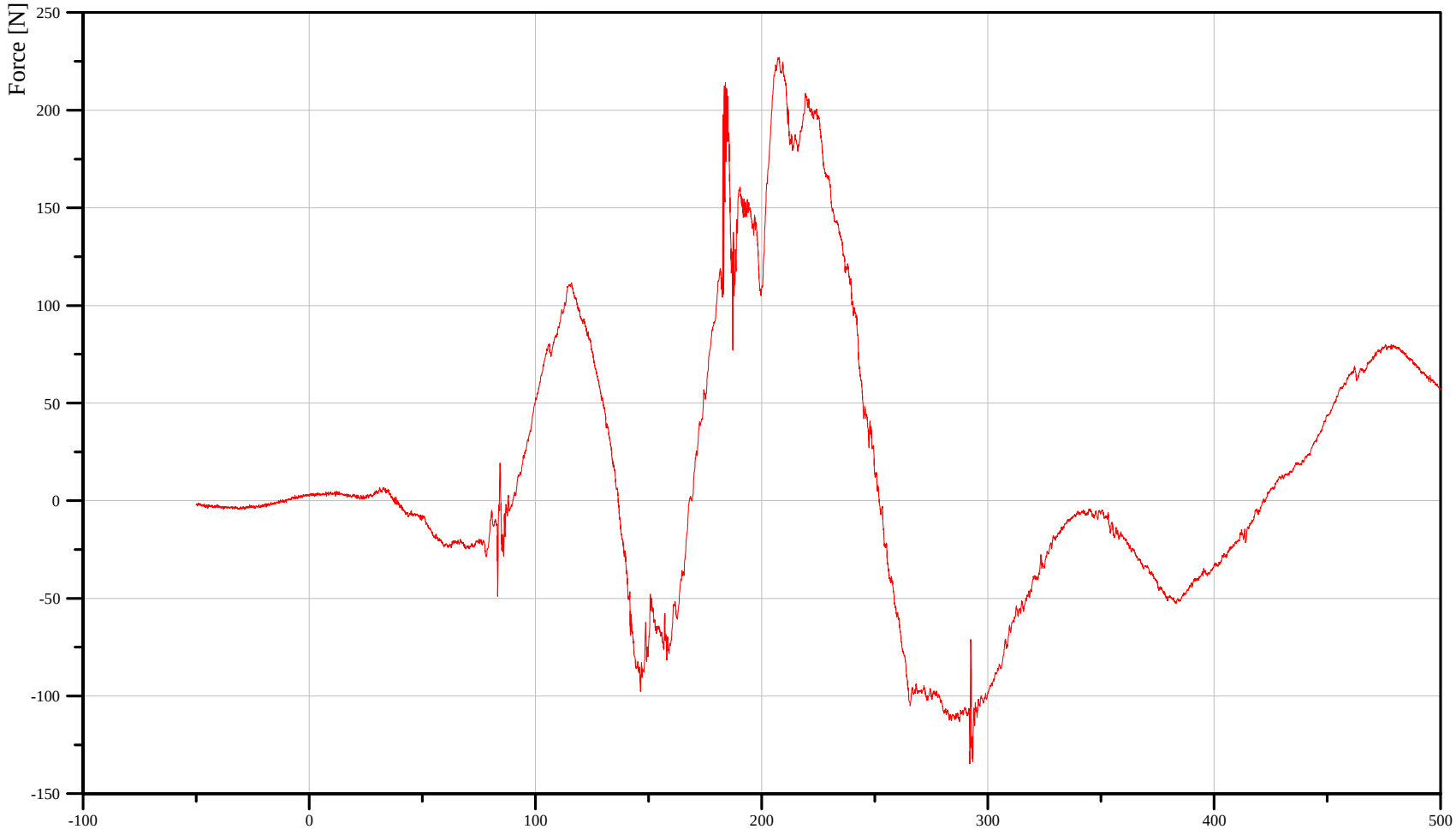
Date: 12/14/2007
Time: 9:12

9R-Left Neck Force Y

Customer: VRTC

24NECKUP00HMFOXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-134.63 N at 292.00 ms

Max. Value
227.05 N at 207.68 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

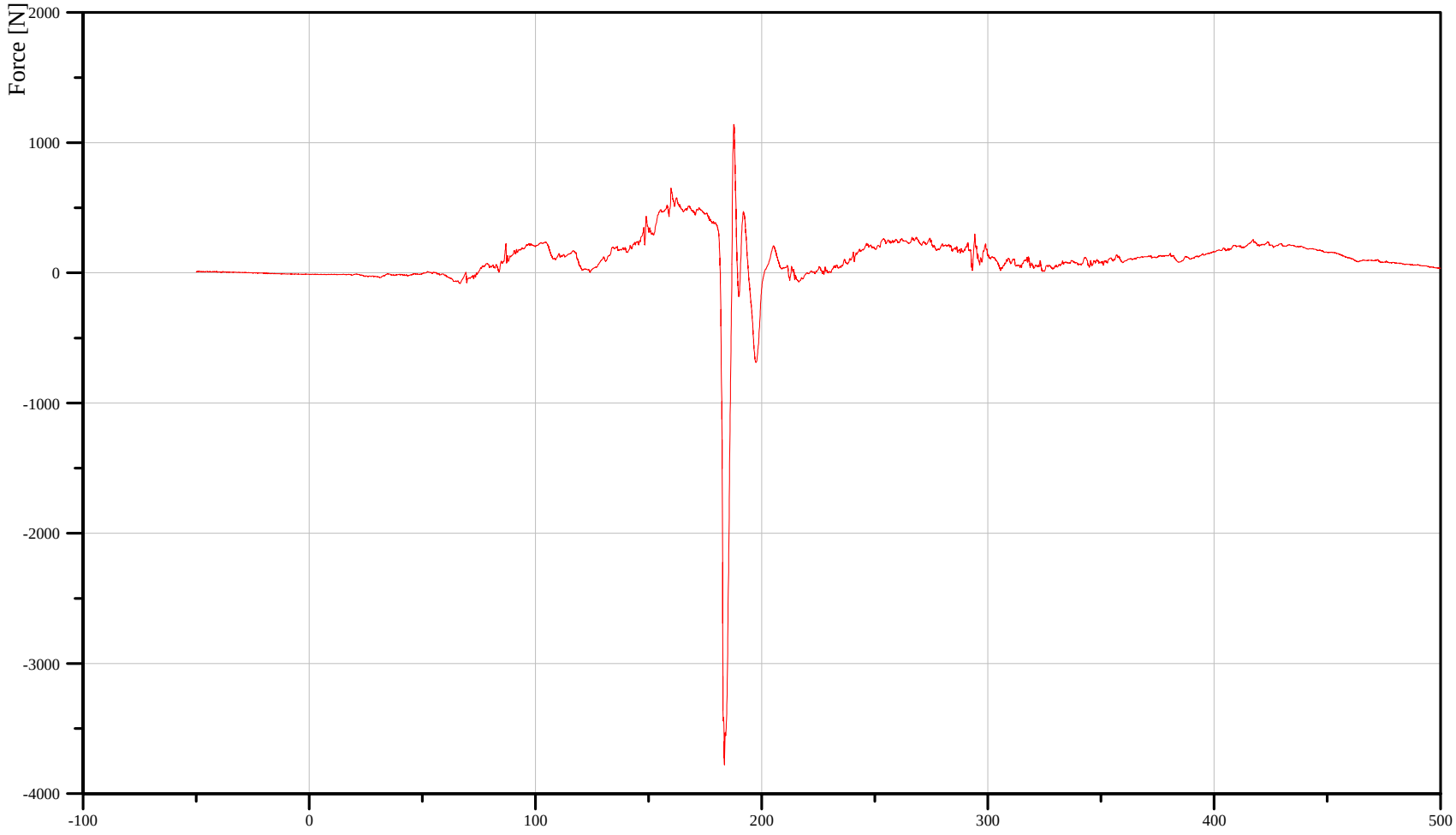
9R-Left Neck Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

24NECKUP00HMFOZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-3,779.88 N at 183.52 ms

Max. Value
1,139.57 N at 187.76 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

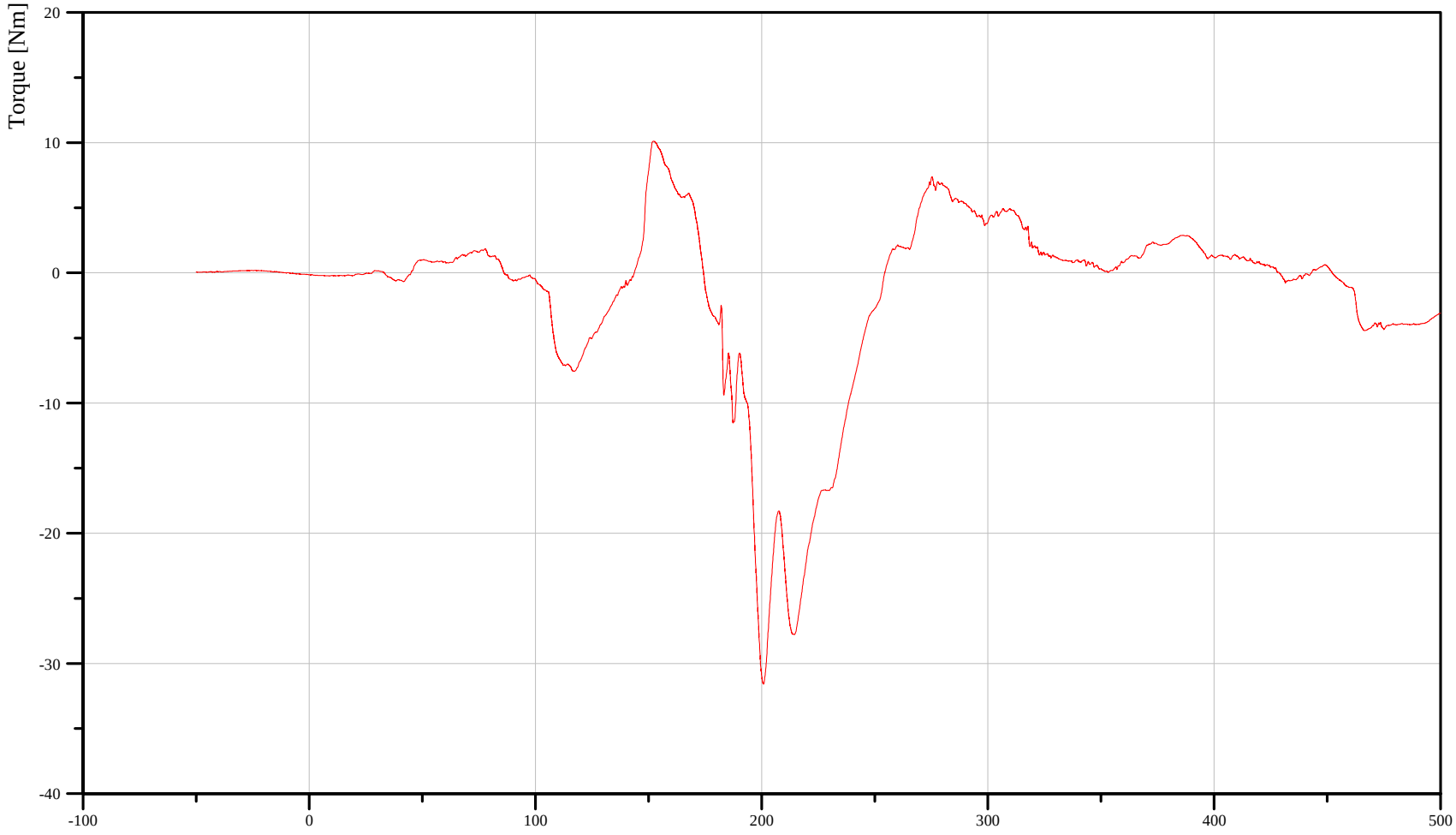
Date: 12/14/2007
Time: 9:12

9R-Left Neck Moment X

Customer: VRTC

24NECKUP00HMMOXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-31.58 Nm at 200.80 ms

Max. Value
10.12 Nm at 152.24 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

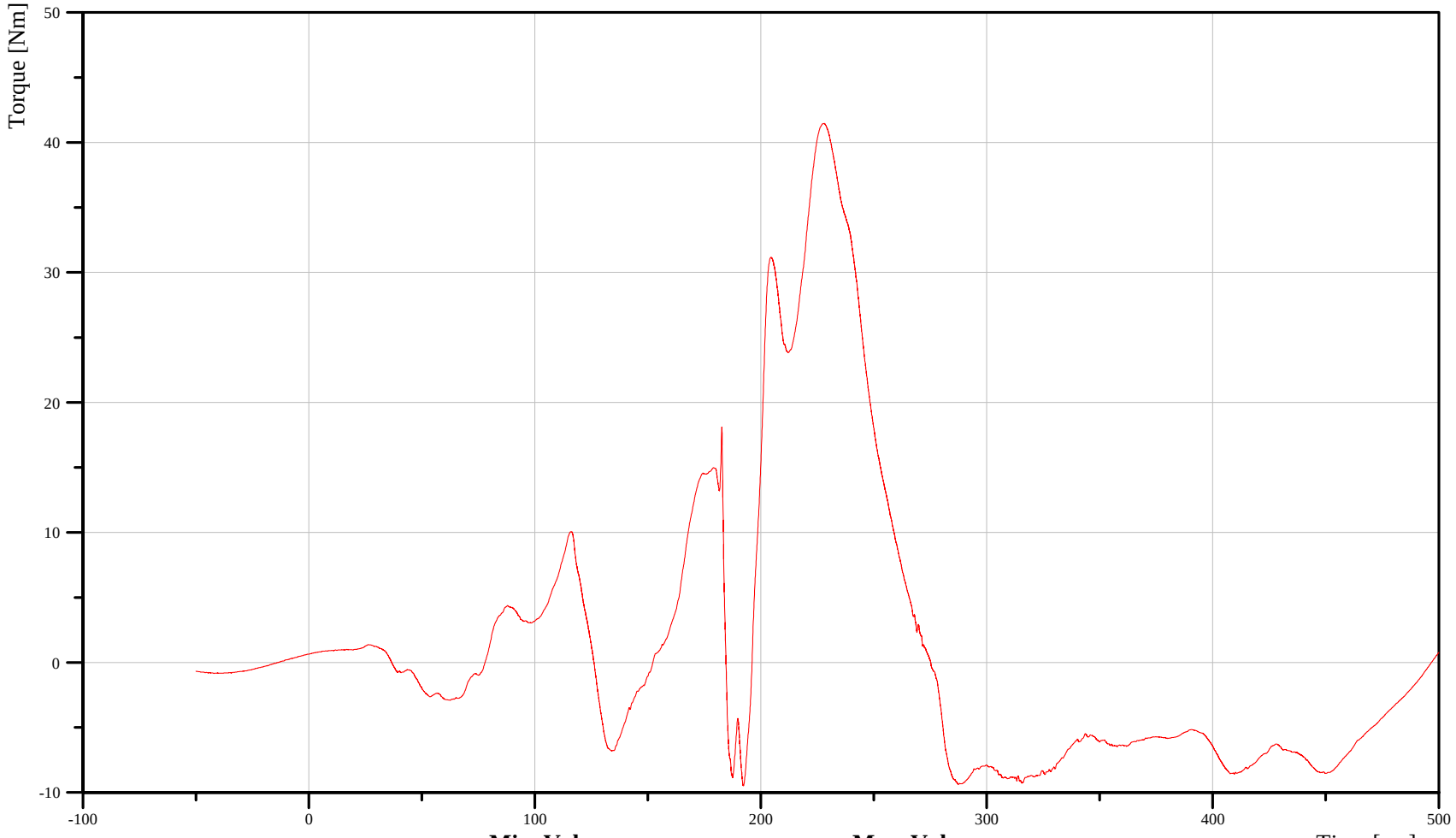
Date: 12/14/2007
Time: 9:12

9R-Left Neck Moment Y

Customer: VRTC

24NECKUP00HMMOYB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-9.49 Nm at 192.32 ms

Max. Value
41.48 Nm at 228.08 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

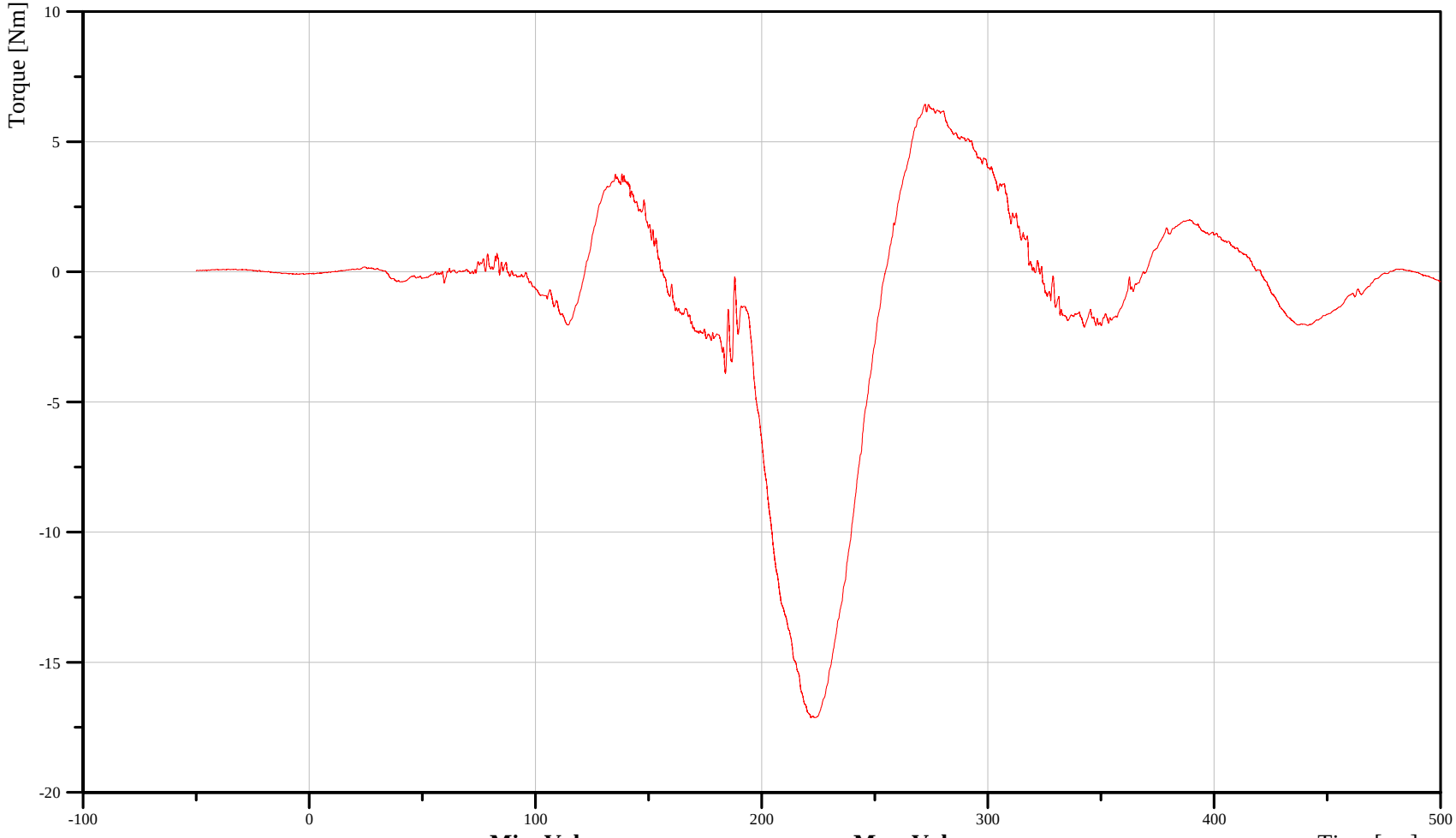
Date: 12/14/2007
Time: 9:12

9R-Left Neck Moment Z

Customer: VRTC

24NECKUP00HMMOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-17.13 Nm at 221.92 ms

Max. Value
6.45 Nm at 272.24 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

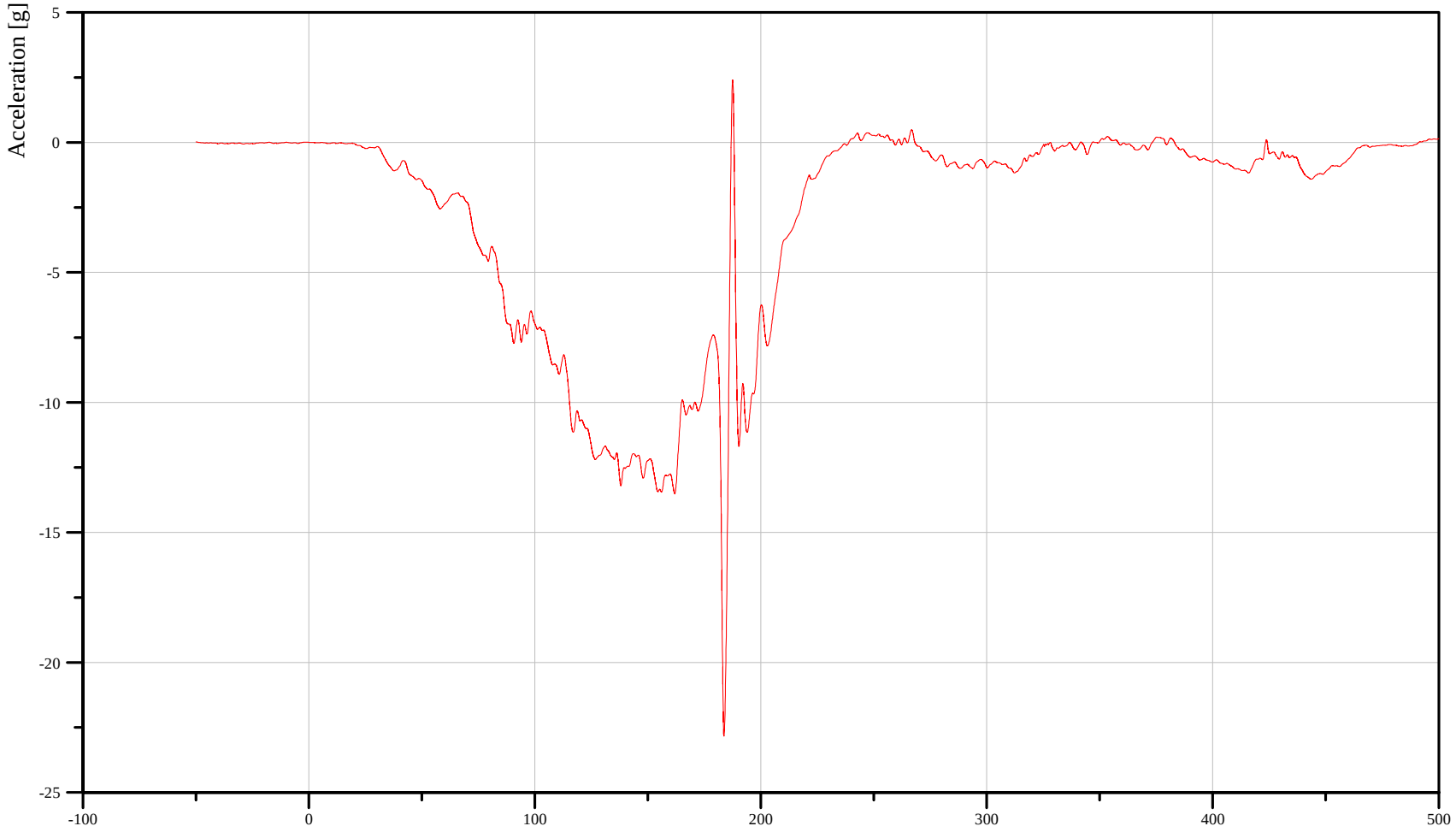
Date: 12/14/2007
Time: 9:12

9R-Left Chest X-Axis Acceleration

Customer: VRTC

24CHSTCG00HMACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-22.83 g at 183.68 ms

Max. Value
2.41 g at 187.52 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

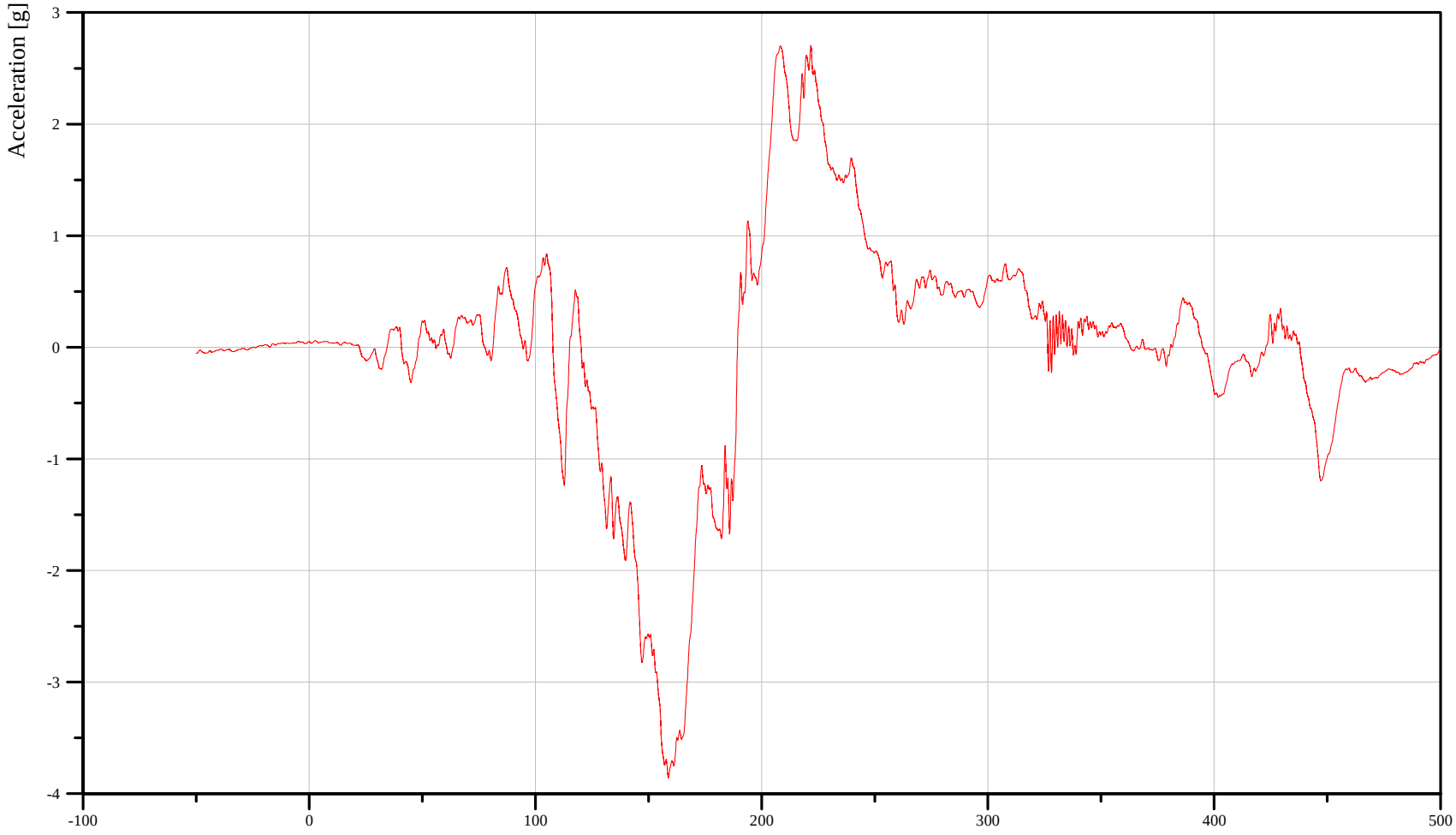
9R-Left Chest Y-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

24CHSTCG00HMACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-3.86 g at 158.72 ms

Max. Value
2.70 g at 221.76 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

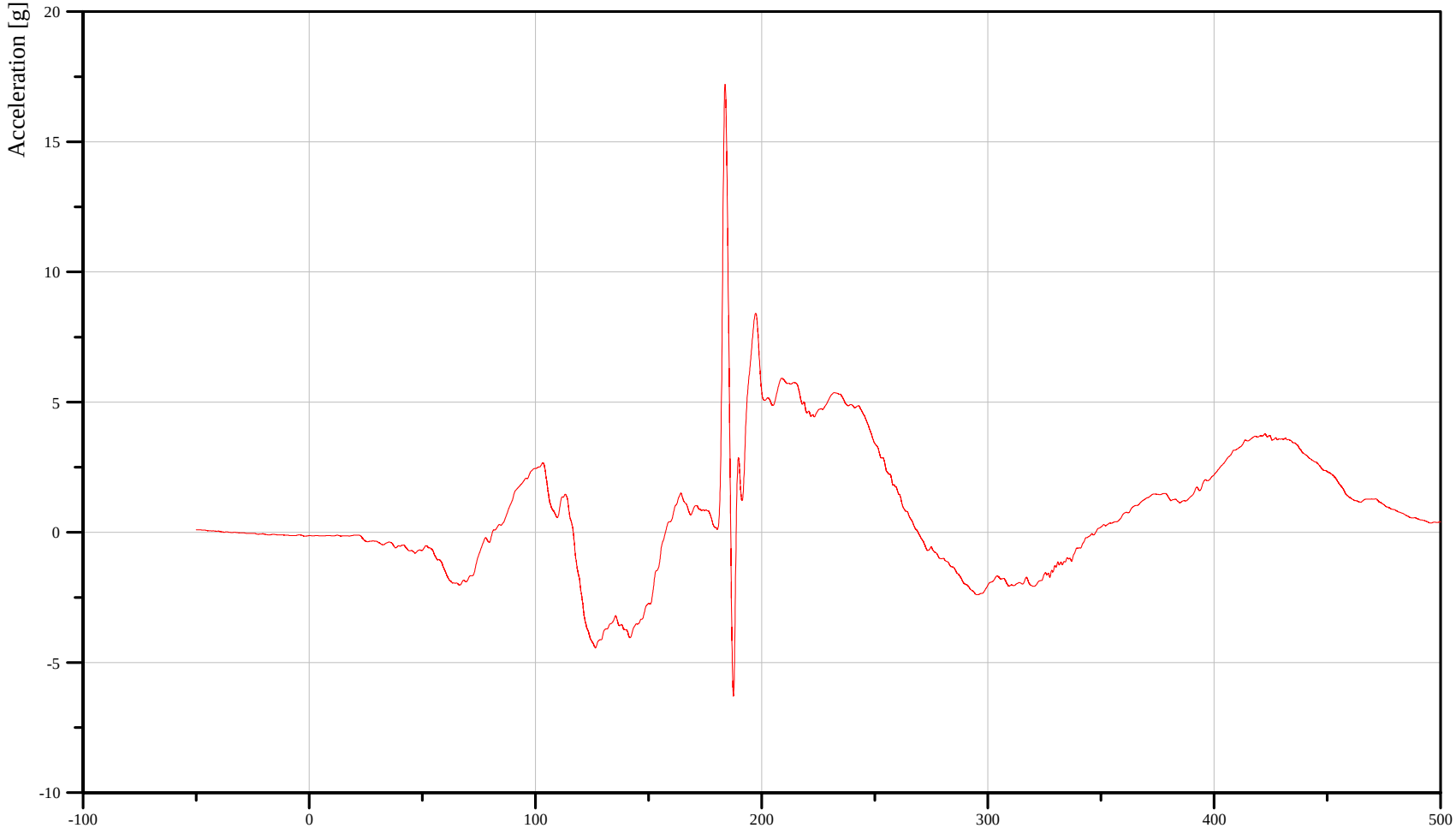
Date: 12/14/2007
Time: 9:12

9R-Left Chest Z-Axis Acceleration

Customer: VRTC

24CHSTCG00HMACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-6.29 g at 187.52 ms

Max. Value
17.22 g at 183.84 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

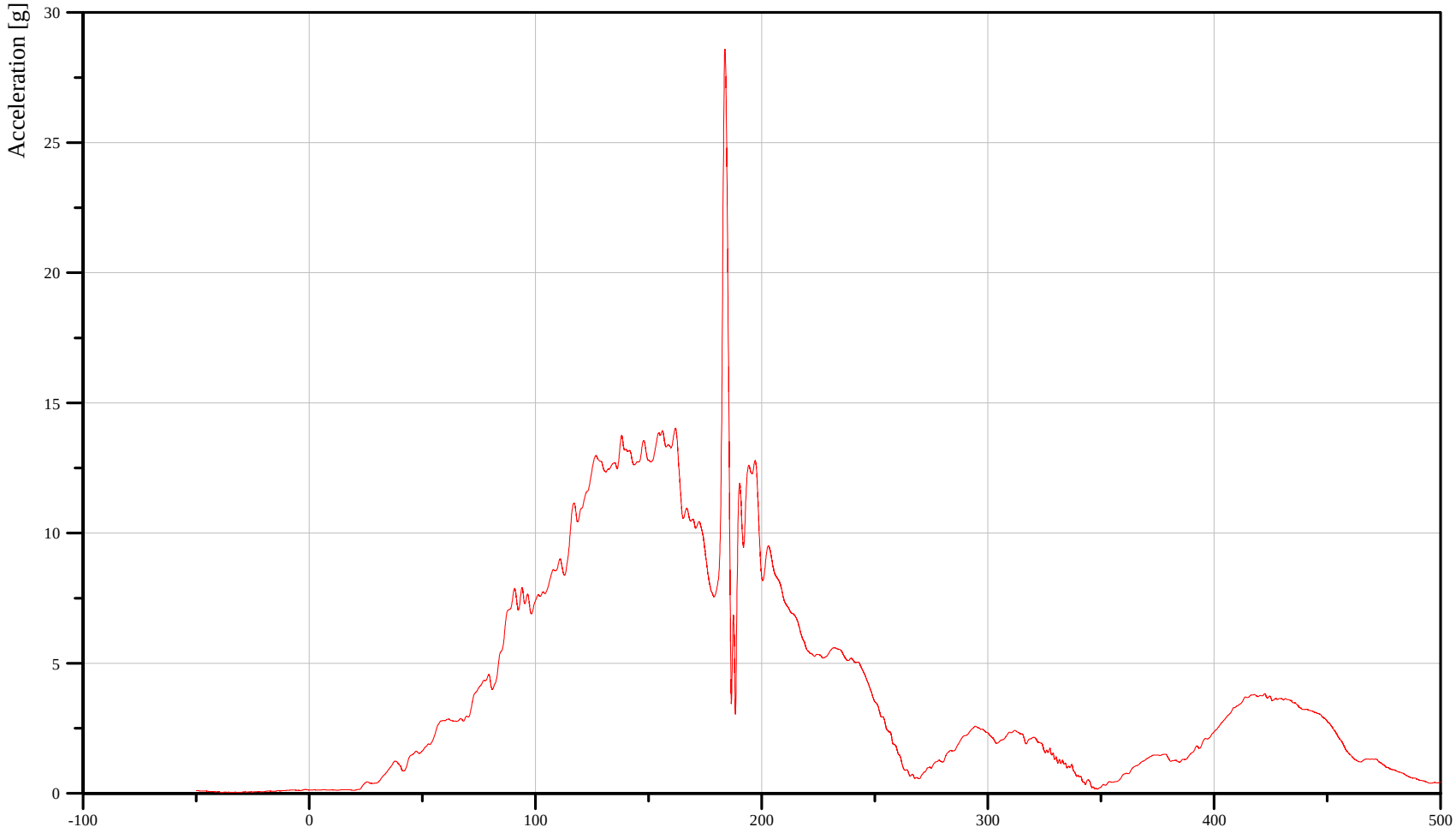
9R-Left Chest Resultant Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

24CHSTCG00HMACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.03 g at -38.64 ms

Max. Value
28.59 g at 183.76 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

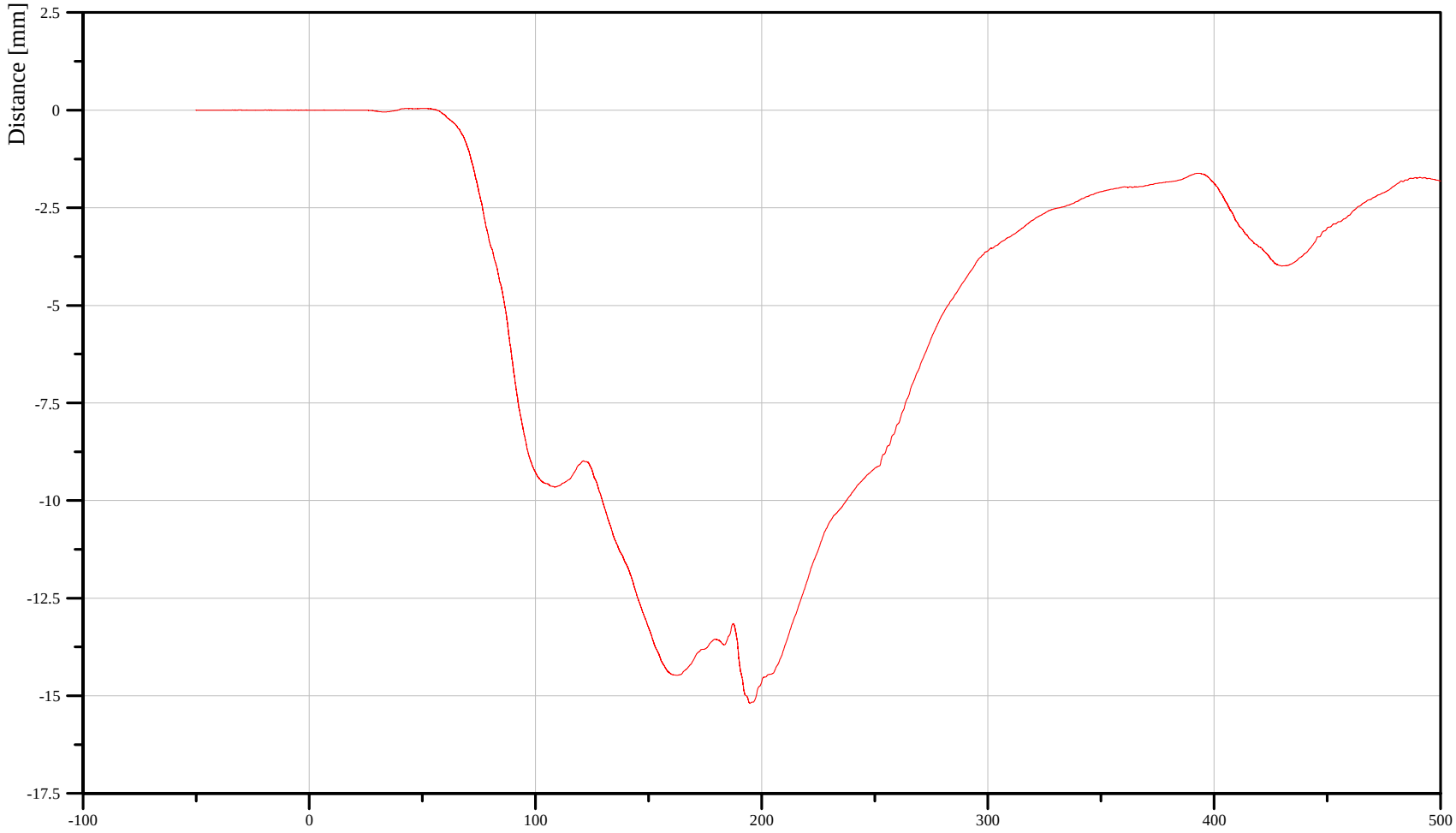
Date: 12/14/2007
Time: 9:12

9R-Left Chest X-Axis Deflection

Customer: VRTC

24CHST0000HMDSXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-15.19 mm at 194.80 ms

Max. Value
0.05 mm at 51.60 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

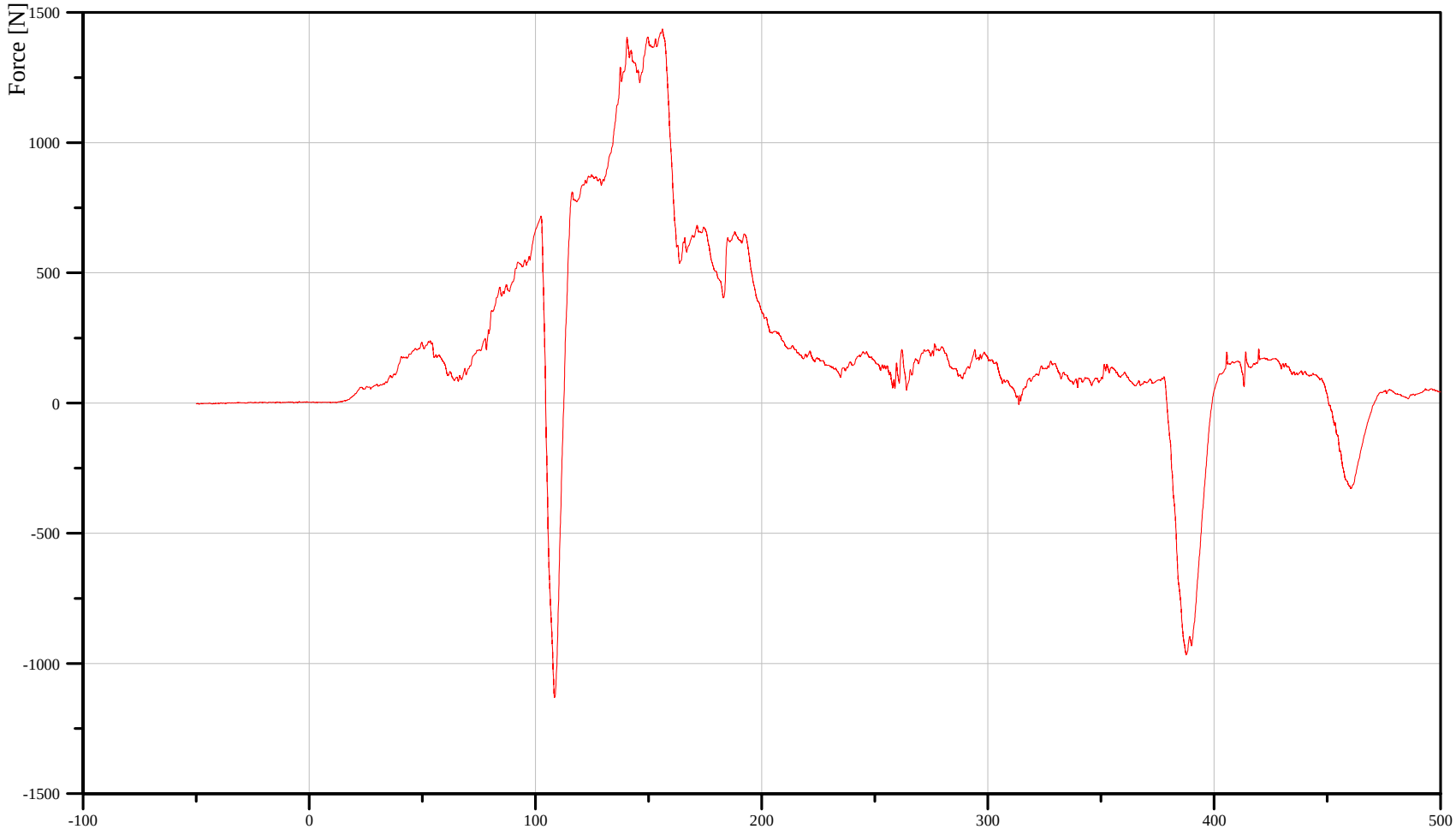
Date: 12/14/2007
Time: 9:12

9R-Left Left Femur Force Z

Customer: VRTC

24FEMRLL00HMFOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-1,129.83 N at 108.48 ms

Max. Value
1,436.09 N at 156.16 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

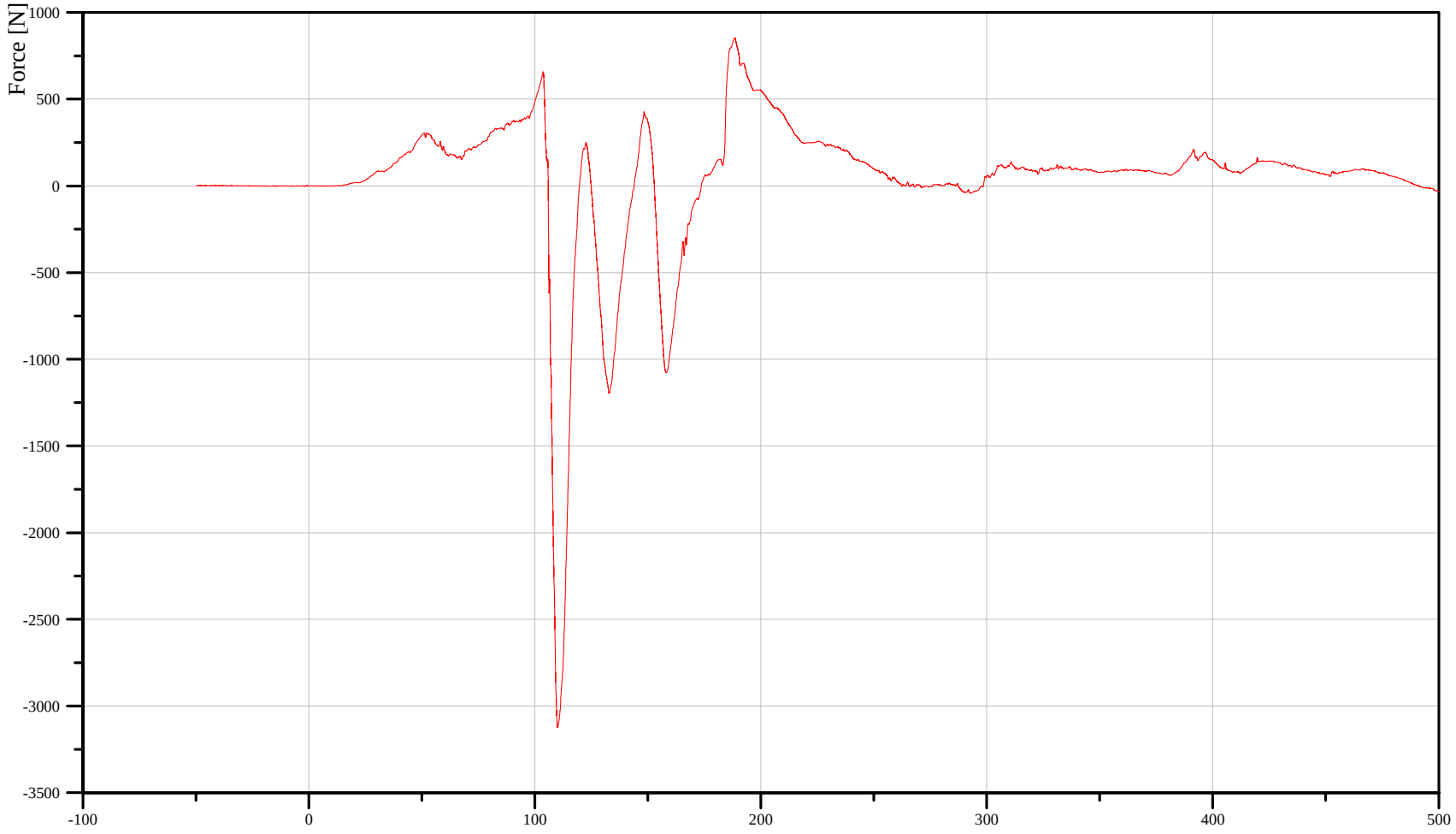
Date: 12/14/2007
Time: 9:12

9R-Left Right Femur Force Z

Customer: VRTC

24FEMRRL00HMFOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-3,123.96 N at 110.08 ms

Max. Value
854.48 N at 188.56 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

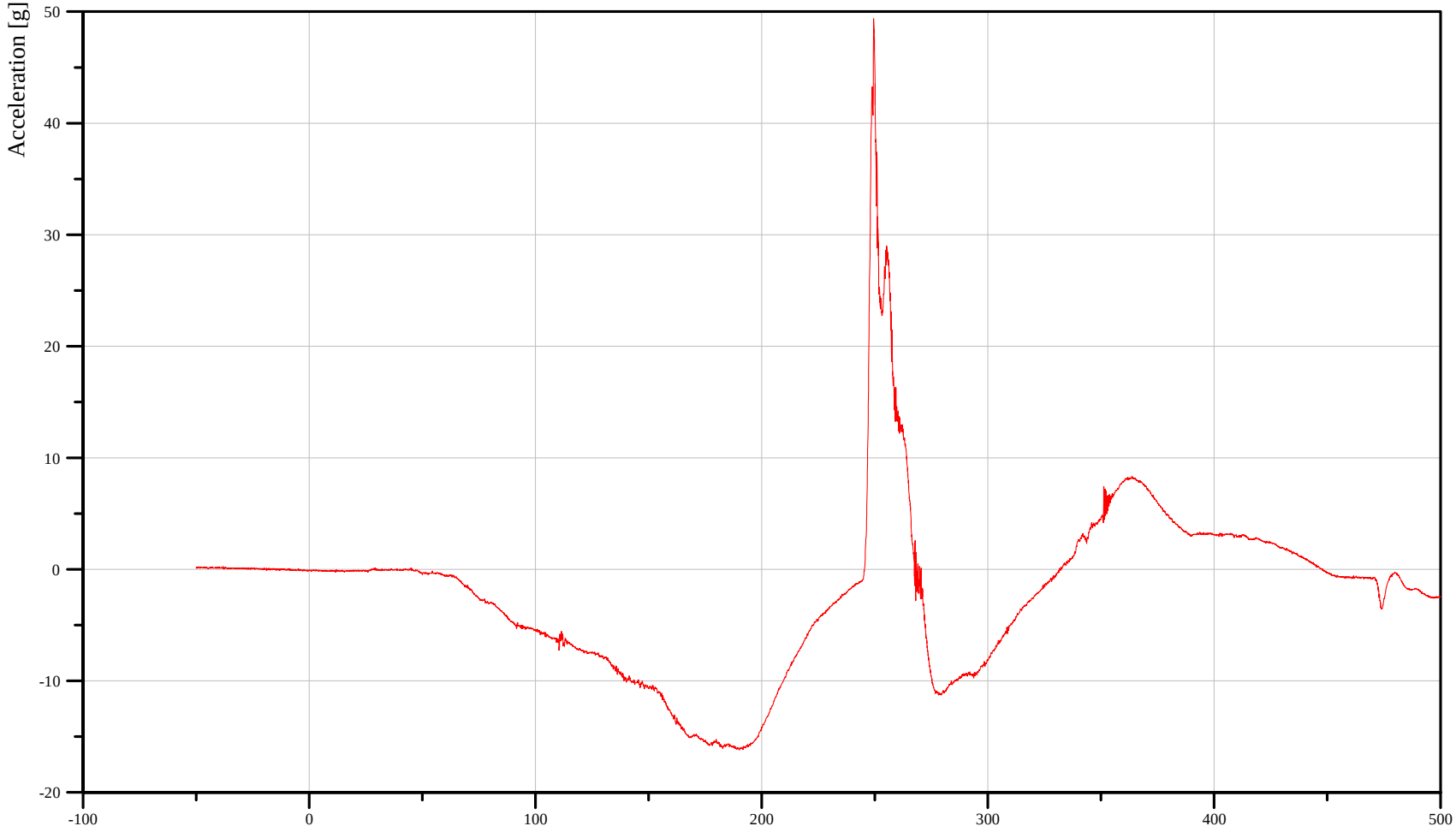
9R-Right Head X-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

25HEADCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-16.19 g at 190.08 ms

Max. Value
49.36 g at 249.52 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

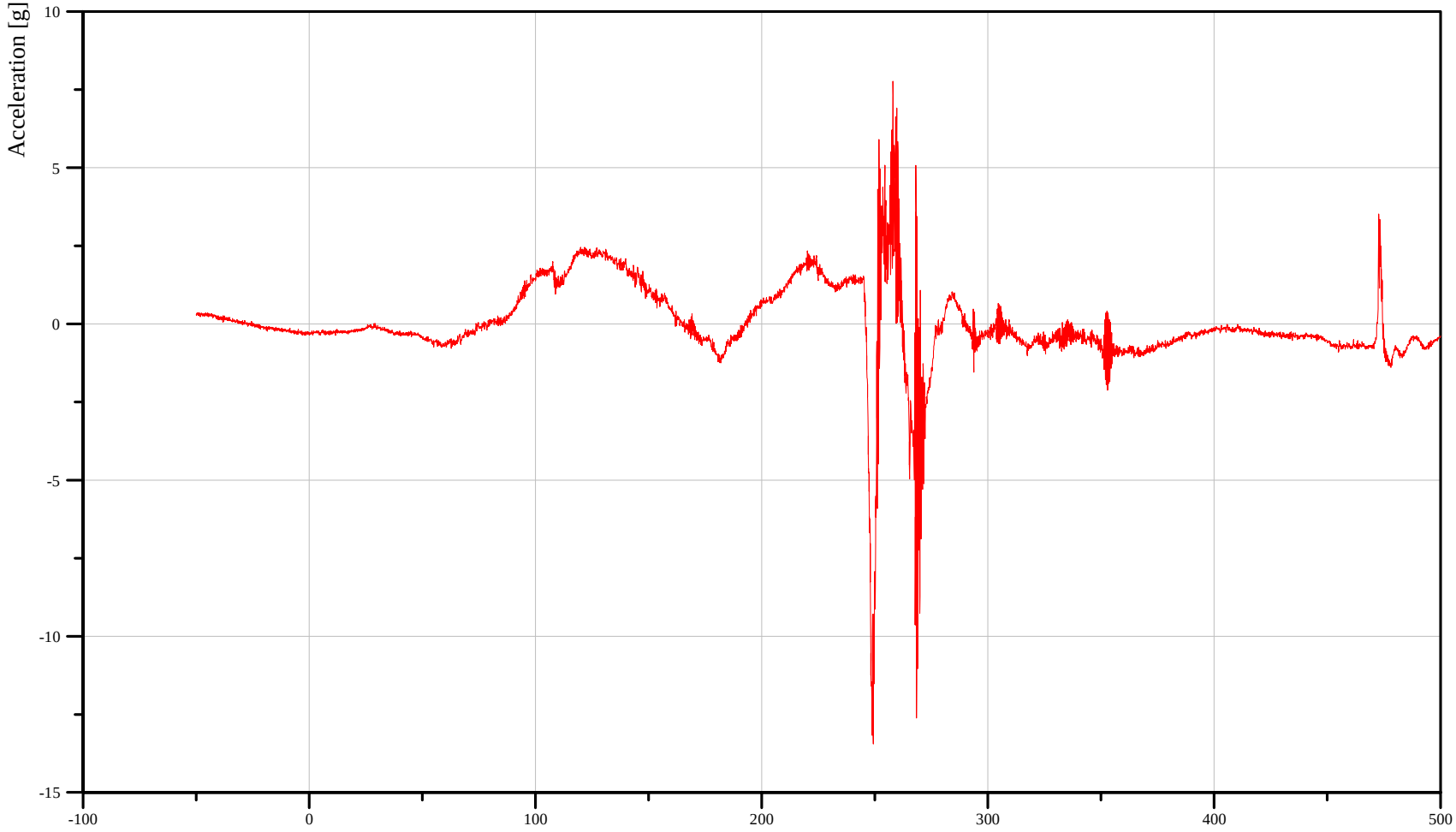
Date: 12/14/2007
Time: 9:12

9R-Right Head Y-Axis Acceleration

Customer: VRTC

25HEADCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-13.45 g at 249.28 ms

Max. Value
7.77 g at 258.00 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

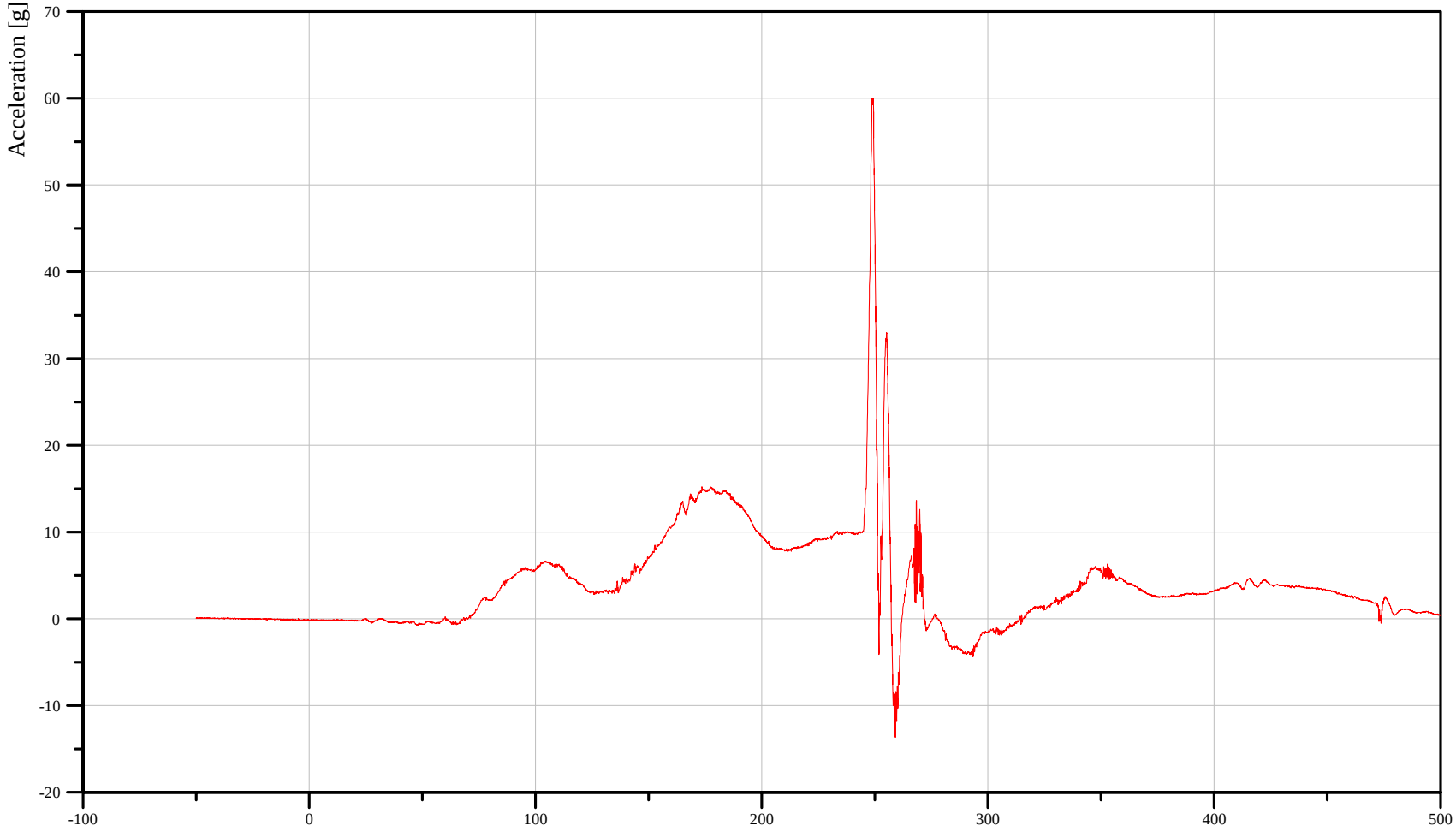
Date: 12/14/2007
Time: 9:12

9R-Right Head Z-Axis Acceleration

Customer: VRTC

25HEADCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-13.64 g at 259.12 ms

Max. Value
60.04 g at 249.36 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

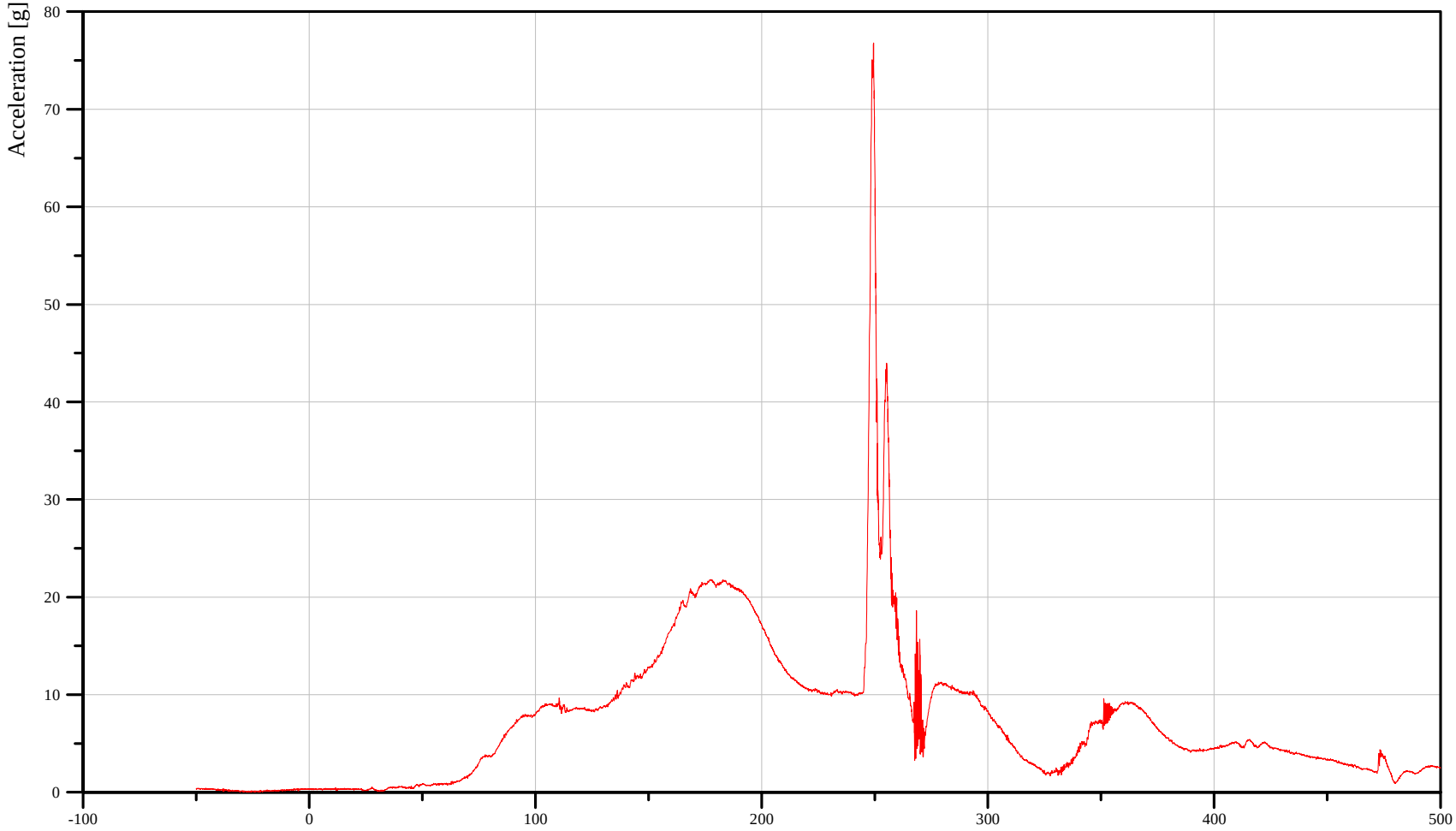
Date: 12/14/2007
Time: 9:12

9R-Right Head Resultant Acceleration

Customer: VRTC

25HEADCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.03 g at -27.04 ms

Max. Value
76.78 g at 249.44 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

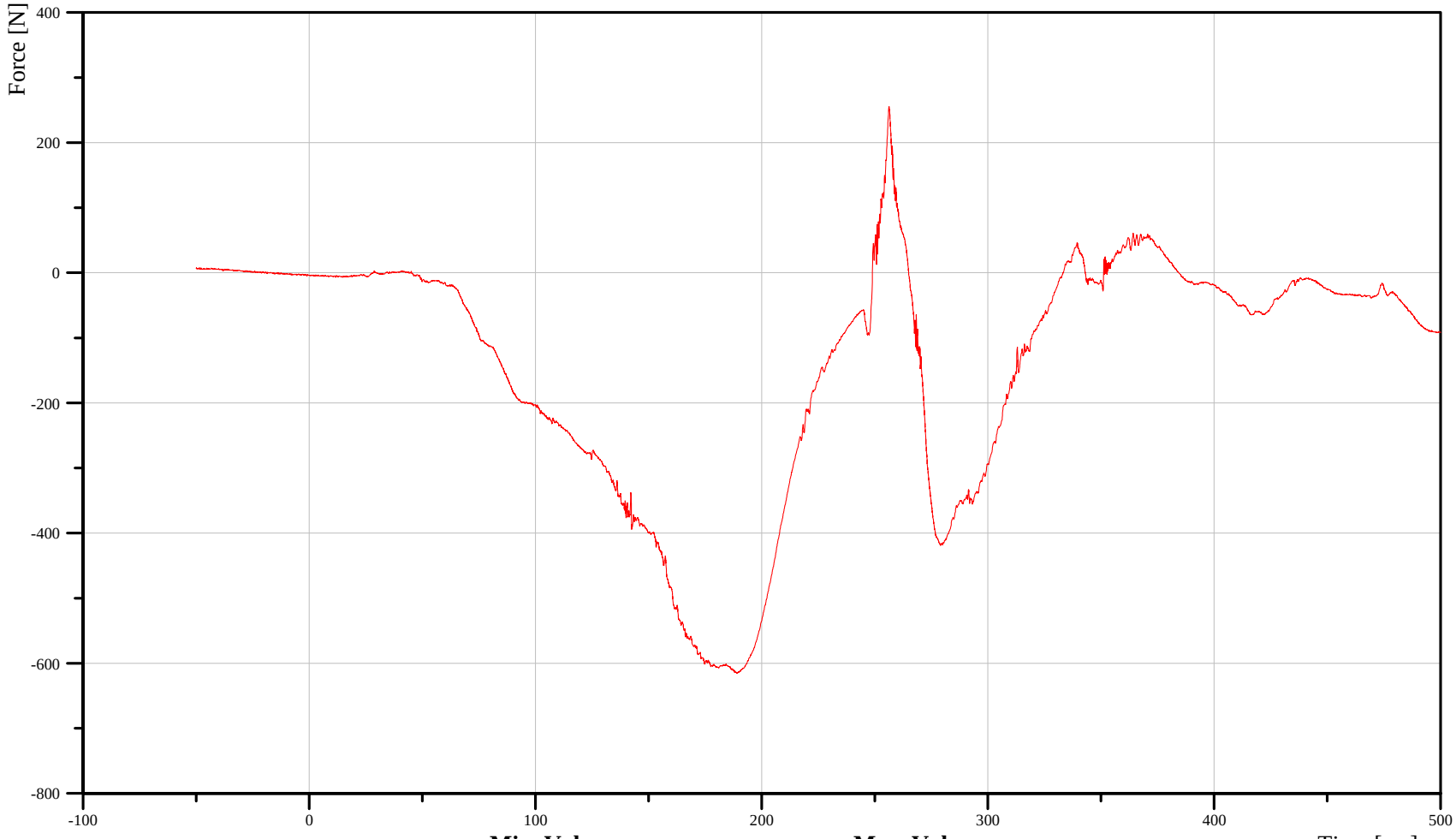
Date: 12/14/2007
Time: 9:12

9R-Right Neck Force X

Customer: VRTC

25NECKUP00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-615.20 N at 189.20 ms

Max. Value
255.37 N at 256.24 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

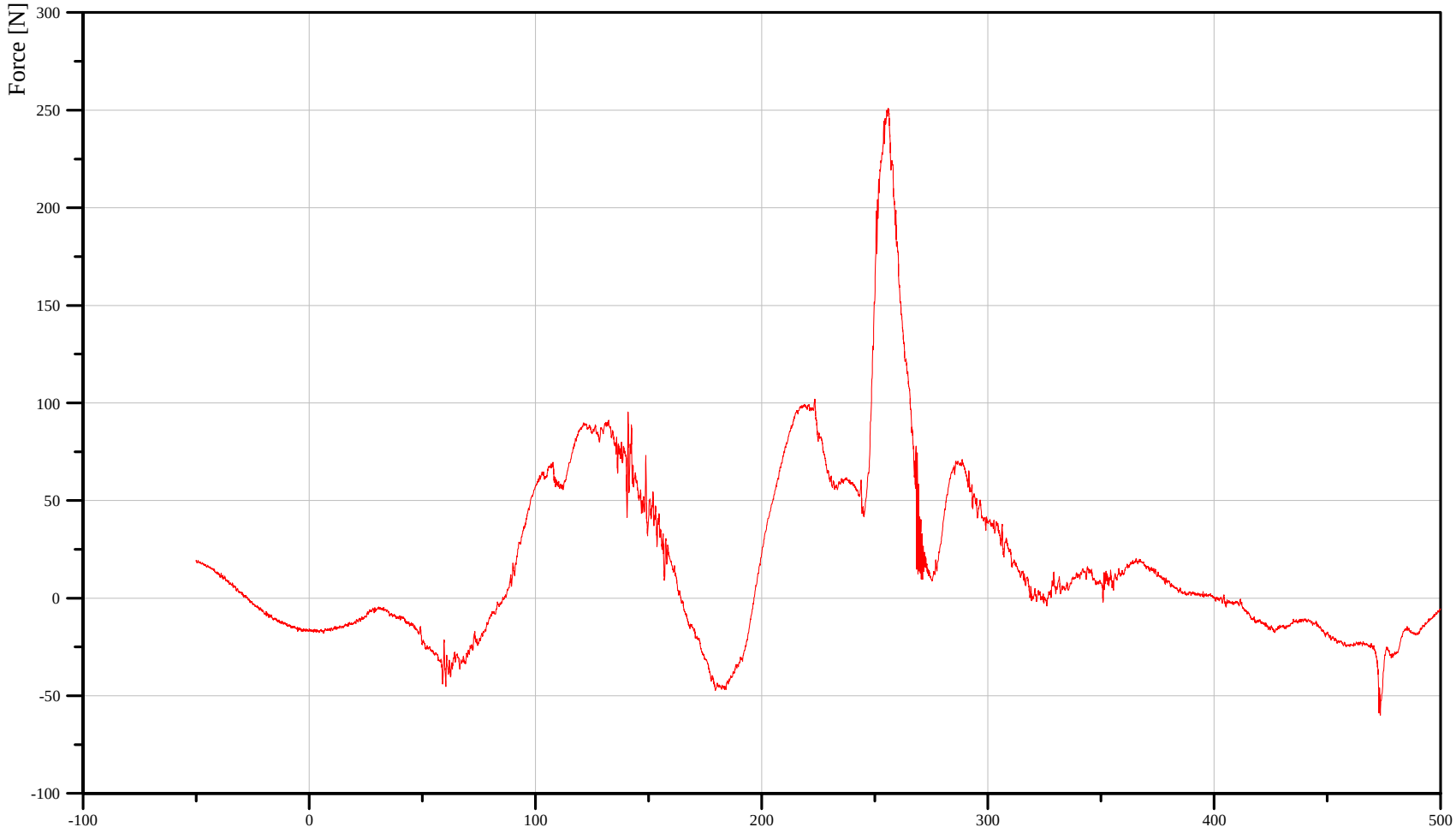
9R-Right Neck Force Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

25NECKUP00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-59.96 N at 473.44 ms

Max. Value
251.11 N at 255.92 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

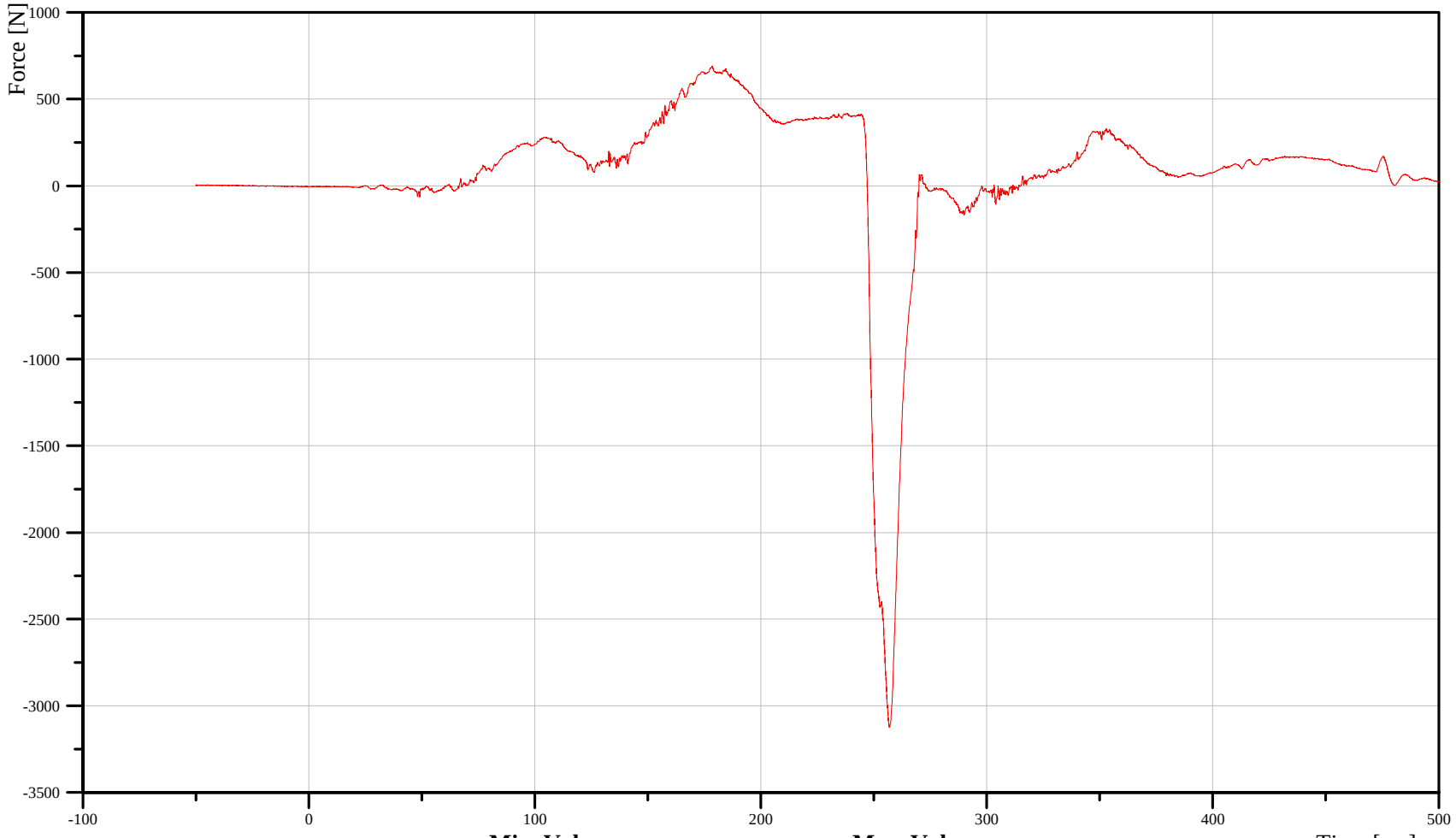
Date: 12/14/2007
Time: 9:12

9R-Right Neck Force Z

Customer: VRTC

25NECKUP00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-3,122.97 N at 256.88 ms

Max. Value
692.15 N at 178.48 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

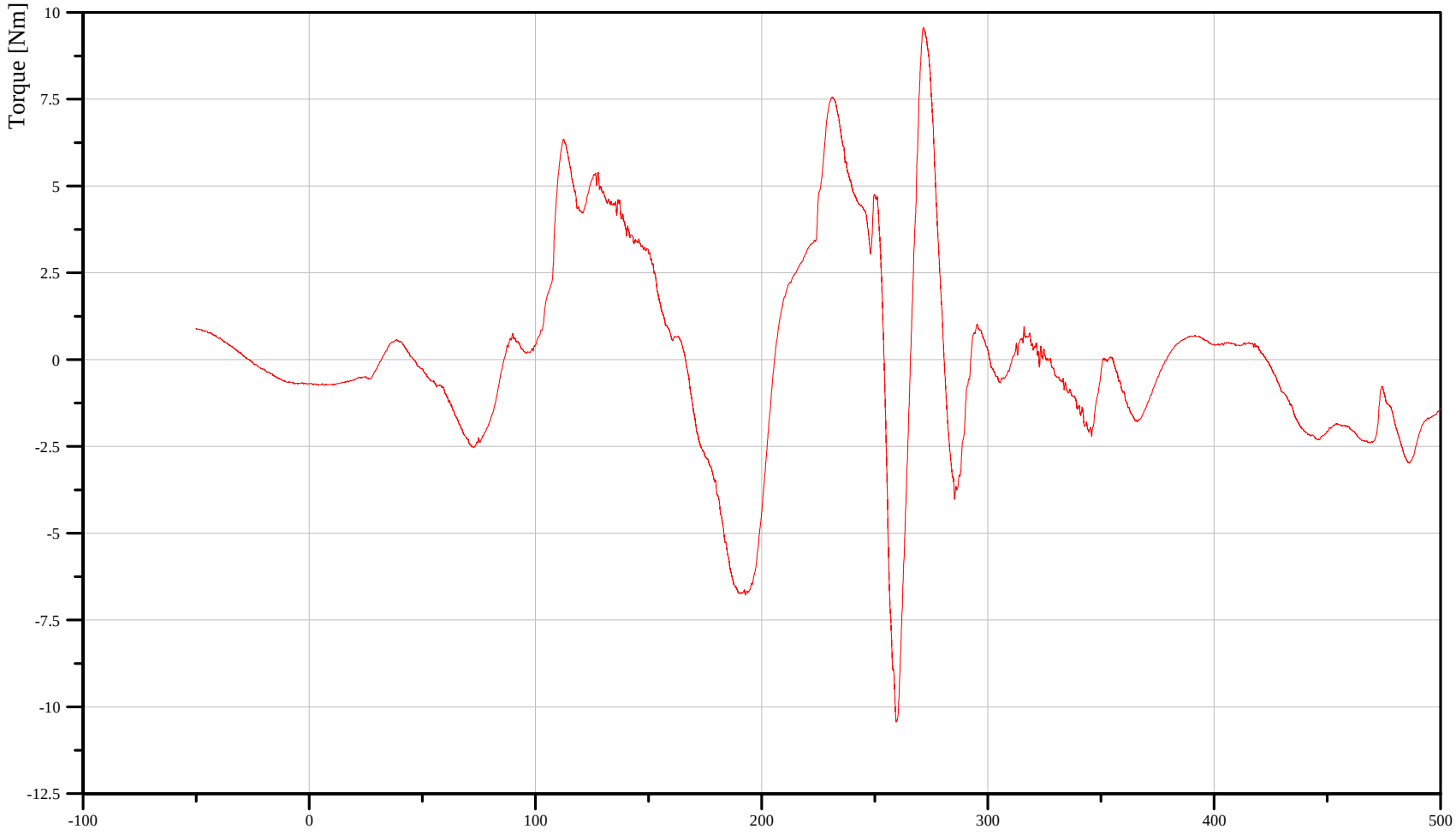
Date: 12/14/2007
Time: 9:12

9R-Right Neck Moment X

Customer: VRTC

25NECKUP00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-10.43 Nm at 259.44 ms

Max. Value
9.56 Nm at 271.60 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

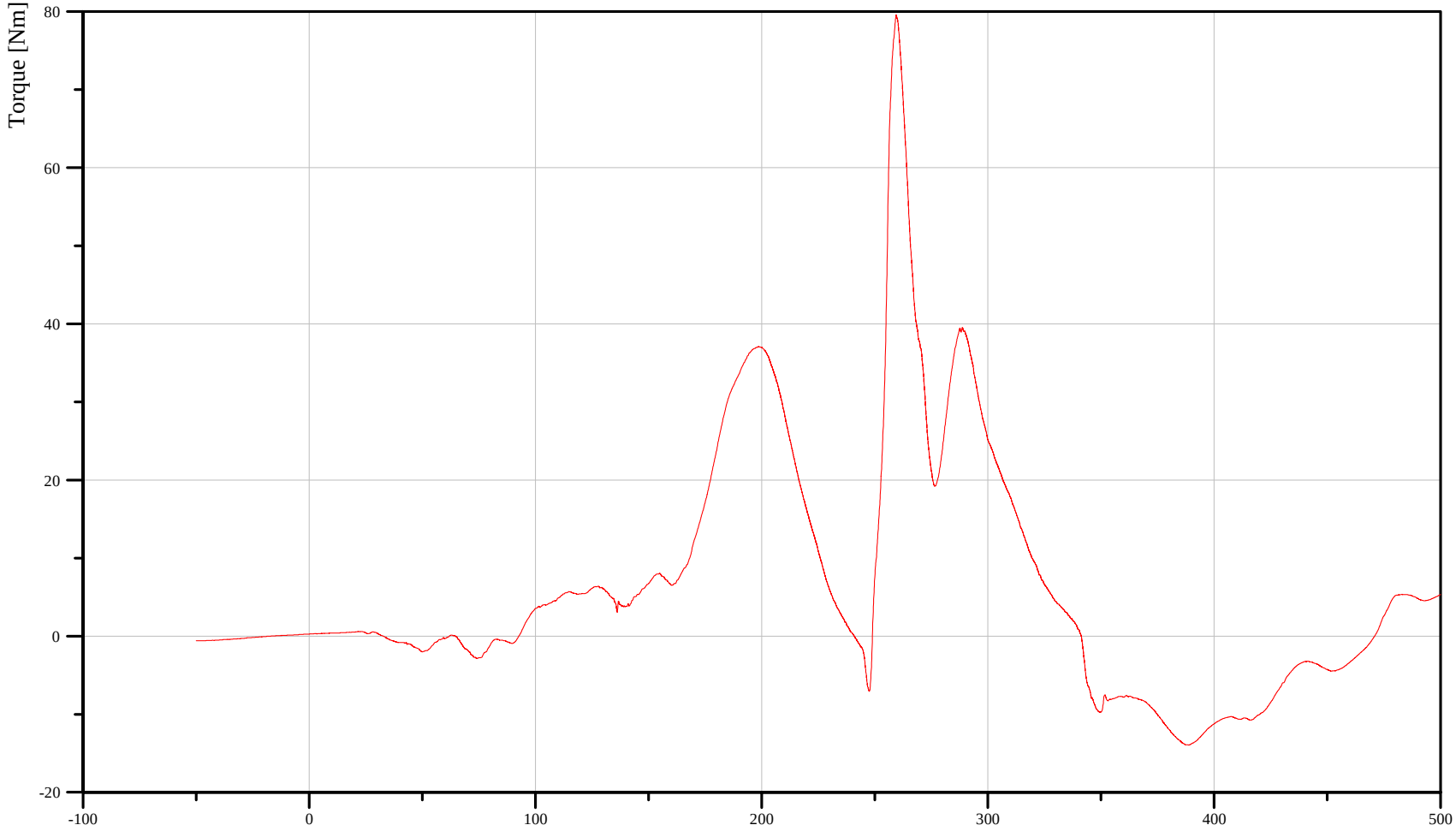
Date: 12/14/2007
Time: 9:12

9R-Right Neck Moment Y

Customer: VRTC

25NECKUP00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-13.93 Nm at 388.72 ms

Max. Value
79.54 Nm at 259.44 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

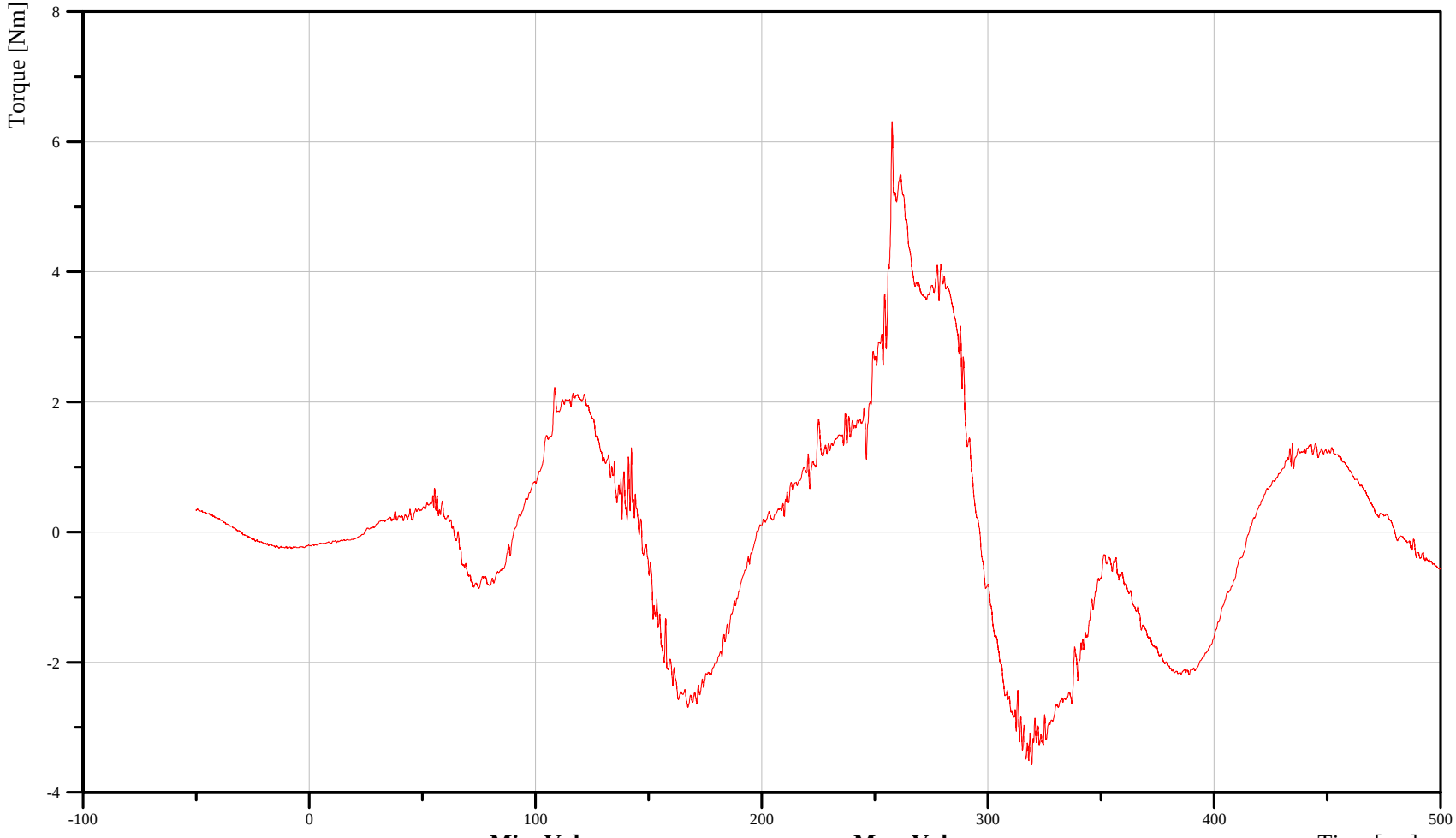
Date: 12/14/2007
Time: 9:12

9R-Right Neck Moment Z

Customer: VRTC

25NECKUP00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-3.57 Nm at 319.36 ms

Max. Value
6.31 Nm at 257.68 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

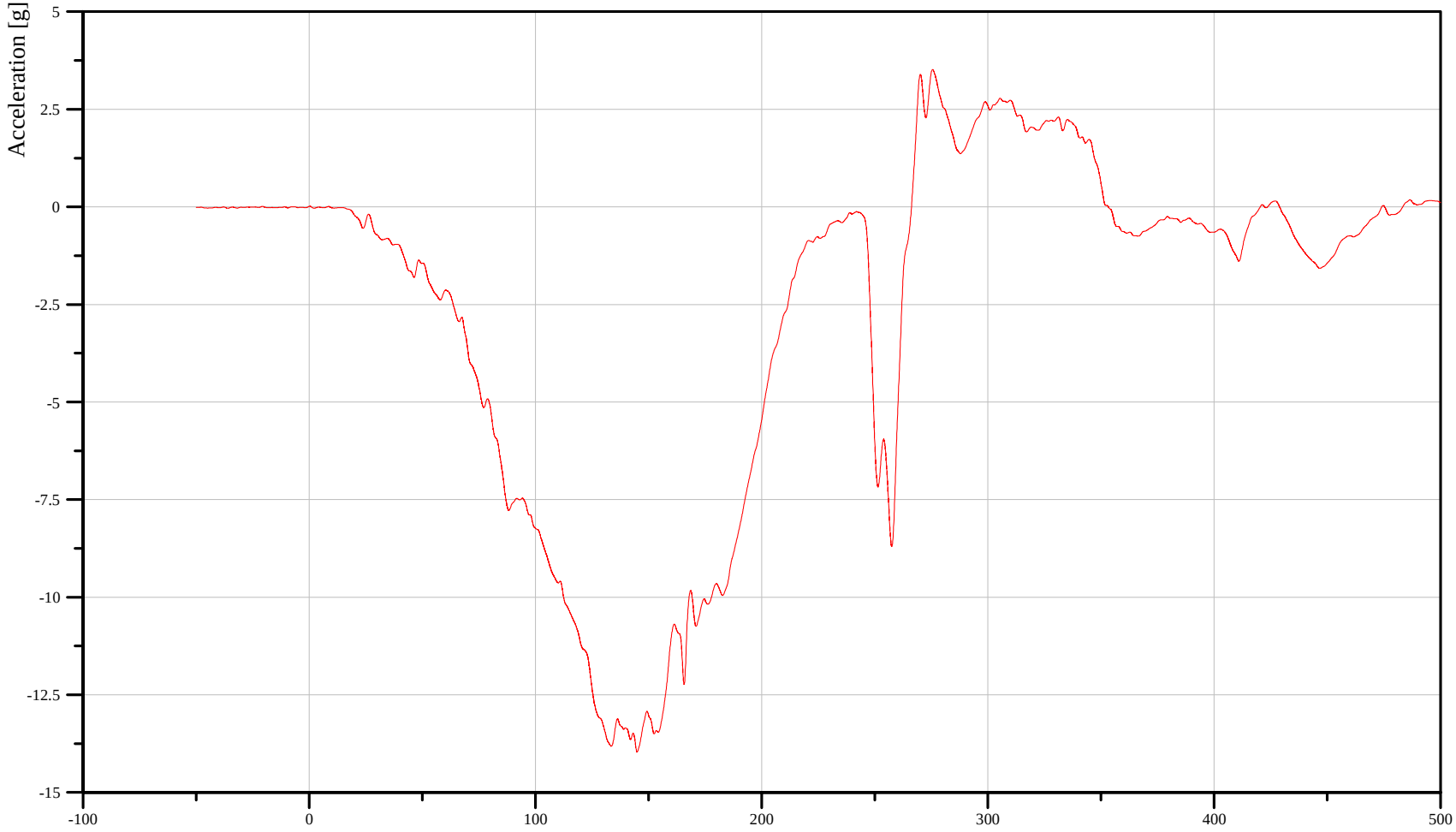
Date: 12/14/2007
Time: 9:12

9R-Right Chest X-Axis Acceleration

Customer: VRTC

25CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-13.97 g at 144.88 ms

Max. Value
3.51 g at 275.52 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

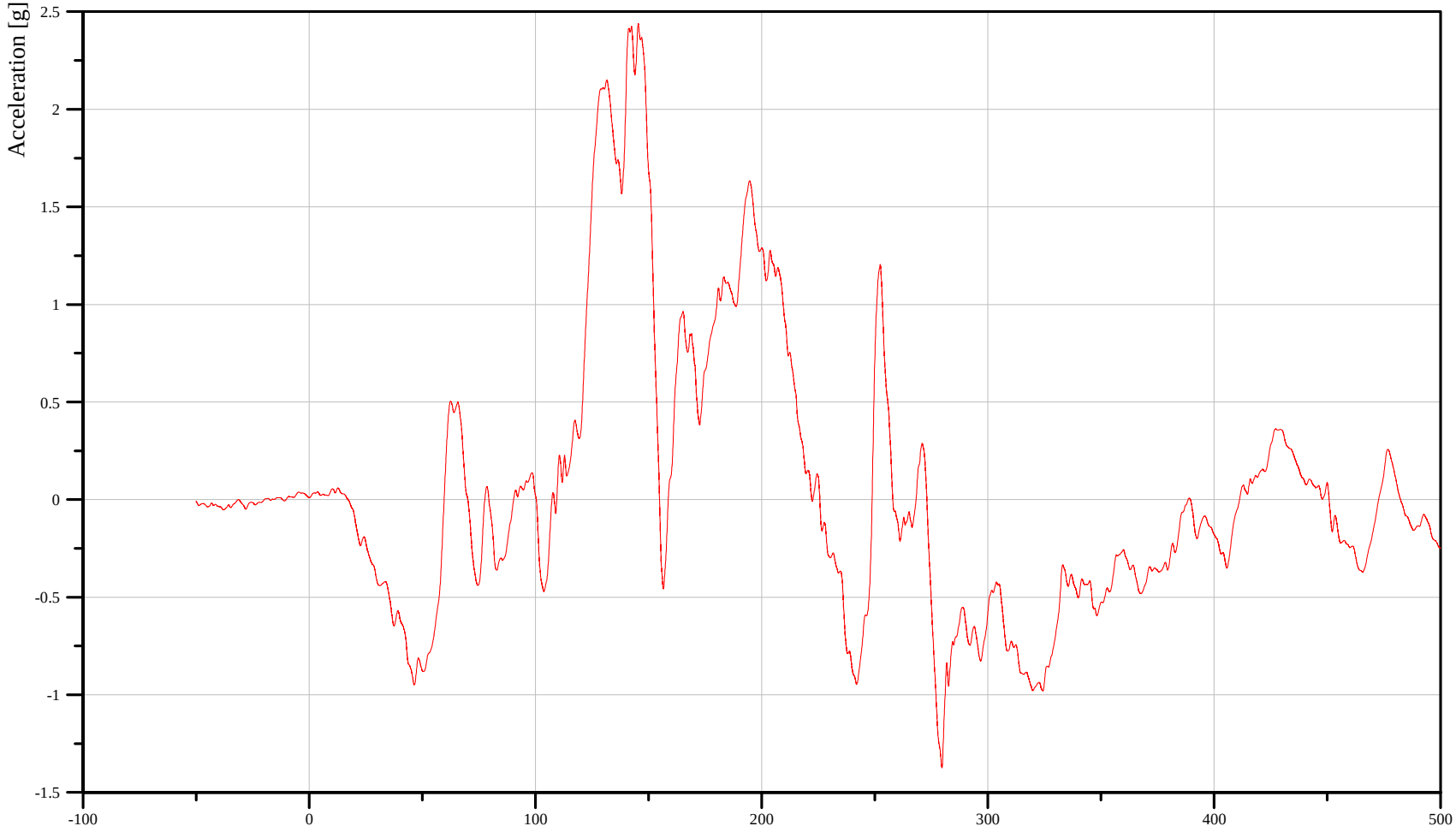
Date: 12/14/2007
Time: 9:12

9R-Right Chest Y-Axis Acceleration

Customer: VRTC

25CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-1.37 g at 279.68 ms

Max. Value
2.44 g at 145.44 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

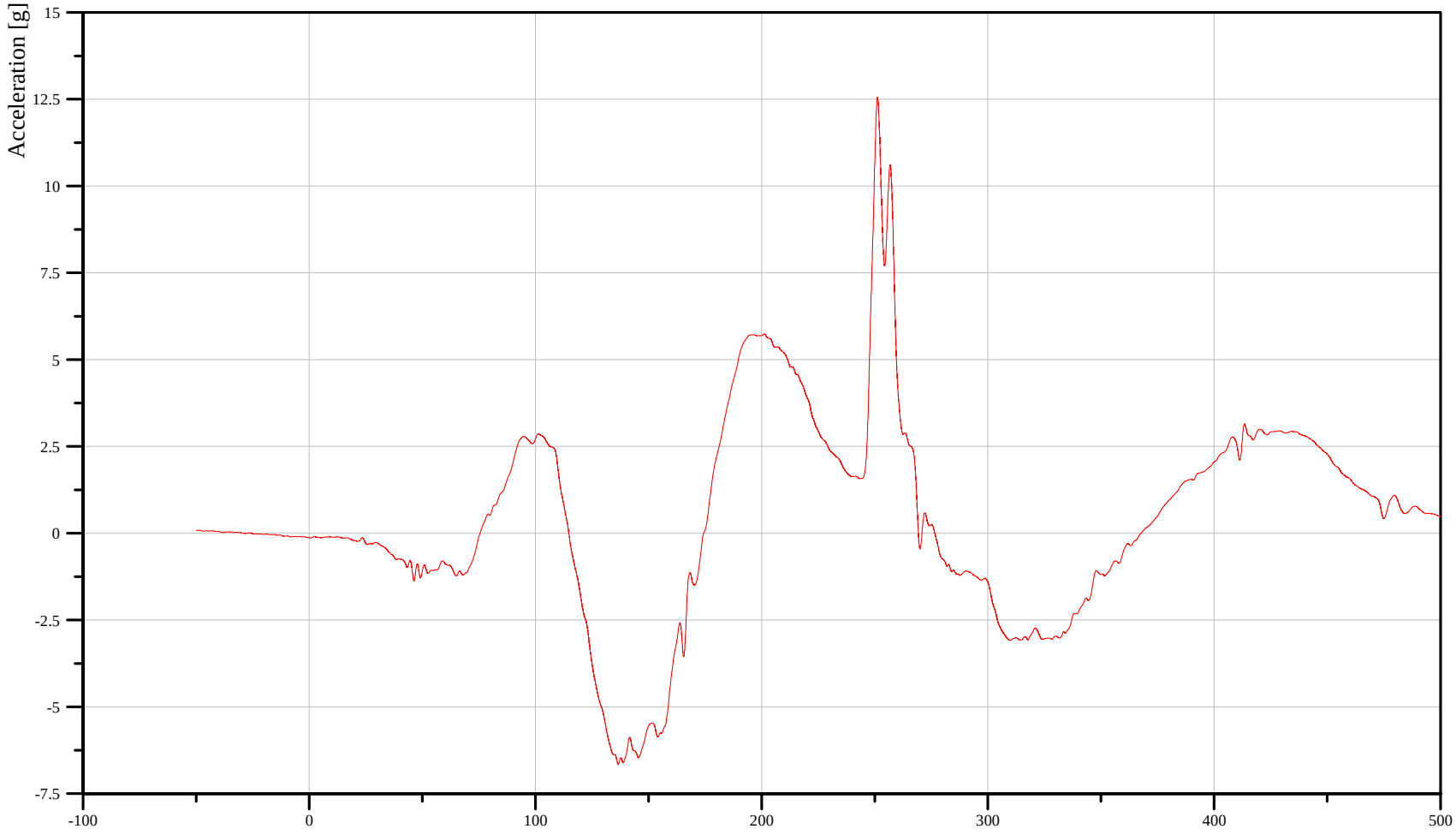
Date: 12/14/2007
Time: 9:12

9R-Right Chest Z-Axis Acceleration

Customer: VRTC

25CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-6.65 g at 136.56 ms

Max. Value
12.56 g at 251.20 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

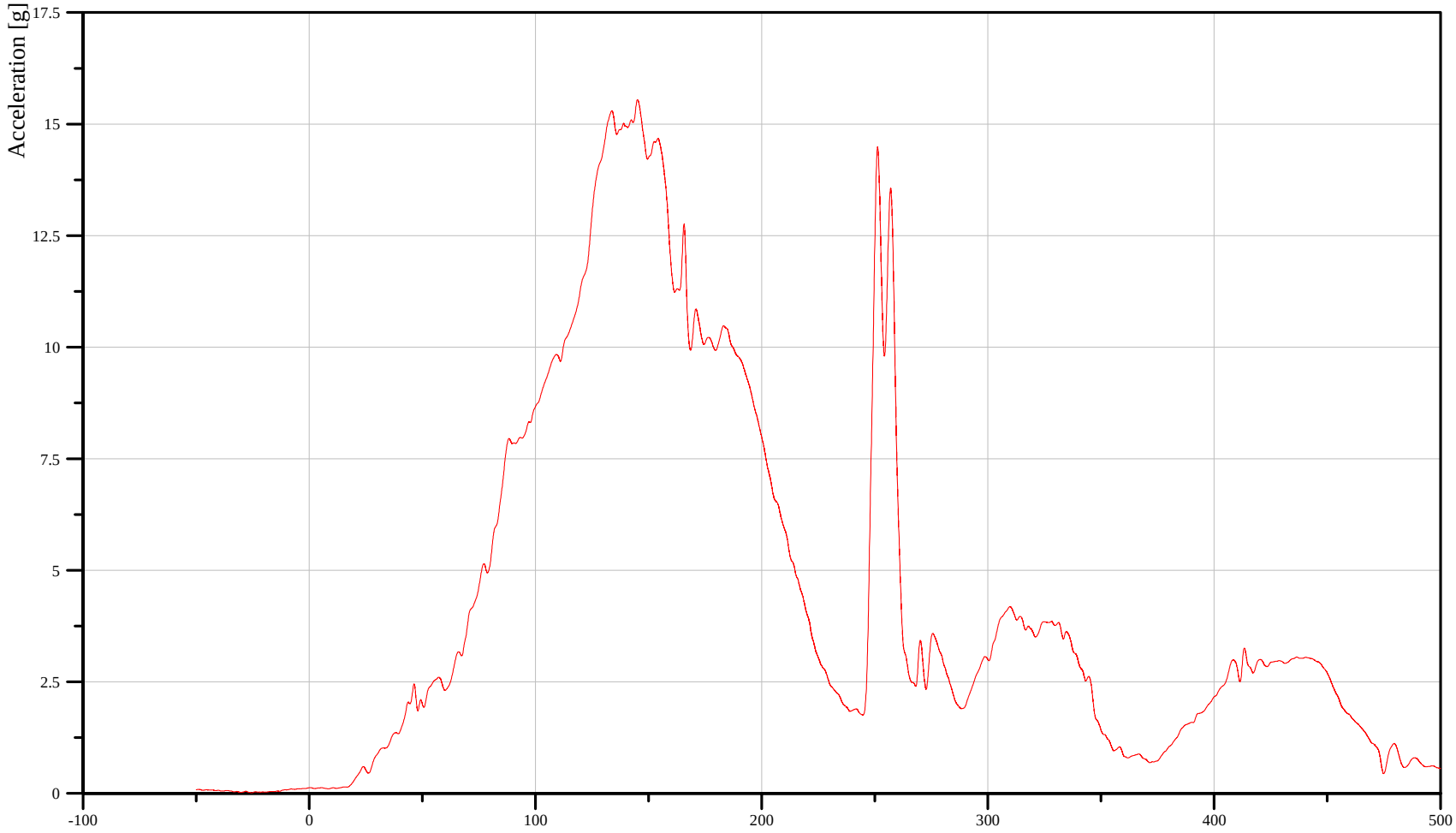
Date: 12/14/2007
Time: 9:12

9R-Right Chest Resultant Acceleration

Customer: VRTC

25CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.01 g at -25.36 ms

Max. Value
15.55 g at 145.12 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

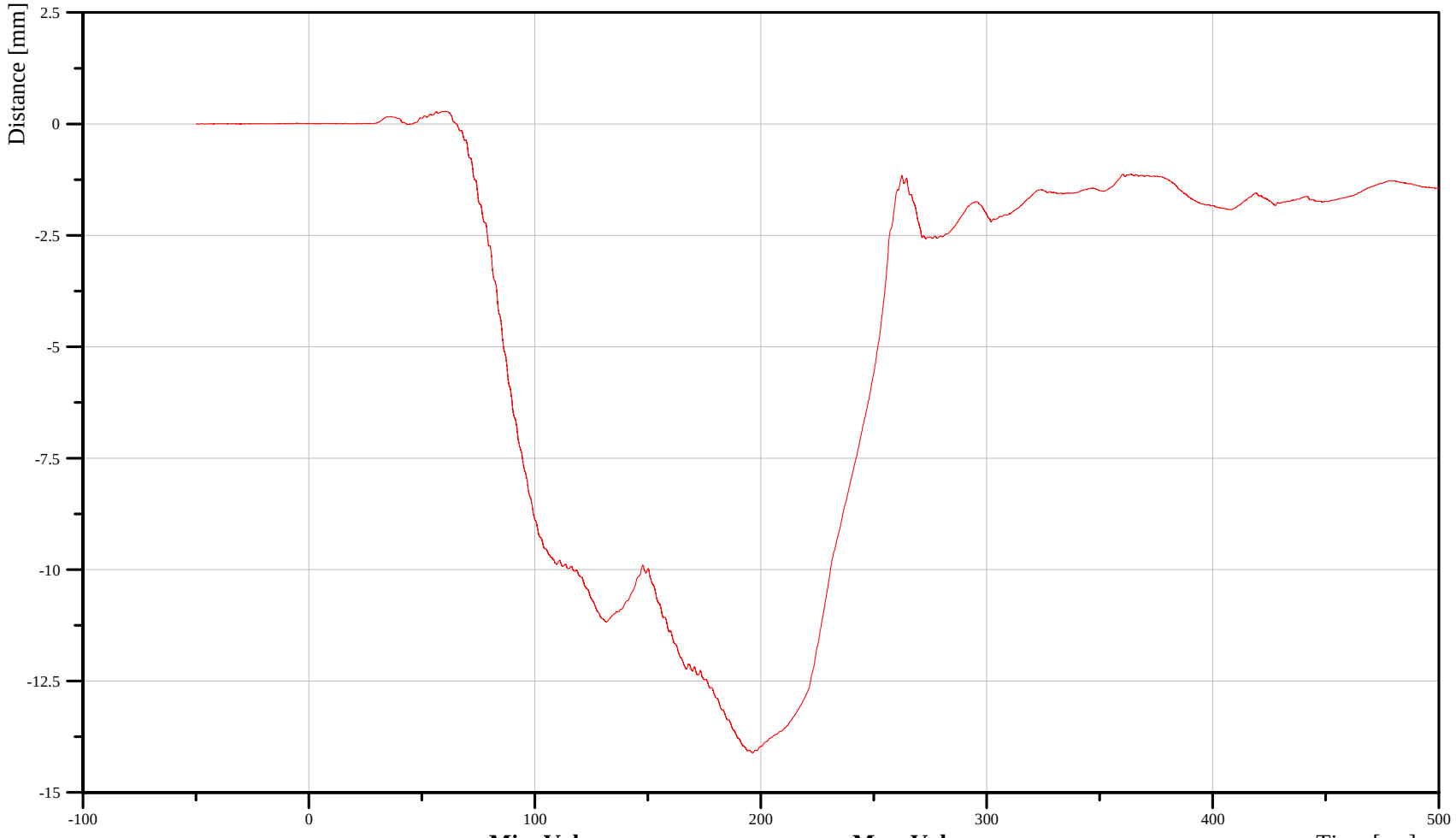
Date: 12/14/2007
Time: 9:12

9R-Right Chest X-Axis Deflection

Customer: VRTC

25CHST0000H3DSXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-14.11 mm at 196.40 ms

Max. Value
0.28 mm at 60.56 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

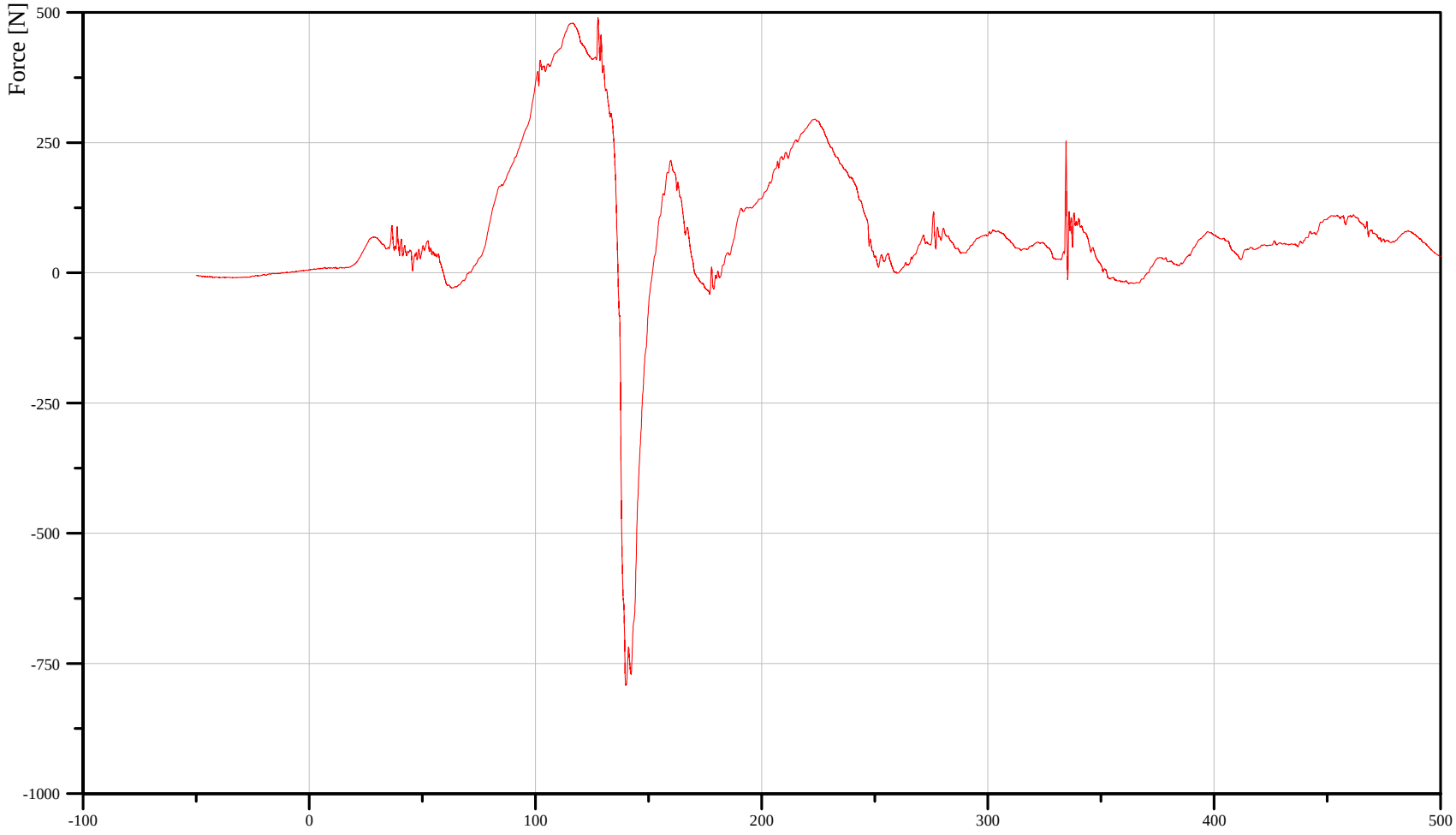
Date: 12/14/2007
Time: 9:12

9R-Right Left Femur Force Z

Customer: VRTC

25FEMRLL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-791.59 N at 140.00 ms

Max. Value
490.30 N at 127.68 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

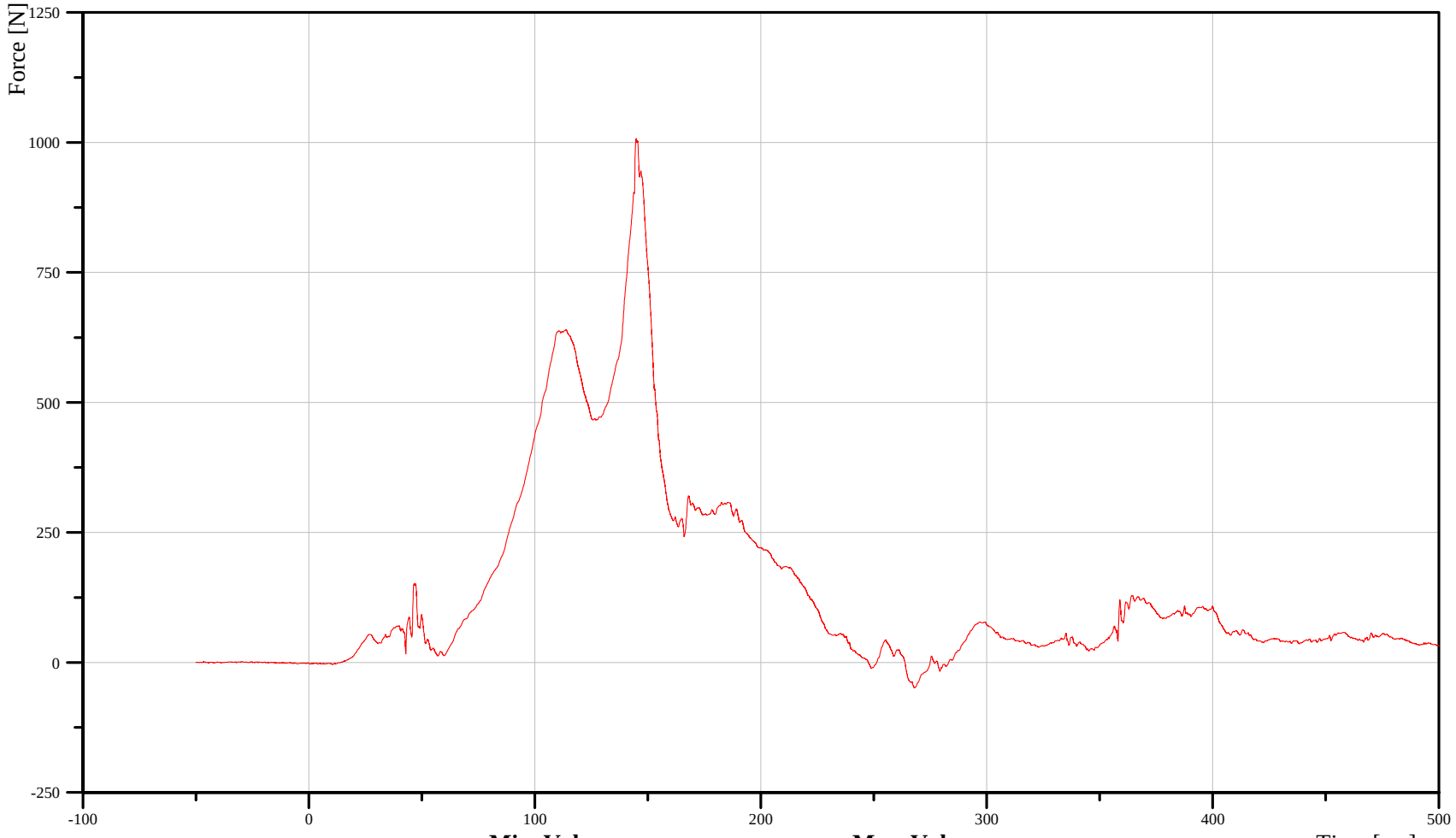
Date: 12/14/2007
Time: 9:12

9R-Right Right Femur Force Z

Customer: VRTC

25FEMRRL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-48.48 N at 268.08 ms

Max. Value
1,007.70 N at 144.96 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

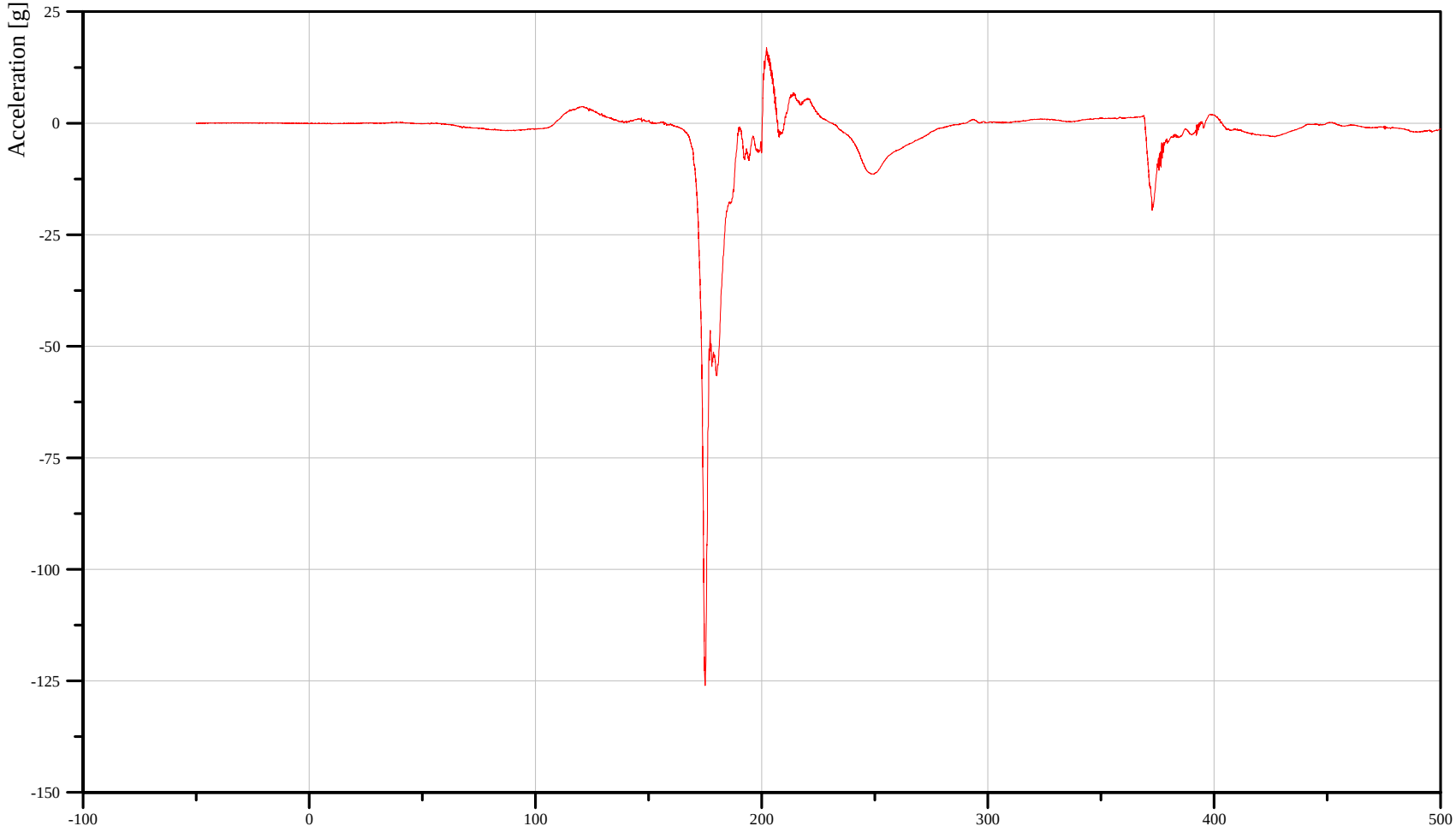
Date: 12/14/2007
Time: 9:12

10L-Left Head X-Axis Acceleration

Customer: VRTC

26HEADCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-126.08 g at 174.96 ms

Max. Value
16.97 g at 202.16 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

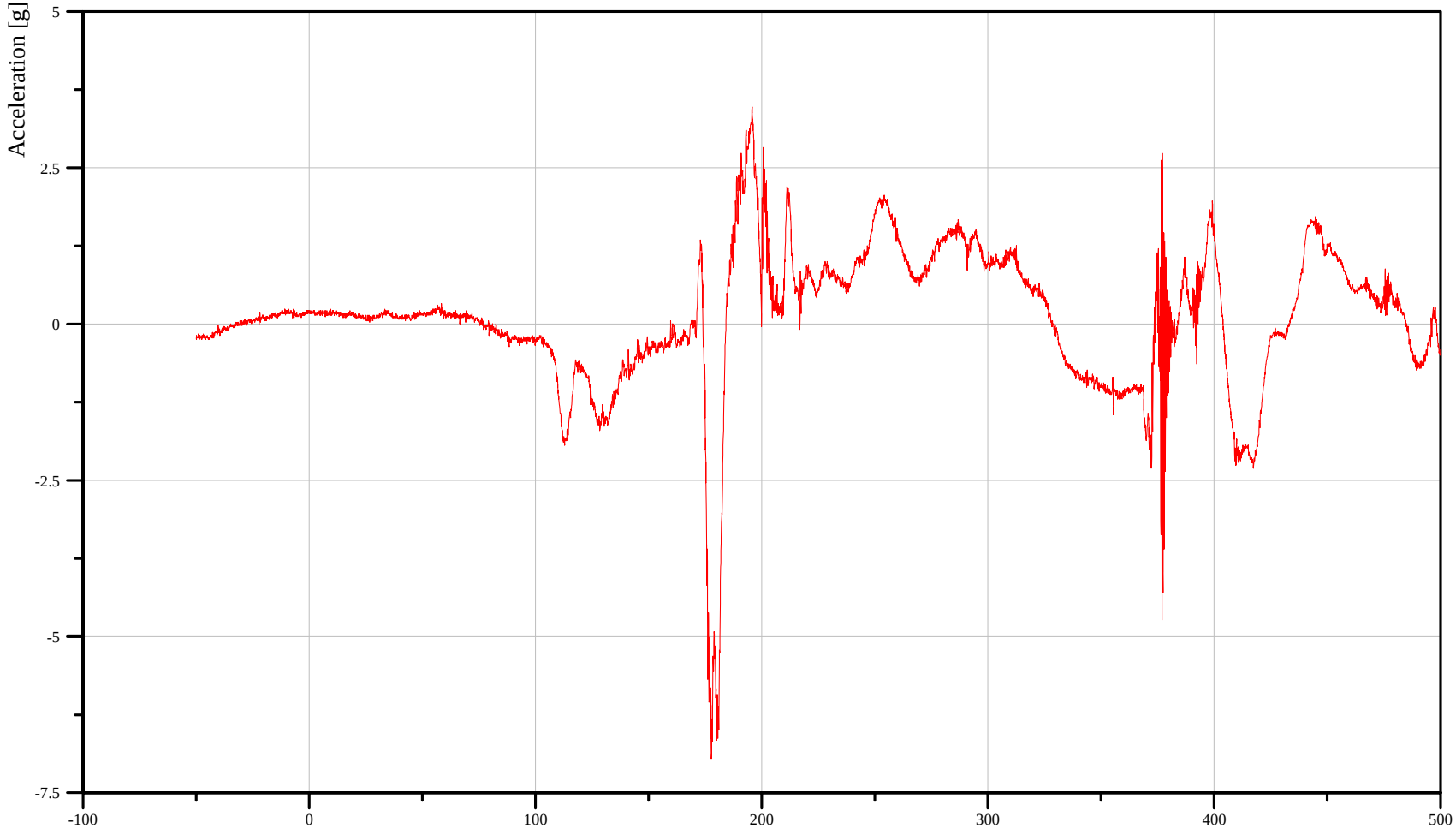
Date: 12/14/2007
Time: 9:12

10L-Left Head Y-Axis Acceleration

Customer: VRTC

26HEADCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-6.95 g at 177.76 ms

Max. Value
3.47 g at 195.76 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

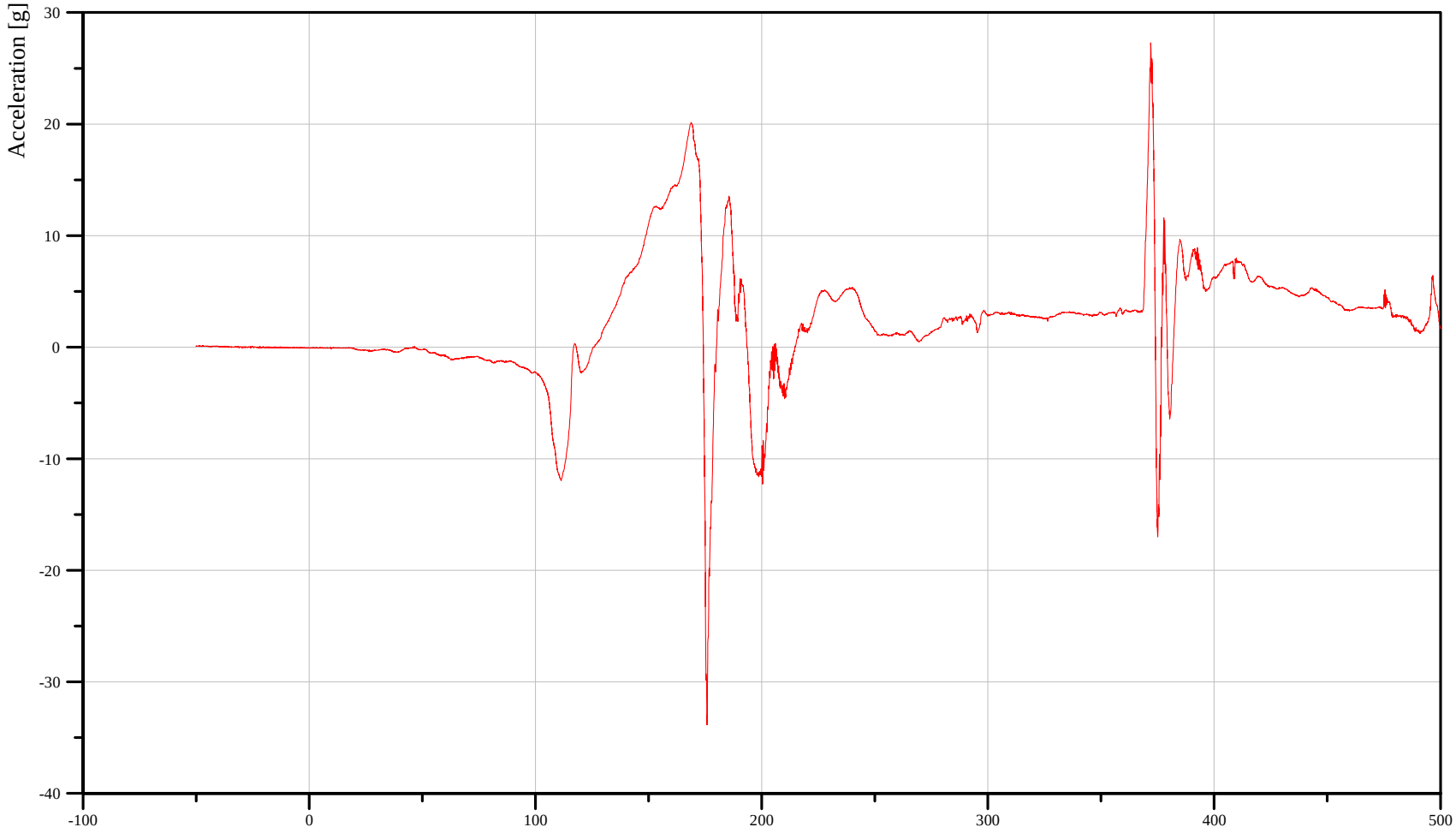
Date: 12/14/2007
Time: 9:12

10L-Left Head Z-Axis Acceleration

Customer: VRTC

26HEADCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-33.84 g at 175.84 ms

Max. Value
27.29 g at 372.00 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

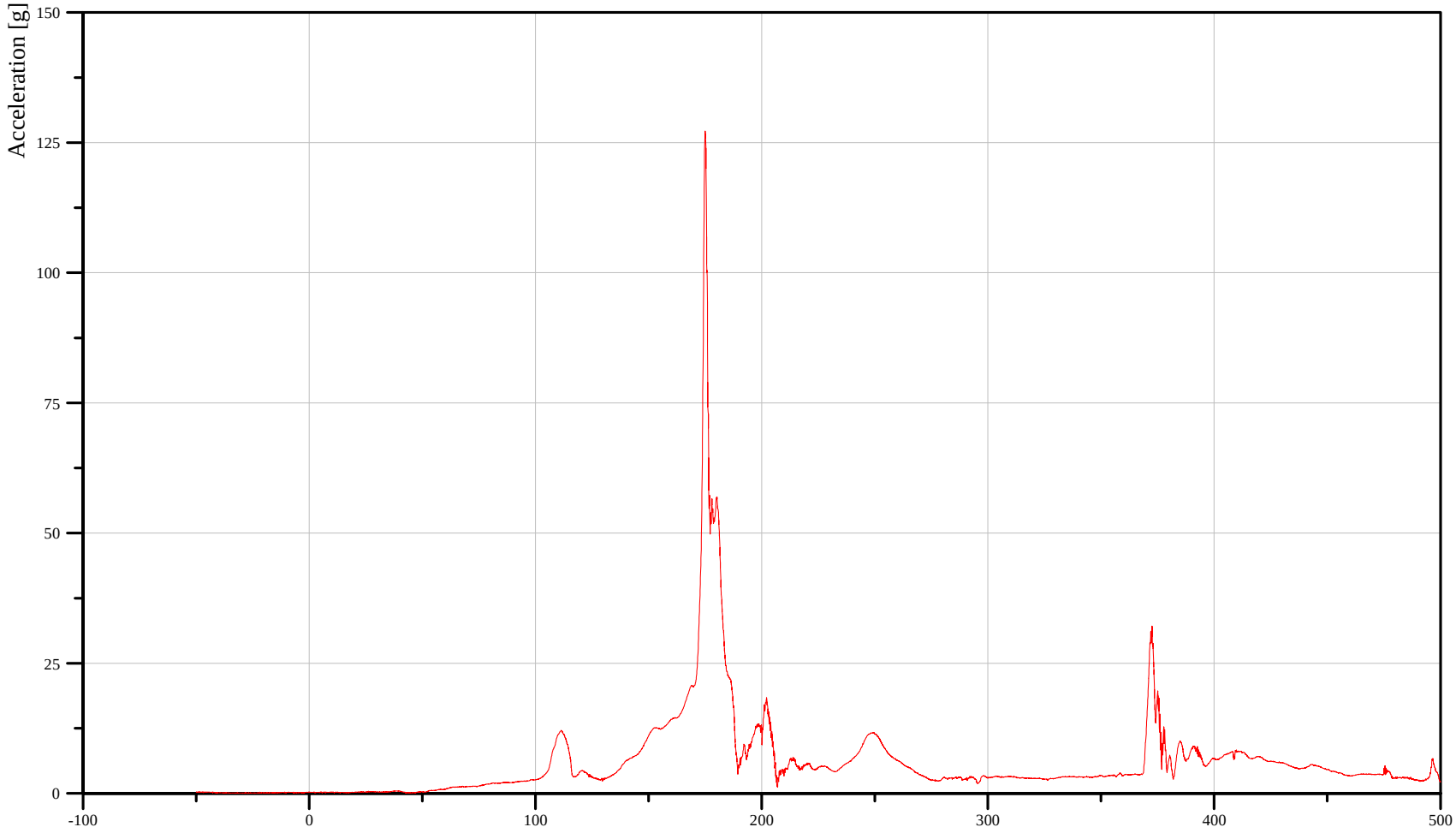
Date: 12/14/2007
Time: 9:12

10L-Left Head Resultant Acceleration

Customer: VRTC

26HEADCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.02 g at -32.56 ms

Max. Value
127.23 g at 175.04 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

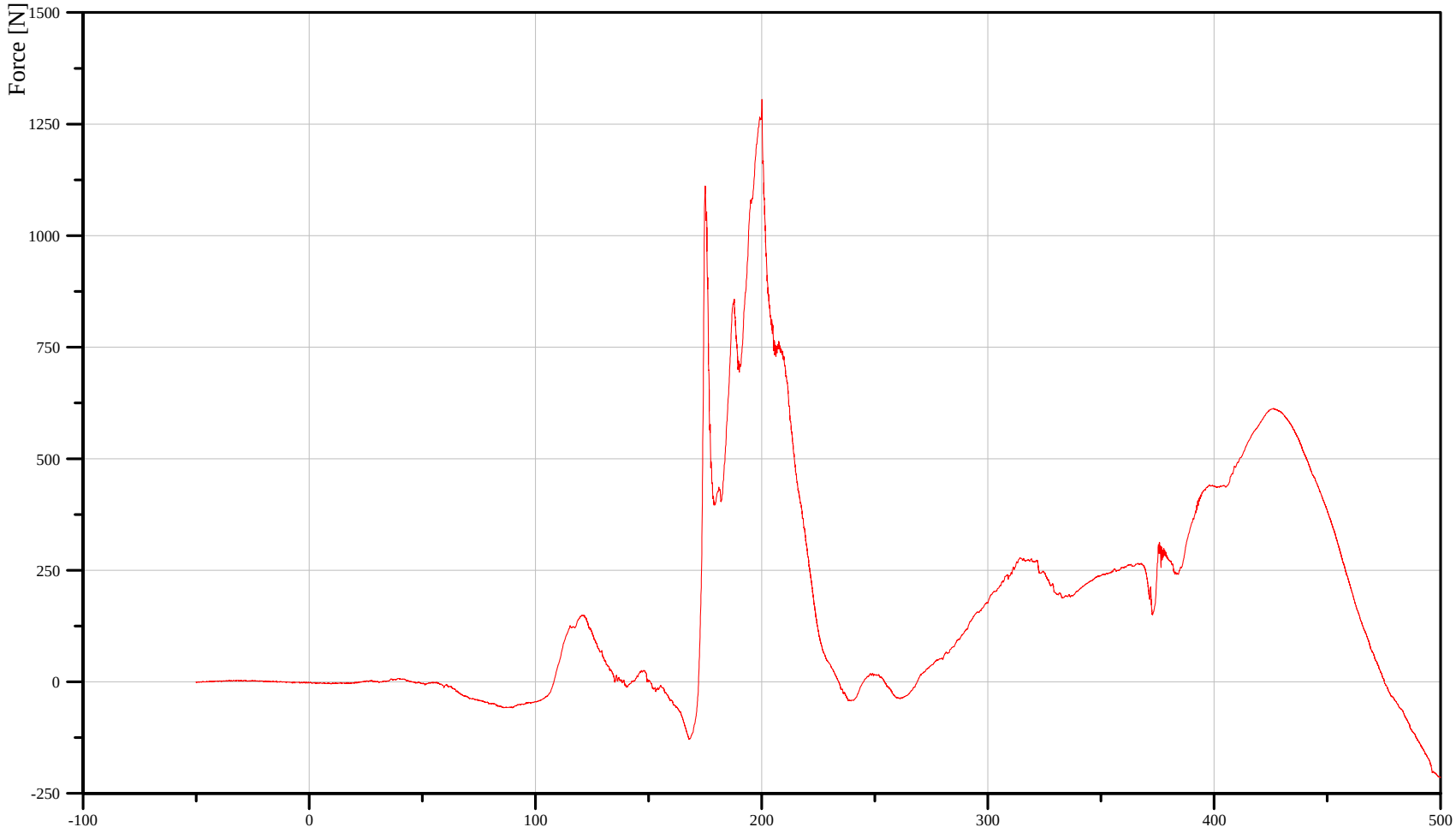
10L-Left Neck Force X

Date: 12/14/2007
Time: 9:12

Customer: VRTC

26NECKUP00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-214.36 N at 500.00 ms

Max. Value
1,305.38 N at 200.16 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

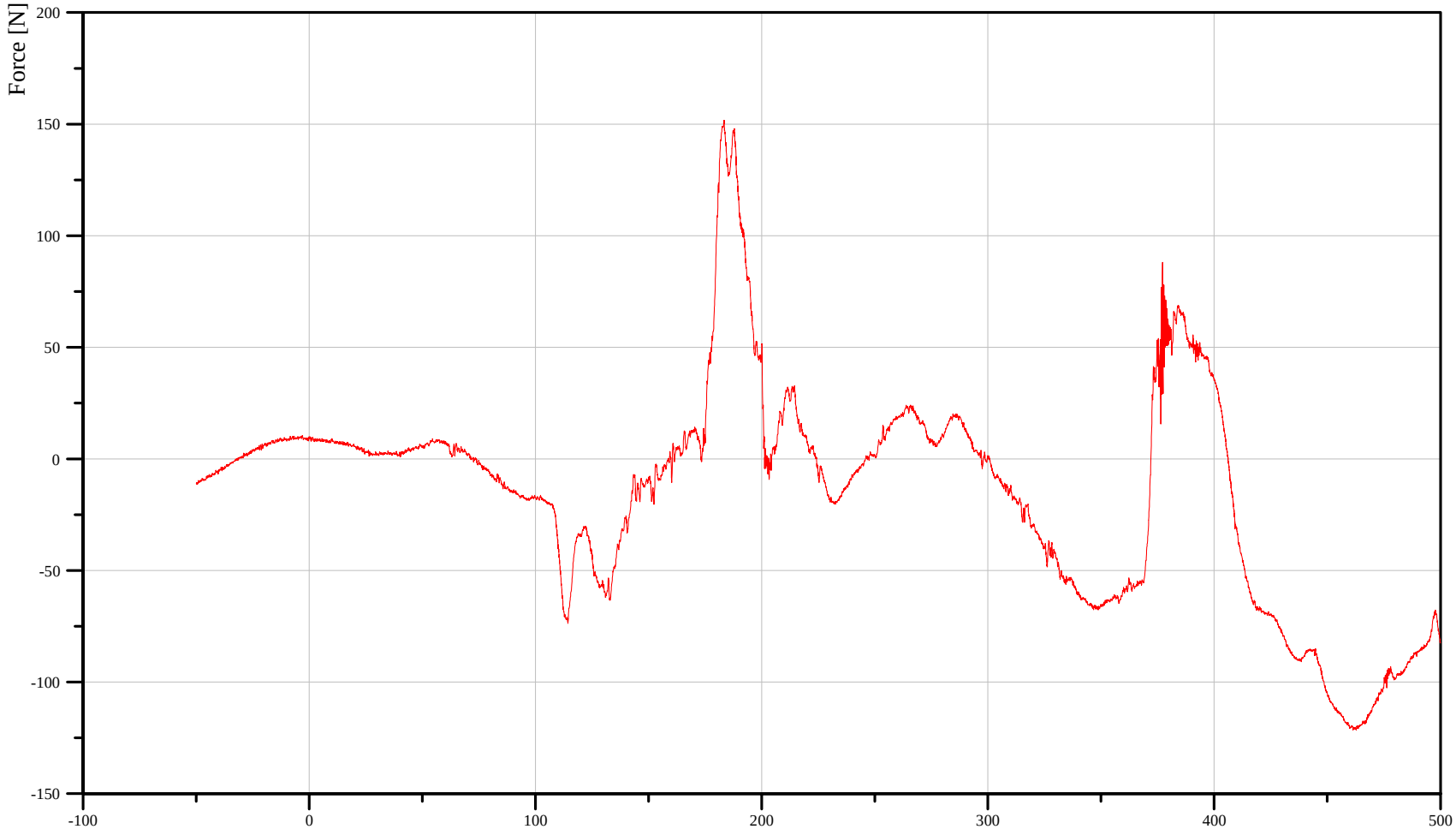
10L-Left Neck Force Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

26NECKUP00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-121.34 N at 461.44 ms

Max. Value
151.74 N at 183.28 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

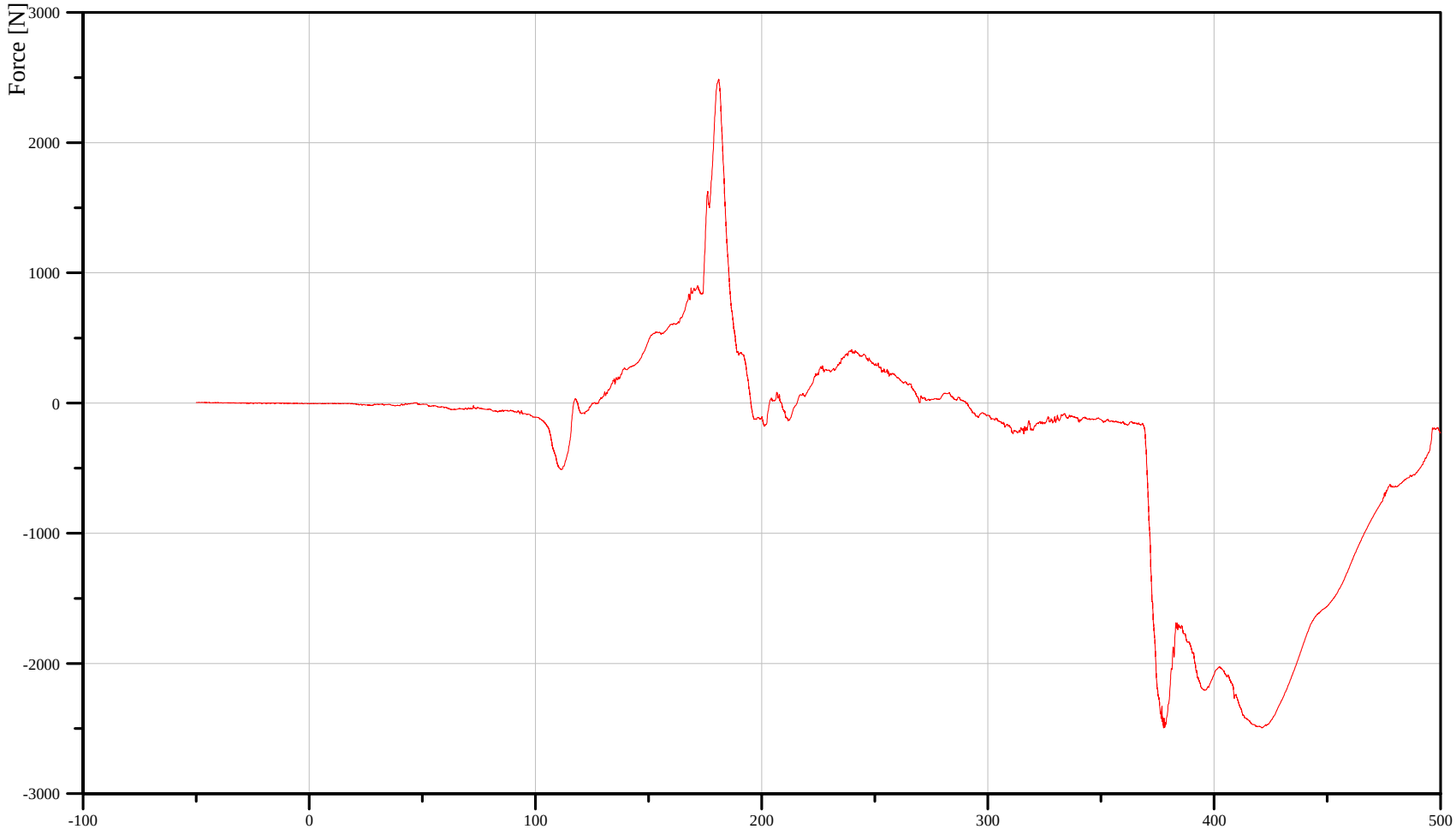
Date: 12/14/2007
Time: 9:12

10L-Left Neck Force Z

Customer: VRTC

26NECKUP00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-2,495.29 N at 377.60 ms

Max. Value
2,489.07 N at 180.96 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

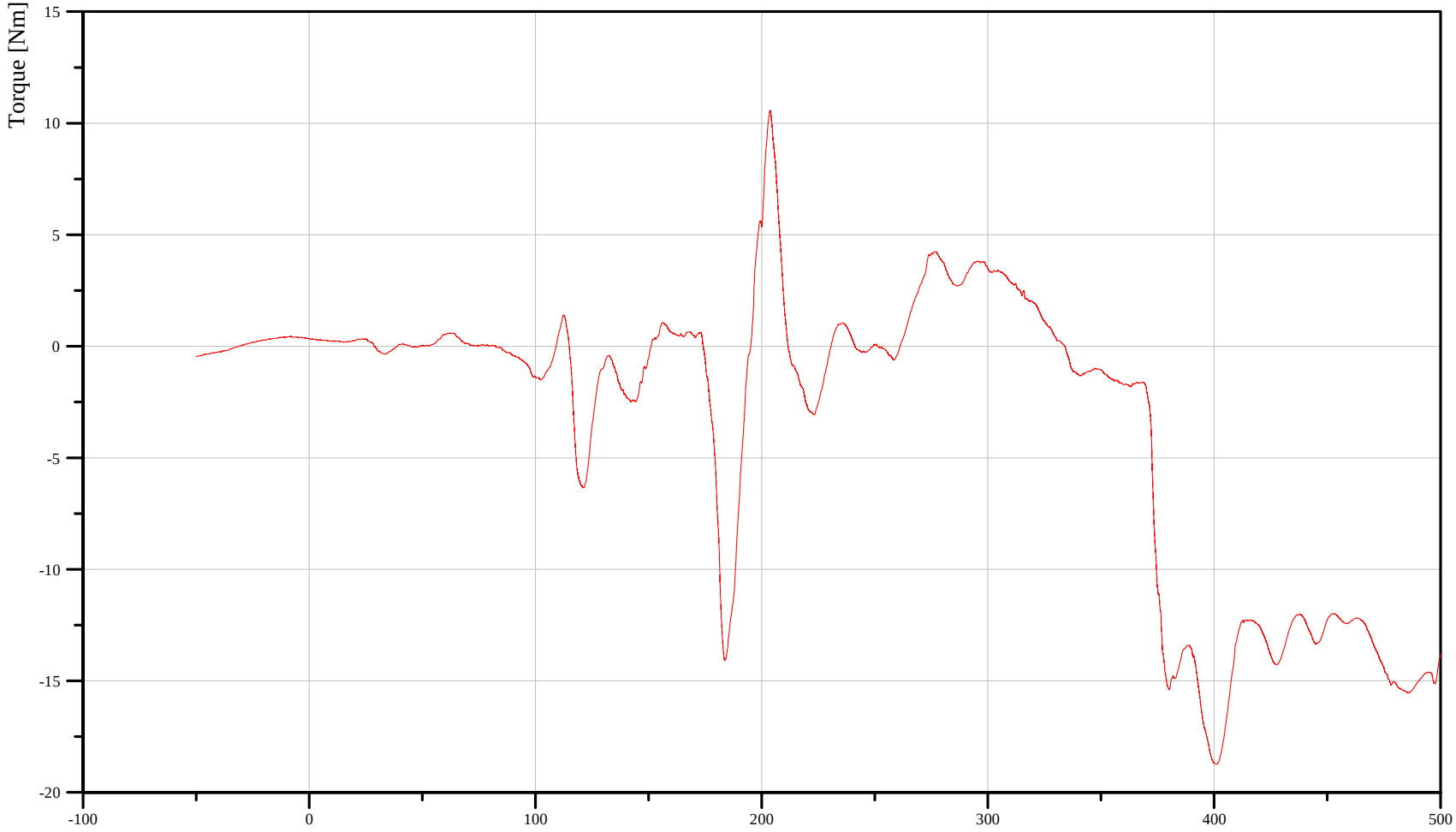
Date: 12/14/2007
Time: 9:12

10L-Left Neck Moment X

Customer: VRTC

26NECKUP00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-18.74 Nm at 401.12 ms

Max. Value
10.57 Nm at 203.76 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

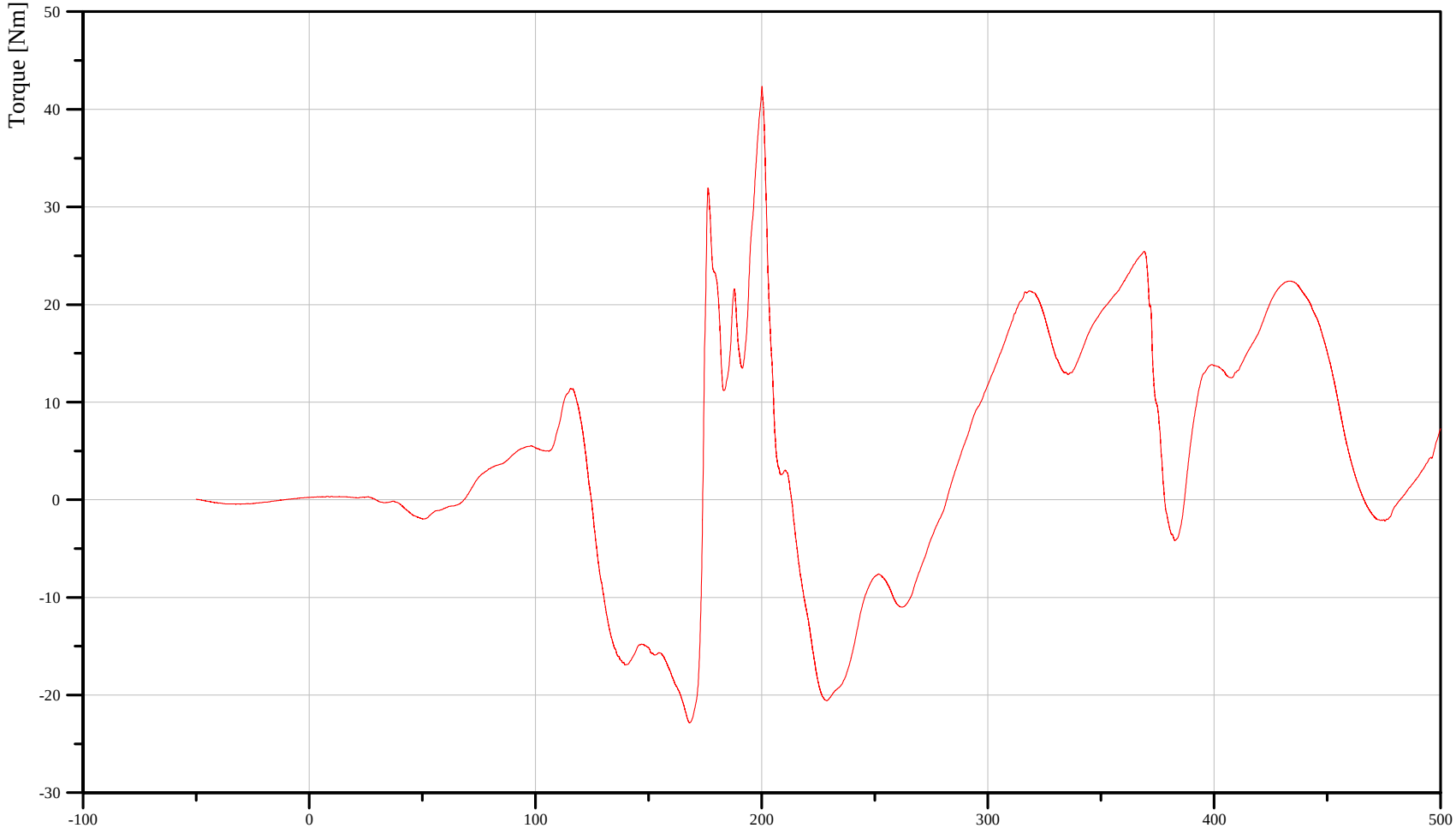
Date: 12/14/2007
Time: 9:12

10L-Left Neck Moment Y

Customer: VRTC

26NECKUP00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-22.85 Nm at 168.16 ms

Max. Value
42.36 Nm at 200.16 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

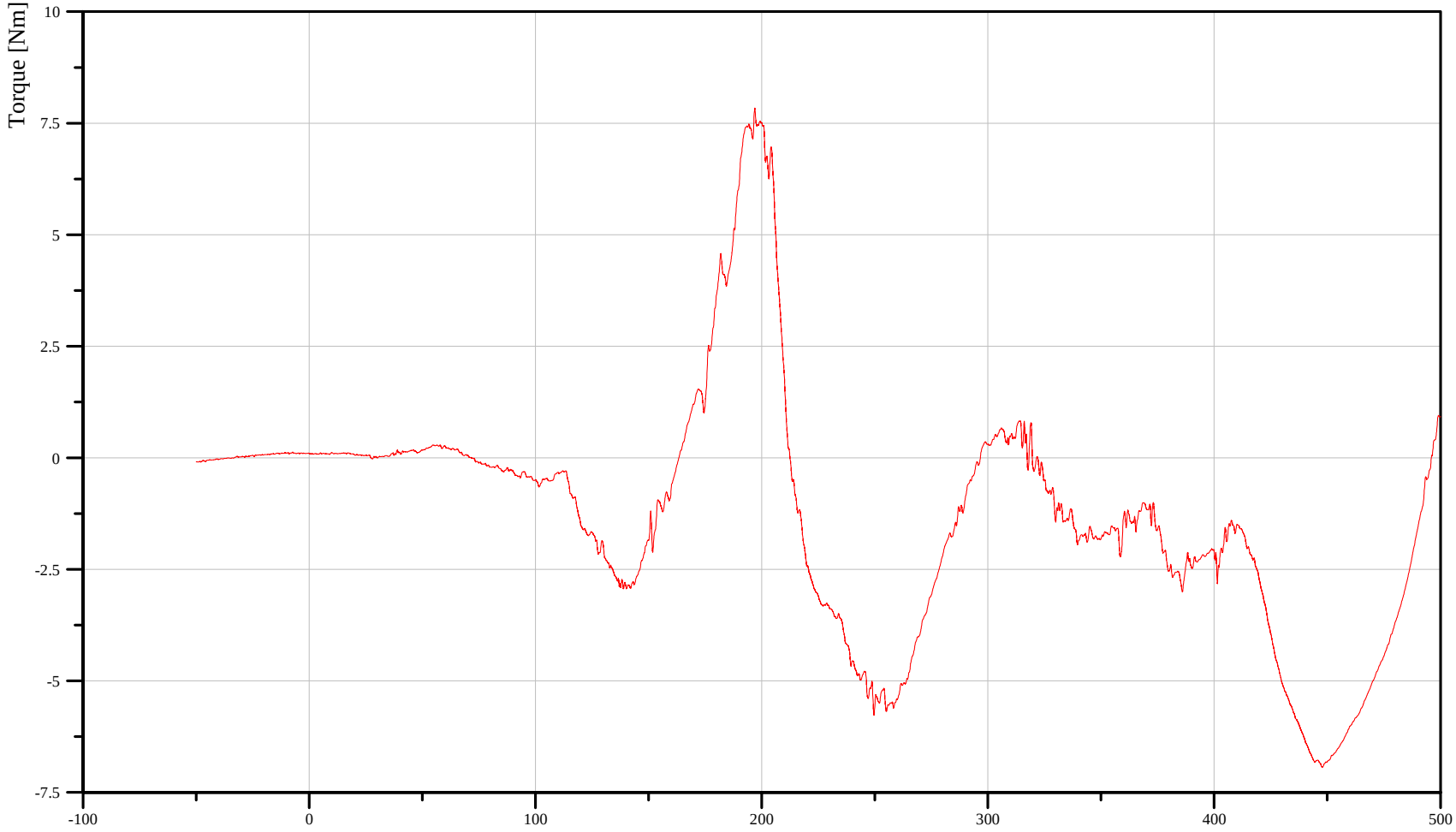
Date: 12/14/2007
Time: 9:12

10L-Left Neck Moment Z

Customer: VRTC

26NECKUP00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-6.94 Nm at 447.92 ms

Max. Value
7.84 Nm at 196.96 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

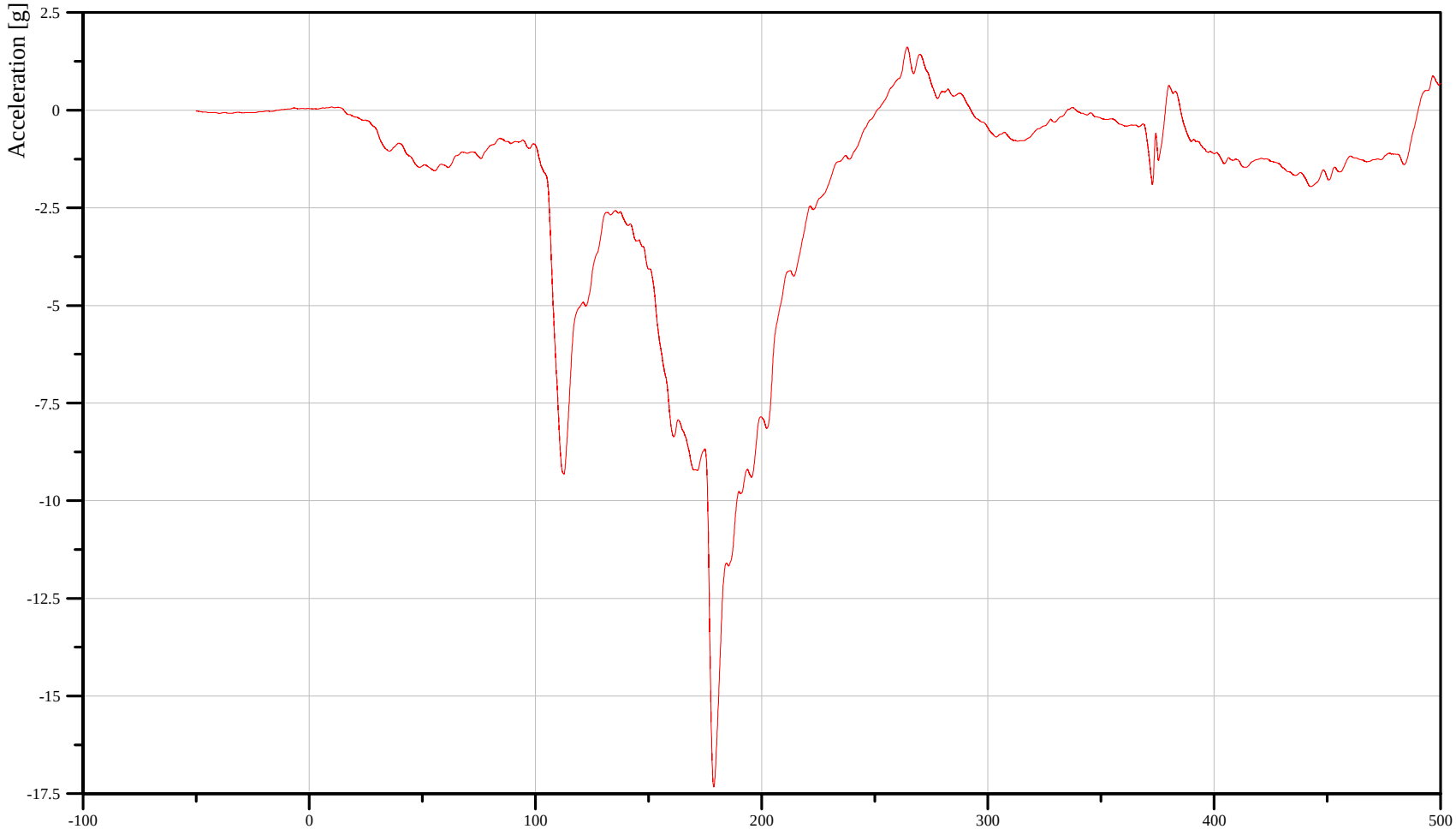
Date: 12/14/2007
Time: 9:12

10L-Left Chest X-Axis Acceleration

Customer: VRTC

26CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-17.33 g at 178.88 ms

Max. Value
1.61 g at 264.32 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

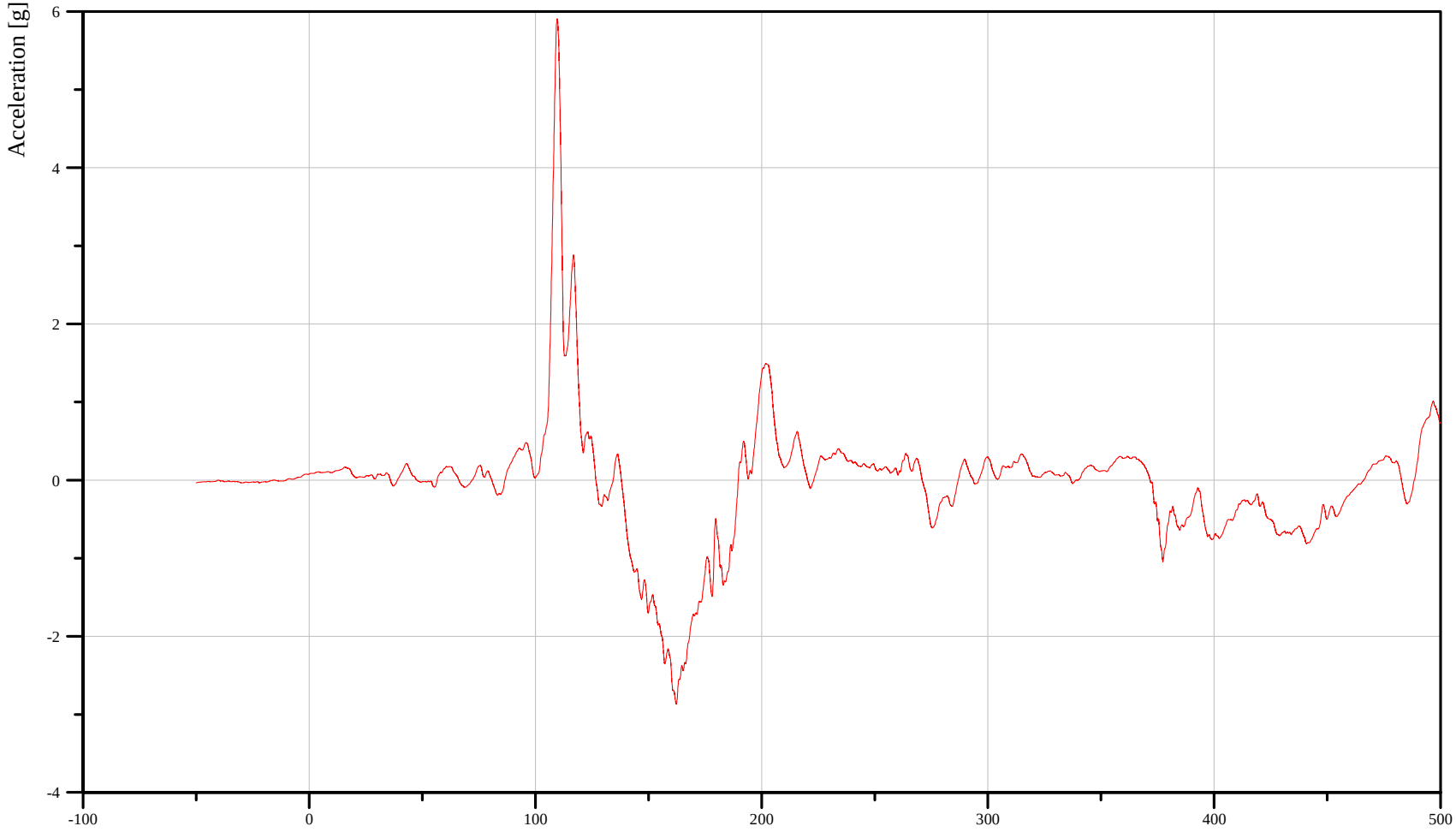
Date: 12/14/2007
Time: 9:12

10L-Left Chest Y-Axis Acceleration

Customer: VRTC

26CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-2.87 g at 162.24 ms

Max. Value
5.91 g at 109.60 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

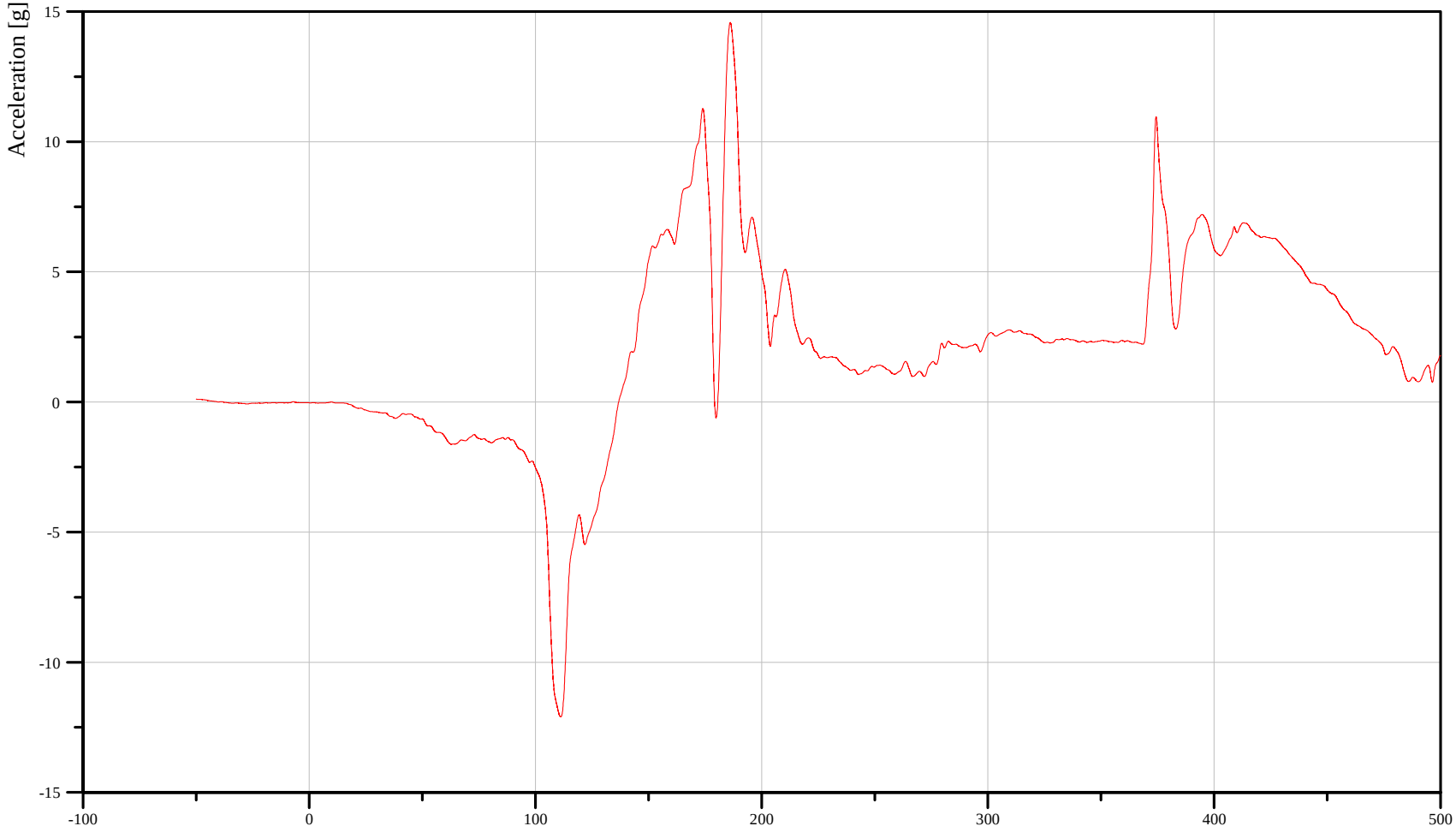
Date: 12/14/2007
Time: 9:12

10L-Left Chest Z-Axis Acceleration

Customer: VRTC

26CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-12.09 g at 111.20 ms

Max. Value
14.58 g at 186.08 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

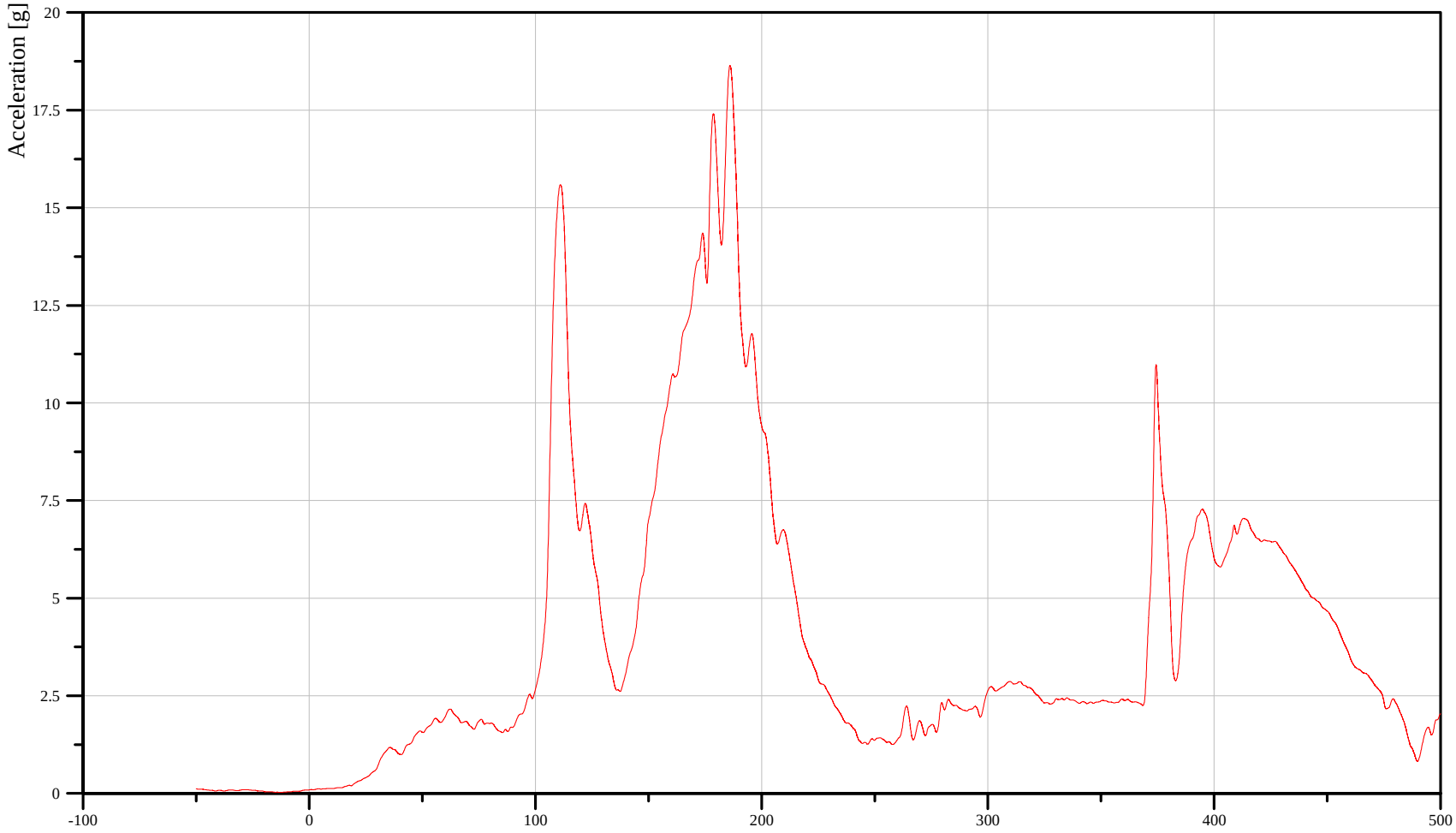
Date: 12/14/2007
Time: 9:12

10L-Left Chest Resultant Acceleration

Customer: VRTC

26CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.03 g at -12.08 ms

Max. Value
18.64 g at 186.00 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

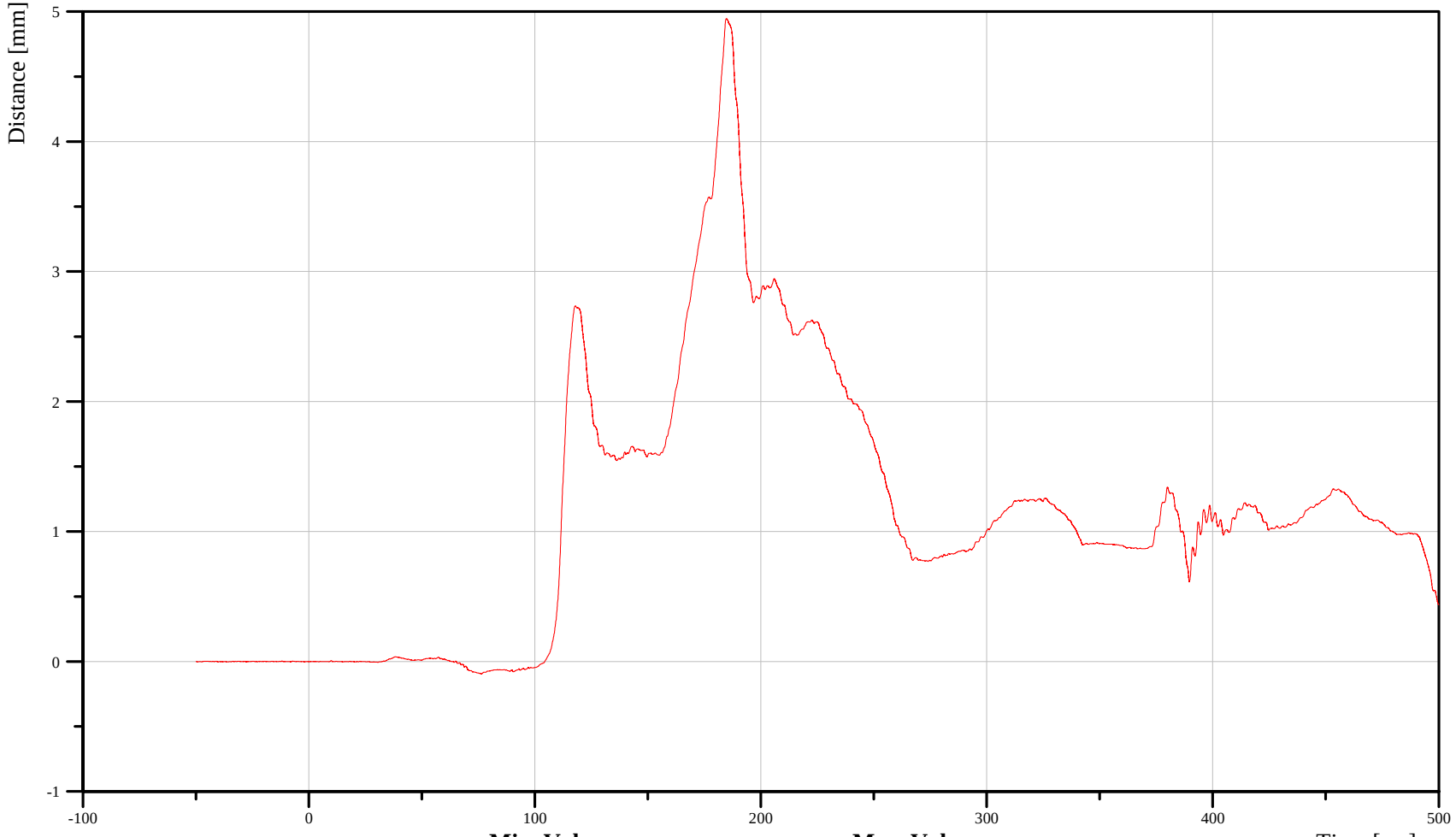
Date: 12/14/2007
Time: 9:12

10L-Left Chest X-Axis Deflection

Customer: VRTC

26CHST0000H3DSXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-0.10 mm at 76.40 ms

Max. Value
4.95 mm at 184.80 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

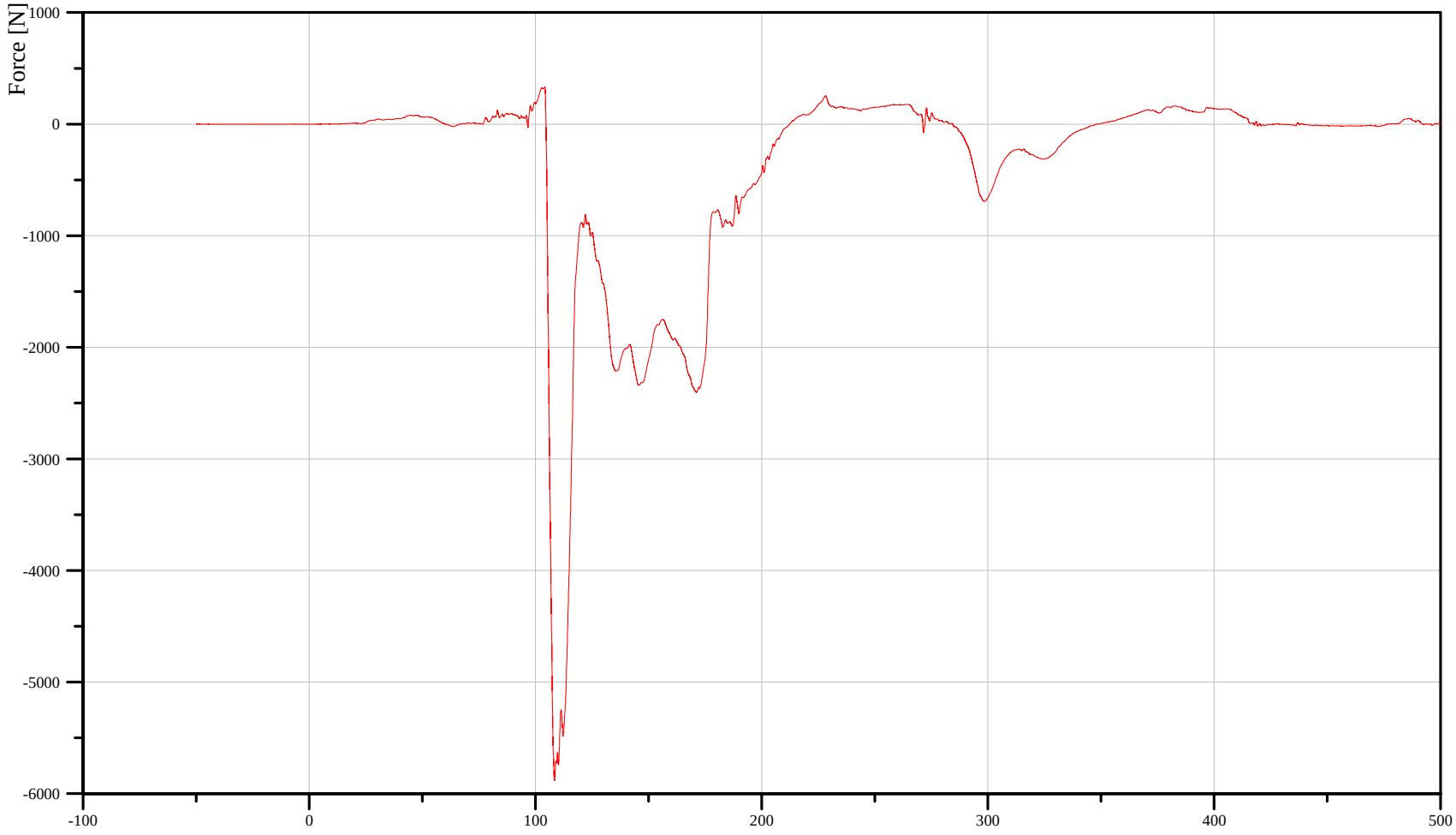
Date: 12/14/2007
Time: 9:12

10L-Left Left Femur Force Z

Customer: VRTC

26FEMRLL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-5,880.47 N at 108.48 ms

Max. Value
332.24 N at 104.16 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

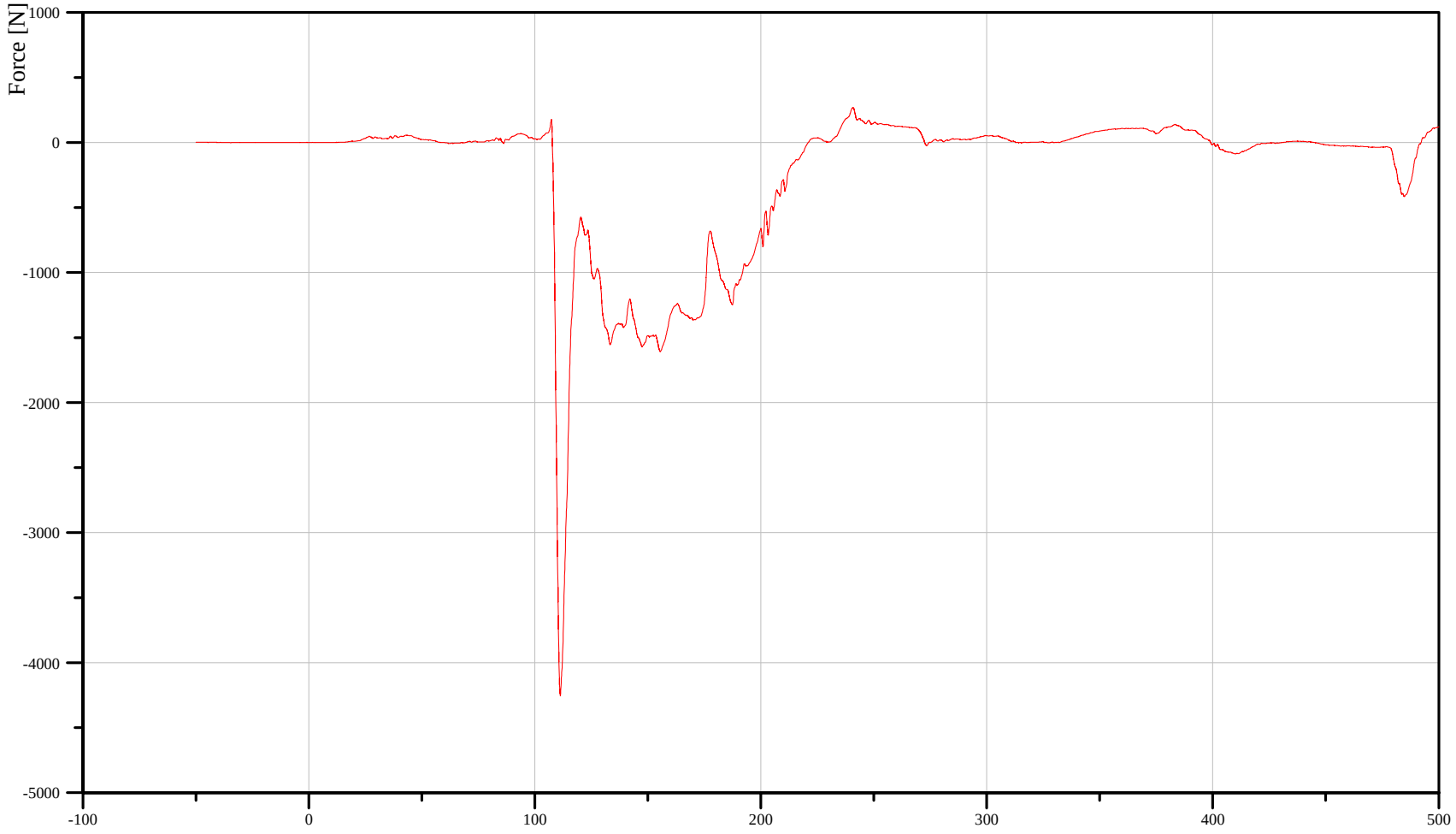
Date: 12/14/2007
Time: 9:12

10L-Left Right Femur Force Z

Customer: VRTC

26FEMRRL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-4,254.01 N at 111.28 ms

Max. Value
267.81 N at 240.80 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

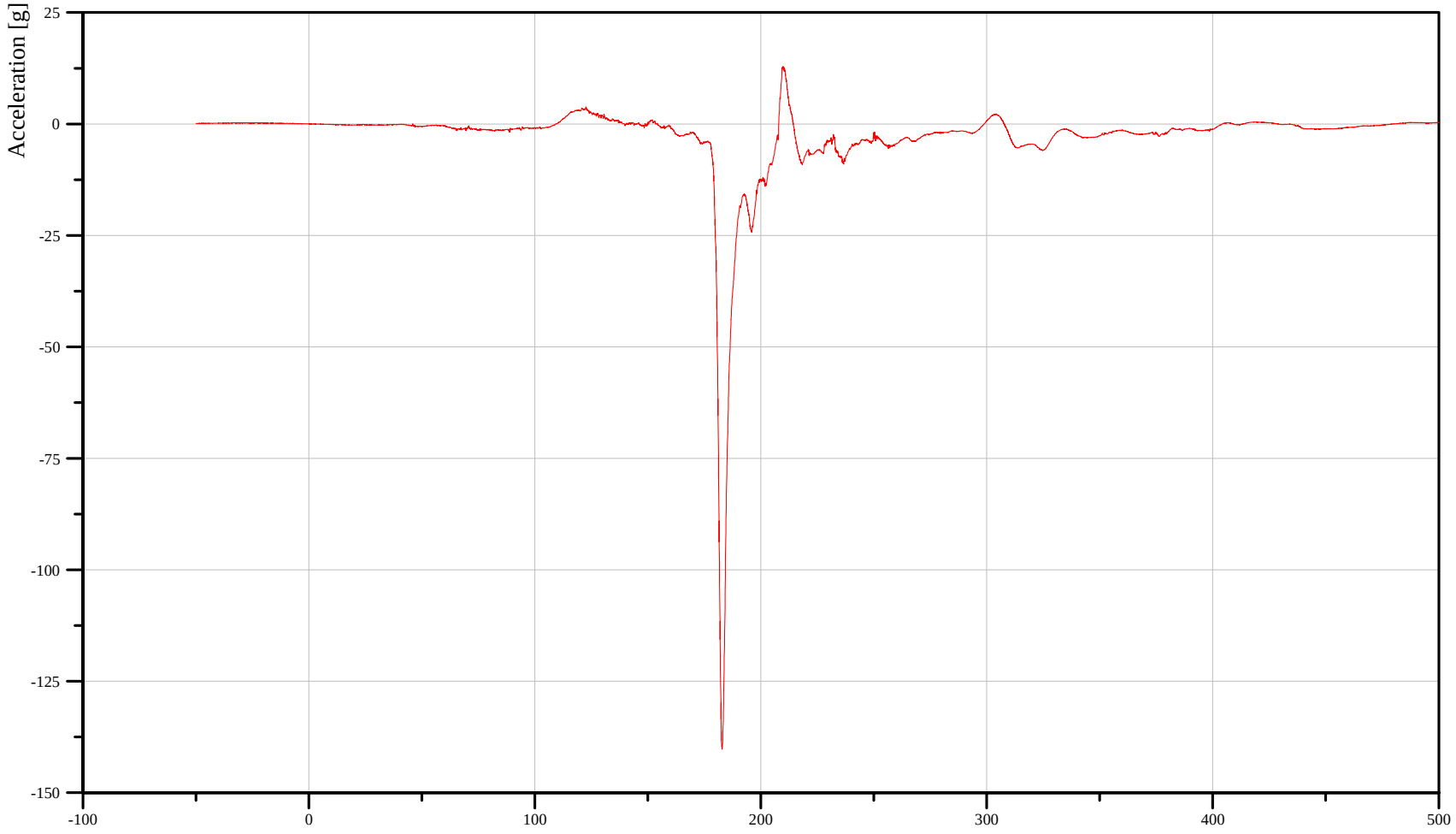
Date: 12/14/2007
Time: 9:12

10L-Right Head X-Axis Acceleration

Customer: VRTC

27HEADCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-140.23 g at 182.96 ms

Max. Value
12.88 g at 209.76 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

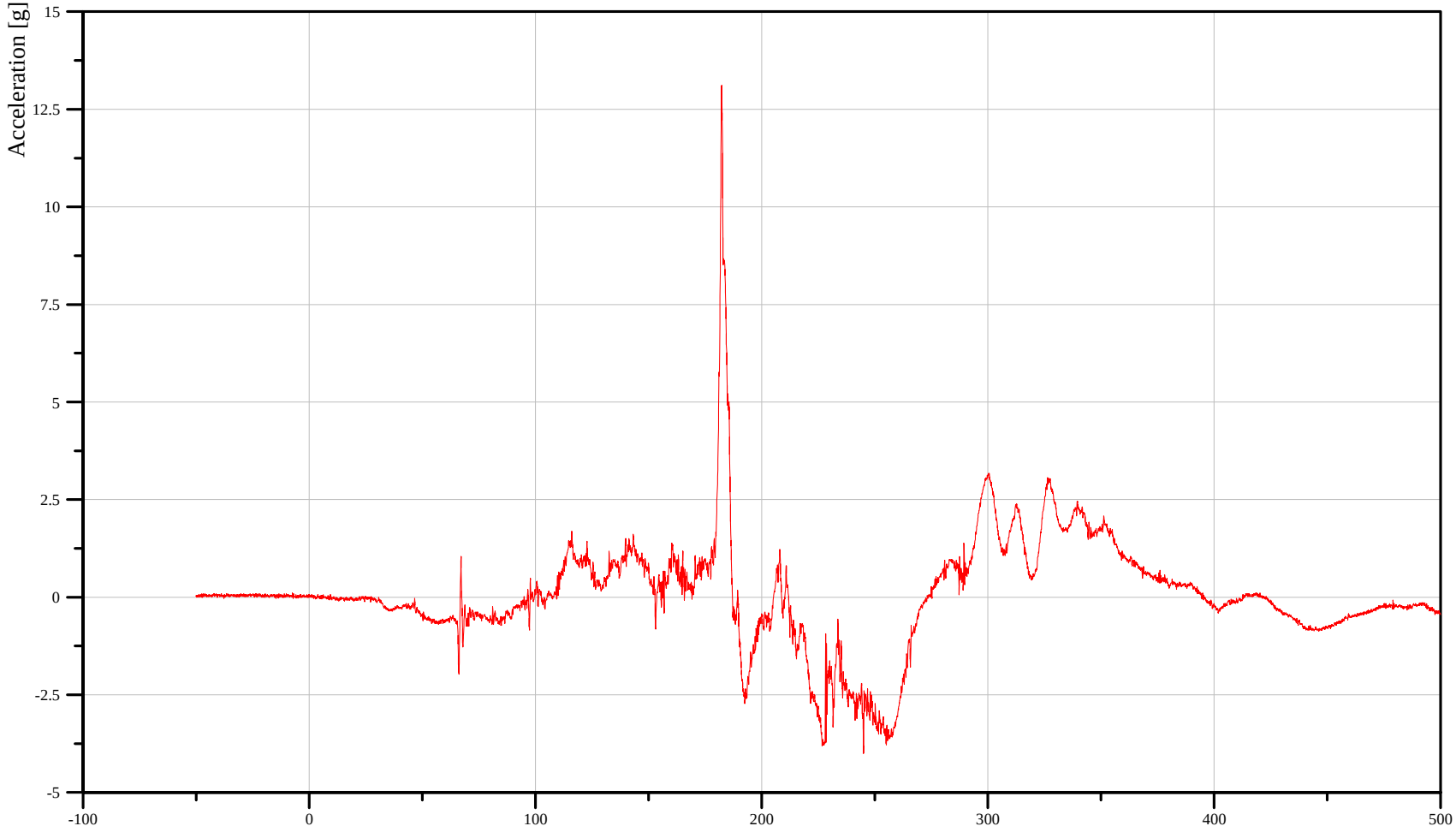
Date: 12/14/2007
Time: 9:12

10L-Right Head Y-Axis Acceleration

Customer: VRTC

27HEADCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-3.99 g at 245.04 ms

Max. Value
13.11 g at 182.24 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

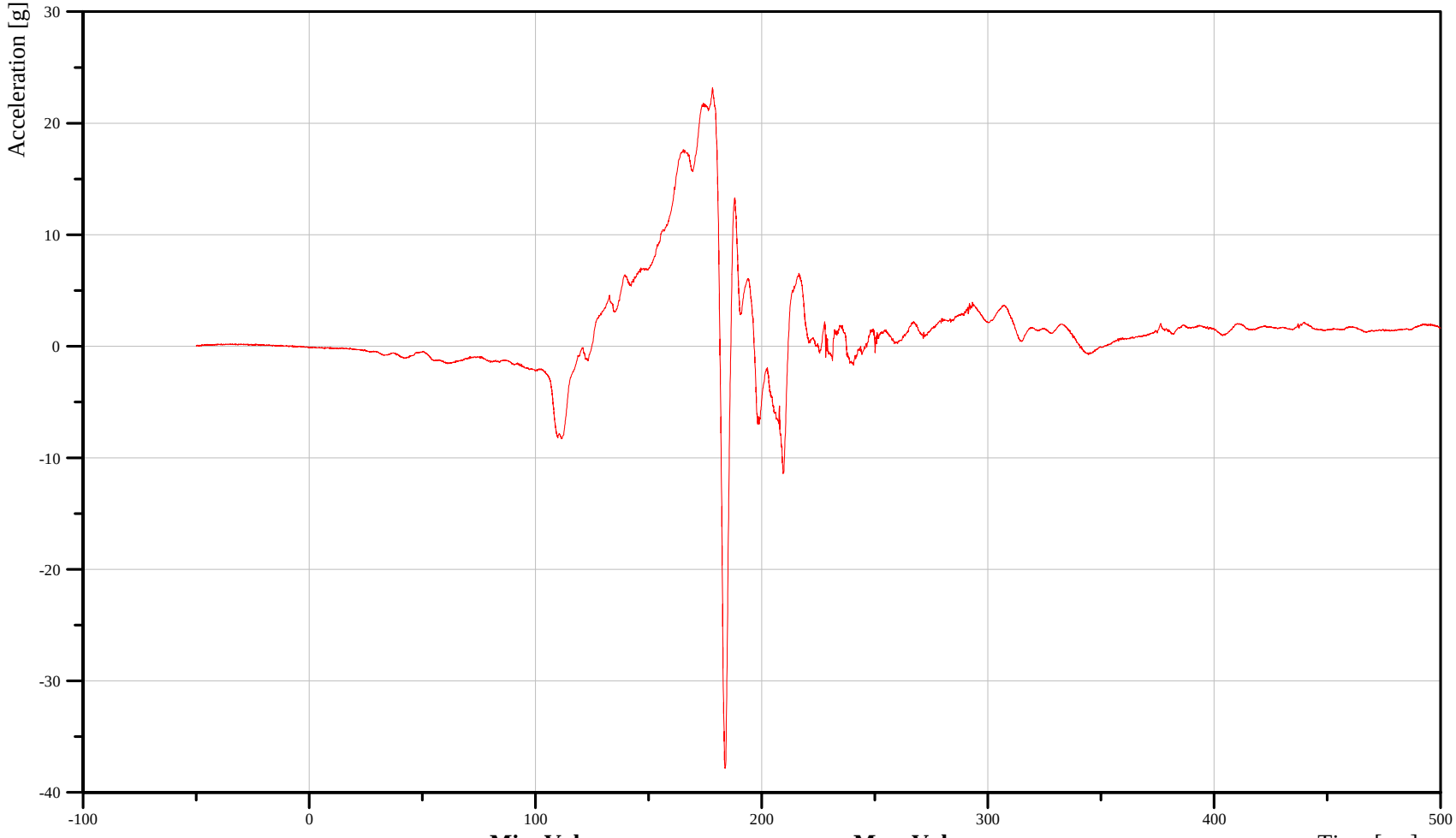
Date: 12/14/2007
Time: 9:12

10L-Right Head Z-Axis Acceleration

Customer: VRTC

27HEADCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-37.80 g at 183.84 ms

Max. Value
23.18 g at 178.24 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

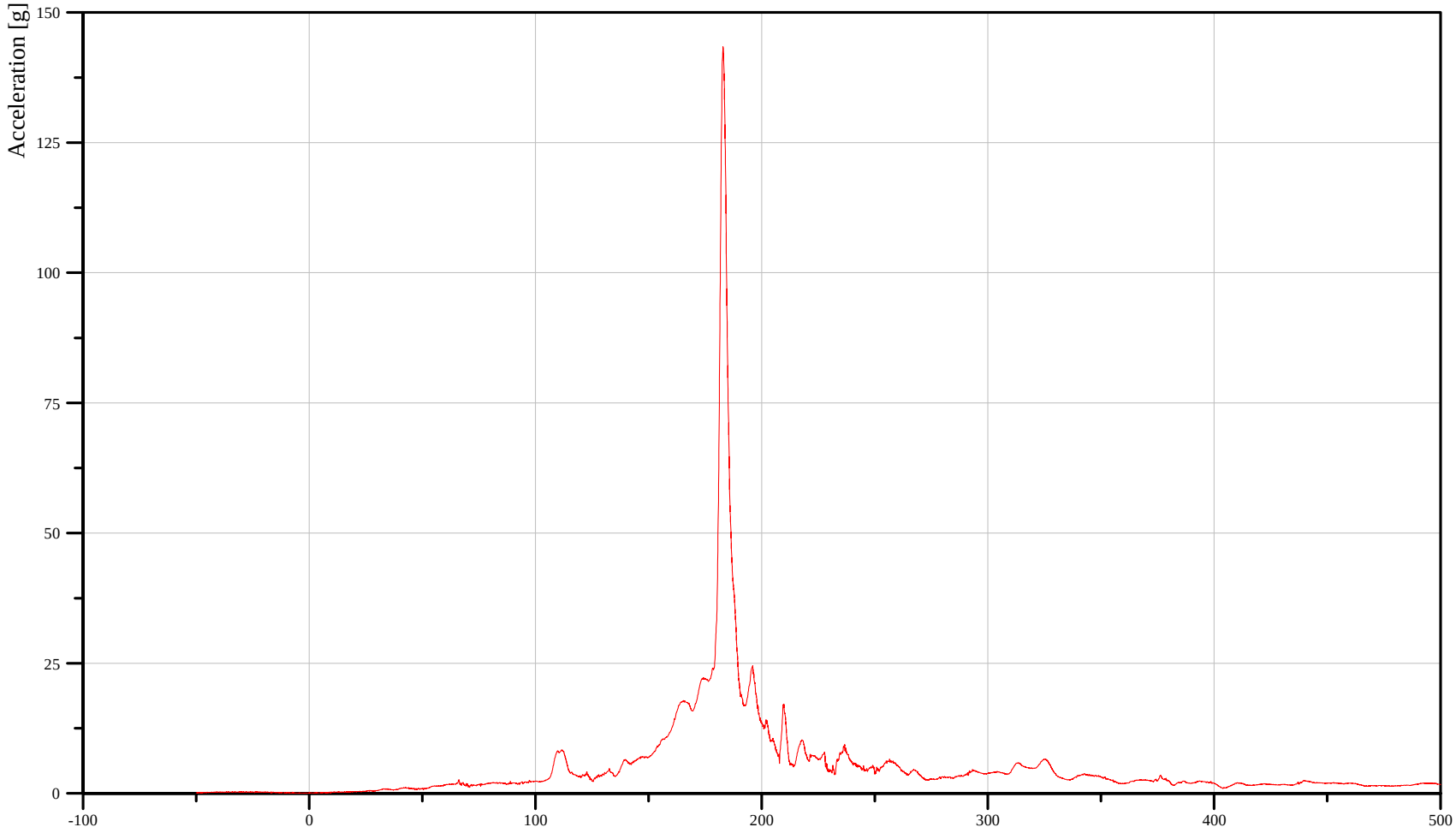
Date: 12/14/2007
Time: 9:12

10L-Right Head Resultant Acceleration

Customer: VRTC

27HEADCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.03 g at -4.56 ms

Max. Value
143.43 g at 182.96 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

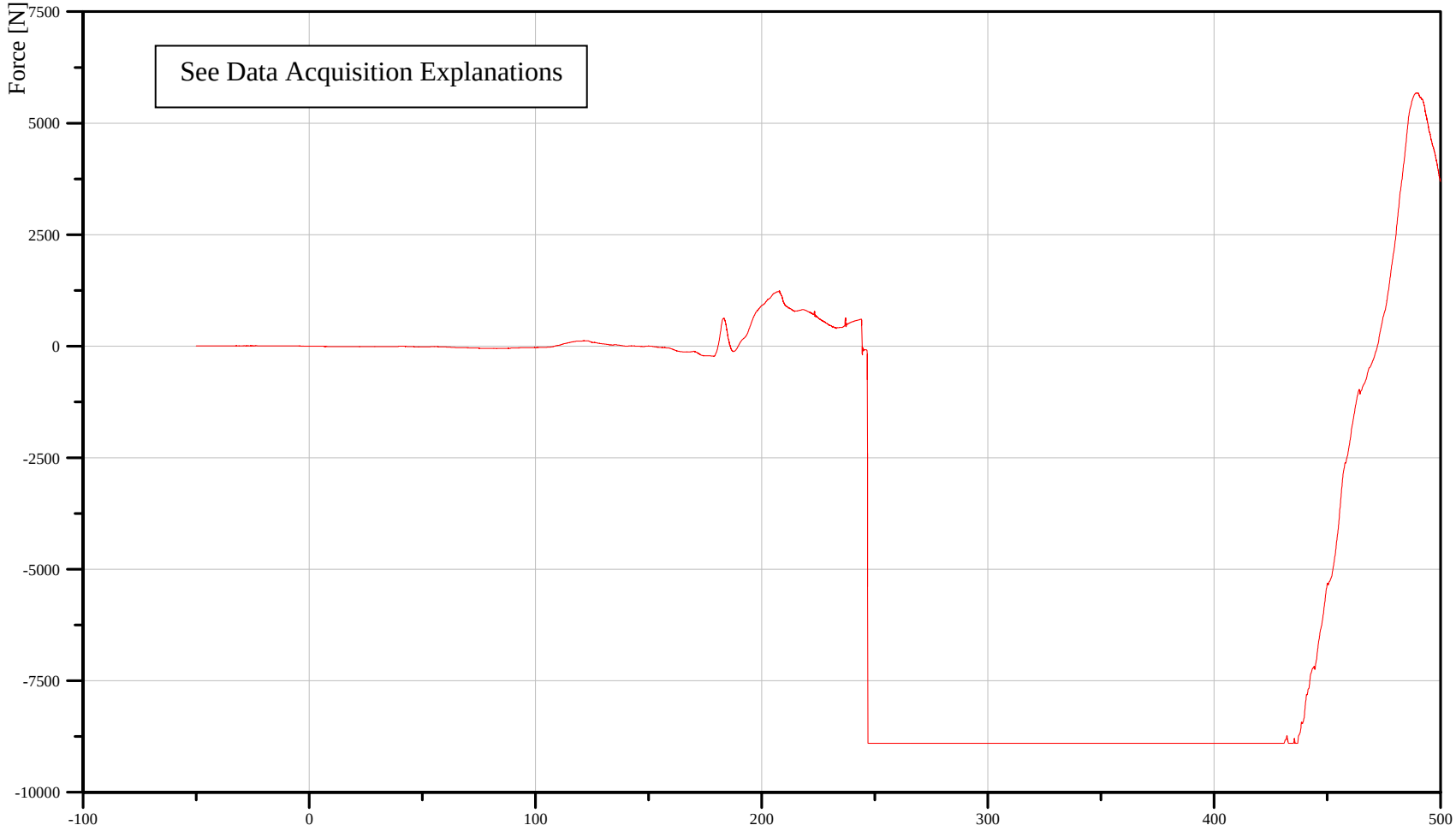
10L-Right Neck Force X

Date: 12/14/2007
Time: 9:12

Customer: VRTC

27NECKUP00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-8,902.14 N at 246.96 ms

Max. Value
5,680.68 N at 489.92 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

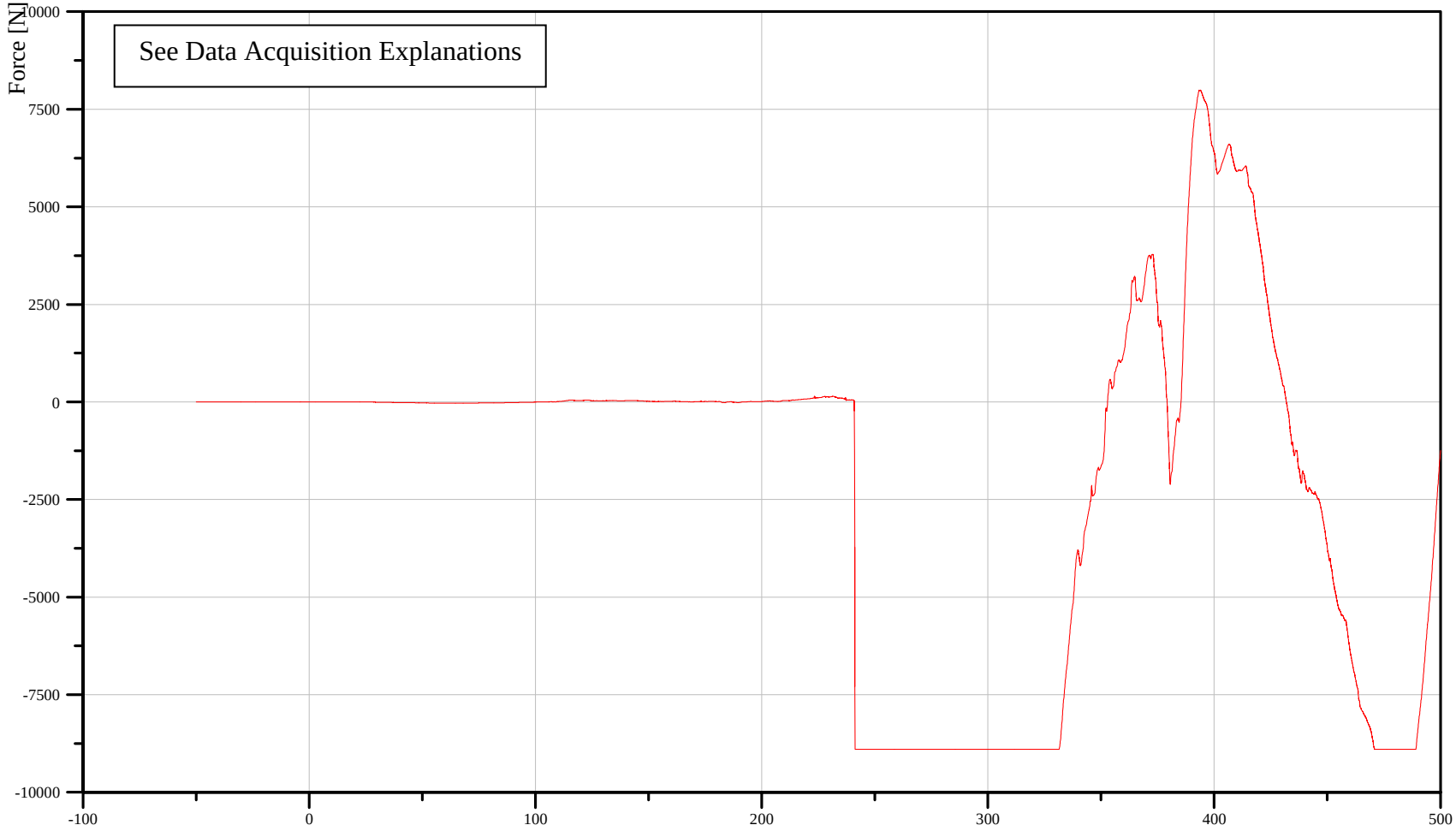
Date: 12/14/2007
Time: 9:12

10L-Right Neck Force Y

Customer: VRTC

27NECKUP00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-8,894.67 N at 241.28 ms

Max. Value
7,990.18 N at 393.92 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

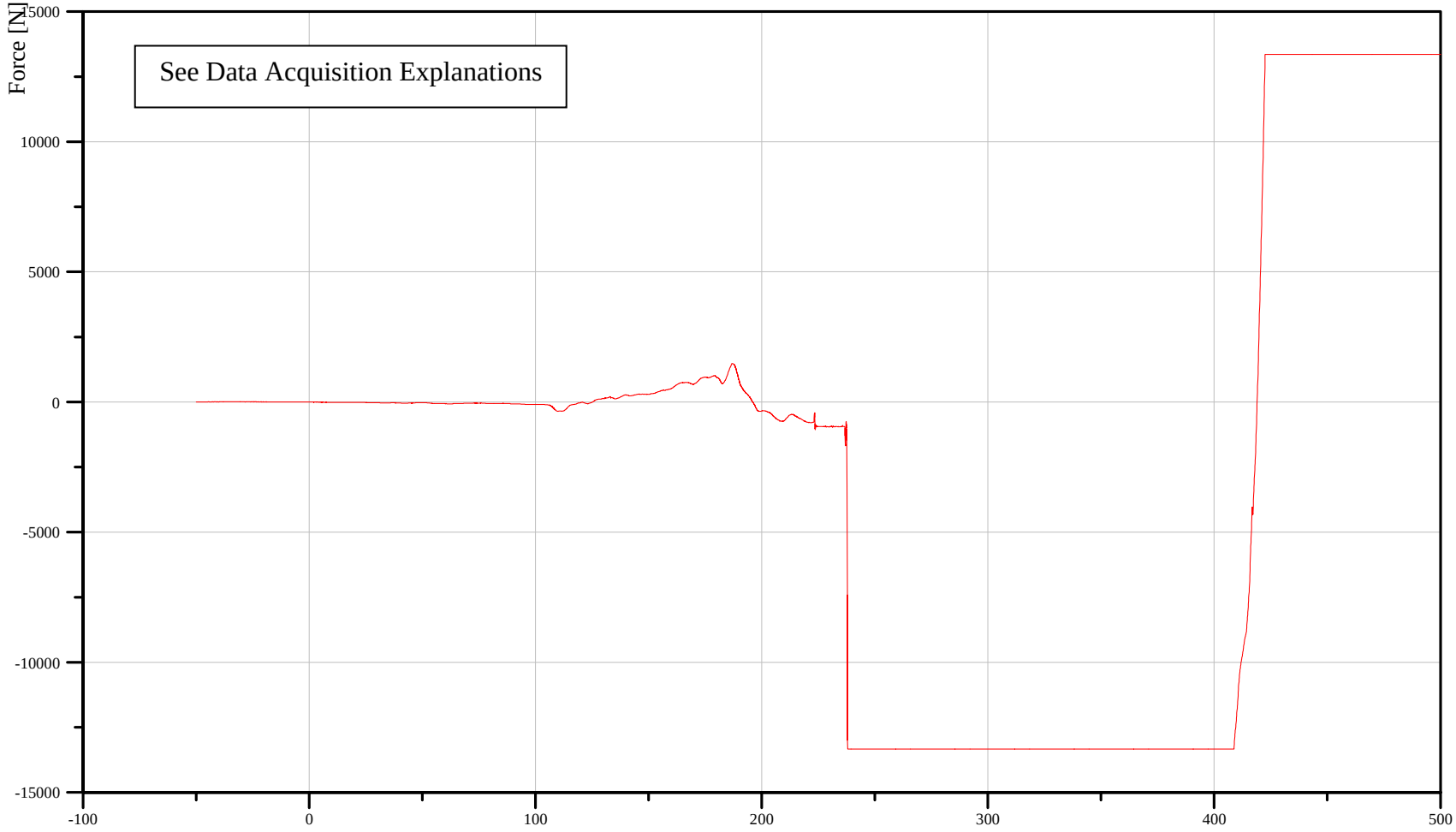
10L-Right Neck Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

27NECKUP00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-13,335.81 N at 238.00 ms

Max. Value
13,357.62 N at 422.48 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

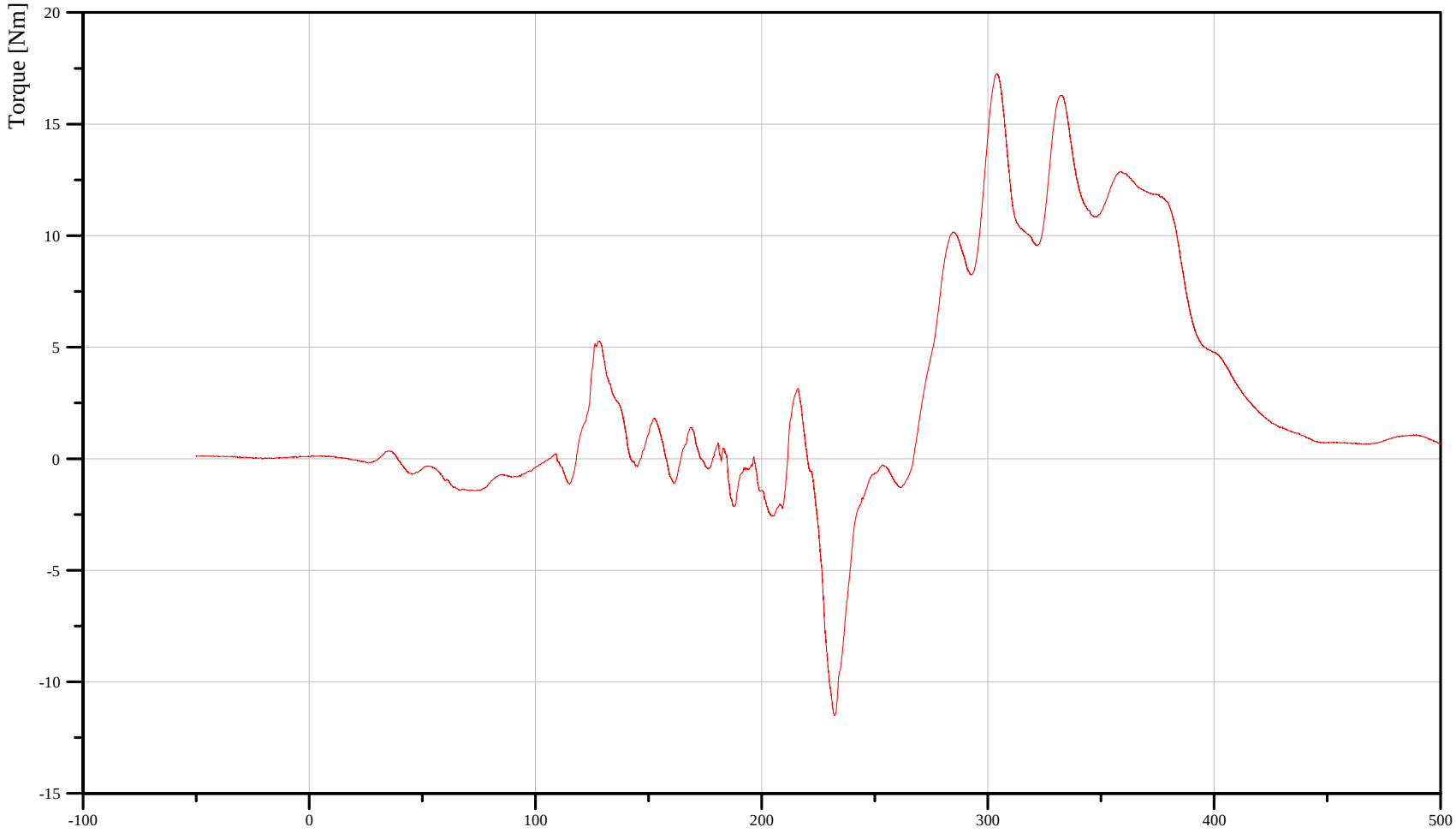
10L-Right Neck Moment X

Date: 12/14/2007
Time: 9:12

Customer: VRTC

27NECKUP00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-11.49 Nm at 232.24 ms

Max. Value
17.26 Nm at 304.08 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

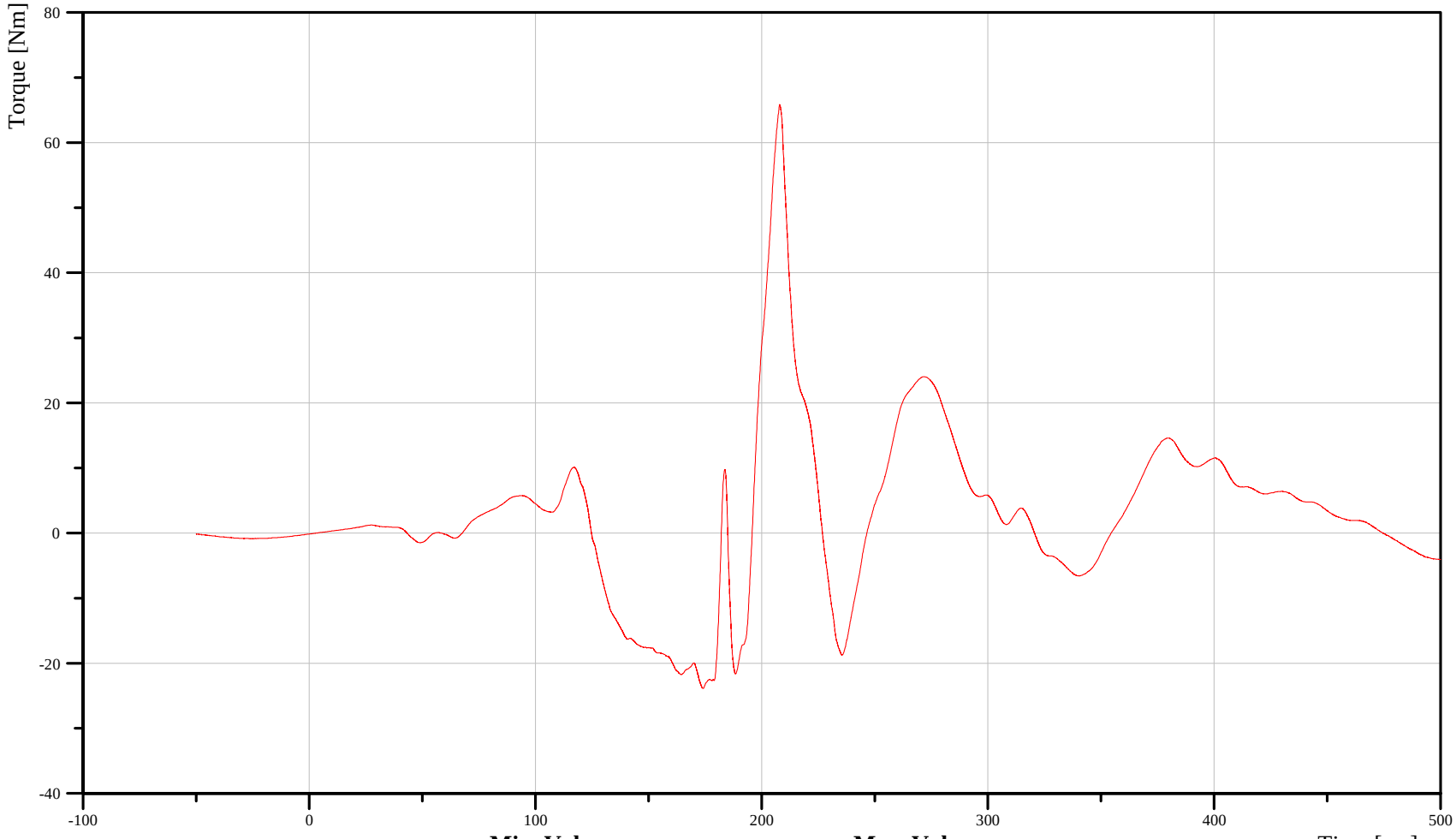
10L-Right Neck Moment Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

27NECKUP00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-23.87 Nm at 174.08 ms

Max. Value
65.85 Nm at 207.92 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

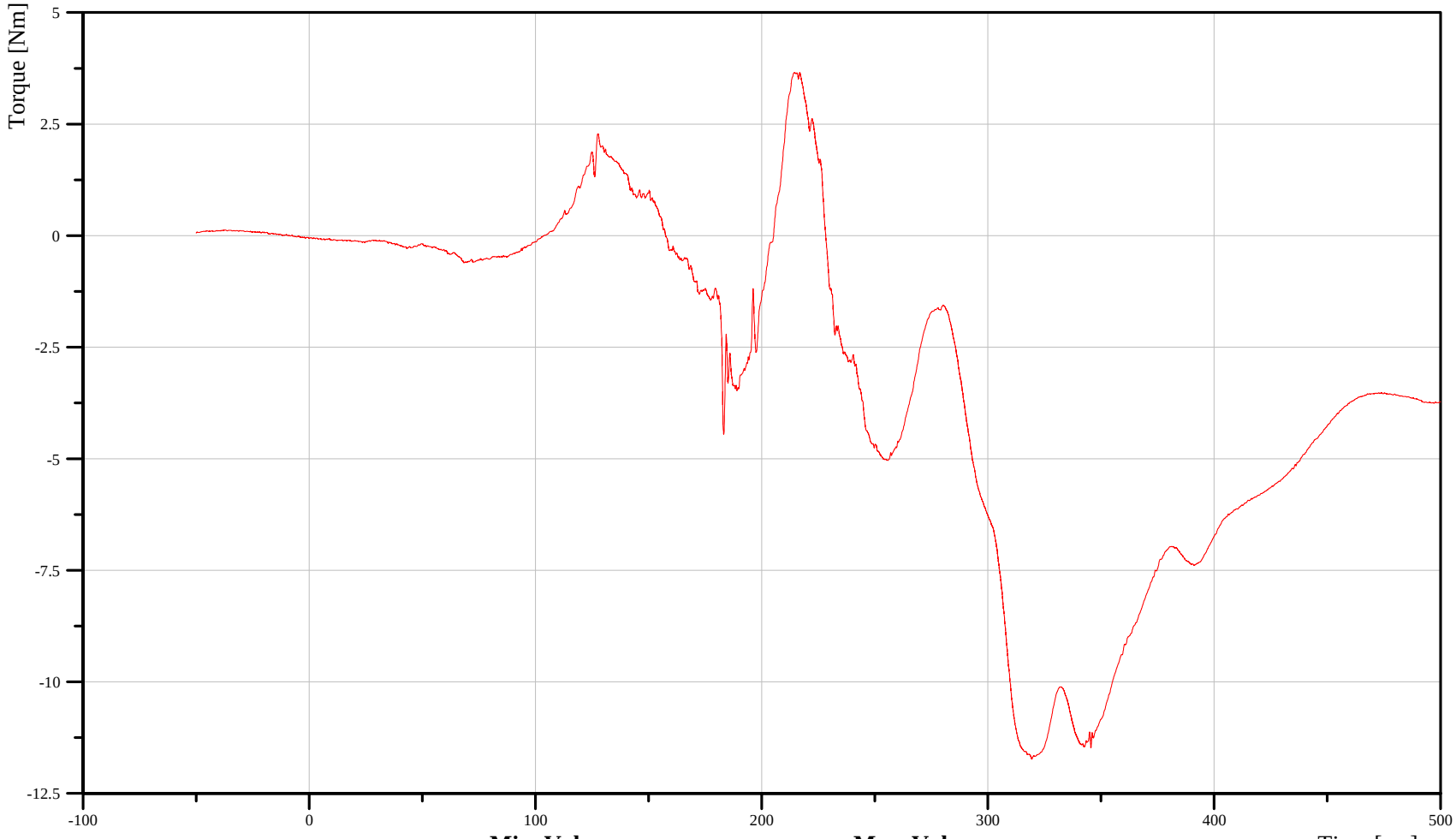
10L-Right Neck Moment Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

27NECKUP00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-11.73 Nm at 319.44 ms

Max. Value
3.65 Nm at 214.56 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

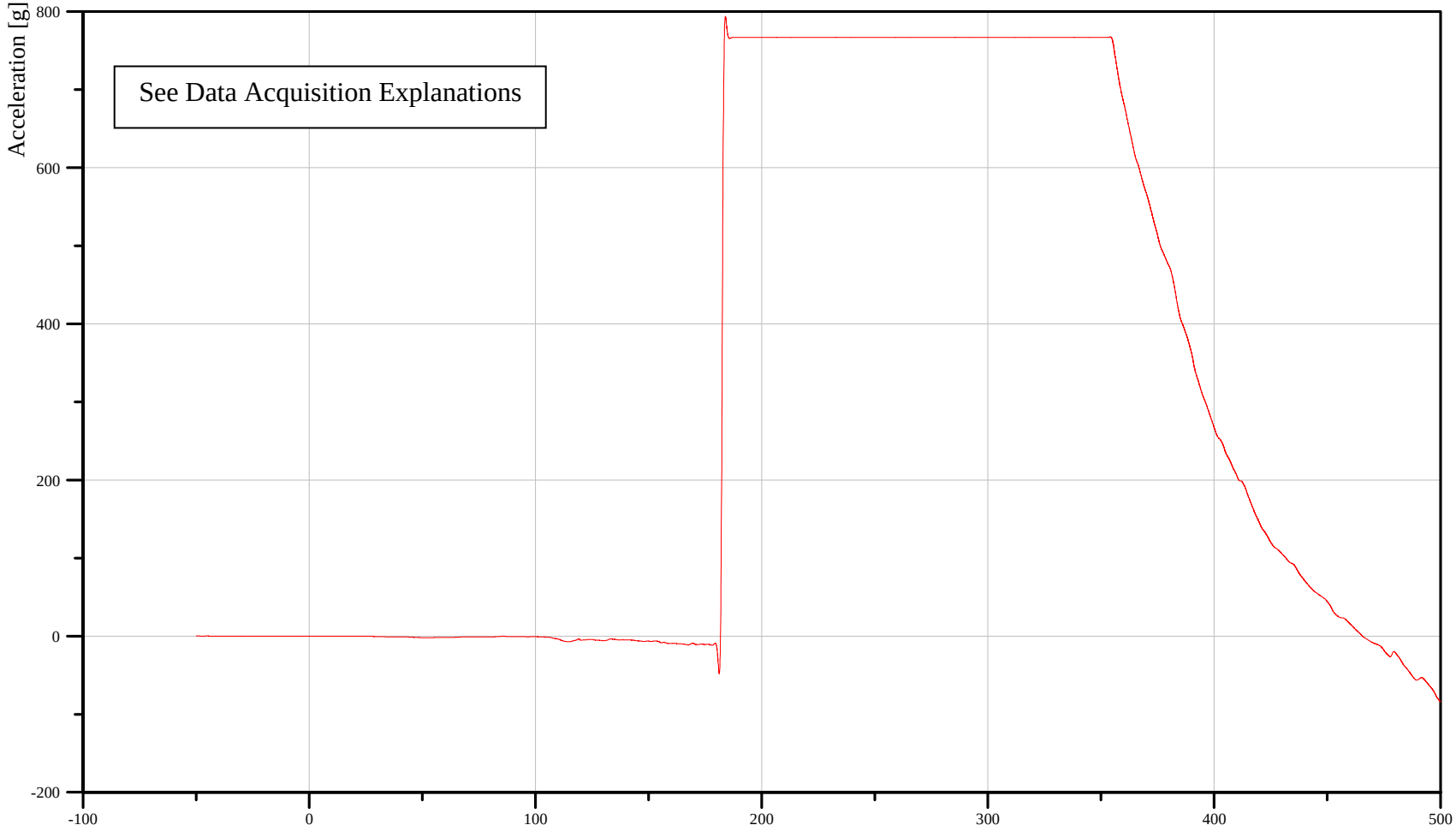
Date: 12/14/2007
Time: 9:12

10L-Right Chest X-Axis Acceleration

Customer: VRTC

27CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-83.94 g at 500.00 ms

Max. Value
794.02 g at 184.00 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

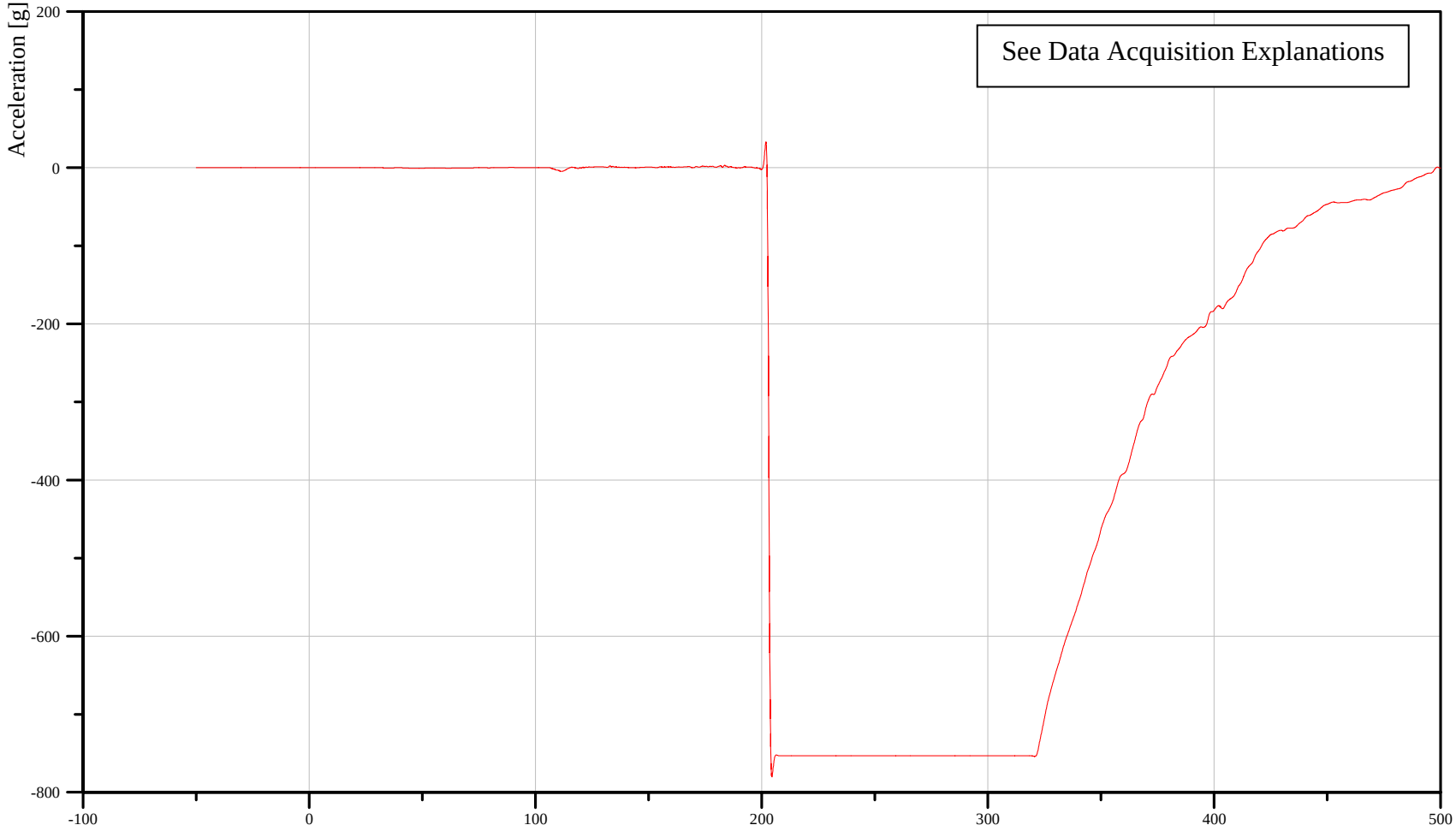
Date: 12/14/2007
Time: 9:12

10L-Right Chest Y-Axis Acceleration

Customer: VRTC

27CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-780.29 g at 204.56 ms

Max. Value
33.00 g at 201.84 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

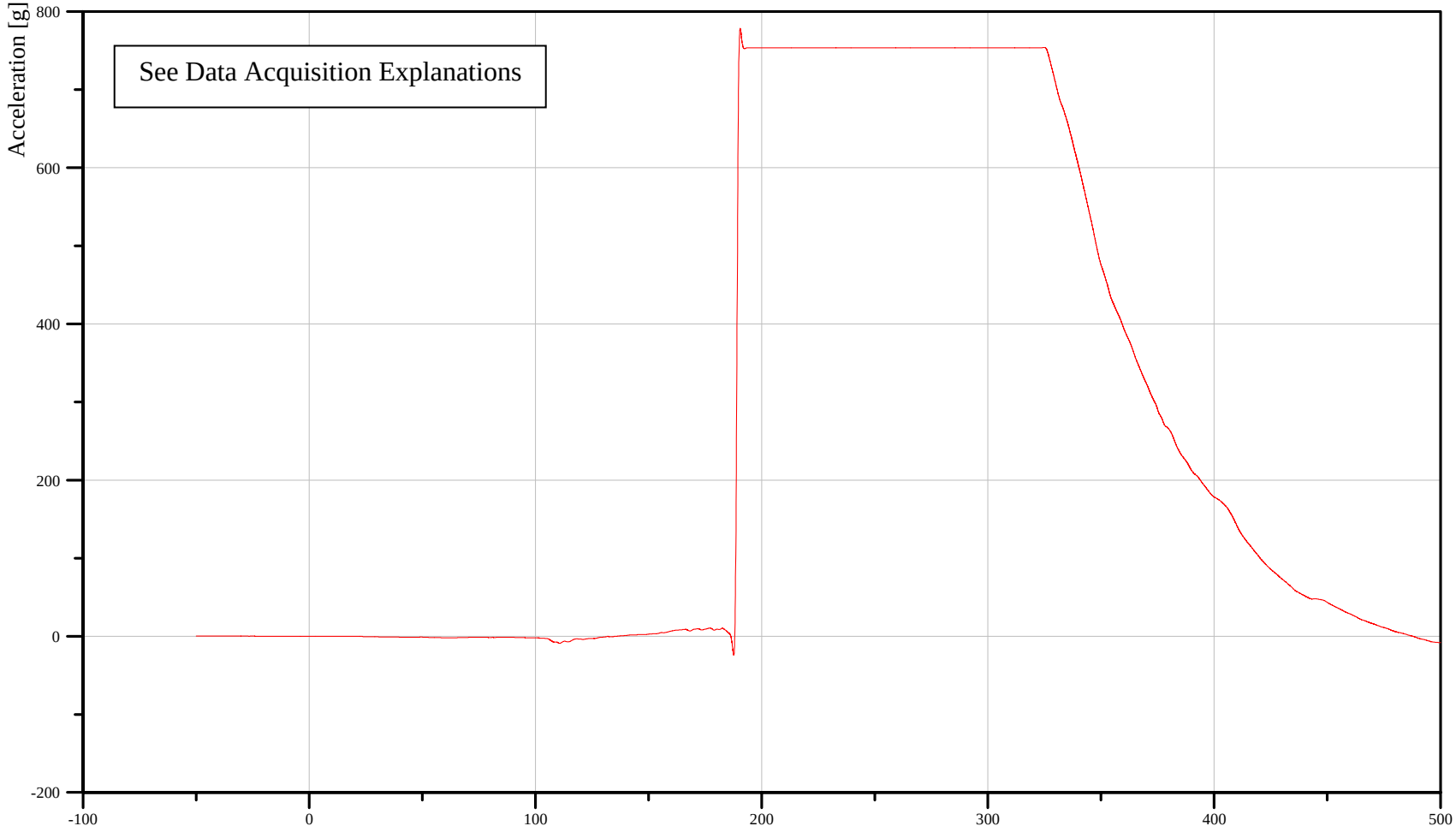
Date: 12/14/2007
Time: 9:12

10L-Right Chest Z-Axis Acceleration

Customer: VRTC

27CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-24.30 g at 187.68 ms

Max. Value
778.72 g at 190.48 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

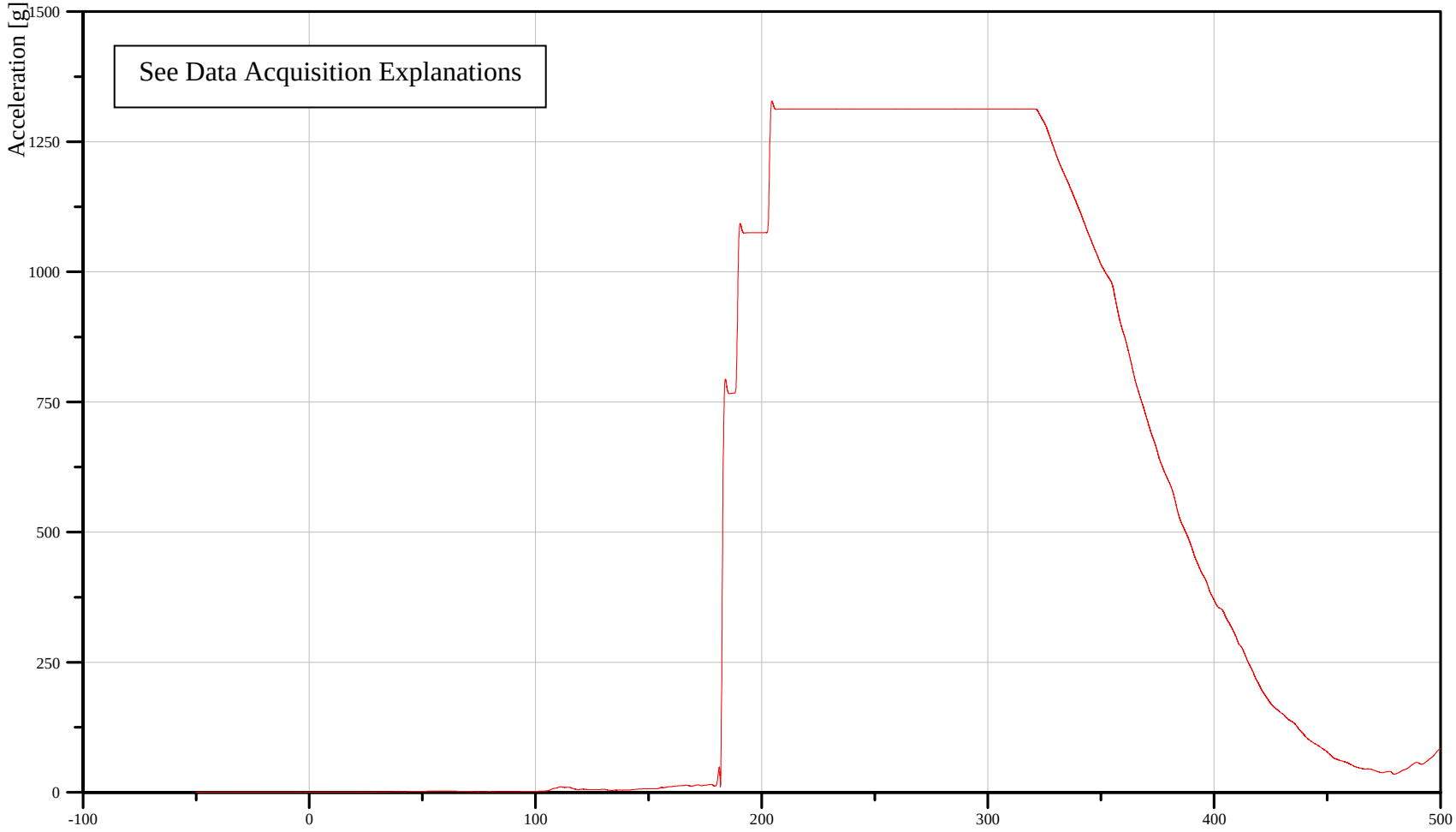
Date: 12/14/2007
Time: 9:12

10L-Right Chest Resultant Acceleration

Customer: VRTC

27CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.05 g at -17.20 ms

Max. Value
1,328.58 g at 204.56 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

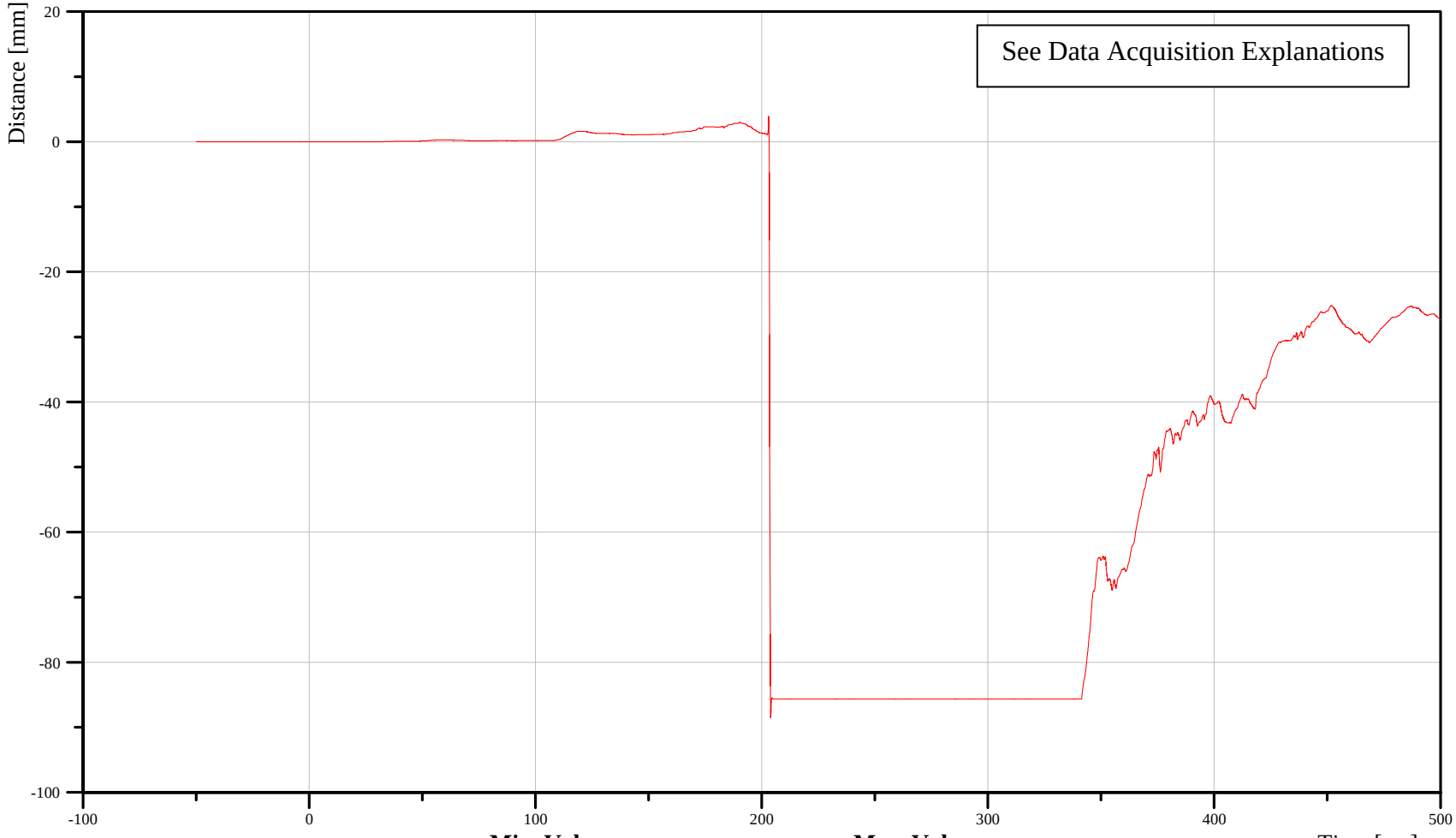
Date: 12/14/2007
Time: 9:12

10L-Right Chest X-Axis Deflection

Customer: VRTC

27CHST0000H3DSXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-88.50 mm at 204.00 ms

Max. Value
3.91 mm at 203.12 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

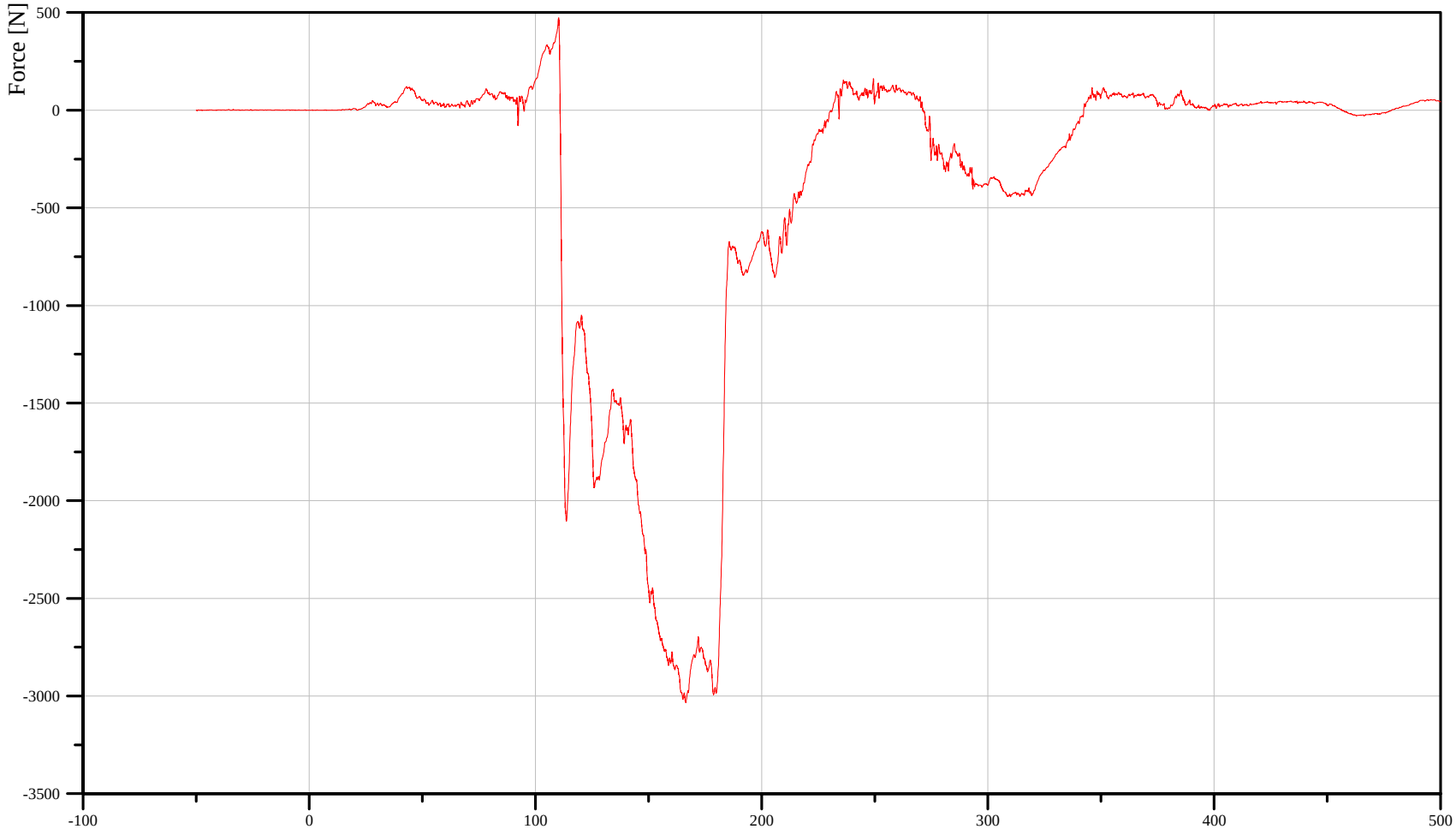
Date: 12/14/2007
Time: 9:12

10L-Right Left Femur Force Z

Customer: VRTC

27FEMRLL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-3,033.15 N at 166.48 ms

Max. Value
473.95 N at 110.24 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

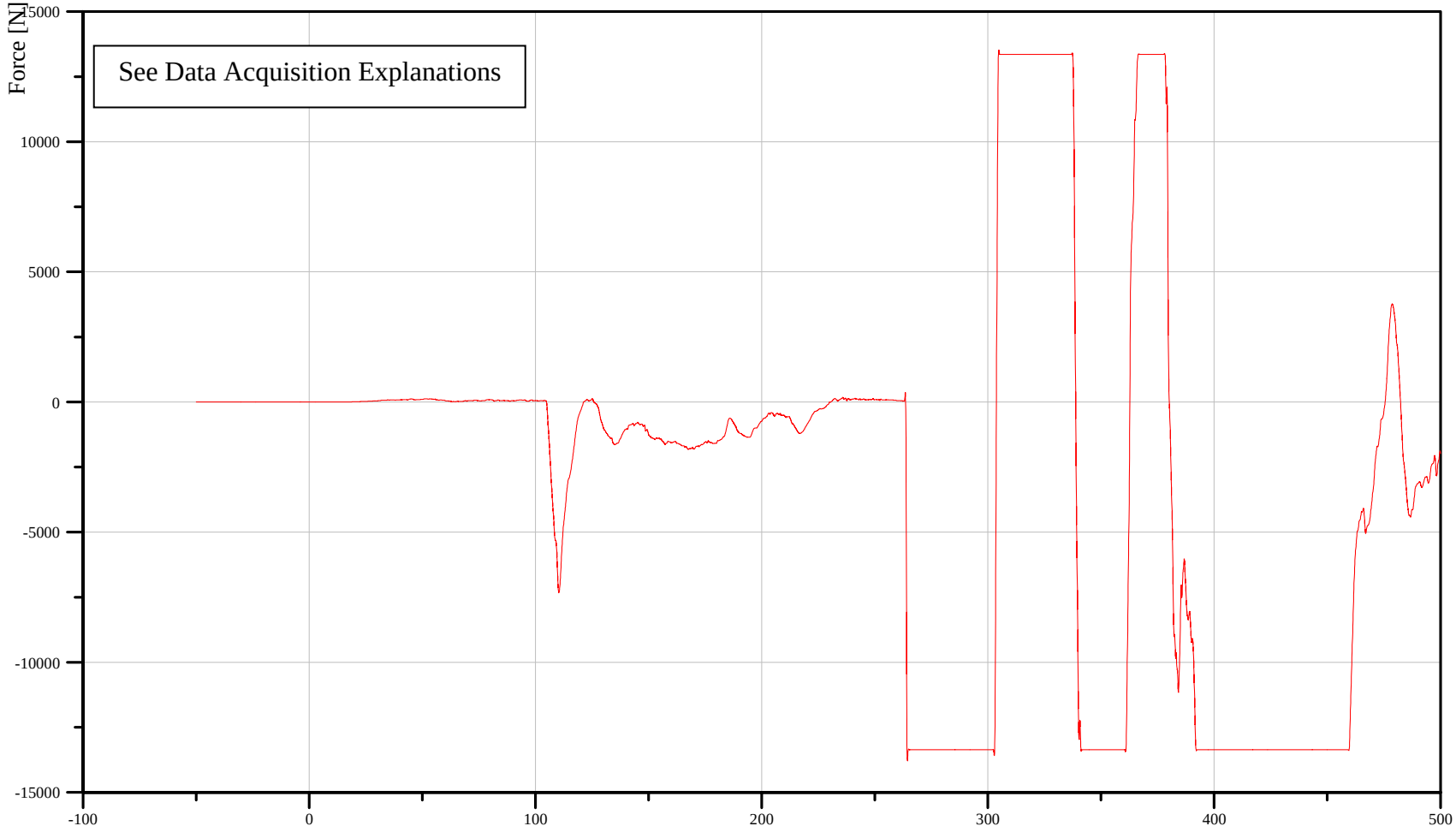
Date: 12/14/2007
Time: 9:12

10L-Right Right Femur Force Z

Customer: VRTC

27FEMRRL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-13,788.75 N at 264.40 ms

Max. Value
13,512.64 N at 304.80 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

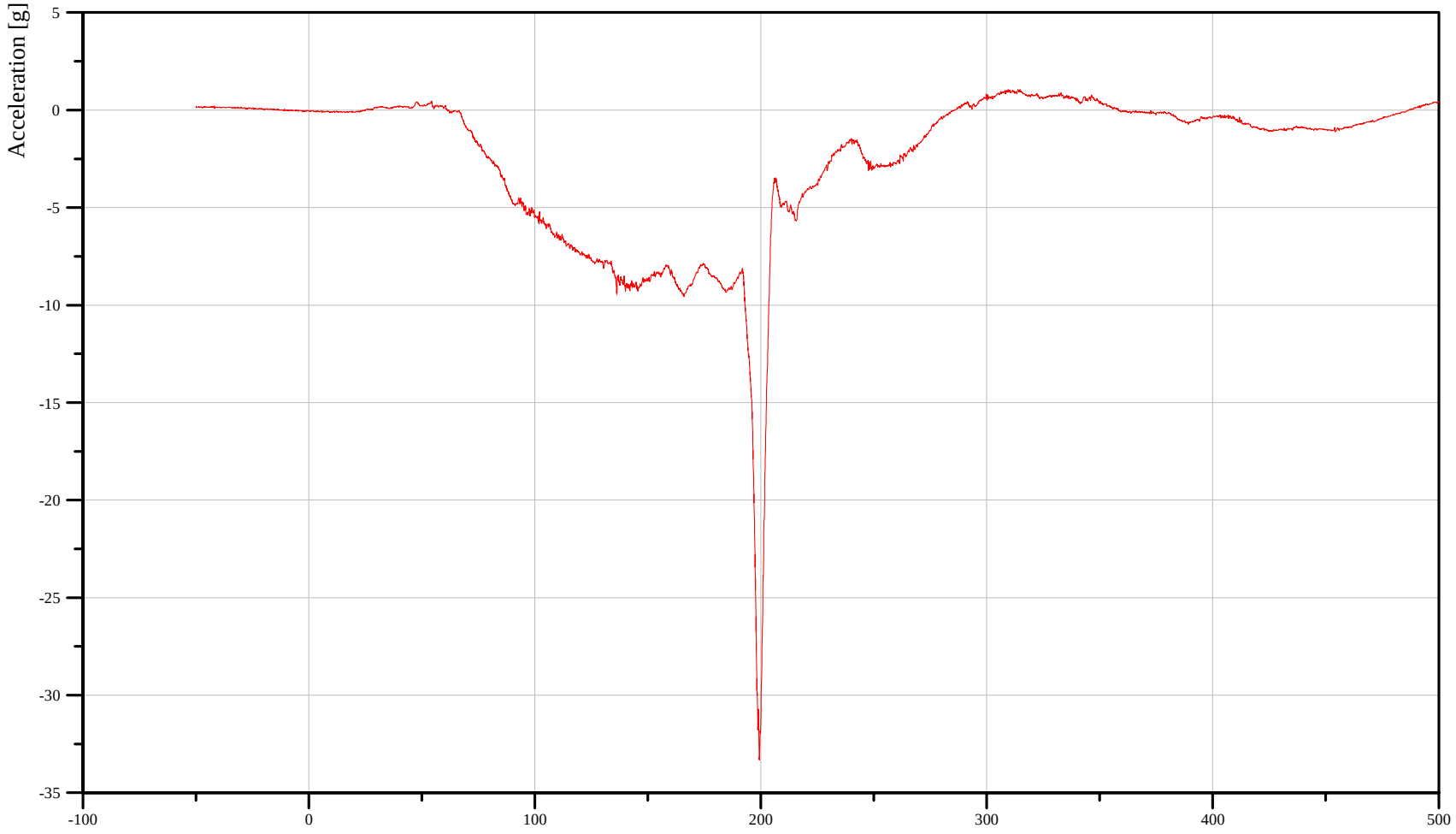
Date: 12/14/2007
Time: 9:12

11R-Left Head X-Axis Acceleration

Customer: VRTC

28HEADCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-33.32 g at 199.44 ms

Max. Value
1.04 g at 314.64 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

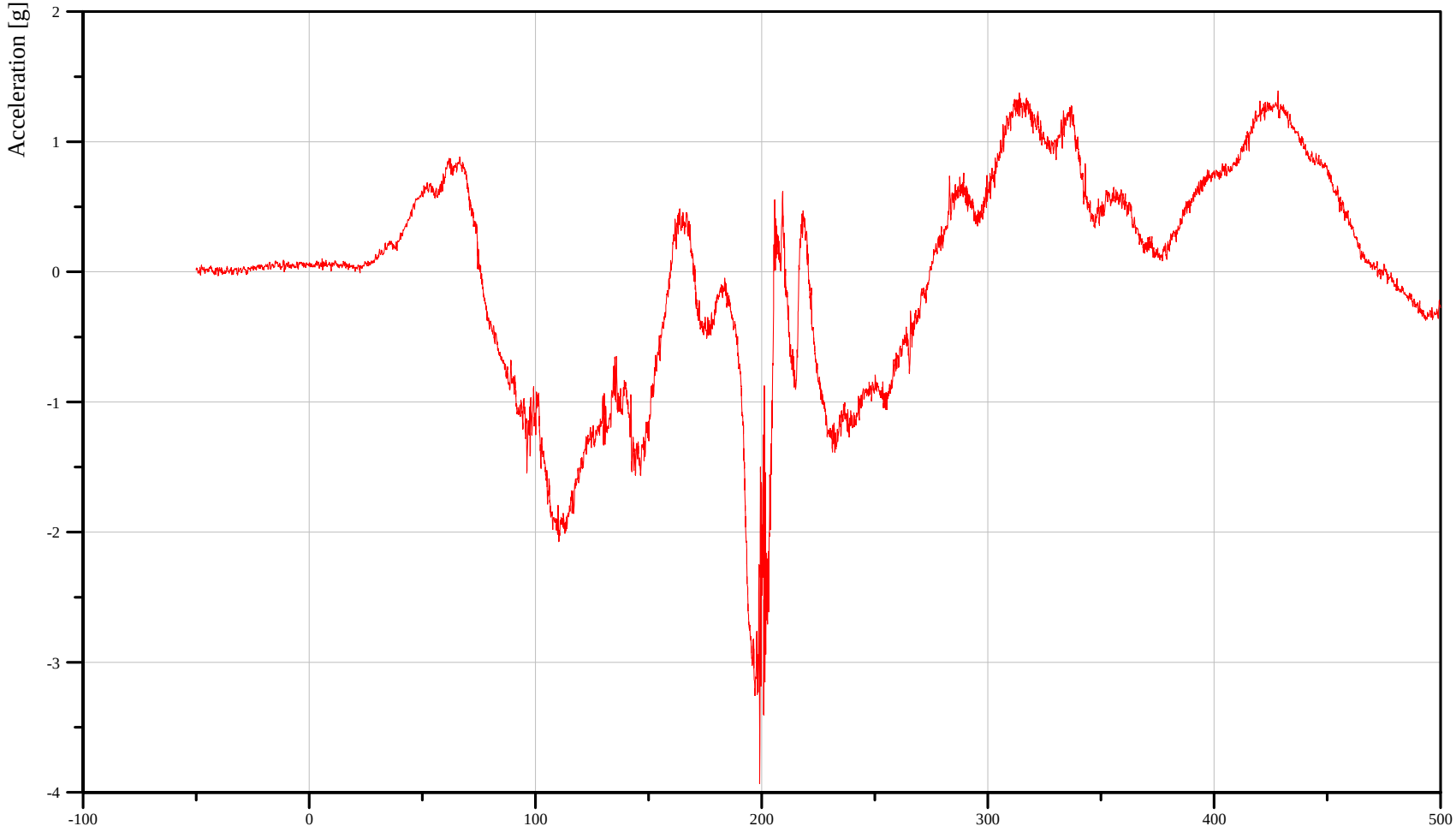
Date: 12/14/2007
Time: 9:12

11R-Left Head Y-Axis Acceleration

Customer: VRTC

28HEADCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-3.93 g at 199.12 ms

Max. Value
1.39 g at 428.24 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

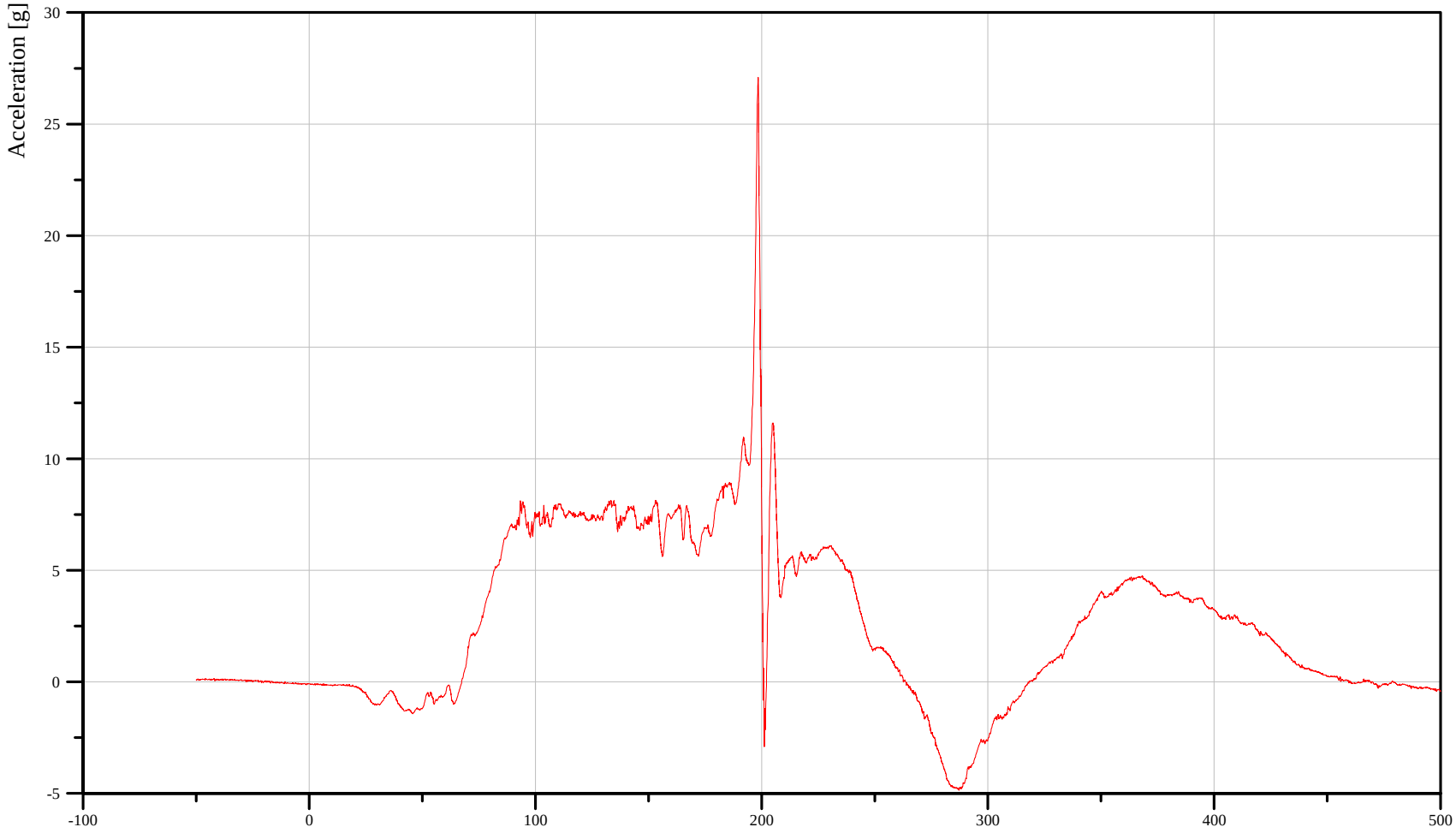
11R-Left Head Z-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

28HEADCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-4.86 g at 287.20 ms

Max. Value
27.09 g at 198.48 ms

B-500

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

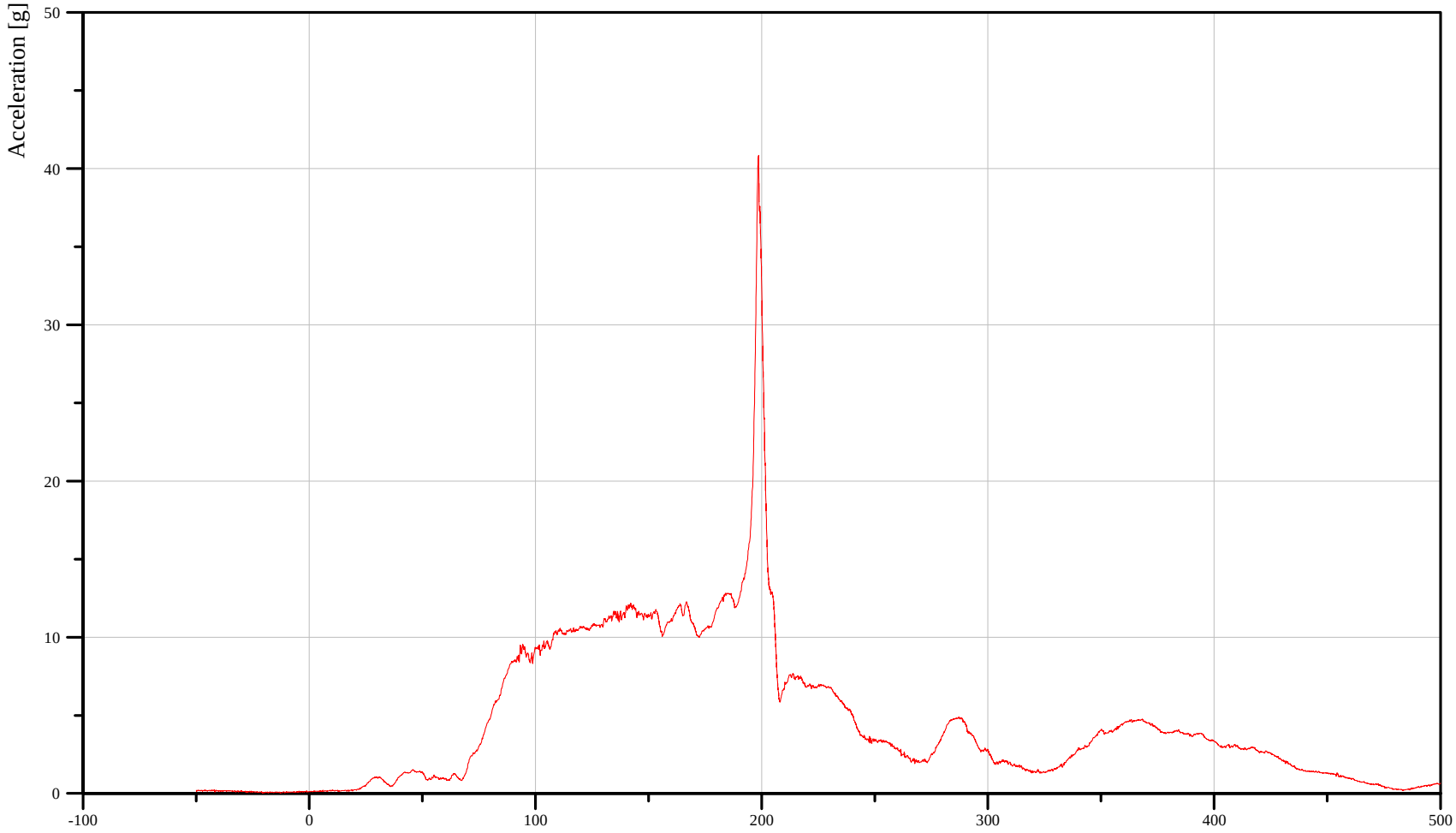
Date: 12/14/2007
Time: 9:12

11R-Left Head Resultant Acceleration

Customer: VRTC

28HEADCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.04 g at -18.00 ms

Max. Value
40.84 g at 198.64 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

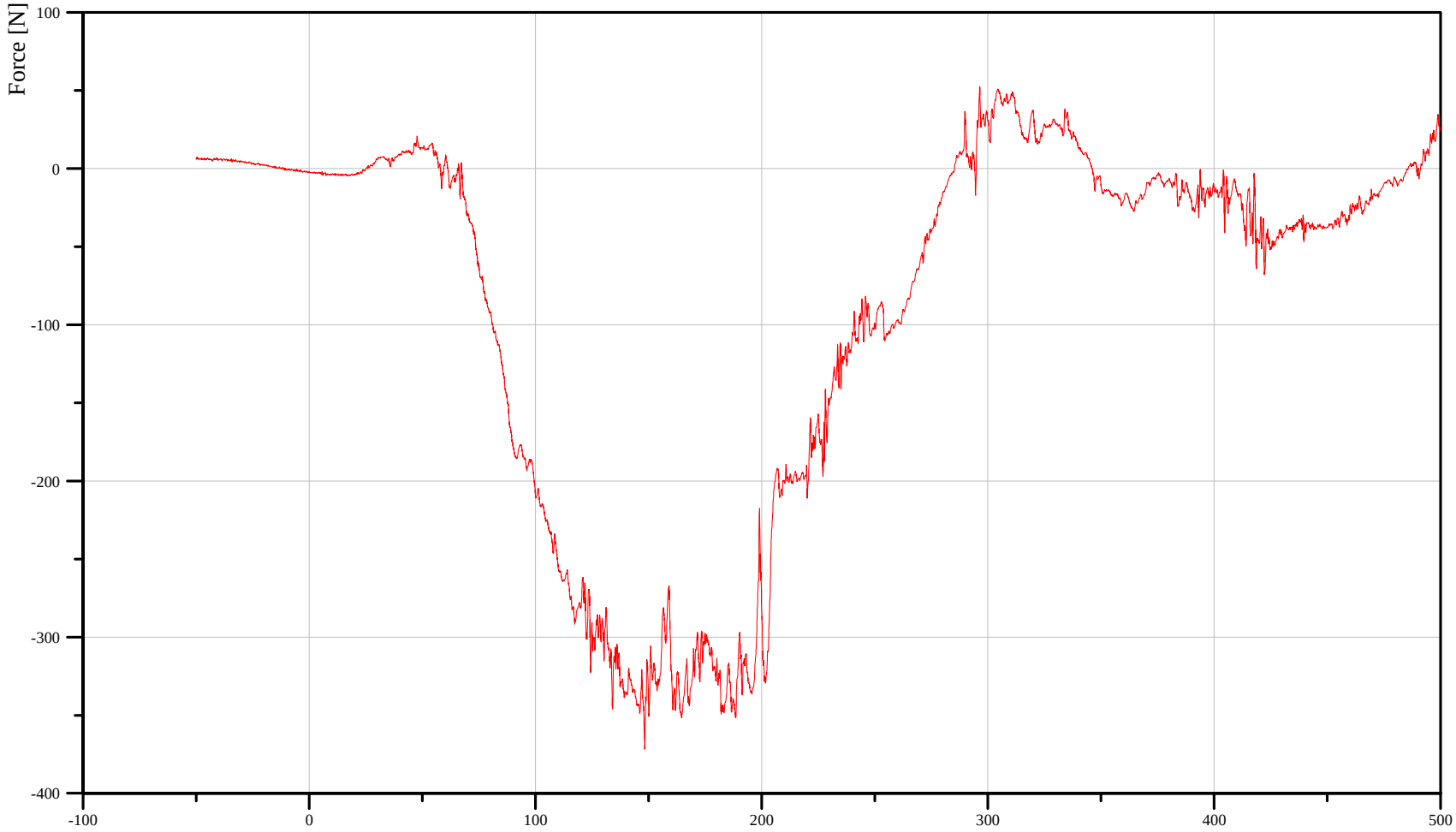
Date: 12/14/2007
Time: 9:12

11R-Left Neck Force X

Customer: VRTC

28NECKUP00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-371.52 N at 148.32 ms

Max. Value
52.81 N at 296.32 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

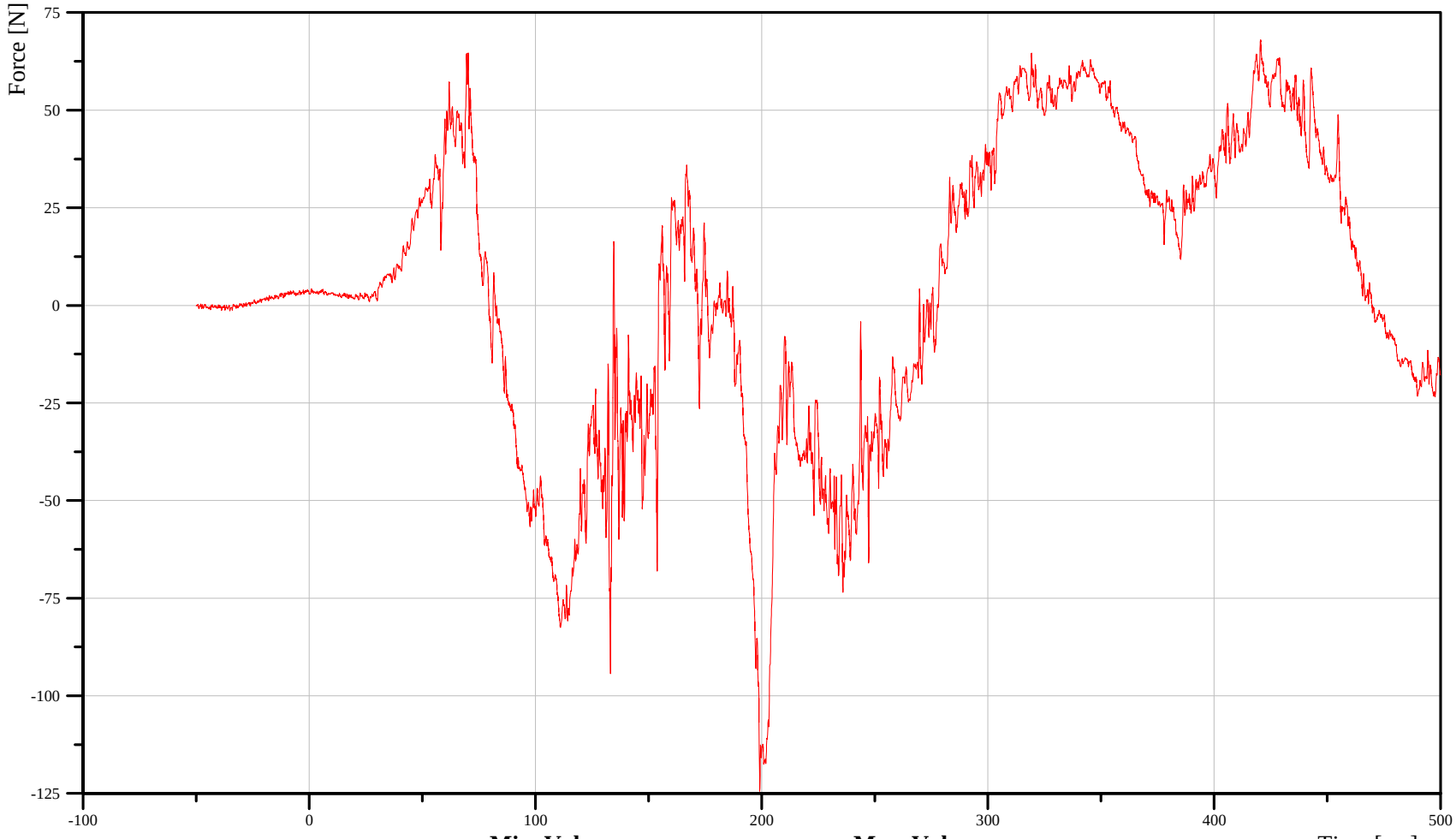
11R-Left Neck Force Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

28NECKUP00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-124.34 N at 199.12 ms

Max. Value
67.93 N at 420.56 ms

B-503

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

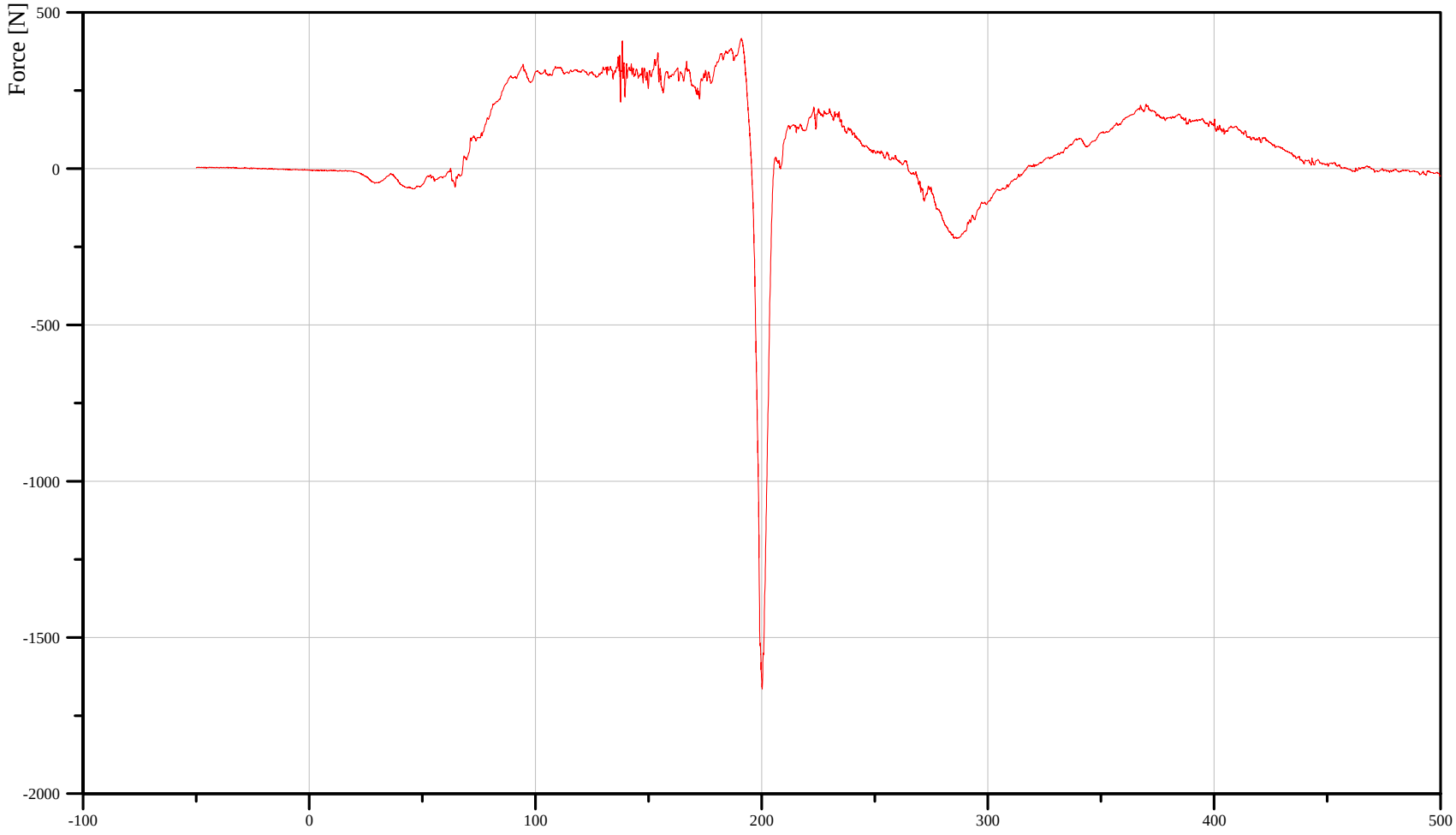
11R-Left Neck Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

28NECKUP00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-1,665.74 N at 200.24 ms

Max. Value
416.26 N at 191.04 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

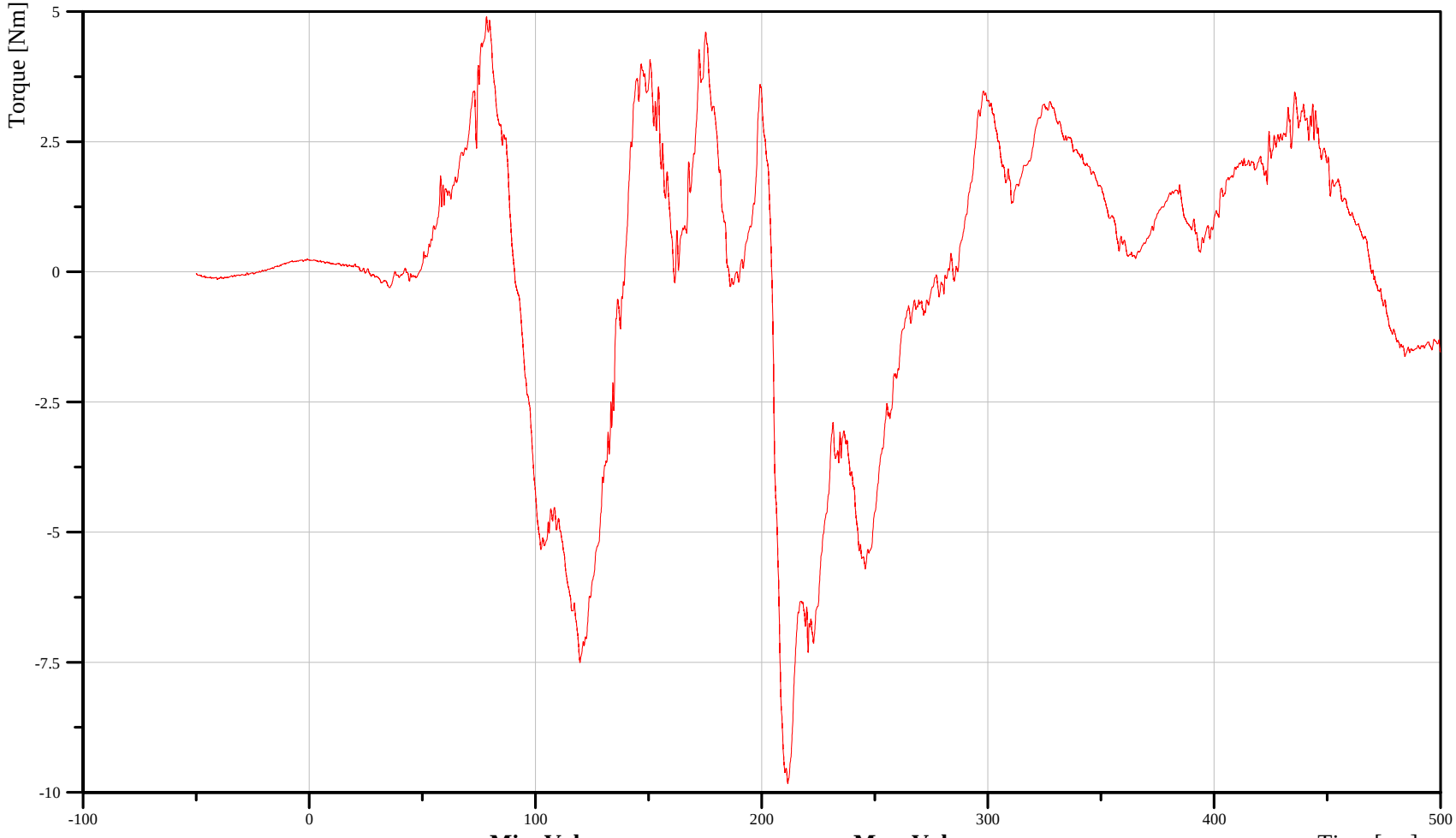
Date: 12/14/2007
Time: 9:12

11R-Left Neck Moment X

Customer: VRTC

28NECKUP00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-9.83 Nm at 211.52 ms

Max. Value
4.90 Nm at 78.40 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

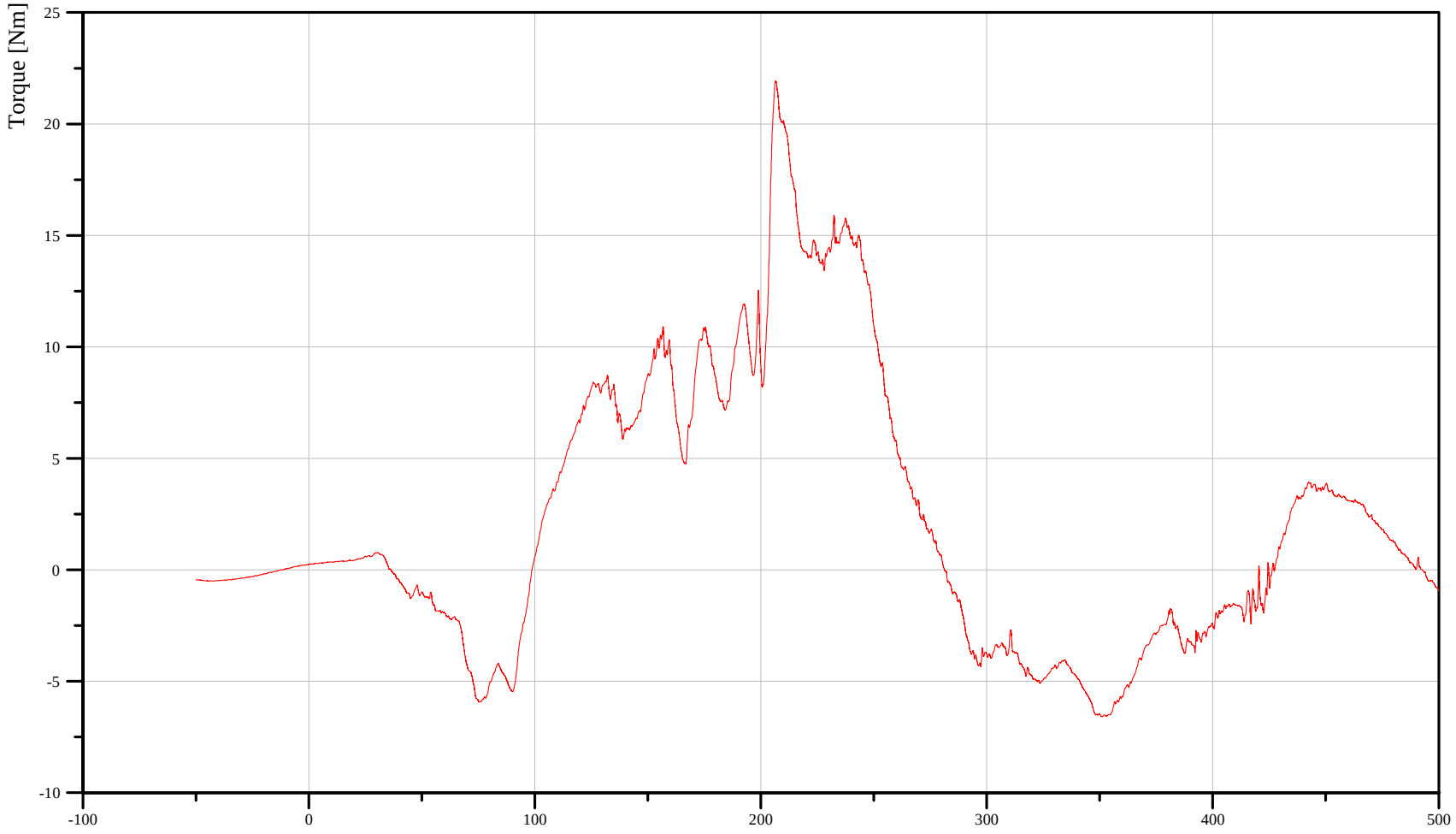
11R-Left Neck Moment Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

28NECKUP00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-6.59 Nm at 351.12 ms

Max. Value
21.94 Nm at 206.48 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

