

**Vehicle Research and Test Center
Moving Deformable Barrier into
2005 Suzuki Forenza at 53.1 km/h
TRC Inc. Test Number: 050916**

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Section 1.0

Purpose and Test Procedure

Purpose

This 48/24 km/h (32.9 mph) 90° side 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 purpose of this test was to evaluate side impact protection in a moving deformable barrier impact test. The subject vehicle was a 2005 Suzuki Forenza 4-door.

Test Procedure

This test was conducted in accordance with VRTC instructions for a moving deformable barrier into a vehicle side impact test. Data was obtained relative to FMVSS 214, "Side Impact Protection" performed using SID-IIs (Build D) anthropomorphic test devices (dummies).

A 2005 Suzuki Forenza 4-door was impacted on the driver's side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the monorail at a velocity of 53.1 km/h (33.0 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by Transportation Research Center Inc. in East Liberty, Ohio on September 16, 2005. Pre-test and post-test photographs of the test vehicle, the moving deformable barrier (MDB), and the side impact dummies (SID-IIs) are included in Appendix A.

The moving deformable barrier was equipped with a 214 style deformable barrier face and five (5) accelerometers to measure longitudinal, lateral, and vertical axis accelerations. The barrier's specified impact velocity range was 52.1 to 53.8 km/h.

Two restrained Side Impact Dummies (SID-IIs) were placed in the driver (Pos. #1) and left rear (Pos. #4) designated seating positions according to the instructions specified in the Federal Register Part 572-214 Section S8.3 and S12.3 (May 17, 2004). Both SID-IIs were certified prior to this test and were restrained by 3-point seat belts. The driver dummy was additionally restrained by a combination head/torso airbag.

Both dummies were instrumented with head, shoulder, spine, thorax, abdomen, and pelvis accelerometers to measure longitudinal, lateral, and vertical accelerations. Both dummies were also instrumented with upper neck, shoulder, lumbar, acetabulum, iliac wing, and femur load cells to measure forces and moments, and five (5) rib and one (1) shoulder deflection potentiometers.

The 198 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 ten (10) high-speed motion picture cameras. The pre- and post-test conditions were recorded by one (1) real-time motion picture camera.

The side impact test summary data are presented in Section 2.0. The summary of FMVSS 214 data are presented in Section 3.0. The occupant, camera, vehicle, and barrier 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 dummy verification data. Appendix D contains test equipment and instrumentation calibration information. Appendix E contains a copy of the INSIA Report on Structural Measurements.

Section 2.0

Moving Deformable Barrier Side Impact Test Summary

Test Results Summary

This moving deformable barrier side impact test was conducted by TRC Inc. on September 16, 2005.

The test vehicle, a 2005 Suzuki Forenza 4-door, was equipped with a 2.0-liter transverse engine, automatic transmission, power steering, power brakes, dual stage front airbags, and a side front combination head/torso airbag. The vehicle's test weight was 1460.5 kg. The moving deformable barrier's impact speed was 53.1 km/h. The moving deformable barrier impacted 20 mm to the right of the target point (405 mm rearward of front axle).

Injury Criteria Data Summary		
	Driver	Left Rear Passenger
HIC (15 ms)	56	773
HIC (36 ms)	69	773
Lower Spine Acceleration (g)	53	73
Pelvic Force Summation (N)	4,948	6,557

Data Acquisition Explanations

The vehicle's left side sill at rear seat Y-axis acceleration data channel, 14SILBRE0000ACYA, recorded questionable data throughout the test.

The vehicle's left lower B-post Y-axis acceleration data channel, 14BPILLO0000ACYA, recorded questionable data throughout the test.

The vehicle's left lower A-post Y-axis acceleration data channel, 11APILLO0000ACYA, exceeded full-scale at approximately 3 milliseconds and recorded no useful data after that.

The vehicle's left rear seat track Y-axis acceleration data channel, 14SETRLERE00ACYA, recorded questionable data throughout the test.

The vehicle's left front door centerline Y-axis acceleration data channel, 11DOOR000001ACYA, recorded questionable data throughout the test.

The vehicle's left front door mid-rear Y-axis acceleration data channel, 11DOOROOOOO2ACYA, recorded questionable data throughout the test.

The vehicle's left front door upper centerline Y-axis acceleration data channel, 11DOOR000003ACYA, recorded questionable data throughout the test.

Table 1 Crash Test Summary

Test mode:	Moving deformable barrier side impact			
Test date:	09/16/05			
Test time:	1104			
Ambient temperature:	21° C			
Vehicle year/make/ model/body style:	2005/Suzuki/Forenza/4-door			
Vehicle test weight:	1460.5 kg			
Impact angle ¹ :	270°			
Impact velocity ² :	53.1 km/h			
Maximum vehicle static crush:	277 mm			
Maximum barrier static crush:	154 mm			
Number of data channels:				
Number of cameras:	High-speed	10	Real-time	1
<u>Dummies:</u>	<u>Driver #056</u>		<u>Passenger #020</u>	
Type:	SID-IIs		SID-IIs	
Location:	Left front		Left rear	
Restraint:	Seat belt, combination head/torso airbag		Seat belt	
<u>Seat track position for test:</u>				
Driver:	Full forward			
Passenger:	Fixed			
<u>Seat back position for test:</u>				
Driver:	5.8° at headrest			
Passenger:	Fixed			
<u>Head restraint position for test:</u>				
Driver:	Full down			
Passenger:	Full down			
<u>Steering column position:</u>	21.8°; middle of geometric range of travel			

¹ With respect to tow track centerline.

² Speed trap measurement ($\pm .08$ km/h accuracy)

Table 2 General Test and Vehicle Parameter Data

Vehicle year/make/ model/body style:	2005/Suzuki/Forenza/4-door
VIN:	KL5JD56Z95K085790
Model year:	2005
Body style:	4-door
Color:	Red
Engine data:	
Cylinders:	4
Displacement	2.0 liters
Cylinder placement:	Straight
Engine placement:	Transverse
Transmission data:	<u>4</u> speed, ___ manual, <u>X</u> automatic, <u>X</u> overdrive
Final drive:	<u>X</u> FWD, ___ RWD, ___ 4WD
Date vehicle received:	9/13/2005
Odometer reading:	10,004
Dealer's name and address:	Vehicle supplied by VRTC

Accessories:

Power steering	Yes	Automatic transmission	Yes
Power brakes	Yes	Automatic speed control	No
Power seats	No	Tilting steering wheel	Yes
Power windows	Yes	Telescoping steering wheel	No
Tinted glass	Yes	Air conditioning	Yes
Radio	Yes	Anti-skid brake	No
Clock	Yes	Rear window defroster	Yes
Other	None	Power door locks	Yes

Certification data from vehicle's label:

Vehicle manufactured by:	GM Daewoo Auto & Technology Company
Date of manufacture:	09/04
VIN:	KL5JD56Z95K085790
GVWR:	3737 lbs.
GAWR: Front:	2028 lbs.
Rear:	1863 lbs.

Table 2 General Test and Vehicle Parameter Data, Continued

Tires on vehicle (mfr., line, size): Hankook, Optimo, P195/55R15

Tire pressure with maximum capacity vehicle load:

Front:	44 psi	(300 kPa)
Rear:	44 psi	(300 kPa)

Spare tire (mfr., line, size): Kumho, Temporary, T125/70D15

Type of seats:

Front	Bucket
Rear	Split bench

Maximum width: 1725 mm

Wheelbase: 2650 mm

Location of “Recommended Tire Pressure” label:

The label was located on driver B-pillar.

Data from vehicle’s “Recommended Tire Pressure” label”:

Recommended tire size: P195/55R15

Recommended cold tire pressure:

Front:	30 psi	(210 kPa)
Rear:	30 psi	(210 kPa)

Vehicle Capacity Data:

Number of Occupants (Designated seating capacity):

Front	2
Rear	3
Total	5

Vehicle capacity weight: 396.0 kg

Rated cargo/luggage weight¹ 56.0 kg

Test vehicle attitude:

Delivered attitude:	LF	648 mm;	RF	651 mm;	LR	662 mm;	RR	664 mm
Fully loaded attitude:	LF	623 mm;	RF	638 mm;	LR	603 mm;	RR	620 mm
Pre-test attitude:	LF	639 mm;	RF	650 mm;	LR	605 mm;	RR	615 mm
Post-test attitude:	LF	648 mm;	RF	655 mm;	LR	595 mm;	RR	601 mm

¹ RCLW = VCW - (68 kg * designated seating capacity)

Table 2 General Test and Vehicle Parameter Data, Continued

Test vehicle attitude:

	Left Sill Pitch	Right Sill Pitch	Front Bumper L-R Roll	Rear Bumper L-R Roll
As Delivered:	-0.4°	-0.1°	-0.4°	-0.7°
As Tested:	-0.6°	-0.4°	0.1°	-0.1°
Fully Loaded:	-0.5°	-0.3°	-1.0°	-1.2°

Negative Pitch Angle = Vehicle front down

Negative Roll Angle = Driver side down

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

Right front	388.5 kg	Right rear	236.0 kg
Left front	414.0 kg	Left rear	252.0 kg
Total front weight	802.5 kg	(62.2 % of total vehicle weight)	
Total rear weight	488.0 kg	(37.8 % of total vehicle weight)	
Total delivered weight	1290.5 kg		

Calculation of test vehicle's target test weight:

Total Delivered Weight (UDW) =	1290.5 kg
Rated Cargo/Luggage Weight (RCLW) =	56.0 kg
Weight of 2 SID-IIs Dummies @ 57 kg each =	114.0 kg
Target test weight =	1460.5 kg

Weight of test vehicle with required dummies:

Right front	395.0 kg	Right rear	321.3 kg
Left front	403.8 kg	Left rear	340.4 kg
Total front weight	798.8 kg	(54.7% of total vehicle weight)	
Total rear weight	661.7 kg	(45.3% of total vehicle weight)	
Total test weight	1460.5 kg		

Table 2 General Test and Vehicle Parameter Data, Continued

Weight of ballast secured in vehicle: None

Components removed to meet target test weight: Front & rear fascia, taillight assemblies, headlight assemblies, (2) headrests, washer reservoir, transmission fluid cooler, radiator with fans, air ducts to engine, serpentine belt, power steering pump, heat shield, air conditioner compressor, dipstick, alternator, trunk gasket, trunk lid, idler pulley, alternator bracket, 9.1 kg of Stoddard

Location of Vehicle's CG: 1201 mm rearward of front wheel centerline

Fuel System Data:

Usable fuel system capacity 54.9 liters (from owner's manual)

Actual test volume: 51.1 liters (93% of usable)

Table 3 Post-Impact Data

Test number: 050916
Test date: 09/16/05
Test time: 1104
Test type: Moving deformable barrier left side impact
Impact angle: 270°
Ambient temperature
at impact area: 21° C
Required impact velocity range: 52.1 to 53.8 km/h

MDB impact velocity:

Primary: 53.1 km/h
Secondary: 53.0 km/h
Distance from vehicle to barrier:
Entering velocity trap: 661 mm
Exiting velocity trap: 51 mm

Location of Impact Point On Test Vehicle Side To Be Impacted:

Wheelbase = 2650 millimeters
Intended impact point is 385 millimeters rearward of front axle centerline
(which is 940 millimeters forward of the wheelbase midpoint)
Actual Impact Point is 405 millimeters rearward of front axle centerline

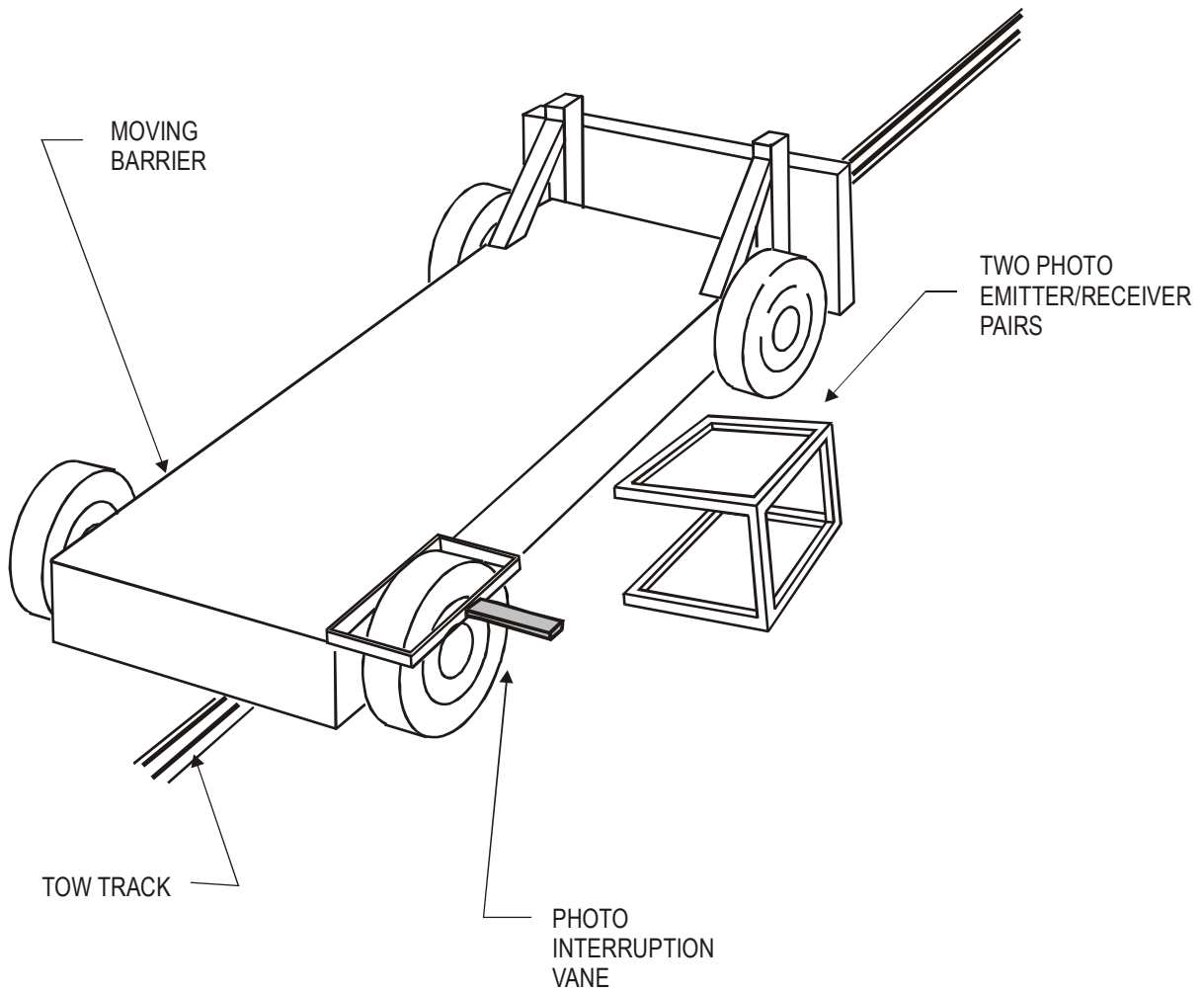
Impact Point:

Actual Impact Point is 20 mm right of nominal impact ref. line (Lateral)
Actual Impact Point is 9 mm up from nominal impact point (Vertical)

Maximum Exterior Static Crush:

1. Level 1 (272 mm above ground) = 149 mm
2. Level 2 (543 mm above ground) = 277 mm
3. Level 3 (630 mm above ground) = 242 mm
4. Level 4 (915 mm above ground) = 192 mm
5. Level 5 (1400 mm above ground) = 49 mm
Maximum Post-Test Intrusion = 277 mm

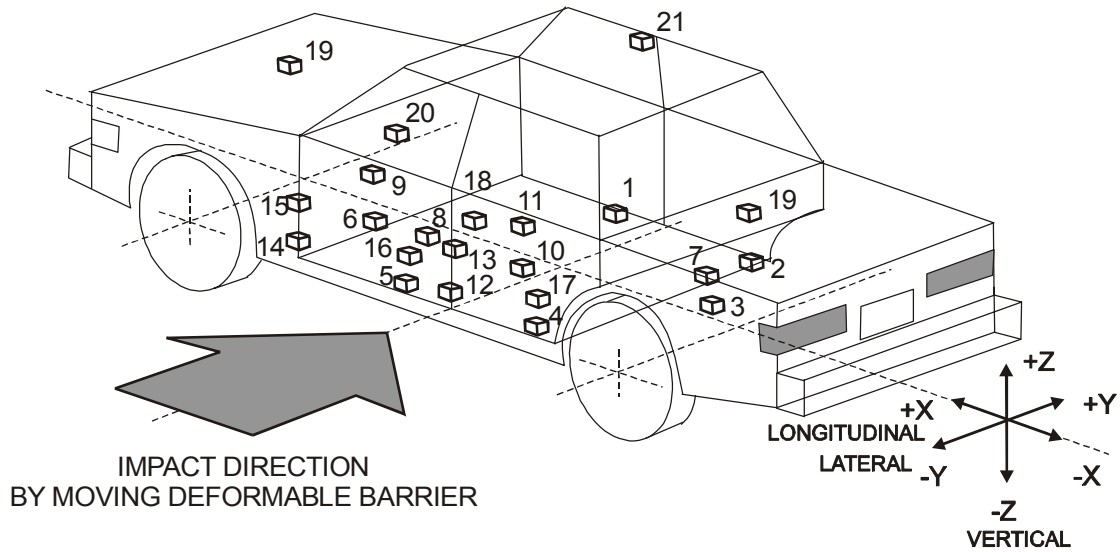
Figure 1 Impact Velocity Measurement System



The final vane clears the final emitter/receiver pair 51 millimeters before impact.

The vanes have 610-millimeter spacing.

Figure 2 Vehicle Accelerometer and String Potentiometer Placement



- 1-Right Front Side Sill
- 2-Right Side Sill at Rear Seat
- 3-Rear Floorpan above Axle
- 4-Left Side Sill at Rear Seat
- 5-Left Front Side Sill
- 6-Left Front Door Centerline
- 7-Right Rear Occupant Compartment
- 8-Left Front Door Mid-Rear
- 9-Left Front Door Upper Centerline
- 10-Left Rear Door Mid-Rear
- 11-Left Rear Door Upper Centerline

- 12-Left Side Lower B-pillar
- 13-Left Side Middle B-pillar
- 14-Left Side Lower A-pillar
- 15-Left Side Middle A-pillar
- 16-Left Side Front Seat Track at H-point
- 17-Left Rear Seat Track at H-point
- 18-Vehicle Center of Gravity
- 19-Engine Top
- 20-Firewall
- 21-Right Side Roof Rail

Table 4 Test Vehicle Accelerometer Data Summary

Accel. No.	Location		Positive Direction		Negative Direction	
			Max. (g)	Time (ms)	Max. (g)	Time (ms)
1	Right Side Sill at Front Seat	X	2.2	45.0	-6.0	12.3
		Y	18.7	17.3	-2.7	152.5
		Z	3.2	79.8	-6.0	17.0
2	Right Side Sill At Rear Seat	X	3.7	30.0	-7.8	13.4
		Y	19.8	36.2	-2.9	153.0
		Z	3.1	80.7	-7.0	23.6
3	Rear Floorpan Above Axle	X	3.3	50.6	-9.9	20.3
		Y	18.9	27.8	-2.0	154.1
		Z	9.3	23.5	-7.9	19.0
4	Left Side Sill at Rear Seat ¹	Y	119.8	15.2	-64.9	21.3
5	Left Side Sill at Front Seat	Y	72.3	10.6	-33.9	17.6
6	Left Front Door Centerline ¹	Y	111.2	4.7	-92.6	9.5
7	Right Rear Occupant Compartment	Y	19.2	36.2	-2.4	153.5
8	Left Front Door Mid-Rear ¹	Y	157.3	6.9	-69.2	11.4
9	Left Front Door Upper Centerline ¹	Y	96.2	5.9	-79.7	26.1
10	Left Rear Door Mid-Rear	Y	152.0	6.6	-69.4	26.3
11	Left Rear Door Upper Centerline	Y	121.9	17.5	-47.1	28.5
12	Left Lower B-Pillar ¹	Y	196.5	4.2	-77.1	15.0
13	Left Middle B-Pillar	Y	233.0	5.8	-58.1	13.0
14	Left Lower A-Pillar ¹	Y	----	----	----	----
15	Left Middle A-Pillar	Y	130.8	3.9	-34.7	9.3
16	Left Front Seat Track	Y	40.6	14.3	-8.5	50.1
17	Left Rear Seat Track ¹	Y	22.8	14.8	-13.7	162.8
18	Vehicle Center of Gravity	X	59.7	31.4	-39.1	37.8
		Y	94.9	39.8	-92.5	31.5
		Z	11.3	44.6	-20.5	39.6
	Resultant		110.1	31.5		

¹ See Data Acquisition Explanations.

Table 4 Test Vehicle Accelerometer Data Summary, Cont'd.

Accel. No.	Location		Positive Direction		Negative Direction	
			Max. (g)	Time (ms)	Max. (g)	Time (ms)
19	Top of Engine	X	9.1	93.3	-14.0	30.8
		Y	19.6	27.6	-4.1	117.4
20	Firewall	X	4.4	53.2	-11.0	12.3
		Y	17.3	45.2	-1.5	303.8
21	Right Roof Rail	X	5.3	34.8	-6.9	17.0
		Y	18.7	21.9	-1.9	163.8

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

Table 5 Moving Deformable Barrier (MDB) Summary

MDB Face Manufacturer And Serial Number:

Cellbond, FE 304

Position Of Impactor (MDB) On Monorail:

Crabbed 27° to the left

MDB Specifications:

Overall Width of Framework Carriage = 1251 mm

Overall Length of MDB (Incl. honeycomb impact face) = 4014 mm

Wheelbase of Framework Carriage = 2591 mm

Track of Framework Carriage (Front & Rear) = 1881 mm

C.G. Location Rearward of Front Axle = 1134 mm

MDB Weight:

Left Front = 507.2 kg Left Rear = 178.4 kg

Right Front = 261.8 kg Right Rear = 420.2 kg

Total Front = 769.0 kg Total Rear = 598.6 kg

Total MDB Weight = 1367.6 kg

Impact Angle (MDB C/L to Target Vehicle C/L) = 90 degrees

Impact Speed = 53.1 km/h

Maximum Static Crush of Honeycomb Impact Face:

1. Row A at Center of Bumper Level = 118 millimeters

2. Row B at Top of Bumper Level = 81 millimeters

3. Row C at Mid Level = 106 millimeters

4. Row D at Top of Stack Level = 154 millimeters

Instrumentation:

Number of MDB Data Channels = 5

Section 3.0

Summary of FMVSS 214 Data

Table 6 Dummy Injury Criteria Data

Driver Dummy S/N 056

Location		Positive Direction Max. Time (ms)		Negative Direction Max. Time (ms)	
Head Acceleration (g)					
Longitudinal	X	3.0	266.5	-11.2	54.5
Lateral	Y	23.3	50.6	-3.8	268.6
Vertical	Z	19.1	49.0	-4.0	19.1
Resultant		29.9	50.6		
HIC (36 ms)		69			
Upper Neck Force (N)					
X-Axis Shear		257.6	54.5	-95.4	266.5
Y-Axis Shear		318.6	52.7	-114.2	297.4
Z-Axis Axial		692.8	49.4	-166.8	19.0
Upper Neck Moment (N-m)					
About X-Axis		19.0	22.6	-22.8	39.0
About Y-Axis		12.1	76.2	-19.1	53.6
About Z-Axis		20.0	75.8	-4.8	131.8
Shoulder Acceleration (g)					
Longitudinal	X	320.7	11.0	-98.6	11.4
Lateral	Y	335.5	15.2	-145.1	10.9
Vertical	Z	109.8	17.2	-138.7	15.2
Resultant		365.7	15.2		
Shoulder Force (N)					
Longitudinal	X	410.5	11.8	-58.7	276.2
Lateral	Y	1653.6	17.5	-485.4	98.0
Vertical	Z	112.7	13.7	-412.2	18.8
Shoulder Displacement (mm)					
Lateral	Y	40.7	27.0		
Upper Spine Acceleration (g)					
Longitudinal	X	5.8	262.5	-8.6	42.3
Lateral	Y	32.7	25.8	-5.0	266.6
Vertical	Z	4.2	29.5	-5.2	45.4
Resultant		32.7	25.8		

Table 6 Dummy Injury Criteria Data, Cont'd.

Driver Dummy S/N 056

Location		Positive Direction Max. Time (ms)		Negative Direction Max. Time (ms)	
Spine Rib 1 Acceleration (g)					
Longitudinal ¹	X	10.2	38.5	-6.1	26.3
Lateral	Y	30.5	42.3	-5.3	117.8
Vertical	Z	10.4	19.4	-17.9	40.6
Resultant ¹		35.8	42.2		
Spine Rib 2 Acceleration (g)					
Longitudinal	X	9.4	38.6	-6.5	26.5
Lateral	Y	35.2	41.9	-5.4	116.6
Vertical	Z	10.6	19.3	-18.0	40.8
Resultant		40.3	41.8		
Spine Rib 3 Acceleration (g)					
Longitudinal	X	8.6	41.4	-6.5	26.8
Lateral	Y	41.7	41.1	-6.8	103.7
Vertical	Z	10.6	19.3	-17.9	40.7
Resultant		46.2	41.1		
Lower Spine Acceleration (g)					
Longitudinal	X	10.2	41.8	-7.0	27.1
Lateral	Y	49.1	40.6	-8.6	103.4
Vertical	Z	10.3	19.4	-18.3	41.9
Resultant		53.0	40.8		
Spine Rib 5 Acceleration (g)					
Longitudinal	X	9.5	41.8	-7.8	29.7
Lateral	Y	56.1	40.6	-9.5	90.7
Vertical	Z	10.2	19.4	-18.9	41.8
Resultant		59.4	40.6		
Lumbar Moment (N-m)					
Longitudinal	X	47.0	42.9	-37.4	226.2
Lateral	Y	28.7	40.8	-24.2	239.3
Vertical	Z	0.5	44.0	-29.1	83.4

Table 6 Dummy Injury Criteria Data, Cont'd.

Driver Dummy S/N 056

Location	Positive Direction Max. Time (ms)		Negative Direction Max. Time (ms)	
Thorax Rib 1 Acceleration (g)				
Longitudinal X	133.1	10.2	-65.7	11.8
Lateral Y	138.0	17.8	-96.0	12.3
Vertical Z	37.2	44.9	-21.0	13.7
Resultant	187.7	10.2		
Thorax Rib 1 Displacement (mm)				
Lateral Y	27.0	28.5		
Thorax Rib 2 Acceleration (g)				
Longitudinal X	46.1	10.6	-29.3	42.2
Lateral Y	84.5	20.4	-31.6	25.4
Vertical Z	55.7	45.8	-19.0	13.8
Resultant	87.3	20.6		
Thorax Rib 2 Displacement (mm)				
Lateral Y	22.0	29.6		
Thorax Rib 3 Acceleration (g)				
Longitudinal X	50.9	171.3	-28.9	41.8
Lateral Y	75.0	22.6	-43.2	28.3
Vertical Z	40.4	47.5	-17.4	161.8
Resultant	76.3	22.5		
Thorax Rib 3 Displacement (mm)				
Lateral Y	16.7	46.2		
Abdomen Rib 1 Acceleration (g)				
Longitudinal X	20.8	29.1	-42.1	41.0
Lateral Y	110.9	31.4	-26.7	38.4
Vertical Z	40.3	40.7	-29.1	21.3
Resultant	112.5	31.4		
Abdomen Rib 1 Displacement (mm)				
Lateral Y	24.8	43.6		

Table 6 Dummy Injury Criteria Data, Cont'd.

Driver Dummy S/N 056

Location		Positive Direction Max. Time (ms)		Negative Direction Max. Time (ms)	
Abdomen Rib 2 Acceleration (g)					
Longitudinal	X	19.6	52.1	-36.8	57.9
Lateral	Y	150.9	30.0	-35.0	34.4
Vertical	Z	27.3	23.4	-64.1	42.8
Resultant		153.6	30.0		
Abdomen Rib 2 Displacement (mm)					
Lateral	Y	27.5	41.7		
Pelvis Acceleration (g)					
Longitudinal	X	6.1	54.0	-9.3	31.6
Lateral	Y	75.7	38.2	-14.2	97.6
Vertical	Z	3.6	30.3	-4.0	54.0
Resultant		75.8	38.2		
Left Acetabulum Force (N)					
Lateral	Y	3326.4	37.6	-6.6	97.7
Left Illiac Wing Force (N)					
Lateral	Y	1690.1	39.2	-134.8	53.4
Pelvis Force Summation (N)					
Lateral	Y	4,947	38.5		
Left Femur Force (N)					
X-Axis		62.6	25.4	-96.9	64.2
Y-Axis		252.8	32.6	-416.3	51.4
Z-Axis		529.8	53.9	-260.4	32.2
Left Femur Moment (N-m)					
About Longitudinal		89.5	38.9	-33.7	79.0
About Lateral		26.6	79.7	-29.0	41.0
About Vertical		35.7	43.2	-15.3	61.4

Table 6 Dummy Injury Criteria Data, Cont'd.

Driver Dummy S/N 056

Location	Positive Direction		Negative Direction	
	Max.	Time (ms)	Max.	Time (ms)
Right Femur Force (N)				
X-Axis	126.2	70.0	-133.3	51.6
Y-Axis	279.5	38.8	-300.3	46.9
Z-Axis	320.1	44.0	-389.2	51.4
Right Femur Moment (N-m)				
About Longitudinal	59.6	56.5	-54.3	35.7
About Lateral	30.0	69.8	-12.5	129.8
About Vertical	20.5	54.7	-24.3	39.8

Positive Direction:

Longitudinal: Forward

Lateral: Rightward

Vertical: Downward

Negative Direction:

Longitudinal: Rearward

Lateral: Leftward

Vertical: Upward

¹ See Data Acquisition Explanations.

Table 6 Dummy Injury Criteria Data, Cont'd.

Left Rear Passenger Dummy S/N 020

Location		Positive Direction Max. Time (ms)		Negative Direction Max. Time (ms)	
Head Acceleration (g)					
Longitudinal	X	10.2	210.2	-27.3	50.0
Lateral	Y	130.4	51.5	-11.8	210.0
Vertical	Z	28.2	49.4	-32.8	58.8
Resultant		133.8	51.5		
HIC (36 ms)		773			
Upper Neck Force (N)					
X-Axis Shear		186.6	75.2	-344.8	57.3
Y-Axis Shear		271.2	52.1	-127.2	58.4
Z-Axis Axial		652.7	48.5	-1552.6	57.8
Upper Neck Moment (N-m)					
About X-Axis		81.6	55.6	-23.1	81.0
About Y-Axis		19.5	113.6	-17.6	74.6
About Z-Axis		10.5	107.7	-13.5	56.6
Shoulder Acceleration (g)					
Longitudinal	X	98.6	76.7	-66.7	76.5
Lateral	Y	114.9	76.4	-63.4	76.6
Vertical	Z	194.2	24.6	-416.4	75.0
Resultant		416.6	75.0		
Shoulder Force (N)					
Longitudinal	X	113.6	50.0	-187.9	59.6
Lateral	Y	237.1	76.6	-1057.3	46.8
Vertical	Z	437.7	81.0	-533.8	56.1
Shoulder Displacement (mm)					
Lateral	Y	23.9	56.6		
Upper Spine Acceleration (g)					
Longitudinal	X	3.5	133.4	-19.2	53.5
Lateral	Y	45.6	48.8	-7.3	101.9
Vertical	Z	14.7	53.7	-4.9	32.4
Resultant		46.4	48.9		

Table 6 Dummy Injury Criteria Data, Cont'd.

Left Rear Passenger Dummy S/N 020

Location		Positive Direction Max. Time (ms)		Negative Direction Max. Time (ms)	
Spine Rib 1 Acceleration (g)					
Longitudinal	X	5.4	29.3	-14.7	53.8
Lateral	Y	41.4	45.2	-8.1	87.6
Vertical	Z	30.9	60.2	-22.3	39.9
Resultant		44.1	40.6		
Spine Rib 2 Acceleration (g)					
Longitudinal	X	4.2	29.2	-12.8	60.0
Lateral	Y	48.6	41.0	-8.9	87.8
Vertical	Z	29.8	60.2	-23.5	40.0
Resultant		53.6	40.6		
Spine Rib 3 Acceleration (g)					
Longitudinal	X	3.6	98.6	-14.0	60.0
Lateral	Y	57.4	40.7	-9.2	88.1
Vertical	Z	29.6	60.2	-24.2	40.0
Resultant		62.2	40.4		
Lower Spine Acceleration (g)					
Longitudinal	X	4.6	98.5	-14.4	60.2
Lateral	Y	68.5	40.6	-19.8	60.6
Vertical	Z	28.6	60.3	-24.5	40.1
Resultant		73.1	40.4		
Spine Rib 5 Acceleration (g)					
Longitudinal	X	6.3	74.2	-15.6	60.3
Lateral	Y	76.5	40.5	-29.1	60.9
Vertical	Z	28.0	60.3	-25.8	40.2
Resultant		81.3	40.4		
Lumbar Moment (N-m)					
Longitudinal	X	97.9	41.8	-31.3	112.7
Lateral	Y	46.4	38.2	-38.6	50.6
Vertical	Z	20.3	53.5	-9.7	164.5

Table 6 Dummy Injury Criteria Data, Cont'd.

Left Rear Passenger Dummy S/N 020

Location	Positive Direction Max. Time (ms)		Negative Direction Max. Time (ms)	
Thorax Rib 1 Acceleration (g)				
Longitudinal X	28.1	66.1	-31.8	35.1
Lateral Y	66.7	33.6	-42.7	29.0
Vertical Z	39.4	52.6	-61.5	70.6
Resultant	68.8	33.7		
Thorax Rib 1 Displacement (mm)				
Lateral Y	25.7	49.5		
Thorax Rib 2 Acceleration (g)				
Longitudinal X	26.9	54.6	-37.8	35.3
Lateral Y	101.4	33.7	-63.3	30.8
Vertical Z	60.0	28.9	-47.8	44.0
Resultant	102.1	33.6		
Thorax Rib 2 Displacement (mm)				
Lateral Y	32.0	47.0		
Thorax Rib 3 Acceleration (g)				
Longitudinal X	27.5	48.6	-40.0	27.8
Lateral Y	176.4	25.4	-97.8	28.8
Vertical Z	44.9	31.2	-40.8	67.1
Resultant	179.5	25.3		
Thorax Rib 3 Displacement (mm)				
Lateral Y	41.2	45.1		
Abdomen Rib 1 Acceleration (g)				
Longitudinal X	34.5	45.6	-54.2	28.0
Lateral Y	285.4	25.9	-103.5	28.4
Vertical Z	20.2	27.6	-50.7	30.4
Resultant	285.4	25.9		
Abdomen Rib 1 Displacement (mm)				
Lateral Y	46.2	42.0		

Table 6 Dummy Injury Criteria Data, Cont'd.

Left Rear Passenger Dummy S/N 020

Location	Positive Direction Max. Time (ms)		Negative Direction Max. Time (ms)	
Abdomen Rib 2 Acceleration (g)				
Longitudinal X	39.0	80.2	-65.1	30.9
Lateral Y	82.4	32.4	-34.9	64.2
Vertical Z	23.9	37.9	-61.8	63.4
Resultant	90.7	28.4		
Abdomen Rib 2 Displacement (mm)				
Lateral Y	37.3	41.5		
Pelvis Acceleration (g)				
Longitudinal X	9.9	83.9	-56.4	36.1
Lateral Y	119.7	37.4	-20.9	68.4
Vertical Z	12.3	45.8	-12.4	39.4
Resultant	119.8	37.3		
Left Acetabulum Force (N)				
Lateral Y	4852.6	36.7	-1.5	16.2
Left Illiac Wing Force (N)				
Lateral Y	1997.3	39.4	-166.0	55.4
Pelvis Force Summation (N)				
Lateral Y	6,557	37.1		
Left Femur Force (N)				
X-Axis	210.6	37.4	-269.5	36.1
Y-Axis	812.9	28.8	-1609.9	36.3
Z-Axis	586.4	53.3	-2543.6	36.0
Left Femur Moment (N-m)				
About Longitudinal	284.3	36.2	-84.4	27.4
About Lateral	50.6	53.6	-87.3	34.6
About Vertical	96.8	37.4	-16.0	219.7

Table 6 Dummy Injury Criteria Data, Cont'd.

Left Rear Passenger Dummy S/N 020

Location	Positive Direction		Negative Direction	
	Max.	Time (ms)	Max.	Time (ms)
Right Femur Force (N)				
X-Axis	148.0	94.1	-712.9	36.8
Y-Axis	2605.5	36.2	-255.2	104.9
Z-Axis	1471.2	43.0	-193.0	59.8
Right Femur Moment (N-m)				
About Longitudinal	202.2	47.8	-75.1	36.0
About Lateral	70.8	45.6	-28.1	37.0
About Vertical	132.8	49.0	-11.7	154.3

Positive Direction:

Longitudinal: Forward

Lateral: Rightward

Vertical: Downward

Negative Direction:

Longitudinal: Rearward

Lateral: Leftward

Vertical: Upward

Table 7 Post-Impact Dummy/Vehicle Data

Visible Dummy Contact Points:

	<u>Driver</u>	<u>Passenger</u>
Head	Combination head/torso airbag	C-pillar
Shoulder	Combination head/torso airbag, door panel	Door panel
Abdomen	None	None
Left knee	Door panel	Door panel
Right knee	None	None

Door opening:

	<u>Left</u>	<u>Right</u>
Front	Jammed and latched	Easy
Rear	Jammed and latched	Easy

Seat movement:

	<u>Seat back failure</u>	<u>Seat shift</u>
Left Front	None	None
Left Rear	None	None

Glazing damage: Struck side windows broken.

Other notable impact effects: None

Section 4.0

Occupant, Vehicle, Camera, and Barrier Information

Table 8 Vehicle Structural Measurements^{1,2}

	Elements	Pre-Test
1	Total Length	4500
2	Total Width	1725
3	Bumper Top Height	532
4	Bumper Bottom Height	404
5	Longitudinal Member Top Height	511
6	Longitudinal Member Bottom Height	407
7	Distance Between Longitudinal Members	1010
7'	Longitudinal Member Width	60
8	Engine Top Height	788
9	Engine Bottom Height	182
10	Engine and Gearbox Width	820
11	Front Bumper - Engine Distance	560
12	Front Shock Absorber Fixing Height	870
13	Bonnet Leading Edge Height	758
14	Front Shock Absorber Fixing Width	1100
15	Front Bumper - Front Axle Distance	890
16	Front Axle - A Pillar Distance	530
17	A Pillar - B Pillar Distance	965
18	B Pillar - Rear Axle Distance	1070
19	B Pillar - C Pillar Distance	910
20	Roof Sill Bottom Height	1278
21	Roof Sill Top Height	1342
22	Floor Sill Bottom Height	299
23	Floor Sill Top Height	342

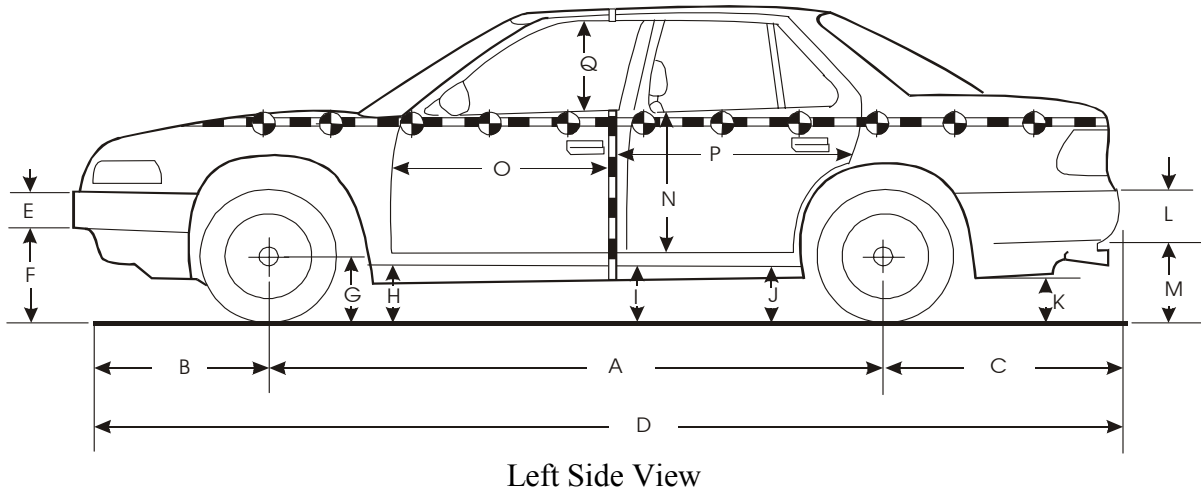
All distance measurements are in millimeters.

¹ Taken from INSIA report, “Structural Survey of Cars, Methodology of the Main Resistant Elements in the Car Body”, March 1999. This report is included in Appendix E.

² The vertical measurements from the ground are adjusted based on the test vehicle’s pre-test attitude measurements.

Figure 3 Pre-Test And Post-Test Measurement Points

Vehicle: 2005 Suzuki Forenza 4-door



Note: All dimensions are in millimeters with tolerance of ± 3 mm

Code	Measurement Description	Pre-Test	Post-Test	Change
A	Wheelbase	2650	2580	70
B	Front Axle to Front Surface of Vehicle	890	868	22
C	Rear Axle to Rear Surface of Vehicle	1010	1012	-2
D	Total Length at Centerline	4500	4469	31
E	Front Bumper Thickness	120	120	0
F	Front Bumper Bottom to Ground	410	425	-15
G	Sill Height at Front Wheel Well	273	273	0
H	Sill Height at Front Door Leading Edge	248	246	2
I	Sill Height at "B" Pillar	235	285	-50
J1	Sill Height at Rear Wheel Well	164	174	-10
J2	Pinch Weld Height at Rear Wheel Well	219	258	-39
K	Sill Height Aft of Rear Wheel Well	266	207	59
L	Rear Bumper Thickness	183	183	0
M	Rear Bumper Bottom to Ground	406	352	54
N	Sill Height to Window Bottom Sill	698	585	113
O	Front Door Leading Edge to Impact CL	673	676	-3
P	Rear Door Trailing Edge to Impact CL	1274	1217	57
Q	Front Window Opening	422	408	14
R	Right Side Length	4385	4377	8
S	Left Side Length	4380	4345	35
T	Vehicle Width at "B" Post	1314	1130	184

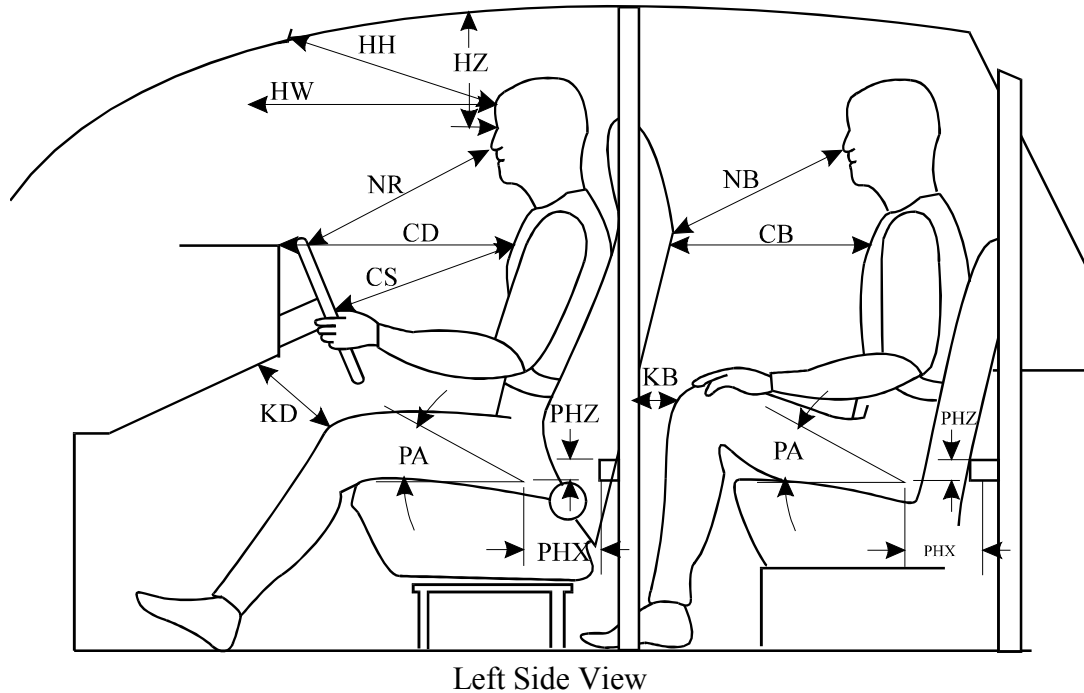
D = Length at centerline
T = Width at B-pillar

E&L = Bumper Thickness
J1 = To Pinch Weld

R = Right Side Length
J2 = To Sill

S = Left Side Length

Figure 4 SID-IIs Longitudinal Clearance Dimensions



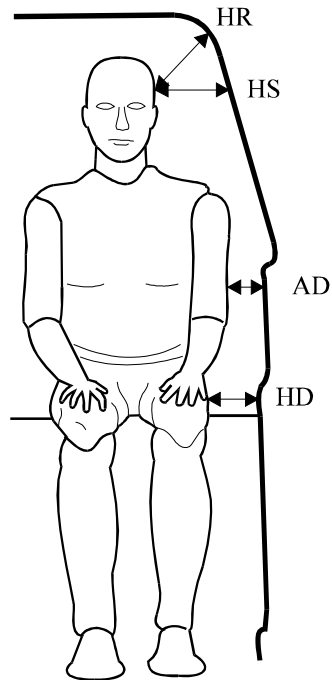
Note: All measurements were recorded using TRC Inc.'s FARO Arm with a tolerance of ± 0.1 mm.

Measurement	Driver SID-IIs # 056	Left Rear Pass. SID-IIs # 020
HH	224	N/A
HW	519	N/A
HZ	181	N/A
NR/NB	194	858
CD/CB	N/A	839
CS	152	N/A
KDL(KDA°)/KBL(KBA°)	52/(34.0°)	400/(1.7°)
KDR(KDA°)/KBR(KBA°)	44/(43.4°)	397/(1.6°)
PA°	20.6°	20.0°
PHX	308	214
PHZ	125	289

Note: 2-door vehicle shown. Rear dummy PHX and PHZ measurements for 4-door vehicle would use the C-post striker as a reference point.

¹ Measurement point not recorded.

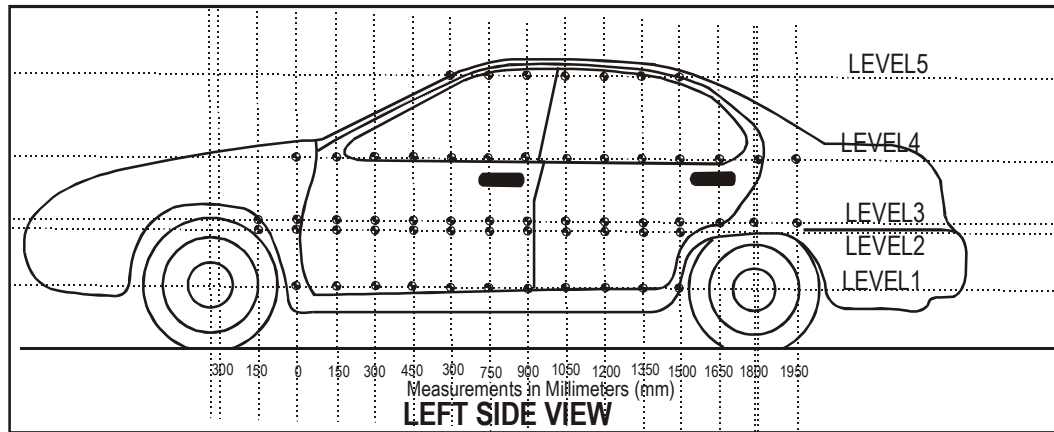
Figure 5 SID-IIs Lateral Clearance Dimensions



Note: All measurements were recorded using TRC Inc.'s FARO Arm with a tolerance of ± 0.1 mm.

Measurement	Driver SID-IIs # 056	Left Rear Pass. SID-IIs # 020
HR	238	217
HS	337	313
AD	168	100
HD	218	178

Figure 6 Vehicle Side Measurements



Level 5 - Window Top

Level 4 - Window Sill

Level 3 - Mid-Door

Level 2 - Occupant H-Point

Level 1 - Axle Centerline Height or Sill Top Height

Measurements Are Taken When The Vehicle Is In The “As Tested” Configuration.

Measurements along the vertical 750 mm line shown above:

Level 5 @ Window Top	=	<u>1400</u>	mm
Level 4 @ Window Sill	=	<u>915</u>	mm
Level 3 @ Mid Door	=	<u>630</u>	mm
Level 2 @ Occupant H-Point	=	<u>543</u>	mm
Level 1 @ Axle Centerline Height (or Sill Top Height)	=	<u>272</u>	mm

Table 9 Vehicle Exterior Crush Profiles - All Levels

Location	Height		(mm) From Impact Point													
			-1200	-1050	-900	-750	-600	-450	-300	-150	0	150	300	450	600	750
Level 1 Side Sill	272	Pre	---	---	---	---	---	---	---	---	811	803	803	805	807	810
		Post	---	---	---	---	---	---	---	---	813	819	696	689	682	675
		Crush	---	---	---	---	---	---	---	---	-2	-16	107	116	125	135
Level 2 H-Point	543	Pre	---	---	762	797	842	---	---	---	840	835	838	840	842	842
		Post	---	---	---	---	---	---	---	---	855	675	653	634	623	607
		Crush	---	---	---	---	---	---	---	---	-15	160	185	206	219	235
Level 3 Mid-Door	630	Pre	---	---	756	793	837	---	---	856	835	838	842	845	848	850
		Post	---	---	751	792	840	---	---	869	845	717	673	659	642	637
		Crush	---	---	5	1	-3	---	---	-13	-10	121	169	186	206	213
Level 4 Window Sill	915	Pre	---	---	---	---	716	735	751	763	779	780	785	790	793	797
		Post	---	---	---	---	713	733	751	764	783	766	736	694	683	672
		Crush	---	---	---	---	3	2	0	-1	-4	14	49	96	110	125
Level 5 Window Top	1400	Pre	---	---	---	---	---	---	---	---	---	---	---	---	---	539
		Post	---	---	---	---	---	---	---	---	---	---	---	---	---	542
		Crush	---	---	---	---	---	---	---	---	---	---	---	---	---	-3

All measurements were recorded using TRC Inc.'s FARO Arm with a tolerance of ± 0.1 mm.

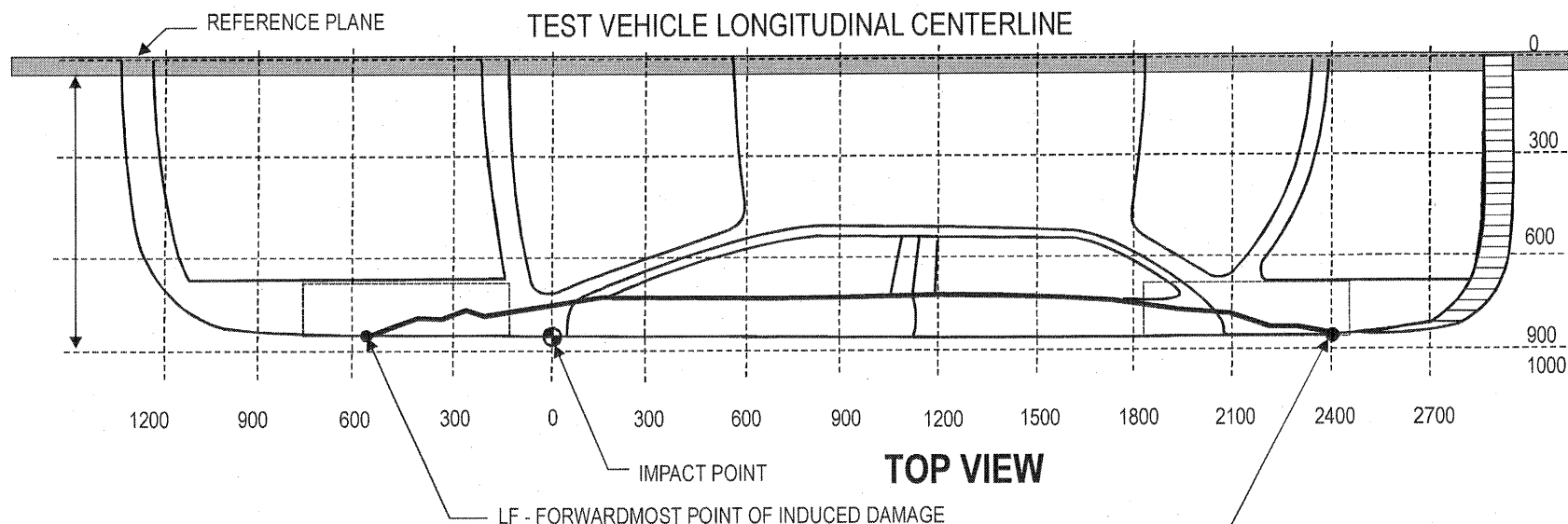
Table 9 Vehicle Exterior Crush Profiles - All Levels, Cont'd.

Location	Height		(mm) From Impact Point												
			900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700
Level 1 Side Sill	272	Pre	810	811	811	812	812	811	816	---	---	---	---	---	---
		Post	669	662	669	675	704	714	753	---	---	---	---	---	---
		Crush	141	149	142	137	108	97	63	---	---	---	---	---	---
Level 2 H-Point	543	Pre	843	844	842	842	841	840	838	856	---	---	---	830	798
		Post	584	576	568	565	571	578	621	790	---	---	---	---	---
		Crush	259	268	274	277	270	262	217	66	---	---	---	---	---
Level 3 Mid-Door	630	Pre	851	852	851	853	853	852	849	845	861	---	851	816	802
		Post	623	616	609	618	616	611	636	722	842	---	903	---	---
		Crush	228	236	242	235	237	241	213	123	19	---	-52	---	---
Level 4 Window Sill	915	Pre	803	806	806	806	807	806	805	800	795	790	783	773	759
		Post	658	647	623	614	631	646	680	756	833	820	829	835	835
		Crush	145	159	183	192	176	160	125	44	-38	-30	-46	-62	-76
Level 5 Window Top	1400	Pre	549	552	552	550	547	542	537	527	---	---	---	---	---
		Post	541	526	503	508	528	548	563	568	---	---	---	---	---
		Crush	8	26	49	42	19	-6	-26	-41	---	---	---	---	---

All measurements were recorded using TRC Inc.'s FARO Arm with a tolerance of ± 0.1 mm.

Figure 7 Vehicle Damage Profile Distances

NOTE: All measurements were recorded using TRC Inc.'s FARO Arm with a tolerance of plus or minus 0.1 mm.



MEASUREMENT CONVENTIONS:

Forward of the impact point (towards front of vehicle) is considered negative (-)

Rearward of the impact point (towards rear end of vehicle) is considered positive (+)

DPD Measurements	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
6: LF = 150 mm (Level 2)	835	675	160
5: 600 mm (Level 2)	842	623	219
4: 900 mm (Level 2)	843	587	259
3: 1200 mm (Level 2)	842	568	274
2: 1500 mm (Level 2)	841	571	270
1: LR = 1950 mm (Level 3)	845	722	123

Full length of induced damage was 1800 mm.

Figure 8 Exterior Static Crush For Impactor Face

(Grid as looking at MDB from front)

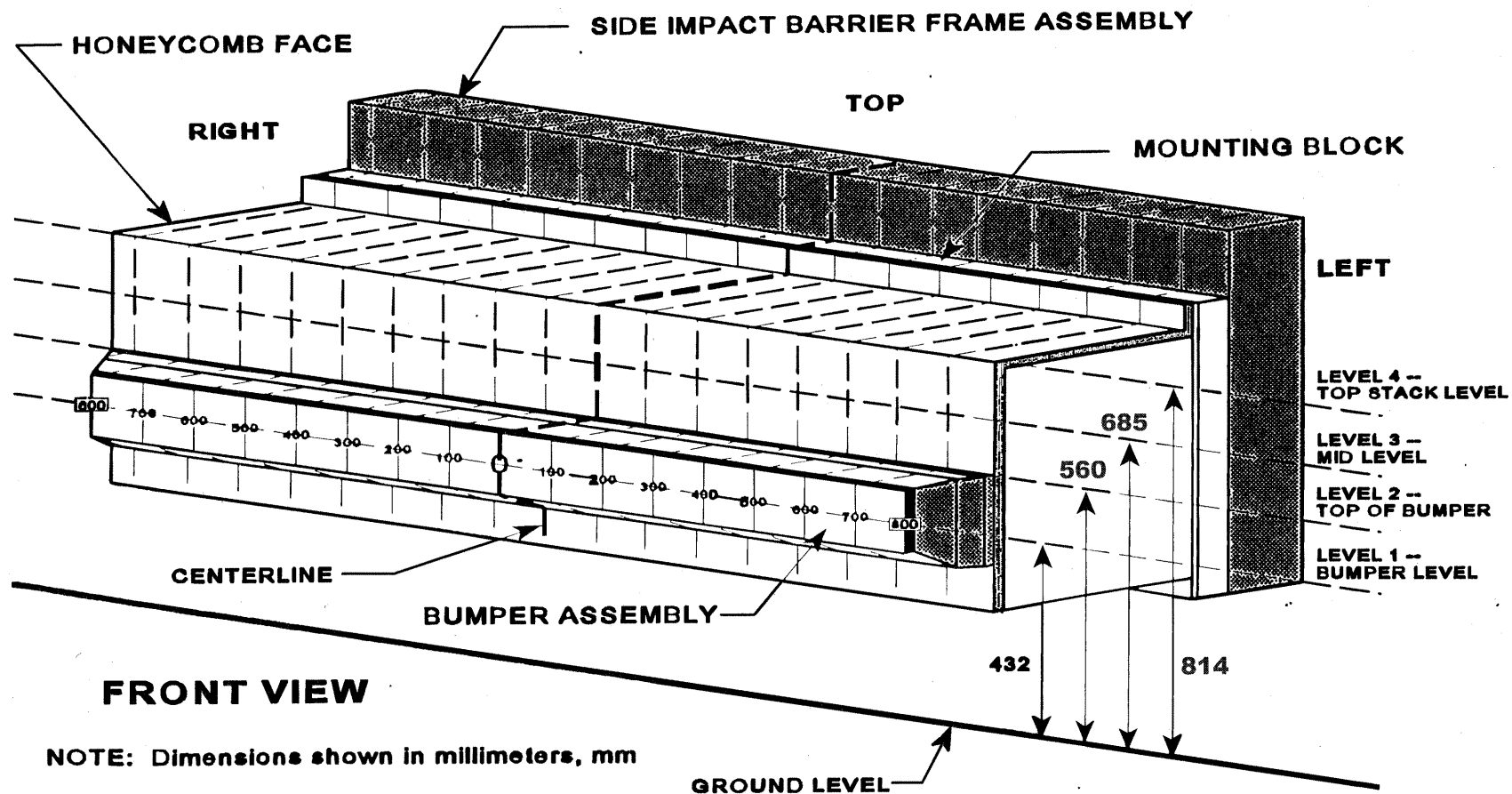


Table 10 Exterior Static Crush For Impactor Face

		Distance Right of Center (mm)									Distance Left of Center (mm)							
Location	Height At CL	800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800
Top Stack Level - Level D	814	-10	12	15	13	10	6	-4	2	1	-2	-4	-7	-14	-31	-60	-109	-154
Mid Level Level C	685	12	13	11	9	6	4	2	1	-1	-3	-4	-6	-8	-14	-26	-68	-106
Top Bumper Level-Level B	560	-8	1	5	3	2	0	-2	-4	-5	-11	-16	-23	-29	-35	-43	-69	-81
Mid Bumper Level - Level A	432	-49	-41	-34	-27	-26	-30	-31	-34	-39	-43	-48	-55	-61	-67	-80	-105	-118

All measurements were recorded using TRC Inc.'s FARO Arm with a tolerance of ± 0.1 mm.

Table 11 Deformable Barrier Face Profiles

Deformable Barrier Face Profile

Level D - Top Stack

Pre-Test

Index	Xmm	Ymm	Zmm
1	-384	801	-52
2	-384	701	-52
3	-384	601	-52
4	-384	502	-52
5	-384	401	-52
6	-384	302	-52
7	-385	201	-51
8	-384	102	-53
9	-384	1	-53
10	-384	-99	-53
11	-385	-198	-53
12	-385	-299	-52
13	-384	-398	-53
14	-385	-499	-52
15	-385	-598	-52
16	-384	-698	-53
17	-384	-798	-53

Post-Test

Index	Xmm	Ymm	Zmm
1	-374	790	-73
2	-396	692	-69
3	-399	593	-68
4	-397	494	-66
5	-394	393	-66
6	-391	294	-65
7	-381	193	-63
8	-386	94	-62
9	-385	-7	-61
10	-383	-107	-60
11	-381	-205	-58
12	-378	-306	-57
13	-370	-406	-57
14	-354	-504	-56
15	-324	-599	-58
16	-275	-685	-67
17	-230	-769	-73

Difference

Index	Xmm	Ymm	Zmm
1	-10	11	21
2	12	9	17
3	15	8	16
4	13	8	14
5	10	8	14
6	6	8	13
7	-4	9	12
8	2	8	10
9	1	8	8
10	-2	8	7
11	-4	8	6
12	-7	8	5
13	-14	8	4
14	-31	6	4
15	-60	1	6
16	-109	-13	14
17	-154	-29	20

Table 11 Deformable Barrier Face Profiles, Cont'd.

Deformable Barrier Face Profile Cont'd.

Level C - Mid Level

Pre-Test

Index	Xmm	Ymm	Zmm
18	-384	802	-181
19	-384	702	-181
20	-384	602	-181
21	-384	502	-181
22	-383	401	-181
23	-384	302	-181
24	-384	201	-181
25	-384	102	-181
26	-384	1	-181
27	-384	-99	-181
28	-384	-198	-181
29	-384	-299	-181
30	-384	-398	-181
31	-384	-498	-181
32	-384	-598	-181
33	-384	-698	-181
34	-384	-798	-182

Post-Test

Index	Xmm	Ymm	Zmm
18	-396	792	-198
19	-397	692	-197
20	-394	592	-197
21	-392	493	-195
22	-390	392	-194
23	-388	293	-193
24	-386	192	-192
25	-385	92	-191
26	-383	-9	-189
27	-381	-109	-188
28	-380	-207	-187
29	-378	-308	-185
30	-376	-408	-185
31	-370	-508	-183
32	-358	-607	-182
33	-315	-697	-188
34	-279	-787	-190

Difference

Index	Xmm	Ymm	Zmm
18	12	10	17
19	13	9	17
20	11	9	16
21	9	10	14
22	6	9	13
23	4	9	12
24	2	10	11
25	1	10	10
26	-1	10	8
27	-3	10	7
28	-4	9	6
29	-6	10	4
30	-8	10	3
31	-14	10	2
32	-26	9	1
33	-68	-1	7
34	-106	-12	8

Table 11 Deformable Barrier Face Profiles, Cont'd.

Deformable Barrier Face Profile Cont'd.

Level B - Top of Bumper

Pre-Test

Index	Xmm	Ymm	Zmm
35	-384	801	-307
36	-384	702	-306
37	-384	601	-307
38	-384	502	-307
39	-384	402	-306
40	-384	301	-306
41	-384	202	-306
42	-384	102	-307
43	-384	2	-306
44	-384	-98	-306
45	-384	-198	-306
46	-384	-299	-307
47	-384	-398	-306
48	-384	-498	-307
49	-384	-598	-307
50	-384	-698	-307
51	-383	-797	-306

Post-Test

Index	Xmm	Ymm	Zmm
35	-376	790	-320
36	-384	691	-321
37	-389	590	-322
38	-387	491	-320
39	-386	391	-319
40	-384	290	-319
41	-382	190	-317
42	-380	90	-316
43	-379	-10	-312
44	-373	-109	-312
45	-368	-209	-310
46	-362	-309	-307
47	-355	-409	-304
48	-349	-509	-303
49	-341	-609	-302
50	-314	-706	-294
51	-302	-803	-300

Difference

Index	Xmm	Ymm	Zmm
35	-8	11	13
36	1	11	15
37	5	11	15
38	3	11	14
39	2	11	13
40	0	11	12
41	-2	11	11
42	-4	12	9
43	-5	11	6
44	-11	11	6
45	-16	11	3
46	-23	11	0
47	-29	11	-3
48	-35	11	-4
49	-43	11	-5
50	-69	8	-13
51	-81	6	-6

Table 11 Deformable Barrier Face Profiles, Cont'd.

Deformable Barrier Face Profile Cont'd.

Level A - Mid Bumper

Pre-Test

Index	Xmm	Ymm	Zmm
52	-473	801	-434
53	-487	702	-434
54	-487	602	-435
55	-488	502	-436
56	-488	403	-436
57	-487	303	-437
58	-487	203	-437
59	-488	103	-438
60	-488	2	-438
61	-488	-97	-439
62	-488	-197	-440
63	-488	-297	-441
64	-488	-397	-441
65	-488	-497	-442
66	-488	-597	-442
67	-487	-697	-443
68	-475	-795	-442

Post-Test

Index	Xmm	Ymm	Zmm
52	-425	783	-456
53	-446	685	-455
54	-454	586	-453
55	-461	486	-451
56	-462	387	-449
57	-457	286	-446
58	-457	186	-445
59	-453	86	-443
60	-449	-14	-442
61	-445	-114	-441
62	-439	-214	-439
63	-433	-315	-439
64	-427	-414	-437
65	-421	-514	-435
66	-407	-614	-432
67	-383	-711	-429
68	-357	-807	-425

Difference

Index	Xmm	Ymm	Zmm
52	-49	18	22
53	-41	17	21
54	-34	16	18
55	-27	16	16
56	-26	17	13
57	-30	17	10
58	-31	17	8
59	-34	17	6
60	-39	16	4
61	-43	17	2
62	-48	17	-1
63	-55	18	-2
64	-61	18	-5
65	-67	18	-7
66	-80	17	-10
67	-105	13	-14
68	-118	11	-17

Figure 9 Deformable Barrier Face Profiles

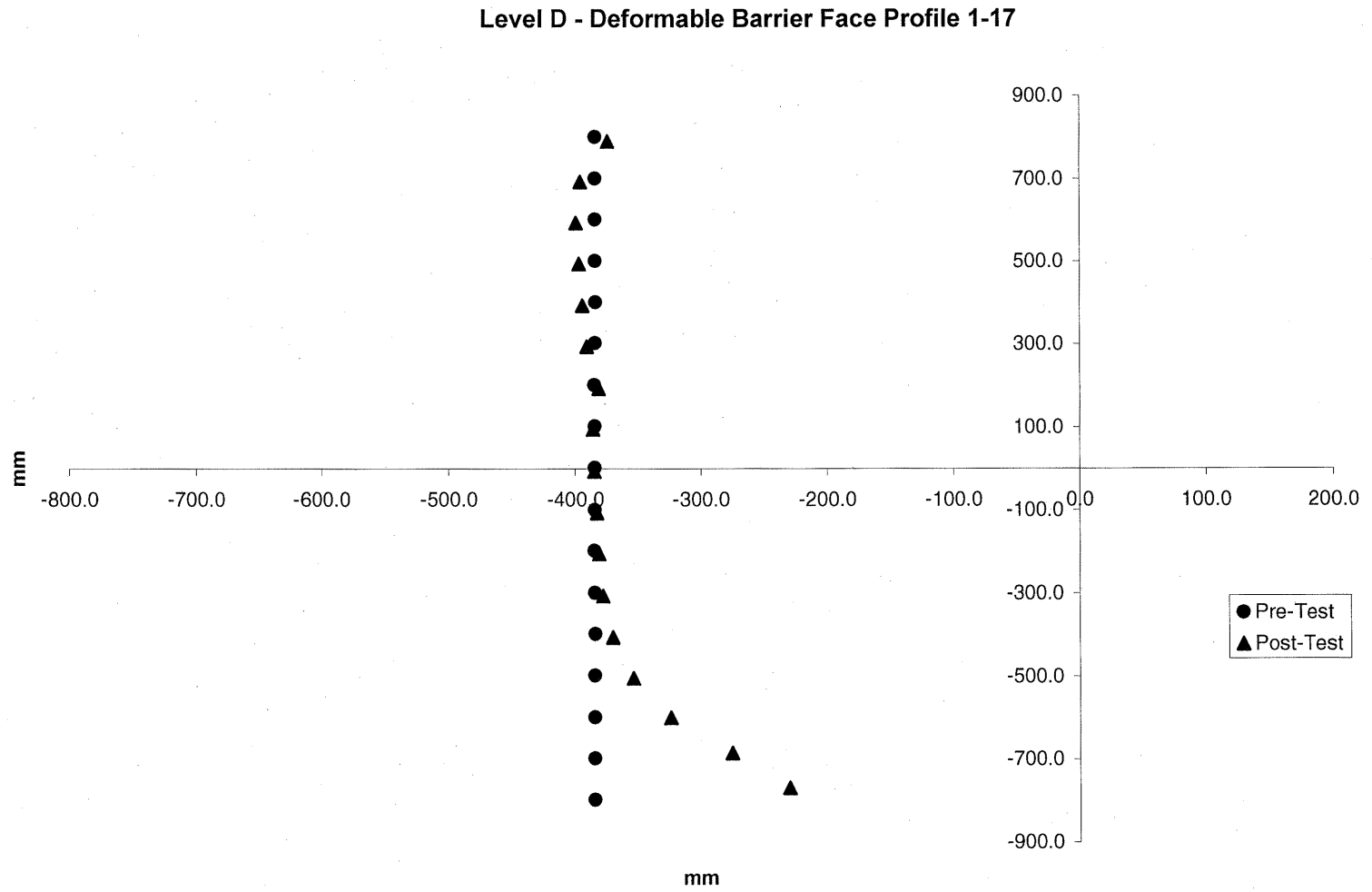
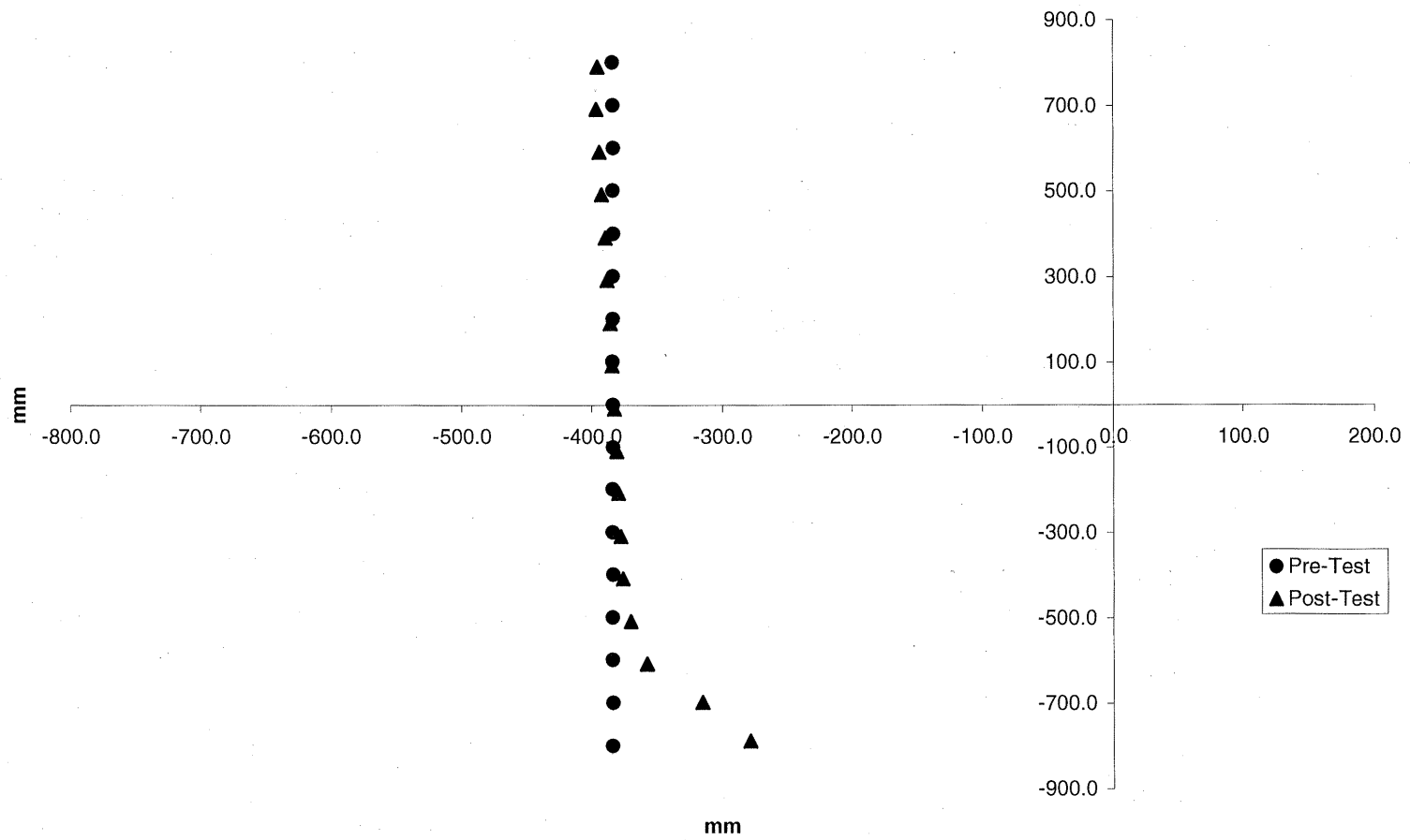


Figure 9 Deformable Barrier Face Profiles, Cont'd.

Level C - Deformable Barrier Face Profile 18-34



4-18

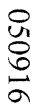


Figure 9 Deformable Barrier Face Profiles, Cont'd.

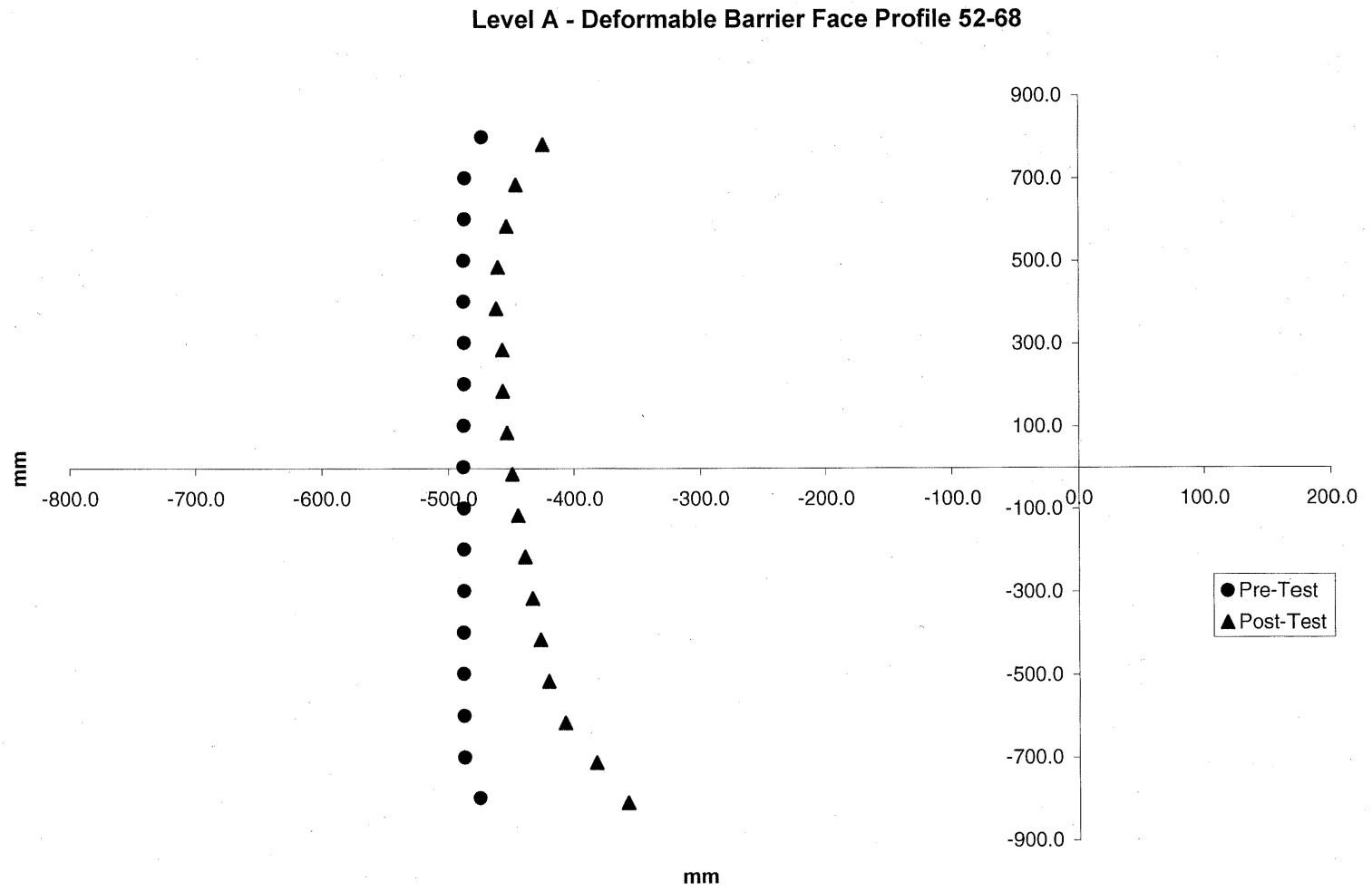
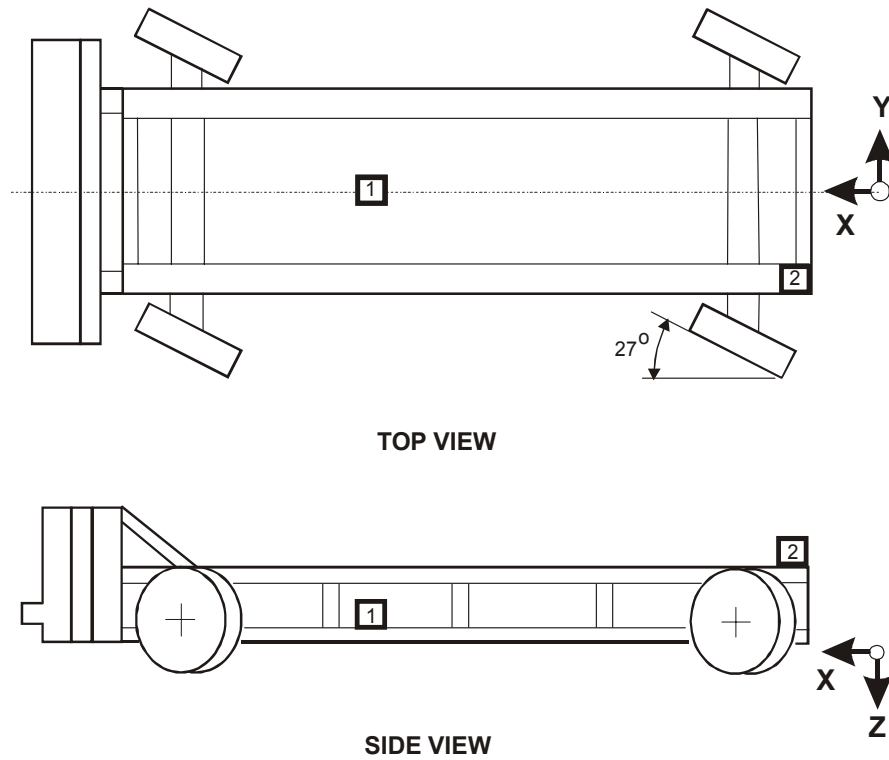


Figure 10 MDB Accelerometer Locations and Data Summary



Accel. No.	Location	Coordinates (millimeters)			Positive Direction		Negative Direction	
		X*	Y*	Z*	Max. (g)	Time (ms)	Max. (g)	Time (ms)
1	MDB Center of Gravity	1853	0	-519				
	Longitudinal X				1.5	141.3	-18.1	37.0
	Lateral Y				2.8	54.1	-7.6	27.8
	Vertical Z				5.5	14.2	-6.7	21.4
	Resultant R				19.1	27.1		
2	Rear Frame Member	411	-738	-628				
	Longitudinal X				2.0	116.8	-20.7	31.0
	Lateral Y				4.6	24.6	-1.5	174.9

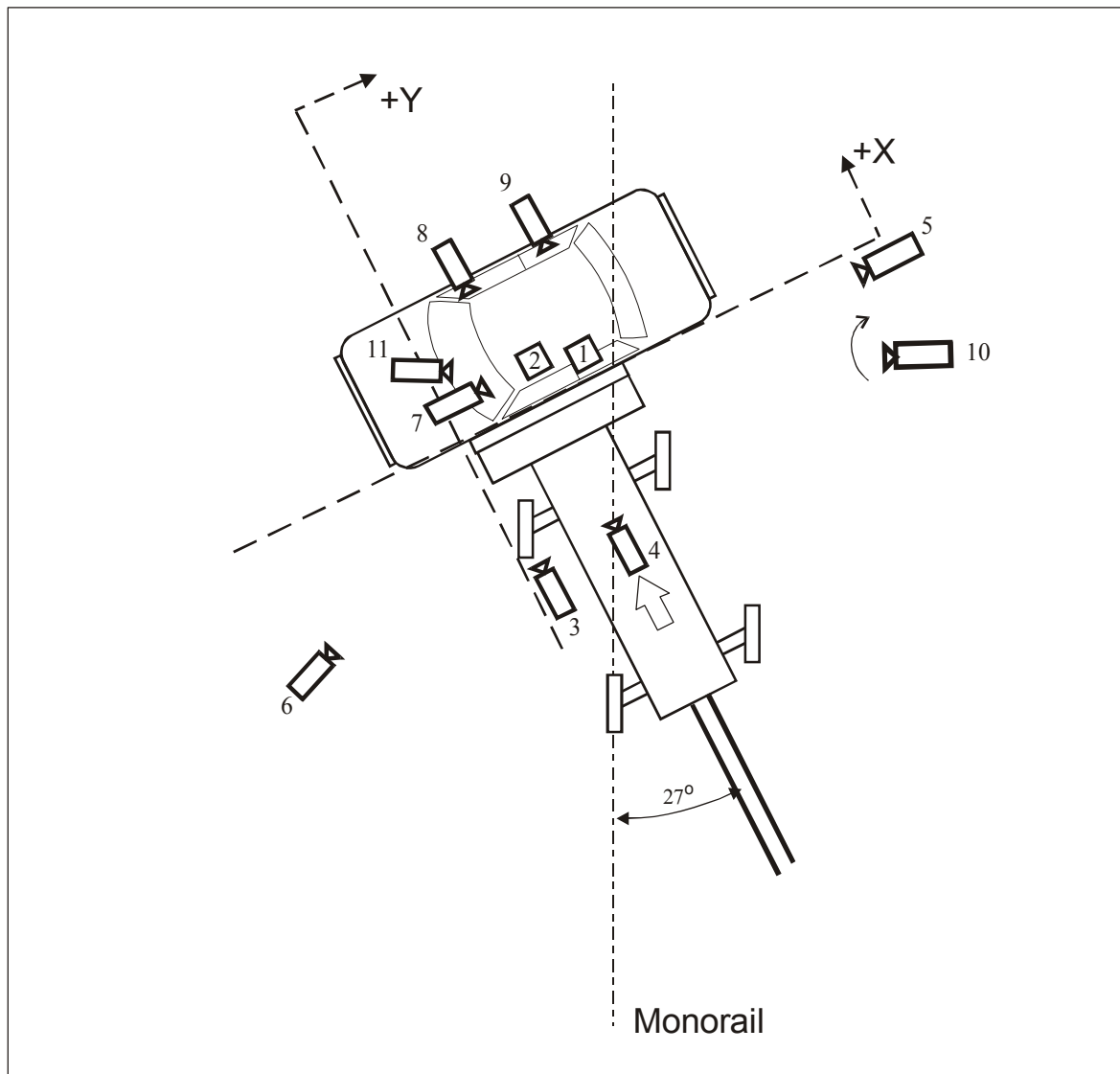
*Reference: X = Rear Bumper (+ Forward)

Y = Vehicle Centerline (+ To Right)

Z = Ground Level (+ Down)

All measurements accurate to within ± 3 mm.

Figure 11 Camera Positions



Impact
Area

Table 12 Camera Information

Camera Number	Location	Location, mm			Angle (deg.)	Lens (mm)	Speed (fps)
		X	Y	Z			
1	Overhead wide	250	2150	-5750	-77.5	12.5	1000
2	Overhead tight	370	1800	-5750	-85.5	50	1000
3	Onboard MDB left side	-1750	-40	-720	-0.5	13	1000
4	Onboard MDB center	-2480	830	-1353	-5.2	25	1000
5	Right wide	0	6700	-960	0.8	12.5	1000
6	Left quarter wide	-2550	-4800	-1005	3.5	25	1000
7	Onboard vehicle front	420	-1600	-1220	4.0	25	1000
8	Onboard side front door	1400	0	-1100	8.0	12.5	1000
9	Onboard side rear door	1400	800	-1150	11.5	12.5	1000
10	Real-time Panning-Video	N/A	N/A	N/A	N/A	Zoom	24
11	Onboard vehicle driver hip	750	-1450	-1700	32.4	50	1000

+X: Forward (referenced to MDB) from impact point

+Y: Rightward (referenced to MDB) from impact point

+Z: Downward from ground level

Appendix A

Photographs



Figure A-1 Pre-Test Front View

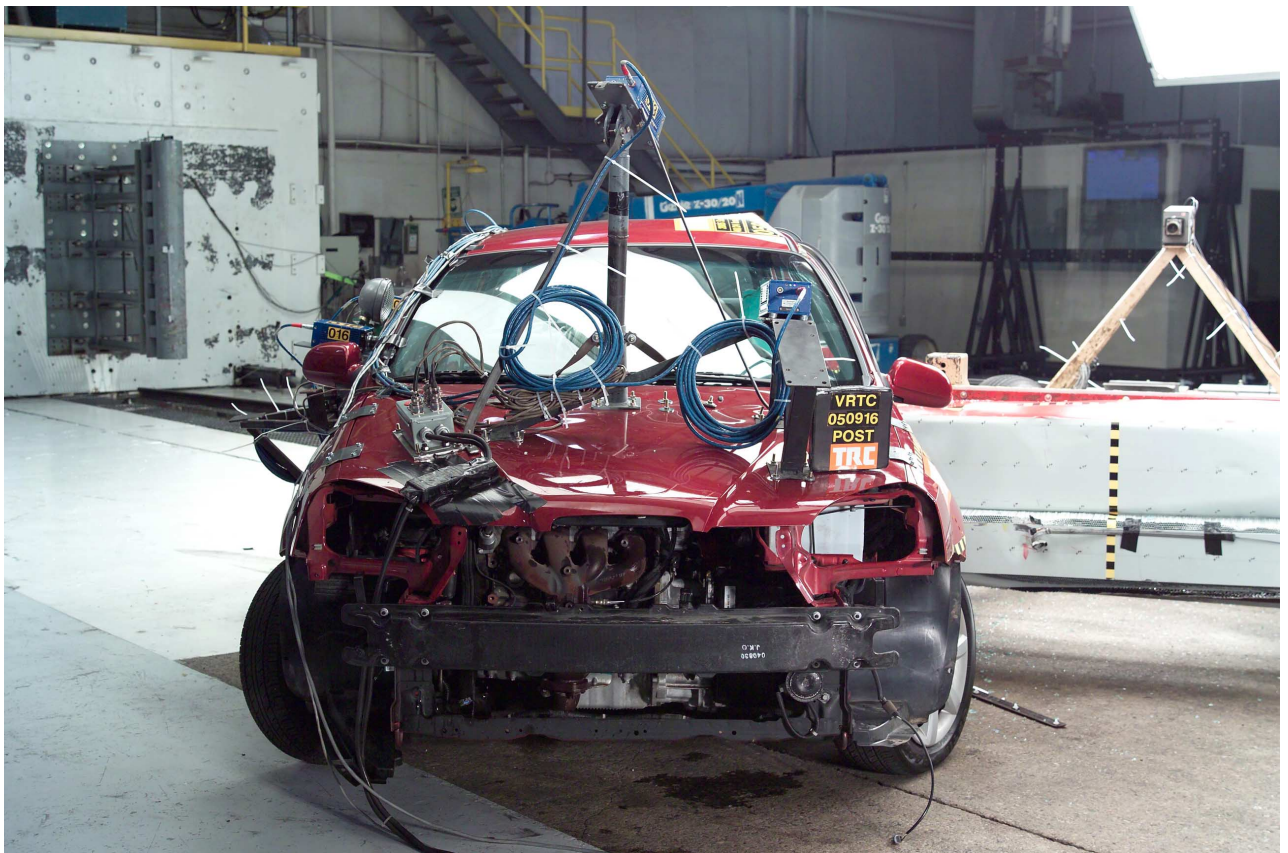


Figure A-2 Post-Test Front View



Figure A-3 Pre-Test Left Front View



Figure A-4 Post-Test Left Front View



Figure A-5 Pre-Test Left Side View



Figure A-6 Post-Test Left Side View



Figure A-7 Pre-Test Left Rear View



Figure A-8 Post-Test Left Rear View



Figure A-9 Pre-Test Rear View

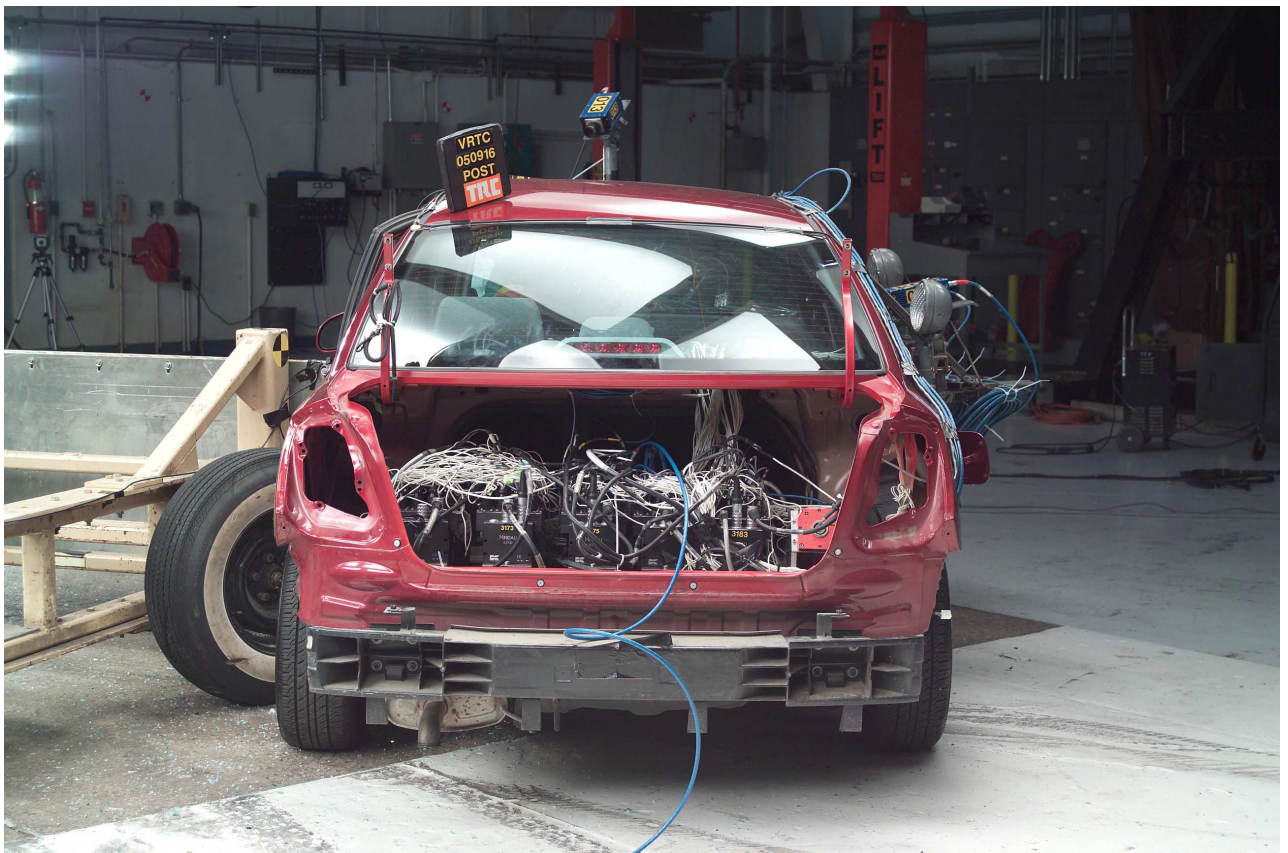


Figure A-10 Post-Test Rear View



Figure A-11 Pre-Test Right Rear View



Figure A-12 Post-Test Right Rear View



Figure A-13 Pre-Test Right Side View



Figure A-14 Post-Test Right Side View



Figure A-15 Pre-Test Right Front View



Figure A-16 Post-Test Right Front View

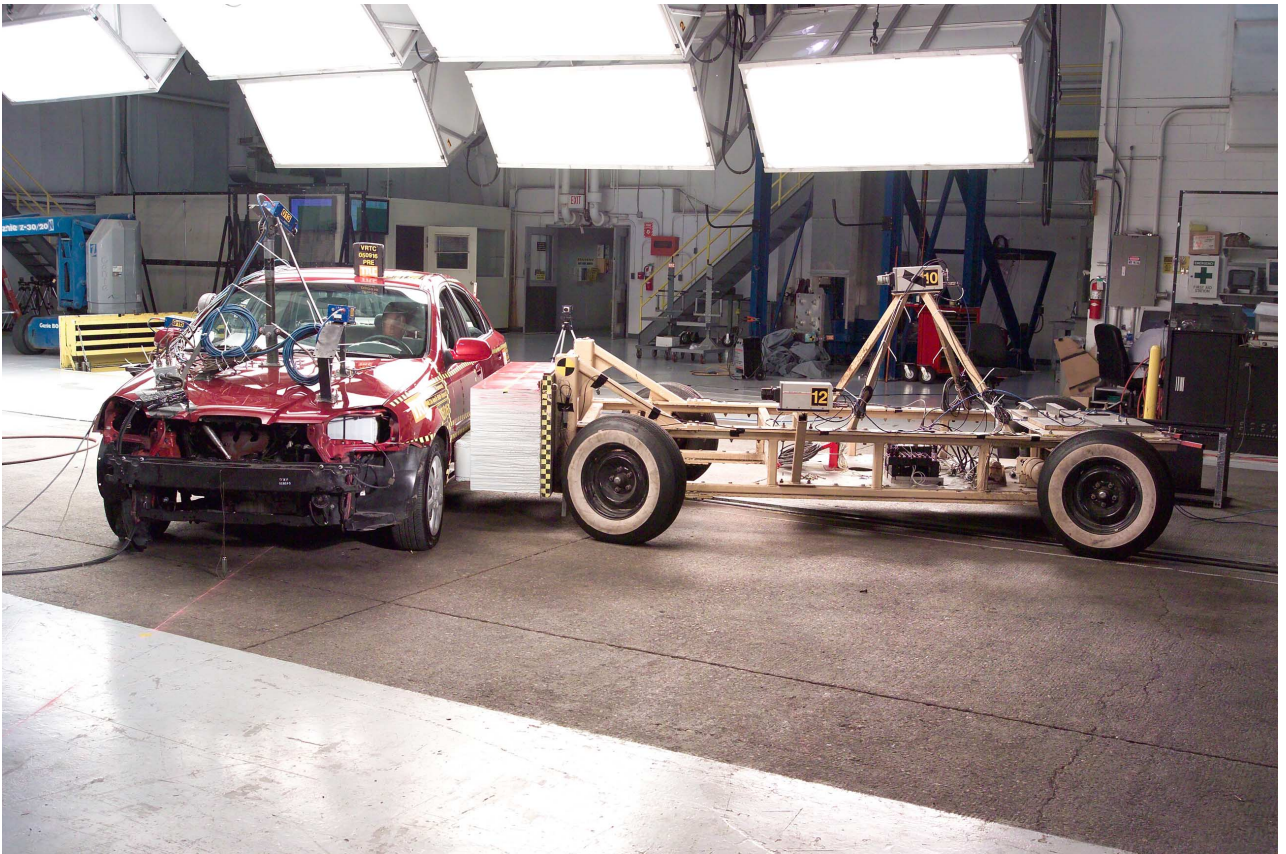


Figure A-17 Pre-Test Front View with MDB in Position



Figure A-18 Post-Test Front View with MDB in Position

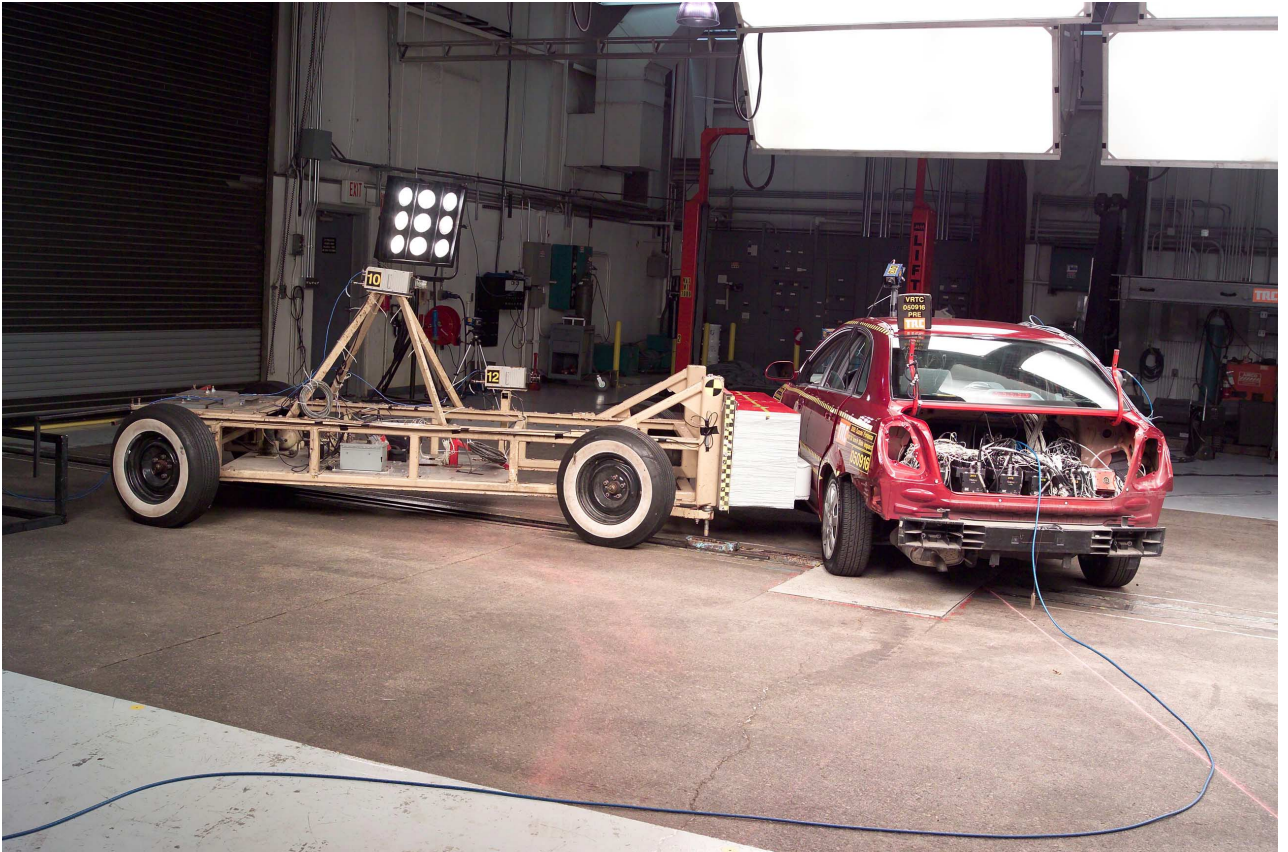


Figure A-19 Pre-Test Rear View with MDB in Position

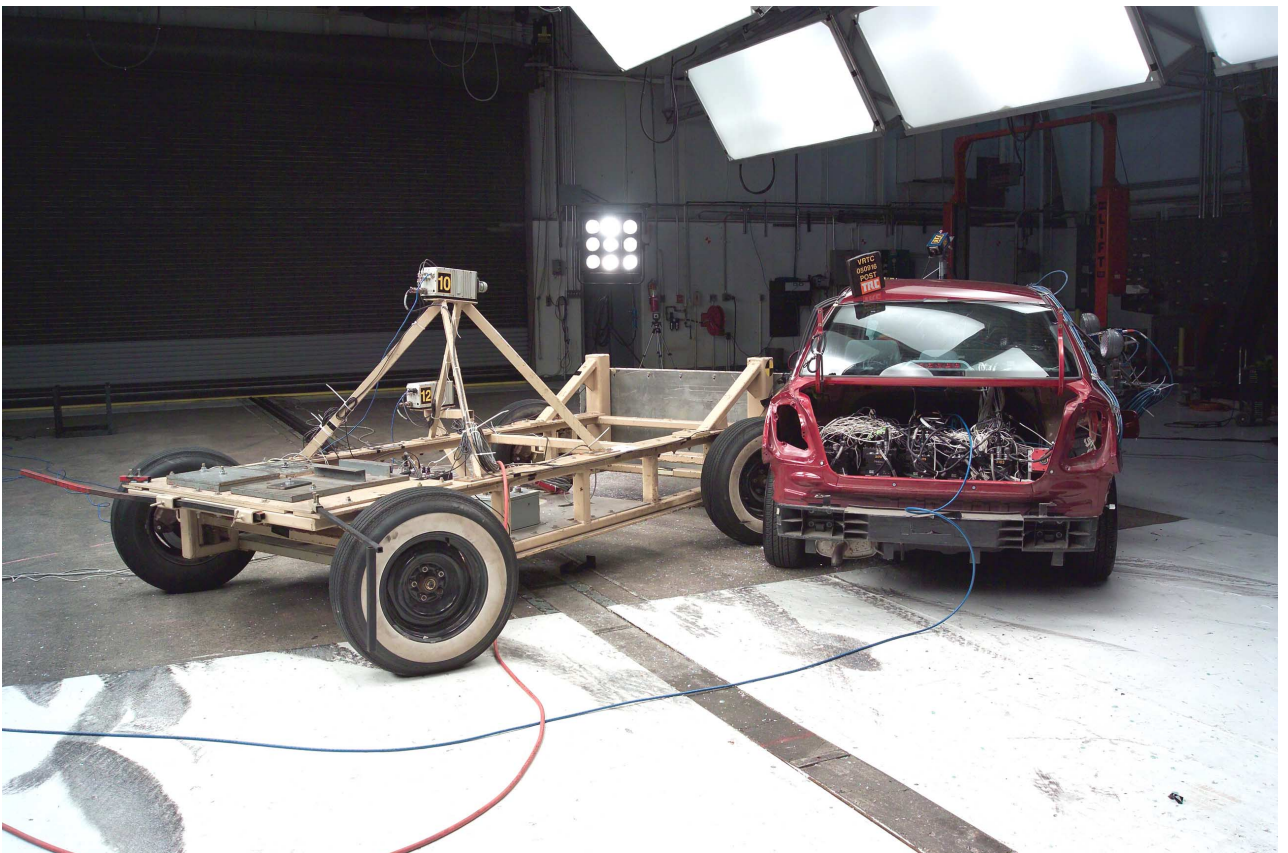


Figure A-20 Post-Test Rear View with MDB in Position

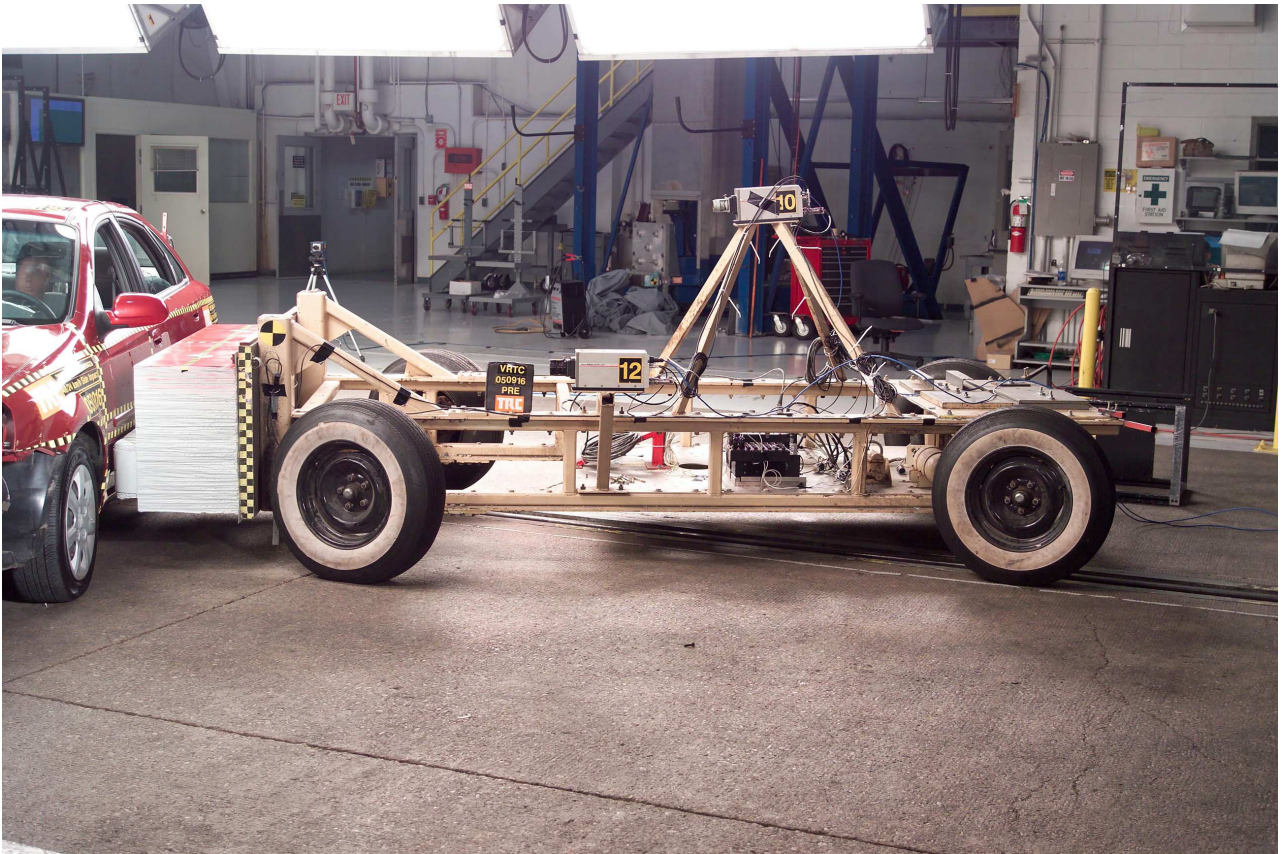


Figure A-21 Pre-Test Left Side View of MDB with Impactor Face in Position



Figure A-22 Post-Test Left Side View of MDB with Impactor Face in Position



Figure A-23 Pre-Test Rear View of MDB with Impactor Face in Position



Figure A-24 Post-Test Rear View of MDB with Impactor Face in Position

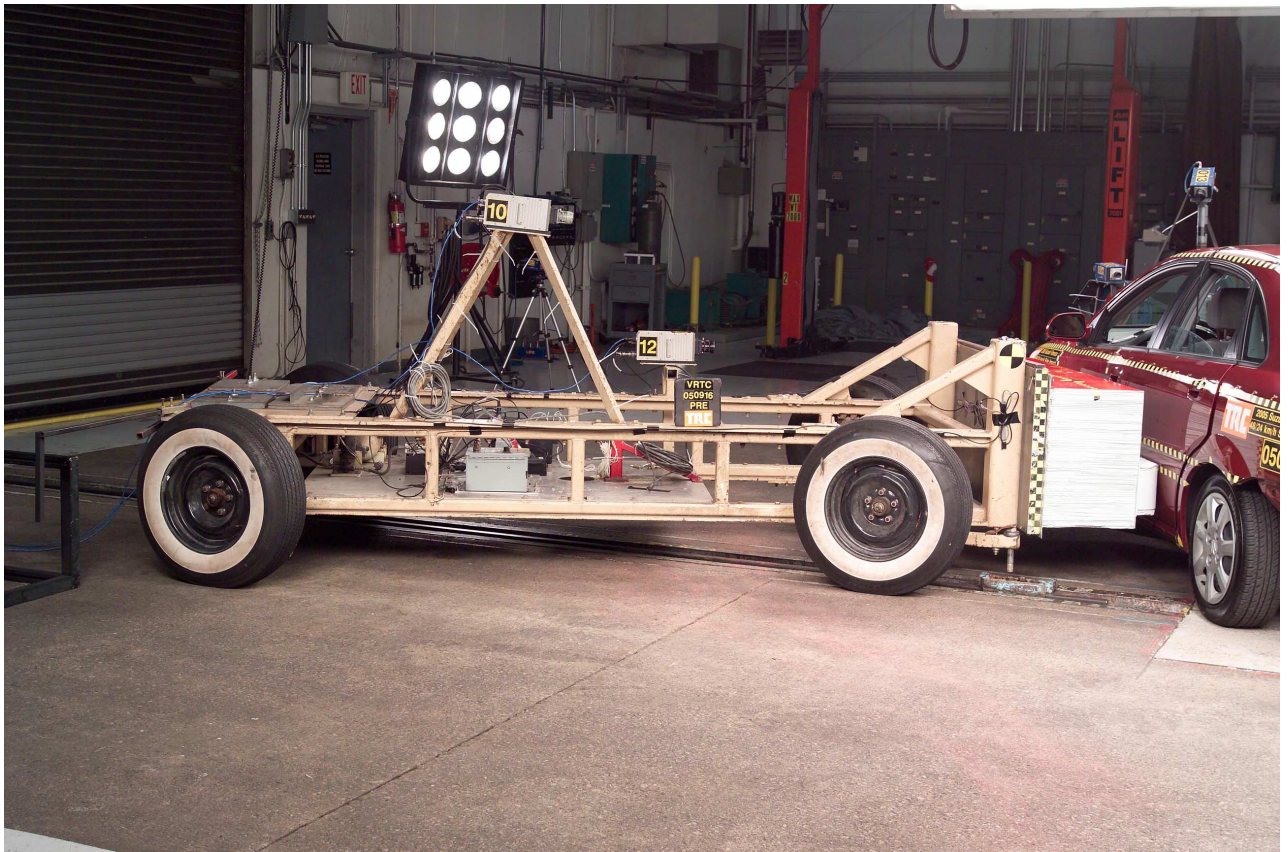


Figure A-25 Pre-Test Right Side View of MDB with Impactor Face in Position



Figure A-26 Post-Test Right Side View of MDB with Impactor Face in Position



Figure A-27 Pre-Test Overhead View of MDB Aligned with Vehicle



Figure A-28 Post-Test Overhead View of MDB

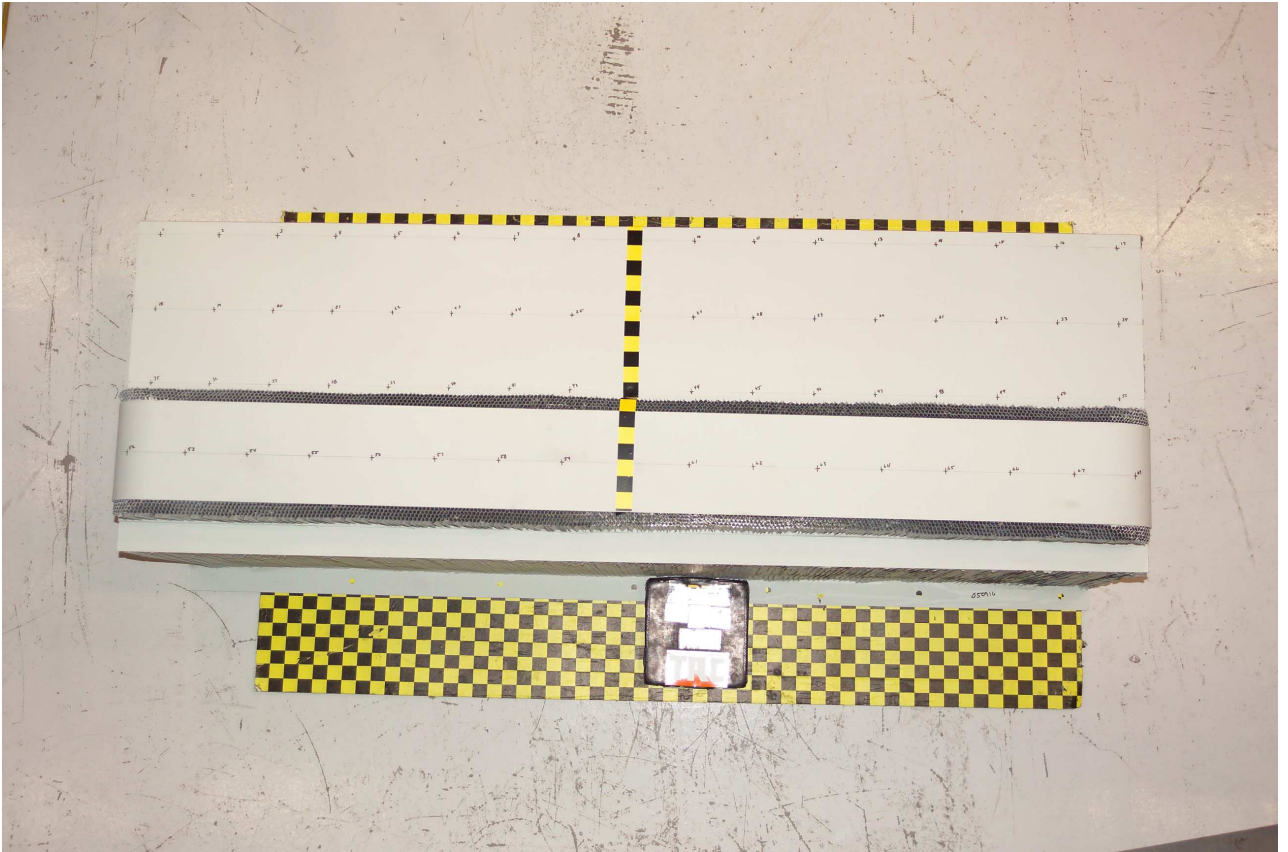


Figure A-29 Pre-Test Frontal View of Impactor Face

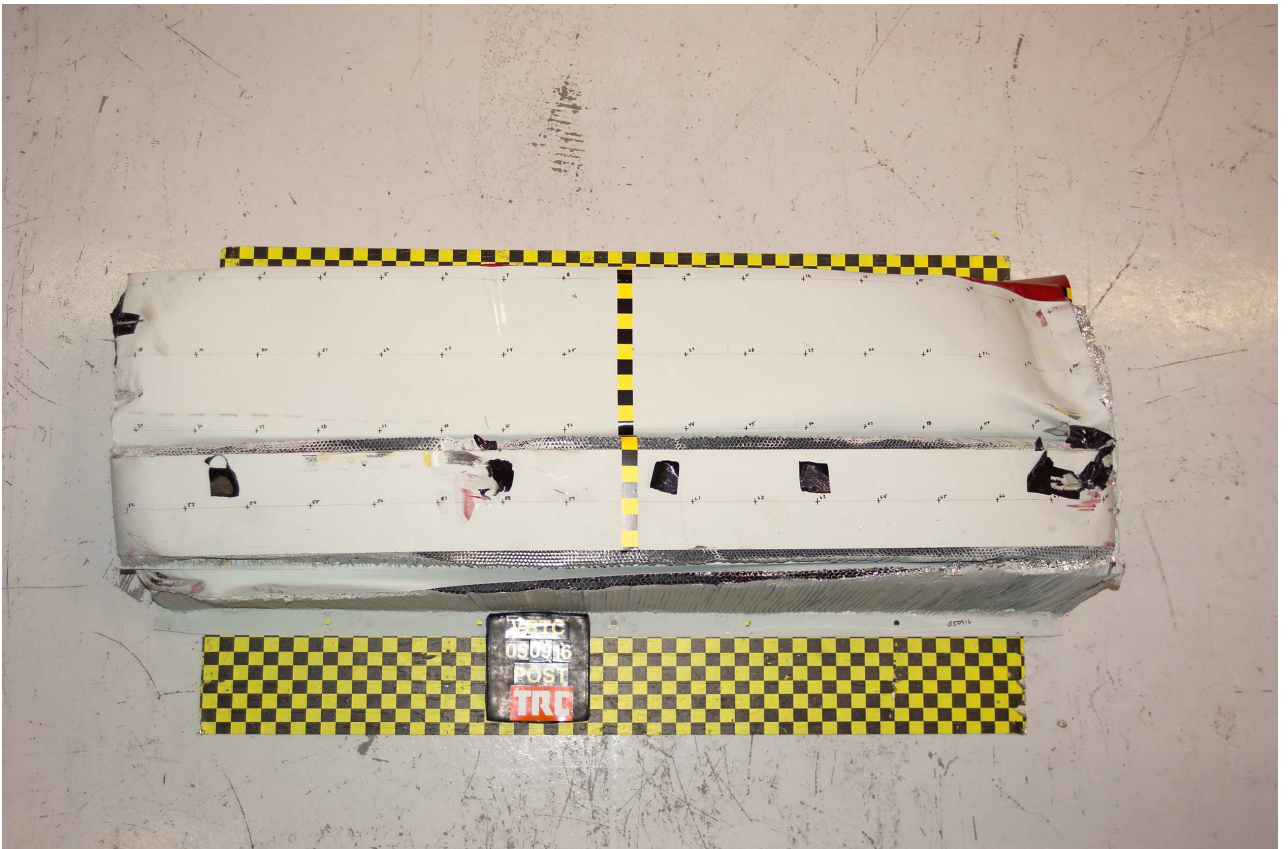


Figure A-30 Post-Test Frontal View of Impactor Face

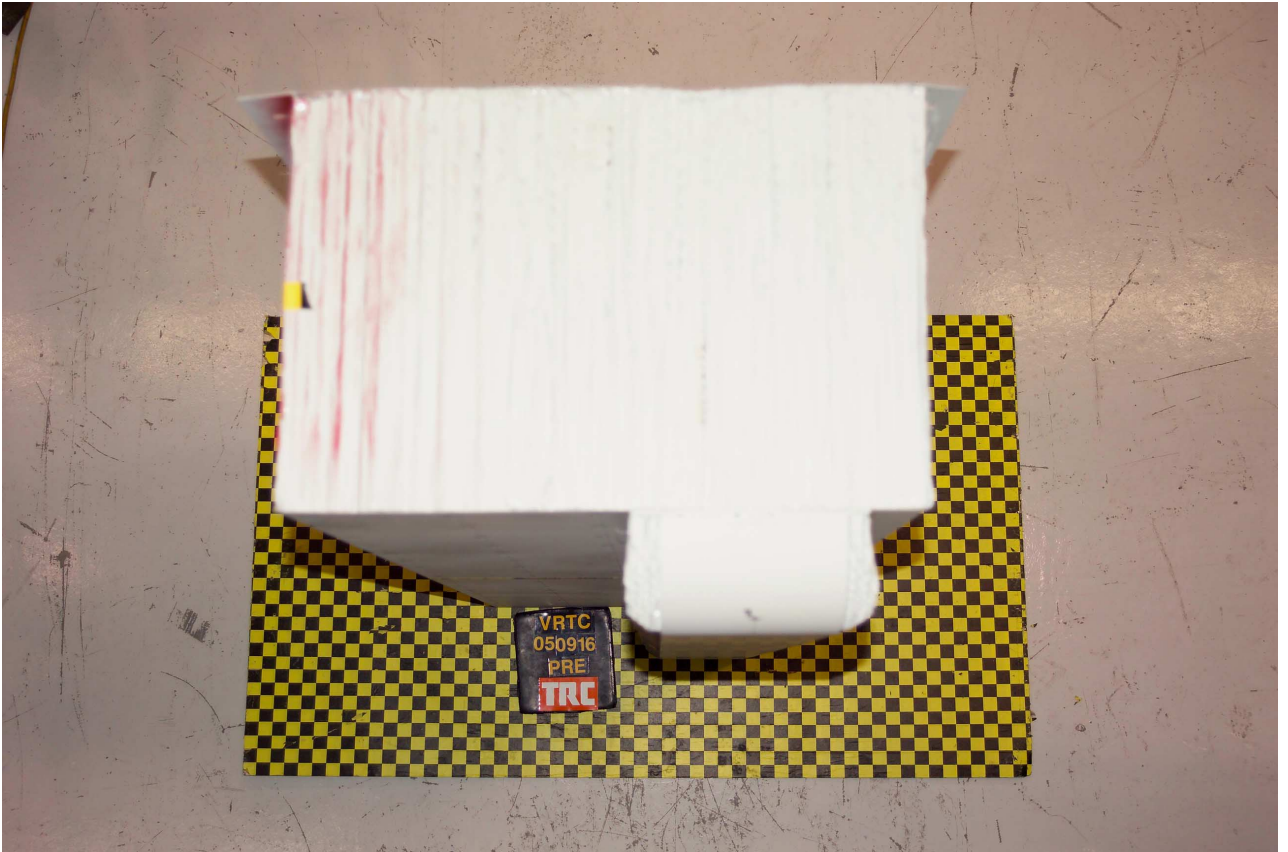


Figure A-31 Pre-Test Left Side View of Impactor Face

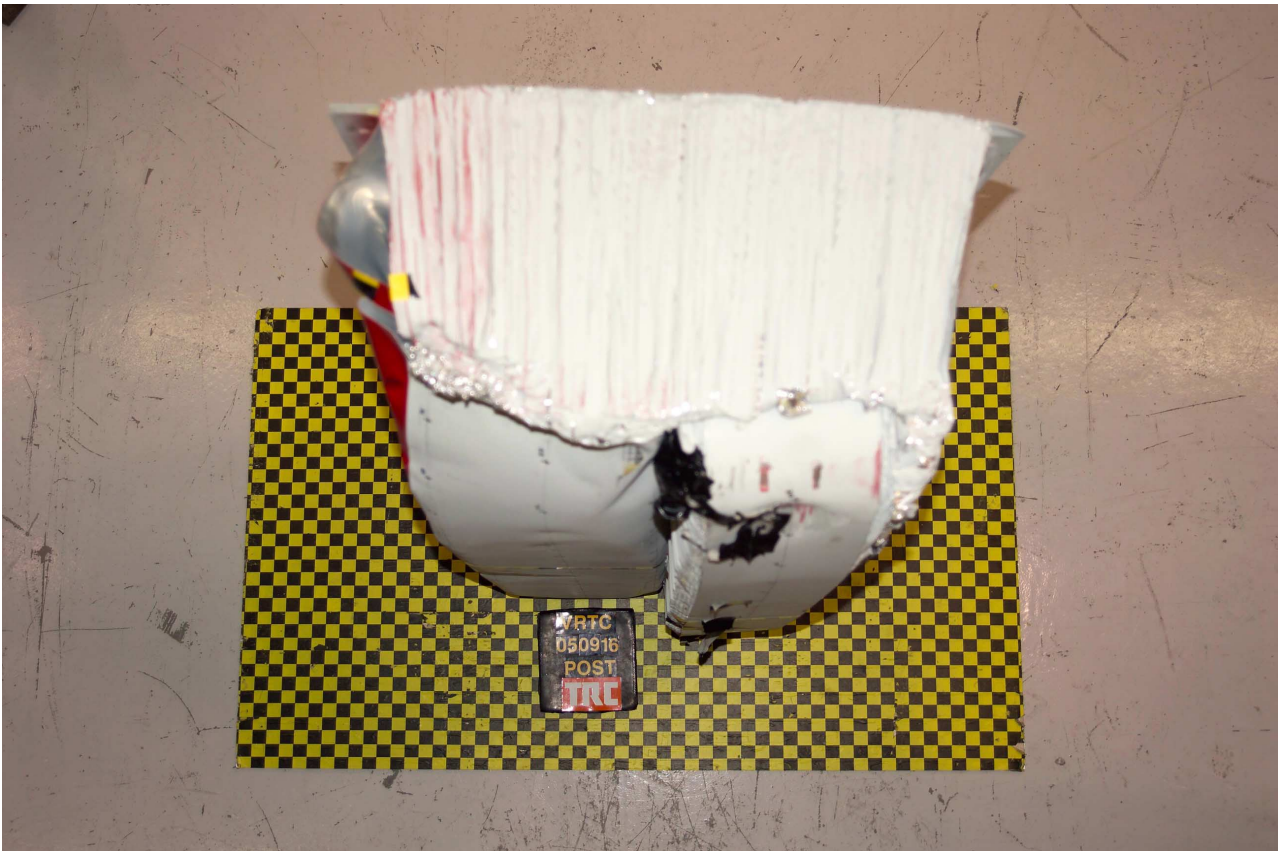


Figure A-32 Post-Test Left Side View of Impactor Face



Figure A-33 Pre-Test Right Side View of Impactor Face

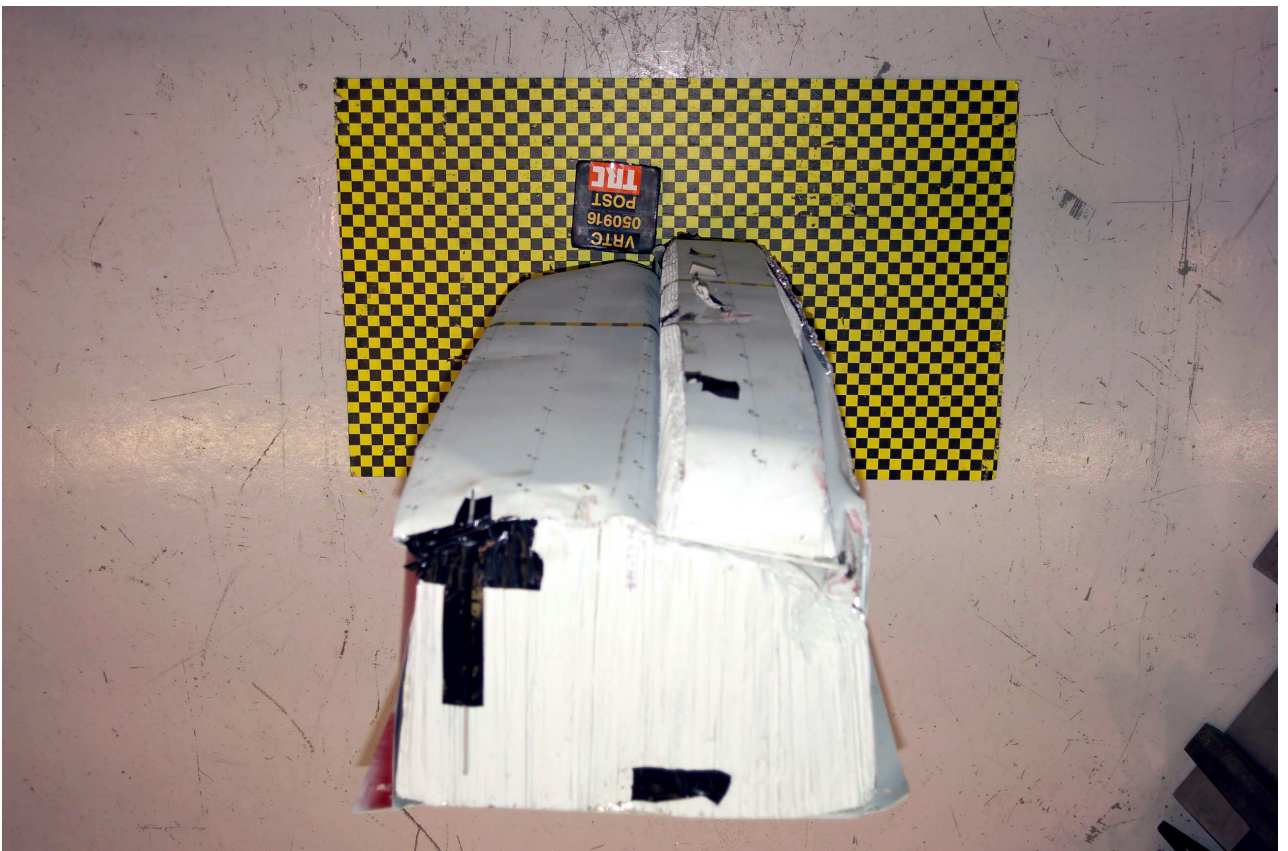


Figure A-34 Post-Test Right Side View of Impactor Face

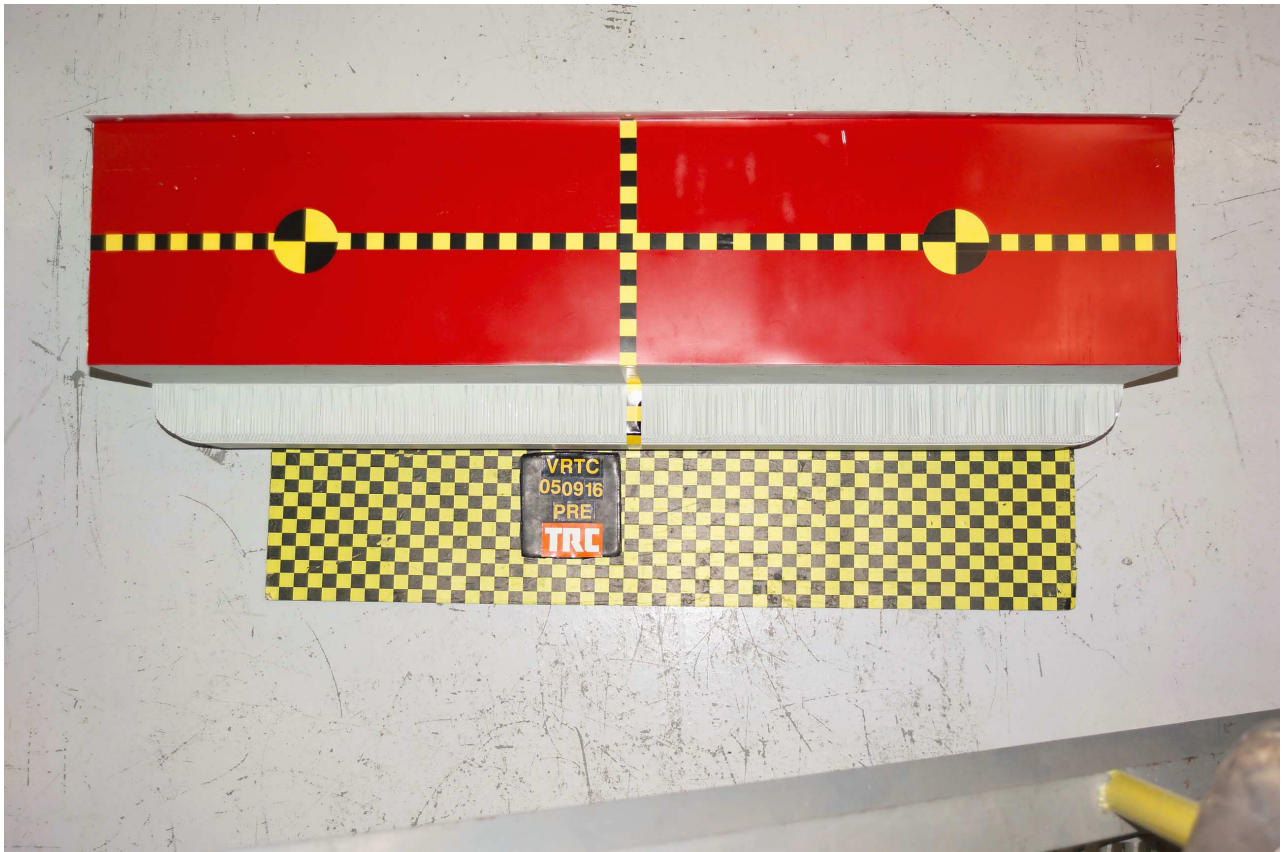


Figure A-35 Pre-Test Top View of Impactor Face

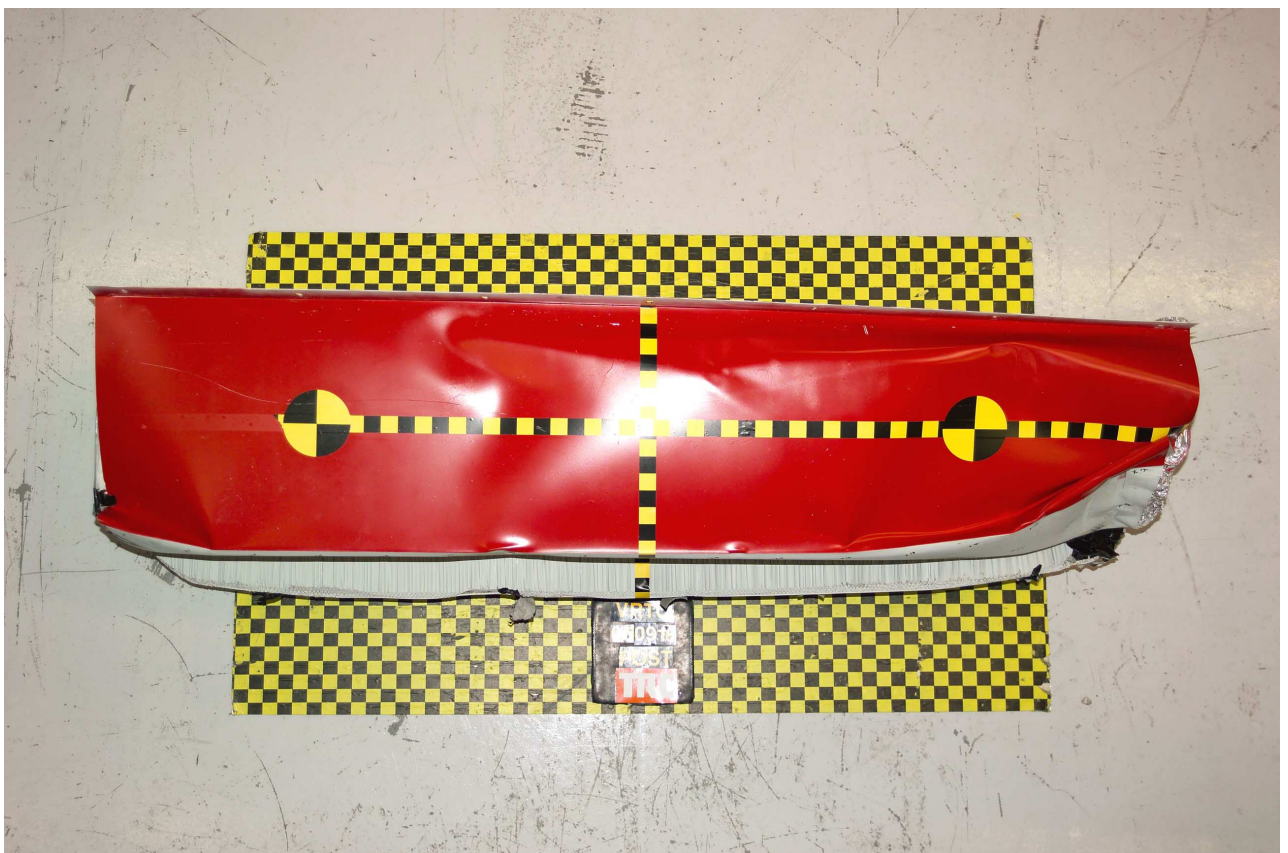


Figure A-36 Post-Test Top View of Impactor Face



Figure A-37 Pre-Test View of MDB Showing Contact Switches in Place

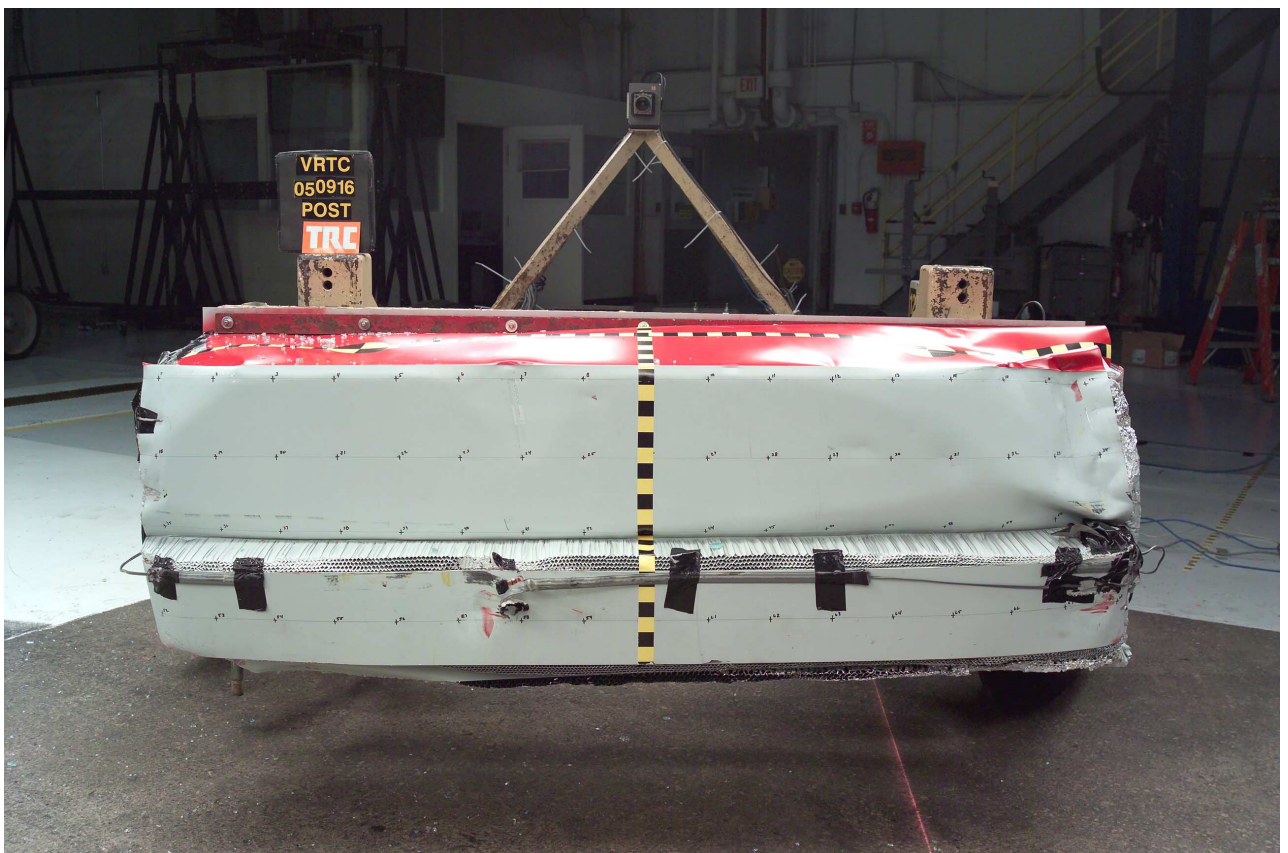


Figure A-38 Post-Test View of MDB Showing Contact Switches in Place



Figure A-39 Pre-Test Primary Impact Point View



Figure A-40 Post-Test Primary Impact Point View



Figure A-41 Pre-Test Secondary Impact Point View



Figure A-42 Post-Test Secondary Impact Point View



Figure A-43 Pre-Test Fuel Filler Cap View



Figure A-44 Post-Test Fuel Filler Cap View



Figure A-45 Pre-Test Right Occupant Compartment View of Front SID-IIs

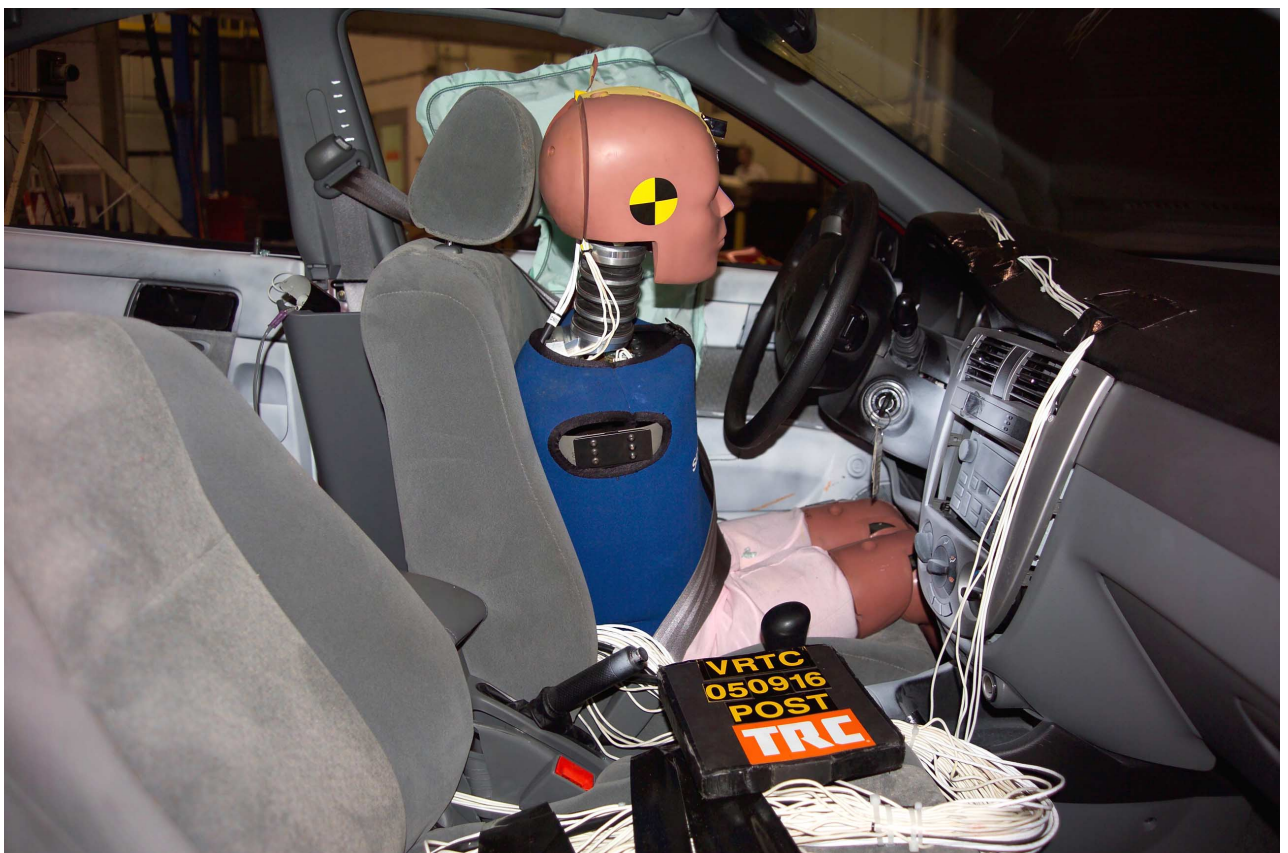


Figure A-46 Post-Test Right Occupant Compartment View of Front SID-IIs



Figure A-47 Pre-Test Right Occupant Compartment View of Rear SID-IIs

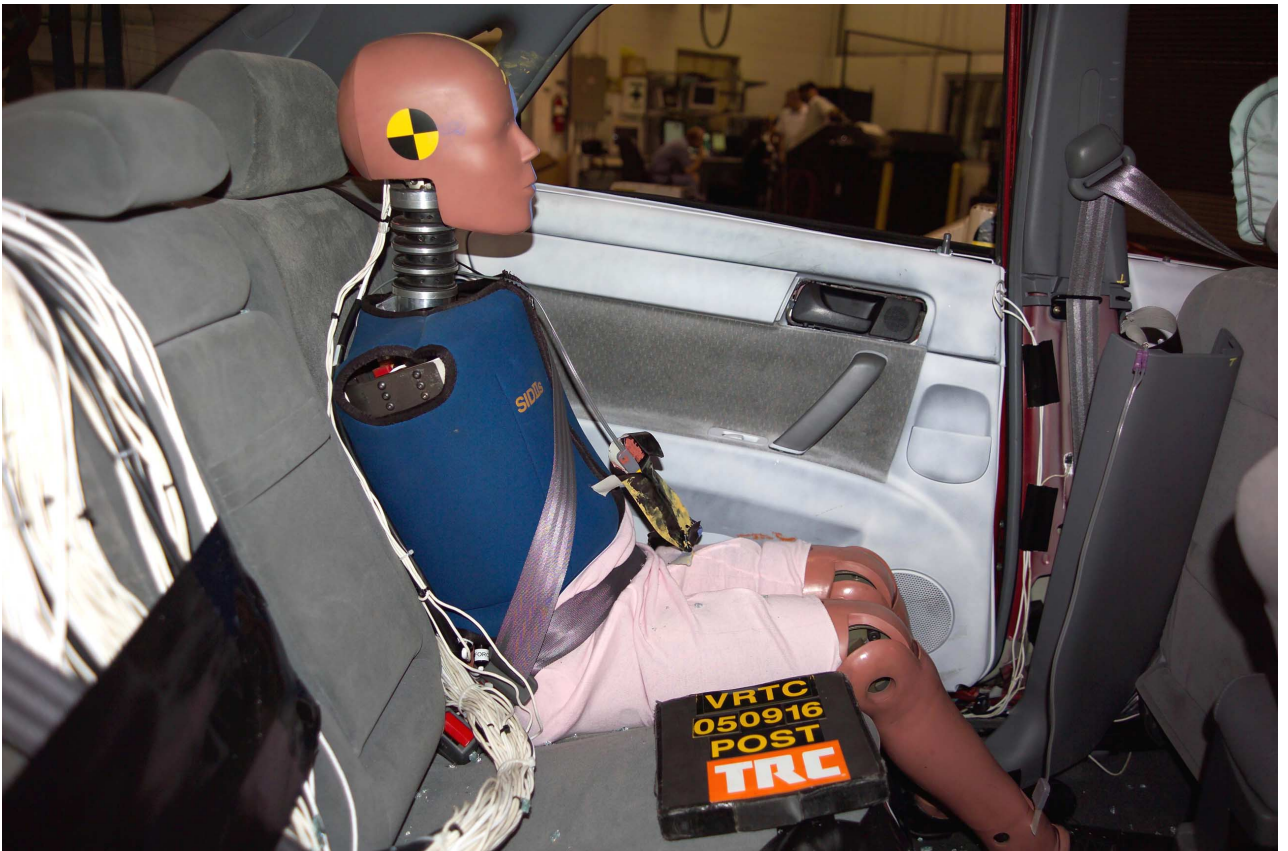


Figure A-48 Post-Test Right Occupant Compartment View of Rear SID-IIs



Figure A-49 Pre-Test Left View of Front SID-IIs - View 1



Figure A-50 Post-Test Left View of Front SID-IIs View



Figure A-51 Pre-Test Left View of Front SID-IIs - View 2

Intentionally Left Blank



Figure A-52 Pre-Test Left View of Front SID-II and Door Clearance



Figure A-53 Post-Test Left View of Front SID-II and Door Clearance



Figure A-54 Pre-Test Left View of Rear SID-IIs - View 1



Figure A-55 Post-Test Left View of Rear SID-IIs View

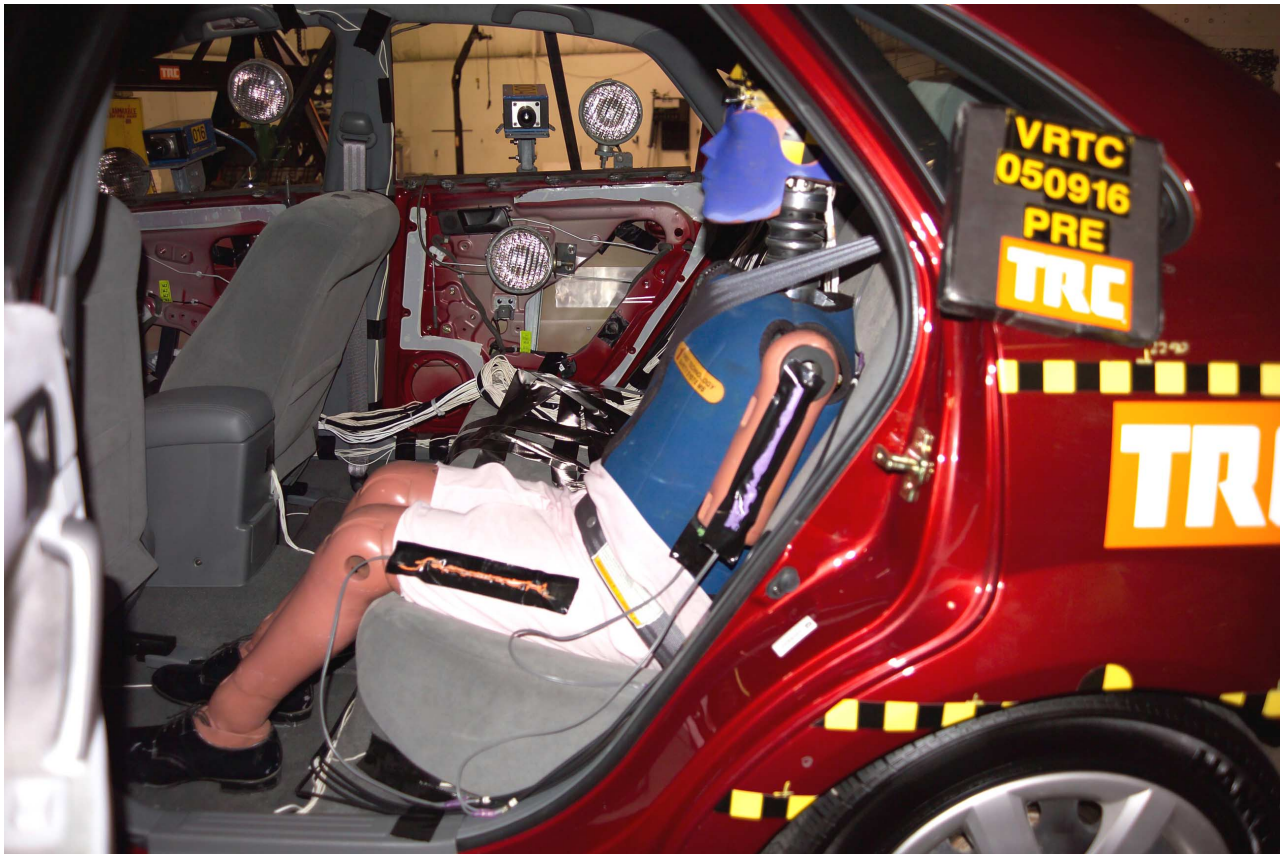


Figure A-56 Pre-Test Left View of Rear SID-IIs - View 2

Intentionally Left Blank



Figure A-57 Pre-Test Left View of Rear SID-II and Door Clearance



Figure A-58 Post-Test Left View of Rear SID-II and Door Clearance



Figure A-59 Pre-Test Interior of Front Door



Figure A-60 Post-Test Interior of Front Door Showing SID-II's Impact Locations



Figure A-61 Post-Test Front SID-IIs Contact - View 1



Figure A-62 Post-Test Front SID-IIs Contact - View 2



Figure A-63 Pre-Test Interior of Rear Door



Figure A-64 Post-Test Interior of Rear Door Showing SID-II's Impact Locations



Figure A-65 Post-Test Rear SID-IIs Contact - View 1



Figure A-66 Post-Test Rear SID-IIs Contact - View 2



Figure A-67 Post-Test Rear SID-IIs Contact - View 3

Intentionally Left Blank



Figure A-68 Pre-Test Barrier Face Front View

Intentionally Left Blank



Figure A-69 Pre-Test Barrier Face Left Side View



Figure A-70 Post-Test Barrier Face Left Side View



Figure A-71 Pre-Test Barrier Face Right Side View



Figure A-72 Post-Test Barrier Face Right Side View

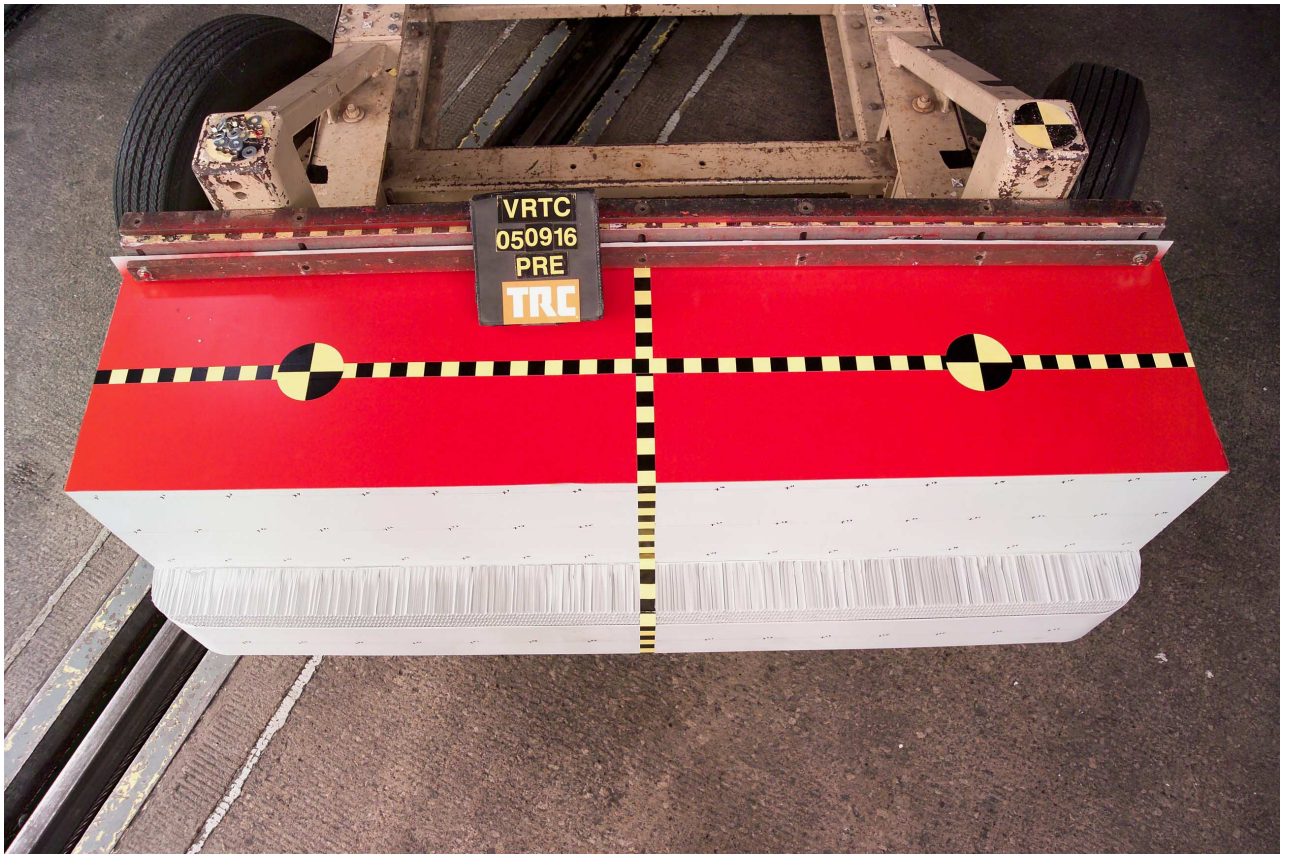


Figure A-73 Pre-Test Barrier Face Overhead View

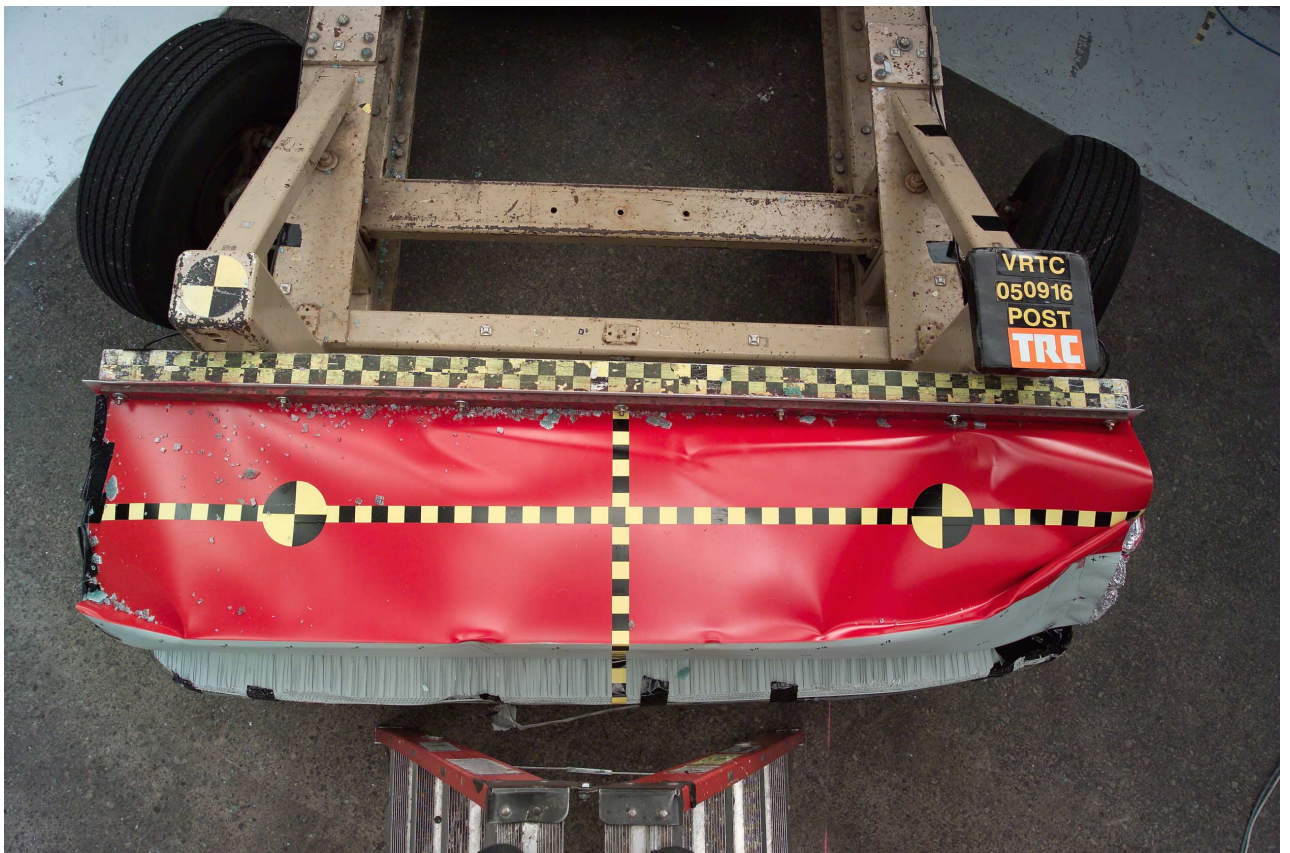


Figure A-74 Post-Test Barrier Face Overhead View



Figure A-75 Vehicle Certification Label View



Figure A-76 Vehicle Tire Load Label View

Appendix B

Data Plots



MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Head Accel X

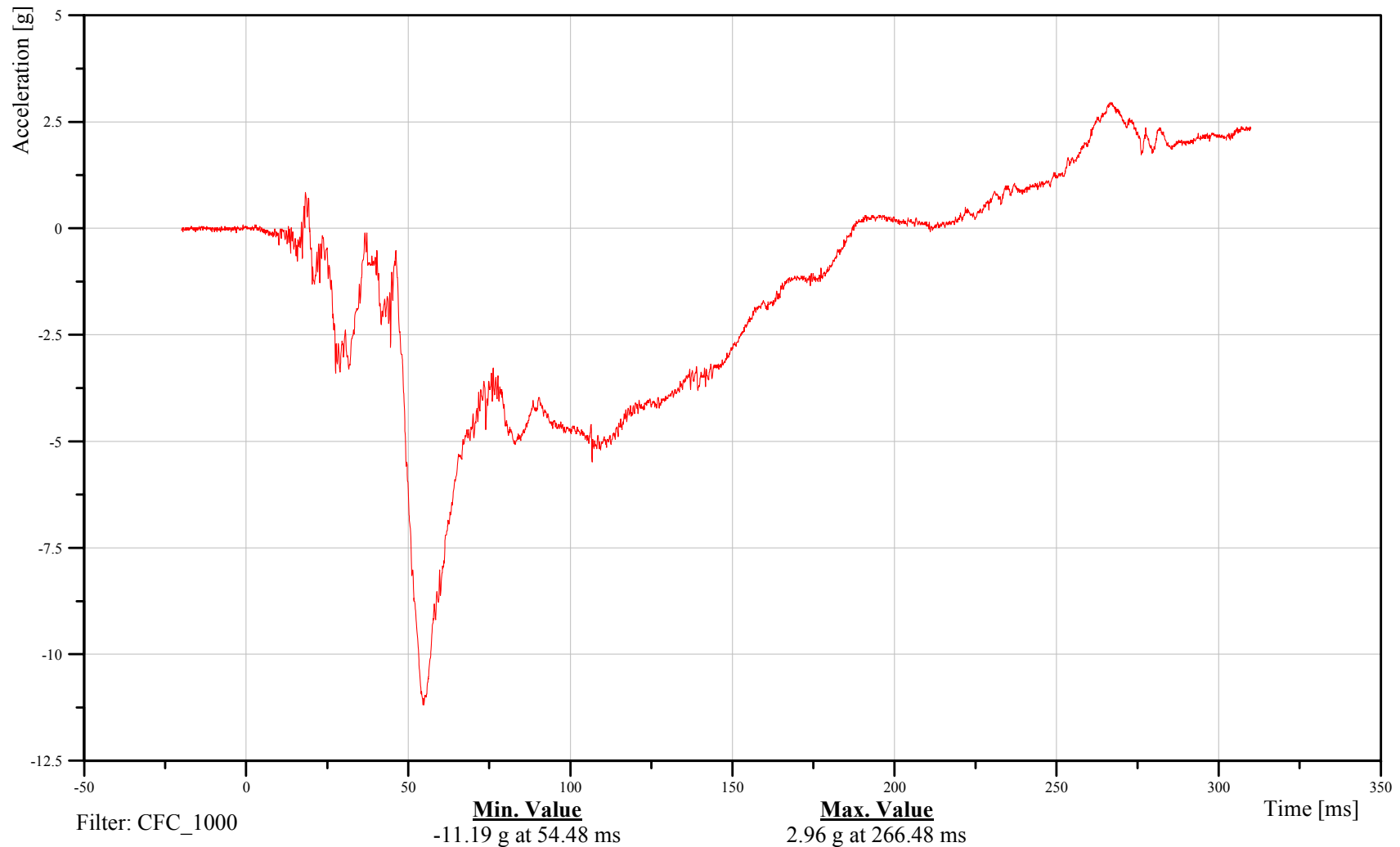
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11HEADCG00S2ACXA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Head Accel Y

Date: 09/16/2005

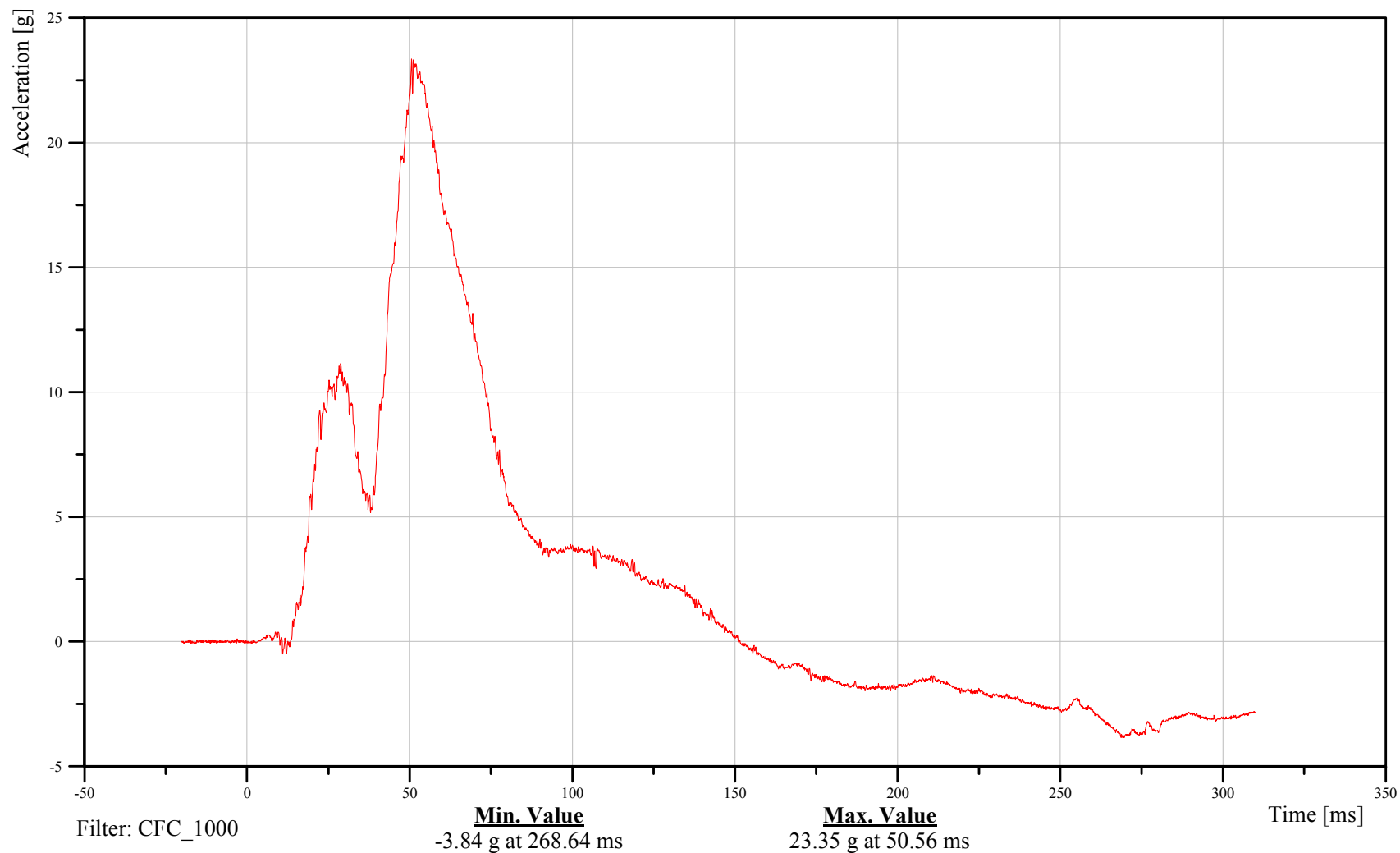
Time: 11:12

Customer: VRTC

11HEADCG00S2ACYA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Head Accel Z

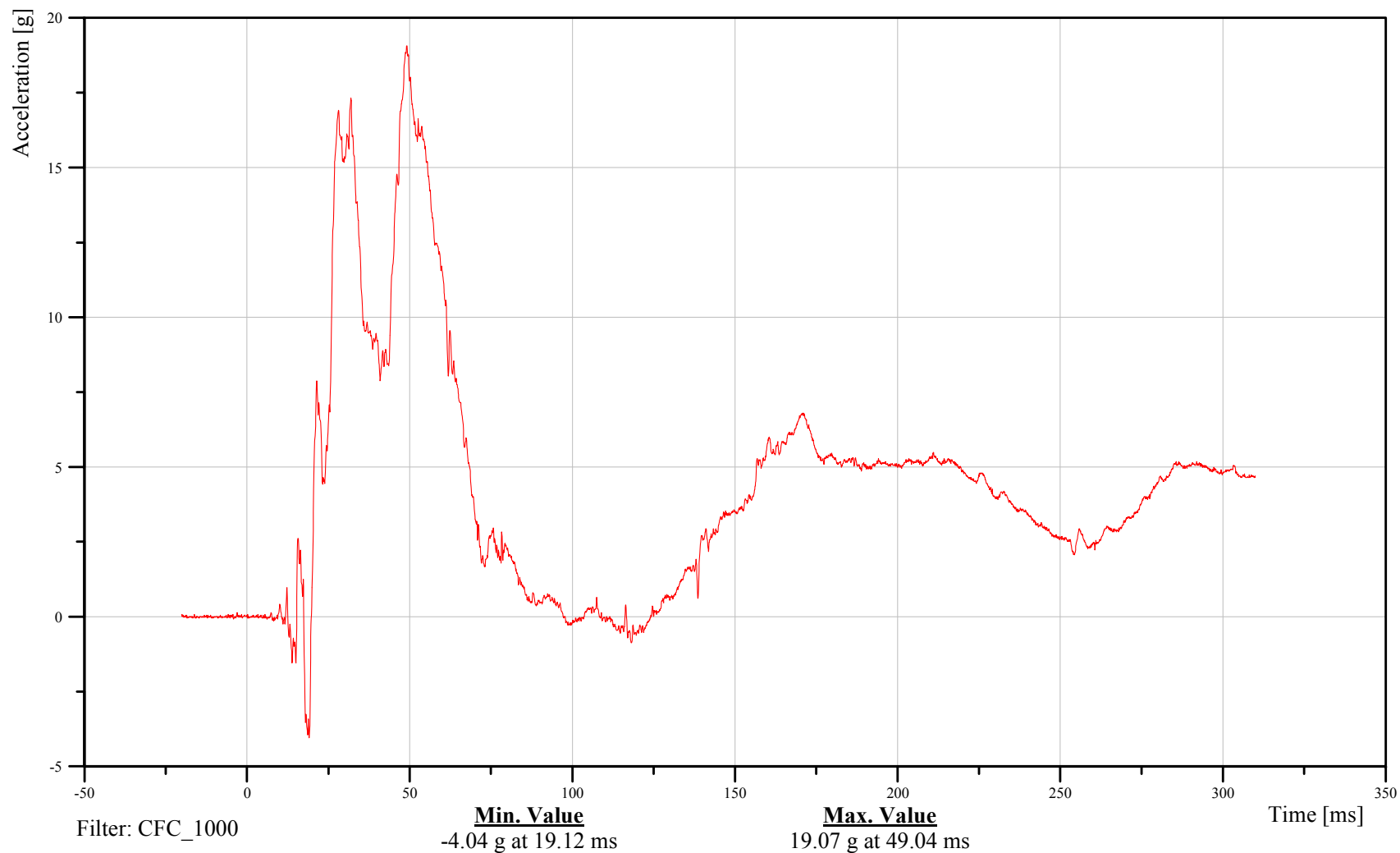
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11HEADCG00S2ACZA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Head Accel Resultant

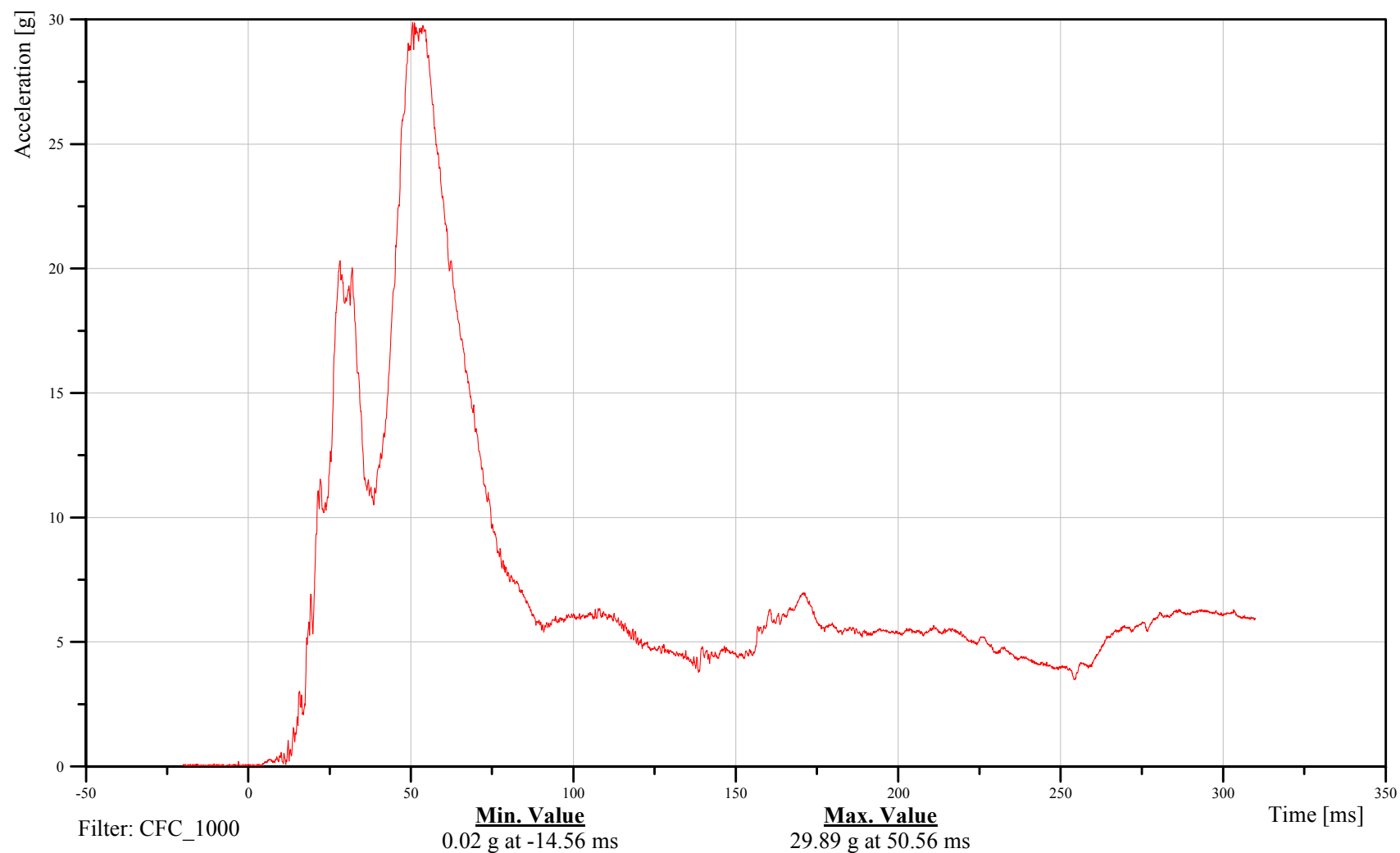
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11HEADCG00S2ACRA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Neck Force X

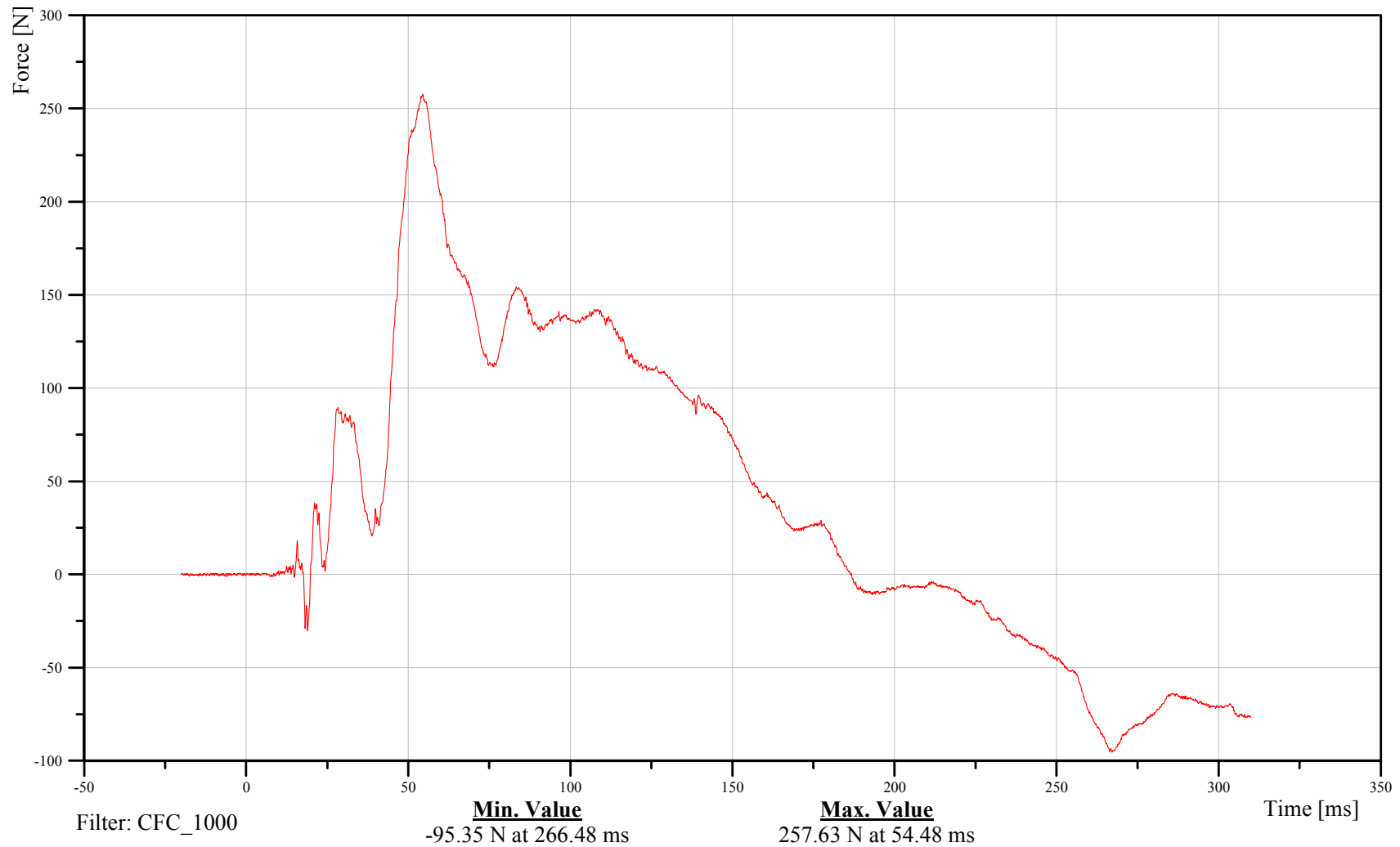
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Time: 11:12

Customer: VRTC

11NECKUP00S2FOXA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Neck Force Y

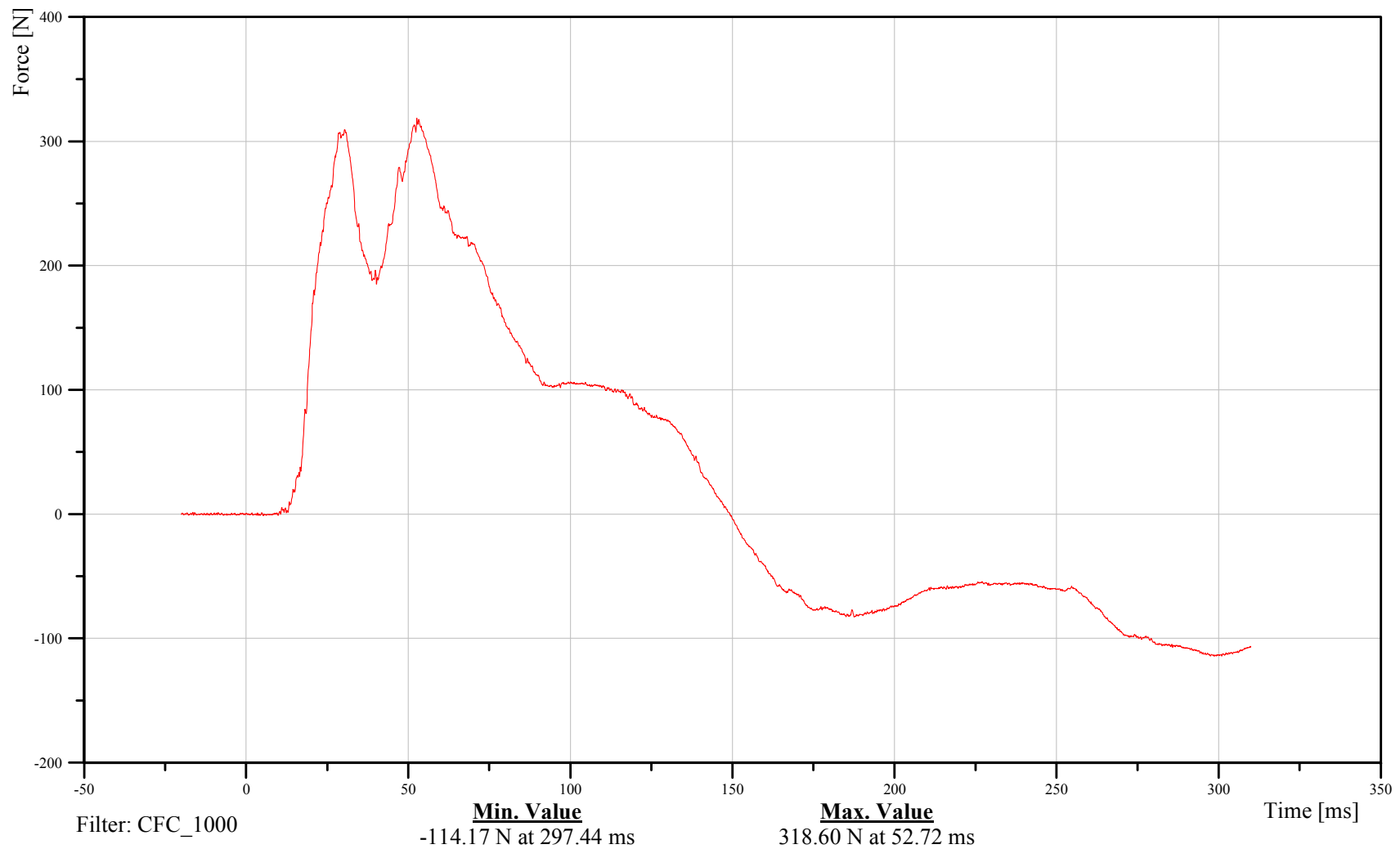
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11NECKUP00S2FOYA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Neck Force Z

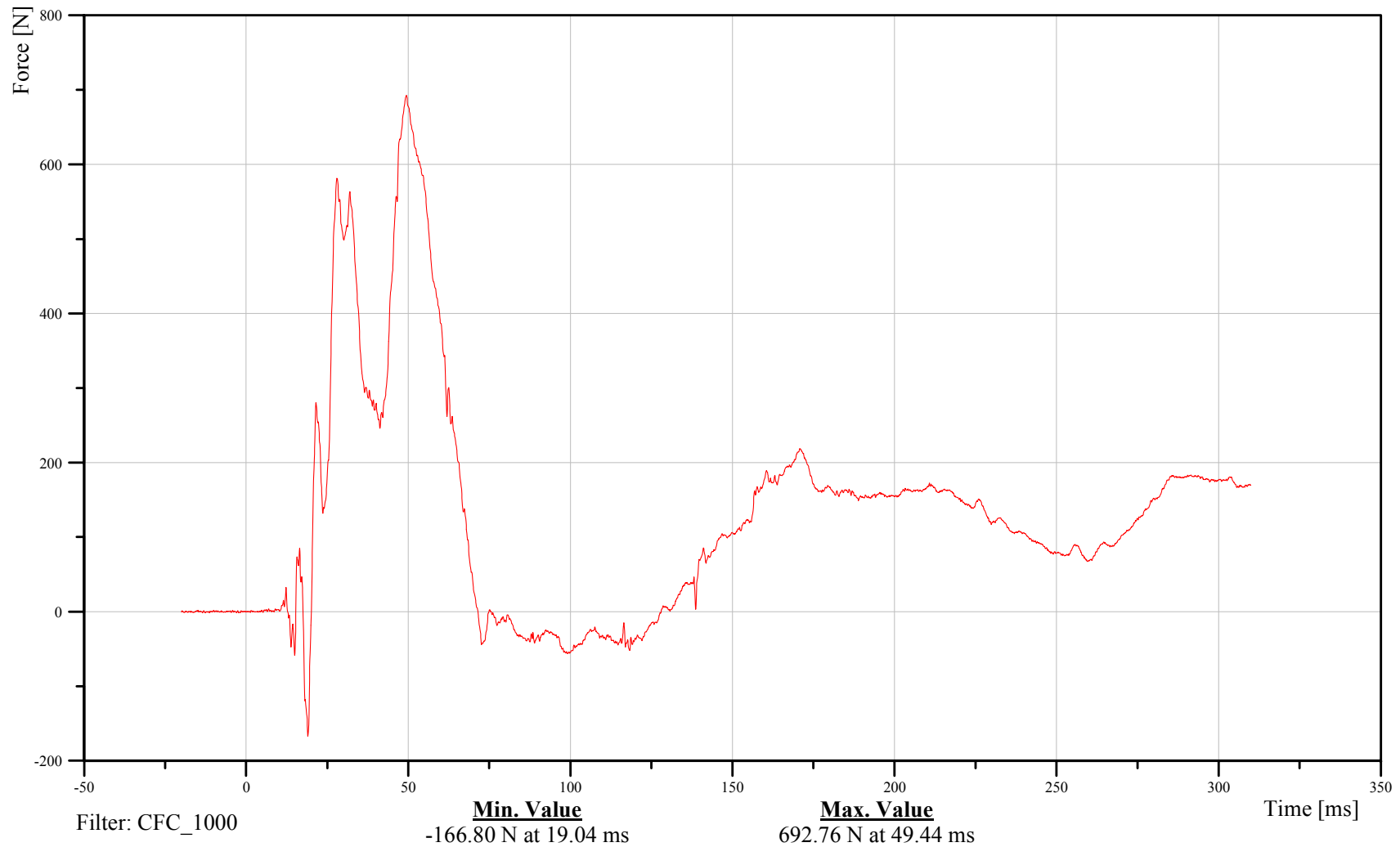
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11NECKUP00S2FOZA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

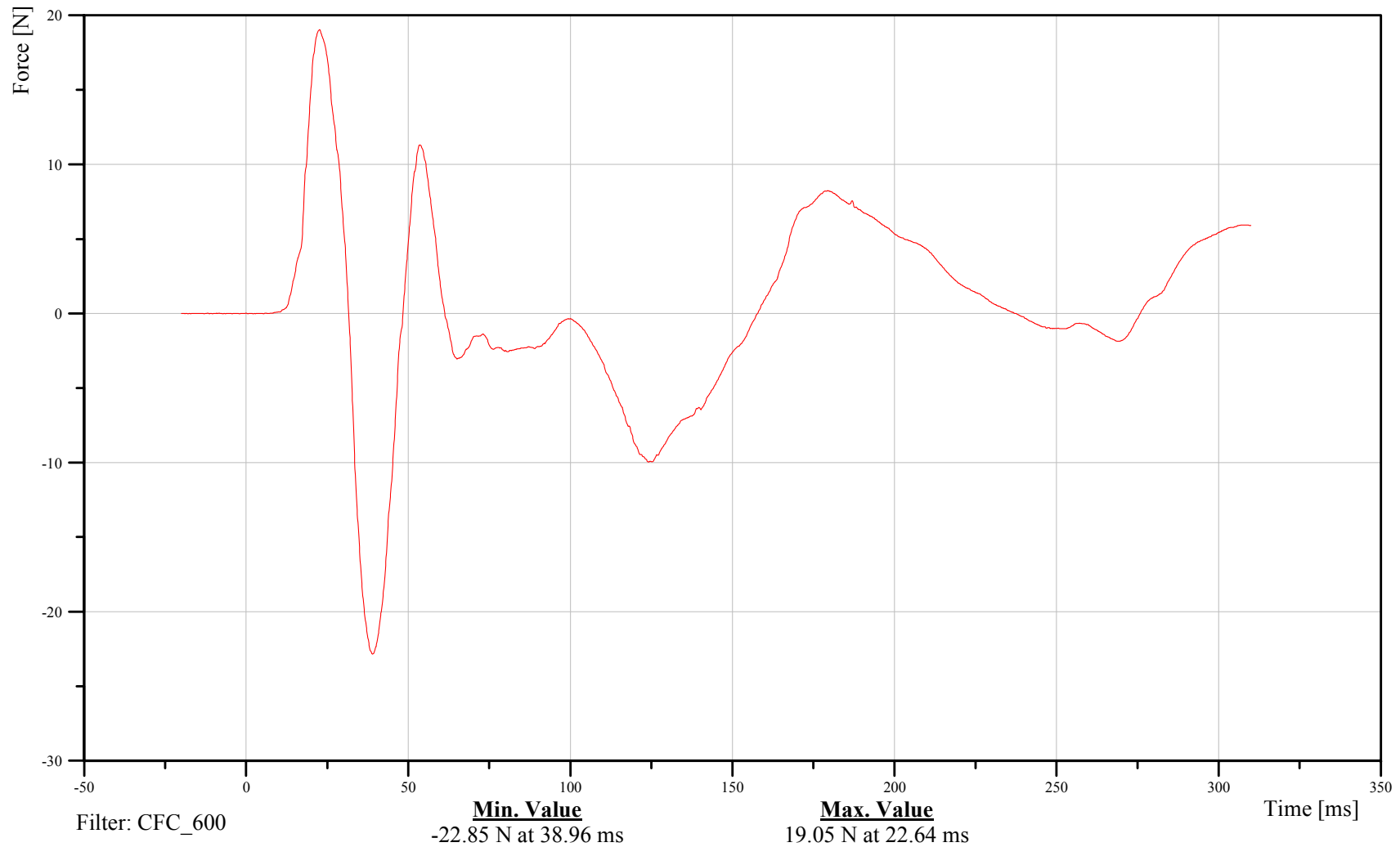
Driver Neck Moment X

Customer: VRTC

11NECKUP00S2MOXB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

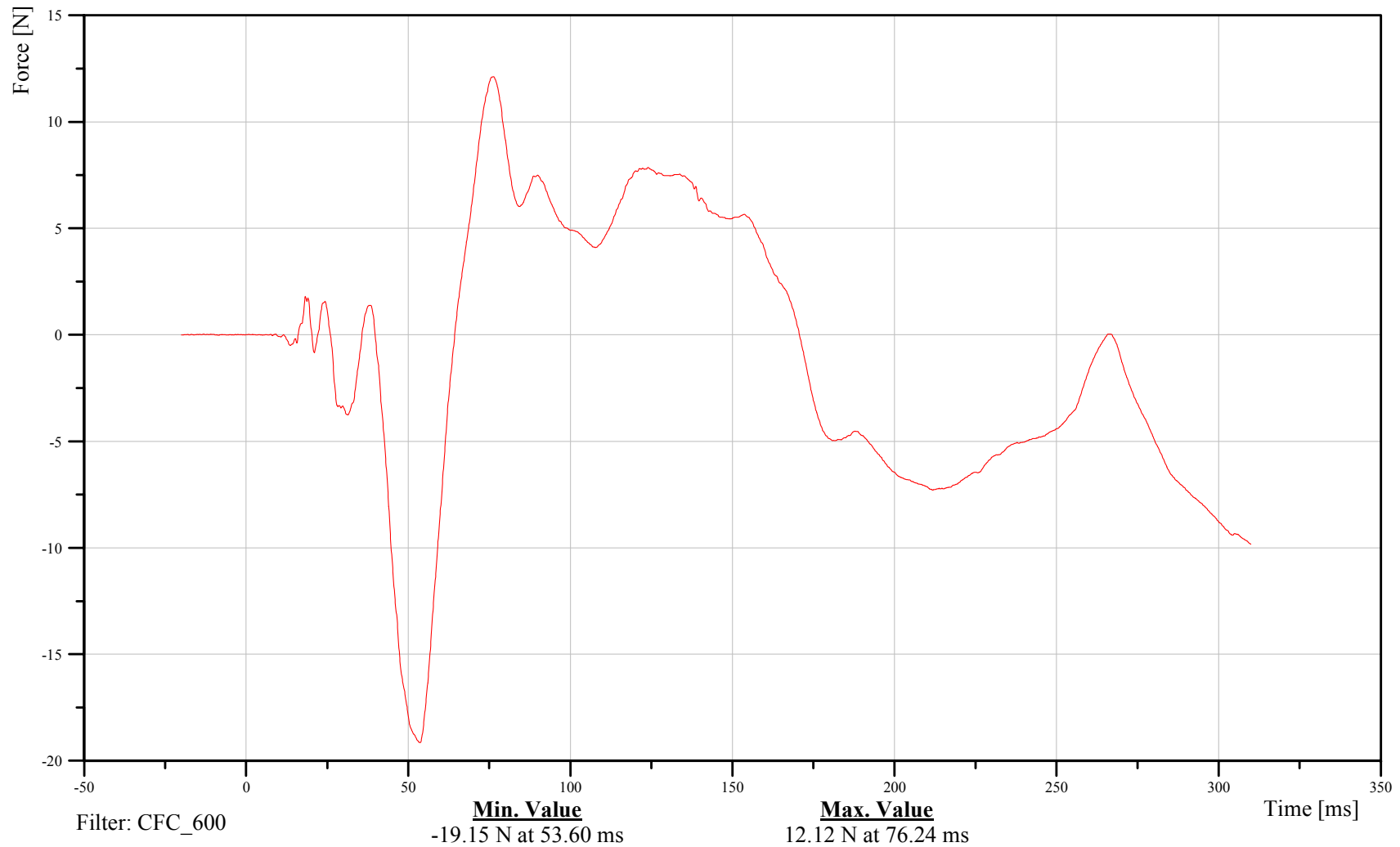
Driver Neck Moment Y

Customer: VRTC

11NECKUP00S2MOYB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

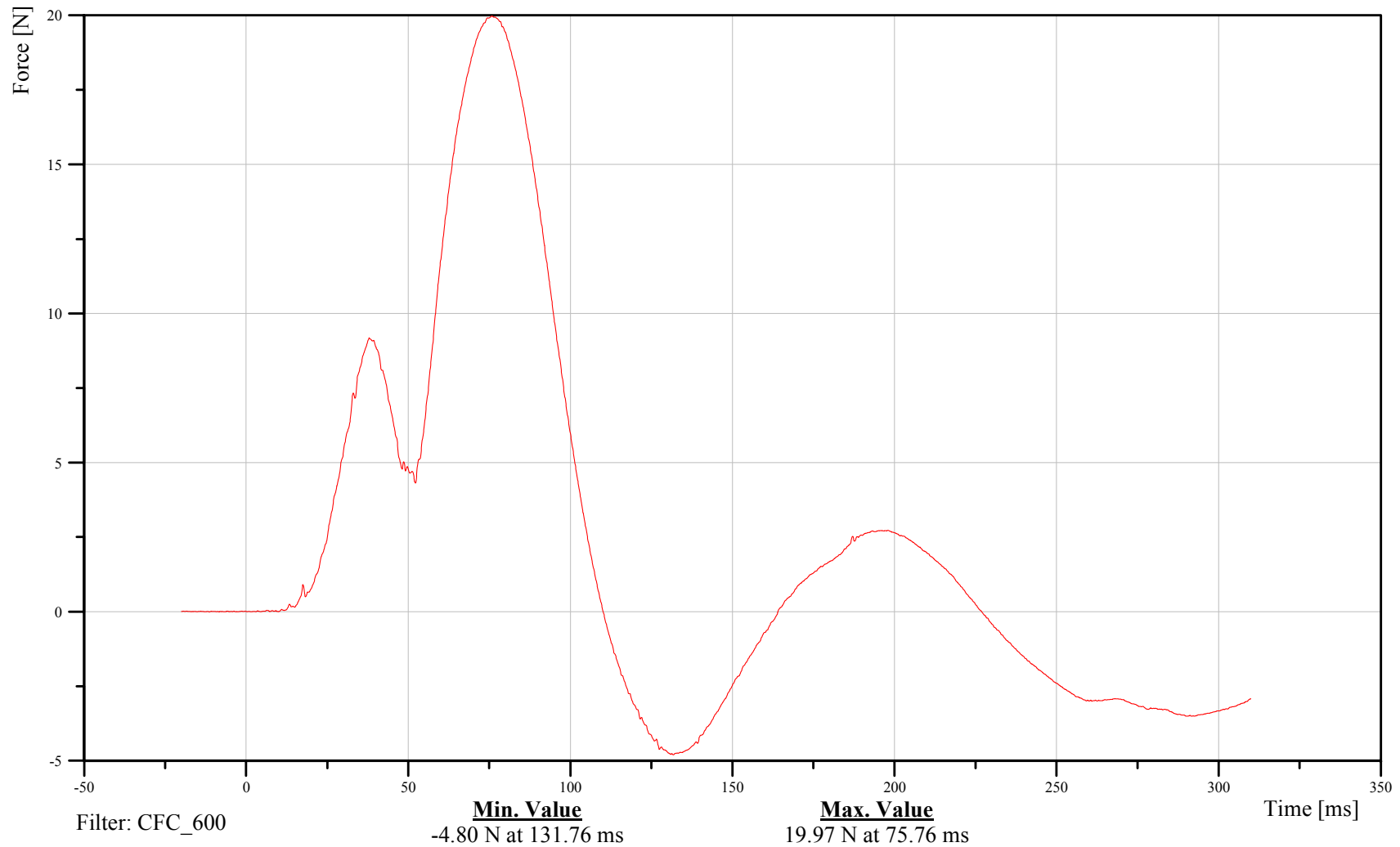
Driver Neck Moment Z

Customer: VRTC

11NECKUP00S2MOZB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Shoulder Accel X

Date: 09/16/2005

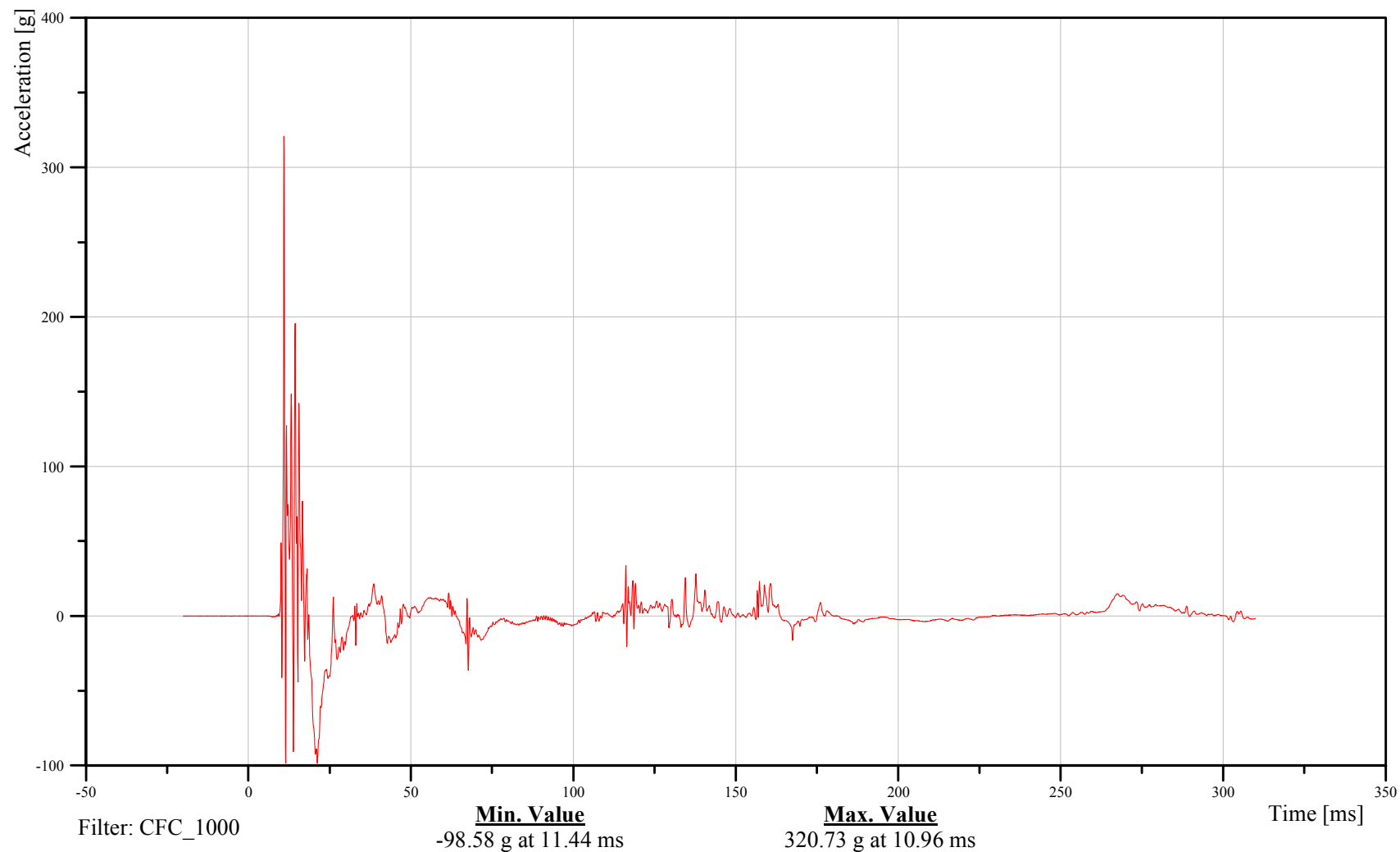
Time: 11:12

Customer: VRTC

11SHLDLE00S2ACXA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Shoulder Accel Y

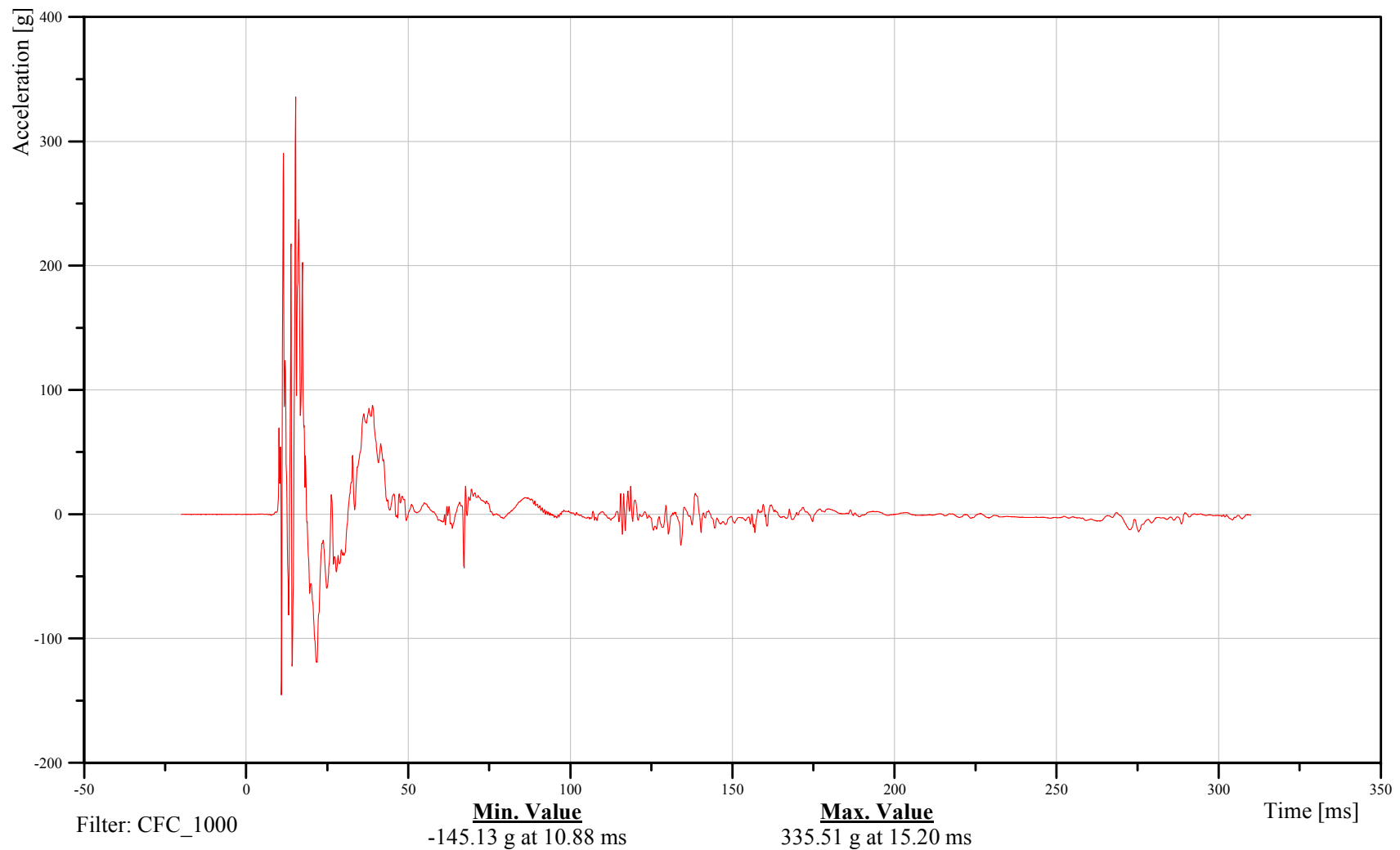
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11SHLDLE00S2ACYA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Shoulder Accel Z

Date: 09/16/2005

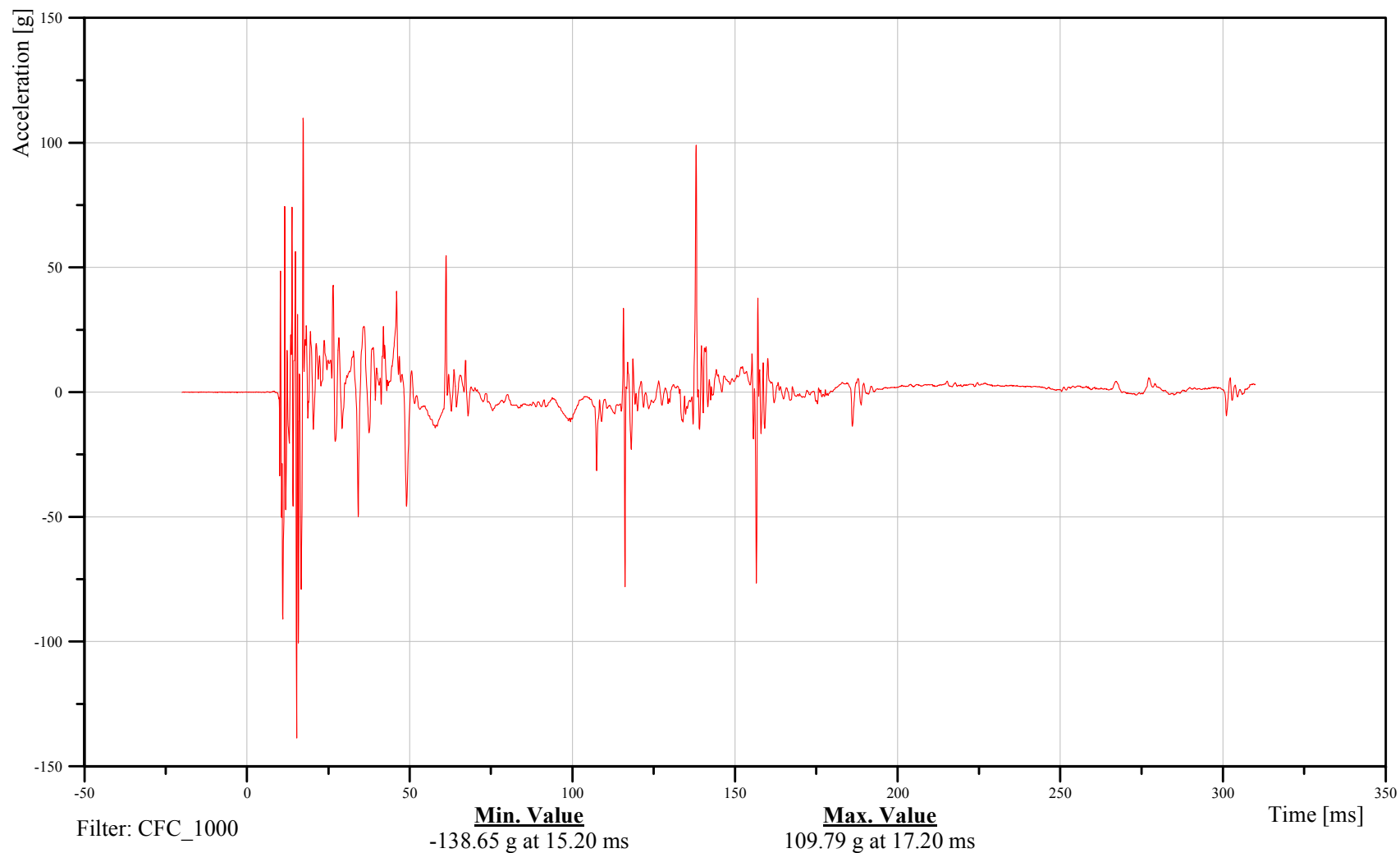
Time: 11:12

Customer: VRTC

11SHLDLE00S2ACZA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Shoulder Accel Resultant

Date: 09/16/2005

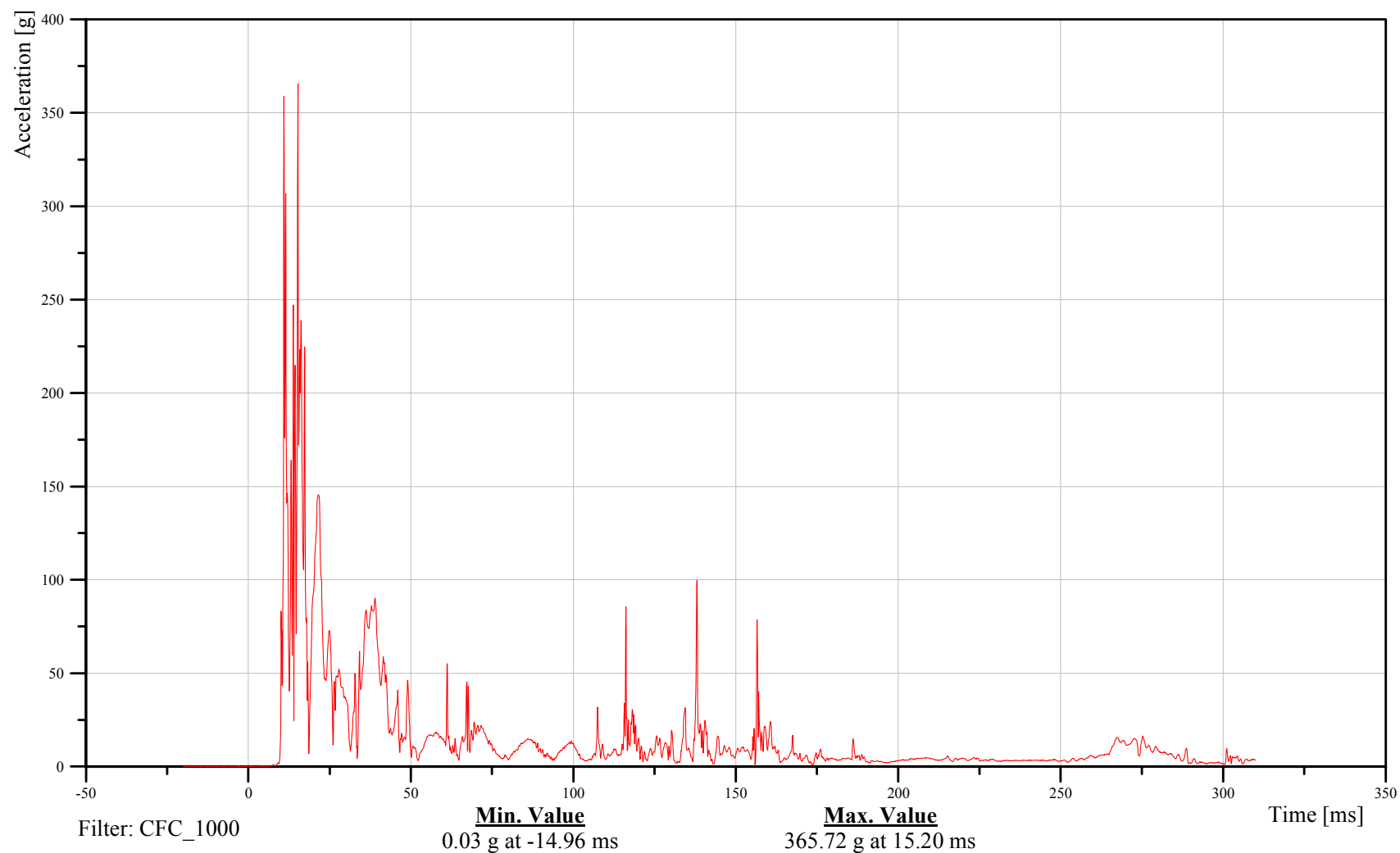
Time: 11:12

Customer: VRTC

11SHLDLE00S2ACRA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Shoulder Force X

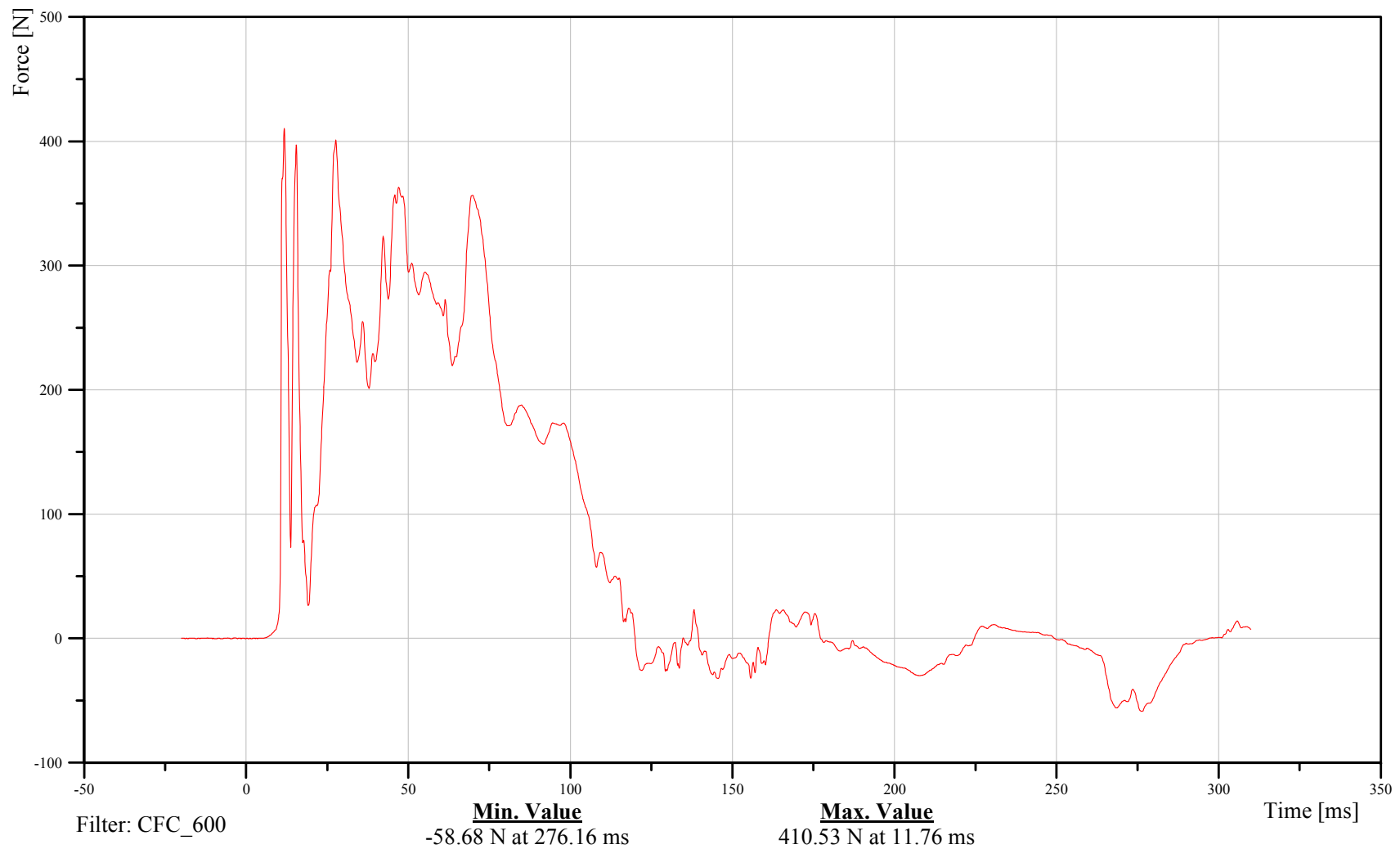
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11SHLDLE00S2FOXB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Shoulder Force Y

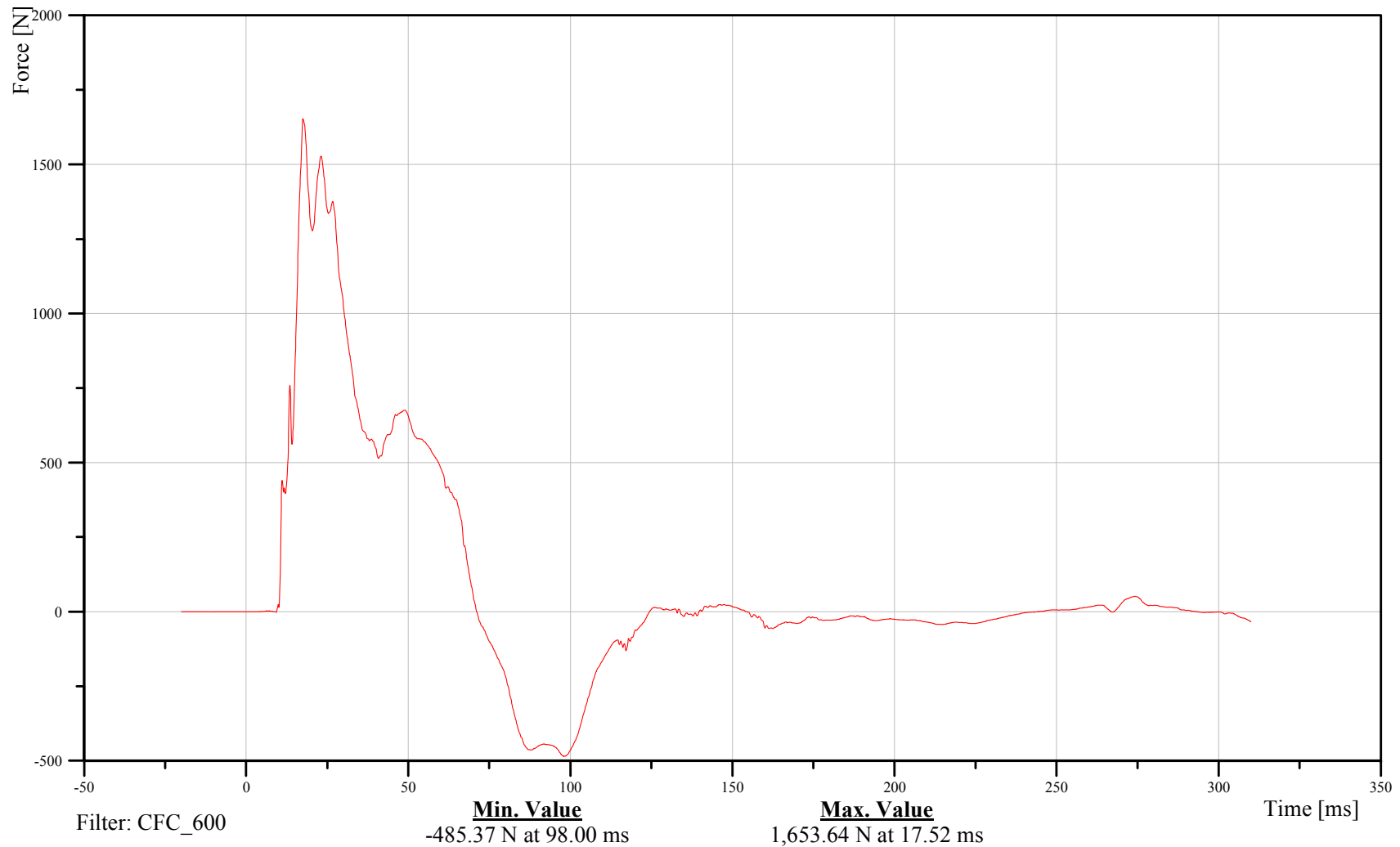
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11SHLDLE00S2FOYB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Shoulder Force Z

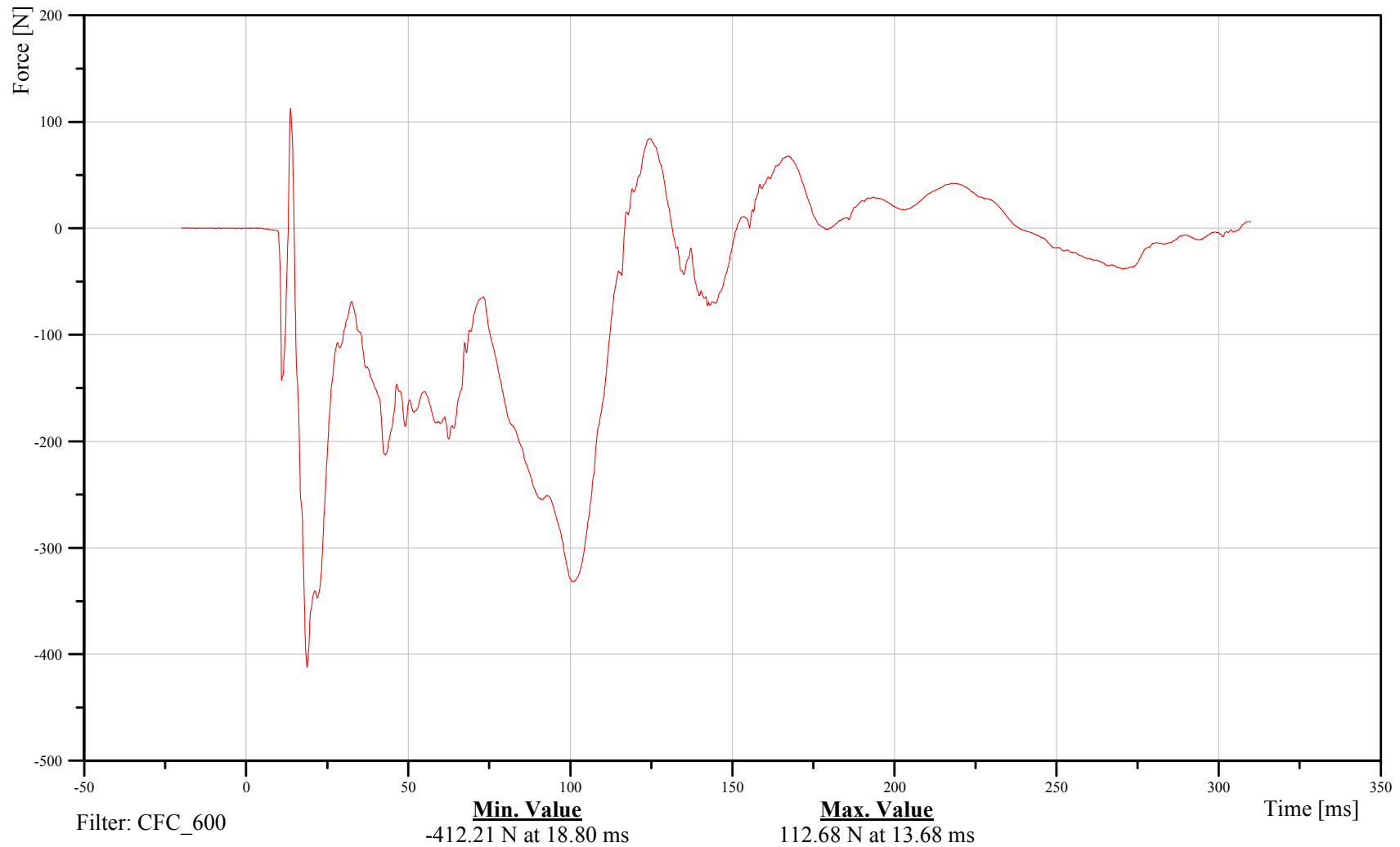
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11SHLDLE00S2FOZB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Upper Spine Accel X

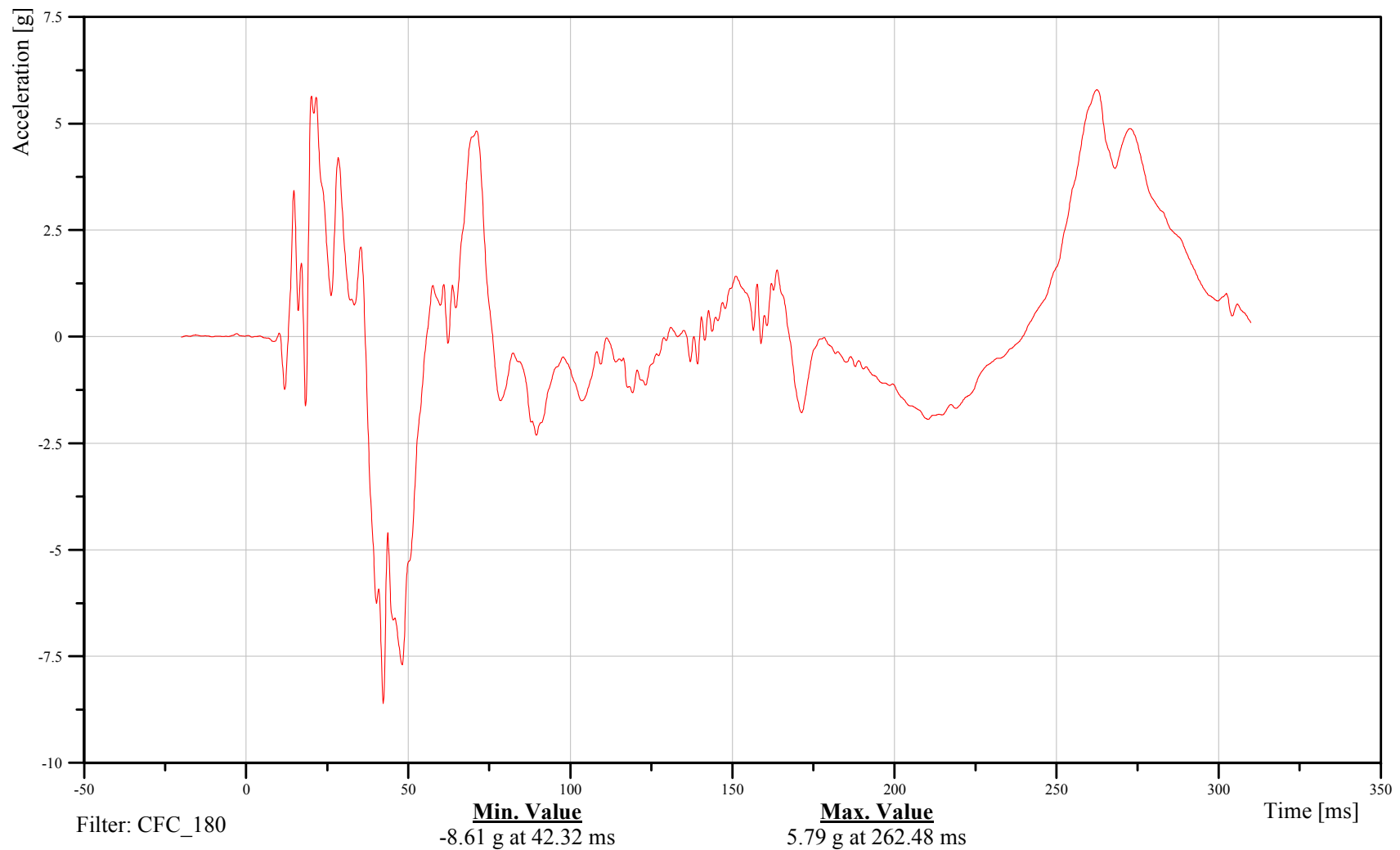
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11SPIN0100S2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Upper Spine Accel Y

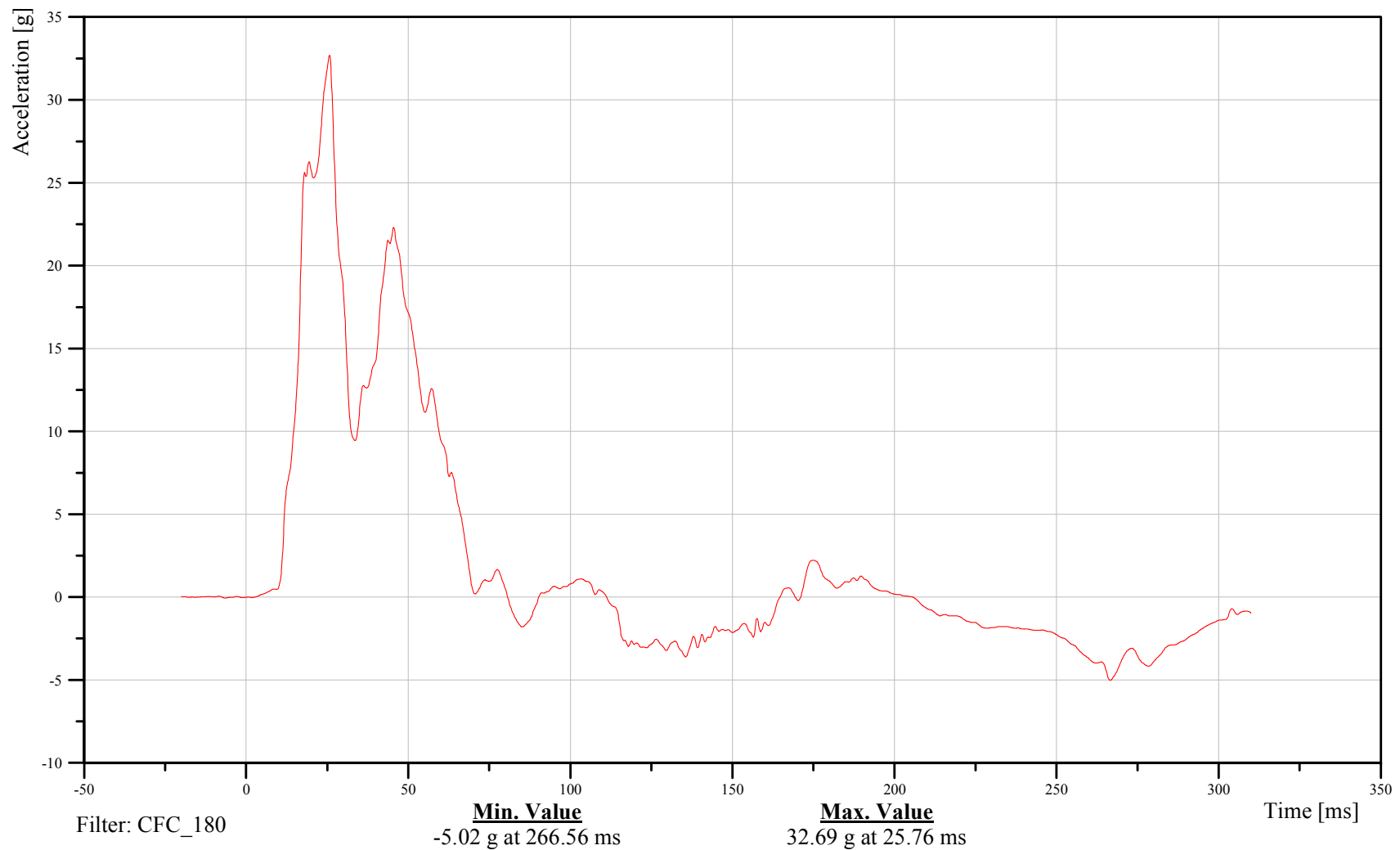
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11SPIN0100S2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Upper Spine Accel Z

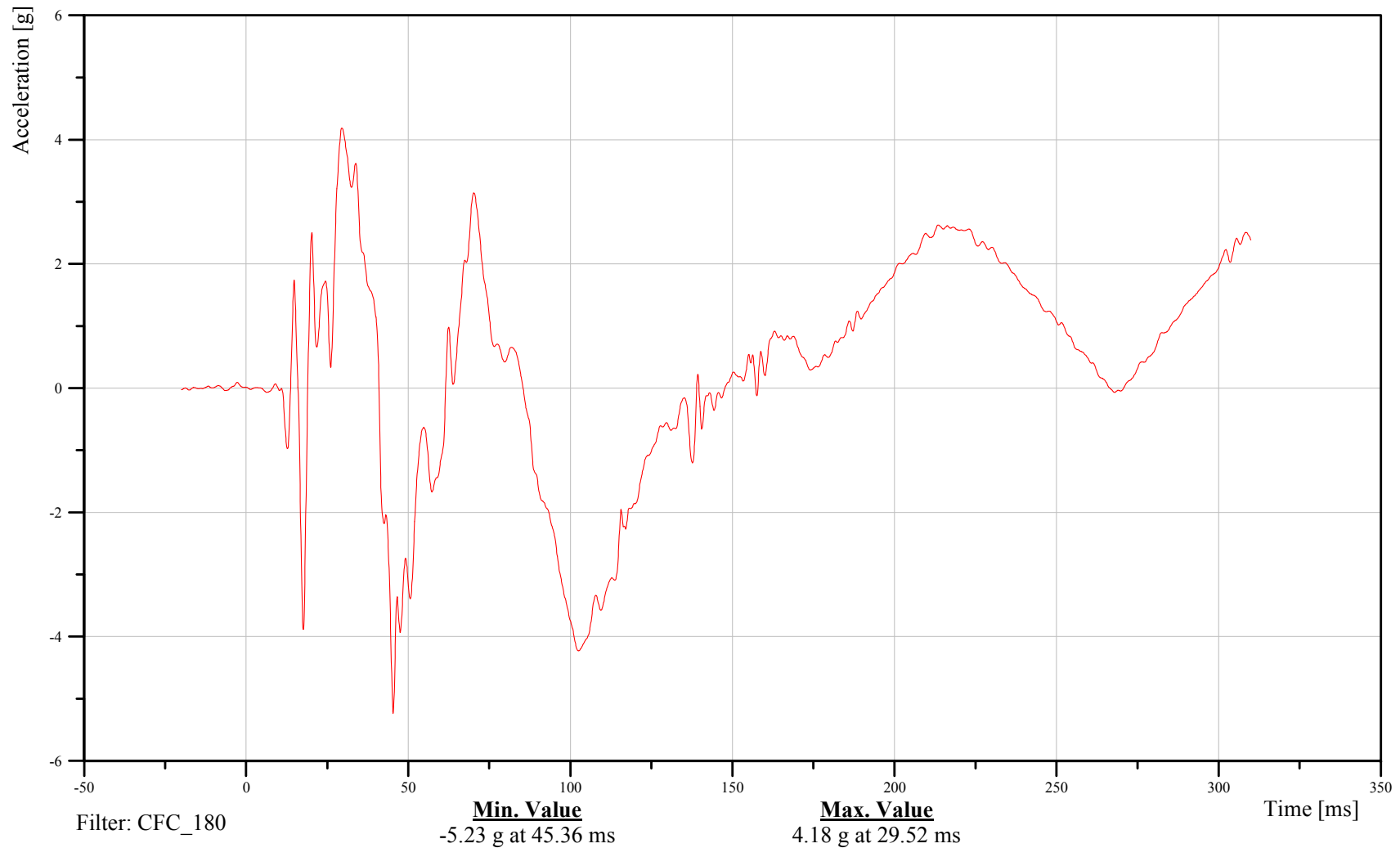
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11SPIN0100S2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Upper Spine Resultant

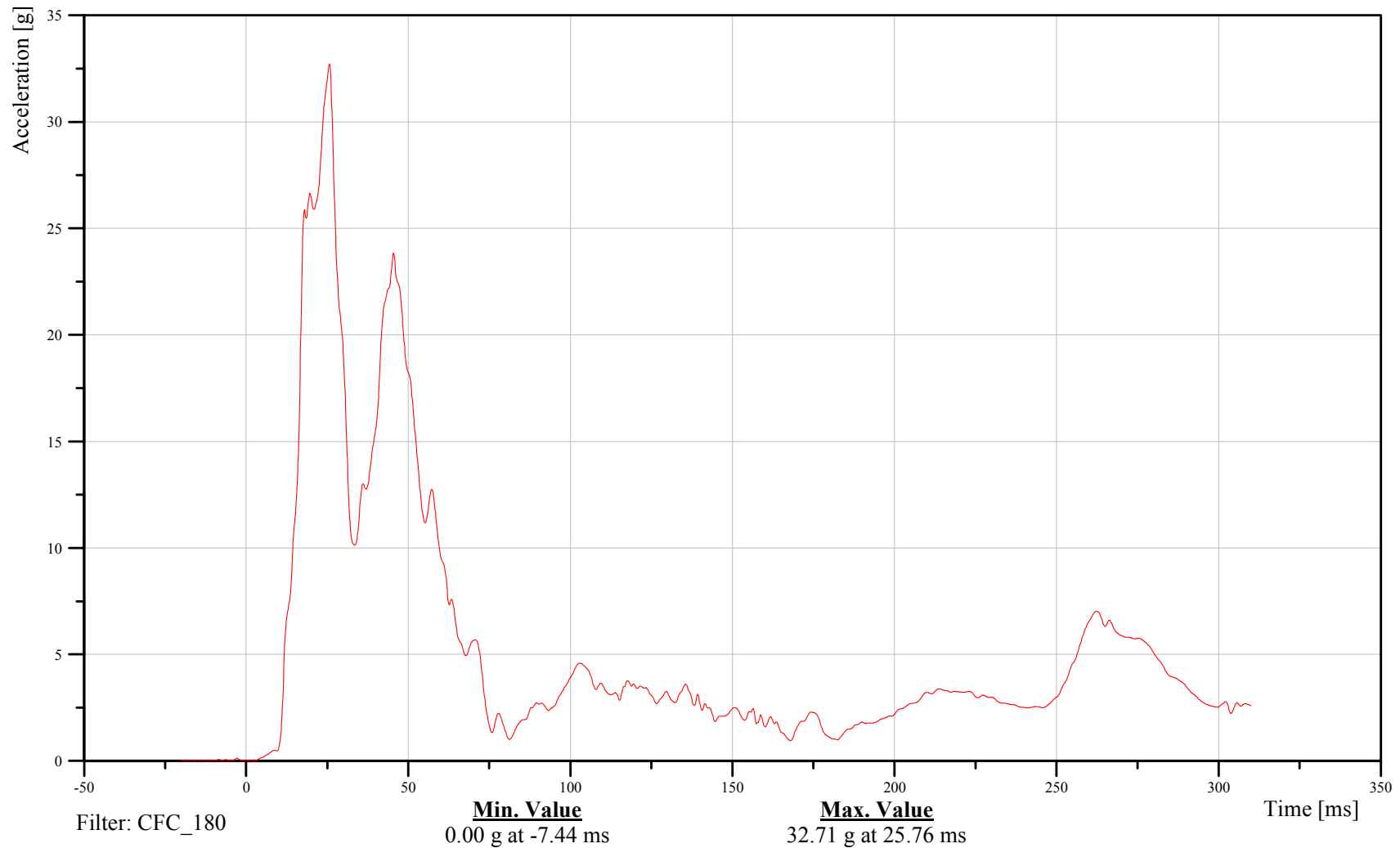
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11SPIN0100S2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Spine Rib 1 Accel X

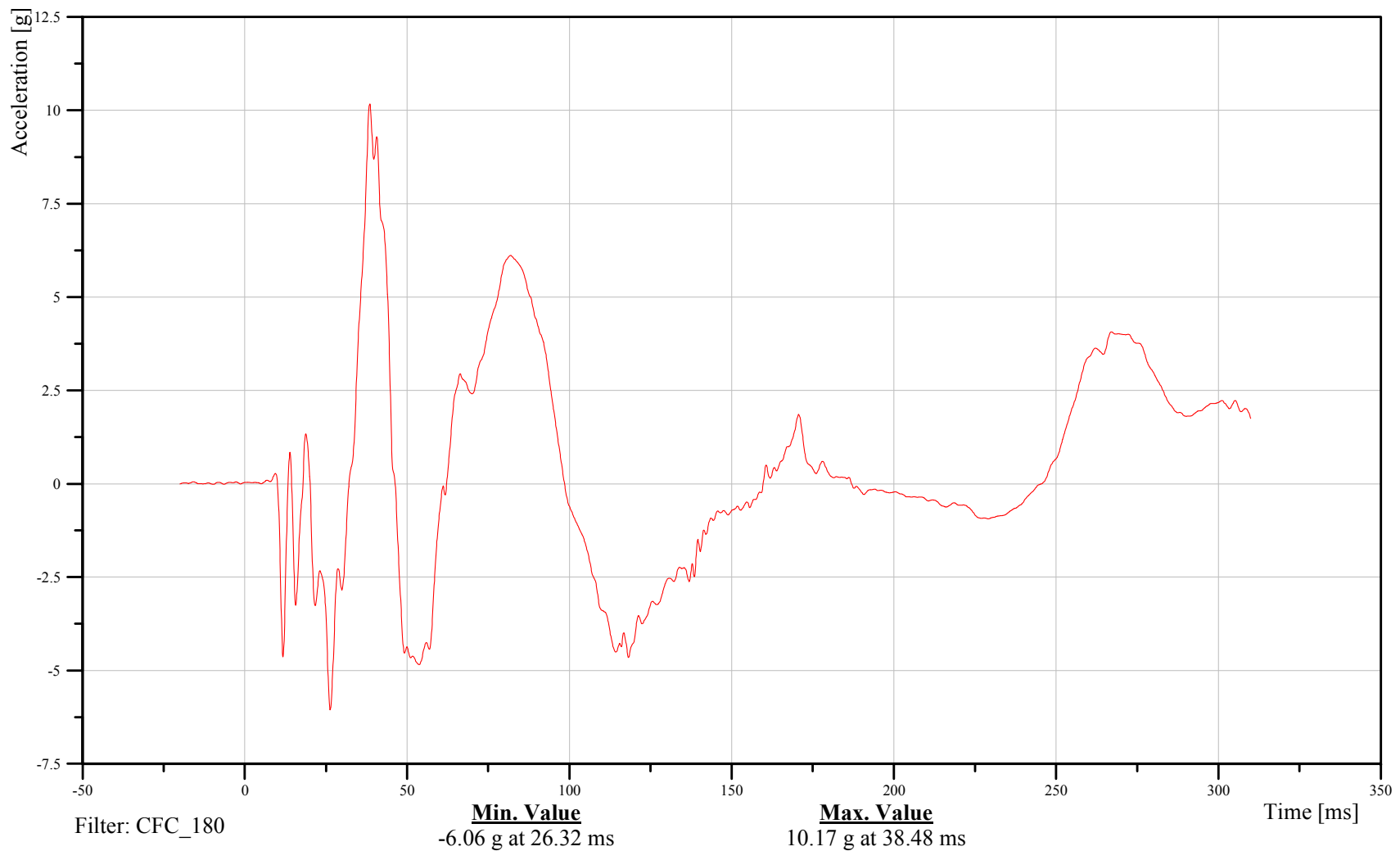
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11THSP01RIS2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Spine Rib 1 Accel Y

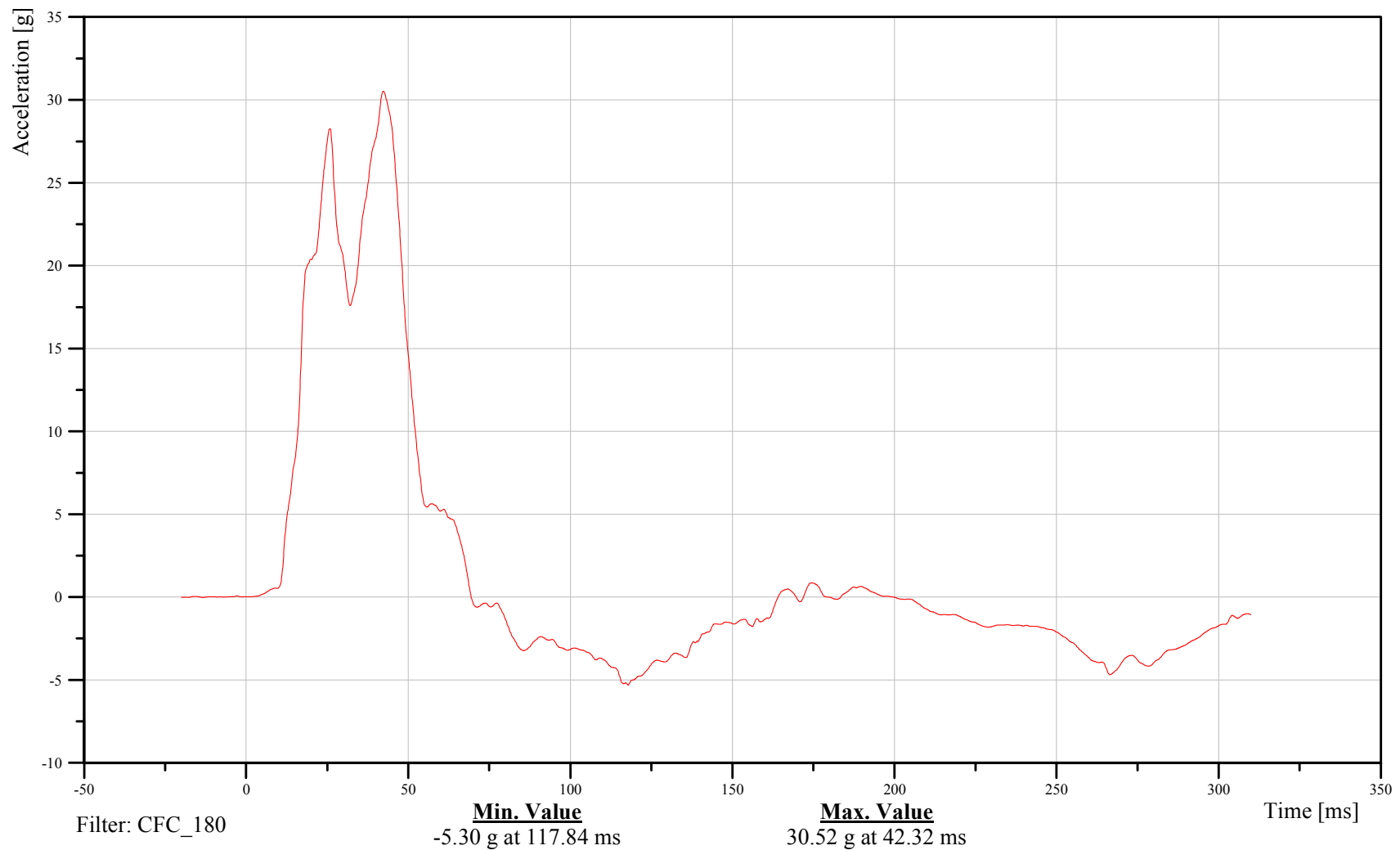
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11THSP01RIS2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Spine Rib 1 Accel Z

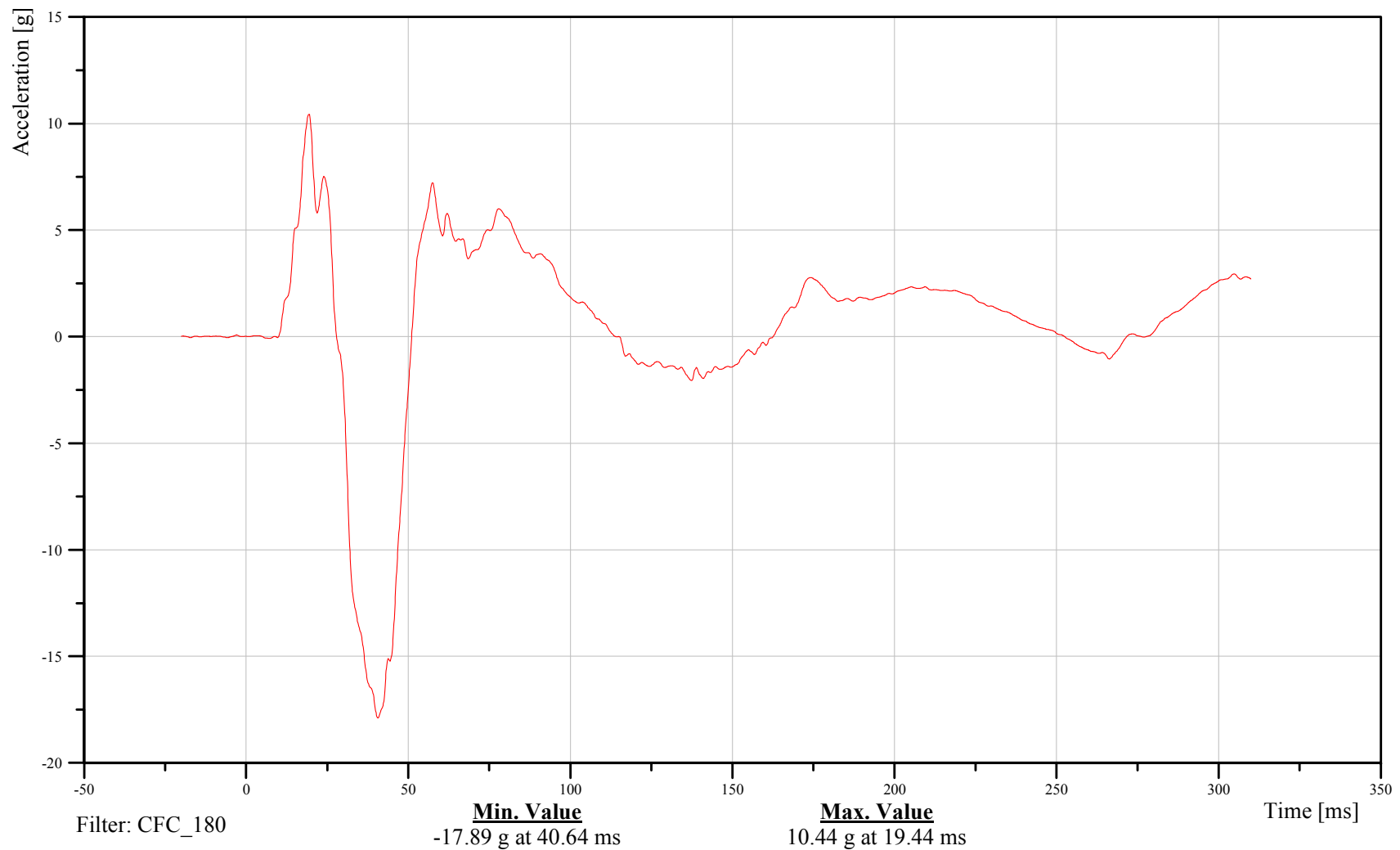
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11THSP01RIS2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

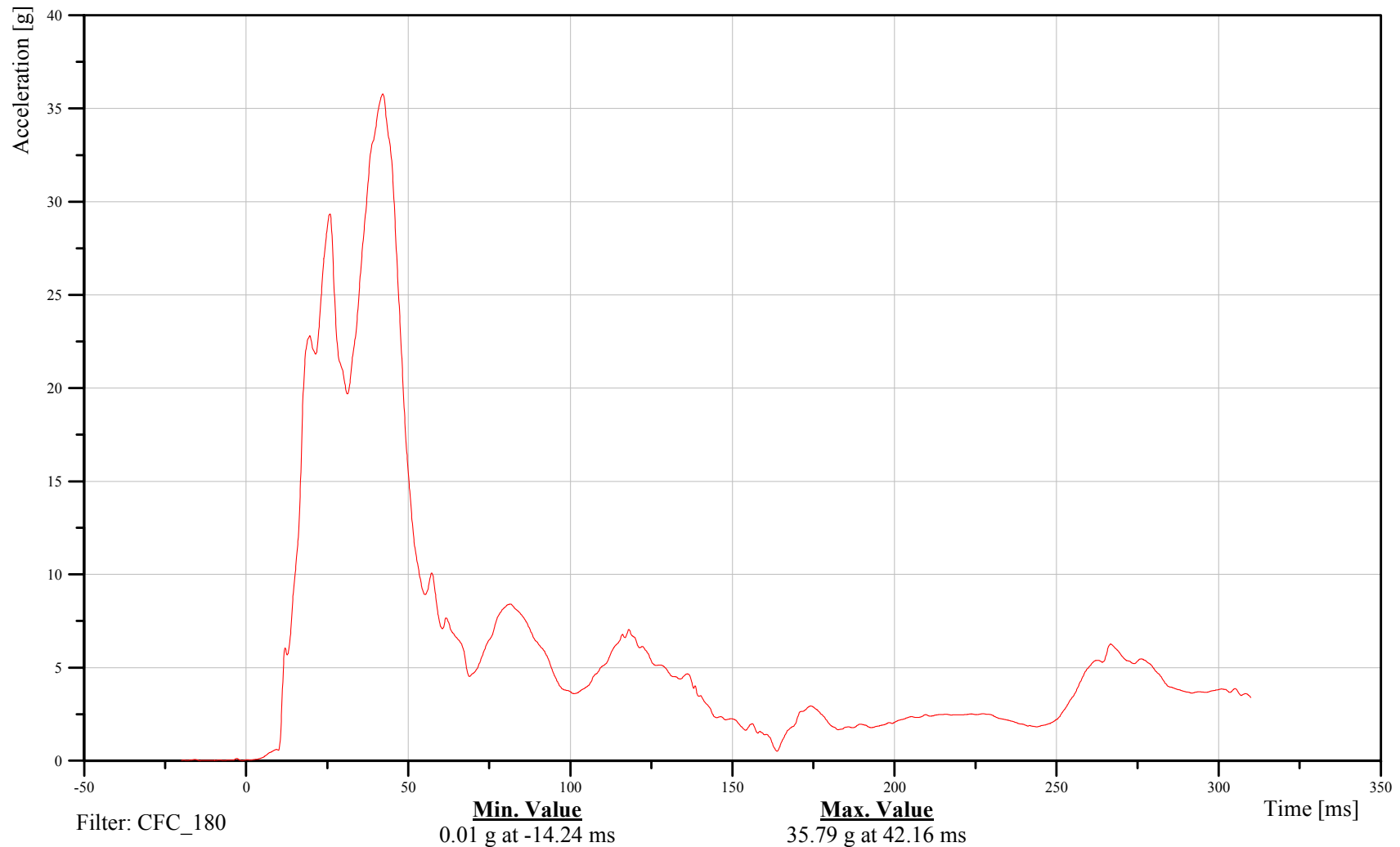
Driver Spine Rib 1 Accel Resultant

Customer: VRTC

11THSP01RIS2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Spine Rib 2 Accel X

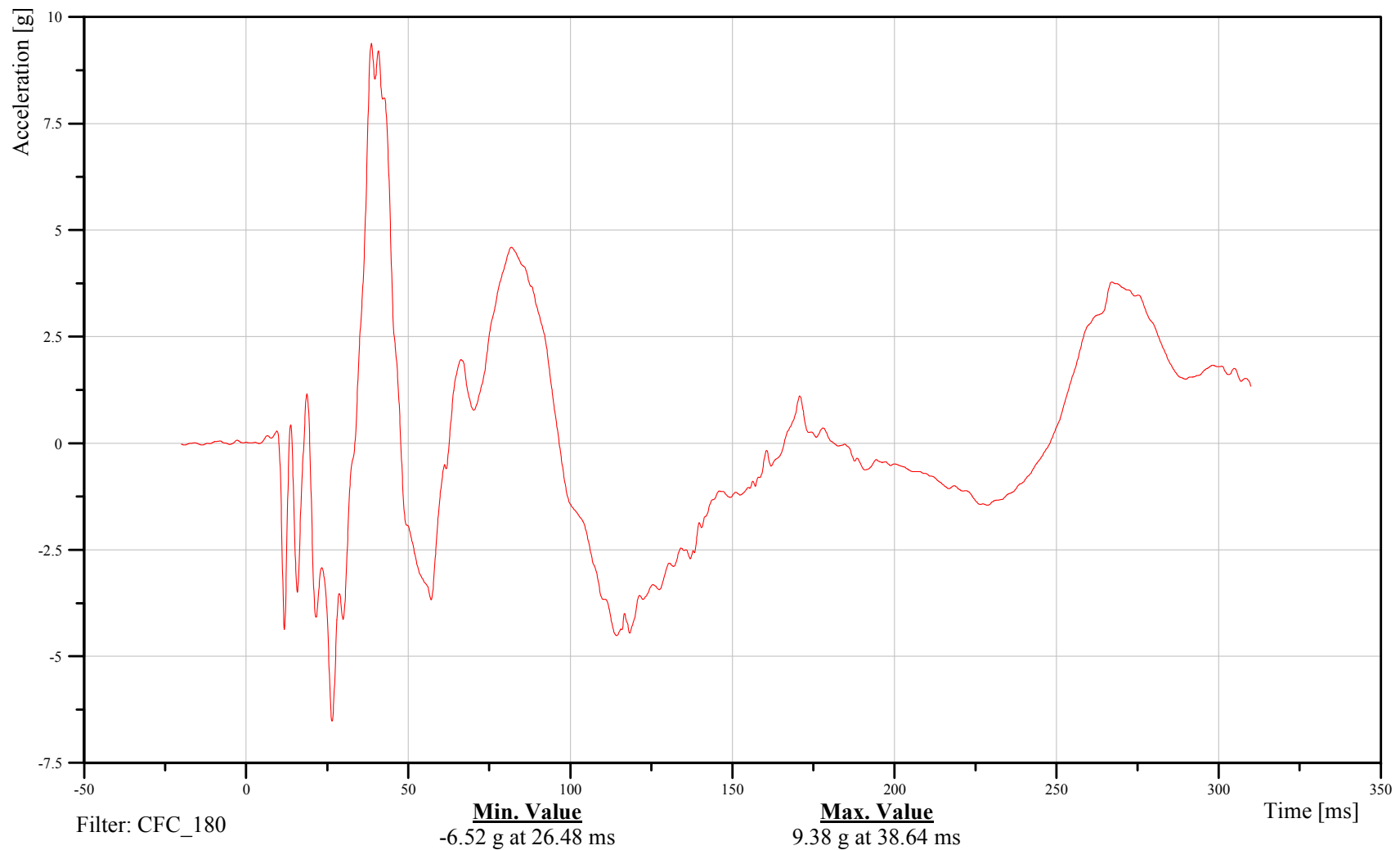
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11THSP02RIS2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Spine Rib 2 Accel Y

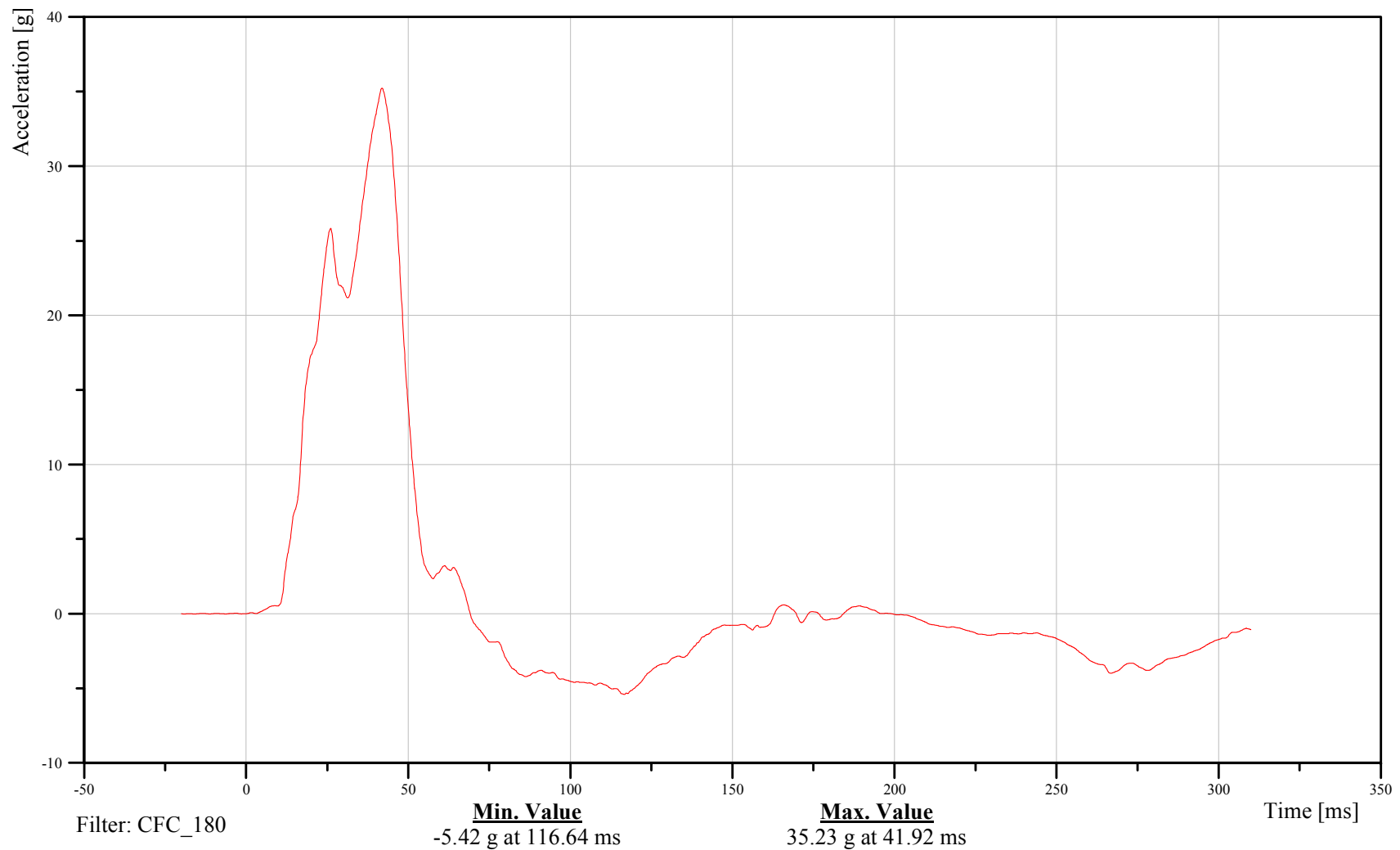
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11THSP02RIS2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Spine Rib 2 Accel Z

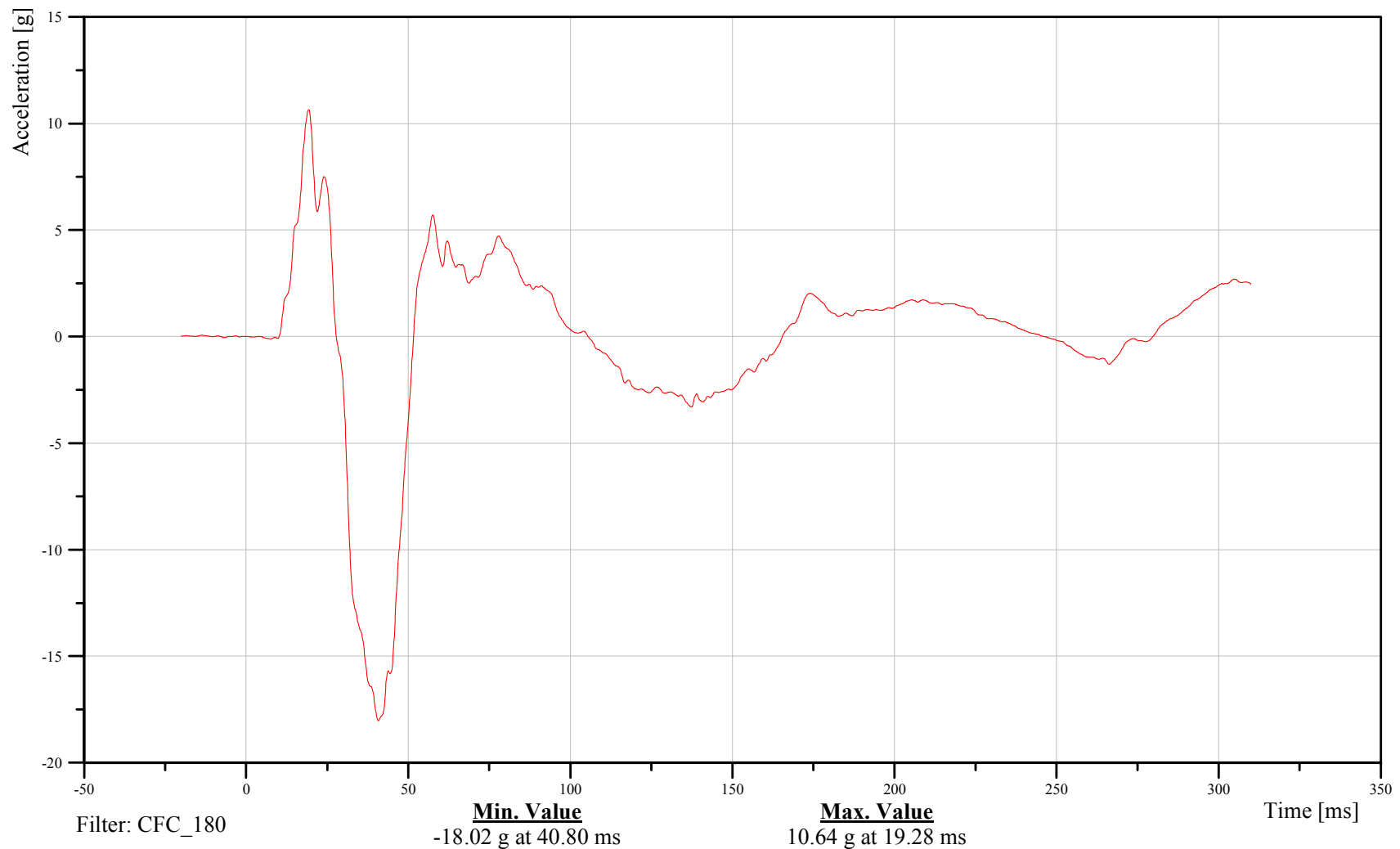
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11THSP02RIS2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

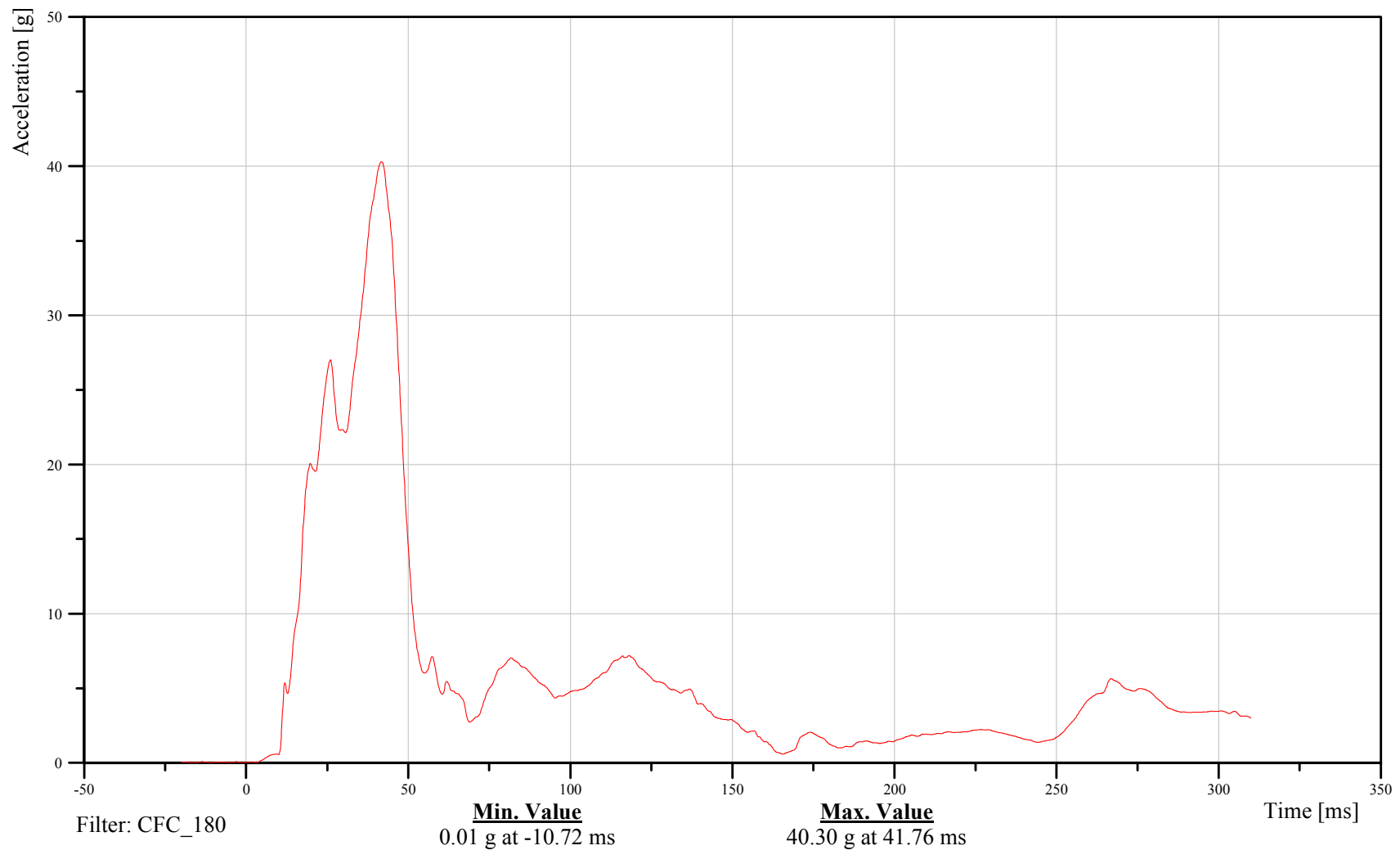
Driver Spine Rib 2 Accel Resultant

Customer: VRTC

11THSP02RIS2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Spine Rib 3 Accel X

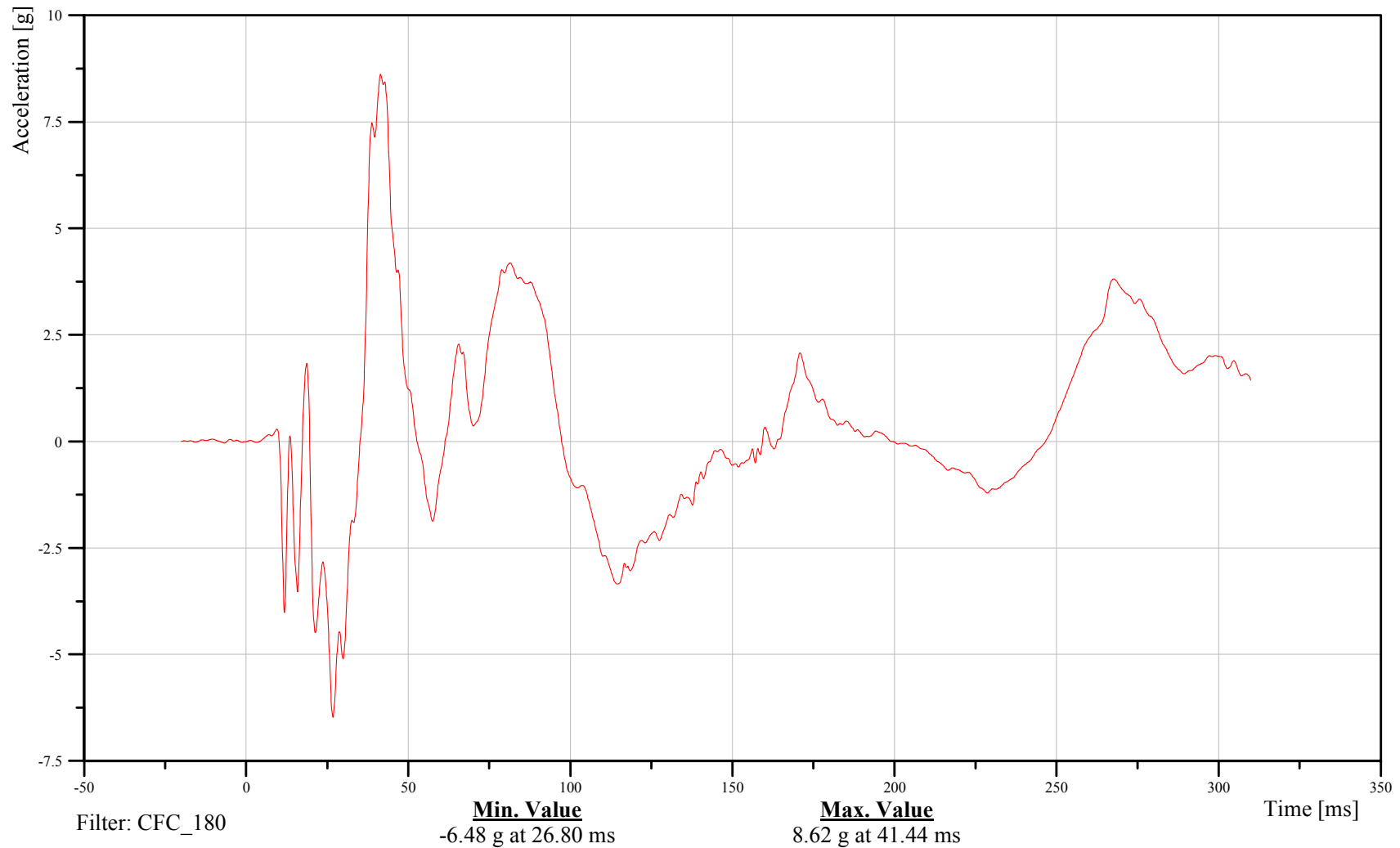
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11THSP03RIS2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Spine Rib 3 Accel Y

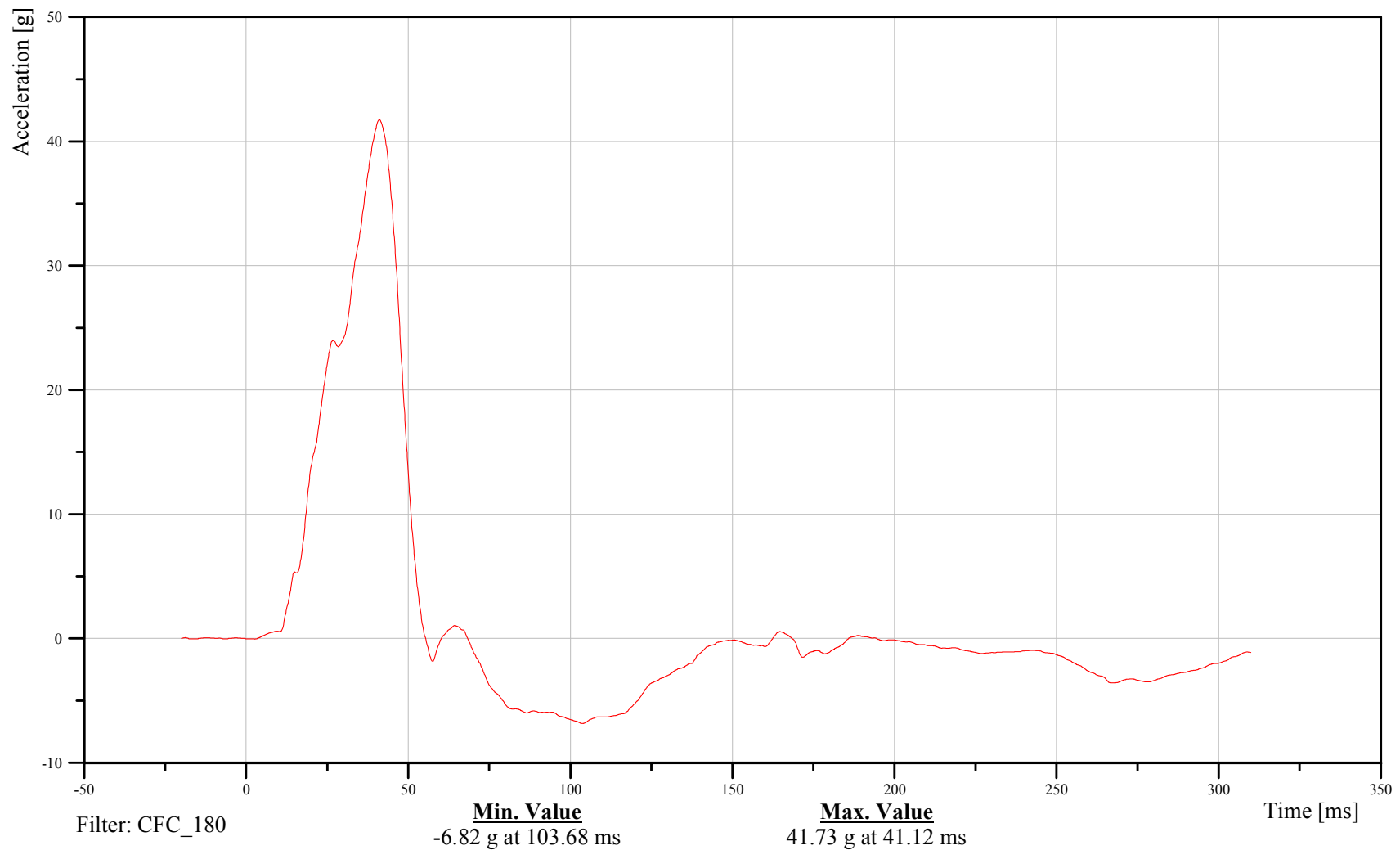
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11THSP03RIS2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Spine Rib 3 Accel Z

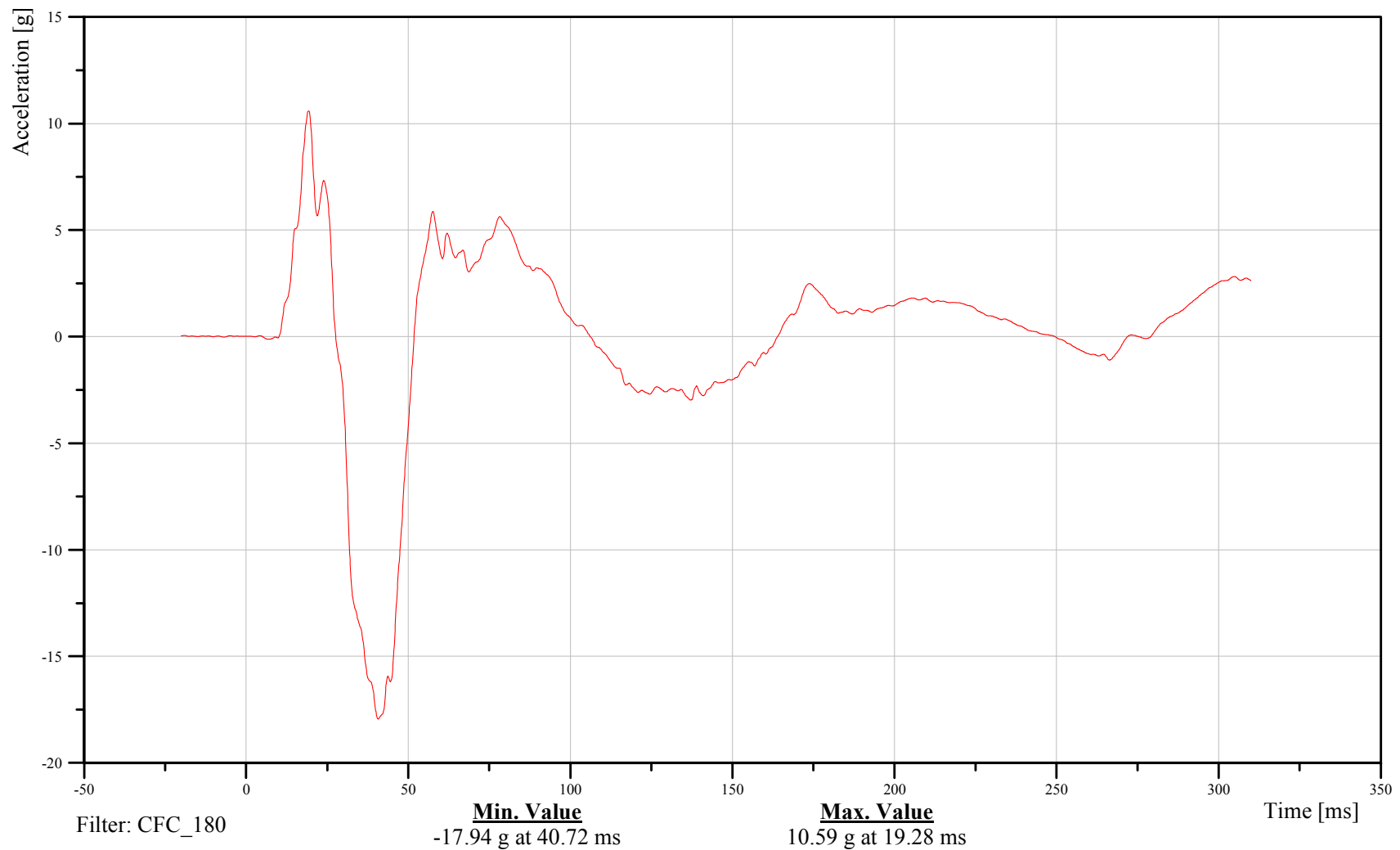
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11THSP03RIS2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

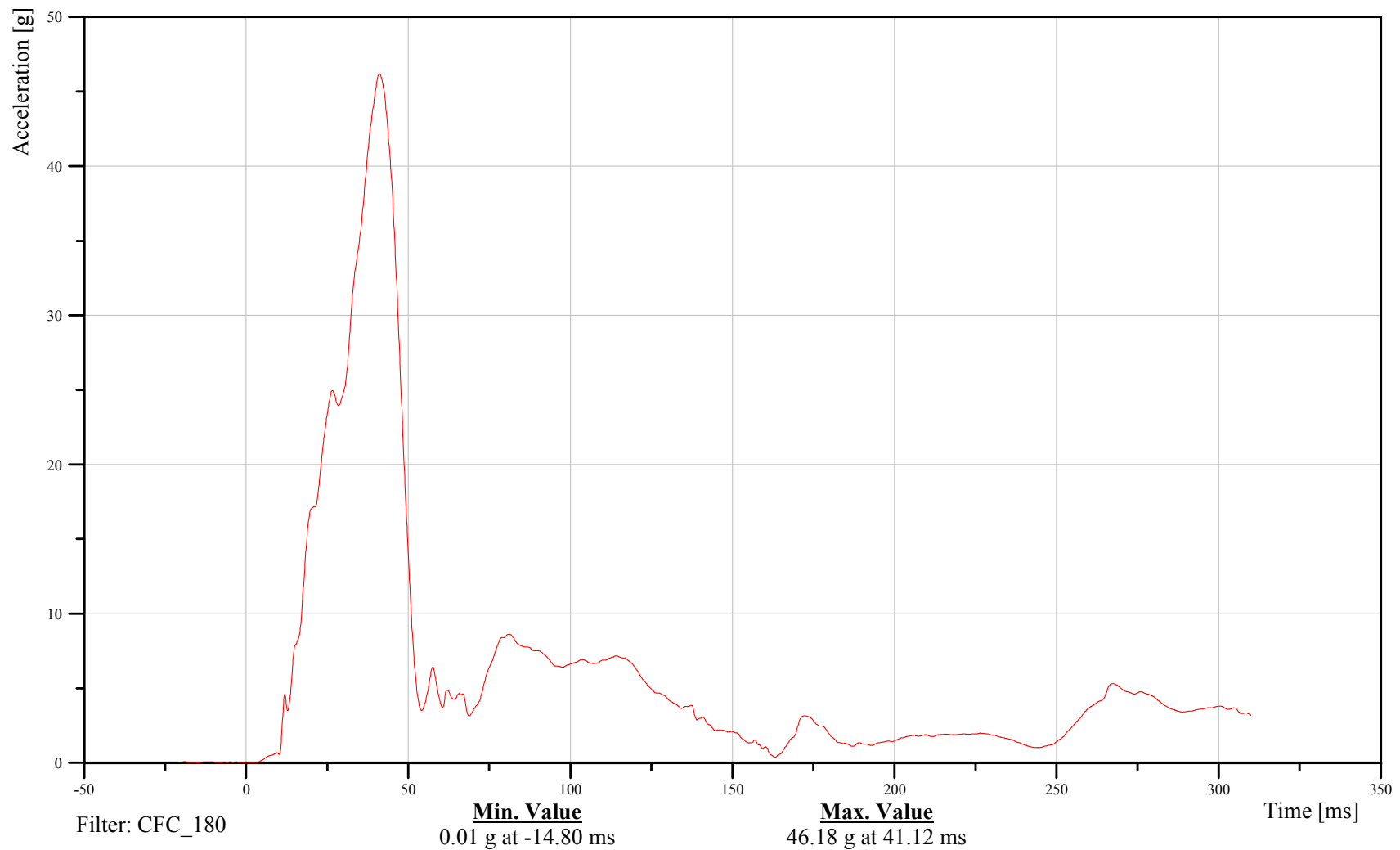
Driver Spine Rib 3 Accel Resultant

Customer: VRTC

11THSP03RIS2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Lower Spine Accel X

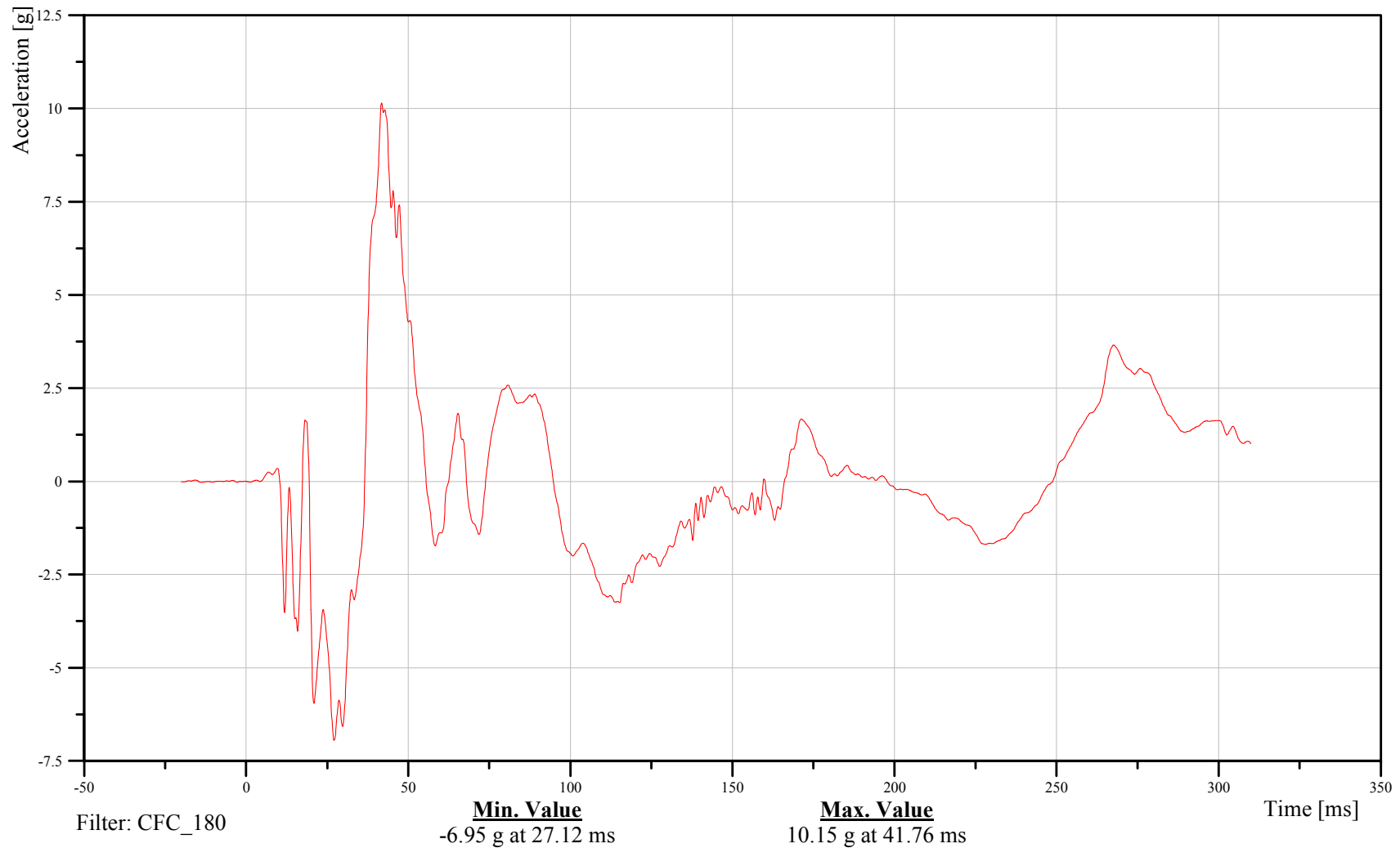
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11SPIN1200S2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Lower Spine Accel Y

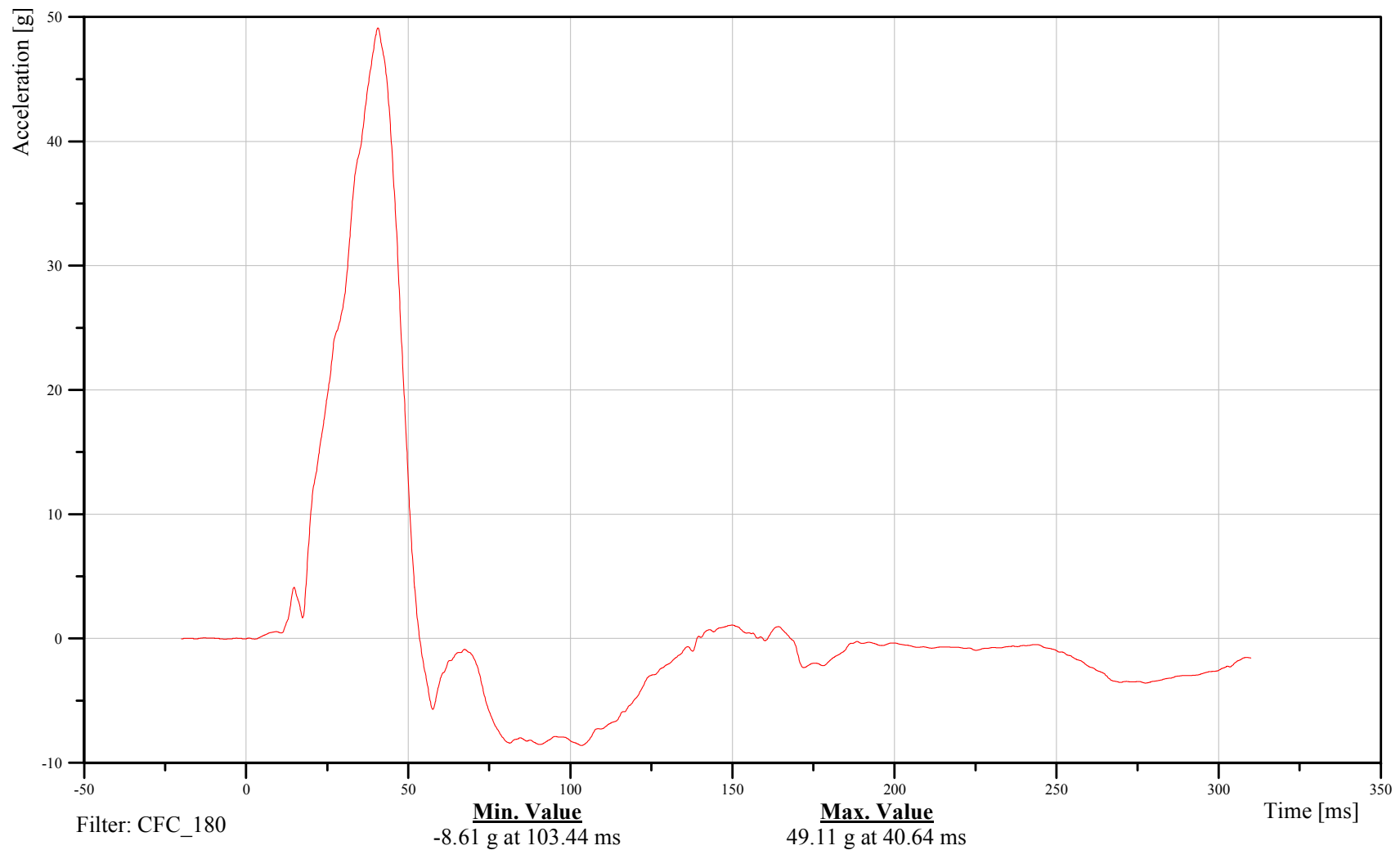
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11SPIN1200S2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Lower Spine Accel Z

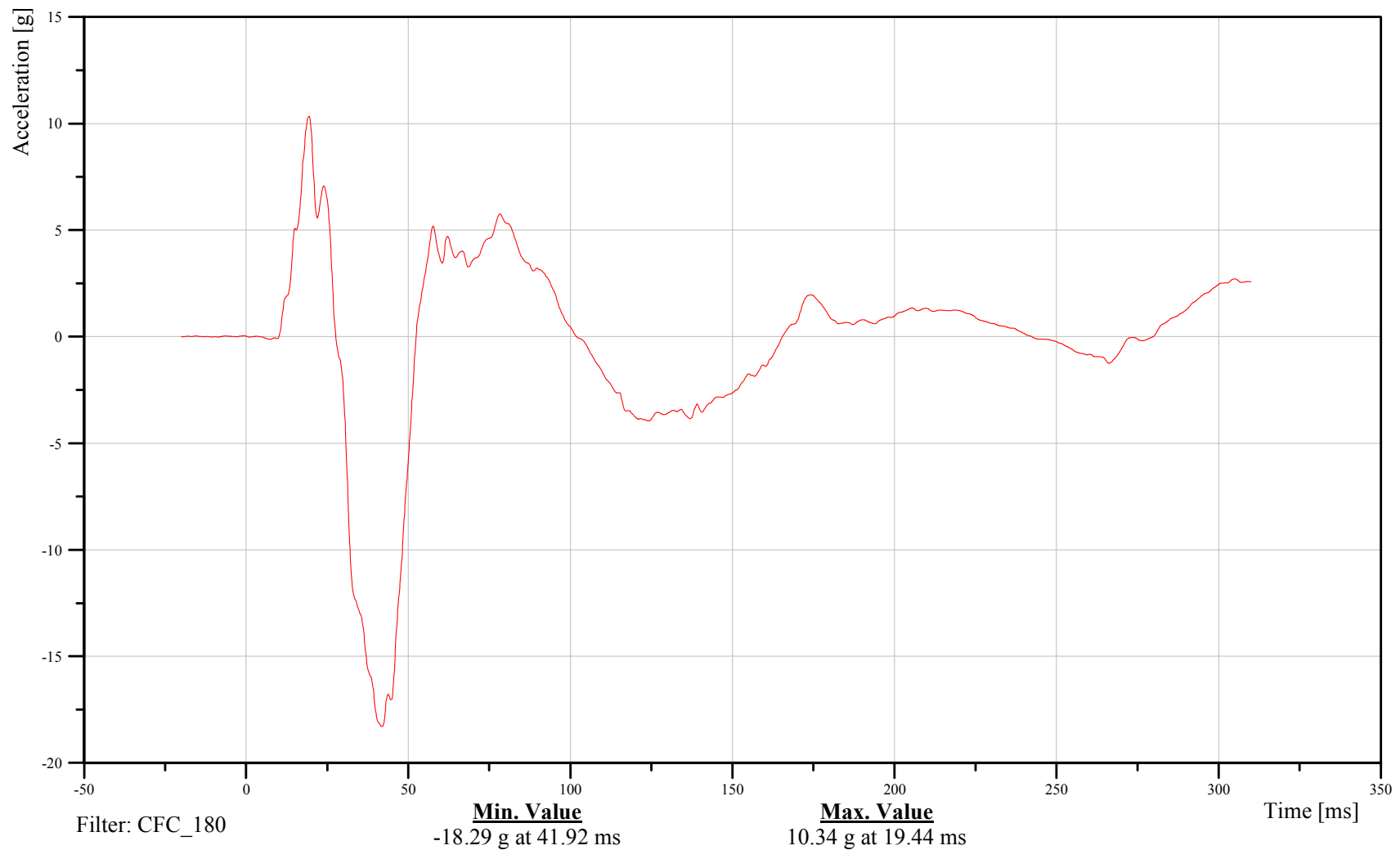
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11SPIN1200S2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

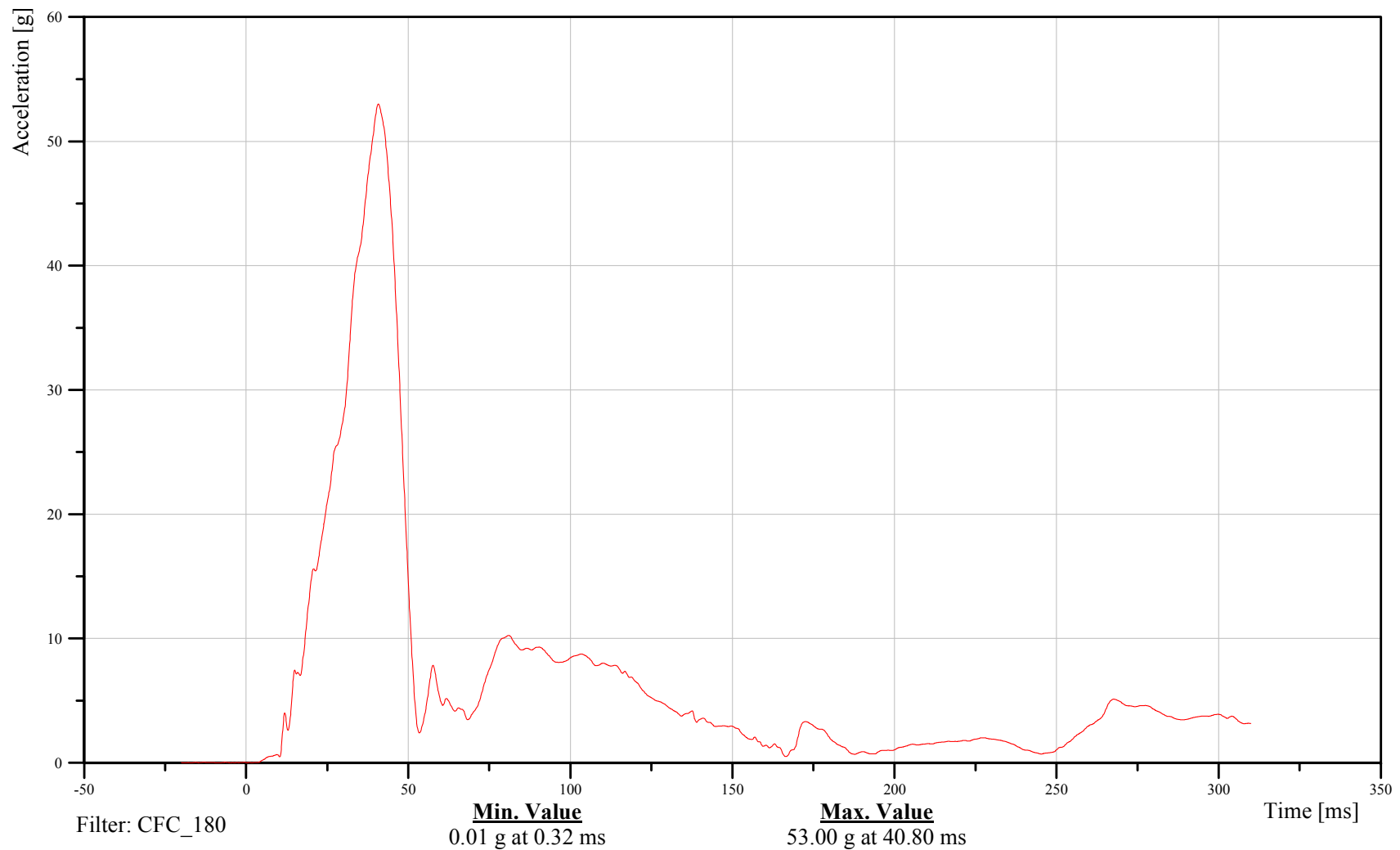
Driver Lower Spine Accel Resultant

Customer: VRTC

11SPIN1200S2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Spine Rib 5 Accel X

Date: 09/16/2005

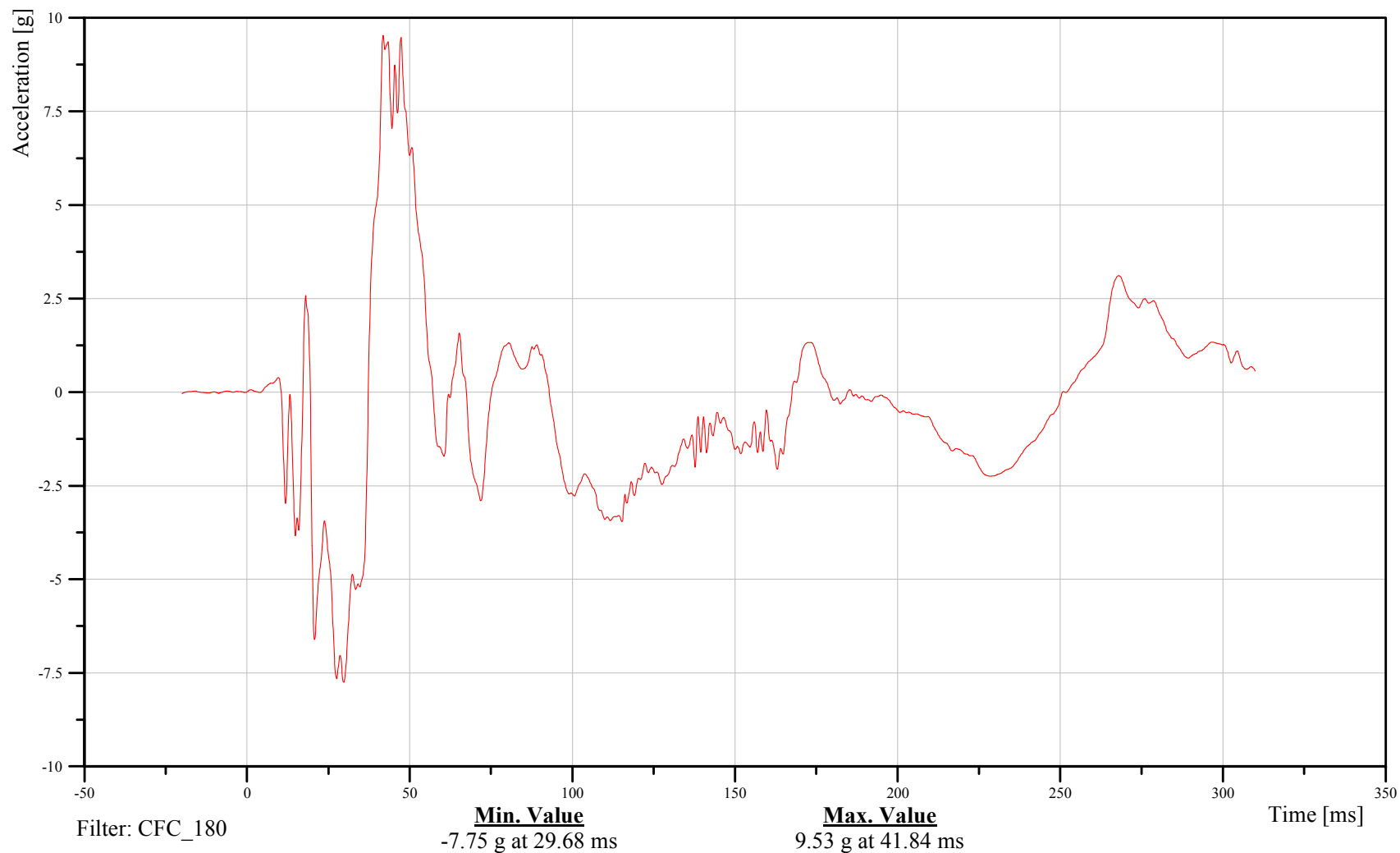
Time: 11:12

Customer: VRTC

11ABSP02RIS2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Spine Rib 5 Accel Y

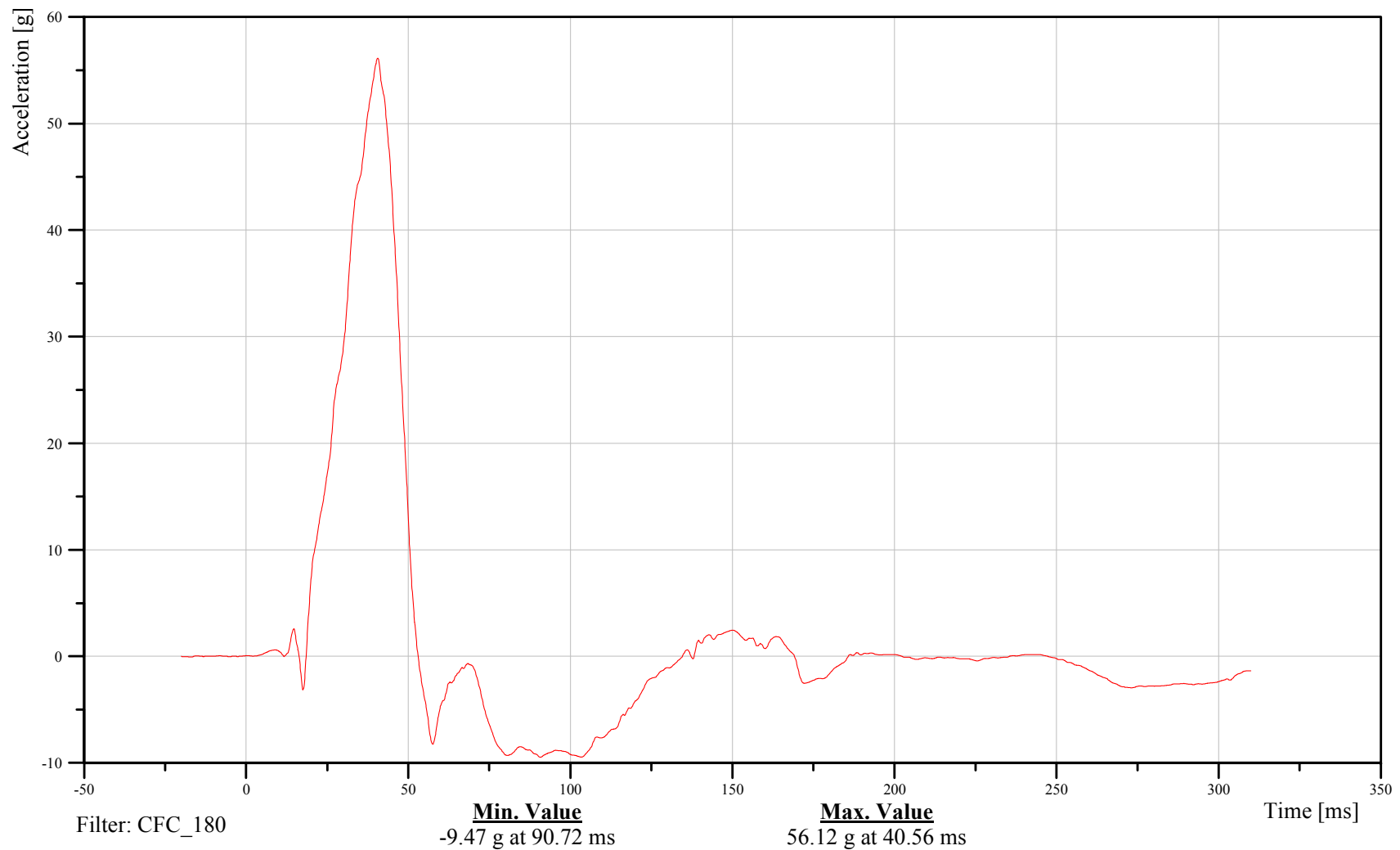
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11ABSP02RIS2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Spine Rib 5 Accel Z

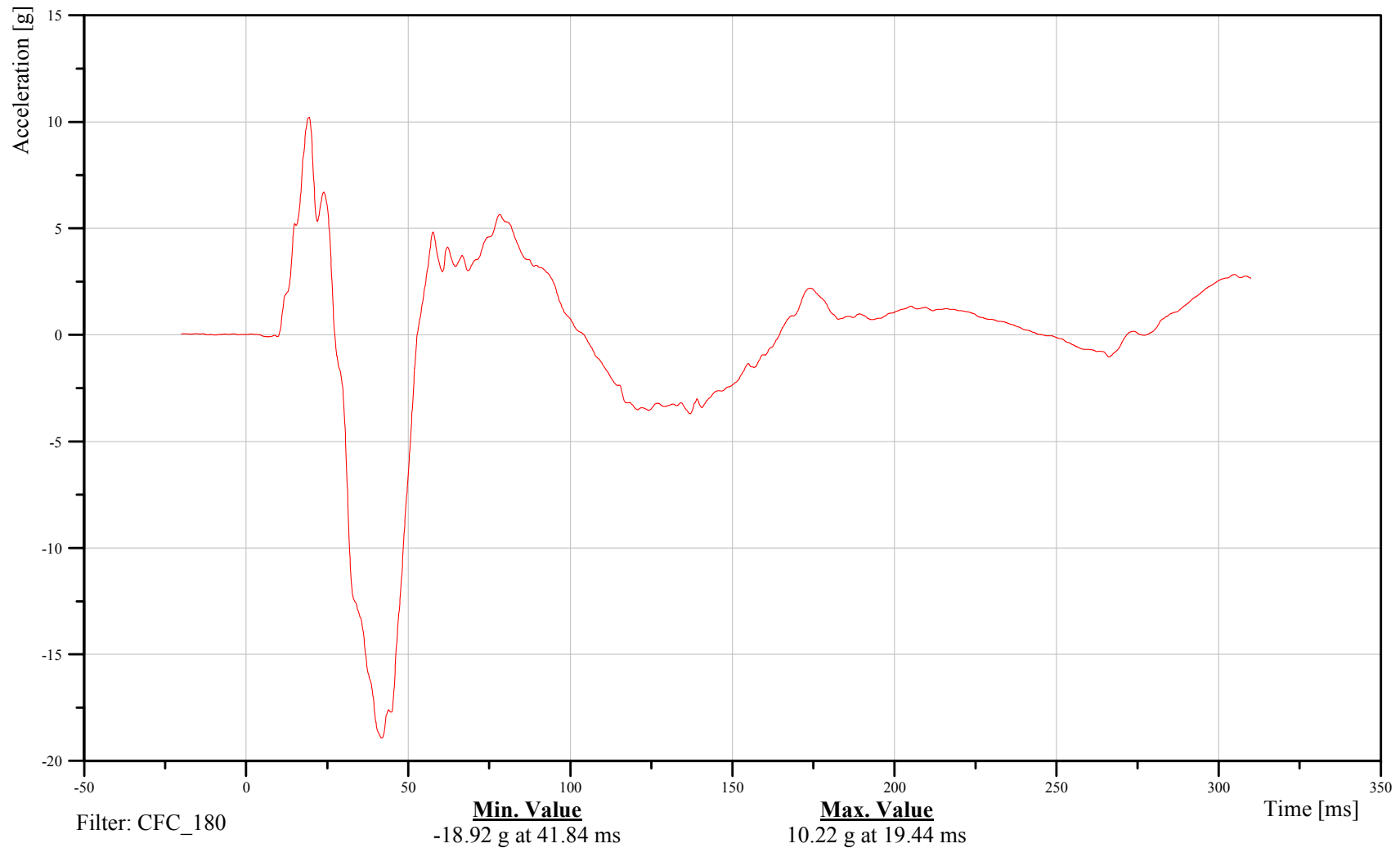
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11ABSP02RIS2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

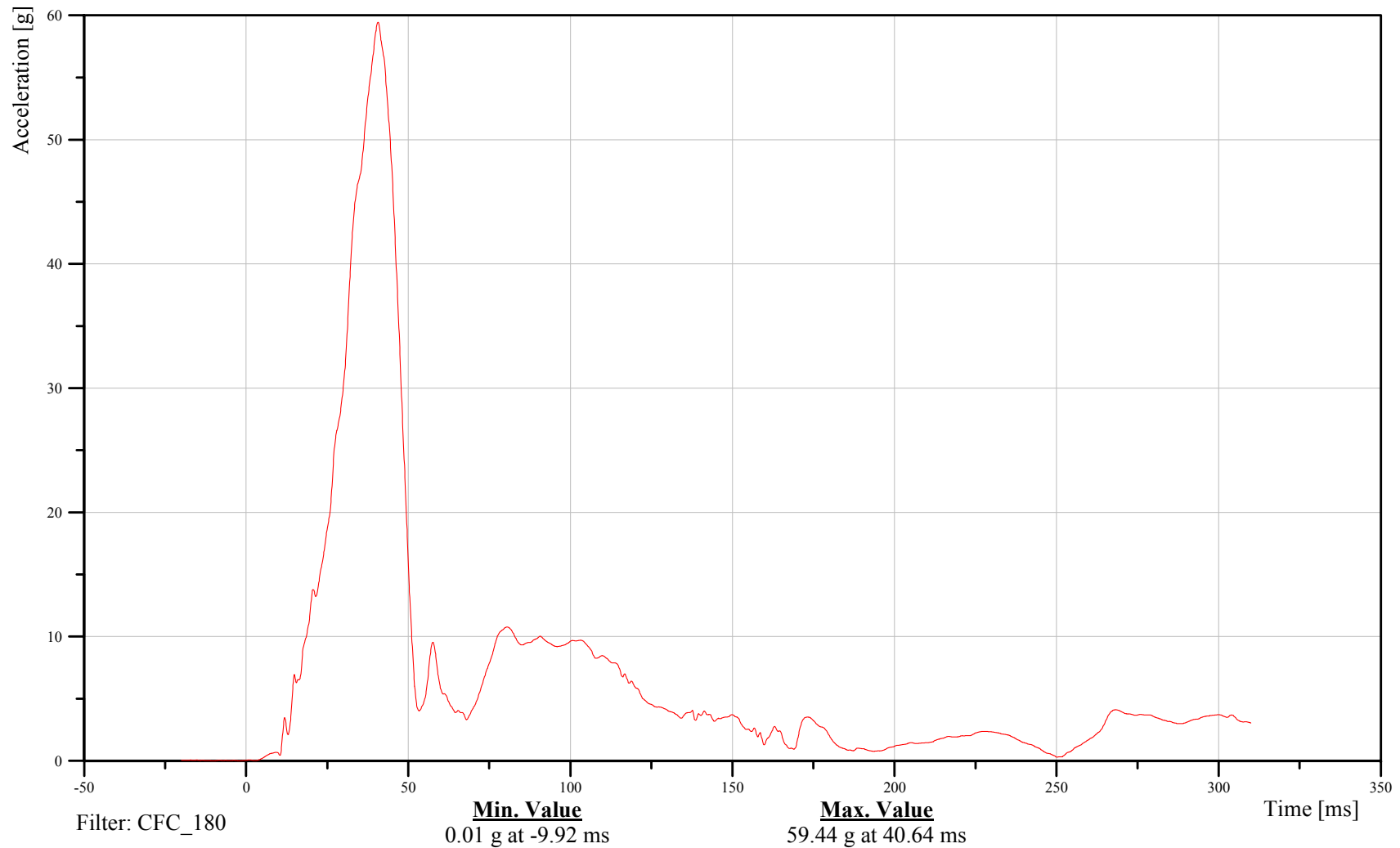
Driver Spine Rib 5 Accel Resultant

Customer: VRTC

11ABSP02RIS2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Lumbar Moment X

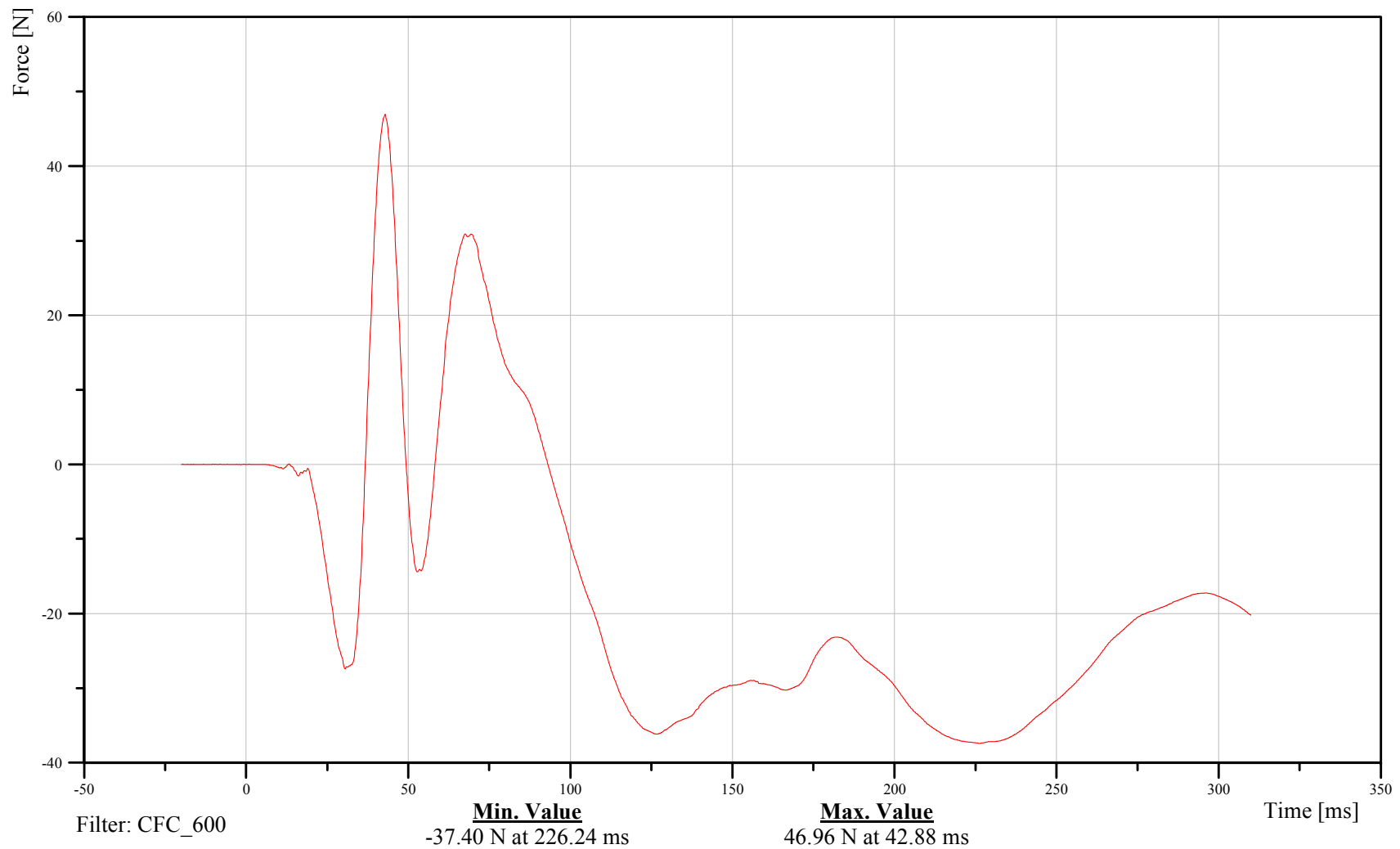
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11LUSP0000S2MOXB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Lumbar Moment Y

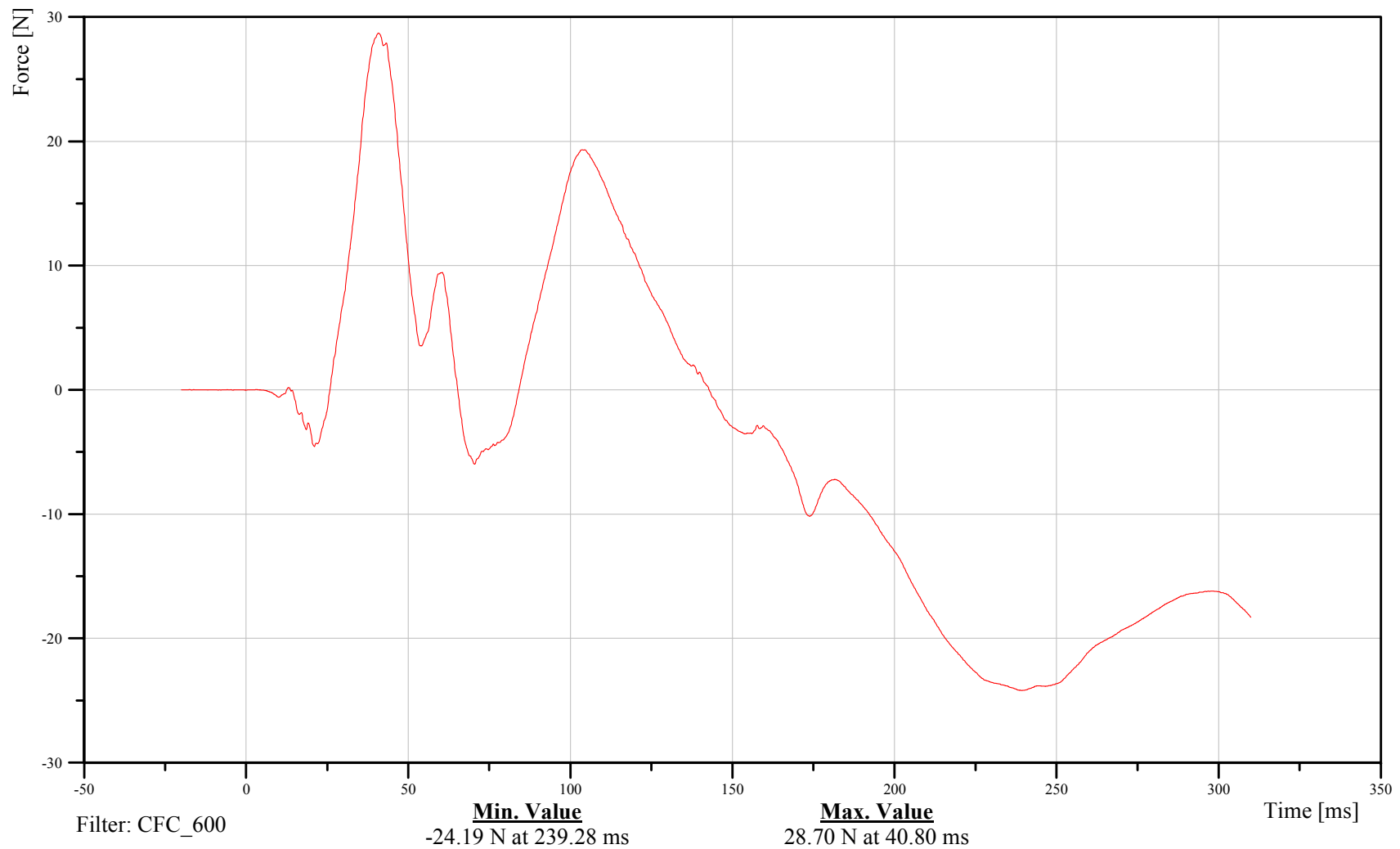
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11LUSP0000S2MOYB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Lumbar Moment Z

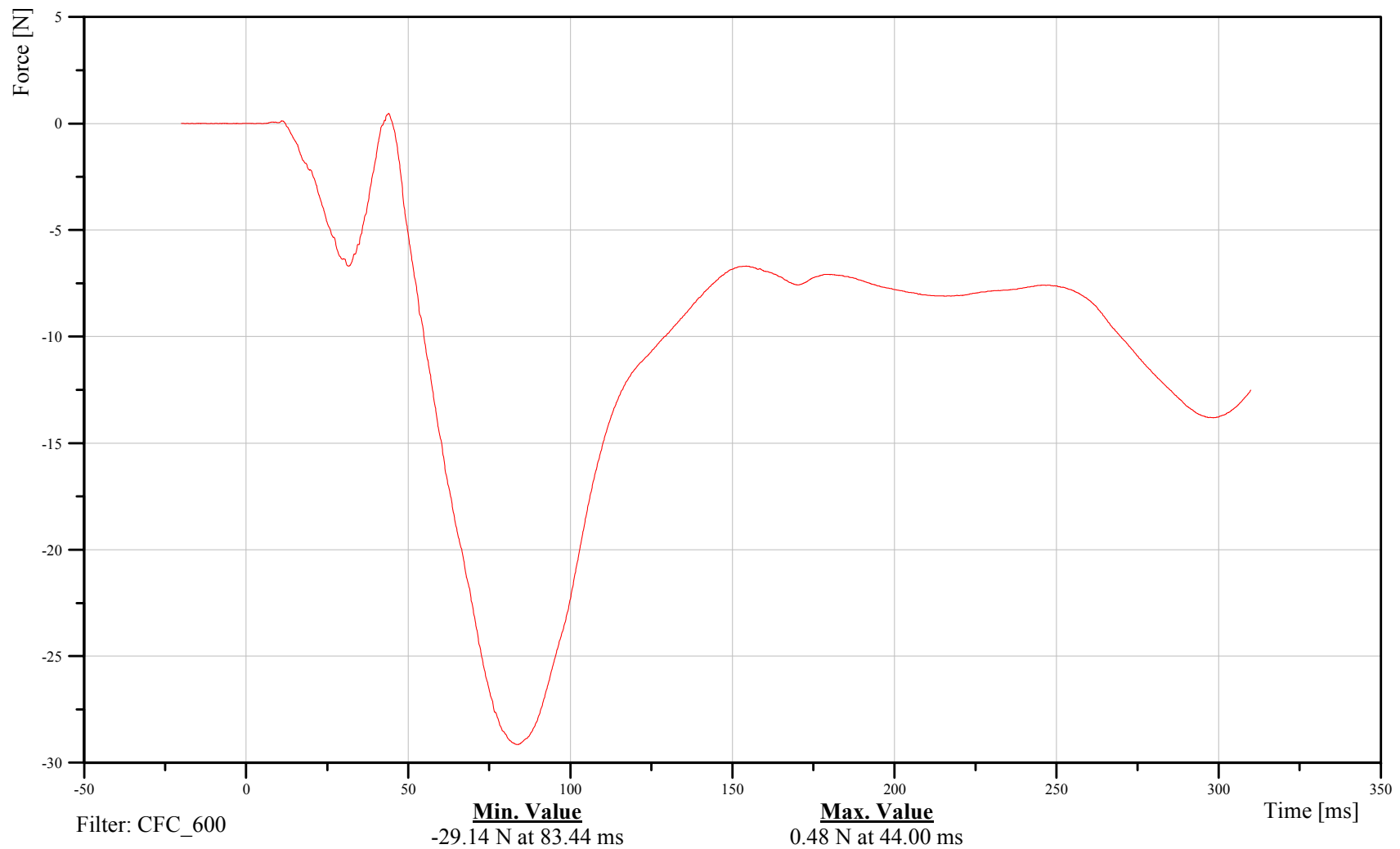
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11LUSP0000S2MOZB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Thorax Rib 1 Accel X