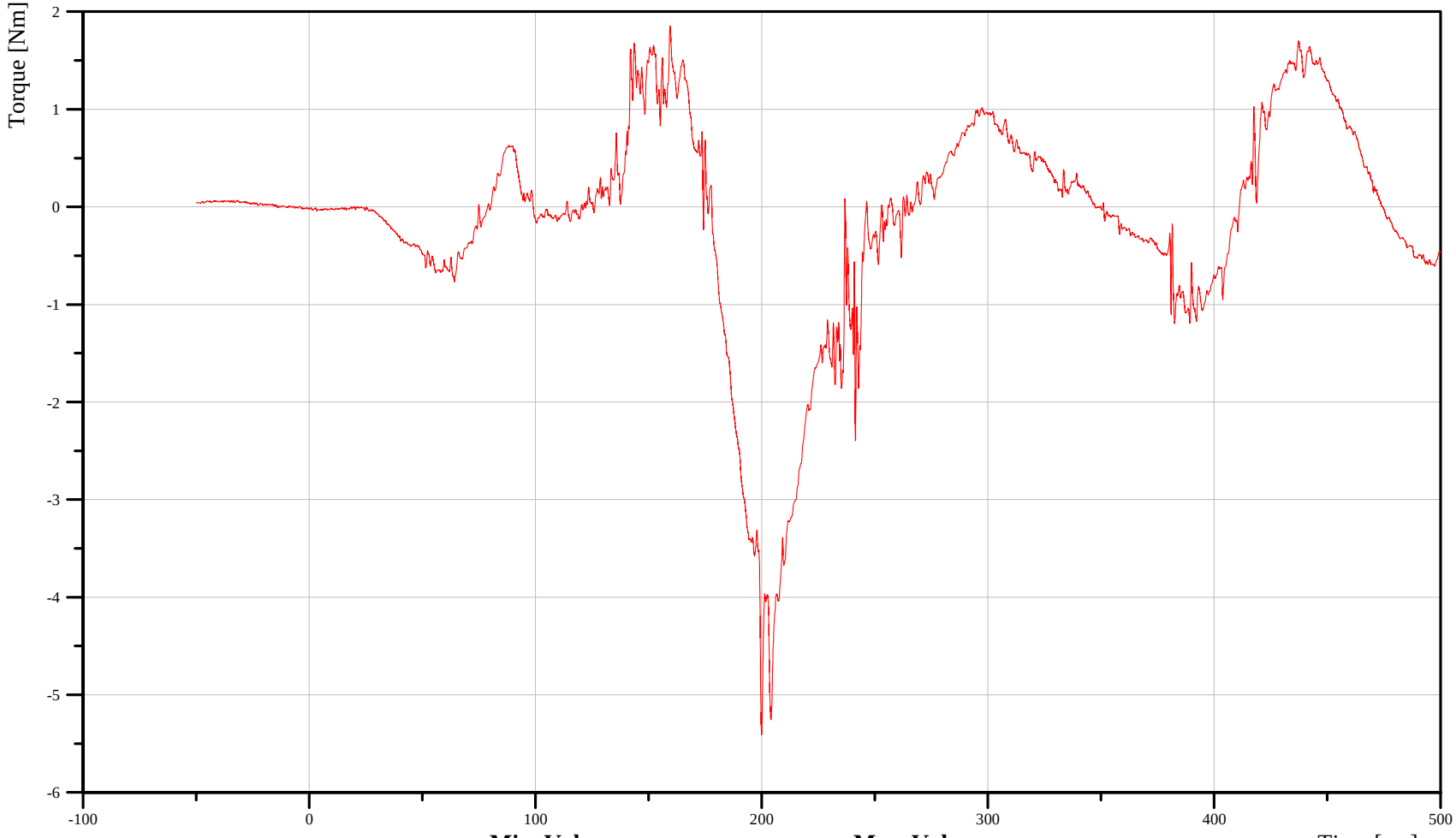
Date: 12/14/2007
Time: 9:12

11R-Left Neck Moment Z

Customer: VRTC

28NECKUP00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-5.41 Nm at 199.92 ms

Max. Value
1.85 Nm at 159.52 ms

B-507

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

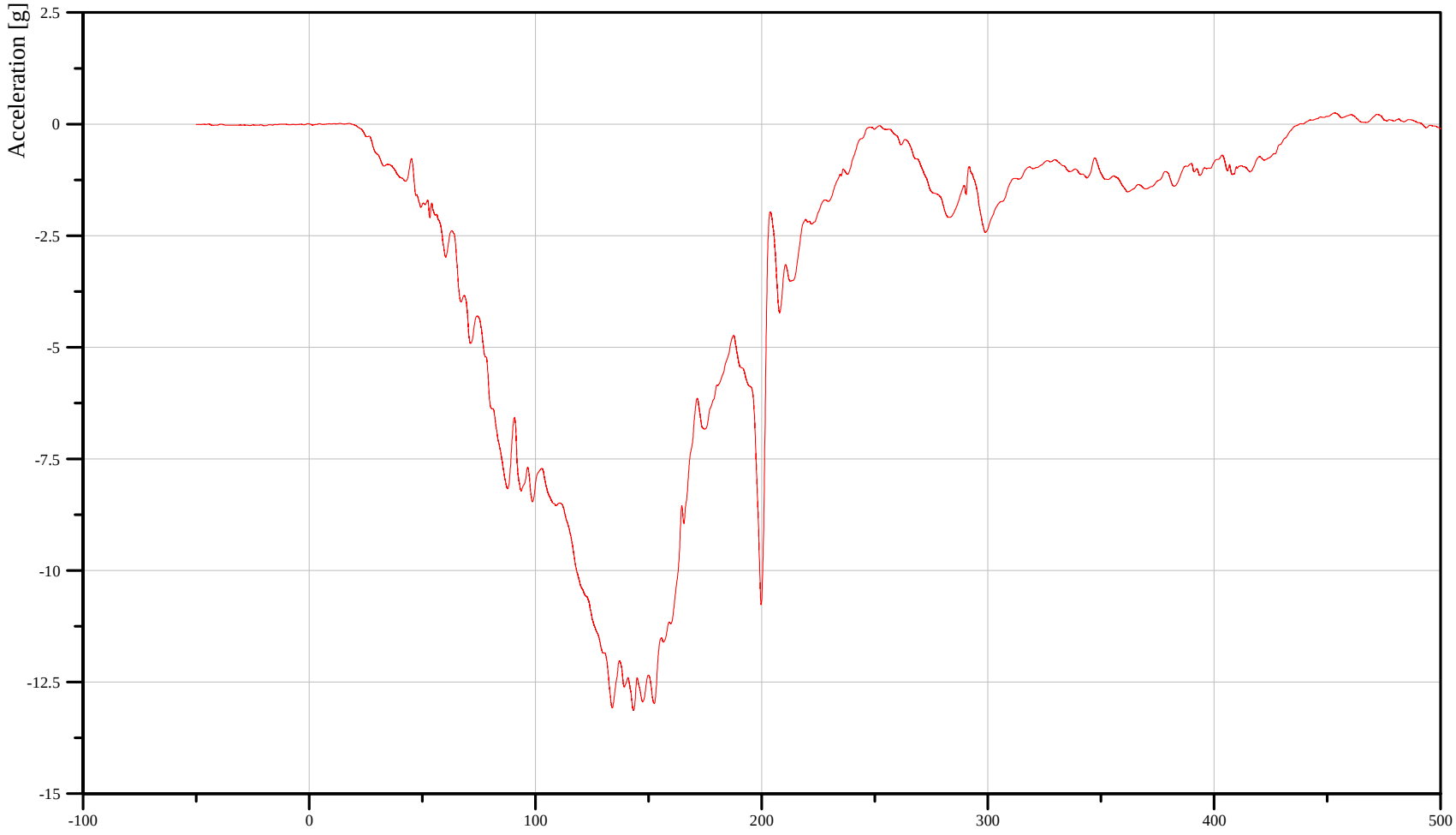
Date: 12/14/2007
Time: 9:12

11R-Left Chest X-Axis Acceleration

Customer: VRTC

28CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-13.13 g at 143.36 ms

Max. Value
0.25 g at 453.12 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

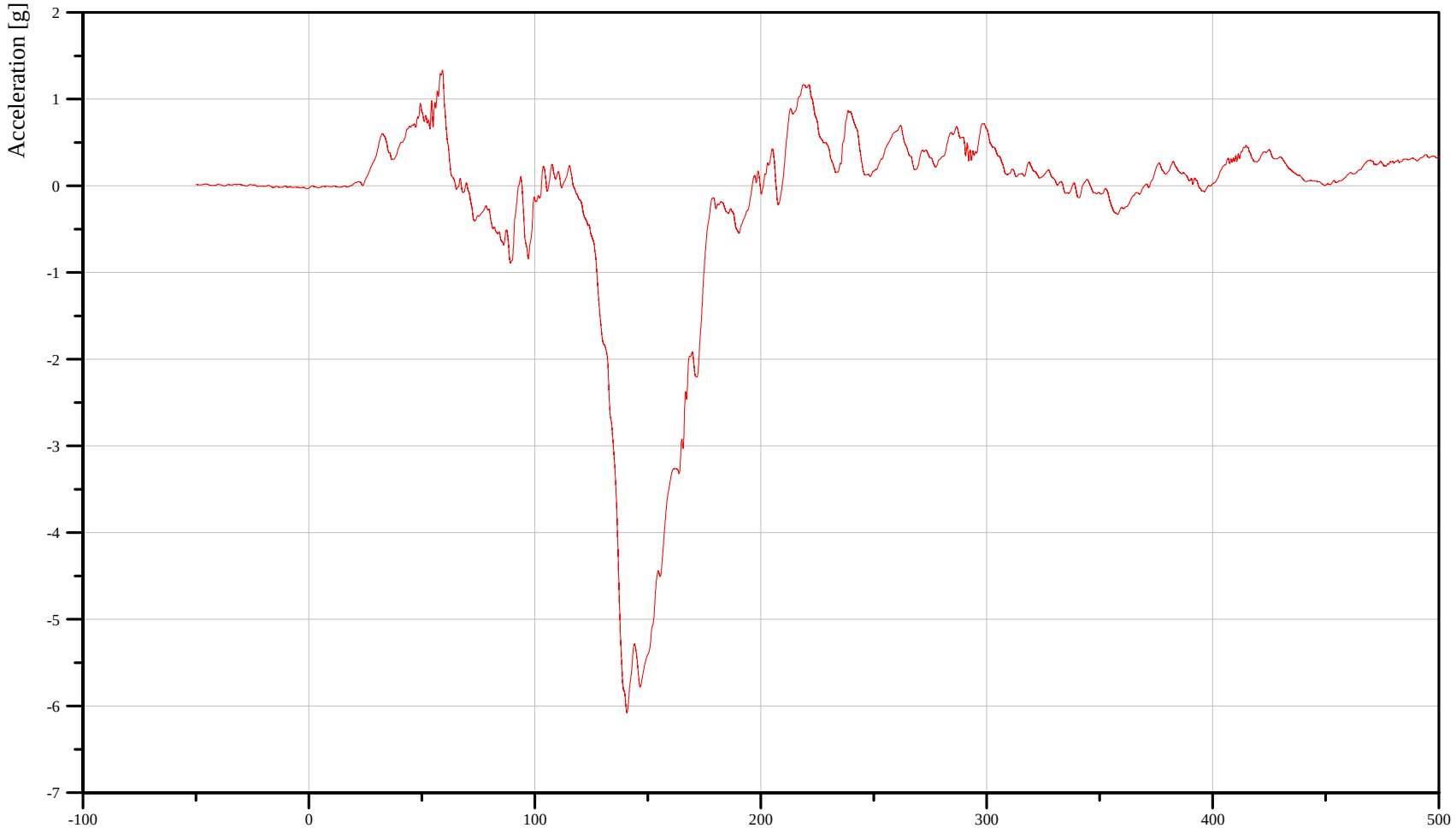
Date: 12/14/2007
Time: 9:12

11R-Left Chest Y-Axis Acceleration

Customer: VRTC

28CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-6.08 g at 140.80 ms

Max. Value
1.33 g at 59.12 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

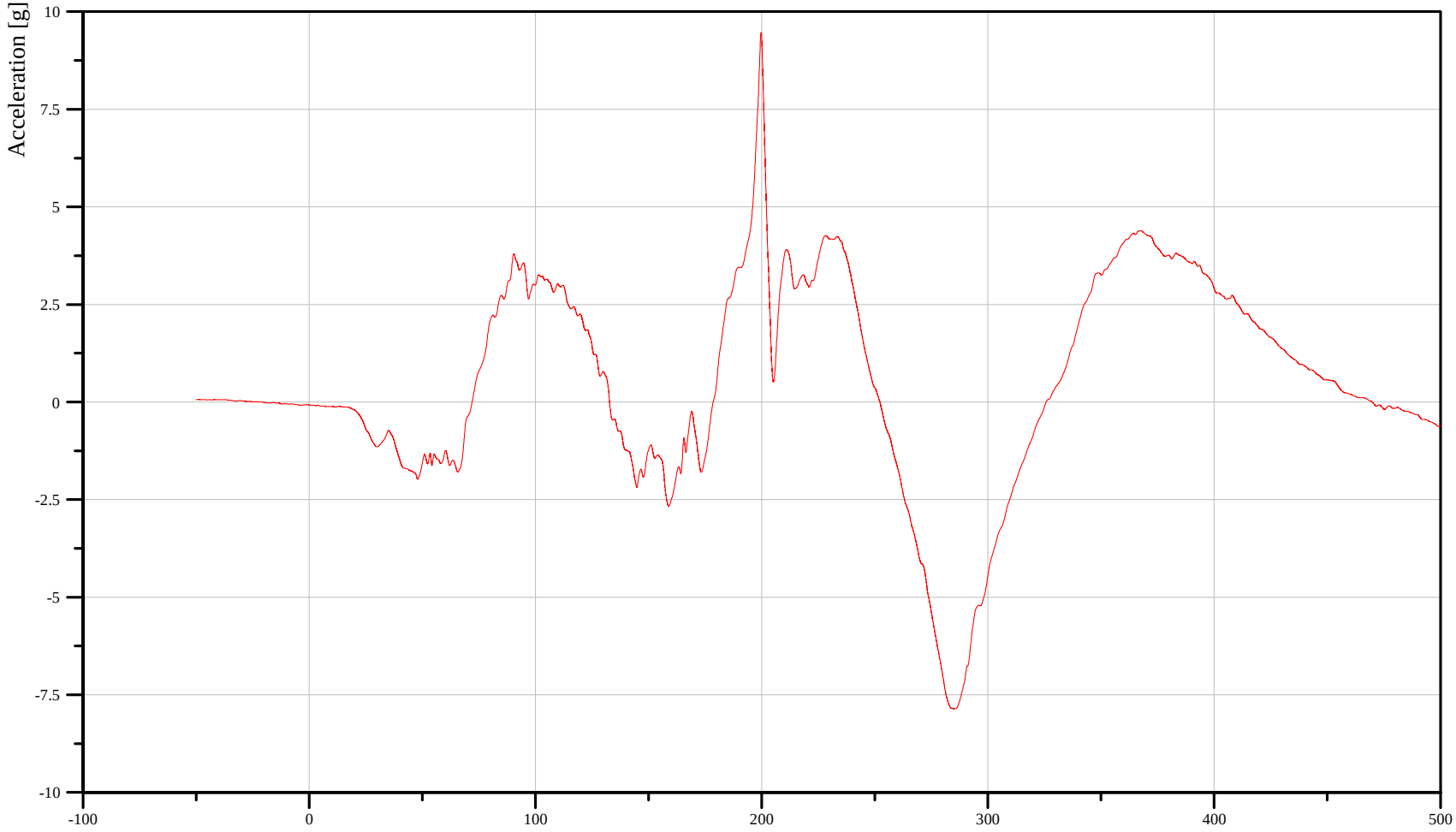
Date: 12/14/2007
Time: 9:12

11R-Left Chest Z-Axis Acceleration

Customer: VRTC

28CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-7.86 g at 285.44 ms

Max. Value
9.47 g at 199.76 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

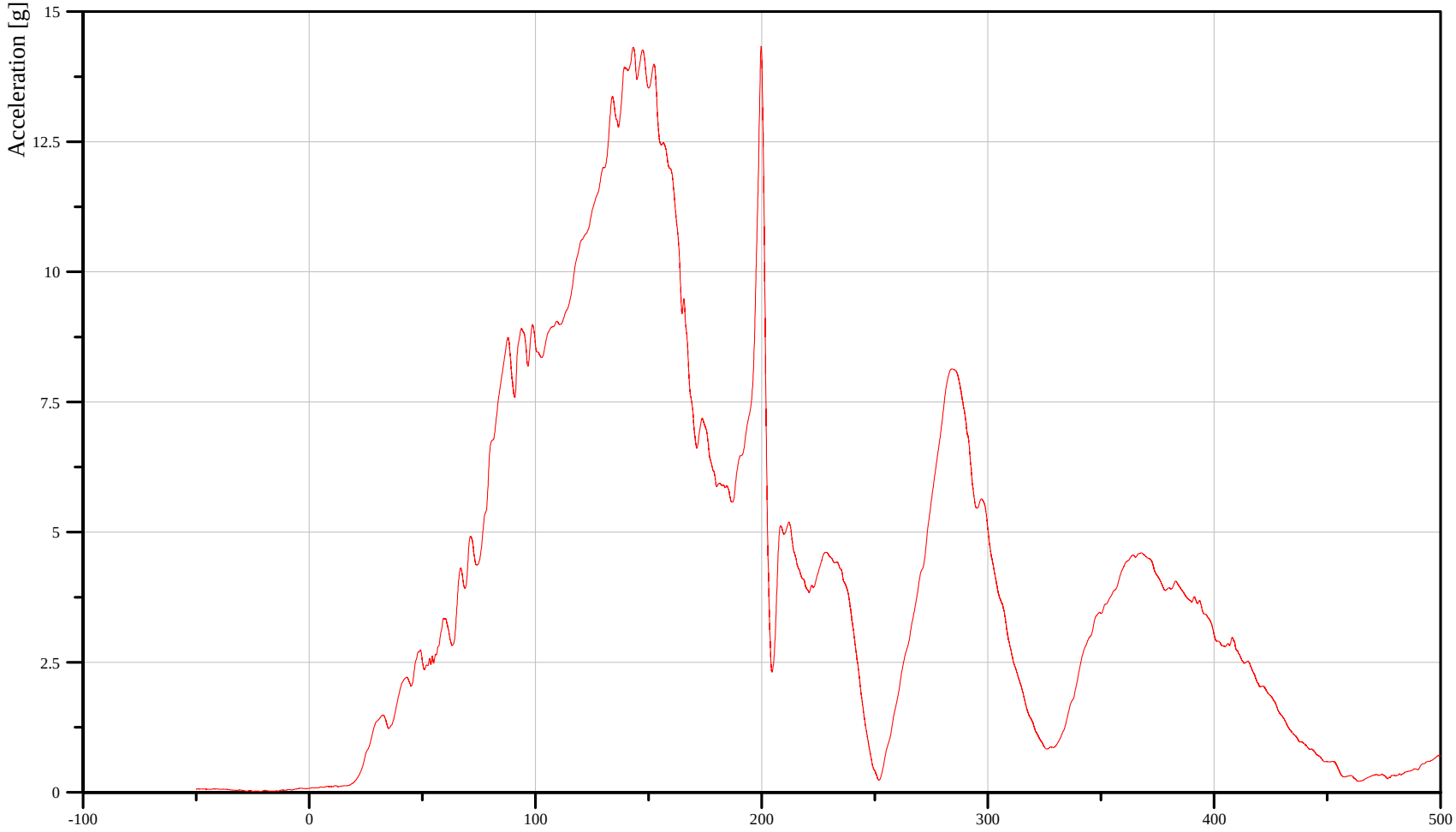
Date: 12/14/2007
Time: 9:12

11R-Left Chest Resultant Acceleration

Customer: VRTC

28CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.02 g at -21.44 ms

Max. Value
14.33 g at 199.76 ms

B-511

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

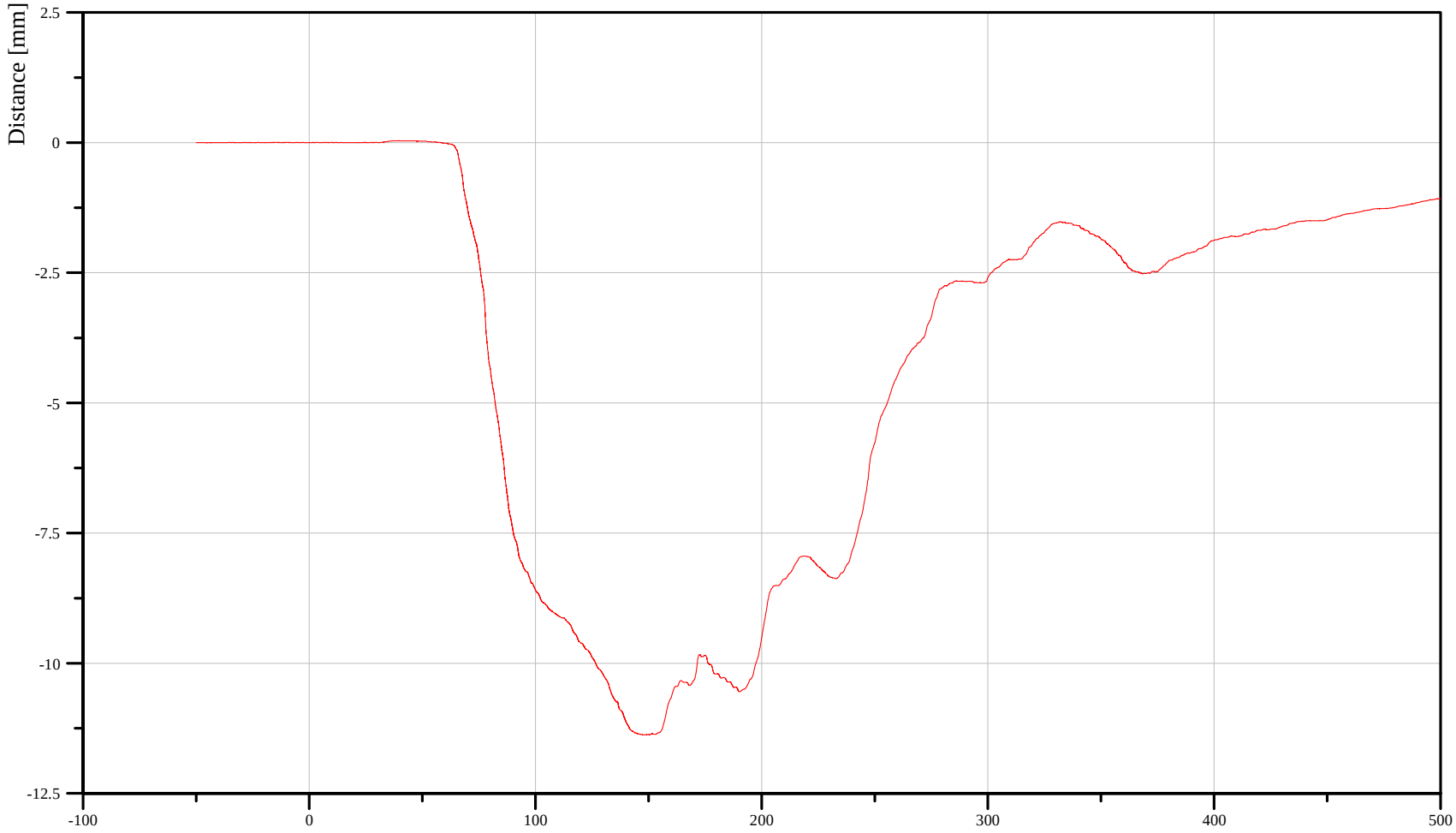
Date: 12/14/2007
Time: 9:12

11R-Left Chest X-Axis Deflection

Customer: VRTC

28CHST0000H3DSXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-11.38 mm at 147.68 ms

Max. Value
0.04 mm at 39.76 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

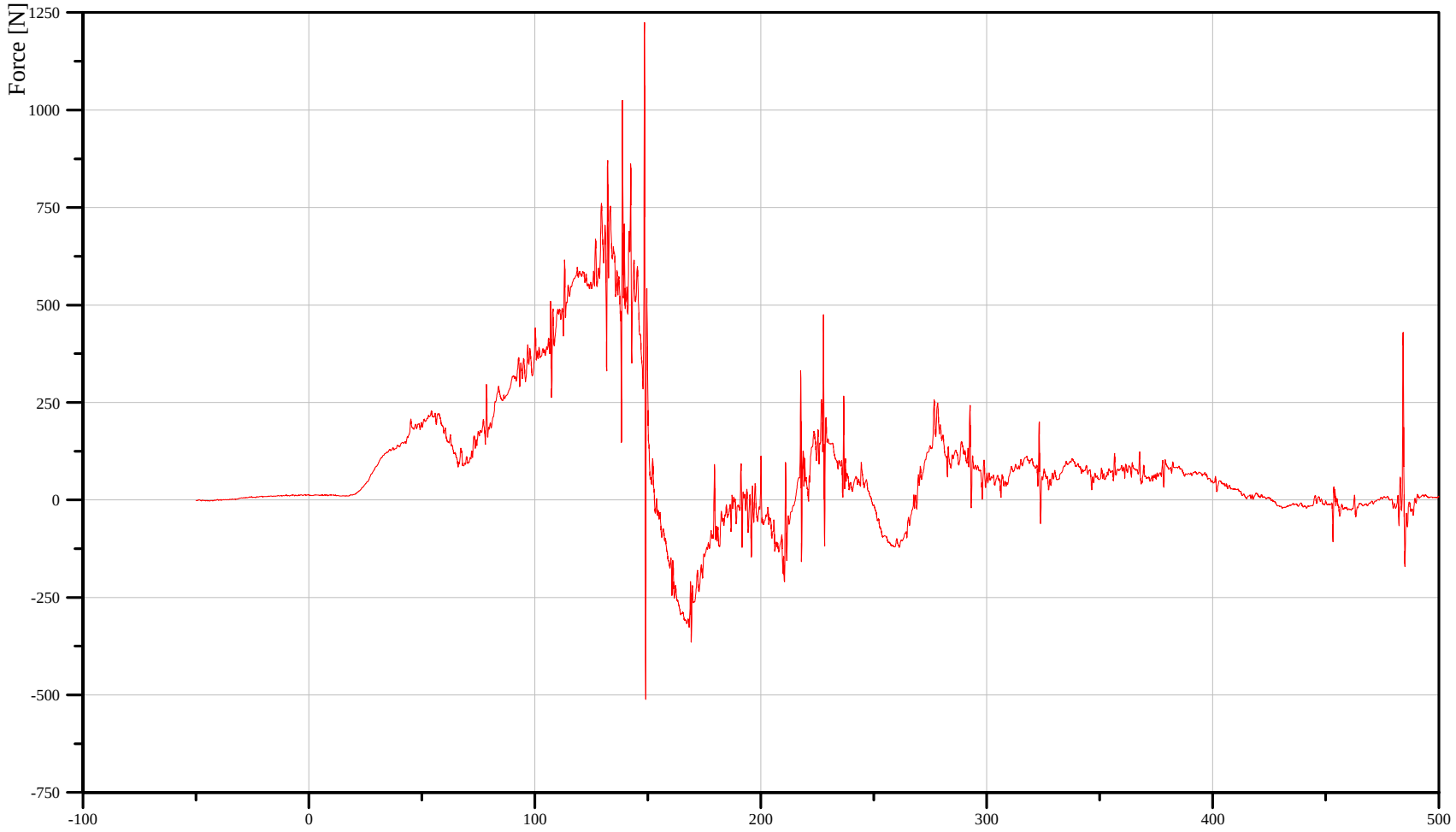
Date: 12/14/2007
Time: 9:12

11R-Left Left Femur Force Z

Customer: VRTC

28FEMRLL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-511.35 N at 149.04 ms

Max. Value
1,224.33 N at 148.56 ms

B-513

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

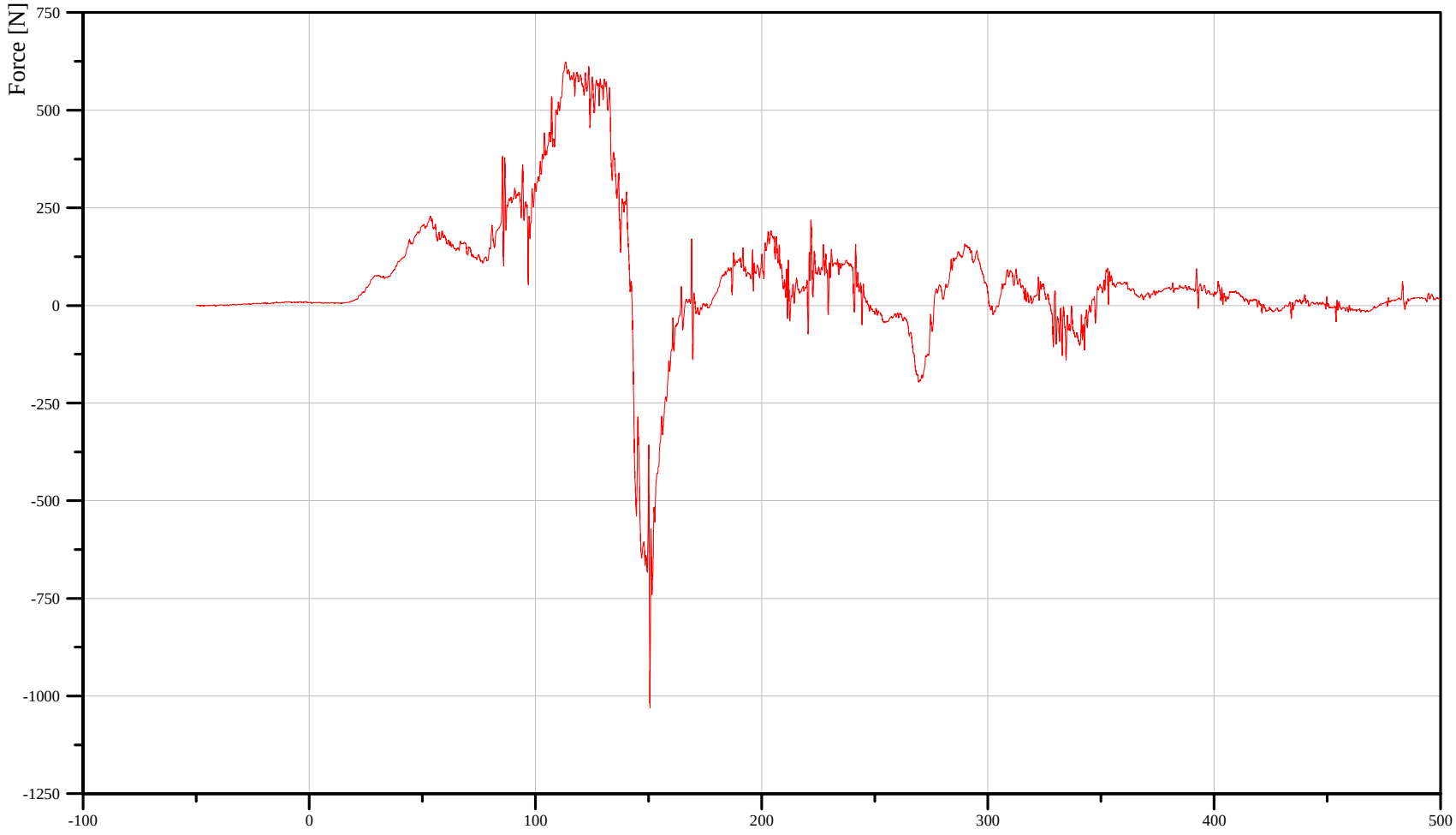
11R-Left Right Femur Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

28FEMRRL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-1,029.47 N at 150.64 ms

Max. Value
623.46 N at 113.36 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

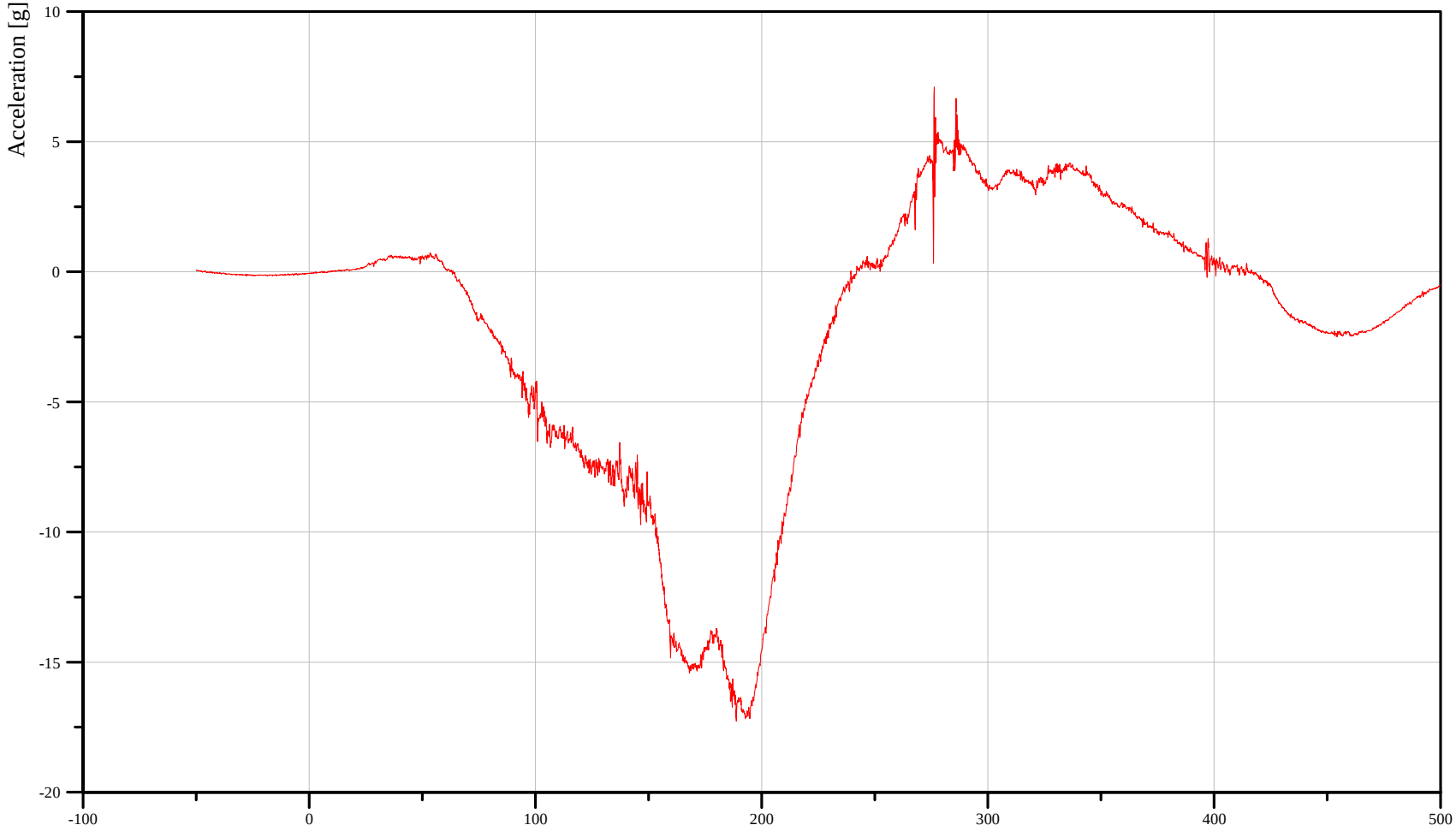
Date: 12/14/2007
Time: 9:12

11R-Right Head X-Axis Acceleration

Customer: VRTC

29HEADCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-17.26 g at 188.80 ms

Max. Value
7.09 g at 276.24 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

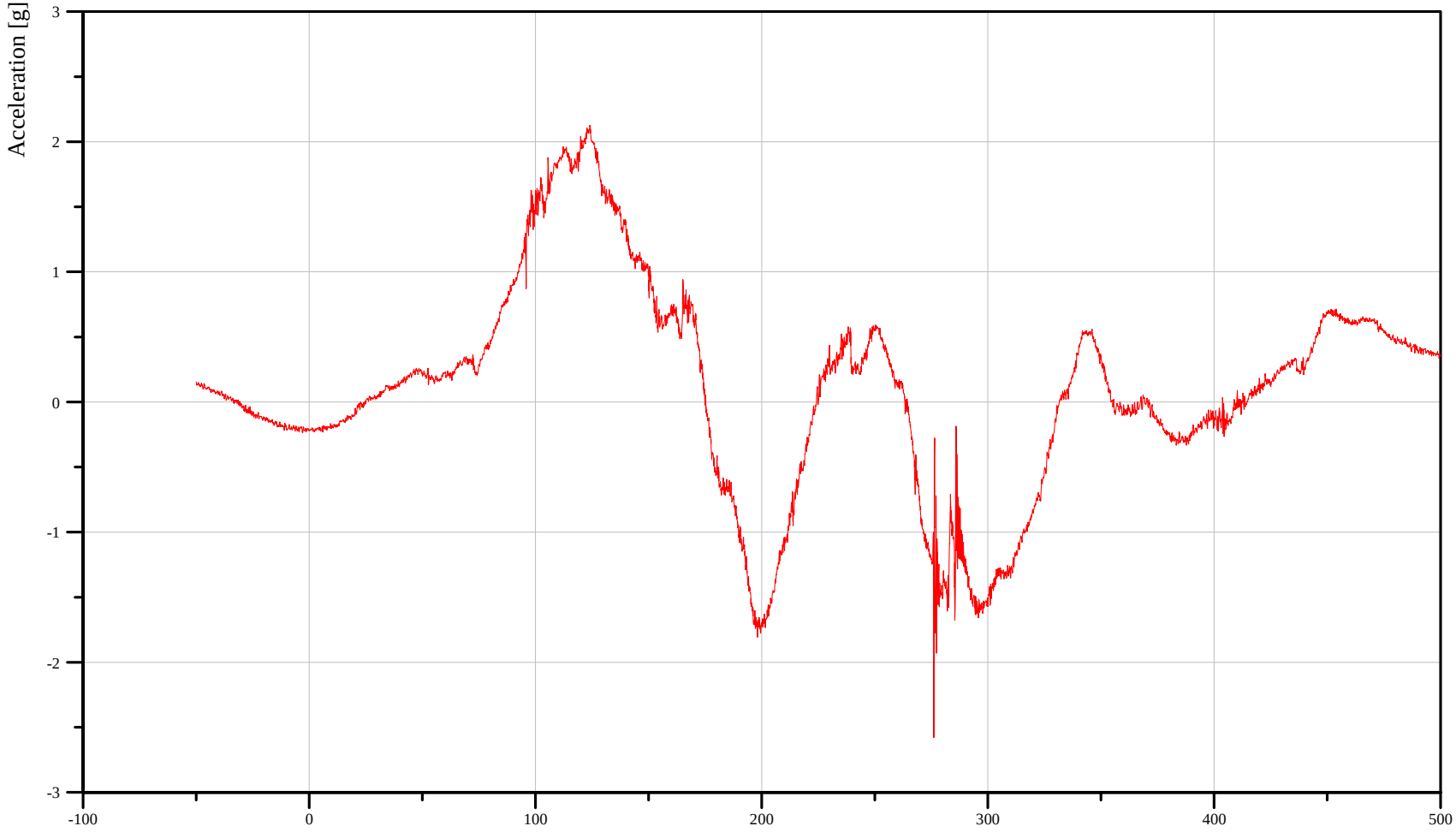
Date: 12/14/2007
Time: 9:12

11R-Right Head Y-Axis Acceleration

Customer: VRTC

29HEADCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-2.58 g at 276.08 ms

Max. Value
2.13 g at 124.08 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

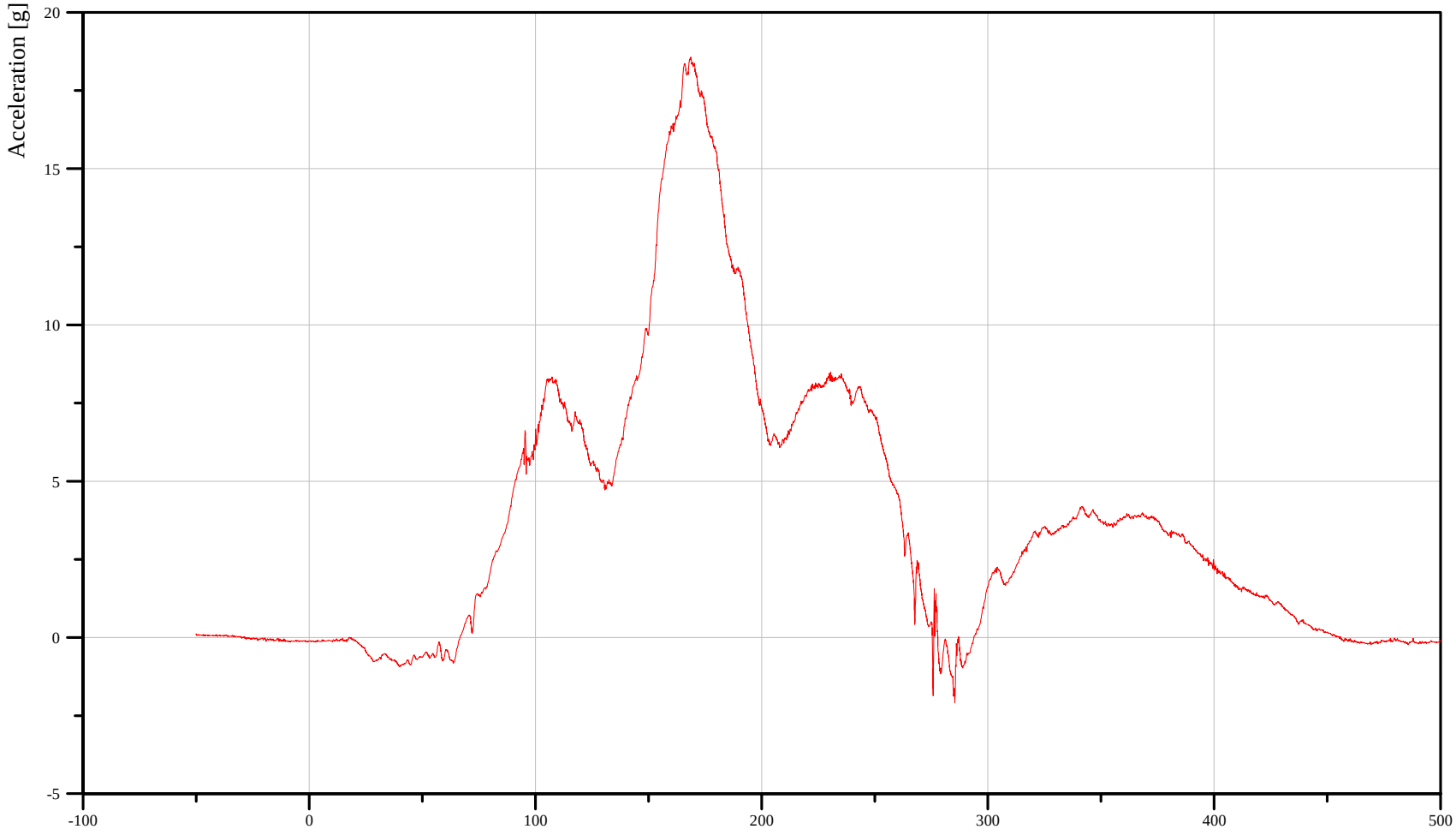
Date: 12/14/2007
Time: 9:12

11R-Right Head Z-Axis Acceleration

Customer: VRTC

29HEADCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-2.07 g at 285.44 ms

Max. Value
18.58 g at 168.64 ms

B-517

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

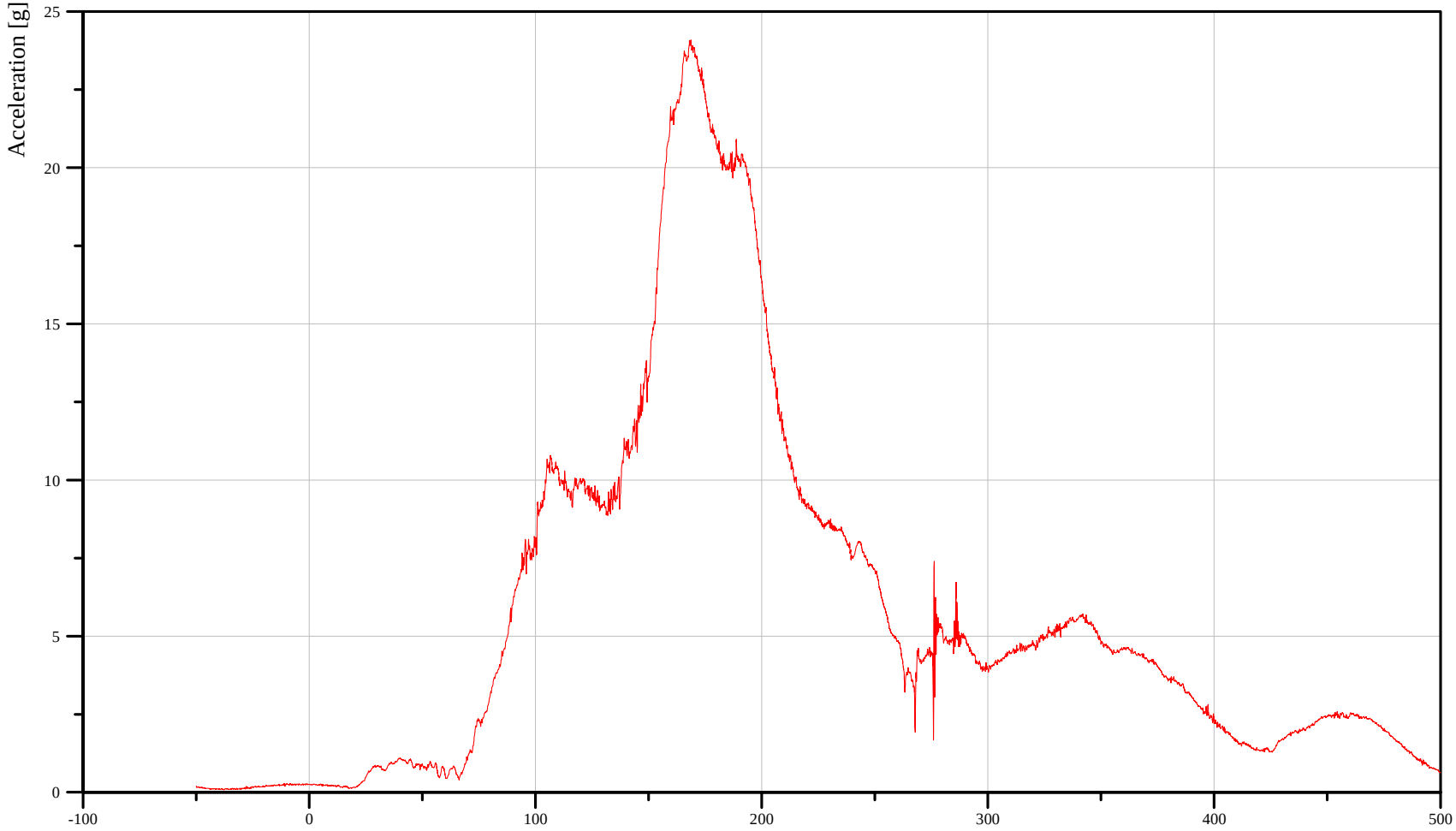
Date: 12/14/2007
Time: 9:12

11R-Right Head Resultant Acceleration

Customer: VRTC

29HEADCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.08 g at -37.60 ms

Max. Value
24.09 g at 168.64 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

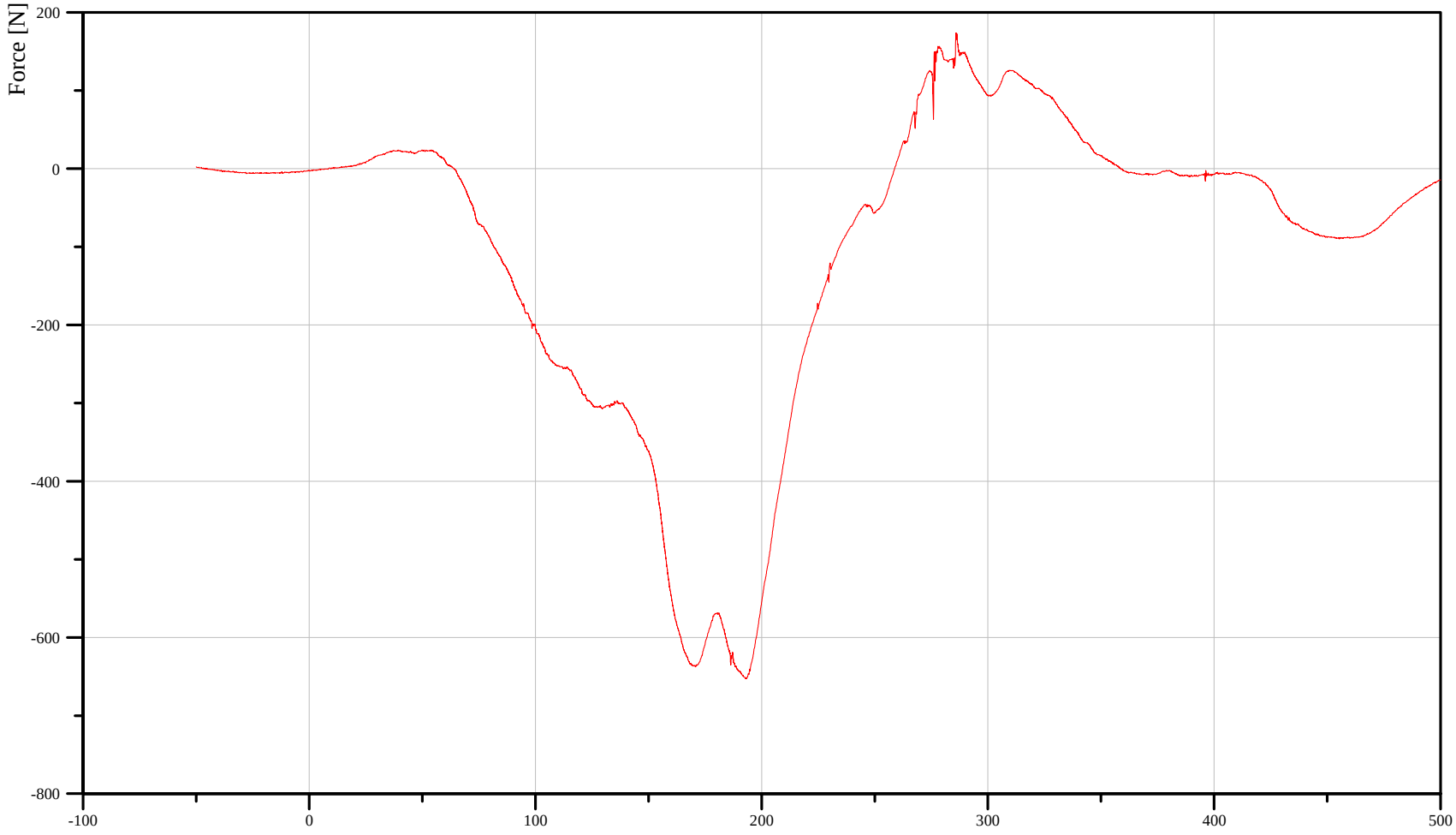
11R-Right Neck Force X

Date: 12/14/2007
Time: 9:12

Customer: VRTC

29NECKUP00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-652.85 N at 193.28 ms

Max. Value
174.02 N at 285.84 ms

B-519

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

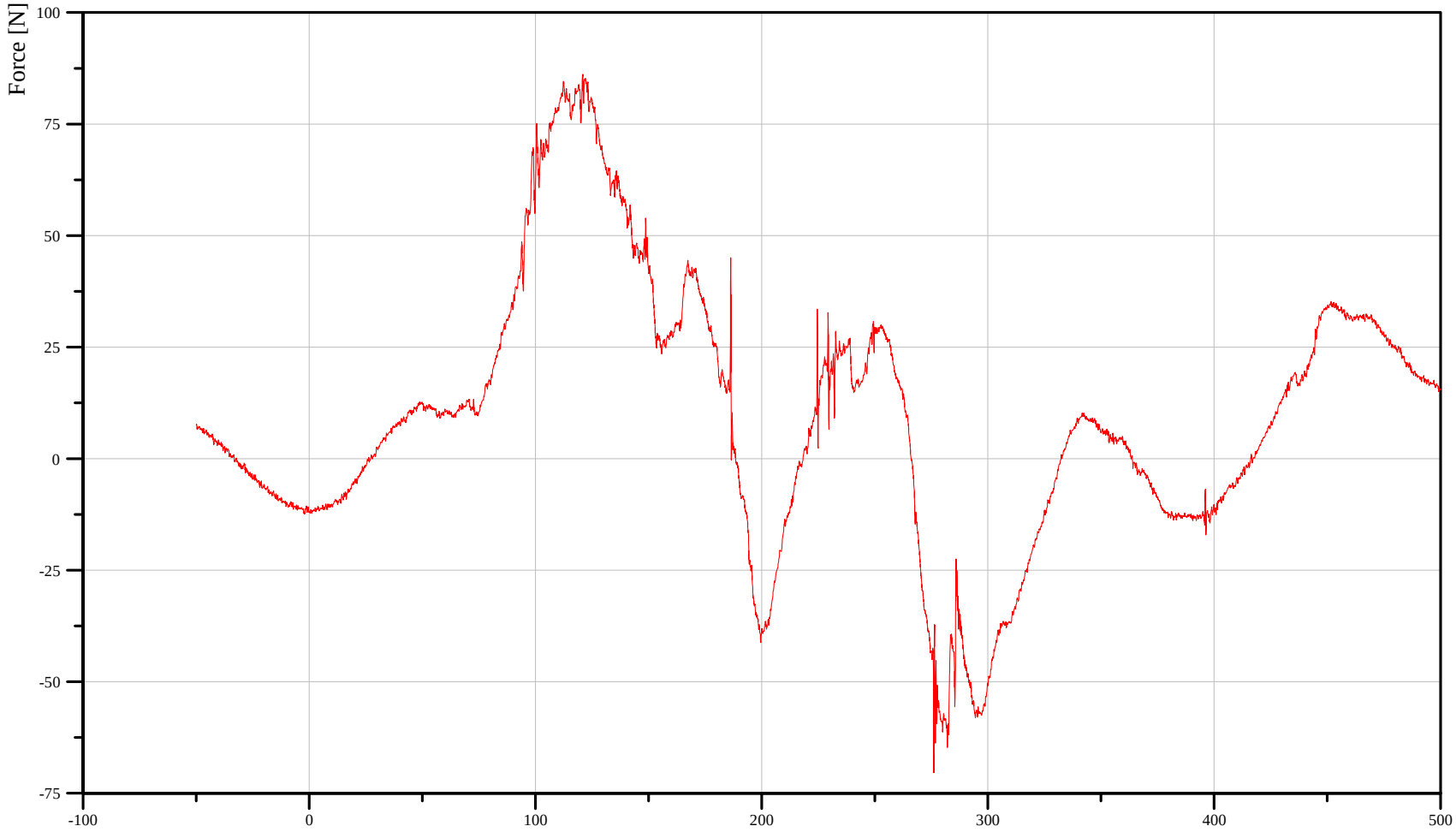
11R-Right Neck Force Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

29NECKUP00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-70.35 N at 276.08 ms

Max. Value
86.10 N at 120.88 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

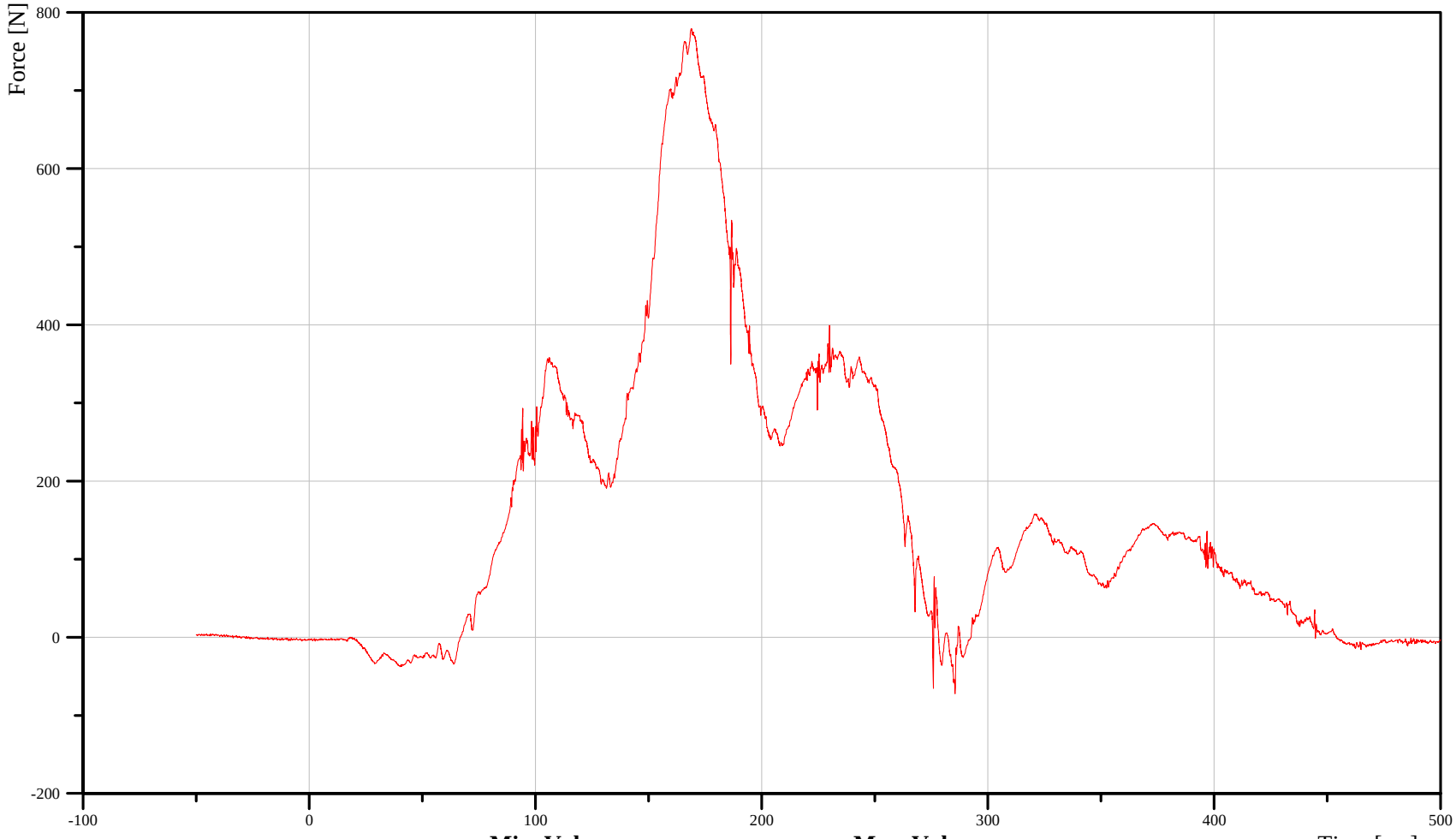
11R-Right Neck Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

29NECKUP00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-72.42 N at 285.52 ms

Max. Value
779.16 N at 168.96 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

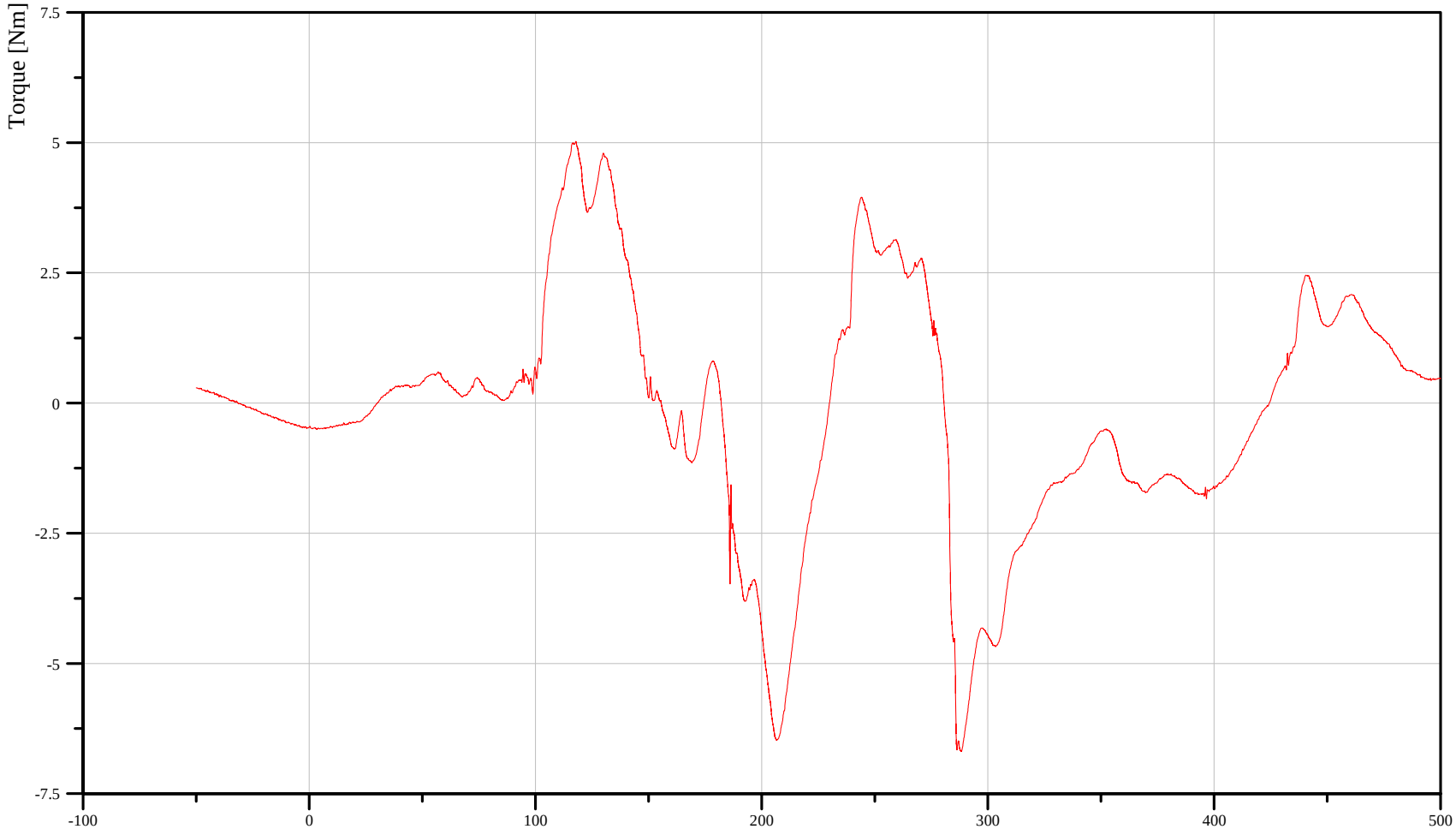
11R-Right Neck Moment X

Date: 12/14/2007
Time: 9:12

Customer: VRTC

29NECKUP00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-6.69 Nm at 288.24 ms

Max. Value
5.03 Nm at 117.84 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

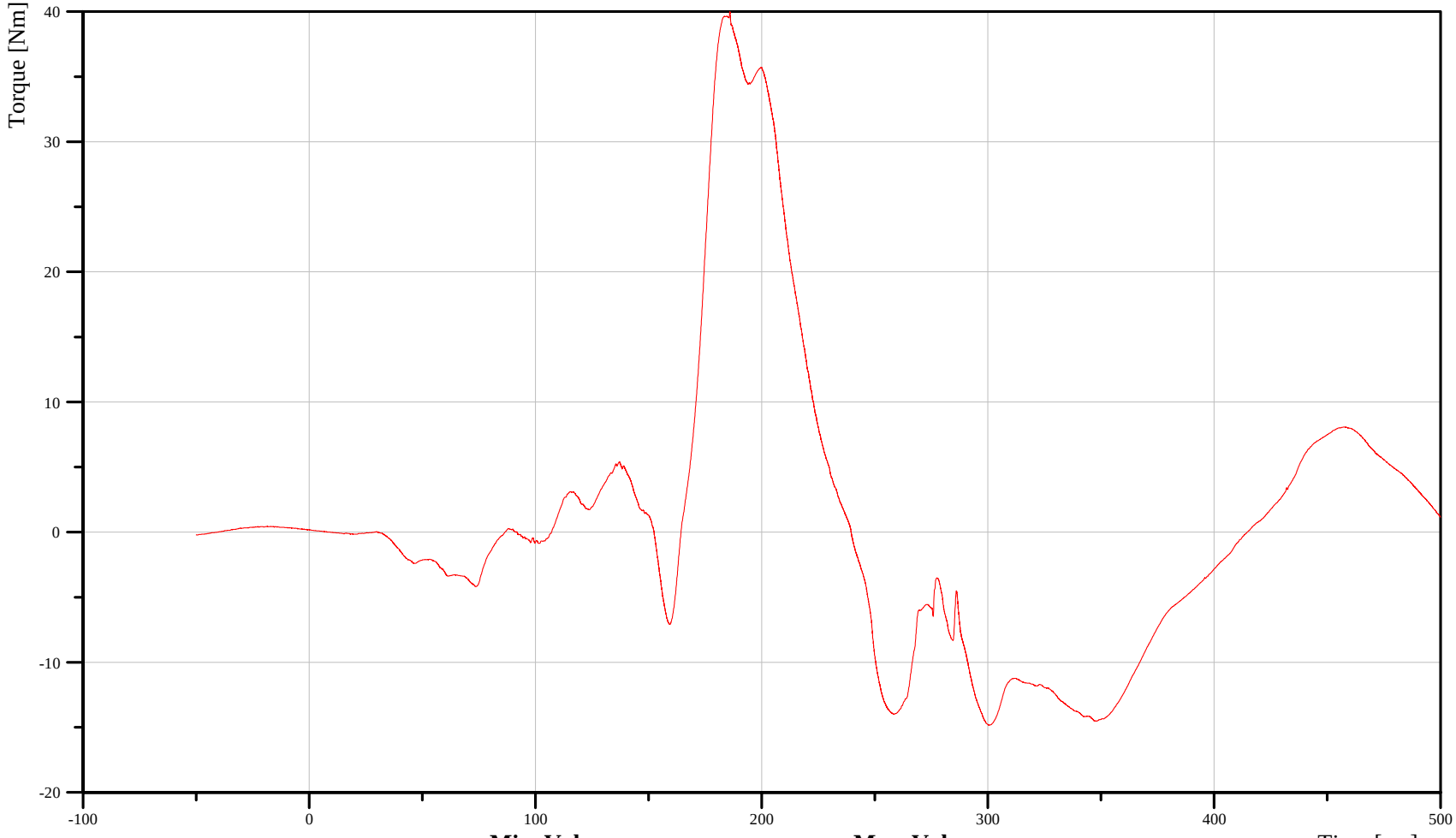
Date: 12/14/2007
Time: 9:12

11R-Right Neck Moment Y

Customer: VRTC

29NECKUP00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-14.84 Nm at 300.48 ms

Max. Value
40.00 Nm at 186.00 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

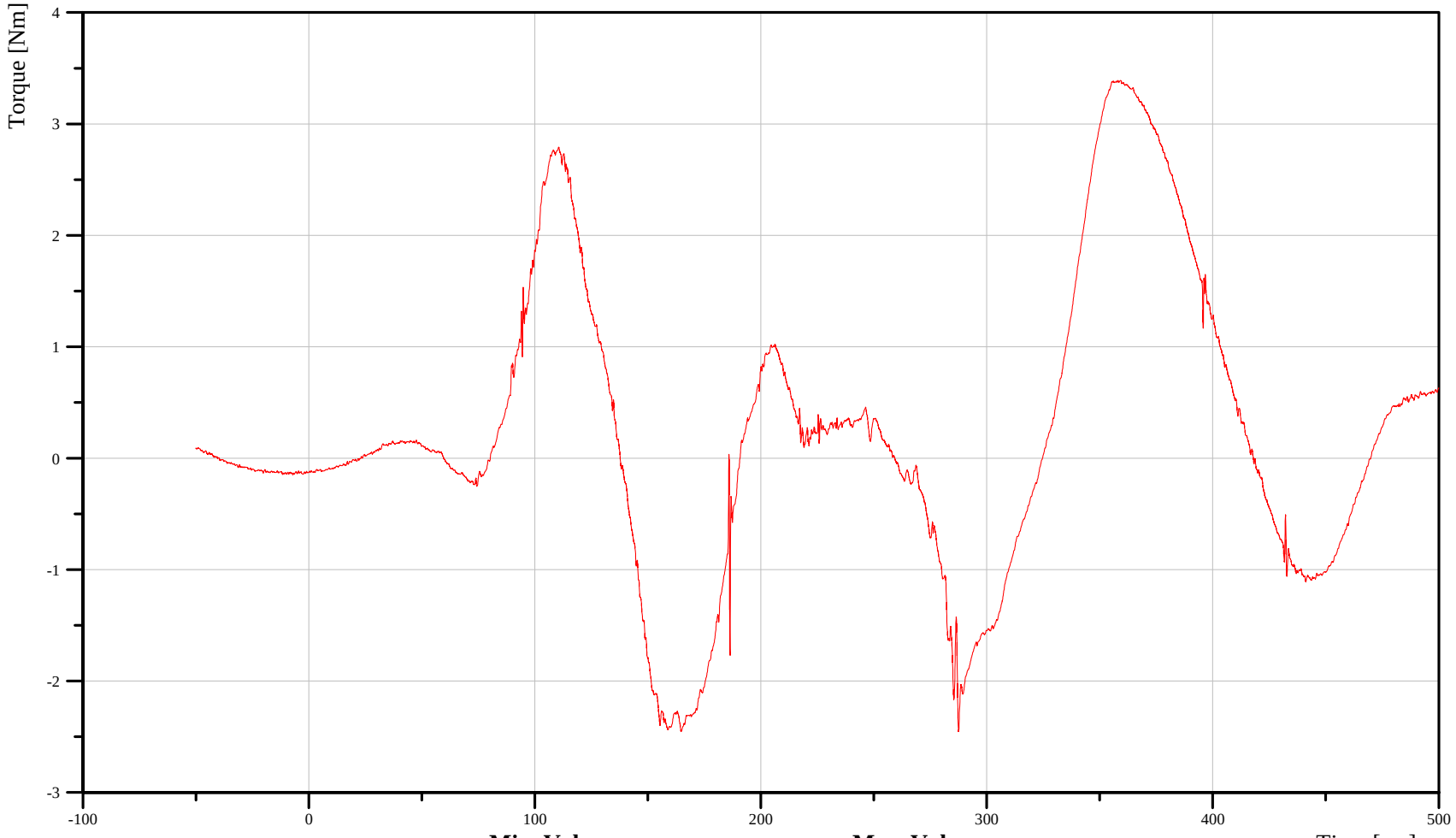
11R-Right Neck Moment Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

29NECKUP00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-2.45 Nm at 287.52 ms

Max. Value
3.39 Nm at 359.12 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

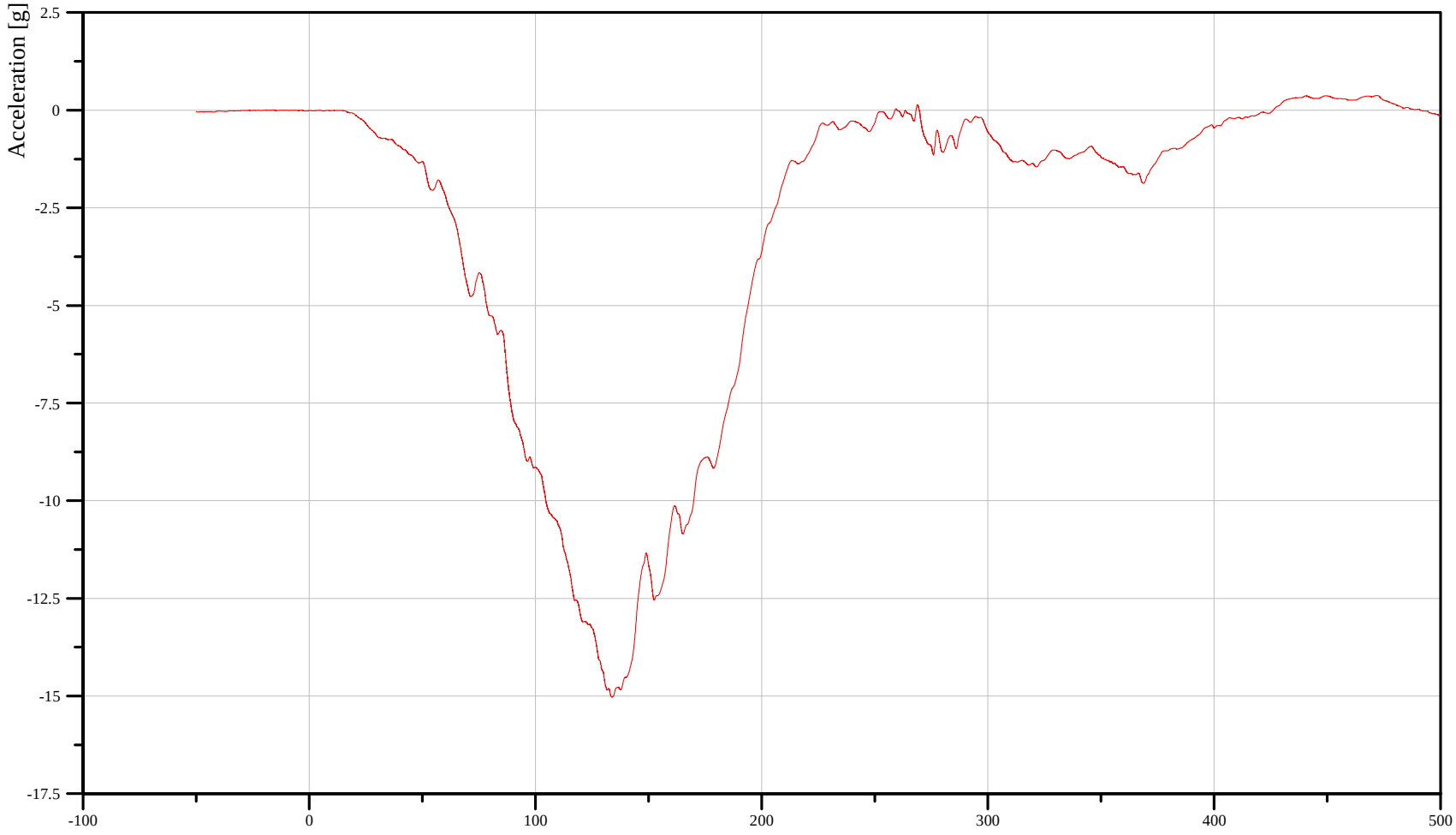
Date: 12/14/2007
Time: 9:12

11R-Right Chest X-Axis Acceleration

Customer: VRTC

29CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-15.03 g at 133.84 ms

Max. Value
0.37 g at 472.32 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

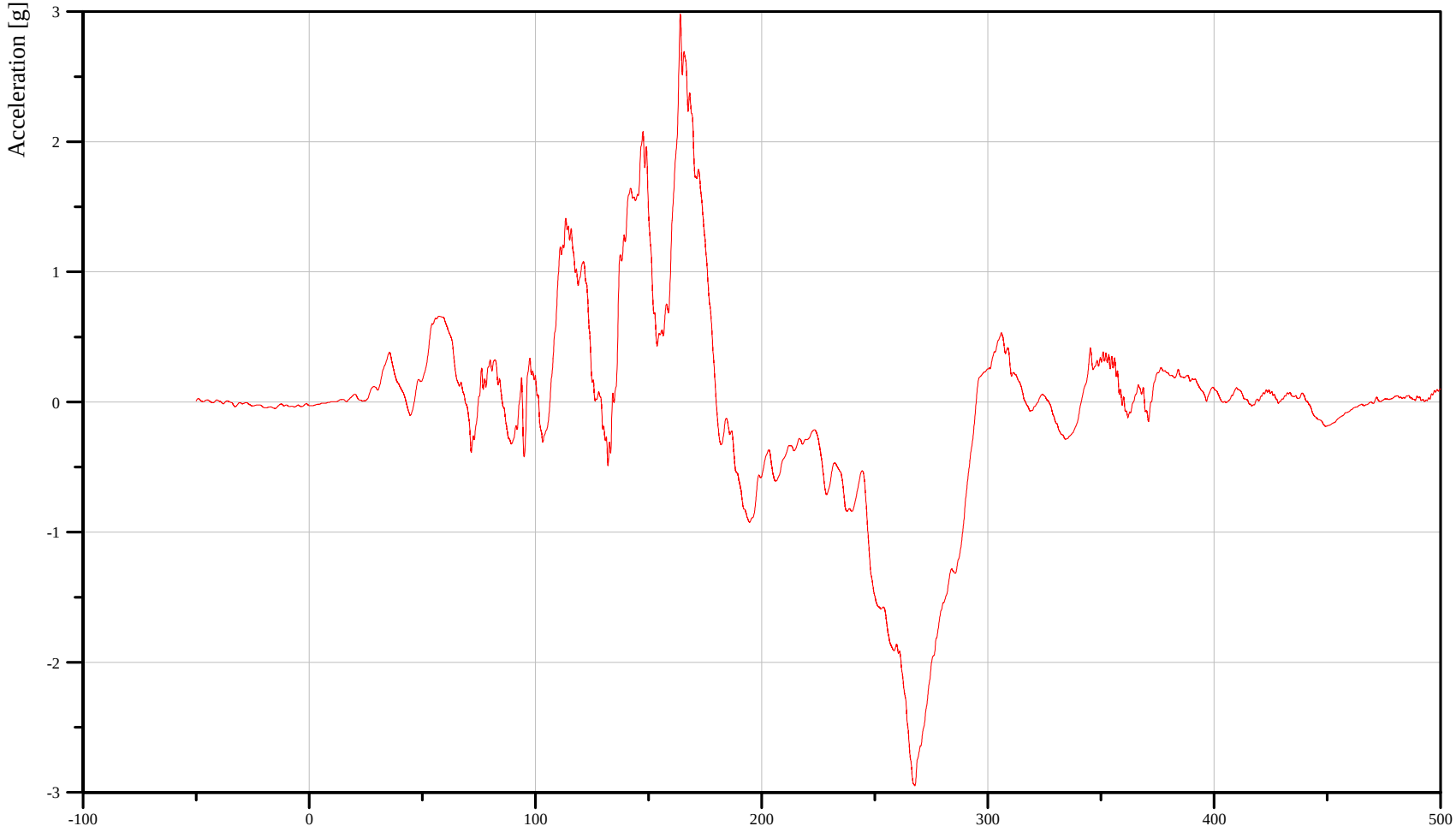
Date: 12/14/2007
Time: 9:12

11R-Right Chest Y-Axis Acceleration

Customer: VRTC

29CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-2.95 g at 267.76 ms

Max. Value
2.98 g at 164.08 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

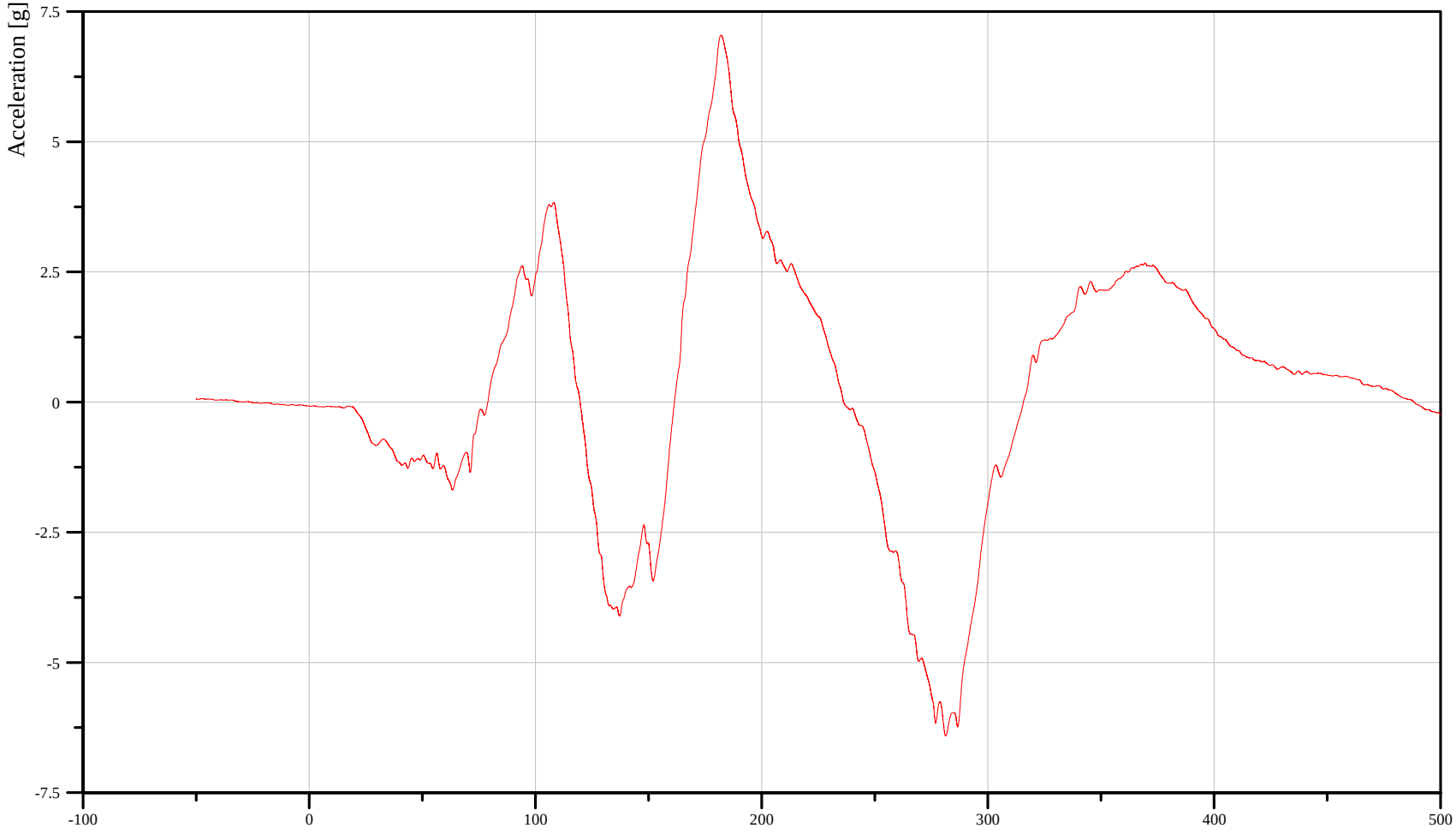
Date: 12/14/2007
Time: 9:12

11R-Right Chest Z-Axis Acceleration

Customer: VRTC

29CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-6.41 g at 281.36 ms

Max. Value
7.05 g at 182.00 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

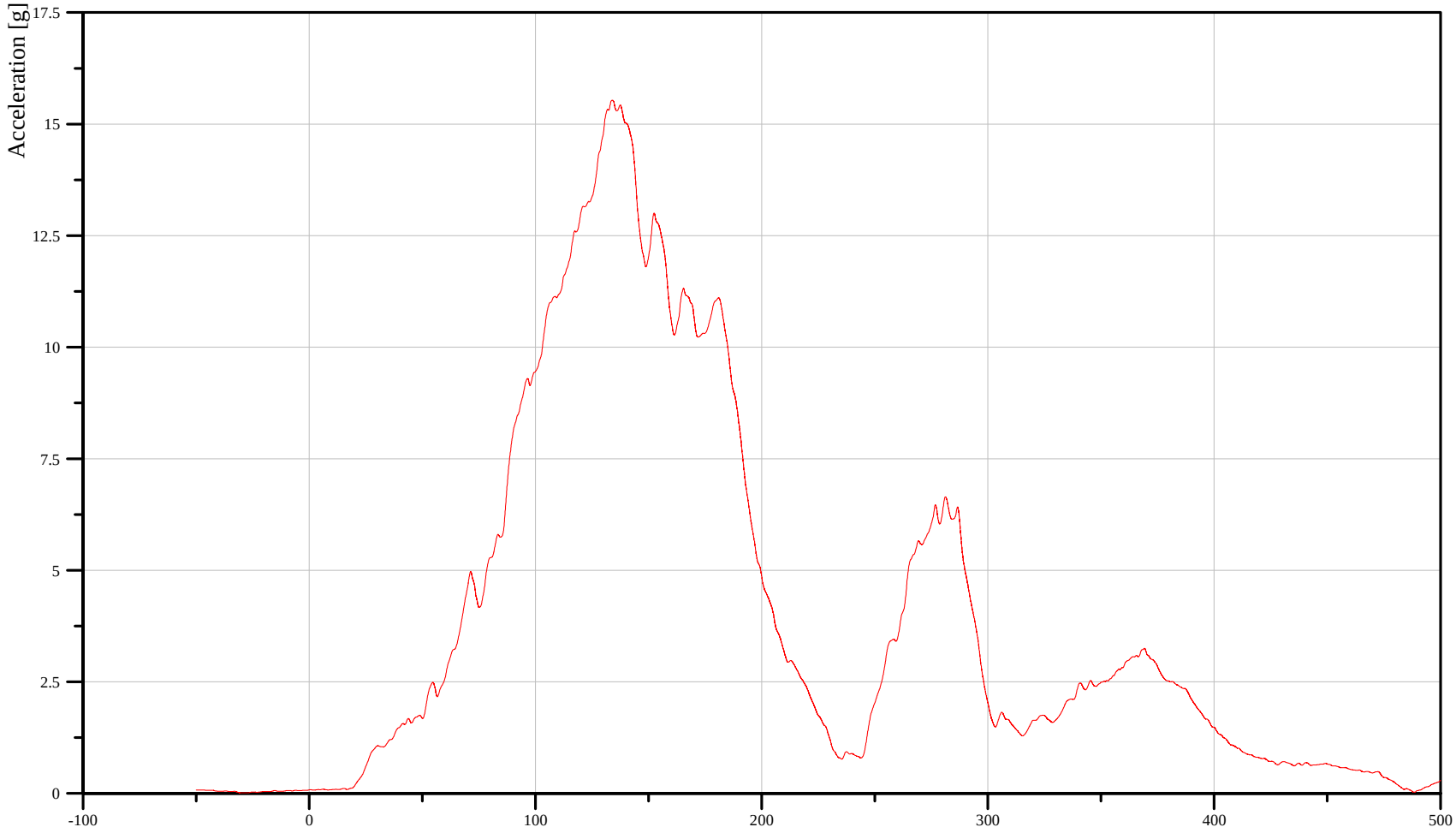
Date: 12/14/2007
Time: 9:12

11R-Right Chest Resultant Acceleration

Customer: VRTC

29CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.01 g at -28.48 ms

Max. Value
15.54 g at 133.92 ms

B-528

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

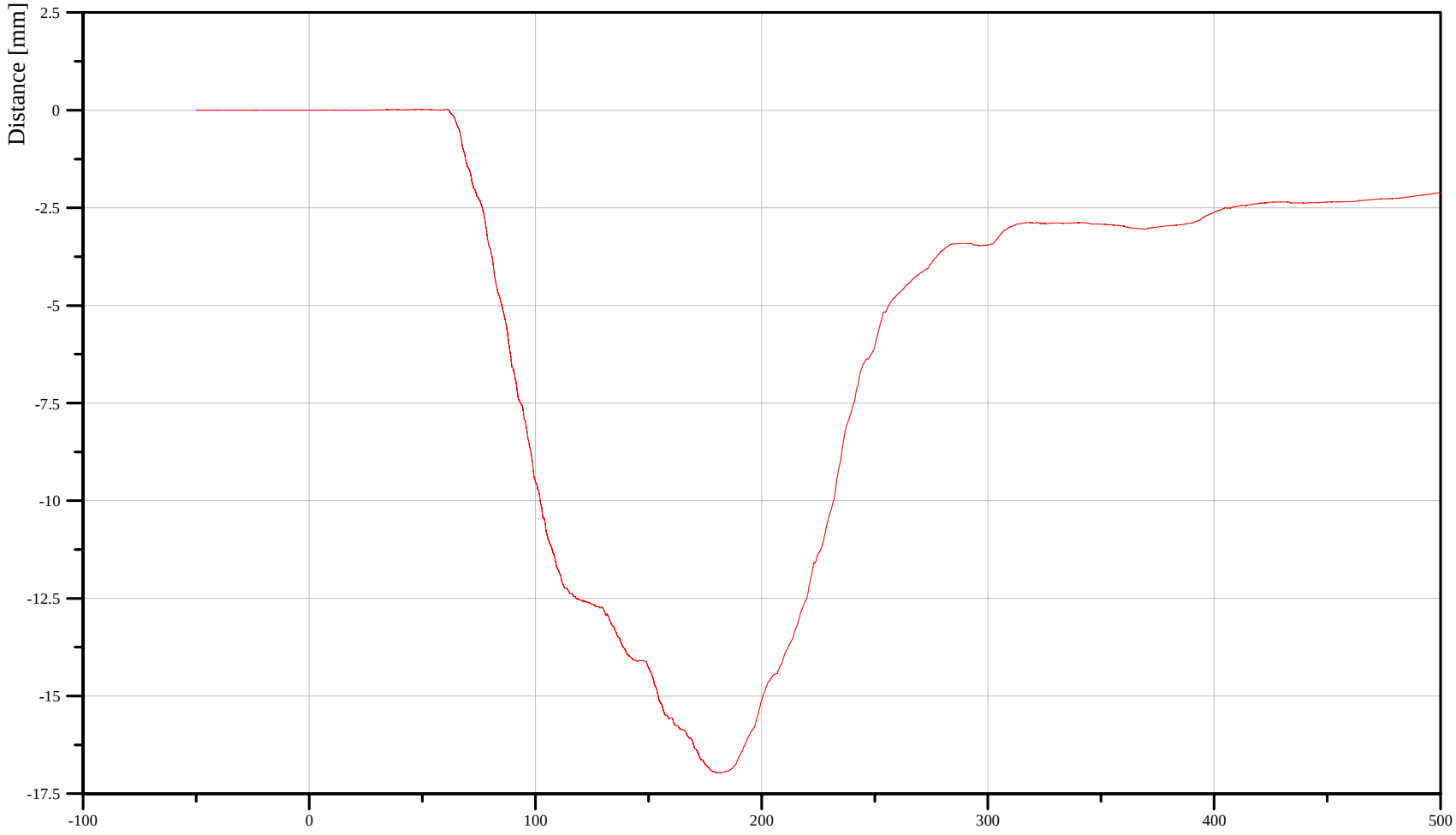
Date: 12/14/2007
Time: 9:12

11R-Right Chest X-Axis Deflection

Customer: VRTC

29CHST0000H3DSXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-16.97 mm at 181.20 ms

Max. Value
0.02 mm at 48.56 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

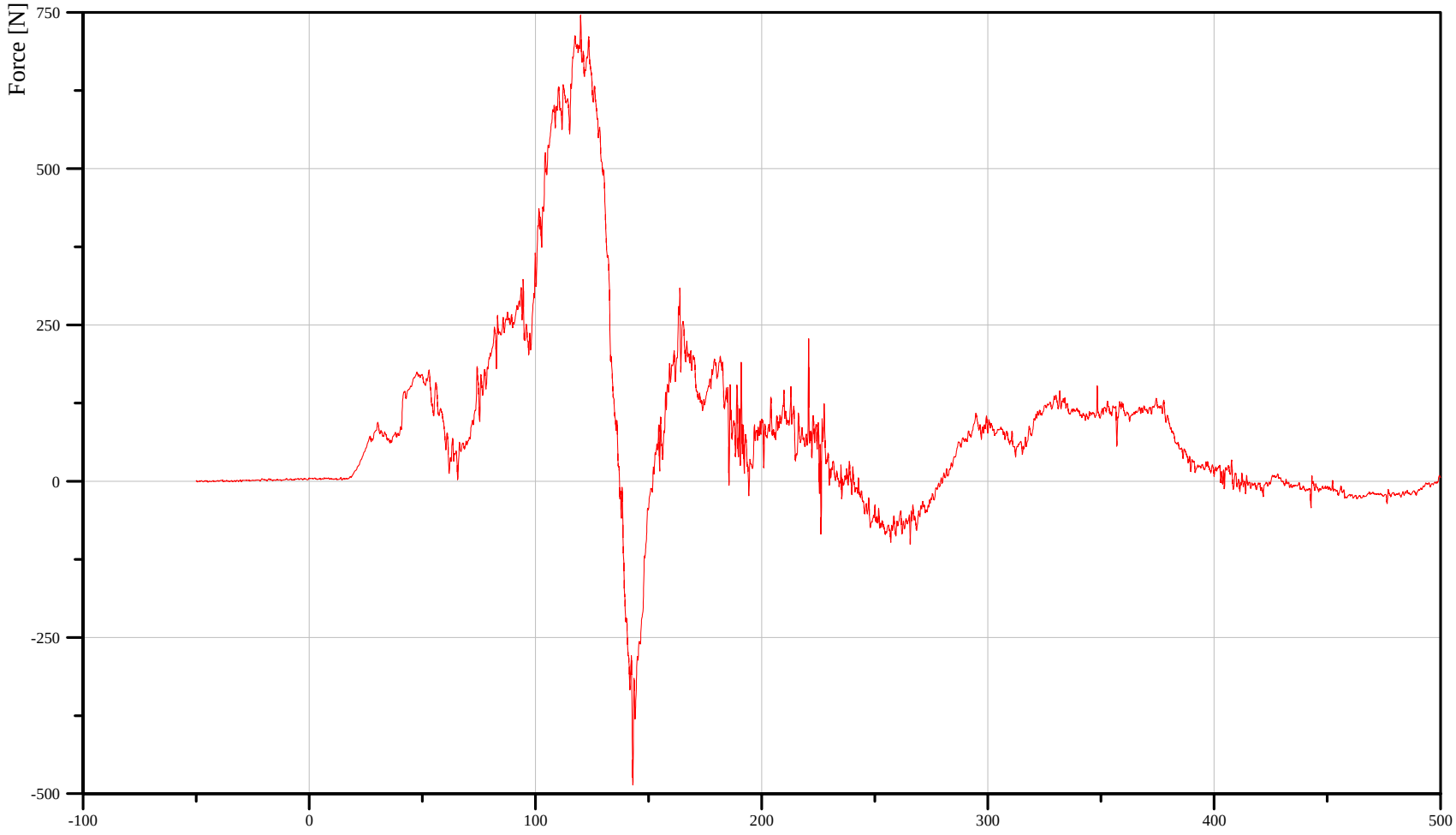
Date: 12/14/2007
Time: 9:12

11R-Right Left Femur Force Z

Customer: VRTC

29FEMRLL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value	Max. Value
-485.96 N at 143.04 ms	745.23 N at 120.00 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

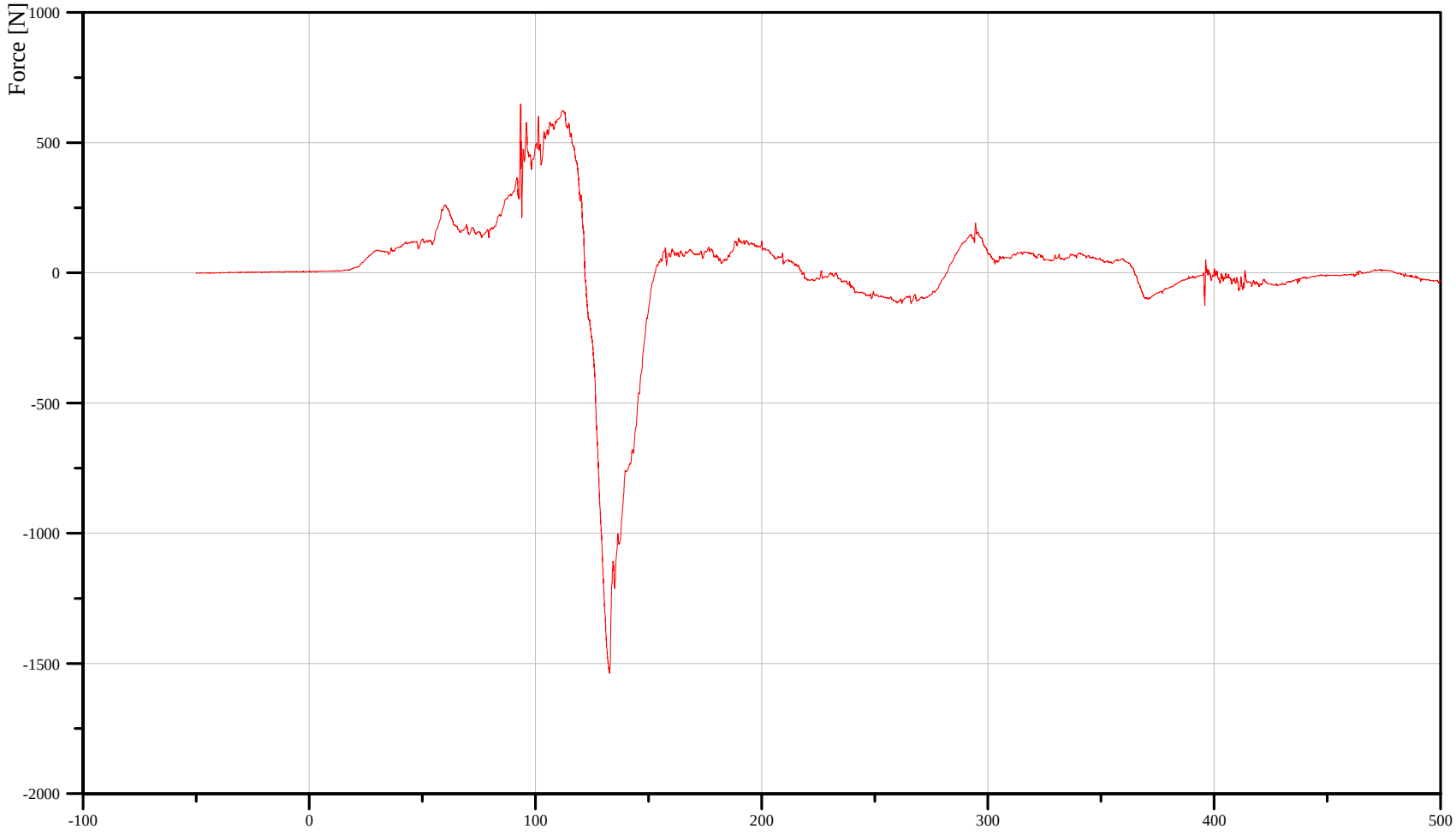
Date: 12/14/2007
Time: 9:12

11R-Right Right Femur Force Z

Customer: VRTC

29FEMRRL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-1,537.98 N at 132.80 ms

Max. Value
649.09 N at 93.44 ms

B-531

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

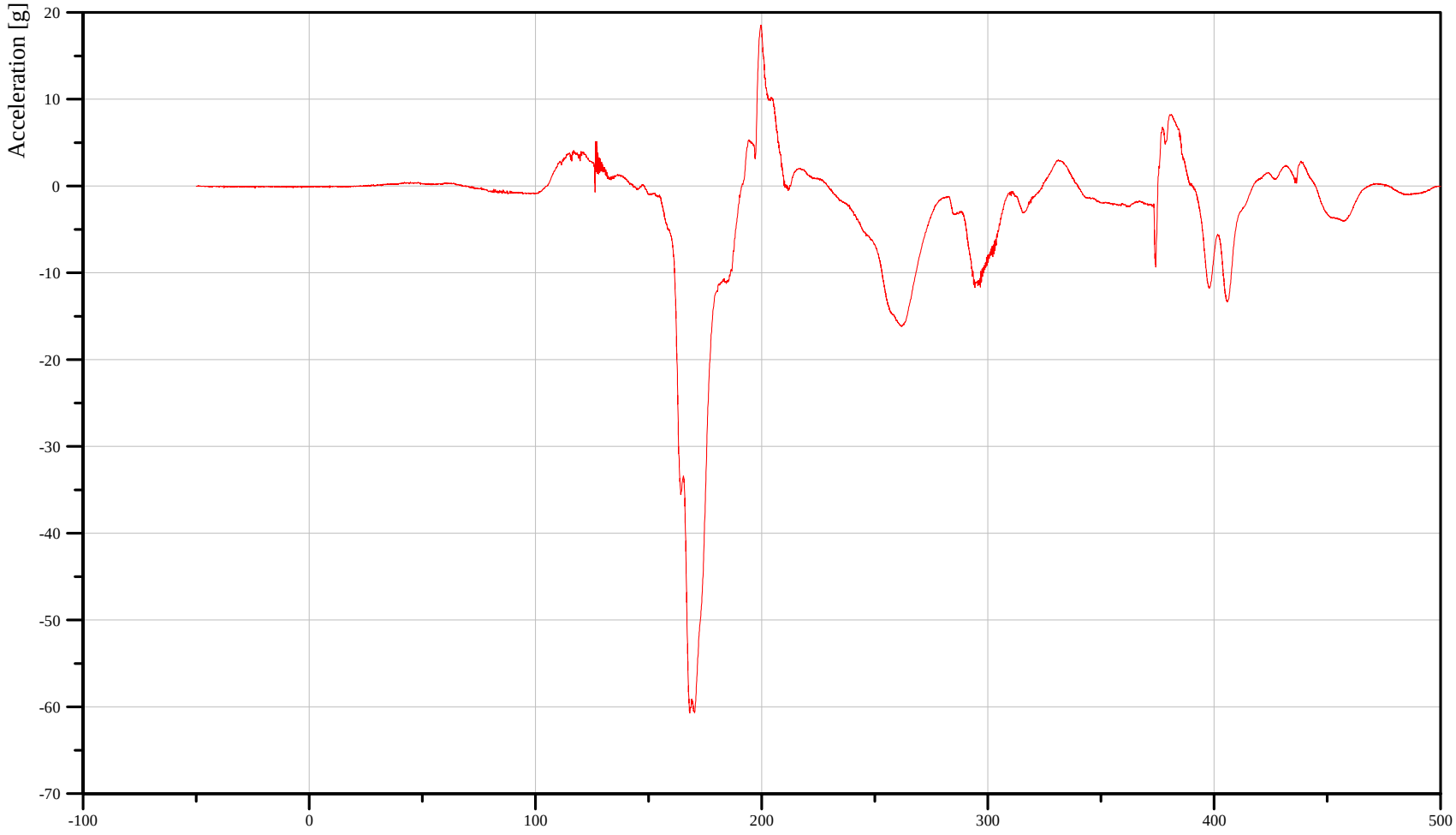
Date: 12/14/2007
Time: 9:12

12L-Left Head X-Axis Acceleration

Customer: VRTC

31HEADCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-60.70 g at 168.24 ms

Max. Value
18.54 g at 199.68 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

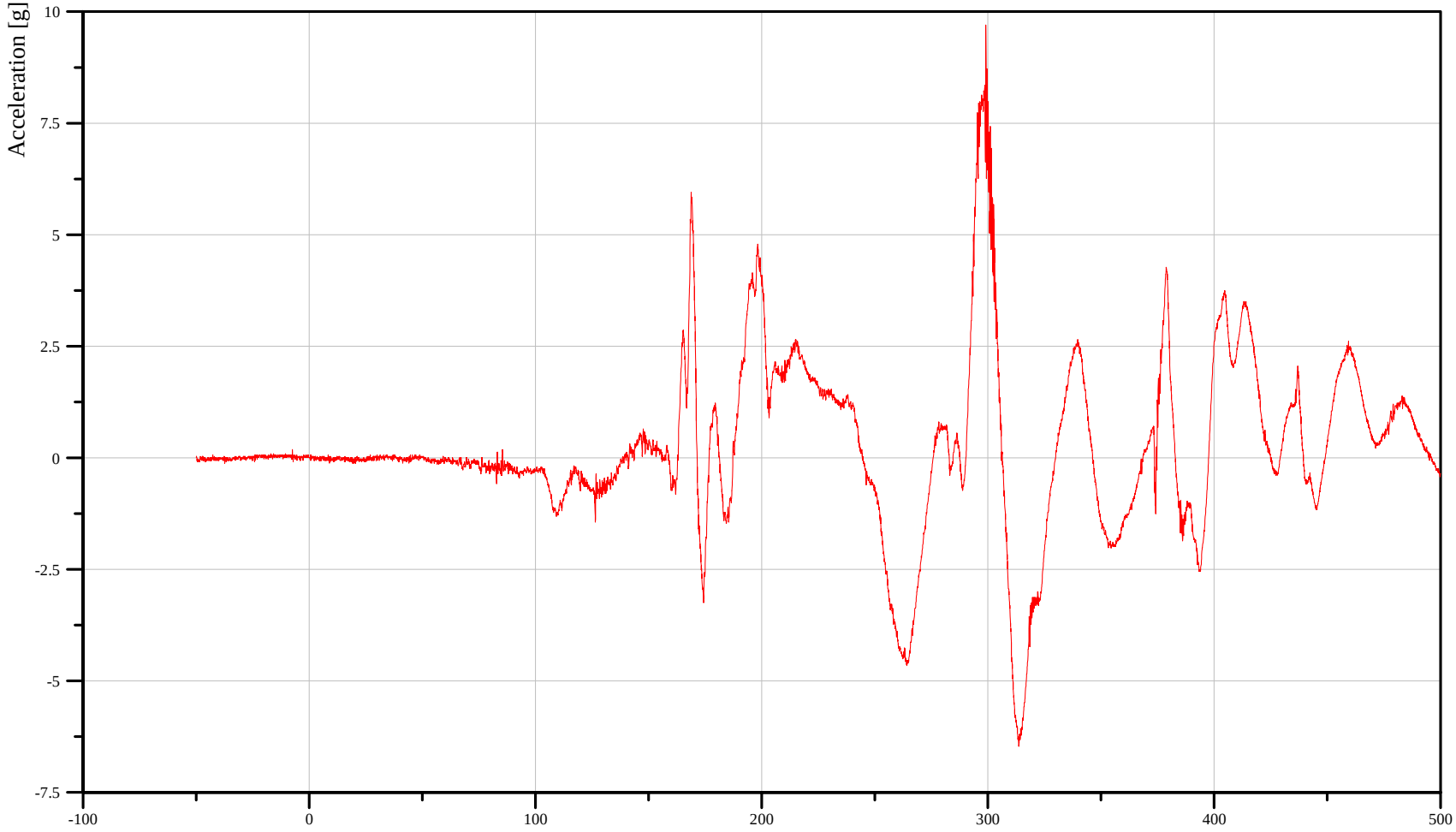
Date: 12/14/2007
Time: 9:12

12L-Left Head Y-Axis Acceleration

Customer: VRTC

31HEADCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-6.47 g at 313.60 ms

Max. Value
9.70 g at 299.12 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

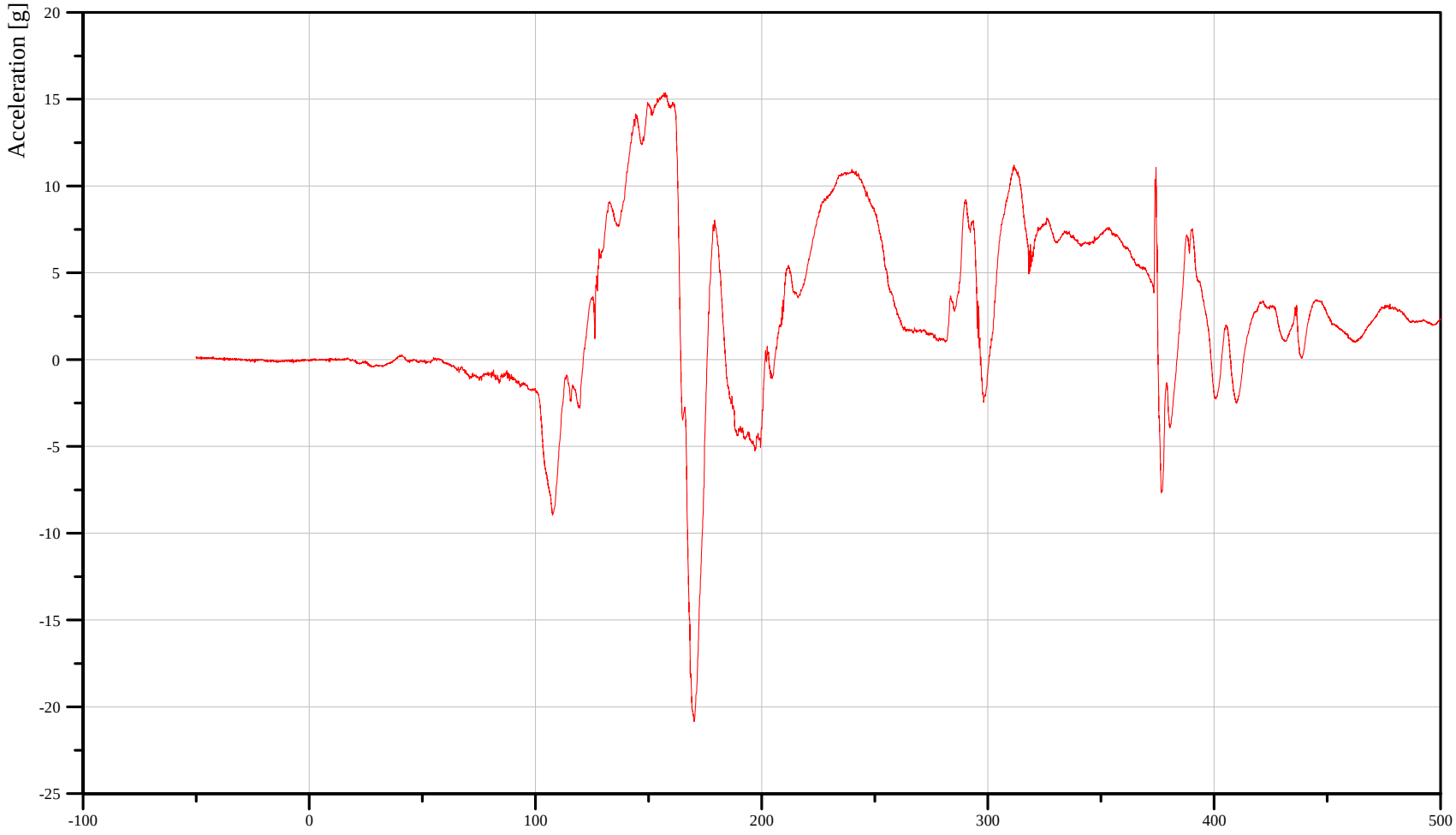
Date: 12/14/2007
Time: 9:12

12L-Left Head Z-Axis Acceleration

Customer: VRTC

31HEADCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-20.83 g at 170.16 ms

Max. Value
15.38 g at 157.44 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

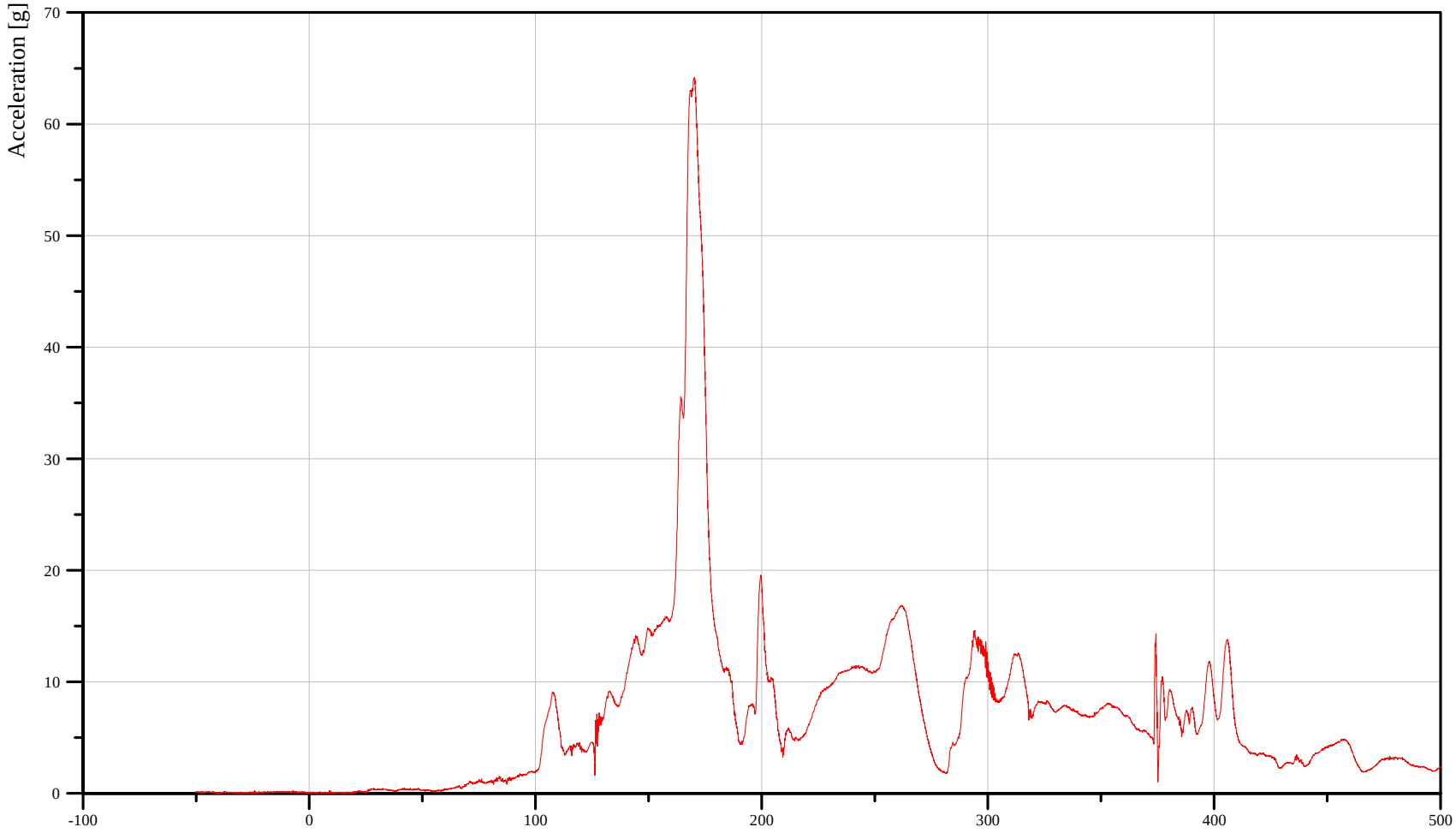
Date: 12/14/2007
Time: 9:12

12L-Left Head Resultant Acceleration

Customer: VRTC

31HEADCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.01 g at -31.84 ms

Max. Value
64.19 g at 170.32 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

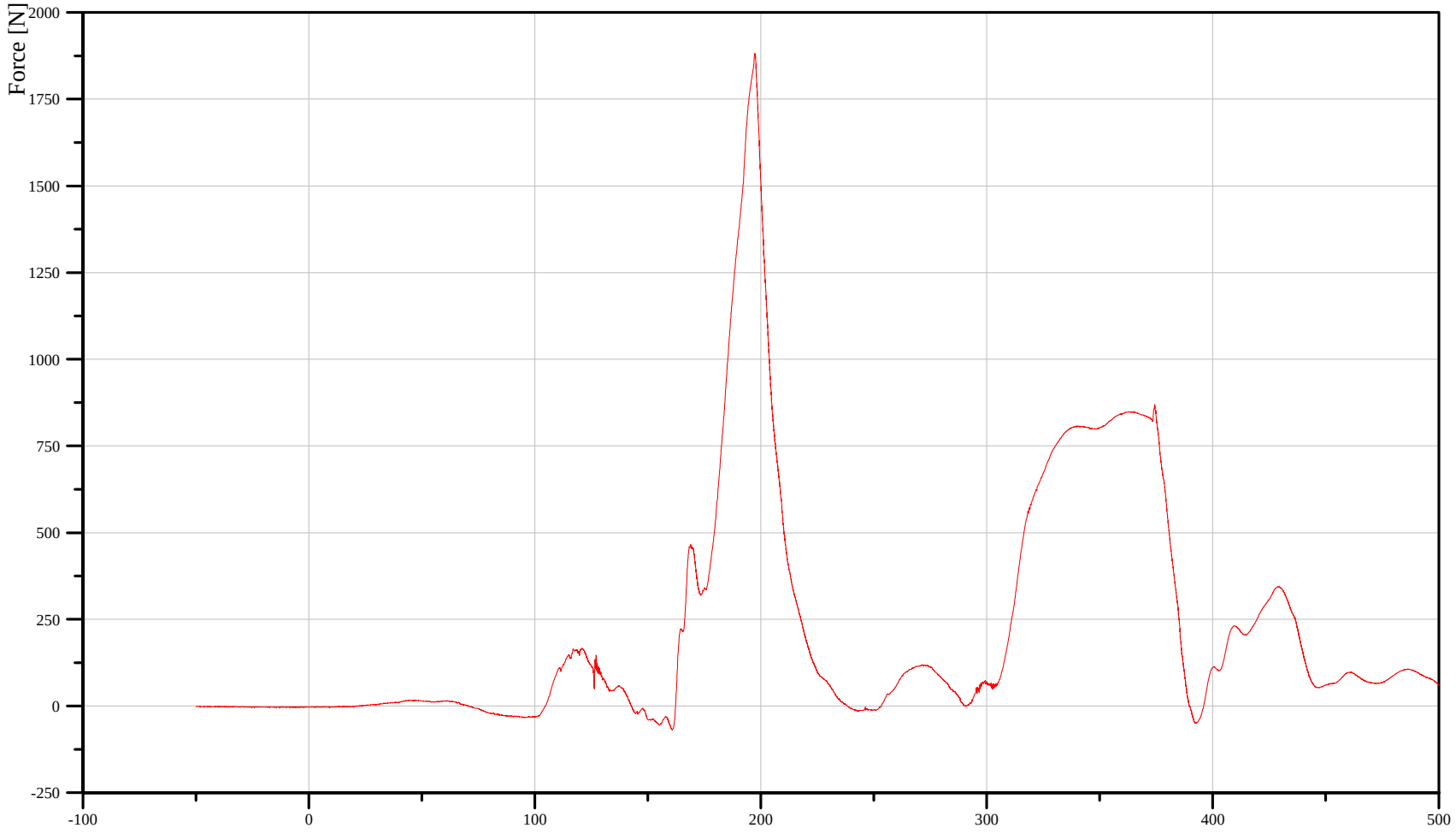
Date: 12/14/2007
Time: 9:12

12L-Left Neck Force X

Customer: VRTC

31NECKUP00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-68.12 N at 160.88 ms

Max. Value
1,882.09 N at 197.36 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

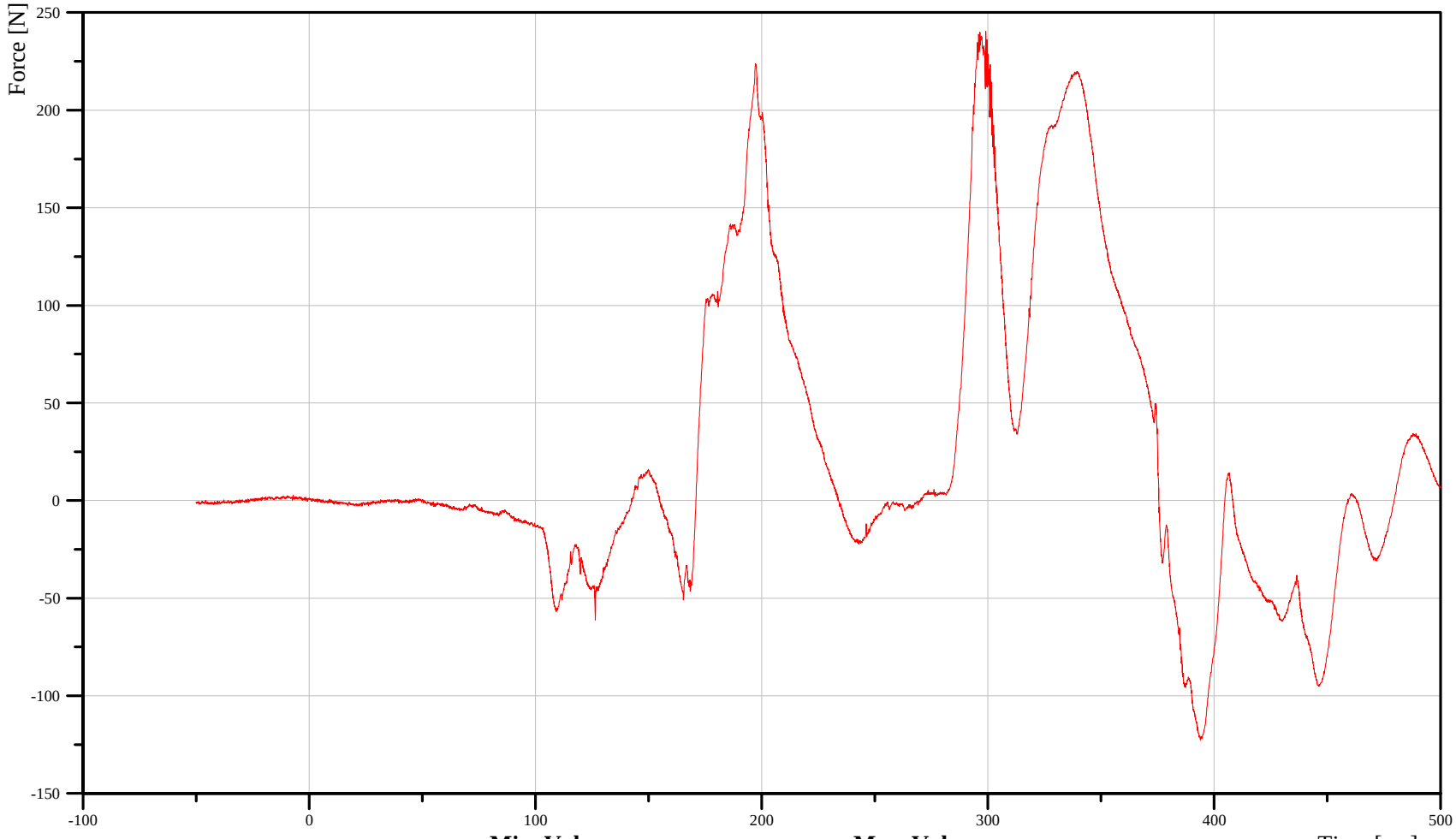
12L-Left Neck Force Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

31NECKUP00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-122.43 N at 393.92 ms

Max. Value
240.40 N at 299.12 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

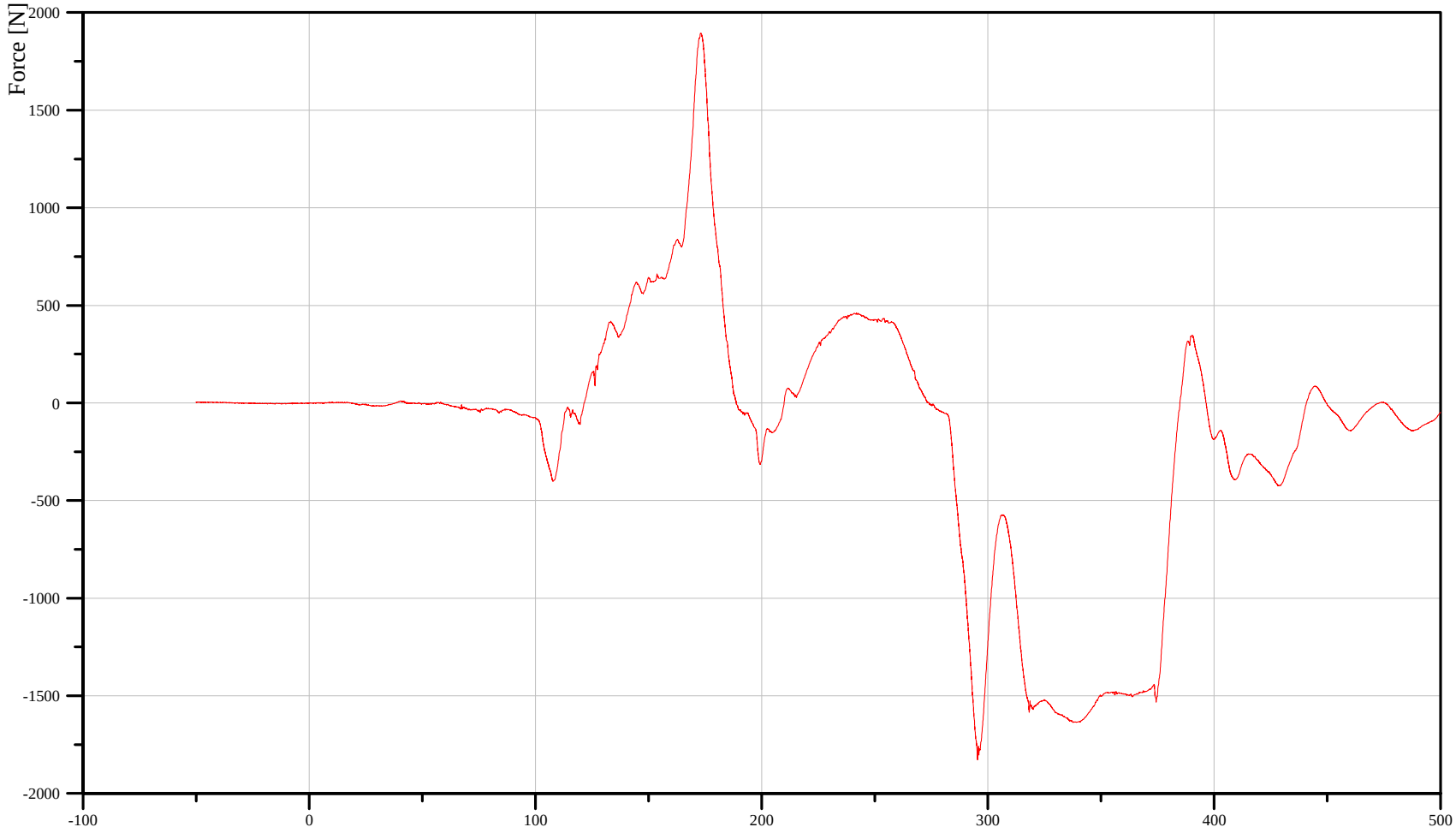
12L-Left Neck Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

31NECKUP00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-1,828.11 N at 295.36 ms

Max. Value
1,894.10 N at 172.96 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

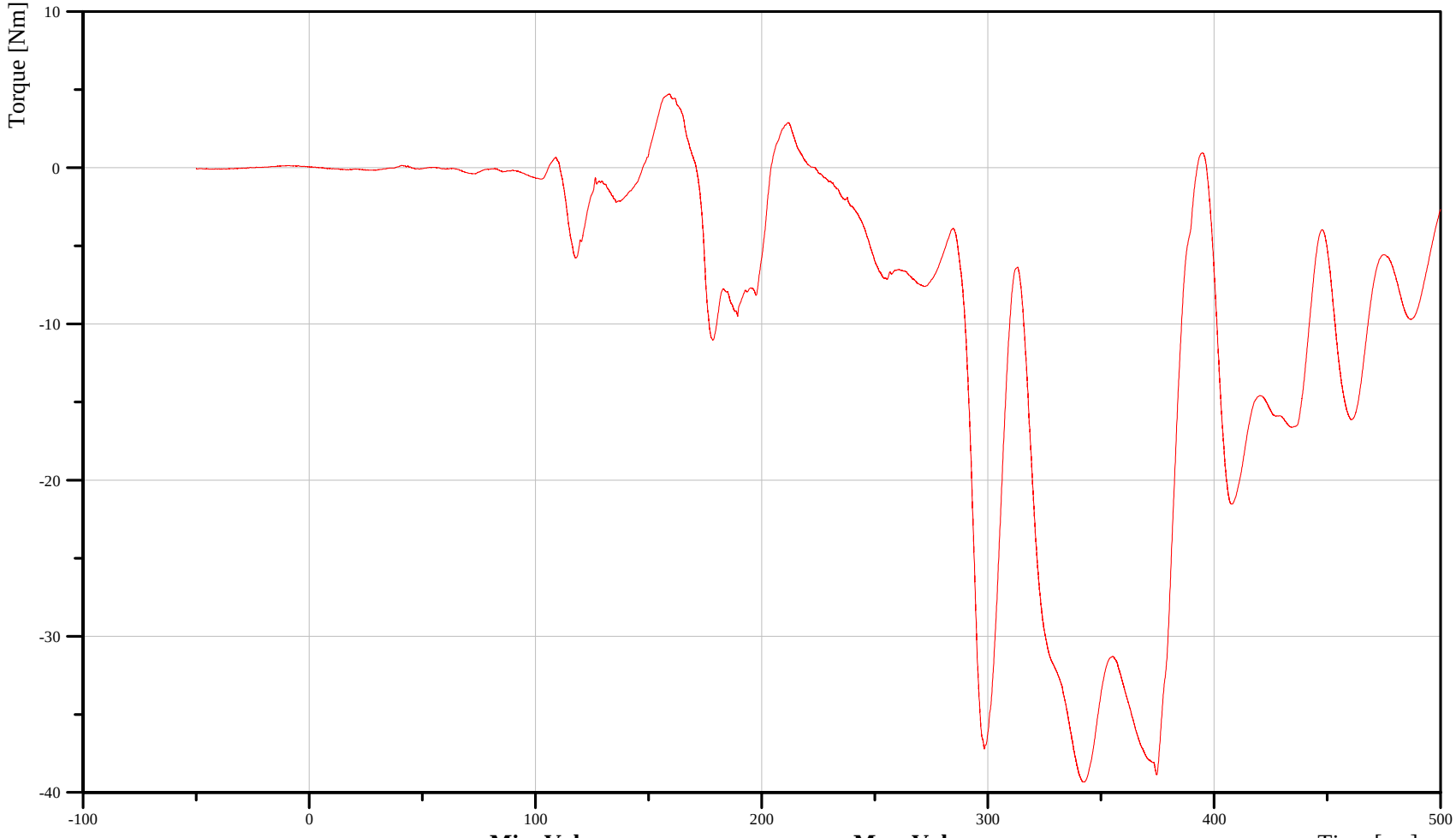
Date: 12/14/2007
Time: 9:12

12L-Left Neck Moment X

Customer: VRTC

31NECKUP00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-39.32 Nm at 342.56 ms

Max. Value
4.72 Nm at 159.04 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

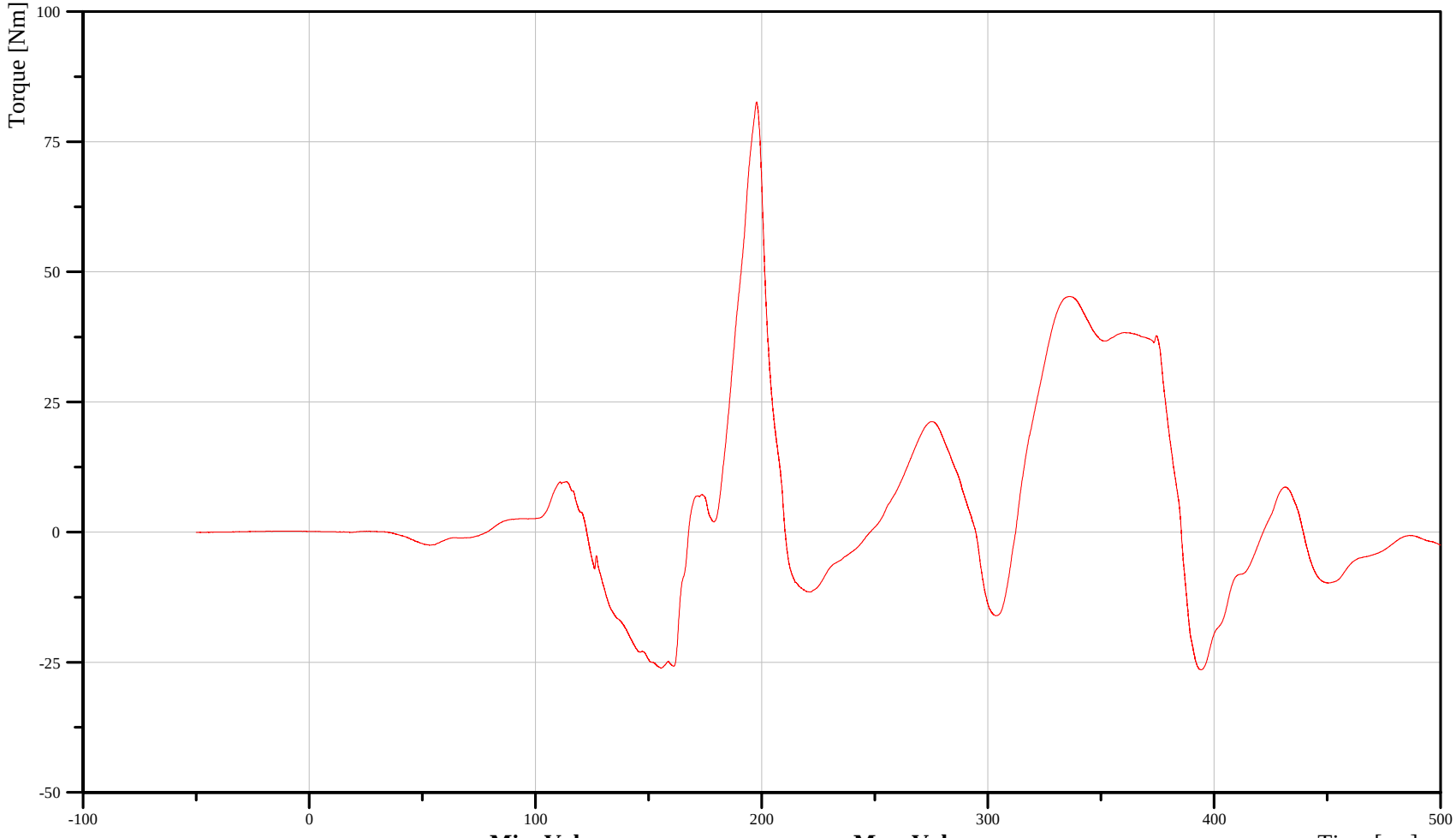
Date: 12/14/2007
Time: 9:12

12L-Left Neck Moment Y

Customer: VRTC

31NECKUP00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-26.43 Nm at 394.24 ms

Max. Value
82.64 Nm at 197.76 ms

B-540

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

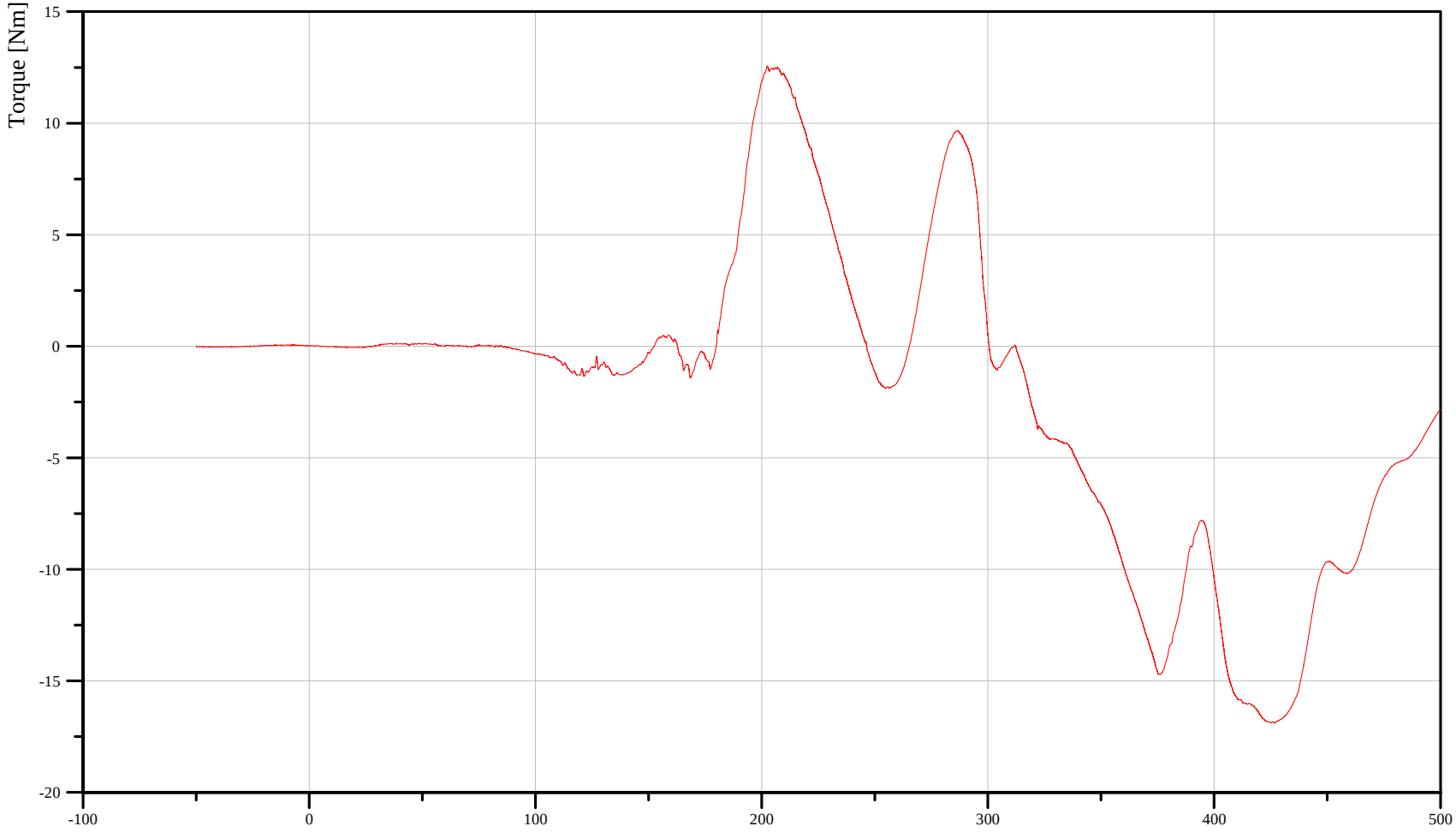
Date: 12/14/2007
Time: 9:12

12L-Left Neck Moment Z

Customer: VRTC

31NECKUP00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-16.88 Nm at 426.88 ms

Max. Value
12.56 Nm at 202.48 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

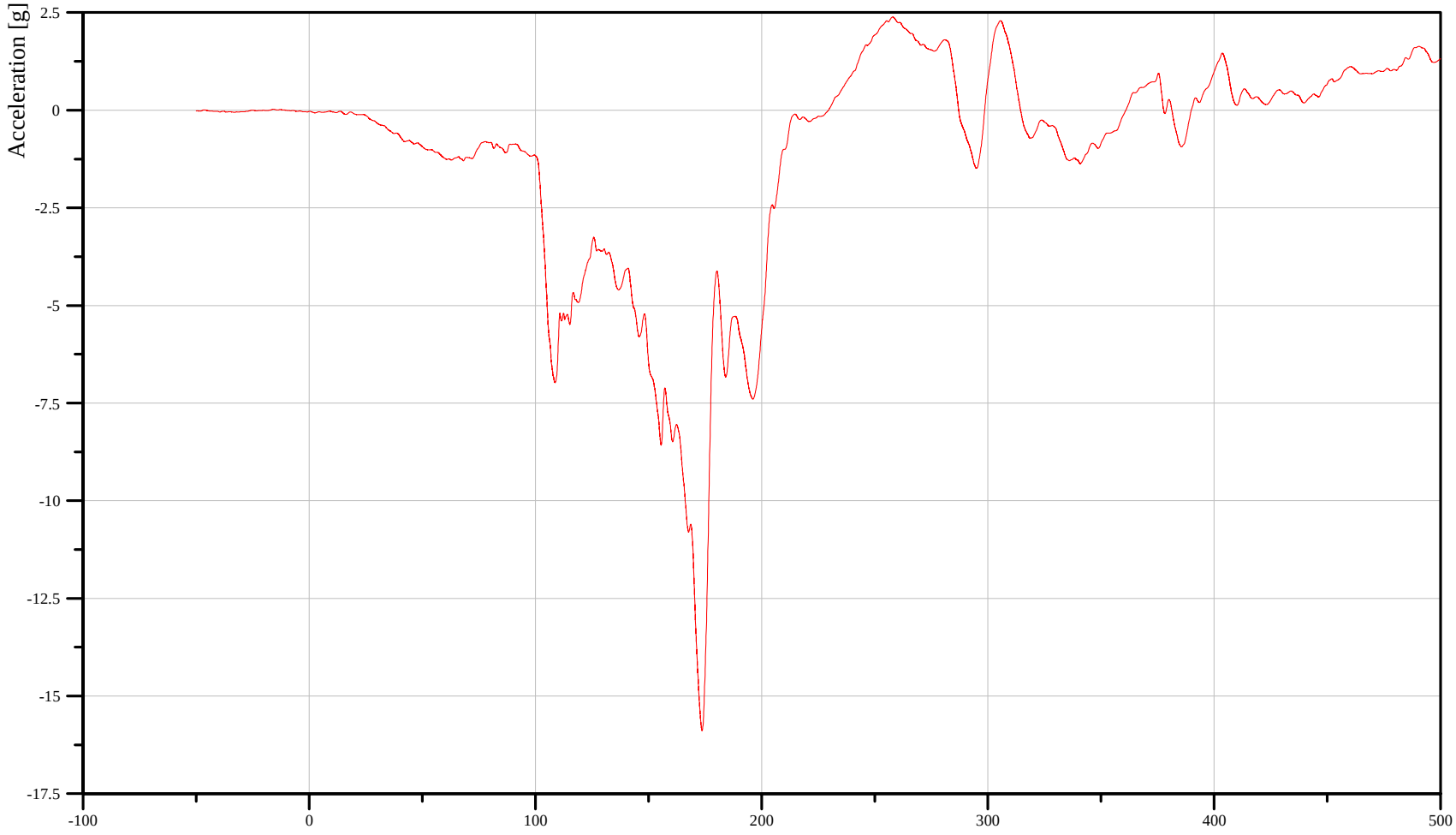
Date: 12/14/2007
Time: 9:12

12L-Left Chest X-Axis Acceleration

Customer: VRTC

31CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-15.88 g at 173.68 ms

Max. Value
2.39 g at 257.92 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

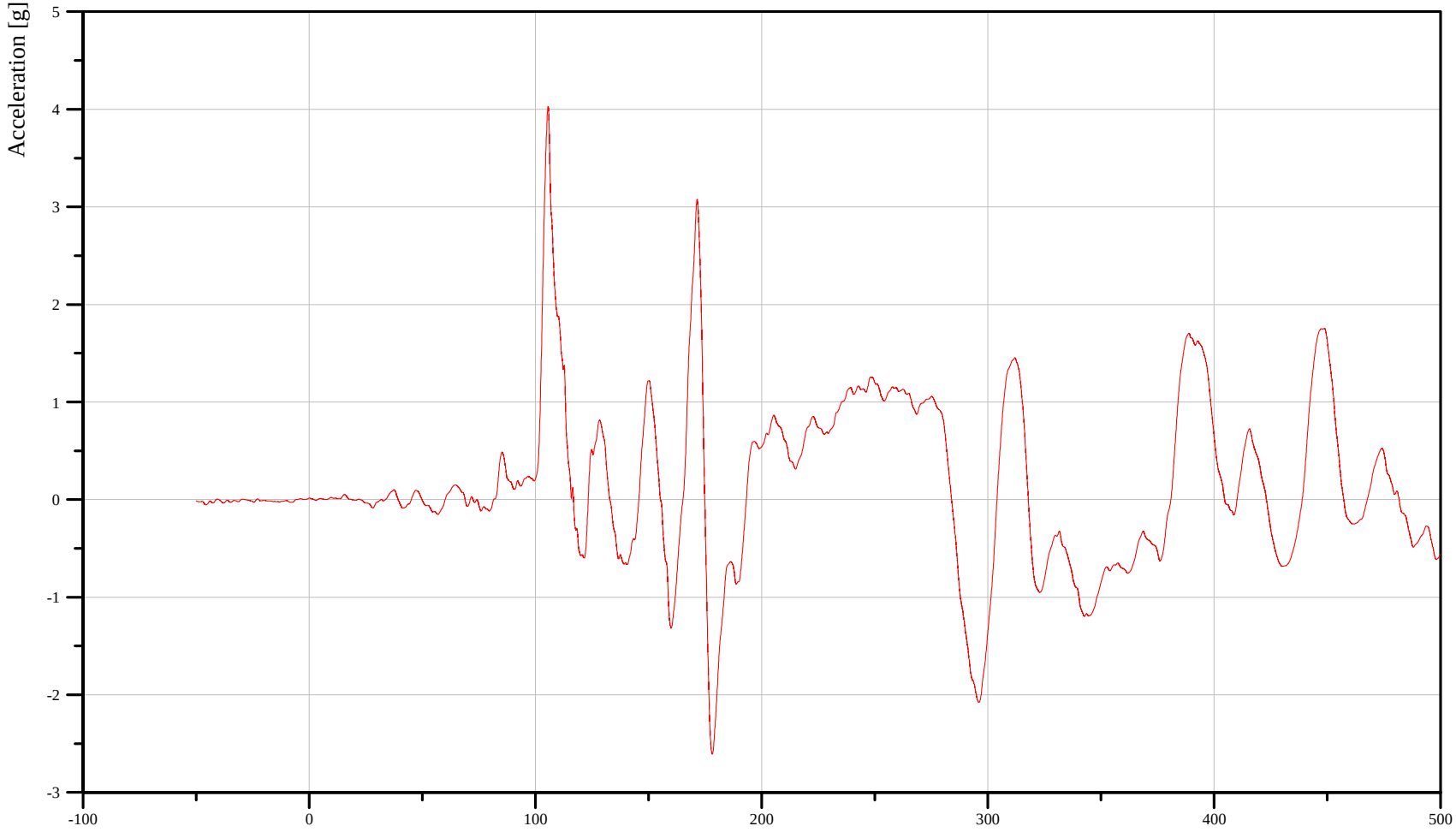
Date: 12/14/2007
Time: 9:12

12L-Left Chest Y-Axis Acceleration

Customer: VRTC

31CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-2.61 g at 178.16 ms

Max. Value
4.03 g at 105.60 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

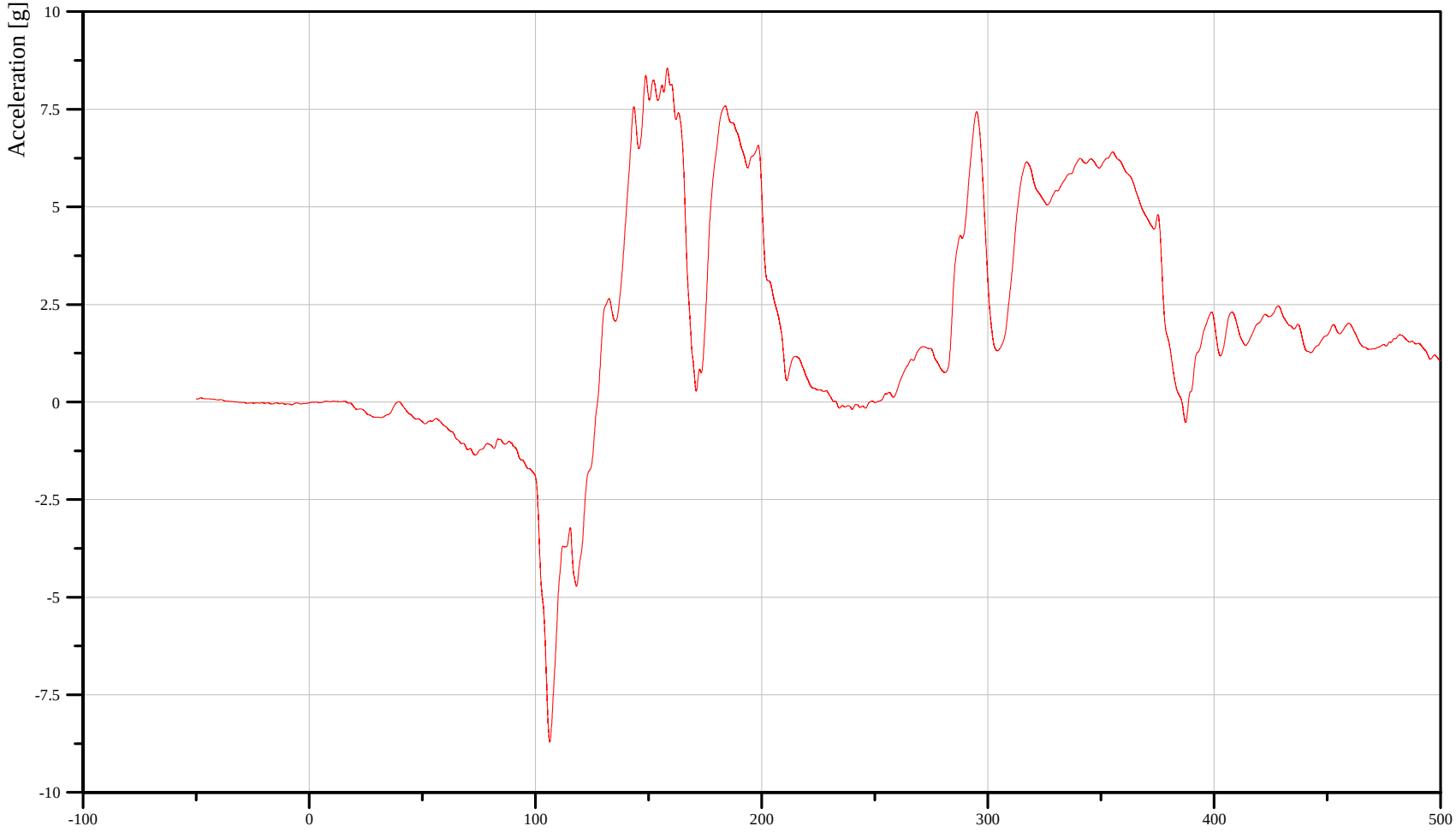
Date: 12/14/2007
Time: 9:12

12L-Left Chest Z-Axis Acceleration

Customer: VRTC

31CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-8.71 g at 106.32 ms

Max. Value
8.55 g at 158.24 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

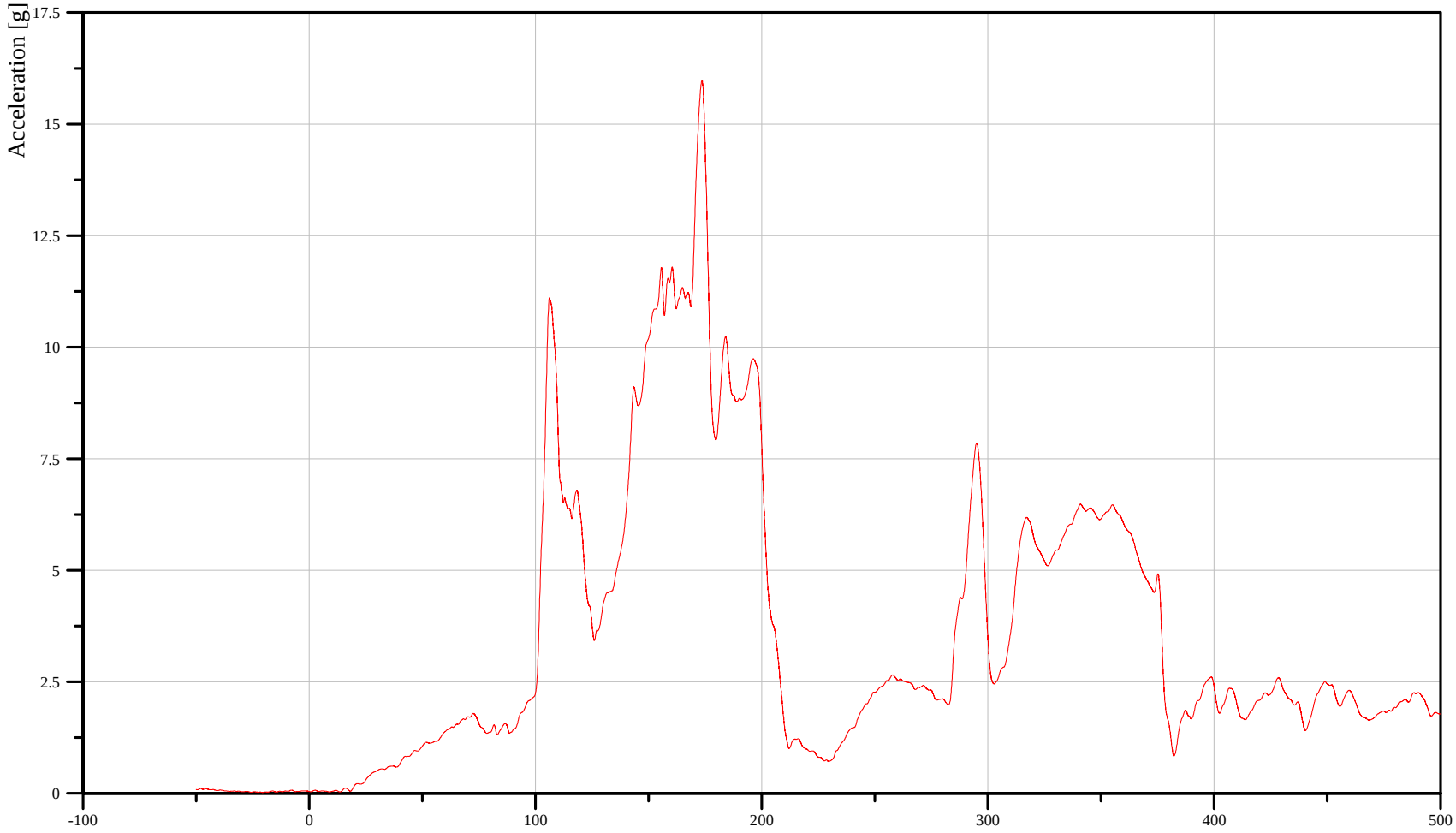
Date: 12/14/2007
Time: 9:12

12L-Left Chest Resultant Acceleration

Customer: VRTC

31CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.02 g at -20.56 ms

Max. Value
15.98 g at 173.60 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

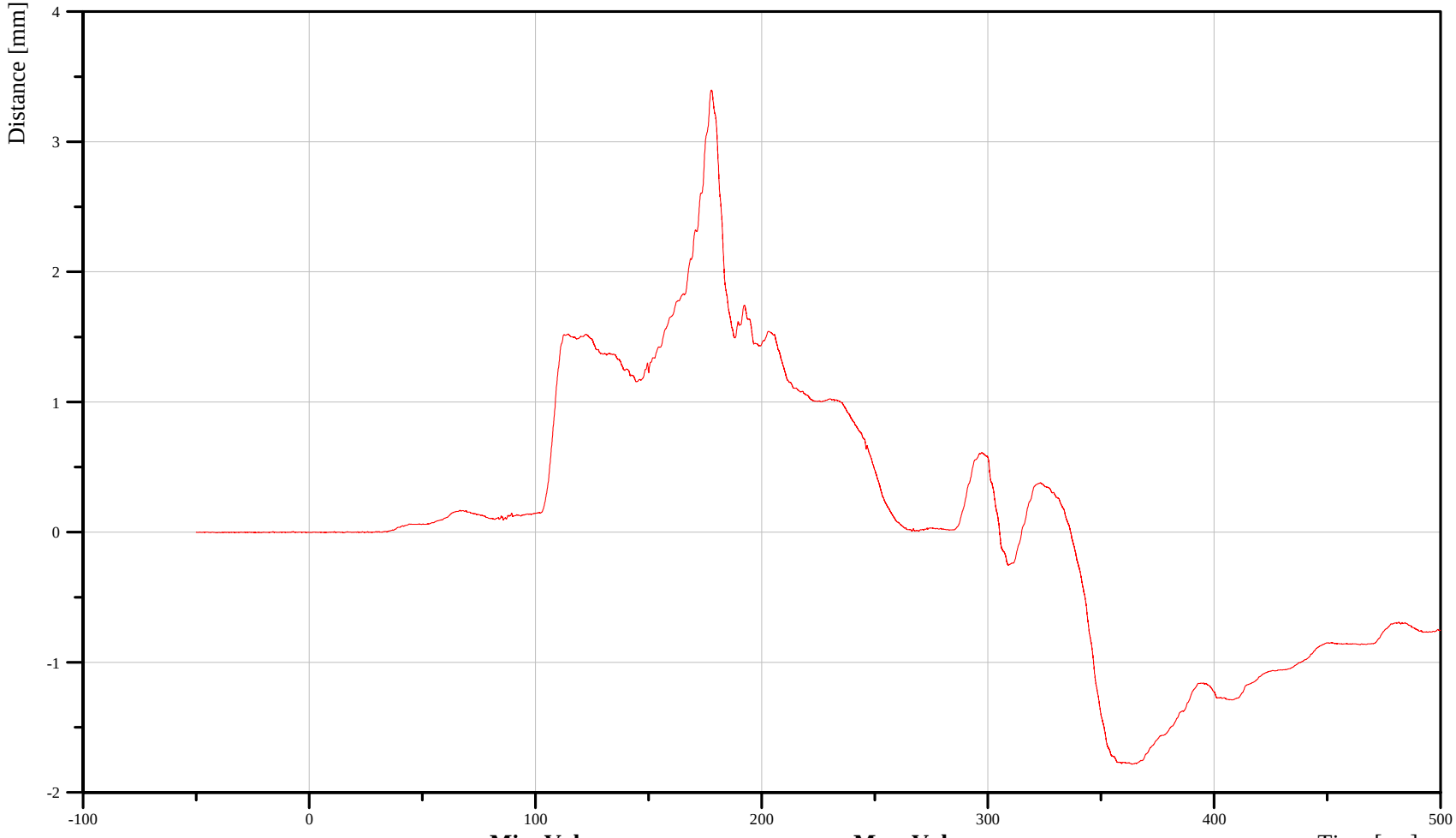
Date: 12/14/2007
Time: 9:12

12L-Left Chest X-Axis Deflection

Customer: VRTC

31CHST0000H3DSXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-1.78 mm at 363.68 ms

Max. Value
3.40 mm at 177.76 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

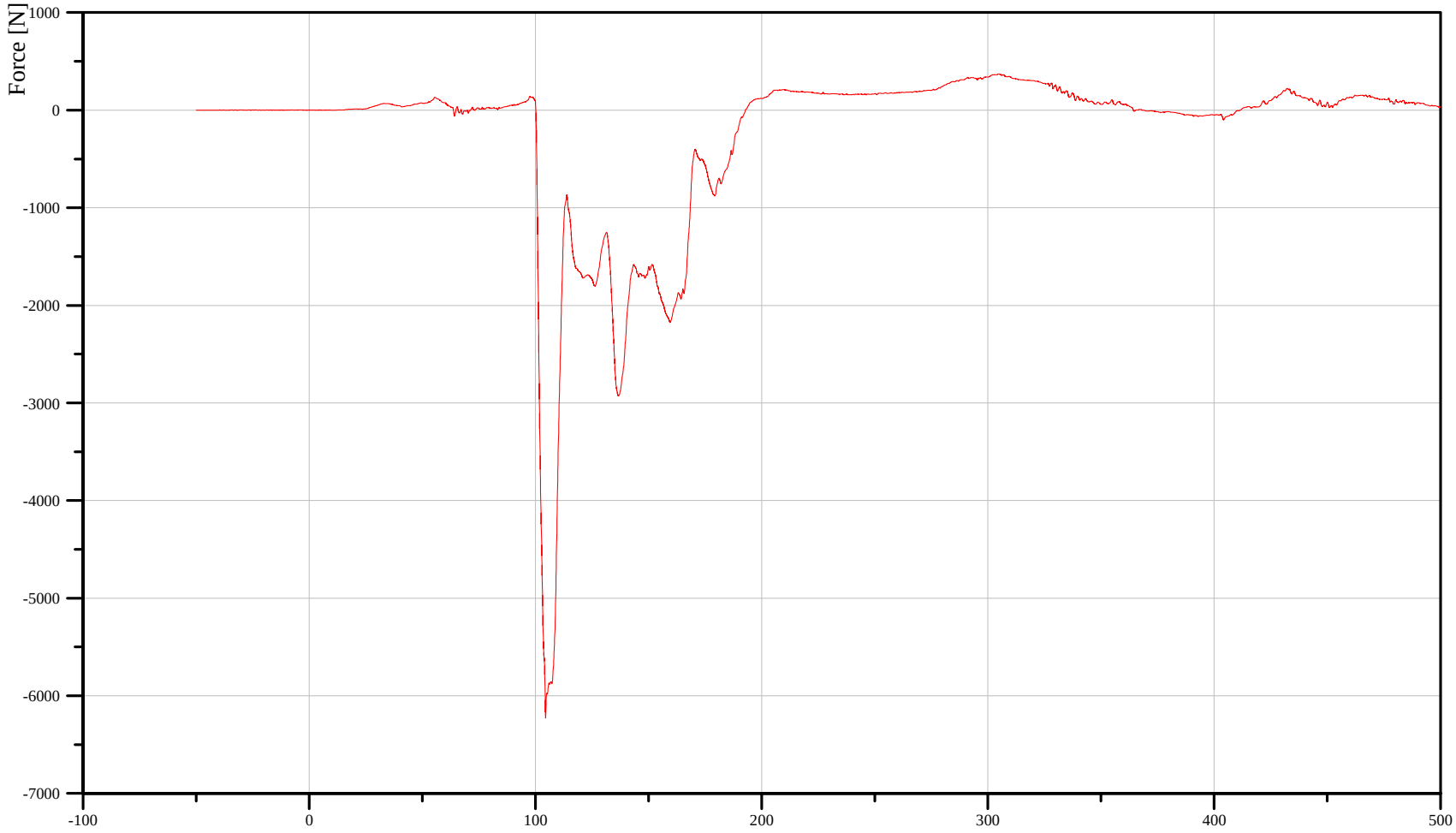
Date: 12/14/2007
Time: 9:12

12L-Left Left Femur Force Z

Customer: VRTC

31FEMRLL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-6,229.63 N at 104.48 ms

Max. Value
368.55 N at 304.72 ms

B-547

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

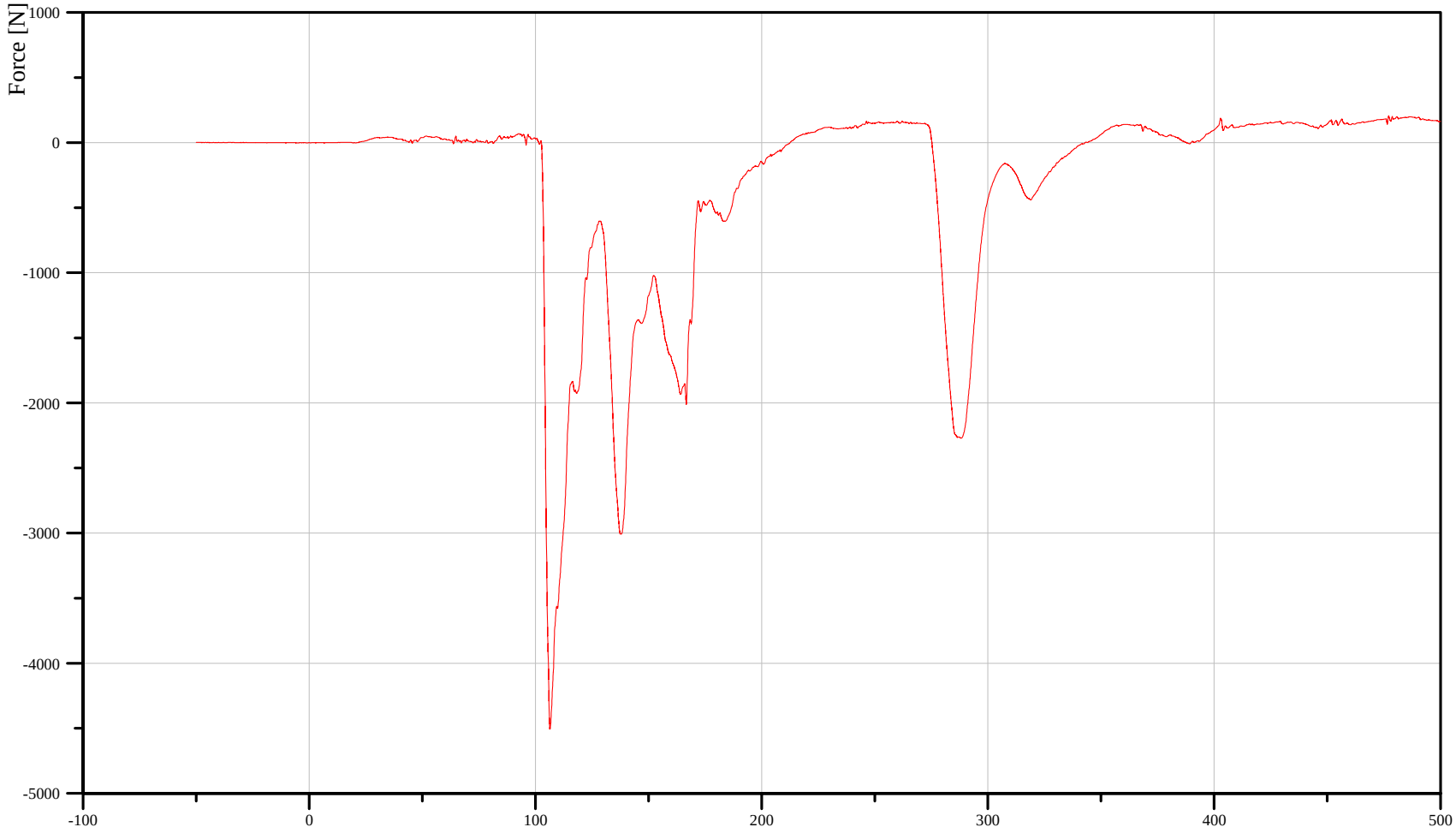
12L-Left Right Femur Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

31FEMRRL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-4,505.35 N at 106.48 ms

Max. Value
206.48 N at 477.12 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

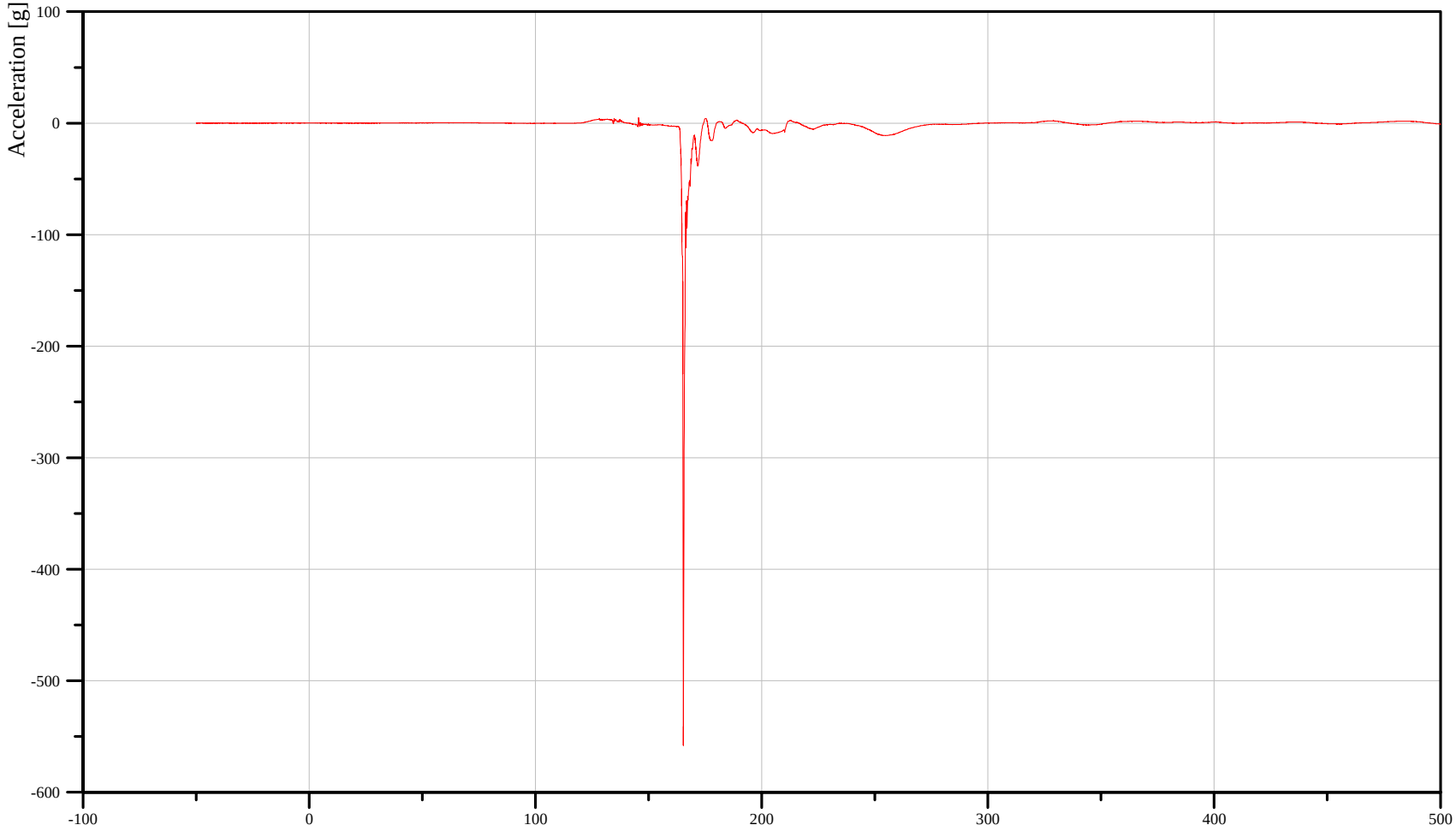
Date: 12/14/2007
Time: 9:12

12L-Right Head X-Axis Acceleration

Customer: VRTC

32HEADCG00HFACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-557.92 g at 165.44 ms

Max. Value
4.93 g at 145.60 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

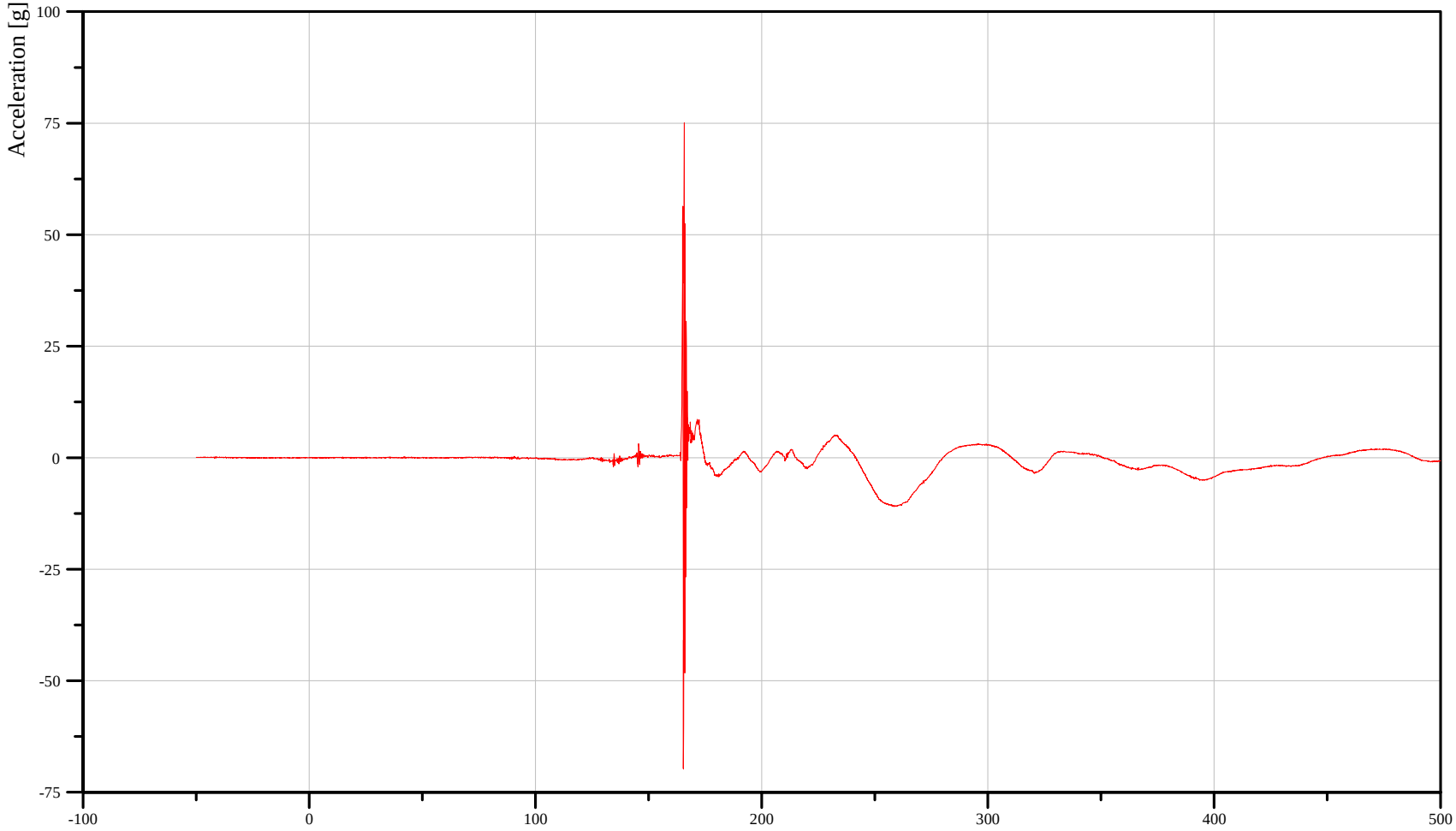
Date: 12/14/2007
Time: 9:12

12L-Right Head Y-Axis Acceleration

Customer: VRTC

32HEADCG00HFACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-69.71 g at 165.44 ms

Max. Value
75.06 g at 165.76 ms

B-550

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

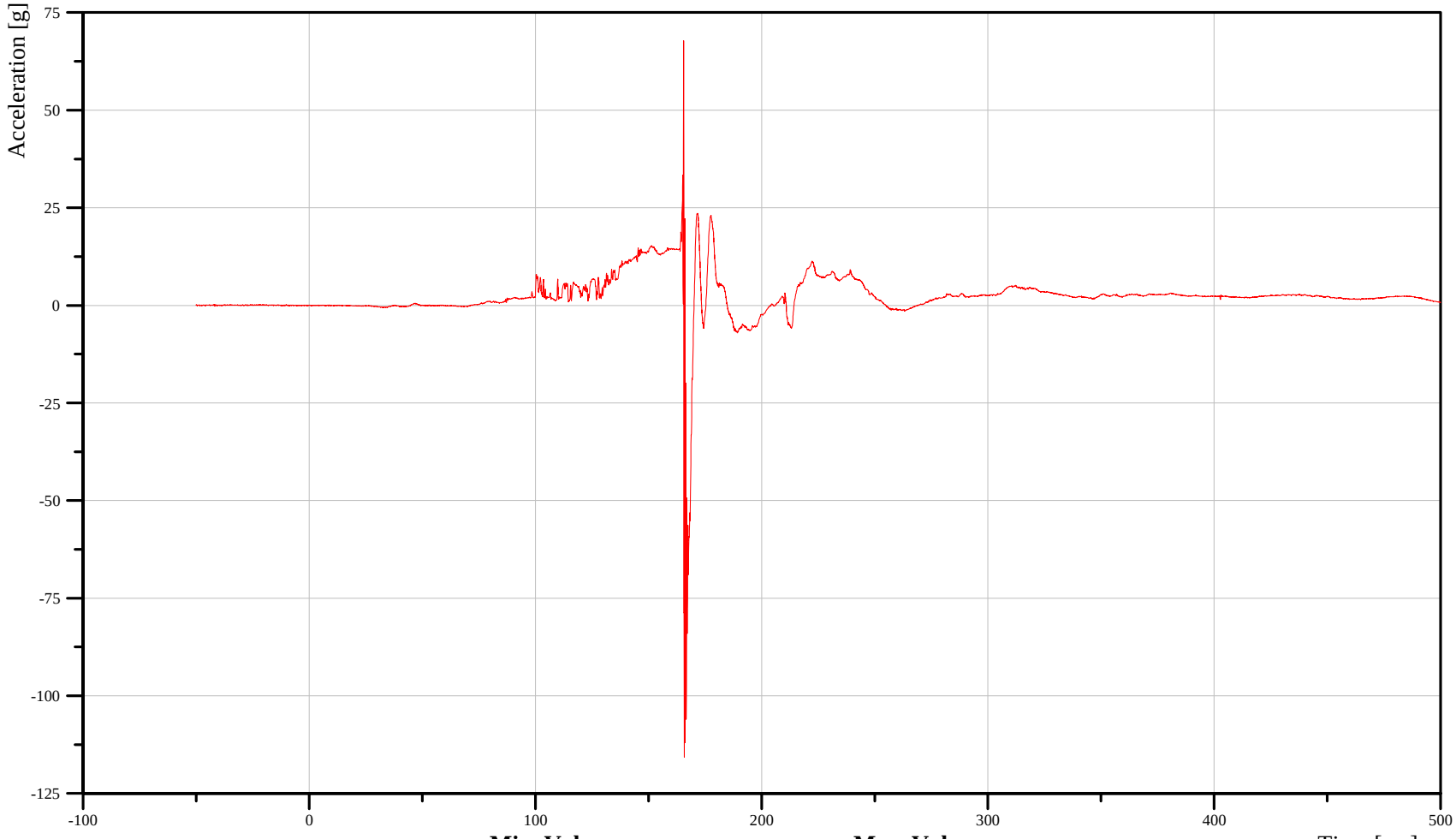
Date: 12/14/2007
Time: 9:12

12L-Right Head Z-Axis Acceleration

Customer: VRTC

32HEADCG00HFACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-115.75 g at 165.76 ms

Max. Value
67.75 g at 165.52 ms

B-551

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

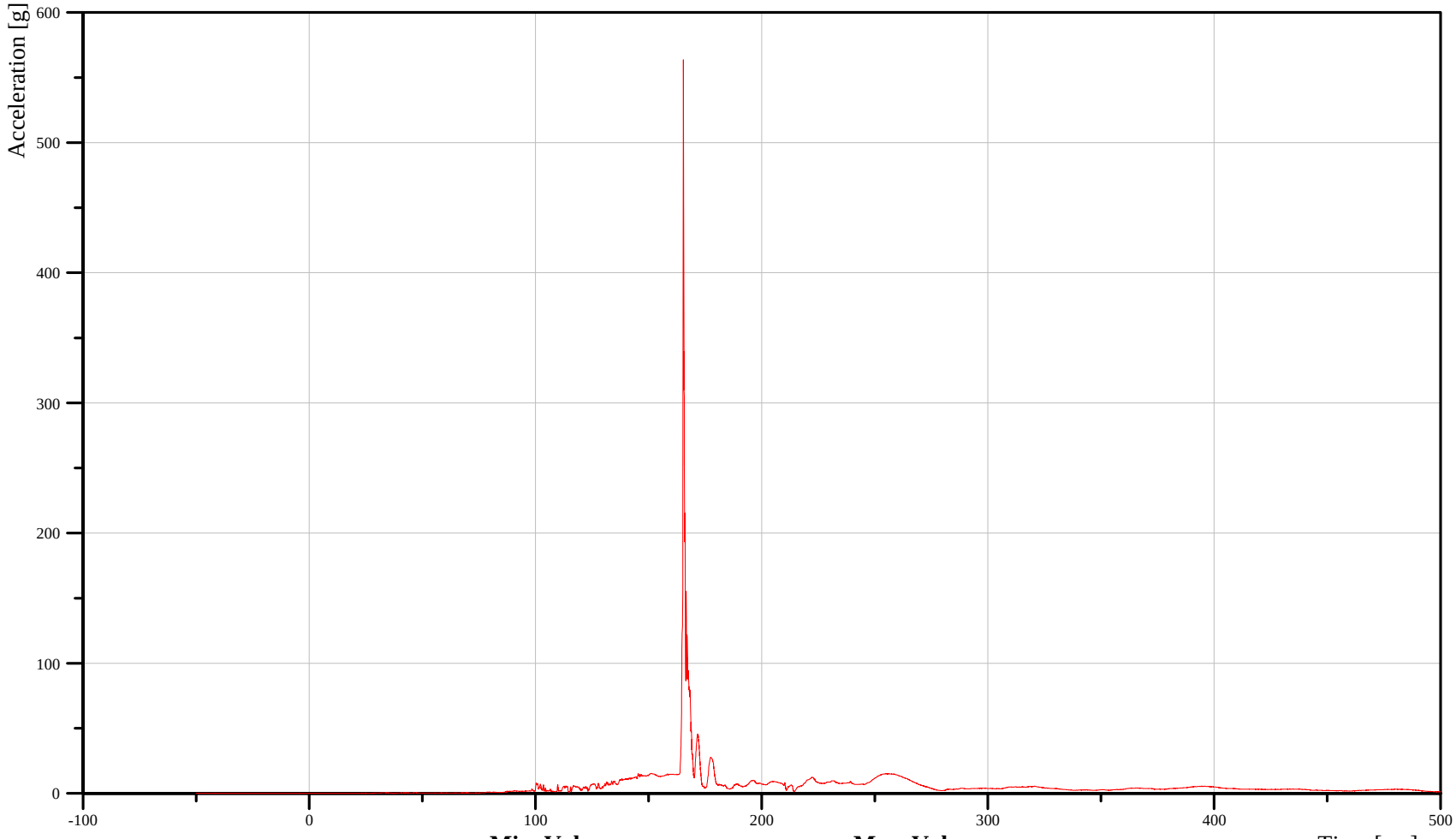
Date: 12/14/2007
Time: 9:12

12L-Right Head Resultant Acceleration

Customer: VRTC

32HEADCG00HFACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.02 g at -31.44 ms

Max. Value
563.61 g at 165.44 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

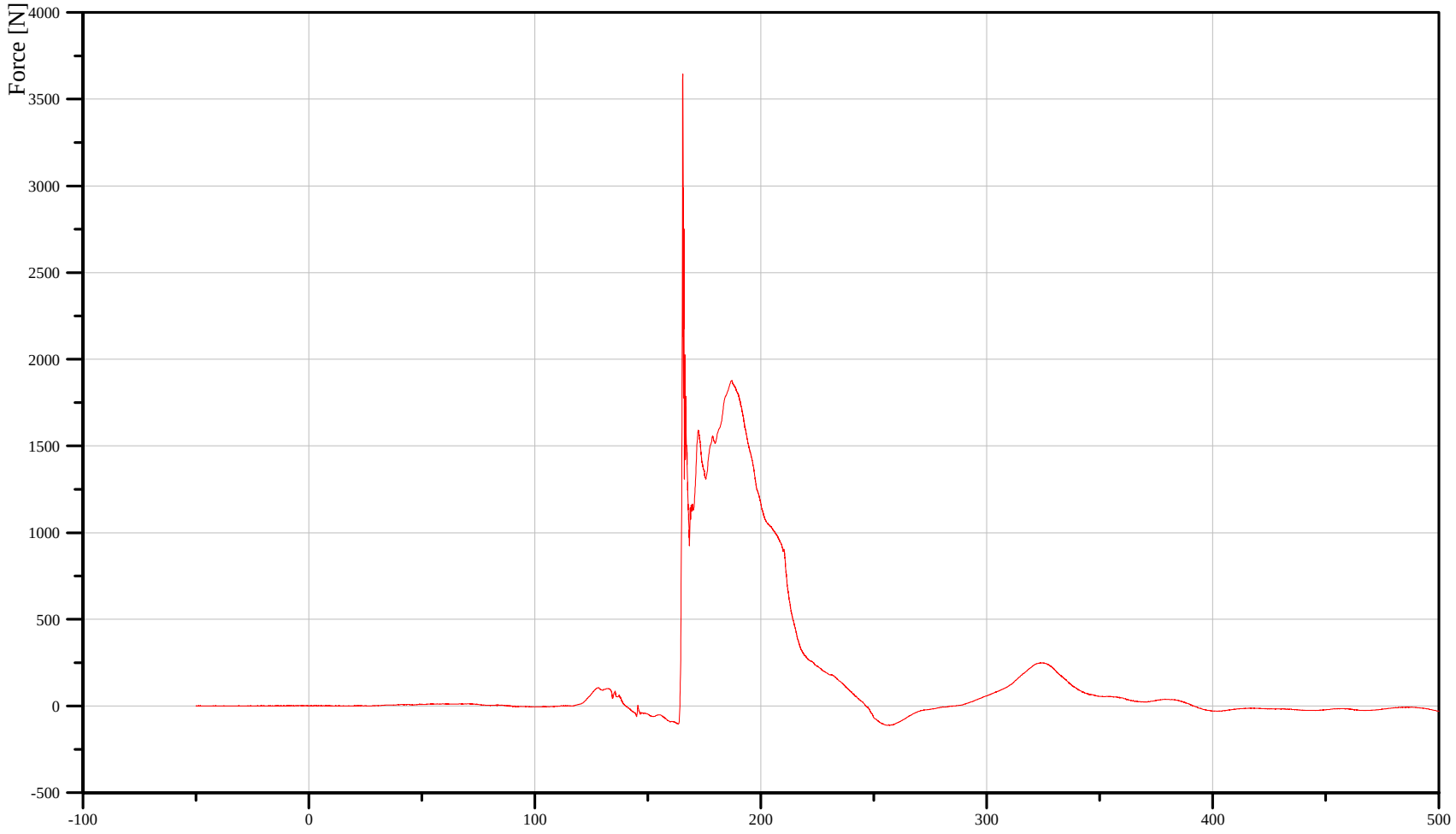
Date: 12/14/2007
Time: 9:12

12L-Right Neck Force X

Customer: VRTC

32NECKUP00HFFOXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-111.38 N at 255.76 ms

Max. Value
3,645.85 N at 165.52 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

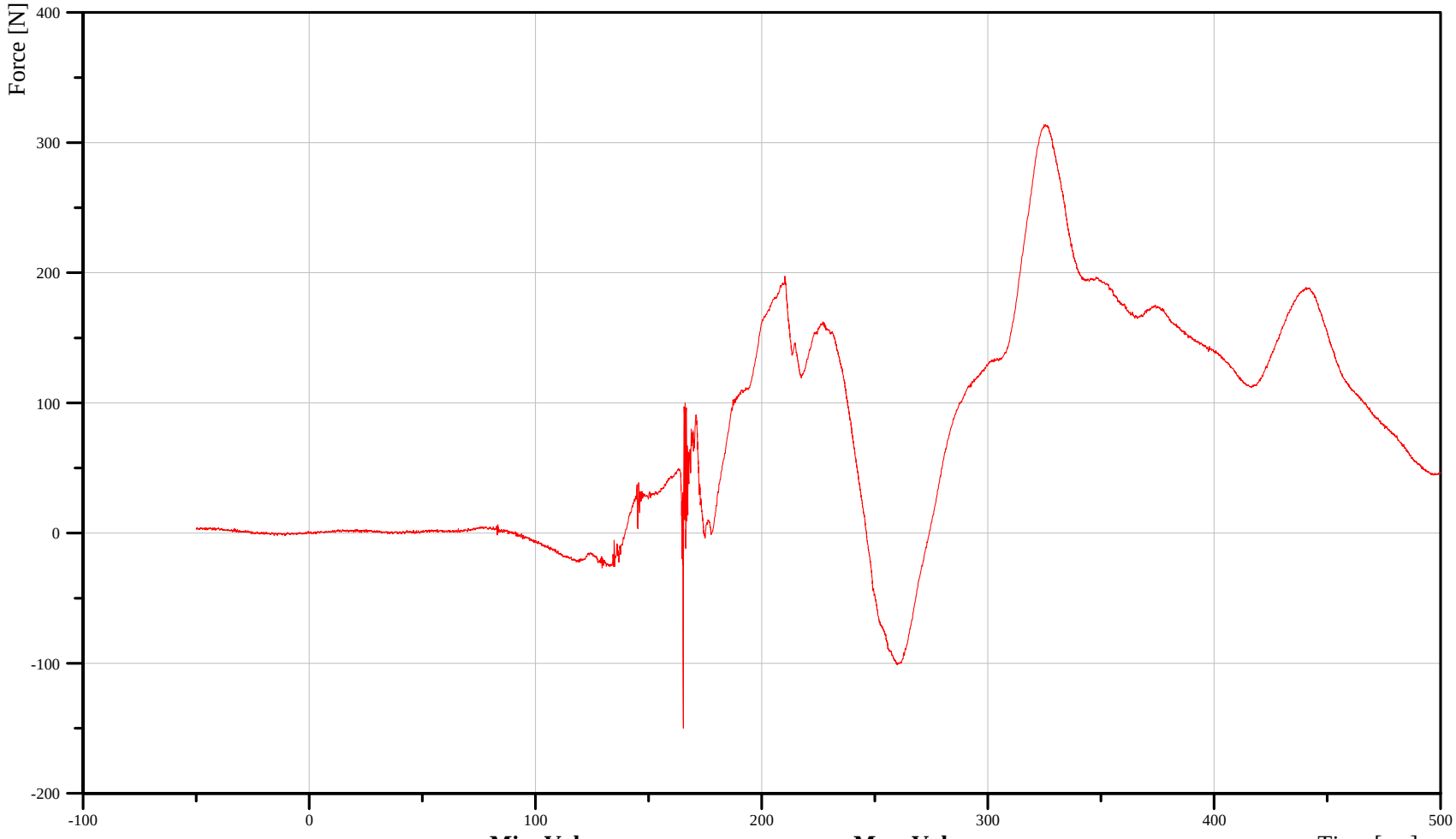
12L-Right Neck Force Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

32NECKUP00HFFOYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-149.98 N at 165.36 ms

Max. Value
313.94 N at 325.44 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

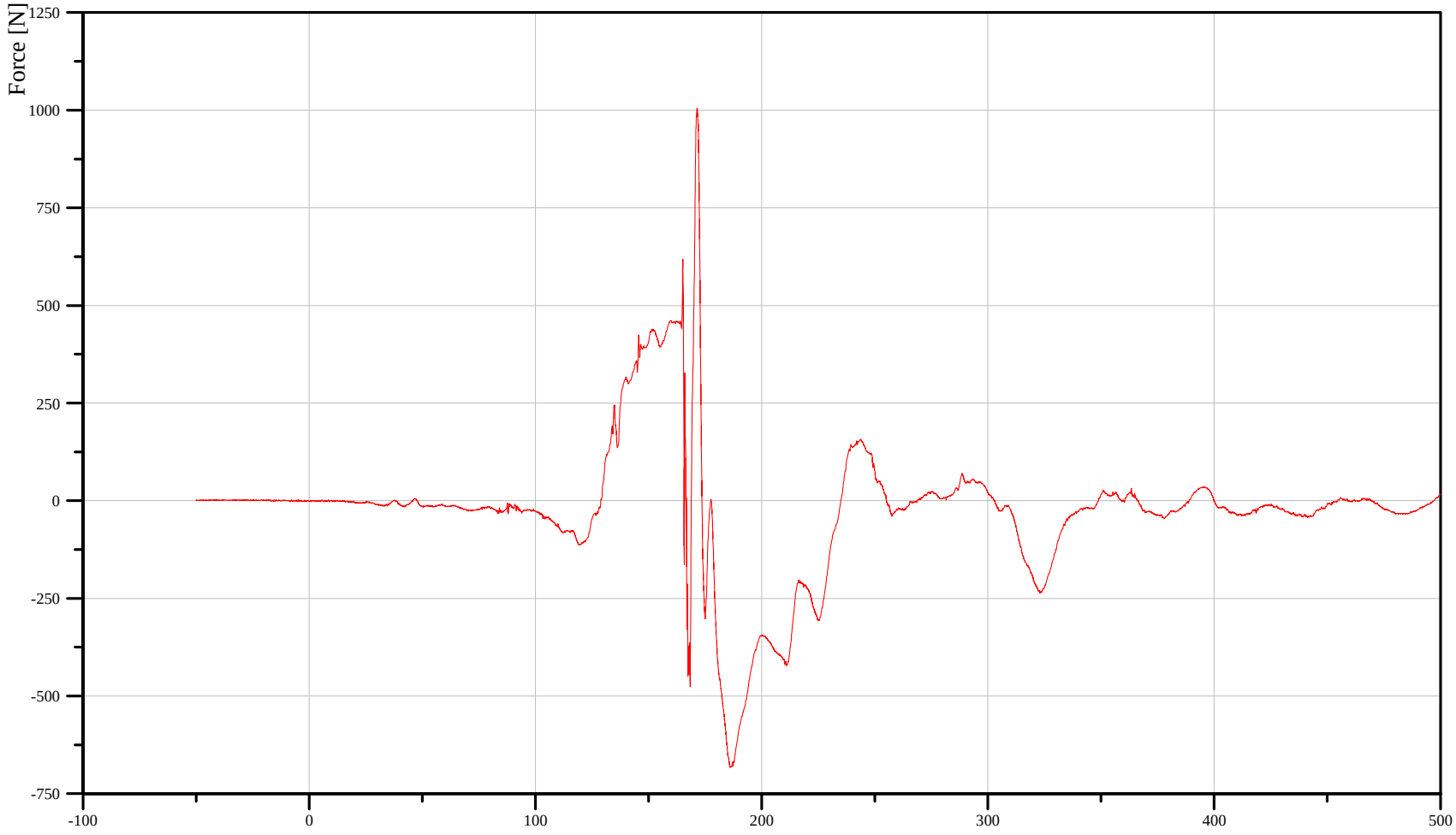
12L-Right Neck Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

32NECKUP00HFFOZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value	Max. Value
-682.36 N at 186.08 ms	1,004.88 N at 171.44 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

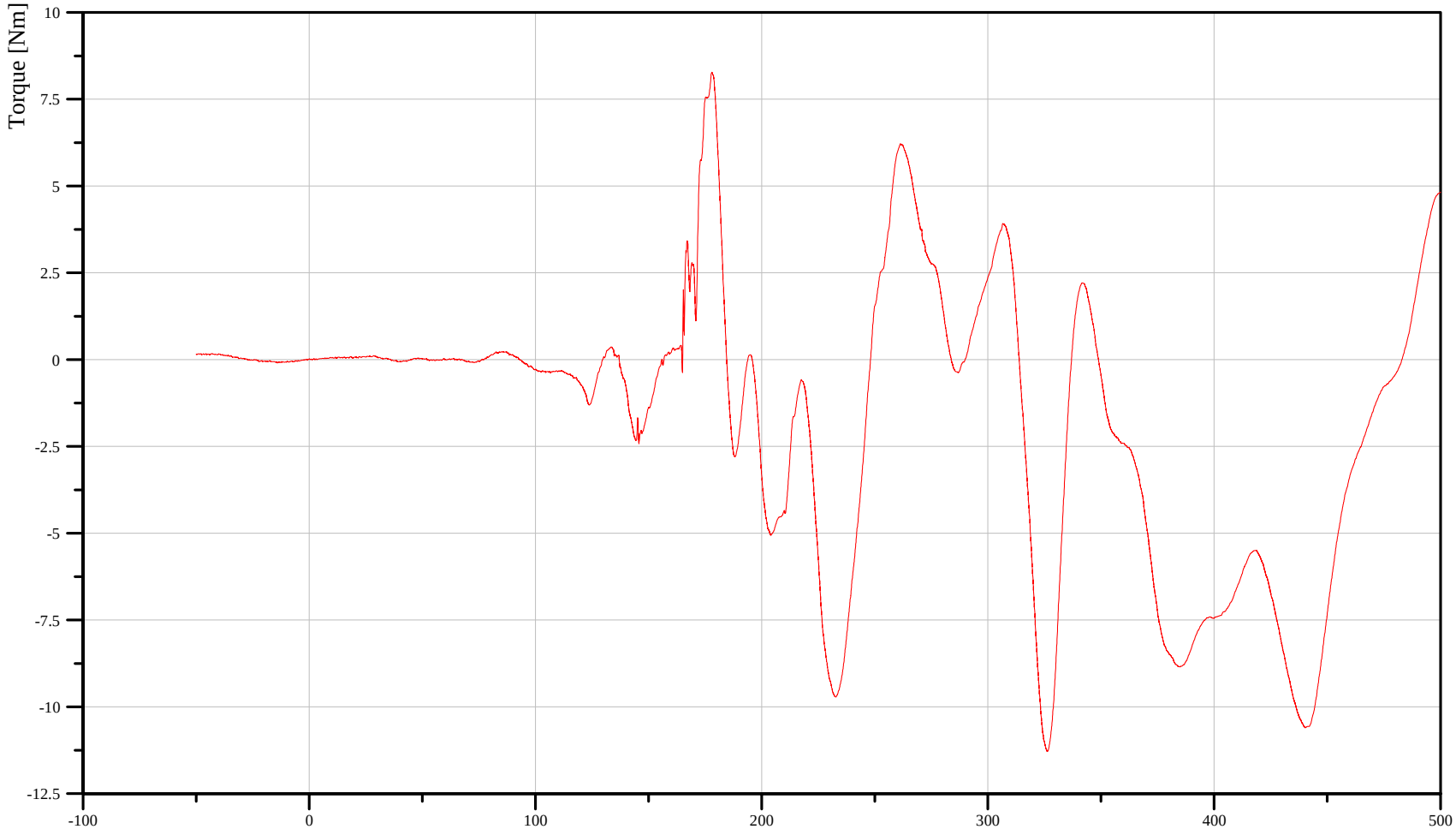
12L-Right Neck Moment X

Date: 12/14/2007
Time: 9:12

Customer: VRTC

32NECKUP00HFMOXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-11.29 Nm at 326.32 ms

Max. Value
8.28 Nm at 177.92 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

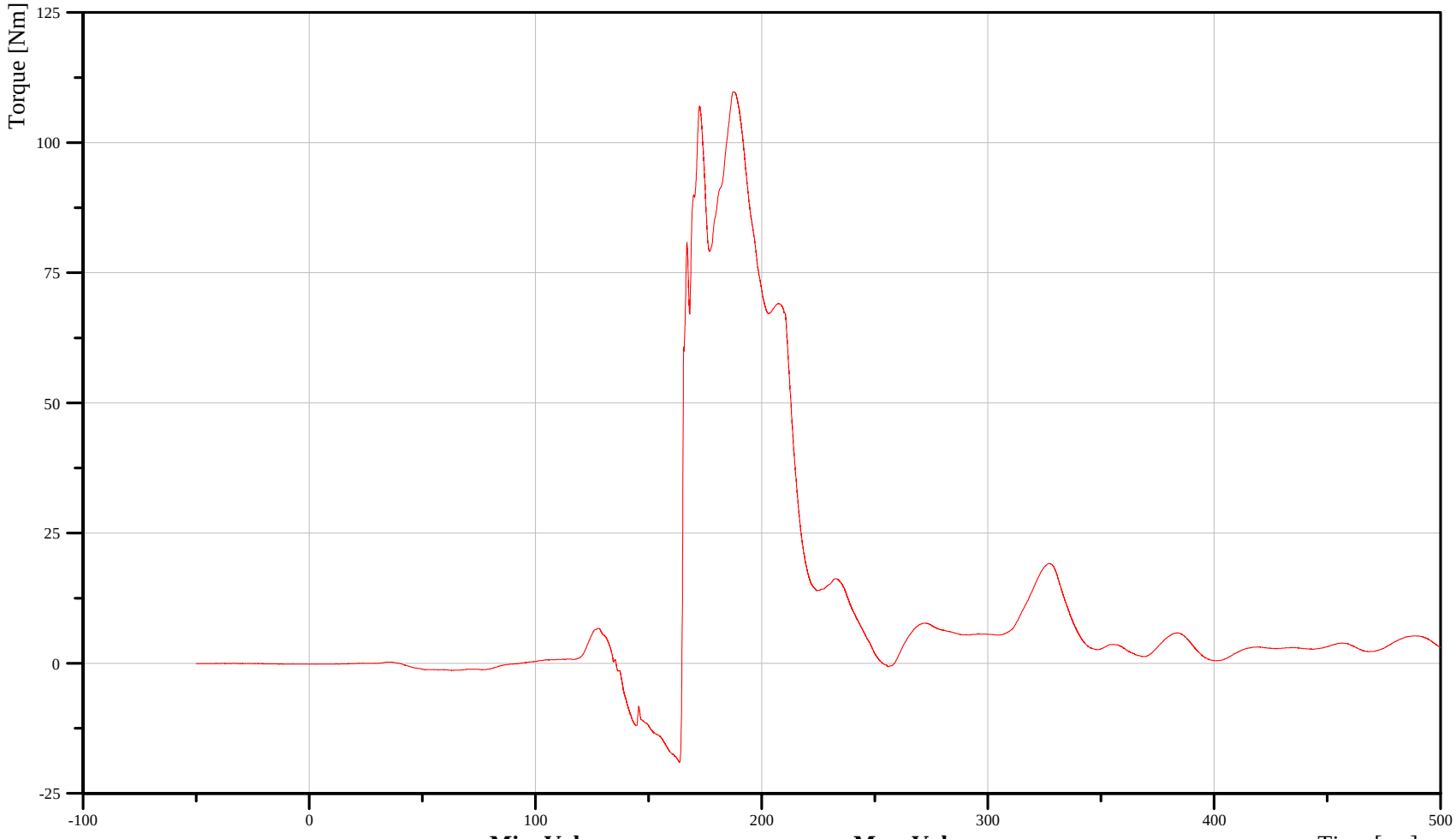
12L-Right Neck Moment Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

32NECKUP00HFMOYB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-19.01 Nm at 163.68 ms

Max. Value
109.80 Nm at 187.36 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

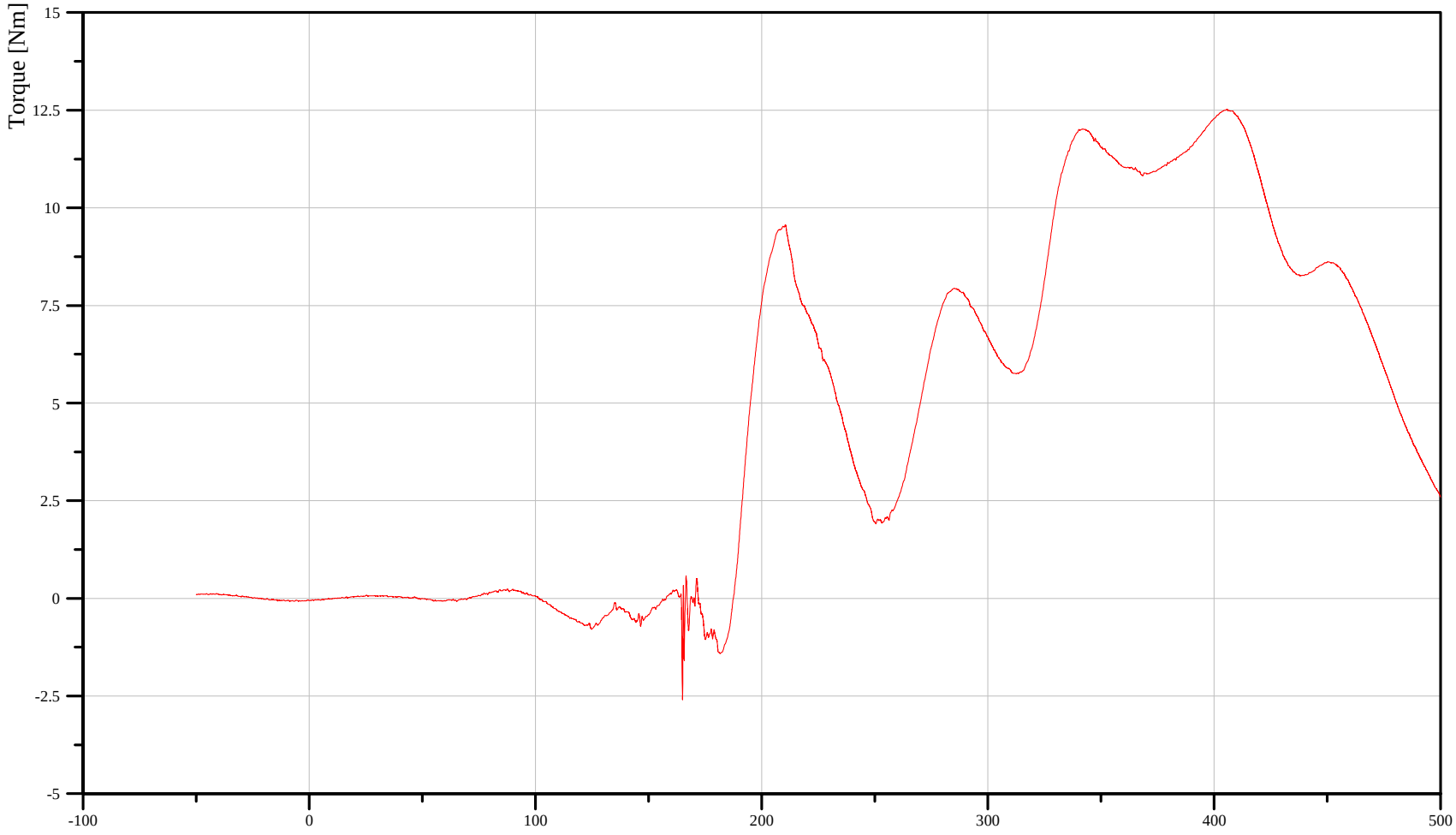
12L-Right Neck Moment Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

32NECKUP00HFMOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-2.59 Nm at 165.04 ms

Max. Value
12.52 Nm at 405.60 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

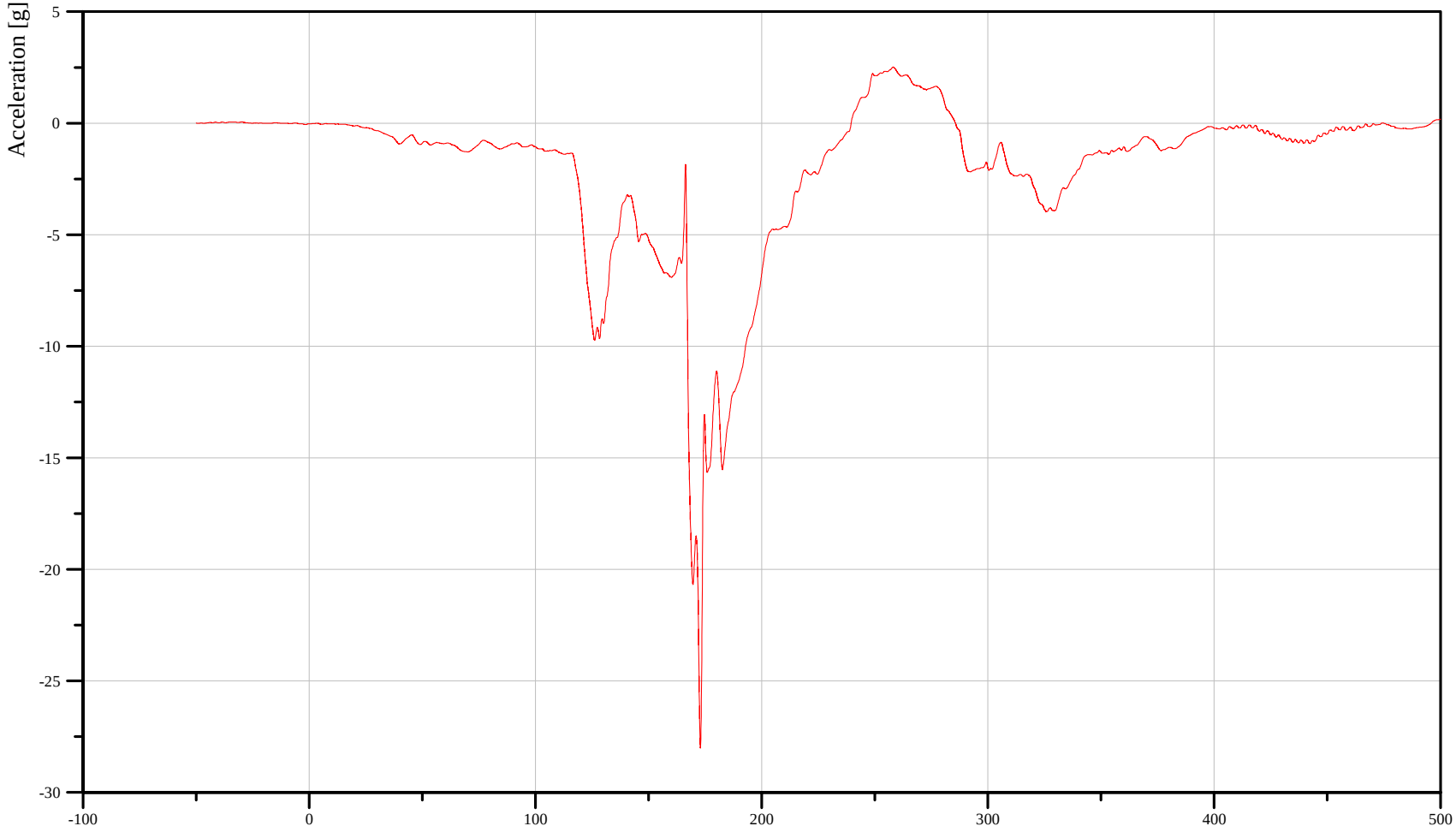
Date: 12/14/2007
Time: 9:12

12L-Right Chest X-Axis Acceleration

Customer: VRTC

32CHSTCG00HFACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-28.00 g at 172.96 ms

Max. Value
2.52 g at 258.08 ms

B-559

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

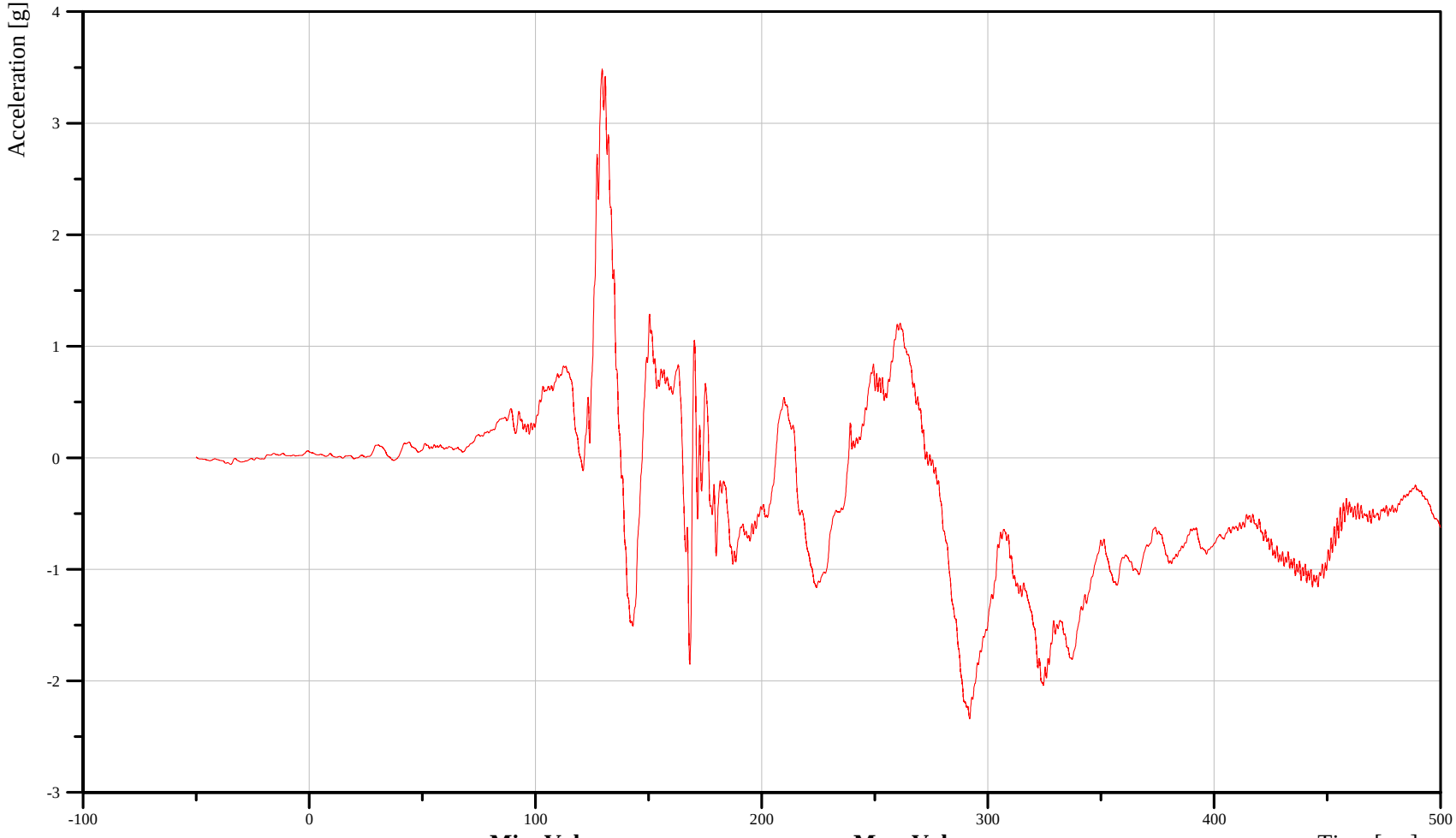
Date: 12/14/2007
Time: 9:12

12L-Right Chest Y-Axis Acceleration

Customer: VRTC

32CHSTCG00HFACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-2.34 g at 291.92 ms

Max. Value
3.49 g at 129.52 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

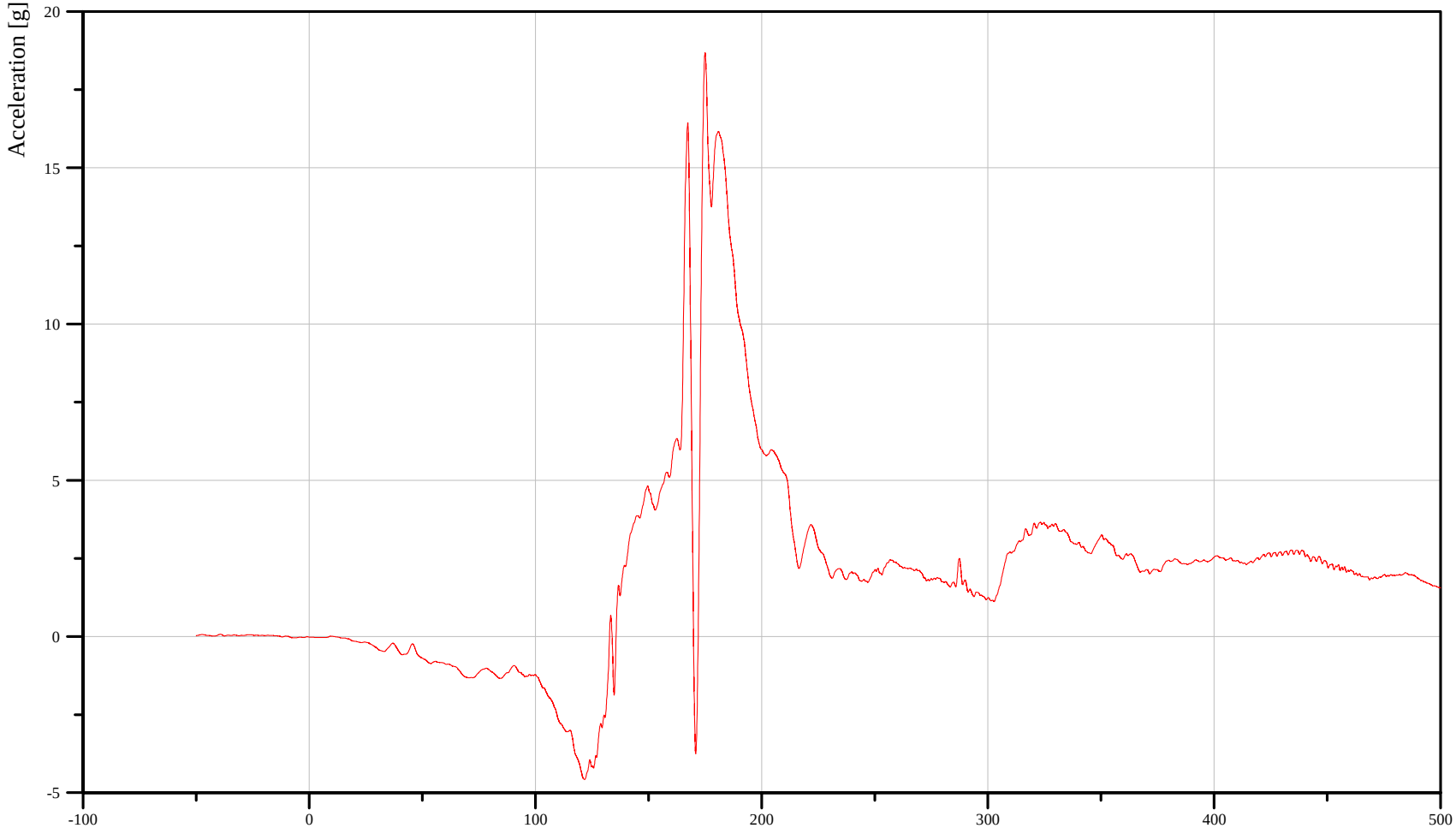
Date: 12/14/2007
Time: 9:12

12L-Right Chest Z-Axis Acceleration

Customer: VRTC

32CHSTCG00HFACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-4.57 g at 121.76 ms

Max. Value
18.69 g at 175.04 ms

B-561

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

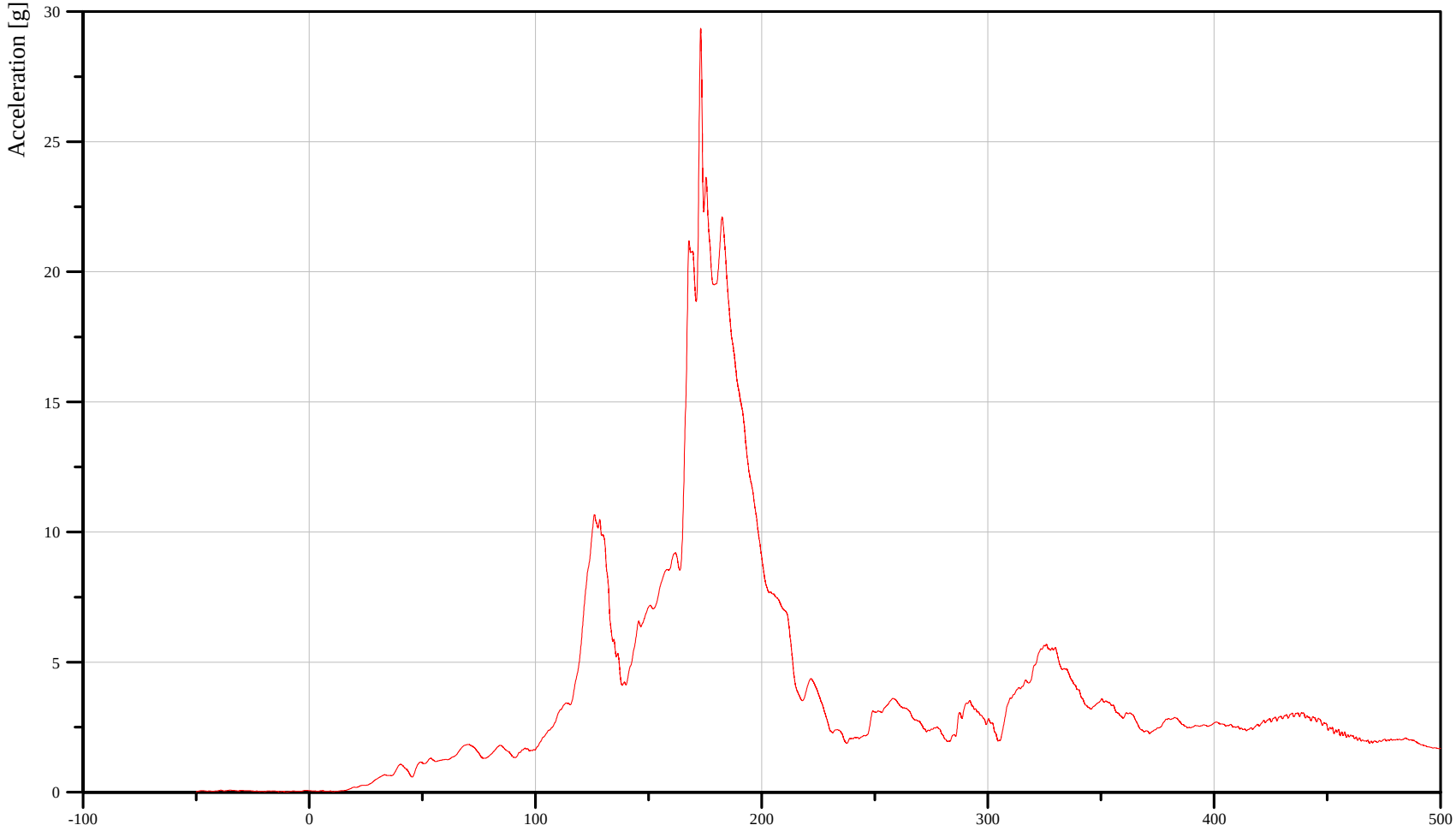
Date: 12/14/2007
Time: 9:12

12L-Right Chest Resultant Acceleration

Customer: VRTC

32CHSTCG00HFACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.02 g at -9.68 ms

Max. Value
29.36 g at 173.04 ms

B-562

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

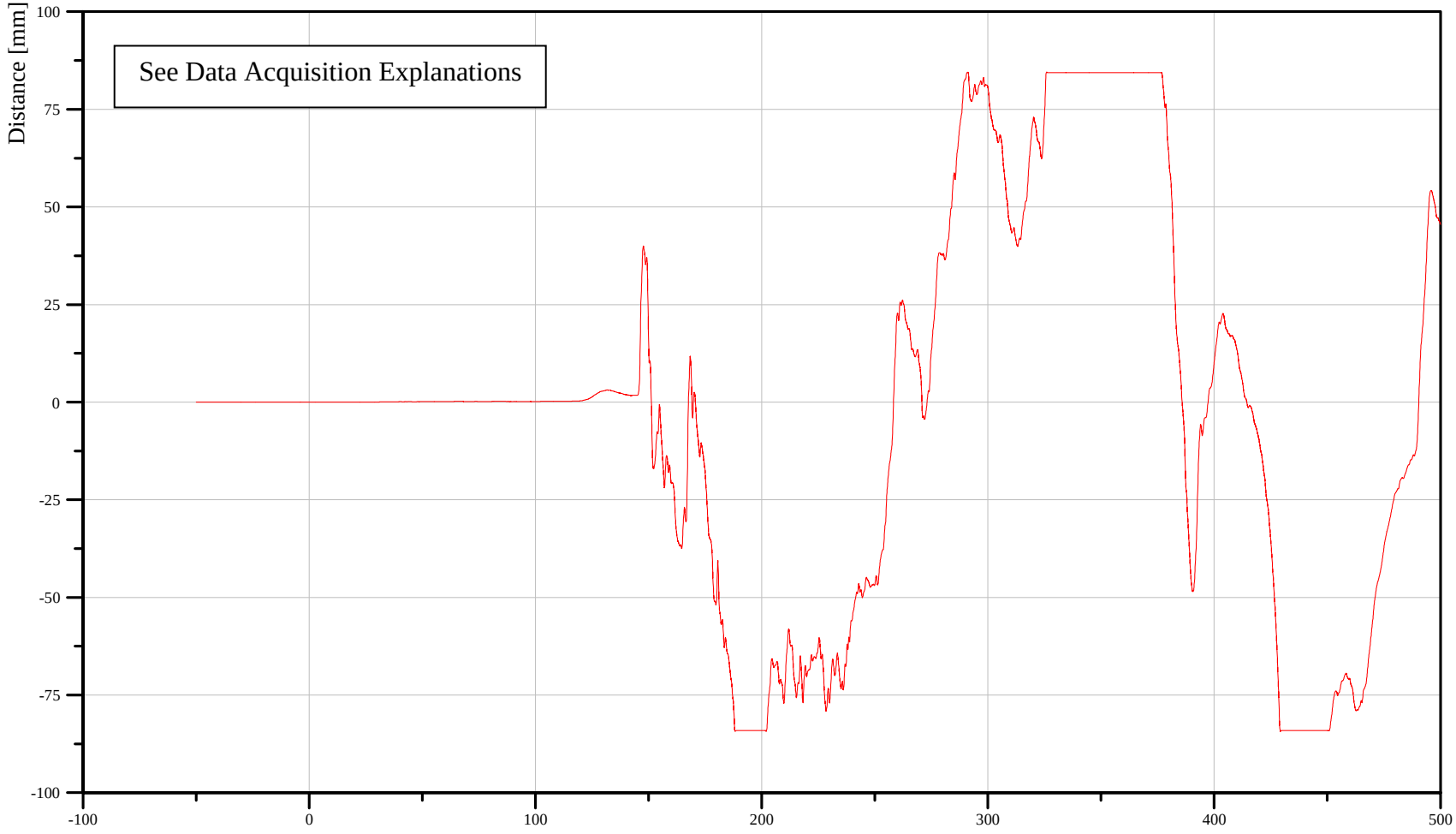
Date: 12/14/2007
Time: 9:12

12L-Right Chest X-Axis Deflection

Customer: VRTC

32CHST0000HFDSXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-84.29 mm at 429.28 ms

Max. Value
84.54 mm at 325.92 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

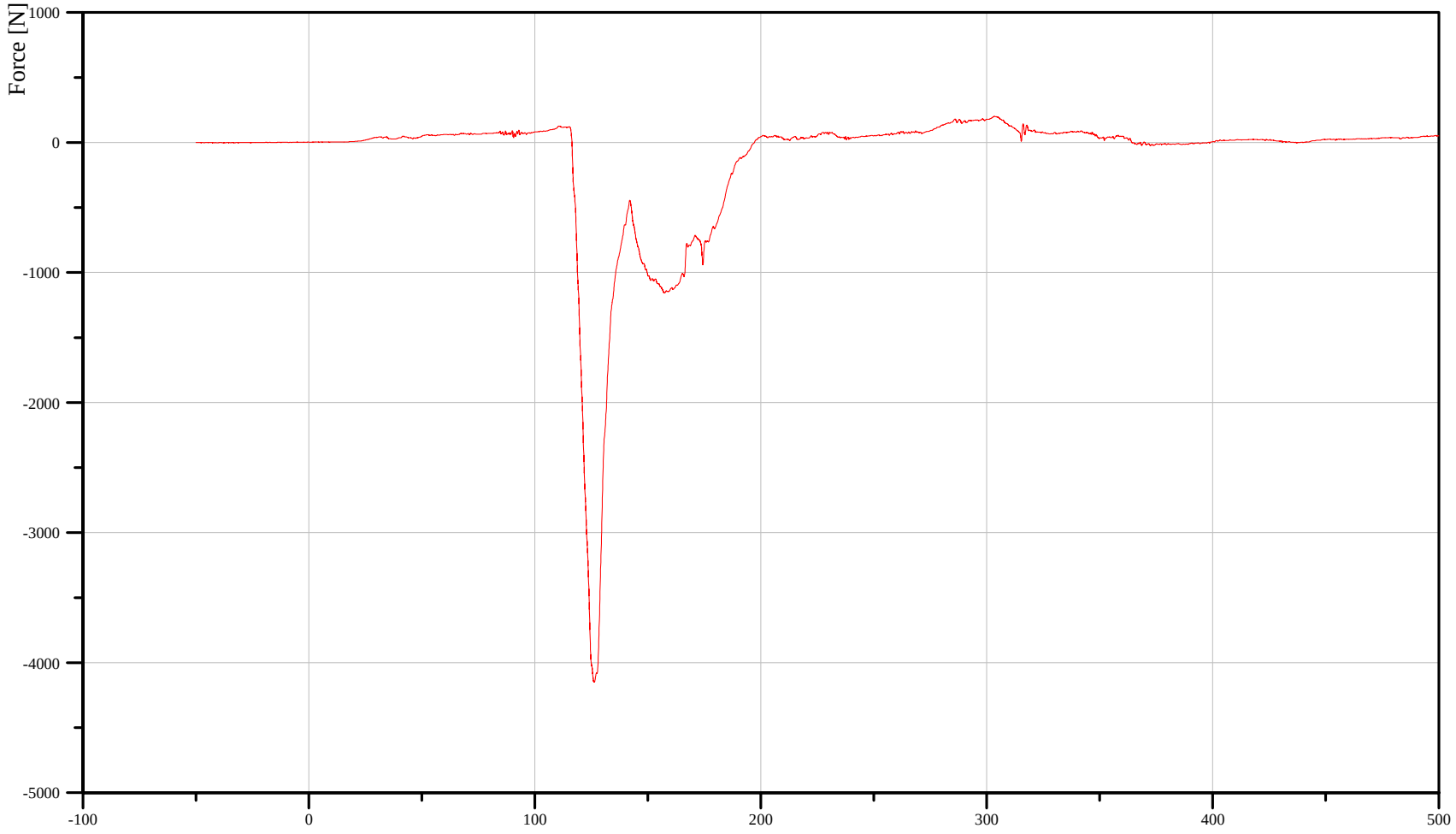
Date: 12/14/2007
Time: 9:12

12L-Right Left Femur Force Z

Customer: VRTC

32FEMRLL00HFFOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-4,148.77 N at 126.32 ms

Max. Value
200.94 N at 303.36 ms

B-564

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

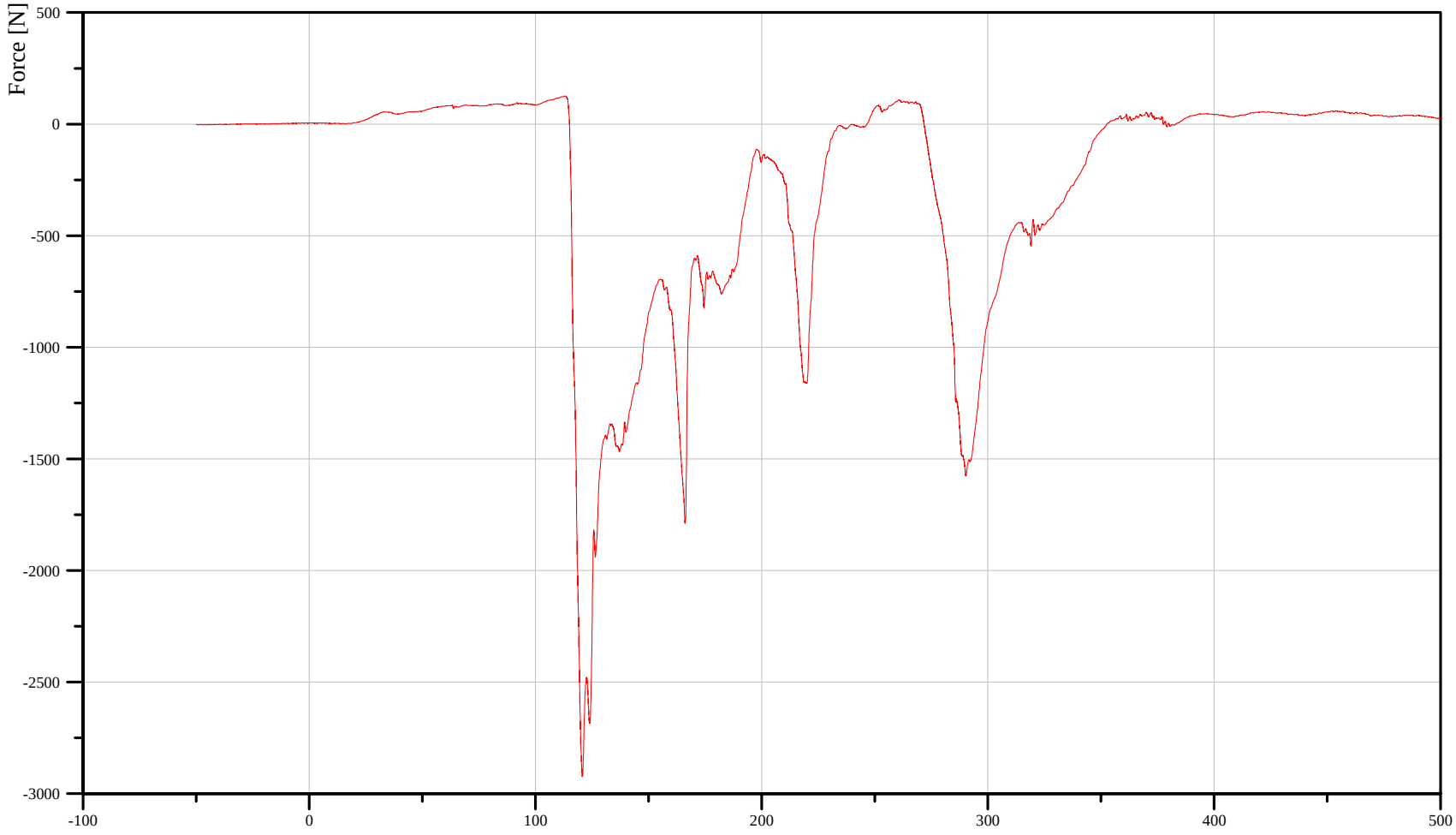
12L-Right Right Femur Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

32FEMRRL00HFFOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-2,922.15 N at 120.72 ms

Max. Value
125.73 N at 113.20 ms

B-565

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

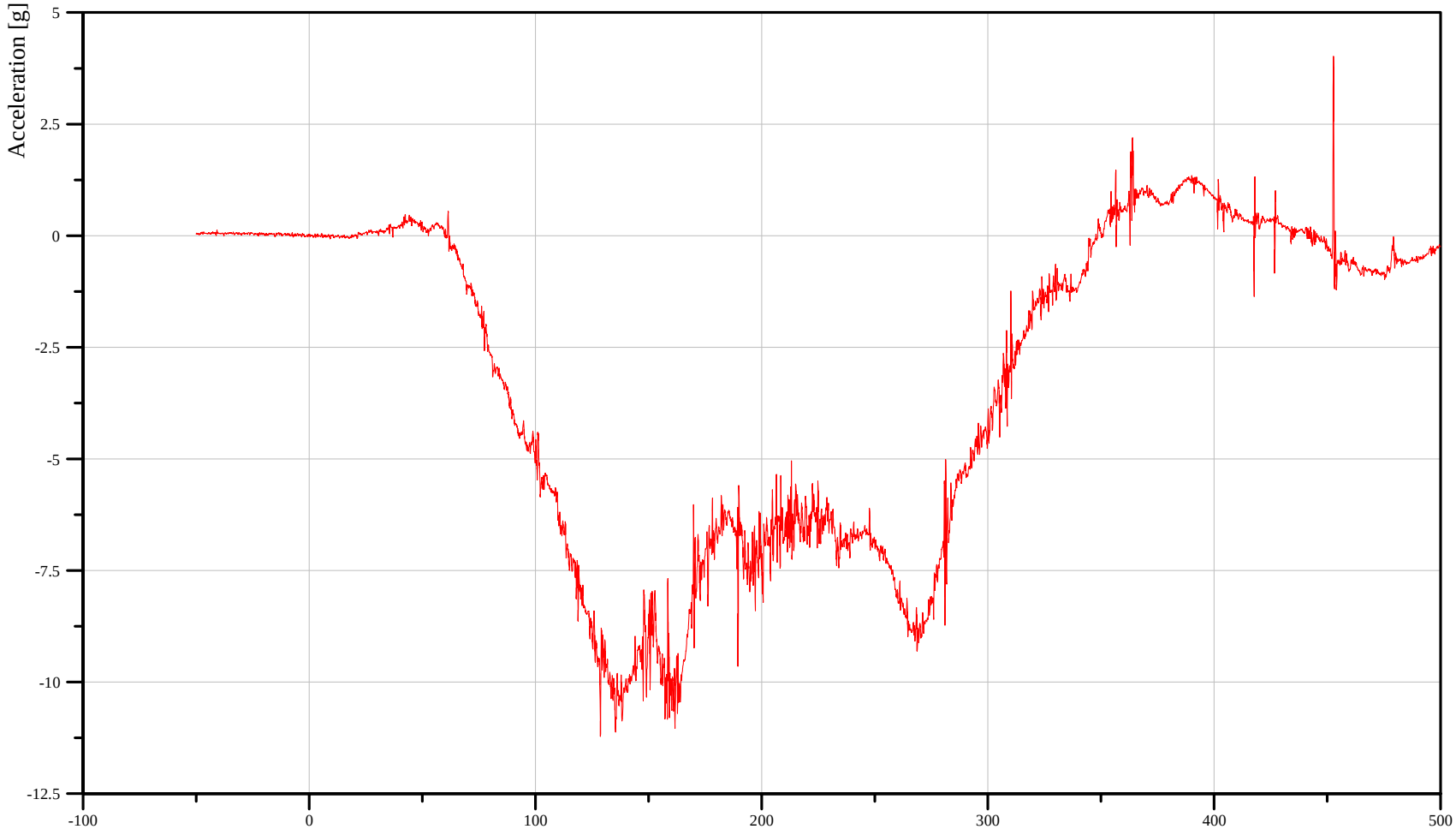
13R-Left Head X-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

33HEADCG00HFACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-11.21 g at 128.72 ms

Max. Value
4.02 g at 452.72 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

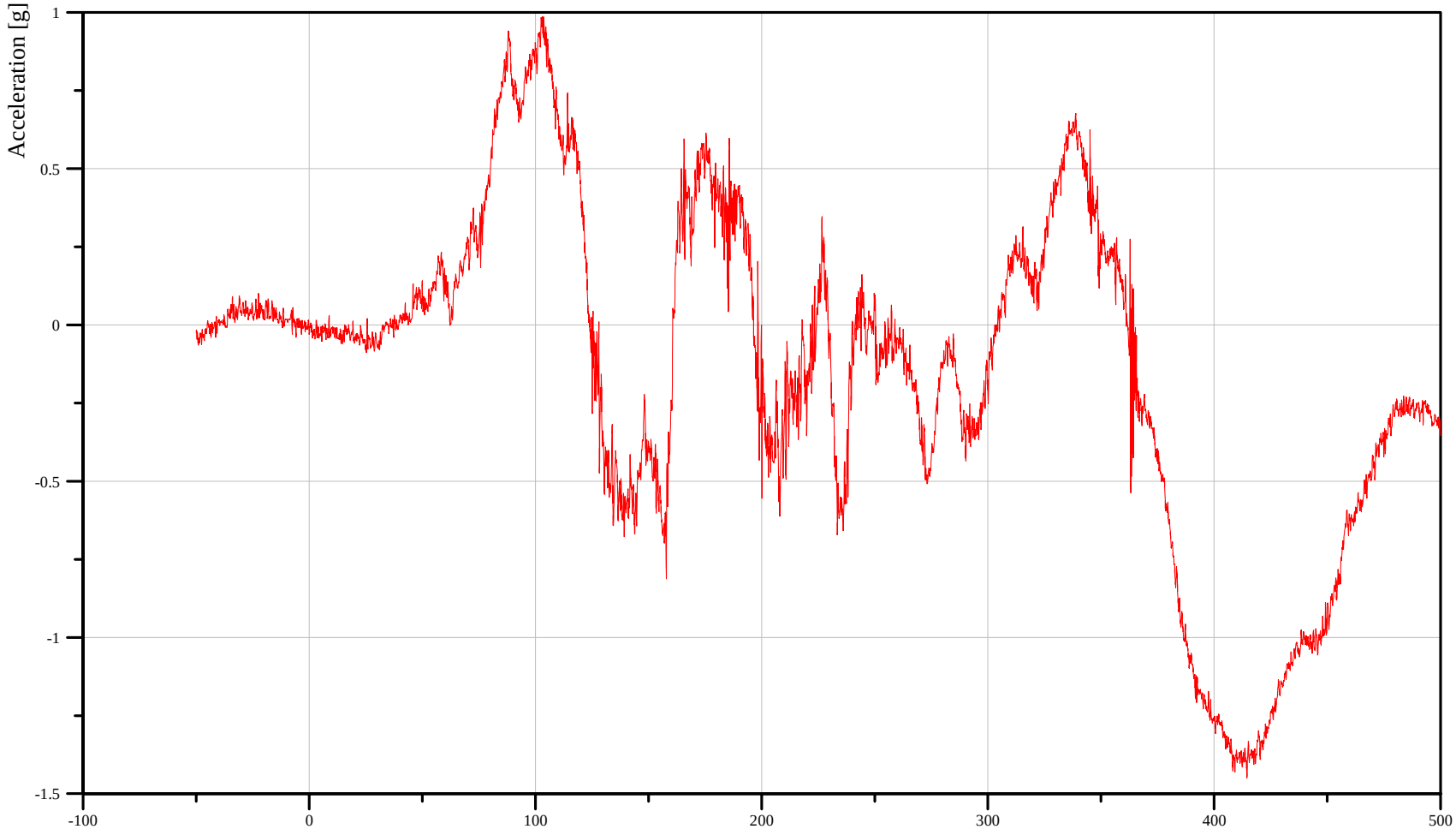
13R-Left Head Y-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

33HEADCG00HFACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-1.45 g at 414.48 ms

Max. Value
0.99 g at 103.20 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

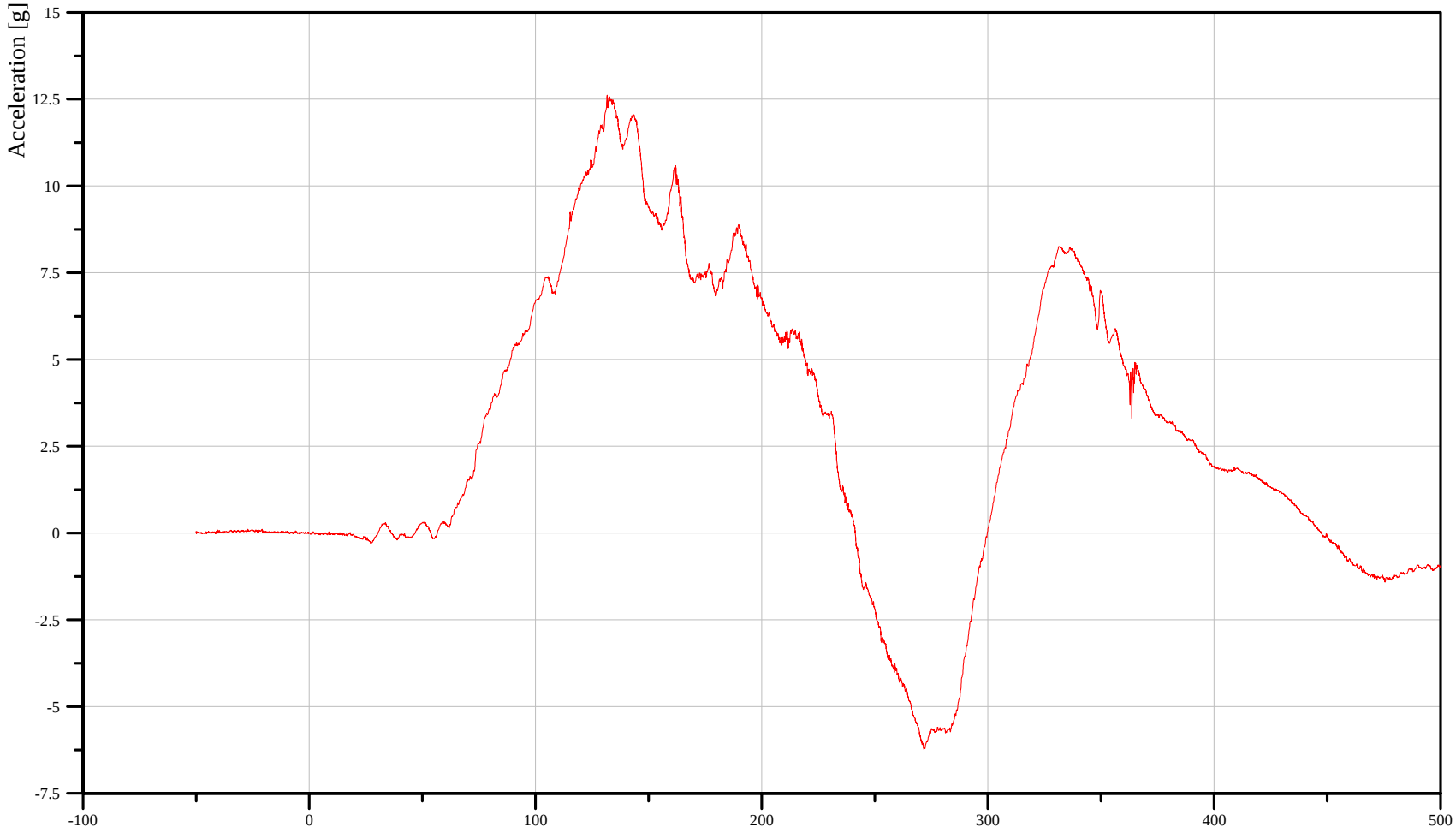
Date: 12/14/2007
Time: 9:12

13R-Left Head Z-Axis Acceleration

Customer: VRTC

33HEADCG00HFACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-6.23 g at 271.76 ms

Max. Value
12.62 g at 131.68 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

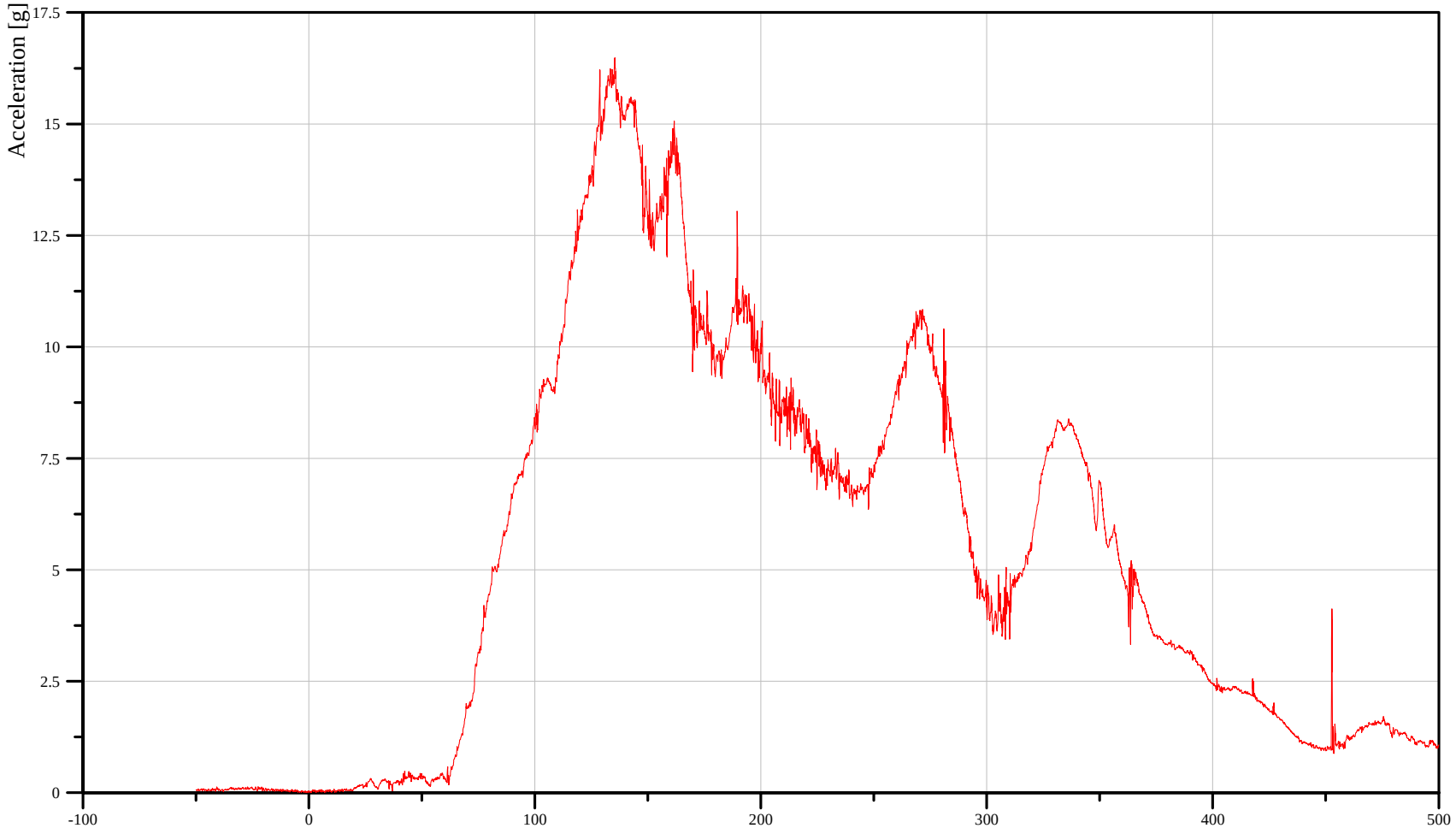
Date: 12/14/2007
Time: 9:12

13R-Left Head Resultant Acceleration

Customer: VRTC

33HEADCG00HFACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.00 g at 6.96 ms

Max. Value
16.48 g at 135.36 ms

B-569

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

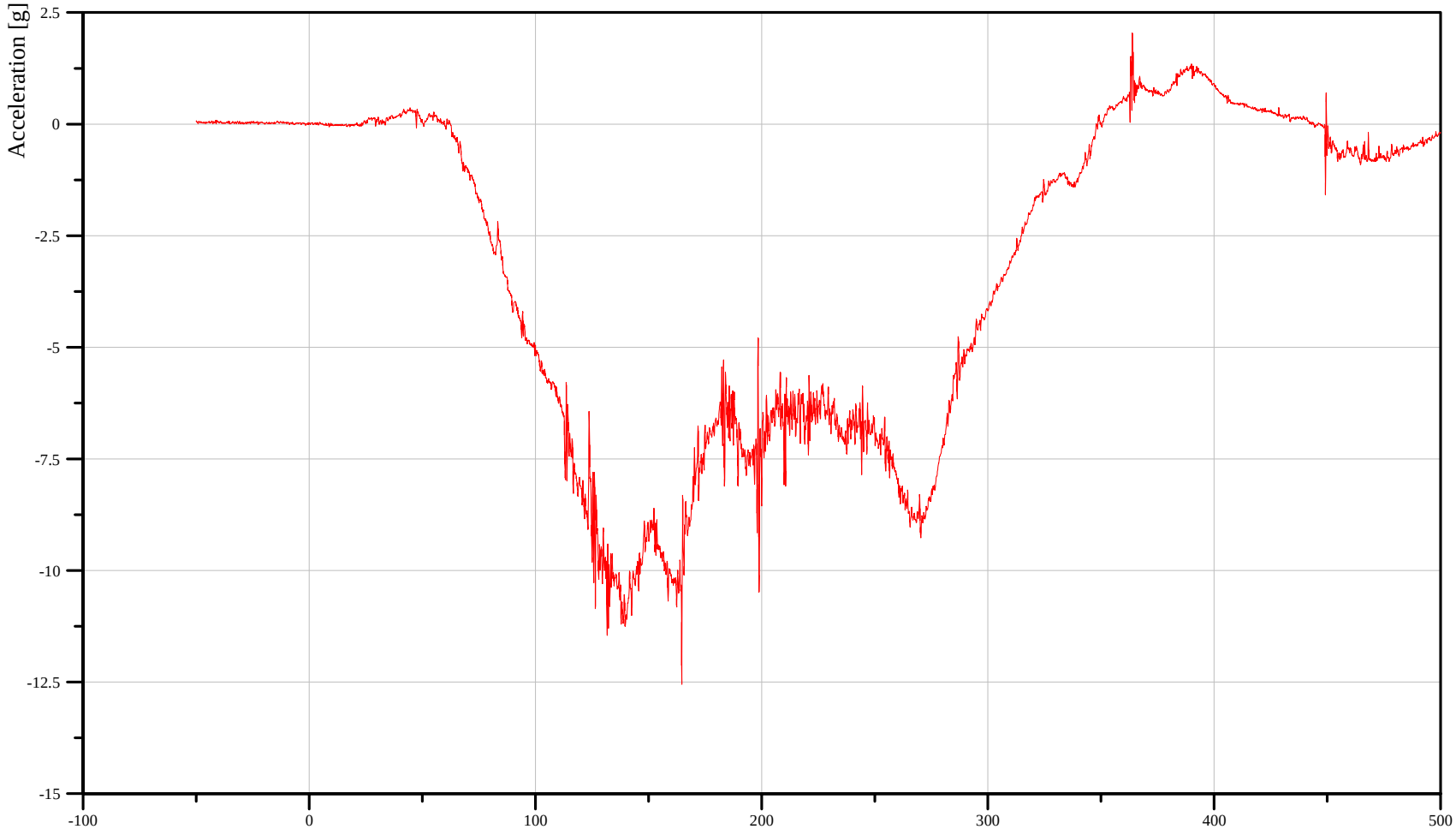
13R-Left Head Redundant X-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

33HEADCGRDHFACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-12.55 g at 164.72 ms

Max. Value
2.04 g at 363.84 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

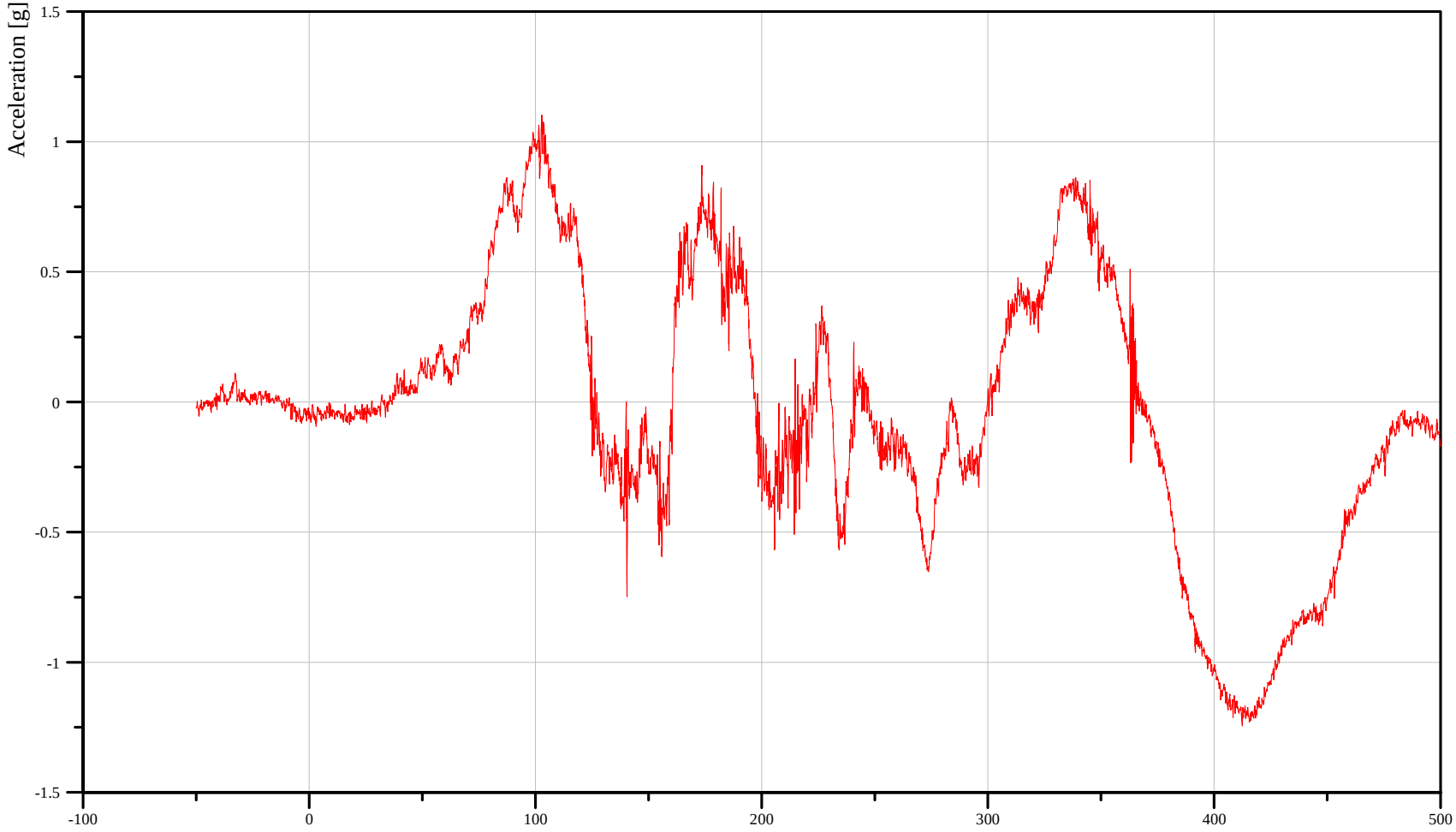
Date: 12/14/2007
Time: 9:12

13R-Left Head Redundant Y-Axis Acceleration

Customer: VRTC

33HEADCGRDHFACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-1.24 g at 412.40 ms

Max. Value
1.10 g at 102.80 ms

B-571

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

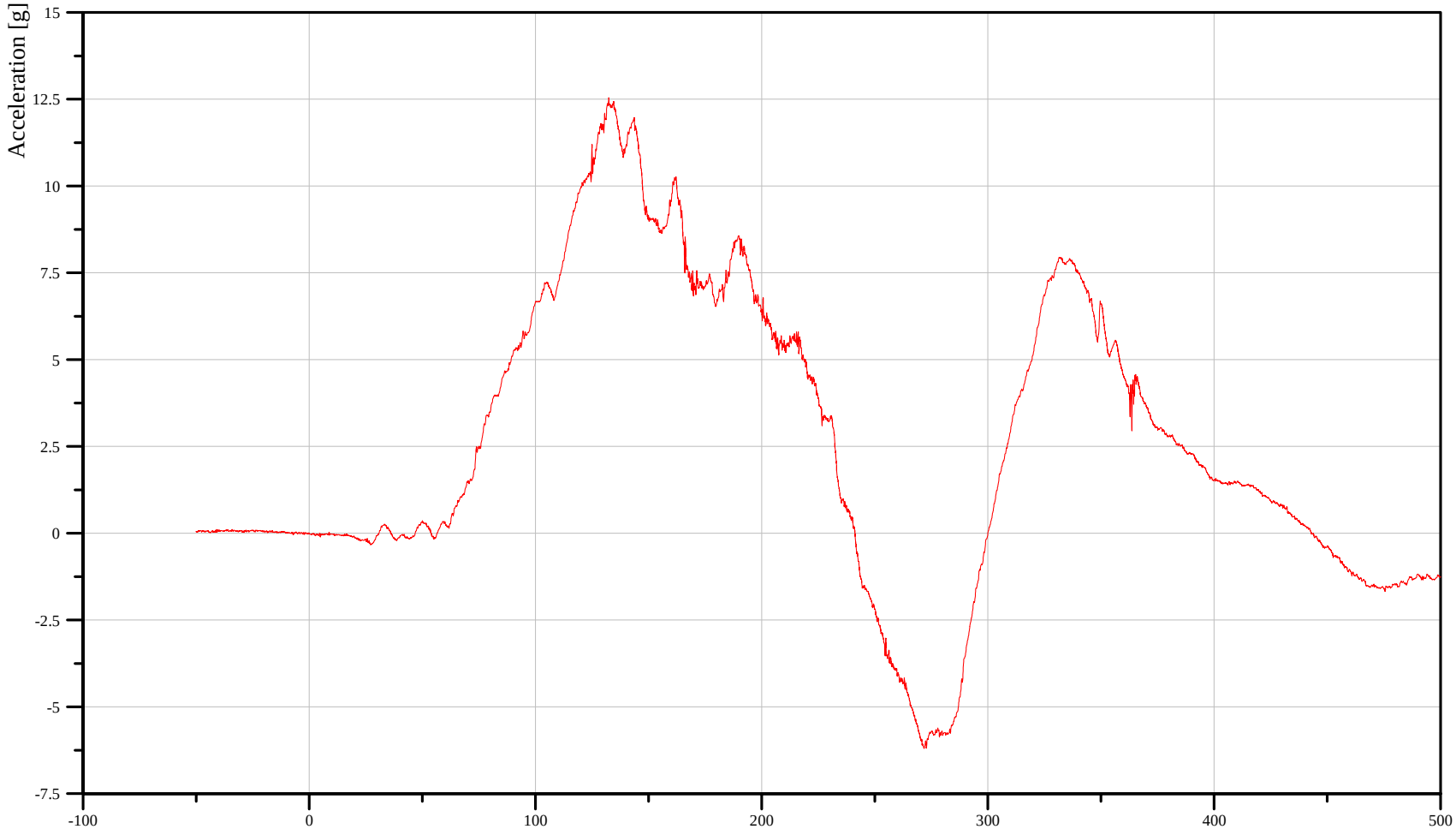
Date: 12/14/2007
Time: 9:12

13R-Left Head Redundant Z-Axis Acceleration

Customer: VRTC

33HEADCGRDHFACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-6.20 g at 271.84 ms

Max. Value
12.55 g at 132.40 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

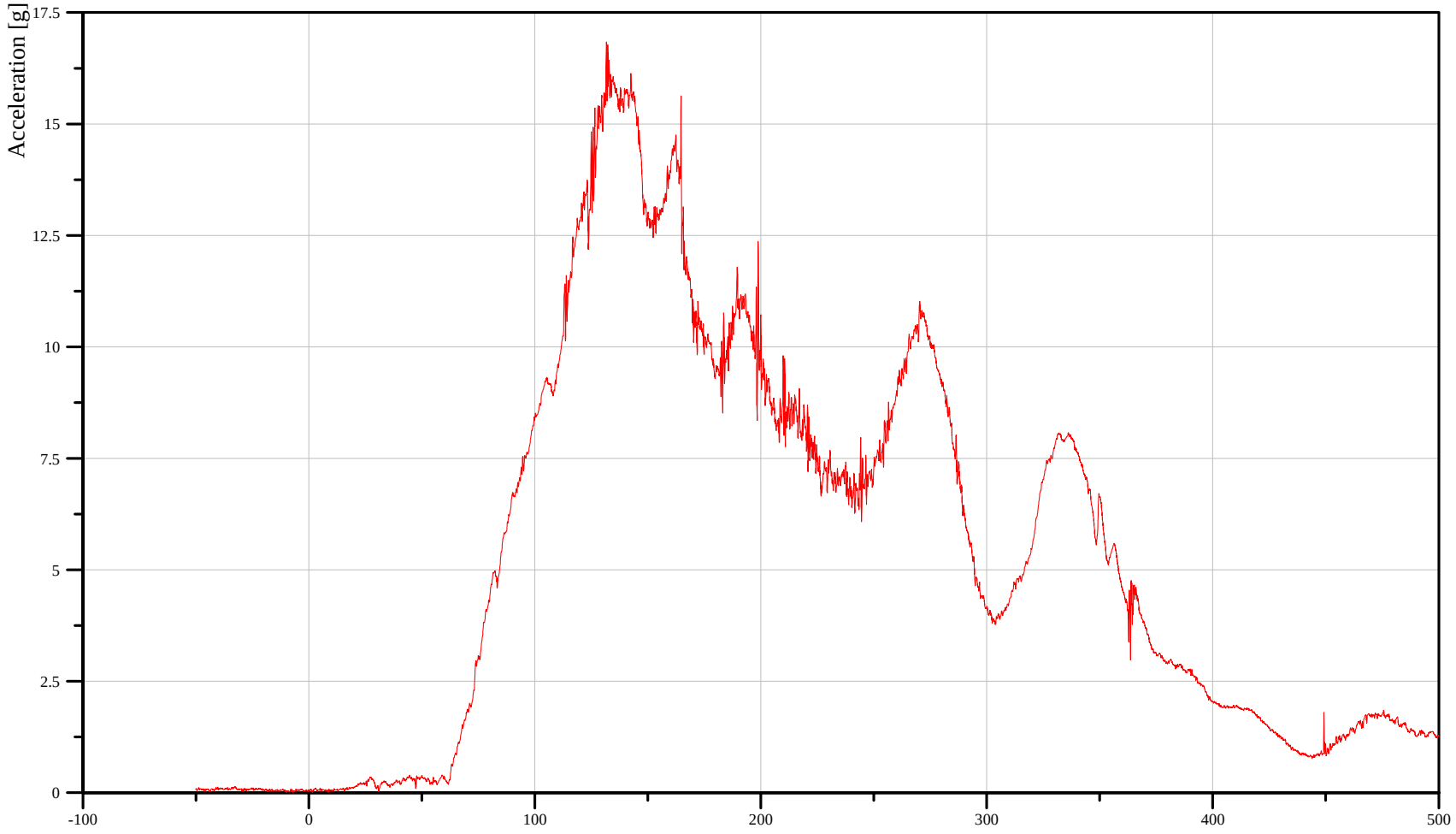
13R-Left Head Redundant Resultant Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

33HEADCGRDHFACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.01 g at -7.12 ms

Max. Value
16.83 g at 131.68 ms

B-573

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

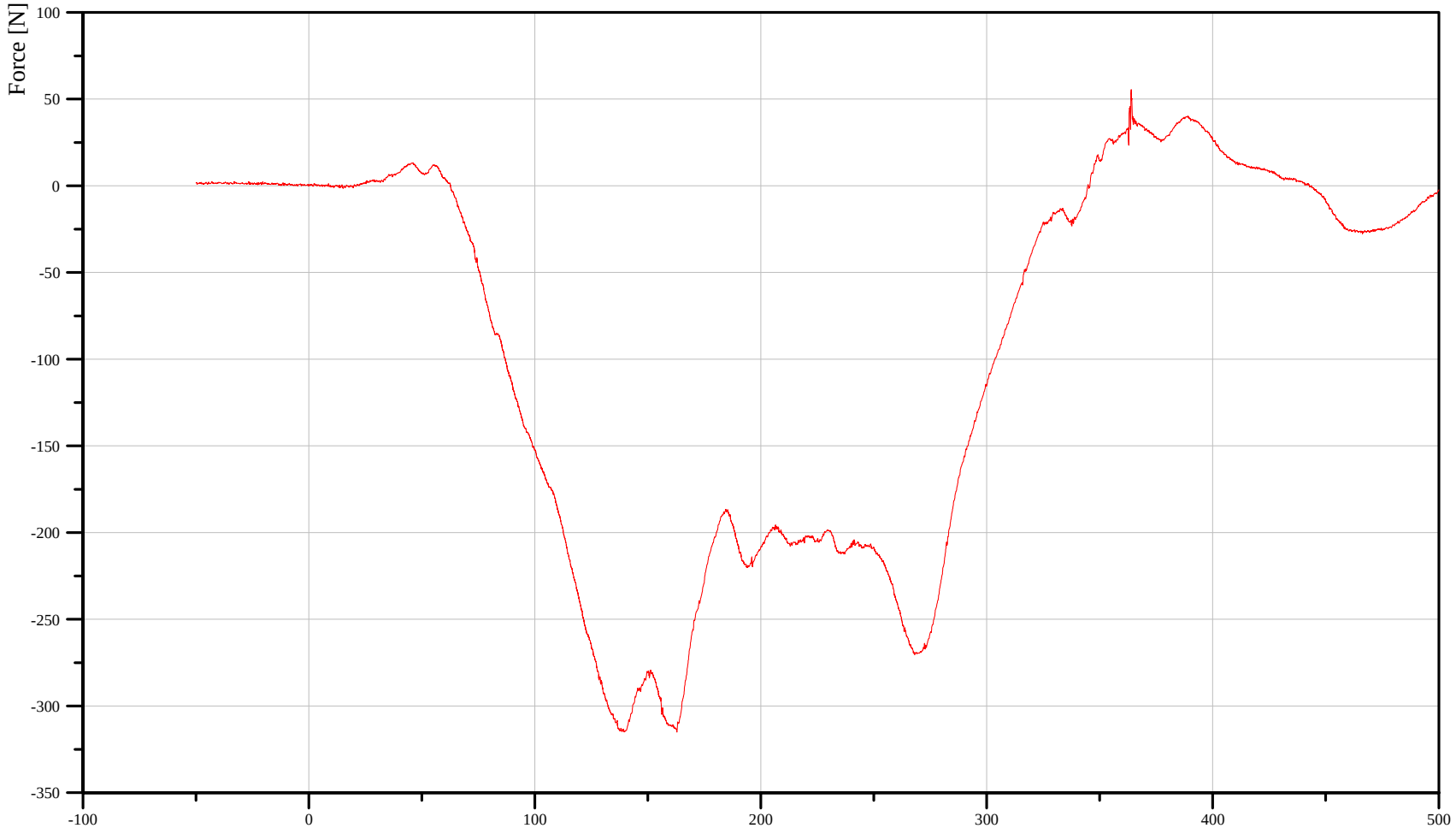
13R-Left Neck Force X

Date: 12/14/2007
Time: 9:12

Customer: VRTC

33NECKUP00HFFOXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-315.06 N at 162.88 ms

Max. Value
55.51 N at 363.92 ms

B-574

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

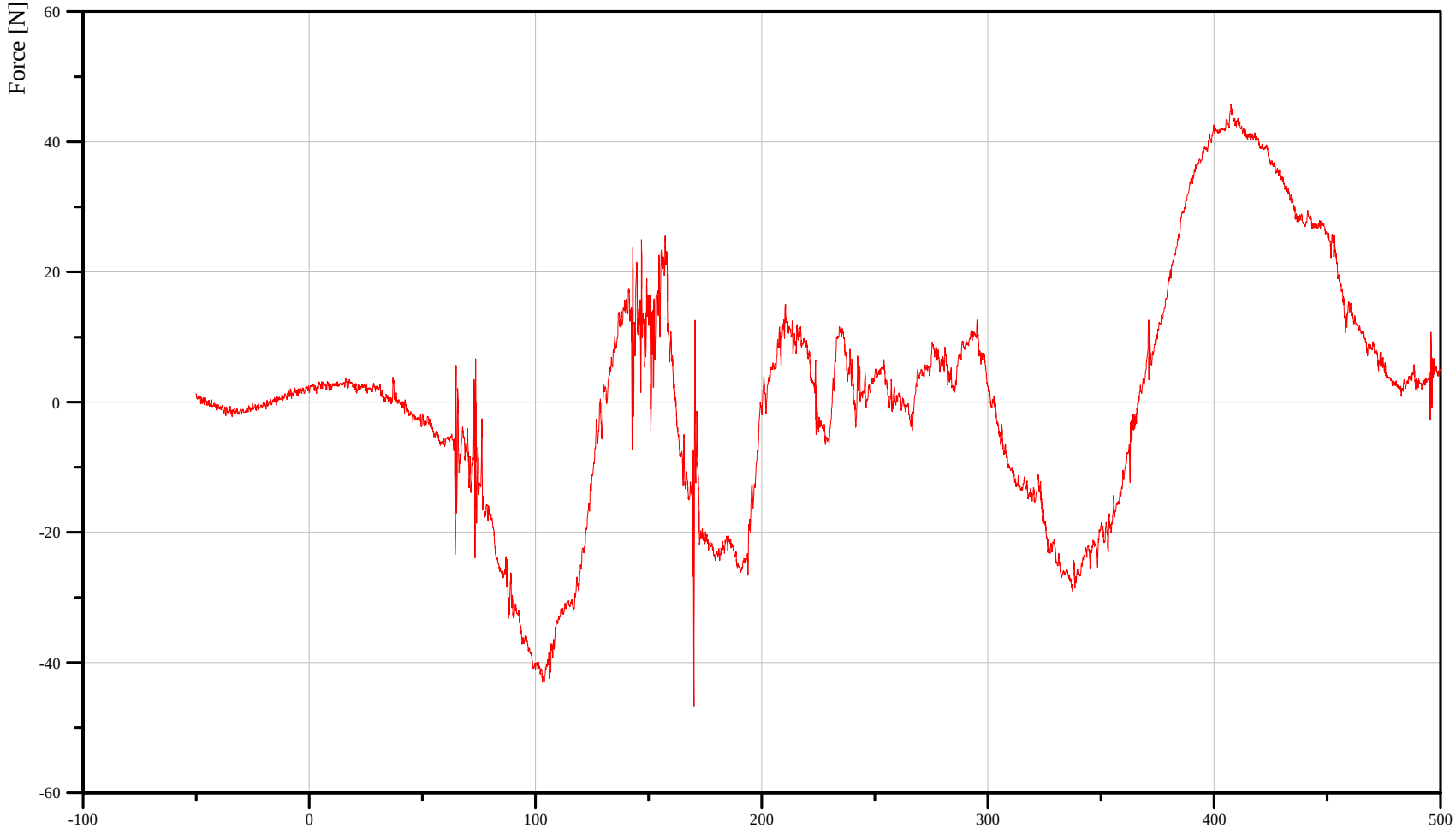
13R-Left Neck Force Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

33NECKUP00HFFOYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-46.80 N at 170.08 ms

Max. Value
45.74 N at 407.44 ms

B-575

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

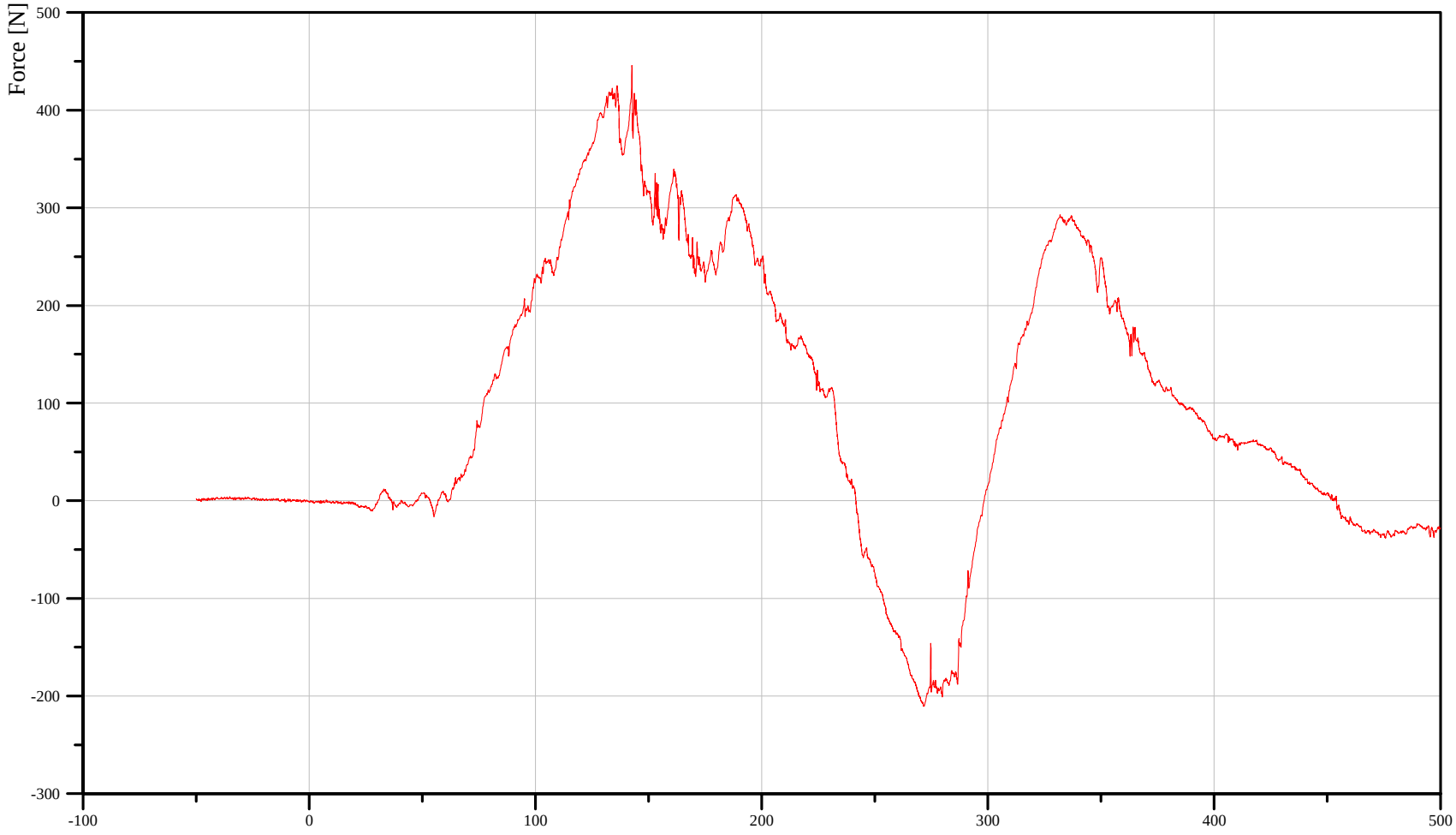
13R-Left Neck Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

33NECKUP00HFFOZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-210.35 N at 271.84 ms

Max. Value
445.64 N at 142.64 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

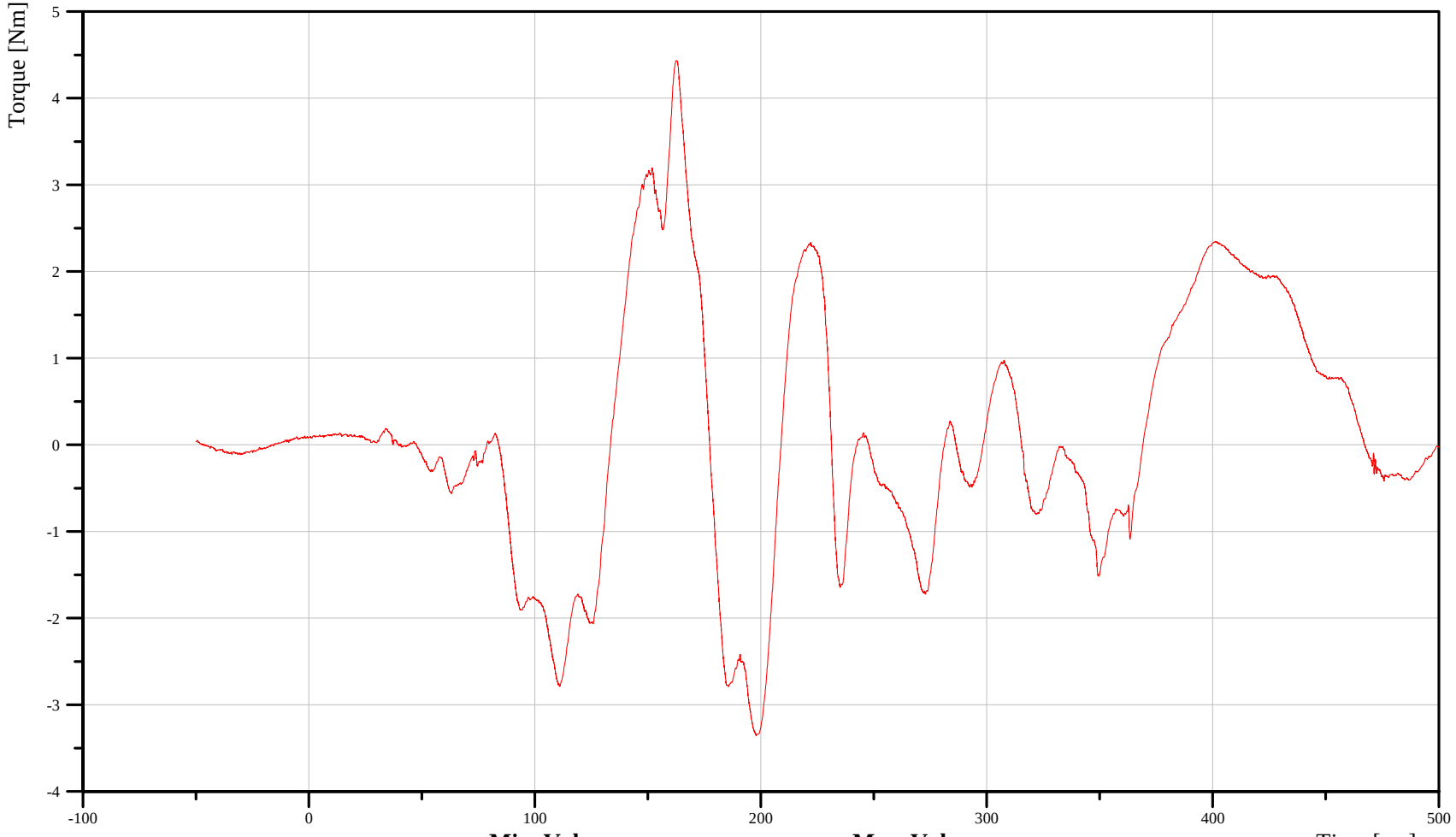
Date: 12/14/2007
Time: 9:12

13R-Left Neck Moment X

Customer: VRTC

33NECKUP00HFMOXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-3.35 Nm at 197.92 ms

Max. Value
4.44 Nm at 162.56 ms

B-577

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

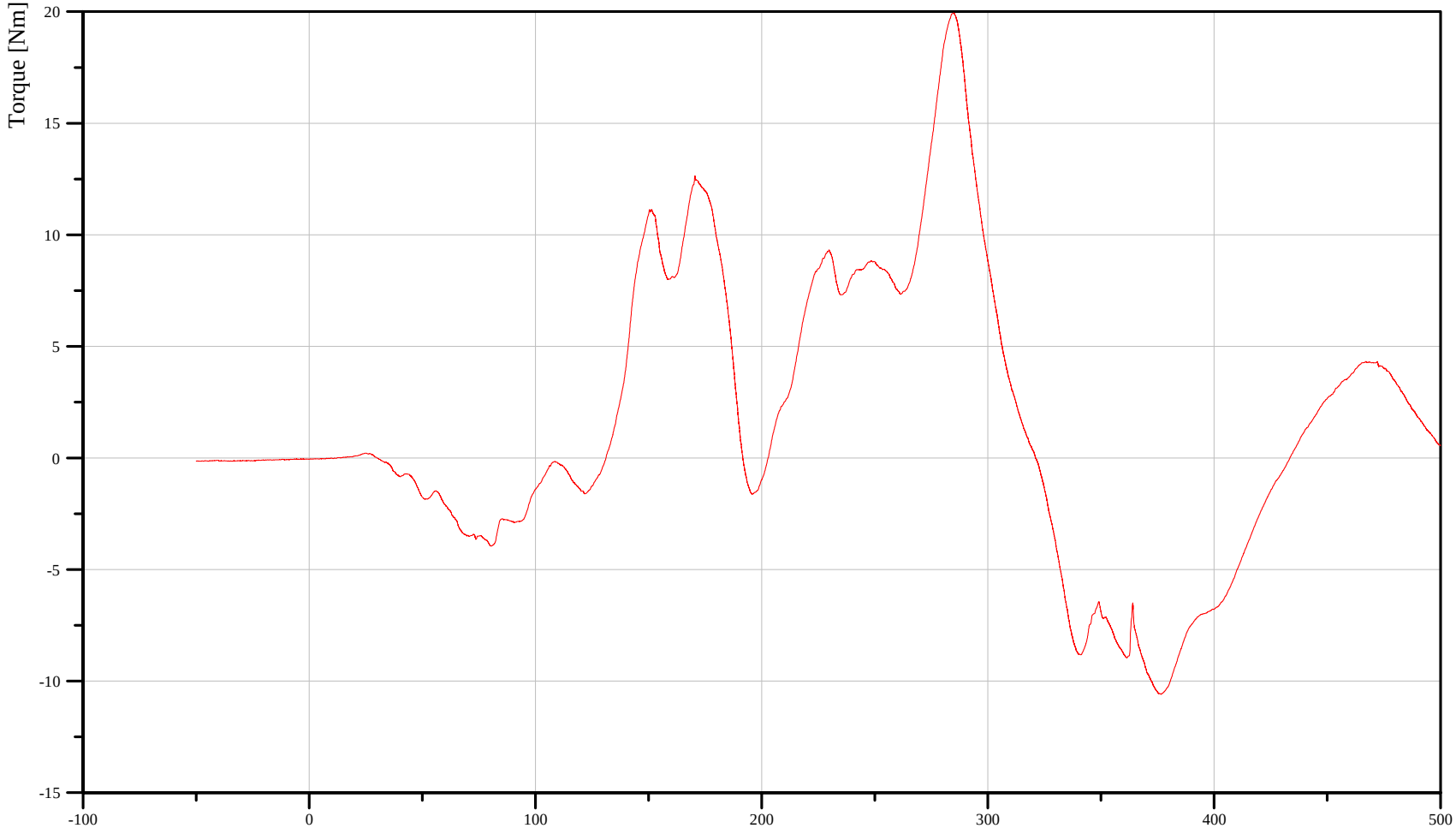
13R-Left Neck Moment Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

33NECKUP00HFMOYB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-10.58 Nm at 376.56 ms

Max. Value
19.94 Nm at 284.88 ms

B-578

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

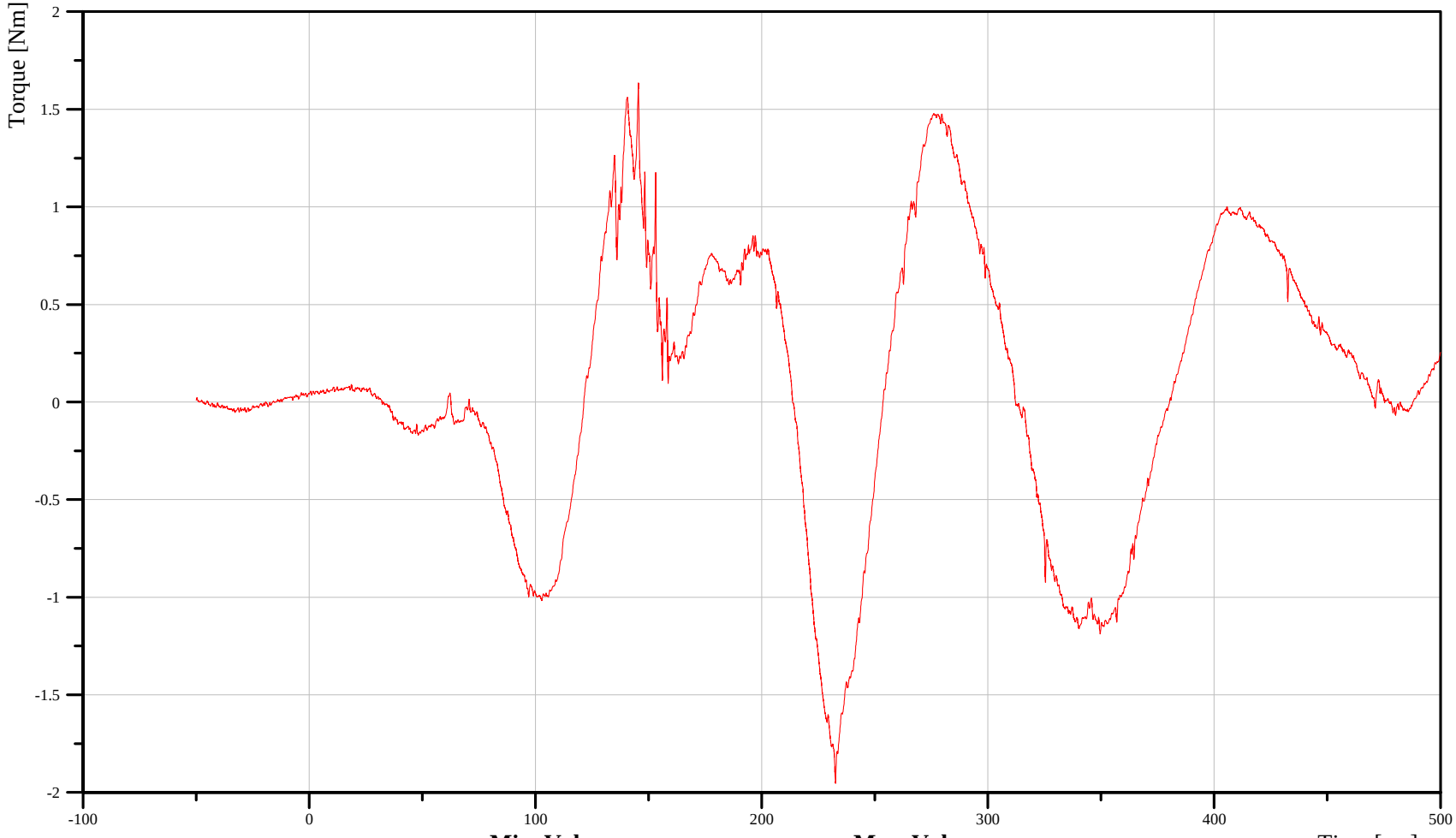
Date: 12/14/2007
Time: 9:12

13R-Left Neck Moment Z

Customer: VRTC

33NECKUP00HFMOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-1.95 Nm at 232.64 ms