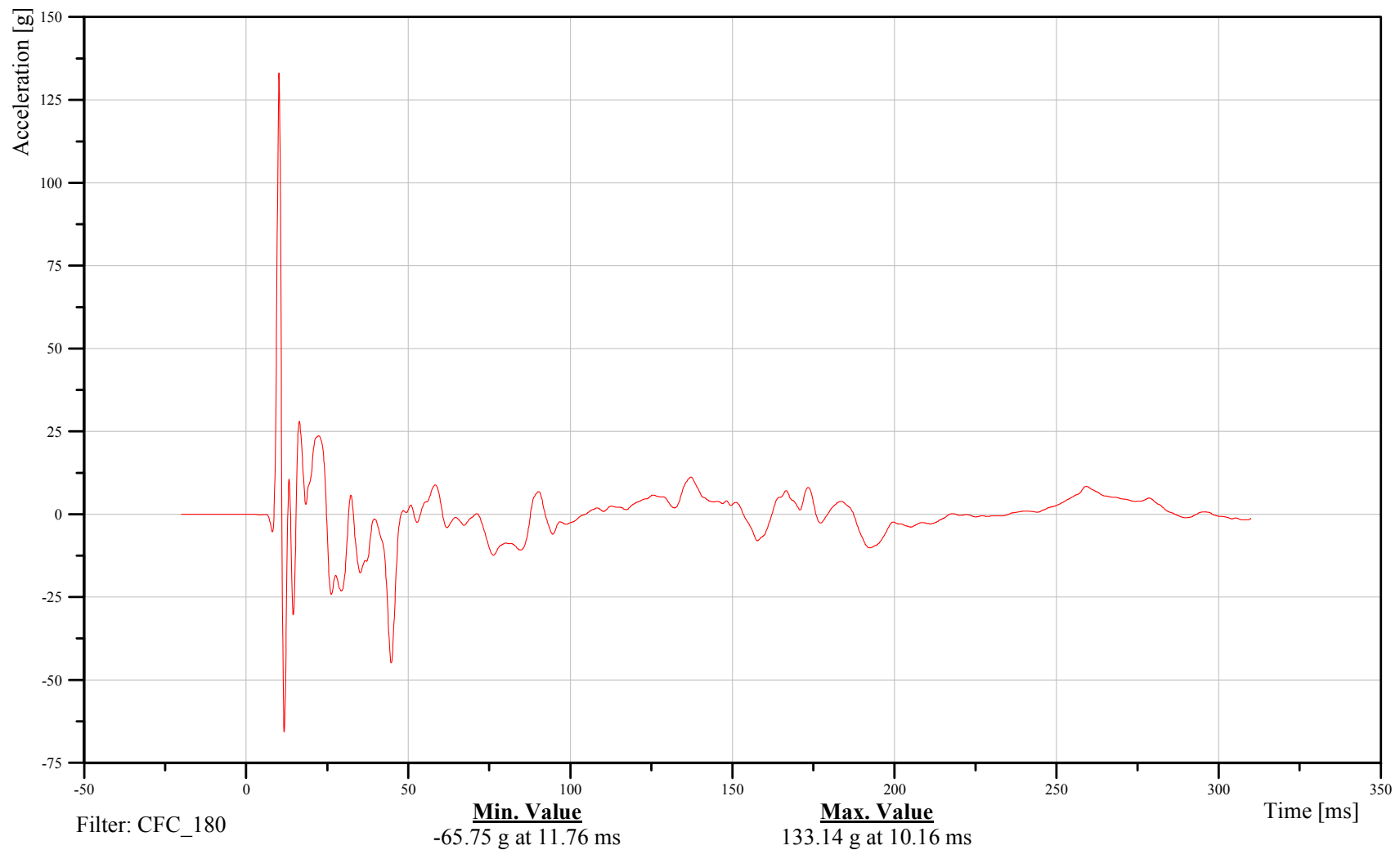
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11TRRI01LES2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Thorax Rib 1 Accel Y

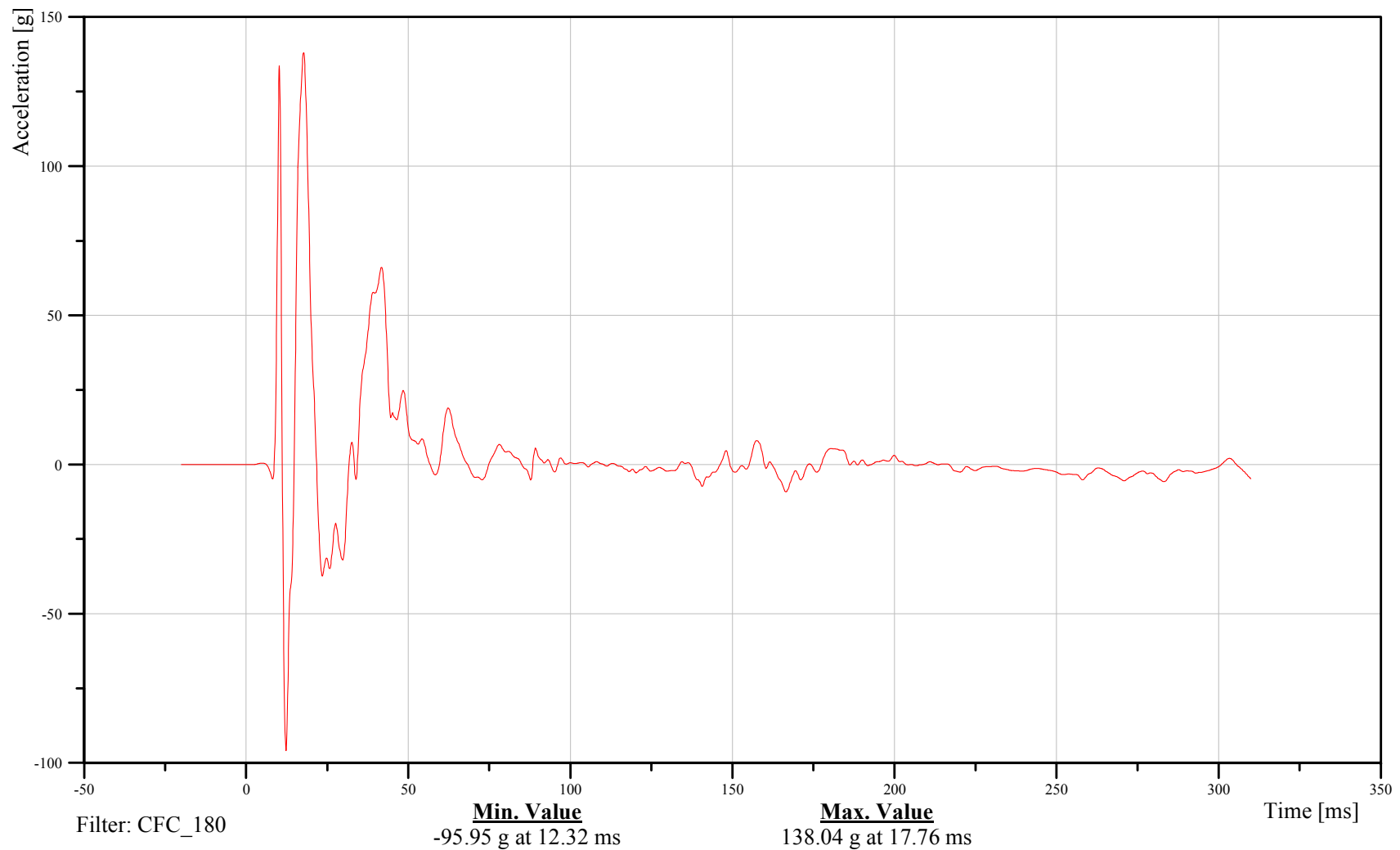
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11TRRI01LES2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Thorax Rib 1 Accel Z

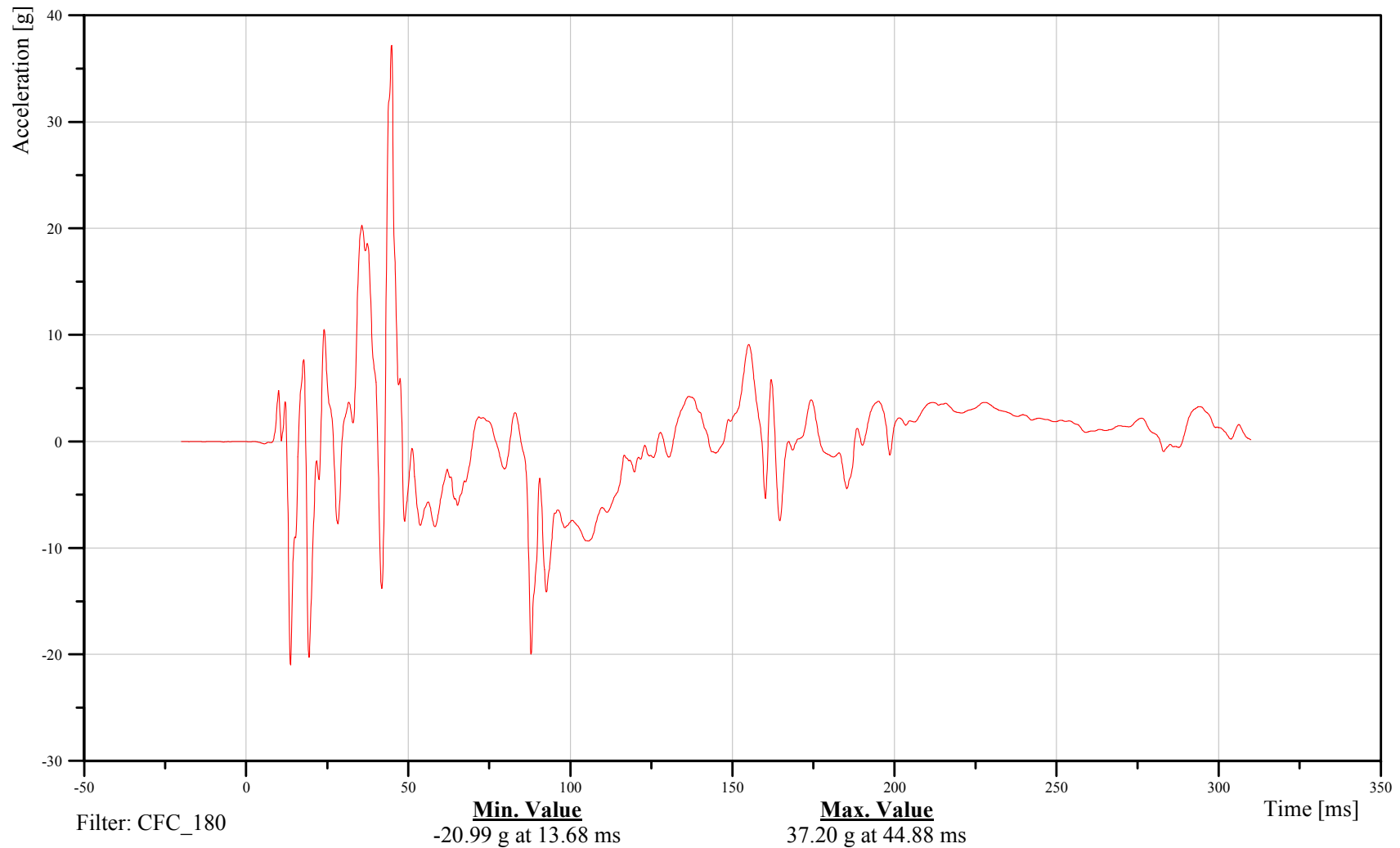
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11TRRI01LES2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Thorax Rib 1 Accel Resultant

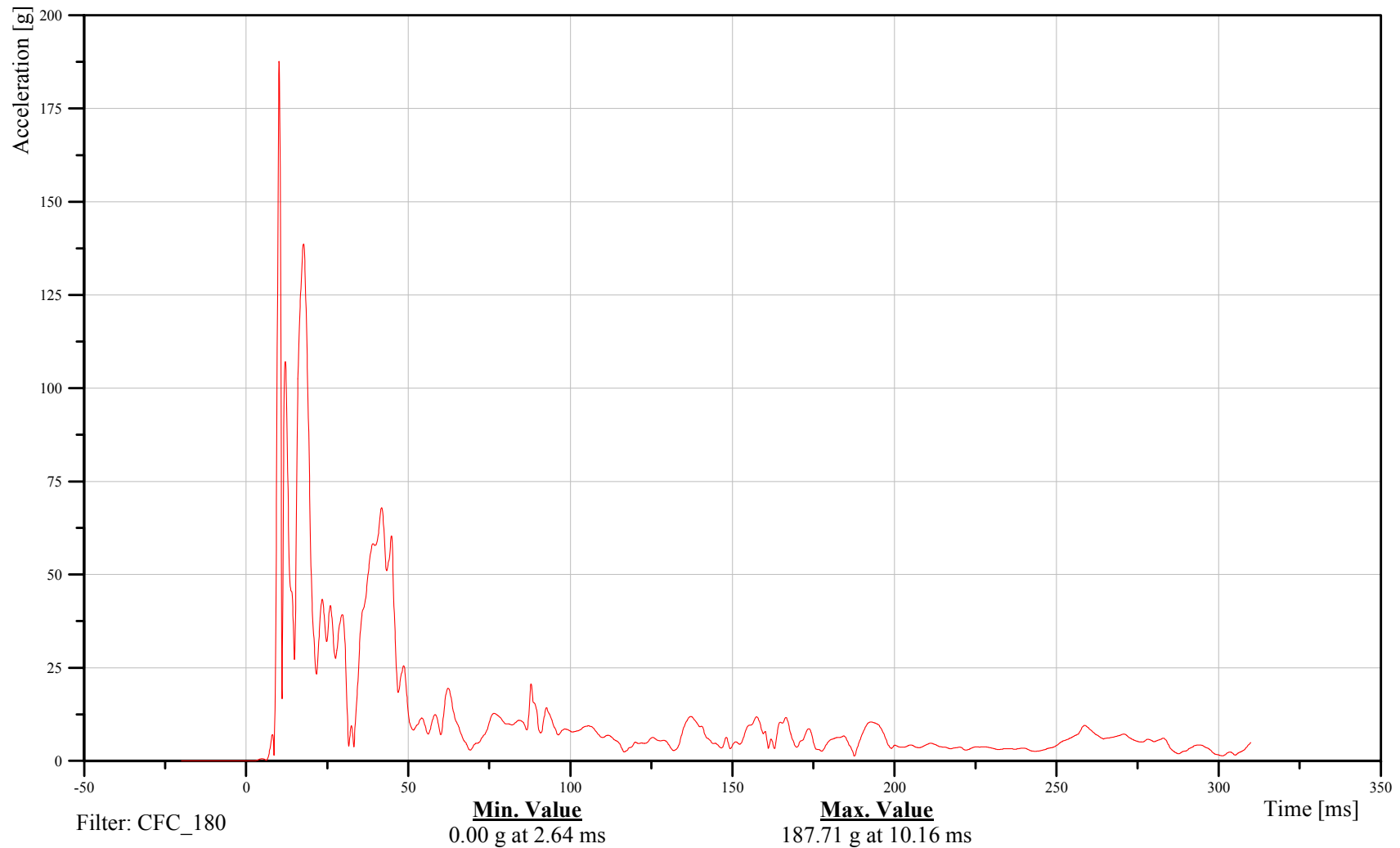
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11TRRI01LES2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Thorax Rib 2 Accel X

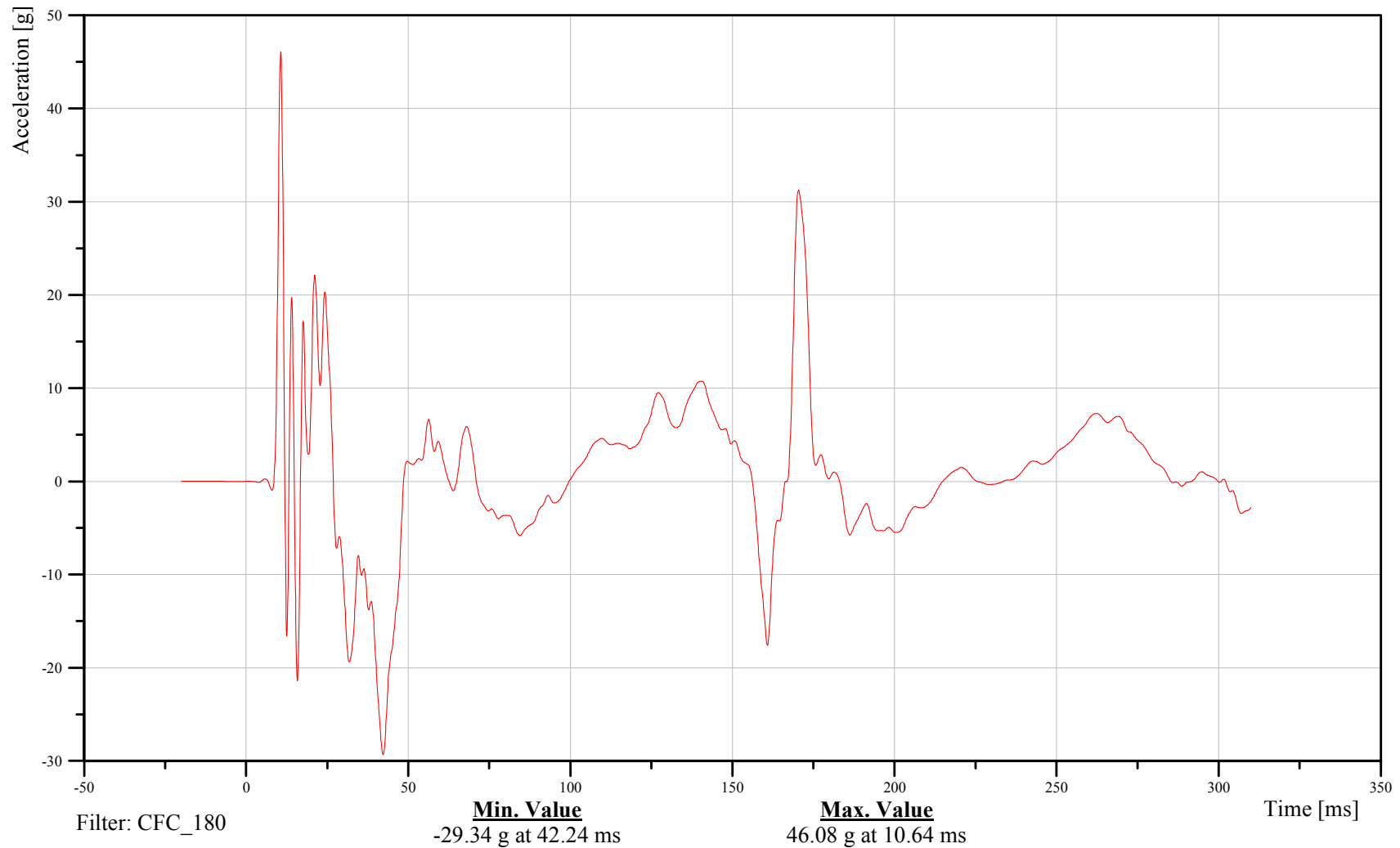
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11TRRI02LES2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Thorax Rib 2 Accel Y

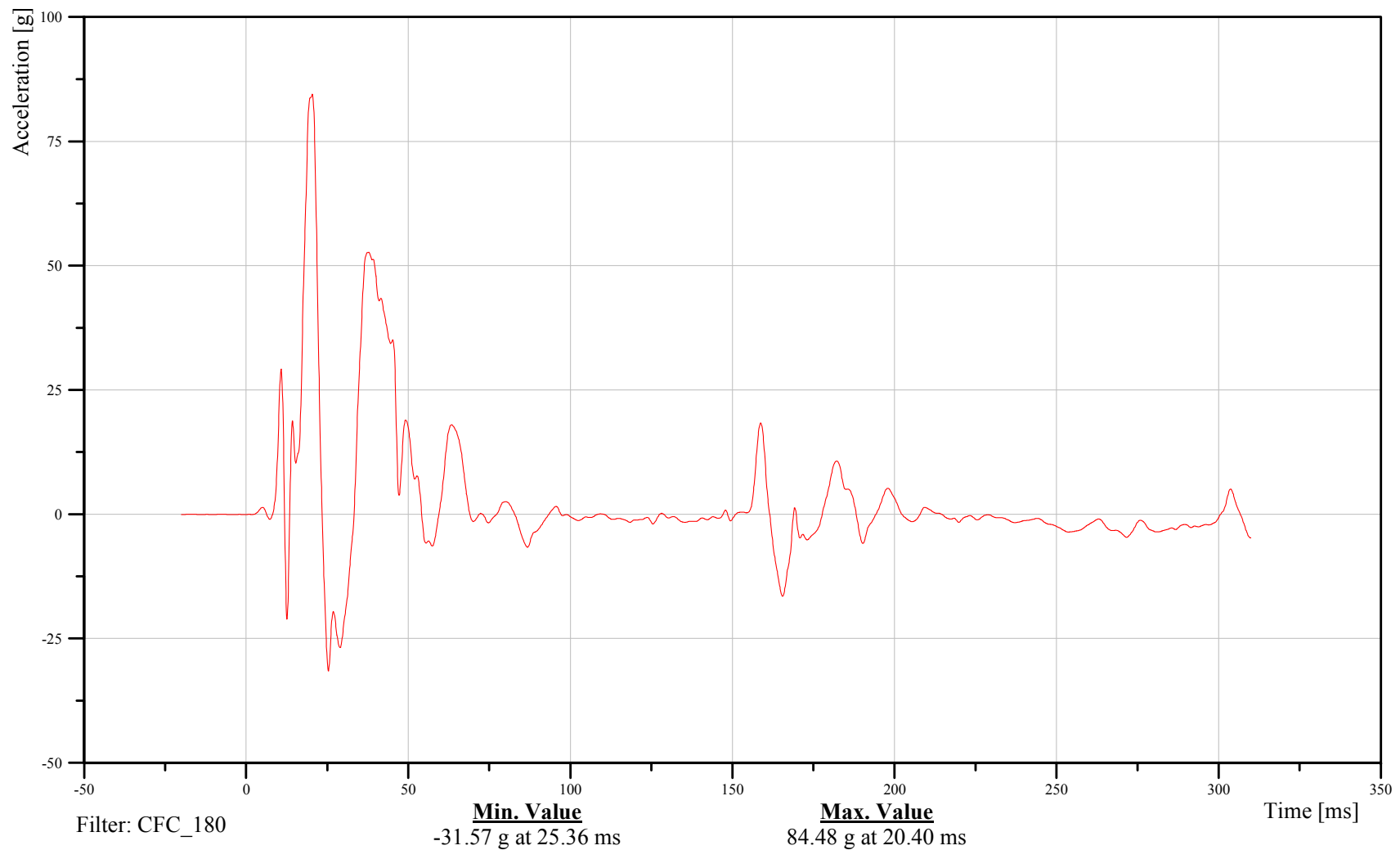
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11TRRI02LES2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Thorax Rib 2 Accel Z

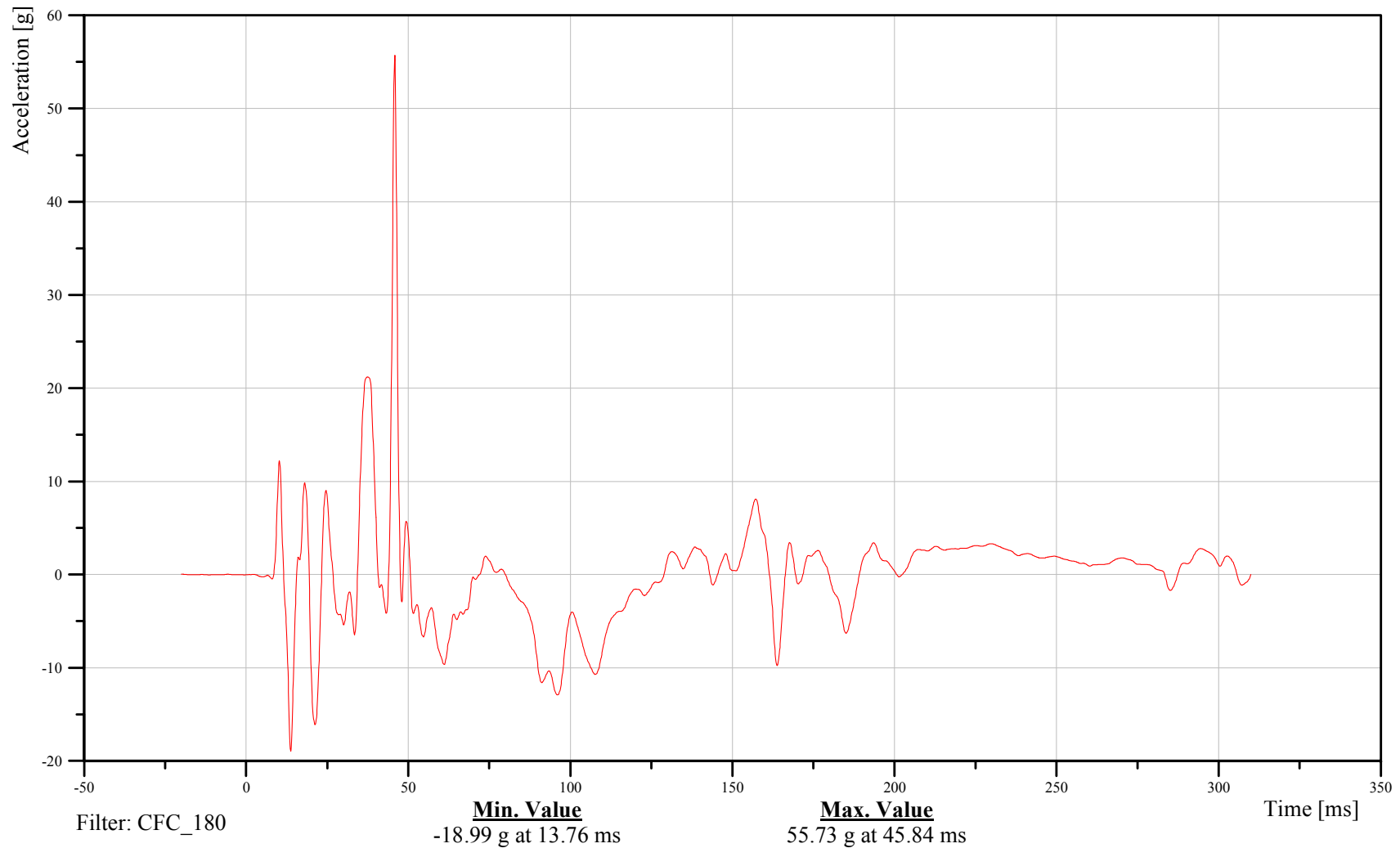
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11TRRI02LES2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Thorax Rib 2 Accel Resultant

Date: 09/16/2005

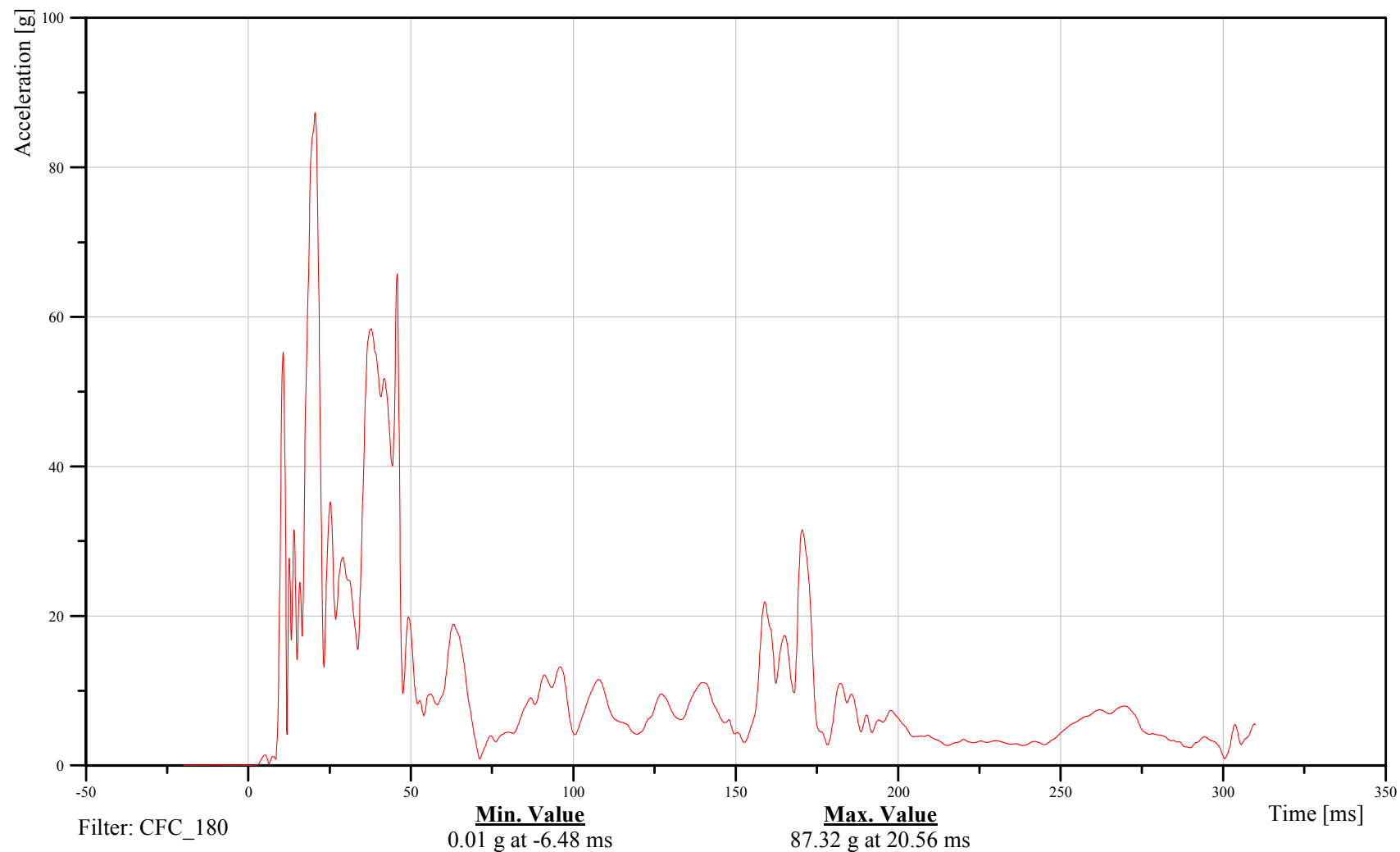
Time: 11:12

Customer: VRTC

11TRRI02LES2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Thorax Rib 3 Accel X

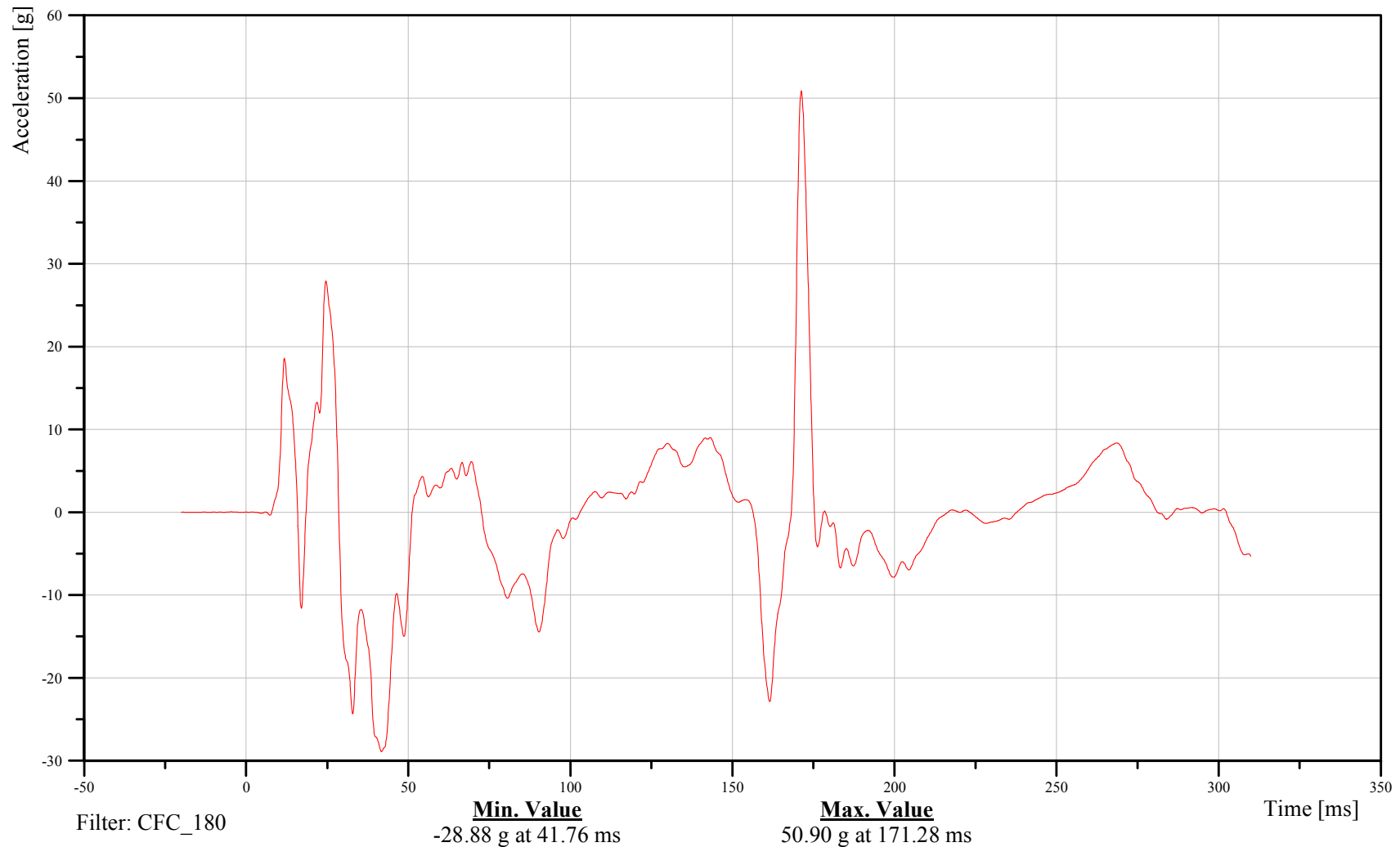
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11TRRI03LES2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Thorax Rib 3 Accel Y

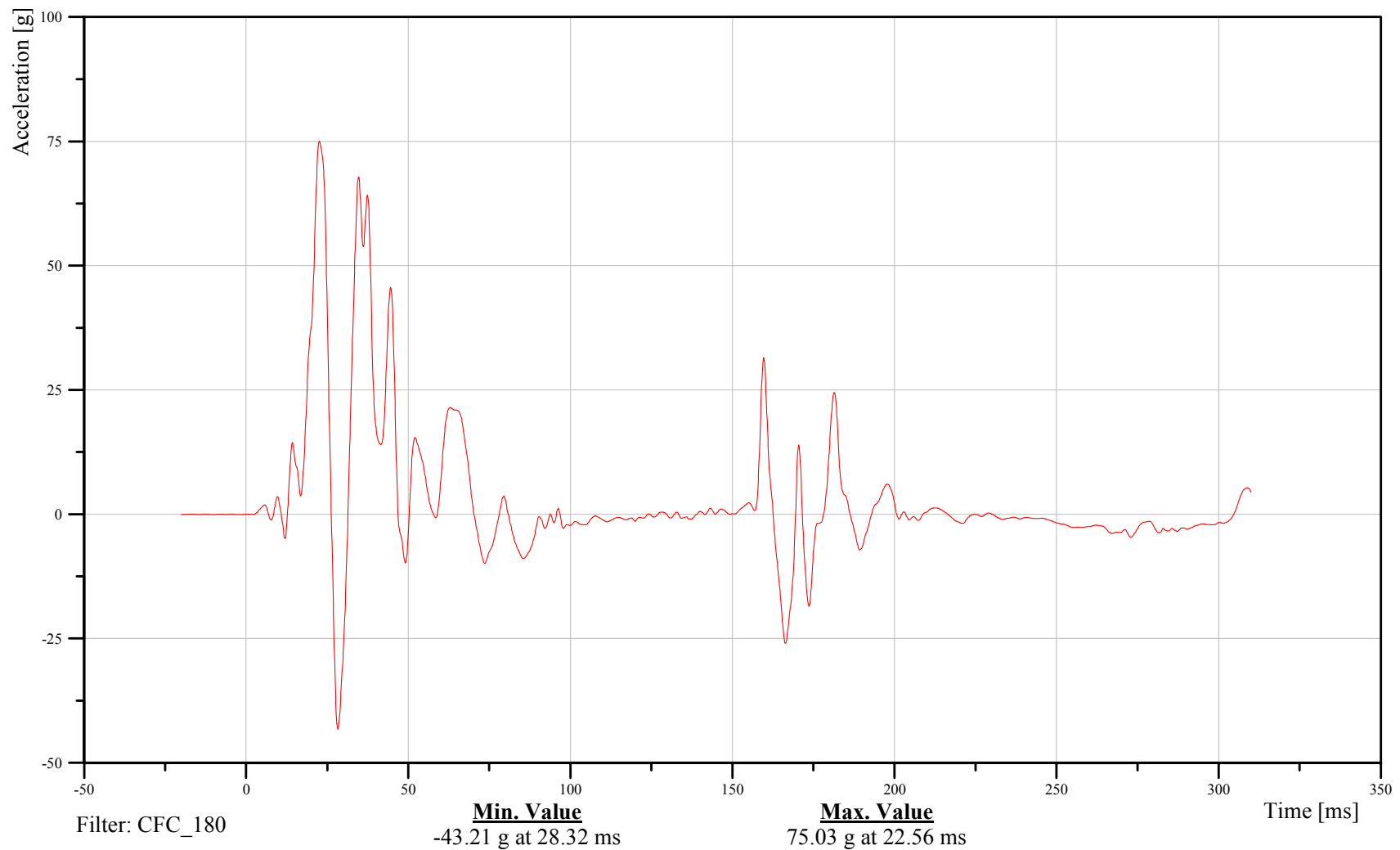
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11TRRI03LES2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Thorax Rib 3 Accel Z

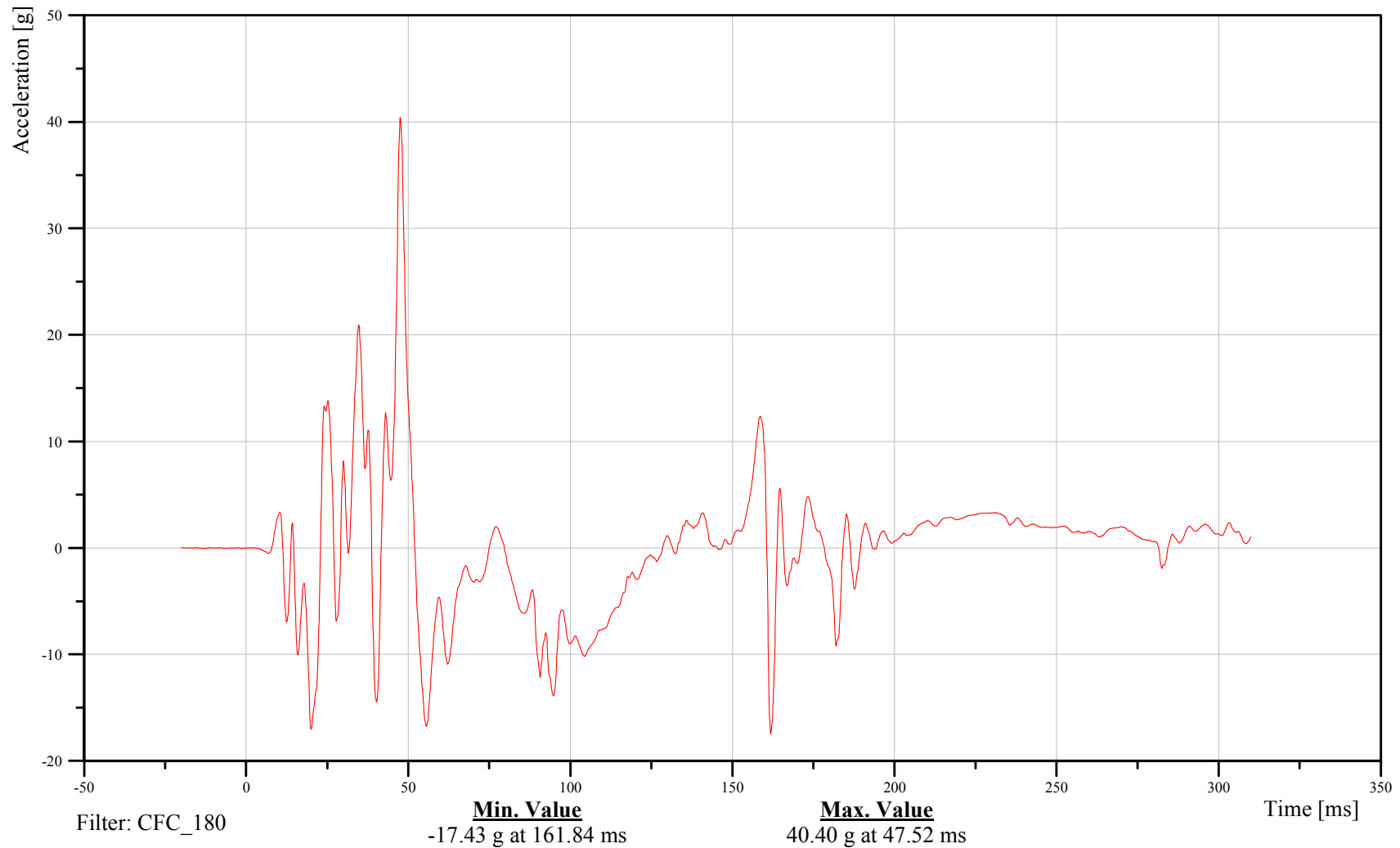
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11TRRI03LES2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Thorax Rib 3 Accel Resultant

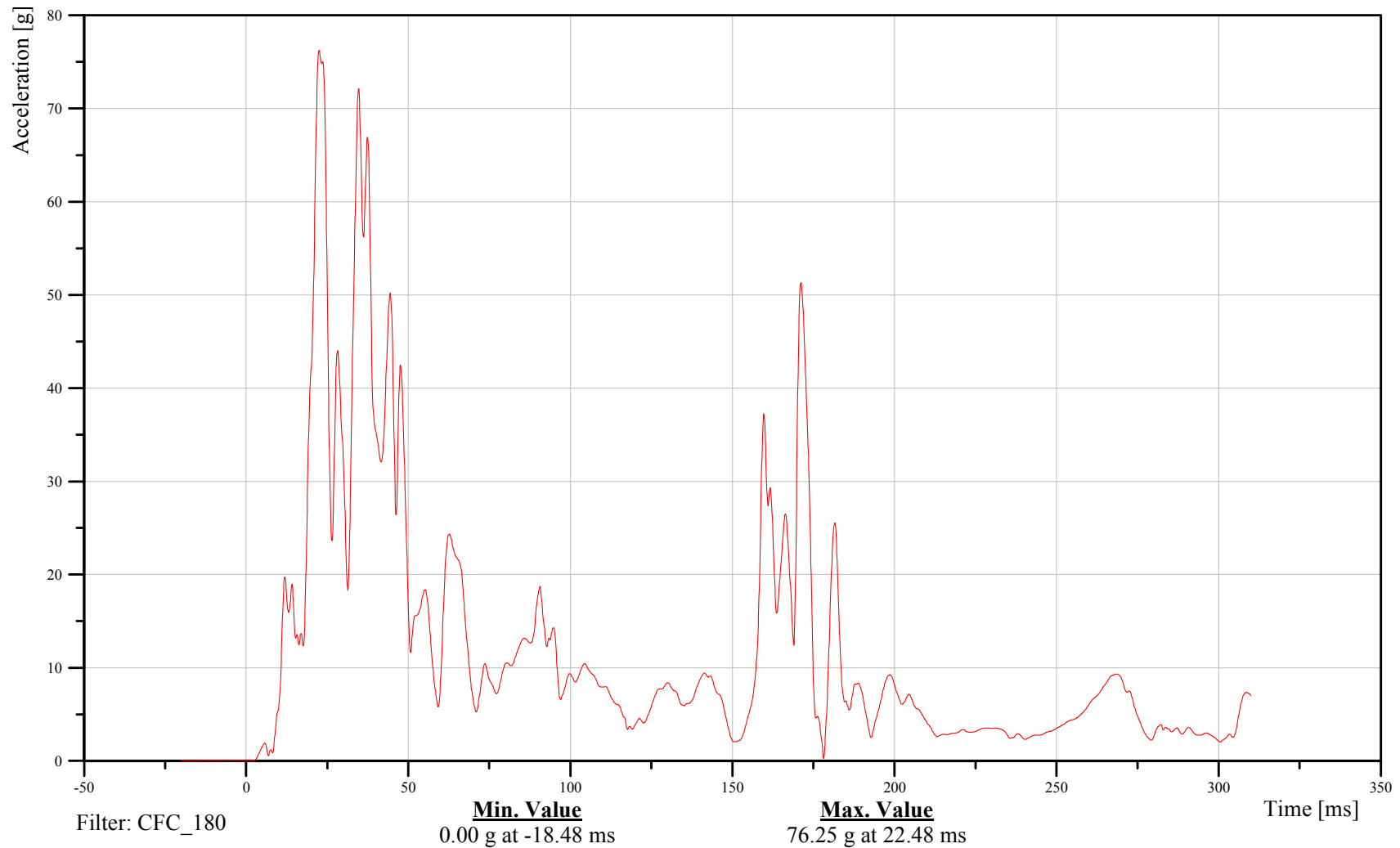
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11TRRI03LES2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Abdomin Rib 1 Accel X

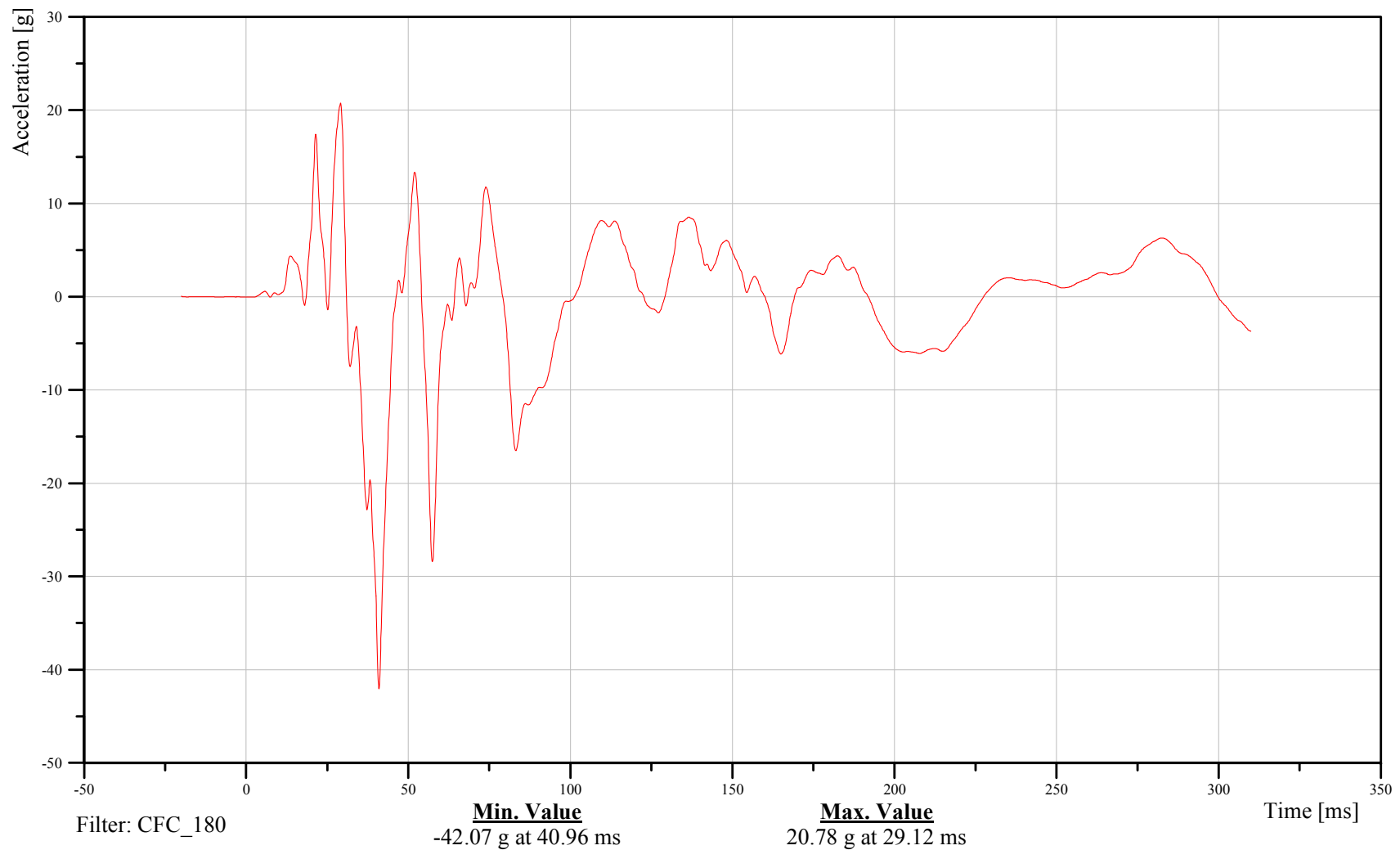
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11ABRI01LES2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Abdomin Rib 1 Accel Y

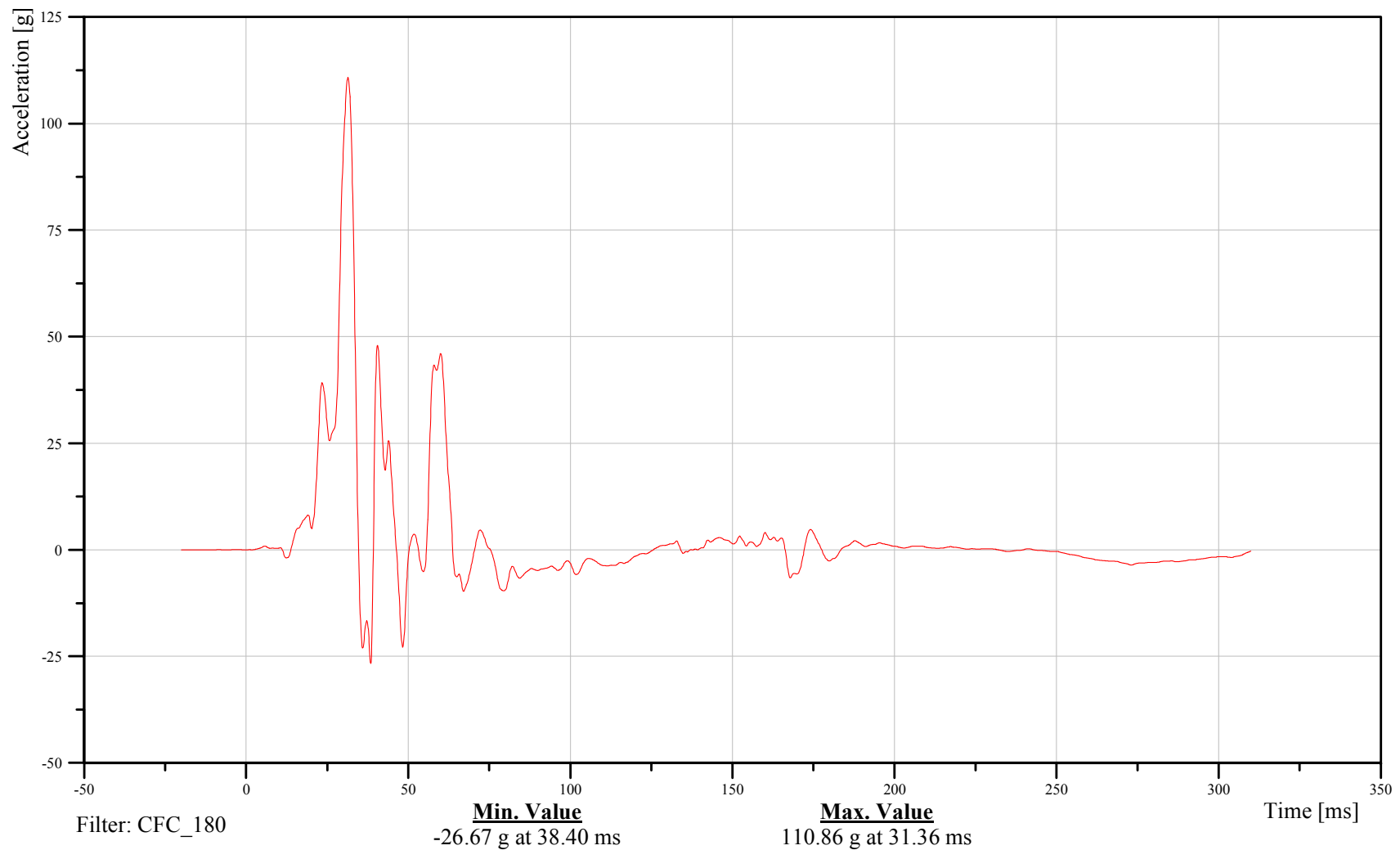
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11ABRI01LES2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Abdomin Rib 1 Accel Z

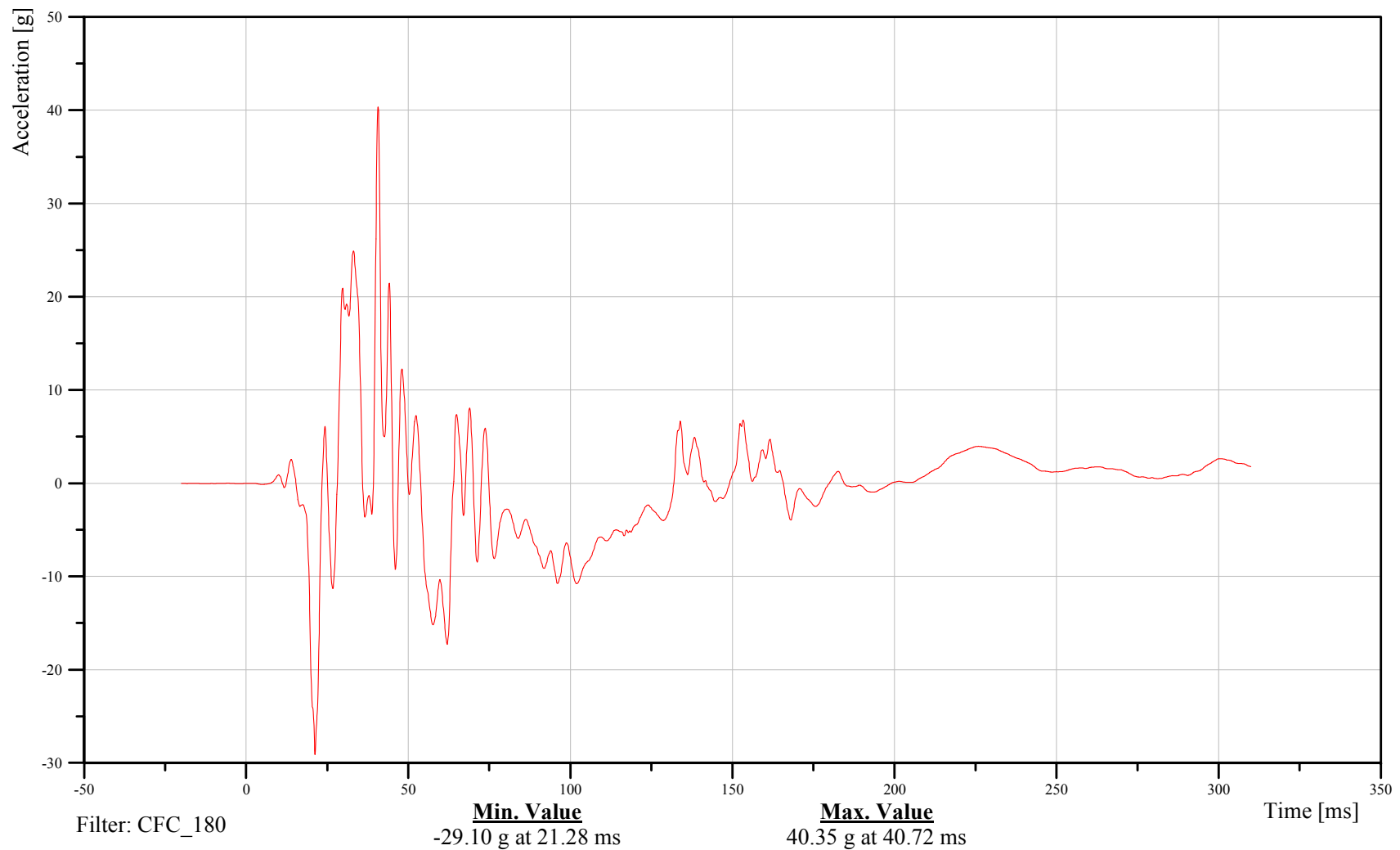
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11ABRI01LES2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Abdomin Rib 1 Accel Resultant

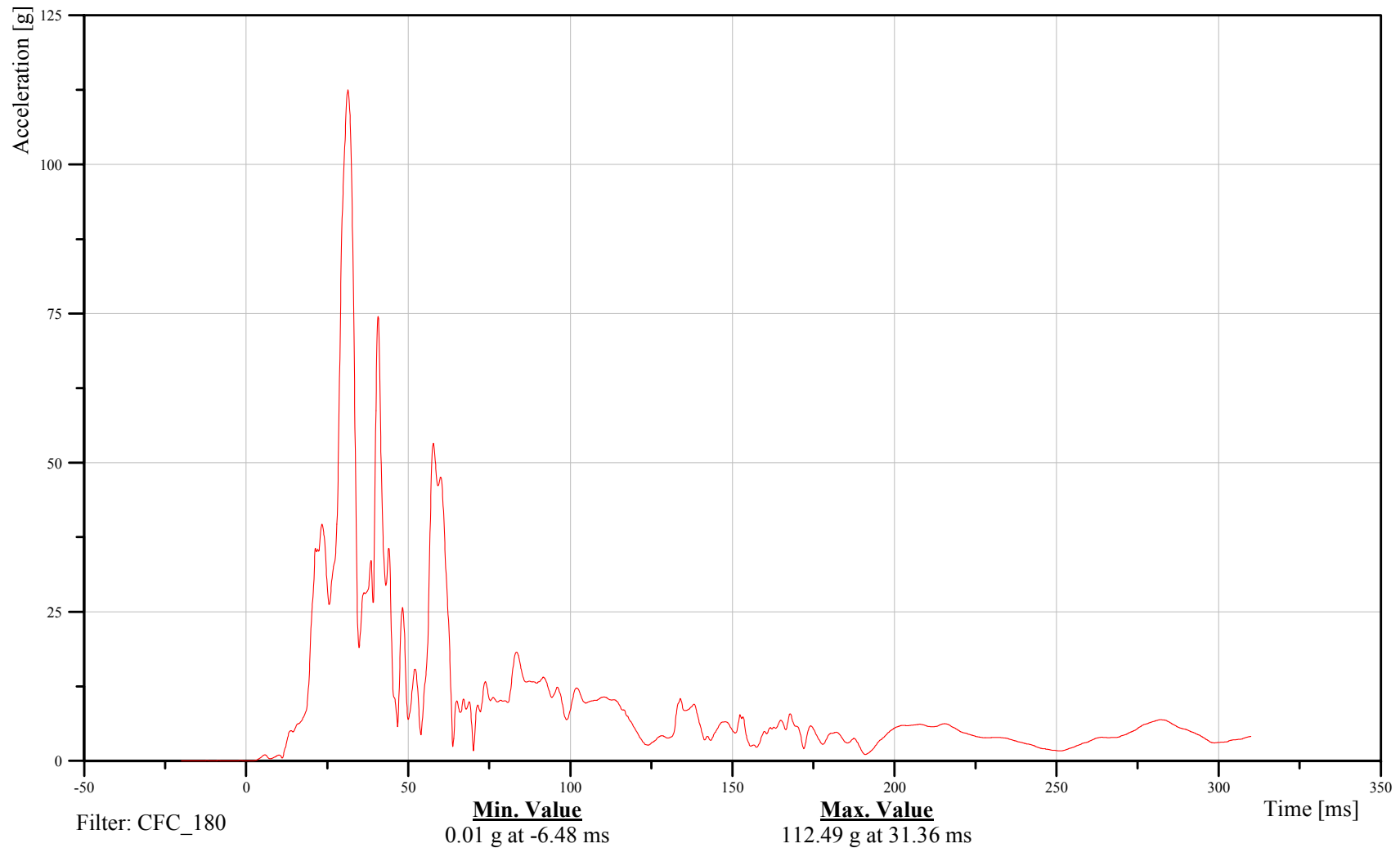
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11ABRI01LES2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Abdomin Rib 2 Accel X

Date: 09/16/2005

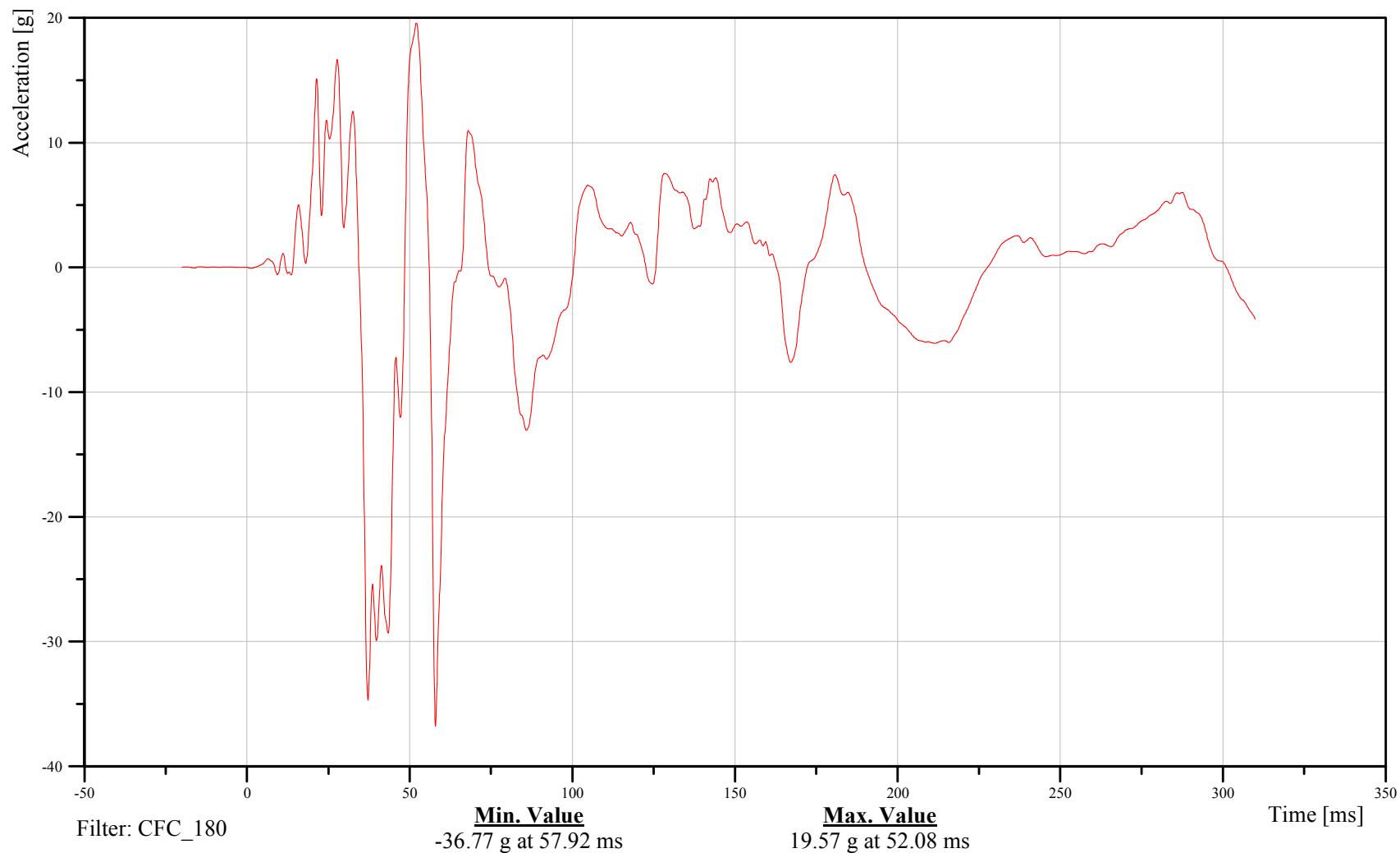
Time: 11:12

Customer: VRTC

11ABRI02LES2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Abdomin Rib 2 Accel Y

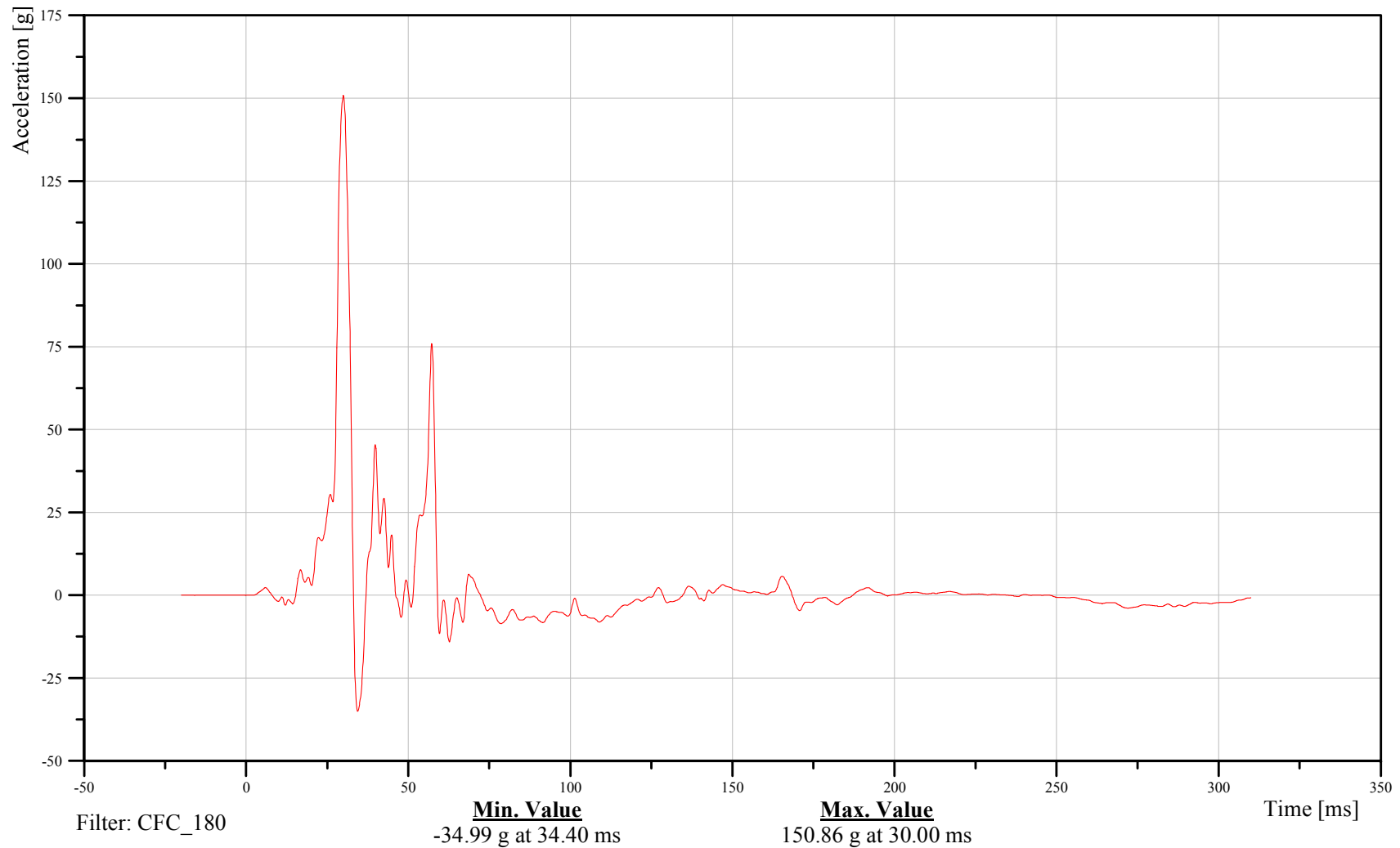
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11ABRI02LES2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Abdomin Rib 2 Accel Z

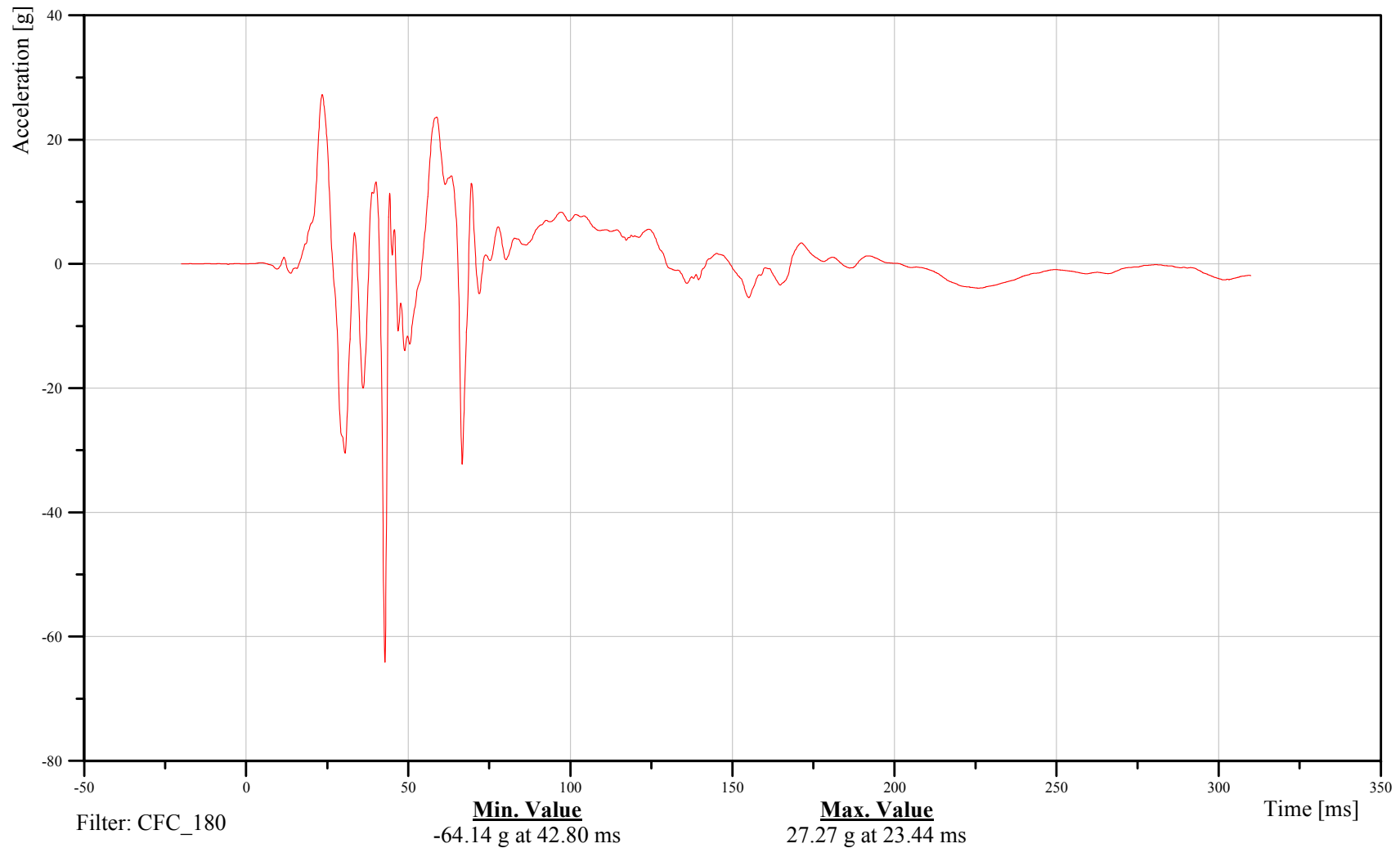
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11ABRI02LES2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Abdomin Rib 2 Accel Resultant

Date: 09/16/2005

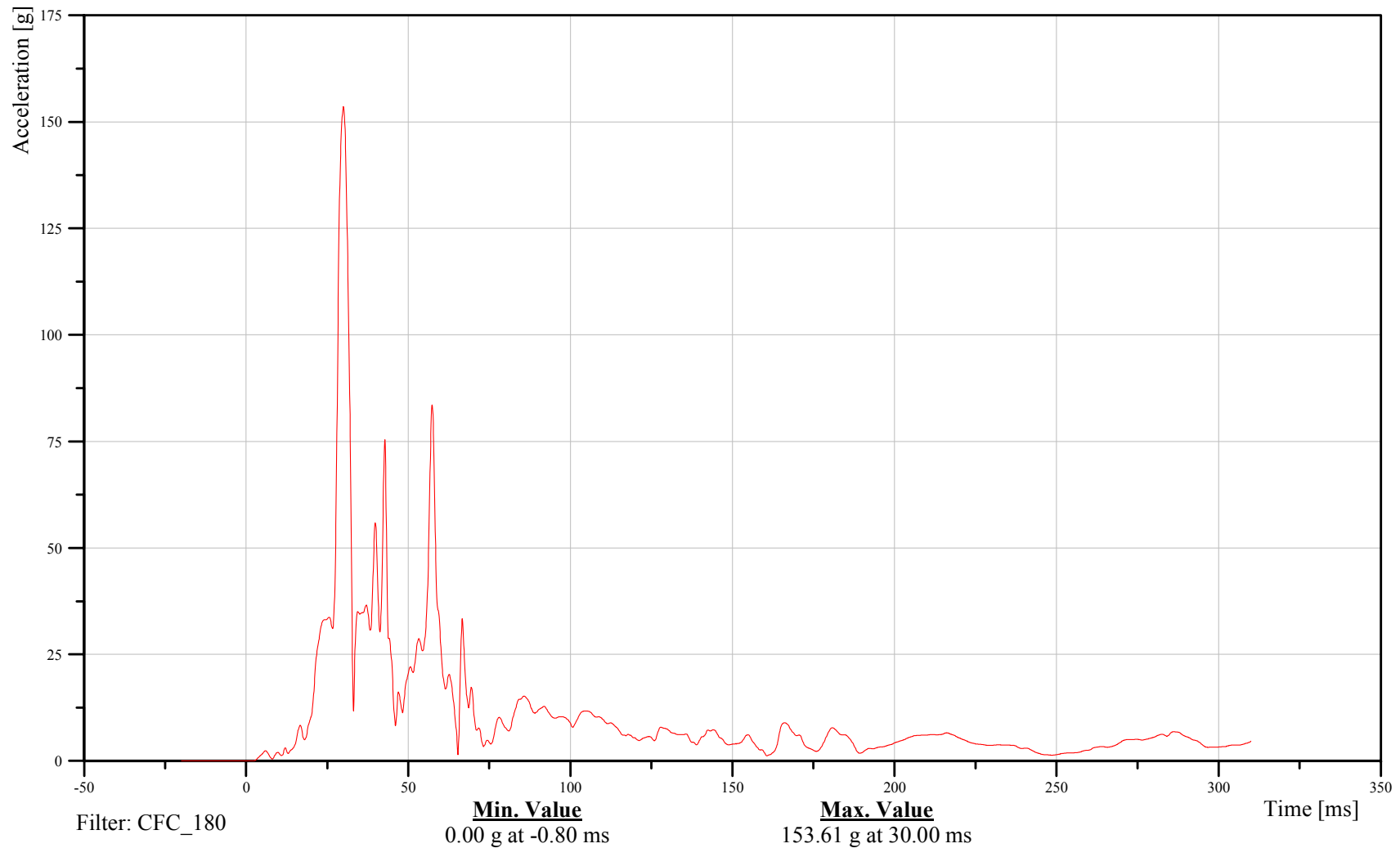
Time: 11:12

Customer: VRTC

11ABRI02LES2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

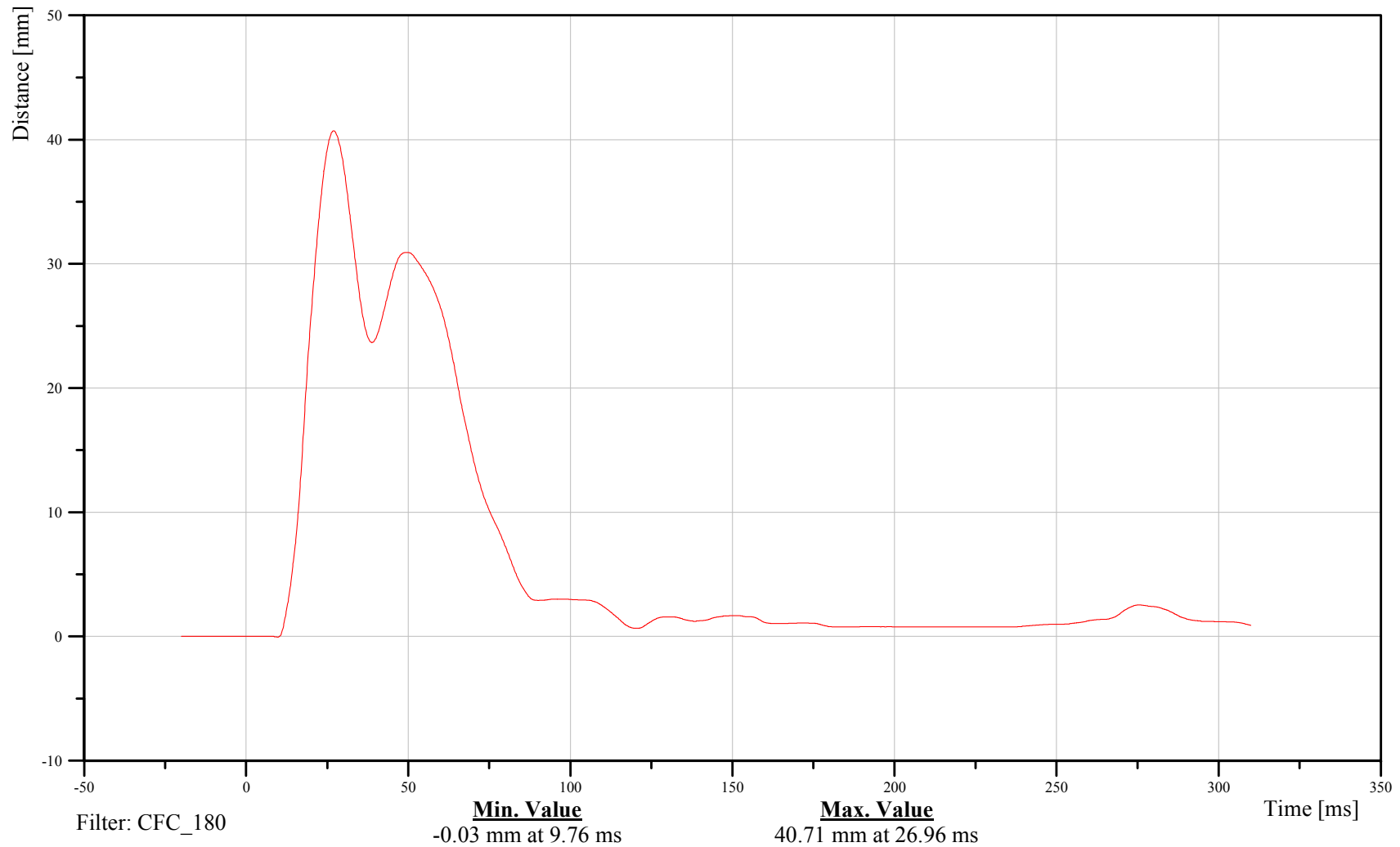
Driver Shoulder Disp. Y

Customer: VRTC

11SHRILE00S2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Thorax Rib 1 Disp. Y

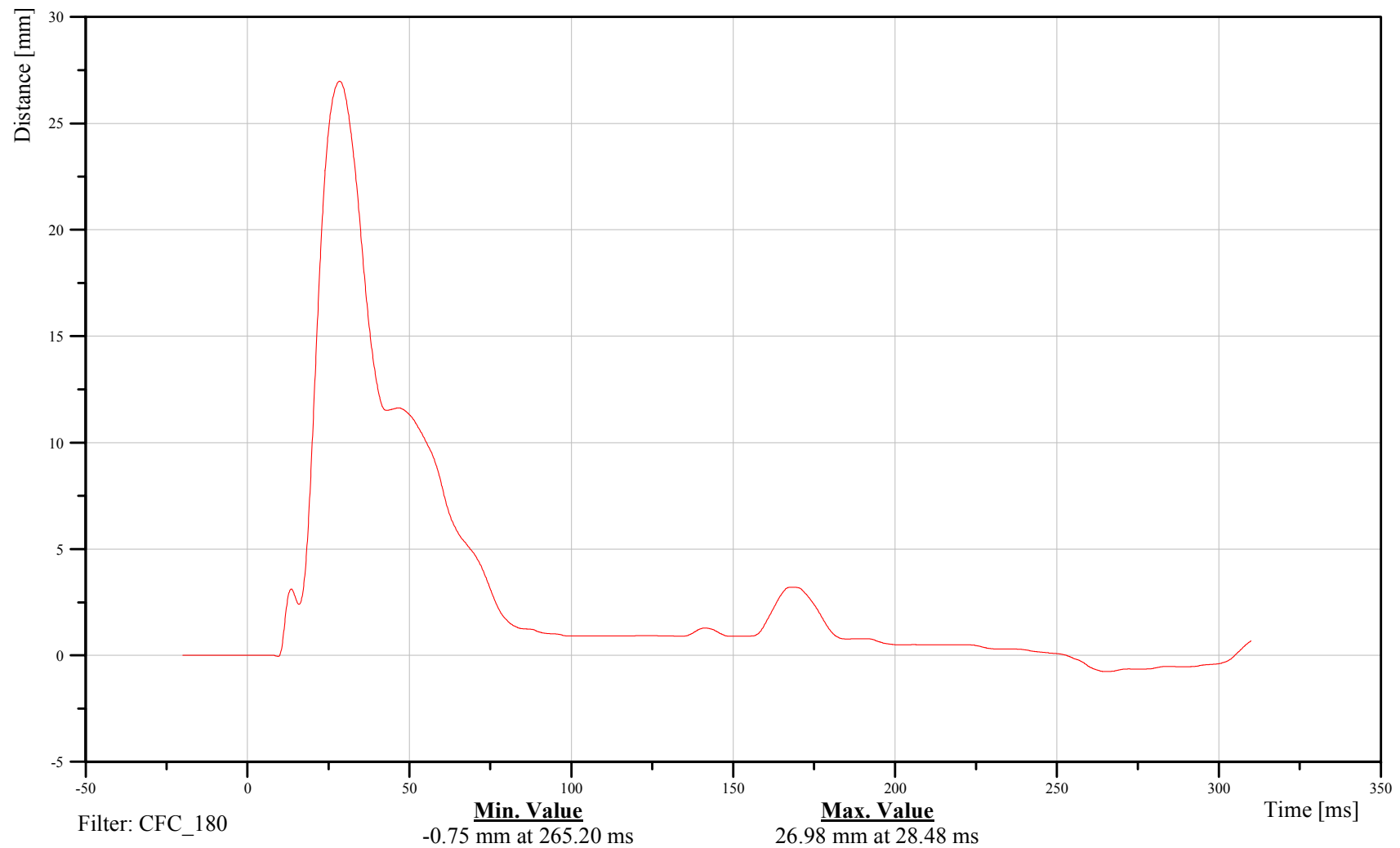
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11TRRI01LES2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Thorax Rib 2 Disp. Y

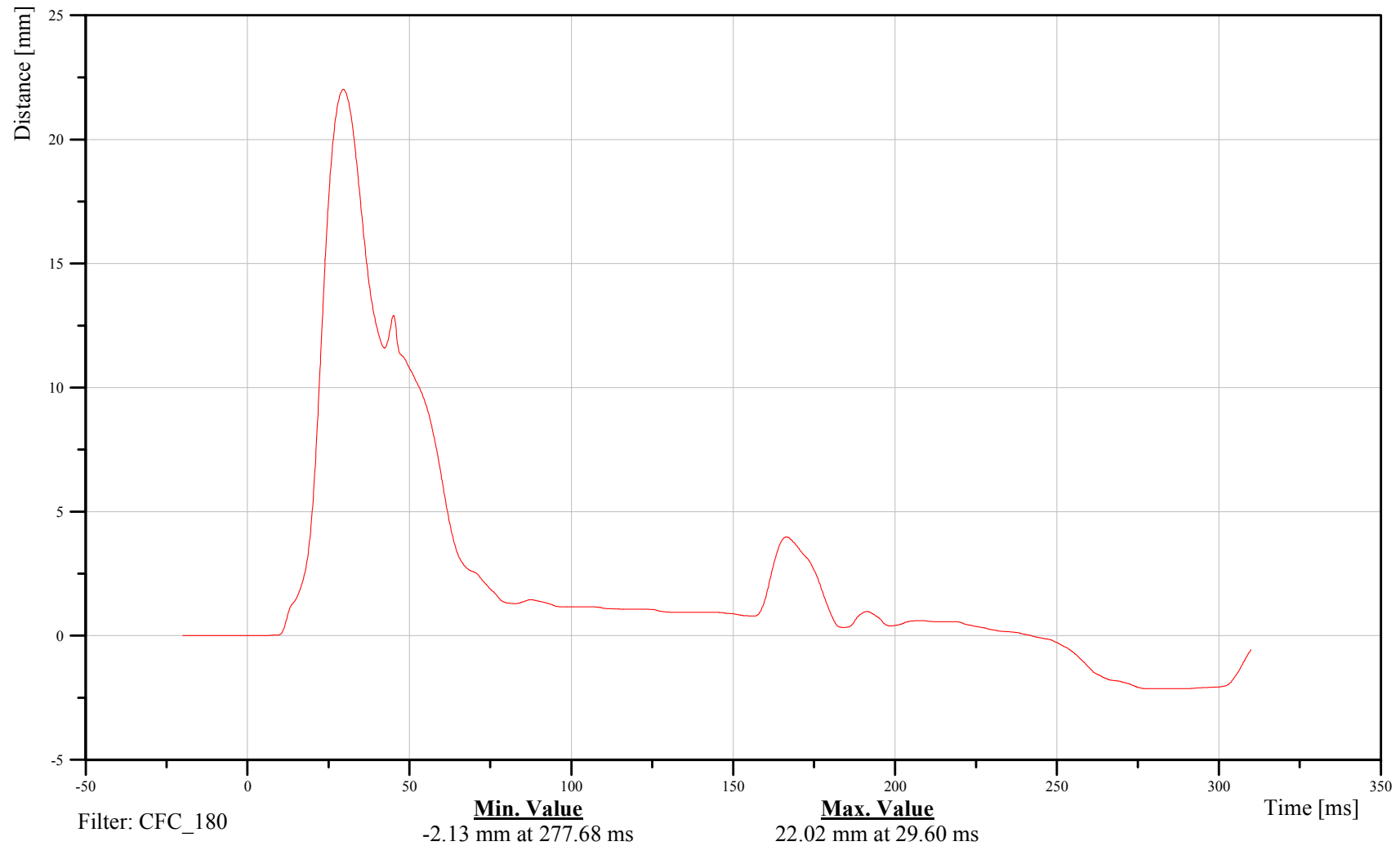
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11TRRI02LES2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Thorax Rib 3 Disp. Y

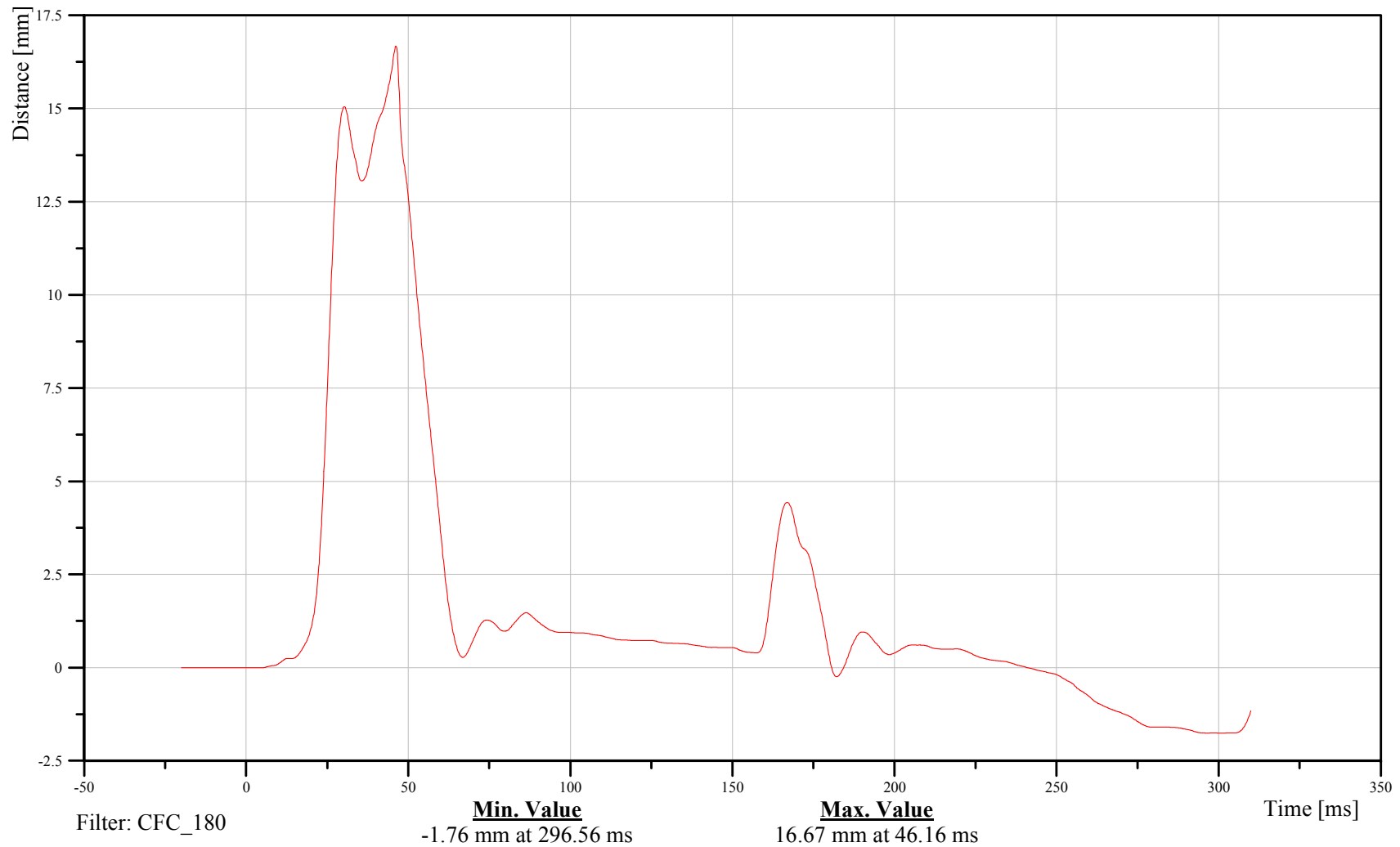
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11TRRI03LES2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Abdomin Rib 1 Disp. Y

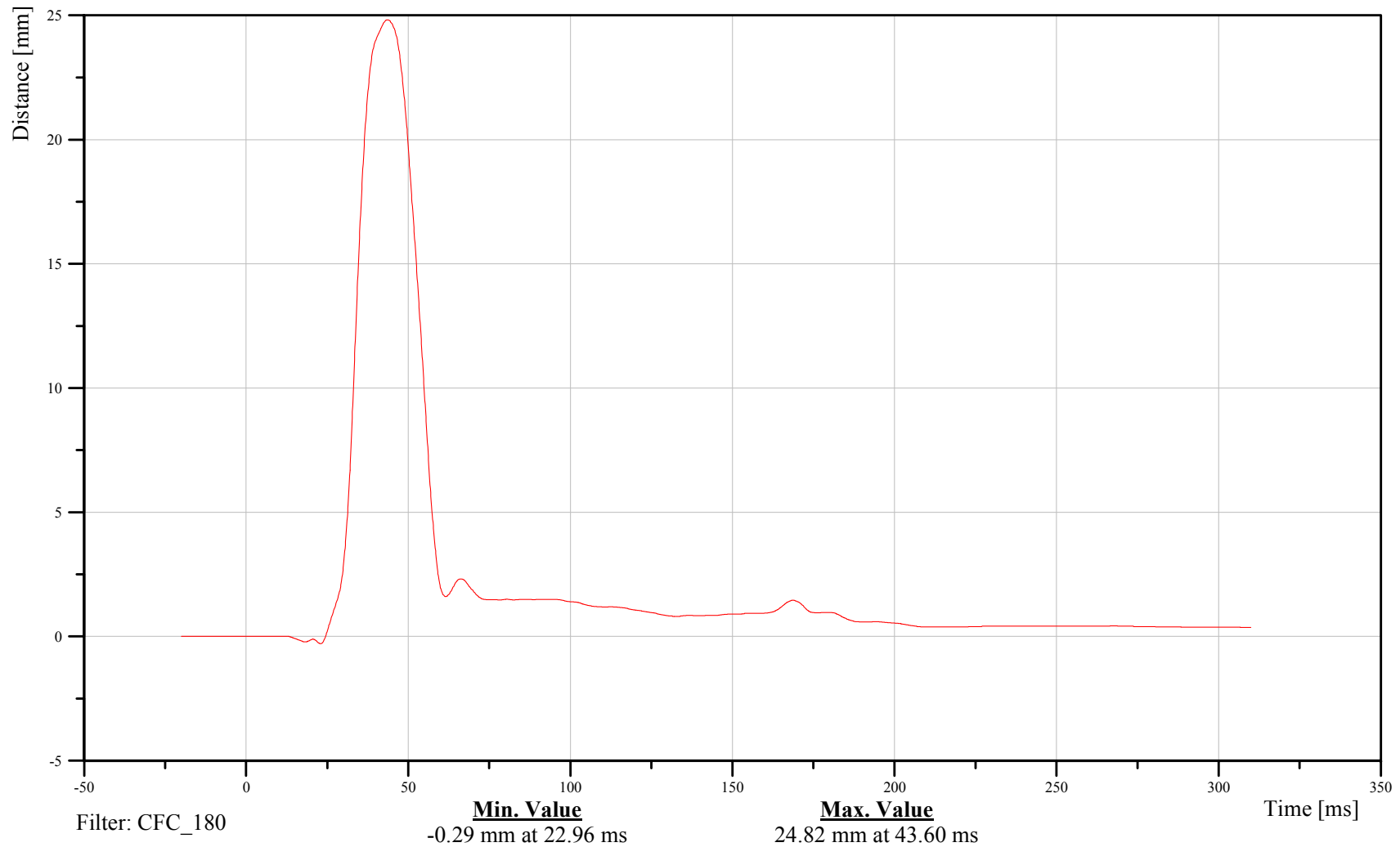
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11ABRI01LES2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Abdomin Rib 2 Disp. Y

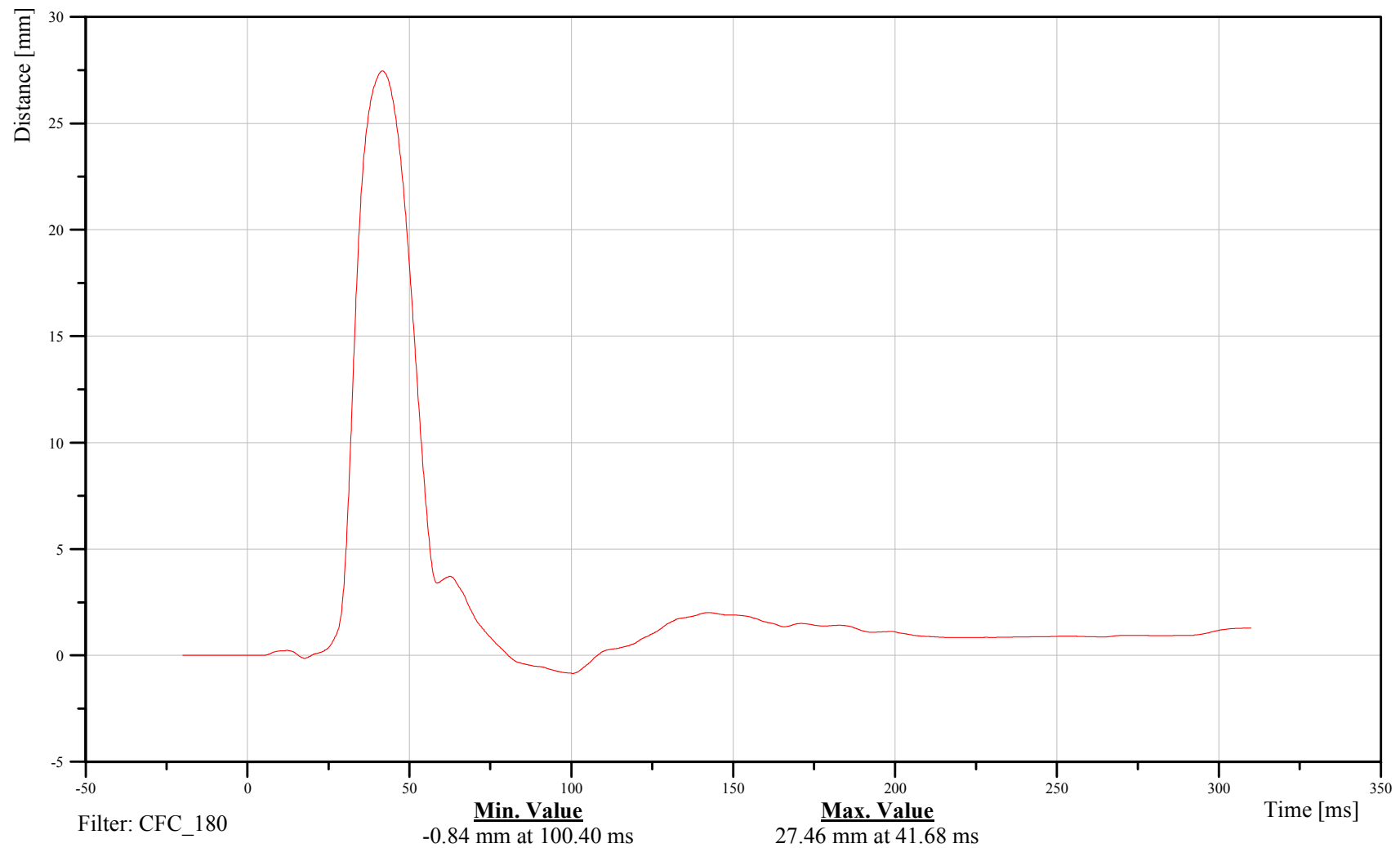
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11ABRI02LES2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Pelvis Accel X

Date: 09/16/2005

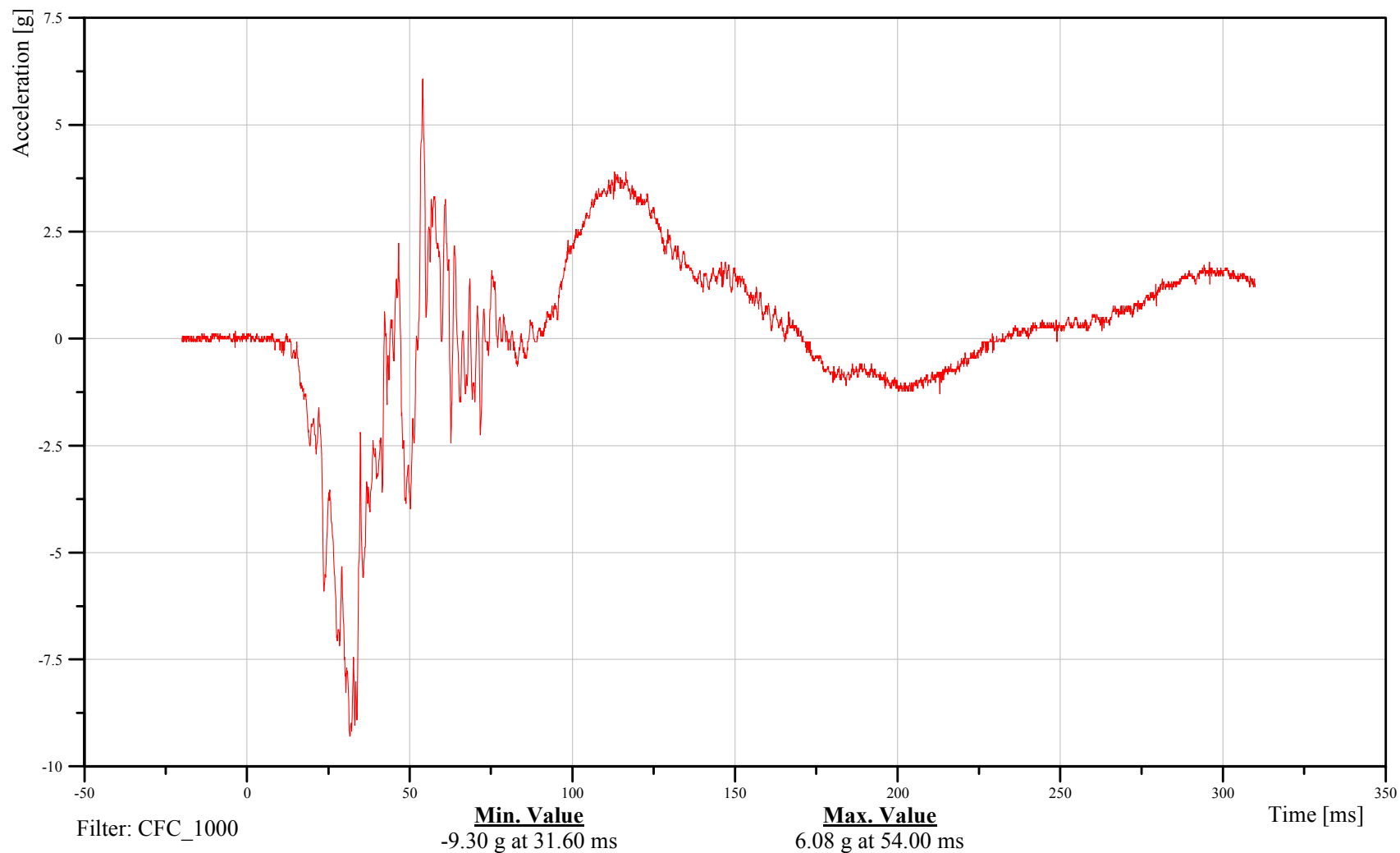
Time: 11:12

Customer: VRTC

11PELVCG00S2ACXA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Pelvis Accel Y

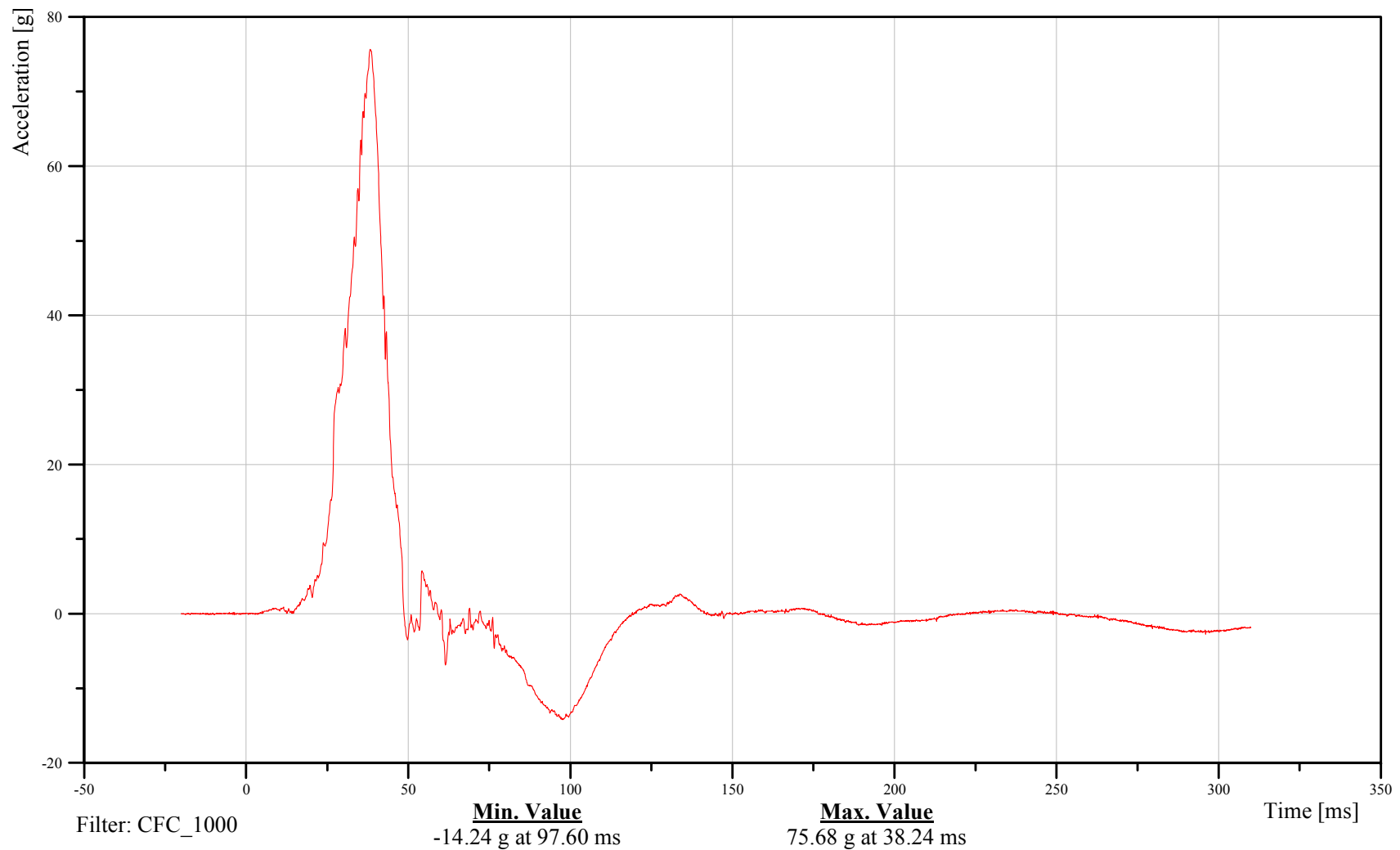
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11PELVCG00S2ACYA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Pelvis Accel Z

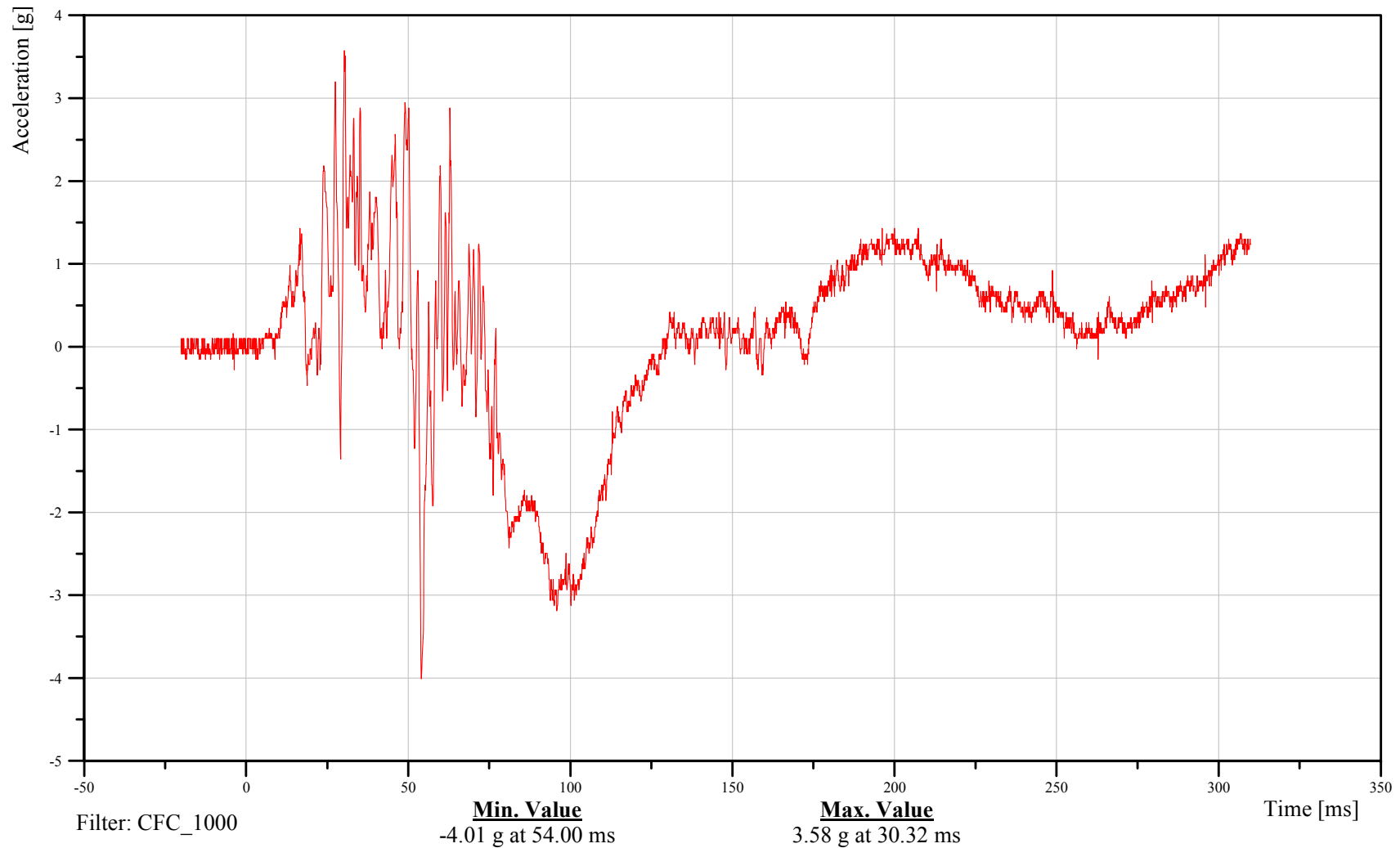
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11PELVCG00S2ACZA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Pelvis Accel Resultant

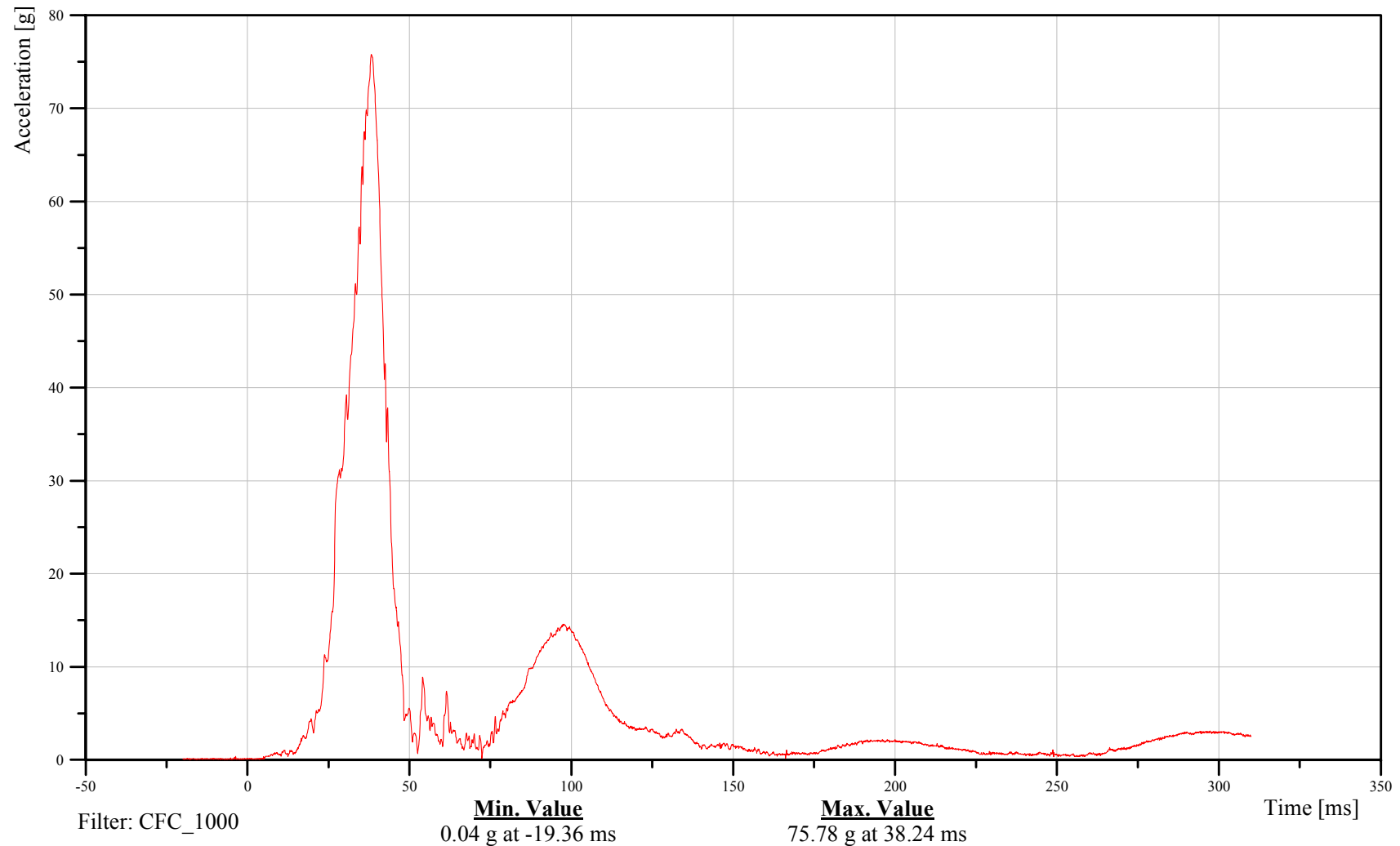
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11PELVCG00S2ACRA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Left Acetabulum Force Y

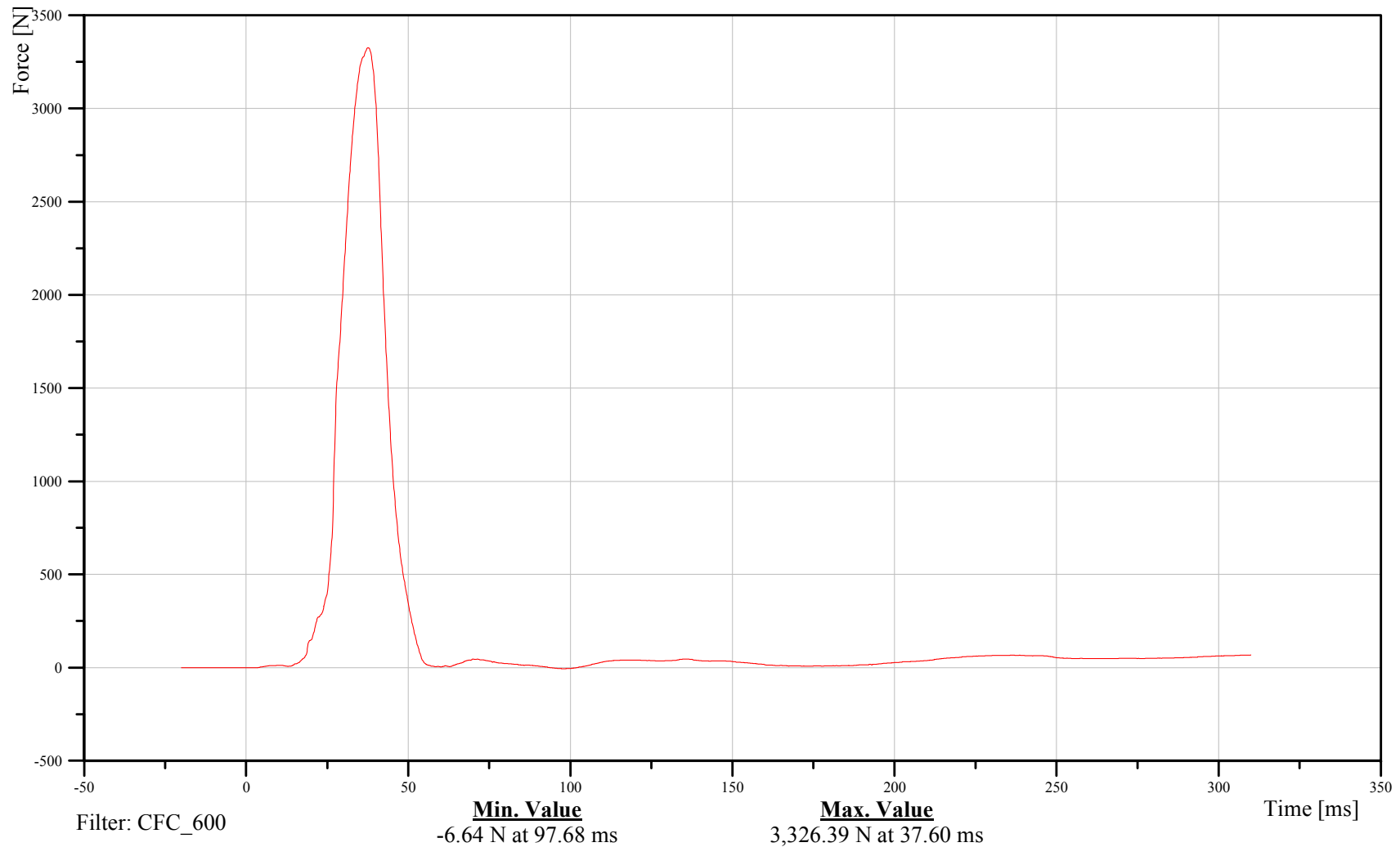
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11ACTBLE00S2FOYB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Left Illiac Wing Force Y

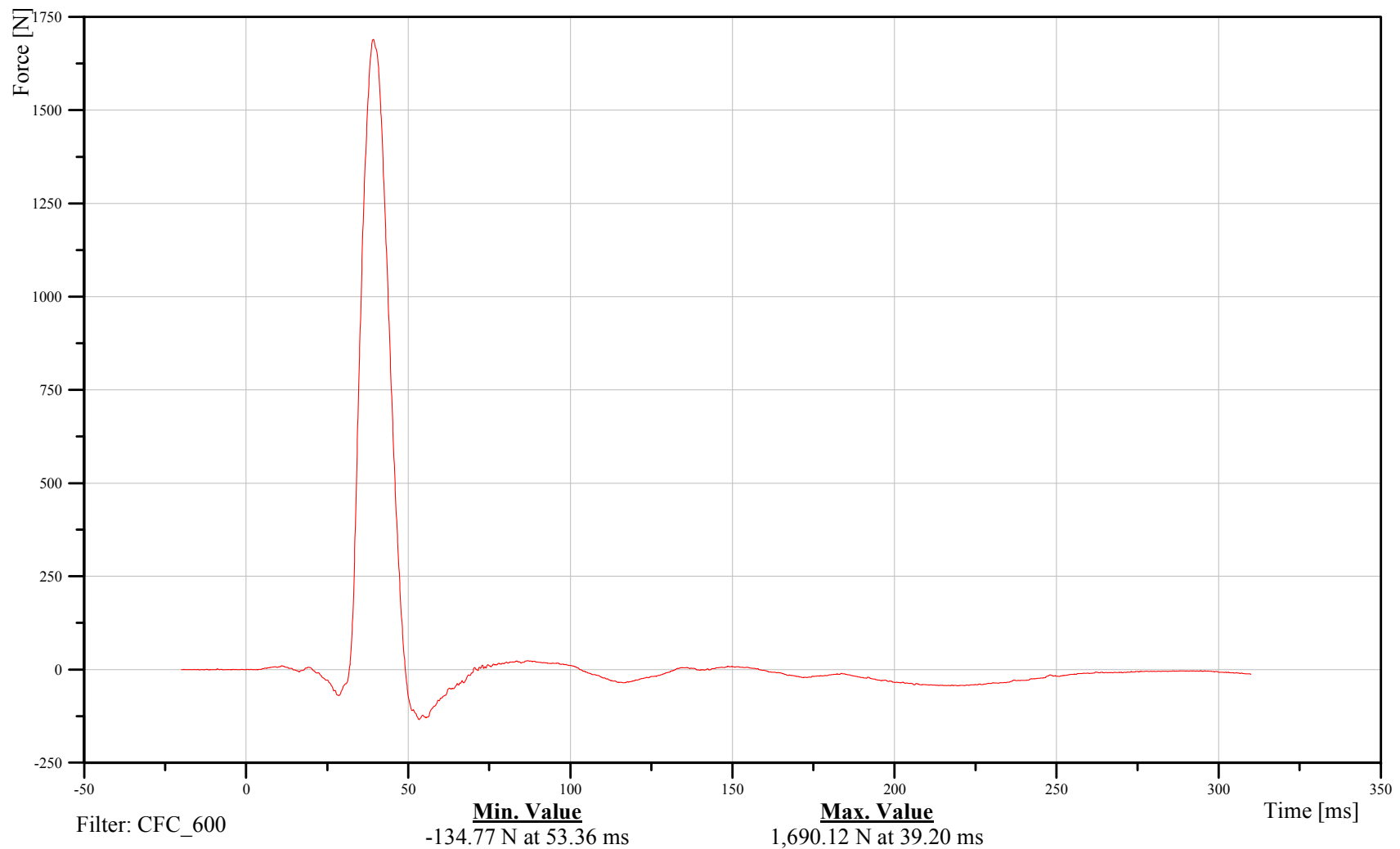
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11ILACLE00S2FOYB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Left Femur Force X

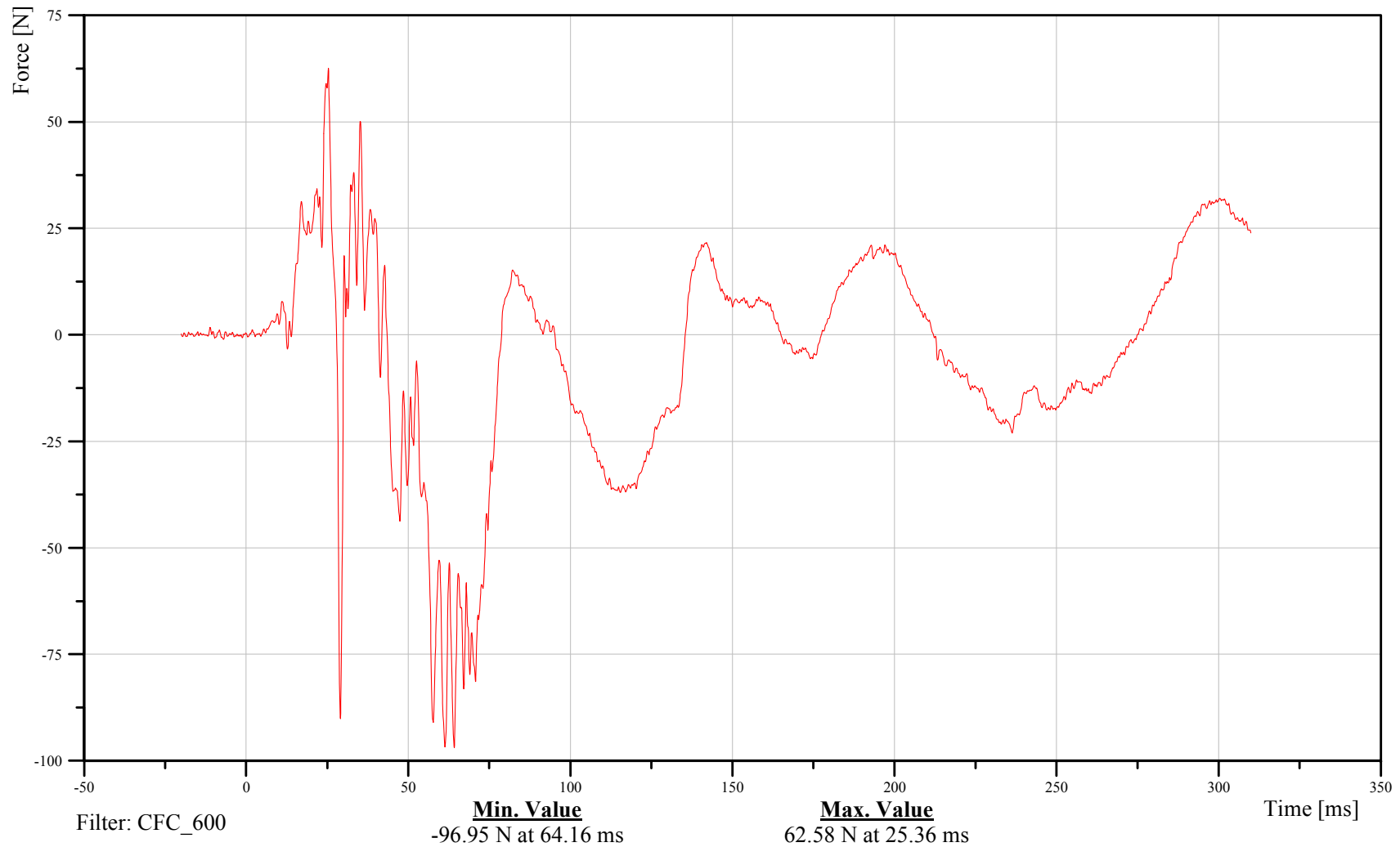
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11FEMRLE00S2FOXB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Left Femur Force Y

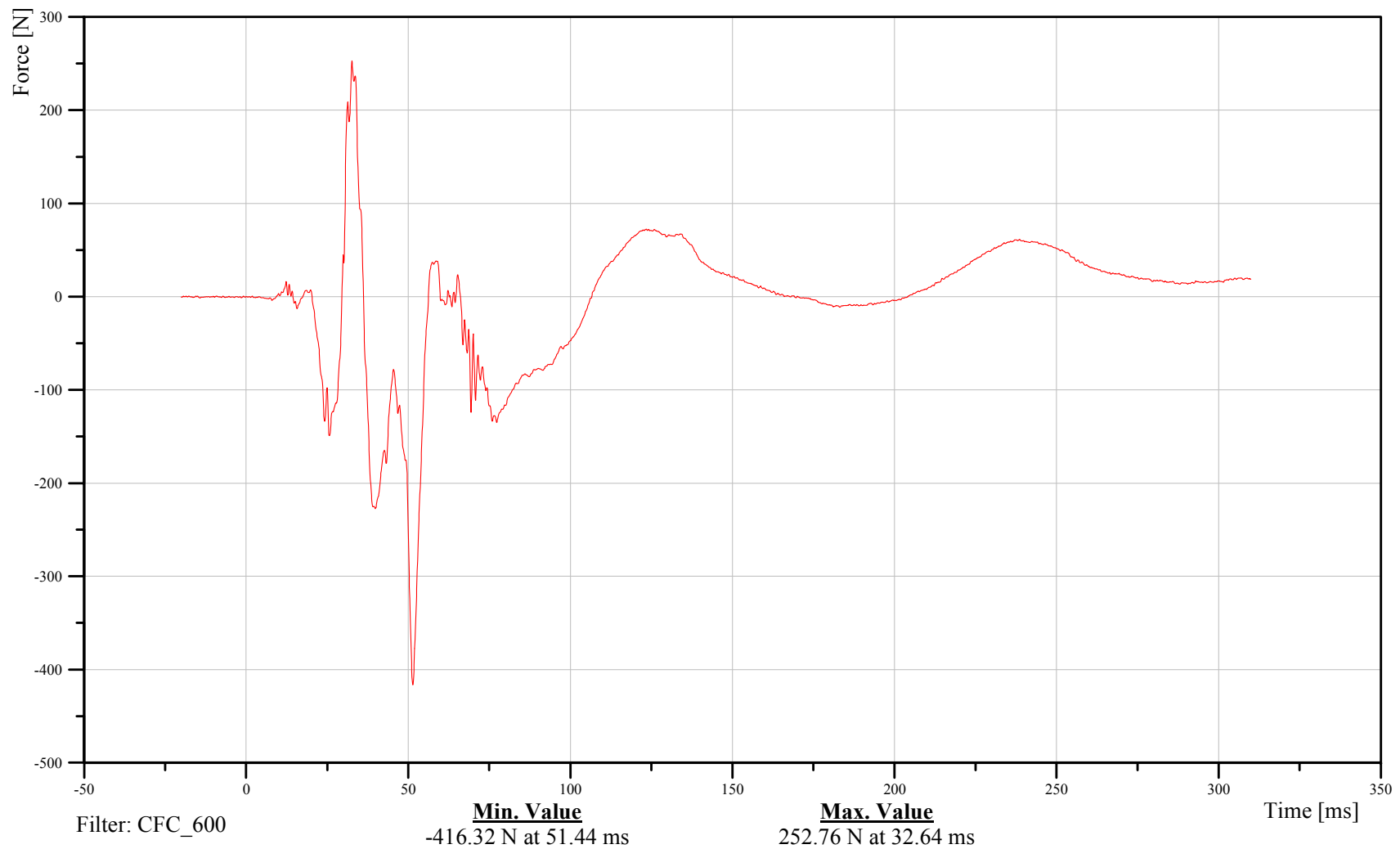
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11FEMRLE00S2FOYB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Left Femur Force Z

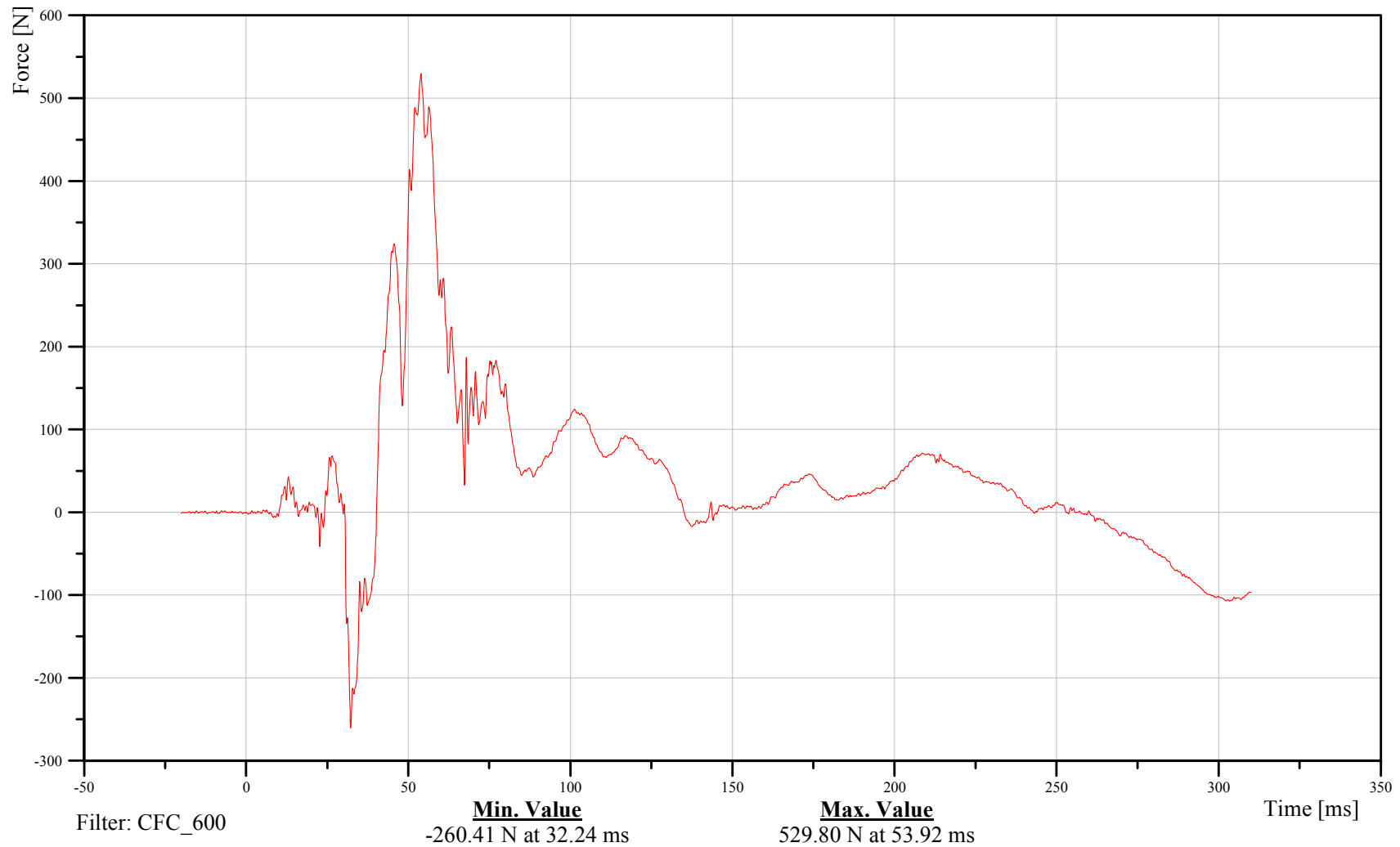
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11FEMRLE00S2FOZB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Left Femur Moment X

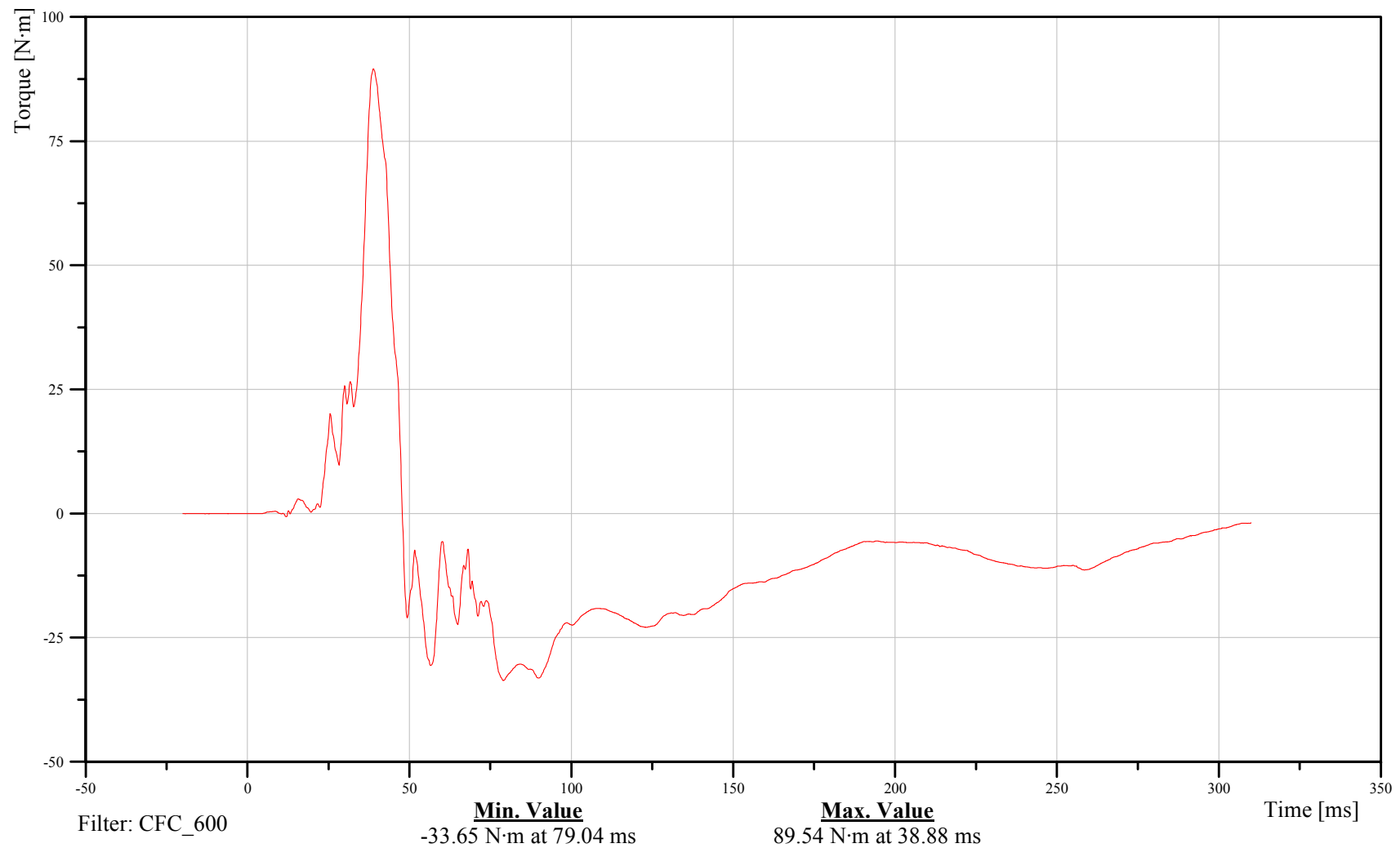
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11FEMRLE00S2MOXB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Left Femur Moment Y

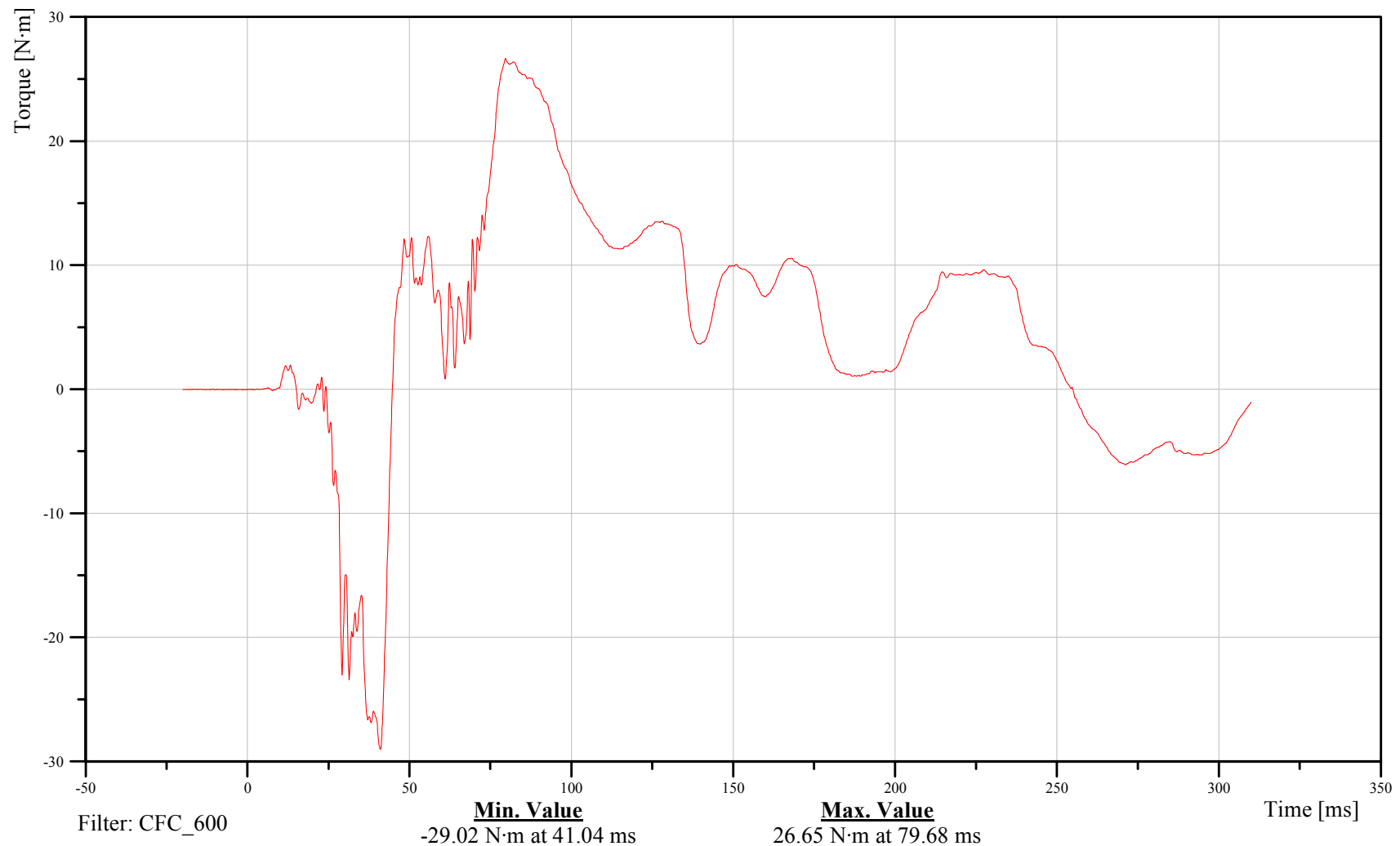
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11FEMRLE00S2MOYB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Left Femur Moment Z

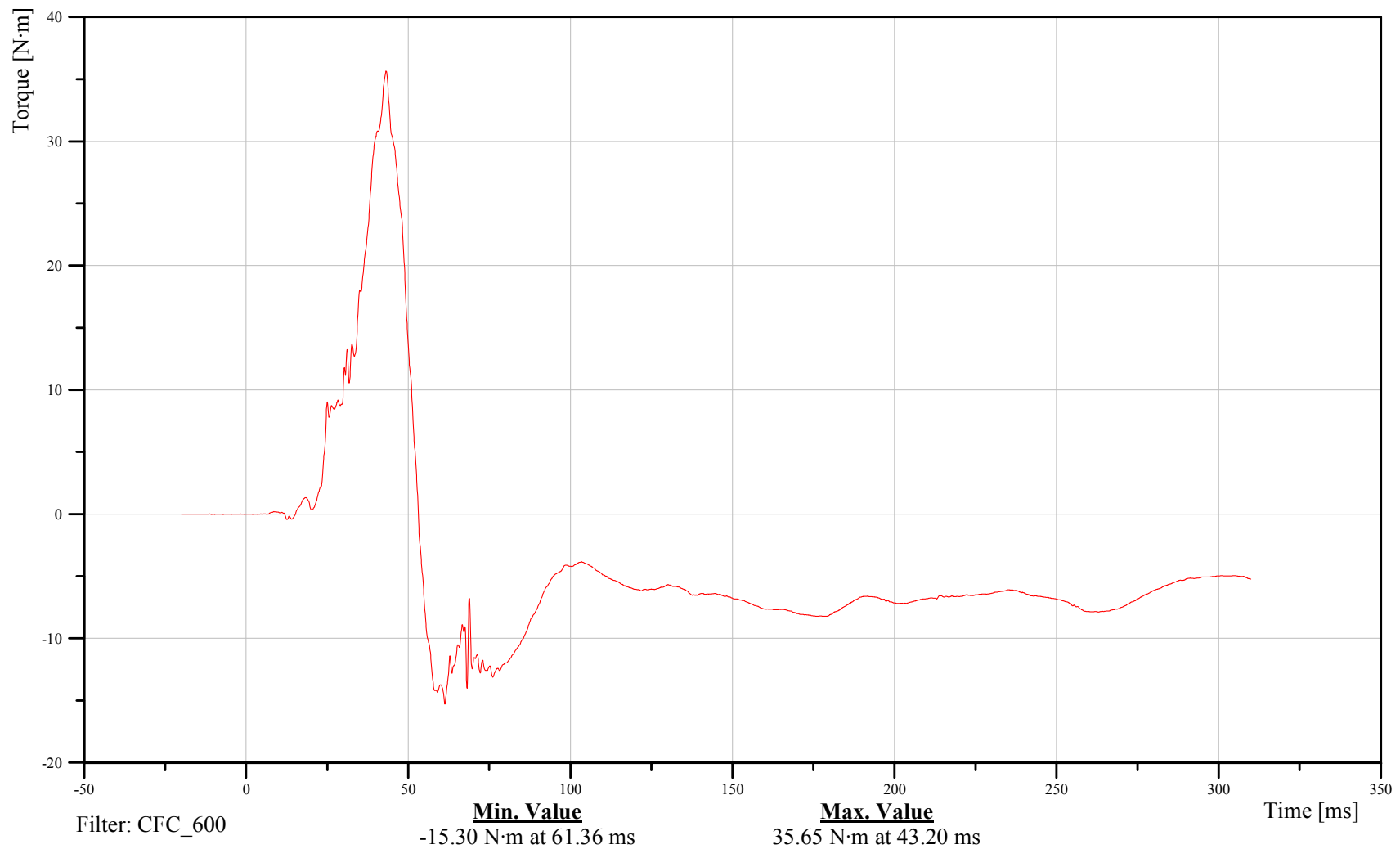
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11FEMRLE00S2MOZB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Right Femur Force X

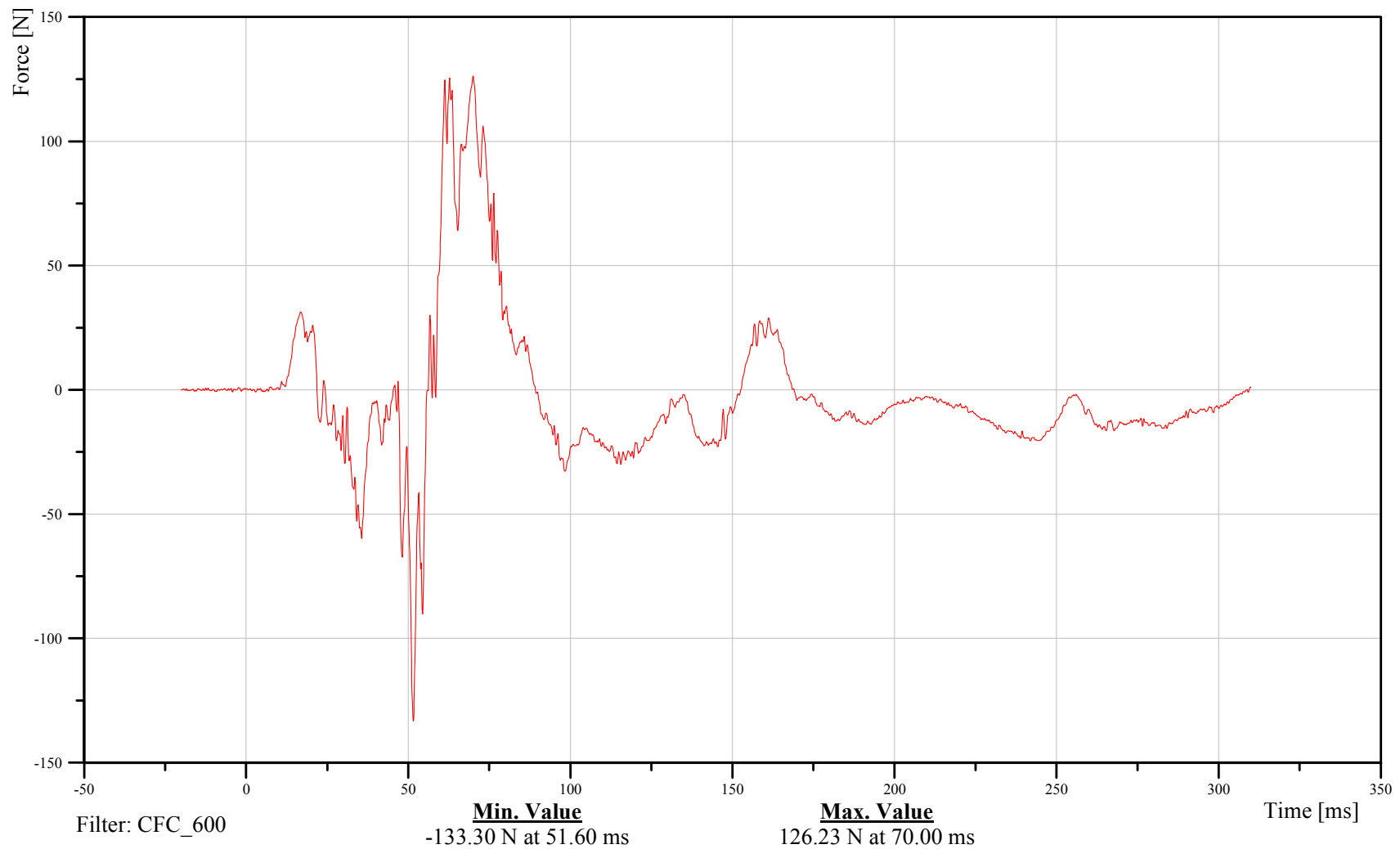
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11FEMRRI00S2FOX B

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Right Femur Force Y

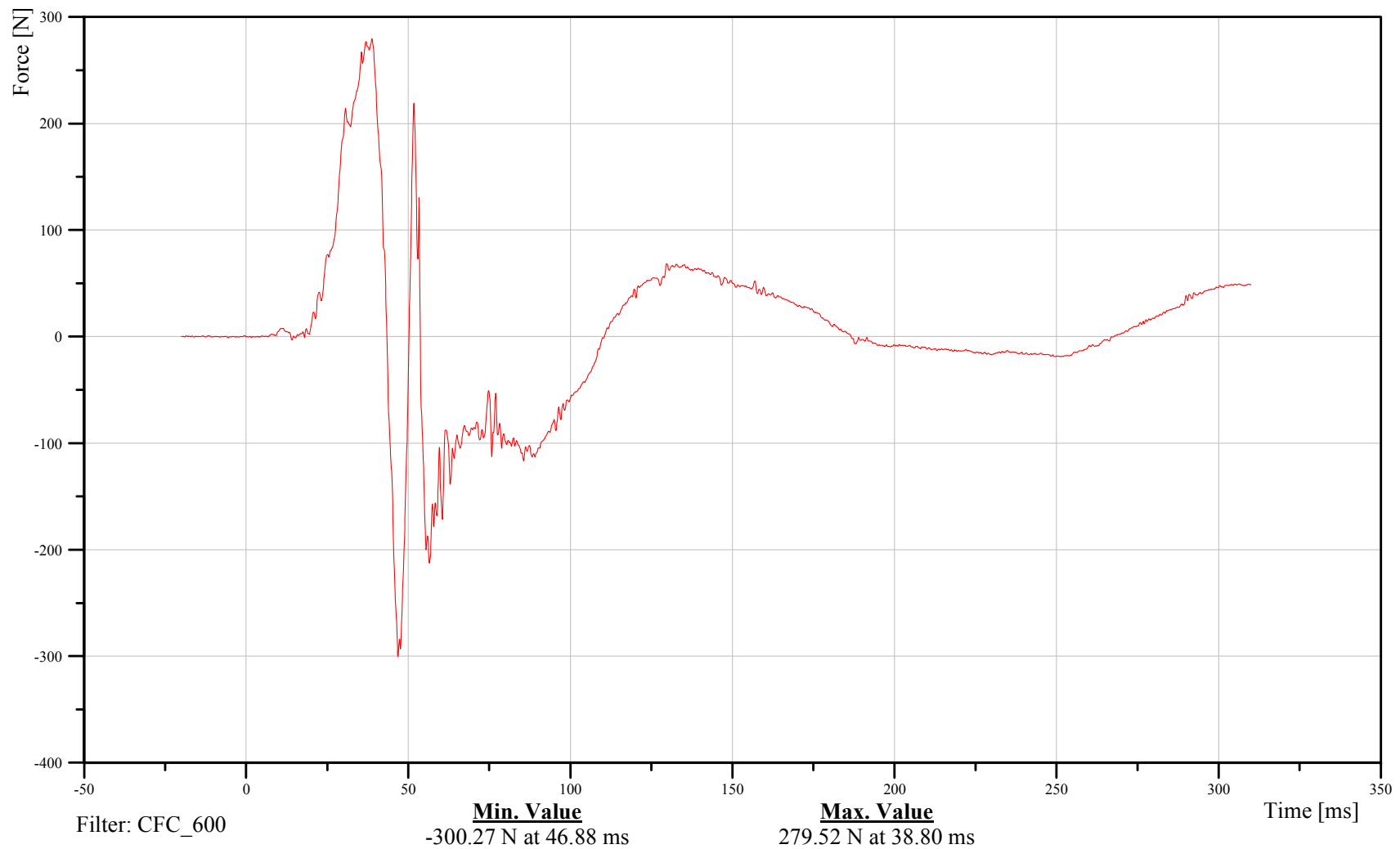
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11FEMRRI00S2FOYB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Right Femur Force Z

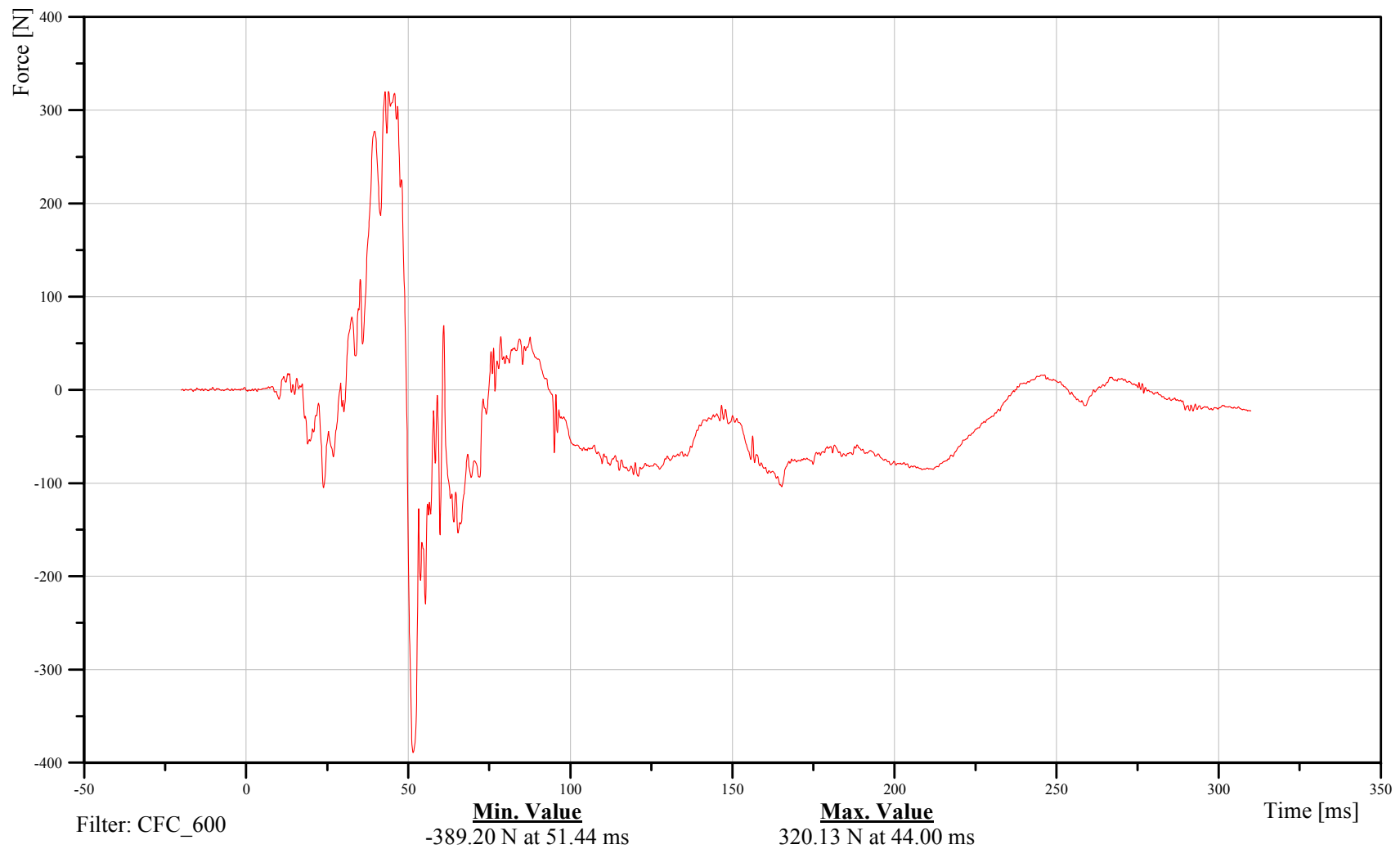
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11FEMRRI00S2FOZB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Right Femur Moment X

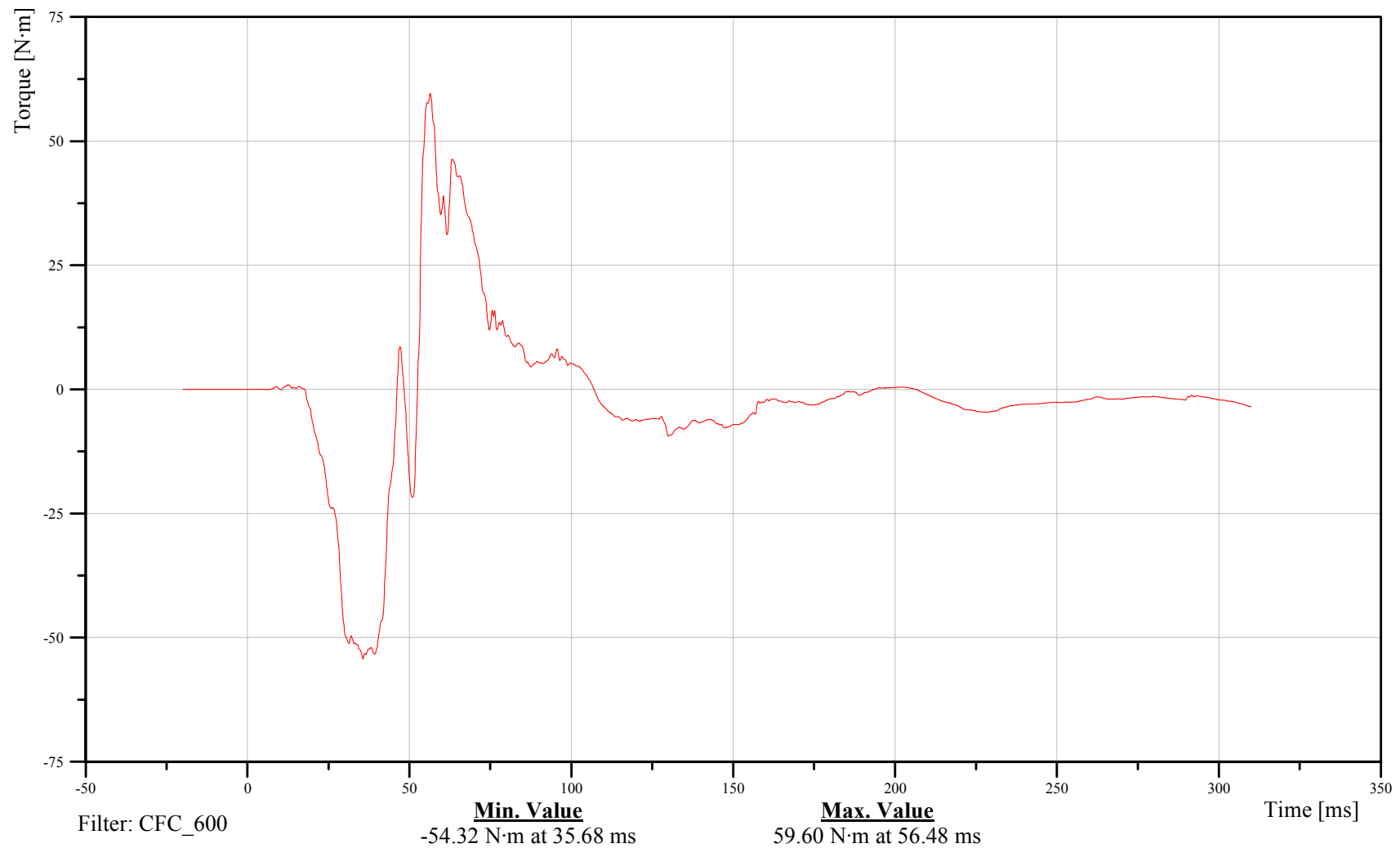
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11FEMRRI00S2MOXB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Right Femur Moment Y

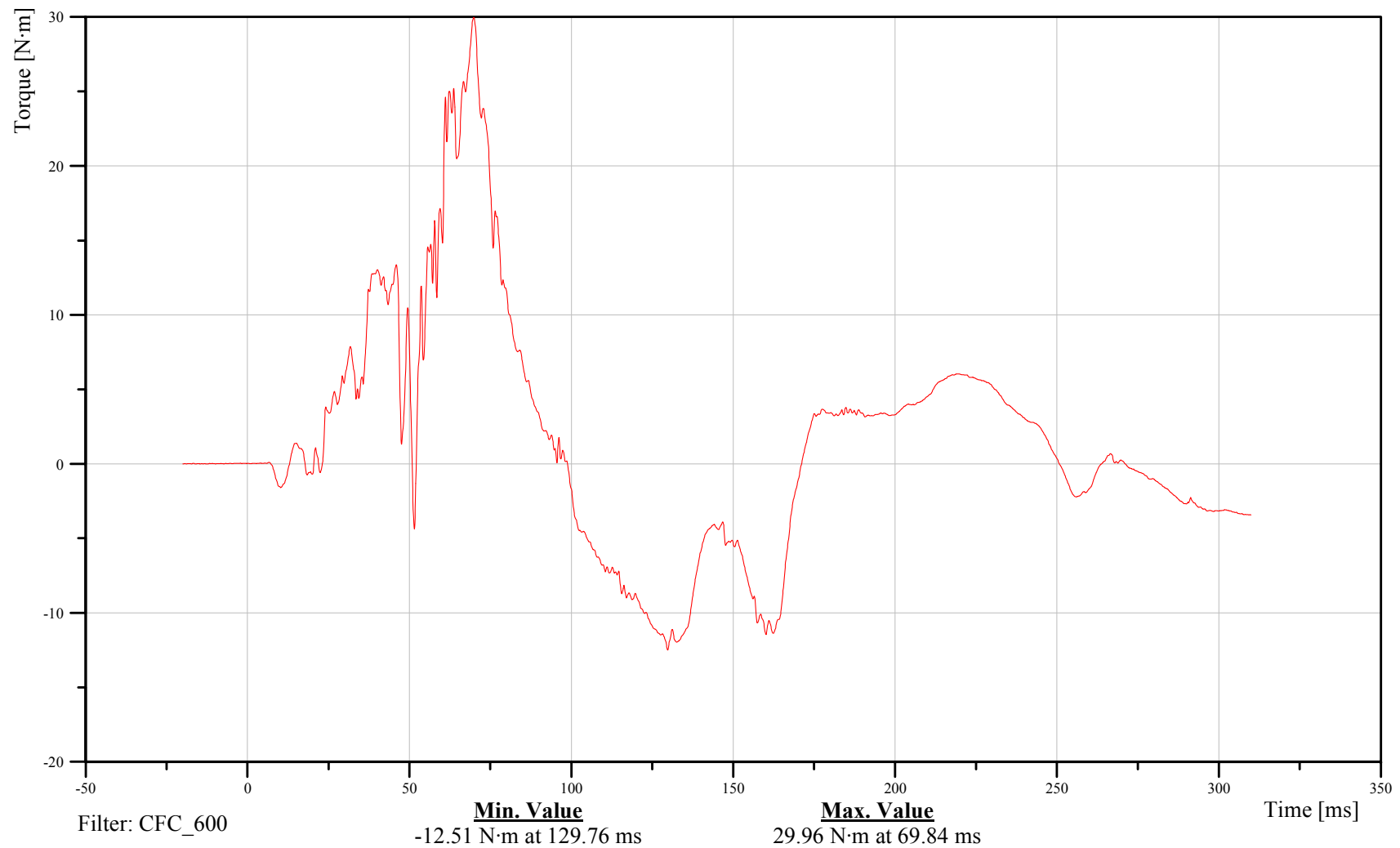
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11FEMRRI00S2MOYB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Right Femur Moment Z