Max. Value
1.63 Nm at 145.52 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

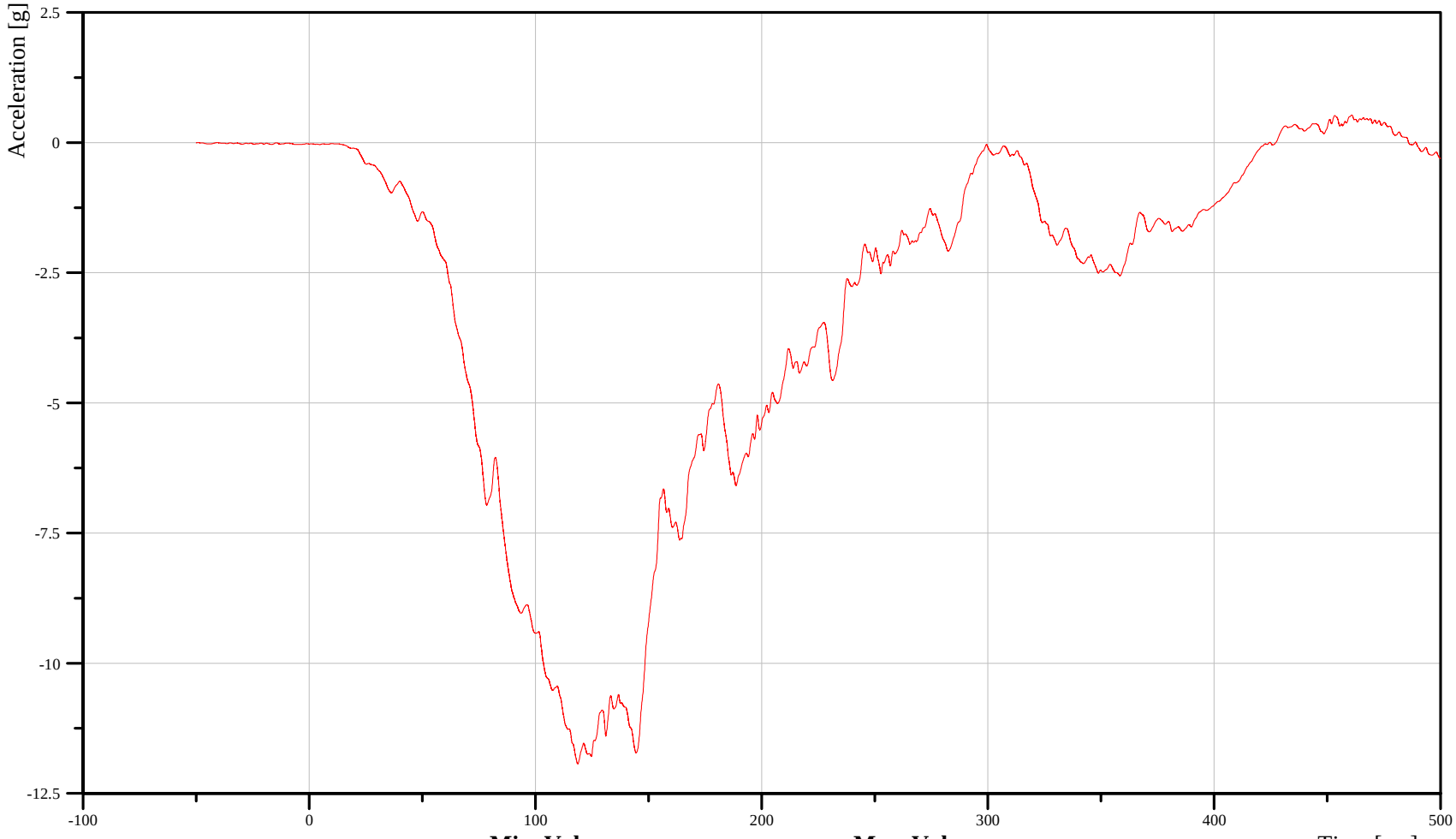
13R-Left Chest X-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

33CHSTCG00HFACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-11.93 g at 118.72 ms

Max. Value
0.53 g at 460.80 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

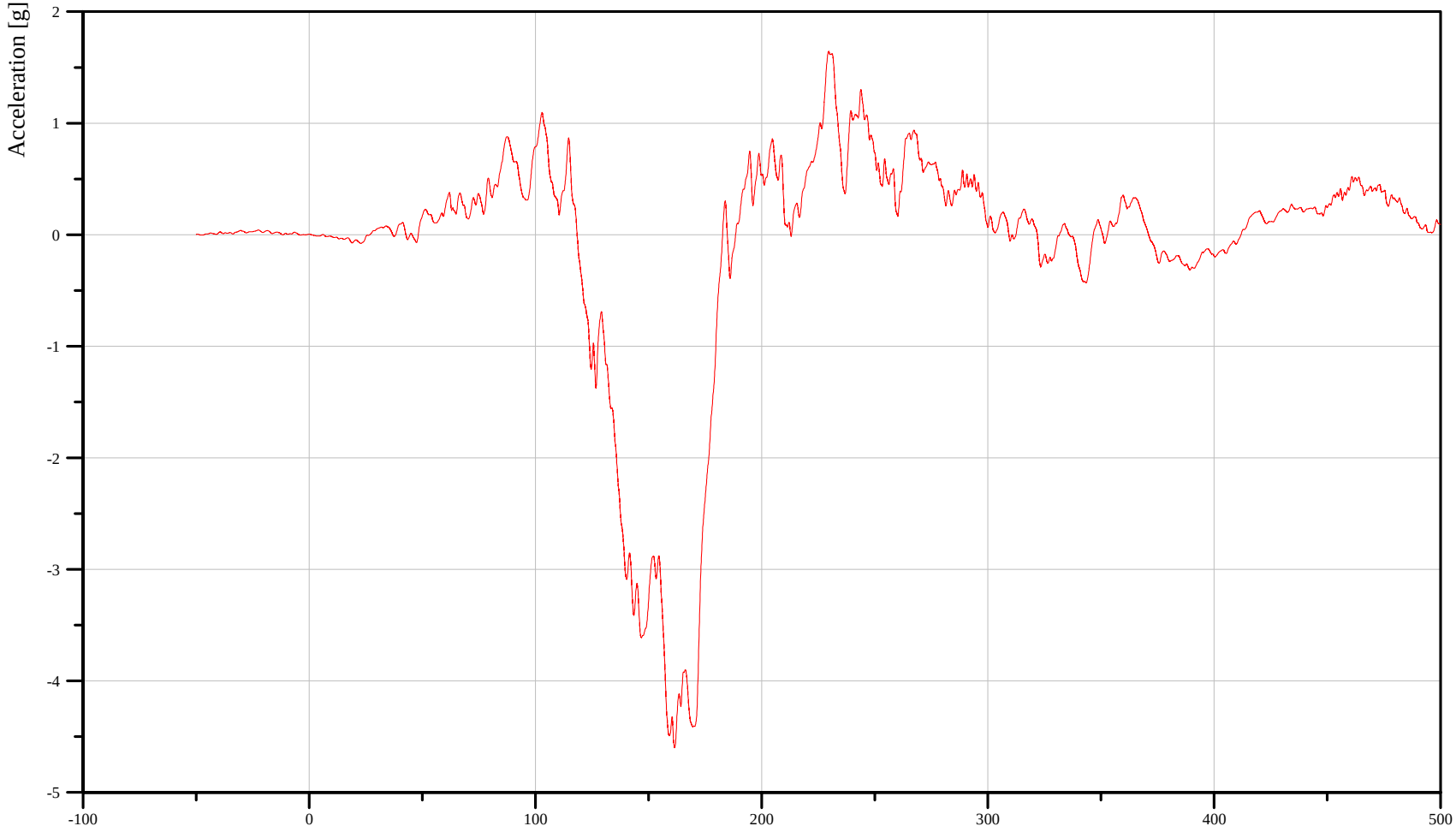
Date: 12/14/2007
Time: 9:12

13R-Left Chest Y-Axis Acceleration

Customer: VRTC

33CHSTCG00HFACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-4.60 g at 161.52 ms

Max. Value
1.64 g at 229.60 ms

B-581

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

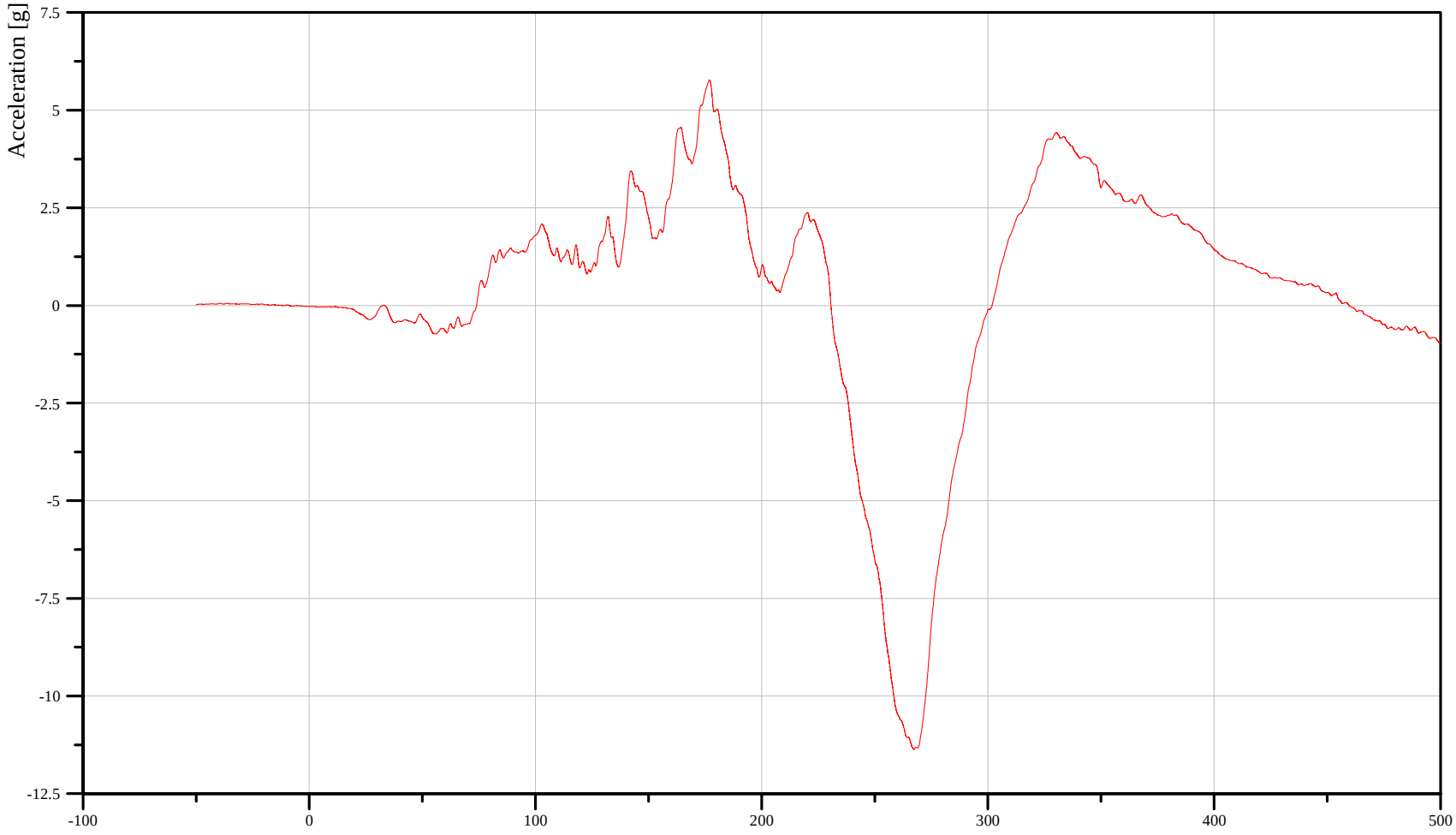
Date: 12/14/2007
Time: 9:12

13R-Left Chest Z-Axis Acceleration

Customer: VRTC

33CHSTCG00HFACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-11.36 g at 267.36 ms

Max. Value
5.77 g at 176.88 ms

B-582

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

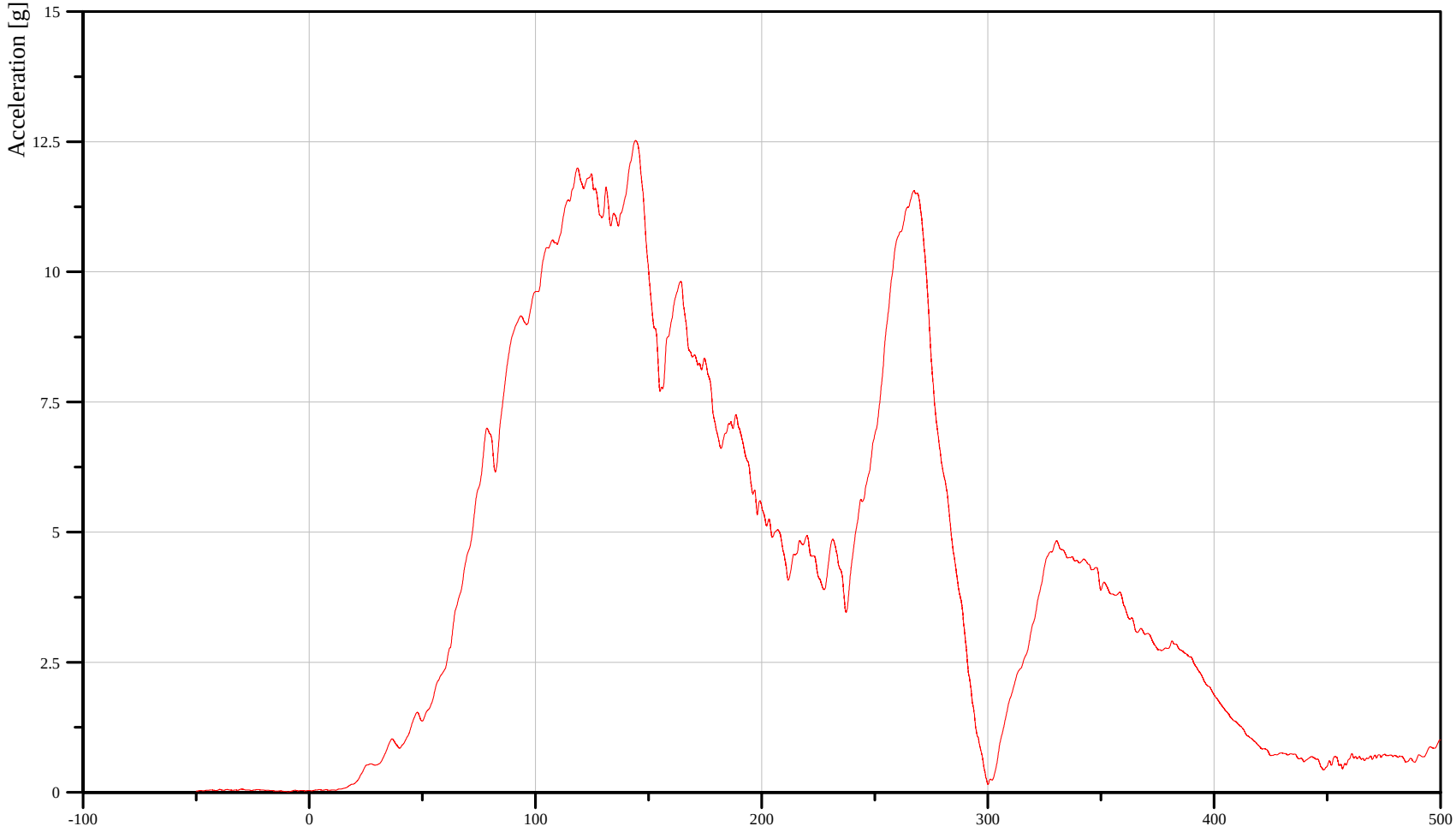
Date: 12/14/2007
Time: 9:12

13R-Left Chest Resultant Acceleration

Customer: VRTC

33CHSTCG00HFACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.01 g at -9.12 ms

Max. Value
12.52 g at 144.24 ms

B-583

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

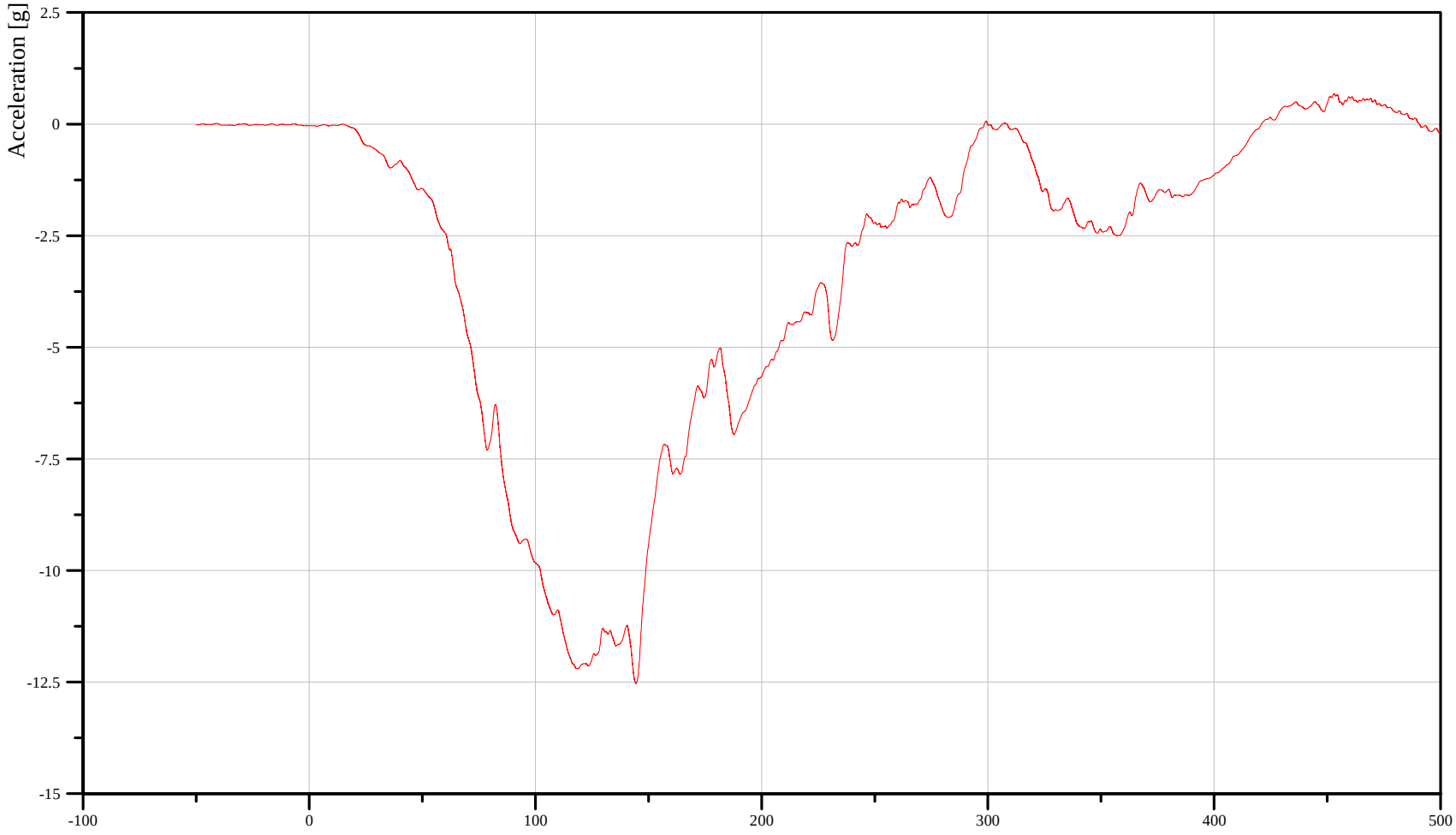
13R-Left Chest Redundant X-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

33CHSTCGRDHFACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-12.53 g at 144.56 ms

Max. Value
0.68 g at 452.96 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

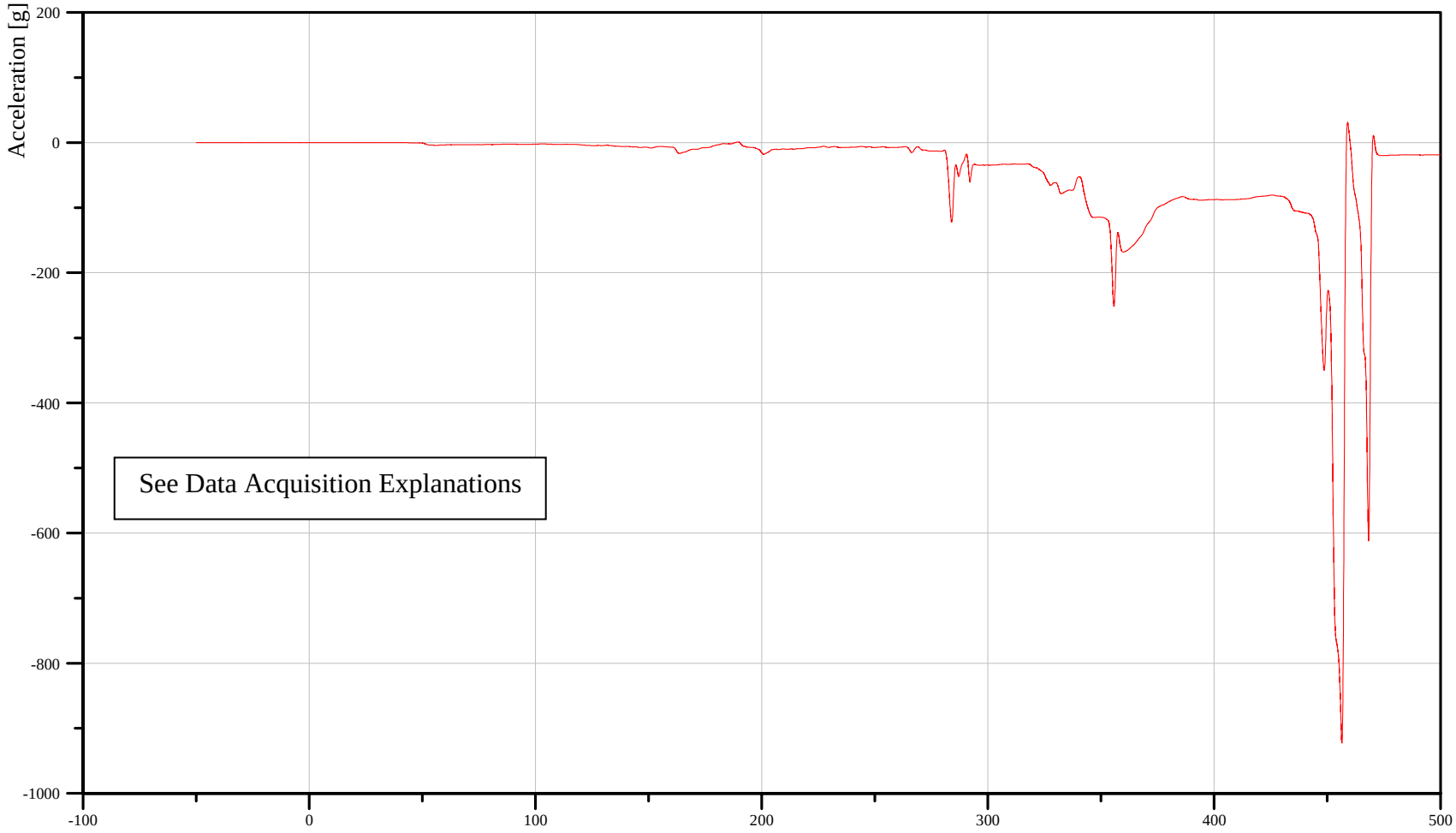
13R-Left Chest Redundant Y-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

33CHSTCGRDHFACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-922.83 g at 456.48 ms

Max. Value
31.15 g at 458.96 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

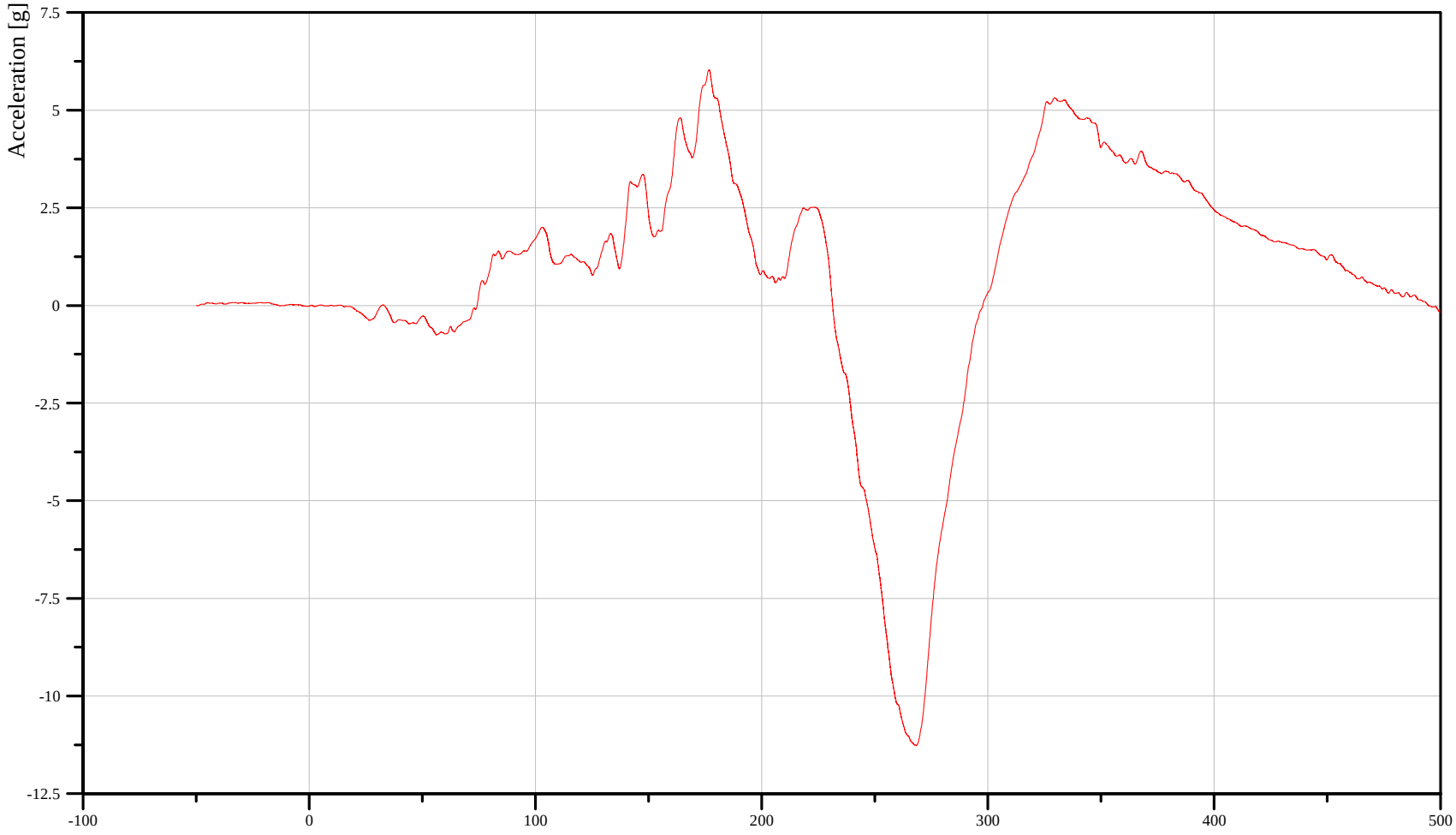
13R-Left Chest Redundant Z-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

33CHSTCGRDHFACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-11.26 g at 268.40 ms

Max. Value
6.04 g at 176.72 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

Date: 12/14/2007
Time: 9:12

13R-Left Chest Redundant Resultant Acceleration

Customer: VRTC

33CHSTCGRDHFACRC

TRC Inc. Test Lab: CTF
Test Number: 071214

Filter: CFC_180

Min. Value
0.01 g at -12.08 ms

Max. Value
922.83 g at 456.48 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

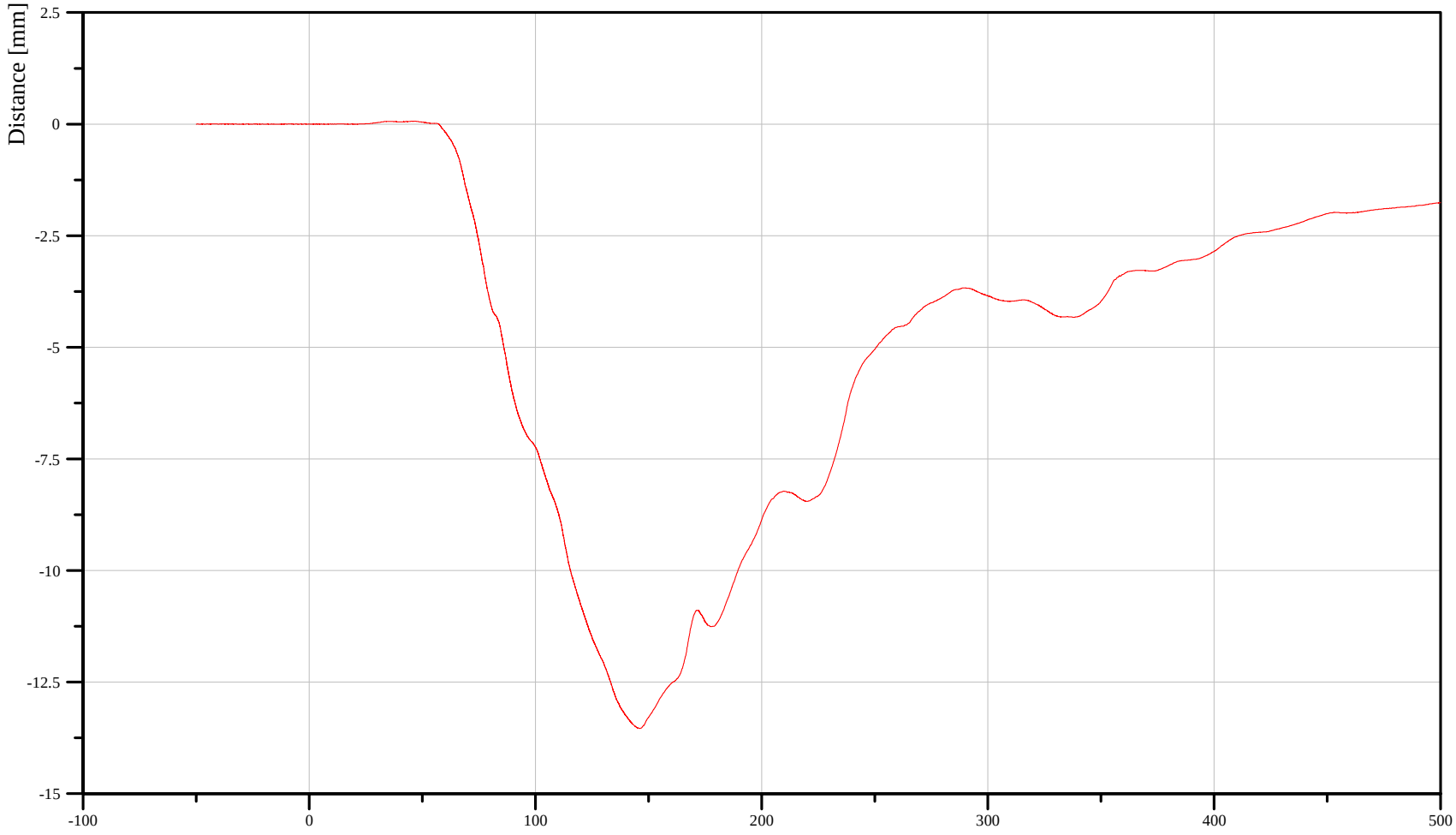
Date: 12/14/2007
Time: 9:12

13R-Left Chest X-Axis Deflection

Customer: VRTC

33CHST0000HFDSXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-13.54 mm at 146.08 ms

Max. Value
0.06 mm at 45.20 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

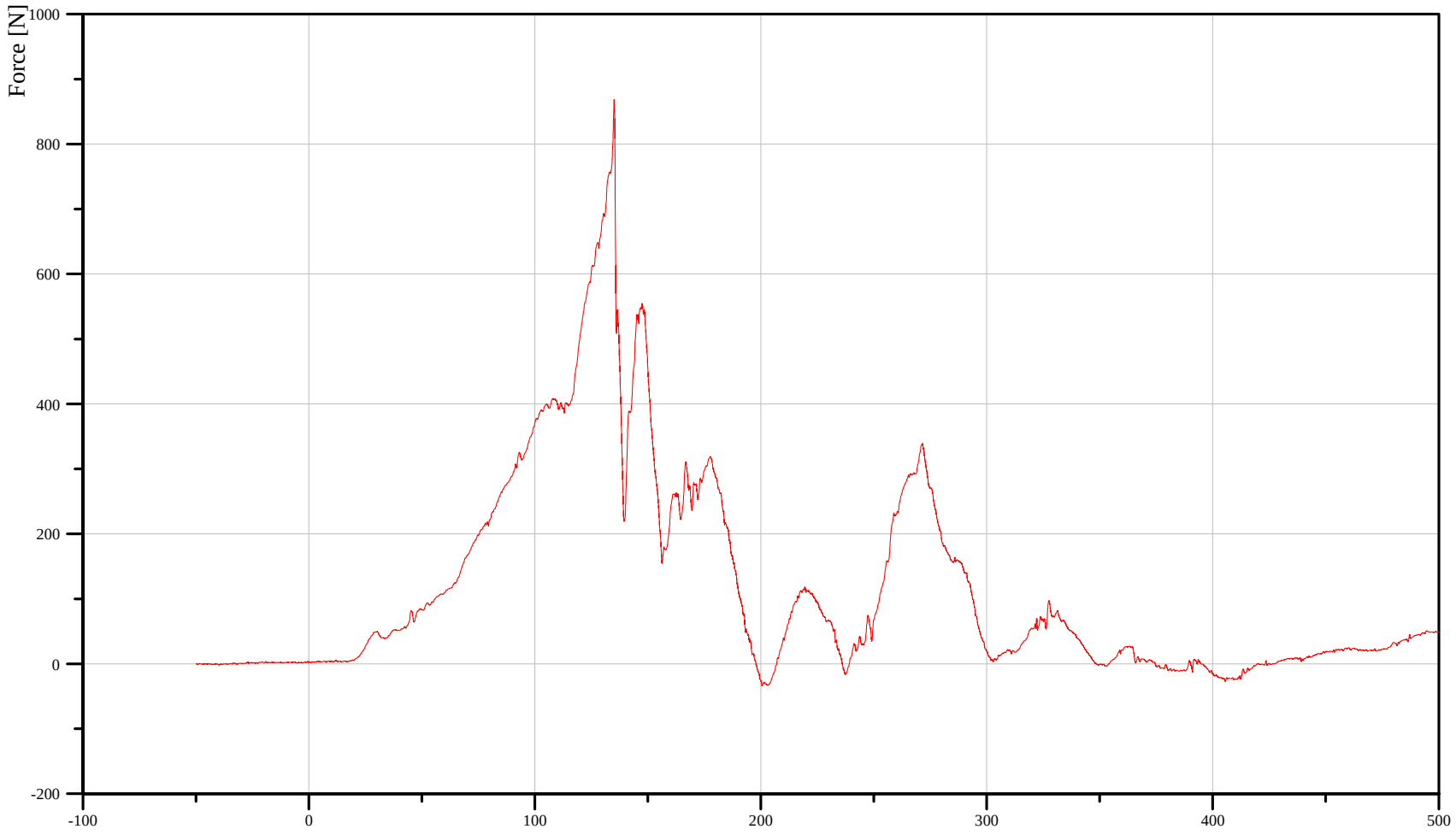
Date: 12/14/2007
Time: 9:12

13R-Left Left Femur Force Z

Customer: VRTC

33FEMRLL00HFFOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-34.01 N at 200.64 ms

Max. Value
868.05 N at 135.12 ms

B-589

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

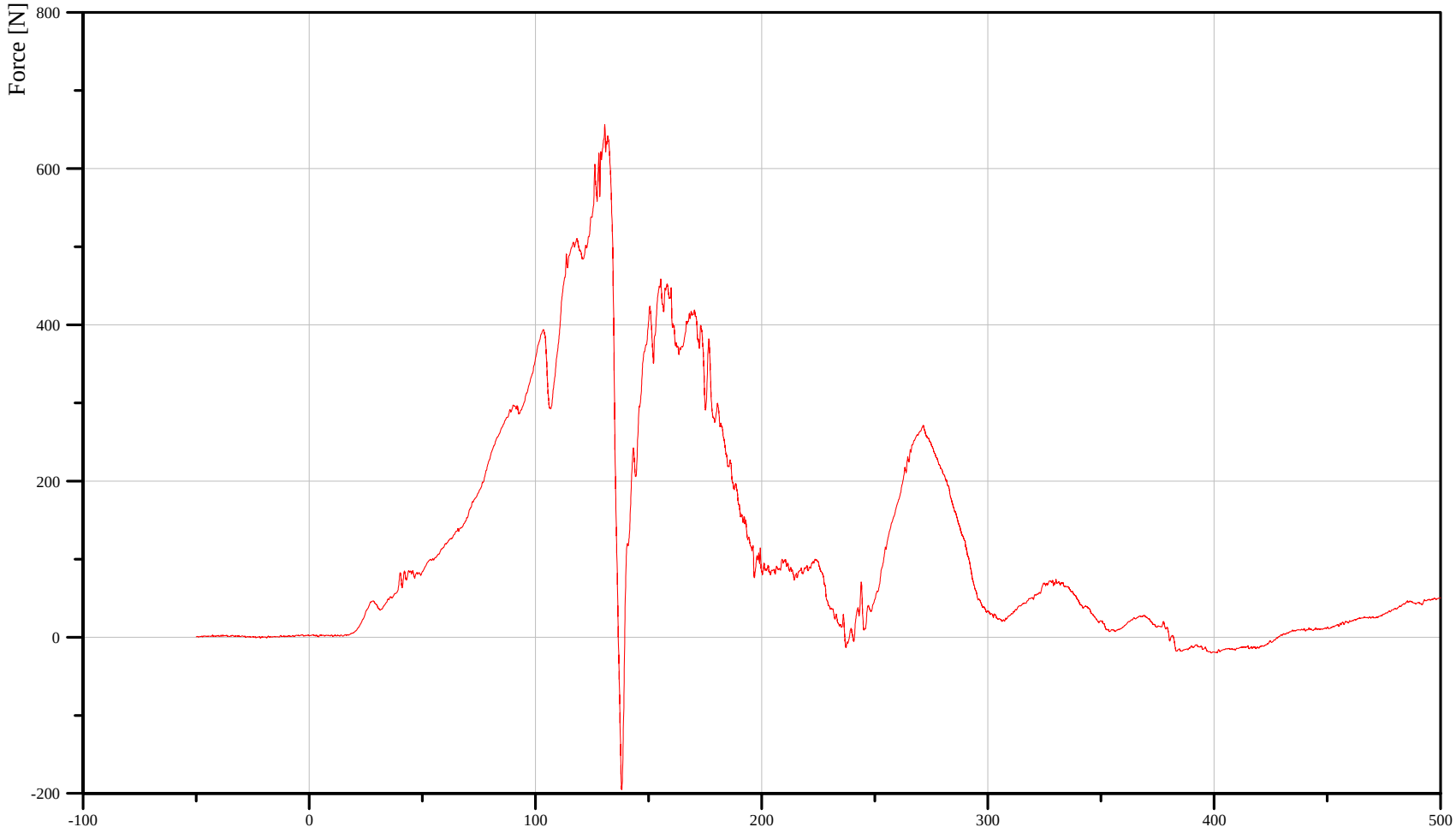
Date: 12/14/2007
Time: 9:12

13R-Left Right Femur Force Z

Customer: VRTC

33FEMRRL00HFFOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-195.08 N at 138.16 ms

Max. Value
656.76 N at 130.64 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

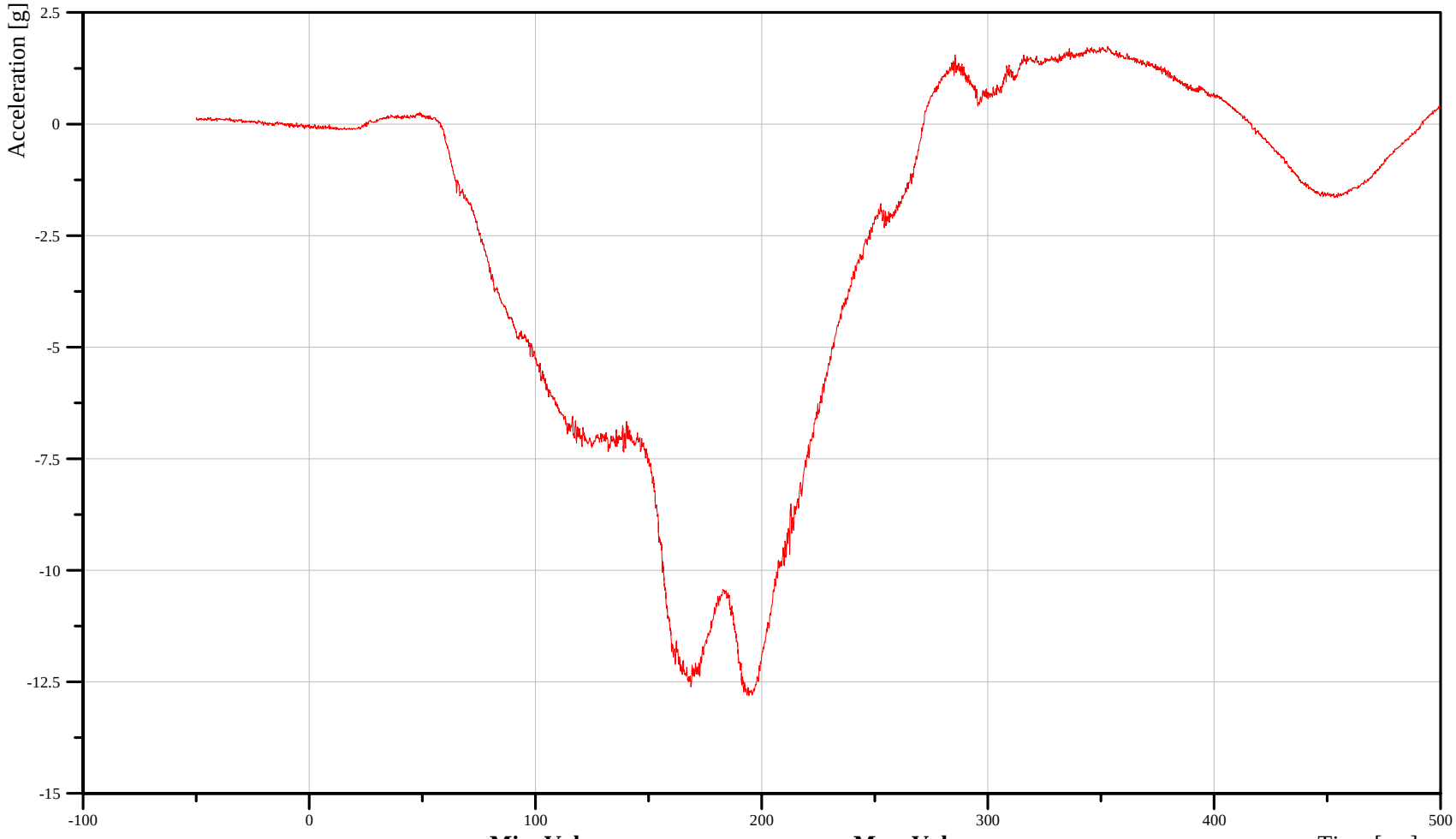
Date: 12/14/2007
Time: 9:12

13R-Right Head X-Axis Acceleration

Customer: VRTC

34HEADCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-12.80 g at 193.52 ms

Max. Value
1.73 g at 352.96 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

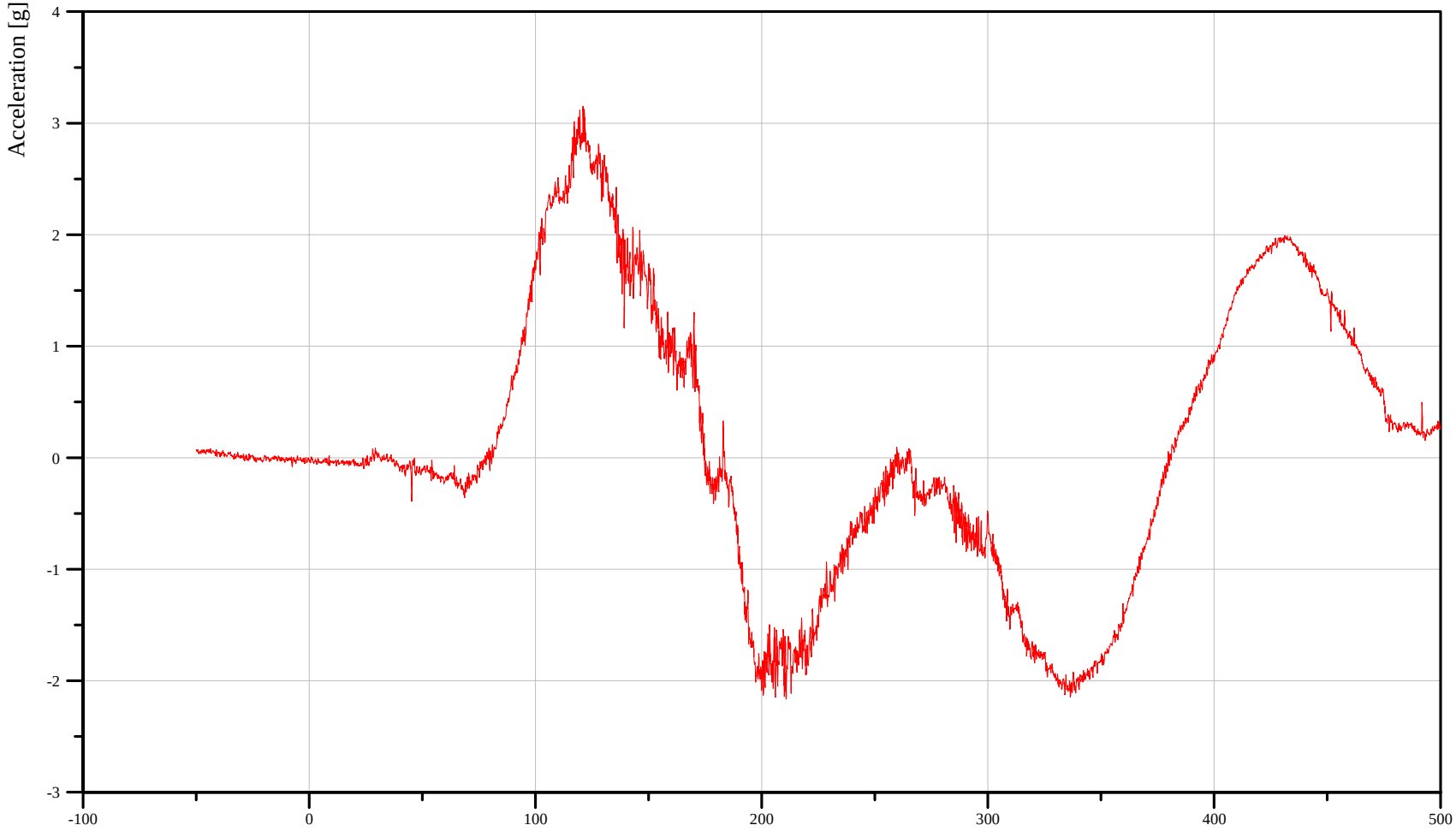
Date: 12/14/2007
Time: 9:12

13R-Right Head Y-Axis Acceleration

Customer: VRTC

34HEADCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-2.17 g at 210.80 ms

Max. Value
3.15 g at 121.04 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

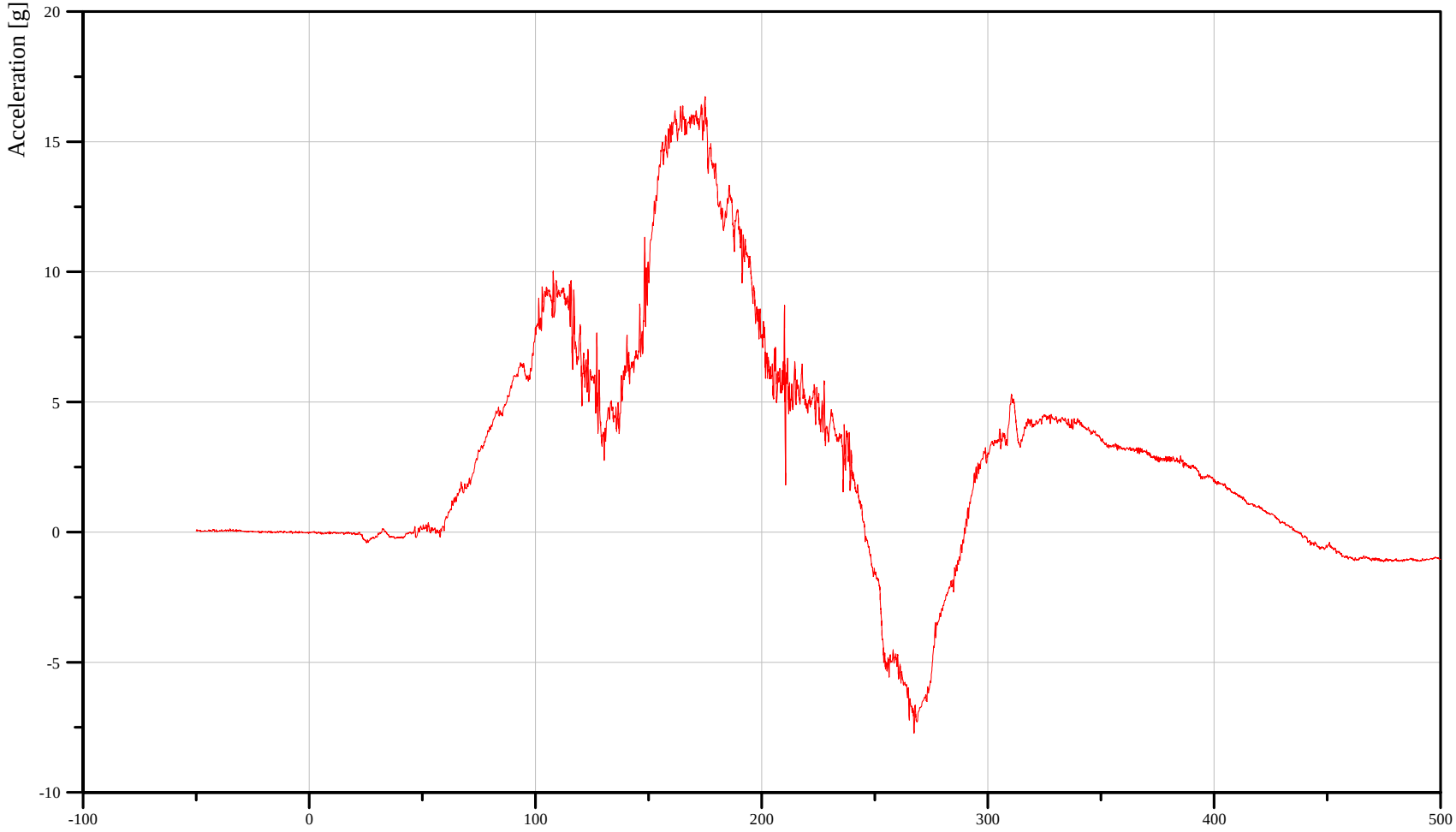
Date: 12/14/2007
Time: 9:12

13R-Right Head Z-Axis Acceleration

Customer: VRTC

34HEADCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-7.73 g at 267.36 ms

Max. Value
16.73 g at 174.96 ms

B-593

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

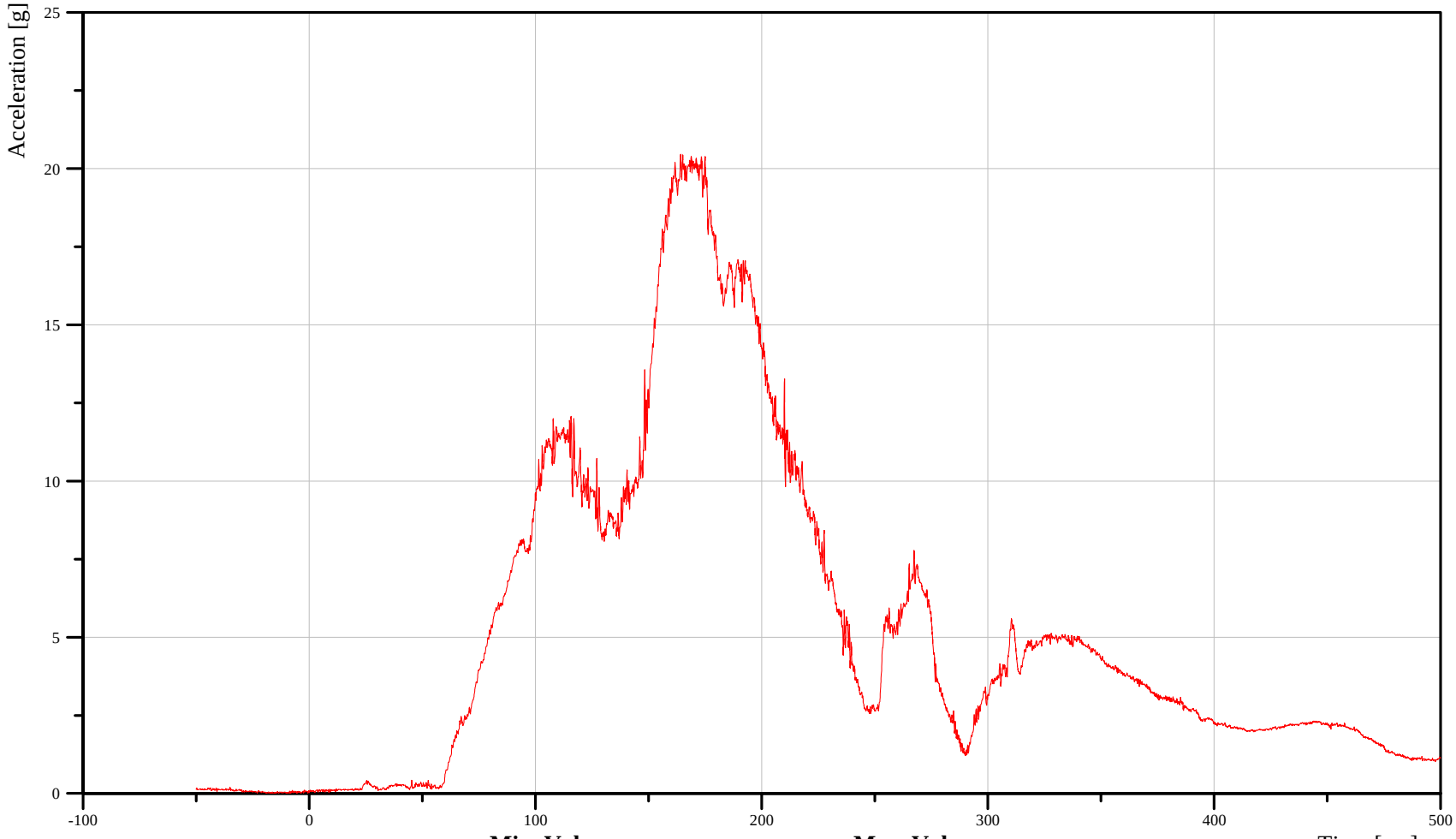
13R-Right Head Resultant Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

34HEADCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.00 g at -5.36 ms

Max. Value
20.46 g at 164.16 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

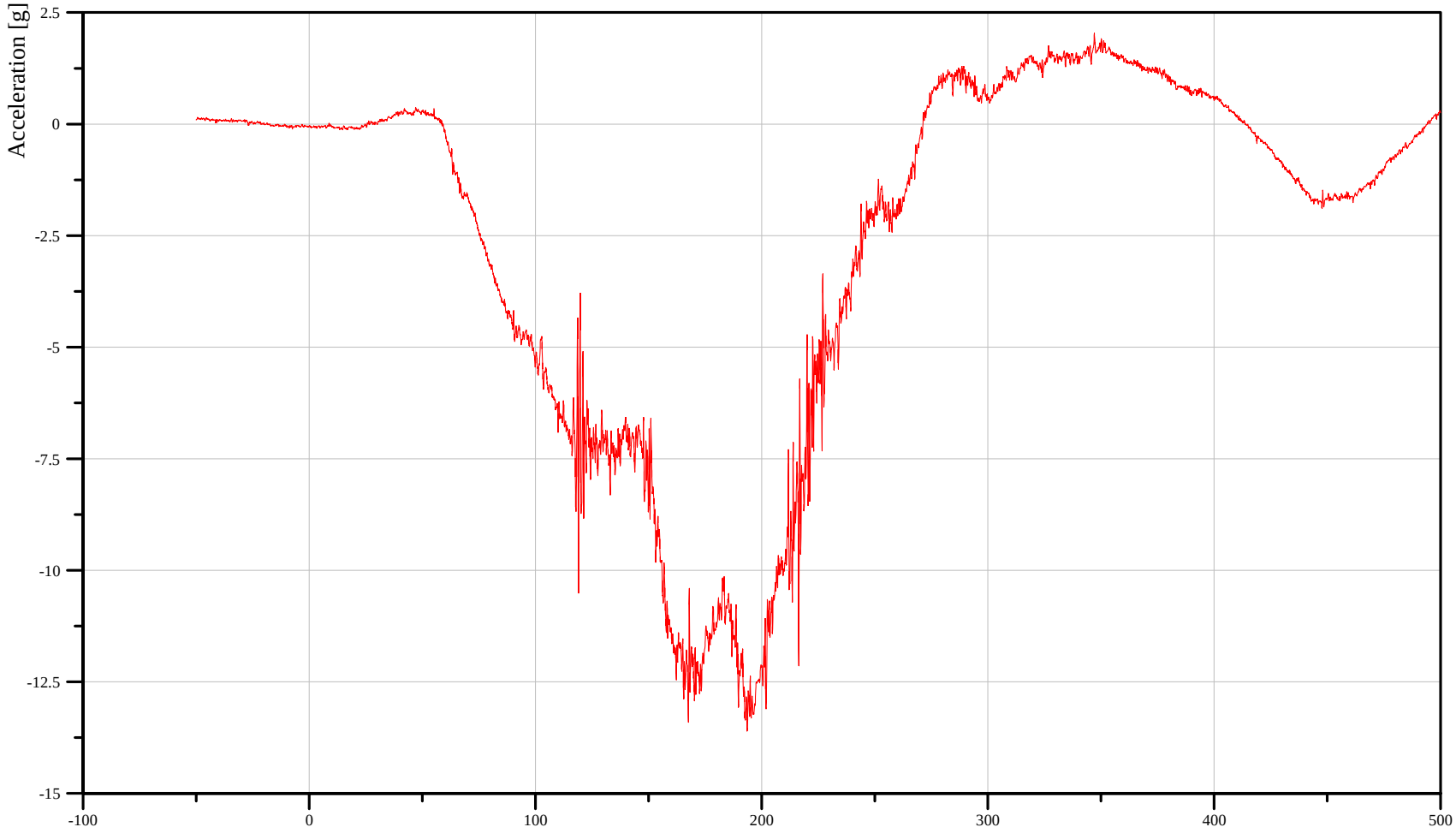
Date: 12/14/2007
Time: 9:12

13R-Right Head Redundant X-Axis Acceleration

Customer: VRTC

34HEADCGRDH3ACXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-13.60 g at 193.60 ms

Max. Value
2.03 g at 347.04 ms

B-595

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

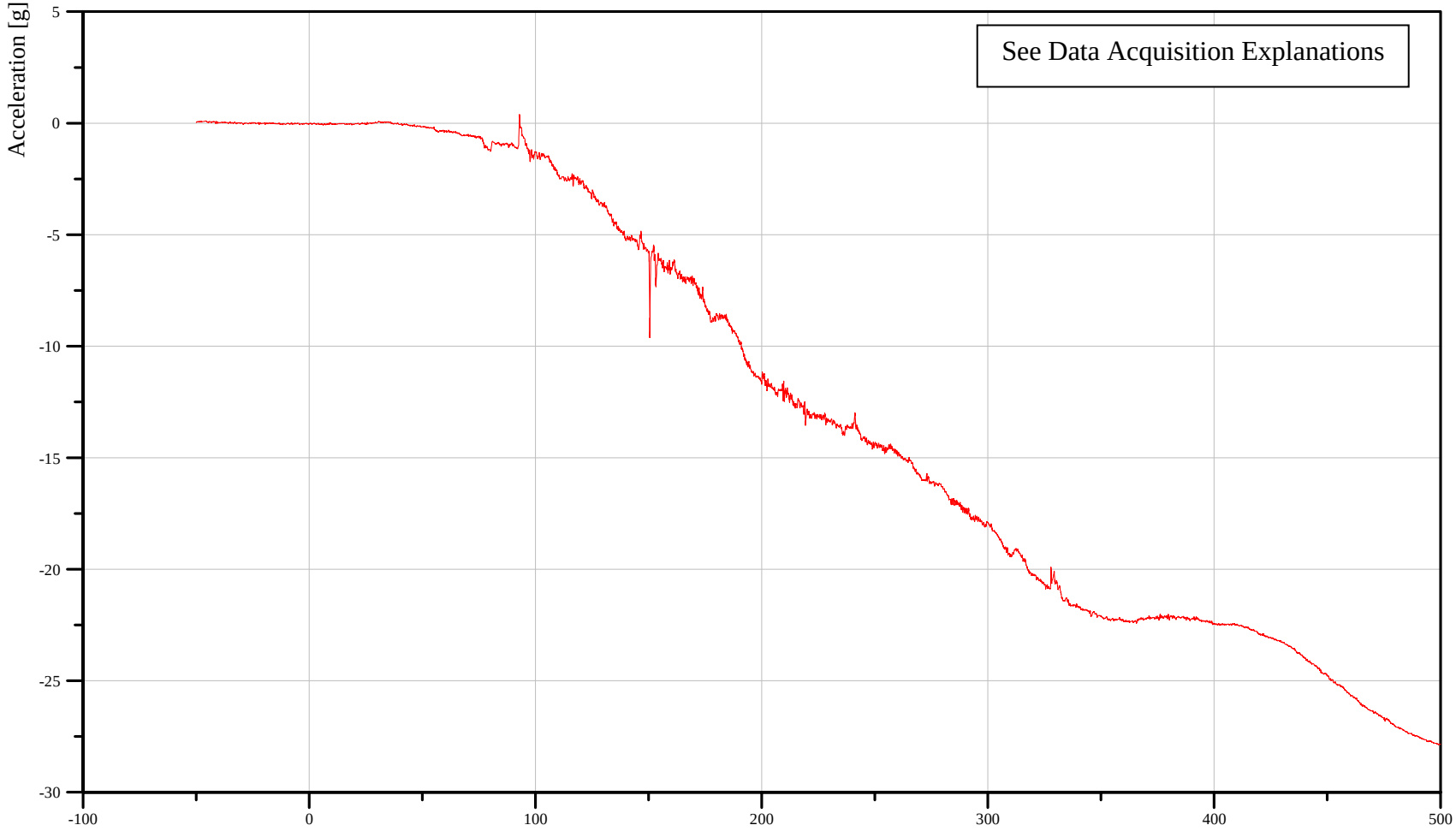
Date: 12/14/2007
Time: 9:12

13R-Right Head Redundant Y-Axis Acceleration

Customer: VRTC

34HEADCGRDH3ACYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-27.86 g at 499.12 ms

Max. Value
0.39 g at 92.96 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

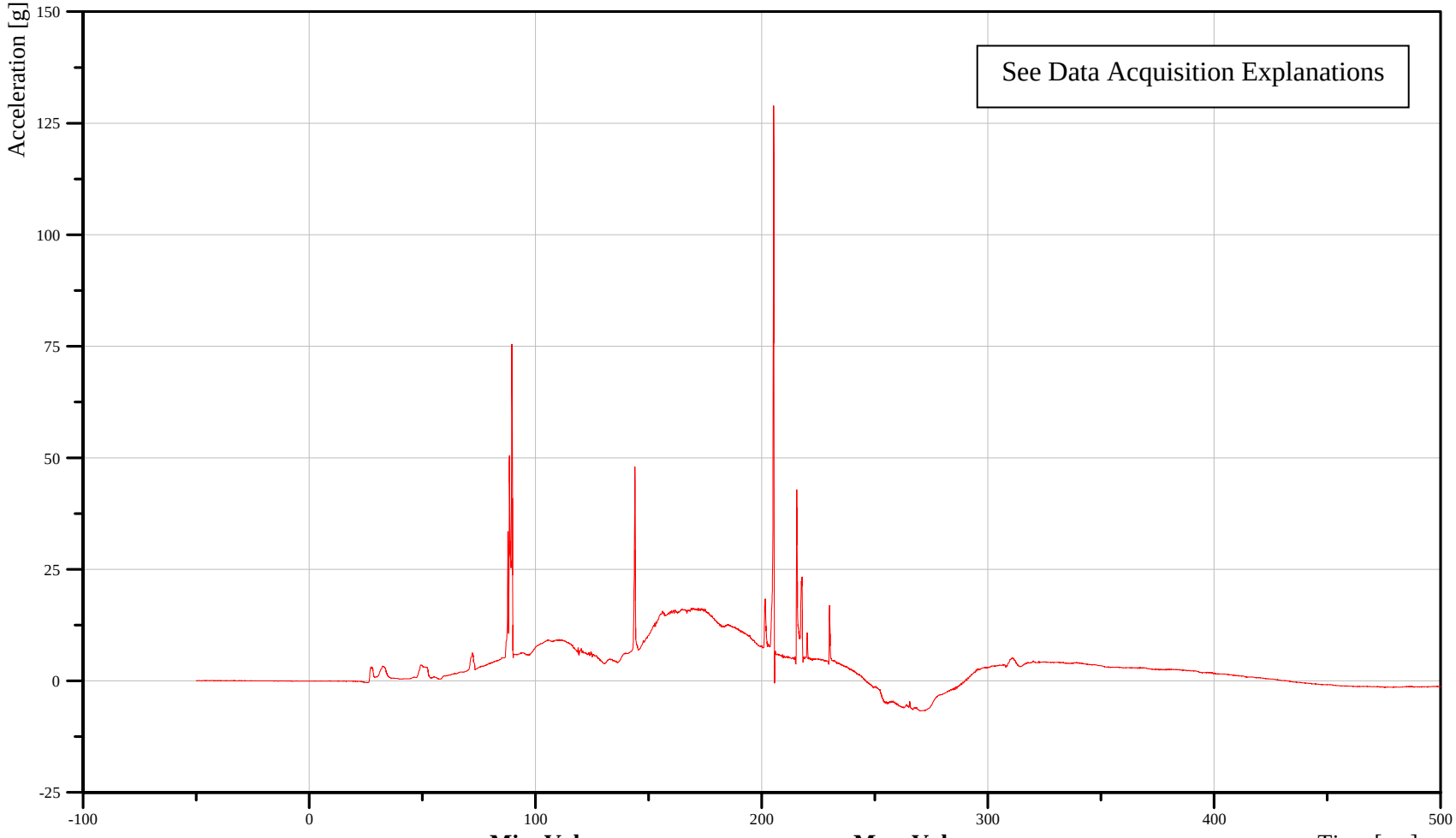
13R-Right Head Redundant Z-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

34HEADCGRDH3ACZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-6.70 g at 270.00 ms

Max. Value
128.93 g at 205.28 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

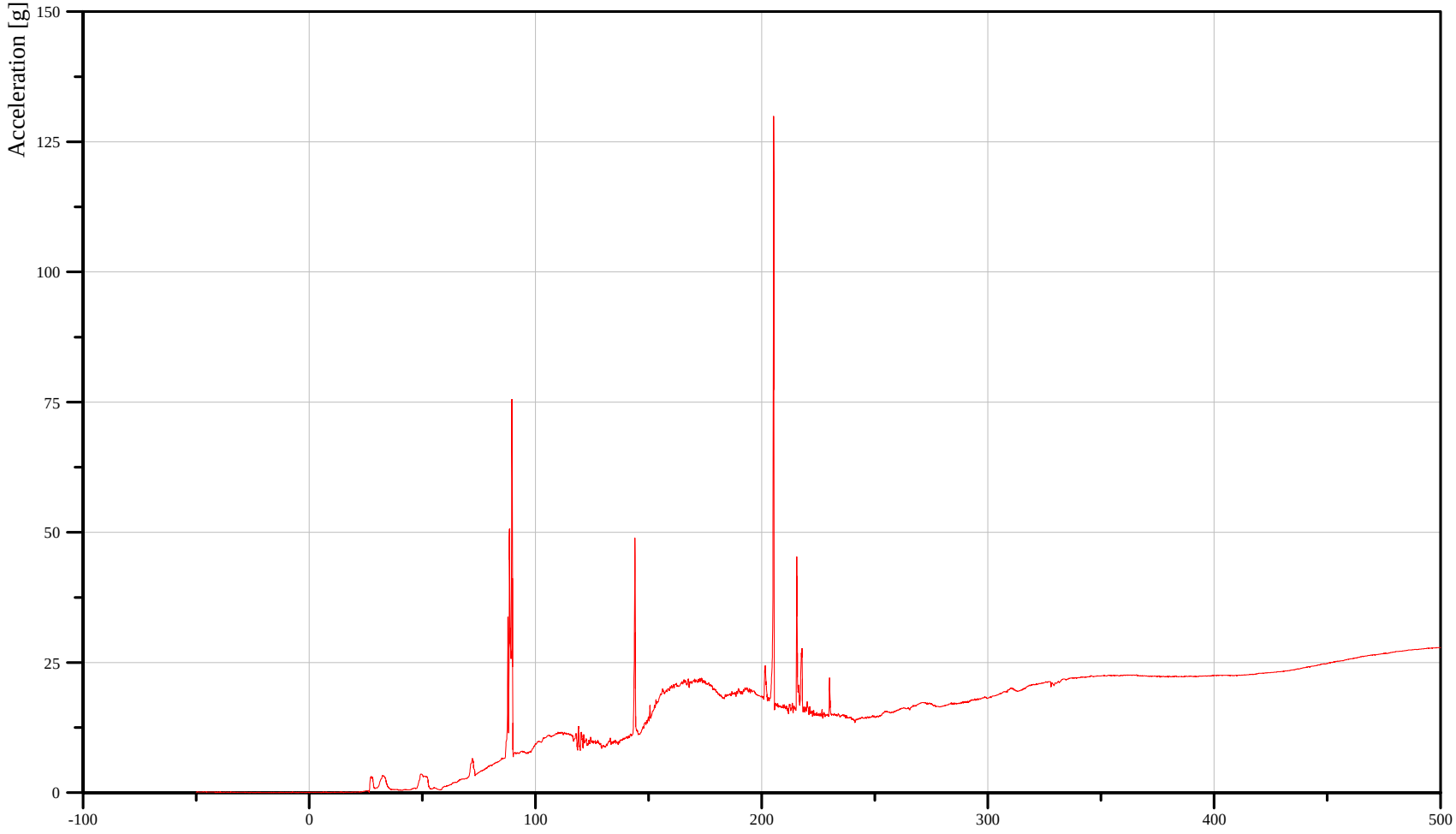
13R-Right Head Redundant Resultant Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

34HEADCGRDH3ACRA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
0.00 g at 9.20 ms

Max. Value
129.91 g at 205.28 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

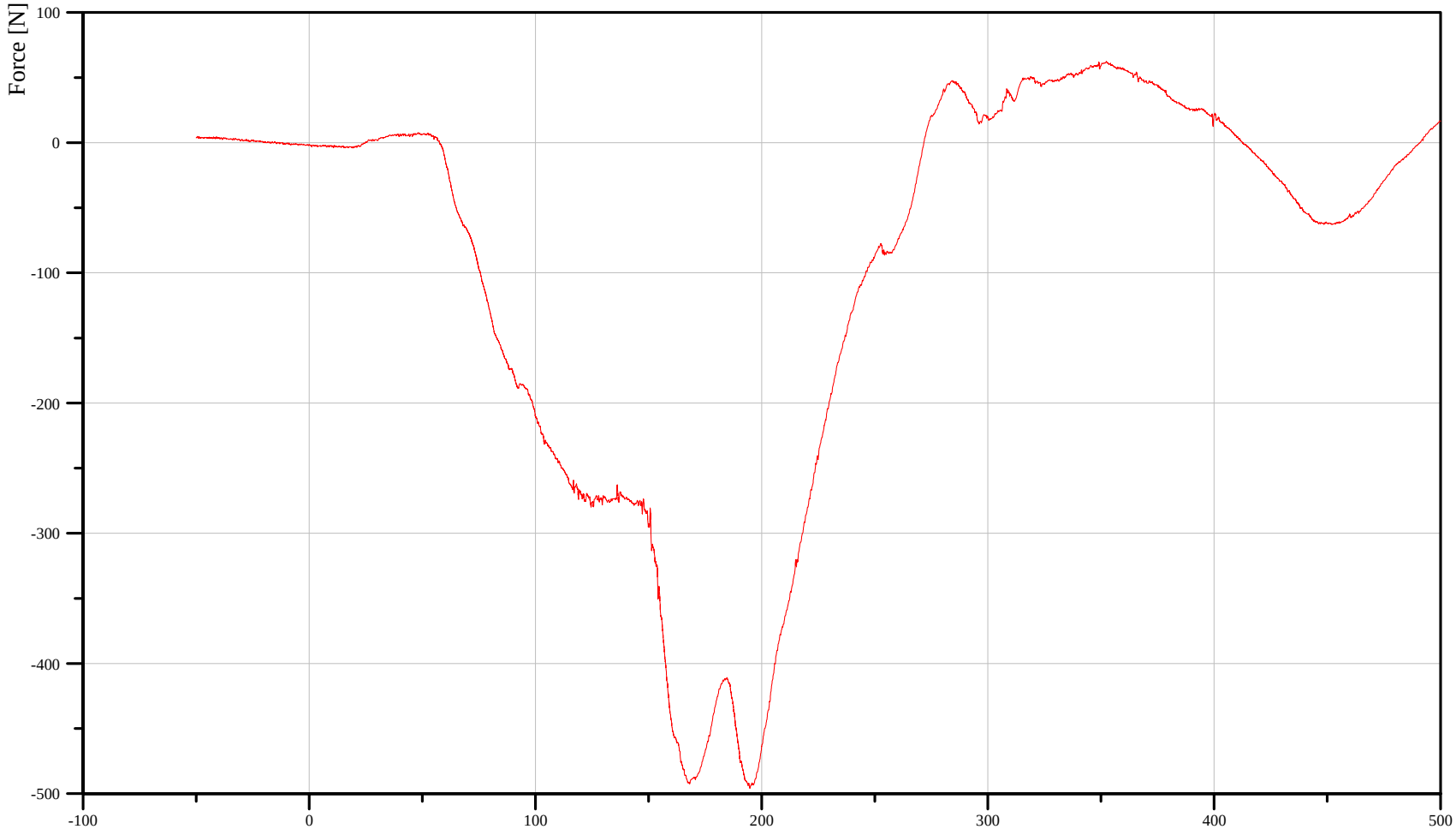
13R-Right Neck Force X

Date: 12/14/2007
Time: 9:12

Customer: VRTC

34NECKUP00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-495.50 N at 194.88 ms

Max. Value
62.20 N at 352.32 ms

B-599

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

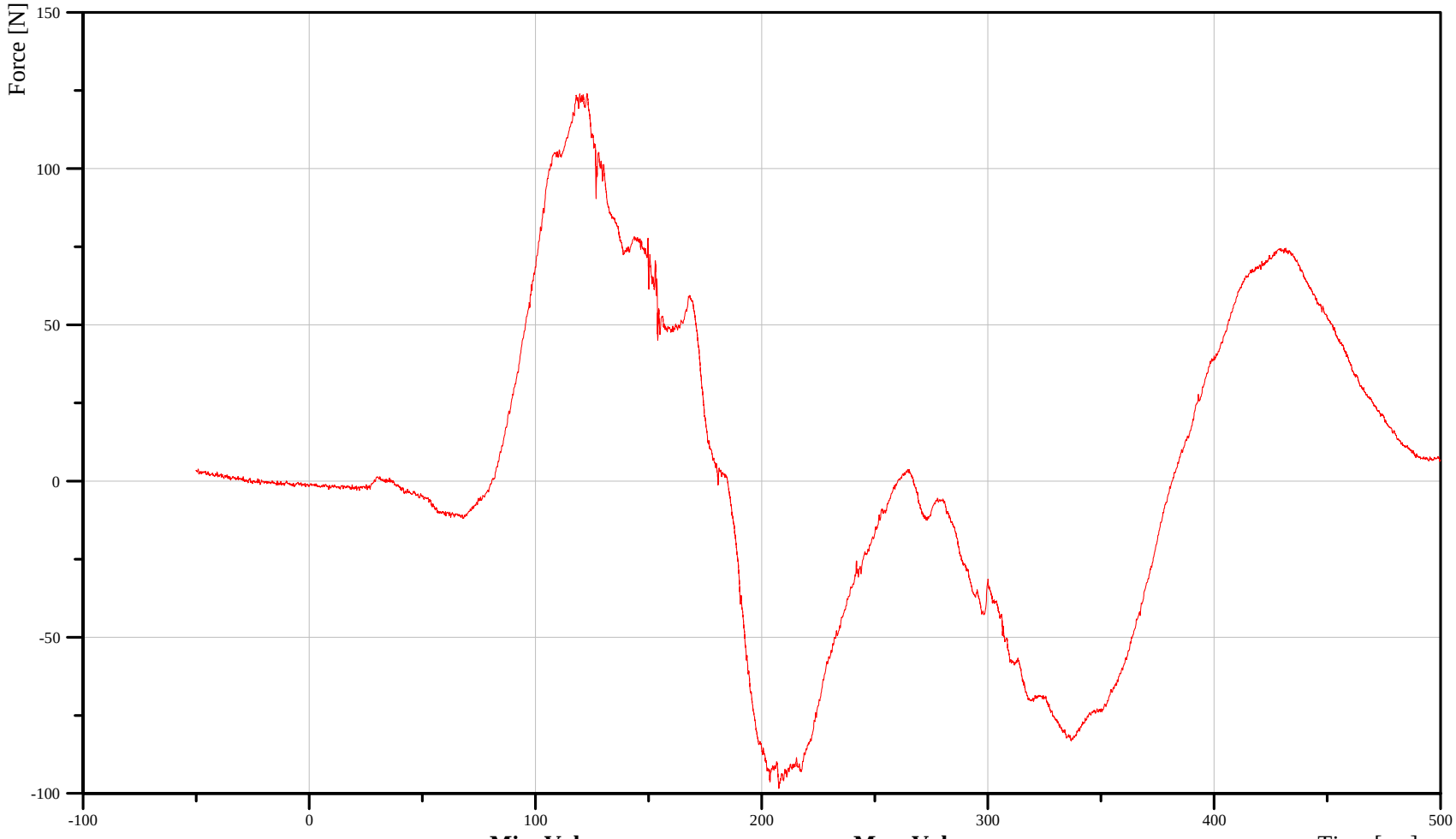
13R-Right Neck Force Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

34NECKUP00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-98.31 N at 207.60 ms

Max. Value
124.06 N at 122.80 ms

B-600

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

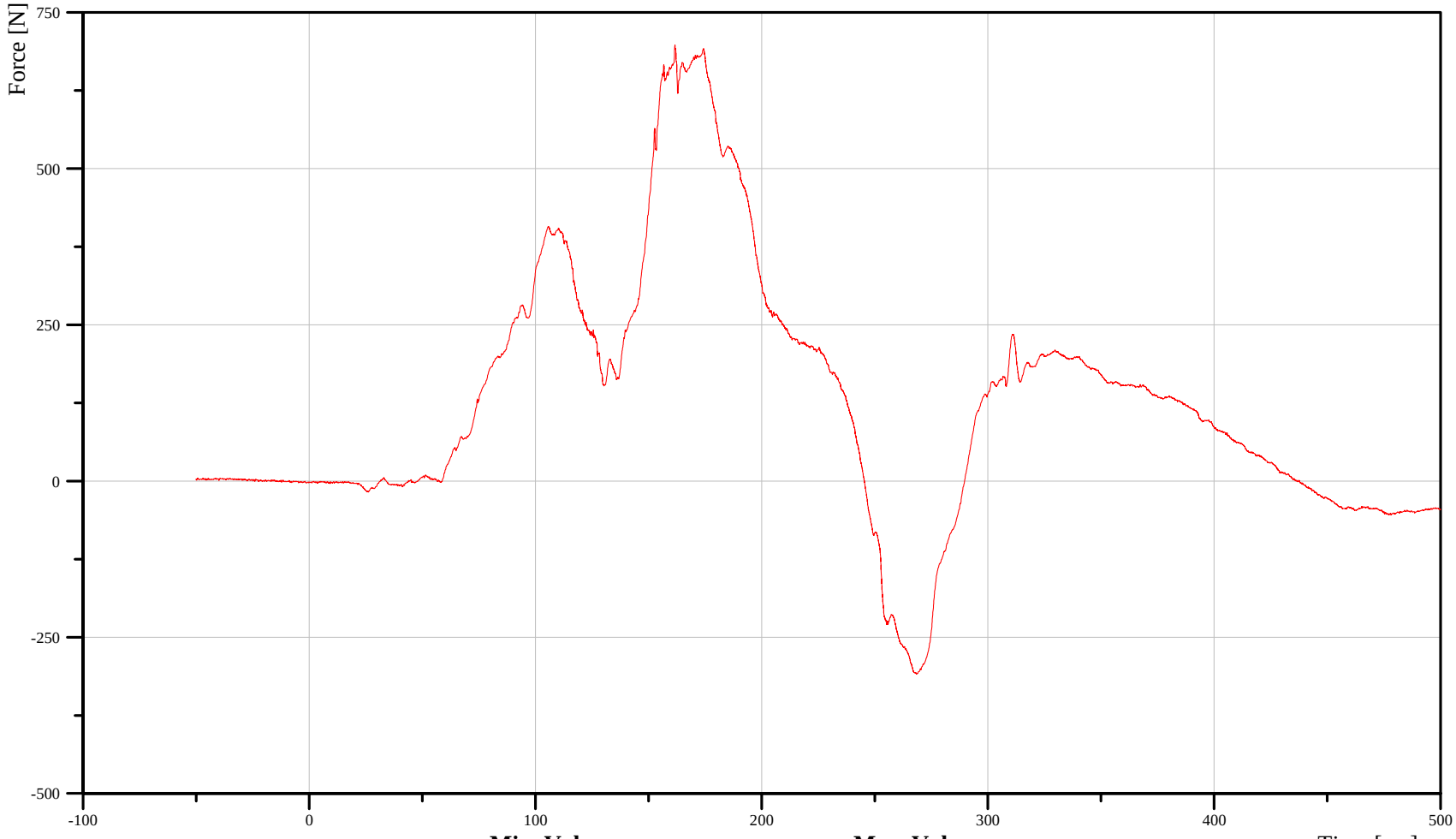
13R-Right Neck Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

34NECKUP00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_1000

Min. Value
-308.68 N at 268.48 ms

Max. Value
697.57 N at 161.68 ms

B-601

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

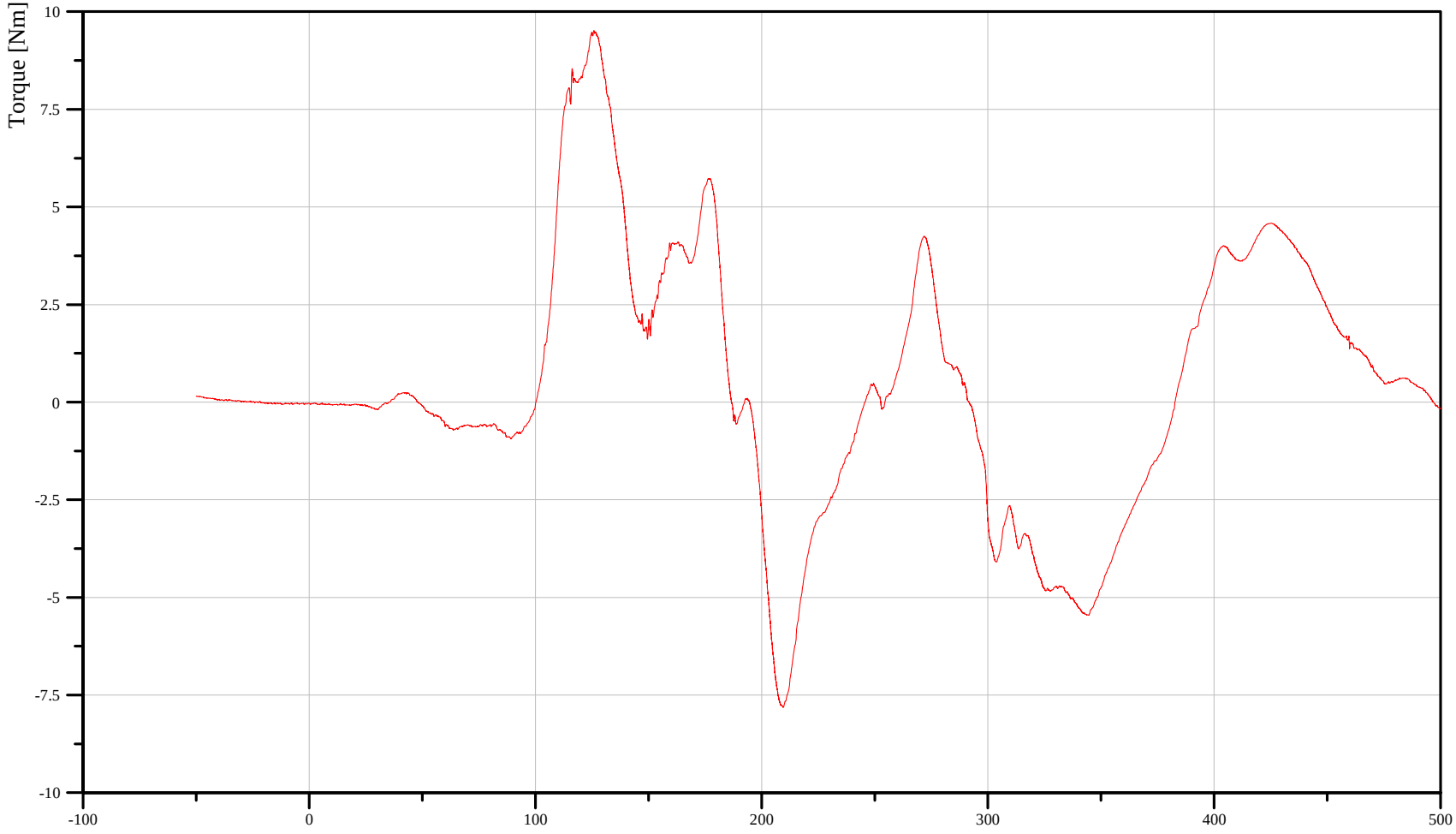
13R-Right Neck Moment X

Date: 12/14/2007
Time: 9:12

Customer: VRTC

34NECKUP00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-7.82 Nm at 209.60 ms

Max. Value
9.52 Nm at 125.84 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

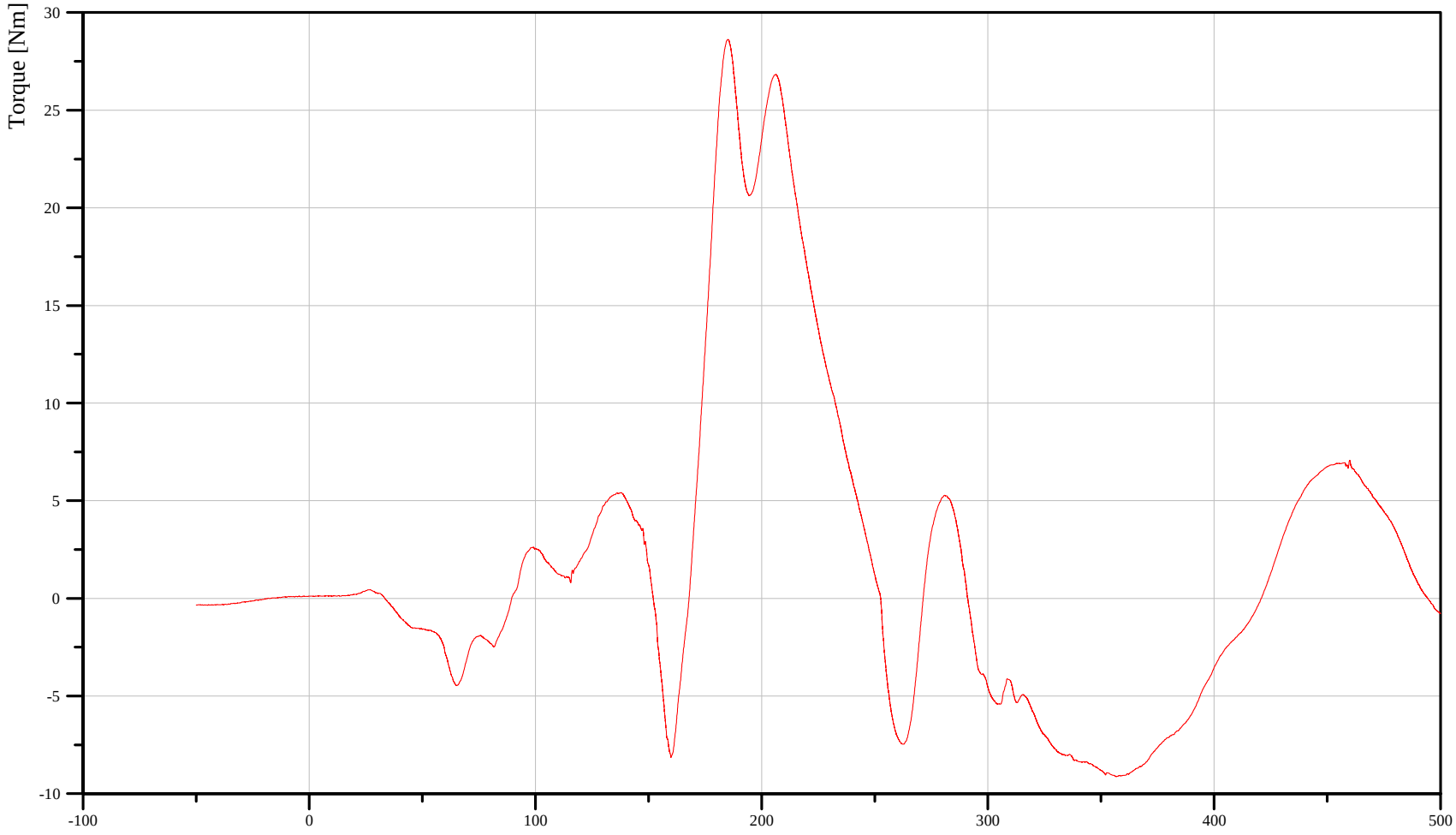
13R-Right Neck Moment Y

Date: 12/14/2007
Time: 9:12

Customer: VRTC

34NECKUP00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-9.12 Nm at 356.80 ms

Max. Value
28.62 Nm at 185.12 ms

B-603

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

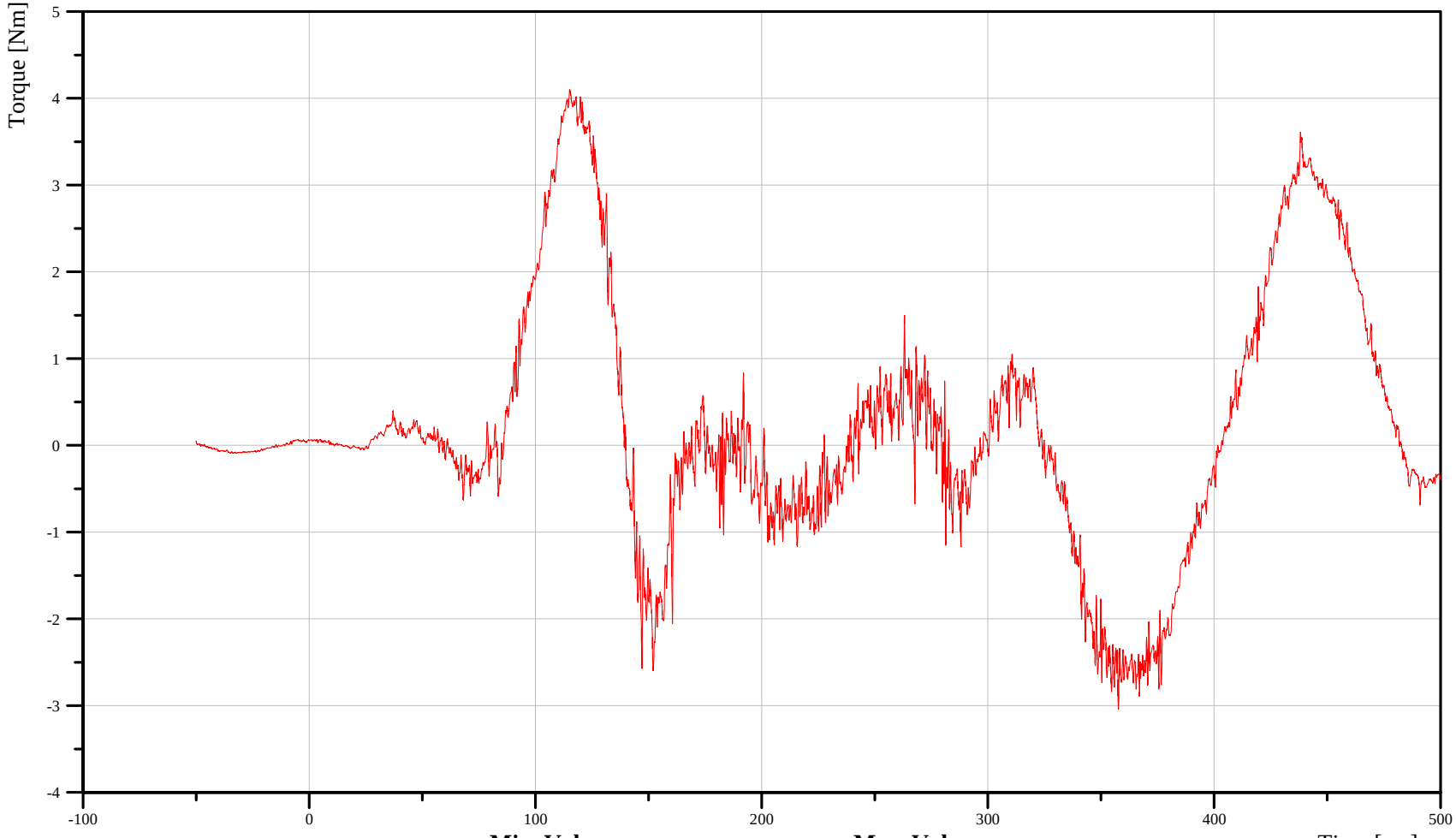
13R-Right Neck Moment Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

34NECKUP00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-3.04 Nm at 357.68 ms

Max. Value
4.11 Nm at 115.20 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

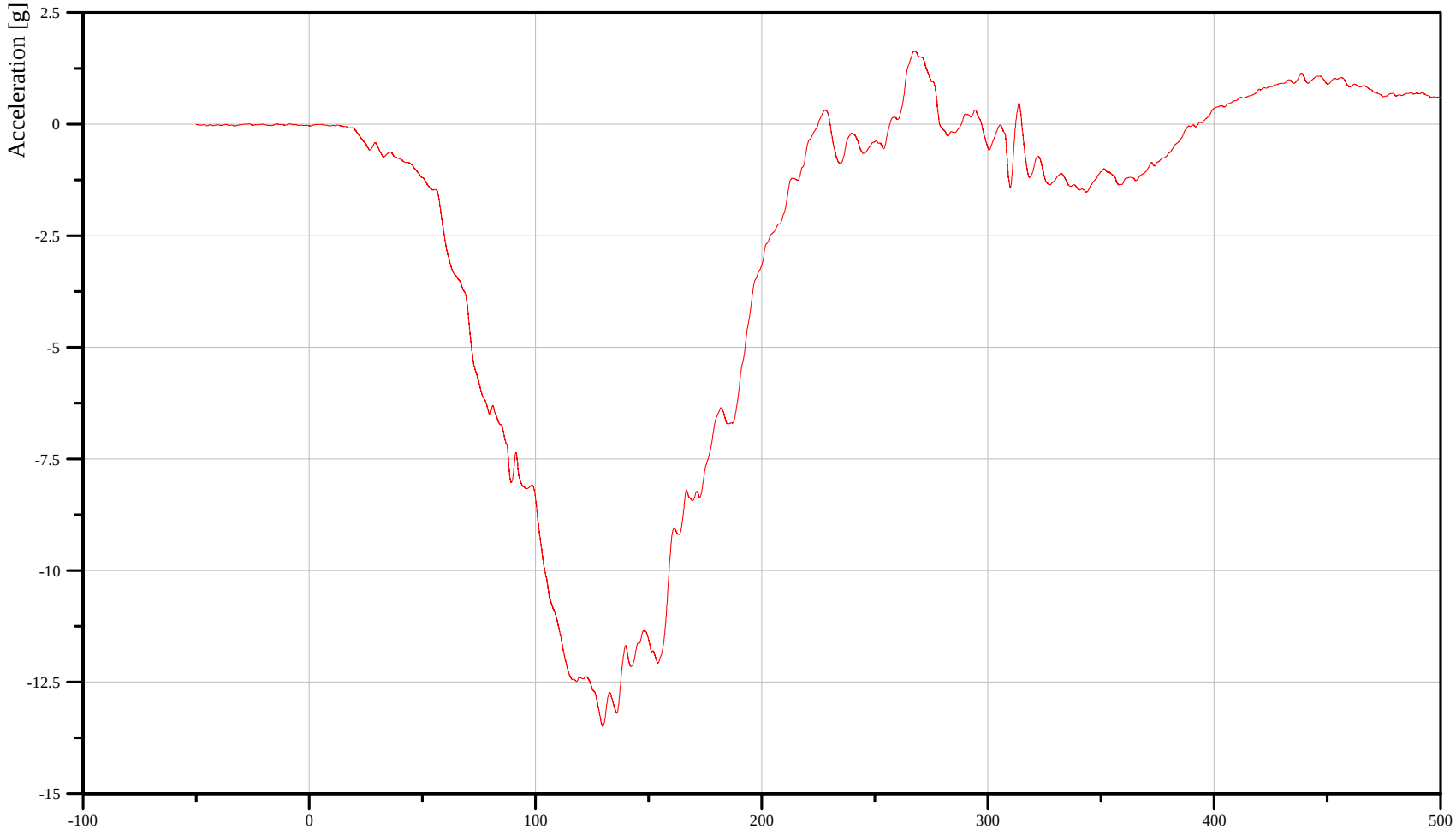
Date: 12/14/2007
Time: 9:12

13R-Right Chest X-Axis Acceleration

Customer: VRTC

34CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-13.49 g at 129.76 ms

Max. Value
1.63 g at 267.20 ms

B-605

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

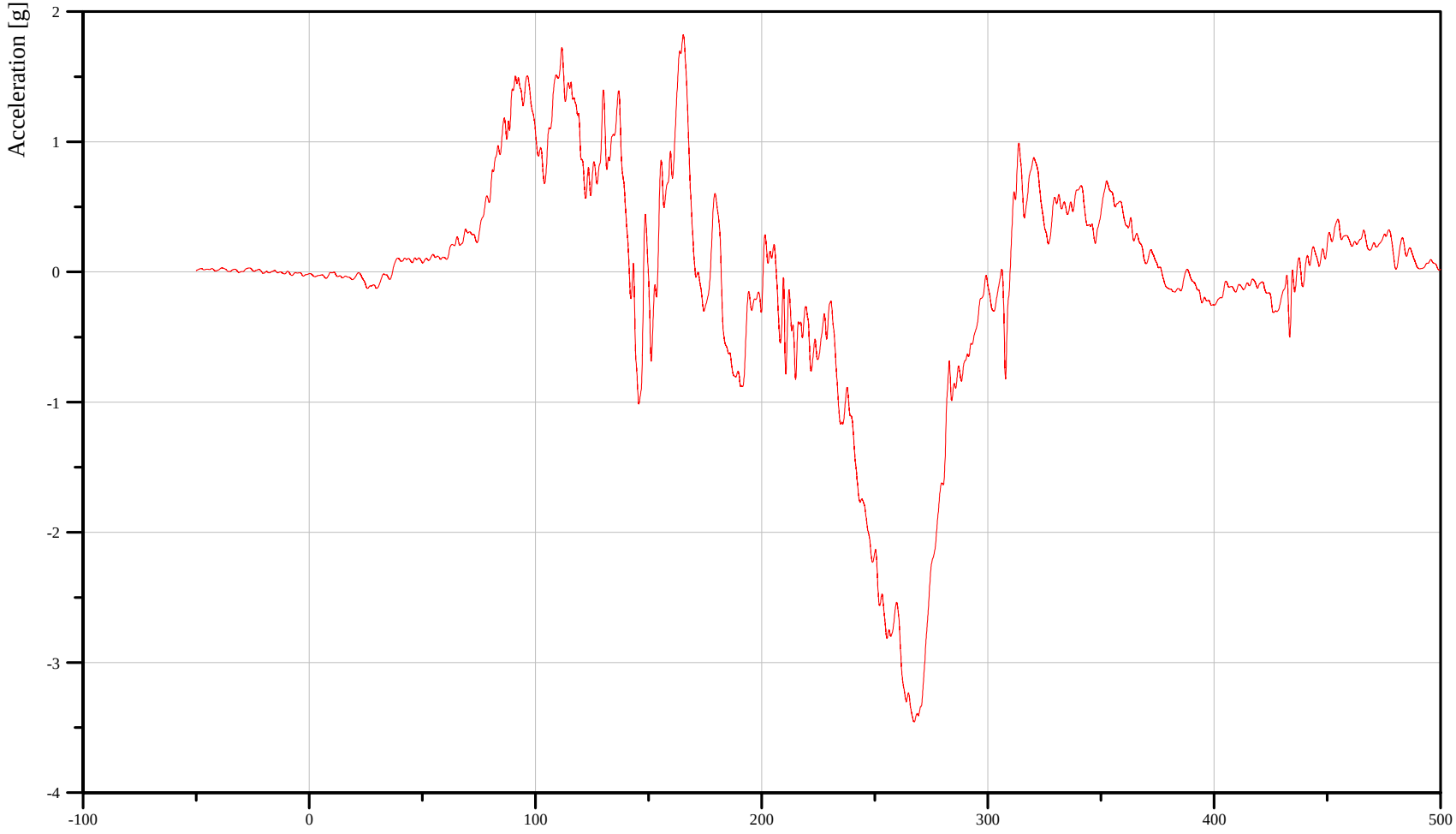
Date: 12/14/2007
Time: 9:12

13R-Right Chest Y-Axis Acceleration

Customer: VRTC

34CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-3.46 g at 267.44 ms

Max. Value
1.82 g at 165.36 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

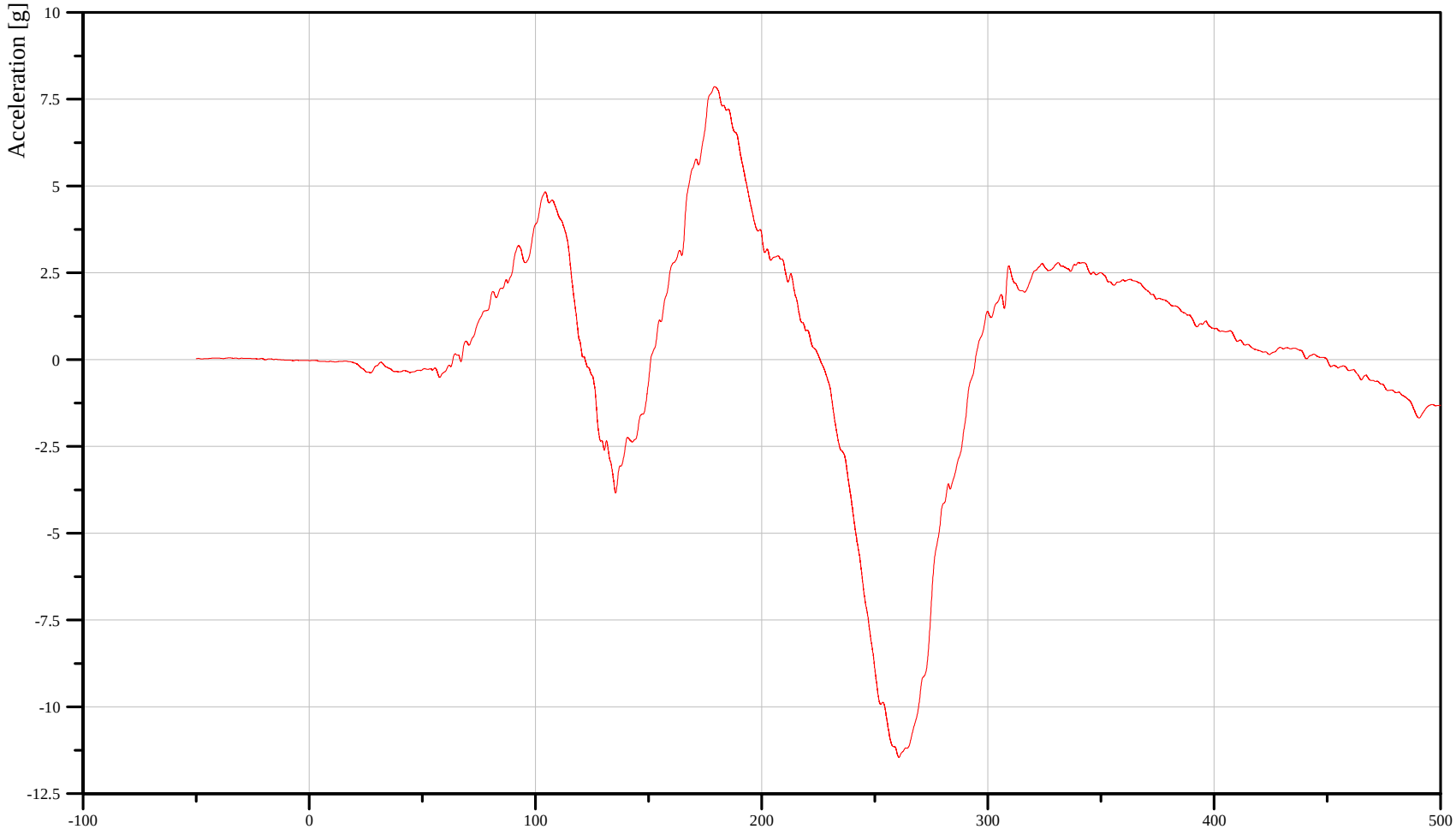
Date: 12/14/2007
Time: 9:12

13R-Right Chest Z-Axis Acceleration

Customer: VRTC

34CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-11.45 g at 260.64 ms

Max. Value
7.86 g at 179.12 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

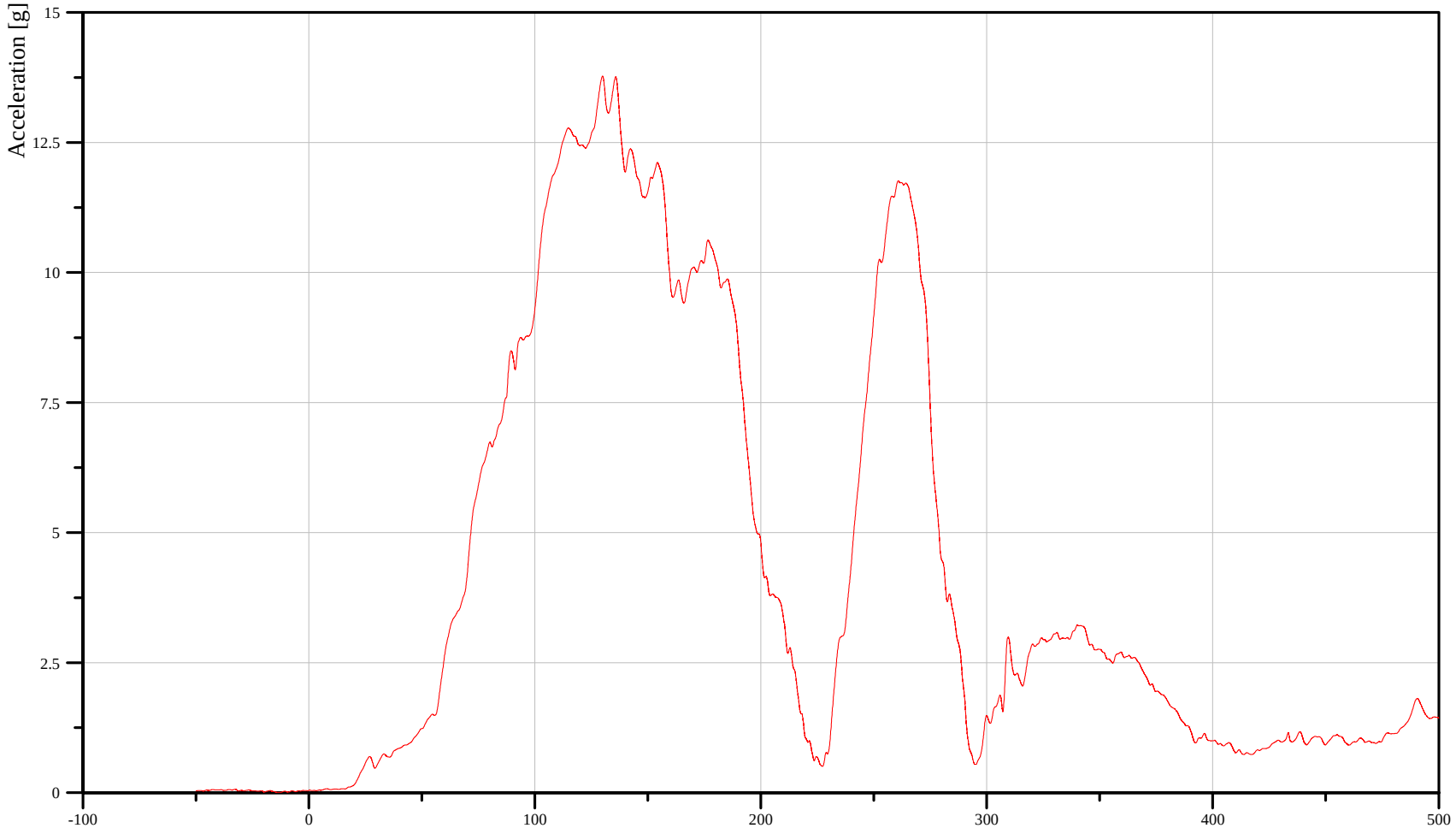
Date: 12/14/2007
Time: 9:12

13R-Right Chest Resultant Acceleration

Customer: VRTC

34CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.01 g at -12.64 ms

Max. Value
13.77 g at 130.00 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

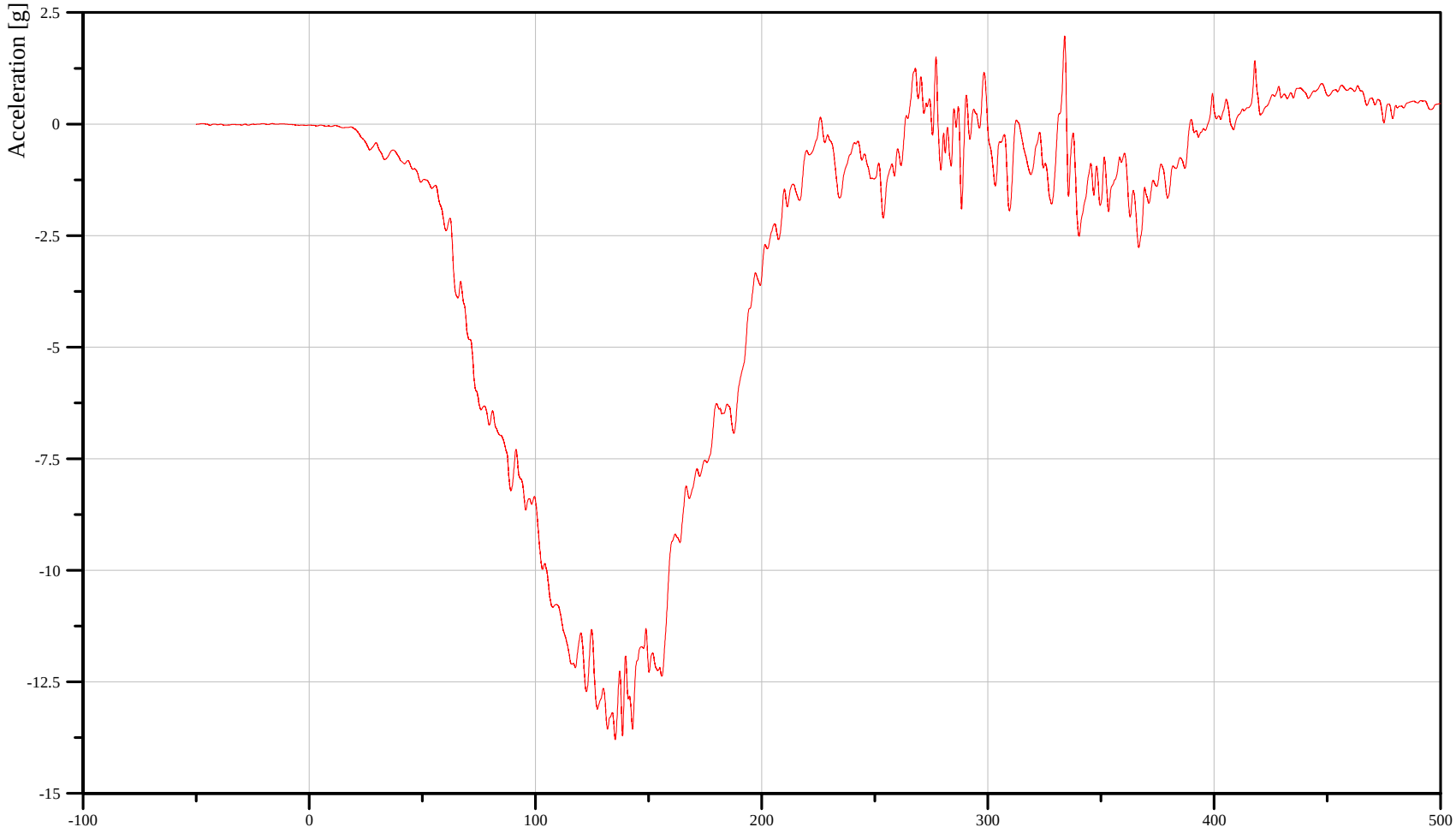
Date: 12/14/2007
Time: 9:12

13R-Right Chest Redundant X-Axis Acceleration

Customer: VRTC

34CHSTCGRDH3ACXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-13.80 g at 135.36 ms

Max. Value
1.98 g at 333.92 ms

B-609

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

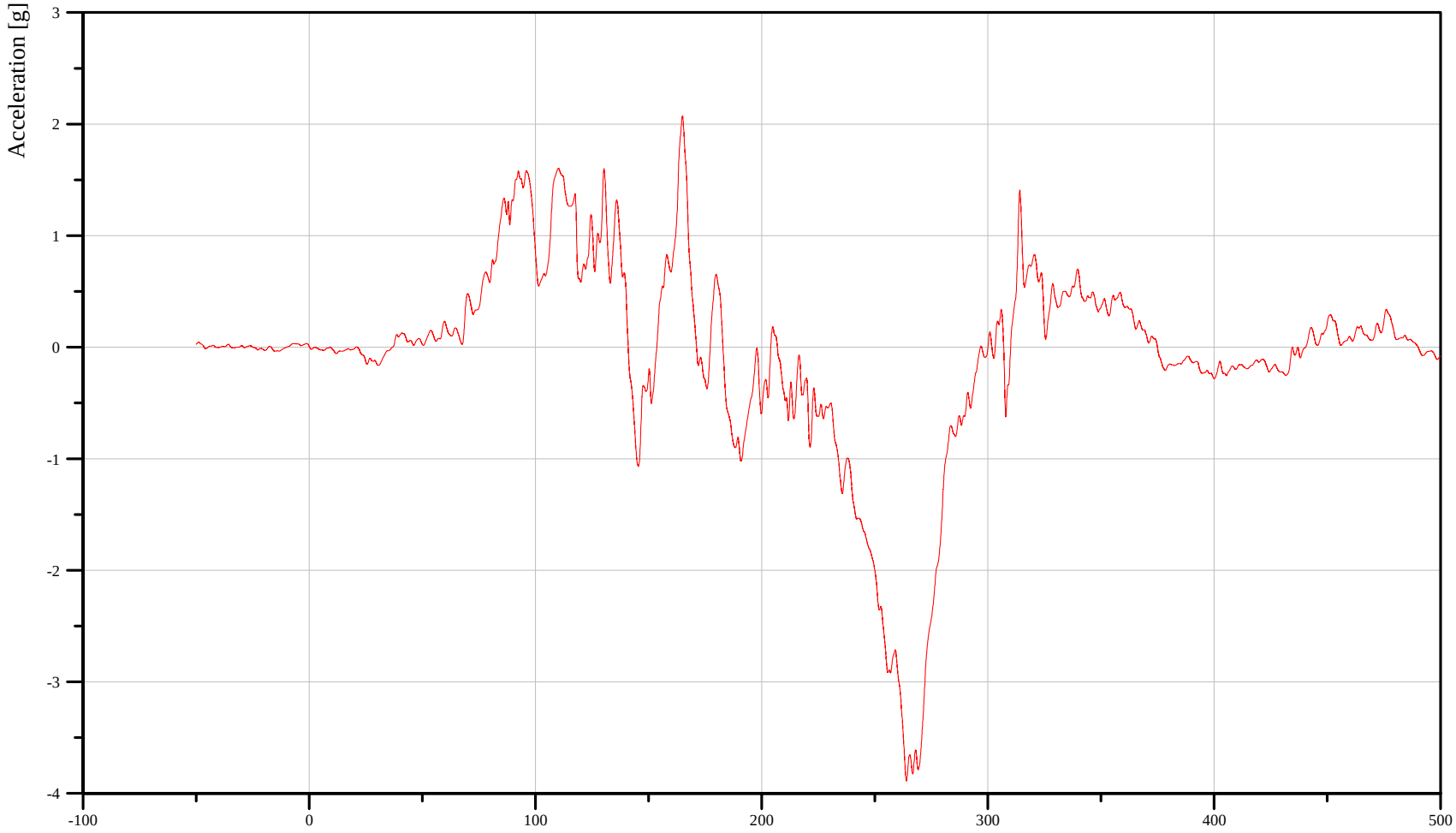
13R-Right Chest Redundant Y-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

34CHSTCGRDH3ACYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-3.89 g at 264.00 ms

Max. Value
2.07 g at 164.96 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

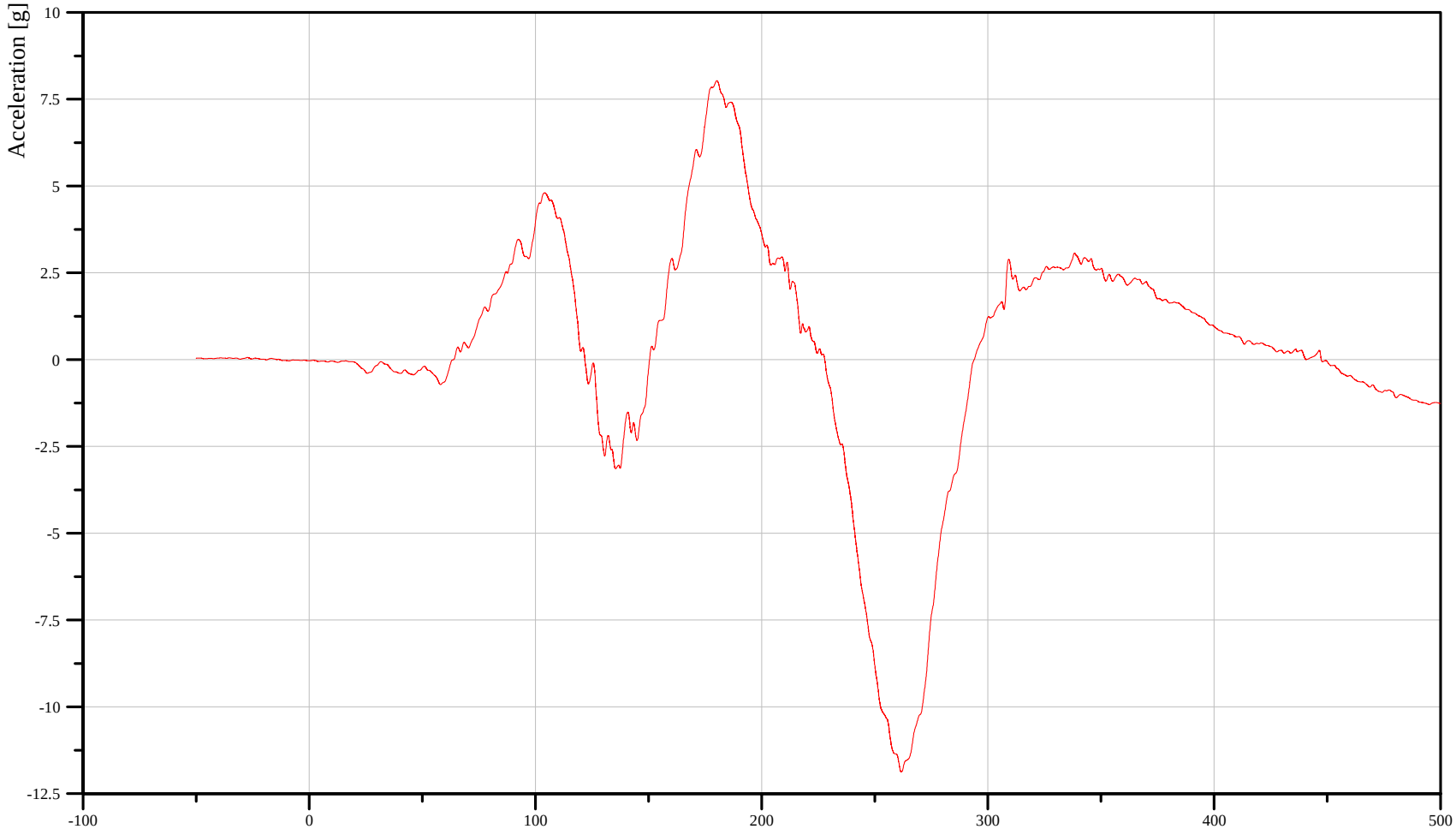
13R-Right Chest Redundant Z-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

34CHSTCGRDH3ACZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-11.87 g at 261.68 ms

Max. Value
8.03 g at 180.16 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

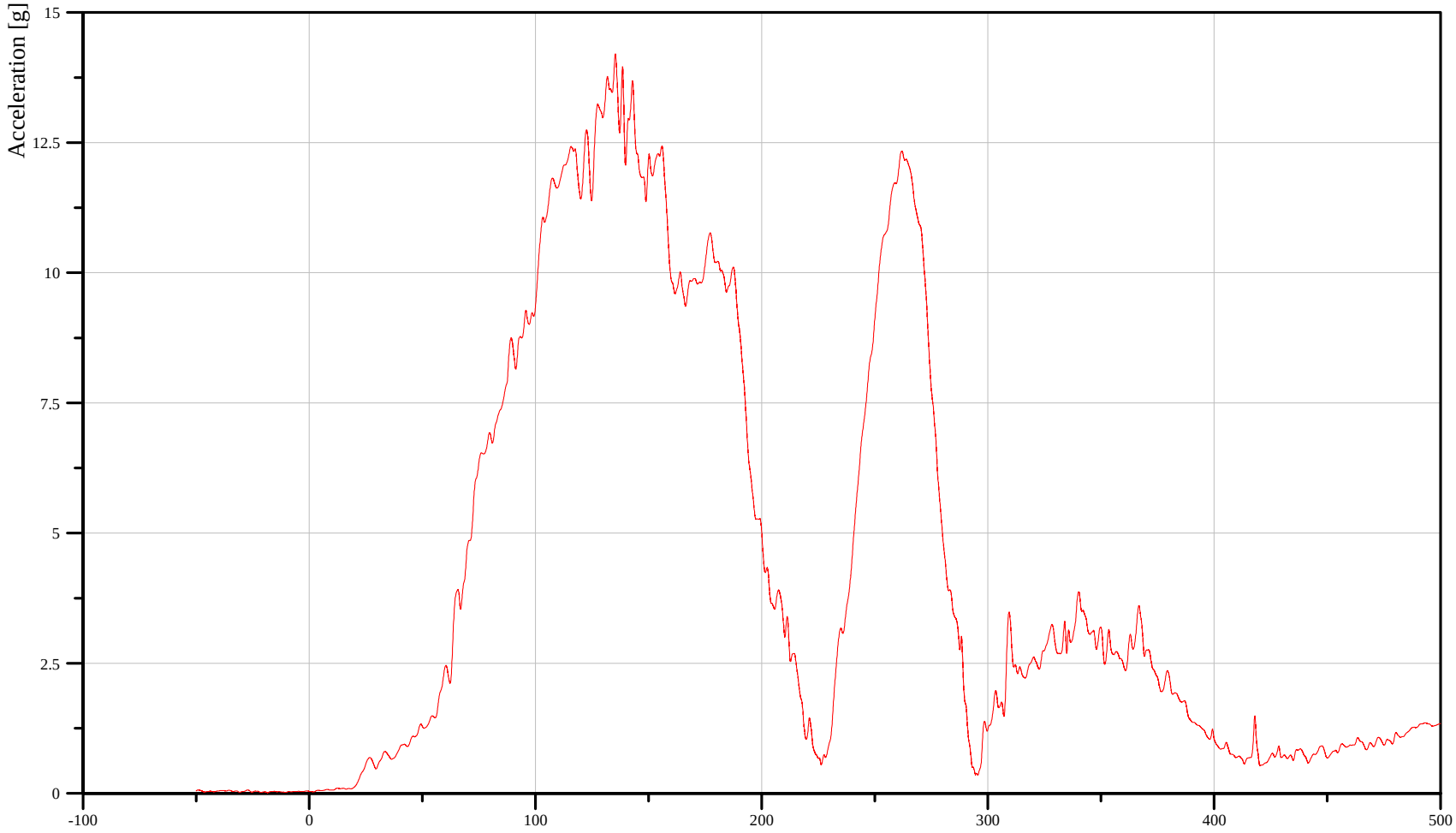
13R-Right Chest Redundant Resultant Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

34CHSTCGRDH3ACRC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.01 g at -18.24 ms

Max. Value
14.20 g at 135.36 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

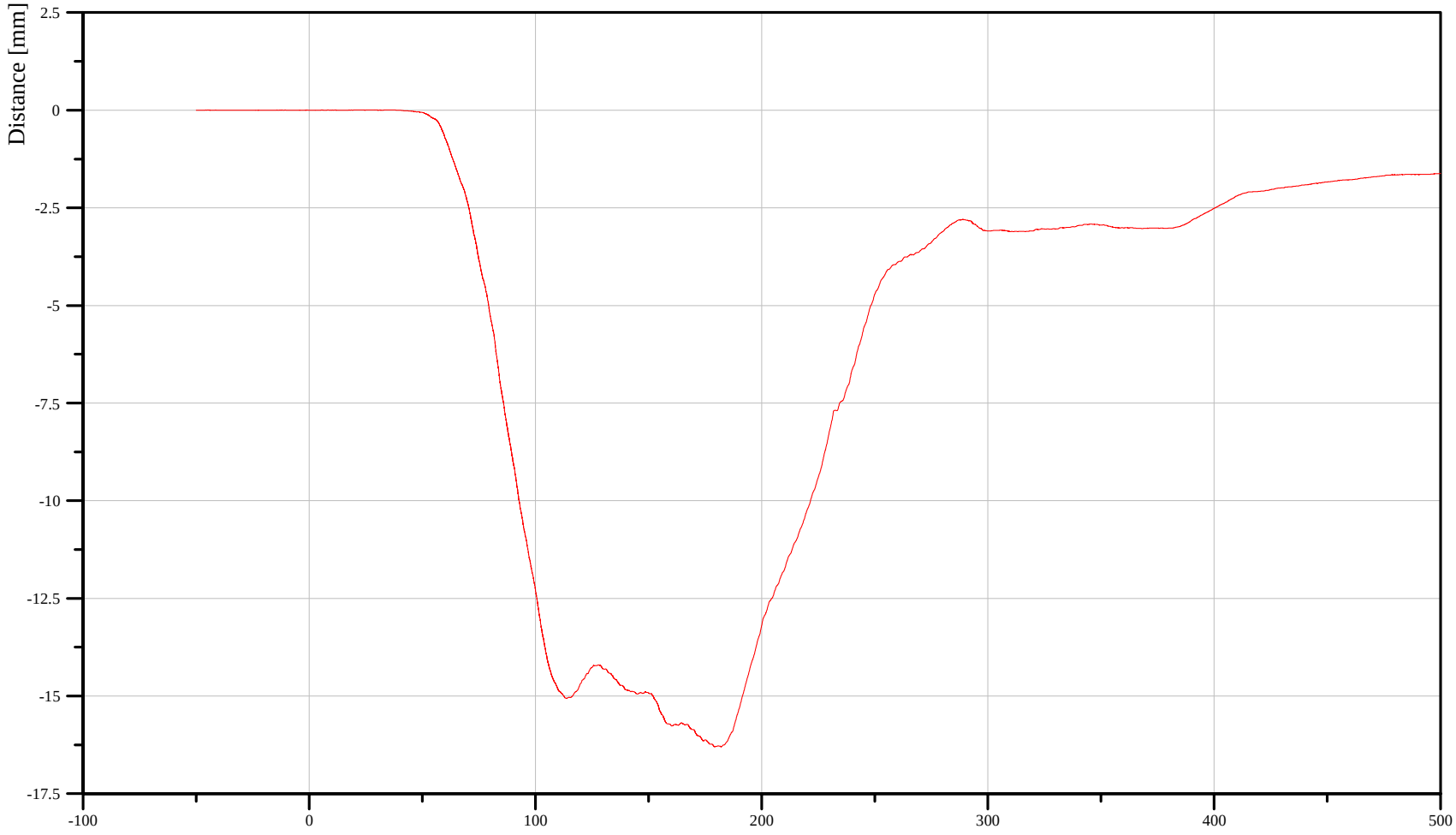
Date: 12/14/2007
Time: 9:12

13R-Right Chest X-Axis Deflection

Customer: VRTC

34CHST0000H3DSXB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-16.30 mm at 179.20 ms

Max. Value
0.01 mm at 25.20 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

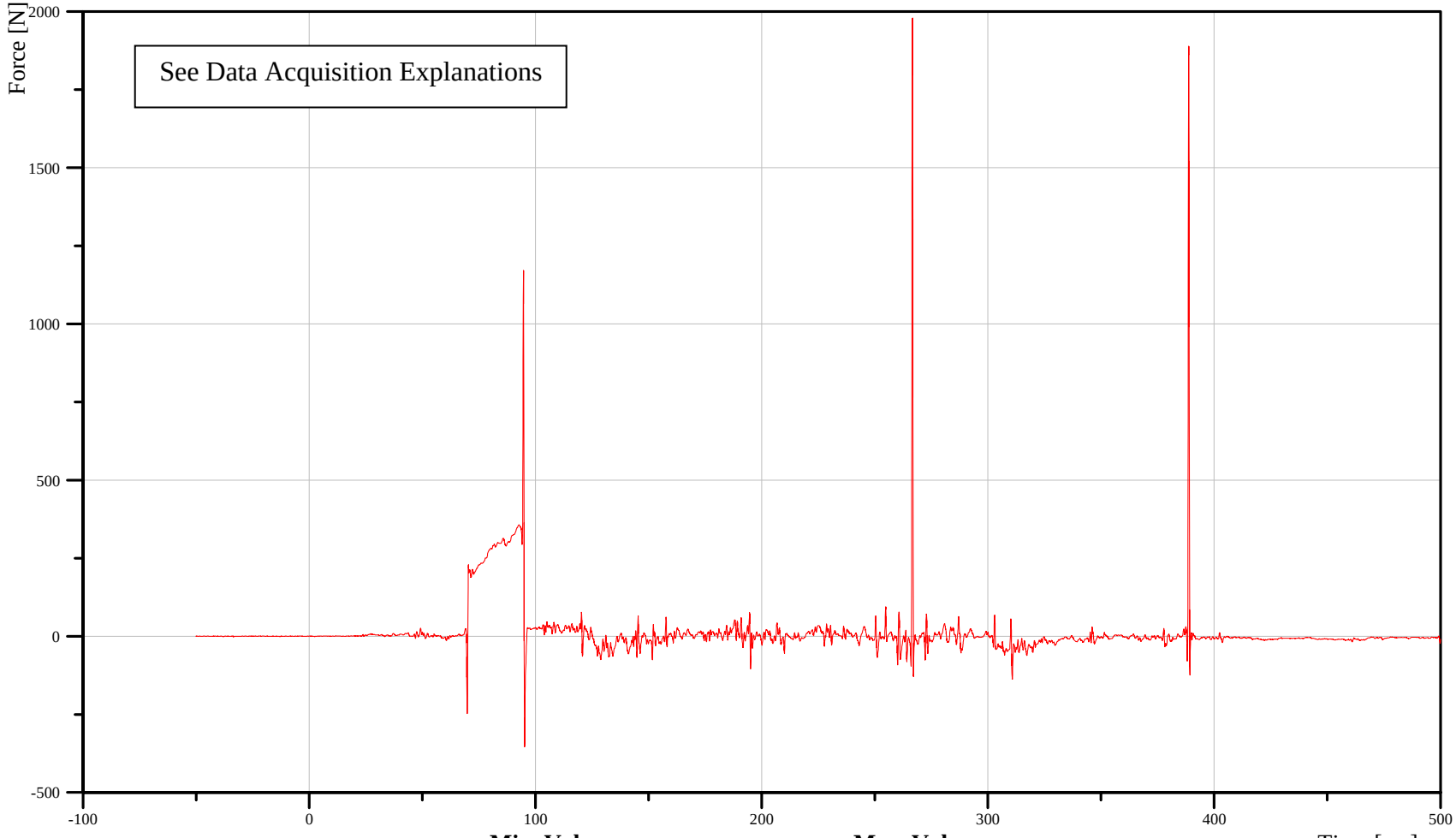
13R-Right Left Femur Force Z

Date: 12/14/2007
Time: 9:12

Customer: VRTC

34FEMRLL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-353.76 N at 95.20 ms

Max. Value
1,979.92 N at 266.64 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

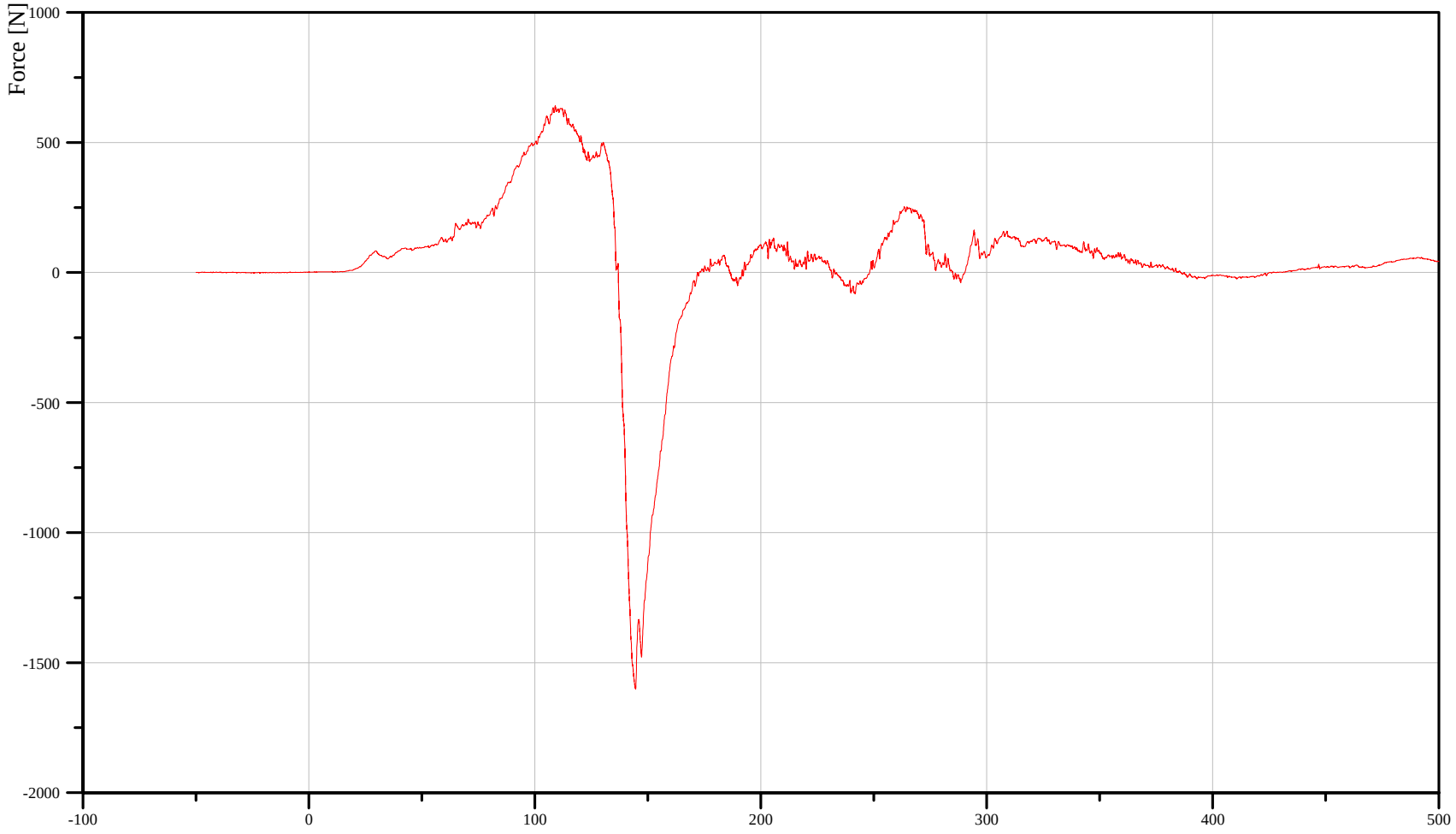
Date: 12/14/2007
Time: 9:12

13R-Right Right Femur Force Z

Customer: VRTC

34FEMRRL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_600

Min. Value
-1,602.46 N at 144.56 ms

Max. Value
640.90 N at 109.04 ms

B-615

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

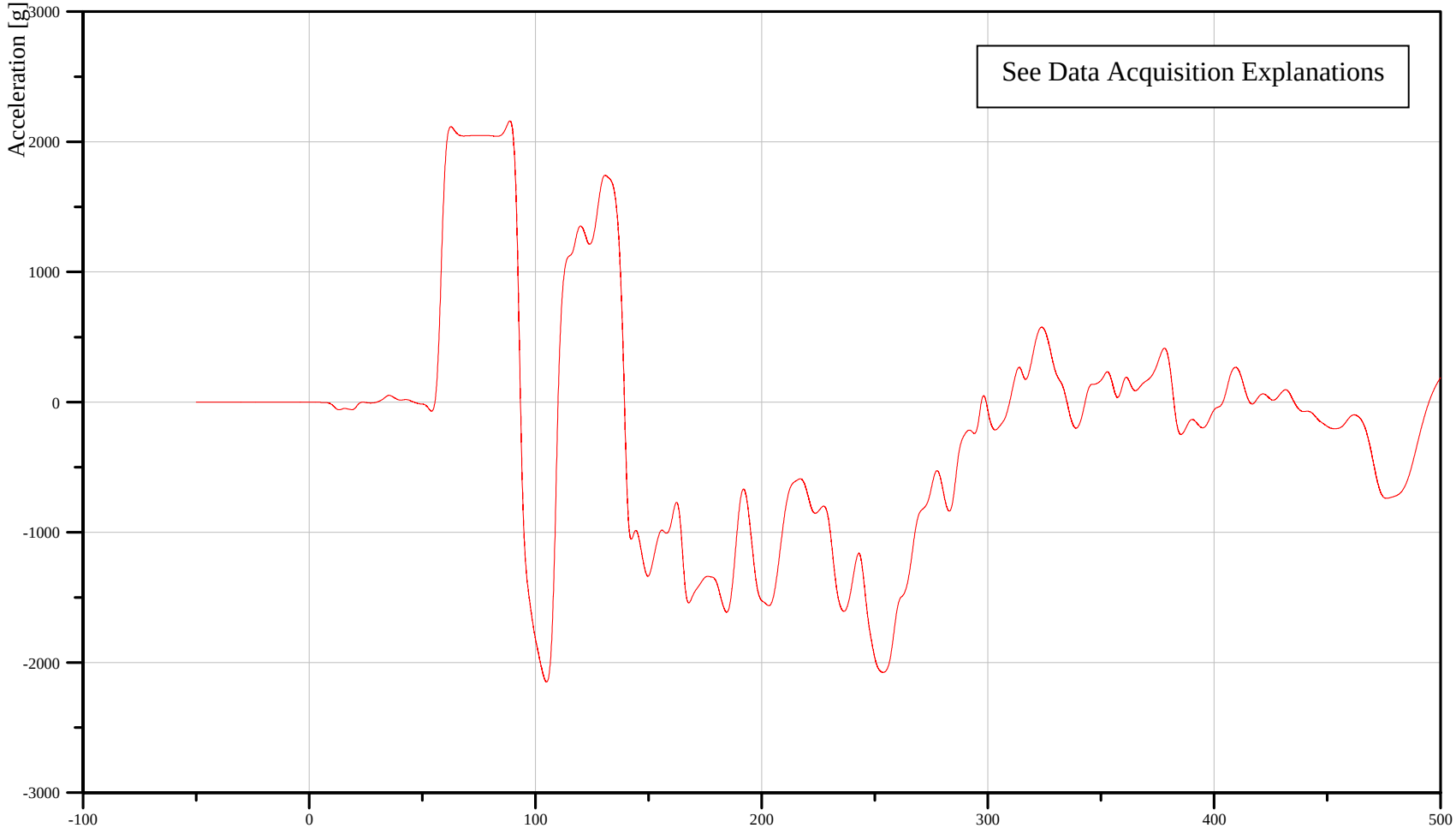
Date: 12/14/2007
Time: 9:12

Driver Seat of Bus X-Axis Acceleration

Customer: VRTC

11SEAT000000ACXD

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-2,149.37 g at 104.96 ms

Max. Value
2,160.49 g at 88.72 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

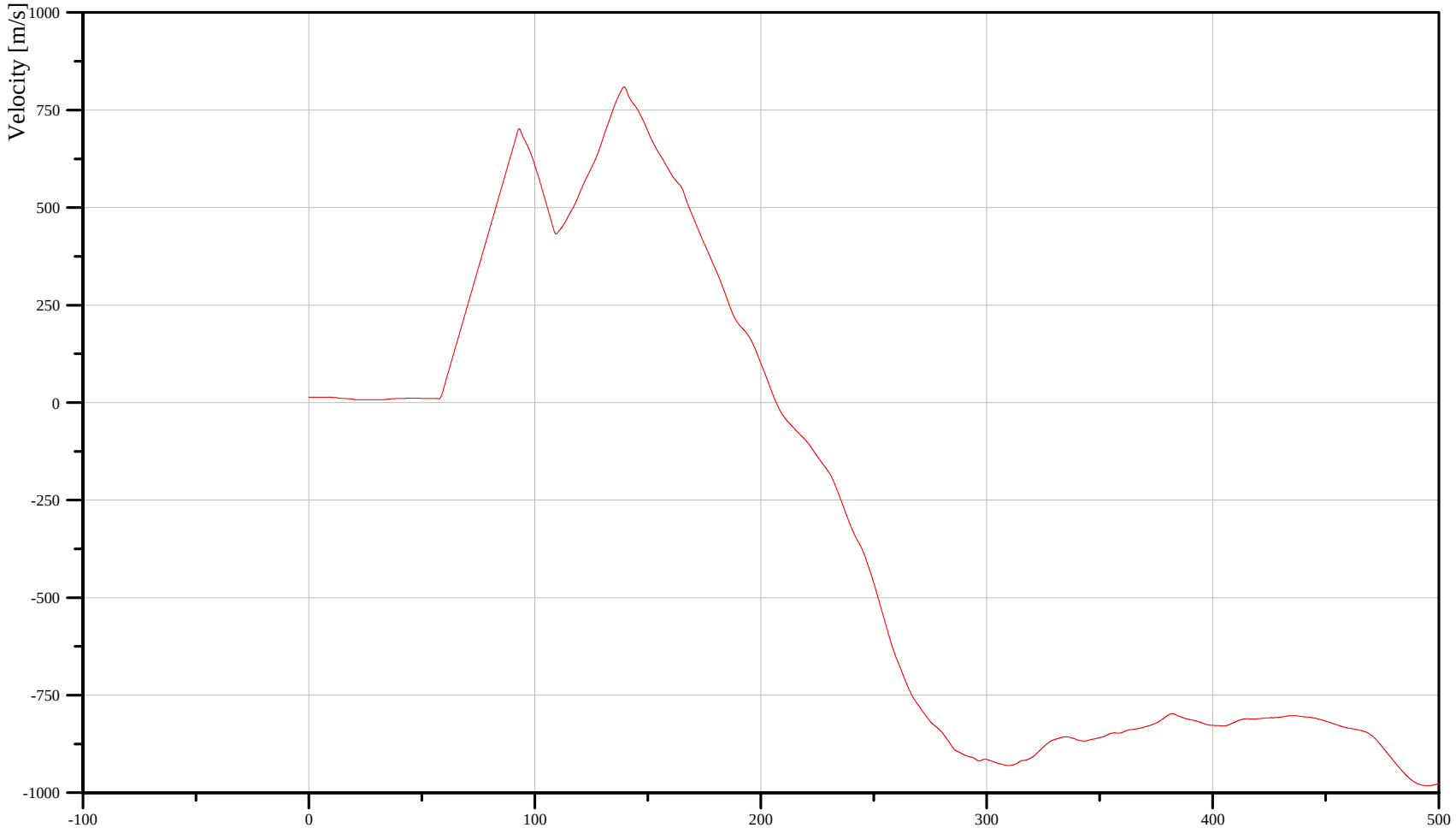
Date: 12/14/2007
Time: 9:12

Driver Seat of Bus X-Axis Velocity

Customer: VRTC

11SEAT000000VEXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-981.68 m/s at 494.96 ms

Max. Value
809.70 m/s at 139.52 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

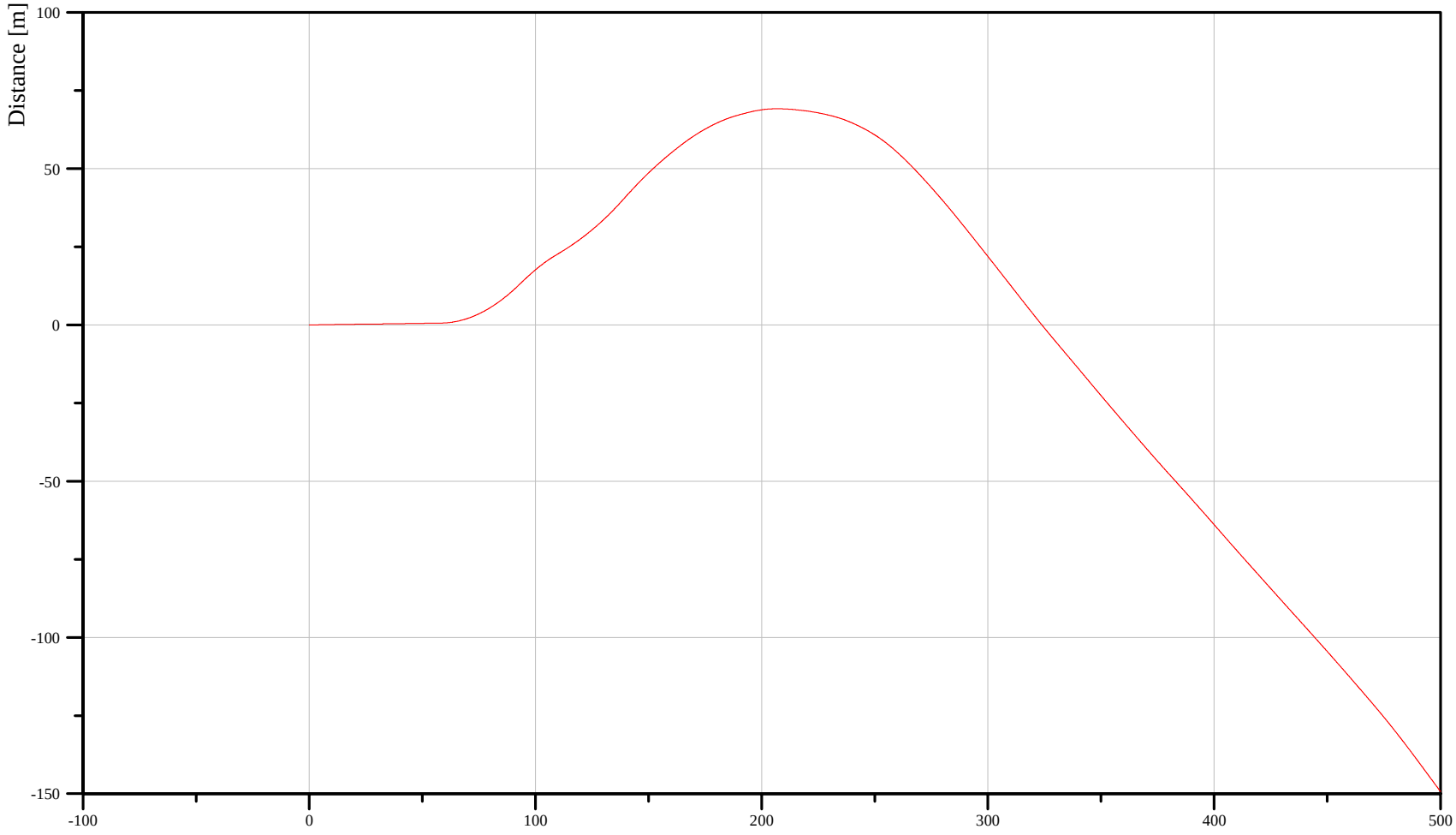
Date: 12/14/2007
Time: 9:12

Driver Seat of Bus X-Axis Displacement

Customer: VRTC

11SEAT000000DCXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-149.28 m at 500.00 ms

Max. Value
69.20 m at 206.80 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

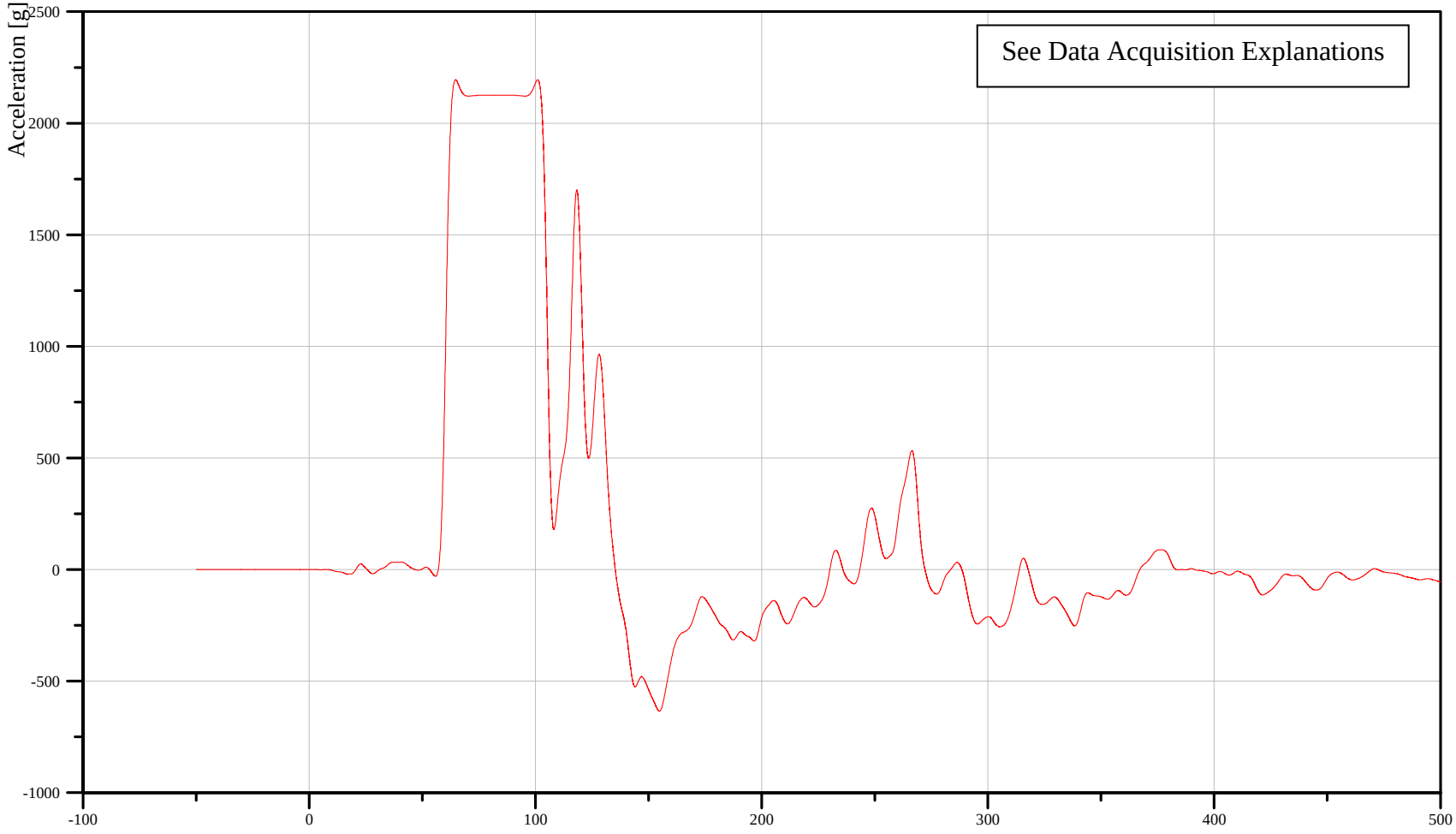
Date: 12/14/2007
Time: 9:12

Driver Seat of Bus Y-Axis Acceleration

Customer: VRTC

11SEAT000000ACYD

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-634.22 g at 154.80 ms

Max. Value
2,195.18 g at 101.04 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

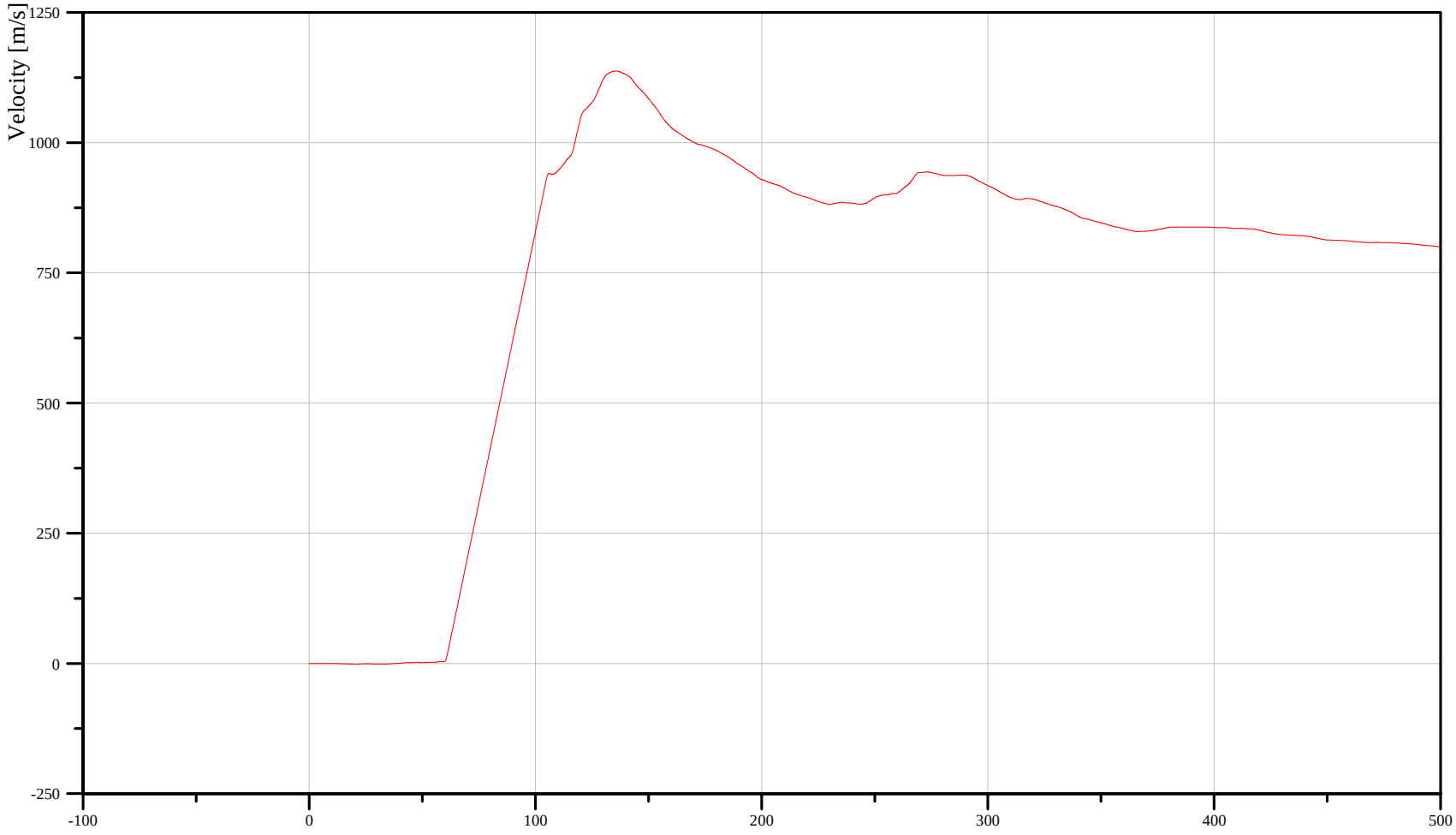
Date: 12/14/2007
Time: 9:12

Driver Seat of Bus Y-Axis Velocity

Customer: VRTC

11SEAT000000VEYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-1.60 m/s at 21.36 ms

Max. Value
1,137.70 m/s at 135.44 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

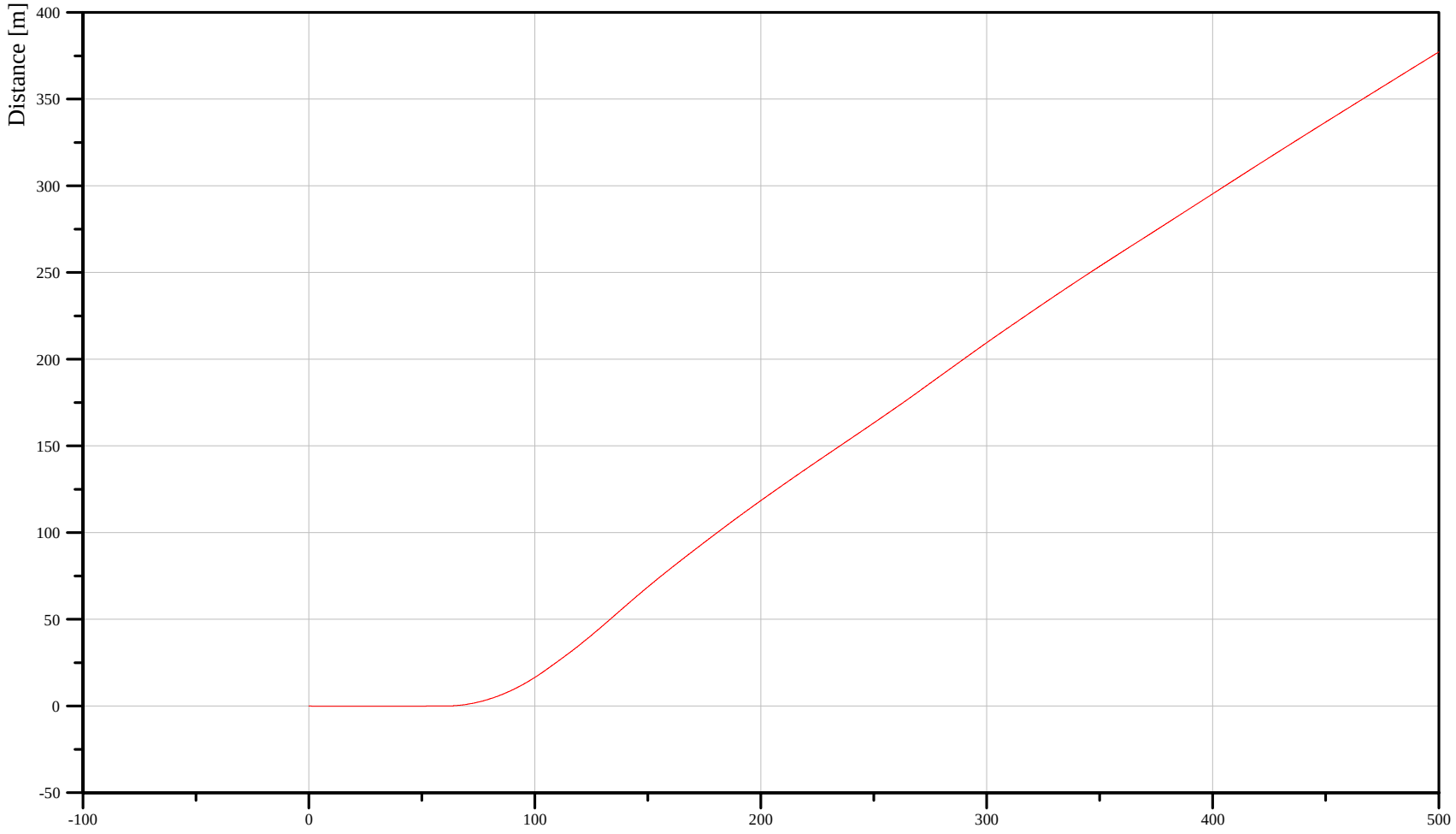
Date: 12/14/2007
Time: 9:12

Driver Seat of Bus Y-Axis Displacement

Customer: VRTC

11SEAT000000DCYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-0.02 m at 37.60 ms

Max. Value
377.21 m at 500.00 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

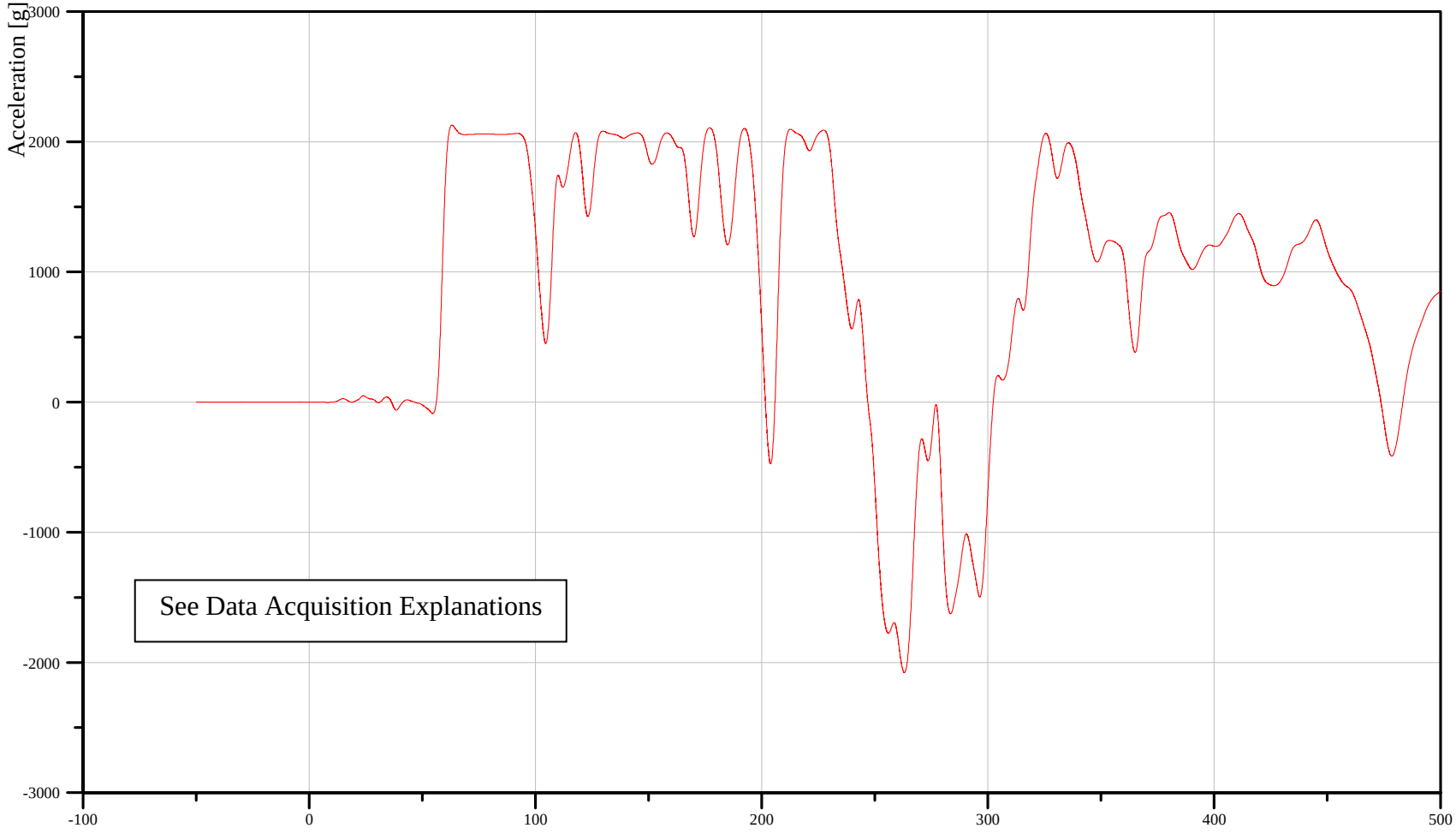
Driver Seat of Bus Z-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

11SEAT000000ACZD

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-2,077.81 g at 263.04 ms

Max. Value
2,128.63 g at 63.12 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

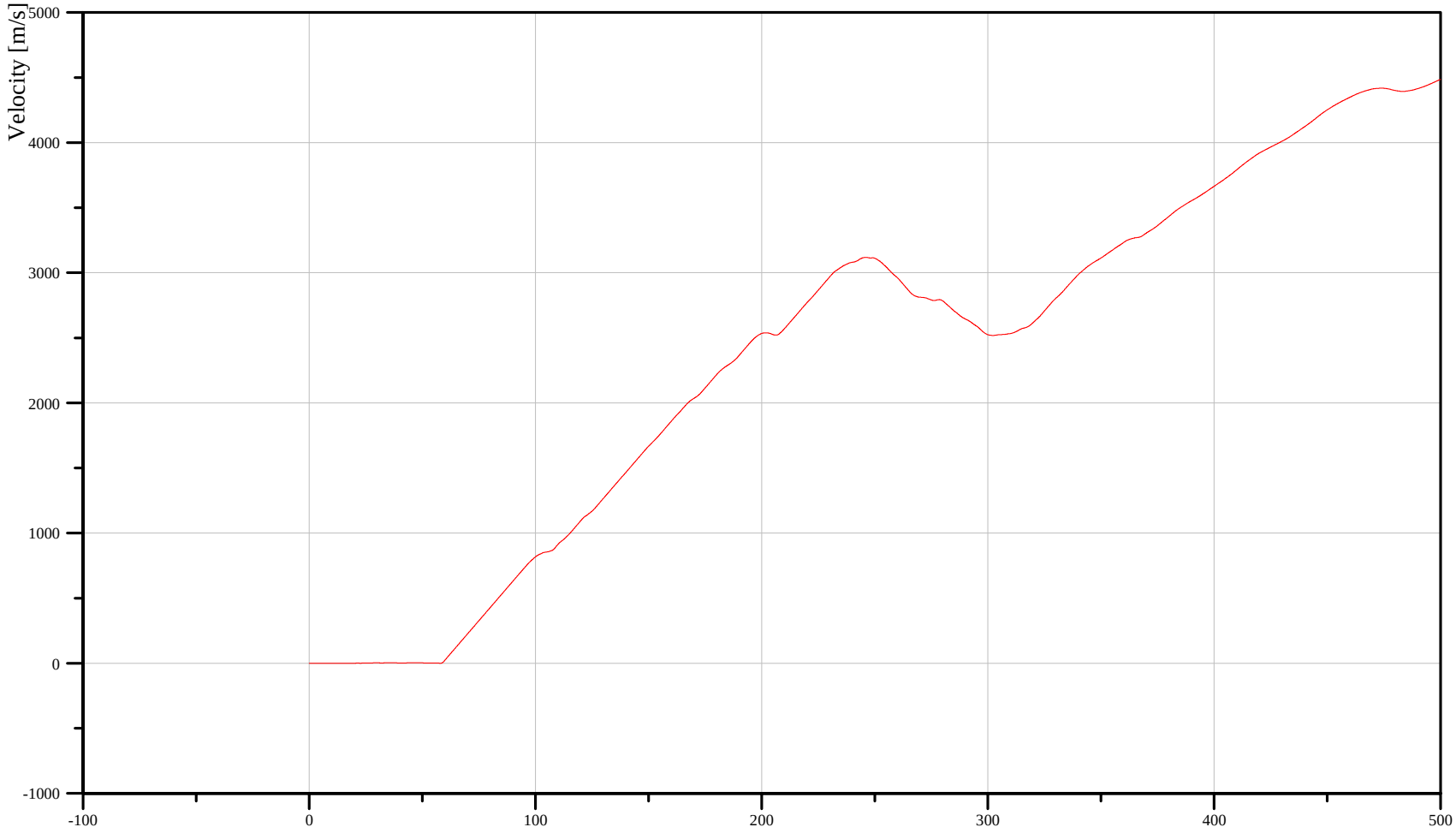
Date: 12/14/2007
Time: 9:12

Driver Seat of Bus Z-Axis Velocity

Customer: VRTC

11SEAT000000VEZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-0.02 m/s at 8.40 ms

Max. Value
4,486.82 m/s at 500.00 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

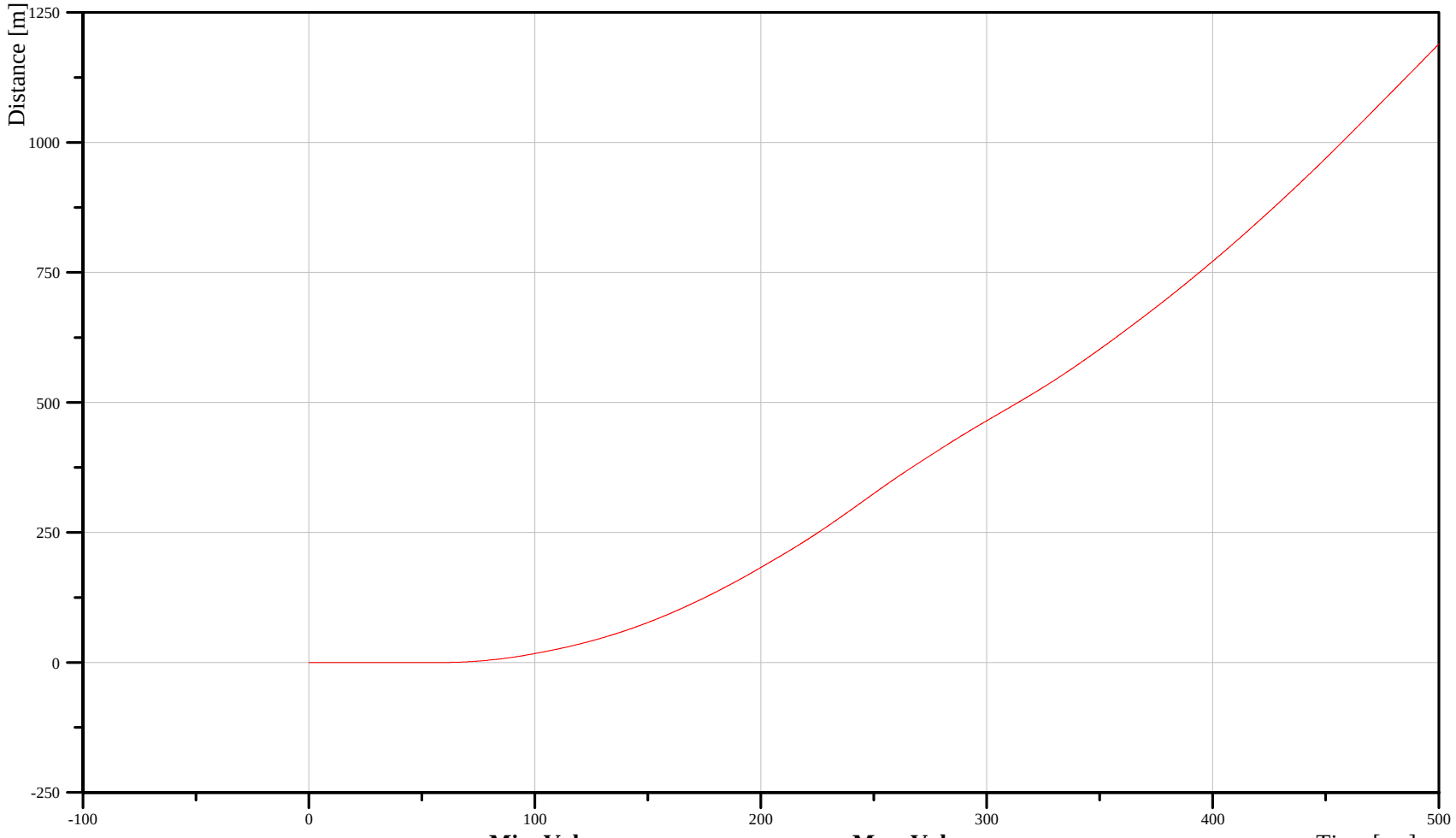
Date: 12/14/2007
Time: 9:12

Driver Seat of Bus Z-Axis Displacement

Customer: VRTC

11SEAT000000DCZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.00 m at 12.16 ms

Max. Value
1,189.18 m at 500.00 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

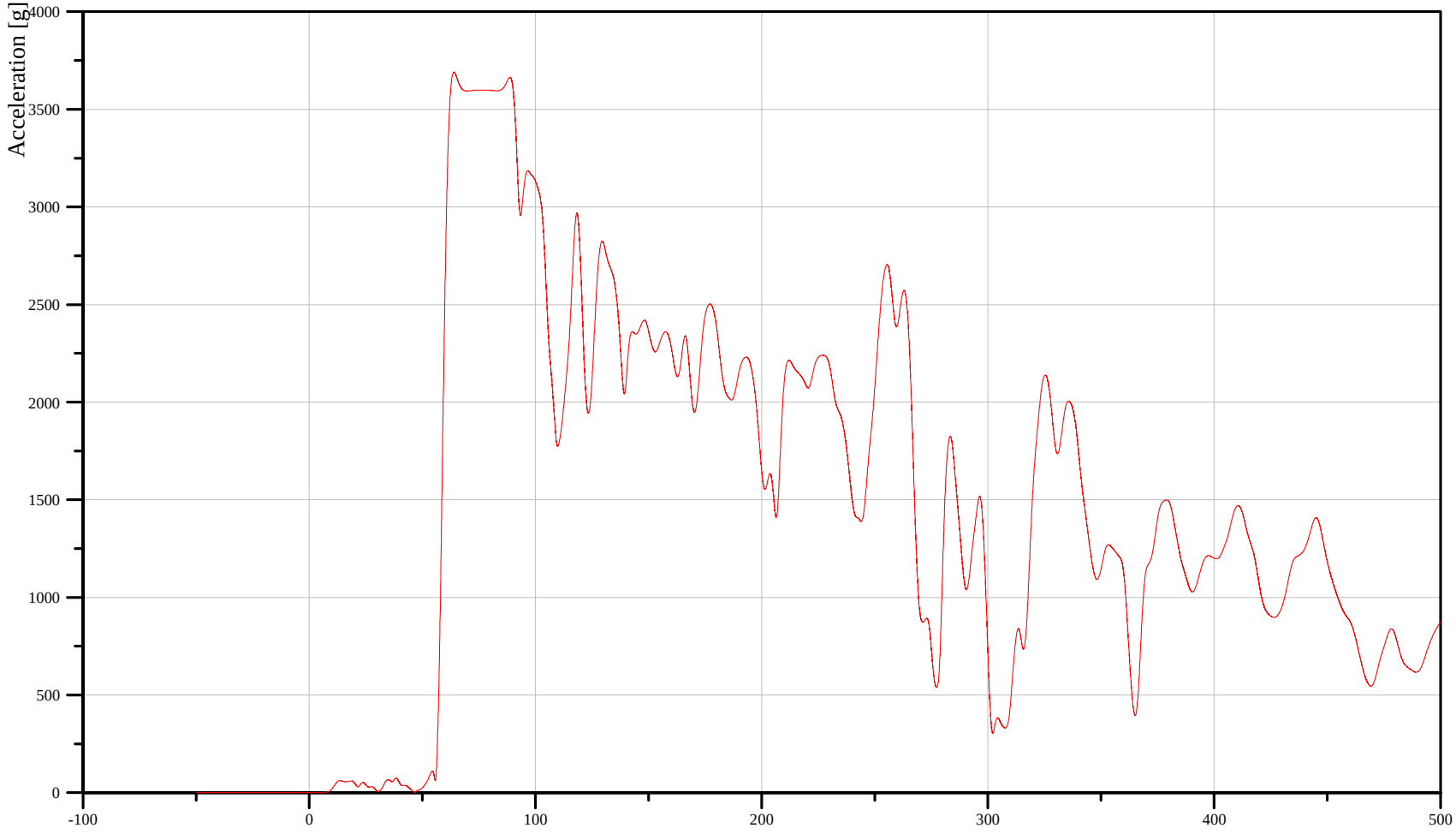
Date: 12/14/2007
Time: 9:12

Driver Seat of Bus Resultant Acceleration

Customer: VRTC

11SEAT000000ACRD

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
0.03 g at -11.28 ms

Max. Value
3,690.29 g at 64.00 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

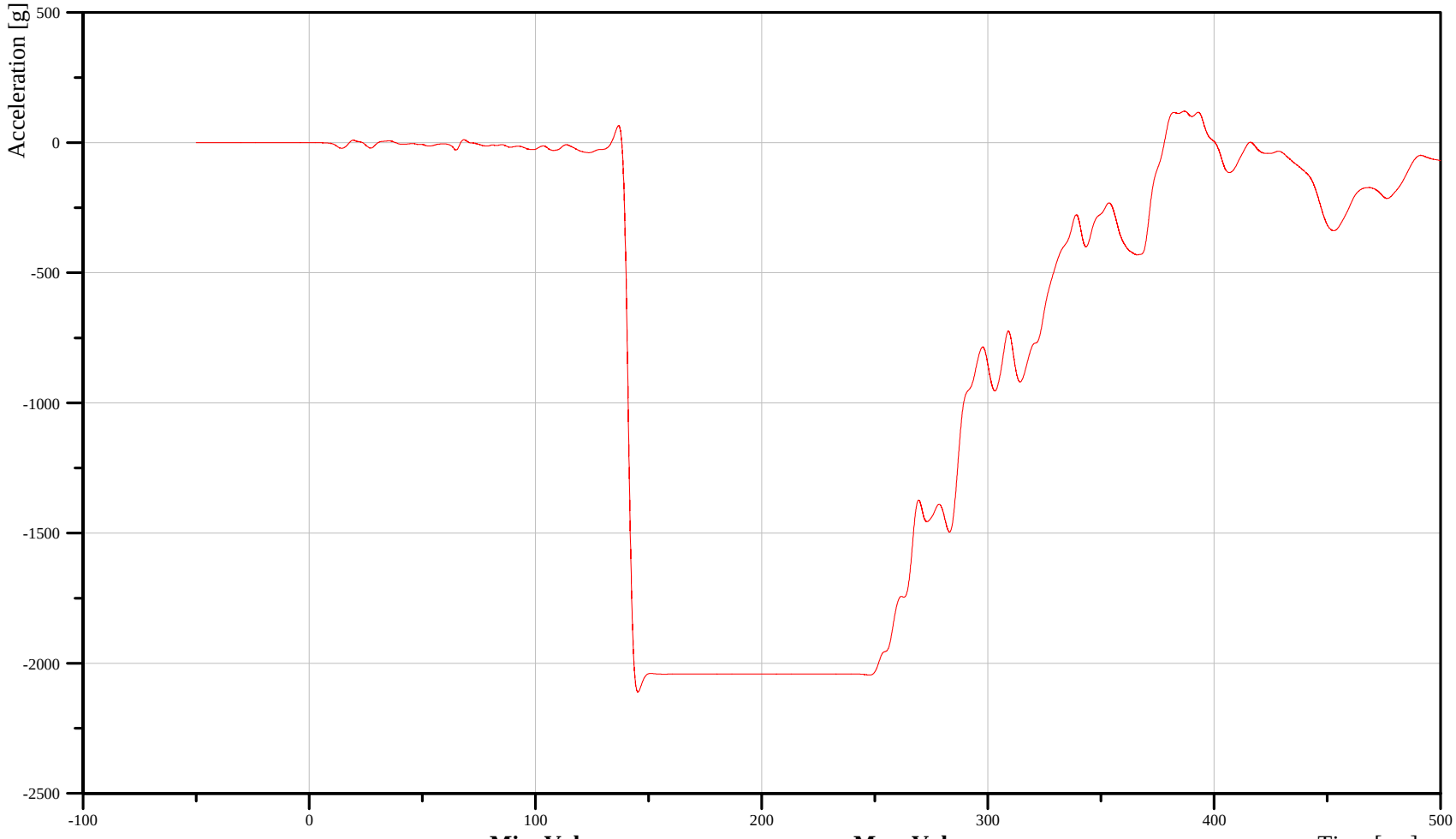
Front Left of Bus B X-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMLEFR00ACXD

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-2,109.90 g at 145.28 ms

Max. Value
120.89 g at 386.80 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

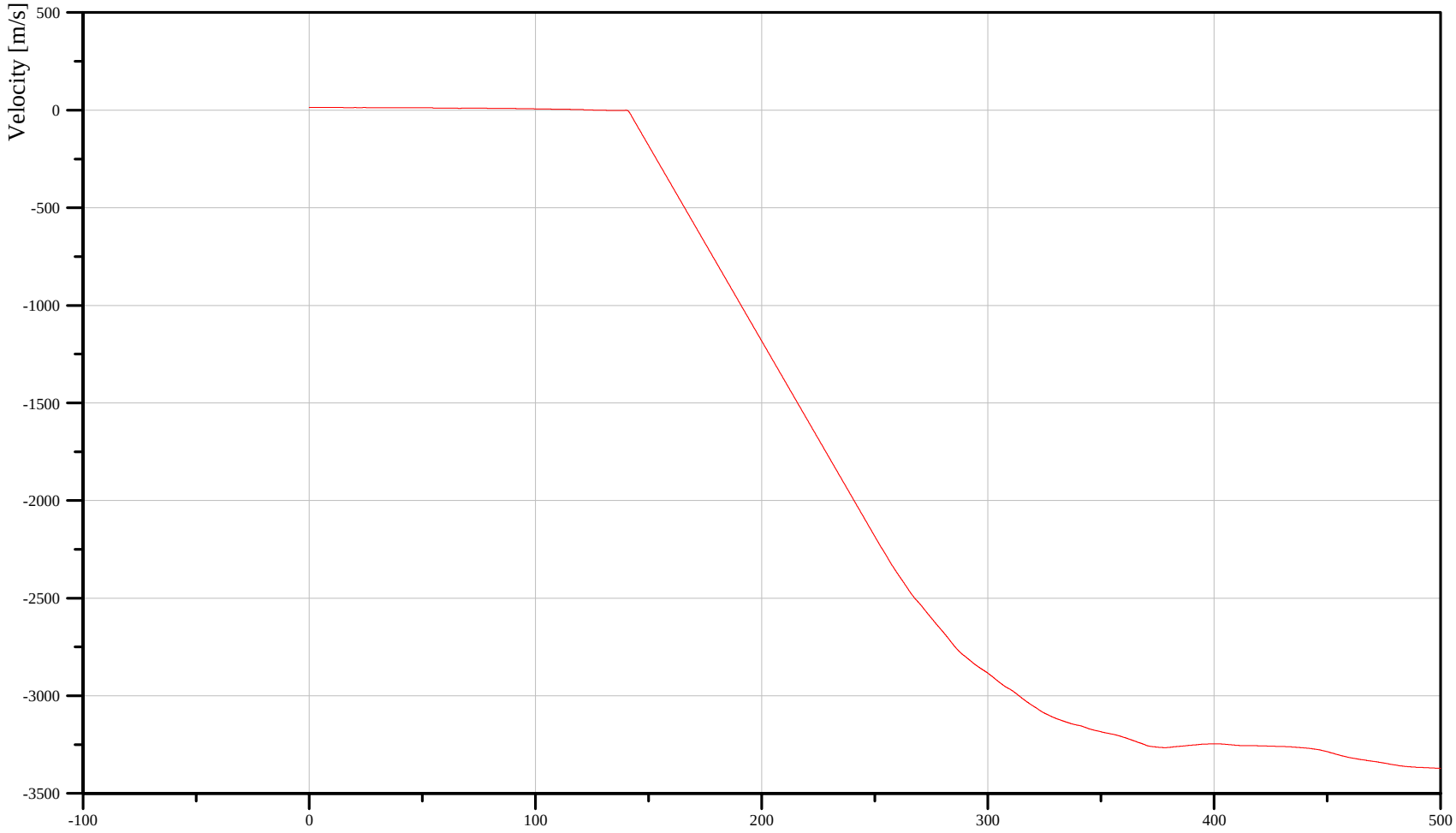
Front Left of Bus B X-Axis Velocity

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMLEFR00VEXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-3,371.79 m/s at 500.00 ms

Max. Value
13.57 m/s at 0.00 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

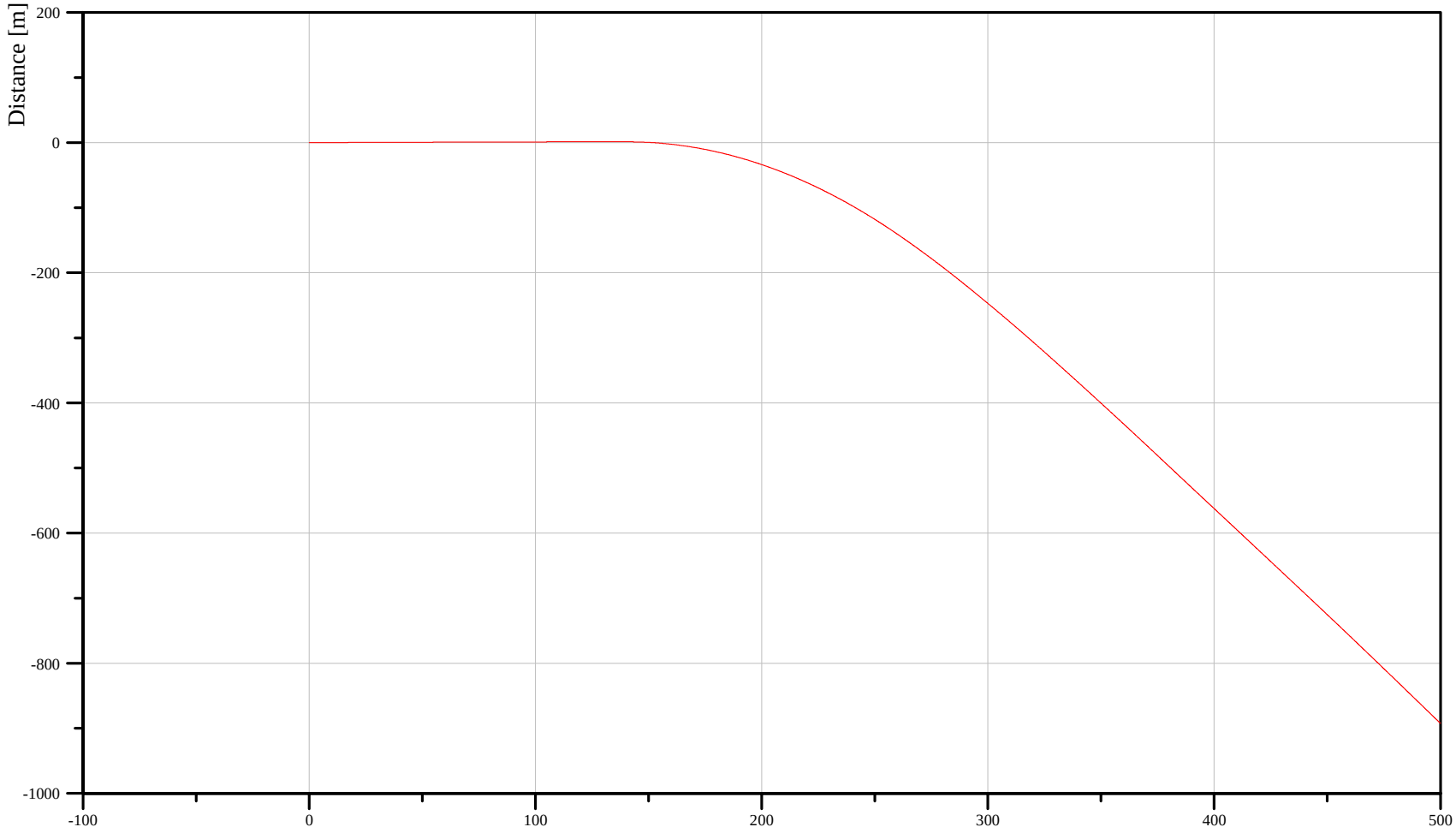
Front Left of Bus B X-Axis Displacement

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMLEFR00DCXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-892.32 m at 500.00 ms

Max. Value
1.22 m at 127.36 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

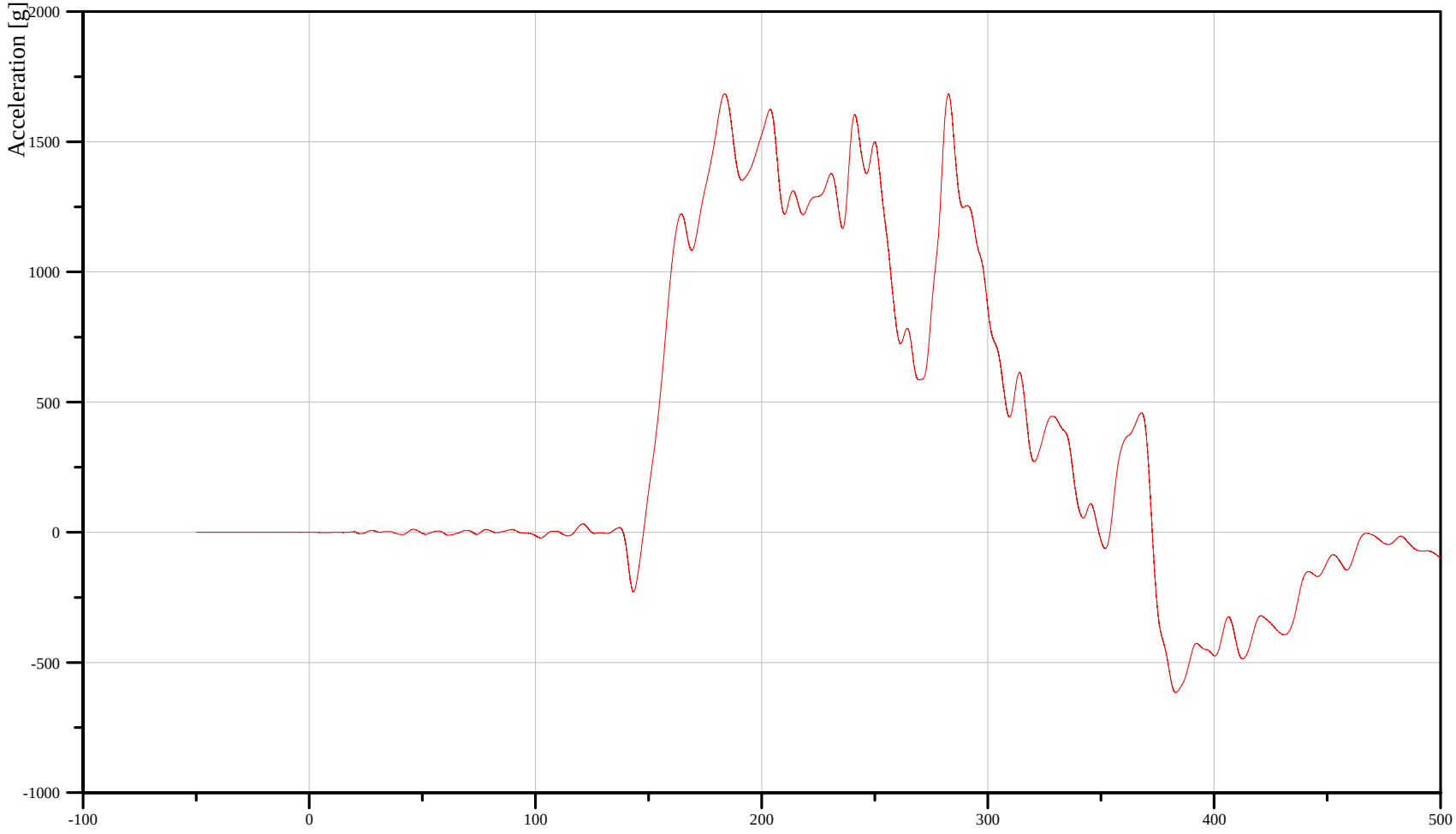
Front Left of Bus B Y-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMLEFR00ACYD

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-614.70 g at 383.04 ms

Max. Value
1,684.79 g at 183.68 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

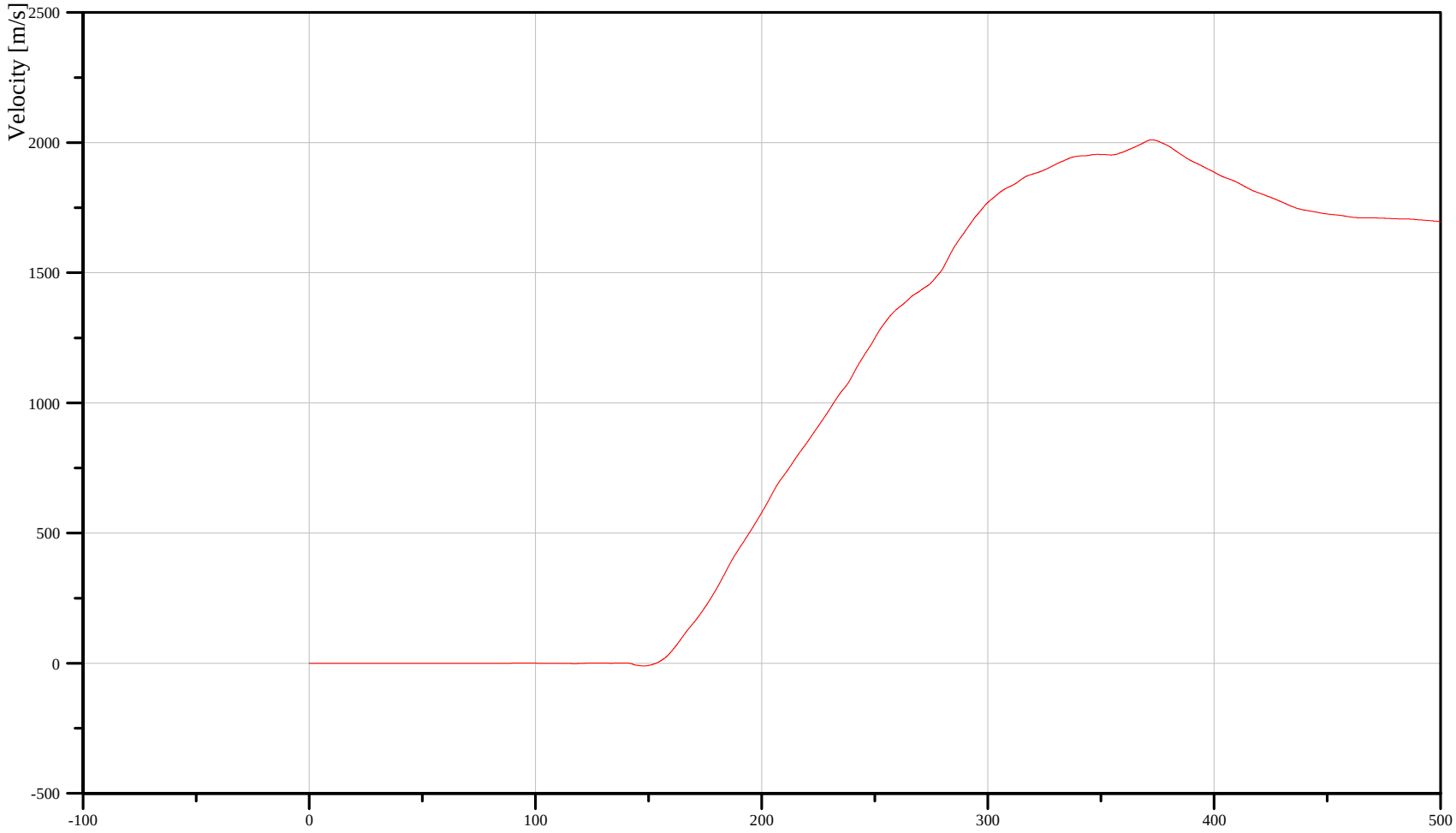
Front Left of Bus B Y-Axis Velocity

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMLEFR00VEYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-10.09 m/s at 148.00 ms

Max. Value
2,010.77 m/s at 372.48 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

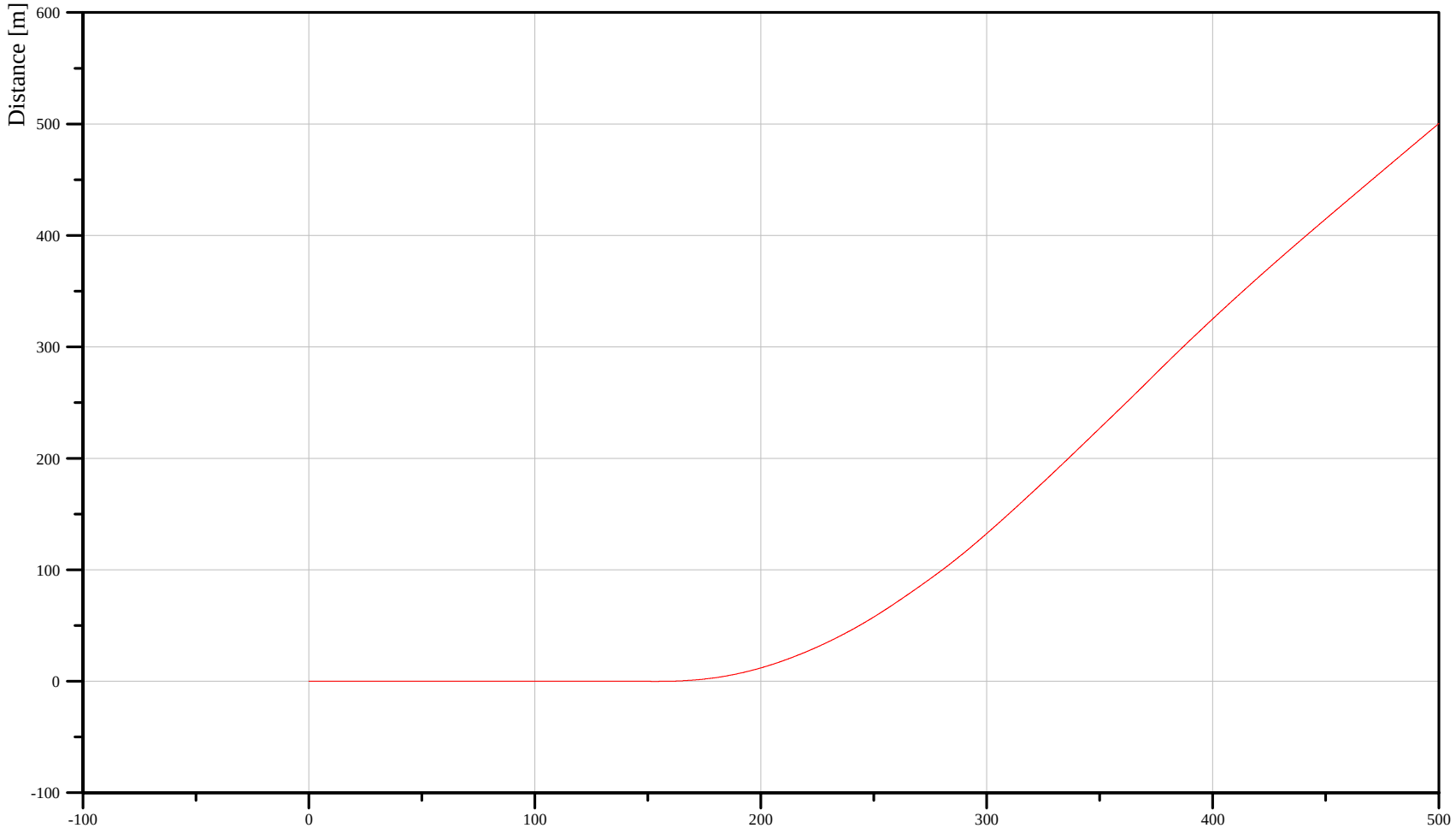
Front Left of Bus B Y-Axis Displacement

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMLEFR00DCYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-0.04 m at 153.28 ms

Max. Value
500.32 m at 500.00 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

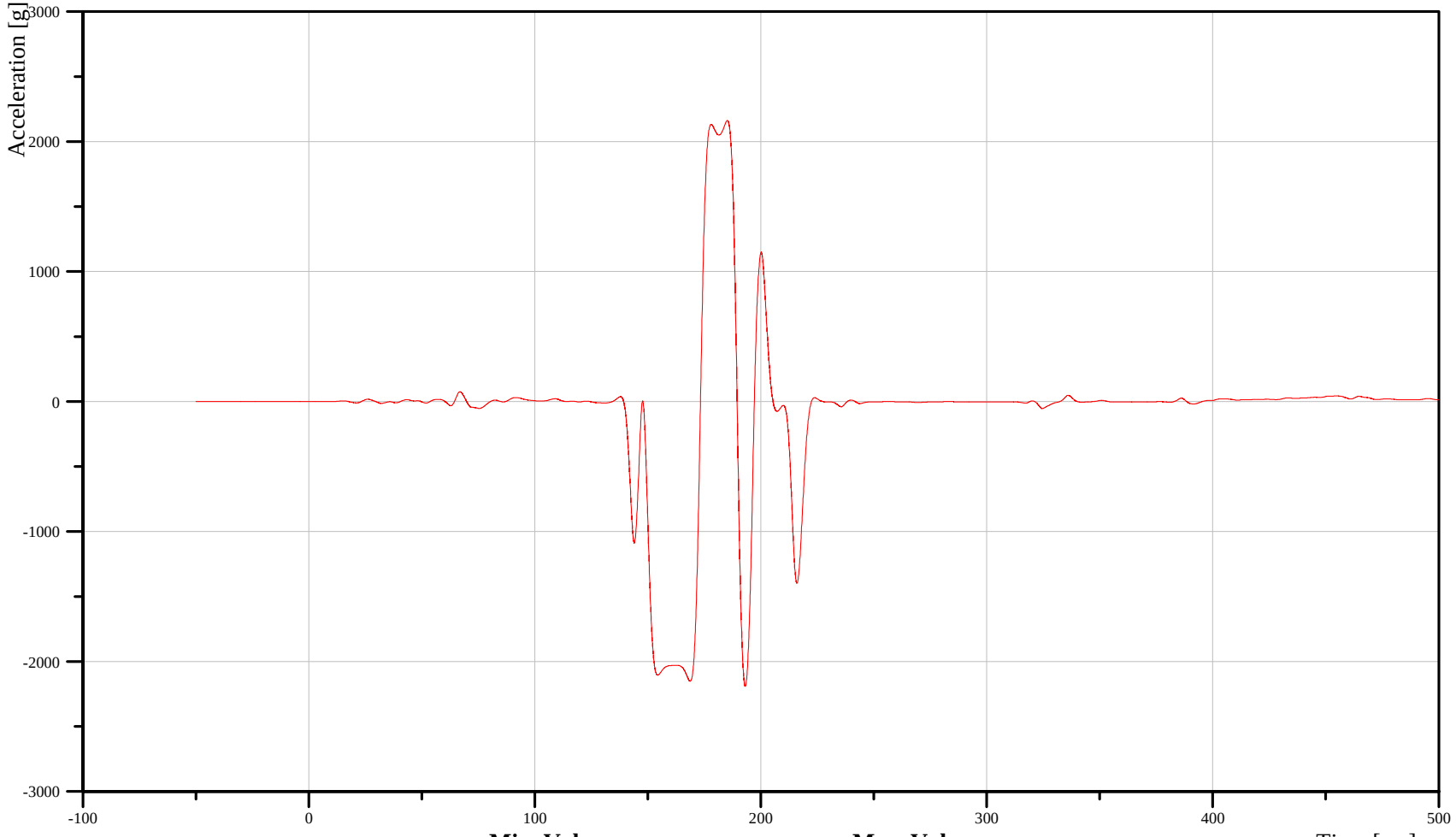
Front Left of Bus B Z-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMLEFR00ACZD

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-2,190.56 g at 193.12 ms

Max. Value
2,161.97 g at 185.20 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

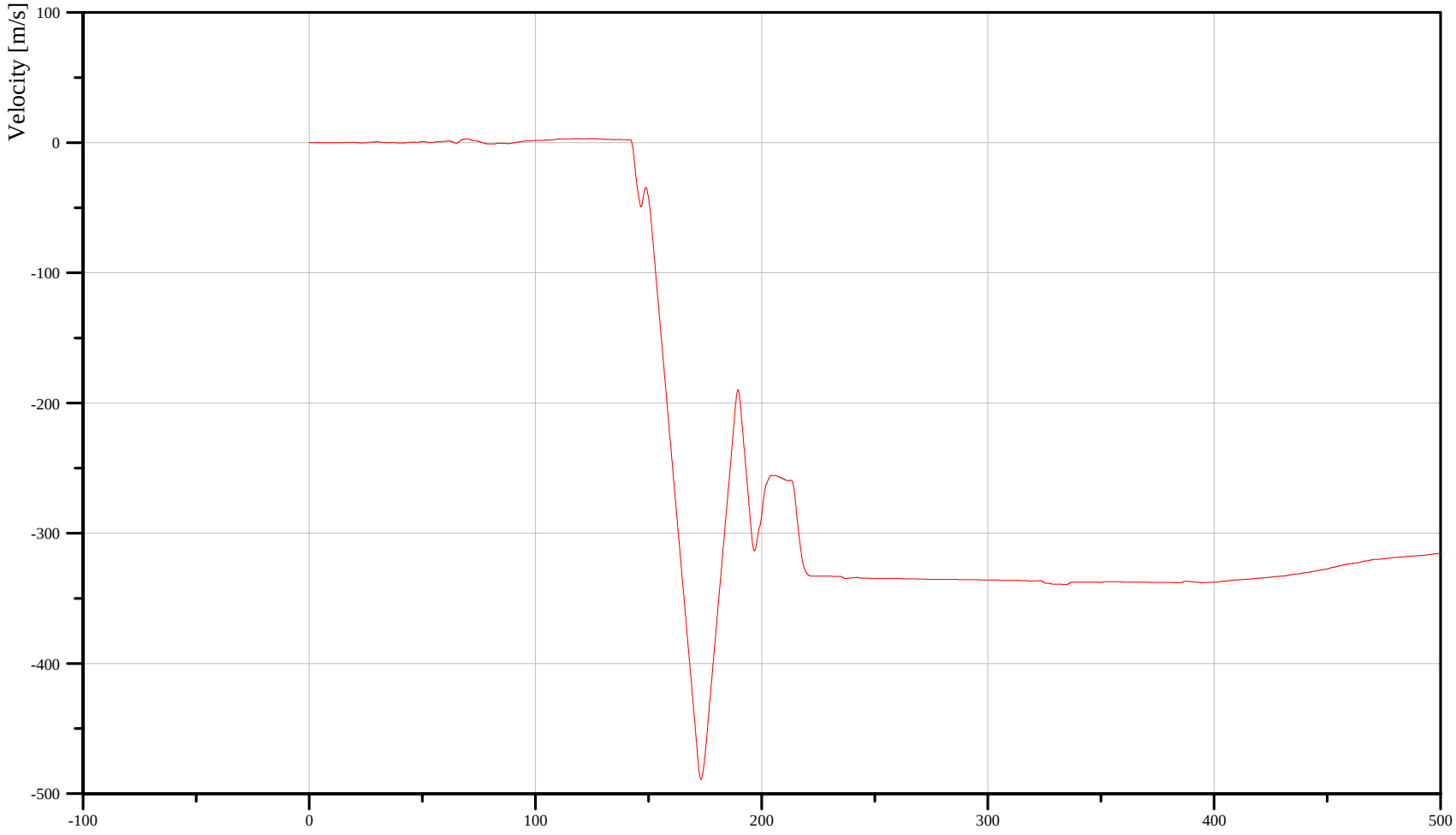
Front Left of Bus B Z-Axis Velocity

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMLEFR00VEZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-489.05 m/s at 173.12 ms

Max. Value
3.21 m/s at 117.76 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

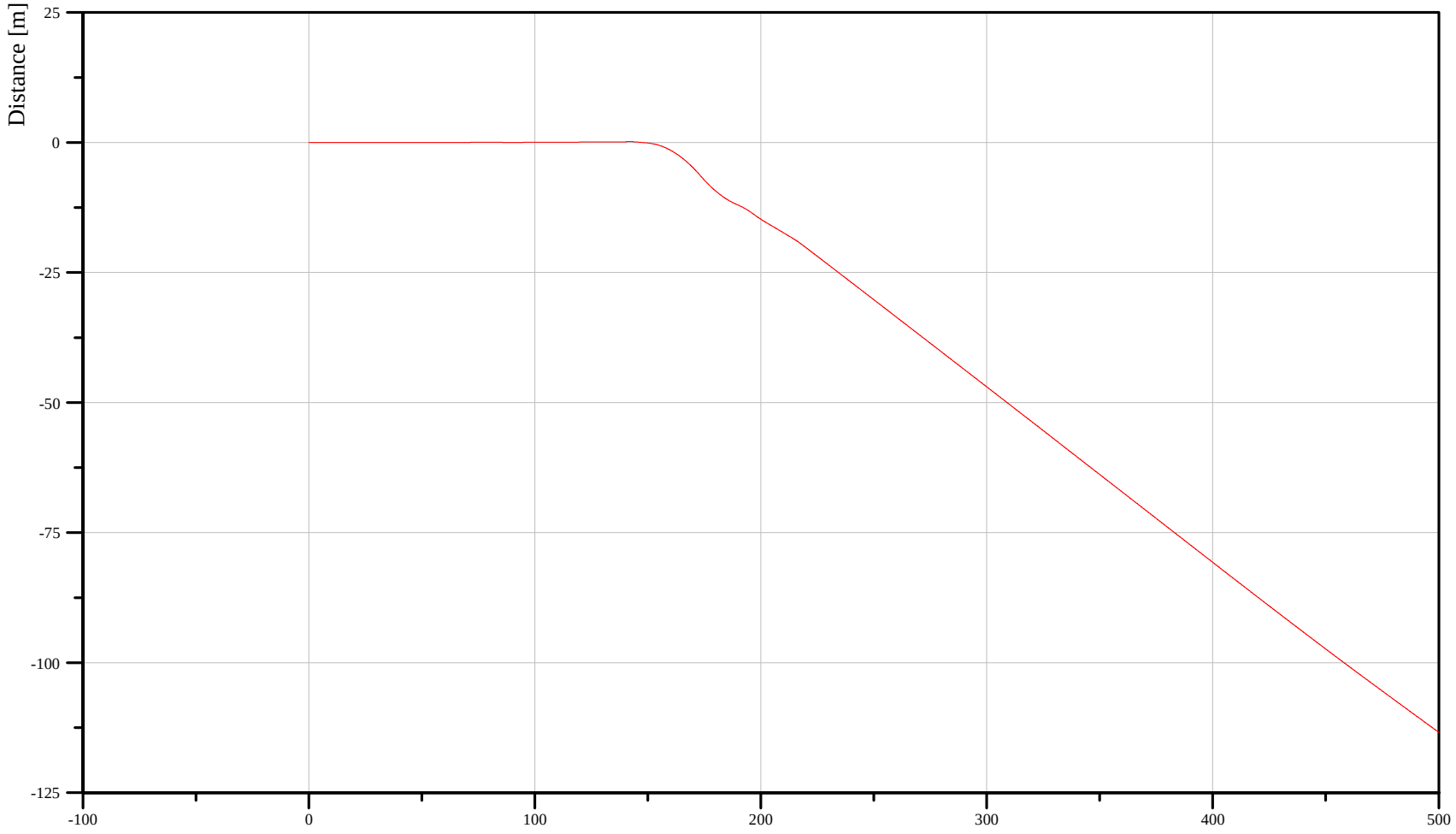
Front Left of Bus B Z-Axis Displacement

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMLEFR00DCZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-113.37 m at 500.00 ms

Max. Value
0.15 m at 142.64 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

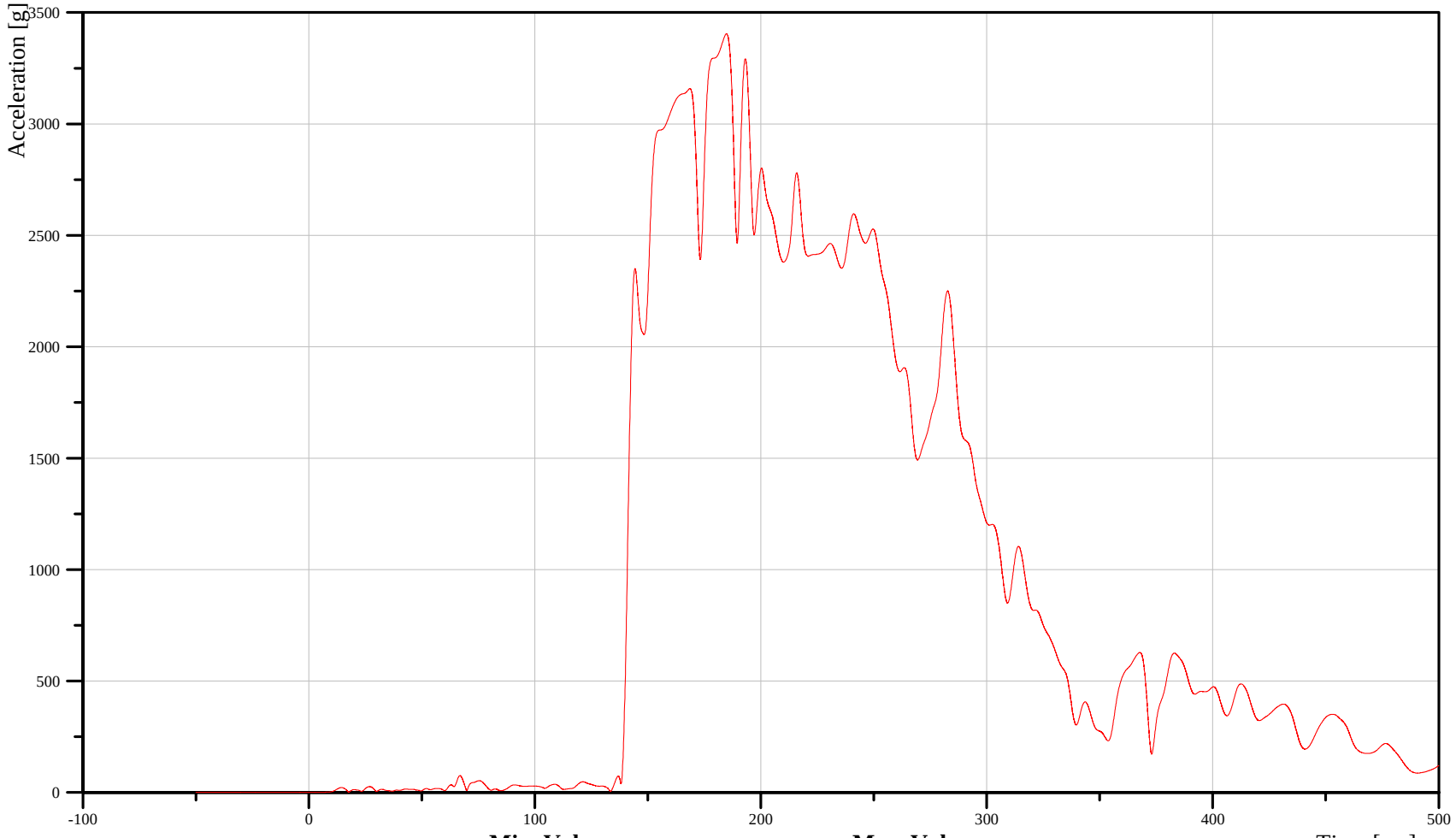
Front Left of Bus B Resultant Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMLEFR00ACRD

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
0.03 g at -33.76 ms

Max. Value
3,404.52 g at 184.80 ms

B-635

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

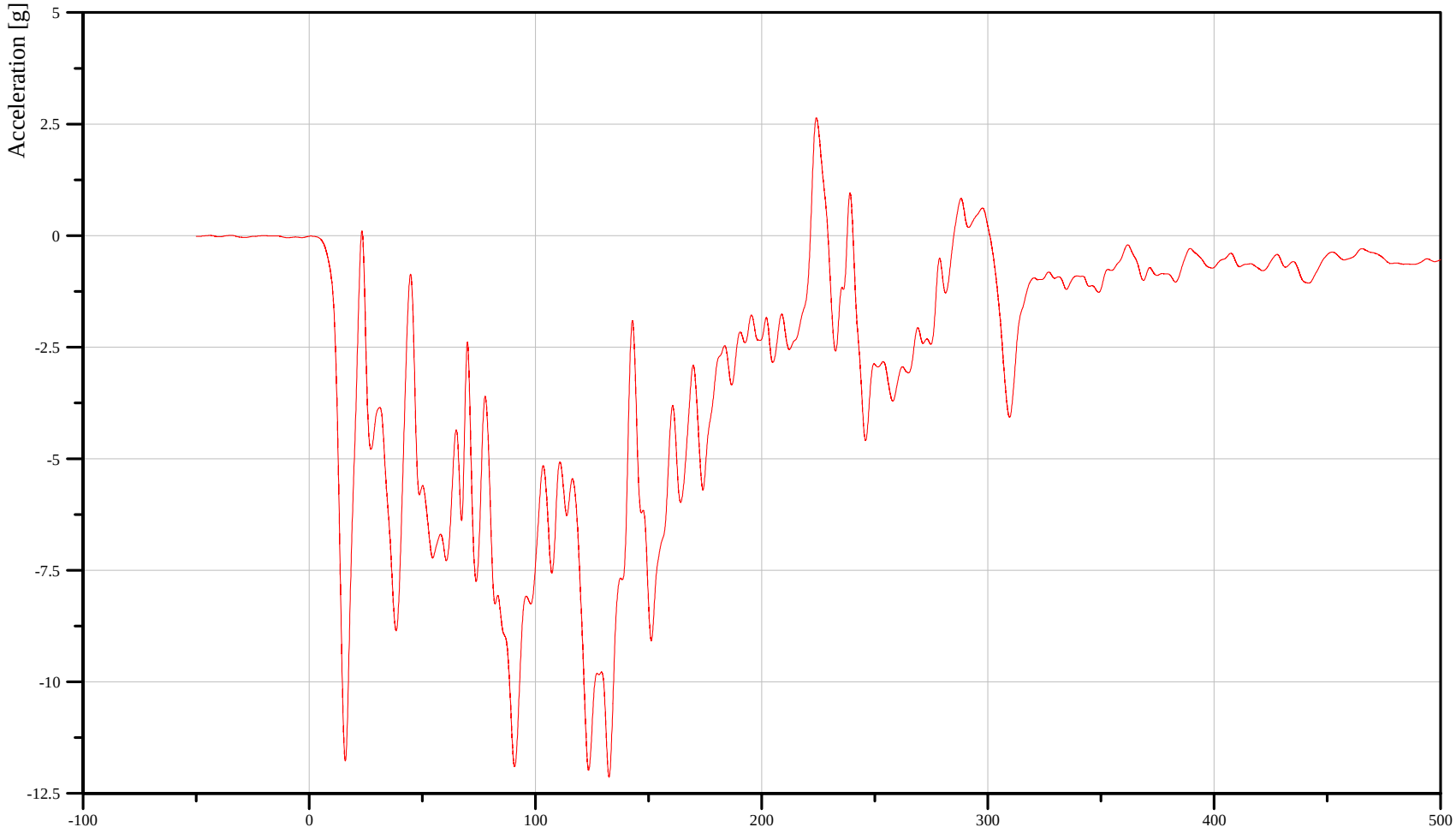
Middle Front Right of Bus C X-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMMIFR00ACXD

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-12.14 g at 132.56 ms

Max. Value
2.64 g at 224.16 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

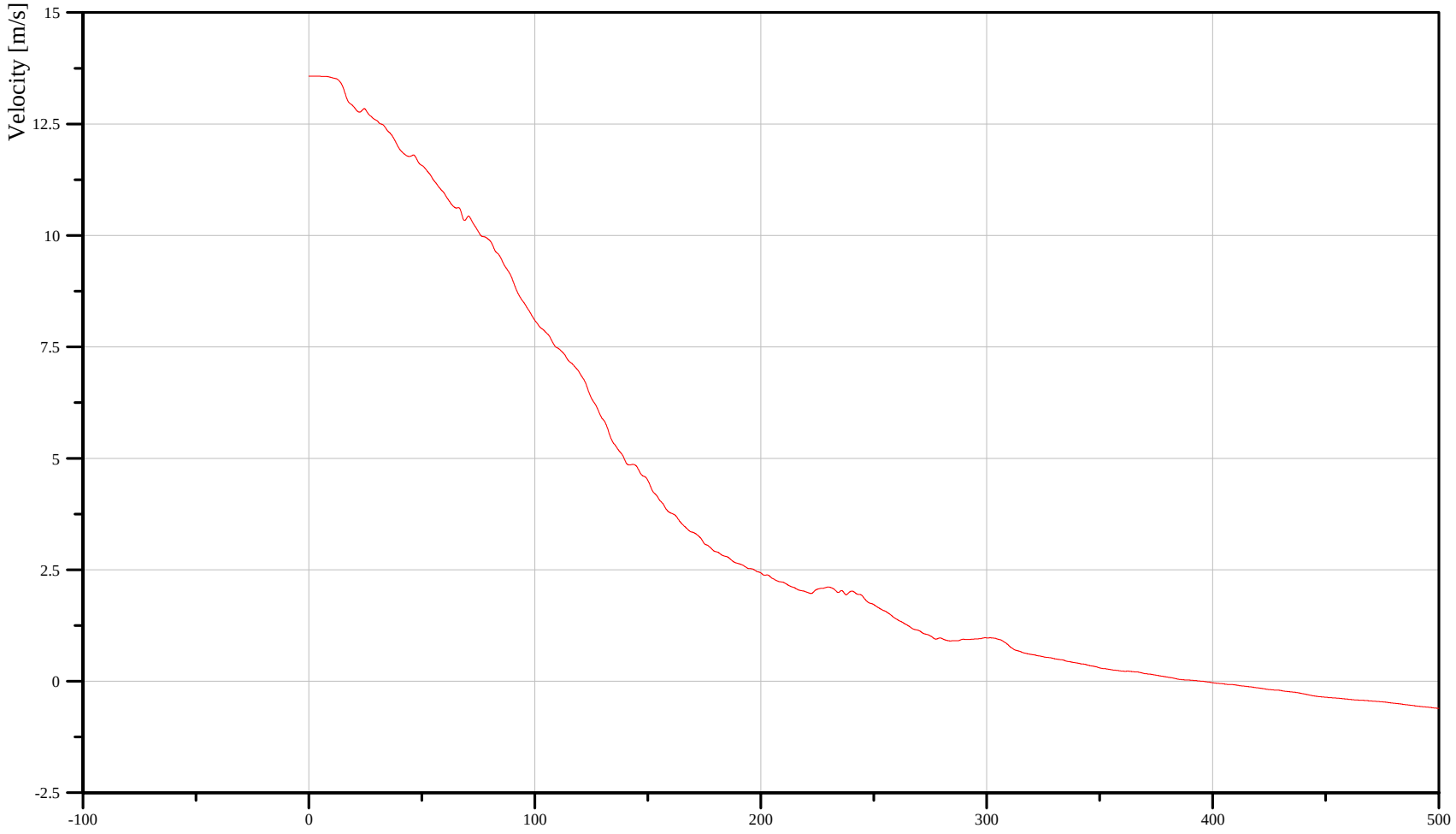
Date: 12/14/2007
Time: 9:12

Middle Front Right of Bus C X-Axis Velocity

Customer: VRTC

10FRAMMIFR00VEXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-0.61 m/s at 500.00 ms

Max. Value
13.57 m/s at 0.64 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

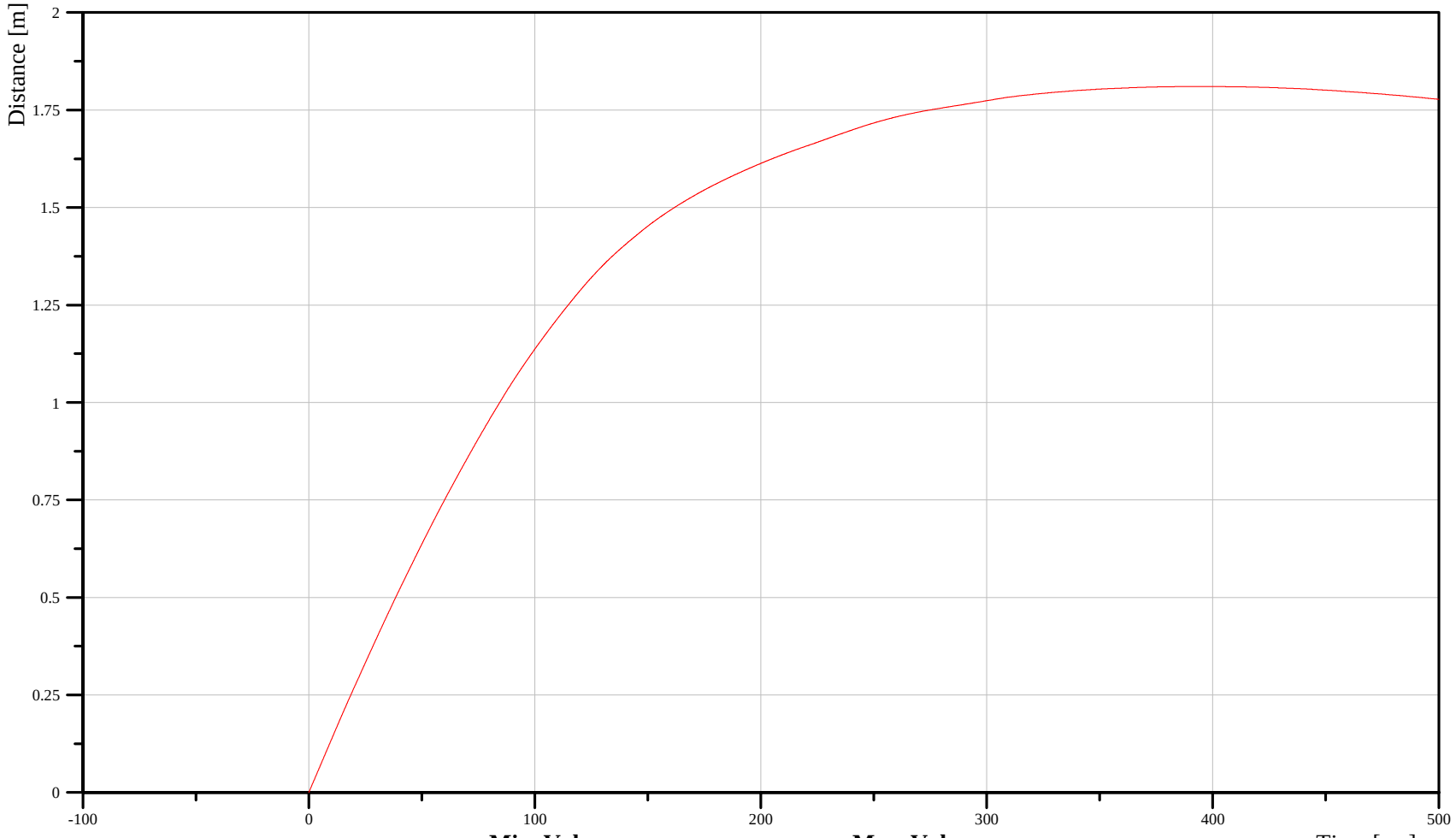
Middle Front Right of Bus C X-Axis Displacement

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMMIFR00DCXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.00 m at 0.00 ms

Max. Value
1.81 m at 395.76 ms

B-638

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

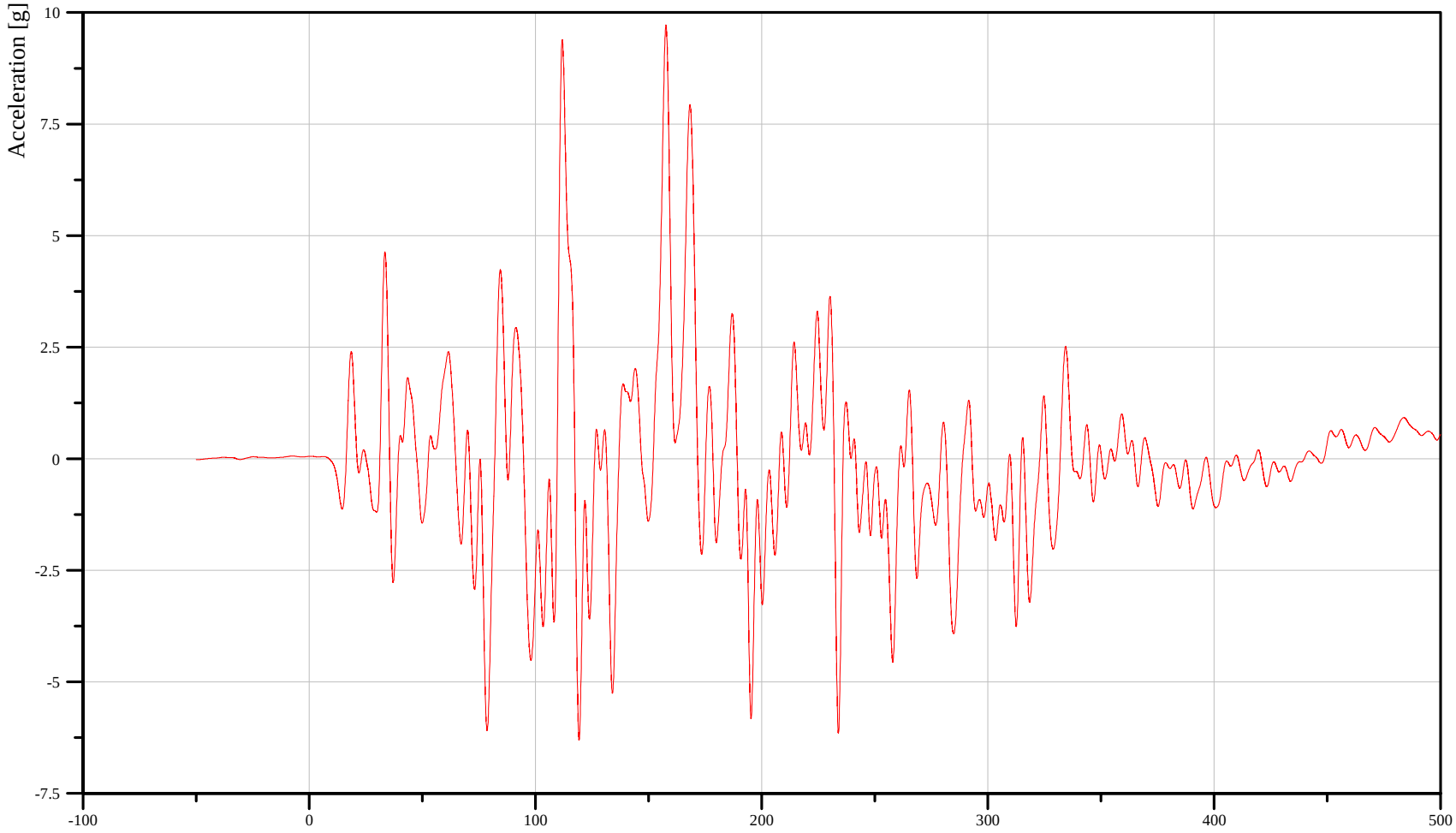
Middle Front Right of Bus C Y-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMMIFR00ACYD

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-6.30 g at 119.28 ms

Max. Value
9.72 g at 157.68 ms

B-639

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

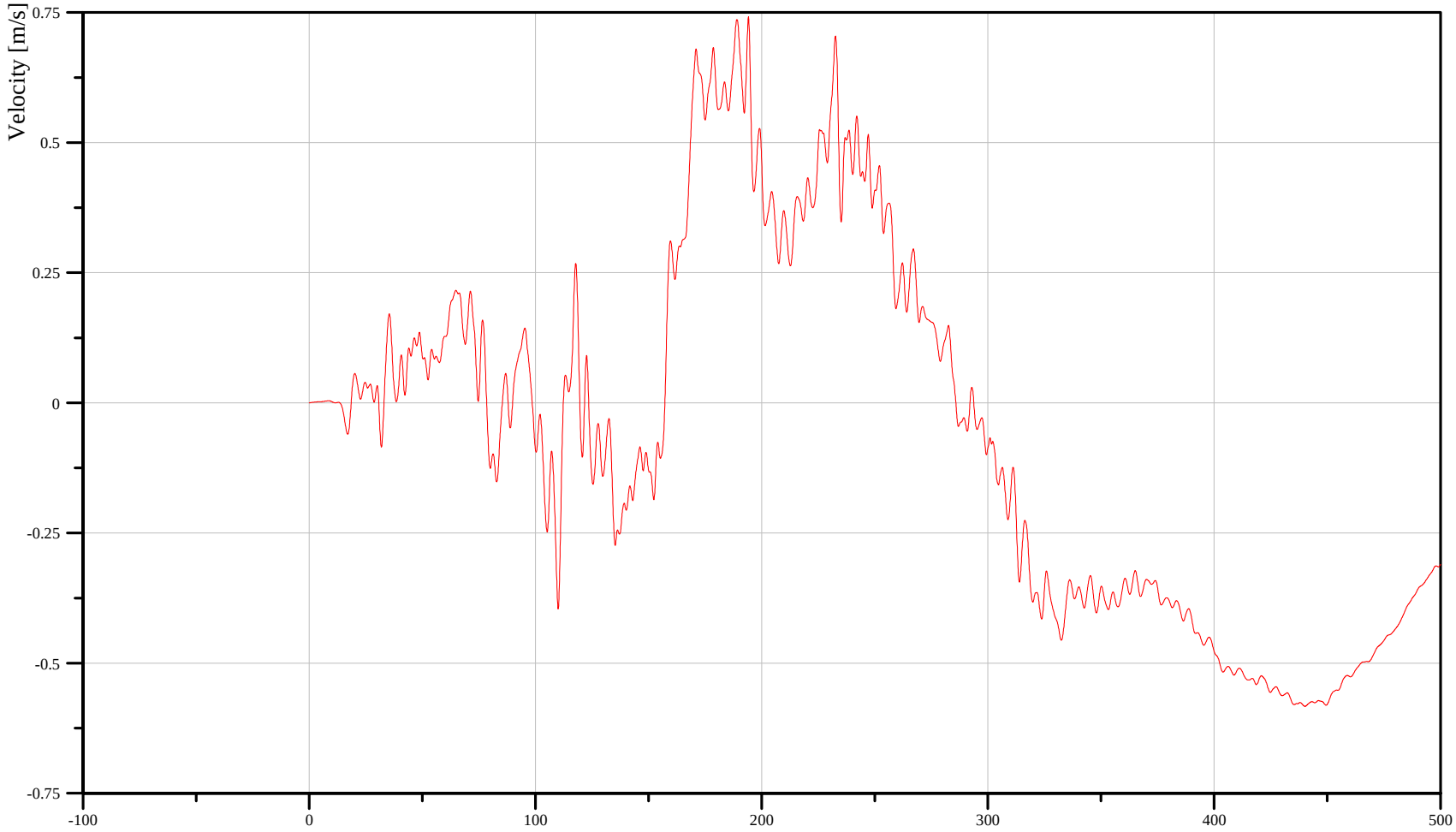
Middle Front Right of Bus C Y-Axis Velocity

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMMIFR00VEYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-0.58 m/s at 440.16 ms

Max. Value
0.74 m/s at 194.16 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

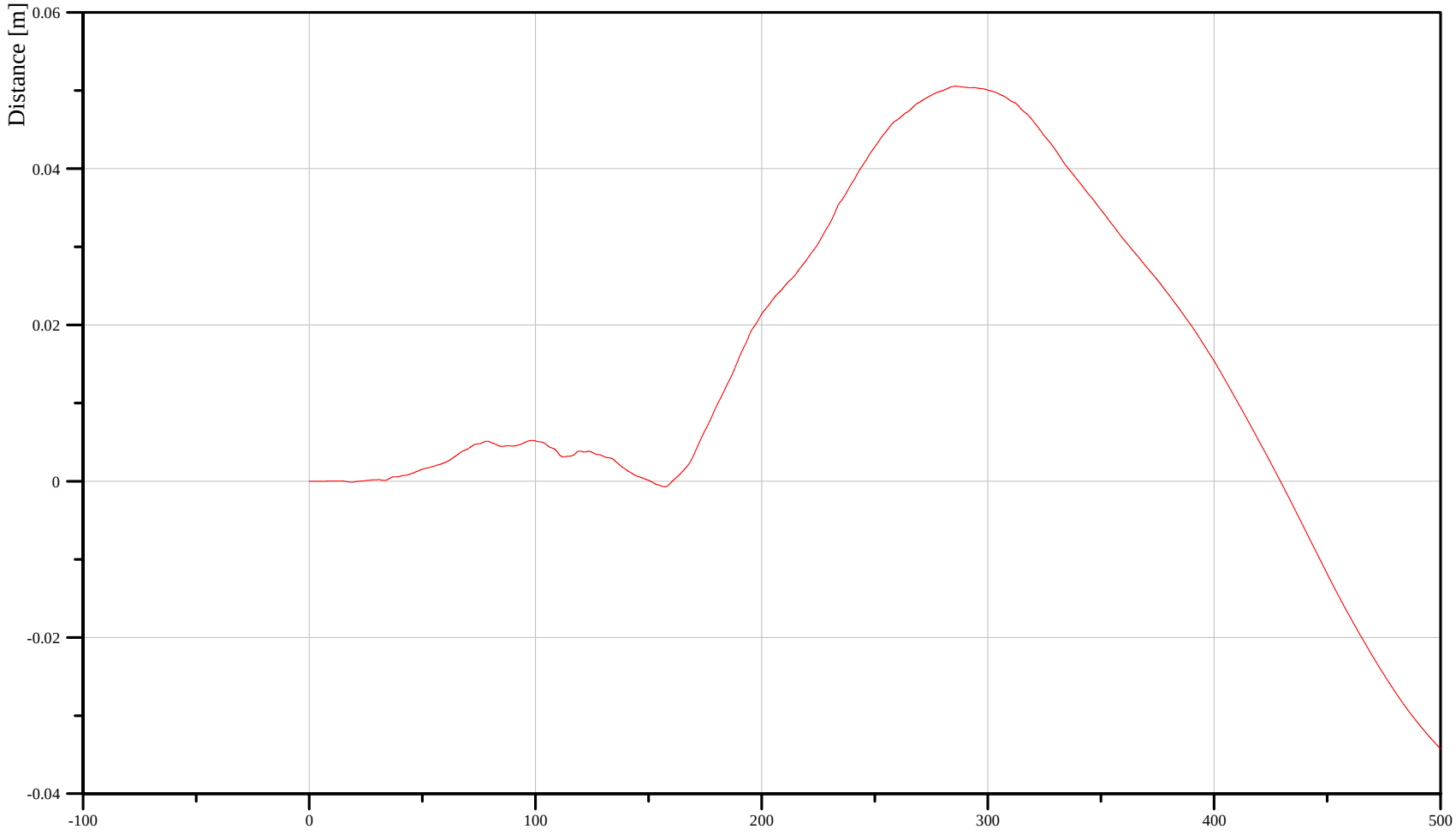
Middle Front Right of Bus C Y-Axis Displacement

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMMIFR00DCYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-0.03 m at 500.00 ms

Max. Value
0.05 m at 285.84 ms

B-641

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

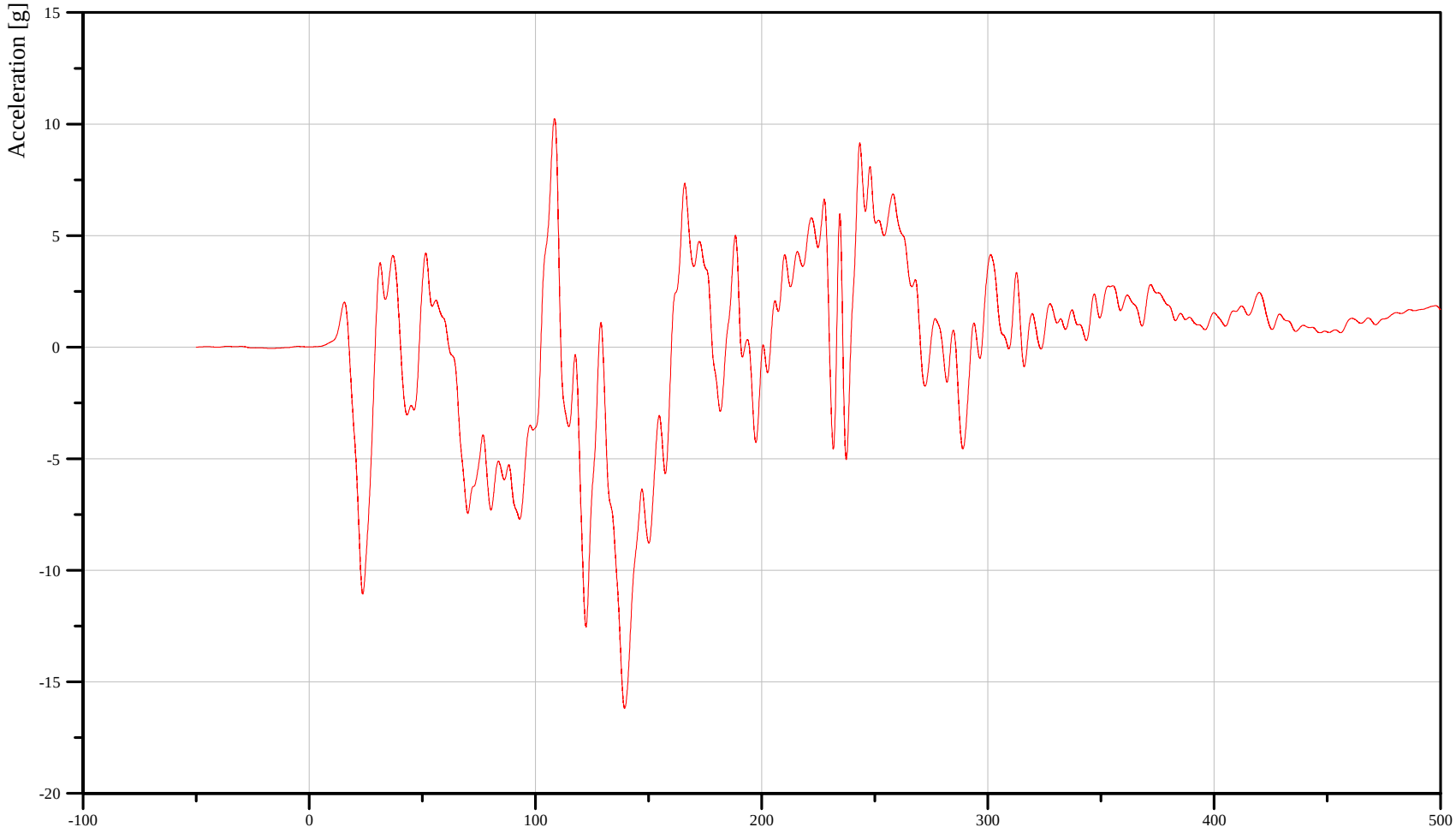
Middle Front Right of Bus C Z-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMMIFR00ACZD

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-16.19 g at 139.44 ms

Max. Value
10.25 g at 108.40 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

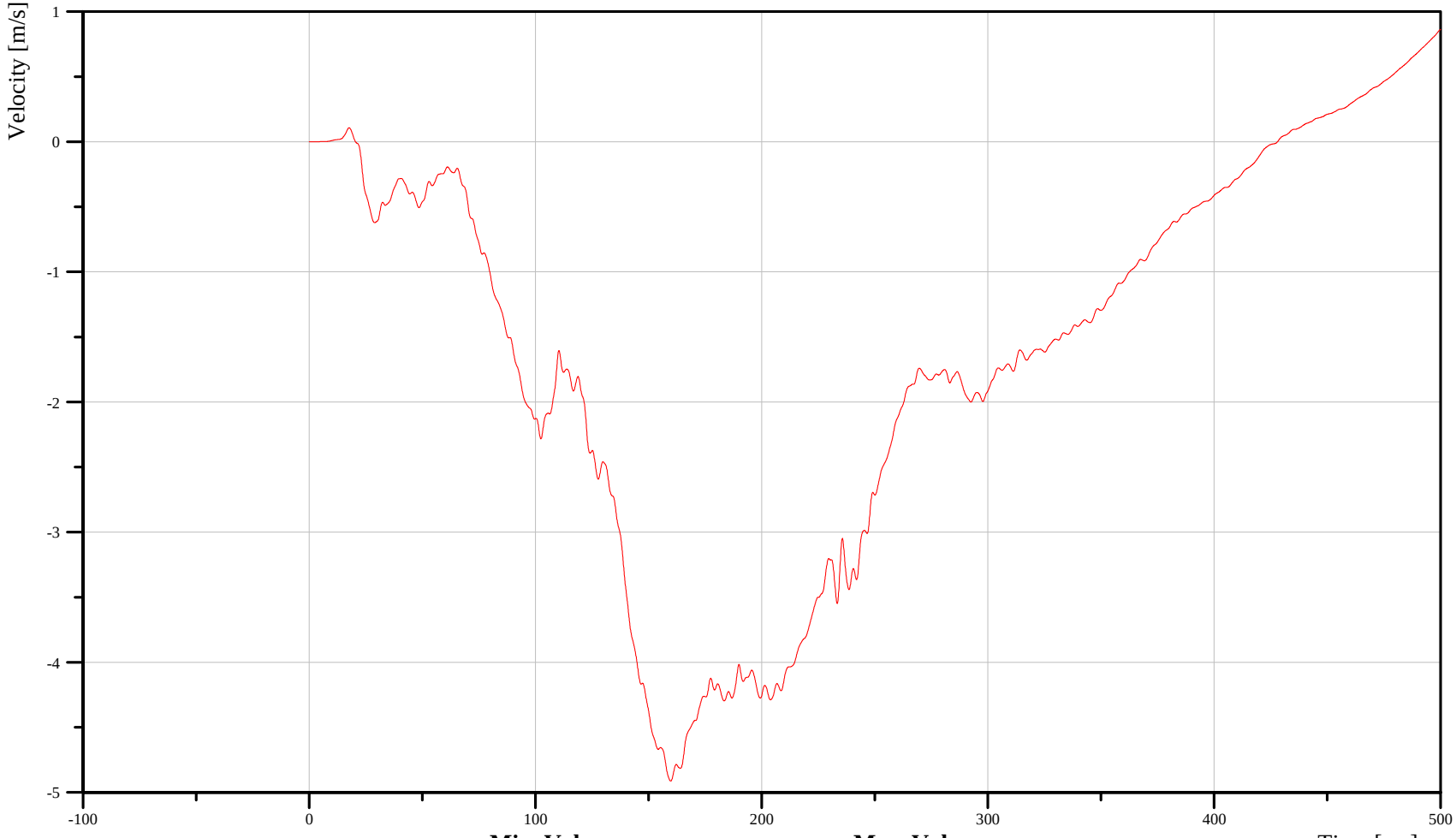
Middle Front Right of Bus C Z-Axis Velocity

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMMIFR00VEZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-4.91 m/s at 159.84 ms

Max. Value
0.86 m/s at 500.00 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

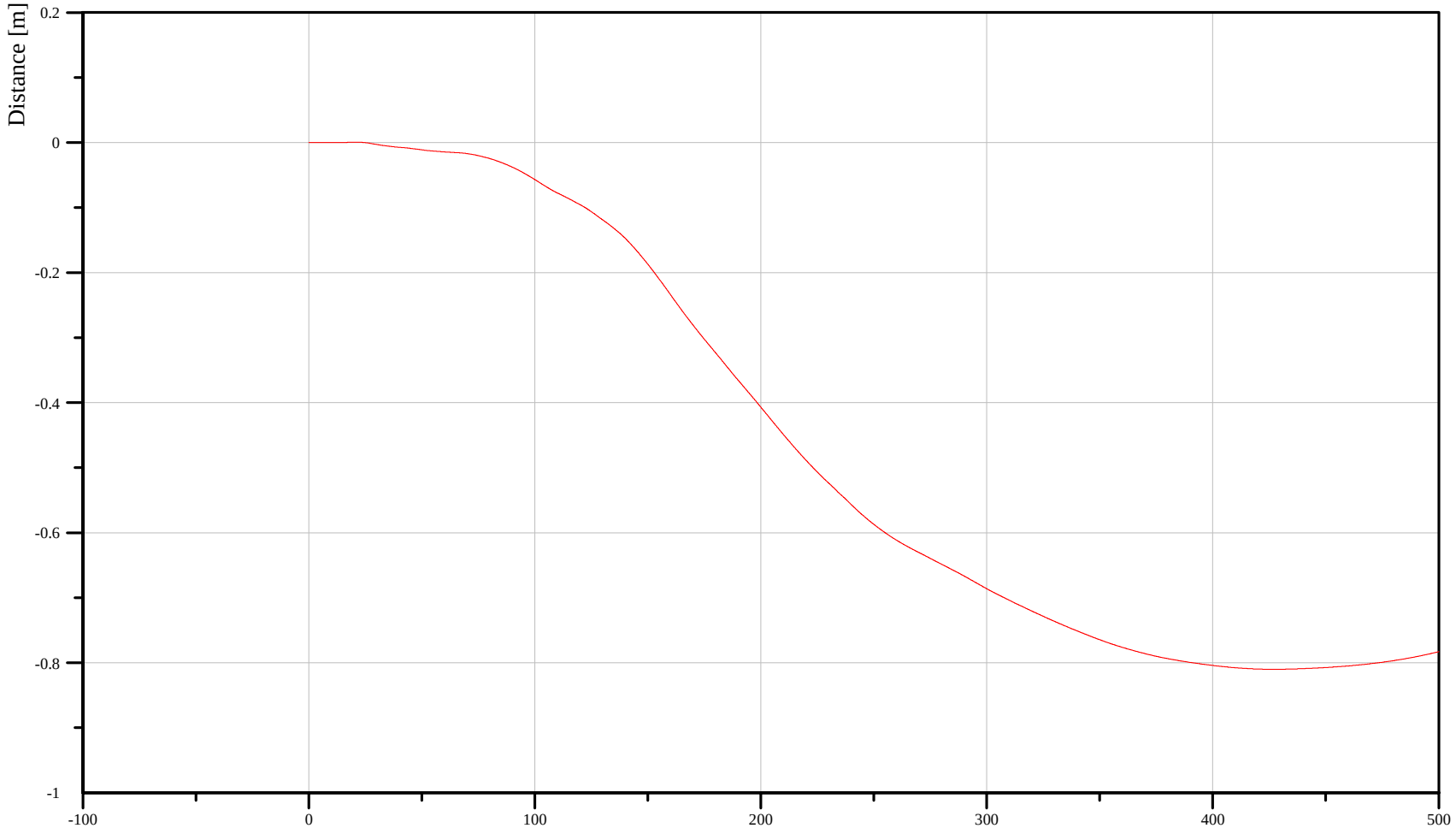
Middle Front Right of Bus C Z-Axis Displacement

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMMIFR00DCZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-0.81 m at 428.00 ms

Max. Value
0.00 m at 20.48 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

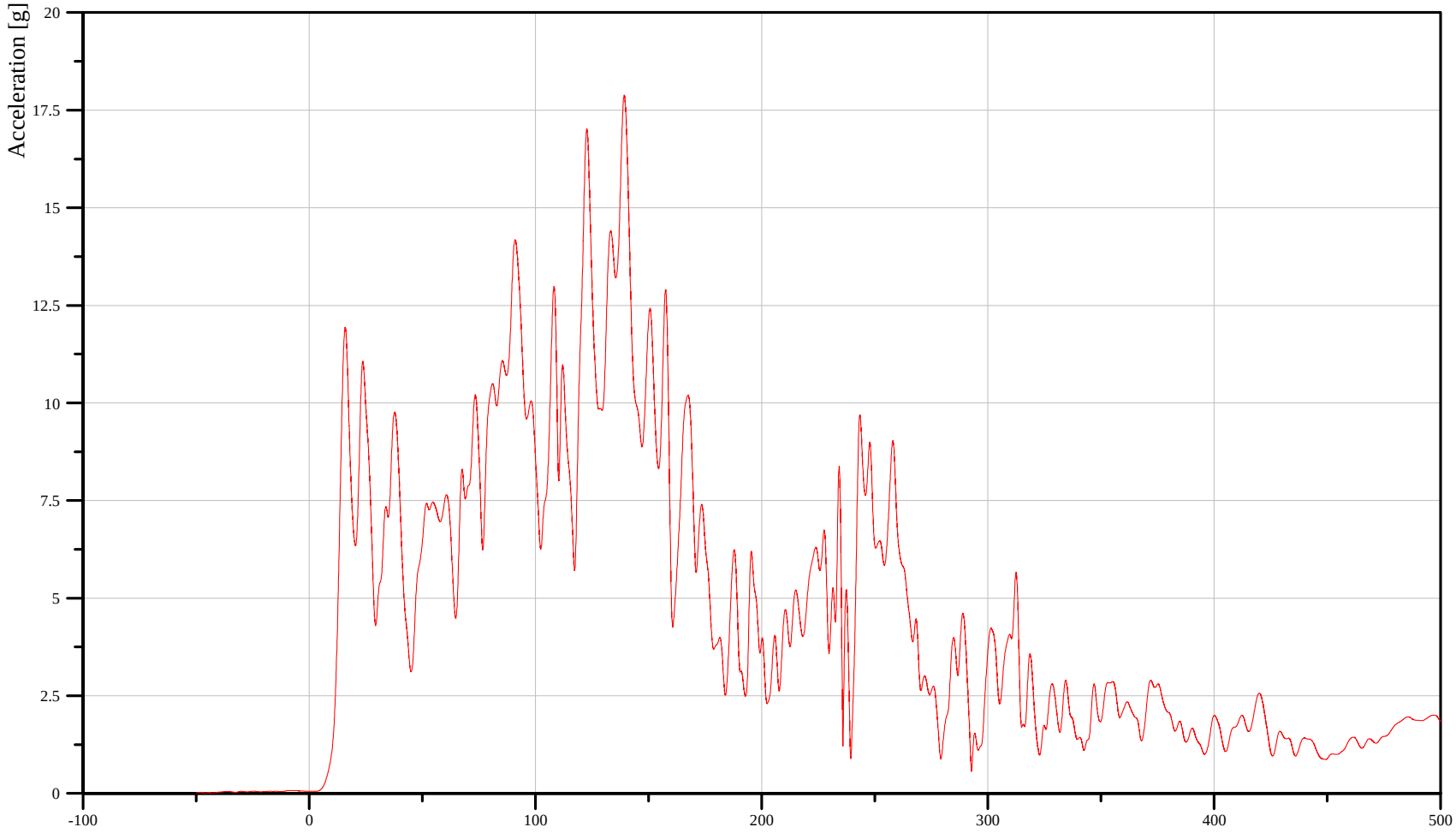
Middle Front Right of Bus C Resultant Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMMIFR00ACRD

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
0.02 g at -42.32 ms

Max. Value
17.89 g at 139.28 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

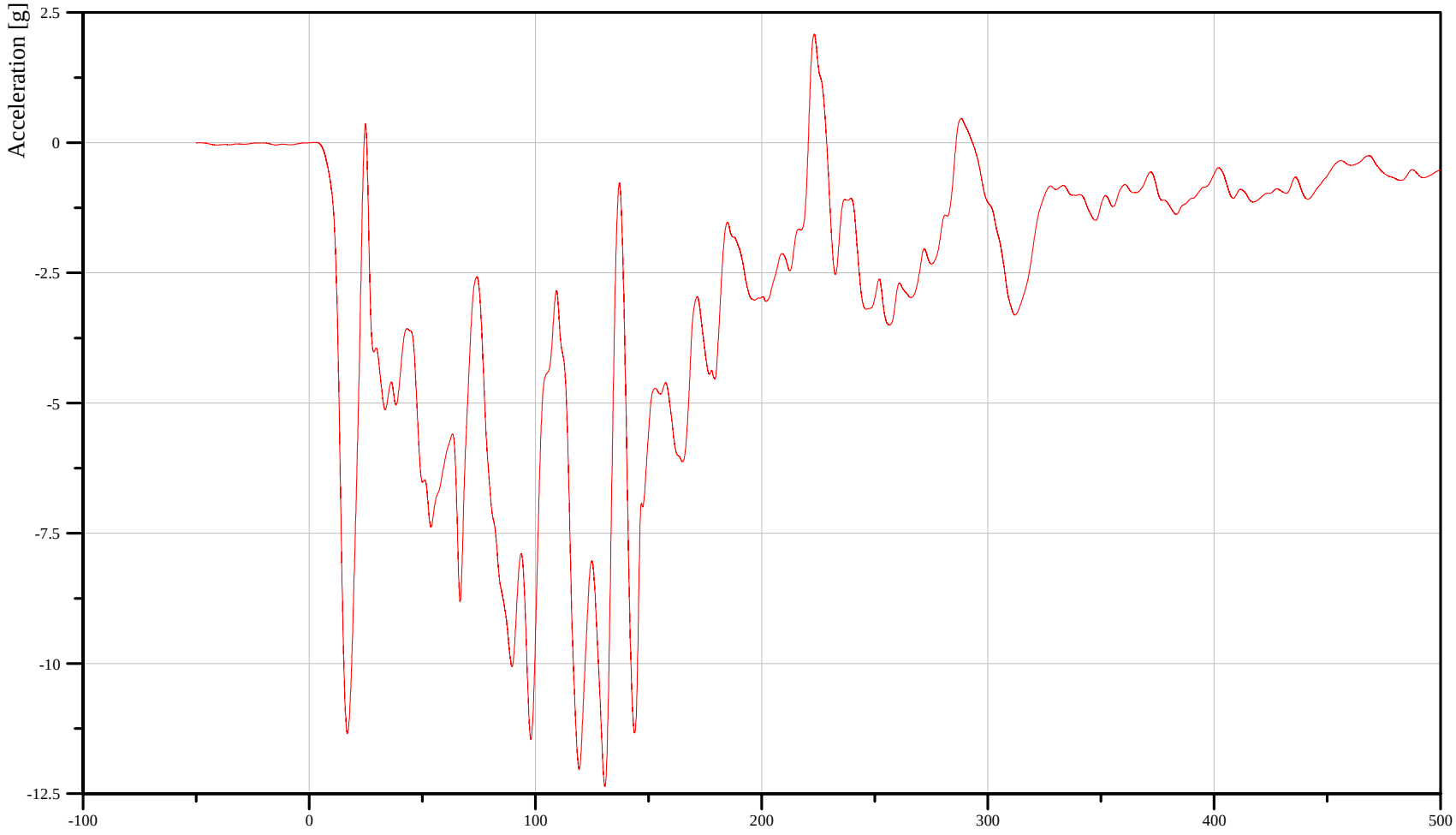
Middle Rear Left of Bus D X-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMMIRE00ACXD

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-12.36 g at 130.72 ms

Max. Value
2.09 g at 223.20 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

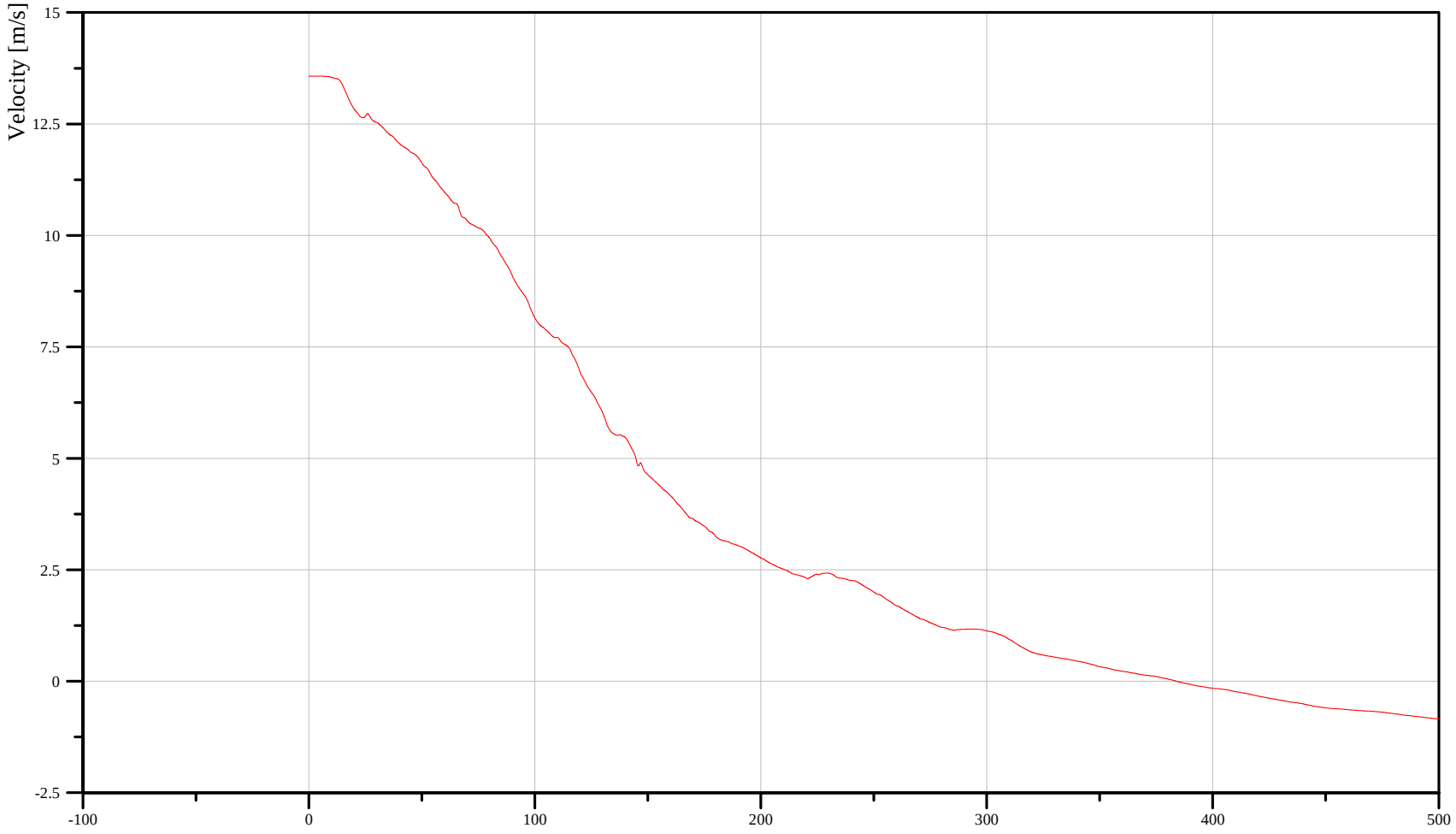
Middle Rear Left of Bus D X-Axis Velocity

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMMIRE00VEXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-0.85 m/s at 500.00 ms

Max. Value
13.57 m/s at 1.28 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

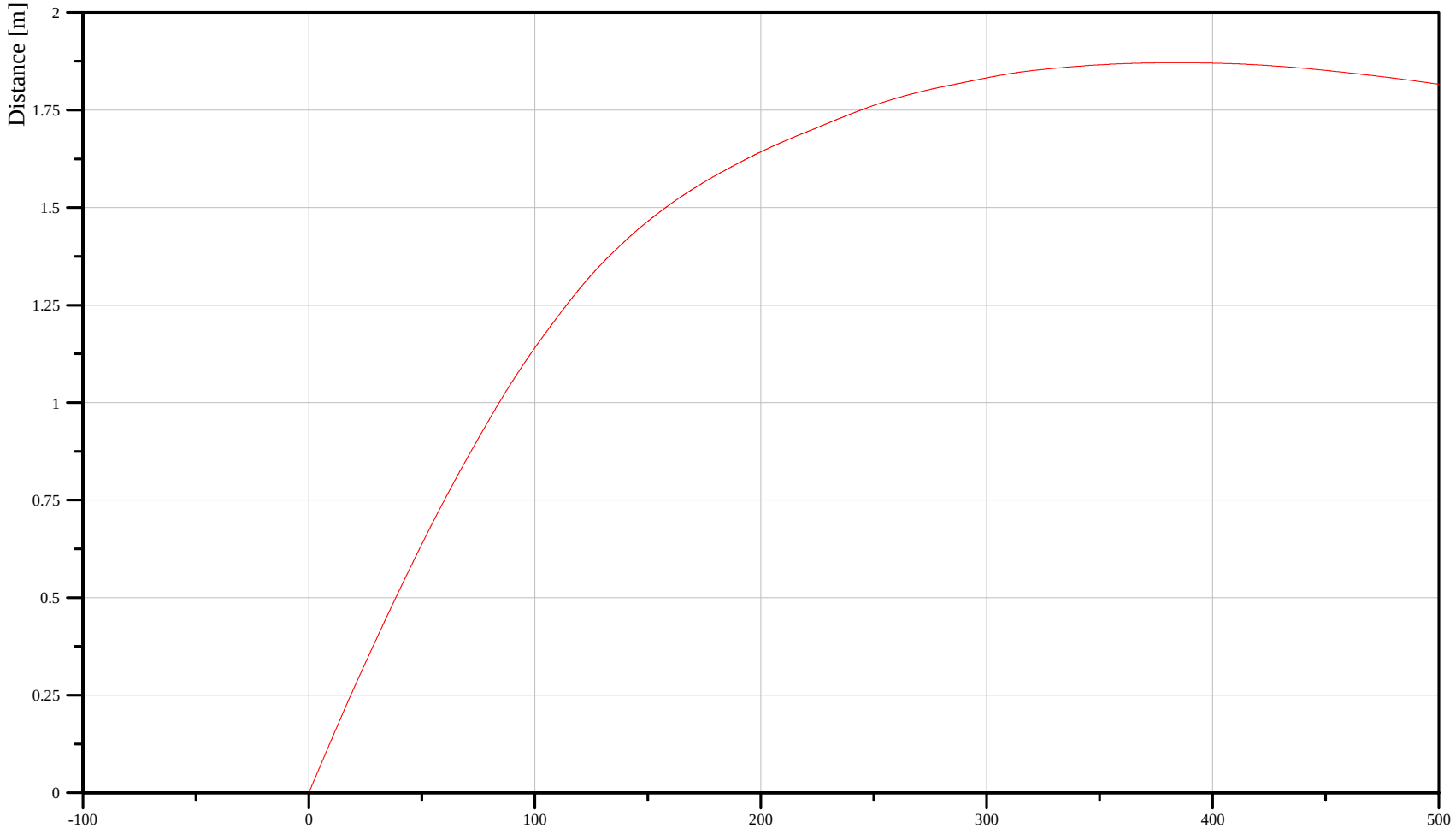
Middle Rear Left of Bus D X-Axis Displacement

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMMIRE00DCXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.00 m at 0.00 ms

Max. Value
1.87 m at 384.00 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

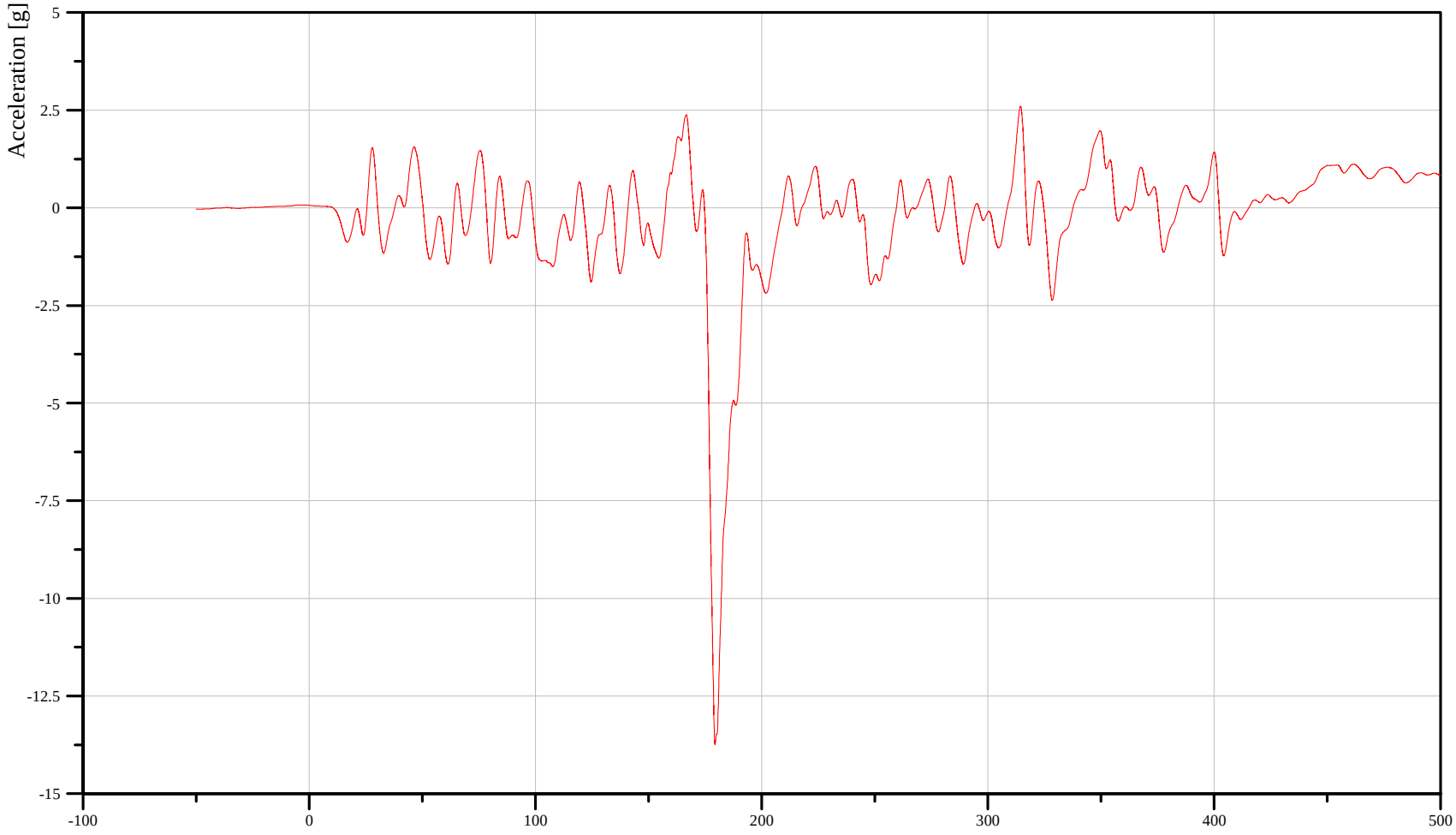
Middle Rear Left of Bus D Y-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMMIRE00ACYD

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-13.75 g at 179.44 ms

Max. Value
2.60 g at 314.40 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

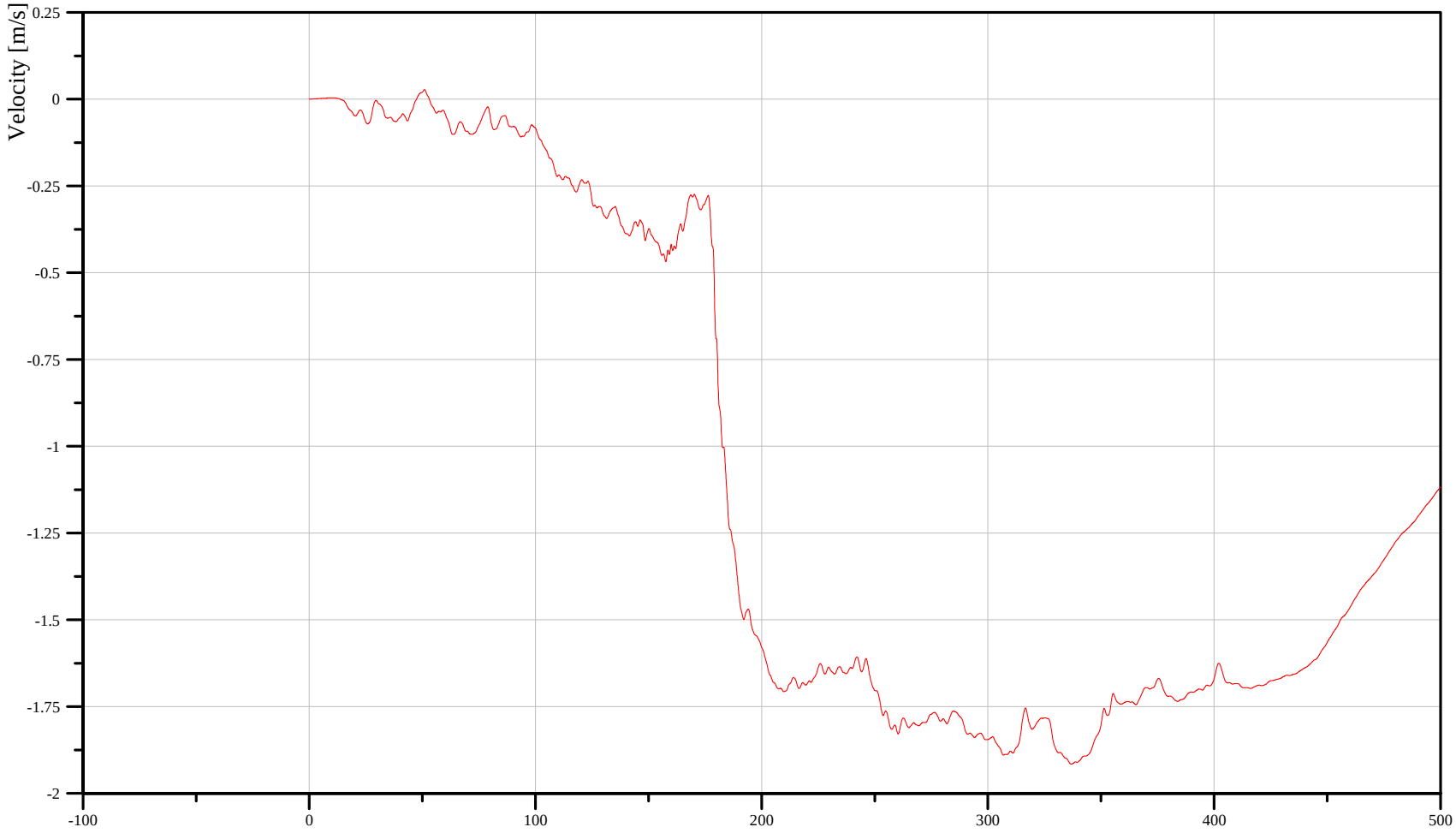
Middle Rear Left of Bus D Y-Axis Velocity

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMMIRE00VEYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-1.92 m/s at 336.80 ms

Max. Value
0.03 m/s at 50.96 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

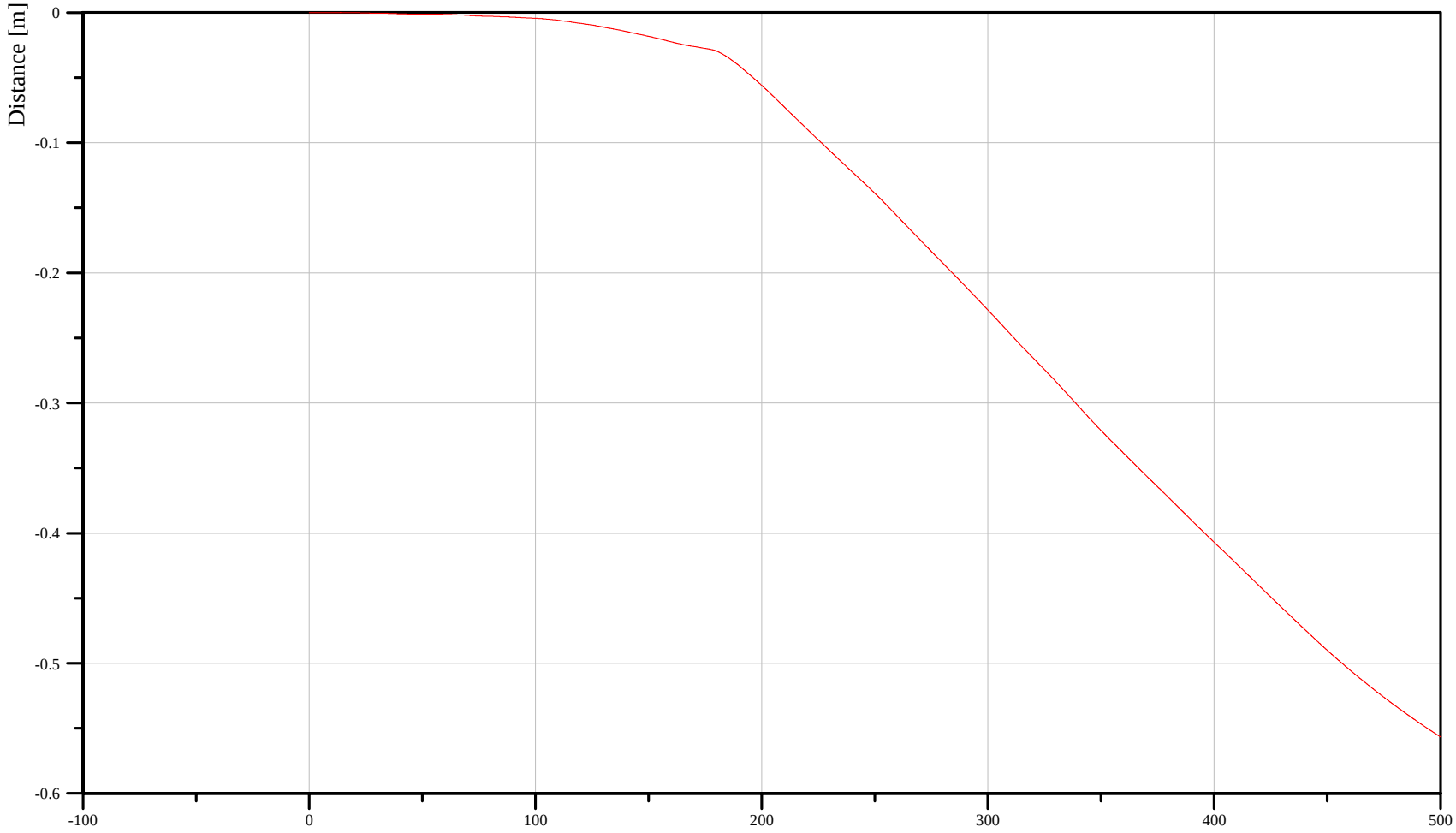
Middle Rear Left of Bus D Y-Axis Displacement

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMMIRE00DCYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-0.56 m at 500.00 ms

Max. Value
0.00 m at 13.84 ms

B-651

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

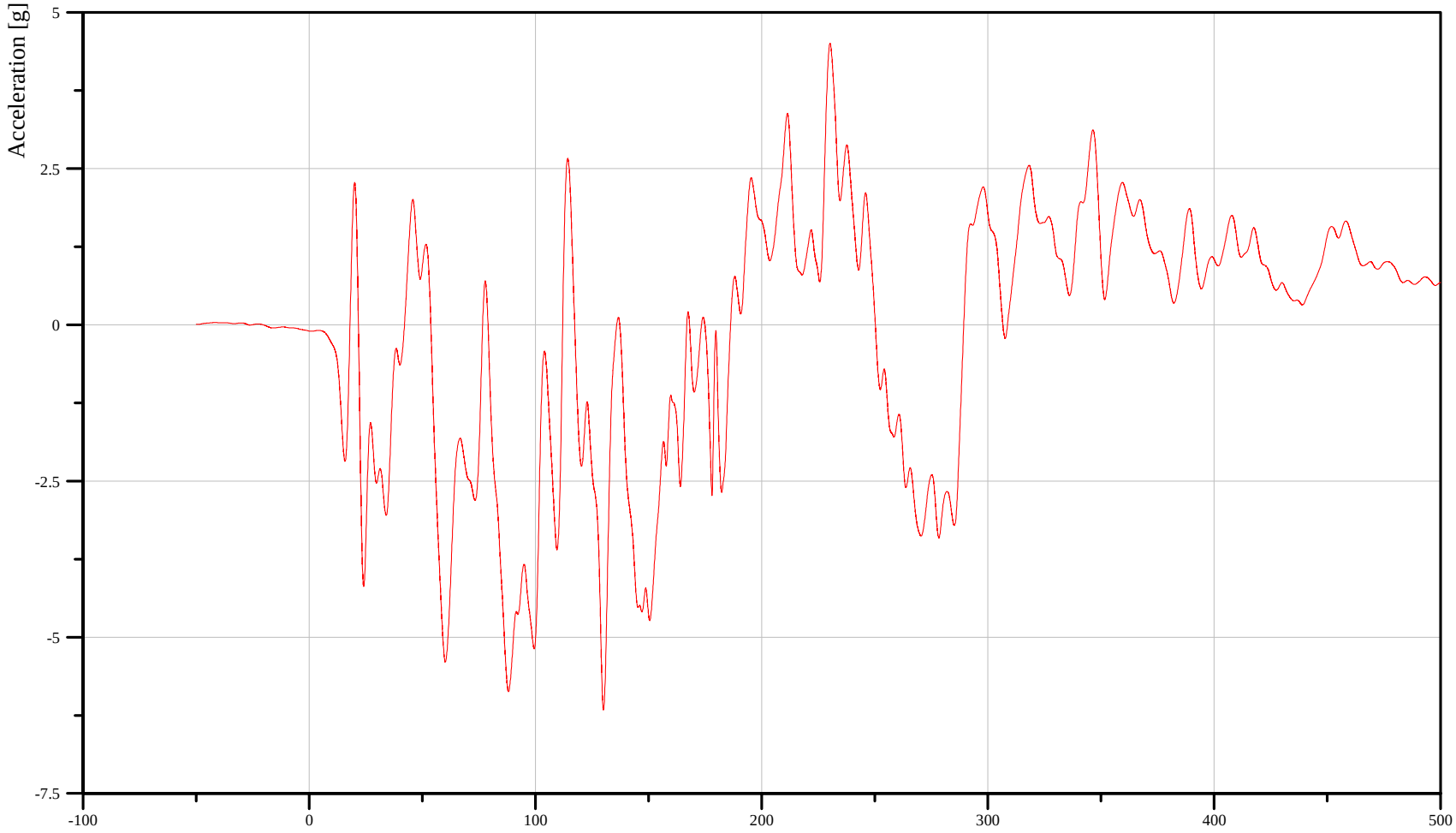
Middle Rear Left of Bus D Z-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMMIRE00ACZD