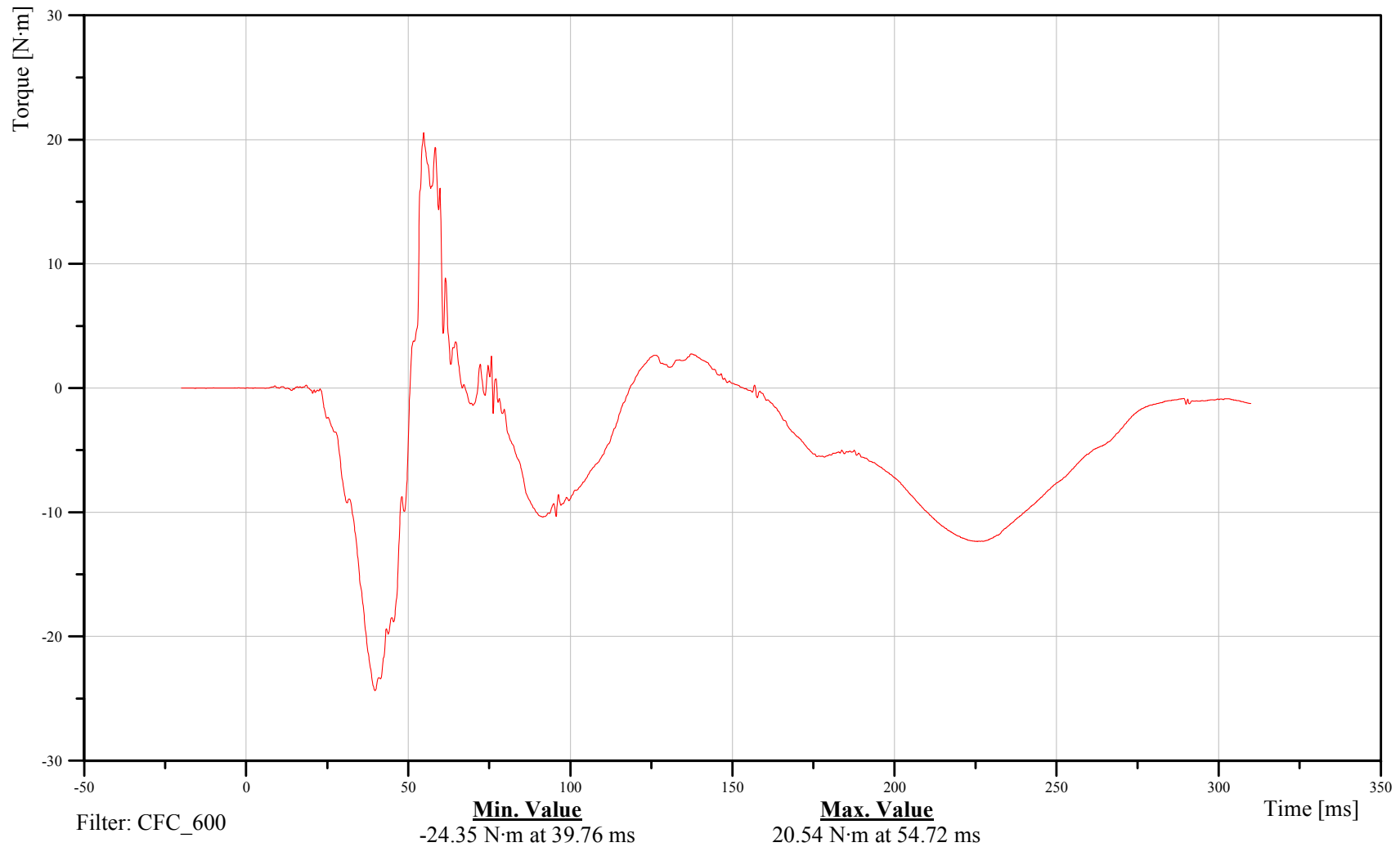
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11FEMRRI00S2MOZB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

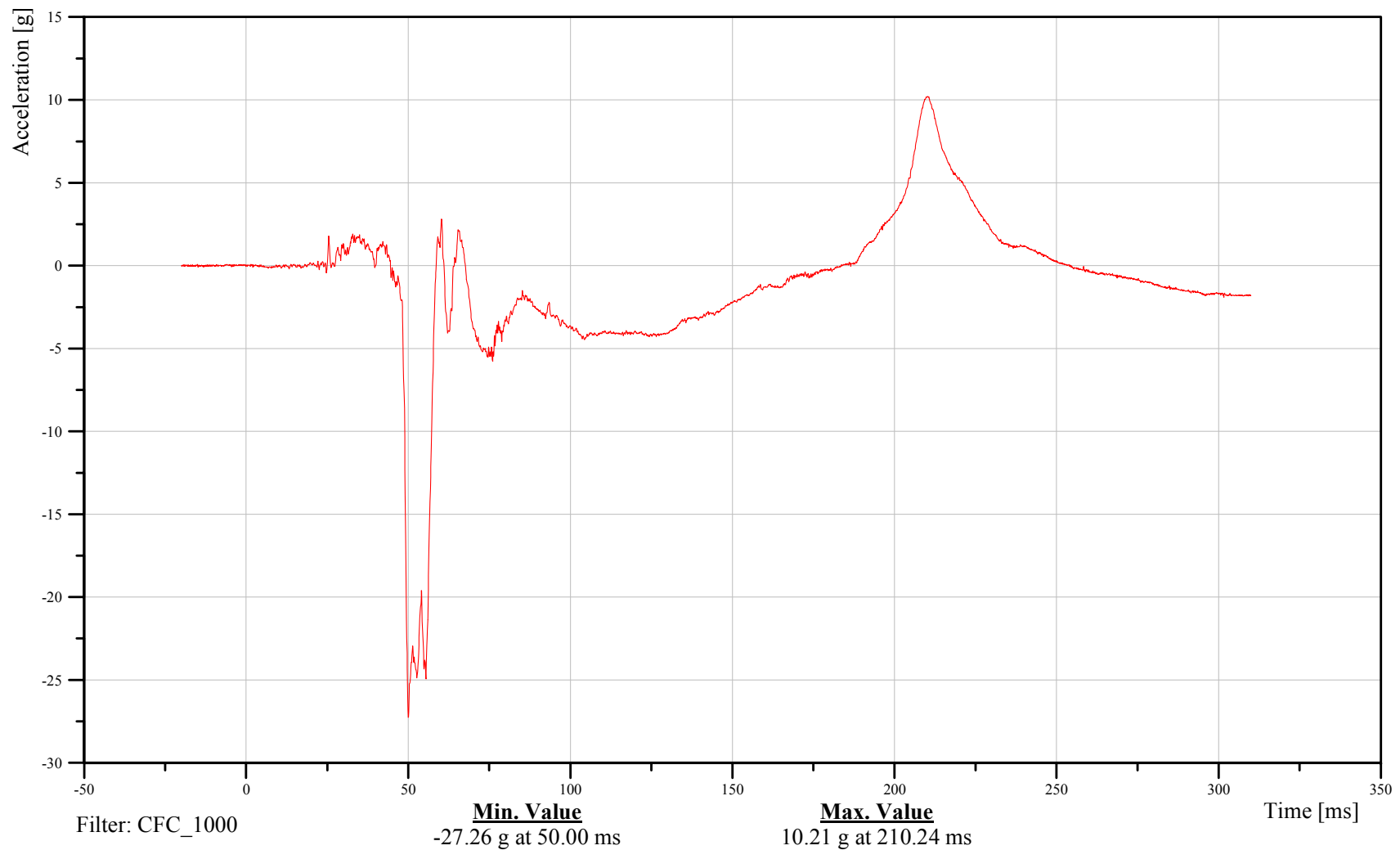
LR Pass. Head Accel X

Customer: VRTC

14HEADCG00S2ACXA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

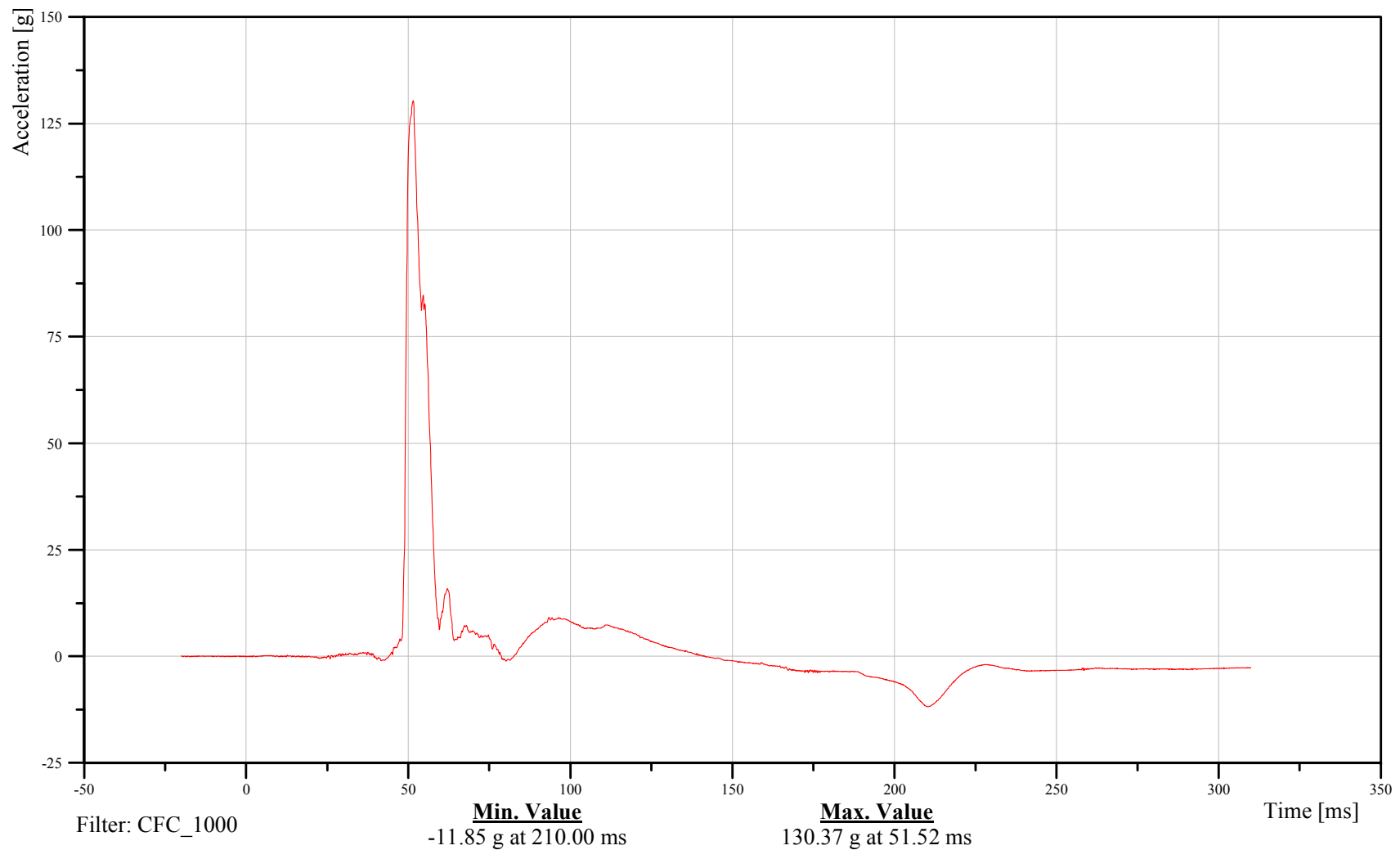
LR Pass. Head Accel Y

Customer: VRTC

14HEADCG00S2ACYA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Head Accel Z

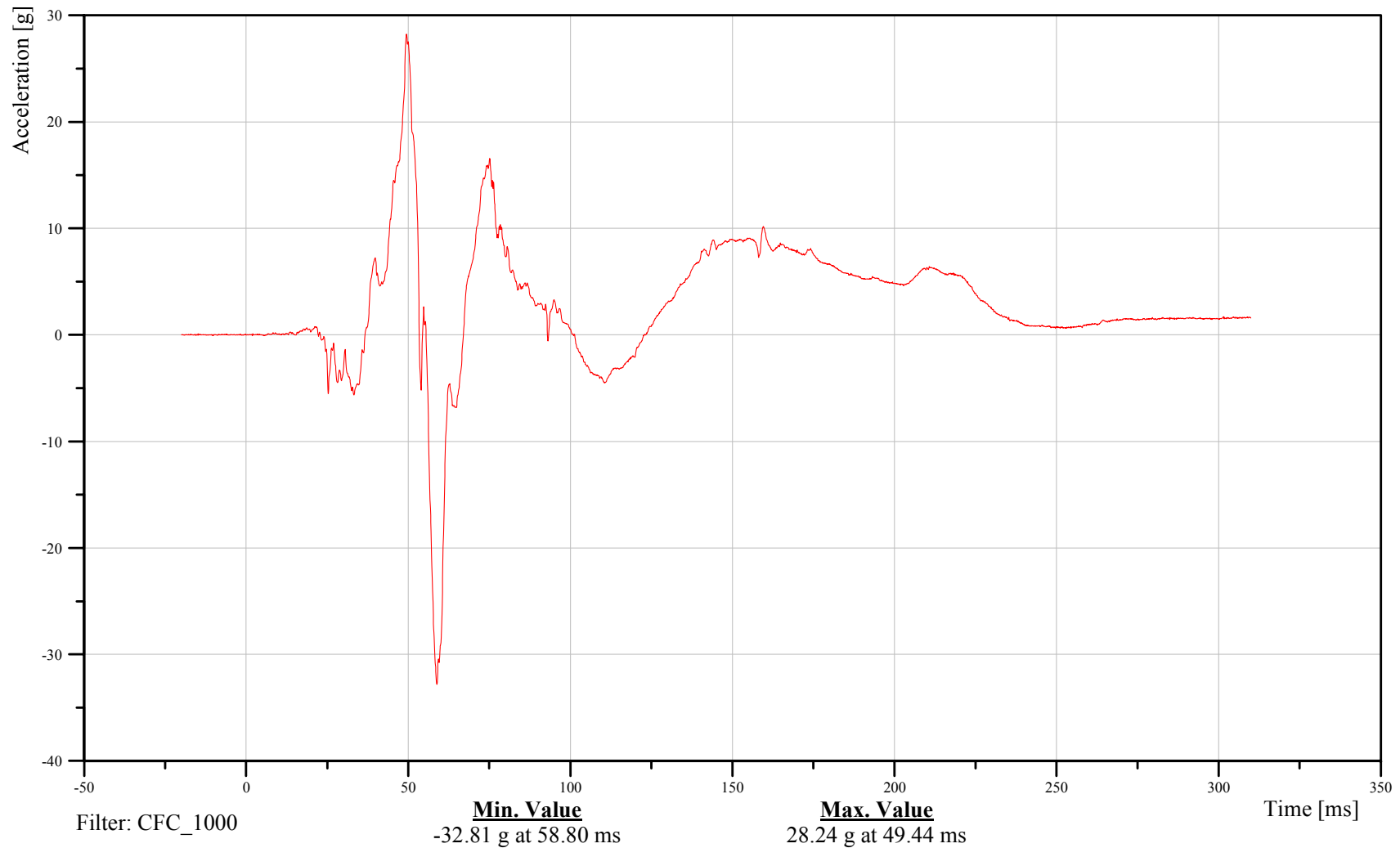
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14HEADCG00S2ACZA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Head Accel Resultant

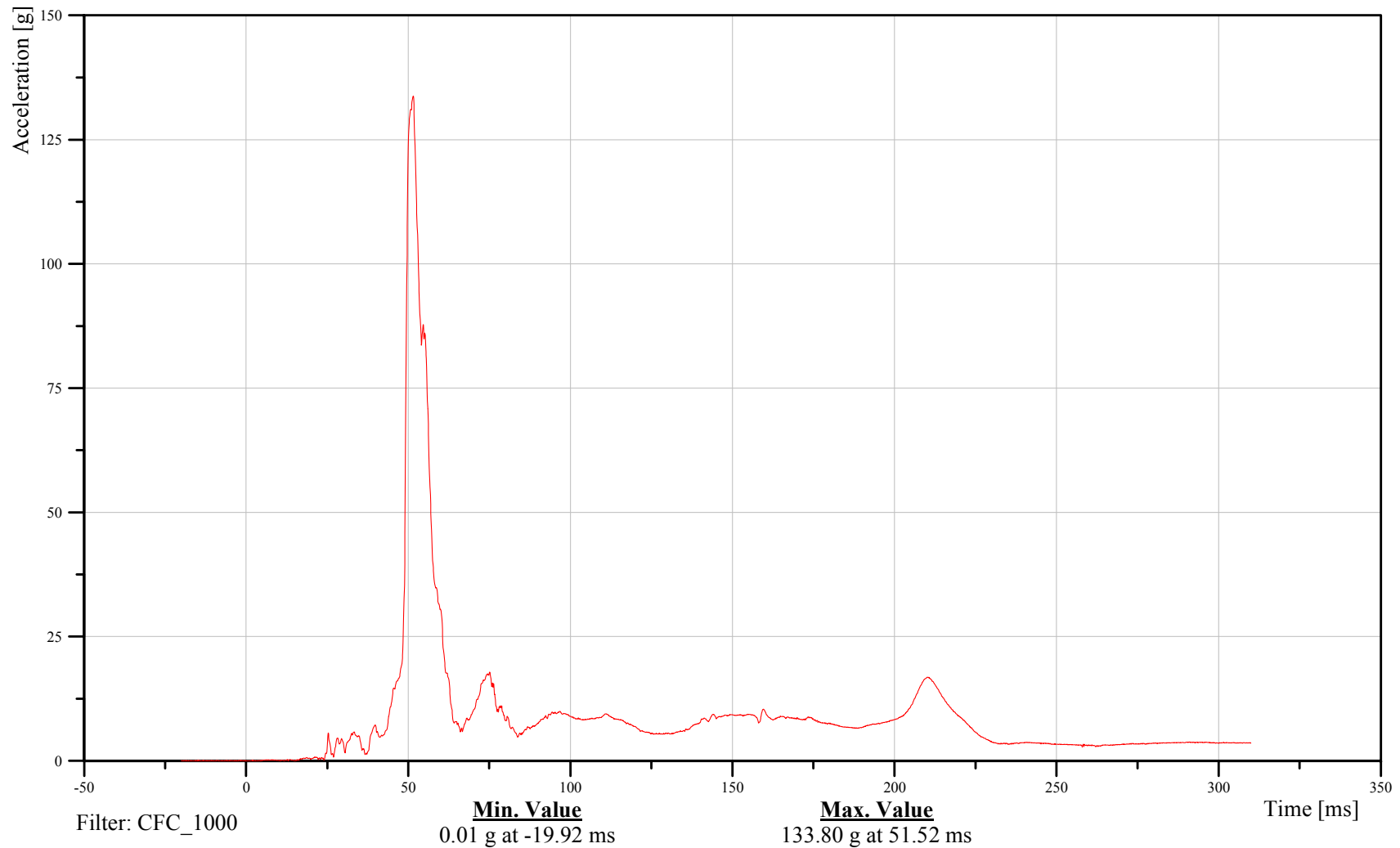
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14HEADCG00S2ACRA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

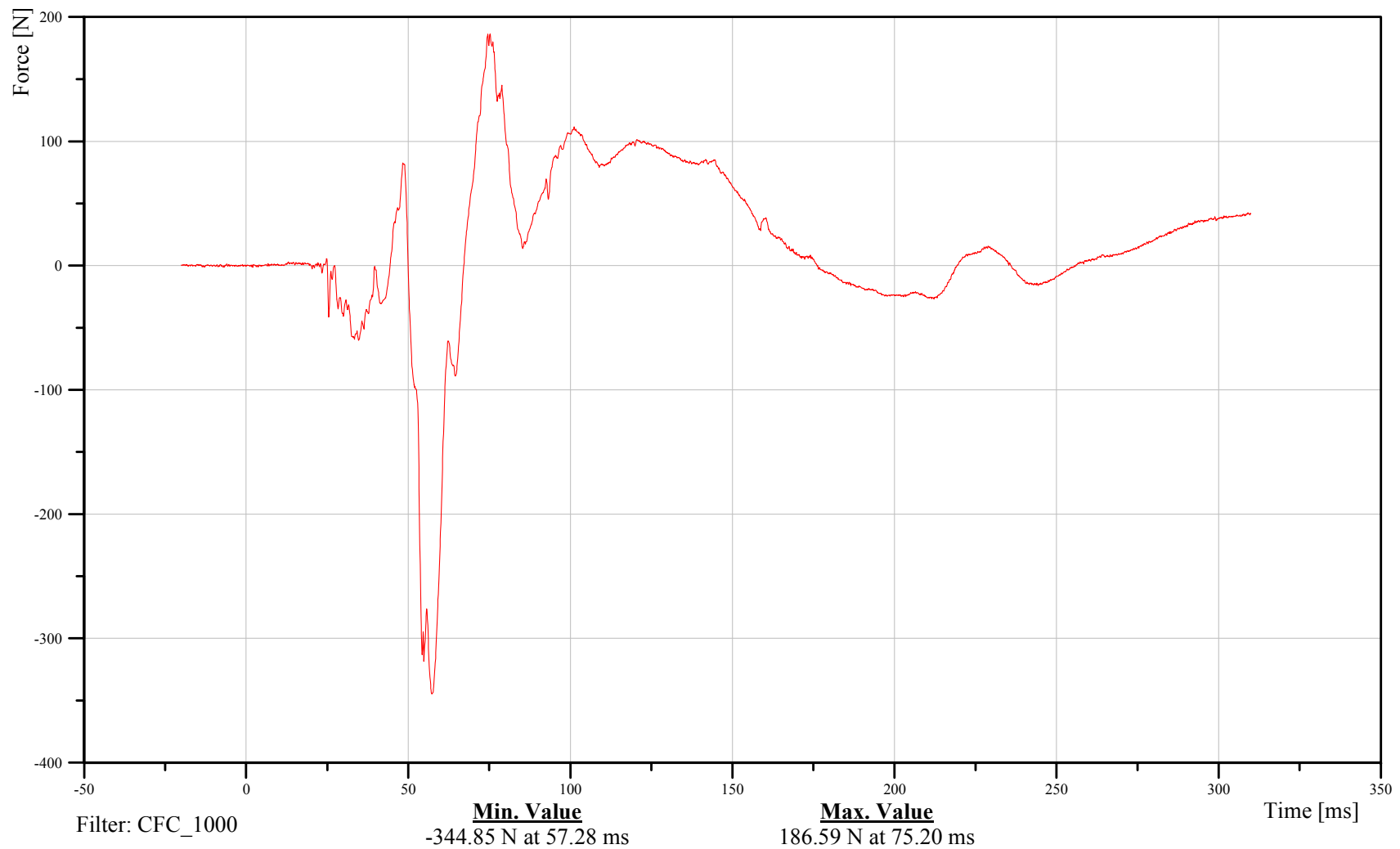
LR Pass. Neck Force X

Customer: VRTC

14NECKUP00S2FOXA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

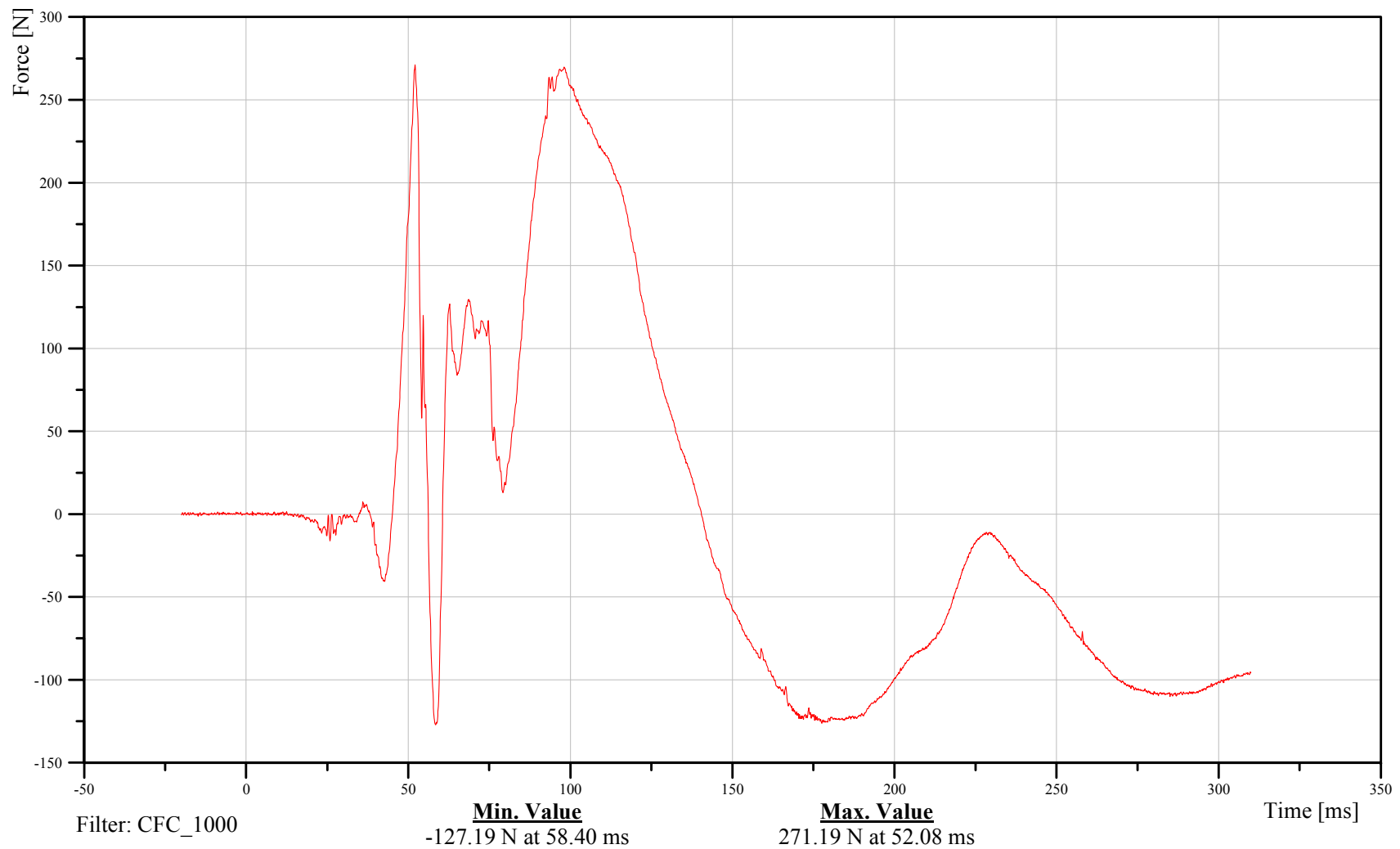
LR Pass. Neck Force Y

Customer: VRTC

14NECKUP00S2FOYA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Neck Force Z

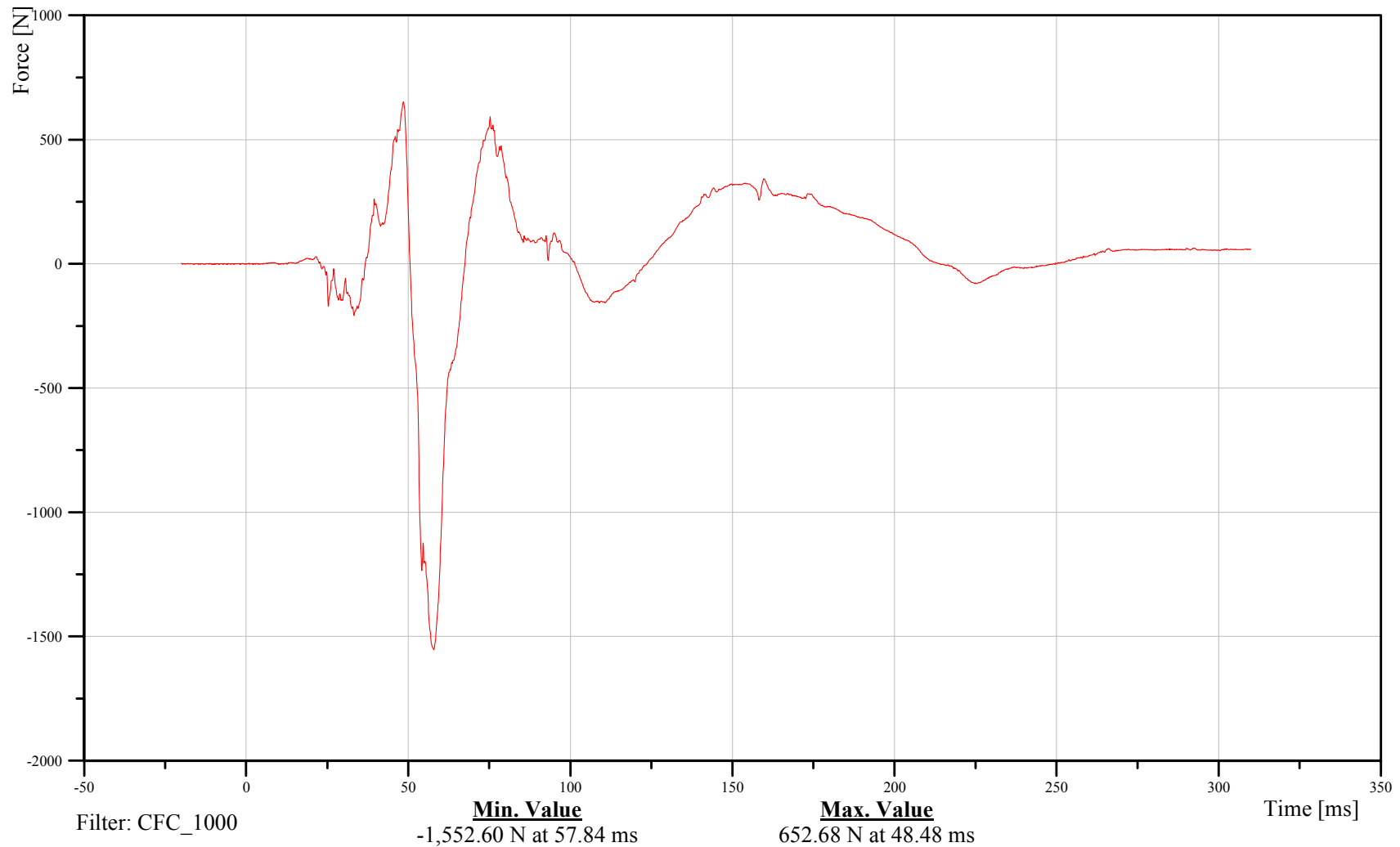
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14NECKUP00S2FOZA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Neck Moment X

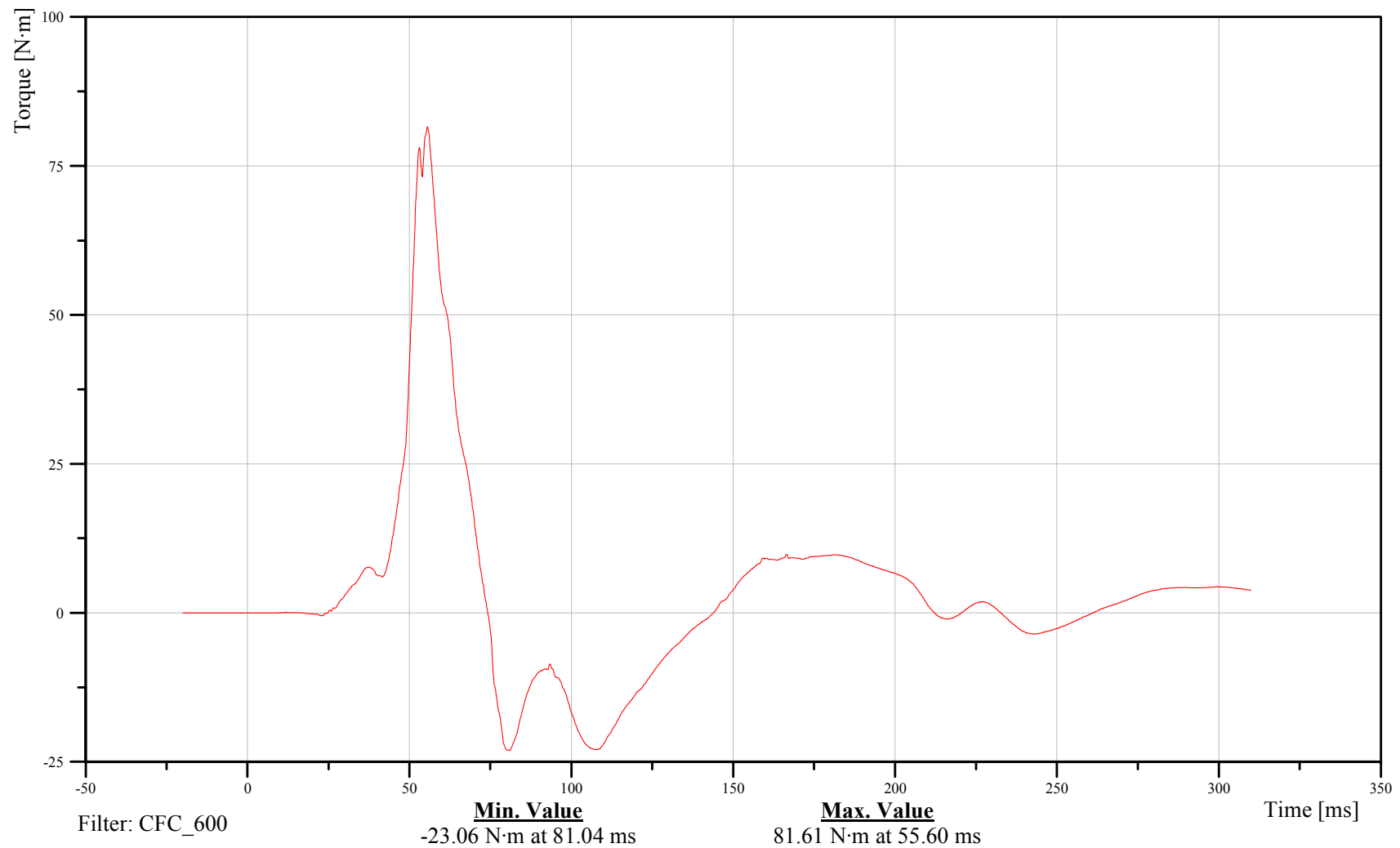
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14NECKUP00S2MOXB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Neck Moment Y

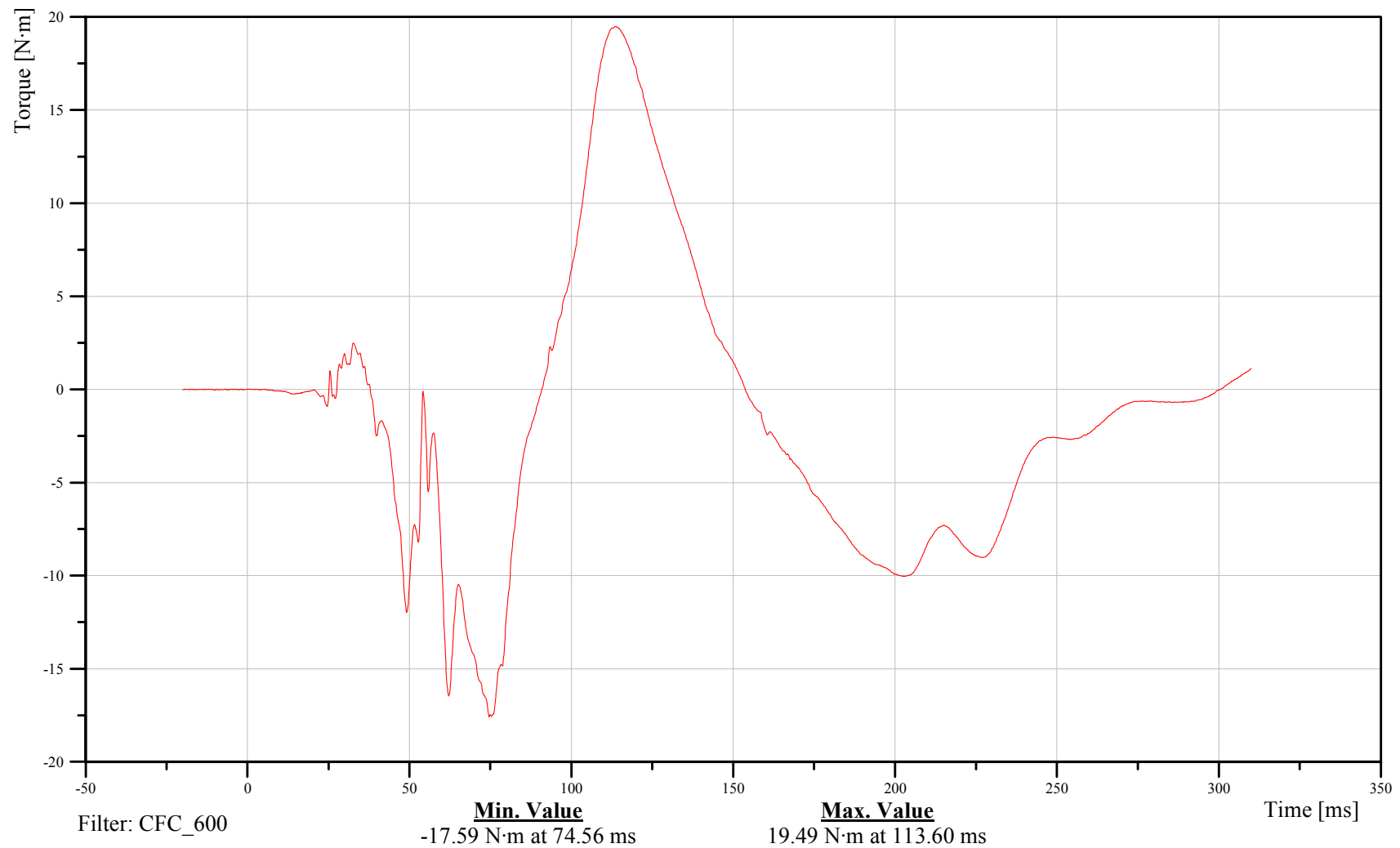
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14NECKUP00S2MOYB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Neck Moment Z

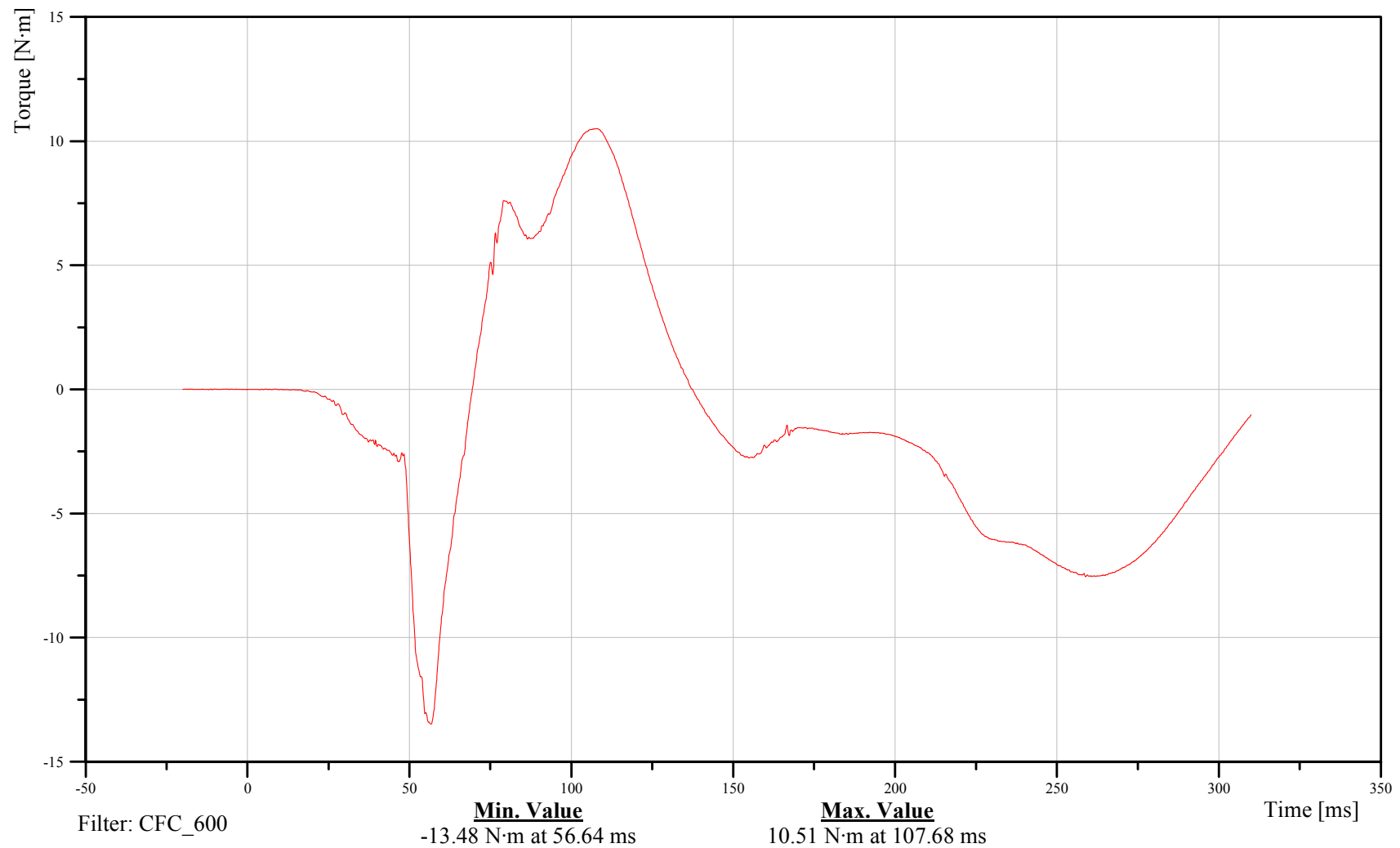
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14NECKUP00S2MOZB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Shoulder Accel X

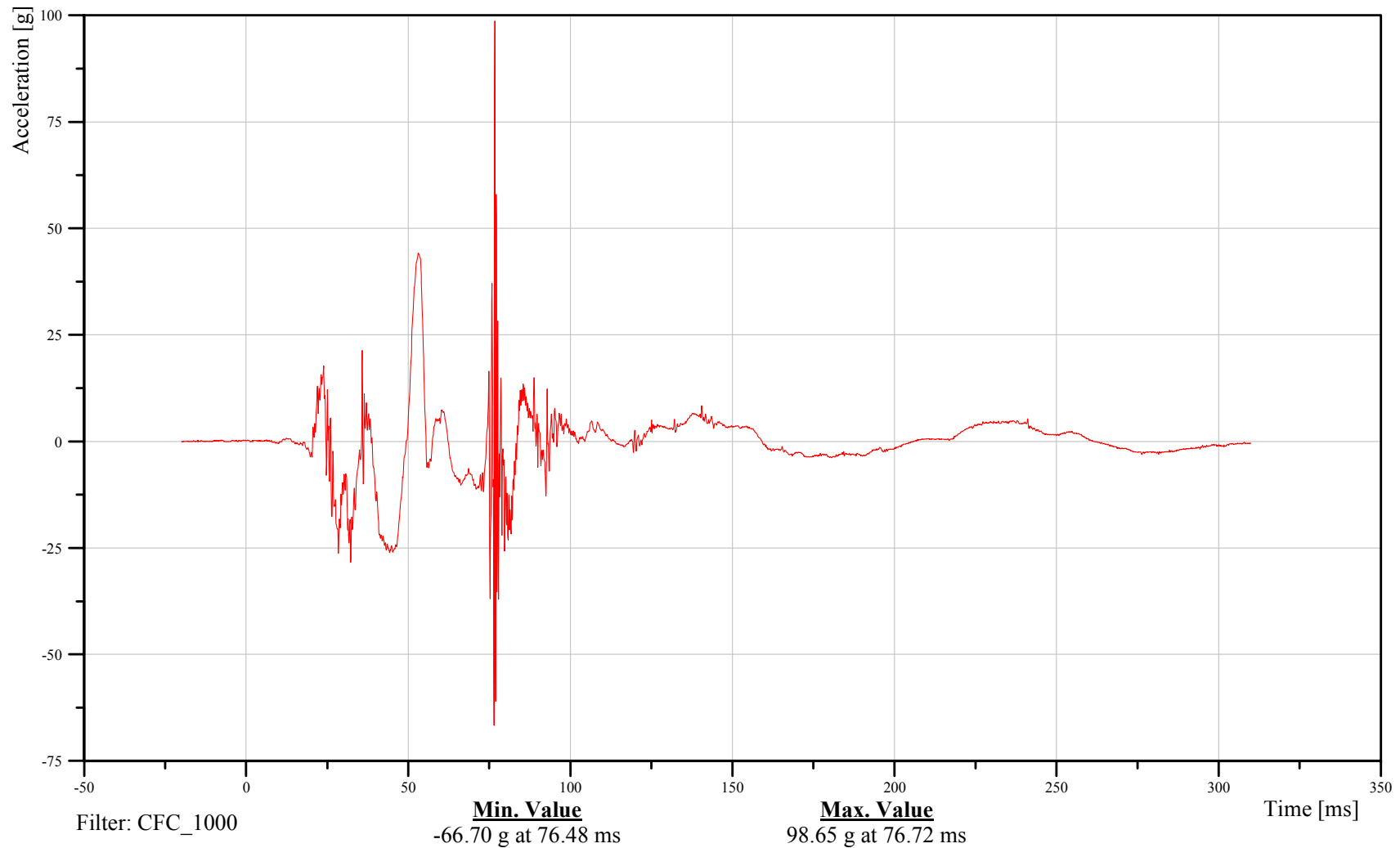
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14SHLDLE00S2ACXA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Shoulder Accel Y

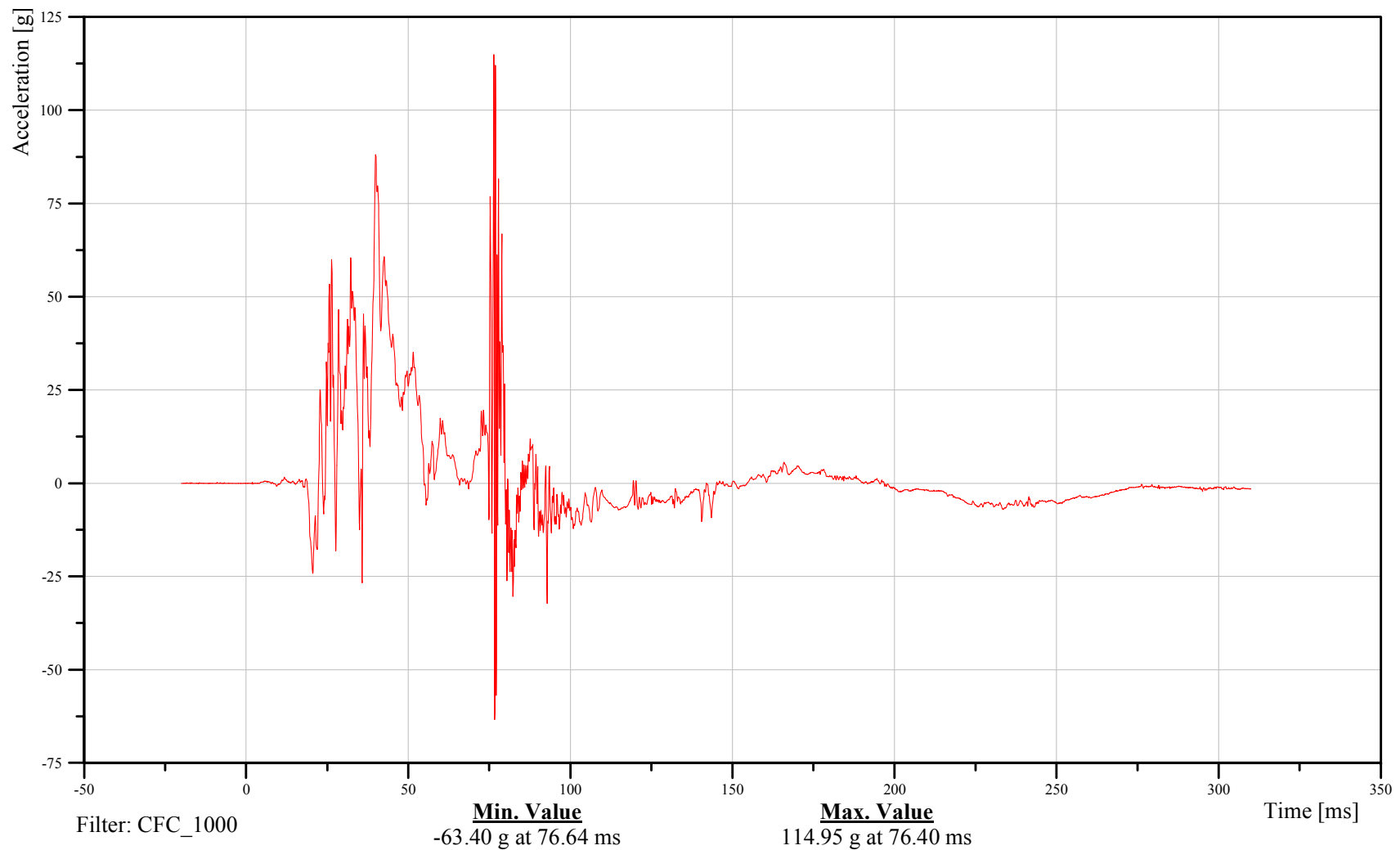
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14SHLDLE00S2ACYA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

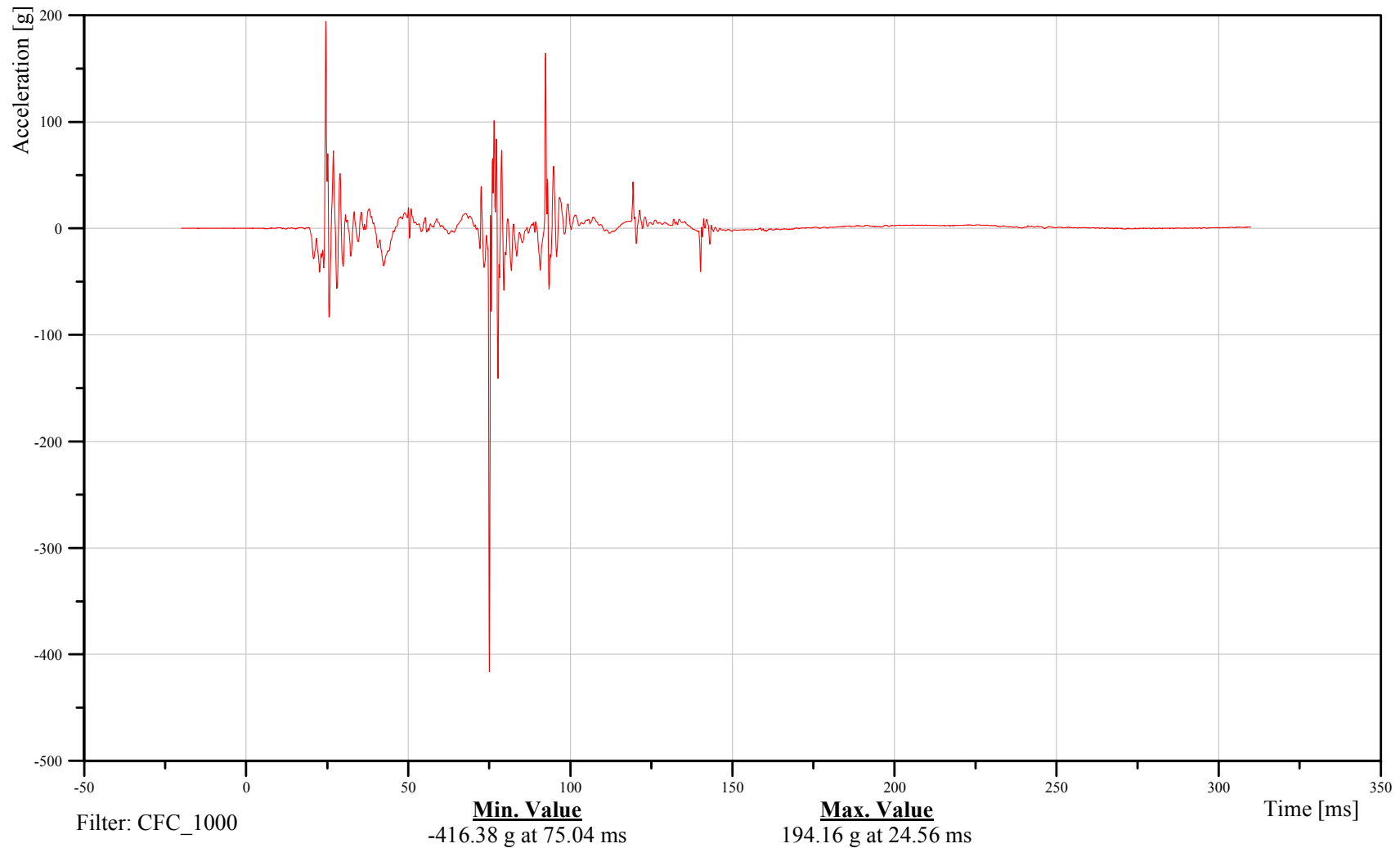
LR Pass. Shoulder Accel Z

Customer: VRTC

14SHLDLE00S2ACZA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

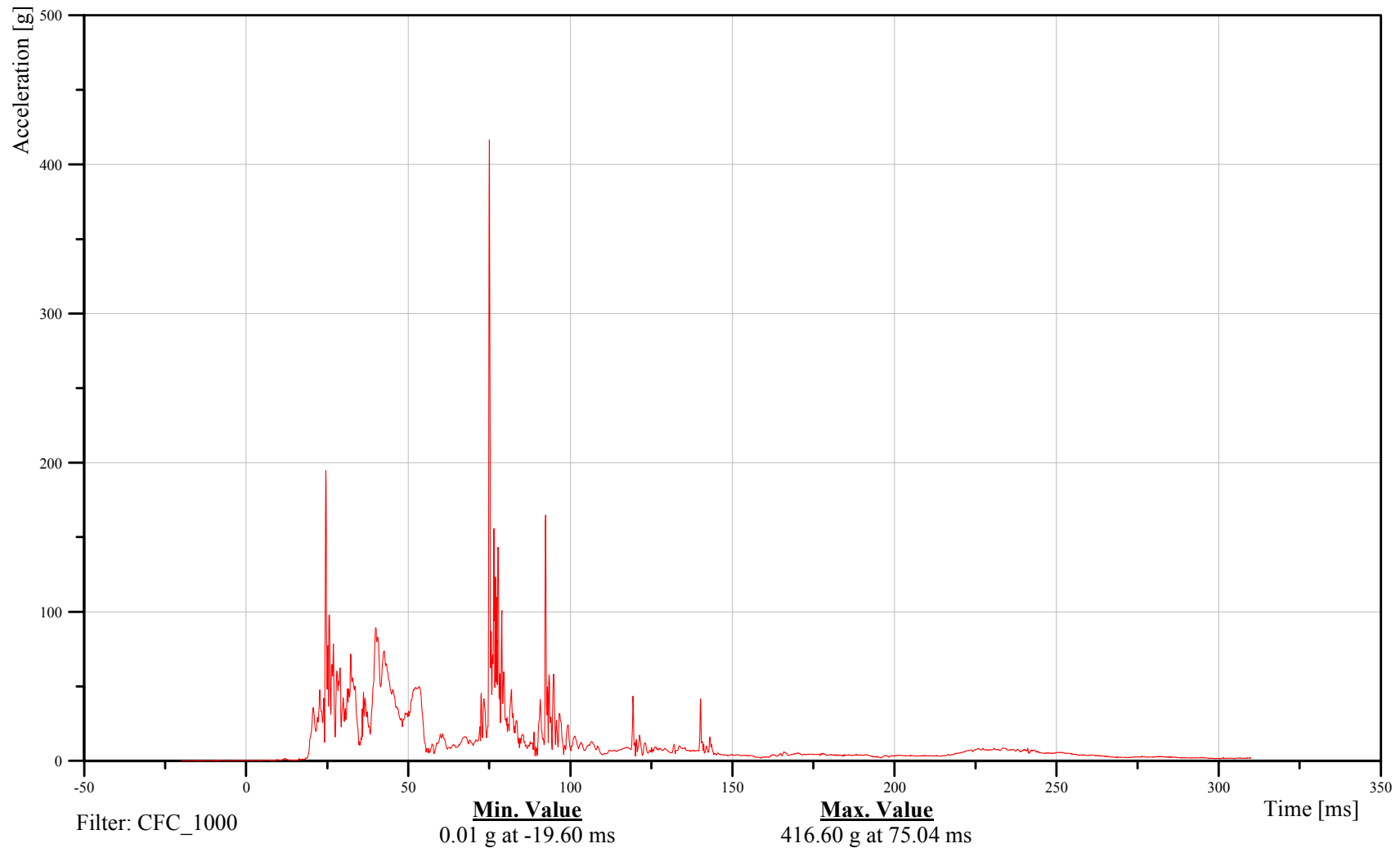
LR Pass. Shoulder Accel Resultant

Customer: VRTC

14SHLDLE00S2ACRA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Shoulder Force X

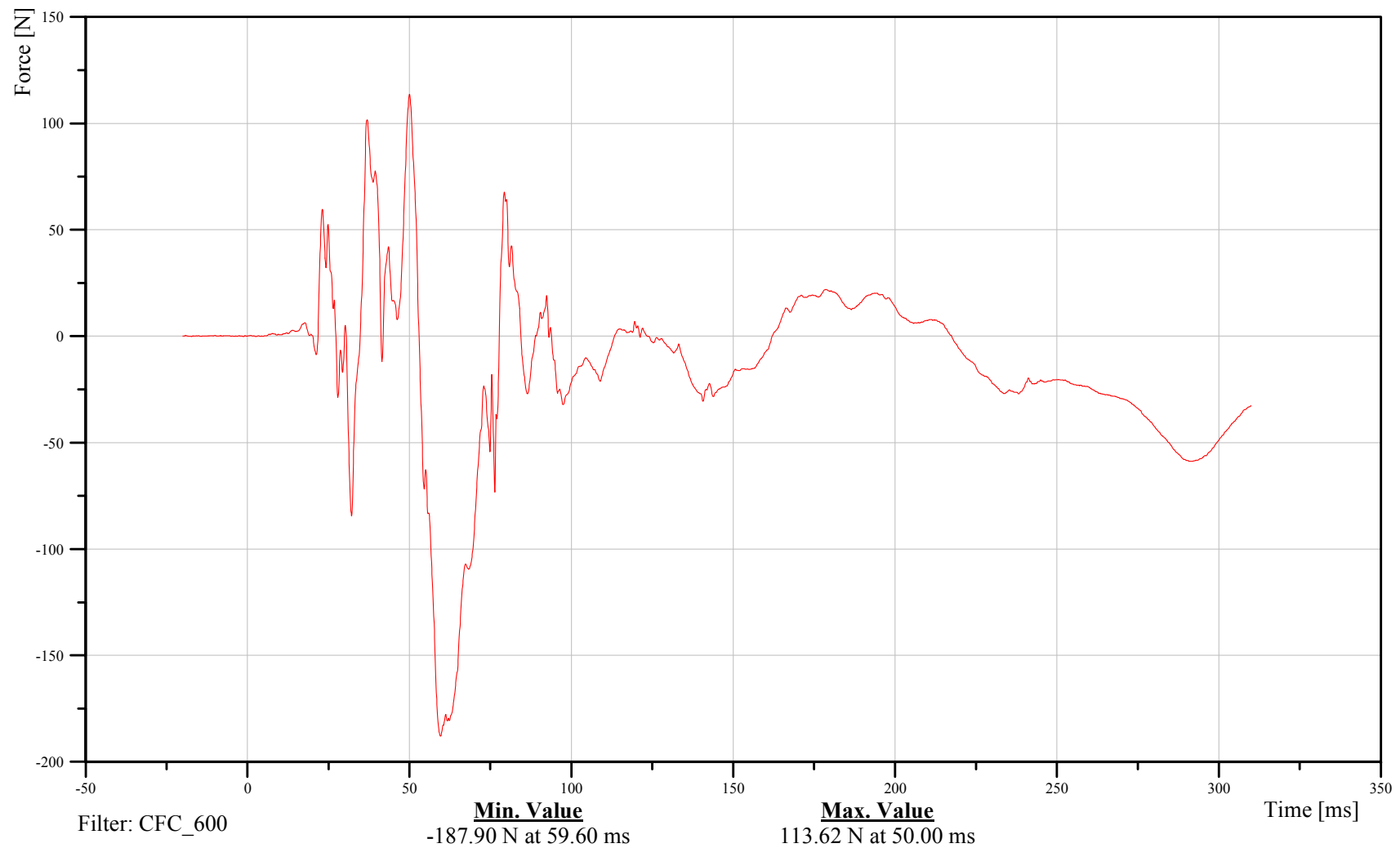
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14SHLDLE00S2FOXB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Shoulder Force Y

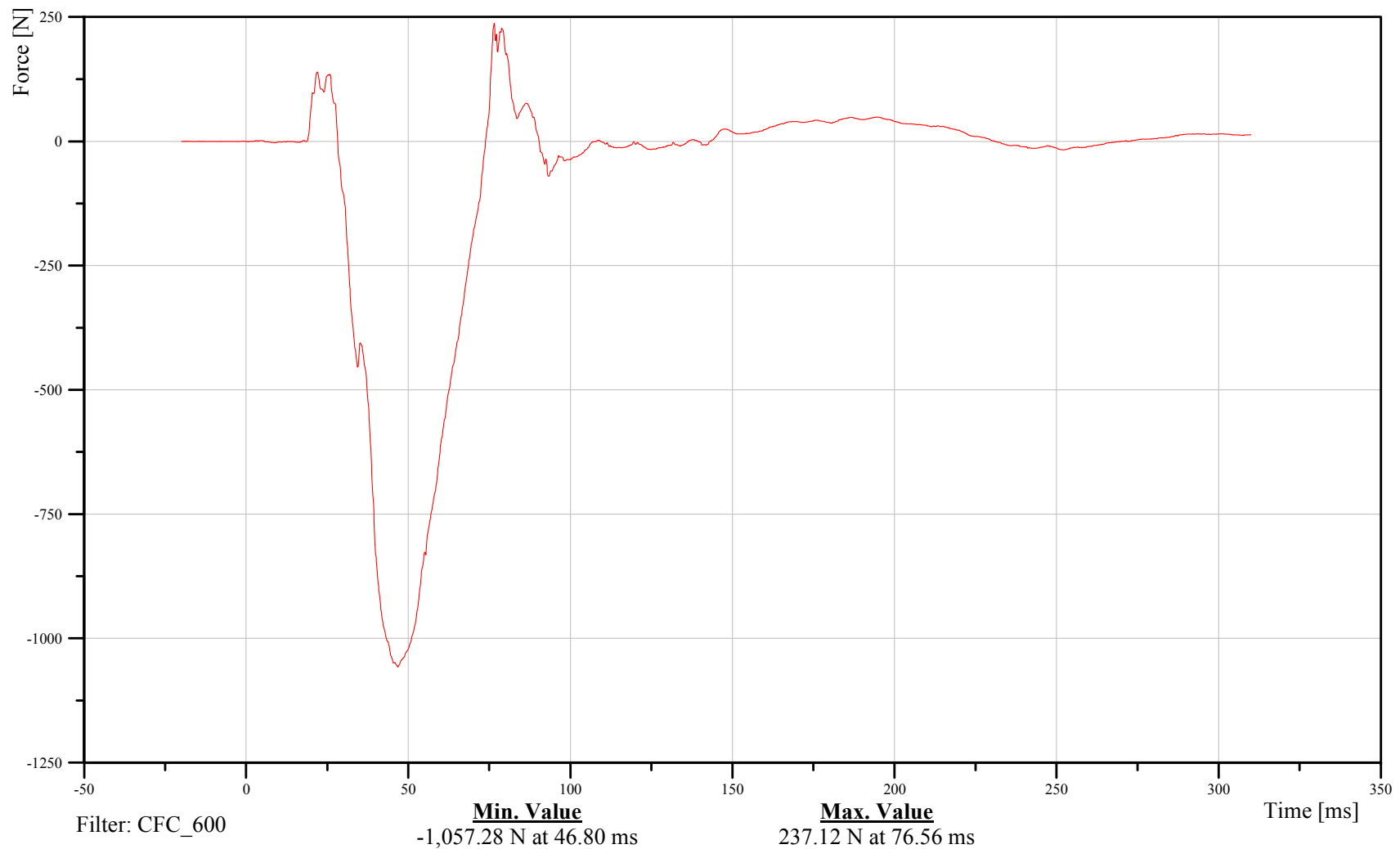
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14SHLDLE00S2FOYB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Shoulder Force Z

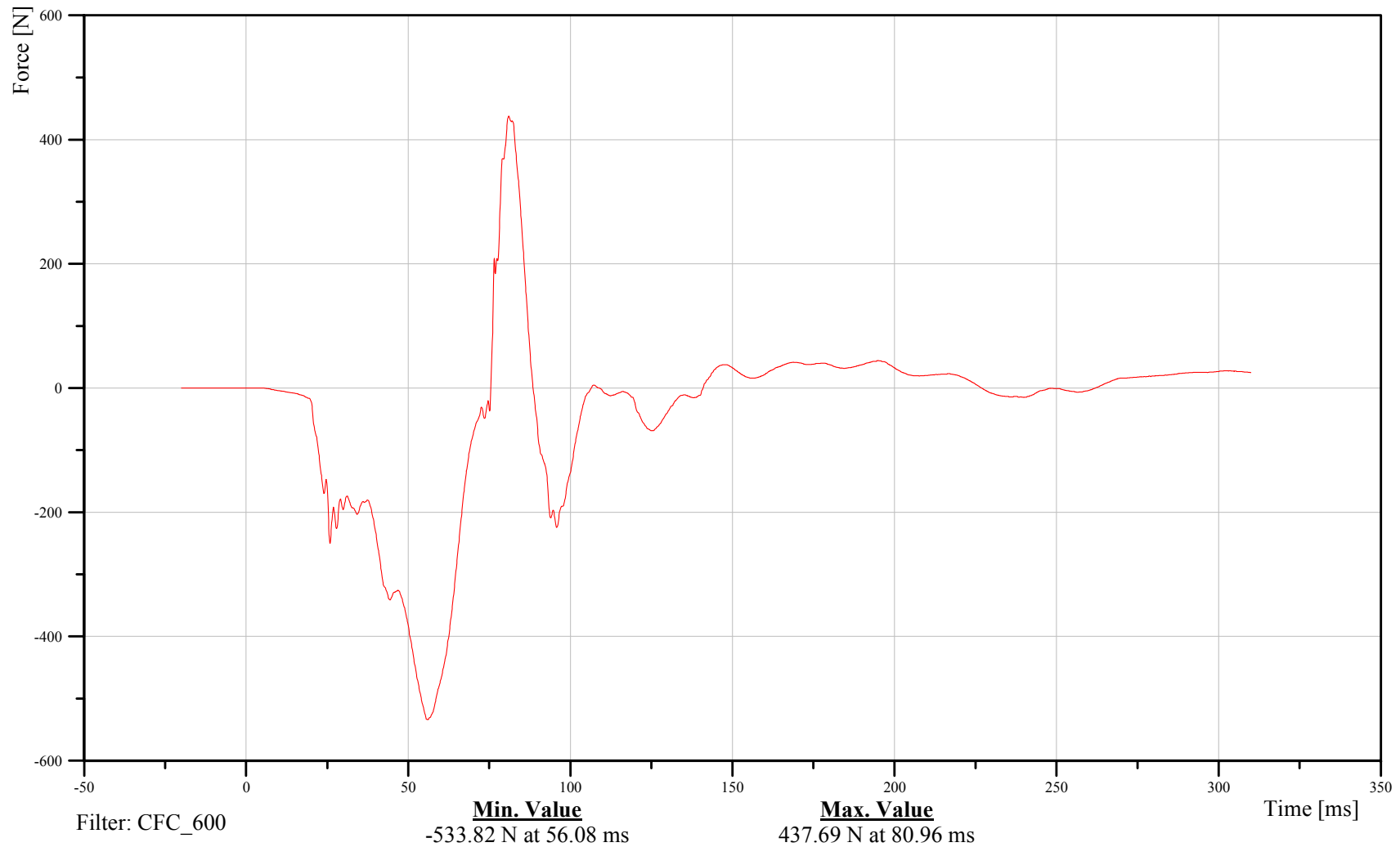
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14SHLDLE00S2FOZB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Upper Spine Accel X

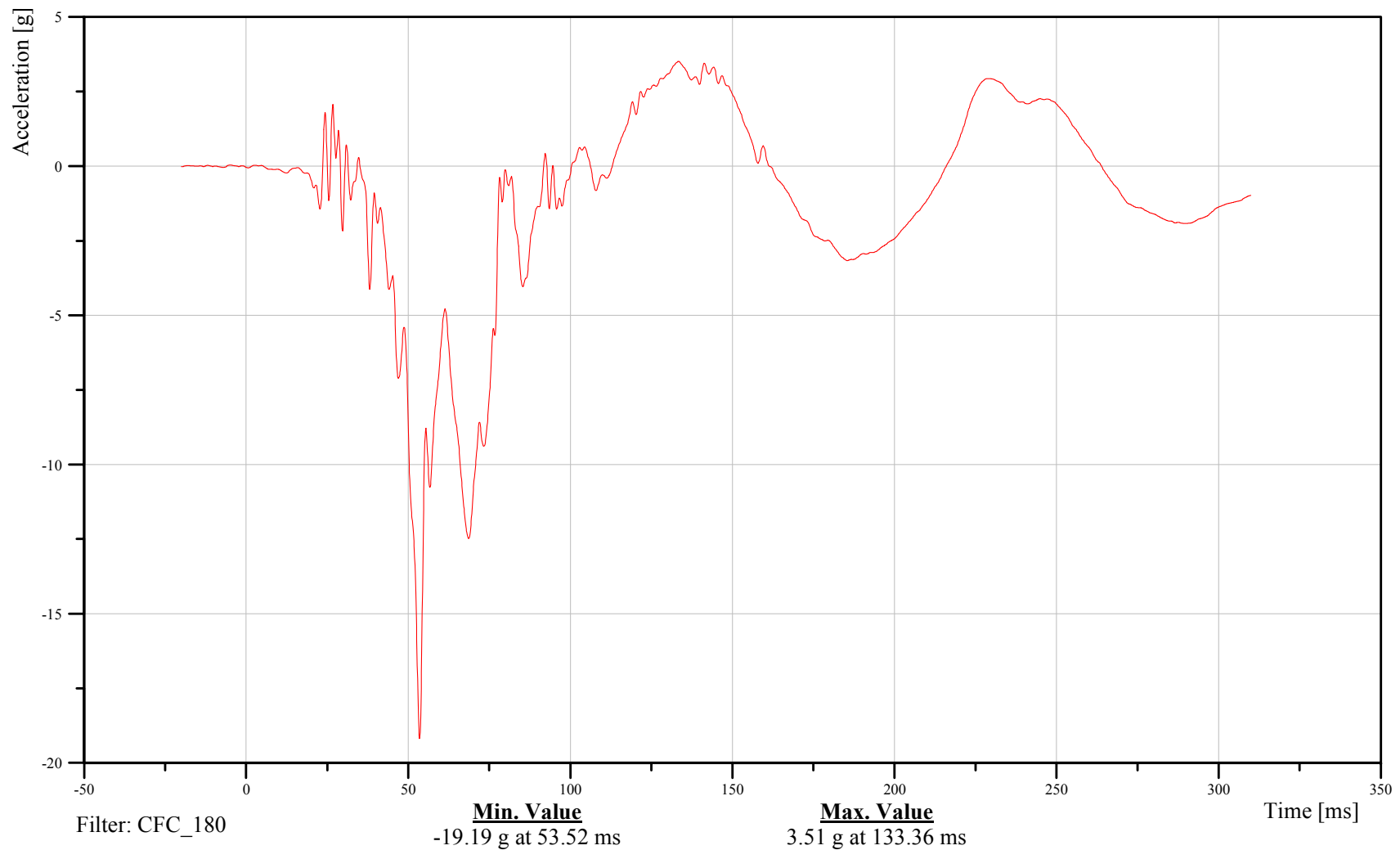
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14SPIN0100S2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Upper Spine Accel Y

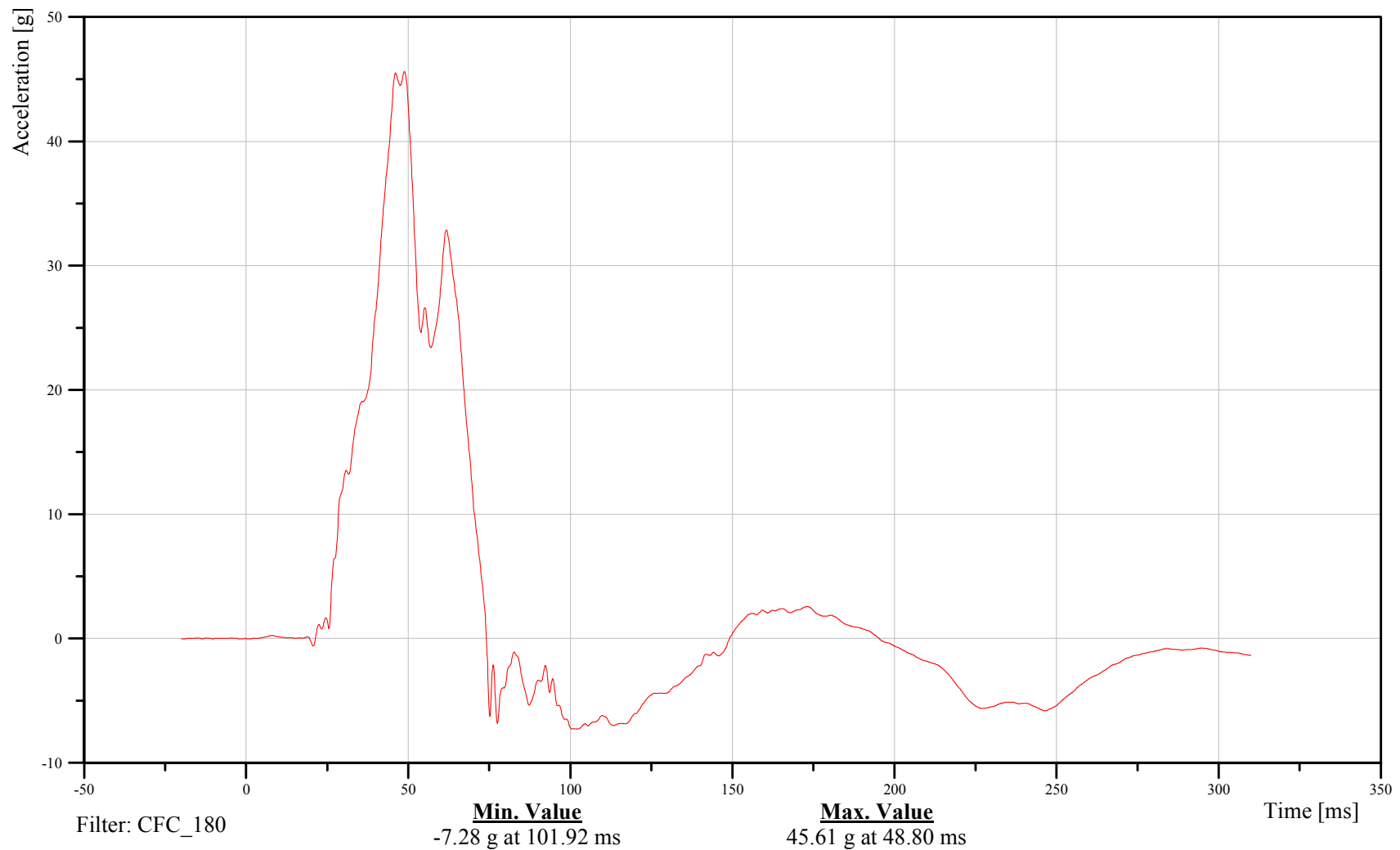
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14SPIN0100S2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Upper Spine Accel Z

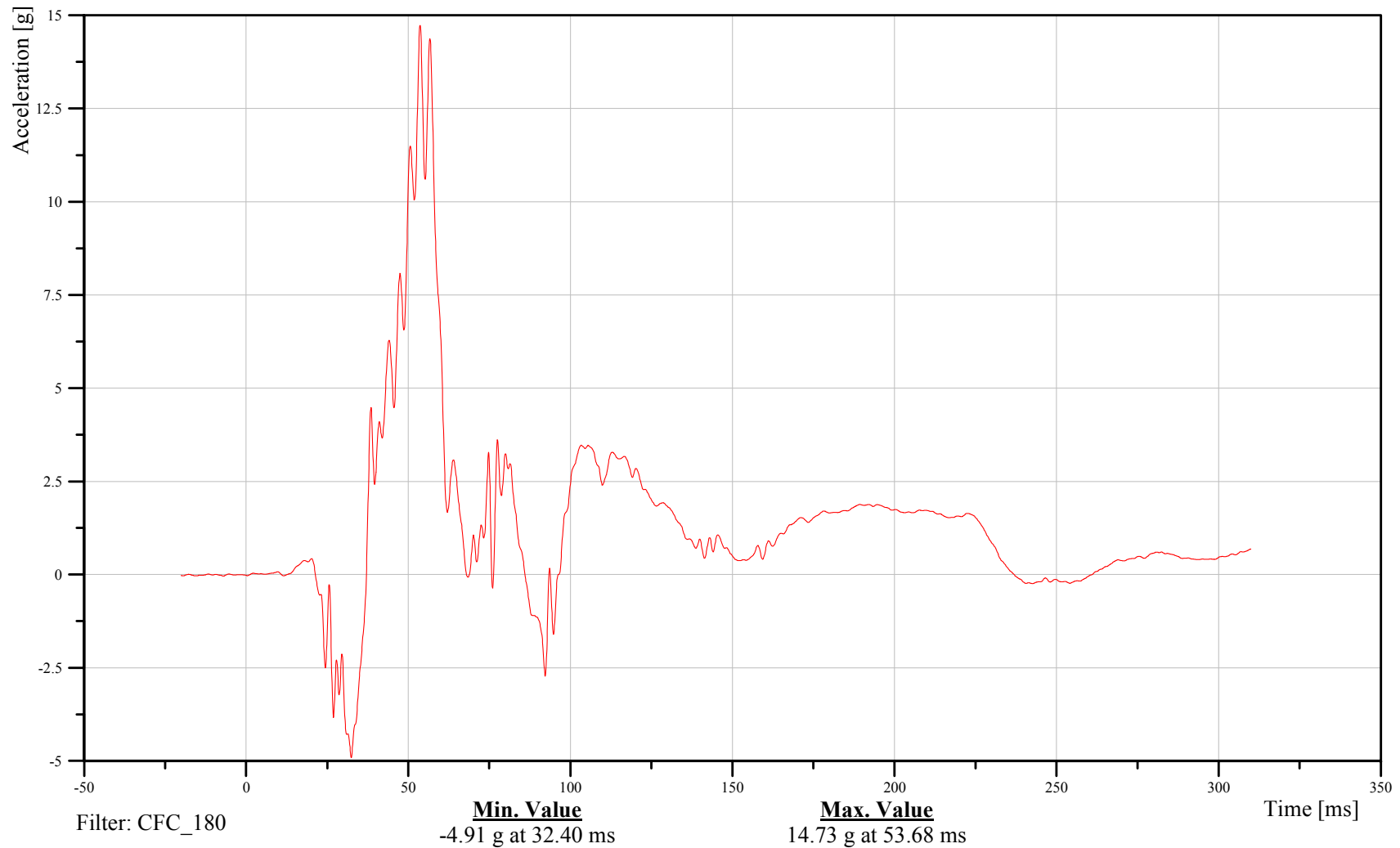
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14SPIN0100S2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Upper Spine Resultant

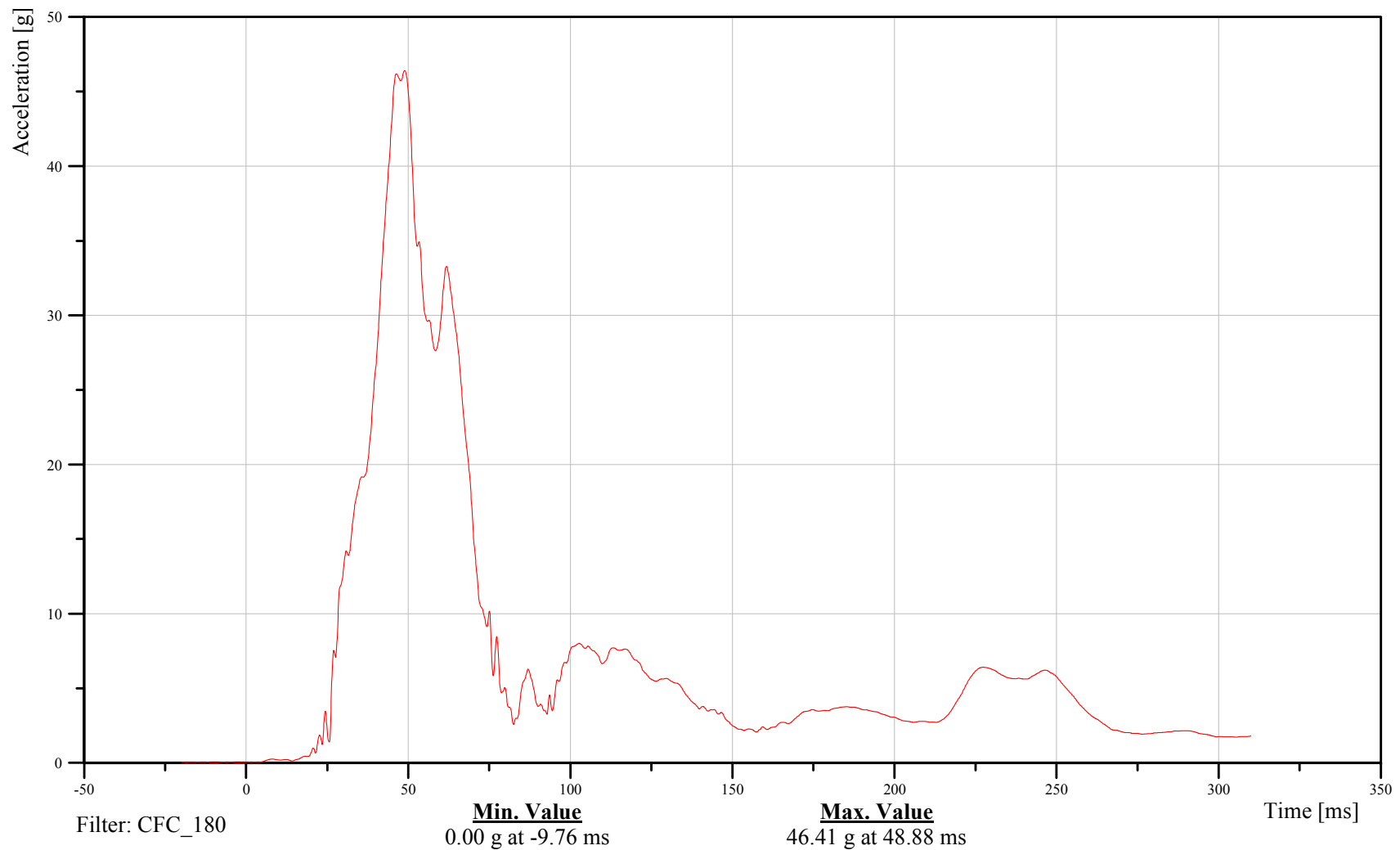
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14SPIN0100S2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Spine Rib 1 Accel X

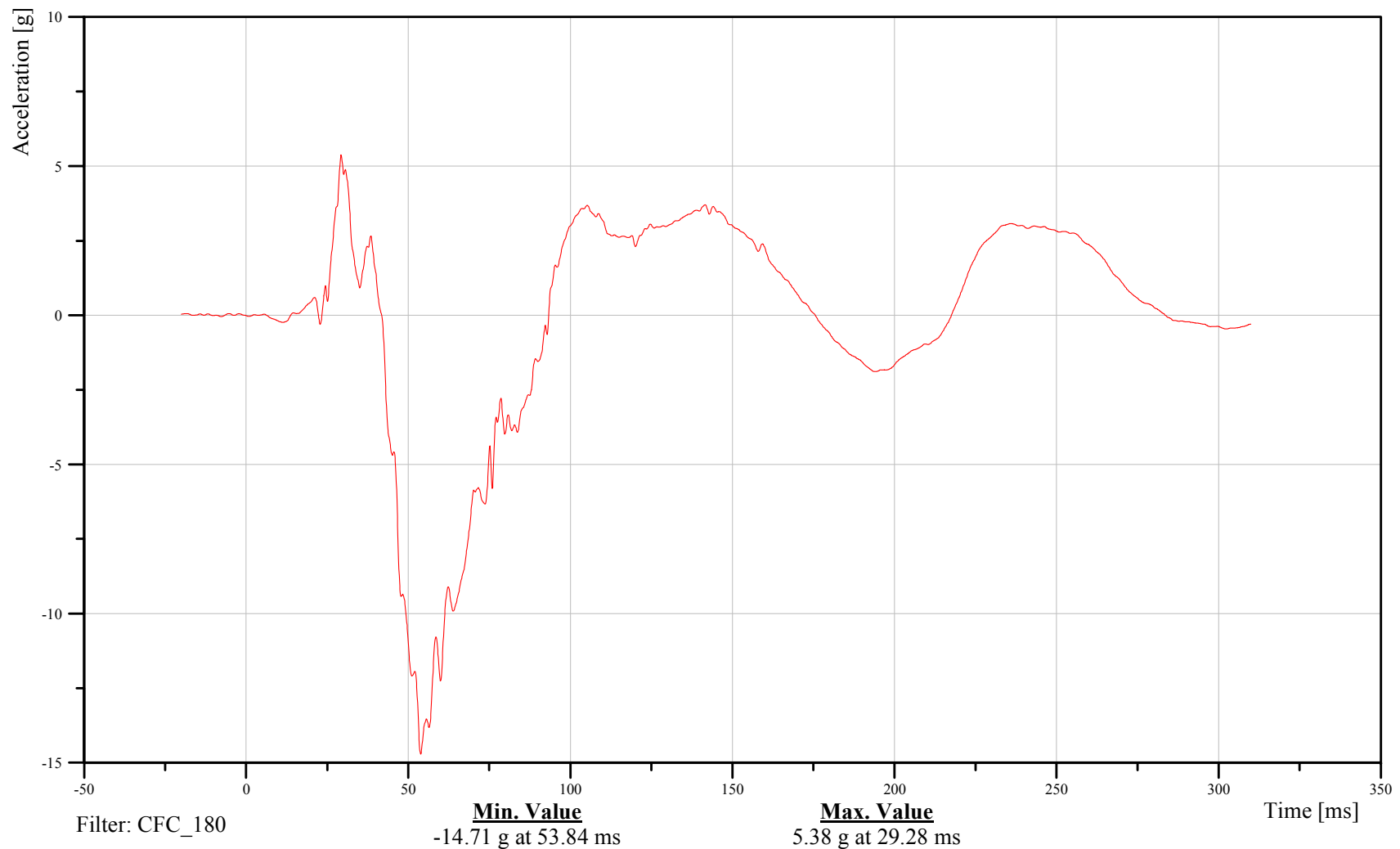
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14THSP01RIS2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Spine Rib 1 Accel Y

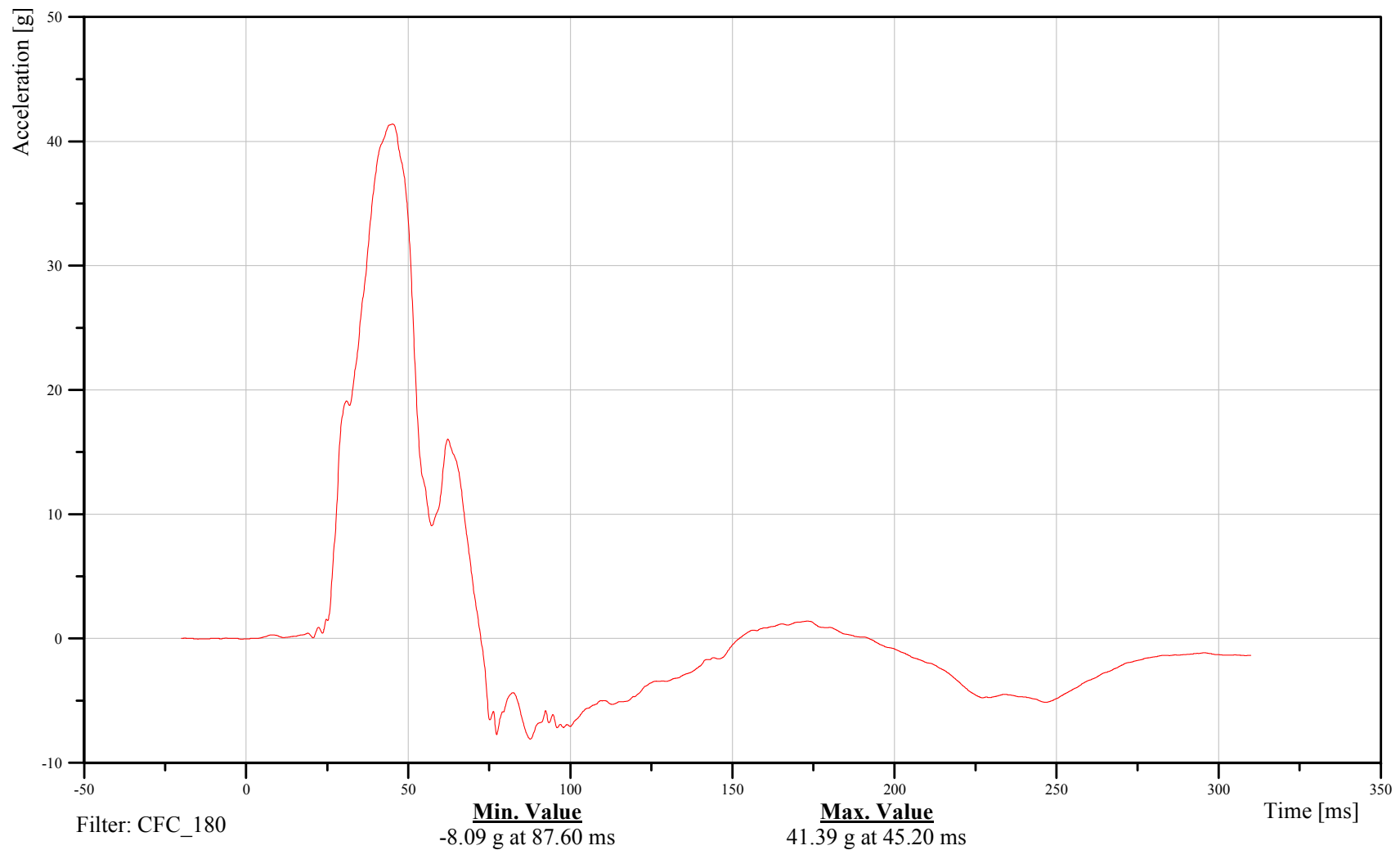
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14THSP01RIS2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Spine Rib 1 Accel Z

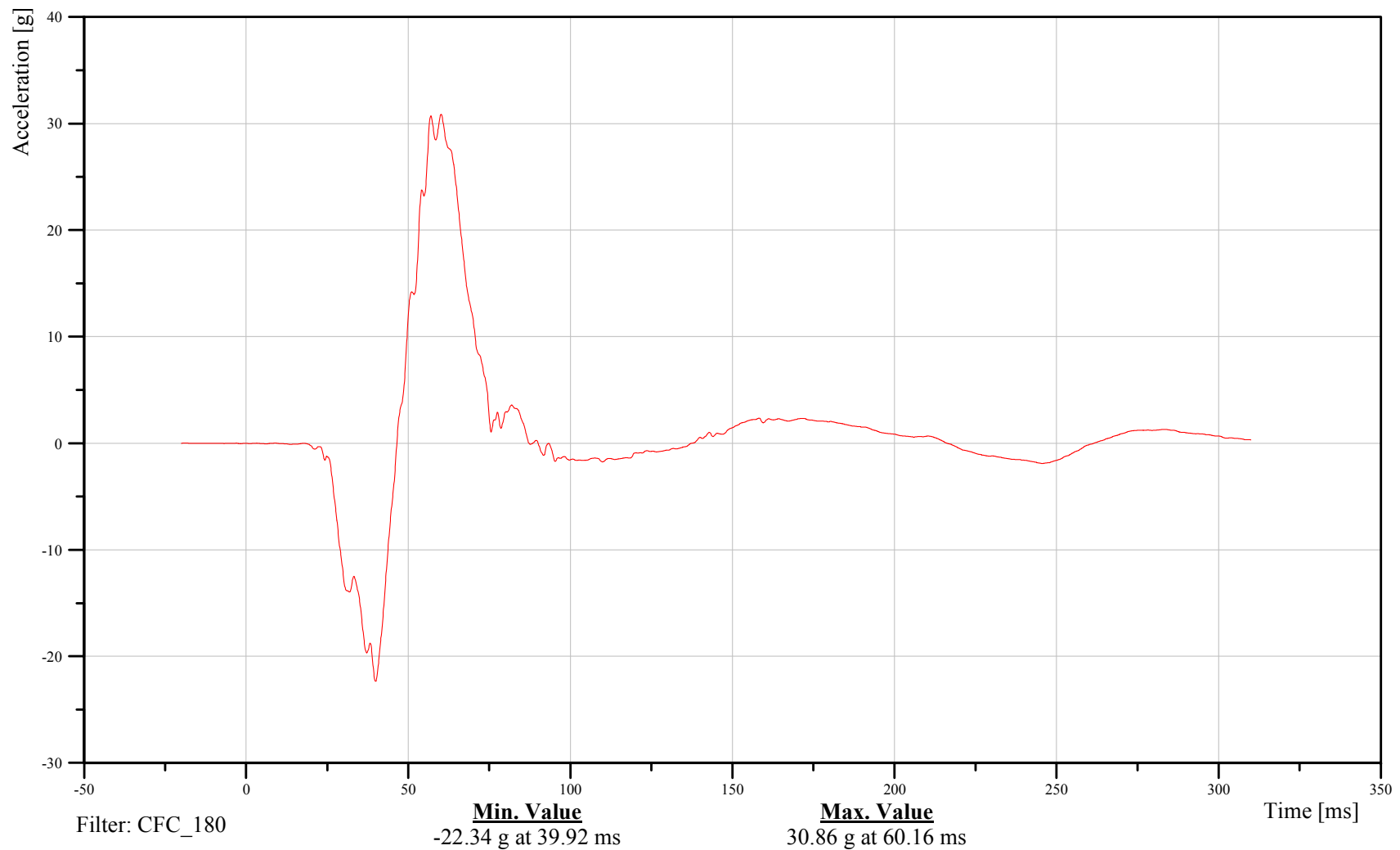
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14THSP01RIS2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

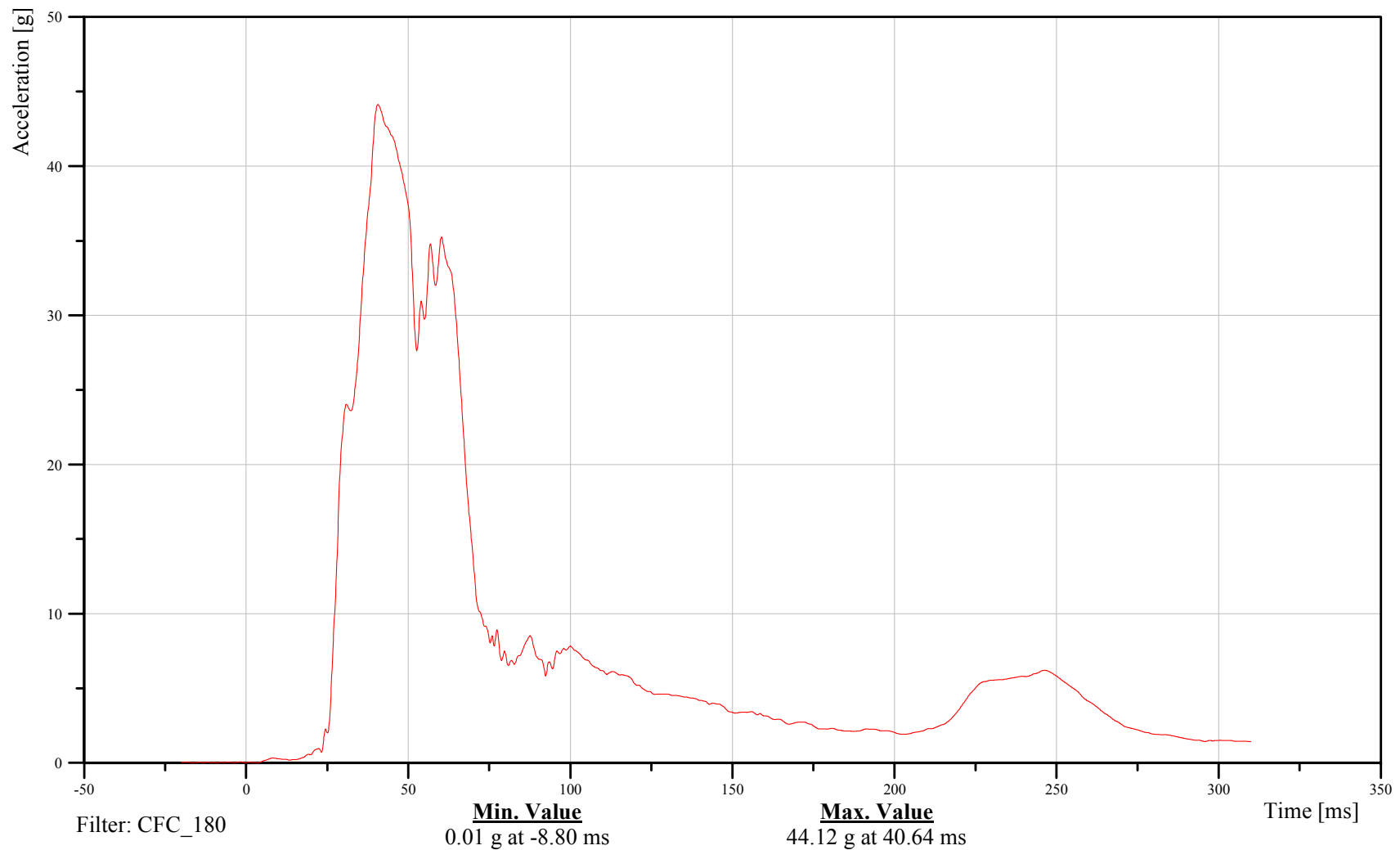
LR Pass. Spine Rib 1 Accel Resultant

Customer: VRTC

14THSP01RIS2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Spine Rib 2 Accel X

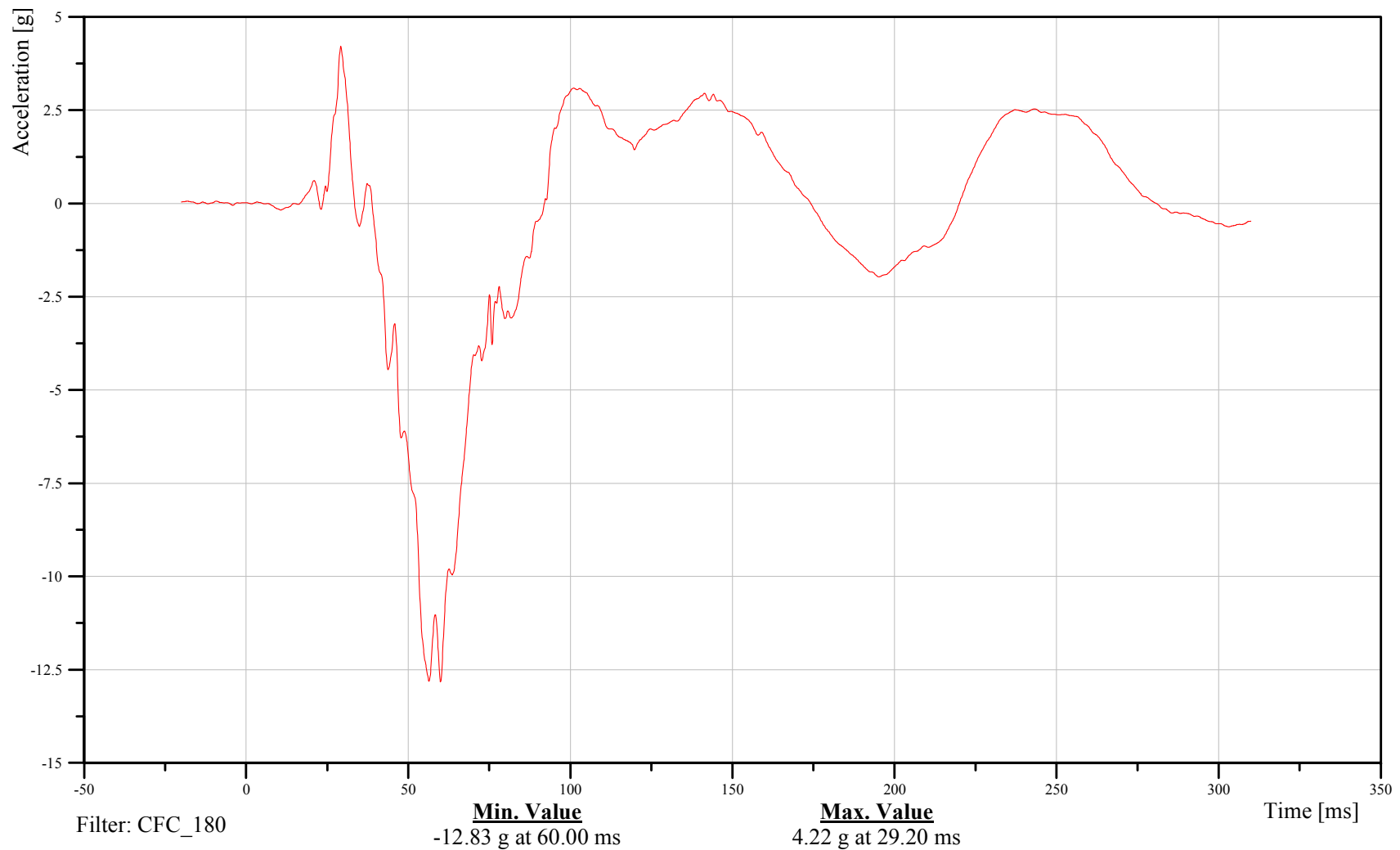
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14THSP02RIS2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Spine Rib 2 Accel Y

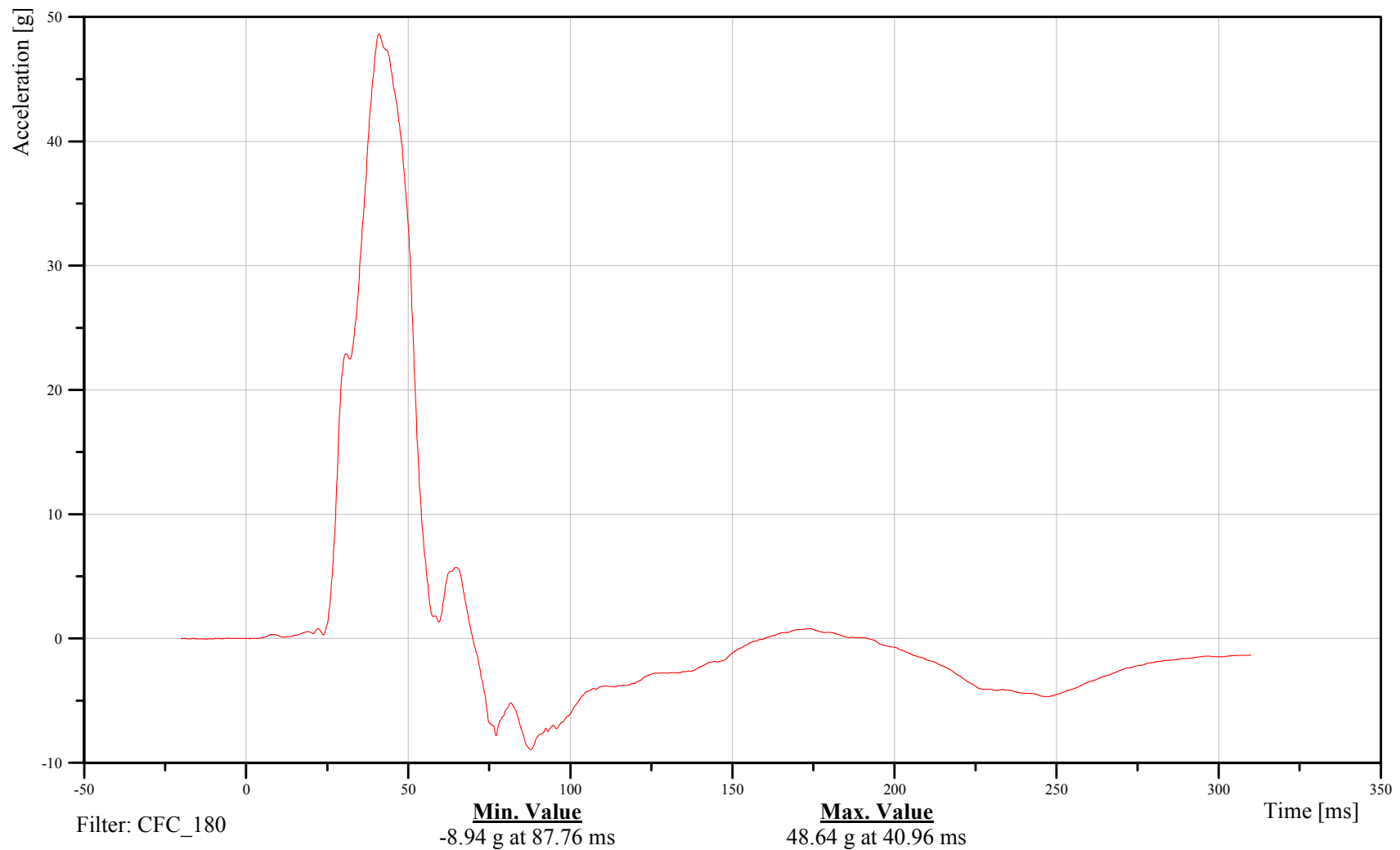
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14THSP02RIS2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Spine Rib 2 Accel Z

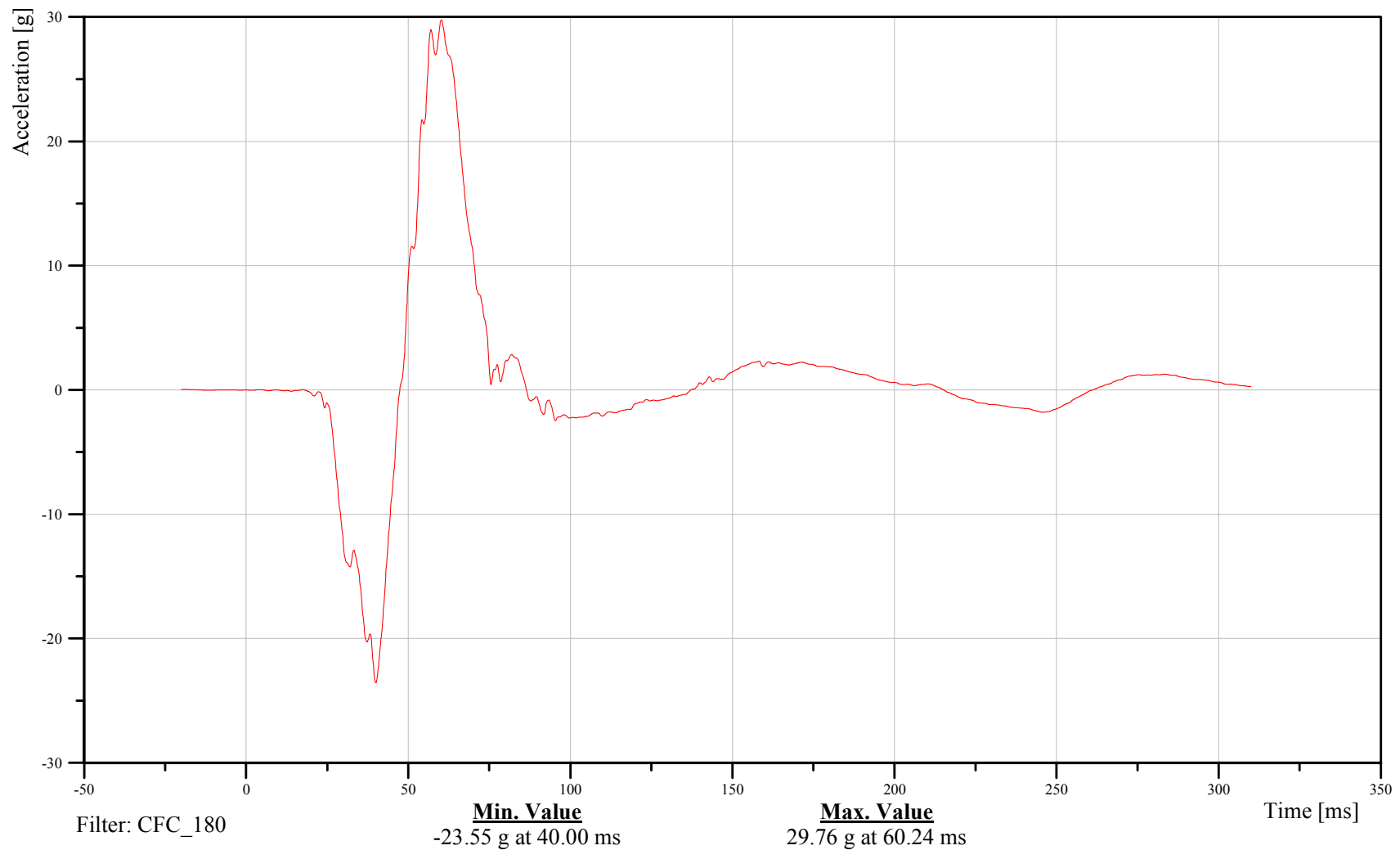
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14THSP02RIS2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Spine Rib 2 Accel Resultant

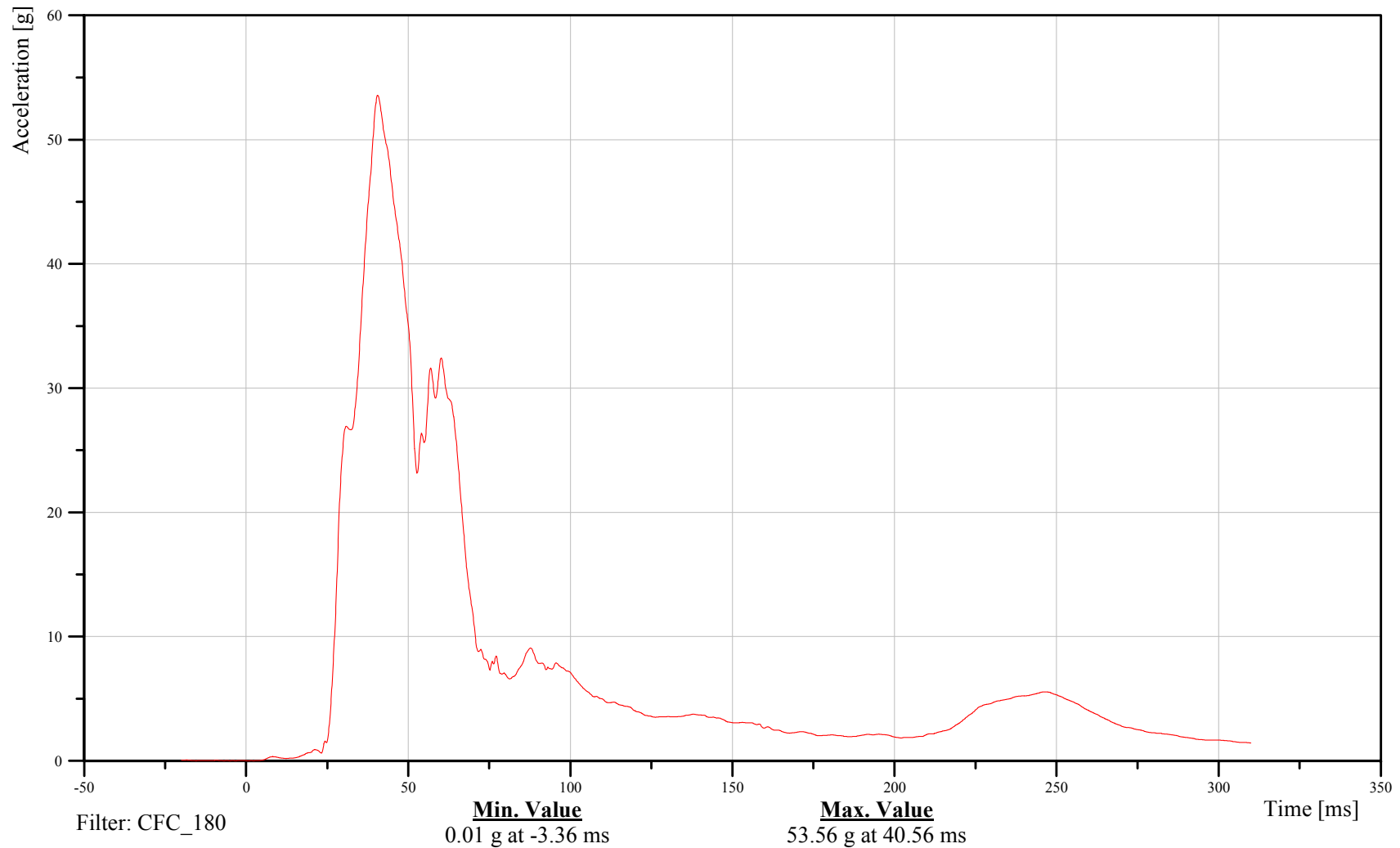
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14THSP02RIS2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Spine Rib 3 Accel X

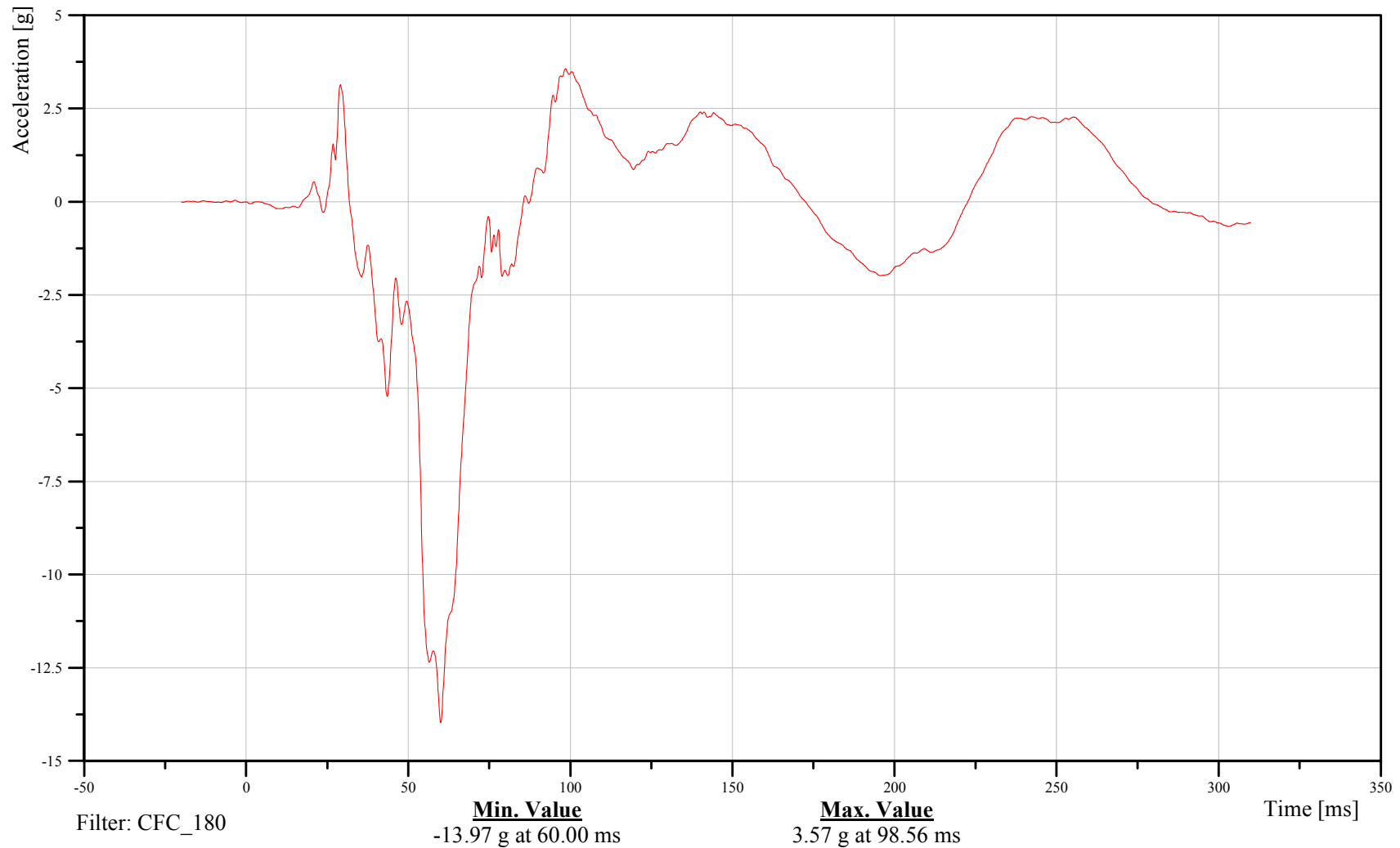
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14THSP03RIS2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Spine Rib 3 Accel Y

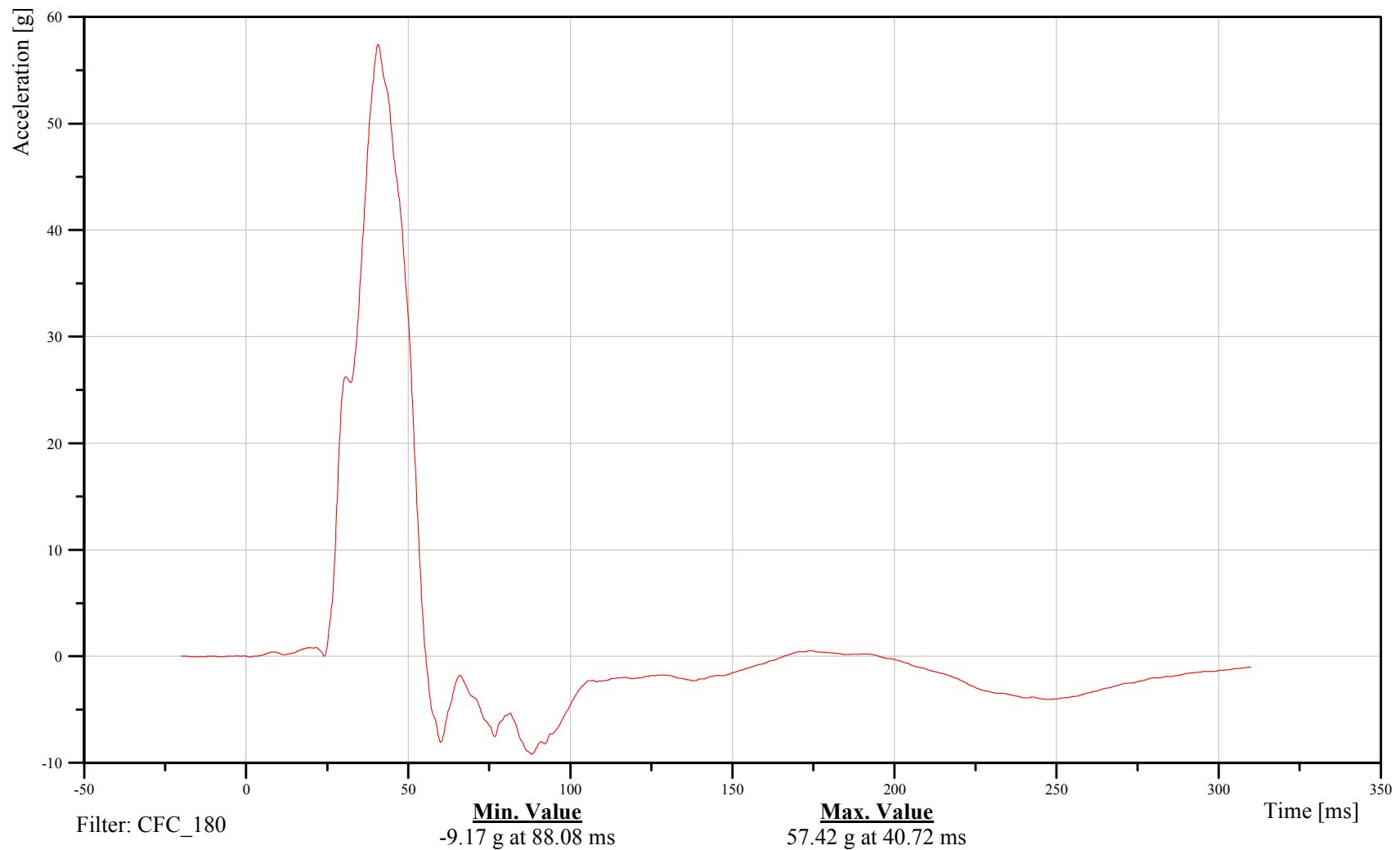
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14THSP03RIS2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Spine Rib 3 Accel Z

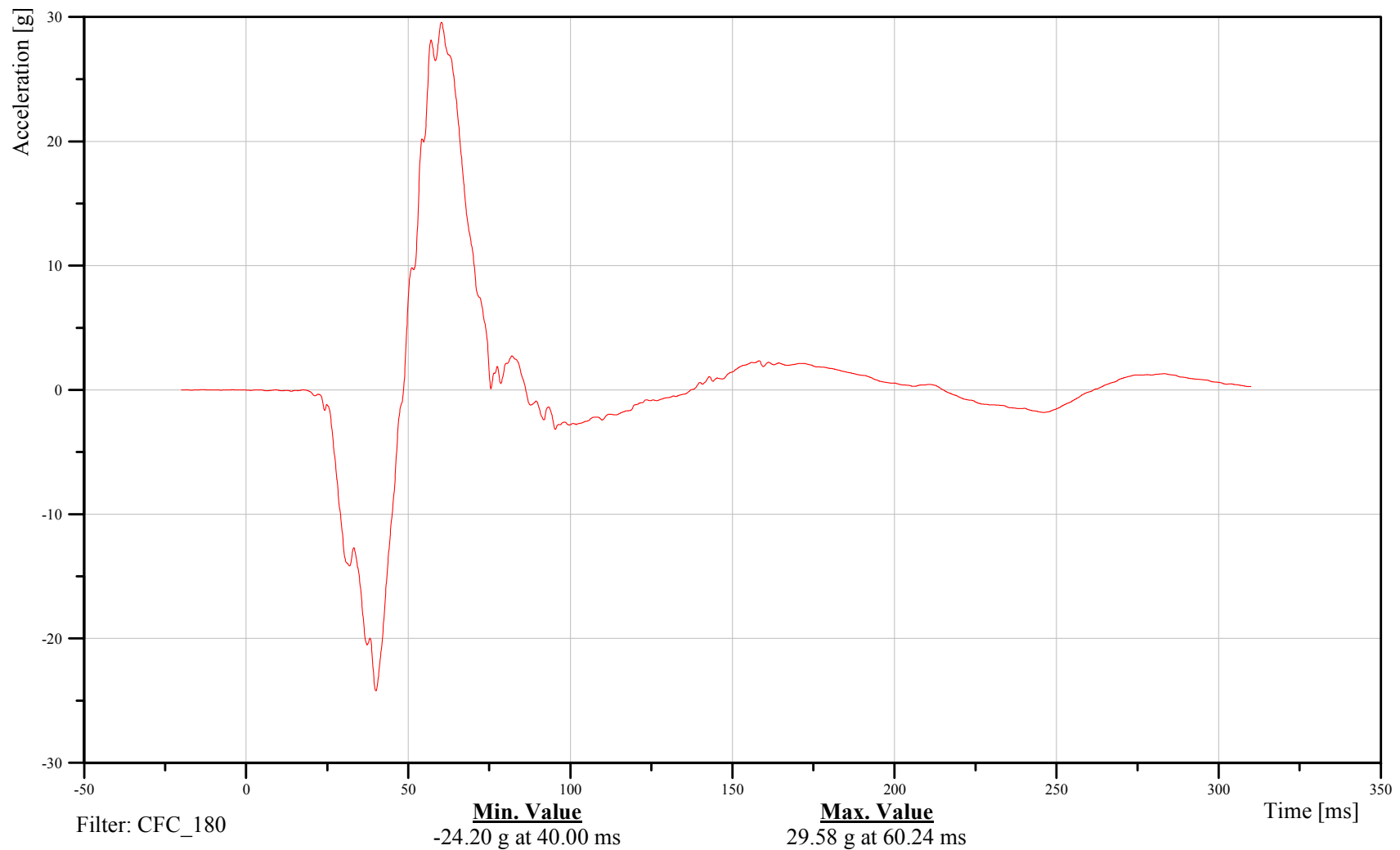
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14THSP03RIS2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Spine Rib 3 Accel Resultant

Date: 09/16/2005

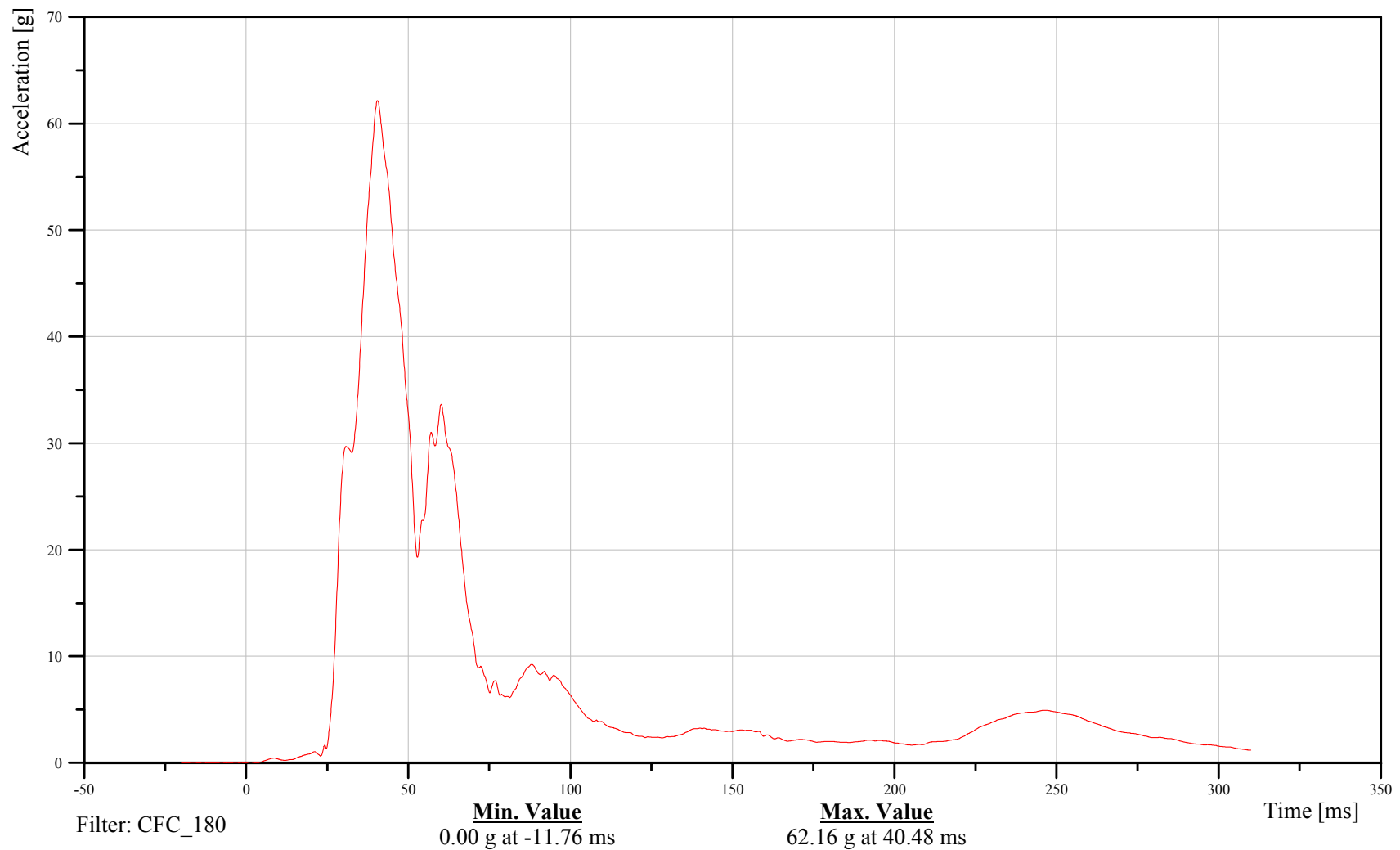
Time: 11:12

Customer: VRTC

14THSP03RIS2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Lower Spine Accel X

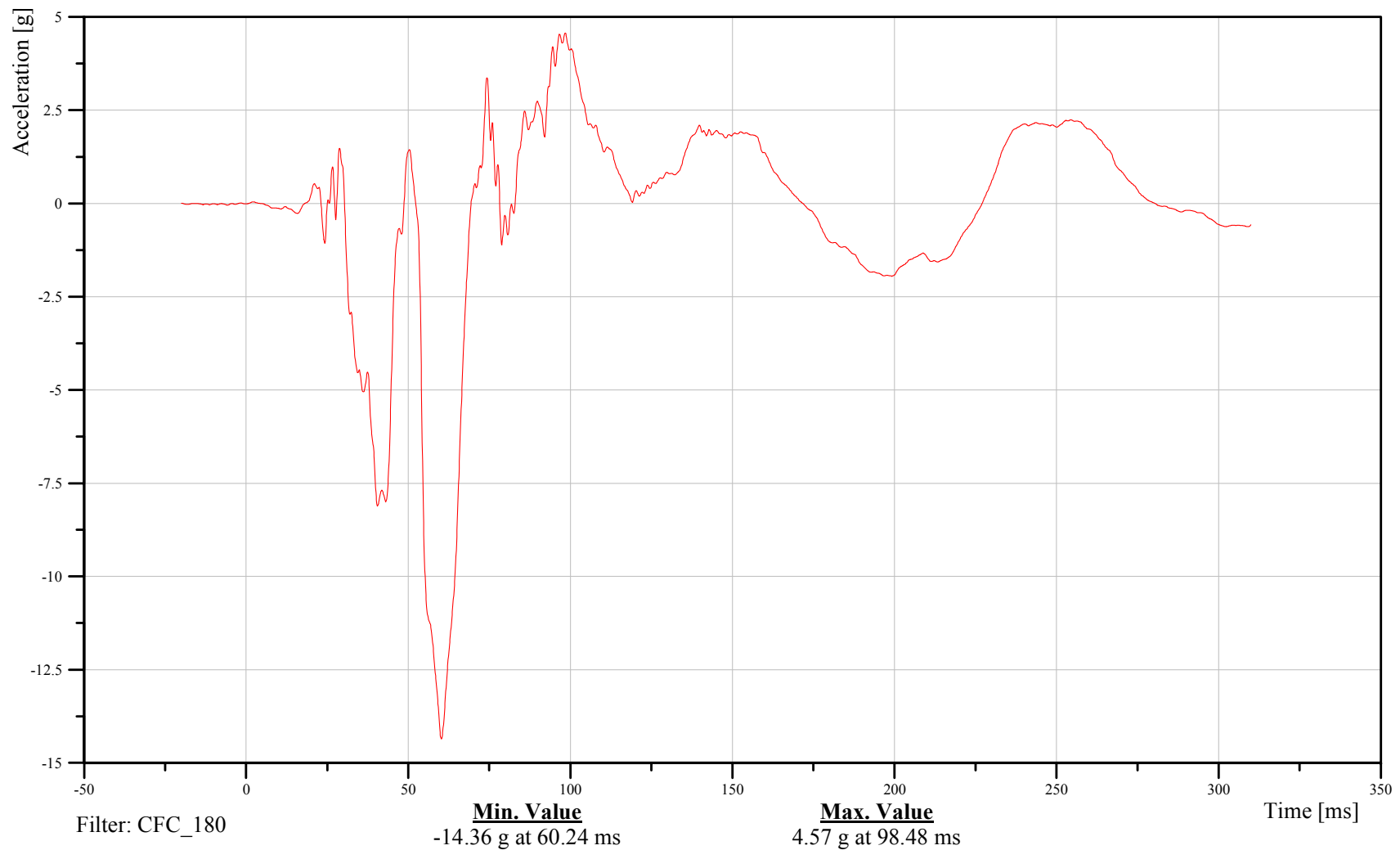
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14SPIN1200S2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Lower Spine Accel Y

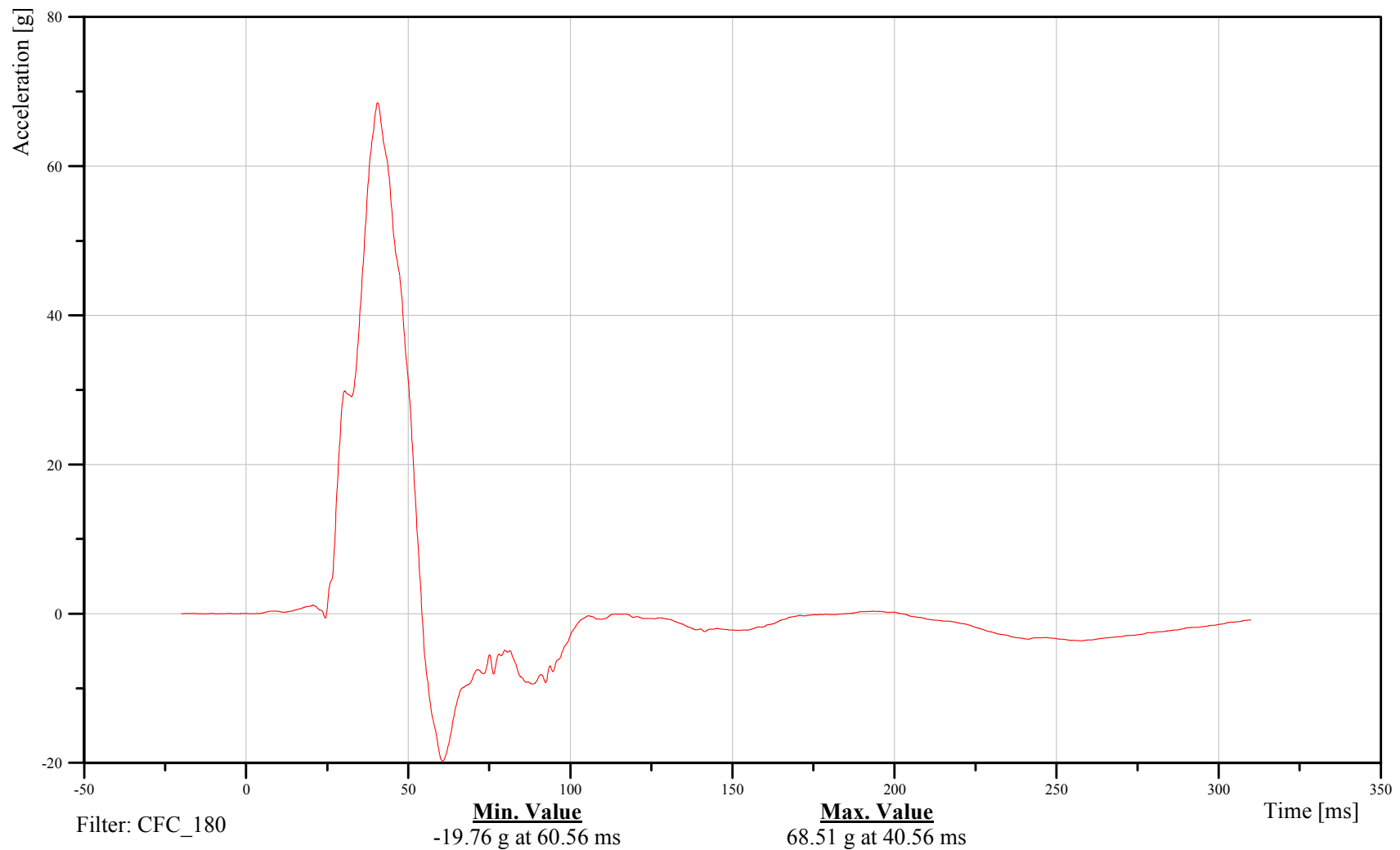
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14SPIN1200S2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Lower Spine Accel Z

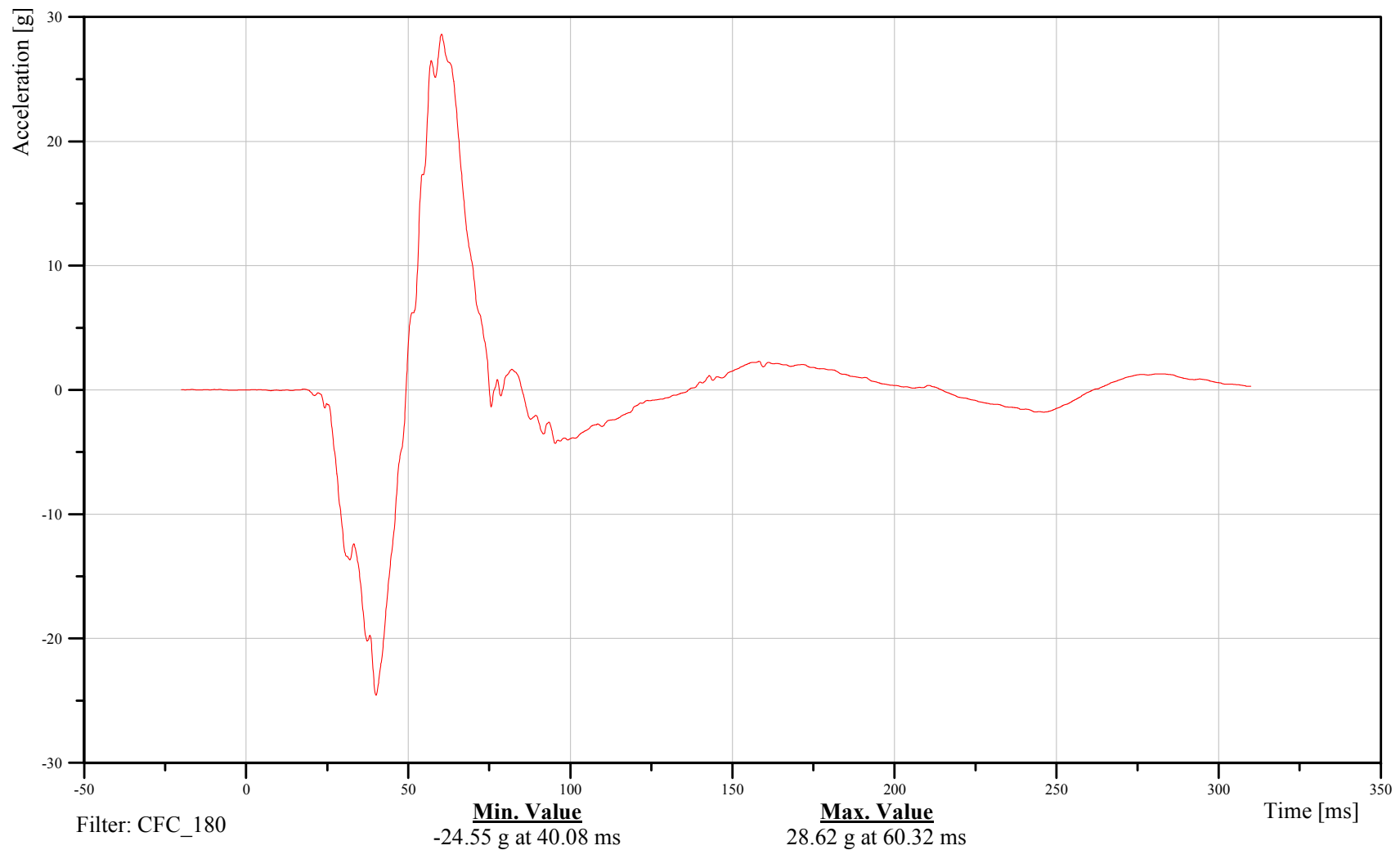
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14SPIN1200S2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

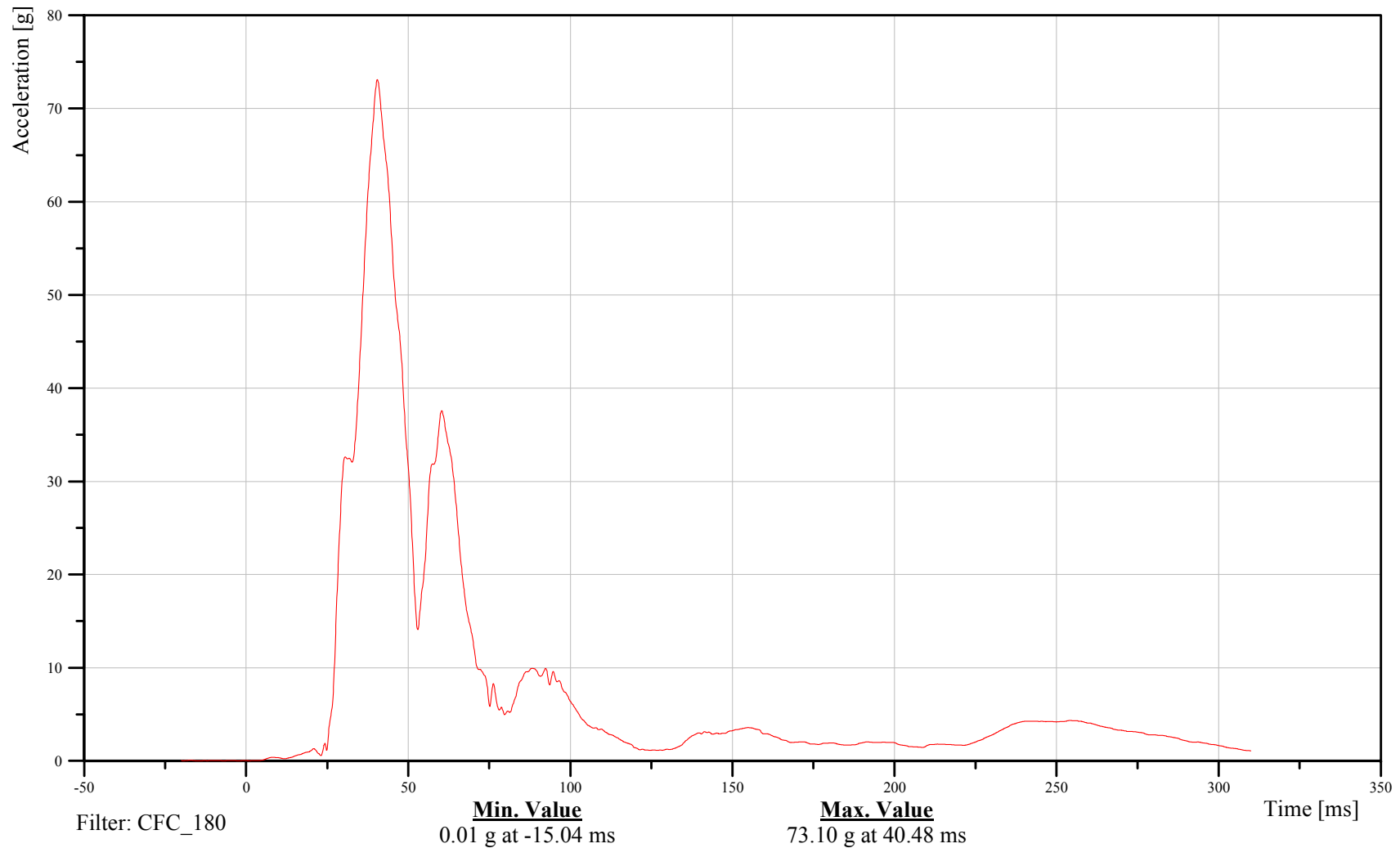
LR Pass. Lower Spine Accel Resultant

Customer: VRTC

14SPIN1200S2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Spine Rib 5 Accel X

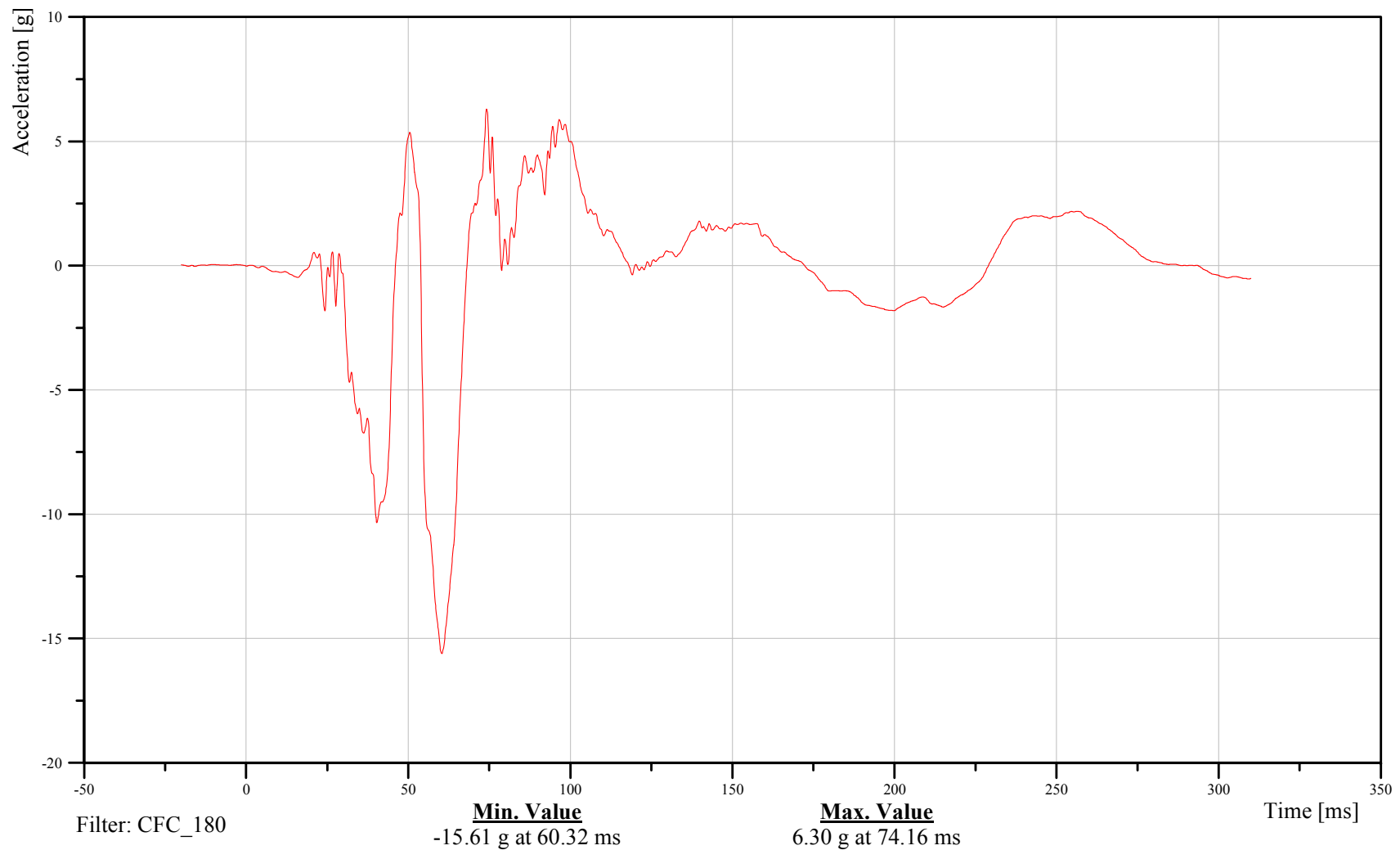
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14ABSP02RIS2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Spine Rib 5 Accel Y

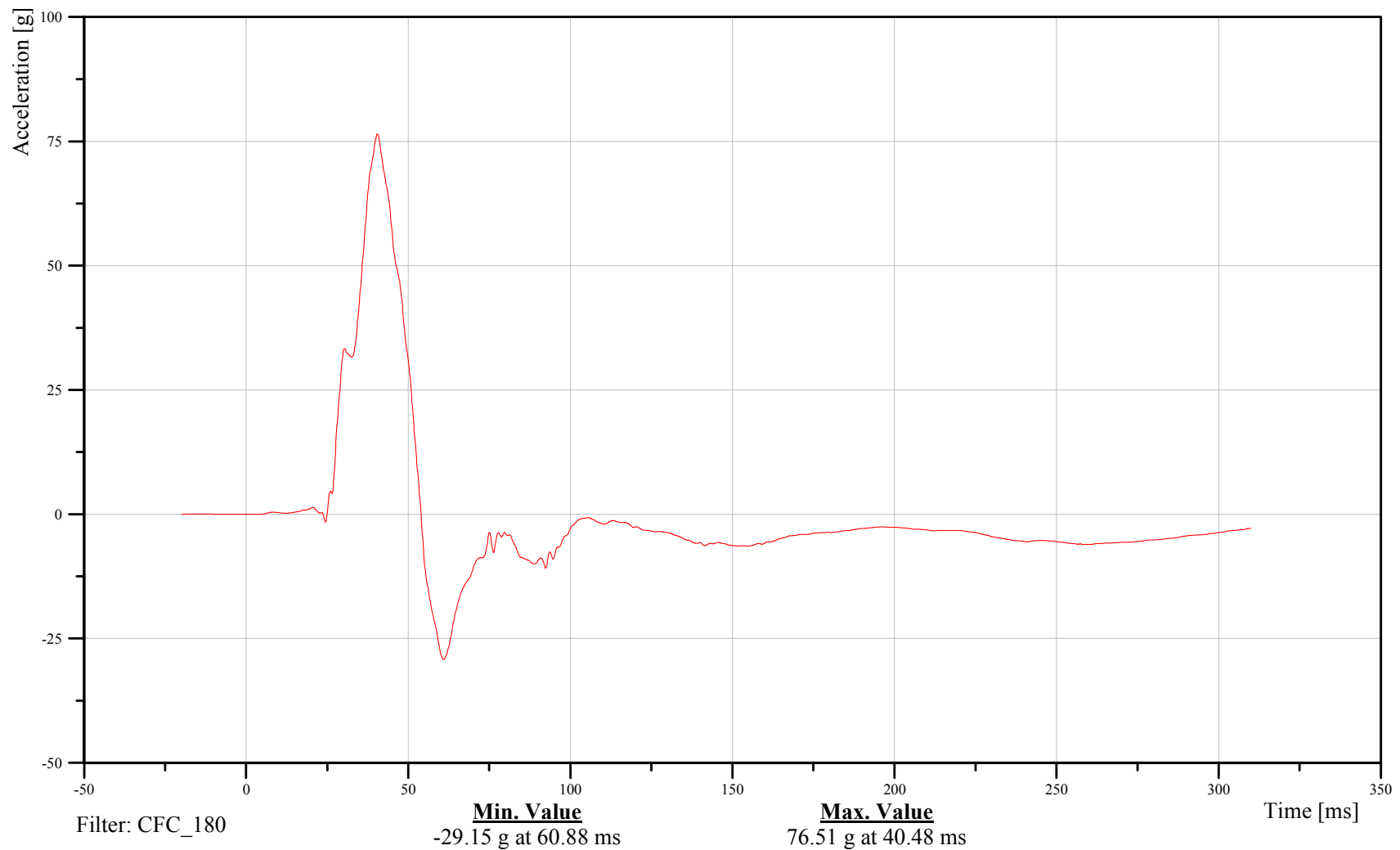
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14ABSP02RIS2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Spine Rib 5 Accel Z

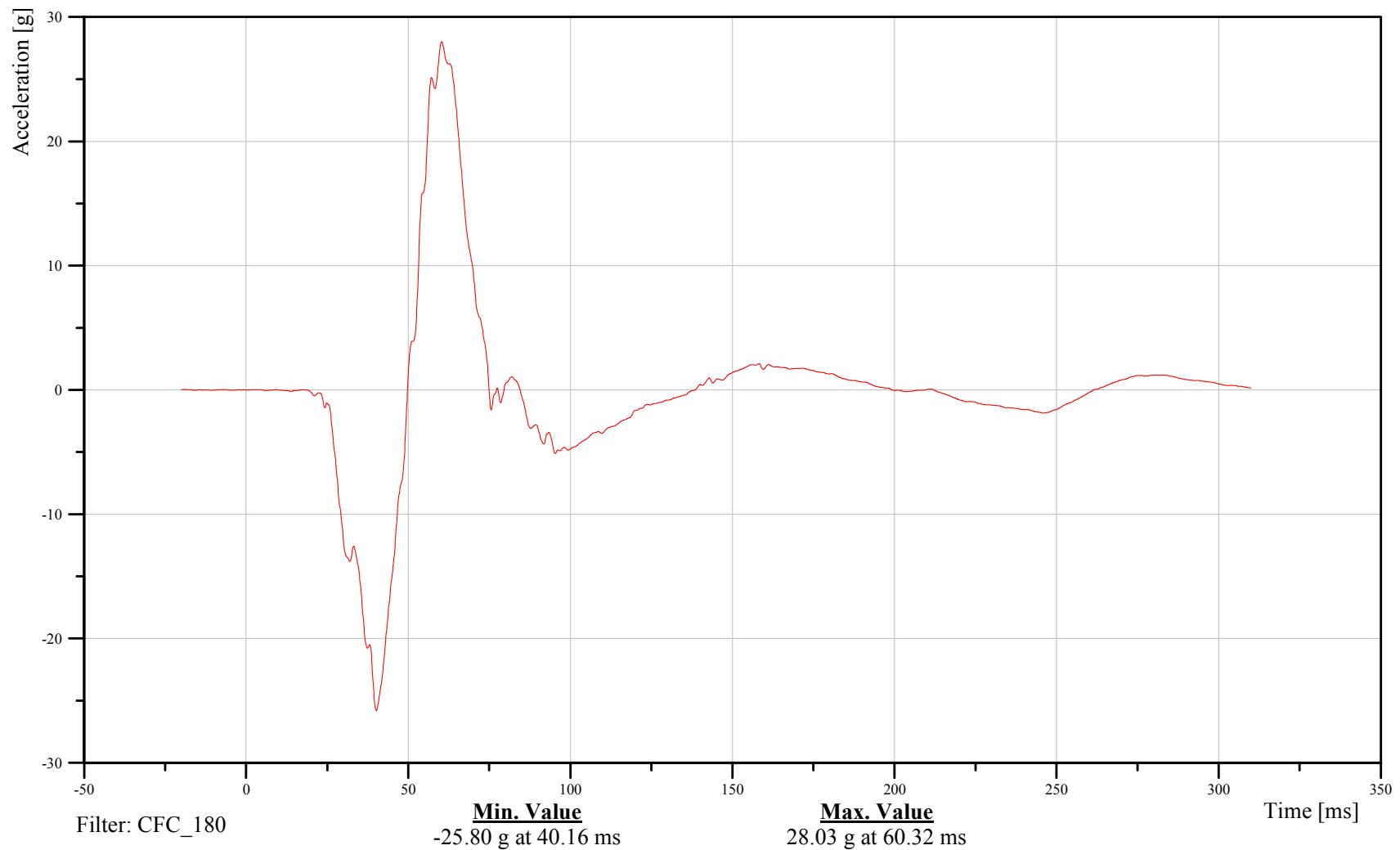
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14ABSP02RIS2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

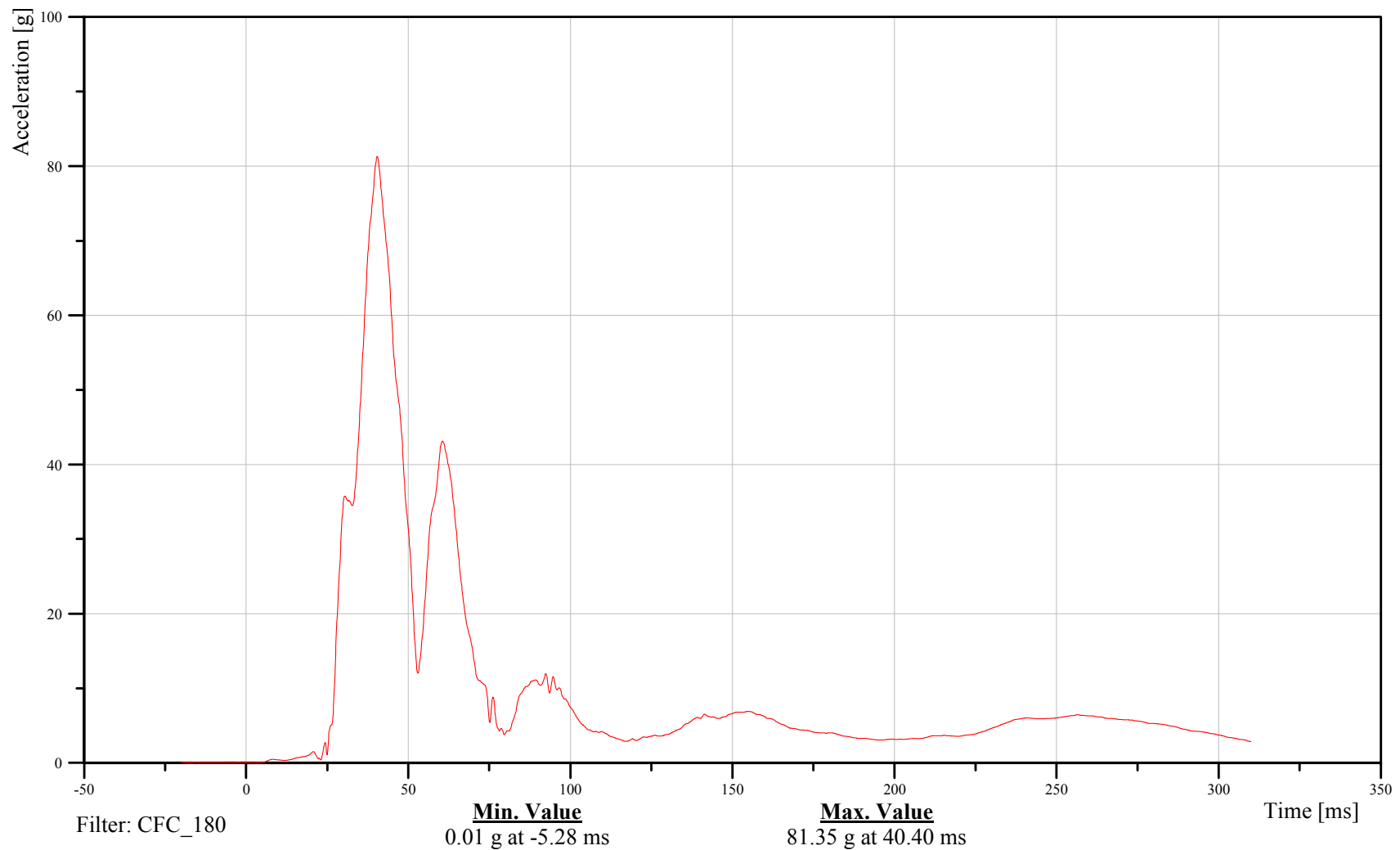
LR Pass. Spine Rib 5 Accel Resultant

Customer: VRTC

14ABSP02RIS2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Lumbar Moment X

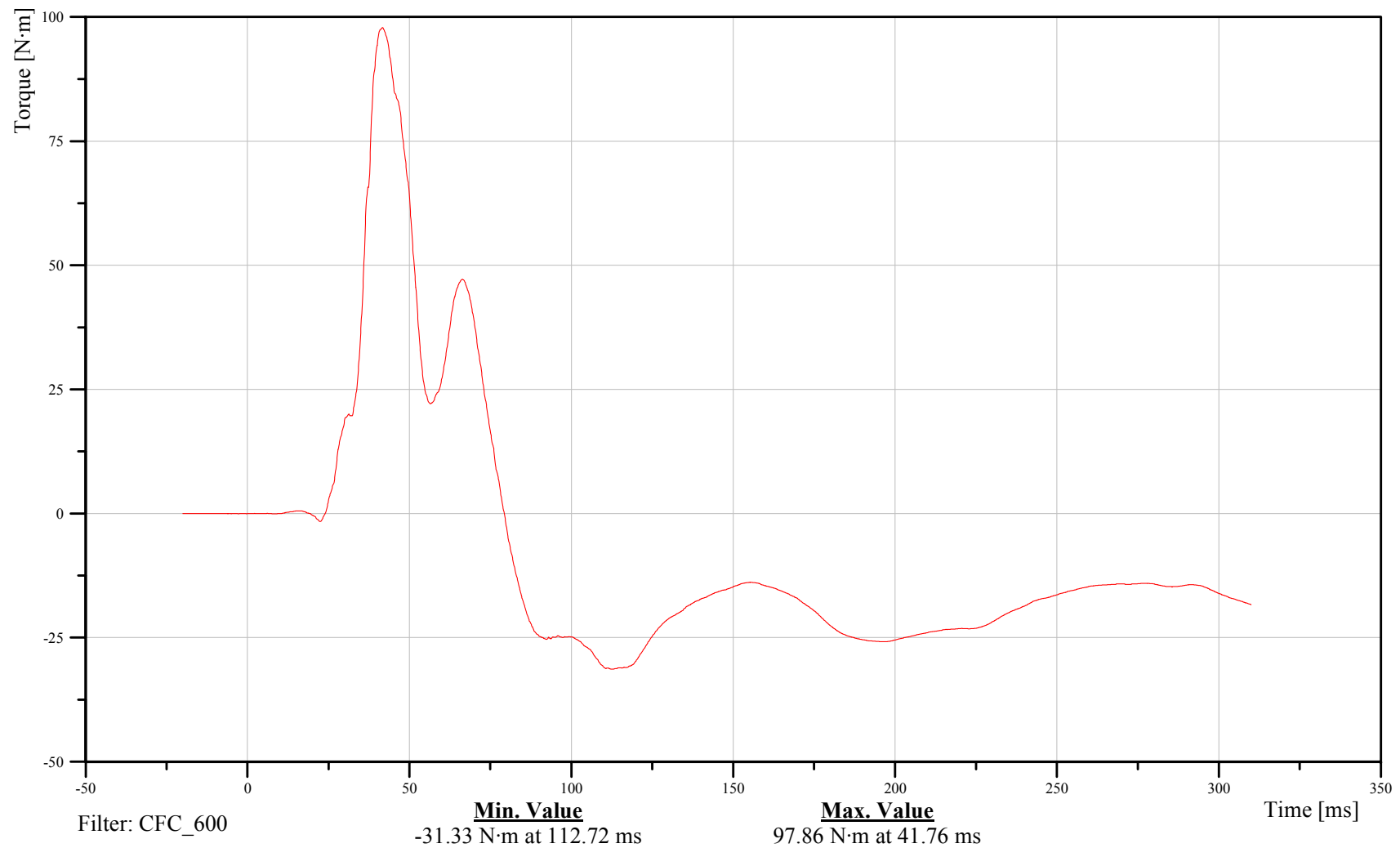
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14LUSP0000S2MOXB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Lumbar Moment Y