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-6.16 g at 130.08 ms

Max. Value
4.51 g at 230.24 ms

B-652

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

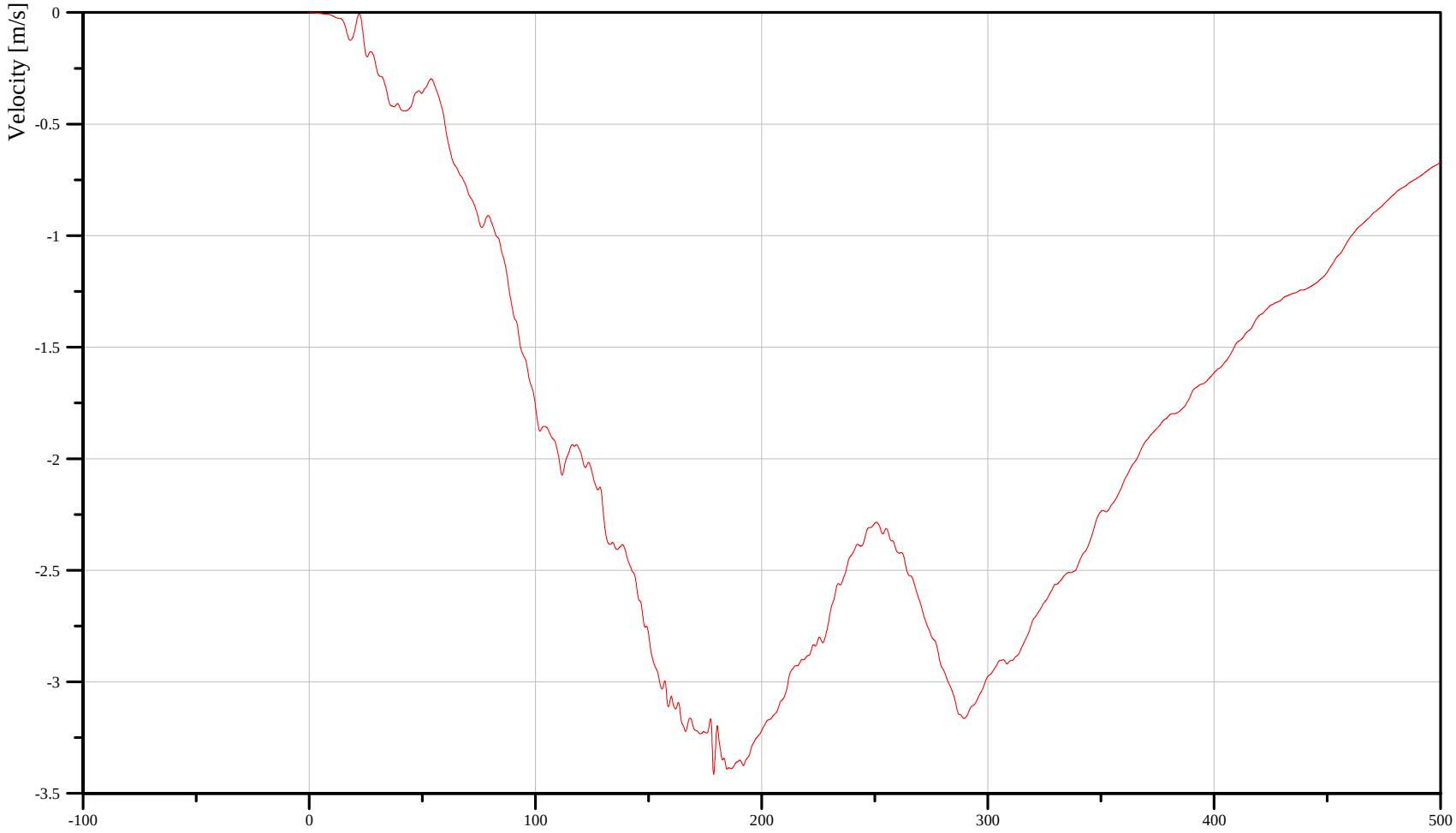
Middle Rear Left of Bus D Z-Axis Velocity

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMMIRE00VEZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-3.41 m/s at 178.80 ms

Max. Value
0.00 m/s at 0.00 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

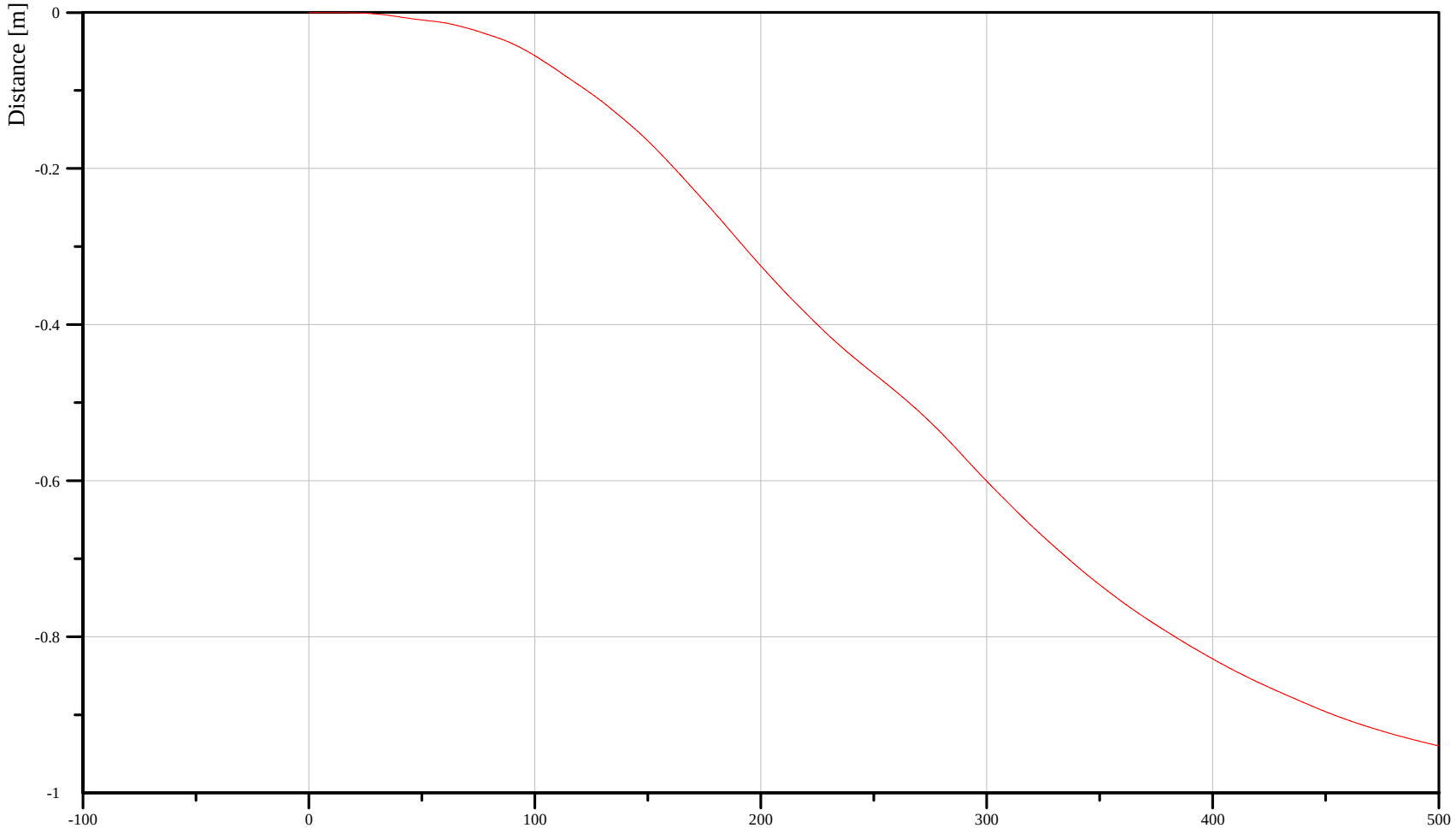
Date: 12/14/2007
Time: 9:12

Middle Rear Left of Bus D Z-Axis Displacement

Customer: VRTC

10FRAMMIRE00DCZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-0.94 m at 500.00 ms

Max. Value
0.00 m at 0.00 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

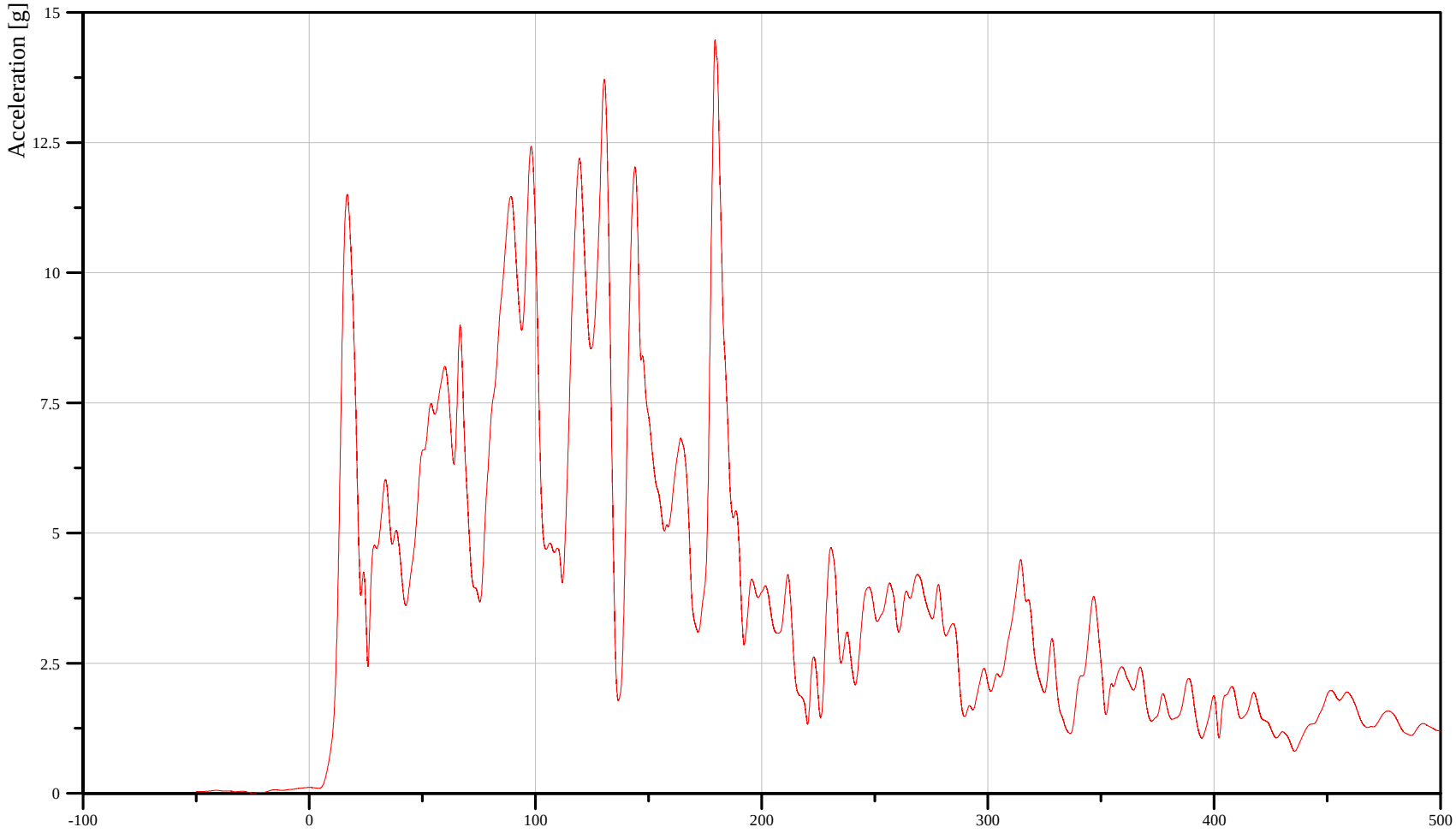
Date: 12/14/2007
Time: 9:12

Middle Rear Left of Bus D Resultant Acceleration

Customer: VRTC

10FRAMMIRE00ACRD

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
0.01 g at -24.72 ms

Max. Value
14.48 g at 179.36 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

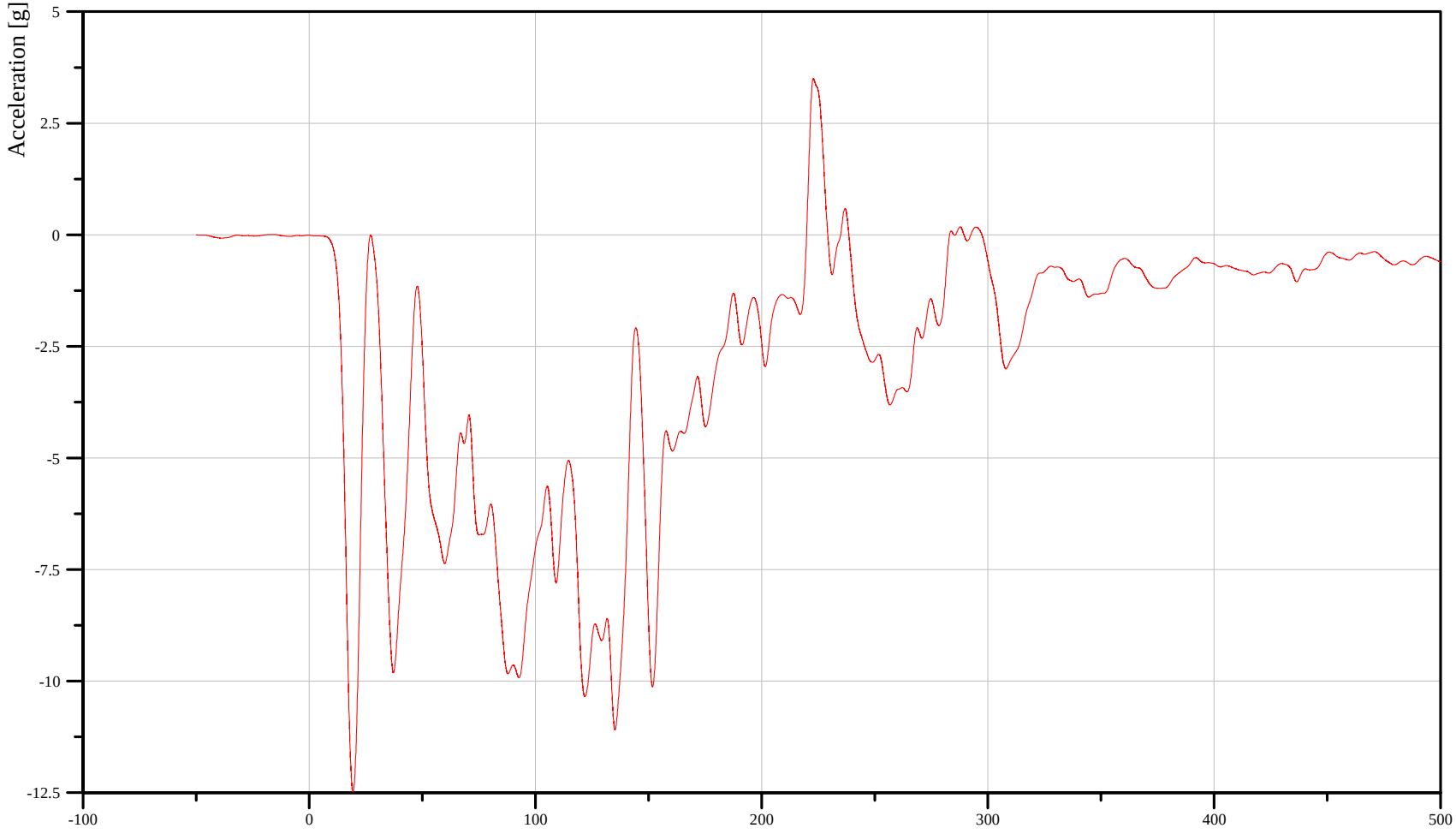
Rear Right of Bus E X-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMRIRE00ACXD

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-12.48 g at 19.36 ms

Max. Value
3.50 g at 222.80 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

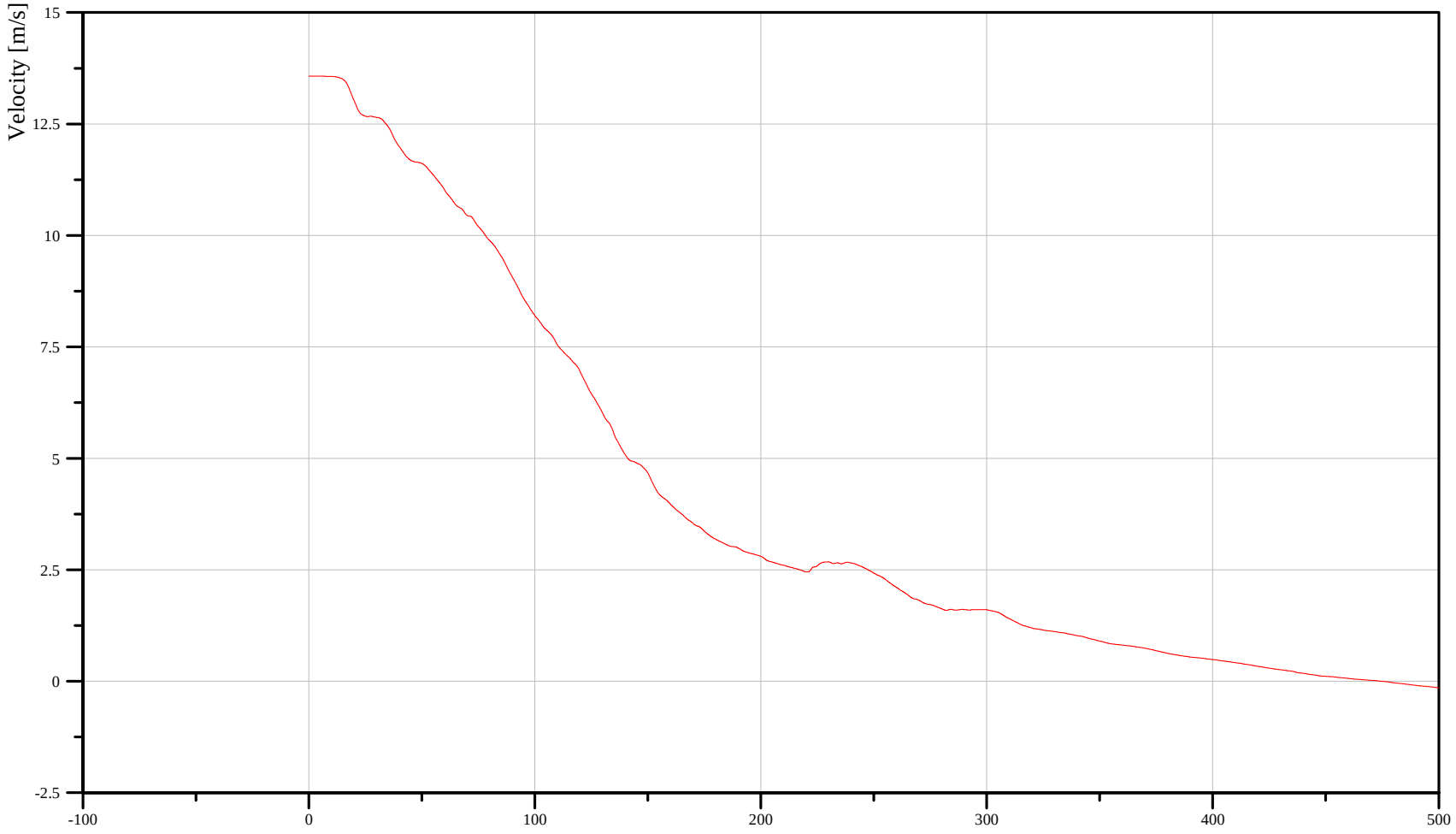
Date: 12/14/2007
Time: 9:12

Rear Right of Bus E X-Axis Velocity

Customer: VRTC

10FRAMRIRE00VEXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-0.14 m/s at 500.00 ms

Max. Value
13.57 m/s at 0.64 ms

B-657

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

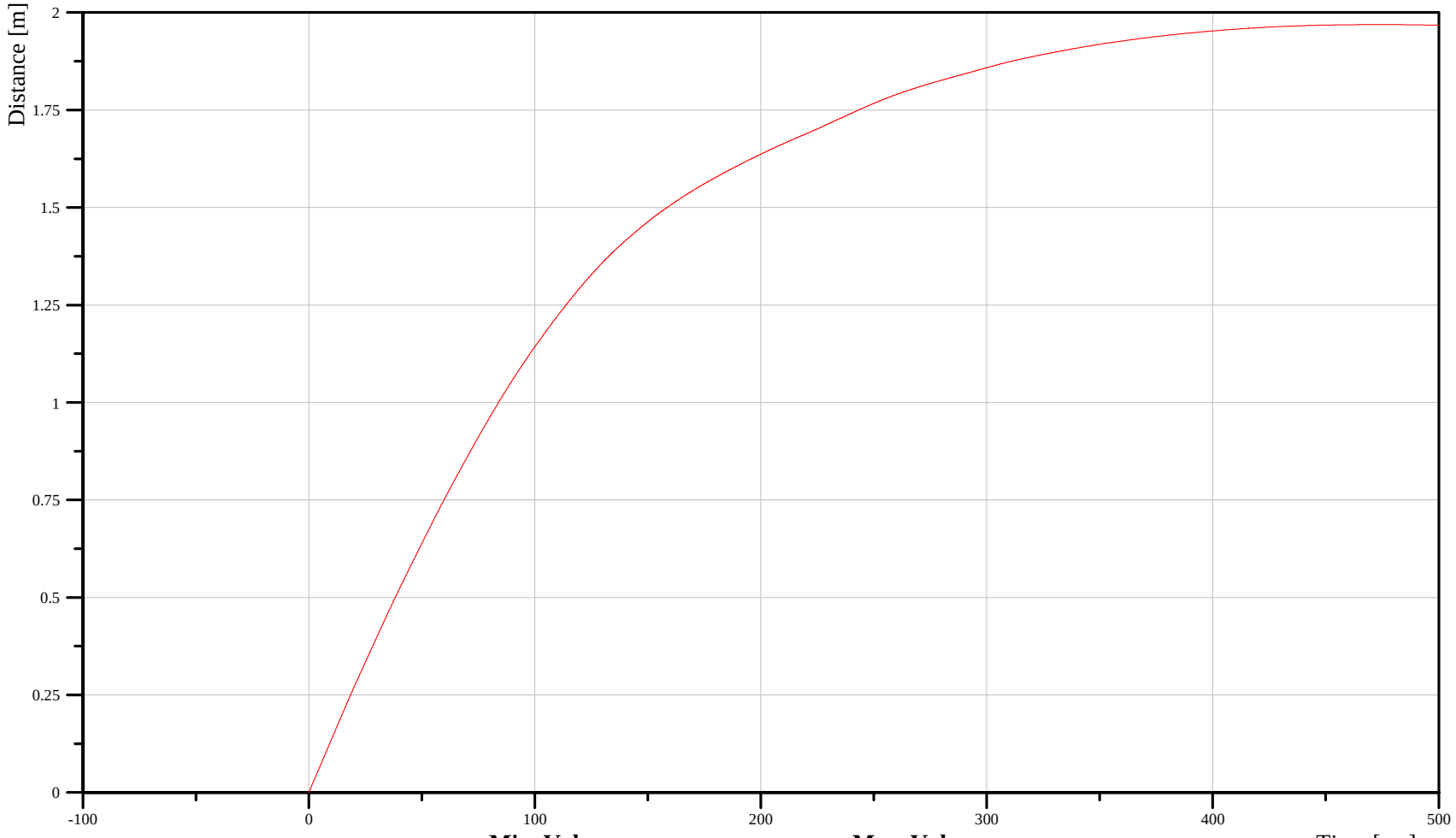
Date: 12/14/2007
Time: 9:12

Rear Right of Bus E X-Axis Displacement

Customer: VRTC

10FRAMRIRE00DCXC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.00 m at 0.00 ms

Max. Value
1.97 m at 475.04 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

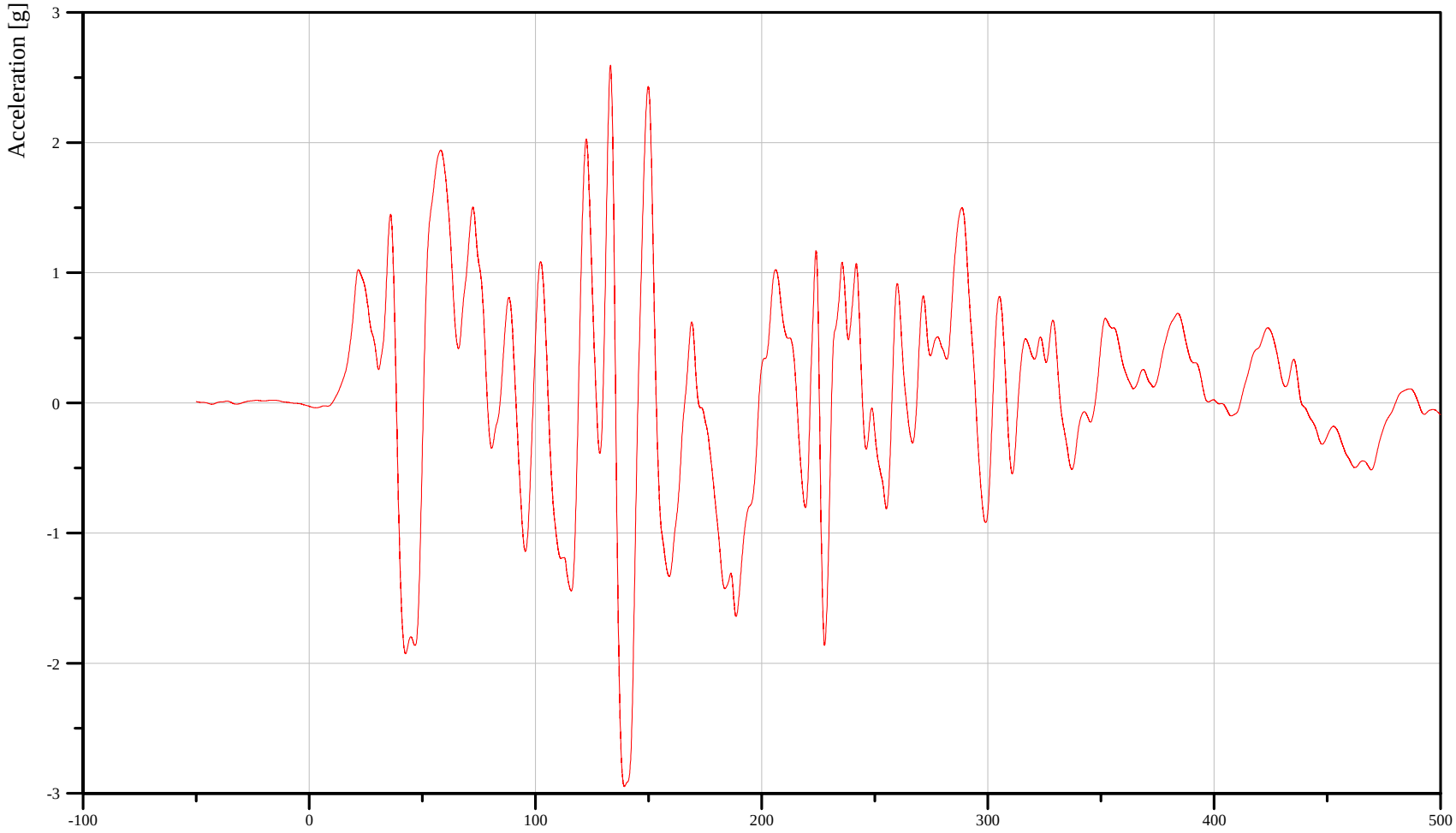
Rear Right of Bus E Y-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMRIRE00ACYD

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-2.95 g at 139.36 ms

Max. Value
2.60 g at 133.20 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

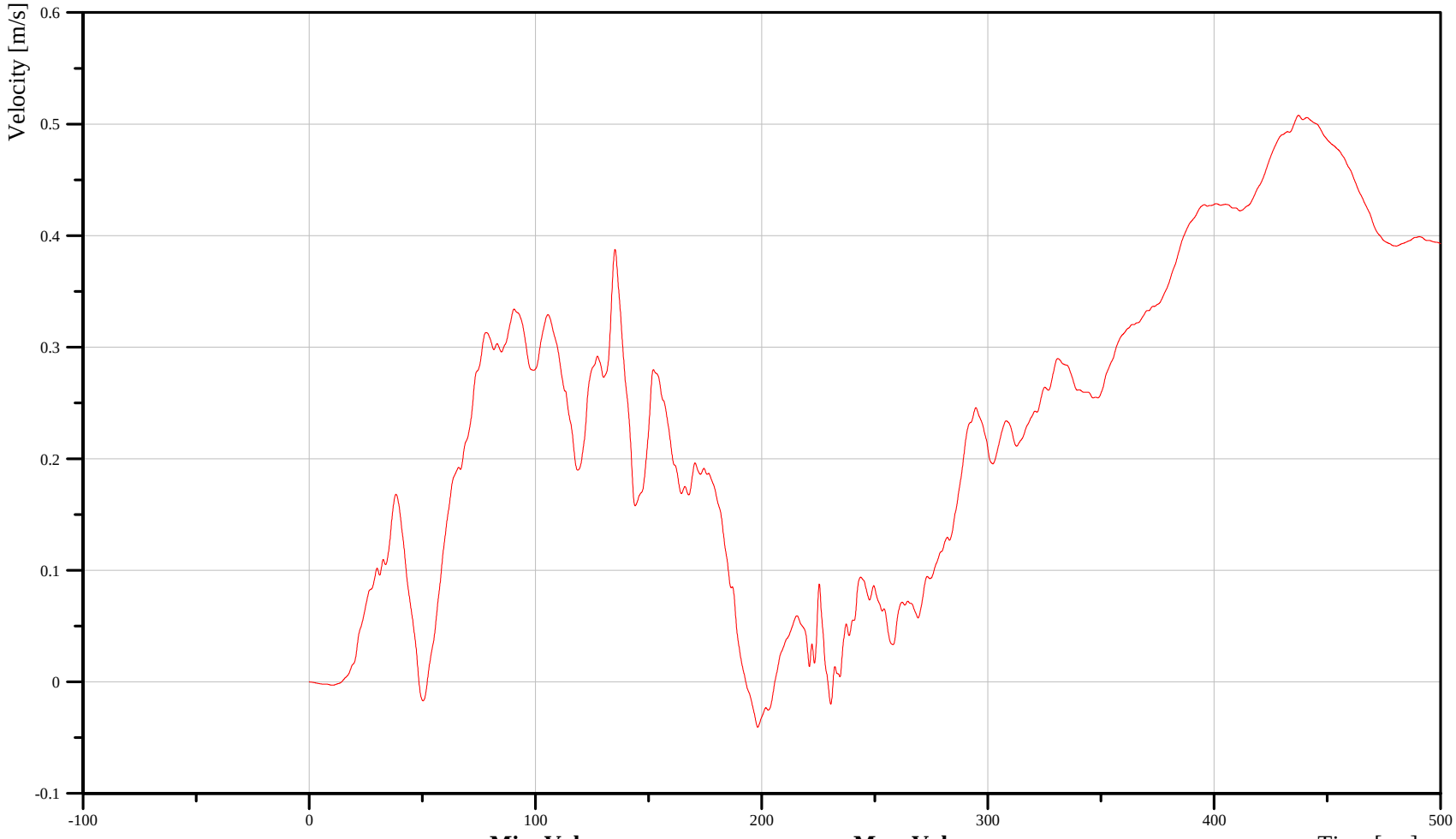
Date: 12/14/2007
Time: 9:12

Rear Right of Bus E Y-Axis Velocity

Customer: VRTC

10FRAMRIRE00VEYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-0.04 m/s at 198.24 ms

Max. Value
0.51 m/s at 437.28 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

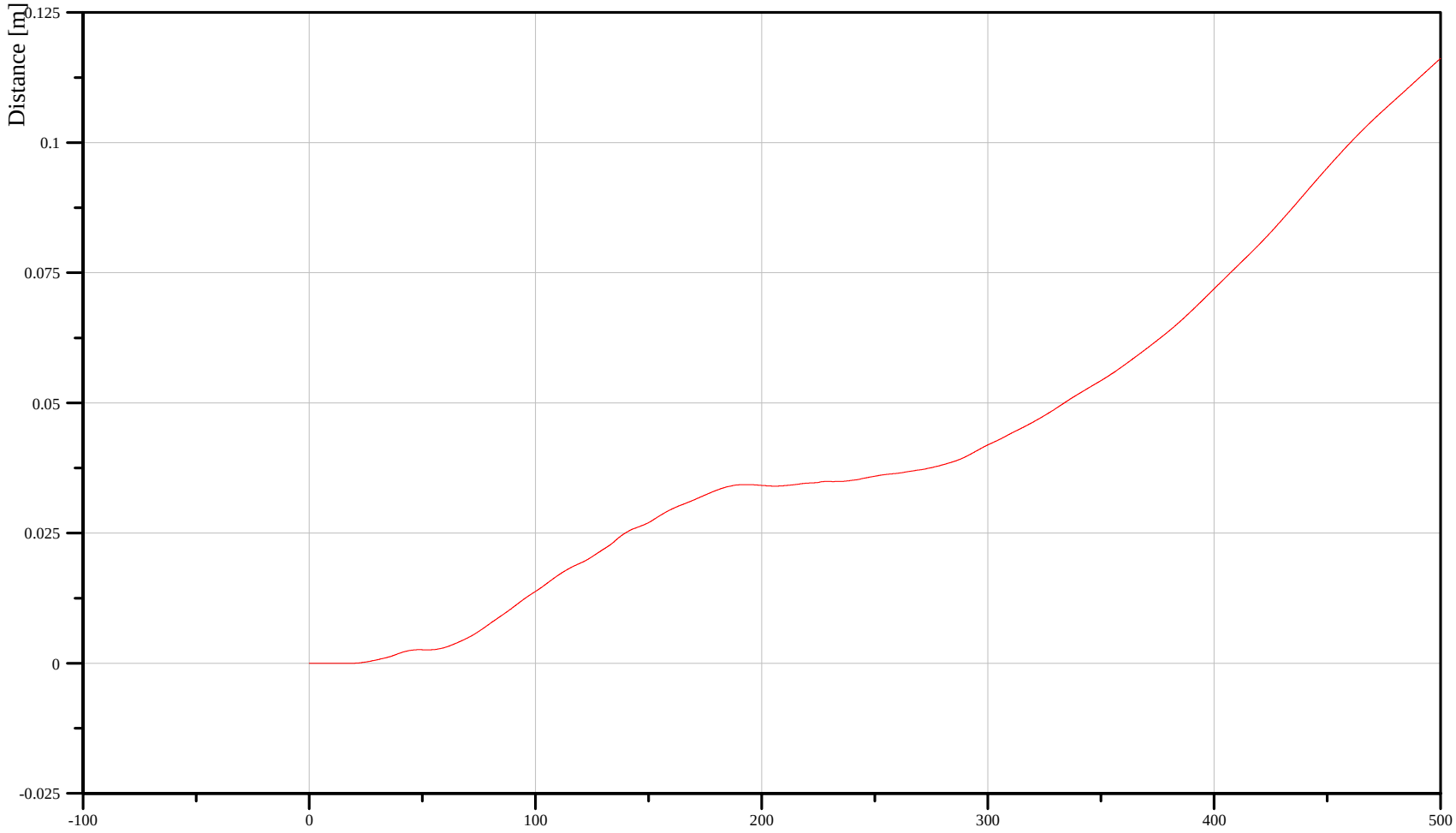
Date: 12/14/2007
Time: 9:12

Rear Right of Bus E Y-Axis Displacement

Customer: VRTC

10FRAMRIRE00DCYC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
0.00 m at 14.32 ms

Max. Value
0.12 m at 500.00 ms

B-661

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

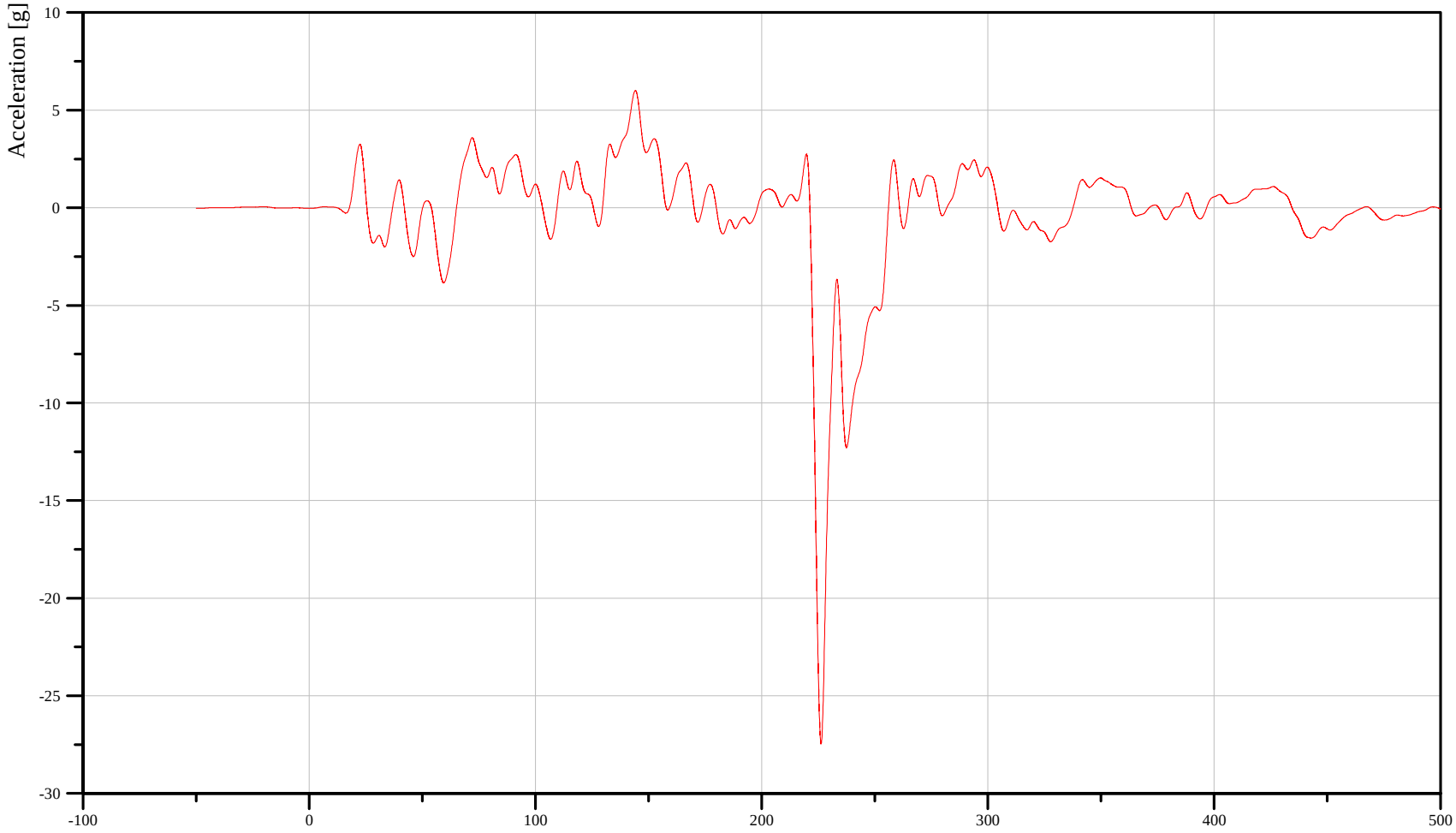
Rear Right of Bus E Z-Axis Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMRIRE00ACZD

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-27.45 g at 226.24 ms

Max. Value
6.01 g at 144.16 ms

B-662

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

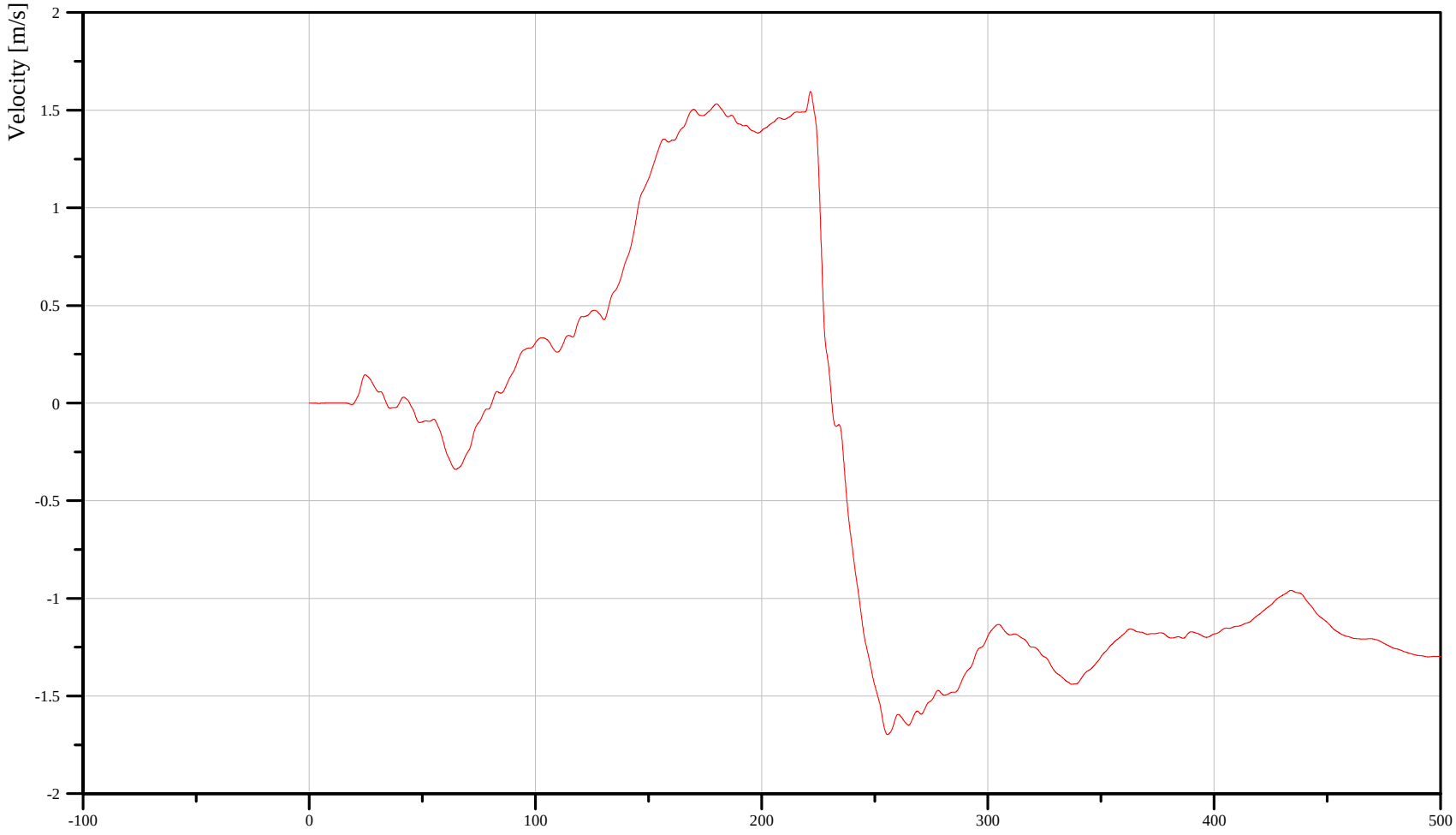
Rear Right of Bus E Z-Axis Velocity

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMRIRE00VEZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-1.70 m/s at 255.68 ms

Max. Value
1.60 m/s at 221.60 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

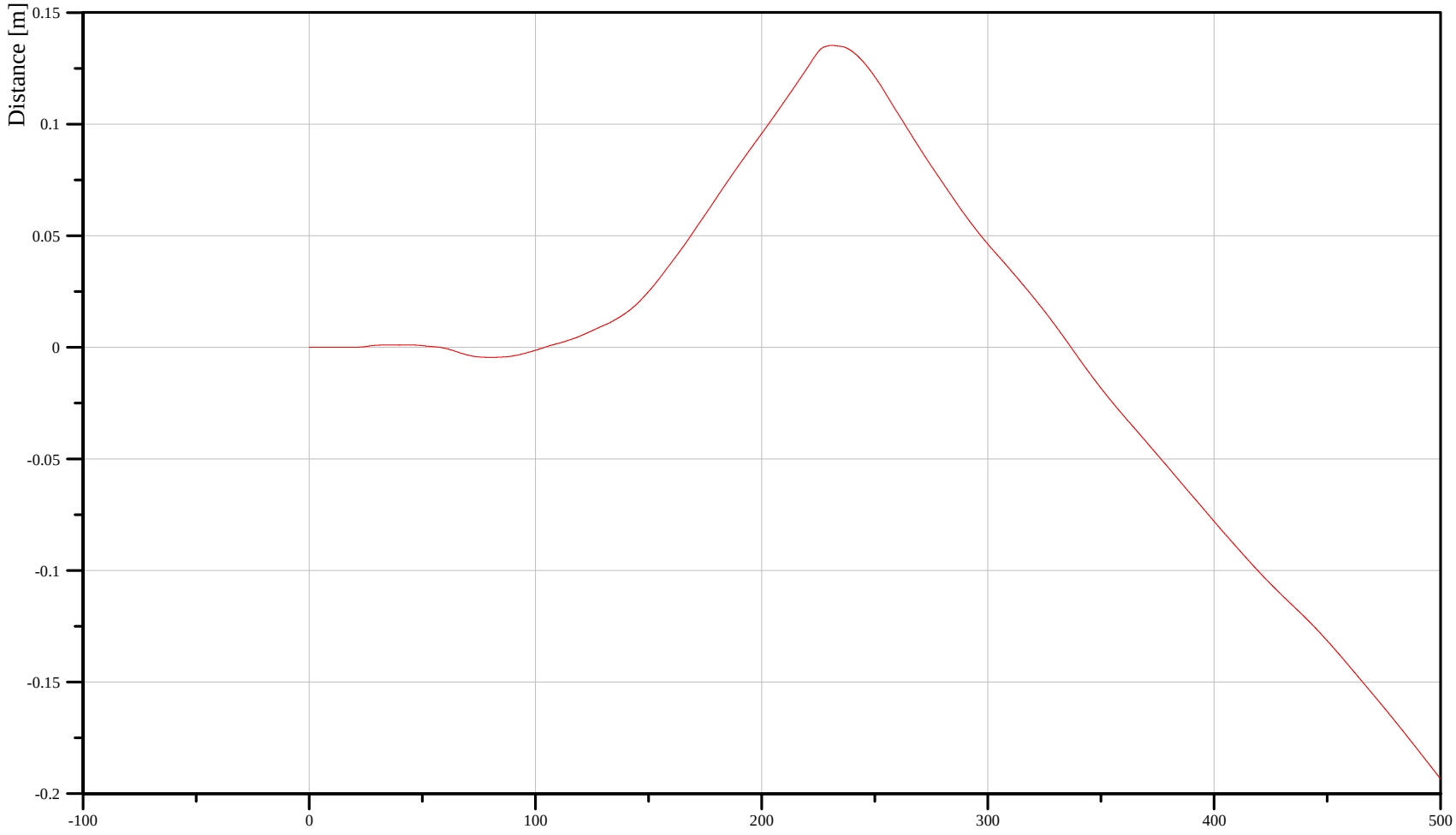
Rear Right of Bus E Z-Axis Displacement

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMRIRE00DCZC

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_180

Min. Value
-0.19 m at 500.00 ms

Max. Value
0.14 m at 231.04 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

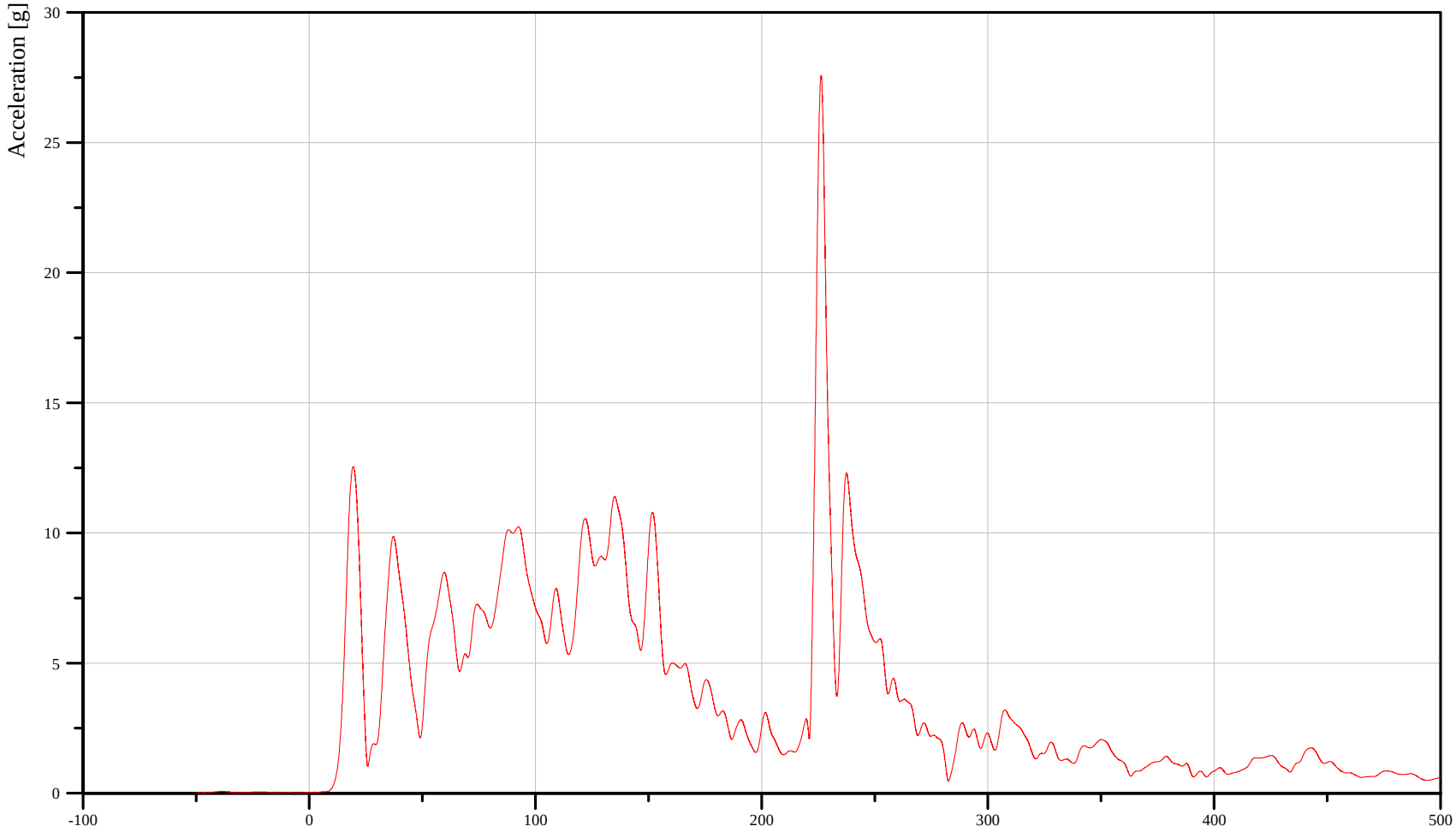
Rear Right of Bus E Resultant Acceleration

Date: 12/14/2007
Time: 9:12

Customer: VRTC

10FRAMRIRE00ACRD

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
0.02 g at -5.20 ms

Max. Value
27.59 g at 226.24 ms

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

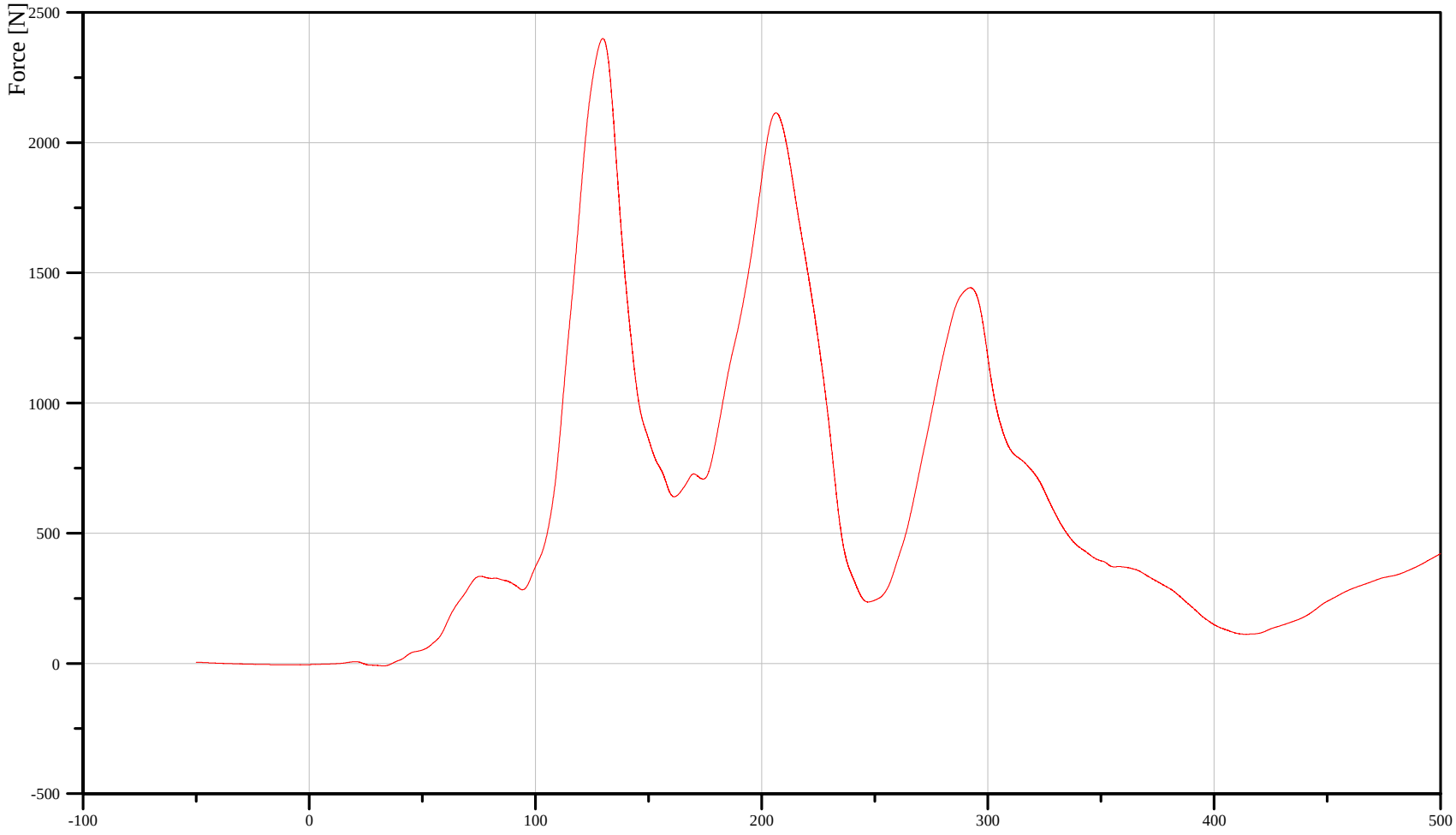
4R-Left Lap Belt

Date: 12/14/2007
Time: 9:12

Customer: VRTC

11SEBE0000B5FO0D

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-9.21 N at 32.96 ms

Max. Value
2,400.23 N at 129.84 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

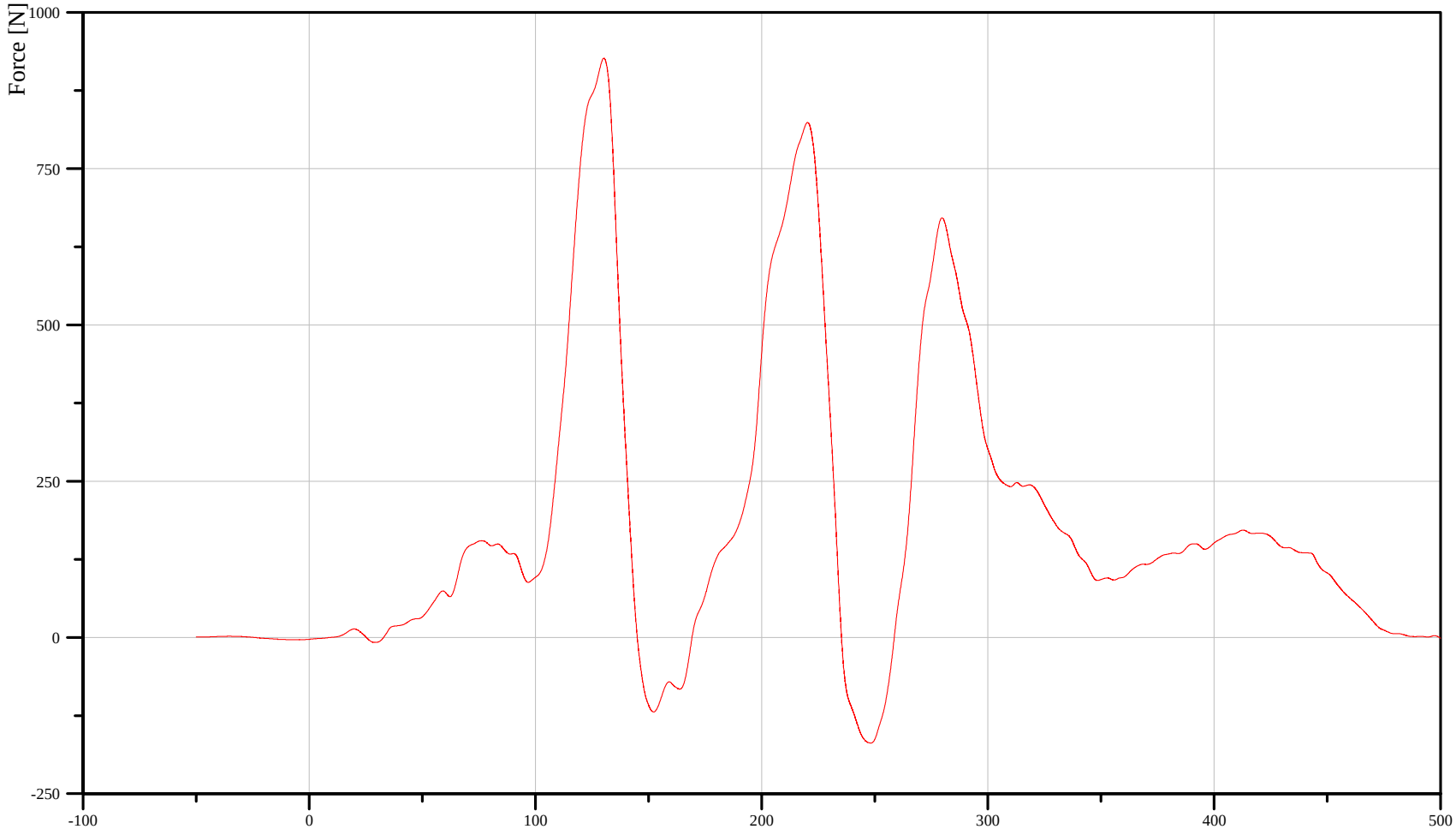
4R-Right Lap Belt

Date: 12/14/2007
Time: 9:12

Customer: VRTC

12SEBE0000B5FO0D

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-168.93 N at 248.24 ms

Max. Value
926.89 N at 130.24 ms

B-667

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

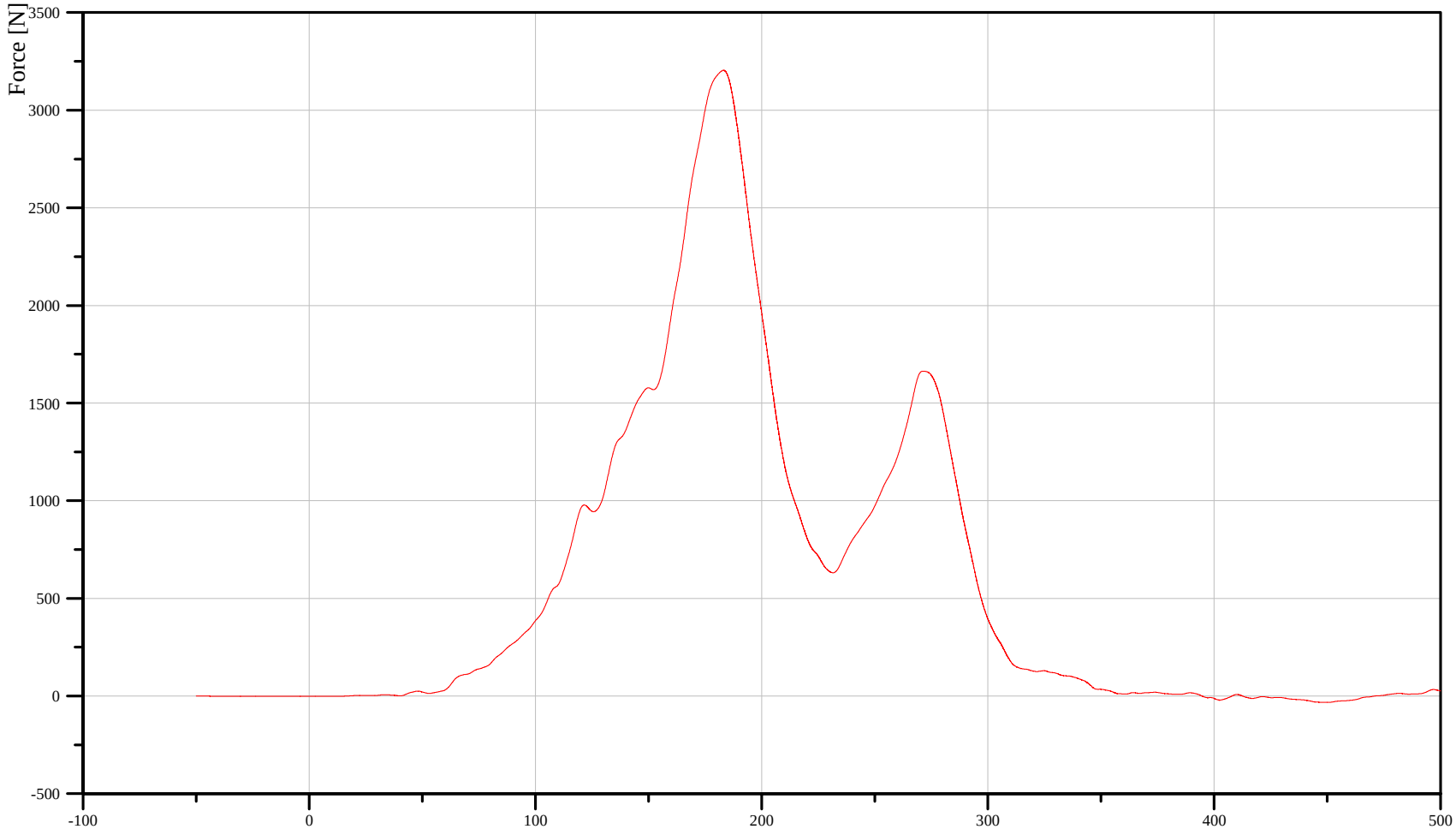
5L-Left Lap Belt

Date: 12/14/2007
Time: 9:12

Customer: VRTC

15SEBE0000B5FO0D

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-32.13 N at 450.32 ms

Max. Value
3,204.11 N at 183.12 ms

B-668

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

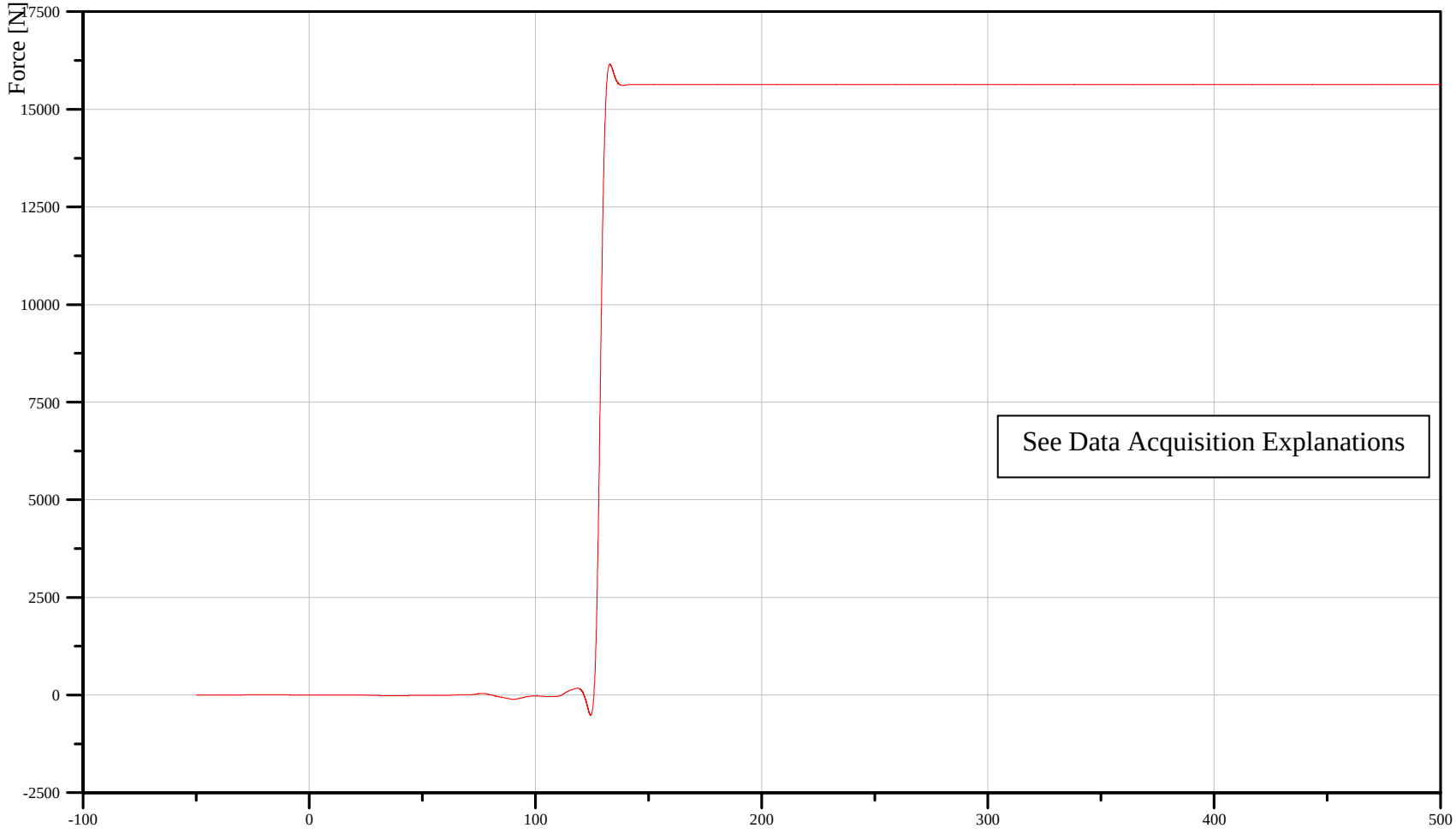
Date: 12/14/2007
Time: 9:12

5L-Right Lap Belt

Customer: VRTC

16SEBE0000B5FO0D

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-516.98 N at 124.48 ms

Max. Value
16,158.56 N at 132.96 ms

B-669

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

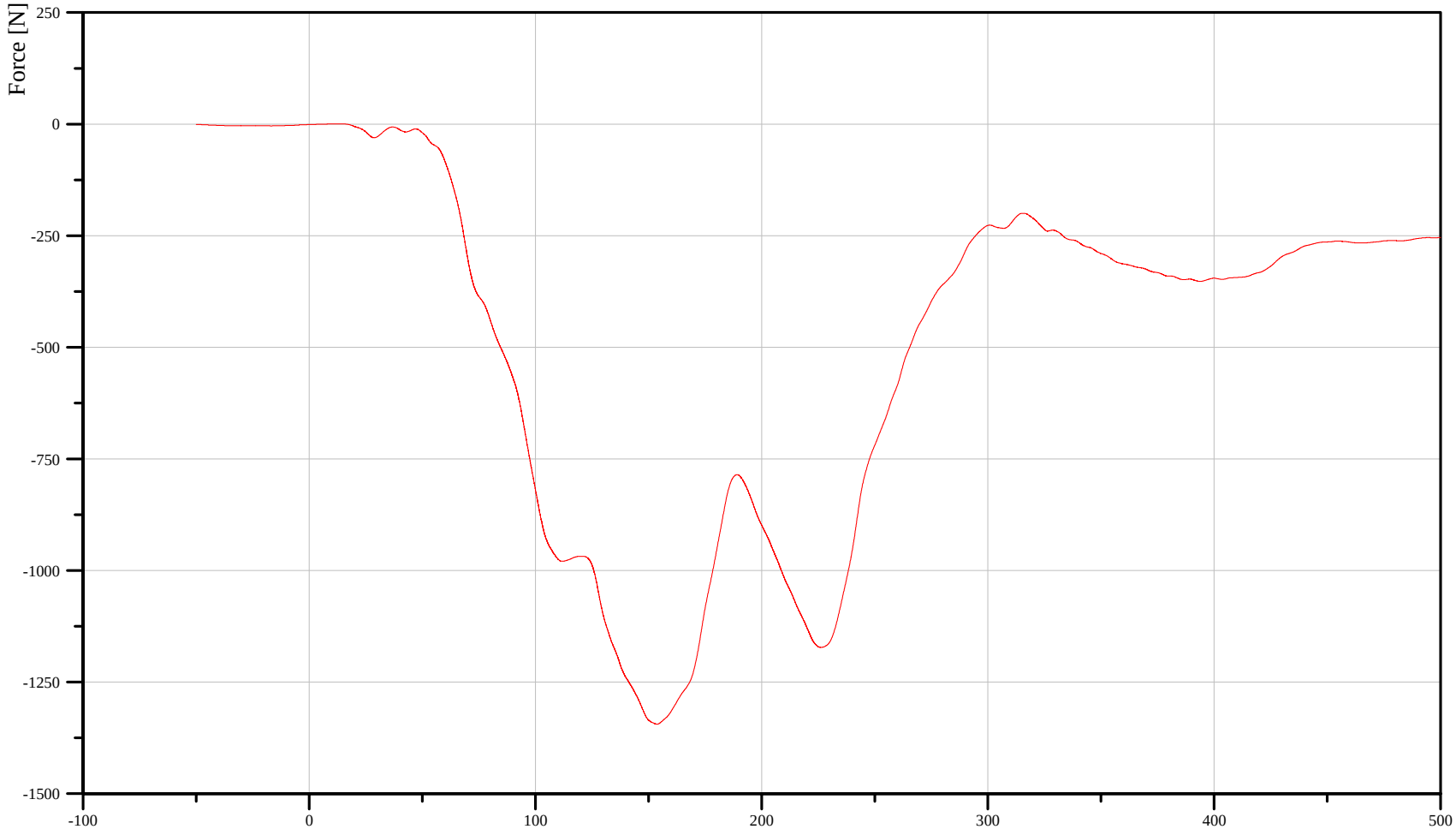
6R-Left Lap Belt

Date: 12/14/2007
Time: 9:12

Customer: VRTC

17SEBE0000B5FO0D

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-1,344.13 N at 153.68 ms

Max. Value
0.67 N at 12.16 ms

B-670

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

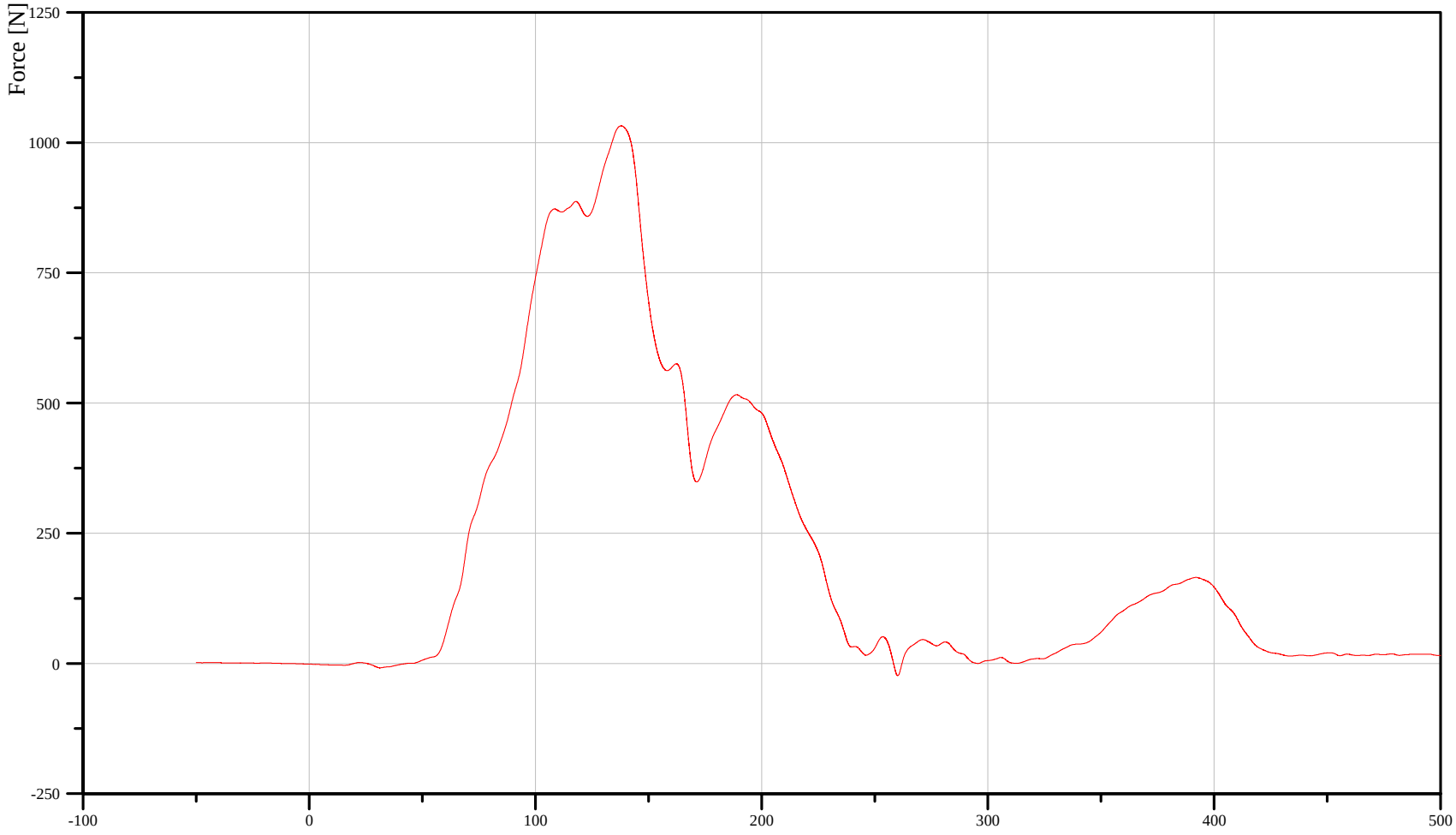
6R-Right Lap Belt

Date: 12/14/2007
Time: 9:12

Customer: VRTC

18SEBE0000B5FO0D

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-23.25 N at 260.16 ms

Max. Value
1,032.39 N at 137.92 ms

B-671

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

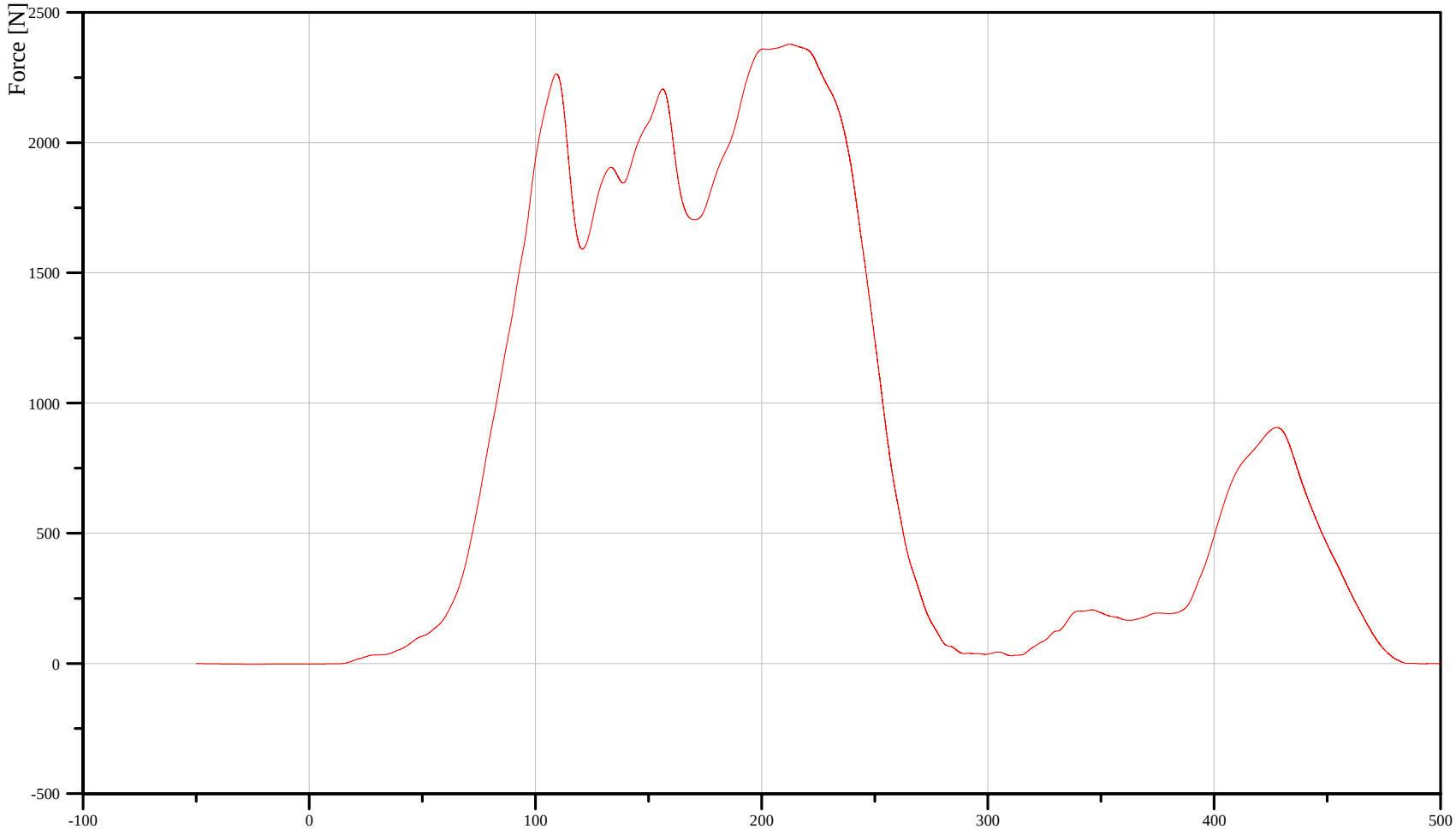
9R-Left Lap Belt

Date: 12/14/2007
Time: 9:12

Customer: VRTC

24SEBE0000B5FO0D

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-3.12 N at -22.80 ms

Max. Value
2,378.45 N at 212.48 ms

B-672

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

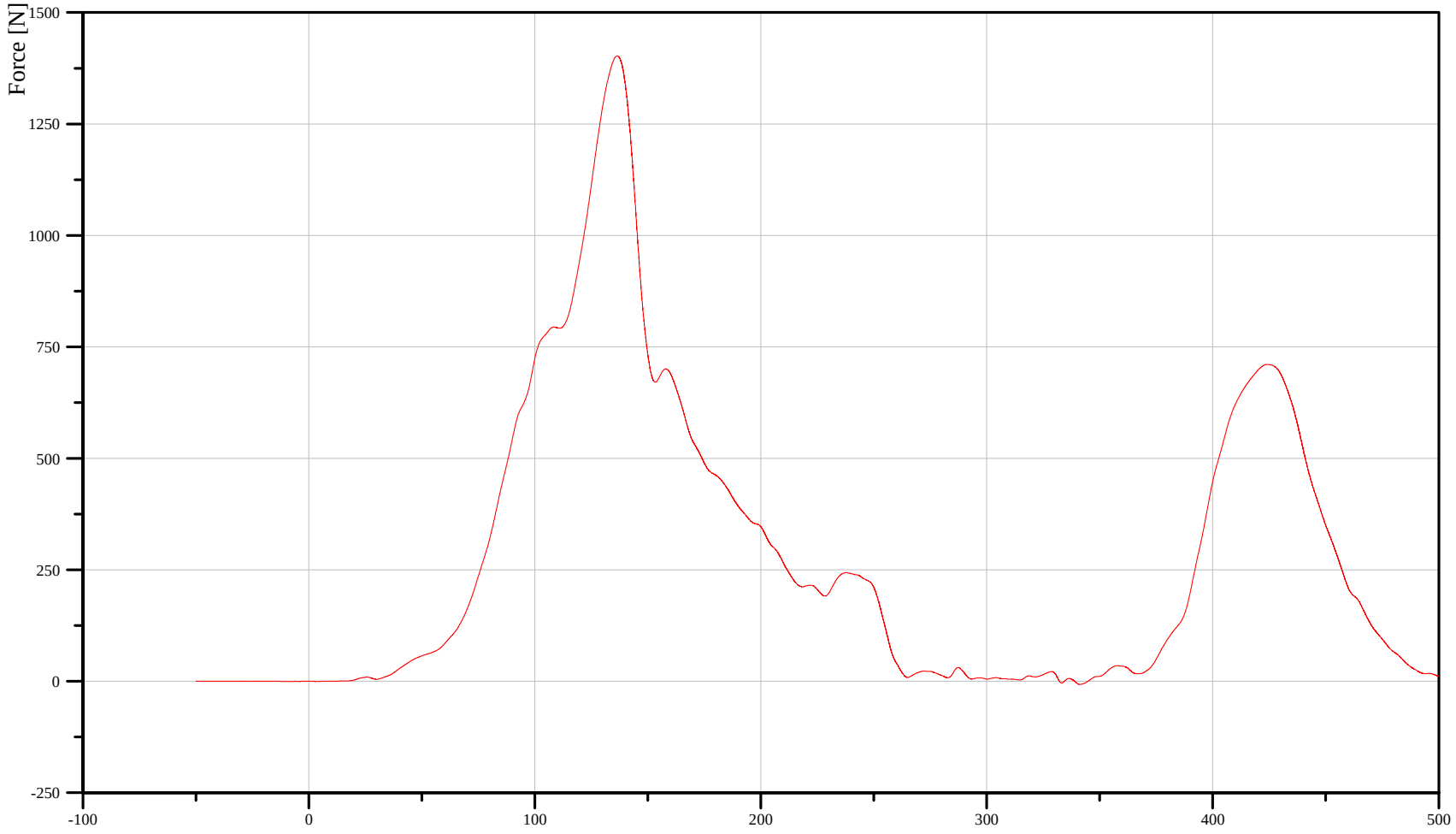
9R-Right Lap Belt

Date: 12/14/2007
Time: 9:12

Customer: VRTC

25SEBE0000B5FO0D

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-6.88 N at 341.36 ms

Max. Value
1,402.54 N at 136.48 ms

B-673

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

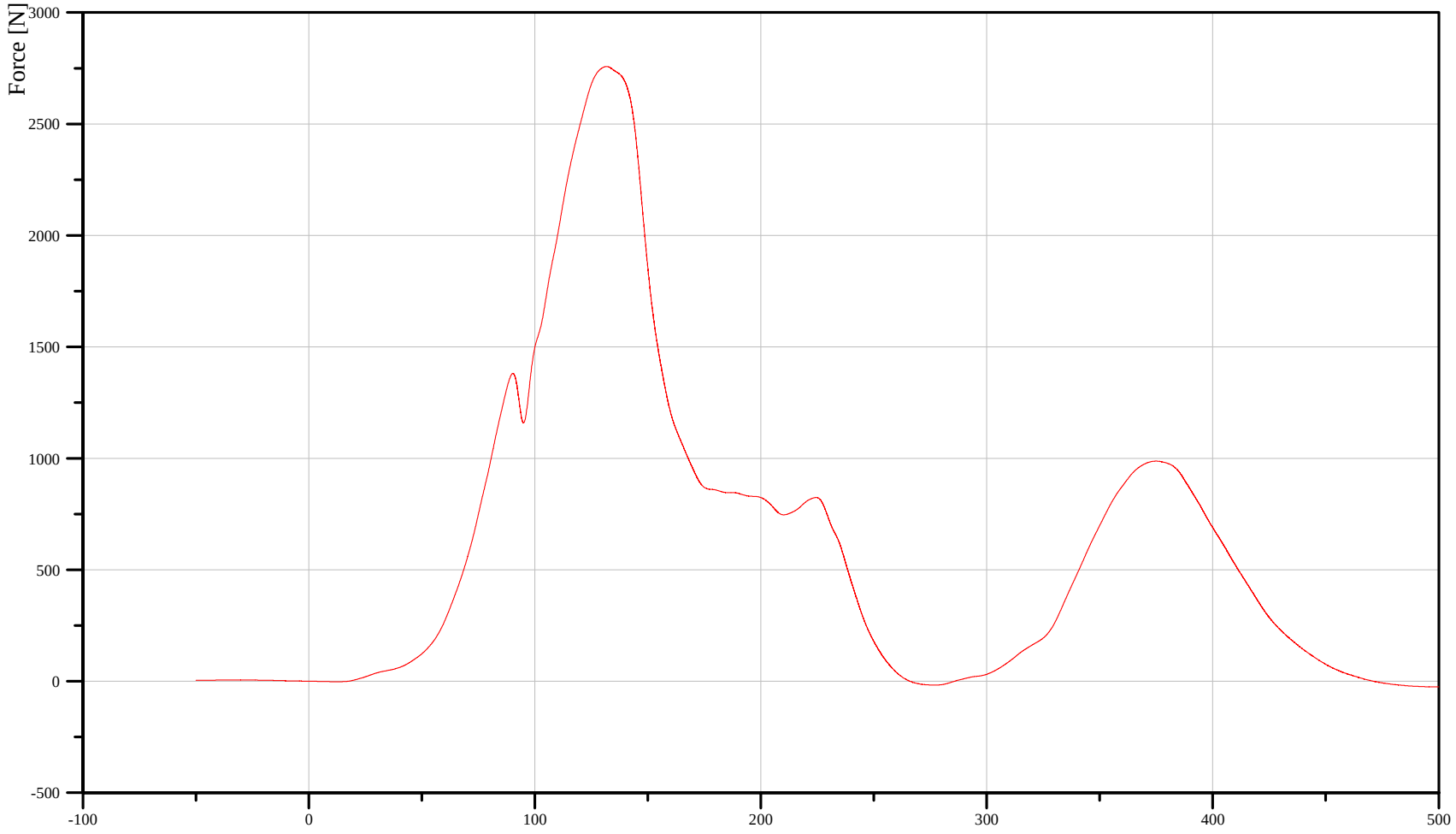
11L-Left Lap Belt

Date: 12/14/2007
Time: 9:12

Customer: VRTC

28SEBE0000B5FO0D

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-25.55 N at 500.00 ms

Max. Value
2,757.65 N at 131.76 ms

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

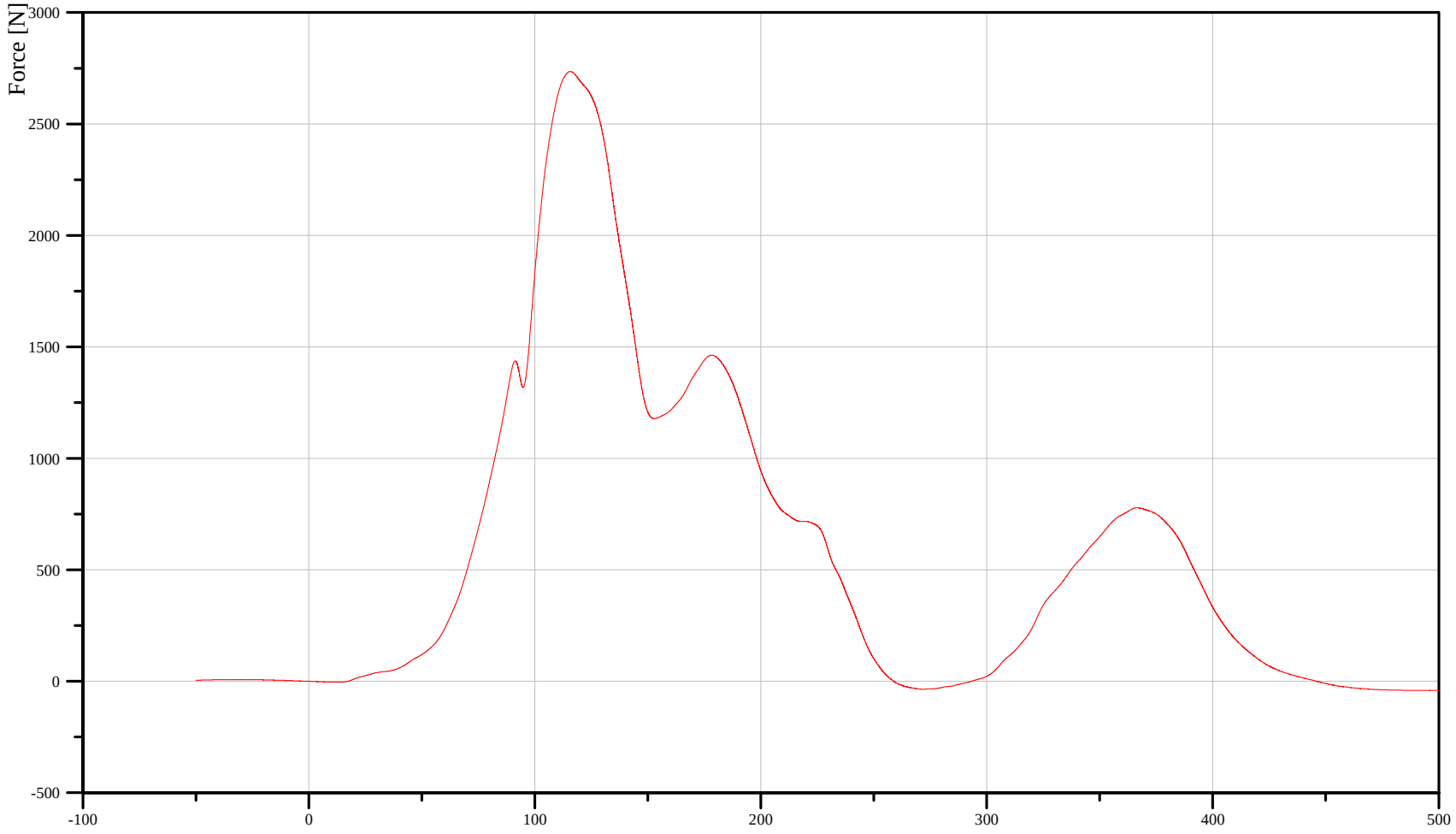
11R-Right Lap Belt

Date: 12/14/2007
Time: 9:12

Customer: VRTC

29SEBE0000B5FO0D

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-41.53 N at 500.00 ms

Max. Value
2,735.12 N at 115.76 ms

B-675

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

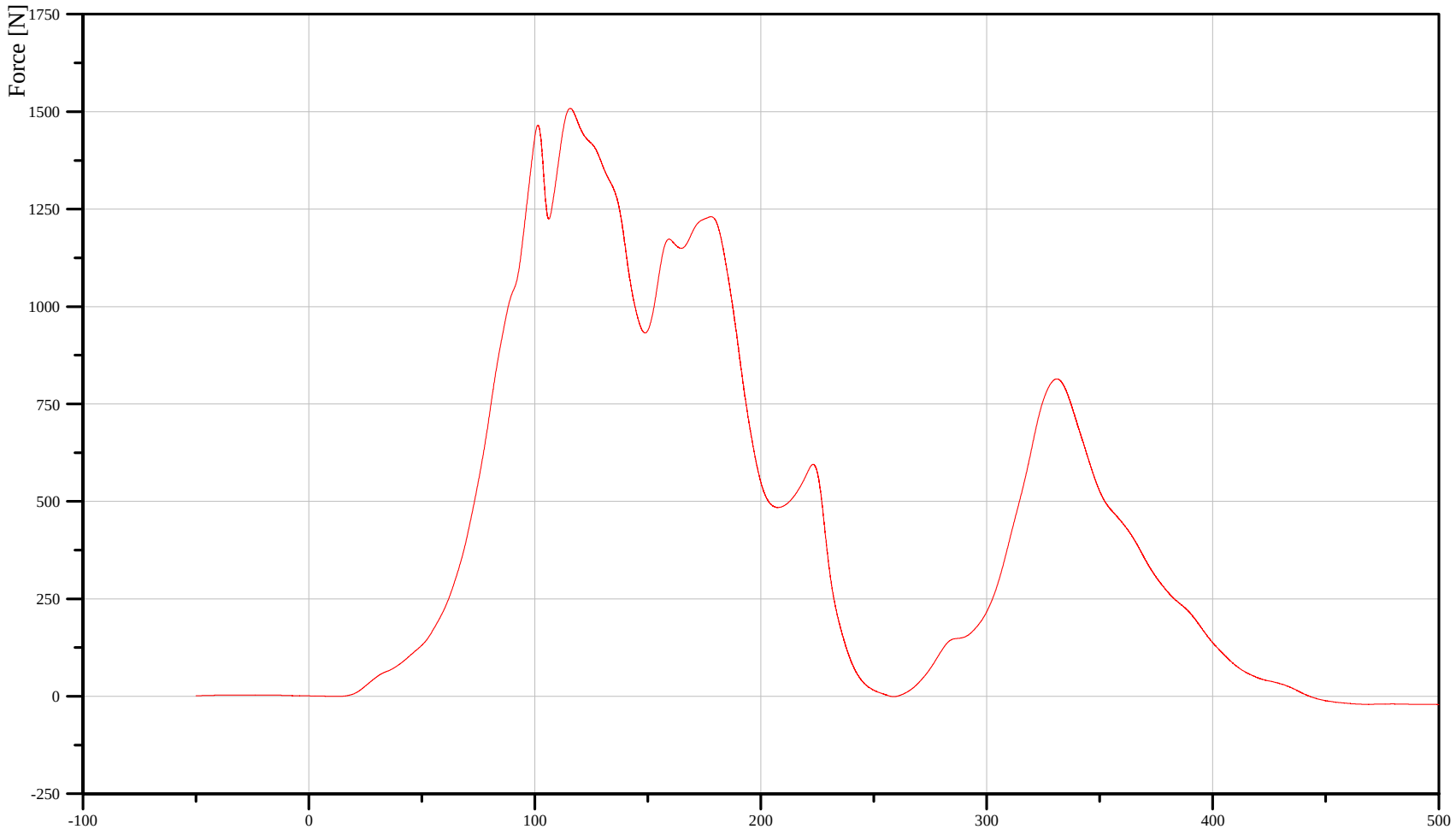
13R-Left Lap Belt

Date: 12/14/2007
Time: 9:12

Customer: VRTC

33SEBE0000B5FO0D

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-21.05 N at 500.00 ms

Max. Value
1,508.61 N at 115.68 ms

B-676

071214

2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30mph

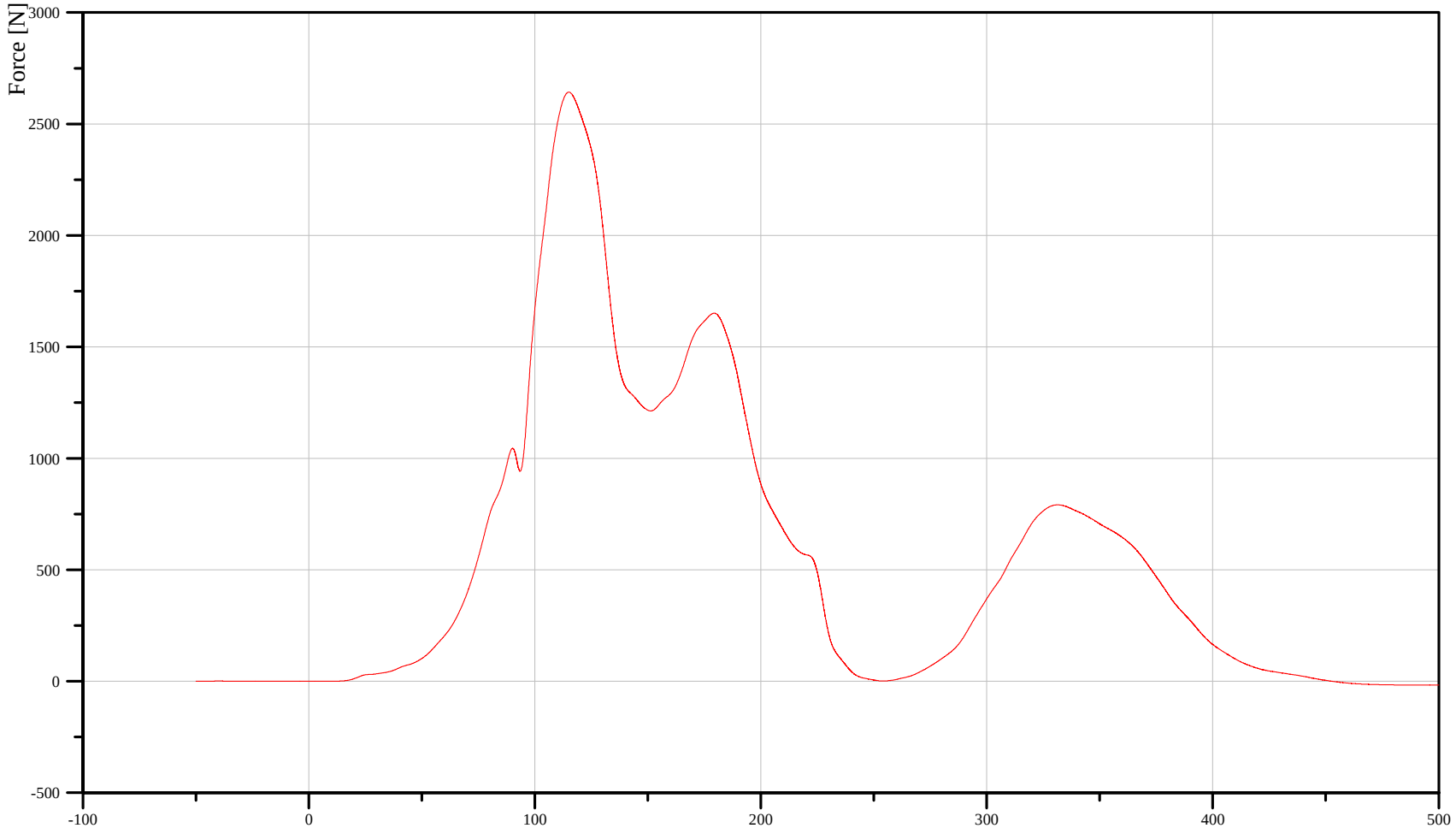
13R-Right Lap Belt

Date: 12/14/2007
Time: 9:12

Customer: VRTC

34SEBE0000B5FO0D

TRC Inc. Test Lab: CTF
Test Number: 071214



Filter: CFC_60

Min. Value
-17.01 N at 490.32 ms

Max. Value
2,642.65 N at 115.04 ms

B-677

071214

Appendix C

Pre-Test Dummy Configuration and Performance Verification Data

Pre-Test Dummy Configuration and Performance Verification Data

Right Side Row 4 Left Seat Dummy S/N: 055

Transportation Research Center Inc.
SID/HIII Dummy
External Dimensions
Serial No. 055 Calibration No. 26

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	905 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	510 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Knee Pivot From Backline	KH	510.5 - 525.8 mm	518 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	500 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	370 mm	Yes
Top Rib Width From C\L	RW-1	165.1 - 180.3 mm	168 mm	Yes
Bottom Rib Width From C\L	RW-2	165.1 - 180.3 mm	169 mm	Yes
Difference Between Top & Bottom Rib Width from C\L		<= 2.5 mm	1.0 mm	Yes

Technician

Approved

Transportation Research Center Inc.

Left Lateral Head Drop
SID-HIII Serial No. 055 Certification No. 26-1
Test Date: 1/4/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Peak Head Resultant Acceleration	120 - 150 g	141.6 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	-6.8 g	Yes
Is Head Resultant Acceleration Curve Unimodal Within 15% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart M with Polarity in accordance with J211

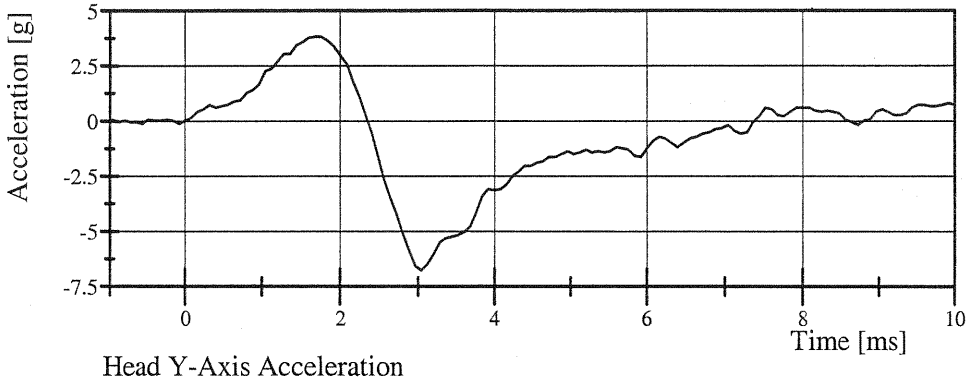
01.04.2007 14:27:31 613

071214

Transportation Research Center Inc.

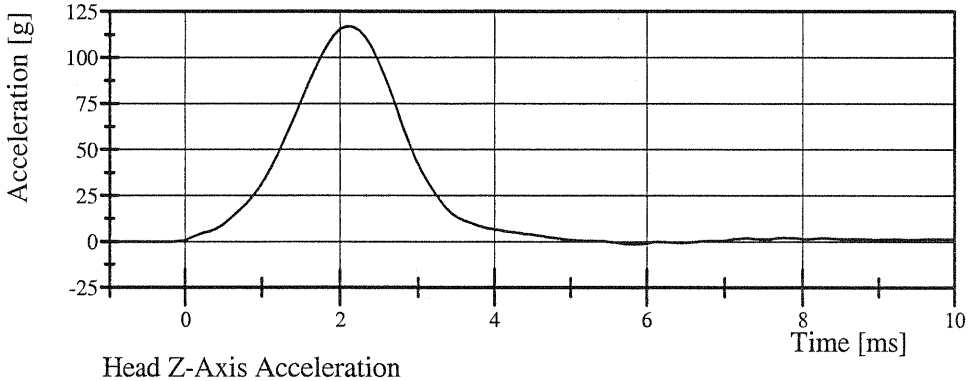
Left Lateral Head Drop
SID-HIII Serial No. 055 Certification No. 26-1
Test Date: 1/4/2007

Head X-Axis Acceleration



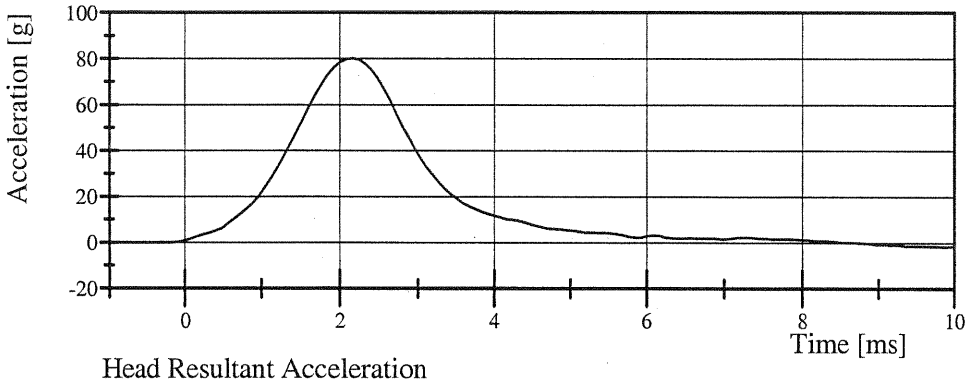
Filter Class: CFC_1000
Max: 3.8 g at 1.7 ms
Min: -6.8 g at 3.0 ms

Head Y-Axis Acceleration



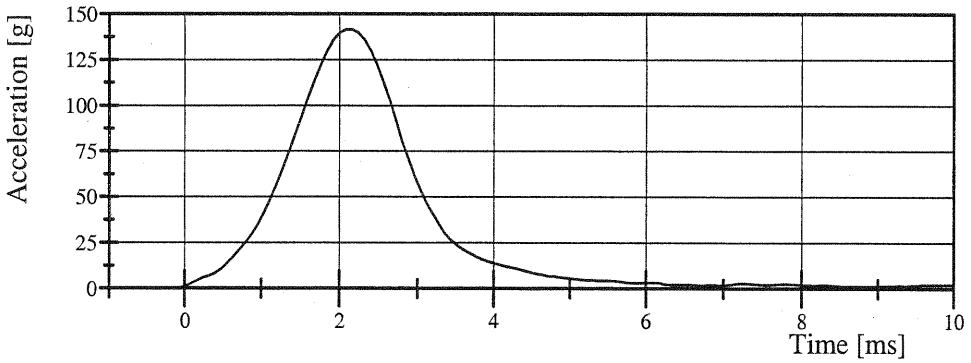
Filter Class: CFC_1000
Max: 116.9 g at 2.1 ms
Min: -1.5 g at 5.8 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 80.1 g at 2.2 ms
Min: -1.7 g at 9.8 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 141.6 g at 2.1 ms
Min: 0.0 g at -0.2 ms

Specification Source: CFR49 Part 572 Subpart M
with Polarity in accordance with J211

01.04.2007 14:27:42 613

071214

Transportation Research Center Inc.

Left Lateral Neck
SID-HIII Serial No. 055 Certification No. 26-1
Test Date: 1/5/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.0 °C	Yes
Relative Humidity	10 - 70 %	58 %	Yes
Pendulum Velocity	(-6.89) - (-7.13) m/s	-7.071 m/s	Yes
Pendulum Integrated Velocity Change at 10 ms	1.96 - 2.55 m/s	2.281 m/s	Yes
Pendulum Integrated Velocity Change at 20 ms	4.12 - 5.10 m/s	4.602 m/s	Yes
Pendulum Integrated Velocity Change at 30 ms	5.73 - 7.01 m/s	6.575 m/s	Yes
Pendulum Integrated Velocity Change at 40 to 70 ms	6.27 - 7.64 m/s	7.210 m/s	Yes
Total Head D-Plane Rotation	(-66) - (-82) °	-69.8 °	Yes
Total Head D-Plane Rotation Time to 0° after Peak Rotation	58 - 67 ms	60.7 ms	Yes
Total Neck Occipital Condyle Moment	73 - 88 N·m	83.2 N·m	Yes
Total Neck Occipital Condyle Moment Time to 0 N·m after Peak Moment	49 - 64 ms	54.2 ms	Yes
Time from Peak Moment to Peak Rotation	2 - 16 ms	8.6 ms	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart M with Polarity in accordance with J211

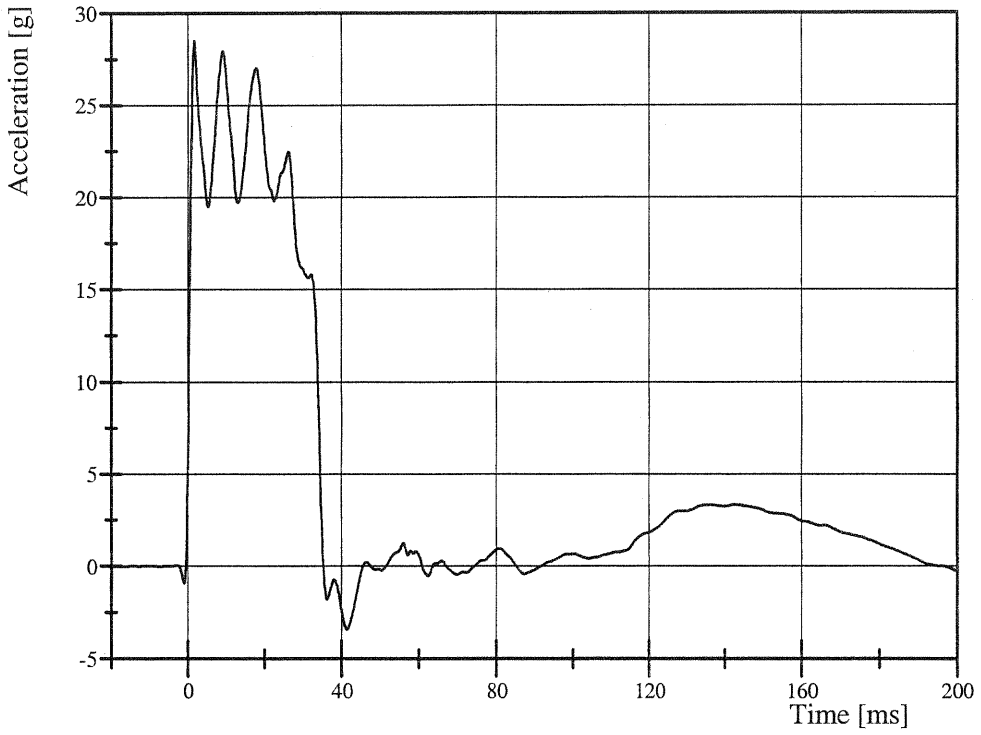
01.05.2007 13:44:38 2967

071214

Transportation Research Center Inc.

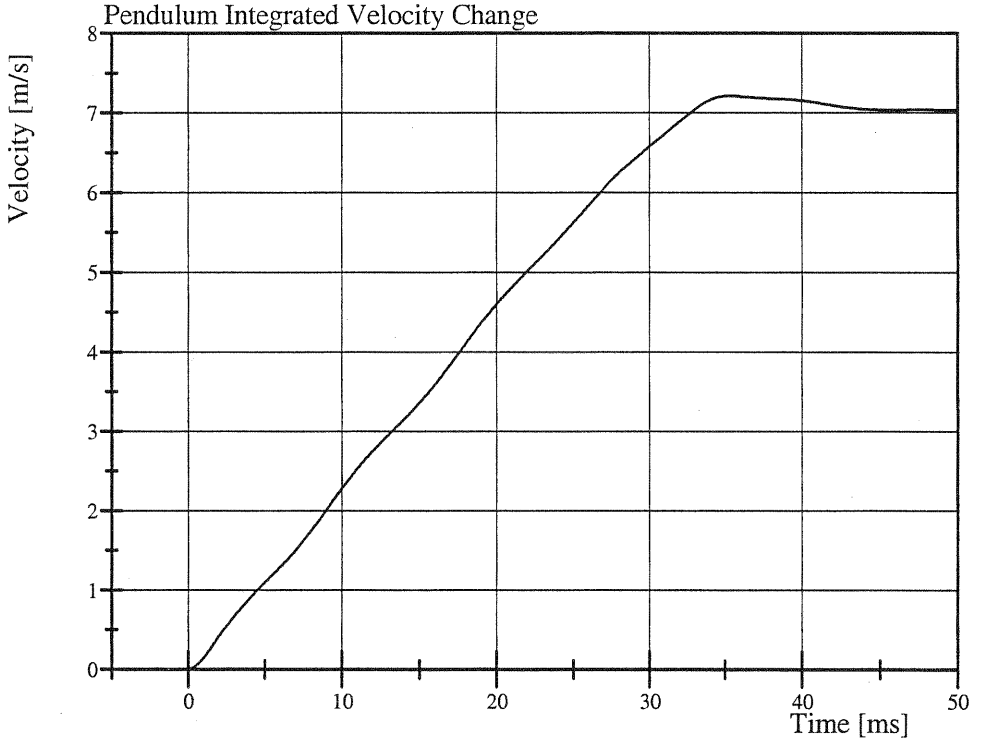
Left Lateral Neck
SID-HIII Serial No. 055 Certification No. 26-1
Test Date: 1/5/2007

Pendulum Acceleration



Filter Class: CFC_180
Max: 28.5 g at 1.8 ms
Min: -3.4 g at 41.4 ms

Pendulum Integrated Velocity Change



Filter Class: CFC_180
Max: 7.2 m/s at 35.4 ms
Min: 0.0 m/s at 0.0 ms

Specification Source: CFR49 Part 572 Subpart M
with Polarity in accordance with J211

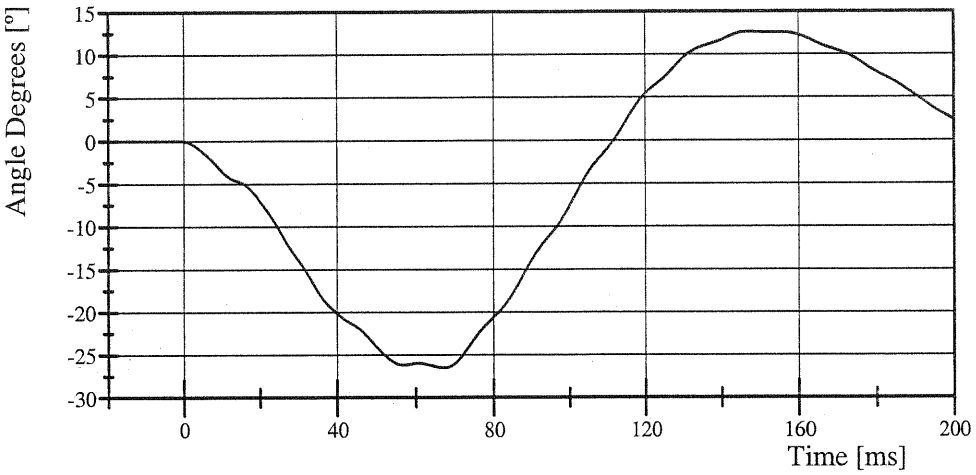
01.05.2007 13:44:50 2967

071214

Transportation Research Center Inc.

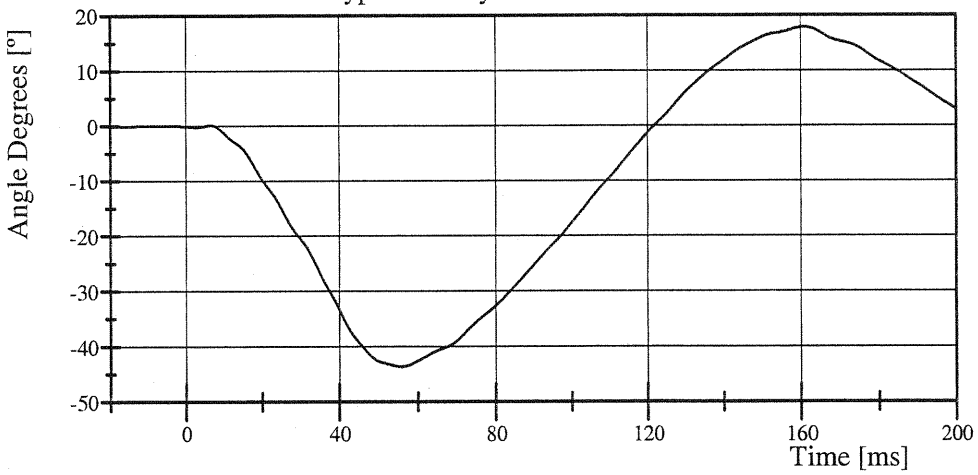
Left Lateral Neck
SID-HIII Serial No. 055 Certification No. 26-1
Test Date: 1/5/2007

Pot Rotation at the Base of Neck



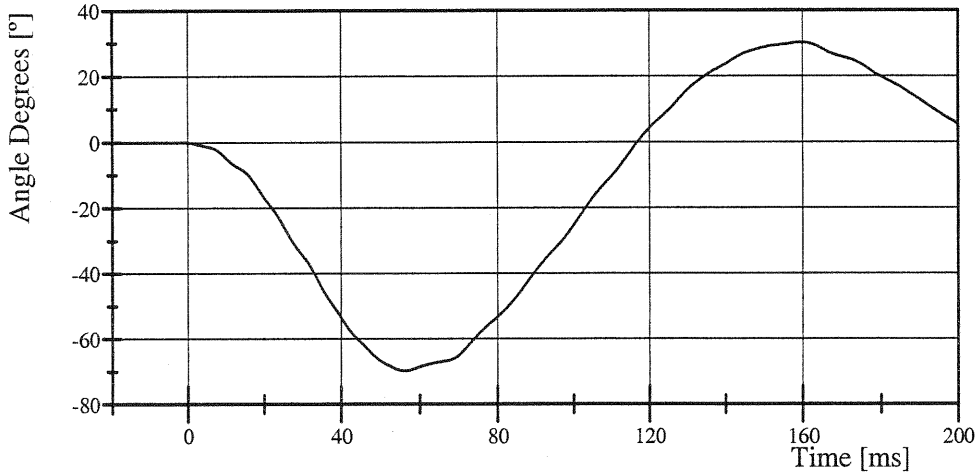
Filter Class: CFC_60
Max: 12.6 ° at 147.3 ms
Min: -26.5 ° at 67.2 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 17.9 ° at 161.0 ms
Min: -43.6 ° at 55.8 ms

Total Head D-Plane Rotation

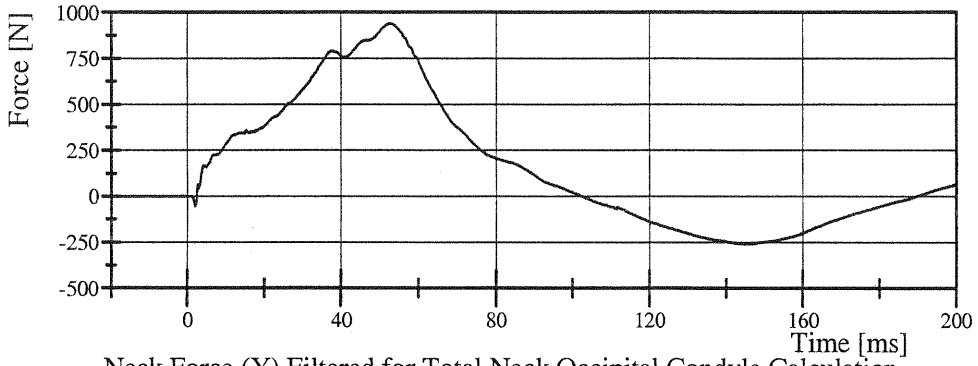


Filter Class: CFC_60
Max: 30.2 ° at 159.8 ms
Min: -69.8 ° at 56.2 ms

Transportation Research Center Inc.

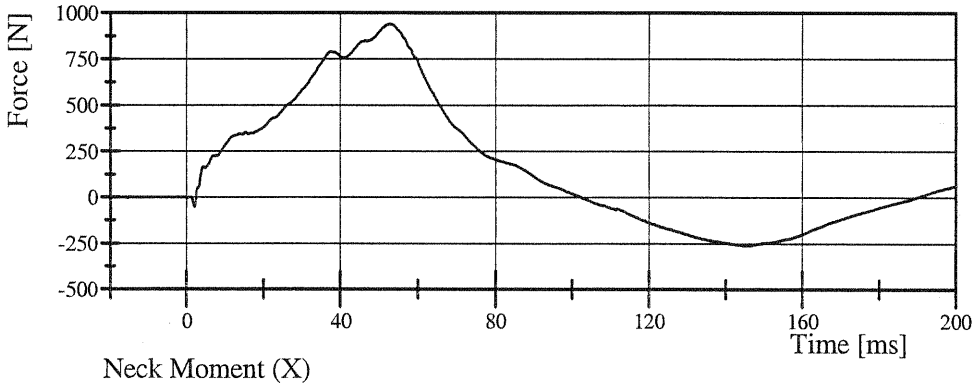
Left Lateral Neck
SID-HIII Serial No. 055 Certification No. 26-1
Test Date: 1/5/2007

Neck Force (Y)



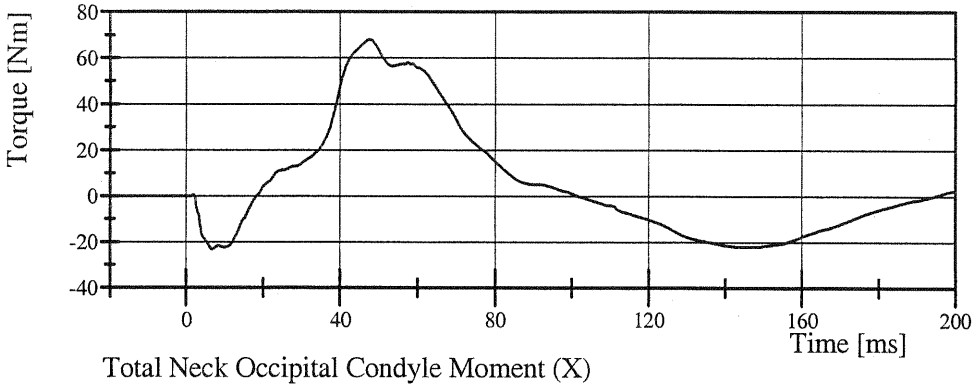
Filter Class: CFC_1000
Max: 940.8 N at 52.7 ms
Min: -259.7 N at 144.9 ms

Neck Force (Y) Filtered for Total Neck Occipital Condyle Calculation



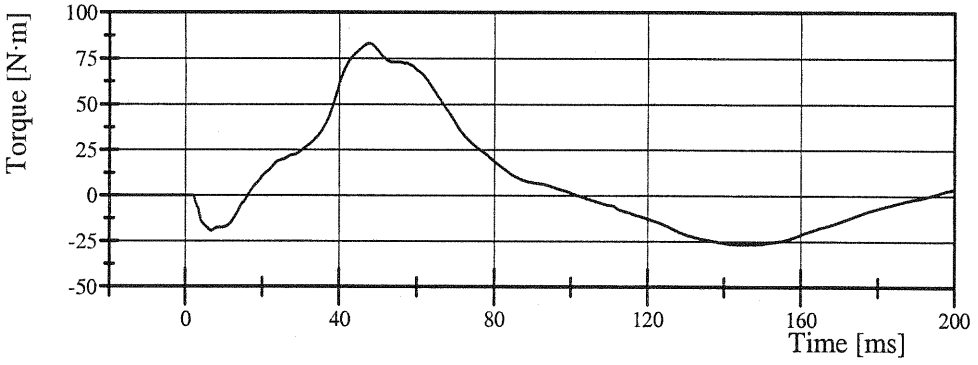
Filter Class: CFC_600
Max: 940.4 N at 52.8 ms
Min: -259.1 N at 144.8 ms

Neck Moment (X)



Filter Class: CFC_600
Max: 68.0 Nm at 47.5 ms
Min: -23.3 Nm at 6.7 ms

Total Neck Occipital Condyle Moment (X)



Filter Class: CFC_600
Max: 83.2 N·m at 47.6 ms
Min: -26.6 N·m at 145.0 ms

Transportation Research Center Inc.

Left Lateral Thorax
SID-HIII Serial No. 055 Certification No. 26-1
Test Date: 1/4/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	34 %	Yes
Impactor Velocity	4.27 - 4.33 m/s	4.297 m/s	Yes
Upper Rib Lateral Acceleration	37 - 46 g	45.4 g	Yes
Lower Rib Lateral Acceleration	37 - 46 g	44.9 g	Yes
Lower Spine Lateral Acceleration	15 - 22 g	20.5 g	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart M
with Polarity in accordance with J211

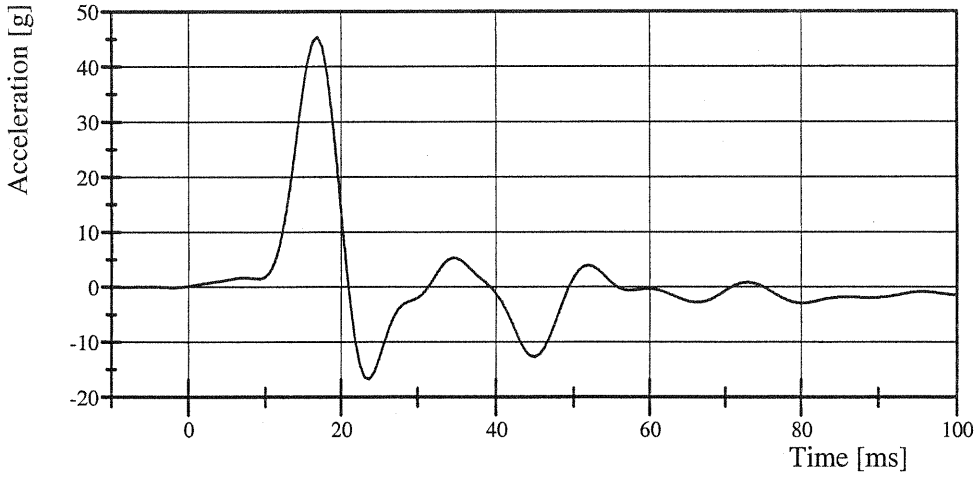
01.04.2007 13:17:23 603

071214

Transportation Research Center Inc.

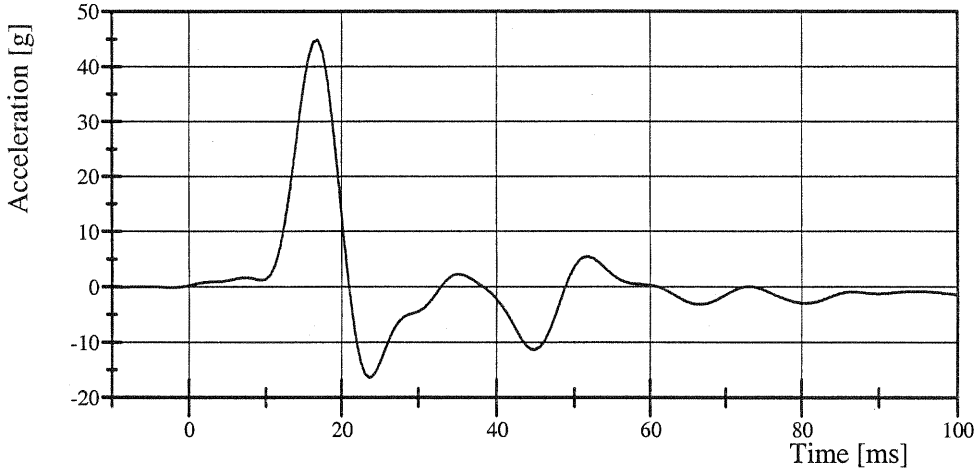
Left Lateral Thorax
SID-HIII Serial No. 055 Certification No. 26-1
Test Date: 1/4/2007

Upper Rib Acceleration (Y)



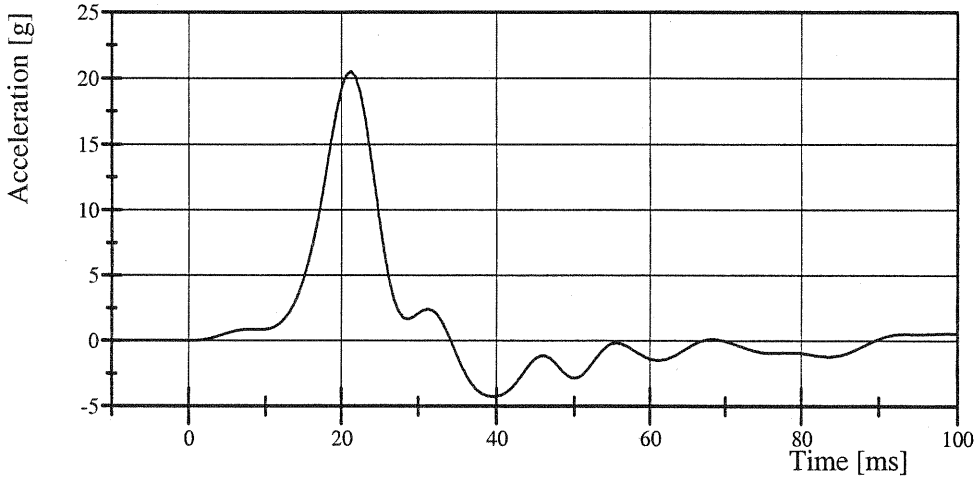
Filter Class: FIR_100
Max: 45.4 g at 16.8 ms
Min: -16.7 g at 23.7 ms

Lower Rib Acceleration (Y)



Filter Class: FIR_100
Max: 44.9 g at 16.8 ms
Min: -16.4 g at 23.7 ms

Lower Spine Acceleration (Y)



Filter Class: FIR_100
Max: 20.5 g at 21.2 ms
Min: -4.3 g at 39.4 ms

Specification Source: CFR49 Part 572 Subpart M
with Polarity in accordance with J211

01.04.2007 13:17:36 603

071214

Transportation Research Center Inc.

Abdomen Compression
SID-HIII Serial No. 055 Certification No. 26-8
Test Date: 1/8/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Probe Force within Corridor	Yes	Yes	Yes
Probe Velocity	6.35 - 8.89 mm/s	7.974 mm/s	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart B with Polarity in accordance with J211

01.08.2007 11:39:37 5420

071214

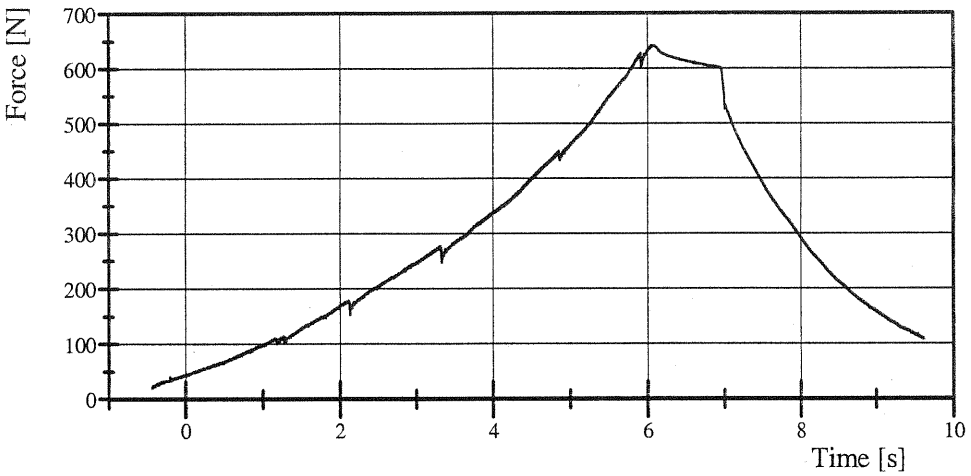
Transportation Research Center Inc.

Abdomen Compression

SID-HIII Serial No. 055 Certification No. 26-8

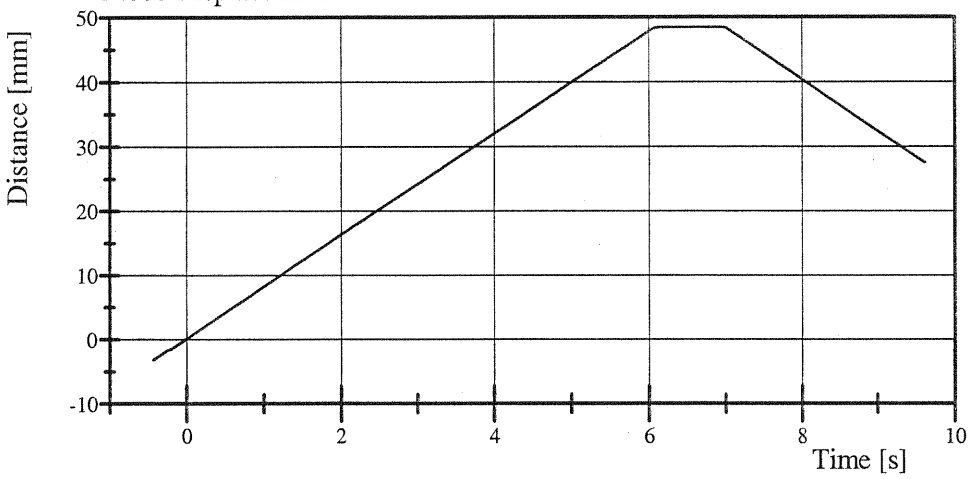
Test Date: 1/8/2007

Probe Force



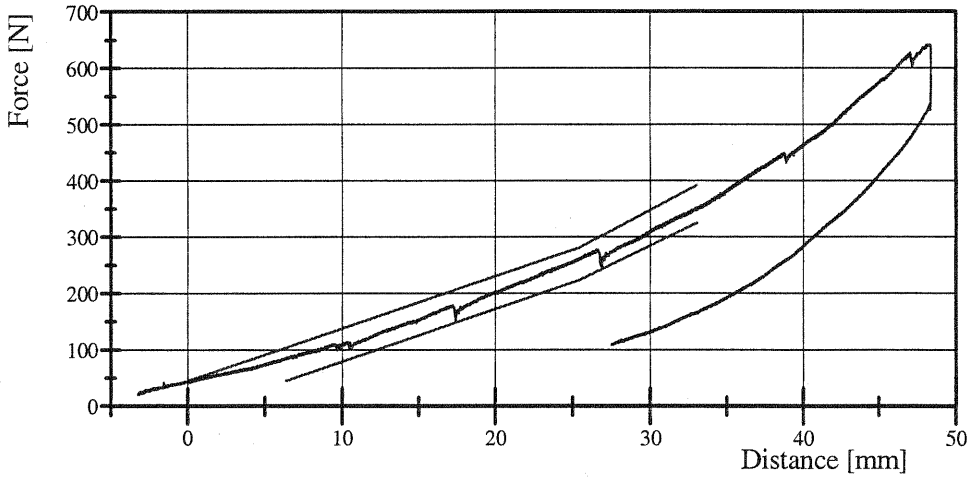
Filter Class: CFC_600
Max: 641.2 N at 6.1 s
Min: 19.8 N at -0.4 s

Probe Displacement



Filter Class: CFC_180
Max: 48.4 mm at 7.0 s
Min: -3.2 mm at -0.4 s

Probe Force vs Displacement



Filter Class: CFC_600
Max: 641.2 N at 48.2 mm
Min: 19.8 N at -3.2 mm

Specification Source: CFR49 Part 572 Subpart B
with Polarity in accordance with J211

01.08.2007 11:40:11 5420

071214

Transportation Research Center Inc.

Left Lateral Pelvis
SID-HIII Serial No. 055 Certification No. 26-1
Test Date: 1/4/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	33 %	Yes
Impactor Velocity	4.27 - 4.33 m/s	4.299 m/s	Yes
Pelvis Lateral Acceleration Duration above 20g	3 - 7 ms	5.8 ms	Yes
Pelvis Lateral Acceleration	40 - 60 g	46.4 g	Yes
Is Acceleration Curve Unimodal Above 20g?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Approved

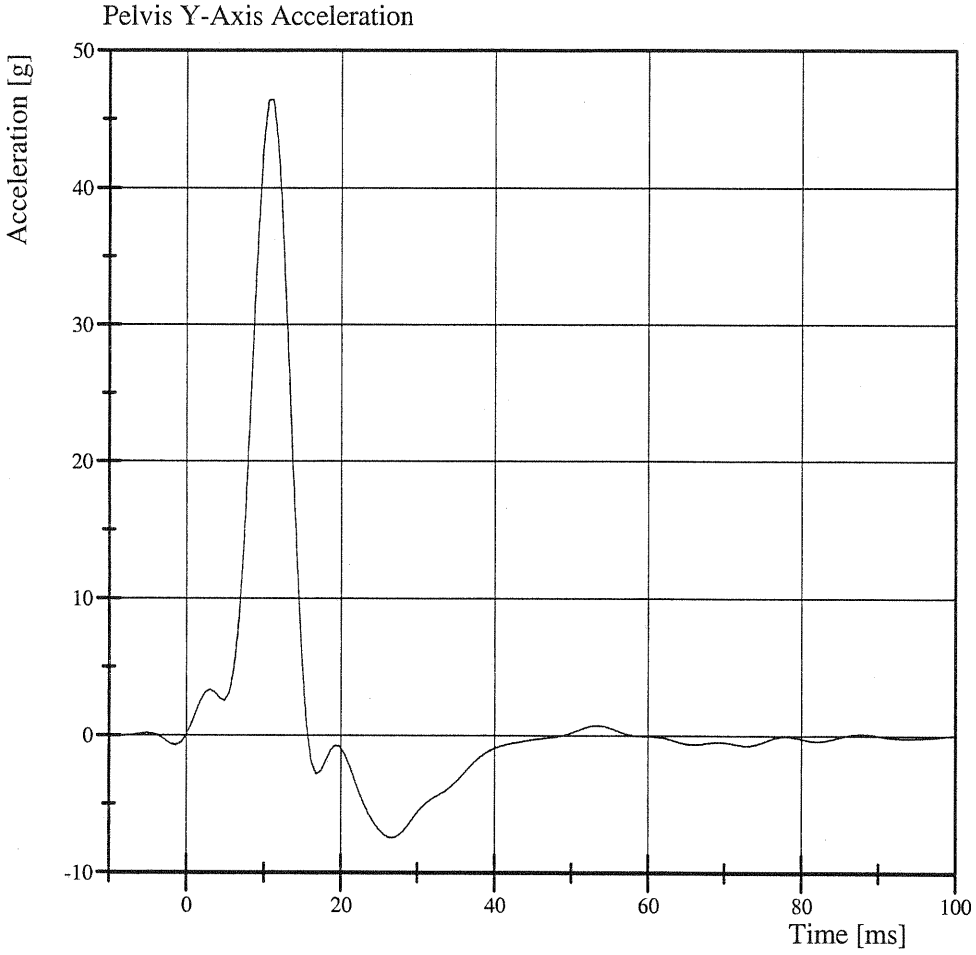
Specification Source: CFR49 Part 572 Subpart M
with Polarity in accordance with J211

01.04.2007 13:13:12 604

071214

Transportation Research Center Inc.

Left Lateral Pelvis
SID-HIII Serial No. 055 Certification No. 26-1
Test Date: 1/4/2007



Filter Class: FIR_100
Max: 46.4 g at 11.1 ms
Min: -7.5 g at 26.7 ms

Specification Source: CFR49 Part 572 Subpart M
with Polarity in accordance with J211

01.04.2007 13:13:25 604

071214

TRANSPORTATION RESEARCH CENTER INC.

LUMBAR FLEXION TEST

SID PART 572B

CAL DATE: 09-Jan-07

TRC, INC. **TEST NO: LUFL-01** **572B SN 055 TORSO FLEX CAL 26**

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6° C	21.3 C
RELATIVE HUMIDITY	10 – 70 %	24 %
FORCE AT 0 DEG. FLEXION	-27 – 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 – 151 N	120 N
FORCE AT 30 DEG OF FLEXION	151 – 205 N	160 N
FORCE AT 40 DEG OF FLEXION	205 – 258 N	209 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	7.5 °

TEST MEETS SPECIFICATIONS

TECHNICIAN Robert Barnes

Pre-Test Dummy Configuration and Performance Verification Data

Right Side Row 4 Right Seat Dummy S/N: 290

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 290
Calibration No. 01

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	881	Yes
B	Shoulder Pivot Height	505.5 - 520.7	515	Yes
C	H-Point Height	83.8 - 88.9	87	Yes
D	H-Point From Seatback	134.6 - 139.7	138	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	90	Yes
F	Thigh Clearance	139.7 - 154.9	151	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	296	Yes
H	Skull Cap To Backline	40.6 - 45.7	44	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	331	Yes
J	Elbow Rest Height	190.5 - 210.8	202	Yes
K	Buttock Knee Length	579.1 - 604.5	600	Yes
L	Popliteal Height	429.3 - 454.7	437	Yes
M	Knee Pivot Height	485.1 - 500.4	495	Yes
N	Buttock Popliteal Length	452.1 - 477.5	472	Yes
O	Chest Depth	213.4 - 228.6	221	Yes
P	Foot Length	251.5 - 266.7	260	Yes
V	Shoulder Breadth	421.6 - 436.9	425	Yes
W	Foot Breadth	91.4 - 106.7	100	Yes
Y	Chest Circumference	970.3 - 1000.8	987	Yes
Z	Waist Circumference	835.7 - 866.1	855	Yes
AA	Location For Chest Circumference	429.3 - 434.3	430	Yes
BB	Location For Waist Circumference	226.1 - 231.1	230	Yes

Comments:

Technician

Approved

Transportation Research Center Inc.

Front Head Drop
HIII 50th Serial No. 290 Certification No. 1-2
Test Date: 11/6/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	32 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	246.2 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-3.4 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

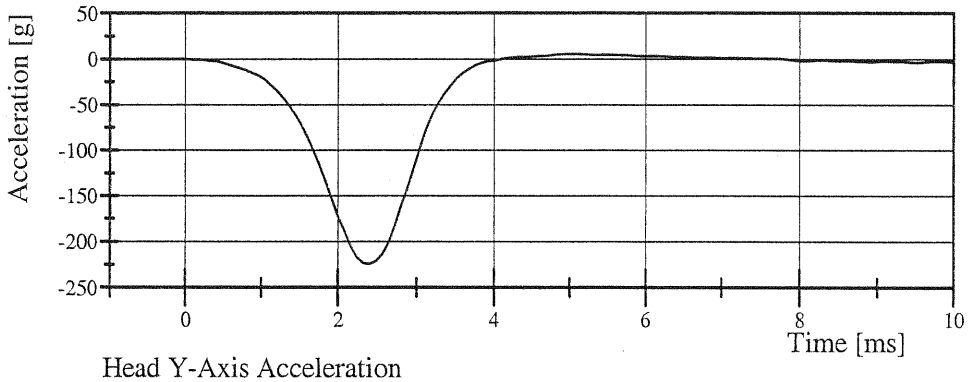
11.06.2007 08:14:40 610

071214

Transportation Research Center Inc.

Front Head Drop
HIII 50th Serial No. 290 Certification No. 1-2
Test Date: 11/6/2007

Head X-Axis Acceleration

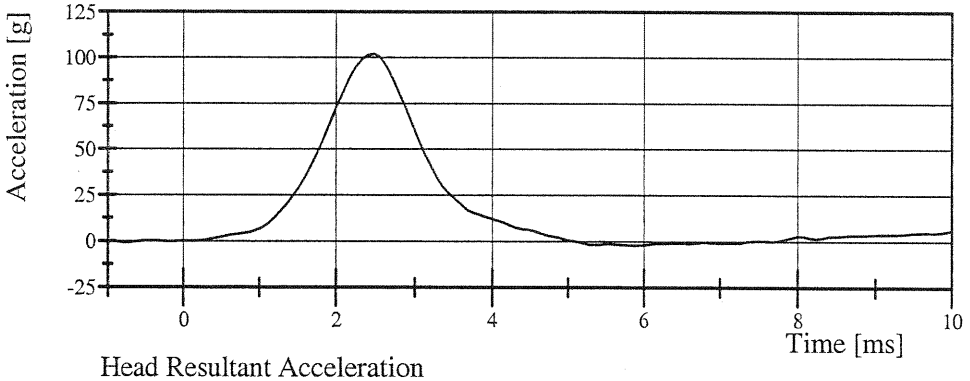


Filter Class: CFC_1000
Max: 5.9 g at 5.0 ms
Min: -224.4 g at 2.4 ms

Head Y-Axis Acceleration

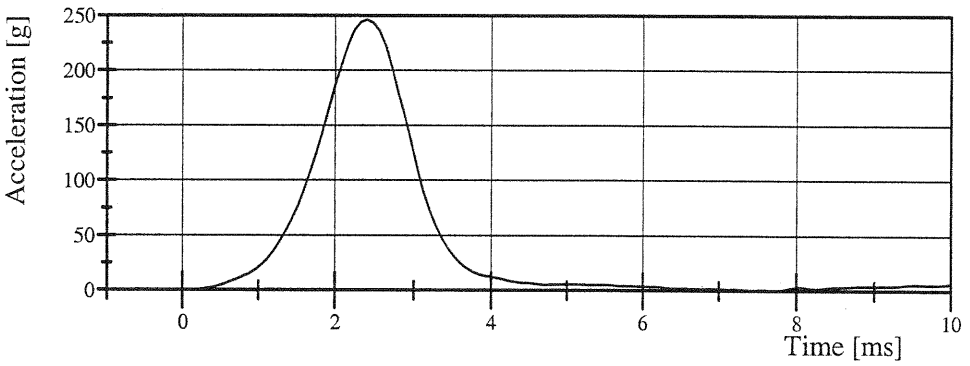
Filter Class: CFC_1000
Max: 2.8 g at 3.8 ms
Min: -3.4 g at 2.8 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 102.2 g at 2.5 ms
Min: -2.1 g at 5.8 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 246.2 g at 2.4 ms
Min: 0.1 g at -0.2 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.06.2007 08:14:48 610

071214

Transportation Research Center Inc.

Neck Flexion
HIII 50th Serial No. 290 Certification No. 1-10
Test Date: 11/8/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.977 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	42.0 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-23.00 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-18.33 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-13.71 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-13.71 g	Yes
Total Head D-Plane Rotation			
Peak	(-64) - (-78) °	-64.8 °	Yes
Time of Peak	57 - 64 ms	59.7 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	117.9 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	88 - 108 N·m	88.1 N·m	Yes
Time of Peak	47 - 58 ms	52.6 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	98.9 ms	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

11.08.2007 12:48:56 2985

071214

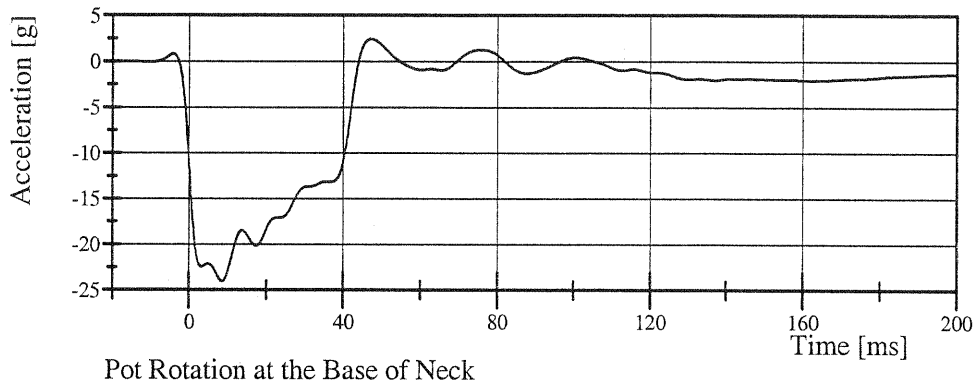
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 290 Certification No. 1-10

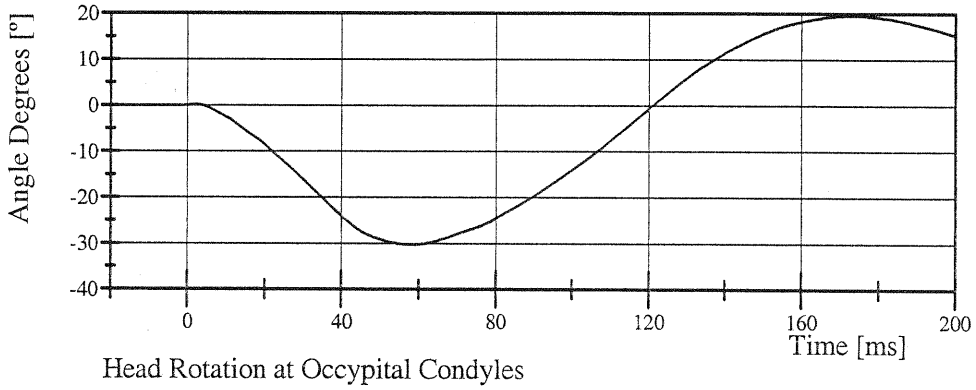
Test Date: 11/8/2007

Pendulum Acceleration



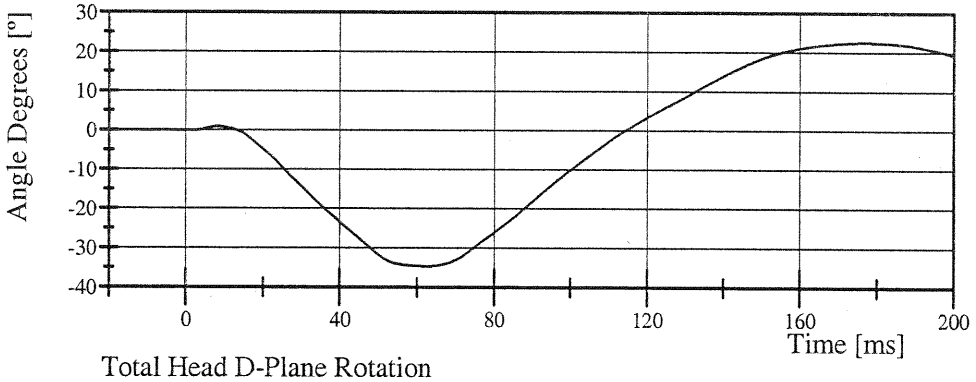
Filter Class: CFC_60
Max: 2.4 g at 47.0 ms
Min: -24.1 g at 8.6 ms

Pot Rotation at the Base of Neck



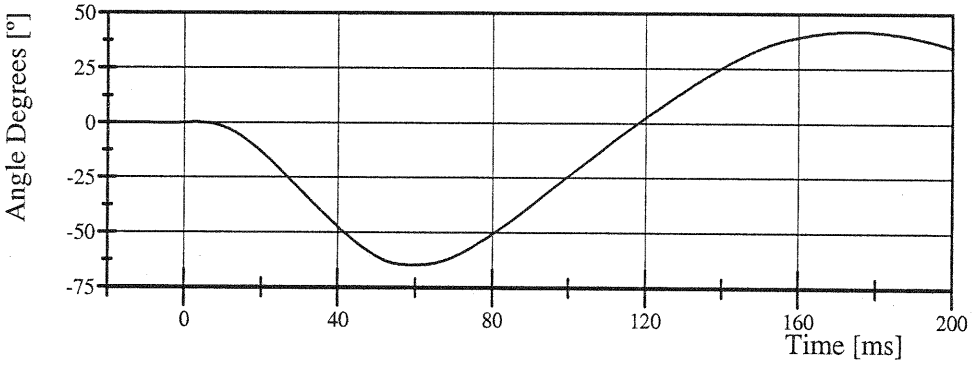
Filter Class: CFC_60
Max: 19.5 ° at 173.4 ms
Min: -30.3 ° at 58.1 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 22.6 ° at 176.8 ms
Min: -34.6 ° at 62.7 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 42.1 ° at 175.0 ms
Min: -64.8 ° at 59.7 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.08.2007 12:49:04 2985

071214

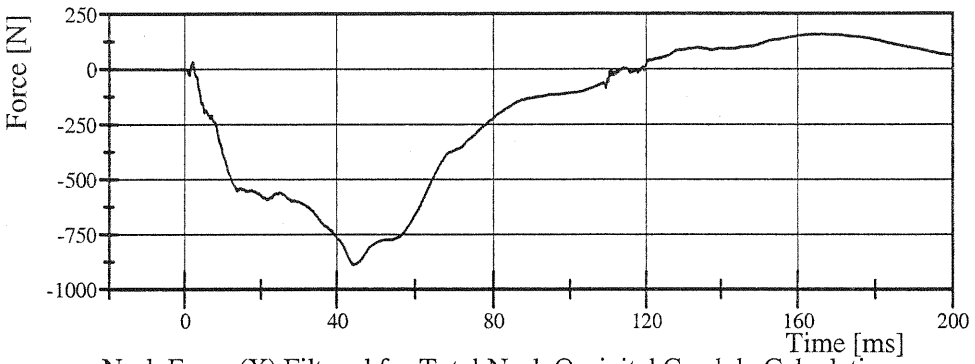
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 290 Certification No. 1-10

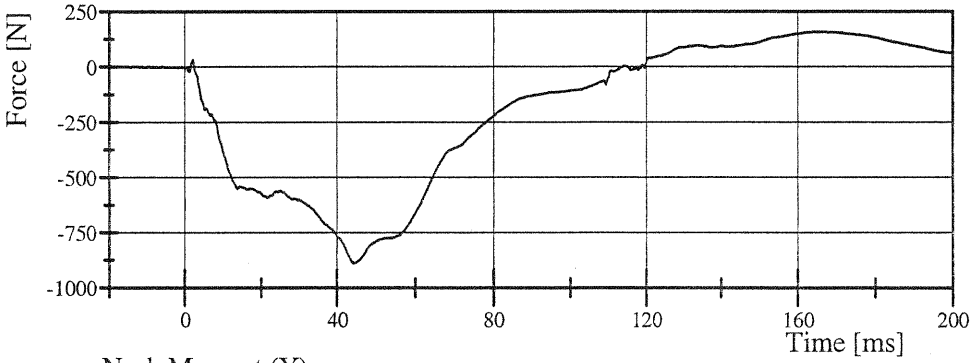
Test Date: 11/8/2007

Neck Force (X)



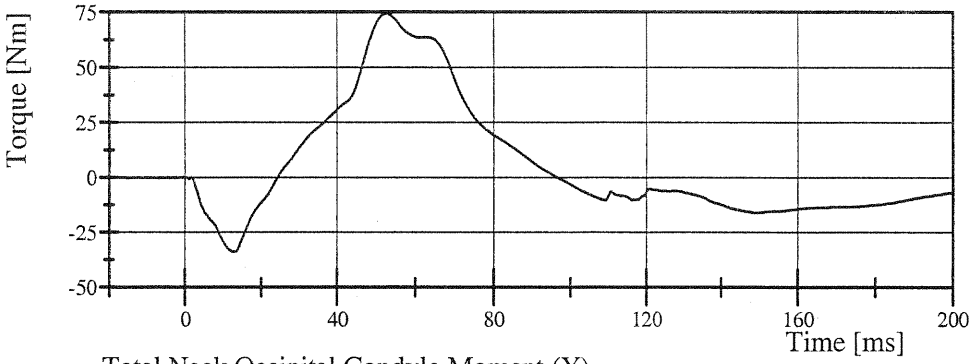
Filter Class: CFC_1000
Max: 158.7 N at 164.4 ms
Min: -888.3 N at 44.4 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



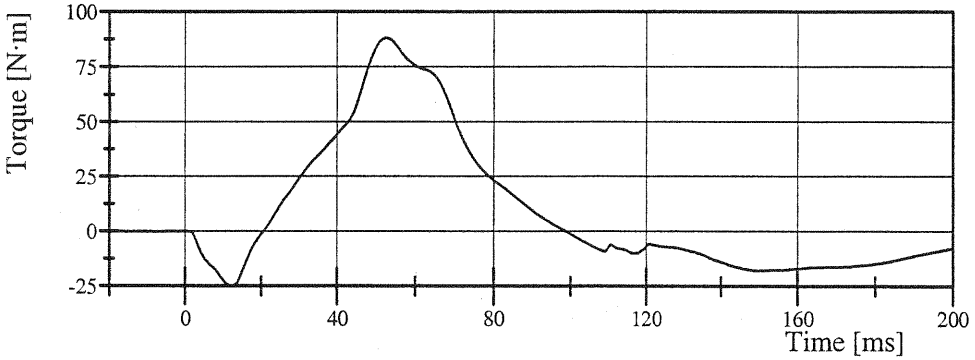
Filter Class: CFC_600
Max: 158.0 N at 164.4 ms
Min: -888.0 N at 44.3 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 74.4 Nm at 52.6 ms
Min: -33.8 Nm at 12.6 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 88.1 N·m at 52.6 ms
Min: -24.8 N·m at 12.2 ms

Transportation Research Center Inc.

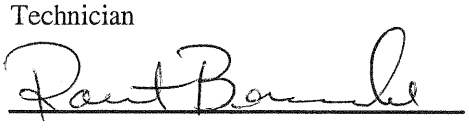
Neck Extension
HIII 50th Serial No. 290 Certification No. 1-1
Test Date: 11/8/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-5.979 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	42.0 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	19.74 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	16.94 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	13.95 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	13.95 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	93.1 °	Yes
Time of Peak	72 - 82 ms	78.9 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	161.8 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-53) - (-80) N·m	-56.1 N·m	Yes
Time of Peak	65 - 79 ms	73.5 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	143.3 ms	Yes

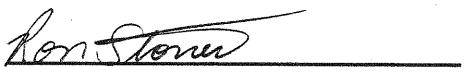
Test meets specifications.

Comments:

Technician



Approved



Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

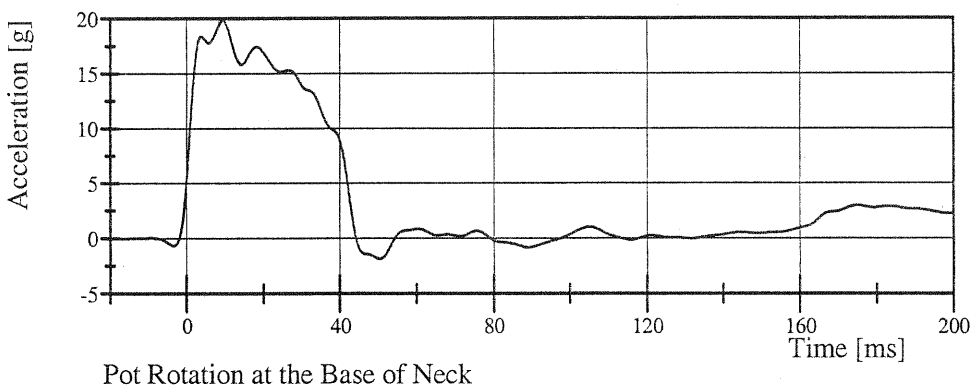
11.08.2007 13:19:15 3053

071214

Transportation Research Center Inc.

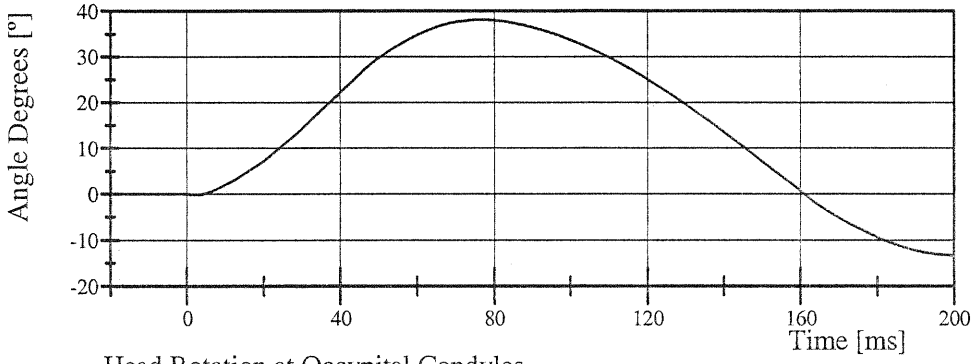
Neck Extension
HIII 50th Serial No. 290 Certification No. 1-1
Test Date: 11/8/2007

Pendulum Acceleration



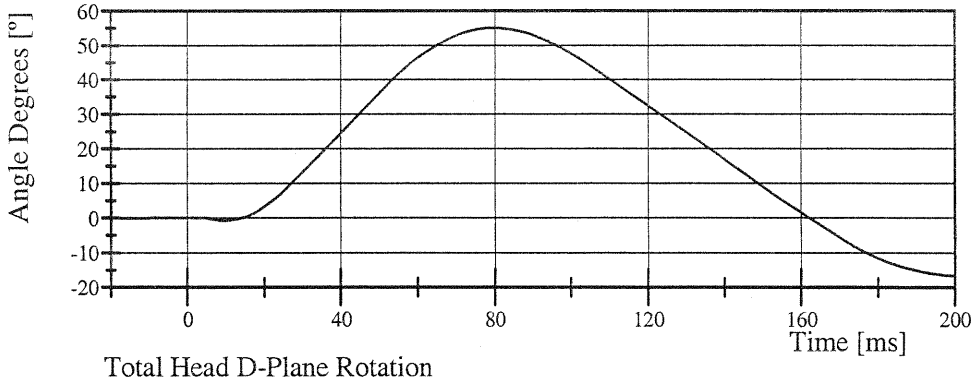
Filter Class: CFC_60
Max: 19.8 g at 9.5 ms
Min: -1.9 g at 50.4 ms

Pot Rotation at the Base of Neck



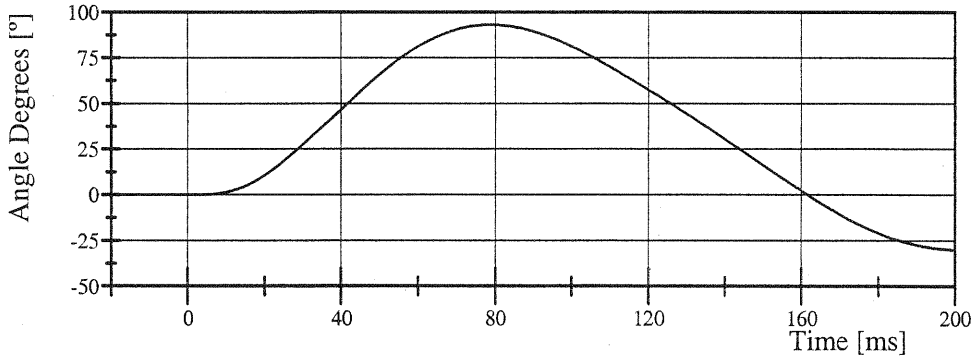
Filter Class: CFC_60
Max: 38.1 ° at 76.7 ms
Min: -13.3 ° at 200.0 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 55.1 ° at 79.6 ms
Min: -16.6 ° at 200.0 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 93.1 ° at 78.9 ms
Min: -30.0 ° at 200.0 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

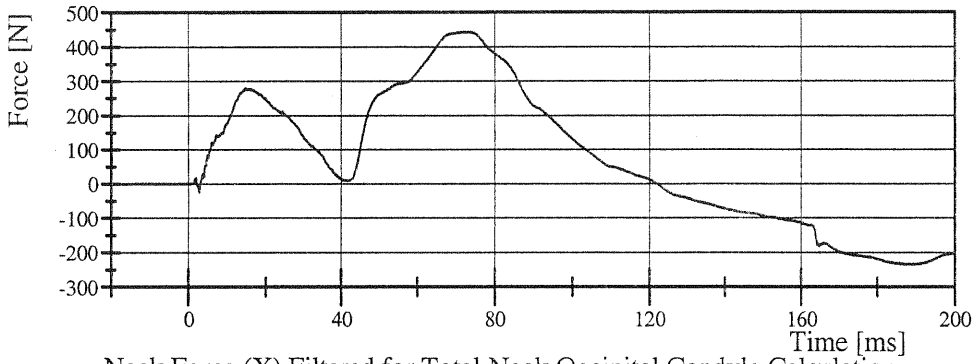
11.08.2007 13:19:24 3053

071214

Transportation Research Center Inc.

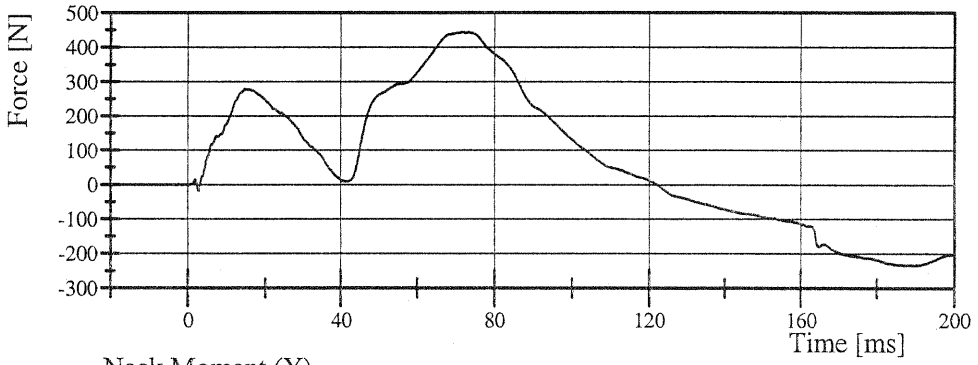
Neck Extension
HIII 50th Serial No. 290 Certification No. 1-1
Test Date: 11/8/2007

Neck Force (X)



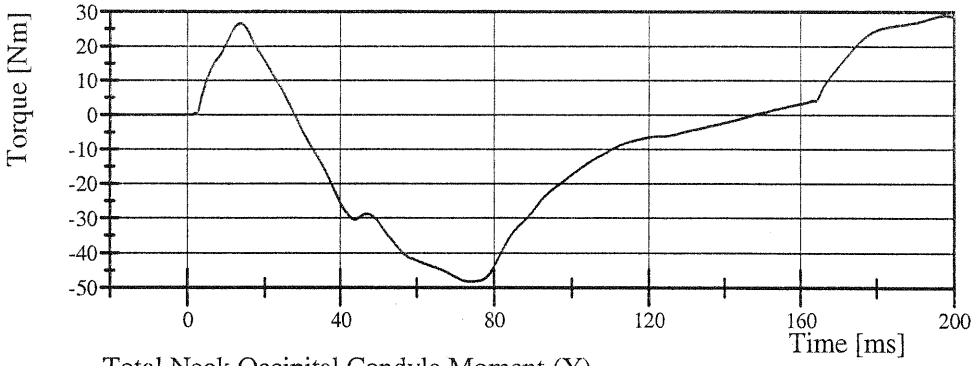
Filter Class: CFC_1000
Max: 443.9 N at 73.4 ms
Min: -234.7 N at 187.1 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



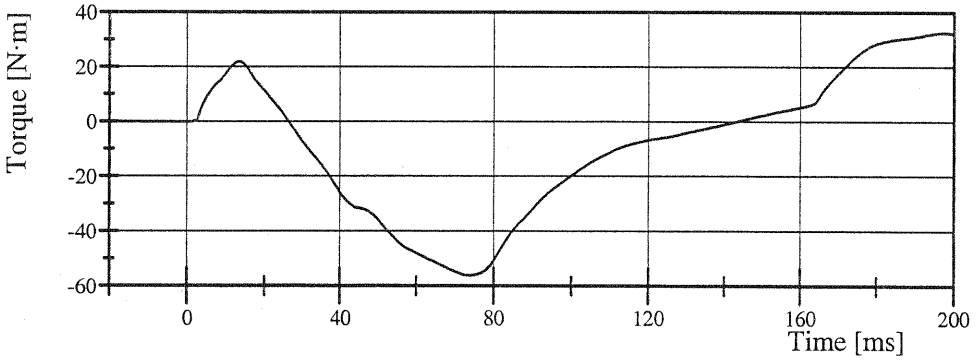
Filter Class: CFC_600
Max: 443.6 N at 73.4 ms
Min: -234.5 N at 187.3 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 29.0 Nm at 197.8 ms
Min: -48.2 Nm at 73.8 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 32.7 N·m at 197.1 ms
Min: -56.1 N·m at 73.5 ms

Transportation Research Center Inc.

Front Thorax
HIII 50th Serial No. 290 Certification No. 1-3
Test Date: 11/12/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	47 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.615 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,719.6 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-64.80 mm	Yes
Internal Hysteresis	65 - 85 %	77.5 %	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

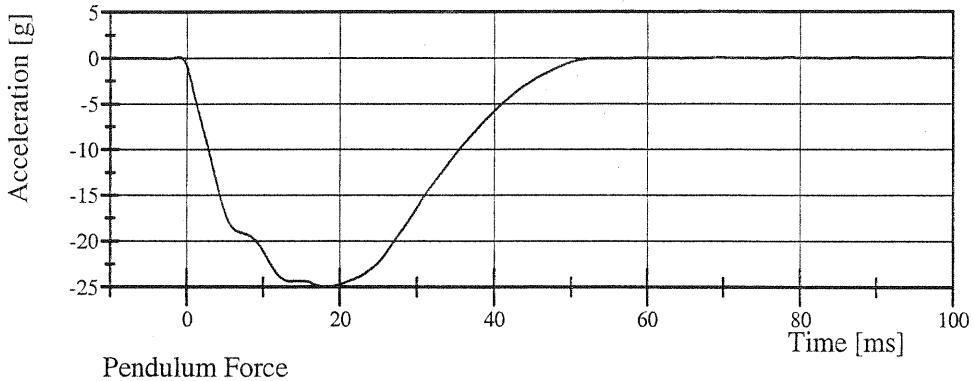
11.12.2007 08:44:57 1600

071214

Transportation Research Center Inc.

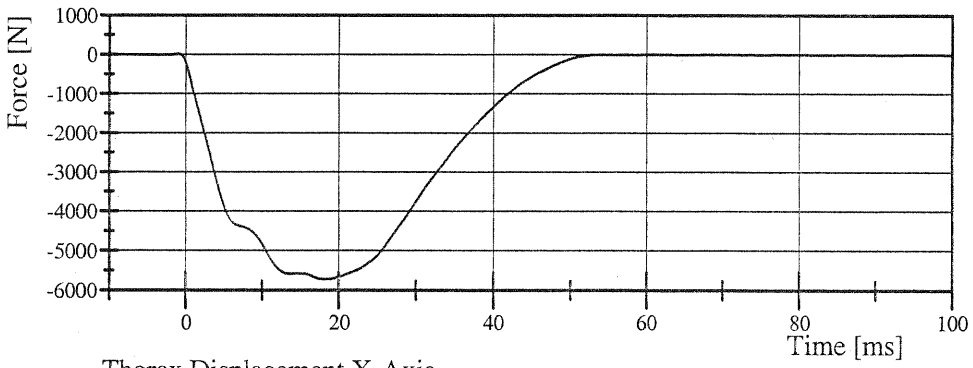
Front Thorax
HIII 50th Serial No. 290 Certification No. 1-3
Test Date: 11/12/2007

Pendulum Acceleration



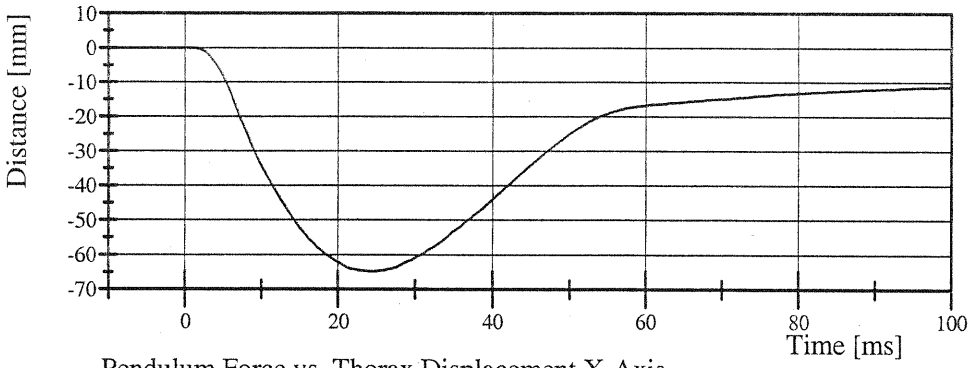
Filter Class: CFC_180
Max: 0.1 g at -1.0 ms
Min: -25.0 g at 18.4 ms

Pendulum Force



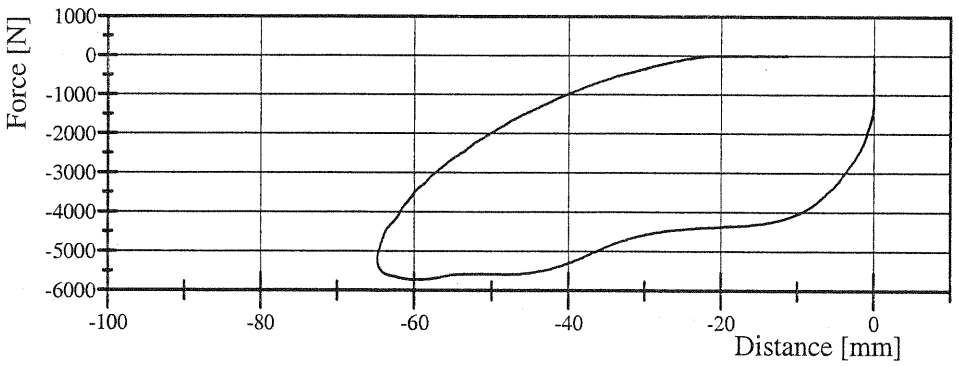
Filter Class: CFC_180
Max: 21.4 N at -1.0 ms
Min: -5,719.6 N at 18.4 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.0 mm at 1.1 ms
Min: -64.8 mm at 24.7 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 21.4 N at 0.0 mm
Min: -5,719.6 N at -59.9 mm

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

11.12.2007 08:45:09 1600

071214

Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

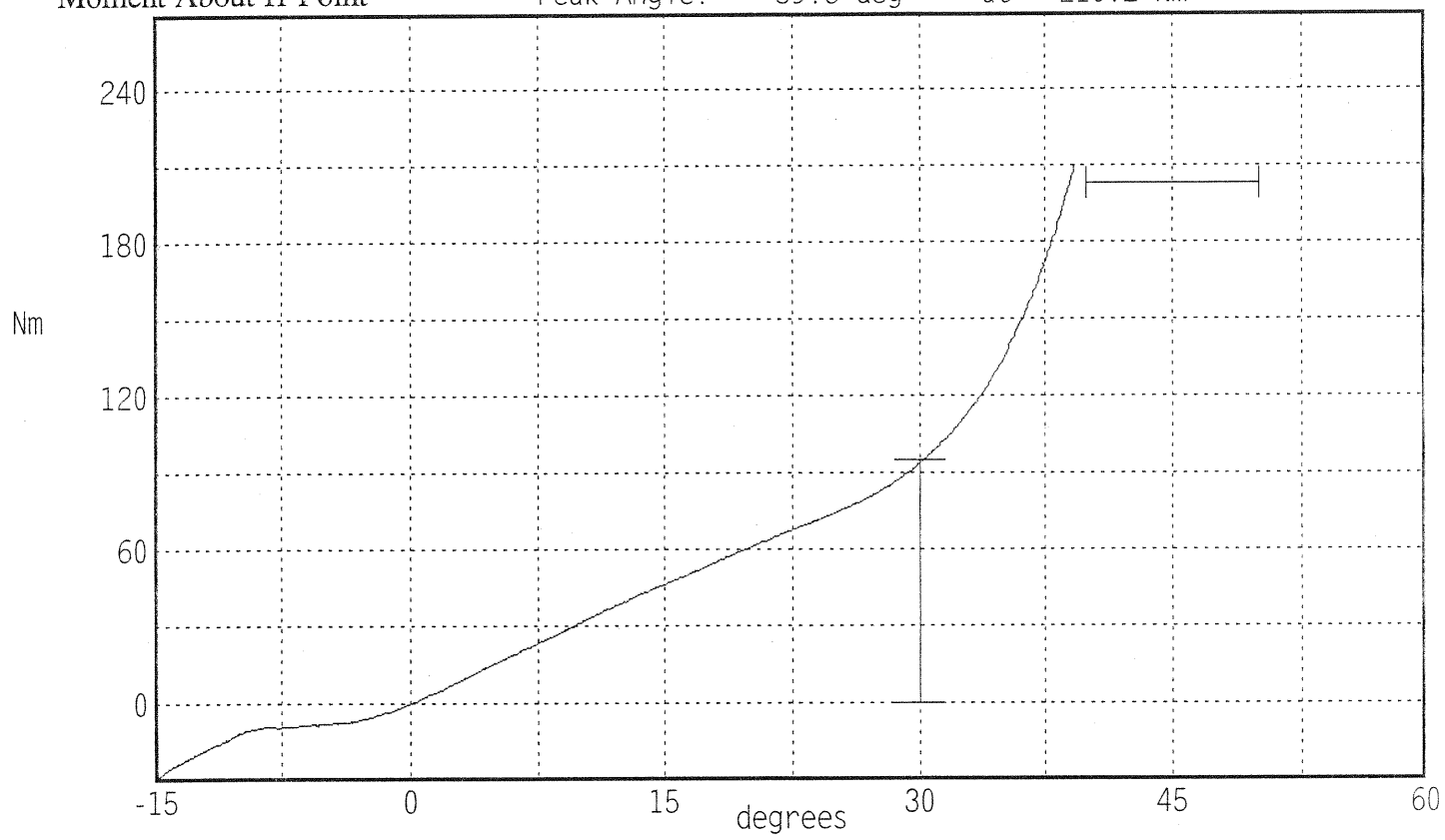
Serial Number: 290L
Test Number: 290C01
Comments:

Date: 11/08/2007
Time: 15:50

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.7	°C	Pass
Humidity	10 - 70	40	%	Pass
Moment at 30 deg	<= 94.9	94.0	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	39.0	deg	Fail
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

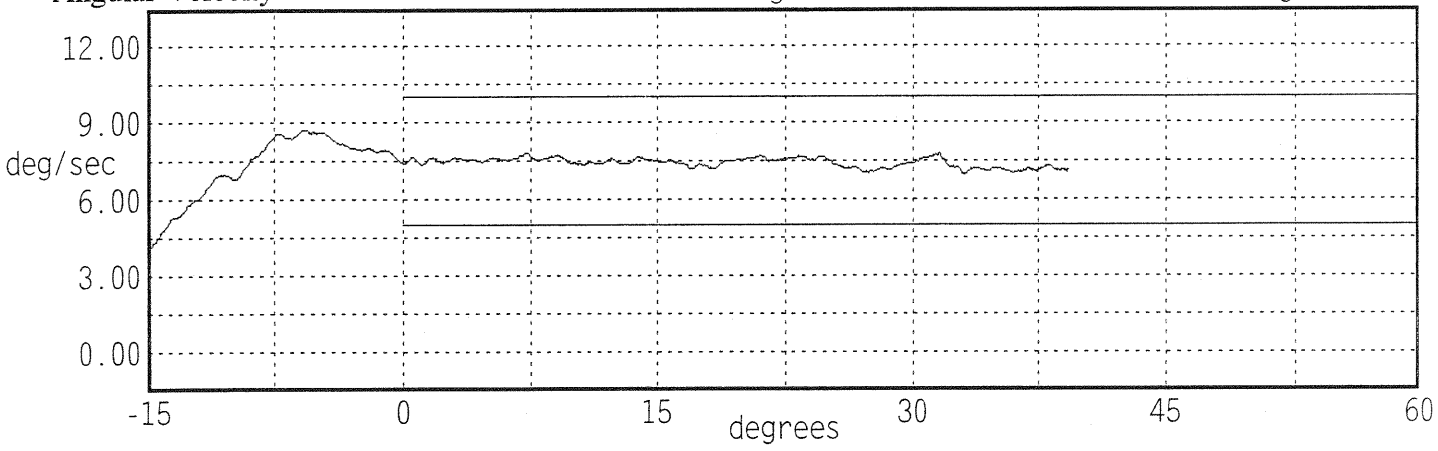
Moment About H-Point

Peak Moment: 210.2 Nm at 39.3 deg
Peak Angle: 39.3 deg at 210.2 Nm



Angular Velocity

Max: 7.8 deg/sec Min: 7.0 deg/sec



Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

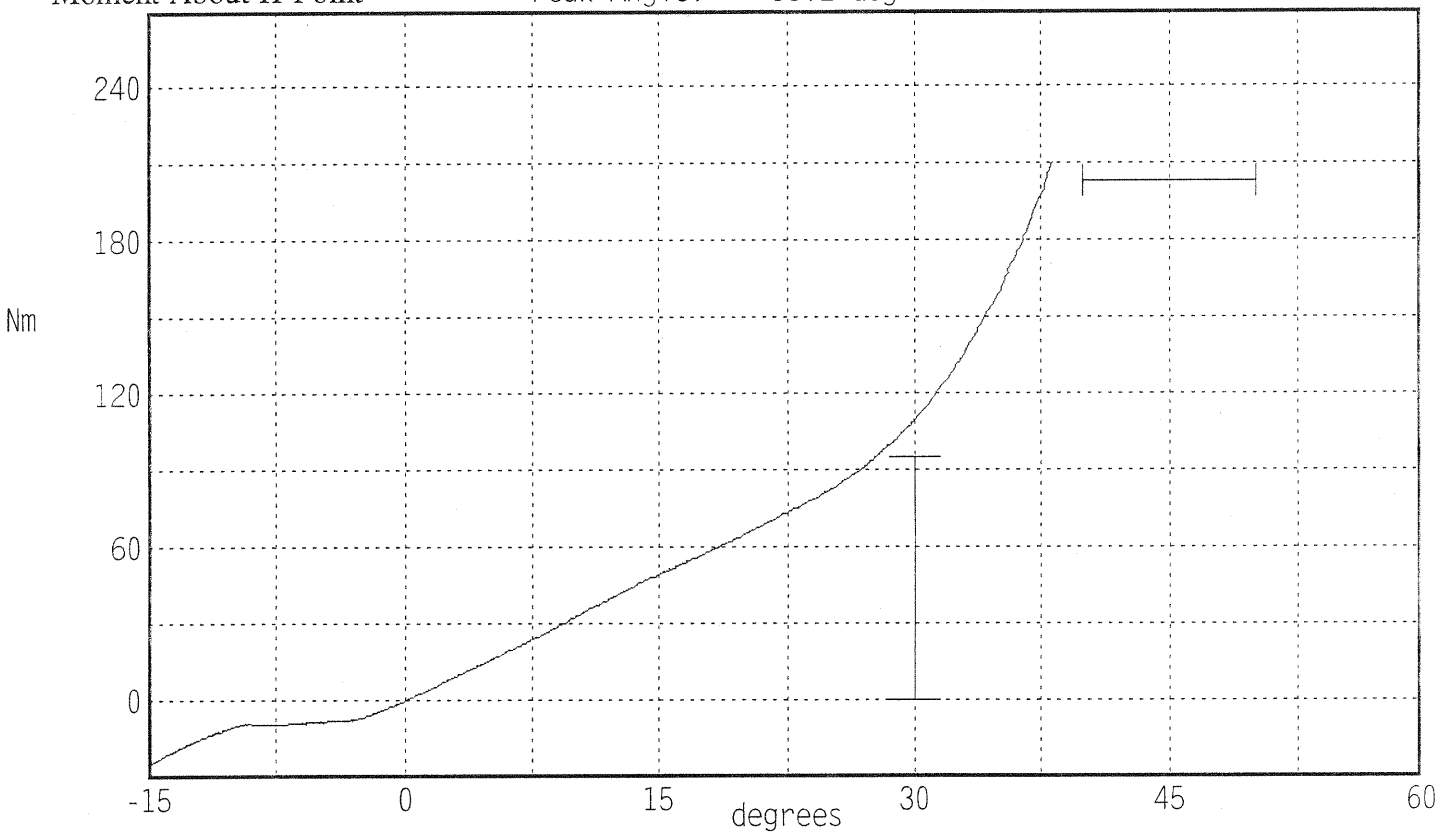
Serial Number: 290R
Test Number: 290C01
Comments:

Date: 11/09/2007
Time: 09:16

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.6	°C	Pass
Humidity	10 - 70	37	%	Pass
Moment at 30 deg	<= 94.9	109.5	Nm	Fail
Angle at 203 Nm	40.0 - 50.0	37.9	deg	Fail
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

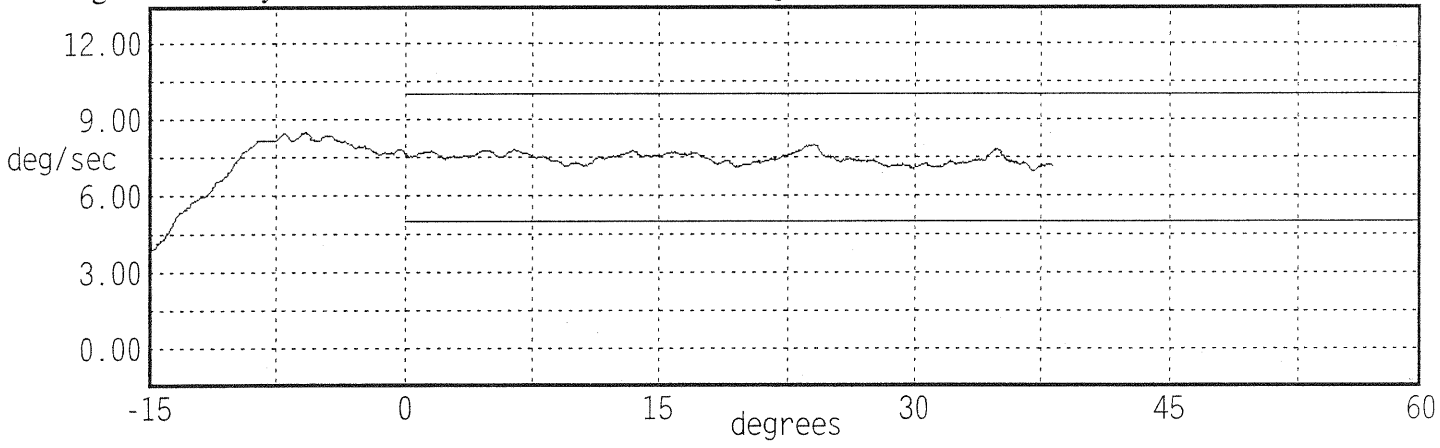
Moment About H-Point

Peak Moment: 210.0 Nm at 38.2 deg
Peak Angle: 38.2 deg at 210.0 Nm



Angular Velocity

Max: 8.0 deg/sec Min: 6.9 deg/sec



Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 290 Certification No. 1-2
Test Date: 11/7/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.123 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,643.97 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

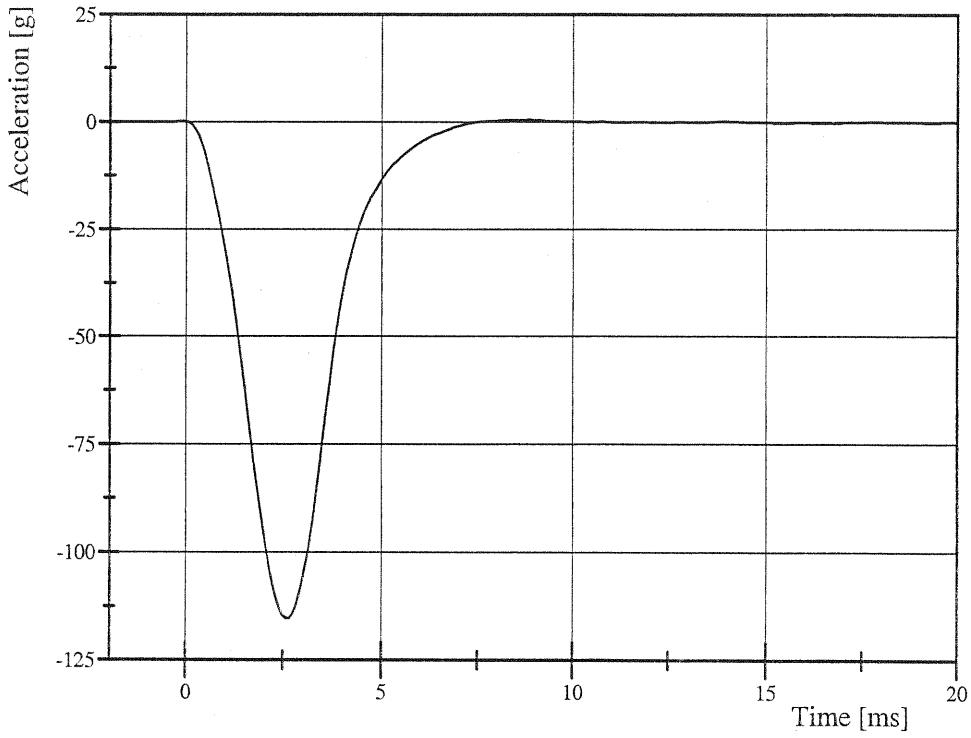
11.07.2007 08:45:37 1700

071214

Transportation Research Center Inc.

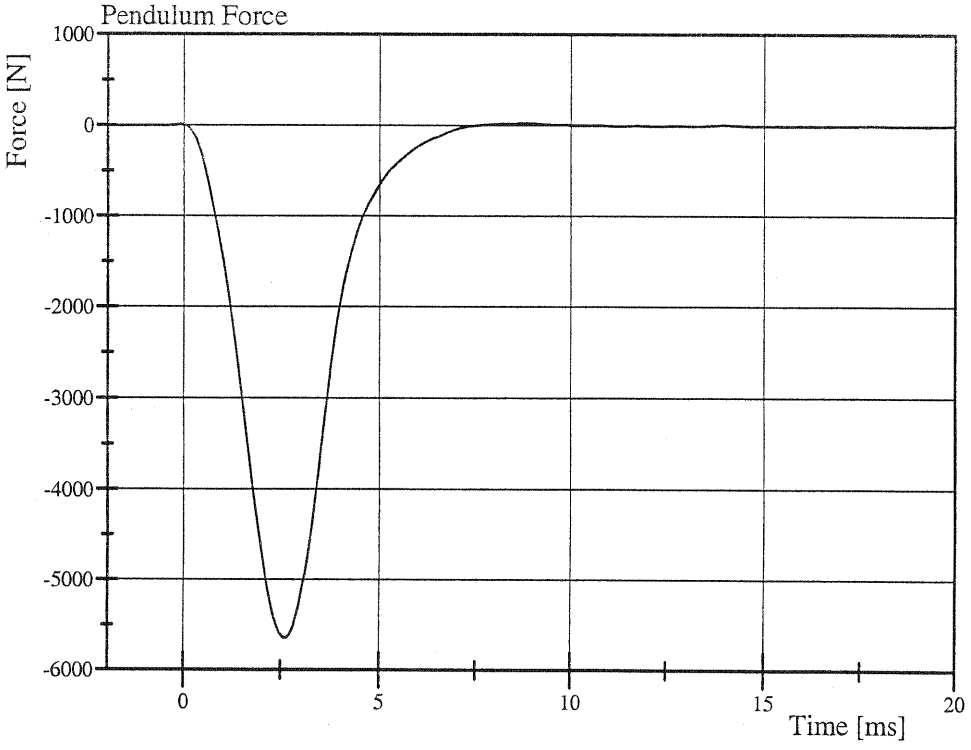
Left Knee Femur Response Test
HIII 50th Serial No. 290 Certification No. 1-2
Test Date: 11/7/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.5 g at 8.8 ms
Min: -115.3 g at 2.6 ms

Pendulum Force



Filter Class: CFC_600
Max: 24.5 N at 8.8 ms
Min: -5,644.0 N at 2.6 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.07.2007 08:45:45 1700

071214

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 290 Certification No. 1-2
Test Date: 11/7/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.121 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,296.53 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

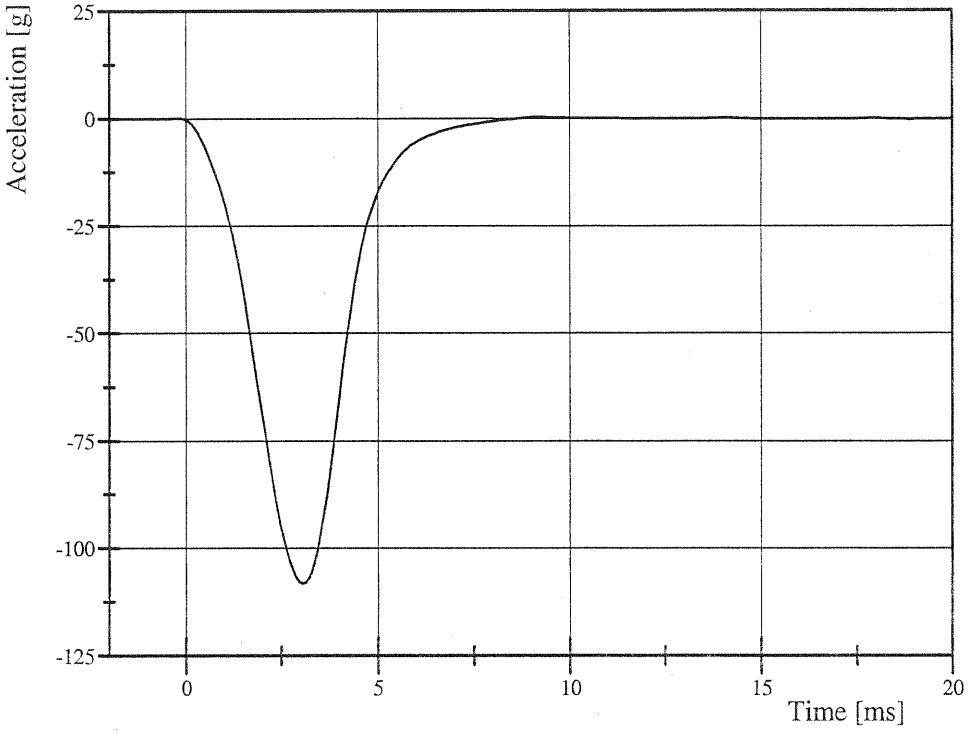
11.07.2007 08:53:29 1700

071214

Transportation Research Center Inc.

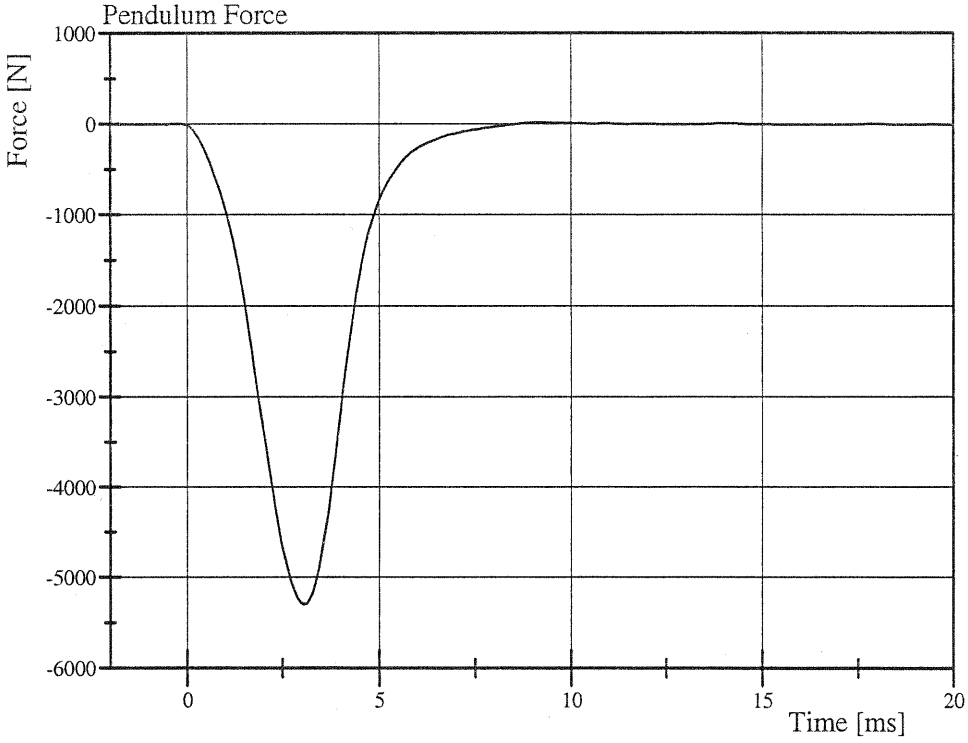
Right Knee Femur Response Test
HIII 50th Serial No. 290 Certification No. 1-2
Test Date: 11/7/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.4 g at 9.2 ms
Min: -108.2 g at 3.0 ms

Pendulum Force



Filter Class: CFC_600
Max: 18.1 N at 9.2 ms
Min: -5,296.5 N at 3.0 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.07.2007 08:53:36 1700

071214

Pre-Test Dummy Configuration and Performance Verification Data

Right Side Row 5 Left Seat Dummy S/N: 168

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 168 Calibration No. 24

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	881	Yes
B	Shoulder Pivot Height	505.5 - 520.7	513	Yes
C	H-Point Height	83.8 - 88.9	87	Yes
D	H-Point From Seatback	134.6 - 139.7	135	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	90	Yes
F	Thigh Clearance	139.7 - 154.9	150	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	295	Yes
H	Skull Cap To Backline	40.6 - 45.7	44	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	340	Yes
J	Elbow Rest Height	190.5 - 210.8	205	Yes
K	Buttock Knee Length	579.1 - 604.5	587	Yes
L	Popliteal Height	429.3 - 454.7	439	Yes
M	Knee Pivot Height	485.1 - 500.4	490	Yes
N	Buttock Popliteal Length	452.1 - 477.5	470	Yes
O	Chest Depth	213.4 - 228.6	220	Yes
P	Foot Length	251.5 - 266.7	257	Yes
V	Shoulder Breadth	421.6 - 436.9	427	Yes
W	Foot Breadth	91.4 - 106.7	102	Yes
Y	Chest Circumference	970.3 - 1000.8	986	Yes
Z	Waist Circumference	835.7 - 866.1	857	Yes
AA	Location For Chest Circumference	429.3 - 434.3	432	Yes
BB	Location For Waist Circumference	226.1 - 231.1	229	Yes

Technician

Charles W. Bell

Approved

Ron Stoner

Transportation Research Center Inc.

Front Head Drop
HIII 50th Serial No. 168 Certification No. 25-1
Test Date: 11/6/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	34 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	262.2 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-7.3 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

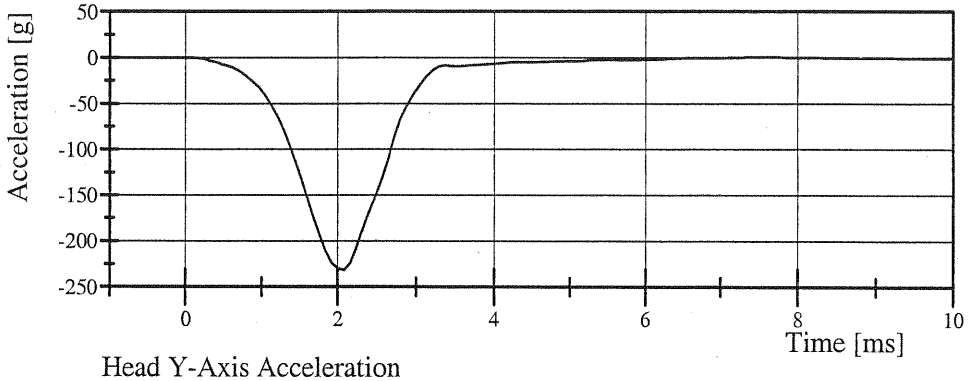
11.06.2007 09:07:12 612

071214

Transportation Research Center Inc.

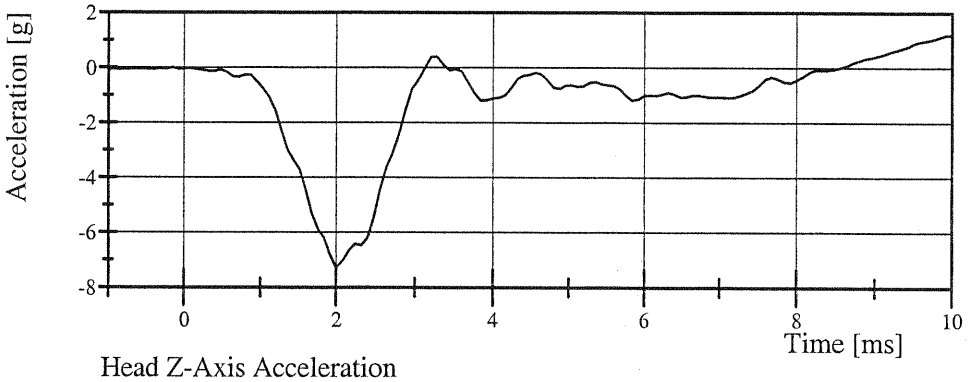
Front Head Drop
HIII 50th Serial No. 168 Certification No. 25-1
Test Date: 11/6/2007

Head X-Axis Acceleration



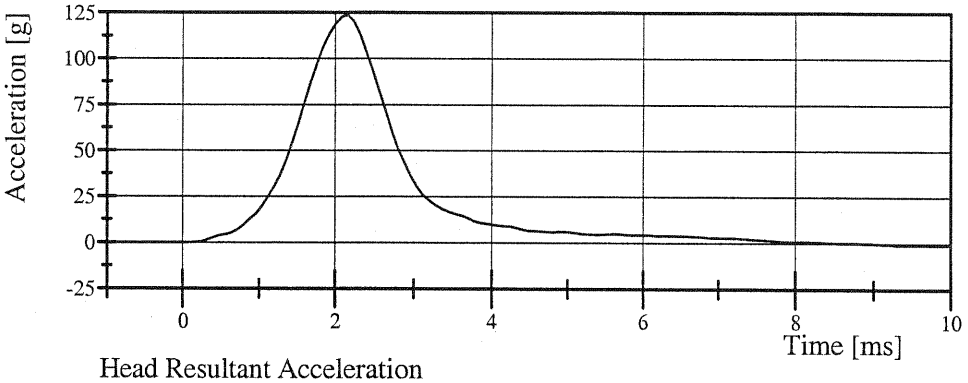
Filter Class: CFC_1000
Max: 0.6 g at 7.5 ms
Min: -231.6 g at 2.1 ms

Head Y-Axis Acceleration



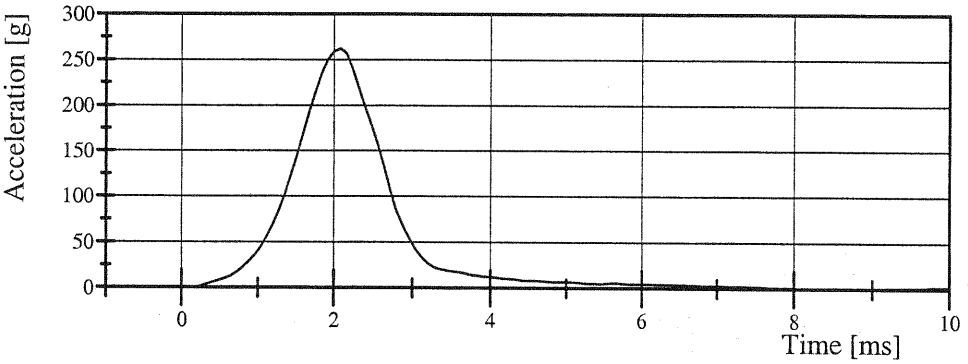
Filter Class: CFC_1000
Max: 1.2 g at 10.0 ms
Min: -7.3 g at 2.0 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 123.8 g at 2.2 ms
Min: -0.8 g at 10.0 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 262.2 g at 2.1 ms
Min: 0.1 g at -0.7 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.06.2007 09:07:19 612

071214

Transportation Research Center Inc.

Neck Flexion
HIII 50th Serial No. 168 Certification No. 25-1
Test Date: 11/6/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.948 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	41.4 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-23.48 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-19.34 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-14.83 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-14.83 g	Yes
Total Head D-Plane Rotation			
Peak	(-64) - (-78) °	-69.4 °	Yes
Time of Peak	57 - 64 ms	59.1 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	116.0 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	88 - 108 N·m	99.4 N·m	Yes
Time of Peak	47 - 58 ms	53.7 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	102.1 ms	Yes

Test meets specifications.

Comments:

Technician

Charles W. Hall

Approved

Ron Stoner

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.06.2007 11:03:15 2983

071214

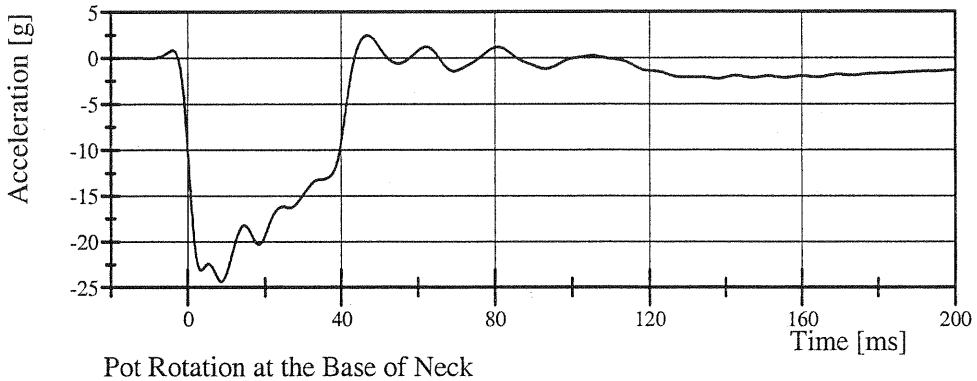
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 168 Certification No. 25-1

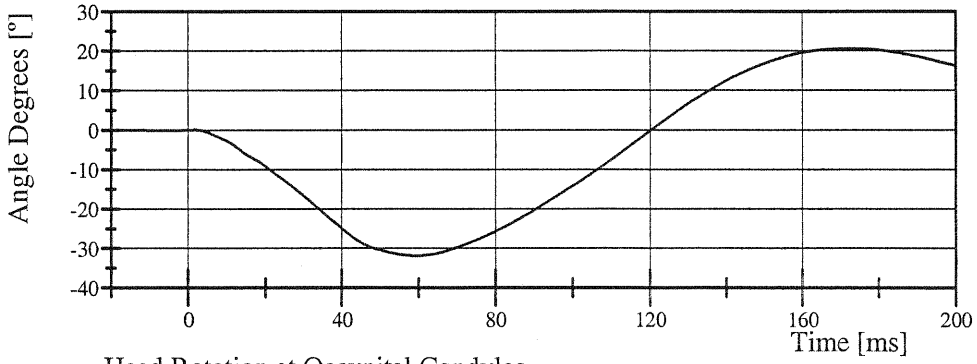
Test Date: 11/6/2007

Pendulum Acceleration



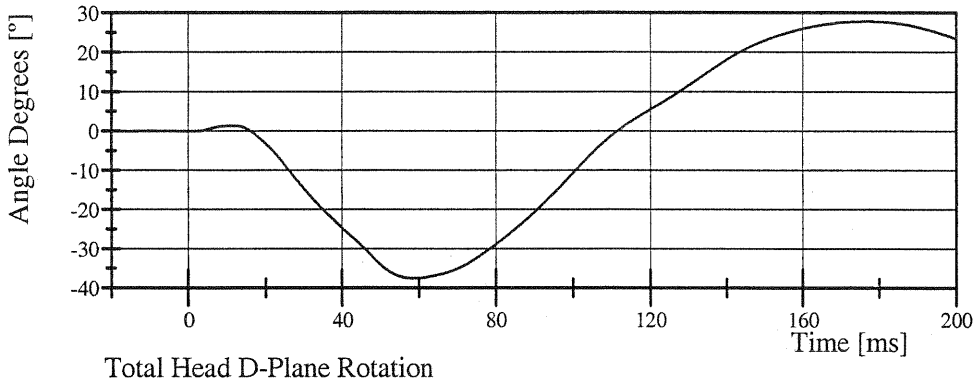
Filter Class: CFC_60
Max: 2.5 g at 46.9 ms
Min: -24.4 g at 8.6 ms

Pot Rotation at the Base of Neck



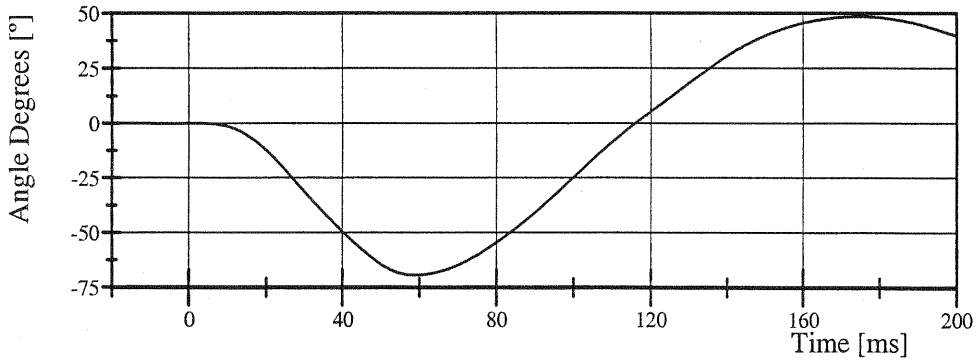
Filter Class: CFC_60
Max: 20.7 ° at 173.4 ms
Min: -31.8 ° at 59.6 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 27.8 ° at 177.1 ms
Min: -37.5 ° at 58.8 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 48.5 ° at 174.7 ms
Min: -69.4 ° at 59.1 ms

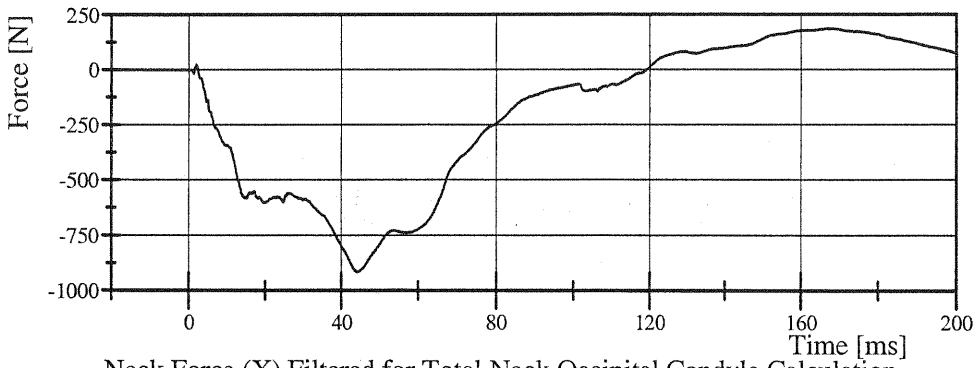
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 168 Certification No. 25-1

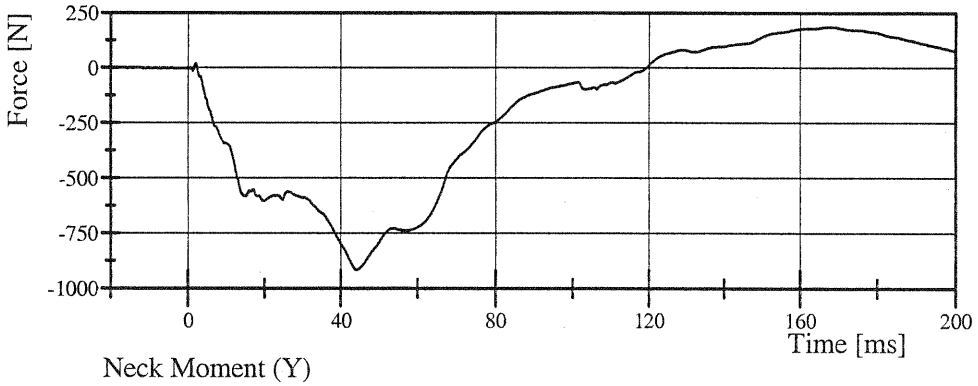
Test Date: 11/6/2007

Neck Force (X)



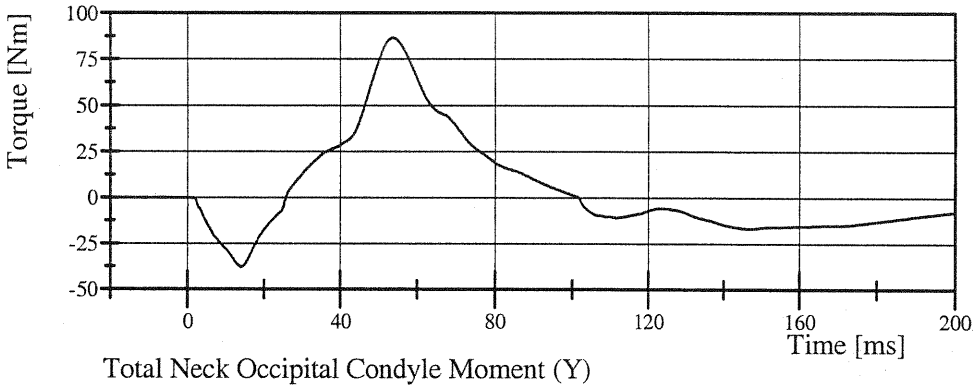
Filter Class: CFC_1000
Max: 187.9 N at 167.5 ms
Min: -915.4 N at 43.9 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



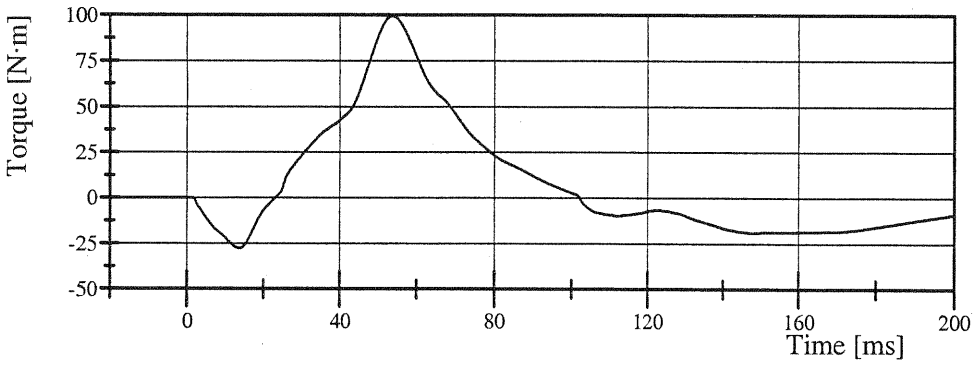
Filter Class: CFC_600
Max: 187.5 N at 167.4 ms
Min: -915.0 N at 44.1 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 86.6 Nm at 53.7 ms
Min: -37.7 Nm at 14.1 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 99.4 N·m at 53.7 ms
Min: -27.7 N·m at 13.8 ms

Transportation Research Center Inc.

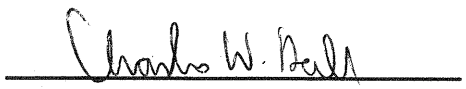
Neck Extension
HIII 50th Serial No. 168 Certification No. 25-2
Test Date: 11/6/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-6.016 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	44.7 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	18.71 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	15.47 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	13.19 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	13.19 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	94.3 °	Yes
Time of Peak	72 - 82 ms	78.0 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	153.9 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-53) - (-80) N·m	-62.8 N·m	Yes
Time of Peak	65 - 79 ms	70.2 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	143.8 ms	Yes

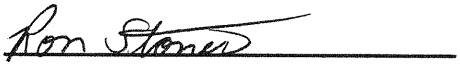
Test meets specifications.

Comments:

Technician



Approved



Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.06.2007 12:58:02 3057

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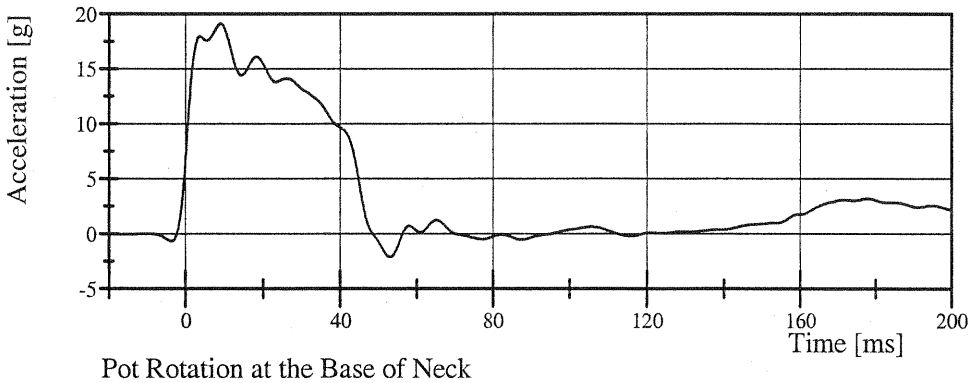
Transportation Research Center Inc.

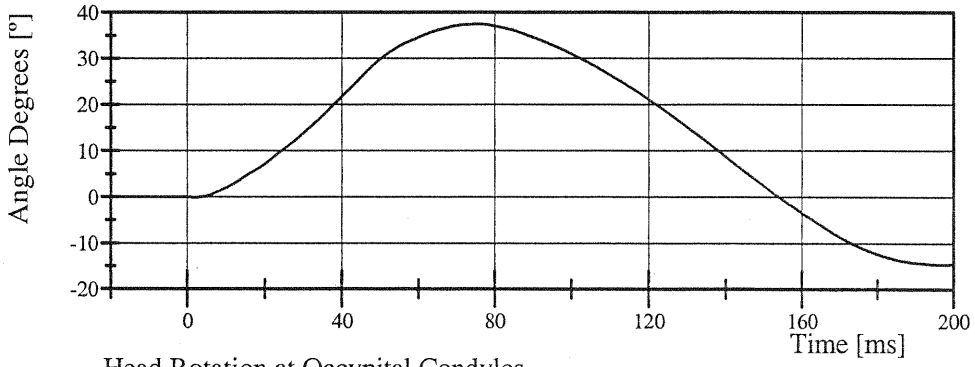
Neck Extension
HIII 50th Serial No. 168 Certification No. 25-2
Test Date: 11/6/2007

Pendulum Acceleration



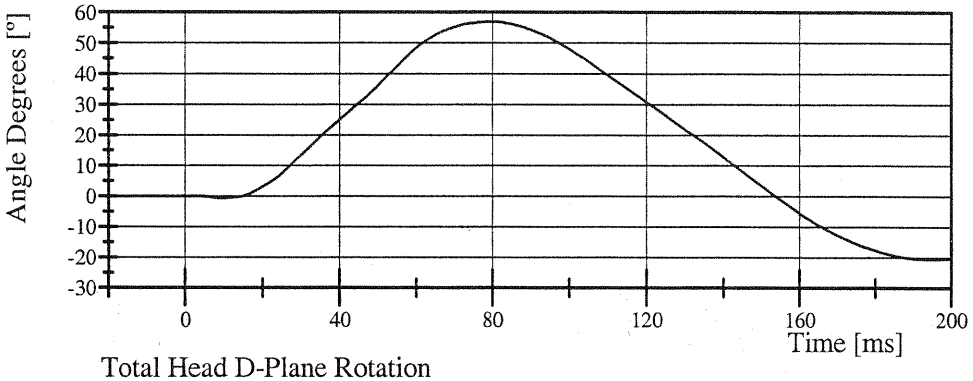
Filter Class: CFC_60
Max: 19.1 g at 9.0 ms
Min: -2.1 g at 53.0 ms

Pot Rotation at the Base of Neck



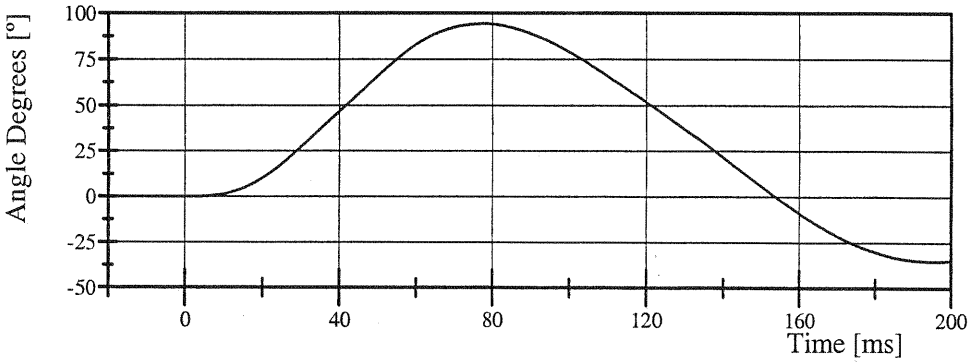
Filter Class: CFC_60
Max: 37.5 ° at 76.0 ms
Min: -14.6 ° at 197.1 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 57.0 ° at 80.1 ms
Min: -20.6 ° at 194.9 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 94.3 ° at 78.0 ms
Min: -35.2 ° at 195.9 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.06.2007 12:58:18 3057

071214

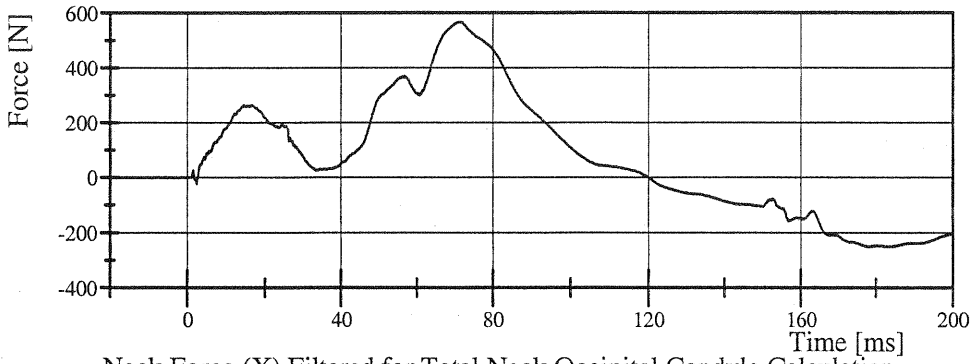
Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 168 Certification No. 25-2

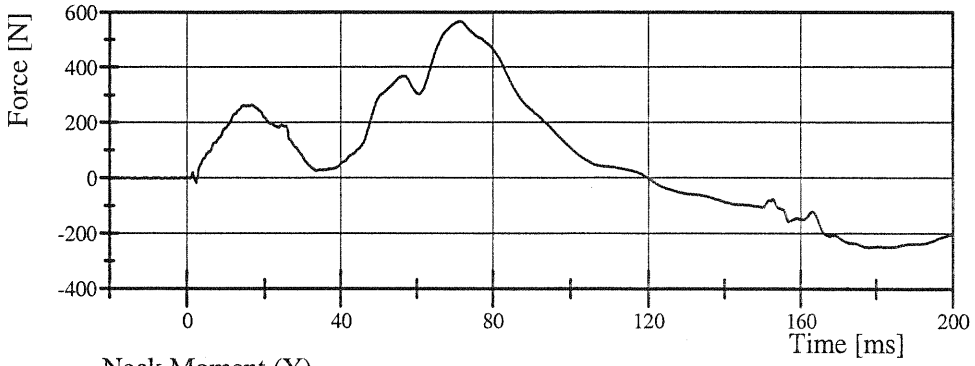
Test Date: 11/6/2007

Neck Force (X)



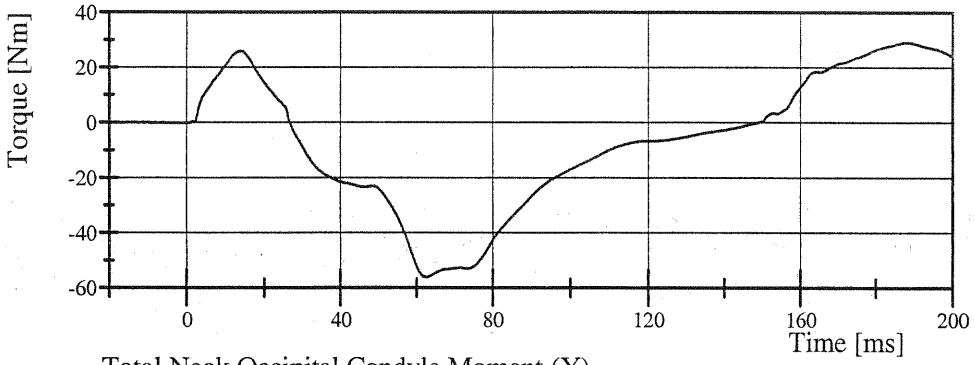
Filter Class: CFC_1000
Max: 567.0 N at 71.3 ms
Min: -250.6 N at 178.0 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



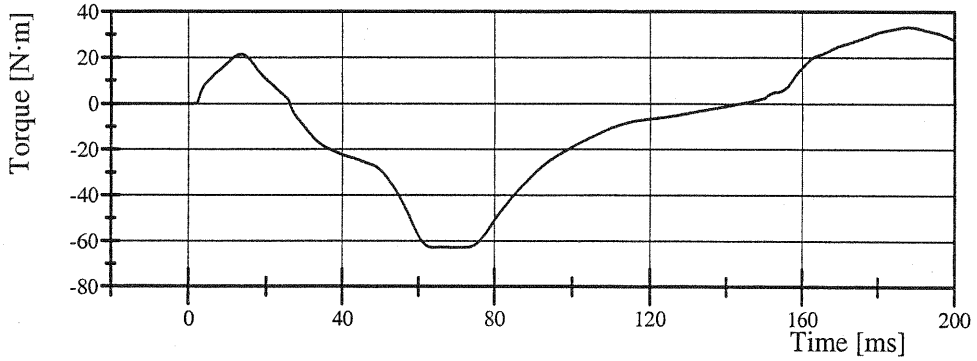
Filter Class: CFC_600
Max: 567.0 N at 71.4 ms
Min: -250.2 N at 178.1 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 29.1 Nm at 188.3 ms
Min: -56.1 Nm at 62.6 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 33.3 N·m at 188.2 ms
Min: -62.8 N·m at 70.2 ms

Transportation Research Center Inc.

Front Thorax
HIII 50th Serial No. 168 Certification No. 25-1
Test Date: 11/8/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.631 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,616.9 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-68.73 mm	Yes
Internal Hysteresis	65 - 85 %	71.9 %	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

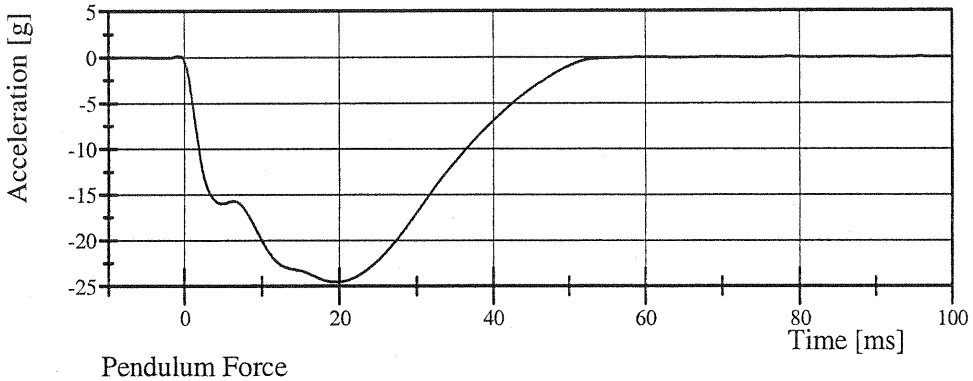
11.08.2007 12:00:15 417

071214

Transportation Research Center Inc.

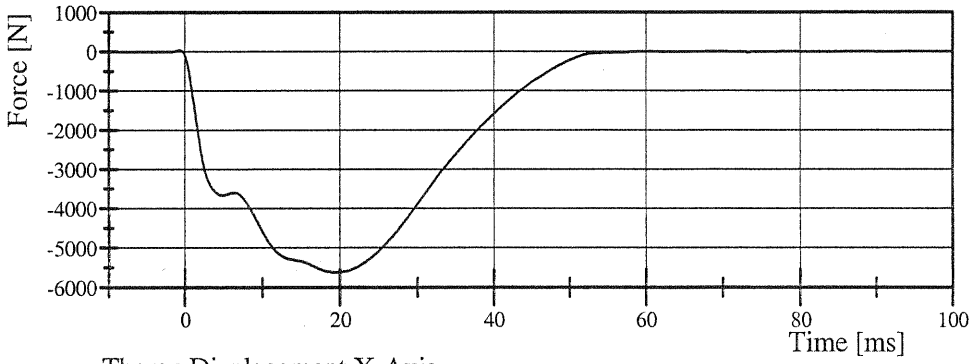
Front Thorax
HIII 50th Serial No. 168 Certification No. 25-1
Test Date: 11/8/2007

Pendulum Acceleration



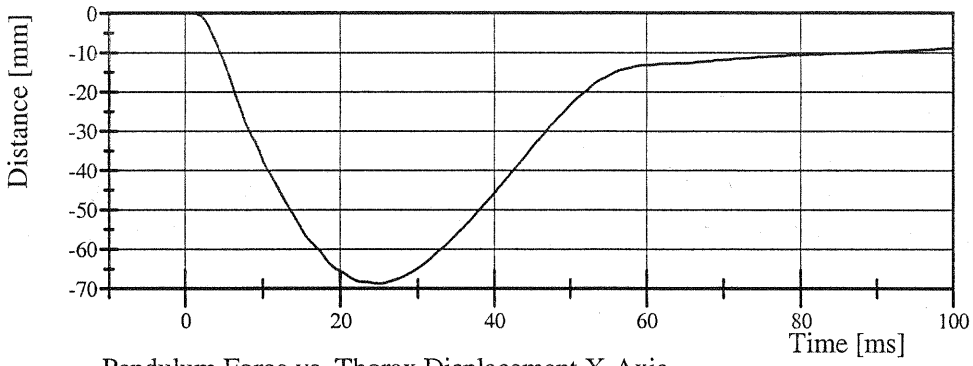
Filter Class: CFC_180
Max: 0.2 g at -0.7 ms
Min: -24.5 g at 19.6 ms

Pendulum Force



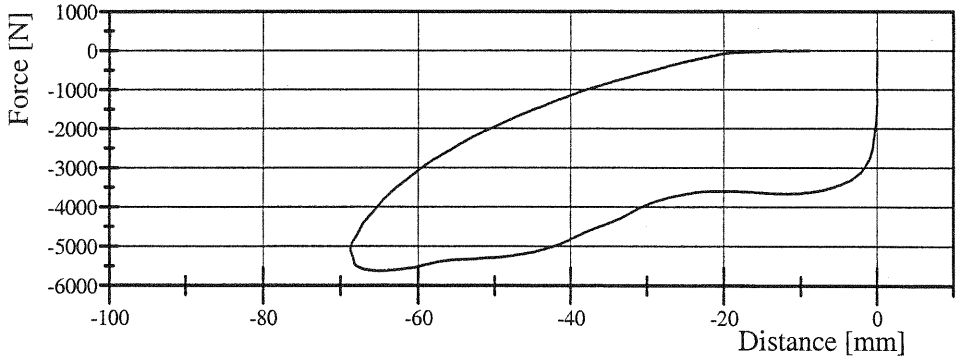
Filter Class: CFC_180
Max: 35.2 N at -0.7 ms
Min: -5,616.9 N at 19.6 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.0 mm at -5.0 ms
Min: -68.7 mm at 25.0 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 35.2 N at -0.0 mm
Min: -5,616.9 N at -65.2 mm

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

11.08.2007 12:00:24 417

071214

Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

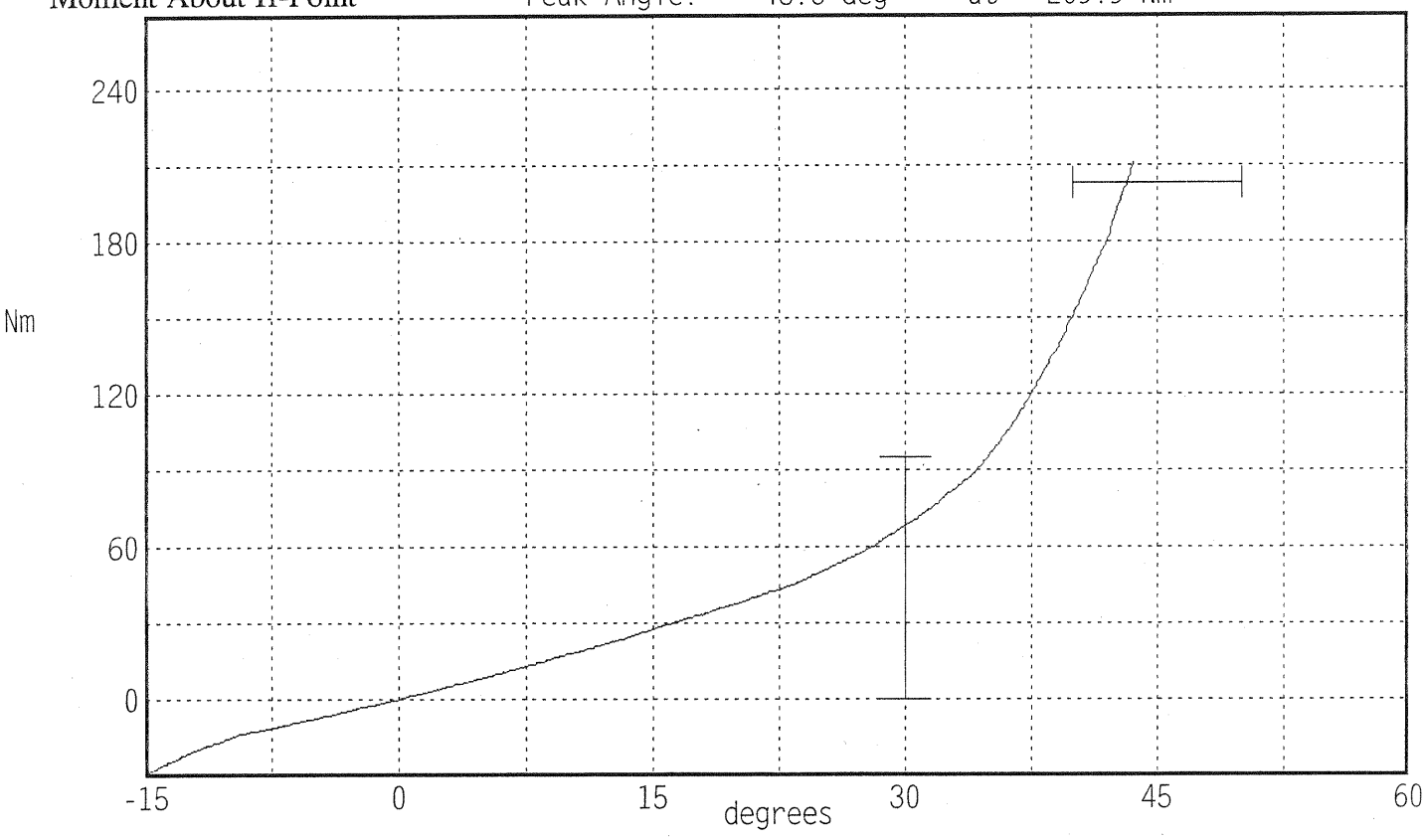
Serial Number: 168L
Test Number: 168C24
Comments:

Date: 09/20/2007
Time: 14:40

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.5	°C	Pass
Humidity	10 - 70	57	%	Pass
Moment at 30 deg	<= 94.9	68.7	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	43.2	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

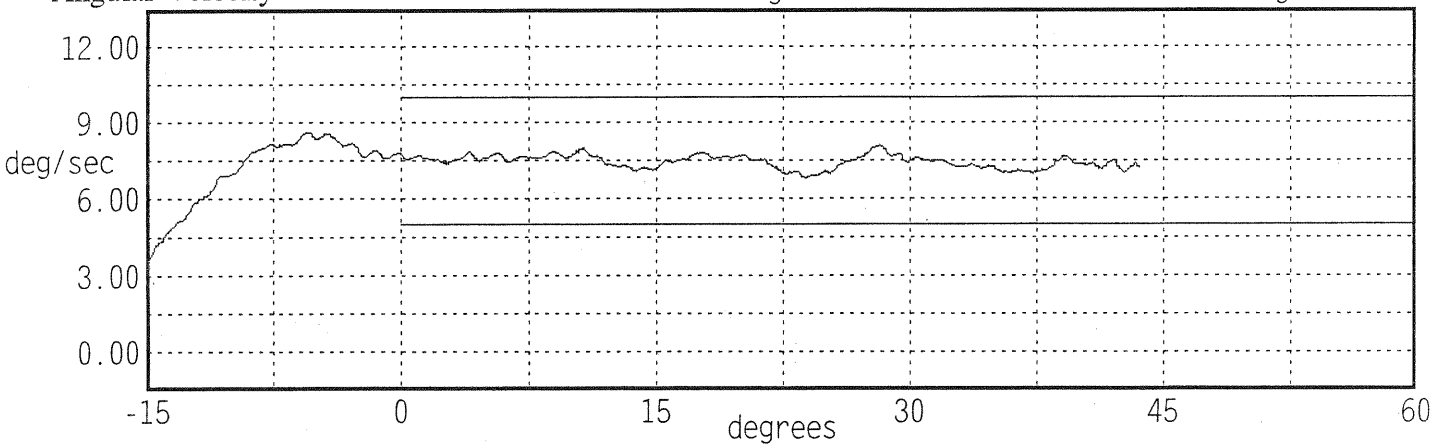
Moment About H-Point

Peak Moment: 211.2 Nm at 43.6 deg
Peak Angle: 43.6 deg at 209.9 Nm



Angular Velocity

Max: 8.1 deg/sec Min: 6.8 deg/sec



Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

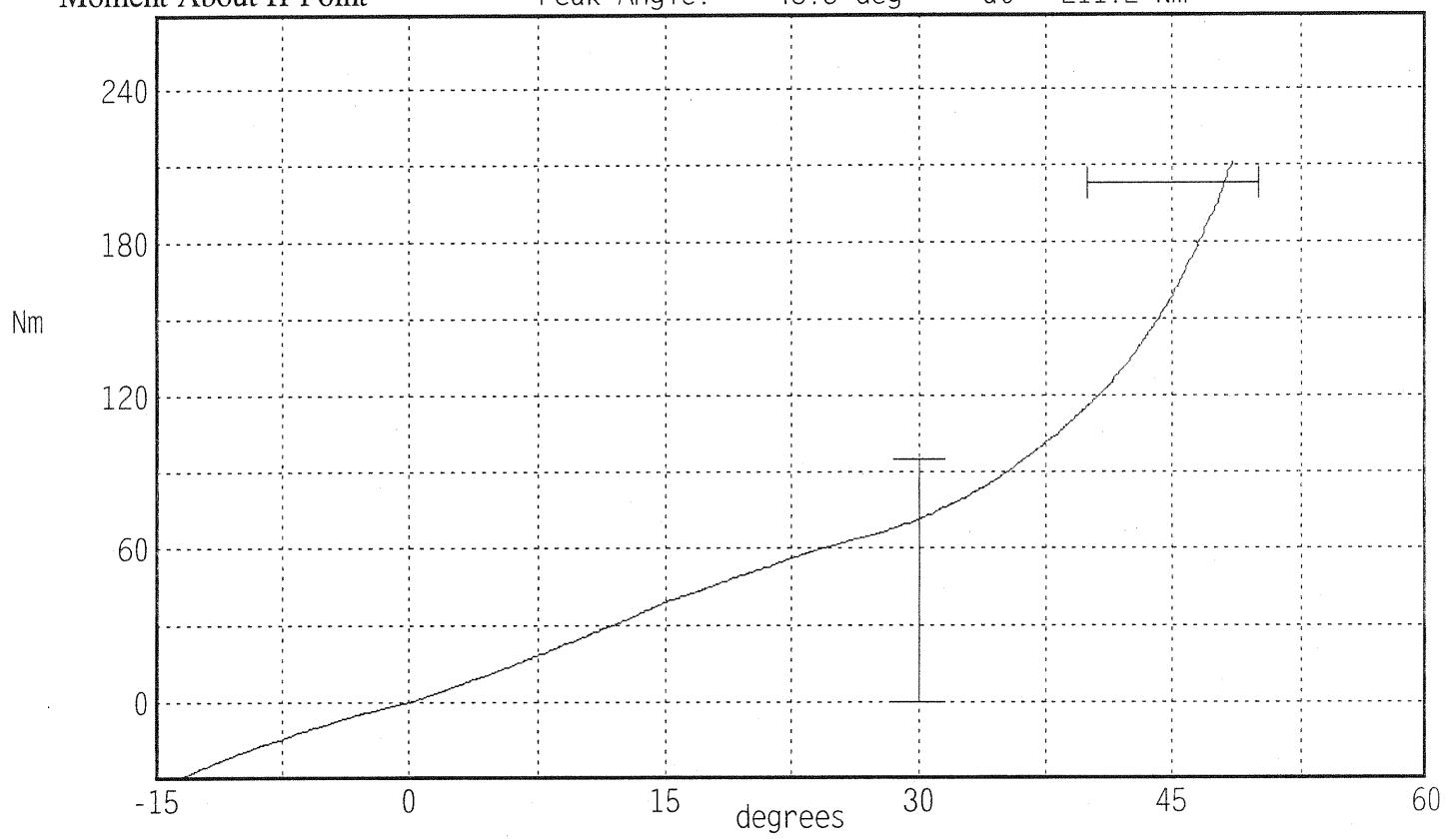
Serial Number: 168R
Test Number: 168C24
Comments:

Date: 09/20/2007
Time: 14:46

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	20.9	°C	Pass
Humidity	10 - 70	54	%	Pass
Moment at 30 deg	<= 94.9	71.1	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	48.1	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

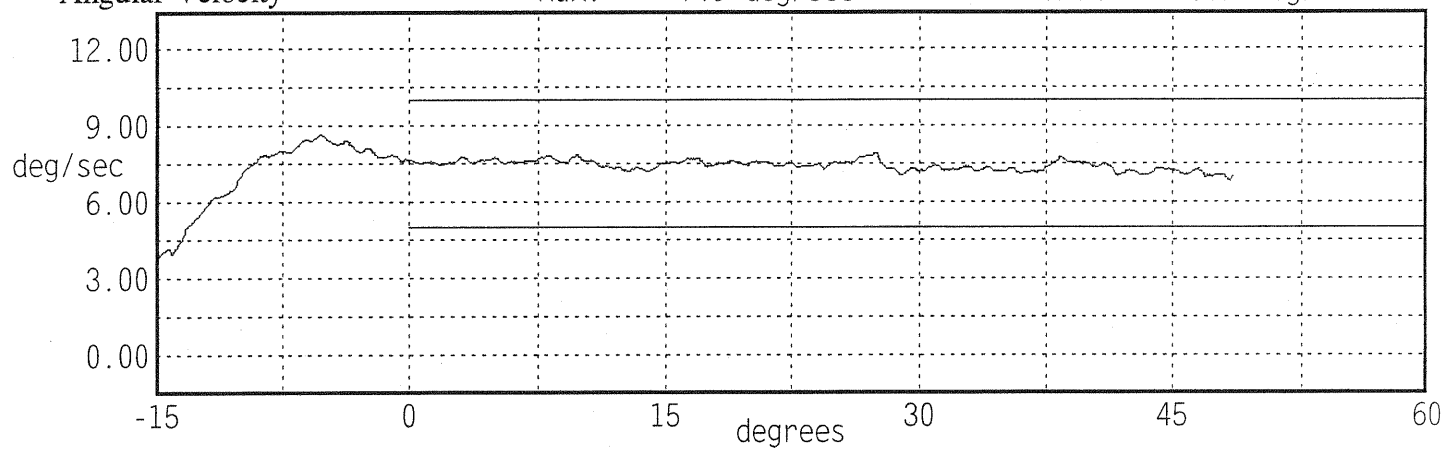
Moment About H-Point

Peak Moment: 211.2 Nm at 48.5 deg
Peak Angle: 48.5 deg at 211.2 Nm



Angular Velocity

Max: 7.9 deg/sec Min: 6.9 deg/sec



Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 168 Certification No. 24-3
Test Date: 9/20/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	58 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.087 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,565.33 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

09.20.2007 14:06:40 1722

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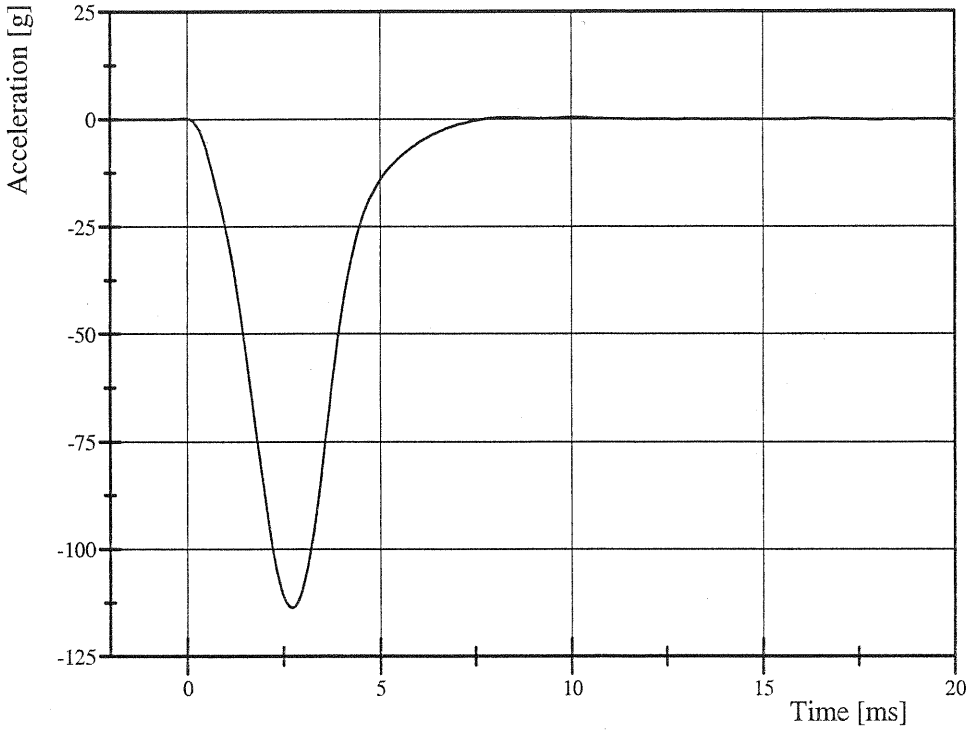
Transportation Research Center Inc.

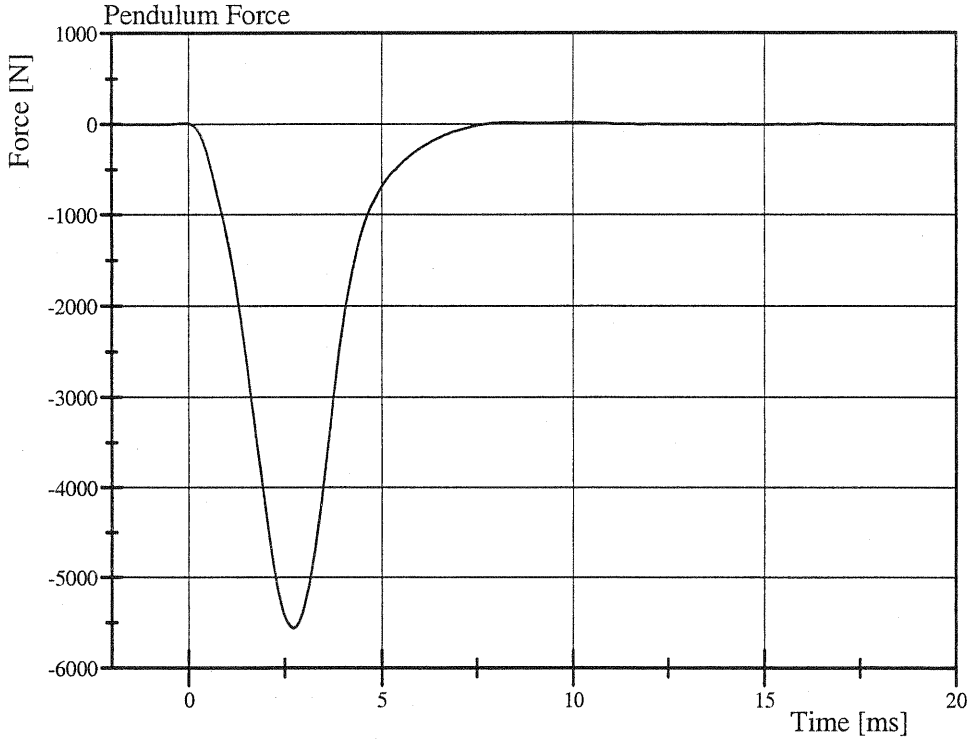
Left Knee Femur Response Test
HIII 50th Serial No. 168 Certification No. 24-3
Test Date: 9/20/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.4 g at 10.1 ms
Min: -113.7 g at 2.7 ms

Pendulum Force



Filter Class: CFC_600
Max: 20.6 N at 10.1 ms
Min: -5,565.3 N at 2.7 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

09.20.2007 14:06:46 1722

071214

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 168 Certification No. 24-1
Test Date: 9/20/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	57 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.119 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,515.61 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

09.20.2007 13:01:23 1706

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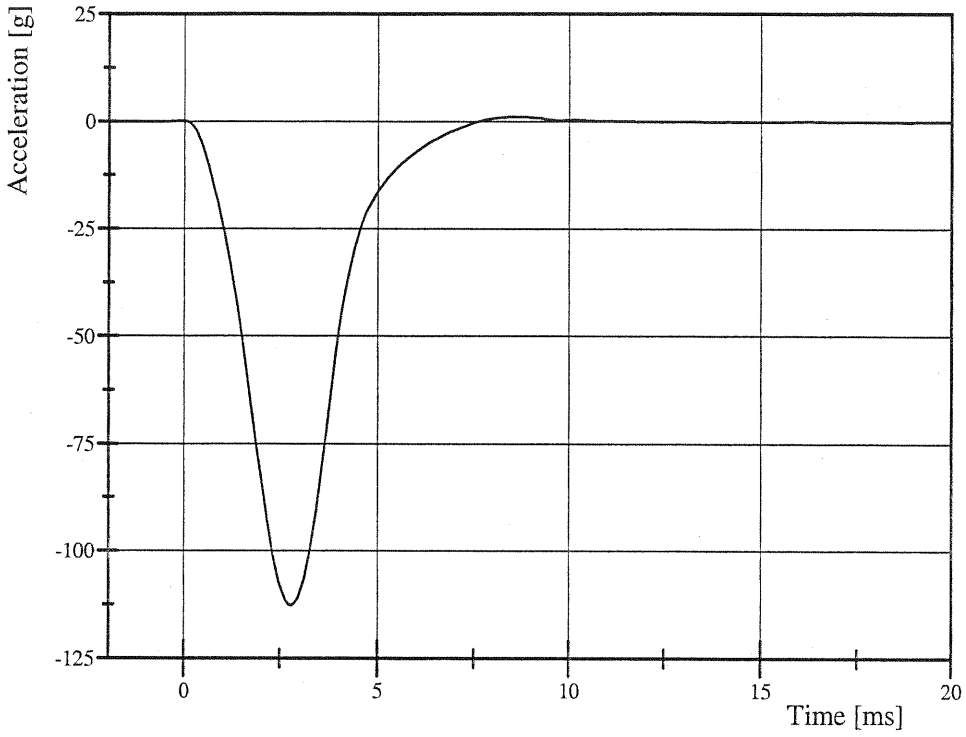
Transportation Research Center Inc.

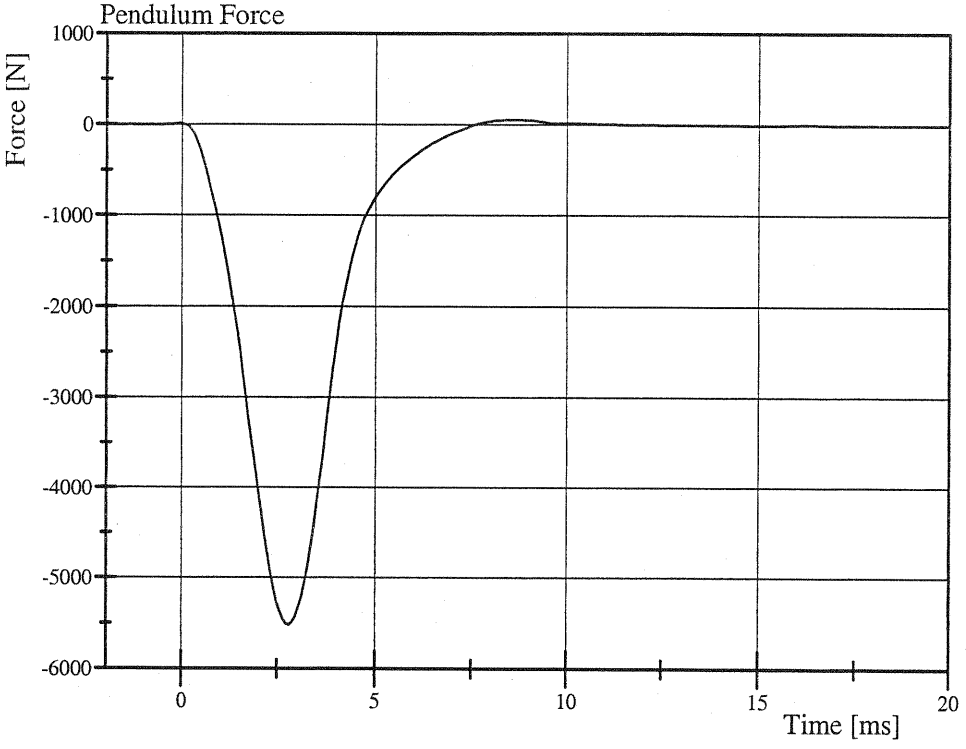
Right Knee Femur Response Test
HIII 50th Serial No. 168 Certification No. 24-1
Test Date: 9/20/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 1.1 g at 8.6 ms
Min: -112.7 g at 2.8 ms

Pendulum Force



Filter Class: CFC_600
Max: 54.6 N at 8.6 ms
Min: -5,515.6 N at 2.8 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

09.20.2007 13:01:31 1706

071214

Pre-Test Dummy Configuration and Performance Verification Data

Right Side Row 5 Right Seat Dummy S/N: 169

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 169 Calibration No. 24

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	882	Yes
B	Shoulder Pivot Height	505.5 - 520.7	510	Yes
C	H-Point Height	83.8 - 88.9	85	Yes
D	H-Point From Seatback	134.6 - 139.7	138	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	91	Yes
F	Thigh Clearance	139.7 - 154.9	153	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	292	Yes
H	Skull Cap To Backline	40.6 - 45.7	44	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	340	Yes
J	Elbow Rest Height	190.5 - 210.8	203	Yes
K	Buttock Knee Length	579.1 - 604.5	600	Yes
L	Popliteal Height	429.3 - 454.7	439	Yes
M	Knee Pivot Height	485.1 - 500.4	495	Yes
N	Buttock Popliteal Length	452.1 - 477.5	475	Yes
O	Chest Depth	213.4 - 228.6	214	Yes
P	Foot Length	251.5 - 266.7	262	Yes
V	Shoulder Breadth	421.6 - 436.9	427	Yes
W	Foot Breadth	91.4 - 106.7	98	Yes
Y	Chest Circumference	970.3 - 1000.8	995	Yes
Z	Waist Circumference	835.7 - 866.1	860	Yes
AA	Location For Chest Circumference	429.3 - 434.3	432	Yes
BB	Location For Waist Circumference	226.1 - 231.1	228	Yes

Technician

Charles W. Bell

Approved

Ron Stowers

Transportation Research Center Inc.

Front Head Drop
HIII 50th Serial No. 169 Certification No. 25-1
Test Date: 11/6/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	266.5 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	4.5 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

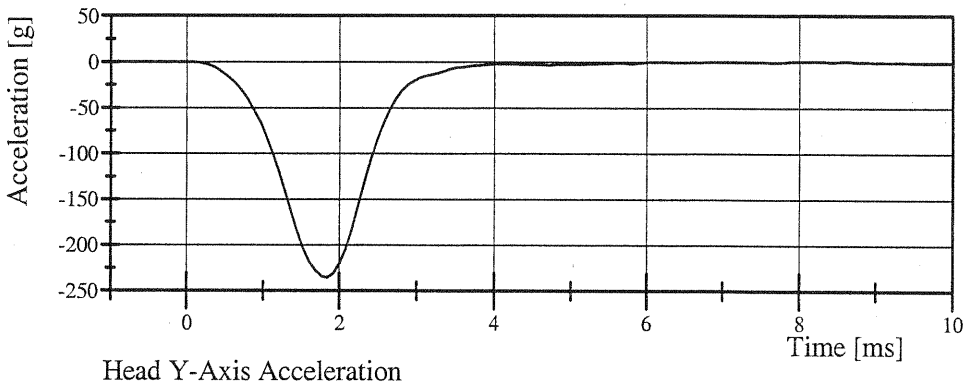
11.06.2007 15:10:19 614

071214

Transportation Research Center Inc.

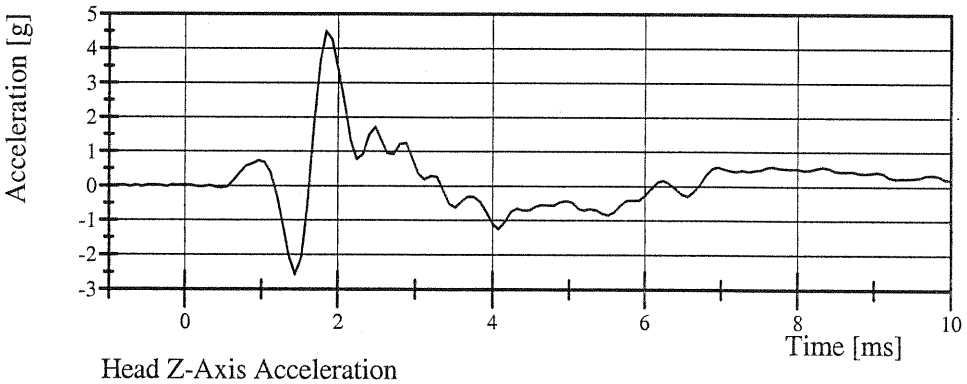
Front Head Drop
HIII 50th Serial No. 169 Certification No. 25-1
Test Date: 11/6/2007

Head X-Axis Acceleration



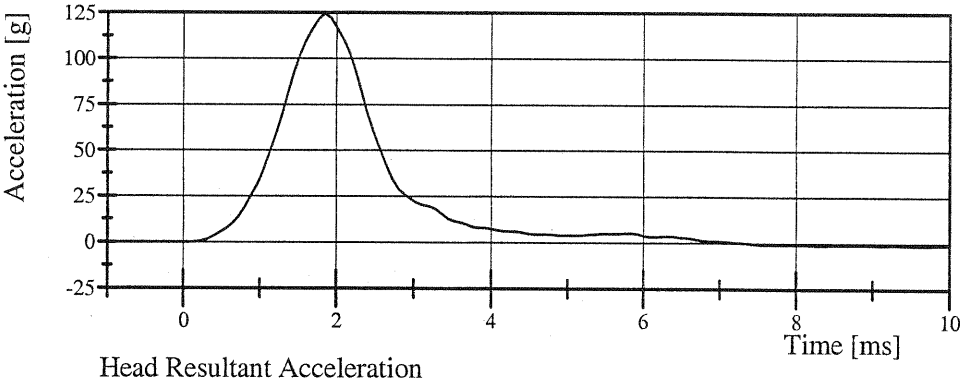
Filter Class: CFC_1000
Max: 0.6 g at 8.0 ms
Min: -235.7 g at 1.8 ms

Head Y-Axis Acceleration



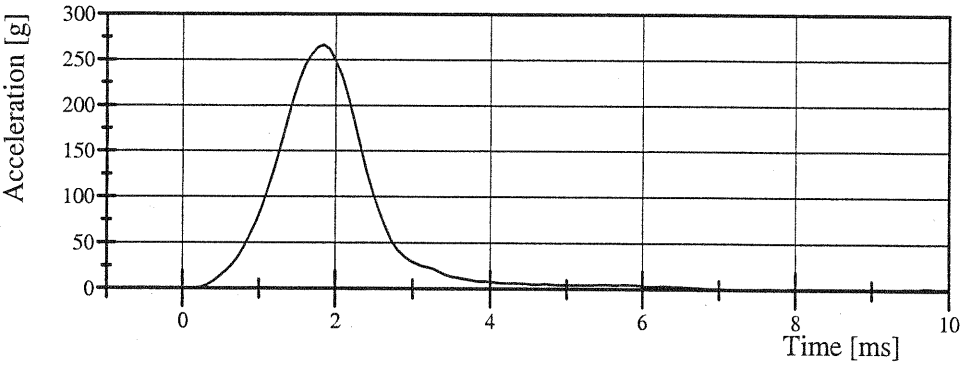
Filter Class: CFC_1000
Max: 4.5 g at 1.8 ms
Min: -2.6 g at 1.4 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 124.4 g at 1.8 ms
Min: -1.3 g at 9.7 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 266.5 g at 1.8 ms
Min: 0.0 g at -0.1 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.06.2007 15:10:27 614

071214

Transportation Research Center Inc.

Neck Flexion
HIII 50th Serial No. 169 Certification No. 25-5
Test Date: 11/7/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.941 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	39.7 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-24.38 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-19.76 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-14.78 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-14.78 g	Yes
Total Head D-Plane Rotation			
Peak	(-64) - (-78) °	-69.8 °	Yes
Time of Peak	57 - 64 ms	59.4 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	117.1 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	88 - 108 N·m	101.3 N·m	Yes
Time of Peak	47 - 58 ms	52.1 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	98.5 ms	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.07.2007 12:51:16 2982

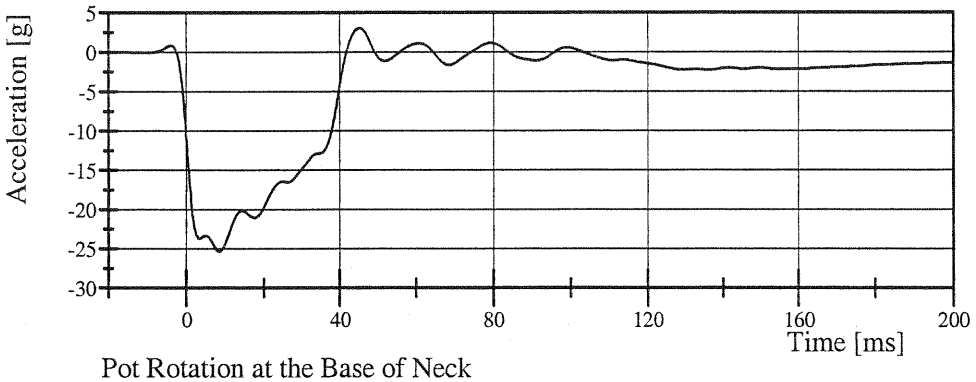
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 169 Certification No. 25-5

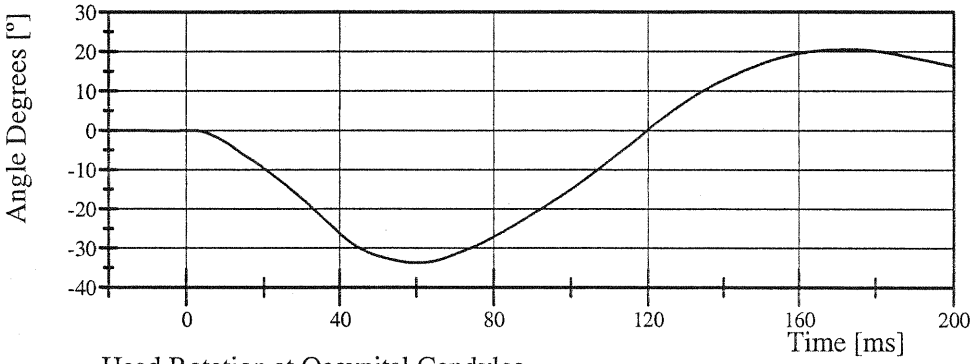
Test Date: 11/7/2007

Pendulum Acceleration



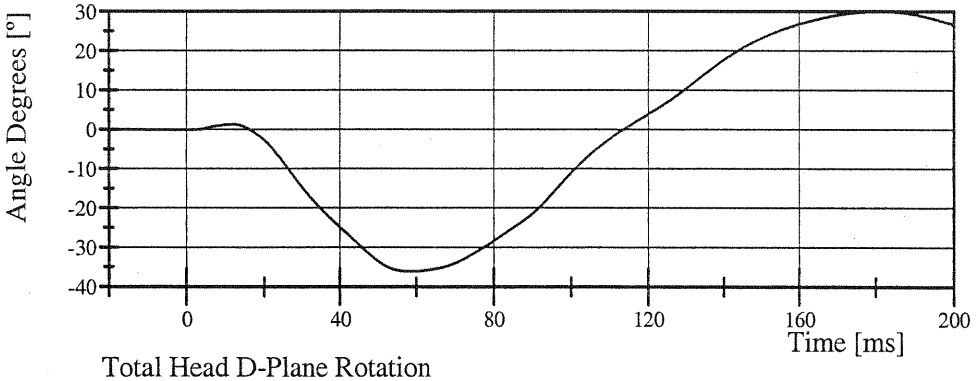
Filter Class: CFC_60
Max: 3.1 g at 45.2 ms
Min: -25.3 g at 8.5 ms

Pot Rotation at the Base of Neck



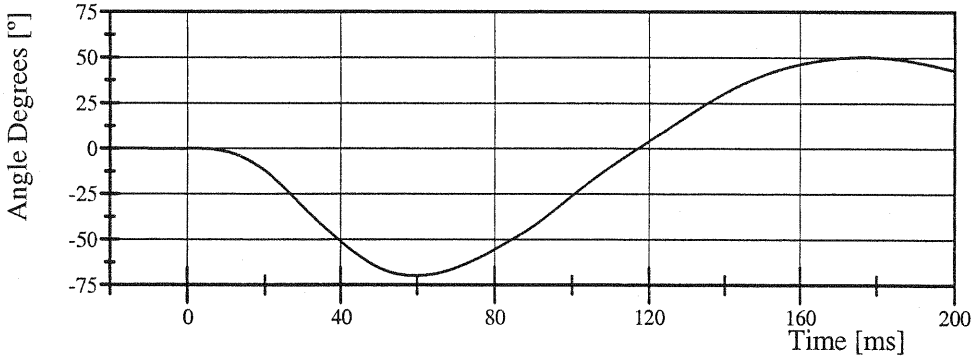
Filter Class: CFC_60
Max: 20.6 ° at 173.4 ms
Min: -33.7 ° at 60.2 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 30.0 ° at 180.8 ms
Min: -36.1 ° at 58.7 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 50.4 ° at 176.6 ms
Min: -69.8 ° at 59.4 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.07.2007 12:51:25 2982

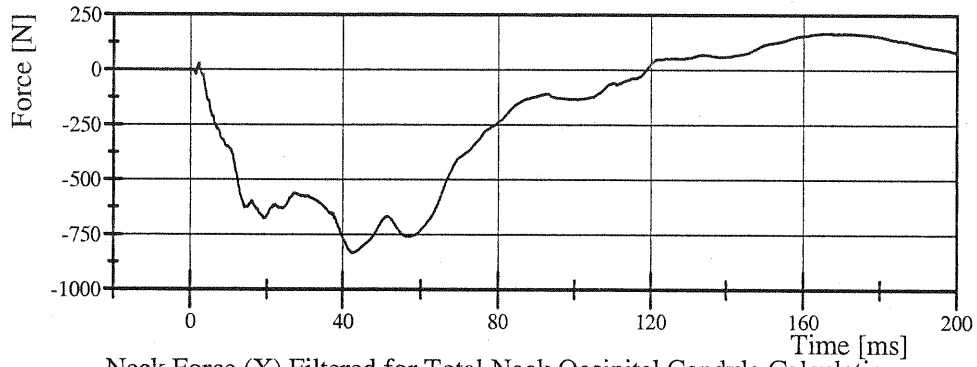
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 169 Certification No. 25-5

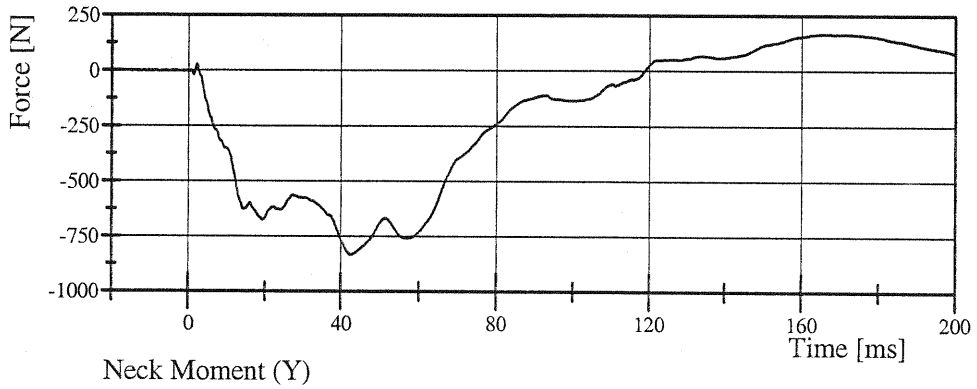
Test Date: 11/7/2007

Neck Force (X)



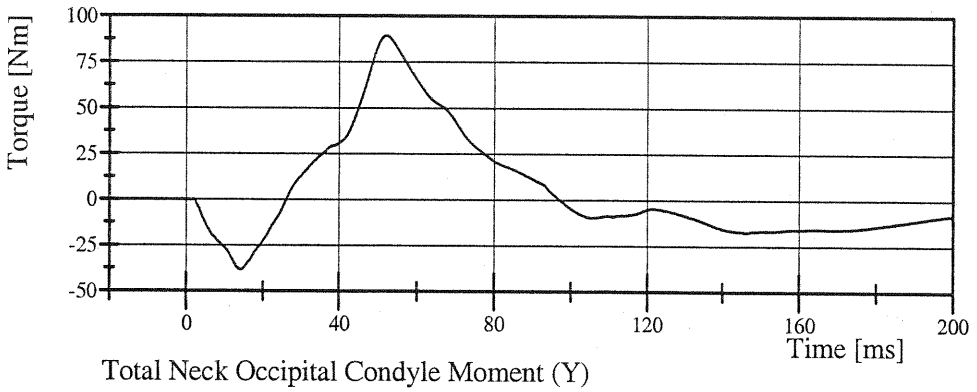
Filter Class: CFC_1000
Max: 168.3 N at 165.7 ms
Min: -833.1 N at 42.4 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



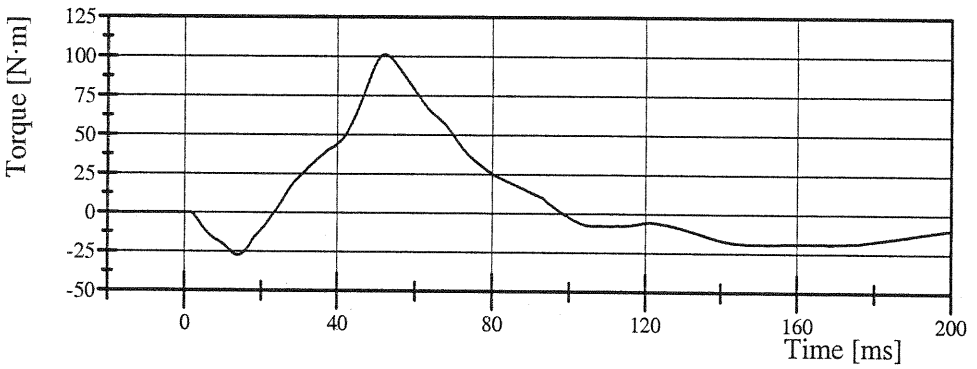
Filter Class: CFC_600
Max: 167.7 N at 166.8 ms
Min: -832.8 N at 42.5 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 89.4 Nm at 52.0 ms
Min: -38.4 Nm at 14.2 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 101.3 N·m at 52.1 ms
Min: -27.4 N·m at 14.0 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.07.2007 12:51:26 2982

Transportation Research Center Inc.

Neck Extension
HIII 50th Serial No. 169 Certification No. 25-2
Test Date: 11/7/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-6.016 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	43.0 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	19.14 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	15.60 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	13.57 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	13.57 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	96.1 °	Yes
Time of Peak	72 - 82 ms	77.6 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	159.3 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-53) - (-80) N·m	-64.8 N·m	Yes
Time of Peak	65 - 79 ms	72.1 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	144.6 ms	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.07.2007 13:54:54 3057

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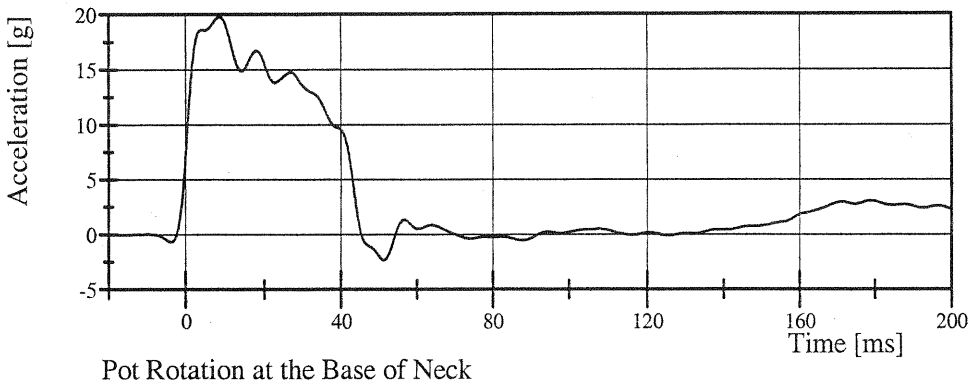
Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 169 Certification No. 25-2

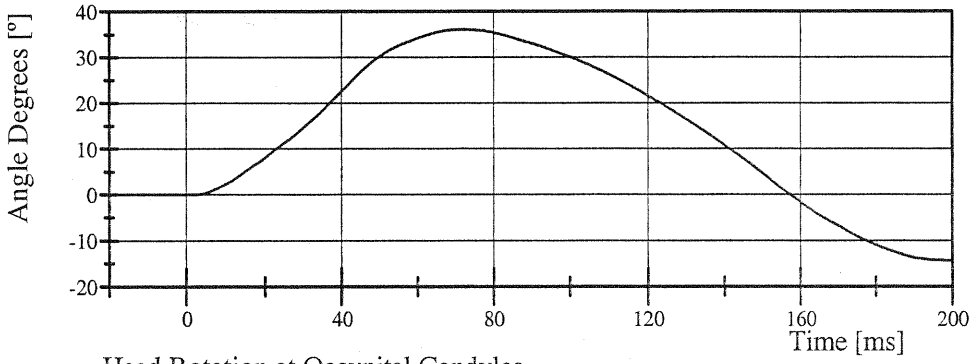
Test Date: 11/7/2007

Pendulum Acceleration



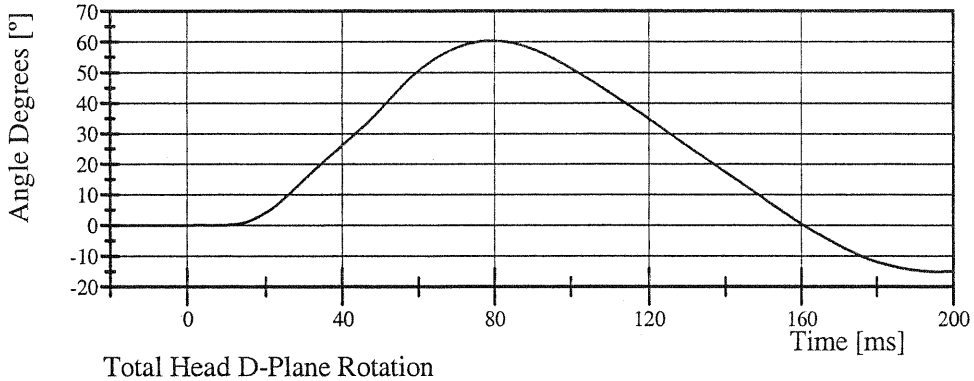
Filter Class: CFC_60
Max: 19.8 g at 8.6 ms
Min: -2.3 g at 51.2 ms

Pot Rotation at the Base of Neck



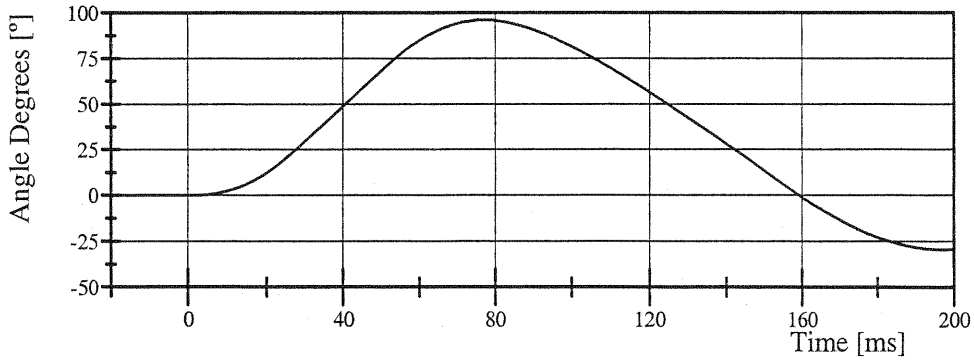
Filter Class: CFC_60
Max: 36.1 ° at 71.8 ms
Min: -14.4 ° at 200.0 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 60.4 ° at 79.2 ms
Min: -15.1 ° at 196.2 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 96.1 ° at 77.6 ms
Min: -29.4 ° at 197.2 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.07.2007 13:55:05 3057

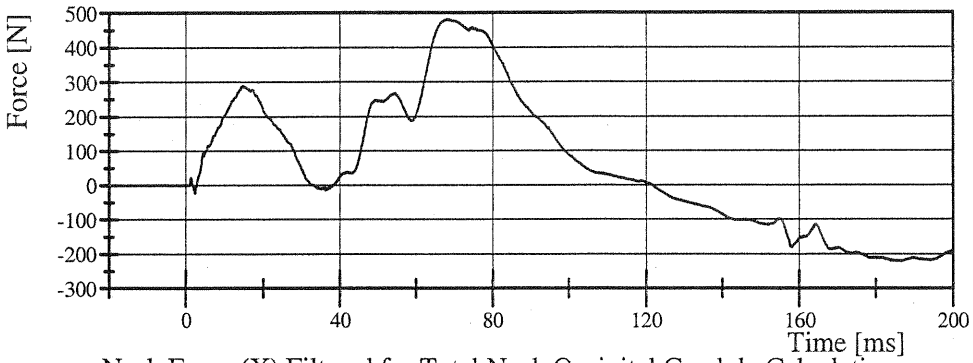
Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 169 Certification No. 25-2

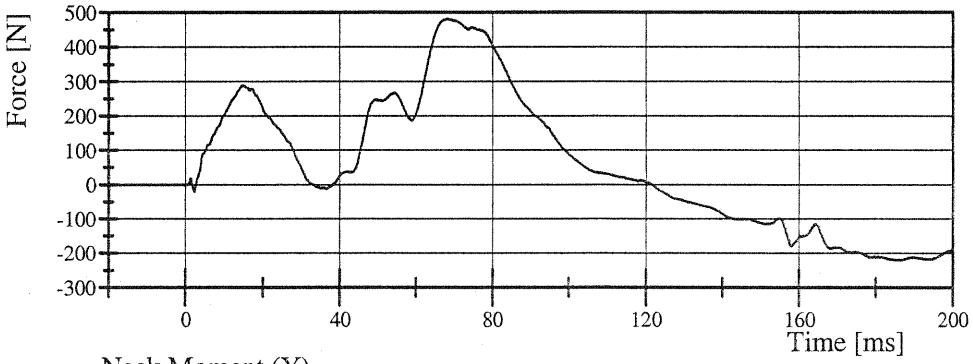
Test Date: 11/7/2007

Neck Force (X)



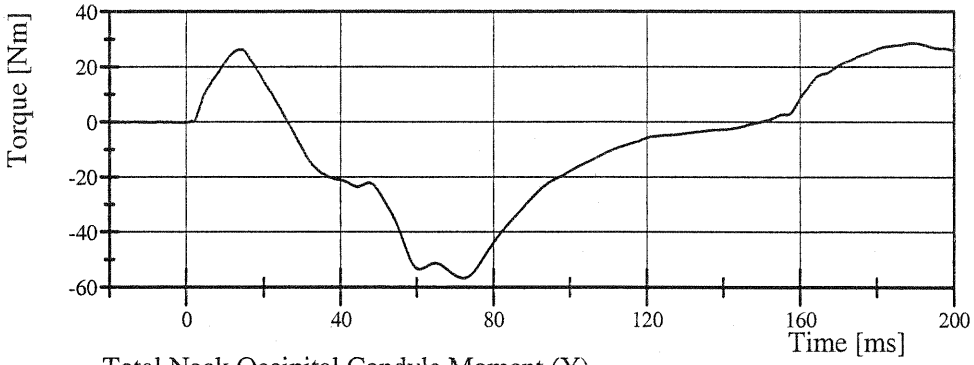
Filter Class: CFC_1000
Max: 482.0 N at 68.2 ms
Min: -220.4 N at 185.4 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



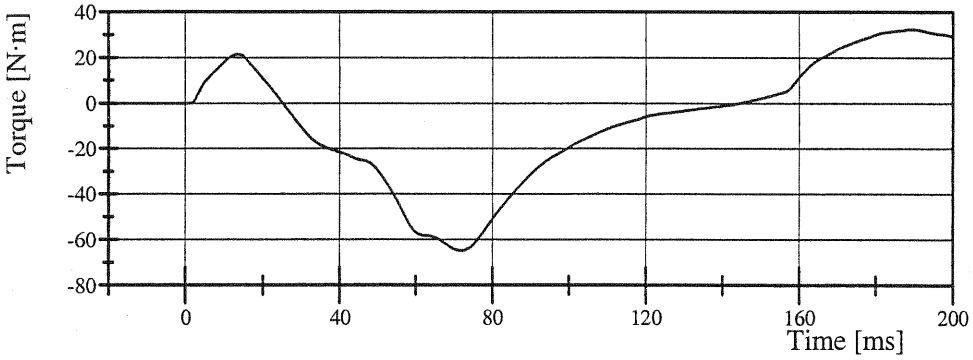
Filter Class: CFC_600
Max: 481.4 N at 68.2 ms
Min: -220.3 N at 186.4 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 28.7 Nm at 189.5 ms
Min: -56.7 Nm at 72.3 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 32.4 N·m at 189.4 ms
Min: -64.8 N·m at 72.1 ms

Transportation Research Center Inc.

Front Thorax
HIII 50th Serial No. 169 Certification No. 25-1
Test Date: 11/8/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.0 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.627 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,588.8 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-69.80 mm	Yes
Internal Hysteresis	65 - 85 %	72.0 %	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

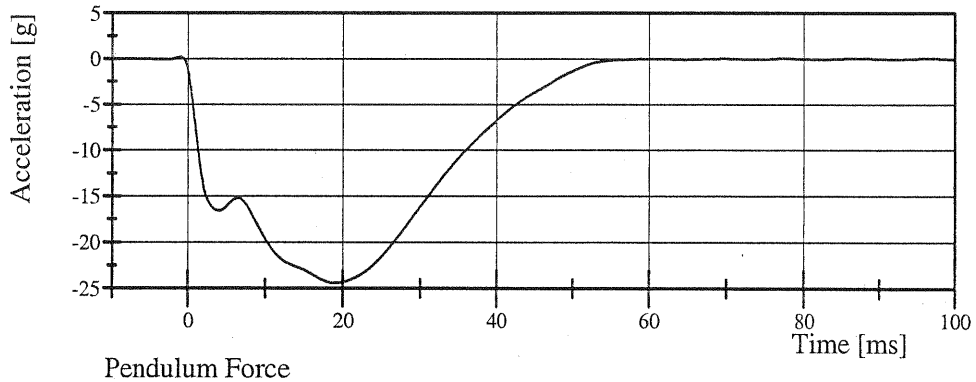
11.08.2007 10:59:00 416

071214

Transportation Research Center Inc.

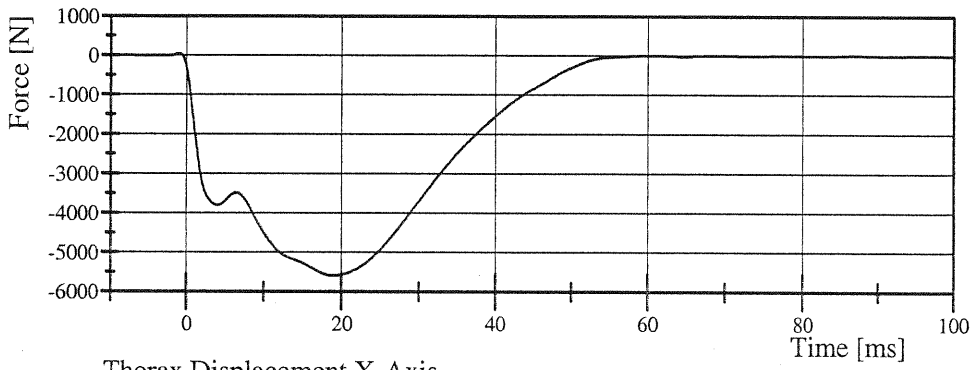
Front Thorax
HIII 50th Serial No. 169 Certification No. 25-1
Test Date: 11/8/2007

Pendulum Acceleration



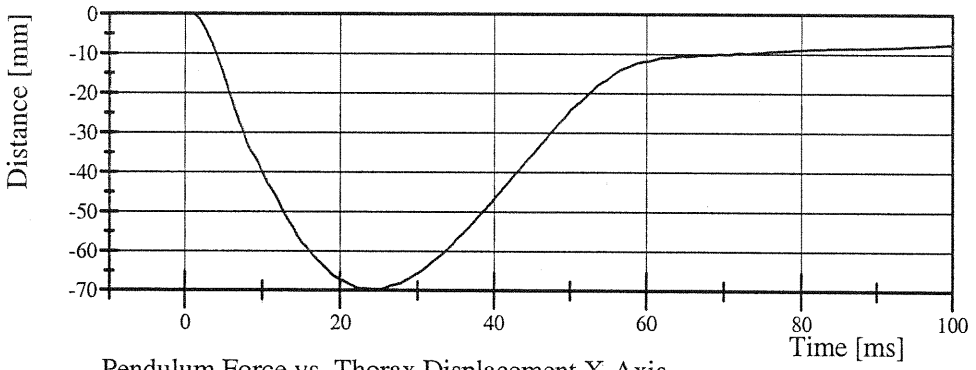
Filter Class: CFC_180
Max: 0.2 g at -1.0 ms
Min: -24.4 g at 19.0 ms

Pendulum Force



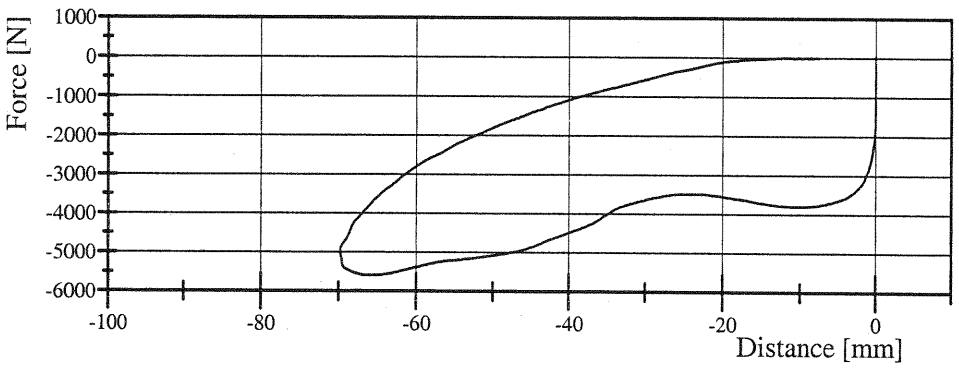
Filter Class: CFC_180
Max: 47.0 N at -1.0 ms
Min: -5,588.8 N at 19.0 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.0 mm at -4.9 ms
Min: -69.8 mm at 24.8 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 47.0 N at -0.0 mm
Min: -5,588.8 N at -66.0 mm

Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 169 Certification No. 24-2
Test Date: 9/20/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	59 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.118 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,098.52 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

09.20.2007 13:12:40 1705

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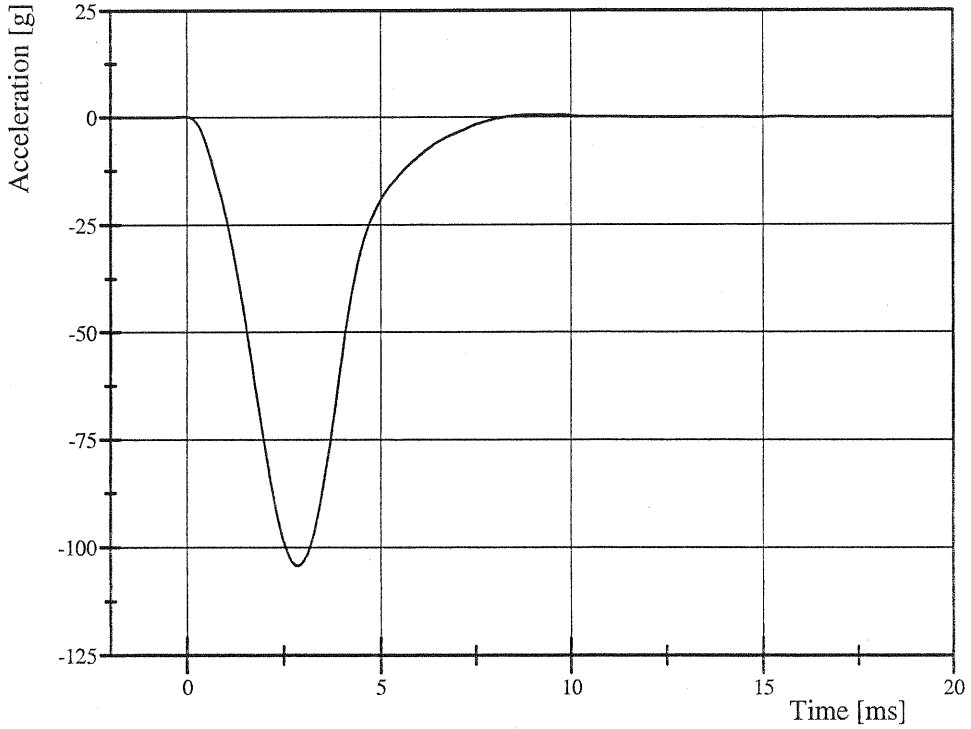
Transportation Research Center Inc.

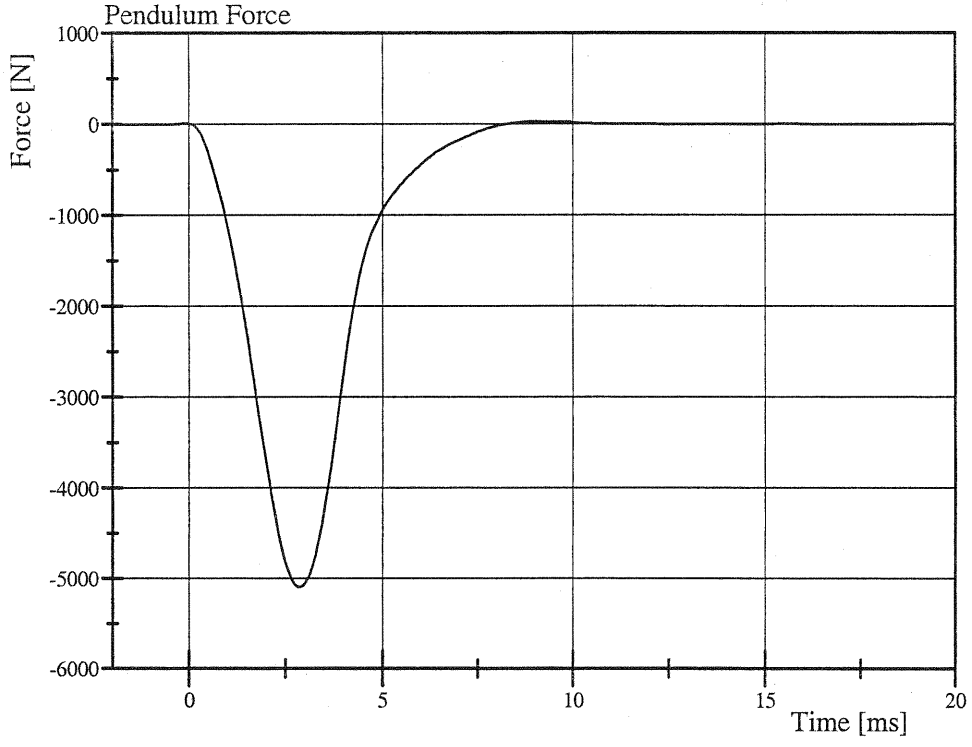
Left Knee Femur Response Test
HIII 50th Serial No. 169 Certification No. 24-2
Test Date: 9/20/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.6 g at 9.0 ms
Min: -104.2 g at 2.9 ms

Pendulum Force



Filter Class: CFC_600
Max: 27.2 N at 9.0 ms
Min: -5,098.5 N at 2.9 ms

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 169 Certification No. 24-2
Test Date: 9/20/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	57 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.119 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,055.64 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

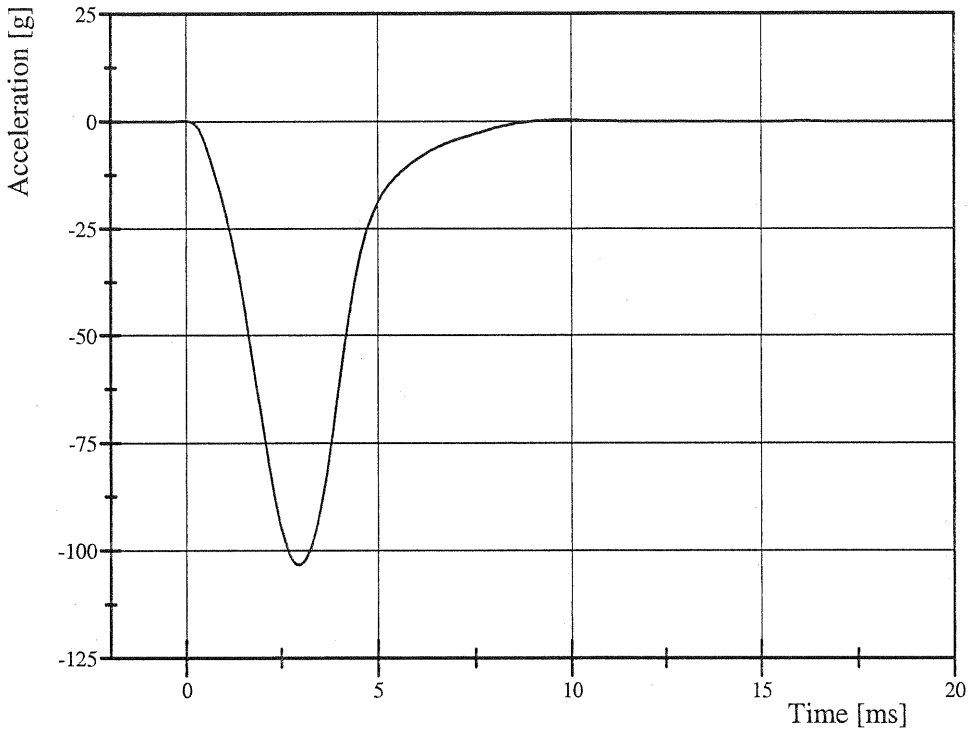
09.20.2007 13:17:17 1704

071214

Transportation Research Center Inc.

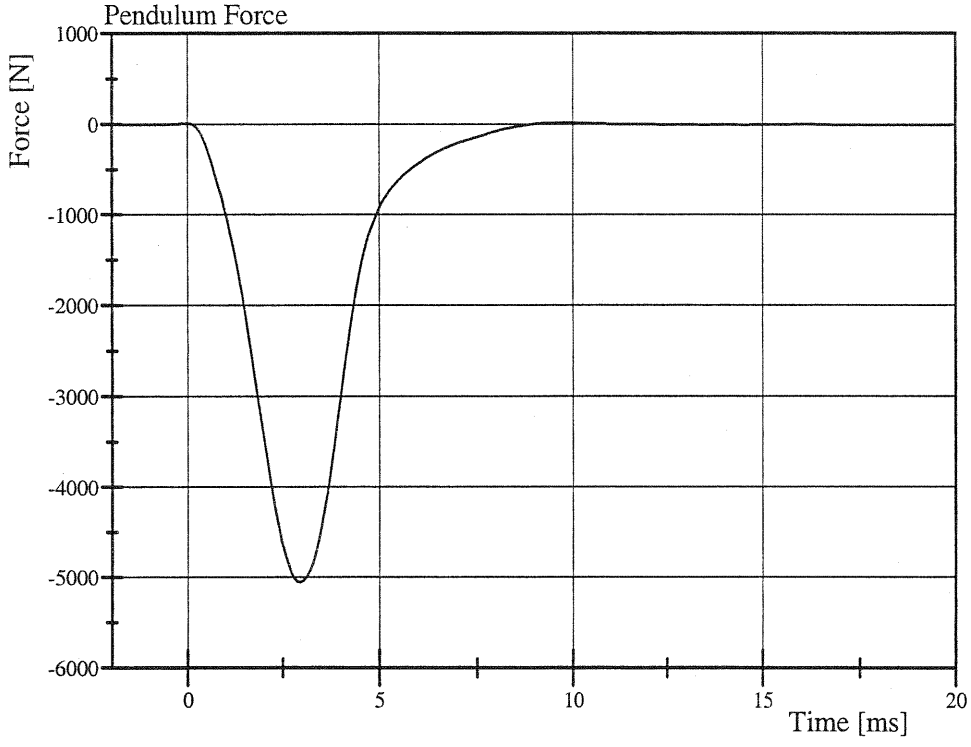
Right Knee Femur Response Test
HIII 50th Serial No. 169 Certification No. 24-2
Test Date: 9/20/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.4 g at 9.9 ms
Min: -103.3 g at 3.0 ms

Pendulum Force



Filter Class: CFC_600
Max: 19.7 N at 9.9 ms
Min: -5,055.6 N at 3.0 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

09.20.2007 13:17:23 1704

071214

Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

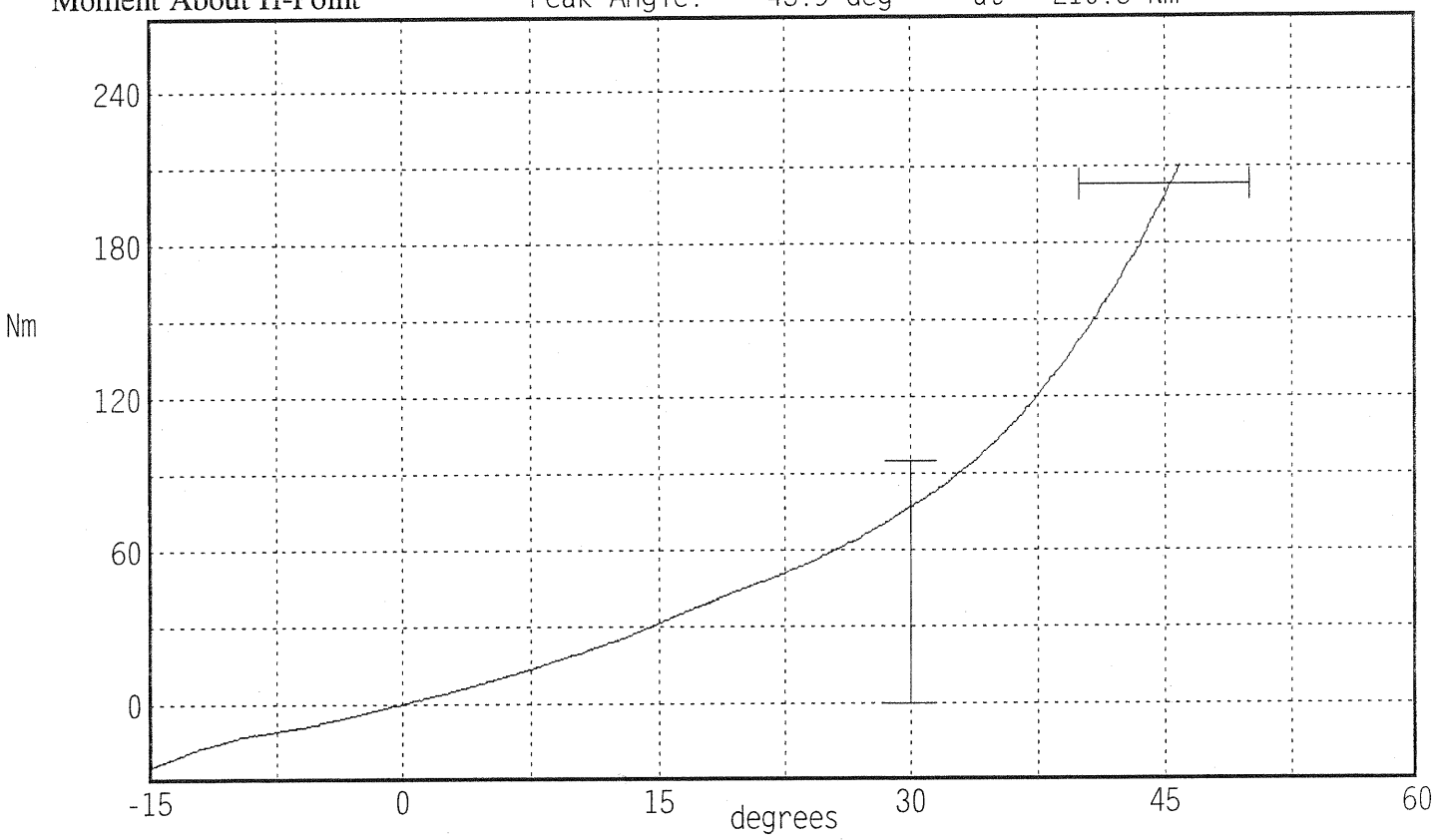
Serial Number: 169L
Test Number: 169C24
Comments:

Date: 09/21/2007
Time: 08:55

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.2	°C	Pass
Humidity	10 - 70	58	%	Pass
Moment at 30 deg	<= 94.9	77.0	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	45.4	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

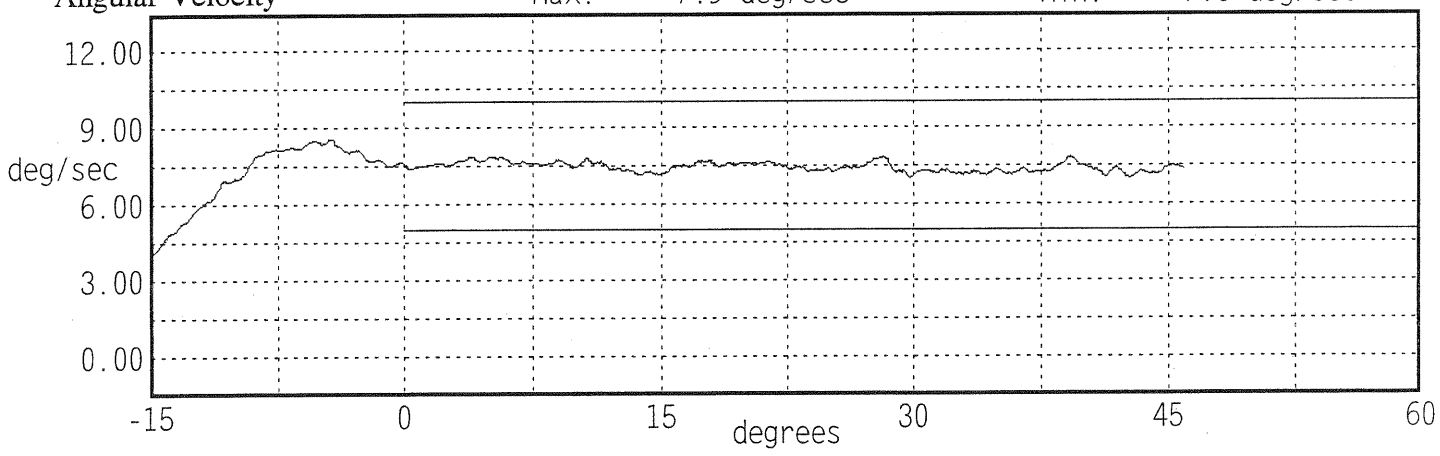
Moment About H-Point

Peak Moment: 210.3 Nm at 45.9 deg
Peak Angle: 45.9 deg at 210.3 Nm



Angular Velocity

Max: 7.9 deg/sec Min: 7.0 deg/sec



Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

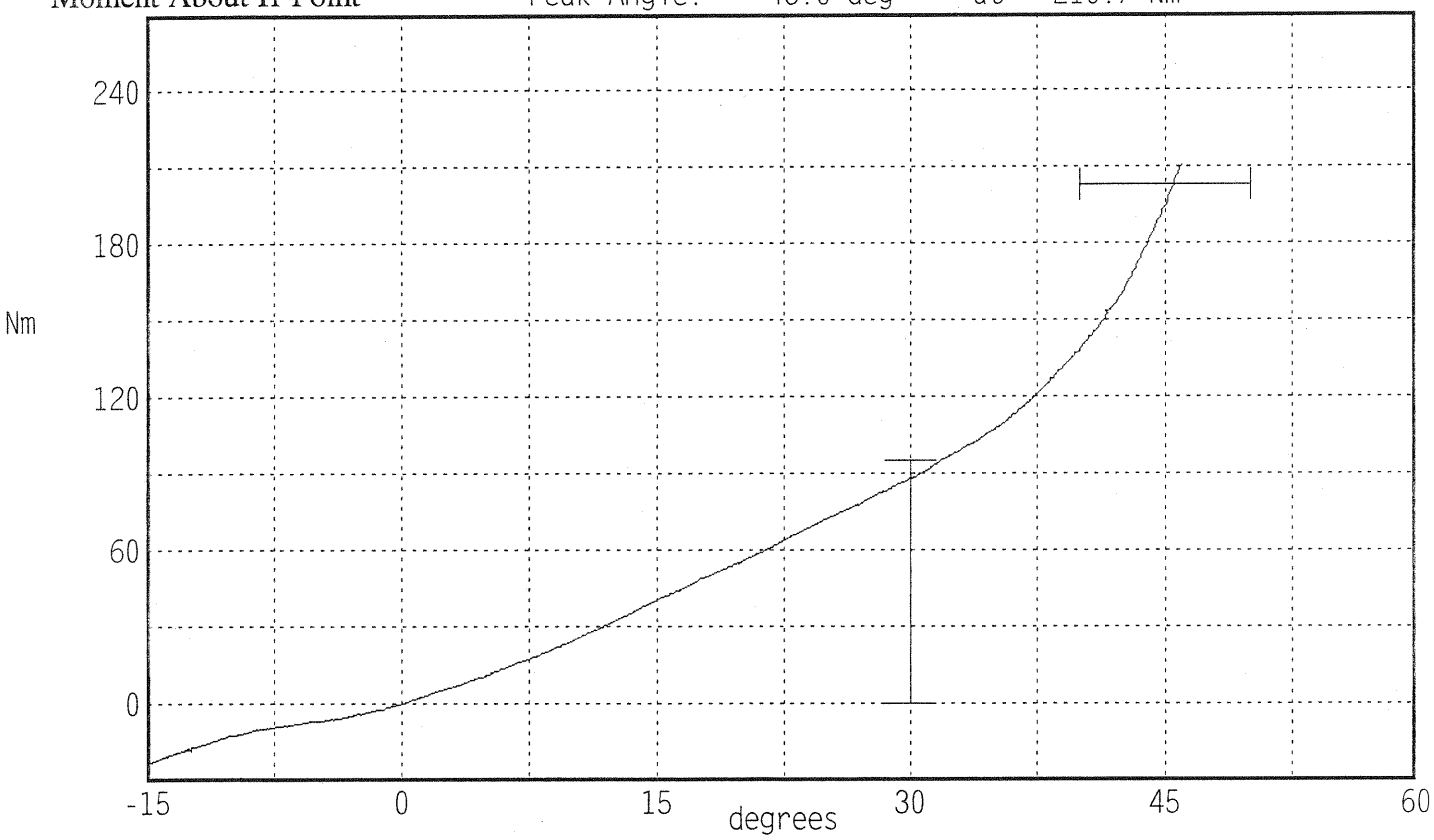
Serial Number: 169R
Test Number: 169C24
Comments:

Date: 09/21/2007
Time: 09:02

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.4	°C	Pass
Humidity	10 - 70	58	%	Pass
Moment at 30 deg	<= 94.9	87.8	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	45.5	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

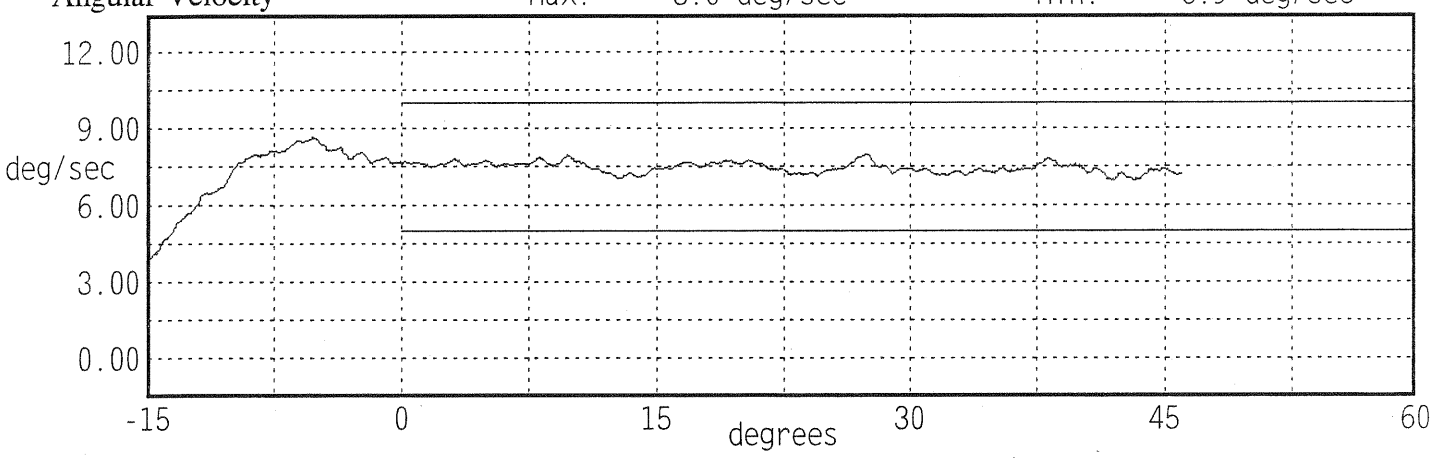
Moment About H-Point

Peak Moment: 210.7 Nm at 46.0 deg
Peak Angle: 46.0 deg at 210.7 Nm



Angular Velocity

Max: 8.0 deg/sec Min: 6.9 deg/sec



Pre-Test Dummy Configuration and Performance Verification Data

Left Side Row 5 Left Seat Dummy S/N: 342

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 342
Calibration No. 01

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	880	Yes
B	Shoulder Pivot Height	505.5 - 520.7	516	Yes
C	H-Point Height	83.8 - 88.9	87	Yes
D	H-Point From Seatback	134.6 - 139.7	138	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	90	Yes
F	Thigh Clearance	139.7 - 154.9	152	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	296	Yes
H	Skull Cap To Backline	40.6 - 45.7	44	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	332	Yes
J	Elbow Rest Height	190.5 - 210.8	202	Yes
K	Buttock Knee Length	579.1 - 604.5	601	Yes
L	Popliteal Height	429.3 - 454.7	437	Yes
M	Knee Pivot Height	485.1 - 500.4	496	Yes
N	Buttock Popliteal Length	452.1 - 477.5	472	Yes
O	Chest Depth	213.4 - 228.6	220	Yes
P	Foot Length	251.5 - 266.7	260	Yes
V	Shoulder Breadth	421.6 - 436.9	427	Yes
W	Foot Breadth	91.4 - 106.7	100	Yes
Y	Chest Circumference	970.3 - 1000.8	985	Yes
Z	Waist Circumference	835.7 - 866.1	857	Yes
AA	Location For Chest Circumference	429.3 - 434.3	430	Yes
BB	Location For Waist Circumference	226.1 - 231.1	230	Yes

Comments:

Technician

Charles W Bell

Approved

Ron Stover

Transportation Research Center Inc.

Front Head Drop
HIII 50th Serial No. 342 Certification No. 1-2
Test Date: 11/16/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	33 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	230.7 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-3.4 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

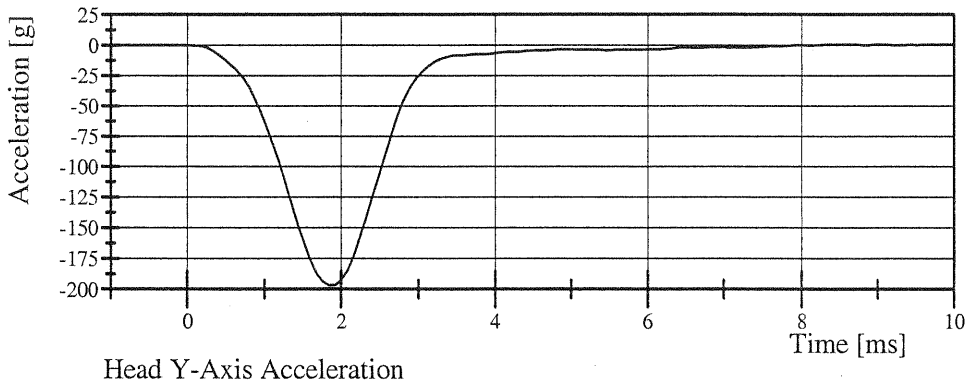
11.16.2007 07:45:12 614

071214

Transportation Research Center Inc.

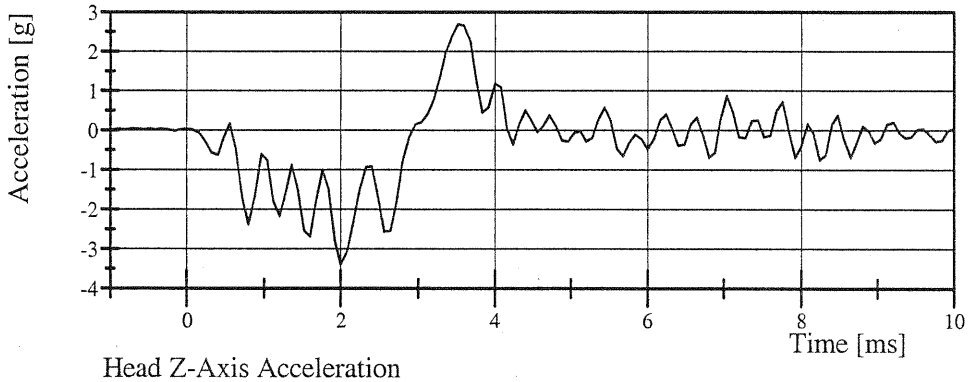
Front Head Drop
HIII 50th Serial No. 342 Certification No. 1-2
Test Date: 11/16/2007

Head X-Axis Acceleration



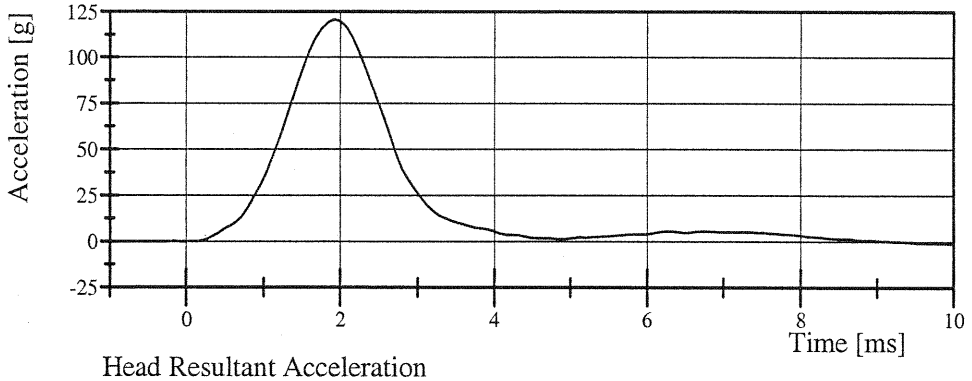
Filter Class: CFC_1000
Max: 0.5 g at 10.0 ms
Min: -196.7 g at 1.8 ms

Head Y-Axis Acceleration



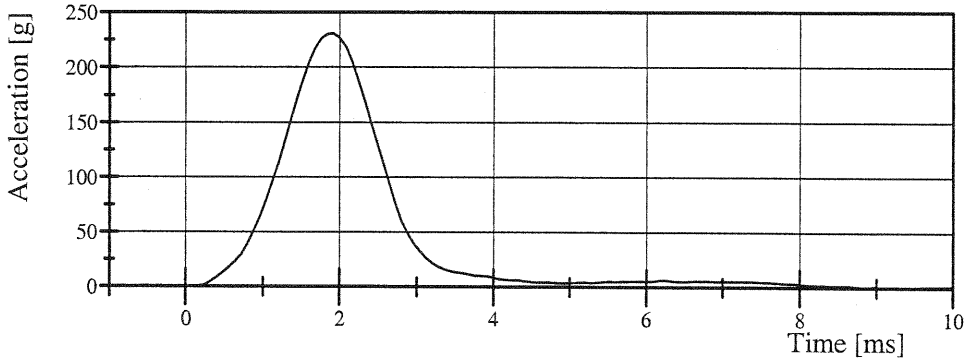
Filter Class: CFC_1000
Max: 2.7 g at 3.5 ms
Min: -3.4 g at 2.0 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 120.9 g at 1.9 ms
Min: -1.2 g at 10.0 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 230.7 g at 1.9 ms
Min: 0.0 g at -1.0 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.16.2007 07:45:29 614

071214

Transportation Research Center Inc.

Neck Flexion
HIII 50th Serial No. 342 Certification No. 1-7
Test Date: 11/16/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.934 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	40.9 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-23.52 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-19.51 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-14.16 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-14.16 g	Yes
Total Head D-Plane Rotation			
Peak	(-64) - (-78) °	-70.1 °	Yes
Time of Peak	57 - 64 ms	58.9 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	116.1 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	88 - 108 N·m	107.9 N·m	Yes
Time of Peak	47 - 58 ms	52.5 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	98.8 ms	Yes

Test meets specifications.

Comments:

Technician

Charles W. Bell

Approved

Ron Stowe

Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

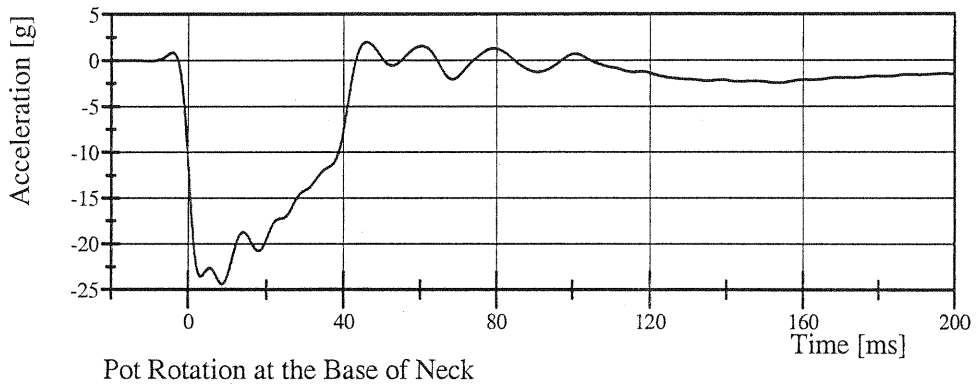
11.16.2007 13:21:59 2986

071214

Transportation Research Center Inc.

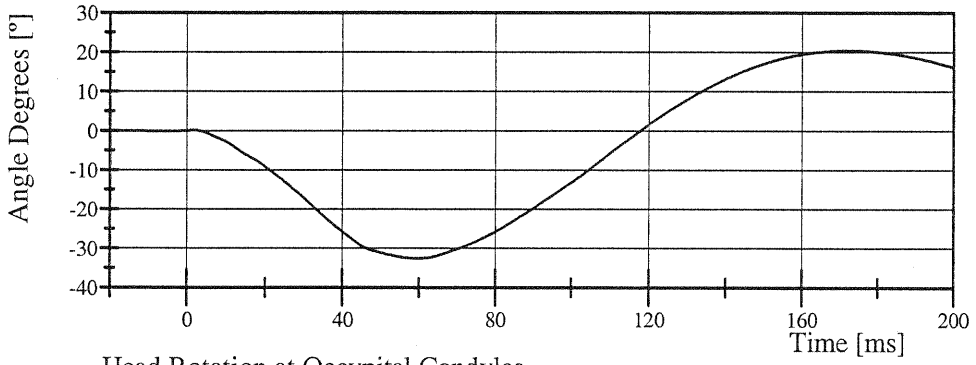
Neck Flexion
HIII 50th Serial No. 342 Certification No. 1-7
Test Date: 11/16/2007

Pendulum Acceleration



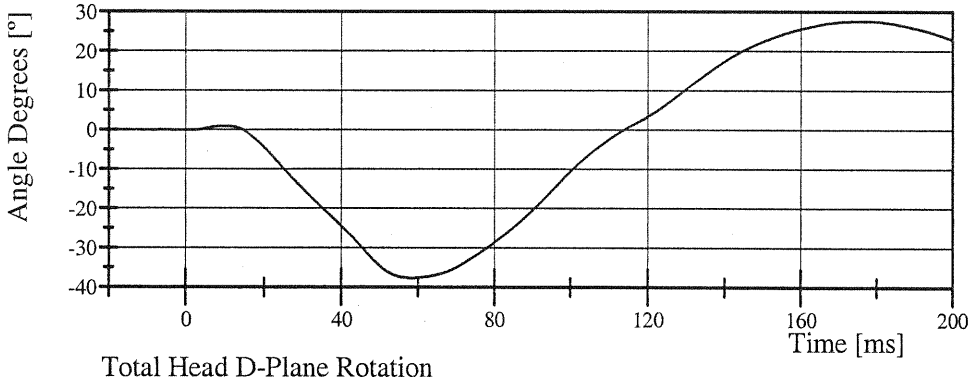
Filter Class: CFC_60
Max: 2.0 g at 45.9 ms
Min: -24.4 g at 8.6 ms

Pot Rotation at the Base of Neck



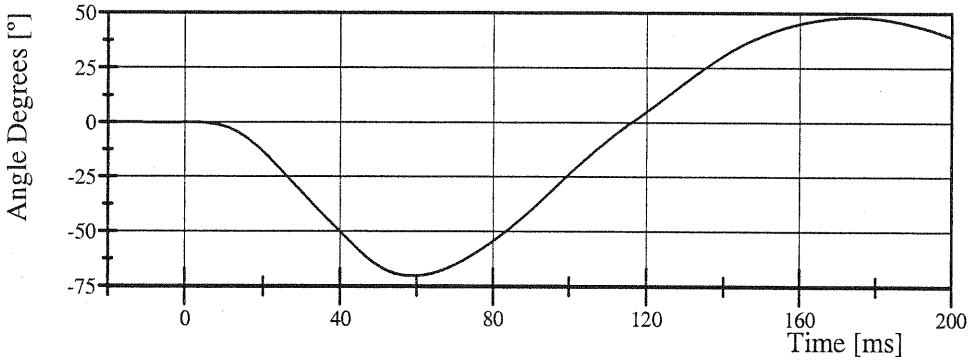
Filter Class: CFC_60
Max: 20.5 ° at 172.6 ms
Min: -32.5 ° at 59.8 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 27.7 ° at 176.9 ms
Min: -37.6 ° at 58.2 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 48.1 ° at 174.4 ms
Min: -70.1 ° at 58.9 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.16.2007 13:22:14 2986

071214

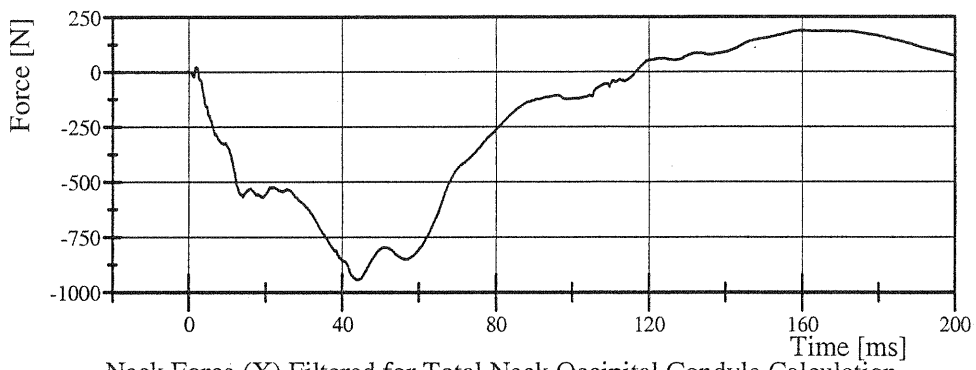
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 342 Certification No. 1-7

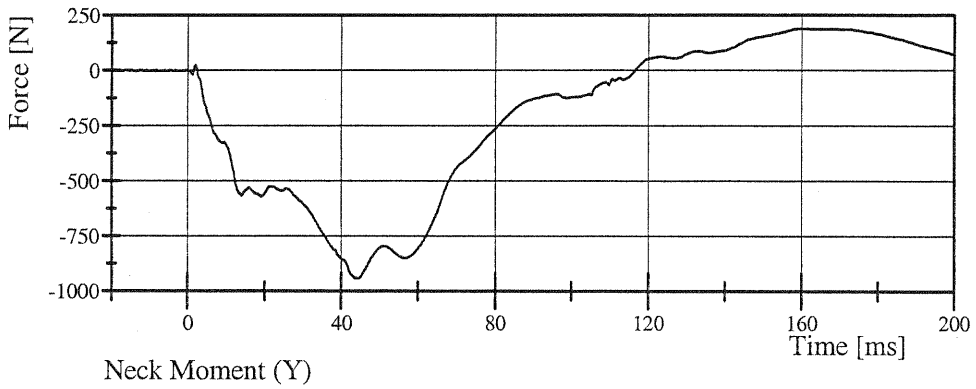
Test Date: 11/16/2007

Neck Force (X)



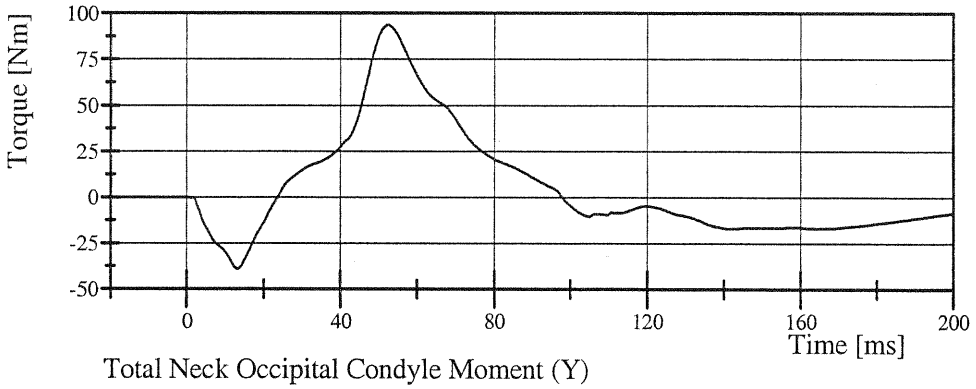
Filter Class: CFC_1000
Max: 189.5 N at 159.6 ms
Min: -942.3 N at 44.2 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



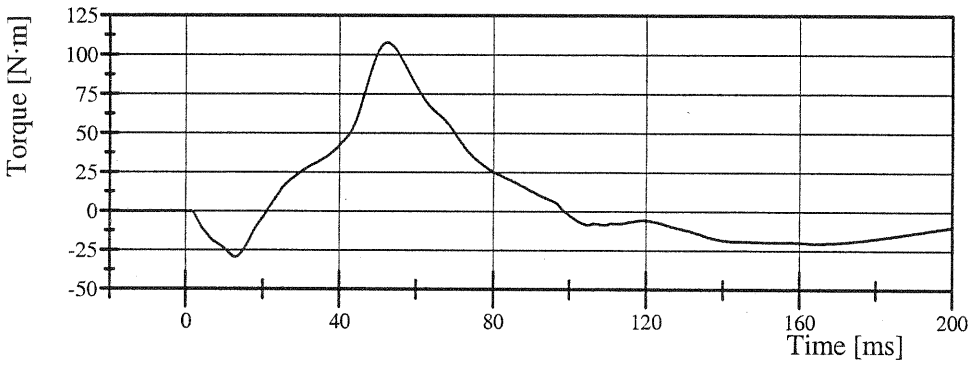
Filter Class: CFC_600
Max: 189.3 N at 159.8 ms
Min: -941.9 N at 44.1 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 93.7 Nm at 52.4 ms
Min: -38.9 Nm at 13.1 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 107.9 N·m at 52.5 ms
Min: -29.3 N·m at 12.9 ms

Transportation Research Center Inc.

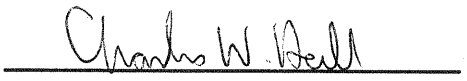
Neck Extension
HIII 50th Serial No. 342 Certification No. 1-1
Test Date: 11/16/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-5.979 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	41.5 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	19.12 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	16.35 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	14.16 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	14.16 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	92.7 °	Yes
Time of Peak	72 - 82 ms	76.3 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	153.6 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-53) - (-80) N·m	-69.3 N·m	Yes
Time of Peak	65 - 79 ms	70.6 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	139.9 ms	Yes

Test meets specifications.

Comments:

Technician



Approved

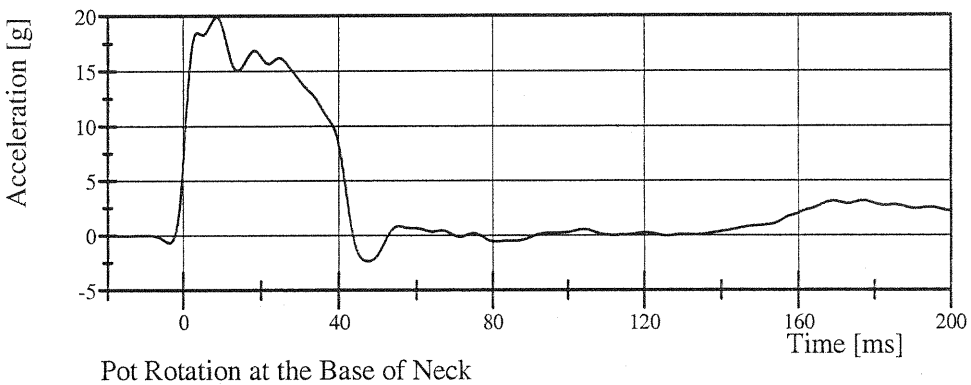
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.16.2007 13:53:36 3058

Transportation Research Center Inc.

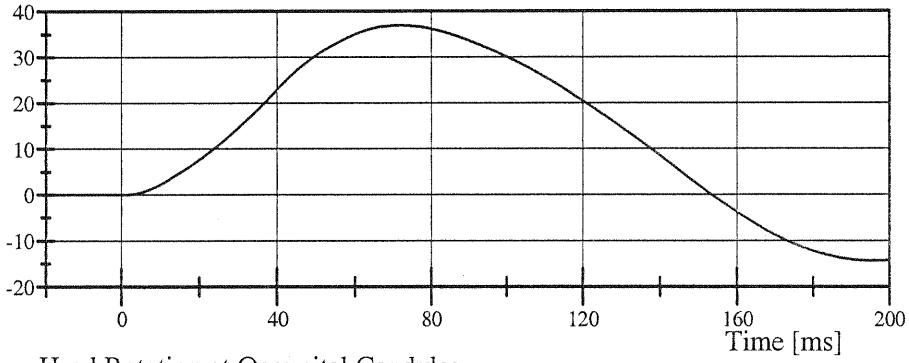
Neck Extension
HIII 50th Serial No. 342 Certification No. 1-1
Test Date: 11/16/2007

Pendulum Acceleration



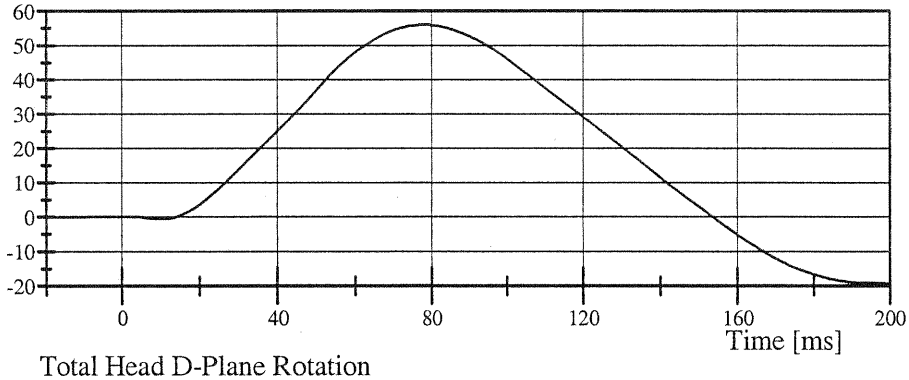
Filter Class: CFC_60
Max: 19.9 g at 8.6 ms
Min: -2.3 g at 47.4 ms

Pot Rotation at the Base of Neck



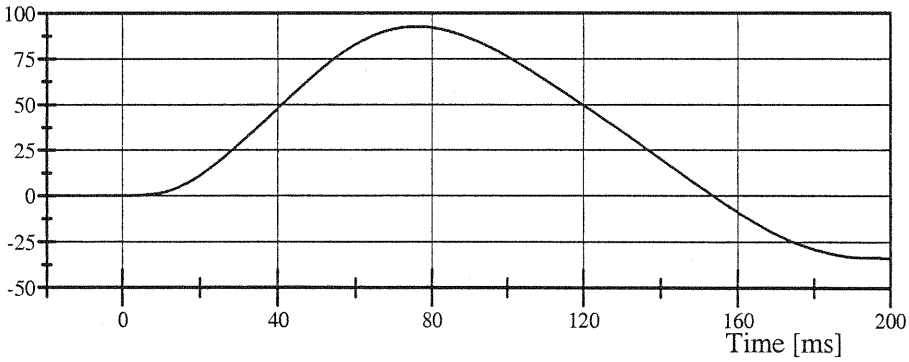
Filter Class: CFC_60
Max: 36.9 ° at 72.0 ms
Min: -14.4 ° at 196.2 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 56.1 ° at 78.3 ms
Min: -19.3 ° at 200.0 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 92.7 ° at 76.3 ms
Min: -33.6 ° at 200.0 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.16.2007 13:53:50 3058

071214

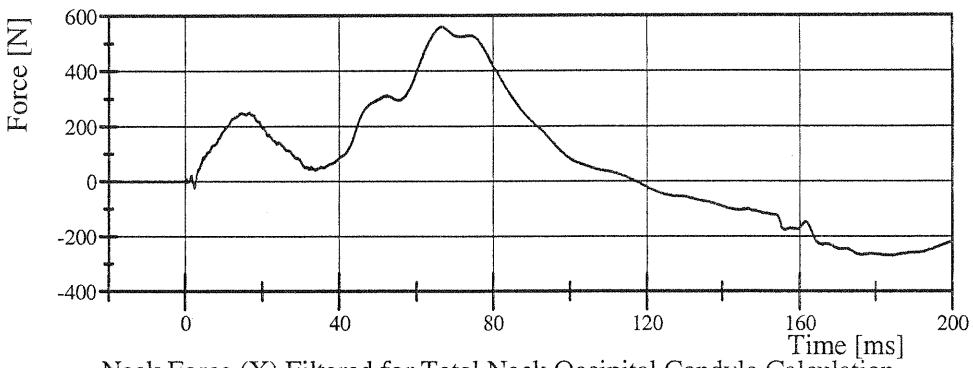
Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 342 Certification No. 1-1

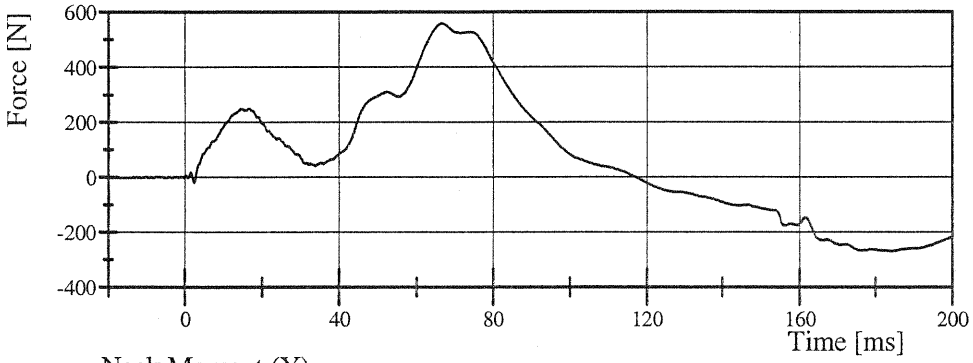
Test Date: 11/16/2007

Neck Force (X)



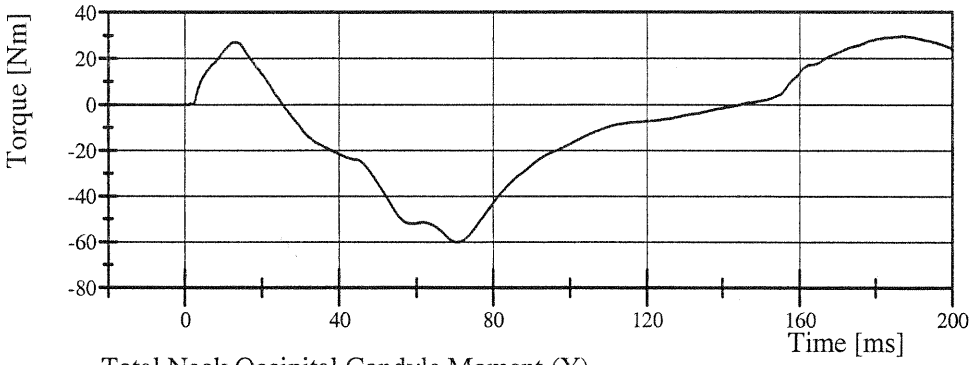
Filter Class: CFC_1000
Max: 560.0 N at 66.5 ms
Min: -269.1 N at 184.0 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



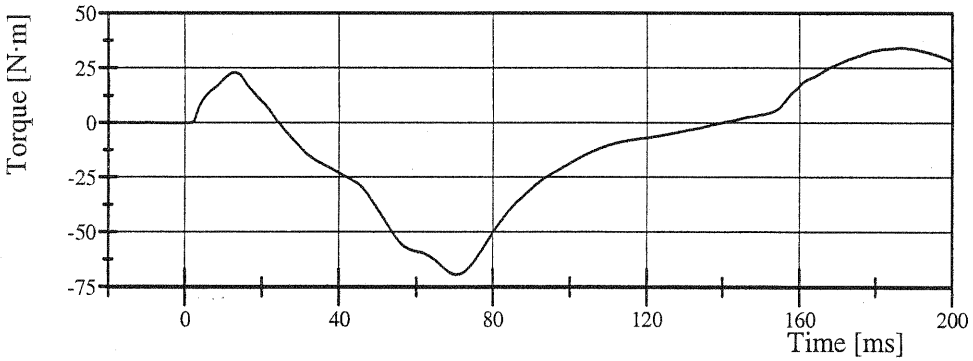
Filter Class: CFC_600
Max: 559.7 N at 66.6 ms
Min: -269.0 N at 184.1 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 29.6 Nm at 187.2 ms
Min: -60.0 Nm at 70.6 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 34.2 N·m at 186.6 ms
Min: -69.3 N·m at 70.6 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.16.2007 13:53:51 3058

071214

Transportation Research Center Inc.

Front Thorax
HIII 50th Serial No. 342 Certification No. 1-8
Test Date: 11/20/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	57 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.607 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,627.4 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-65.52 mm	Yes
Internal Hysteresis	65 - 85 %	76.7 %	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

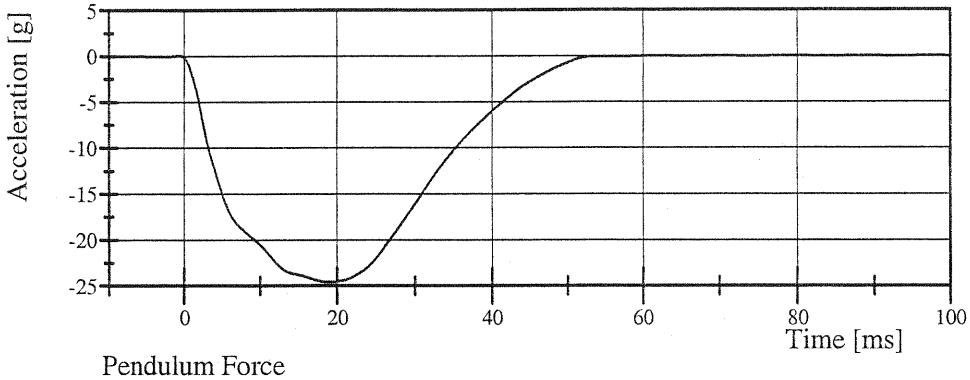
11.20.2007 07:56:50 1586

071214

Transportation Research Center Inc.

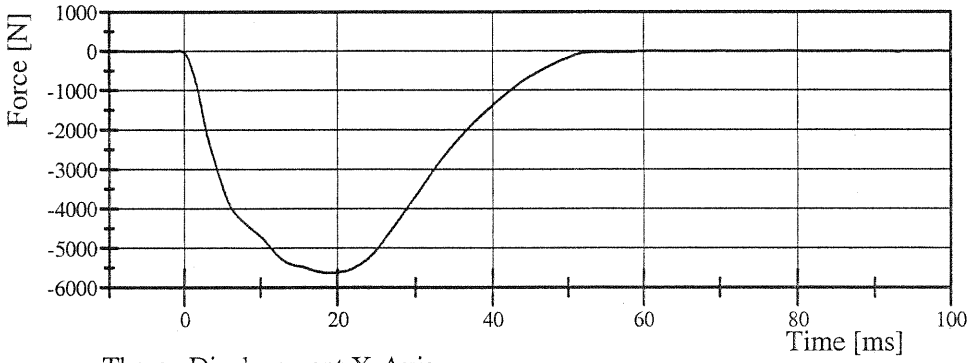
Front Thorax
HIII 50th Serial No. 342 Certification No. 1-8
Test Date: 11/20/2007

Pendulum Acceleration



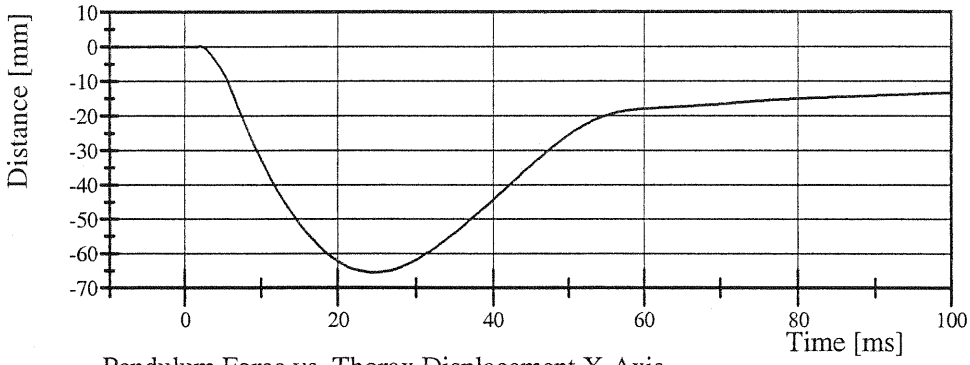
Filter Class: CFC_180
Max: 0.1 g at -0.6 ms
Min: -24.6 g at 19.0 ms

Pendulum Force



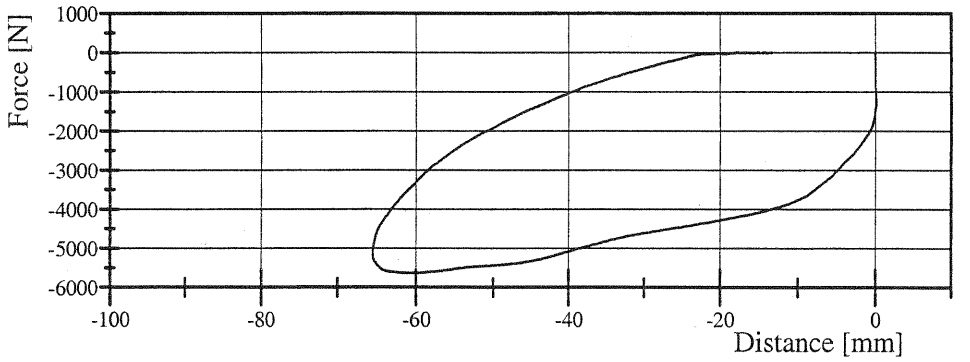
Filter Class: CFC_180
Max: 11.8 N at -0.6 ms
Min: -5,627.4 N at 19.0 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.1 mm at 2.0 ms
Min: -65.5 mm at 24.8 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 11.8 N at 0.0 mm
Min: -5,627.4 N at -60.6 mm

Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

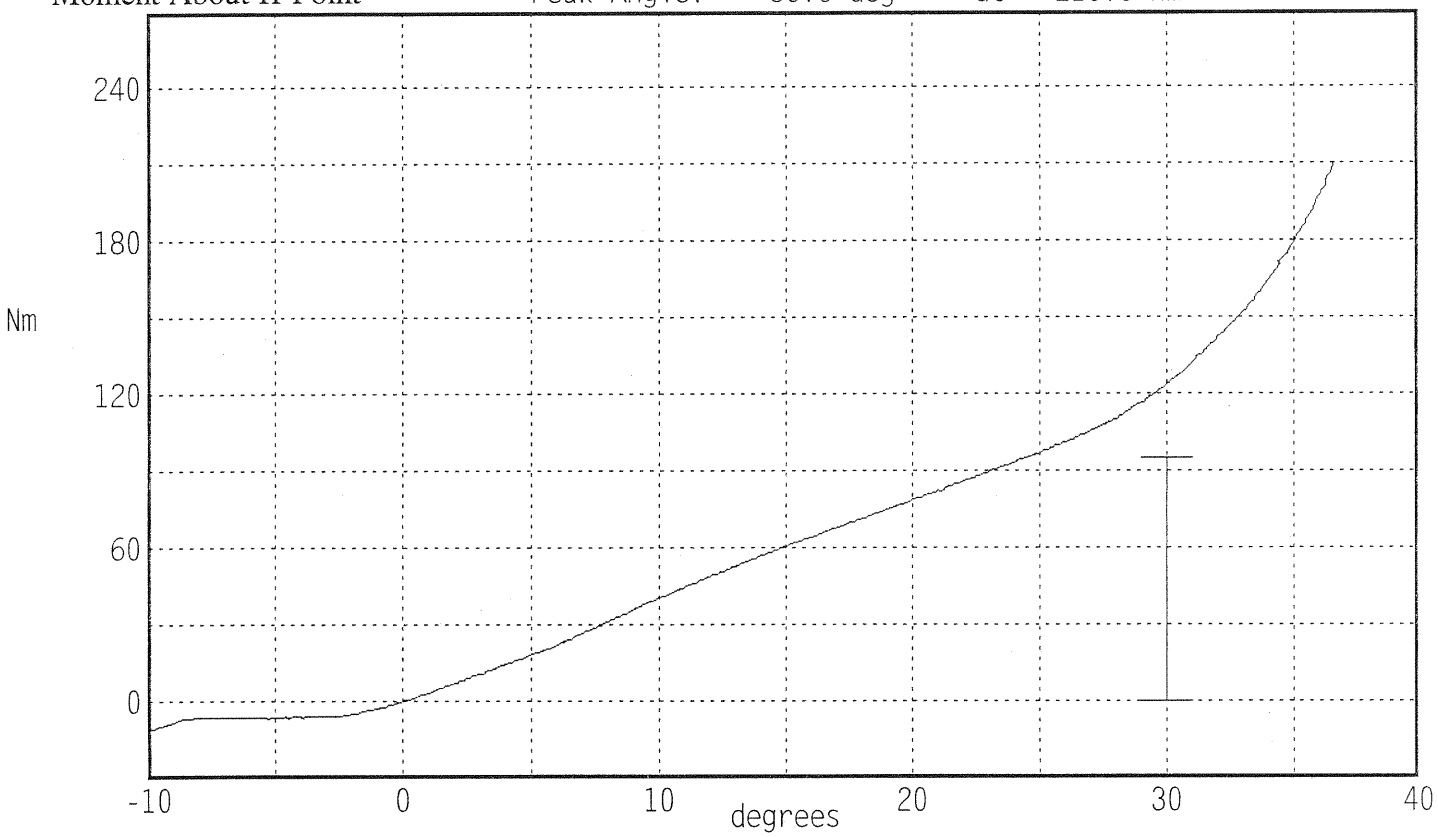
Serial Number: 342L
Test Number: 342C01
Comments:

Date: 11/15/2007
Time: 13:46

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.6	°C	Pass
Humidity	10 - 70	36	%	Pass
Moment at 30 deg	<= 94.9	123.4	Nm	Fail
Angle at 203 Nm	40.0 - 50.0	36.3	deg	Fail
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

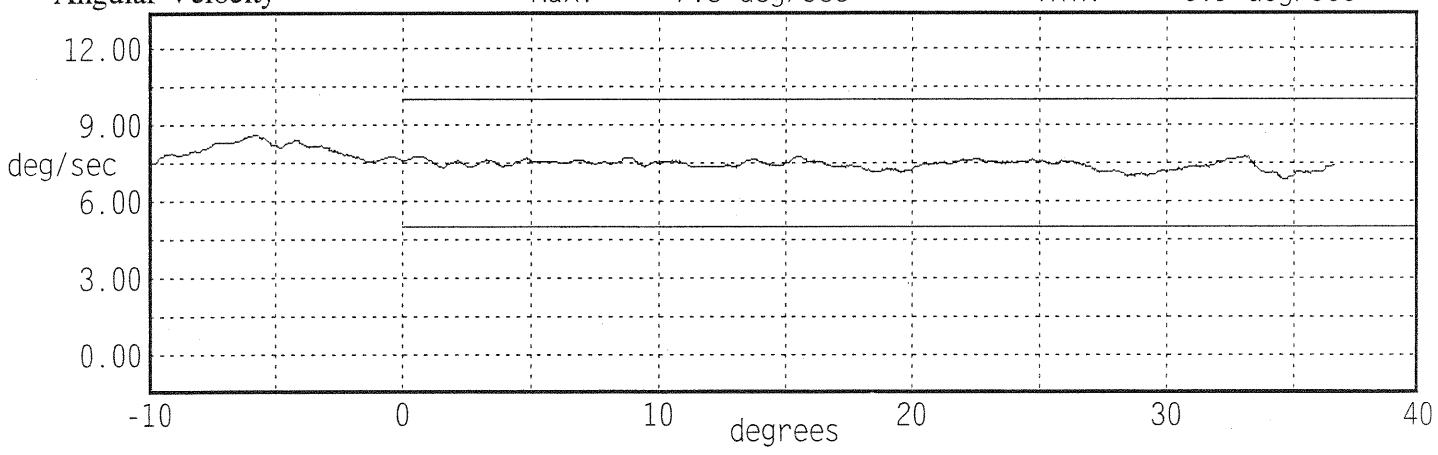
Moment About H-Point

Peak Moment: 210.0 Nm at 36.6 deg
Peak Angle: 36.6 deg at 210.0 Nm



Angular Velocity

Max: 7.8 deg/sec Min: 6.9 deg/sec



Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

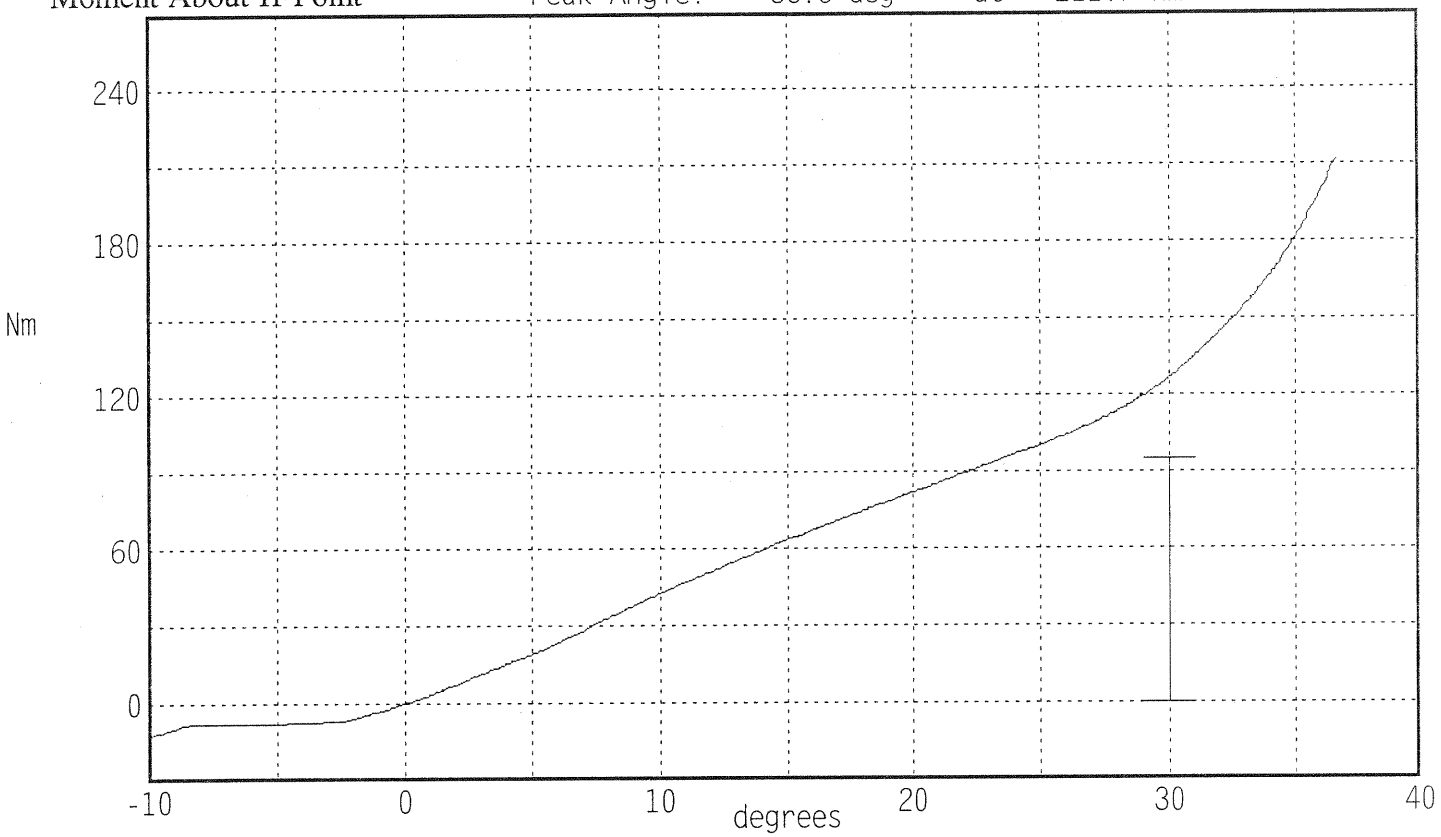
Serial Number: 342R
Test Number: 342C01
Comments:

Date: 11/15/2007
Time: 14:00

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.4	°C	Pass
Humidity	10 - 70	35	%	Pass
Moment at 30 deg	<= 94.9	126.8	Nm	Fail
Angle at 203 Nm	40.0 - 50.0	36.2	deg	Fail
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

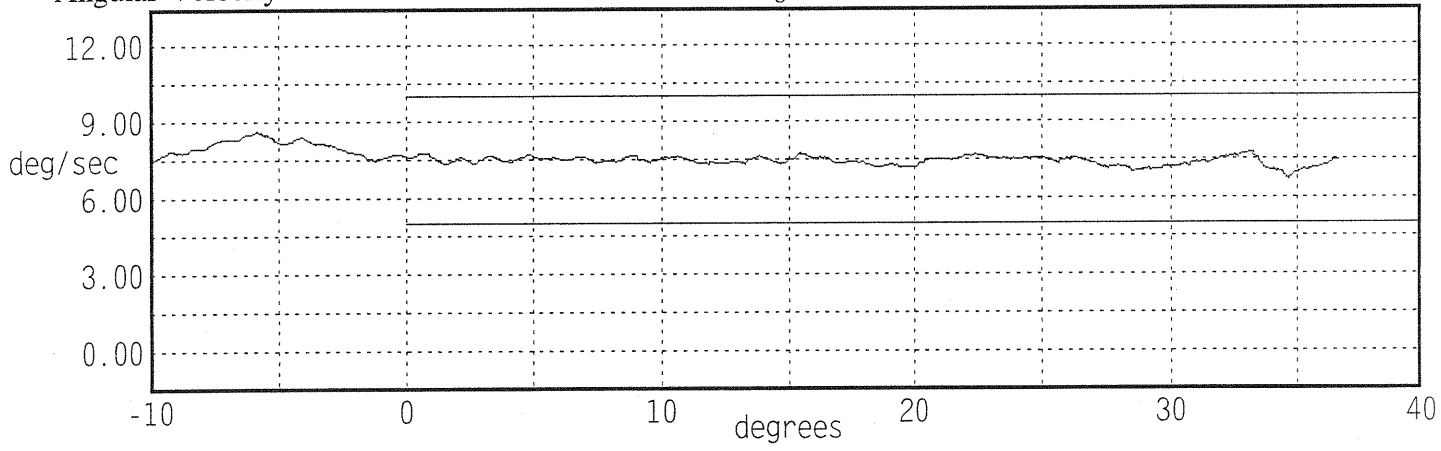
Moment About H-Point

Peak Moment: 211.7 Nm at 36.6 deg
Peak Angle: 36.6 deg at 211.7 Nm



Angular Velocity

Max: 7.8 deg/sec Min: 6.8 deg/sec



Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 342 Certification No. 1-2
Test Date: 11/15/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.119 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,631.62 N	Yes

Test meets specifications.

Comments:

Technician

Approved

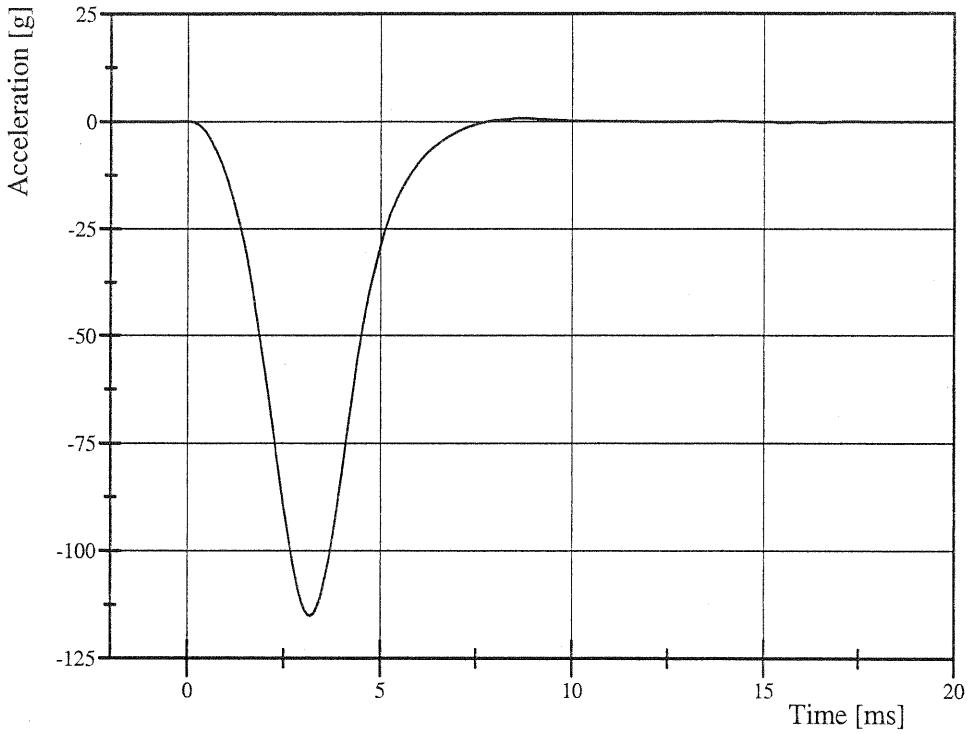
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.15.2007 14:39:15 1732

Transportation Research Center Inc.

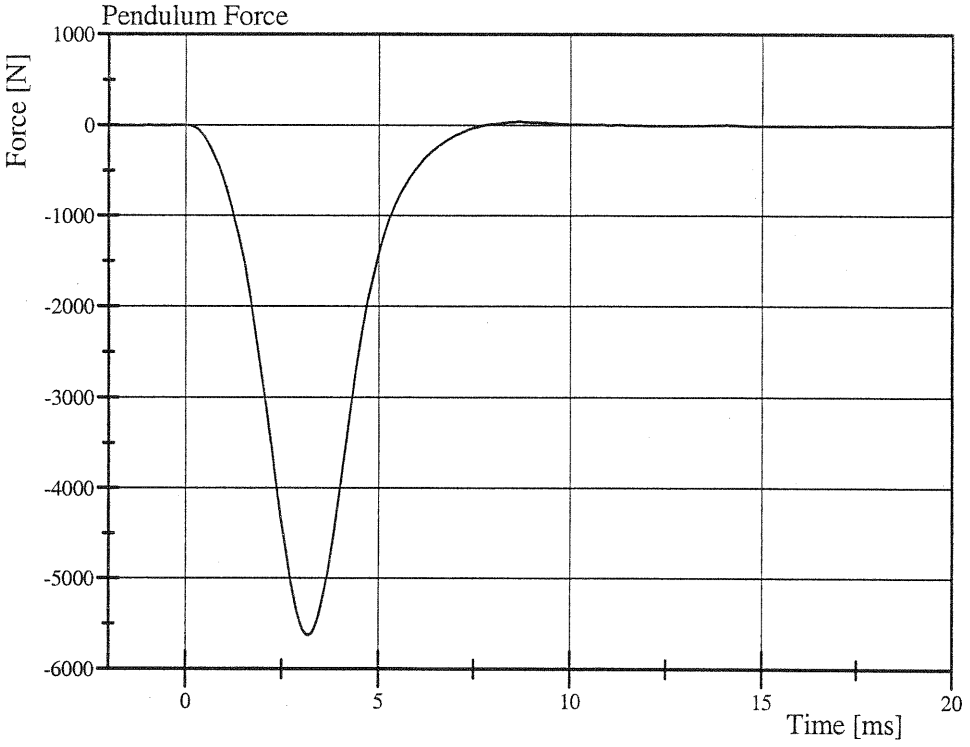
Left Knee Femur Response Test
HIII 50th Serial No. 342 Certification No. 1-2
Test Date: 11/15/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.8 g at 8.6 ms
Min: -115.1 g at 3.2 ms

Pendulum Force



Filter Class: CFC_600
Max: 40.4 N at 8.6 ms
Min: -5,631.6 N at 3.2 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.15.2007 14:39:26 1732

071214

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 342 Certification No. 1-1
Test Date: 11/15/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.118 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,316.32 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

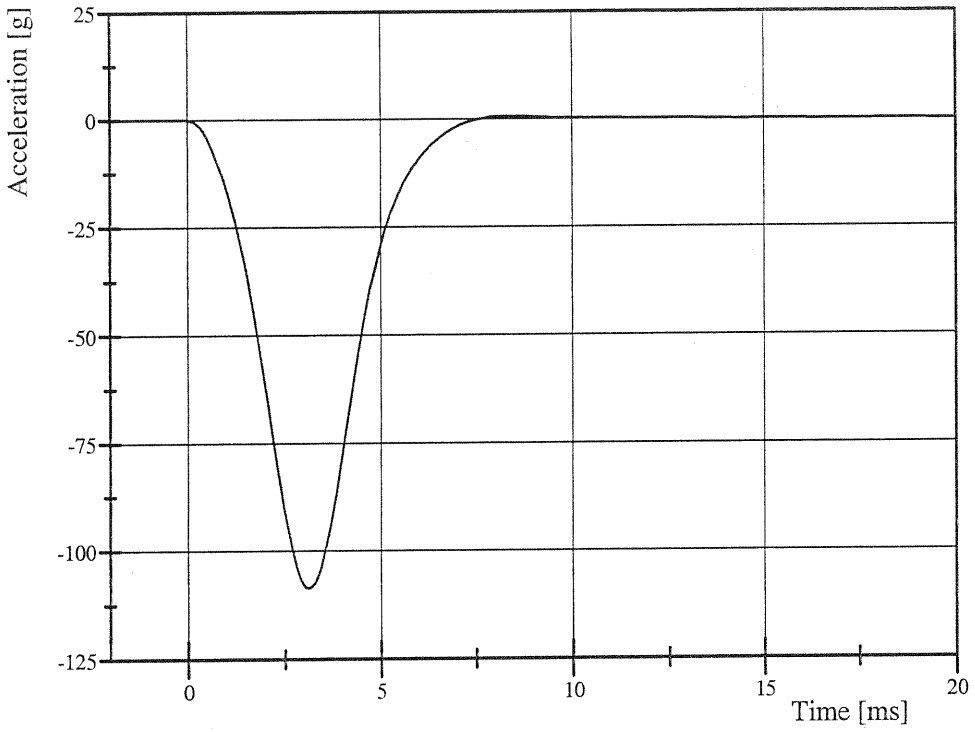
11.15.2007 13:52:08 1726

071214

Transportation Research Center Inc.

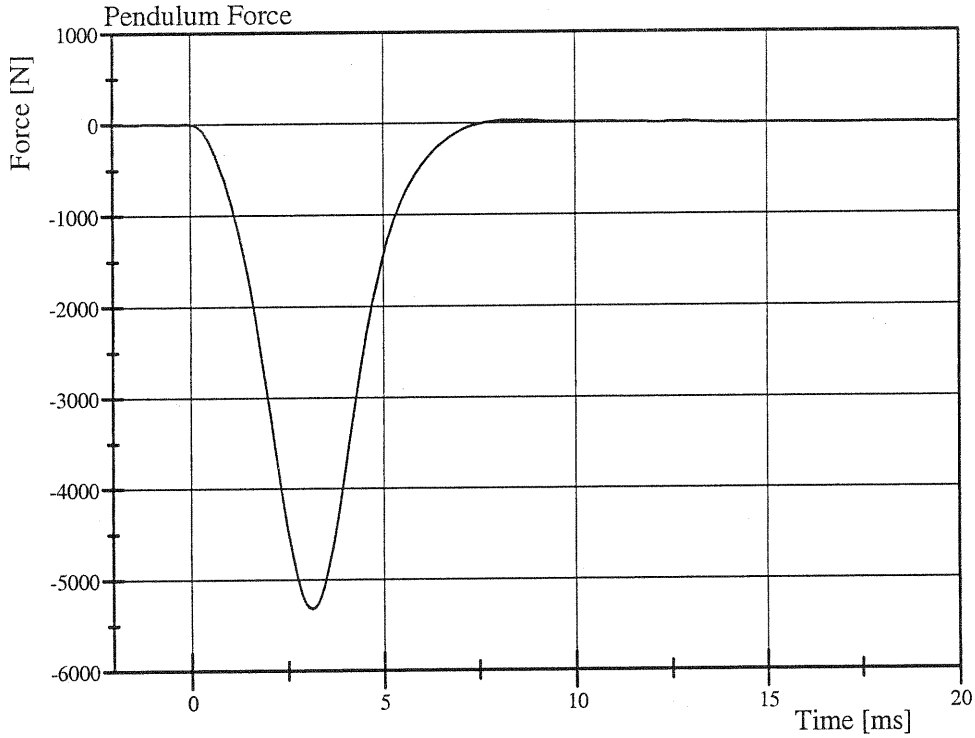
Right Knee Femur Response Test
HIII 50th Serial No. 342 Certification No. 1-1
Test Date: 11/15/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.6 g at 8.6 ms
Min: -108.7 g at 3.1 ms

Pendulum Force



Filter Class: CFC_600
Max: 30.3 N at 8.6 ms
Min: -5,316.3 N at 3.1 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.15.2007 13:52:22 1726

071214

Pre-Test Dummy Configuration and Performance Verification Data

Left Side Row 5 Right Seat Dummy S/N: 426

Transportation Research Center Inc.
572O HIII 5th Dummy
External Dimensions
Serial No. 426 Calibration No. 05

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	774.7 - 800.1	786	Yes
B	Shoulder Pivot Height	431.8 - 457.2	447	Yes
C	Hip Pivot Height	81.3 - 86.3	85	Yes
D	Hip Pivot from Backline	144.8 - 149.8	148	Yes
E	Shoulder Pivot from Backline	68.6 - 83.8	82	Yes
F	Thigh Clearance	119.4 - 134.6	127	Yes
G	Back of Elbow to Wrist Pivot	243.9 - 259.1	250	Yes
H	Head Back to Backline	43.2 - 48.2	46	Yes
I	Shoulder to Elbow Length	276.8 - 297.2	281	Yes
J	Elbow Rest Height	182.8 - 203.2	197	Yes
K	Buttock Knee Length	520.7 - 546.1	535	Yes
L	Popliteal Height	355.6 - 376.0	370	Yes
M	Knee Pivot Height	393.7 - 419.1	418	Yes
N	Buttock Popliteal Length	414.0 - 439.4	436	Yes
O	Chest Depth without Jacket	175.3 - 190.5	187	Yes
P	Foot Length	218.5 - 233.7	221	Yes
R	Buttock to Knee Pivot Length	457.2 - 482.6	476	Yes
S	Head Breadth	137.1 - 147.3	139	Yes
T	Head Depth	177.8 - 188.0	182	Yes
U	Hip Breadth	299.7 - 314.9	306	Yes
V	Shoulder Breadth	350.5 - 365.7	362	Yes
W	Foot Breadth	78.8 - 94.0	83	Yes
X	Head Circumference	528.3 - 548.7	538	Yes
Y	Chest Circumference with Jacket	850.9 - 881.3	860	Yes
Z	Waist Circumference	759.5 - 789.9	771	Yes
AA	Reference Location for Chest Circumference	332.7 - 358.1	345	Yes
BB	Reference Location for Waist Circumference	160.0 - 170.2	165	Yes

Technician

Approved

Transportation Research Center Inc.

Front Head Drop
HIII 5th Serial No. 426 Certification No. 5-1
Test Date: 11/28/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Peak Head Resultant Acceleration	250 - 300 g	274.3 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	3.2 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

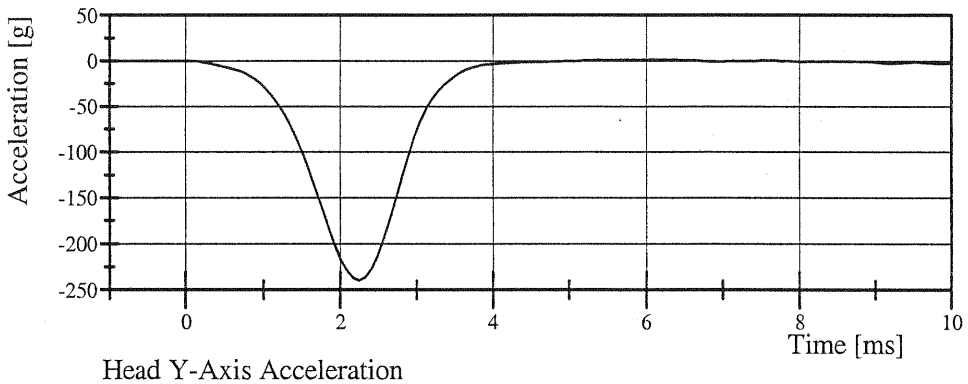
11.28.2007 08:43:46 611

071214

Transportation Research Center Inc.

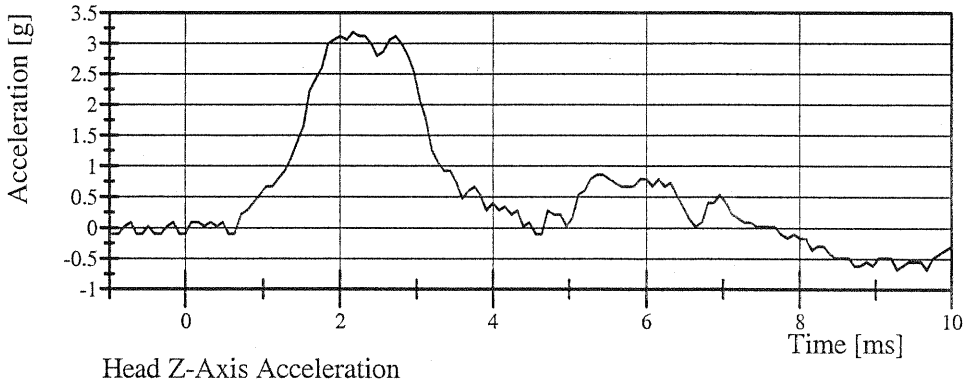
Front Head Drop
HIII 5th Serial No. 426 Certification No. 5-1
Test Date: 11/28/2007

Head X-Axis Acceleration



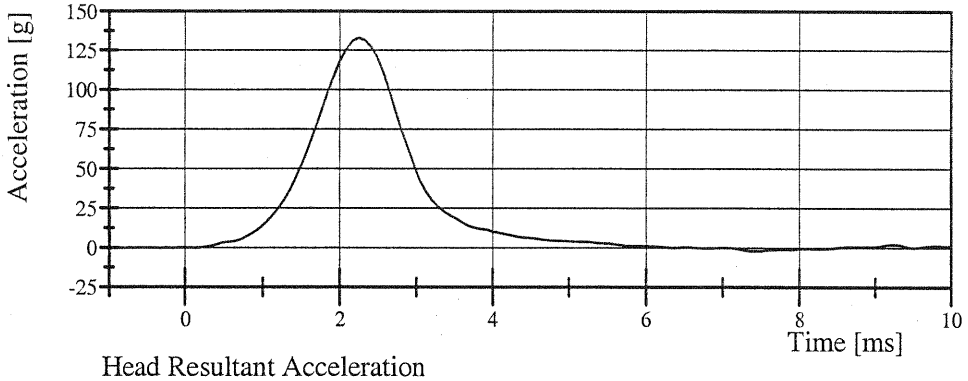
Filter Class: CFC_1000
Max: 1.7 g at 6.2 ms
Min: -239.8 g at 2.2 ms

Head Y-Axis Acceleration



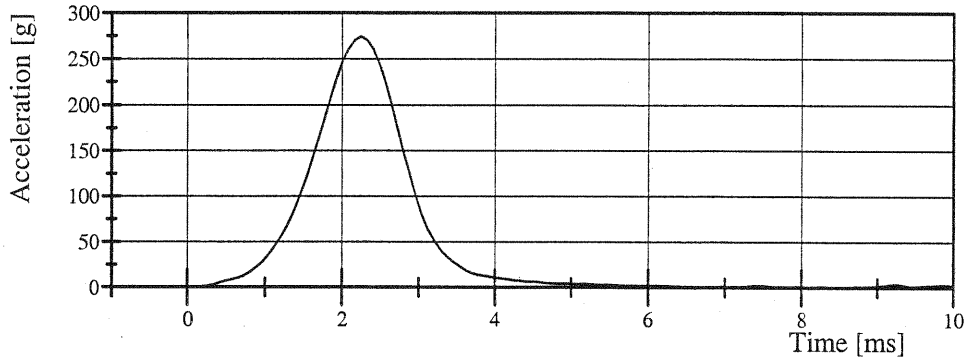
Filter Class: CFC_1000
Max: 3.2 g at 2.2 ms
Min: -0.7 g at 9.3 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 133.1 g at 2.2 ms
Min: -2.0 g at 7.4 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 274.3 g at 2.2 ms
Min: 0.0 g at -0.2 ms

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

11.28.2007 08:43:53 611

071214

Transportation Research Center Inc.

Neck Flexion
HIII 5th Serial No. 426 Certification No. 5-1
Test Date: 12/3/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	33 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	7.003 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	(-2.1) - (-2.5) m/s	-2.45 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	(-4.0) - (-5.0) m/s	-4.68 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	(-5.8) - (-7.0) m/s	-6.59 m/s	Yes
Total Head D-Plane Rotation	(-77) - (-91) °	-78.8 °	Yes
Total Neck Occipital Condyles Moment Between -77° and -91° Rotation	69 - 83 N·m	74.1 N·m	Yes
Total Neck Occipital Condyles Moment Decay to 10 N·m	80 - 100 ms	84.6 ms	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart O with Polarity in accordance with J211

12.03.2007 13:24:36 1096

071214

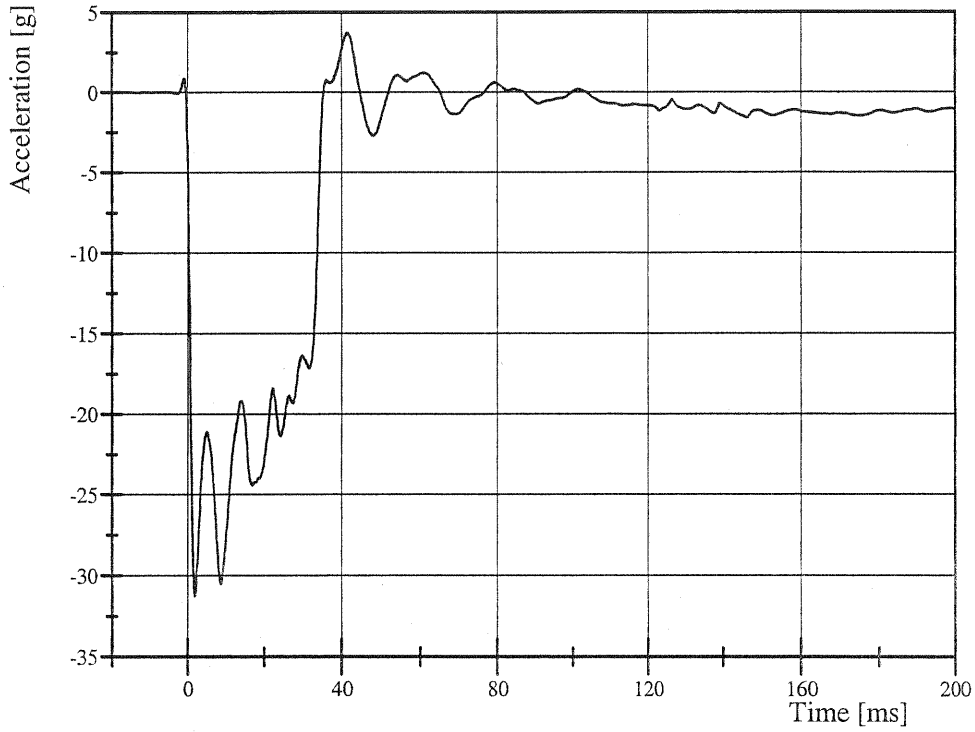
Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 426 Certification No. 5-1

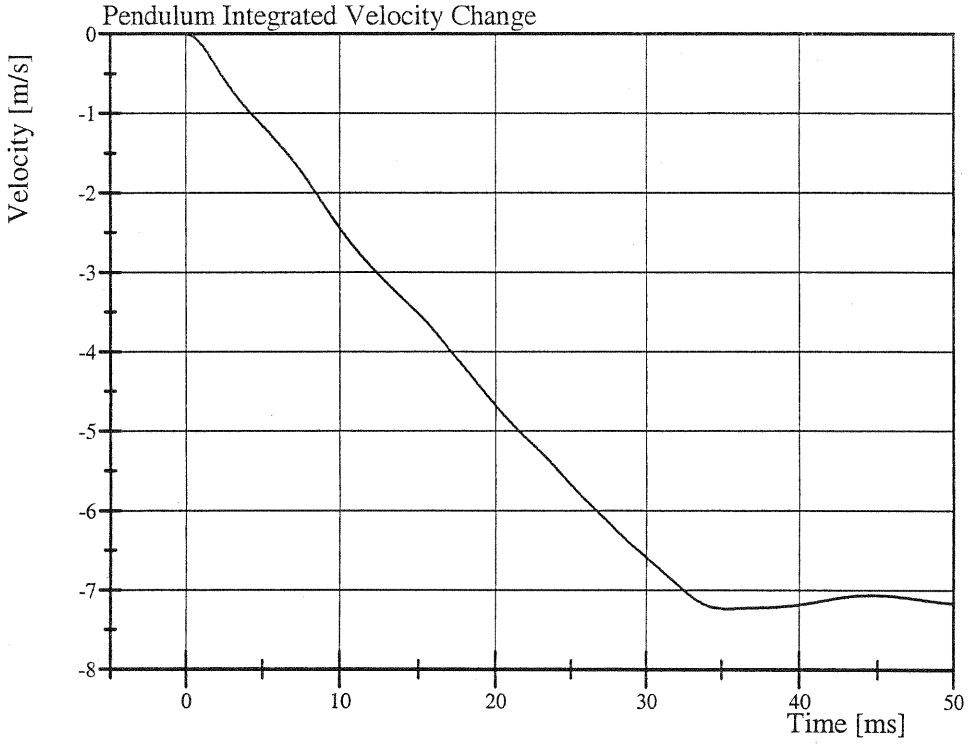
Test Date: 12/3/2007

Pendulum Acceleration



Filter Class: CFC_180
Max: 3.7 g at 41.5 ms
Min: -31.3 g at 1.8 ms

Pendulum Integrated Velocity Change



Filter Class: CFC_180
Max: 0.0 m/s at 0.0 ms
Min: -7.2 m/s at 35.4 ms

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

12.03.2007 13:24:46 1096

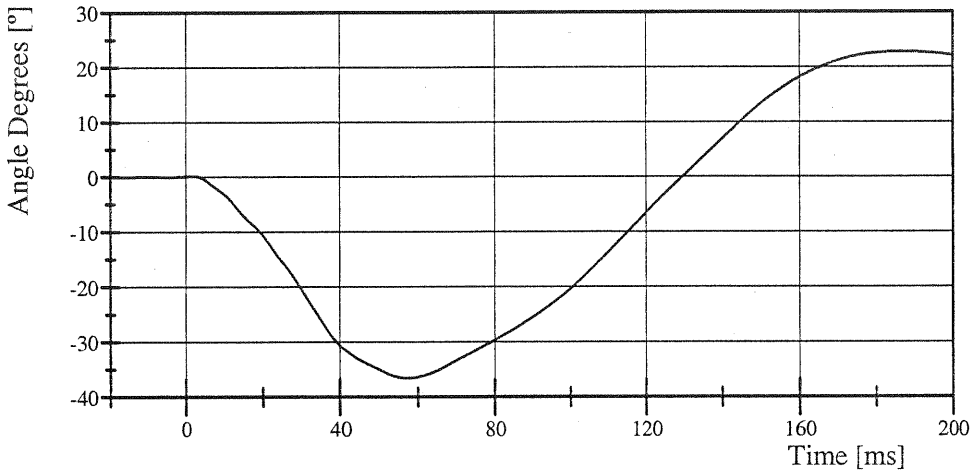
Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 426 Certification No. 5-1

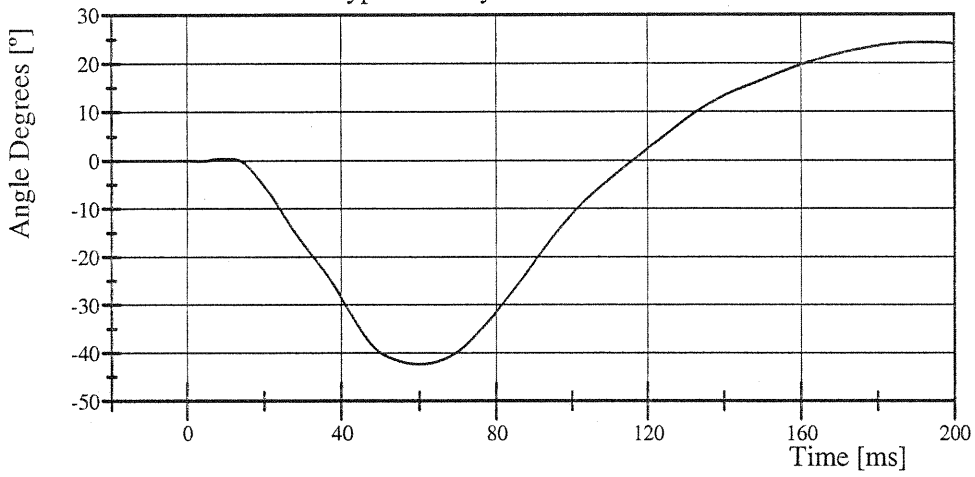
Test Date: 12/3/2007

Pot Rotation at the Base of Neck



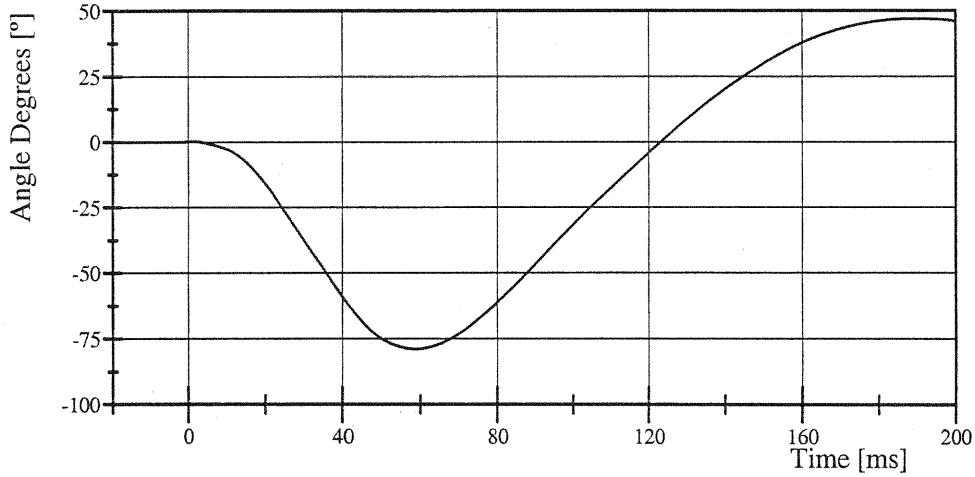
Filter Class: CFC_60
Max: 22.8 ° at 186.5 ms
Min: -36.6 ° at 57.5 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 24.3 ° at 191.8 ms
Min: -42.4 ° at 60.2 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 47.0 ° at 189.6 ms
Min: -78.8 ° at 58.9 ms

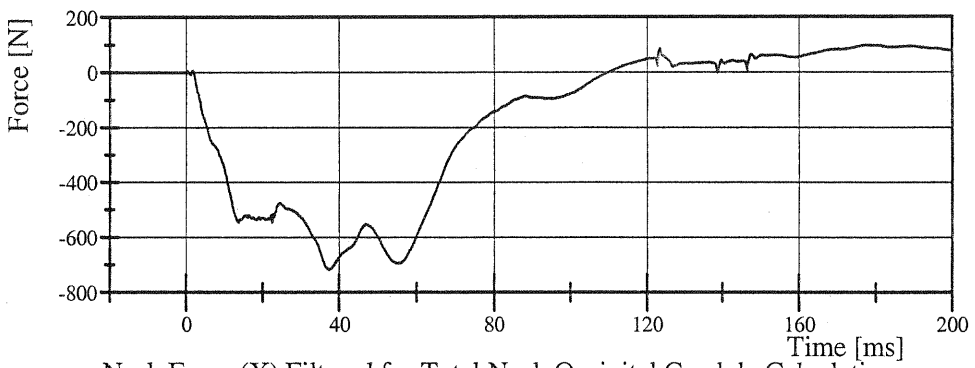
Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

12.03.2007 13:24:46 1096

Transportation Research Center Inc.

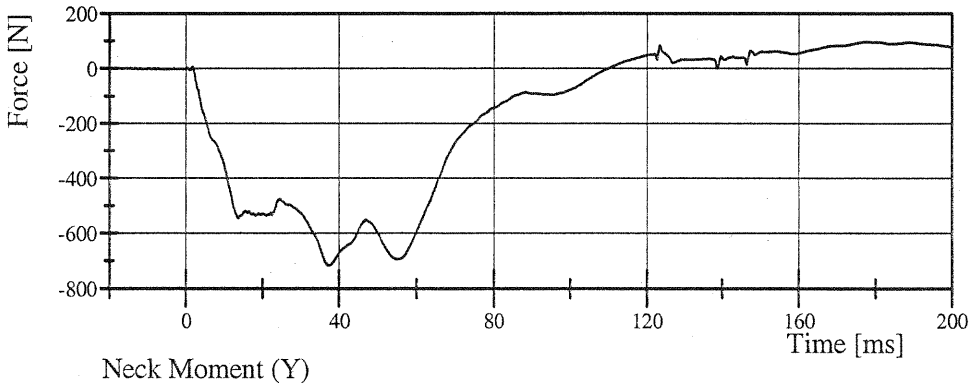
Neck Flexion
HIII 5th Serial No. 426 Certification No. 5-1
Test Date: 12/3/2007

Neck Force (X)



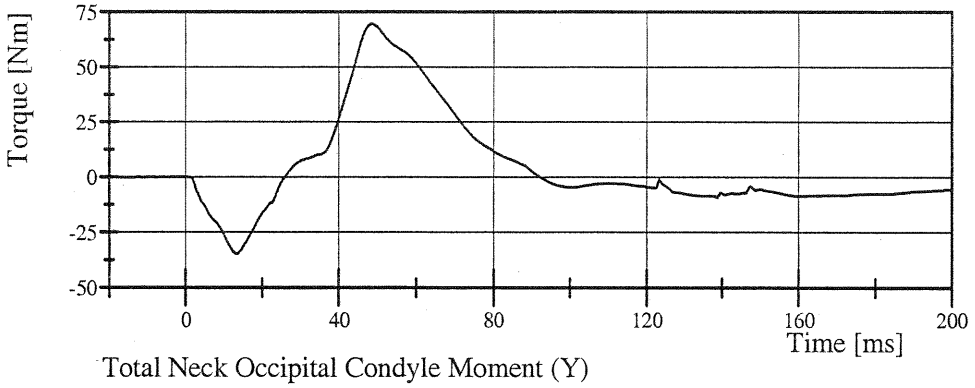
Filter Class: CFC_1000
Max: 98.4 N at 177.3 ms
Min: -716.1 N at 37.3 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



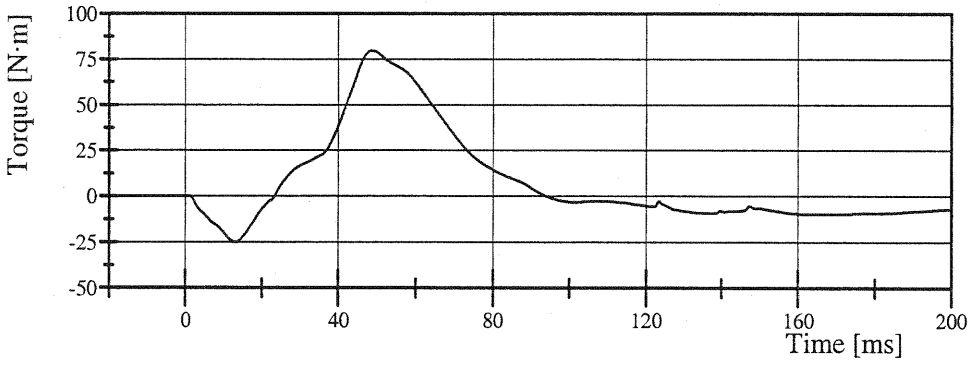
Filter Class: CFC_600
Max: 98.0 N at 177.3 ms
Min: -715.8 N at 37.4 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 69.7 Nm at 48.5 ms
Min: -34.7 Nm at 13.4 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 79.8 N·m at 48.6 ms
Min: -25.1 N·m at 13.2 ms

Transportation Research Center Inc.

Front Thorax
HIII 5th Serial No. 426 Certification No. 5-13
Test Date: 12/4/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.748 m/s	Yes
Probe Force Peak Between 50.0 mm and 58.0 mm Chest Deflection	(-3,900) - (-4,400) N	-4,362.2 N	Yes
Probe Force Peak Between 18.0 mm and 50.0 mm Chest Deflection	>= (-4,600) N	-4,045.1 N	Yes
Maximum Chest Compression	(-50) - (-58) mm	-57.1 mm	Yes
Internal Hysteresis	69 - 85 %	70.9 %	Yes

Test meets specifications.

Comments:

Technician

Approved

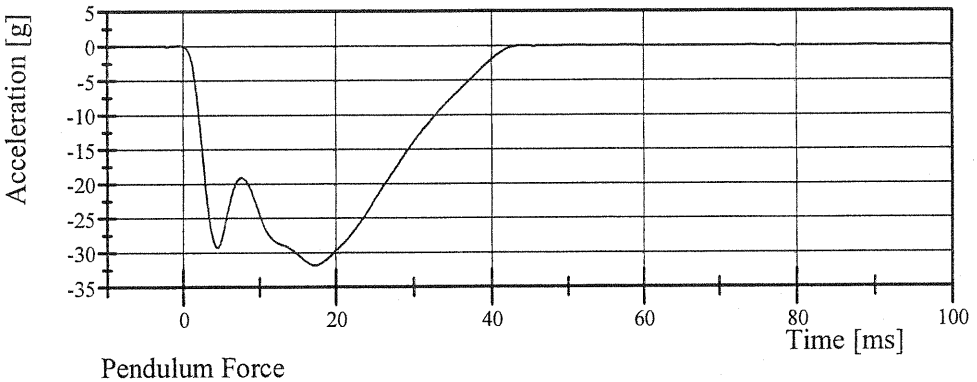
Specification Source: CFR49 Part 572 Subpart O with Polarity in accordance with J211

12.04.2007 11:24:42 482

Transportation Research Center Inc.

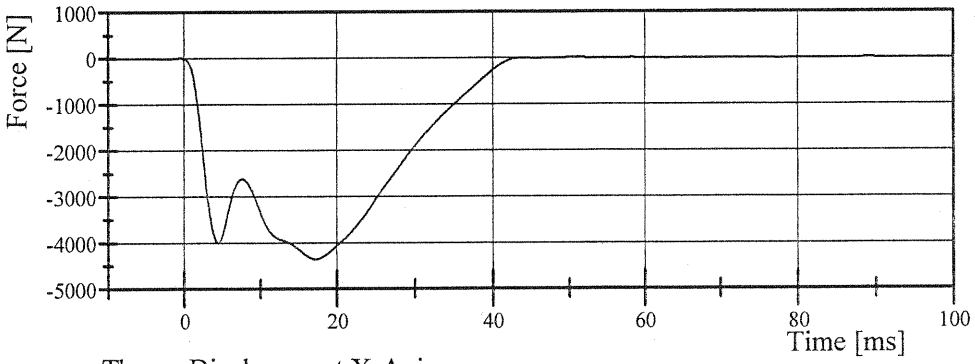
Front Thorax
HIII 5th Serial No. 426 Certification No. 5-13
Test Date: 12/4/2007

Pendulum Acceleration



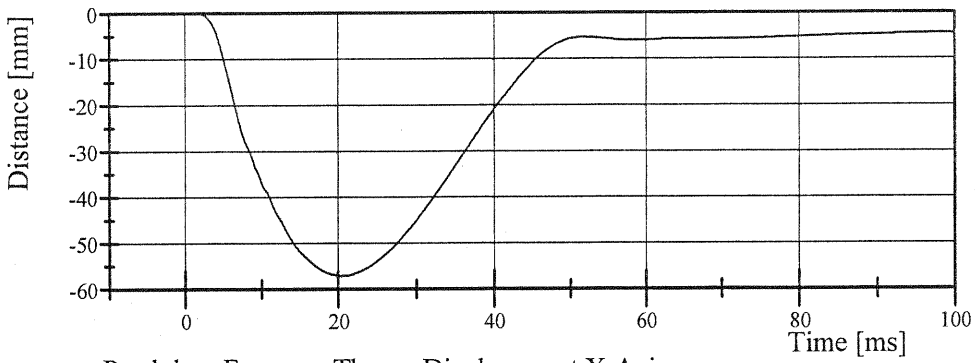
Filter Class: CFC_180
Max: 0.1 g at 50.9 ms
Min: -31.8 g at 17.3 ms

Pendulum Force



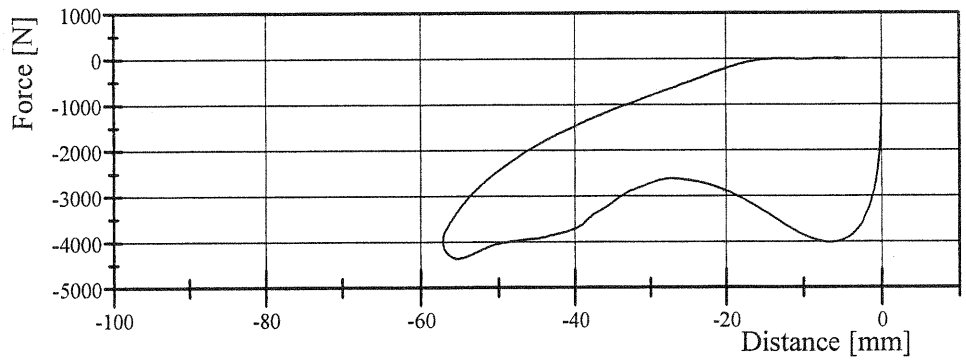
Filter Class: CFC_180
Max: 10.0 N at 50.9 ms
Min: -4,362.2 N at 17.3 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.0 mm at -8.8 ms
Min: -57.1 mm at 20.4 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 10.0 N at -5.4 mm
Min: -4,362.2 N at -55.3 mm

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

12.04.2007 11:25:15 482

071214

TRANSPORTATION RESEARCH CENTER INC.

TORSO FLEXION TEST

HYBRID III SMALL FEMALE

CAL DATE: 12-Dec-07

TRC, INC. **TEST NO: TOFL-06** **572 O SN426 TORSO FLEX CAL 05**

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TIME	NA	**850**
TEMPERATURE	18.9 – 25.6° C	**21.5**C
RELATIVE HUMIDITY	10 – 70 %	**30** %
INITIAL ANGLE OF UNSUPPORRTED DUMMY	<= 20° REFERENCED TO VERTICAL	**17.6°**
MAXIMUM FORCE AT 45 DEG. DURING 10 SECOND PERIOD	320 – 390 N	**384.2** N
RETURN ANGLE – (DIFFERENCE BETWEEN RETURN ANGLE & INTIAL ANGLE)	+/- 8 ° OF INTIAL ANGLE	**4.5°**
RATE	0.5° - 1.5 °/sec	**0.98**°/sec

TEST MEETS SPECIFICATIONS

Comments:

TECHNICIAN Charles W Ball

Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 5th Serial No. 426 Certification No. 5-2
Test Date: 11/27/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.105 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,603.6 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

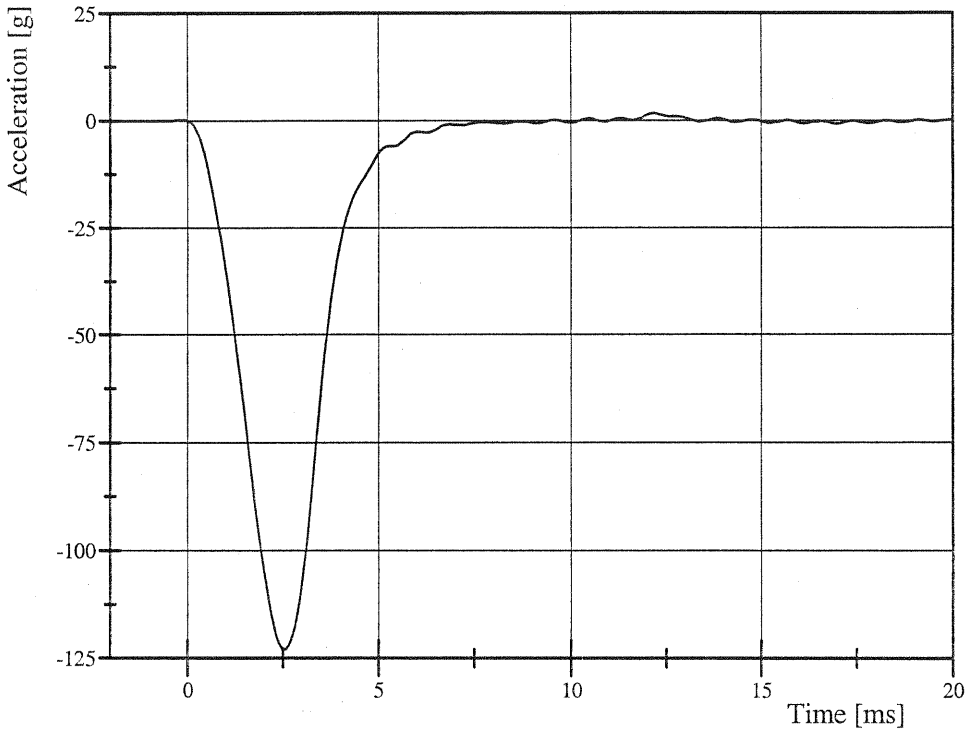
11.27.2007 09:17:57 1702

071214

Transportation Research Center Inc.

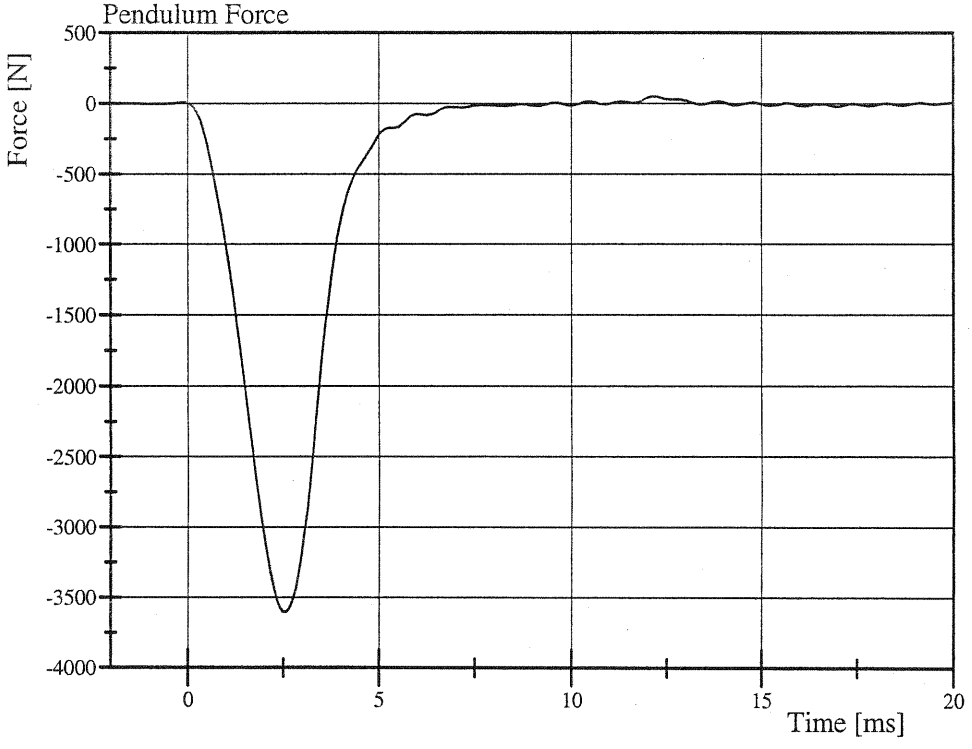
Left Knee Femur Response Test
HIII 5th Serial No. 426 Certification No. 5-2
Test Date: 11/27/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 1.7 g at 12.2 ms
Min: -122.9 g at 2.6 ms

Pendulum Force



Filter Class: CFC_600
Max: 49.7 N at 12.2 ms
Min: -3,603.6 N at 2.6 ms

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

11.27.2007 09:18:10 1702

071214

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 5th Serial No. 426 Certification No. 5-1
Test Date: 11/27/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	34 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.111 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,505.1 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

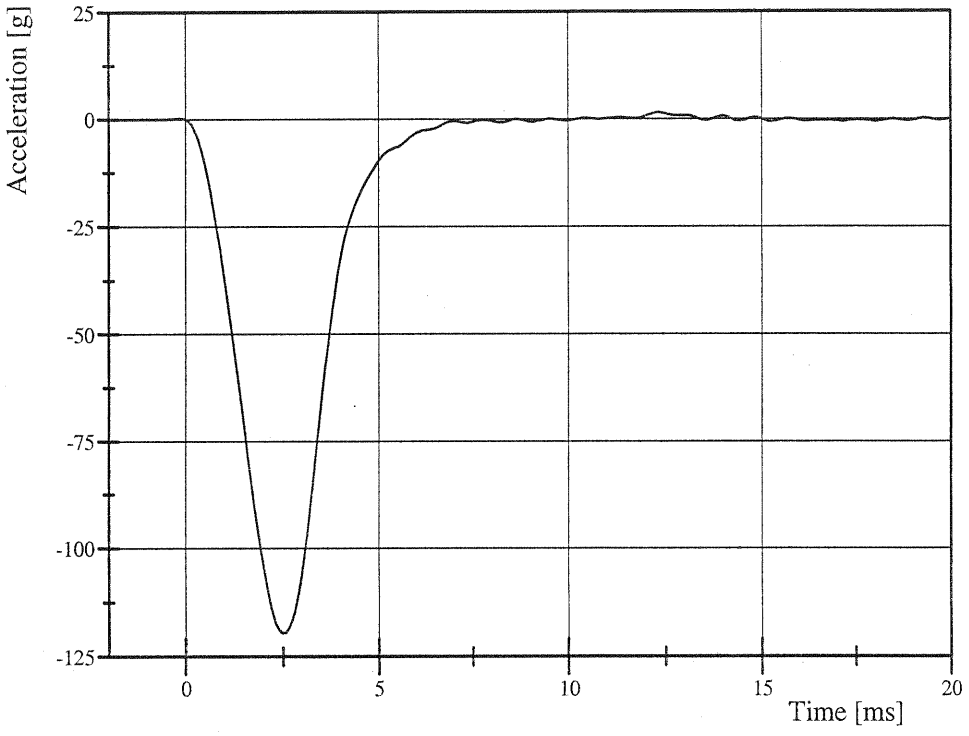
11.27.2007 09:31:08 1696

071214

Transportation Research Center Inc.

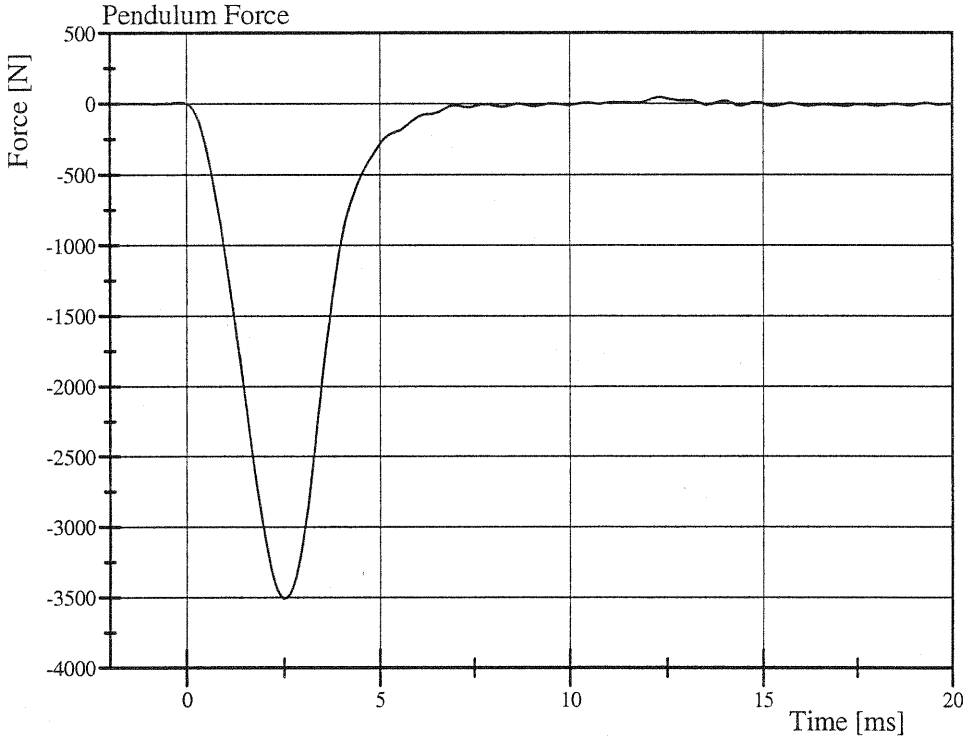
Right Knee Femur Response Test
HIII 5th Serial No. 426 Certification No. 5-1
Test Date: 11/27/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 1.5 g at 12.3 ms
Min: -119.5 g at 2.5 ms

Pendulum Force



Filter Class: CFC_600
Max: 44.0 N at 12.3 ms
Min: -3,505.1 N at 2.5 ms

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

11.27.2007 09:31:15 1696

071214

Pre-Test Dummy Configuration and Performance Verification Data

Right Side Row 6 Left Seat Dummy S/N: 313

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 313
Calibration No. 01

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	880	Yes
B	Shoulder Pivot Height	505.5 - 520.7	512	Yes
C	H-Point Height	83.8 - 88.9	87	Yes
D	H-Point From Seatback	134.6 - 139.7	138	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	91	Yes
F	Thigh Clearance	139.7 - 154.9	150	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	296	Yes
H	Skull Cap To Backline	40.6 - 45.7	44	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	331	Yes
J	Elbow Rest Height	190.5 - 210.8	202	Yes
K	Buttock Knee Length	579.1 - 604.5	600	Yes
L	Popliteal Height	429.3 - 454.7	430	Yes
M	Knee Pivot Height	485.1 - 500.4	495	Yes
N	Buttock Popliteal Length	452.1 - 477.5	472	Yes
O	Chest Depth	213.4 - 228.6	220	Yes
P	Foot Length	251.5 - 266.7	260	Yes
V	Shoulder Breadth	421.6 - 436.9	425	Yes
W	Foot Breadth	91.4 - 106.7	100	Yes
Y	Chest Circumference	970.3 - 1000.8	990	Yes
Z	Waist Circumference	835.7 - 866.1	850	Yes
AA	Location For Chest Circumference	429.3 - 434.3	430	Yes
BB	Location For Waist Circumference	226.1 - 231.1	230	Yes

Comments:

Technician

Charles W. Ball

Approved

Ron Stoner

Transportation Research Center Inc.

Front Head Drop
HIII 50th Serial No. 313 Certification No. 1-1
Test Date: 11/13/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	46 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	259.1 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	8.0 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

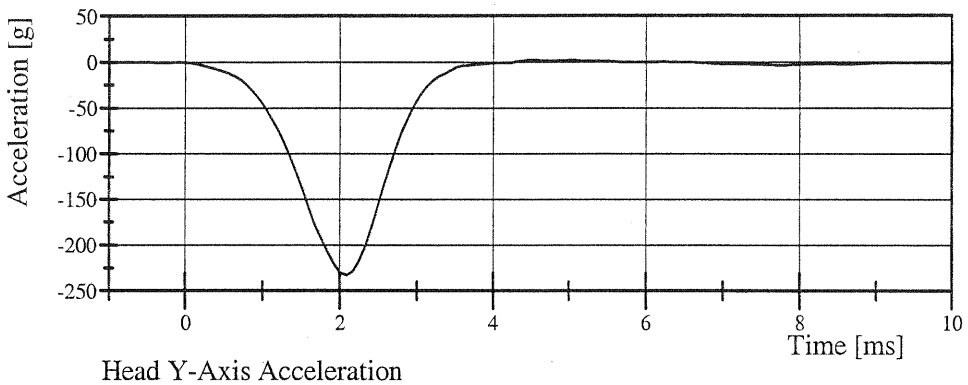
11.13.2007 09:09:12 613

071214

Transportation Research Center Inc.

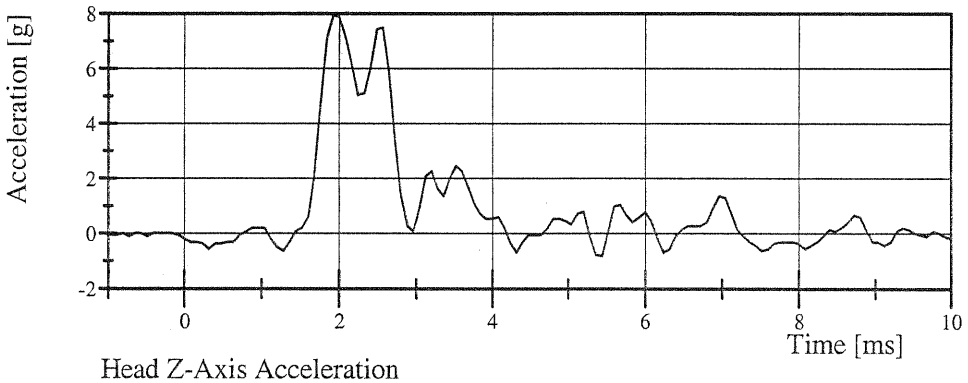
Front Head Drop
HIII 50th Serial No. 313 Certification No. 1-1
Test Date: 11/13/2007

Head X-Axis Acceleration



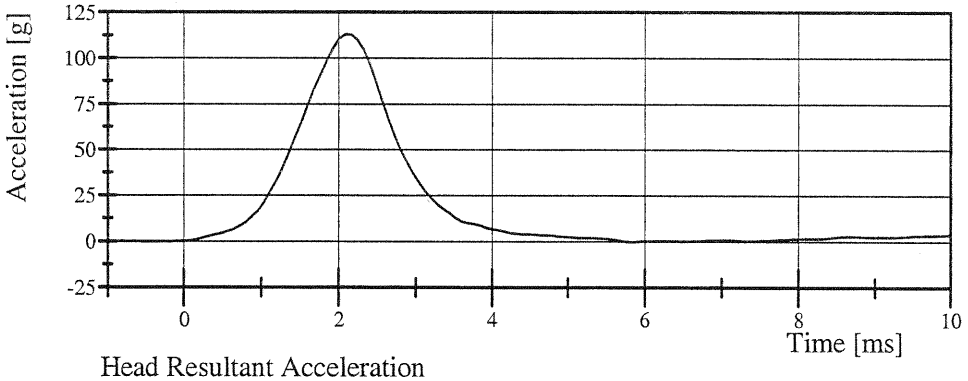
Filter Class: CFC_1000
Max: 2.3 g at 4.5 ms
Min: -233.1 g at 2.1 ms

Head Y-Axis Acceleration



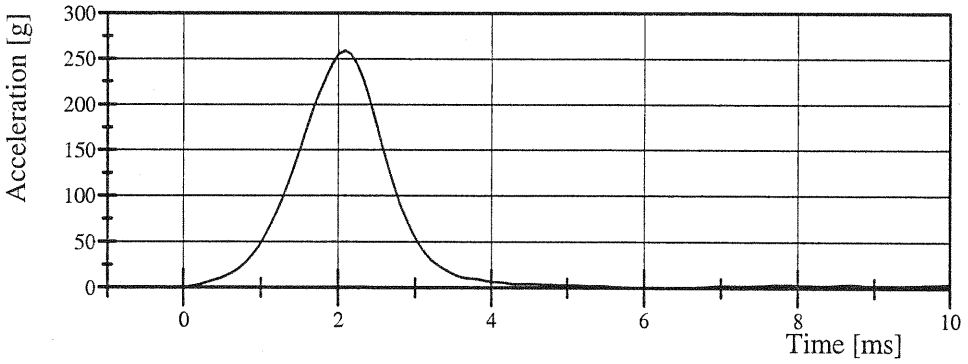
Filter Class: CFC_1000
Max: 8.0 g at 1.9 ms
Min: -0.8 g at 5.4 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 113.0 g at 2.1 ms
Min: -0.3 g at 5.8 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 259.1 g at 2.1 ms
Min: 0.0 g at -1.0 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.13.2007 09:09:20 613

071214

Transportation Research Center Inc.

Neck Flexion
HIII 50th Serial No. 313 Certification No. 1-6
Test Date: 11/13/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	47 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.920 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	41.8 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-22.76 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-18.73 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-14.48 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-14.48 g	Yes
Total Head D-Plane Rotation			
Peak	(-64) - (-78) °	-65.6 °	Yes
Time of Peak	57 - 64 ms	60.0 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	118.6 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	88 - 108 N·m	93.0 N·m	Yes
Time of Peak	47 - 58 ms	53.5 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	97.8 ms	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.13.2007 15:11:07 2992

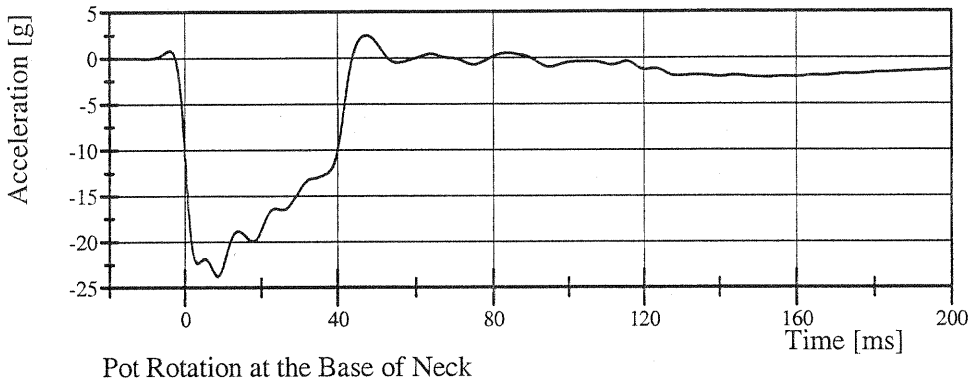
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 313 Certification No. 1-6

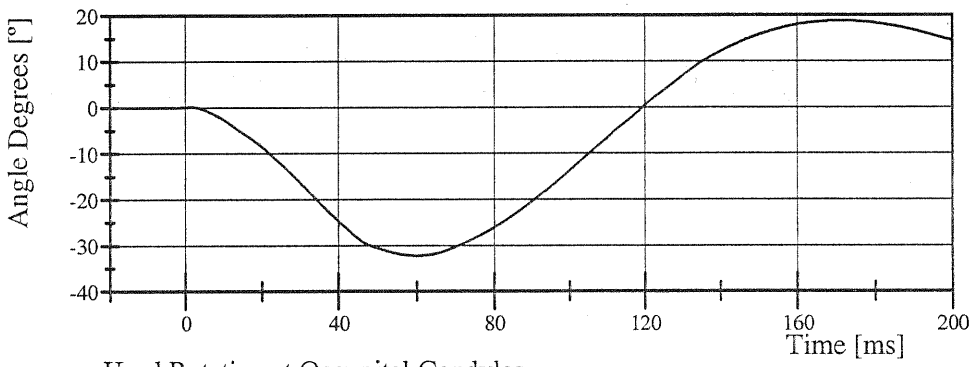
Test Date: 11/13/2007

Pendulum Acceleration



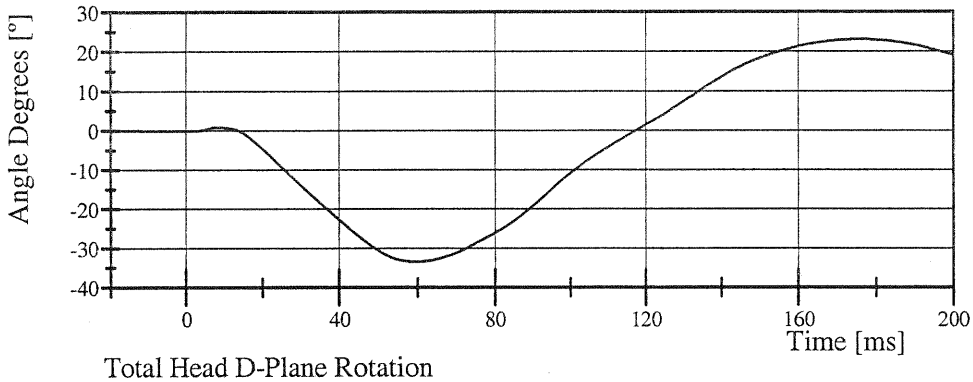
Filter Class: CFC_60
Max: 2.5 g at 47.4 ms
Min: -23.8 g at 8.6 ms

Pot Rotation at the Base of Neck



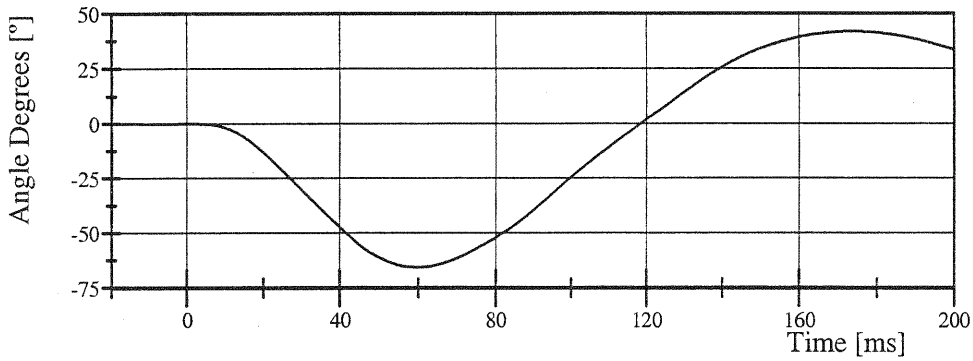
Filter Class: CFC_60
Max: 18.8 ° at 171.3 ms
Min: -32.2 ° at 60.2 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 23.1 ° at 175.9 ms
Min: -33.4 ° at 59.8 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 41.9 ° at 173.8 ms
Min: -65.6 ° at 60.0 ms

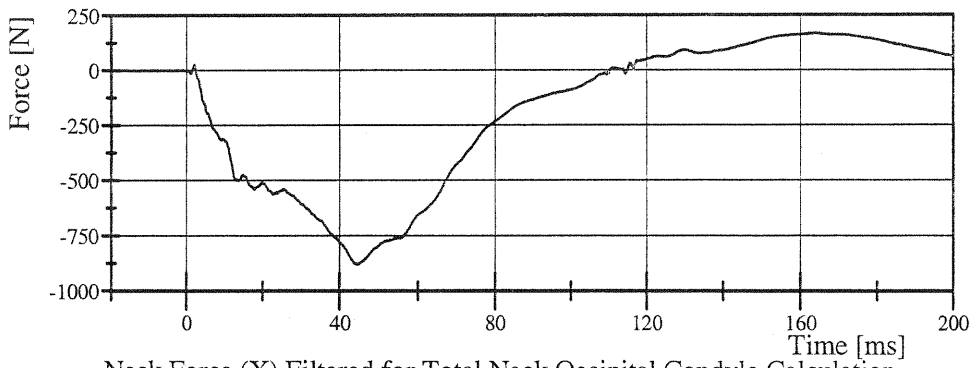
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 313 Certification No. 1-6

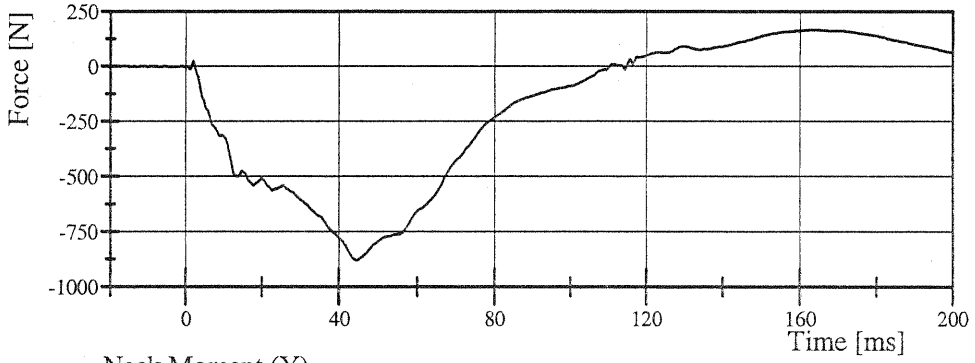
Test Date: 11/13/2007

Neck Force (X)



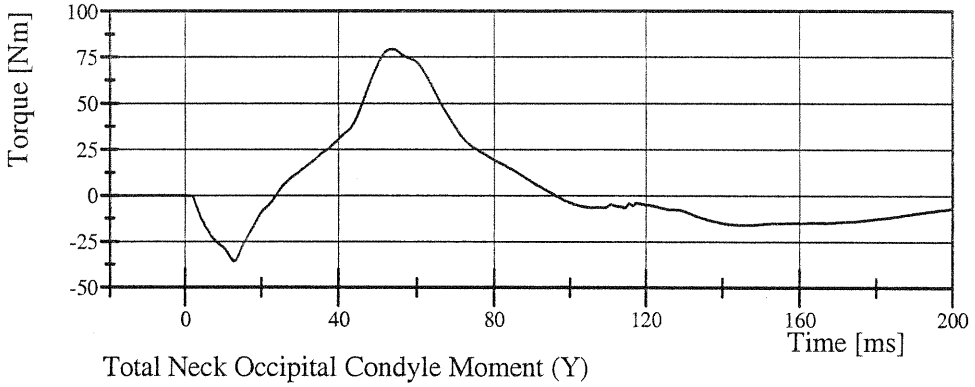
Filter Class: CFC_1000
Max: 167.8 N at 163.8 ms
Min: -879.7 N at 44.6 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



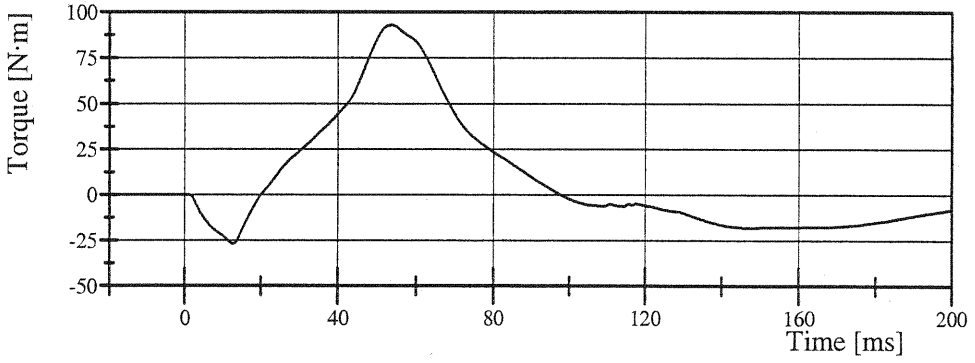
Filter Class: CFC_600
Max: 167.4 N at 163.6 ms
Min: -879.4 N at 44.6 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 79.4 Nm at 53.8 ms
Min: -35.7 Nm at 12.8 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 93.0 N·m at 53.5 ms
Min: -26.9 N·m at 12.7 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.13.2007 15:11:30 2992

071214

Transportation Research Center Inc.

Neck Extension
HIII 50th Serial No. 313 Certification No. 1-1
Test Date: 11/14/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	62 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-5.979 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	40.3 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	19.38 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	16.74 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	13.88 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	13.88 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	93.1 °	Yes
Time of Peak	72 - 82 ms	80.1 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	160.8 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-53) - (-80) N·m	-56.5 N·m	Yes
Time of Peak	65 - 79 ms	72.7 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	142.6 ms	Yes

Test meets specifications.

Comments:

Technician

Approved

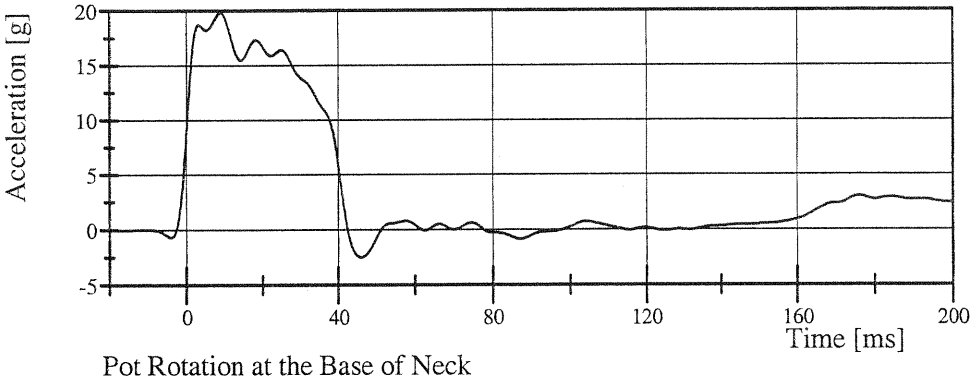
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.14.2007 07:52:57 3064

Transportation Research Center Inc.

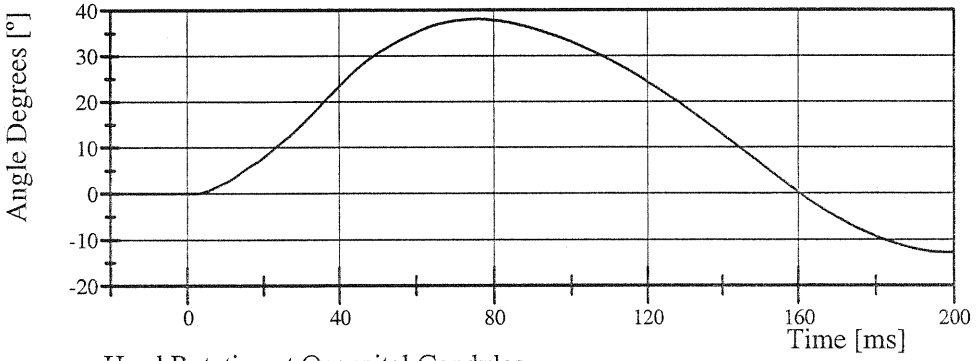
Neck Extension
HIII 50th Serial No. 313 Certification No. 1-1
Test Date: 11/14/2007

Pendulum Acceleration



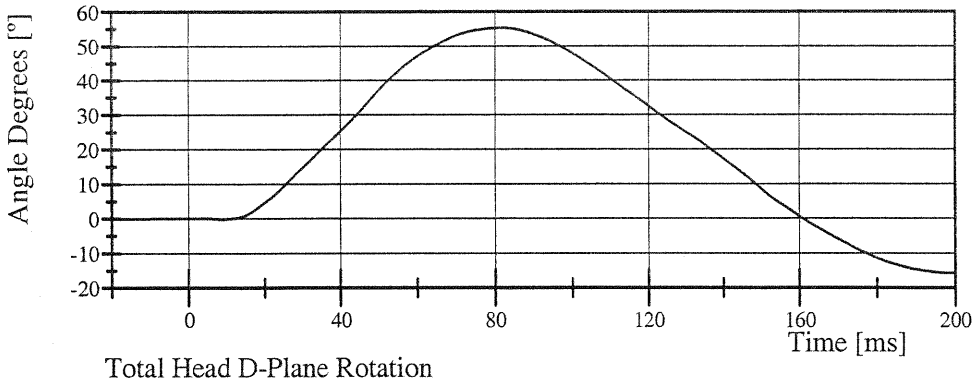
Filter Class: CFC_60
Max: 19.8 g at 8.9 ms
Min: -2.5 g at 45.9 ms

Pot Rotation at the Base of Neck



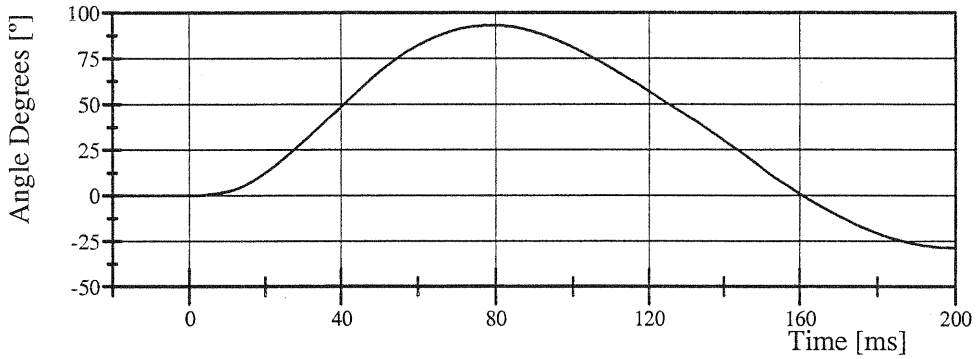
Filter Class: CFC_60
Max: 38.0 ° at 76.1 ms
Min: -12.9 ° at 200.0 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 55.4 ° at 81.7 ms
Min: -15.8 ° at 199.8 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 93.1 ° at 80.1 ms
Min: -28.6 ° at 199.9 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.14.2007 07:53:08 3064

071214

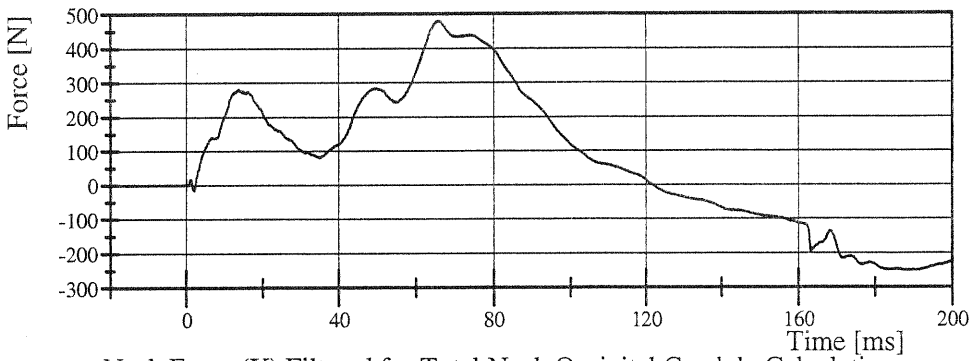
Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 313 Certification No. 1-1

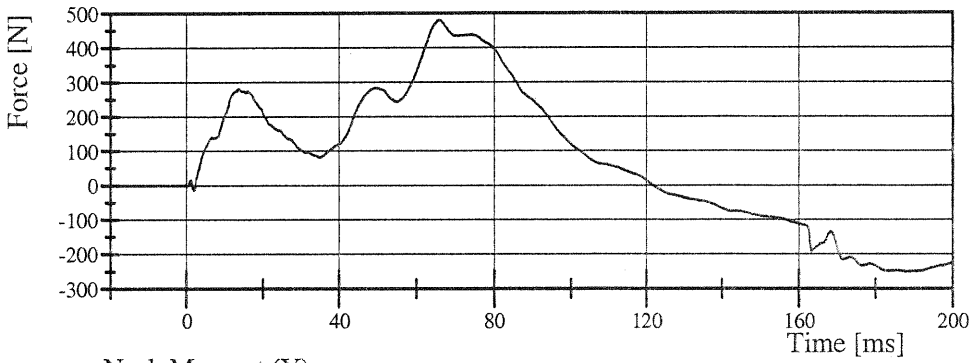
Test Date: 11/14/2007

Neck Force (X)



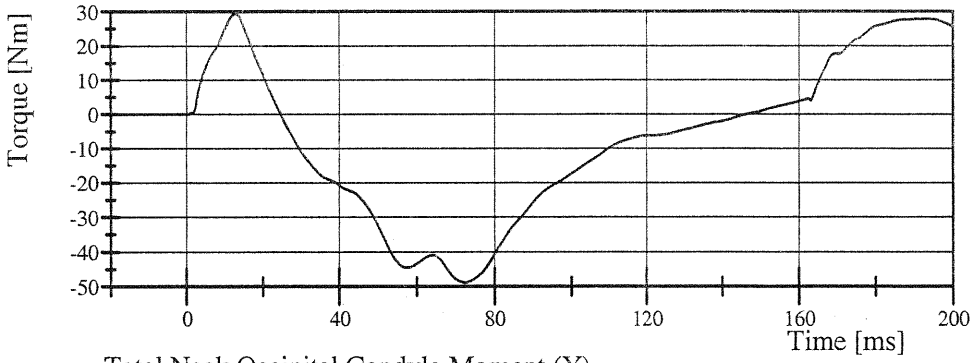
Filter Class: CFC_1000
Max: 480.1 N at 65.9 ms
Min: -250.5 N at 188.2 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



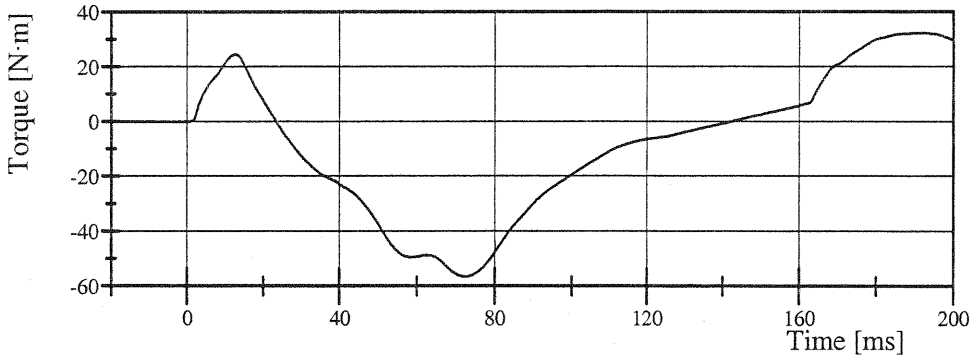
Filter Class: CFC_600
Max: 479.9 N at 66.0 ms
Min: -250.1 N at 188.2 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 29.3 Nm at 12.6 ms
Min: -48.8 Nm at 72.4 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 32.3 N·m at 190.5 ms
Min: -56.5 N·m at 72.7 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.14.2007 07:53:09 3064

071214

Transportation Research Center Inc.

Front Thorax
HIII 50th Serial No. 313 Certification No. 1-5
Test Date: 11/14/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	54 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.607 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,890.5 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-65.65 mm	Yes
Internal Hysteresis	65 - 85 %	75.3 %	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

11.14.2007 13:12:14 1589

071214

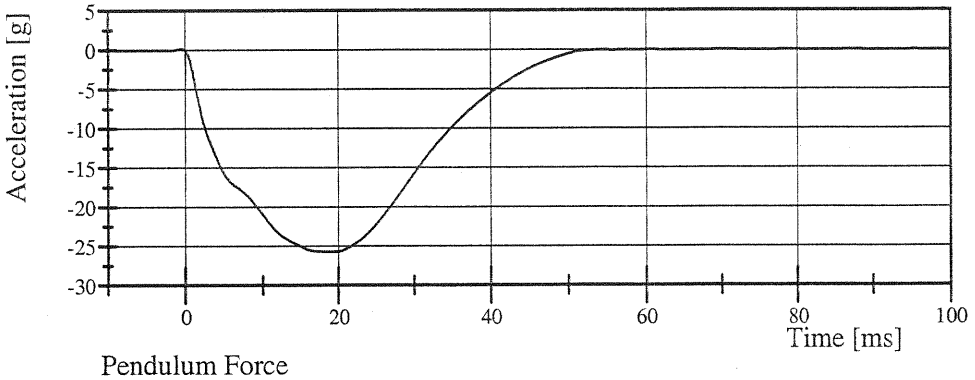
Transportation Research Center Inc.

Front Thorax

HIII 50th Serial No. 313 Certification No. 1-5

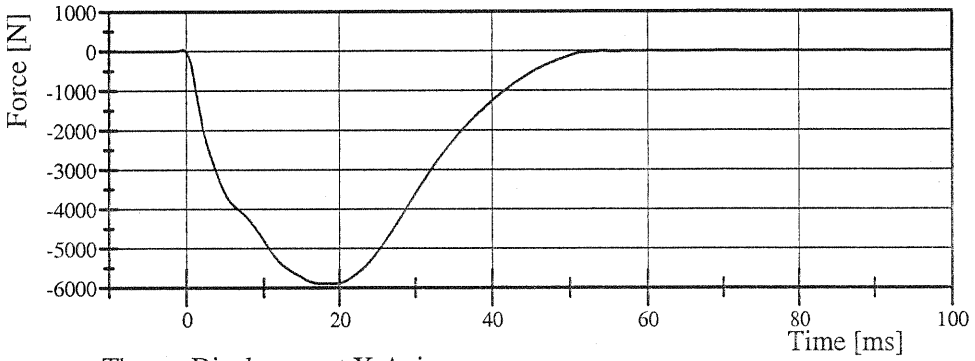
Test Date: 11/14/2007

Pendulum Acceleration



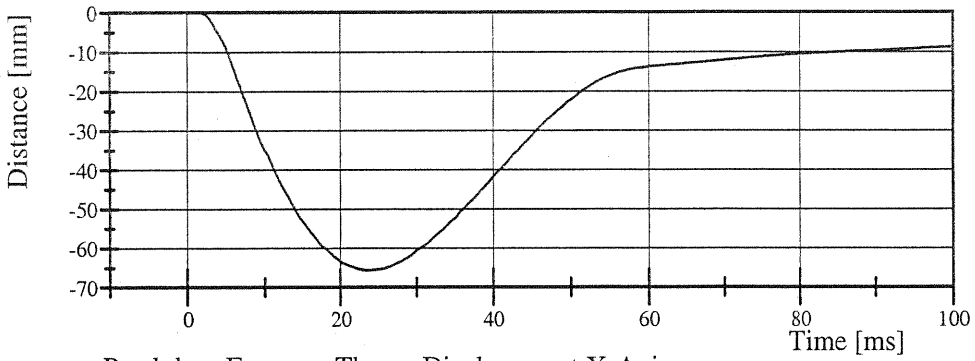
Filter Class: CFC_180
Max: 0.1 g at -0.5 ms
Min: -25.7 g at 19.1 ms

Pendulum Force



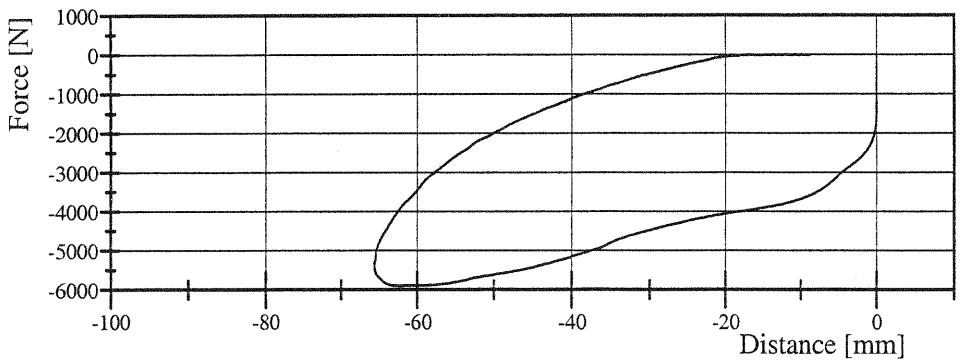
Filter Class: CFC_180
Max: 31.1 N at -0.5 ms
Min: -5,890.5 N at 19.1 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.0 mm at -9.2 ms
Min: -65.6 mm at 23.5 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 31.1 N at 0.0 mm
Min: -5,890.5 N at -62.1 mm

Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

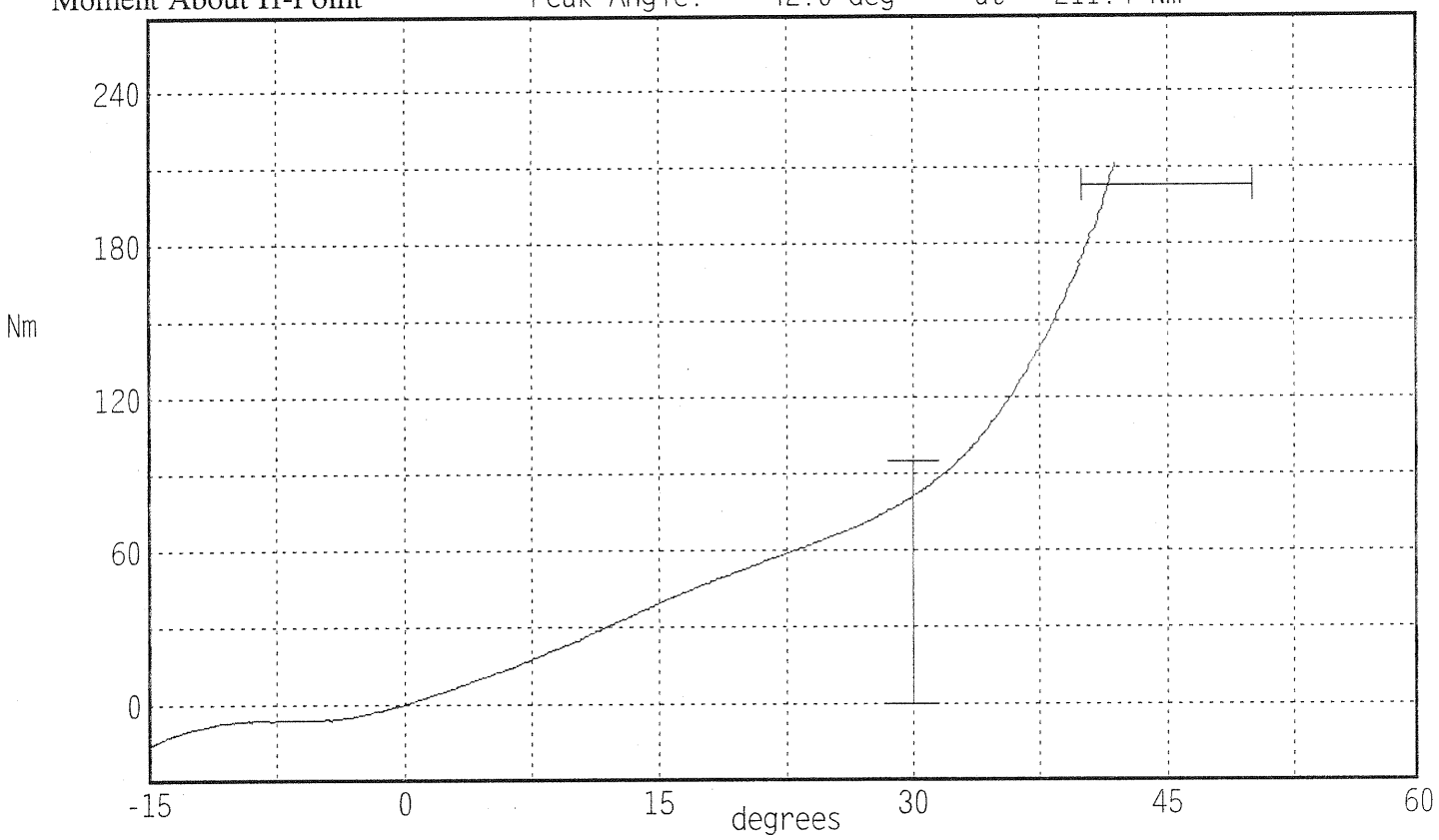
Serial Number: 313L
Test Number: 313C01
Comments:

Date: 11/13/2007
Time: 13:39

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.1	°C	Pass
Humidity	10 - 70	47	%	Pass
Moment at 30 deg	<= 94.9	81.4	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	41.6	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

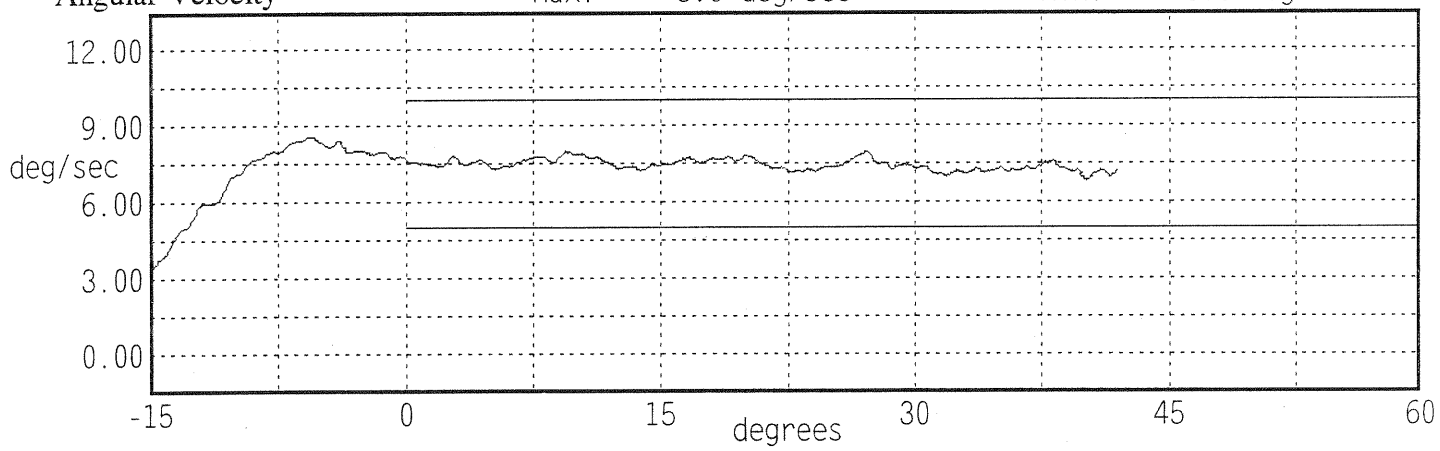
Moment About H-Point

Peak Moment: 211.4 Nm at 42.0 deg
Peak Angle: 42.0 deg at 211.4 Nm



Angular Velocity

Max: 8.0 deg/sec Min: 6.8 deg/sec



Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

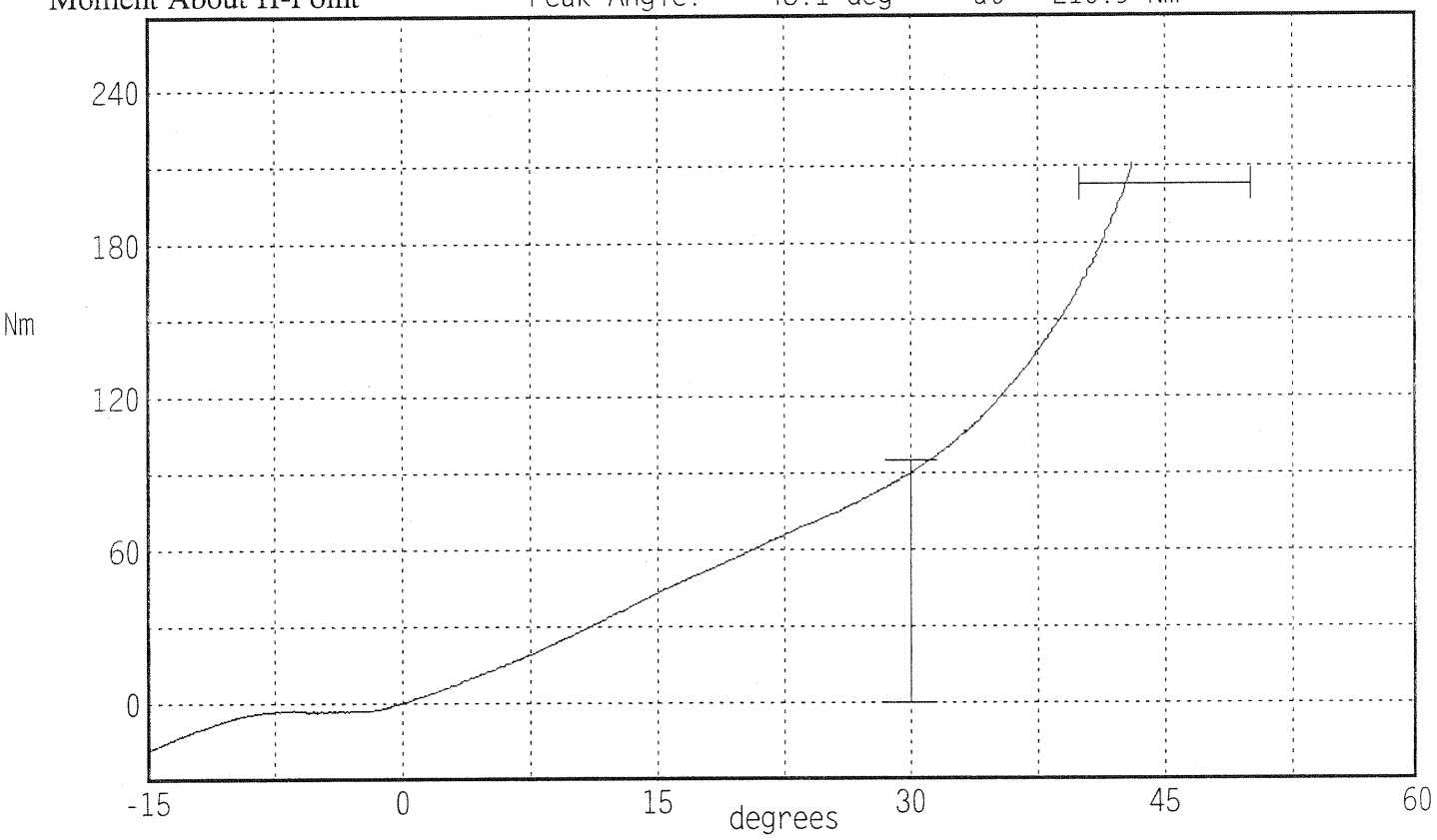
Serial Number: 313R
Test Number: 313C01
Comments:

Date: 11/13/2007
Time: 13:58

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.0	°C	Pass
Humidity	10 - 70	48	%	Pass
Moment at 30 deg	<= 94.9	90.0	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	42.8	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

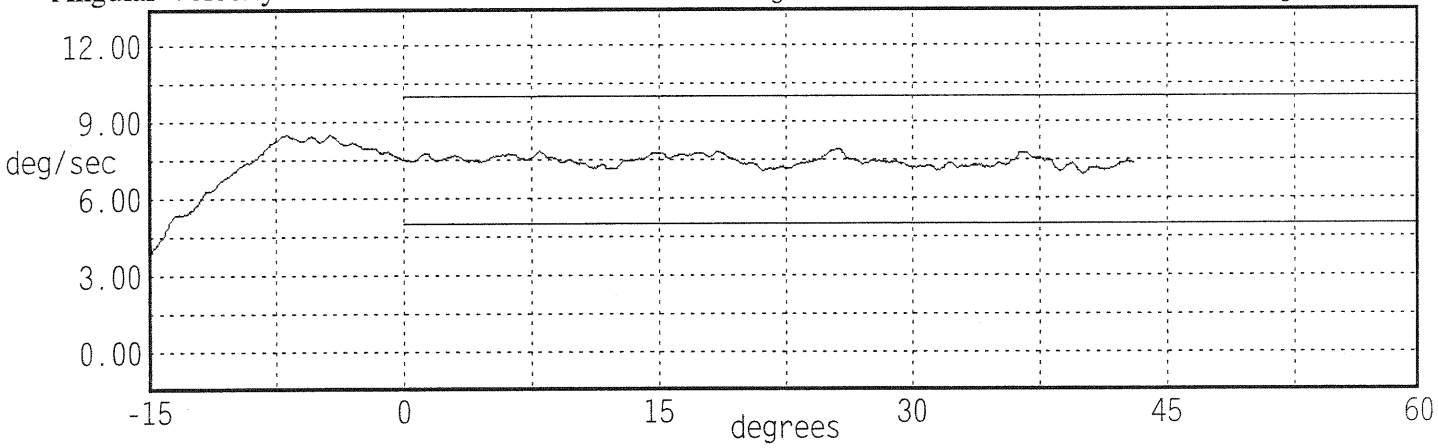
Moment About H-Point

Peak Moment: 210.9 Nm at 43.1 deg
Peak Angle: 43.1 deg at 210.9 Nm



Angular Velocity

Max: 7.9 deg/sec Min: 6.9 deg/sec



Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 313 Certification No. 1-2
Test Date: 11/13/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	50 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.110 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,717.76 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

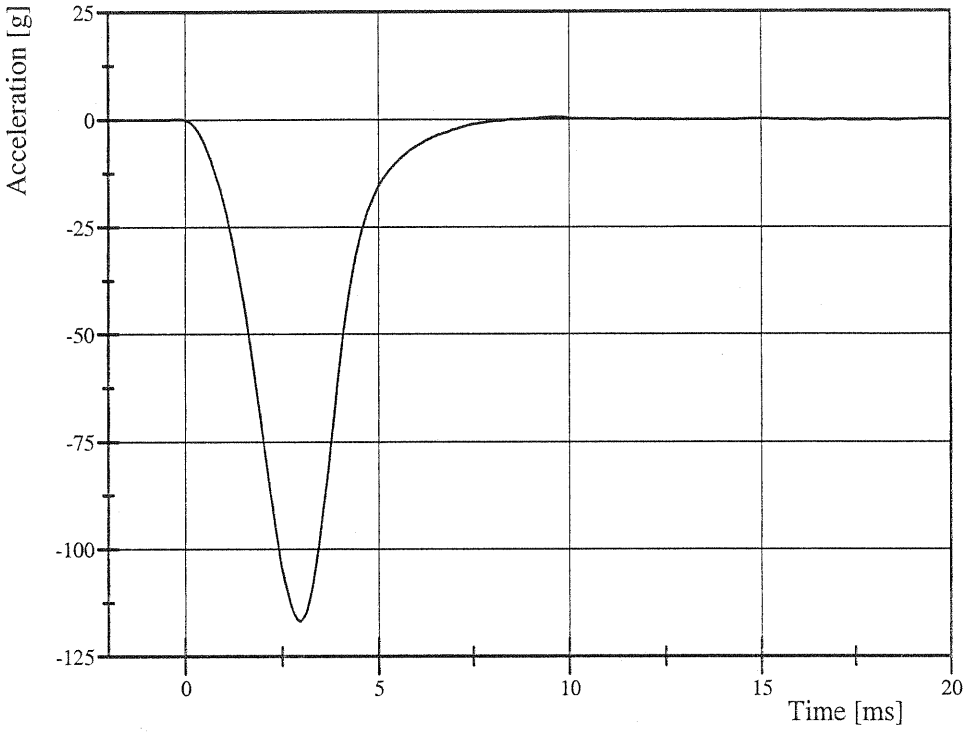
11.13.2007 11:01:44 1831

071214

Transportation Research Center Inc.

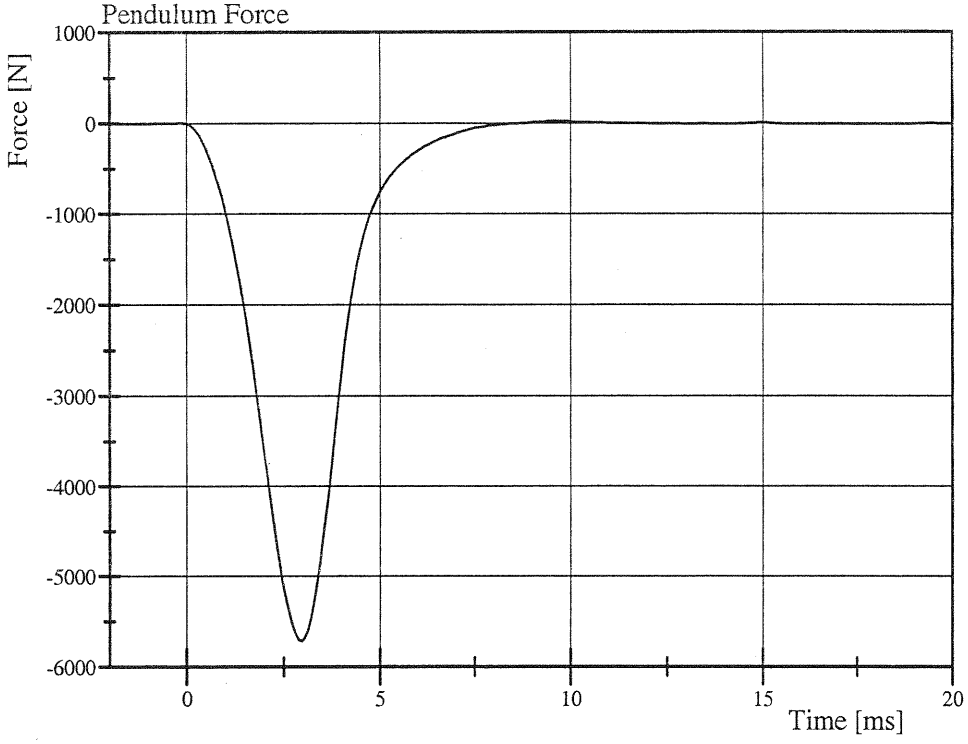
Left Knee Femur Response Test
HIII 50th Serial No. 313 Certification No. 1-2
Test Date: 11/13/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.5 g at 9.6 ms
Min: -116.9 g at 3.0 ms

Pendulum Force



Filter Class: CFC_600
Max: 24.9 N at 9.6 ms
Min: -5,717.8 N at 3.0 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.13.2007 11:01:51 1831

071214

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 313 Certification No. 1-1
Test Date: 11/13/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	48 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.106 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,136.72 N	Yes

Test meets specifications.

Comments:

Technician

Charles W. Bell

Approved

Ron Stoner

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

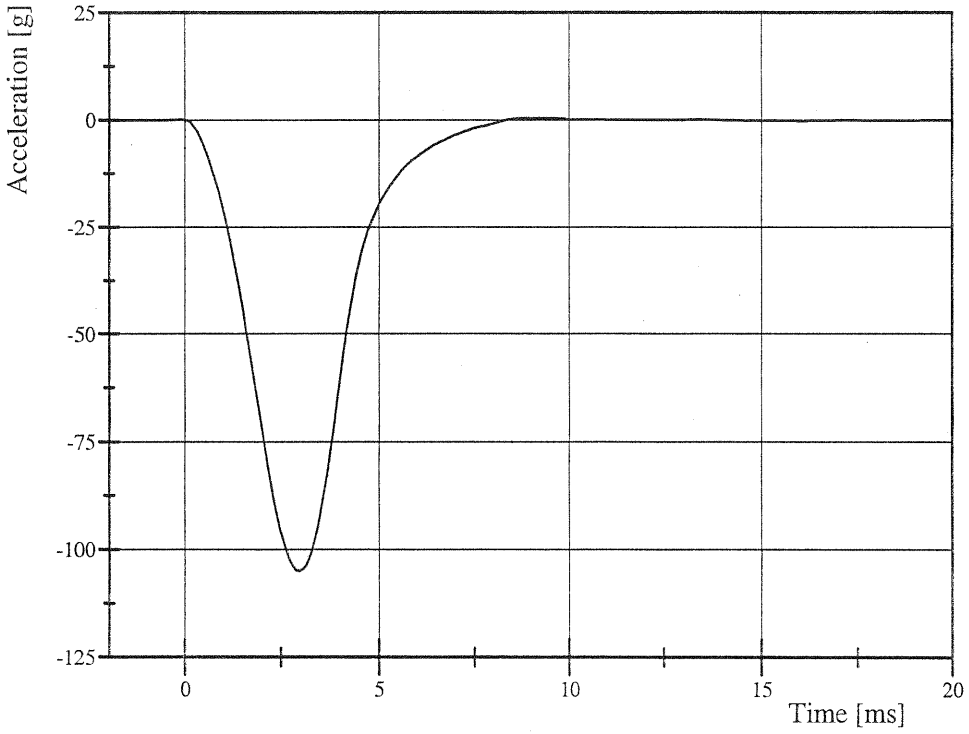
11.13.2007 10:24:18 1841

071214

Transportation Research Center Inc.

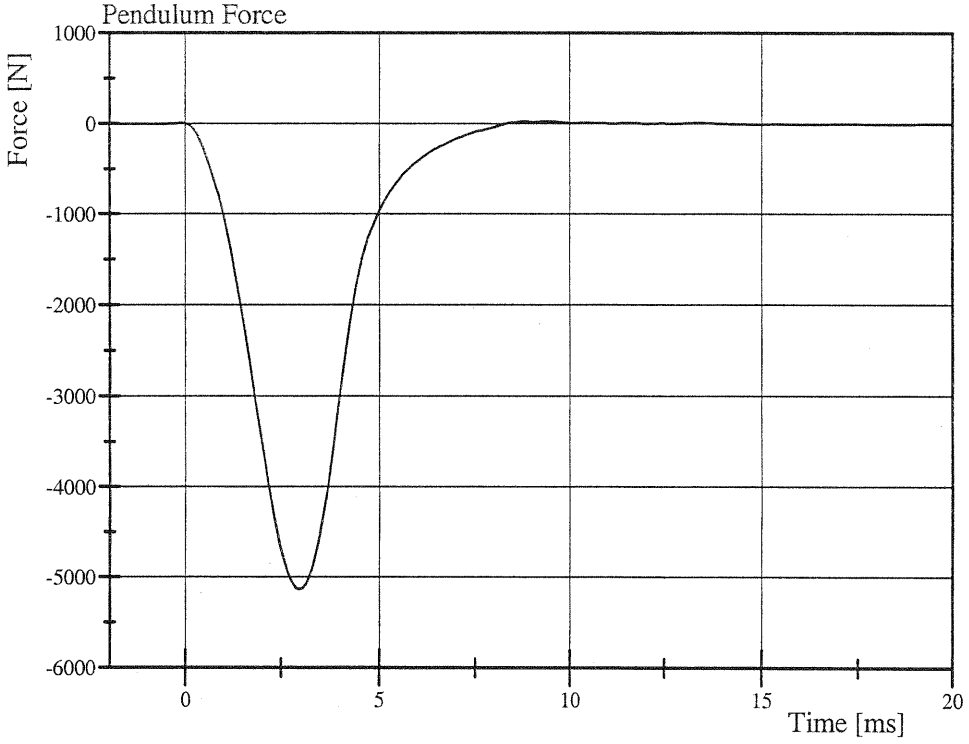
Right Knee Femur Response Test
HIII 50th Serial No. 313 Certification No. 1-1
Test Date: 11/13/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.5 g at 9.4 ms
Min: -105.0 g at 3.0 ms

Pendulum Force



Filter Class: CFC_600
Max: 23.2 N at 9.4 ms
Min: -5,136.7 N at 3.0 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.13.2007 10:24:29 1841

071214

Pre-Test Dummy Configuration and Performance Verification Data

Right Side Row 6 Right Seat Dummy S/N: 314

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 314
Calibration No. 01

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	879	Yes
B	Shoulder Pivot Height	505.5 - 520.7	514	Yes
C	H-Point Height	83.8 - 88.9	85	Yes
D	H-Point From Seatback	134.6 - 139.7	136	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	93	Yes
F	Thigh Clearance	139.7 - 154.9	152	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	295	Yes
H	Skull Cap To Backline	40.6 - 45.7	44	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	331	Yes
J	Elbow Rest Height	190.5 - 210.8	202	Yes
K	Buttock Knee Length	579.1 - 604.5	600	Yes
L	Popliteal Height	429.3 - 454.7	430	Yes
M	Knee Pivot Height	485.1 - 500.4	490	Yes
N	Buttock Popliteal Length	452.1 - 477.5	472	Yes
O	Chest Depth	213.4 - 228.6	220	Yes
P	Foot Length	251.5 - 266.7	260	Yes
V	Shoulder Breadth	421.6 - 436.9	430	Yes
W	Foot Breadth	91.4 - 106.7	100	Yes
Y	Chest Circumference	970.3 - 1000.8	990	Yes
Z	Waist Circumference	835.7 - 866.1	860	Yes
AA	Location For Chest Circumference	429.3 - 434.3	430	Yes
BB	Location For Waist Circumference	226.1 - 231.1	230	Yes

Comments:

Technician

Approved

Transportation Research Center Inc.

Front Head Drop
HIII 50th Serial No. 314 Certification No. 1-1
Test Date: 11/13/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	47 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	257.2 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	3.7 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

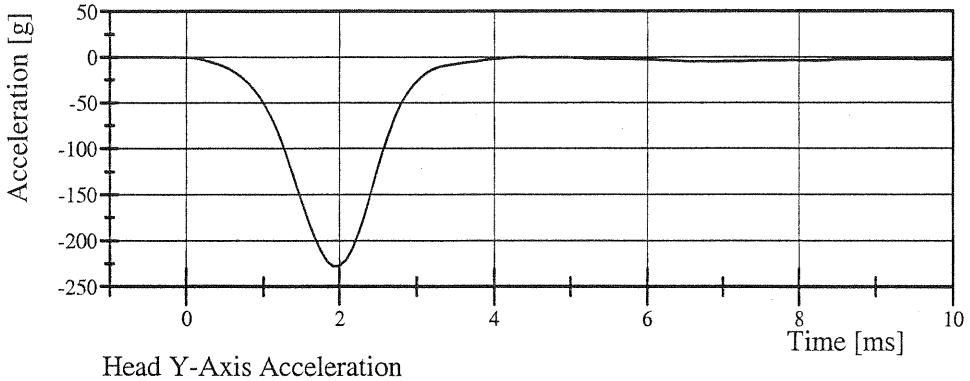
11.13.2007 09:31:11 613

071214

Transportation Research Center Inc.

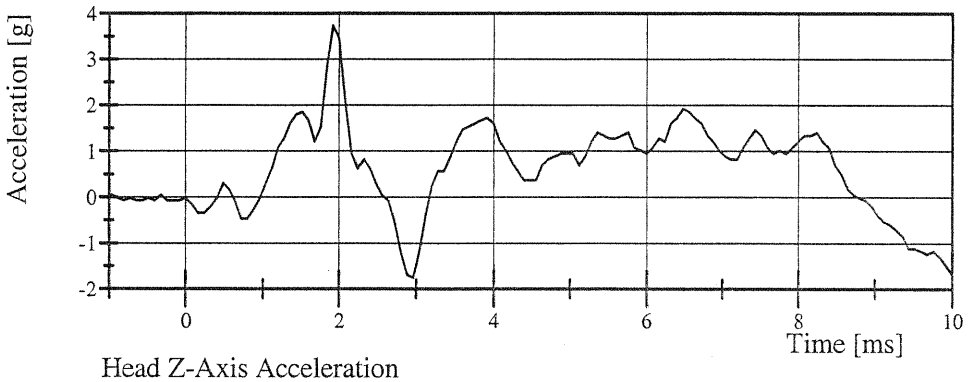
Front Head Drop
HIII 50th Serial No. 314 Certification No. 1-1
Test Date: 11/13/2007

Head X-Axis Acceleration



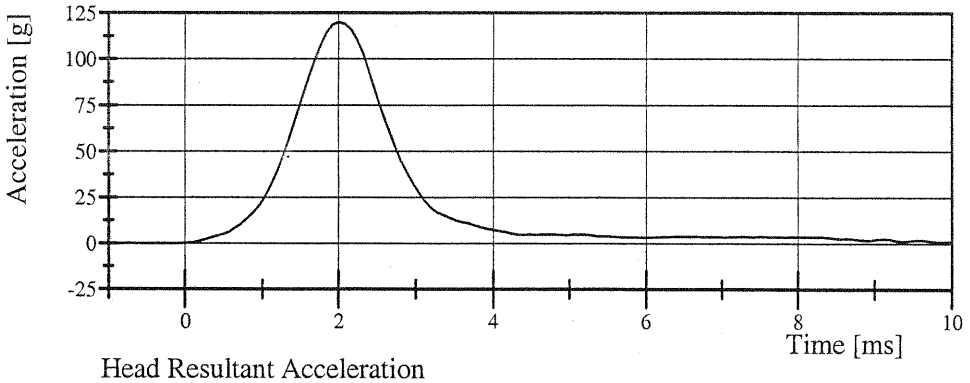
Filter Class: CFC_1000
Max: 0.1 g at -0.8 ms
Min: -228.0 g at 1.9 ms

Head Y-Axis Acceleration



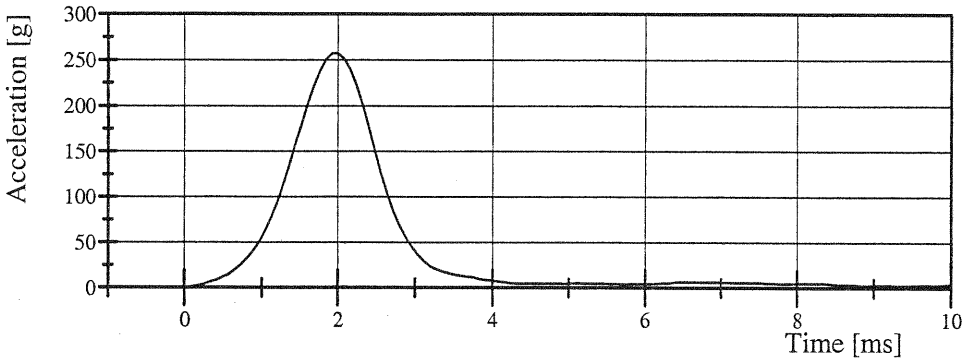
Filter Class: CFC_1000
Max: 3.7 g at 1.9 ms
Min: -1.8 g at 3.0 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 120.2 g at 2.0 ms
Min: -0.1 g at -0.9 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 257.2 g at 2.0 ms
Min: 0.1 g at -0.5 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.13.2007 09:31:18 613

071214

Transportation Research Center Inc.

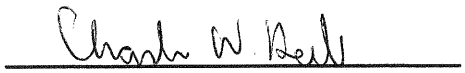
Neck Flexion
HIII 50th Serial No. 314 Certification No. 1-1
Test Date: 11/13/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	48 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.948 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	37.5 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-25.38 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-21.44 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-16.73 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-16.73 g	Yes
Total Head D-Plane Rotation			
Peak	(-64) - (-78) °	-68.5 °	Yes
Time of Peak	57 - 64 ms	58.2 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	115.4 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	88 - 108 N·m	100.3 N·m	Yes
Time of Peak	47 - 58 ms	50.5 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	98.1 ms	Yes

Test meets specifications.

Comments:

Technician



Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.13.2007 12:42:52 2975

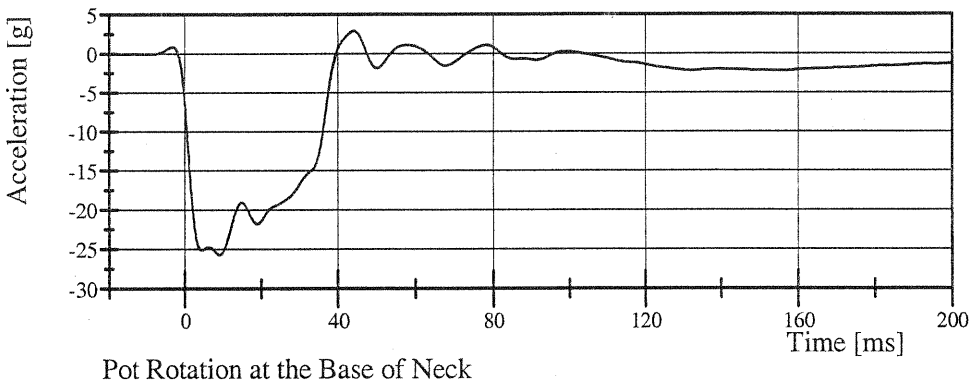
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 314 Certification No. 1-1

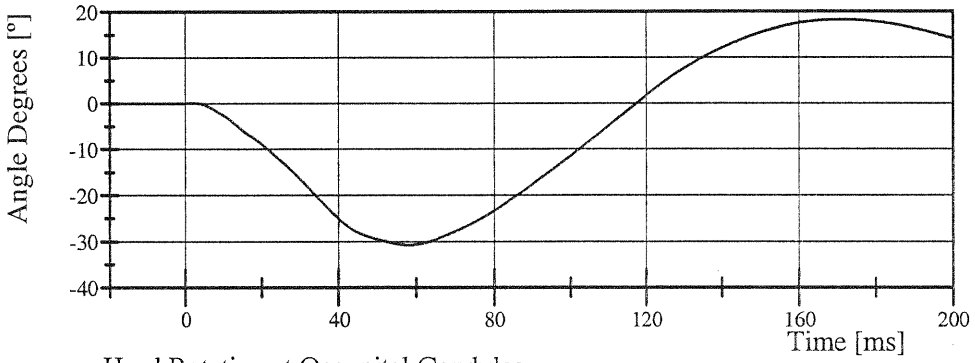
Test Date: 11/13/2007

Pendulum Acceleration



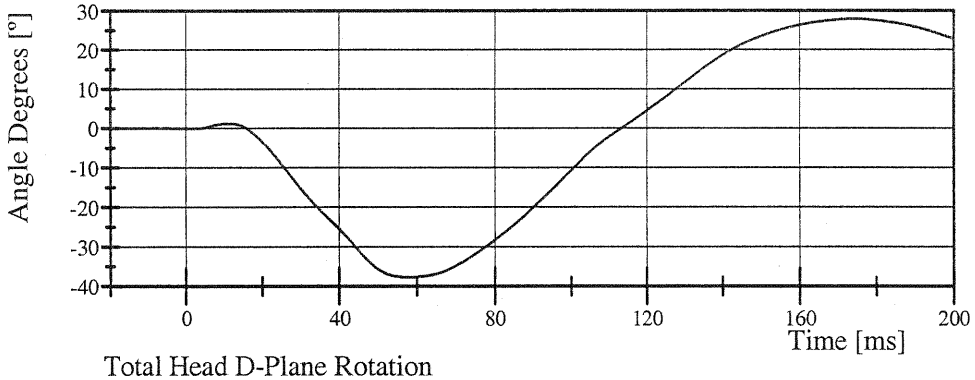
Filter Class: CFC_60
Max: 2.9 g at 44.1 ms
Min: -25.7 g at 9.1 ms

Pot Rotation at the Base of Neck



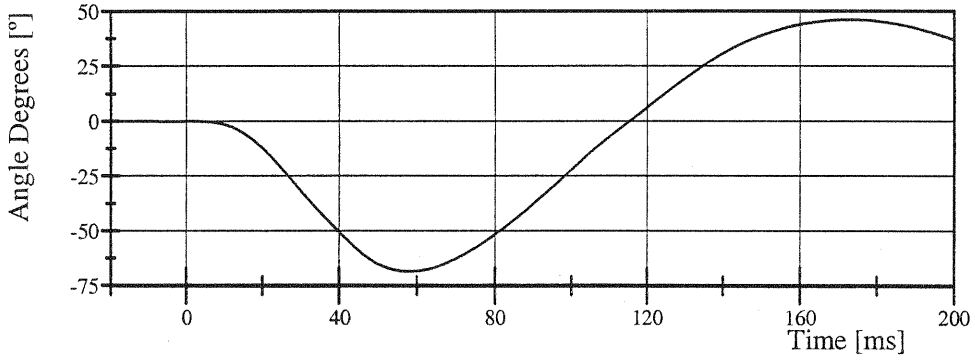
Filter Class: CFC_60
Max: 18.3 ° at 171.2 ms
Min: -30.8 ° at 58.2 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 27.9 ° at 174.2 ms
Min: -37.7 ° at 58.2 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 46.2 ° at 173.1 ms
Min: -68.5 ° at 58.2 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.13.2007 12:43:03 2975

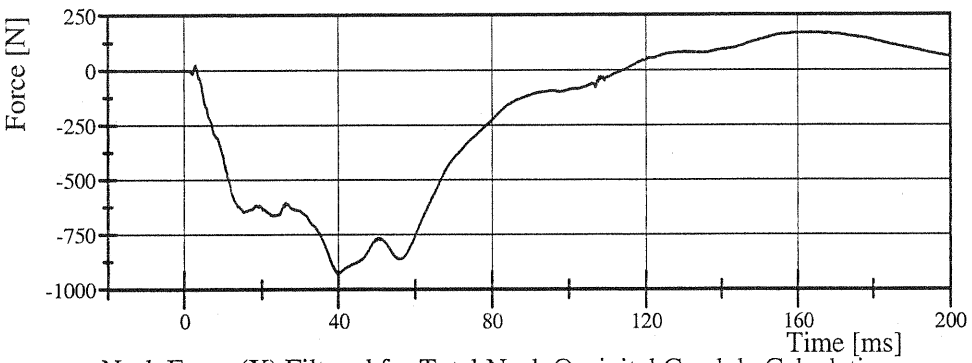
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 314 Certification No. 1-1

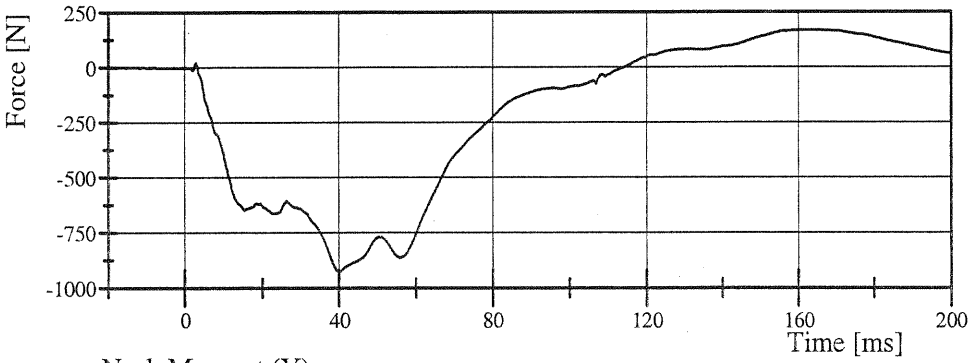
Test Date: 11/13/2007

Neck Force (X)



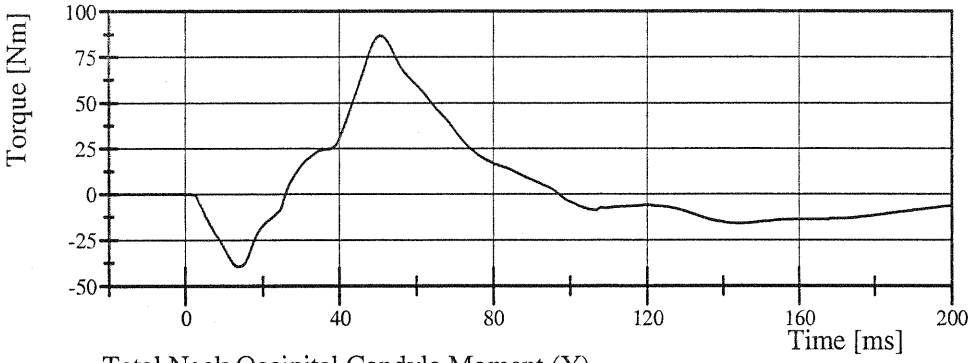
Filter Class: CFC_1000
Max: 170.3 N at 163.1 ms
Min: -926.4 N at 40.2 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



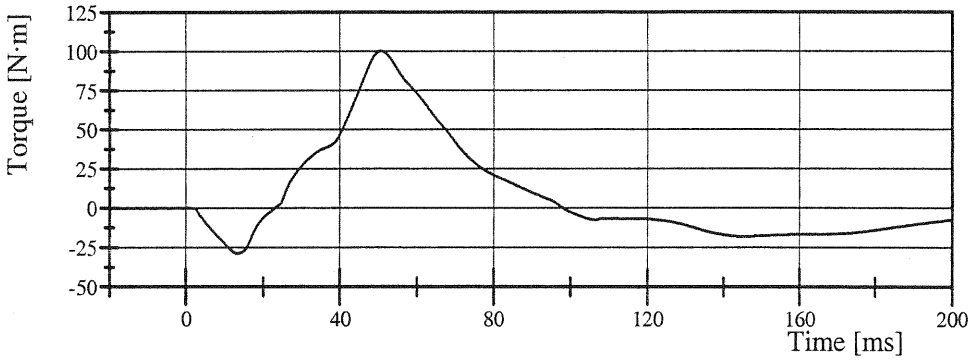
Filter Class: CFC_600
Max: 169.5 N at 163.1 ms
Min: -926.1 N at 40.1 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 86.7 Nm at 50.4 ms
Min: -39.5 Nm at 13.8 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 100.3 N·m at 50.5 ms
Min: -28.6 N·m at 13.4 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.13.2007 12:43:05 2975

071214

Transportation Research Center Inc.

Neck Extension
HIII 50th Serial No. 314 Certification No. 1-1
Test Date: 11/13/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	48 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-5.984 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	41.1 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	18.66 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	16.49 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	14.02 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	14.02 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	94.6 °	Yes
Time of Peak	72 - 82 ms	76.9 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	155.9 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-53) - (-80) N·m	-63.4 N·m	Yes
Time of Peak	65 - 79 ms	71.1 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	142.1 ms	Yes

Test meets specifications.

Comments:

Technician

Charles W. Kelly

Approved

Ron Stoner

Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

11.13.2007 13:19:13 3062

071214

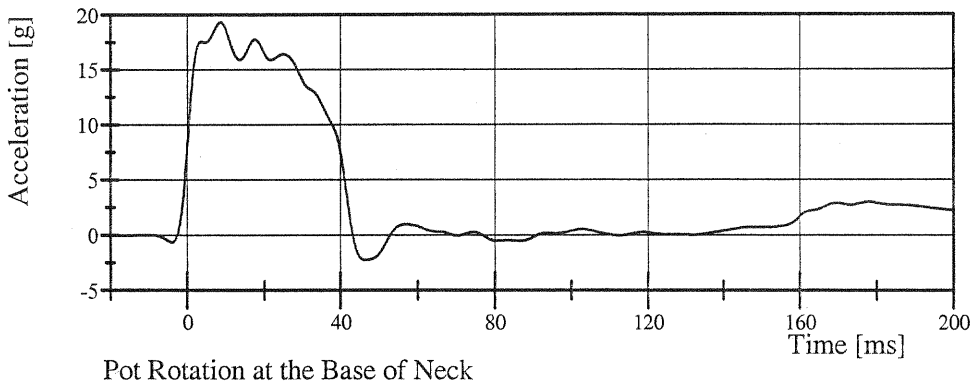
Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 314 Certification No. 1-1

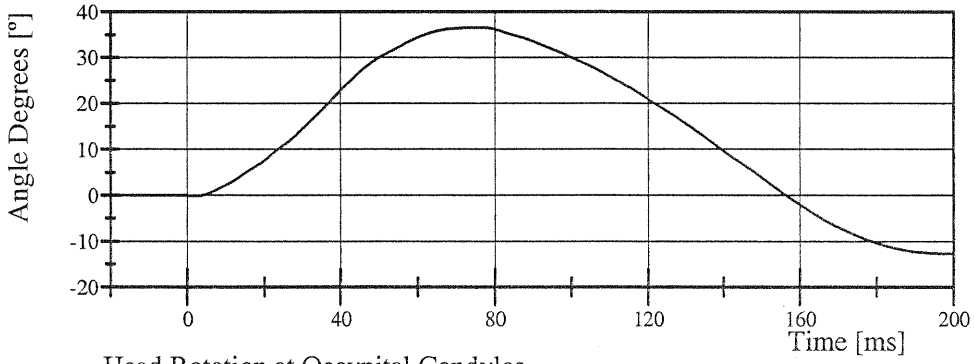
Test Date: 11/13/2007

Pendulum Acceleration



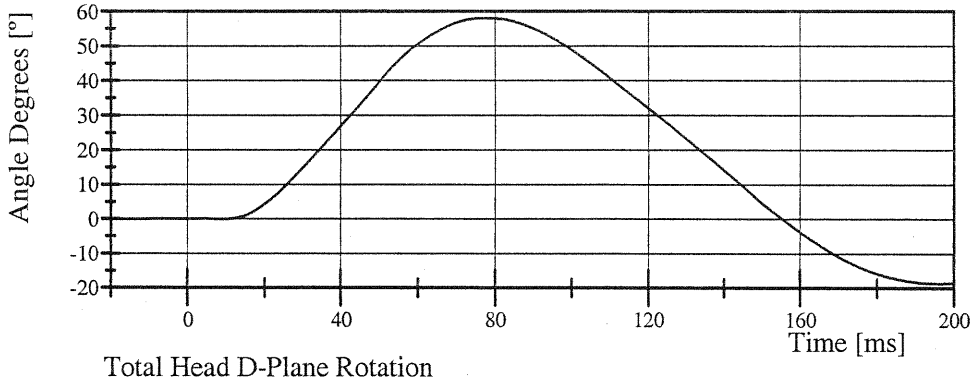
Filter Class: CFC_60
Max: 19.3 g at 8.6 ms
Min: -2.2 g at 46.6 ms

Pot Rotation at the Base of Neck



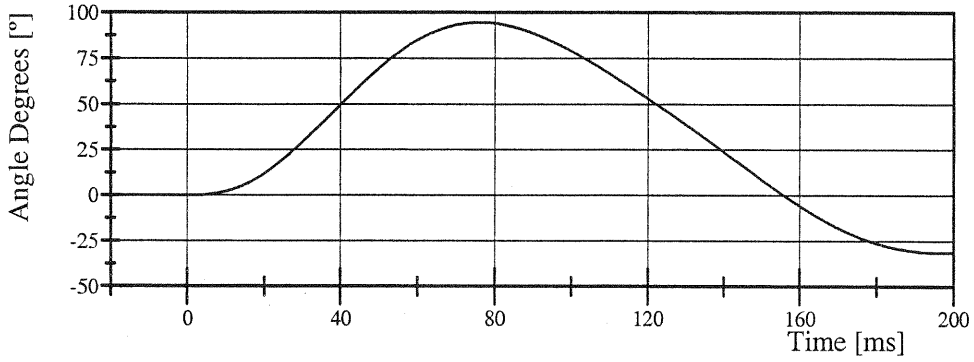
Filter Class: CFC_60
Max: 36.5 ° at 76.8 ms
Min: -12.6 ° at 197.7 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 58.0 ° at 77.0 ms
Min: -18.6 ° at 196.4 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 94.6 ° at 76.9 ms
Min: -31.3 ° at 196.8 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.13.2007 13:19:21 3062

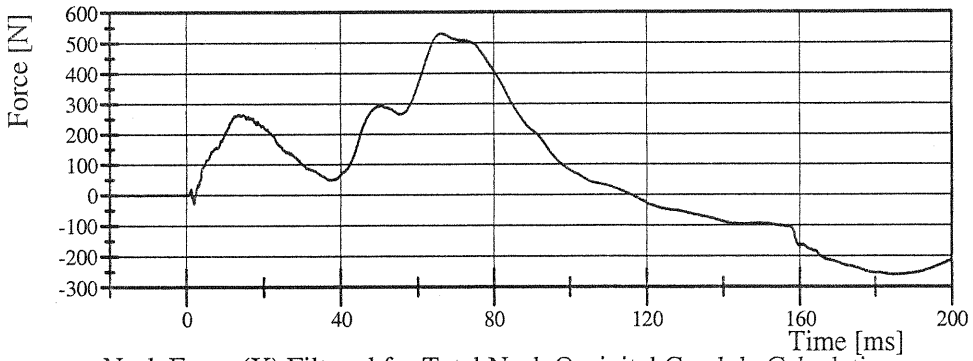
Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 314 Certification No. 1-1

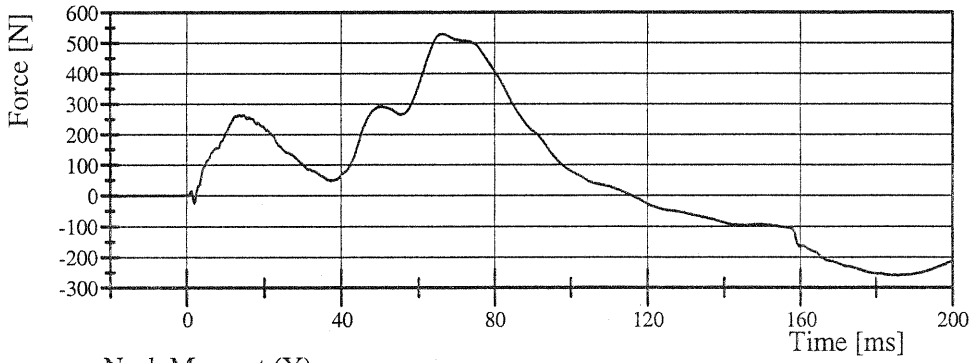
Test Date: 11/13/2007

Neck Force (X)



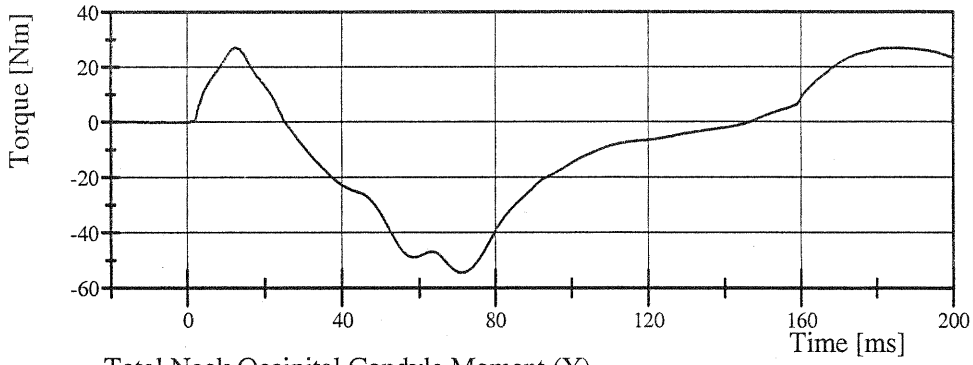
Filter Class: CFC_1000
Max: 530.1 N at 66.1 ms
Min: -260.7 N at 185.8 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



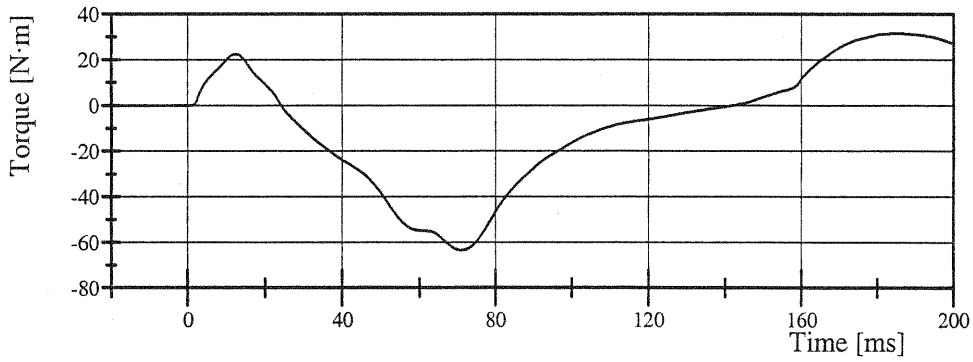
Filter Class: CFC_600
Max: 529.9 N at 66.2 ms
Min: -260.2 N at 185.8 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 27.1 Nm at 12.5 ms
Min: -54.4 Nm at 71.2 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 31.5 N·m at 185.8 ms
Min: -63.4 N·m at 71.1 ms

Transportation Research Center Inc.

Front Thorax
HIII 50th Serial No. 314 Certification No. 1-5
Test Date: 11/14/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	61 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.600 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,886.6 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-65.98 mm	Yes
Internal Hysteresis	65 - 85 %	73.5 %	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

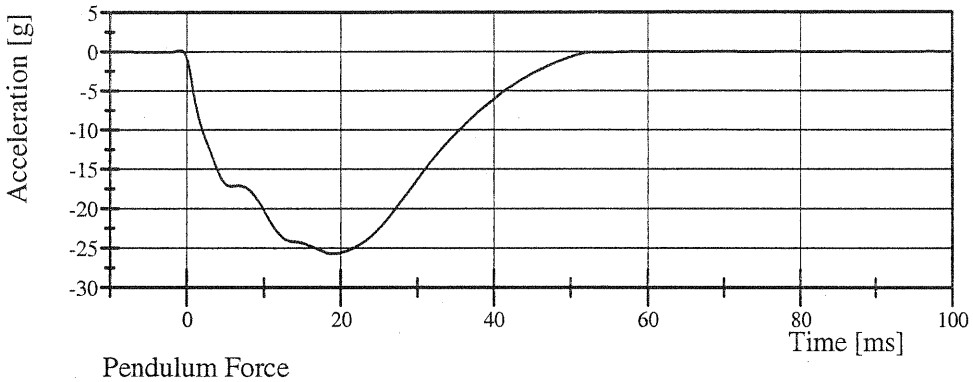
11.14.2007 08:41:21 1599

071214

Transportation Research Center Inc.

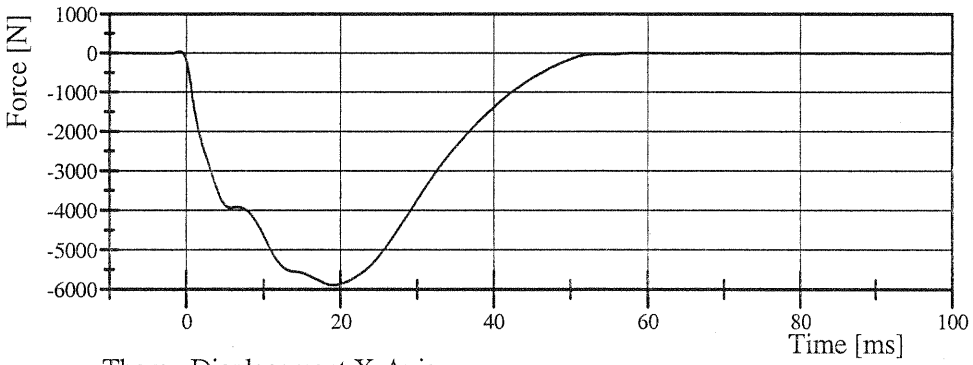
Front Thorax
HIII 50th Serial No. 314 Certification No. 1-5
Test Date: 11/14/2007

Pendulum Acceleration



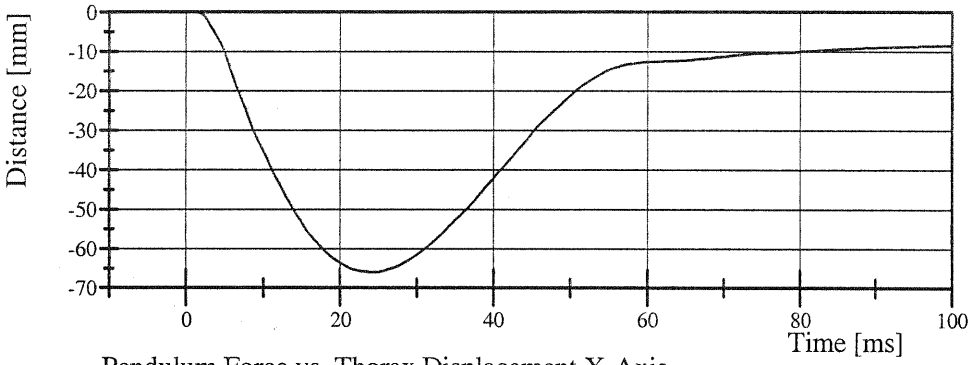
Filter Class: CFC_180
Max: 0.2 g at -0.9 ms
Min: -25.7 g at 19.0 ms

Pendulum Force



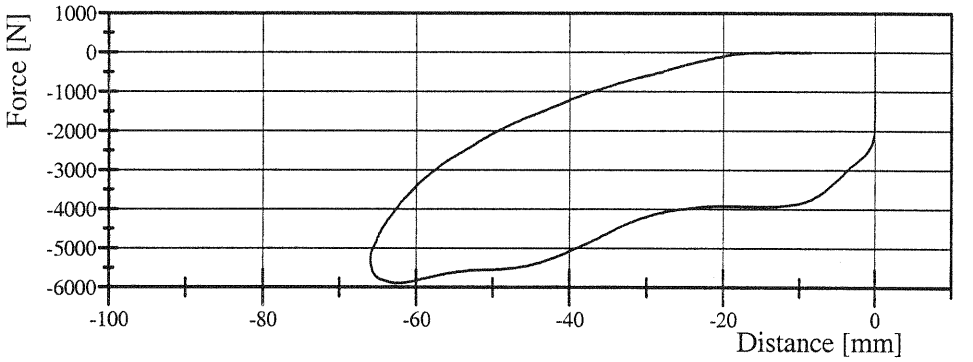
Filter Class: CFC_180
Max: 41.6 N at -0.9 ms
Min: -5,886.6 N at 19.0 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.0 mm at -10.0 ms
Min: -66.0 mm at 24.3 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 41.6 N at 0.0 mm
Min: -5,886.6 N at -62.4 mm

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

11.14.2007 08:41:43 1599

071214

Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

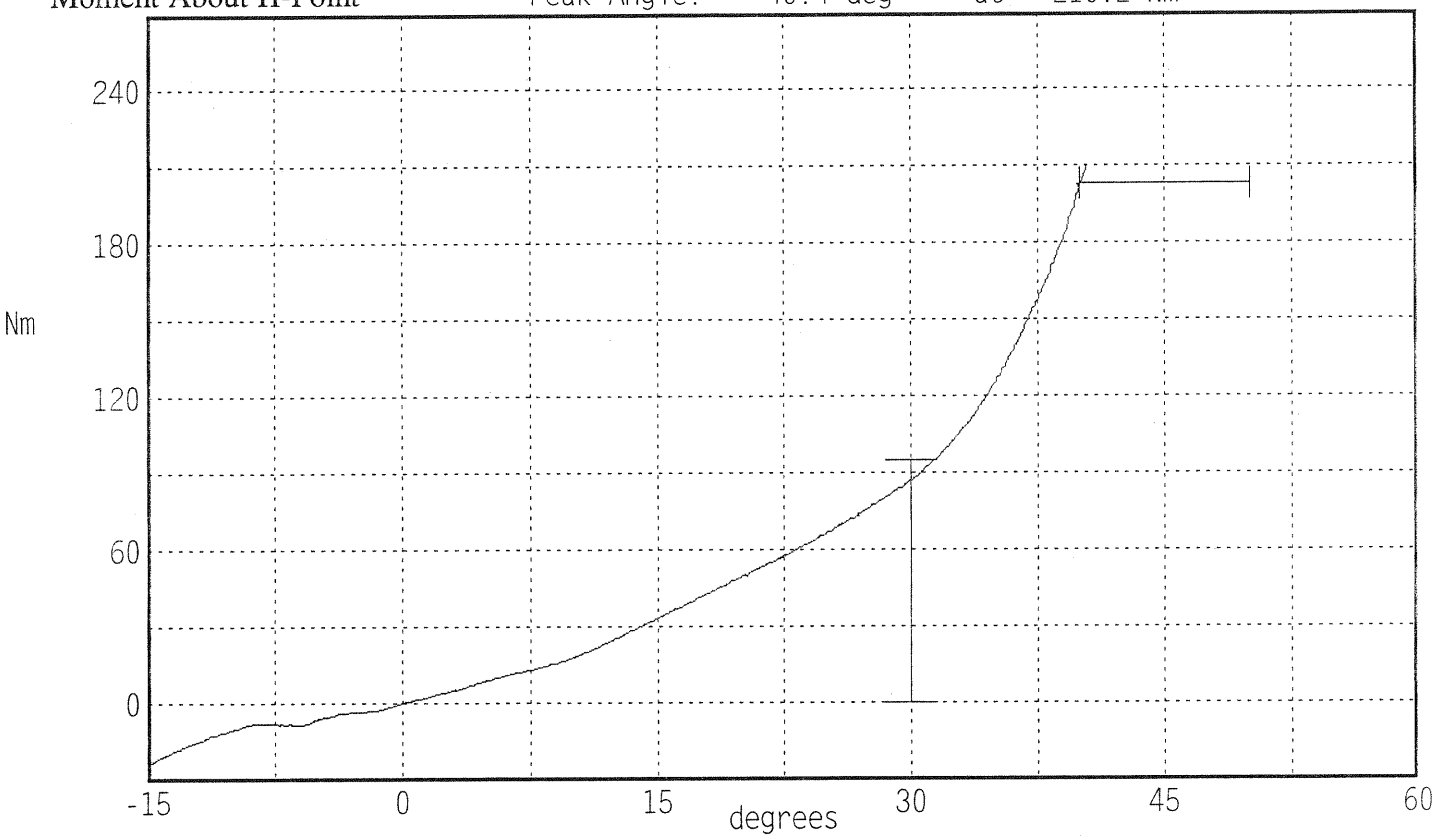
Serial Number: 314L
Test Number: 314C01
Comments:

Date: 11/13/2007
Time: 11:46

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	20.9	°C	Pass
Humidity	10 - 70	48	%	Pass
Moment at 30 deg	<= 94.9	87.2	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	40.2	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

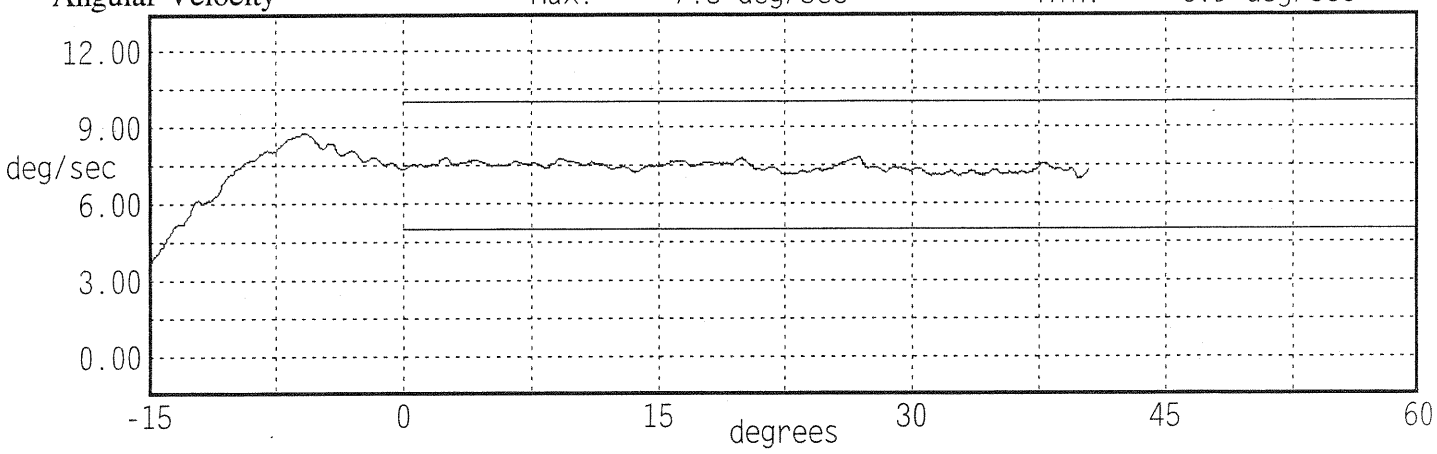
Moment About H-Point

Peak Moment: 210.2 Nm at 40.4 deg
Peak Angle: 40.4 deg at 210.2 Nm



Angular Velocity

Max: 7.8 deg/sec Min: 6.9 deg/sec



Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

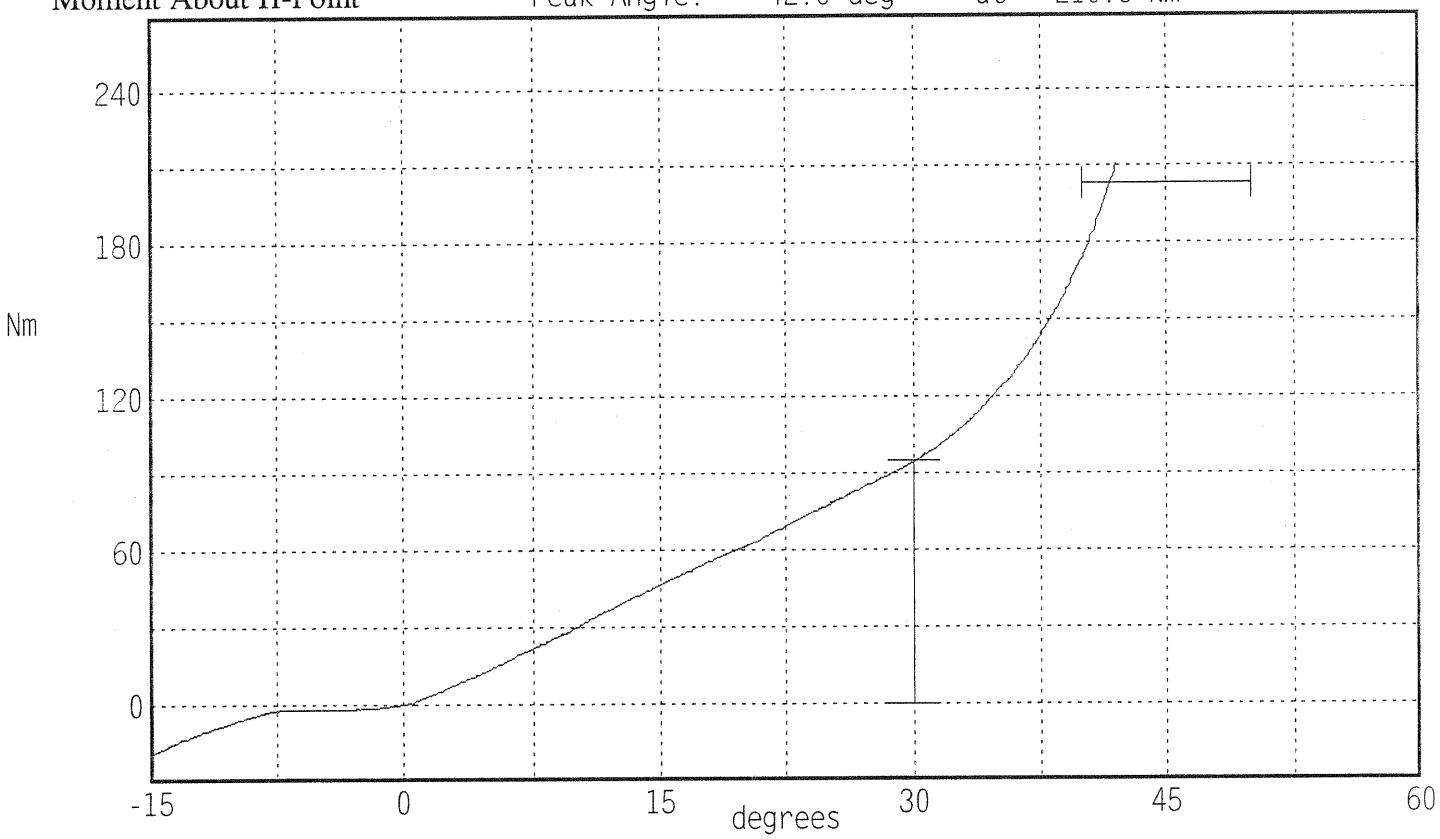
Serial Number: 314R
Test Number: 314C01
Comments:

Date: 11/13/2007
Time: 11:57

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	20.9	°C	Pass
Humidity	10 - 70	48	%	Pass
Moment at 30 deg	<= 94.9	94.3	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	41.6	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

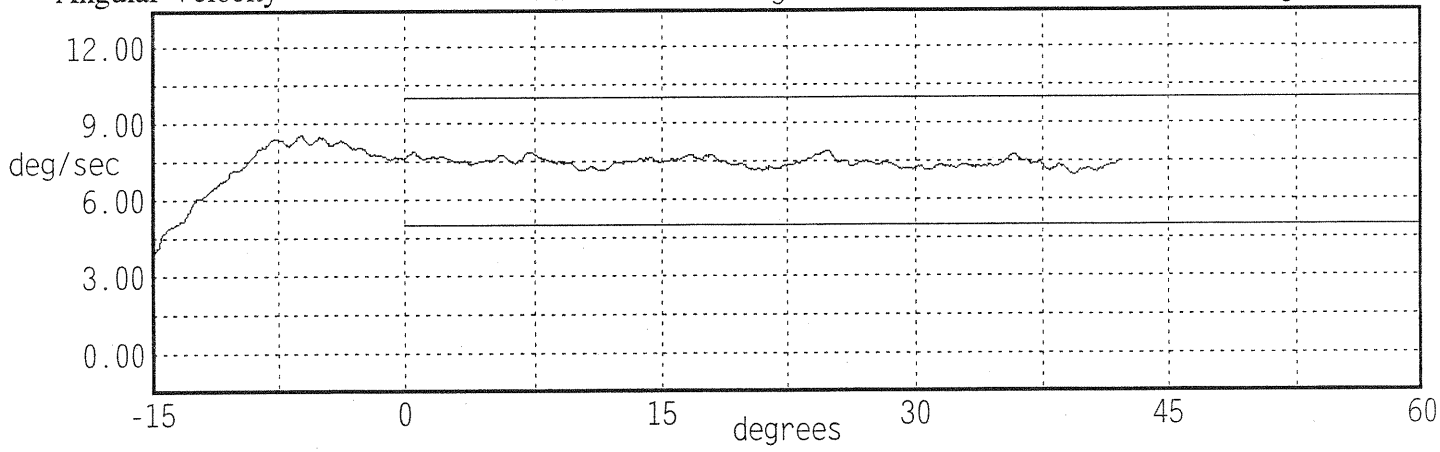
Moment About H-Point

Peak Moment: 210.6 Nm at 42.0 deg
Peak Angle: 42.0 deg at 210.6 Nm



Angular Velocity

Max: 7.9 deg/sec Min: 6.9 deg/sec



Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 314 Certification No. 1-1
Test Date: 11/13/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	46 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.108 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,338.97 N	Yes

Test meets specifications.

Comments:

Technician

Approved

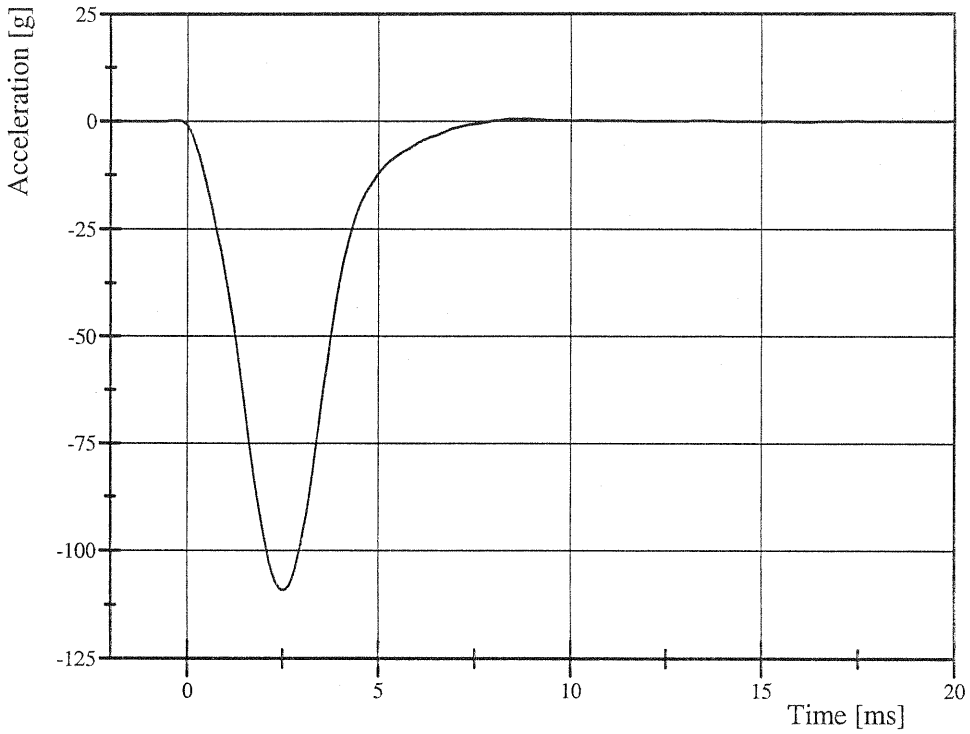
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.13.2007 10:29:43 1832

Transportation Research Center Inc.

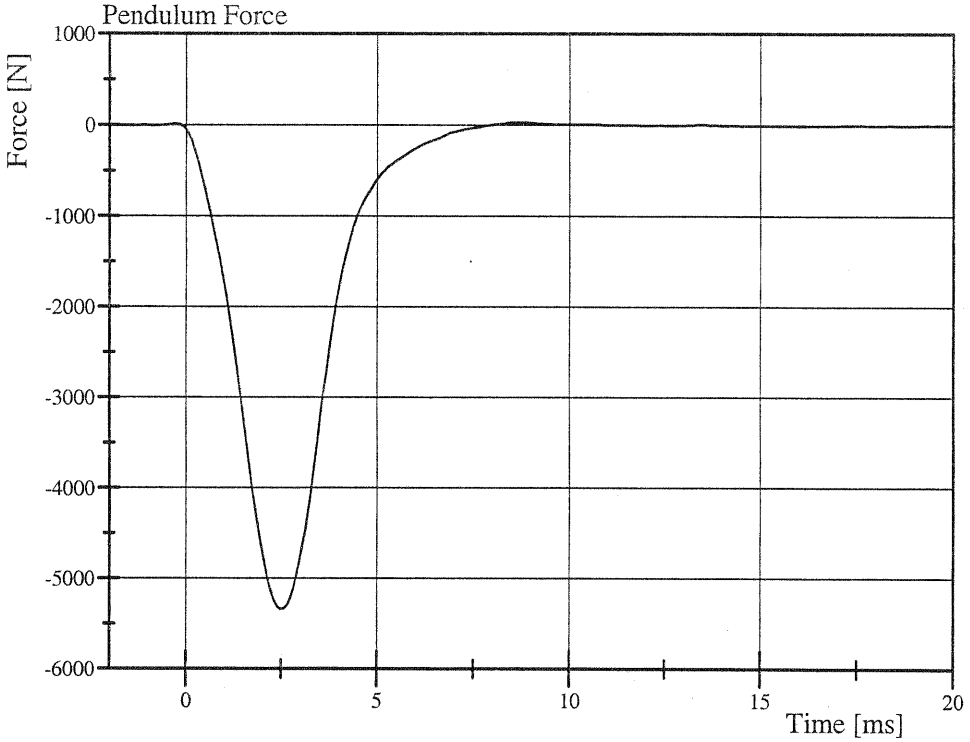
Left Knee Femur Response Test
HIII 50th Serial No. 314 Certification No. 1-1
Test Date: 11/13/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.6 g at 8.7 ms
Min: -109.1 g at 2.5 ms

Pendulum Force



Filter Class: CFC_600
Max: 28.2 N at 8.7 ms
Min: -5,339.0 N at 2.5 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.13.2007 10:29:49 1832

071214

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 314 Certification No. 1-1
Test Date: 11/13/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	46 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.107 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,304.01 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

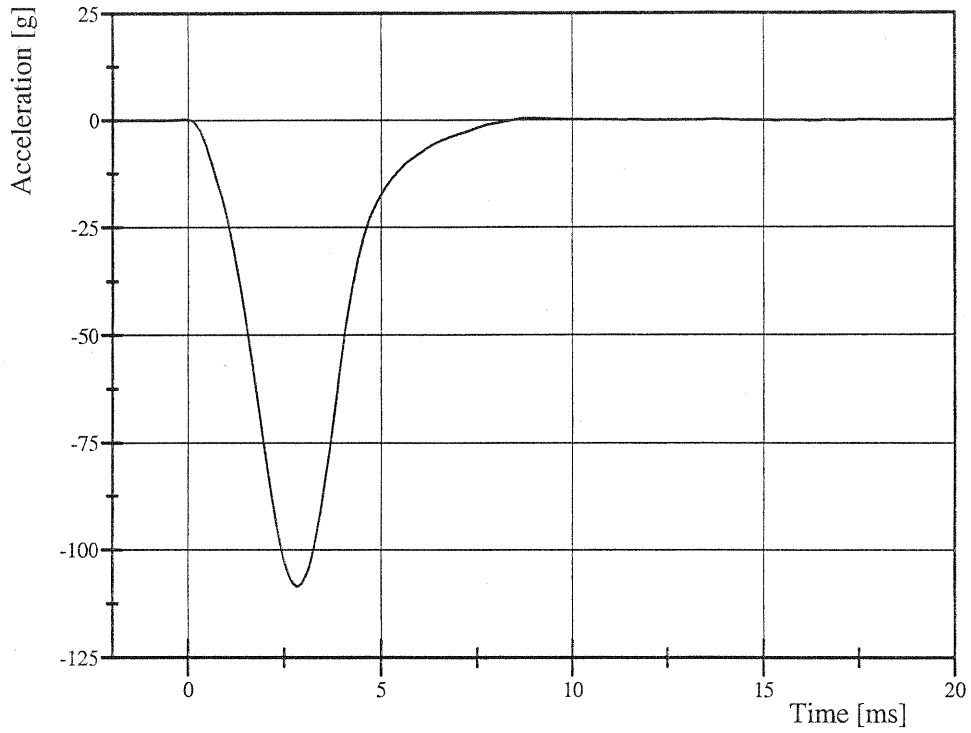
11.13.2007 10:30:42 1829

071214

Transportation Research Center Inc.

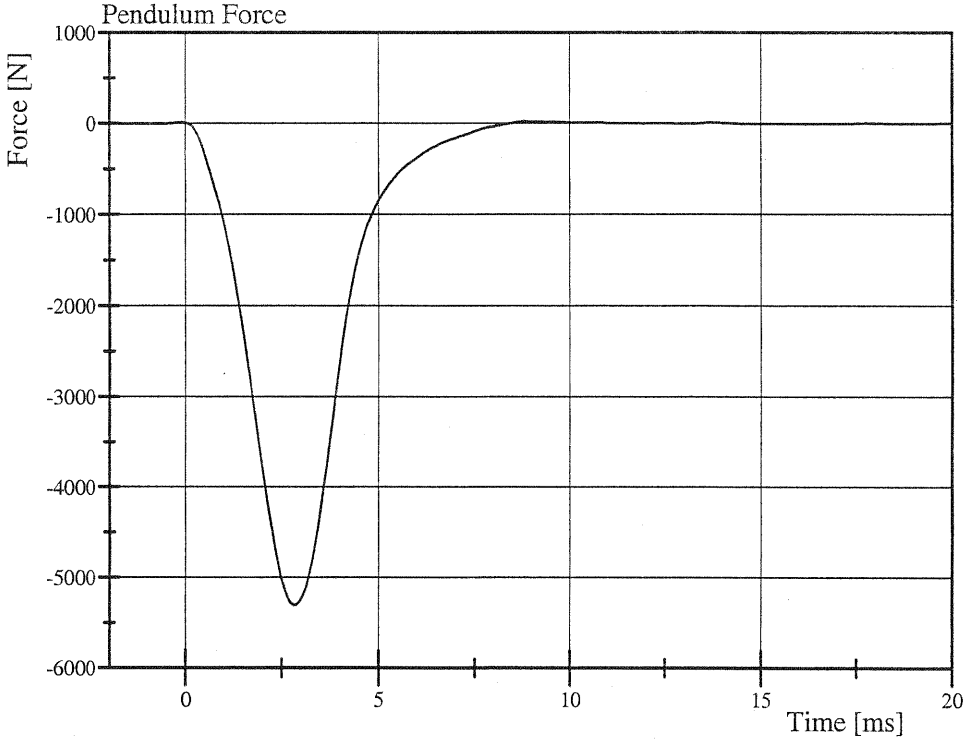
Right Knee Femur Response Test
HIII 50th Serial No. 314 Certification No. 1-1
Test Date: 11/13/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.4 g at 8.8 ms
Min: -108.4 g at 2.8 ms

Pendulum Force



Filter Class: CFC_600
Max: 21.9 N at 8.8 ms
Min: -5,304.0 N at 2.8 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.13.2007 10:30:52 1829

071214

Pre-Test Dummy Configuration and Performance Verification Data

Right Side Row 7 Left Seat Dummy S/N: 045

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 045
Calibration No. 46

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	880	Yes
B	Shoulder Pivot Height	505.5 - 520.7	516	Yes
C	H-Point Height	83.8 - 88.9	85	Yes
D	H-Point From Seatback	134.6 - 139.7	137	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	90	Yes
F	Thigh Clearance	139.7 - 154.9	150	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	295	Yes
H	Skull Cap To Backline	40.6 - 45.7	44	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	331	Yes
J	Elbow Rest Height	190.5 - 210.8	200	Yes
K	Buttock Knee Length	579.1 - 604.5	602	Yes
L	Popliteal Height	429.3 - 454.7	435	Yes
M	Knee Pivot Height	485.1 - 500.4	495	Yes
N	Buttock Popliteal Length	452.1 - 477.5	470	Yes
O	Chest Depth	213.4 - 228.6	220	Yes
P	Foot Length	251.5 - 266.7	260	Yes
V	Shoulder Breadth	421.6 - 436.9	425	Yes
W	Foot Breadth	91.4 - 106.7	100	Yes
Y	Chest Circumference	970.3 - 1000.8	985	Yes
Z	Waist Circumference	835.7 - 866.1	857	Yes
AA	Location For Chest Circumference	429.3 - 434.3	430	Yes
BB	Location For Waist Circumference	226.1 - 231.1	230	Yes

Comments:

Technician

Approved

Transportation Research Center Inc.

Front Head Drop
HIII 50th Serial No. 045 Certification No. 46-6
Test Date: 11/1/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	226.1 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	3.1 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

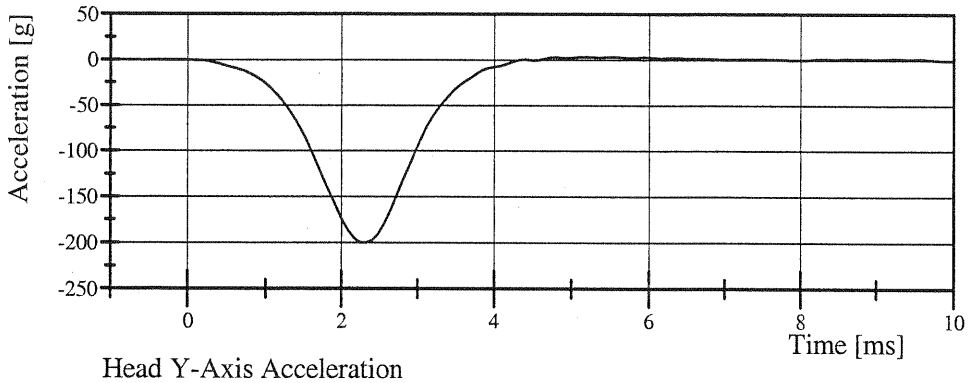
11.01.2007 11:13:11 611

071214

Transportation Research Center Inc.

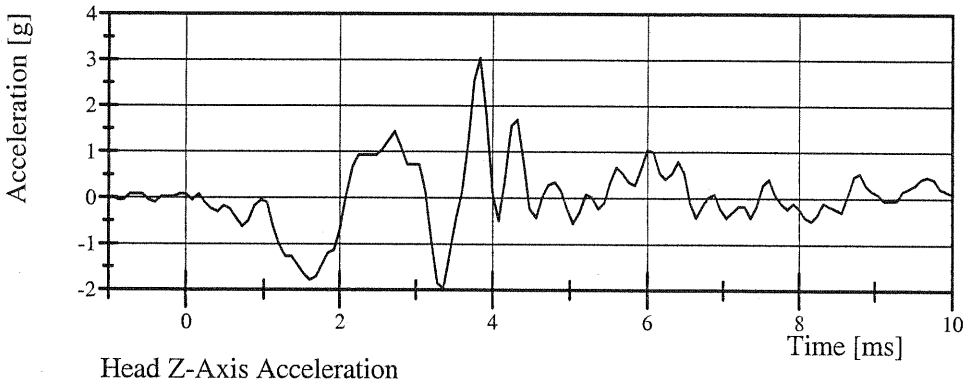
Front Head Drop
HIII 50th Serial No. 045 Certification No. 46-6
Test Date: 11/1/2007

Head X-Axis Acceleration



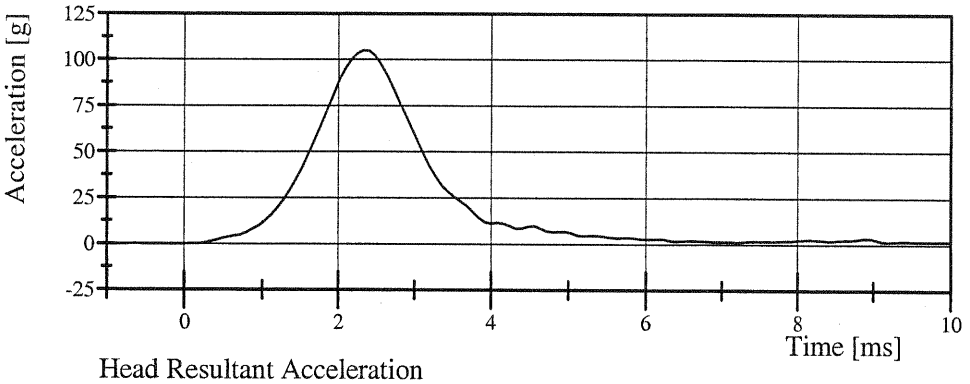
Filter Class: CFC_1000
Max: 3.5 g at 5.1 ms
Min: -200.2 g at 2.3 ms

Head Y-Axis Acceleration



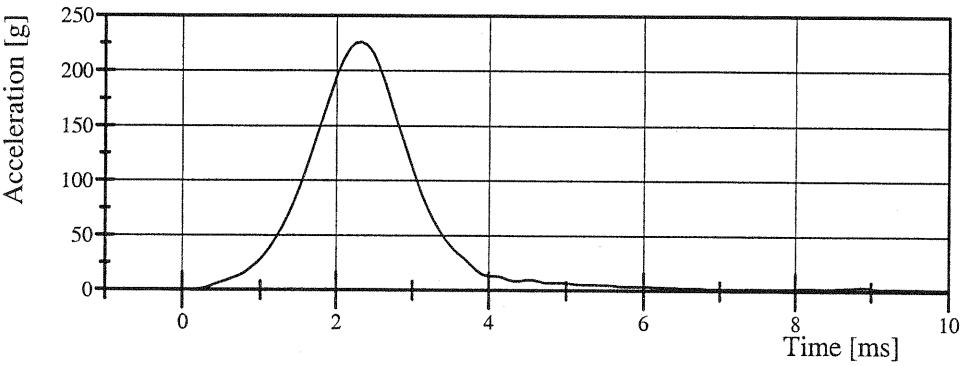
Filter Class: CFC_1000
Max: 3.1 g at 3.8 ms
Min: -2.0 g at 3.4 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 104.9 g at 2.3 ms
Min: -0.1 g at -0.9 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 226.1 g at 2.3 ms
Min: 0.0 g at -0.3 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.01.2007 11:13:32 611

071214

Transportation Research Center Inc.

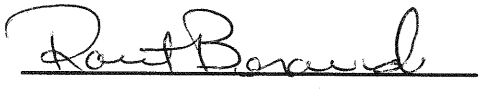
Neck Flexion
HIII 50th Serial No. 045 Certification No. 46-1
Test Date: 11/1/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.955 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	34.6 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-25.68 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-21.63 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-17.43 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-17.43 g	Yes
Total Head D-Plane Rotation			
Peak	(-64) - (-78) °	-74.2 °	Yes
Time of Peak	57 - 64 ms	58.8 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	120.6 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	88 - 108 N·m	95.7 N·m	Yes
Time of Peak	47 - 58 ms	48.2 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	99.5 ms	Yes

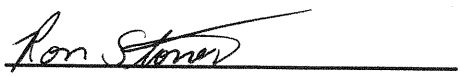
Test meets specifications.

Comments:

Technician



Approved



Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.01.2007 08:12:14 2980

071214

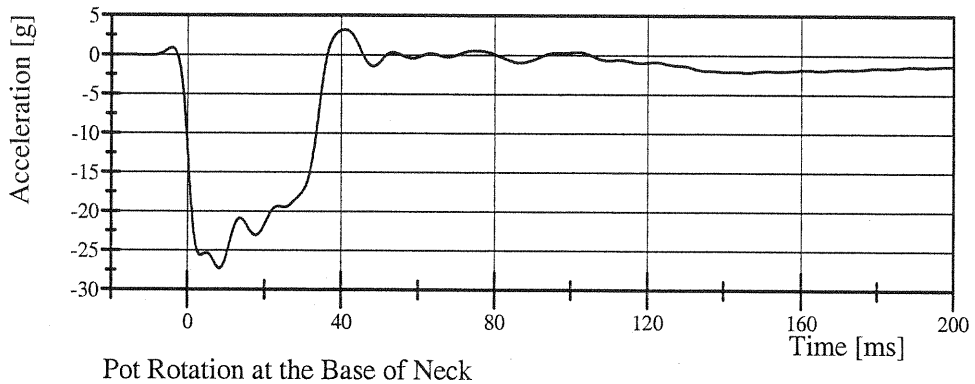
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 045 Certification No. 46-1

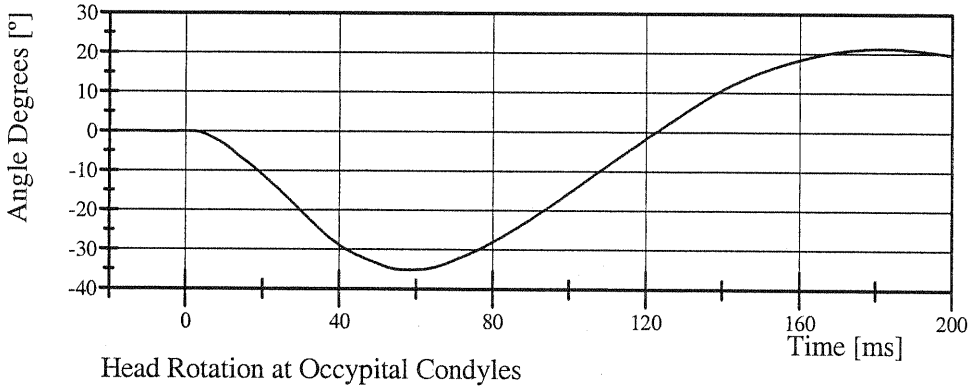
Test Date: 11/1/2007

Pendulum Acceleration



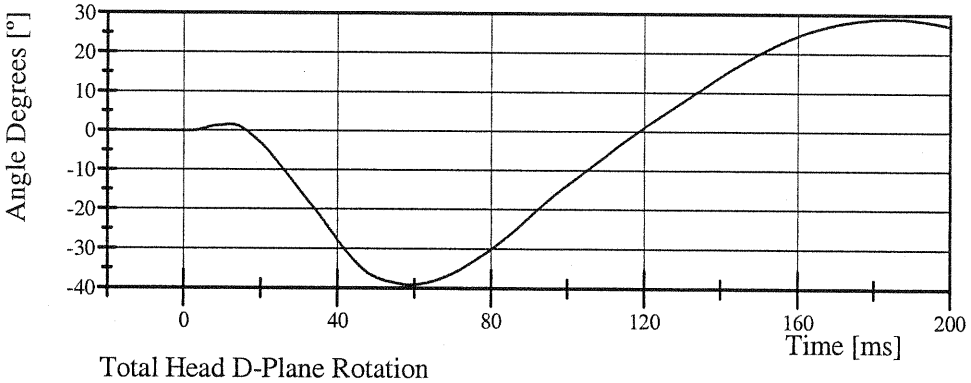
Filter Class: CFC_60
Max: 3.2 g at 40.9 ms
Min: -27.3 g at 8.2 ms

Pot Rotation at the Base of Neck



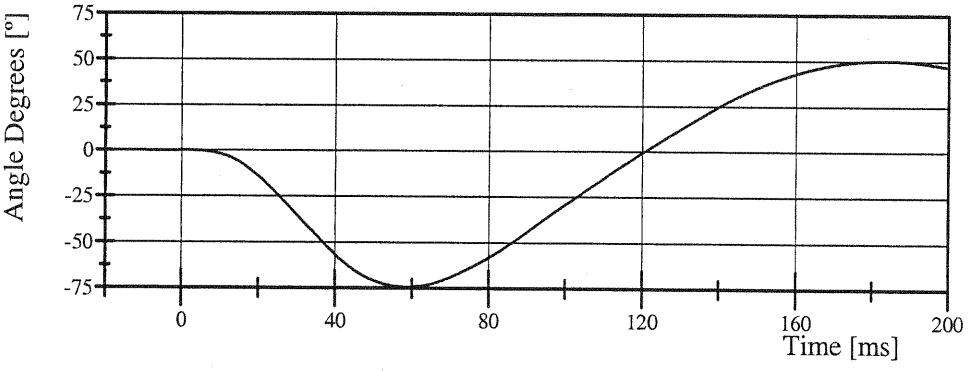
Filter Class: CFC_60
Max: 21.3 ° at 182.4 ms
Min: -35.1 ° at 58.1 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 29.0 ° at 185.1 ms
Min: -39.1 ° at 59.0 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 50.3 ° at 183.5 ms
Min: -74.2 ° at 58.8 ms

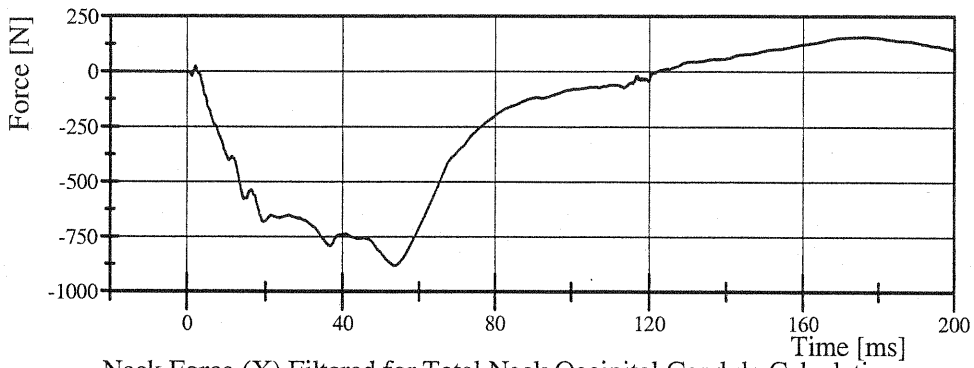
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 045 Certification No. 46-1

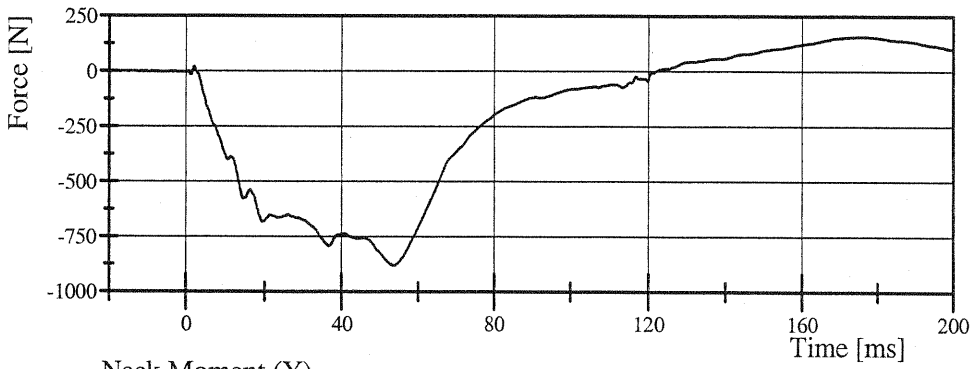
Test Date: 11/1/2007

Neck Force (X)



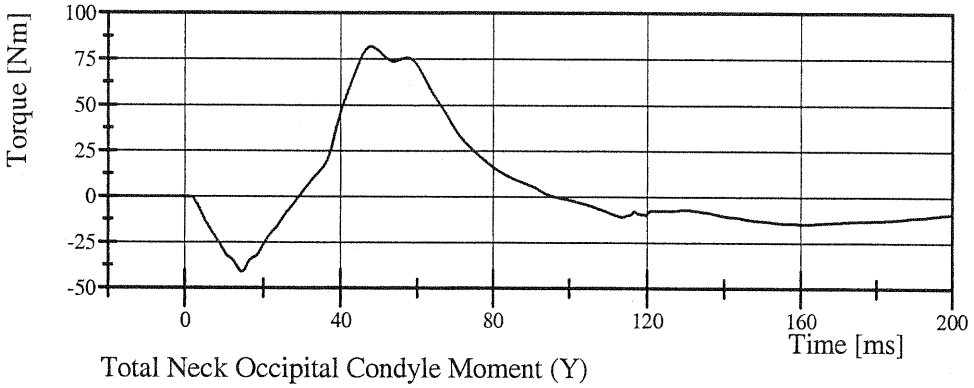
Filter Class: CFC_1000
Max: 158.4 N at 174.7 ms
Min: -881.5 N at 53.6 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



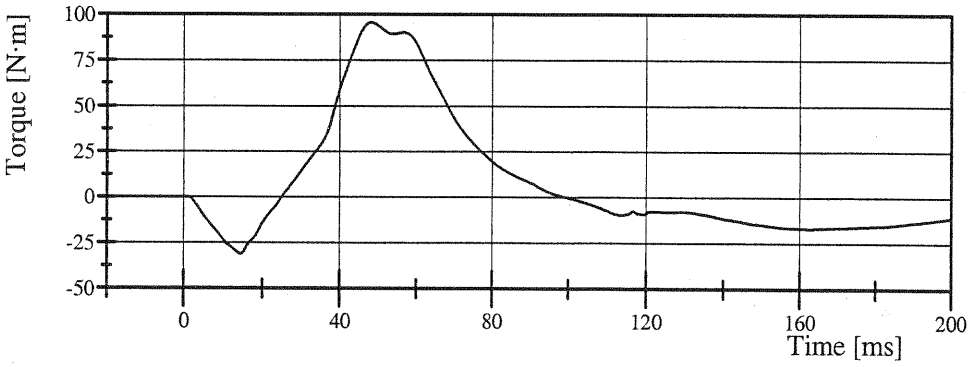
Filter Class: CFC_600
Max: 158.1 N at 174.7 ms
Min: -881.1 N at 53.6 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 81.9 Nm at 47.8 ms
Min: -41.2 Nm at 14.5 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 95.7 N·m at 48.2 ms
Min: -31.0 N·m at 14.5 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.01.2007 08:12:26 2980

Transportation Research Center Inc.

Neck Extension
HIII 50th Serial No. 045 Certification No. 46-2
Test Date: 11/1/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-5.974 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	39.6 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	19.80 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	17.03 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	13.85 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	13.85 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	95.8 °	Yes
Time of Peak	72 - 82 ms	75.0 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	156.4 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-53) - (-80) N·m	-71.3 N·m	Yes
Time of Peak	65 - 79 ms	69.7 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	143.1 ms	Yes

Test meets specifications.

Comments:

Technician

Mark W. Bell

Approved

Ron Stover

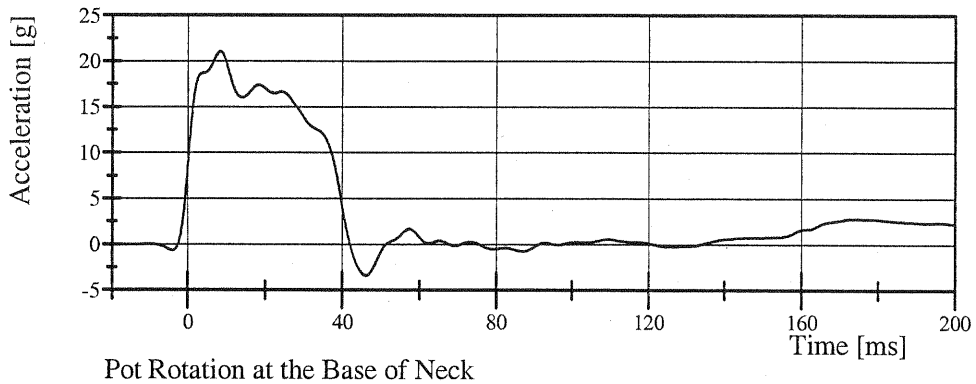
Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

11.01.2007 09:16:32 3064

Transportation Research Center Inc.

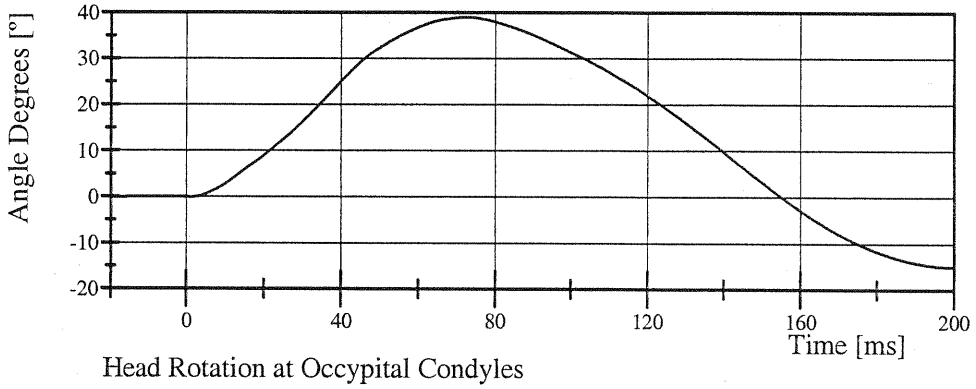
Neck Extension
HIII 50th Serial No. 045 Certification No. 46-2
Test Date: 11/1/2007

Pendulum Acceleration



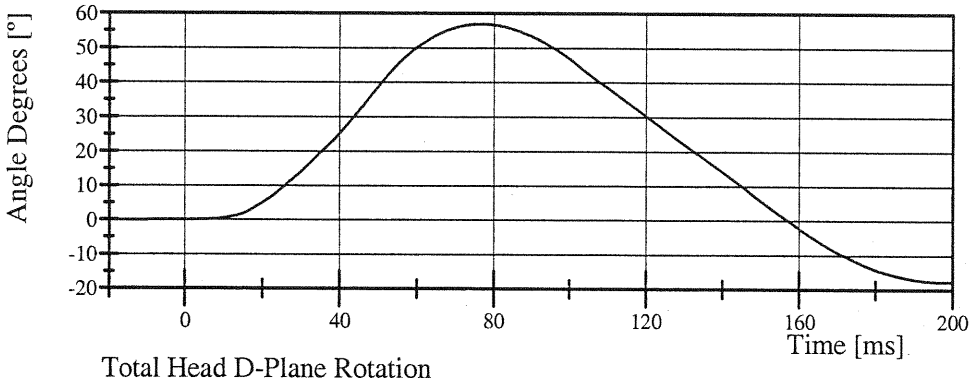
Filter Class: CFC_60
Max: 21.1 g at 8.3 ms
Min: -3.4 g at 46.2 ms

Pot Rotation at the Base of Neck



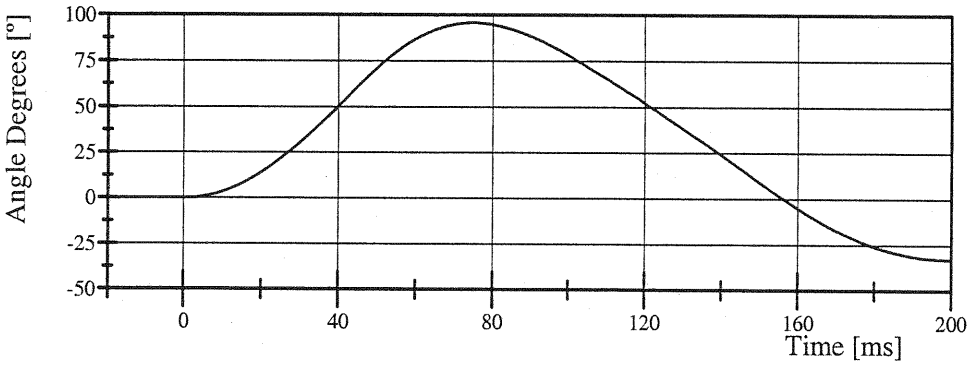
Filter Class: CFC_60
Max: 39.0 ° at 72.7 ms
Min: -15.0 ° at 200.0 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 57.0 ° at 76.6 ms
Min: -17.7 ° at 198.6 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 95.8 ° at 75.0 ms
Min: -32.7 ° at 199.8 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.01.2007 09:16:40 3064

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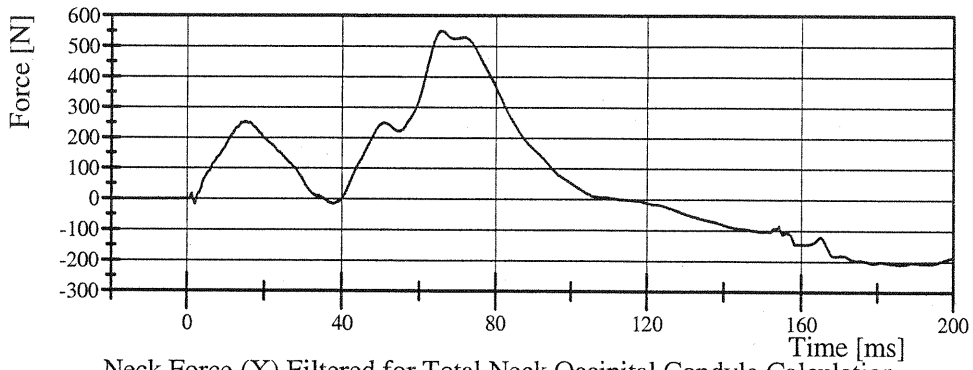
Transportation Research Center Inc.

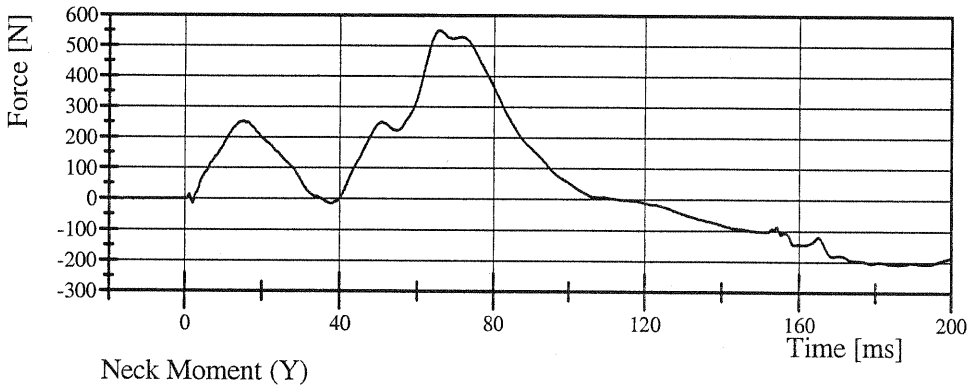
Neck Extension
HIII 50th Serial No. 045 Certification No. 46-2
Test Date: 11/1/2007

Neck Force (X)



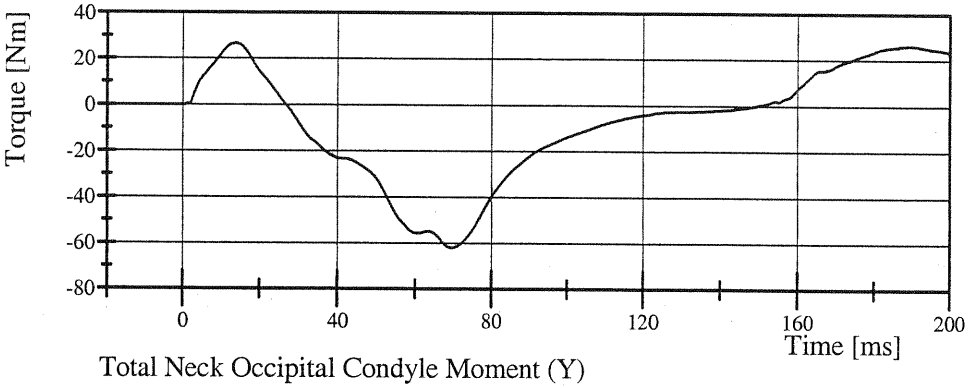
Filter Class: CFC_1000
Max: 550.7 N at 65.4 ms
Min: -209.2 N at 185.8 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



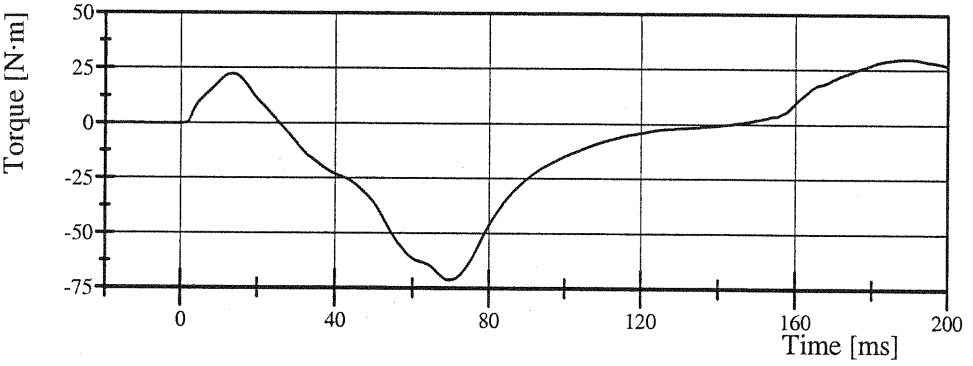
Filter Class: CFC_600
Max: 550.7 N at 65.8 ms
Min: -208.9 N at 186.0 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 26.7 Nm at 13.8 ms
Min: -62.0 Nm at 69.6 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 30.0 N·m at 189.8 ms
Min: -71.3 N·m at 69.7 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.01.2007 09:16:42 3064

071214

Transportation Research Center Inc.

Front Thorax
HIII 50th Serial No. 045 Certification No. 46-1
Test Date: 11/1/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.607 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,730.9 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-66.54 mm	Yes
Internal Hysteresis	65 - 85 %	74.0 %	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

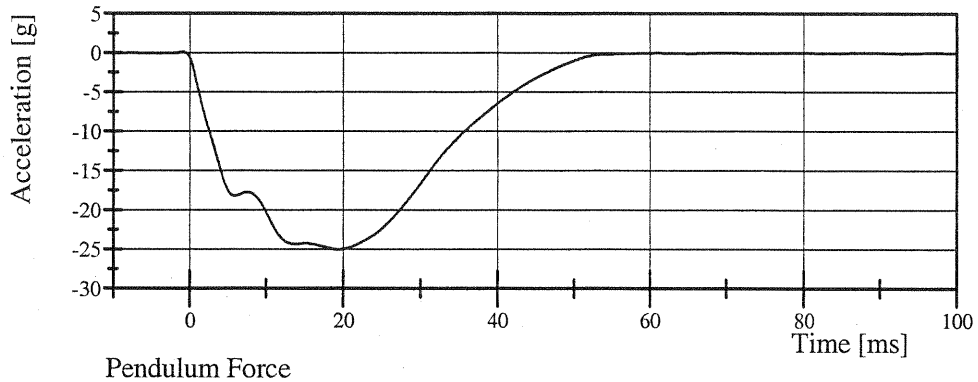
11.01.2007 10:50:27 1600

071214

Transportation Research Center Inc.

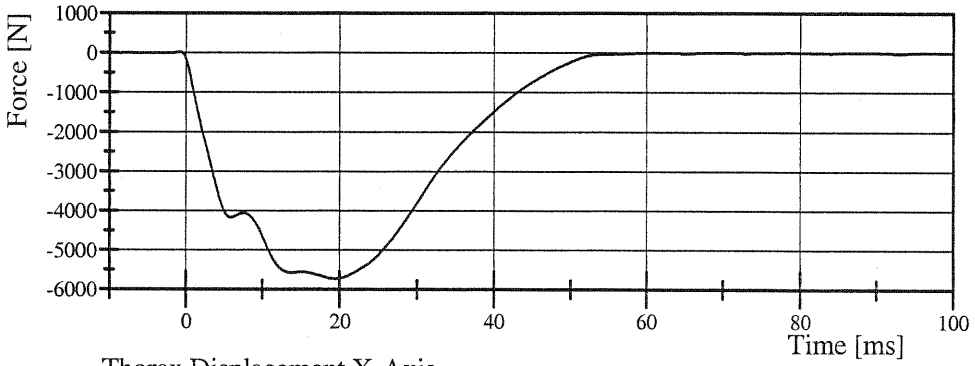
Front Thorax
HIII 50th Serial No. 045 Certification No. 46-1
Test Date: 11/1/2007

Pendulum Acceleration



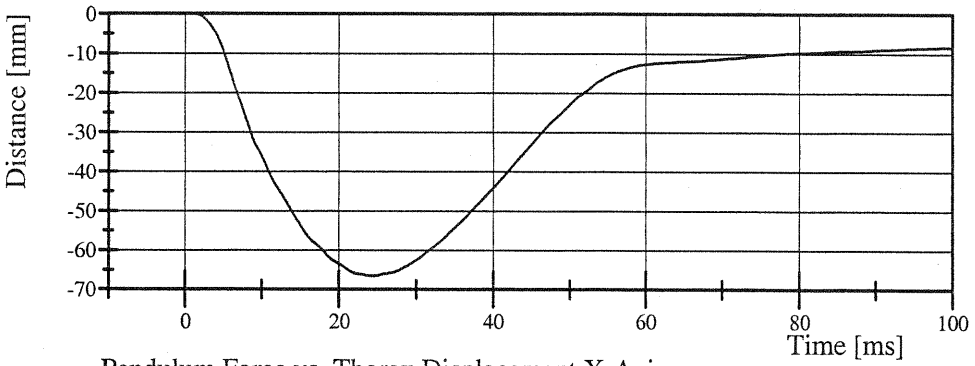
Filter Class: CFC_180
Max: 0.1 g at -0.9 ms
Min: -25.0 g at 19.4 ms

Pendulum Force



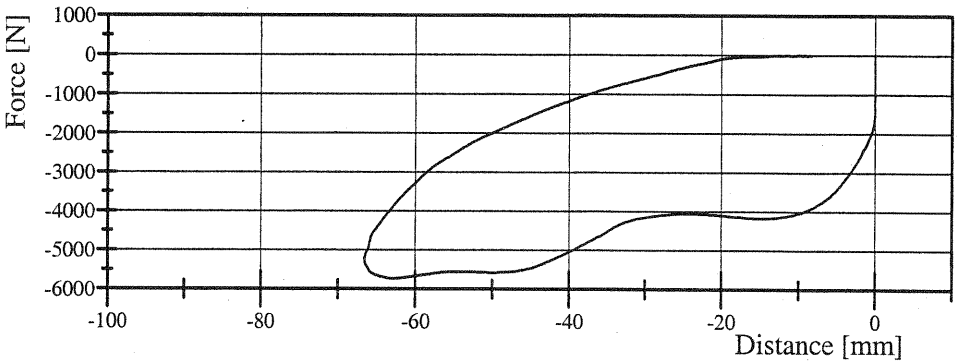
Filter Class: CFC_180
Max: 25.5 N at -0.9 ms
Min: -5,730.9 N at 19.4 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.0 mm at -5.6 ms
Min: -66.5 mm at 24.3 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 25.5 N at -0.0 mm
Min: -5,730.9 N at -62.8 mm

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

11.01.2007 10:50:35 1600

071214

Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 045 Certification No. 46-1
Test Date: 10/30/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.120 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-4,828.50 N	Yes

Test meets specifications.

Comments:

Technician Robert Brandt

Approved Ron Stoner

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.30.2007 13:29:38 1712

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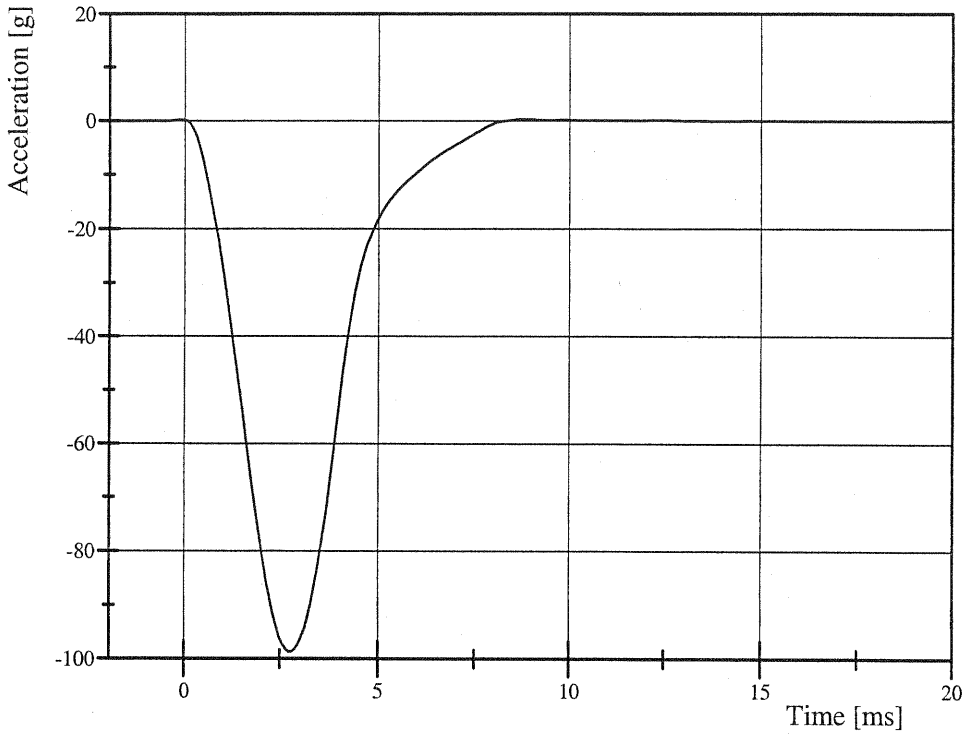
Transportation Research Center Inc.

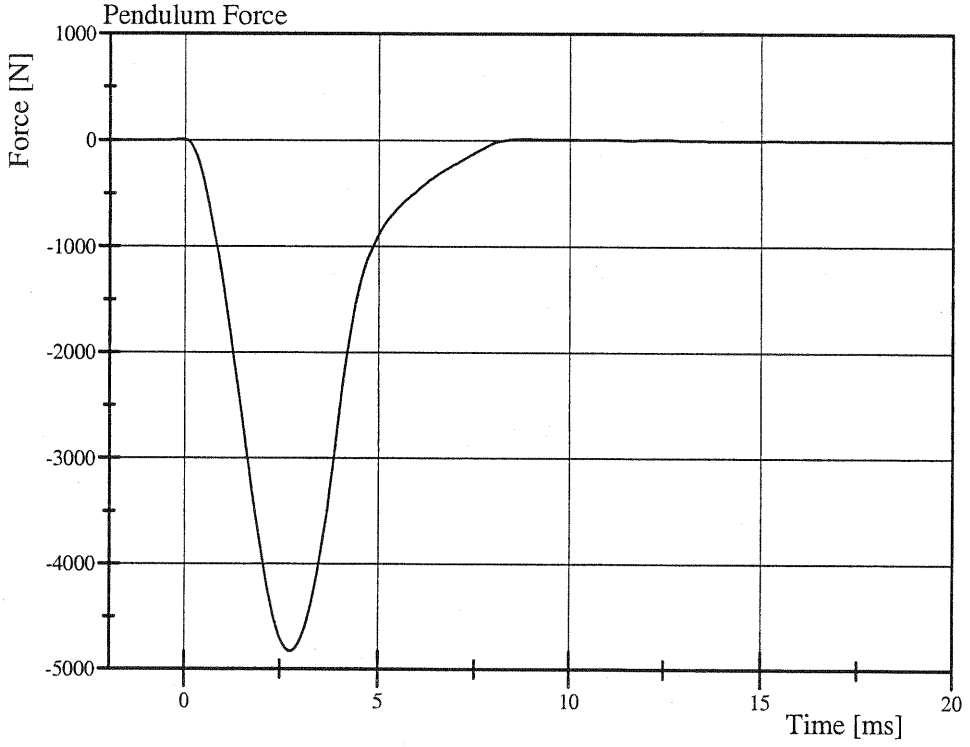
Left Knee Femur Response Test
HIII 50th Serial No. 045 Certification No. 46-1
Test Date: 10/30/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.3 g at 8.9 ms
Min: -98.7 g at 2.8 ms

Pendulum Force



Filter Class: CFC_600
Max: 14.7 N at 8.9 ms
Min: -4,828.5 N at 2.8 ms

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 045 Certification No. 46-1
Test Date: 10/30/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.118 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,033.57 N	Yes

Test meets specifications.

Comments:

Technician Robert Boranda

Approved Ron Stowe

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.30.2007 13:31:18 1711

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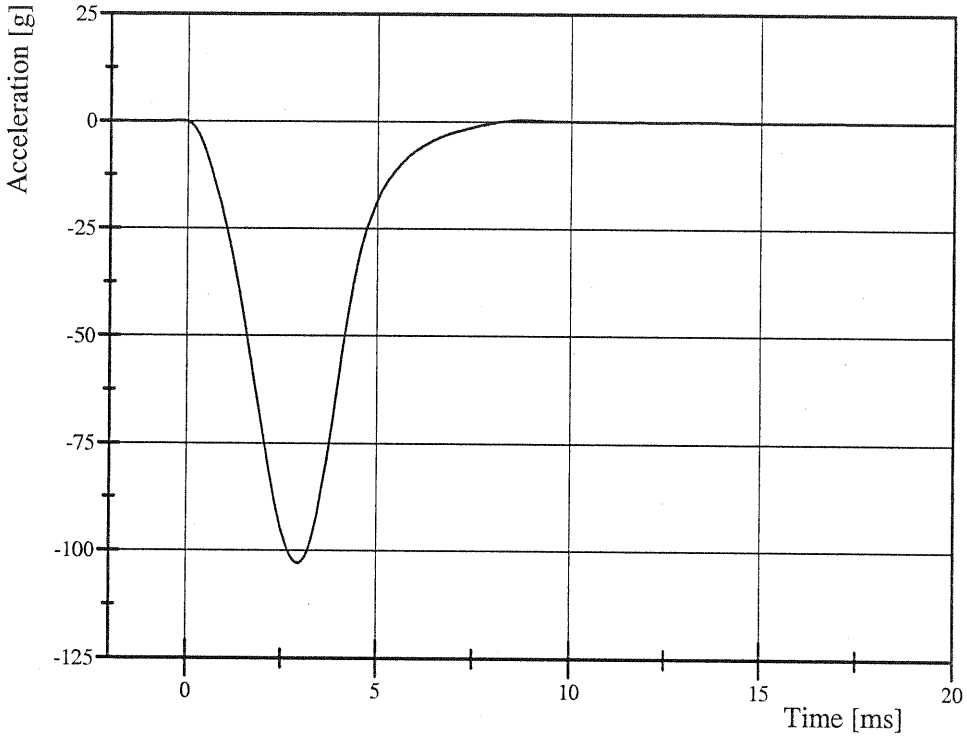
Transportation Research Center Inc.

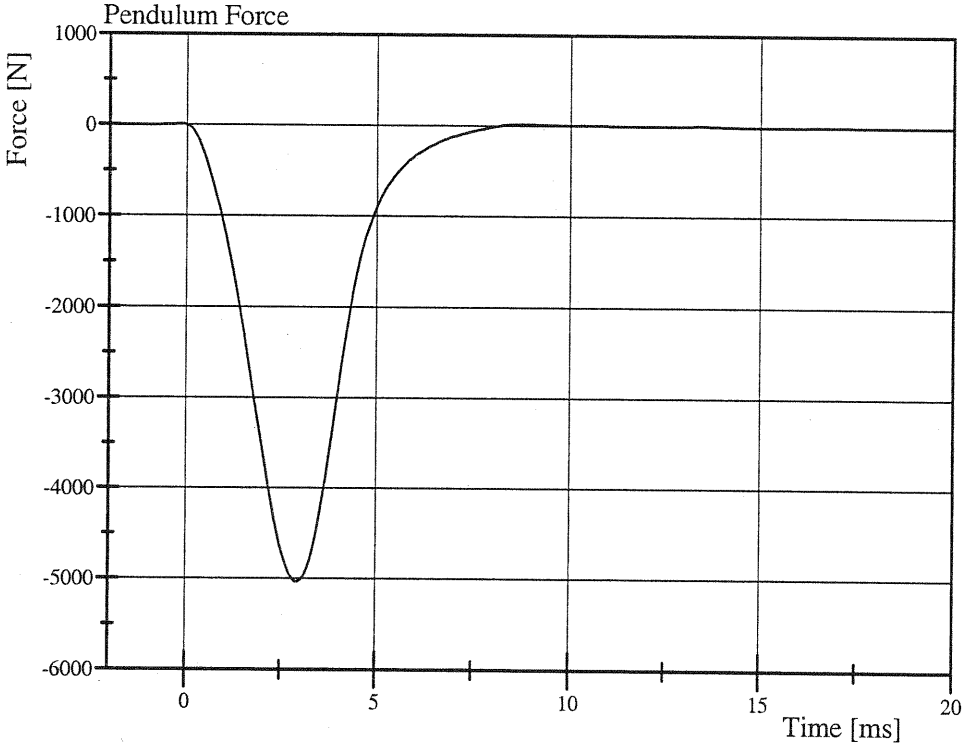
Right Knee Femur Response Test
HIII 50th Serial No. 045 Certification No. 46-1
Test Date: 10/30/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.4 g at 8.8 ms
Min: -102.9 g at 3.0 ms

Pendulum Force



Filter Class: CFC_600
Max: 21.2 N at 8.8 ms
Min: -5,033.6 N at 3.0 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.30.2007 13:31:25 1711

071214

Pre-Test Dummy Configuration and Performance Verification Data

Right Side Row 7 Right Seat Dummy S/N: 043

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 043
Calibration No. 02

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	879	Yes
B	Shoulder Pivot Height	505.5 - 520.7	516	Yes
C	H-Point Height	83.8 - 88.9	87	Yes
D	H-Point From Seatback	134.6 - 139.7	136	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	88	Yes
F	Thigh Clearance	139.7 - 154.9	153	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	294	Yes
H	Skull Cap To Backline	40.6 - 45.7	45	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	332	Yes
J	Elbow Rest Height	190.5 - 210.8	205	Yes
K	Buttock Knee Length	579.1 - 604.5	601	Yes
L	Popliteal Height	429.3 - 454.7	435	Yes
M	Knee Pivot Height	485.1 - 500.4	495	Yes
N	Buttock Popliteal Length	452.1 - 477.5	470	Yes
O	Chest Depth	213.4 - 228.6	220	Yes
P	Foot Length	251.5 - 266.7	260	Yes
V	Shoulder Breadth	421.6 - 436.9	427	Yes
W	Foot Breadth	91.4 - 106.7	100	Yes
Y	Chest Circumference	970.3 - 1000.8	983	Yes
Z	Waist Circumference	835.7 - 866.1	858	Yes
AA	Location For Chest Circumference	429.3 - 434.3	430	Yes
BB	Location For Waist Circumference	226.1 - 231.1	230	Yes

Comments:

Technician

Approved

Transportation Research Center Inc.

Front Head Drop
HIII 50th Serial No. 043 Certification No. 1-1
Test Date: 10/29/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	43 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	270.5 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-5.0 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

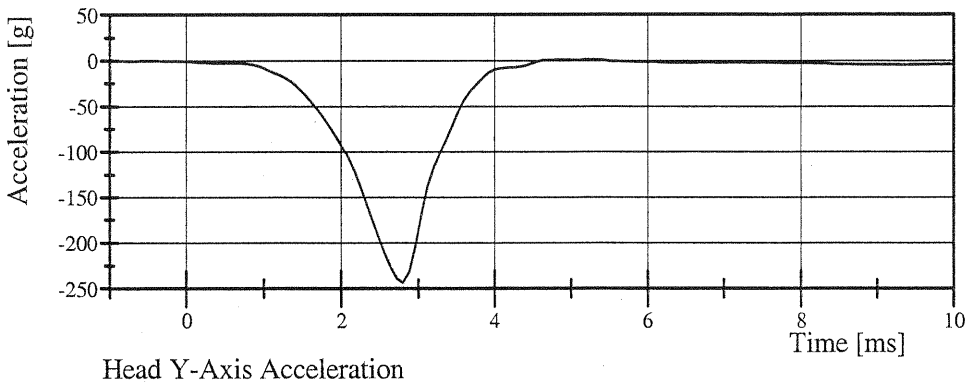
10.29.2007 15:15:21 606

071214

Transportation Research Center Inc.