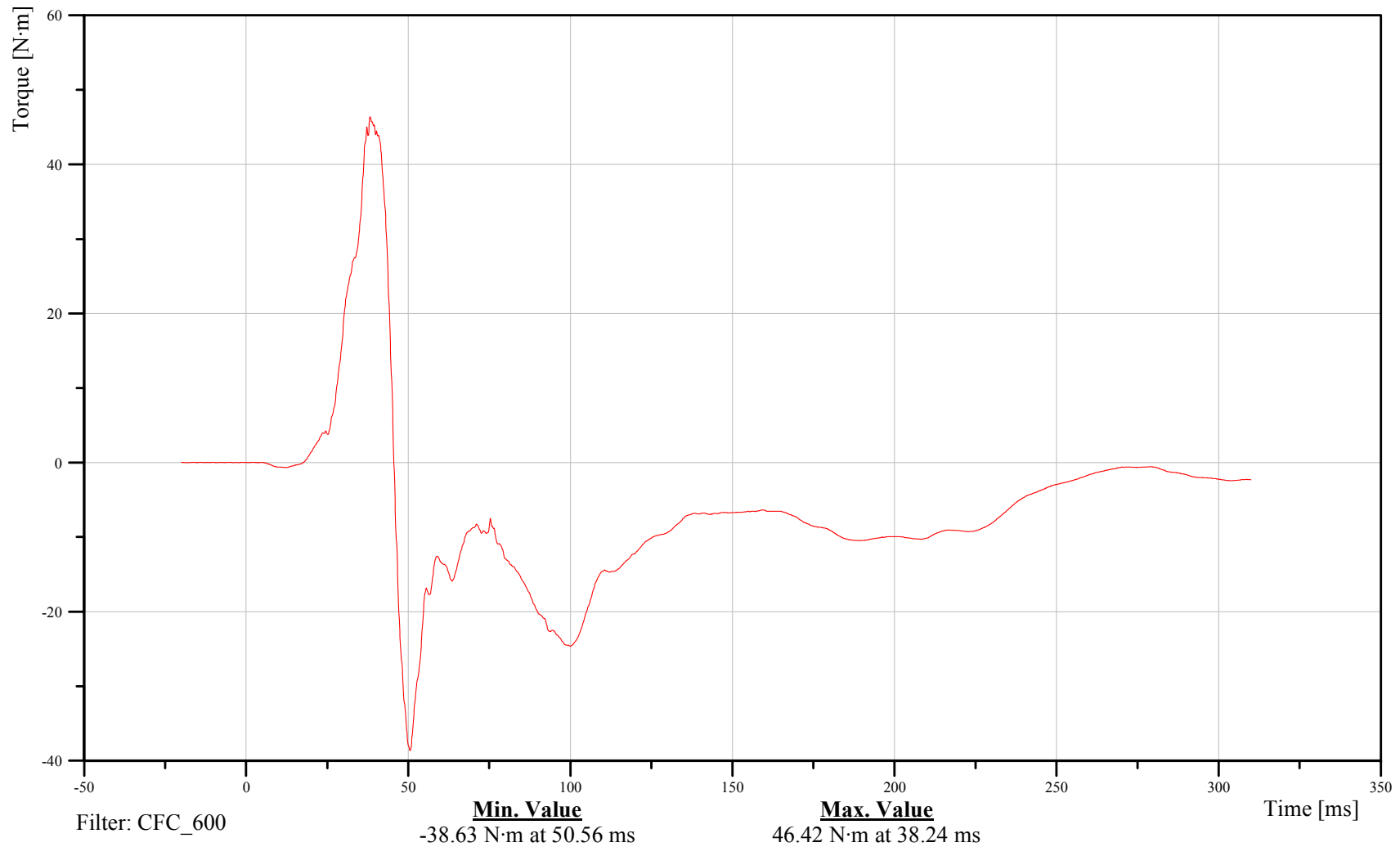
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14LUSP0000S2MOYB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Lumbar Moment Z

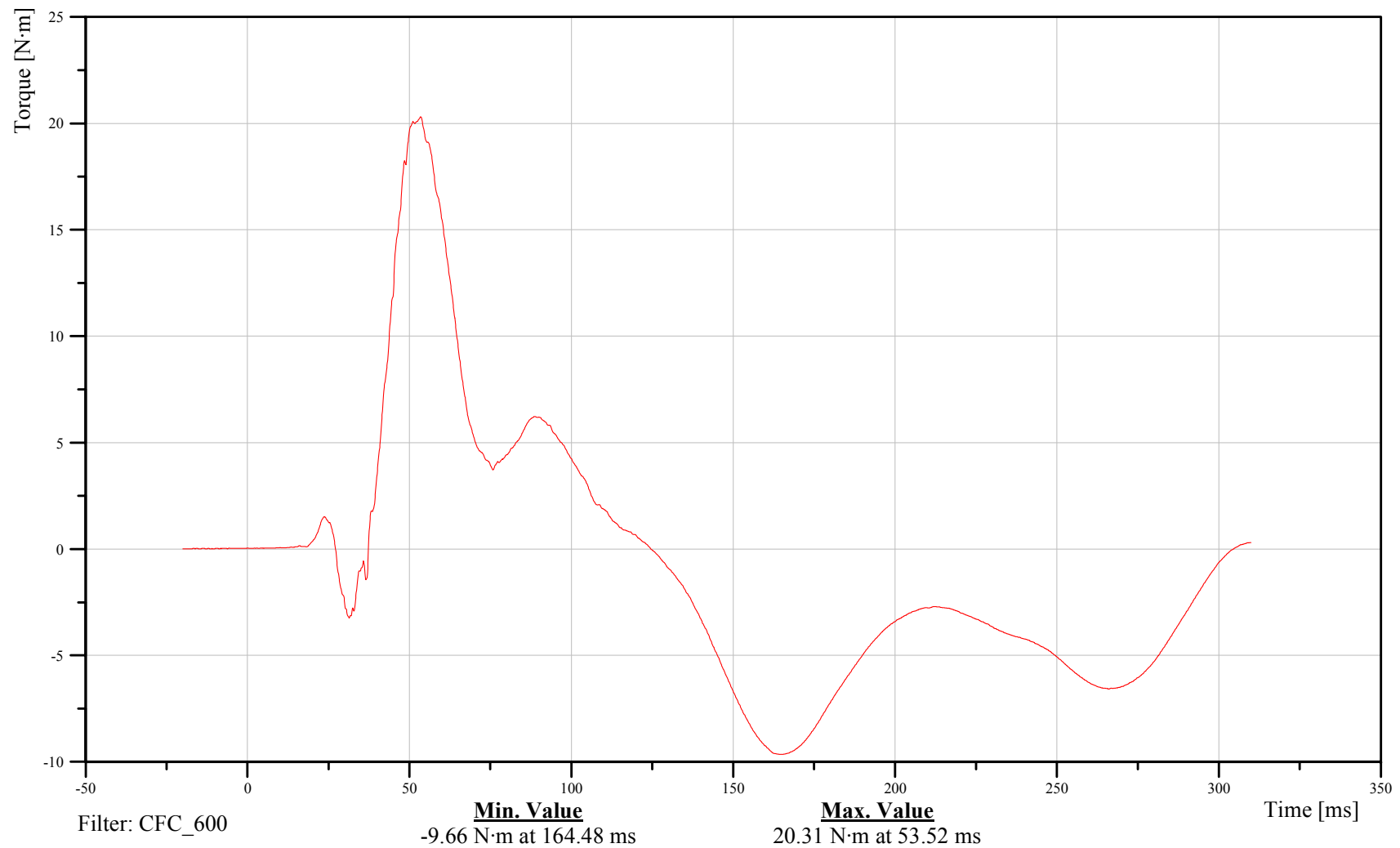
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14LUSP0000S2MOZB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Thorax Rib 1 Accel X

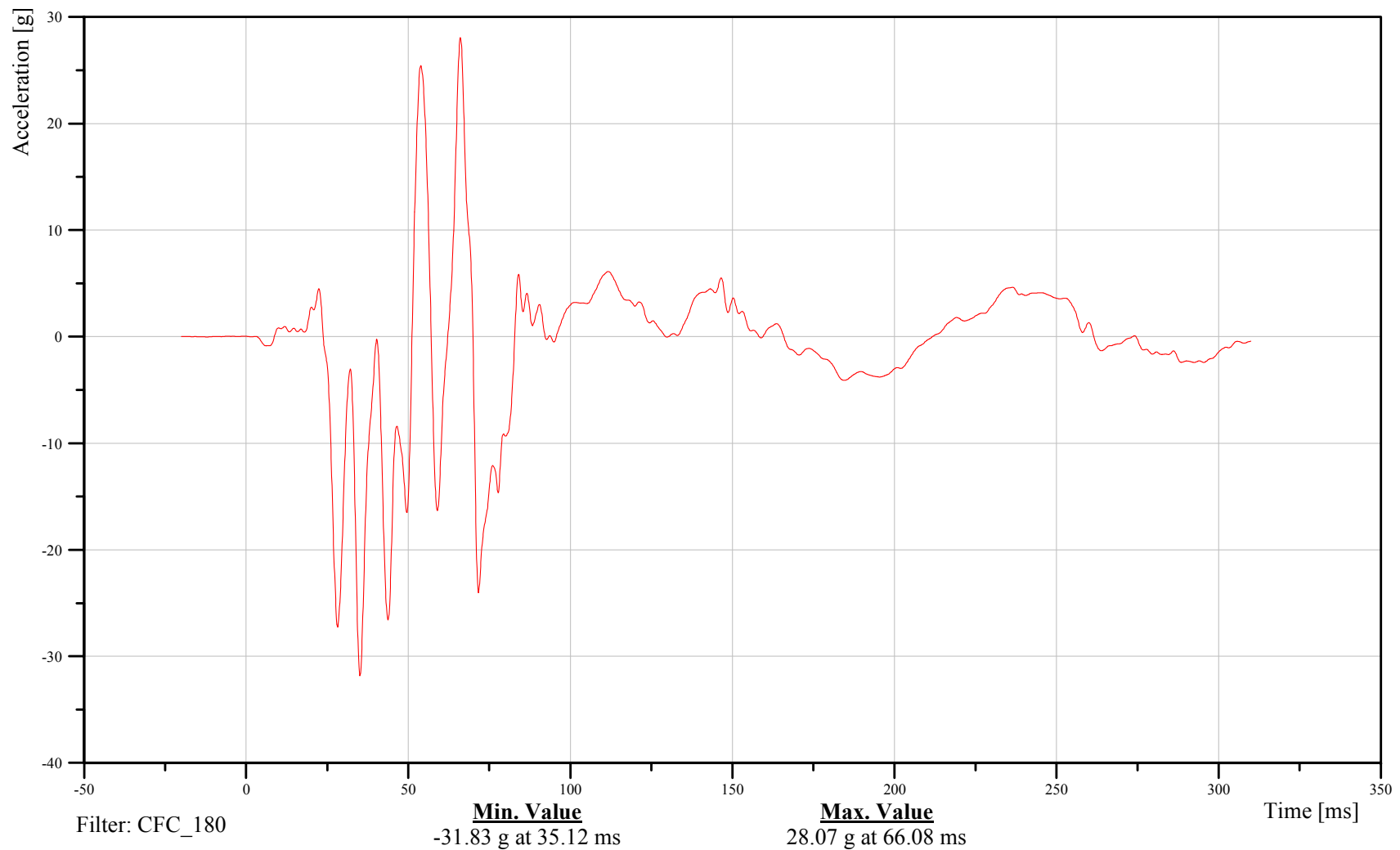
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14TRRI01LES2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Thorax Rib 1 Accel Y

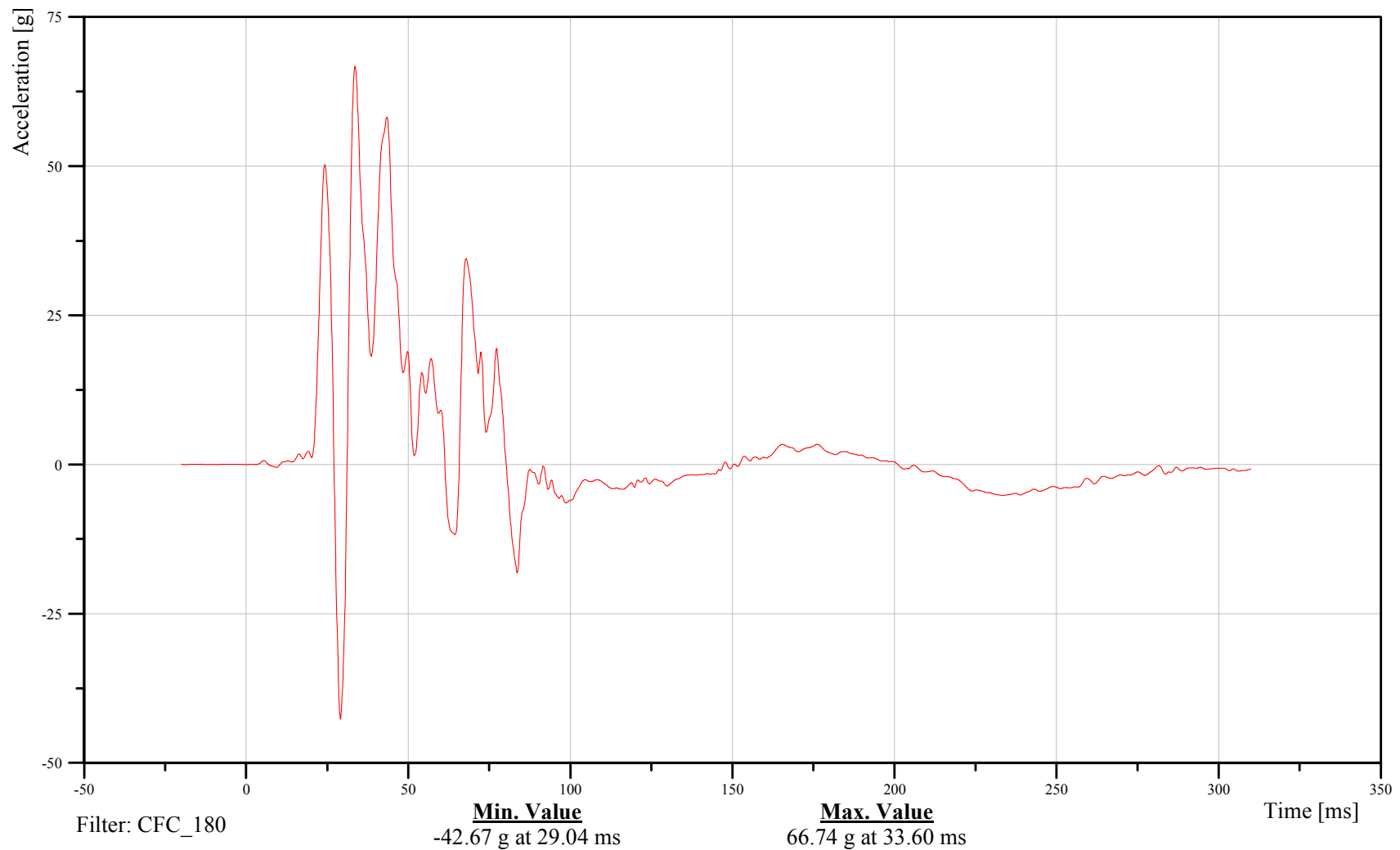
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14TRRI01LES2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Thorax Rib 1 Accel Z

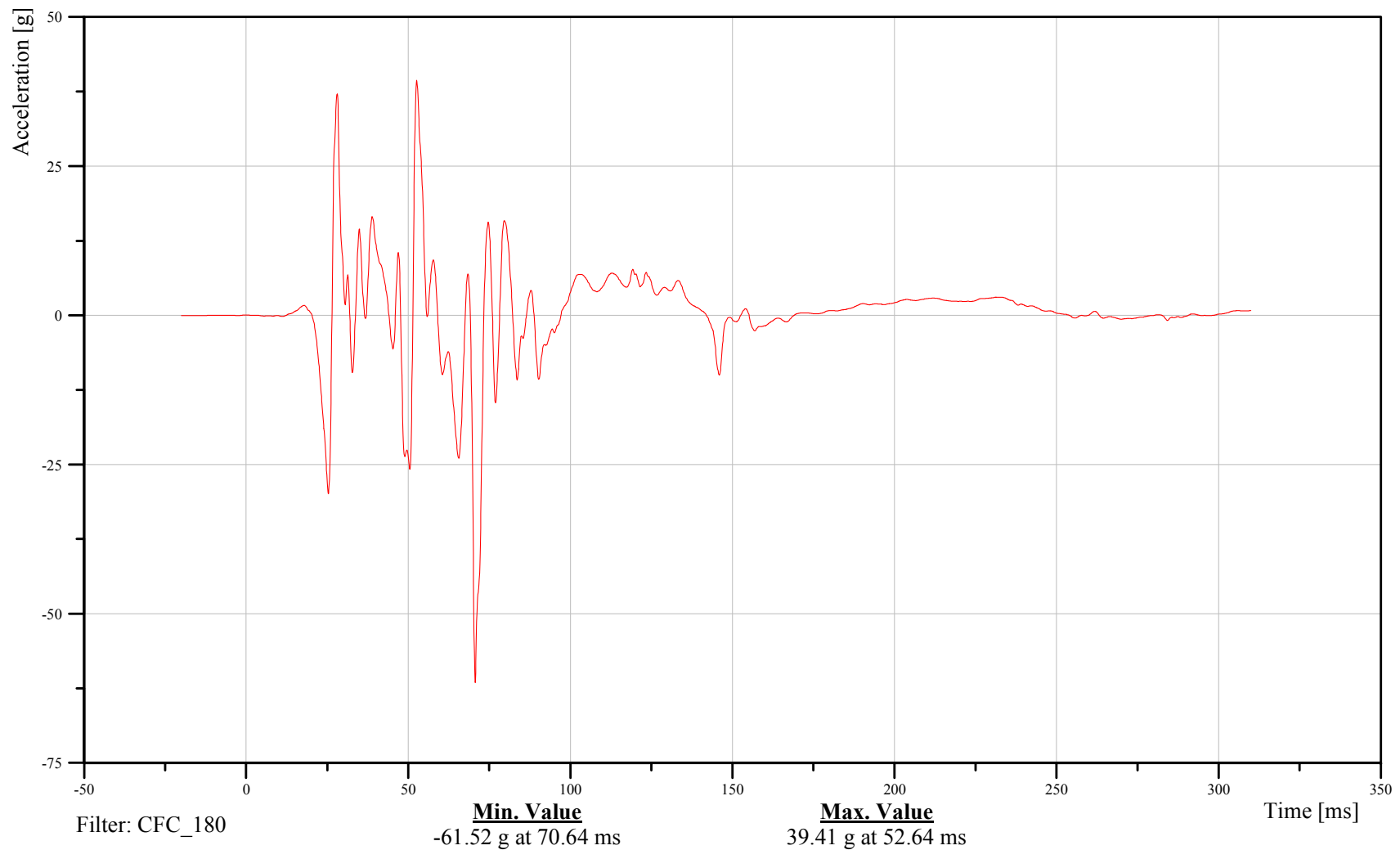
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14TRRI01LES2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Thorax Rib 1 Accel Resultant

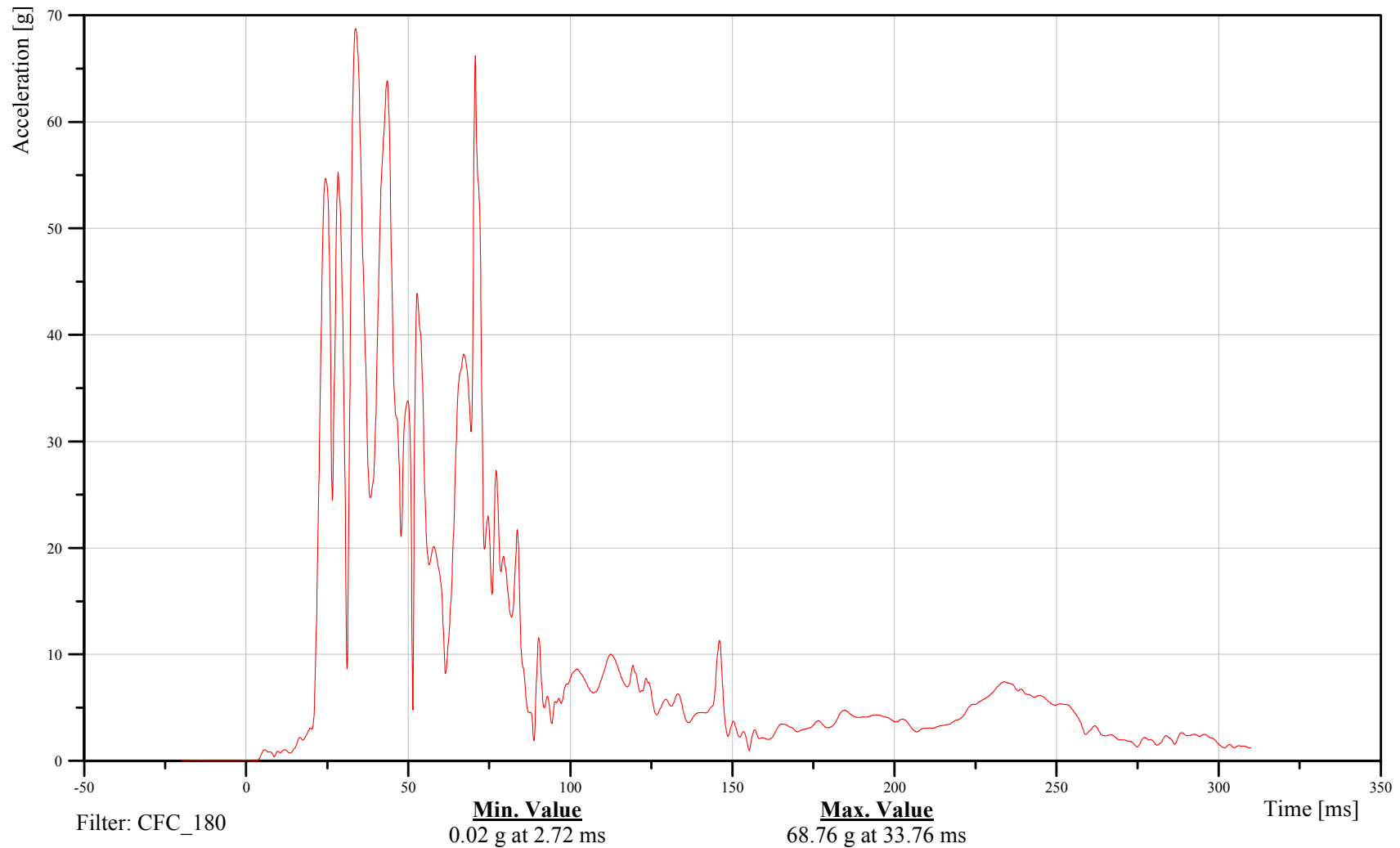
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14TRRI01LES2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Thorax Rib 2 Accel X

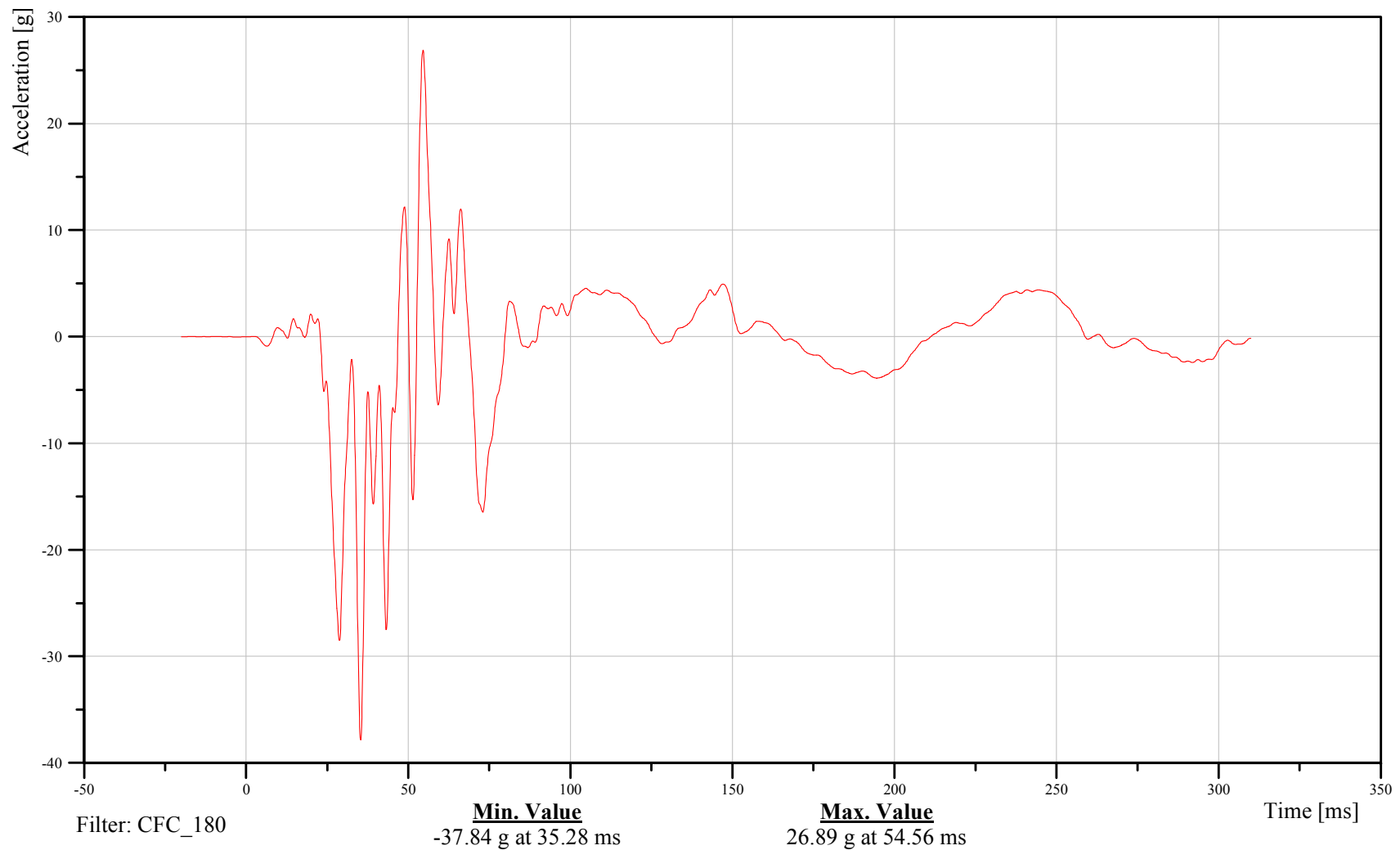
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14TRRI02LES2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Thorax Rib 2 Accel Y

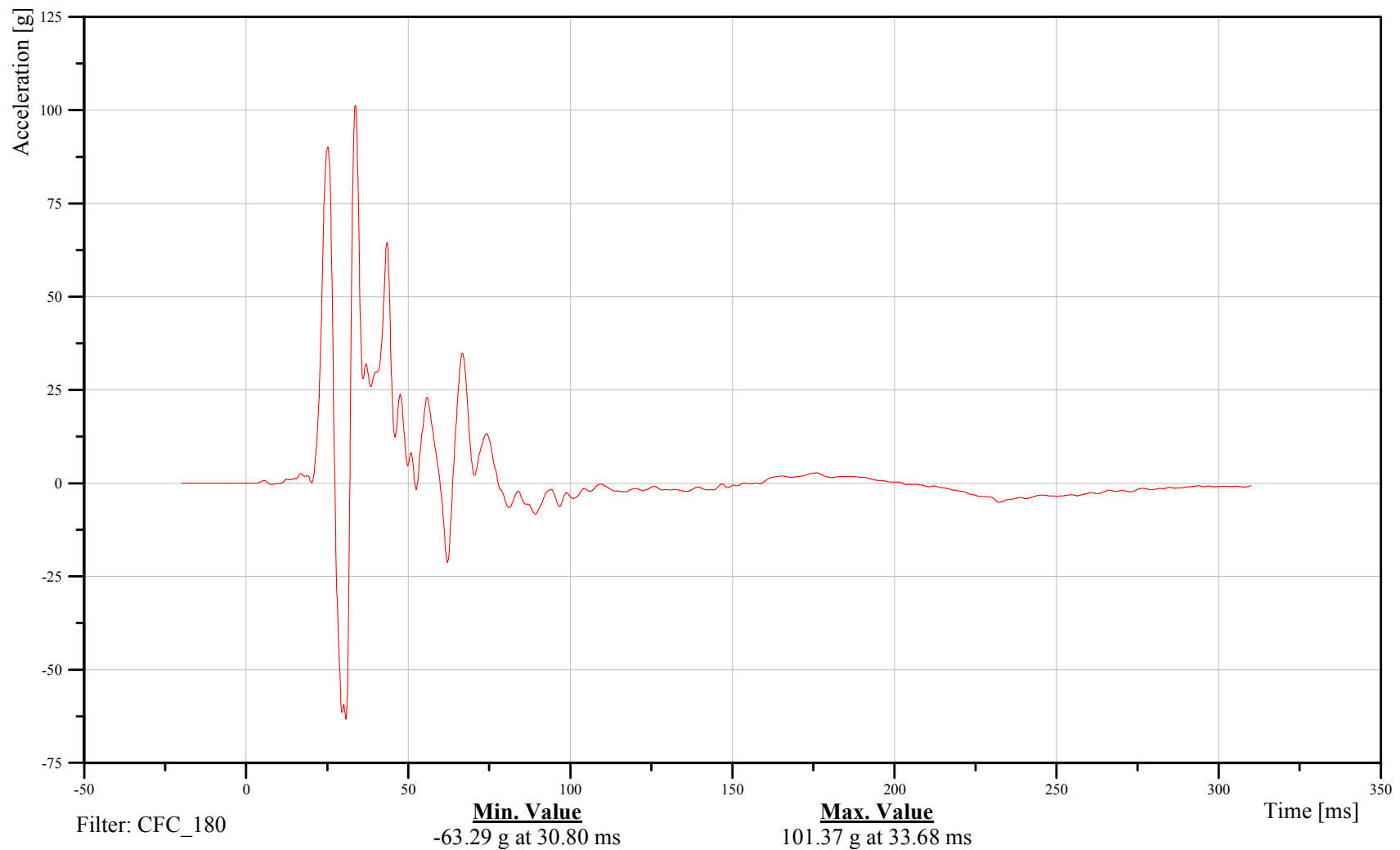
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14TRRI02LES2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Thorax Rib 2 Accel Z

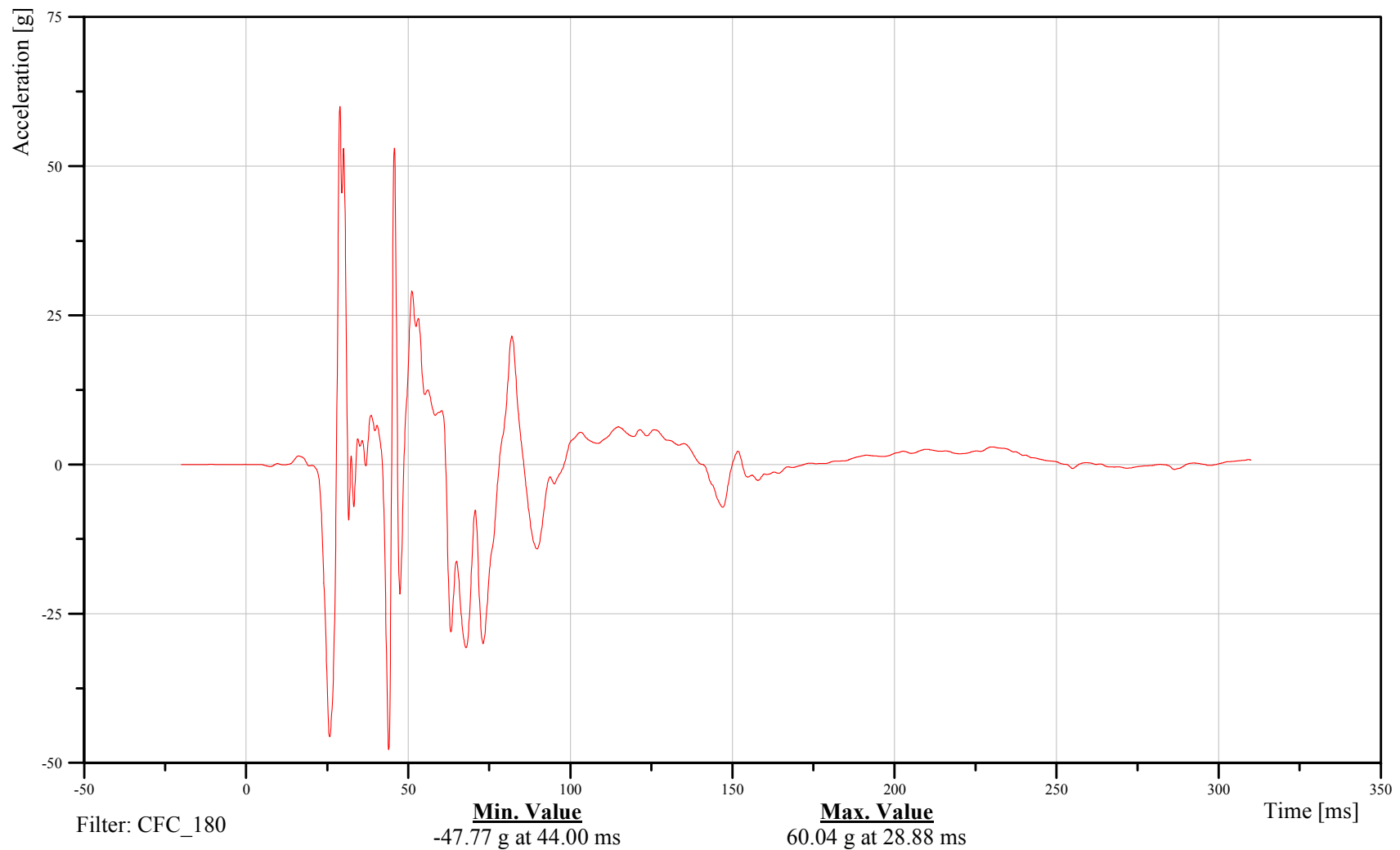
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14TRRI02LES2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Thorax Rib 2 Accel Resultant

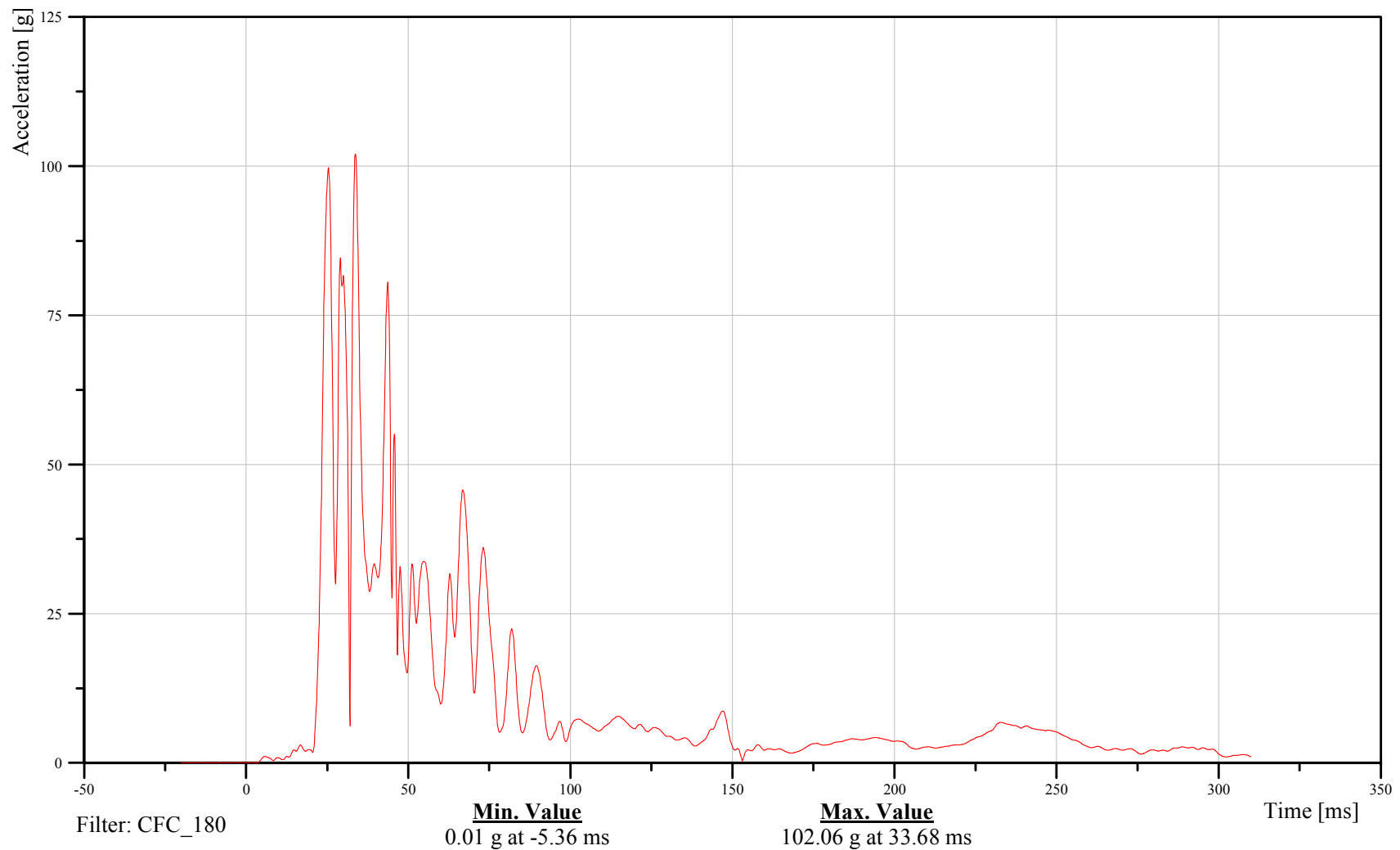
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14TRRI02LES2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Thorax Rib 3 Accel X

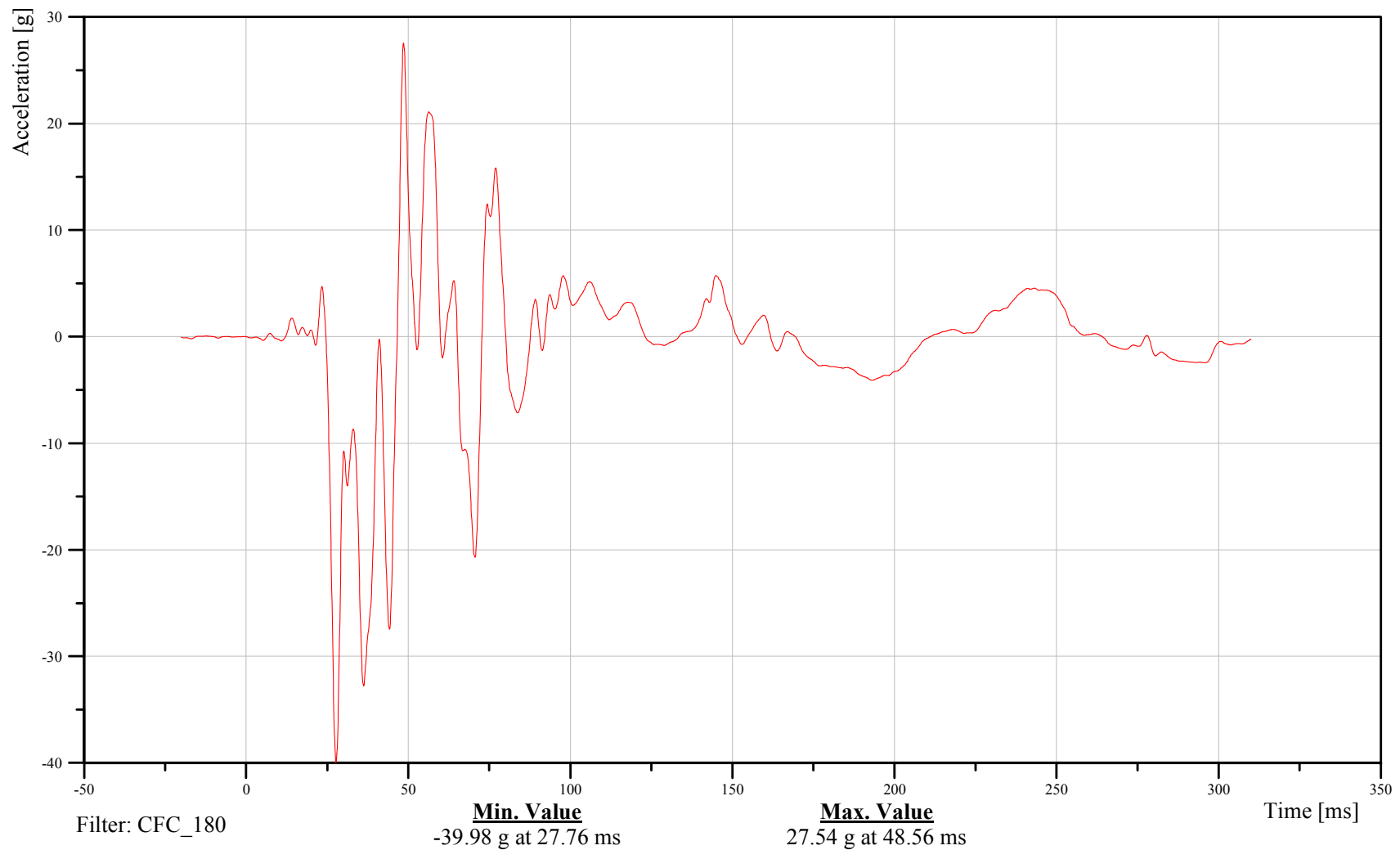
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14TRRI03LES2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Thorax Rib 3 Accel Y

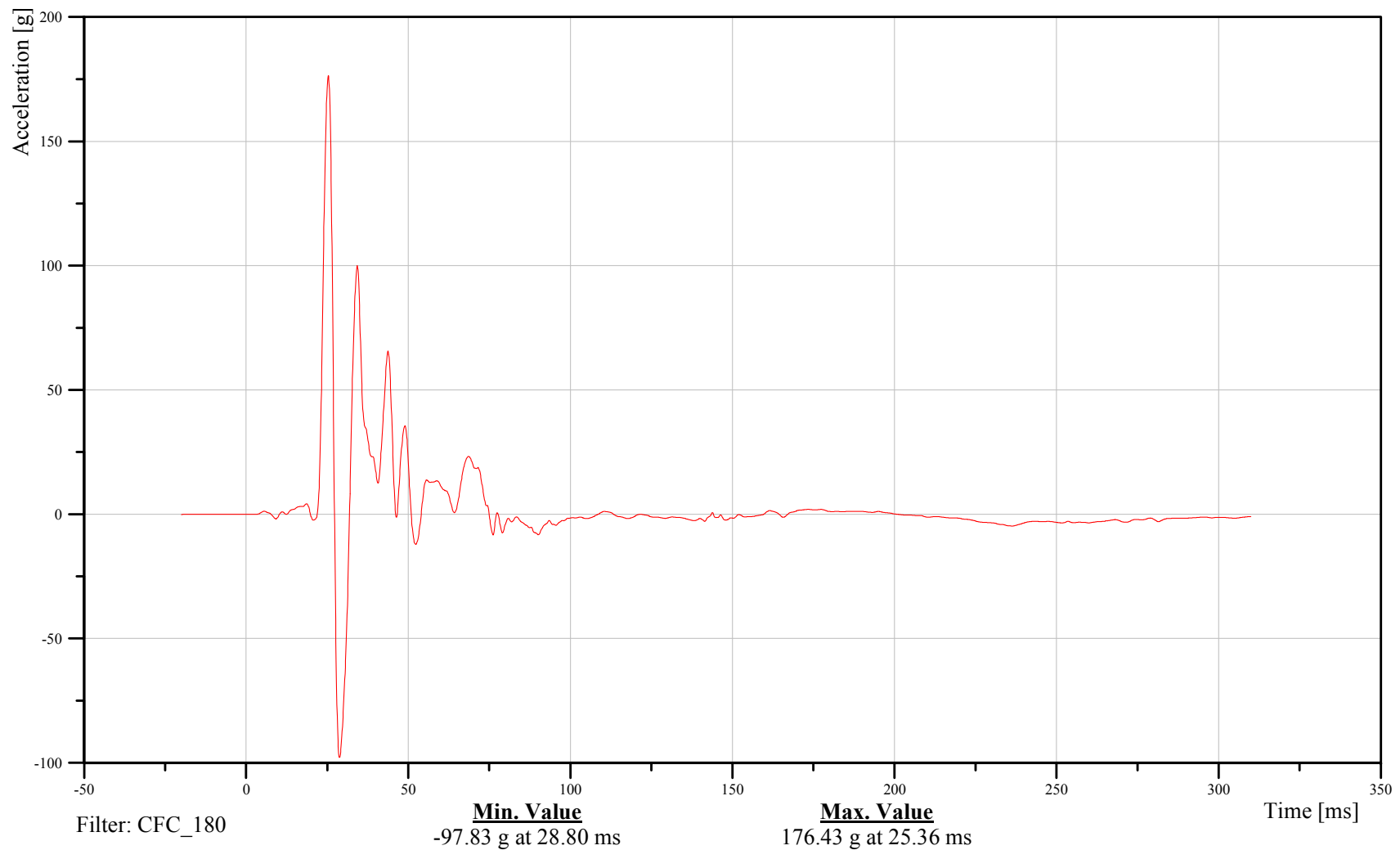
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14TRRI03LES2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Thorax Rib 3 Accel Z

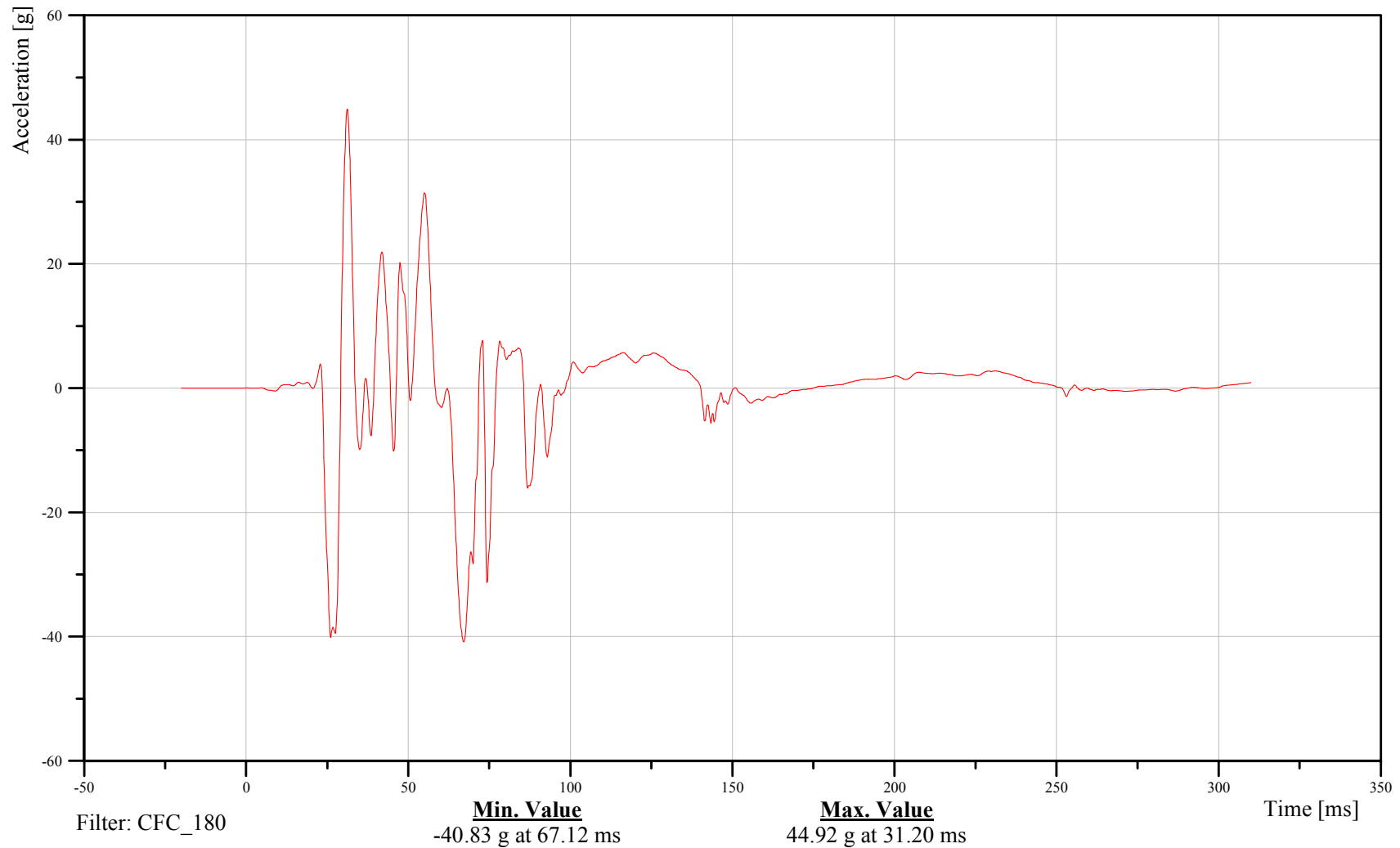
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14TRRI03LES2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Thorax Rib 3 Accel Resultant

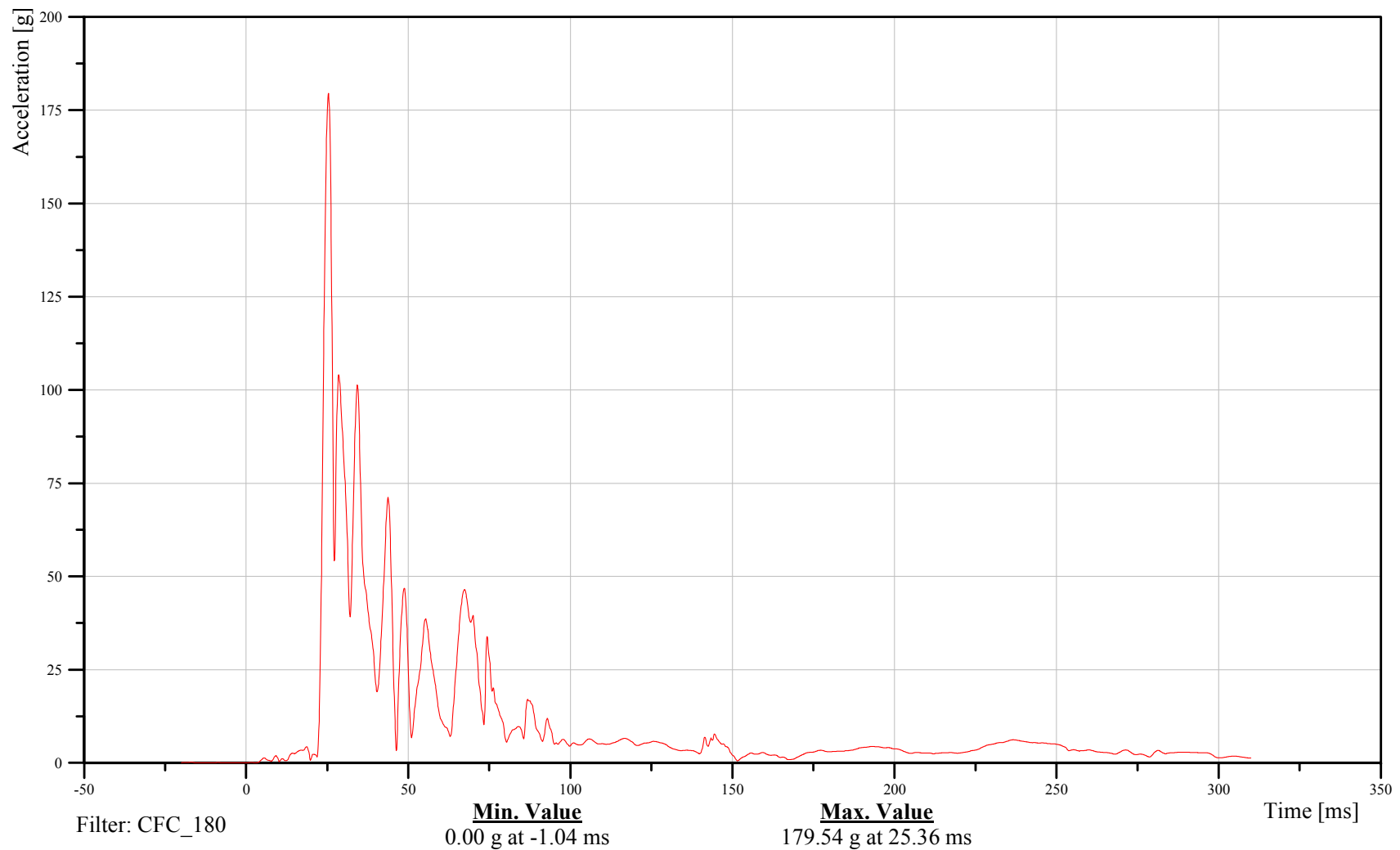
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14TRRI03LES2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

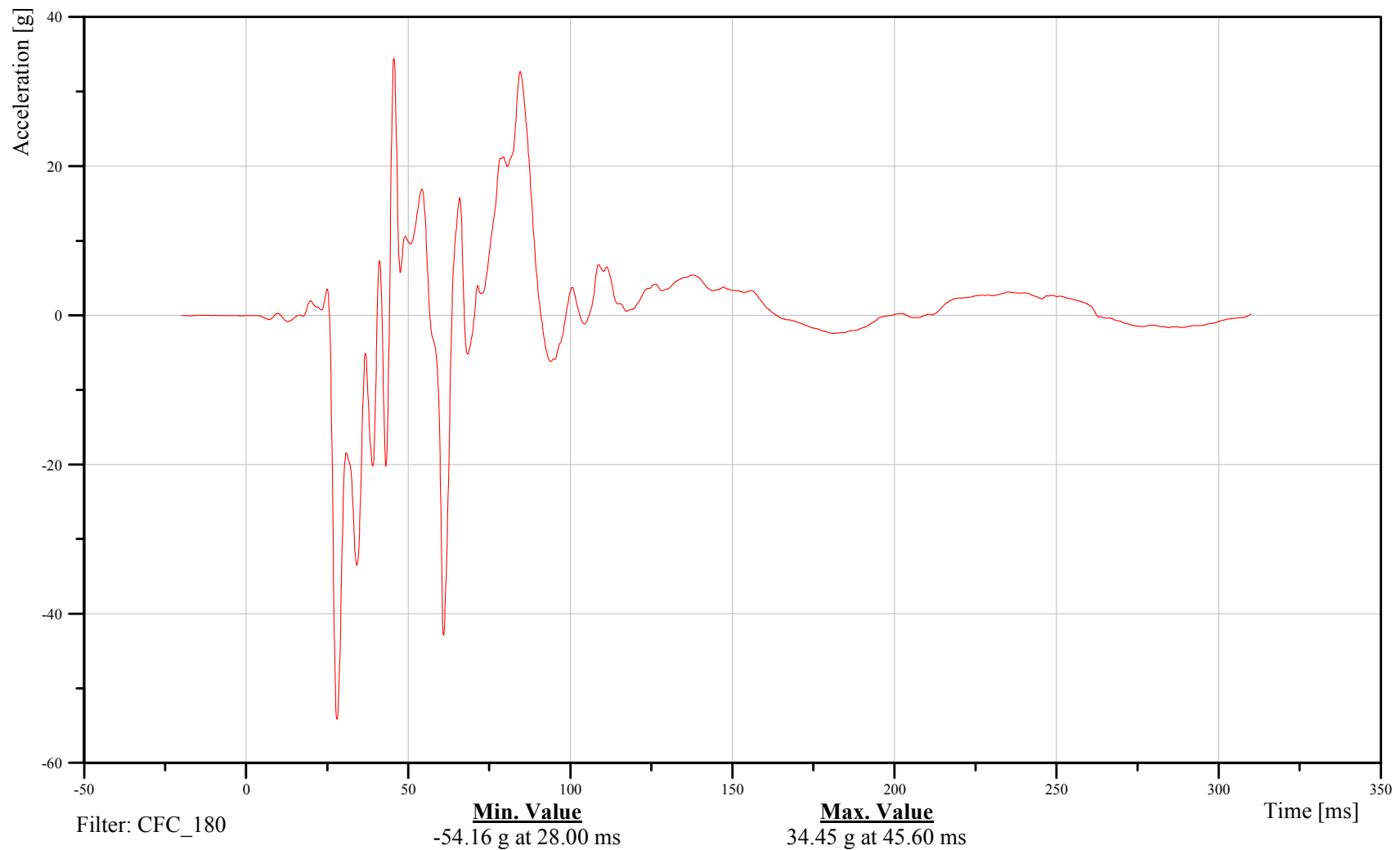
LR Pass. Abdomin Rib 1 Accel X

Customer: VRTC

14ABRI01LES2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Abdomin Rib 1 Accel Y

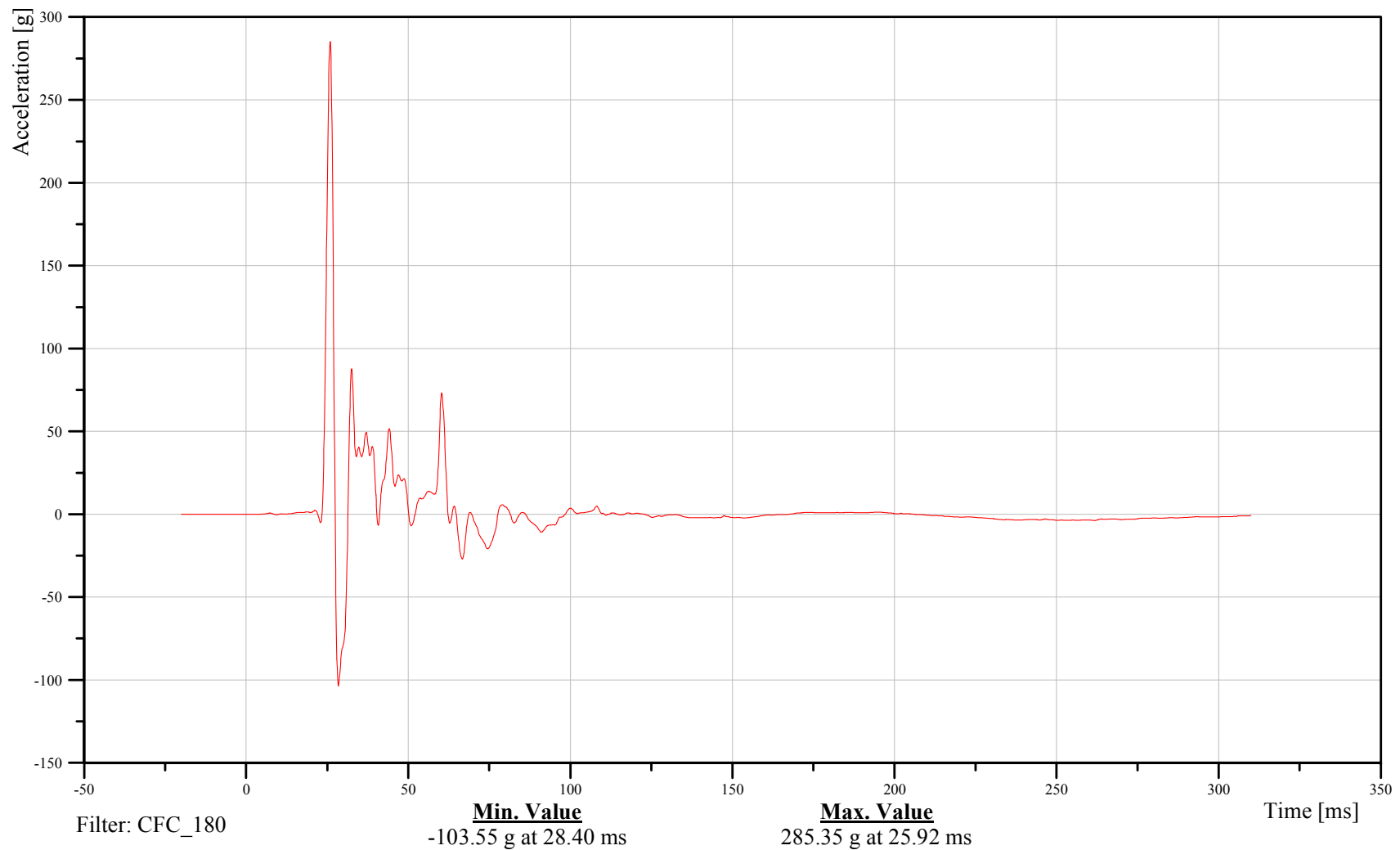
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14ABRI01LES2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Abdomin Rib 1 Accel Z

Date: 09/16/2005

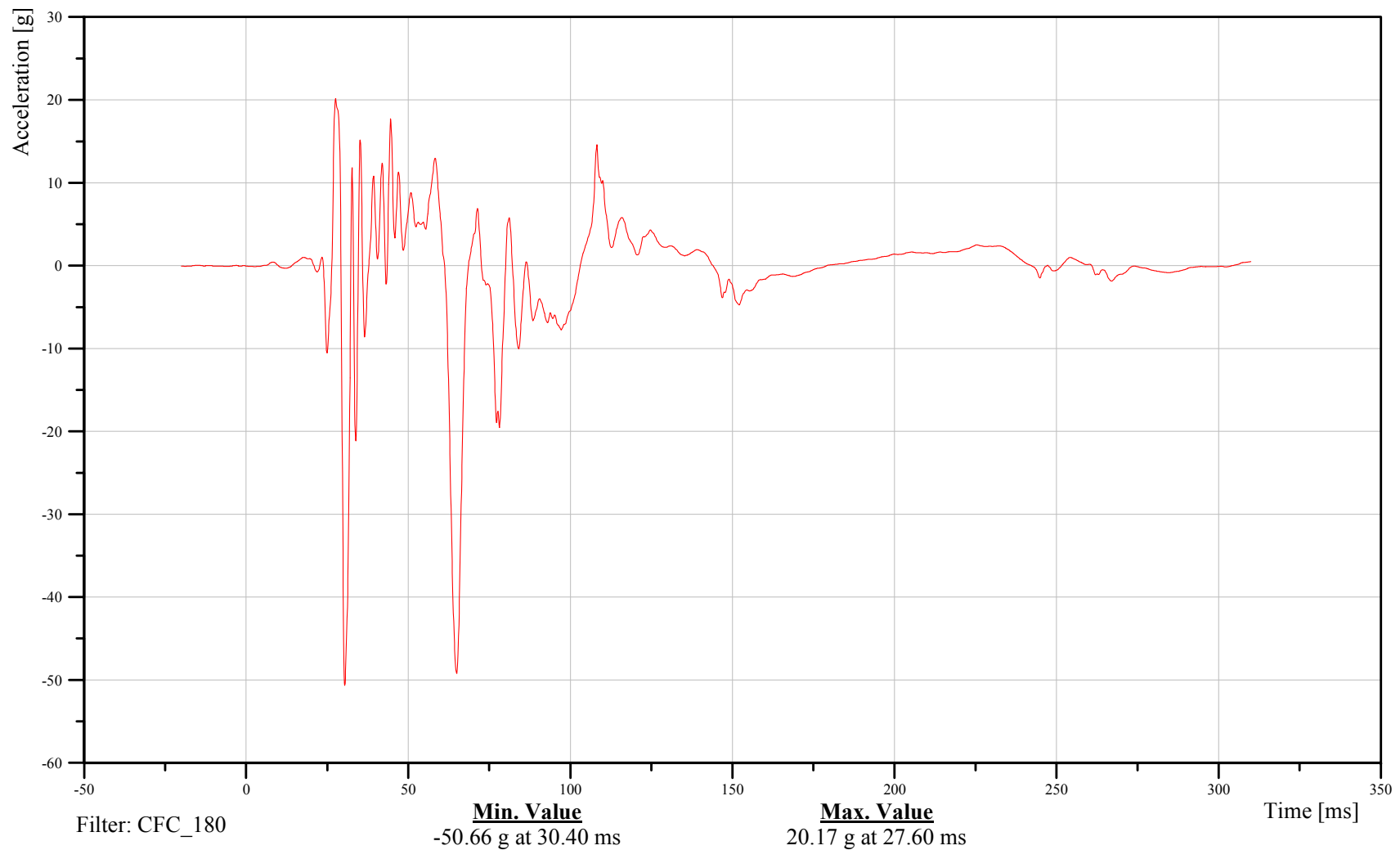
Time: 11:12

Customer: VRTC

14ABRI01LES2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Abdomin Rib 1 Accel Resultant

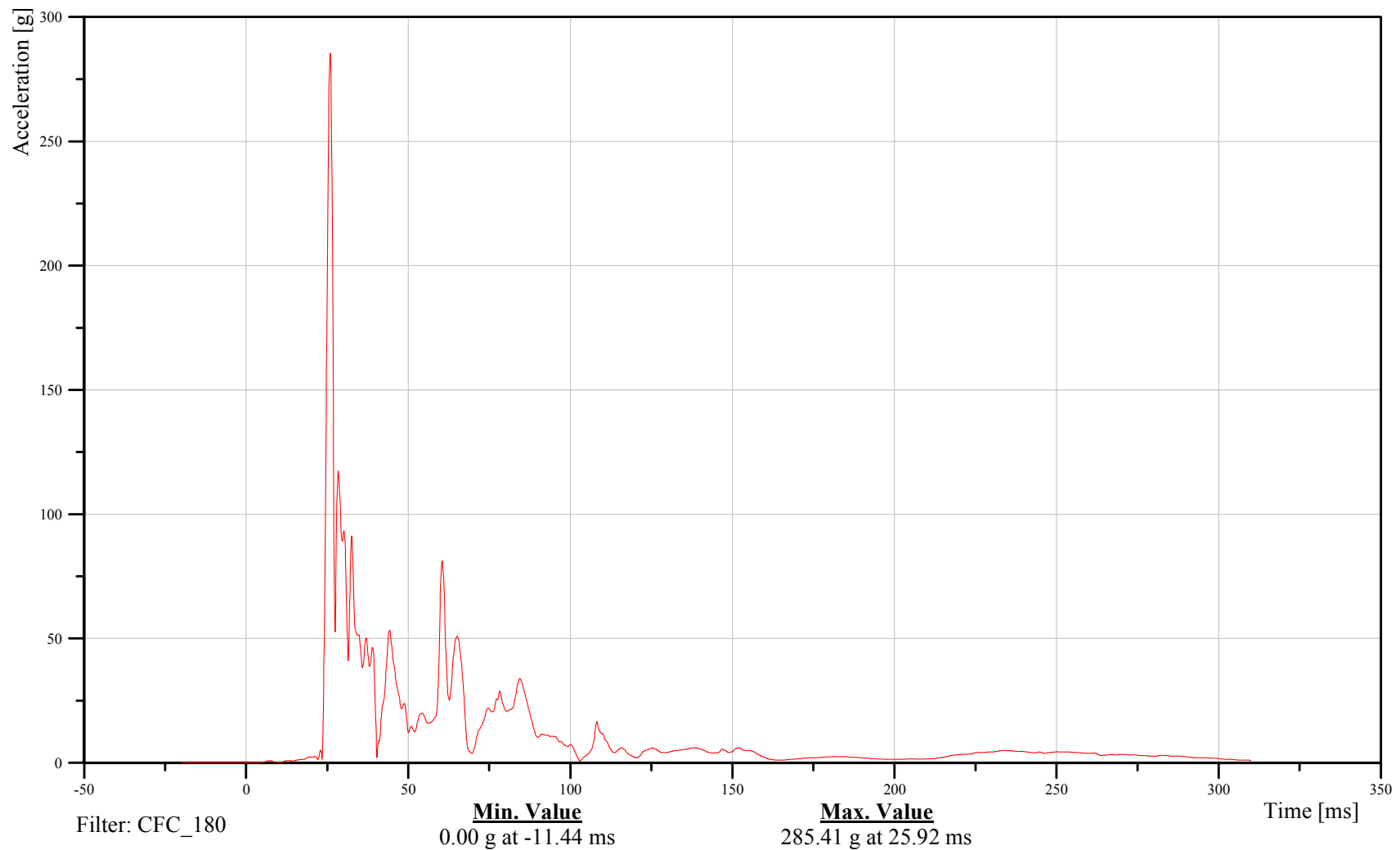
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14ABRI01LES2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005

Time: 11:12

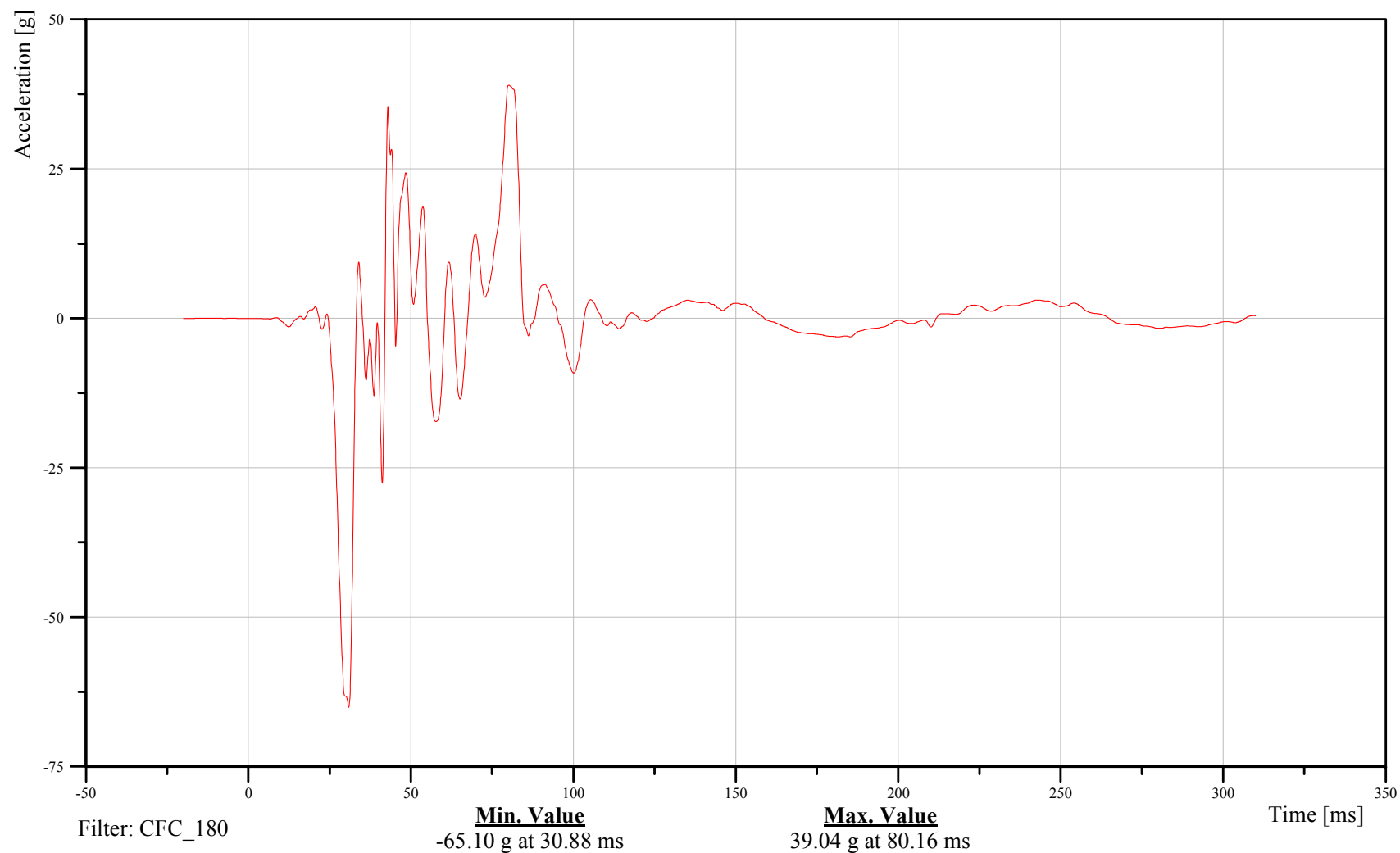
LR Pass. Abdomin Rib 2 Accel X

Customer: VRTC

14ABRI02LES2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Abdomin Rib 2 Accel Y

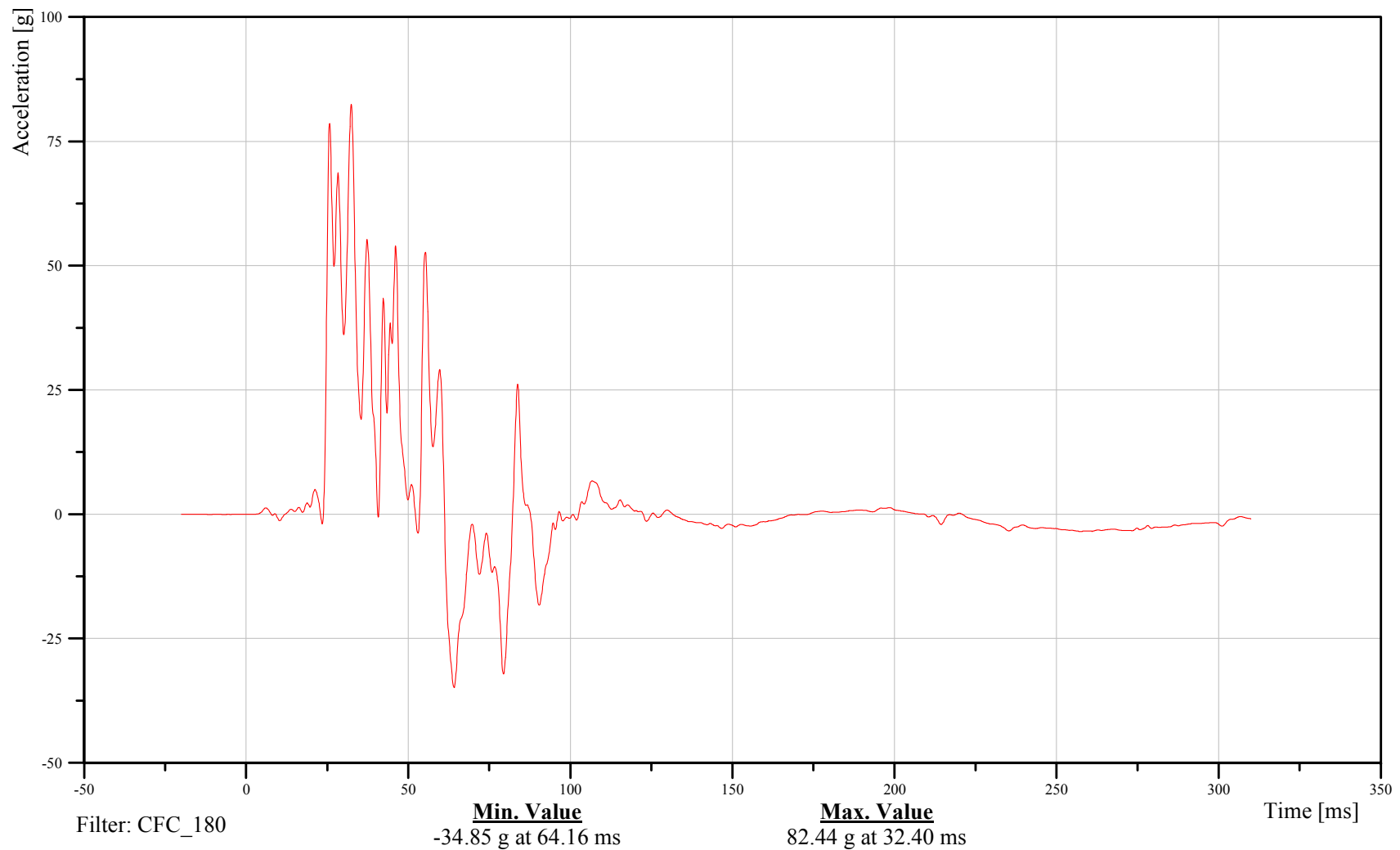
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14ABRI02LES2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Abdomin Rib 2 Accel Z

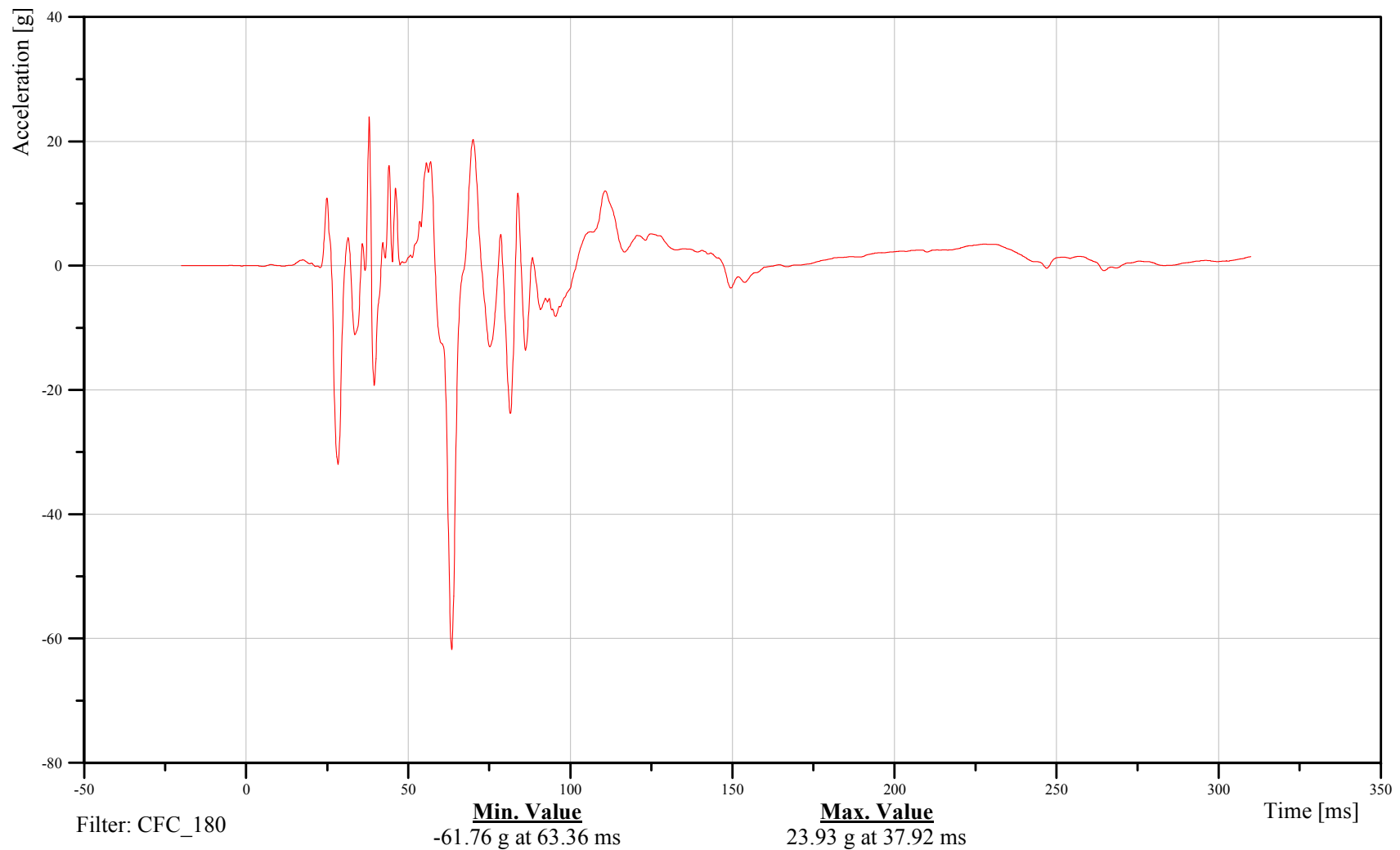
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14ABRI02LES2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Abdomin Rib 2 Accel Resultant

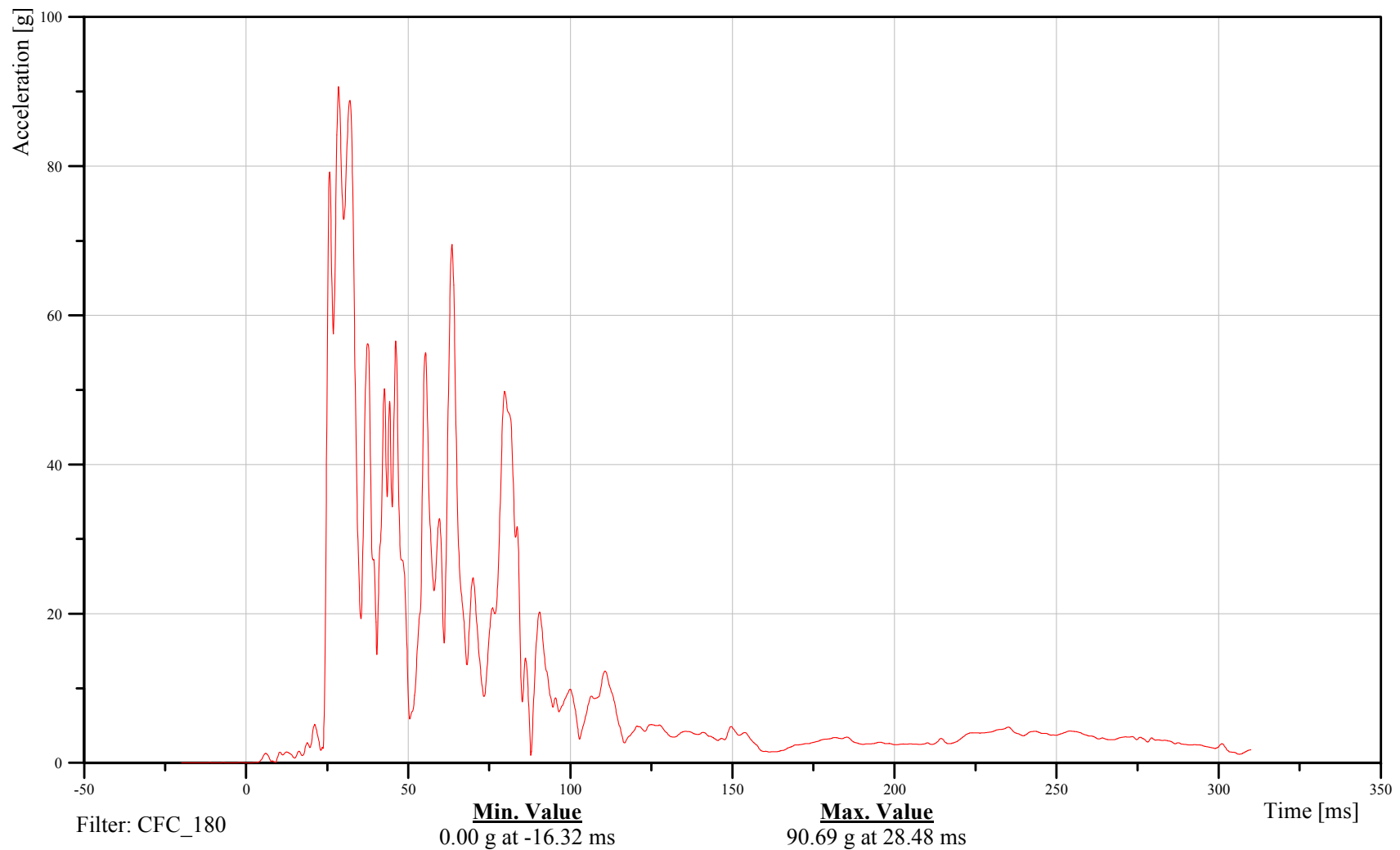
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14ABRI02LES2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Shoulder Disp. Y

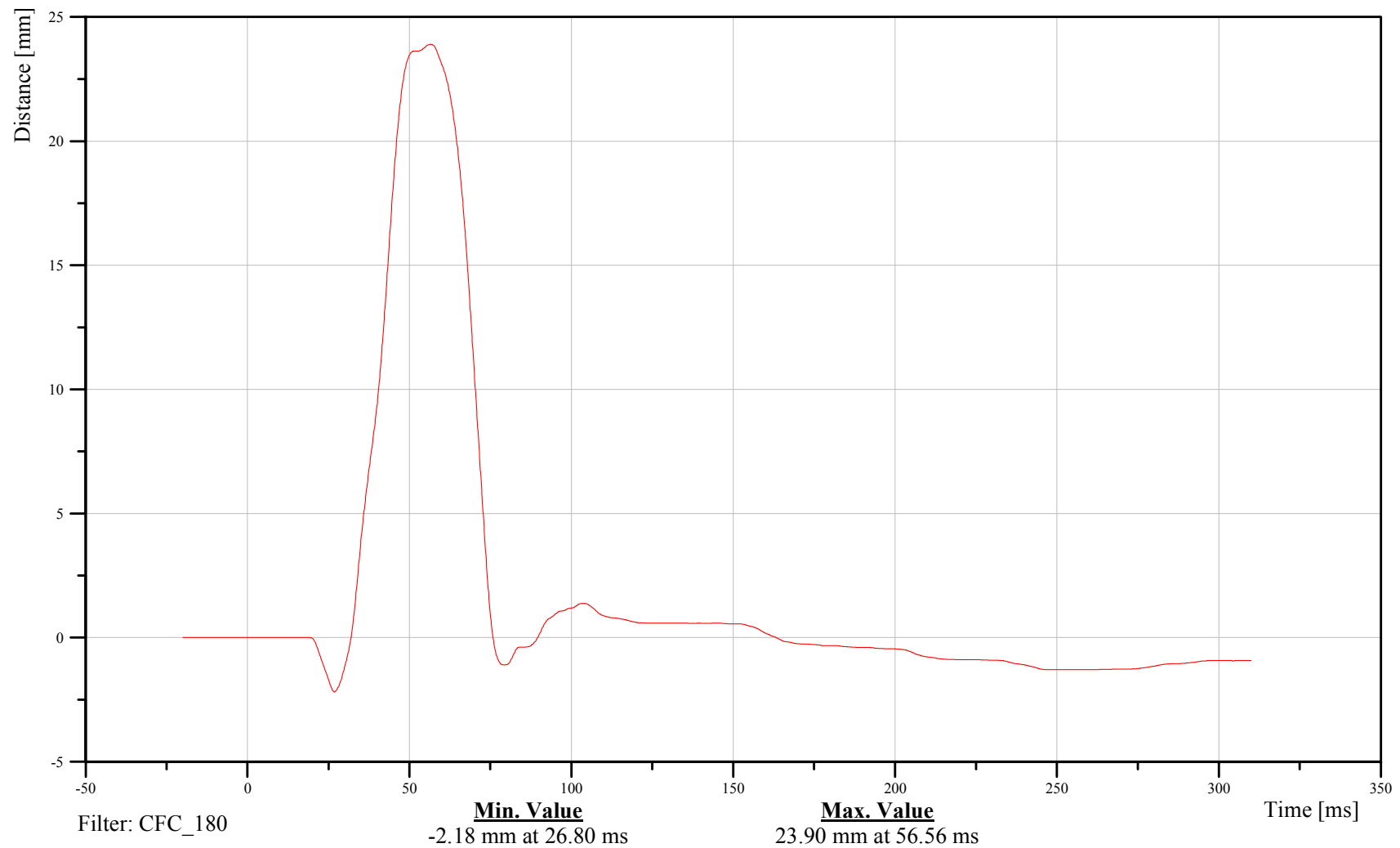
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14SHRILE00S2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Thorax Rib 1 Disp. Y

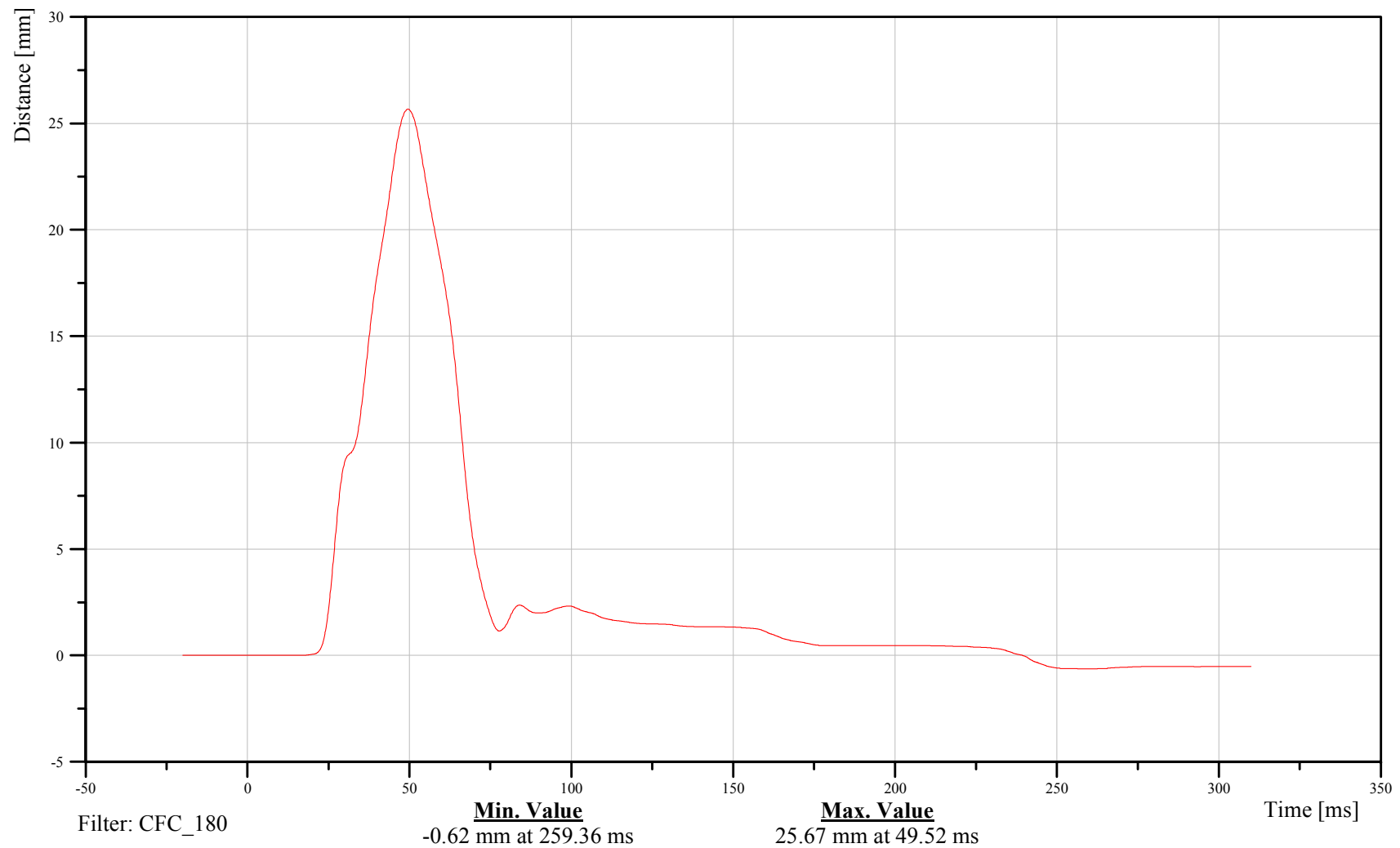
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14TRRI01LES2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Thorax Rib 2 Disp. Y

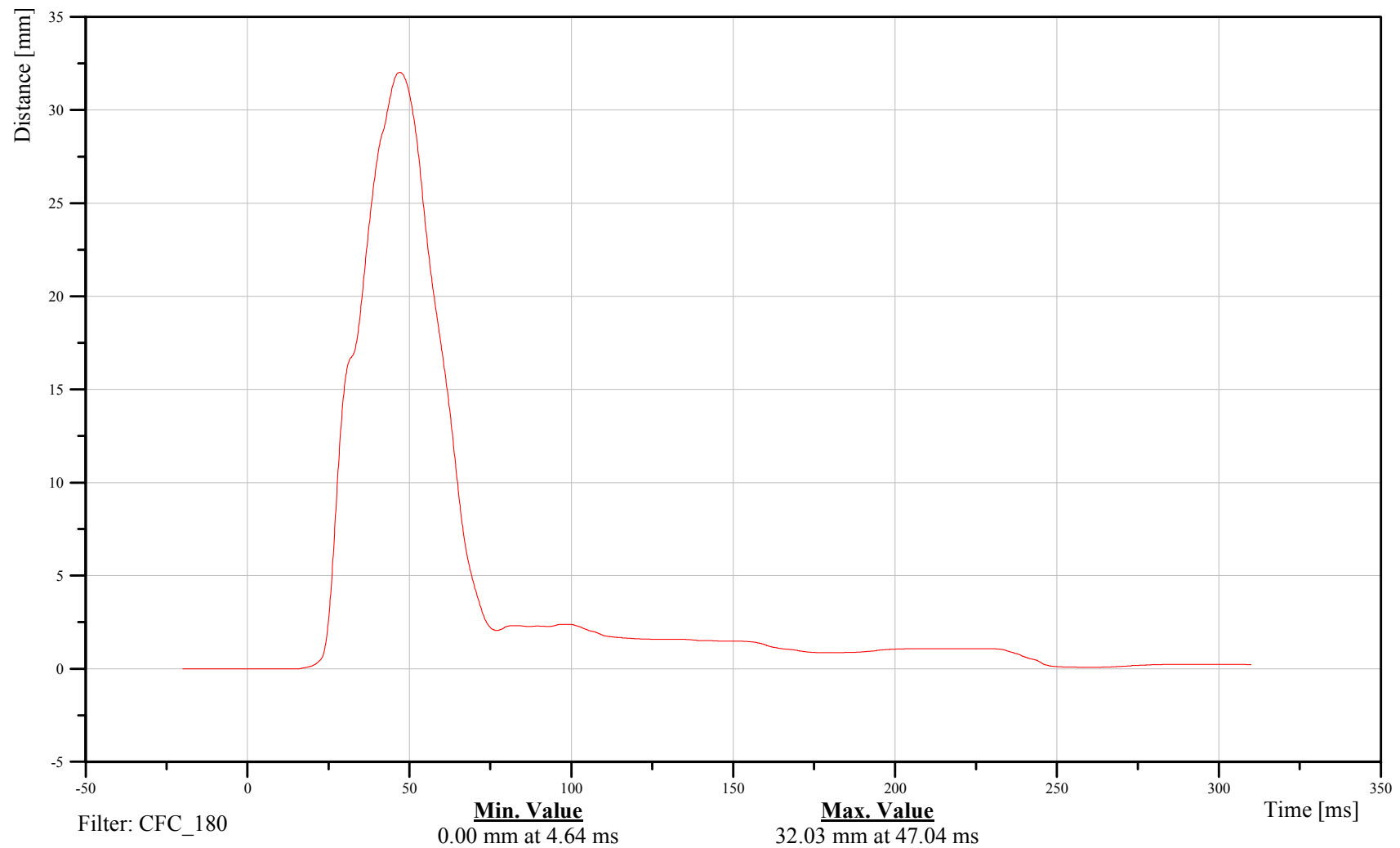
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14TRRI02LES2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Thorax Rib 3 Disp. Y

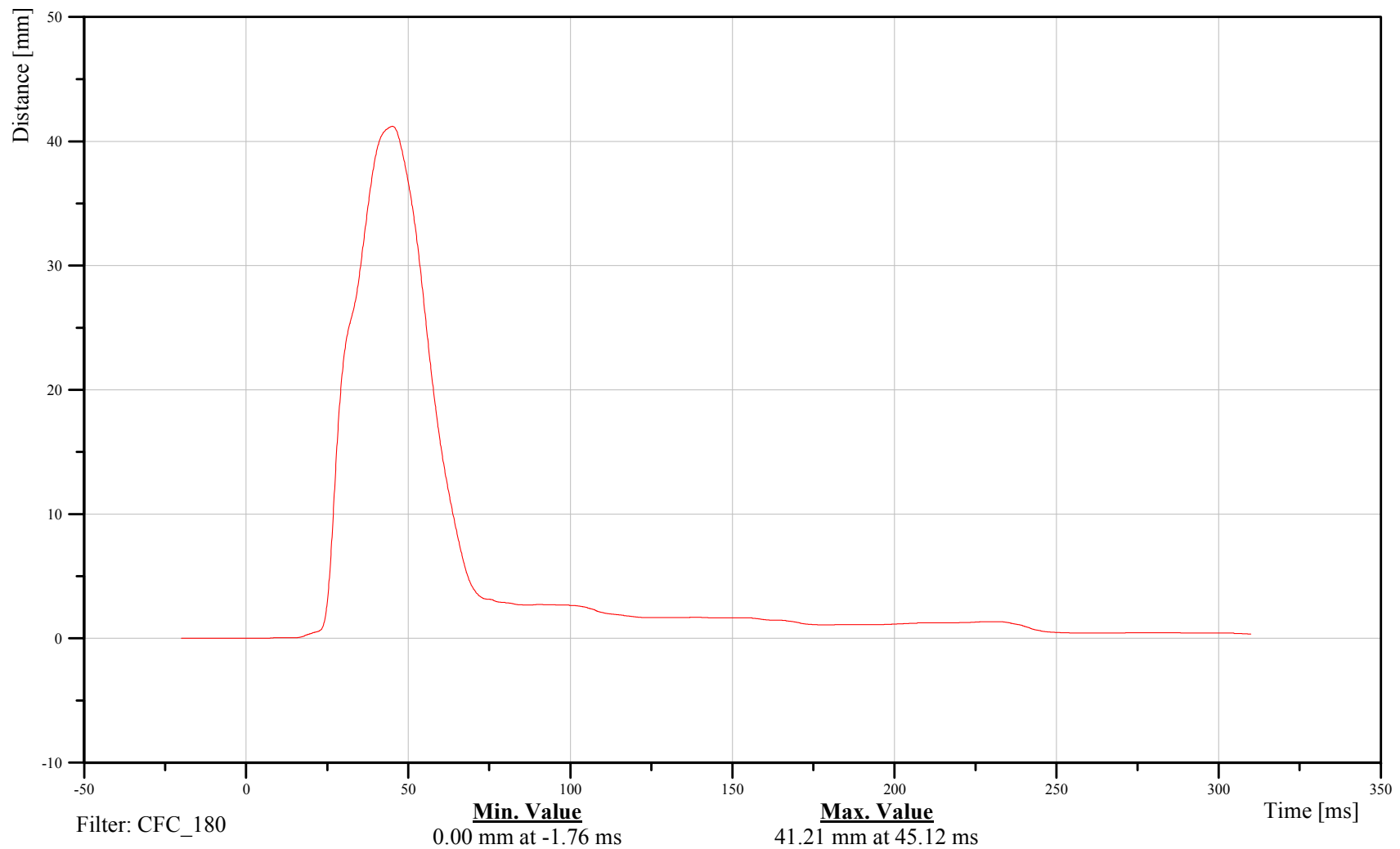
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14TRRI03LES2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Abdomin Rib 1 Disp. Y

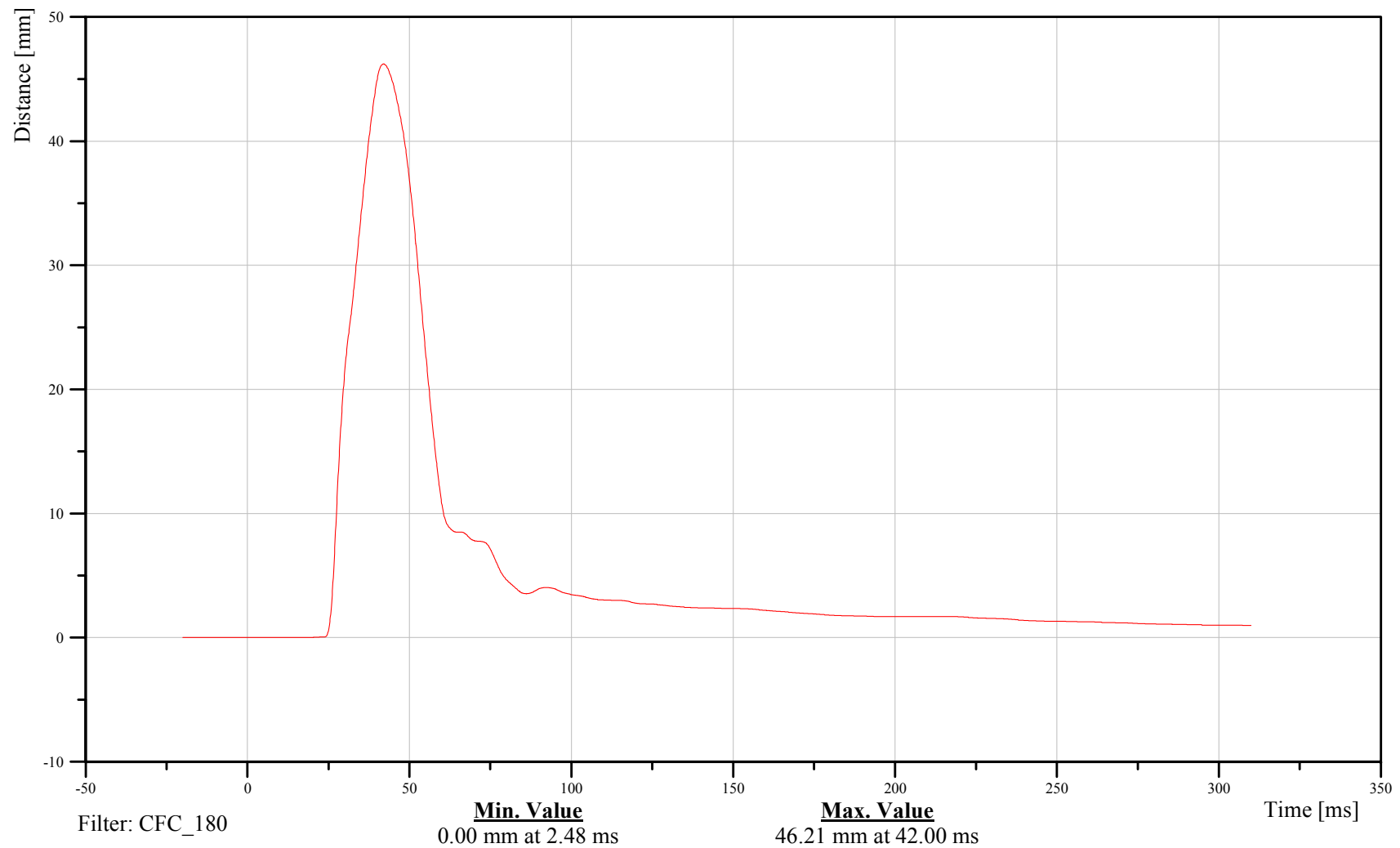
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14ABRI01LES2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Abdomin Rib 2 Disp. Y

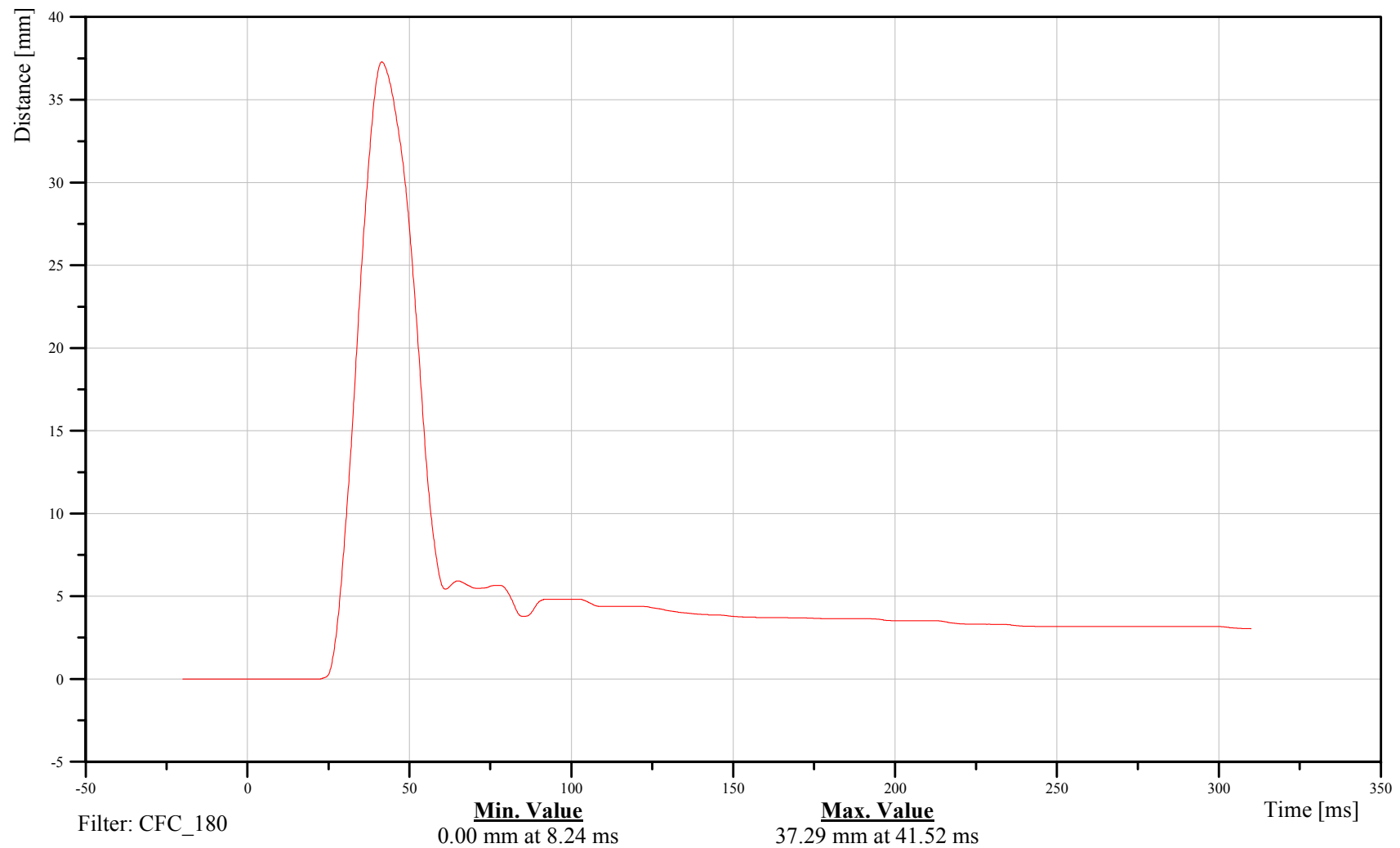
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14ABRI02LES2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Pelvis Accel X

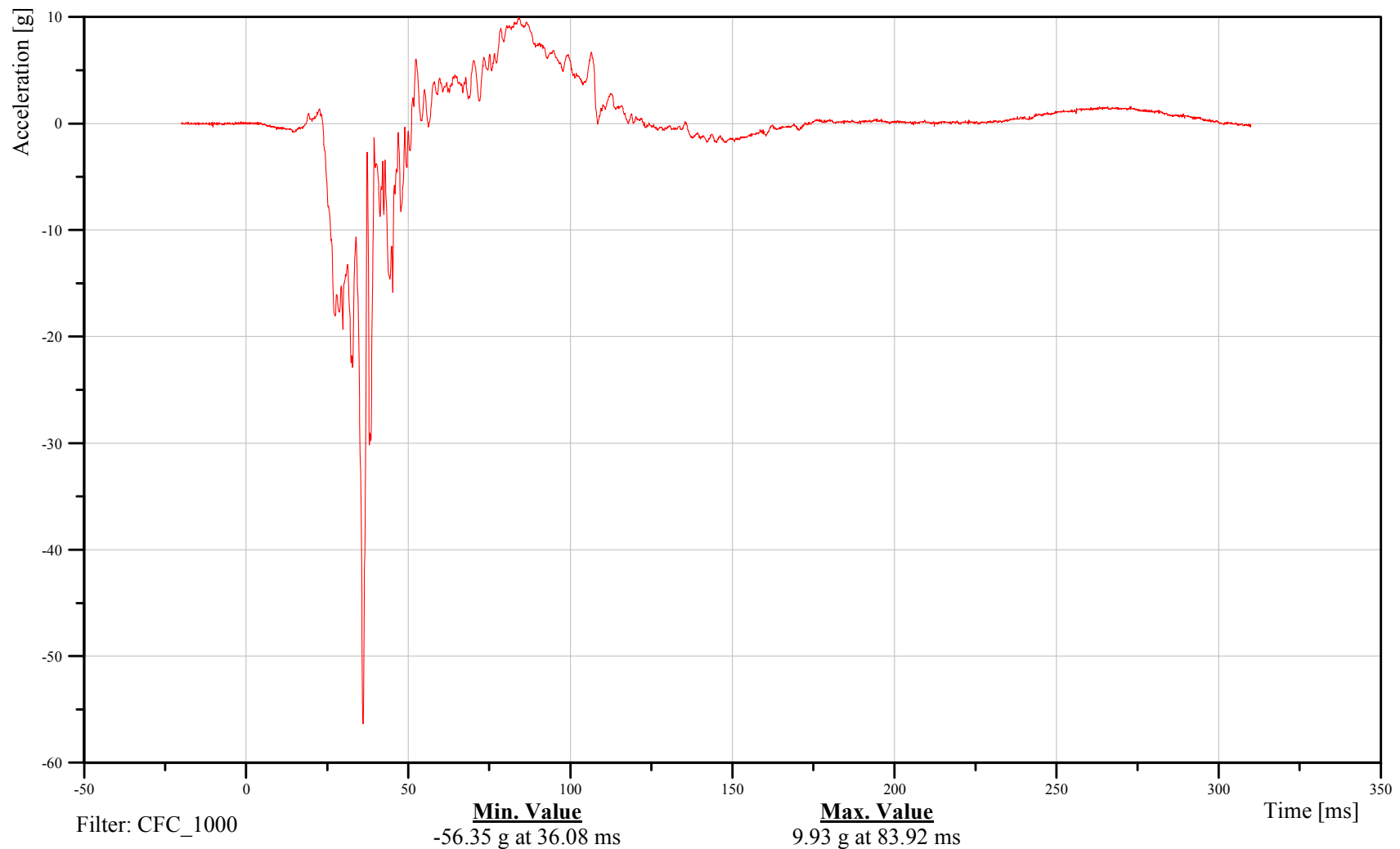
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14PELVCG00S2ACXA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Pelvis Accel Y

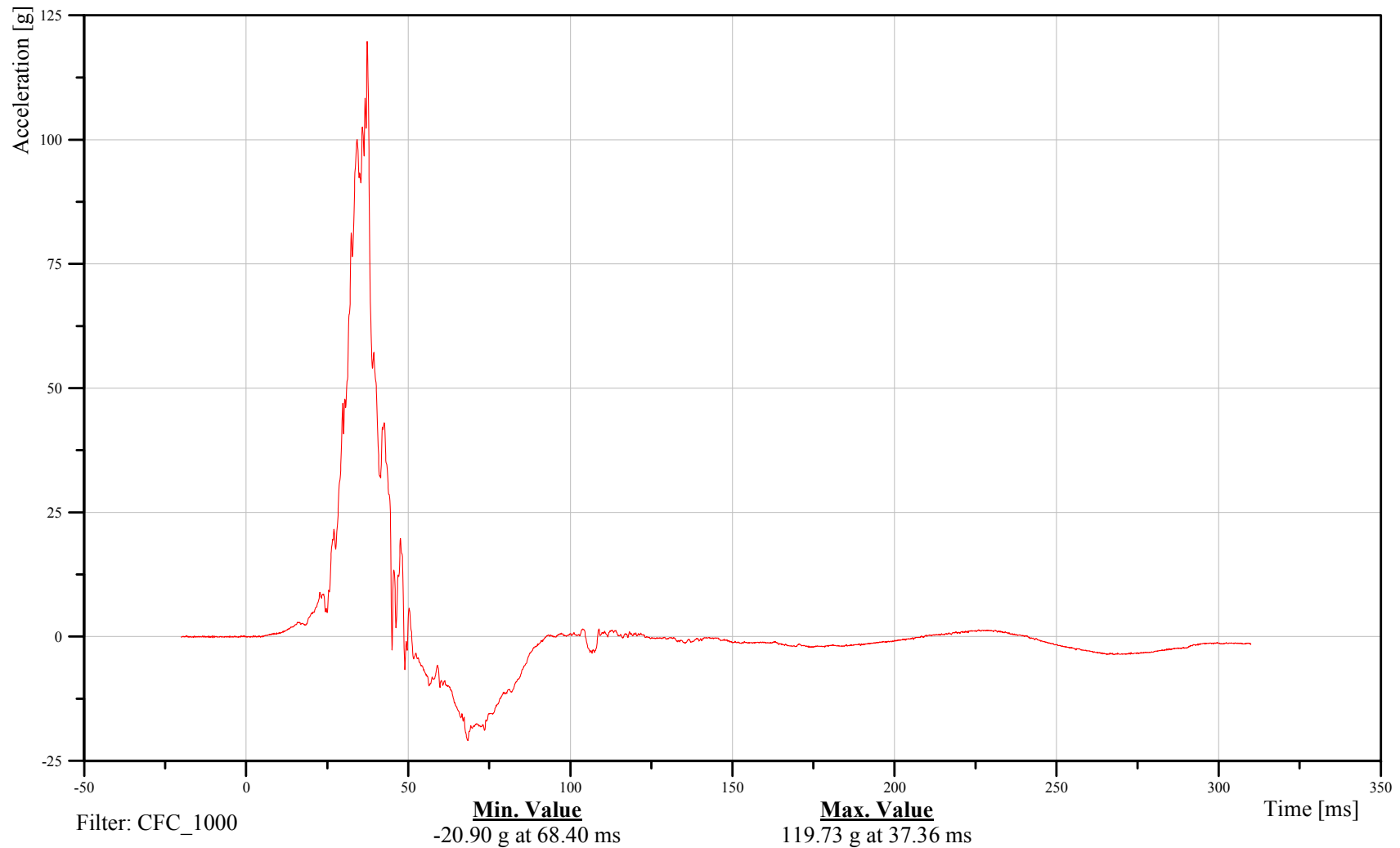
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14PELVCG00S2ACYA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Pelvis Accel Z

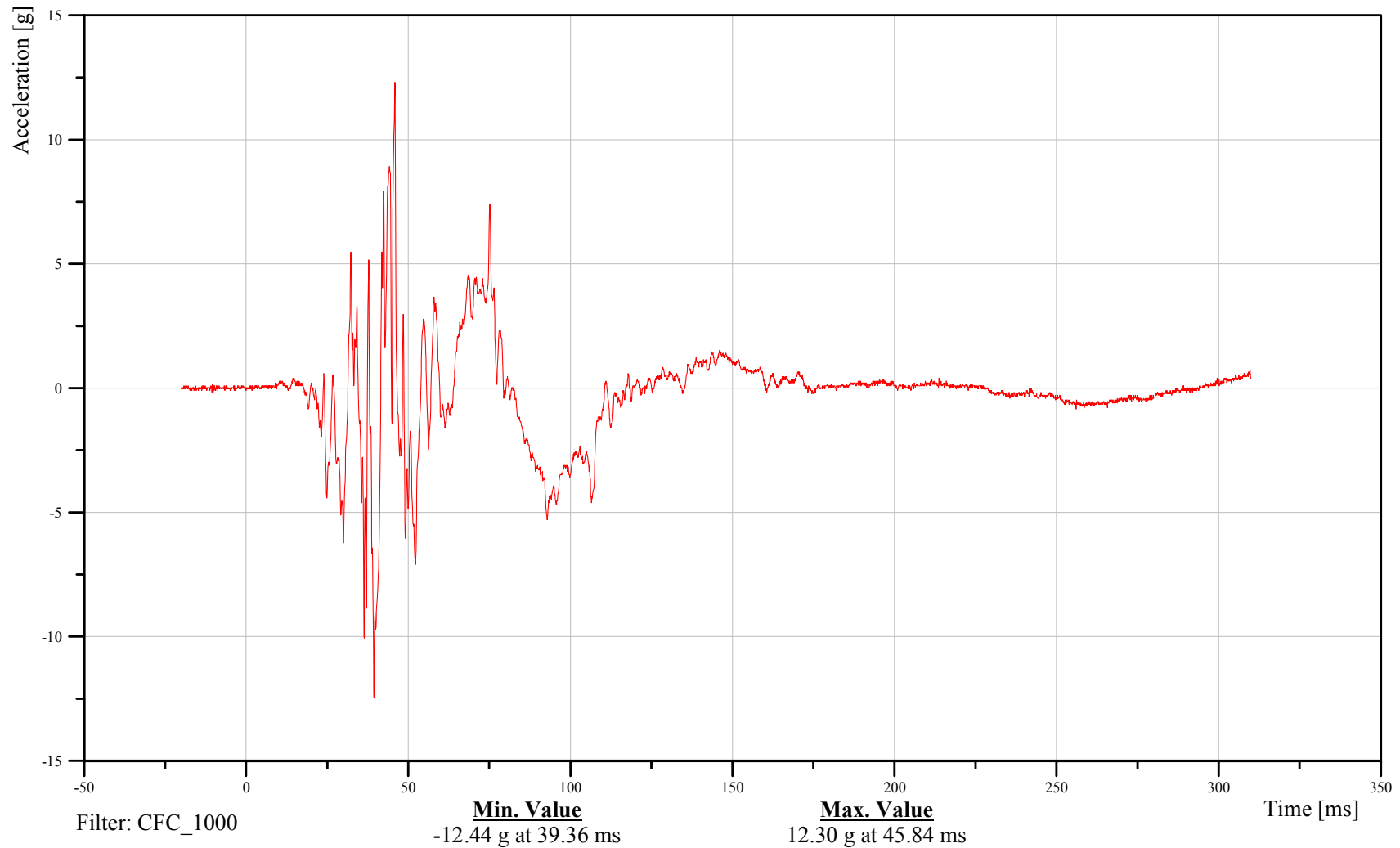
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14PELVCG00S2ACZA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Pelvis Accel Resultant

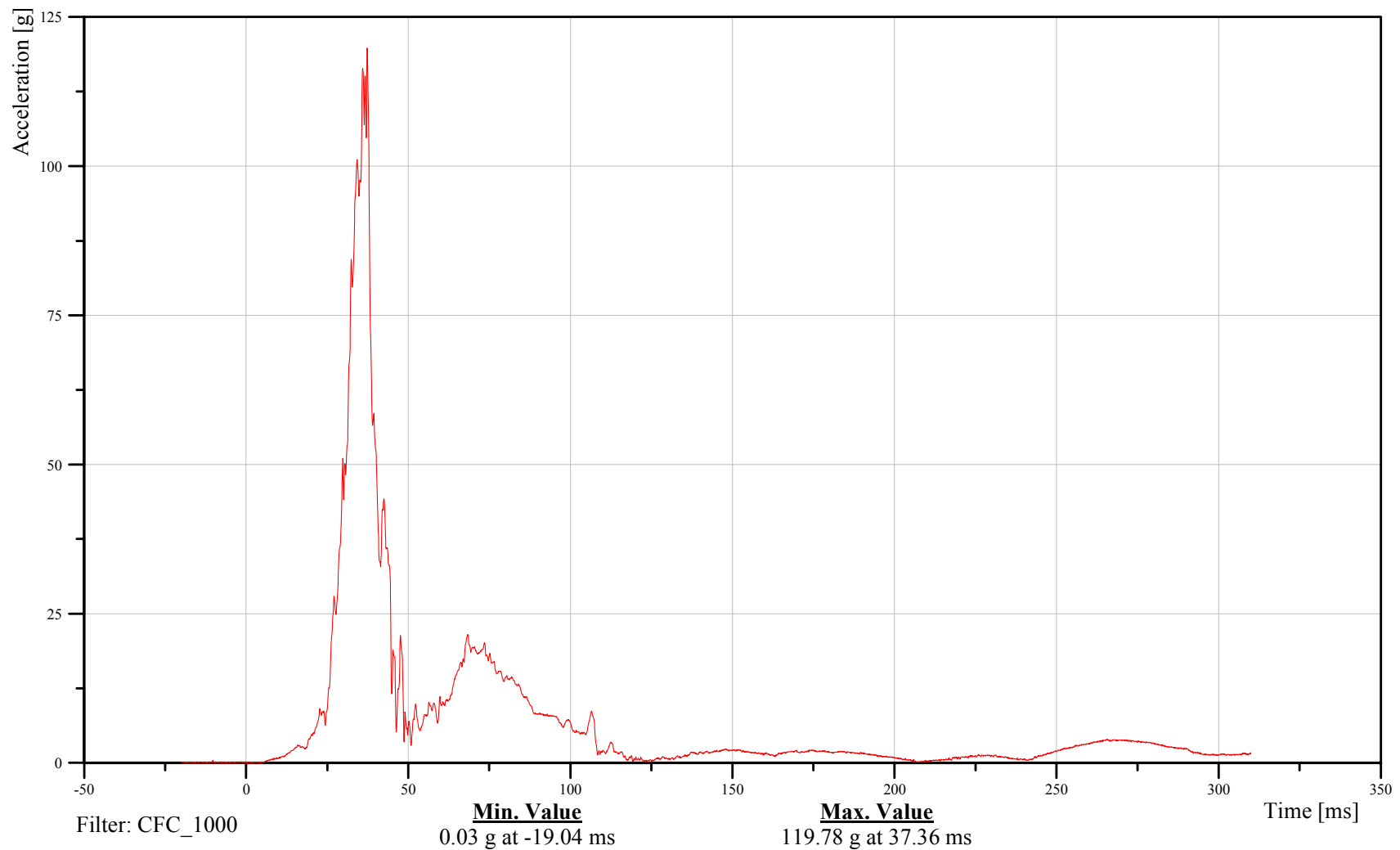
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14PELVCG00S2ACRA

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Left Acetabulum Force Y

Date: 09/16/2005

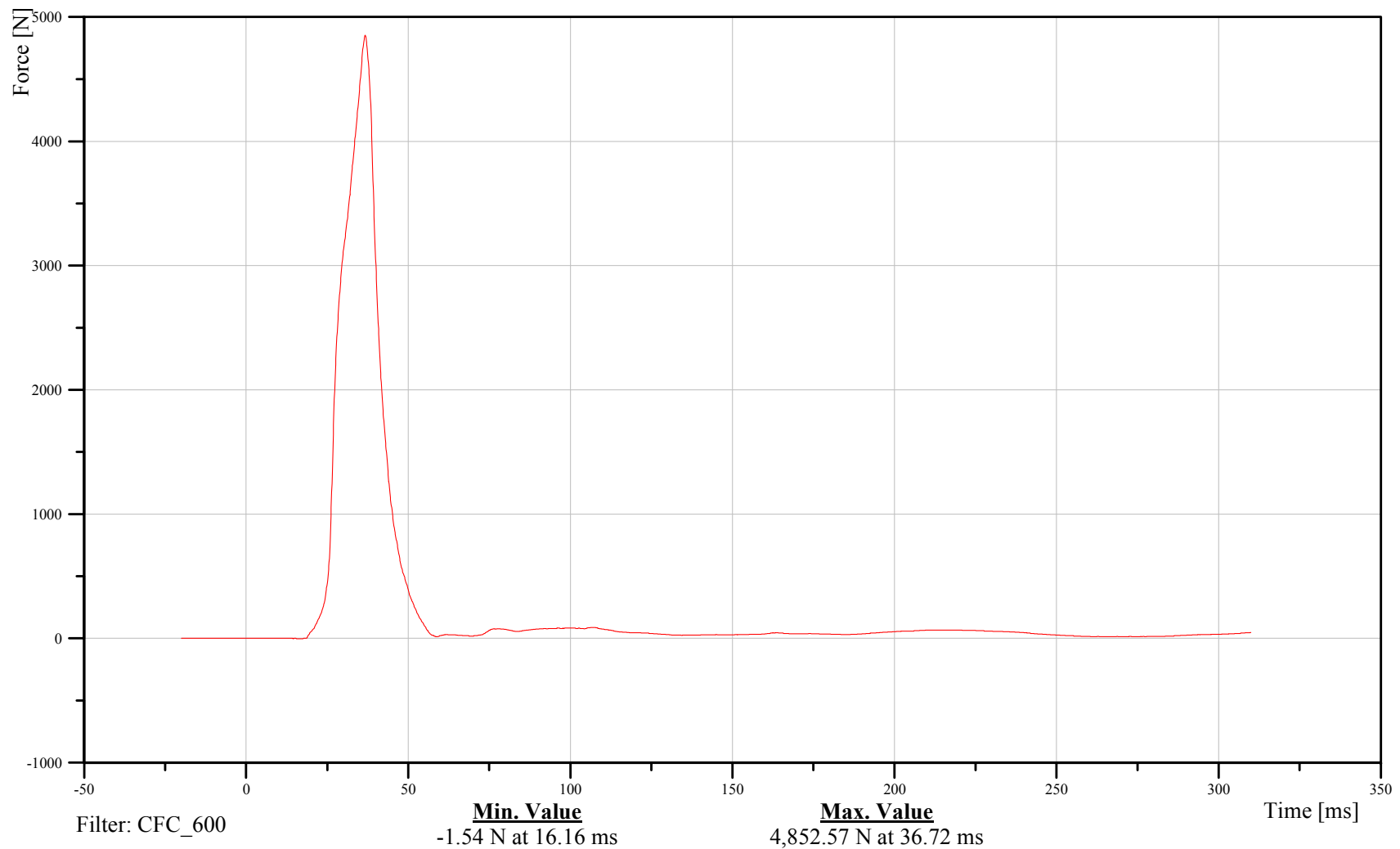
Time: 11:12

Customer: VRTC

14ACTBLE00S2FOYB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005

Time: 11:12

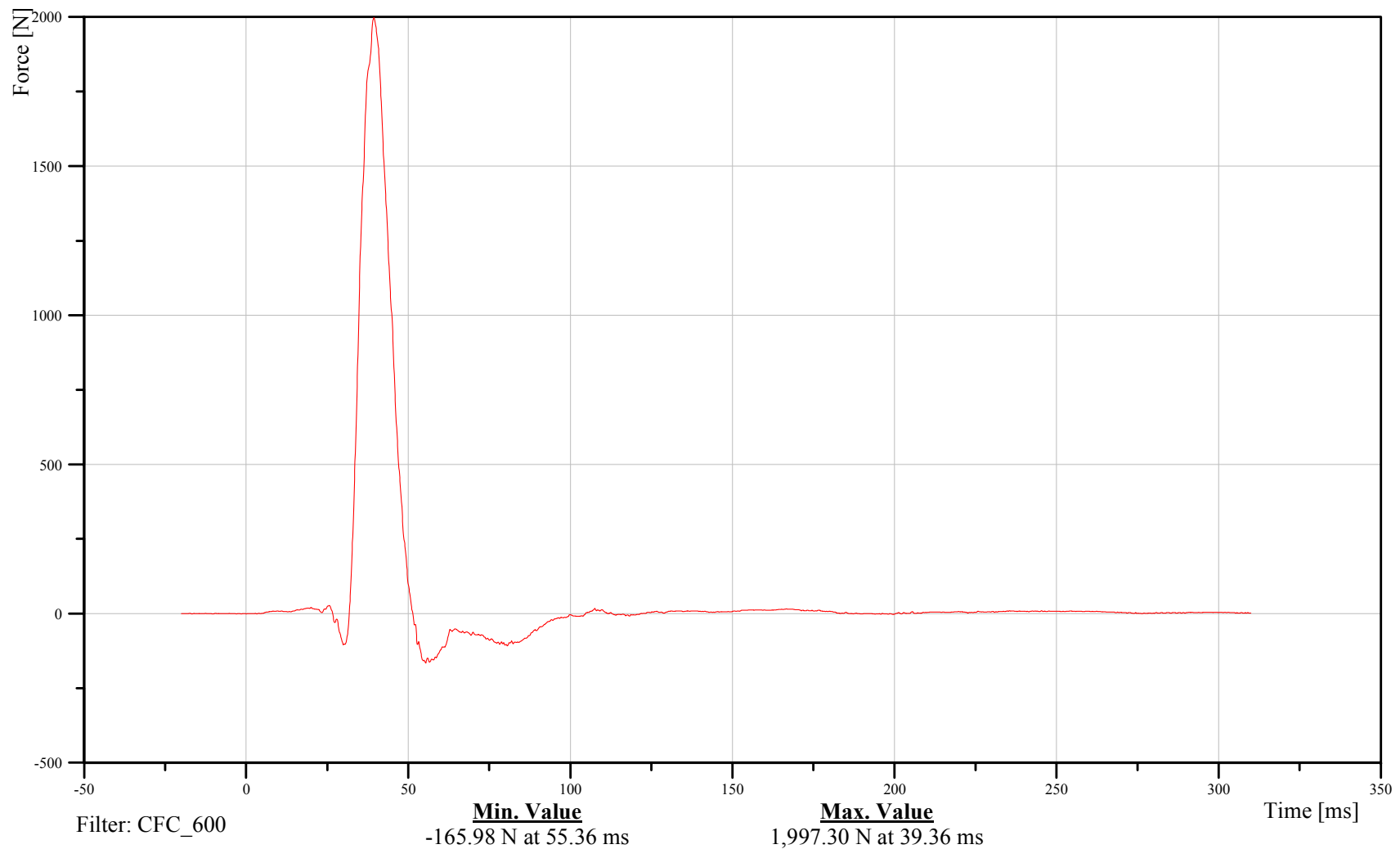
LR Pass. Left Illiac Wing Force Y

Customer: VRTC

14ILACLE00S2FOYB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Left Femur Force X

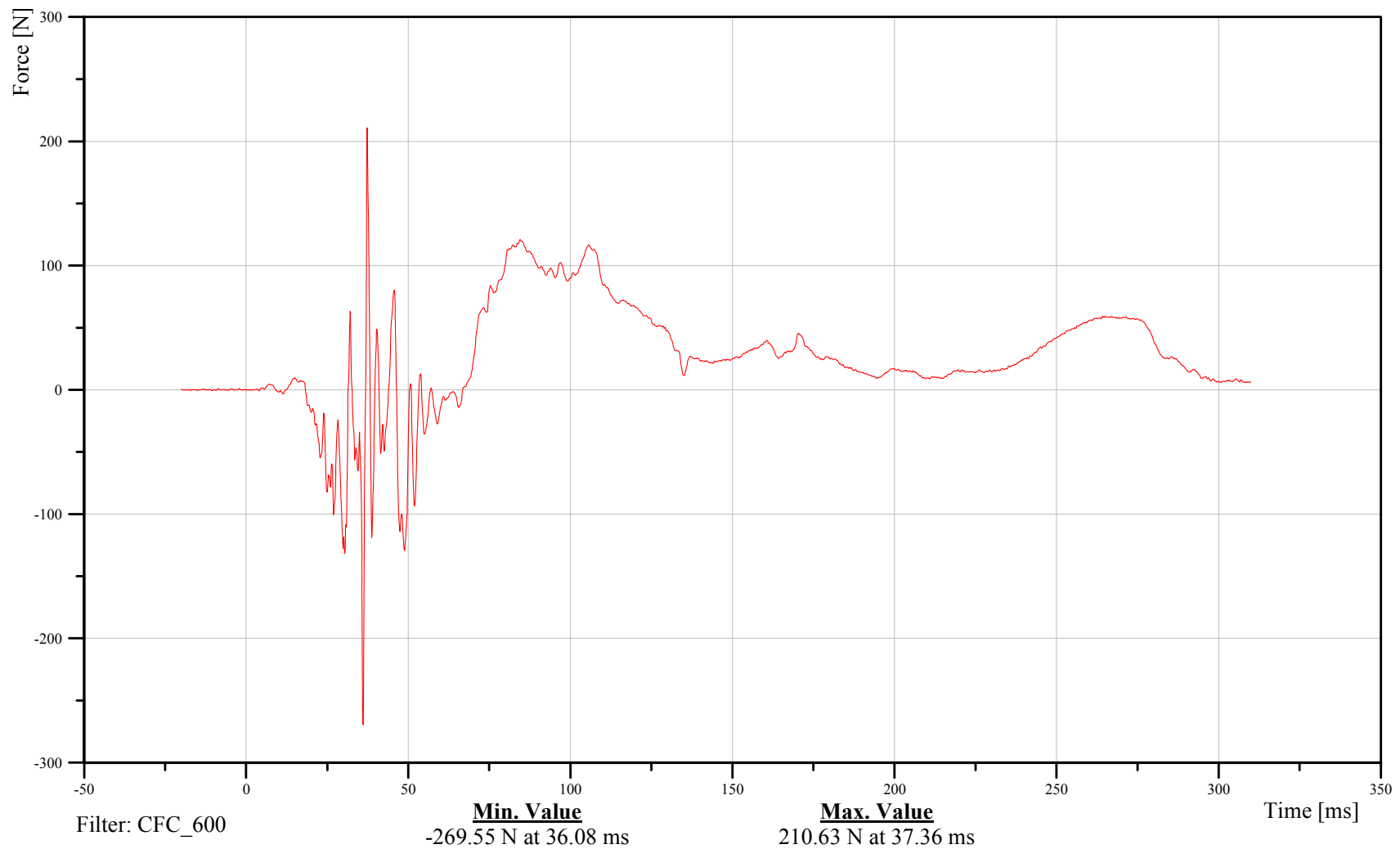
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14FEMRLE00S2FOX B

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Left Femur Force Y

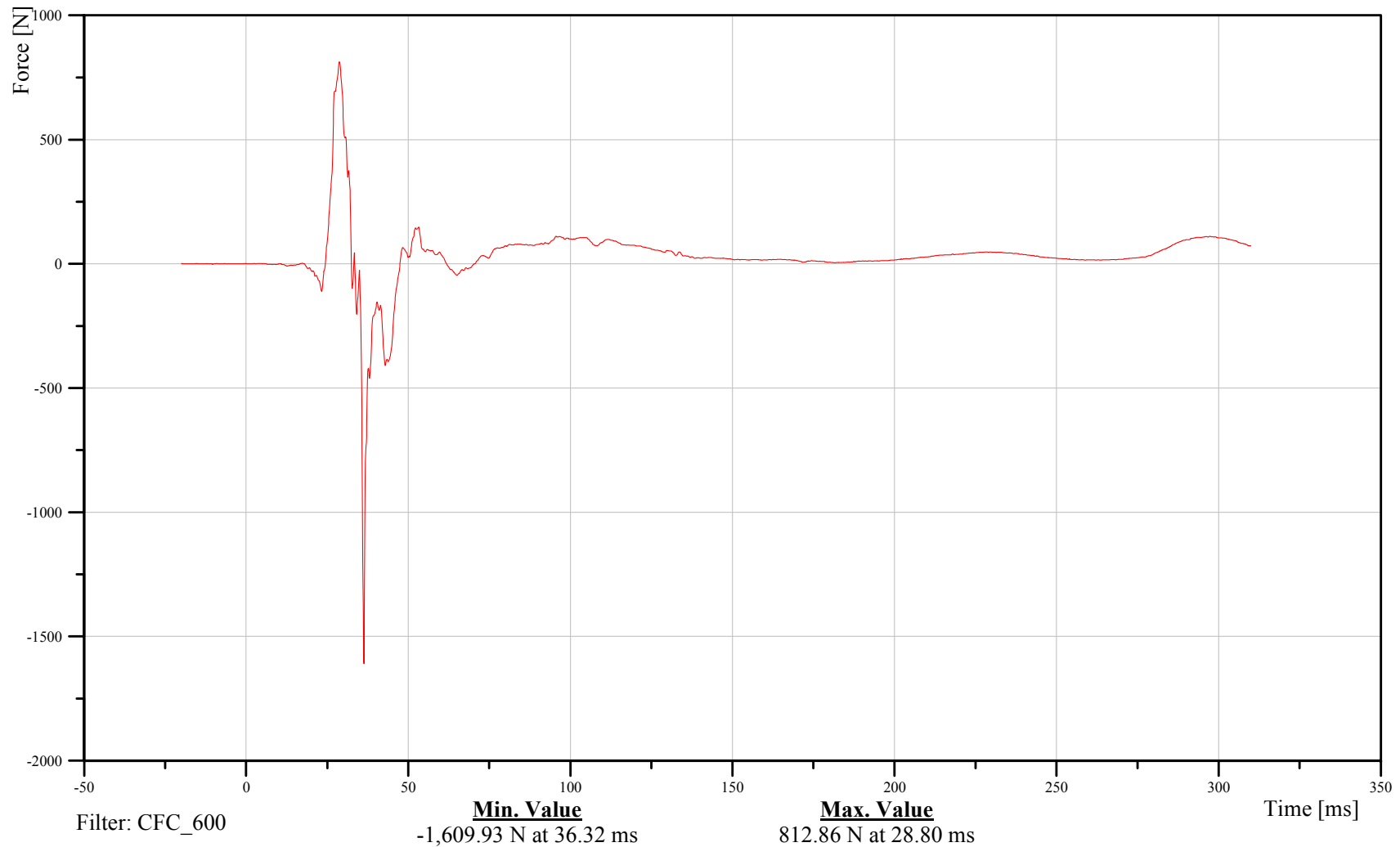
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14FEMRLE00S2FOYB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Left Femur Force Z

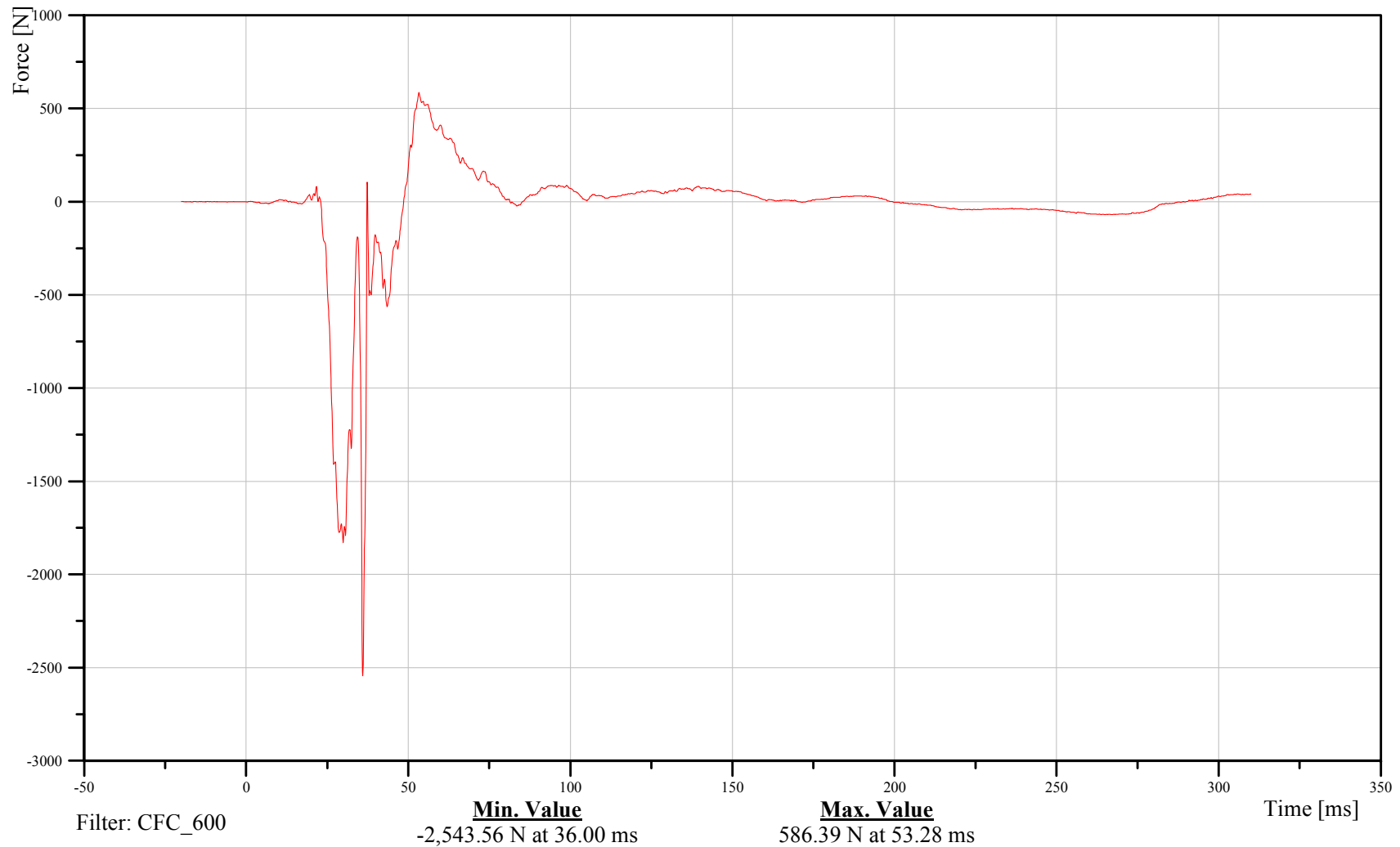
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14FEMRLE00S2FOZB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Left Femur Moment X

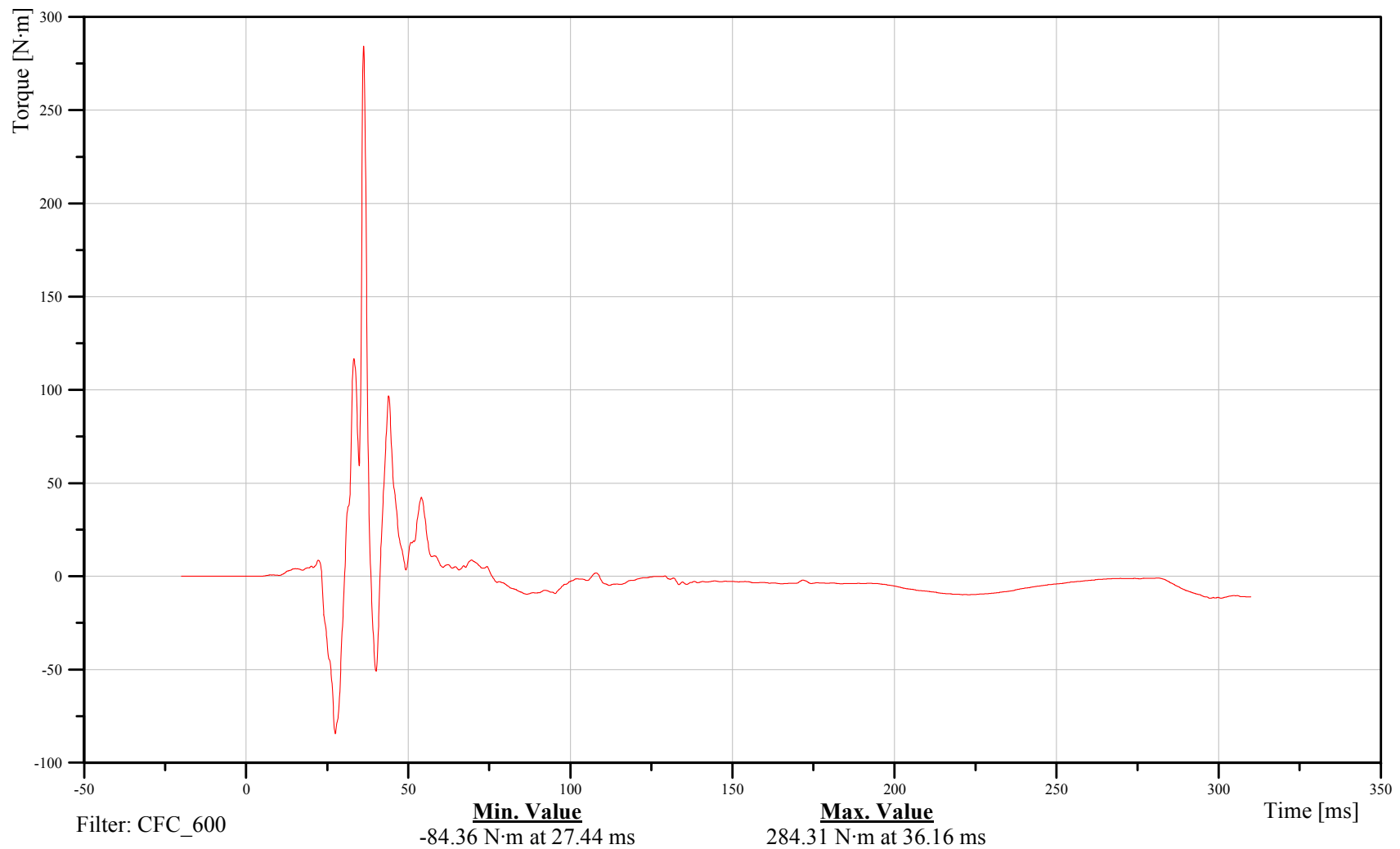
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14FEMRLE00S2MOXB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Left Femur Moment Y

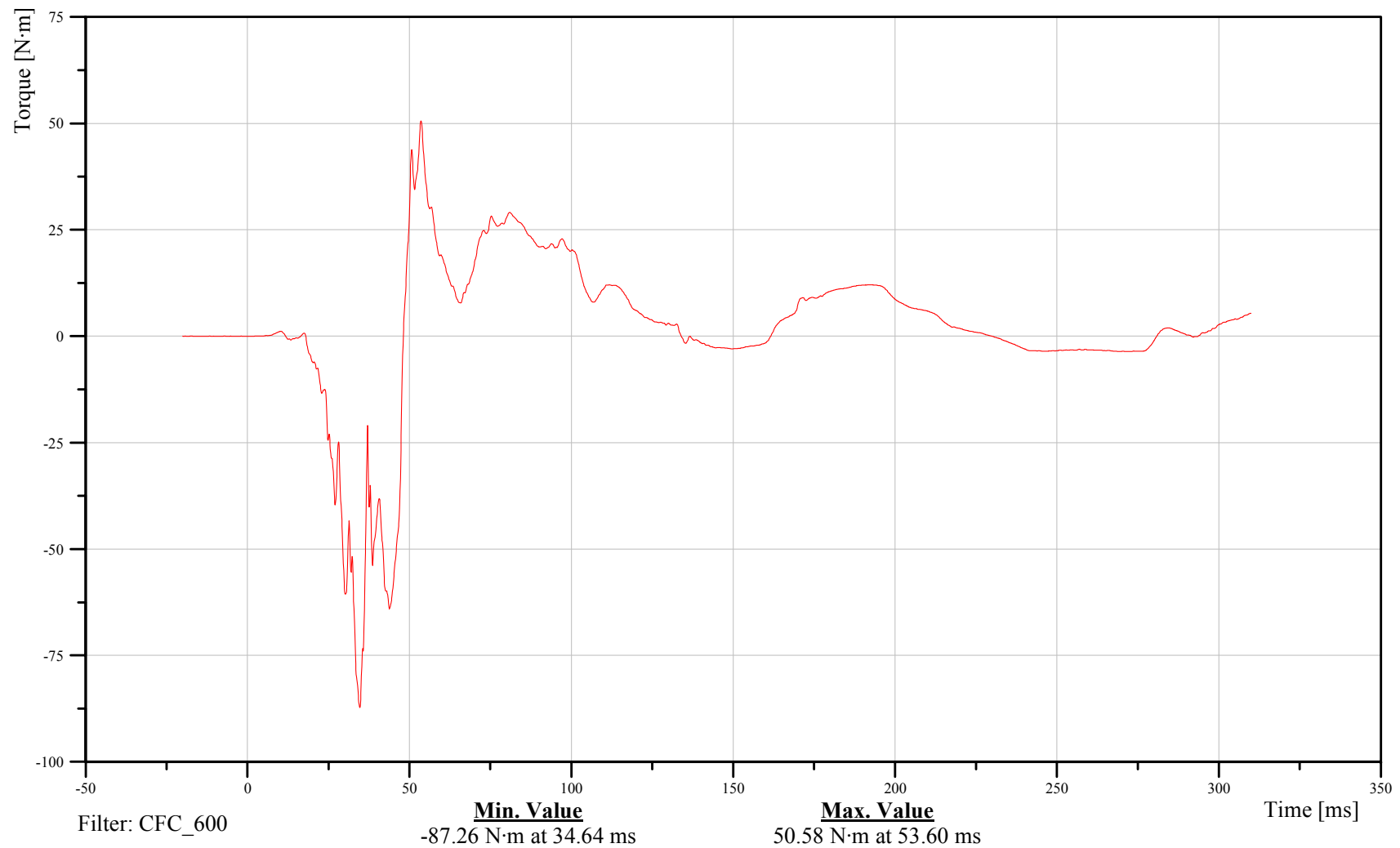
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14FEMRLE00S2MOYB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Left Femur Moment Z

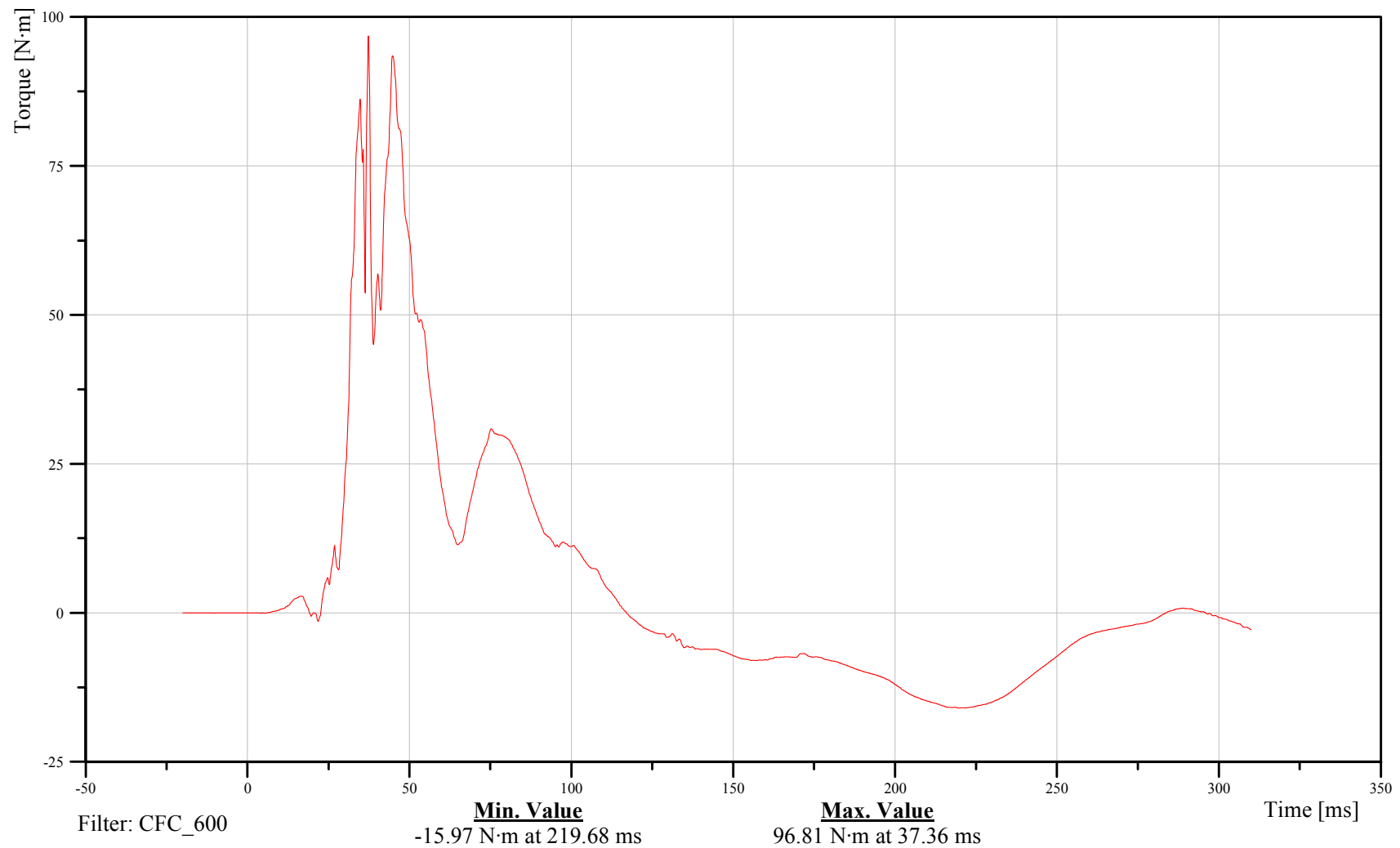
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14FEMRLE00S2MOZB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Right Femur Force X

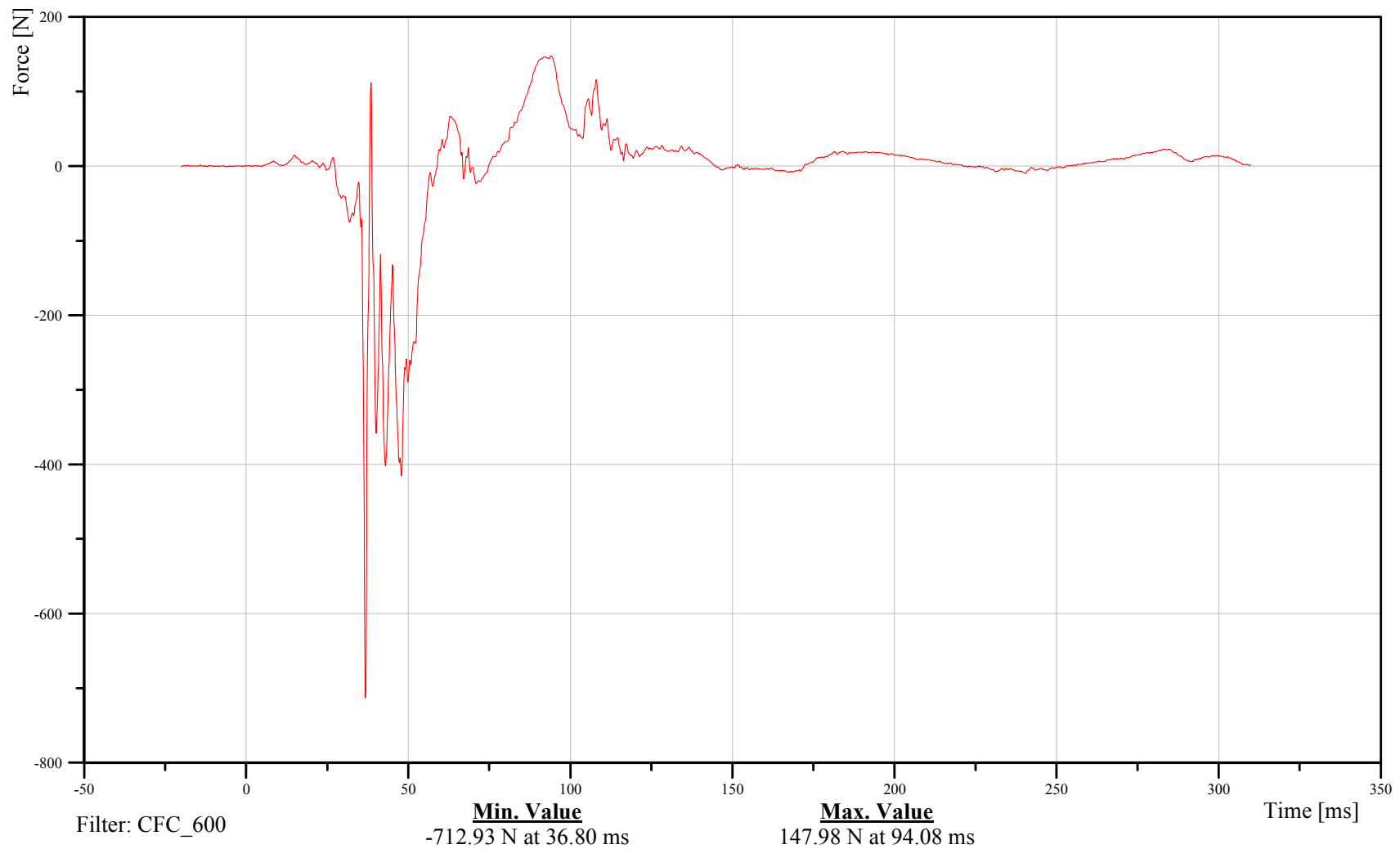
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14FEMRRI00S2FOX B

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Right Femur Force Y

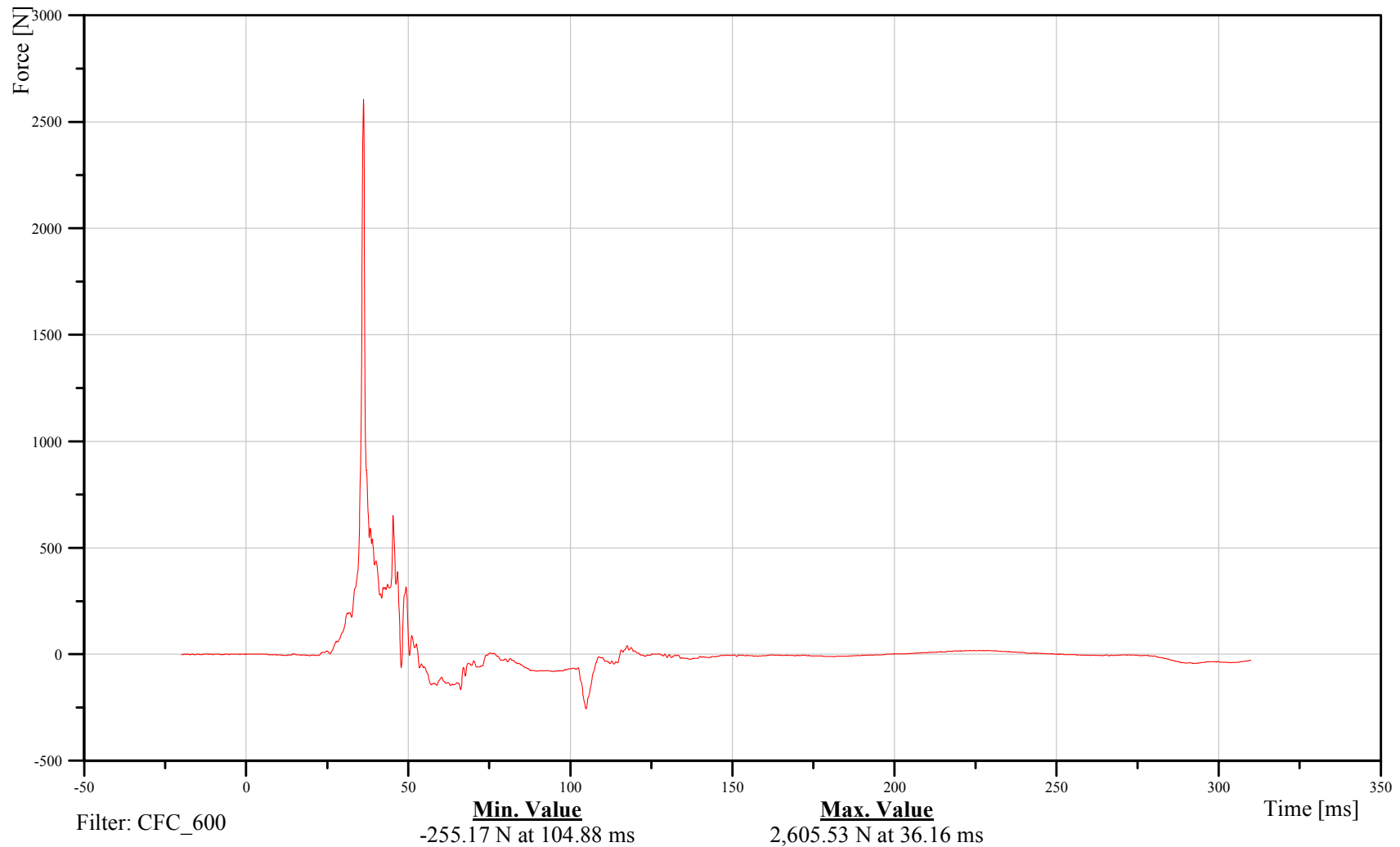
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14FEMRRI00S2FOYB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Right Femur Force Z

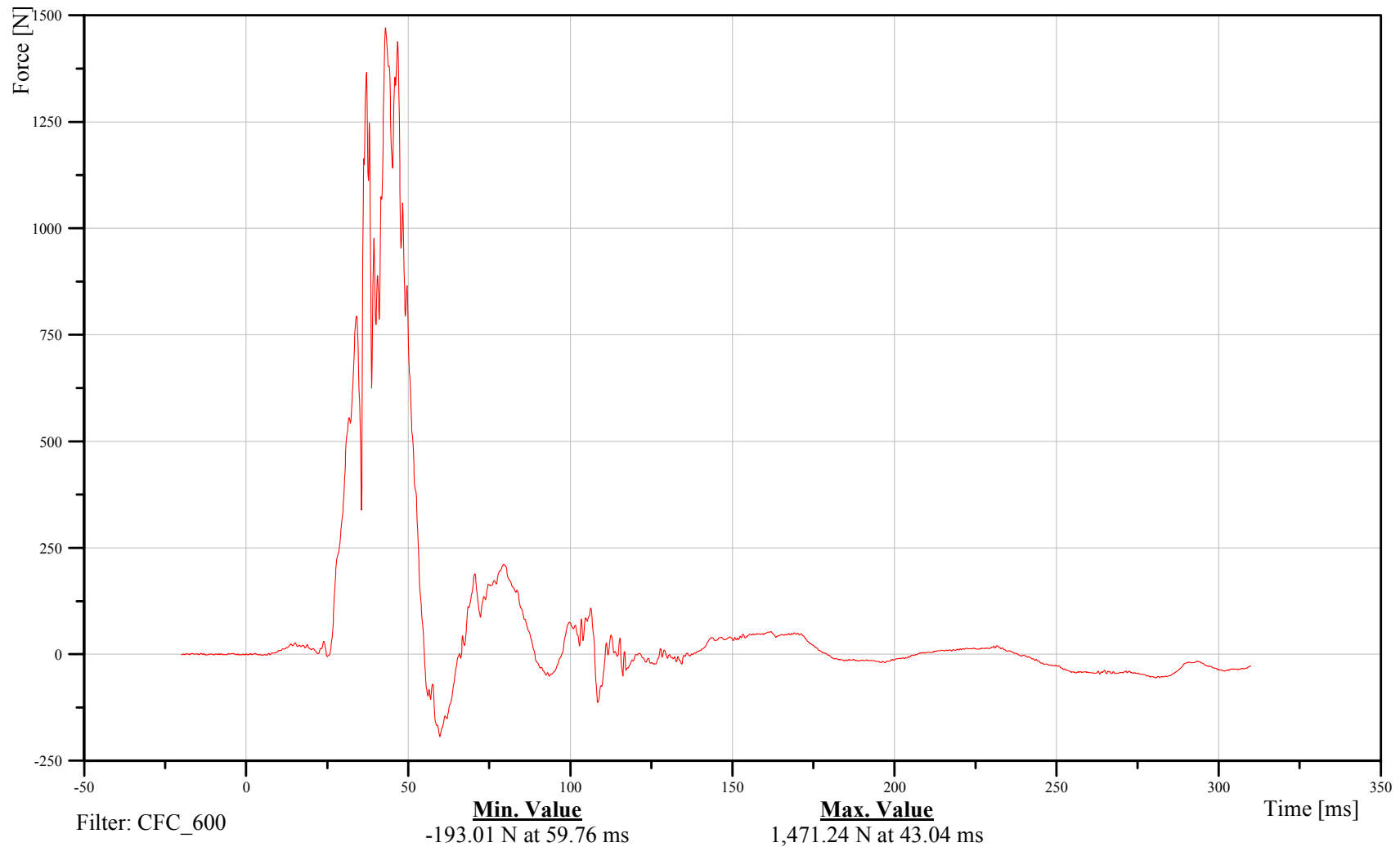
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14FEMRRI00S2FOZB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Right Femur Moment X