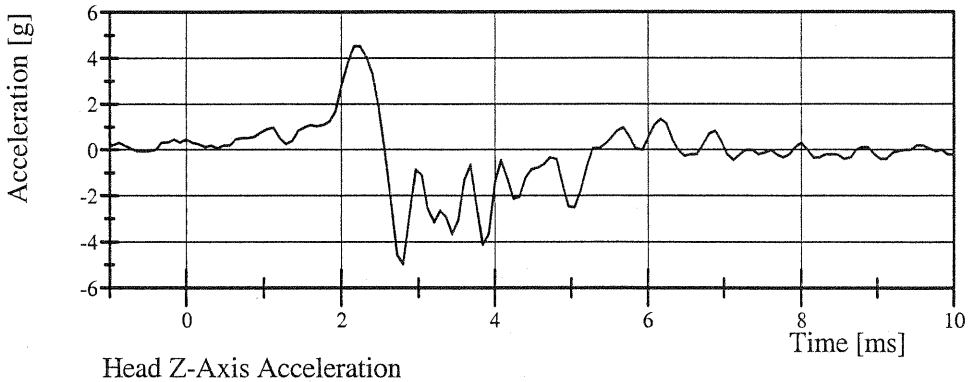
Front Head Drop
HIII 50th Serial No. 043 Certification No. 1-1
Test Date: 10/29/2007

Head X-Axis Acceleration



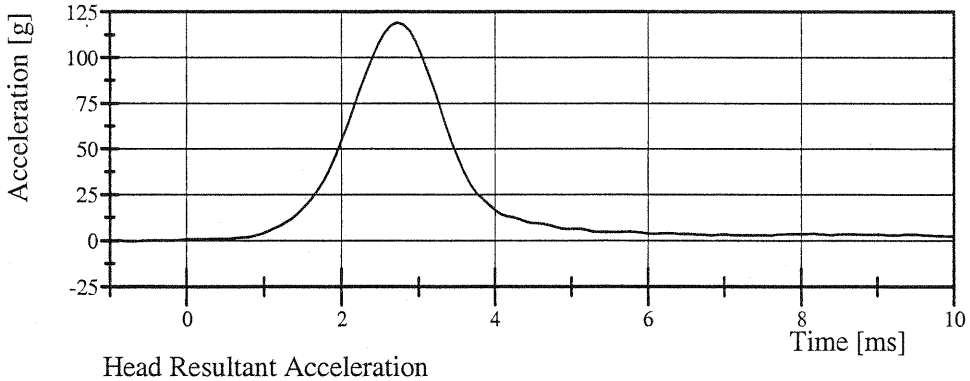
Filter Class: CFC_1000
Max: 1.5 g at 5.3 ms
Min: -243.2 g at 2.8 ms

Head Y-Axis Acceleration



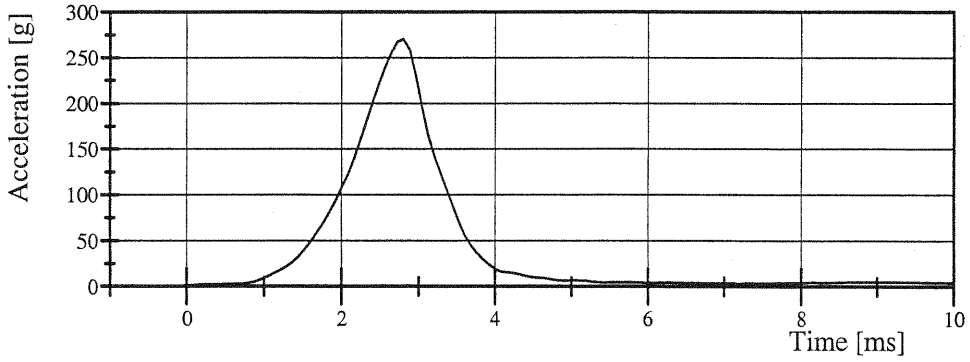
Filter Class: CFC_1000
Max: 4.5 g at 2.2 ms
Min: -5.0 g at 2.8 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 119.2 g at 2.7 ms
Min: -0.3 g at -0.7 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 270.5 g at 2.8 ms
Min: 0.1 g at -0.6 ms

Transportation Research Center Inc.

Neck Flexion
HIII 50th Serial No. 043 Certification No. 1-6
Test Date: 10/30/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	33 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.913 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	39.9 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-22.98 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-19.32 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-15.80 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-15.80 g	Yes
Total Head D-Plane Rotation			
Peak	(-64) - (-78) °	-70.8 °	Yes
Time of Peak	57 - 64 ms	60.0 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	119.0 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	88 - 108 N·m	106.2 N·m	Yes
Time of Peak	47 - 58 ms	51.6 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	98.0 ms	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

10.30.2007 14:46:02 2982

071214

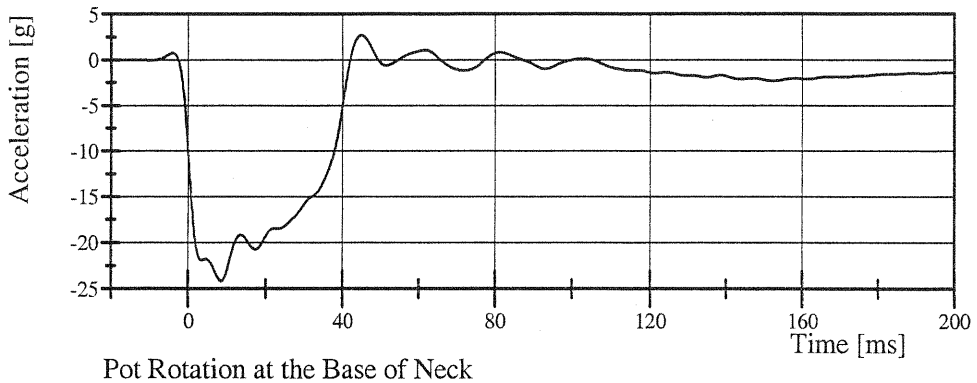
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 043 Certification No. 1-6

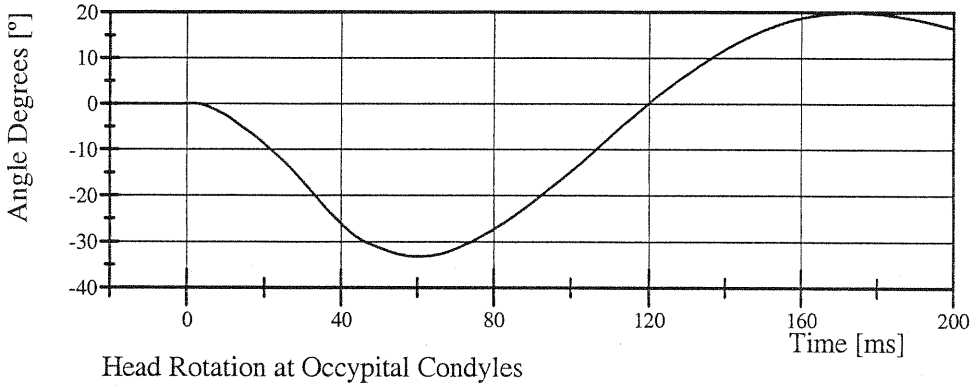
Test Date: 10/30/2007

Pendulum Acceleration



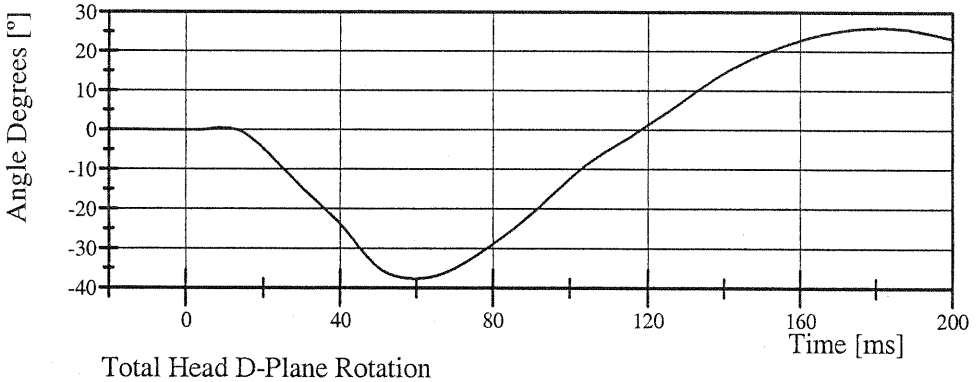
Filter Class: CFC_60
Max: 2.7 g at 45.0 ms
Min: -24.2 g at 8.5 ms

Pot Rotation at the Base of Neck



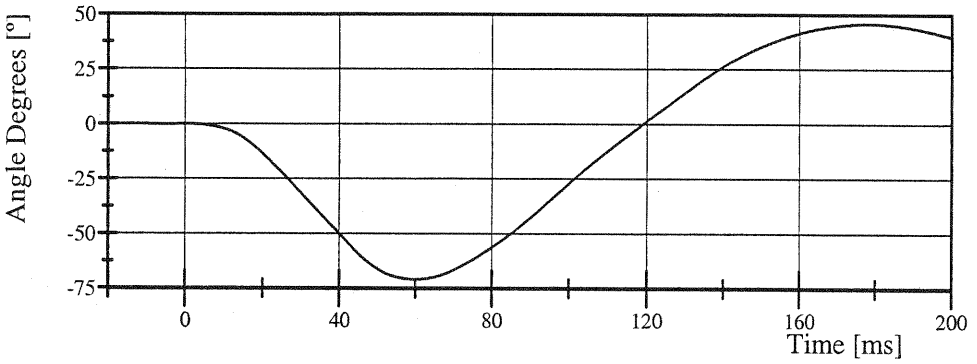
Filter Class: CFC_60
Max: 19.9 ° at 174.2 ms
Min: -33.2 ° at 60.4 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 26.1 ° at 181.4 ms
Min: -37.6 ° at 59.7 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 45.8 ° at 178.2 ms
Min: -70.8 ° at 60.0 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.30.2007 14:46:34 2982

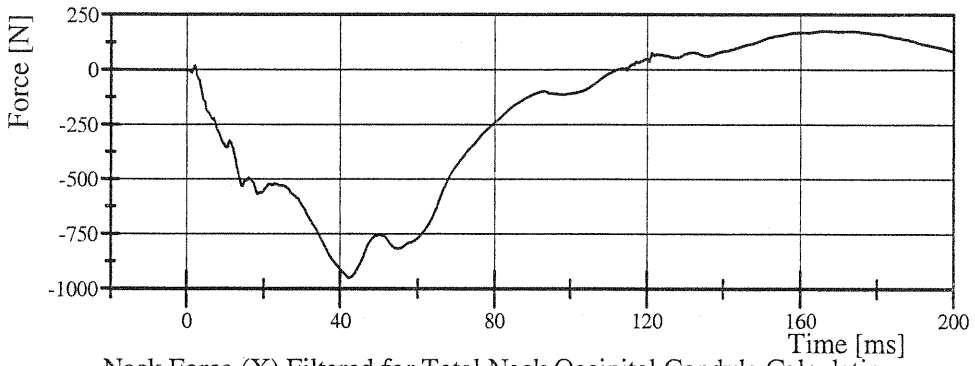
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 043 Certification No. 1-6

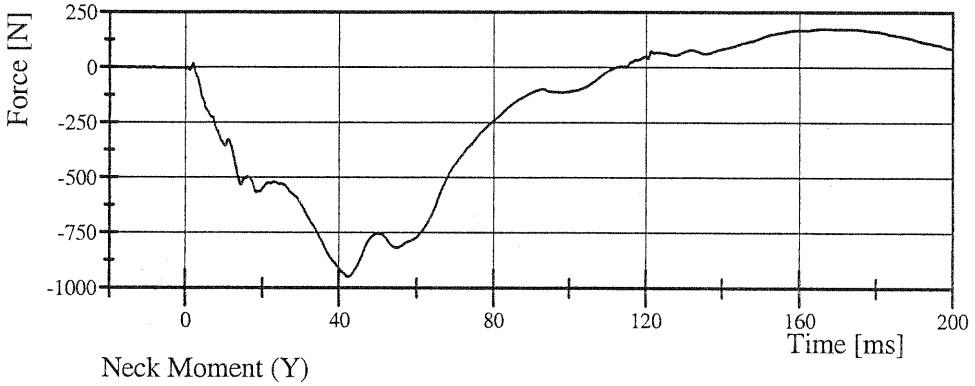
Test Date: 10/30/2007

Neck Force (X)



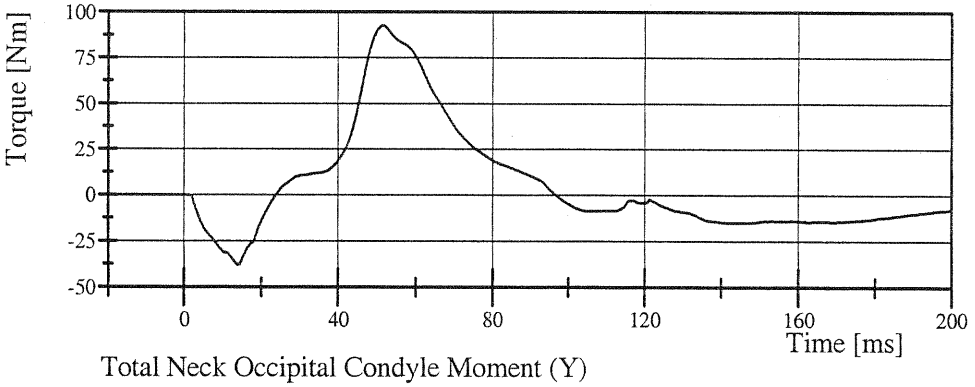
Filter Class: CFC_1000
Max: 176.8 N at 166.7 ms
Min: -949.5 N at 42.2 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



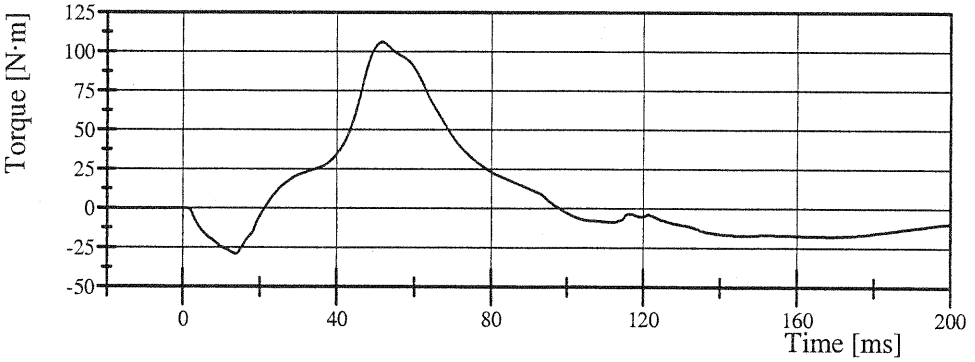
Filter Class: CFC_600
Max: 176.4 N at 166.7 ms
Min: -949.4 N at 42.2 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 92.7 Nm at 51.4 ms
Min: -38.0 Nm at 14.0 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 106.2 N·m at 51.6 ms
Min: -28.8 N·m at 13.7 ms

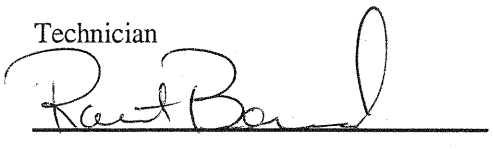
Transportation Research Center Inc.

Neck Extension
HIII 50th Serial No. 043 Certification No. 1-1
Test Date: 10/30/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-5.979 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	38.8 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	19.50 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	17.52 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	14.56 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	14.81 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	96.0 °	Yes
Time of Peak	72 - 82 ms	75.8 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	155.5 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-53) - (-80) N·m	-72.3 N·m	Yes
Time of Peak	65 - 79 ms	69.8 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	138.8 ms	Yes

Test meets specifications.

Comments:

Technician 

Approved

Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

10.30.2007 15:22:26 3063

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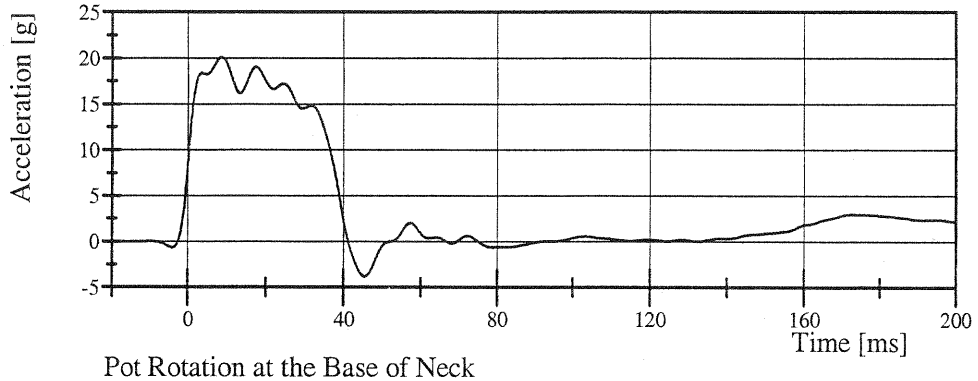
Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 043 Certification No. 1-1

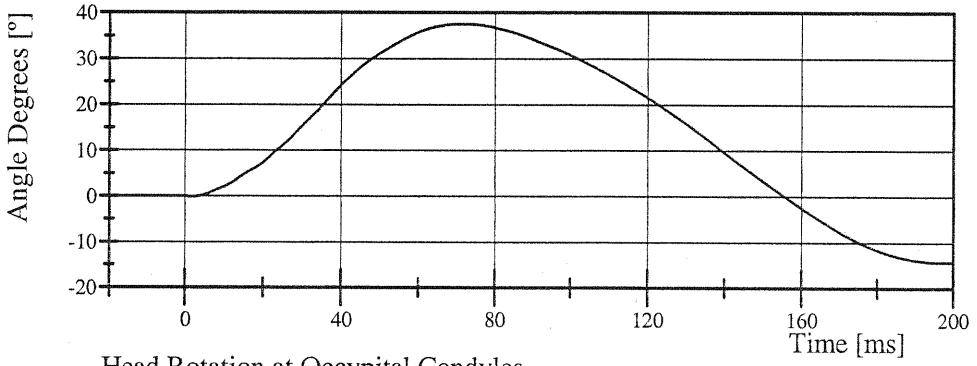
Test Date: 10/30/2007

Pendulum Acceleration



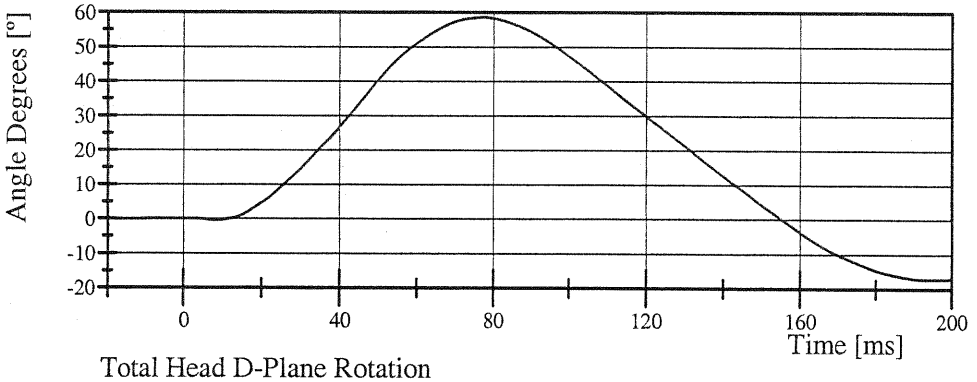
Filter Class: CFC_60
Max: 20.1 g at 8.7 ms
Min: -3.8 g at 45.4 ms

Pot Rotation at the Base of Neck



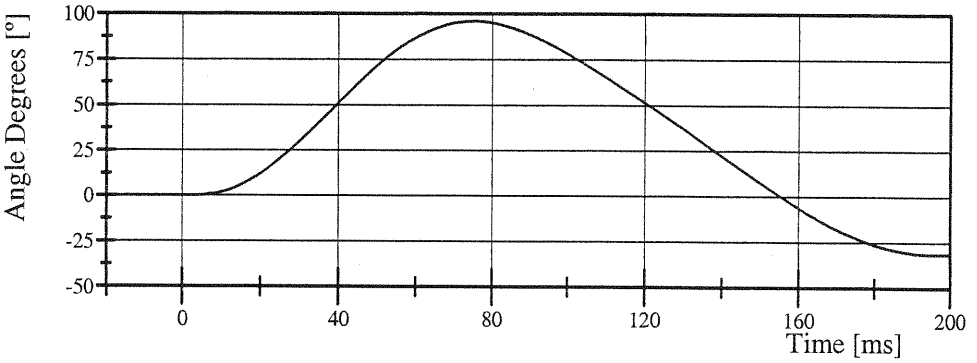
Filter Class: CFC_60
Max: 37.6 ° at 71.8 ms
Min: -14.3 ° at 199.1 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 58.6 ° at 77.4 ms
Min: -17.2 ° at 196.1 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 96.0 ° at 75.8 ms
Min: -31.5 ° at 197.3 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.30.2007 15:22:37 3063

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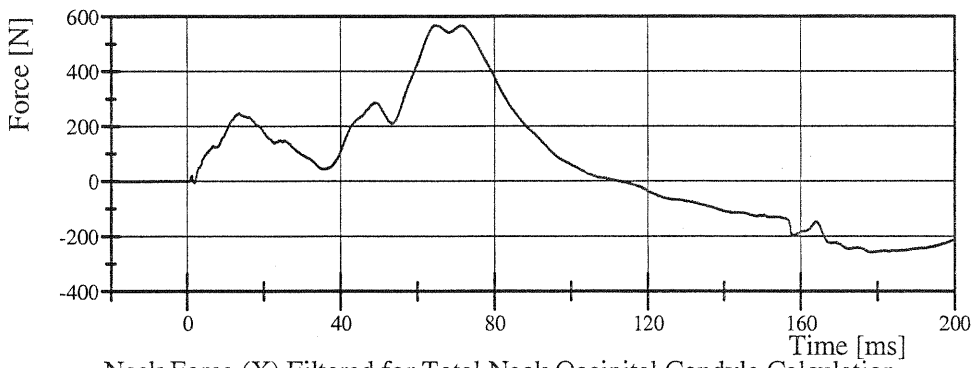
Transportation Research Center Inc.

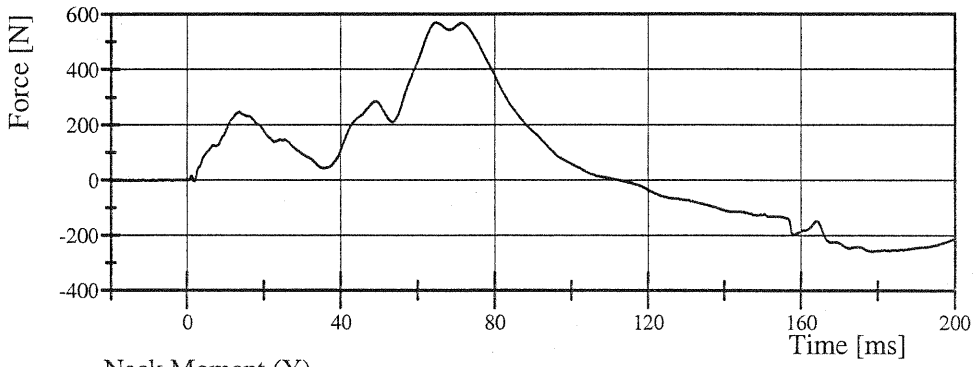
Neck Extension
HIII 50th Serial No. 043 Certification No. 1-1
Test Date: 10/30/2007

Neck Force (X)



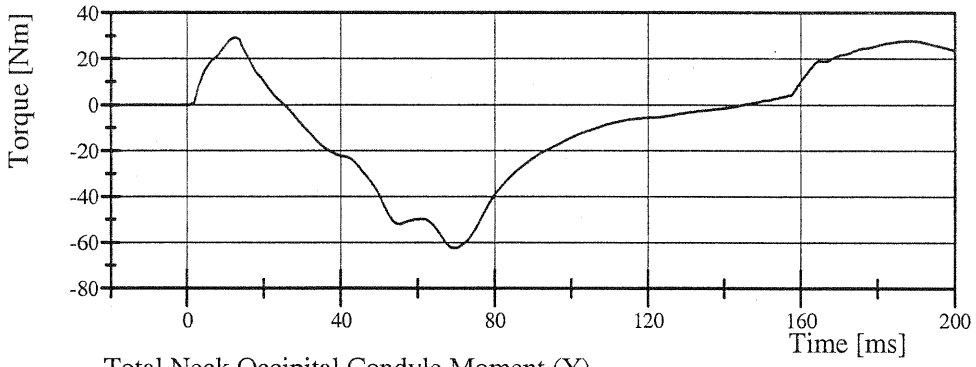
Filter Class: CFC_1000
Max: 569.6 N at 64.9 ms
Min: -257.5 N at 178.4 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



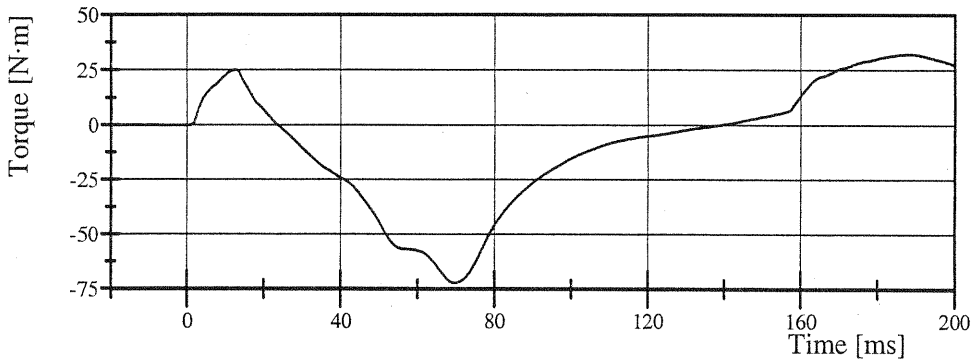
Filter Class: CFC_600
Max: 569.4 N at 64.8 ms
Min: -257.3 N at 178.6 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 29.2 Nm at 12.6 ms
Min: -62.5 Nm at 69.7 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 32.2 N·m at 188.7 ms
Min: -72.3 N·m at 69.8 ms

Transportation Research Center Inc.

Front Thorax
HIII 50th Serial No. 043 Certification No. 2-1
Test Date: 11/1/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.600 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,598.4 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-68.74 mm	Yes
Internal Hysteresis	65 - 85 %	75.1 %	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

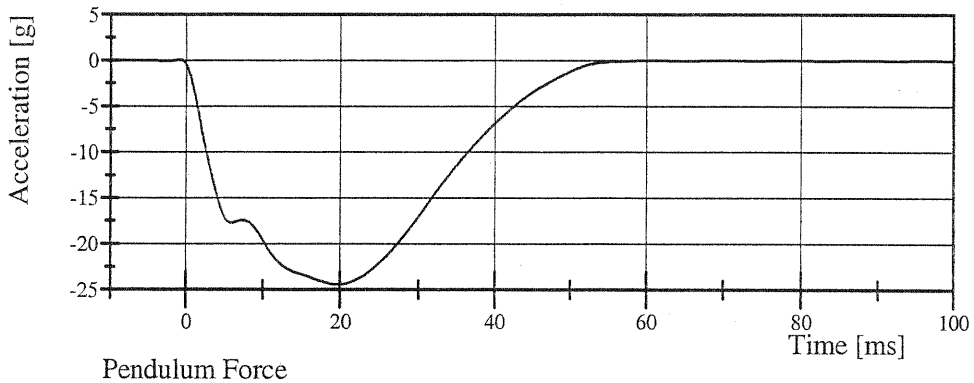
11.01.2007 09:30:30 1594

071214

Transportation Research Center Inc.

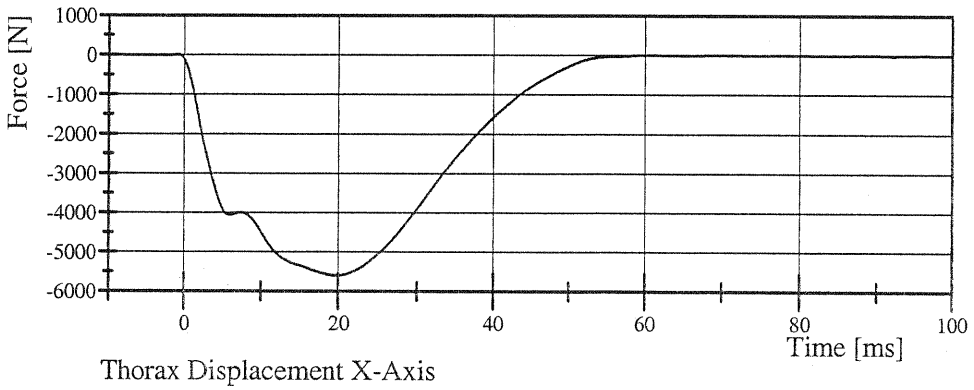
Front Thorax
HIII 50th Serial No. 043 Certification No. 2-1
Test Date: 11/1/2007

Pendulum Acceleration



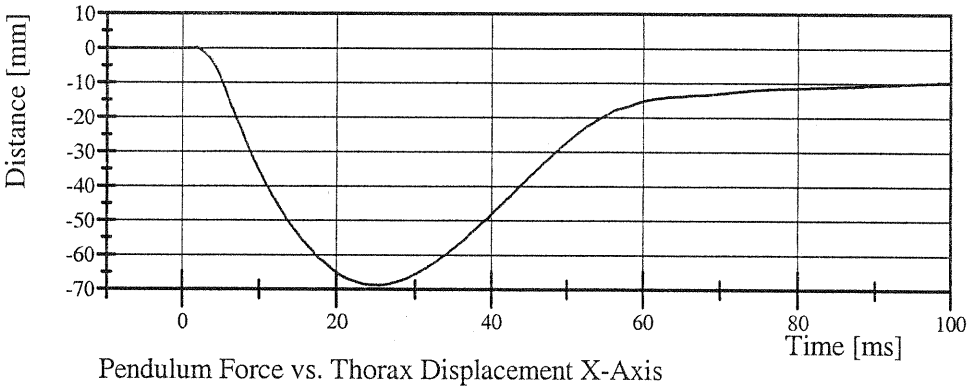
Filter Class: CFC_180
Max: 0.1 g at -0.9 ms
Min: -24.4 g at 19.7 ms

Pendulum Force



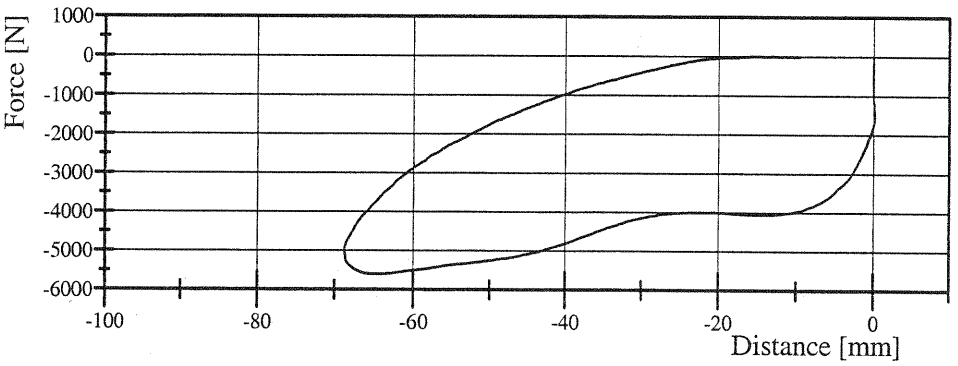
Filter Class: CFC_180
Max: 13.1 N at -0.9 ms
Min: -5,598.4 N at 19.7 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.1 mm at 1.8 ms
Min: -68.7 mm at 25.4 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 13.1 N at -0.0 mm
Min: -5,598.4 N at -64.6 mm

Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

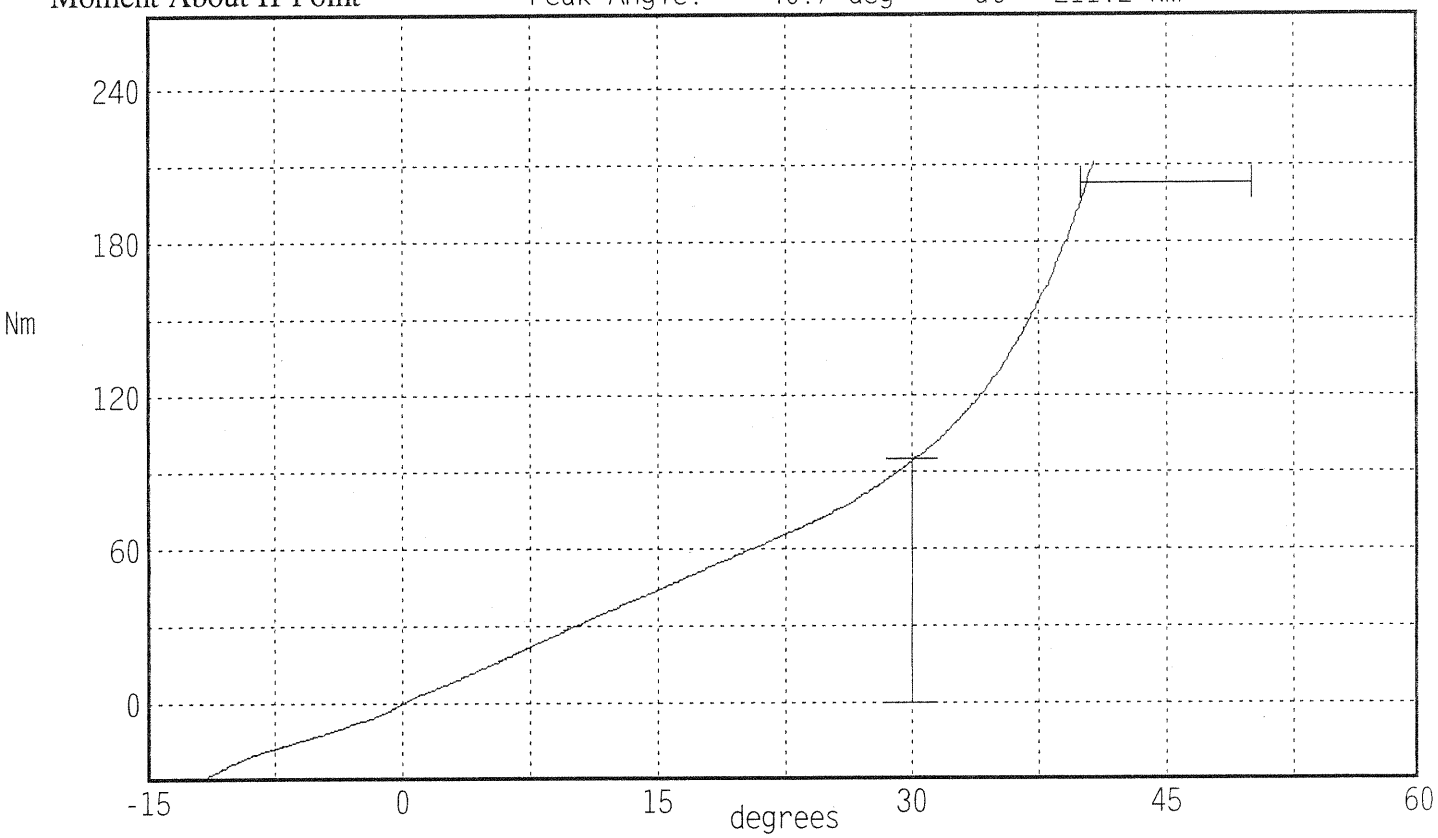
Serial Number: 043L
Test Number: 043C01
Comments:

Date: 10/29/2007
Time: 14:14

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	20.9	°C	Pass
Humidity	10 - 70	44	%	Pass
Moment at 30 deg	<= 94.9	94.1	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	40.4	deg	Pass
Average Velocity	5.0 - 10.0	7.5	deg/sec	Pass

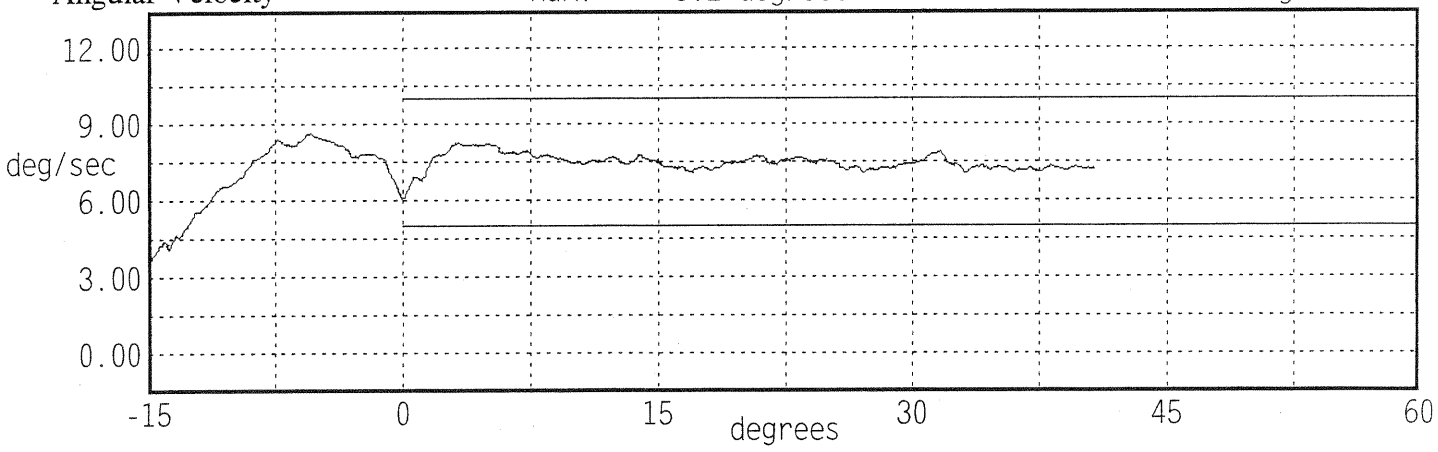
Moment About H-Point

Peak Moment: 211.2 Nm at 40.7 deg
Peak Angle: 40.7 deg at 211.2 Nm



Angular Velocity

Max: 8.2 deg/sec Min: 6.1 deg/sec



Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

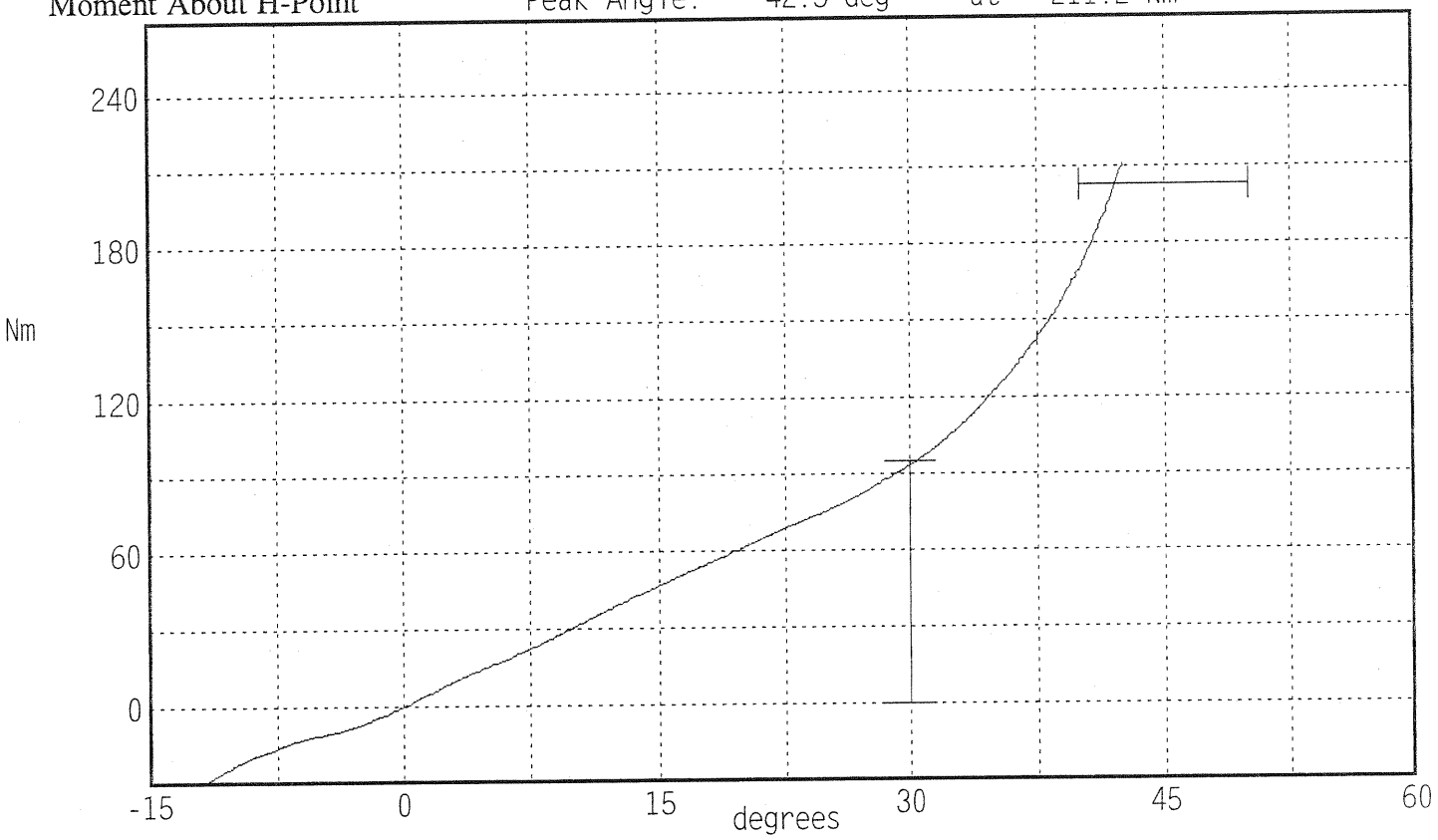
Serial Number: 043R
Test Number: 043C01
Comments:

Date: 10/29/2007
Time: 14:26

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.6	°C	Pass
Humidity	10 - 70	43	%	Pass
Moment at 30 deg	<= 94.9	93.4	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	42.1	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

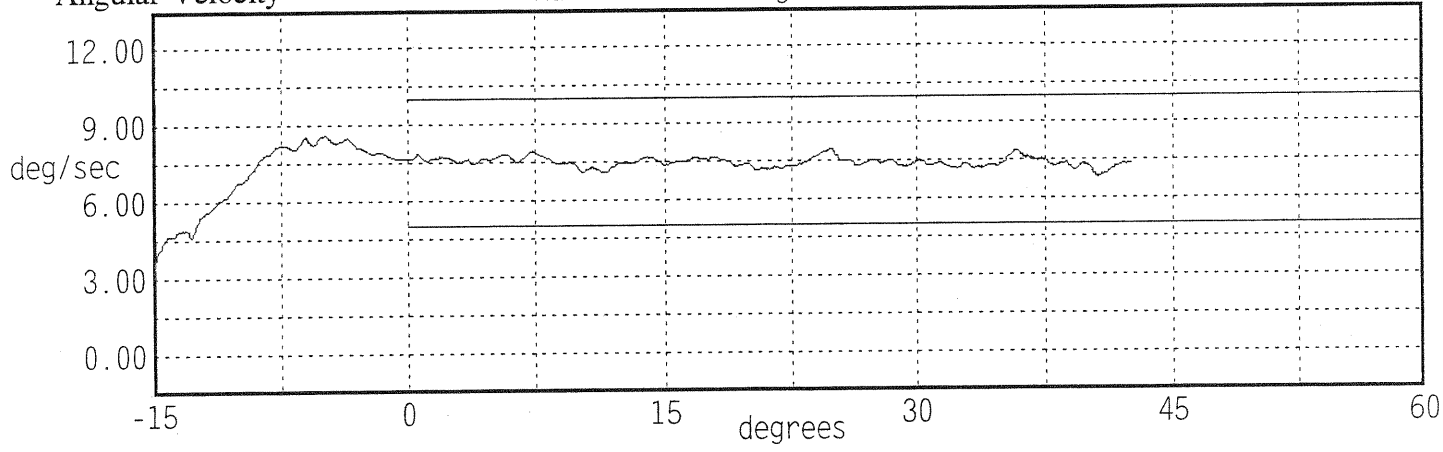
Moment About H-Point

Peak Moment: 211.2 Nm at 42.5 deg
Peak Angle: 42.5 deg at 211.2 Nm



Angular Velocity

Max: 8.0 deg/sec Min: 6.8 deg/sec



Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 043 Certification No. 1-2
Test Date: 10/29/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	43 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.113 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,414.75 N	Yes

Test meets specifications.

Comments:

Technician

Approved

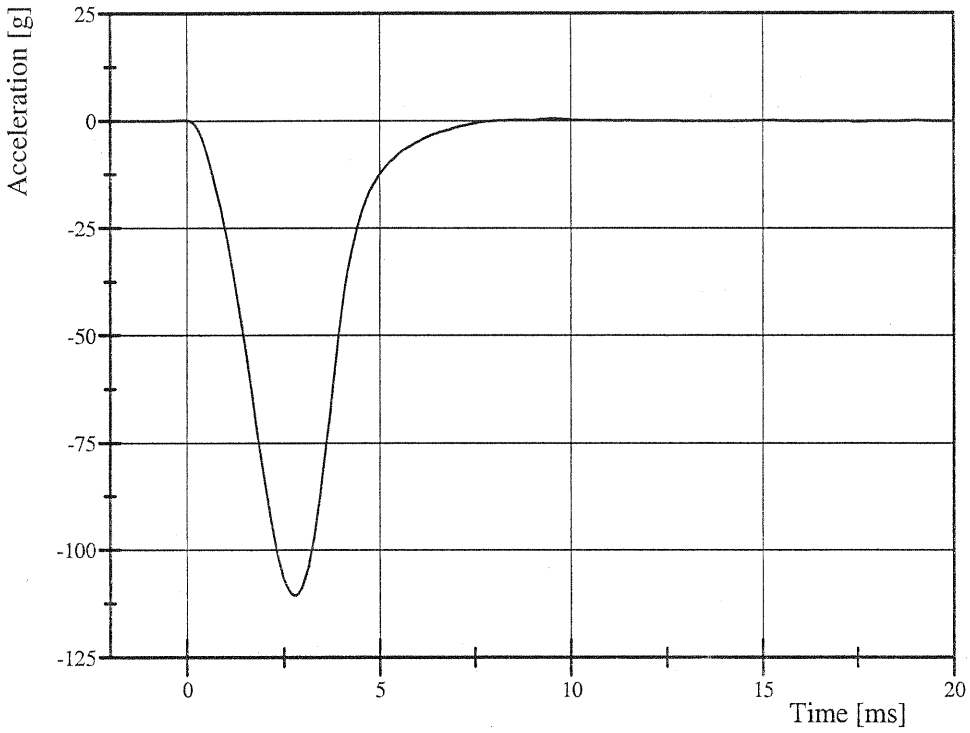
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.29.2007 15:05:30 1717

Transportation Research Center Inc.

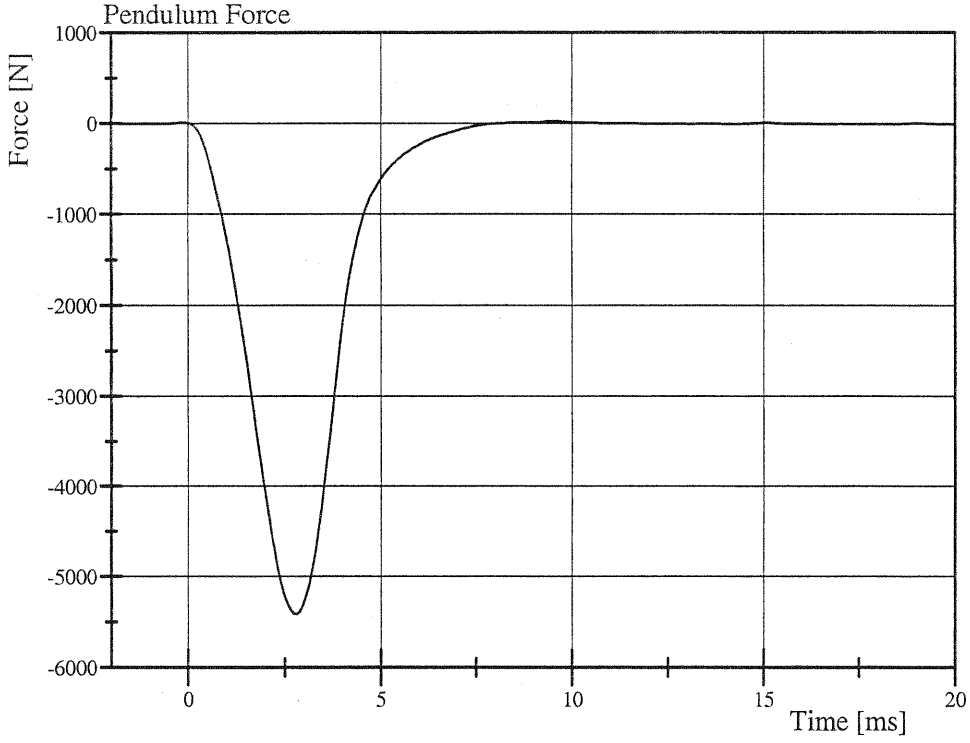
Left Knee Femur Response Test
HIII 50th Serial No. 043 Certification No. 1-2
Test Date: 10/29/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.5 g at 9.5 ms
Min: -110.7 g at 2.8 ms

Pendulum Force



Filter Class: CFC_600
Max: 25.0 N at 9.5 ms
Min: -5,414.8 N at 2.8 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.29.2007 15:05:36 1717

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Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 043 Certification No. 1-1
Test Date: 10/29/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	43 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.114 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,438.33 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

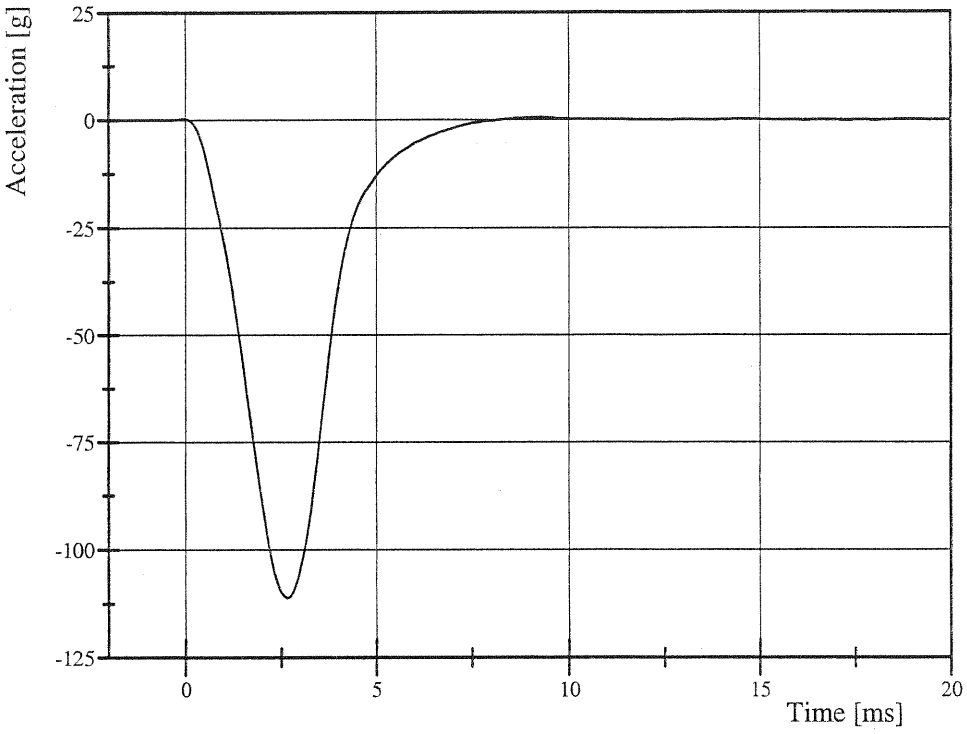
10.29.2007 14:46:53 1720

071214

Transportation Research Center Inc.

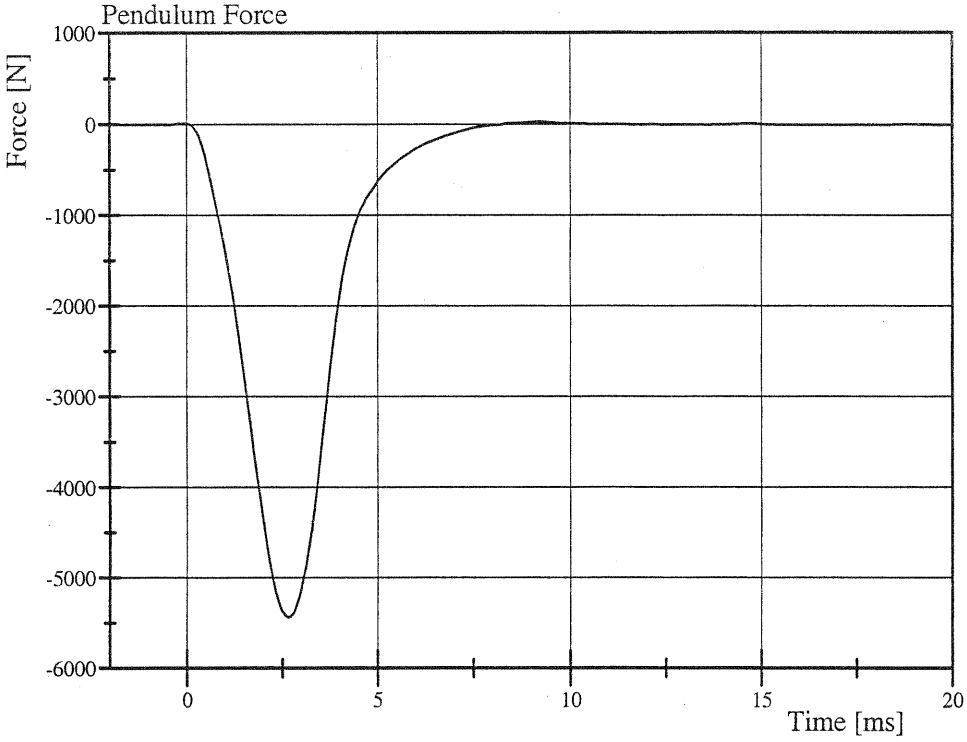
Right Knee Femur Response Test
HIII 50th Serial No. 043 Certification No. 1-1
Test Date: 10/29/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.6 g at 9.3 ms
Min: -111.1 g at 2.6 ms

Pendulum Force



Filter Class: CFC_600
Max: 28.8 N at 9.3 ms
Min: -5,438.3 N at 2.6 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.29.2007 14:47:01 1720

071214

Pre-Test Dummy Configuration and Performance Verification Data

Left Side Row 8 Left Seat Dummy S/N: 177

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 177 Calibration No. 130

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	882	Yes
B	Shoulder Pivot Height	505.5 - 520.7	519	Yes
C	H-Point Height	83.8 - 88.9	85	Yes
D	H-Point From Seatback	134.6 - 139.7	137	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	92	Yes
F	Thigh Clearance	139.7 - 154.9	152	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	297	Yes
H	Skull Cap To Backline	40.6 - 45.7	43	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	334	Yes
J	Elbow Rest Height	190.5 - 210.8	200	Yes
K	Buttock Knee Length	579.1 - 604.5	603	Yes
L	Popliteal Height	429.3 - 454.7	440	Yes
M	Knee Pivot Height	485.1 - 500.4	495	Yes
N	Buttock Popliteal Length	452.1 - 477.5	475	Yes
O	Chest Depth	213.4 - 228.6	221	Yes
P	Foot Length	251.5 - 266.7	258	Yes
V	Shoulder Breadth	421.6 - 436.9	428	Yes
W	Foot Breadth	91.4 - 106.7	99	Yes
Y	Chest Circumference	970.3 - 1000.8	989	Yes
Z	Waist Circumference	835.7 - 866.1	862	Yes
AA	Location For Chest Circumference	429.3 - 434.3	430	Yes
BB	Location For Waist Circumference	226.1 - 231.1	230	Yes

Technician

Charles W. Ball

Approved

Ron Stover

Transportation Research Center Inc.

Front Head Drop
HIII 50th Serial No. 177 Certification No. 130-1
Test Date: 11/30/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	269.9 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-2.9 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

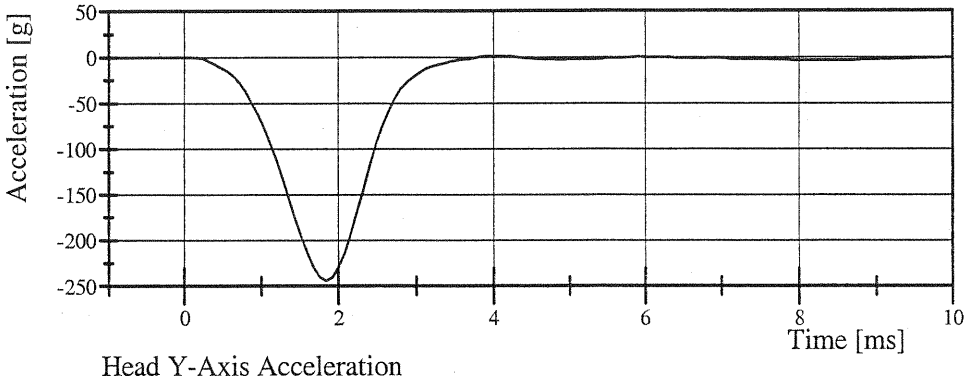
11.30.2007 12:34:42 614

071214

Transportation Research Center Inc.

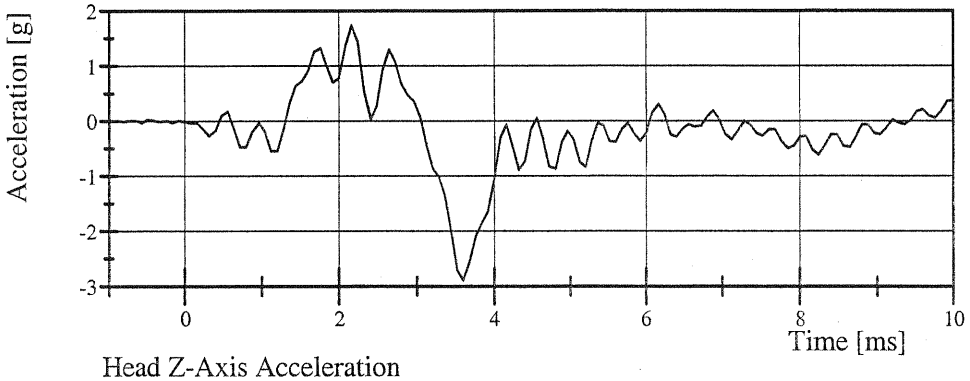
Front Head Drop
HIII 50th Serial No. 177 Certification No. 130-1
Test Date: 11/30/2007

Head X-Axis Acceleration



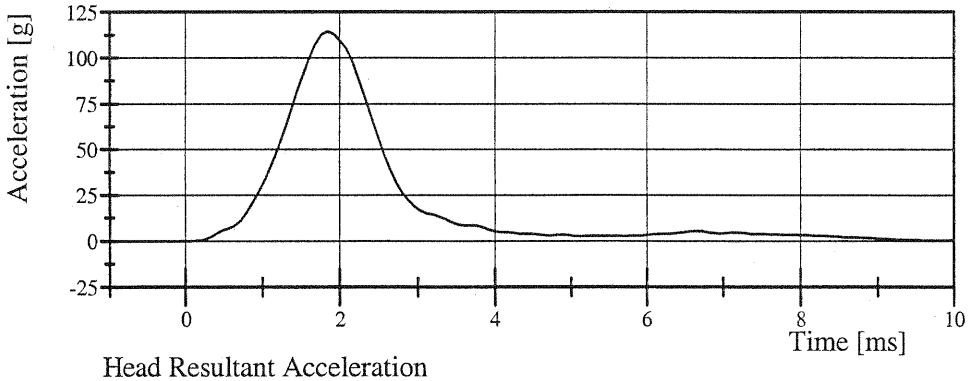
Filter Class: CFC_1000
Max: 1.3 g at 4.0 ms
Min: -244.4 g at 1.8 ms

Head Y-Axis Acceleration



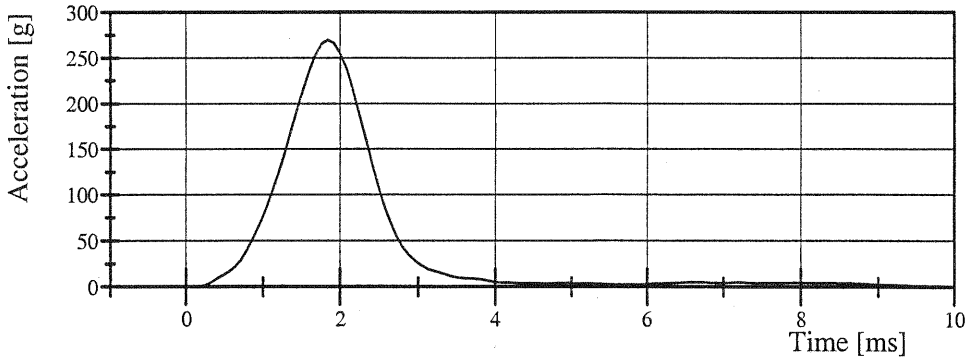
Filter Class: CFC_1000
Max: 1.7 g at 2.2 ms
Min: -2.9 g at 3.6 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 114.5 g at 1.8 ms
Min: -0.1 g at -1.0 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 269.9 g at 1.8 ms
Min: 0.0 g at -0.7 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.30.2007 12:34:49 614

071214

Transportation Research Center Inc.

Neck Flexion
HIII 50th Serial No. 177 Certification No. 130-3
Test Date: 11/30/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.998 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	37.6 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-24.97 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-19.89 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-16.70 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-16.70 g	Yes
Total Head D-Plane Rotation			
Peak	(-64) - (-78) °	-65.1 °	Yes
Time of Peak	57 - 64 ms	57.4 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	113.1 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	88 - 108 N·m	90.9 N·m	Yes
Time of Peak	47 - 58 ms	49.7 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	100.6 ms	Yes

Test meets specifications.

Comments:

Technician

Charles W. Bell

Approved

Ron Stover

Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

11.30.2007 14:44:12 2973

071214

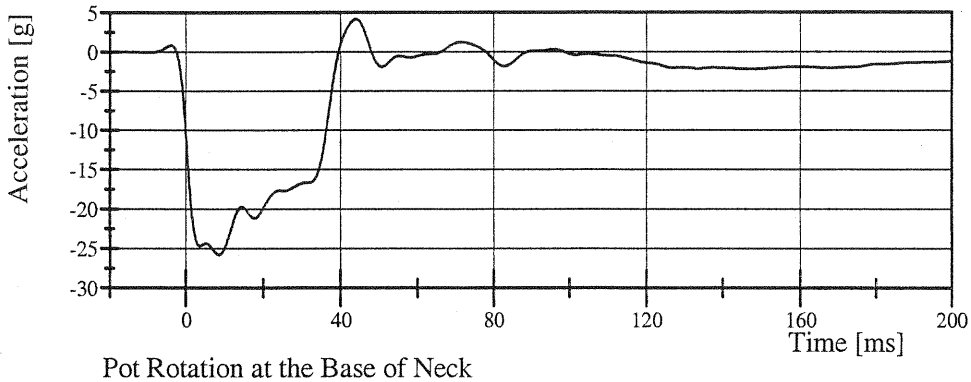
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 177 Certification No. 130-3

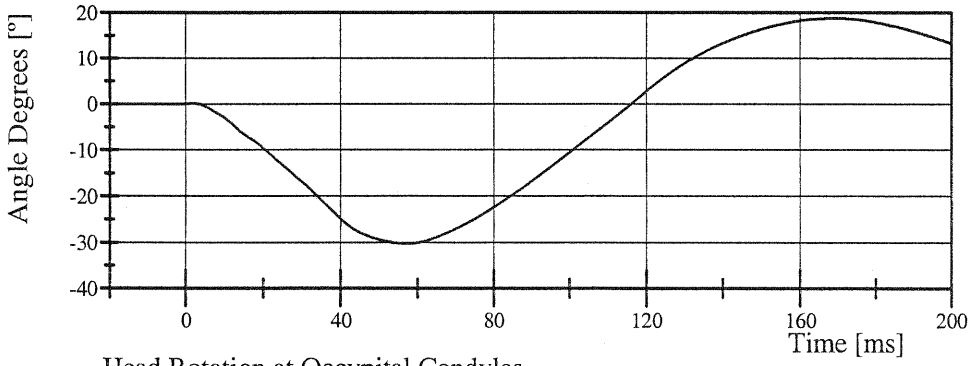
Test Date: 11/30/2007

Pendulum Acceleration



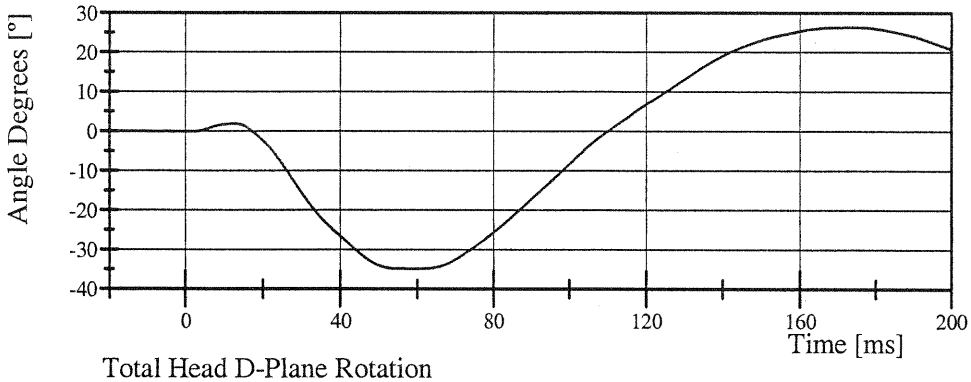
Filter Class: CFC_60
Max: 4.2 g at 44.0 ms
Min: -25.8 g at 8.6 ms

Pot Rotation at the Base of Neck



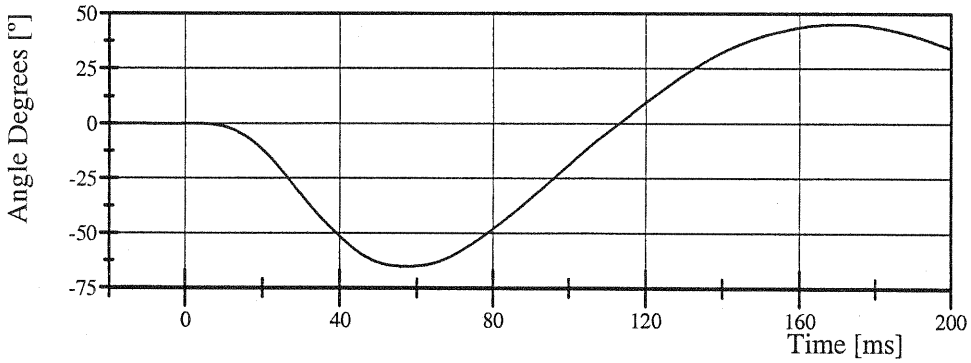
Filter Class: CFC_60
Max: 18.8 ° at 169.5 ms
Min: -30.3 ° at 57.3 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 26.4 ° at 174.2 ms
Min: -34.8 ° at 60.2 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 45.1 ° at 170.8 ms
Min: -65.1 ° at 57.4 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.30.2007 14:44:24 2973

071214

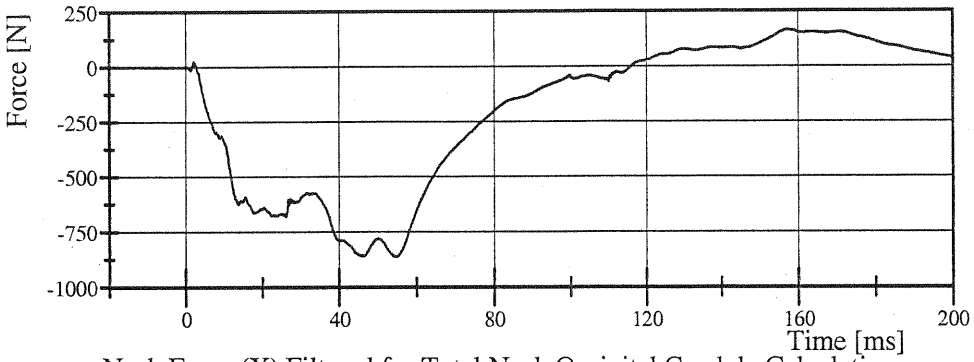
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 177 Certification No. 130-3

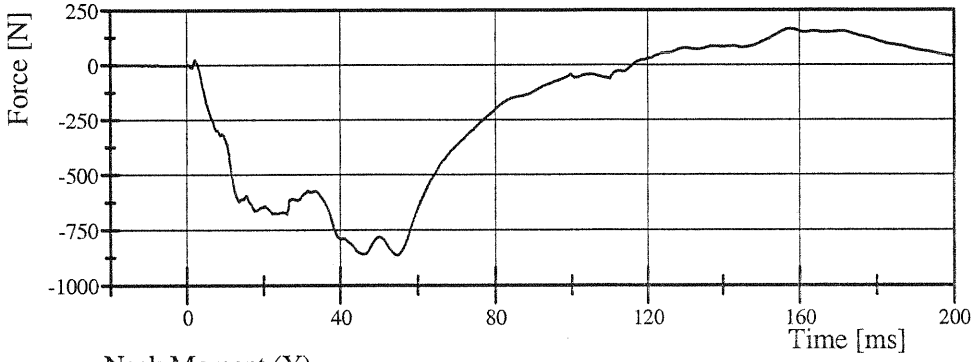
Test Date: 11/30/2007

Neck Force (X)



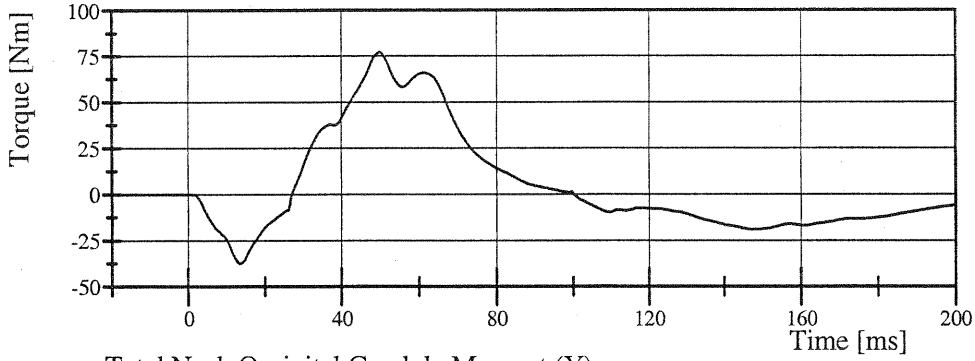
Filter Class: CFC_1000
Max: 165.4 N at 157.4 ms
Min: -863.0 N at 54.8 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



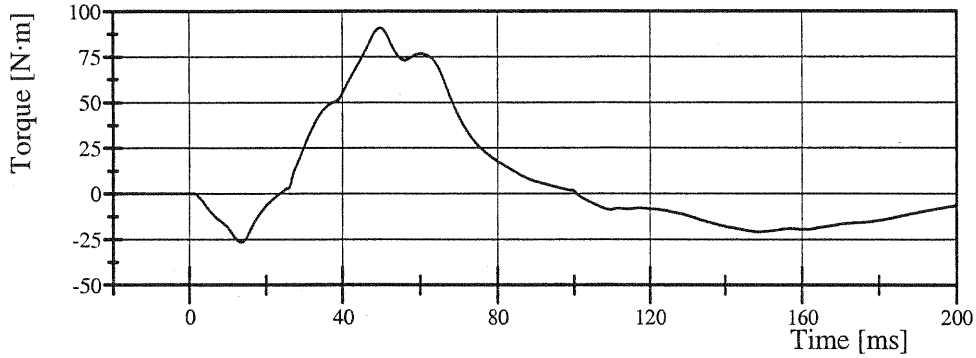
Filter Class: CFC_600
Max: 165.1 N at 157.4 ms
Min: -862.5 N at 54.7 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 77.1 Nm at 49.7 ms
Min: -37.5 Nm at 13.6 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 90.9 N·m at 49.7 ms
Min: -26.5 N·m at 13.5 ms

Transportation Research Center Inc.

Neck Extension
HIII 50th Serial No. 177 Certification No. 130-2
Test Date: 12/3/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	33 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-6.016 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	44.2 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	18.57 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	14.85 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	12.72 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	12.72 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	90.7 °	Yes
Time of Peak	72 - 82 ms	74.8 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	150.6 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-53) - (-80) N·m	-64.7 N·m	Yes
Time of Peak	65 - 79 ms	71.9 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	137.4 ms	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

12.03.2007 07:25:45 3052

071214

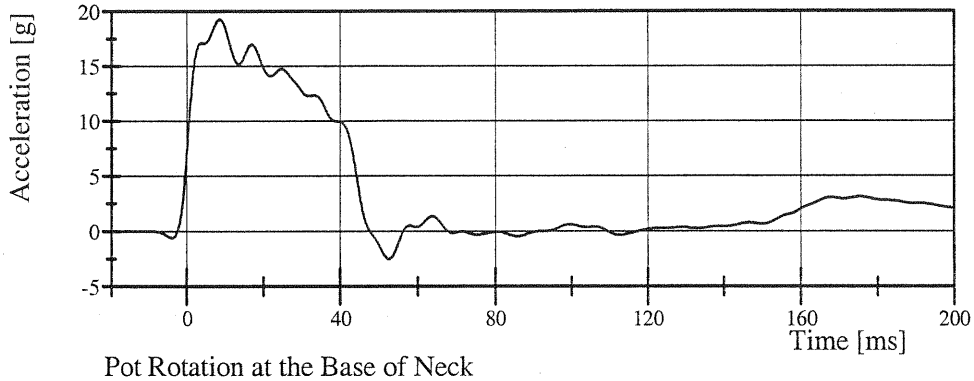
Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 177 Certification No. 130-2

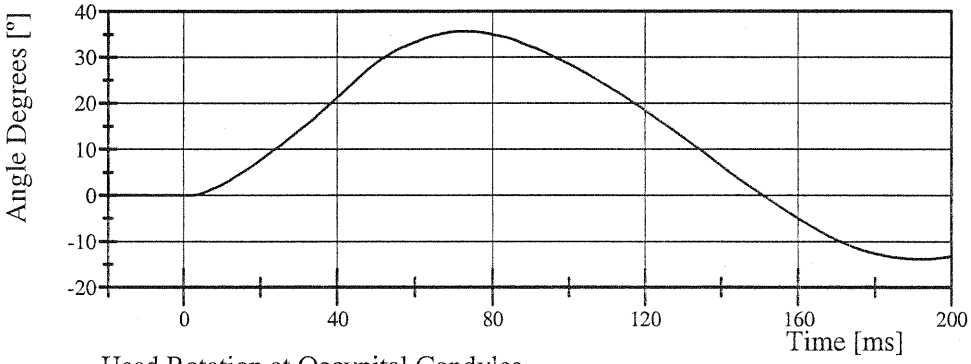
Test Date: 12/3/2007

Pendulum Acceleration



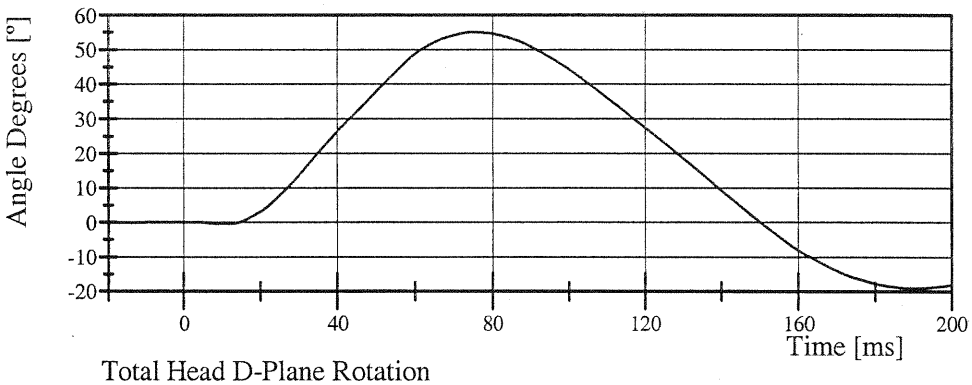
Filter Class: CFC_60
Max: 19.3 g at 8.6 ms
Min: -2.5 g at 52.5 ms

Pot Rotation at the Base of Neck



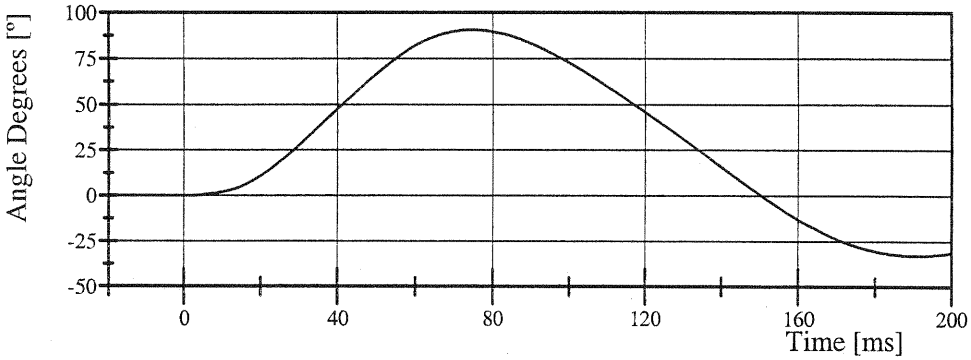
Filter Class: CFC_60
Max: 35.7 ° at 72.2 ms
Min: -13.8 ° at 192.3 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 55.1 ° at 75.4 ms
Min: -19.0 ° at 190.2 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 90.7 ° at 74.8 ms
Min: -32.8 ° at 191.0 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

12.03.2007 07:25:56 3052

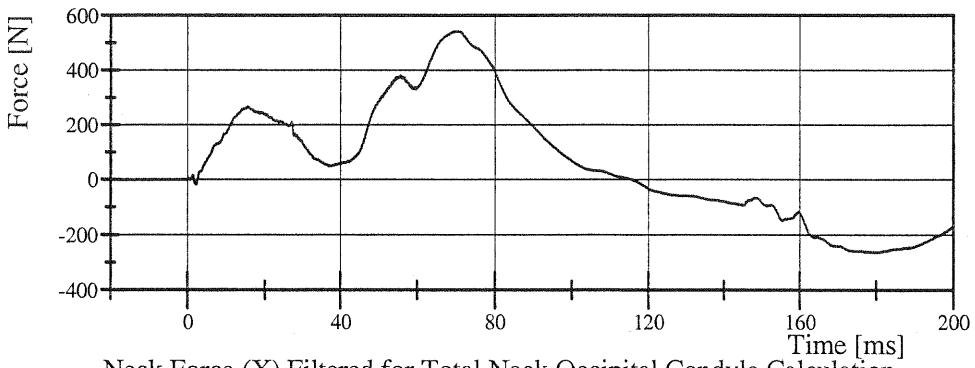
Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 177 Certification No. 130-2

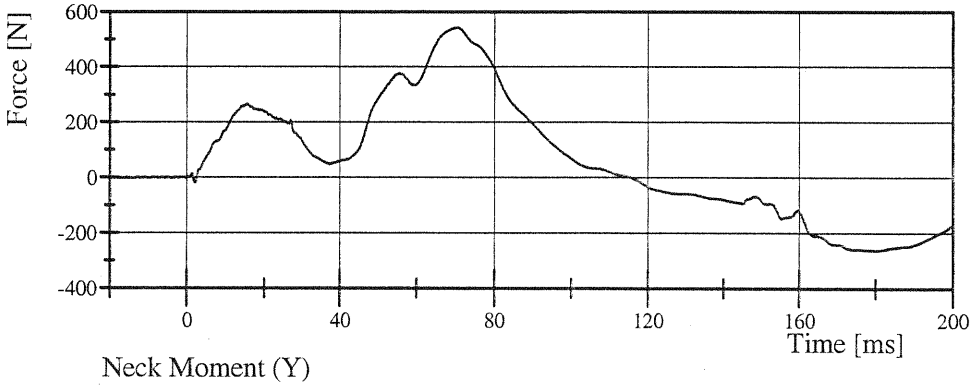
Test Date: 12/3/2007

Neck Force (X)



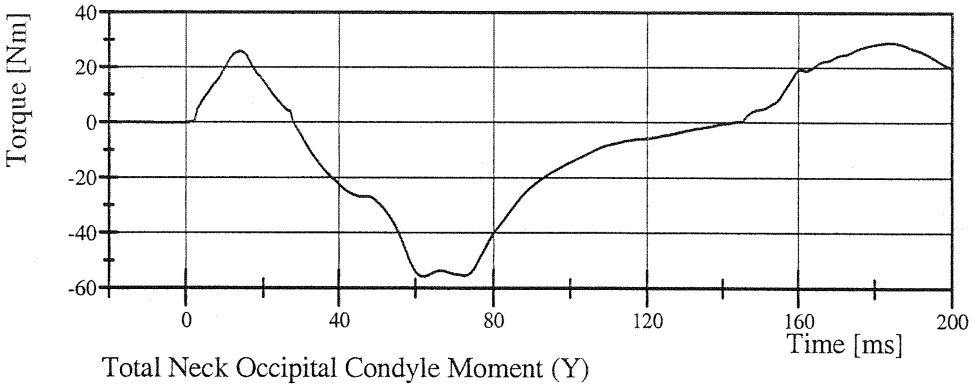
Filter Class: CFC_1000
Max: 543.4 N at 70.6 ms
Min: -262.9 N at 180.2 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



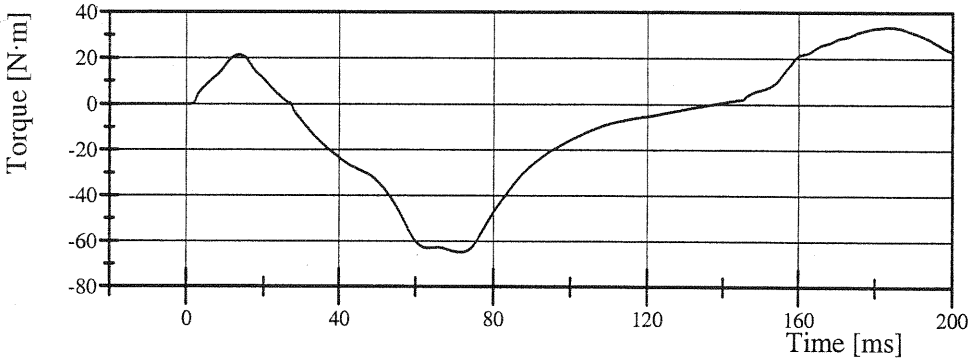
Filter Class: CFC_600
Max: 543.1 N at 70.6 ms
Min: -262.5 N at 180.2 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 29.1 Nm at 184.2 ms
Min: -55.8 Nm at 62.0 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 33.6 N·m at 183.6 ms
Min: -64.7 N·m at 71.9 ms

Transportation Research Center Inc.

Front Thorax
HIII 50th Serial No. 177 Certification No. 130-1
Test Date: 12/3/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.0 °C	Yes
Relative Humidity	10 - 70 %	33 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.661 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,797.8 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-65.90 mm	Yes
Internal Hysteresis	65 - 85 %	72.9 %	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

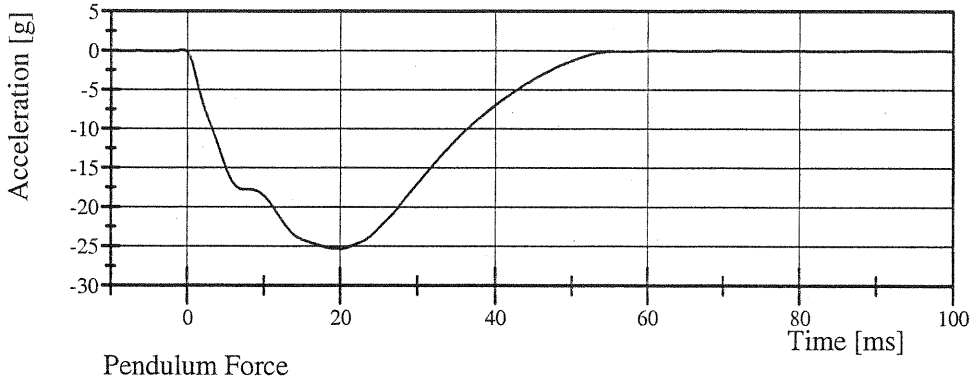
12.03.2007 10:28:49 1586

071214

Transportation Research Center Inc.

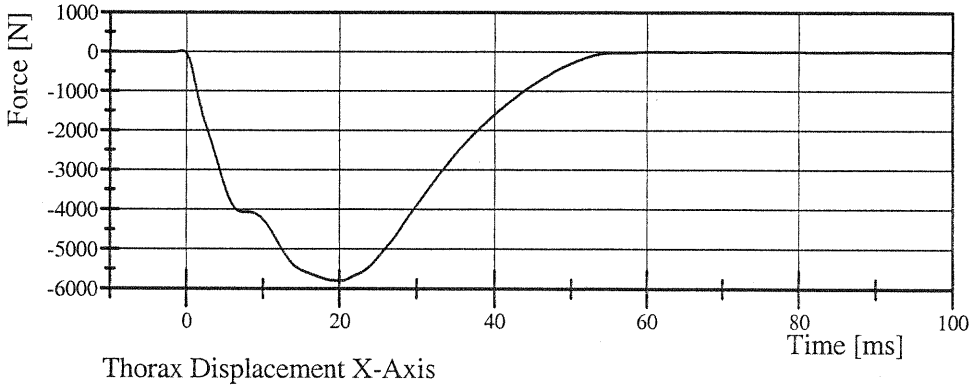
Front Thorax
HIII 50th Serial No. 177 Certification No. 130-1
Test Date: 12/3/2007

Pendulum Acceleration



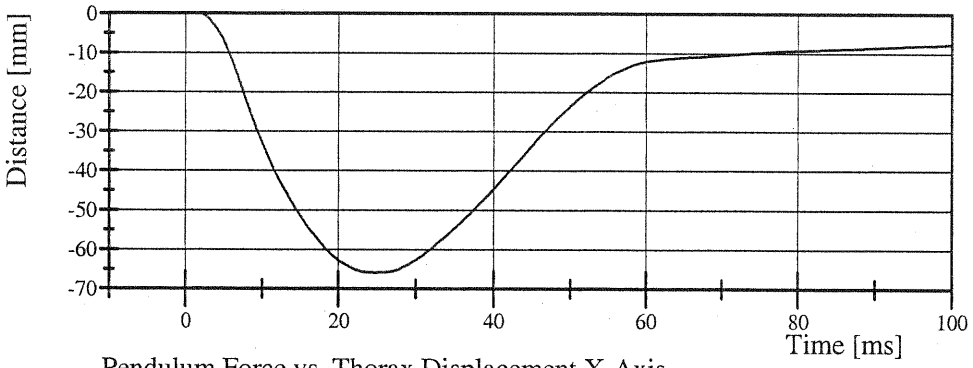
Filter Class: CFC_180
Max: 0.1 g at -0.6 ms
Min: -25.3 g at 20.2 ms

Pendulum Force



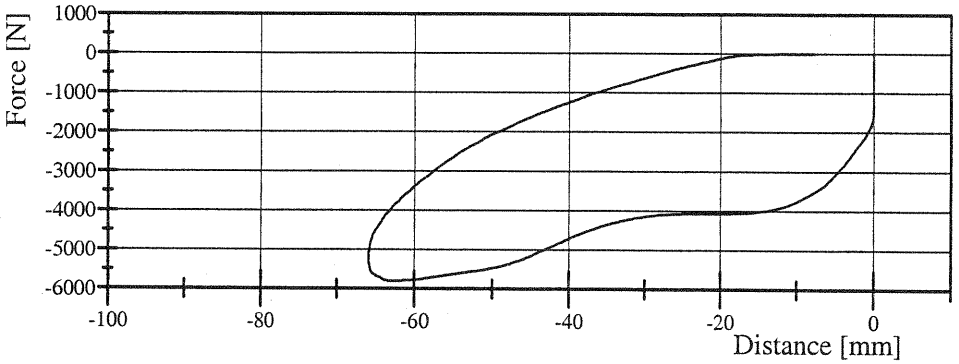
Filter Class: CFC_180
Max: 22.9 N at -0.6 ms
Min: -5,797.8 N at 20.2 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.0 mm at -6.8 ms
Min: -65.9 mm at 24.7 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 22.9 N at -0.0 mm
Min: -5,797.8 N at -63.0 mm

Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

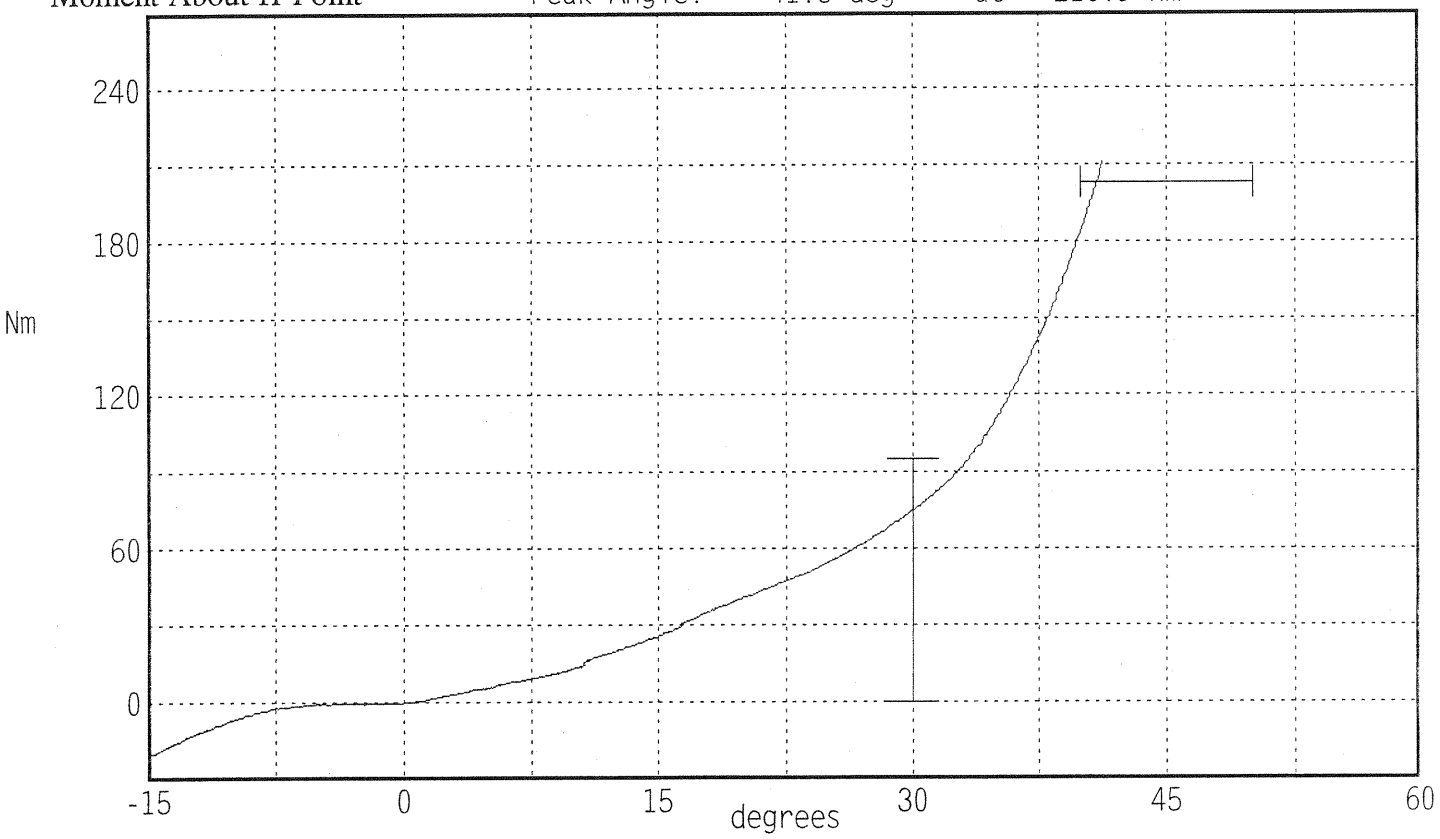
Serial Number: 177L
Test Number: 177C130
Comments:

Date: 12/03/2007
Time: 09:01

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	20.7	°C	Pass
Humidity	10 - 70	34	%	Pass
Moment at 30 deg	<= 94.9	74.9	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	40.9	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

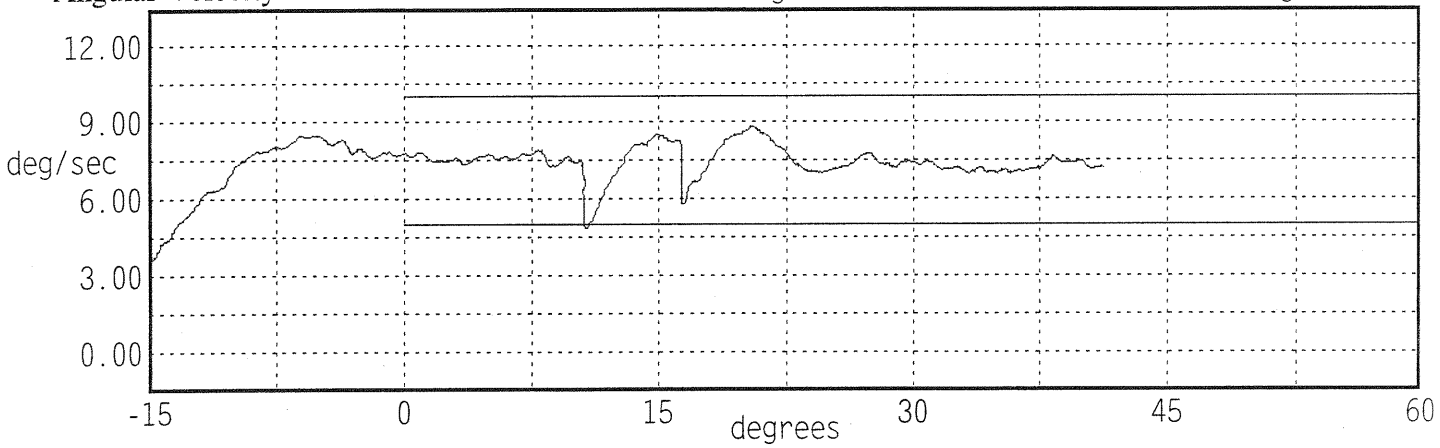
Moment About H-Point

Peak Moment: 210.9 Nm at 41.3 deg
Peak Angle: 41.3 deg at 210.9 Nm



Angular Velocity

Max: 8.8 deg/sec Min: 4.8 deg/sec



Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

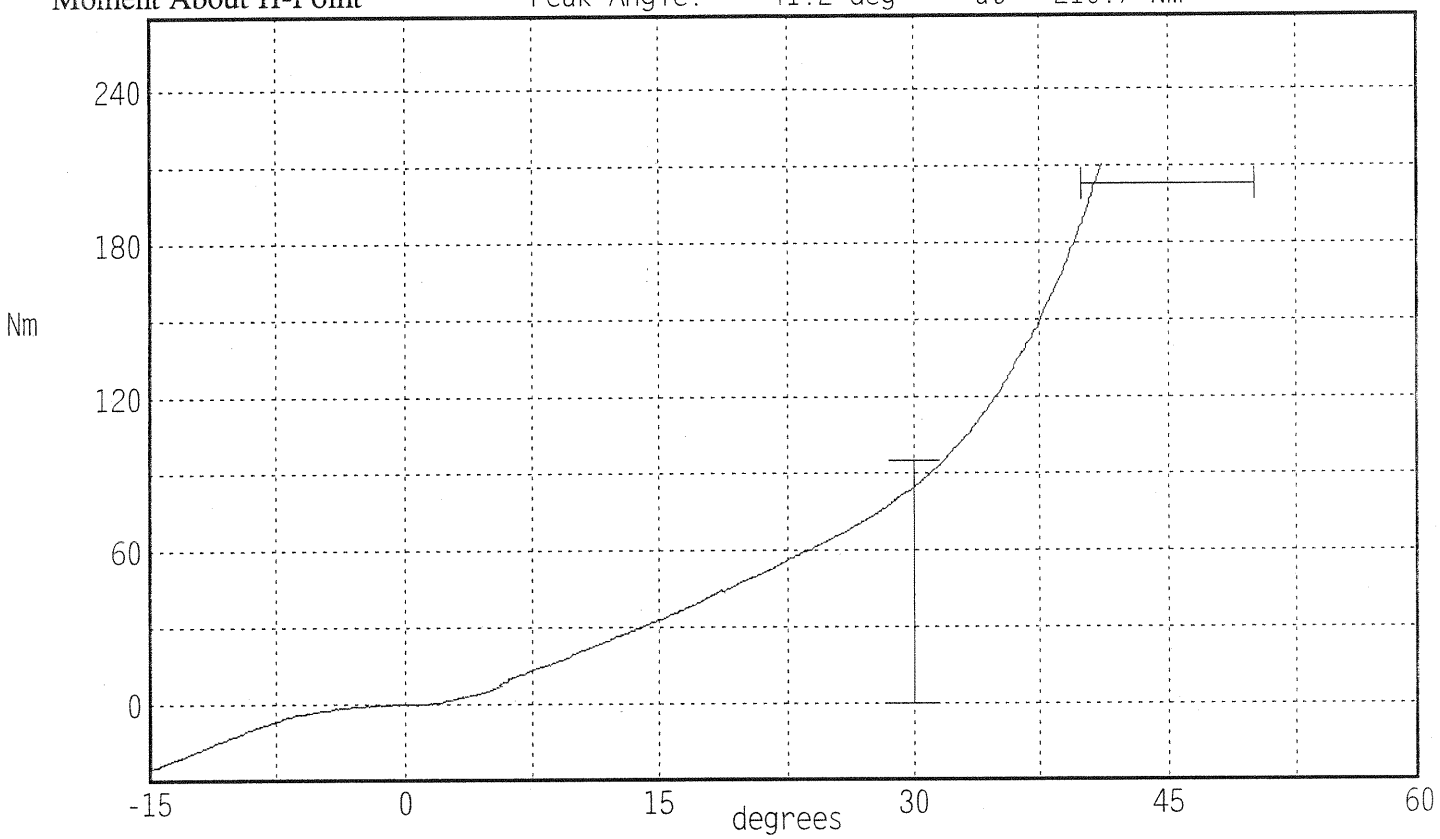
Serial Number: 177R
Test Number: 177C130
Comments:

Date: 12/03/2007
Time: 09:10

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	20.7	°C	Pass
Humidity	10 - 70	34	%	Pass
Moment at 30 deg	<= 94.9	84.5	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	40.8	deg	Pass
Average Velocity	5.0 - 10.0	7.3	deg/sec	Pass

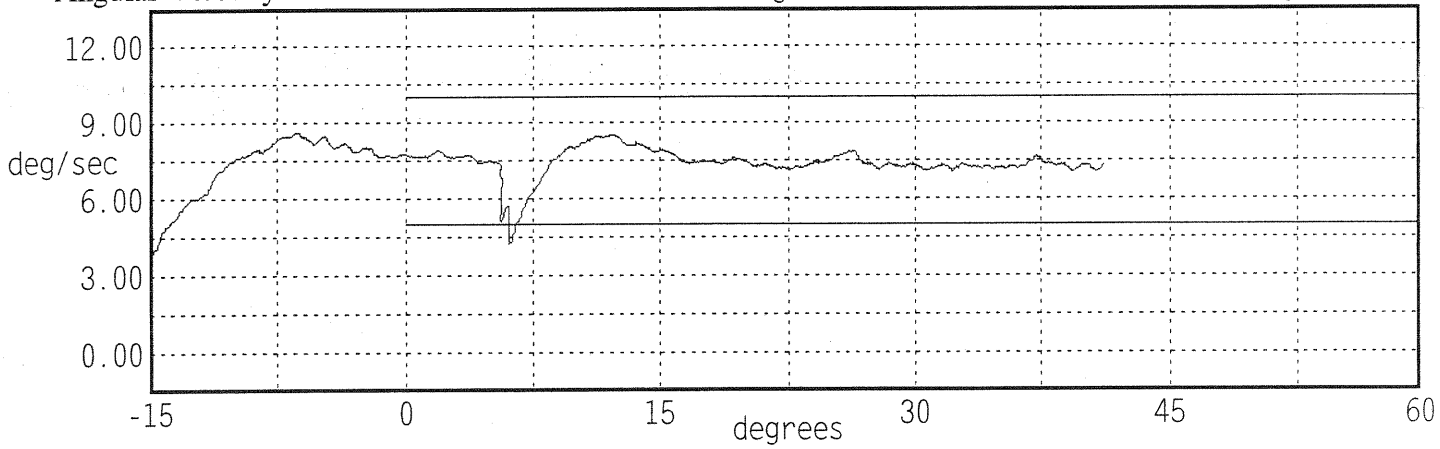
Moment About H-Point

Peak Moment: 210.7 Nm at 41.2 deg
Peak Angle: 41.2 deg at 210.7 Nm



Angular Velocity

Max: 8.5 deg/sec Min: 4.3 deg/sec



Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 177 Certification No. 130-1
Test Date: 11/30/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.113 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,657.63 N	Yes

Test meets specifications.

Comments:

Technician

Approved

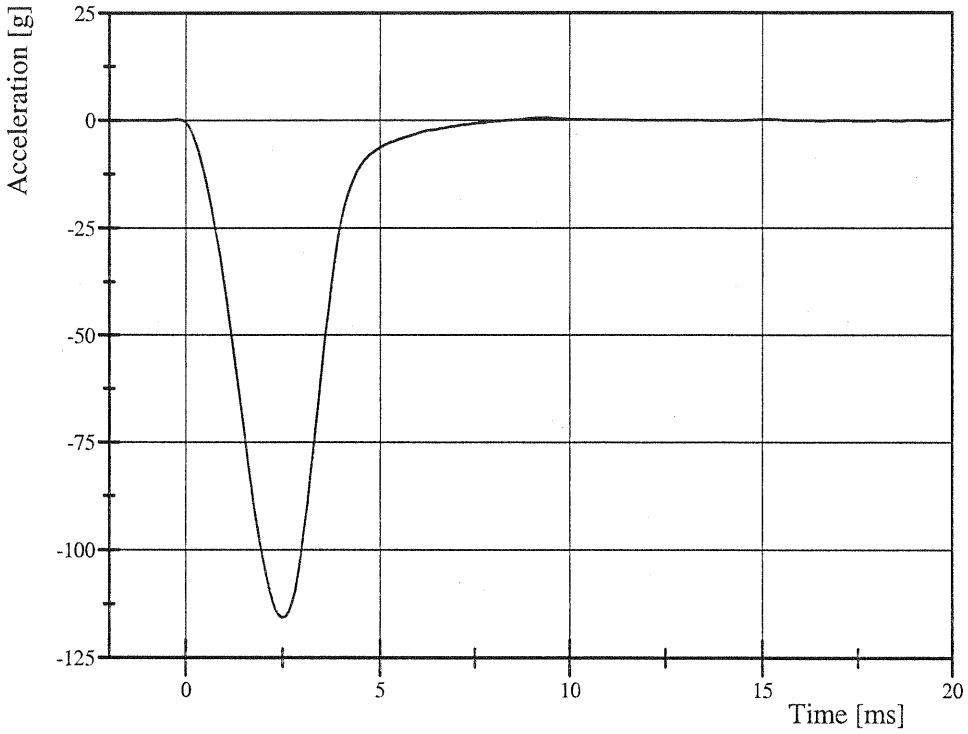
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.30.2007 11:27:53 1707

Transportation Research Center Inc.

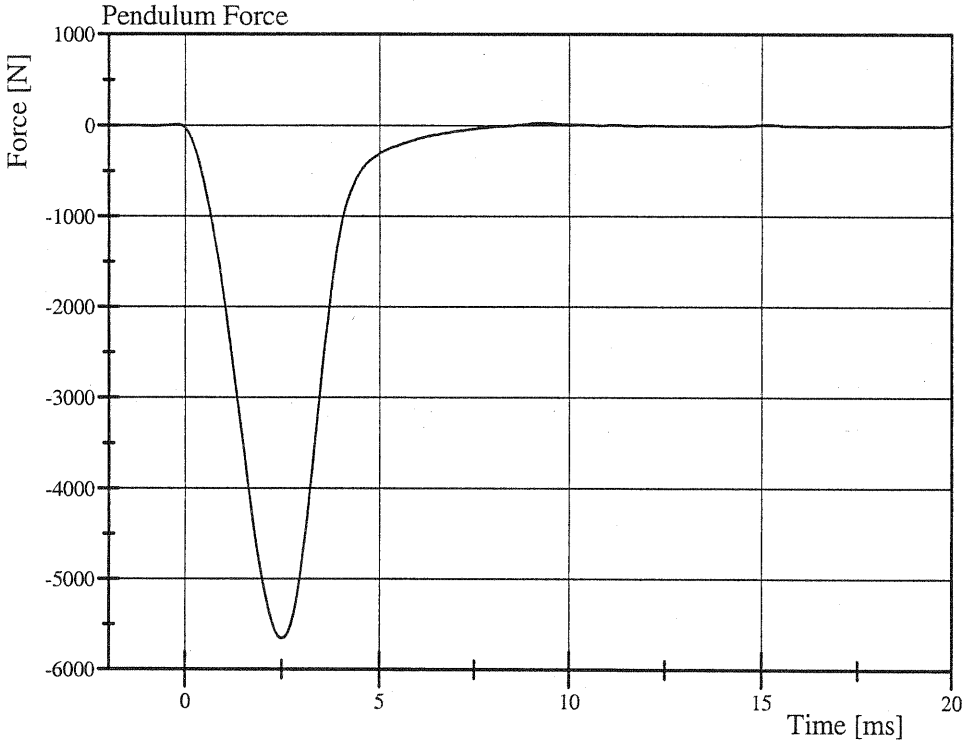
Left Knee Femur Response Test
HIII 50th Serial No. 177 Certification No. 130-1
Test Date: 11/30/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.6 g at 9.3 ms
Min: -115.6 g at 2.5 ms

Pendulum Force



Filter Class: CFC_600
Max: 30.2 N at 9.3 ms
Min: -5,657.6 N at 2.5 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.30.2007 11:28:01 1707

071214

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 177 Certification No. 130-2
Test Date: 11/30/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.115 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,149.58 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

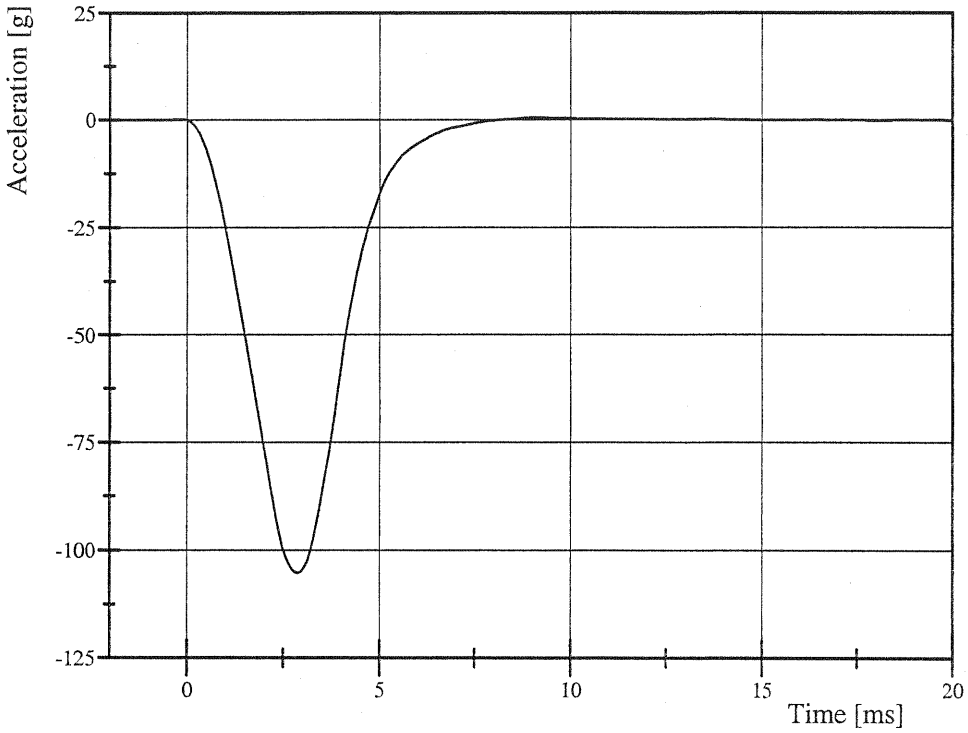
11.30.2007 12:10:06 1696

071214

Transportation Research Center Inc.

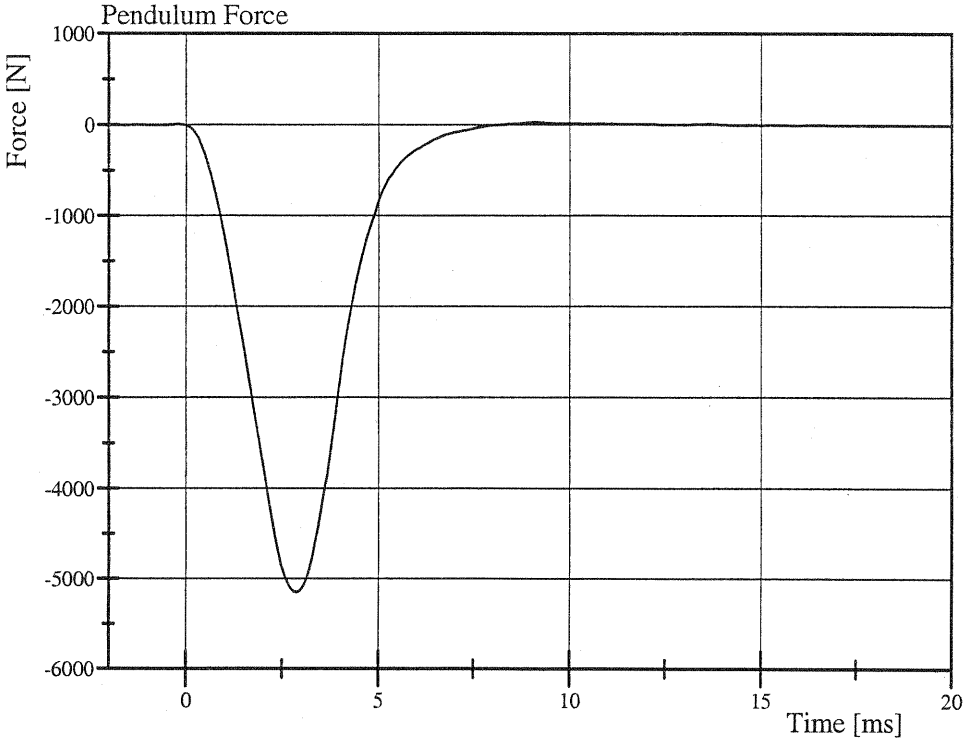
Right Knee Femur Response Test
HIII 50th Serial No. 177 Certification No. 130-2
Test Date: 11/30/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.6 g at 9.1 ms
Min: -105.2 g at 2.9 ms

Pendulum Force



Filter Class: CFC_600
Max: 27.5 N at 9.1 ms
Min: -5,149.6 N at 2.9 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.30.2007 12:10:22 1696

071214

Pre-Test Dummy Configuration and Performance Verification Data

Left Side Row 8 Right Seat Dummy S/N: 077

Transportation Research Center Inc.

Front Head Drop
HIII 95th Serial No. 077 Certification No. 3-1
Test Date: 11/20/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	56 %	Yes
Peak Head Resultant Acceleration	220 - 265 g	244.5 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	3.2 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Charles W. Bell

Approved

Ron Stone

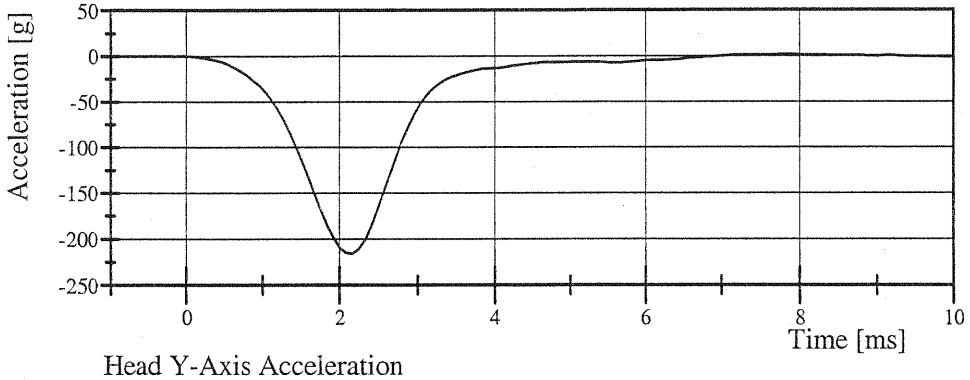
Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.20.2007 11:28:19 612

Transportation Research Center Inc.

Front Head Drop
HIII 95th Serial No. 077 Certification No. 3-1
Test Date: 11/20/2007

Head X-Axis Acceleration

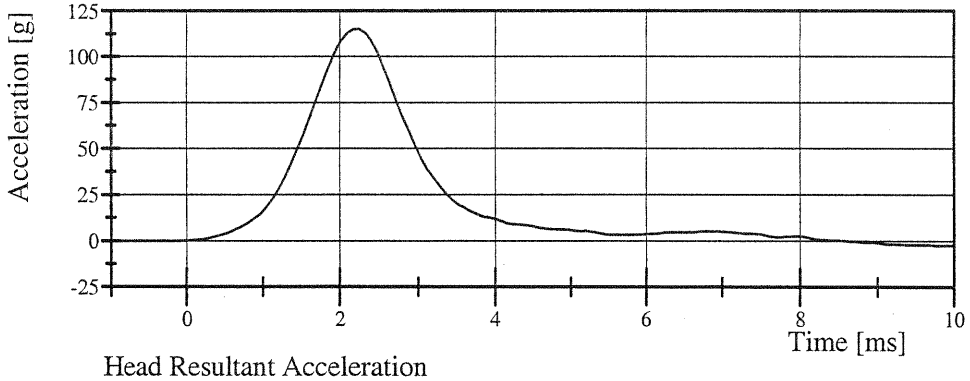


Filter Class: CFC_1000
Max: 1.7 g at 7.8 ms
Min: -215.8 g at 2.2 ms

Head Y-Axis Acceleration

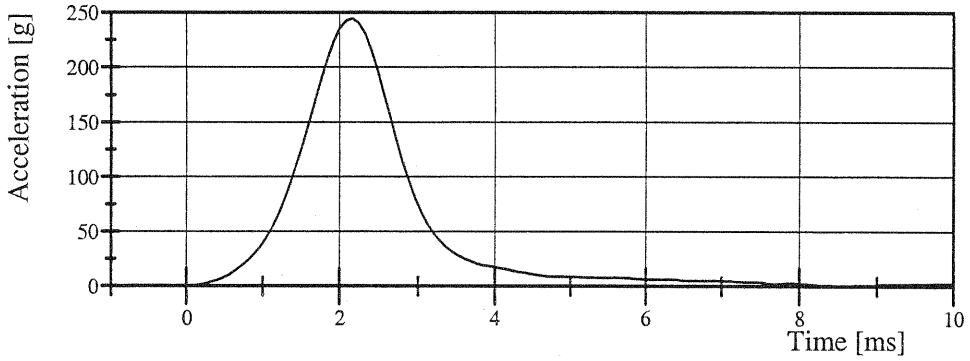
Filter Class: CFC_1000
Max: 3.2 g at 2.4 ms
Min: -1.3 g at 1.2 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 115.1 g at 2.2 ms
Min: -2.5 g at 10.0 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 244.5 g at 2.2 ms
Min: 0.0 g at -0.2 ms

Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.20.2007 11:28:25 612

Transportation Research Center Inc.

Neck Flexion
HIII 95th Serial No. 077 Certification No. 3-1
Test Date: 11/21/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	56 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	7.070 m/s	Yes
Pendulum Integrated Velocity at 10ms	(-2.2) - (-2.7) m/s	-2.55 m/s	Yes
Pendulum Integrated Velocity at 20ms	(-4.0) - (-5.0) m/s	-4.72 m/s	Yes
Pendulum Integrated Velocity at 30ms	(-5.7) - (-6.9) m/s	-6.57 m/s	Yes
Total Head D-Plane Rotation	(-61) - (-75) °	-64.5 °	Yes
Total Neck Occipital Condyles Moment Between -61° and -75° Rotation	110 - 130 N·m	110.3 N·m	Yes
Total Neck Occipital Condyles Moment Decay to 10 N·m	77 - 97 ms	85.1 ms	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.21.2007 09:28:27 2968

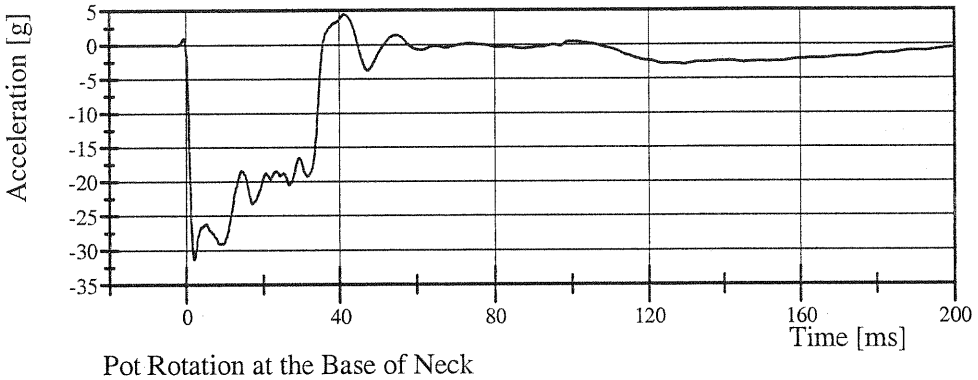
Transportation Research Center Inc.

Neck Flexion

HIII 95th Serial No. 077 Certification No. 3-1

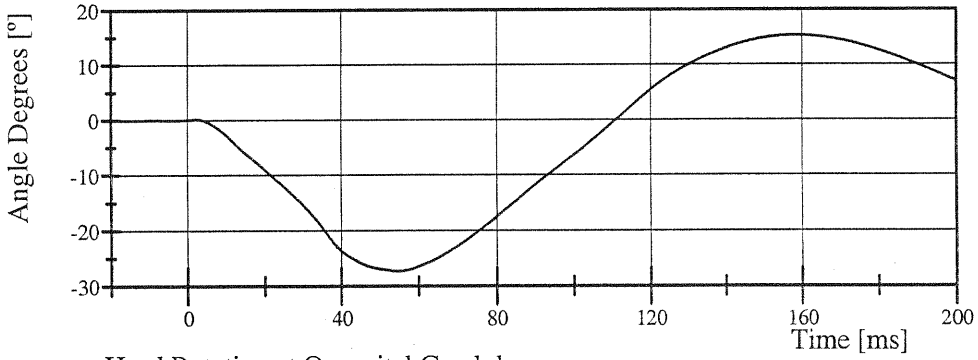
Test Date: 11/21/2007

Pendulum Acceleration



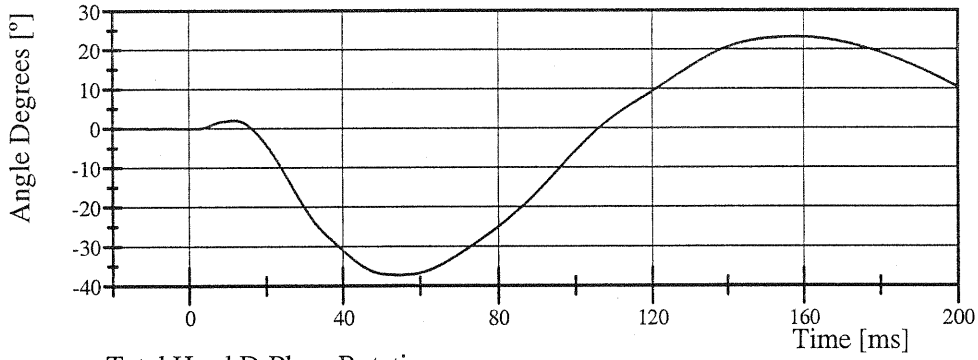
Filter Class: CFC_180
Max: 4.5 g at 41.2 ms
Min: -31.3 g at 2.0 ms

Pot Rotation at the Base of Neck



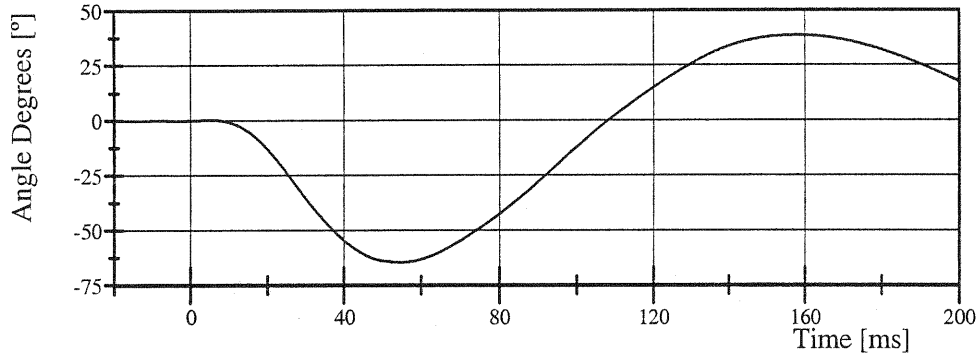
Filter Class: CFC_60
Max: 15.3 ° at 158.3 ms
Min: -27.3 ° at 54.7 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 23.3 ° at 158.5 ms
Min: -37.2 ° at 54.6 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 38.6 ° at 158.4 ms
Min: -64.5 ° at 54.7 ms

Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.21.2007 09:28:36 2968

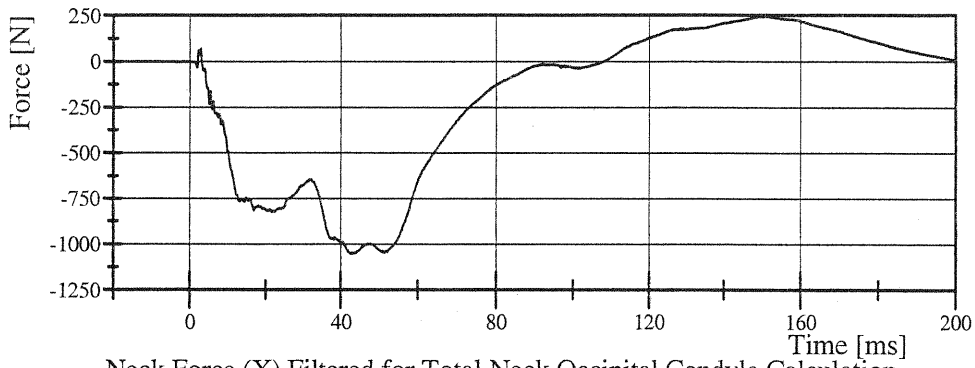
Transportation Research Center Inc.

Neck Flexion

HIII 95th Serial No. 077 Certification No. 3-1

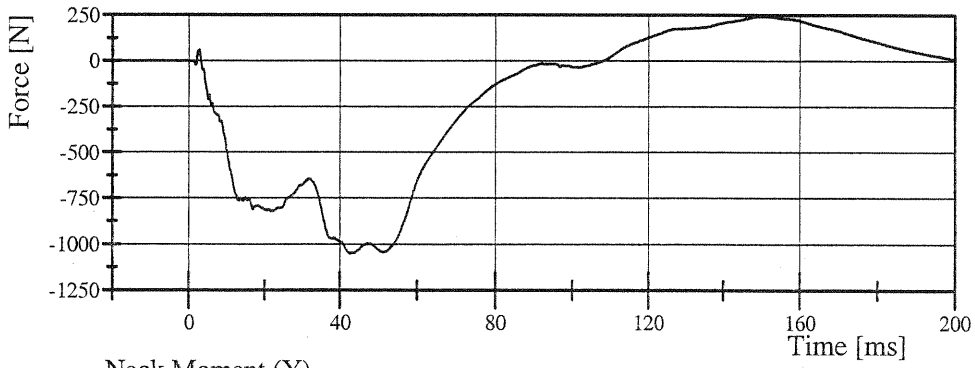
Test Date: 11/21/2007

Neck Force (X)



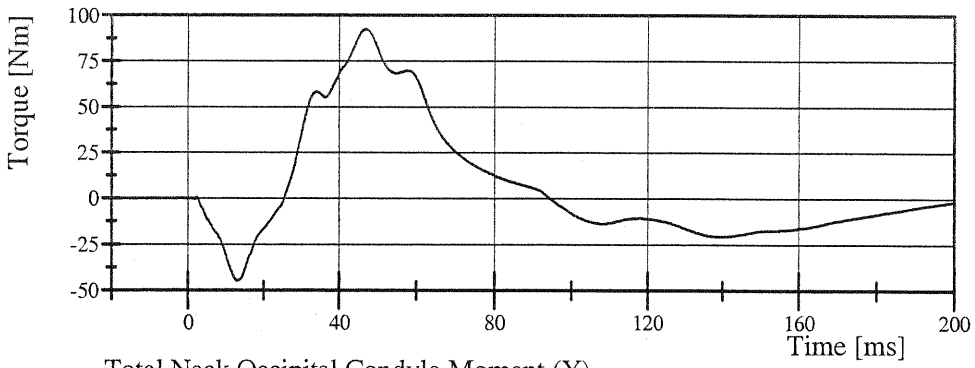
Filter Class: CFC_1000
Max: 243.7 N at 150.3 ms
Min: -1,051.6 N at 42.5 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



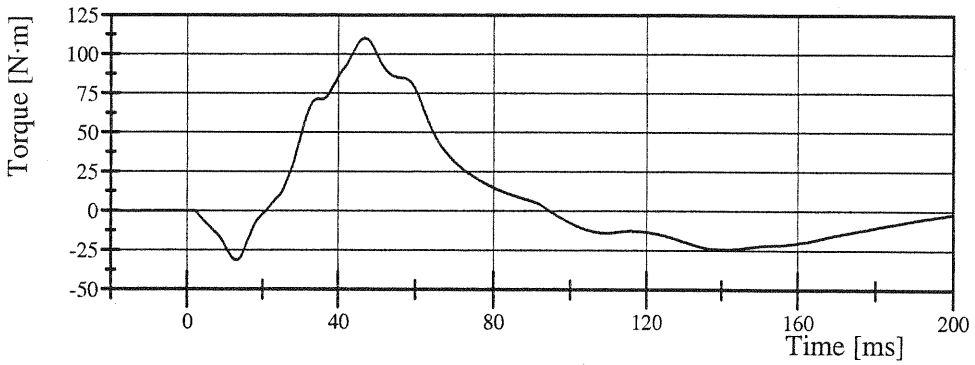
Filter Class: CFC_600
Max: 243.4 N at 150.3 ms
Min: -1,049.8 N at 42.5 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 92.5 Nm at 46.9 ms
Min: -44.8 Nm at 13.0 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 110.3 N·m at 46.8 ms
Min: -31.2 N·m at 13.0 ms

Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.21.2007 09:28:37 2968

Transportation Research Center Inc.

Neck Extension
HIII 95th Serial No. 077 Certification No. 3-2
Test Date: 11/21/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	59 %	Yes
Pendulum Velocity	(-5.95) - (-6.19) m/s	-6.069 m/s	Yes
Pendulum Integrated Velocity at 10ms	1.8 - 2.2 m/s	2.11 m/s	Yes
Pendulum Integrated Velocity at 20ms	3.4 - 4.2 m/s	3.98 m/s	Yes
Pendulum Integrated Velocity at 30ms	4.8 - 5.8 m/s	5.55 m/s	Yes
Total Head D-Plane Rotation	81 - 98 °	86.6 °	Yes
Total Neck Occipital Condyles Moment Between 81° and 98° Rotation	(-66) - (-84) N·m	-66.4 N·m	Yes
Total Neck Occipital Condyles Moment Decay to -10 N·m	100 - 120 ms	108.7 ms	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.21.2007 11:14:30 3057

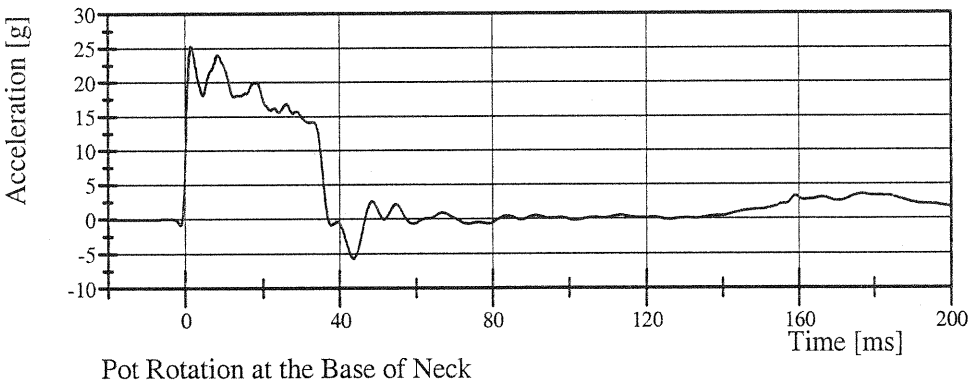
Transportation Research Center Inc.

Neck Extension

HIII 95th Serial No. 077 Certification No. 3-2

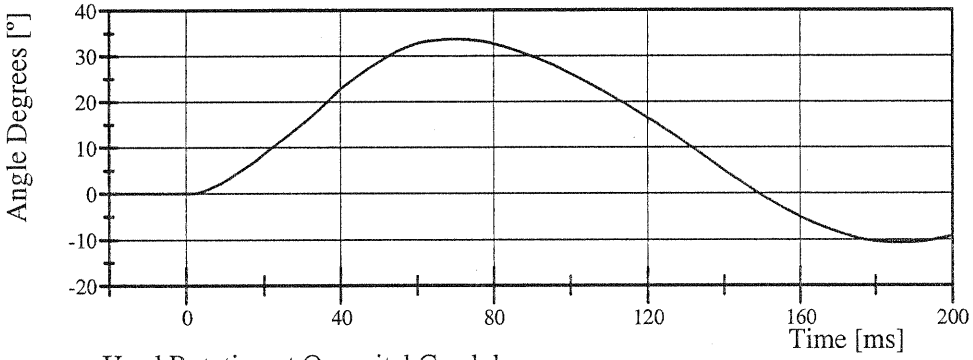
Test Date: 11/21/2007

Pendulum Acceleration



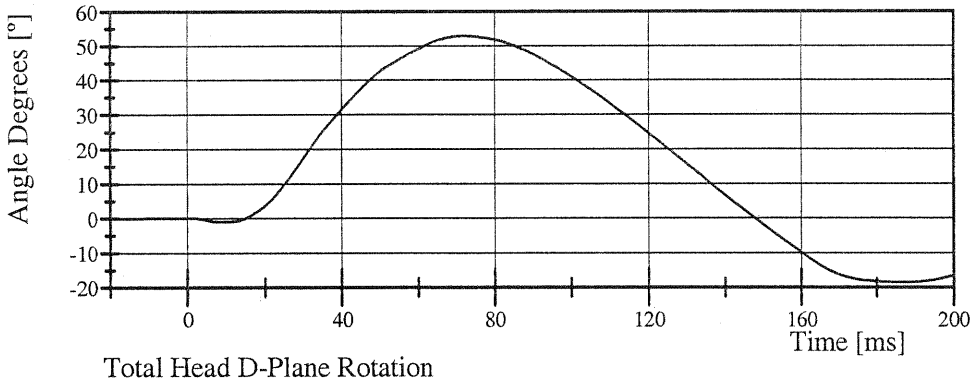
Filter Class: CFC_180
Max: 25.3 g at 1.4 ms
Min: -5.7 g at 43.5 ms

Pot Rotation at the Base of Neck



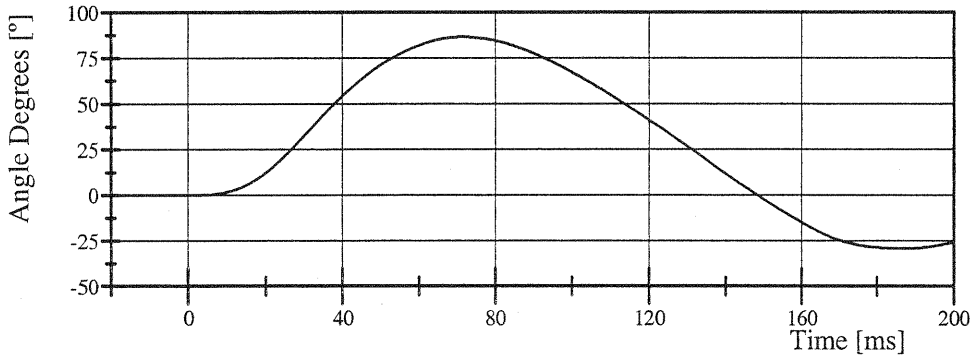
Filter Class: CFC_60
Max: 33.7 ° at 69.8 ms
Min: -10.7 ° at 186.3 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 52.9 ° at 72.0 ms
Min: -18.5 ° at 187.2 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 86.6 ° at 71.6 ms
Min: -29.2 ° at 186.8 ms

Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.21.2007 11:14:45 3057

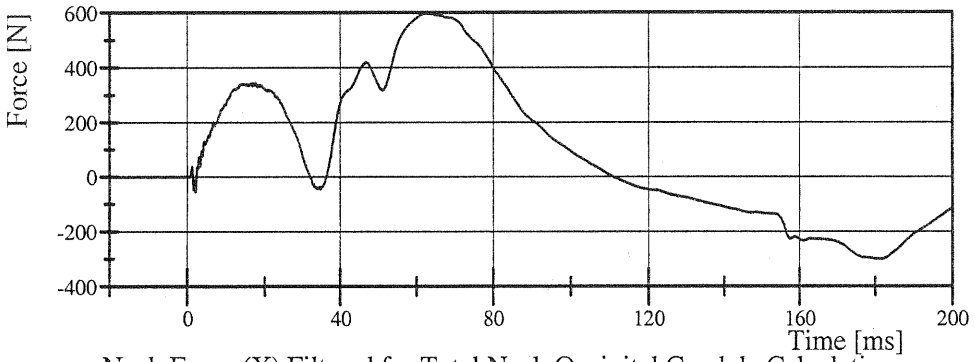
Transportation Research Center Inc.

Neck Extension

HIII 95th Serial No. 077 Certification No. 3-2

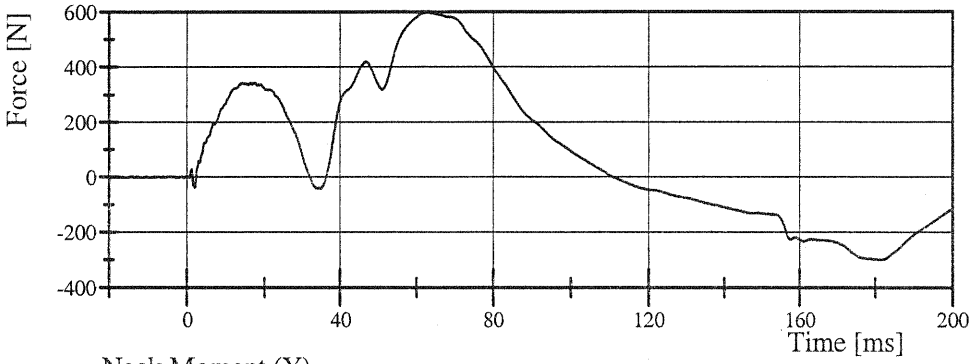
Test Date: 11/21/2007

Neck Force (X)



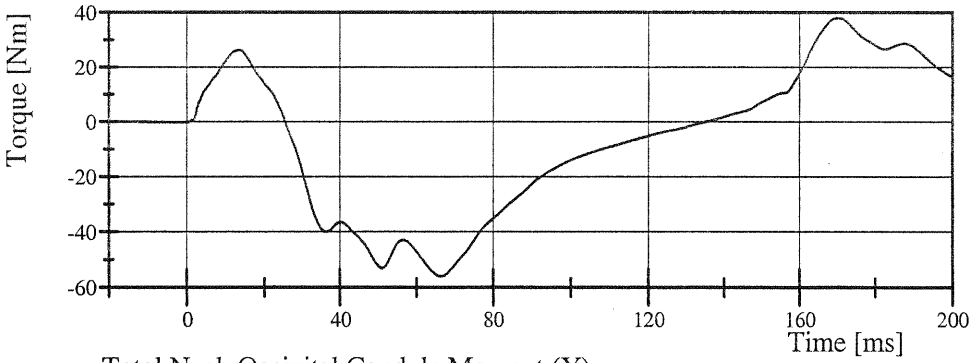
Filter Class: CFC_1000
Max: 598.6 N at 62.5 ms
Min: -299.8 N at 181.0 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



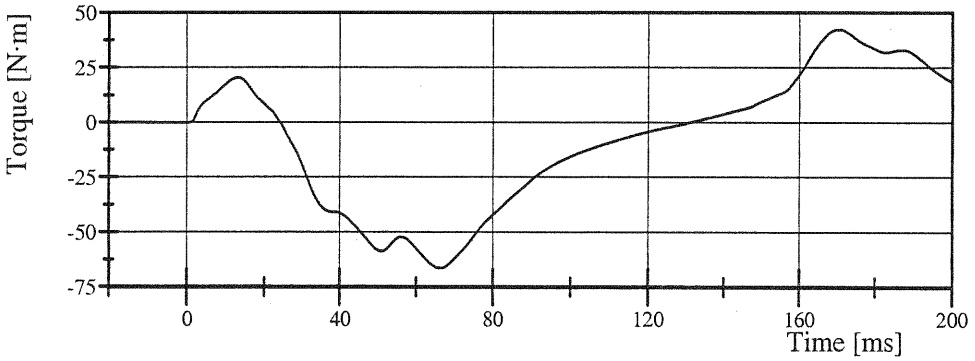
Filter Class: CFC_600
Max: 598.2 N at 62.5 ms
Min: -299.6 N at 181.6 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 38.1 Nm at 170.2 ms
Min: -55.9 Nm at 66.5 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 42.3 N·m at 170.4 ms
Min: -66.4 N·m at 66.3 ms

Transportation Research Center Inc.

Front Thorax
HIII 95th Serial No. 077 Certification No. 3-1
Test Date: 11/26/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.653 m/s	Yes
Probe Force Peak Between -66° and -76° Rotation	(-5,100) - (-5,900) N	-5,828.0 N	Yes
Maximum Chest Compression	(-66.0) - (-76.0) mm	-69.33 mm	Yes
Internal Hysteresis	69 - 85 %	70.3 %	Yes

Test meets specifications.

Comments:

Technician

Charles W. Hall

Approved

Ron Stover

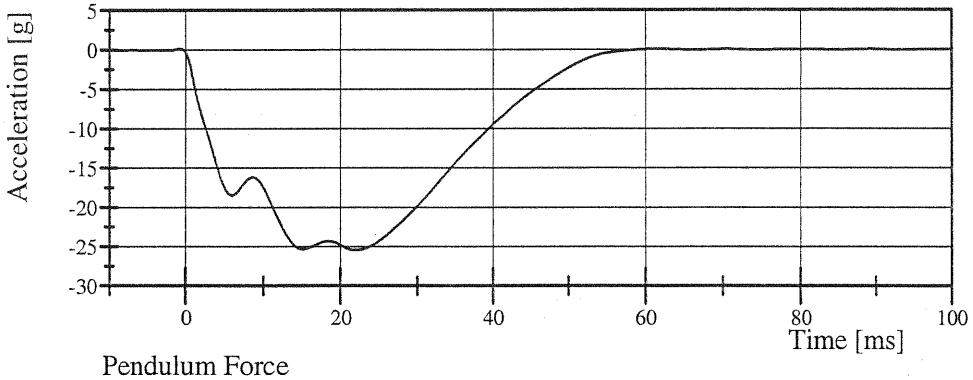
Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.26.2007 08:32:43 1582

Transportation Research Center Inc.

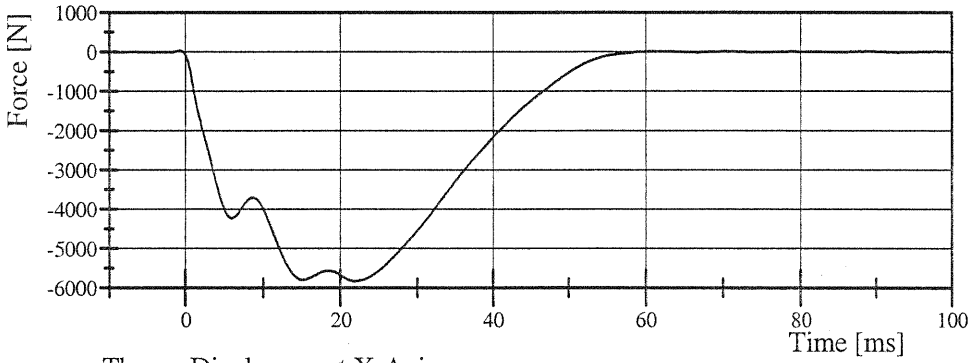
Front Thorax
HIII 95th Serial No. 077 Certification No. 3-1
Test Date: 11/26/2007

Pendulum Acceleration



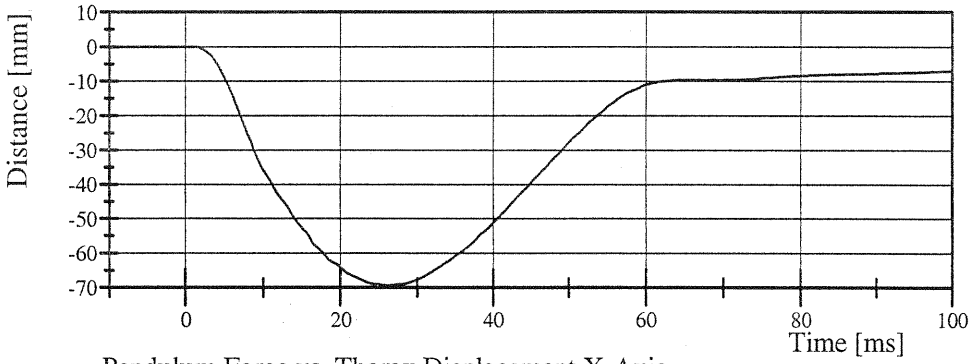
Filter Class: CFC_180
Max: 0.1 g at -0.7 ms
Min: -25.4 g at 21.9 ms

Pendulum Force



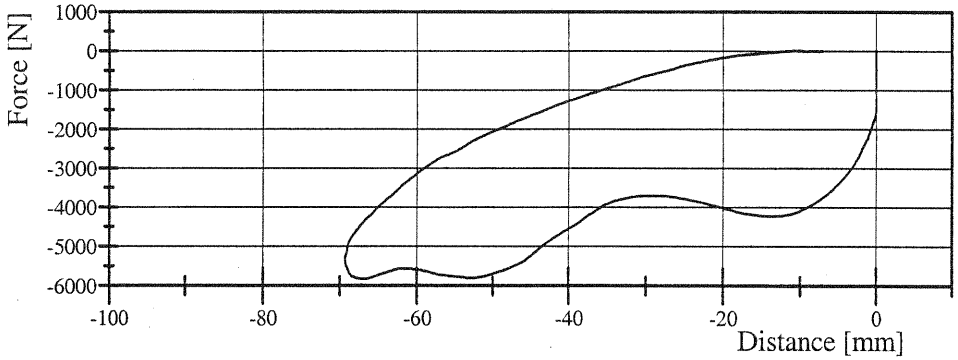
Filter Class: CFC_180
Max: 31.4 N at -0.7 ms
Min: -5,828.0 N at 21.9 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.0 mm at 1.3 ms
Min: -69.3 mm at 26.3 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 31.4 N at 0.0 mm
Min: -5,828.0 N at -66.9 mm

Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.26.2007 08:32:51 1582

Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 95th Serial No. 077 Certification No. 3-1
Test Date: 11/20/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	56 %	Yes
Probe Velocity	2.07 - 2.13 m/s	2.121 m/s	Yes
Peak Femur Force	(-4,900) - (-7,300) N	-6,050.5 N	Yes

Test meets specifications.

Comments:

Technician

Approved

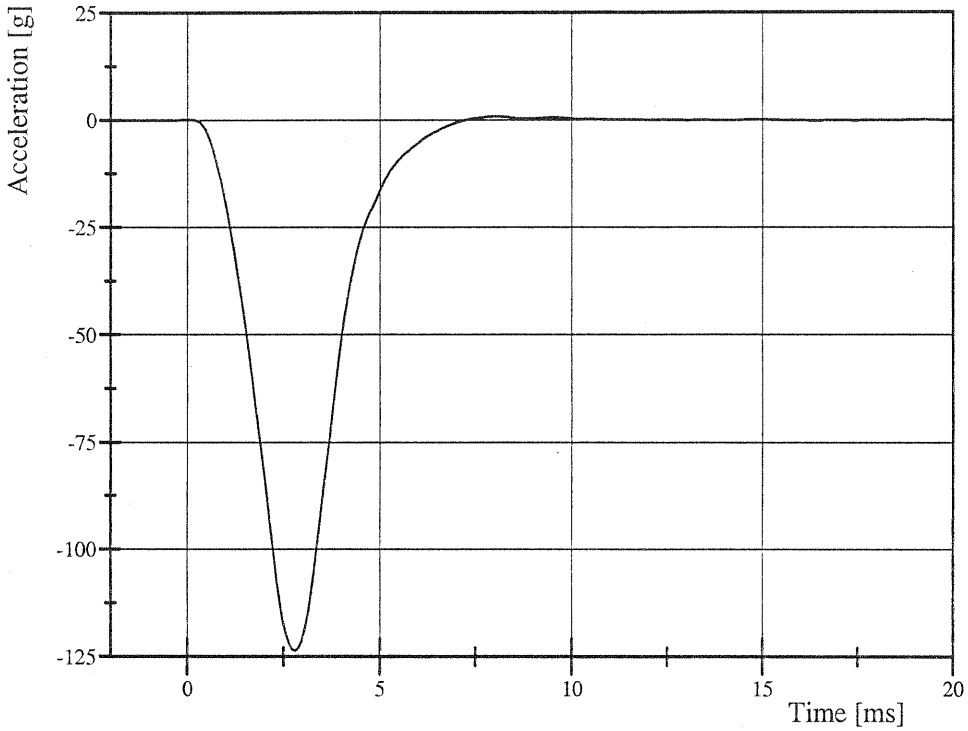
Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.20.2007 12:22:38 1709

Transportation Research Center Inc.

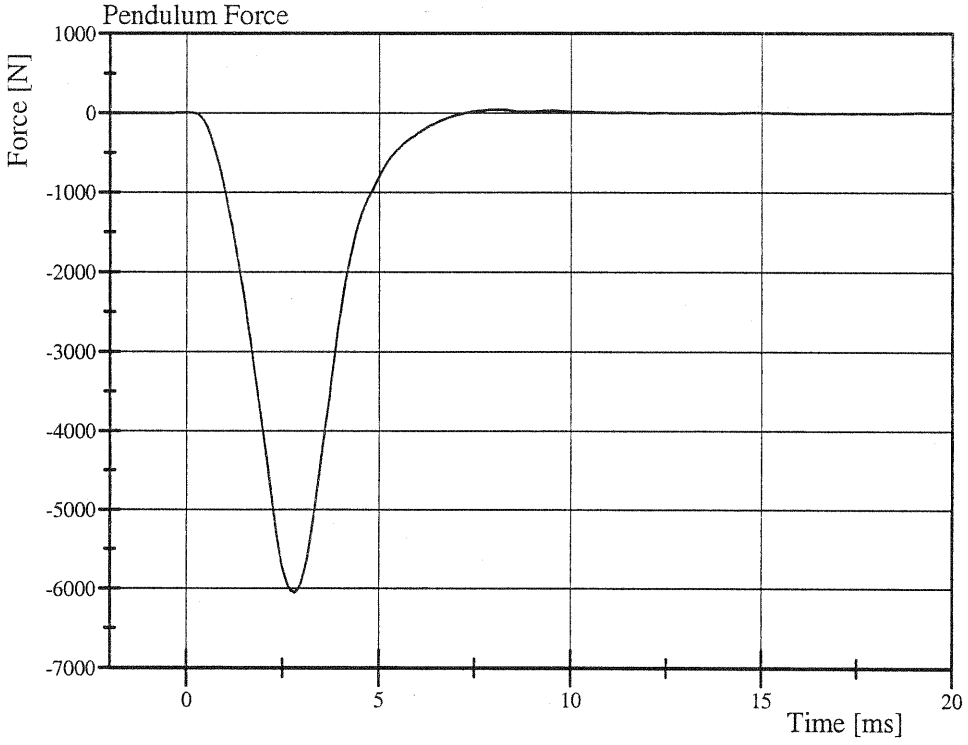
Left Knee Femur Response Test
HIII 95th Serial No. 077 Certification No. 3-1
Test Date: 11/20/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.9 g at 8.1 ms
Min: -123.7 g at 2.8 ms

Pendulum Force



Filter Class: CFC_600
Max: 42.3 N at 8.1 ms
Min: -6,050.5 N at 2.8 ms

Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.20.2007 12:22:45 1709

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 95th Serial No. 077 Certification No. 3-1
Test Date: 11/20/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	56 %	Yes
Probe Velocity	2.07 - 2.13 m/s	2.120 m/s	Yes
Peak Femur Force	(-4,900) - (-7,300) N	-6,121.4 N	Yes

Test meets specifications.

Comments:

Technician

Approved

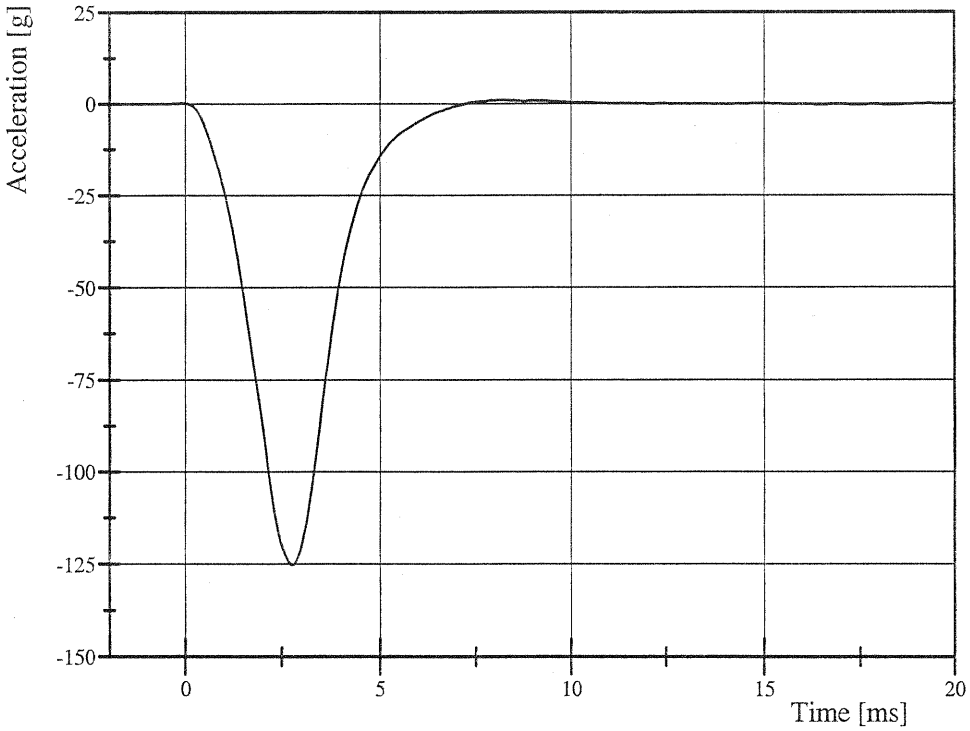
Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.20.2007 12:26:33 1711

Transportation Research Center Inc.

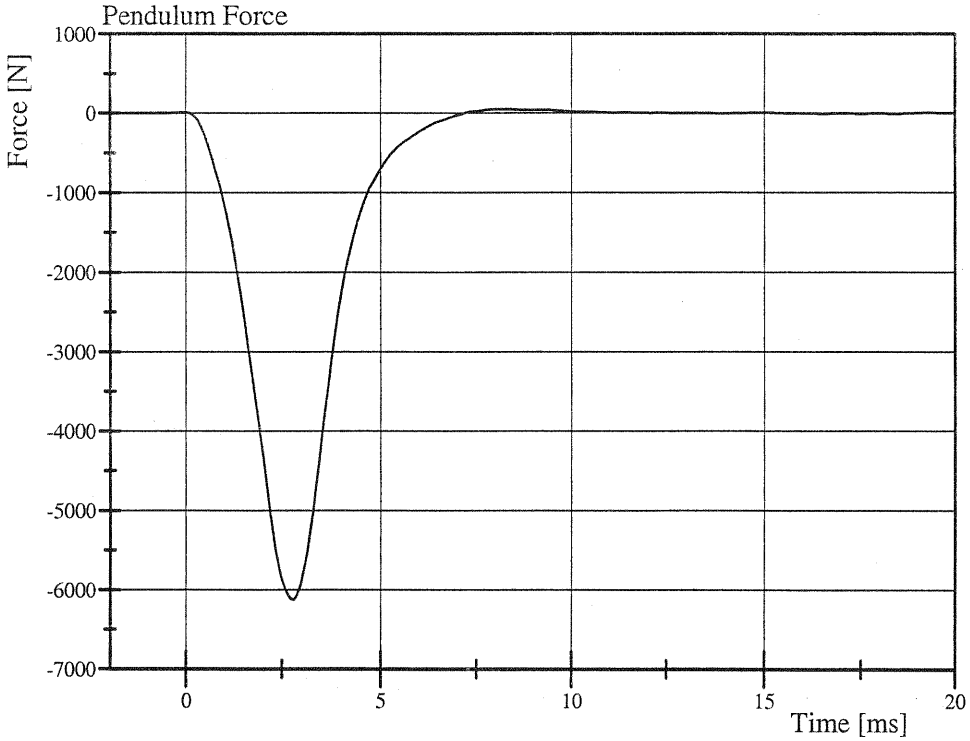
Right Knee Femur Response Test
HIII 95th Serial No. 077 Certification No. 3-1
Test Date: 11/20/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 1.0 g at 8.2 ms
Min: -125.1 g at 2.8 ms

Pendulum Force



Filter Class: CFC_600
Max: 49.3 N at 8.2 ms
Min: -6,121.4 N at 2.8 ms

Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.20.2007 12:26:42 1711

Transportation Research Center Inc.

Left Knee Slider
HIII 95th Serial No. 077 Certification No. 3-2
Test Date: 11/26/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Probe Velocity	2.70 - 2.80 m/s	2.711 m/s	Yes
Knee Displacement	(-15.0) - (-18.3) mm	-17.61 mm	Yes

Test meets specifications.

Comments:

Technician

Charles W. Wells

Approved

Ron Stover

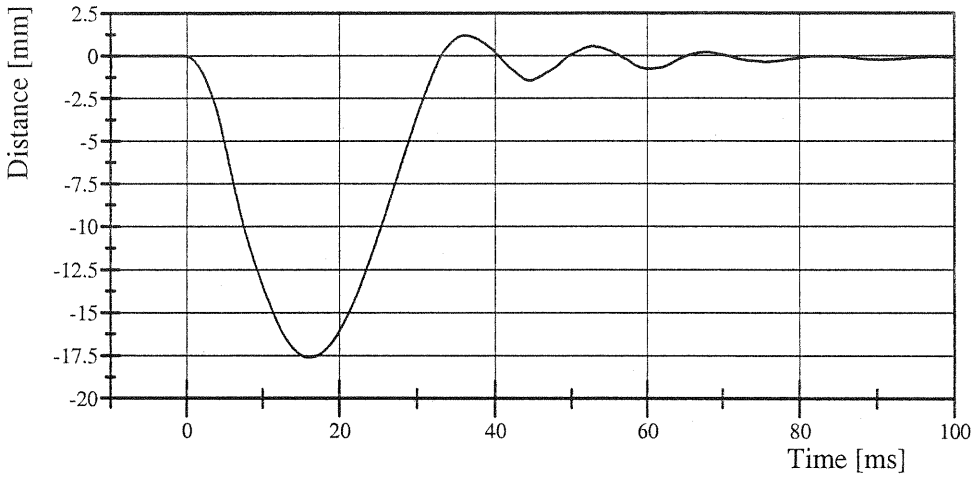
Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.26.2007 09:17:31 1096

Transportation Research Center Inc.

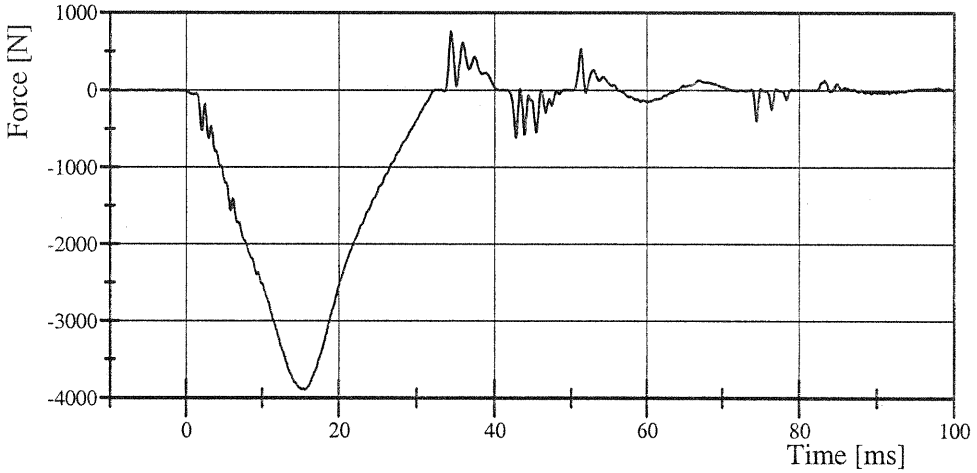
Left Knee Slider
HIII 95th Serial No. 077 Certification No. 3-2
Test Date: 11/26/2007

Knee Slider Displacement



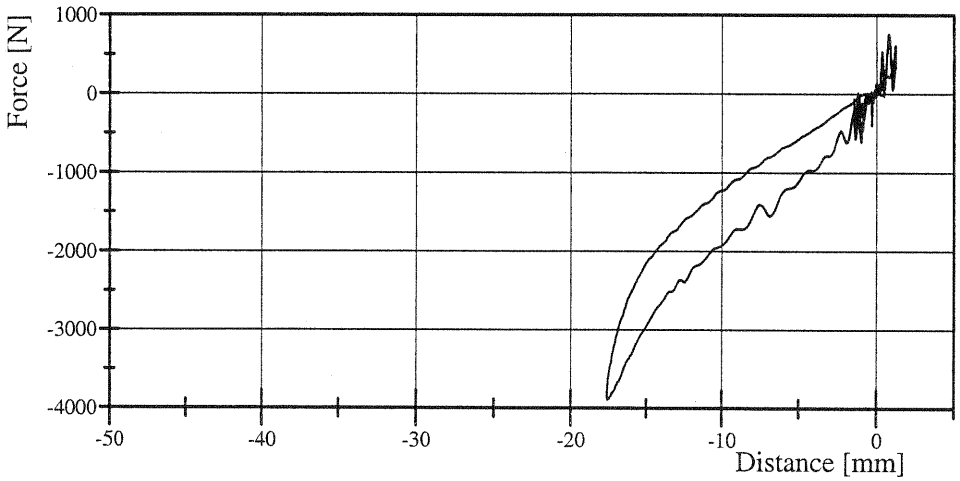
Filter Class: CFC_180
Max: 1.2 mm at 36.2 ms
Min: -17.6 mm at 16.1 ms

Femur Force



Filter Class: CFC_600
Max: 760.2 N at 34.5 ms
Min: -3,889.3 N at 15.7 ms

Femur Force vs. Knee Slider Displacement



Filter Class: CFC_600
Max: 760.2 N at 0.8 mm
Min: -3,889.3 N at -17.6 mm

Transportation Research Center Inc.

Right Knee Slider
HIII 95th Serial No. 077 Certification No. 3-1
Test Date: 11/20/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	56 %	Yes
Probe Velocity	2.70 - 2.80 m/s	2.707 m/s	Yes
Knee Displacement	(-15.0) - (-18.3) mm	-17.96 mm	Yes

Test meets specifications.

Comments:

Technician

Approved

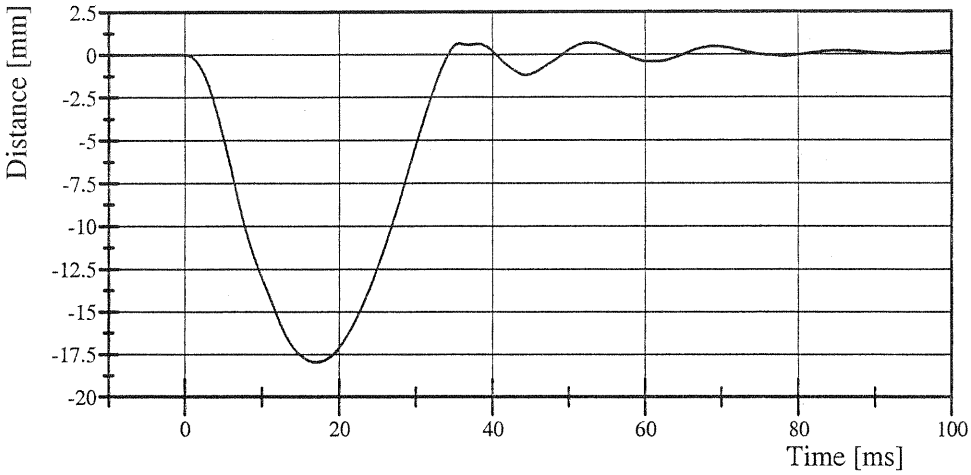
Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.20.2007 12:43:08 1090

Transportation Research Center Inc.

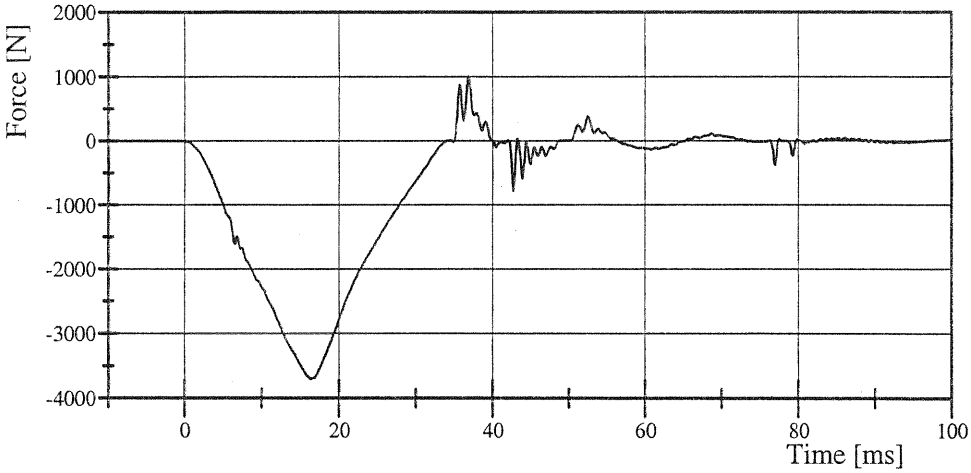
Right Knee Slider
HIII 95th Serial No. 077 Certification No. 3-1
Test Date: 11/20/2007

Knee Slider Displacement



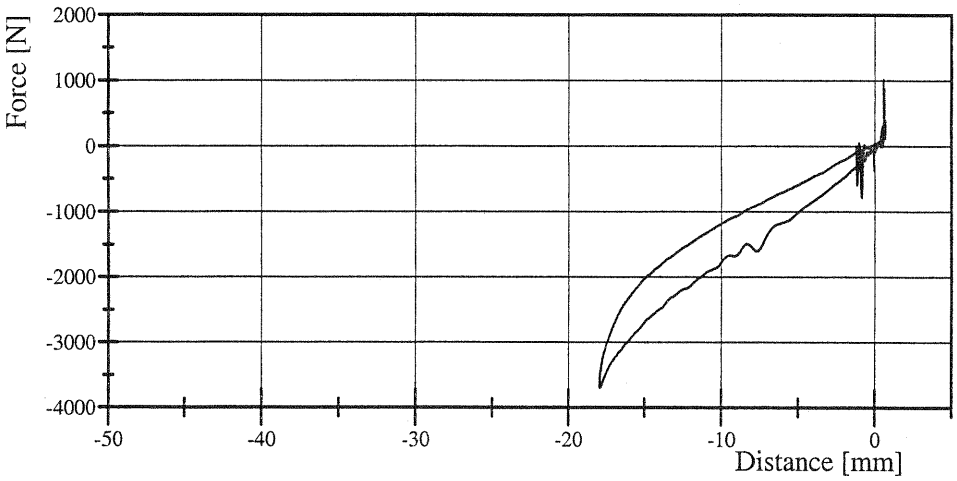
Filter Class: CFC_180
Max: 0.7 mm at 52.9 ms
Min: -18.0 mm at 17.0 ms

Femur Force



Filter Class: CFC_600
Max: 1,012.4 N at 36.9 ms
Min: -3,699.9 N at 16.5 ms

Femur Force vs. Knee Slider Displacement



Filter Class: CFC_600
Max: 1,012.4 N at 0.6 mm
Min: -3,699.9 N at -17.9 mm

Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.20.2007 12:43:16 1090

Pre-Test Dummy Configuration and Performance Verification Data

Right Side Row 9 Left Seat Dummy S/N: 226

Transportation Research Center Inc.

Front Head Drop
HIII 95th Serial No. 226 Certification No. 3-1
Test Date: 11/20/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	56 %	Yes
Peak Head Resultant Acceleration	220 - 265 g	254.7 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-4.7 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Approved

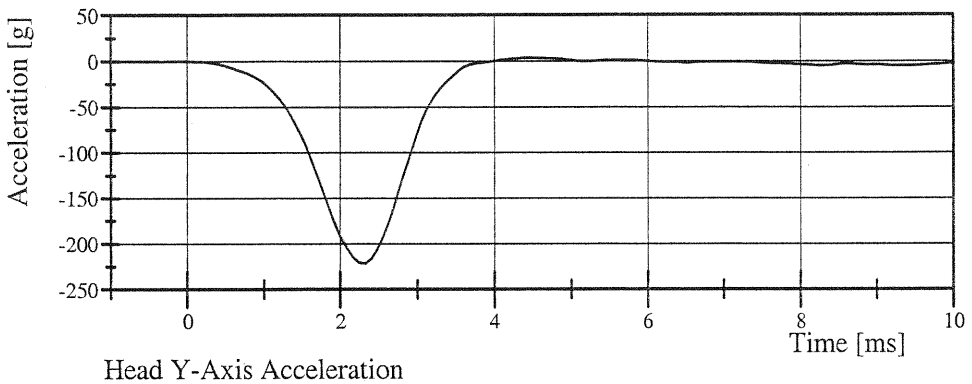
Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.20.2007 09:31:23 611

Transportation Research Center Inc.

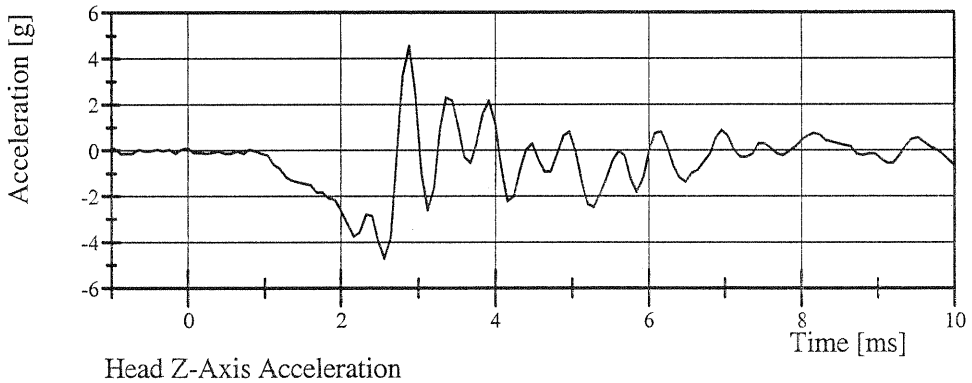
Front Head Drop
HIII 95th Serial No. 226 Certification No. 3-1
Test Date: 11/20/2007

Head X-Axis Acceleration



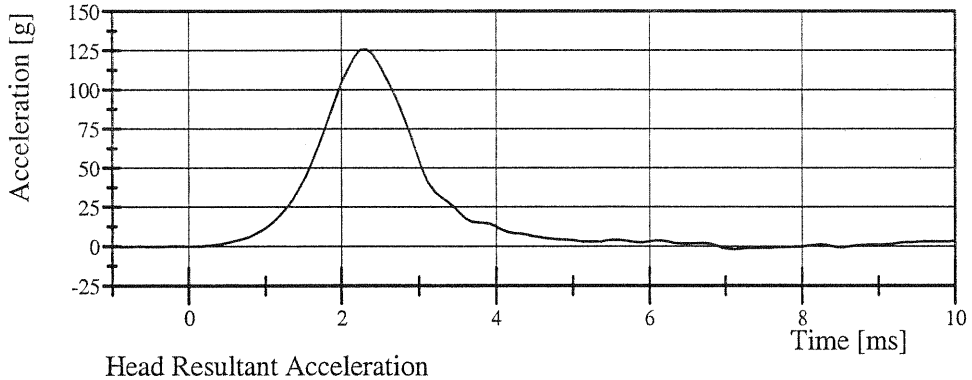
Filter Class: CFC_1000
Max: 3.9 g at 4.5 ms
Min: -221.3 g at 2.3 ms

Head Y-Axis Acceleration



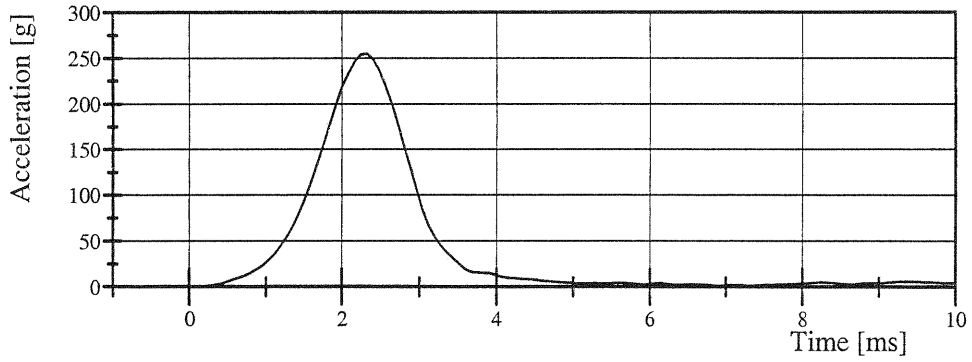
Filter Class: CFC_1000
Max: 4.6 g at 2.9 ms
Min: -4.7 g at 2.6 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 125.9 g at 2.3 ms
Min: -1.8 g at 7.1 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 254.7 g at 2.3 ms
Min: 0.1 g at -0.2 ms

Transportation Research Center Inc.

Neck Flexion
HIII 95th Serial No. 226 Certification No. 3-27
Test Date: 11/29/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	7.122 m/s	Yes
Pendulum Integrated Velocity at 10ms	(-2.2) - (-2.7) m/s	-2.37 m/s	Yes
Pendulum Integrated Velocity at 20ms	(-4.0) - (-5.0) m/s	-4.56 m/s	Yes
Pendulum Integrated Velocity at 30ms	(-5.7) - (-6.9) m/s	-6.49 m/s	Yes
Total Head D-Plane Rotation	(-61) - (-75) °	-62.0 °	Yes
Total Neck Occipital Condyles Moment Between -61° and -75° Rotation	110 - 130 N·m	117.4 N·m	Yes
Total Neck Occipital Condyles Moment Decay to 10 N·m	77 - 97 ms	83.4 ms	Yes

Test meets specifications.

Comments:

Technician

Charles W. Kelly

Approved

Ron Stover

Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.29.2007 09:25:34 2959

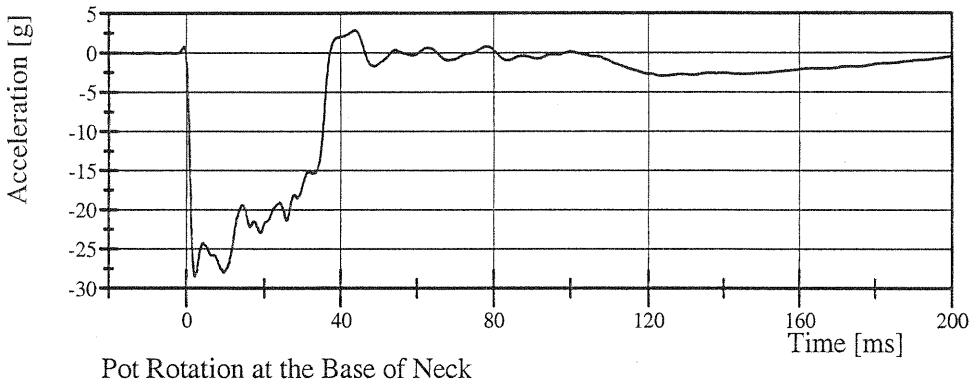
Transportation Research Center Inc.

Neck Flexion

HIII 95th Serial No. 226 Certification No. 3-27

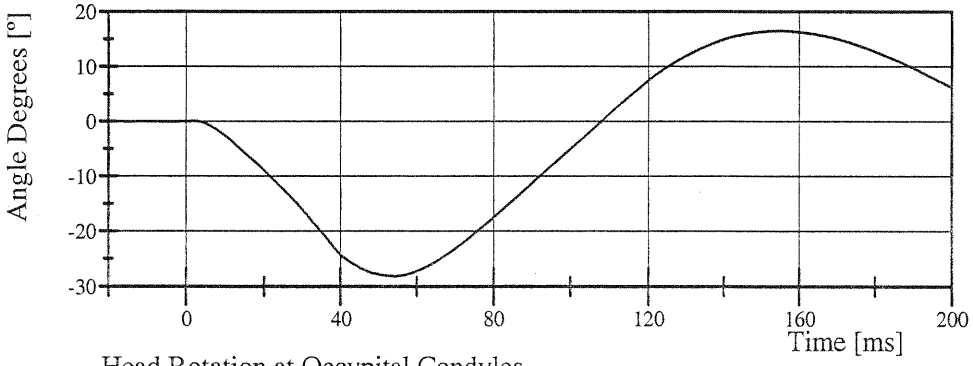
Test Date: 11/29/2007

Pendulum Acceleration



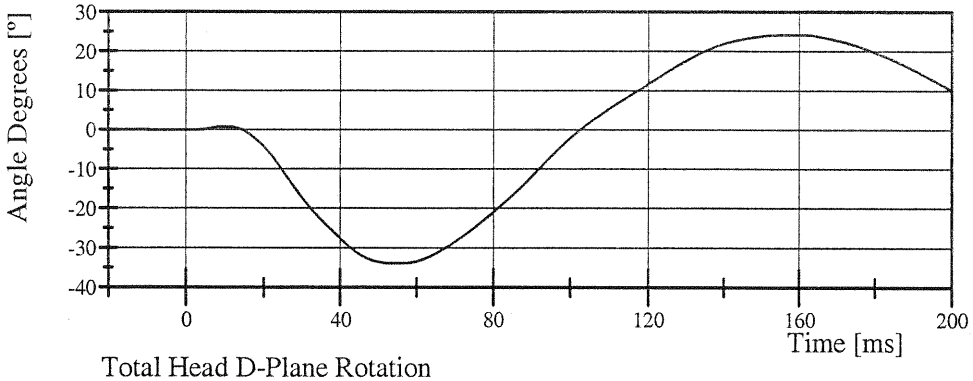
Filter Class: CFC_180
Max: 2.9 g at 43.5 ms
Min: -28.5 g at 2.2 ms

Pot Rotation at the Base of Neck



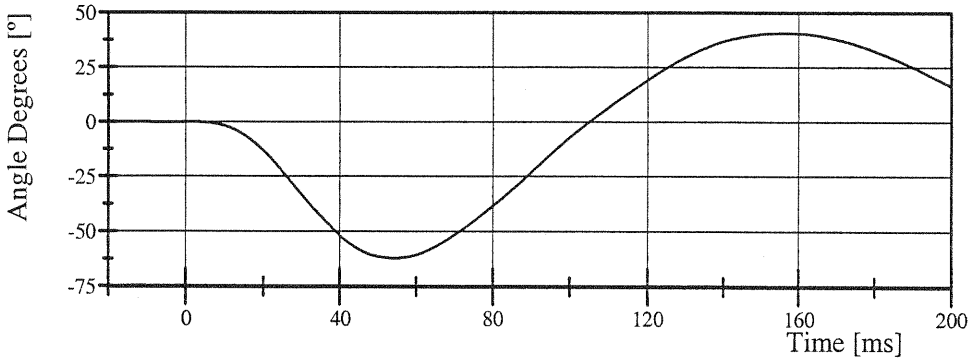
Filter Class: CFC_60
Max: 16.5 ° at 155.0 ms
Min: -28.1 ° at 54.2 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 24.3 ° at 157.6 ms
Min: -33.9 ° at 54.9 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 40.8 ° at 156.0 ms
Min: -62.0 ° at 54.3 ms

Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.29.2007 09:26:26 2959

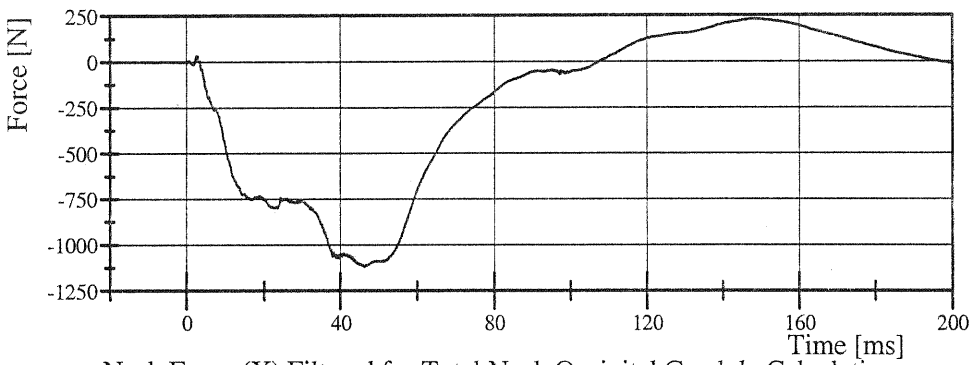
Transportation Research Center Inc.

Neck Flexion

HIII 95th Serial No. 226 Certification No. 3-27

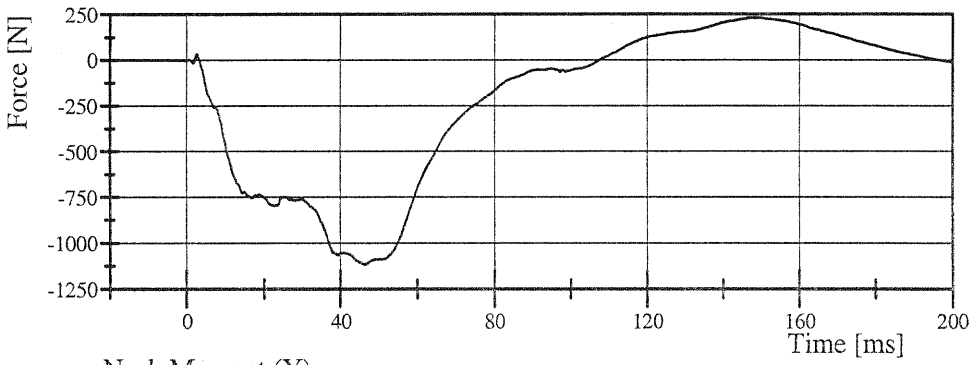
Test Date: 11/29/2007

Neck Force (X)



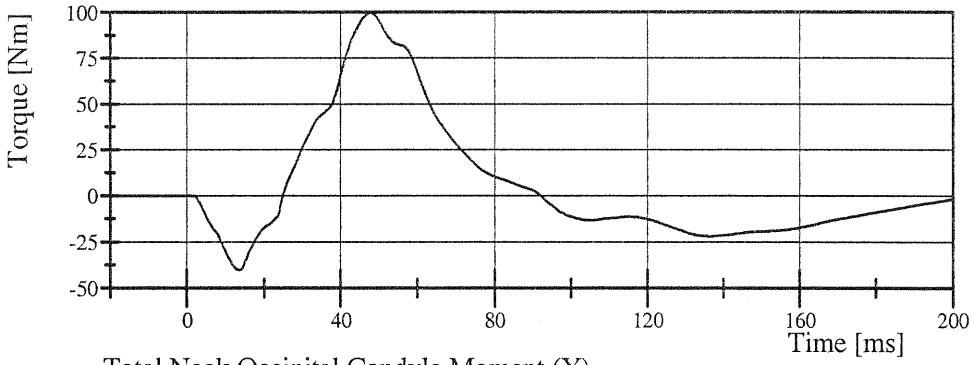
Filter Class: CFC_1000
Max: 230.8 N at 148.1 ms
Min: -1,119.0 N at 46.2 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



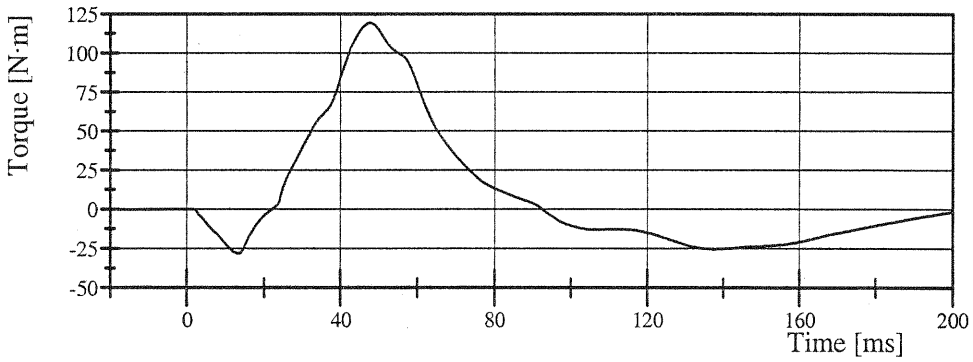
Filter Class: CFC_600
Max: 230.4 N at 148.2 ms
Min: -1,117.4 N at 46.2 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 99.8 Nm at 47.8 ms
Min: -40.2 Nm at 13.8 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 119.4 N·m at 47.6 ms
Min: -28.0 N·m at 13.3 ms

Transportation Research Center Inc.

Neck Extension
HIII 95th Serial No. 226 Certification No. 3-1
Test Date: 11/29/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Pendulum Velocity	(-5.95) - (-6.19) m/s	-6.096 m/s	Yes
Pendulum Integrated Velocity at 10ms	1.8 - 2.2 m/s	2.04 m/s	Yes
Pendulum Integrated Velocity at 20ms	3.4 - 4.2 m/s	3.94 m/s	Yes
Pendulum Integrated Velocity at 30ms	4.8 - 5.8 m/s	5.58 m/s	Yes
Total Head D-Plane Rotation	81 - 98 °	86.0 °	Yes
Total Neck Occipital Condyles Moment Between 81° and 98° Rotation	(-66) - (-84) N·m	-70.5 N·m	Yes
Total Neck Occipital Condyles Moment Decay to -10 N·m	100 - 120 ms	108.8 ms	Yes

Test meets specifications.

Comments:

Technician

Approved

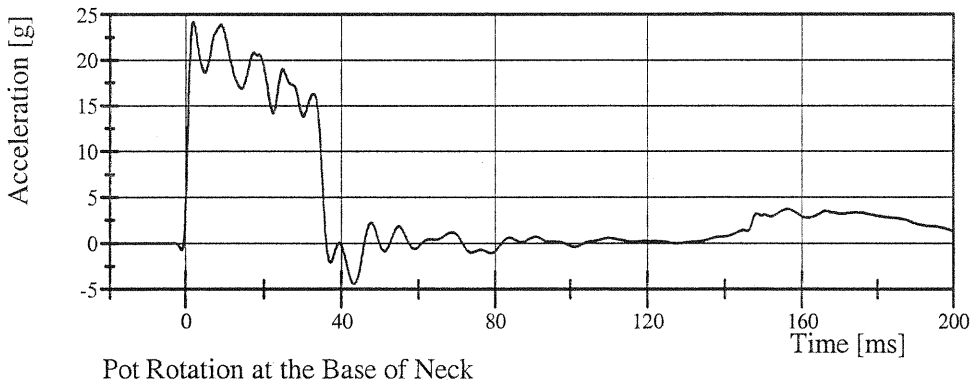
Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.29.2007 10:23:52 3045

Transportation Research Center Inc.

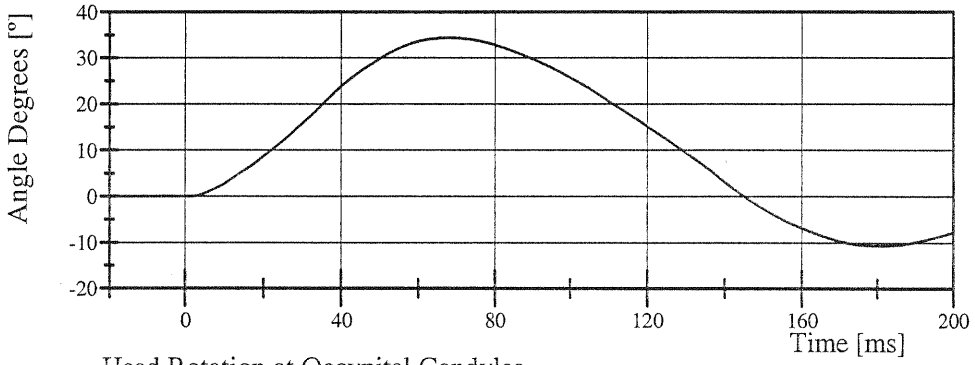
Neck Extension
HIII 95th Serial No. 226 Certification No. 3-1
Test Date: 11/29/2007

Pendulum Acceleration



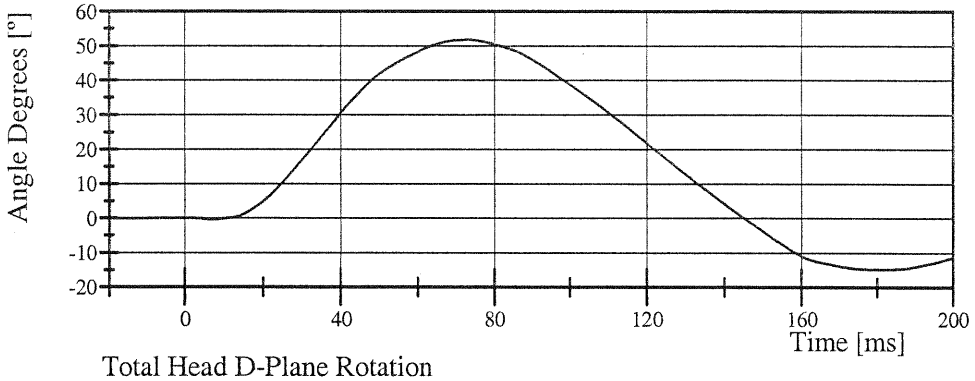
Filter Class: CFC_180
Max: 24.2 g at 1.9 ms
Min: -4.4 g at 43.2 ms

Pot Rotation at the Base of Neck



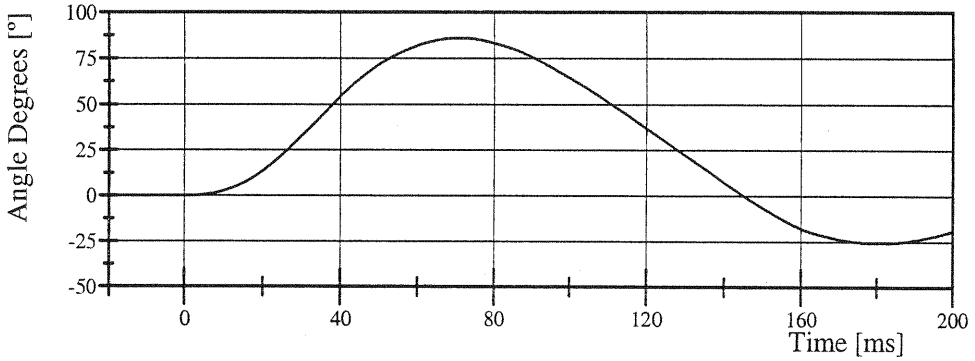
Filter Class: CFC_60
Max: 34.4 ° at 67.8 ms
Min: -10.7 ° at 180.7 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 51.8 ° at 73.1 ms
Min: -14.8 ° at 180.6 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 86.0 ° at 71.4 ms
Min: -25.5 ° at 180.7 ms

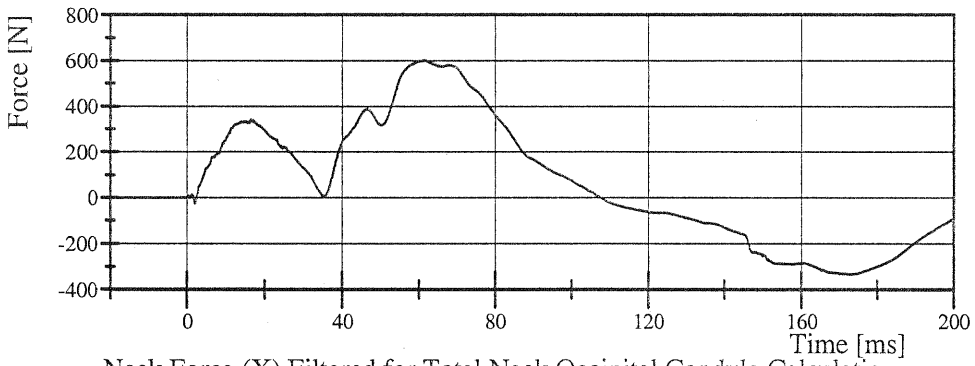
Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.29.2007 10:24:00 3045

Transportation Research Center Inc.

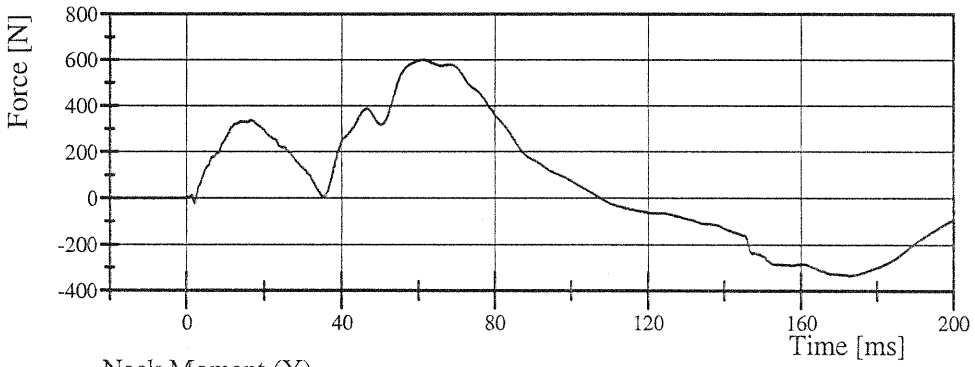
Neck Extension
HIII 95th Serial No. 226 Certification No. 3-1
Test Date: 11/29/2007

Neck Force (X)



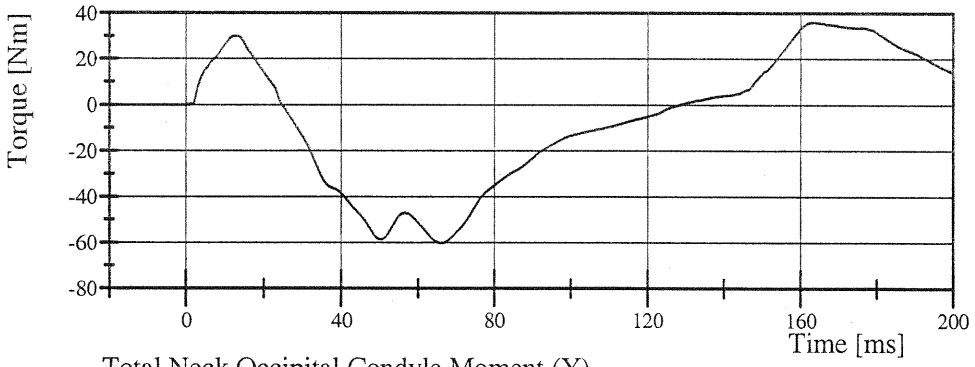
Filter Class: CFC_1000
Max: 601.6 N at 61.4 ms
Min: -334.2 N at 173.1 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



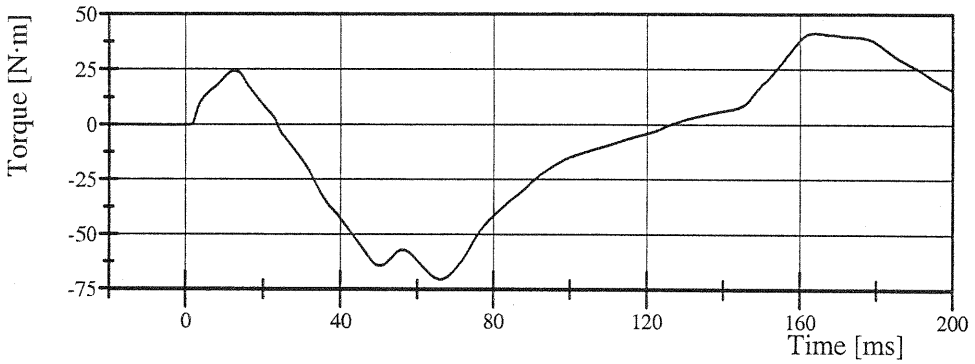
Filter Class: CFC_600
Max: 601.0 N at 61.5 ms
Min: -333.6 N at 173.0 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 36.1 Nm at 163.5 ms
Min: -60.3 Nm at 66.1 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 41.5 N·m at 164.1 ms
Min: -70.5 N·m at 66.1 ms

Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.29.2007 10:24:02 3045

Transportation Research Center Inc.

Front Thorax
HIII 95th Serial No. 226 Certification No. 3-1
Test Date: 11/26/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.685 m/s	Yes
Probe Force Peak Between -66° and -76° Rotation	(-5,100) - (-5,900) N	-5,390.9 N	Yes
Maximum Chest Compression	(-66.0) - (-76.0) mm	-66.72 mm	Yes
Internal Hysteresis	69 - 85 %	73.2 %	Yes

Test meets specifications.

Comments:

Technician

Approved

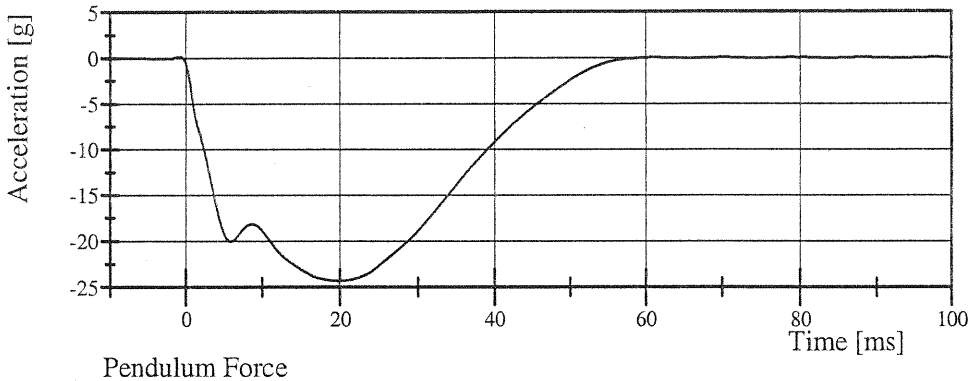
Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.26.2007 10:55:12 1583

Transportation Research Center Inc.

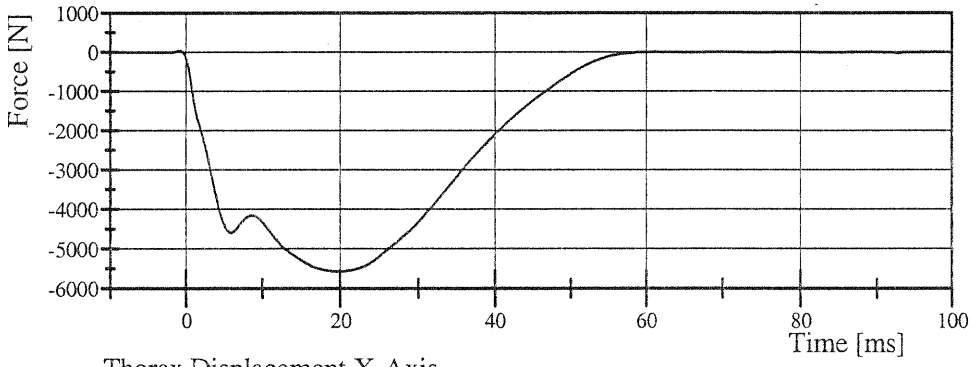
Front Thorax
HIII 95th Serial No. 226 Certification No. 3-1
Test Date: 11/26/2007

Pendulum Acceleration



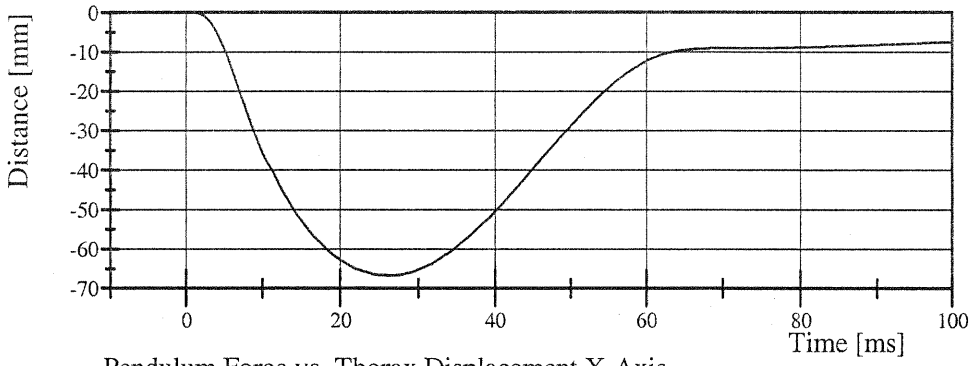
Filter Class: CFC_180
Max: 0.2 g at -0.8 ms
Min: -24.3 g at 19.8 ms

Pendulum Force



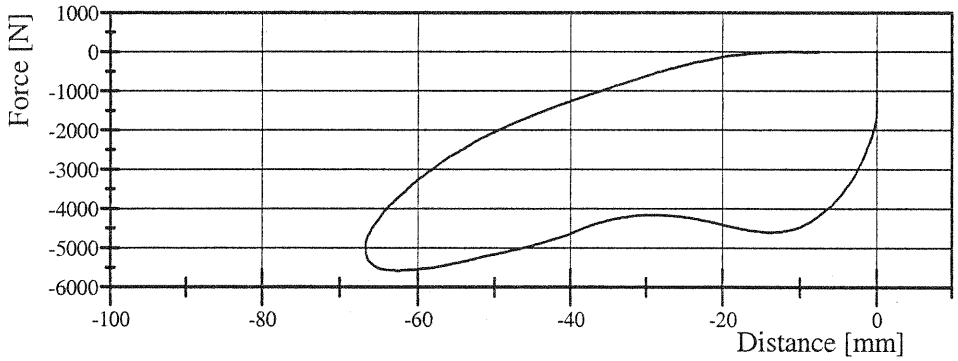
Filter Class: CFC_180
Max: 35.0 N at -0.8 ms
Min: -5,571.1 N at 19.8 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.0 mm at -9.0 ms
Min: -66.7 mm at 26.6 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 35.0 N at -0.0 mm
Min: -5,571.1 N at -62.6 mm

Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.26.2007 10:55:20 1583

071214

Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 95th Serial No. 226 Certification No. 3-2
Test Date: 11/20/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Probe Velocity	2.07 - 2.13 m/s	2.119 m/s	Yes
Peak Femur Force	(-4,900) - (-7,300) N	-6,897.8 N	Yes

Test meets specifications.

Comments:

Technician

Approved

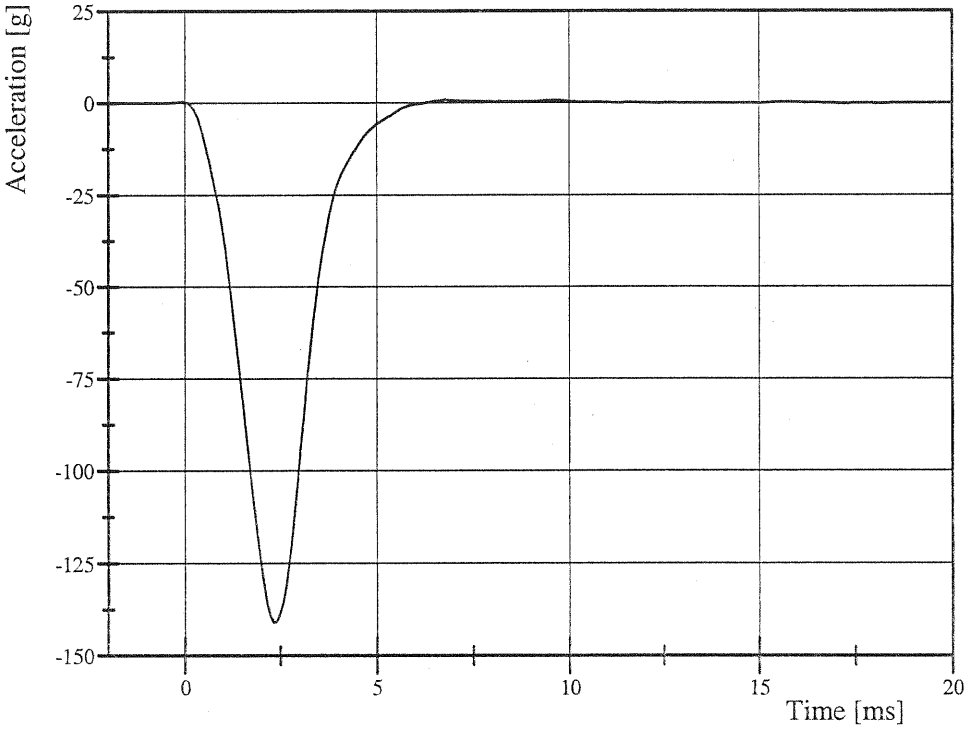
Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.20.2007 12:07:58 1716

Transportation Research Center Inc.

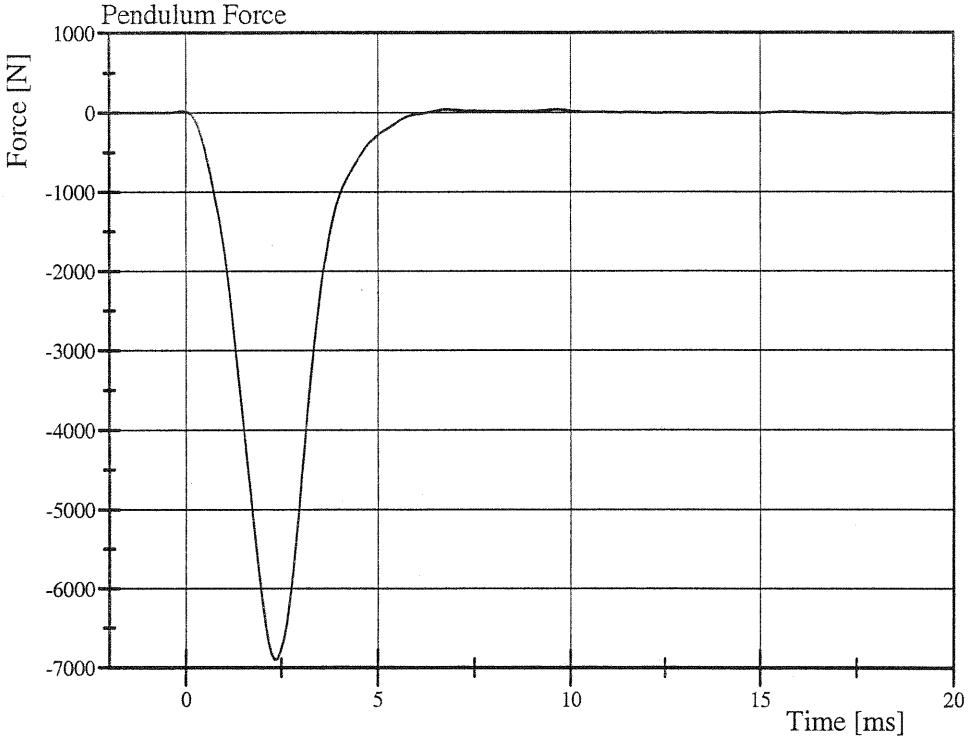
Left Knee Femur Response Test
HIII 95th Serial No. 226 Certification No. 3-2
Test Date: 11/20/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.8 g at 6.8 ms
Min: -141.0 g at 2.3 ms

Pendulum Force



Filter Class: CFC_600
Max: 38.3 N at 6.8 ms
Min: -6,897.8 N at 2.3 ms

Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.20.2007 12:08:03 1716

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 95th Serial No. 226 Certification No. 3-1
Test Date: 11/20/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Probe Velocity	2.07 - 2.13 m/s	2.119 m/s	Yes
Peak Femur Force	(-4,900) - (-7,300) N	-6,913.0 N	Yes

Test meets specifications.

Comments:

Technician

Charles W. Kelly

Approved

Lon Stones

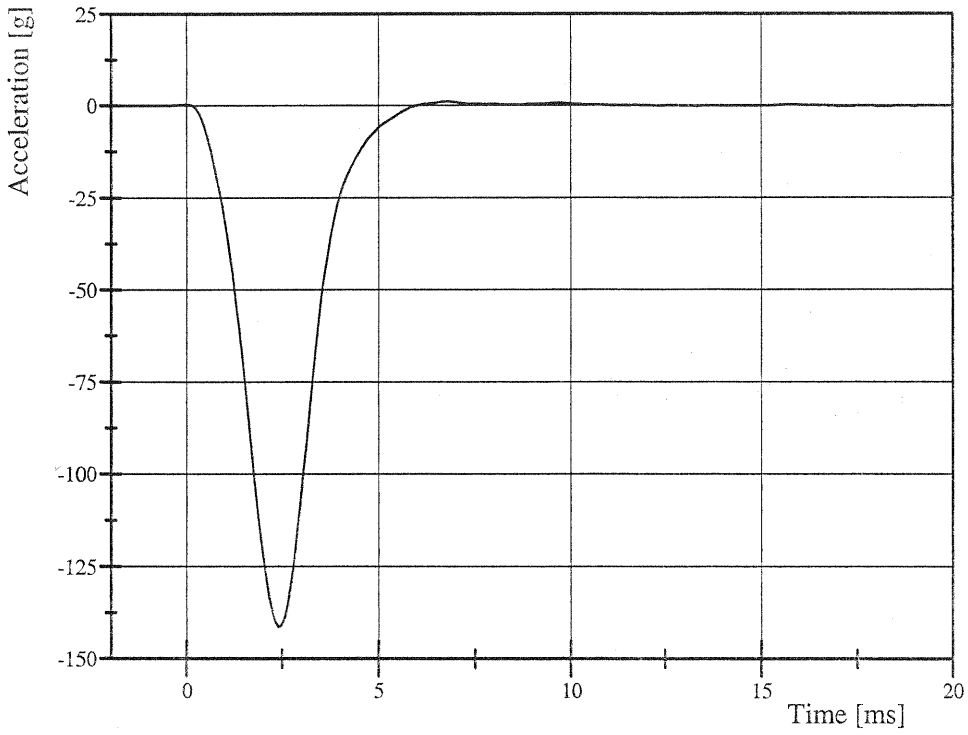
Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.20.2007 11:09:42 1715

Transportation Research Center Inc.

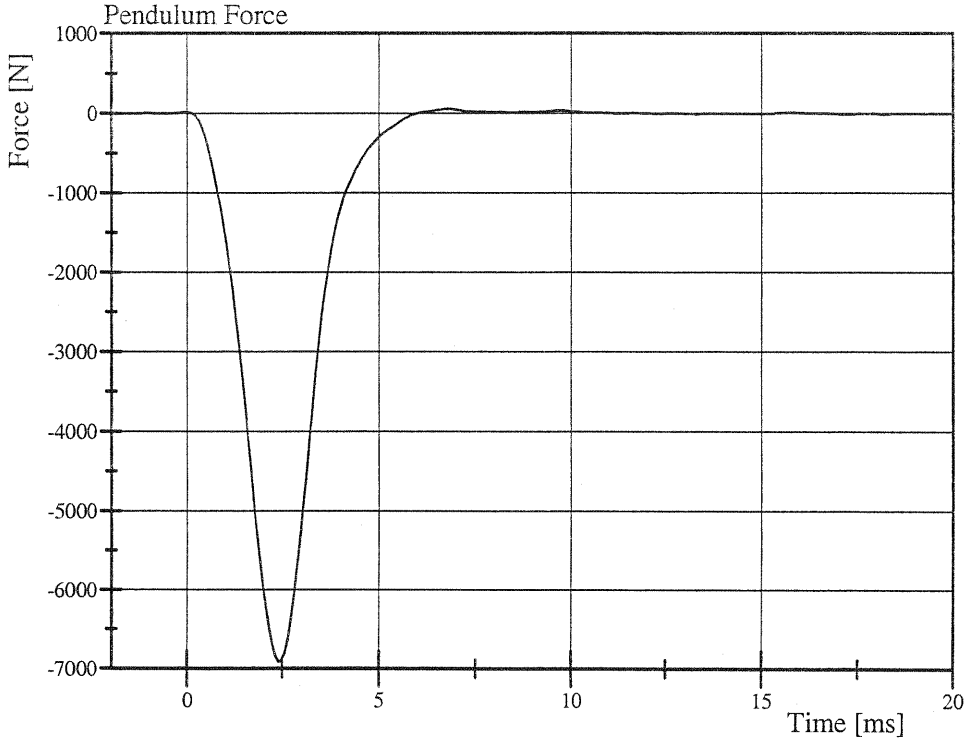
Right Knee Femur Response Test
HIII 95th Serial No. 226 Certification No. 3-1
Test Date: 11/20/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 1.1 g at 6.8 ms
Min: -141.3 g at 2.4 ms

Pendulum Force



Filter Class: CFC_600
Max: 54.1 N at 6.8 ms
Min: -6,913.0 N at 2.4 ms

Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.20.2007 11:09:50 1715

071214

Transportation Research Center Inc.

Left Knee Slider
HIII 95th Serial No. 226 Certification No. 3-1
Test Date: 11/20/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.0 °C	Yes
Relative Humidity	10 - 70 %	55 %	Yes
Probe Velocity	2.70 - 2.80 m/s	2.708 m/s	Yes
Knee Displacement	(-15.0) - (-18.3) mm	-15.73 mm	Yes

Test meets specifications.

Comments:

Technician

Charles W. Kelly

Approved

Ron Stover

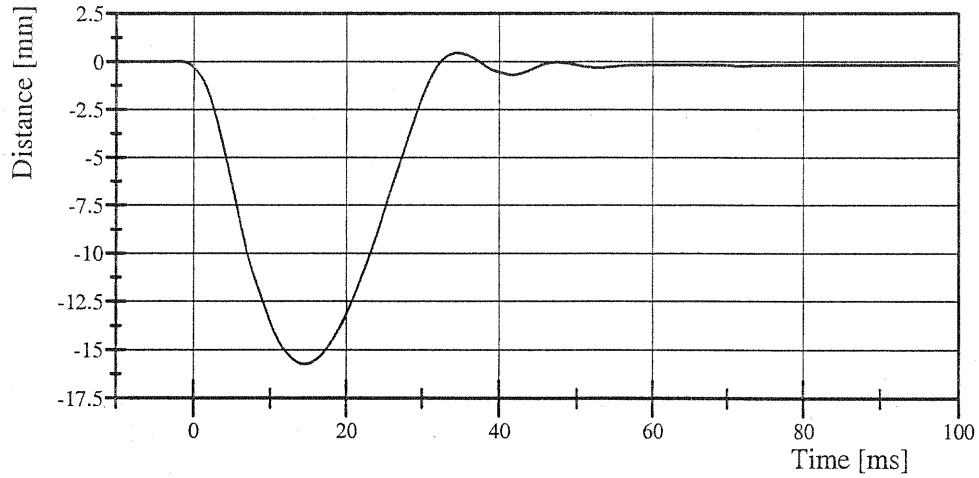
Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.20.2007 13:06:22 1109

Transportation Research Center Inc.

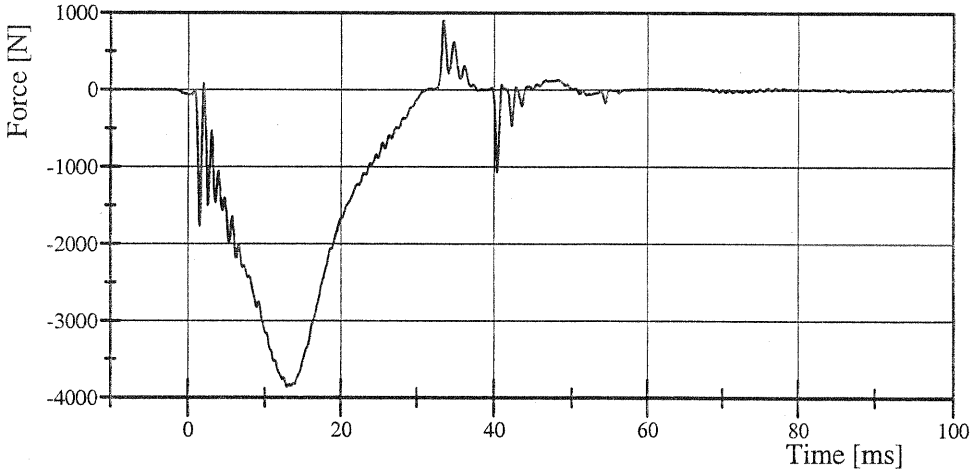
Left Knee Slider
HIII 95th Serial No. 226 Certification No. 3-1
Test Date: 11/20/2007

Knee Slider Displacement



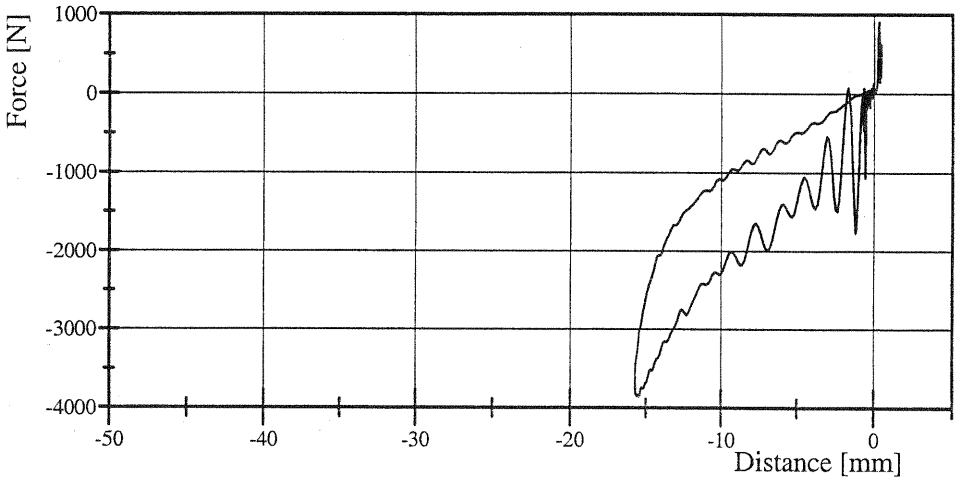
Filter Class: CFC_180
Max: 0.5 mm at 34.6 ms
Min: -15.7 mm at 14.6 ms

Femur Force



Filter Class: CFC_600
Max: 902.7 N at 33.5 ms
Min: -3,853.6 N at 13.0 ms

Femur Force vs. Knee Slider Displacement



Filter Class: CFC_600
Max: 902.7 N at 0.3 mm
Min: -3,853.6 N at -15.5 mm

Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.20.2007 13:06:31 1109

Transportation Research Center Inc.

Right Knee Slider
HIII 95th Serial No. 226 Certification No. 3-2
Test Date: 11/20/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	57 %	Yes
Probe Velocity	2.70 - 2.80 m/s	2.740 m/s	Yes
Knee Displacement	(-15.0) - (-18.3) mm	-15.53 mm	Yes

Test meets specifications.

Comments:

Technician

Approved

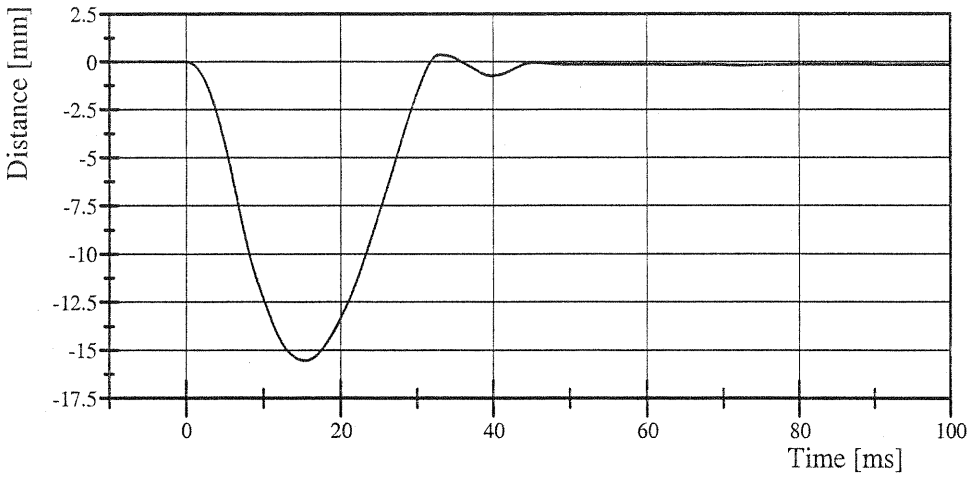
Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.20.2007 14:02:25 1086

Transportation Research Center Inc.

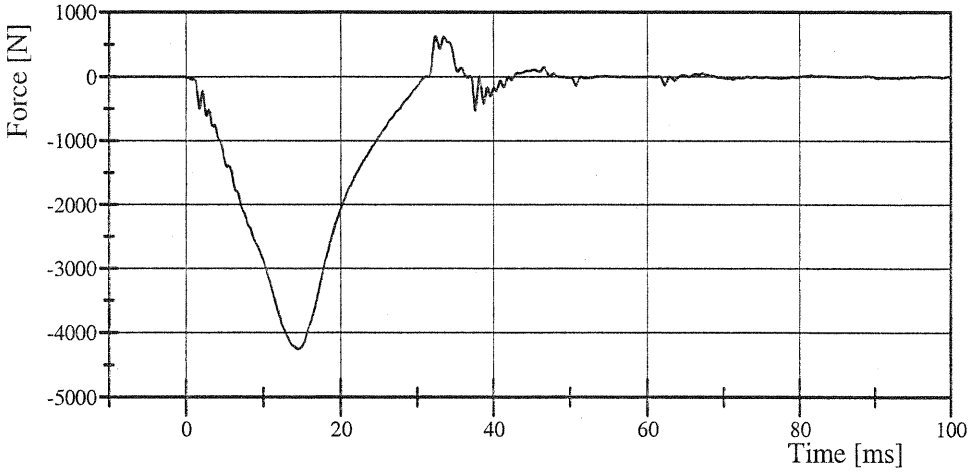
Right Knee Slider
HIII 95th Serial No. 226 Certification No. 3-2
Test Date: 11/20/2007

Knee Slider Displacement



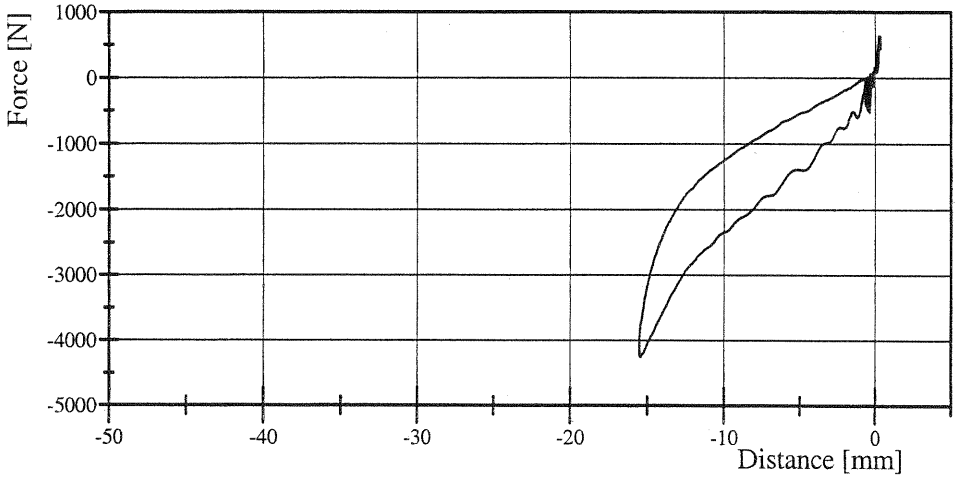
Filter Class: CFC_180
Max: 0.4 mm at 33.1 ms
Min: -15.5 mm at 15.4 ms

Femur Force



Filter Class: CFC_600
Max: 631.4 N at 32.4 ms
Min: -4,252.0 N at 14.6 ms

Femur Force vs. Knee Slider Displacement



Filter Class: CFC_600
Max: 631.4 N at 0.3 mm
Min: -4,252.0 N at -15.5 mm

Specification Source: SAE Engineering Aid 26, Oct. 2003 draft

11.20.2007 14:02:33 1086

Pre-Test Dummy Configuration and Performance Verification Data

Right Side Row 9 Right Seat Dummy S/N: 591

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 591
Calibration No. 150

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	879	Yes
B	Shoulder Pivot Height	505.5 - 520.7	515	Yes
C	H-Point Height	83.8 - 88.9	85	Yes
D	H-Point From Seatback	134.6 - 139.7	135	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	88	Yes
F	Thigh Clearance	139.7 - 154.9	151	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	295	Yes
H	Skull Cap To Backline	40.6 - 45.7	45	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	331	Yes
J	Elbow Rest Height	190.5 - 210.8	202	Yes
K	Buttock Knee Length	579.1 - 604.5	603	Yes
L	Popliteal Height	429.3 - 454.7	437	Yes
M	Knee Pivot Height	485.1 - 500.4	495	Yes
N	Buttock Popliteal Length	452.1 - 477.5	469	Yes
O	Chest Depth	213.4 - 228.6	222	Yes
P	Foot Length	251.5 - 266.7	260	Yes
V	Shoulder Breadth	421.6 - 436.9	425	Yes
W	Foot Breadth	91.4 - 106.7	100	Yes
Y	Chest Circumference	970.3 - 1000.8	981	Yes
Z	Waist Circumference	835.7 - 866.1	860	Yes
AA	Location For Chest Circumference	429.3 - 434.3	430	Yes
BB	Location For Waist Circumference	226.1 - 231.1	230	Yes

Comments:

Technician

Approved

Transportation Research Center Inc.

Front Head Drop
HIII 50th Serial No. 591 Certification No. 150-1
Test Date: 9/20/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	59 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	244.8 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-2.5 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Charles W. Bell

Approved

Ron Stover

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

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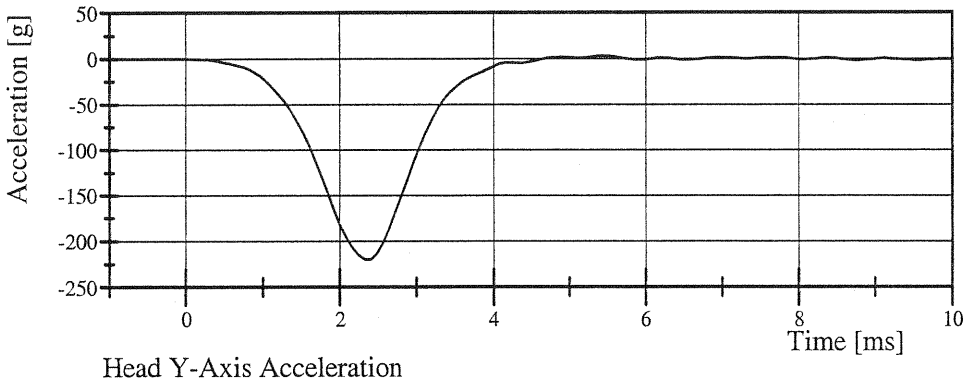
Transportation Research Center Inc.

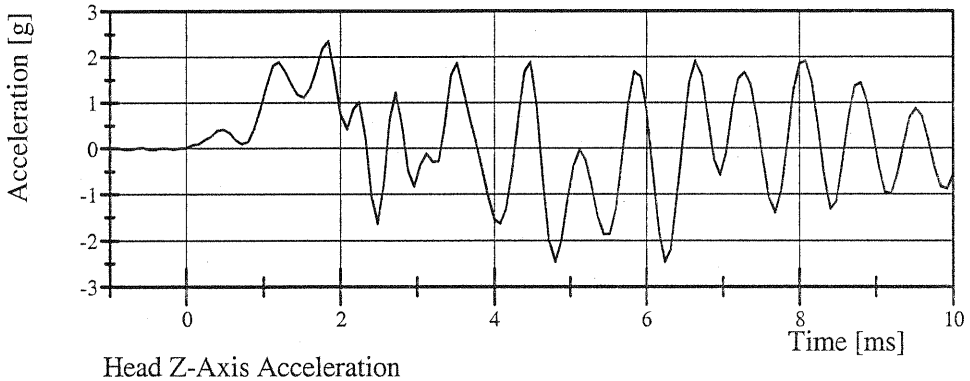
Front Head Drop
HIII 50th Serial No. 591 Certification No. 150-1
Test Date: 9/20/2007

Head X-Axis Acceleration



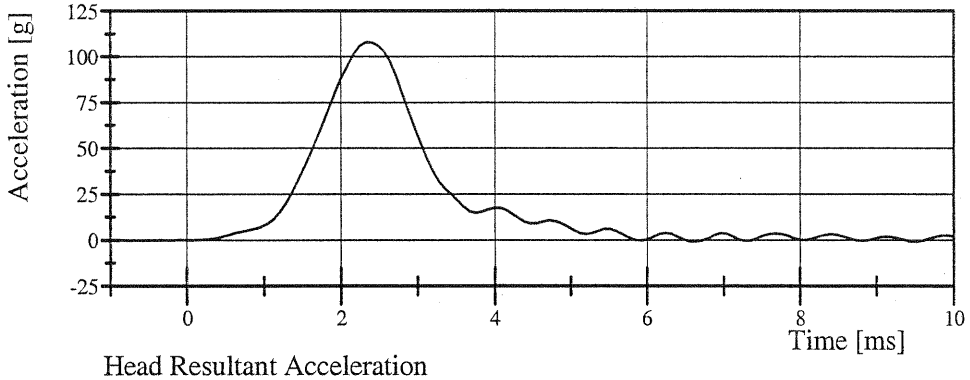
Filter Class: CFC_1000
Max: 3.3 g at 5.4 ms
Min: -219.8 g at 2.3 ms

Head Y-Axis Acceleration



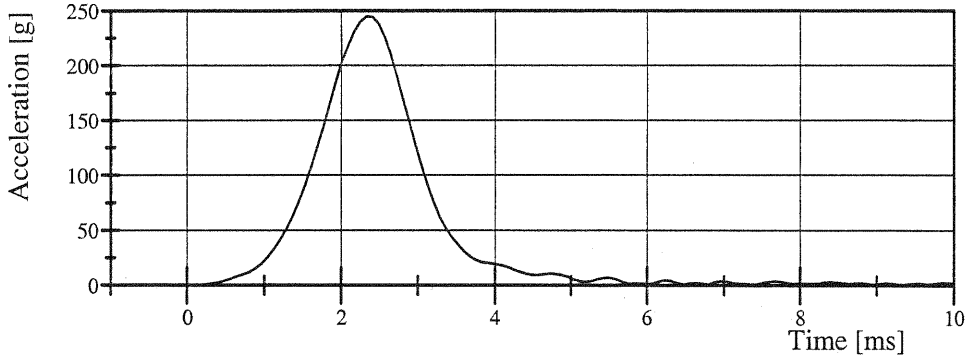
Filter Class: CFC_1000
Max: 2.4 g at 1.8 ms
Min: -2.5 g at 4.8 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 108.0 g at 2.3 ms
Min: -1.0 g at 6.6 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 244.8 g at 2.3 ms
Min: 0.0 g at -1.0 ms

Transportation Research Center Inc.

Neck Flexion
HIII 50th Serial No. 591 Certification No. 150-1
Test Date: 9/17/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.970 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	37.2 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-24.14 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-22.29 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-17.20 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-17.20 g	Yes
Total Head D-Plane Rotation			
Peak	(-64) - (-78) °	-69.5 °	Yes
Time of Peak	57 - 64 ms	58.1 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	113.7 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	88 - 108 N·m	98.7 N·m	Yes
Time of Peak	47 - 58 ms	48.8 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	100.8 ms	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

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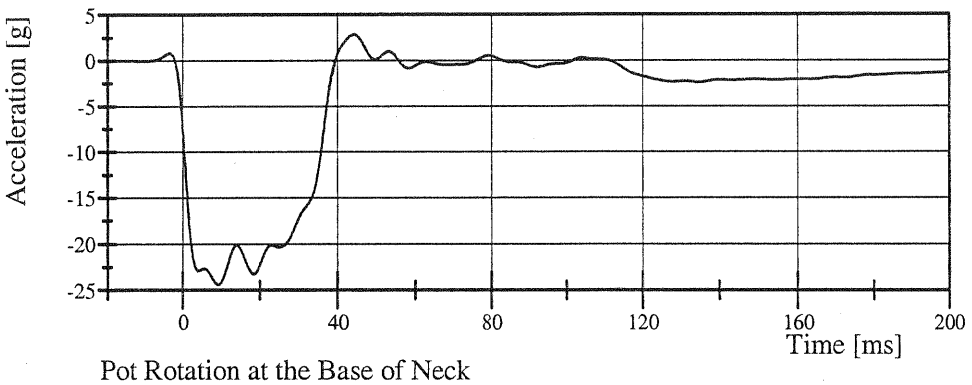
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 591 Certification No. 150-1

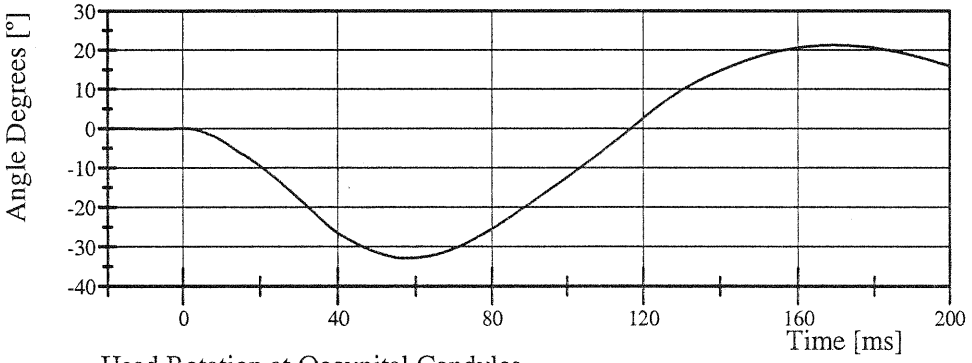
Test Date: 9/17/2007

Pendulum Acceleration



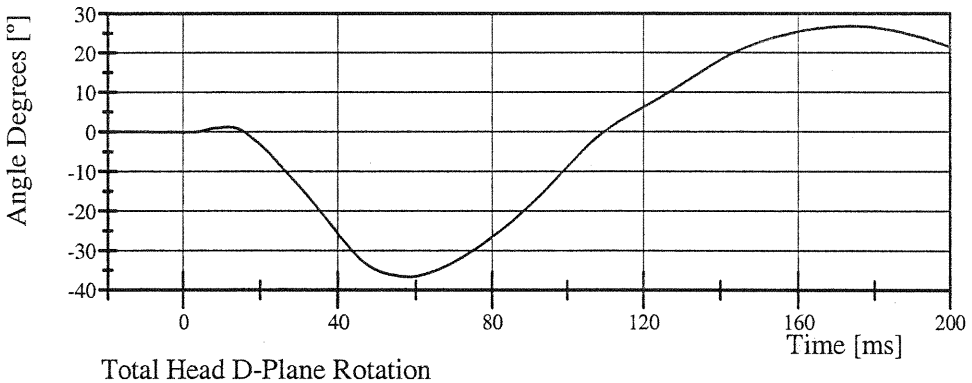
Filter Class: CFC_60
Max: 2.9 g at 44.2 ms
Min: -24.4 g at 9.2 ms

Pot Rotation at the Base of Neck



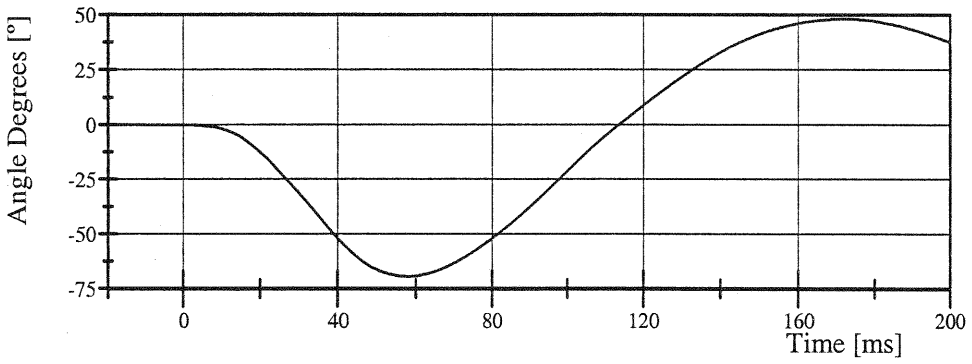
Filter Class: CFC_60
Max: 21.3 ° at 169.5 ms
Min: -32.9 ° at 57.8 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 26.8 ° at 174.3 ms
Min: -36.6 ° at 58.3 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 48.1 ° at 172.2 ms
Min: -69.5 ° at 58.1 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

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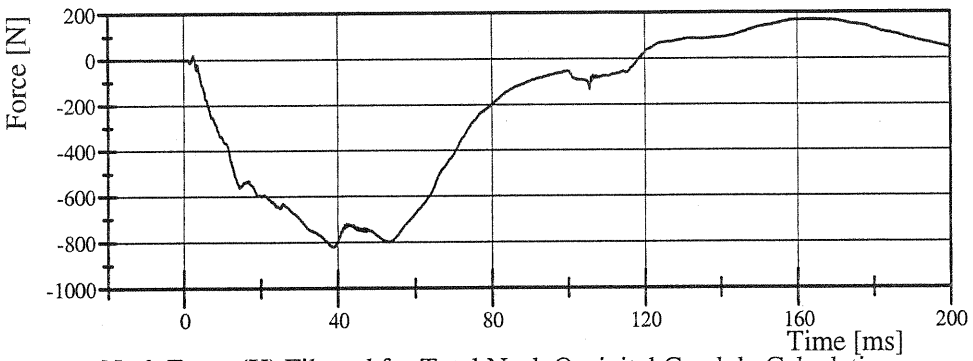
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 591 Certification No. 150-1

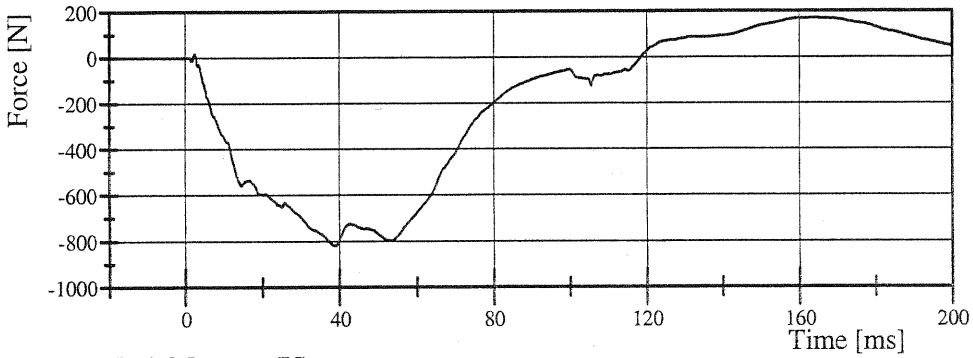
Test Date: 9/17/2007

Neck Force (X)



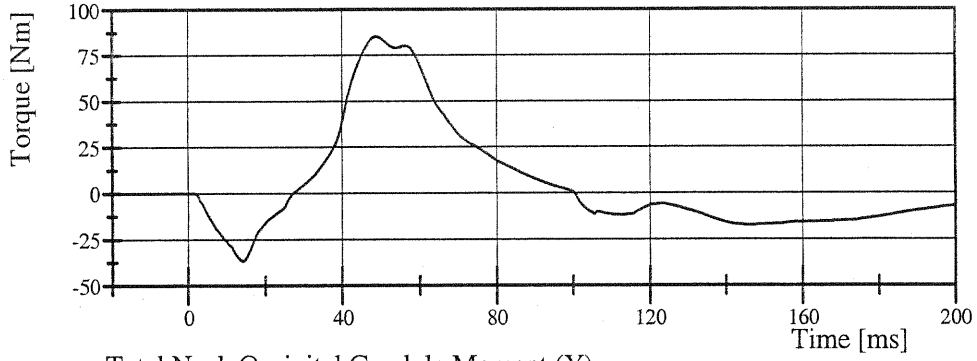
Filter Class: CFC_1000
Max: 170.2 N at 162.8 ms
Min: -820.0 N at 38.9 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



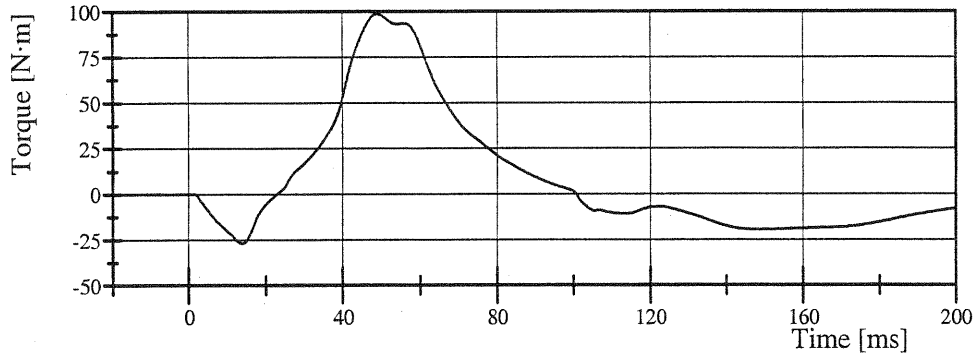
Filter Class: CFC_600
Max: 169.7 N at 163.8 ms
Min: -819.7 N at 38.8 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 85.4 Nm at 48.7 ms
Min: -36.5 Nm at 14.2 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 98.7 N·m at 48.8 ms
Min: -26.9 N·m at 13.9 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

09.17.2007 13:59:27 2977

Transportation Research Center Inc.

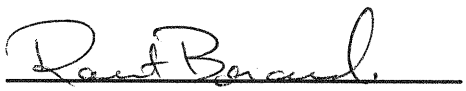
Neck Extension
HIII 50th Serial No. 591 Certification No. 150-2
Test Date: 9/18/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	48 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-5.995 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	44.0 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	18.75 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	15.58 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	11.42 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	11.49 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	91.1 °	Yes
Time of Peak	72 - 82 ms	76.6 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	155.3 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-53) - (-80) N·m	-62.5 N·m	Yes
Time of Peak	65 - 79 ms	72.3 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	139.8 ms	Yes

Test meets specifications.

Comments:

Technician



Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

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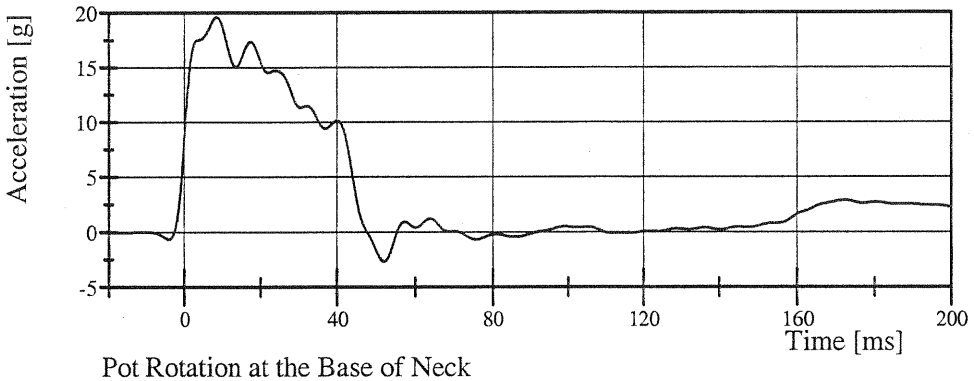
Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 591 Certification No. 150-2

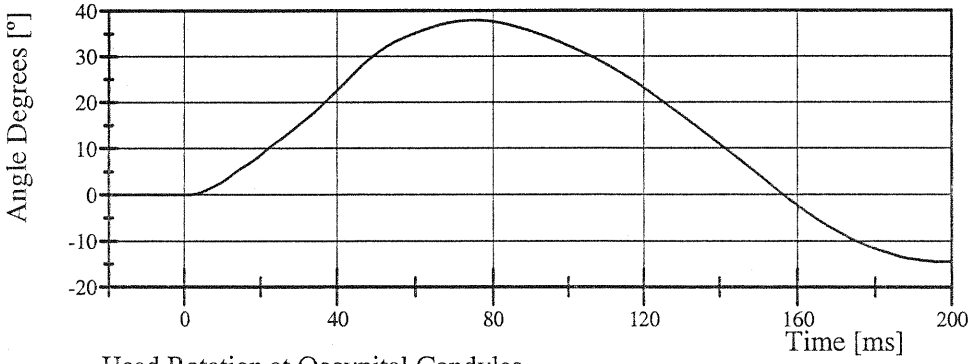
Test Date: 9/18/2007

Pendulum Acceleration



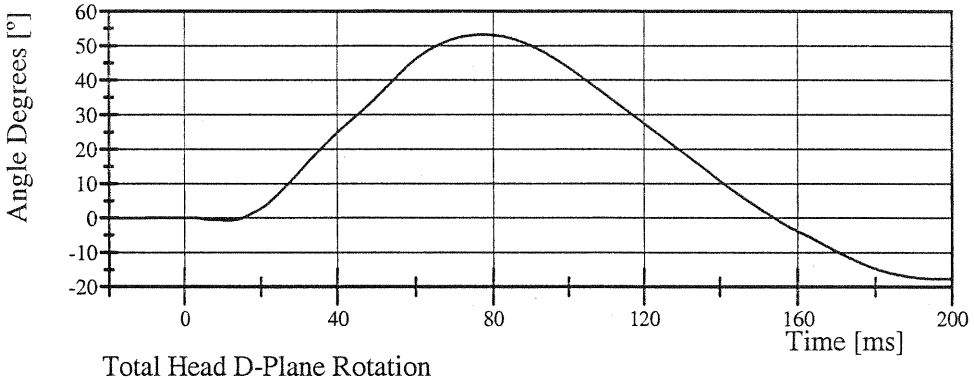
Filter Class: CFC_60
Max: 19.6 g at 8.5 ms
Min: -2.7 g at 52.0 ms

Pot Rotation at the Base of Neck



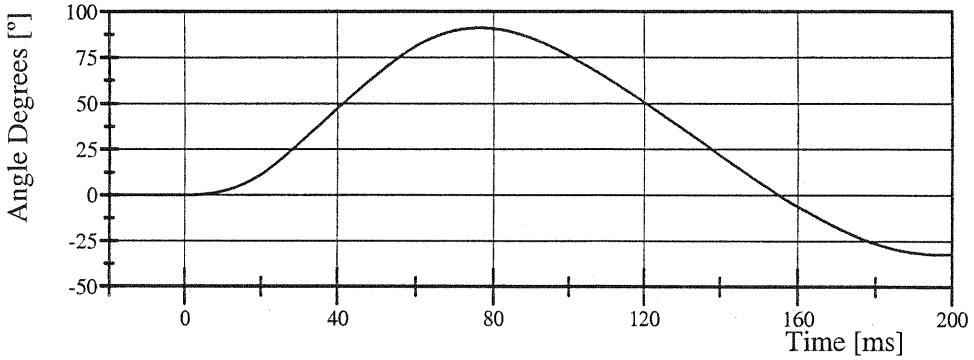
Filter Class: CFC_60
Max: 37.9 ° at 75.5 ms
Min: -14.5 ° at 197.4 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 53.2 ° at 77.3 ms
Min: -17.7 ° at 197.3 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 91.1 ° at 76.6 ms
Min: -32.2 ° at 197.4 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

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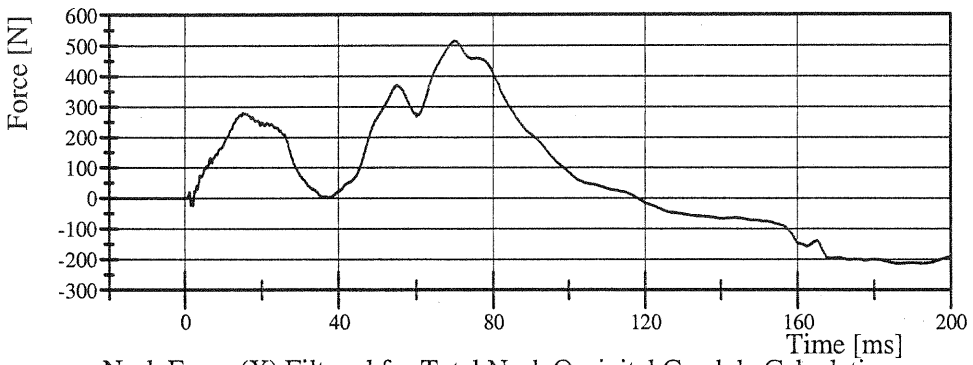
Transportation Research Center Inc.

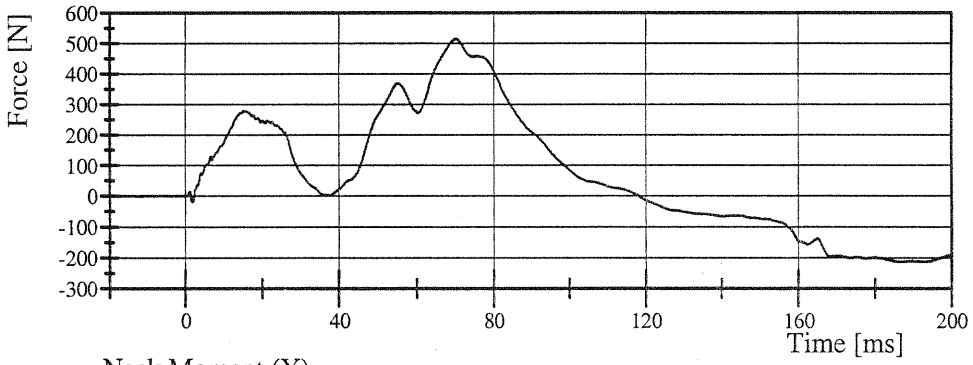
Neck Extension
HIII 50th Serial No. 591 Certification No. 150-2
Test Date: 9/18/2007

Neck Force (X)



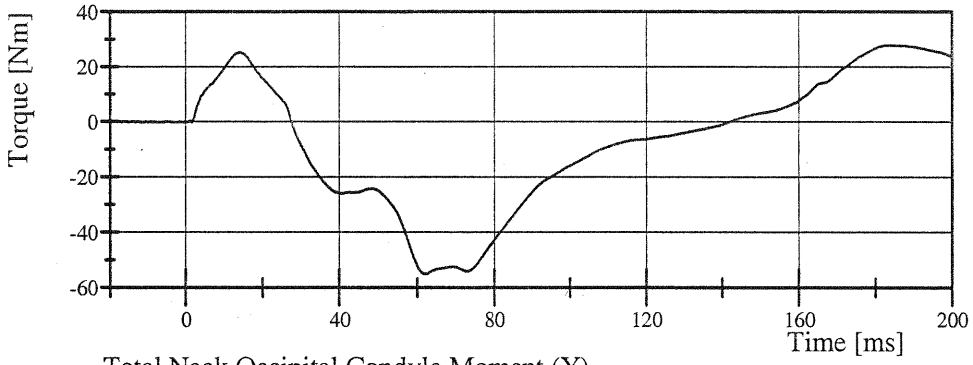
Filter Class: CFC_1000
Max: 514.5 N at 70.2 ms
Min: -213.9 N at 186.7 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



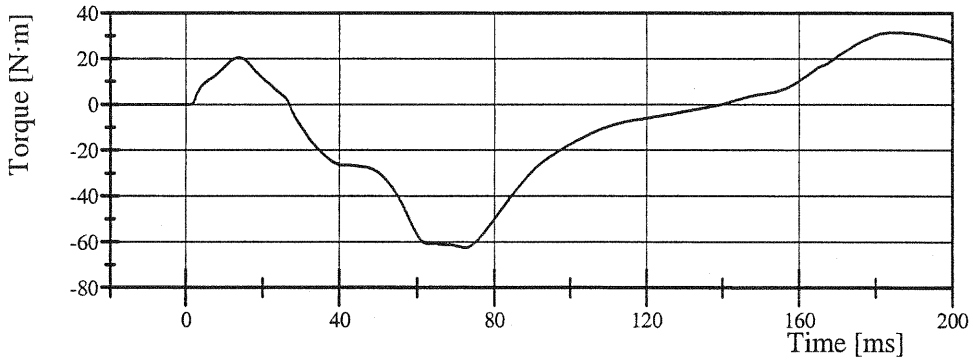
Filter Class: CFC_600
Max: 514.5 N at 70.2 ms
Min: -213.4 N at 186.8 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 27.9 Nm at 183.8 ms
Min: -55.0 Nm at 62.2 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 31.6 N·m at 185.4 ms
Min: -62.5 N·m at 72.3 ms

Transportation Research Center Inc.

Front Thorax
HIII 50th Serial No. 591 Certification No. 150-1
Test Date: 9/21/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	57 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.592 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,528.9 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-71.68 mm	Yes
Internal Hysteresis	65 - 85 %	71.4 %	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

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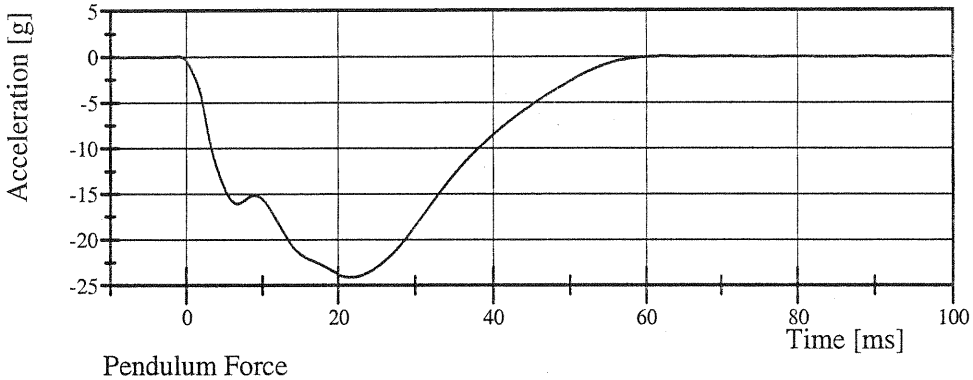
Transportation Research Center Inc.

Front Thorax

HIII 50th Serial No. 591 Certification No. 150-1

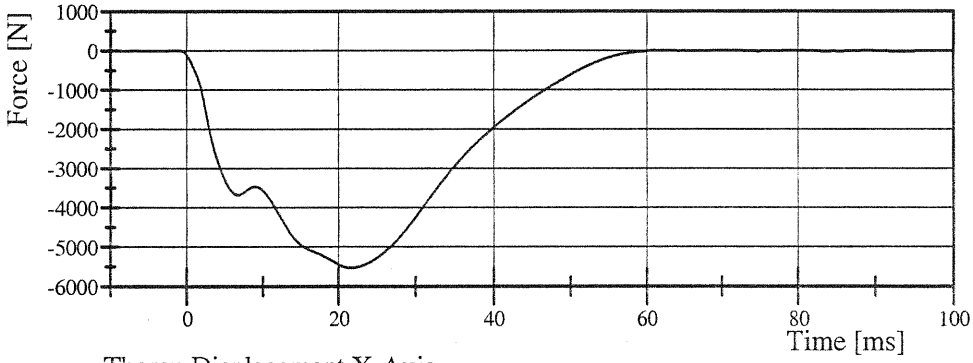
Test Date: 9/21/2007

Pendulum Acceleration



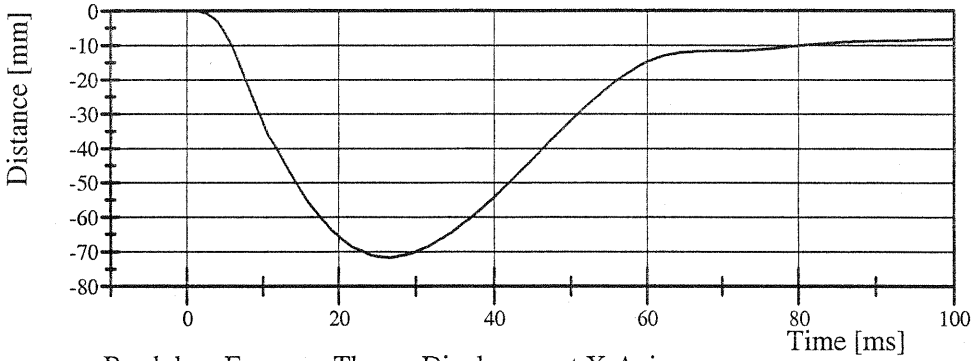
Filter Class: CFC_180
Max: 0.0 g at -1.0 ms
Min: -24.1 g at 21.6 ms

Pendulum Force



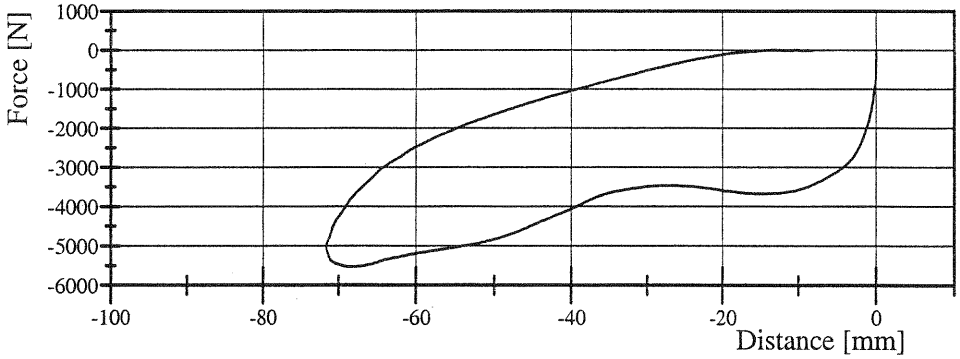
Filter Class: CFC_180
Max: 8.9 N at -1.0 ms
Min: -5,528.9 N at 21.6 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.0 mm at -4.6 ms
Min: -71.7 mm at 26.6 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 8.9 N at -0.0 mm
Min: -5,528.9 N at -68.4 mm

Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

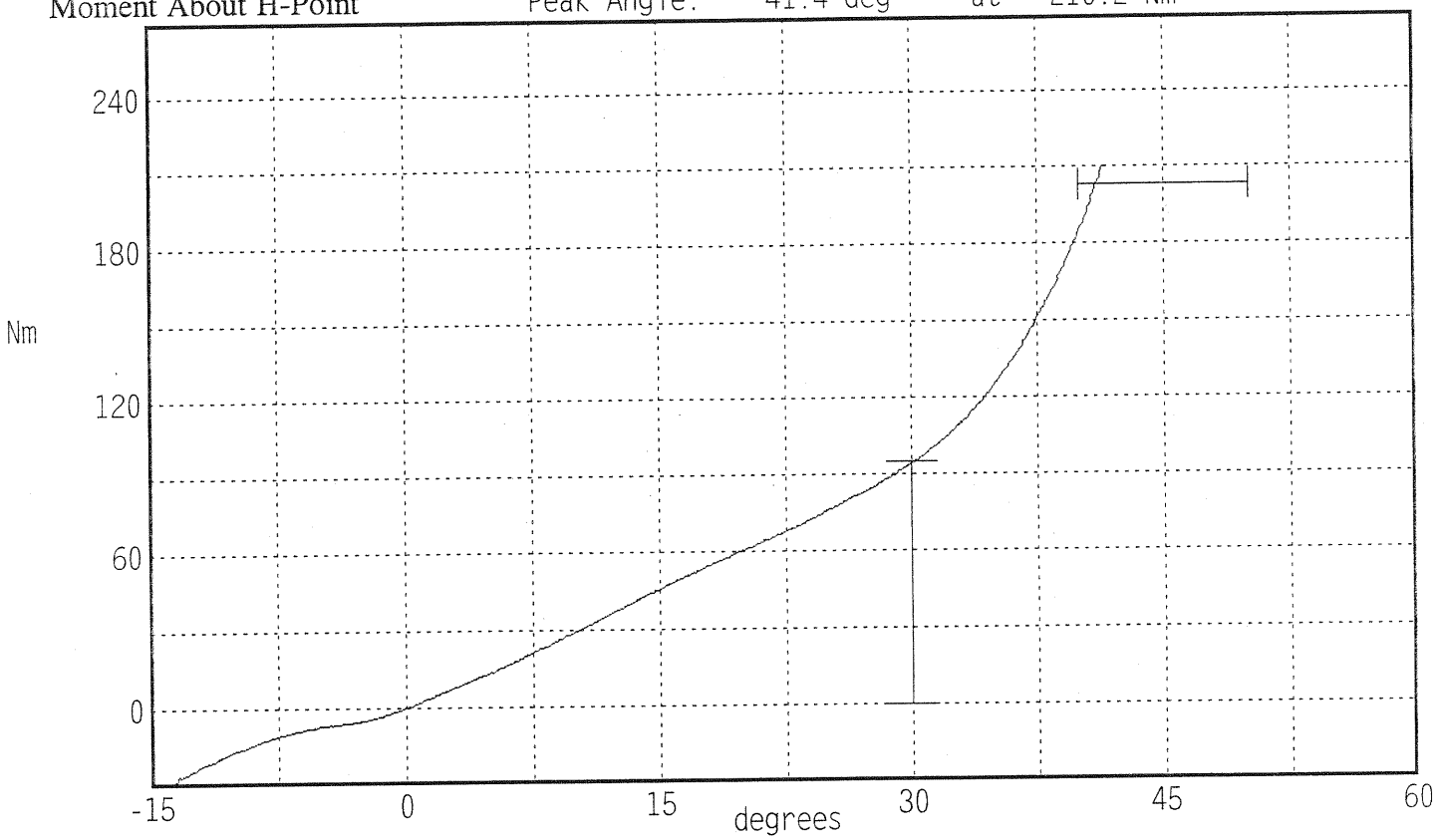
Serial Number: 591L
Test Number: 591C150
Comments:

Date: 09/20/2007
Time: 08:00

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.1	°C	Pass
Humidity	10 - 70	56	%	Pass
Moment at 30 deg	<= 94.9	94.3	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	41.0	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

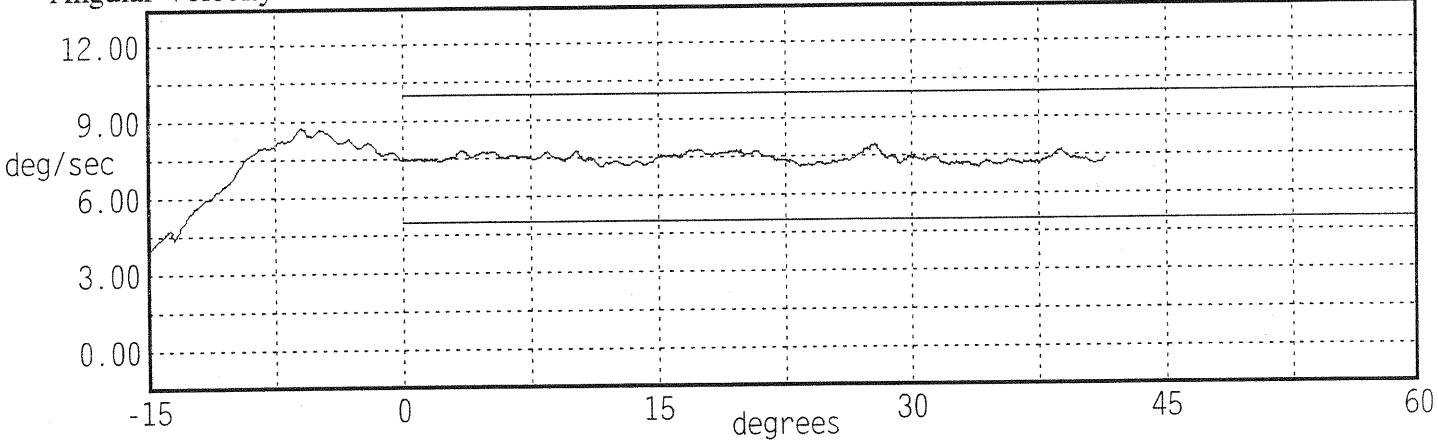
Moment About H-Point

Peak Moment: 210.2 Nm at 41.4 deg
Peak Angle: 41.4 deg at 210.2 Nm



Angular Velocity

Max: 7.9 deg/sec Min: 7.1 deg/sec



Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

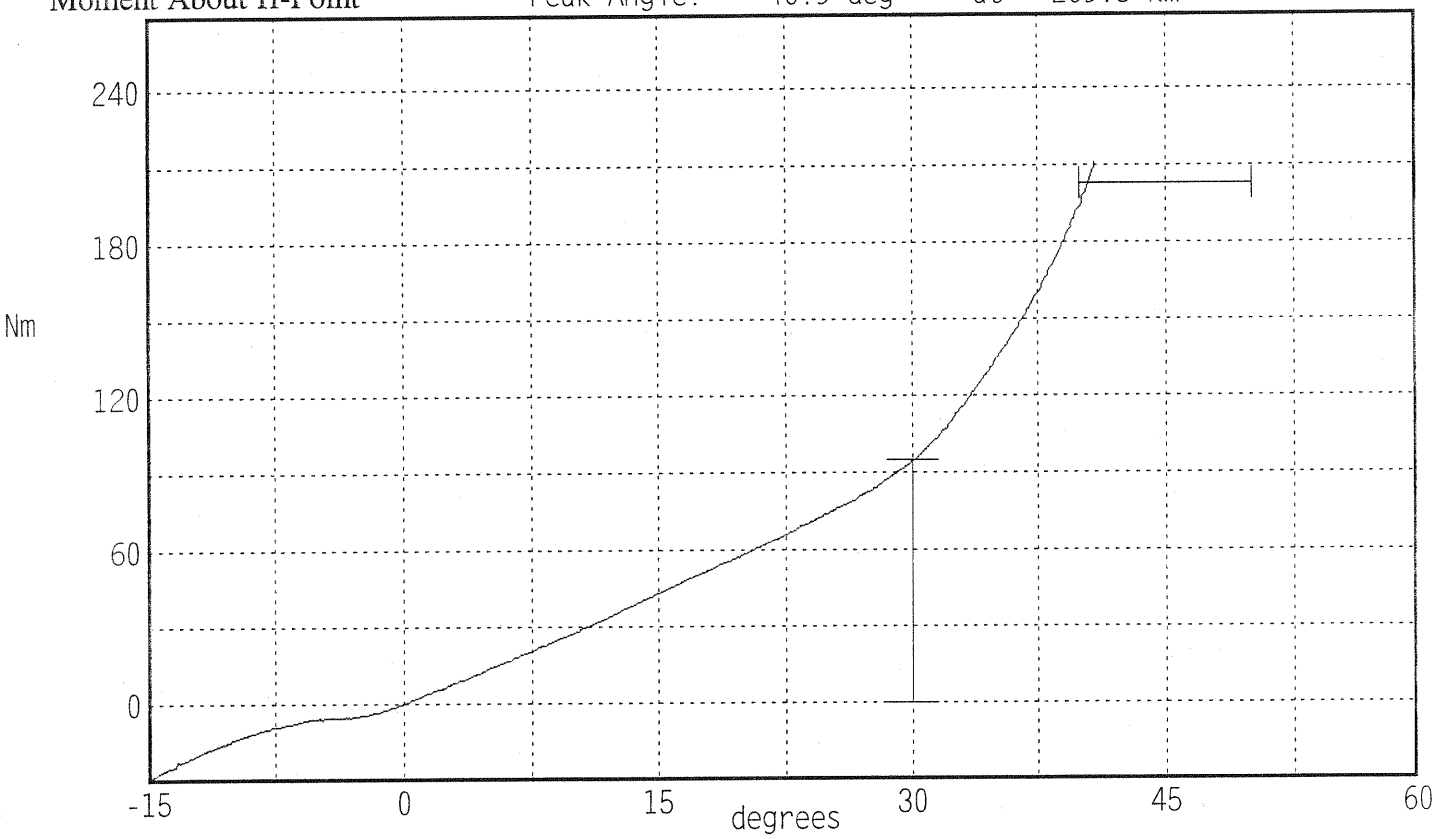
Serial Number: 591R
Test Number: 591C150
Comments:

Date: 09/20/2007
Time: 08:16

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.3	°C	Pass
Humidity	10 - 70	58	%	Pass
Moment at 30 deg	<= 94.9	94.8	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	40.5	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

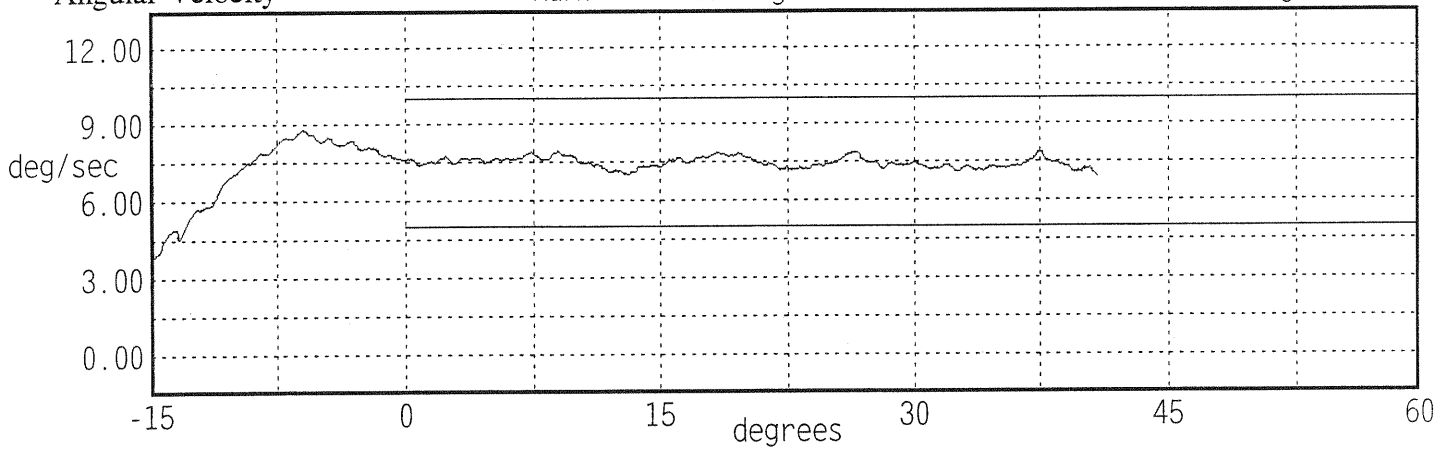
Moment About H-Point

Peak Moment: 211.0 Nm at 40.9 deg
Peak Angle: 40.9 deg at 209.5 Nm



Angular Velocity

Max: 7.9 deg/sec Min: 6.9 deg/sec



Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 591 Certification No. 150-2
Test Date: 9/20/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	56 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.116 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,309.34 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

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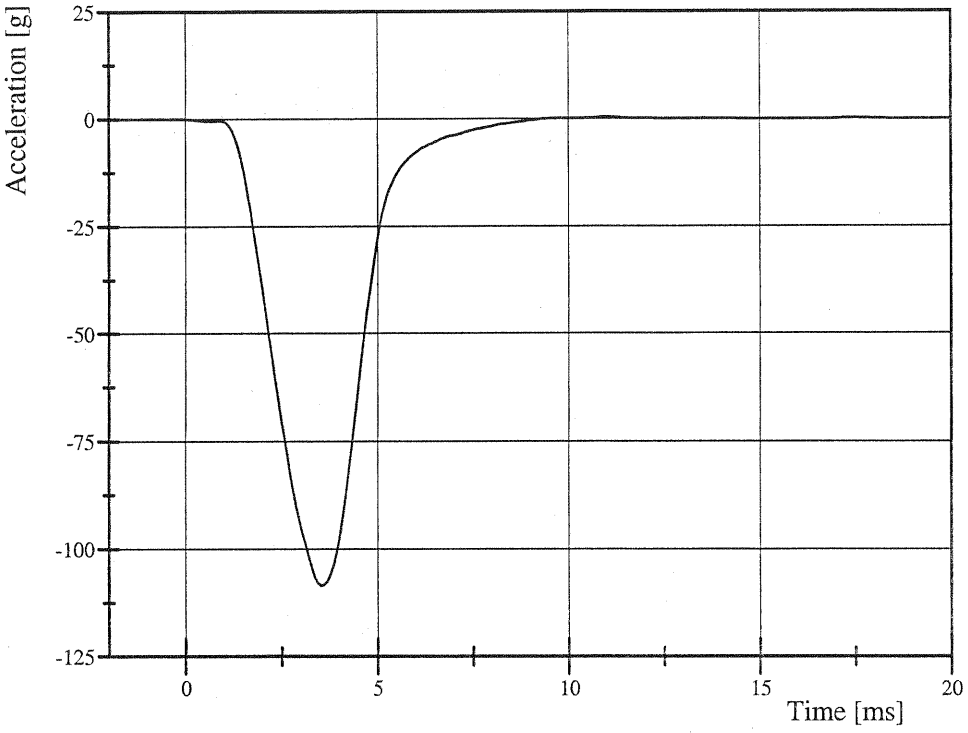
Transportation Research Center Inc.

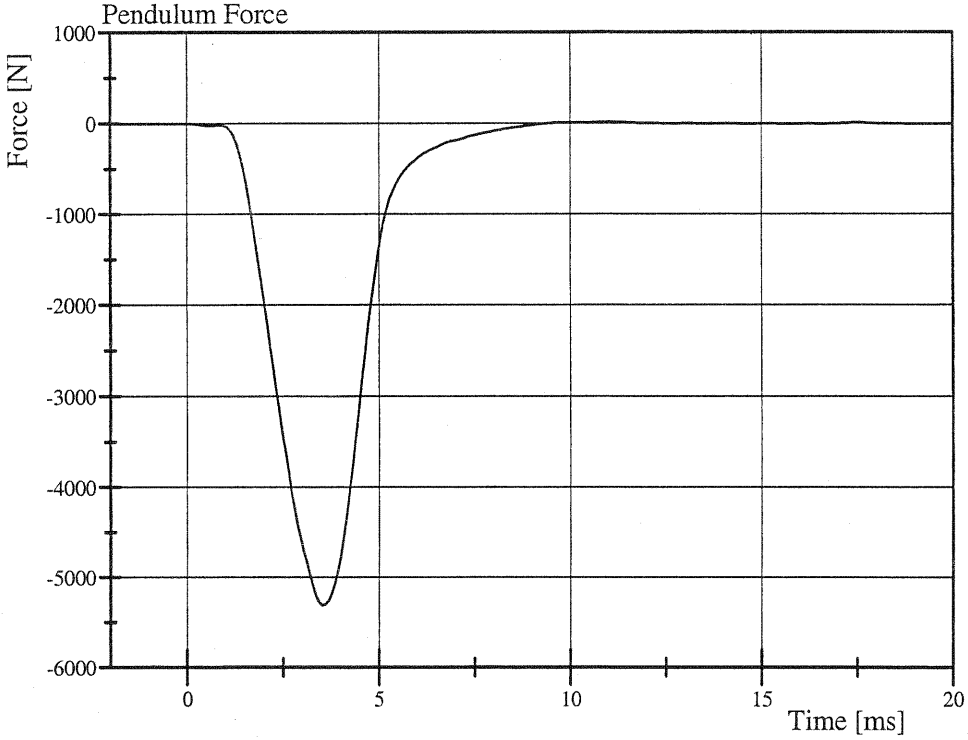
Left Knee Femur Response Test
HIII 50th Serial No. 591 Certification No. 150-2
Test Date: 9/20/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.4 g at 11.0 ms
Min: -108.5 g at 3.5 ms

Pendulum Force



Filter Class: CFC_600
Max: 17.6 N at 11.0 ms
Min: -5,309.3 N at 3.5 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

09.20.2007 08:14:33 1698

071214

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 591 Certification No. 150-1
Test Date: 9/20/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	58 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.119 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,709.89 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

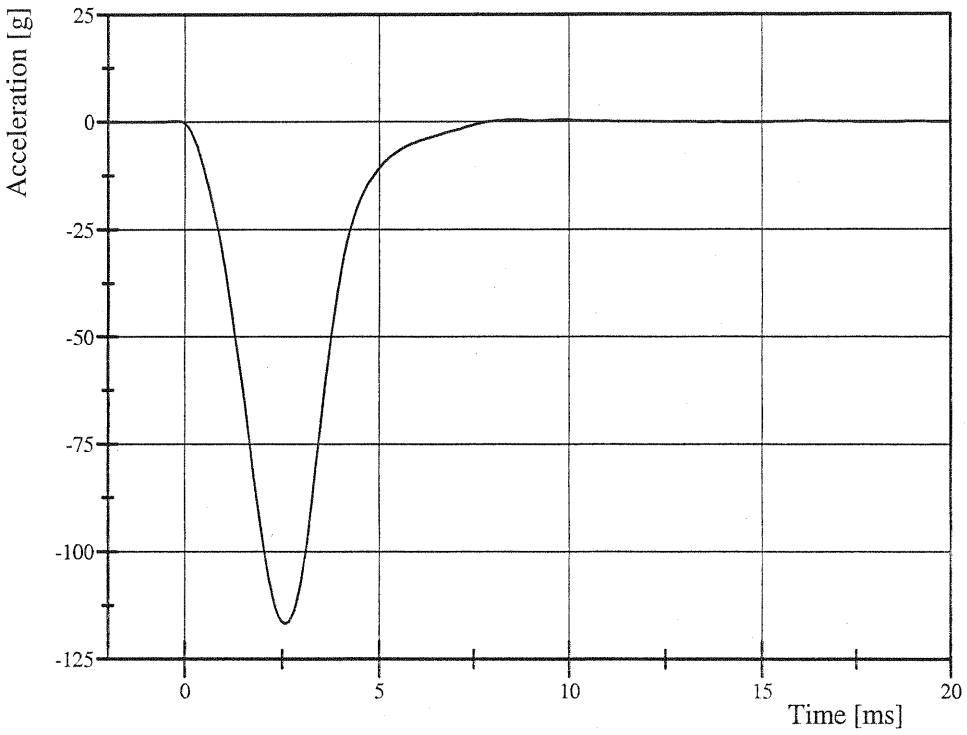
09.20.2007 07:46:19 1701

071214

Transportation Research Center Inc.

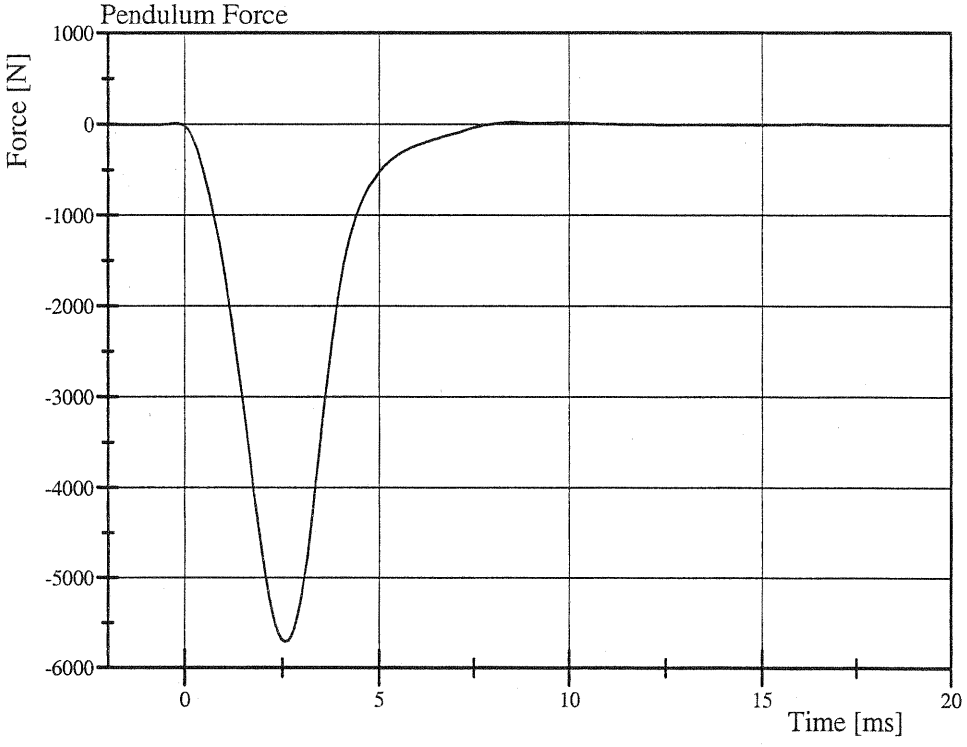
Right Knee Femur Response Test
HIII 50th Serial No. 591 Certification No. 150-1
Test Date: 9/20/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.5 g at 8.6 ms
Min: -116.7 g at 2.6 ms

Pendulum Force



Filter Class: CFC_600
Max: 22.5 N at 8.6 ms
Min: -5,709.9 N at 2.6 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

09.20.2007 07:46:27 1701

071214

Pre-Test Dummy Configuration and Performance Verification Data

Left Side Row 10 Left Seat Dummy S/N: 551

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 551 Calibration No. 175

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	881	Yes
B	Shoulder Pivot Height	505.5 - 520.7	511	Yes
C	H-Point Height	83.8 - 88.9	87	Yes
D	H-Point From Seatback	134.6 - 139.7	138	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	91	Yes
F	Thigh Clearance	139.7 - 154.9	152	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	294	Yes
H	Skull Cap To Backline	40.6 - 45.7	45	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	339	Yes
J	Elbow Rest Height	190.5 - 210.8	195	Yes
K	Buttock Knee Length	579.1 - 604.5	600	Yes
L	Popliteal Height	429.3 - 454.7	449	Yes
M	Knee Pivot Height	485.1 - 500.4	498	Yes
N	Buttock Popliteal Length	452.1 - 477.5	472	Yes
O	Chest Depth	213.4 - 228.6	217	Yes
P	Foot Length	251.5 - 266.7	260	Yes
V	Shoulder Breadth	421.6 - 436.9	424	Yes
W	Foot Breadth	91.4 - 106.7	99	Yes
Y	Chest Circumference	970.3 - 1000.8	993	Yes
Z	Waist Circumference	835.7 - 866.1	864	Yes
AA	Location For Chest Circumference	429.3 - 434.3	430	Yes
BB	Location For Waist Circumference	226.1 - 231.1	230	Yes

Technician

Approved

Transportation Research Center Inc.

Front Head Drop
HIII 50th Serial No. 551 Certification No. 175-1
Test Date: 10/31/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	257.9 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	8.2 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Approved

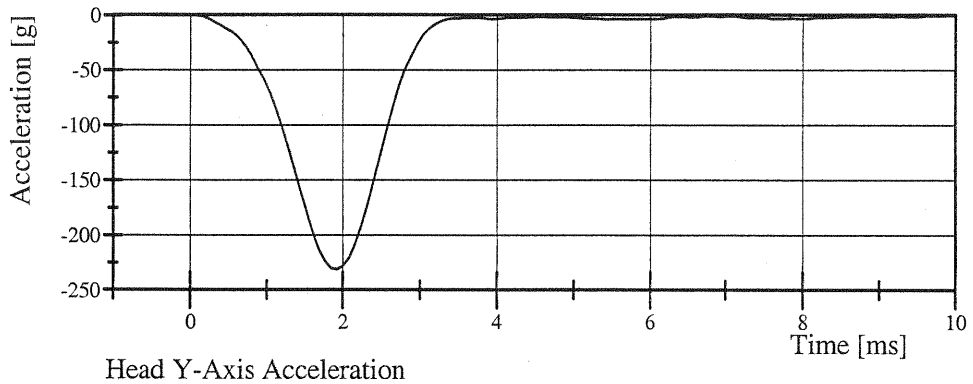
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.31.2007 08:32:30 614

Transportation Research Center Inc.

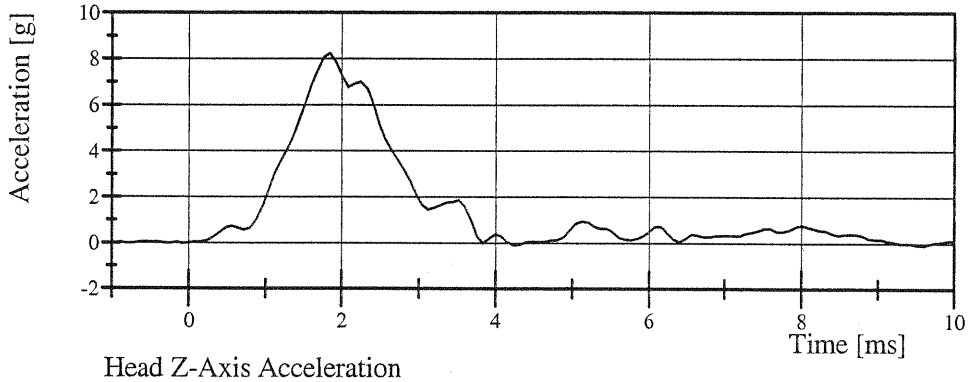
Front Head Drop
HIII 50th Serial No. 551 Certification No. 175-1
Test Date: 10/31/2007

Head X-Axis Acceleration



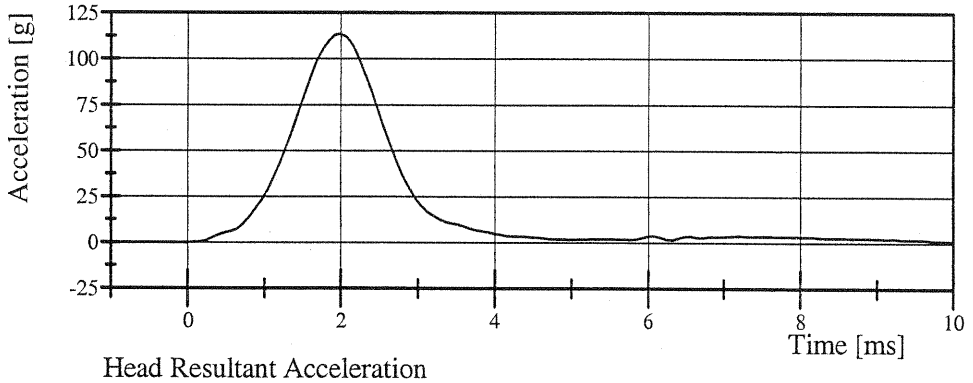
Filter Class: CFC_1000
Max: 0.0 g at -0.9 ms
Min: -231.7 g at 1.9 ms

Head Y-Axis Acceleration



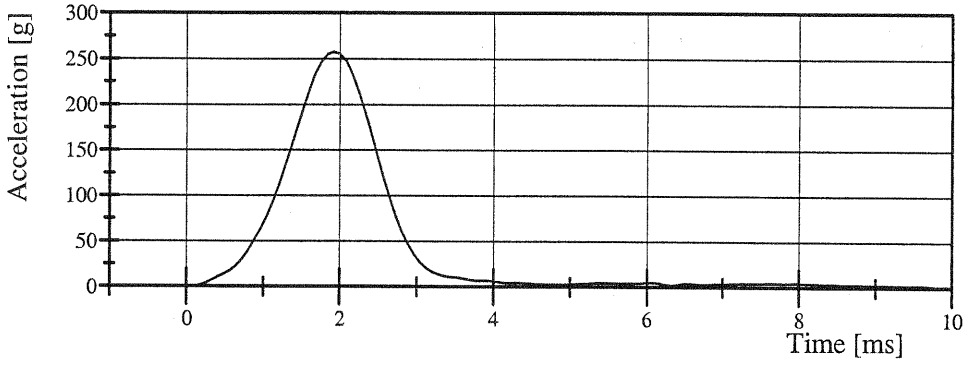
Filter Class: CFC_1000
Max: 8.2 g at 1.8 ms
Min: -0.1 g at 4.2 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 113.8 g at 2.0 ms
Min: -0.0 g at -1.0 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 257.9 g at 1.9 ms
Min: 0.0 g at -1.0 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.31.2007 08:32:42 614

071214

Transportation Research Center Inc.

Neck Flexion
HIII 50th Serial No. 551 Certification No. 175-4
Test Date: 10/31/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.955 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	37.3 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-23.33 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-22.10 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-17.32 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-17.32 g	Yes
Total Head D-Plane Rotation			
Peak	(-64) - (-78) °	-70.4 °	Yes
Time of Peak	57 - 64 ms	59.5 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	119.3 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	88 - 108 N·m	100.3 N·m	Yes
Time of Peak	47 - 58 ms	50.3 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	102.1 ms	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

10.31.2007 12:16:37 2983

071214

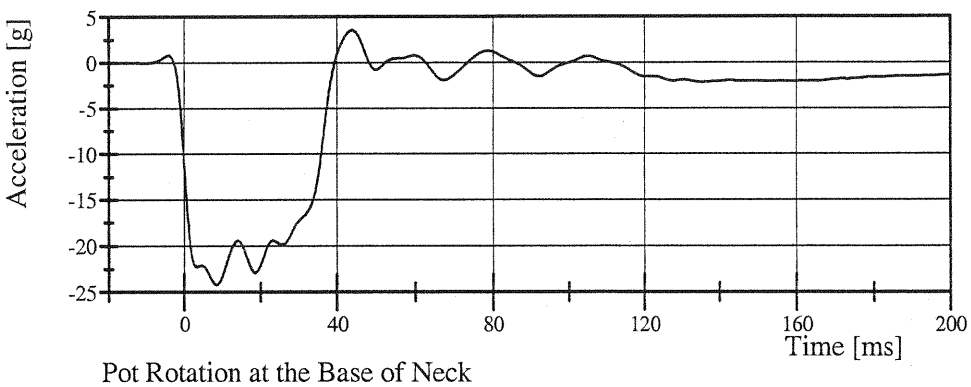
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 551 Certification No. 175-4

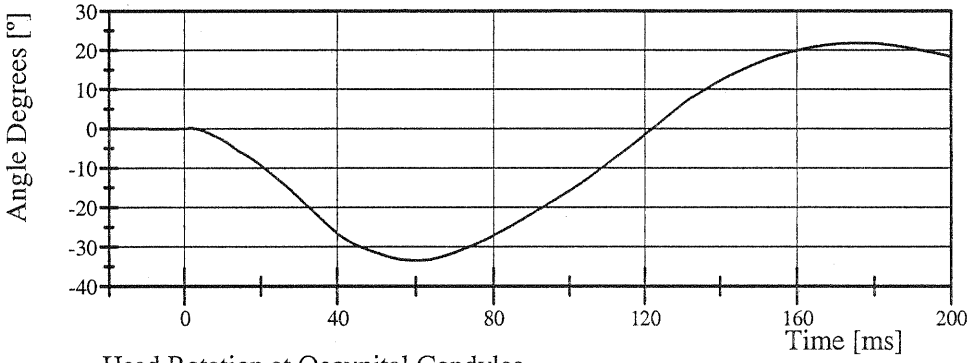
Test Date: 10/31/2007

Pendulum Acceleration



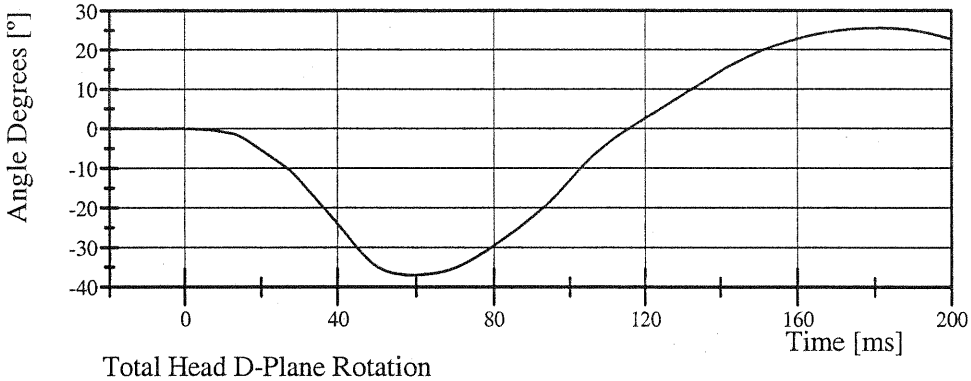
Filter Class: CFC_60
Max: 3.6 g at 43.8 ms
Min: -24.2 g at 8.5 ms

Pot Rotation at the Base of Neck



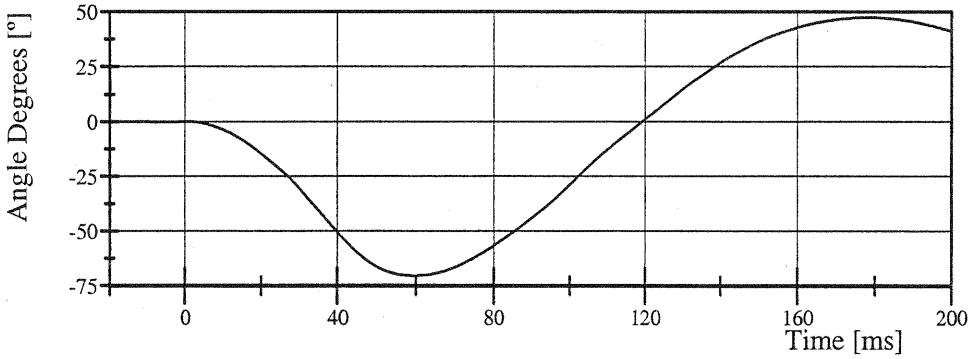
Filter Class: CFC_60
Max: 21.9 ° at 177.2 ms
Min: -33.4 ° at 60.2 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 25.6 ° at 181.4 ms
Min: -37.0 ° at 59.0 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 47.4 ° at 178.6 ms
Min: -70.4 ° at 59.5 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.31.2007 12:17:41 2983

071214

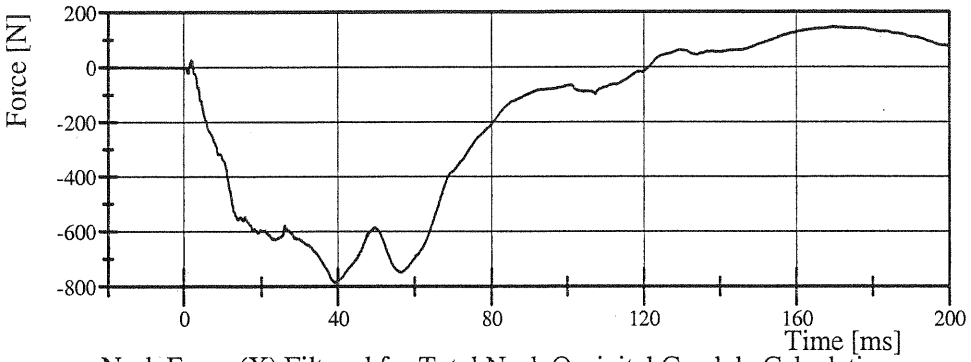
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 551 Certification No. 175-4

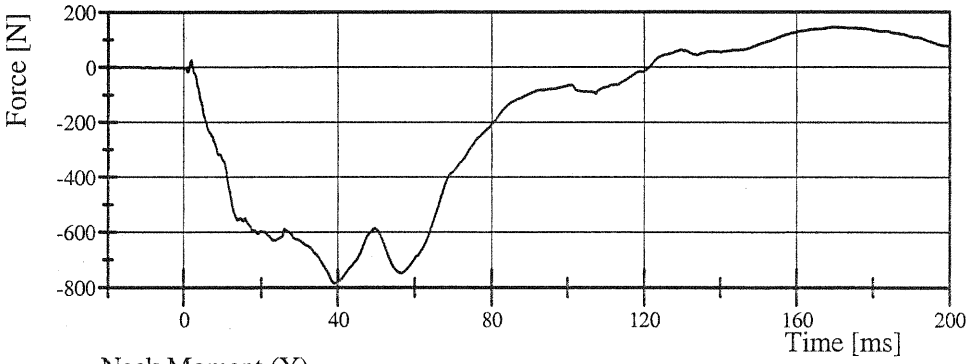
Test Date: 10/31/2007

Neck Force (X)



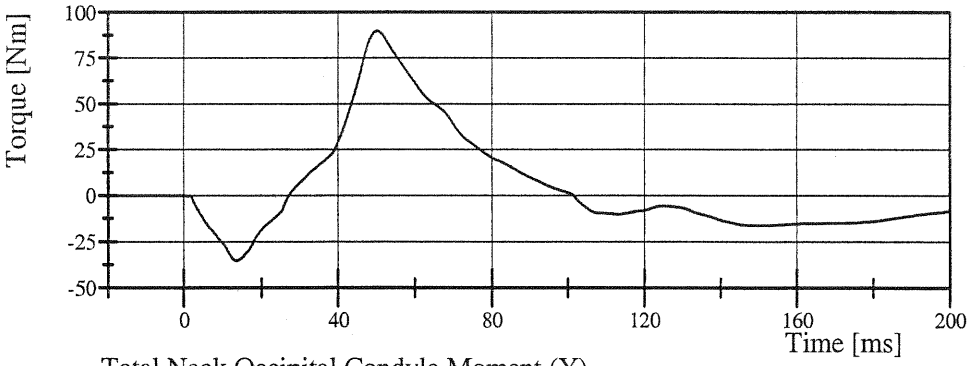
Filter Class: CFC_1000
Max: 146.9 N at 169.9 ms
Min: -785.3 N at 39.0 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



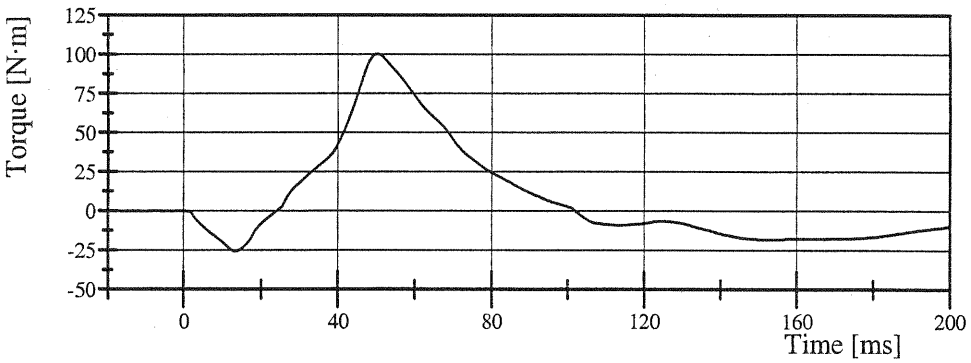
Filter Class: CFC_600
Max: 146.4 N at 169.8 ms
Min: -784.5 N at 39.0 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 89.9 Nm at 50.2 ms
Min: -35.2 Nm at 13.7 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 100.3 N·m at 50.3 ms
Min: -25.5 N·m at 13.3 ms

Transportation Research Center Inc.

Neck Extension
HIII 50th Serial No. 551 Certification No. 175-2
Test Date: 10/31/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-6.011 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	38.5 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	20.62 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	17.99 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	14.73 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	14.91 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	90.9 °	Yes
Time of Peak	72 - 82 ms	75.4 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	153.8 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-53) - (-80) N·m	-67.9 N·m	Yes
Time of Peak	65 - 79 ms	70.5 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	142.0 ms	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

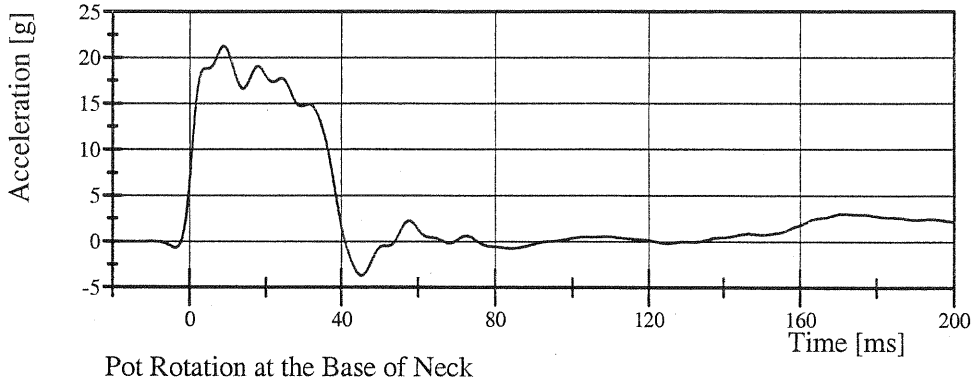
10.31.2007 13:37:04 3053

071214

Transportation Research Center Inc.

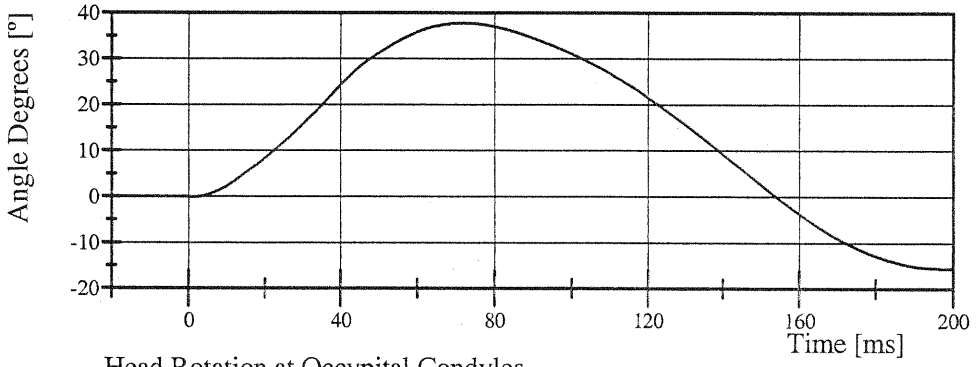
Neck Extension
HIII 50th Serial No. 551 Certification No. 175-2
Test Date: 10/31/2007

Pendulum Acceleration



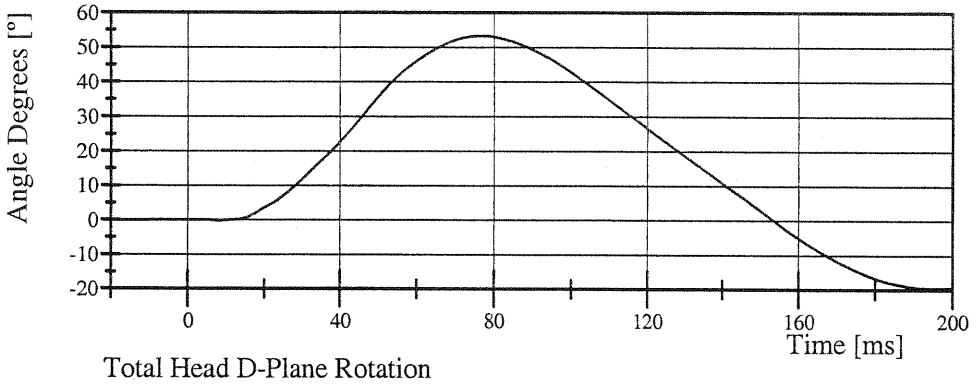
Filter Class: CFC_60
Max: 21.3 g at 8.8 ms
Min: -3.7 g at 45.3 ms

Pot Rotation at the Base of Neck



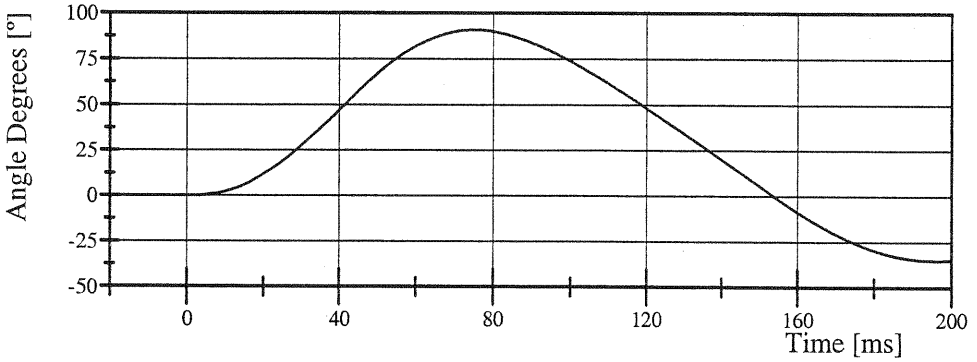
Filter Class: CFC_60
Max: 37.8 ° at 72.1 ms
Min: -15.6 ° at 197.9 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 53.3 ° at 77.0 ms
Min: -19.5 ° at 195.6 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 90.9 ° at 75.4 ms
Min: -35.0 ° at 196.6 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

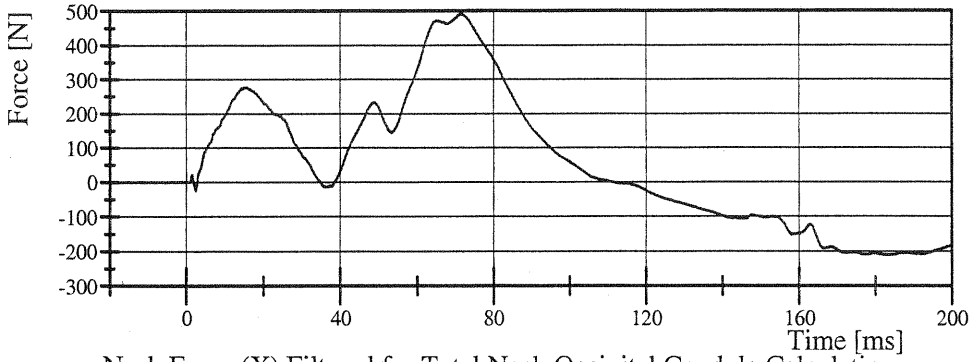
10.31.2007 13:37:21 3053

071214

Transportation Research Center Inc.

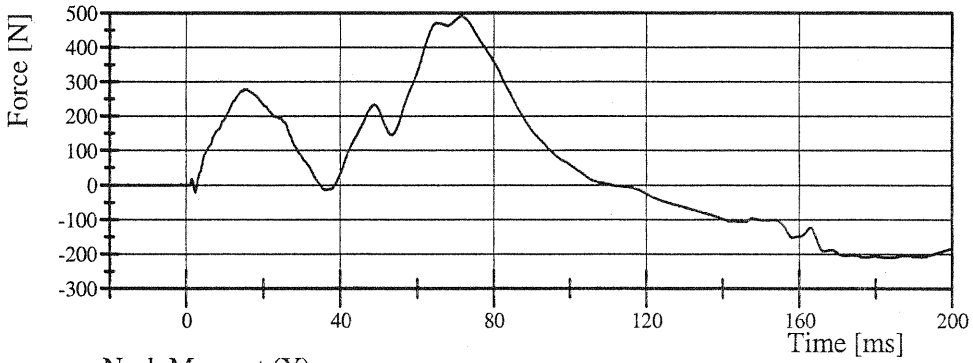
Neck Extension
HIII 50th Serial No. 551 Certification No. 175-2
Test Date: 10/31/2007

Neck Force (X)



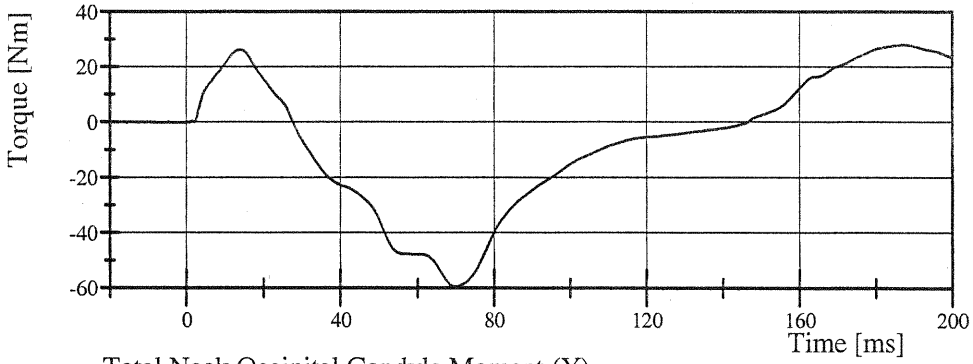
Filter Class: CFC_1000
Max: 491.4 N at 71.5 ms
Min: -210.7 N at 182.8 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



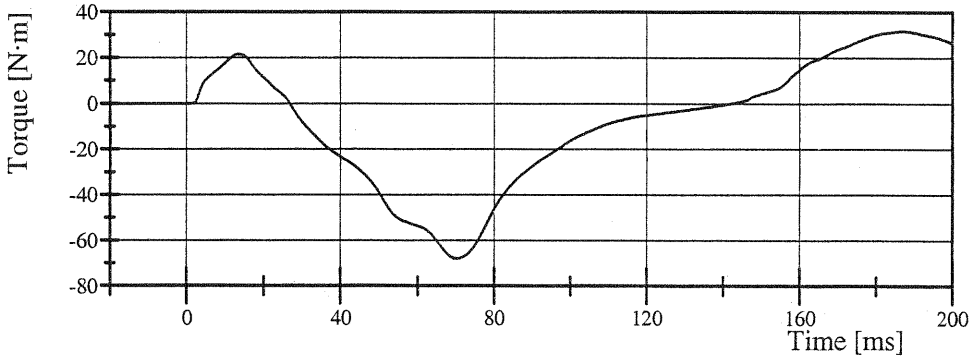
Filter Class: CFC_600
Max: 491.2 N at 71.5 ms
Min: -210.3 N at 183.8 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 28.1 Nm at 187.5 ms
Min: -59.4 Nm at 70.0 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 31.7 N·m at 187.1 ms
Min: -67.9 N·m at 70.5 ms

Transportation Research Center Inc.

Front Thorax
HIII 50th Serial No. 551 Certification No. 175-2
Test Date: 11/1/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.609 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,712.7 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-72.57 mm	Yes
Internal Hysteresis	65 - 85 %	69.8 %	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

11.01.2007 08:52:48 411

071214

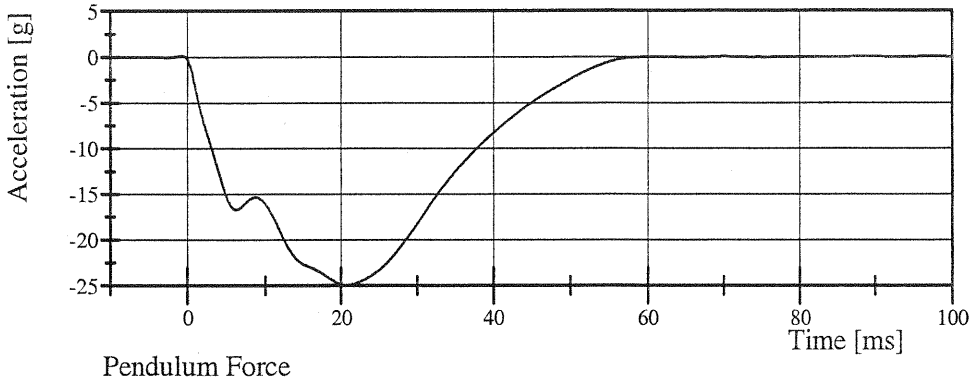
Transportation Research Center Inc.

Front Thorax

HIII 50th Serial No. 551 Certification No. 175-2

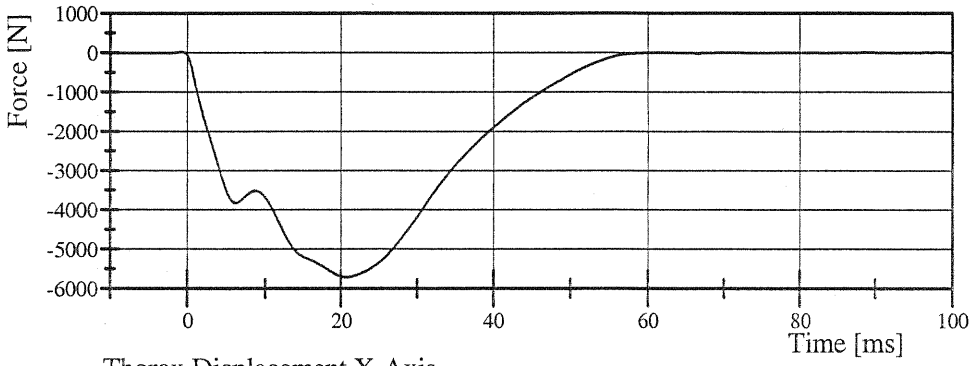
Test Date: 11/1/2007

Pendulum Acceleration



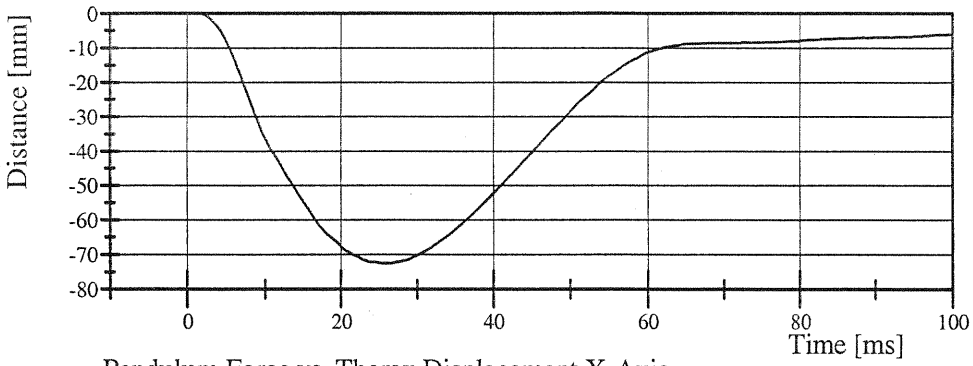
Filter Class: CFC_180
Max: 0.1 g at -0.7 ms
Min: -24.9 g at 20.7 ms

Pendulum Force



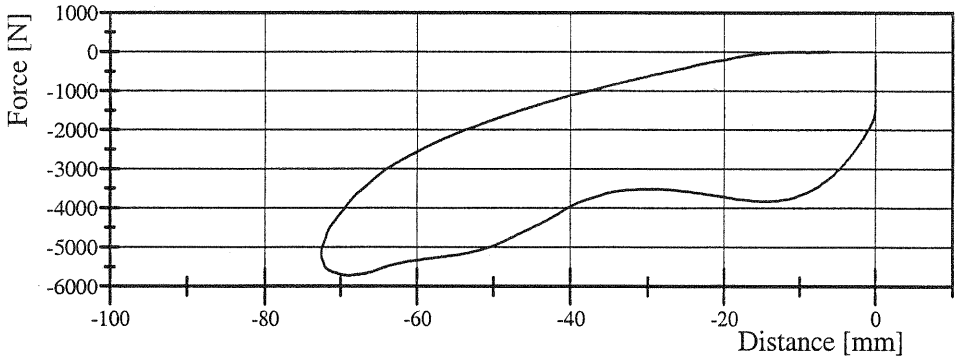
Filter Class: CFC_180
Max: 28.8 N at -0.7 ms
Min: -5,712.7 N at 20.7 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.0 mm at -9.0 ms
Min: -72.6 mm at 26.0 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 28.8 N at -0.0 mm
Min: -5,712.7 N at -69.0 mm

Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

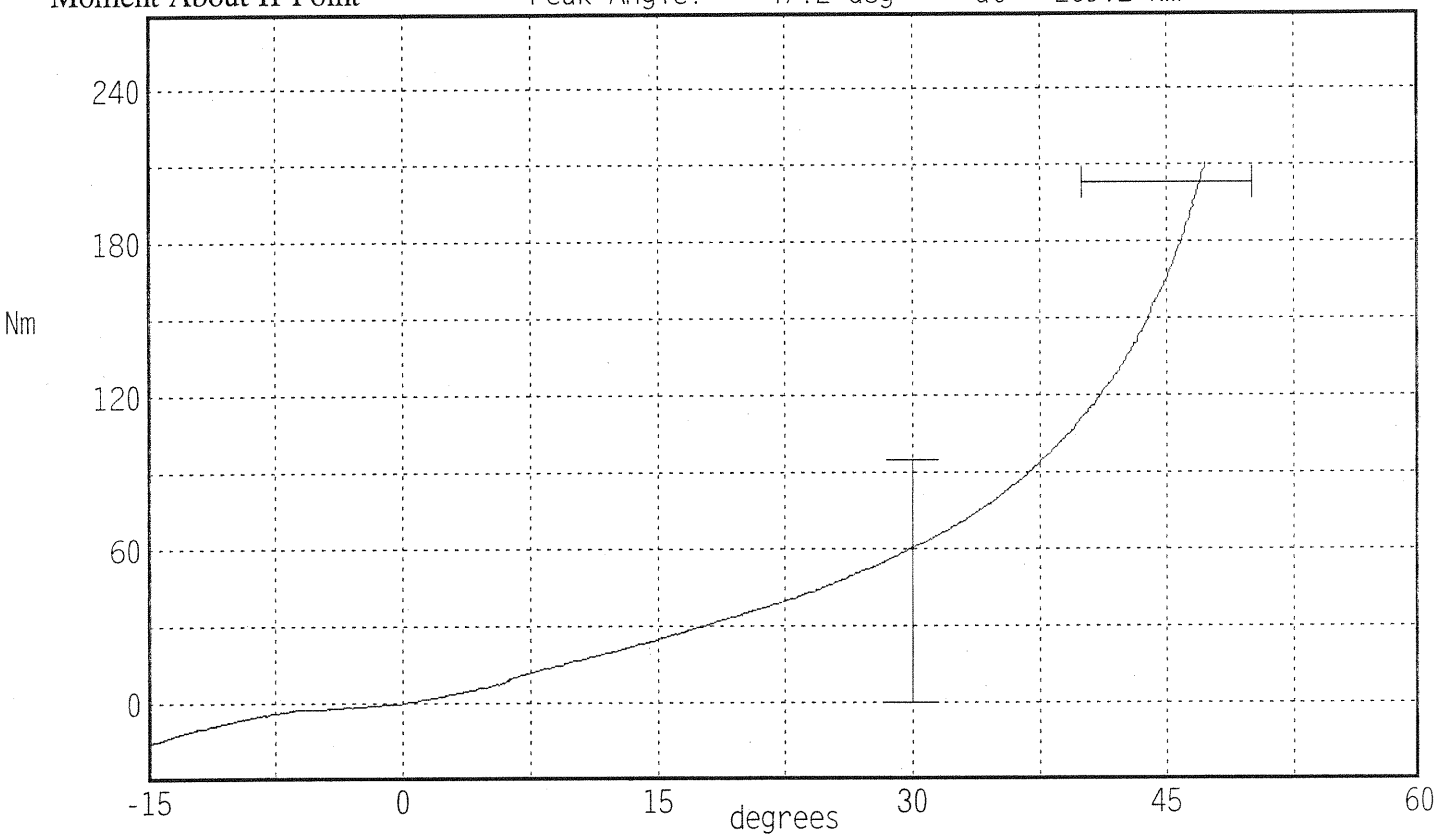
Serial Number: 551L
Test Number: 551C175
Comments:

Date: 10/30/2007
Time: 13:37

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	20.8	°C	Pass
Humidity	10 - 70	40	%	Pass
Moment at 30 deg	<= 94.9	60.6	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	47.1	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

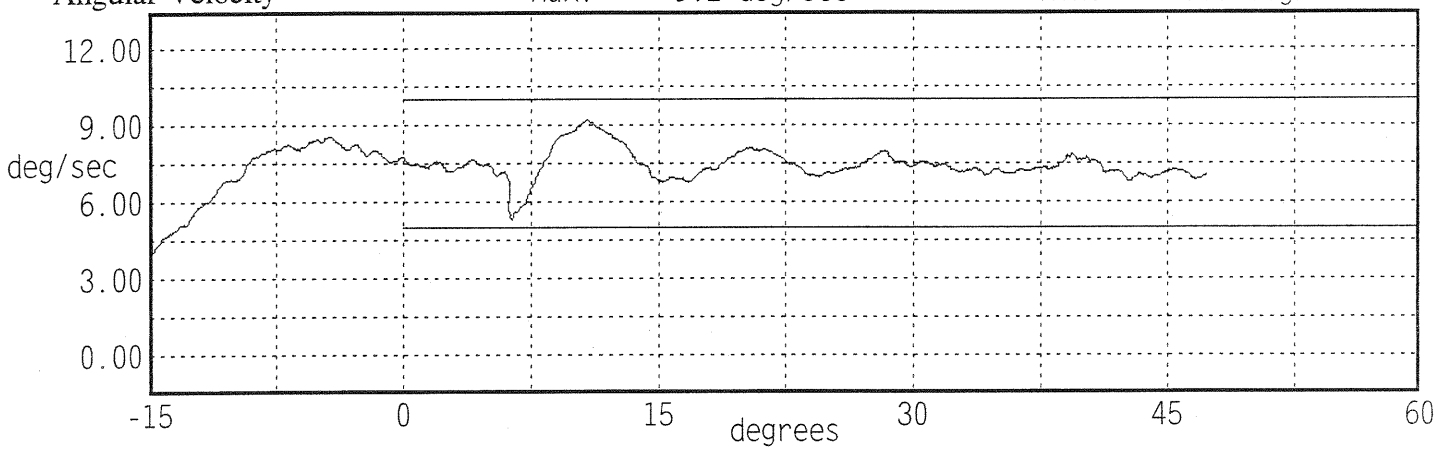
Moment About H-Point

Peak Moment: 210.7 Nm at 47.2 deg
Peak Angle: 47.2 deg at 209.2 Nm



Angular Velocity

Max: 9.2 deg/sec Min: 5.3 deg/sec



Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

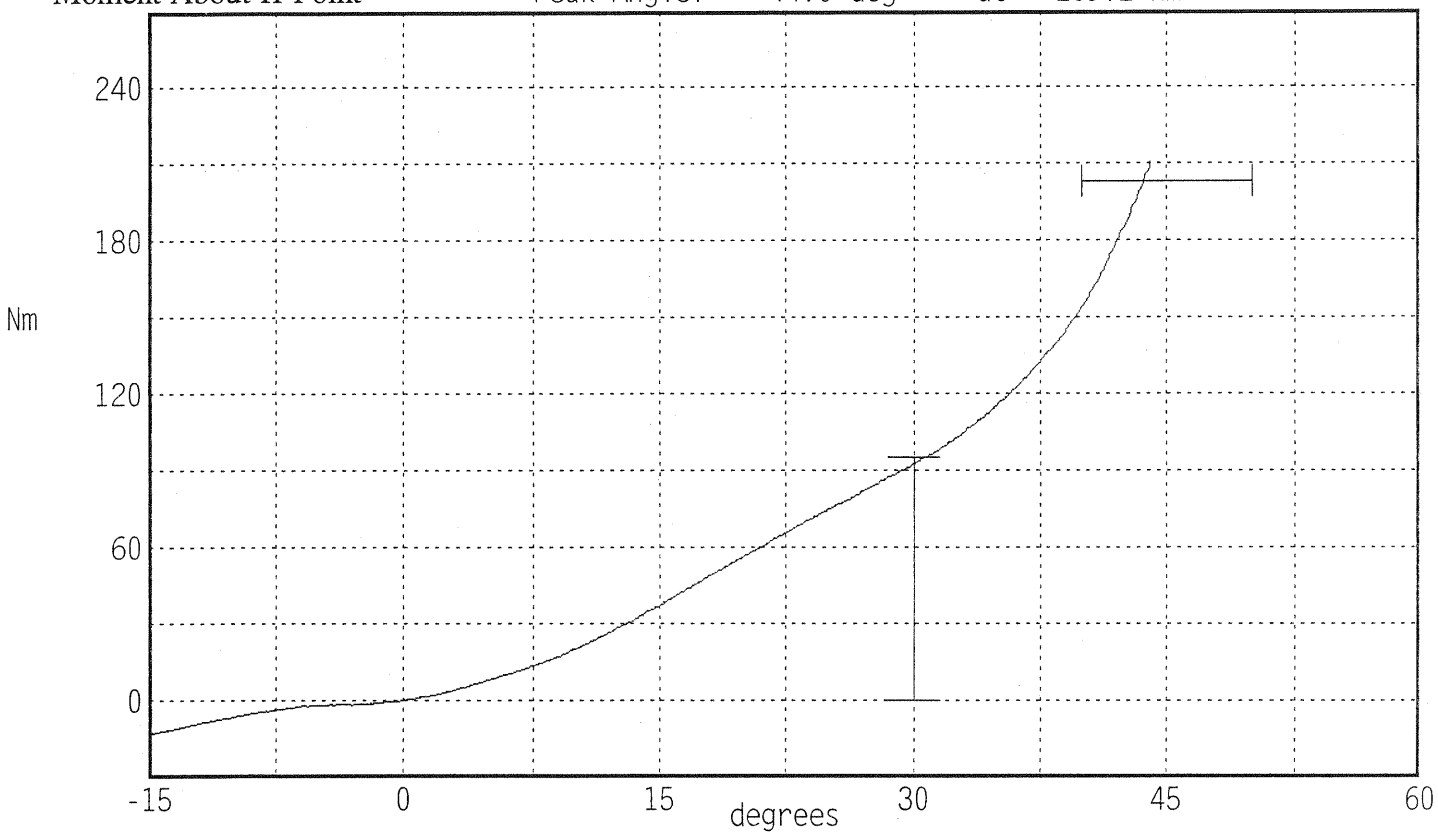
Serial Number: 551R
Test Number: 551C175
Comments:

Date: 10/30/2007
Time: 13:48

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	20.8	°C	Pass
Humidity	10 - 70	40	%	Pass
Moment at 30 deg	<= 94.9	92.4	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	43.7	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

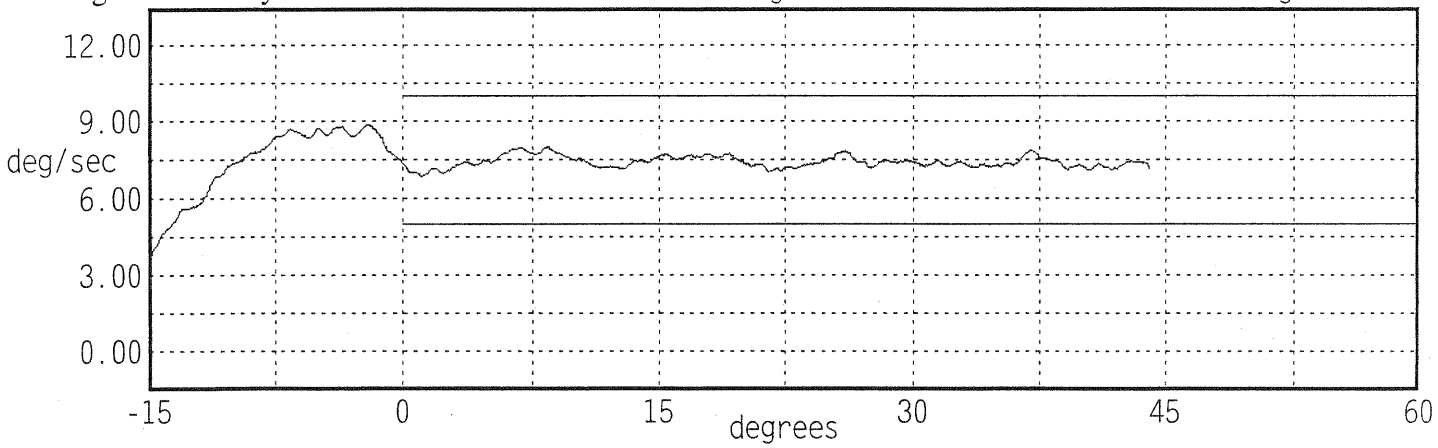
Moment About H-Point

Peak Moment: 210.3 Nm at 44.0 deg
Peak Angle: 44.0 deg at 209.2 Nm



Angular Velocity

Max: 8.0 deg/sec Min: 6.8 deg/sec



Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 551 Certification No. 175-1
Test Date: 10/31/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.088 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,197.89 N	Yes

Test meets specifications.

Comments:

Technician

Charles W. Hall

Approved

Ron Stonar

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

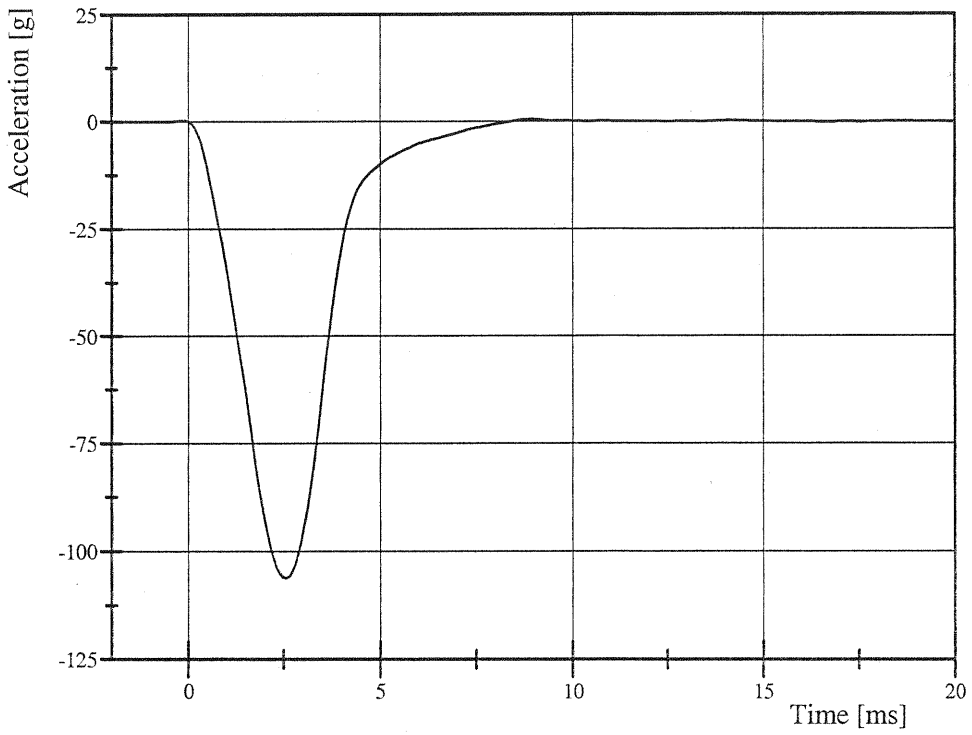
10.31.2007 08:02:31 1718

071214

Transportation Research Center Inc.

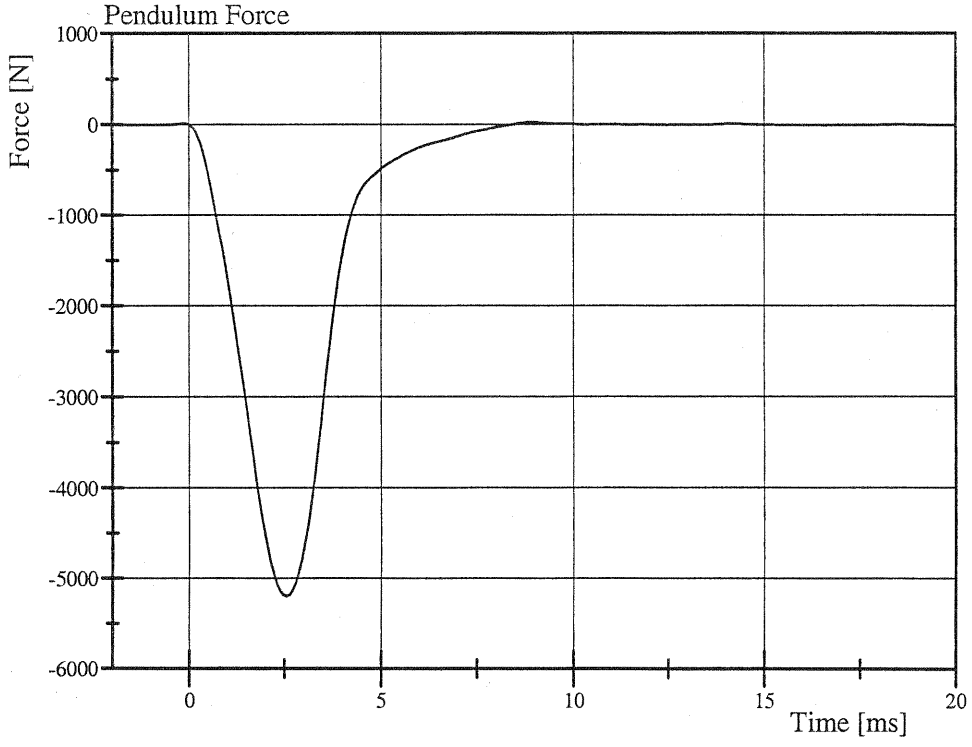
Left Knee Femur Response Test
HIII 50th Serial No. 551 Certification No. 175-1
Test Date: 10/31/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.5 g at 8.9 ms
Min: -106.2 g at 2.6 ms

Pendulum Force



Filter Class: CFC_600
Max: 24.1 N at 8.9 ms
Min: -5,197.9 N at 2.6 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.31.2007 08:02:41 1718

071214

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 551 Certification No. 175-1
Test Date: 10/31/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.091 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,022.79 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

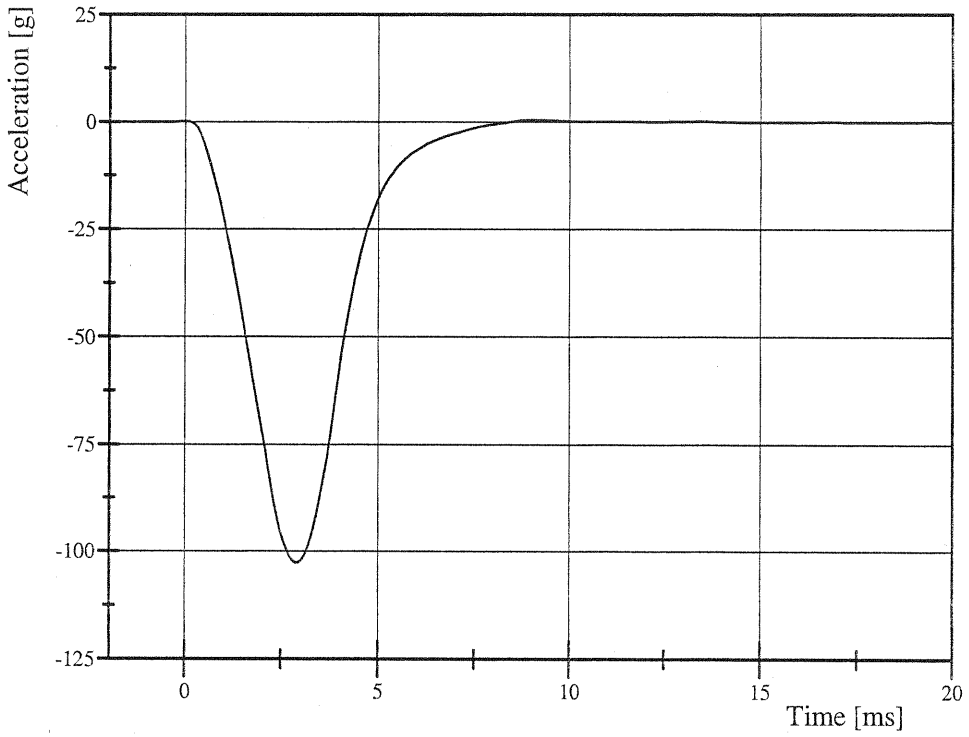
10.31.2007 08:05:39 1704

071214

Transportation Research Center Inc.

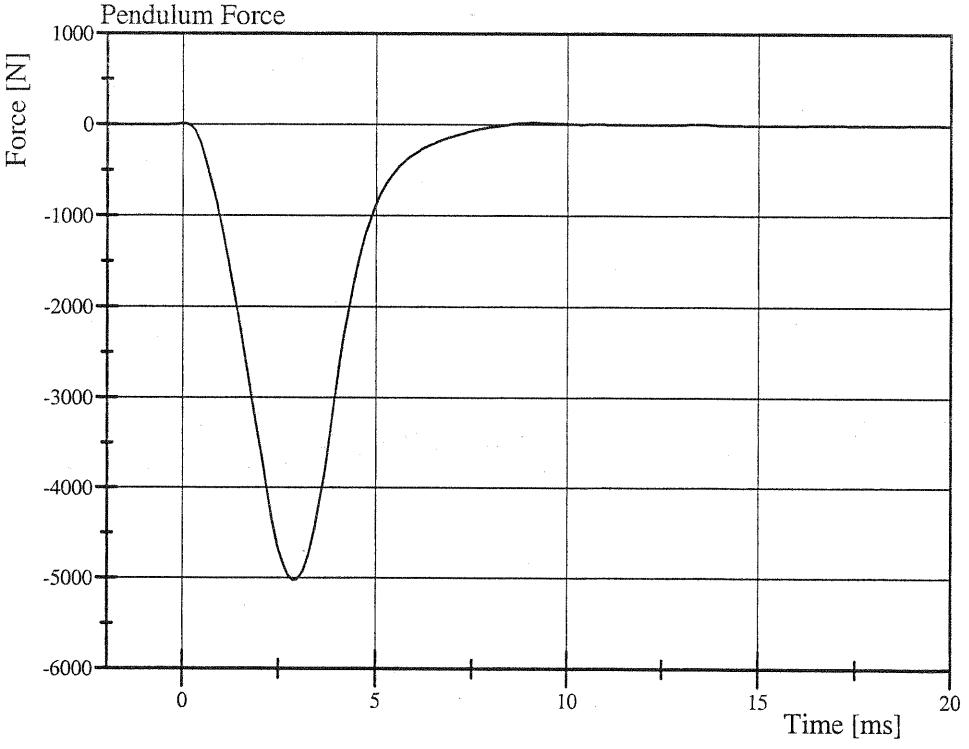
Right Knee Femur Response Test
HIII 50th Serial No. 551 Certification No. 175-1
Test Date: 10/31/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.5 g at 9.1 ms
Min: -102.7 g at 2.9 ms

Pendulum Force



Filter Class: CFC_600
Max: 22.2 N at 9.1 ms
Min: -5,022.8 N at 2.9 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.31.2007 08:05:48 1704

071214

Pre-Test Dummy Configuration and Performance Verification Data

Left Side Row 10 Right Seat Dummy S/N: 616

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 616 Calibration No. 159

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	882	Yes
B	Shoulder Pivot Height	505.5 - 520.7	508	Yes
C	H-Point Height	83.8 - 88.9	87	Yes
D	H-Point From Seatback	134.6 - 139.7	137	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	93	Yes
F	Thigh Clearance	139.7 - 154.9	150	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	292	Yes
H	Skull Cap To Backline	40.6 - 45.7	44	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	340	Yes
J	Elbow Rest Height	190.5 - 210.8	205	Yes
K	Buttock Knee Length	579.1 - 604.5	590	Yes
L	Popliteal Height	429.3 - 454.7	440	Yes
M	Knee Pivot Height	485.1 - 500.4	496	Yes
N	Buttock Popliteal Length	452.1 - 477.5	475	Yes
O	Chest Depth	213.4 - 228.6	215	Yes
P	Foot Length	251.5 - 266.7	262	Yes
V	Shoulder Breadth	421.6 - 436.9	425	Yes
W	Foot Breadth	91.4 - 106.7	101	Yes
Y	Chest Circumference	970.3 - 1000.8	997	Yes
Z	Waist Circumference	835.7 - 866.1	860	Yes
AA	Location For Chest Circumference	429.3 - 434.3	431	Yes
BB	Location For Waist Circumference	226.1 - 231.1	230	Yes

Technician

Charles W. Beck

Approved

Ron Stover

Transportation Research Center Inc.

Front Head Drop
HIII 50th Serial No. 616 Certification No. 159-1
Test Date: 11/9/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	253.8 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-2.6 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.09.2007 07:48:02 612

071214

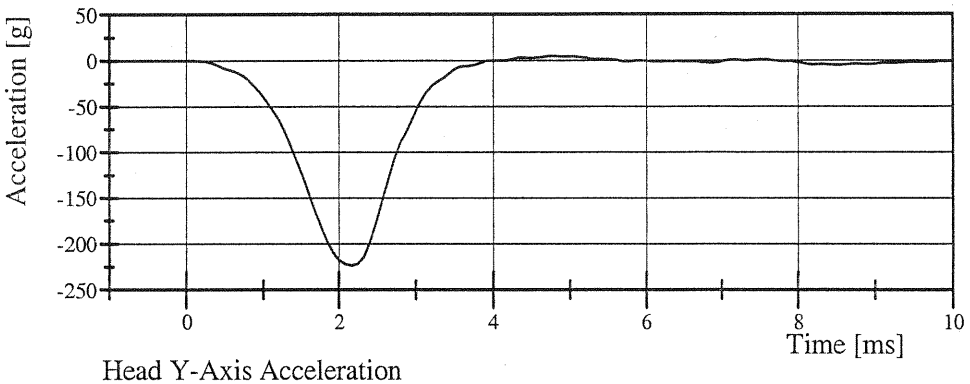
Transportation Research Center Inc.

Front Head Drop

HIII 50th Serial No. 616 Certification No. 159-1

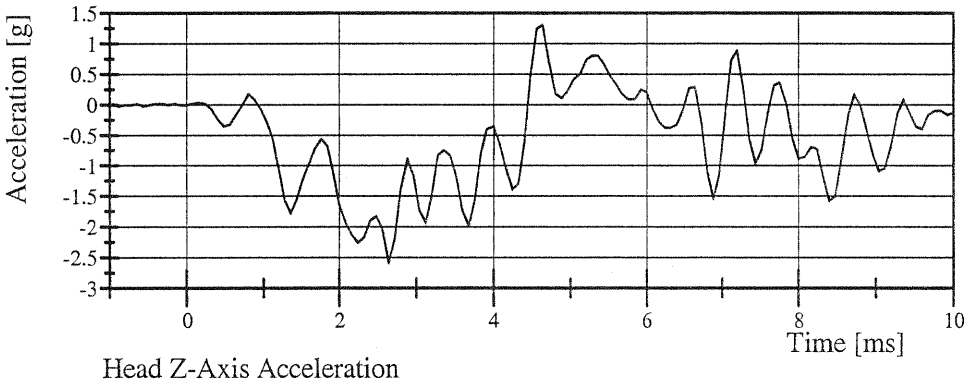
Test Date: 11/9/2007

Head X-Axis Acceleration



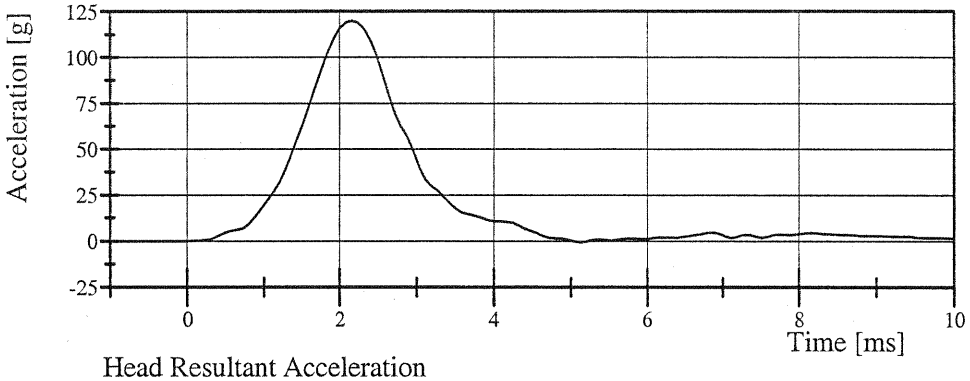
Filter Class: CFC_1000
Max: 5.0 g at 4.8 ms
Min: -223.7 g at 2.2 ms

Head Y-Axis Acceleration



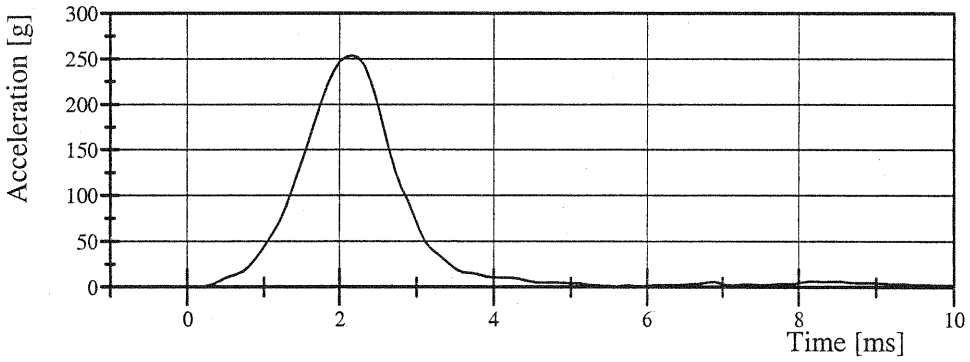
Filter Class: CFC_1000
Max: 1.3 g at 4.6 ms
Min: -2.6 g at 2.6 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 120.1 g at 2.2 ms
Min: -0.6 g at 5.1 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 253.8 g at 2.2 ms
Min: 0.1 g at -0.2 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.09.2007 07:48:12 612

Transportation Research Center Inc.

Neck Flexion
HIII 50th Serial No. 616 Certification No. 159-2
Test Date: 11/9/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.955 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	38.0 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-24.47 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-20.94 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-15.68 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-15.68 g	Yes
Total Head D-Plane Rotation			
Peak	(-64) - (-78) °	-72.2 °	Yes
Time of Peak	57 - 64 ms	61.4 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	121.8 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	88 - 108 N·m	88.9 N·m	Yes
Time of Peak	47 - 58 ms	50.3 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	99.7 ms	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

11.09.2007 12:06:22 2985

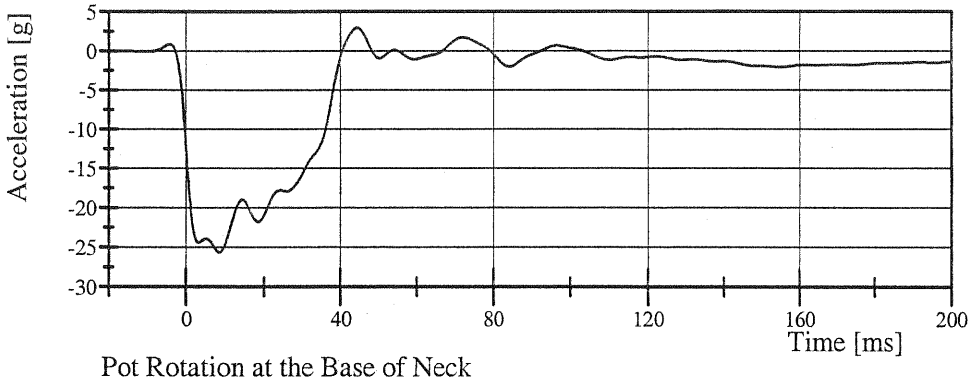
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 616 Certification No. 159-2

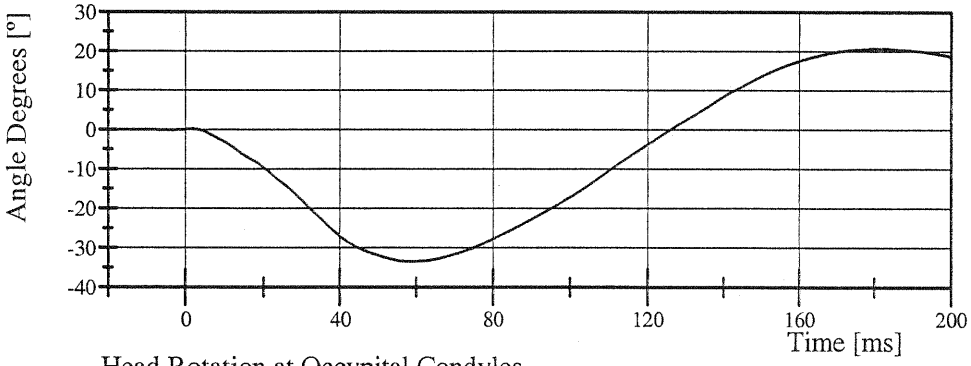
Test Date: 11/9/2007

Pendulum Acceleration



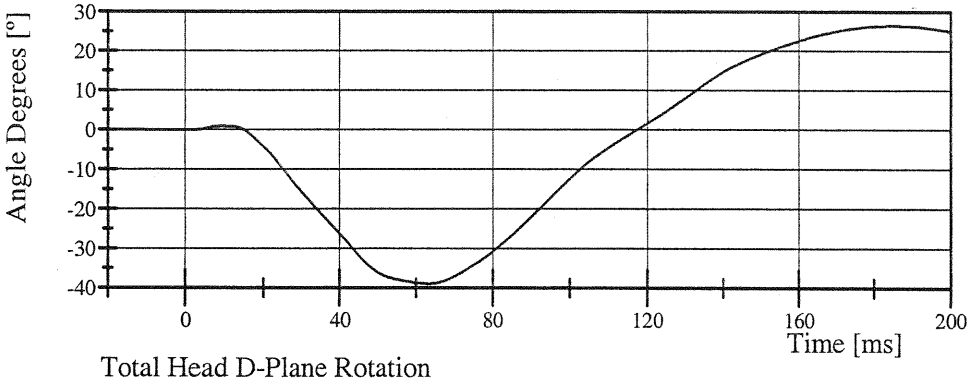
Filter Class: CFC_60
Max: 3.0 g at 44.3 ms
Min: -25.6 g at 8.4 ms

Pot Rotation at the Base of Neck



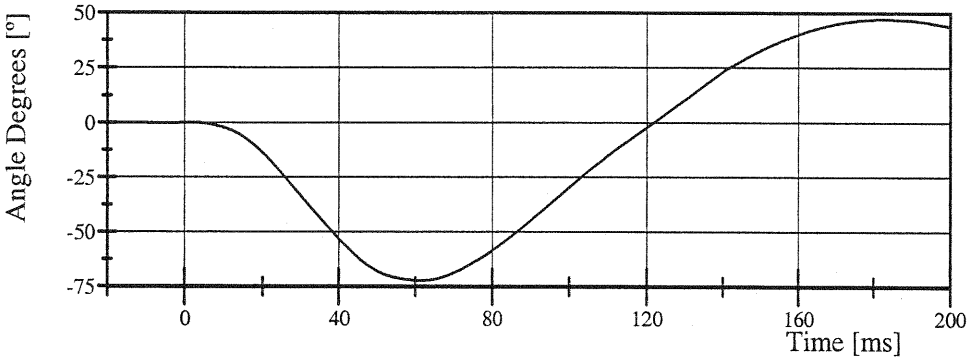
Filter Class: CFC_60
Max: 20.8 ° at 181.6 ms
Min: -33.5 ° at 58.6 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 26.5 ° at 184.9 ms
Min: -38.9 ° at 63.3 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 47.2 ° at 182.8 ms
Min: -72.2 ° at 61.4 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.09.2007 12:06:30 2985

071214

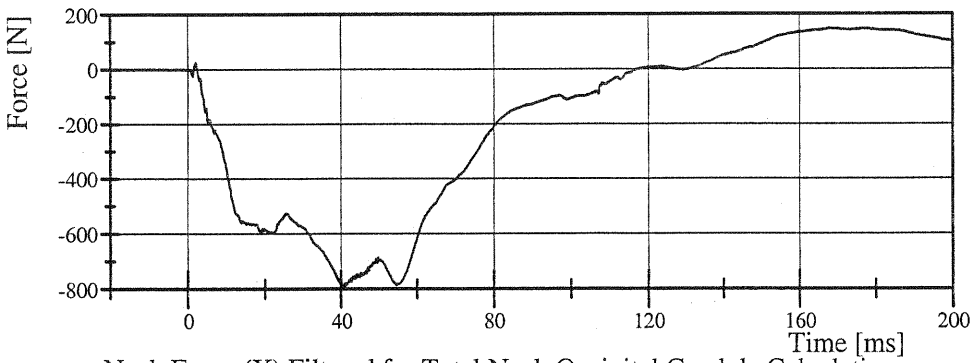
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 616 Certification No. 159-2

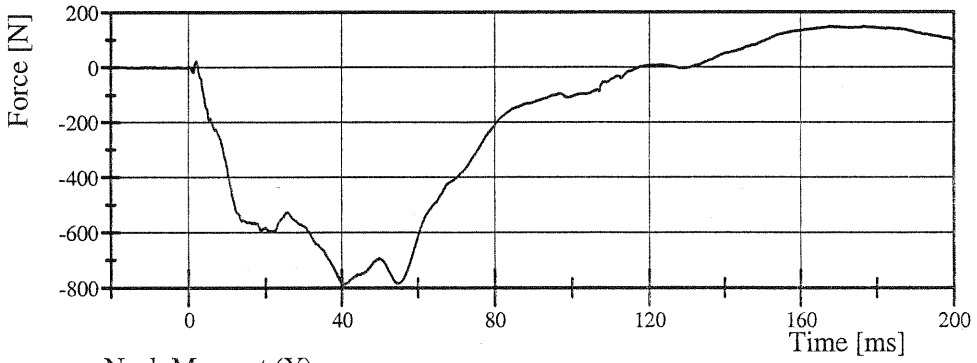
Test Date: 11/9/2007

Neck Force (X)



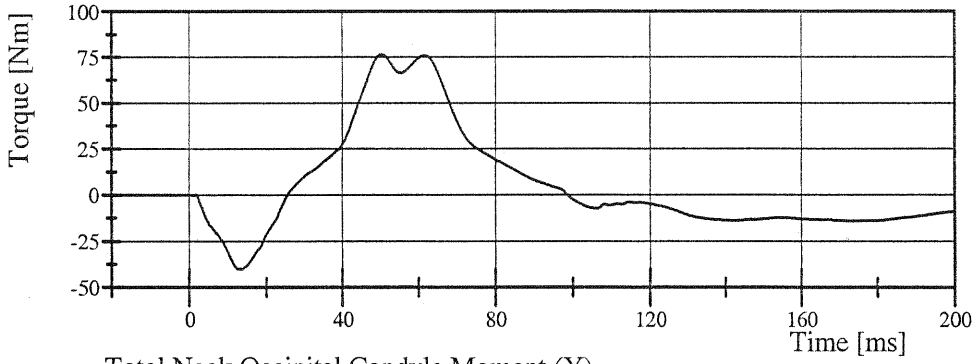
Filter Class: CFC_1000
Max: 148.3 N at 176.6 ms
Min: -793.5 N at 40.5 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



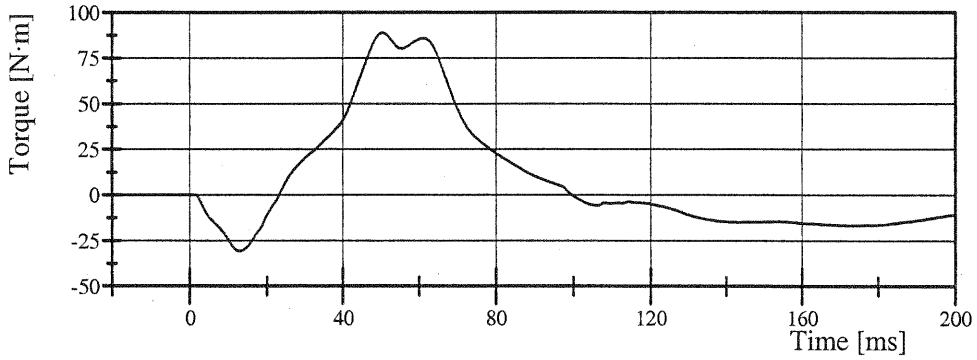
Filter Class: CFC_600
Max: 147.9 N at 176.6 ms
Min: -789.5 N at 40.4 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 76.6 Nm at 50.2 ms
Min: -40.2 Nm at 13.5 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 88.9 N·m at 50.3 ms
Min: -30.6 N·m at 12.6 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.09.2007 12:06:31 2985

071214

Transportation Research Center Inc.

Neck Extension
HIII 50th Serial No. 616 Certification No. 159-1
Test Date: 11/9/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-6.000 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	41.6 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	19.09 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	15.61 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	13.93 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	13.93 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	95.1 °	Yes
Time of Peak	72 - 82 ms	77.2 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	159.7 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-53) - (-80) N·m	-67.5 N·m	Yes
Time of Peak	65 - 79 ms	71.9 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	142.9 ms	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

11.09.2007 12:27:31 3064

071214

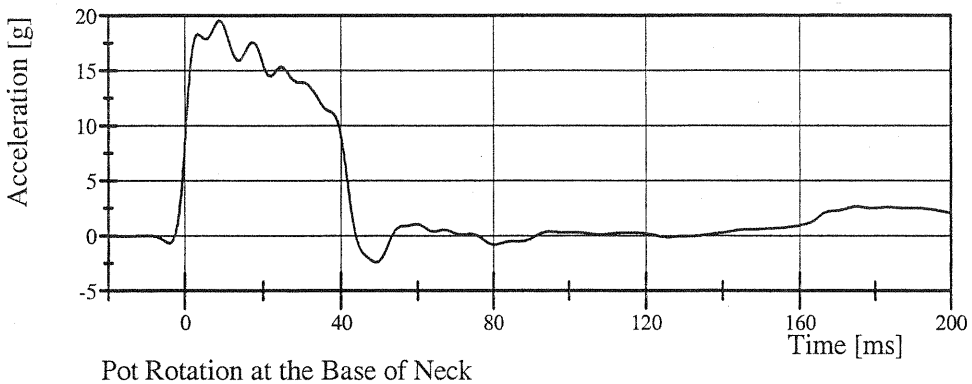
Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 616 Certification No. 159-1

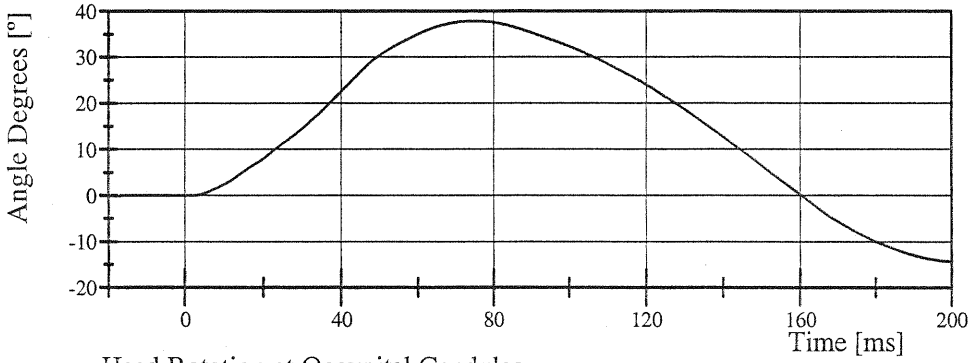
Test Date: 11/9/2007

Pendulum Acceleration



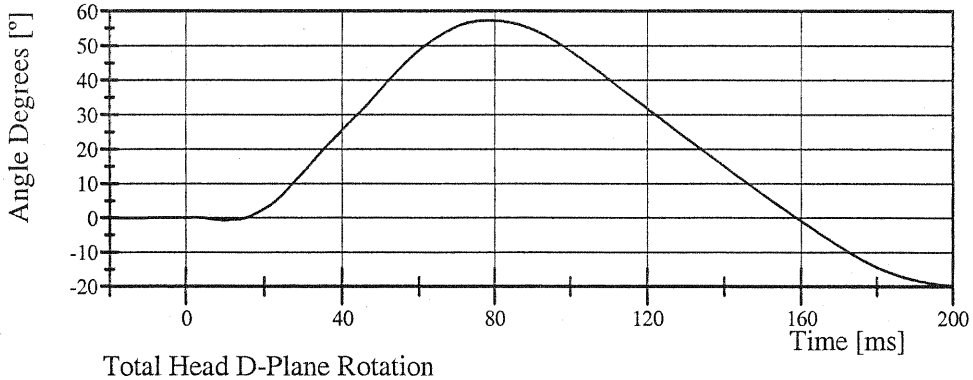
Filter Class: CFC_60
Max: 19.6 g at 8.9 ms
Min: -2.4 g at 49.0 ms

Pot Rotation at the Base of Neck



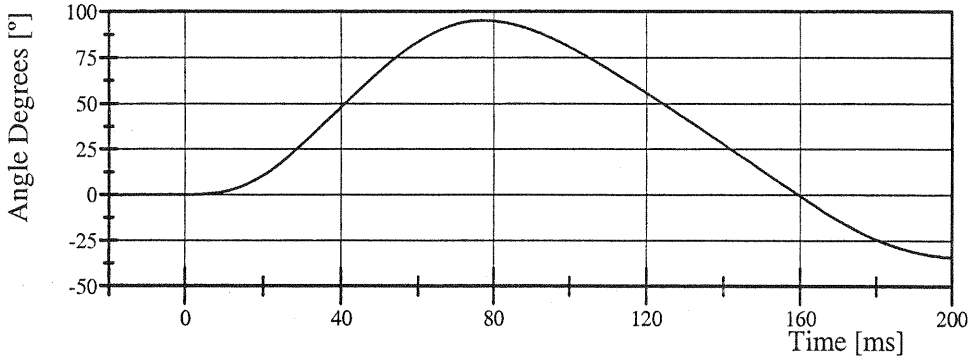
Filter Class: CFC_60
Max: 37.8 ° at 75.0 ms
Min: -14.4 ° at 200.0 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 57.3 ° at 78.4 ms
Min: -19.7 ° at 200.0 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 95.1 ° at 77.2 ms
Min: -34.1 ° at 200.0 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.09.2007 12:27:40 3064

071214

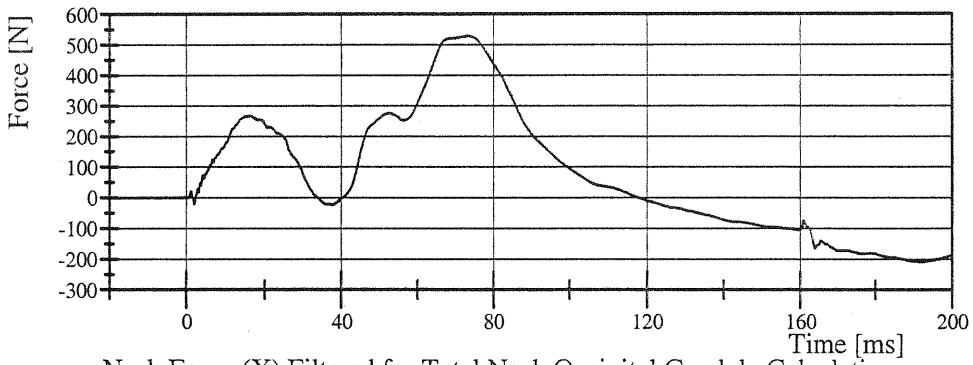
Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 616 Certification No. 159-1

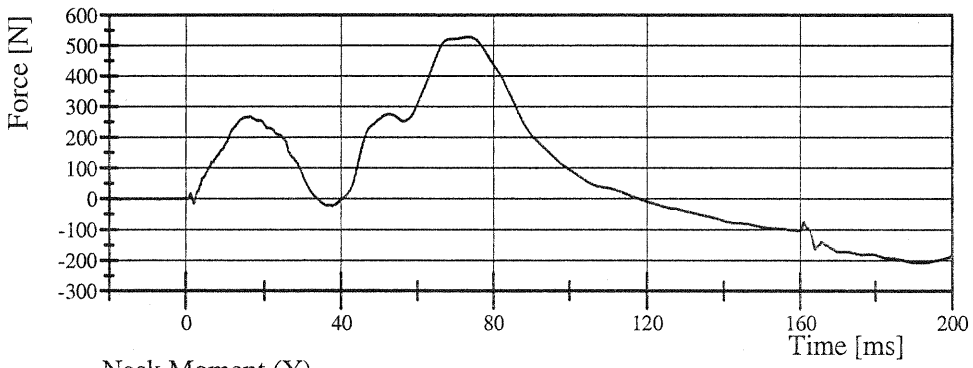
Test Date: 11/9/2007

Neck Force (X)



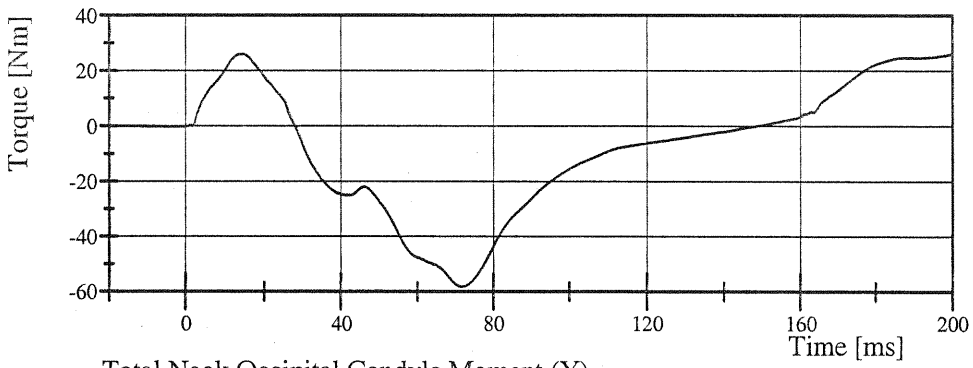
Filter Class: CFC_1000
Max: 529.4 N at 73.7 ms
Min: -209.0 N at 191.4 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



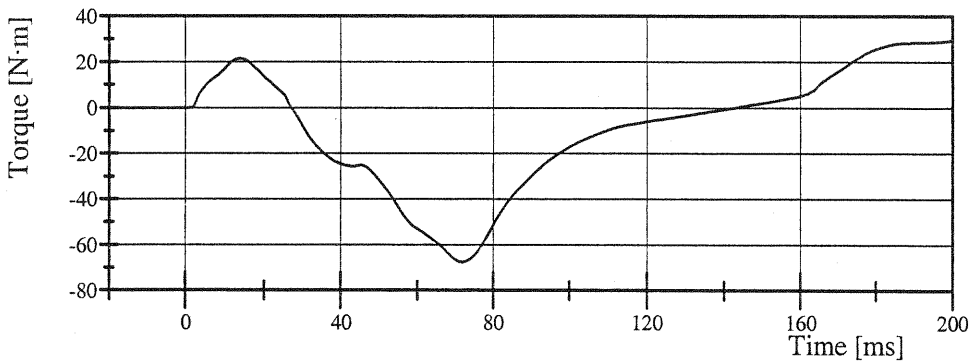
Filter Class: CFC_600
Max: 528.8 N at 73.6 ms
Min: -208.6 N at 192.2 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 26.1 Nm at 14.2 ms
Min: -58.2 Nm at 71.9 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 29.3 N·m at 200.0 ms
Min: -67.5 N·m at 71.9 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.09.2007 12:27:42 3064

071214

Transportation Research Center Inc.

Front Thorax
HIII 50th Serial No. 616 Certification No. 159-1
Test Date: 11/9/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.607 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,836.0 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-64.61 mm	Yes
Internal Hysteresis	65 - 85 %	75.3 %	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

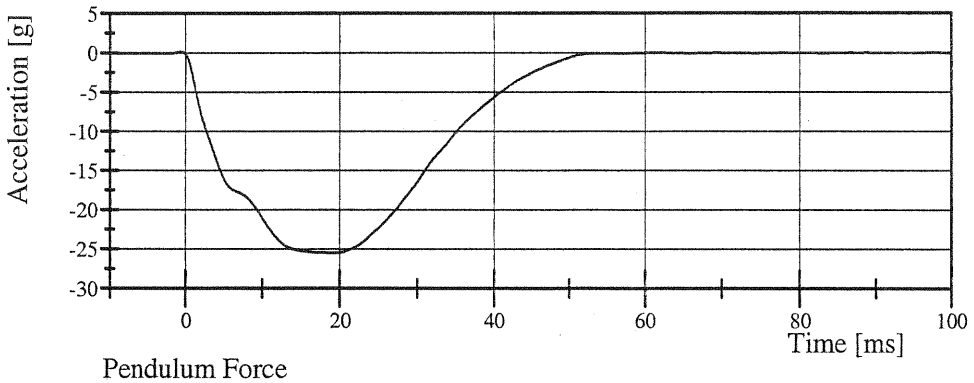
11.09.2007 14:07:21 416

071214

Transportation Research Center Inc.

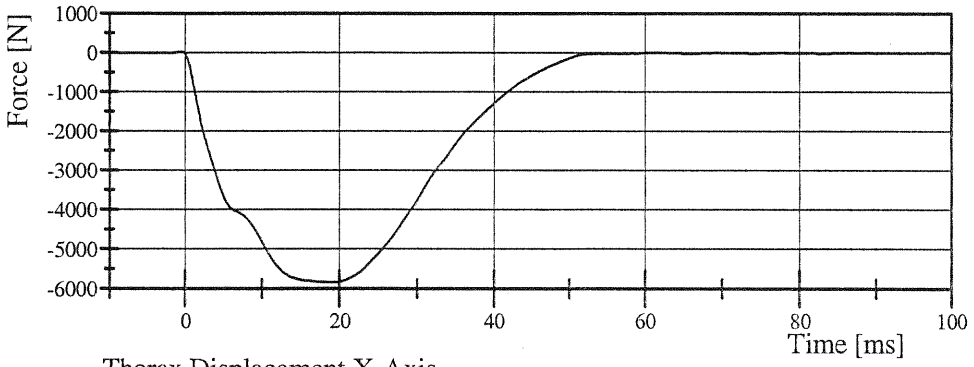
Front Thorax
HIII 50th Serial No. 616 Certification No. 159-1
Test Date: 11/9/2007

Pendulum Acceleration



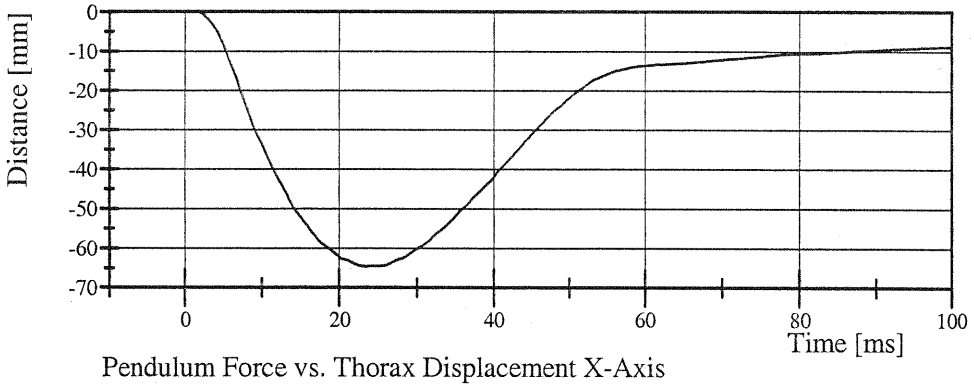
Filter Class: CFC_180
Max: 0.1 g at -0.6 ms
Min: -25.5 g at 19.0 ms

Pendulum Force



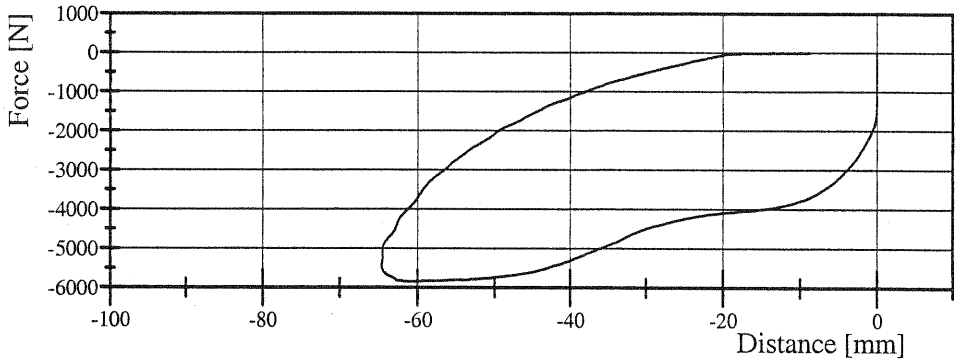
Filter Class: CFC_180
Max: 28.7 N at -0.6 ms
Min: -5,836.0 N at 19.0 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.0 mm at -4.9 ms
Min: -64.6 mm at 23.4 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 28.7 N at 0.0 mm
Min: -5,836.0 N at -60.6 mm

Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

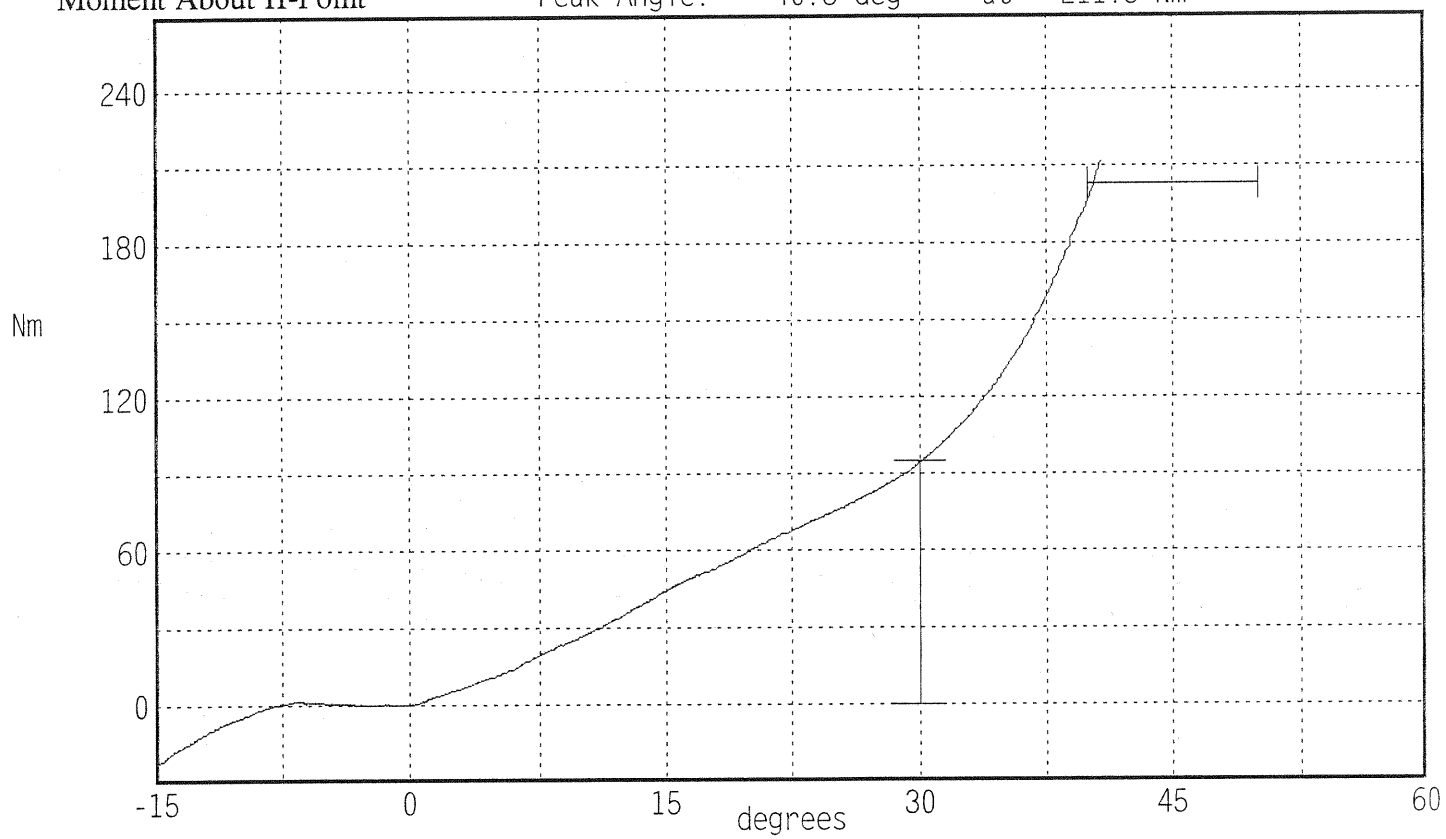
Serial Number: 616L
Test Number: 616C159
Comments:

Date: 11/09/2007
Time: 11:09

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	20.8	°C	Pass
Humidity	10 - 70	39	%	Pass
Moment at 30 deg	<= 94.9	94.7	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	40.4	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

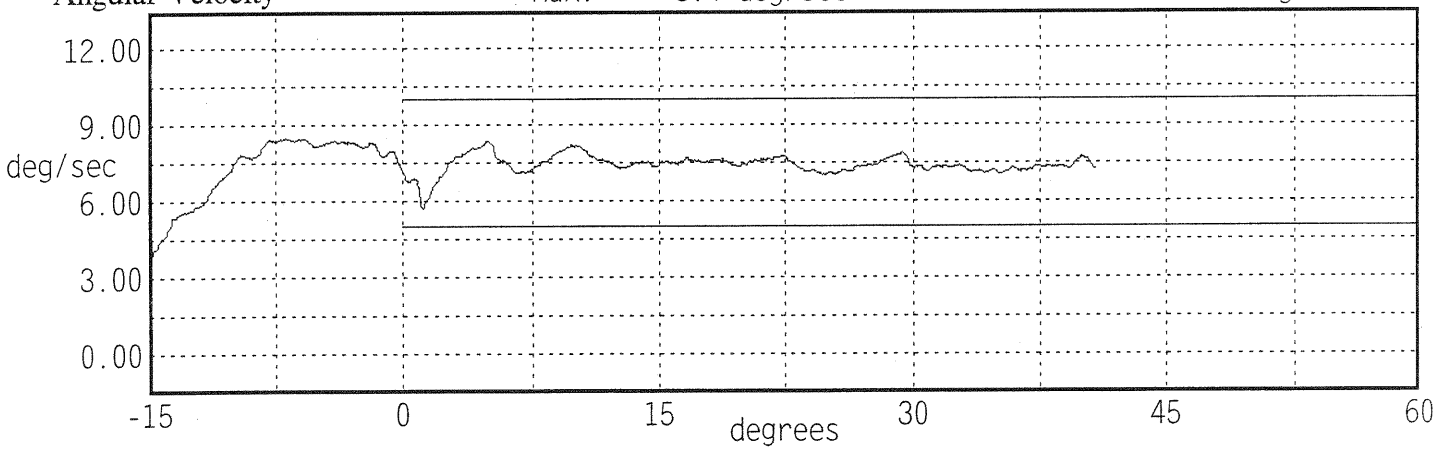
Moment About H-Point

Peak Moment: 211.3 Nm at 40.8 deg
Peak Angle: 40.8 deg at 211.3 Nm



Angular Velocity

Max: 8.4 deg/sec Min: 5.7 deg/sec



Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

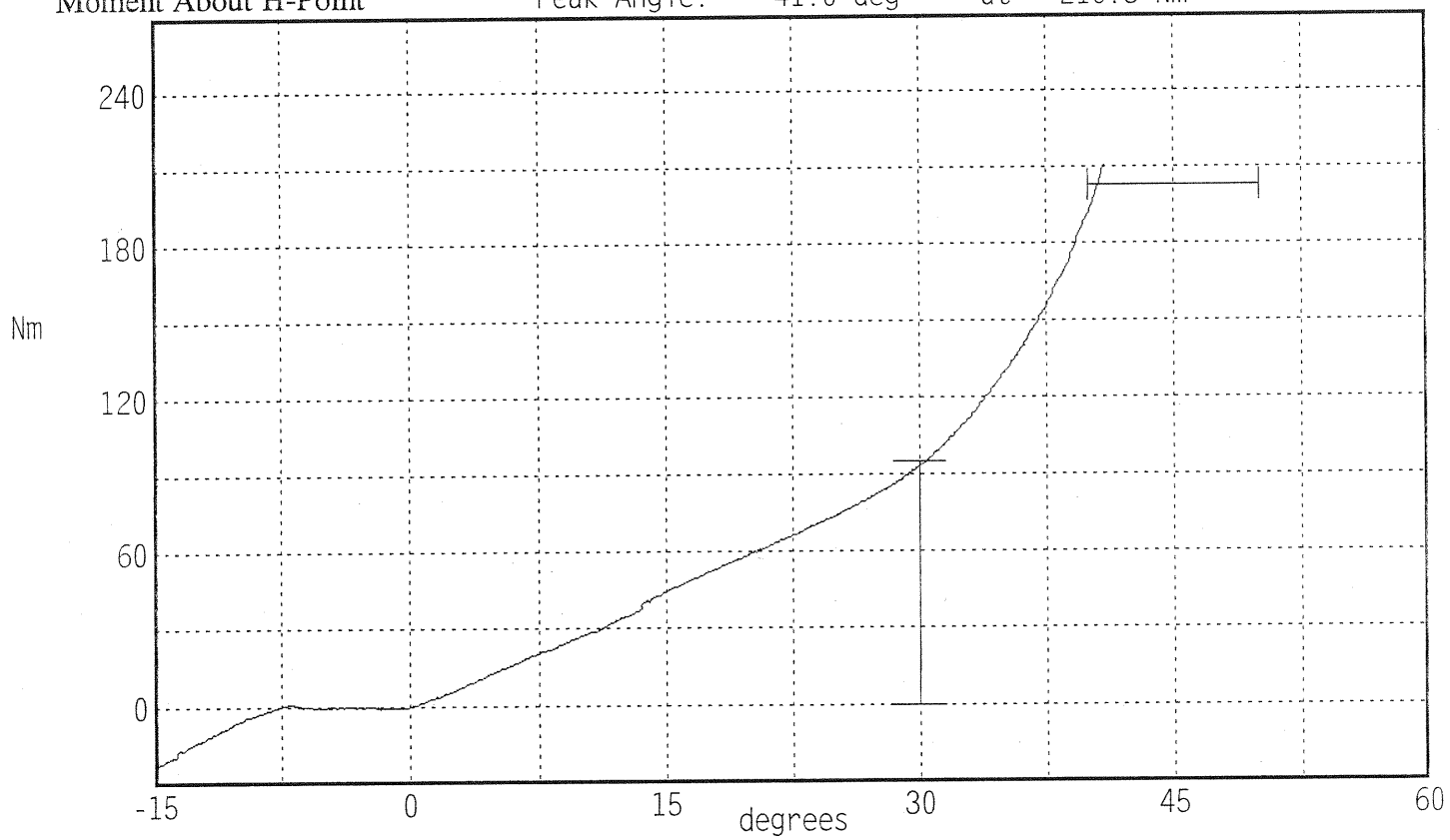
Serial Number: 616R
Test Number: 616C159
Comments:

Date: 11/09/2007
Time: 11:31

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.7	°C	Pass
Humidity	10 - 70	38	%	Pass
Moment at 30 deg	<= 94.9	93.3	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	40.6	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

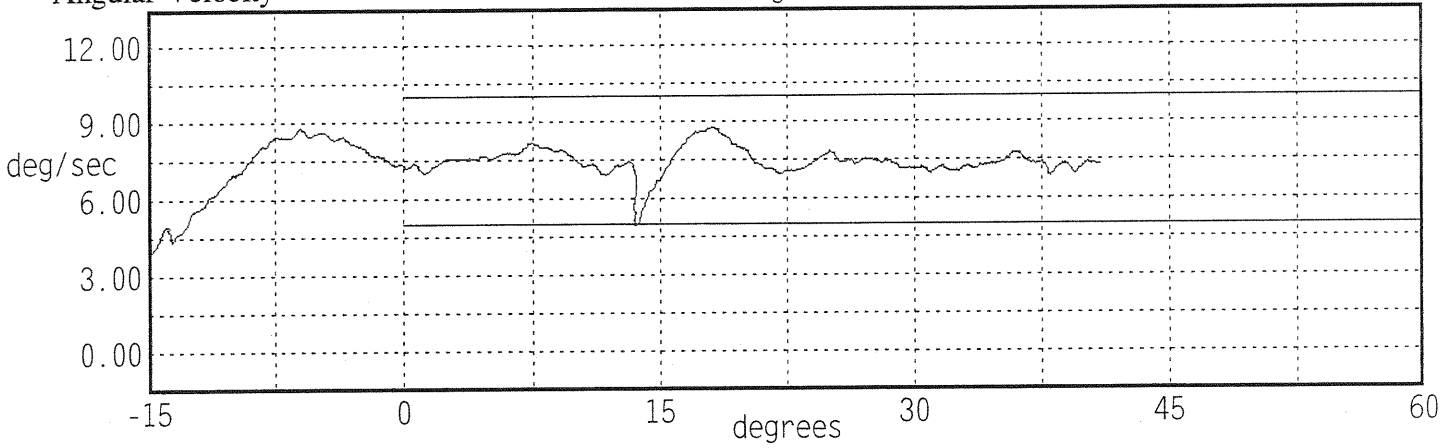
Moment About H-Point

Peak Moment: 210.3 Nm at 41.0 deg
Peak Angle: 41.0 deg at 210.3 Nm



Angular Velocity

Max: 8.8 deg/sec Min: 4.9 deg/sec



Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 616 Certification No. 159-1
Test Date: 11/7/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.090 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,347.48 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

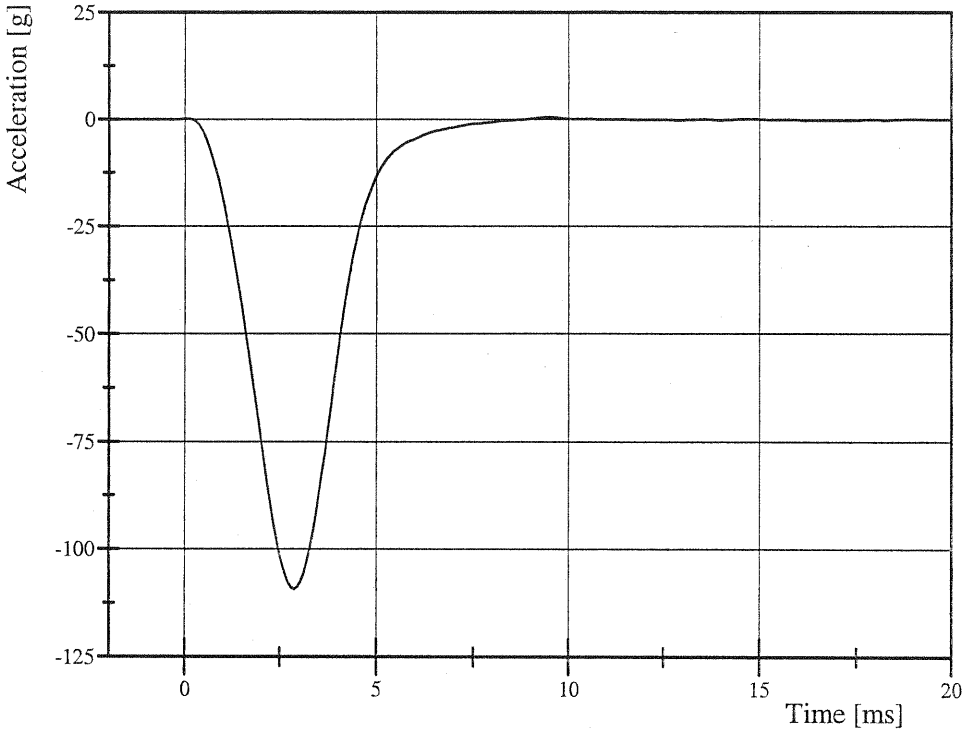
11.07.2007 10:55:17 1723

071214

Transportation Research Center Inc.

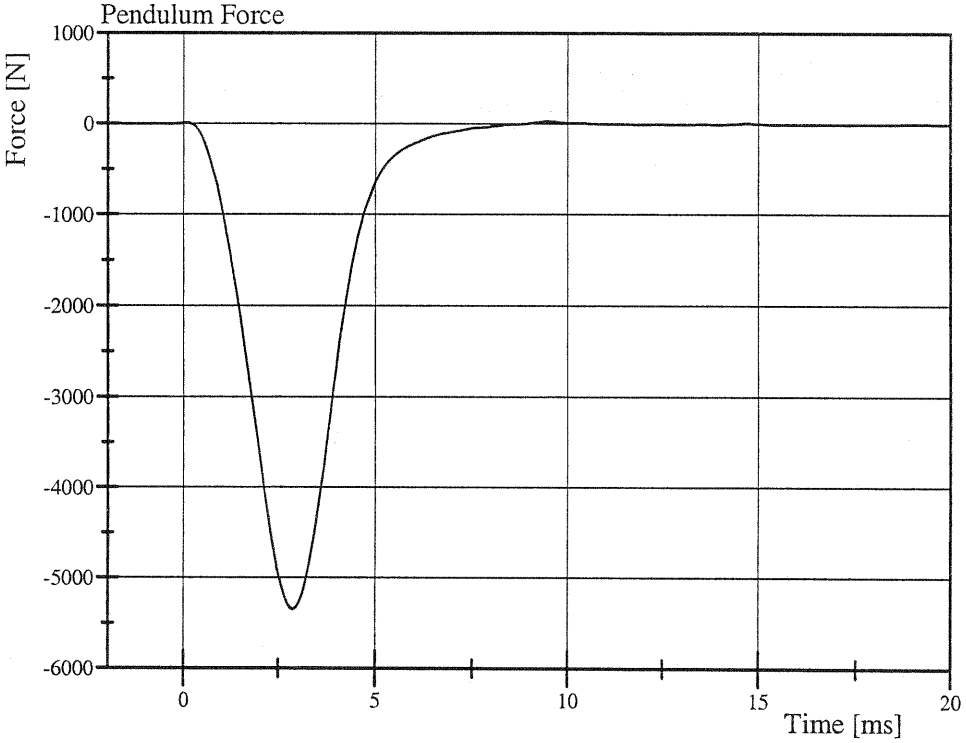
Left Knee Femur Response Test
HIII 50th Serial No. 616 Certification No. 159-1
Test Date: 11/7/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.6 g at 9.5 ms
Min: -109.3 g at 2.9 ms

Pendulum Force



Filter Class: CFC_600
Max: 27.1 N at 9.5 ms
Min: -5,347.5 N at 2.9 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.07.2007 10:55:24 1723

071214

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 616 Certification No. 159-1
Test Date: 11/7/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.090 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,221.09 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

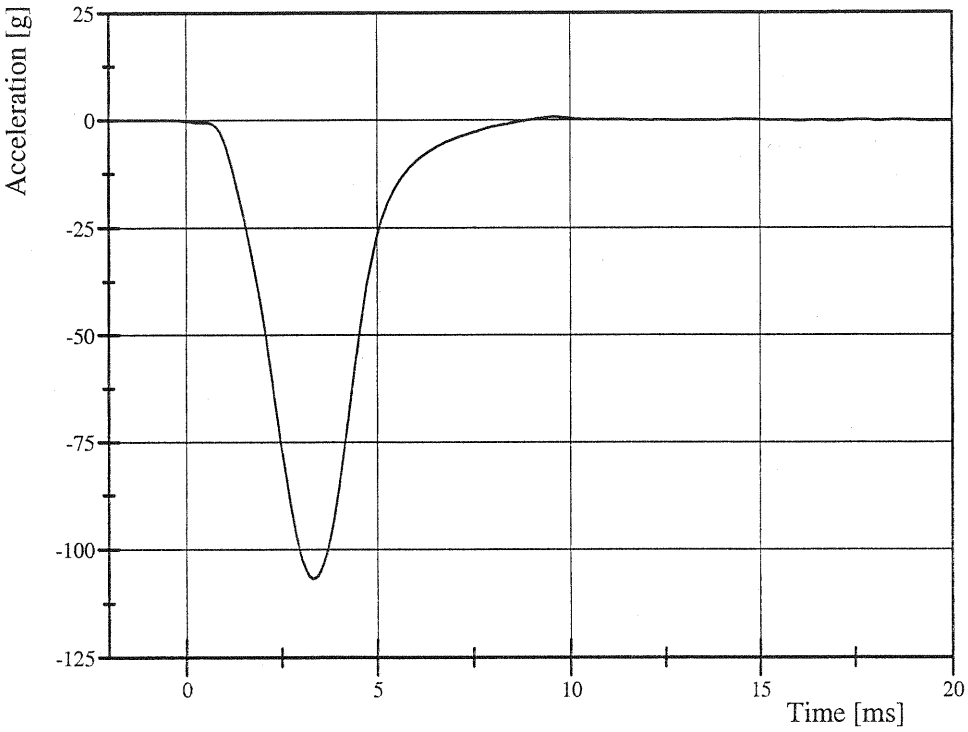
11.07.2007 11:05:10 1710

071214

Transportation Research Center Inc.

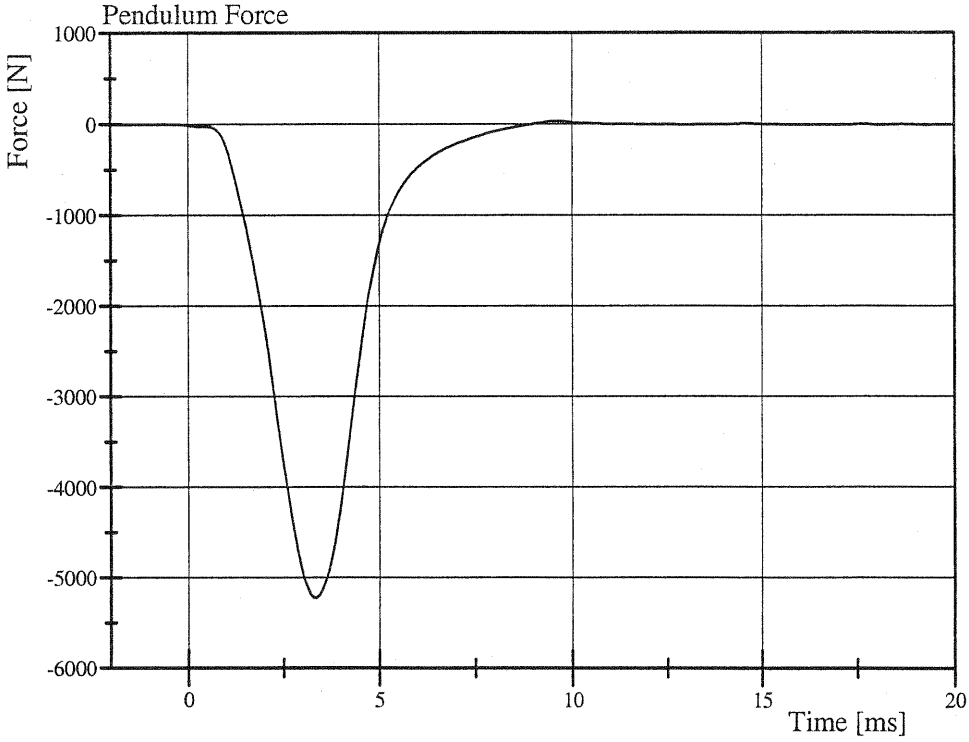
Right Knee Femur Response Test
HIII 50th Serial No. 616 Certification No. 159-1
Test Date: 11/7/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.7 g at 9.6 ms
Min: -106.7 g at 3.4 ms

Pendulum Force



Filter Class: CFC_600
Max: 34.2 N at 9.6 ms
Min: -5,221.1 N at 3.4 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.07.2007 11:05:17 1710

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Pre-Test Dummy Configuration and Performance Verification Data

Right Side Row 11 Left Seat Dummy S/N: 617

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 617
Calibration No. 140

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	880	Yes
B	Shoulder Pivot Height	505.5 - 520.7	507	Yes
C	H-Point Height	83.8 - 88.9	88	Yes
D	H-Point From Seatback	134.6 - 139.7	136	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	90	Yes
F	Thigh Clearance	139.7 - 154.9	153	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	290	Yes
H	Skull Cap To Backline	40.6 - 45.7	44	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	332	Yes
J	Elbow Rest Height	190.5 - 210.8	197	Yes
K	Buttock Knee Length	579.1 - 604.5	583	Yes
L	Popliteal Height	429.3 - 454.7	448	Yes
M	Knee Pivot Height	485.1 - 500.4	487	Yes
N	Buttock Popliteal Length	452.1 - 477.5	462	Yes
O	Chest Depth	213.4 - 228.6	214	Yes
P	Foot Length	251.5 - 266.7	260	Yes
V	Shoulder Breadth	421.6 - 436.9	428	Yes
W	Foot Breadth	91.4 - 106.7	95	Yes
Y	Chest Circumference	970.3 - 1000.8	988	Yes
Z	Waist Circumference	835.7 - 866.1	857	Yes
AA	Location For Chest Circumference	429.3 - 434.3	430	Yes
BB	Location For Waist Circumference	226.1 - 231.1	230	Yes

Comment:

Technician

Approved

Transportation Research Center Inc.

Front Head Drop
HIII 50th Serial No. 617 Certification No. 140-1
Test Date: 11/30/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	274.3 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-3.9 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Approved

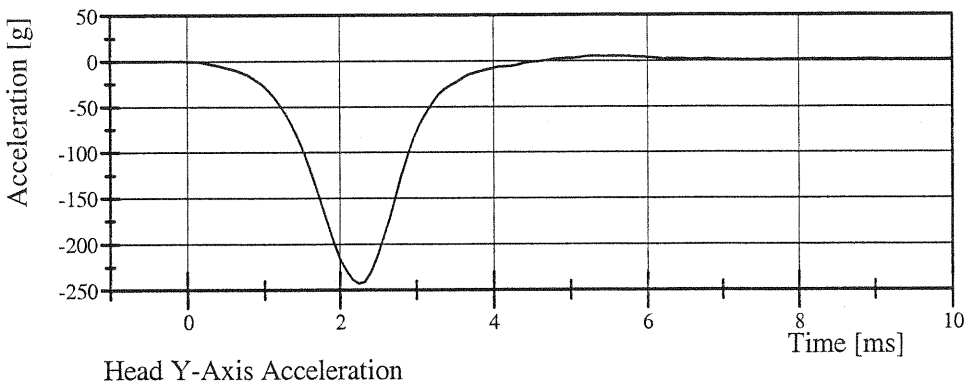
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.30.2007 07:54:50 611

Transportation Research Center Inc.

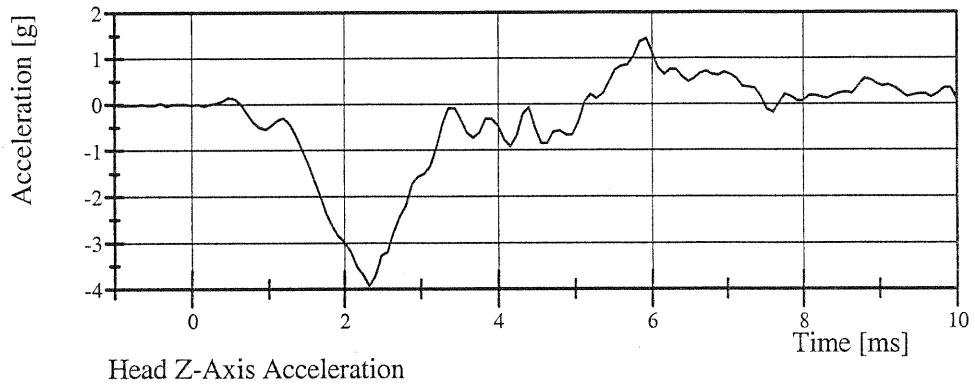
Front Head Drop
HIII 50th Serial No. 617 Certification No. 140-1
Test Date: 11/30/2007

Head X-Axis Acceleration



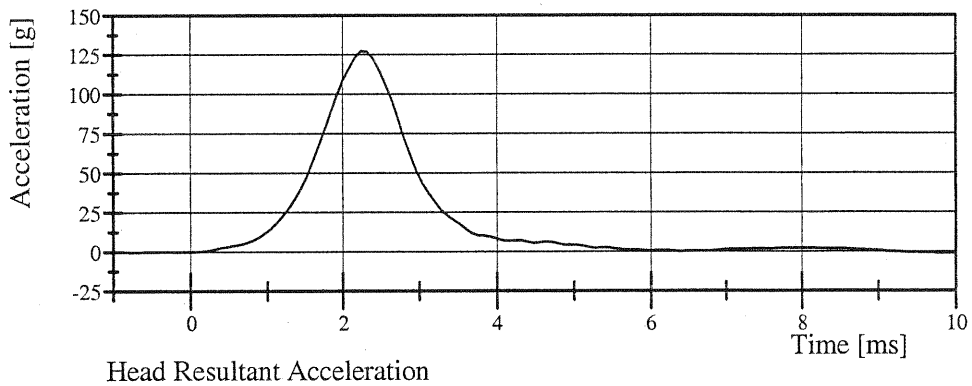
Filter Class: CFC_1000
Max: 5.4 g at 5.6 ms
Min: -242.9 g at 2.2 ms

Head Y-Axis Acceleration



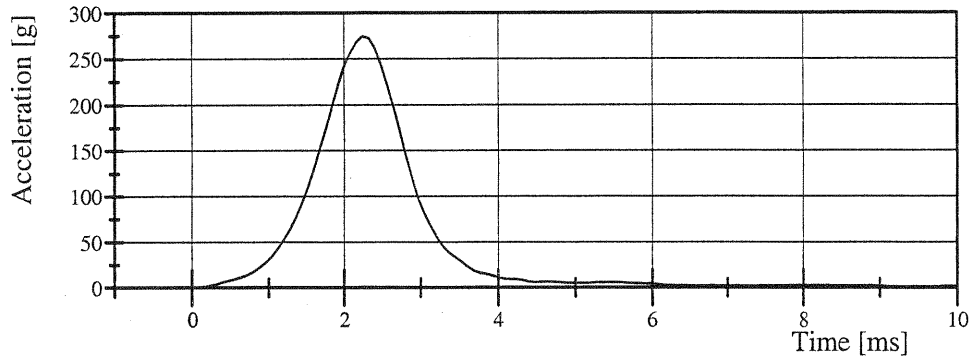
Filter Class: CFC_1000
Max: 1.4 g at 5.9 ms
Min: -3.9 g at 2.3 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 127.4 g at 2.2 ms
Min: -1.0 g at 9.9 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 274.3 g at 2.2 ms
Min: 0.0 g at -0.6 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.30.2007 07:54:57 611

071214

Transportation Research Center Inc.

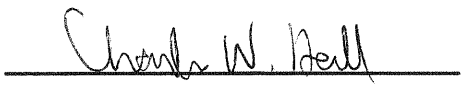
Neck Flexion
HIII 50th Serial No. 617 Certification No. 140-2
Test Date: 11/30/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.991 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	38.4 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-24.04 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-20.50 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-16.36 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-16.36 g	Yes
Total Head D-Plane Rotation Peak	(-64) - (-78) °	-70.9 °	Yes
Total Head D-Plane Rotation Time of Peak	57 - 64 ms	60.6 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	120.1 ms	Yes
Total Neck Occipital Condyles Moment Peak	88 - 108 N·m	97.8 N·m	Yes
Total Neck Occipital Condyles Moment Time of Peak	47 - 58 ms	50.6 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	99.5 ms	Yes

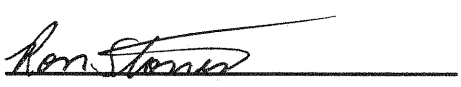
Test meets specifications.

Comments:

Technician



Approved



Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.30.2007 10:37:08 2974

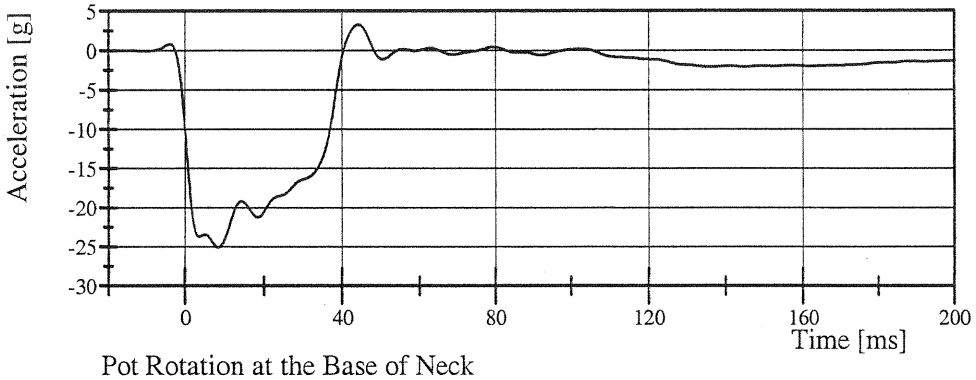
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 617 Certification No. 140-2

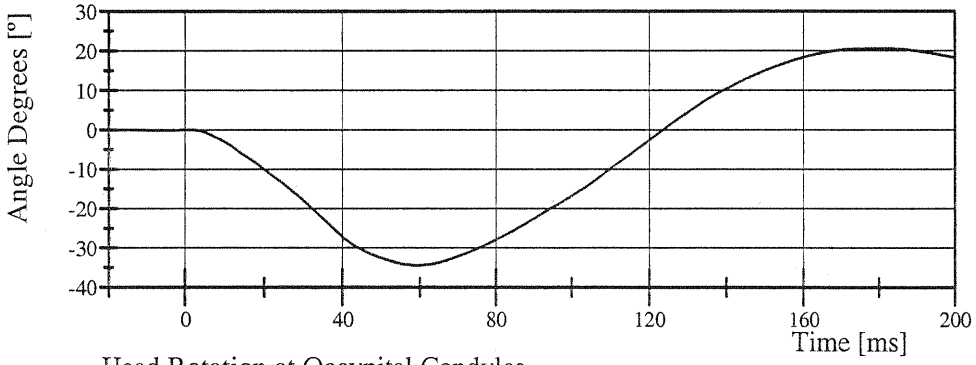
Test Date: 11/30/2007

Pendulum Acceleration



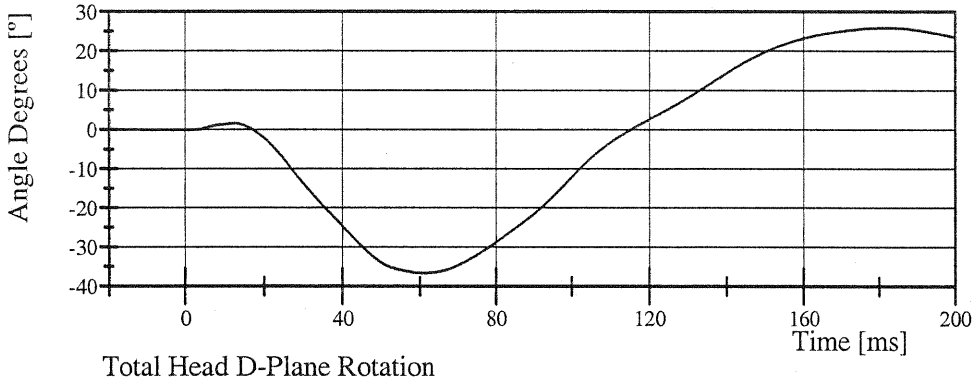
Filter Class: CFC_60
Max: 3.3 g at 44.2 ms
Min: -25.1 g at 8.4 ms

Pot Rotation at the Base of Neck



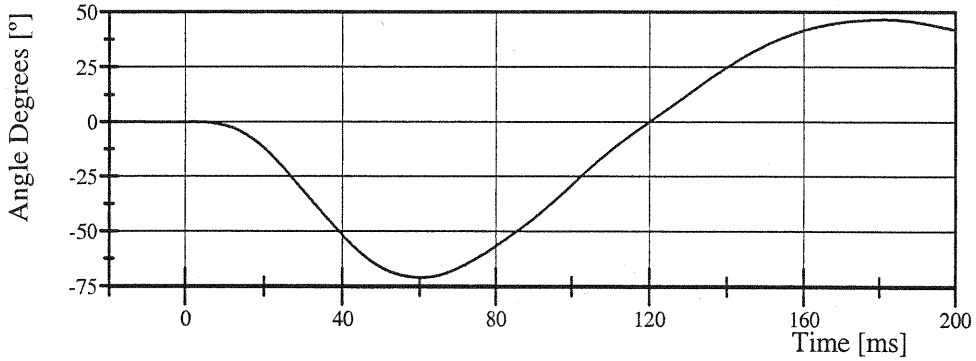
Filter Class: CFC_60
Max: 20.7 ° at 180.6 ms
Min: -34.3 ° at 59.4 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 25.9 ° at 182.3 ms
Min: -36.6 ° at 61.1 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 46.6 ° at 181.4 ms
Min: -70.9 ° at 60.6 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.30.2007 10:37:20 2974

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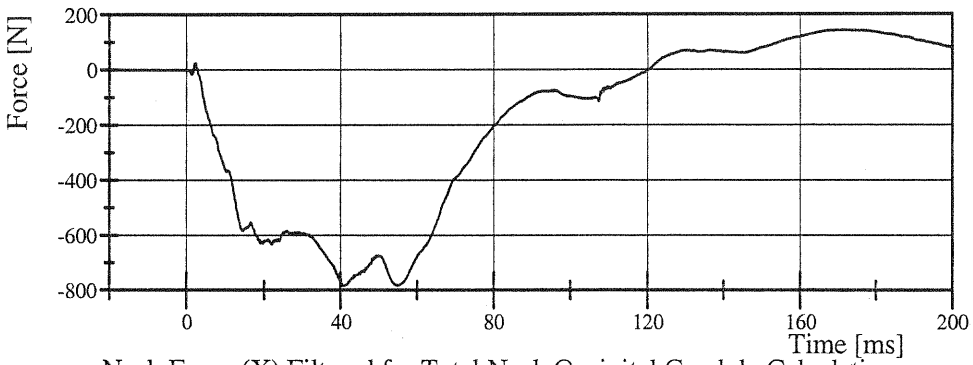
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 617 Certification No. 140-2

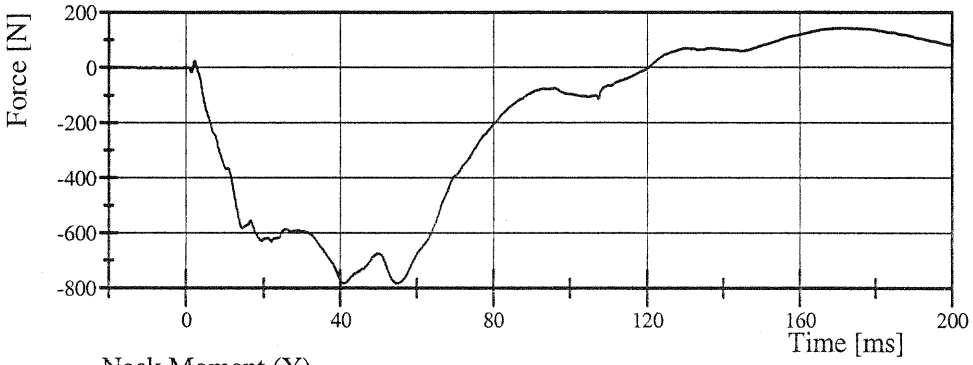
Test Date: 11/30/2007

Neck Force (X)



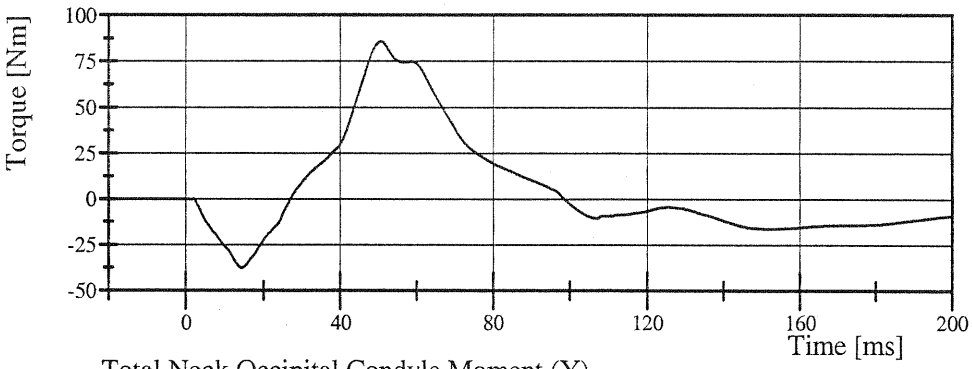
Filter Class: CFC_1000
Max: 143.5 N at 171.2 ms
Min: -783.7 N at 40.9 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



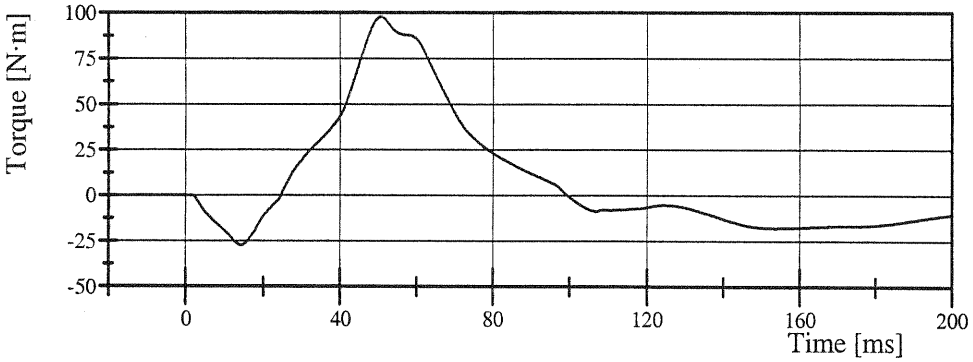
Filter Class: CFC_600
Max: 142.9 N at 171.2 ms
Min: -783.4 N at 40.8 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 85.8 Nm at 50.6 ms
Min: -37.7 Nm at 14.3 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 97.8 N·m at 50.6 ms
Min: -27.4 N·m at 14.2 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.30.2007 10:37:22 2974

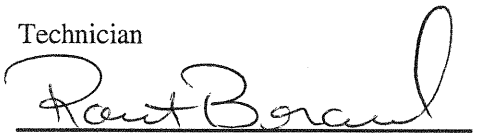
Transportation Research Center Inc.

Neck Extension
HIII 50th Serial No. 617 Certification No. 140-1
Test Date: 11/30/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-6.011 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	42.2 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	19.56 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	16.12 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	12.50 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	12.59 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	93.4 °	Yes
Time of Peak	72 - 82 ms	76.4 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	157.3 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-53) - (-80) N·m	-65.1 N·m	Yes
Time of Peak	65 - 79 ms	71.9 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	138.2 ms	Yes

Test meets specifications.

Comments:

Technician 

Approved

Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

11.30.2007 11:06:57 3055

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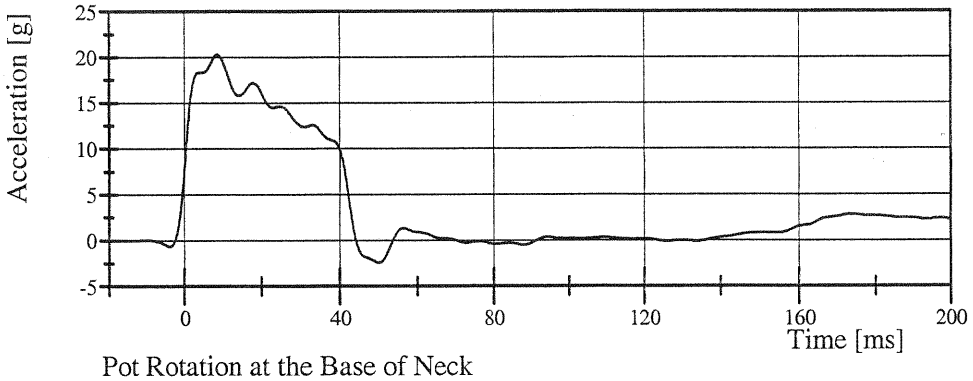
Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 617 Certification No. 140-1

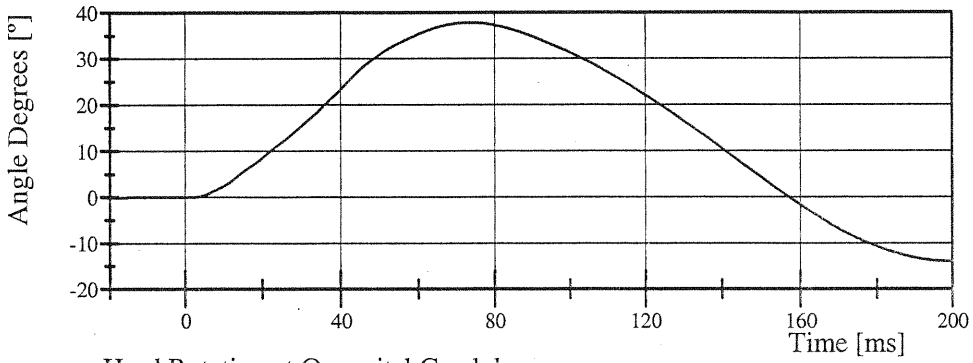
Test Date: 11/30/2007

Pendulum Acceleration



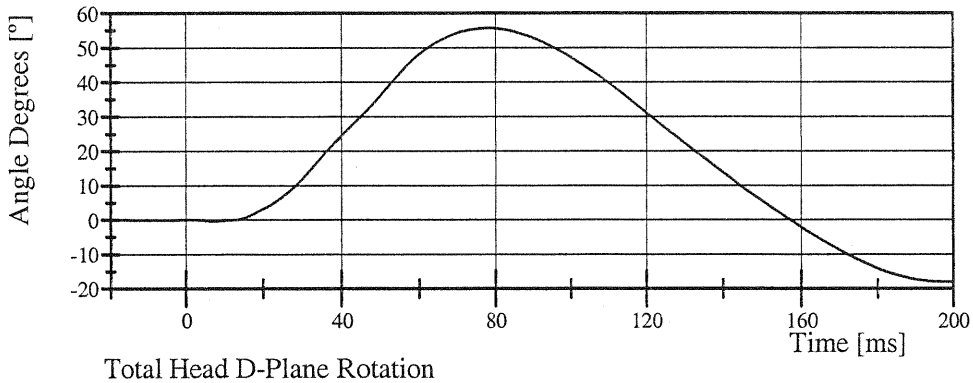
Filter Class: CFC_60
Max: 20.3 g at 8.6 ms
Min: -2.4 g at 49.9 ms

Pot Rotation at the Base of Neck



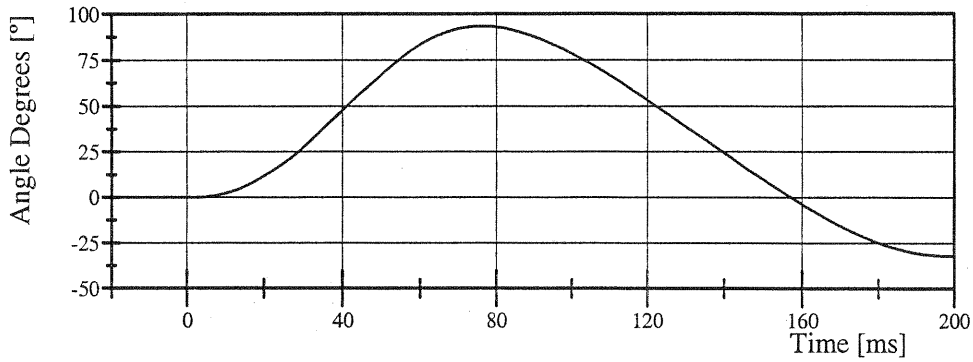
Filter Class: CFC_60
Max: 37.8 ° at 73.8 ms
Min: -14.0 ° at 200.0 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 55.7 ° at 78.5 ms
Min: -18.0 ° at 198.6 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 93.4 ° at 76.4 ms
Min: -31.9 ° at 199.5 ms

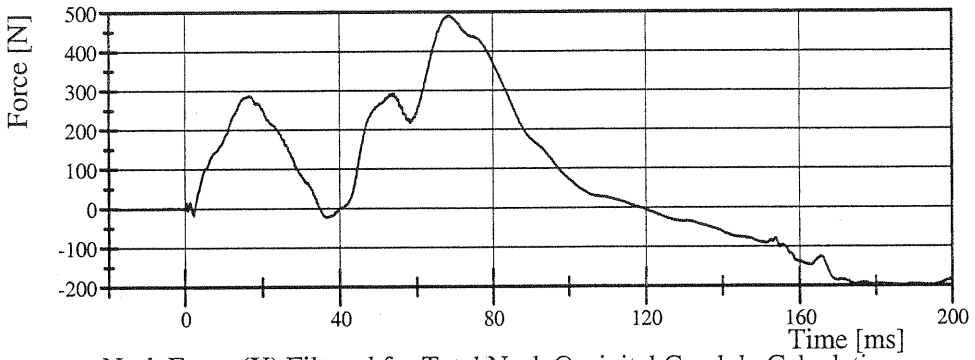
Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 617 Certification No. 140-1

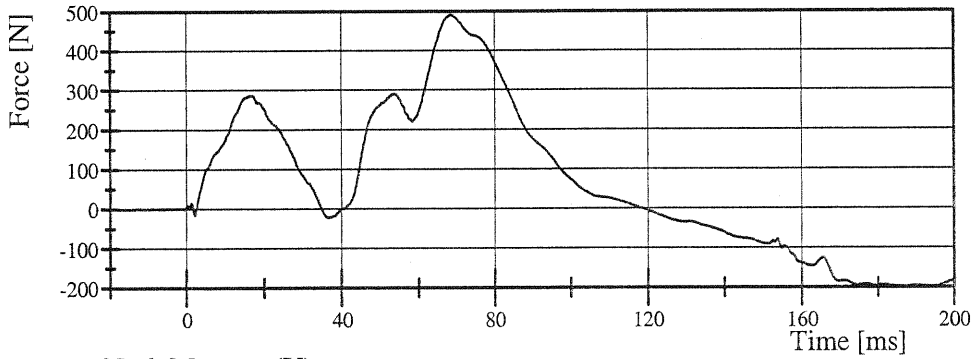
Test Date: 11/30/2007

Neck Force (X)



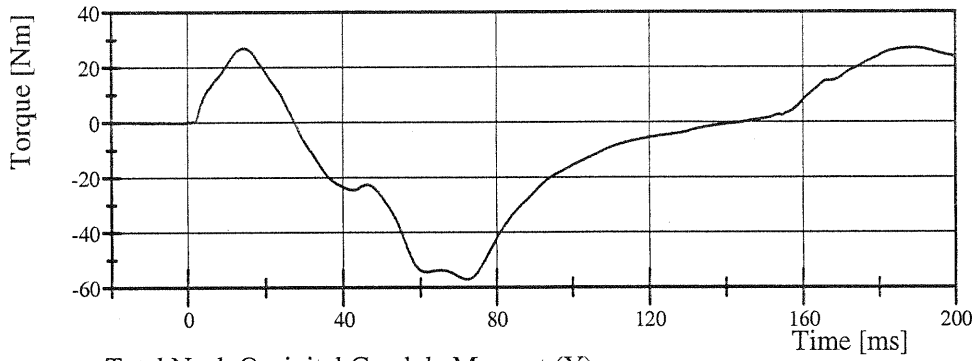
Filter Class: CFC_1000
Max: 491.3 N at 68.6 ms
Min: -199.1 N at 187.0 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



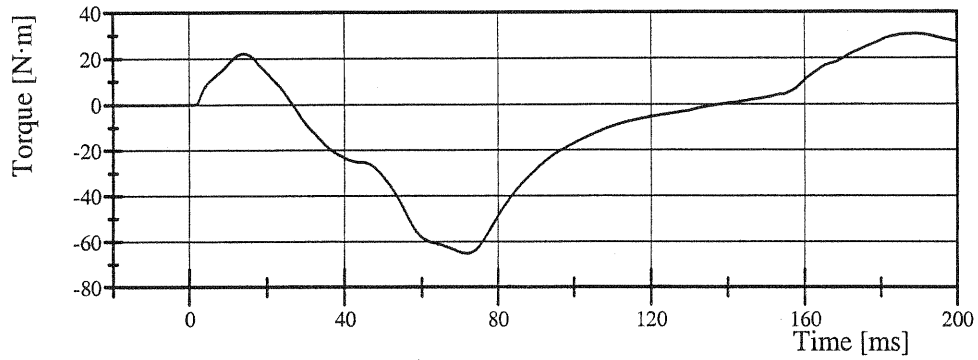
Filter Class: CFC_600
Max: 490.7 N at 68.5 ms
Min: -198.7 N at 187.2 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 27.0 Nm at 14.5 ms
Min: -57.1 Nm at 72.1 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 30.4 N·m at 188.9 ms
Min: -65.1 N·m at 71.9 ms

Transportation Research Center Inc.

Front Thorax
HIII 50th Serial No. 617 Certification No. 140-3
Test Date: 11/30/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.614 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,816.6 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-67.40 mm	Yes
Internal Hysteresis	65 - 85 %	73.2 %	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

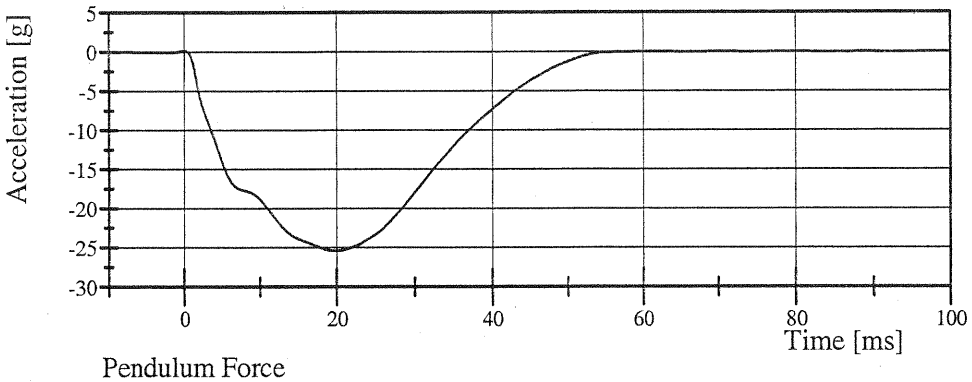
11.30.2007 15:08:56 414

071214

Transportation Research Center Inc.

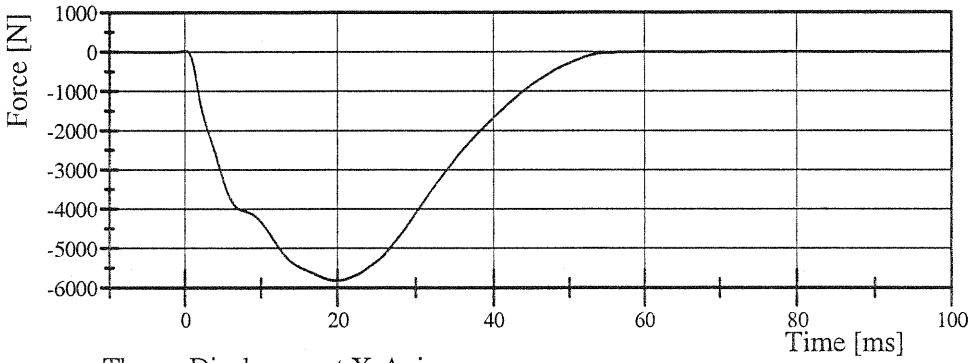
Front Thorax
HIII 50th Serial No. 617 Certification No. 140-3
Test Date: 11/30/2007

Pendulum Acceleration



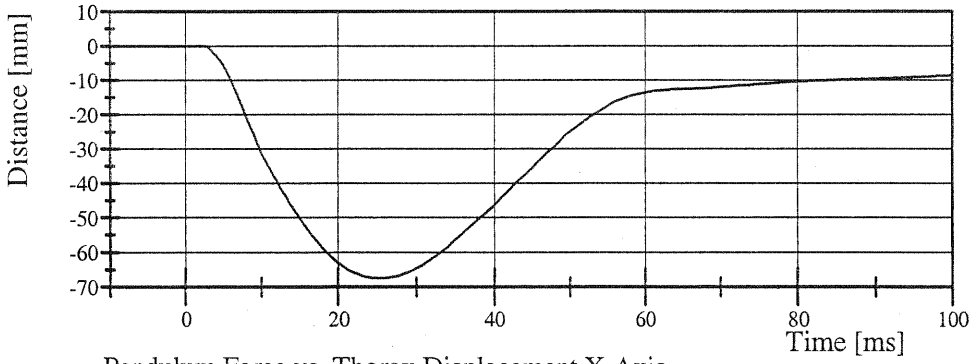
Filter Class: CFC_180
Max: 0.1 g at 0.1 ms
Min: -25.4 g at 19.8 ms

Pendulum Force



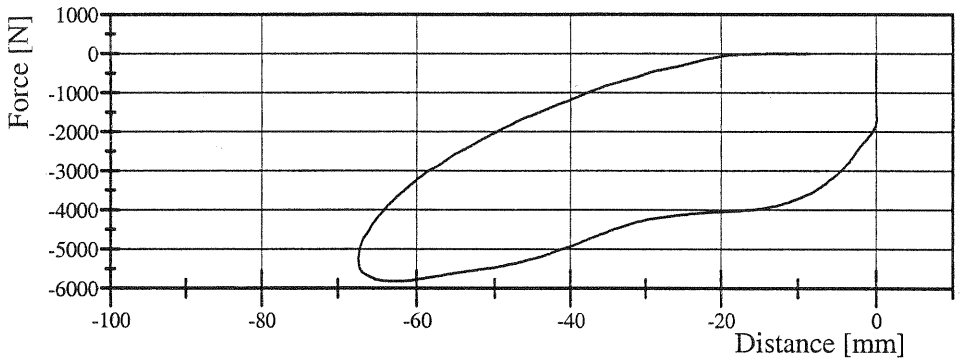
Filter Class: CFC_180
Max: 32.5 N at 0.1 ms
Min: -5,816.6 N at 19.8 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.0 mm at 2.5 ms
Min: -67.4 mm at 25.5 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 32.5 N at -0.0 mm
Min: -5,816.6 N at -62.7 mm

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

11.30.2007 15:09:08 414

Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

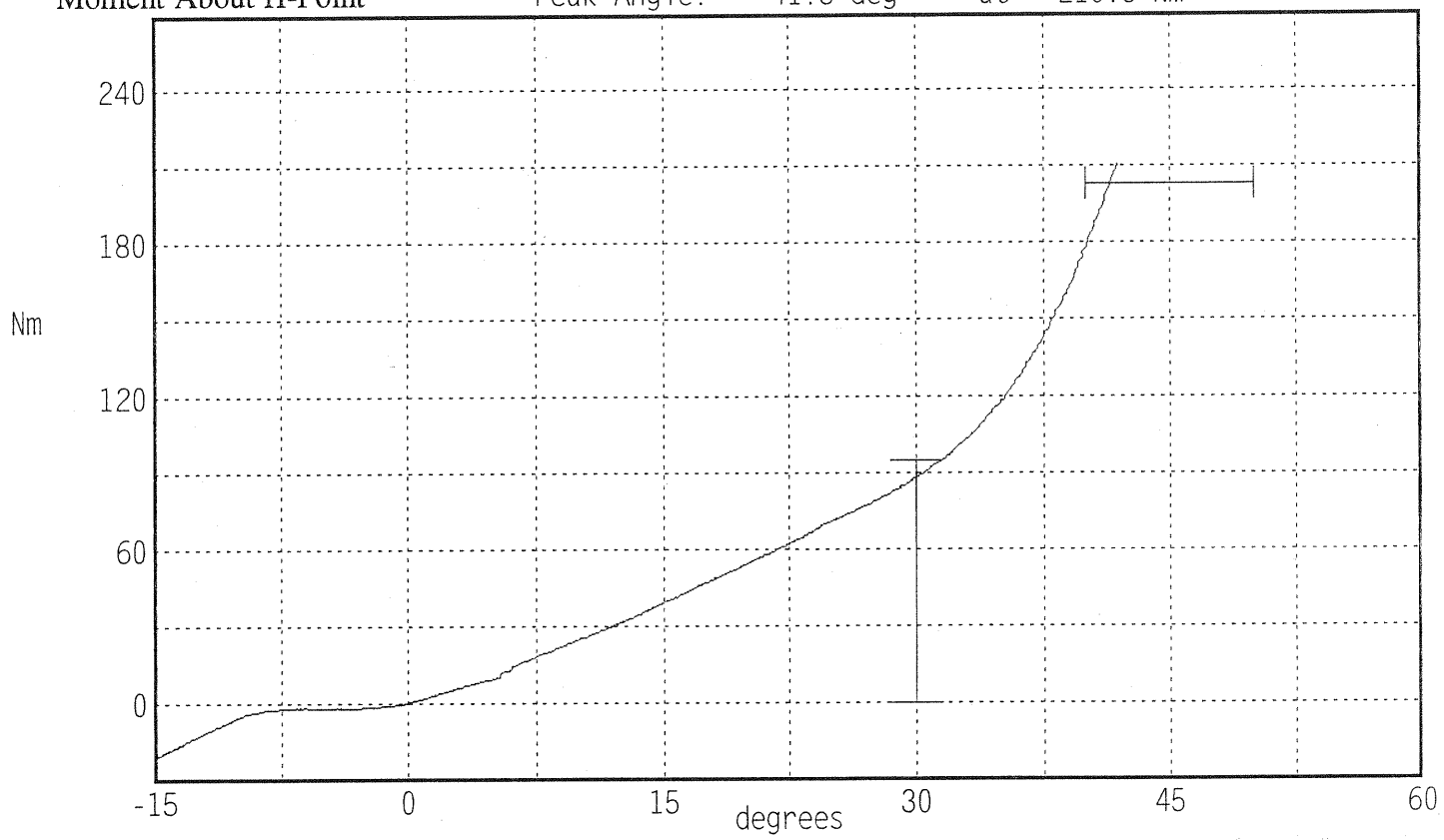
Serial Number: 617L
Test Number: 617C140
Comments:

Date: 11/30/2007
Time: 11:39

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	20.6	°C	Pass
Humidity	10 - 70	36	%	Pass
Moment at 30 deg	<= 94.9	88.3	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	41.5	deg	Pass
Average Velocity	5.0 - 10.0	7.3	deg/sec	Pass

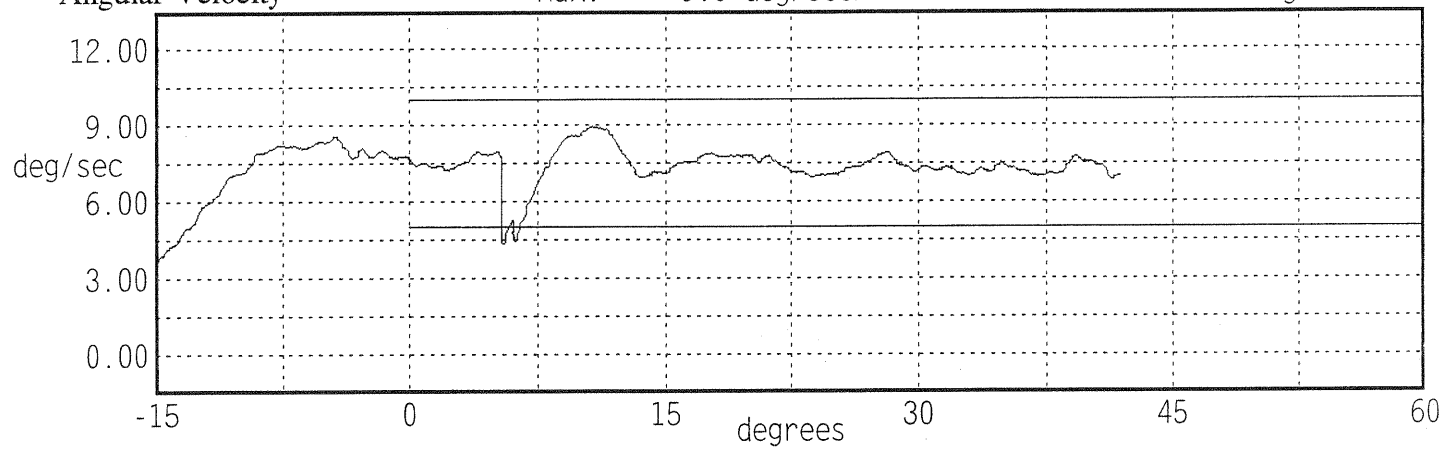
Moment About H-Point

Peak Moment: 210.3 Nm at 41.8 deg
Peak Angle: 41.8 deg at 210.3 Nm



Angular Velocity

Max: 9.0 deg/sec Min: 4.4 deg/sec



Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

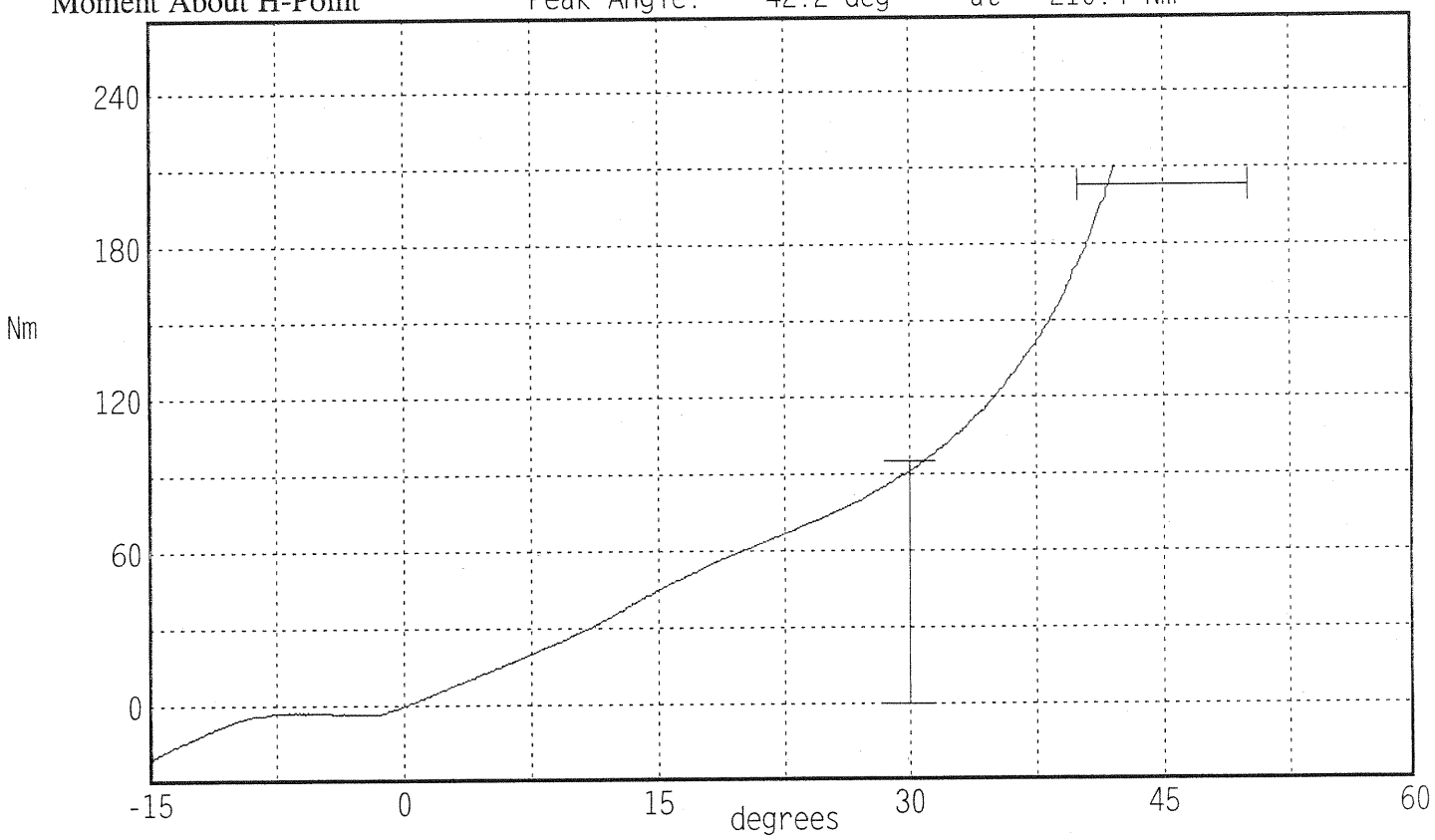
Serial Number: 617R
Test Number: 617C140
Comments:

Date: 11/30/2007
Time: 11:48

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	20.8	°C	Pass
Humidity	10 - 70	38	%	Pass
Moment at 30 deg	<= 94.9	91.3	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	41.8	deg	Pass
Average Velocity	5.0 - 10.0	7.5	deg/sec	Pass

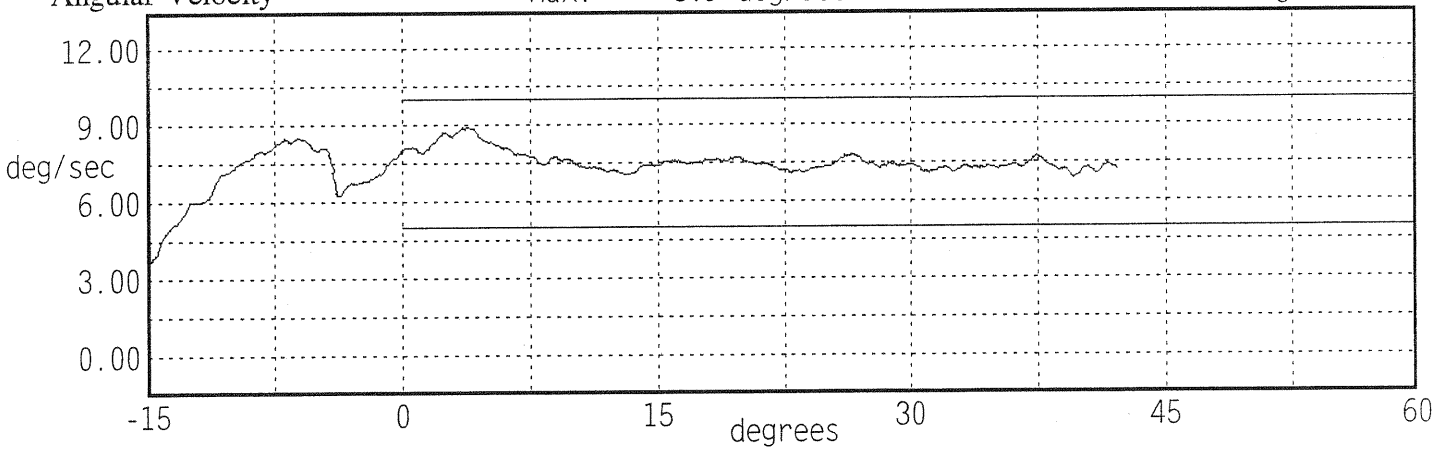
Moment About H-Point

Peak Moment: 210.4 Nm at 42.2 deg
Peak Angle: 42.2 deg at 210.4 Nm



Angular Velocity

Max: 8.9 deg/sec Min: 6.9 deg/sec



Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 617 Certification No. 140-1
Test Date: 11/29/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	32 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.114 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,631.65 N	Yes

Test meets specifications.

Comments:

Technician

Approved

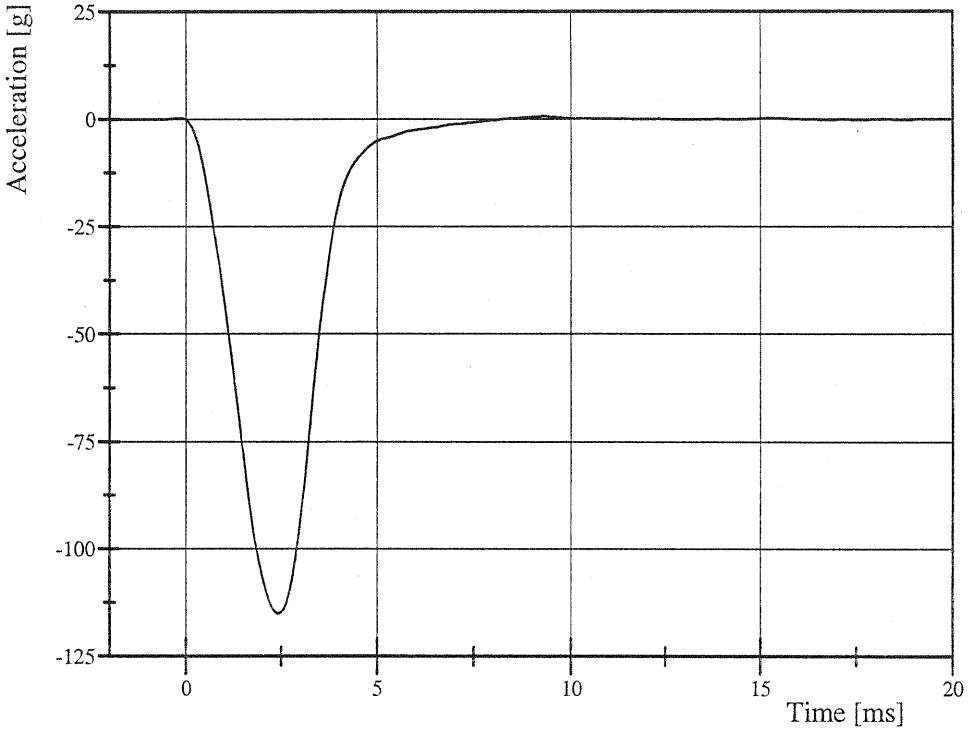
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.29.2007 15:01:13 1698

Transportation Research Center Inc.

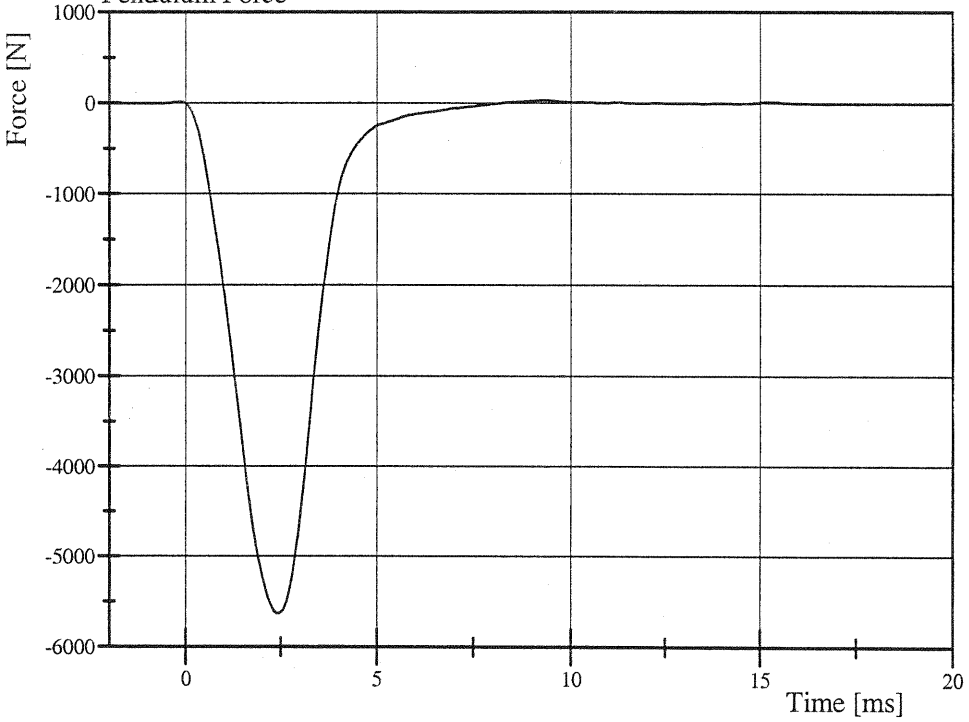
Left Knee Femur Response Test
HIII 50th Serial No. 617 Certification No. 140-1
Test Date: 11/29/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.7 g at 9.4 ms
Min: -115.1 g at 2.4 ms

Pendulum Force



Filter Class: CFC_600
Max: 33.1 N at 9.4 ms
Min: -5,631.6 N at 2.4 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.29.2007 15:01:19 1698

071214

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 617 Certification No. 140-1
Test Date: 11/29/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	33 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.115 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,439.43 N	Yes

Test meets specifications.

Comments:

Technician

Approved

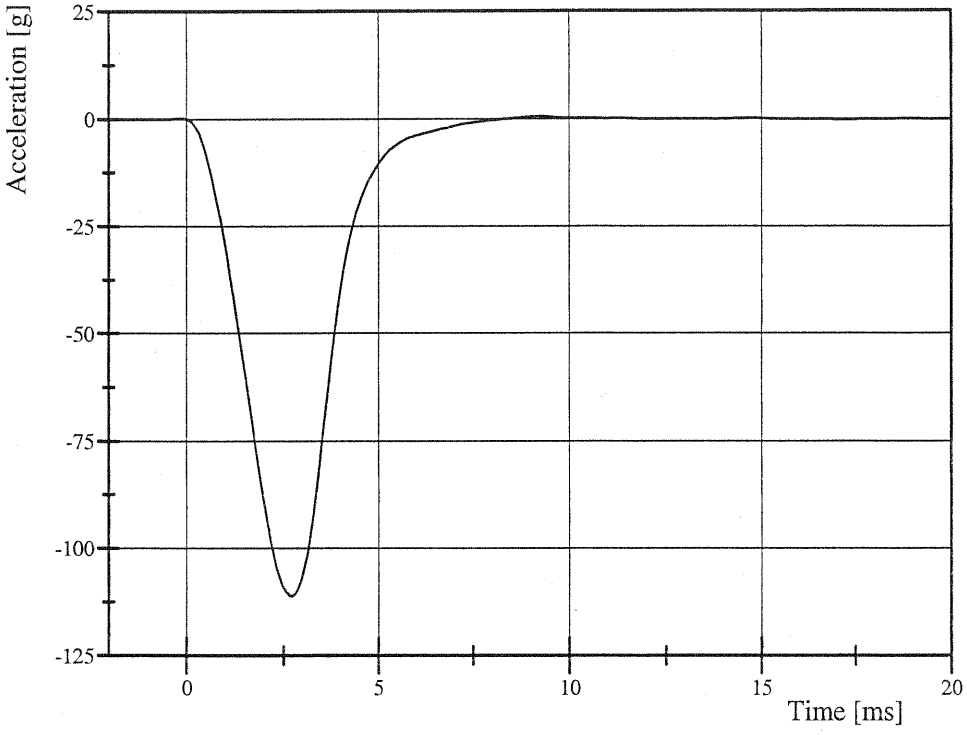
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.29.2007 15:09:14 1688

Transportation Research Center Inc.

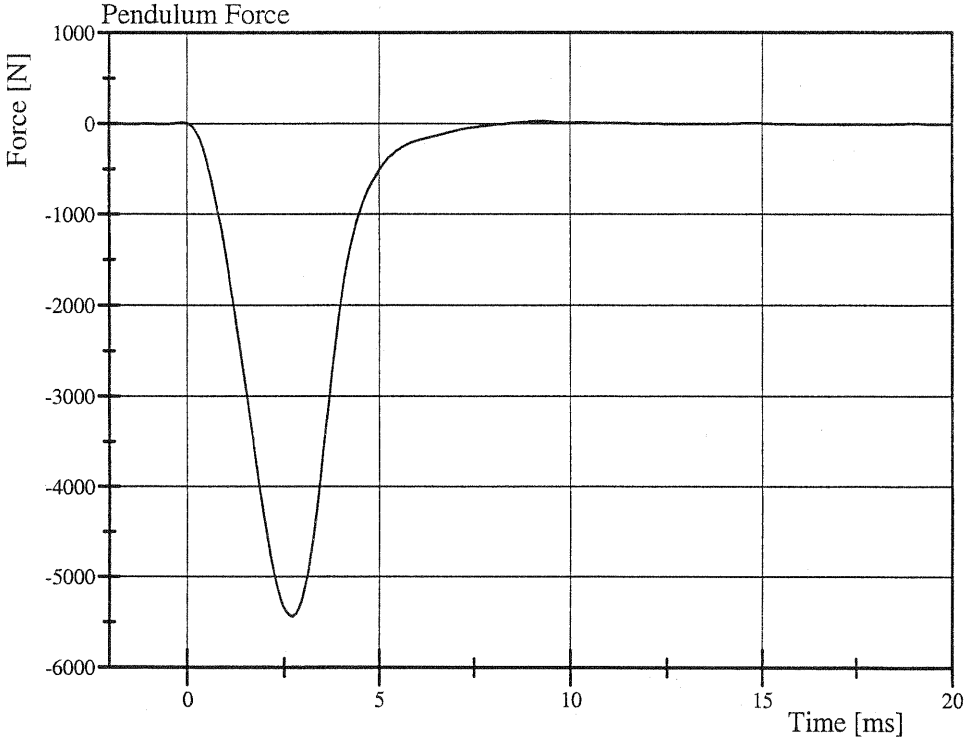
Right Knee Femur Response Test
HIII 50th Serial No. 617 Certification No. 140-1
Test Date: 11/29/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.6 g at 9.3 ms
Min: -111.2 g at 2.7 ms

Pendulum Force



Filter Class: CFC_600
Max: 30.2 N at 9.3 ms
Min: -5,439.4 N at 2.7 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.29.2007 15:09:25 1688

071214

Pre-Test Dummy Configuration and Performance Verification Data

Right Side Row 11 Right Seat Dummy S/N: 134

1

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 134 Calibration No. 126

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	879	Yes
B	Shoulder Pivot Height	505.5 - 520.7	511	Yes
C	H-Point Height	83.8 - 88.9	88	Yes
D	H-Point From Seatback	134.6 - 139.7	138	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	92	Yes
F	Thigh Clearance	139.7 - 154.9	151	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	293	Yes
H	Skull Cap To Backline	40.6 - 45.7	44	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	334	Yes
J	Elbow Rest Height	190.5 - 210.8	201	Yes
K	Buttock Knee Length	579.1 - 604.5	597	Yes
L	Popliteal Height	429.3 - 454.7	440	Yes
M	Knee Pivot Height	485.1 - 500.4	495	Yes
N	Buttock Popliteal Length	452.1 - 477.5	472	Yes
O	Chest Depth	213.4 - 228.6	220	Yes
P	Foot Length	251.5 - 266.7	260	Yes
V	Shoulder Breadth	421.6 - 436.9	426	Yes
W	Foot Breadth	91.4 - 106.7	99	Yes
Y	Chest Circumference	970.3 - 1000.8	997	Yes
Z	Waist Circumference	835.7 - 866.1	862	Yes
AA	Location For Chest Circumference	429.3 - 434.3	430	Yes
BB	Location For Waist Circumference	226.1 - 231.1	230	Yes

Technician

Approved

Transportation Research Center Inc.

Front Head Drop
HIII 50th Serial No. 134 Certification No. 126-1
Test Date: 11/30/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	239.0 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-5.1 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

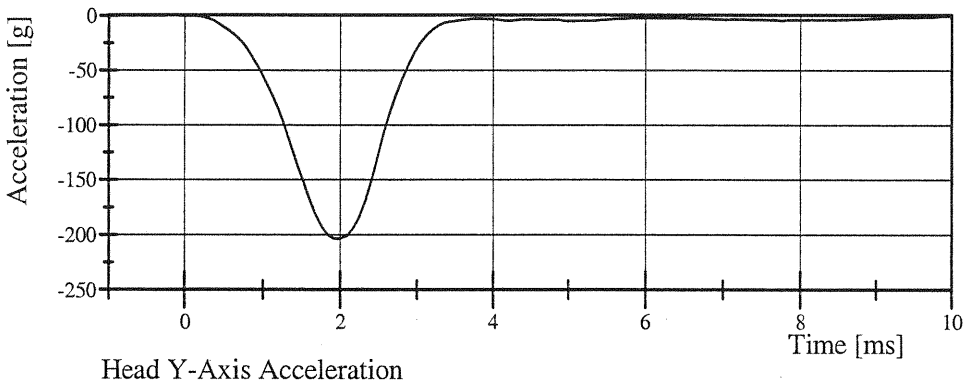
11.30.2007 14:58:49 613

071214

Transportation Research Center Inc.

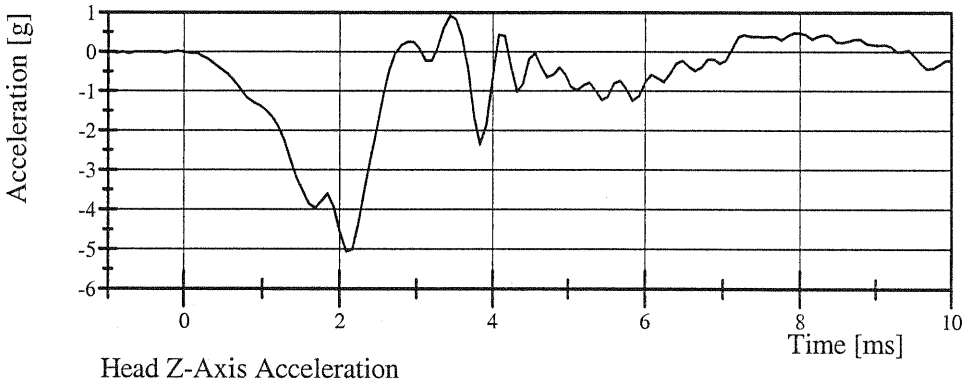
Front Head Drop
HIII 50th Serial No. 134 Certification No. 126-1
Test Date: 11/30/2007

Head X-Axis Acceleration



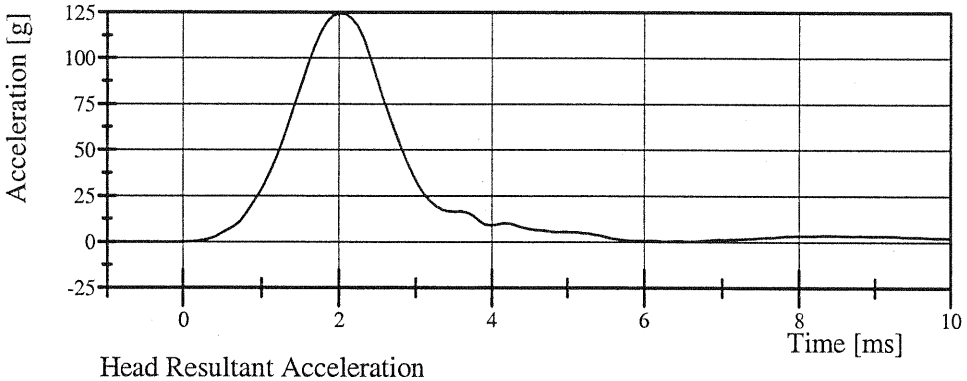
Filter Class: CFC_1000
Max: 0.0 g at -1.0 ms
Min: -203.9 g at 2.0 ms

Head Y-Axis Acceleration



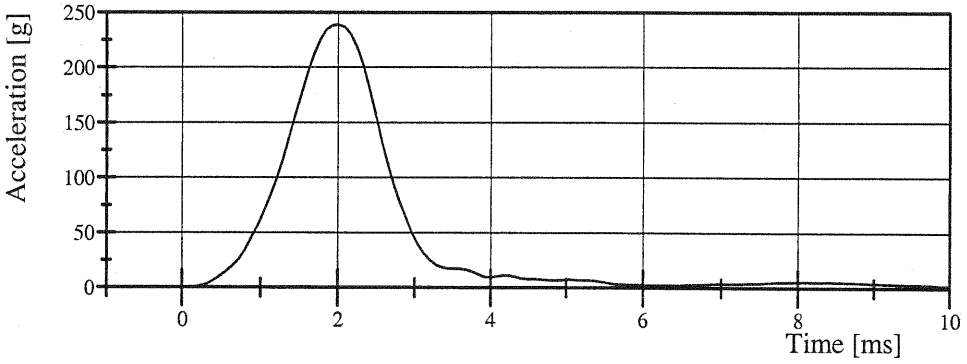
Filter Class: CFC_1000
Max: 0.9 g at 3.4 ms
Min: -5.1 g at 2.1 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 124.5 g at 2.0 ms
Min: -0.0 g at -0.7 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 239.0 g at 2.0 ms
Min: 0.0 g at -0.6 ms

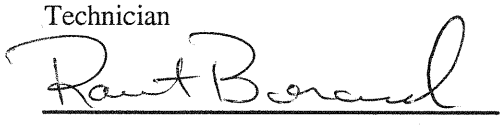
Transportation Research Center Inc.

Neck Flexion
HIII 50th Serial No. 134 Certification No. 126-2
Test Date: 12/3/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.7 °C	Yes
Relative Humidity	10 - 70 %	34 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	7.048 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	40.8 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-24.90 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-18.59 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-15.18 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-15.18 g	Yes
Total Head D-Plane Rotation			
Peak	(-64) - (-78) °	-67.6 °	Yes
Time of Peak	57 - 64 ms	58.2 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	113.4 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	88 - 108 N·m	99.4 N·m	Yes
Time of Peak	47 - 58 ms	52.7 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	102.3 ms	Yes

Test meets specifications.

Comments:

Technician 

Approved

Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

12.03.2007 08:59:20 2967

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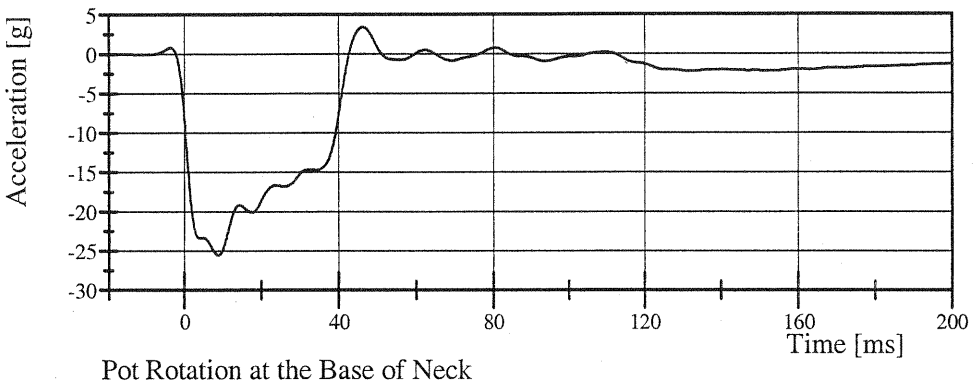
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 134 Certification No. 126-2

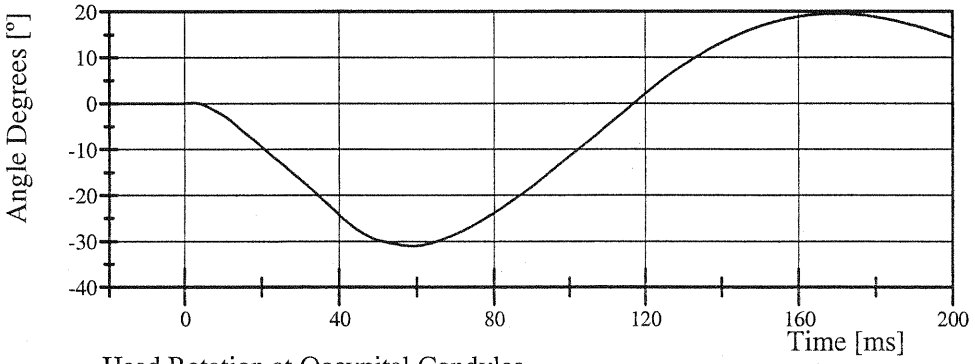
Test Date: 12/3/2007

Pendulum Acceleration



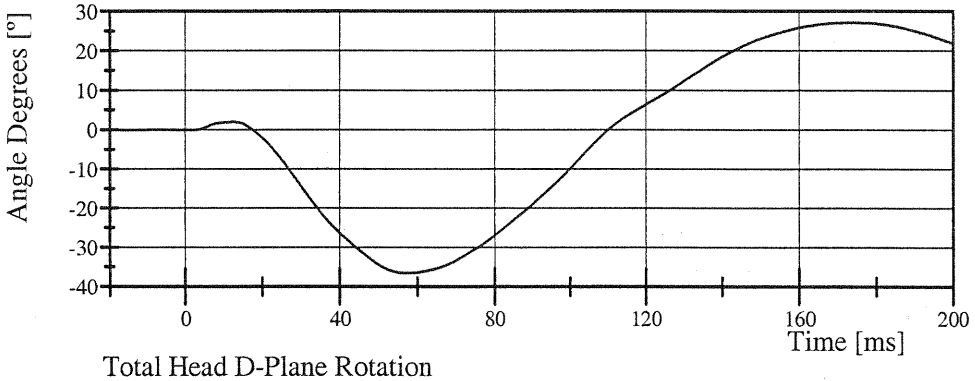
Filter Class: CFC_60
Max: 3.4 g at 46.2 ms
Min: -25.5 g at 8.9 ms

Pot Rotation at the Base of Neck



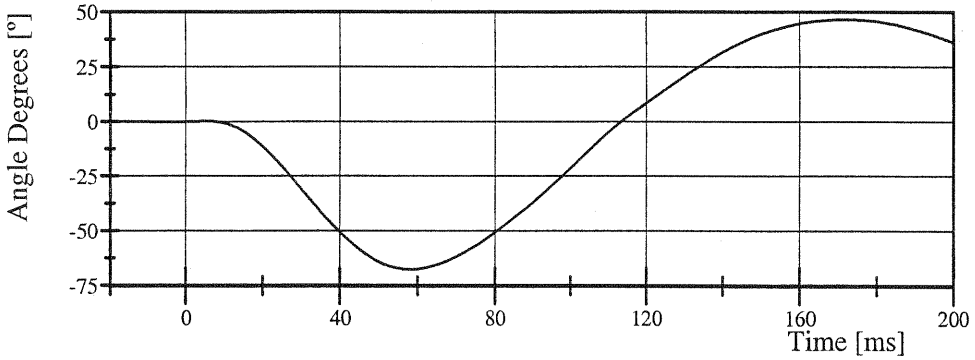
Filter Class: CFC_60
Max: 19.5 ° at 169.8 ms
Min: -31.0 ° at 58.9 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 27.1 ° at 173.6 ms
Min: -36.5 ° at 57.3 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 46.5 ° at 171.6 ms
Min: -67.6 ° at 58.2 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

12.03.2007 08:59:30 2967

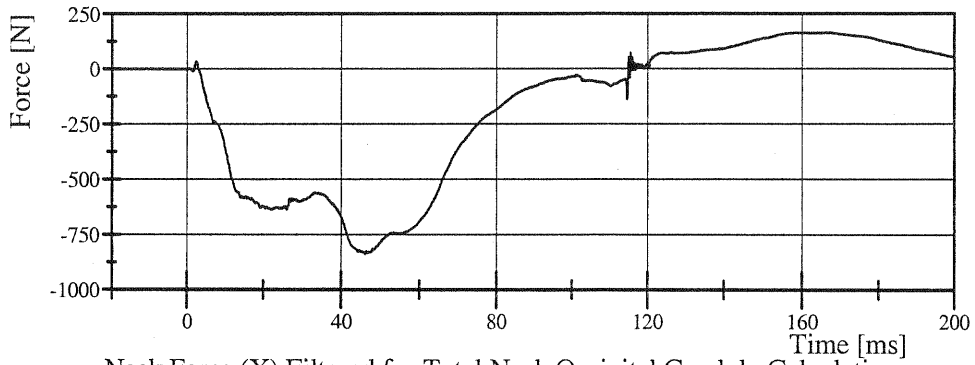
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 134 Certification No. 126-2

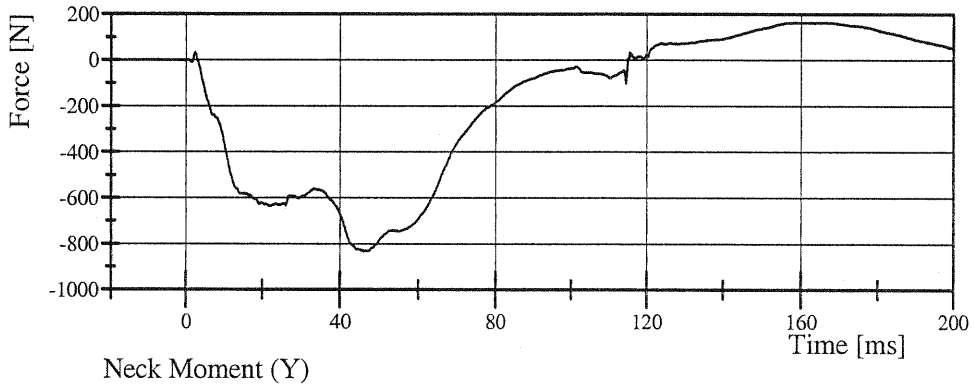
Test Date: 12/3/2007

Neck Force (X)



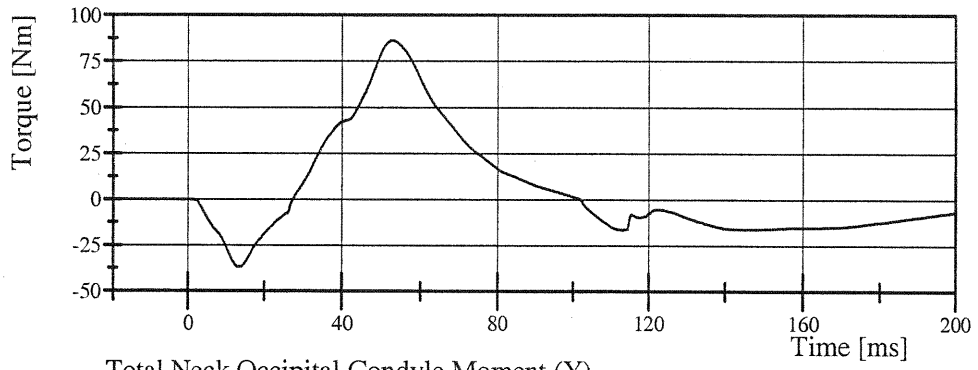
Filter Class: CFC_1000
Max: 164.7 N at 166.5 ms
Min: -836.0 N at 46.0 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



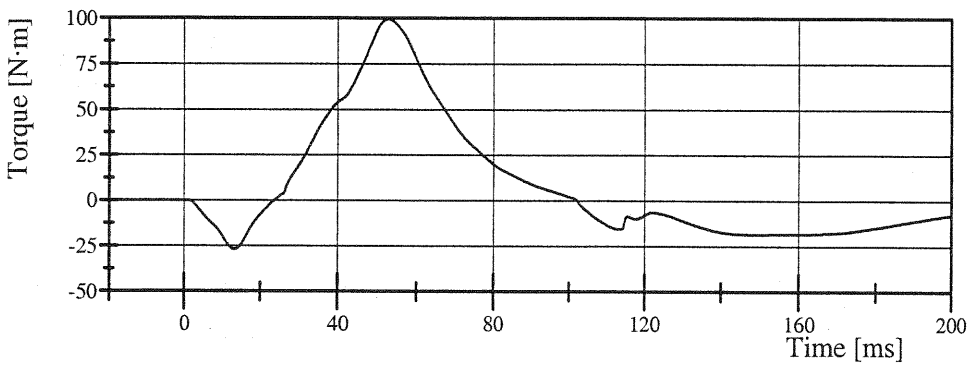
Filter Class: CFC_600
Max: 164.0 N at 166.4 ms
Min: -833.4 N at 45.9 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 86.3 Nm at 52.8 ms
Min: -36.7 Nm at 13.3 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 99.4 N·m at 52.7 ms
Min: -26.9 N·m at 13.3 ms

Transportation Research Center Inc.

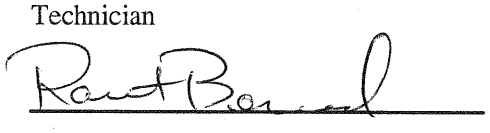
Neck Extension
HIII 50th Serial No. 134 Certification No. 126-1
Test Date: 12/3/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	33 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-6.011 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	41.8 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	19.22 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	15.88 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	13.25 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	13.49 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	93.1 °	Yes
Time of Peak	72 - 82 ms	77.1 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	155.5 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-53) - (-80) N·m	-62.6 N·m	Yes
Time of Peak	65 - 79 ms	71.6 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	140.9 ms	Yes

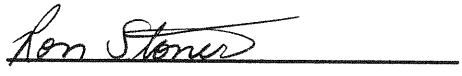
Test meets specifications.

Comments:

Technician



Approved



Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

12.03.2007 09:29:36 3054

071214

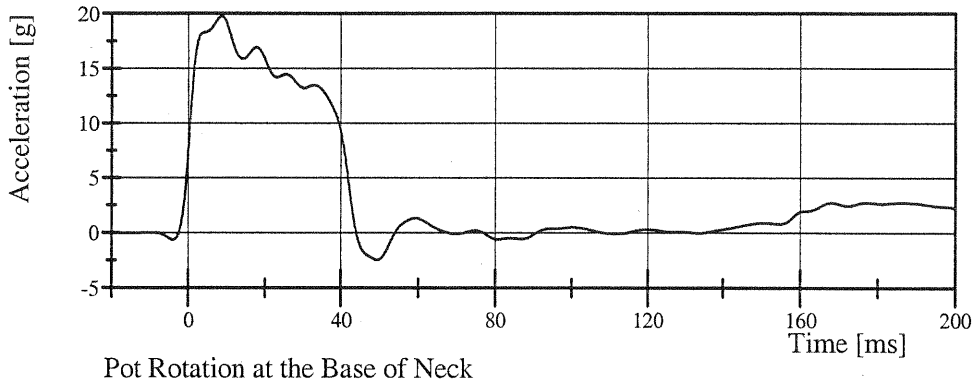
Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 134 Certification No. 126-1

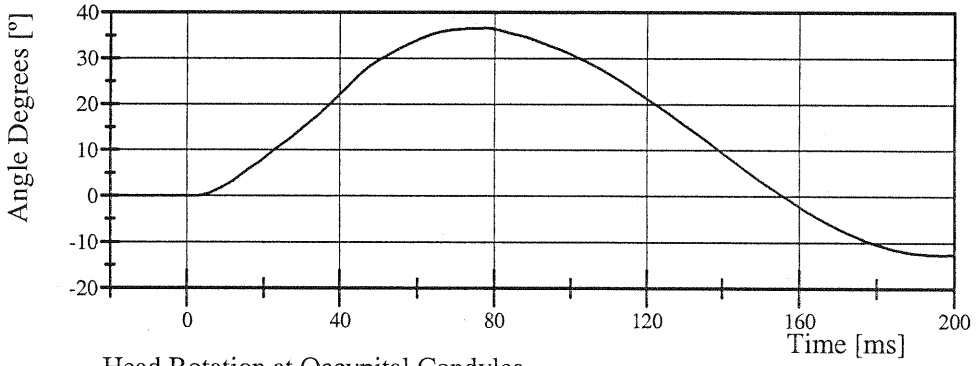
Test Date: 12/3/2007

Pendulum Acceleration



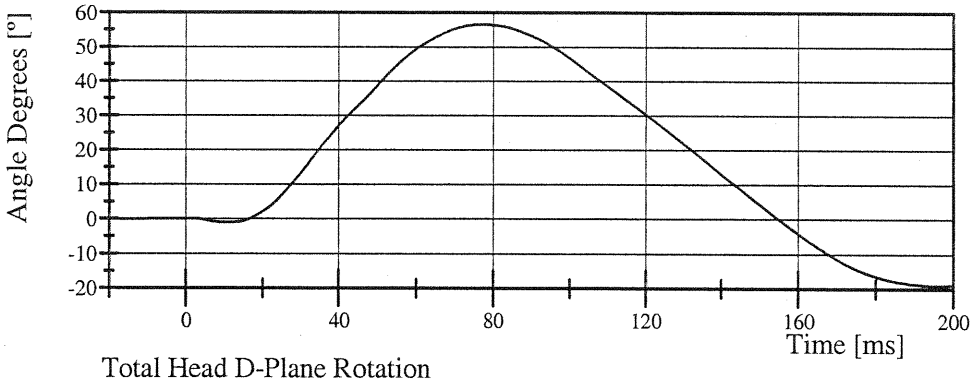
Filter Class: CFC_60
Max: 19.8 g at 8.7 ms
Min: -2.5 g at 49.3 ms

Pot Rotation at the Base of Neck



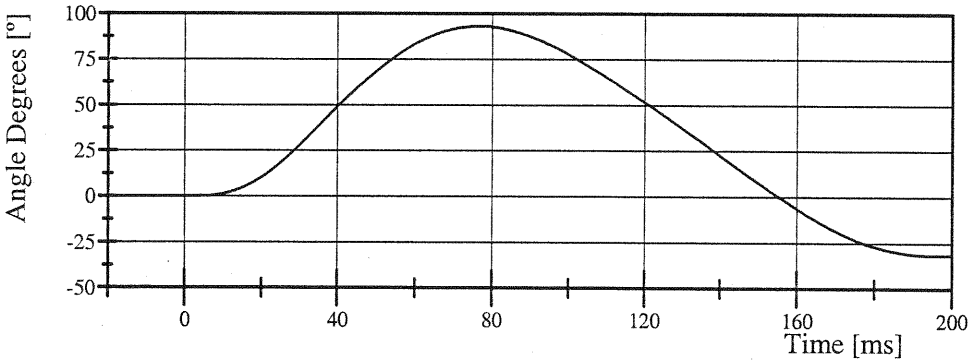
Filter Class: CFC_60
Max: 36.6 ° at 77.9 ms
Min: -12.6 ° at 197.0 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 56.5 ° at 76.6 ms
Min: -18.9 ° at 196.1 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 93.1 ° at 77.1 ms
Min: -31.6 ° at 196.4 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

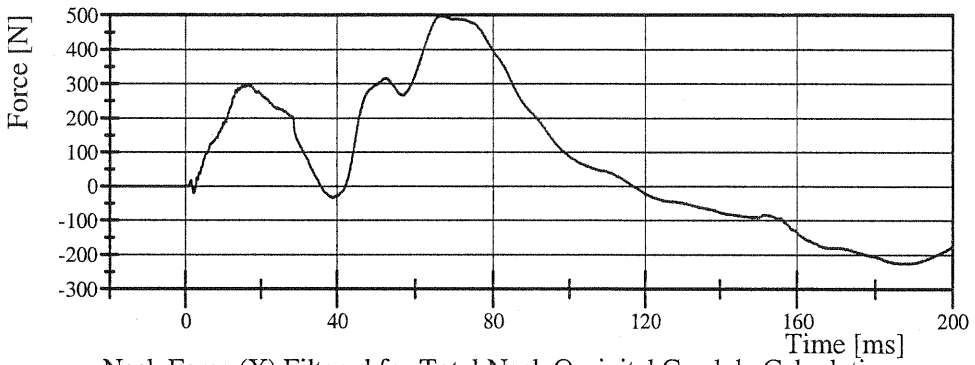
12.03.2007 09:29:54 3054

071214

Transportation Research Center Inc.

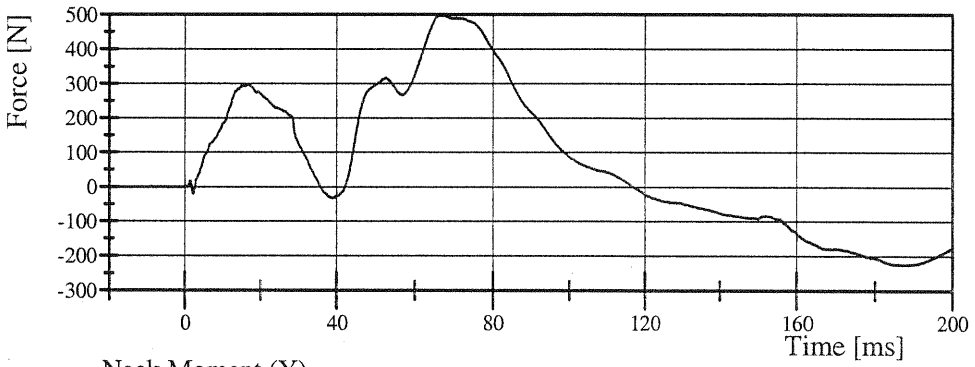
Neck Extension
HIII 50th Serial No. 134 Certification No. 126-1
Test Date: 12/3/2007

Neck Force (X)



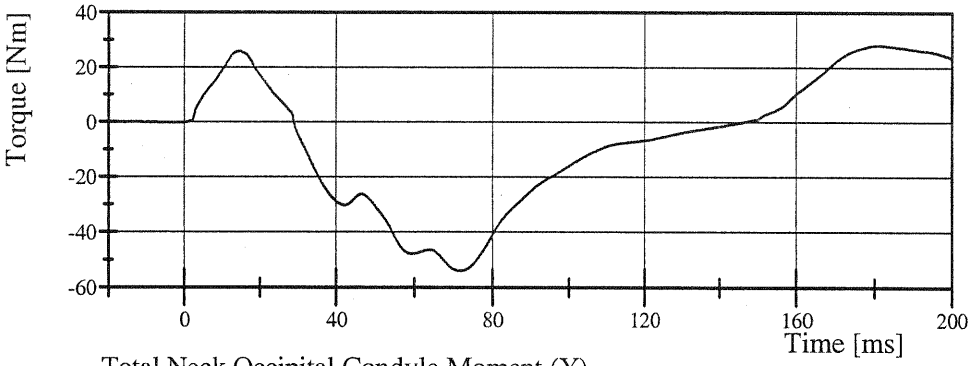
Filter Class: CFC_1000
Max: 497.6 N at 66.6 ms
Min: -225.4 N at 186.5 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



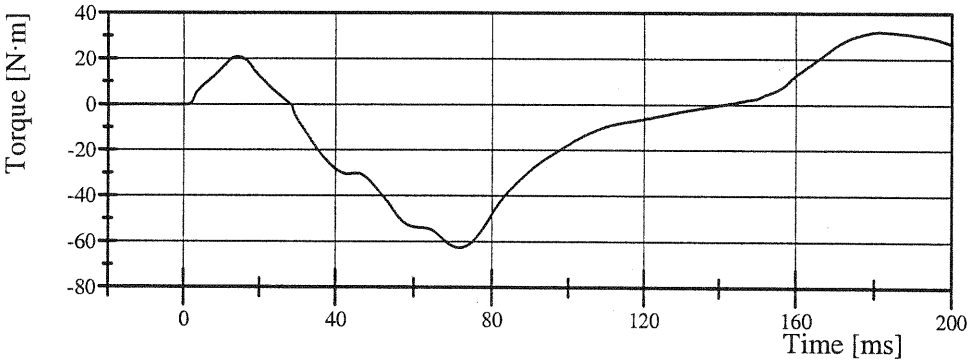
Filter Class: CFC_600
Max: 497.2 N at 66.6 ms
Min: -225.2 N at 188.5 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 28.3 Nm at 180.8 ms
Min: -54.0 Nm at 71.7 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 32.0 N·m at 181.0 ms
Min: -62.6 N·m at 71.6 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

12.03.2007 09:29:56 3054

071214

Transportation Research Center Inc.

Front Thorax
HIII 50th Serial No. 134 Certification No. 126-1
Test Date: 12/3/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	32 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.615 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,489.6 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-67.67 mm	Yes
Internal Hysteresis	65 - 85 %	73.3 %	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

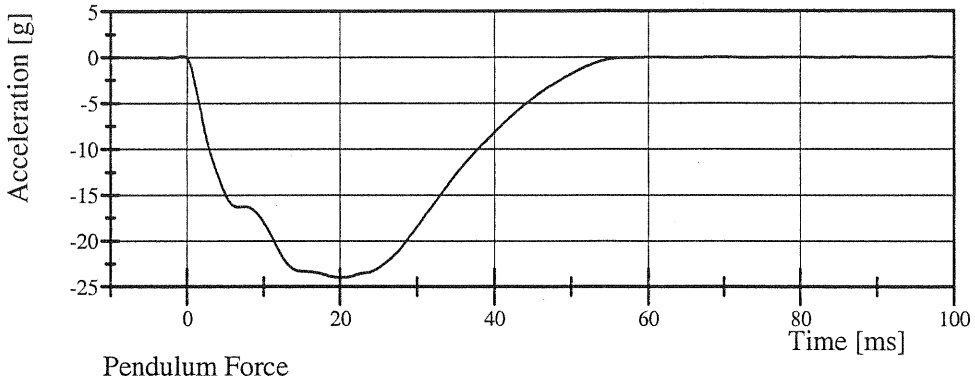
12.03.2007 11:18:58 1584

071214

Transportation Research Center Inc.

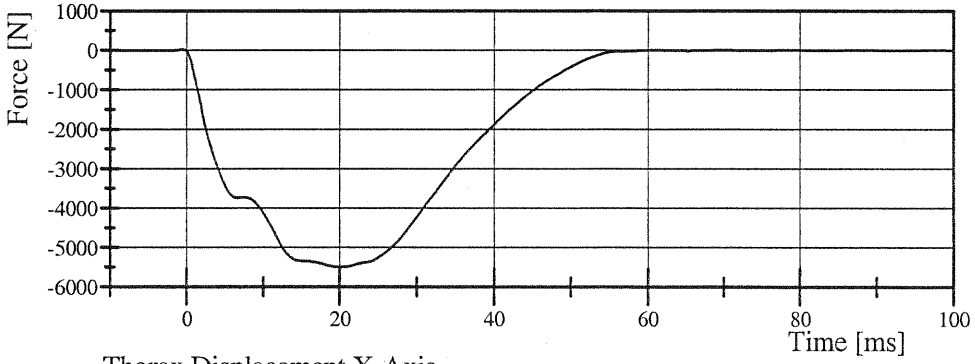
Front Thorax
HIII 50th Serial No. 134 Certification No. 126-1
Test Date: 12/3/2007

Pendulum Acceleration



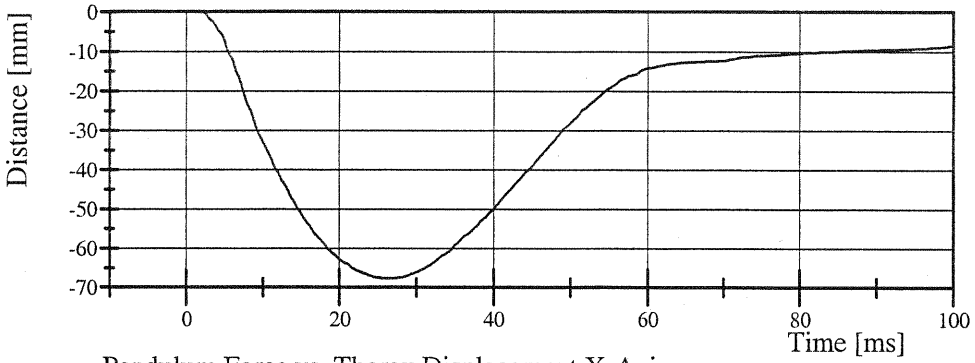
Filter Class: CFC_180
Max: 0.1 g at -0.6 ms
Min: -24.0 g at 19.8 ms

Pendulum Force



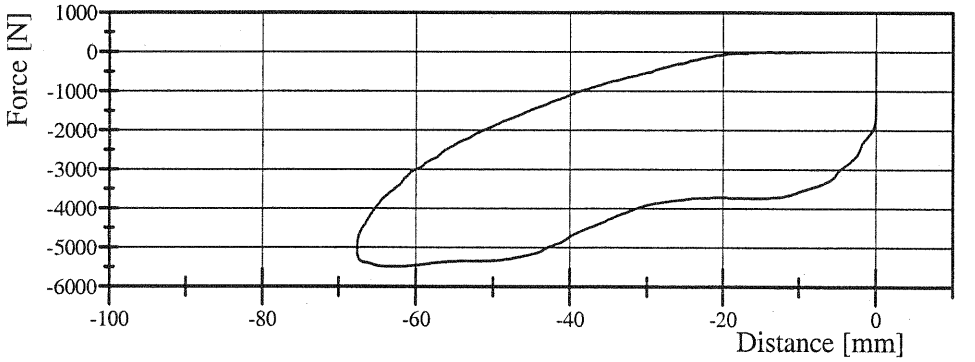
Filter Class: CFC_180
Max: 25.2 N at -0.6 ms
Min: -5,489.6 N at 19.8 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.0 mm at -8.8 ms
Min: -67.7 mm at 26.6 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 25.2 N at -0.0 mm
Min: -5,489.6 N at -62.4 mm

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

12.03.2007 11:19:08 1584

071214

Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

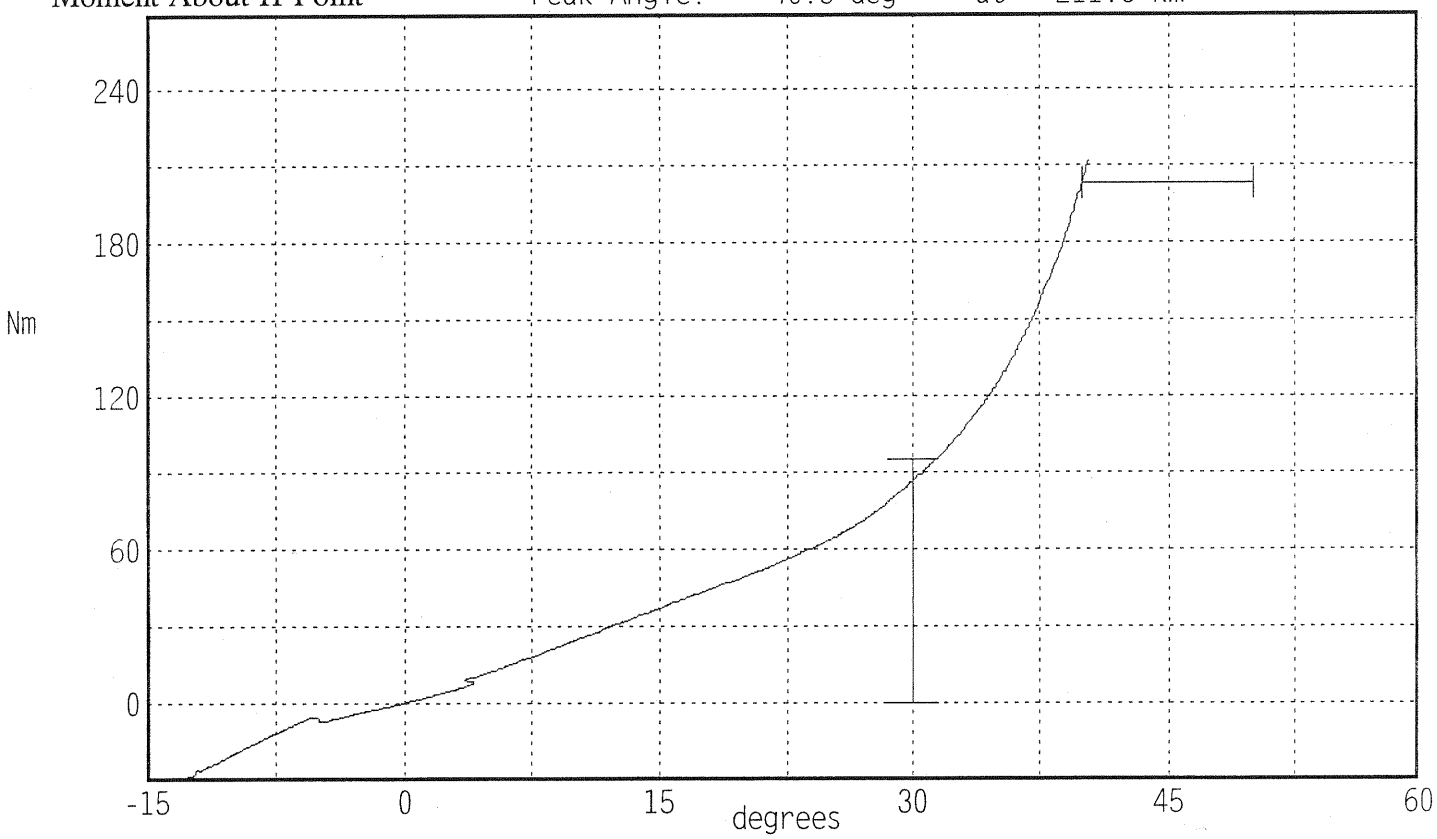
Serial Number: 134L
Test Number: 134C126
Comments:

Date: 12/03/2007
Time: 08:29

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.1	°C	Pass
Humidity	10 - 70	33	%	Pass
Moment at 30 deg	<= 94.9	86.5	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	40.1	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

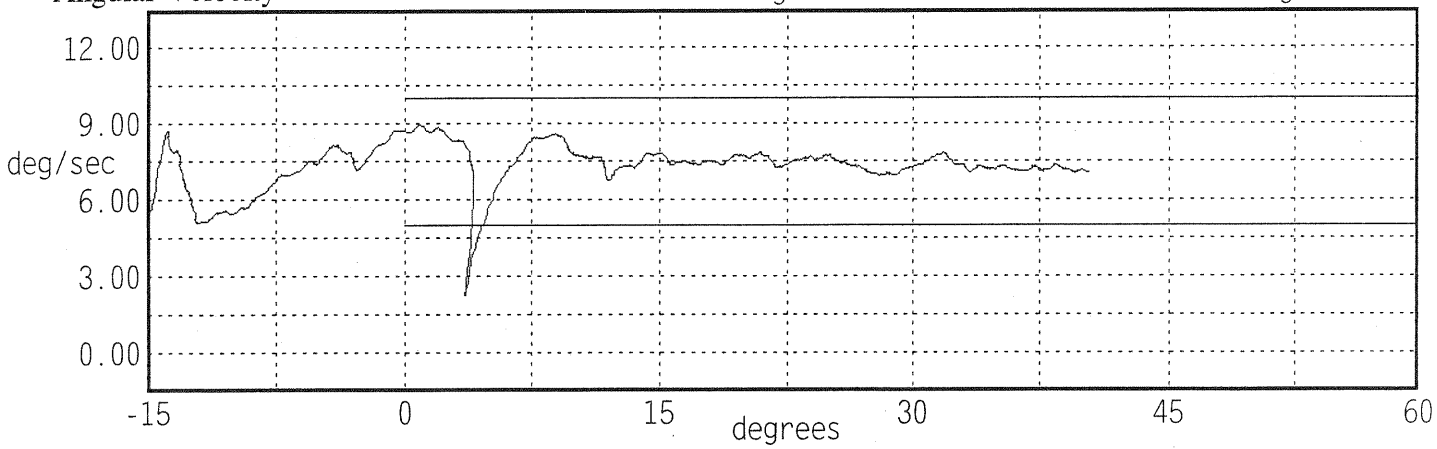
Moment About H-Point

Peak Moment: 211.6 Nm at 40.3 deg
Peak Angle: 40.3 deg at 211.6 Nm



Angular Velocity

Max: 8.9 deg/sec Min: 2.2 deg/sec



Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

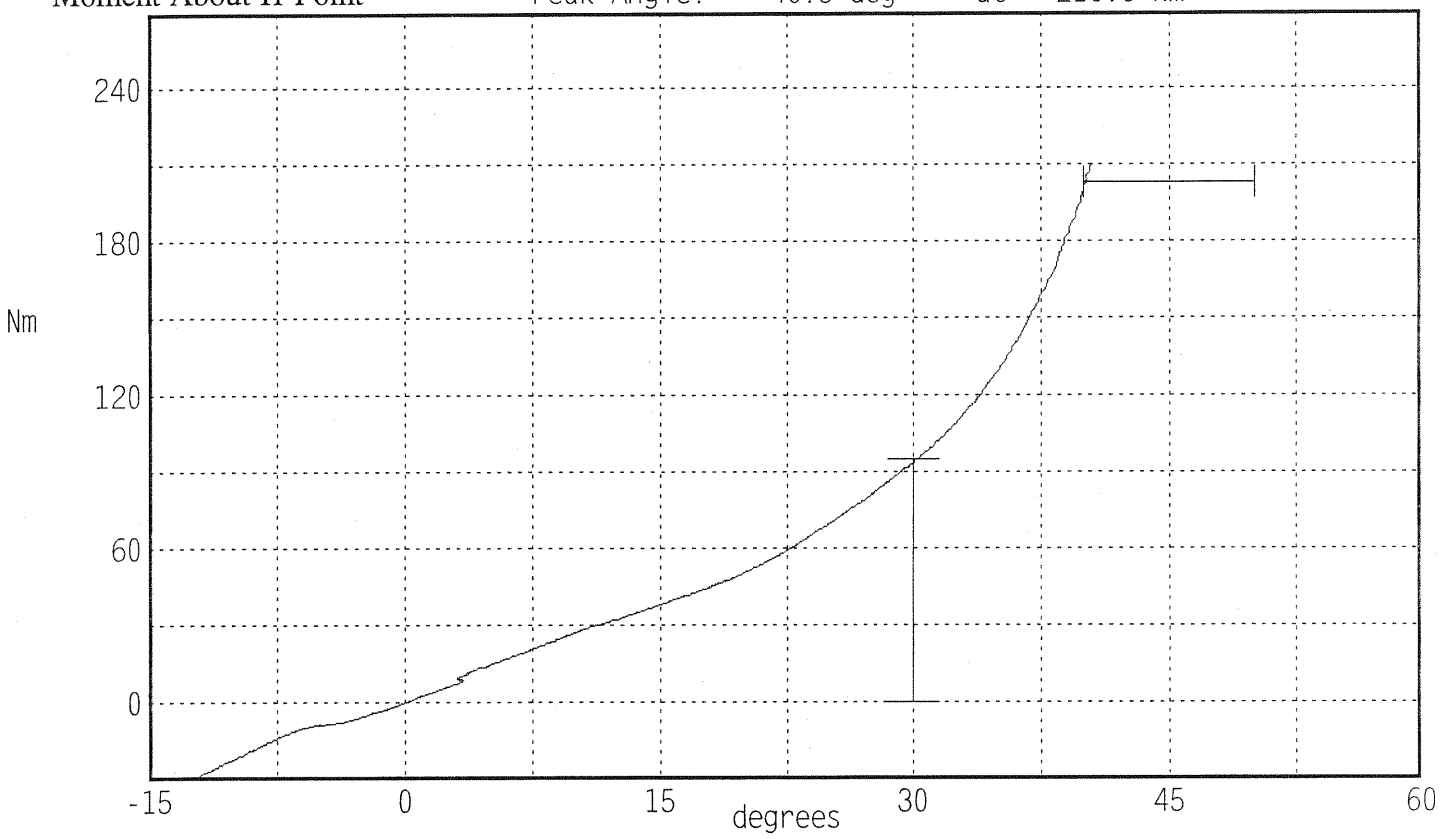
Serial Number: 134R
Test Number: 134C126
Comments:

Date: 12/03/2007
Time: 08:46

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.0	°C	Pass
Humidity	10 - 70	34	%	Pass
Moment at 30 deg	<= 94.9	93.6	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	40.2	deg	Pass
Average Velocity	5.0 - 10.0	7.3	deg/sec	Pass

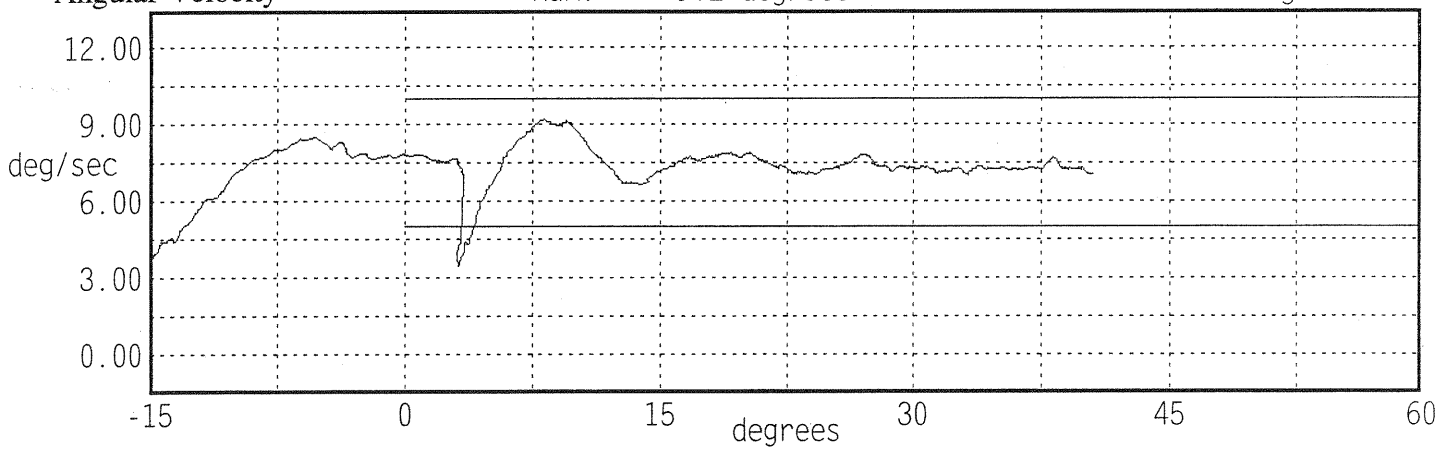
Moment About H-Point

Peak Moment: 210.0 Nm at 40.5 deg
Peak Angle: 40.5 deg at 210.0 Nm



Angular Velocity

Max: 9.2 deg/sec Min: 3.5 deg/sec



Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 134 Certification No. 126-1
Test Date: 11/30/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.0 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.124 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,620.67 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

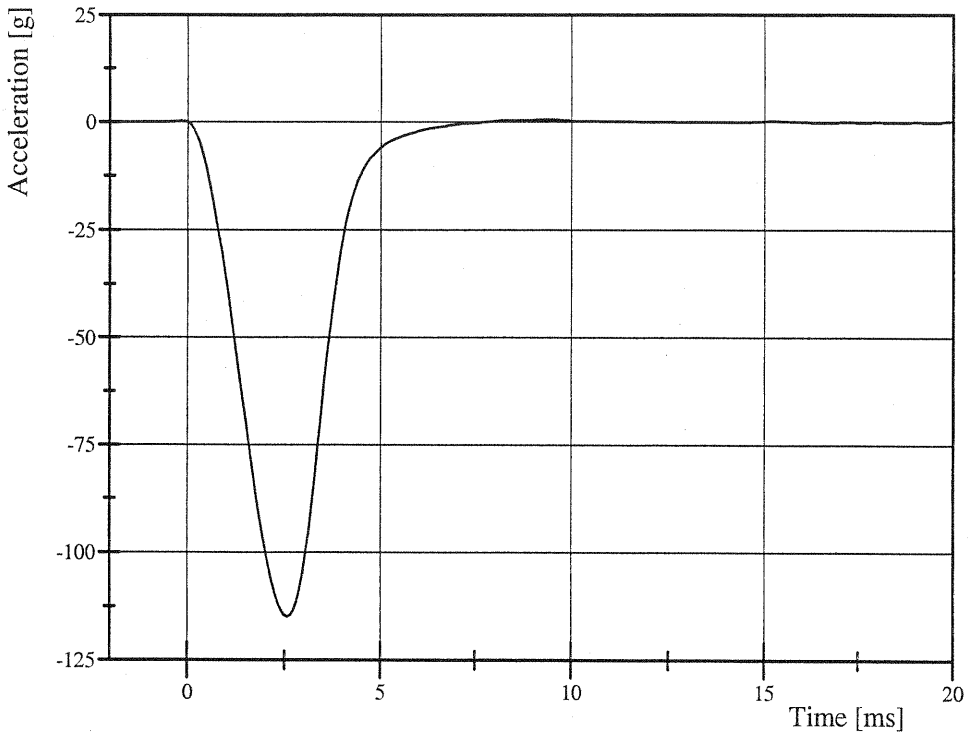
11.30.2007 13:37:41 1695

071214

Transportation Research Center Inc.

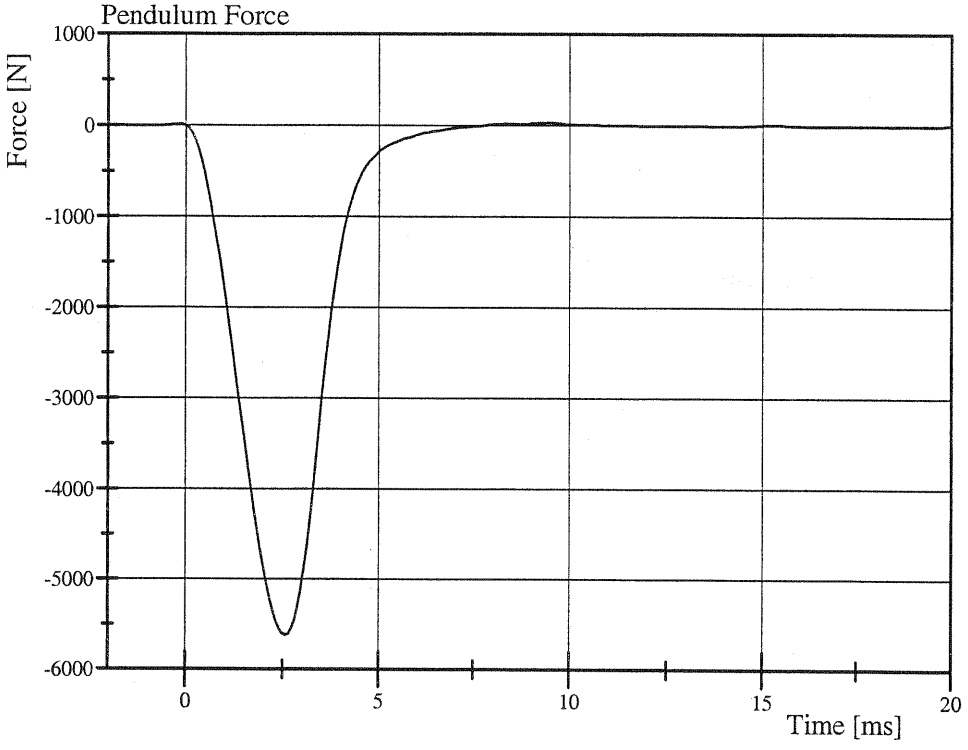
Left Knee Femur Response Test
HIII 50th Serial No. 134 Certification No. 126-1
Test Date: 11/30/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.6 g at 9.4 ms
Min: -114.9 g at 2.6 ms

Pendulum Force



Filter Class: CFC_600
Max: 30.6 N at 9.4 ms
Min: -5,620.7 N at 2.6 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.30.2007 13:37:48 1695

071214

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 134 Certification No. 126-1
Test Date: 11/30/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.124 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,656.89 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

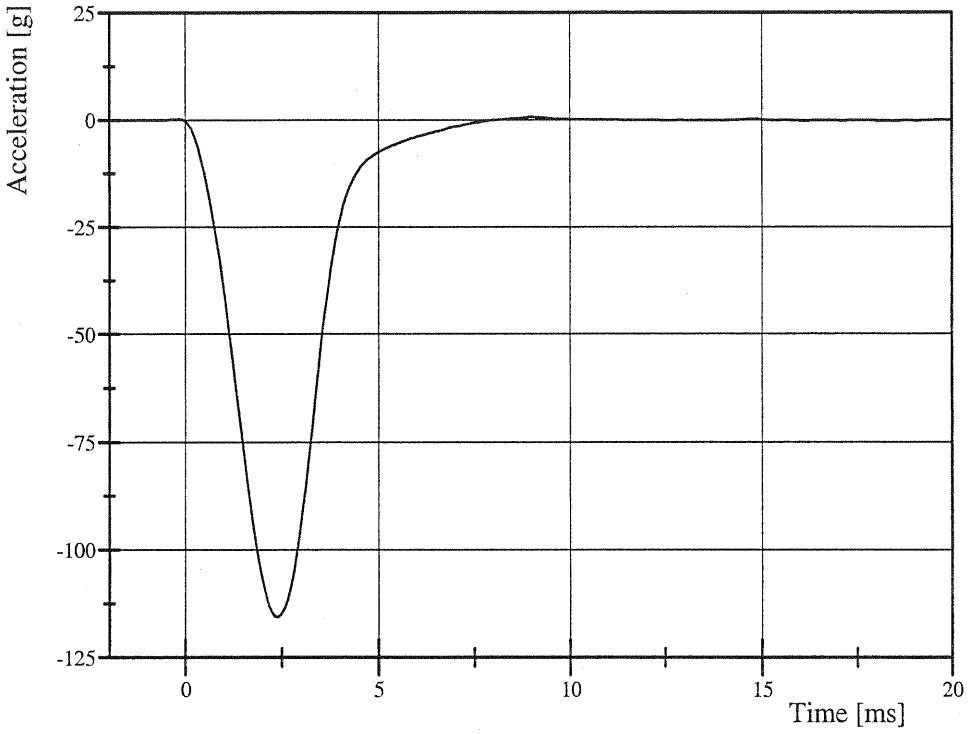
11.30.2007 13:42:50 1704

071214

Transportation Research Center Inc.

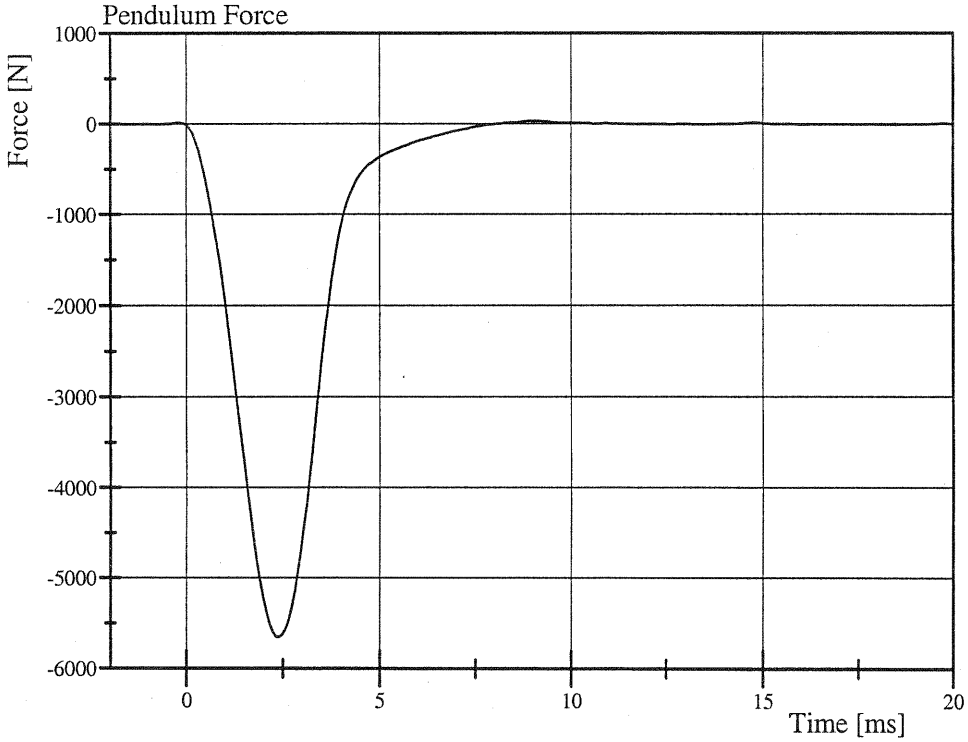
Right Knee Femur Response Test
HIII 50th Serial No. 134 Certification No. 126-1
Test Date: 11/30/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.7 g at 9.0 ms
Min: -115.6 g at 2.4 ms

Pendulum Force



Filter Class: CFC_600
Max: 33.7 N at 9.0 ms
Min: -5,656.9 N at 2.4 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.30.2007 13:42:56 1704

071214

Pre-Test Dummy Configuration and Performance Verification Data

Left Side Row 12 Left Seat Dummy S/N: 855

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 855
Calibration No. 09

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	885	Yes
B	Shoulder Pivot Height	505.5 - 520.7	507	Yes
C	H-Point Height	83.8 - 88.9	87	Yes
D	H-Point From Seatback	134.6 - 139.7	139	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	88	Yes
F	Thigh Clearance	139.7 - 154.9	150	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	298	Yes
H	Skull Cap To Backline	40.6 - 45.7	44	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	333	Yes
J	Elbow Rest Height	190.5 - 210.8	195	Yes
K	Buttock Knee Length	579.1 - 604.5	599	Yes
L	Popliteal Height	429.3 - 454.7	432	Yes
M	Knee Pivot Height	485.1 - 500.4	490	Yes
N	Buttock Popliteal Length	452.1 - 477.5	476	Yes
O	Chest Depth	213.4 - 228.6	226	Yes
P	Foot Length	251.5 - 266.7	260	Yes
V	Shoulder Breadth	421.6 - 436.9	425	Yes
W	Foot Breadth	91.4 - 106.7	95	Yes
Y	Chest Circumference	970.3 - 1000.8	996	Yes
Z	Waist Circumference	835.7 - 866.1	846	Yes
AA	Location For Chest Circumference	429.3 - 434.3	430	Yes
BB	Location For Waist Circumference	226.1 - 231.1	230	Yes

Comment:

Technician

Approved

Transportation Research Center Inc.

Front Head Drop
HIII 50th Serial No. 855 Certification No. 9-1
Test Date: 11/15/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.0 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	227.9 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-6.8 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Approved

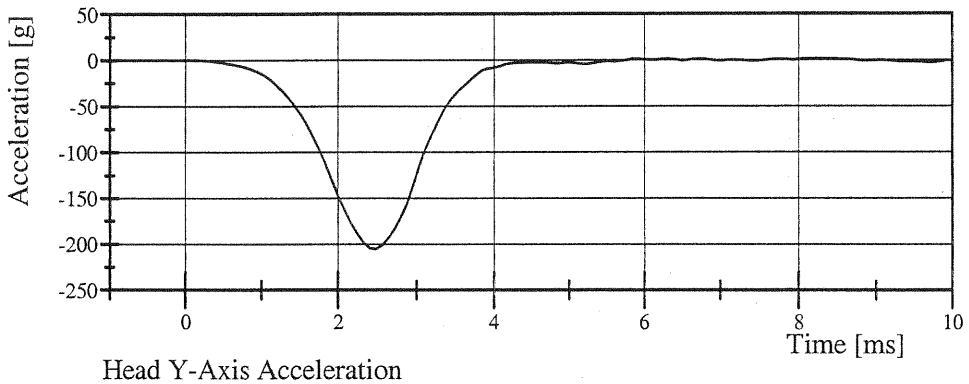
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.15.2007 08:01:30 608

Transportation Research Center Inc.

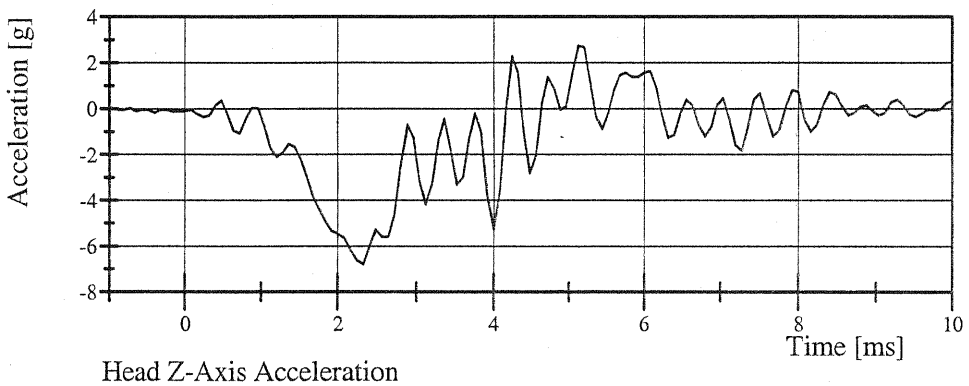
Front Head Drop
HIII 50th Serial No. 855 Certification No. 9-1
Test Date: 11/15/2007

Head X-Axis Acceleration



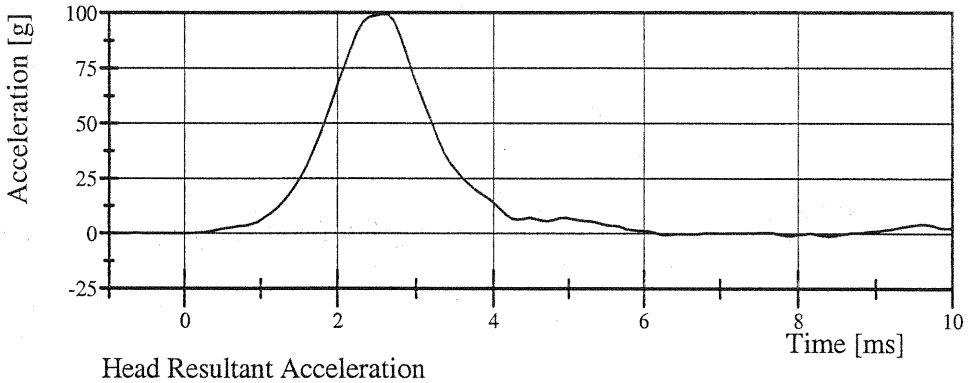
Filter Class: CFC_1000
Max: 1.4 g at 8.3 ms
Min: -205.3 g at 2.5 ms

Head Y-Axis Acceleration



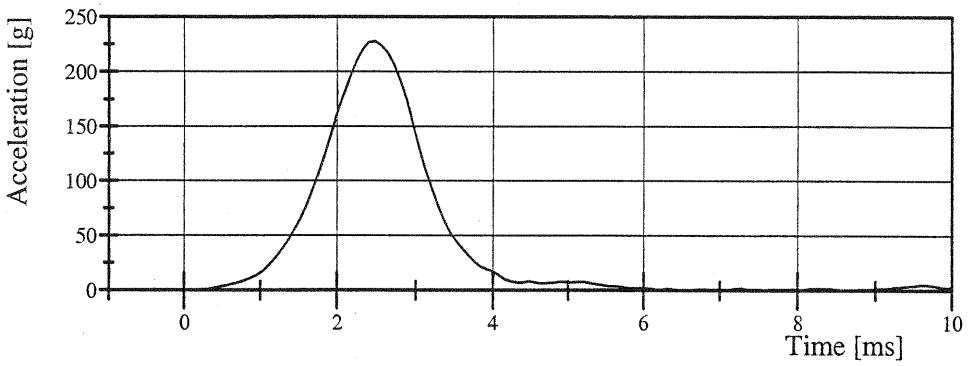
Filter Class: CFC_1000
Max: 2.7 g at 5.1 ms
Min: -6.8 g at 2.3 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 99.3 g at 2.6 ms
Min: -1.1 g at 8.4 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 227.9 g at 2.5 ms
Min: 0.1 g at -0.5 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.15.2007 08:01:37 608

071214

Transportation Research Center Inc.

Neck Flexion
HIII 50th Serial No. 855 Certification No. 9-2
Test Date: 11/15/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	7.012 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	39.1 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-26.59 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-21.50 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-15.11 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-15.11 g	Yes
Total Head D-Plane Rotation			
Peak	(-64) - (-78) °	-68.8 °	Yes
Time of Peak	57 - 64 ms	59.9 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	120.6 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	88 - 108 N·m	97.8 N·m	Yes
Time of Peak	47 - 58 ms	52.1 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	101.4 ms	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.15.2007 09:10:55 2973

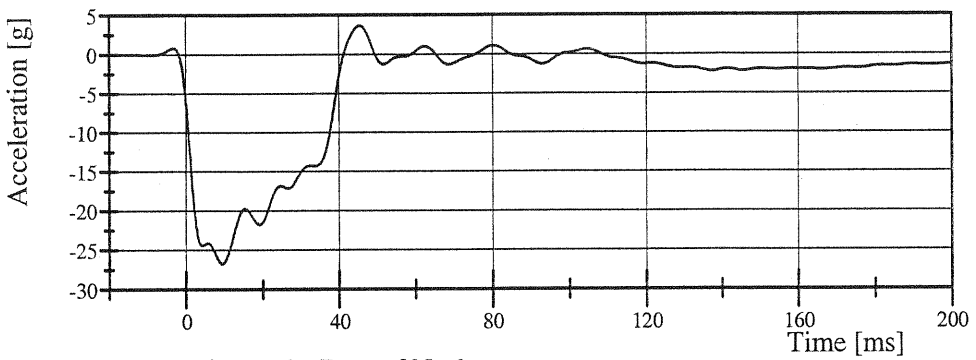
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 855 Certification No. 9-2

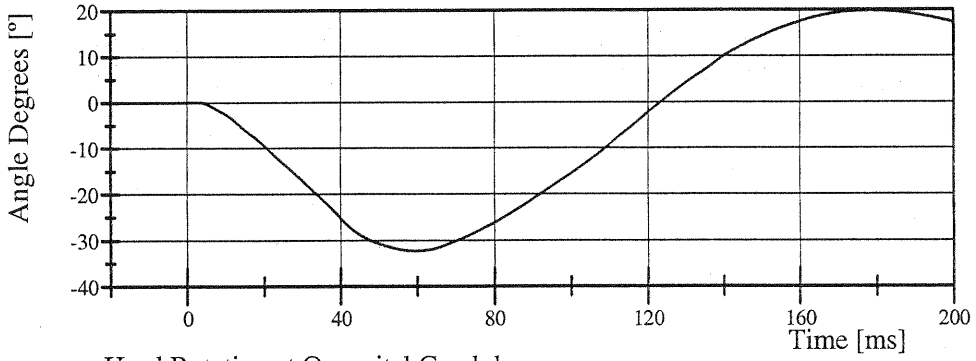
Test Date: 11/15/2007

Pendulum Acceleration



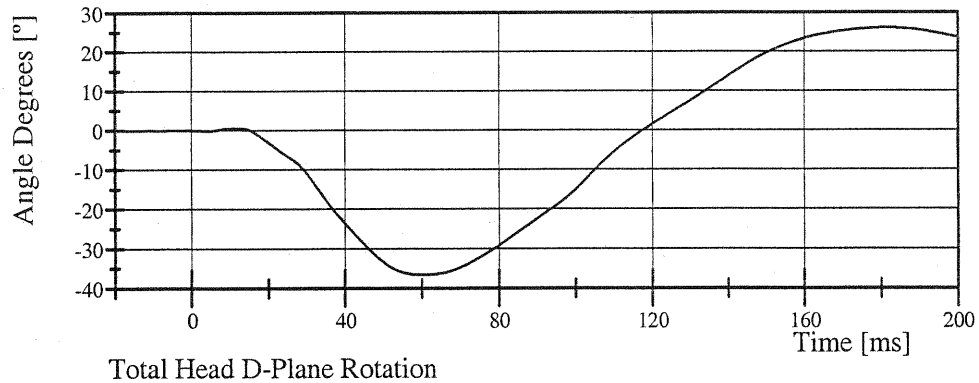
Filter Class: CFC_60
Max: 3.7 g at 45.4 ms
Min: -26.8 g at 9.4 ms

Pot Rotation at the Base of Neck



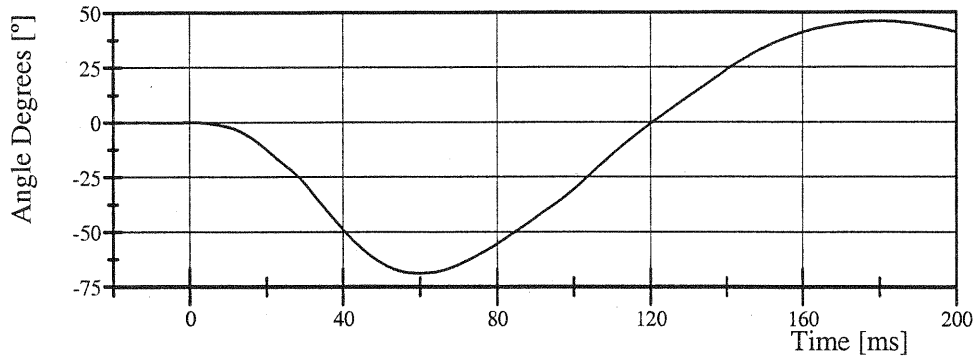
Filter Class: CFC_60
Max: 19.8 ° at 178.6 ms
Min: -32.3 ° at 59.4 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 26.1 ° at 181.9 ms
Min: -36.5 ° at 60.2 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 45.9 ° at 180.2 ms
Min: -68.8 ° at 59.9 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.15.2007 09:11:23 2973

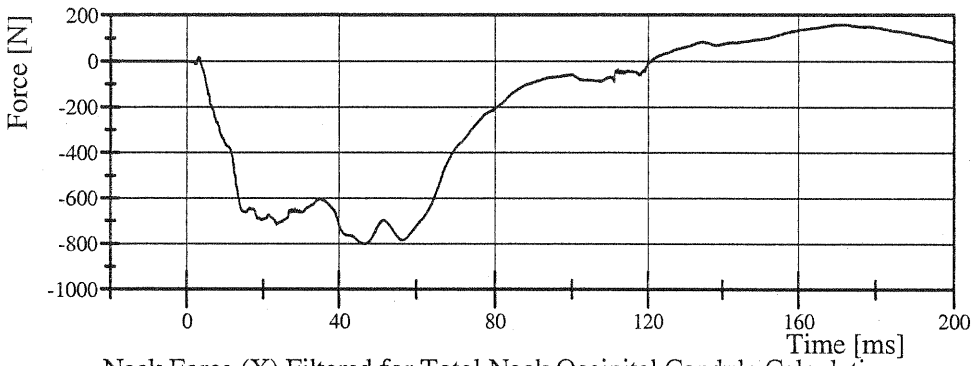
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 855 Certification No. 9-2

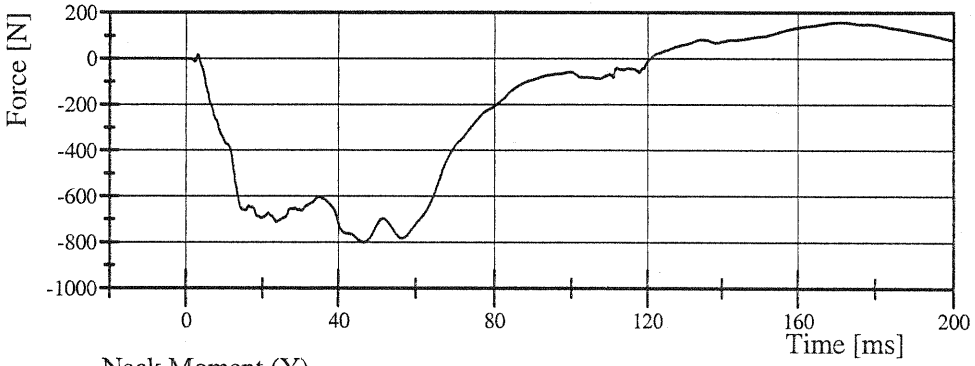
Test Date: 11/15/2007

Neck Force (X)



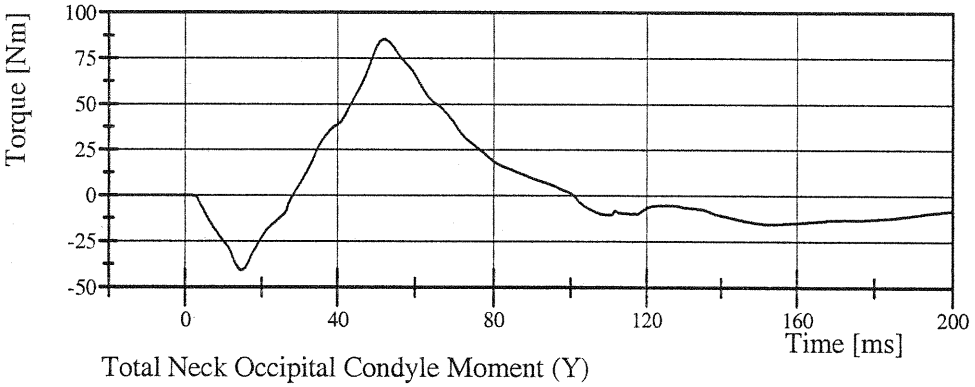
Filter Class: CFC_1000
Max: 158.9 N at 170.2 ms
Min: -801.0 N at 46.6 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



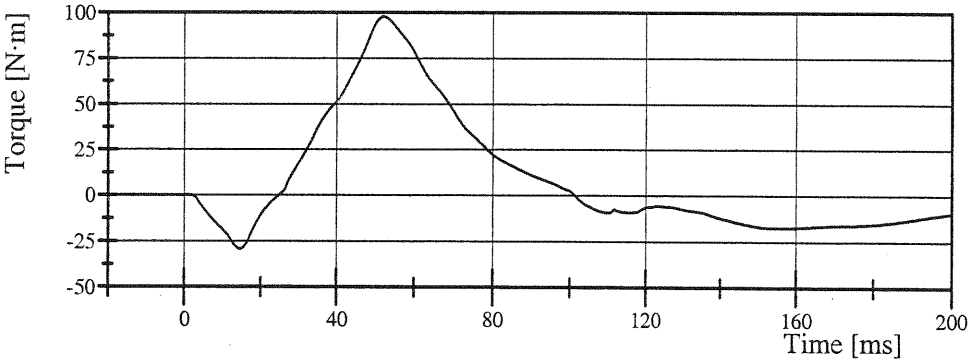
Filter Class: CFC_600
Max: 158.7 N at 170.3 ms
Min: -801.0 N at 46.7 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 85.5 Nm at 52.0 ms
Min: -40.7 Nm at 14.6 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 97.8 N·m at 52.1 ms
Min: -29.1 N·m at 14.6 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.15.2007 09:11:24 2973

071214

Transportation Research Center Inc.

Neck Extension
HIII 50th Serial No. 855 Certification No. 9-1
Test Date: 11/15/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-6.011 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	45.8 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	17.69 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	14.66 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	12.59 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	12.59 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	93.1 °	Yes
Time of Peak	72 - 82 ms	79.8 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	166.3 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-53) - (-80) N·m	-58.9 N·m	Yes
Time of Peak	65 - 79 ms	74.8 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	145.3 ms	Yes

Test meets specifications.

Comments:

Technician Robert Brandl

Approved Ron Stoner

Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

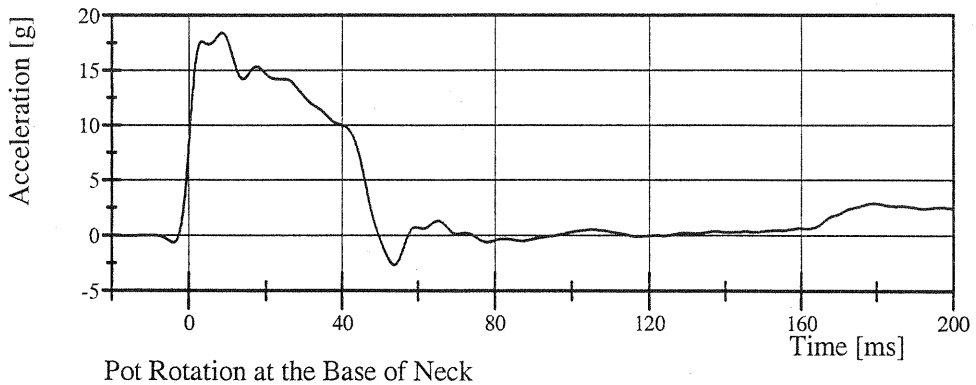
11.15.2007 10:23:05 3062

071214

Transportation Research Center Inc.

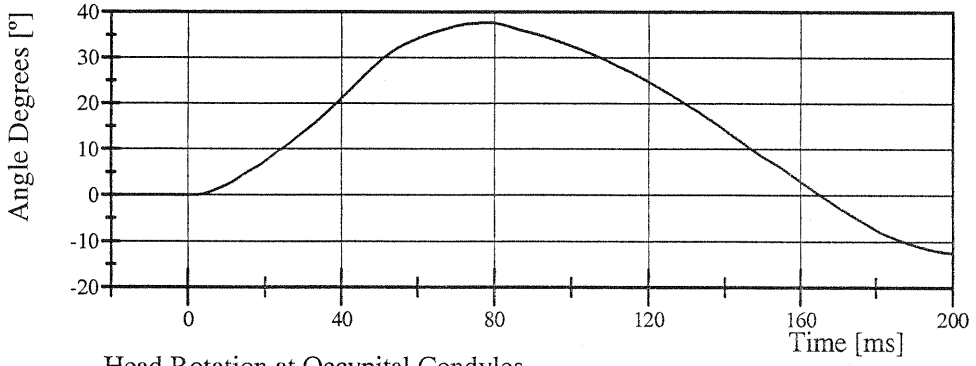
Neck Extension
HIII 50th Serial No. 855 Certification No. 9-1
Test Date: 11/15/2007

Pendulum Acceleration



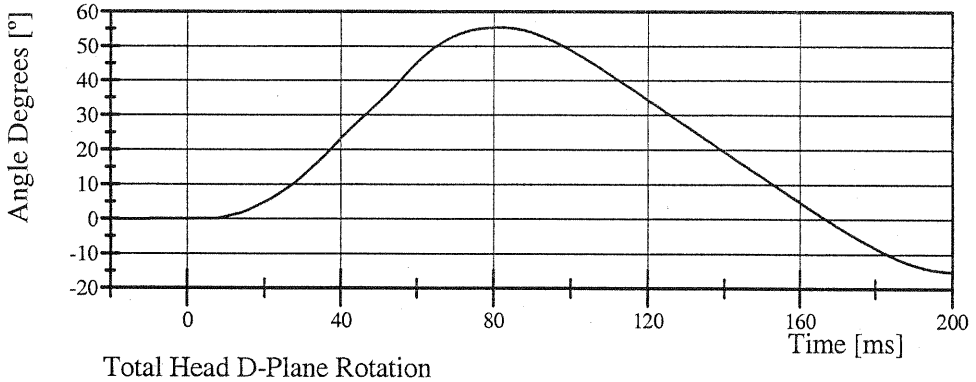
Filter Class: CFC_60
Max: 18.4 g at 8.5 ms
Min: -2.7 g at 53.6 ms

Pot Rotation at the Base of Neck



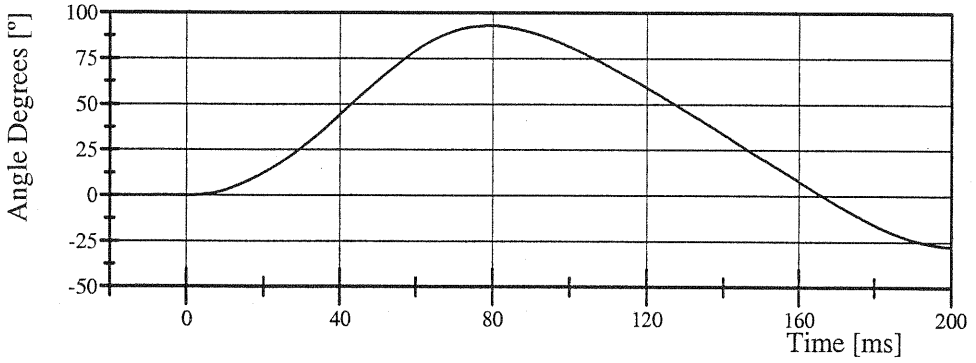
Filter Class: CFC_60
Max: 37.7 ° at 78.4 ms
Min: -12.5 ° at 200.0 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 55.5 ° at 81.6 ms
Min: -15.1 ° at 200.0 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 93.1 ° at 79.8 ms
Min: -27.6 ° at 200.0 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

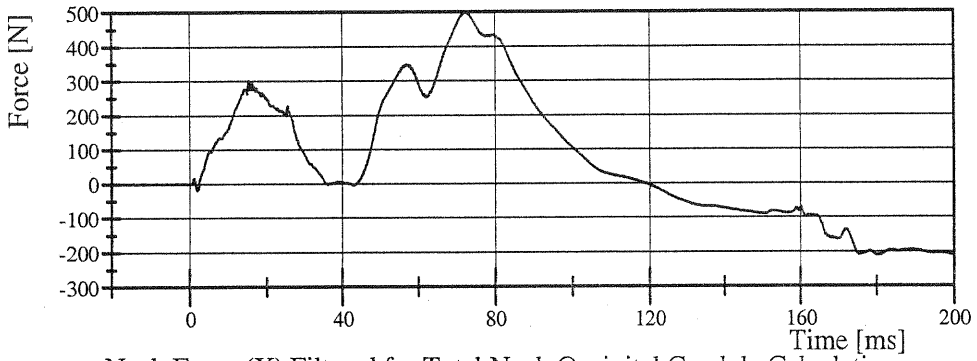
11.15.2007 10:23:38 3062

071214

Transportation Research Center Inc.

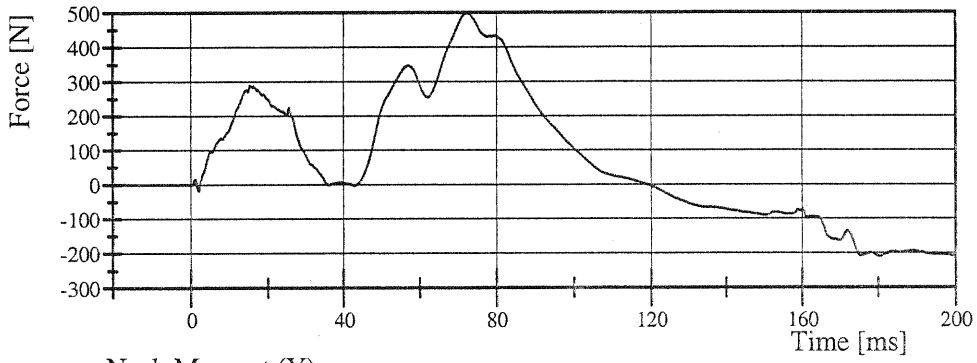
Neck Extension
HIII 50th Serial No. 855 Certification No. 9-1
Test Date: 11/15/2007

Neck Force (X)



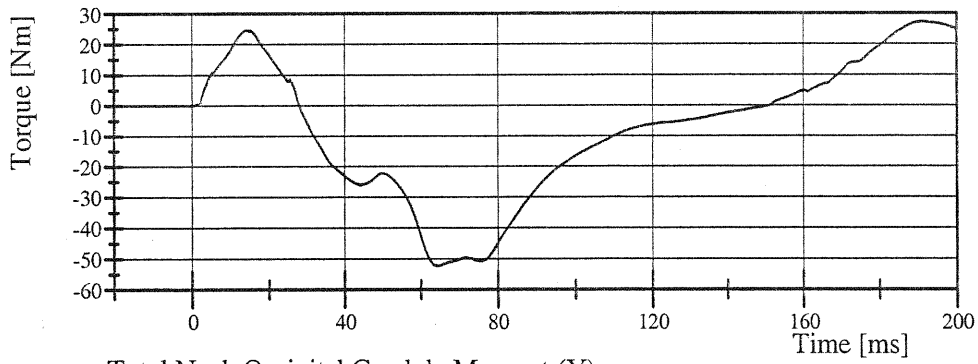
Filter Class: CFC_1000
Max: 499.4 N at 72.6 ms
Min: -210.5 N at 180.4 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



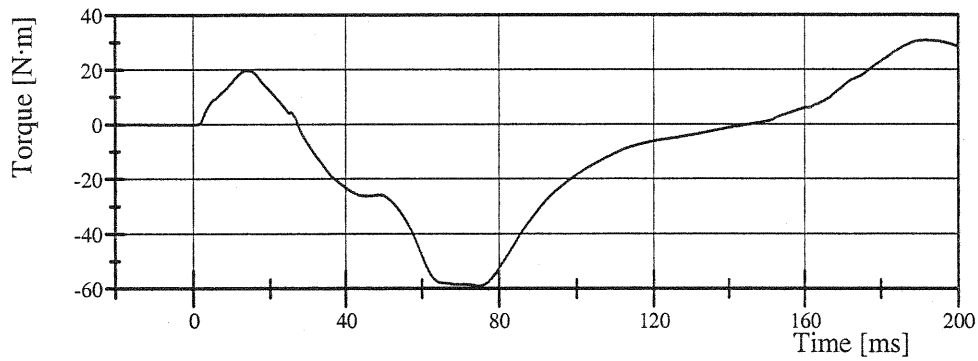
Filter Class: CFC_600
Max: 498.9 N at 72.6 ms
Min: -210.2 N at 180.5 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 27.2 Nm at 191.3 ms
Min: -52.4 Nm at 64.4 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 30.7 N·m at 191.8 ms
Min: -58.9 N·m at 74.8 ms

Transportation Research Center Inc.

Front Thorax
HIII 50th Serial No. 855 Certification No. 9-1
Test Date: 11/15/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.725 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,885.5 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-64.93 mm	Yes
Internal Hysteresis	65 - 85 %	76.0 %	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

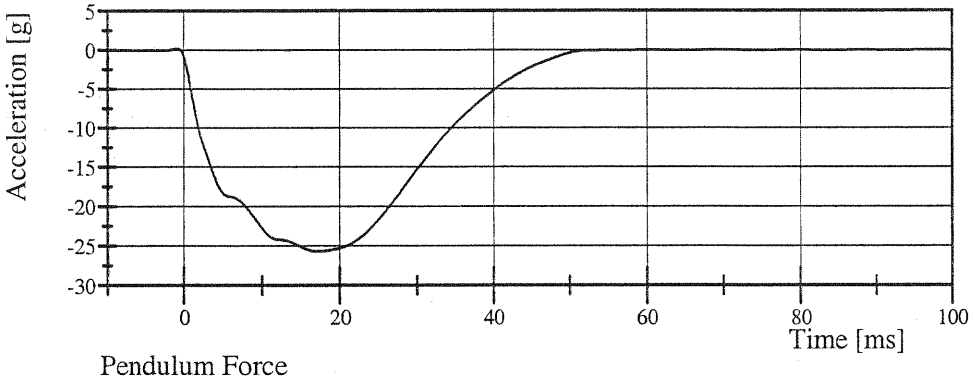
11.15.2007 13:10:43 403

071214

Transportation Research Center Inc.

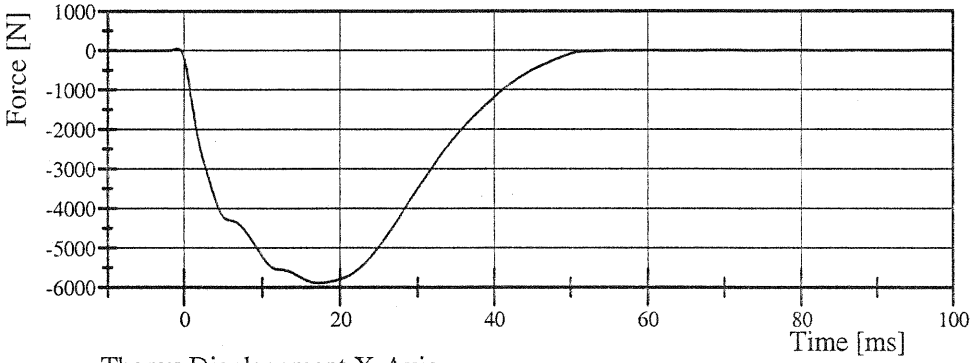
Front Thorax
HIII 50th Serial No. 855 Certification No. 9-1
Test Date: 11/15/2007

Pendulum Acceleration



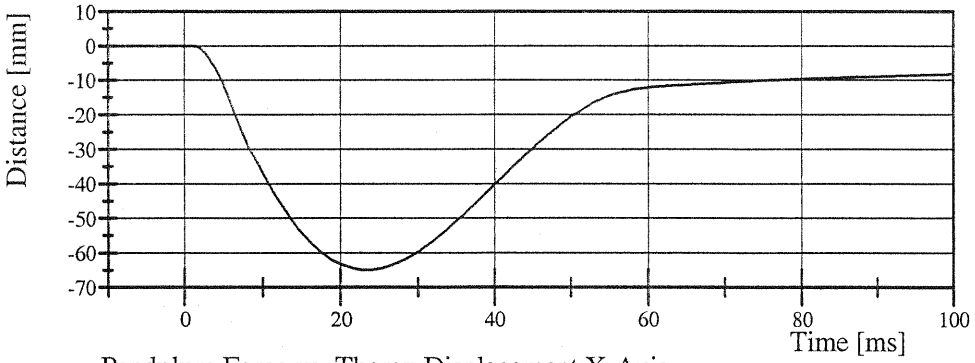
Filter Class: CFC_180
Max: 0.2 g at -0.9 ms
Min: -25.7 g at 17.3 ms

Pendulum Force



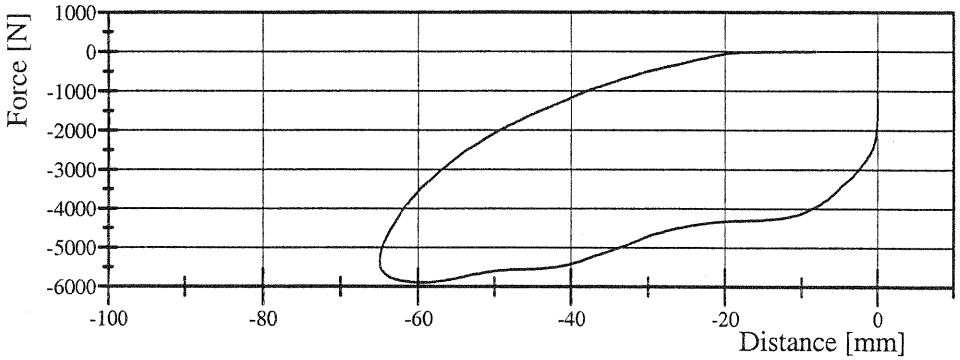
Filter Class: CFC_180
Max: 43.7 N at -0.9 ms
Min: -5,885.5 N at 17.3 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.0 mm at -4.0 ms
Min: -64.9 mm at 23.3 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 43.7 N at -0.0 mm
Min: -5,885.5 N at -59.4 mm

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

11.15.2007 13:10:54 403

071214

Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

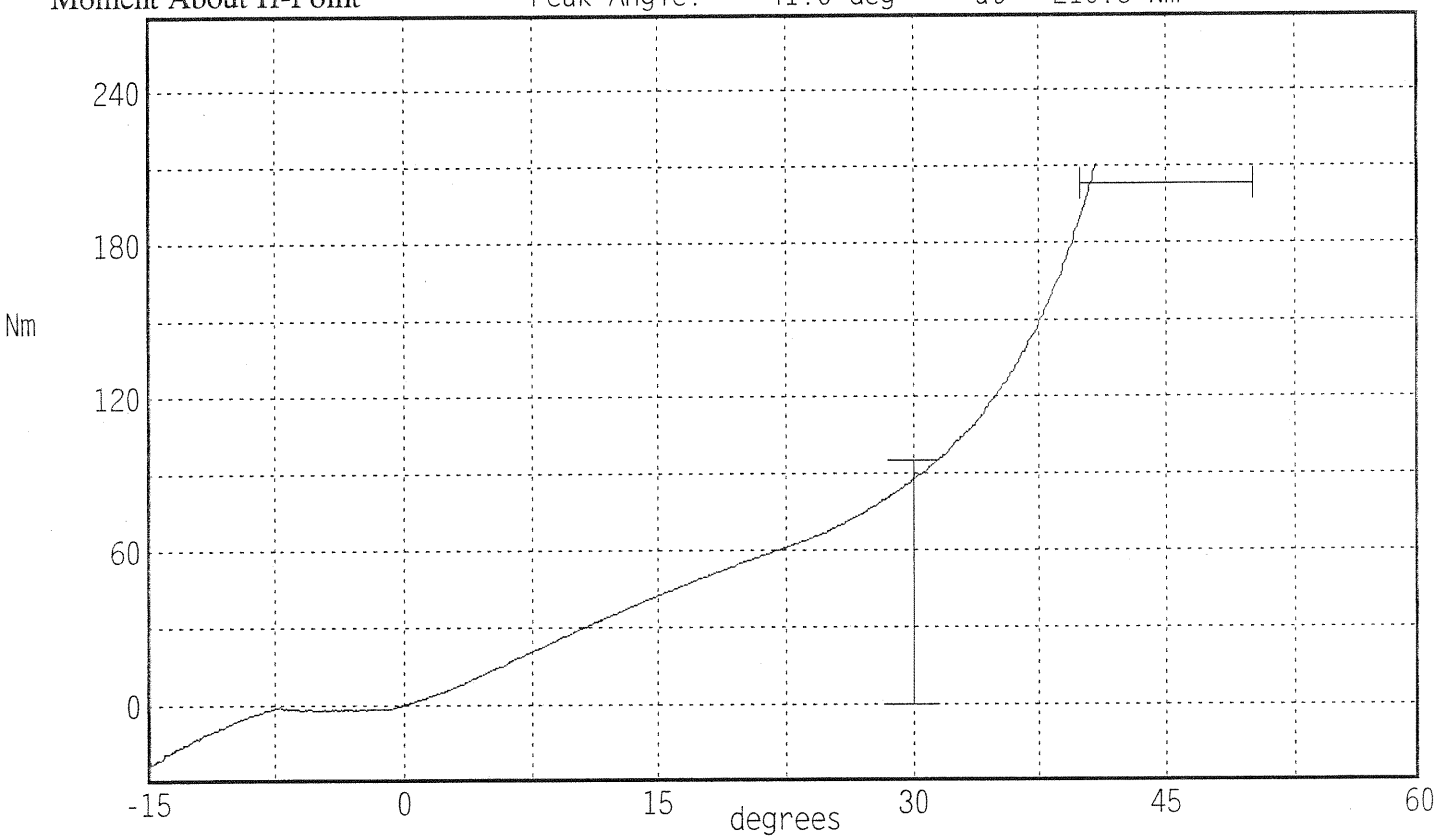
Serial Number: 855L
Test Number: 855C09
Comments:

Date: 11/15/2007
Time: 09:52

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	20.9	°C	Pass
Humidity	10 - 70	36	%	Pass
Moment at 30 deg	<= 94.9	87.9	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	40.6	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

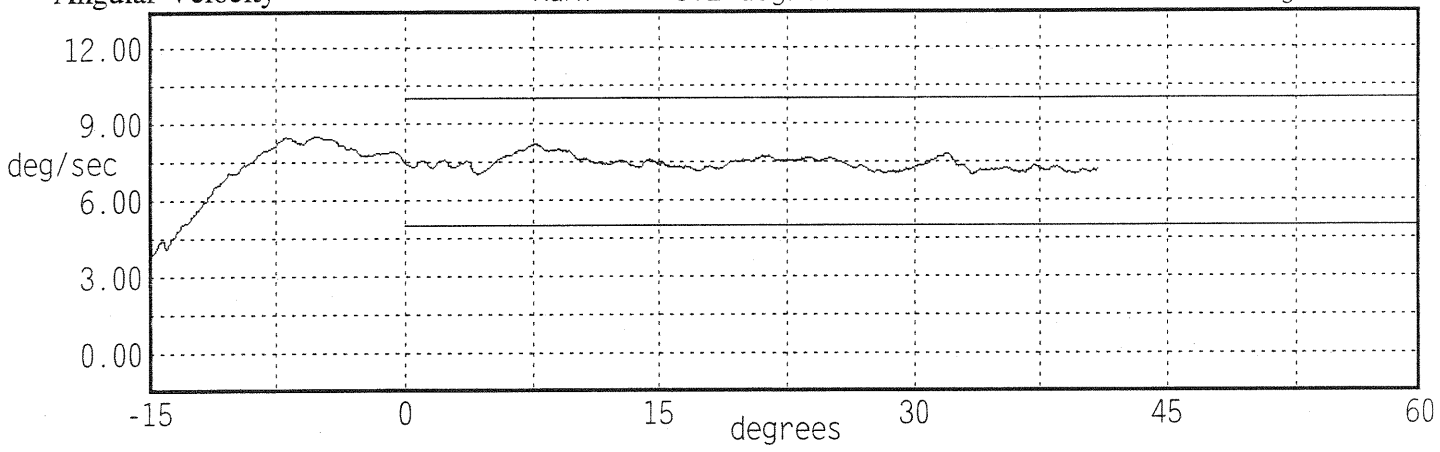
Moment About H-Point

Peak Moment: 210.6 Nm at 41.0 deg
Peak Angle: 41.0 deg at 210.6 Nm



Angular Velocity

Max: 8.2 deg/sec Min: 7.0 deg/sec



Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

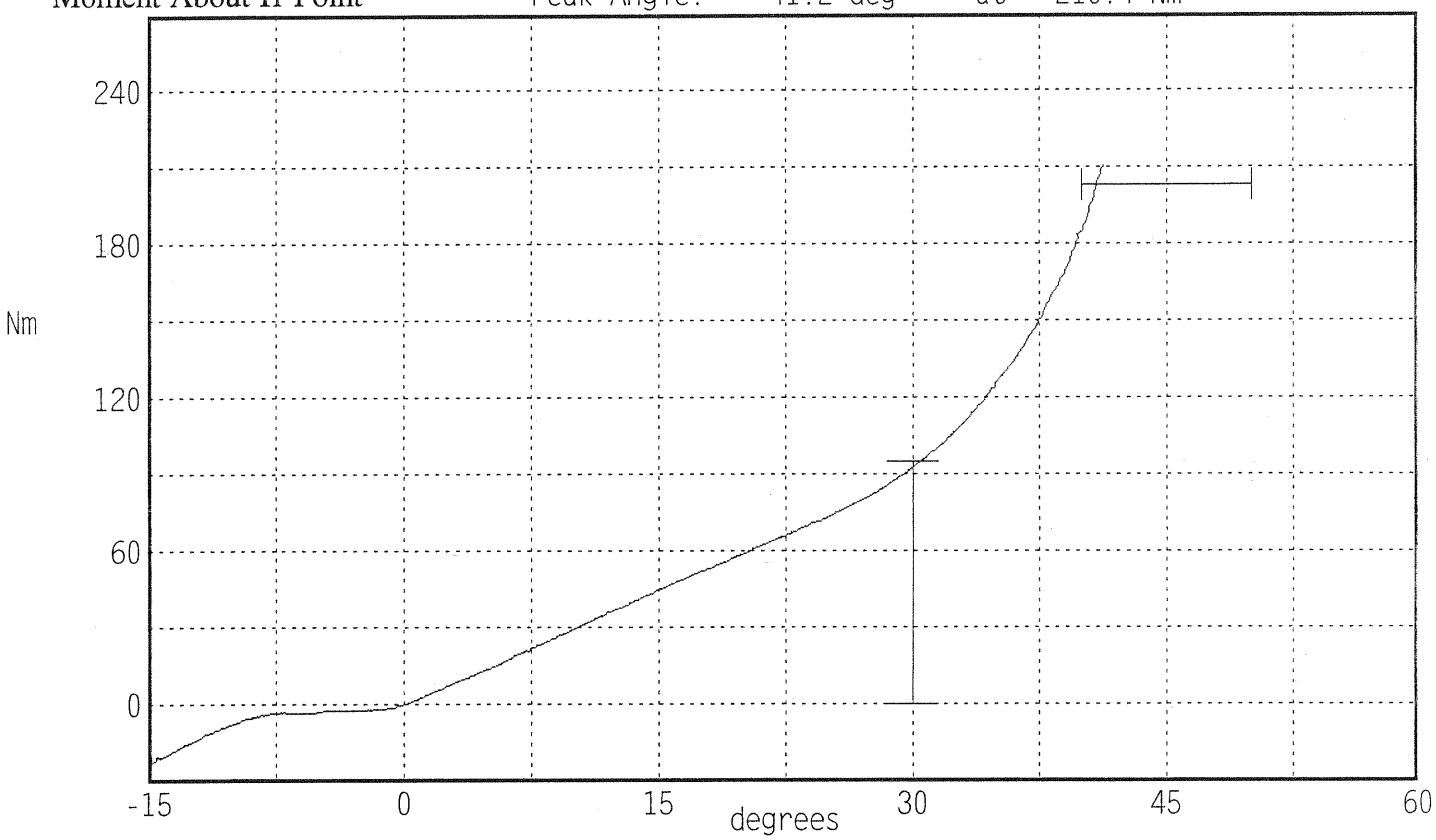
Serial Number: 855R
Test Number: 855C09
Comments:

Date: 11/15/2007
Time: 10:10

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.8	°C	Pass
Humidity	10 - 70	34	%	Pass
Moment at 30 deg	<= 94.9	92.6	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	40.9	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

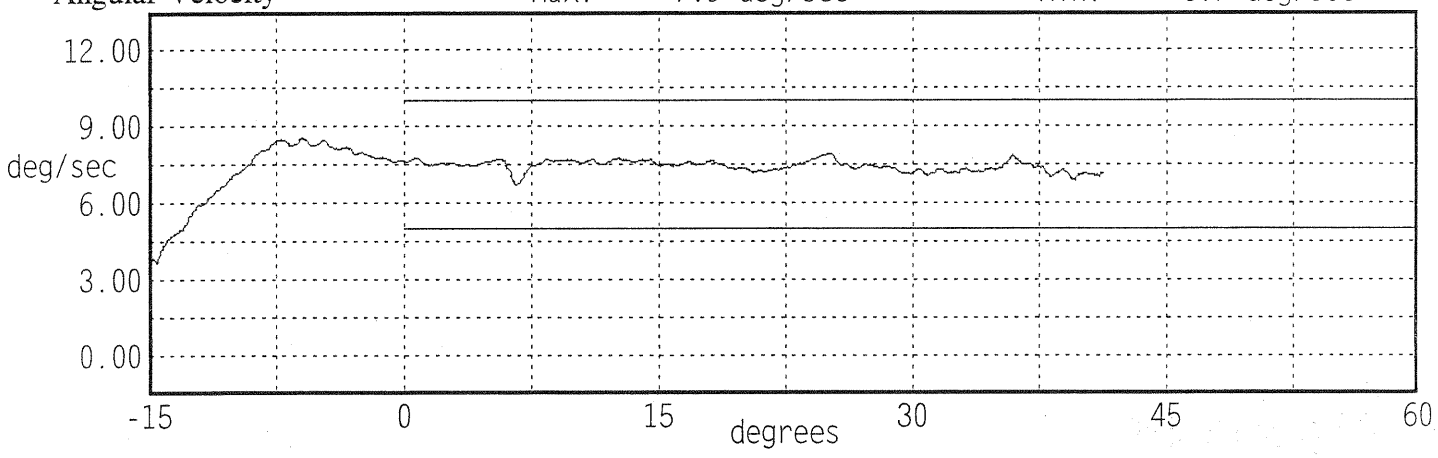
Moment About H-Point

Peak Moment: 210.4 Nm at 41.2 deg
Peak Angle: 41.2 deg at 210.4 Nm



Angular Velocity

Max: 7.9 deg/sec Min: 6.7 deg/sec



Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 855 Certification No. 9-3
Test Date: 11/15/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.114 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,254.44 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

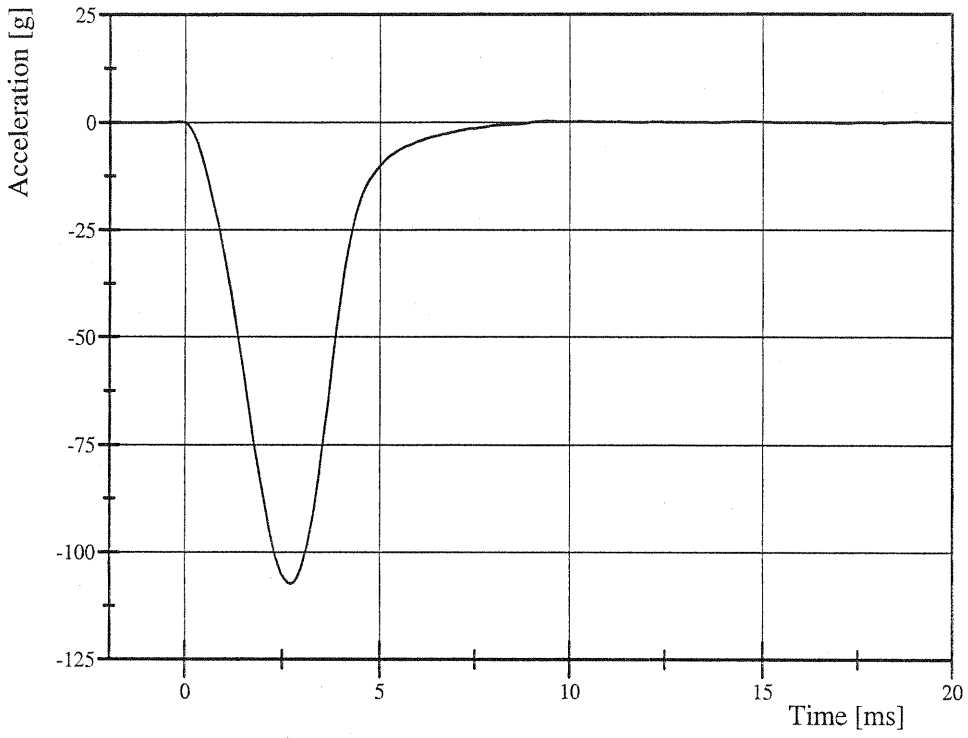
11.15.2007 12:40:54 1831

071214

Transportation Research Center Inc.

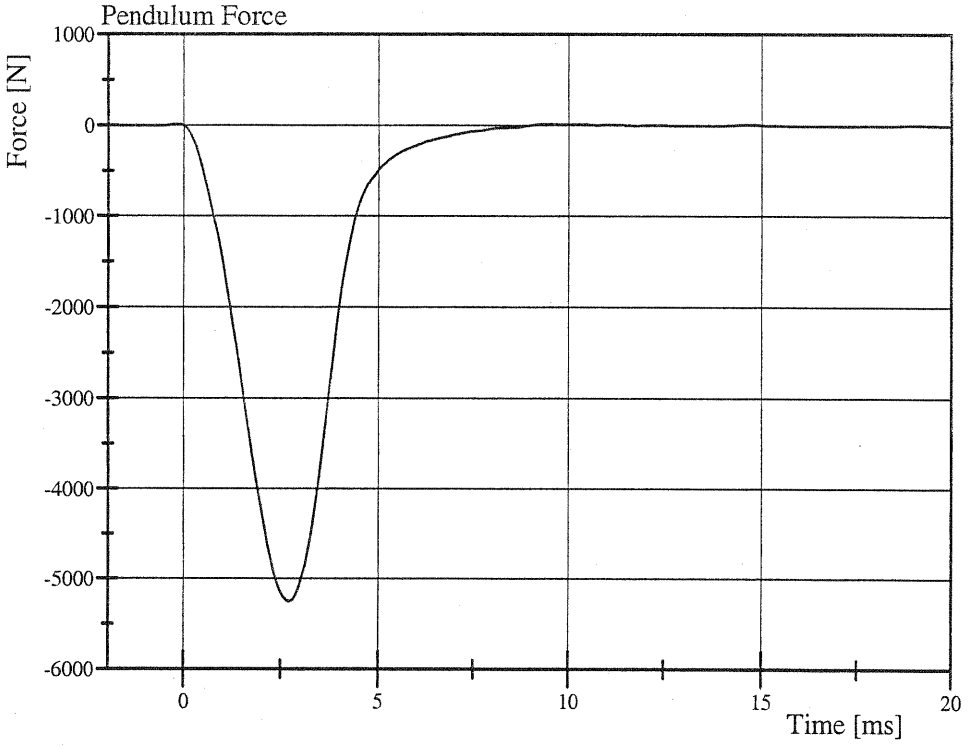
Left Knee Femur Response Test
HIII 50th Serial No. 855 Certification No. 9-3
Test Date: 11/15/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.3 g at 9.4 ms
Min: -107.4 g at 2.7 ms

Pendulum Force



Filter Class: CFC_600
Max: 14.9 N at 9.4 ms
Min: -5,254.4 N at 2.7 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.15.2007 12:41:12 1831

071214

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 855 Certification No. 9-1
Test Date: 11/15/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.114 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,467.98 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

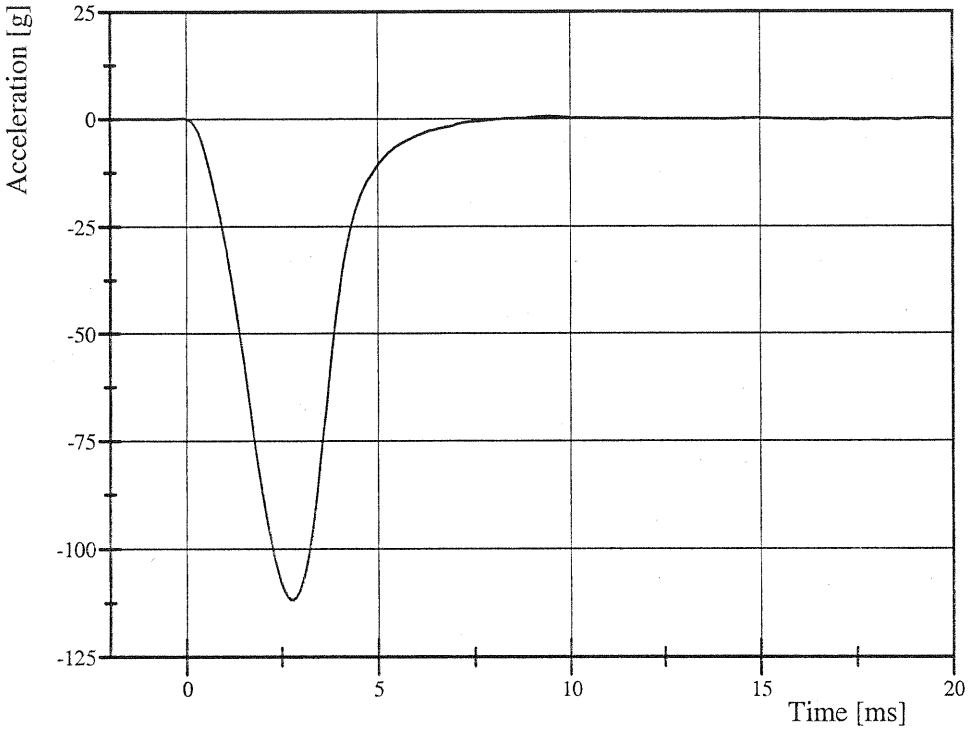
11.15.2007 11:13:58 1828

071214

Transportation Research Center Inc.

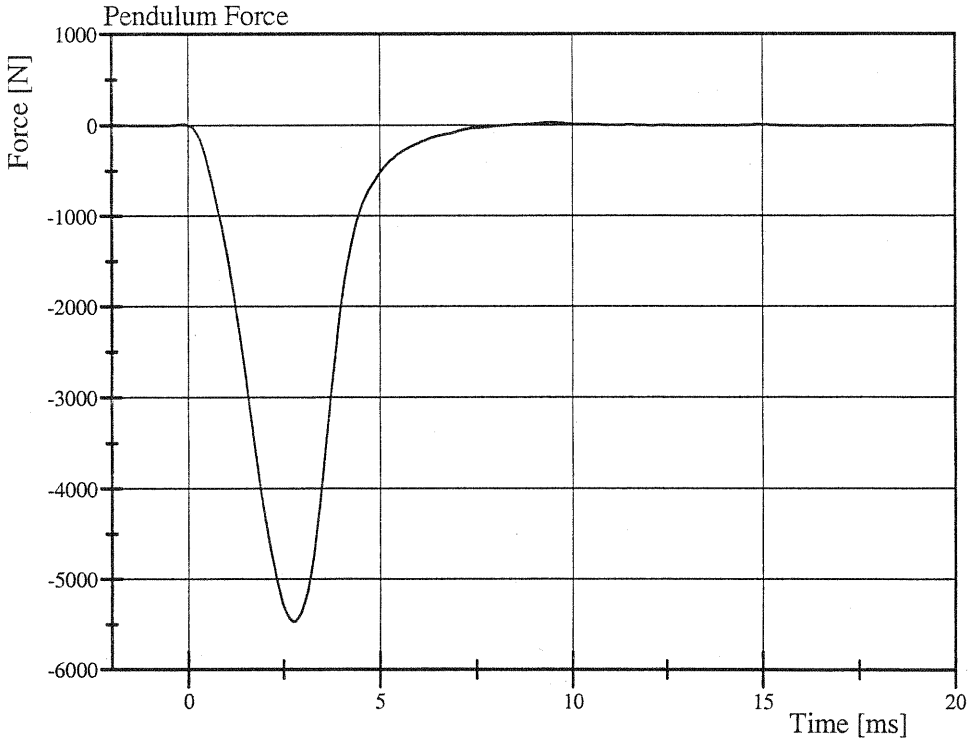
Right Knee Femur Response Test
HIII 50th Serial No. 855 Certification No. 9-1
Test Date: 11/15/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.6 g at 9.4 ms
Min: -111.8 g at 2.8 ms

Pendulum Force



Filter Class: CFC_600
Max: 30.9 N at 9.4 ms
Min: -5,468.0 N at 2.8 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

11.15.2007 11:14:23 1828

071214

Pre-Test Dummy Configuration and Performance Verification Data

Left Side Row 12 Right Seat Dummy S/N: 324

Transportation Research Center Inc.
572O HIII 5th Female Dummy
External Dimensions
Serial No. 324 Calibration No. 10
With Thor FLX Legs

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	774.7 - 800.1	775	Yes
B	Shoulder Pivot Height	431.8 - 457.2	445	Yes
C	Hip Pivot Height	81.3 - 86.3	85	Yes
D	Hip Pivot from Backline	144.8 - 149.8	146	Yes
E	Shoulder Pivot from Backline	68.6 - 83.8	79	Yes
F	Thigh Clearance	119.4 - 134.6	130	Yes
G	Back of Elbow to Wrist Pivot	243.9 - 259.1	245	Yes
H	Head Back to Backline	43.2 - 48.2	44	Yes
I	Shoulder to Elbow Length	276.8 - 297.2	287	Yes
J	Elbow Rest Height	182.8 - 203.2	184	Yes
K	Buttock Knee Length	520.7 - 546.1	535	Yes
L	Popliteal Height	355.6 - 376.0	370	Yes
M	Knee Pivot Height	393.7 - 419.1	396	Yes
N	Buttock Popliteal Height	414.0 - 439.4	438	Yes
O	Chest Depth without Jacket	175.3 - 190.5	178	Yes
P	Foot Length	218.5 - 233.7	221	Yes
R	Buttock to Knee Pivot Length	457.2 - 482.6	480	Yes
S	Head Breadth	137.1 - 147.3	142	Yes
T	Head Depth	177.8 - 188.0	181	Yes
U	Hip Breadth	299.7 - 314.9	300	Yes
V	Shoulder Breadth	350.5 - 365.7	362	Yes
W	Foot Breadth	78.8 - 94.0	88	Yes
X	Head Circumference	528.3 - 548.7	532	Yes
Y	Chest Circumference with Jacket	850.9 - 881.3	875	Yes
Z	Waist Circumference	759.5 - 789.9	780	Yes
AA	Reference Location for Chest Circumference	332.7 - 358.1	357	Yes
BB	Reference Location for Waist Circumference	160.0 - 170.2	161	Yes

Technician

Approved

Revised 3/19/3003

071214

Transportation Research Center Inc.

Front Head Drop
HIII 5th Serial No. 324 Certification No. 10-1
Test Date: 11/27/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Peak Head Resultant Acceleration	250 - 300 g	275.4 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	3.0 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

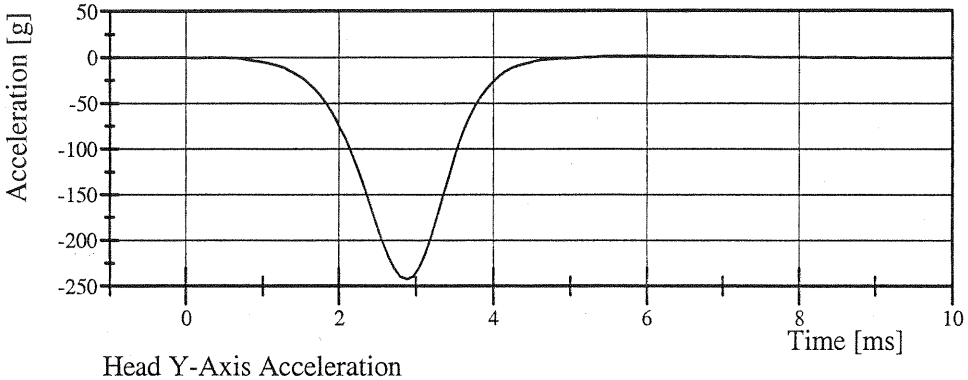
11.27.2007 10:33:23 229

071214

Transportation Research Center Inc.

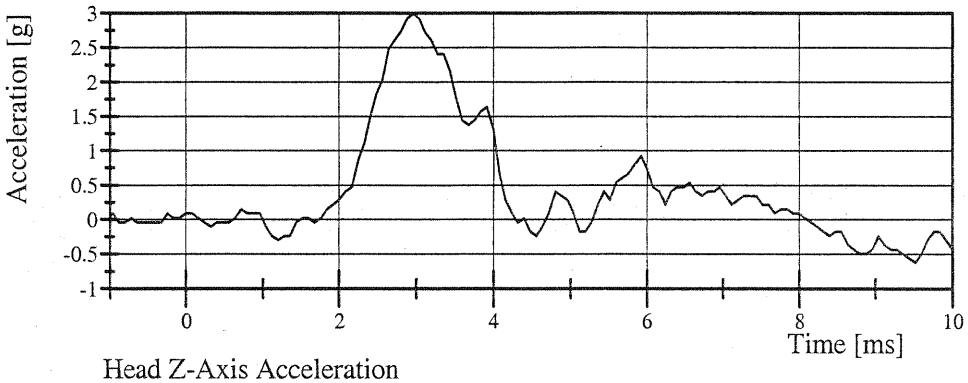
Front Head Drop
HIII 5th Serial No. 324 Certification No. 10-1
Test Date: 11/27/2007

Head X-Axis Acceleration



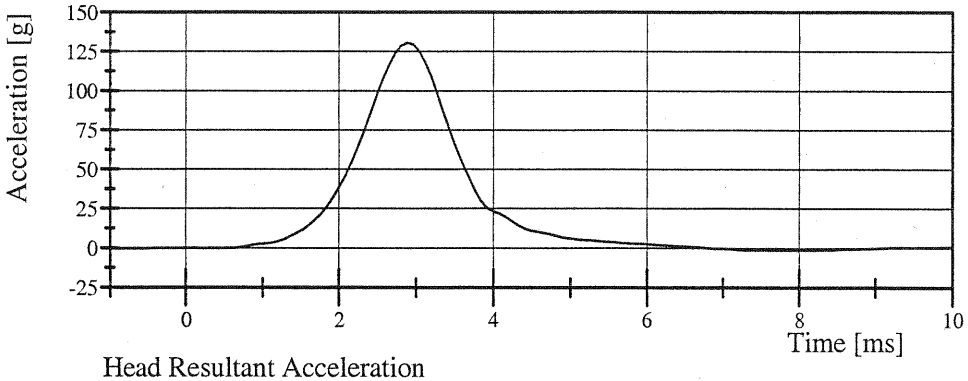
Filter Class: CFC_1000
Max: 1.8 g at 6.1 ms
Min: -242.4 g at 2.9 ms

Head Y-Axis Acceleration



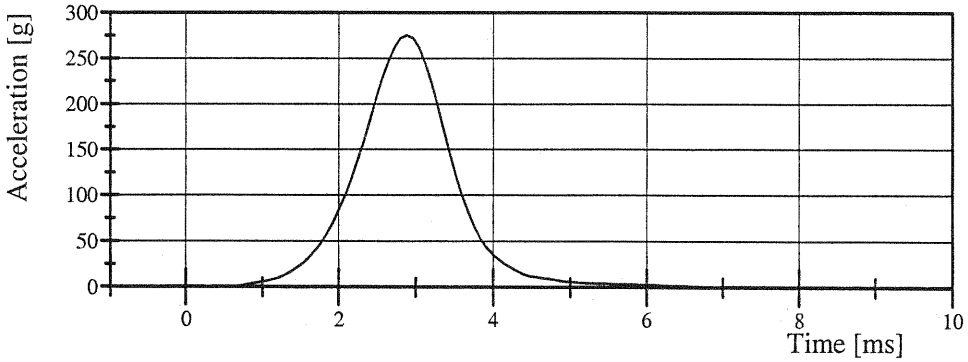
Filter Class: CFC_1000
Max: 3.0 g at 3.0 ms
Min: -0.6 g at 9.5 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 130.6 g at 2.9 ms
Min: -1.2 g at 7.4 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 275.4 g at 2.9 ms
Min: 0.0 g at -1.0 ms

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

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071214

Transportation Research Center Inc.

Neck Flexion
HIII 5th Serial No. 324 Certification No. 10-2
Test Date: 11/28/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	7.051 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	(-2.1) - (-2.5) m/s	-2.23 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	(-4.0) - (-5.0) m/s	-4.31 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	(-5.8) - (-7.0) m/s	-6.08 m/s	Yes
Total Head D-Plane Rotation	(-77) - (-91) °	-85.0 °	Yes
Total Neck Occipital Condyles Moment Between -77° and -91° Rotation	69 - 83 N·m	71.7 N·m	Yes
Total Neck Occipital Condyles Moment Decay to 10 N·m	80 - 100 ms	90.2 ms	Yes

Test meets specifications.