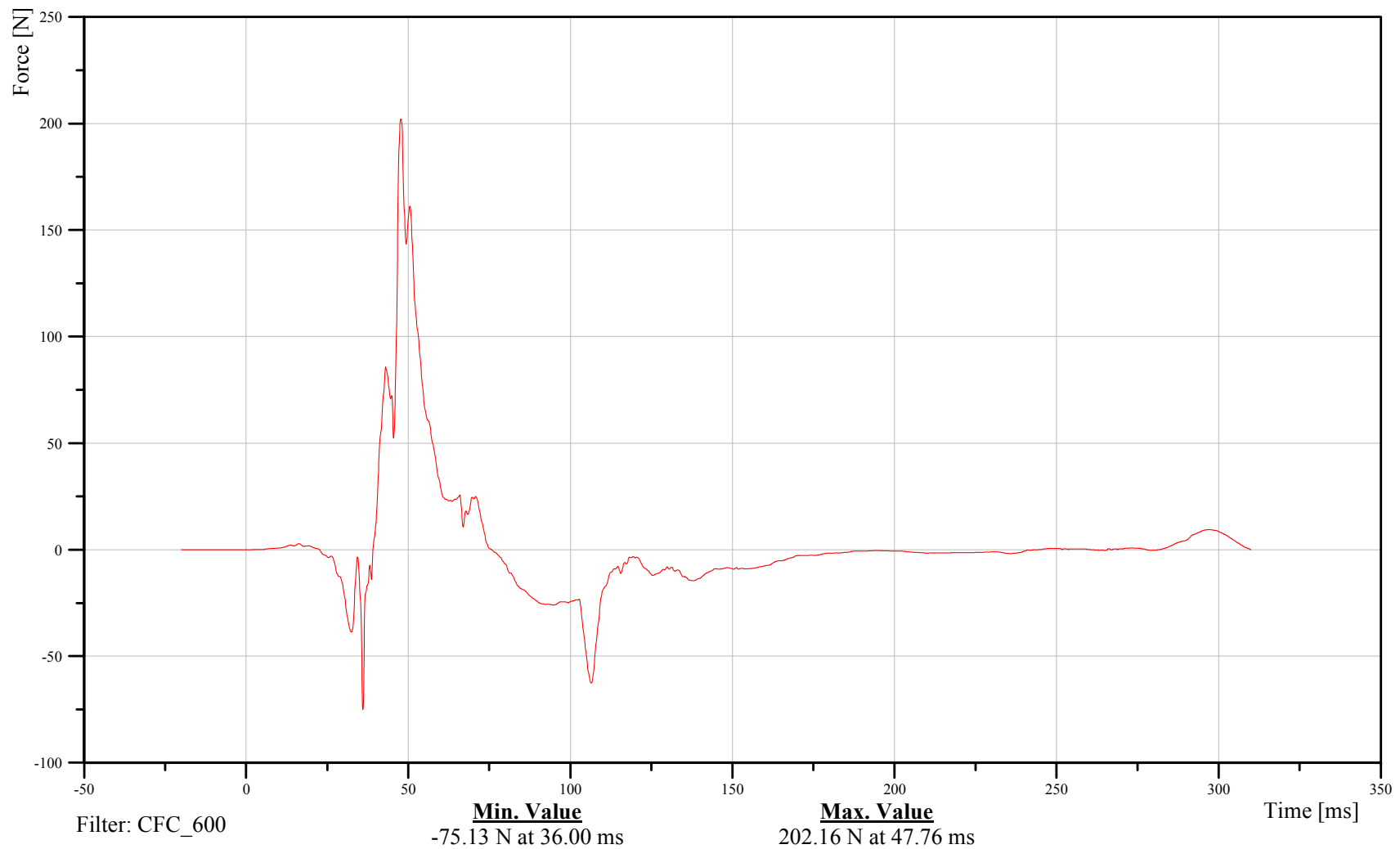
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14FEMRRI00S2MOXB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Right Femur Moment Y

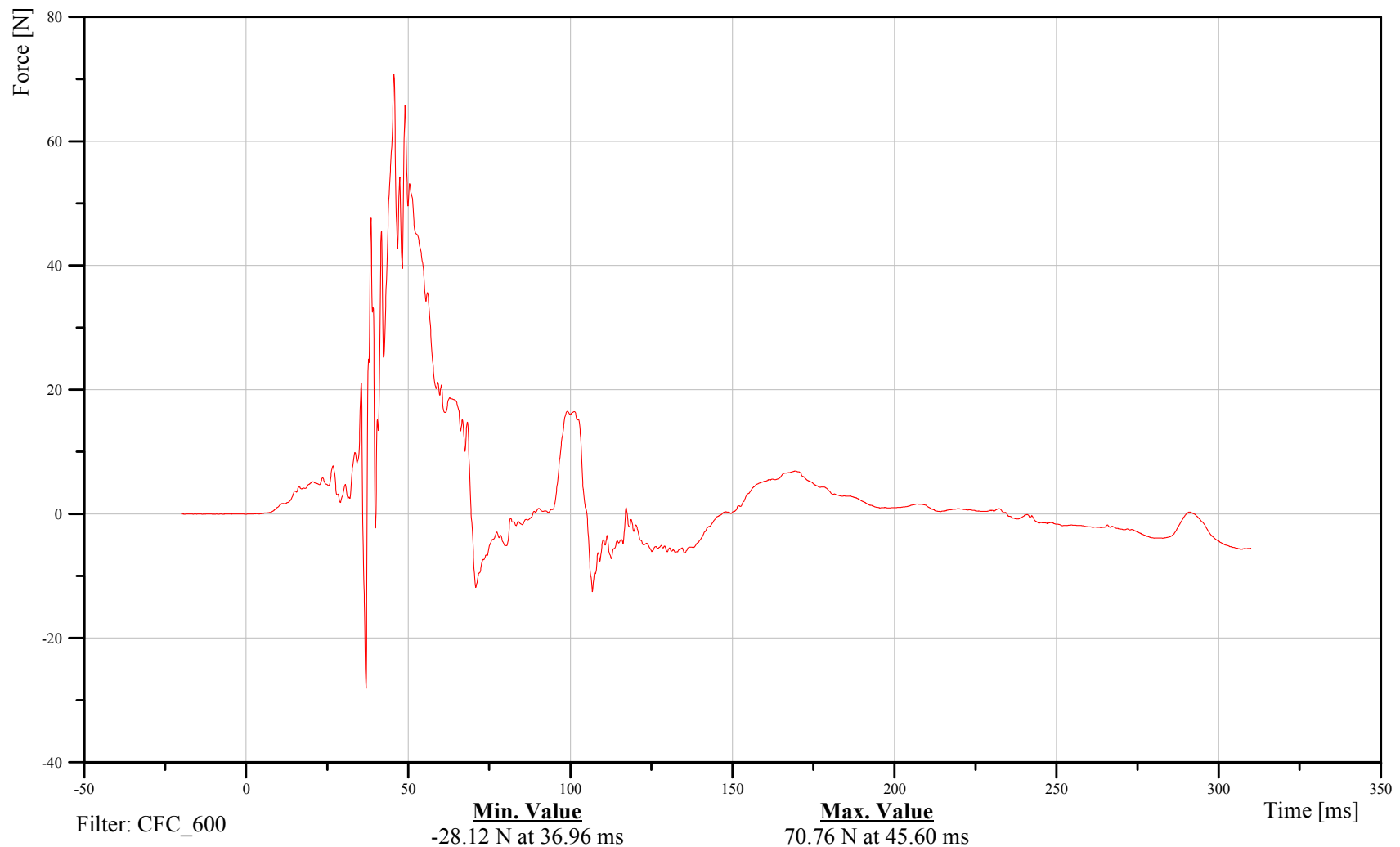
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14FEMRRI00S2MOYB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005

Time: 11:12

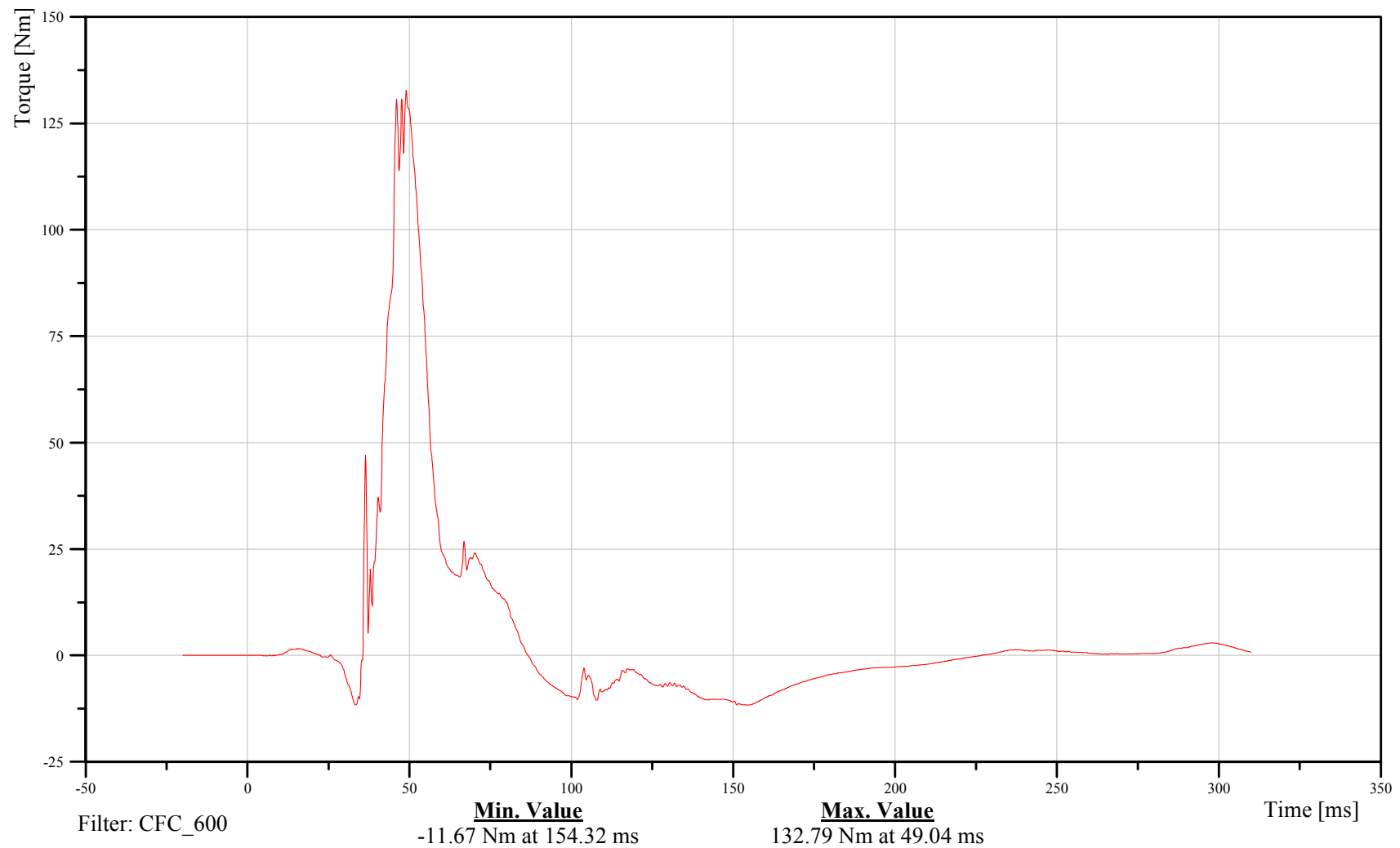
LR Pass. Right Femur Moment Z

Customer: VRTC

14FEMRRI00S2MOZB

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005

Time: 11:12

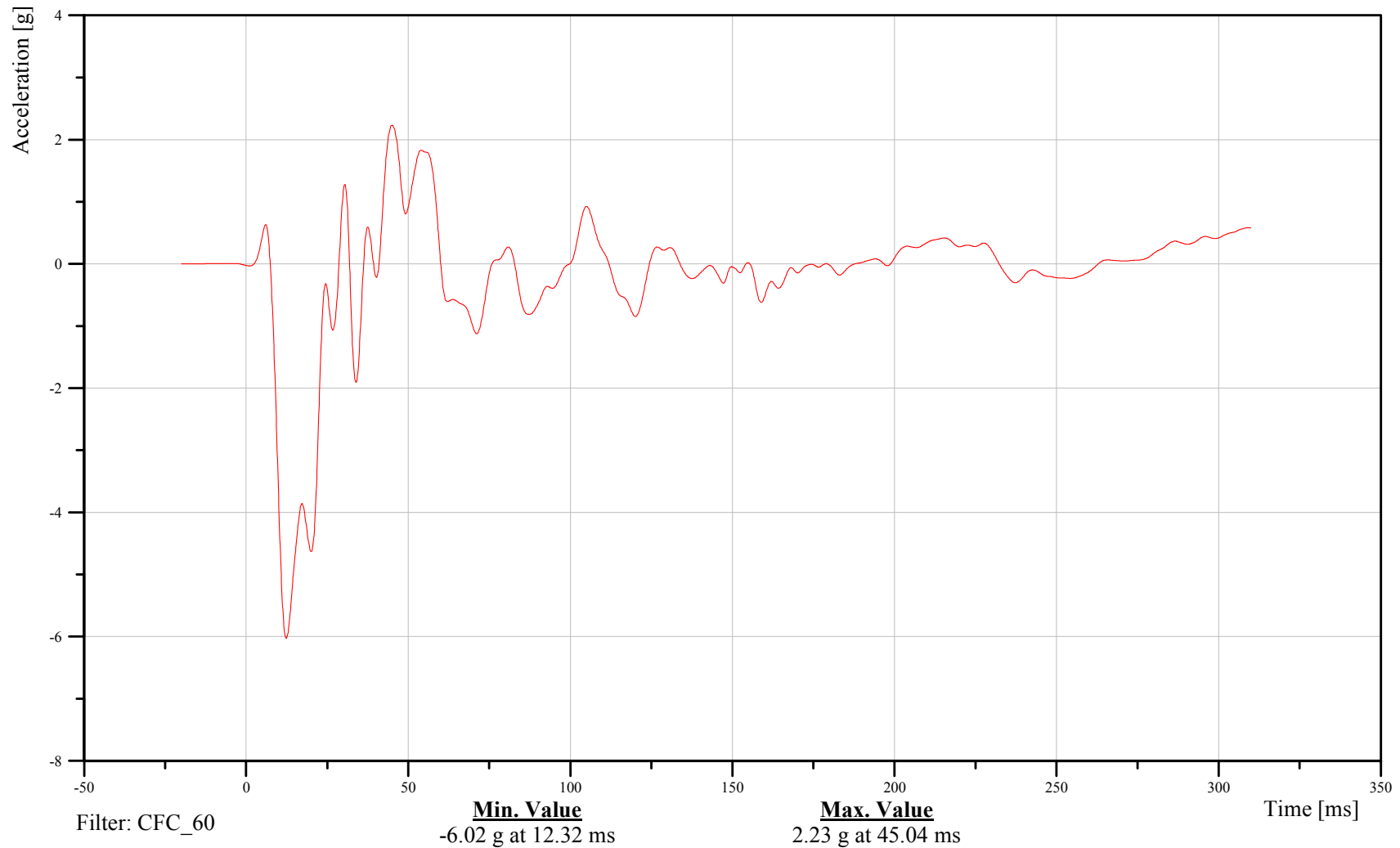
Right Side Sill at Front Seat X-Axis Acceleration

Customer: VRTC

16SILBFR0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005

Time: 11:12

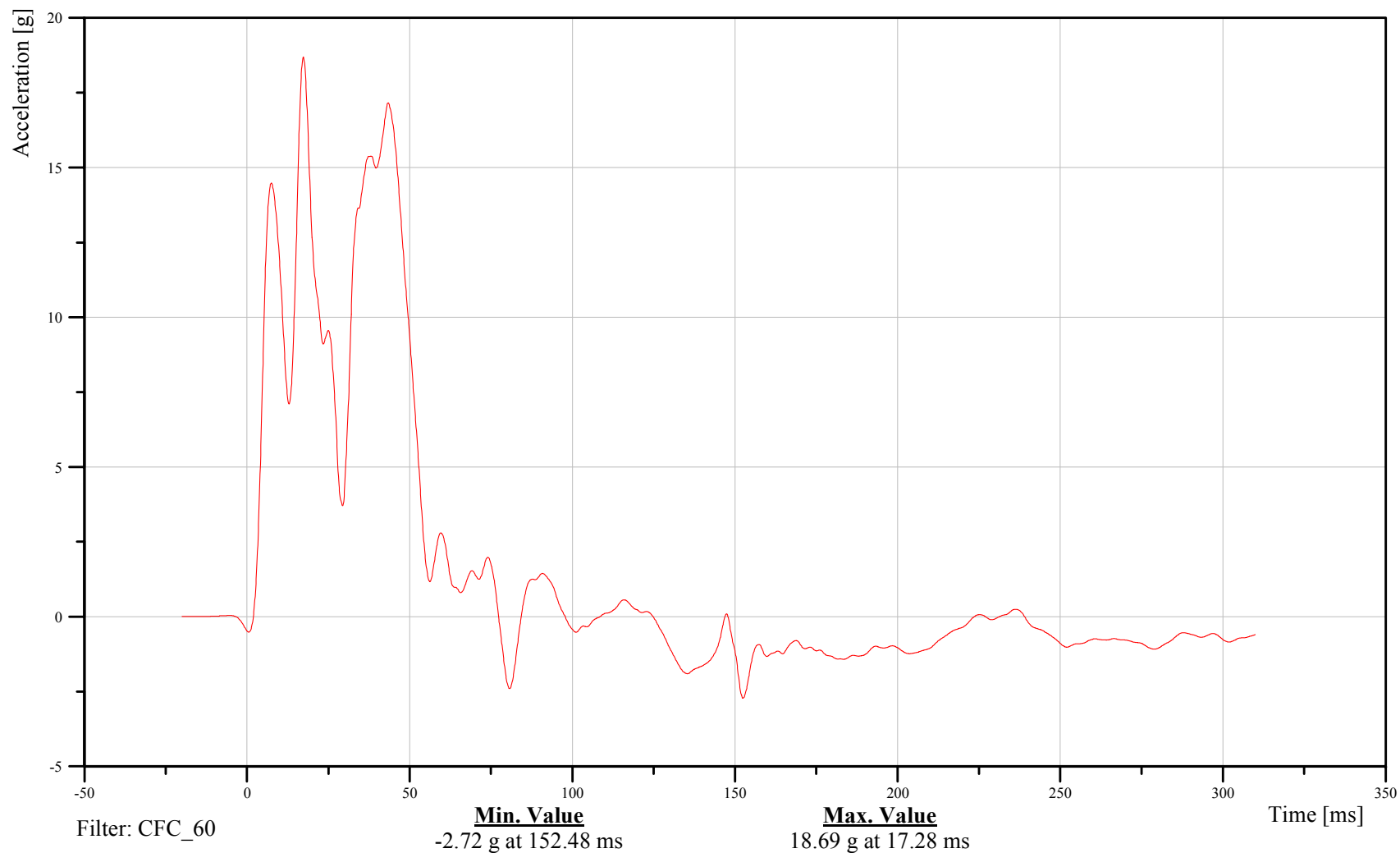
Right Side Sill at Front Seat Y-Axis Acceleration

Customer: VRTC

16SILBFR0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

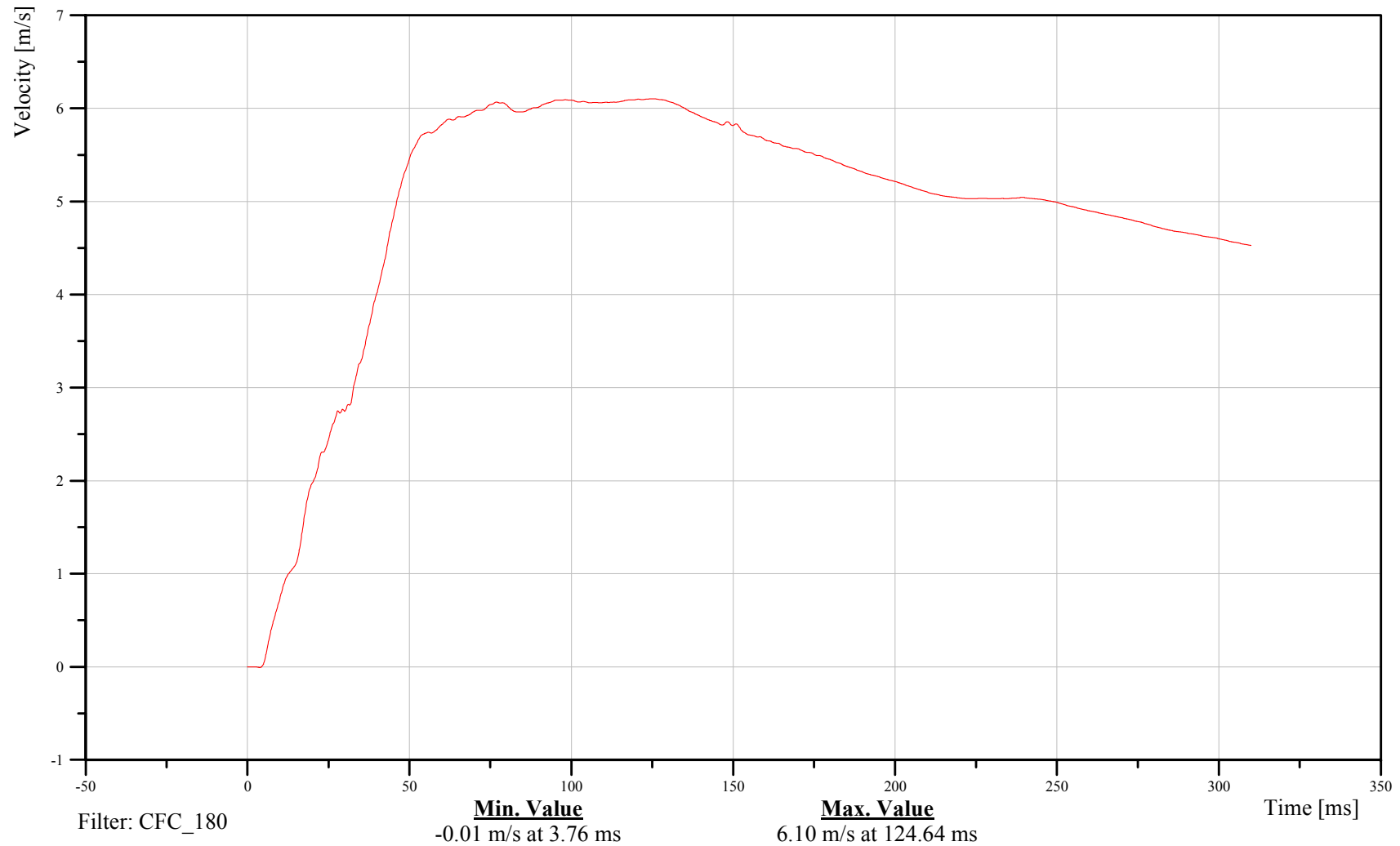
Right Side Sill at Front Seat Y-Axis Velocity

Customer: VRTC

16SILBFR0000VEYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005

Time: 11:12

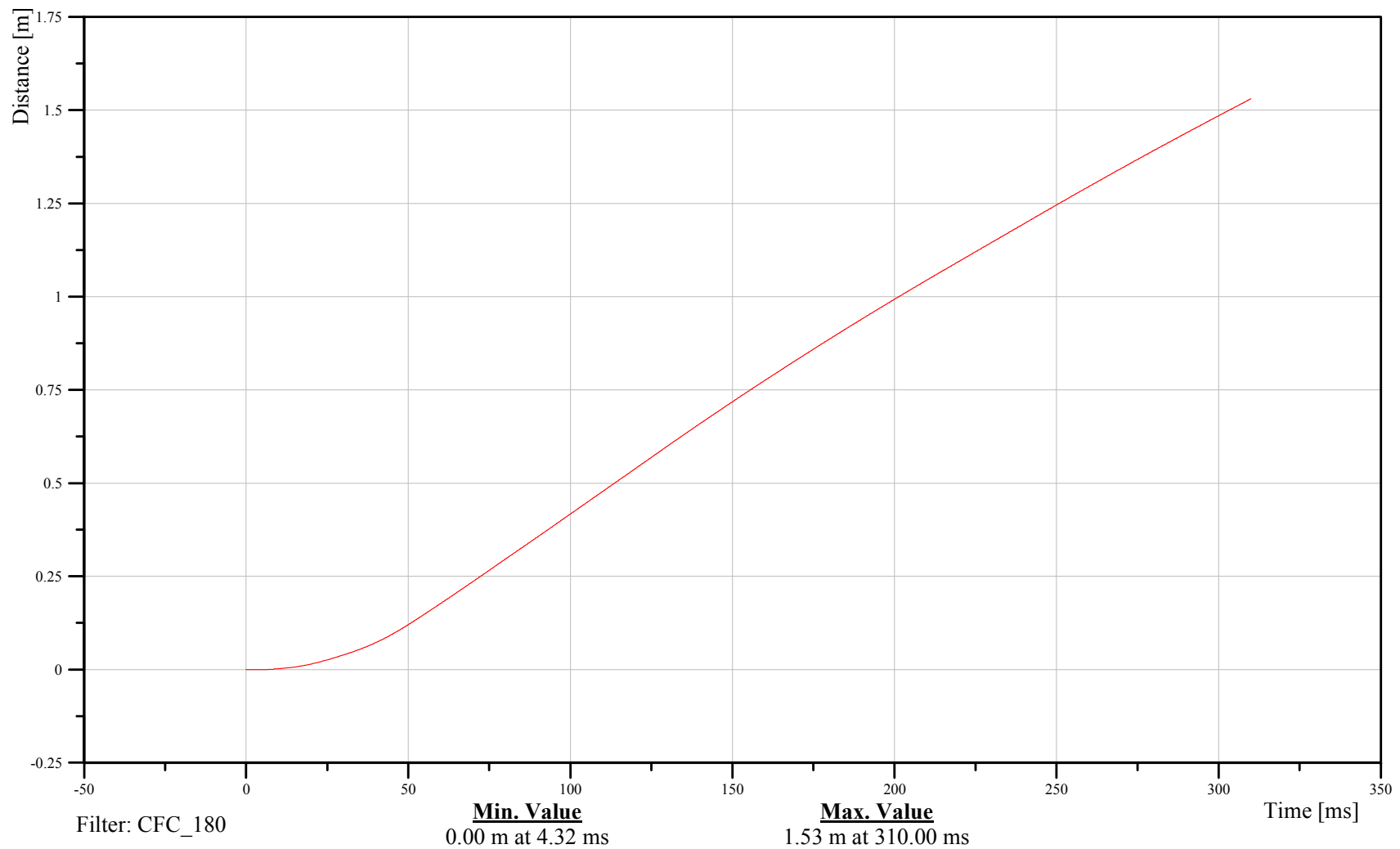
Right Side Sill at Front Seat Y-Axis Displacement

Customer: VRTC

16SILBFR0000DCYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

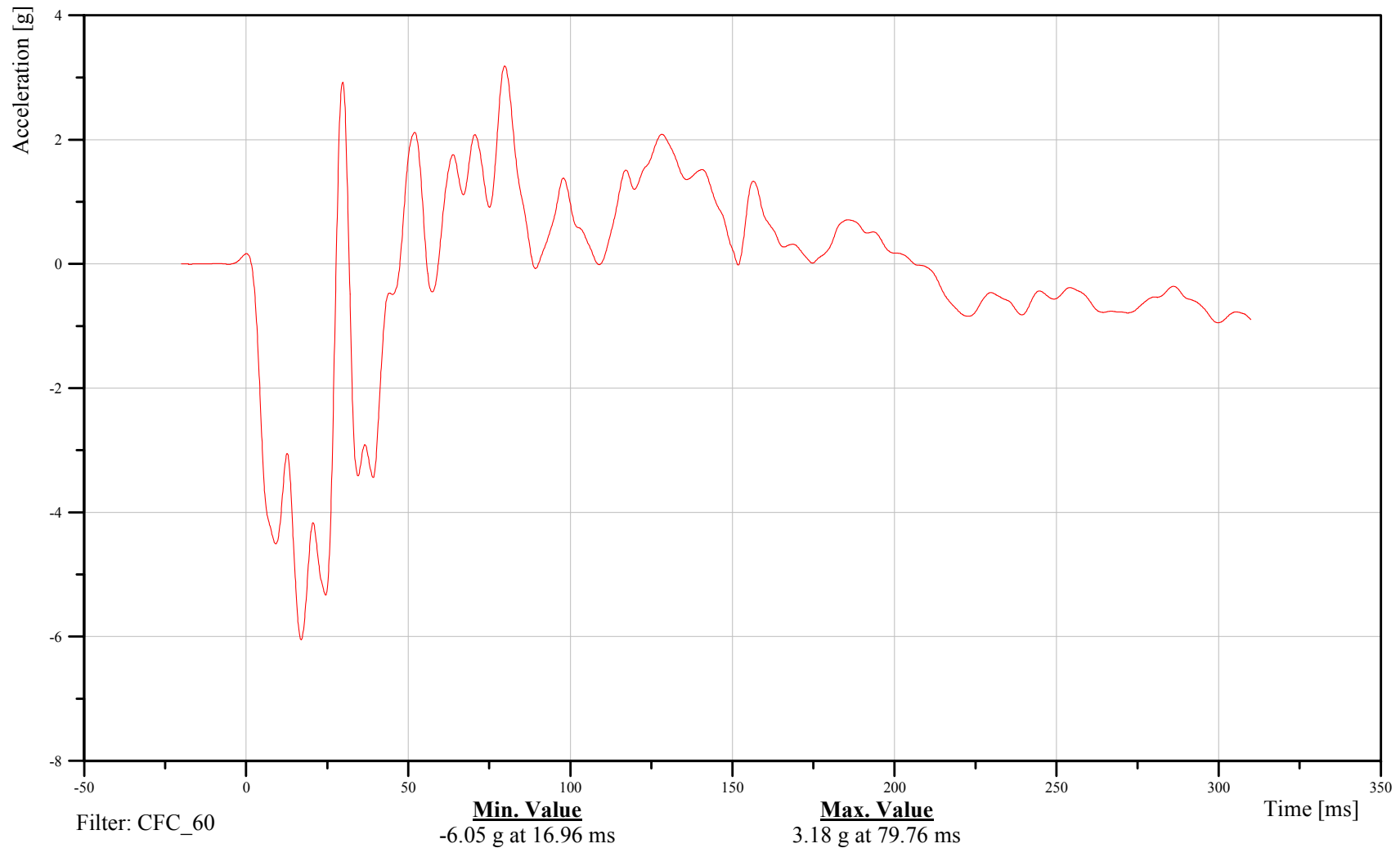
Right Side Sill at Front Seat Z-Axis Acceleration

Customer: VRTC

16SILBFR0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005

Time: 11:12

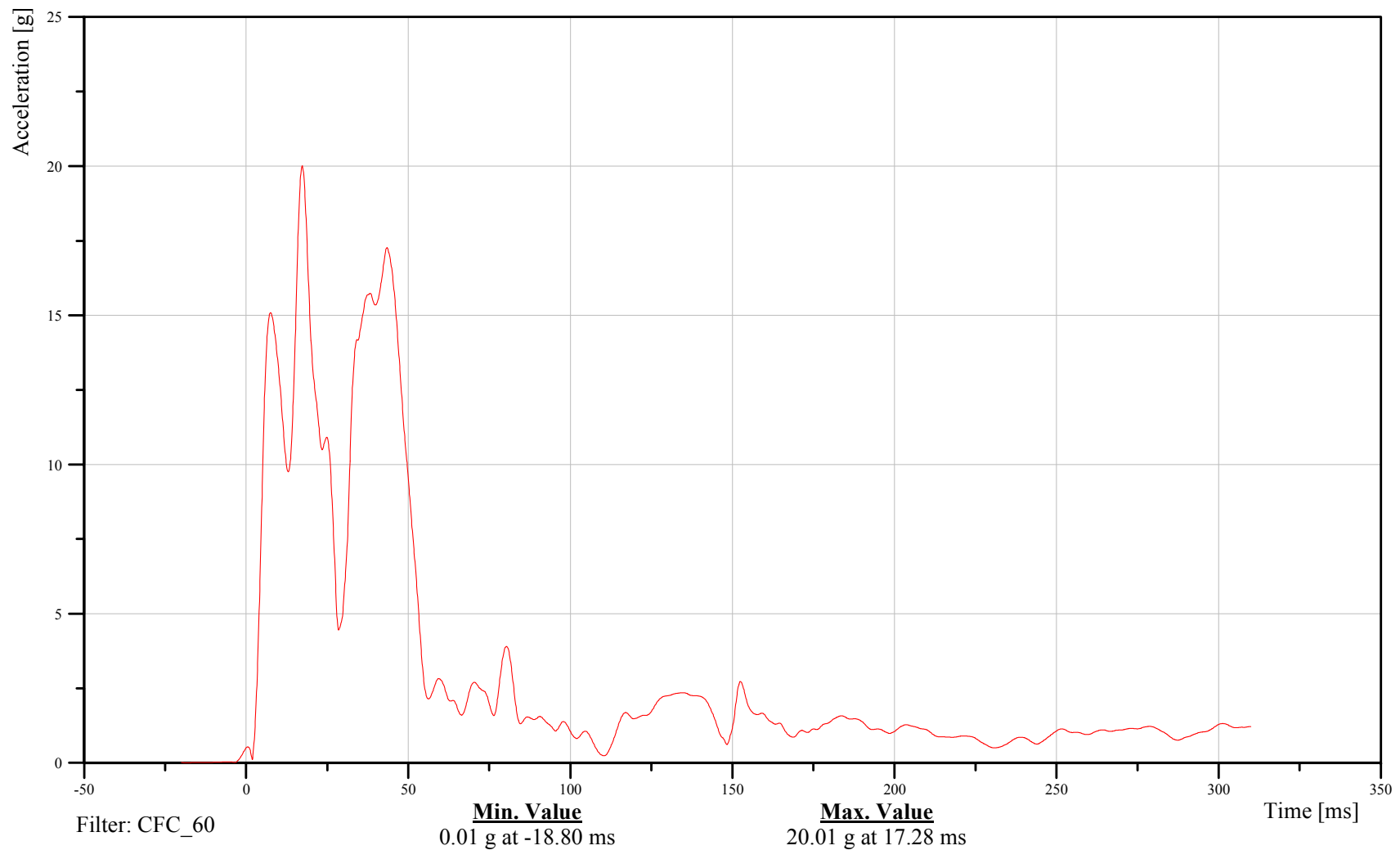
Right Side Sill at Front Seat Resultant Acceleration

Customer: VRTC

16SILBFR0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Right Side Sill at Rear Seat X-Axis Acceleration

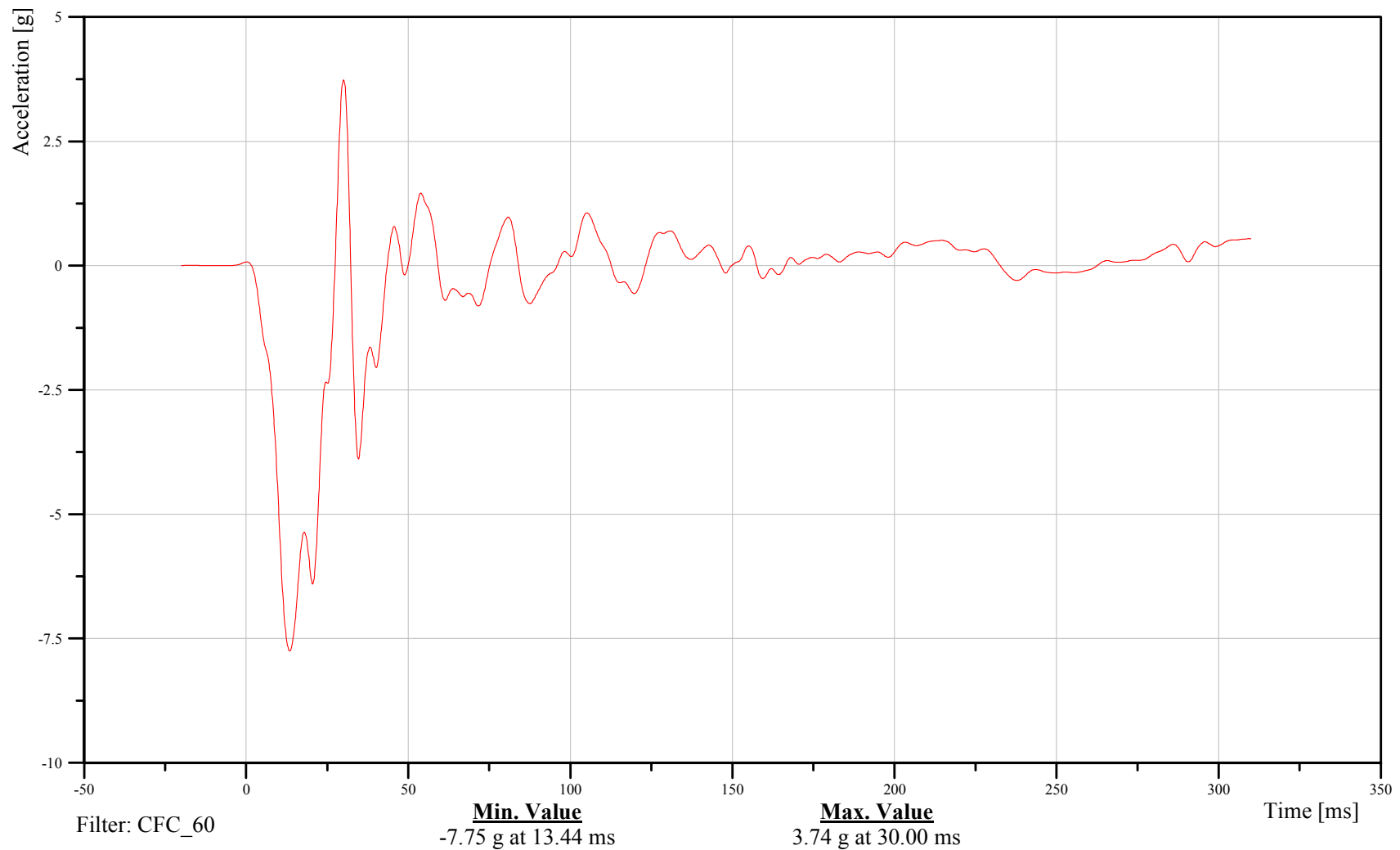
Date: 09/16/2005
Time: 11:12

Customer: VRTC

16SILBRE0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Right Side Sill at Rear Seat Y-Axis Acceleration

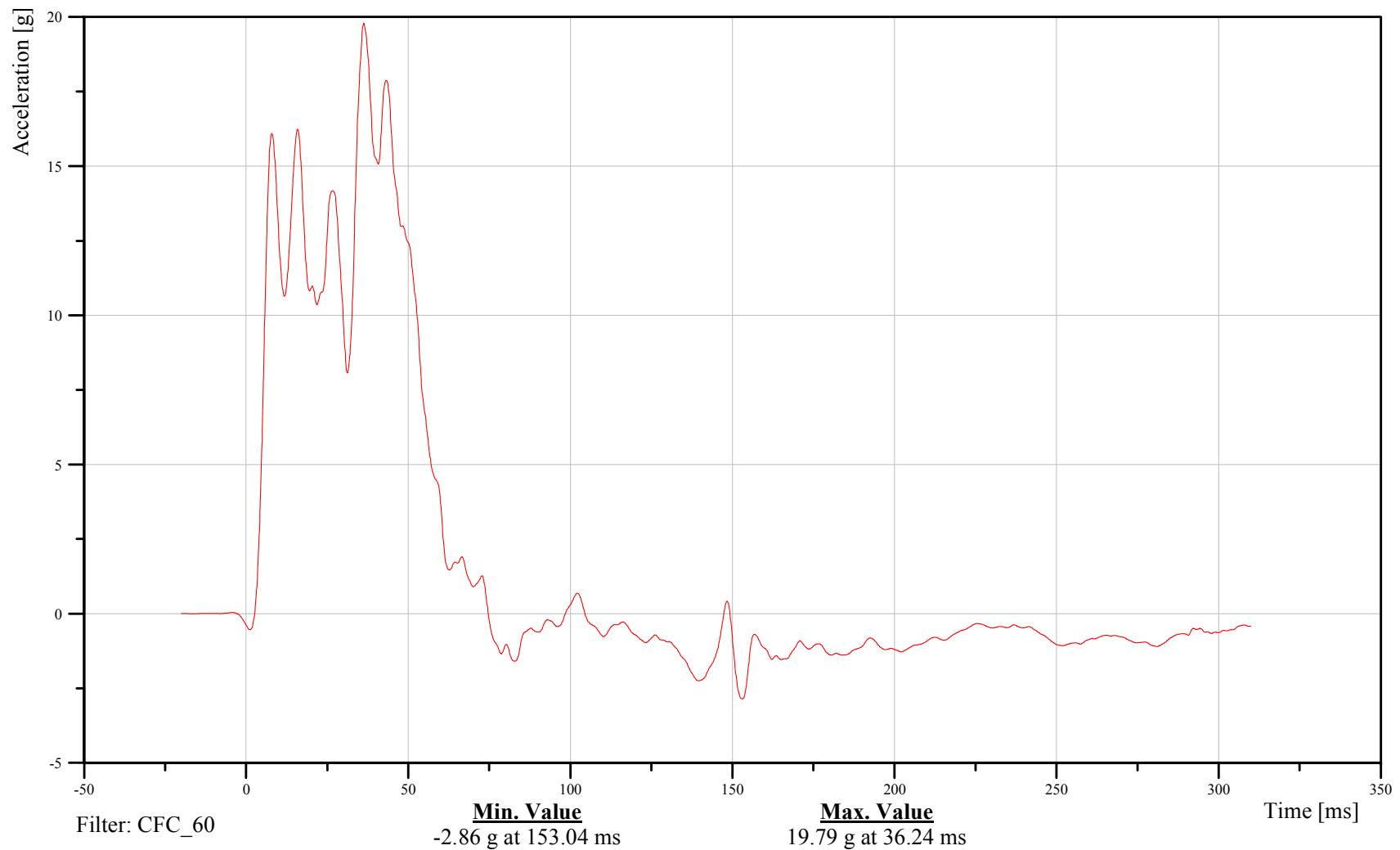
Date: 09/16/2005
Time: 11:12

Customer: VRTC

16SILBRE0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Right Side Sill at Rear Seat Y-Axis Velocity

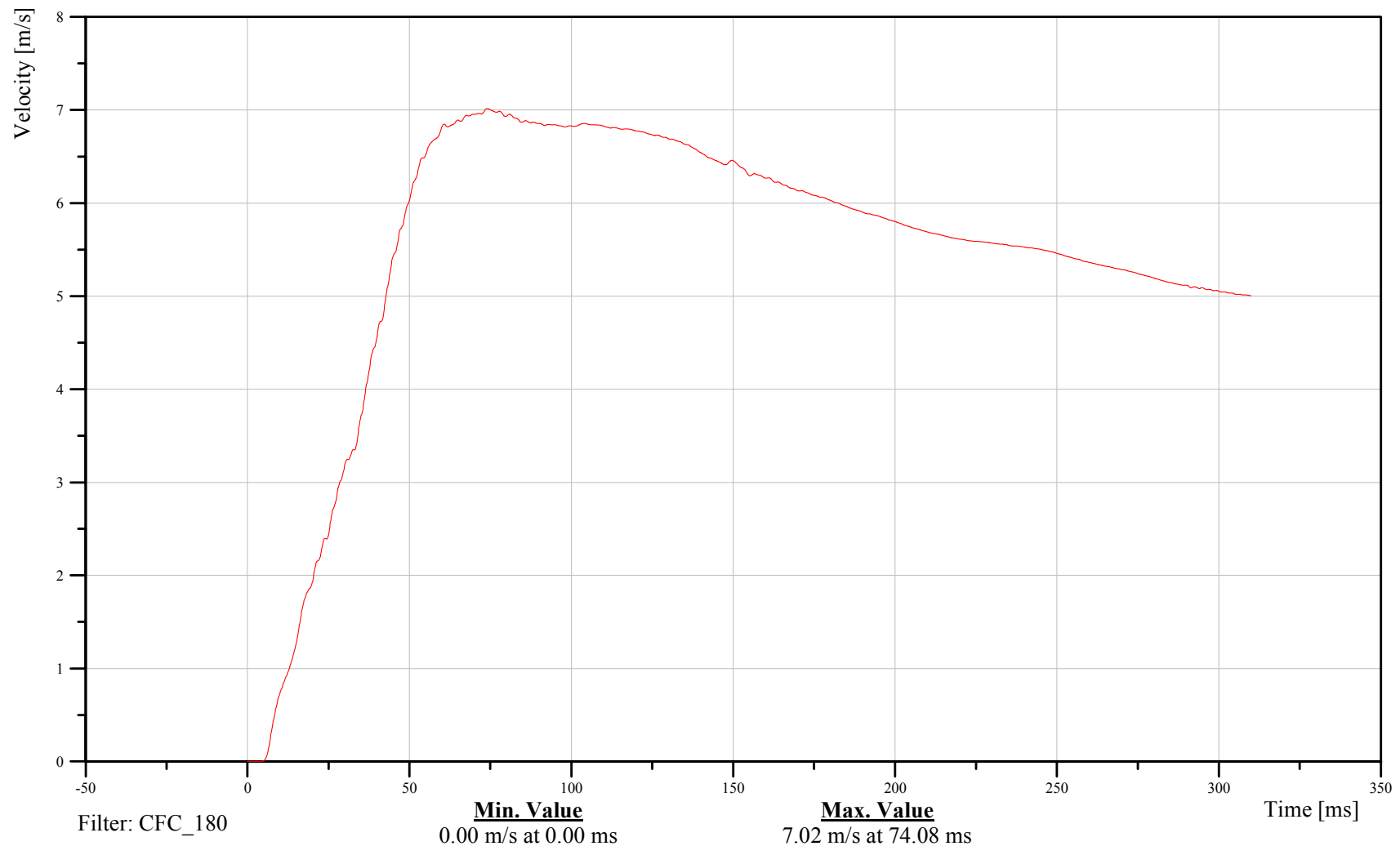
Date: 09/16/2005
Time: 11:12

Customer: VRTC

16SILBRE0000VEYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Right Side Sill at Rear Seat Y-Axis Displacement

Date: 09/16/2005

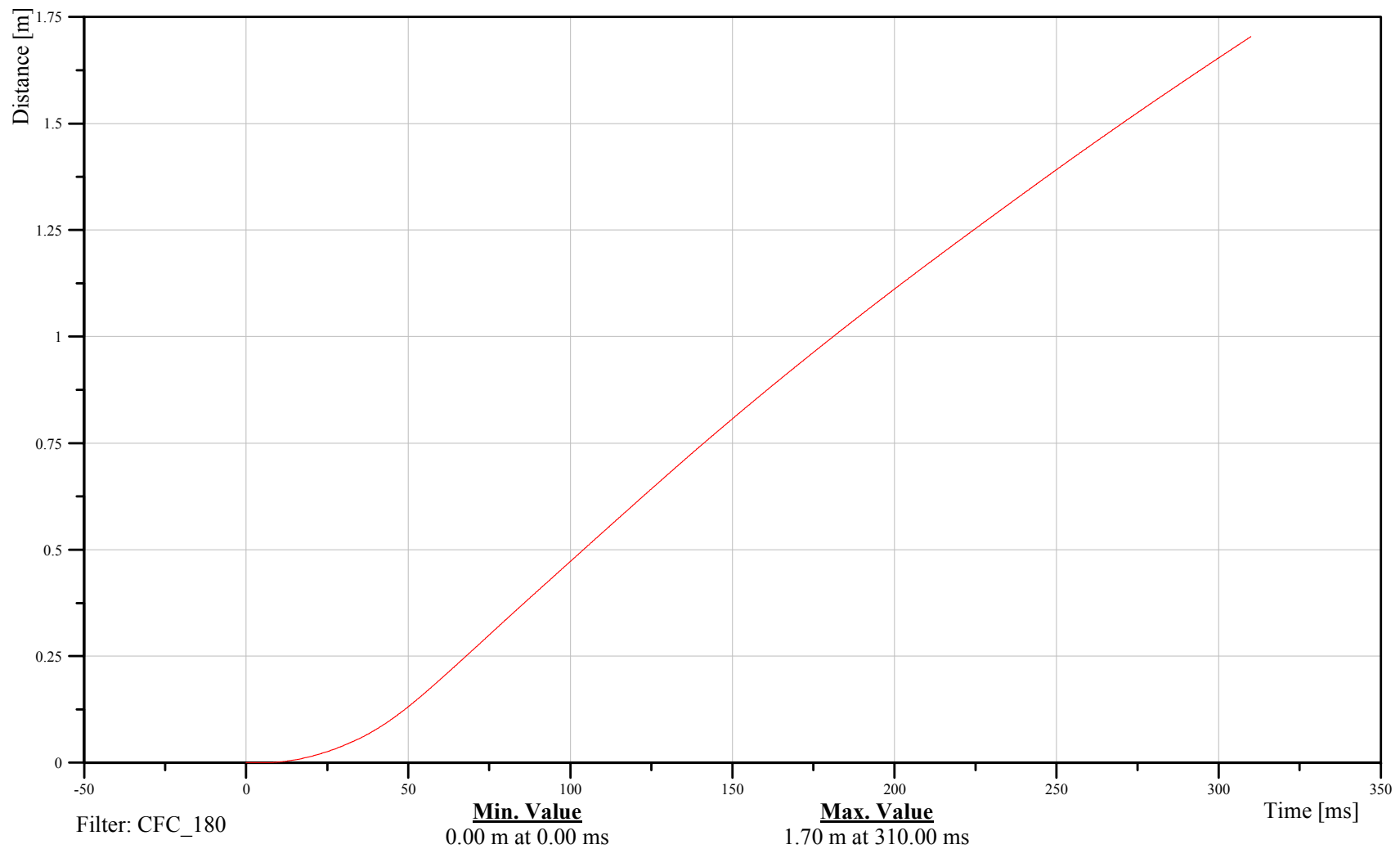
Time: 11:12

Customer: VRTC

16SILBRE0000DCYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005

Time: 11:12

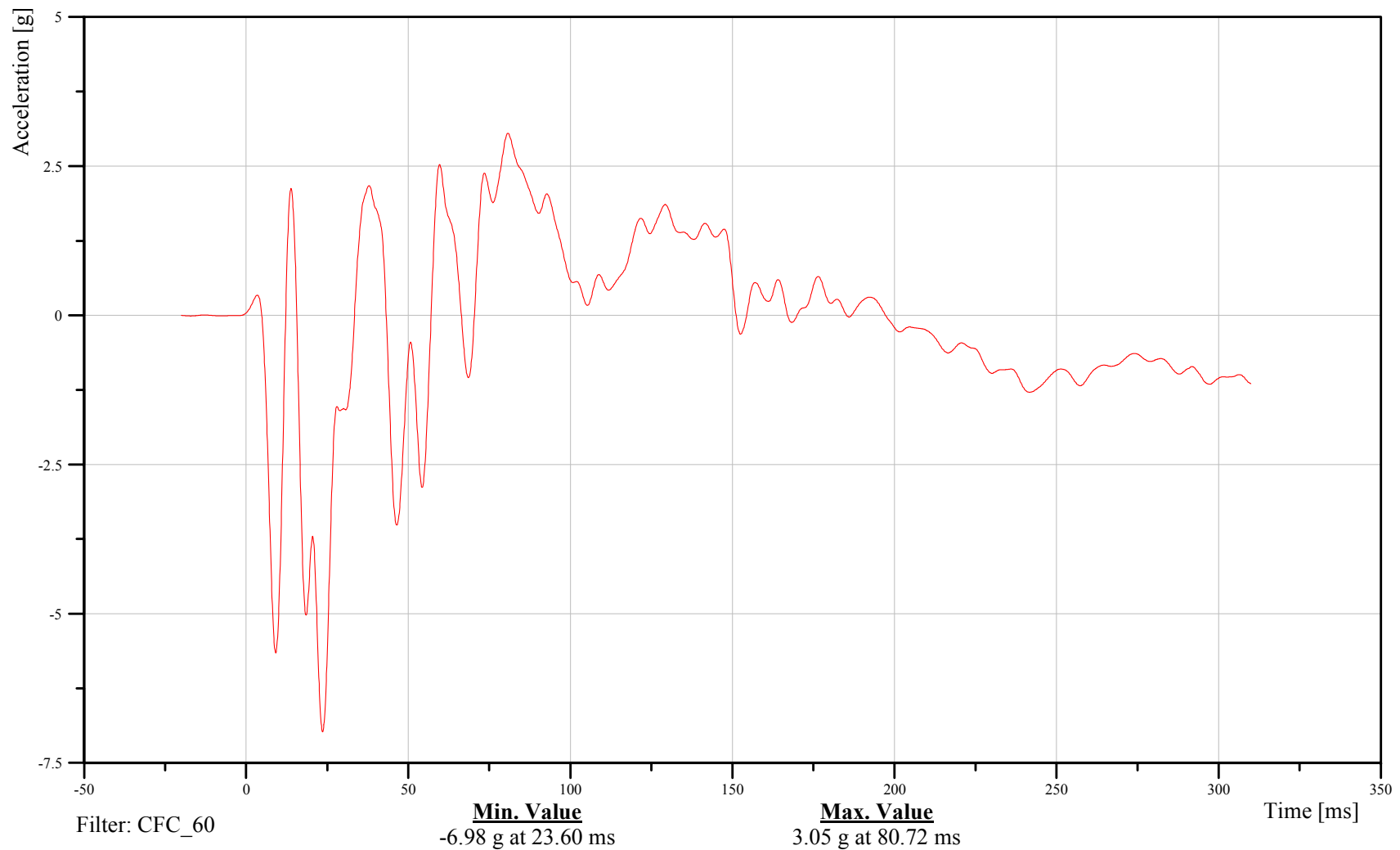
Right Side Sill at Rear Seat Z-Axis Acceleration

Customer: VRTC

16SILBRE0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

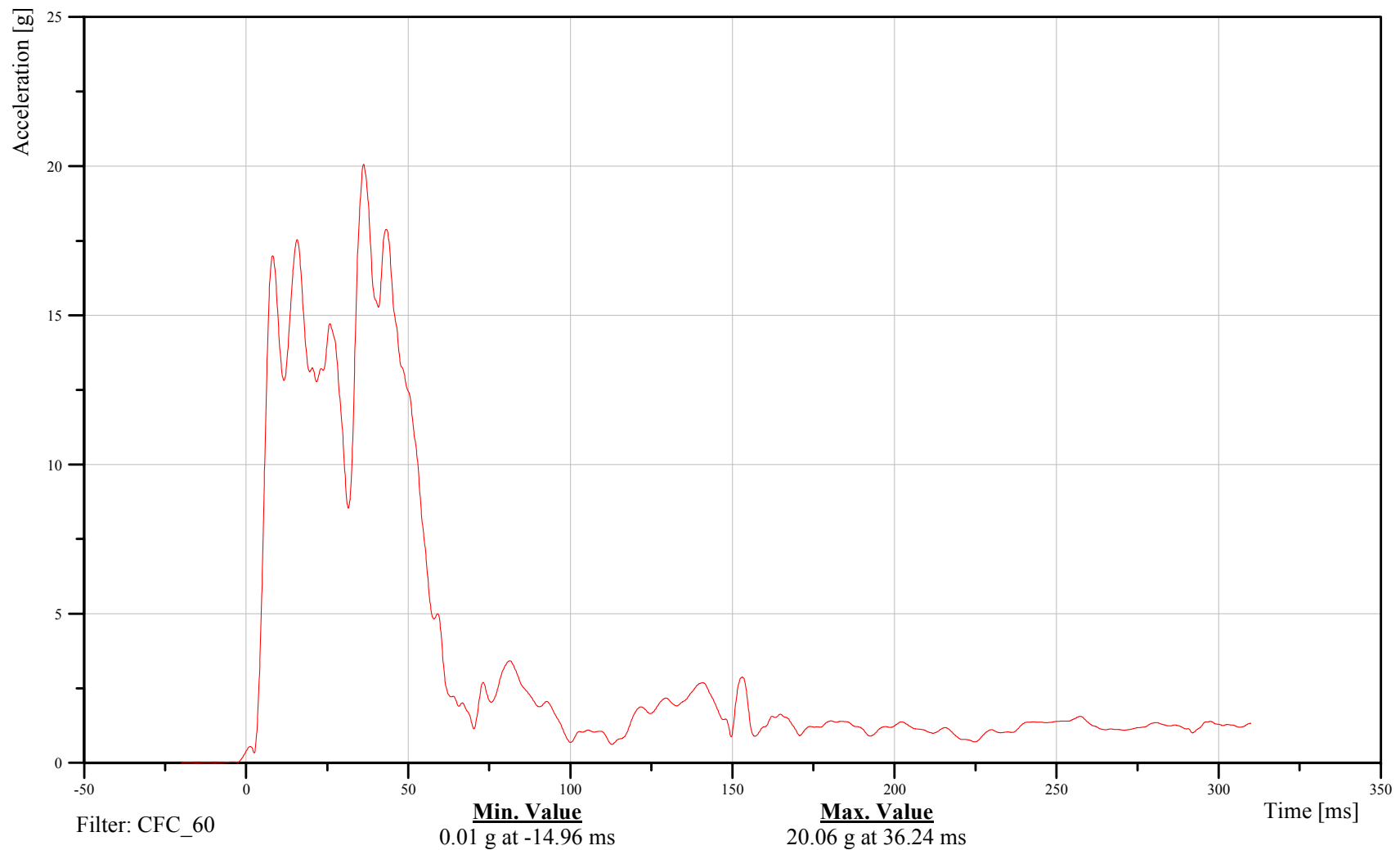
Right Side Sill at Rear Seat Resultant Acceleration

Customer: VRTC

16SILBRE0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

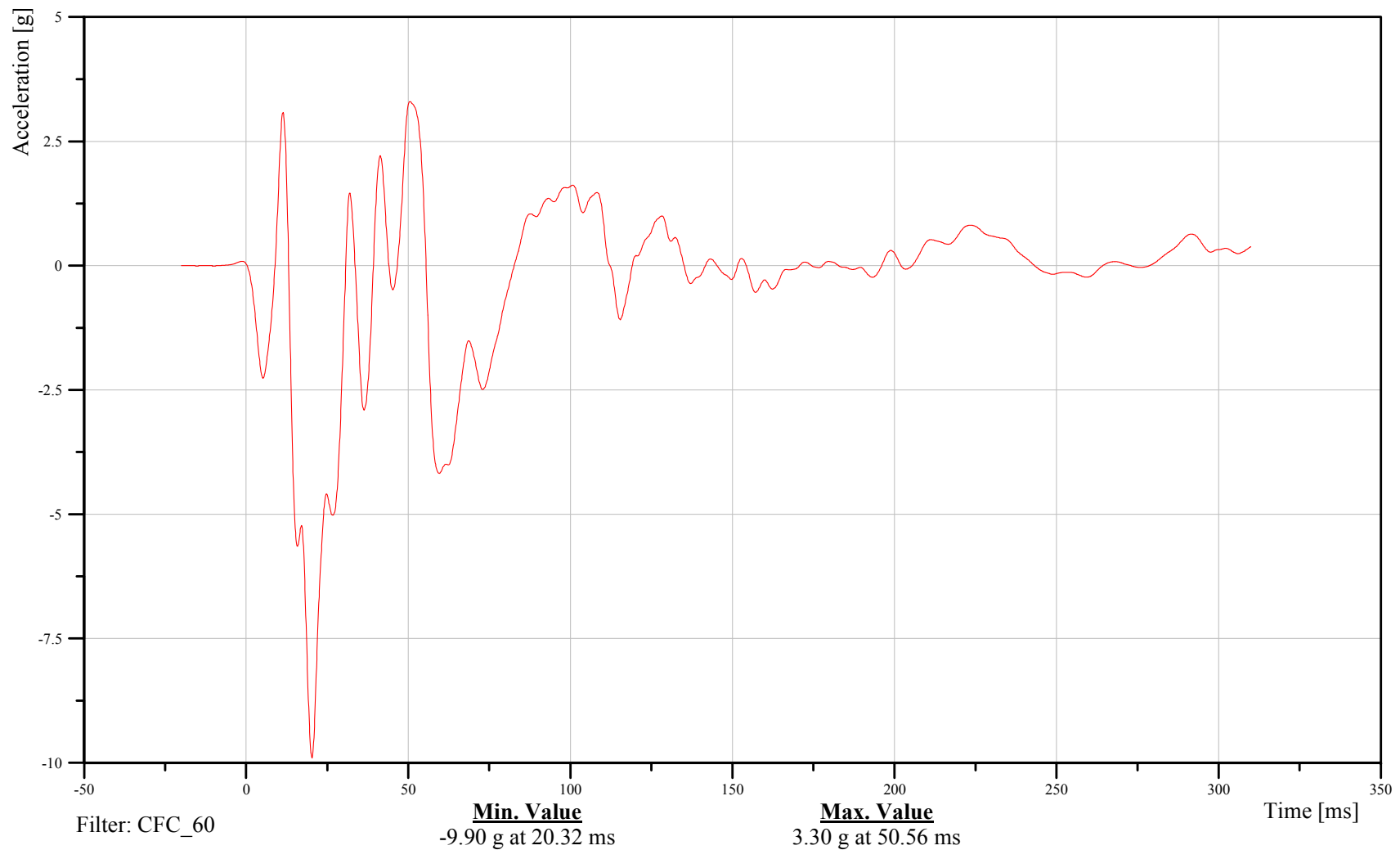
Rear Floorpan Above Axle X-Axis Acceleration

Customer: VRTC

18FORA000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

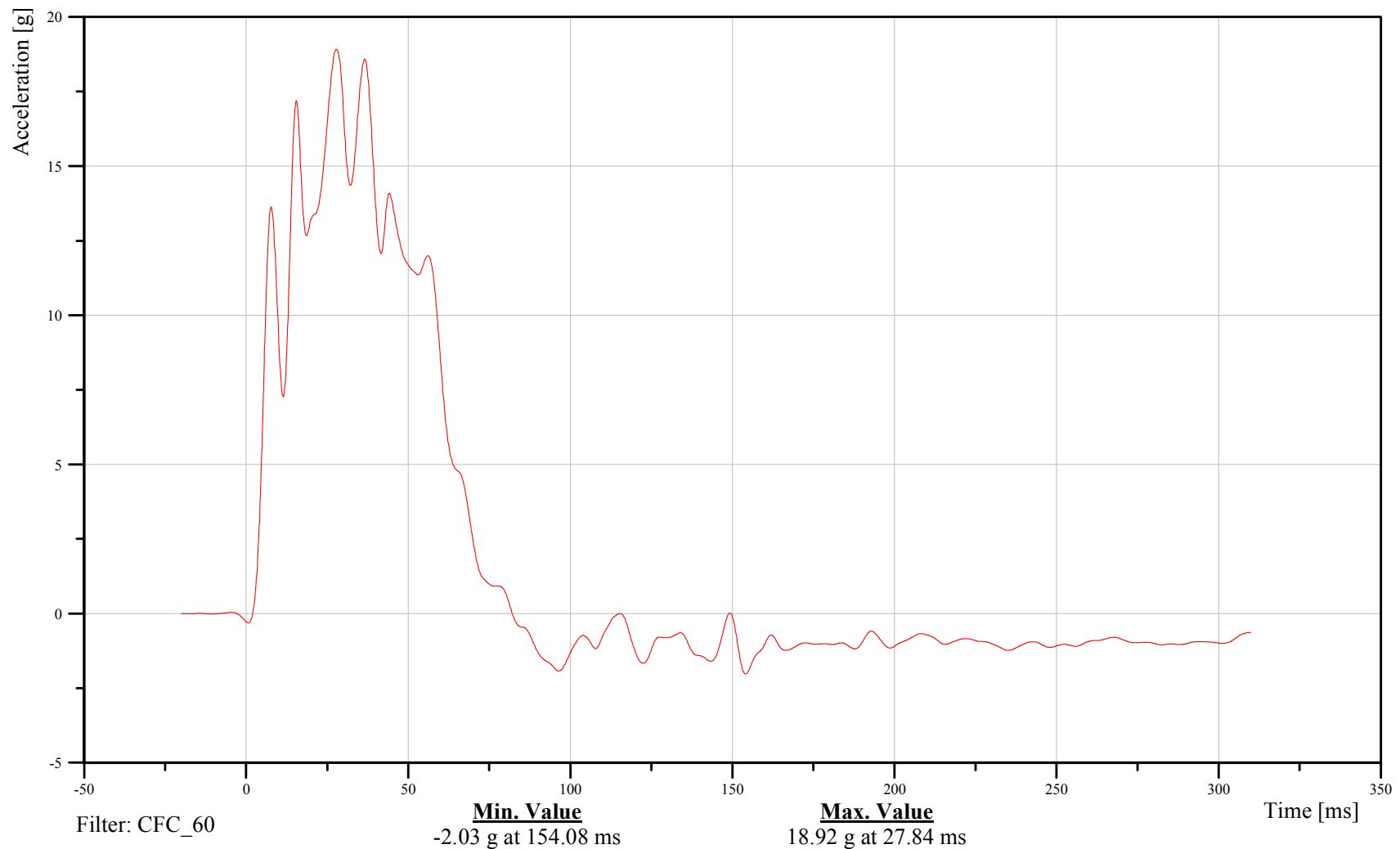
Rear Floorpan Above Axle Y-Axis Acceleration

Customer: VRTC

18FORA000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Rear Floorpan Above Axle Z-Axis Acceleration

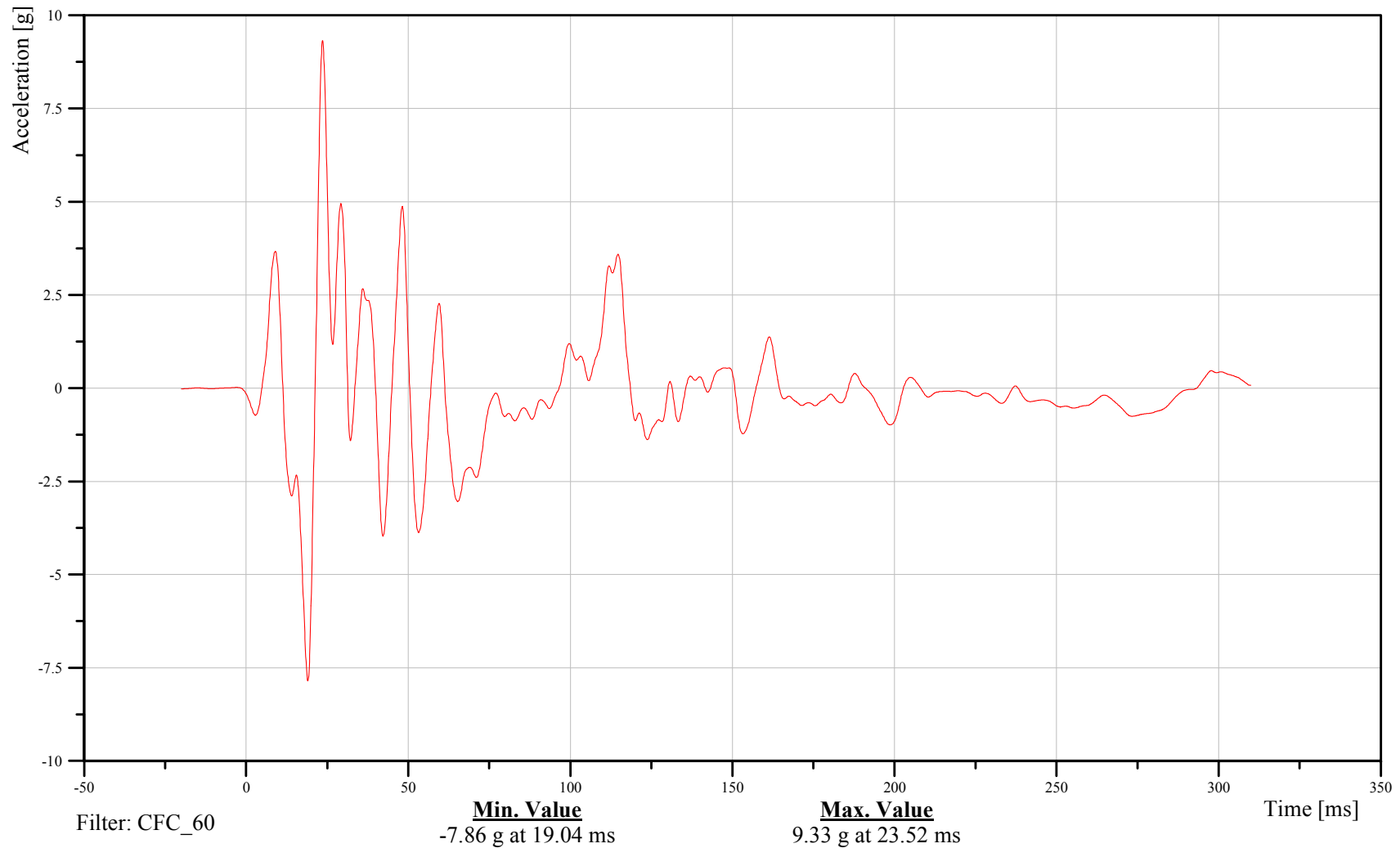
Date: 09/16/2005
Time: 11:12

Customer: VRTC

18FORA000000ACZD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

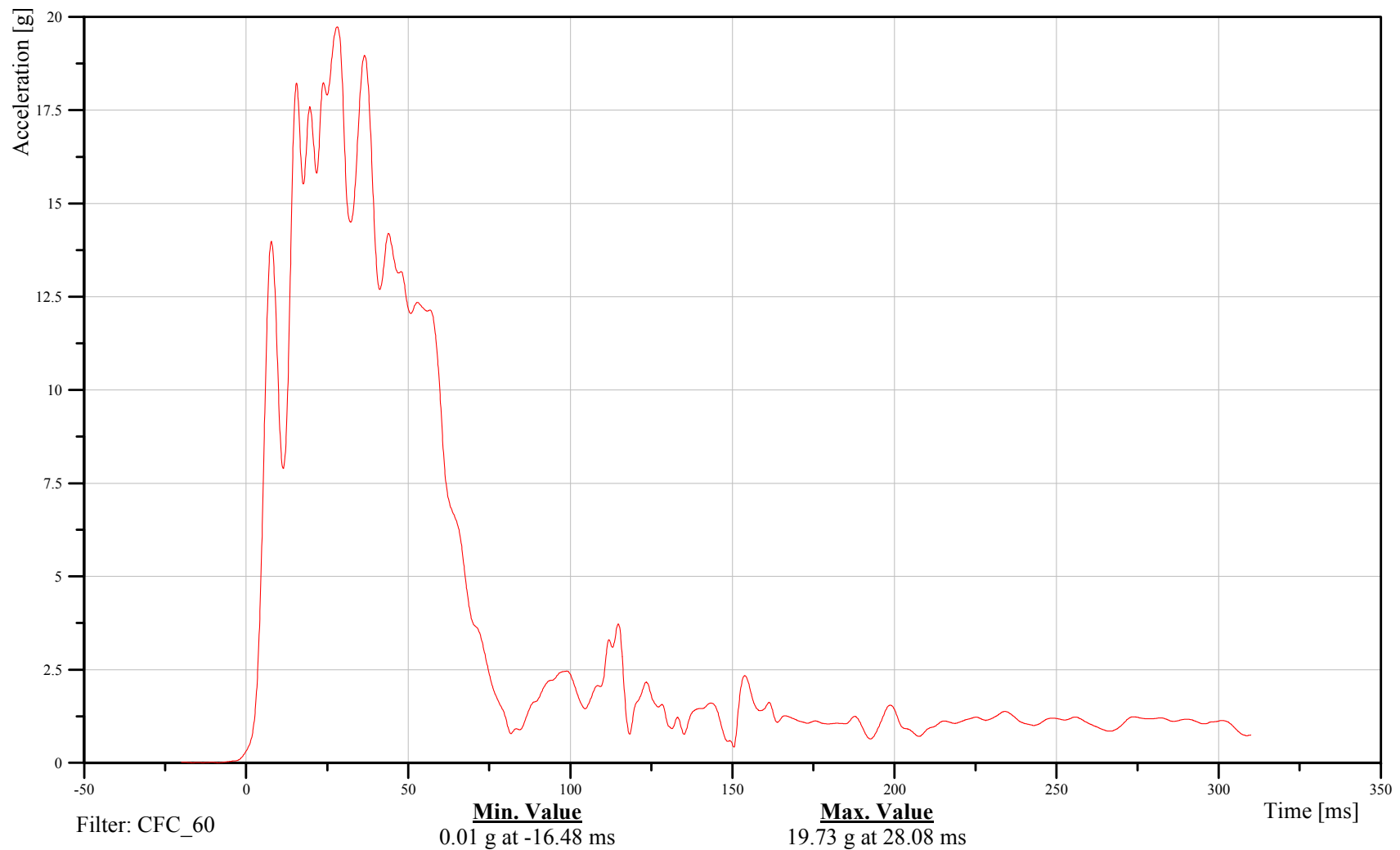
Rear Floorpan Above Axle Resultant Acceleration

Customer: VRTC

18FORA000000ACRD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

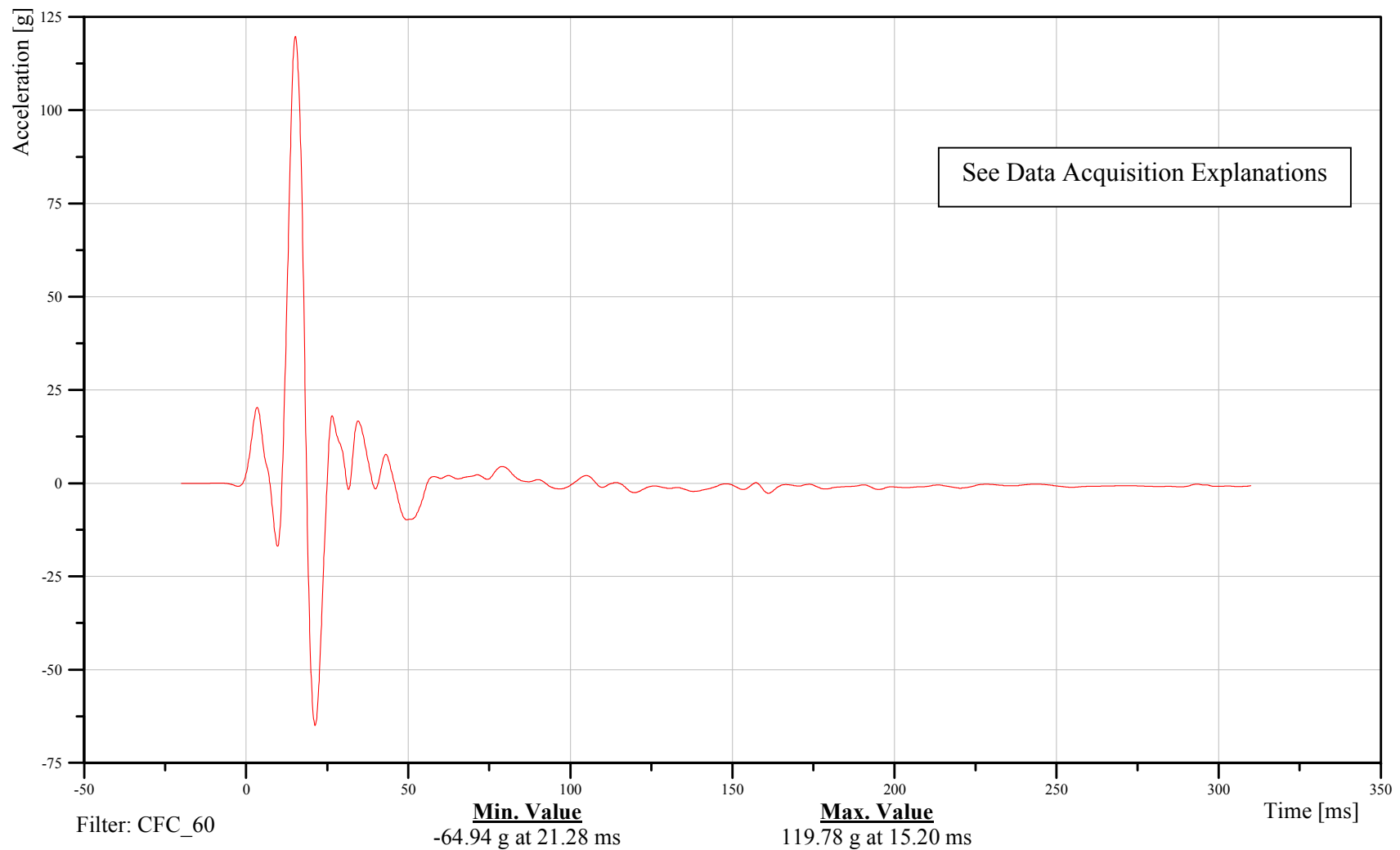
Left Side Sill at Rear Seat Y-Axis Acceleration

Customer: VRTC

14SILBRE0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Left Side Sill at Front Seat Y-Axis Acceleration

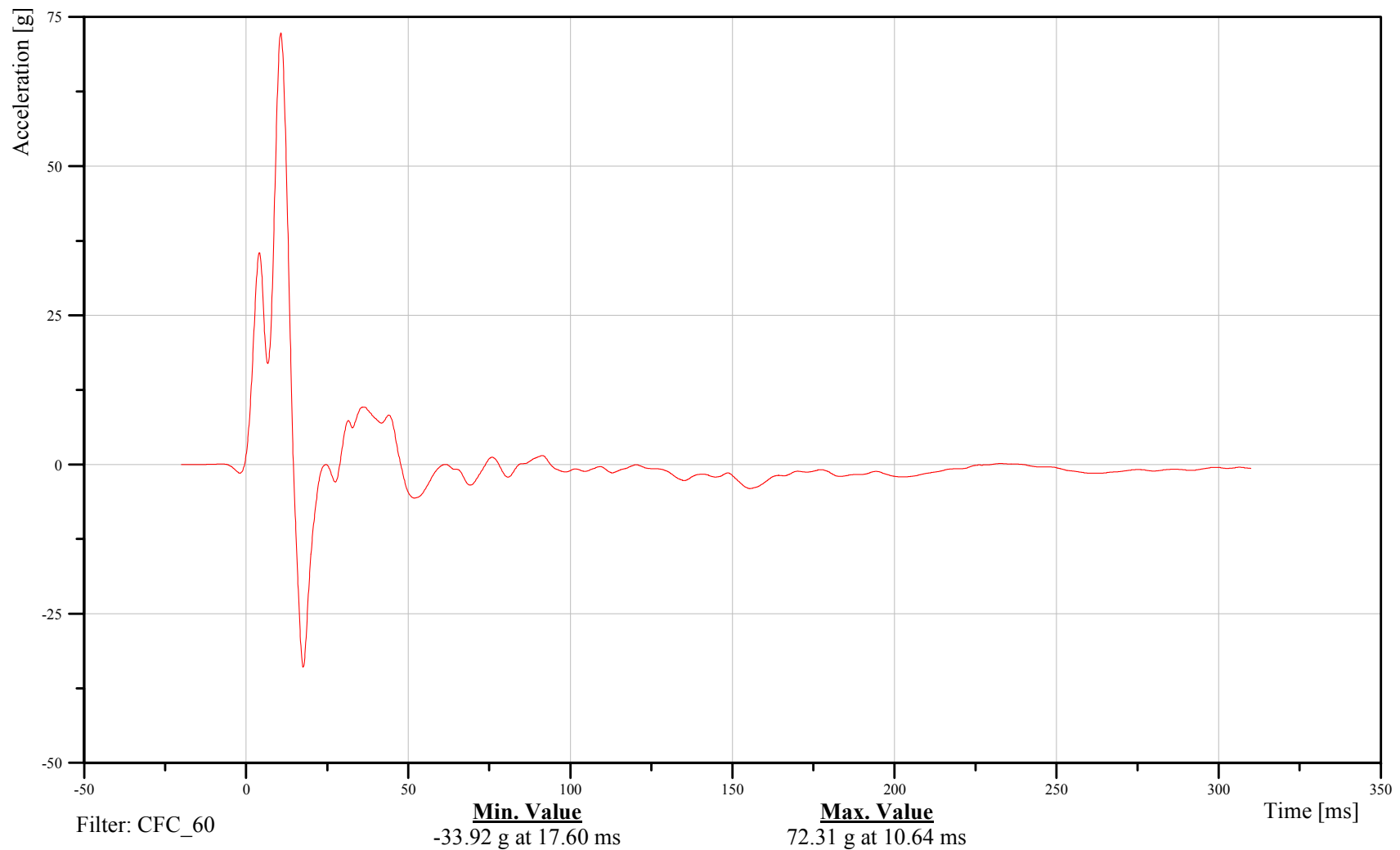
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14SILBFR0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005

Time: 11:12

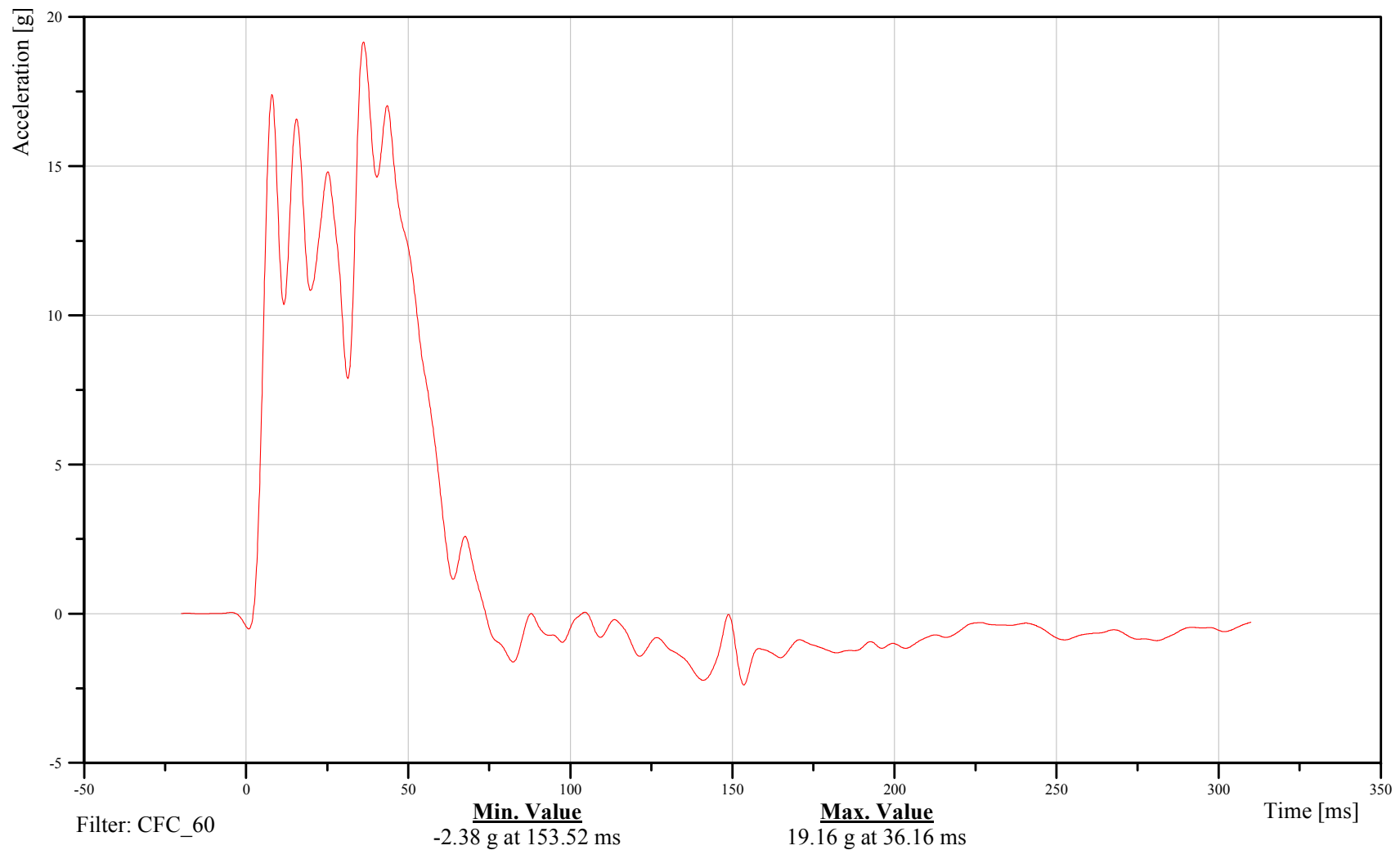
Right Rear Occupant Compartment Y-Axis Acceleration

Customer: VRTC

16VEHCRE0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Left Lower B-Post Y-Axis Acceleration

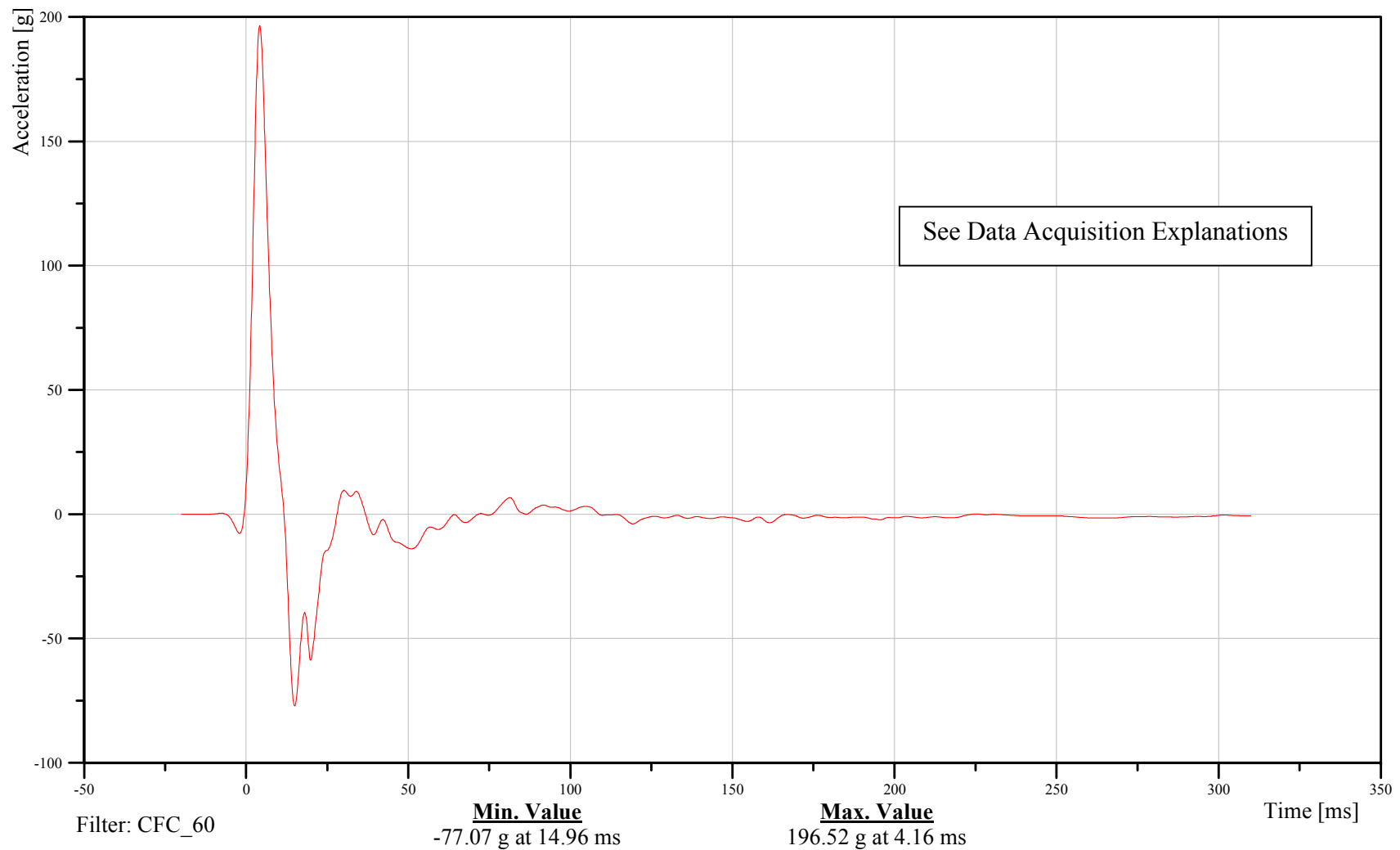
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14BPILLO0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

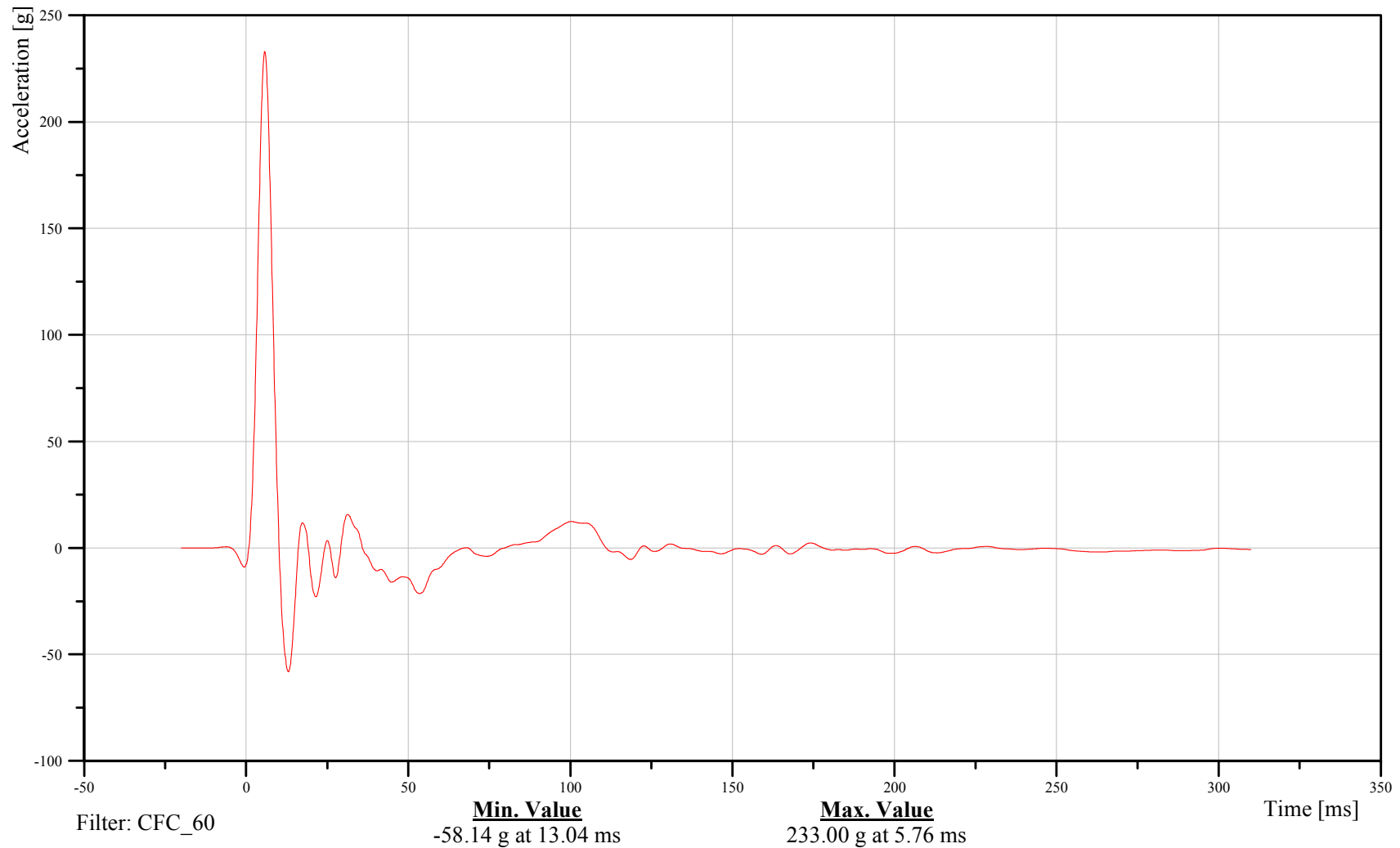
Left Middle B-Post Y-Axis Acceleration

Customer: VRTC

14BPILMI0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

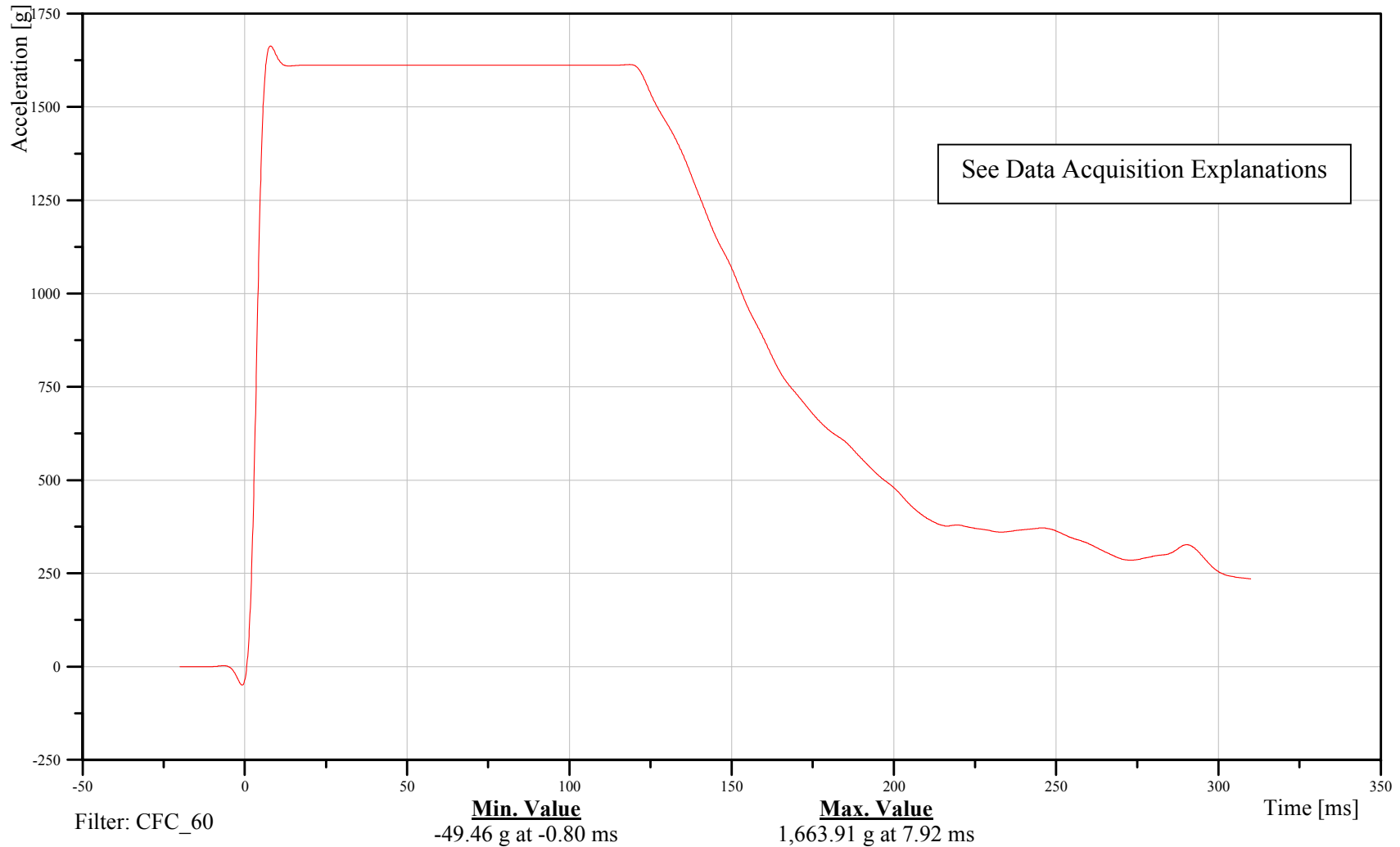
Left Lower A-Post Y-Axis Acceleration

Customer: VRTC

11APILO0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

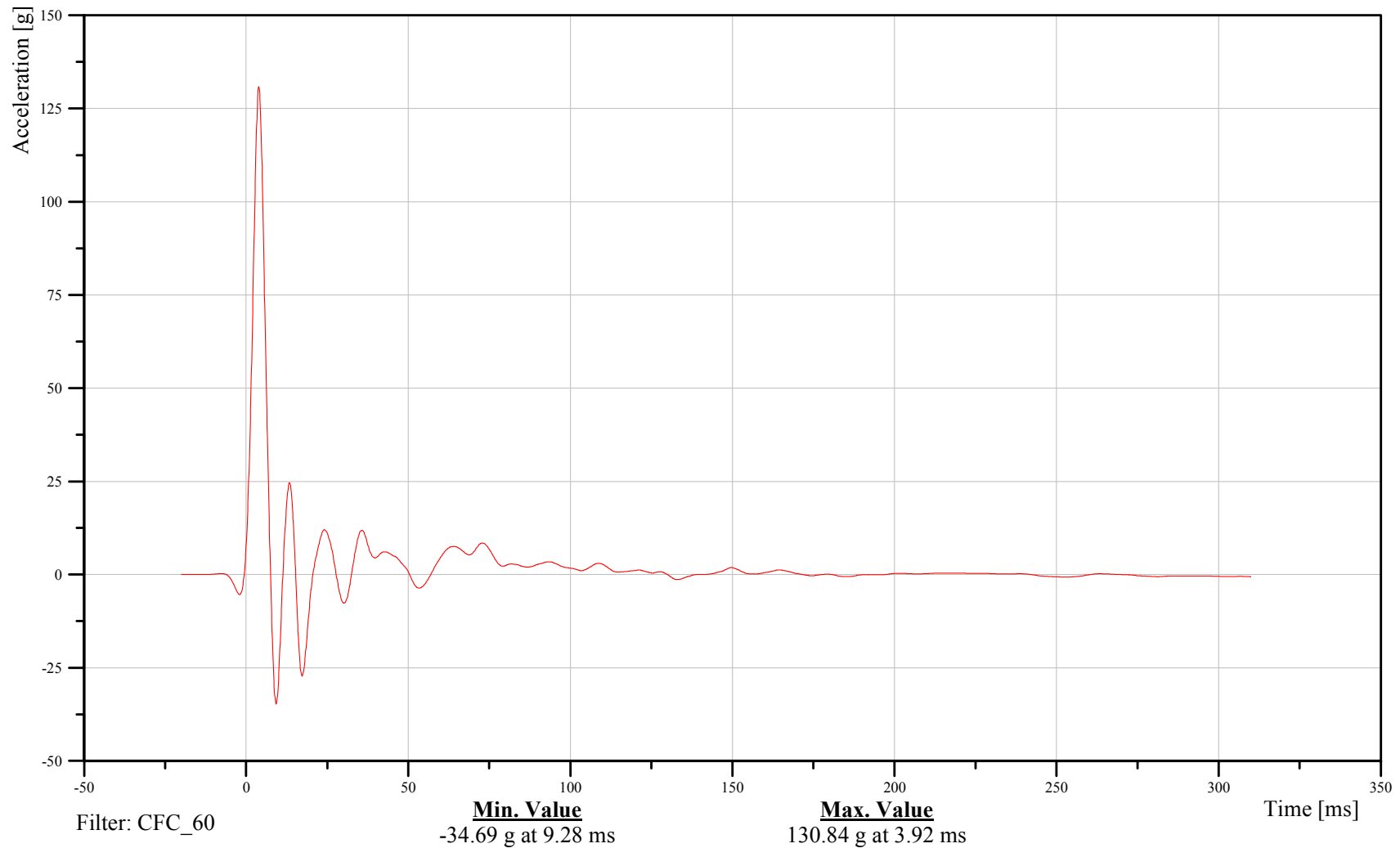
Left Middle A-Post Y-Axis Acceleration

Customer: VRTC

11APILMI0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

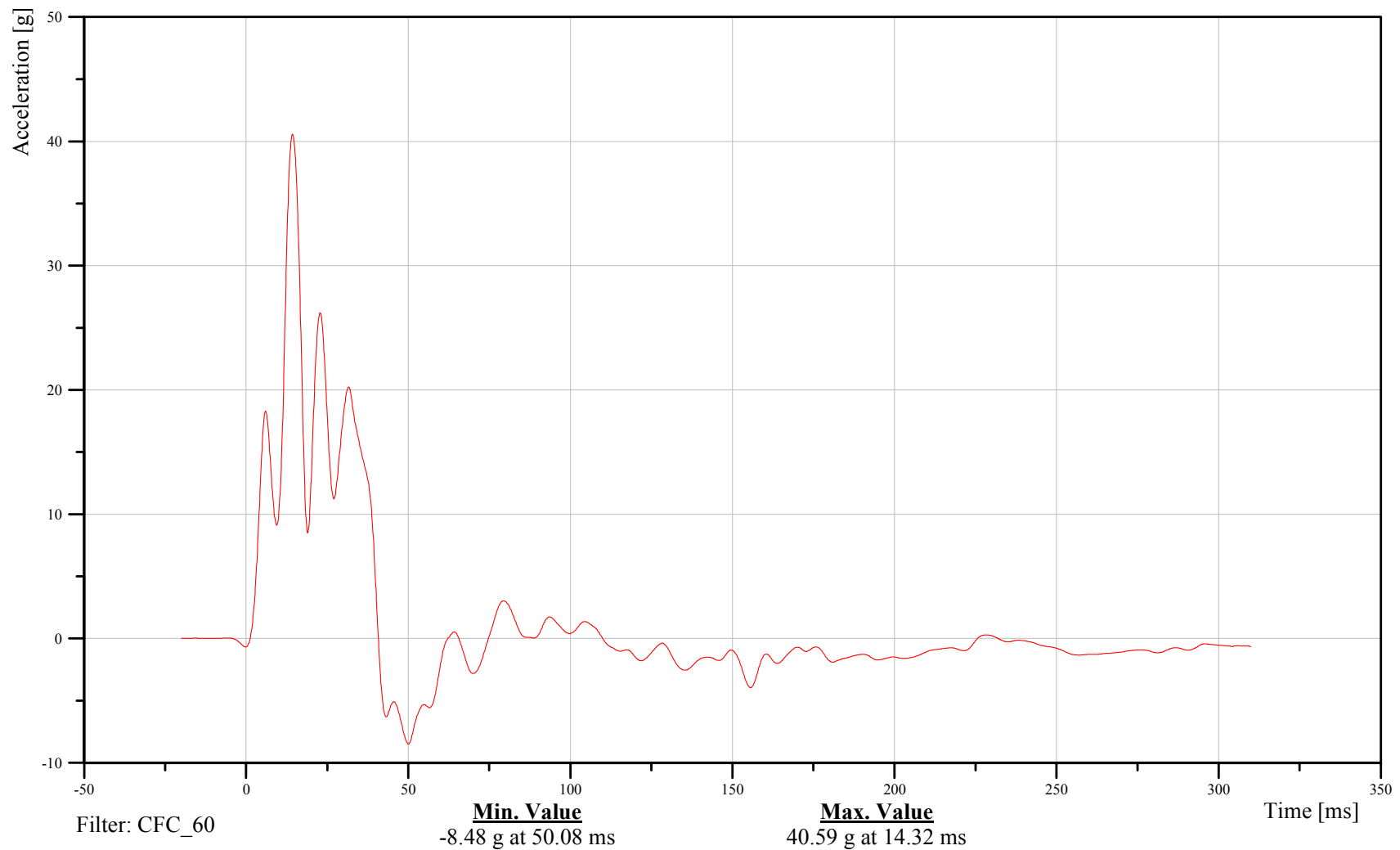
Left Front Seat Track Y-Axis Acceleration

Customer: VRTC

11SETRFR0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Left Rear Seat Track Y-Axis Acceleration

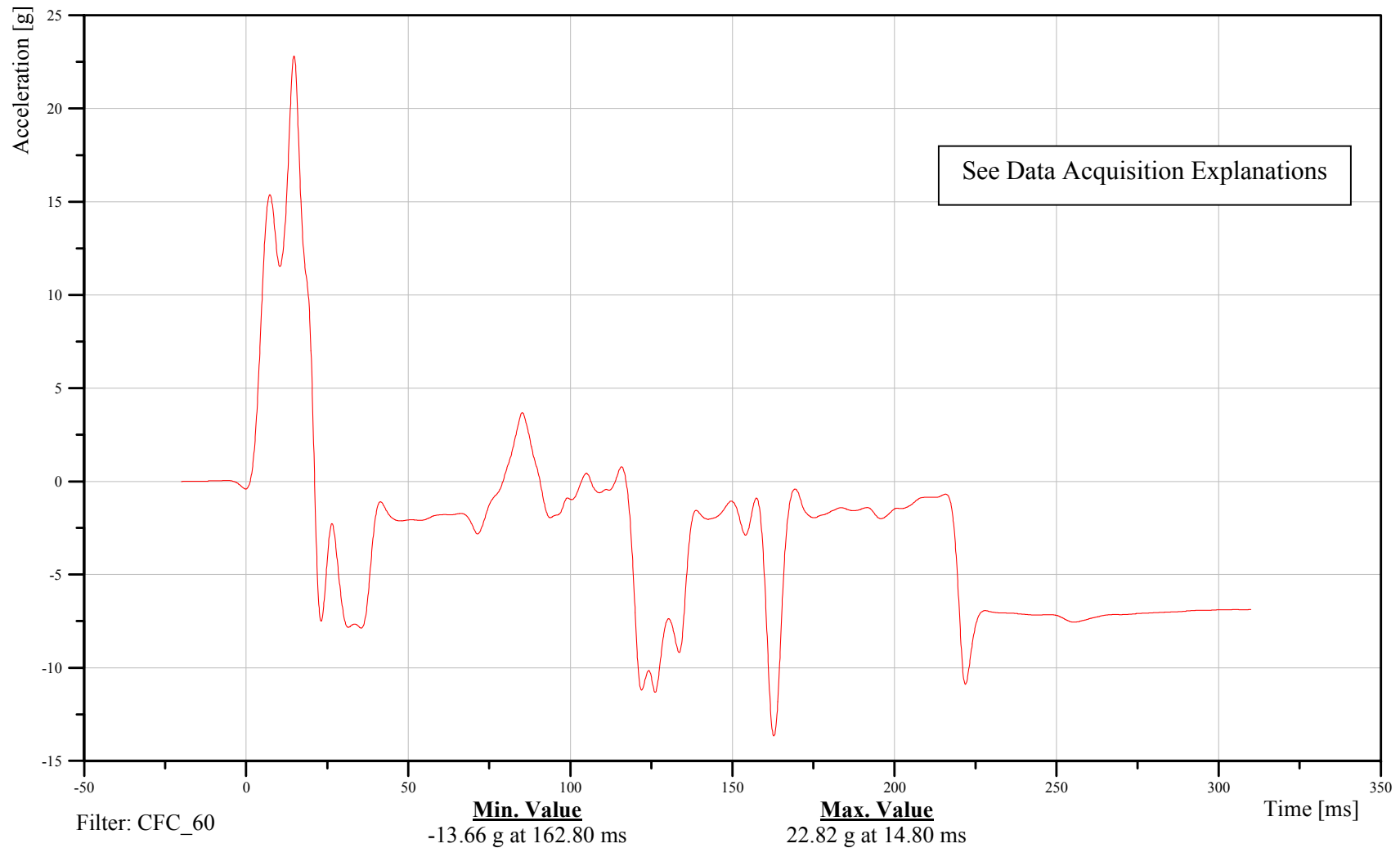
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14SETRLERE00ACYD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

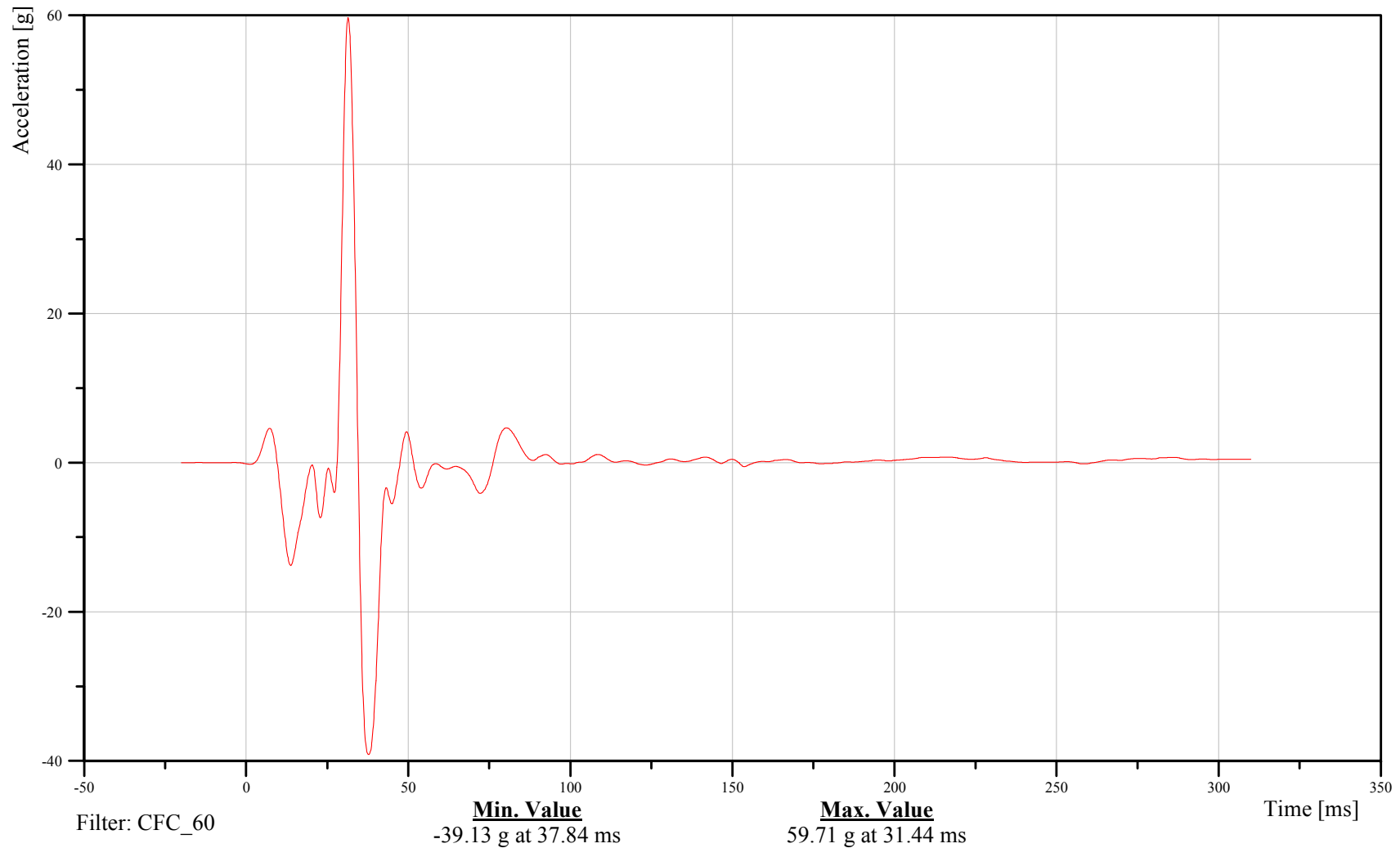
Vehicle Center of Gravity X-Axis Acceleration

Customer: VRTC

10VEHCCG0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Vehicle Center of Gravity Y-Axis Acceleration

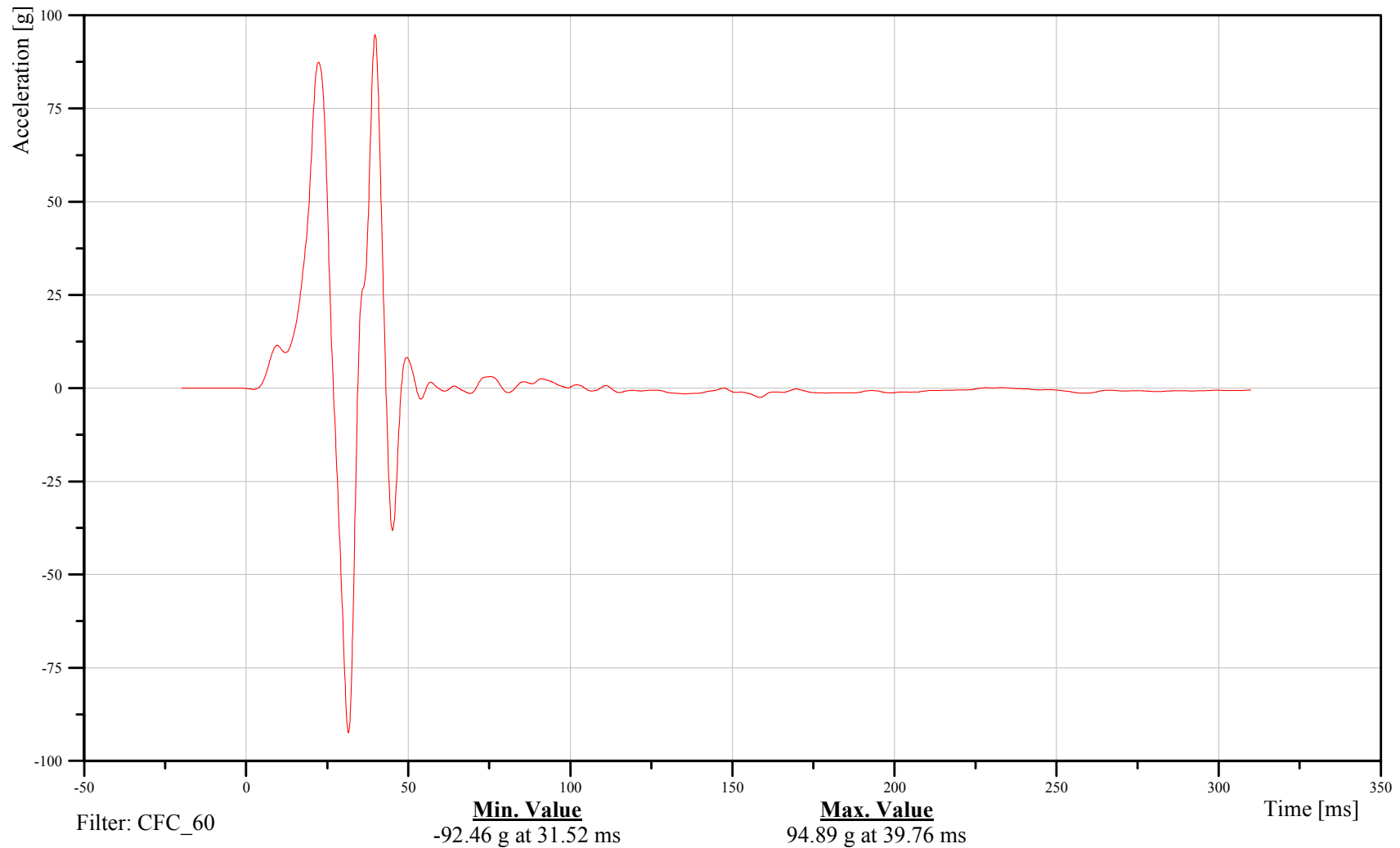
Date: 09/16/2005
Time: 11:12

Customer: VRTC

10VEHCCG0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Vehicle Center of Gravity Z-Axis Acceleration

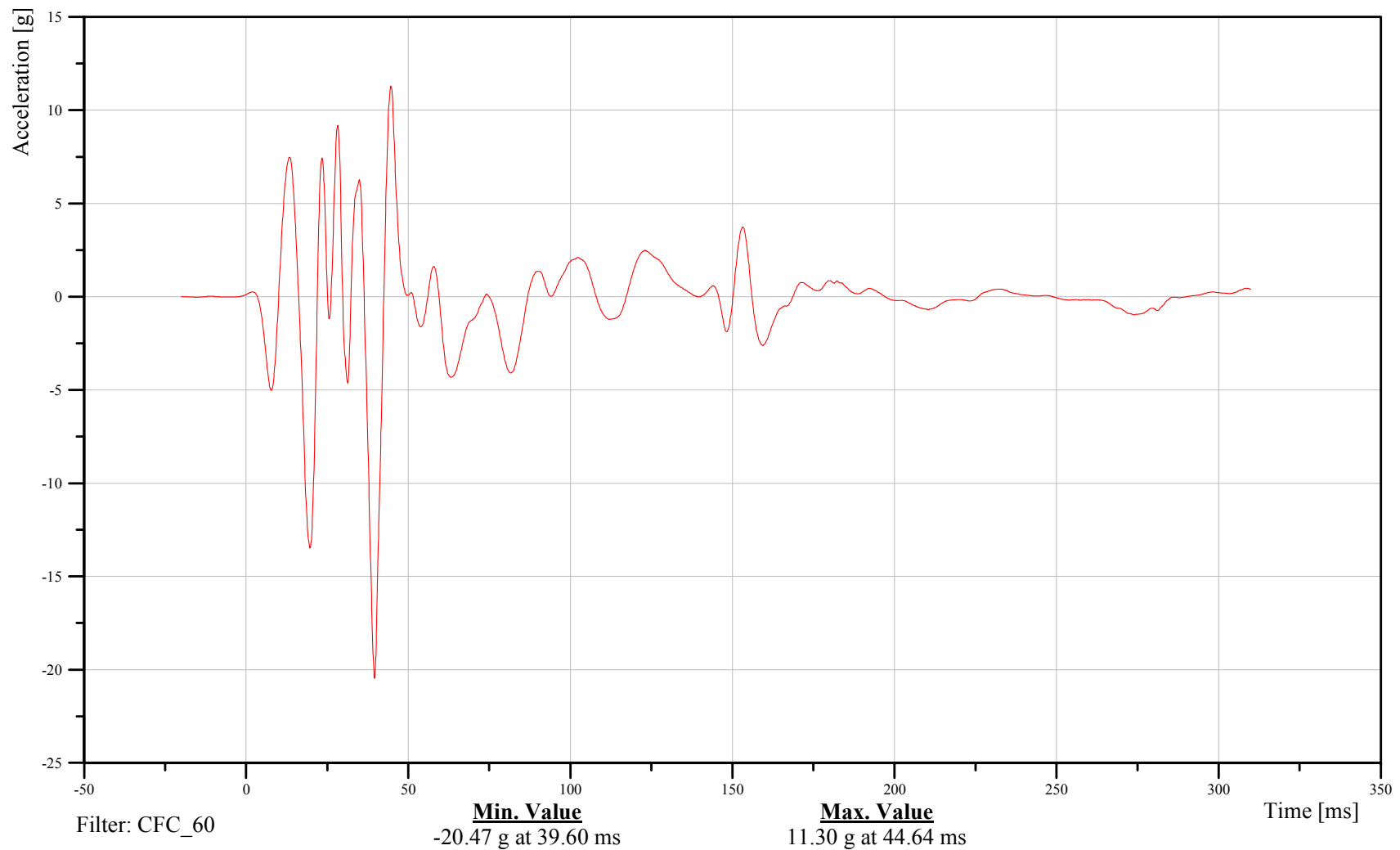
Date: 09/16/2005
Time: 11:12

Customer: VRTC

10VEHCCG0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

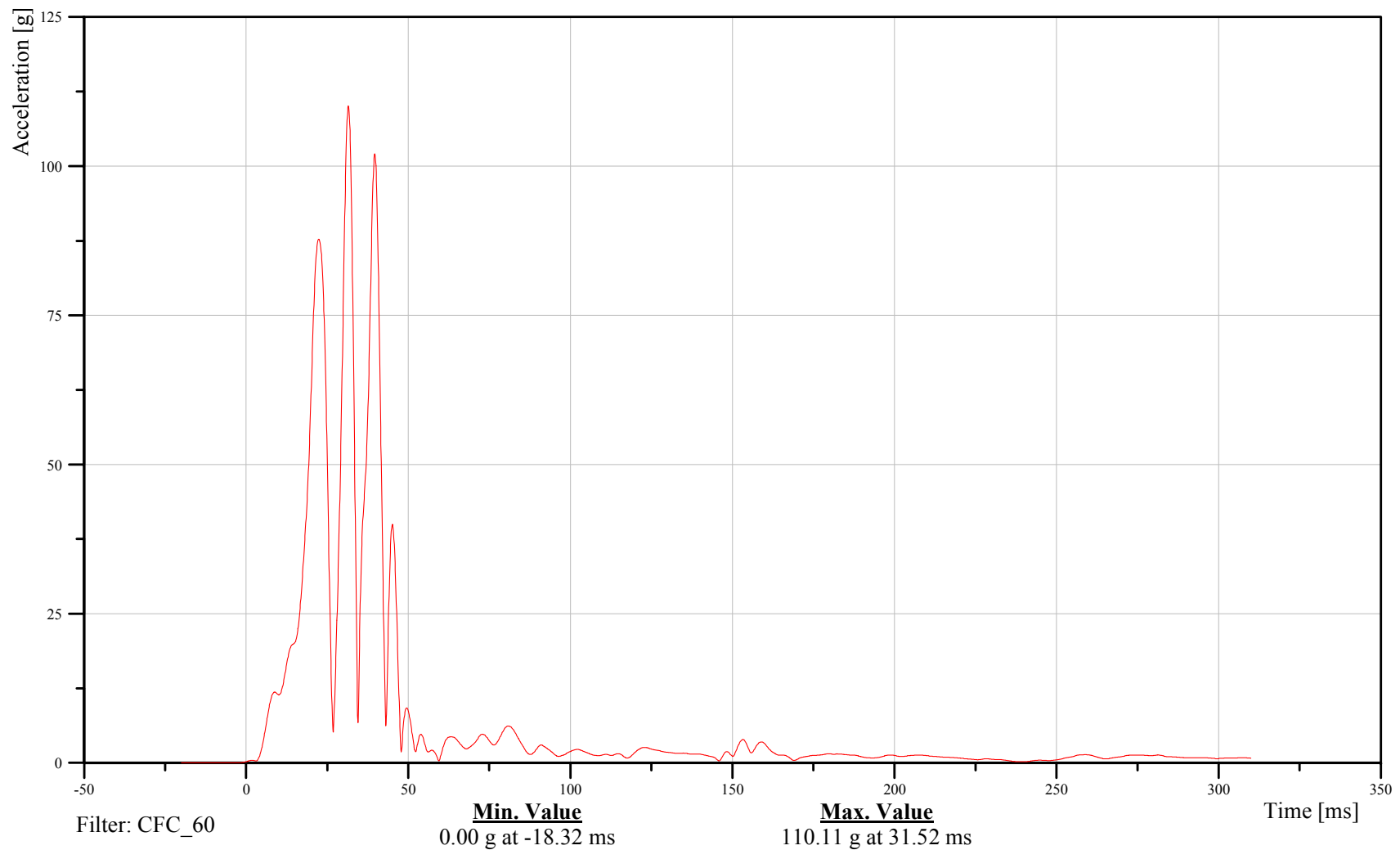
Vehicle Center of Gravity Resultant Acceleration

Customer: VRTC

10VEHCCG0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

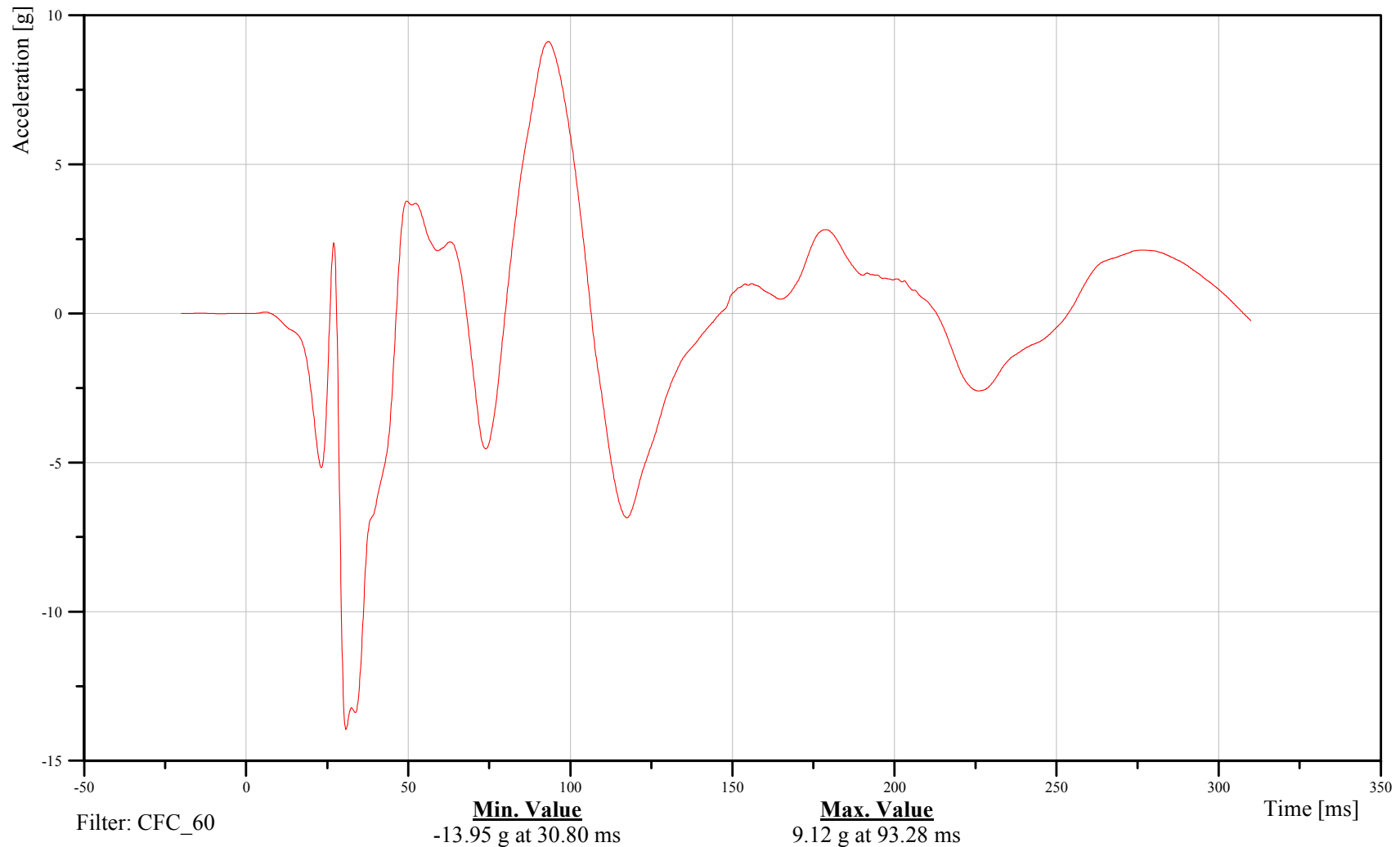
Top of Engine X-Axis Acceleration

Customer: VRTC

12ENG000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

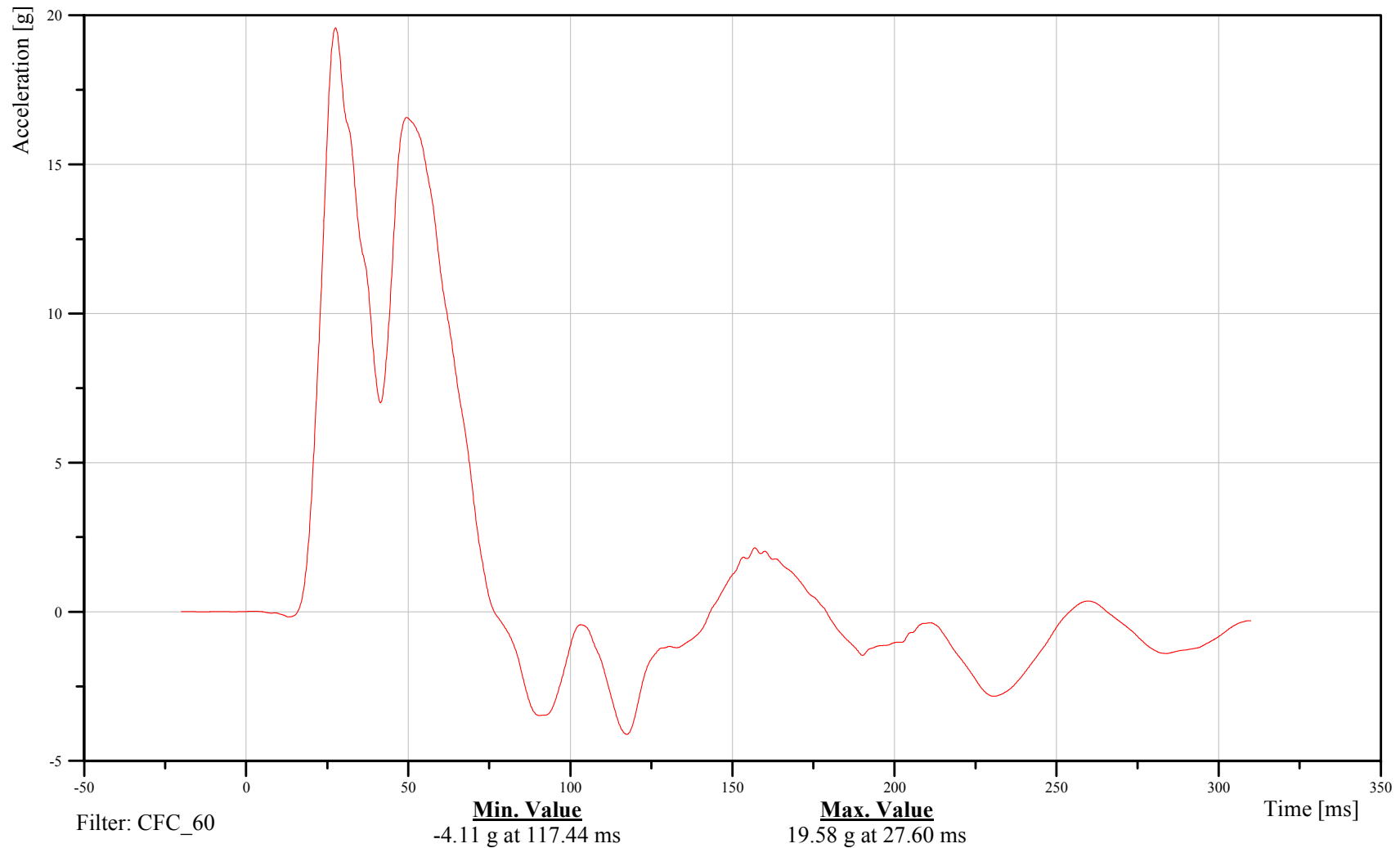
Top of Engine Y-Axis Acceleration

Customer: VRTC

12ENGN000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

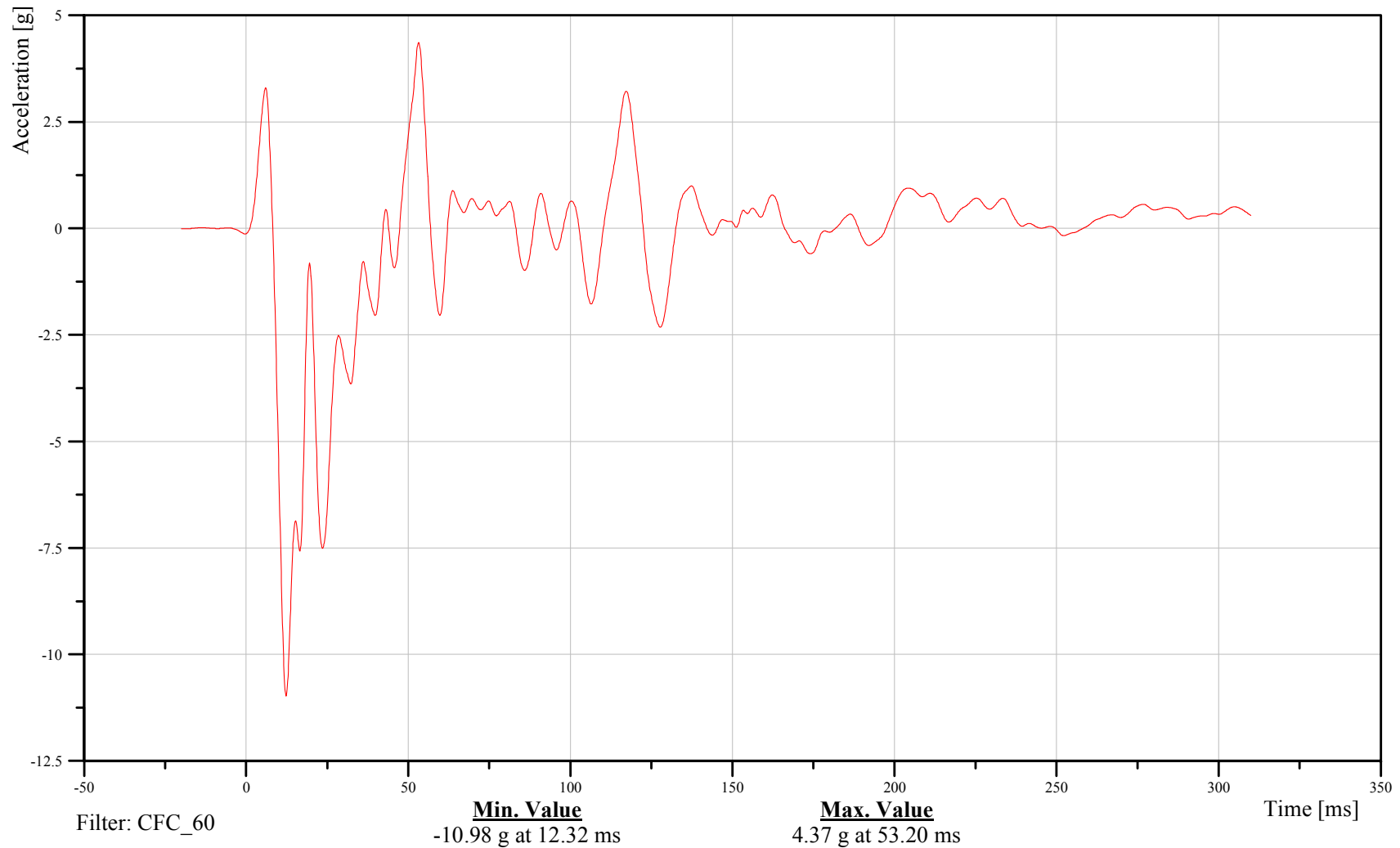
Firewall X-Axis Acceleration

Customer: VRTC

12VEHC000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Firewall Y-Axis Acceleration

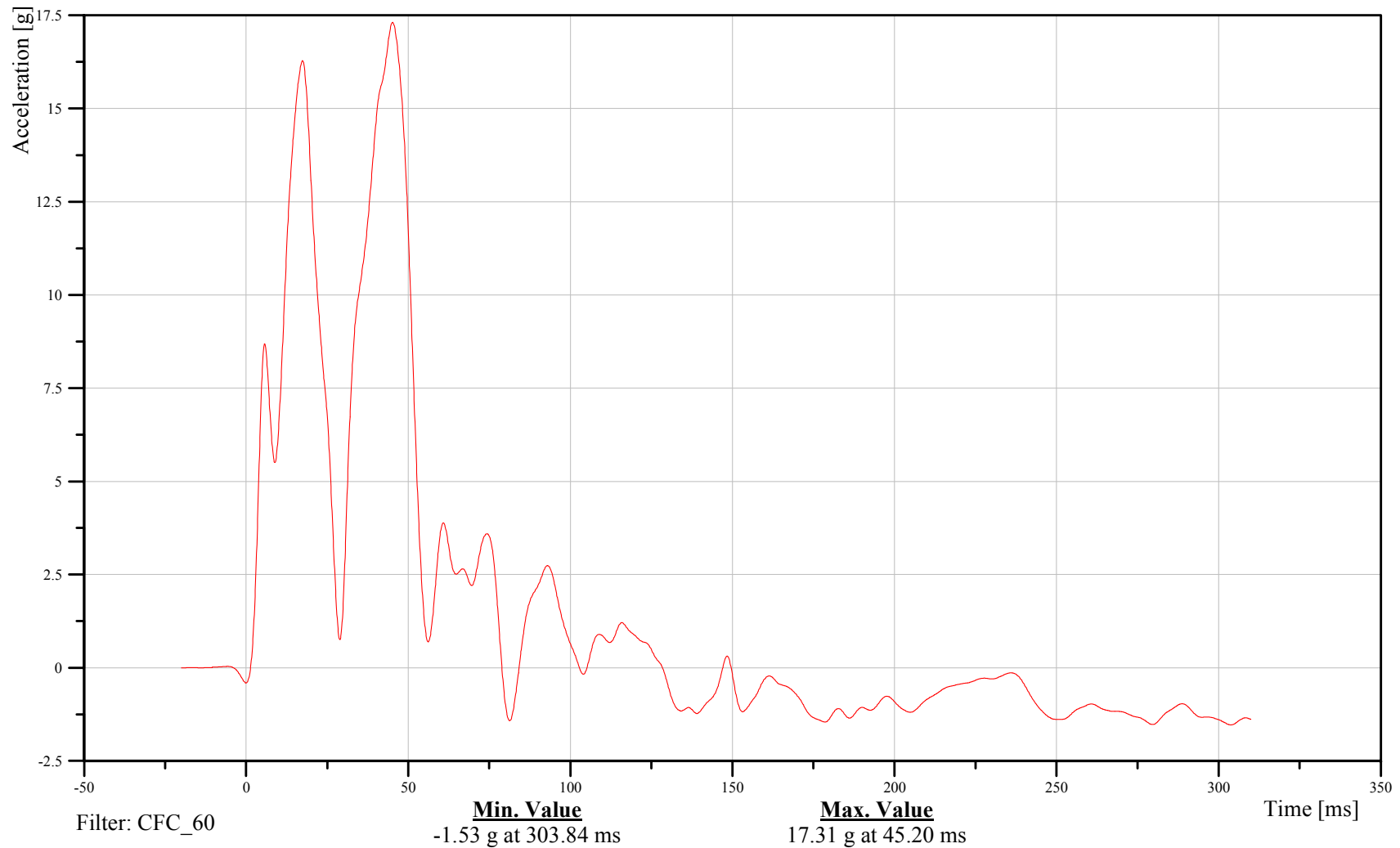
Date: 09/16/2005
Time: 11:12

Customer: VRTC

12VEHC000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

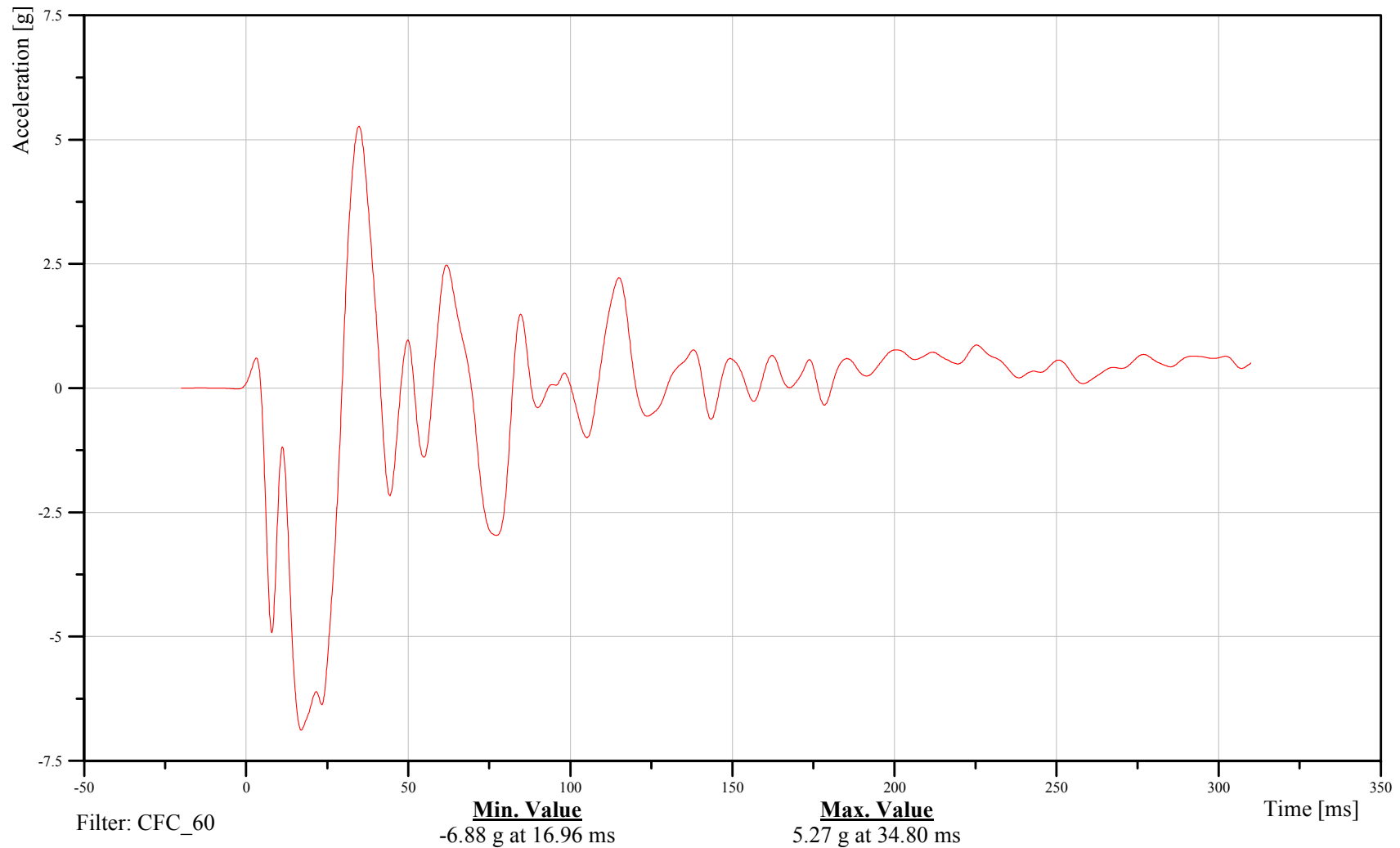
Right Roof Rail X-Axis Acceleration

Customer: VRTC

13ROFR000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005

Time: 11:12

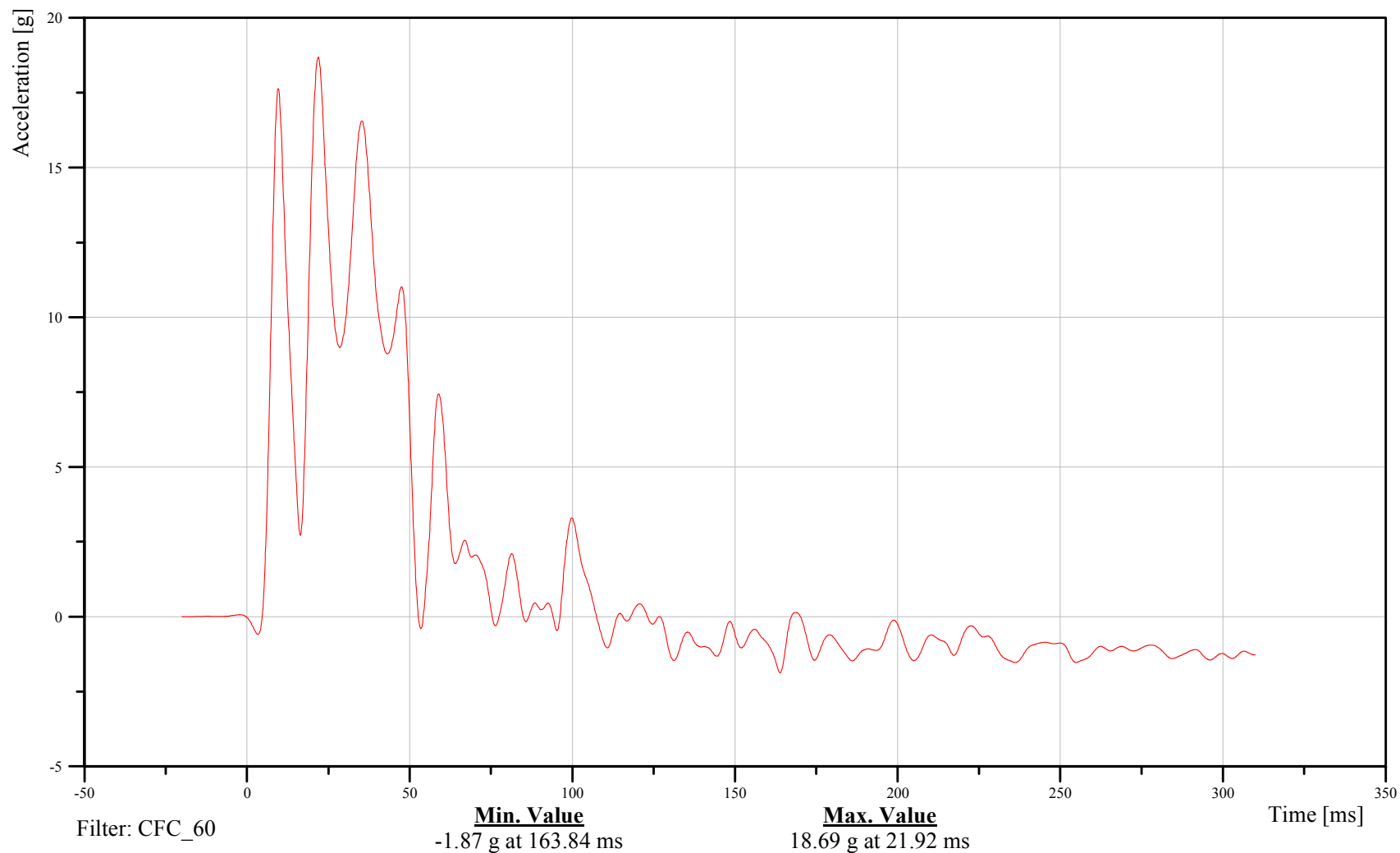
Right Roof Rail Y-Axis Acceleration

Customer: VRTC

13ROFR000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Left Front Door Centerline Y-Axis Acceleration

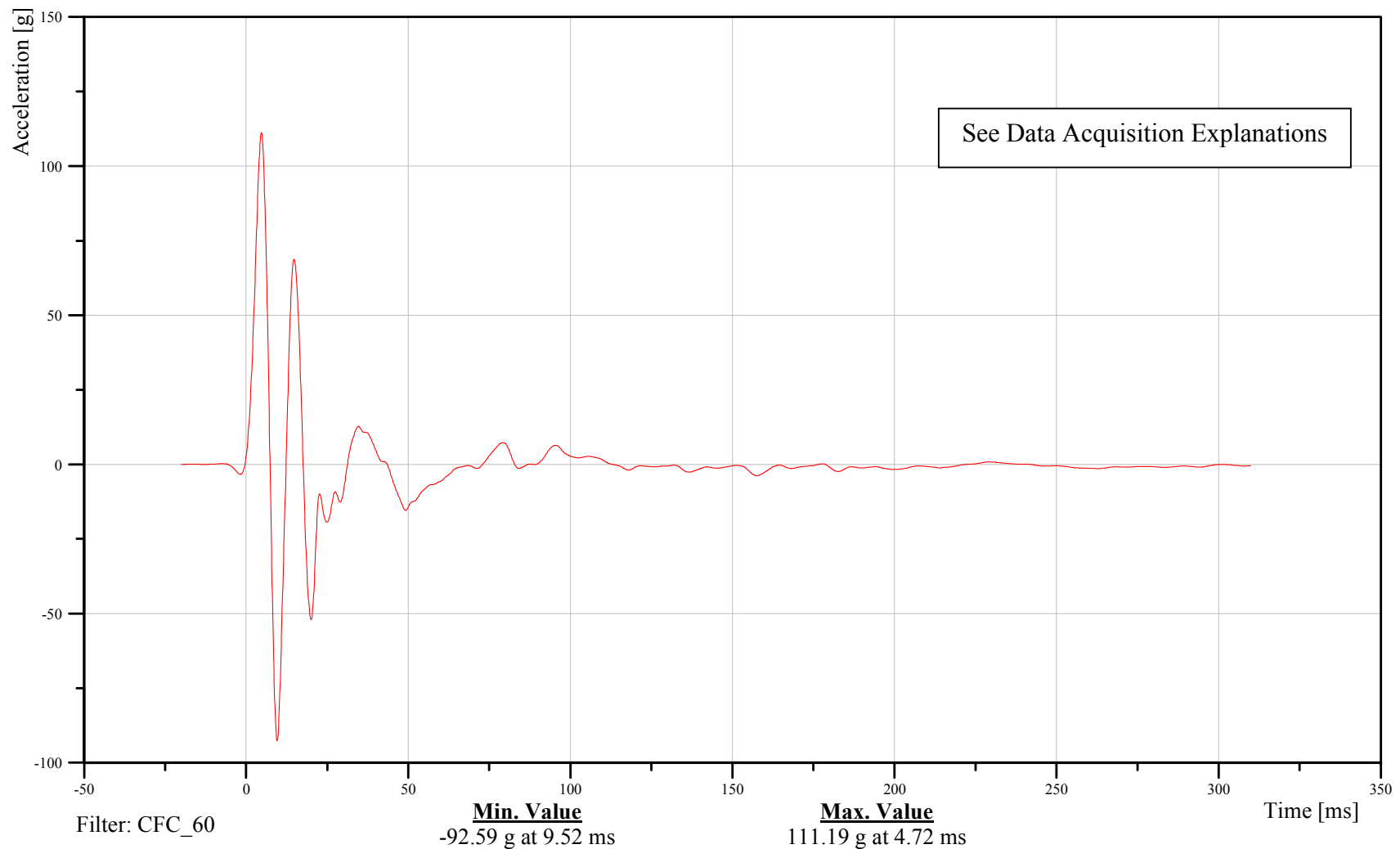
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11DOOR000001ACYD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Left Front Door Mid-Rear Y-Axis Acceleration

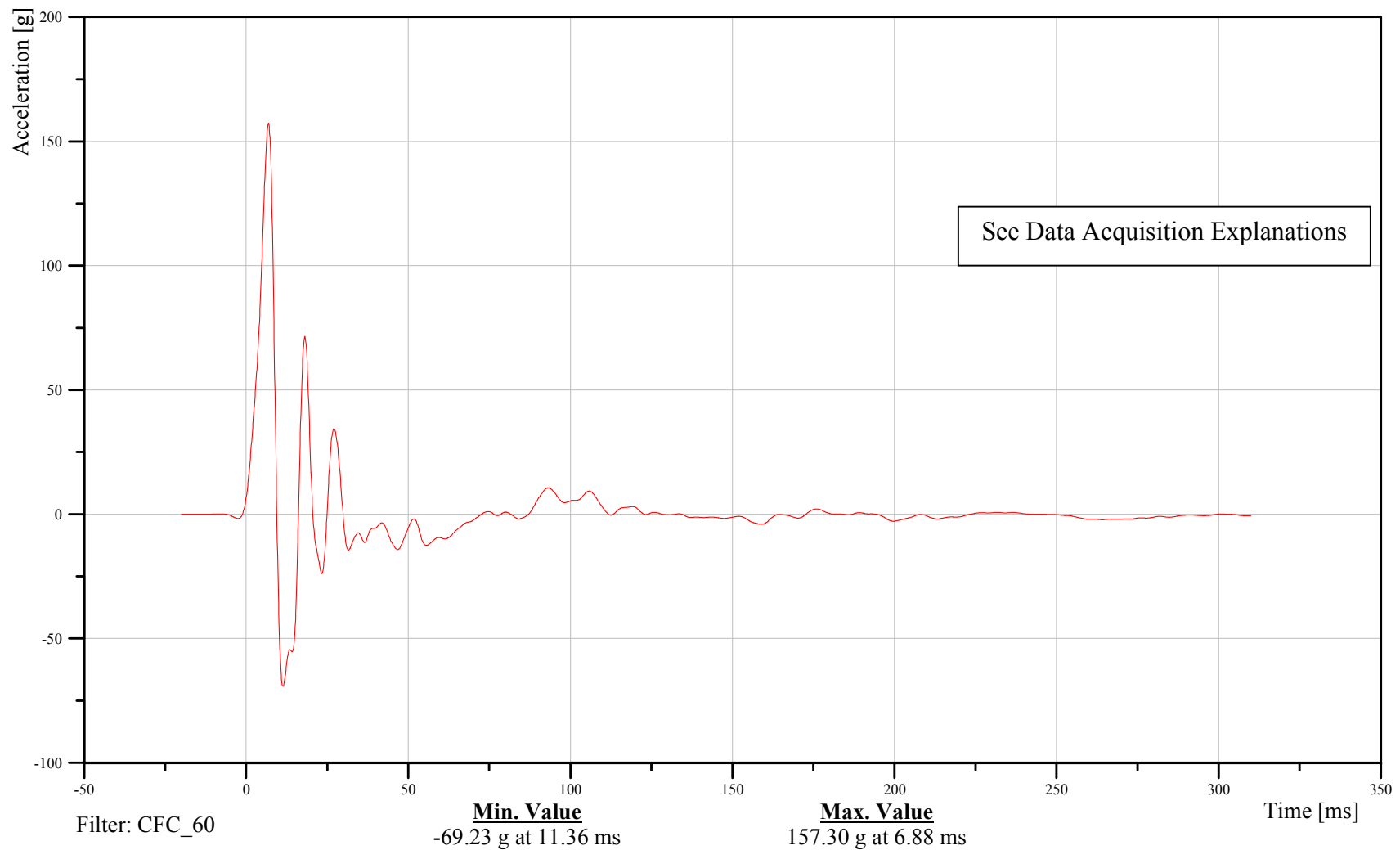
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11DOOR000002ACYD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005

Time: 11:12

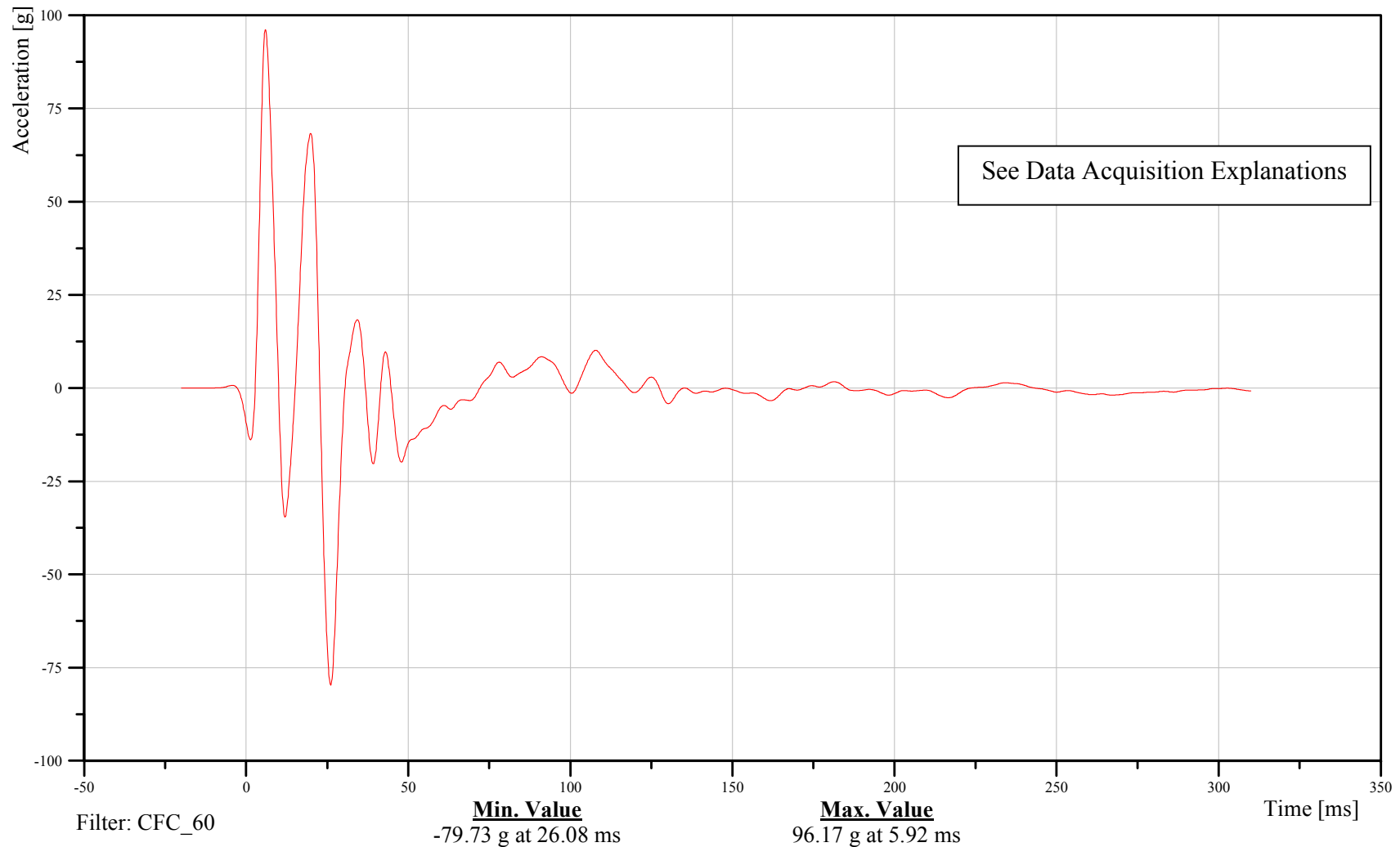
Left Front Door Upper Centerline Y-Axis Acceleration

Customer: VRTC

11DOOR000003ACYD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

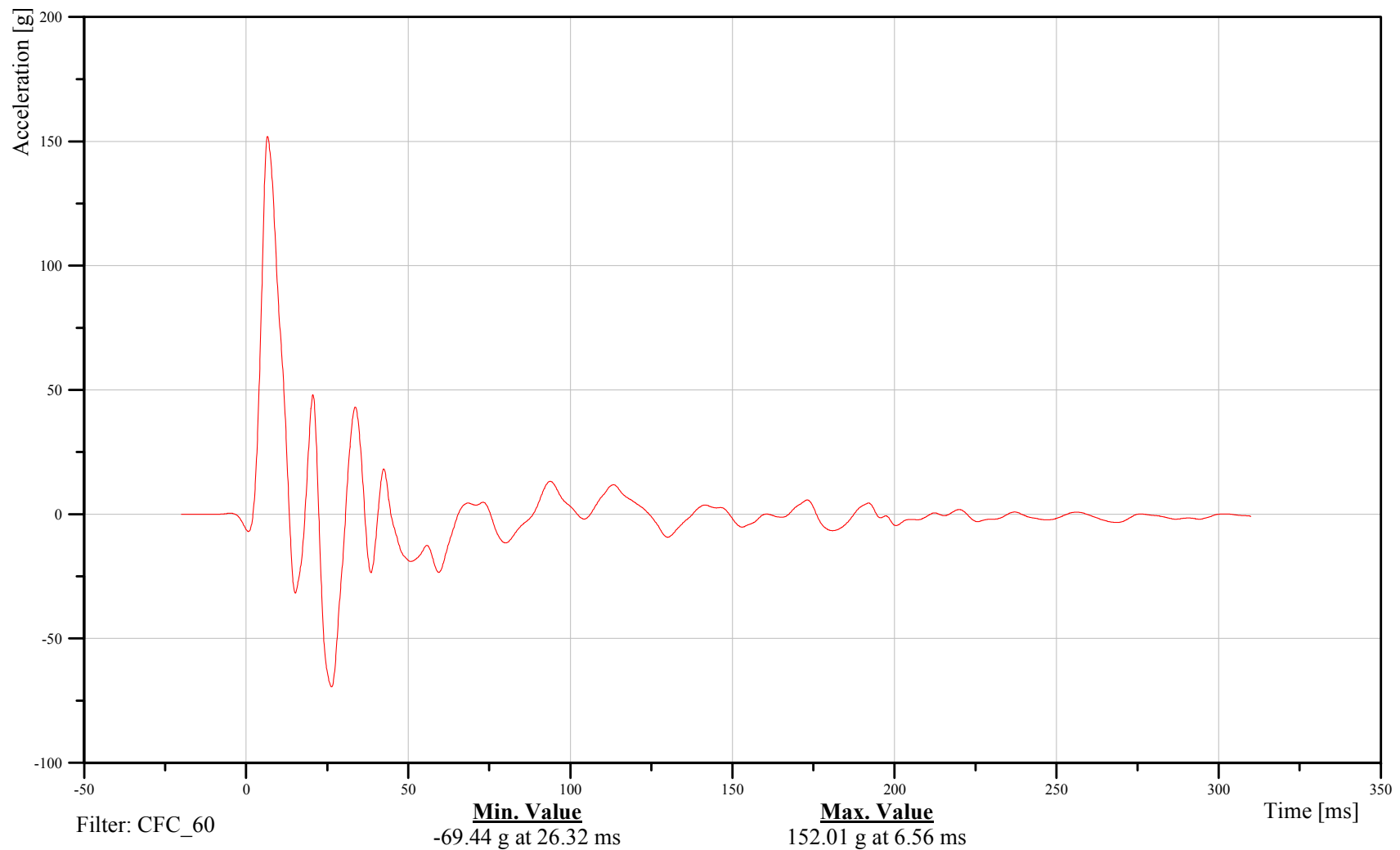
Left Rear Door Mid-Rear Y-Axis Acceleration

Customer: VRTC

14DOOR000001ACYD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

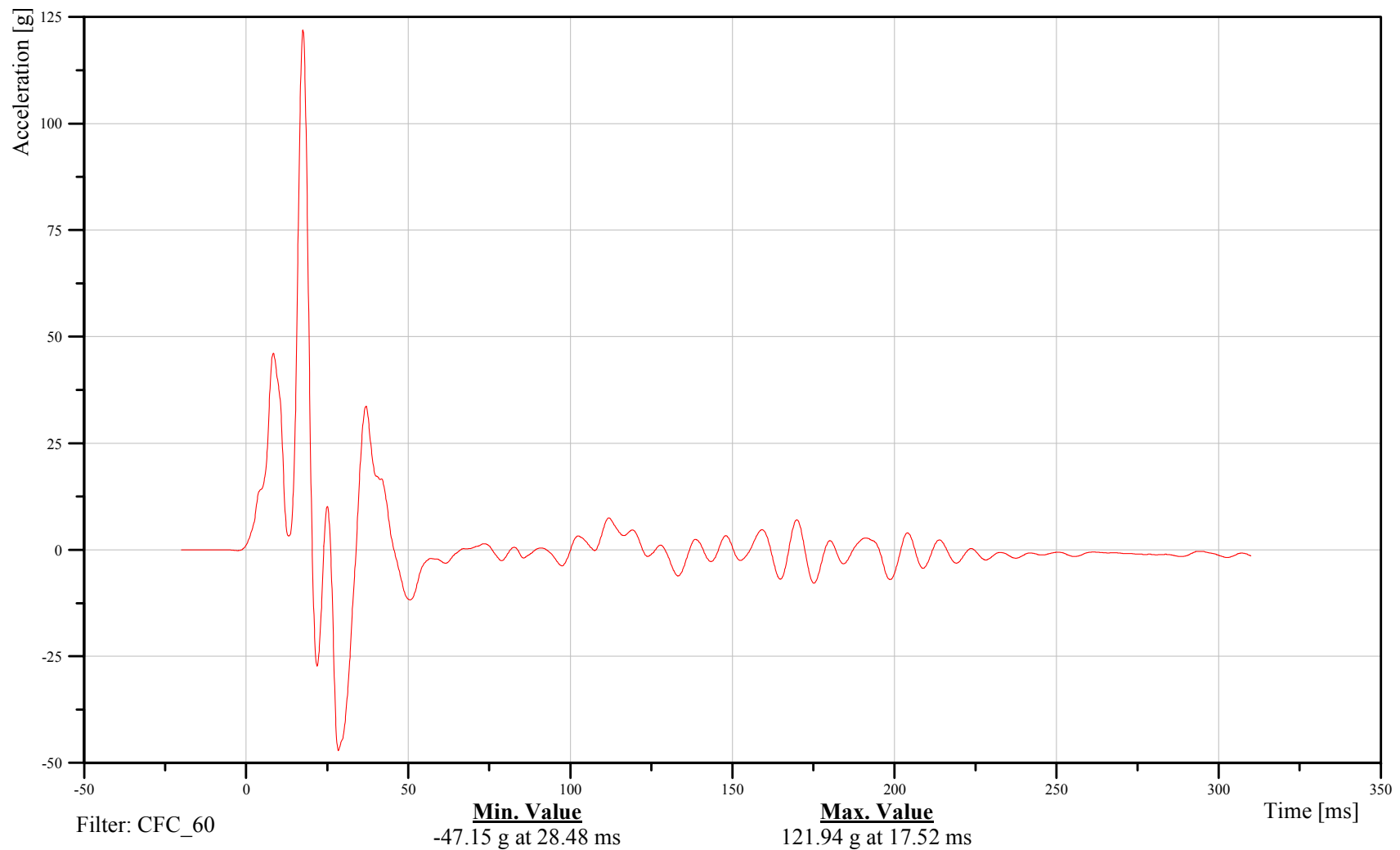
Left Rear Door Upper Centerline Y-Axis Acceleration

Customer: VRTC

14DOOR000002ACYD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Side Torso Airbag Fire

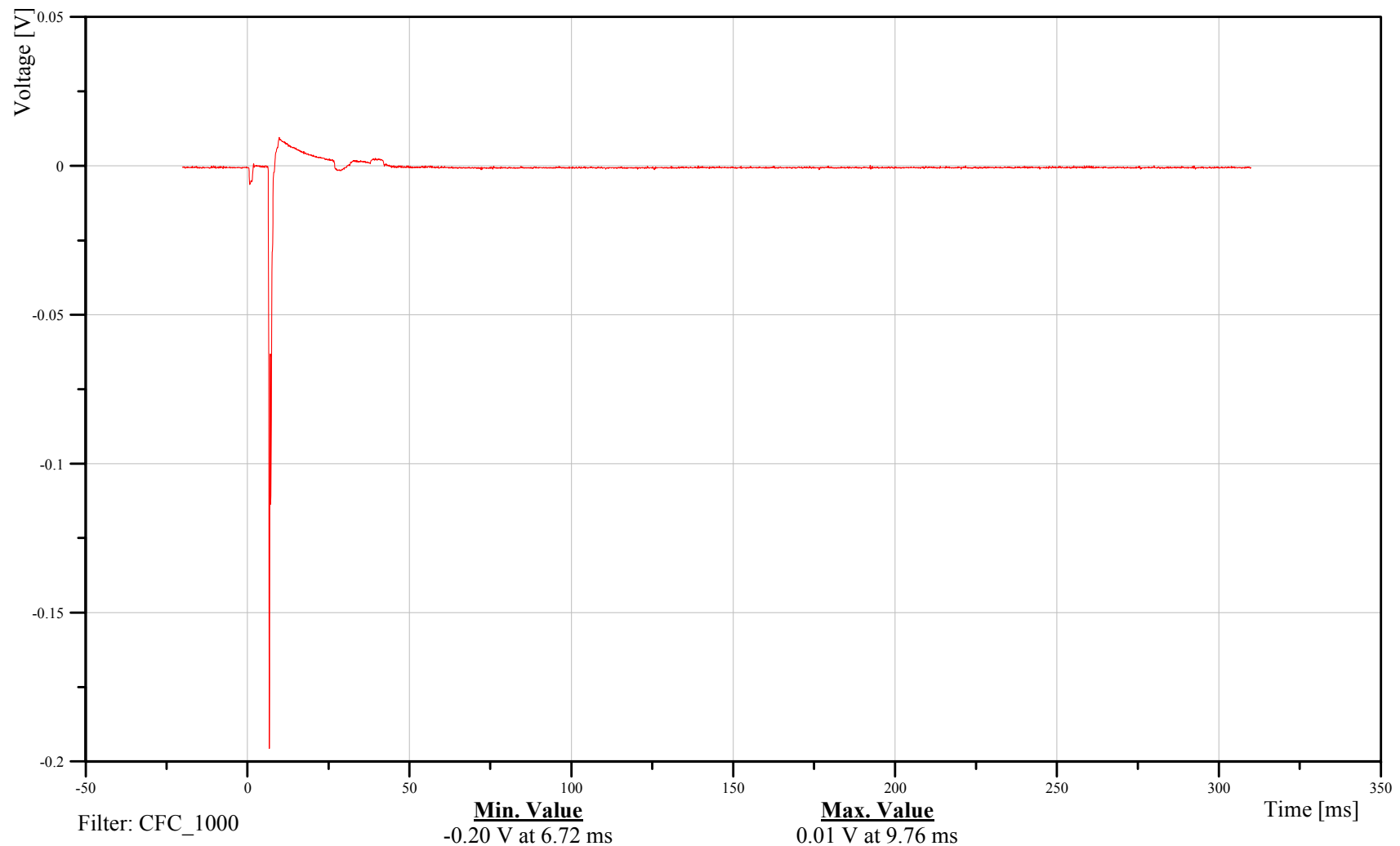
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11SENS000001VO0A

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Side Curtain Airbag Fire

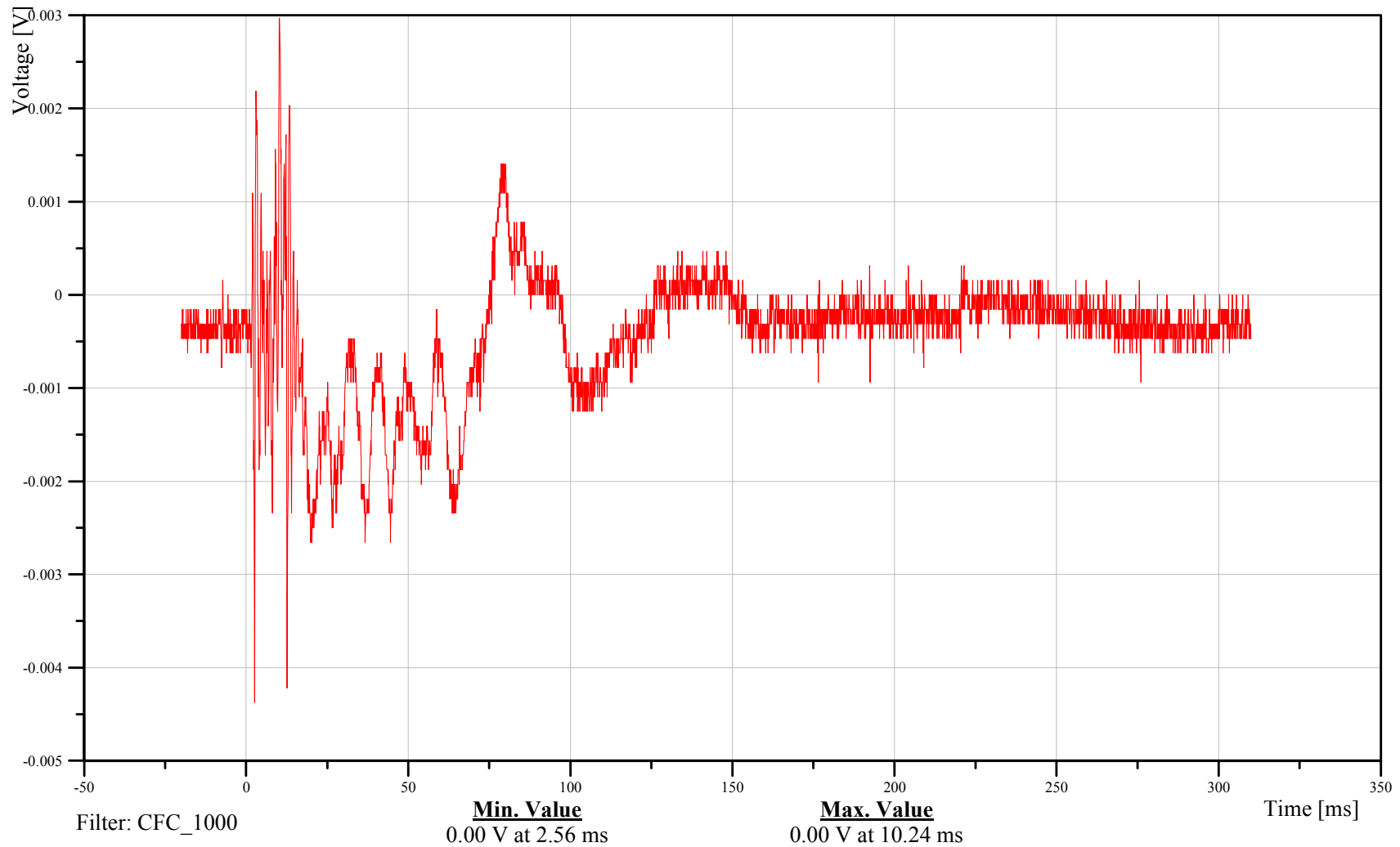
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11SENS000002VO0A

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Non-Struck Side Torso Airbag Fire (disable bag)

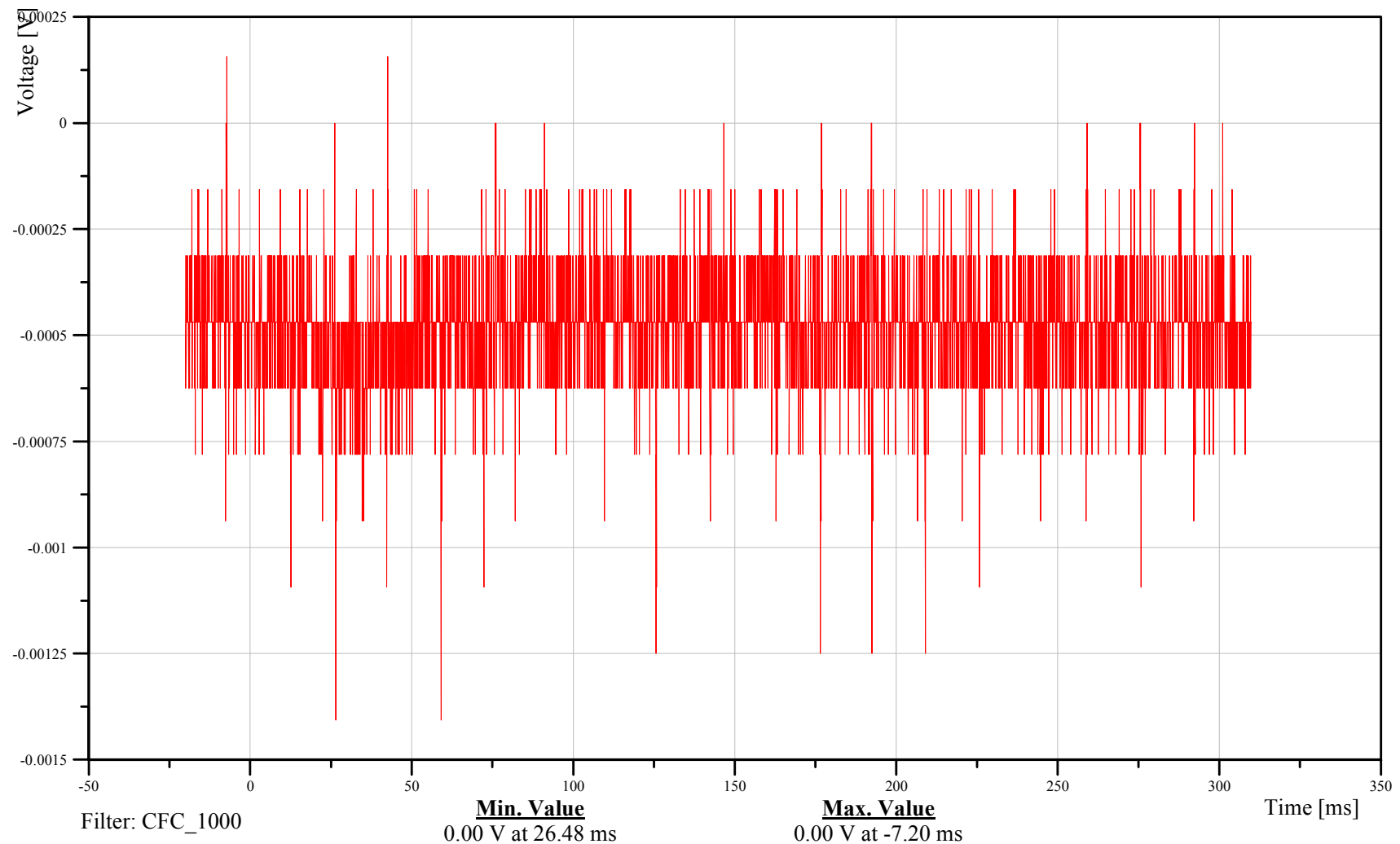
Date: 09/16/2005
Time: 11:12

Customer: VRTC

13SENS000001V00A

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

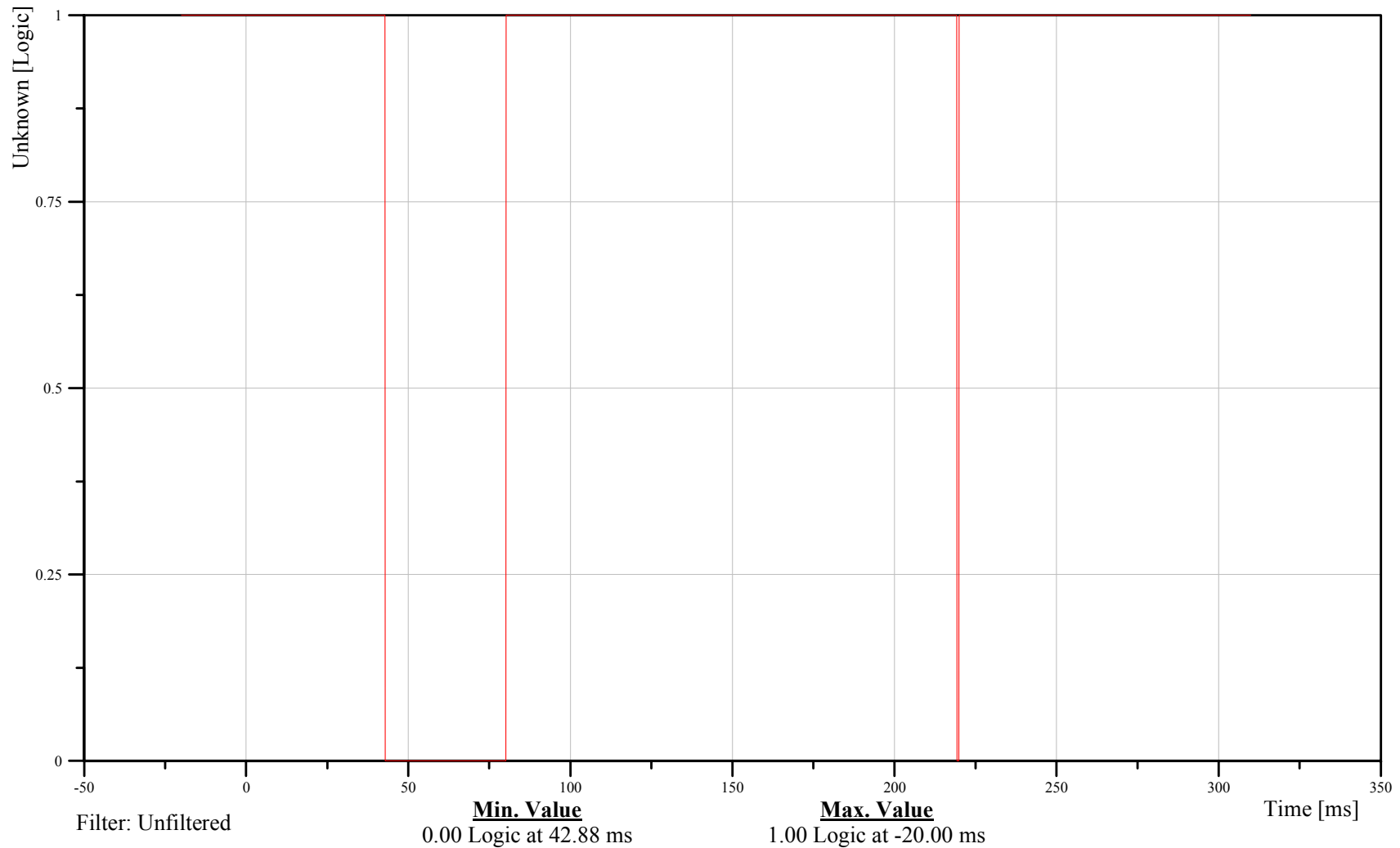
Driver Dummy Head contact

Customer: VRTC

11CONT000001EV00

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

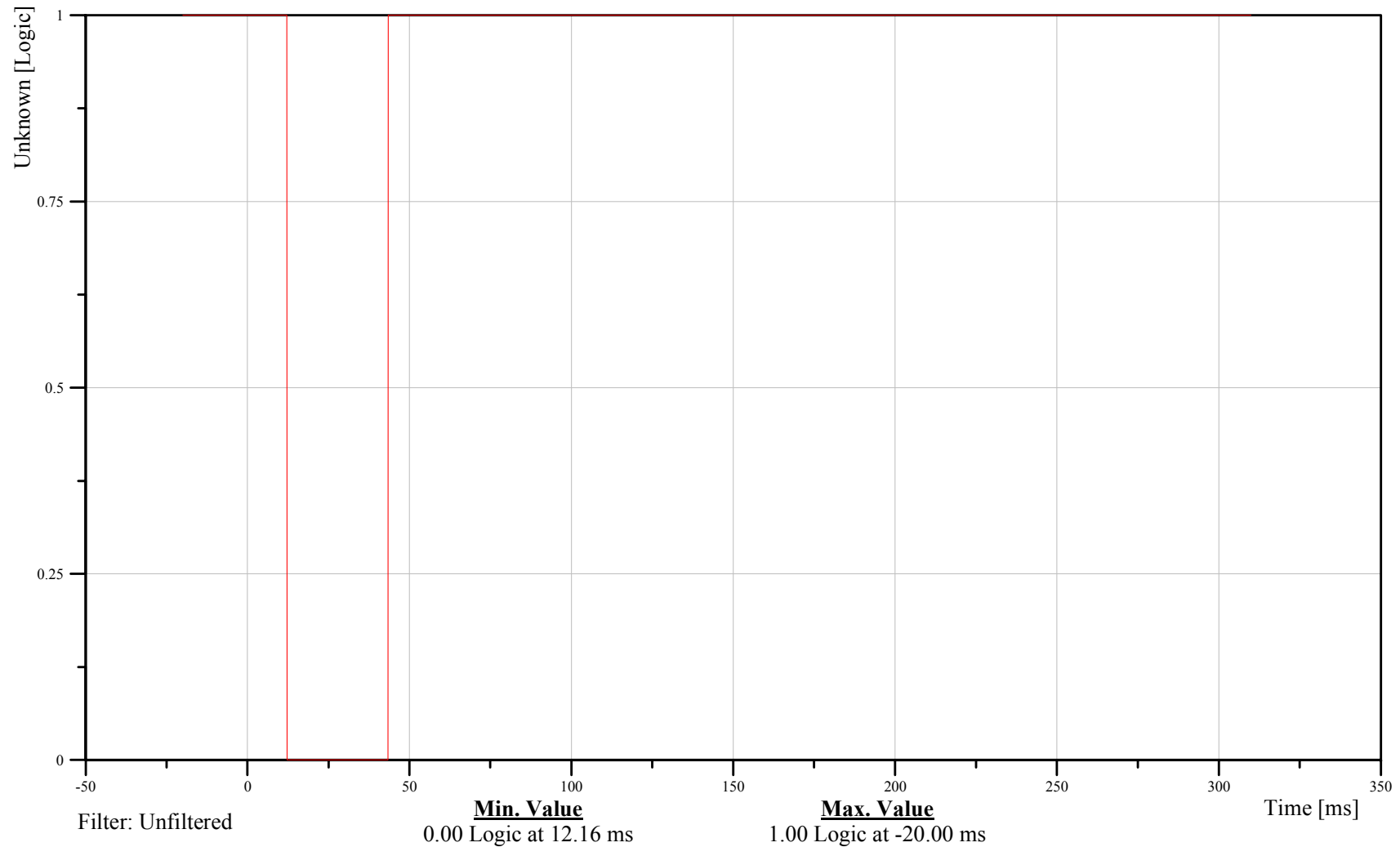
Driver Dummy Shoulder contact

Customer: VRTC

11CONT000002EV00

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Driver Dummy Torso contact

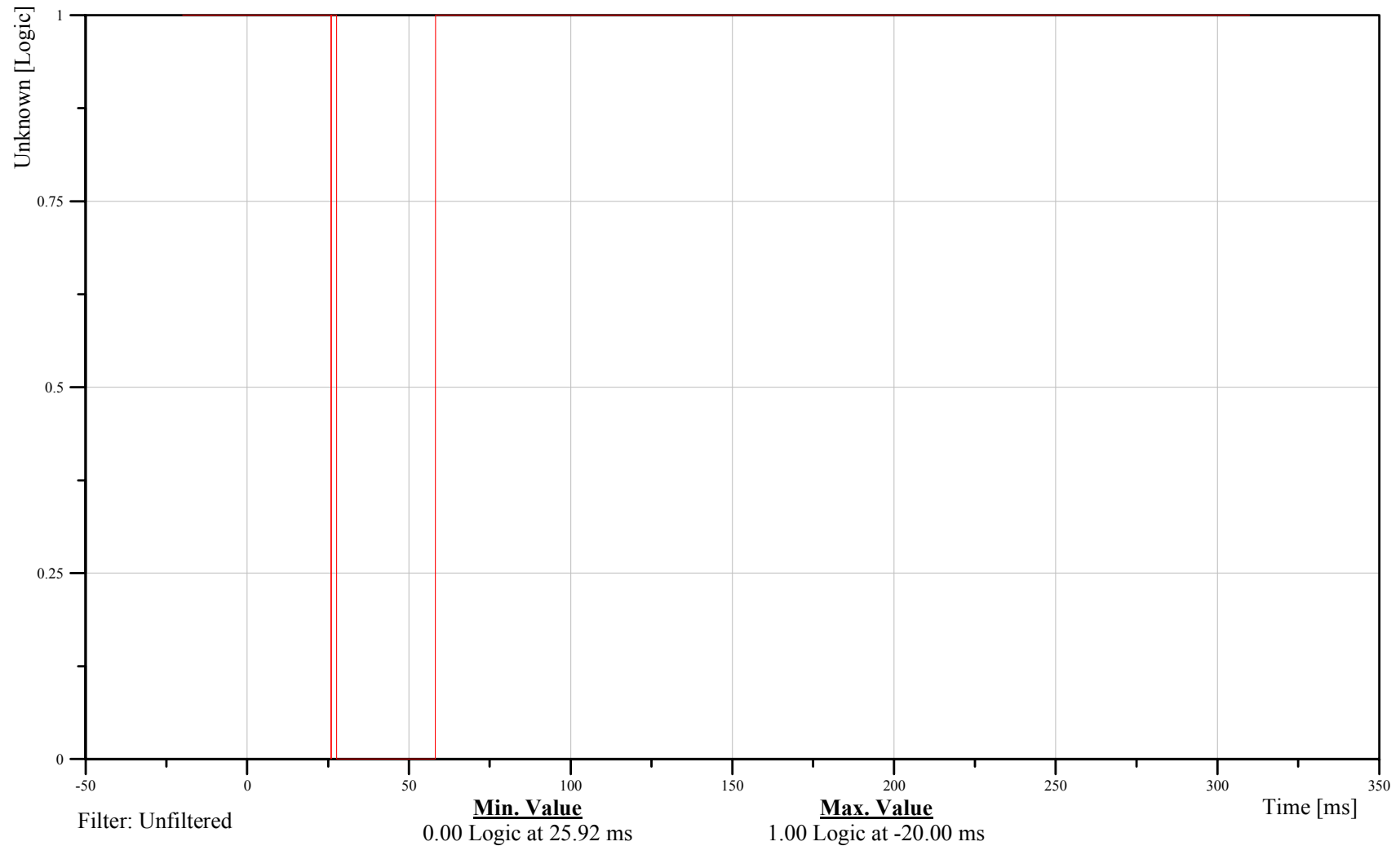
Date: 09/16/2005
Time: 11:12

Customer: VRTC

11CONT000003EV00

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

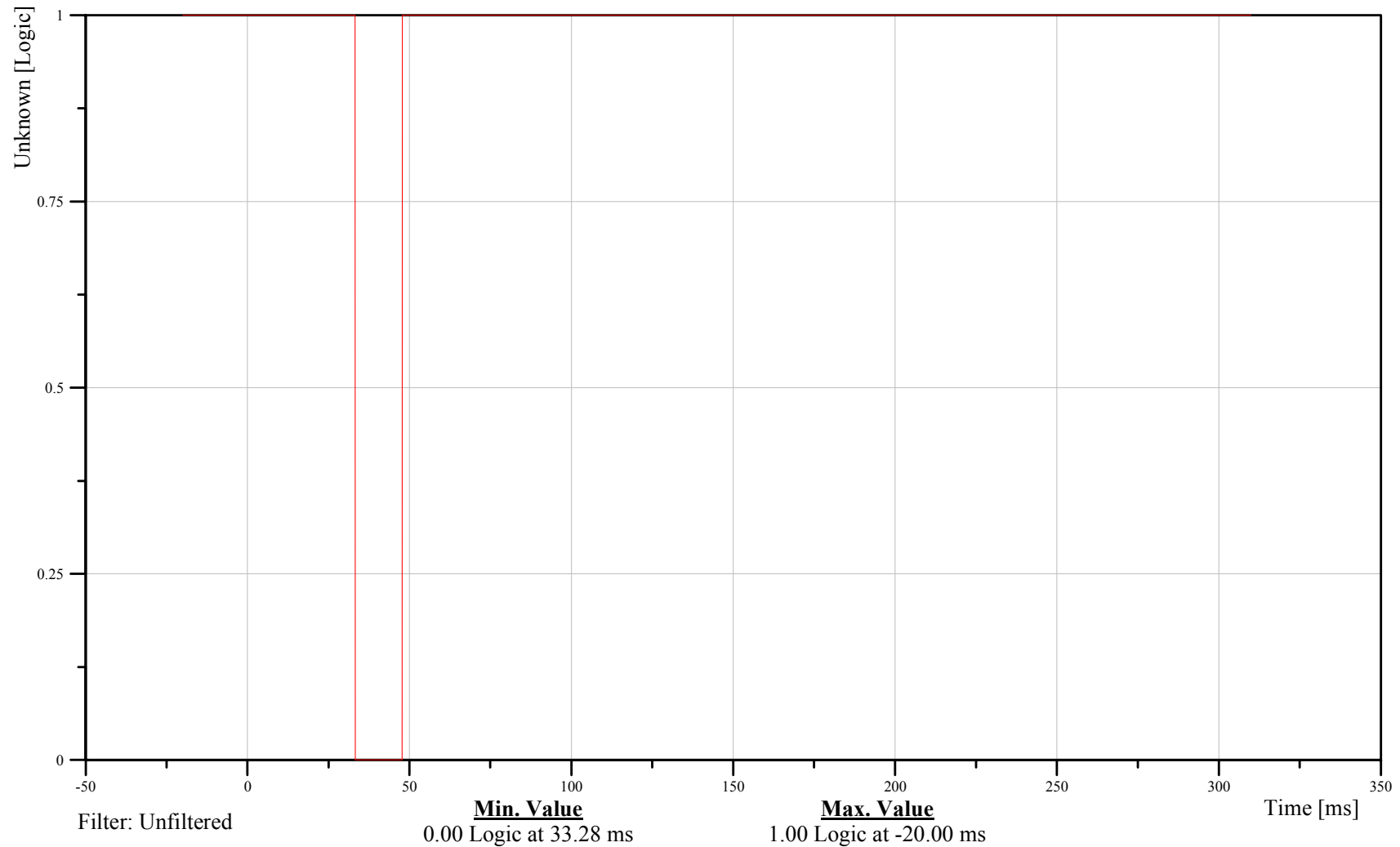
Driver Dummy Leg contact

Customer: VRTC

11CONT000004EV00

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

LR Pass. Dummy Head contact

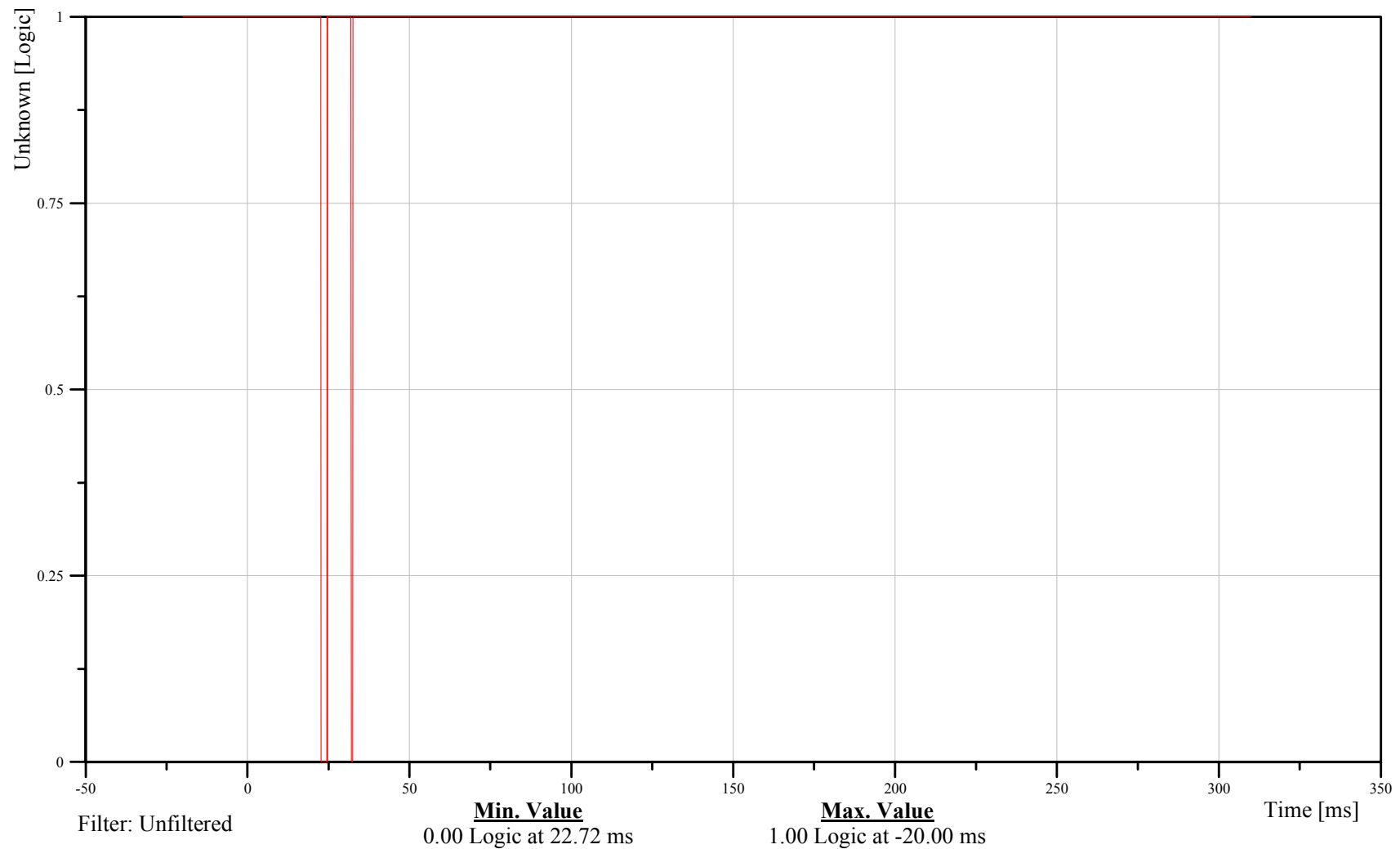
Date: 09/16/2005
Time: 11:12

Customer: VRTC

14CONT000001EV00

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

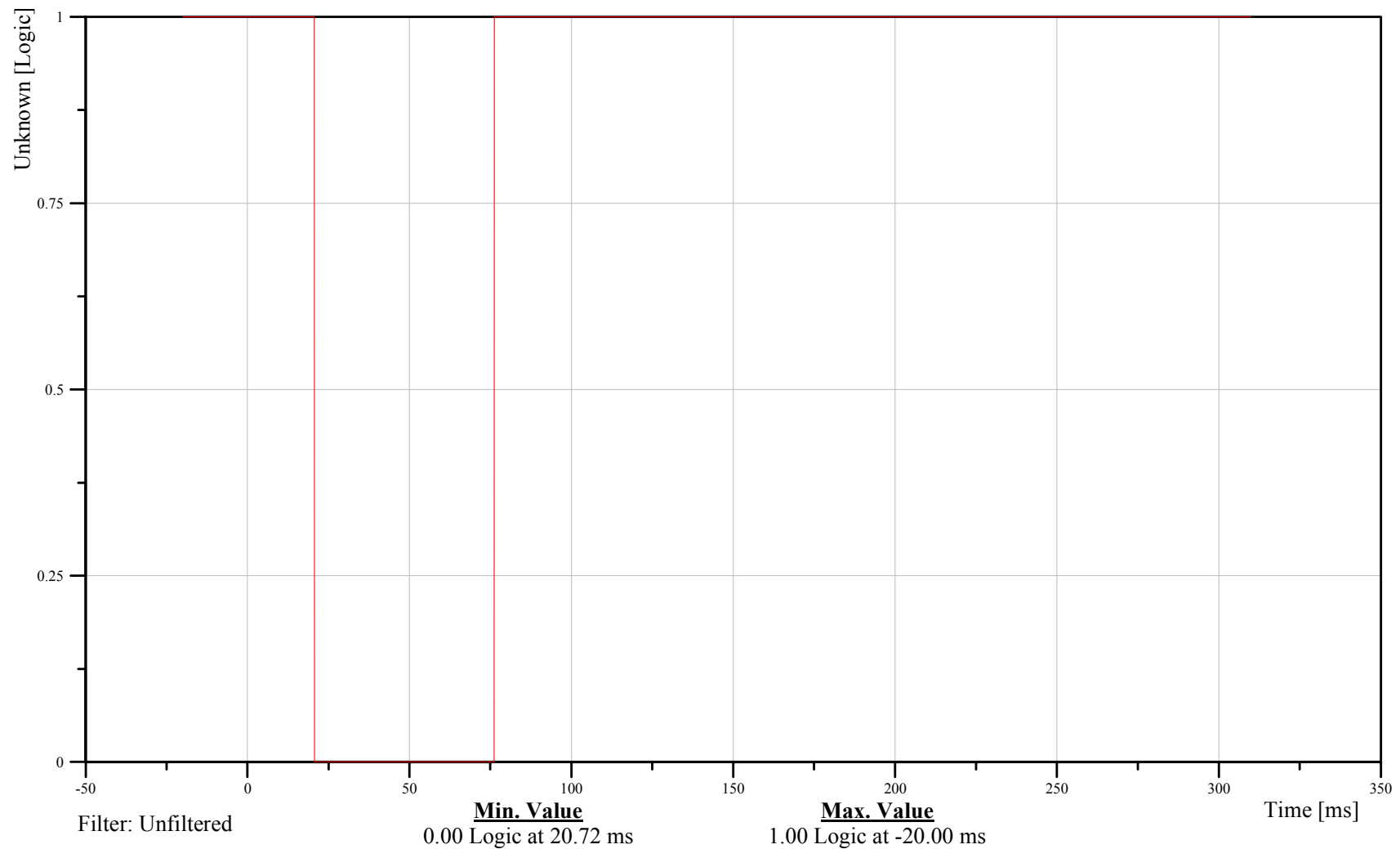
LR Pass. Dummy Shoulder contact

Customer: VRTC

14CONT000002EV00

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

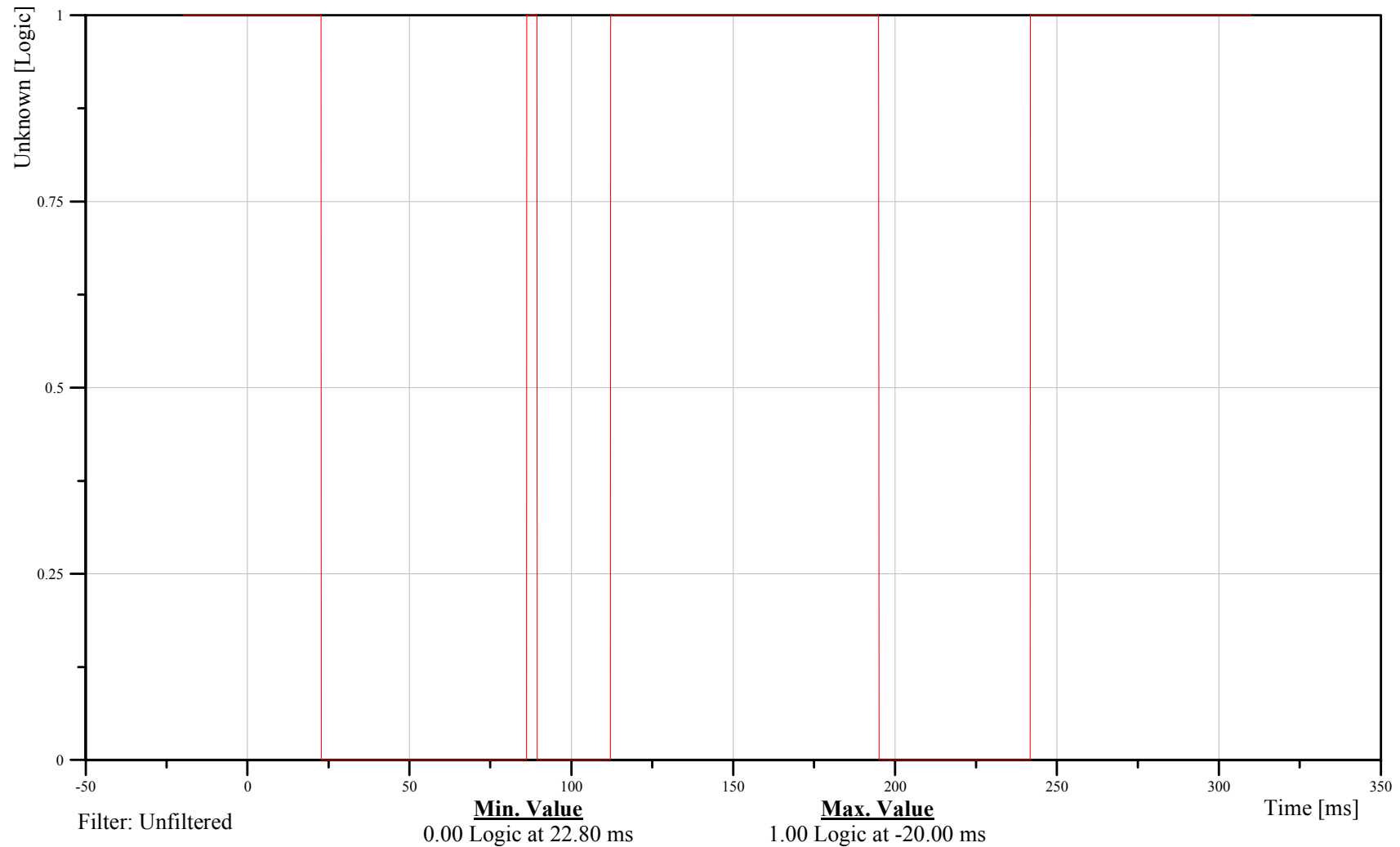
LR Pass. Dummy Torso contact

Customer: VRTC

14CONT000003EV00

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

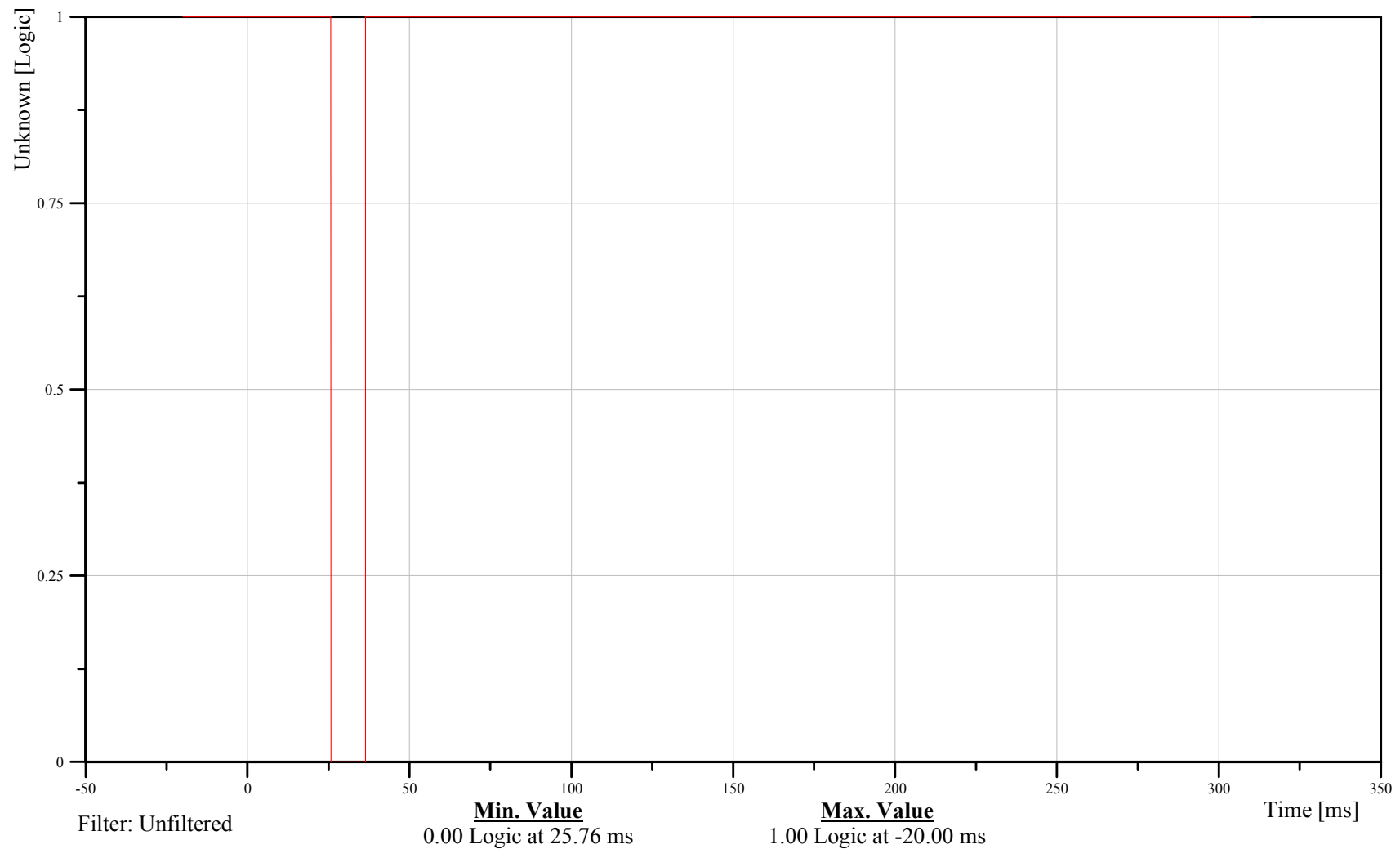
LR Pass. Dummy Leg contact

Customer: VRTC

14CONT000004EV00

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

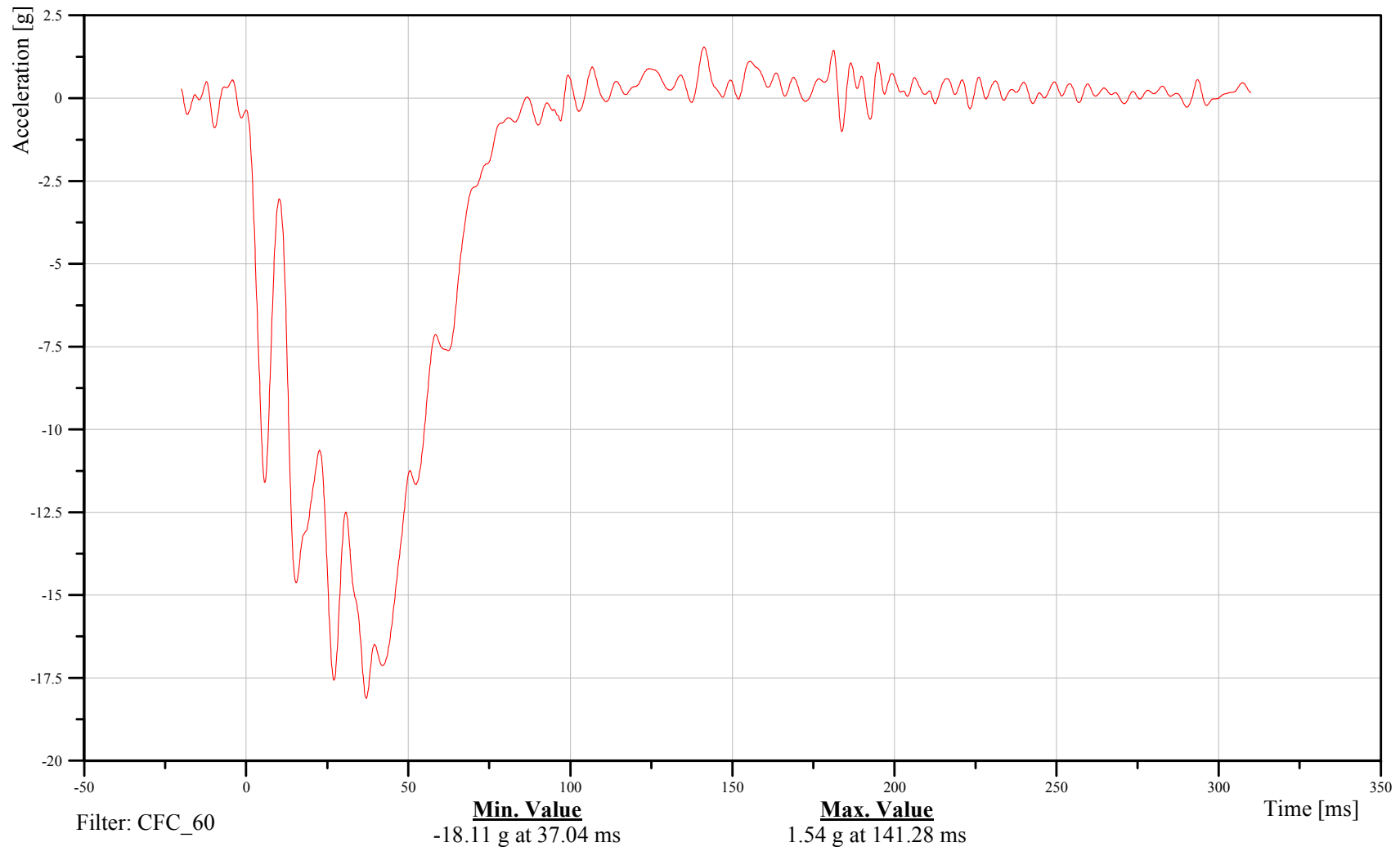
MDB Center of Gravity X-Axis Acceleration

Customer: VRTC

M0VEHCCG0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

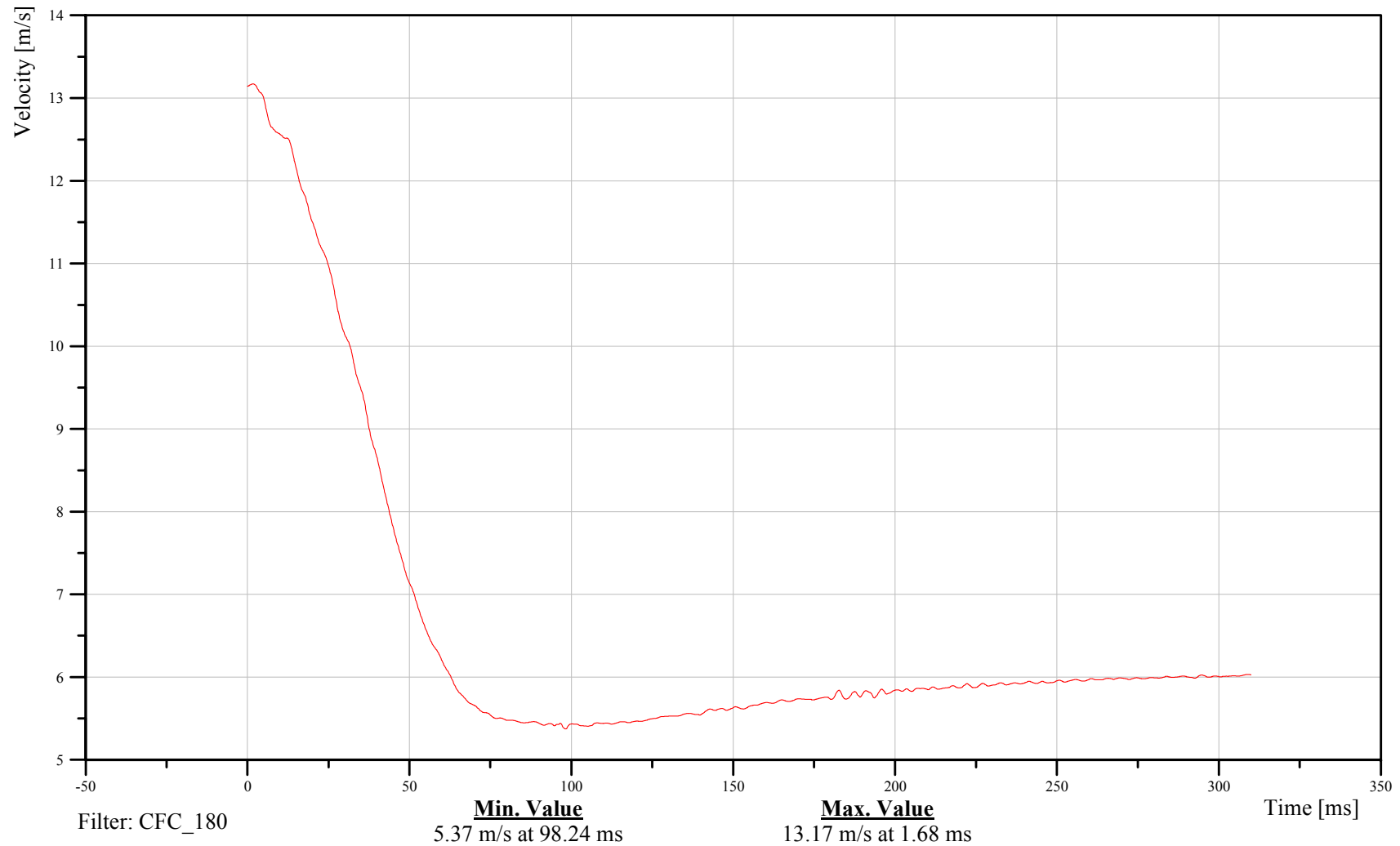
MDB Center of Gravity X-Axis Velocity

Customer: VRTC

M0VEHCCG0000VEXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

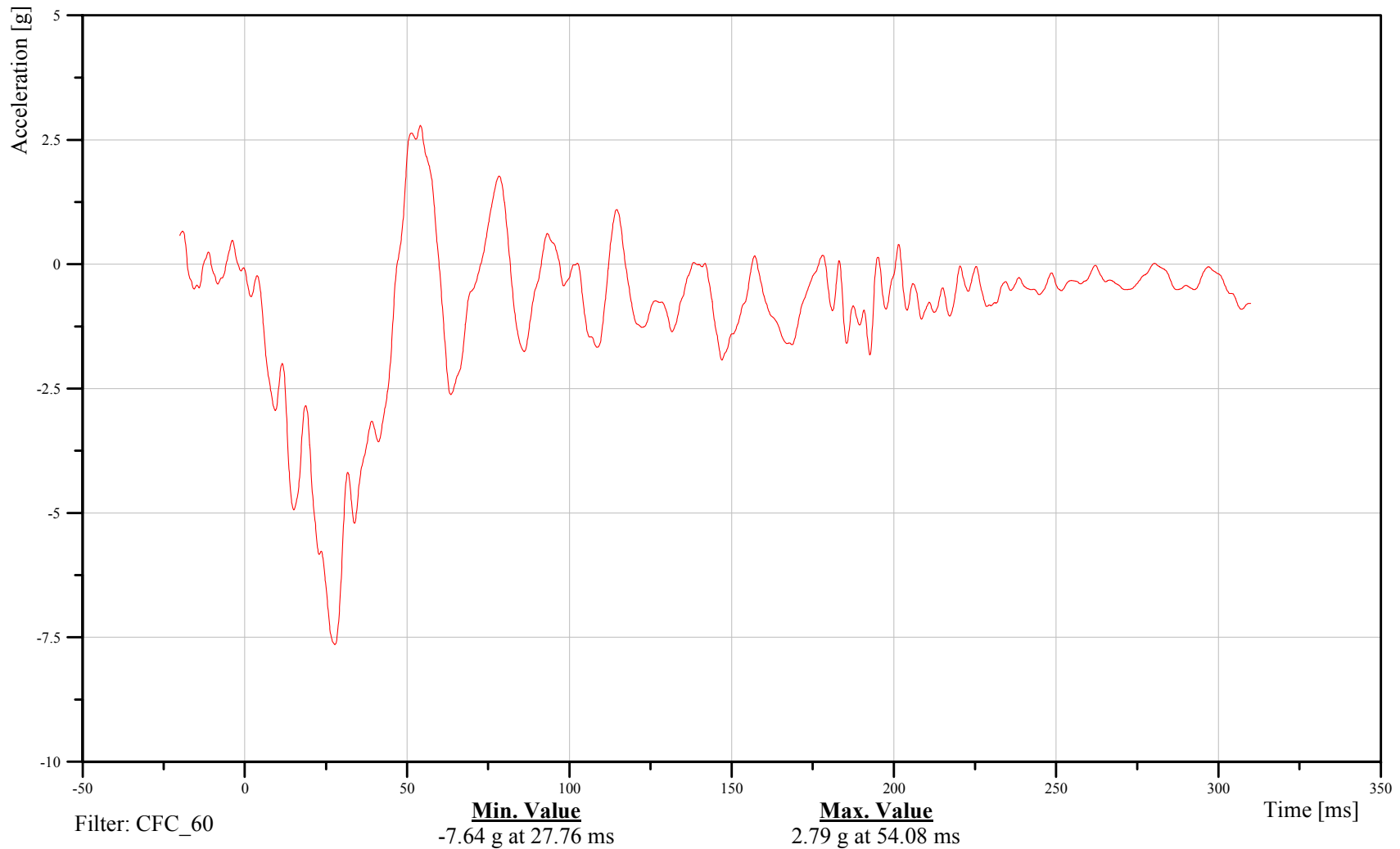
MDB Center of Gravity Y-Axis Acceleration

Customer: VRTC

M0VEHCCG0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005

Time: 11:12

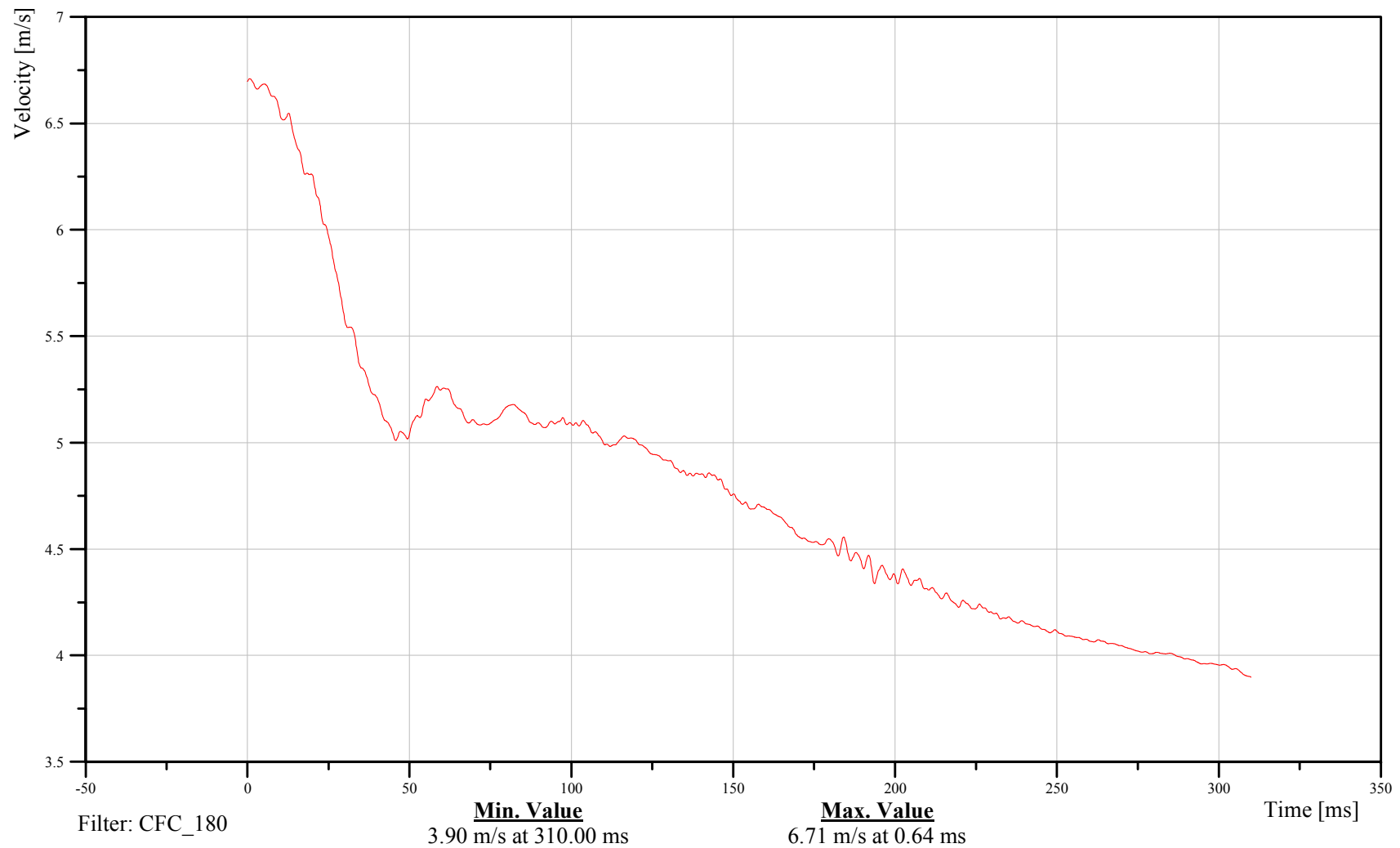
MDB Center of Gravity Y-Axis Velocity

Customer: VRTC

M0VEHCCG0000VEYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

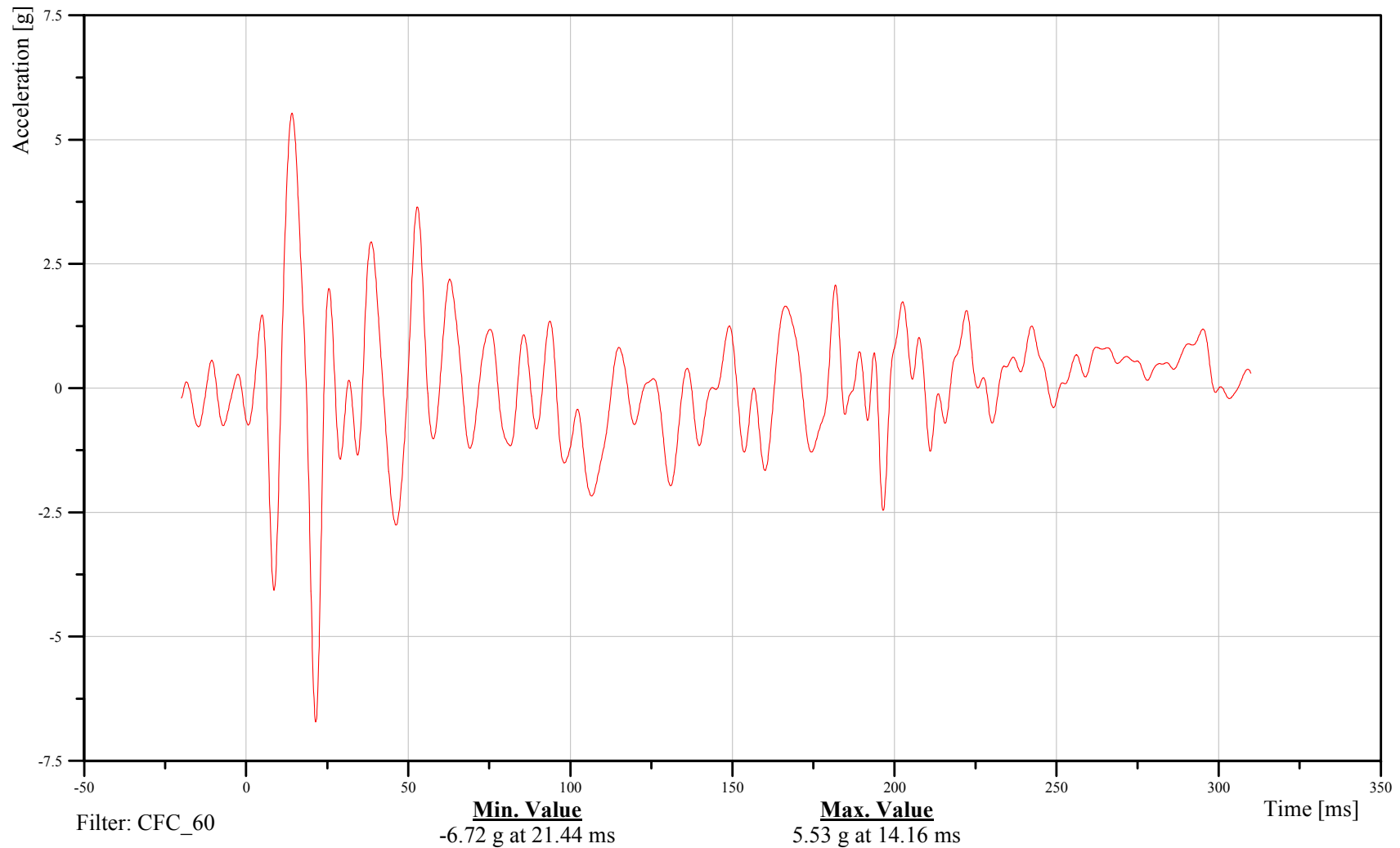
MDB Center of Gravity Z-Axis Acceleration

Customer: VRTC

M0VEHCCG0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

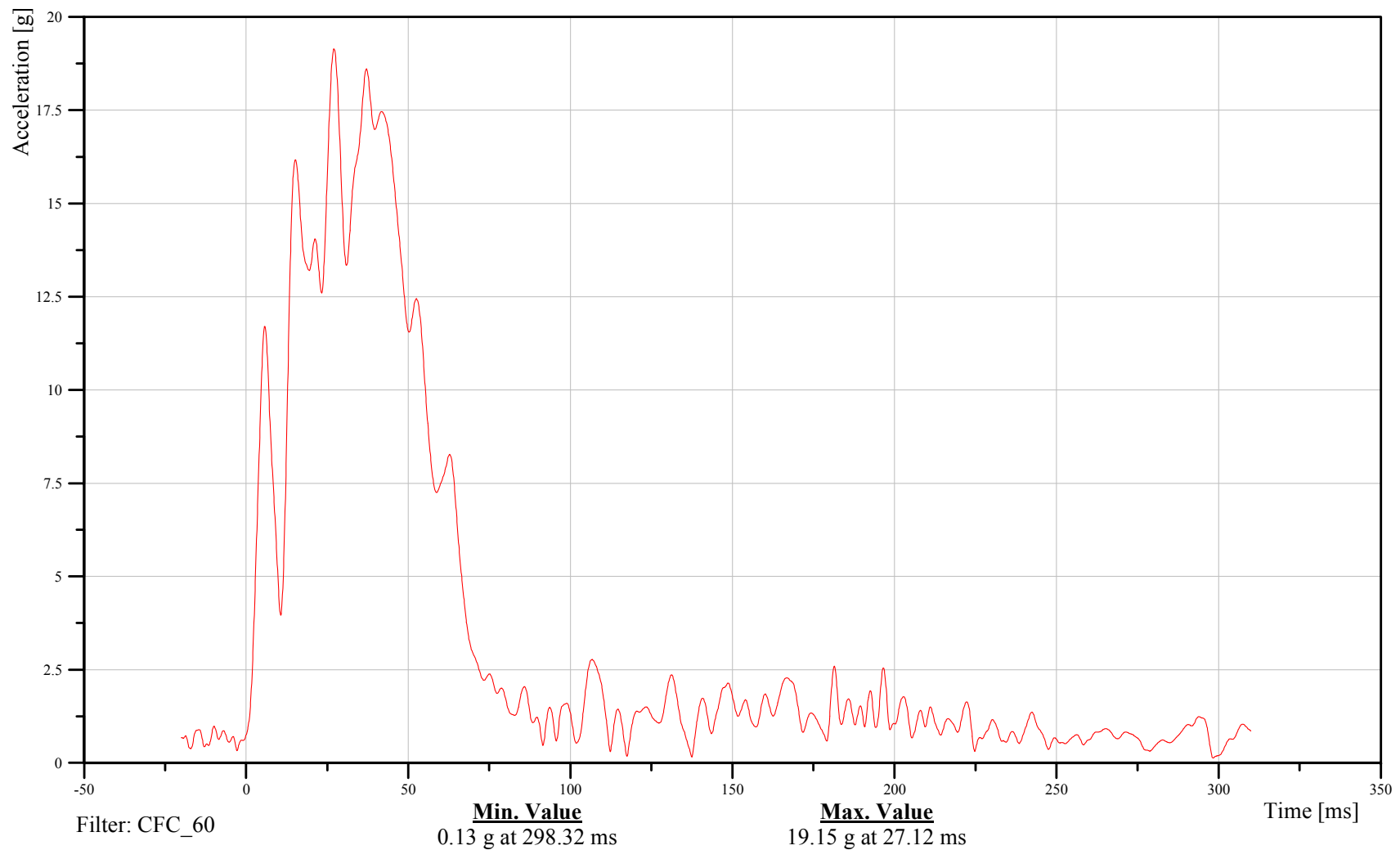
MDB Center of Gravity Resultant Acceleration

Customer: VRTC

M0VEHCCG0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

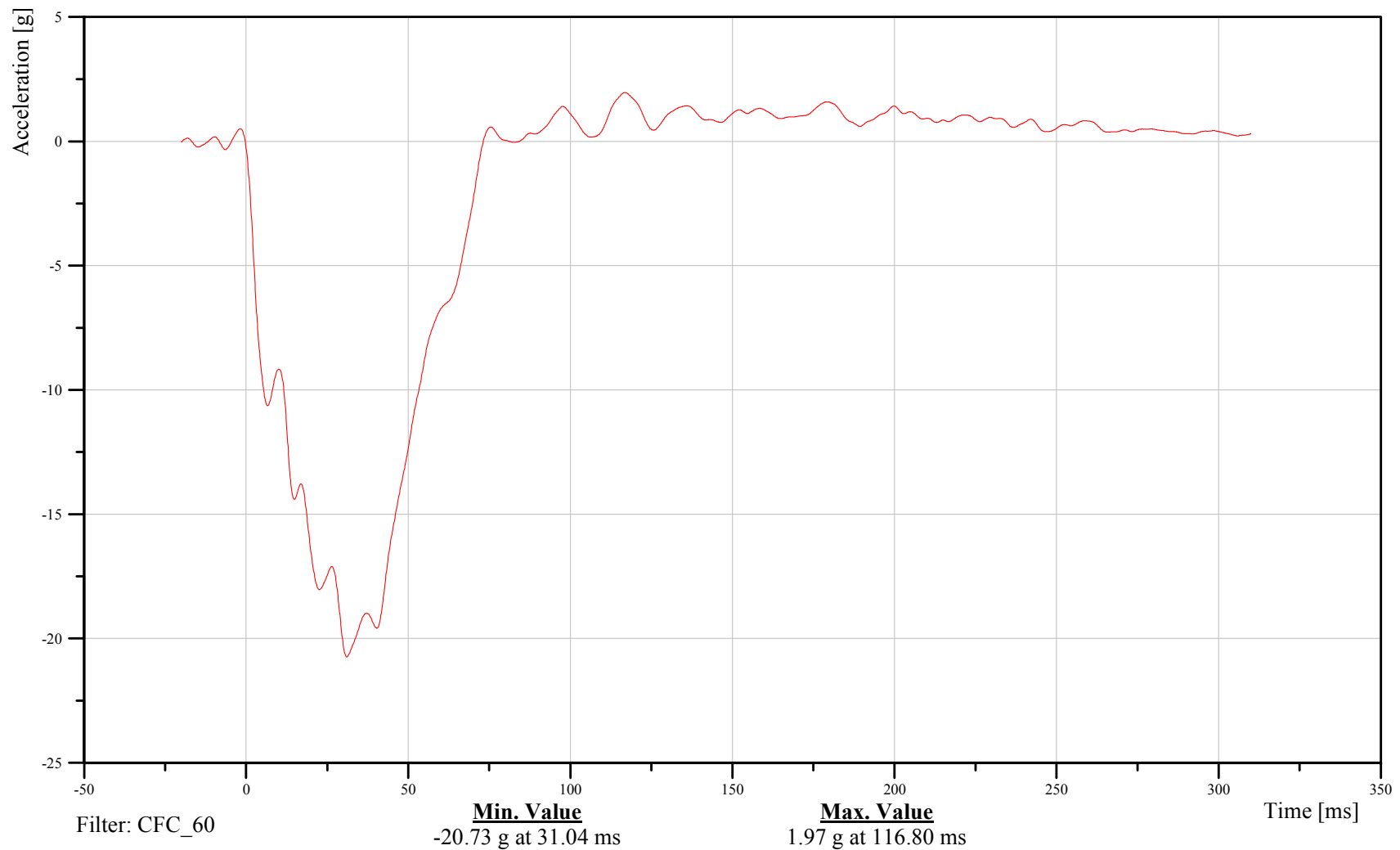
MDB Left Rear X-Axis Acceleration

Customer: VRTC

M7FRAM000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

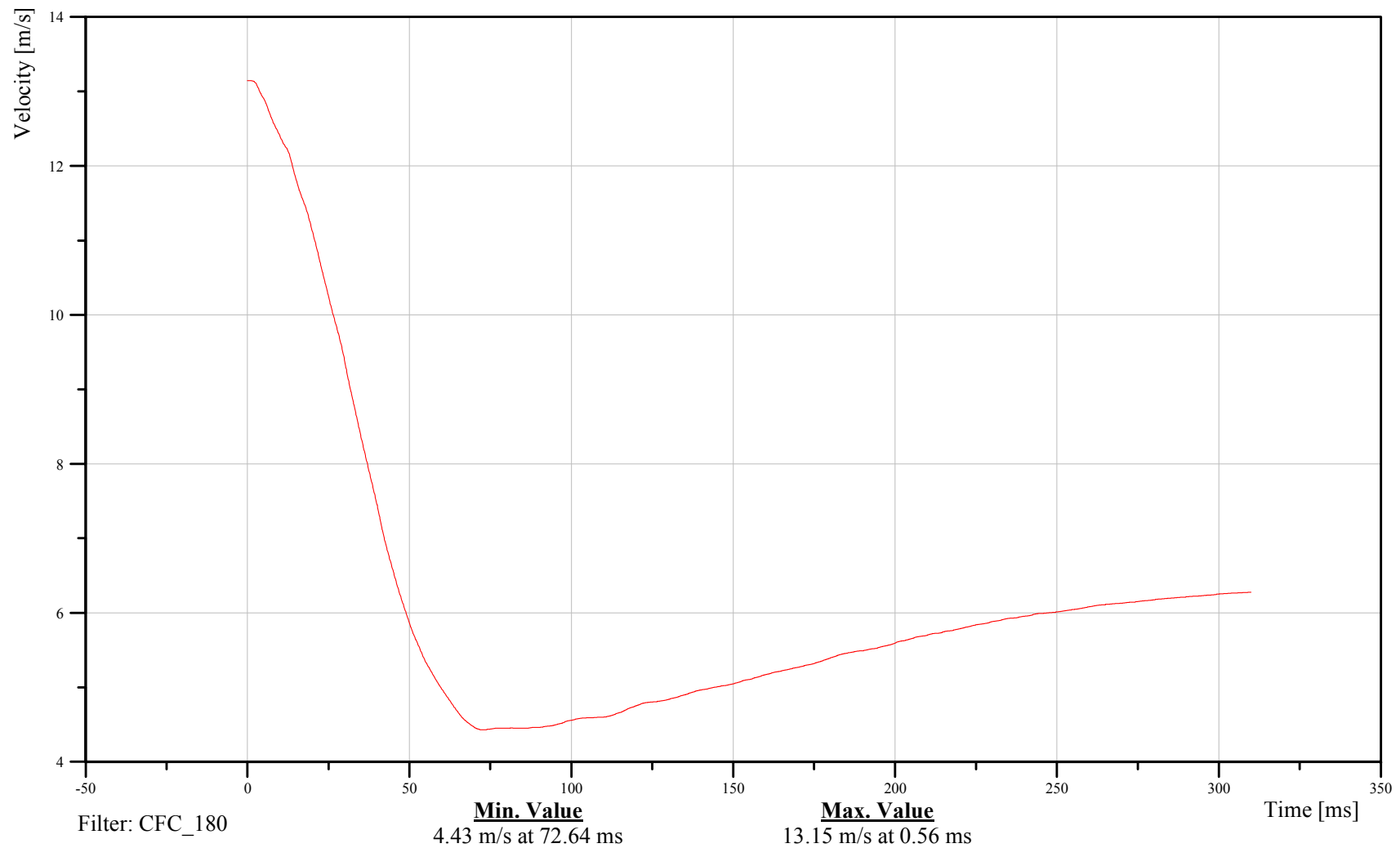
MDB Left Rear X-Axis Velocity

Customer: VRTC

M7FRAM000000VEXC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

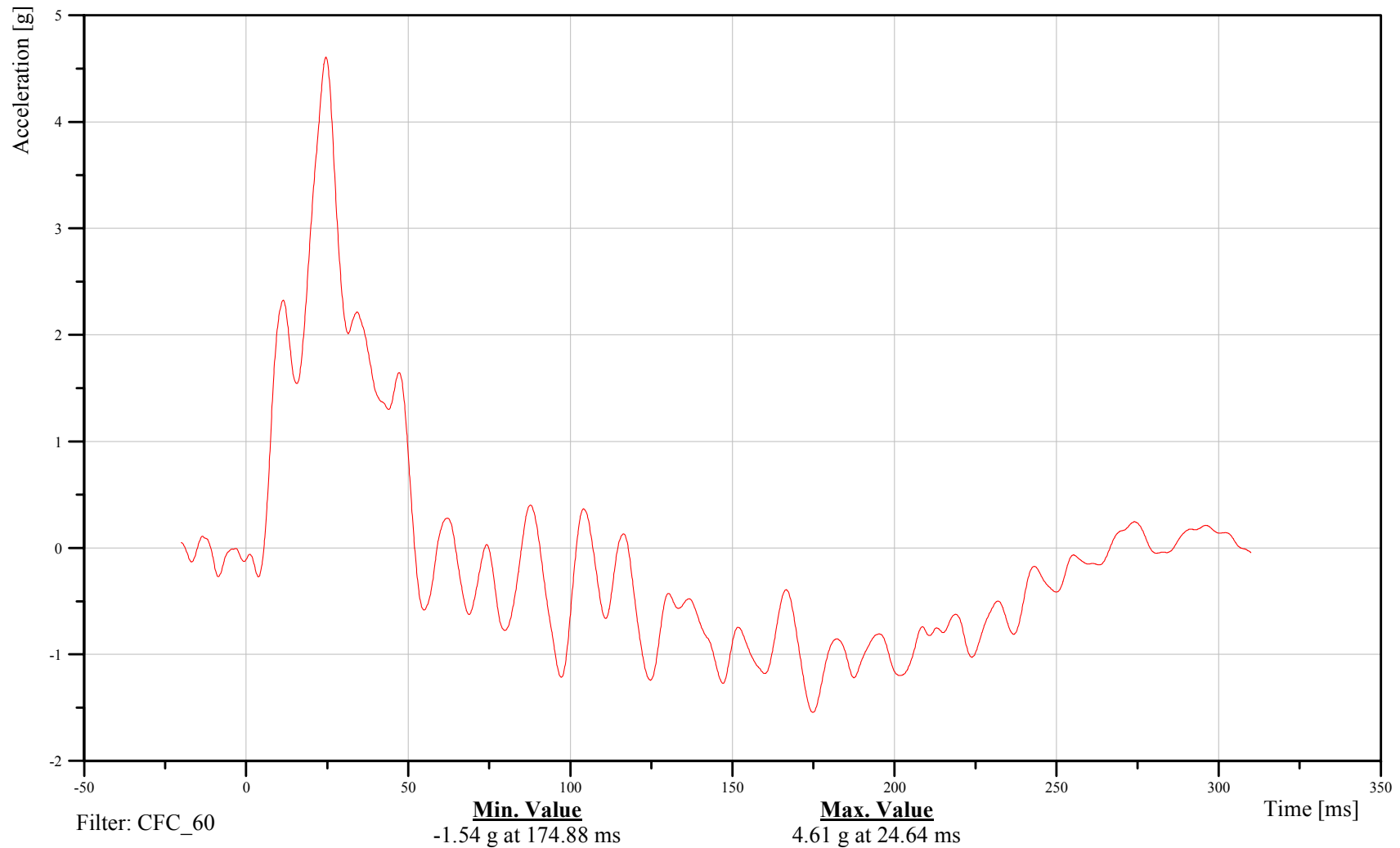
MDB Left Rear Y-Axis Acceleration

Customer: VRTC

M7FRAM000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

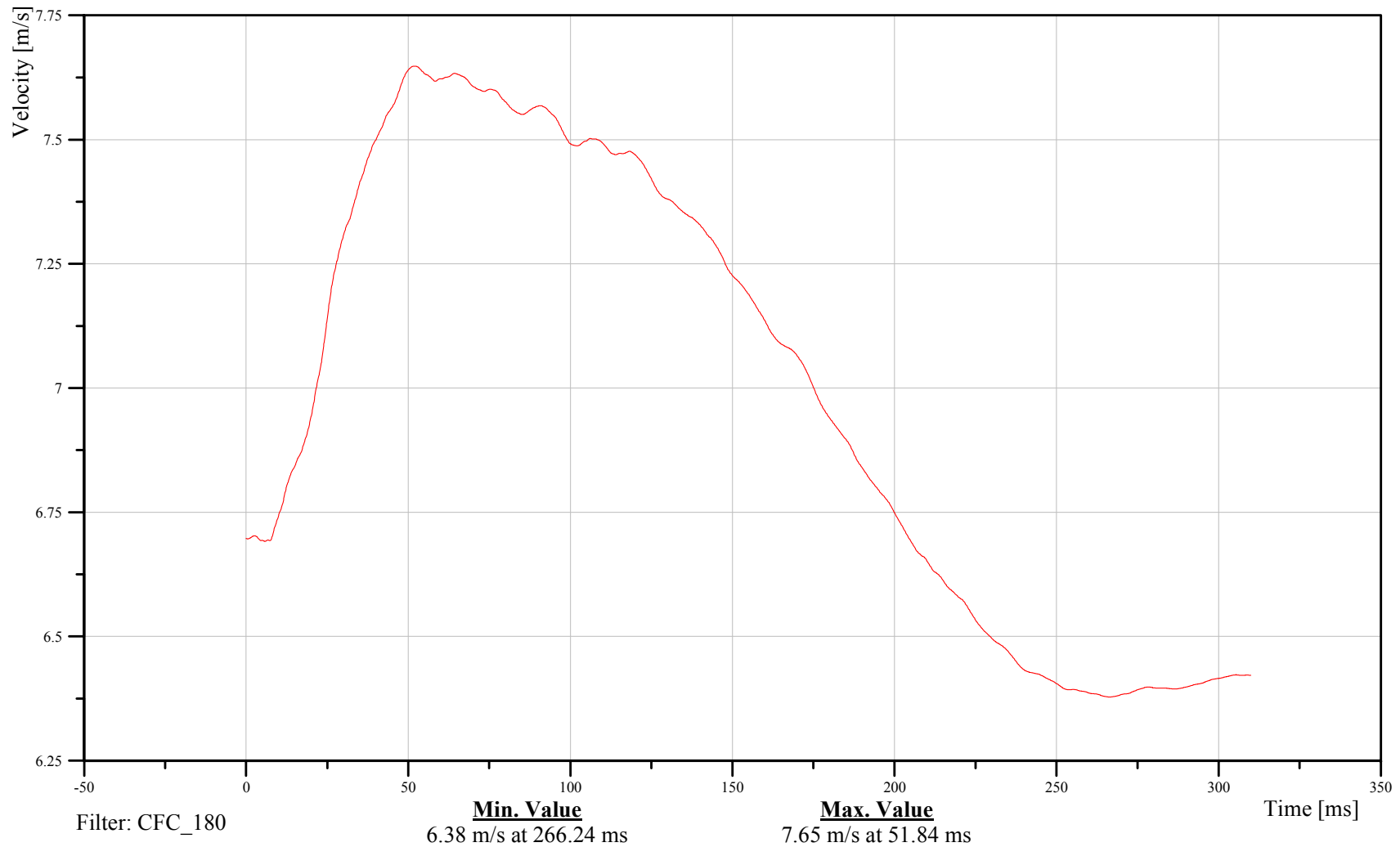
MDB Left Rear Y-Axis Velocity

Customer: VRTC

M7FRAM000000VEYC

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

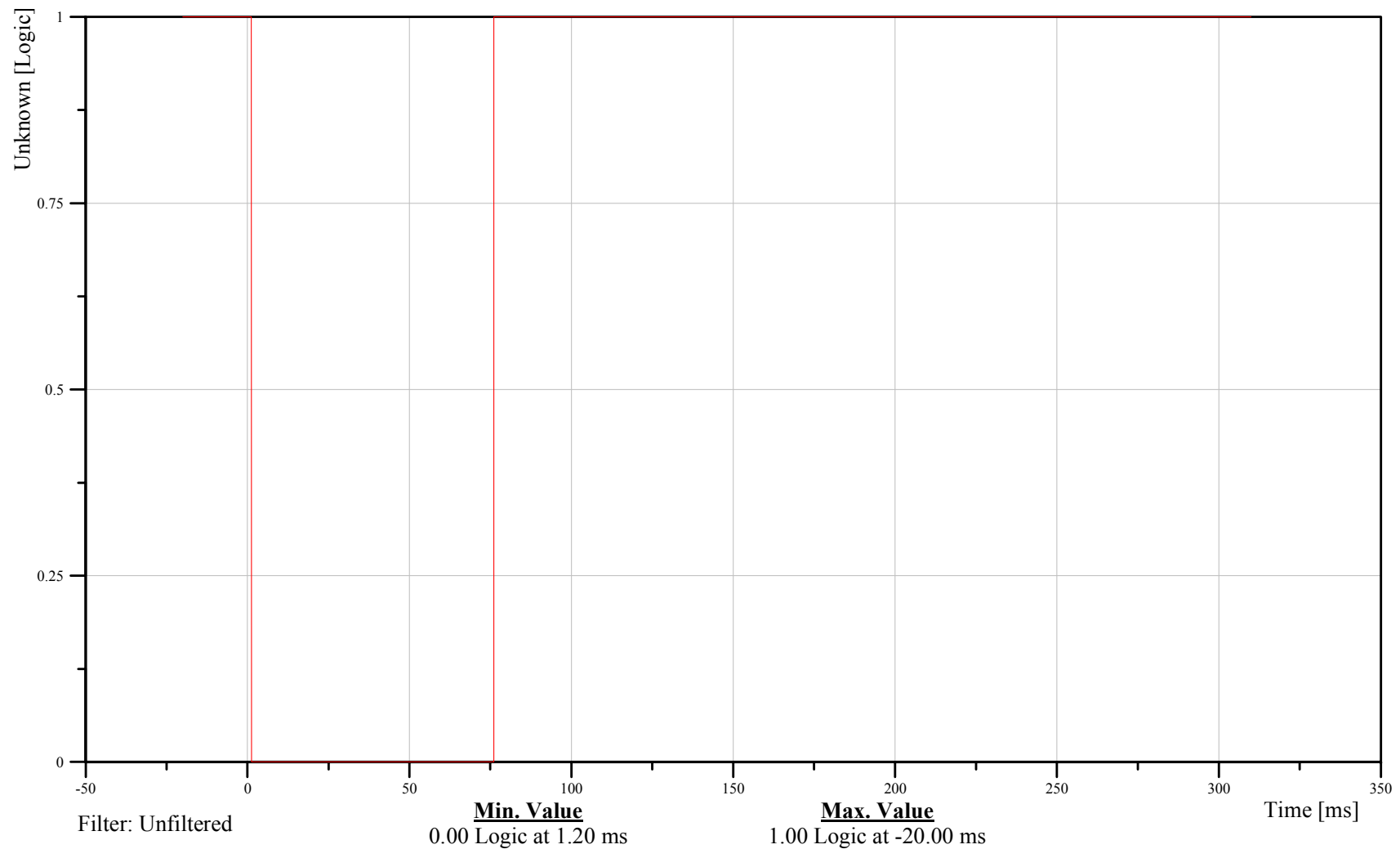
MDB Right Side Contact Switch

Customer: VRTC

M3CONT000000EV00

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

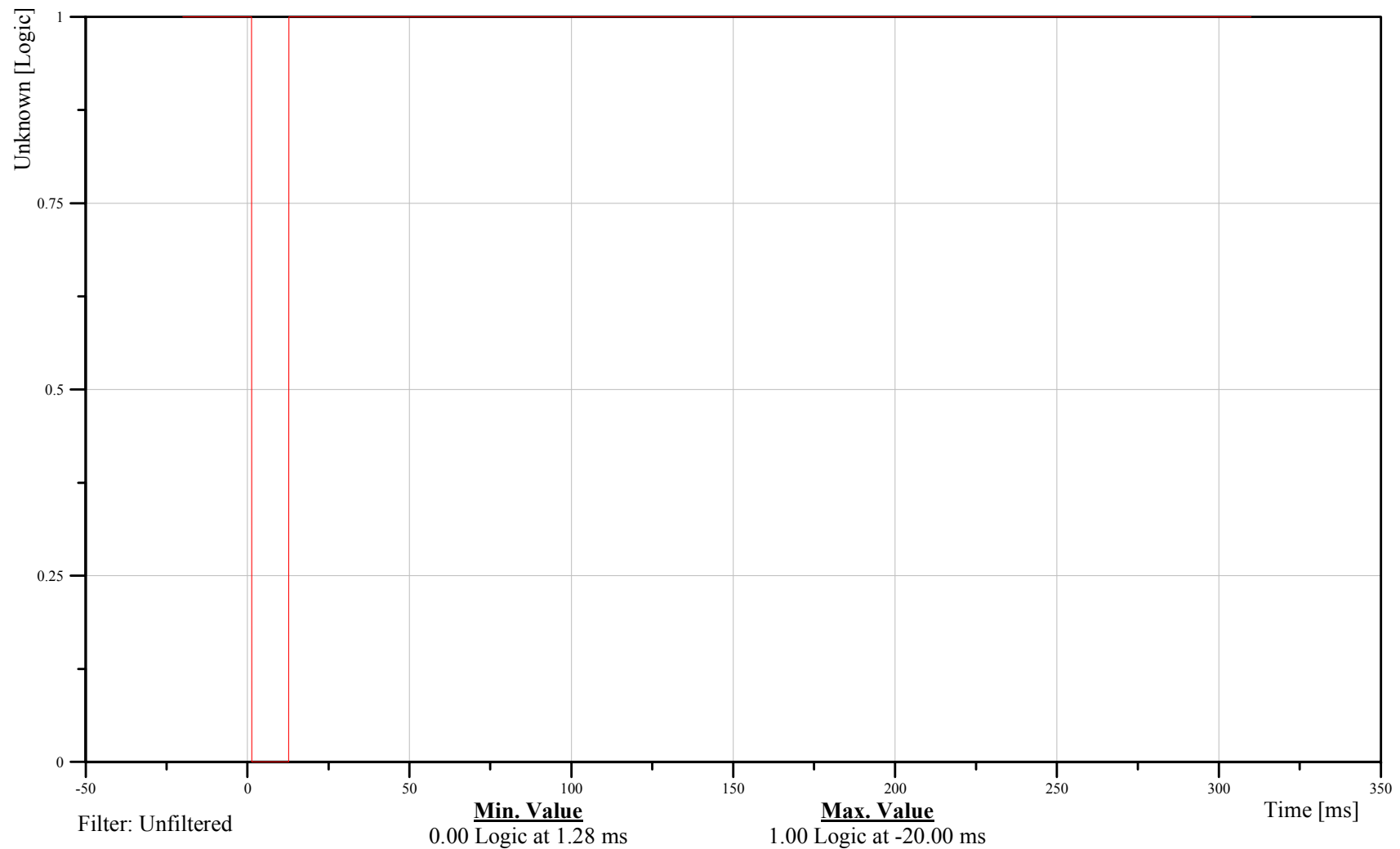
MDB Left Side Contact Switch

Customer: VRTC

M1CONT000000EV00

TRC Inc. Test Lab: CTF

Test Number: 050916





MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Head Injury Criterion (HIC)

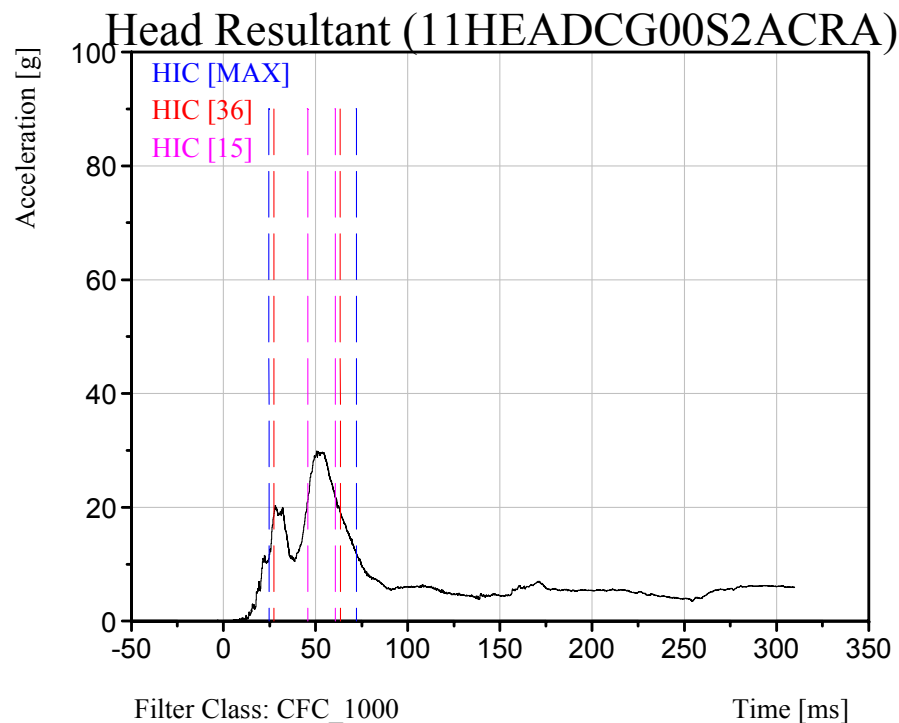
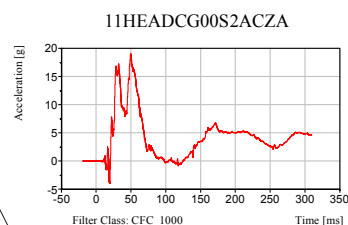
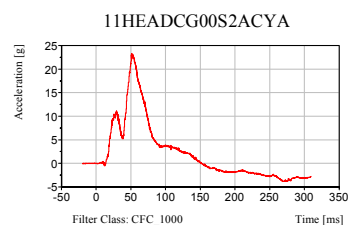
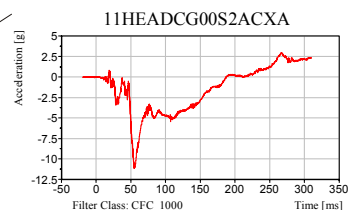
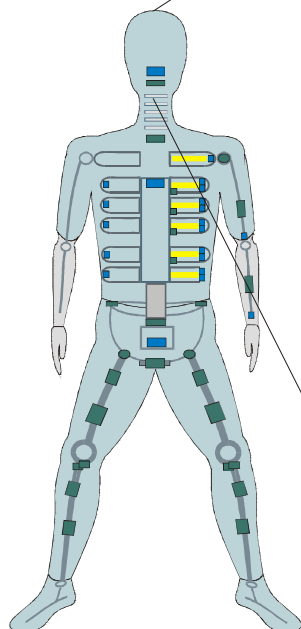
Date: 09/16/2005

Time: 11:12

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 050916



Dummy:SID IIs
Seating Position:
Driver

	<u>T1</u> (Begin)	<u>T2</u> (End)	<u>Avg. g T1 to T2</u>
HIC [Max.] = 77.86	24.80 ms	72.24 ms	19.31 g
HIC [36] = 69.41	27.44 ms	63.44 ms	20.60 g
HIC [15] = 56.28	45.76 ms	60.80 ms	26.84 g

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16) 0



MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

Pelvis(LE) Summation

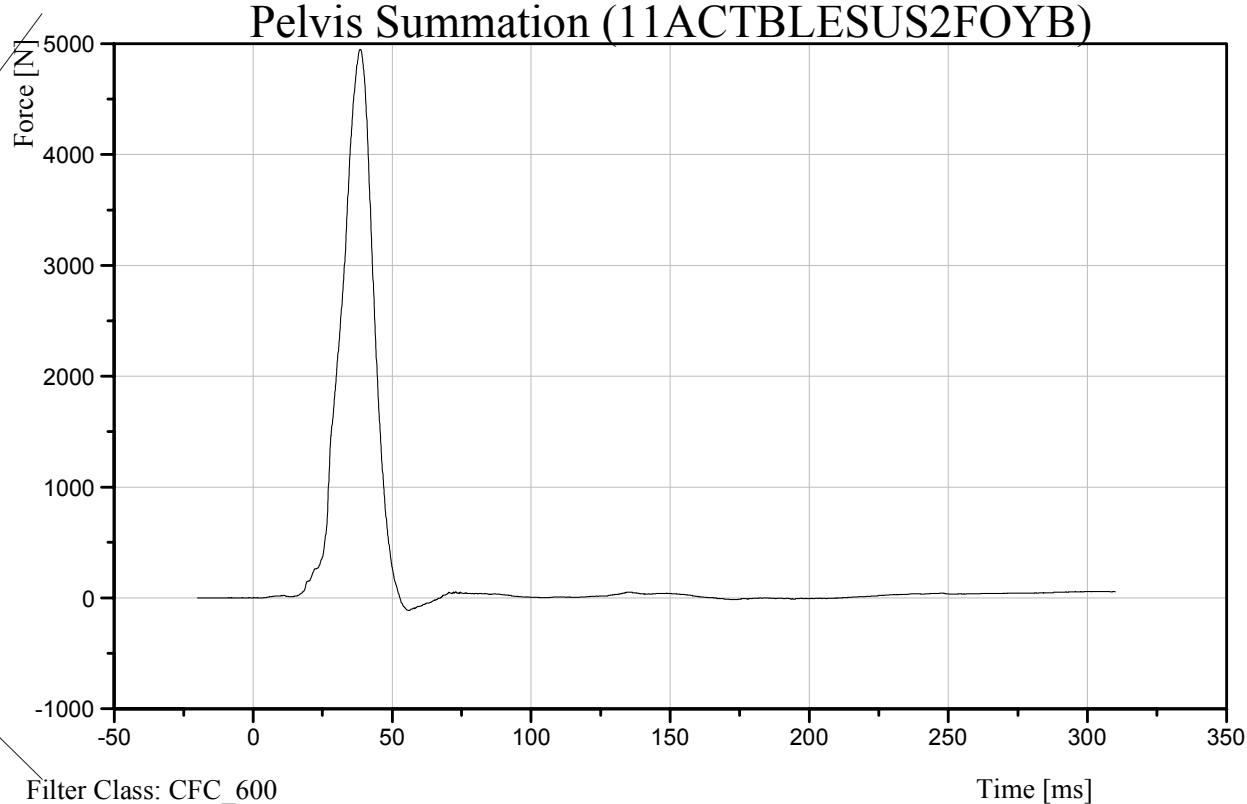
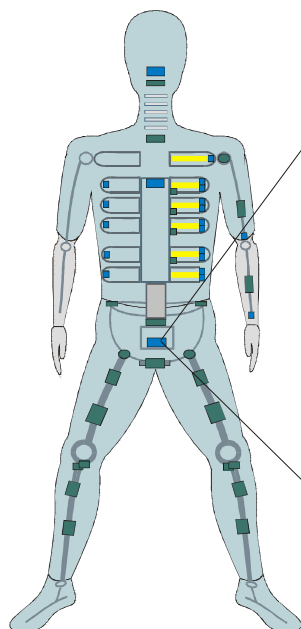
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 050916

Test Orientation = Side

Pelvis Summation (11ACTBLESUS2FOYB)



Dummy:SID IIs
Seating Position:
Driver

[Max.] 4,947.69 N at 38.48 ms
[Min.] -114.15 N at 56.24 ms

Pelvis Summation Source Code : Summation of Channels 11ILACLE00S2FOYB,11ACTBLE00S2FOYB



MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Head Injury Criterion (HIC)

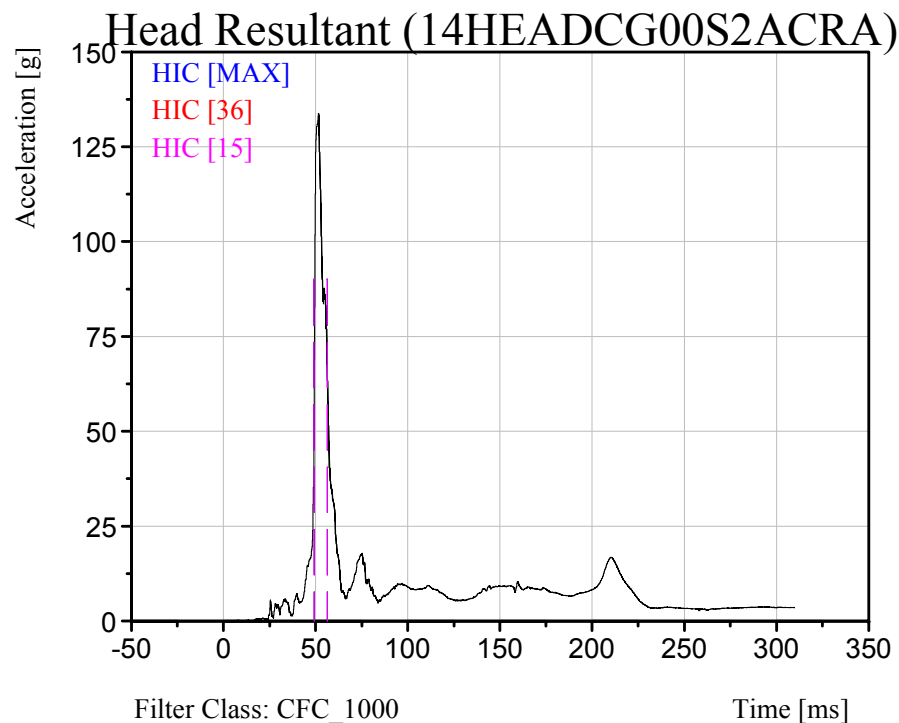
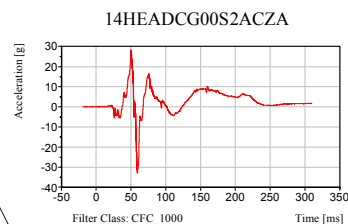
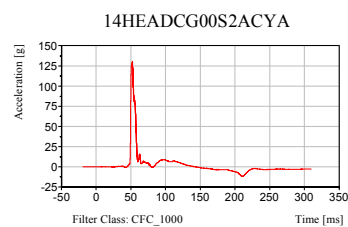
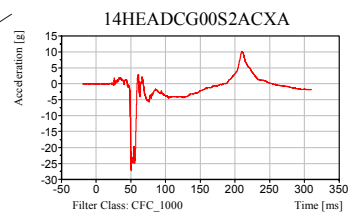
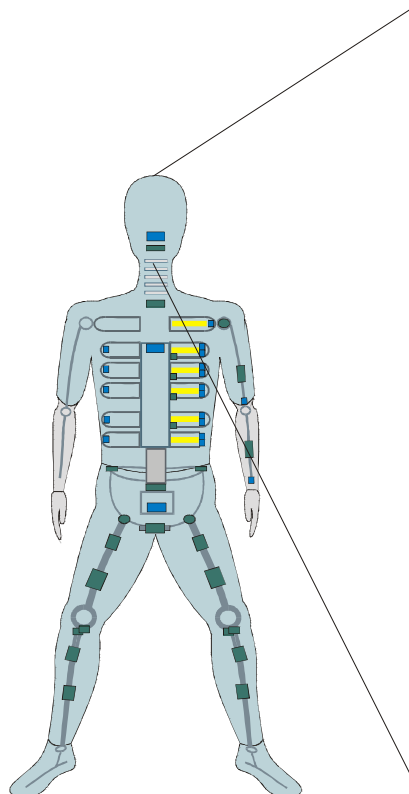
Date: 09/16/2005

Time: 11:12

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 050916



Dummy:SID IIs
Seating Position:
Left Rear Passenger

	<u>T1</u> (Begin)	<u>T2</u> (End)	<u>Avg. g T1 to T2</u>
HIC [Max.] = 773.19	49.12 ms	56.40 ms	101.99 g
HIC [36] = 773.19	49.12 ms	56.40 ms	101.99 g
HIC [15] = 773.19	49.12 ms	56.40 ms	101.99 g

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16) 102



MDB into Left Side of 2005 Suzuki Forenza at 52.9 kph

Date: 09/16/2005
Time: 11:12

Pelvis(LE) Summation

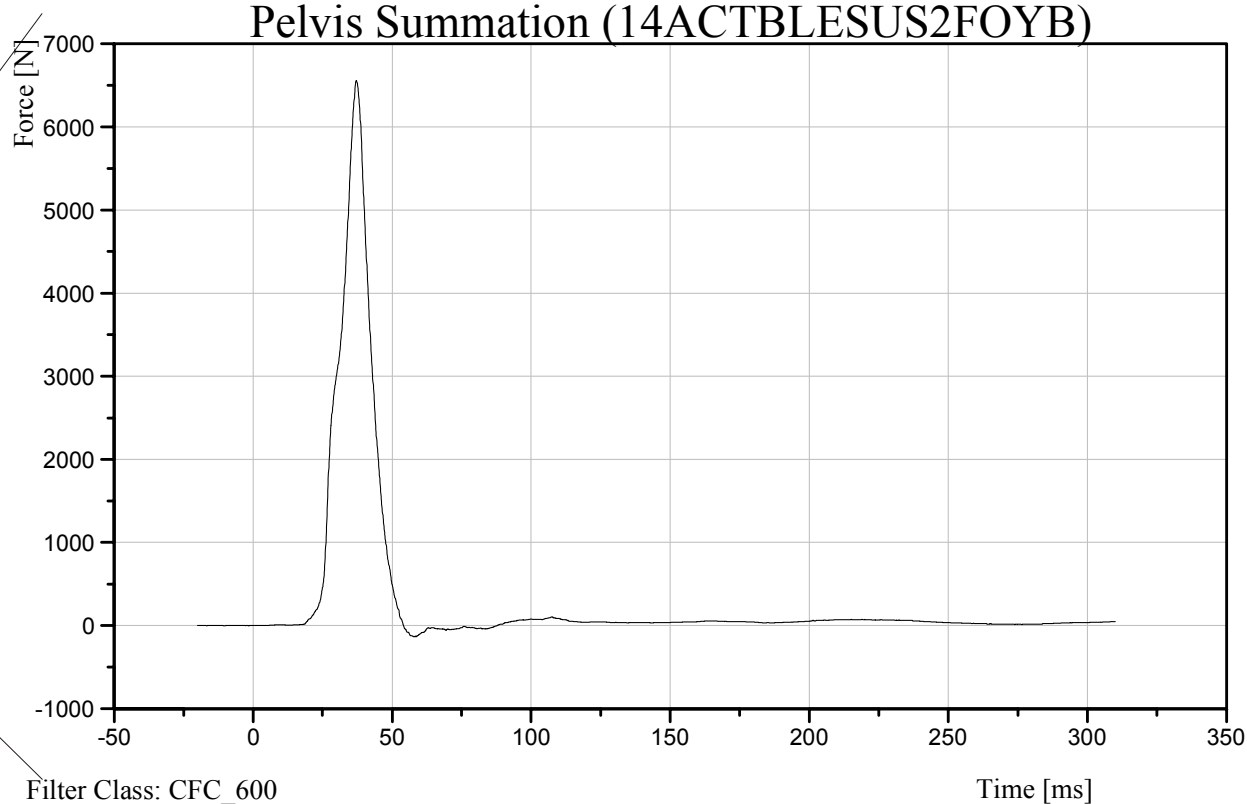
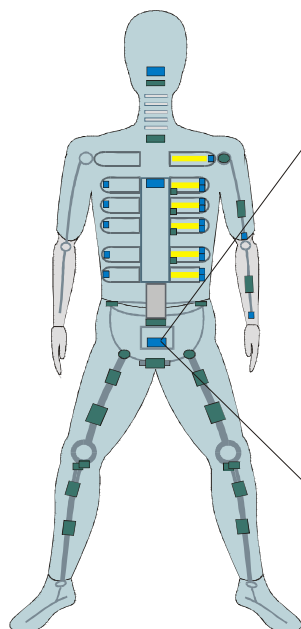
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 050916

Test Orientation = Side

Pelvis Summation (14ACTBLE00S2FOYB)



Dummy:SID IIs
Seating Position:
Left Rear Passenger

[Max.] 6,557.46 N at 37.12 ms

[Min.] -133.45 N at 58.64 ms

Pelvis Summation Source Code : Summation of Channels 14ILACLE00S2FOYB,14ACTBLE00S2FOYB

Appendix C

Dummy Configuration and Performance Verification Data

Pre-Test Dummy Configuration and Performance Verification Data

Driver Dummy S/N: 056

Transportation Research Center Inc.

Left Head Drop Test

SID-IIs Serial No. 056 Calibration No. 02 - 1

Test Date 08/02/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Peak Resultant Acceleration	125 - 145 g	122.8 g	No
Peak Longitudinal Acceleration	15 g Max	-3.5 g	Yes
Is Acceleration Curve Unimodal?	Yes	Yes	Yes

Test does not meet specifications.

Comments:

Technician



Approved



08.08.2005 13:16:12 230

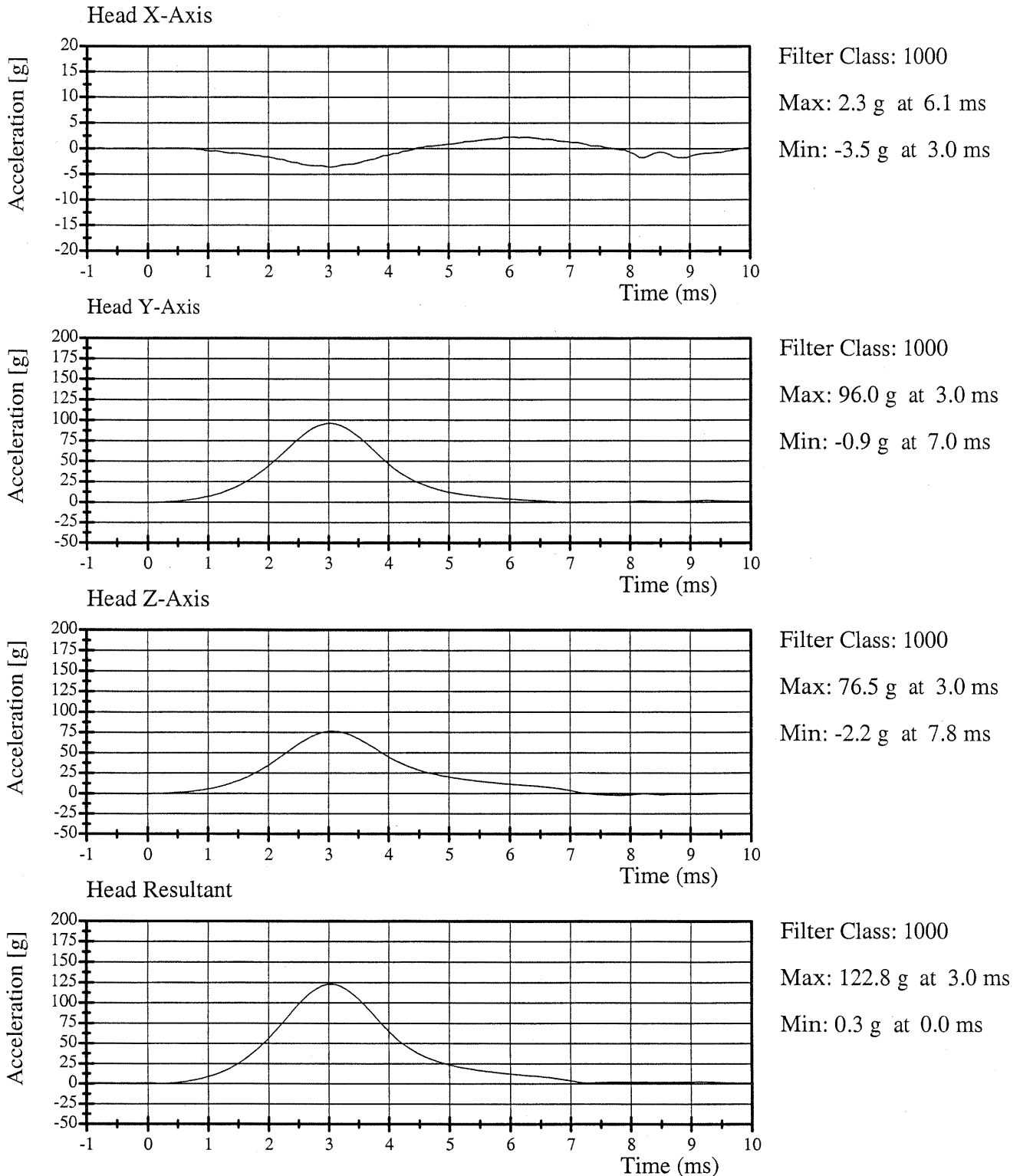


Transportation Research Center Inc.

Head Drop Test

SID-IIs Serial No. 056 Calibration No. 02 - 1

Test Date 08/02/2005



08.08.2005 13:16:13 230



Transportation Research Center Inc.

Left Lateral Neck Test

SID-IIs Serial No. 056 Calibration No. 02 - 01

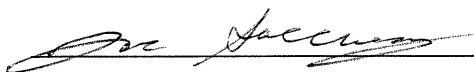
Test Date 08/02/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	50 %	Yes
Impact Velocity	5.51 - 5.63 m/s	5.58 m/s	Yes
Integrated Pendulum Velocity			
10 ms	2.20 - 2.80 m/s	2.67 m/s	Yes
15 ms	3.40 - 4.10 m/s	3.76 m/s	Yes
20 ms	4.50 - 5.40 m/s	4.98 m/s	Yes
25 ms	5.50 - 6.10 m/s	5.95 m/s	Yes
25 - 100 ms	5.20 - 6.20 m/s	5.69 - 6.02 m/s	Yes
Peak D Plane Rotation	74 - 79 °	74.8 °	Yes
Time of Peak D-Plane Rotation	50 - 70 °	60.4 °	Yes
Peak Moment About Occipital Condyles during Rotation Interval	40.0 - 45.0 N·m	42.1 N·m	Yes
Time of Moment Decay To 0 N·m	113 - 123 ms	114.9 ms	Yes

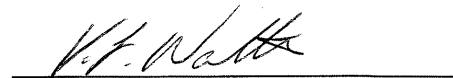
Test meets specifications.

Comments:

Technician



Approved



08.08.2005 13:22:08 674

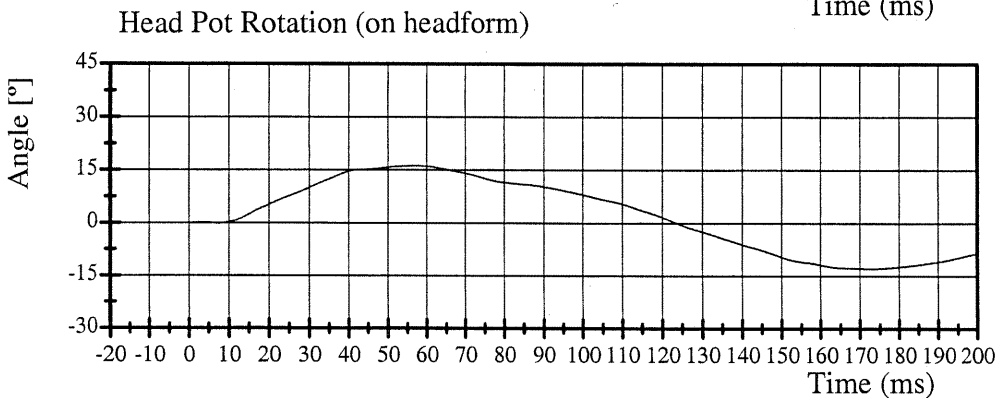
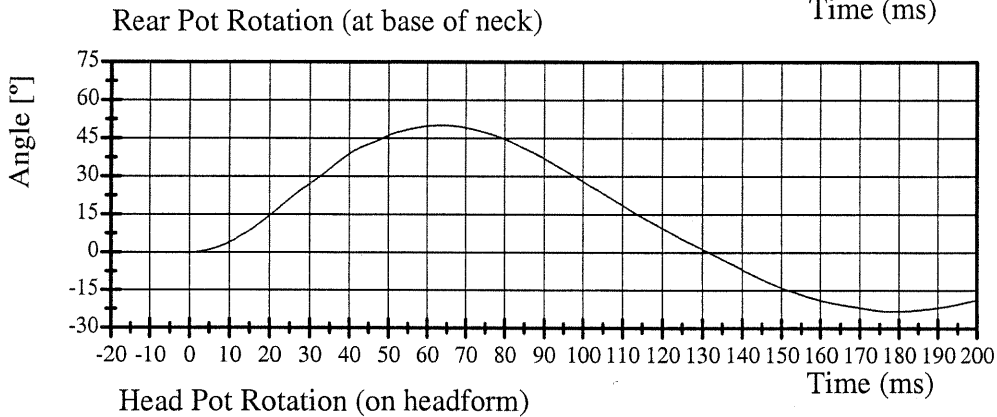
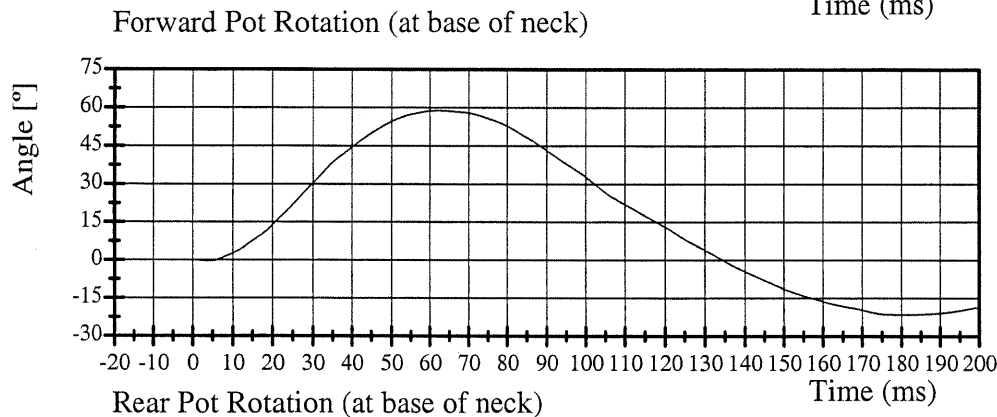
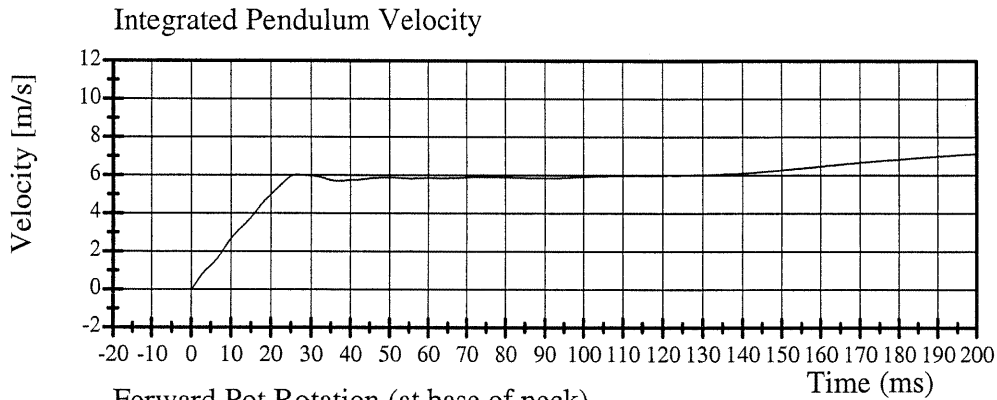


Transportation Research Center Inc.

Left Lateral Neck Test

SID-IIs Serial No. 056 Calibration No. 02 - 01

Test Date 08/02/2005



08.08.2005 13:19:01 674



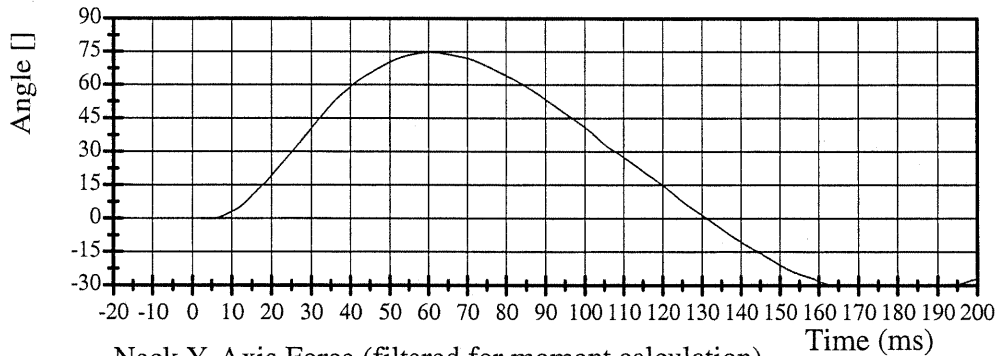
Transportation Research Center Inc.

Left Lateral Neck Test

SID-IIs Serial No. 056 Calibration No. 02 - 01

Test Date 08/02/2005

D-Plane Rotation (forward pot + head pot)

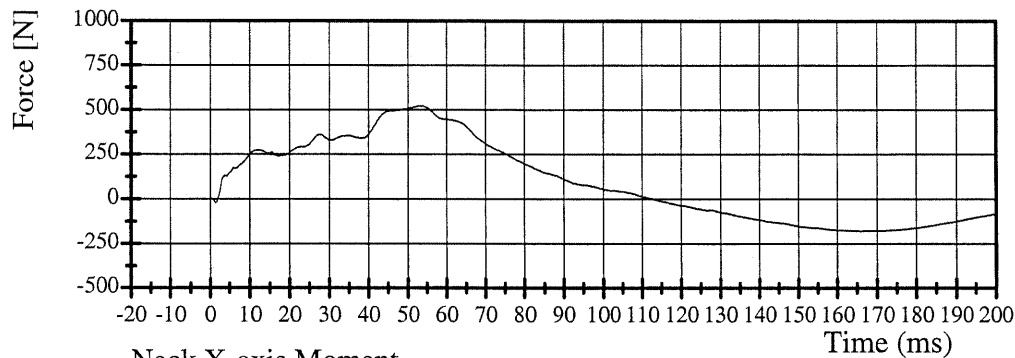


Filter Class: CFC 60

Max: 74.8 ° at 60.4 ms

Min: -34.1 ° at 176.1 ms

Neck Y-Axis Force (filtered for moment calculation)

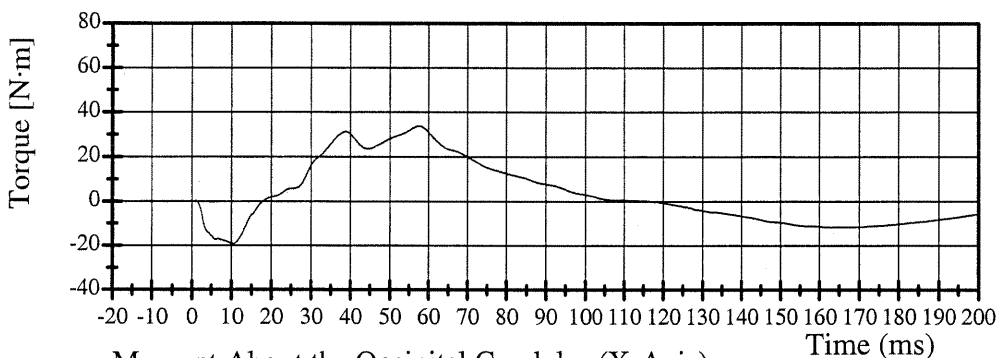


Filter Class: CFC 600

Max: 522 N at 53.8 ms

Min: -179 N at 166.2 ms

Neck X-axis Moment

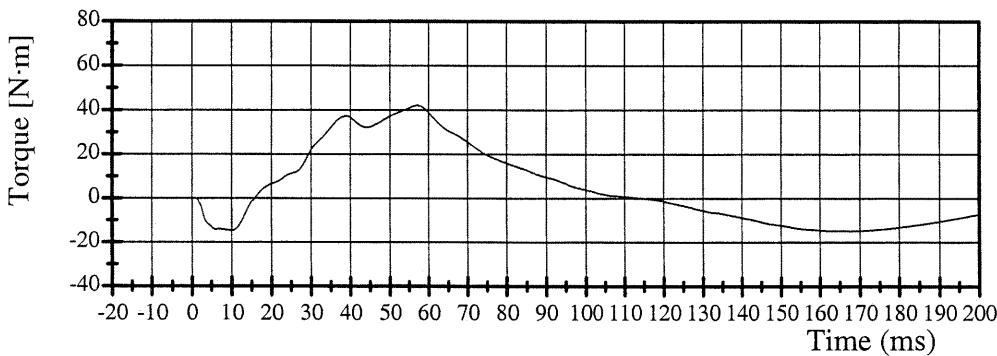


Filter Class: CFC 600

Max: 33.8 N·m at 57.4 ms

Min: -19.1 N·m at 10.3 ms

Moment About the Occipital Condyles (X-Axis)



Filter Class: 600

Max: 42.1 N·m at 57.2 ms

Min: -14.8 N·m at 167.9 ms

Transportation Research Center Inc.

Left Shoulder Test

SID-IIs Serial No. 056 Calibration No. 02 - 1

Test Date 08/02/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 C	21.2 C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Pendulum Velocity	4.41 - 4.59 m/sec	4.47 m/sec	Yes
Probe Force	1600 - 2400 N	2232 N	Yes
Deflection	27 - 39 mm	35.8 mm	Yes

Test meets specifications.

Comments:

Technician



Approved



08.08.2005 13:25:06 568

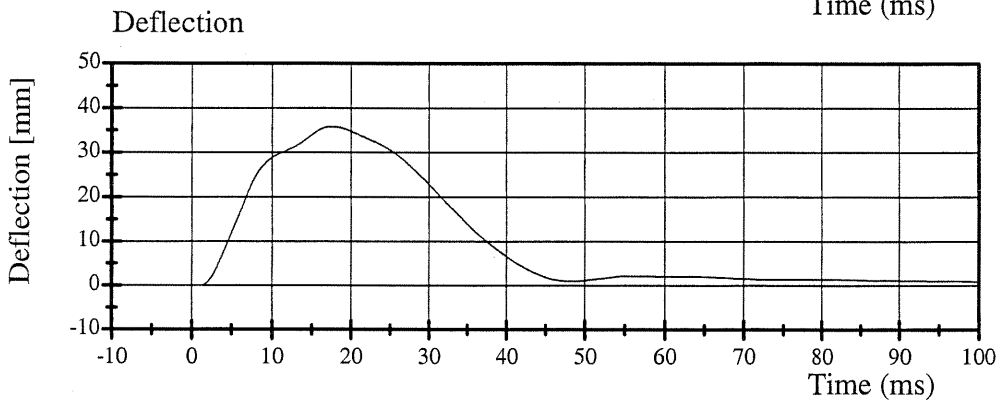
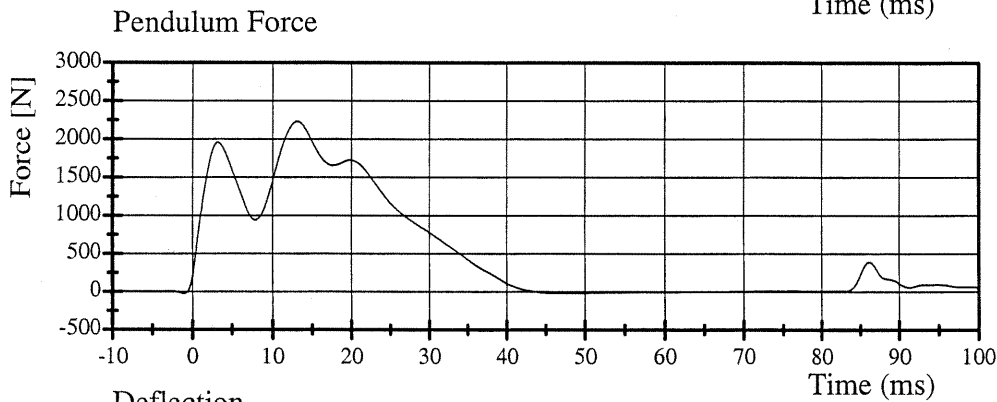
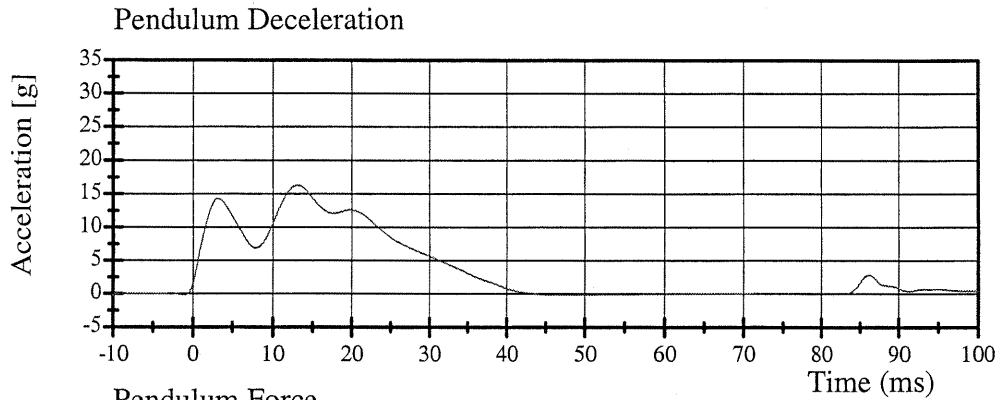


Transportation Research Center Inc.

Left Shoulder Test

SID-IIs Serial No. 056 Calibration No. 02 - 1

Test Date 08/02/2005



08.08.2005 13:25:06 568



Transportation Research Center Inc.

Left Thorax With Arm Test

SID-IIs Serial No. 056 Calibration No. 02 - 1

Test Date 08/02/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 C	21.4 C	Yes
Relative Humidity	10 - 70 %	51 %	Yes
Pendulum Velocity	6.60 - 6.80 m/sec	6.72 m/sec	Yes
Pendulum Force	4100 - 4700 N	4708 N	No
Upper Spine Peak Acceleration	34 - 48 g	36.0 g	Yes
Lower Spine Peak Acceleration	30 - 38 g	32.8 g	Yes
Upper Rib Peak Deflection	23 - 35 mm	28.1 mm	Yes
Mid Rib Peak Deflection	29 - 44 mm	32.7 mm	Yes
Lower Rib Peak Deflection	33 - 40 mm	35.6 mm	Yes
Shoulder Peak Deflectioin	30 - 42 mm	35.4 mm	Yes

Test does not meet specifications.

Comments:

Technician



Approved



08.08.2005 13:31:29 405



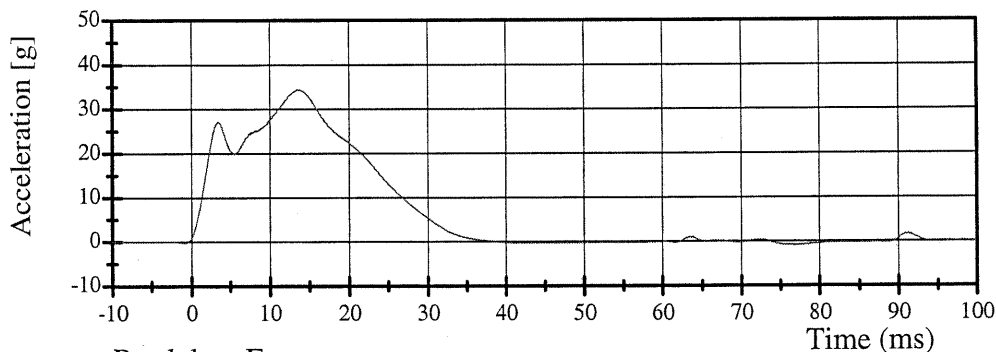
Transportation Research Center Inc.

Left Thorax With Arm Test

SID-IIs Serial No. 056 Calibration No. 02 - 1

Test Date 08/02/2005

Pendulum Deceleration

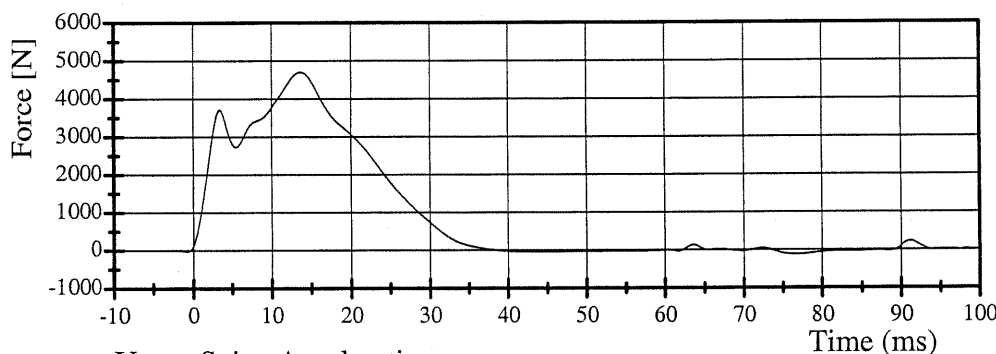


Filter Class: CFC 180

Max: 34.4 g at 13.7 ms

Min: -0.8 g at 77.0 ms

Pendulum Force

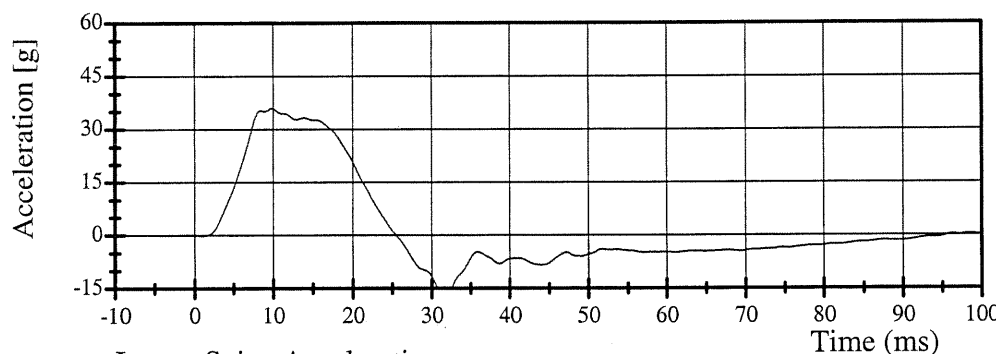


Filter Class: CFC 180

Max: 4708 N at 13.7 ms

Min: -115 N at 77.0 ms

Upper Spine Acceleration

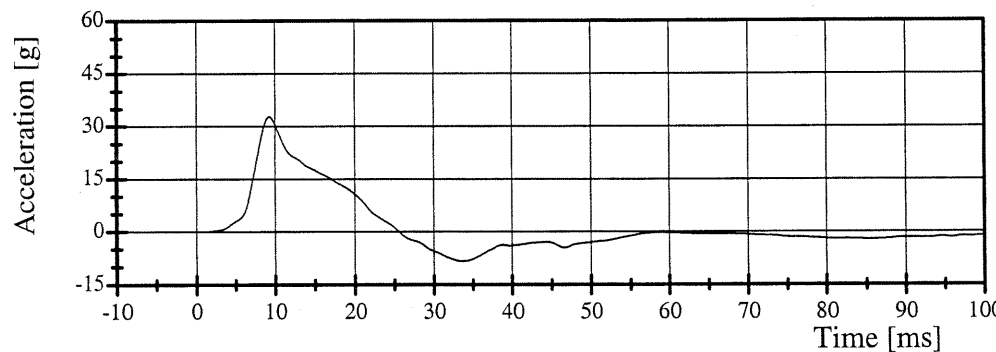


Filter Class: CFC 180

Max: 36.0 g at 9.8 ms

Min: -19.0 g at 31.6 ms

Lower Spine Acceleration



Filter Class: CFC 180

Max: 32.8 g at 9.3 ms

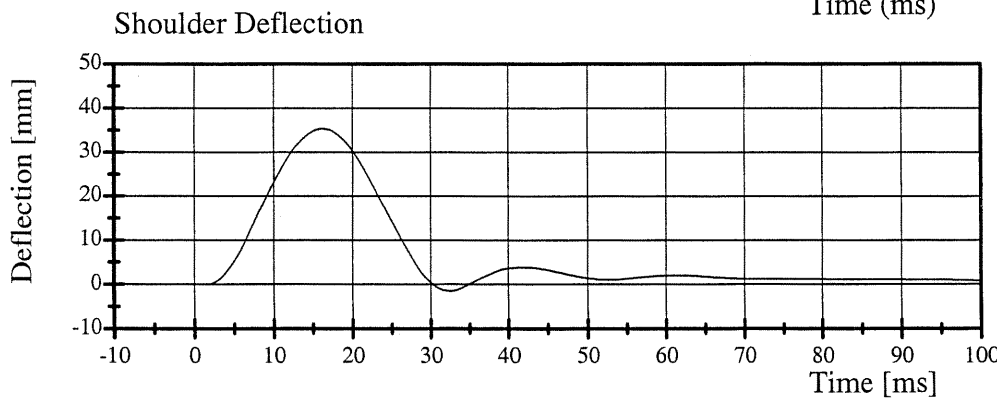
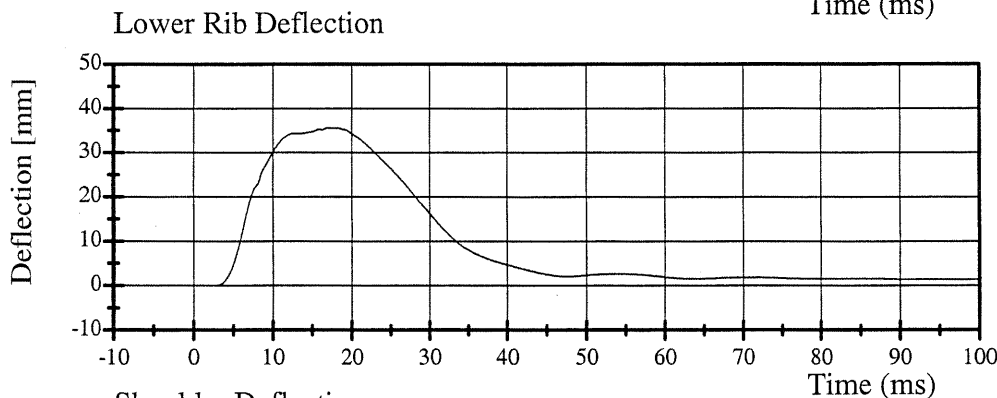
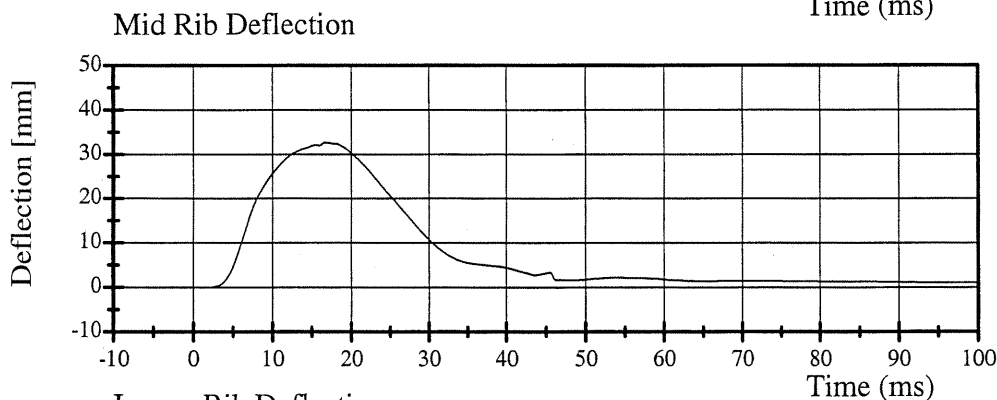
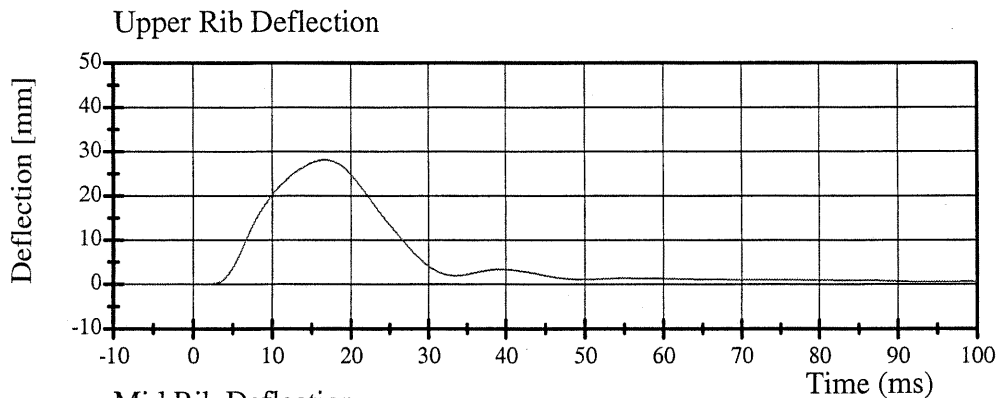
Min: -8.4 g at 33.6 ms

Transportation Research Center Inc.

Left Thorax With Arm Test

SID-IIs Serial No. 056 Calibration No. 02 - 1

Test Date 08/02/2005



08.08.2005 13:31:30 405



Transportation Research Center Inc.

Left Thorax Without Arm Test

SID-IIs Serial No. 056 Calibration No. 02 - 2

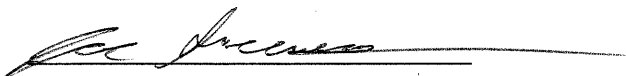
Test Date 08/01/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 C	21.3 C	Yes
Relative Humidity	10 - 70 %	46 %	Yes
Pendulum Velocity	4.20 - 4.40 m/sec	4.31 m/sec	Yes
Pendulum Force	1800 - 2300 N	2304 N	No
Upper Spine Peak Acceleration	13 - 18 g	15.4 g	Yes
Lower Spine Peak Acceleration	8 - 13 g	10.1 g	Yes
Upper Rib Peak Deflection	32 - 41 mm	34.2 mm	Yes
Mid Rib Peak Deflection	40 - 51 mm	41.2 mm	Yes
Lower Rib Peak Deflection	34 - 47 mm	40.2 mm	Yes

Test does not meet specifications.

Comments:

Technician



Approved



08.08.2005 13:42:29 567

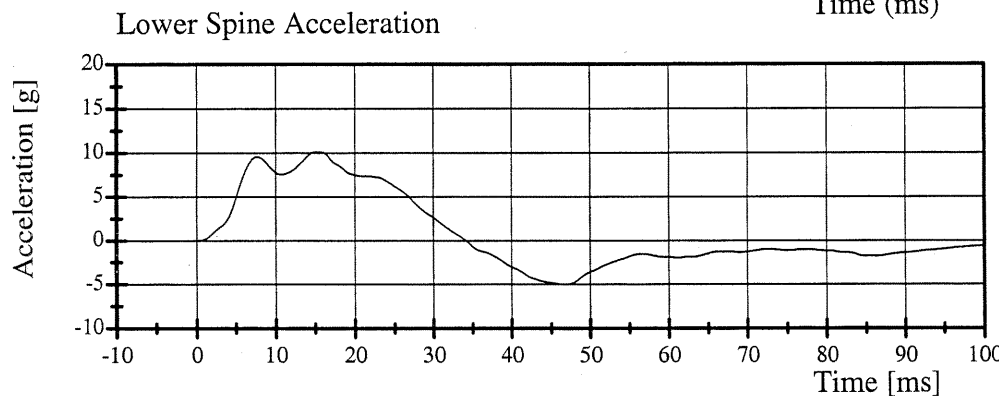
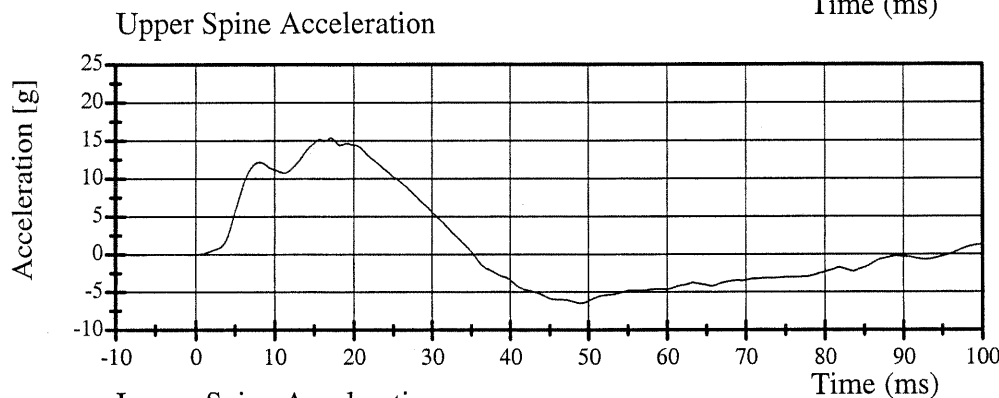
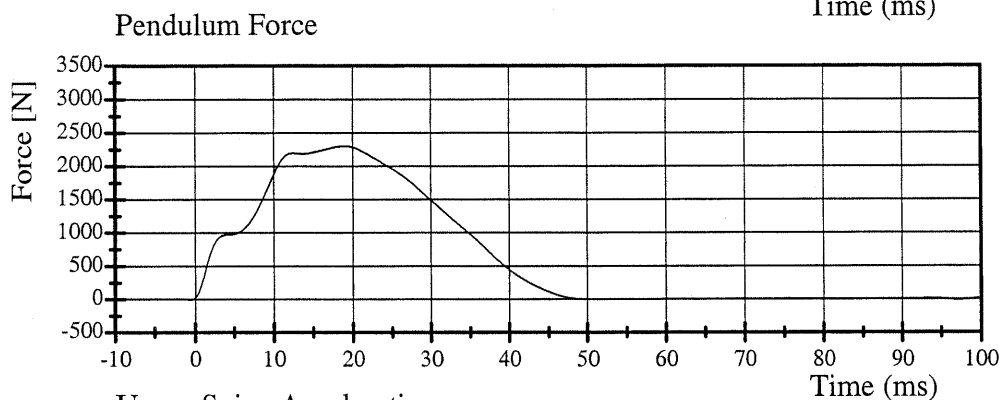
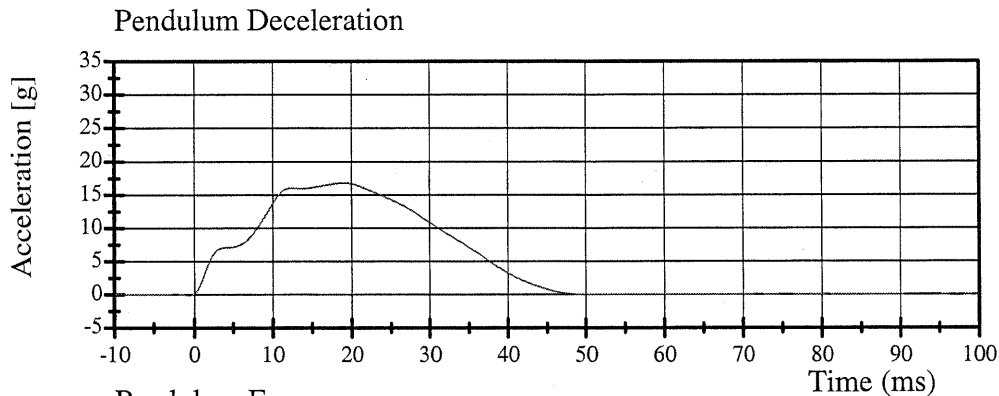


Transportation Research Center Inc.

Left Thorax Without Arm Test

SID-IIs Serial No. 056 Calibration No. 02 - 2

Test Date 08/01/2005



08.08.2005 13:42:30 567



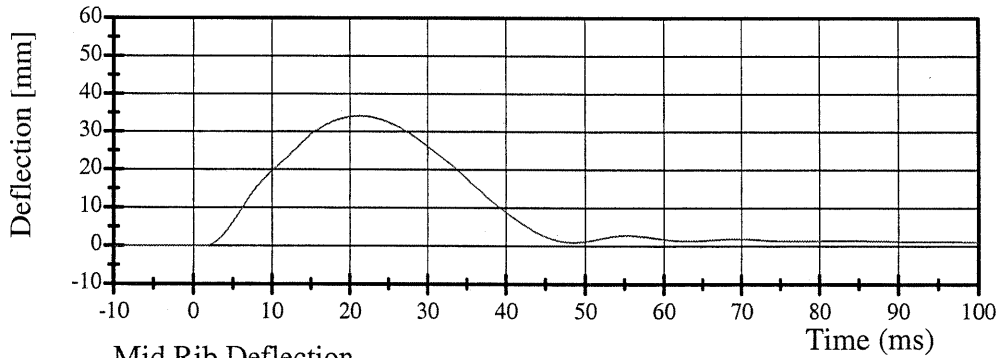
Transportation Research Center Inc.

Left Thorax Without Arm Test

SID-IIs Serial No. 056 Calibration No. 02 - 2

Test Date 08/01/2005

Upper Rib Deflection

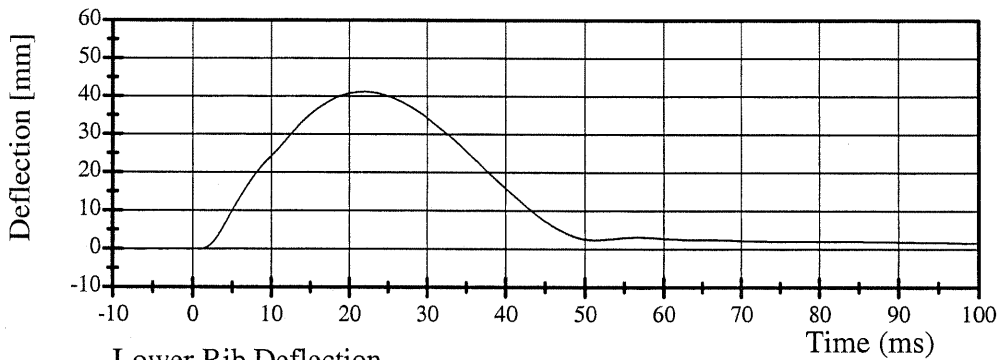


Filter Class: CFC 600

Max: 34.2 mm at 21.3 ms

Min: -0.0 mm at 1.4 ms

Mid Rib Deflection

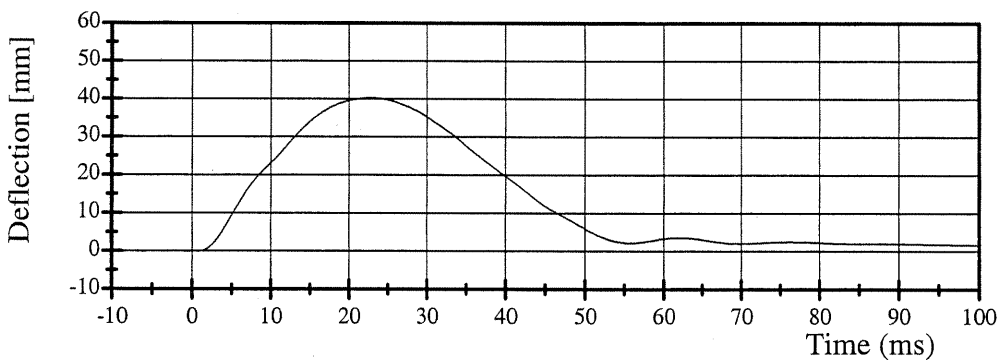


Filter Class: CFC 600

Max: 41.2 mm at 22.1 ms

Min: -0.0 mm at 1.0 ms

Lower Rib Deflection



Filter Class: CFC 600

Max: 40.2 mm at 23.0 ms

Min: -0.0 mm at 0.9 ms

Transportation Research Center Inc.

Left Abdomen Test

SID-IIs Serial No. 056 Calibration No. 02 - 02

Test Date 08/01/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 C	21.2 C	Yes
Relative Humidity	10 - 70 %	46 %	Yes
Pendulum Velocity	4.20 - 4.40 m/sec	4.38 m/sec	Yes
Pendulum Force	1300 - 1900 N	2104 N	No
Upper Spine Peak Acceleration	5 - 9 g	7.4 g	Yes
Lower Spine Peak Acceleration	9 - 13 g	11.8 g	Yes
Upper Abdomen Rib Peak Deflection	44 - 55 mm	43.5 mm	No
Lower Abdomen Rib Peak Deflection	44 - 56 mm	41.1 mm	No

Test does not meet specifications.

Comments:

Technician



Approved



08.08.2005 13:48:58 592

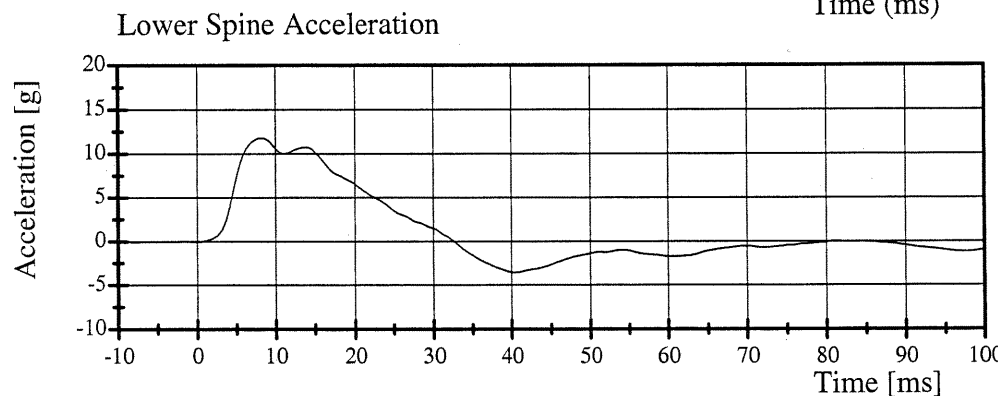
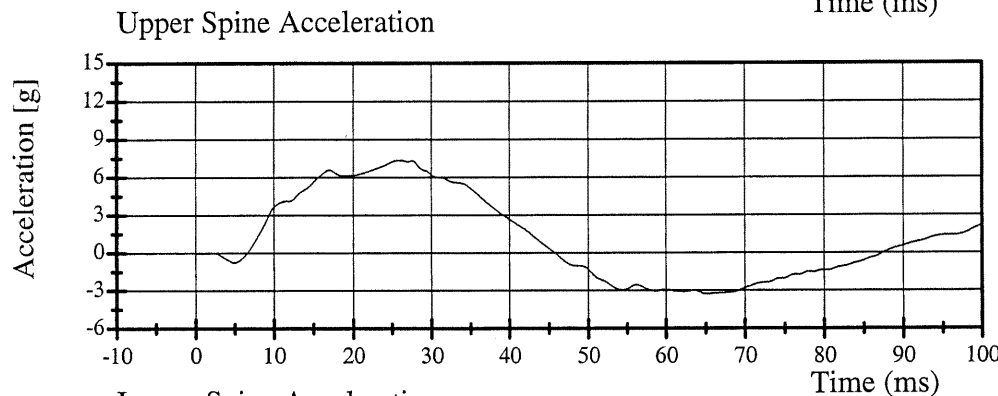
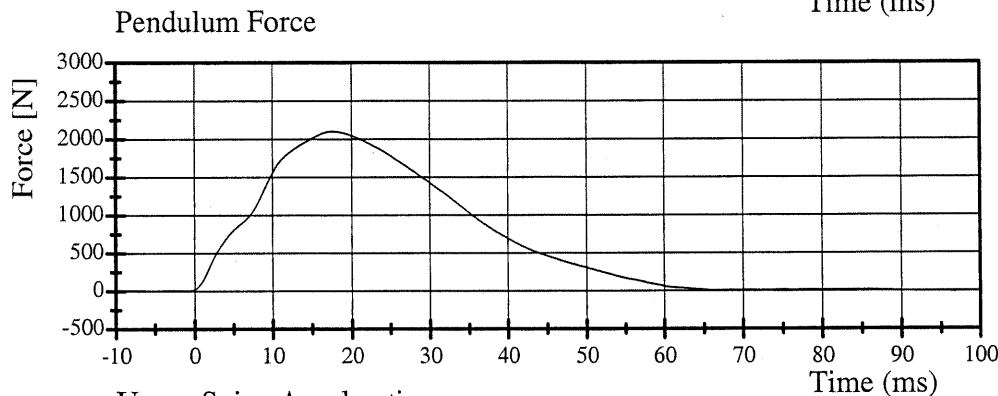
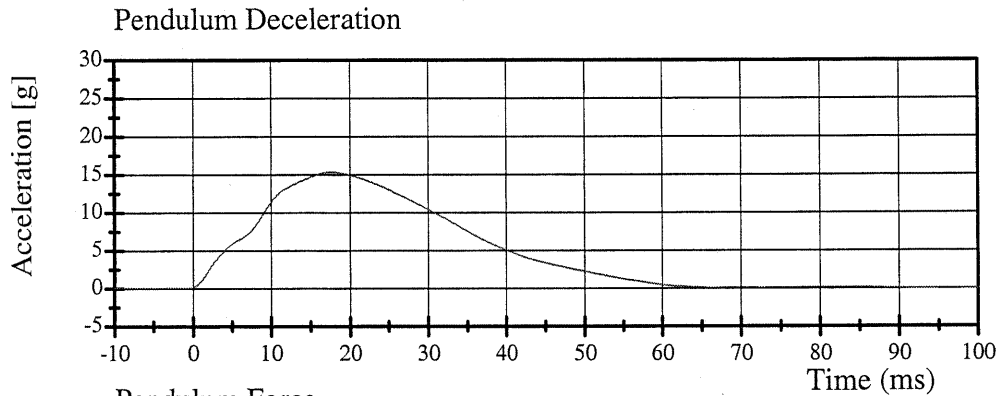


Transportation Research Center Inc.

Left Abdomen Test

SID-IIs Serial No. 056 Calibration No. 02 - 02

Test Date 08/01/2005



08.08.2005 13:48:58 592

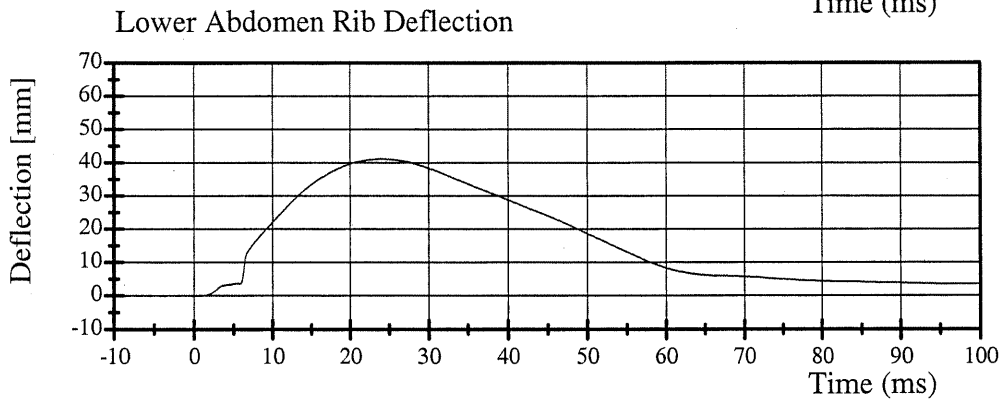
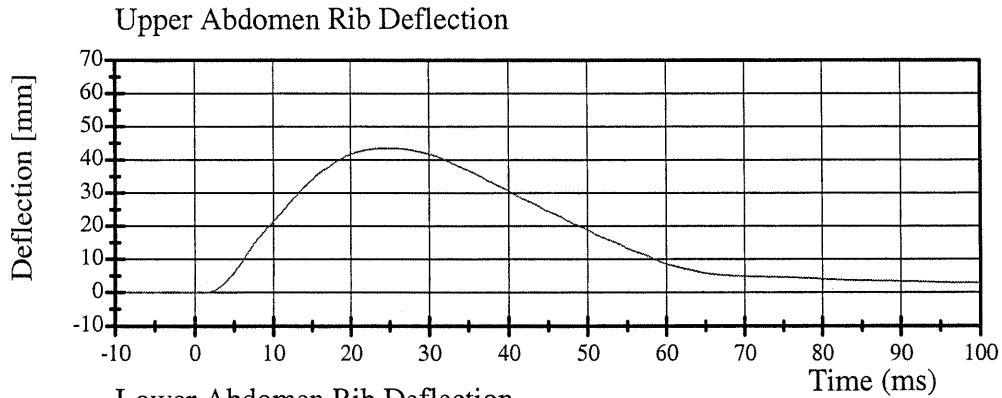


Transportation Research Center Inc.

Left Abdomen Test

SID-IIs Serial No. 056 Calibration No. 02 - 02

Test Date 08/01/2005



Transportation Research Center Inc.

Left Pelvis Test

SID-IIs Serial No. 056 Calibration No. 02 - 2

Test Date 08/02/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 C	21.2 C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Pendulum Velocity	6.60 - 6.80 m/sec	6.65 m/sec	Yes
Pendulum Acceleration	40 - 48 g	40.3 g	Yes
Pelvis Peak Acceleration	40 - 48 g	43.3 g	Yes
Peak Acetabulum Force	3803 - 4505 g	3987 N	Yes

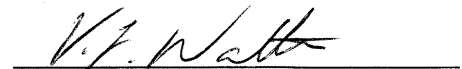
Test meets specifications.

Comments:

Technician



Approved



08.08.2005 14:56:49 418



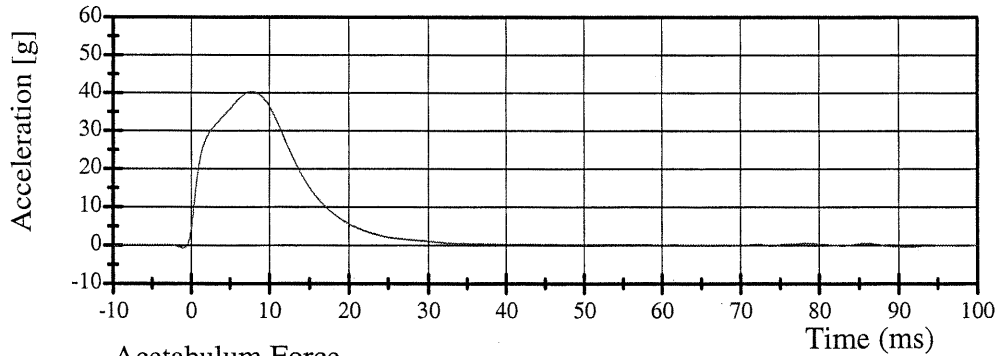
Transportation Research Center Inc.