Comments:

Technician

Approved

Ron Stoner

Specification Source: CFR49 Part 572 Subpart O with Polarity in accordance with J211

11.28.2007 14:02:13 543

071214

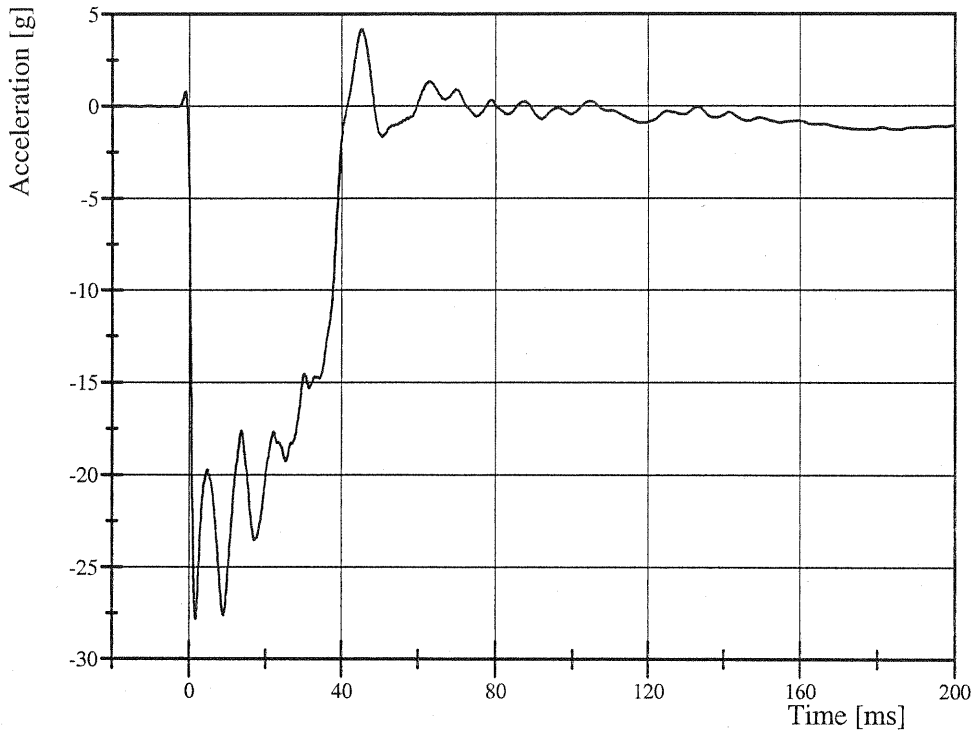
Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 324 Certification No. 10-2

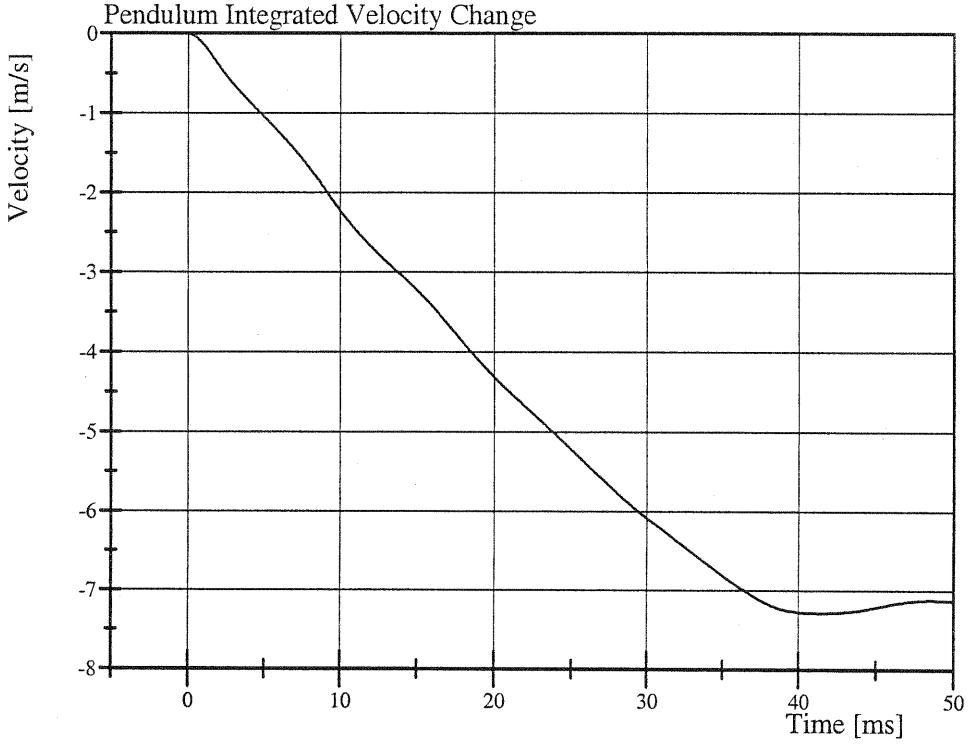
Test Date: 11/28/2007

Pendulum Acceleration



Filter Class: CFC_180
Max: 4.2 g at 45.4 ms
Min: -27.8 g at 1.8 ms

Pendulum Integrated Velocity Change



Filter Class: CFC_180
Max: 0.0 m/s at 0.0 ms
Min: -7.3 m/s at 41.5 ms

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

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071214

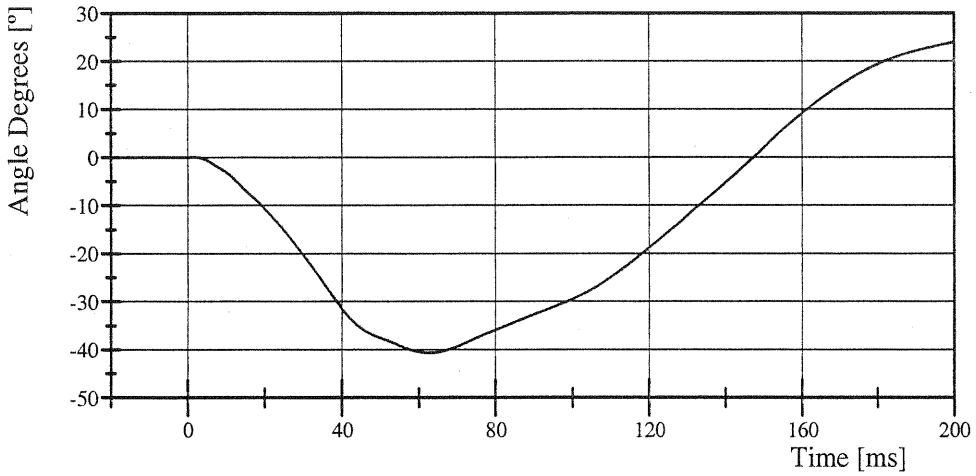
Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 324 Certification No. 10-2

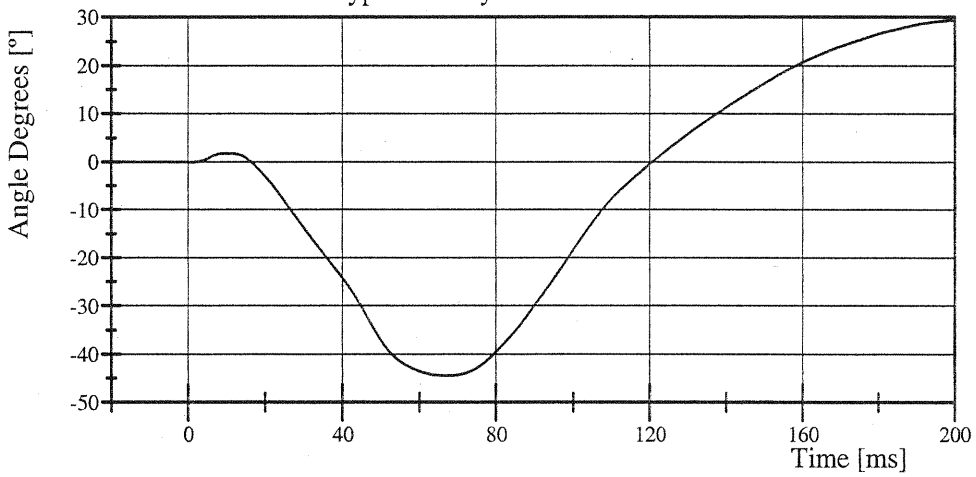
Test Date: 11/28/2007

Pot Rotation at the Base of Neck



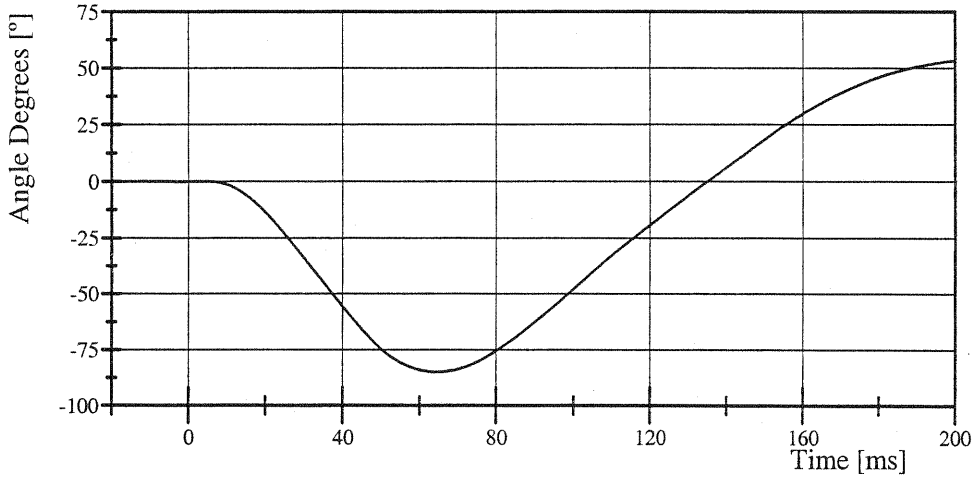
Filter Class: CFC_60
Max: 23.9 ° at 200.0 ms
Min: -40.7 ° at 62.9 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 29.4 ° at 200.0 ms
Min: -44.5 ° at 67.4 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 53.3 ° at 200.0 ms
Min: -85.0 ° at 64.6 ms

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

11.28.2007 14:02:21 543

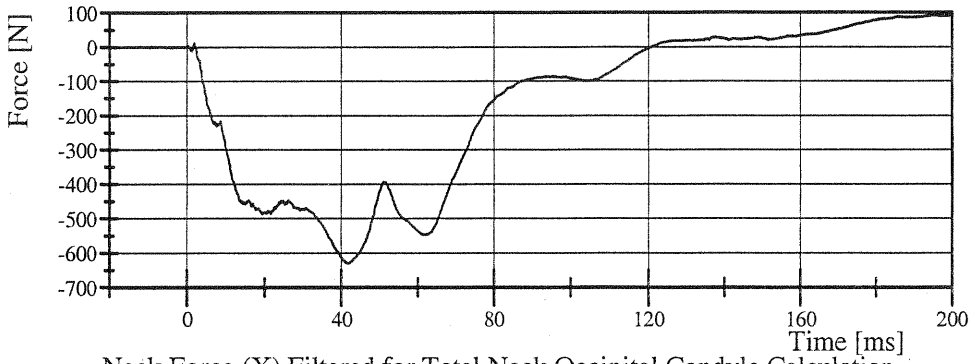
Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 324 Certification No. 10-2

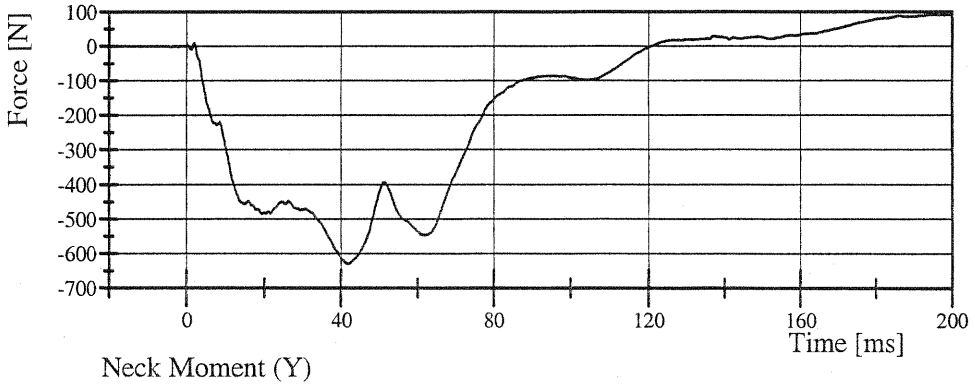
Test Date: 11/28/2007

Neck Force (X)



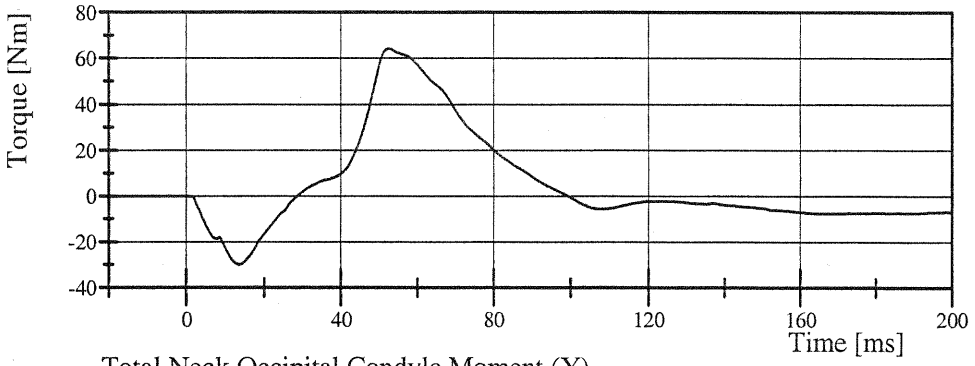
Filter Class: CFC_1000
Max: 92.5 N at 195.2 ms
Min: -630.2 N at 41.7 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



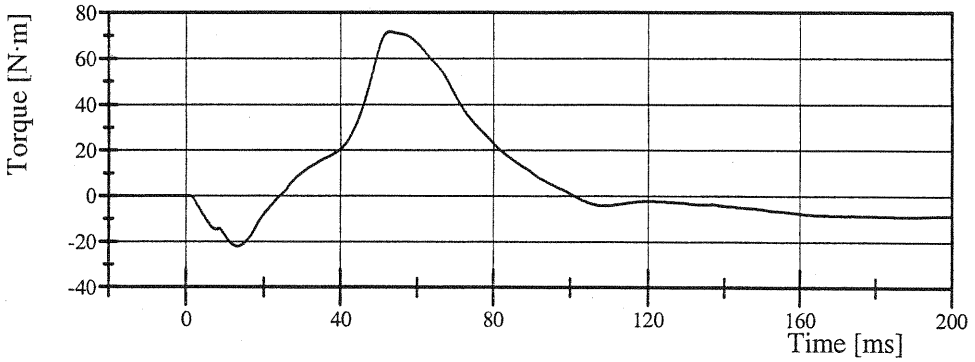
Filter Class: CFC_600
Max: 92.0 N at 195.2 ms
Min: -629.8 N at 41.7 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 64.3 Nm at 52.6 ms
Min: -29.9 Nm at 13.4 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 71.7 N·m at 52.8 ms
Min: -22.1 N·m at 13.2 ms

Transportation Research Center Inc.

Neck Extension
HIII 5th Serial No. 324 Certification No. 10-4
Test Date: 11/29/2007

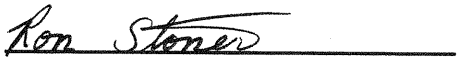
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	32 %	Yes
Pendulum Velocity	(-5.95) - (-6.19) m/s	-6.082 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	1.5 - 1.9 m/s	1.75 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	3.1 - 3.9 m/s	3.39 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	4.6 - 5.6 m/s	4.82 m/s	Yes
Total Head D-Plane Rotation	99 - 114 °	111.6 °	Yes
Total Neck Occipital Condyles Moment Between 99° and 114° Rotation	(-53) - (-65) N·m	-55.8 N·m	Yes
Total Neck Occipital Condyles Moment Decay to -10 N·m	94 - 114 ms	104.5 ms	Yes

Test meets specifications.

Comments:

Technician

Approved



Specification Source: CFR49 Part 572 Subpart O with Polarity in accordance with J211

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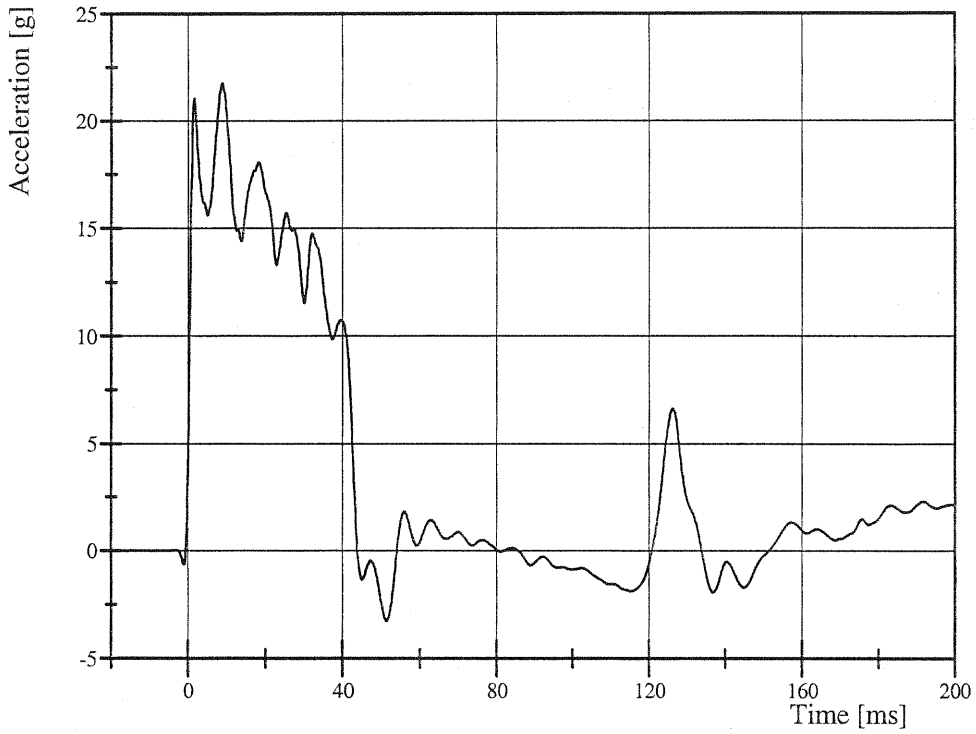
Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 324 Certification No. 10-4

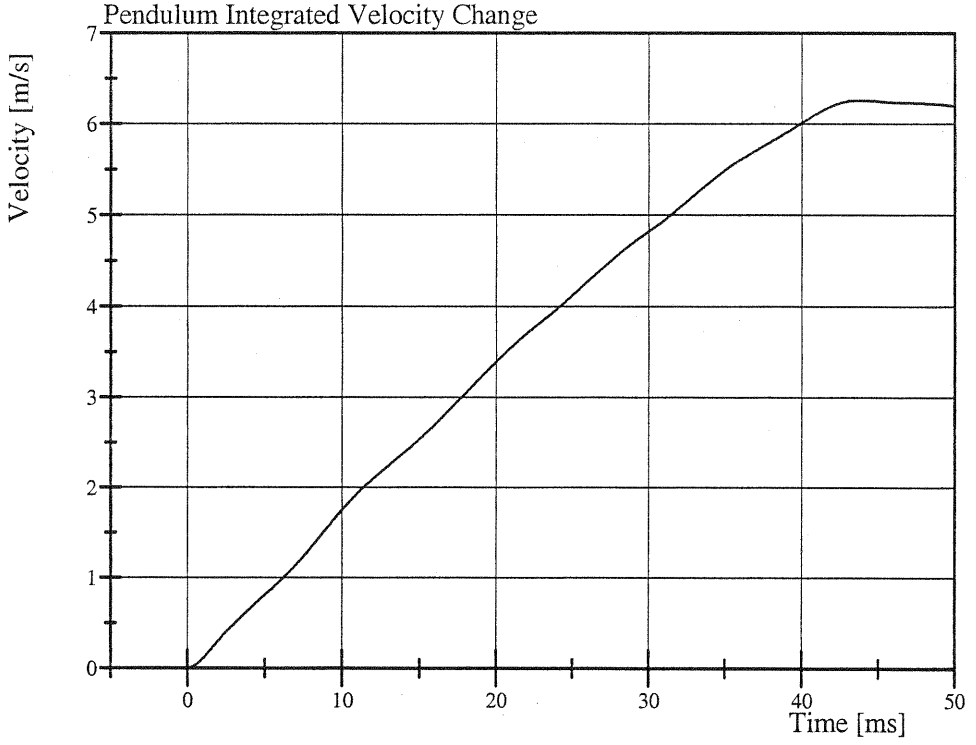
Test Date: 11/29/2007

Pendulum Acceleration



Filter Class: CFC_180
Max: 21.8 g at 8.8 ms
Min: -3.3 g at 51.4 ms

Pendulum Integrated Velocity Change



Filter Class: CFC_180
Max: 6.3 m/s at 43.8 ms
Min: 0.0 m/s at 0.0 ms

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

11.29.2007 08:05:00 625

071214

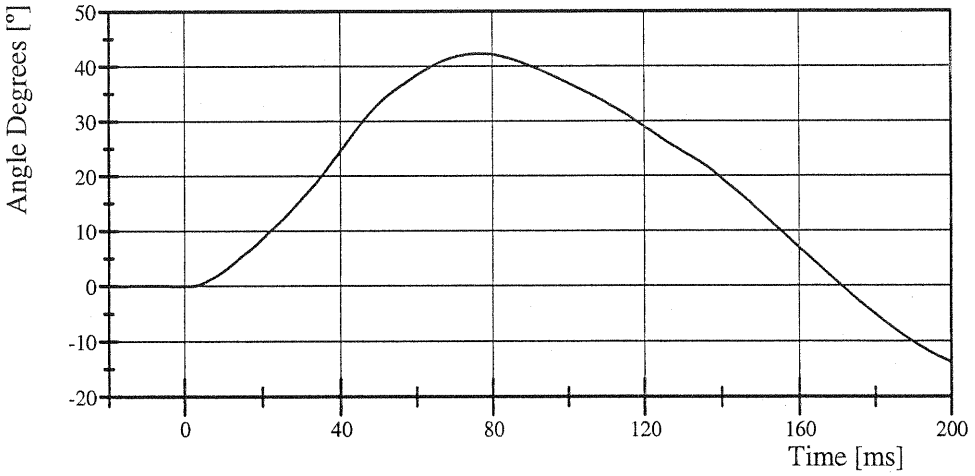
Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 324 Certification No. 10-4

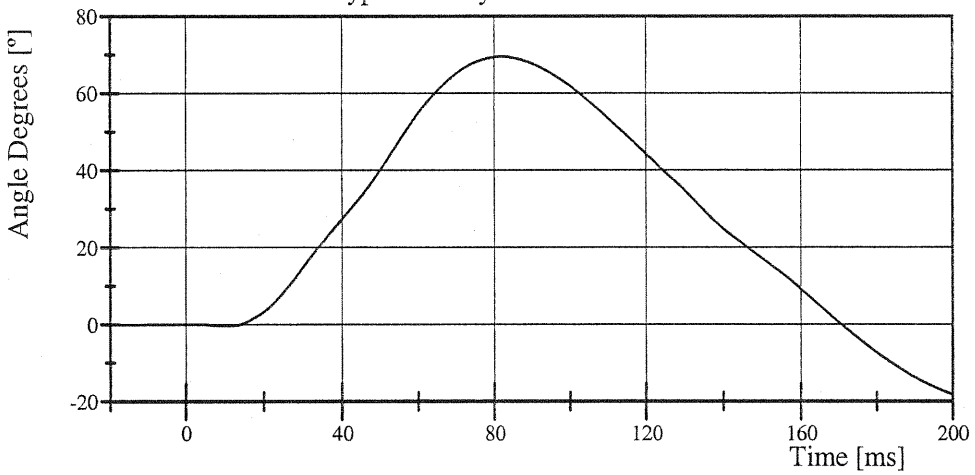
Test Date: 11/29/2007

Pot Rotation at the Base of Neck



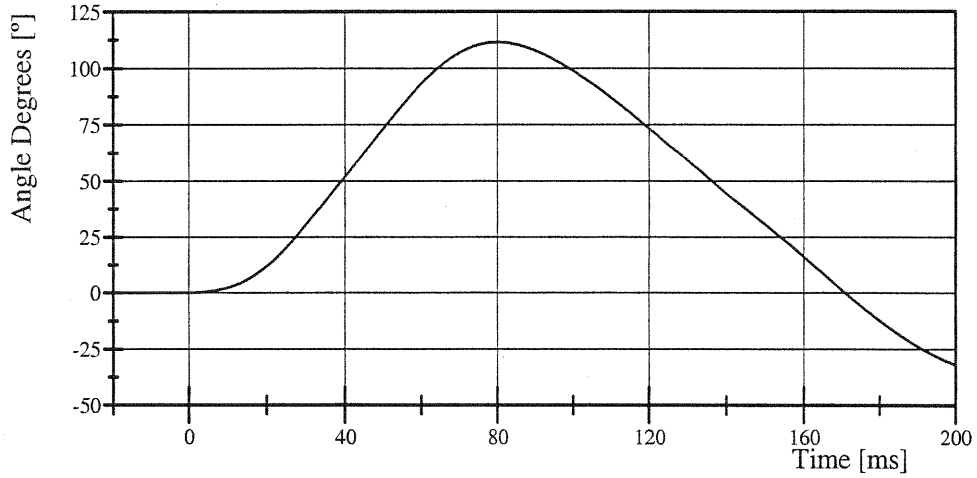
Filter Class: CFC_60
Max: 42.3 ° at 77.0 ms
Min: -13.7 ° at 200.0 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 69.5 ° at 82.2 ms
Min: -18.2 ° at 200.0 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 111.6 ° at 80.3 ms
Min: -31.9 ° at 200.0 ms

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

11.29.2007 08:05:00 625

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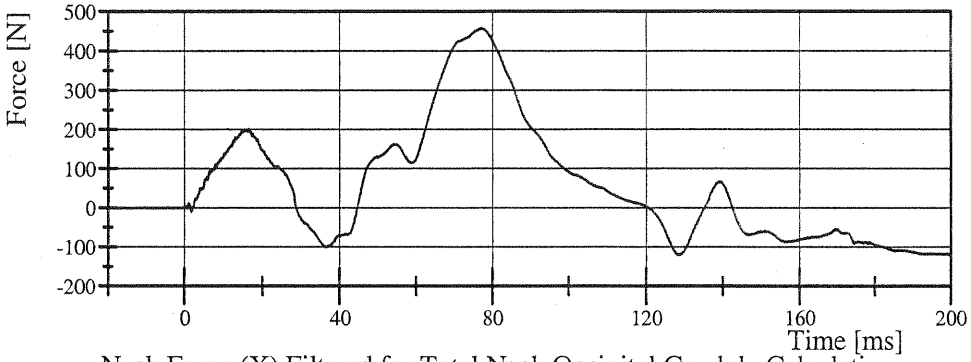
Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 324 Certification No. 10-4

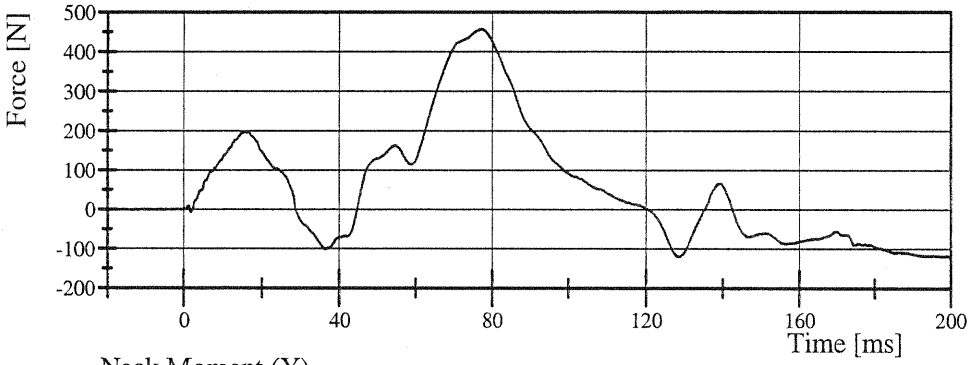
Test Date: 11/29/2007

Neck Force (X)



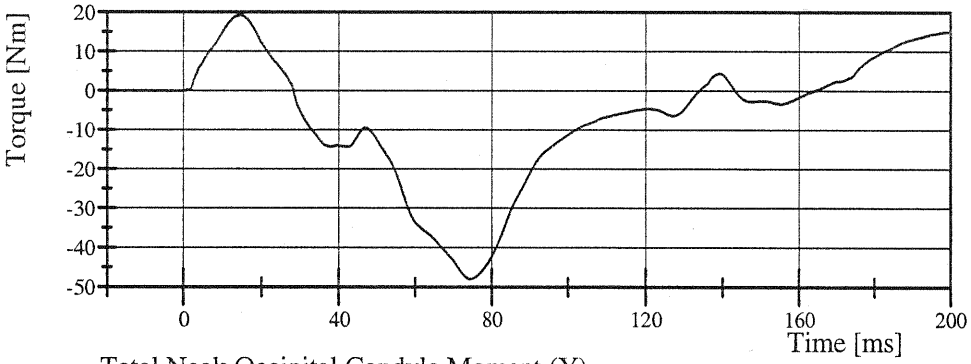
Filter Class: CFC_1000
Max: 457.5 N at 77.0 ms
Min: -119.8 N at 128.2 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



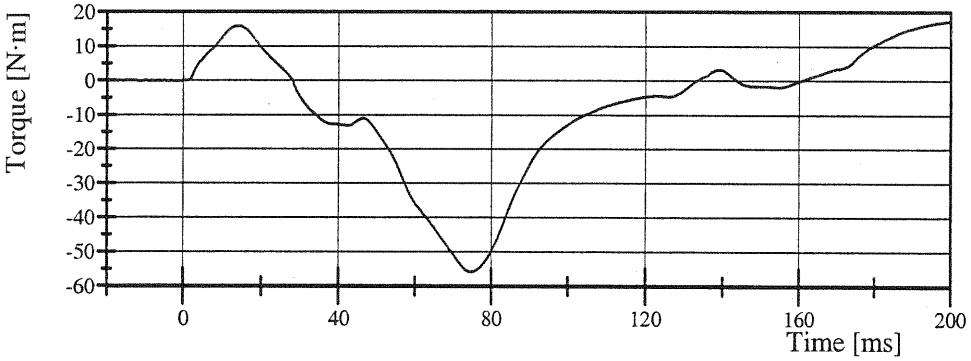
Filter Class: CFC_600
Max: 457.2 N at 77.1 ms
Min: -119.5 N at 128.3 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 19.2 Nm at 14.6 ms
Min: -48.0 Nm at 74.4 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 17.3 N·m at 200.0 ms
Min: -55.8 N·m at 74.6 ms

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

11.29.2007 08:05:01 625

071214

Transportation Research Center Inc.

Front Thorax
HIII 5th Serial No. 324 Certification No. 10-2
Test Date: 12/3/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	32 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.627 m/s	Yes
Probe Force Peak Between 50.0 mm and 58.0 mm Chest Deflection	(-3,900) - (-4,400) N	-4,046.9 N	Yes
Probe Force Peak Between 18.0 mm and 50.0 mm Chest Deflection	>= (-4,600) N	-3,950.1 N	Yes
Maximum Chest Compression	(-50) - (-58) mm	-55.9 mm	Yes
Internal Hysteresis	69 - 85 %	71.3 %	Yes

Test meets specifications.

Comments:

Technician

Approved

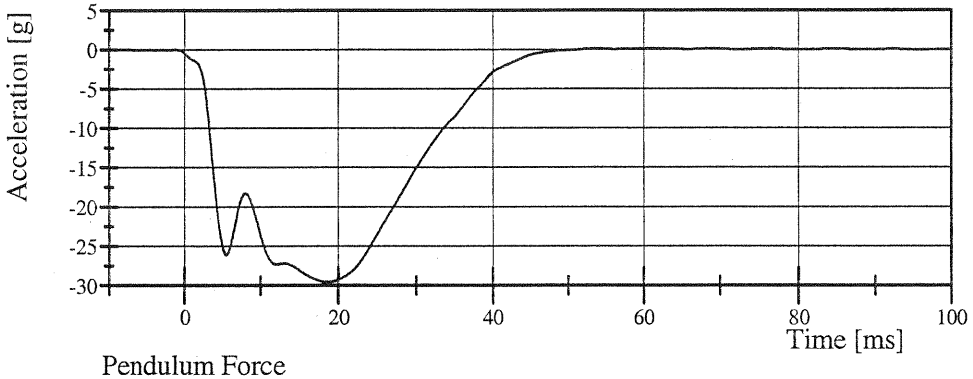
Specification Source: CFR49 Part 572 Subpart O with Polarity in accordance with J211

12.03.2007 12:50:14 395

Transportation Research Center Inc.

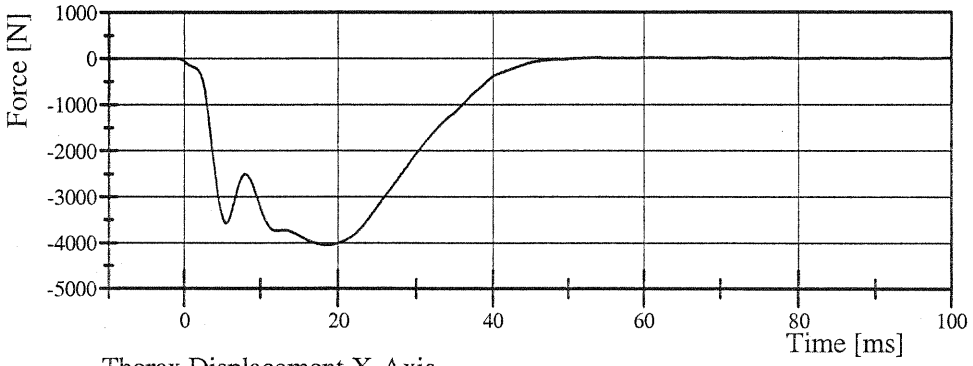
Front Thorax
HIII 5th Serial No. 324 Certification No. 10-2
Test Date: 12/3/2007

Pendulum Acceleration



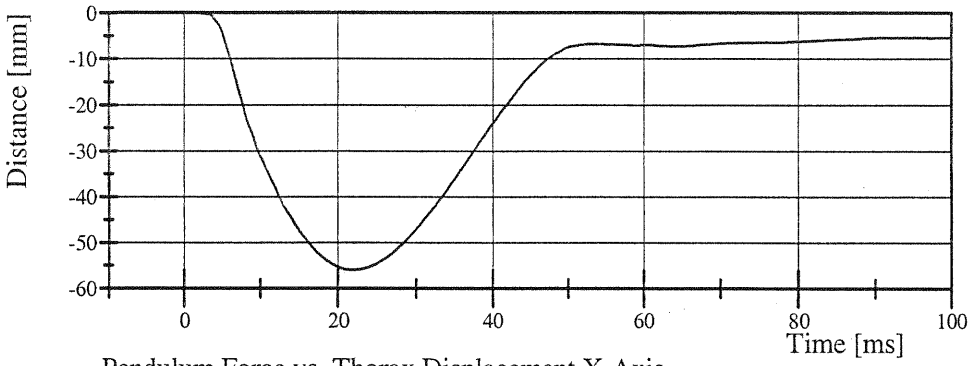
Filter Class: CFC_180
Max: 0.1 g at 61.0 ms
Min: -29.5 g at 18.6 ms

Pendulum Force



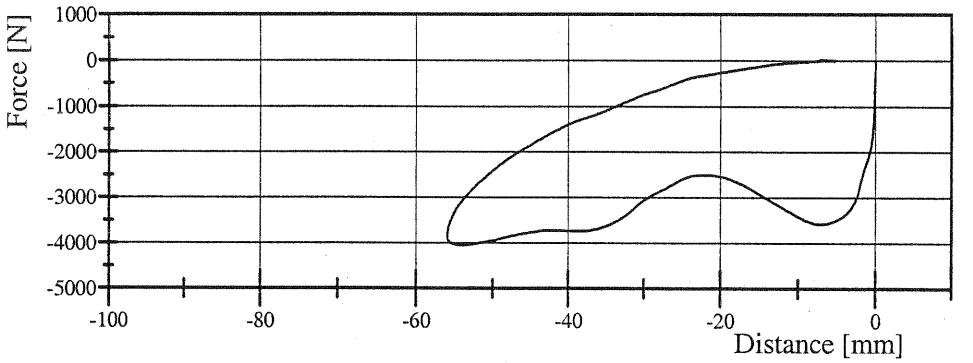
Filter Class: CFC_180
Max: 20.0 N at 61.0 ms
Min: -4,046.9 N at 18.6 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.0 mm at -8.0 ms
Min: -55.9 mm at 21.9 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 20.0 N at -7.0 mm
Min: -4,046.9 N at -54.1 mm

TRANSPORTATION RESEARCH CENTER INC.

TORSO FLEXION TEST

HYBRID III SMALL FEMALE

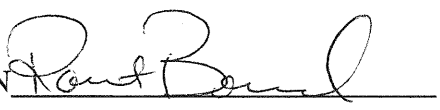
CAL DATE: 03-Dec-07

TRC, INC. **TEST NO: TOFL-01** **572 O SN 324 TORSO FLEX CAL 10**

TEST PARAMETER	SPECIFICATION	TEST RESULTS	
TEMPERATURE	20.6 – 22.2° C	21.5 ° C	P
RELATIVE HUMIDITY	10 – 70 %	32 %	P
INITIAL ANGLE OF UNSUPPORRTED DUMMY	<= 20° REFERENCED TO VERTICAL	17.2 °	P
MAXIMUM FORCE AT 45 DEG. DURING 10 SECOND PERIOD	320 – 390 N	352.6 N	P
DIFFERENCE BETWEEN RETURN ANGLE & INTIAL ANGLE	+/- 8 ° OF INTIAL ANGLE	5.2 °	P
RATE	0.5° - 1.5 °/sec	.98°/sec	P

TEST MEETS SPECIFICATIONS

Comments:

TECHNICIAN 

Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 5th Serial No. 324 Certification No. 10-2
Test Date: 11/28/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.122 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,791.8 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

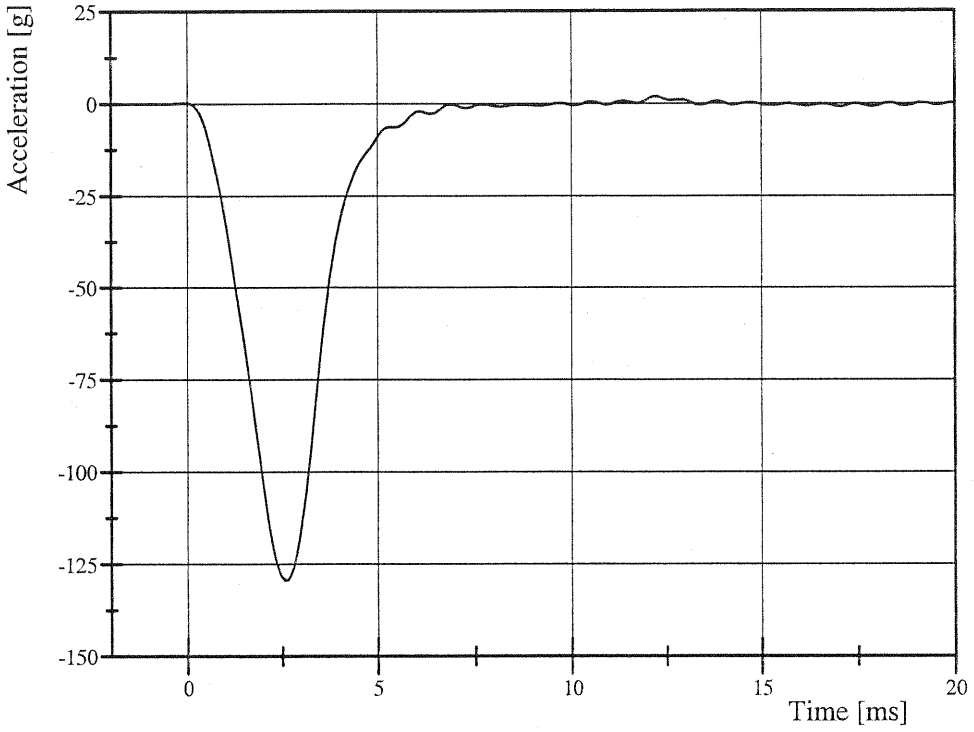
11.28.2007 08:58:29 1139

071214

Transportation Research Center Inc.

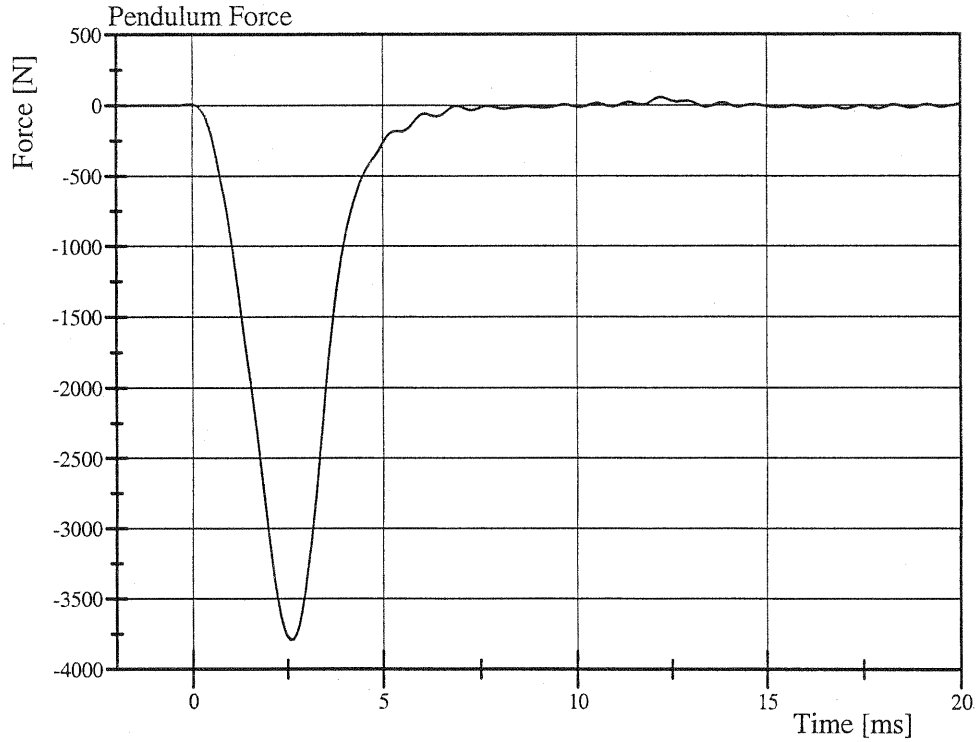
Left Knee Femur Response Test
HIII 5th Serial No. 324 Certification No. 10-2
Test Date: 11/28/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 1.9 g at 12.2 ms
Min: -129.3 g at 2.6 ms

Pendulum Force



Filter Class: CFC_600
Max: 56.3 N at 12.2 ms
Min: -3,791.8 N at 2.6 ms

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

11.28.2007 08:58:40 1139

071214

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 5th Serial No. 324 Certification No. 10-3
Test Date: 11/28/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	20.7 °C	Yes
Relative Humidity	10 - 70 %	32 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.122 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,651.4 N	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

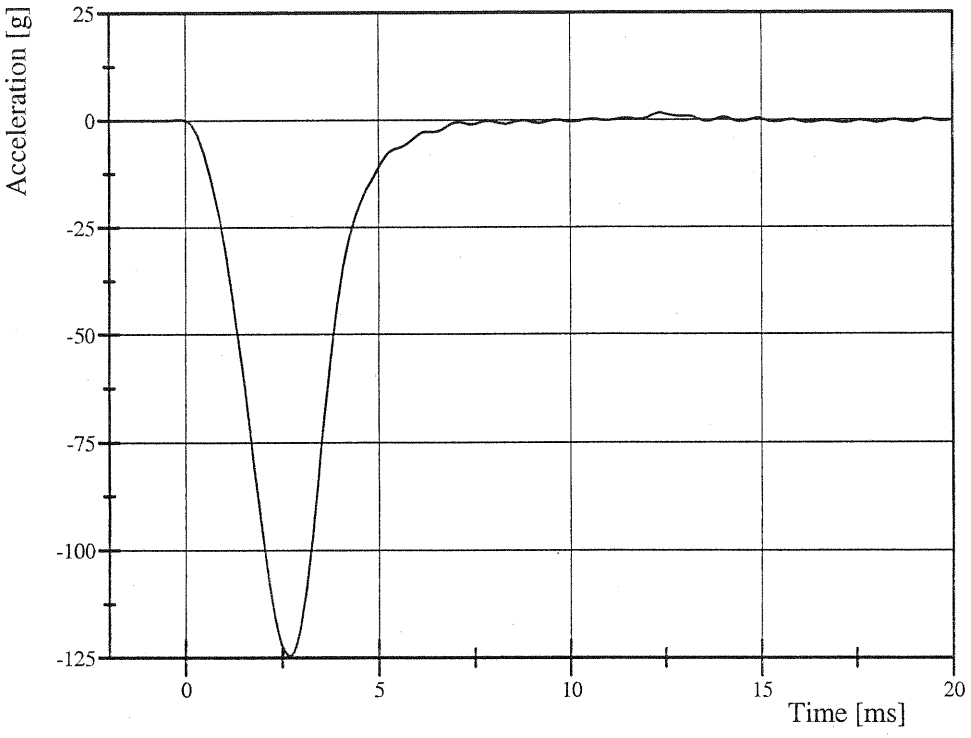
11.28.2007 09:27:52 1684

071214

Transportation Research Center Inc.

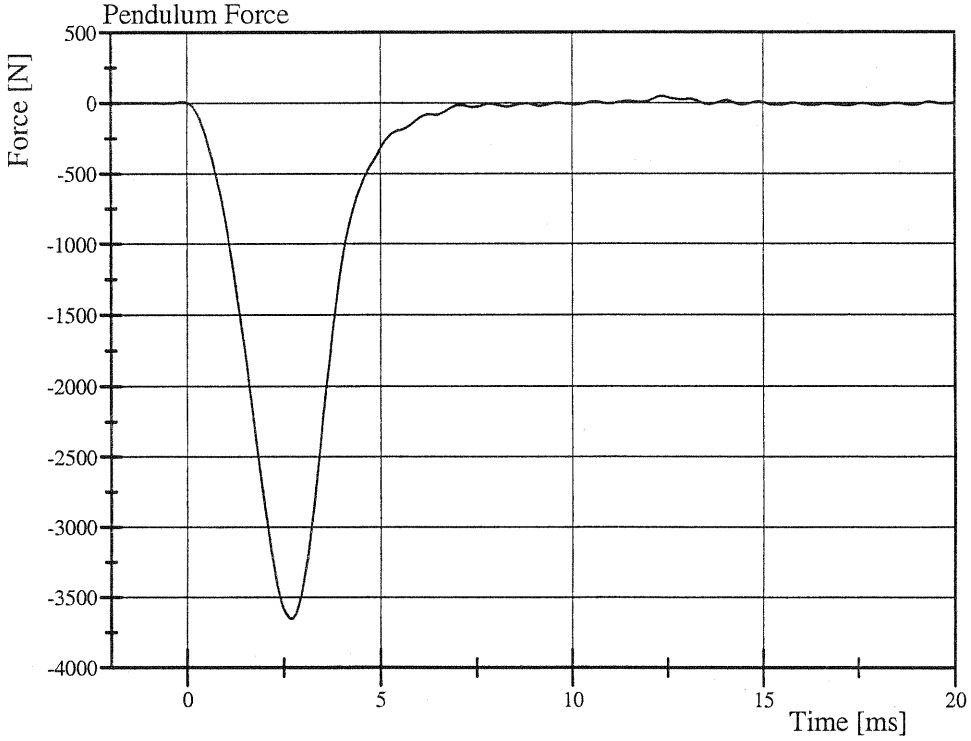
Right Knee Femur Response Test
HIII 5th Serial No. 324 Certification No. 10-3
Test Date: 11/28/2007

Pendulum Acceleration



Filter Class: CFC_600
Max: 1.6 g at 12.4 ms
Min: -124.5 g at 2.6 ms

Pendulum Force



Filter Class: CFC_600
Max: 47.6 N at 12.4 ms
Min: -3,651.4 N at 2.6 ms

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

11.28.2007 09:27:58 1684

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Pre-Test Dummy Configuration and Performance Verification Data

Right Side Row 13 Left Seat Dummy S/N: 416

Transportation Research Center Inc.
572O HIII 5th Female Dummy
External Dimensions
Serial No. 416 Calibration No. 44
With Thor FLX Legs

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	774.7 - 800.1	779	Yes
B	Shoulder Pivot Height	431.8 - 457.2	445	Yes
C	Hip Pivot Height	81.3 - 86.3	85	Yes
D	Hip Pivot from Backline	144.8 - 149.8	146	Yes
E	Shoulder Pivot from Backline	68.6 - 83.8	82	Yes
F	Thigh Clearance	119.4 - 134.6	123	Yes
G	Back of Elbow to Wrist Pivot	243.9 - 259.1	253	Yes
H	Head Back to Backline	43.2 - 48.2	46	Yes
I	Shoulder to Elbow Length	276.8 - 297.2	282	Yes
J	Elbow Rest Height	182.8 - 203.2	183	Yes
K	Buttock Knee Length	520.7 - 546.1	540	Yes
L	Popliteal Height	355.6 - 376.0	370	Yes
M	Knee Pivot Height	393.7 - 419.1	415	Yes
N	Buttock Popliteal Height	414.0 - 439.4	432	Yes
O	Chest Depth without Jacket	175.3 - 190.5	180	Yes
P	Foot Length	218.5 - 233.7	221	Yes
R	Buttock to Knee Pivot Length	457.2 - 482.6	467	Yes
S	Head Breadth	137.1 - 147.3	140	Yes
T	Head Depth	177.8 - 188.0	180	Yes
U	Hip Breadth	299.7 - 314.9	301	Yes
V	Shoulder Breadth	350.5 - 365.7	352	Yes
W	Foot Breadth	78.8 - 94.0	88	Yes
X	Head Circumference	528.3 - 548.7	534	Yes
Y	Chest Circumference with Jacket	850.9 - 881.3	863	Yes
Z	Waist Circumference	759.5 - 789.9	770	Yes
AA	Reference Location for Chest Circumference	332.7 - 358.1	354	Yes
BB	Reference Location for Waist Circumference	160.0 - 170.2	167	Yes

Technician

Approved

Transportation Research Center Inc.

Front Head Drop
HIII 5th Serial No. 416 Certification No. 44-1
Test Date: 7/12/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	46 %	Yes
Peak Head Resultant Acceleration	250 - 300 g	278.9 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	5.7 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart O with Polarity in accordance with J211

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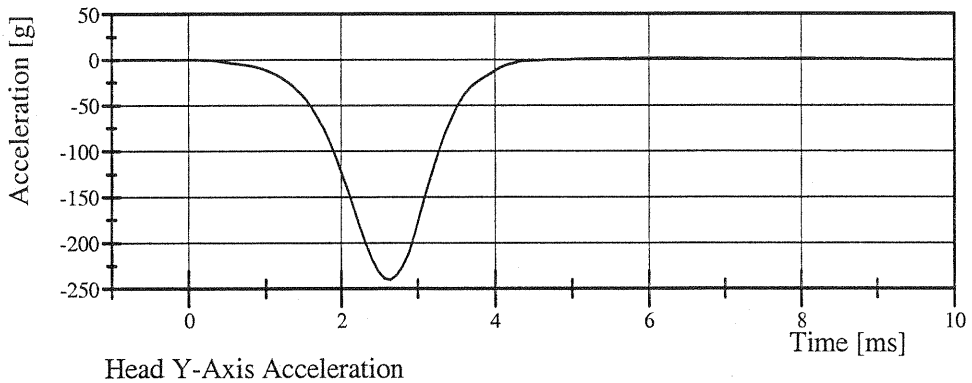
Transportation Research Center Inc.

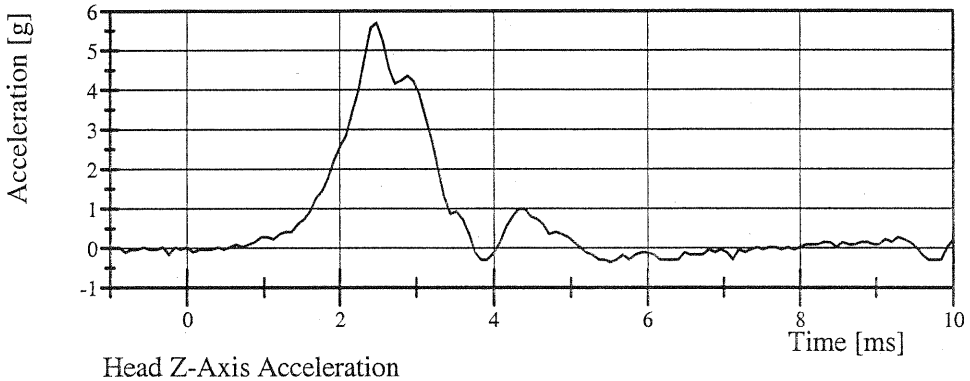
Front Head Drop
HIII 5th Serial No. 416 Certification No. 44-1
Test Date: 7/12/2007

Head X-Axis Acceleration



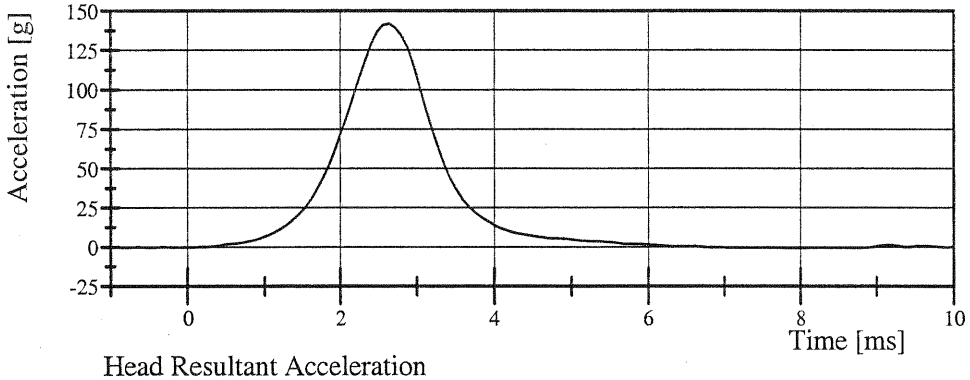
Filter Class: CFC_1000
Max: 2.0 g at 6.2 ms
Min: -240.1 g at 2.6 ms

Head Y-Axis Acceleration



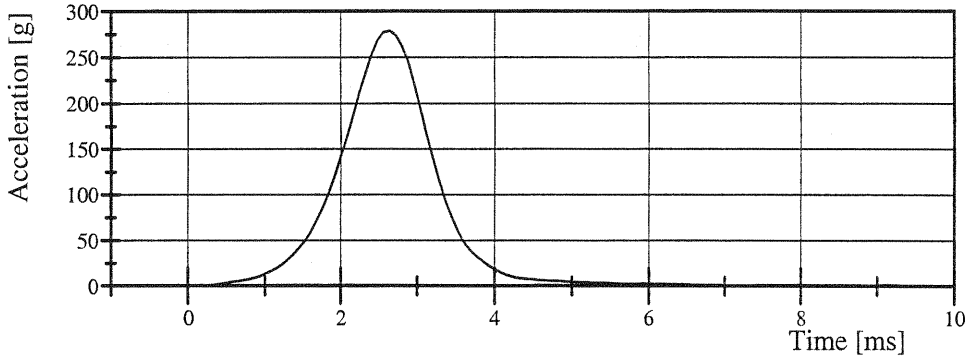
Filter Class: CFC_1000
Max: 5.7 g at 2.5 ms
Min: -0.4 g at 5.5 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 141.8 g at 2.6 ms
Min: -0.7 g at 7.9 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 278.9 g at 2.6 ms
Min: 0.0 g at -0.9 ms

Transportation Research Center Inc.

Neck Flexion
HIII 5th Serial No. 416 Certification No. 44-1
Test Date: 7/12/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	7.059 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	(-2.1) - (-2.5) m/s	-2.30 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	(-4.0) - (-5.0) m/s	-4.62 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	(-5.8) - (-7.0) m/s	-6.46 m/s	Yes
Total Head D-Plane Rotation	(-77) - (-91) °	-78.5 °	Yes
Total Neck Occipital Condyles Moment Between -77° and -91° Rotation	69 - 83 N·m	75.3 N·m	Yes
Total Neck Occipital Condyles Moment Decay to 10 N·m	80 - 100 ms	87.0 ms	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

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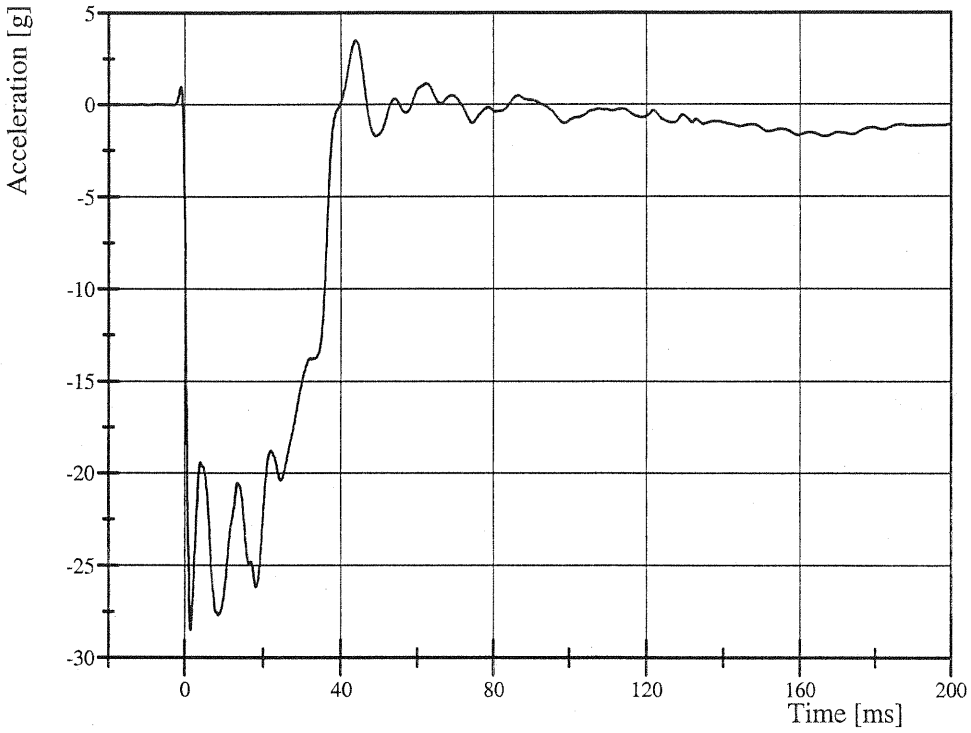
Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 416 Certification No. 44-1

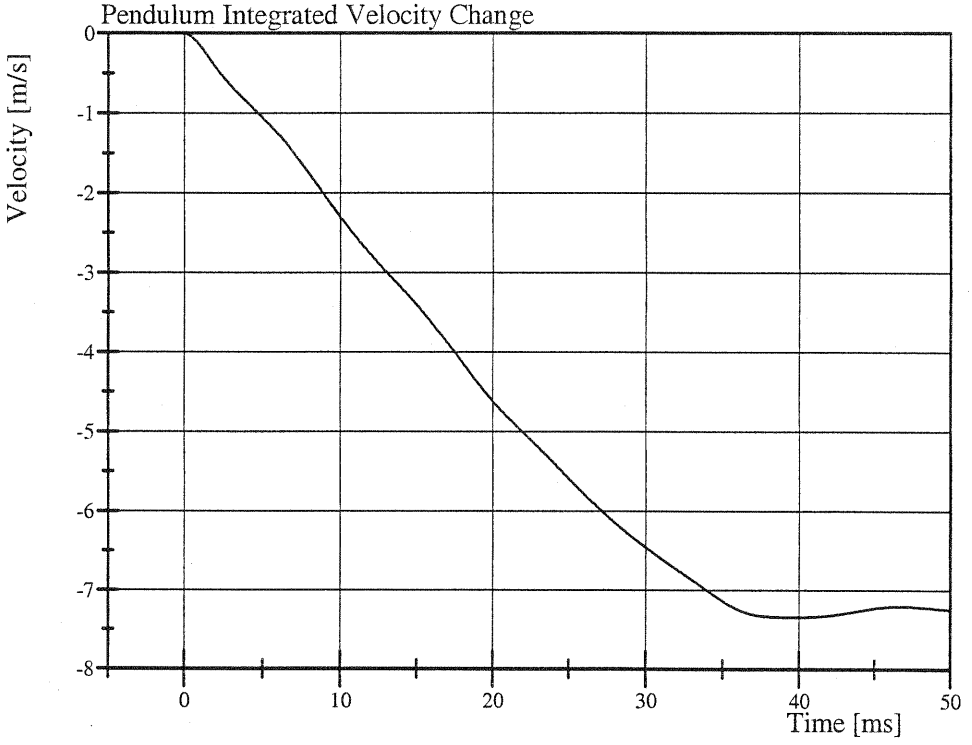
Test Date: 7/12/2007

Pendulum Acceleration



Filter Class: CFC_180
Max: 3.5 g at 43.8 ms
Min: -28.5 g at 1.5 ms

Pendulum Integrated Velocity Change



Filter Class: CFC_180
Max: 0.0 m/s at 0.0 ms
Min: -7.3 m/s at 39.8 ms

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

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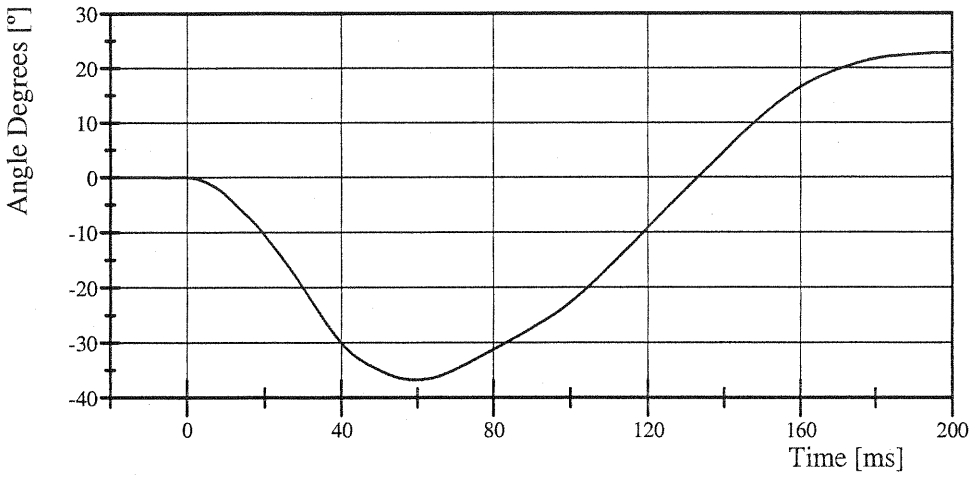
Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 416 Certification No. 44-1

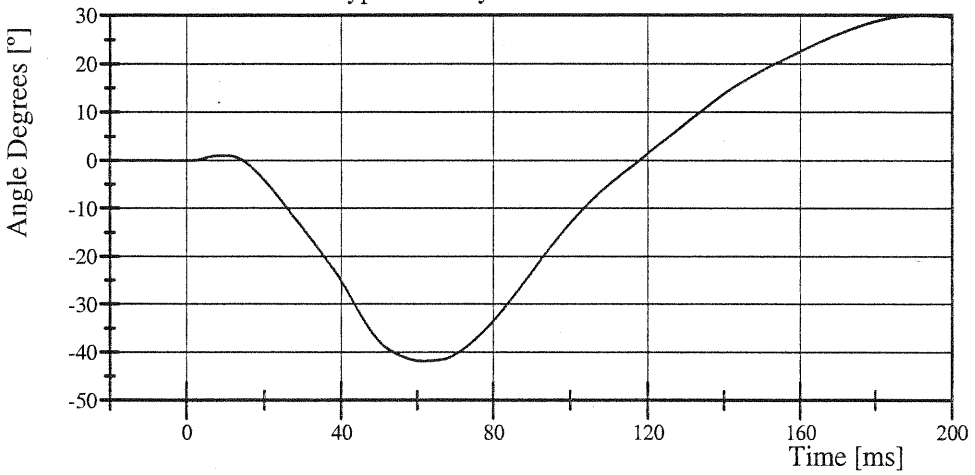
Test Date: 7/12/2007

Pot Rotation at the Base of Neck



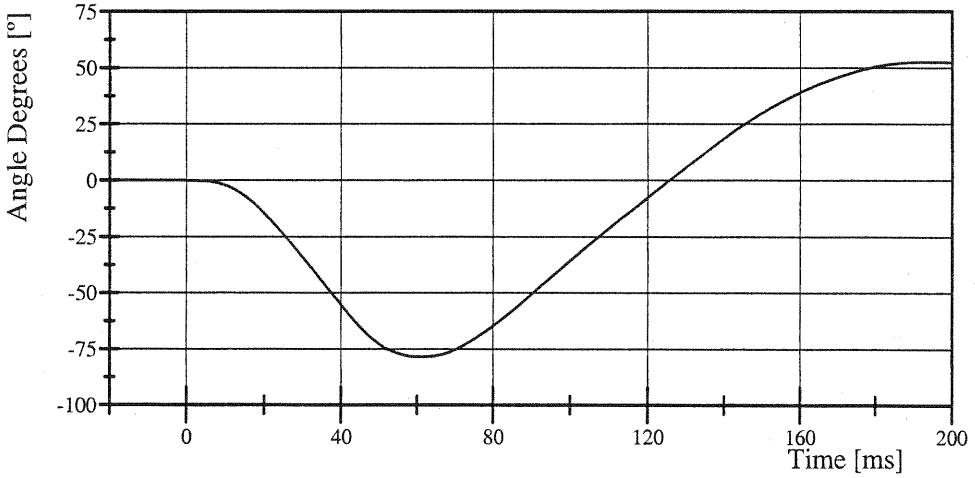
Filter Class: CFC_60
Max: 22.8 ° at 198.2 ms
Min: -36.7 ° at 59.7 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 30.0 ° at 191.8 ms
Min: -41.8 ° at 61.7 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 52.6 ° at 194.6 ms
Min: -78.5 ° at 60.9 ms

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

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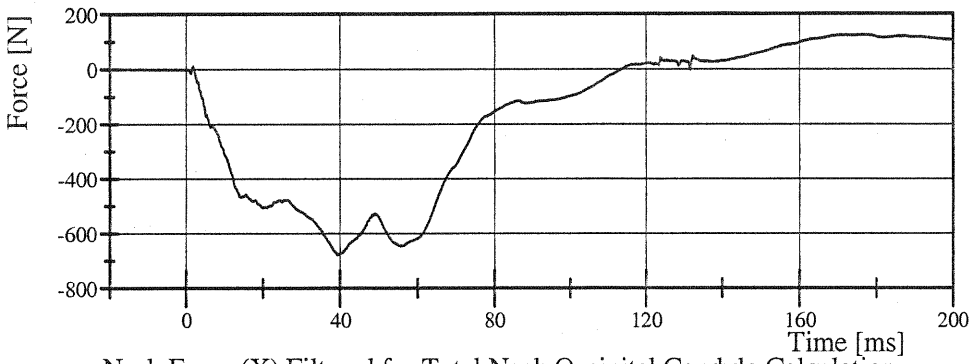
Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 416 Certification No. 44-1

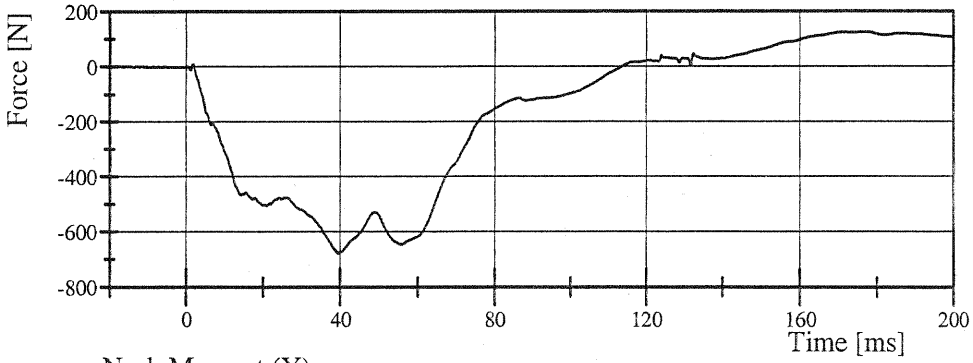
Test Date: 7/12/2007

Neck Force (X)



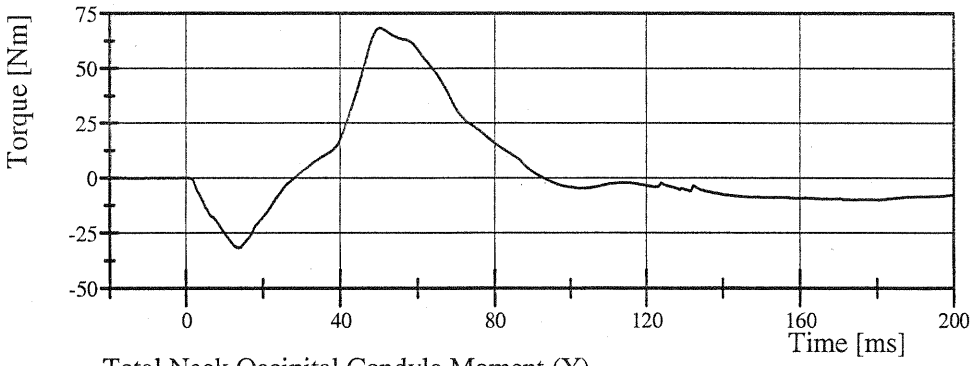
Filter Class: CFC_1000
Max: 126.1 N at 176.3 ms
Min: -678.3 N at 39.4 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



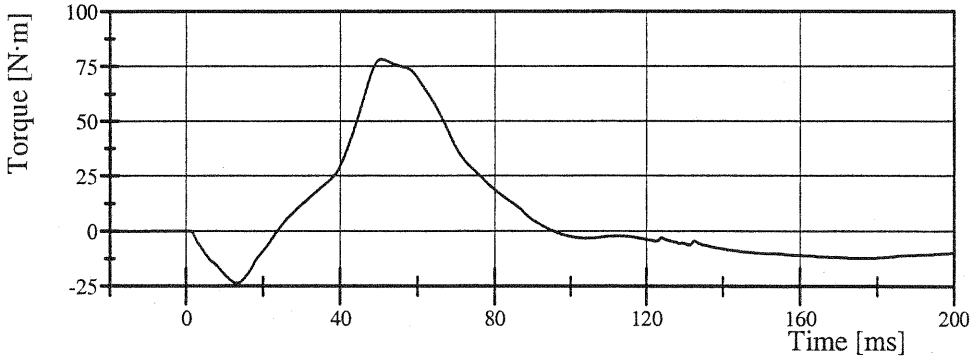
Filter Class: CFC_600
Max: 125.6 N at 176.3 ms
Min: -677.6 N at 39.4 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 68.5 Nm at 50.3 ms
Min: -31.6 Nm at 13.8 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 78.3 N·m at 50.6 ms
Min: -23.6 N·m at 13.3 ms

Transportation Research Center Inc.

Neck Extension
HIII 5th Serial No. 416 Certification No. 44-2
Test Date: 7/12/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.0 °C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Pendulum Velocity	(-5.95) - (-6.19) m/s	-6.016 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	1.5 - 1.9 m/s	1.84 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	3.1 - 3.9 m/s	3.55 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	4.6 - 5.6 m/s	5.11 m/s	Yes
Total Head D-Plane Rotation	99 - 114 °	102.4 °	Yes
Total Neck Occipital Condyles Moment Between 99° and 114° Rotation	(-53) - (-65) N·m	-60.4 N·m	Yes
Total Neck Occipital Condyles Moment Decay to -10 N·m	94 - 114 ms	103.5 ms	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart O with Polarity in accordance with J211

07.12.2007 10:50:21 637

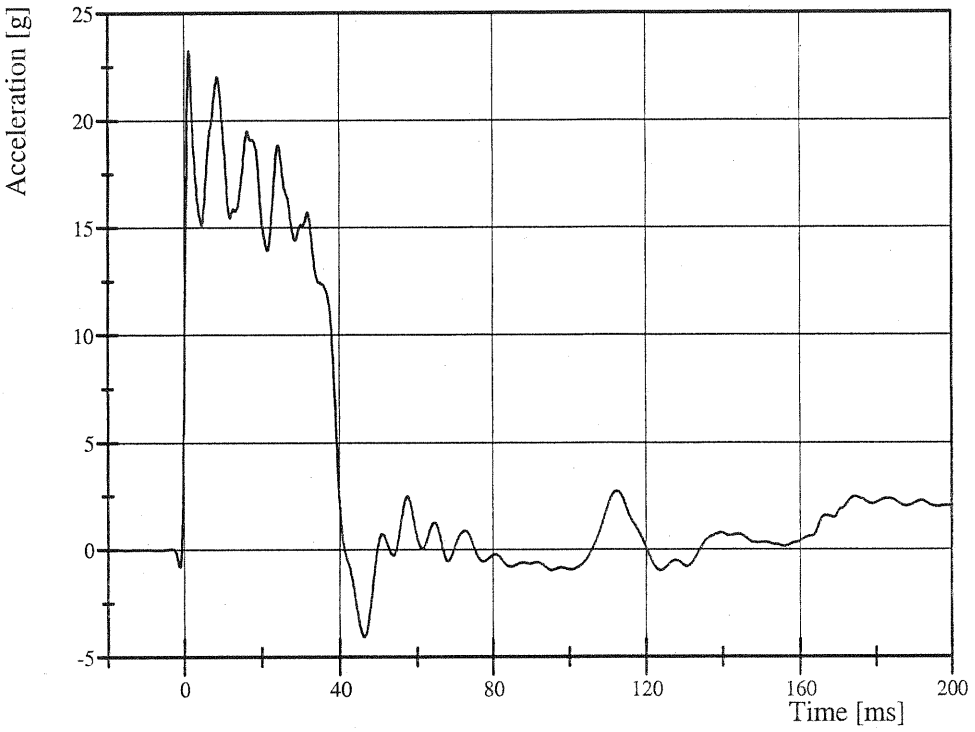
Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 416 Certification No. 44-2

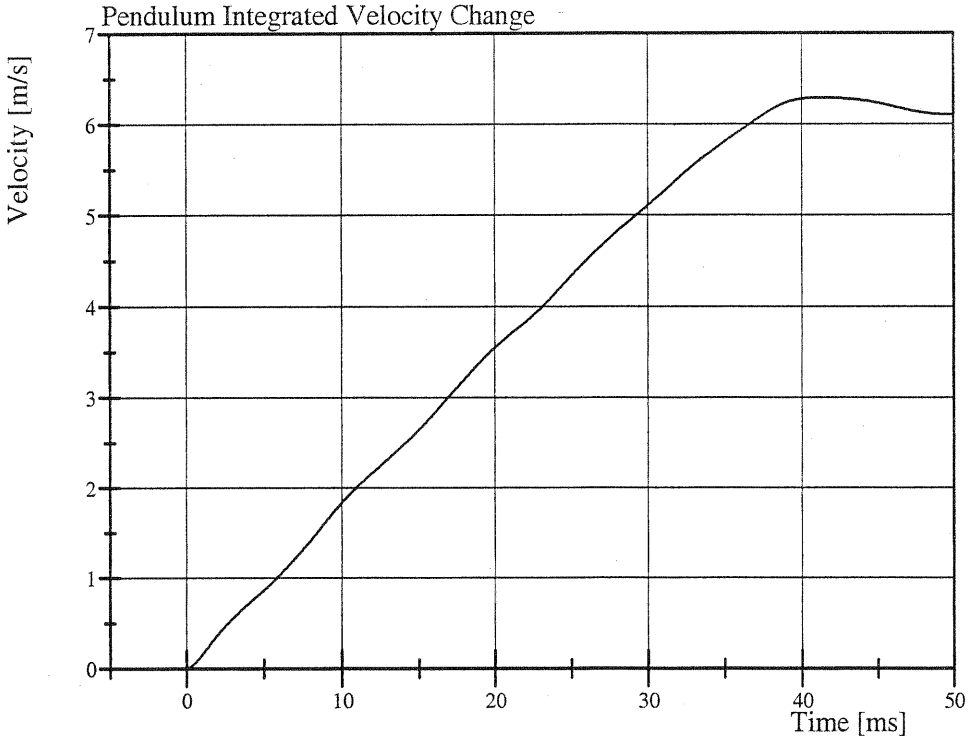
Test Date: 7/12/2007

Pendulum Acceleration



Filter Class: CFC_180
Max: 23.3 g at 1.4 ms
Min: -4.1 g at 46.2 ms

Pendulum Integrated Velocity Change



Filter Class: CFC_180
Max: 6.3 m/s at 41.3 ms
Min: 0.0 m/s at 0.0 ms

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

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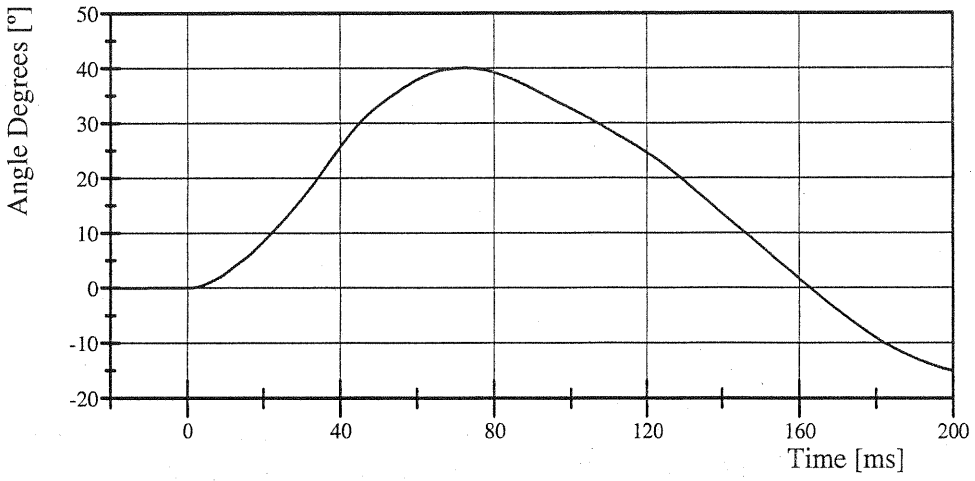
Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 416 Certification No. 44-2

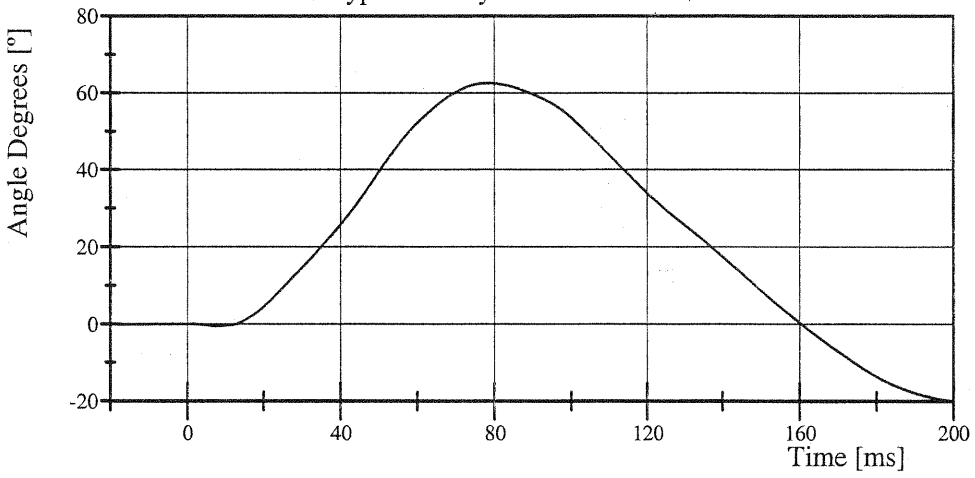
Test Date: 7/12/2007

Pot Rotation at the Base of Neck



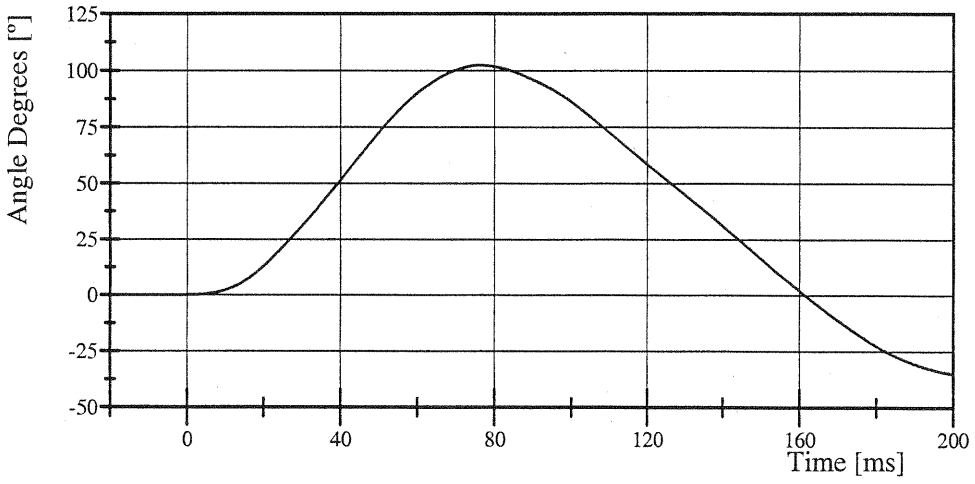
Filter Class: CFC_60
Max: 40.1 ° at 72.4 ms
Min: -15.0 ° at 200.0 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 62.6 ° at 78.3 ms
Min: -20.0 ° at 200.0 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 102.4 ° at 76.4 ms
Min: -34.9 ° at 200.0 ms

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

07.12.2007 10:50:35 637

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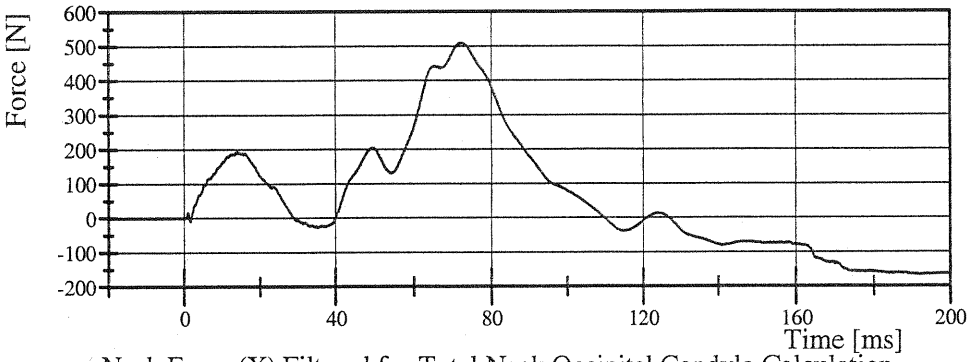
Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 416 Certification No. 44-2

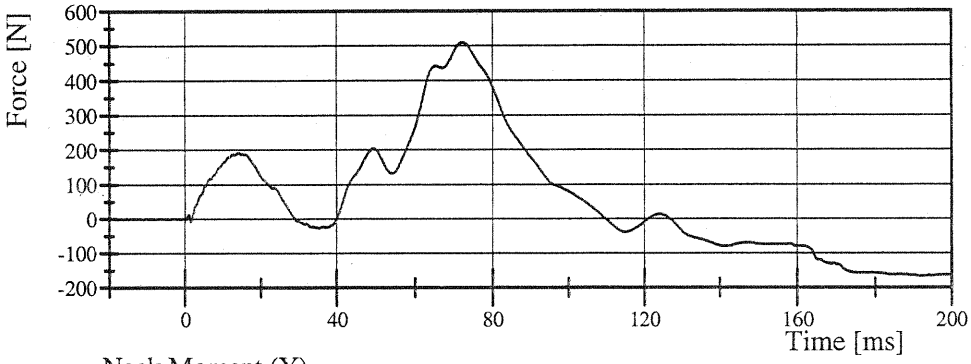
Test Date: 7/12/2007

Neck Force (X)



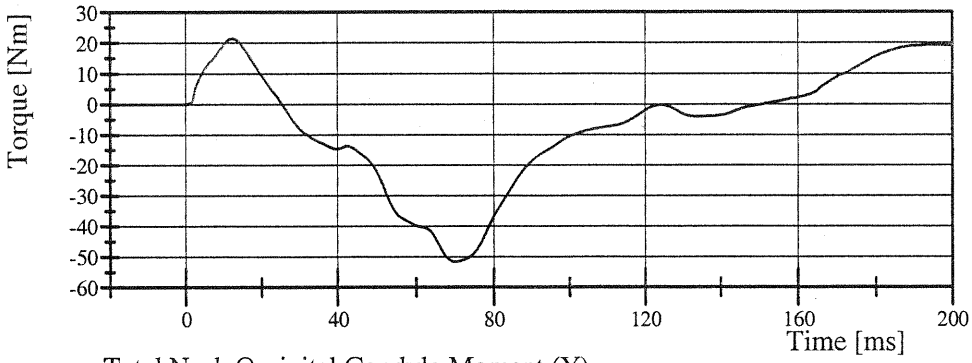
Filter Class: CFC_1000
Max: 510.1 N at 72.5 ms
Min: -166.6 N at 192.1 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



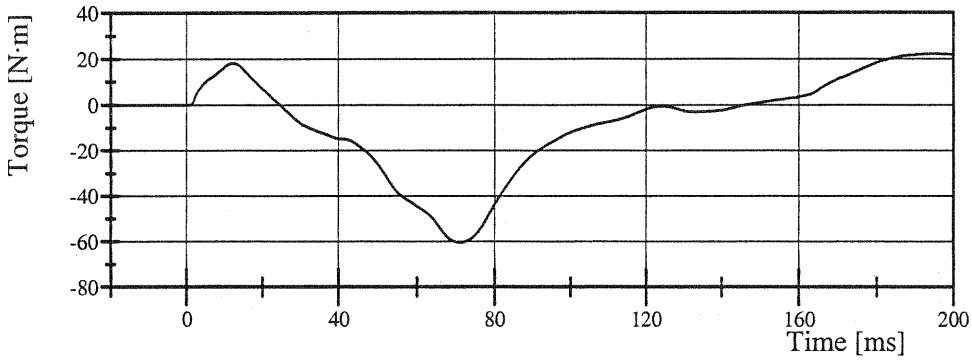
Filter Class: CFC_600
Max: 509.6 N at 72.5 ms
Min: -166.3 N at 192.2 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 21.5 Nm at 12.4 ms
Min: -51.6 Nm at 69.9 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 22.3 N·m at 195.1 ms
Min: -60.4 N·m at 71.0 ms

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

07.12.2007 10:50:36 637

071214

Transportation Research Center Inc.

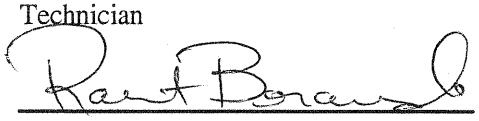
Front Thorax
HIII 5th Serial No. 416 Certification No. 44-1
Test Date: 7/12/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	53 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.592 m/s	Yes
Probe Force Peak Between 50.0 mm and 58.0 mm Chest Deflection	(-3,900) - (-4,400) N	-3,950.4 N	Yes
Probe Force Peak Between 18.0 mm and 50.0 mm Chest Deflection	>= (-4,600) N	-3,919.3 N	Yes
Maximum Chest Compression	(-50) - (-58) mm	-55.1 mm	Yes
Internal Hysteresis	69 - 85 %	72.2 %	Yes

Test meets specifications.

Comments:

Technician



Approved

Specification Source: CFR49 Part 572 Subpart O with Polarity in accordance with J211

07.12.2007 11:21:08 422

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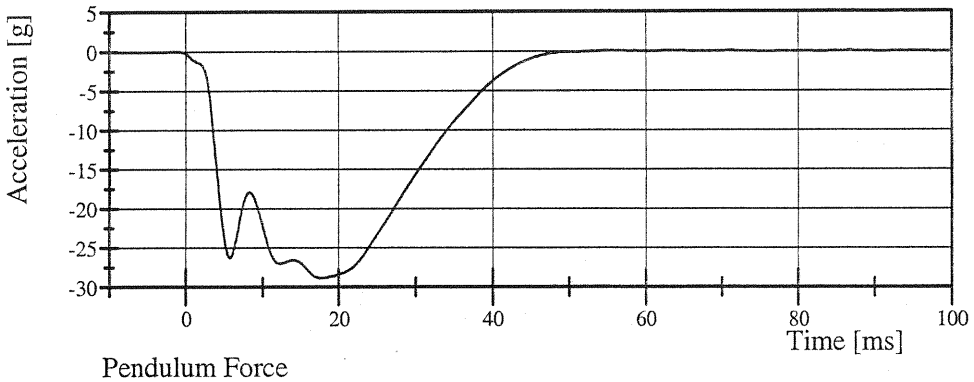
Transportation Research Center Inc.

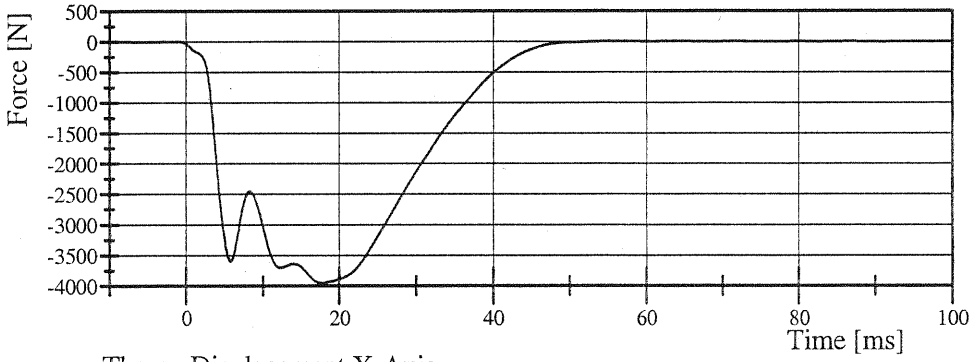
Front Thorax
HIII 5th Serial No. 416 Certification No. 44-1
Test Date: 7/12/2007

Pendulum Acceleration



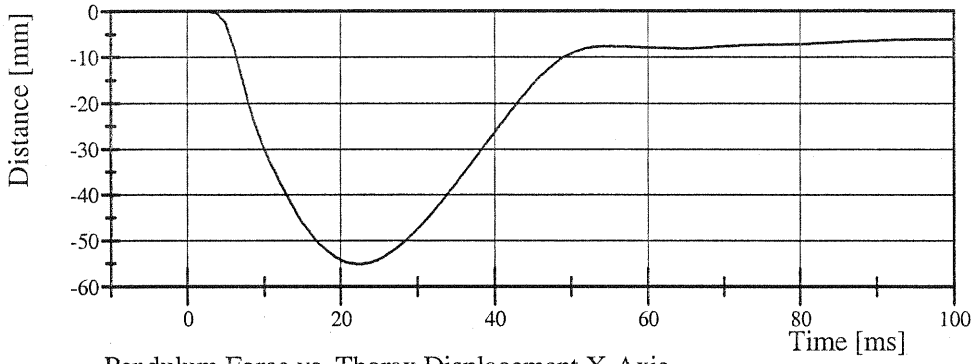
Filter Class: CFC_180
Max: 0.1 g at 64.3 ms
Min: -28.8 g at 17.8 ms

Pendulum Force



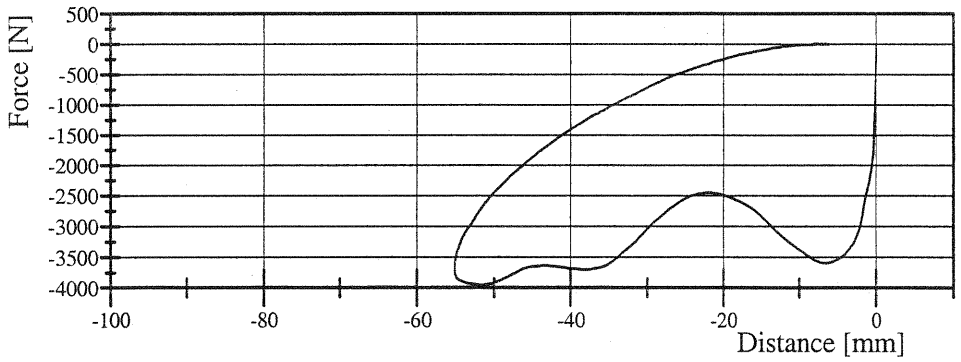
Filter Class: CFC_180
Max: 10.9 N at 64.3 ms
Min: -3,950.4 N at 17.8 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.0 mm at -5.4 ms
Min: -55.1 mm at 22.4 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 10.9 N at -8.1 mm
Min: -3,950.4 N at -51.6 mm

Specification Source: CFR49 Part 572 Subpart O
with Polarity in accordance with J211

07.12.2007 11:21:17 422

071214

TRANSPORTATION RESEARCH CENTER INC.

TORSO FLEXION TEST

HYBRID III SMALL FEMALE

CAL DATE: 10-Jul-07

TRC, INC. **TEST NO: TOFL-04** **572 O SN416 TORSO FLEX CAL 44**

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6 – 22.2° C	21.4° C
RELATIVE HUMIDITY	10 – 70 %	60 %
INITIAL ANGLE OF UNSUPPORRTED DUMMY	<= 20° REFERENCED TO VERTICAL	17.3°
MAXIMUM FORCE AT 45 DEG. DURING 10 SECOND PERIOD	320 – 390 N	378.9 N
DIFFERENCE BETWEEN RETURN ANGLE & INTIAL ANGLE	+/- 8 ° OF INTIAL ANGLE	4.4 °
RATE	0.5° - 1.5°/sec	0.95 °/sec

TEST MEETS SPECIFICATIONS

Comments:

TECHNICIAN Charles W. Daly

Pre-Test Dummy Configuration and Performance Verification Data

Right Side Row 13 Right Seat Dummy S/N: 001

1

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 001 Calibration No. 05

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	880	Yes
B	Shoulder Pivot Height	505.5 - 520.7	517	Yes
C	H-Point Height	83.8 - 88.9	86	Yes
D	H-Point From Seatback	134.6 - 139.7	137	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	94	Yes
F	Thigh Clearance	139.7 - 154.9	154	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	298	Yes
H	Skull Cap To Backline	40.6 - 45.7	45	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	342	Yes
J	Elbow Rest Height	190.5 - 210.8	200	Yes
K	Buttock Knee Length	579.1 - 604.5	594	Yes
L	Popliteal Height	429.3 - 454.7	432	Yes
M	Knee Pivot Height	485.1 - 500.4	499	Yes
N	Buttock Popliteal Length	452.1 - 477.5	460	Yes
O	Chest Depth	213.4 - 228.6	228	Yes
P	Foot Length	251.5 - 266.7	260	Yes
V	Shoulder Breadth	421.6 - 436.9	427	Yes
W	Foot Breadth	91.4 - 106.7	99	Yes
Y	Chest Circumference	970.3 - 1000.8	989	Yes
Z	Waist Circumference	835.7 - 866.1	854	Yes
AA	Location For Chest Circumference	429.3 - 434.3	432	Yes
BB	Location For Waist Circumference	226.1 - 231.1	229	Yes

Technician

Approved

Transportation Research Center Inc.

Front Head Drop
HIII 50th Serial No. 001 Certification No. 5-1
Test Date: 9/19/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	258.2 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	8.9 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

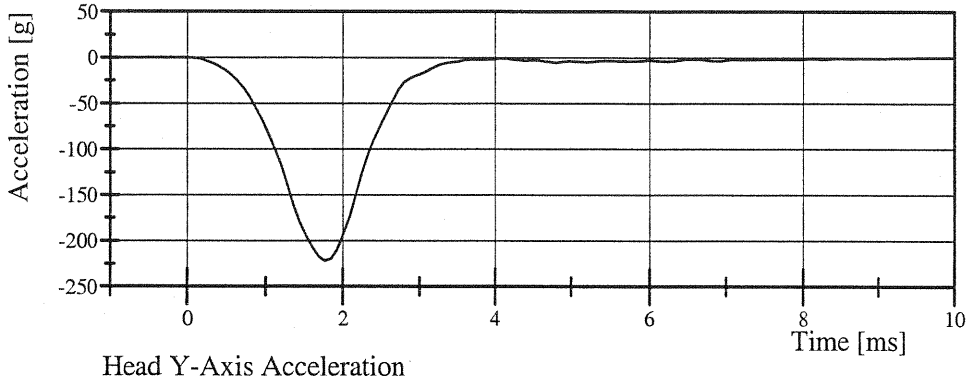
09.19.2007 10:21:29 614

071214

Transportation Research Center Inc.

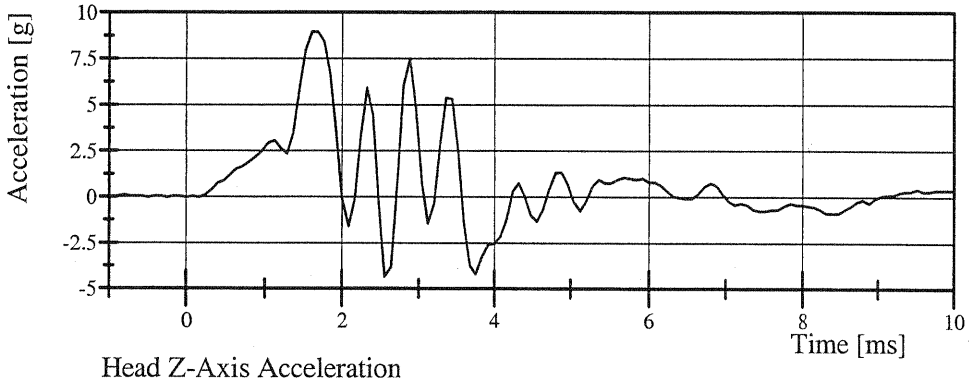
Front Head Drop
HIII 50th Serial No. 001 Certification No. 5-1
Test Date: 9/19/2007

Head X-Axis Acceleration



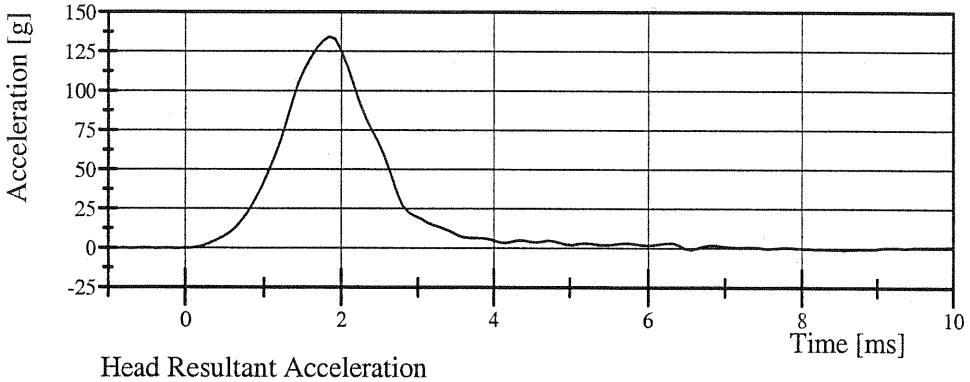
Filter Class: CFC_1000
Max: 0.2 g at 9.8 ms
Min: -221.9 g at 1.8 ms

Head Y-Axis Acceleration



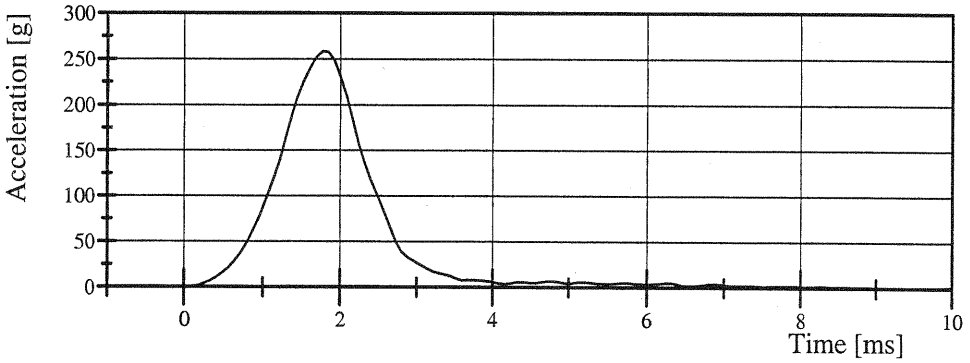
Filter Class: CFC_1000
Max: 8.9 g at 1.6 ms
Min: -4.3 g at 2.6 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 134.6 g at 1.8 ms
Min: -0.9 g at 6.6 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 258.2 g at 1.8 ms
Min: 0.1 g at -0.7 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

09.19.2007 10:21:36 614

071214

Transportation Research Center Inc.

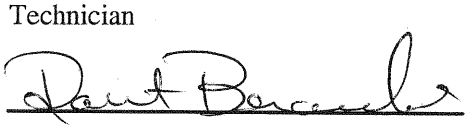
Neck Flexion
HIII 50th Serial No. 001 Certification No. 5-4
Test Date: 9/19/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	54 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.920 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	36.0 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-25.05 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-21.15 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-18.33 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-18.33 g	Yes
Total Head D-Plane Rotation			
Peak	(-64) - (-78) °	-71.7 °	Yes
Time of Peak	57 - 64 ms	58.3 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	116.7 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	88 - 108 N·m	102.8 N·m	Yes
Time of Peak	47 - 58 ms	49.3 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	99.4 ms	Yes

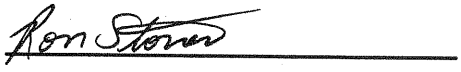
Test meets specifications.

Comments:

Technician



Approved



Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

09.19.2007 13:11:59 2984

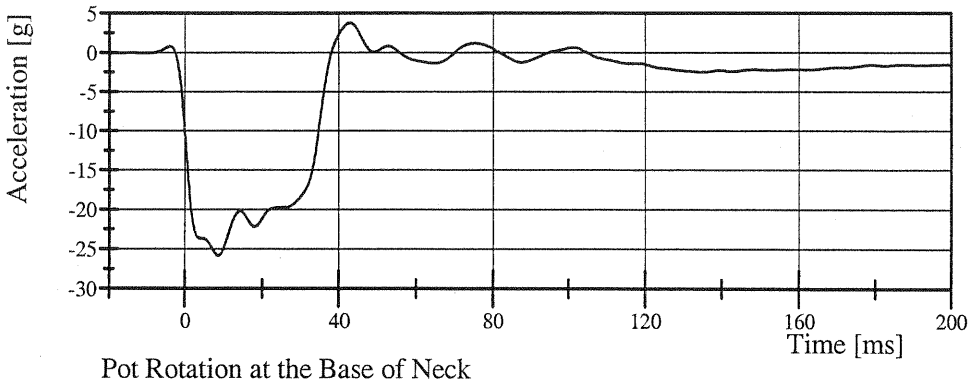
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 001 Certification No. 5-4

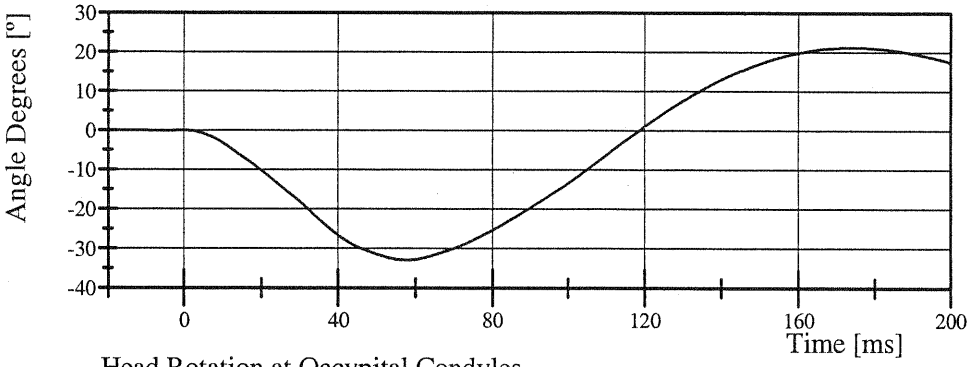
Test Date: 9/19/2007

Pendulum Acceleration



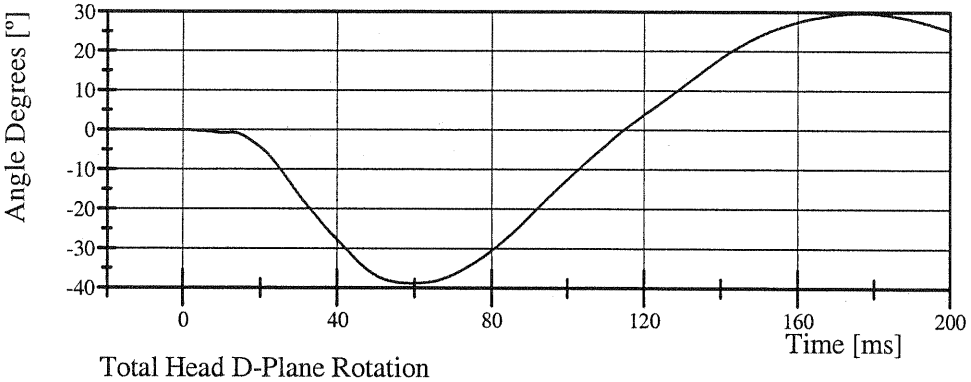
Filter Class: CFC_60
Max: 3.8 g at 42.8 ms
Min: -25.8 g at 8.7 ms

Pot Rotation at the Base of Neck



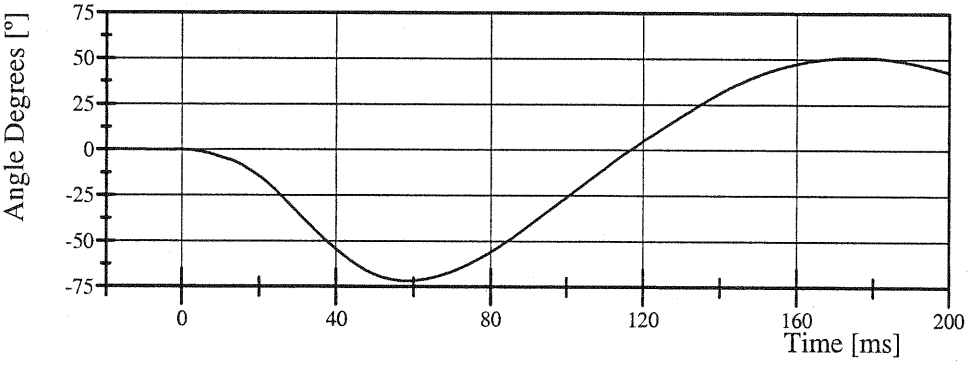
Filter Class: CFC_60
Max: 21.3 ° at 174.4 ms
Min: -32.9 ° at 57.9 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 29.7 ° at 177.0 ms
Min: -38.8 ° at 59.0 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 51.0 ° at 175.9 ms
Min: -71.7 ° at 58.3 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

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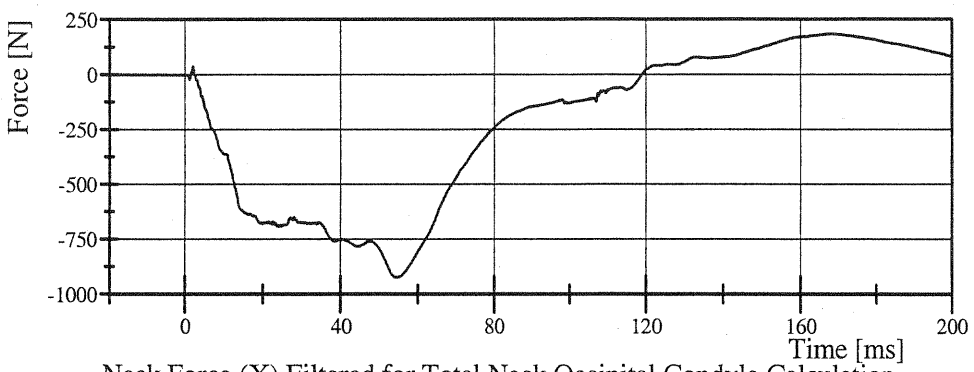
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 001 Certification No. 5-4

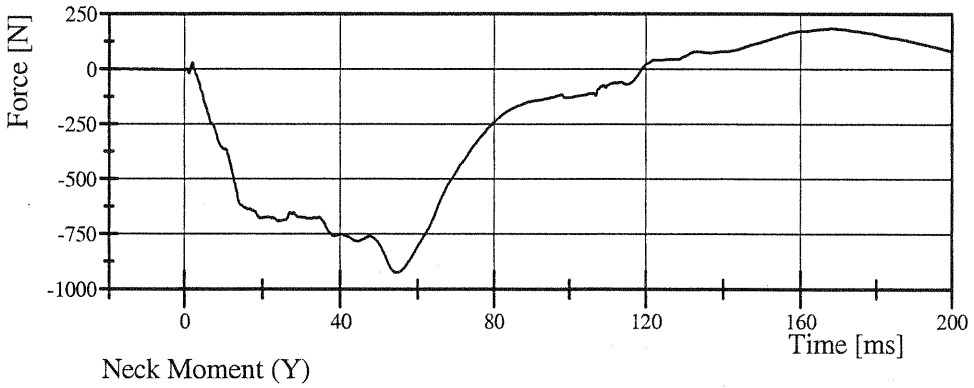
Test Date: 9/19/2007

Neck Force (X)



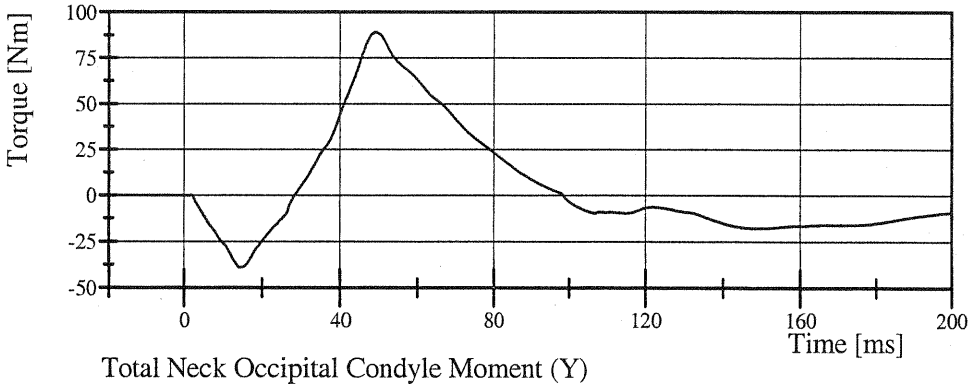
Filter Class: CFC_1000
Max: 185.4 N at 168.0 ms
Min: -924.8 N at 54.2 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



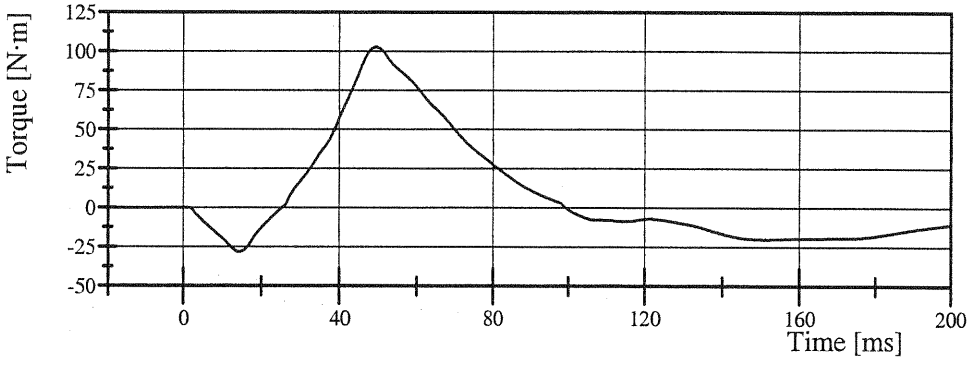
Filter Class: CFC_600
Max: 185.2 N at 168.2 ms
Min: -924.5 N at 54.3 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 89.1 Nm at 49.1 ms
Min: -39.0 Nm at 14.4 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 102.8 N·m at 49.3 ms
Min: -28.1 N·m at 14.3 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

09.19.2007 13:12:08 2984

071214

Transportation Research Center Inc.

Neck Extension
HIII 50th Serial No. 001 Certification No. 5-1
Test Date: 9/19/2007

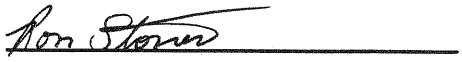
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	56 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-5.990 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	38.8 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	19.47 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	17.13 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	14.68 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	15.37 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	95.4 °	Yes
Time of Peak	72 - 82 ms	75.8 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	156.7 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-53) - (-80) N·m	-68.8 N·m	Yes
Time of Peak	65 - 79 ms	72.5 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	143.6 ms	Yes

Test meets specifications.

Comments:

Technician

Approved



Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

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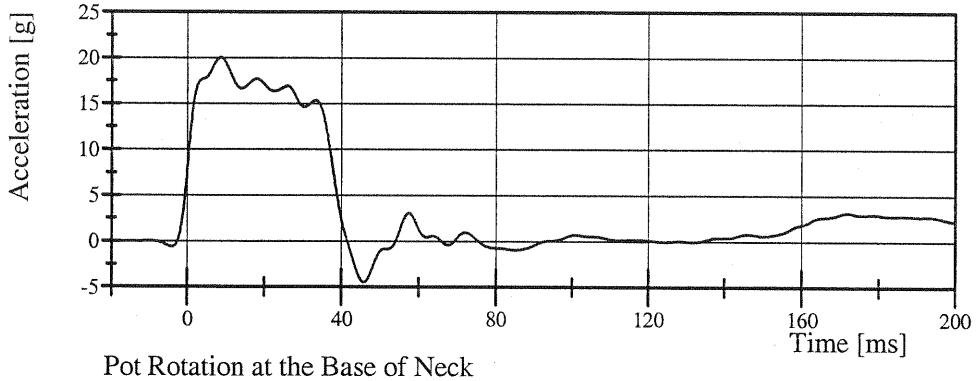
Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 001 Certification No. 5-1

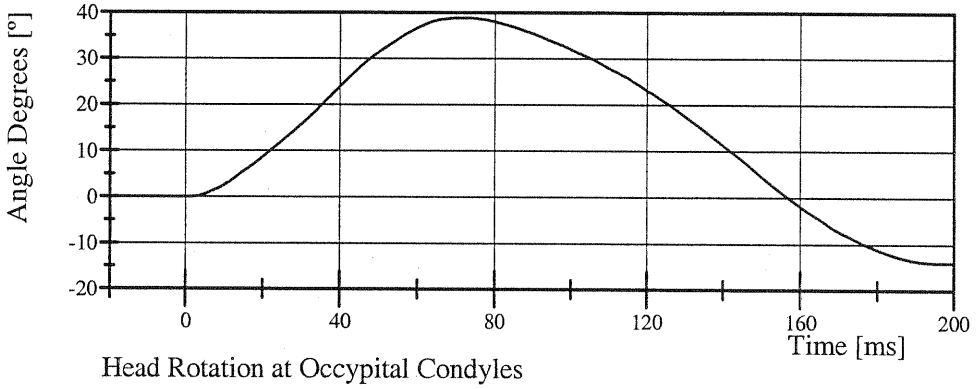
Test Date: 9/19/2007

Pendulum Acceleration



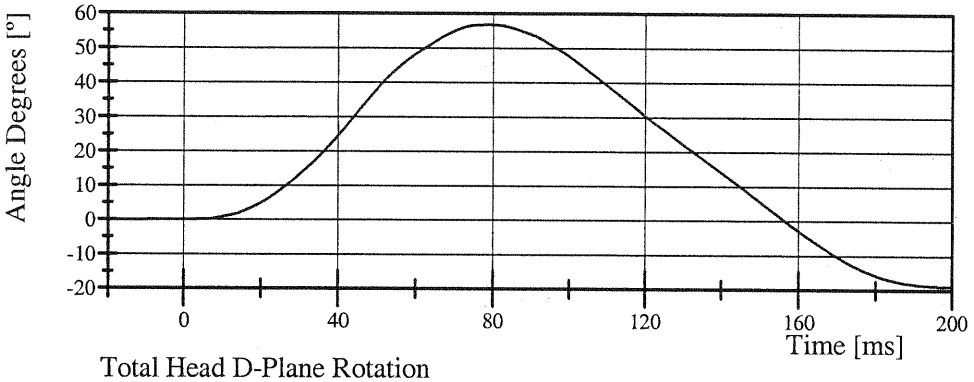
Filter Class: CFC_60
Max: 20.1 g at 8.6 ms
Min: -4.5 g at 45.7 ms

Pot Rotation at the Base of Neck



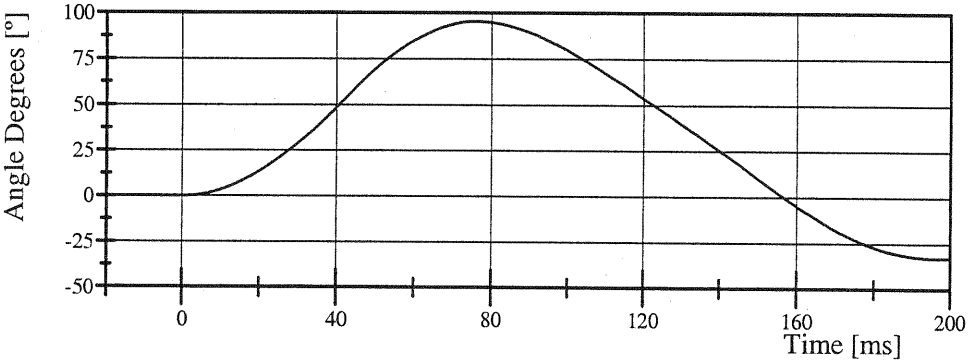
Filter Class: CFC_60
Max: 38.9 ° at 72.1 ms
Min: -14.1 ° at 197.6 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 56.8 ° at 78.9 ms
Min: -18.8 ° at 198.4 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 95.4 ° at 75.8 ms
Min: -32.8 ° at 198.0 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

09.19.2007 13:45:58 3059

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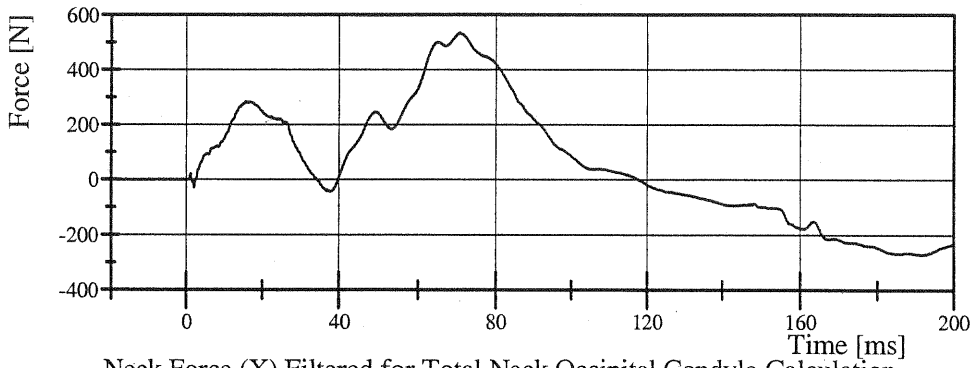
Transportation Research Center Inc.

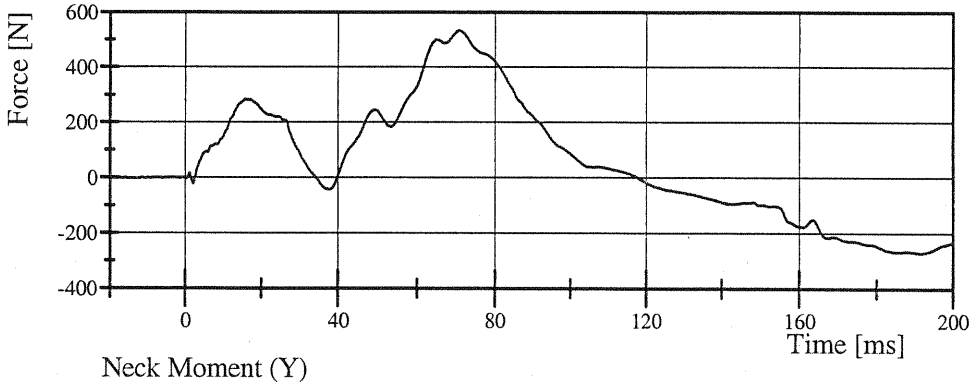
Neck Extension
HIII 50th Serial No. 001 Certification No. 5-1
Test Date: 9/19/2007

Neck Force (X)



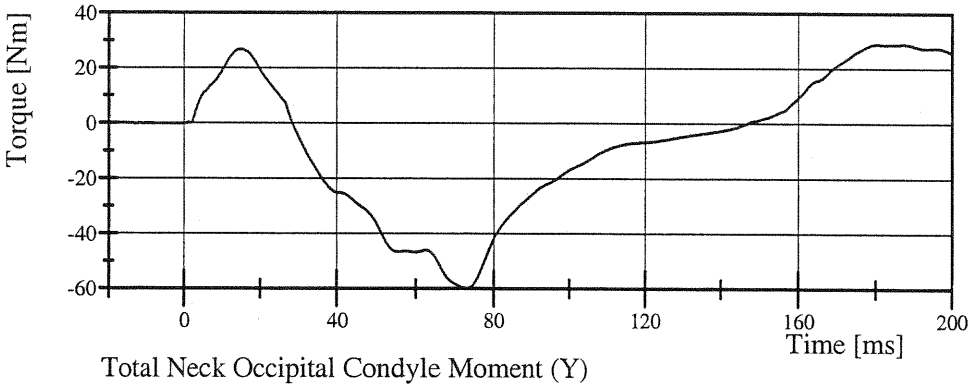
Filter Class: CFC_1000
Max: 534.8 N at 70.6 ms
Min: -271.1 N at 191.3 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



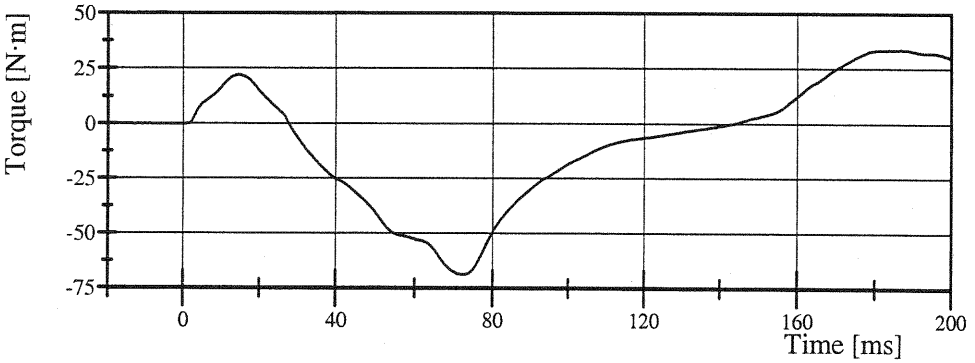
Filter Class: CFC_600
Max: 534.6 N at 70.7 ms
Min: -271.0 N at 191.5 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 28.9 Nm at 180.6 ms
Min: -59.8 Nm at 73.0 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 33.6 N·m at 186.6 ms
Min: -68.8 N·m at 72.5 ms

Transportation Research Center Inc.

Front Thorax
HIII 50th Serial No. 001 Certification No. 6-5
Test Date: 12/5/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.591 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,798.5 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-66.18 mm	Yes
Internal Hysteresis	65 - 85 %	73.9 %	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

12.05.2007 13:59:33 413

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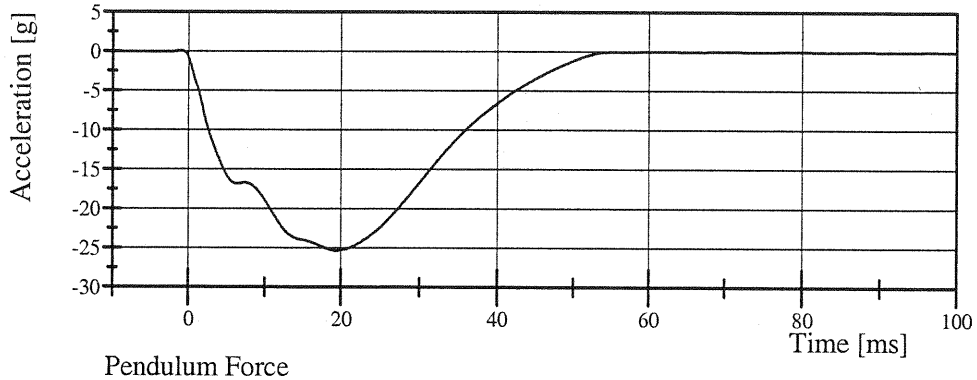
Transportation Research Center Inc.

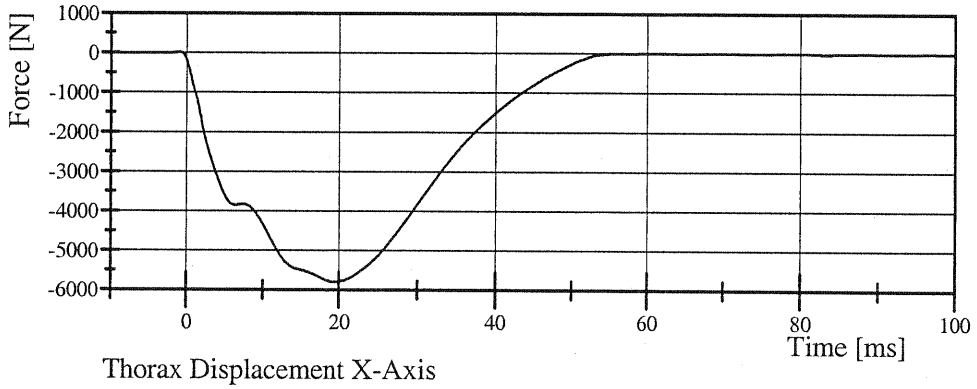
Front Thorax
HIII 50th Serial No. 001 Certification No. 6-5
Test Date: 12/5/2007

Pendulum Acceleration



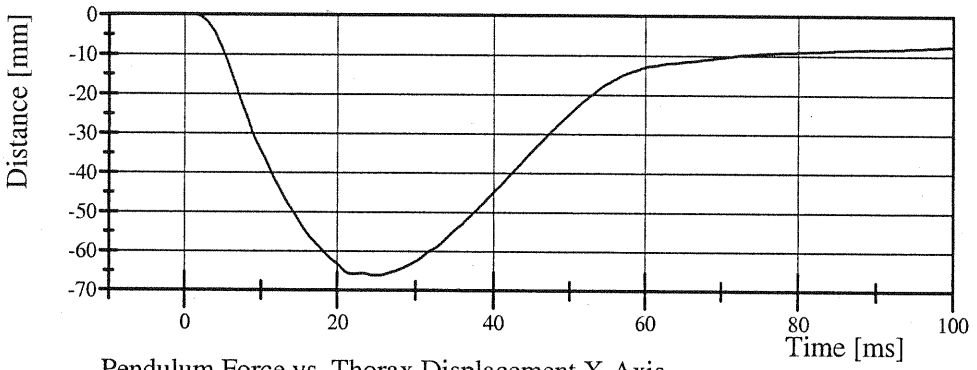
Filter Class: CFC_180
Max: 0.1 g at -1.0 ms
Min: -25.3 g at 19.4 ms

Pendulum Force



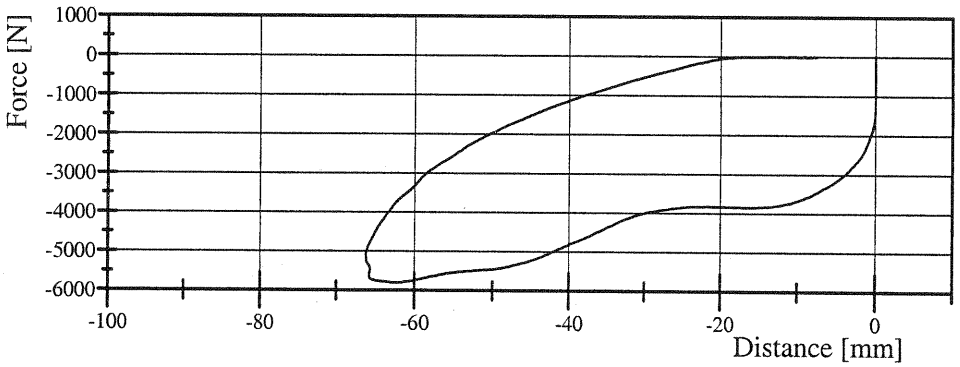
Filter Class: CFC_180
Max: 22.3 N at -1.0 ms
Min: -5,798.5 N at 19.4 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.0 mm at -4.6 ms
Min: -66.2 mm at 24.7 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 22.3 N at -0.0 mm
Min: -5,798.5 N at -62.4 mm

Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

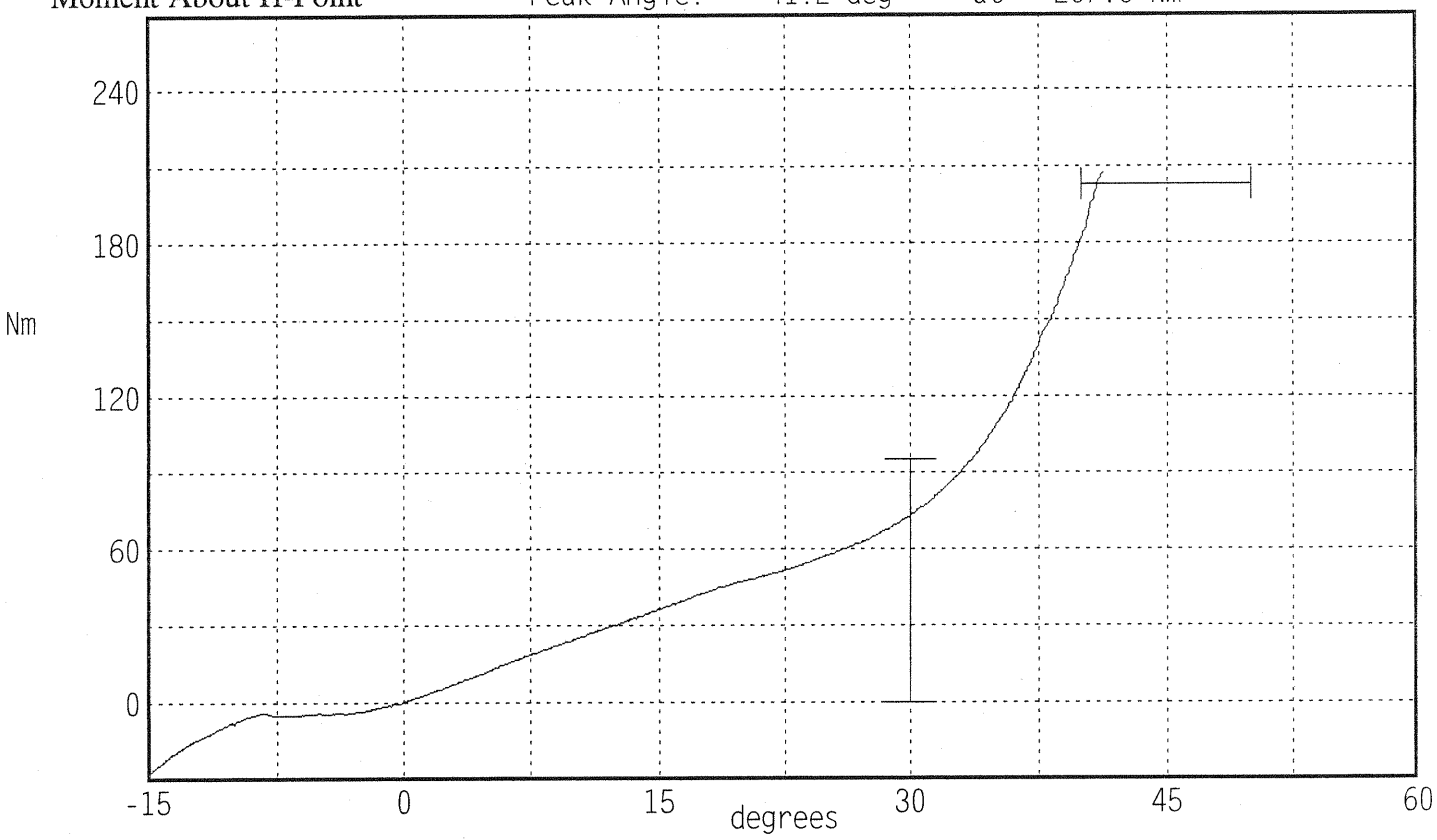
Serial Number: 001L
Test Number: 001C05
Comments:

Date: 09/19/2007
Time: 14:18

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.1	°C	Pass
Humidity	10 - 70	53	%	Pass
Moment at 30 deg	<= 94.9	73.1	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	41.0	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

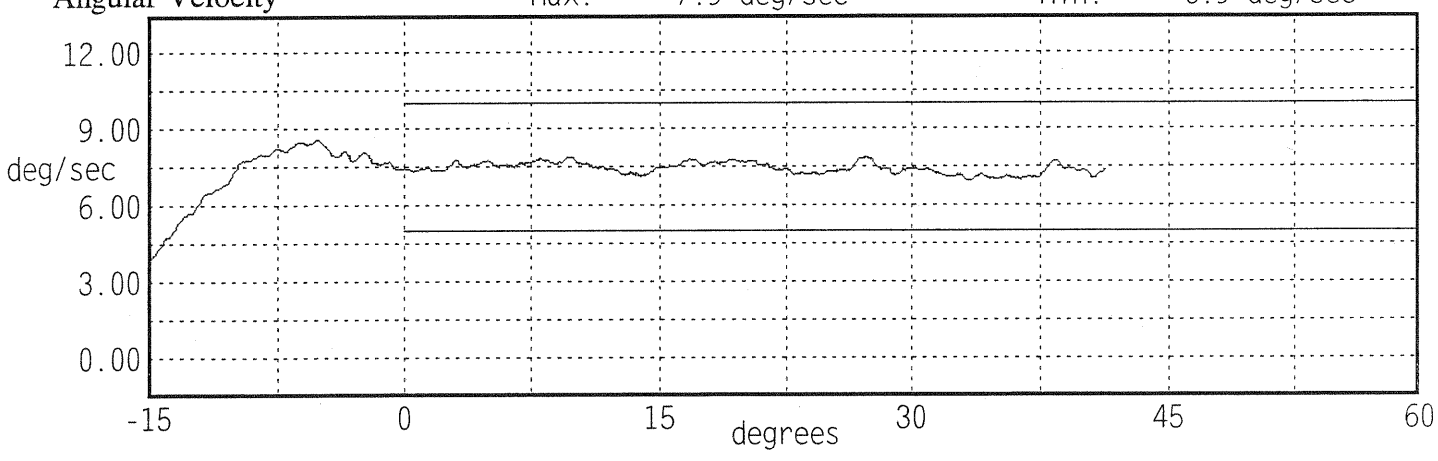
Moment About H-Point

Peak Moment: 207.6 Nm at 41.2 deg
Peak Angle: 41.2 deg at 207.6 Nm



Angular Velocity

Max: 7.9 deg/sec Min: 6.9 deg/sec



Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

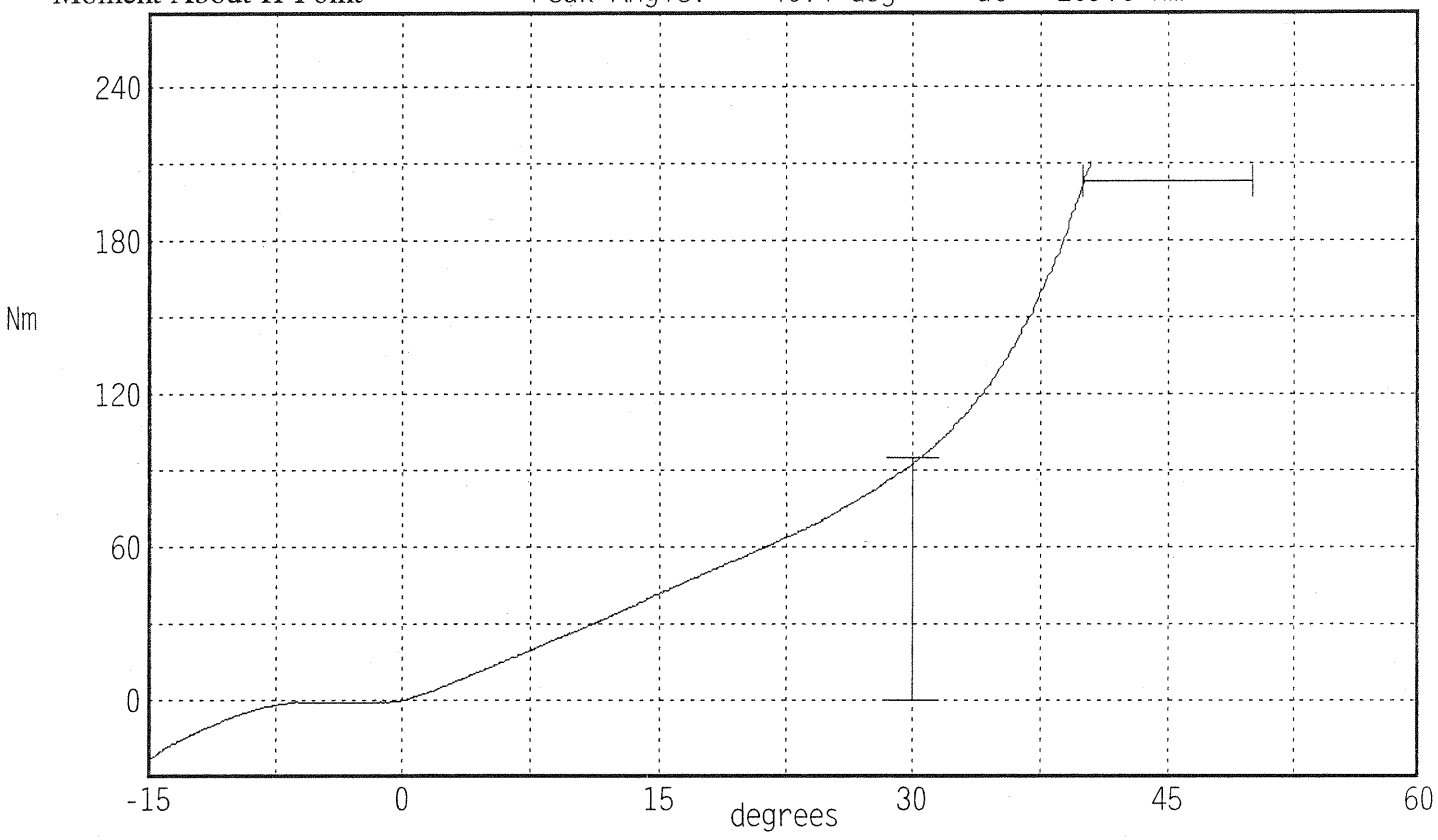
Serial Number: 001R
Test Number: 001C05
Comments:

Date: 09/19/2007
Time: 14:27

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.2	°C	Pass
Humidity	10 - 70	55	%	Pass
Moment at 30 deg	<= 94.9	92.4	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	40.1	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

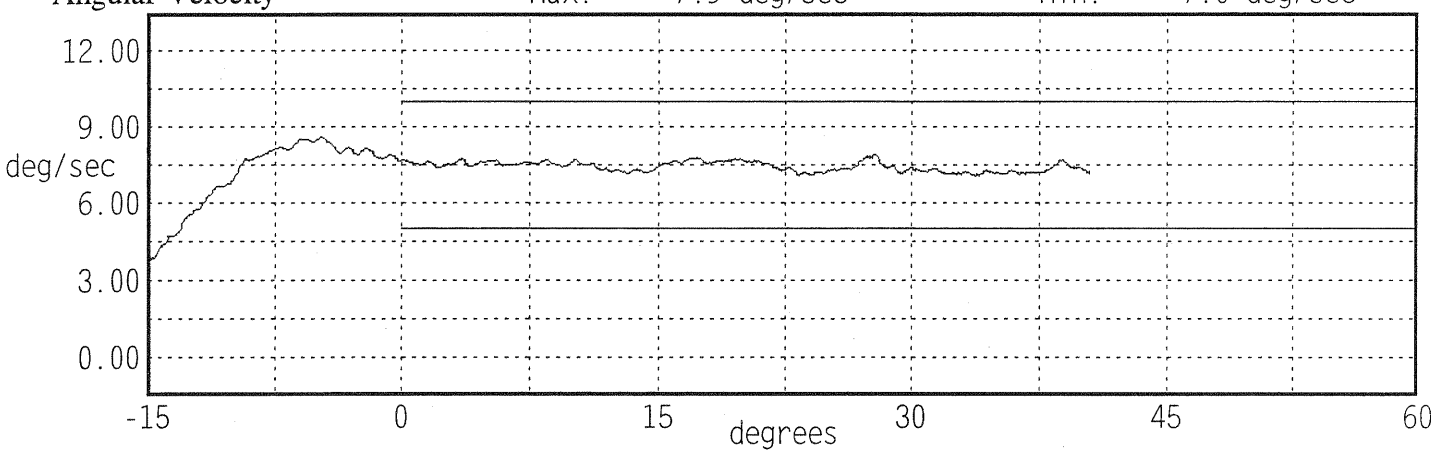
Moment About H-Point

Peak Moment: 210.4 Nm at 40.4 deg
Peak Angle: 40.4 deg at 209.0 Nm



Angular Velocity

Max: 7.9 deg/sec Min: 7.0 deg/sec



Appendix D

Test Equipment and Instrumentation Calibration Information

Sign Convention
SAE J211 MAR95

Accelerometers:	+X: Forward	
	+Y: Rightward	
	+Z: Downward	
Potentiometers:	+Chest longitudinal deflection:	Outward
	+Chest lateral deflection:	Rightward
	+Seat belt displacement:	Outward
	+Seat belt extension:	Elongation
	+Knee slider displacement:	Distance between femur and tibia increased (in relation to a seated dummy)

Rotation potentiometers:

	+About the X-axis:	Left foot-eversion
		Right foot-inversion
	+About the Y-axis:	Left/right foot-dorsiflexion
	+About the Z-axis:	Left foot-internal
		Right foot-external

Load cells:	+Femur force:	Tension
	+Seat belt force:	Tension
	+Barrier force:	Tension

Neck load cells:	+X force:	Head pushed rearward
	+Y force:	Head pushed leftward
	+Z force:	Head pulled upward (tension on neck)
	+X moment:	Left ear rotating toward left shoulder
	+Y moment:	Chin rotating toward chest
	+Z moment:	Chin rotating toward left shoulder

Tibia load cells:	+X force:	Ankle forward, knee rearward
	+Y force:	Ankle rightward, knee leftward
	+Z force:	Tension
	+X moment:	Bottom of tibia moving leftward
	+Y moment:	Bottom of tibia moving rearward

Frequency Response Classes
SAE J211 MAR95

Typical Test Measurements	Channel Class
Vehicle Structural Accelerations for use in:	
Total vehicle comparison	60
Collision simulation input	60
Component analysis	600
Integration for velocity or displacement	180
Barrier Face Forces	60
Belt Restraint System Loads	60
Anthropomorphic Test Device	
Head accelerations (linear and angular)	1000
Neck	
Forces	1000
Moments	600
Thorax	
Spine accelerations	180
Rib accelerations	1000
Sternum accelerations	1000
Deflections	600
Lumbar	
Forces	1000
Moments	1000
Pelvis	
Accelerations	1000
Forces	1000
Moments	1000
Femur/Knee/Tibia/Ankle	
Forces	600
Moments	600
Displacements	180
Sled Accelerations	60
Steering Column Loads	600
Head Form Accelerations	1000

The direction column on the following sheets describes the transducer output as mounted and wired in the test location. The polarity column indicates whether a polarity change occurred during data acquisition to conform to J211 MAR95. See Report Sign Convention sheet for description of data output as presented in the report: occasionally channels have been adjusted in post-acquisition processing to conform to J211 MAR95.

Channel Report Test Number 071214

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
1	Trig D1	10ZERO000000VO0A	EVENT	1	Logic	+	Bipolar	
2	P51738	11HEADCG00H3ACXA	Head Accel X	1000	g	-	Rearward	1-055 HIII 50th VRTC.001
3	P51727	11HEAD0000H3ACYA	Head Accel Y	1000	g	-	Leftward	1-055 HIII 50th VRTC.002
4	P51728	11HEADCG00H3ACZA	Head Accel Z	1000	g	-	Upward	1-055 HIII 50th VRTC.003
5	IF-205-261-FX	11NECKUP00H3FOXA	Upper Neck Force X	8896	N	-	Head forward, chest rearward	1-055 HIII 50th VRTC.004
6	IF-205-261-FY	11NECKUP00H3FOYA	Upper Neck Force Y	8896	N	+	Head leftward, chest rightward	1-055 HIII 50th VRTC.005
7	IF-205-261-FZ	11NECKUP00H3FOZA	Upper Neck Force Z	13344	N	+	Head upward, chest downward	1-055 HIII 50th VRTC.006
8	IF-205-261-MX	11NECKUP00H3MOXA	Upper Neck Moment X	282	Nm	-	Right ear toward right shoulder	1-055 HIII 50th VRTC.007
9	IF-205-261-MY	11NECKUP00H3MOYA	Upper Neck Moment Y	282	Nm	+	Chin toward sternum	1-055 HIII 50th VRTC.008
10	IF-205-261-MZ	11NECKUP00H3MOZA	Upper Neck Moment Z	282	Nm	+	Chin toward left shoulder	1-055 HIII 50th VRTC.009
11	P51723	11CHSTCG00H3ACXA	Chest Accel X	1000	g	+	Forward	1-055 HIII 50th VRTC.010
12	P51731	11CHST0000H3ACYA	Chest Accel Y	1000	g	-	Leftward	1-055 HIII 50th VRTC.011
13	P51721	11CHSTCG00H3ACZA	Chest Accel Z	1000	g	-	Upward	1-055 HIII 50th VRTC.012
14	84892-A-CST055	11CHST0000H3DSXA	Chest Deflection X Ext S37	84	mm	+	Forward	1-055 HIII 50th VRTC.013
15	2121A-260-FZ	11FEMRLL00H3FOZA	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	1-055 HIII 50th VRTC.014
16	2121A-1397-FZ	11FEMRRL00H3FOZA	Right Femur Force Z	13344	N	+	Knee forward, pelvis rearward	1-055 HIII 50th VRTC.015
17	P52031	12HEADCG00H3ACXA	Head Accel X	1000	g	-	Rearward	2-290 HIII 50th VRTC.001
18	P52037	12HEAD0000H3ACYA	Head Accel Y	1000	g	-	Leftward	2-290 HIII 50th VRTC.002
19	P52036	12HEADCG00H3ACZA	Head Accel Z	1000	g	-	Upward	2-290 HIII 50th VRTC.003
20	1716A-2020-FX	12NECKUP00H3FOXA	Upper Neck Force X	8896	N	-	Head forward, chest rearward	2-290 HIII 50th VRTC.004
21	1716A-2020-FY	12NECKUP00H3FOYA	Upper Neck Force Y	8896	N	+	Head leftward, chest rightward	2-290 HIII 50th VRTC.005
22	1716A-2020-FZ	12NECKUP00H3FOZA	Upper Neck Force Z	13344	N	+	Head upward, chest downward	2-290 HIII 50th VRTC.006
23	1716A-2020-MX	12NECKUP00H3MOXA	Upper Neck Moment X	282	Nm	-	Right ear toward right shoulder	2-290 HIII 50th VRTC.007
24	1716A-2020-MY	12NECKUP00H3MOYA	Upper Neck Moment Y	282	Nm	+	Chin toward sternum	2-290 HIII 50th VRTC.008
25	1716A-2020-MZ	12NECKUP00H3MOZA	Upper Neck Moment Z	282	Nm	+	Chin toward left shoulder	2-290 HIII 50th VRTC.009
26	P52021	12CHSTCG00H3ACXA	Chest Accel X	1000	g	+	Forward	2-290 HIII 50th VRTC.010
27	P52034	12CHST0000H3ACYA	Chest Accel Y	1000	g	-	Leftward	2-290 HIII 50th VRTC.011

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
28	P52017	12CHSTCG00H3ACZA	Chest Accel Z	1000	g	-	Upward	2-290 HIII 50th VRTC.012
29	14CB1-2897-CST290	12CHST0000H3DSXA	Chest Deflection X	84	mm	+	Forward	2-290 HIII 50th VRTC.013
30	2121AJ-1706-FZ	12FEMRLL00H3FOZA	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	2-290 HIII 50th VRTC.014
31	2121AJ-1705-FZ	12FEMRRL00H3FOZA	Right Femur Force Z	13344	N	+	Knee forward, pelvis rearward	2-290 HIII 50th VRTC.015
32	P51713	13HEADCG00H3ACXA	Head Accel X	1000	g	-	Rearward	3-168 HIII 50TH VRTC.001
33	P51740	13HEADCG00H3ACYA	Head Accel Y	1000	g	-	Leftward	3-168 HIII 50TH VRTC.002
34	P51734	13HEADCG00H3ACZA	Head Accel Z	1000	g	-	Upward	3-168 HIII 50TH VRTC.003
35	1716A-1647-FX	13NECKUP00H3FOXA	Upper Neck Force X	8896	N	-	Head forward, chest rearward	3-168 HIII 50TH VRTC.007
36	1716A-1647-FY	13NECKUP00H3FOYA	Upper Neck Force Y	8896	N	+	Head leftward, chest rightward	3-168 HIII 50TH VRTC.008
37	1716A-1647-FZ	13NECKUP00H3FOZA	Upper Neck Force Z	13344	N	+	Head upward, chest downward	3-168 HIII 50TH VRTC.009
38	1716A-1647-MX	13NECKUP00H3MOXA	Upper Neck Moment X	282	Nm	-	Right ear toward right shoulder	3-168 HIII 50TH VRTC.010
39	1716A-1647-MY	13NECKUP00H3MOYA	Upper Neck Moment Y	282	Nm	+	Chin toward sternum	3-168 HIII 50TH VRTC.011
40	1716A-1647-MZ	13NECKUP00H3MOZA	Upper Neck Moment Z	282	Nm	+	Chin toward left shoulder	3-168 HIII 50TH VRTC.012
41	P51685	13CHSTCG00H3ACXA	Chest Accel X	1000	g	+	Forward	3-168 HIII 50TH VRTC.019
42	P51699	13CHSTCG00H3ACYA	Chest Accel Y	1000	g	-	Leftward	3-168 HIII 50TH VRTC.020
43	P51701	13CHSTCG00H3ACZA	Chest Accel Z	1000	g	-	Upward	3-168 HIII 50TH VRTC.021
44	14CB1-2897-CST168	13CHST0000H3DSXA	Chest Deflection X	84	mm	+	Forward	3-168 HIII 50TH VRTC.025
45	2121AJ-1708	13FEMRLL00H3FOZA	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	3-168 HIII 50TH VRTC.032
46	2121AJ-1707	13FEMRRL00H3FOZA	Right Femur Force Z	13344	N	+	Knee forward, pelvis rearward	3-168 HIII 50TH VRTC.033
47	P45011	14HEADCG00H3ACXA	Head Accel X	1000	g	-	Rearward	4-169 HIII 50TH VRTC.001
48	P51696	14HEADCG00H3ACYA	Head Accel Y	1000	g	-	Leftward	4-169 HIII 50TH VRTC.002
49	P51700	14HEADCG00H3ACZA	Head Accel Z	1000	g	-	Upward	4-169 HIII 50TH VRTC.003
50	IF-205-161-FX	14NECKUP00H3FOXA	Upper Neck Force X	8896	N	-	Head forward, chest rearward	4-169 HIII 50TH VRTC.007
51	IF-205-161-FY	14NECKUP00H3FOYA	Upper Neck Force Y	8896	N	+	Head leftward, chest rightward	4-169 HIII 50TH VRTC.008
52	IF-205-161-FZ	14NECKUP00H3FOZA	Upper Neck Force Z	13344	N	+	Head upward, chest downward	4-169 HIII 50TH VRTC.009
53	IF-205-161-MX	14NECKUP00H3MOXA	Upper Neck Moment X	282	Nm	-	Right ear toward right shoulder	4-169 HIII 50TH VRTC.010

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
54	IF-205-161-MY	14NECKUP00H3MOYA	Upper Neck Moment Y	282	Nm	+	Chin toward sternum	4-169 HIII 50TH VRTC.011
55	IF-205-161-MZ	14NECKUP00H3MOZA	Upper Neck Moment Z	282	Nm	+	Chin toward left shoulder	4-169 HIII 50TH VRTC.012
56	P51630	14CHSTCG00H3ACXA	Chest Accel X	1000	g	+	Forward	4-169 HIII 50TH VRTC.019
57	P51705	14CHSTCG00H3ACYA	Chest Accel Y	1000	g	-	Leftward	4-169 HIII 50TH VRTC.020
58	P51706	14CHSTCG00H3ACZA	Chest Accel Z	1000	g	-	Upward	4-169 HIII 50TH VRTC.021
59	14CB1-2897-CST169	14CHST0000H3DSXA	Chest Deflection X	84	mm	+	Forward	4-169 HIII 50TH VRTC.025
60	2121AJ-1710	14FEMRLL00H3FOZA	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	4-169 HIII 50TH VRTC.032
61	2121AJ-1709	14FEMRRL00H3FOZA	Right Femur Force Z	13344	N	+	Knee forward, pelvis rearward	4-169 HIII 50TH VRTC.033
62	P51998	15HEADCG00H3ACXA	Head Accel X	1000	g	+	Forward	5-342 HIII 50th VRTC.001
63	P52035	15HEADCG00H3ACYA	Head Accel Y	1000	g	-	Leftward	5-342 HIII 50th VRTC.002
64	P52002	15HEADCG00H3ACZA	Head Accel Z	1000	g	-	Upward	5-342 HIII 50th VRTC.003
65	P51982	15HEADCGRDH3ACXA	Head Accel X Red	1000	g	-	Rearward	5-342 HIII 50th VRTC.004
66	P52000	15HEADCGRDH3ACYA	Head Accel Y Red	1000	g	+	Rightward	5-342 HIII 50th VRTC.005
67	P52026	15HEADCGRDH3ACZA	Head Accel Z Red	1000	g	-	Upward	5-342 HIII 50th VRTC.006
68	1716A-2021-FX	15NECKUP00H3FOXA	Upper Neck Force X	8896.4	N	-	Head forward, chest rearward	5-342 HIII 50th VRTC.013
69	1716A-2021-FY	15NECKUP00H3FOYA	Upper Neck Force Y	8896.4	N	+	Head leftward, chest rightward	5-342 HIII 50th VRTC.014
70	1716A-2021-FZ	15NECKUP00H3FOZA	Upper Neck Force Z	13344	N	+	Head upward, chest downward	5-342 HIII 50th VRTC.015
71	1716A-2021-MX	15NECKUP00H3MOXA	Upper Neck Moment X	282.4	Nm	-	Right ear toward right shoulder	5-342 HIII 50th VRTC.016
72	1716A-2021-MY	15NECKUP00H3MOYA	Upper Neck Moment Y	282.4	Nm	+	Chin toward sternum	5-342 HIII 50th VRTC.017
73	1716A-2021-MZ	15NECKUP00H3MOZA	Upper Neck Moment Z	282.4	Nm	+	Chin toward left shoulder	5-342 HIII 50th VRTC.018
74	P52016	15CHSTCG00H3ACXA	Chest Accel X	1000	g	+	Forward	5-342 HIII 50th VRTC.019
75	P52018	15CHSTCG00H3ACYA	Chest Accel Y	1000	g	-	Leftward	5-342 HIII 50th VRTC.020
76	P51985	15CHSTCG00H3ACZA	Chest Accel Z	1000	g	-	Upward	5-342 HIII 50th VRTC.021
77	P51995	15CHSTCGRDH3ACXA	Chest Accel X Red.	1000	g	-	Rearward	5-342 HIII 50th VRTC.022
78	P51988	15CHSTCGRDH3ACYA	Chest Accel Y Red.	1000	g	-	Leftward	5-342 HIII 50th VRTC.023
79	P52032	15CHSTCGRDH3ACZA	Chest Accel Z Red.	1000	g	-	Upward	5-342 HIII 50th VRTC.024
80	14CB1-2897-CST342	15CHST0000H3DSXA	Chest Deflection X	84	mm	+	Forward	5-342 HIII 50th VRTC.025
81	2121AJ-1711-FZ	15FEMRLL00H3FOZA	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	5-342 HIII 50th VRTC.026
82	2121AJ-1717-FZ	15FEMRRL00H3FOZA	Right Femur Force Z	13344	N	+	Knee forward, pelvis rearward	5-342 HIII 50th VRTC.027

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
83	P52050	16HEADCG00HFACXA	Head Accel X	1000	g	-	Rearward	6-426 HIII 5th VRTC.001
84	P52040	16HEADCG00HFACYA	Head Accel Y	1000	g	-	Leftward	6-426 HIII 5th VRTC.002
85	P52055	16HEADCG00HFACZA	Head Accel Z	1000	g	-	Upward	6-426 HIII 5th VRTC.003
86	P58851	16HEADCGRDHFACXA	Head Accel Redundant X	1000	g	+	Forward	6-426 HIII 5th VRTC.004
87	P52051	16HEADCGRDHFACYA	Head Accel Redundant Y	1000	g	-	Leftward	6-426 HIII 5th VRTC.005
88	P58854	16HEADCGRDHFACZA	Head Accel Redundant Z	1000	g	-	Upward	6-426 HIII 5th VRTC.006
89	1716A-2025-FX	16NECKUP00HFFOXA	Neck Force X	8896	N	-	Head forward, chest rearward	6-426 HIII 5th VRTC.007
90	1716A-2025-FY	16NECKUP00HFFOYA	Neck Force Y	8896	N	+	Head leftward, chest rightward	6-426 HIII 5th VRTC.008
91	1716A-2025-FZ	16NECKUP00HFFOZA	Neck Force Z	13344	N	+	Head upward, chest downward	6-426 HIII 5th VRTC.009
92	1716A-2025-MX	16NECKUP00HFMOXA	Neck Moment X	282.4	Nm	-	Right ear toward right shoulder	6-426 HIII 5th VRTC.010
93	1716A-2025-MY	16NECKUP00HFMOYA	Neck Moment Y	282.4	Nm	+	Chin toward sternum	6-426 HIII 5th VRTC.011
94	1716A-2025-MZ	16NECKUP00HFMOZA	Neck Moment Z	282.4	Nm	+	Chin toward left shoulder	6-426 HIII 5th VRTC.012
95	P52044	16CHSTCG00HFACXA	Chest Accel X	1000	g	+	Forward	6-426 HIII 5th VRTC.013
96	P51992	16CHSTCG00HFACYA	Chest Accel Y	1000	g	-	Leftward	6-426 HIII 5th VRTC.014
97	P52066	16CHSTCG00HFACZA	Chest Accel Z	1000	g	-	Upward	6-426 HIII 5th VRTC.015
98	P51887	16CHSTCGRDHFACXA	Chest Accel Redundant X	1000	g	-	Rearward	6-426 HIII 5th VRTC.016
99	P52065	16CHSTCGRDHFACYA	Chest Accel Redundant Y	1000	g	-	Leftward	6-426 HIII 5th VRTC.017
100	P51886	16CHSTCGRDHFACZA	Chest Accel Redundant Z	1000	g	-	Upward	6-426 HIII 5th VRTC.018
101	14CB1-2897-CST426	16CHST0000HFDSXA	Chest Deflection X	81	mm	+	Forward	6-426 HIII 5th VRTC.019
102	1914A-362-FZ	16FEMRLL00HFFOZA	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	6-426 HIII 5th VRTC.022
103	2667-075-FZ	16FEMRRL00HFFOZA	Right Femur Force Z	13344	N	+	Knee forward, pelvis rearward	6-426 HIII 5th VRTC.028
104	P51681	17HEADCG00H3ACXA	Head Accel X	1000	g	-	Rearward	7-313 HIII 50th VRTC.001
105	P51714	17HEAD0000H3ACYA	Head Accel Y	1000	g	-	Leftward	7-313 HIII 50th VRTC.002
106	P52038	17HEADCG00H3ACZA	Head Accel Z	1000	g	-	Upward	7-313 HIII 50th VRTC.003
107	1716A-2023-FX	17NECKUP00H3FOXA	Upper Neck Force X	8896	N	-	Head forward, chest rearward	7-313 HIII 50th VRTC.004
108	1716A-2023-FY	17NECKUP00H3FOYA	Upper Neck Force Y	8896	N	+	Head leftward, chest rightward	7-313 HIII 50th VRTC.005
109	1716A-0420-FZ	17NECKUP00H3FOZA	Upper Neck Force Z	13344	N	+	Head upward, chest downward	7-313 HIII 50th VRTC.006
110	1716A-2023-MX	17NECKUP00H3MOXA	Upper Neck Moment X	282.4	Nm	-	Right ear toward right shoulder	7-313 HIII 50th VRTC.007

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
111	1716A-2023-MY	17NECKUP00H3MOYA	Upper Neck Moment Y	282.4	Nm	+	Chin toward sternum	7-313 HIII 50th VRTC.008
112	1716A-2023-MZ	17NECKUP00H3MOZA	Upper Neck Moment Z	282.4	Nm	+	Chin toward left shoulder	7-313 HIII 50th VRTC.009
113	P51720	17CHSTCG00H3ACXA	Chest Accel X	1000	g	+	Forward	7-313 HIII 50th VRTC.010
114	P51724	17CHST0000H3ACYA	Chest Accel Y	1000	g	-	Leftward	7-313 HIII 50th VRTC.011
115	P51711	17CHSTCG00H3ACZA	Chest Accel Z	1000	g	-	Upward	7-313 HIII 50th VRTC.012
116	14CB1-2897-CST313	17CHST0000H3DSXA	Chest Deflection X	84	mm	+	Forward	7-313 HIII 50th VRTC.013
117	2121AJ-1714-FZ	17FEMRLL00H3FOZA	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	7-313 HIII 50th VRTC.014
118	2121AJ-1701-FZ	17FEMRRL00H3FOZA	Right Femur Force Z	13344	N	+	Knee forward, pelvis rearward	7-313 HIII 50th VRTC.015
119	P51735	18HEADCG00H3ACXA	Head Accel X	1000	g	-	Rearward	8-314 HIII 50th VRTC.001
120	P51737	18HEAD0000H3ACYA	Head Accel Y	1000	g	-	Leftward	8-314 HIII 50th VRTC.002
121	P51733	18HEADCG00H3ACZA	Head Accel Z	1000	g	-	Upward	8-314 HIII 50th VRTC.003
122	1716A-2022-FX	18NECKUP00H3FOXA	Upper Neck Force X	8896	N	-	Head forward, chest rearward	8-314 HIII 50th VRTC.004
123	1716A-2022-FY	18NECKUP00H3FOYA	Upper Neck Force Y	8896	N	+	Head leftward, chest rightward	8-314 HIII 50th VRTC.005
124	1716A-2022-FZ	18NECKUP00H3FOZA	Upper Neck Force Z	13344	N	+	Head upward, chest downward	8-314 HIII 50th VRTC.006
125	1716A-2022-MX	18NECKUP00H3MOXA	Upper Neck Moment X	282.4	Nm	-	Right ear toward right shoulder	8-314 HIII 50th VRTC.007
126	1716A-2022-MY	18NECKUP00H3MOYA	Upper Neck Moment Y	282.4	Nm	+	Chin toward sternum	8-314 HIII 50th VRTC.008
127	1716A-2022-MZ	18NECKUP00H3MOZA	Upper Neck Moment Z	282.4	Nm	+	Chin toward left shoulder	8-314 HIII 50th VRTC.009
128	P51683	18CHSTCG00H3ACXA	Chest Accel X	1000	g	+	Forward	8-314 HIII 50th VRTC.010
129	P51739	18CHST0000H3ACYA	Chest Accel Y	1000	g	-	Leftward	8-314 HIII 50th VRTC.011
130	P51694	18CHSTCG00H3ACZA	Chest Accel Z	1000	g	-	Upward	8-314 HIII 50th VRTC.012
131	14CB1-2897-CST314	18CHST0000H3DSXA	Chest Deflection X	84	mm	+	Forward	8-314 HIII 50th VRTC.013
132	2121AJ-1704-FZ	18FEMRLL00H3FOZA	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	8-314 HIII 50th VRTC.014
133	2121AJ-1712-FZ	18FEMRRL00H3FOZA	Right Femur Force Z	13344	N	+	Knee forward, pelvis rearward	8-314 HIII 50th VRTC.015
134	P51729	19HEADCG00H3ACXA	Head Accel X	1000	g	-	Rearward	9-045 HIII 50th VRTC.001
135	P51732	19HEAD0000H3ACYA	Head Accel Y	1000	g	-	Leftward	9-045 HIII 50th VRTC.002
136	P51715	19HEADCG00H3ACZA	Head Accel Z	1000	g	-	Upward	9-045 HIII 50th VRTC.003
137	IF-205-199-FX	19NECKUP00H3FOXA	Upper Neck Force X	8896	N	-	Head forward, chest rearward	9-045 HIII 50th VRTC.004

Channel Report Test Number 071214

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
138	IF-205-199-FY	19NECKUP00H3FOYA	Upper Neck Force Y	8896	N	+	Head leftward, chest rightward	9-045 HIII 50th VRTC.005
139	IF-205-199-FZ	19NECKUP00H3FOZA	Upper Neck Force Z	13344	N	+	Head upward, chest downward	9-045 HIII 50th VRTC.006
140	IF-205-199-MX	19NECKUP00H3MOXA	Upper Neck Moment X	282.4	Nm	-	Right ear toward right shoulder	9-045 HIII 50th VRTC.007
141	IF-205-199-MY	19NECKUP00H3MOYA	Upper Neck Moment Y	282.4	Nm	+	Chin toward sternum	9-045 HIII 50th VRTC.008
142	IF-205-199-MZ	19NECKUP00H3MOZA	Upper Neck Moment Z	282.4	Nm	+	Chin toward left shoulder	9-045 HIII 50th VRTC.009
143	P51712	19CHSTCG00H3ACXA	Chest Accel X	1000	g	+	Forward	9-045 HIII 50th VRTC.010
144	P51718	19CHST0000H3ACYA	Chest Accel Y	1000	g	-	Leftward	9-045 HIII 50th VRTC.011
145	P51717	19CHSTCG00H3ACZA	Chest Accel Z	1000	g	-	Upward	9-045 HIII 50th VRTC.012
146	84892-A-CST045	19CHST0000H3DSXA	Chest Deflection X	84	mm	+	Forward	9-045 HIII 50th VRTC.013
147	2121AJ-1700-FZ	19FEMRLL00H3FOZA	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	9-045 HIII 50th VRTC.014
148	2121AJ-1702-FZ	19FEMRRL00H3FOZA	Right Femur Force Z	13344	N	+	Knee forward, pelvis rearward	9-045 HIII 50th VRTC.015
149	P51725	21HEADCG00H3ACXA	Head Accel X	1000	g	-	Rearward	1-043 HIII 50th VRTC.001
150	P51730	21HEAD0000H3ACYA	Head Accel Y	1000	g	-	Leftward	1-043 HIII 50th VRTC.002
151	P51736	21HEADCG00H3ACZA	Head Accel Z	1000	g	-	Upward	1-043 HIII 50th VRTC.003
152	1716A-1632-FX	21NECKUP00H3FOXA	Upper Neck Force X	8896	N	-	Head forward, chest rearward	1-043 HIII 50th VRTC.004
153	1716A-1632-FY	21NECKUP00H3FOYA	Upper Neck Force Y	8896	N	+	Head leftward, chest rightward	1-043 HIII 50th VRTC.005
154	1716A-1632-FZ	21NECKUP00H3FOZA	Upper Neck Force Z	13344	N	+	Head upward, chest downward	1-043 HIII 50th VRTC.006
155	1716A-1632-MX	21NECKUP00H3MOXA	Upper Neck Moment X	282.4	Nm	-	Right ear toward right shoulder	1-043 HIII 50th VRTC.007
156	1716A-1632-MY	21NECKUP00H3MOYA	Upper Neck Moment Y	282.4	Nm	+	Chin toward sternum	1-043 HIII 50th VRTC.008
157	1716A-1632-MZ	21NECKUP00H3MOZA	Upper Neck Moment Z	282.4	Nm	+	Chin toward left shoulder	1-043 HIII 50th VRTC.009
158	P51719	21CHSTCG00H3ACXA	Chest Accel X	1000	g	+	Forward	1-043 HIII 50th VRTC.010
159	P51722	21CHST0000H3ACYA	Chest Accel Y	1000	g	-	Leftward	1-043 HIII 50th VRTC.011
160	P51707	21CHSTCG00H3ACZA	Chest Accel Z	1000	g	-	Upward	1-043 HIII 50th VRTC.012
161	84892-A-CST043	21CHST0000H3DSXA	Chest Deflection X	84	mm	+	Forward	1-043 HIII 50th VRTC.013
162	2121AJ-1713-FZ	21FEMRLL00H3FOZA	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	1-043 HIII 50th VRTC.014
163	2121AJ-1703-FZ	21FEMRRL00H3FOZA	Right Femur Force Z	13344	N	+	Knee forward, pelvis rearward	1-043 HIII 50th VRTC.015

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
164	A19E	22HEADCG00H3ACXA	Head Accel X	750	g	-	Rearward	2-177 HIII 50th Alderson.001
165	APDT8	22HEADCG00H3ACYA	Head Accel Y	750	g	-	Leftward	2-177 HIII 50th Alderson.002
166	C11876	22HEADCG00H3ACZA	Head Accel Z	750	g	-	Upward	2-177 HIII 50th Alderson.003
167	1716-0235-FX	22NECKUP00H3FOXA	Neck Force X	8896	N	-	Head forward, chest rearward	2-177 HIII 50th Alderson.004
168	1716-0235-FY	22NECKUP00H3FOYA	Neck Force Y	8896	N	+	Head leftward, chest rightward	2-177 HIII 50th Alderson.005
169	1716-0235-FZ	22NECKUP00H3FOZA	Neck Force Z	13344	N	+	Head upward, chest downward	2-177 HIII 50th Alderson.006
170	1716-0235-MX	22NECKUP00H3MOXA	Neck Moment X	282.4	Nm	-	Right ear toward right shoulder	2-177 HIII 50th Alderson.007
171	1716-0235-MY	22NECKUP00H3MOYA	Neck Moment Y	282.4	Nm	+	Chin toward sternum	2-177 HIII 50th Alderson.008
172	1716-0235-MZ	22NECKUP00H3MOZA	Neck Moment Z	282.4	Nm	+	Chin toward left shoulder	2-177 HIII 50th Alderson.009
173	A11K	22CHSTCG00H3ACXA	Chest Accel X	750	g	+	Forward	2-177 HIII 50th Alderson.014
174	C12852	22CHSTCG00H3ACYA	Chest Accel Y	750	g	-	Leftward	2-177 HIII 50th Alderson.015
175	A89D	22CHSTCG00H3ACZA	Chest Accel Z	750	g	+	Downward	2-177 HIII 50th Alderson.016
176	CST9126	22CHST0000H3DSXA	Chest Deflection X	84	mm	+	Forward	2-177 HIII 50th Alderson.017
177	2121A-877	22FEMRLL00H3FOZA	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	2-177 HIII 50th Alderson.025
178	2430-982	22FEMRRL00H3FOZA	Right Femur Force Z ext SO7	13344	N	+	Knee forward, pelvis rearward	2-177 HIII 50th Alderson.026
179	P58842	23HEADCG00HMACXA	Head Accel X	1000	g	-	Rearward	3-077 HIII 95th VRTC.001
180	P58834	23HEADCG00HMACYA	Head Accel Y	1000	g	-	Leftward	3-077 HIII 95th VRTC.002
181	P51865	23HEADCG00HMACZA	Head Accel Z	1000	g	-	Upward	3-077 HIII 95th VRTC.003
182	1716A-2019-FX	23NECKUP00HMFOXA	Upper Neck Force X	8896	N	-	Head forward, chest rearward	3-077 HIII 95th VRTC.004
183	1716A-2019-FY	23NECKUP00HMFOYA	Upper Neck Force Y	8896	N	+	Head leftward, chest rightward	3-077 HIII 95th VRTC.005
184	1716A-2019-FZ	23NECKUP00HMFOZA	Upper Neck Force Z	13344	N	+	Head upward, chest downward	3-077 HIII 95th VRTC.006
185	1716A-2019-MX	23NECKUP00HMMOXA	Upper Neck Moment X	282.4	Nm	-	Right ear toward right shoulder	3-077 HIII 95th VRTC.007
186	1716A-2019-MY	23NECKUP00HMMOYA	Upper Neck Moment Y	282.4	Nm	+	Chin toward sternum	3-077 HIII 95th VRTC.008
187	1716A-2019-MZ	23NECKUP00HMMOZA	Upper Neck Moment Z	282.4	Nm	+	Chin toward left shoulder	3-077 HIII 95th VRTC.009
188	P58841	23CHSTCG00HMACXA	Chest Accel X	1000	g	+	Forward	3-077 HIII 95th VRTC.010
189	P51861	23CHSTCG00HMACYA	Chest Accel Y	1000	g	-	Leftward	3-077 HIII 95th VRTC.011
190	P58836	23CHSTCG00HMACZA	Chest Accel Z	1000	g	-	Upward	3-077 HIII 95th VRTC.012

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
191	14CB1-2897-CST077	23CHST0000HMDSXA	Chest Deflection X	84	mm	+	Forward	3-077 HIII 95th VRTC.013
192	1914A-0259-FZ	23FEMRLL00HMFOZA	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	3-077 HIII 95th VRTC.016
193	2667-078-FZ	23FEMRRL00HMFOZA	Right Femur Force Z	13344	N	+	Knee forward, pelvis rearward	3-077 HIII 95th VRTC.022
194	P57830	24HEADCG00HMACXA	Head Accel X	1000	g	-	Knee forward, pelvis rearward	4-226 HIII 95th VRTC.001
195	P58832	24HEADCG00HMACYA	Head Accel Y	1000	g	-	Leftward	4-226 HIII 95th VRTC.002
196	P58829	24HEADCG00HMACZA	Head Accel Z	1000	g	-	Upward	4-226 HIII 95th VRTC.003
197	1716A-2024-FY	24NECKUP00HMFOYA	Neck Force X	8896	N	+	Head rearward, chest forward	4-226 HIII 95th VRTC.005
198	1716A-2024-FX	24NECKUP00HMFOXA	Neck Force Y	8896	N	-	Head rightward, chest leftward	4-226 HIII 95th VRTC.004
199	1716A-2024-FZ	24NECKUP00HMFOZA	Neck Force Z	13344	N	+	Head upward, chest downward	4-226 HIII 95th VRTC.006
200	1716A-2024-MX	24NECKUP00HMMOXA	Neck Moment X	282.4	Nm	-	Right ear toward right shoulder	4-226 HIII 95th VRTC.007
201	1716A-2024-MY	24NECKUP00HMMOYA	Neck Moment Y	282.4	Nm	+	Chin toward sternum	4-226 HIII 95th VRTC.008
202	1716A-2024-MZ	24NECKUP00HMMOZA	Neck Moment Z	282.4	Nm	+	Chin toward left shoulder	4-226 HIII 95th VRTC.009
203	P58831	24CHSTCG00HMACXA	Chest Accel X	1000	g	+	Forward	4-226 HIII 95th VRTC.010
204	P58883	24CHSTCG00HMACYA	Chest Accel Y	1000	g	-	Leftward	4-226 HIII 95th VRTC.011
205	P58835	24CHSTCG00HMACZA	Chest Accel Z	1000	g	-	Upward	4-226 HIII 95th VRTC.012
206	14CB1-2897-CST226	24CHST0000HMDSXA	Chest Deflection X	84	mm	+	Forward	4-226 HIII 95th VRTC.013
207	IF-625-110-FZ	24FEMRLL00HMFOZA	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	4-226 HIII 95th VRTC.016
208	IF-625-109-FZ	24FEMRRL00HMFOZA	Right Femur Force Z	13344	N	+	Knee forward, pelvis rearward	4-226 HIII 95th VRTC.022
209	P33846	25HEADCG00H3ACXA	Head Accel X	1000	g	-	Rearward	5-591 HIII 50th FTSS.001
210	P33909	25HEADCG00H3ACYA	Head Accel Y	1000	g	-	Leftward	5-591 HIII 50th FTSS.002
211	p47387	25HEADCG00H3ACZA	Head Accel Z	1000	g	-	Upward	5-591 HIII 50th FTSS.003
212	1716-0424-FX	25NECKUP00H3FOXA	Neck Force X	8896	N	-	Head forward, chest rearward	5-591 HIII 50th FTSS.007
213	1716-0424-FY	25NECKUP00H3FOYA	Neck Force Y	8896	N	+	Head leftward, chest rightward	5-591 HIII 50th FTSS.008
214	1716-0424-FZ	25NECKUP00H3FOZA	Neck Force Z	13344	N	+	Head upward, chest downward	5-591 HIII 50th FTSS.009
215	1716-0424-MX	25NECKUP00H3MOXA	Neck Moment X	282.4	Nm	-	Right ear toward right shoulder	5-591 HIII 50th FTSS.010

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
216	1716-0424-MY	25NECKUP00H3MOYA	Neck Moment Y	282.4	Nm	+	Chin toward sternum	5-591 HIII 50th FTSS.011
217	1716-0424-MZ	25NECKUP00H3MOZA	Neck Moment Z	282.4	Nm	+	Chin toward left shoulder	5-591 HIII 50th FTSS.012
218	P34046	25CHSTCG00H3ACXA	Chest Accel X	1000	g	+	Forward	5-591 HIII 50th FTSS.013
219	P33880	25CHSTCG00H3ACYA	Chest Accel Y	1000	g	-	Leftward	5-591 HIII 50th FTSS.014
220	P34045	25CHSTCG00H3ACZA	Chest Accel Z	1000	g	-	Upward	5-591 HIII 50th FTSS.015
221	CP84413	25CHST0000H3DSXA	Chest Deflection X	84	mm	+	Forward	5-591 HIII 50th FTSS.019
222	2121-0171	25FEMRLL00H3FOZA	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	5-591 HIII 50th FTSS.023
223	2121A-0167	25FEMRRL00H3FOZA	Right Femur Force Z	13344	N	+	Knee forward, pelvis rearward	5-591 HIII 50th FTSS.024
224	C14398	26HEADCG00H3ACXA	Head Accel X	750	g	-	Rearward	6-551 HIII 50th FTSS.001
225	AH5F6	26HEADCG00H3ACYA	Head Accel Y	750	g	-	Leftward	6-551 HIII 50th FTSS.002
226	C14319	26HEADCG00H3ACZA	Head Accel Z	750	g	-	Upward	6-551 HIII 50th FTSS.003
227	1716A-1534-FX	26NECKUP00H3FOXA	Neck Force X	8896	N	-	Head forward, chest rearward	6-551 HIII 50th FTSS.004
228	1716A-1534-FY	26NECKUP00H3FOYA	Neck Force Y	8896	N	+	Head leftward, chest rightward	6-551 HIII 50th FTSS.005
229	1716A-1534-FZ	26NECKUP00H3FOZA	Neck Force Z	13344	N	+	Head upward, chest downward	6-551 HIII 50th FTSS.006
230	1716A-1534-MX	26NECKUP00H3MOXA	Neck Moment X	282.4	Nm	-	Right ear toward right shoulder	6-551 HIII 50th FTSS.007
231	1716A-1534-MY	26NECKUP00H3MOYA	Neck Moment Y	282.4	Nm	+	Chin toward sternum	6-551 HIII 50th FTSS.008
232	1716A-1534-MZ	26NECKUP00H3MOZA	Neck Moment Z	282.4	Nm	+	Chin toward left shoulder	6-551 HIII 50th FTSS.009
233	AH484	26CHSTCG00H3ACXA	Chest Accel X	750	g	+	Forward	6-551 HIII 50th FTSS.012
234	C13124	26CHSTCG00H3ACYA	Chest Accel Y	750	g	-	Leftward	6-551 HIII 50th FTSS.013
235	ACTT0	26CHSTCG00H3ACZA	Chest Accel Z	750	g	+	Downward	6-551 HIII 50th FTSS.014
236	14CB1-2897-233	26CHST0000H3DSXA	Chest Deflection X	84	mm	+	Forward	6-551 HIII 50th FTSS.015
237	2121-0224	26FEMRLL00H3FOZA	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	6-551 HIII 50th FTSS.027
238	2121-0124	26FEMRRL00H3FOZA	Right Femur Force Z	13344	N	+	Knee forward, pelvis rearward	6-551 HIII 50th FTSS.028
239	A16K	27HEADCG00H3ACXA	Head Accel X	750	g	-	Rearward	7-616 HIII 50th FTSS.001
240	A49D	27HEADCG00H3ACYA	Head Accel Y	750	g	-	Leftward	7-616 HIII 50th FTSS.002
241	A13E	27HEADCG00H3ACZA	Head Accel Z	750	g	-	Upward	7-616 HIII 50th FTSS.003
242	1716A-1821-FX	27NECKUP00H3FOXA	Neck Force X	8896	N	-	Head forward, chest rearward	7-616 HIII 50th FTSS.004

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
243	1716A-1821-FY	27NECKUP00H3FOYA	Neck Force Y	8896	N	+	Head leftward, chest rightward	7-616 HIII 50th FTSS.005
244	1716A-1821-FZ	27NECKUP00H3FOZA	Neck Force Z	13344	N	+	Head upward, chest downward	7-616 HIII 50th FTSS.006
245	1716A-1821-MX	27NECKUP00H3MOXA	Neck Moment X	282.4	Nm	-	Right ear toward right shoulder	7-616 HIII 50th FTSS.007
246	1716A-1821-MY	27NECKUP00H3MOYA	Neck Moment Y	282.4	Nm	+	Chin toward sternum	7-616 HIII 50th FTSS.008
247	1716A-1821-MZ	27NECKUP00H3MOZA	Neck Moment Z	282.4	Nm	+	Chin toward left shoulder	7-616 HIII 50th FTSS.009
248	AH5H7	27CHSTCG00H3ACXA	Chest Accel X	750	g	+	Forward	7-616 HIII 50th FTSS.012
249	APEA8	27CHSTCG00H3ACYA	Chest Accel Y	750	g	-	Leftward	7-616 HIII 50th FTSS.013
250	AH432	27CHSTCG00H3ACZA	Chest Accel Z	750	g	+	Upward	7-616 HIII 50th FTSS.014
251	14CB1-2897-370	27CHST0000H3DSXA	Chest Deflection X	84	mm	+	Forward	7-616 HIII 50th FTSS.015
252	2430-905-FZ	27FEMRLL00H3FOZA	Left Femur Force Z S02	13344	N	+	Knee forward, pelvis rearward	7-616 HIII 50th FTSS.027
253	2430-920-FZ	27FEMRRL00H3FOZA	Right Femur Force Z 520	13344	N	+	Knee forward, pelvis rearward	7-616 HIII 50th FTSS.028
254	P33862	28HEADCG00H3ACXP	Head Accel X	1000	g	-	Rearward	8-617 HIII 50th FTSS.001
255	P49313	28HEADCG00H3ACYP	Head Accel Y	1000	g	-	Leftward	8-617 HIII 50th FTSS.002
256	P34298	28HEADCG00H3ACZP	Head Accel Z	1000	g	-	Upward	8-617 HIII 50th FTSS.003
257	1716A-1818-FX	28NECKUP00H3FOXP	Neck Force X	8896	N	-	Head forward, chest rearward	8-617 HIII 50th FTSS.007
258	1716A-1818-FY	28NECKUP00H3FOYP	Neck Force Y	8896	N	+	Head leftward, chest rightward	8-617 HIII 50th FTSS.008
259	1716A-1818-FZ	28NECKUP00H3FOZP	Neck Force Z	13344	N	+	Head upward, chest downward	8-617 HIII 50th FTSS.009
260	1716A-1818-MX	28NECKUP00H3MOXP	Neck Moment X	282.4	Nm	-	Right ear toward right shoulder	8-617 HIII 50th FTSS.010
261	1716A-1818-MY	28NECKUP00H3MOYP	Neck Moment Y	282.4	Nm	+	Chin toward sternum	8-617 HIII 50th FTSS.011
262	1716A-1818-MZ	28NECKUP00H3MOZP	Neck Moment Z	282.4	Nm	+	Chin toward left shoulder	8-617 HIII 50th FTSS.012
263	P32449	28CHSTCG00H3ACXP	Chest Accel X	1000	g	+	Forward	8-617 HIII 50th FTSS.013
264	P34205	28CHSTCG00H3ACYP	Chest Accel Y	1000	g	-	Leftward	8-617 HIII 50th FTSS.014
265	P34103	28CHSTCG00H3ACZP	Chest Accel Z	1000	g	-	Upward	8-617 HIII 50th FTSS.015
266	14CB1-2897-329	28CHST0000H3DSXP	Chest Deflection X	84	mm	+	Forward	8-617 HIII 50th FTSS.019
267	2430-987-FZ	28FEMRLL00H3FOZP	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	8-617 HIII 50th FTSS.023
268	2430-930-FZ	28FEMRRL00H3FOZP	Right Femur Force Z 520	13344	N	+	Knee forward, pelvis rearward	8-617 HIII 50th FTSS.024

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
269	APEA6	29HEADCG00H3ACXP	Head Accel X	750	g	-	Rearward	9-134 HIII 50th Alderson.001
270	C14136	29HEADCG00H3ACYP	Head Accel Y	750	g	-	Leftward	9-134 HIII 50th Alderson.002
271	AH5D4	29HEADCG00H3ACZP	Head Accel Z	750	g	-	Upward	9-134 HIII 50th Alderson.003
272	1716A-1535-FX	29NECKUP00H3FOXP	Neck Force X	8896	N	-	Head forward, chest rearward	9-134 HIII 50th Alderson.004
273	1716A-1535-FY	29NECKUP00H3FOYP	Neck Force Y	8896	N	+	Head leftward, chest rightward	9-134 HIII 50th Alderson.005
274	1716A-1535-FZ	29NECKUP00H3FOZP	Neck Force Z	13344	N	+	Head upward, chest downward	9-134 HIII 50th Alderson.006
275	1716A-1535-MX	29NECKUP00H3MOXP	Neck Moment X	282.4	Nm	-	Right ear toward right shoulder	9-134 HIII 50th Alderson.007
276	1716A-1535-MY	29NECKUP00H3MOYP	Neck Moment Y	282.4	Nm	+	Chin toward sternum	9-134 HIII 50th Alderson.008
277	1716A-1535-MZ	29NECKUP00H3MOZP	Neck Moment Z	282.4	Nm	+	Chin toward left shoulder	9-134 HIII 50th Alderson.009
278	C12826	29CHSTCG00H3ACXP	Chest Accel X	750	g	+	Forward	9-134 HIII 50th Alderson.014
279	A10F	29CHSTCG00H3ACYP	Chest Accel Y	750	g	-	Leftward	9-134 HIII 50th Alderson.015
280	C12822	29CHSTCG00H3ACZP	Chest Accel Z	750	g	+	Downward	9-134 HIII 50th Alderson.016
281	86696-9	29CHST0000H3DSXP	Chest Deflection X	84	mm	+	Forward	9-134 HIII 50th Alderson.017
282	2430-9429	29FEMRLL00H3FOZP	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	9-134 HIII 50th Alderson.025
283	2430-986	29FEMRRL00H3FOZP	Right Femur Force Z	13344	N	+	Knee forward, pelvis rearward	9-134 HIII 50th Alderson.026
284	05H06-L26	31HEADCG00H3ACXA	Head Accel X	1000	g	-	Rearward	1-855 HIII 50th FTSS.001
285	05G20-L20	31HEADCG00H3ACYA	Head Accel Y	1000	g	-	Leftward	1-855 HIII 50th FTSS.002
286	05G15-L02	31HEADCG00H3ACZA	Head Accel Z	1000	g	-	Upward	1-855 HIII 50th FTSS.003
287	1716A-1037-FX	31NECKUP00H3FOXA	Neck Force X	8896	N	-	Head forward, chest rearward	1-855 HIII 50th FTSS.007
288	1716A-1037-FY	31NECKUP00H3FOYA	Neck Force Y	8896	N	+	Head leftward, chest rightward	1-855 HIII 50th FTSS.008
289	1716A-1037-FZ	31NECKUP00H3FOZA	Neck Force Z	13344	N	+	Head upward, chest downward	1-855 HIII 50th FTSS.009
290	1716A-1037-MX	31NECKUP00H3MOXA	Neck Moment X	282.4	Nm	-	Right ear toward right shoulder	1-855 HIII 50th FTSS.010
291	1716A-1037-MY	31NECKUP00H3MOYA	Neck Moment Y	282.4	Nm	+	Chin toward sternum	1-855 HIII 50th FTSS.011
292	1716A-1037-MZ	31NECKUP00H3MOZA	Neck Moment Z	282.4	Nm	+	Chin toward left shoulder	1-855 HIII 50th FTSS.012
293	01G19-F02	31CHSTCG00H3ACXA	Chest Accel X	1000	g	+	Forward	1-855 HIII 50th FTSS.013
294	01G25-N10	31CHSTCG00H3ACYA	Chest Accel Y	1000	g	-	Leftward	1-855 HIII 50th FTSS.014
295	01H02-N07	31CHSTCG00H3ACZA	Chest Accel Z	1000	g	-	Upward	1-855 HIII 50th FTSS.015

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
296	CST855	31CHST0000H3DSXA	Chest Deflection X	84	mm	+	Forward	1-855 HIII 50th FTSS.019
297	2121A-1394-FZ	31FEMRLL00H3FOZA	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	1-855 HIII 50th FTSS.023
298	2121A-1396	31FEMRRL00H3FOZA	Right Femur Force Z	13344	N	+	Knee forward, pelvis rearward	1-855 HIII 50th FTSS.024
299	05G20-L18	32HEADCG00HFACXA	Head Accel X	1000	g	-	Rearward	2-324 HIII 5th FTSS.001
300	00L20-A20	32HEADCG00HFACYA	Head Accel Y	1000	g	-	Leftward	2-324 HIII 5th FTSS.002
301	03D03C27-N07	32HEADCG00HFACZA	Head Accel Z	1000	g	-	Upward	2-324 HIII 5th FTSS.003
302	IF-205-287-FX	32NECKUP00HFFOXA	Upper Neck Force X	8896	N	-	Head forward, chest rearward	2-324 HIII 5th FTSS.004
303	IF-205-287-FY	32NECKUP00HFFOYA	Upper Neck Force Y	8896	N	+	Head leftward, chest rightward	2-324 HIII 5th FTSS.005
304	IF-205-287-FZ	32NECKUP00HFFOZA	Upper Neck Force Z	13344	N	+	Head upward, chest downward	2-324 HIII 5th FTSS.006
305	IF-205-287-MX	32NECKUP00HFMOXA	Upper Neck Moment X	282.4	Nm	-	Right ear toward right shoulder	2-324 HIII 5th FTSS.007
306	IF-205-287-MY	32NECKUP00HFMOYA	Upper Neck Moment Y	282.4	Nm	+	Chin toward sternum	2-324 HIII 5th FTSS.008
307	IF-205-287-MZ	32NECKUP00HFMOZA	Upper Neck Moment Z	282.4	Nm	+	Chin toward left shoulder	2-324 HIII 5th FTSS.009
308	05G20-L01	32CHSTCG00HFACXA	Chest Accel X	1000	g	+	Forward	2-324 HIII 5th FTSS.010
309	05I07-Z12	32CHSTCG00HFACYA	Chest Accel Y	1000	g	-	Leftward	2-324 HIII 5th FTSS.011
310	05G15-L04	32CHSTCG00HFACZA	Chest Accel Z	1000	g	-	Upward	2-324 HIII 5th FTSS.012
311	CST324	32CHST0000HFDSXA	Chest Deflection X	84	mm	+	Forward	2-324 HIII 5th FTSS.013
312	2121AJ-1520	32FEMRLL00HFFOZA	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	2-324 HIII 5th FTSS.017
313	2121AJ-1521	32FEMRRL00HFFOZA	Right Femur Force Z	13344	N	+	Knee forward, pelvis rearward	2-324 HIII 5th FTSS.018
314	P57847	33HEADCG00HFACXP	Head Accel X	1000	g	-	Rearward	3-416 HIII 5th FTSS.001
315	02I02I05-F11	33HEADCG00HFACYP	Head Accel Y	1000	g	-	Leftward	3-416 HIII 5th FTSS.002
316	05H06-L20	33HEADCG00HFACZP	Head Accel Z	1000	g	-	Upward	3-416 HIII 5th FTSS.003
317	J27466	33HEADCGRDHFACXP	Head Accel X Redundant	1000	g	-	Rearward	3-416 HIII 5th FTSS.004
318	04J04I01-R10	33HEADCGRDHFACYP	Head Accel Y Redundant	1000	g	-	Leftward	3-416 HIII 5th FTSS.005
319	01G19-F03	33HEADCGRDHFACZP	Head Accel Z Redundant	1000	g	-	Upward	3-416 HIII 5th FTSS.006
320	1716A-0440-FX	33NECKUP00HFFOXP	Neck Force X	8896	N	-	Head forward, chest rearward	3-416 HIII 5th FTSS.007
321	1716A-0440-FY	33NECKUP00HFFOYP	Neck Force Y	8896	N	+	Head leftward, chest rightward	3-416 HIII 5th FTSS.008
322	1716A-0440-FZ	33NECKUP00HFFOZP	Neck Force Z	13344	N	+	Head upward, chest downward	3-416 HIII 5th FTSS.009

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
323	1716A-0440-MX	33NECKUP00HFMOXP	Neck Moment X	282.4	Nm	-	Right ear toward right shoulder	3-416 HIII 5th FTSS.010
324	1716A-0440-MY	33NECKUP00HFMOYP	Neck Moment Y	282.4	Nm	+	Chin toward sternum	3-416 HIII 5th FTSS.011
325	1716A-0440-MZ	33NECKUP00HFMOZP	Neck Moment Z	282.4	Nm	+	Chin toward left shoulder	3-416 HIII 5th FTSS.012
326	P52155	33CHSTCG00HFACXP	Chest Accel X	1000	g	+	Forward	3-416 HIII 5th FTSS.013
327	P52160	33CHSTCG00HFACYP	Chest Accel Y	1000	g	-	Leftward	3-416 HIII 5th FTSS.014
328	P52152	33CHSTCG00HFACZP	Chest Accel Z	1000	g	-	Upward	3-416 HIII 5th FTSS.015
329	03E03E20-N08	33CHSTCGRDHFACXP	Chest Accel X Redundant	1000	g	+	Forward	3-416 HIII 5th FTSS.016
330	J19227	33CHSTCGRDHFACYP	Chest Accel Y Redundant	1000	g	-	Leftward	3-416 HIII 5th FTSS.017
331	01J02-F03	33CHSTCGRDHFACZP	Chest Accel Z Redundant	1000	g	-	Upward	3-416 HIII 5th FTSS.018
332	14CB1-2897-CST416	33CHST0000HFDSXP	Chest Deflection X 516	84	mm	+	Forward	3-416 HIII 5th FTSS.019
333	2121AJ-1517	33FEMRLL00HFFOZP	Left Femur Force Z #8	13344	N	+	Knee forward, pelvis rearward	3-416 HIII 5th FTSS.023
334	2121A-1421	33FEMRRL00HFFOZP	Right Femur Force Z 507	13344	N	+	Knee forward, pelvis rearward	3-416 HIII 5th FTSS.024
335	P15345	34HEADCG00H3ACXP	Head Accel X	1000	g	-	Rearward	4-001 VRTC H3 50th.001
336	P46524	34HEADCG00H3ACYP	Head Accel Y	1000	g	-	Leftward	4-001 VRTC H3 50th.002
337	J32220	34HEADCG00H3ACZP	Head Accel Z	1000	g	-	Upward	4-001 VRTC H3 50th.003
338	J23914	34HEADCGRDH3ACXP	Head Accel X Redundant	1000	g	-	Rearward	4-001 VRTC H3 50th.004
339	AE833	34HEADCGRDH3ACYP	Head Accel Y Redundant	1000	g	-	Leftward	4-001 VRTC H3 50th.005
340	J18730	34HEADCGRDH3ACZP	Head Accel Z Redundant	1000	g	-	Upward	4-001 VRTC H3 50th.006
341	1716A-1872-FX	34NECKUP00H3FOXP	Neck Force X	8896	N	-	Head forward, chest rearward	4-001 VRTC H3 50th.007
342	1716A-1872-FY	34NECKUP00H3FOYP	Neck Force Y	8896	N	+	Head leftward, chest rightward	4-001 VRTC H3 50th.008
343	1716A-1872-FZ	34NECKUP00H3FOZP	Neck Force Z	13344	N	+	Head upward, chest downward	4-001 VRTC H3 50th.009
344	1716A-1872-MX	34NECKUP00H3MOXP	Neck Moment X	282.4	Nm	-	Right ear toward right shoulder	4-001 VRTC H3 50th.010
345	1716A-1872-MY	34NECKUP00H3MOYP	Neck Moment Y	282.4	Nm	+	Chin toward sternum	4-001 VRTC H3 50th.011
346	1716A-1872-MZ	34NECKUP00H3MOZA	Neck Moment Z	282.4	Nm	+	Chin toward left shoulder	4-001 VRTC H3 50th.012
347	03E03D30-N22	34CHSTCG00H3ACXA	Chest Accel X	1000	g	+	Forward	4-001 VRTC H3 50th.013
348	J32100	34CHSTCG00H3ACYA	Chest Accel Y	1000	g	-	Leftward	4-001 VRTC H3 50th.014
349	P52159	34CHSTCG00H3ACZA	Chest Accel Z	1000	g	-	Upward	4-001 VRTC H3 50th.015
350	ACCY2	34CHSTCGRDH3ACXA	Chest Accel X Redundant	1000	g	+	Forward	4-001 VRTC H3 50th.016
351	J20125	34CHSTCGRDH3ACYA	Chest Accel Y Redundant	1000	g	-	Leftward	4-001 VRTC H3 50th.017
352	J35562	34CHSTCGRDH3ACZA	Chest Accel Z Redundant	1000	g	-	Upward	4-001 VRTC H3 50th.018

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
353	CST001	34CHST0000H3DSXA	Chest Deflection X	84	mm	+	Forward	4-001 VRTC H3 50th.019
354	2121AJ-1519	34FEMRLL00H3FOZA	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	4-001 VRTC H3 50th.023
355	2121A-1420	34FEMRRL00H3FOZA	Right Femur Force Z	13344	N	+	Knee forward, pelvis rearward	4-001 VRTC H3 50th.024
356	P54490	11SEAT000000ACXA	Driver Seat of Bus X-axis Acceleration	2000	g	+	Forward	
357	P54843	11SEAT000000ACYA	Driver Seat of Bus Y-axis Acceleration	2000	g	-	Leftward	
358	P56998	11SEAT000000ACZA	Driver Seat of Bus Z-axis Acceleration	2000	g	-	Upward	
359	P57429	10FRAMLEFR00ACXA	Front Left of Bus B X-axis Acceleration	2000	g	+	Forward	
360	P57416	10FRAMLEFR00ACYA	Front Left of Bus B Y-axis Acceleration	2000	g	-	Leftward	
361	P57419	10FRAMLEFR00ACZA	Front Left of Bus B Z-axis Acceleration	2000	g	-	Upward	
362	P56965	10FRAMMIFR00ACXA	Middle Front Right of Bus C X-axis Acceleration	2000	g	+	Forward	
363	P56940	10FRAMMIFR00ACYA	Middle Front Right of Bus C Y-axis Acceleration	2000	g	+	Rightward	
364	P56967	10FRAMMIFR00ACZA	Middle Front Right of Bus C Z-axis Acceleration	2000	g	-	Upward	
365	P57418	10FRAMMIRE00ACXA	Middle Rear Left of Bus D X-axis Acceleration	2000	g	+	Forward	
366	P57428	10FRAMMIRE00ACYA	Middle Rear Left of Bus D Y-axis Acceleration	2000	g	-	Leftward	
367	P57412	10FRAMMIRE00ACZA	Middle Rear Left of Bus D Z-axis Acceleration	2000	g	-	Upward	
368	P57000	10FRAMRIRE00ACXA	Rear Right of Bus E X-axis Acceleration	2000	g	+	Forward	
369	P50489	10FRAMRIRE00ACYA	Rear Right of Bus E Y-axis Acceleration	2000	g	-	Leftward	
370	P56975	10FRAMRIRE00ACZA	Rear Right of Bus E Z-axis Acceleration	2000	g	-	Upward	
371	3419T-828	11SEBE0000B5FOOA	4R-Left Lap Belt	15568	N	+	Tension	
372	3419T-1136020	12SEBE0000B5FOOA	4R-Right Lap Belt	15568	N	+	Tension	
373	3419-837	15SEBE0000B5FOOA	5L-Left Lap Belt	15568	N	+	Tension	
374	3419-832	16SEBE0000B5FOOA	5L-Right Lap Belt	15568	N	+	Tension	
375	3419T-739	17SEBE0000B5FOOA	6R-Left Lap Belt	15568	N	+	Tension	
376	3419T-842	18SEBE0000B5FOOA	6R-Right Lap Belt	15568	N	+	Tension	
377	3419-829	24SEBE0000B5FOOA	9R-Left Lap Belt	15568	N	+	Tension	
378	3419T-843	25SEBE0000B5FOOA	9R-Right Lap Belt	15568	N	+	Tension	
379	3255-363	28SEBE0000B5FOOA	11L-Right Lap Belt	13344	N	+	Tension	
380	3255-364	29SEBE0000B5FOOA	11R-Right Lap Belt	13344	N	+	Tension	
381	3255-365	33SEBE0000B5FOOA	13R-Left Lap Belt	13344	N	+	Tension	
382	3255-366	34SEBE0000B5FOOA	13R-Right Lap Belt	13344	N	+	Tension	

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Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
1	11HEADCG00H3ACXA	4R-Left Head X-Axis Acceleration	1000	+	yes	1000
2	11HEAD0000H3ACYA	4R-Left Head Y-Axis Acceleration	1000	+	yes	1000
3	11HEADCG00H3ACZA	4R-Left Head Z-Axis Acceleration	1000	+	yes	1000
3A	11HEADCG00H3ACRA	4R-Left Head Resultant Acceleration	1000			
4	11NECKUP00H3FOXA	4R-Left Neck Force X	1000	+	yes	8896
5	11NECKUP00H3FOYA	4R-Left Neck Force Y	1000	+	yes	8896
6	11NECKUP00H3FOZA	4R-Left Neck Force Z	1000	+	yes	13344
7	11NECKUP00H3MOXA	4R-Left Neck Moment X	600	+	yes	282
8	11NECKUP00H3MOYA	4R-Left Neck Moment Y	600	+	yes	282
9	11NECKUP00H3MOZA	4R-Left Neck Moment Z	600	+	yes	282
10	11CHSTCG00H3ACXA	4R-Left Chest X-Axis Acceleration	180	+	yes	1000
11	11CHST0000H3ACYA	4R-Left Chest Y-Axis Acceleration	180	+	yes	1000
12	11CHSTCG00H3ACZA	4R-Left Chest Z-Axis Acceleration	180	+	yes	1000
12A	11CHSTCG00H3ACRA	4R-Left Chest Resultant Acceleration	180			
13	11CHST0000H3DSXA	4R-Left Chest X-Axis Deflection	600	+	yes	84
14	11FEMRLL00H3FOZA	4R-Left Left Femur Force Z	600	+	yes	13344
15	11FEMRRL00H3FOZA	4R-Left Right Femur Force Z	600	+	yes	13344
16	12HEADCG00H3ACXA	4R-Right Head X-Axis Acceleration	1000	+	yes	1000
17	12HEAD0000H3ACYA	4R-Right Head Y-Axis Acceleration	1000	+	yes	1000
18	12HEADCG00H3ACZA	4R-Right Head Z-Axis Acceleration	1000	+	yes	1000
18A	12HEADCG00H3ACRA	4R-Right Head Resultant Acceleration	1000			
19	12NECKUP00H3FOXA	4R-Right Neck Force X	1000	+	yes	8896
20	12NECKUP00H3FOYA	4R-Right Neck Force Y	1000	+	yes	8896
21	12NECKUP00H3FOZA	4R-Right Neck Force Z	1000	+	yes	13344
22	12NECKUP00H3MOXA	4R-Right Neck Moment X	600	+	yes	282
23	12NECKUP00H3MOYA	4R-Right Neck Moment Y	600	+	yes	282
24	12NECKUP00H3MOZA	4R-Right Neck Moment Z	600	+	yes	282
25	12CHSTCG00H3ACXA	4R-Right Chest X-Axis Acceleration	180	+	yes	1000
26	12CHST0000H3ACYA	4R-Right Chest Y-Axis Acceleration	180	+	yes	1000
27	12CHSTCG00H3ACZA	4R-Right Chest Z-Axis Acceleration	180	+	yes	1000
27A	12CHSTCG00H3ACRA	4R-Right Chest Resultant Acceleration	180			
28	12CHST0000H3DSXA	4R-Right Chest X-Axis Deflection	600	+	yes	84
29	12FEMRLL00H3FOZA	4R-Right Left Femur Force Z	600	+	yes	13344
30	12FEMRRL00H3FOZA	4R-Right Right Femur Force Z	600	+	yes	13344
31	13HEADCG00H3ACXA	5R-Left Head X-Axis Acceleration	1000	+	yes	1000
32	13HEADCG00H3ACYA	5R-Left Head Y-Axis Acceleration	1000	+	yes	1000
33	13HEADCG00H3ACZA	5R-Left Head Z-Axis Acceleration	1000	+	yes	1000

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Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
33A	13HEADCG00H3ACRA	5R-Left Head Resultant Acceleration	1000			
34	13NECKUP00H3FOXA	5R-Left Neck Force X	1000	+	yes	8896
35	13NECKUP00H3FOYA	5R-Left Neck Force Y	1000	+	yes	8896
36	13NECKUP00H3FOZA	5R-Left Neck Force Z	1000	+	yes	13344
37	13NECKUP00H3MOXA	5R-Left Neck Moment X	600	+	yes	282
38	13NECKUP00H3MOYA	5R-Left Neck Moment Y	600	+	yes	282
39	13NECKUP00H3MOZA	5R-Left Neck Moment Z	600	+	yes	282
40	13CHSTCG00H3ACXA	5R-Left Chest X-Axis Acceleration	180	+	yes	1000
41	13CHSTCG00H3ACYA	5R-Left Chest Y-Axis Acceleration	180	+	yes	1000
42	13CHSTCG00H3ACZA	5R-Left Chest Z-Axis Acceleration	180	+	yes	1000
42A	13CHSTCG00H3ACRA	5R-Left Chest Resultant Acceleration	180			
43	13CHST0000H3DSXA	5R-Left Chest X-Axis Deflection	600	+	yes	84
44	13FEMRLL00H3FOZA	5R-Left Left Femur Force Z	600	+	yes	13344
45	13FEMRRL00H3FOZA	5R-Left Right Femur Force Z	600	+	yes	13344
46	14HEADCG00H3ACXA	5R-Right Head X-Axis Acceleration	1000	+	yes	1000
47	14HEADCG00H3ACYA	5R-Right Head Y-Axis Acceleration	1000	+	yes	1000
48	14HEADCG00H3ACZA	5R-Right Head Z-Axis Acceleration	1000	+	yes	1000
48A	14HEADCG00H3ACRA	5R-Right Head Resultant Acceleration	1000			
49	14NECKUP00H3FOXA	5R-Right Neck Force X	1000	+	yes	8896
50	14NECKUP00H3FOYA	5R-Right Neck Force Y	1000	+	yes	8896
51	14NECKUP00H3FOZA	5R-Right Neck Force Z	1000	+	yes	13344
52	14NECKUP00H3MOXA	5R-Right Neck Moment X	600	+	yes	282
53	14NECKUP00H3MOYA	5R-Right Neck Moment Y	600	+	yes	282
54	14NECKUP00H3MOZA	5R-Right Neck Moment Z	600	+	yes	282
55	14CHSTCG00H3ACXA	5R-Right Chest X-Axis Acceleration	180	+	yes	1000
56	14CHSTCG00H3ACYA	5R-Right Chest Y-Axis Acceleration	180	+	yes	1000
57	14CHSTCG00H3ACZA	5R-Right Chest Z-Axis Acceleration	180	+	yes	1000
57A	14CHSTCG00H3ACRA	5R-Right Chest Resultant Acceleration	180			
58	14CHST0000H3DSXA	5R-Right Chest X-Axis Deflection	600	+	yes	84
59	14FEMRLL00H3FOZA	5R-Right Left Femur Force Z	600	+	yes	13344
60	14FEMRRL00H3FOZA	5R-Right Right Femur Force Z	600	+	yes	13344
61	15HEADCG00H3ACXA	5L-Left Head X-Axis Acceleration	1000	+	yes	1000
62	15HEADCG00H3ACYA	5L-Left Head Y-Axis Acceleration	1000	+	yes	1000
63	15HEADCG00H3ACZA	5L-Left Head Z-Axis Acceleration	1000	+	yes	1000
63A	15HEADCG00H3ACRA	5L-Left Head Resultant Acceleration	1000			
64	15HEADCGRDH3ACXA	5L-Left Head Redundant X-Axis Acceleration	1000	+	yes	1000
65	15HEADCGRDH3ACYA	5L-Left Head Redundant Y-Axis Acceleration	1000	+	yes	1000

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Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
66	15HEADCGRDH3ACZA	5L-Left Head Redundant Z-Axis Acceleration	1000	+	yes	1000
66A	15HEADCGRDH3ACRA	5L-Left Head Redundant Resultant Acceleration	1000			
67	15NECKUP00H3FOXA	5L-Left Neck Force X	1000	+	yes	8896.4
68	15NECKUP00H3FOYA	5L-Left Neck Force Y	1000	+	yes	8896.4
69	15NECKUP00H3FOZA	5L-Left Neck Force Z	1000	+	yes	13344
70	15NECKUP00H3MOXA	5L-Left Neck Moment X	600	+	yes	282.4
71	15NECKUP00H3MOYA	5L-Left Neck Moment Y	600	+	yes	282.4
72	15NECKUP00H3MOZA	5L-Left Neck Moment Z	600	+	yes	282.4
73	15CHSTCG00H3ACXA	5L-Left Chest X-Axis Acceleration	180	+	yes	1000
74	15CHSTCG00H3ACYA	5L-Left Chest Y-Axis Acceleration	180	+	yes	1000
75	15CHSTCG00H3ACZA	5L-Left Chest Z-Axis Acceleration	180	+	yes	1000
75A	15CHSTCG00H3ACRA	5L-Left Chest Resultant Acceleration	180			
76	15CHSTCGRDH3ACXA	5L-Left Chest Redundant X-Axis Acceleration	180	+	yes	1000
77	15CHSTCGRDH3ACYA	5L-Left Chest Redundant Y-Axis Acceleration	180	+	yes	1000
78	15CHSTCGRDH3ACZA	5L-Left Chest Redundant Z-Axis Acceleration	180	+	yes	1000
78A	15CHSTCGRDH3ACRA	5L-Left Chest Redundant Resultant Acceleration	180			
79	15CHST0000H3DSXA	5L-Left Chest X-Axis Deflection	600	+	yes	84
80	15FEMRLL00H3FOZA	5L-Left Left Femur Force Z	600	+	yes	13344
81	15FEMRRL00H3FOZA	5L-Left Right Femur Force Z	600	+	yes	13344
82	16HEADCG00HFACXA	5L-Right Head X-Axis Acceleration	1000	+	yes	1000
83	16HEADCG00HFACYA	5L-Right Head Y-Axis Acceleration	1000	+	yes	1000
84	16HEADCG00HFACZA	5L-Right Head Z-Axis Acceleration	1000	+	yes	1000
84A	16HEADCG00HFACRA	5L-Right Head Resultant Acceleration	1000			
85	16HEADCGRDHFACXA	5L-Right Head Redundant X-Axis Acceleration	1000	+	yes	1000
86	16HEADCGRDHFACYA	5L-Right Head Redundant Y-Axis Acceleration	1000	+	yes	1000
87	16HEADCGRDHFACZA	5L-Right Head Redundant Z-Axis Acceleration	1000	+	yes	1000
87A	16HEADCGRDHFACRA	5L-Right Head Redundant Resultant Acceleration	1000			
88	16NECKUP00HFFOXA	5L-Right Neck Force X	1000	+	yes	8896
89	16NECKUP00HFFOYA	5L-Right Neck Force Y	1000	+	yes	8896
90	16NECKUP00HFFOZA	5L-Right Neck Force Z	1000	+	yes	13344
91	16NECKUP00HFMOXA	5L-Right Neck Moment X	600	+	yes	282.4
92	16NECKUP00HFMOYA	5L-Right Neck Moment Y	600	+	yes	282.4
93	16NECKUP00HFMOZA	5L-Right Neck Moment Z	600	+	yes	282.4
94	16CHSTCG00HFACXA	5L-Right Chest X-Axis Acceleration	180	+	yes	1000
95	16CHSTCG00HFACYA	5L-Right Chest Y-Axis Acceleration	180	+	yes	1000
96	16CHSTCG00HFACZA	5L-Right Chest Z-Axis Acceleration	180	+	yes	1000
96A	16CHSTCG00HFACRA	5L-Right Chest Resultant Acceleration	180			

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Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
97	16CHSTCGRDHFACXA	5L-Right Chest Redundant X-Axis Acceleration	180	+	yes	1000
98	16CHSTCGRDHFACYA	5L-Right Chest Redundant Y-Axis Acceleration	180	+	yes	1000
99	16CHSTCGRDHFACZA	5L-Right Chest Redundant Z-Axis Acceleration	180	+	yes	1000
99A	16CHSTCGRDHFACRA	5L-Right Chest Redundant Resultant Acceleration	180			
100	16CHST0000HFDSXA	5L-Right Chest X-Axis Deflection	600	+	yes	81
101	16FEMRLL00HFFOZA	5L-Right Left Femur Force Z	600	+	yes	13344
102	16FEMRRL00HFFOZA	5L-Right Right Femur Force Z	600	+	yes	13344
103	17HEADCG00H3ACXA	6R-Left Head X-Axis Acceleration	1000	+	yes	1000
104	17HEAD0000H3ACYA	6R-Left Head Y-Axis Acceleration	1000	+	yes	1000
105	17HEADCG00H3ACZA	6R-Left Head Z-Axis Acceleration	1000	+	yes	1000
105A	17HEADCG00H3ACRA	6R-Left Head Resultant Acceleration	1000			
106	17NECKUP00H3FOXA	6R-Left Neck Force X	1000	+	yes	8896
107	17NECKUP00H3FOYA	6R-Left Neck Force Y	1000	+	yes	8896
108	17NECKUP00H3FOZA	6R-Left Neck Force Z	1000	+	yes	13344
109	17NECKUP00H3MOXA	6R-Left Neck Moment X	600	+	yes	282.4
110	17NECKUP00H3MOYA	6R-Left Neck Moment Y	600	+	yes	282.4
111	17NECKUP00H3MOZA	6R-Left Neck Moment Z	600	+	yes	282.4
112	17CHSTCG00H3ACXA	6R-Left Chest X-Axis Acceleration	180	+	yes	1000
113	17CHST0000H3ACYA	6R-Left Chest Y-Axis Acceleration	180	+	yes	1000
114	17CHSTCG00H3ACZA	6R-Left Chest Z-Axis Acceleration	180	+	yes	1000
114A	17CHSTCG00H3ACRA	6R-Left Chest Resultant Acceleration	180			
115	17CHST0000H3DSXA	6R-Left Chest X-Axis Deflection	600	+	yes	84
116	17FEMRLL00H3FOZA	6R-Left Left Femur Force Z	600	+	yes	13344
117	17FEMRRL00H3FOZA	6R-Left Right Femur Force Z	600	+	yes	13344
118	18HEADCG00H3ACXA	6R-Right Head X-Axis Acceleration	1000	+	yes	1000
119	18HEAD0000H3ACYA	6R-Right Head Y-Axis Acceleration	1000	+	yes	1000
120	18HEADCG00H3ACZA	6R-Right Head Z-Axis Acceleration	1000	+	yes	1000
120A	18HEADCG00H3ACRA	6R-Right Head Resultant Acceleration	1000			
121	18NECKUP00H3FOXA	6R-Right Neck Force X	1000	+	yes	8896
122	18NECKUP00H3FOYA	6R-Right Neck Force Y	1000	+	yes	8896
123	18NECKUP00H3FOZA	6R-Right Neck Force Z	1000	+	yes	13344
124	18NECKUP00H3MOXA	6R-Right Neck Moment X	600	+	yes	282.4
125	18NECKUP00H3MOYA	6R-Right Neck Moment Y	600	+	yes	282.4
126	18NECKUP00H3MOZA	6R-Right Neck Moment Z	600	+	yes	282.4
127	18CHSTCG00H3ACXA	6R-Right Chest X-Axis Acceleration	180	+	yes	1000
128	18CHST0000H3ACYA	6R-Right Chest Y-Axis Acceleration	180	+	yes	1000
129	18CHSTCG00H3ACZA	6R-Right Chest Z-Axis Acceleration	180	+	yes	1000

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Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
129A	18CHSTCG00H3ACRA	6R-Right Chest Resultant Acceleration	180			
130	18CHST0000H3DSXA	6R-Right Chest X-Axis Deflection	600	+	yes	84
131	18FEMRLL00H3FOZA	6R-Right Left Femur Force Z	600	+	yes	13344
132	18FEMRRL00H3FOZA	6R-Right Right Femur Force Z	600	+	yes	13344
133	19HEADCG00H3ACXA	7R-Left Head X-Axis Acceleration	1000	+	yes	1000
134	19HEAD0000H3ACYA	7R-Left Head Y-Axis Acceleration	1000	+	yes	1000
135	19HEADCG00H3ACZA	7R-Left Head Z-Axis Acceleration	1000	+	yes	1000
135A	19HEADCG00H3ACRA	7R-Left Head Resultant Acceleration	1000			
136	19NECKUP00H3FOXA	7R-Left Neck Force X	1000	+	yes	8896
137	19NECKUP00H3FOYA	7R-Left Neck Force Y	1000	+	yes	8896
138	19NECKUP00H3FOZA	7R-Left Neck Force Z	1000	+	yes	13344
139	19NECKUP00H3MOXA	7R-Left Neck Moment X	600	+	yes	282.4
140	19NECKUP00H3MOYA	7R-Left Neck Moment Y	600	+	yes	282.4
141	19NECKUP00H3MOZA	7R-Left Neck Moment Z	600	+	yes	282.4
142	19CHSTCG00H3ACXA	7R-Left Chest X-Axis Acceleration	180	+	yes	1000
143	19CHST0000H3ACYA	7R-Left Chest Y-Axis Acceleration	180	+	yes	1000
144	19CHSTCG00H3ACZA	7R-Left Chest Z-Axis Acceleration	180	+	yes	1000
144A	19CHSTCG00H3ACRA	7R-Left Chest Resultant Acceleration	180			
145	19CHST0000H3DSXA	7R-Left Chest X-Axis Deflection	600	+	yes	84
146	19FEMRLL00H3FOZA	7R-Left Left Femur Force Z	600	+	yes	13344
147	19FEMRRL00H3FOZA	7R-Left Right Femur Force Z	600	+	yes	13344
148	21HEADCG00H3ACXA	7R-Right Head X-Axis Acceleration	1000	+	yes	1000
149	21HEAD0000H3ACYA	7R-Right Head Y-Axis Acceleration	1000	+	yes	1000
150	21HEADCG00H3ACZA	7R-Right Head Z-Axis Acceleration	1000	+	yes	1000
150A	21HEADCG00H3ACRA	7R-Right Head Resultant Acceleration	1000			
151	21NECKUP00H3FOXA	7R-Right Neck Force X	1000	+	yes	8896
152	21NECKUP00H3FOYA	7R-Right Neck Force Y	1000	+	yes	8896
153	21NECKUP00H3FOZA	7R-Right Neck Force Z	1000	+	yes	13344
154	21NECKUP00H3MOXA	7R-Right Neck Moment X	600	+	yes	282.4
155	21NECKUP00H3MOYA	7R-Right Neck Moment Y	600	+	yes	282.4
156	21NECKUP00H3MOZA	7R-Right Neck Moment Z	600	+	yes	282.4
157	21CHSTCG00H3ACXA	7R-Right Chest X-Axis Acceleration	180	+	yes	1000
158	21CHST0000H3ACYA	7R-Right Chest Y-Axis Acceleration	180	+	yes	1000
159	21CHSTCG00H3ACZA	7R-Right Chest Z-Axis Acceleration	180	+	yes	1000
159A	21CHSTCG00H3ACRA	7R-Right Chest Resultant Acceleration	180			
160	21CHST0000H3DSXA	7R-Right Chest X-Axis Deflection	600	+	yes	84
161	21FEMRLL00H3FOZA	7R-Right Left Femur Force Z	600	+	yes	13344

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Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
162	21FEMRRL00H3FOZA	7R-Right Right Femur Force Z	600	+	yes	13344
163	22HEADCG00H3ACXA	8L-Left Head X-Axis Acceleration	1000	+	yes	750
164	22HEADCG00H3ACYA	8L-Left Head Y-Axis Acceleration	1000	+	yes	750
165	22HEADCG00H3ACZA	8L-Left Head Z-Axis Acceleration	1000	+	yes	750
165A	22HEADCG00H3ACRA	8L-Left Head Resultant Acceleration	1000			
166	22NECKUP00H3FOXA	8L-Left Neck Force X	1000	+	yes	8896
167	22NECKUP00H3FOYA	8L-Left Neck Force Y	1000	+	yes	8896
168	22NECKUP00H3FOZA	8L-Left Neck Force Z	1000	+	yes	13344
169	22NECKUP00H3MOXA	8L-Left Neck Moment X	600	+	yes	282.4
170	22NECKUP00H3MOYA	8L-Left Neck Moment Y	600	+	yes	282.4
171	22NECKUP00H3MOZA	8L-Left Neck Moment Z	600	+	yes	282.4
172	22CHSTCG00H3ACXA	8L-Left Chest X-Axis Acceleration	180	+	yes	750
173	22CHSTCG00H3ACYA	8L-Left Chest Y-Axis Acceleration	180	+	yes	750
174	22CHSTCG00H3ACZA	8L-Left Chest Z-Axis Acceleration	180	+	yes	750
174A	22CHSTCG00H3ACRA	8L-Left Chest Resultant Acceleration	180			
175	22CHST0000H3DSXA	8L-Left Chest X-Axis Deflection	600	+	yes	84
176	22FEMRLL00H3FOZA	8L-Left Left Femur Force Z	600	+	yes	13344
177	22FEMRRL00H3FOZA	8L-Left Right Femur Force Z	600	+	yes	13344
178	23HEADCG00HMACXA	8L-Right Head X-Axis Acceleration	1000	+	yes	1000
179	23HEADCG00HMACYA	8L-Right Head Y-Axis Acceleration	1000	+	yes	1000
180	23HEADCG00HMACZA	8L-Right Head Z-Axis Acceleration	1000	+	yes	1000
180A	23HEADCG00HMACRA	8L-Right Head Resultant Acceleration	1000			
181	23NECKUP00HMFOXA	8L-Right Neck Force X	1000	+	yes	8896
182	23NECKUP00HMFOYA	8L-Right Neck Force Y	1000	+	yes	8896
183	23NECKUP00HMFOZA	8L-Right Neck Force Z	1000	+	yes	13344
184	23NECKUP00HMMOXA	8L-Right Neck Moment X	600	+	yes	282.4
185	23NECKUP00HMMOYA	8L-Right Neck Moment Y	600	+	yes	282.4
186	23NECKUP00HMMOZA	8L-Right Neck Moment Z	600	+	yes	282.4
187	23CHSTCG00HMACXA	8L-Right Chest X-Axis Acceleration	180	+	yes	1000
188	23CHSTCG00HMACYA	8L-Right Chest Y-Axis Acceleration	180	+	yes	1000
189	23CHSTCG00HMACZA	8L-Right Chest Z-Axis Acceleration	180	+	yes	1000
189A	23CHSTCG00HMACRA	8L-Right Chest Resultant Acceleration	180			
190	23CHST0000HMDSXA	8L-Right Chest X-Axis Deflection	600	+	yes	84
191	23FEMRLL00HMFOZA	8L-Right Left Femur Force Z	600	+	yes	13344
192	23FEMRRL00HMFOZA	8L-Right Right Femur Force Z	600	+	yes	13344
193	24HEADCG00HMACXA	9R-Left Head X-Axis Acceleration	1000	+	yes	1000
194	24HEADCG00HMACYA	9R-Left Head Y-Axis Acceleration	1000	+	yes	1000

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Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
195	24HEADCG00HMACZA	9R-Left Head Z-Axis Acceleration	1000	+	yes	1000
195A	24HEADCG00HMACRA	9R-Left Head Resultant Acceleration	1000			
196	24NECKUP00HMFOYA	9R-Left Neck Force X	1000	+	yes	8896
197	24NECKUP00HMFOXA	9R-Left Neck Force Y	1000	+	yes	8896
198	24NECKUP00HMFOZA	9R-Left Neck Force Z	1000	+	yes	13344
199	24NECKUP00HMMOXA	9R-Left Neck Moment X	600	+	yes	282.4
200	24NECKUP00HMMOYA	9R-Left Neck Moment Y	600	+	yes	282.4
201	24NECKUP00HMMOZA	9R-Left Neck Moment Z	600	+	yes	282.4
202	24CHSTCG00HMACXA	9R-Left Chest X-Axis Acceleration	180	+	yes	1000
203	24CHSTCG00HMACYA	9R-Left Chest Y-Axis Acceleration	180	+	yes	1000
204	24CHSTCG00HMACZA	9R-Left Chest Z-Axis Acceleration	180	+	yes	1000
204A	24CHSTCG00HMACRA	9R-Left Chest Resultant Acceleration	180			
205	24CHST0000HMDSXA	9R-Left Chest X-Axis Deflection	600	+	yes	84
206	24FEMRLL00HMFOZA	9R-Left Left Femur Force Z	600	+	yes	13344
207	24FEMRRL00HMFOZA	9R-Left Right Femur Force Z	600	+	yes	13344
208	25HEADCG00H3ACXA	9R-Right Head X-Axis Acceleration	1000	+	yes	1000
209	25HEADCG00H3ACYA	9R-Right Head Y-Axis Acceleration	1000	+	yes	1000
210	25HEADCG00H3ACZA	9R-Right Head Z-Axis Acceleration	1000	+	yes	1000
210A	25HEADCG00H3ACRA	9R-Right Head Resultant Acceleration	1000			
211	25NECKUP00H3FOXA	9R-Right Neck Force X	1000	+	yes	8896
212	25NECKUP00H3FOYA	9R-Right Neck Force Y	1000	+	yes	8896
213	25NECKUP00H3FOZA	9R-Right Neck Force Z	1000	+	yes	13344
214	25NECKUP00H3MOXA	9R-Right Neck Moment X	600	+	yes	282.4
215	25NECKUP00H3MOYA	9R-Right Neck Moment Y	600	+	yes	282.4
216	25NECKUP00H3MOZA	9R-Right Neck Moment Z	600	+	yes	282.4
217	25CHSTCG00H3ACXA	9R-Right Chest X-Axis Acceleration	180	+	yes	1000
218	25CHSTCG00H3ACYA	9R-Right Chest Y-Axis Acceleration	180	+	yes	1000
219	25CHSTCG00H3ACZA	9R-Right Chest Z-Axis Acceleration	180	+	yes	1000
219A	25CHSTCG00H3ACRA	9R-Right Chest Resultant Acceleration	180			
220	25CHST0000H3DSXA	9R-Right Chest X-Axis Deflection	600	+	yes	84
221	25FEMRLL00H3FOZA	9R-Right Left Femur Force Z	600	+	yes	13344
222	25FEMRRL00H3FOZA	9R-Right Right Femur Force Z	600	+	yes	13344
223	26HEADCG00H3ACXA	10L-Left Head X-Axis Acceleration	1000	+	yes	750
224	26HEADCG00H3ACYA	10L-Left Head Y-Axis Acceleration	1000	+	yes	750
225	26HEADCG00H3ACZA	10L-Left Head Z-Axis Acceleration	1000	+	yes	750
225A	26HEADCG00H3ACRA	10L-Left Head Resultant Acceleration	1000			
226	26NECKUP00H3FOXA	10L-Left Neck Force X	1000	+	yes	8896

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Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
227	26NECKUP00H3FOYA	10L-Left Neck Force Y	1000	+	yes	8896
228	26NECKUP00H3FOZA	10L-Left Neck Force Z	1000	+	yes	13344
229	26NECKUP00H3MOXA	10L-Left Neck Moment X	600	+	yes	282.4
230	26NECKUP00H3MOYA	10L-Left Neck Moment Y	600	+	yes	282.4
231	26NECKUP00H3MOZA	10L-Left Neck Moment Z	600	+	yes	282.4
232	26CHSTCG00H3ACXA	10L-Left Chest X-Axis Acceleration	180	+	yes	750
233	26CHSTCG00H3ACYA	10L-Left Chest Y-Axis Acceleration	180	+	yes	750
234	26CHSTCG00H3ACZA	10L-Left Chest Z-Axis Acceleration	180	+	yes	750
234A	26CHSTCG00H3ACRA	10L-Left Chest Resultant Acceleration	180			
235	26CHST0000H3DSXA	10L-Left Chest X-Axis Deflection	600	+	yes	84
236	26FEMRLL00H3FOZA	10L-Left Left Femur Force Z	600	+	yes	13344
237	26FEMRRL00H3FOZA	10L-Left Right Femur Force Z	600	+	yes	13344
238	27HEADCG00H3ACXA	10L-Right Head X-Axis Acceleration	1000	+	yes	750
239	27HEADCG00H3ACYA	10L-Right Head Y-Axis Acceleration	1000	+	yes	750
240	27HEADCG00H3ACZA	10L-Right Head Z-Axis Acceleration	1000	+	yes	750
240A	27HEADCG00H3ACRA	10L-Right Head Resultant Acceleration	1000			
241	27NECKUP00H3FOXA	10L-Right Neck Force X	1000	+	yes	8896
242	27NECKUP00H3FOYA	10L-Right Neck Force Y	1000	+	yes	8896
243	27NECKUP00H3FOZA	10L-Right Neck Force Z	1000	+	yes	13344
244	27NECKUP00H3MOXA	10L-Right Neck Moment X	600	+	yes	282.4
245	27NECKUP00H3MOYA	10L-Right Neck Moment Y	600	+	yes	282.4
246	27NECKUP00H3MOZA	10L-Right Neck Moment Z	600	+	yes	282.4
247	27CHSTCG00H3ACXA	10L-Right Chest X-Axis Acceleration	180	+	yes	750
248	27CHSTCG00H3ACYA	10L-Right Chest Y-Axis Acceleration	180	+	yes	750
249	27CHSTCG00H3ACZA	10L-Right Chest Z-Axis Acceleration	180	+	yes	750
249A	27CHSTCG00H3ACRA	10L-Right Chest Resultant Acceleration	180			
250	27CHST0000H3DSXA	10L-Right Chest X-Axis Deflection	600	+	yes	84
251	27FEMRLL00H3FOZA	10L-Right Left Femur Force Z	600	+	yes	13344
252	27FEMRRL00H3FOZA	10L-Right Right Femur Force Z	600	+	yes	13344
253	28HEADCG00H3ACXP	11R-Left Head X-Axis Acceleration	1000	+	yes	1000
254	28HEADCG00H3ACYP	11R-Left Head Y-Axis Acceleration	1000	+	yes	1000
255	28HEADCG00H3ACZP	11R-Left Head Z-Axis Acceleration	1000	+	yes	1000
255A	28HEADCG00H3ACRA	11R-Left Head Resultant Acceleration	1000			
256	28NECKUP00H3FOXP	11R-Left Neck Force X	1000	+	yes	8896
257	28NECKUP00H3FOYP	11R-Left Neck Force Y	1000	+	yes	8896
258	28NECKUP00H3FOZP	11R-Left Neck Force Z	1000	+	yes	13344
259	28NECKUP00H3MOXP	11R-Left Neck Moment X	600	+	yes	282.4

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Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
260	28NECKUP00H3MOYP	11R-Left Neck Moment Y	600	+	yes	282.4
261	28NECKUP00H3MOZP	11R-Left Neck Moment Z	600	+	yes	282.4
262	28CHSTCG00H3ACXP	11R-Left Chest X-Axis Acceleration	180	+	yes	1000
263	28CHSTCG00H3ACYP	11R-Left Chest Y-Axis Acceleration	180	+	yes	1000
264	28CHSTCG00H3ACZP	11R-Left Chest Z-Axis Acceleration	180	+	yes	1000
264A	28CHSTCG00H3ACRA	11R-Left Chest Resultant Acceleration	180			
265	28CHST0000H3DSXP	11R-Left Chest X-Axis Deflection	600	+	yes	84
266	28FEMRLL00H3FOZP	11R-Left Left Femur Force Z	600	+	yes	13344
267	28FEMRRL00H3FOZP	11R-Left Right Femur Force Z	600	+	yes	13344
268	29HEADCG00H3ACXP	11R-Right Head X-Axis Acceleration	1000	+	yes	750
269	29HEADCG00H3ACYP	11R-Right Head Y-Axis Acceleration	1000	+	yes	750
270	29HEADCG00H3ACZP	11R-Right Head Z-Axis Acceleration	1000	+	yes	750
270A	29HEADCG00H3ACRA	11R-Right Head Resultant Acceleration	1000			
271	29NECKUP00H3FOXP	11R-Right Neck Force X	1000	+	yes	8896
272	29NECKUP00H3FOYP	11R-Right Neck Force Y	1000	+	yes	8896
273	29NECKUP00H3FOZP	11R-Right Neck Force Z	1000	+	yes	13344
274	29NECKUP00H3MOXP	11R-Right Neck Moment X	600	+	yes	282.4
275	29NECKUP00H3MOYP	11R-Right Neck Moment Y	600	+	yes	282.4
276	29NECKUP00H3MOZP	11R-Right Neck Moment Z	600	+	yes	282.4
277	29CHSTCG00H3ACXP	11R-Right Chest X-Axis Acceleration	180	+	yes	750
278	29CHSTCG00H3ACYP	11R-Right Chest Y-Axis Acceleration	180	+	yes	750
279	29CHSTCG00H3ACZP	11R-Right Chest Z-Axis Acceleration	180	+	yes	750
279A	29CHSTCG00H3ACRA	11R-Right Chest Resultant Acceleration	180			
280	29CHST0000H3DSXP	11R-Right Chest X-Axis Deflection	600	+	yes	84
281	29FEMRLL00H3FOZP	11R-Right Left Femur Force Z	600	+	yes	13344
282	29FEMRRL00H3FOZP	11R-Right Right Femur Force Z	600	+	yes	13344
283	31HEADCG00H3ACXA	12L-Left Head X-Axis Acceleration	1000	+	yes	1000
284	31HEADCG00H3ACYA	12L-Left Head Y-Axis Acceleration	1000	+	yes	1000
285	31HEADCG00H3ACZA	12L-Left Head Z-Axis Acceleration	1000	+	yes	1000
285A	31HEADCG00H3ACRA	12L-Left Head Resultant Acceleration	1000			
286	31NECKUP00H3FOXA	12L-Left Neck Force X	1000	+	yes	8896
287	31NECKUP00H3FOYA	12L-Left Neck Force Y	1000	+	yes	8896
288	31NECKUP00H3FOZA	12L-Left Neck Force Z	1000	+	yes	13344
289	31NECKUP00H3MOXA	12L-Left Neck Moment X	600	+	yes	282.4
290	31NECKUP00H3MOYA	12L-Left Neck Moment Y	600	+	yes	282.4
291	31NECKUP00H3MOZA	12L-Left Neck Moment Z	600	+	yes	282.4
292	31CHSTCG00H3ACXA	12L-Left Chest X-Axis Acceleration	180	+	yes	1000

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Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
293	31CHSTCG00H3ACYA	12L-Left Chest Y-Axis Acceleration	180	+	yes	1000
294	31CHSTCG00H3ACZA	12L-Left Chest Z-Axis Acceleration	180	+	yes	1000
294A	31CHSTCG00H3ACRA	12L-Left Chest Resultant Acceleration	180			
295	31CHST0000H3DSXA	12L-Left Chest X-Axis Deflection	600	+	yes	84
296	31FEMRLL00H3FOZA	12L-Left Left Femur Force Z	600	+	yes	13344
297	31FEMRRL00H3FOZA	12L-Left Right Femur Force Z	600	+	yes	13344
298	32HEADCG00HFACXA	12L-Right Head X-Axis Acceleration	1000	+	yes	1000
299	32HEADCG00HFACYA	12L-Right Head Y-Axis Acceleration	1000	+	yes	1000
300	32HEADCG00HFACZA	12L-Right Head Z-Axis Acceleration	1000	+	yes	1000
300A	32HEADCG00HFACRA	12L-Right Head Resultant Acceleration	1000			
301	32NECKUP00HFFOXA	12L-Right Neck Force X	1000	+	yes	8896
302	32NECKUP00HFFOYA	12L-Right Neck Force Y	1000	+	yes	8896
303	32NECKUP00HFFOZA	12L-Right Neck Force Z	1000	+	yes	13344
304	32NECKUP00HFMOXA	12L-Right Neck Moment X	600	+	yes	282.4
305	32NECKUP00HFMOYA	12L-Right Neck Moment Y	600	+	yes	282.4
306	32NECKUP00HFMOZA	12L-Right Neck Moment Z	600	+	yes	282.4
307	32CHSTCG00HFACXA	12L-Right Chest X-Axis Acceleration	180	+	yes	1000
308	32CHSTCG00HFACYA	12L-Right Chest Y-Axis Acceleration	180	+	yes	1000
309	32CHSTCG00HFACZA	12L-Right Chest Z-Axis Acceleration	180	+	yes	1000
309A	32CHSTCG00HFACRA	12L-Right Chest Resultant Acceleration	180			
310	32CHST0000HFDSXA	12L-Right Chest X-Axis Deflection	600	+	yes	84
311	32FEMRLL00HFFOZA	12L-Right Left Femur Force Z	600	+	yes	13344
312	32FEMRRL00HFFOZA	12L-Right Right Femur Force Z	600	+	yes	13344
313	33HEADCG00HFACXP	13R-Left Head X-Axis Acceleration	1000	+	yes	1000
314	33HEADCG00HFACYP	13R-Left Head Y-Axis Acceleration	1000	+	yes	1000
315	33HEADCG00HFACZP	13R-Left Head Z-Axis Acceleration	1000	+	yes	1000
315A	33HEADCG00HFACRA	13R-Left Head Resultant Acceleration	1000			
316	33HEADCGRDHFACXP	13R-Left Head Redundant X-Axis Acceleration	1000	+	yes	1000
317	33HEADCGRDHFACYP	13R-Left Head Redundant Y-Axis Acceleration	1000	+	yes	1000
318	33HEADCGRDHFACZP	13R-Left Head Redundant Z-Axis Acceleration	1000	+	yes	1000
318A	33HEADCGRDHFACRA	13R-Left Head Redundant Resultant Acceleration	1000			
319	33NECKUP00HFFOXP	13R-Left Neck Force X	1000	+	yes	8896
320	33NECKUP00HFFOYP	13R-Left Neck Force Y	1000	+	yes	8896
321	33NECKUP00HFFOZP	13R-Left Neck Force Z	1000	+	yes	13344
322	33NECKUP00HFMOXP	13R-Left Neck Moment X	600	+	yes	282.4
323	33NECKUP00HFMOYP	13R-Left Neck Moment Y	600	+	yes	282.4
324	33NECKUP00HFMOZP	13R-Left Neck Moment Z	600	+	yes	282.4

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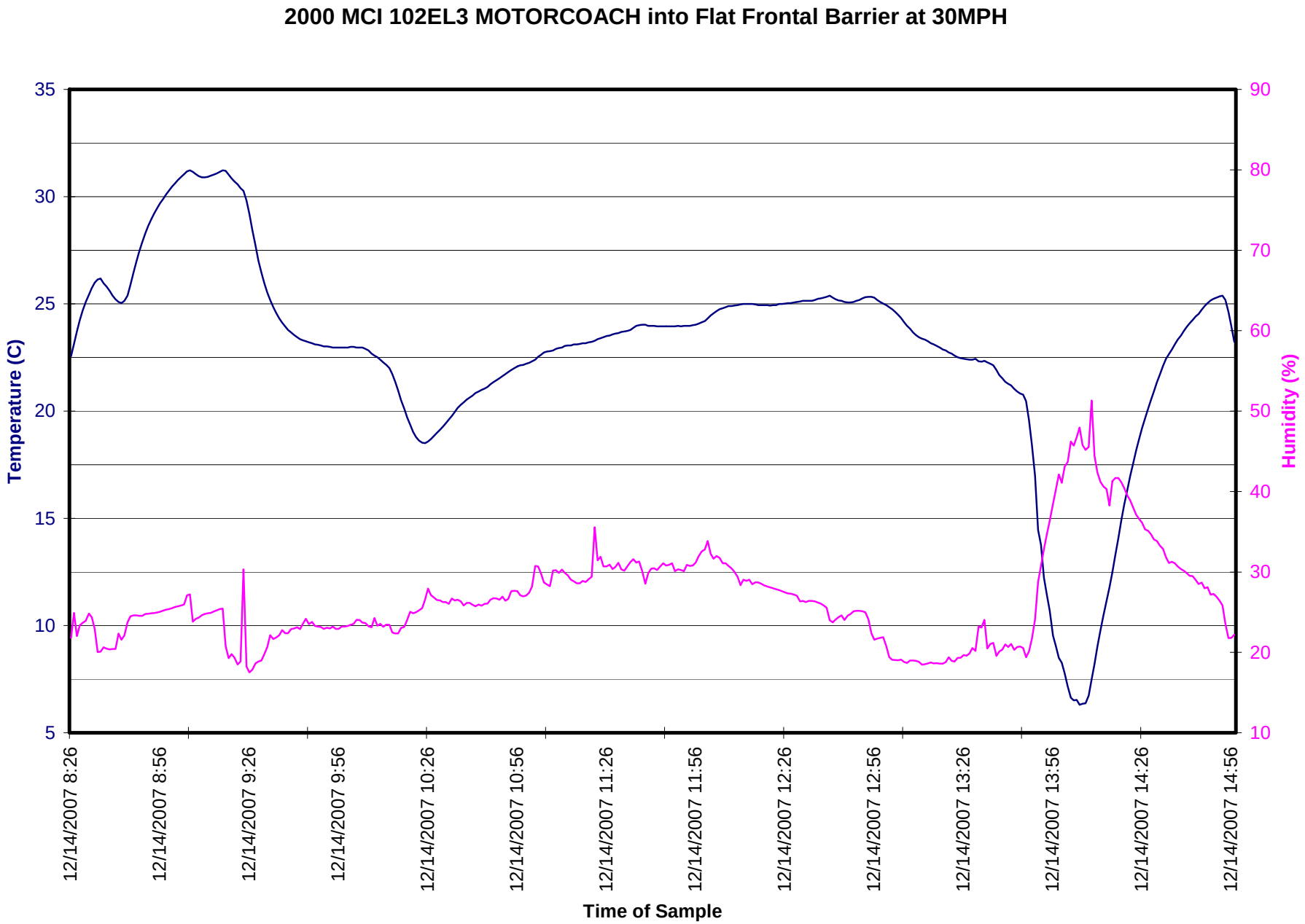
Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
325	33CHSTCG00HFACXP	13R-Left Chest X-Axis Acceleration	180	+	yes	1000
326	33CHSTCG00HFACYP	13R-Left Chest Y-Axis Acceleration	180	+	yes	1000
327	33CHSTCG00HFACZP	13R-Left Chest Z-Axis Acceleration	180	+	yes	1000
327A	33CHSTCG00HFACRA	13R-Left Chest Resultant Acceleration	180			
328	33CHSTCGRDHFACXP	13R-Left Chest Redundant X-Axis Acceleration	180	+	yes	1000
329	33CHSTCGRDHFACYP	13R-Left Chest Redundant Y-Axis Acceleration	180	+	yes	1000
330	33CHSTCGRDHFACZP	13R-Left Chest Redundant Z-Axis Acceleration	180	+	yes	1000
330A	33CHSTCGRDHFACRA	13R-Left Chest Redundant Resultant Acceleration	180			
331	33CHST0000HFDSXP	13R-Left Chest X-Axis Deflection	600	+	yes	84
332	33FEMRLL00HFFOZP	13R-Left Left Femur Force Z	600	+	yes	13344
333	33FEMRRL00HFFOZP	13R-Left Right Femur Force Z	600	+	yes	13344
334	34HEADCG00H3ACXP	13R-Right Head X-Axis Acceleration	1000	+	yes	1000
335	34HEADCG00H3ACYP	13R-Right Head Y-Axis Acceleration	1000	+	yes	1000
336	34HEADCG00H3ACZP	13R-Right Head Z-Axis Acceleration	1000	+	yes	1000
336A	34HEADCG00H3ACRA	13R-Right Head Resultant Acceleration	1000			
337	34HEADCGRDH3ACXP	13R-Right Head Redundant X-Axis Acceleration	1000	+	yes	1000
338	34HEADCGRDH3ACYP	13R-Right Head Redundant Y-Axis Acceleration	1000	+	yes	1000
339	34HEADCGRDH3ACZP	13R-Right Head Redundant Z-Axis Acceleration	1000	+	yes	1000
339A	34HEADCGRDH3ACRA	13R-Right Head Redundant Resultant Acceleration	1000			
340	34NECKUP00H3FOXP	13R-Right Neck Force X	1000	+	yes	8896
341	34NECKUP00H3FOYP	13R-Right Neck Force Y	1000	+	yes	8896
342	34NECKUP00H3FOZP	13R-Right Neck Force Z	1000	+	yes	13344
343	34NECKUP00H3MOXP	13R-Right Neck Moment X	600	+	yes	282.4
344	34NECKUP00H3MOYP	13R-Right Neck Moment Y	600	+	yes	282.4
345	34NECKUP00H3MOZA	13R-Right Neck Moment Z	600	+	yes	282.4
346	34CHSTCG00H3ACXA	13R-Right Chest X-Axis Acceleration	180	+	yes	1000
347	34CHSTCG00H3ACYA	13R-Right Chest Y-Axis Acceleration	180	+	yes	1000
348	34CHSTCG00H3ACZA	13R-Right Chest Z-Axis Acceleration	180	+	yes	1000
348A	34CHSTCG00H3ACRA	13R-Right Chest Resultant Acceleration	180			
349	34CHSTCGRDH3ACXA	13R-Right Chest Redundant X-Axis Acceleration	180	+	yes	1000
350	34CHSTCGRDH3ACYA	13R-Right Chest Redundant Y-Axis Acceleration	180	+	yes	1000
351	34CHSTCGRDH3ACZA	13R-Right Chest Redundant Z-Axis Acceleration	180	+	yes	1000
351A	34CHSTCGRDH3ACRA	13R-Right Chest Redundant Resultant Acceleration	180			
352	34CHST0000H3DSXA	13R-Right Chest X-Axis Deflection	600	+	yes	84
353	34FEMRLL00H3FOZA	13R-Right Left Femur Force Z	600	+	yes	13344
354	34FEMRRL00H3FOZA	13R-Right Right Femur Force Z	600	+	yes	13344
355	11SEAT000000ACXA	Driver Seat of Bus X-Axis Acceleration	60	+	yes	2000

Command File Test Number 071214

Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
355A	11SEAT000000VEXA	Driver Seat of Bus X-Axis Velocity	180			
355B	11SEAT000000DCXA	Driver Seat of Bus X-Axis Displacement	180			
356	11SEAT000000ACYA	Driver Seat of Bus Y-Axis Acceleration	60	+	yes	2000
356A	11SEAT000000VEYA	Driver Seat of Bus Y-Axis Velocity	180			
356B	11SEAT000000DCYA	Driver Seat of Bus Y-Axis Displacement	180			
357	11SEAT000000ACZA	Driver Seat of Bus Z-Axis Acceleration	60	+	yes	2000
357A	11SEAT000000VEZA	Driver Seat of Bus Z-Axis Velocity	180			
357B	11SEAT000000DCZA	Driver Seat of Bus Z-Axis Displacement	180			
357C	11SEAT000000ACRA	Driver Seat of Bus Resultant Acceleration	60			
358	10FRAMLEFR00ACXA	Front Left of Bus B X-Axis Acceleration	60	+	yes	2000
358A	10FRAMLEFR00VEXA	Front Left of Bus B X-Axis Velocity	180			
358B	10FRAMLEFR00DCXA	Front Left of Bus B X-Axis Displacement	180			
359	10FRAMLEFR00ACYA	Front Left of Bus B Y-Axis Acceleration	60	+	yes	2000
359A	10FRAMLEFR00VEYA	Front Left of Bus B Y-Axis Velocity	180			
359B	10FRAMLEFR00DCYA	Front Left of Bus B Y-Axis Displacement	180			
360	10FRAMLEFR00ACZA	Front Left of Bus B Z-Axis Acceleration	60	+	yes	2000
360A	10FRAMLEFR00VEZA	Front Left of Bus B Z-Axis Velocity	180			
360B	10FRAMLEFR00DCZA	Front Left of Bus B Z-Axis Displacement	180			
360C	10FRAMLEFR00ACRA	Front Left of Bus B Resultant Acceleration	60			
361	10FRAMMIFR00ACXA	Middle Front Right of Bus C X-Axis Acceleration	60	+	yes	2000
361A	10FRAMMIFR00VEXA	Middle Front Right of Bus C X-Axis Velocity	180			
361B	10FRAMMIFR00DCXA	Middle Front Right of Bus C X-Axis Displacement	180			
362	10FRAMMIFR00ACYA	Middle Front Right of Bus C Y-Axis Acceleration	60	+	yes	2000
362A	10FRAMMIFR00VEYA	Middle Front Right of Bus C Y-Axis Velocity	180			
362B	10FRAMMIFR00DCYA	Middle Front Right of Bus C Y-Axis Displacement	180			
363	10FRAMMIFR00ACZA	Middle Front Right of Bus C Z-Axis Acceleration	60	+	yes	2000
363A	10FRAMMIFR00VEZA	Middle Front Right of Bus C Z-Axis Velocity	180			
363B	10FRAMMIFR00DCZA	Middle Front Right of Bus C Z-Axis Displacement	180			
363C	10FRAMMIFR00ACRA	Middle Front Right of Bus C Resultant Acceleration	60			
364	10FRAMMIRE00ACXA	Middle Rear Left of Bus D X-Axis Acceleration	60	+	yes	2000
364A	10FRAMMIRE00VEXA	Middle Rear Left of Bus D X-Axis Velocity	180			
364B	10FRAMMIRE00DCXA	Middle Rear Left of Bus D X-Axis Displacement	180			
365	10FRAMMIRE00ACYA	Middle Rear Left of Bus D Y-Axis Acceleration	60	+	yes	2000
365A	10FRAMMIRE00VEYA	Middle Rear Left of Bus D Y-Axis Velocity	180			
365B	10FRAMMIRE00DCYA	Middle Rear Left of Bus D Y-Axis Displacement	180			
366	10FRAMMIRE00ACZA	Middle Rear Left of Bus D Z-Axis Acceleration	60	+	yes	2000
366A	10FRAMMIRE00VEZA	Middle Rear Left of Bus D Z-Axis Velocity	180			

Command File Test Number 071214

Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
366B	10FRAMMIRE00DCZA	Middle Rear Left of Bus D Z-Axis Displacement	180			
366C	10FRAMMIRE00ACRA	Middle Rear Left of Bus D Resultant Acceleration	60			
367	10FRAMRIRE00ACXA	Rear Right of Bus E X-Axis Acceleration	60	+	yes	2000
367A	10FRAMRIRE00VEXA	Rear Right of Bus E X-Axis Velocity	180			
367B	10FRAMRIRE00DCXA	Rear Right of Bus E X-Axis Displacement	180			
368	10FRAMRIRE00ACYA	Rear Right of Bus E Y-Axis Acceleration	60	+	yes	2000
368A	10FRAMRIRE00VEYA	Rear Right of Bus E Y-Axis Velocity	180			
368B	10FRAMRIRE00DCYA	Rear Right of Bus E Y-Axis Displacement	180			
369	10FRAMRIRE00ACZA	Rear Right of Bus E Z-Axis Acceleration	60	+	yes	2000
369A	10FRAMRIRE00VEZA	Rear Right of Bus E Z-Axis Velocity	180			
369B	10FRAMRIRE00DCZA	Rear Right of Bus E Z-Axis Displacement	180			
369C	10FRAMRIRE00ACRA	Rear Right of Bus E Resultant Acceleration	60			
370	11SEBE0000B5FOOA	4R-Left Lap Belt	60	+	yes	15568
371	12SEBE0000B5FOOA	4R-Right Lap Belt	60	+	yes	15568
372	15SEBE0000B5FOOA	5L-Left Lap Belt	60	+	yes	15568
373	16SEBE0000B5FOOA	5L-Right Lap Belt	60	+	yes	15568
374	17SEBE0000B5FOOA	6R-Left Lap Belt	60	+	yes	15568
375	18SEBE0000B5FOOA	6R-Right Lap Belt	60	+	yes	15568
376	24SEBE0000B5FOOA	9R-Left Lap Belt	60	+	yes	15568
377	25SEBE0000B5FOOA	9R-Right Lap Belt	60	+	yes	15568
378	28SEBE0000B5FOOA	11L-Left Lap Belt	60	+	yes	13344
379	29SEBE0000B5FOOA	11R-Right Lap Belt	60	+	yes	13344
380	33SEBE0000B5FOOA	13R-Left Lap Belt	60	+	yes	13344
381	34SEBE0000B5FOOA	13R-Right Lap Belt	60	+	yes	13344


2000 MCI 102EL3 MOTORCOACH into Flat Frontal Barrier at 30MPH
Temperature (C)
Humidity (%)
35
30
25
20
15
10
5
90
80
70
60
50
40
30
20
10
12/14/2007 8:26
12/14/2007 8:56
12/14/2007 9:26
12/14/2007 9:56
12/14/2007 10:26
12/14/2007 10:56
12/14/2007 11:26
12/14/2007 11:56
12/14/2007 12:26
12/14/2007 12:56
12/14/2007 13:26
12/14/2007 13:56
12/14/2007 14:26
12/14/2007 14:56
Time of Sample

Appendix E

INSIA Report on Structural Measurements

STRUCTURAL SURVEY OF CARS. MEASUREMENT METHODOLOGY OF THE MAIN RESISTANT ELEMENTS IN THE CAR BODY

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March, 1999

REPORT DOCUMENTATION PAGE
Title: *STRUCTURAL SURVEY OF CARS. MEASUREMENT METHODOLOGY OF THE MAIN RESISTANT ELEMENTS IN THE CAR BODY*
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Performing Organisation name and address: INSIA – University Institute for Automobile Research Carretera de Valencia, Km. 7 – Campus Sur de la Universidad Politécnica de Madrid 28031 – Madrid – Spain
Suplementary notes: Under contract to: THE EUROPEAN COMMUNITY Project: "Improvement of Crash Compatibility between Cars" Contract Nº: RO – 97 – SC.1064
Abstract: The main aim of this working package -*Structural Survey of Cars*- is the reduction of incompatibilities, both structural and geometric, between passenger vehicles and their potential collision partners. The understanding of these incompatibilities needs a previous step for the knowledge of the existing car fleet. Firstly, it is necessary to select the main resistant elements in the car body. These elements have to be chosen from the point of view of the sort of collision that we want to study, that is to say, frontal and side impacts. Detailed measurements have been taken from exterior and interior elements, spread to a total number of 74 models selected from the main vehicle manufacturers at Spain. All of them are being sold this year. Using the information available from the previous measurements in vehicles, the geometric characteristics of the main resistant elements involved in the geometric compatibility between cars will be defined. This report shows the methodology followed to get these measurements.
Subject terms: Crash compatibility, geometric compatibility, resistant elements, measure methodology
Date: March, 1999

1.- METHODOLOGY.

Detailed measurements have been taken from exterior and interior elements. Using the information available from the previous measurements in vehicles, the geometric characteristics of the main resistant elements involved in the geometric compatibility between cars have been defined. These elements are presented in the following figures, and have been divided in two main groups according to the vehicle zones studied in this project.

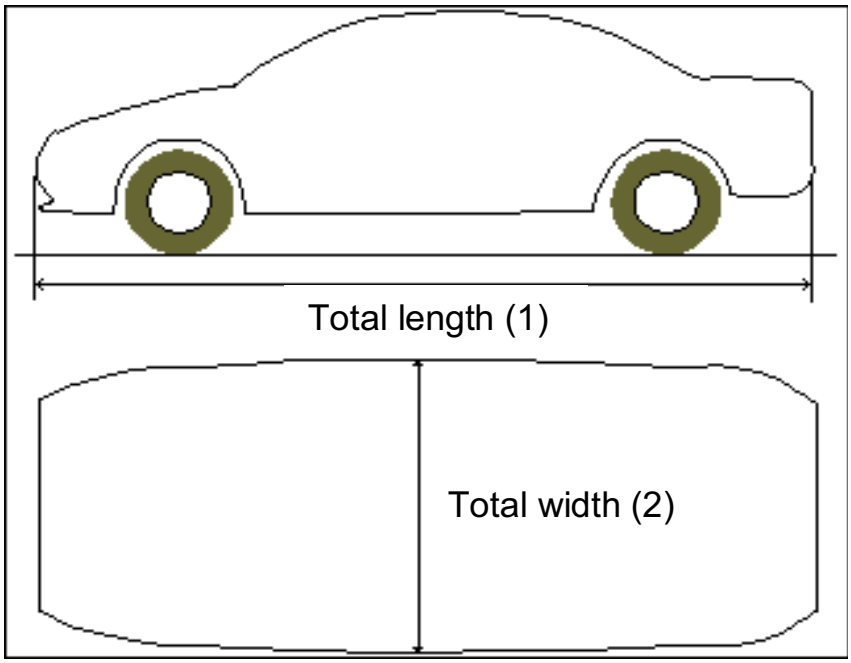

Figure 1.- Definition of the main resistant elements. General dimensions.

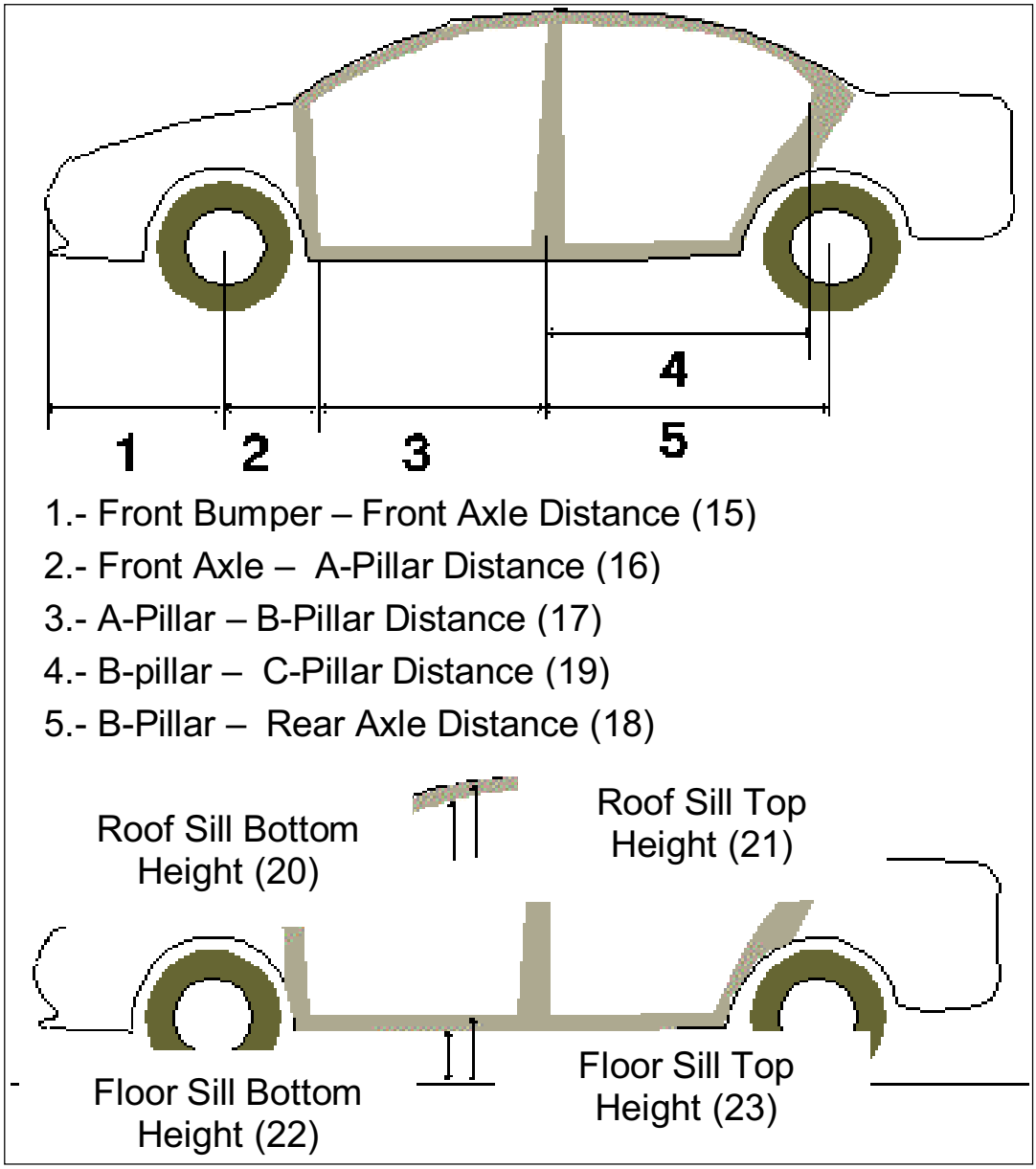

Figure 2.- Definition of the main resistant elements. Side elements.

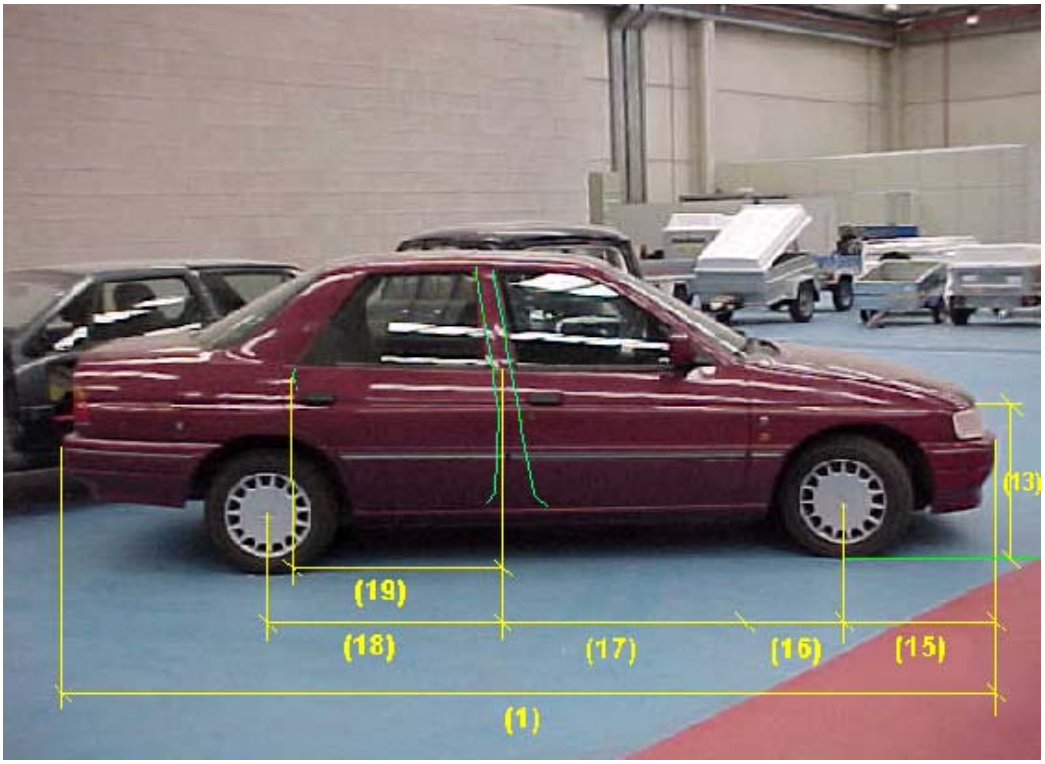

Figure 3.- Measurements of the side resistant elements (outer).

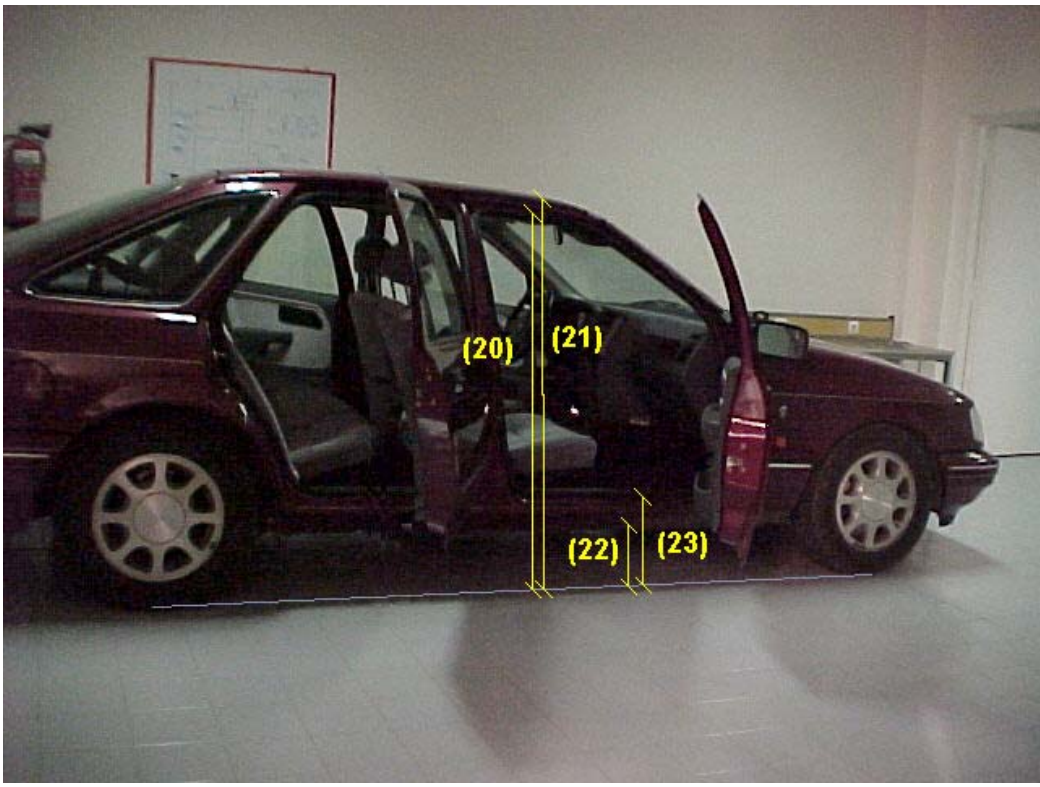

Figure 4.- Measurements of the side resistant elements (inner).

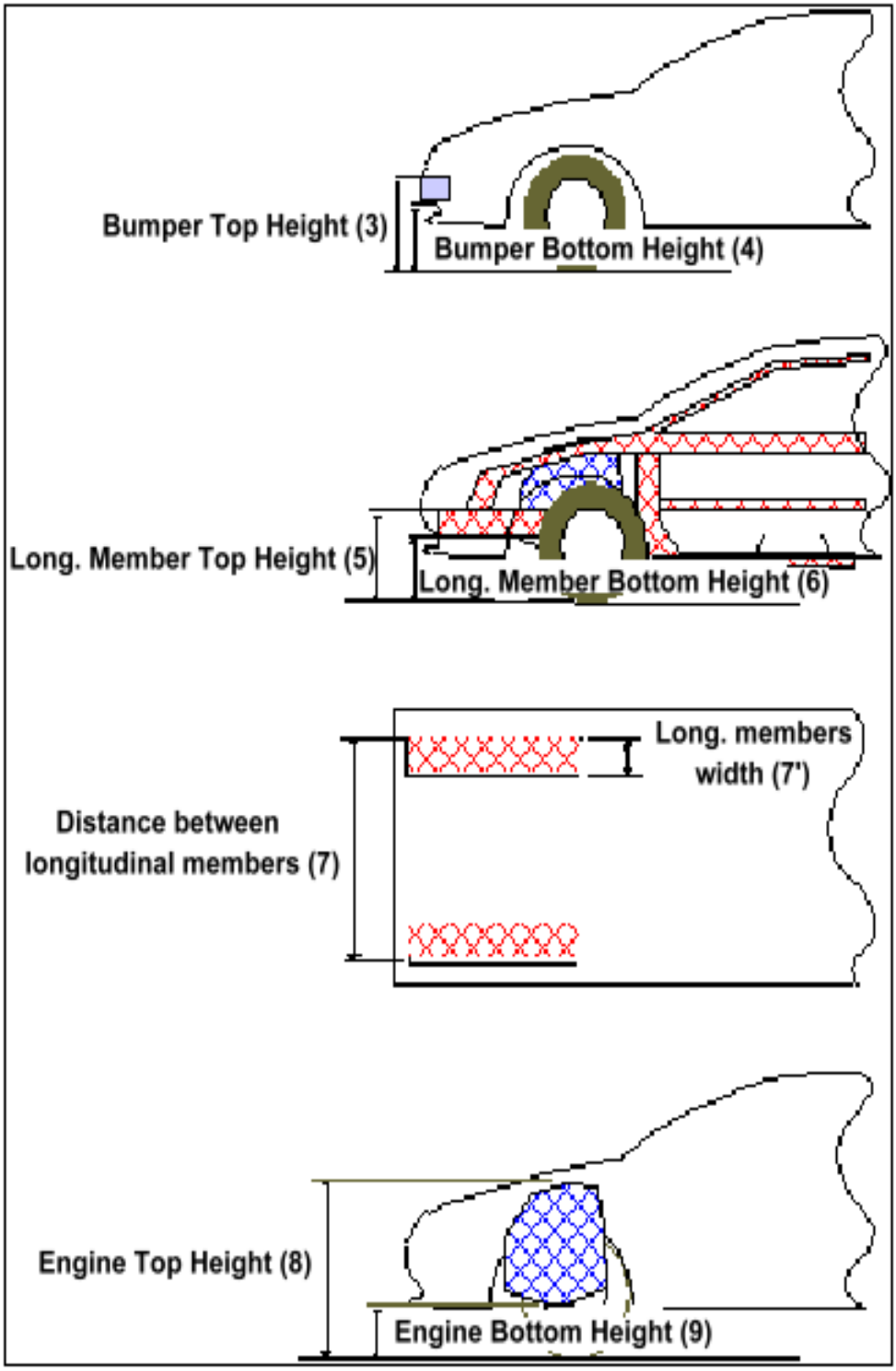

Figure 5.- Definition of the main resistant elements. Front elements.

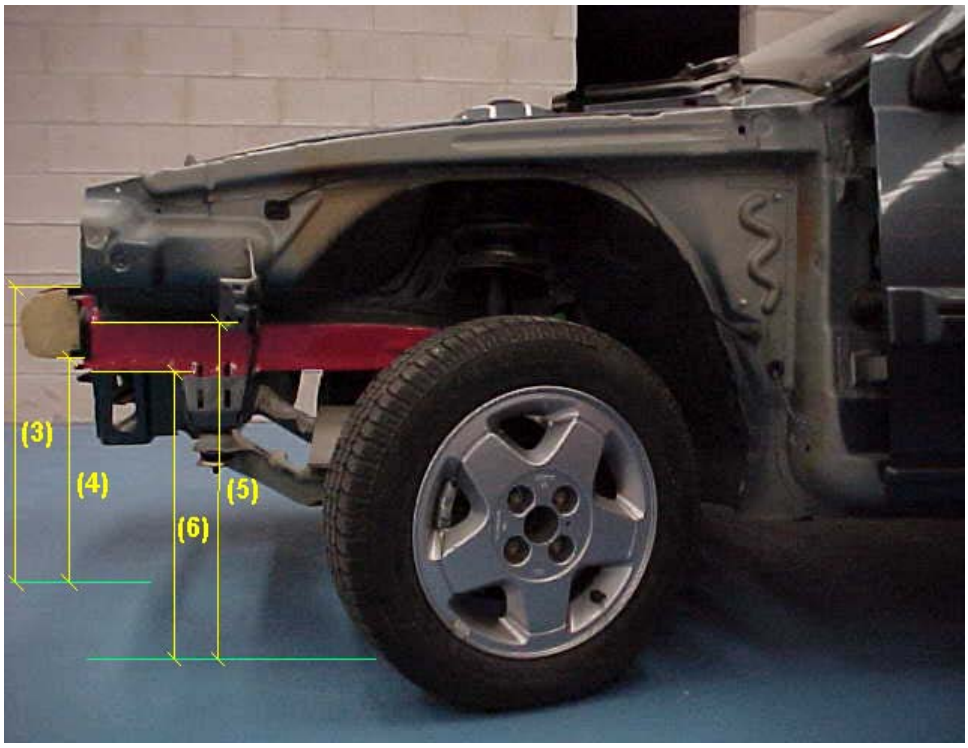

Figure 6.- Measurements of the main resistant elements. Front elements 1.

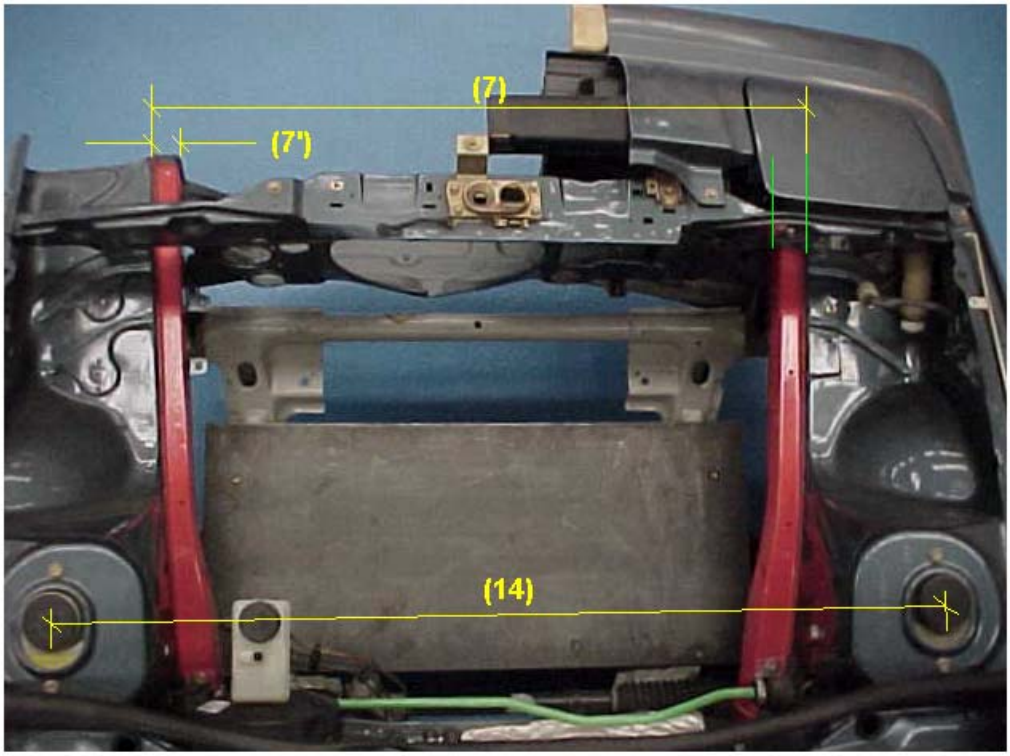

Figure 7.- Measurements of the main resistant elements. Front elements 2.

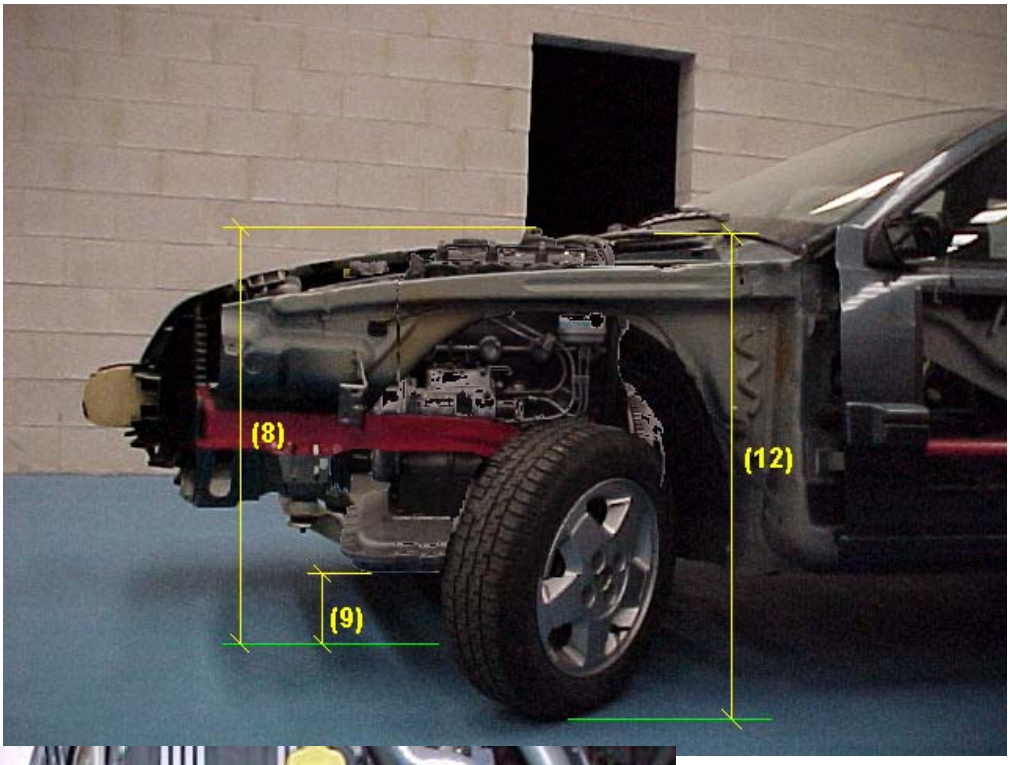

Figure 8.- Measurements of the main resistant elements. Front elements 3.

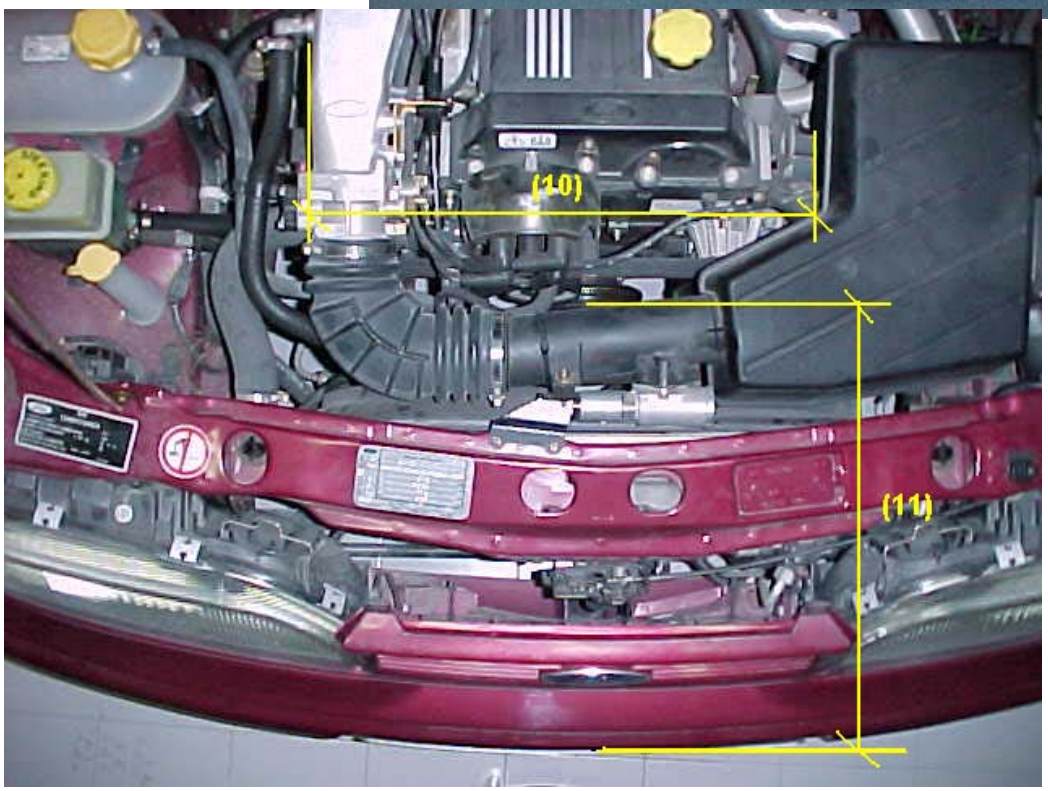

Figure 9.- Definition of the main resistant elements. Front elements (Longitudinal engine).

The procedure considered to measure these elements is described as follows, where it is indicated the location of these ones in the Excel Sheet (SURVEY.XLS) into brackets:

FRONT ELEMENTS

• **Total Length –(1)- (Side & Front Sheets - C column)**: distance between the point in the front bumper further on and the point in the rear bumper further back.

• **Weight (Side & Front Sheets - D column)**: mass, including an average driver weight (70 kg), and the fuel tank mass (at half-capacity).

• **Total Width –(2)- (Side & Front Sheets - E column)**: distance between the outer side points in a transverse plane of the vehicle (middle plane between the front and rear axles).

• **Bumper bottom height –(4)- (Front Sheet G column)**: distance between the ground and the lowest point on the front bumper, being a resistant member (aerodynamic elements under the front bumper are not considered).

• **Bumper top height –(3)- (Front Sheet H column)**: distance between the ground and the highest point on the front bumper, being a resistant member (aerodynamic elements are not considered).

• **Longitudinal member top height –(5)- (Front Sheet I column)**: distance between the ground and the highest point on the longitudinal members, measured approximately in the front bumper-longitudinal member joint (when accessible).

• **Longitudinal member bottom height –(6)- (Front Sheet J column)**: distance between the ground and the lowest point on the longitudinal members, measured approximately in the front bumper-longitudinal member joint.

• **Distance between longitudinal members (Front Sheet K column)**: transverse distance between extreme points in longitudinal members, measured approximately in the front bumper-longitudinal member joint.

Depending on the accessibility of these members, the extreme points are the inner points (I) or the outer points (O).

• **Longitudinal member width -7'- (Front Sheet L column)**: width of one of the longitudinal members, measured approximately in the front bumper-longitudinal member joint.

• **Engine top height (8) (Front Sheet N column)**: distance between the ground and the highest point on the engine that can be a resistant member in case of accident (usually, the highest point on the head, or the highest point of the inlet or exhaust manifolds).

• **Engine bottom height (9) (Front Sheet M column)**: distance between the ground and the lowest point on the engine (usually, the lowest point on the crankcase).

• **Engine and Gearbox width (10) (Front Sheet O & P columns)**:

- Transverse *configuration engine*: distance between extreme points in the gearbox-cylinder block unit or others resistant members attached to the cylinder block unit, i.e. fan belts (from a front point of view).

- *Longitudinal configuration engine*: distance between extreme points in the cylinder block unit (from a front point of view).

• **Front bumper - Engine distance (11) (Front Sheet Q column)**: distance between the point in the front bumper further on and the point in the engine further on that is a resistant element, i.e. the further on point of the exhaust manifold placed in the front of the engine.

• **Front shock absorber fixing width (14) (Front Sheet R column)**: transverse distance between the front shock absorber - body car joints.

• **Front shock absorber fixing height (12) (Front Sheet S column)**: distance between the ground and the front shock absorber-body car joint.

• **Bonnet leading edge height (Front Sheet T column)**: distance between the ground and the bonnet edge further on.

SIDE ELEMENTS

• **Front bumper - Front axle distance (15) (Side Sheet G column)**: distance between the point in the front bumper further on and the middle point in the front tyre-road contact patch.

• **Front axle - A Pillar distance (16) (Side Sheet H column)**: distance between the middle point in the front tyre-road contact patch and the point in the A-pillar further back.

• **A Pillar - B Pillar distance (17) (Side Sheet I column)**: distance between the point in the A-pillar further back and the middle point in the B-pillar.

• **B Pillar - C Pillar distance (19) (Side Sheet J column)**: distance between the middle point in the B-pillar and the point in the C-pillar further back (only 4/5-door vehicles).

• **B Pillar - Rear axle distance (18) (Side Sheet K column)**: distance between the middle point in the B-pillar and the middle point in the rear tyre-road contact patch.

• **Roof sill bottom height (20) (Side Sheet L column)**: distance between the ground and the lowest point on the roof sill, measured in the front door middle point.

• **Roof sill top height (21) (Side Sheet M column)**: distance between the ground and the highest point on the roof sill (usually located in the sill-roof joint), measured in the front door middle point.

• **Floor sill bottom height (22) (Side Sheet N column)**: distance between the ground and the lowest point on the floor sill, measured in the front door middle point.

• **Floor sill top height (23) (Side Sheet O column)**: distance between the ground and the highest point on the floor sill, measured in the front door middle point.

NOTE

- N/A: dimension not available.