Left Pelvis Test

SID-IIs Serial No. 056 Calibration No. 02 - 2

Test Date 08/02/2005

Pendulum Deceleration

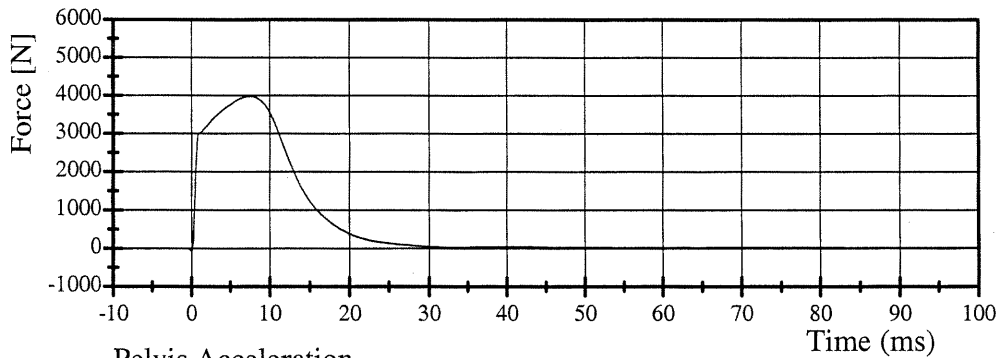


Filter Class: CFC 180

Max: 40.3 g at 7.8 ms

Min: -0.7 g at -1.0 ms

Acetabulum Force

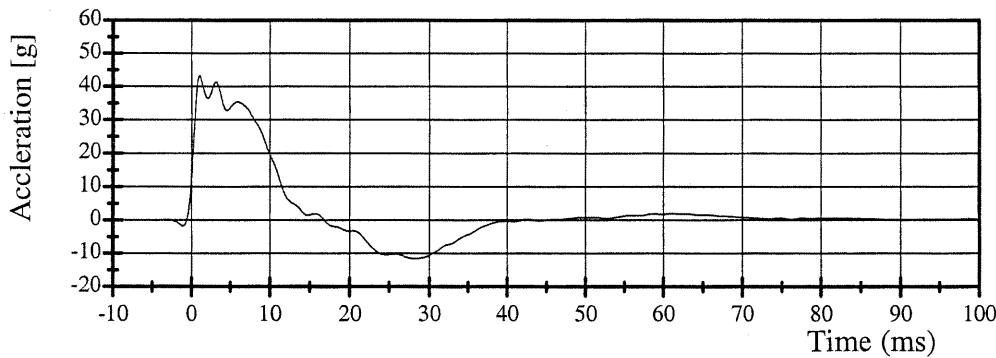


Filter Class: CFC 600

Max: 3987 N at 7.6 ms

Min: -64 N at 0.0 ms

Pelvis Acceleration



Filter Class: CFC 180

Max: 43.3 g at 1.0 ms

Min: -11.5 g at 28.2 ms

Pre-Test Dummy Configuration and Performance Verification Data

Passenger Dummy S/N: 020

Transportation Research Center Inc.

Left Head Drop Test

SID-IIs Serial No. 020 Calibration No. 08 - 1

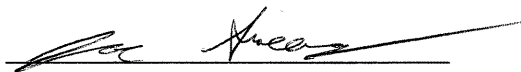
Test Date 08/02/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	54 %	Yes
Peak Resultant Acceleration	125 - 145 g	130.2 g	Yes
Peak Longitudinal Acceleration	15 g Max	-2.5 g	Yes
Is Acceleration Curve Unimodal?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician



Approved



08.11.2005 10:34:29 231

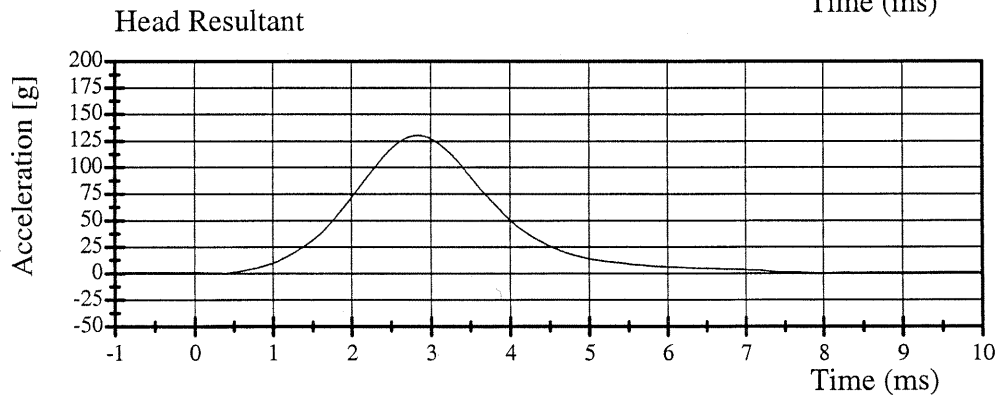
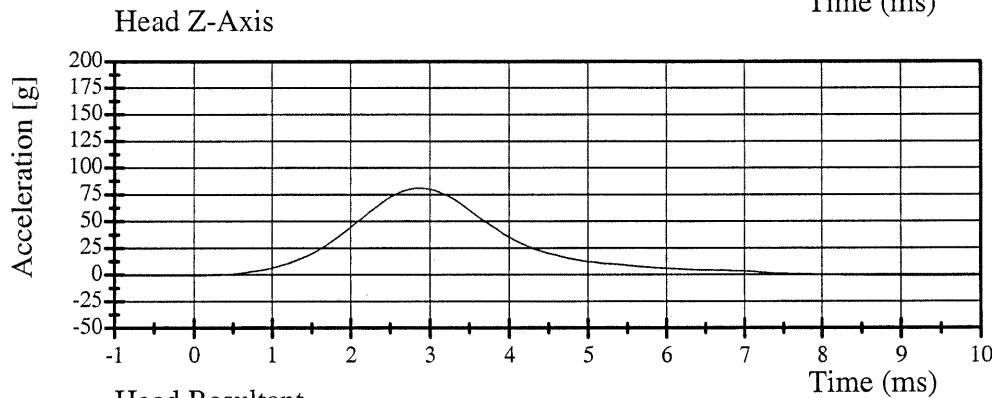
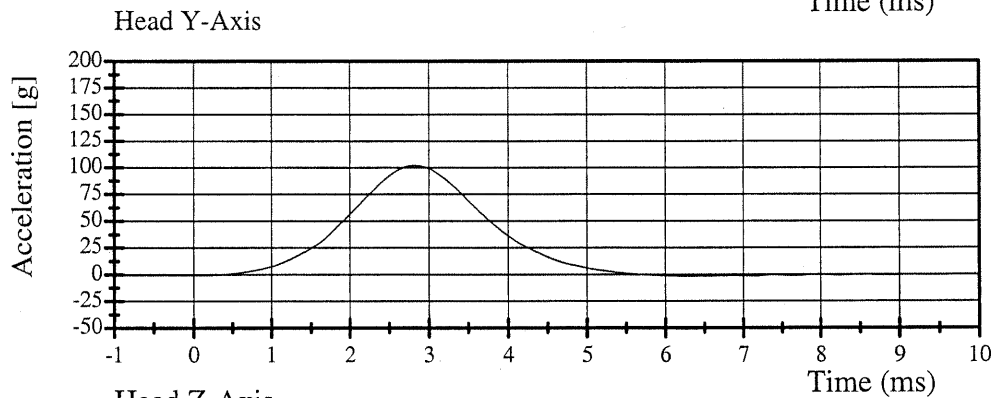
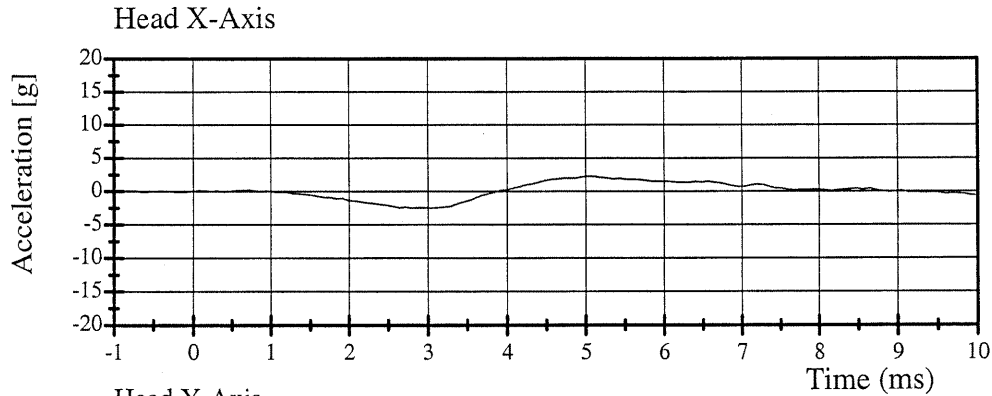


Transportation Research Center Inc.

Head Drop Test

SID-IIs Serial No. 020 Calibration No. 08 - 1

Test Date 08/02/2005



08.11.2005 10:34:30 231



Transportation Research Center Inc.

Left Lateral Neck Test

SID-IIs Serial No. 020 Calibration No. 08 - 1

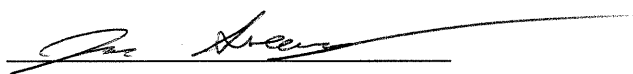
Test Date 08/01/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	50 %	Yes
Impact Velocity	5.51 - 5.63 m/s	5.58 m/s	Yes
Integrated Pendulum Velocity			
10 ms	2.20 - 2.80 m/s	2.52 m/s	Yes
15 ms	3.40 - 4.10 m/s	3.64 m/s	Yes
20 ms	4.50 - 5.40 m/s	4.92 m/s	Yes
25 ms	5.50 - 6.10 m/s	5.94 m/s	Yes
25 - 100 ms	5.20 - 6.20 m/s	5.70 - 6.01 m/s	Yes
Peak D Plane Rotation	74 - 79 °	71.8 °	No
Time of Peak D-Plane Rotation	50 - 70 °	59.2 °	Yes
Peak Moment About Occipital Condyles during Rotation Interval	40.0 - 45.0 N·m	0 N·m	No
Time of Moment Decay To 0 N·m	113 - 123 ms	111.6 ms	No

Test does not meet specifications.

Comments:

Technician



Approved



08.11.2005 10:37:46 669



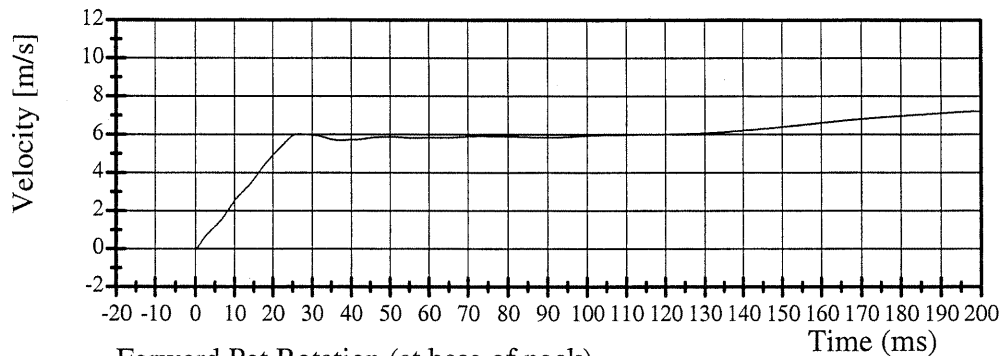
Transportation Research Center Inc.

Left Lateral Neck Test

SID-IIs Serial No. 020 Calibration No. 08 - 1

Test Date 08/01/2005

Integrated Pendulum Velocity

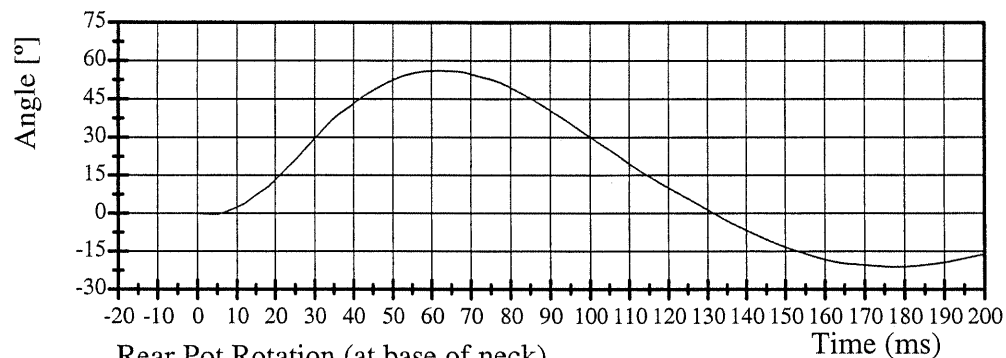


Filter Class: 180

Max: 7.3 m/s at 217.5 ms

Min: -0.0 m/s at -0.6 ms

Forward Pot Rotation (at base of neck)

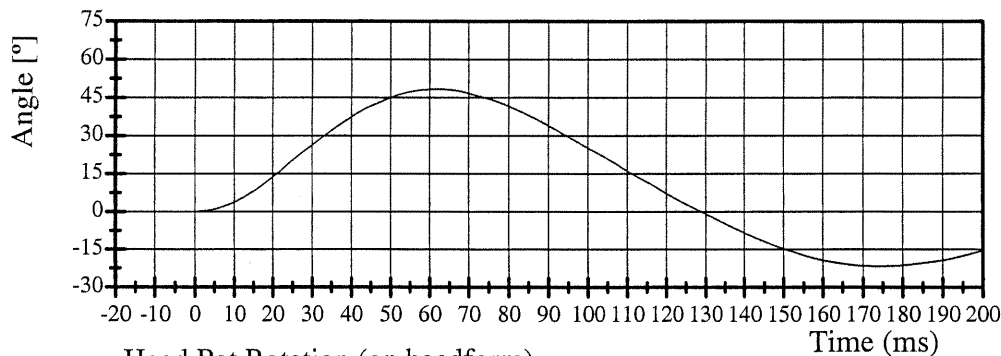


Filter Class: 60

Max: 56.1 ° at 61.8 ms

Min: -21.0 ° at 178.1 ms

Rear Pot Rotation (at base of neck)

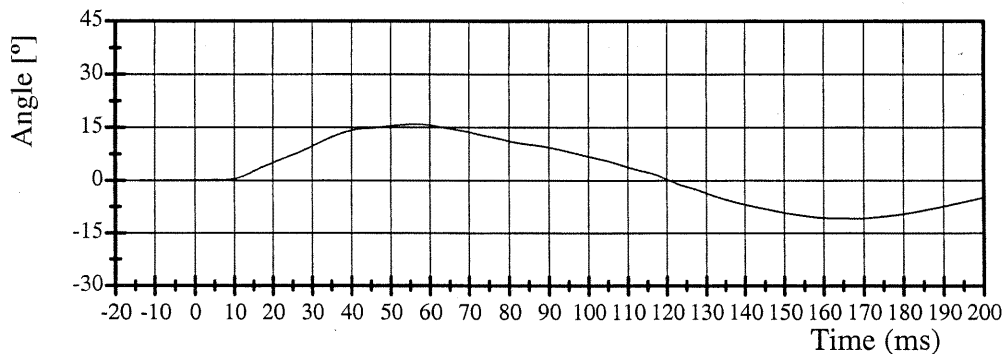


Filter Class: 60

Max: 48.3 ° at 62.0 ms

Min: -21.7 ° at 174.2 ms

Head Pot Rotation (on headform)



Filter Class: 60

Max: 16.0 ° at 56.6 ms

Min: -10.8 ° at 168.0 ms

08.11.2005 10:37:47 669



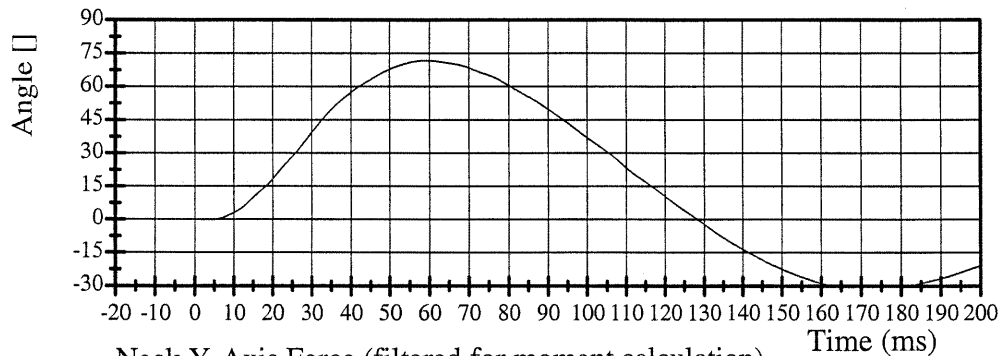
Transportation Research Center Inc.

Left Lateral Neck Test

SID-IIs Serial No. 020 Calibration No. 08 - 1

Test Date 08/01/2005

D-Plane Rotation (forward pot + head pot)

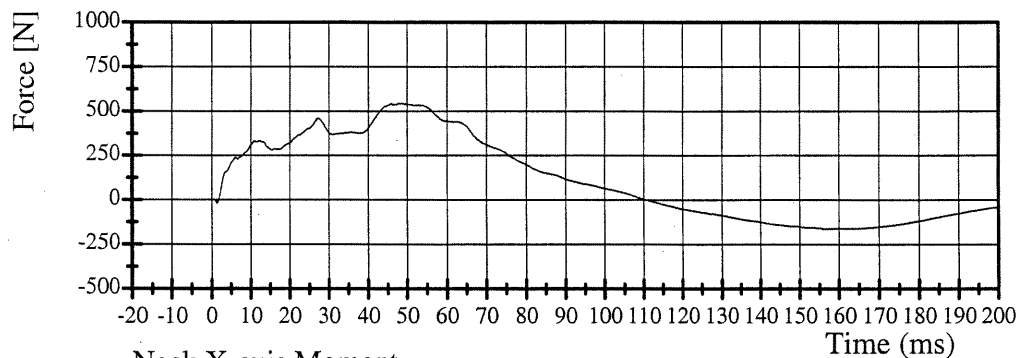


Filter Class: CFC 60

Max: 71.8 ° at 59.2 ms

Min: -31.2 ° at 173.3 ms

Neck Y-Axis Force (filtered for moment calculation)

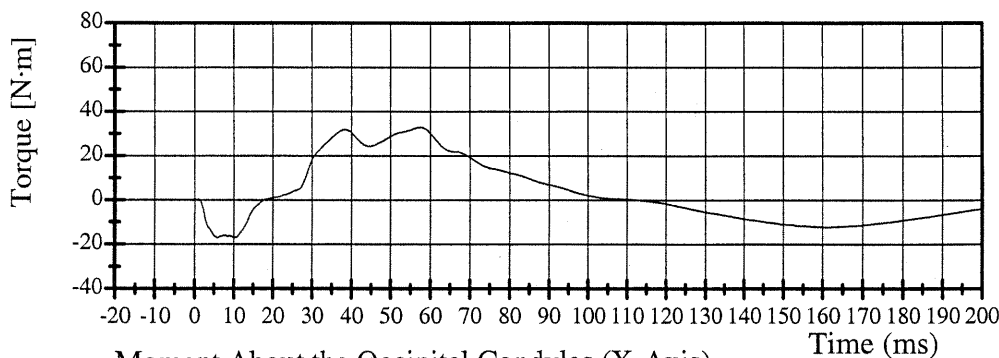


Filter Class: CFC 600

Max: 543 N at 48.1 ms

Min: -164 N at 157.4 ms

Neck X-axis Moment

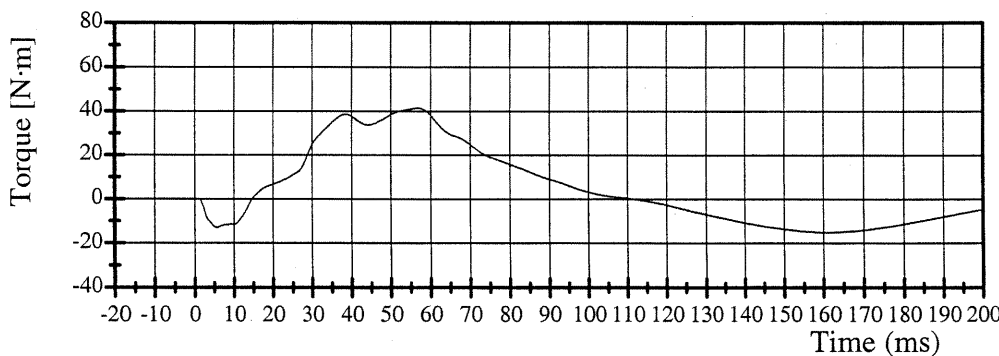


Filter Class: CFC 600

Max: 32.9 N·m at 57.3 ms

Min: -17.1 N·m at 5.8 ms

Moment About the Occipital Condyles (X-Axis)



Filter Class: 600

Max: 41.5 N·m at 57.0 ms

Min: -15.1 N·m at 161.4 ms

Transportation Research Center Inc.

Left Shoulder Test

SID-IIs Serial No. 020 Calibration No. 08 - 1

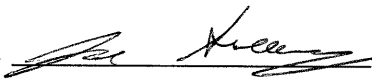
Test Date 08/02/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 C	21.4 C	Yes
Relative Humidity	10 - 70 %	48 %	Yes
Pendulum Velocity	4.41 - 4.59 m/sec	4.43 m/sec	Yes
Probe Force	1600 - 2400 N	2242 N	Yes
Deflection	27 - 39 mm	34.0 mm	Yes

Test meets specifications.

Comments:

Technician



Approved



08.02.2005 14:39:47 645



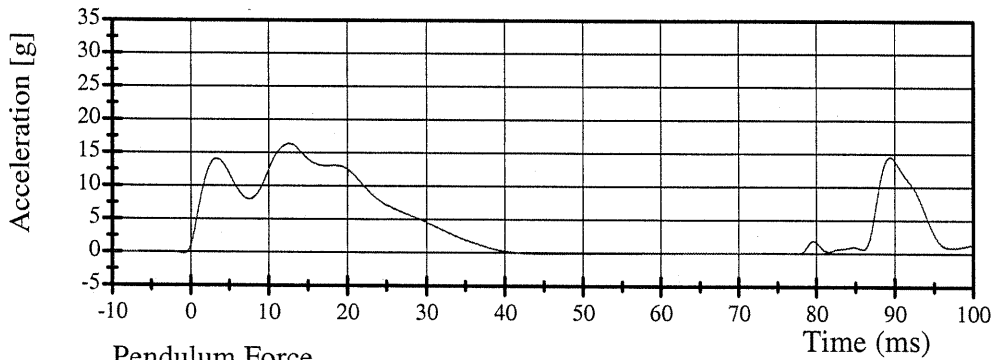
Transportation Research Center Inc.

Left Shoulder Test

SID-IIs Serial No. 020 Calibration No. 08 - 1

Test Date 08/02/2005

Pendulum Deceleration

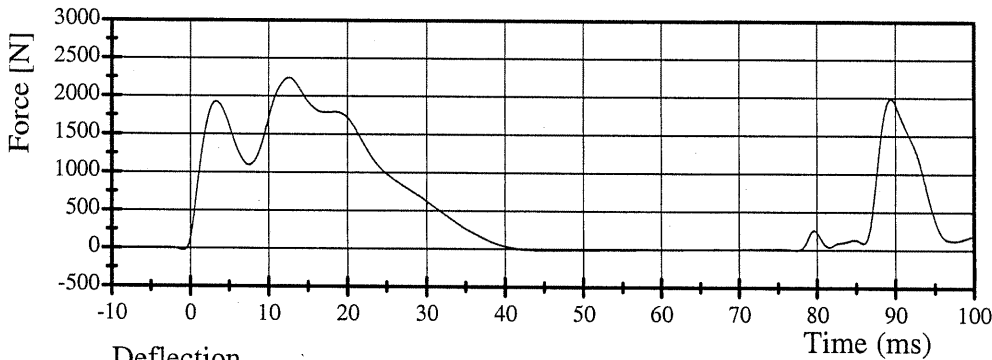


Filter Class: CFC 180

Max: 16.5 g at 12.5 ms

Min: -0.5 g at 121.8 ms

Pendulum Force

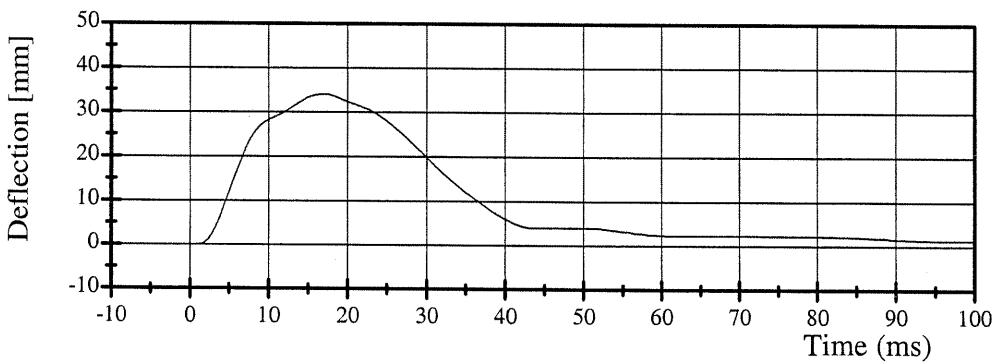


Filter Class: CFC 180

Max: 2242 N at 12.6 ms

Min: -41 N at 121.8 ms

Deflection



Filter Class: CFC 600

Max: 34.0 mm at 17.0 ms

Min: -0.0 mm at 1.1 ms

Transportation Research Center Inc.

Left Thorax With Arm Test

SID-IIs Serial No. 020 Calibration No. 08 - 1

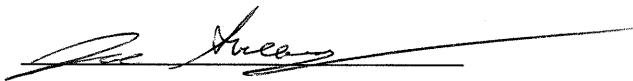
Test Date 08/02/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 C	21.3 C	Yes
Relative Humidity	10 - 70 %	46 %	Yes
Pendulum Velocity	6.60 - 6.80 m/sec	6.72 m/sec	Yes
Pendulum Force	4100 - 4700 N	4859 N	No
Upper Spine Peak Acceleration	34 - 48 g	40.2 g	Yes
Lower Spine Peak Acceleration	30 - 38 g	32.8 g	Yes
Upper Rib Peak Deflection	23 - 35 mm	28.7 mm	Yes
Mid Rib Peak Deflection	29 - 44 mm	31.9 mm	Yes
Lower Rib Peak Deflection	33 - 40 mm	35.0 mm	Yes
Shoulder Peak Deflectioin	30 - 42 mm	34.7 mm	Yes

Test does not meet specifications.

Comments:

Technician



Approved



08.11.2005 14:13:21 392

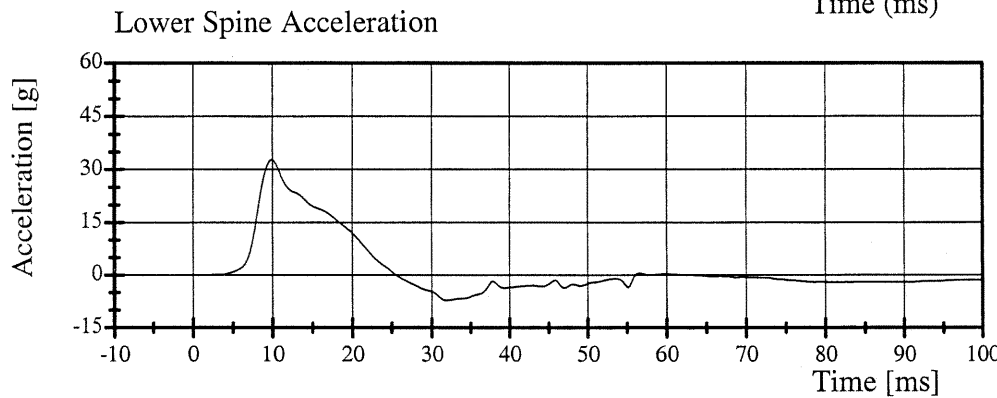
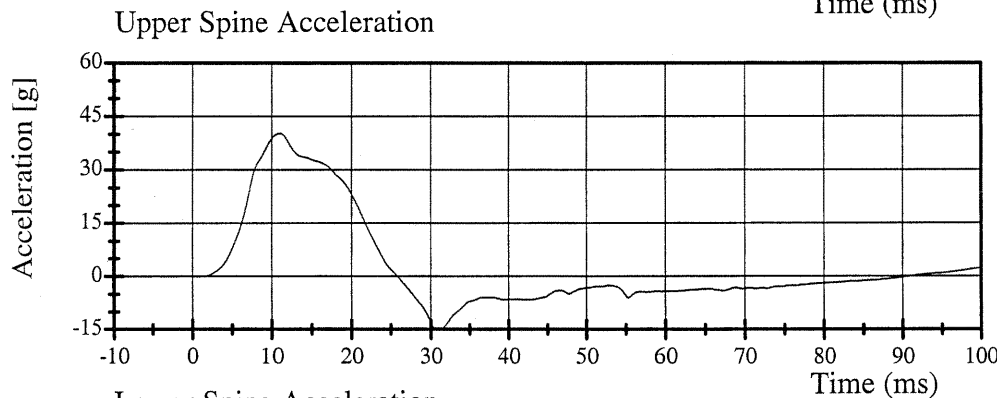
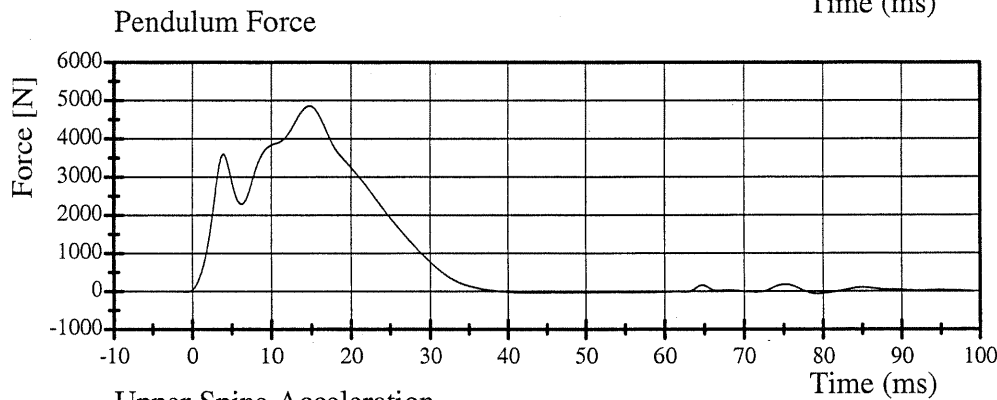
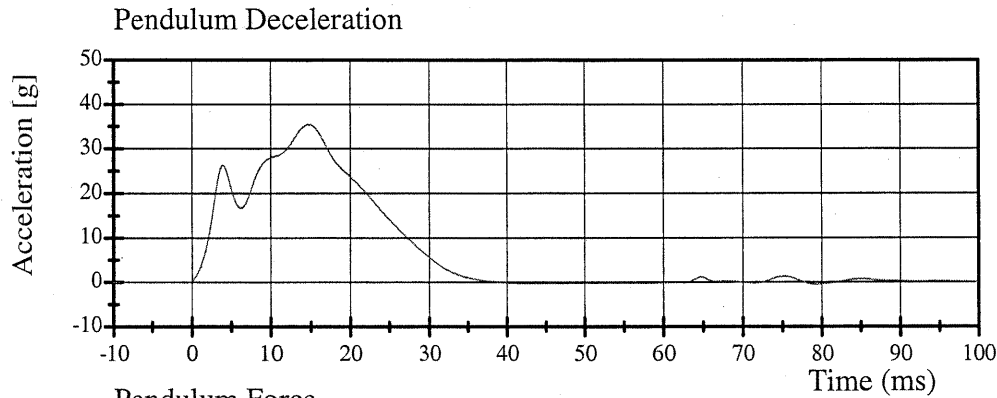


Transportation Research Center Inc.

Left Thorax With Arm Test

SID-II's Serial No. 020 Calibration No. 08 - 1

Test Date 08/02/2005



08.11.2005 14:13:22 392

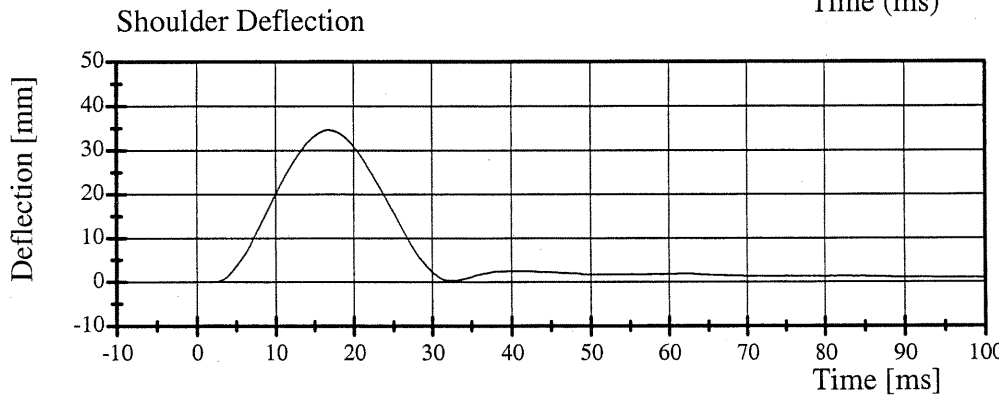
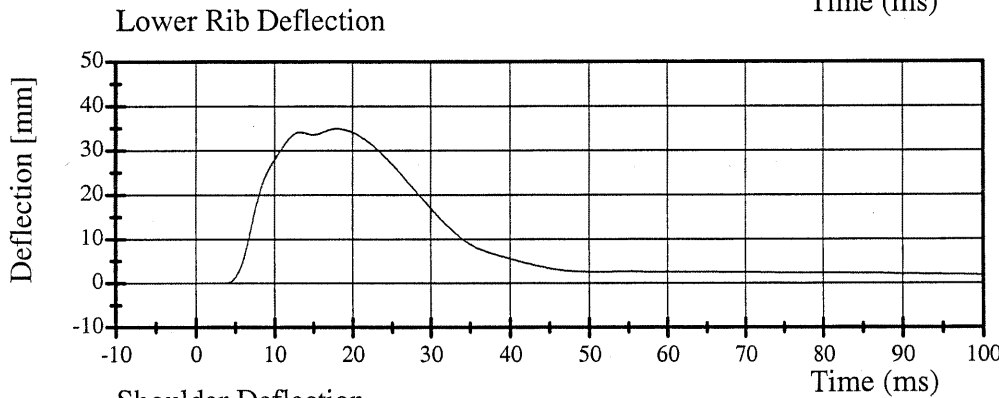
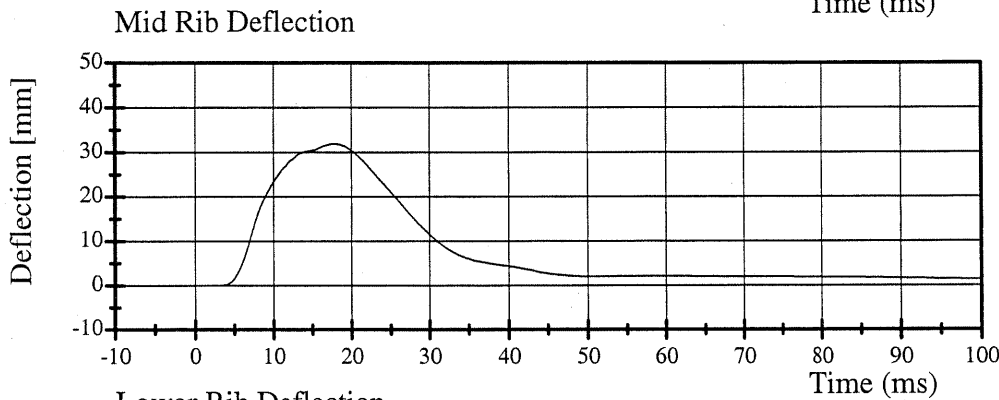
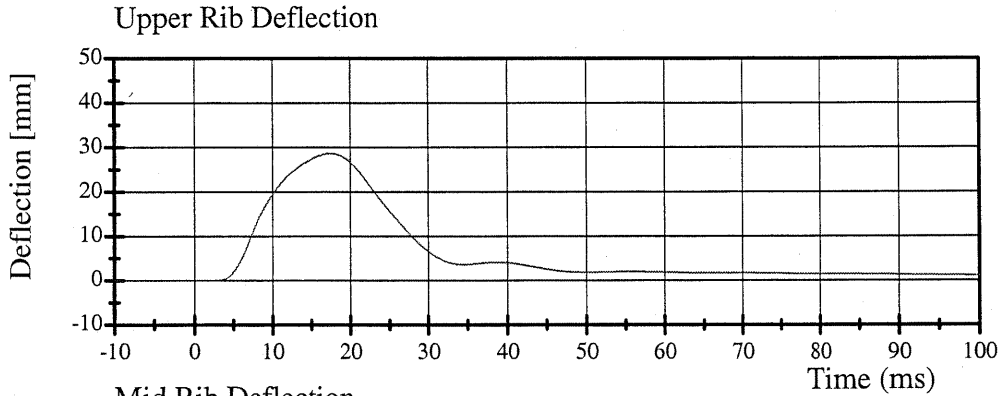


Transportation Research Center Inc.

Left Thorax With Arm Test

SID-II's Serial No. 020 Calibration No. 08 - 1

Test Date 08/02/2005



08.11.2005 14:13:23 392



Transportation Research Center Inc.

Left Thorax Without Arm Test

SID-IIs Serial No. 020 Calibration No. 08 - 1

Test Date 08/03/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 C	21.3 C	Yes
Relative Humidity	10 - 70 %	50 %	Yes
Pendulum Velocity	4.20 - 4.40 m/sec	4.29 m/sec	Yes
Pendulum Force	1800 - 2300 N	2276 N	Yes
Upper Spine Peak Acceleration	13 - 18 g	15.7 g	Yes
Lower Spine Peak Acceleration	8 - 13 g	9.2 g	Yes
Upper Rib Peak Deflection	32 - 41 mm	36.8 mm	Yes
Mid Rib Peak Deflection	40 - 51 mm	41.5 mm	Yes
Lower Rib Peak Deflection	34 - 47 mm	40.1 mm	Yes

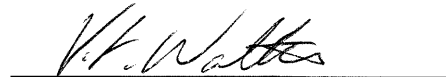
Test meets specifications.

Comments:

Technician



Approved



08.11.2005 14:14:39 594

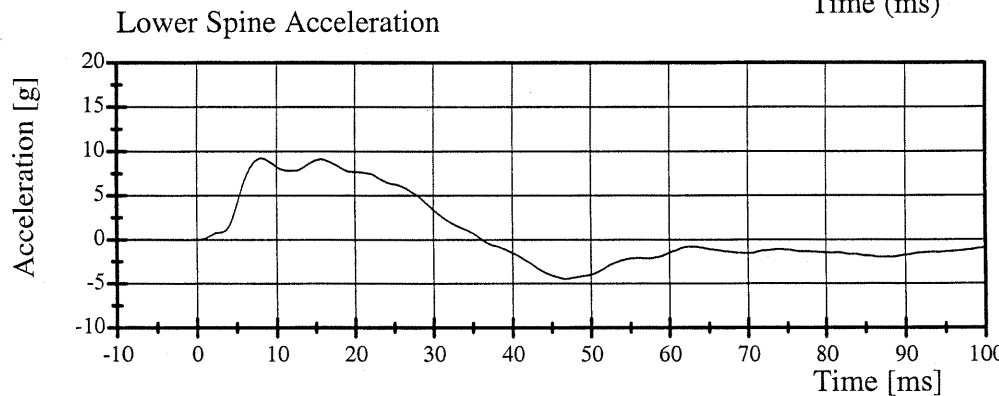
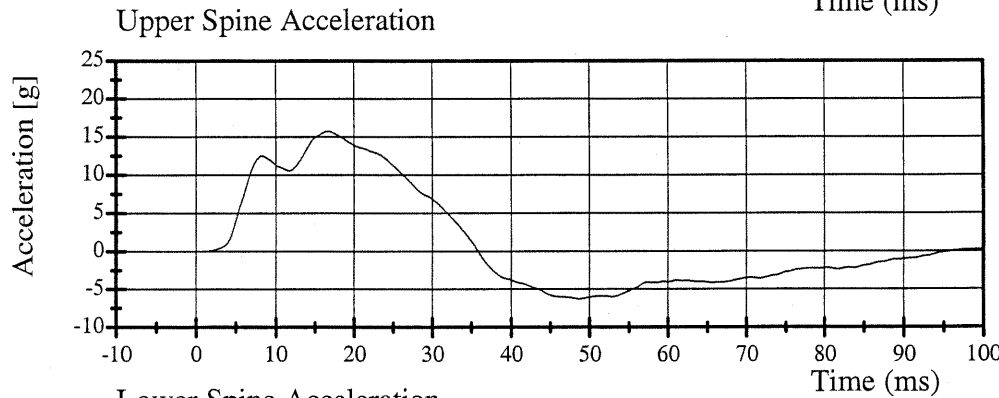
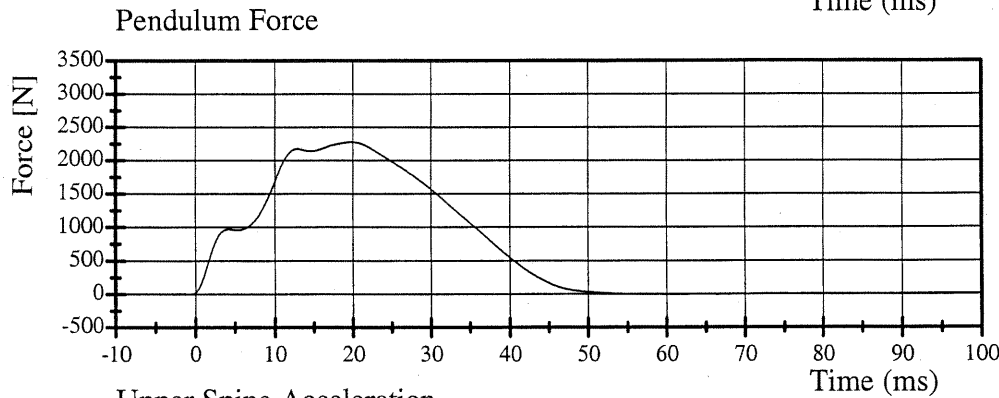
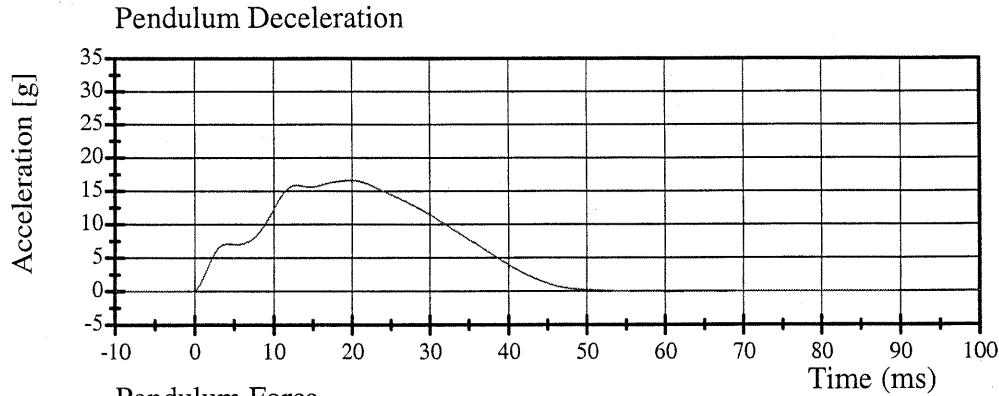


Transportation Research Center Inc.

Left Thorax Without Arm Test

SID-IIs Serial No. 020 Calibration No. 08 - 1

Test Date 08/03/2005



08.11.2005 14:14:40 594



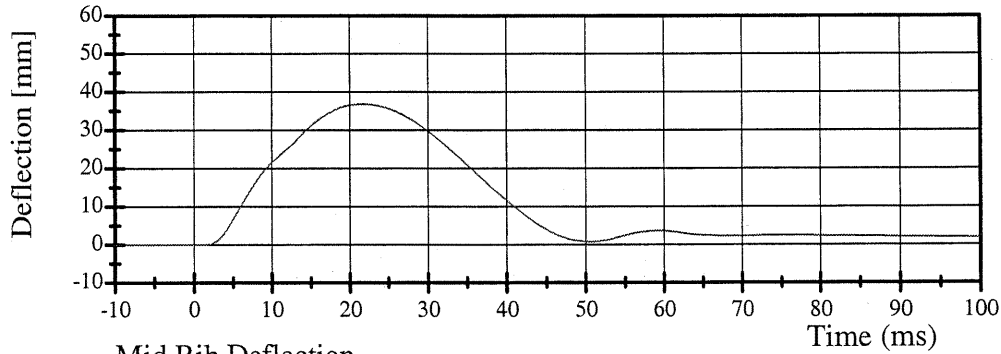
Transportation Research Center Inc.

Left Thorax Without Arm Test

SID-IIs Serial No. 020 Calibration No. 08 - 1

Test Date 08/03/2005

Upper Rib Deflection

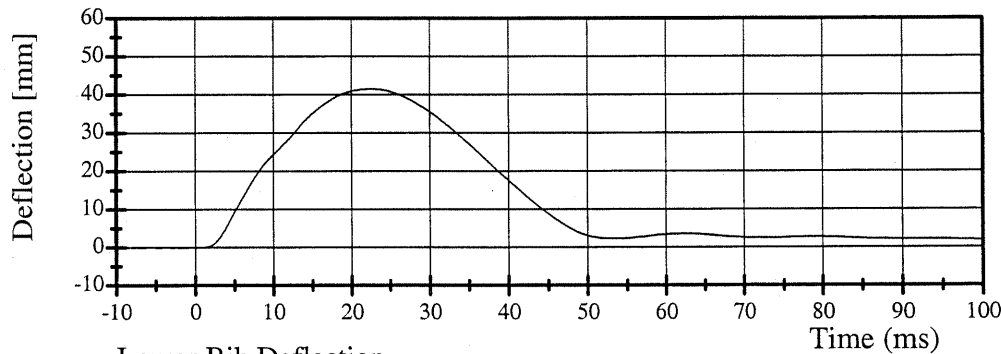


Filter Class: CFC 600

Max: 36.8 mm at 21.7 ms

Min: -0.0 mm at -9.3 ms

Mid Rib Deflection

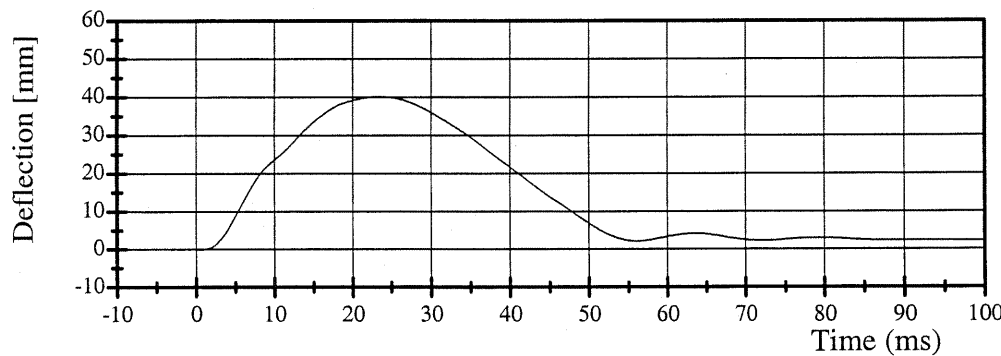


Filter Class: CFC 600

Max: 41.5 mm at 22.5 ms

Min: -0.0 mm at -24.7 ms

Lower Rib Deflection



Filter Class: CFC 600

Max: 40.1 mm at 23.4 ms

Min: -0.0 mm at -9.3 ms

Transportation Research Center Inc.

Left Abdomen Test

SID-IIs Serial No. 020 Calibration No. 08 - 1

Test Date 08/03/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 C	21.5 C	Yes
Relative Humidity	10 - 70 %	50 %	Yes
Pendulum Velocity	4.20 - 4.40 m/sec	4.38 m/sec	Yes
Pendulum Force	1300 - 1900 N	2110 N	No
Upper Spine Peak Acceleration	5 - 9 g	7.2 g	Yes
Lower Spine Peak Acceleration	9 - 13 g	11.7 g	Yes
Upper Abdomen Rib Peak Deflection	44 - 55 mm	39.9 mm	No
Lower Abdomen Rib Peak Deflection	44 - 56 mm	40.9 mm	No

Test does not meet specifications.

Comments:

Technician



Approved



08.11.2005 14:16:51 633

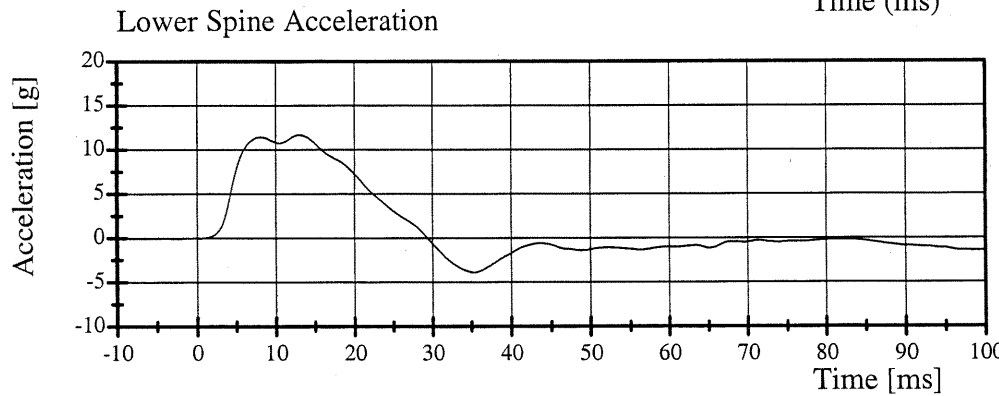
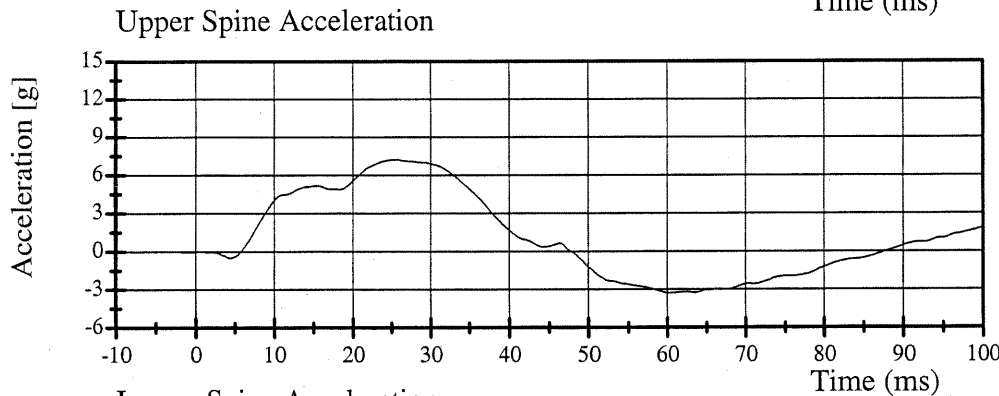
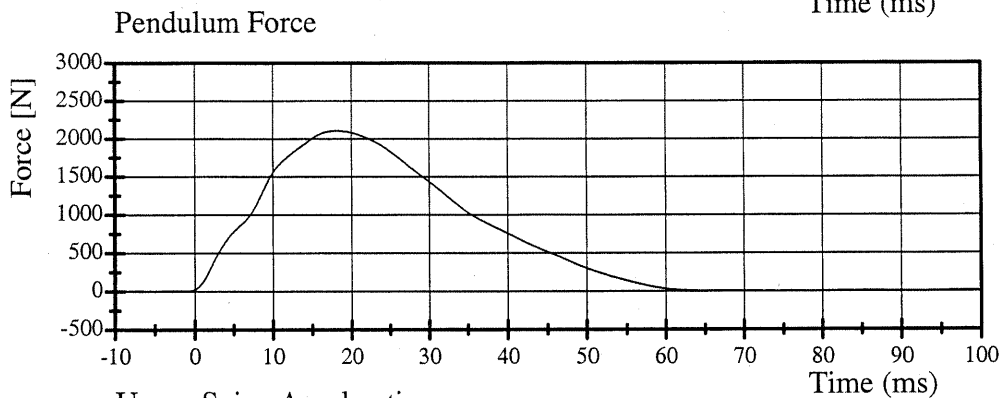
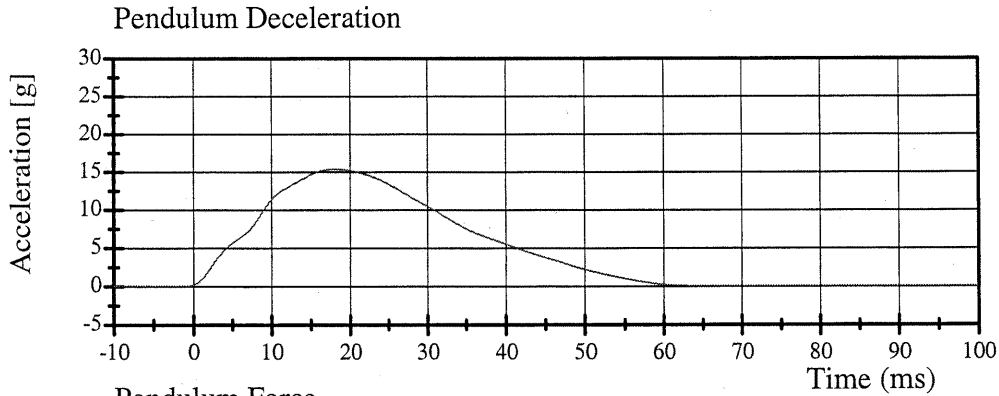


Transportation Research Center Inc.

Left Abdomen Test

SID-IIs Serial No. 020 Calibration No. 08 - 1

Test Date 08/03/2005



08.11.2005 14:16:52 633



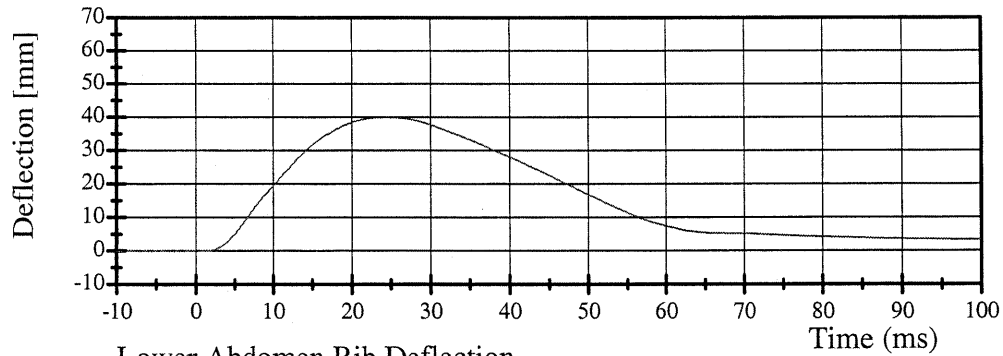
Transportation Research Center Inc.

Left Abdomen Test

SID-IIs Serial No. 020 Calibration No. 08 - 1

Test Date 08/03/2005

Upper Abdomen Rib Deflection

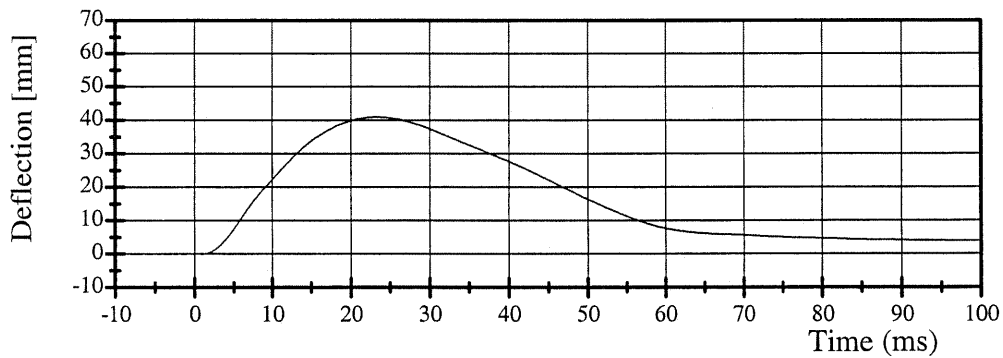


Filter Class: CFC 600

Max: 39.9 mm at 24.3 ms

Min: -0.0 mm at -40.6 ms

Lower Abdomen Rib Deflection



Filter Class: CFC 600

Max: 40.9 mm at 23.4 ms

Min: -0.0 mm at 1.0 ms

Transportation Research Center Inc.

Left Pelvis Test

SID-IIs Serial No. 020 Calibration No. 08 - 2

Test Date 08/03/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 C	21.6 C	Yes
Relative Humidity	10 - 70 %	51 %	Yes
Pendulum Velocity	6.60 - 6.80 m/sec	6.65 m/sec	Yes
Pendulum Acceleration	40 - 48 g	41.7 g	Yes
Pelvis Peak Acceleration	40 - 48 g	43.9 g	Yes
Peak Acetabulum Force	3803 - 4505 g	3951 N	Yes

Test meets specifications.

Comments:

Technician



Approved



08.11.2005 14:23:38 425



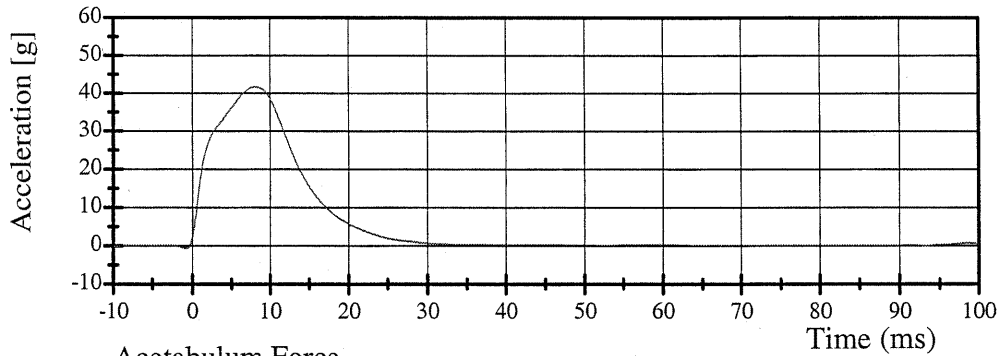
Transportation Research Center Inc.

Left Pelvis Test

SID-IIs Serial No. 020 Calibration No. 08 - 2

Test Date 08/03/2005

Pendulum Deceleration

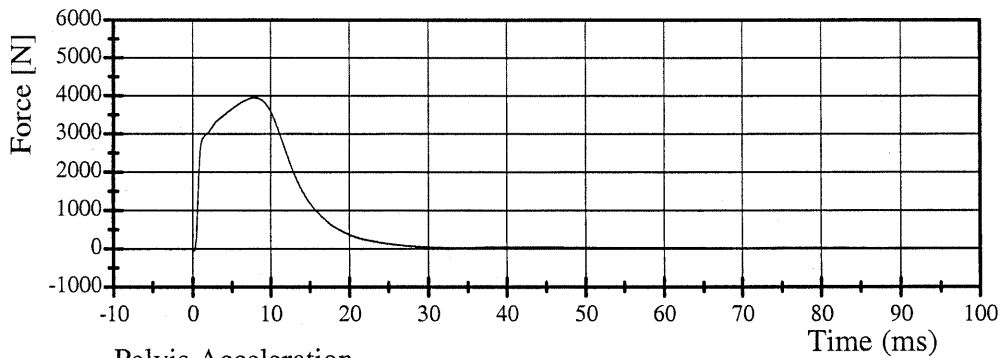


Filter Class: CFC 180

Max: 41.7 g at 8.0 ms

Min: -0.6 g at -0.8 ms

Acetabulum Force

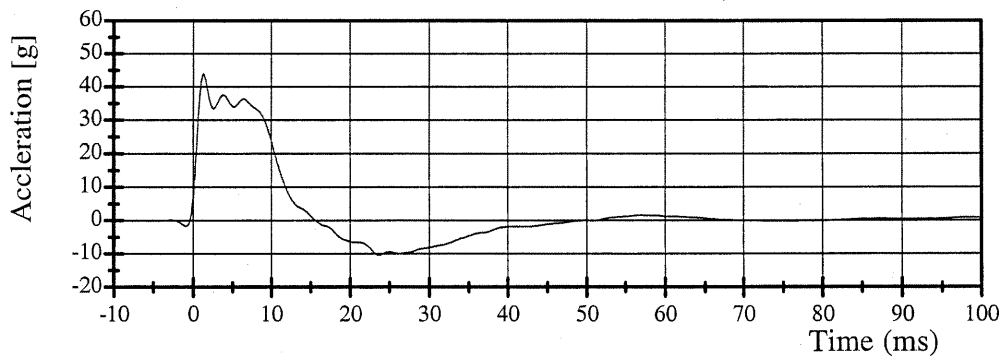


Filter Class: CFC 600

Max: 3951 N at 7.8 ms

Min: -54 N at 0.2 ms

Pelvis Acceleration



Filter Class: CFC 180

Max: 43.9 g at 1.3 ms

Min: -10.3 g at 23.7 ms

Post-Test Dummy Configuration and Performance Verification Data

Driver Dummy S/N: 056

Transportation Research Center Inc.
SIDIIs Dummy - Build Level D
External Dimensions
Serial No. 056 Calibration No. 03
Date: 28-Sep-05

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Sitting Height	779.0 - 795.0	780	Yes
B	Shoulder Pivot Height	437.0 - 453.0	440	Yes
C	H-Point Height	81.0 - 91.0	83	Yes
D	H-Point from Backline	141.0 - 151.0	145	Yes
E	Shoulder Pivot from Backline	104.0 - 114.0	110	Yes
F	Thigh Clearance	119.0 - 135.0	126	Yes
G	Head Breadth	140.0 - 148.0	145	Yes
H	Head Back from Backline	40.0 - 46.0	43	Yes
I	Head Depth	178.0 - 188.0	184	Yes
J	Head Circumference	541.0 - 551.0	545	Yes
K	Buttock to Knee Length	514.0 - 540.0	535	Yes
L	Popliteal Height	348.0 - 374.0	353	Yes
M	Knee to Floor Height	393.0 - 409.0	402	Yes
N	Buttock Popliteal Length	416.0 - 442.0	440	Yes
O	Chest Depth without Jacket	195.0 - 211.0	198	Yes
P	Foot Length	218.0 - 234.0	221	Yes
Q	Hip Breadth (with pelvis plug)	313.0 - 323.0	317	Yes
R	Arm Length	249.0 - 259.0	251	Yes
S	Knee to Seat Back	477.0 - 493.0	485	Yes
V	Shoulder Width	337.0 - 353.0	346	Yes
W	Foot Width	78.0 - 94.0	86	Yes
Y	Chest Circumference with Jacket	861.0 - 891.0	863	Yes
Z	Waist Circumference	757.0 - 787.0	765	Yes

Technician

Approved

V. F. Watters

David K. Stearns



Revised 9/29/2005

Transportation Research Center Inc.

Left Lateral Head Test

SID-IIs Serial No. 056 Calibration No. 03 - 3

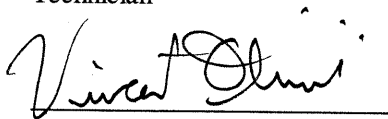
Test Date 09/22/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	53 %	Yes
Peak Resultant Acceleration	125 - 145 g	124.1 g	No
Peak Longitudinal Acceleration	15 g Max	-3.4 g	Yes
Is Acceleration Curve Unimodal?	Yes	Yes	Yes

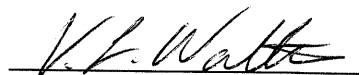
Test does not meet specifications.

Comments:

Technician



Approved



09.22.2005 11:18:59 231

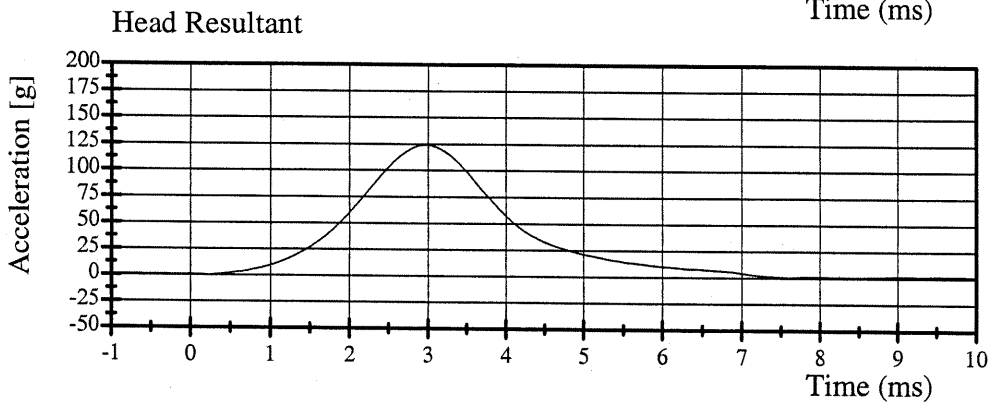
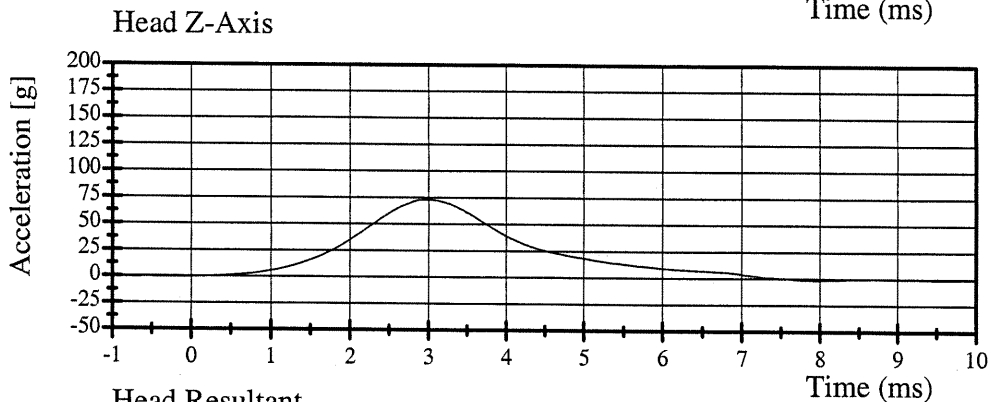
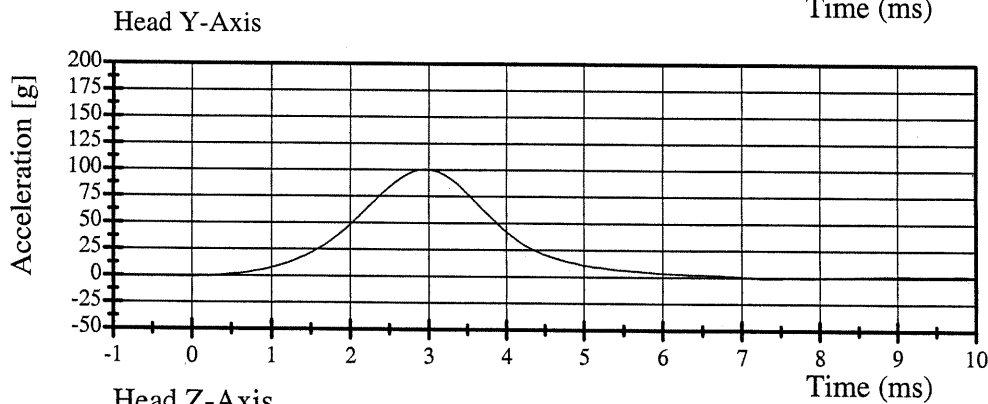
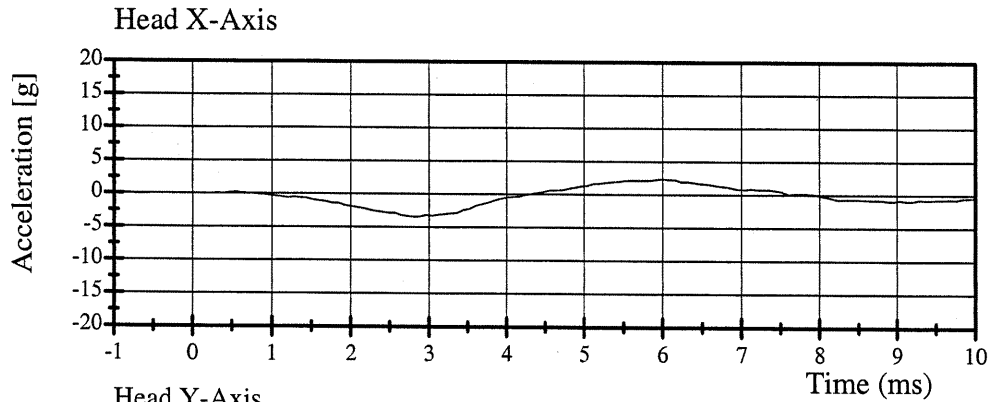


Transportation Research Center Inc.

Lateral Head Test

SID-IIs Serial No. 056 Calibration No. 03 - 3

Test Date 09/22/2005



09.22.2005 11:19:00 231



Transportation Research Center Inc.

Left Shoulder Test

SID-IIs Serial No. 056 Calibration No. 03 - 4

Test Date 09/27/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 C	21.4 C	Yes
Relative Humidity	10 - 70 %	55 %	Yes
Pendulum Velocity	4.41 - 4.59 m/sec	4.47 m/sec	Yes
Probe Force	1600 - 2400 N	2366 N	Yes
Deflection	27 - 39 mm	34.8 mm	Yes

Test meets specifications.

Comments:

Post-test: original shoulder bumper with damage.

Technician

Vivac Shiri

Approved

V.K. Watters

09.27.2005 10:06:04 557



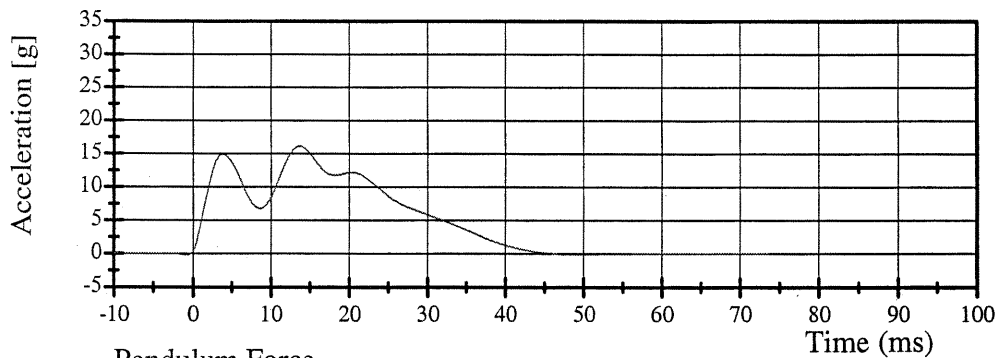
Transportation Research Center Inc.

Left Shoulder Test

SID-IIs Serial No. 056 Calibration No. 03 - 4

Test Date 09/27/2005

Pendulum Deceleration

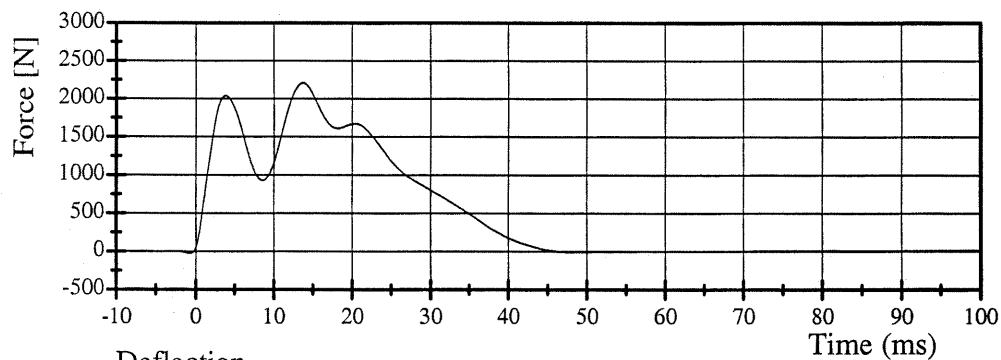


Filter Class: CFC 180

Max: 17.3 g at 265.4 ms

Min: -0.6 g at 276.8 ms

Pendulum Force

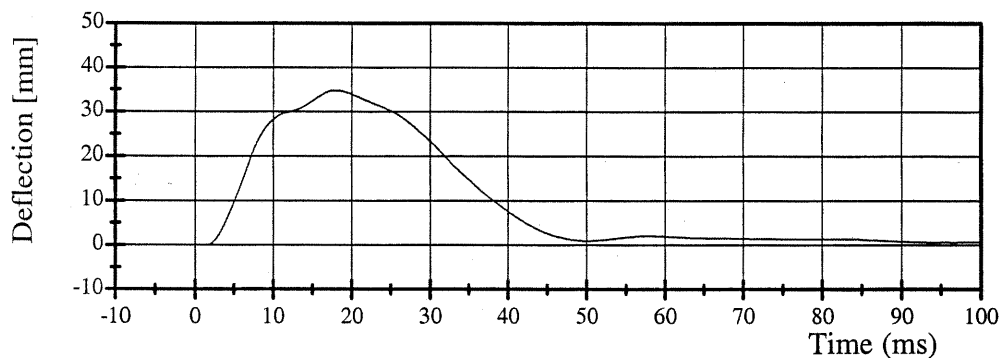


Filter Class: CFC 180

Max: 2366 N at 265.2 ms

Min: -23 N at -0.7 ms

Deflection



Filter Class: CFC 600

Max: 34.8 mm at 17.8 ms

Min: -0.0 mm at 1.5 ms

Transportation Research Center Inc.

Left Lateral Neck Test

SID-IIs Serial No. 056 Calibration No. 03 - 3

Test Date 09/21/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	55 %	Yes
Impact Velocity	5.51 - 5.63 m/s	5.60 m/s	Yes
Integrated Pendulum Velocity			
10 ms	2.20 - 2.80 m/s	2.53 m/s	Yes
15 ms	3.40 - 4.10 m/s	3.62 m/s	Yes
20 ms	4.50 - 5.40 m/s	4.92 m/s	Yes
25 ms	5.50 - 6.10 m/s	5.94 m/s	Yes
25 - 100 ms	5.20 - 6.20 m/s	5.70 - 6.04 m/s	Yes
Peak D Plane Rotation	74 - 79 °	74.8 °	Yes
Time of Peak D-Plane Rotation	50 - 70 °	60.2 °	Yes
Peak Moment About Occipital Condyles during Rotation Interval	40.0 - 45.0 N·m	42.4 N·m	Yes
Time of Moment Decay To 0 N·m	113 - 123 ms	114.3 ms	Yes

Test Meets Specifications

Comments:

Technician

Vince D'Amico

Approved

V.F. Walker

09.21.2005 11:23:55 673

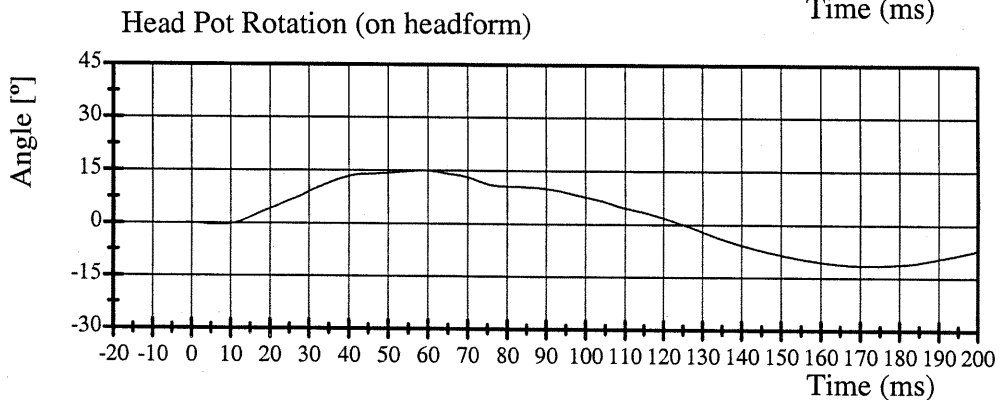
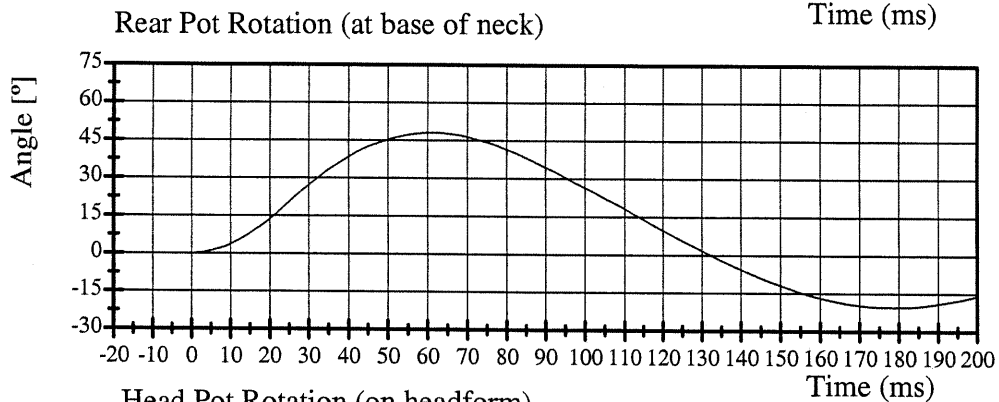
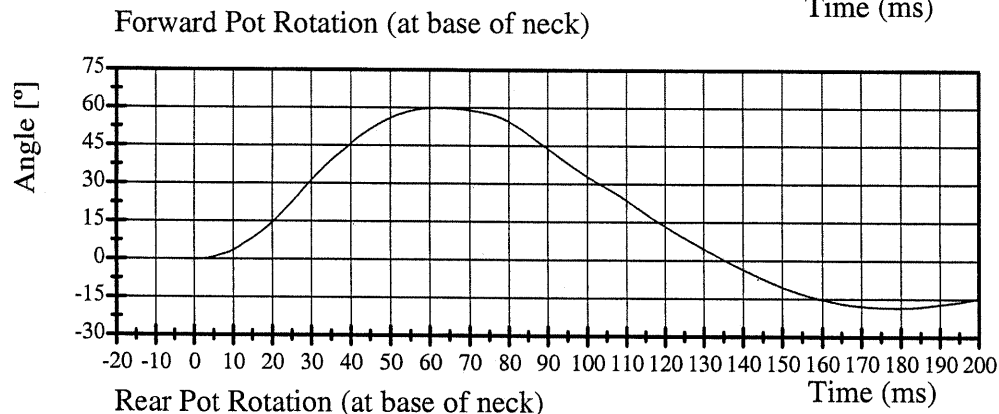
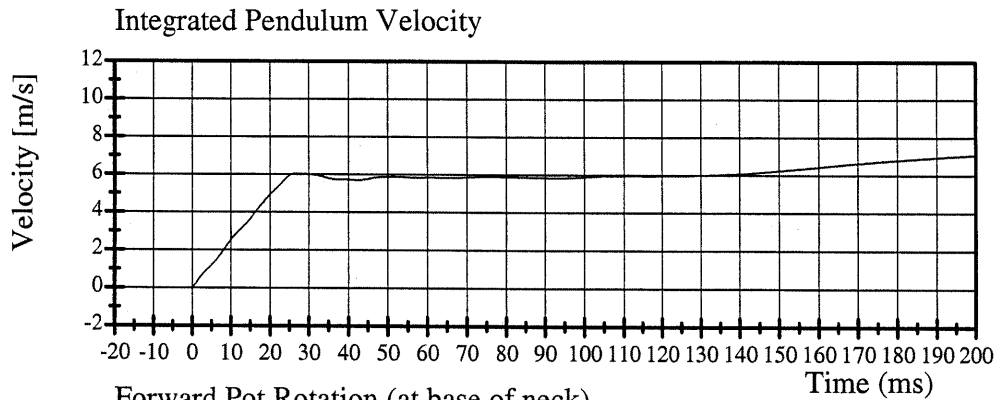


Transportation Research Center Inc.

Left Lateral Neck Test

SID-IIs Serial No. 056 Calibration No. 03 - 3

Test Date 09/21/2005



09.21.2005 11:23:56 673



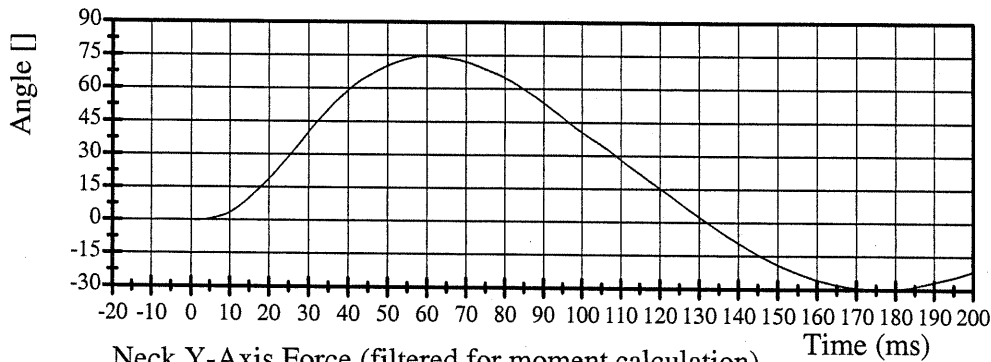
Transportation Research Center Inc.

Left Lateral Neck Test

SID-IIs Serial No. 056 Calibration No. 03 - 3

Test Date 09/21/2005

D-Plane Rotation (forward pot + head pot)

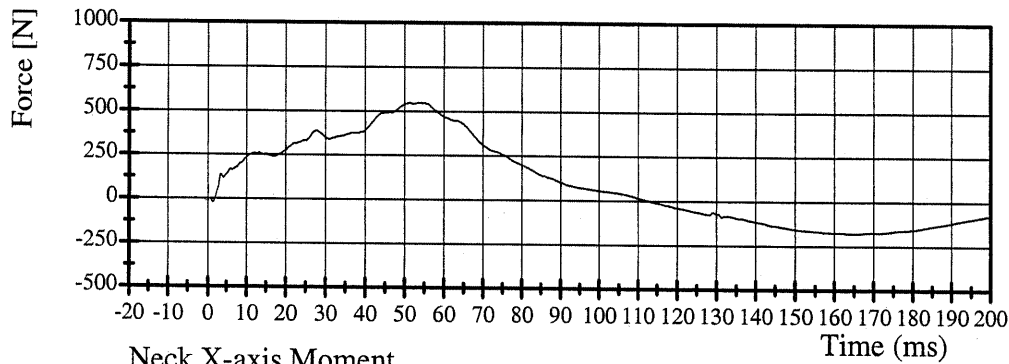


Filter Class: CFC 60

Max: 74.8 ° at 60.2 ms

Min: -29.8 ° at 176.1 ms

Neck Y-Axis Force (filtered for moment calculation)

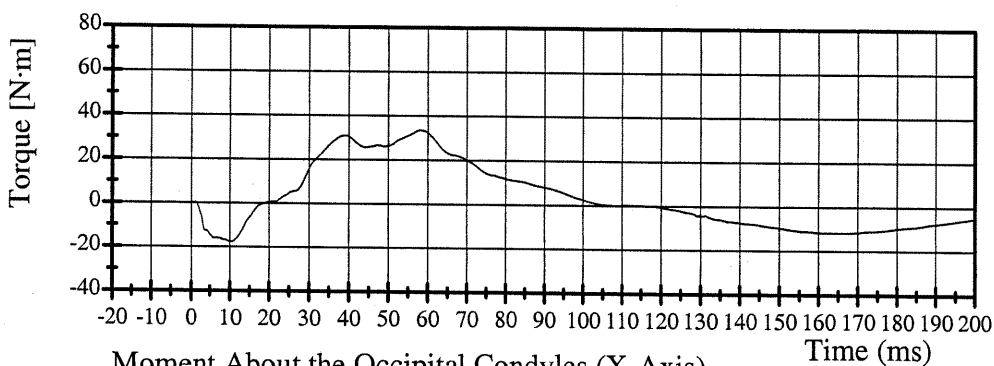


Filter Class: CFC 600

Max: 549 N at 53.7 ms

Min: -178 N at 163.8 ms

Neck X-axis Moment

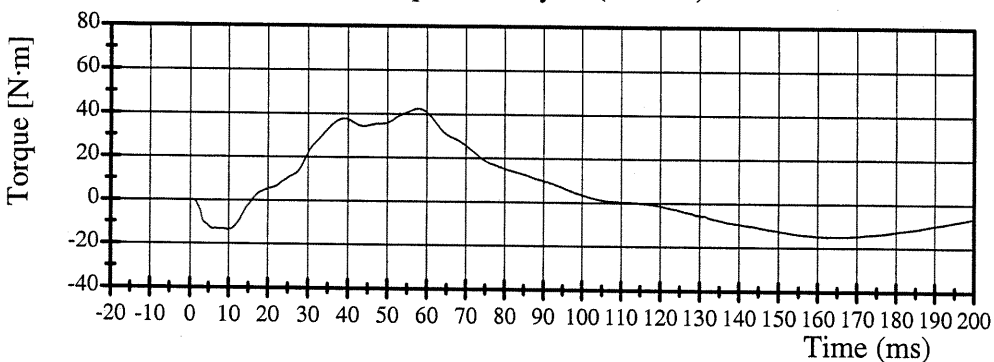


Filter Class: CFC 600

Max: 33.5 N·m at 58.2 ms

Min: -17.6 N·m at 10.5 ms

Moment About the Occipital Condyles (X-Axis)



Filter Class: 600

Max: 42.4 N·m at 57.9 ms

Min: -14.9 N·m at 162.4 ms

09.21.2005 11:23:57 673



Transportation Research Center Inc.

Left Thorax With Arm Test

SID-IIs Serial No. 056 Calibration No. 03 - 1

Test Date 09/23/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 C	21.0 C	Yes
Relative Humidity	10 - 70 %	50 %	Yes
Pendulum Velocity	6.60 - 6.80 m/sec	6.65 m/sec	Yes
Pendulum Force	4100 - 4700 N	4736 N	No
Upper Spine Peak Acceleration	34 - 48 g	35.3 g	Yes
Lower Spine Peak Acceleration	30 - 38 g	32.8 g	Yes
Upper Rib Peak Deflection	23 - 35 mm	28.9 mm	Yes
Mid Rib Peak Deflection	29 - 44 mm	33.4 mm	Yes
Lower Rib Peak Deflection	33 - 40 mm	35.7 mm	Yes
Shoulder Peak Deflectioin	30 - 42 mm	35.6 mm	Yes

Test does not meet specifications.

Comments:

Technician

Vincent Oliveri

Approved

V. F. Walker

09.23.2005 08:48:20 660



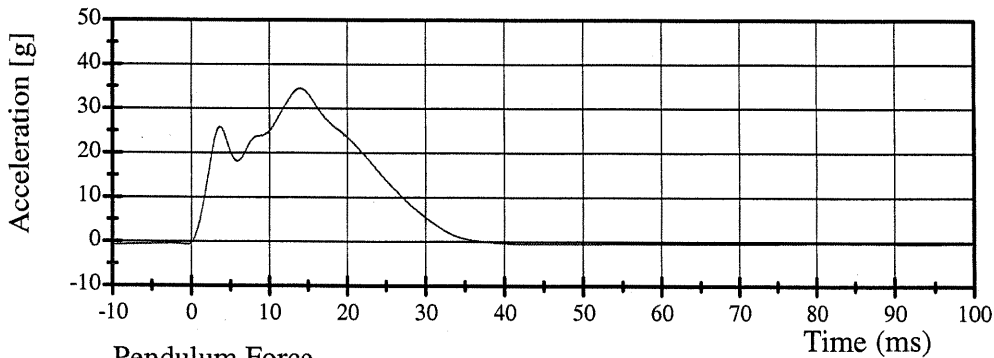
Transportation Research Center Inc.

Left Thorax With Arm Test

SID-IIIs Serial No. 056 Calibration No. 03 - 1

Test Date 09/23/2005

Pendulum Deceleration

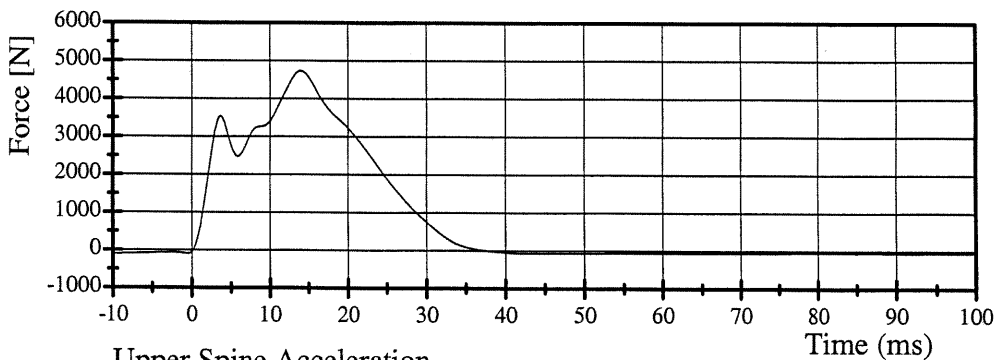


Filter Class: CFC 180

Max: 34.6 g at 14.0 ms

Min: -3.3 g at -20.8 ms

Pendulum Force

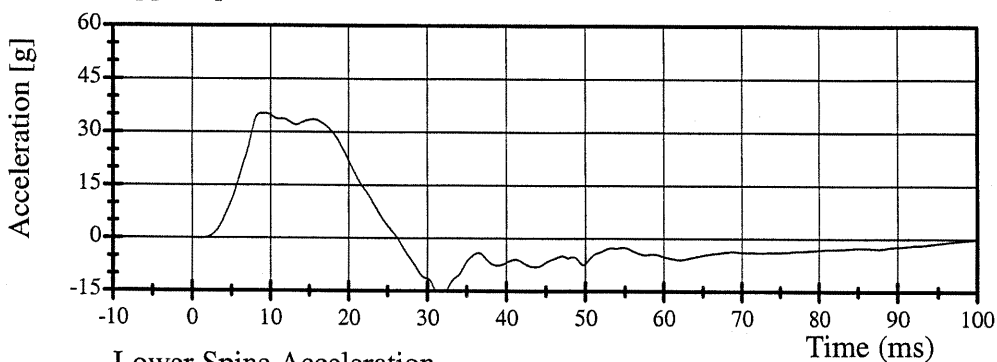


Filter Class: CFC 180

Max: 4736 N at 14.0 ms

Min: -452 N at -20.8 ms

Upper Spine Acceleration

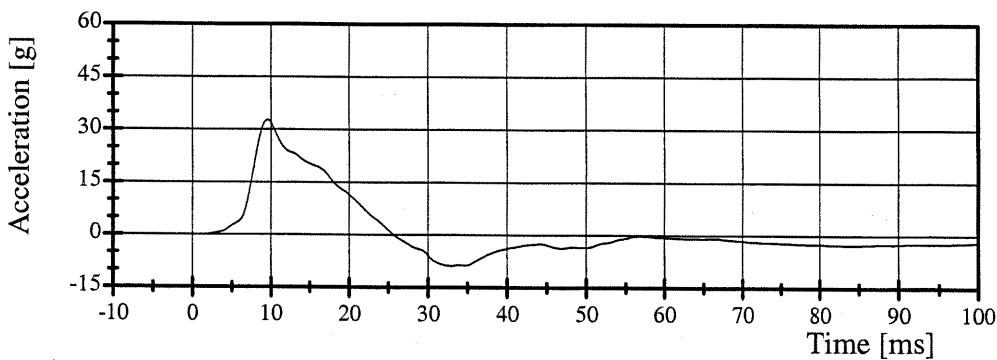


Filter Class: CFC 180

Max: 35.3 g at 8.9 ms

Min: -18.1 g at 31.7 ms

Lower Spine Acceleration



Filter Class: CFC 180

Max: 32.8 g at 9.6 ms

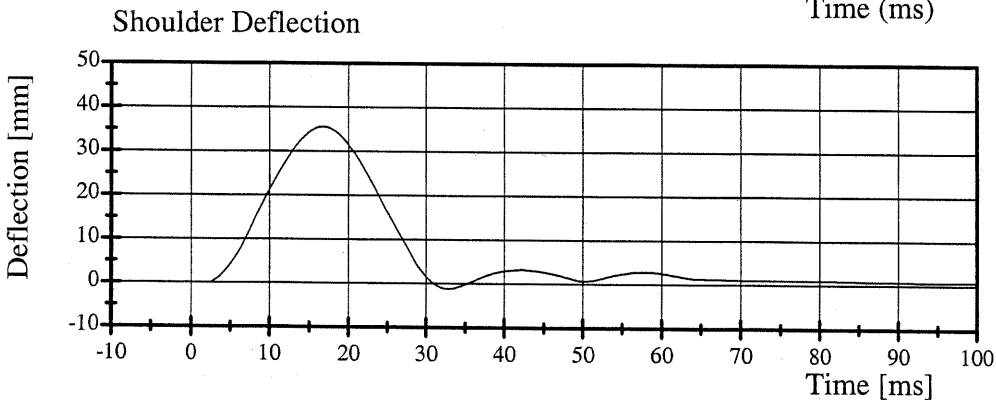
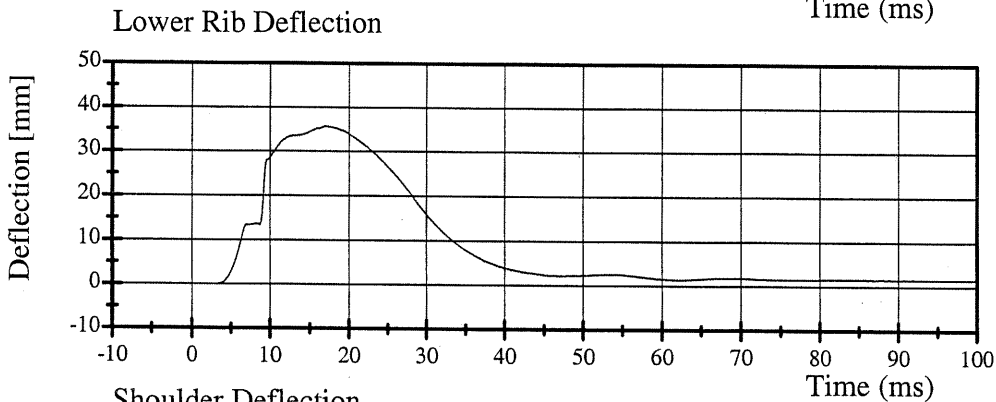
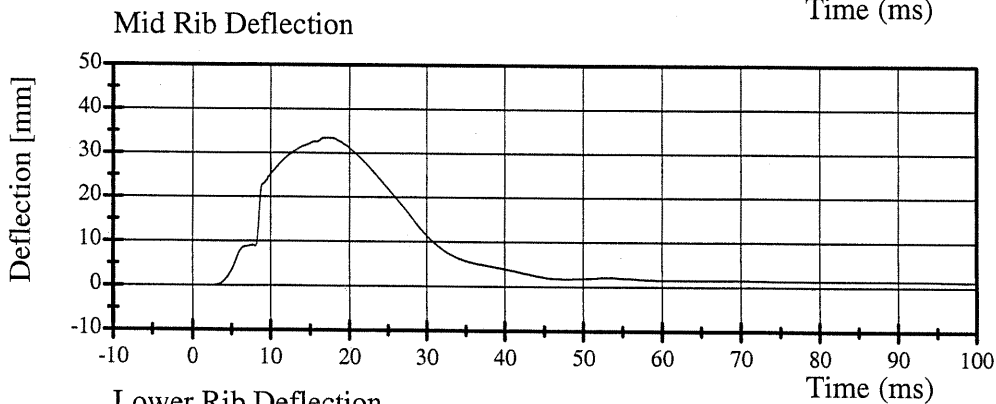
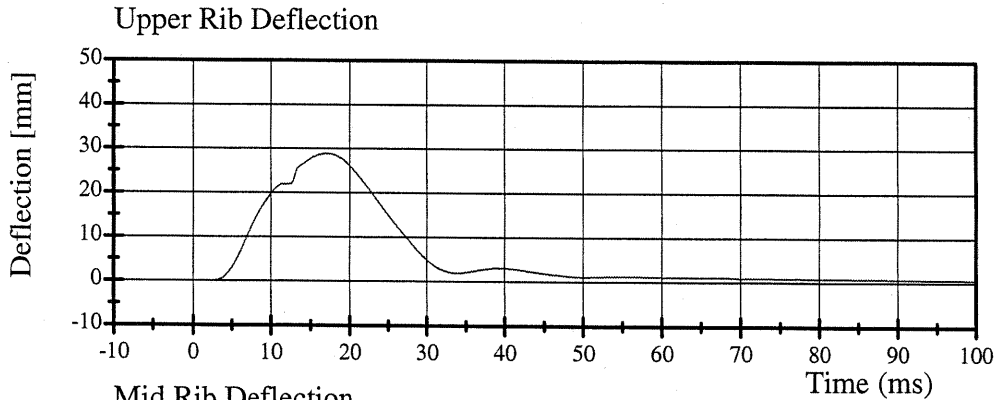
Min: -8.8 g at 33.0 ms

Transportation Research Center Inc.

Left Thorax With Arm Test

SID-II's Serial No. 056 Calibration No. 03 - 1

Test Date 09/23/2005



09.23.2005 08:48:21 660



Transportation Research Center Inc.

Left Thorax Without Arm Test

SID-IIs Serial No. 056 Calibration No. 03 - 1

Test Date 09/26/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 C	21.1 C	Yes
Relative Humidity	10 - 70 %	58 %	Yes
Pendulum Velocity	4.20 - 4.40 m/sec	4.31 m/sec	Yes
Pendulum Force	1800 - 2300 N	2259 N	Yes
Upper Spine Peak Acceleration	13 - 18 g	16.3 g	Yes
Lower Spine Peak Acceleration	8 - 13 g	9.1 g	Yes
Upper Rib Peak Deflection	32 - 41 mm	36.4 mm	Yes
Mid Rib Peak Deflection	40 - 51 mm	41.1 mm	Yes
Lower Rib Peak Deflection	34 - 47 mm	37.2 mm	Yes

Test meets specifications.

Comments:

Technician

Vic Oster

Approved

V. F. Walth

09.26.2005 11:19:39 586



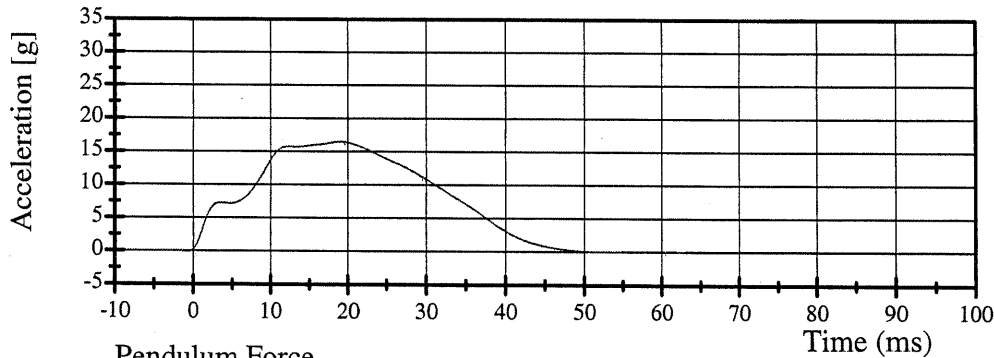
Transportation Research Center Inc.

Left Thorax Without Arm Test

SID-IIs Serial No. 056 Calibration No. 03 - 1

Test Date 09/26/2005

Pendulum Deceleration

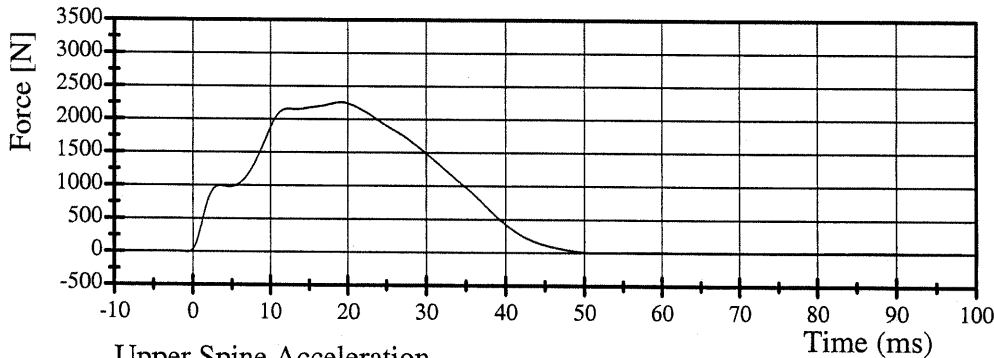


Filter Class: CFC 180

Max: 16.5 g at 19.1 ms

Min: -0.2 g at 213.4 ms

Pendulum Force

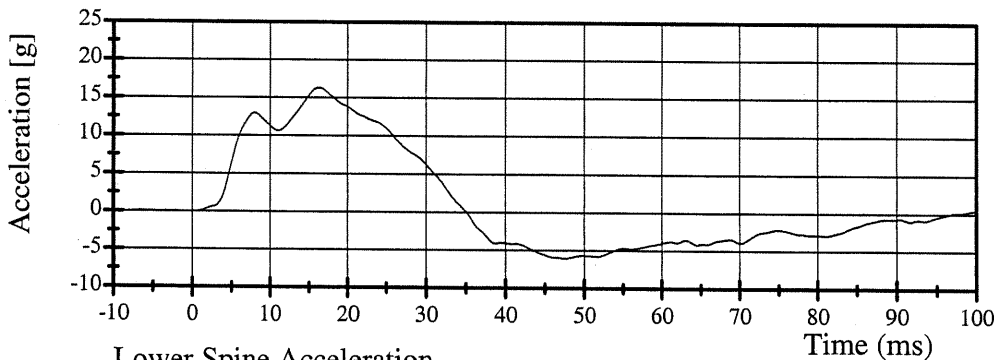


Filter Class: CFC 180

Max: 2259 N at 19.1 ms

Min: -25 N at 213.4 ms

Upper Spine Acceleration

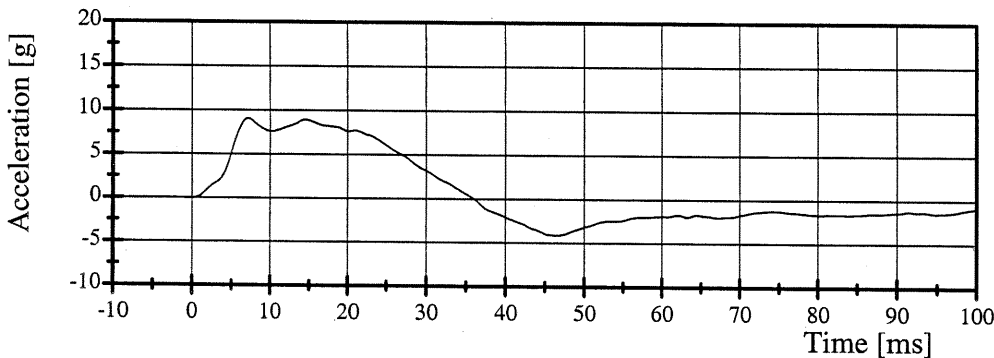


Filter Class: CFC 180

Max: 16.3 g at 16.3 ms

Min: -6.0 g at 47.5 ms

Lower Spine Acceleration



Filter Class: CFC 180

Max: 9.1 g at 7.2 ms

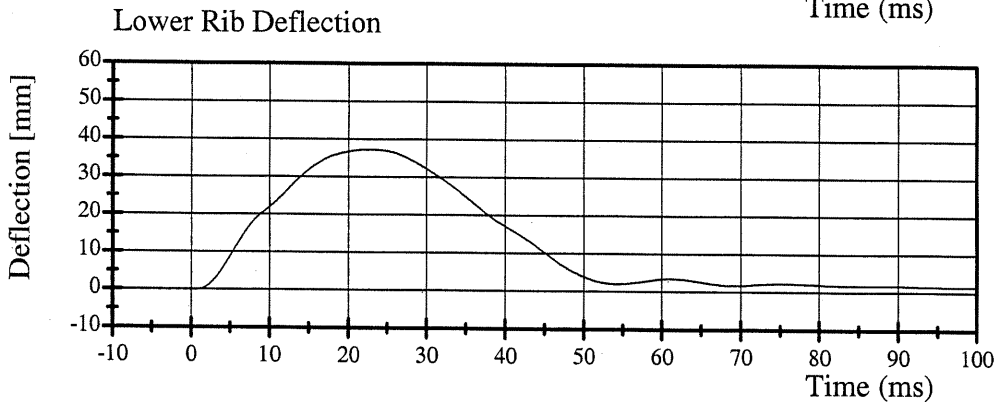
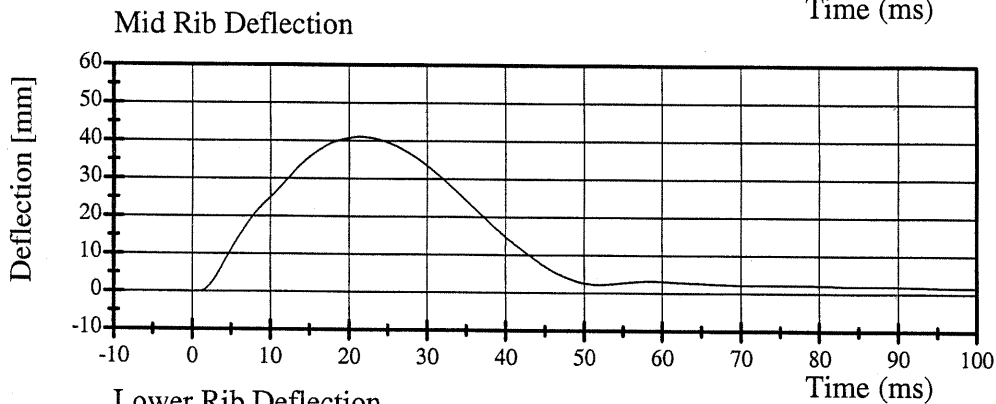
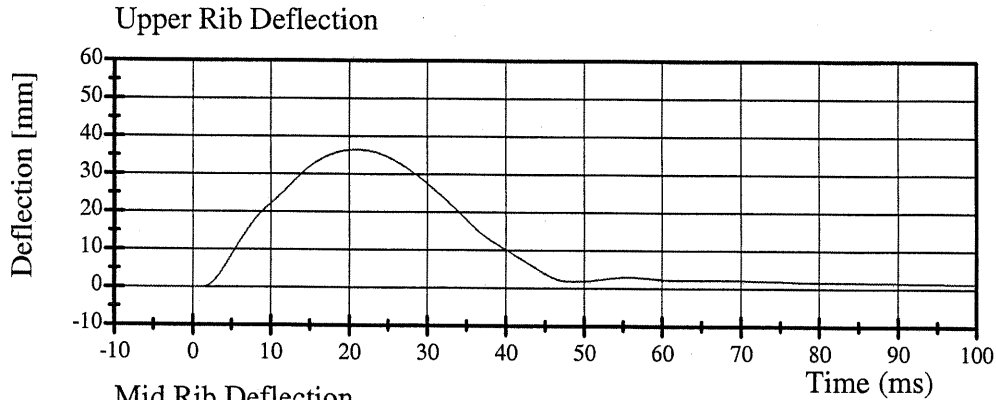
Min: -4.1 g at 46.6 ms

Transportation Research Center Inc.

Left Thorax Without Arm Test

SID-IIs Serial No. 056 Calibration No. 03 - 1

Test Date 09/26/2005



09.26.2005 11:19:41 586



Transportation Research Center Inc.

Left Abdomen Test

SID-IIs Serial No. 056 Calibration No. 03 - 1

Test Date 09/26/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 C	21.0 C	Yes
Relative Humidity	10 - 70 %	54 %	Yes
Pendulum Velocity	4.20 - 4.40 m/sec	4.39 m/sec	Yes
Pendulum Force	1300 - 1900 N	1969 N	No
Upper Spine Peak Acceleration	5 - 9 g	7.4 g	Yes
Lower Spine Peak Acceleration	9 - 13 g	12.1 g	Yes
Upper Abdomen Rib Peak Deflection	44 - 55 mm	44.3 mm	Yes
Lower Abdomen Rib Peak Deflection	44 - 56 mm	38.3 mm	No

Test does not meet specifications.

Comments:

Technician

Vince Oliver

Approved

V.F. Walke

09.27.2005 10:26:59 600



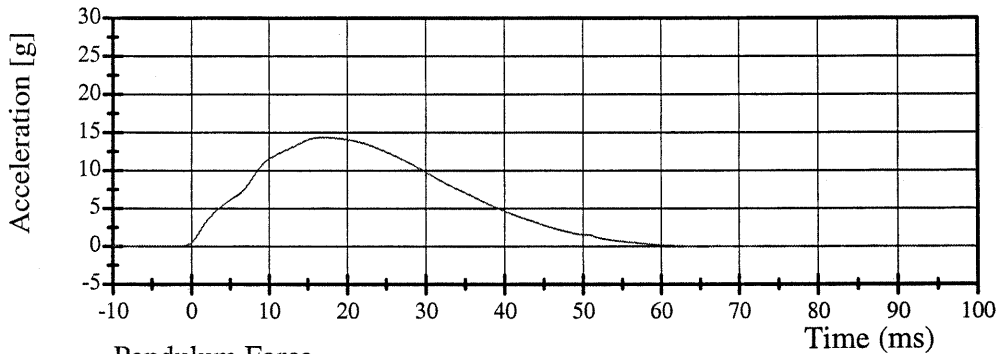
Transportation Research Center Inc.

Left Abdomen Test

SID-II's Serial No. 056 Calibration No. 03 - 1

Test Date 09/26/2005

Pendulum Deceleration

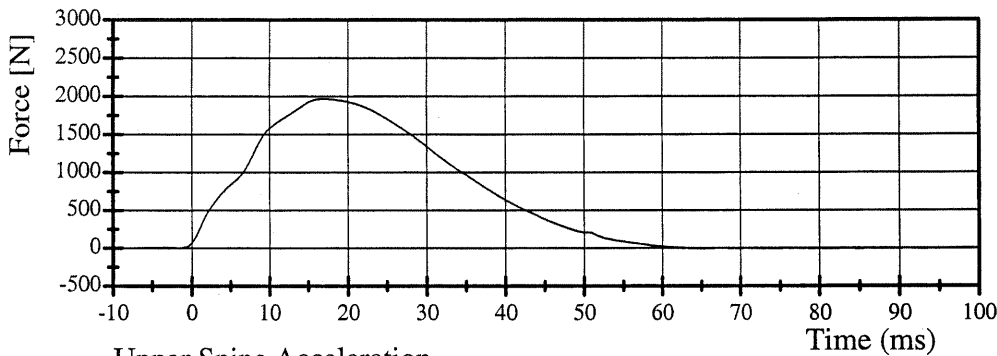


Filter Class: CFC 180

Max: 14.4 g at 17.0 ms

Min: -0.1 g at 211.3 ms

Pendulum Force

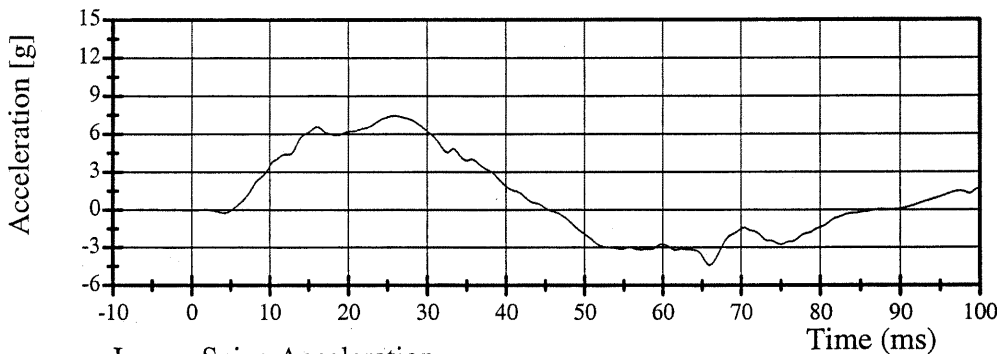


Filter Class: CFC 180

Max: 1969 N at 17.0 ms

Min: -10 N at 211.3 ms

Upper Spine Acceleration

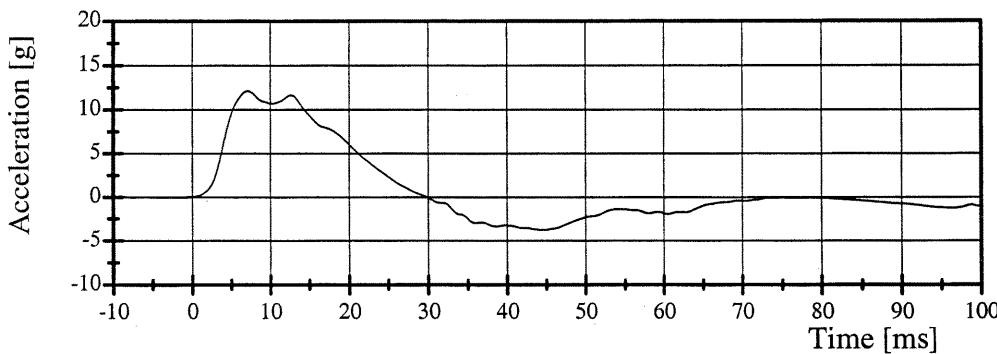


Filter Class: CFC 180

Max: 7.4 g at 25.8 ms

Min: -4.4 g at 66.0 ms

Lower Spine Acceleration



Filter Class: CFC 180

Max: 12.1 g at 7.1 ms

Min: -3.8 g at 44.6 ms

09.27.2005 10:27:00 600



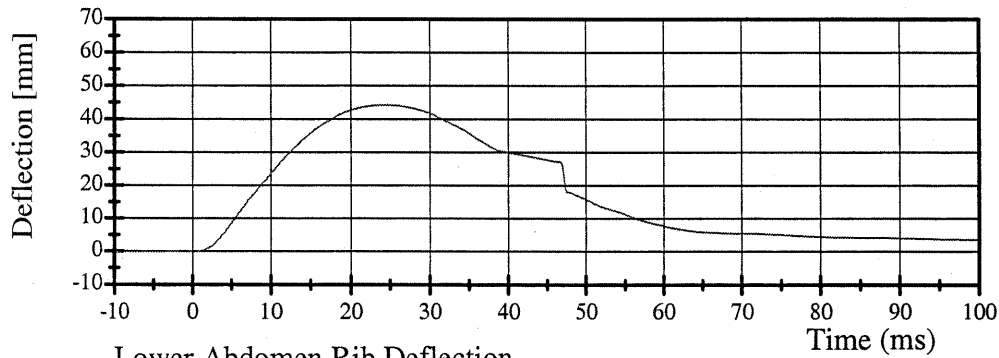
Transportation Research Center Inc.

Left Abdomen Test

SID-IIs Serial No. 056 Calibration No. 03 - 1

Test Date 09/26/2005

Upper Abdomen Rib Deflection

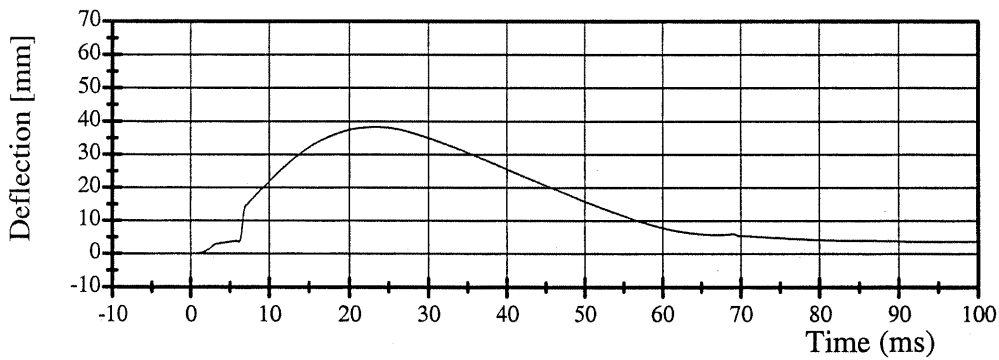


Filter Class: CFC 600

Max: 44.3 mm at 24.5 ms

Min: -0.0 mm at 0.4 ms

Lower Abdomen Rib Deflection



Filter Class: CFC 600

Max: 38.3 mm at 23.4 ms

Min: -0.0 mm at -34.9 ms

Transportation Research Center Inc.

Left Pelvis Test

SID-IIs Serial No. 056 Calibration No. 03 - 1

Test Date 09/26/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 C	21.2 C	Yes
Relative Humidity	10 - 70 %	55 %	Yes
Pendulum Velocity	6.60 - 6.80 m/sec	6.61 m/sec	Yes
Pendulum Acceleration	40 - 48 g	41.4 g	Yes
Pelvis Peak Acceleration	40 - 48 g	47.7 g	Yes
Peak Acetabulum Force	3803 - 4505 g	4105 N	Yes

Test meets specifications.

Comments:

Technician

Vince Stumm

Approved

V. J. Watts

09.26.2005 12:51:38 383



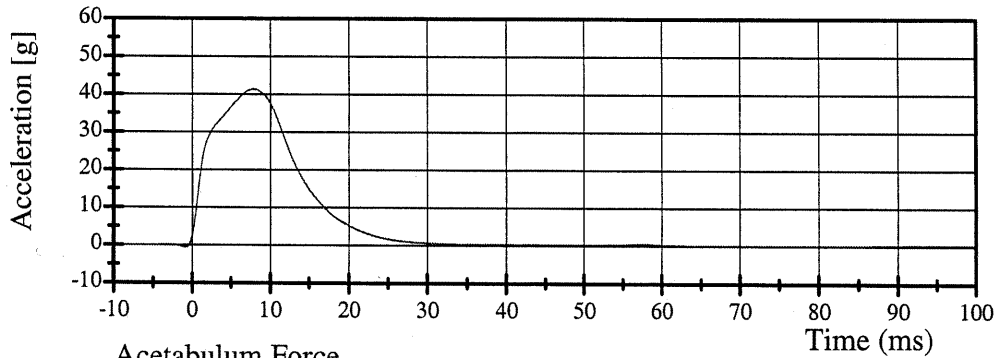
Transportation Research Center Inc.

Left Pelvis Test

SID-IIs Serial No. 056 Calibration No. 03 - 1

Test Date 09/26/2005

Pendulum Deceleration

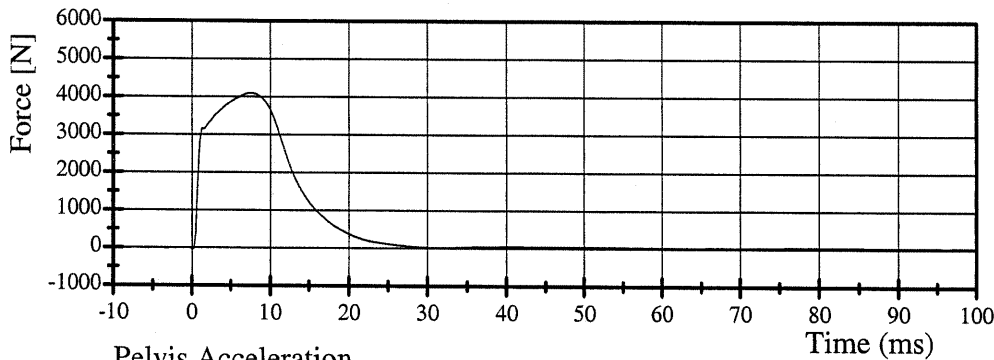


Filter Class: CFC 180

Max: 41.4 g at 7.9 ms

Min: -0.6 g at -0.9 ms

Acetabulum Force

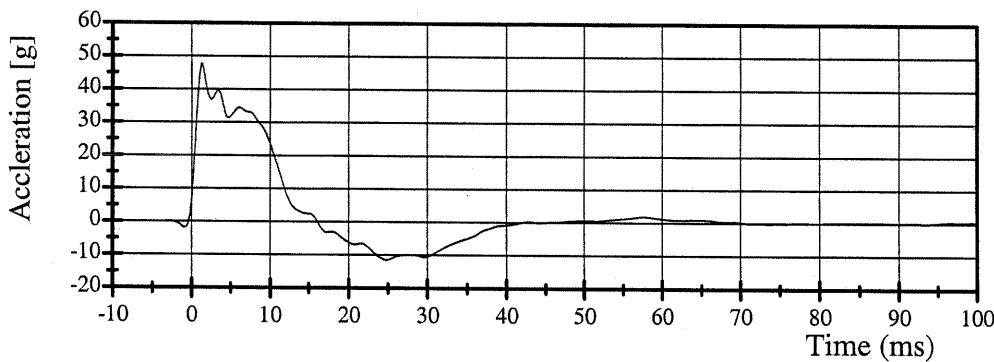


Filter Class: CFC 600

Max: 4105 N at 7.5 ms

Min: -43 N at 0.2 ms

Pelvis Acceleration



Filter Class: CFC 180

Max: 47.7 g at 1.3 ms

Min: -11.5 g at 24.8 ms

Post-Test Dummy Configuration and Performance Verification Data

Passenger Dummy S/N: 020

Transportation Research Center Inc.
5720 SIDIIs Dummy
External Dimensions
Serial No. 020 Calibration No. 09
Date: 28-Sep-05

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Sitting Height	779.0 - 795.0	776	No
B	Shoulder Pivot Height	437.0 - 453.0	441	Yes
C	H-Point Height	81.0 - 91.0	84	Yes
D	H-Point from Backline	141.0 - 151.0	144	Yes
E	Shoulder Pivot from Backline	104.0 - 114.0	105	Yes
F	Thigh Clearance	119.0 - 135.0	130	Yes
G	Head Breadth	140.0 - 148.0	142	Yes
H	Head Back from Backline	40.0 - 46.0	43	Yes
I	Head Depth	178.0 - 188.0	180	Yes
J	Head Circumference	541.0 - 551.0	540	No
K	Buttock to Knee Length	514.0 - 540.0	533	Yes
L	Popliteal Height	348.0 - 374.0	355	Yes
M	Knee to Floor Height	393.0 - 409.0	409	Yes
N	Buttock Popliteal Length	416.0 - 442.0	432	Yes
O	Chest Depth without Jacket	195.0 - 211.0	205	Yes
P	Foot Length (right)	218.0 - 234.0	222	Yes
P	Foot Length (left)	218.0 234.0	215	No
Q	Hip Breadth (with pelvis plug)	313.0 - 323.0	314	Yes
R	Arm Length	249.0 - 259.0	251	Yes
S	Knee to Seat Back	477.0 - 493.0	487	Yes
V	Shoulder Width	337.0 - 353.0	346	Yes
W	Foot Width (right)	78.0 - 94.0	84	Yes
W	Foot Width (left)	78.0 94.0	80	Yes
Y	Chest Circumference with Jacket	861.0 - 891.0	872	Yes
Z	Waist Circumference	757.0 - 787.0	762	Yes

Dummy does not meet all specifications.

Technician

Approved

V.F. Walter

David K. Stevens



Transportation Research Center Inc.

Left Lateral Head Test

SID-IIs Serial No. 020 Calibration No. 09 - 1

Test Date 09/21/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Peak Resultant Acceleration	125 - 145 g	132.7 g	Yes
Peak Longitudinal Acceleration	15 g Max	-5.2 g	Yes
Is Acceleration Curve Unimodal?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Vicat Oliver

Approved

V.J. Watts

09.21.2005 13:21:57 234

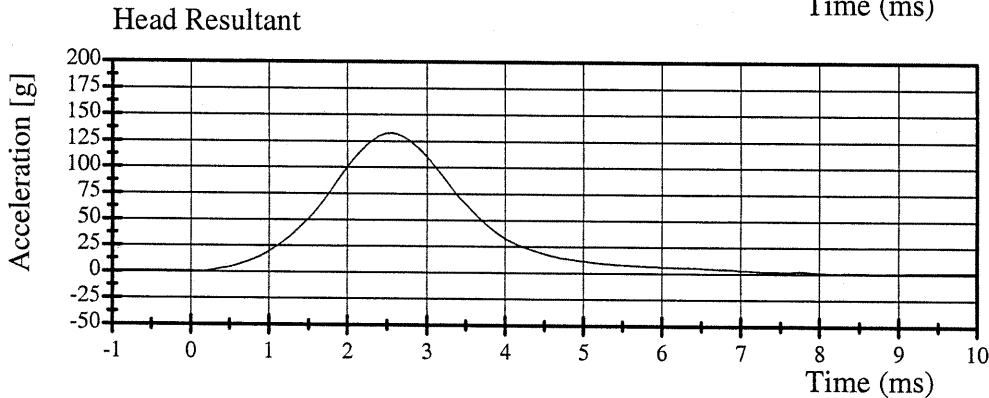
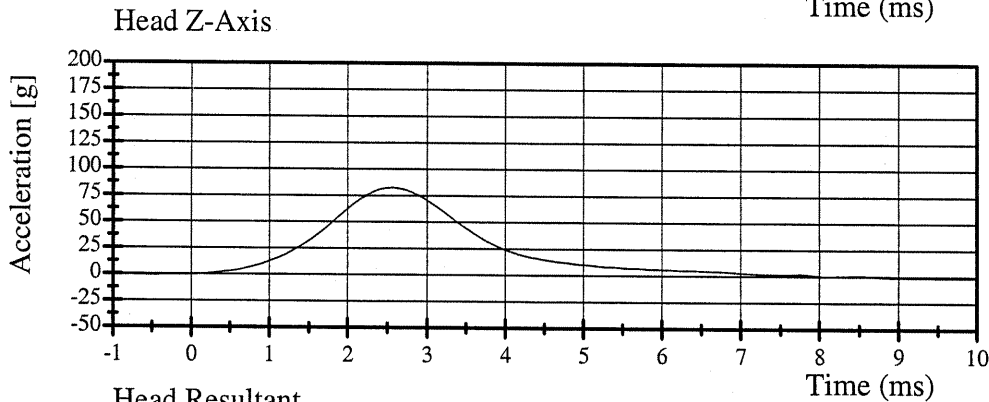
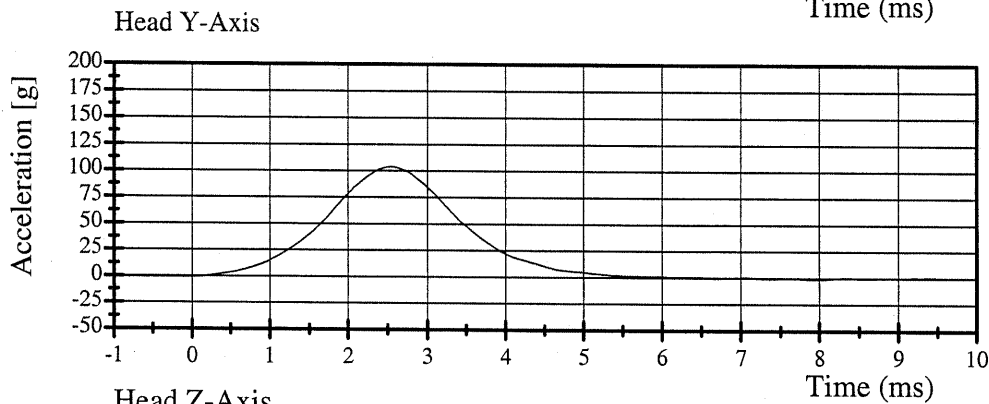
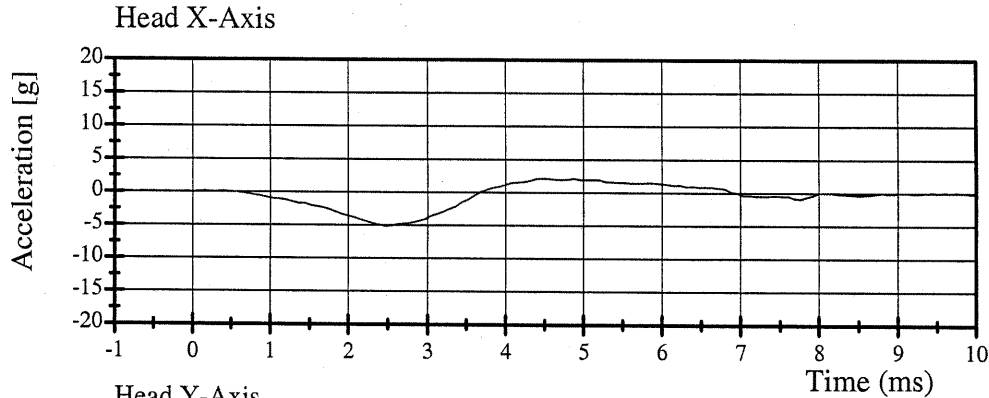


Transportation Research Center Inc.

Lateral Head Test

SID-IIs Serial No. 020 Calibration No. 09 - 1

Test Date 09/21/2005



09.21.2005 13:21:58 234



Transportation Research Center Inc.

Left Lateral Neck Test

SID-IIs Serial No. 020 Calibration No. 09 - 1

Test Date 09/21/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	53 %	Yes
Impact Velocity	5.51 - 5.63 m/s	5.58 m/s	Yes
Integrated Pendulum Velocity			
10 ms	2.20 - 2.80 m/s	2.53 m/s	Yes
15 ms	3.40 - 4.10 m/s	3.62 m/s	Yes
20 ms	4.50 - 5.40 m/s	4.89 m/s	Yes
25 ms	5.50 - 6.10 m/s	5.91 m/s	Yes
25 - 100 ms	5.20 - 6.20 m/s	5.70 - 6.02 m/s	Yes
Peak D Plane Rotation	74 - 79 °	74.8 °	Yes
Time of Peak D-Plane Rotation	50 - 70 °	60.3 °	Yes
Peak Moment About Occipital Condyles during Rotation Interval	40.0 - 45.0 N·m	41.1 N·m	Yes
Time of Moment Decay To 0 N·m	113 - 123 ms	113.8 ms	Yes

Test Meets Specifications

Comments:

Technician

Vince Oliver

Approved

V. J. Walter

09.21.2005 12:42:03 674



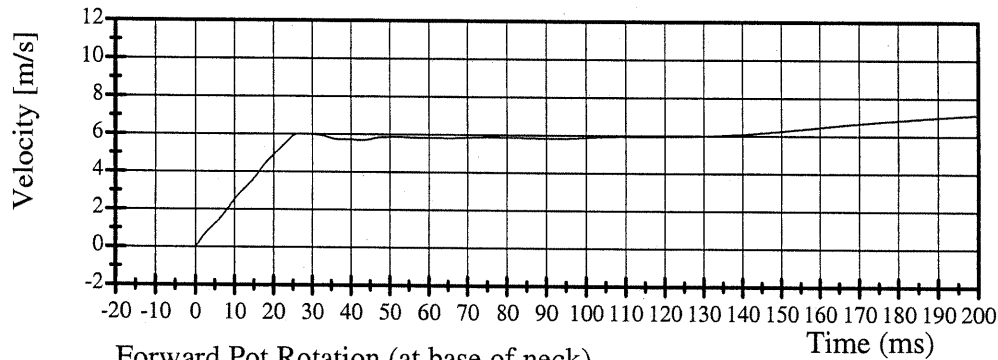
Transportation Research Center Inc.

Left Lateral Neck Test

SID-IIs Serial No. 020 Calibration No. 09 - 1

Test Date 09/21/2005

Integrated Pendulum Velocity

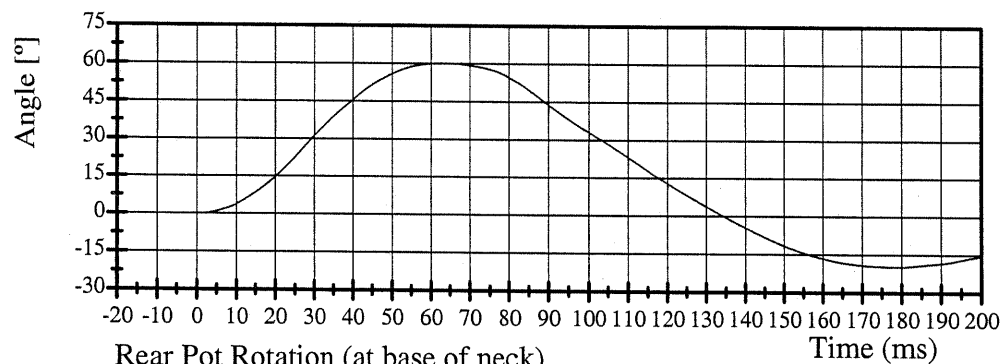


Filter Class: 180

Max: 7.3 m/s at 221.5 ms

Min: -0.0 m/s at -0.8 ms

Forward Pot Rotation (at base of neck)

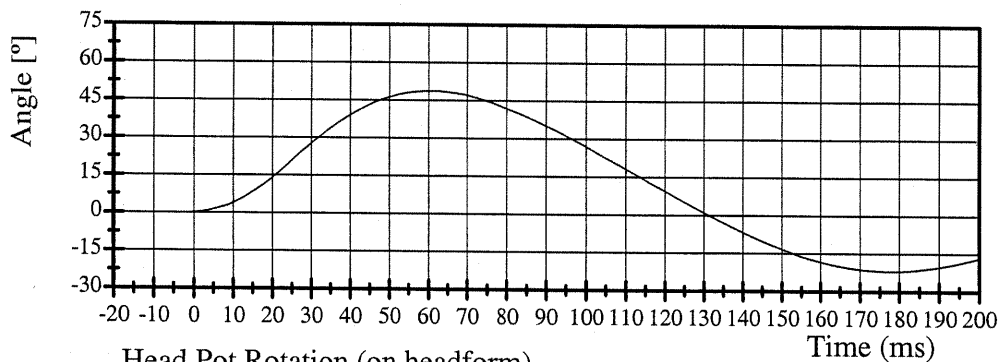


Filter Class: 60

Max: 60.1 ° at 62.6 ms

Min: -19.7 ° at 179.0 ms

Rear Pot Rotation (at base of neck)

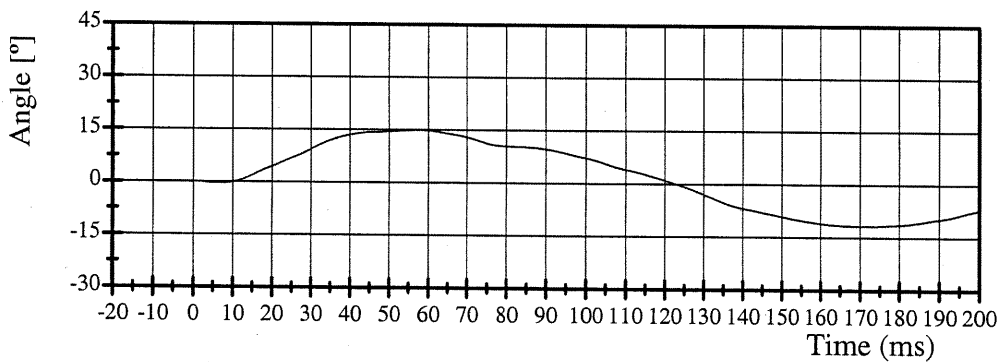


Filter Class: 60

Max: 48.7 ° at 60.7 ms

Min: -21.9 ° at 178.5 ms

Head Pot Rotation (on headform)



Filter Class: 60

Max: 15.0 ° at 57.6 ms

Min: -11.8 ° at 171.0 ms

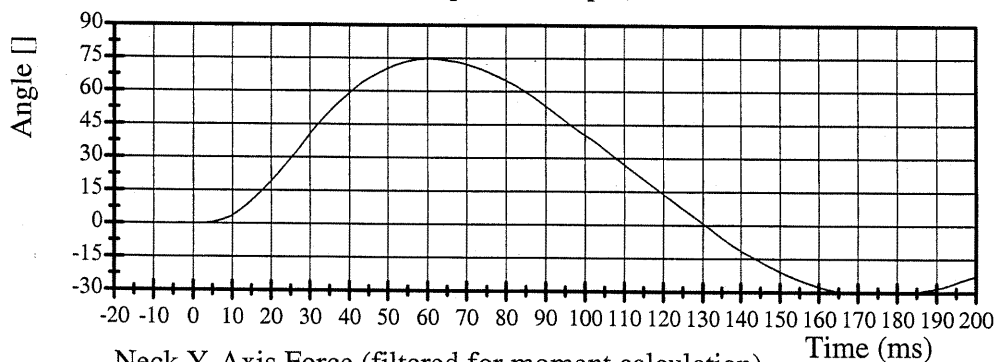
Transportation Research Center Inc.

Left Lateral Neck Test

SID-IIs Serial No. 020 Calibration No. 09 - 1

Test Date 09/21/2005

D-Plane Rotation (forward pot + head pot)

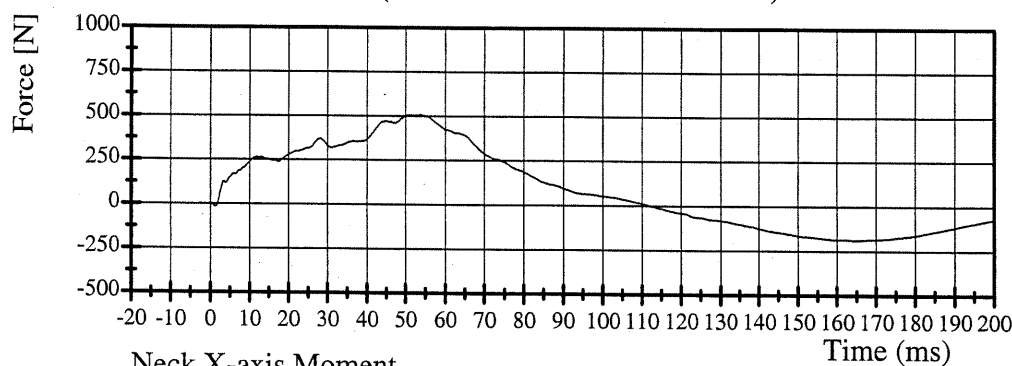


Filter Class: CFC 60

Max: 74.8 ° at 60.3 ms

Min: -31.3 ° at 174.9 ms

Neck Y-Axis Force (filtered for moment calculation)

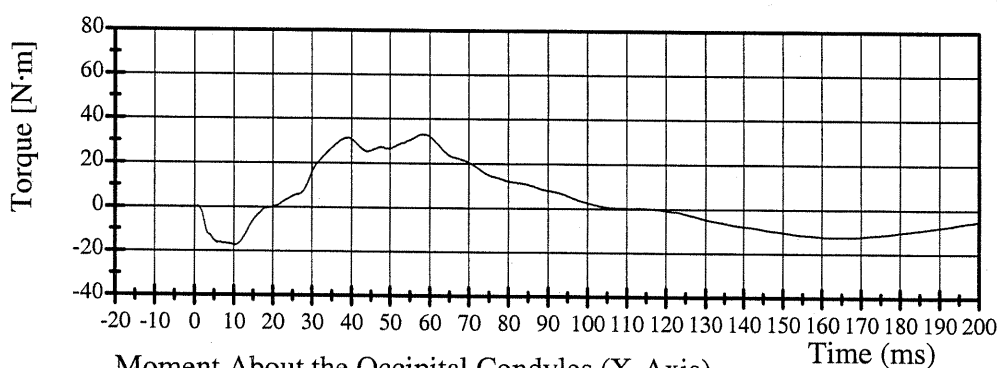


Filter Class: CFC 600

Max: 508 N at 53.7 ms

Min: -189 N at 165.0 ms

Neck X-axis Moment

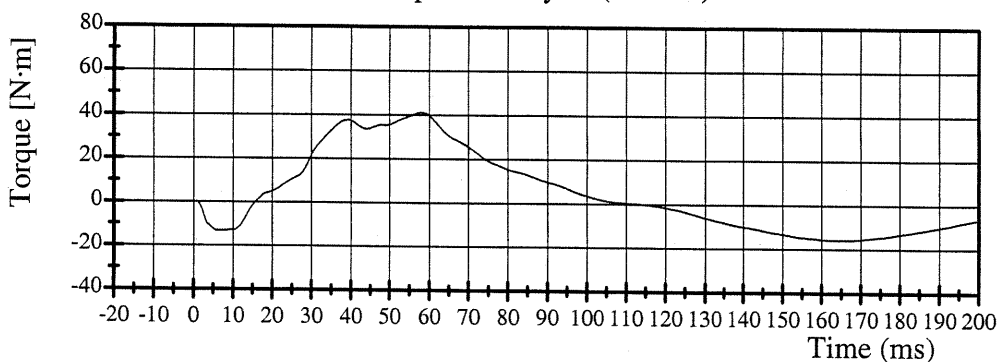


Filter Class: CFC 600

Max: 33.1 N·m at 58.1 ms

Min: -17.2 N·m at 10.4 ms

Moment About the Occipital Condyles (X-Axis)



Filter Class: 600

Max: 41.1 N·m at 57.8 ms

Min: -15.7 N·m at 162.3 ms

Transportation Research Center Inc.

Left Shoulder Test

SID-IIs Serial No. 020 Calibration No. 09 - 5

Test Date 09/27/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 C	21.2 C	Yes
Relative Humidity	10 - 70 %	55 %	Yes
Pendulum Velocity	4.41 - 4.59 m/sec	4.49 m/sec	Yes
Probe Force	1600 - 2400 N	2355 N	Yes
Deflection	27 - 39 mm	33.3 mm	Yes

Test meets specifications.

Comments:

Technician

Vincent Oliver

Approved

V. F. Watts

09.27.2005 09:58:46 570

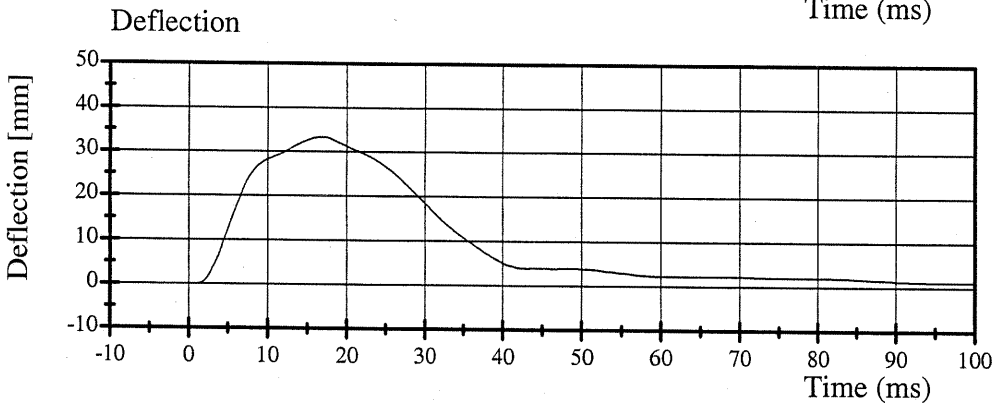
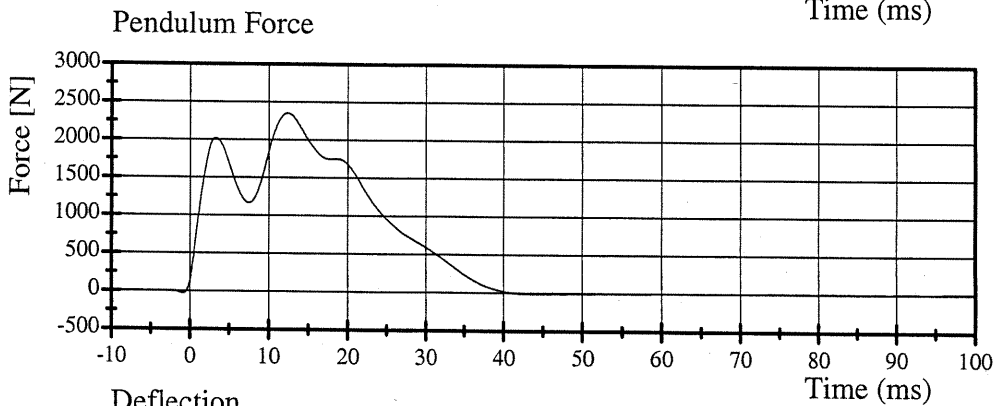
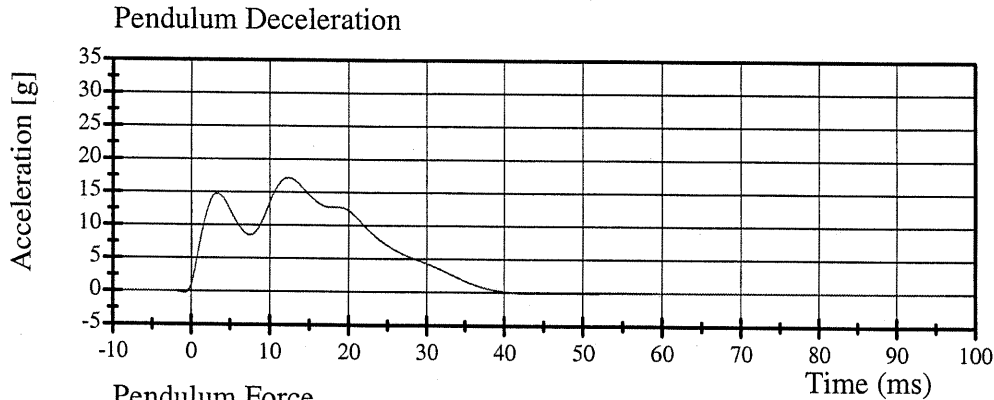


Transportation Research Center Inc.

Left Shoulder Test

SID-IIs Serial No. 020 Calibration No. 09 - 5

Test Date 09/27/2005



09.27.2005 09:58:47 570



Transportation Research Center Inc.

Left Thorax With Arm Test

SID-IIs Serial No. 020 Calibration No. 09 - 1

Test Date 09/22/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 C	21.1 C	Yes
Relative Humidity	10 - 70 %	56 %	Yes
Pendulum Velocity	6.60 - 6.80 m/sec	6.72 m/sec	Yes
Pendulum Force	4100 - 4700 N	4963 N	No
Upper Spine Peak Acceleration	34 - 48 g	38.8 g	Yes
Lower Spine Peak Acceleration	30 - 38 g	31.8 g	Yes
Upper Rib Peak Deflection	23 - 35 mm	28.1 mm	Yes
Mid Rib Peak Deflection	29 - 44 mm	32.0 mm	Yes
Lower Rib Peak Deflection	33 - 40 mm	35.5 mm	Yes
Shoulder Peak Deflectioin	30 - 42 mm	33.6 mm	Yes

Test does not meet specifications.

Comments:

Technician

Vicente Otunir

Approved

K. F. Walter

09.22.2005 13:25:55 406

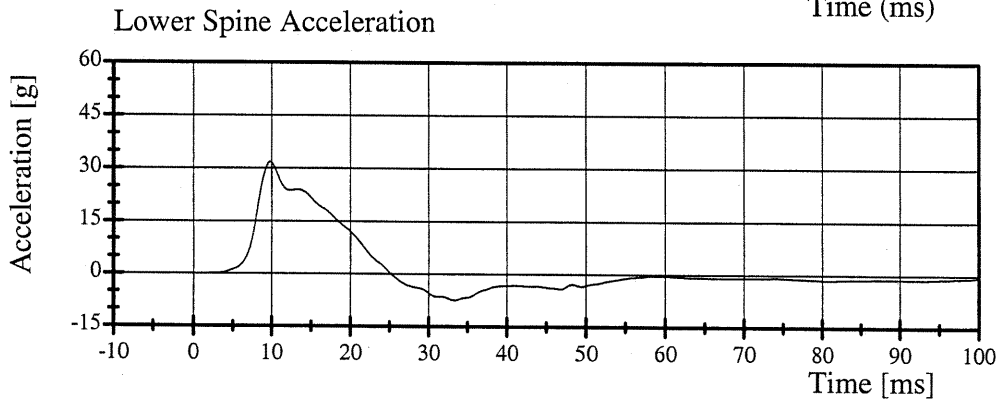
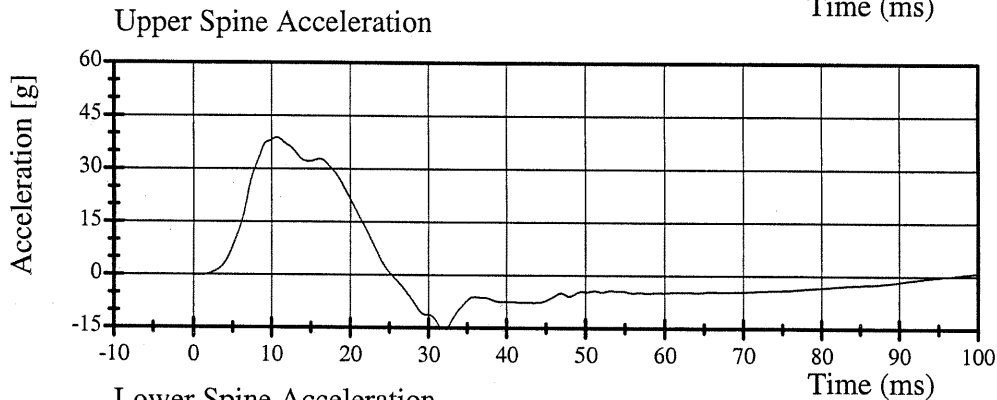
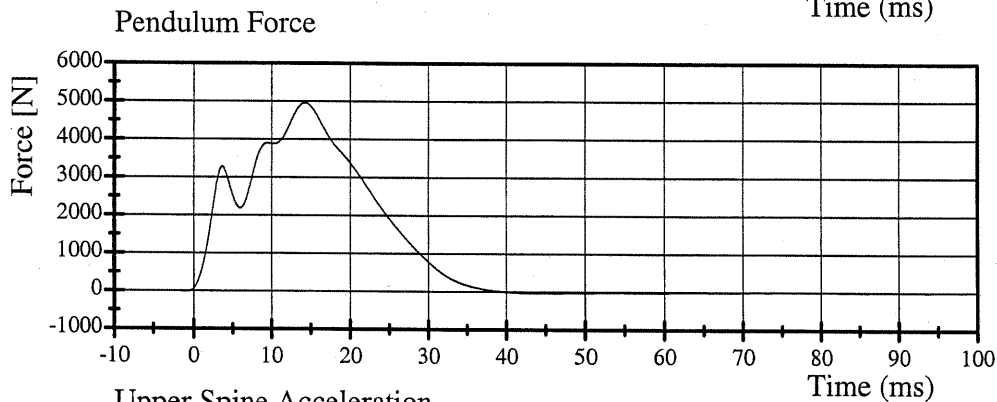
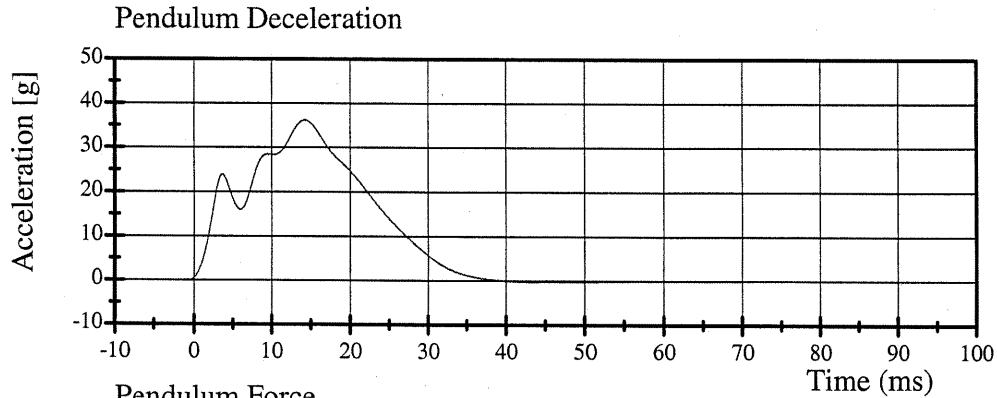


Transportation Research Center Inc.

Left Thorax With Arm Test

SID-IIs Serial No. 020 Calibration No. 09 - 1

Test Date 09/22/2005



09.22.2005 13:25:55 406



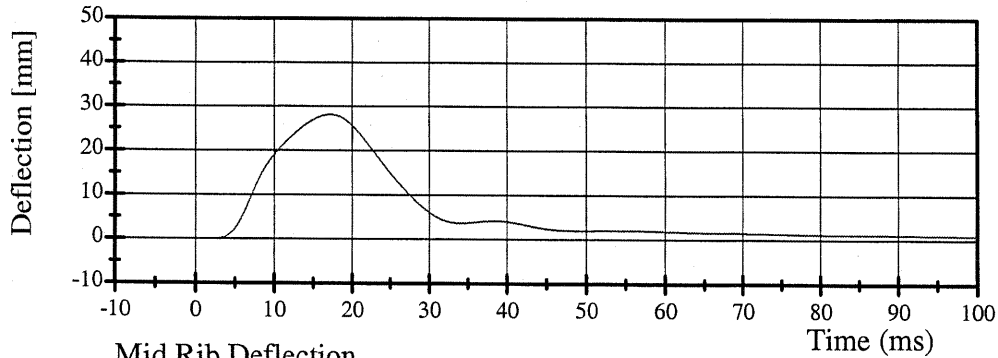
Transportation Research Center Inc.

Left Thorax With Arm Test

SID-IIs Serial No. 020 Calibration No. 09 - 1

Test Date 09/22/2005

Upper Rib Deflection

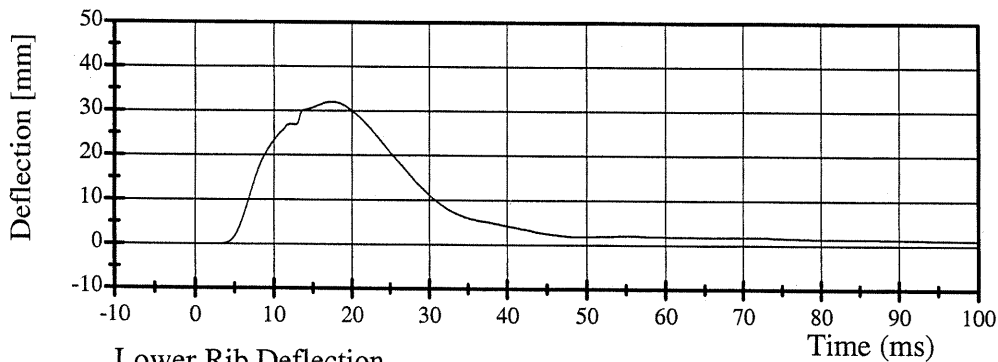


Filter Class: CFC 600

Max: 28.1 mm at 17.2 ms

Min: -0.0 mm at -27.5 ms

Mid Rib Deflection

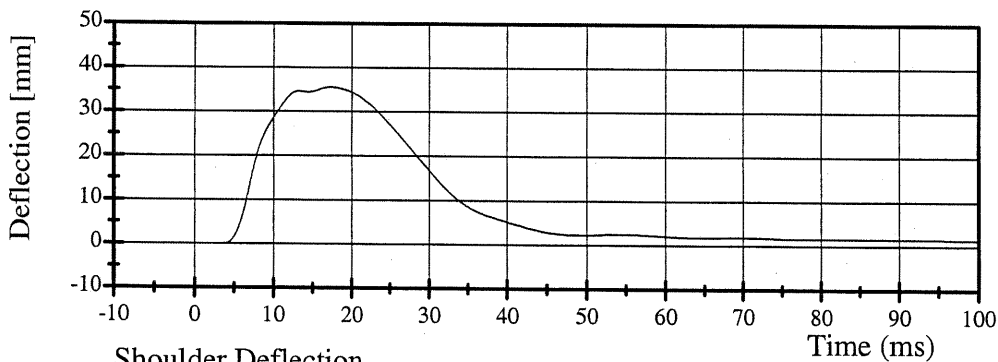


Filter Class: CFC 600

Max: 32.0 mm at 17.4 ms

Min: -0.0 mm at -23.5 ms

Lower Rib Deflection

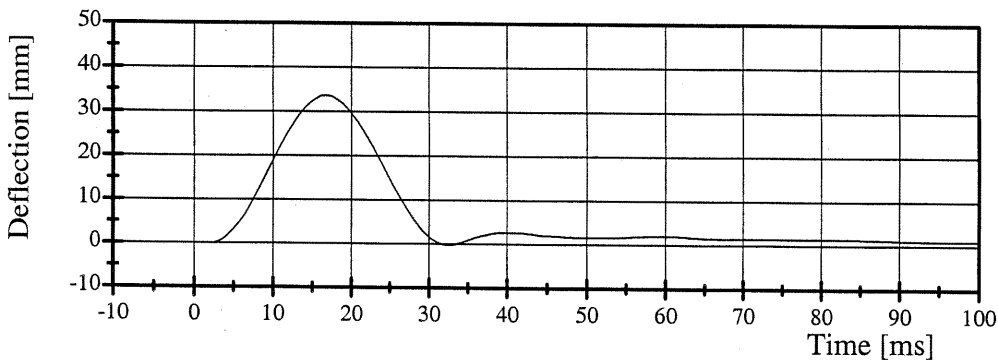


Filter Class: CFC 600

Max: 35.5 mm at 17.4 ms

Min: -0.0 mm at 3.7 ms

Shoulder Deflection



Filter Class: CFC 600

Max: 33.6 mm at 16.6 ms

Min: -0.2 mm at 32.6 ms

09.22.2005 13:25:56 406



Transportation Research Center Inc.

Left Thorax Without Arm Test

SID-IIs Serial No. 020 Calibration No. 09 - 1

Test Date 09/22/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 C	21.4 C	Yes
Relative Humidity	10 - 70 %	54 %	Yes
Pendulum Velocity	4.20 - 4.40 m/sec	4.31 m/sec	Yes
Pendulum Force	1800 - 2300 N	2290 N	Yes
Upper Spine Peak Acceleration	13 - 18 g	15.8 g	Yes
Lower Spine Peak Acceleration	8 - 13 g	8.9 g	Yes
Upper Rib Peak Deflection	32 - 41 mm	37.5 mm	Yes
Mid Rib Peak Deflection	40 - 51 mm	40.9 mm	Yes
Lower Rib Peak Deflection	34 - 47 mm	37.0 mm	Yes

Test meets specifications.

Comments:

Technician

Vicente Olivera

Approved

V.K. Walter

09.22.2005 12:49:24 585



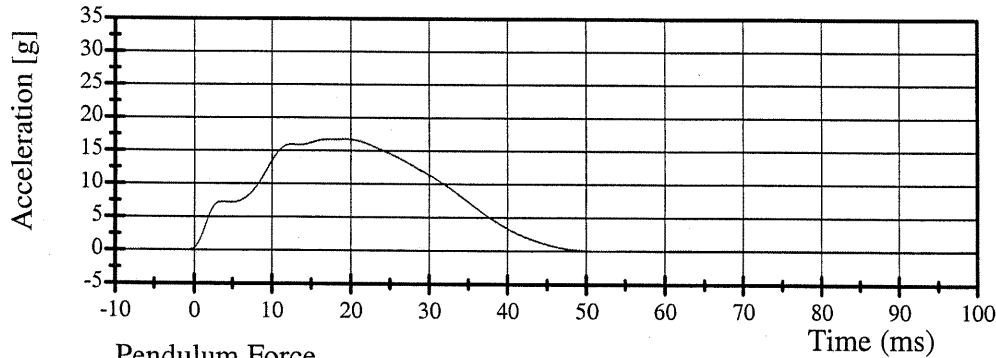
Transportation Research Center Inc.

Left Thorax Without Arm Test

SID-IIs Serial No. 020 Calibration No. 09 - 1

Test Date 09/22/2005

Pendulum Deceleration

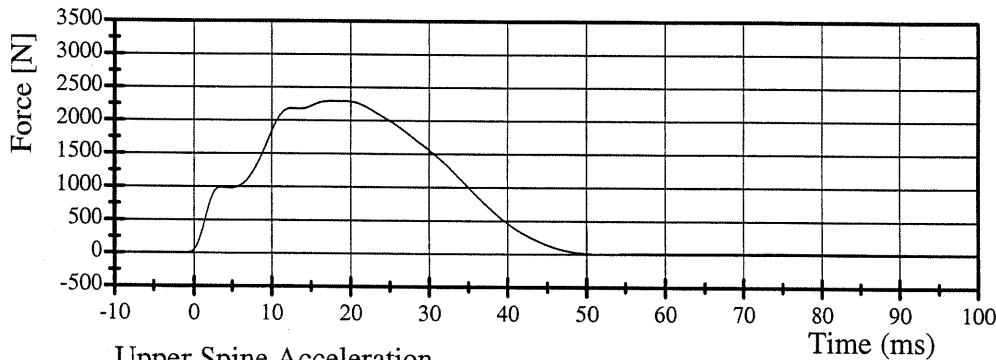


Filter Class: CFC 180

Max: 16.7 g at 19.4 ms

Min: -0.1 g at 182.5 ms

Pendulum Force

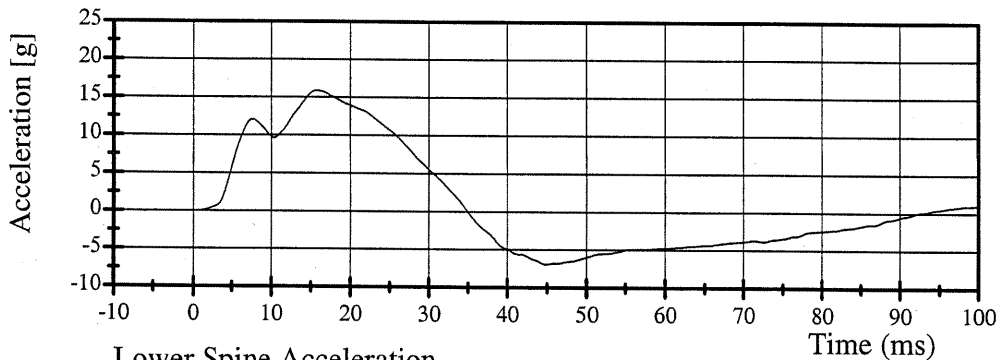


Filter Class: CFC 180

Max: 2290 N at 19.4 ms

Min: -10 N at 182.5 ms

Upper Spine Acceleration

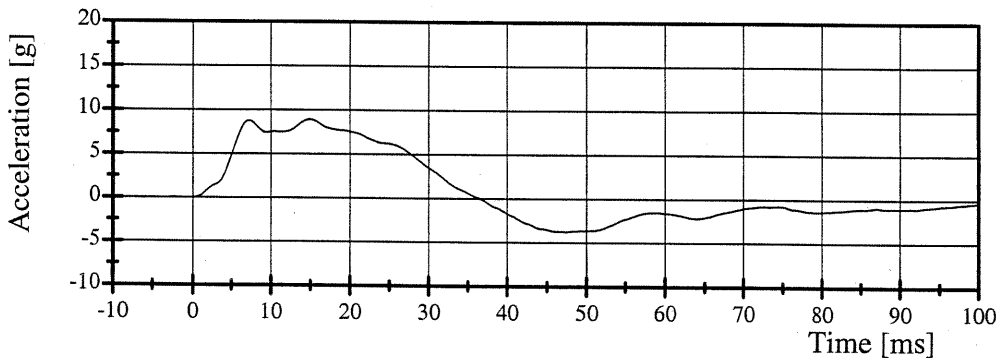


Filter Class: CFC 180

Max: 15.8 g at 15.8 ms

Min: -6.9 g at 44.9 ms

Lower Spine Acceleration



Filter Class: CFC 180

Max: 8.9 g at 14.9 ms

Min: -3.7 g at 47.5 ms

09.22.2005 12:49:25 585

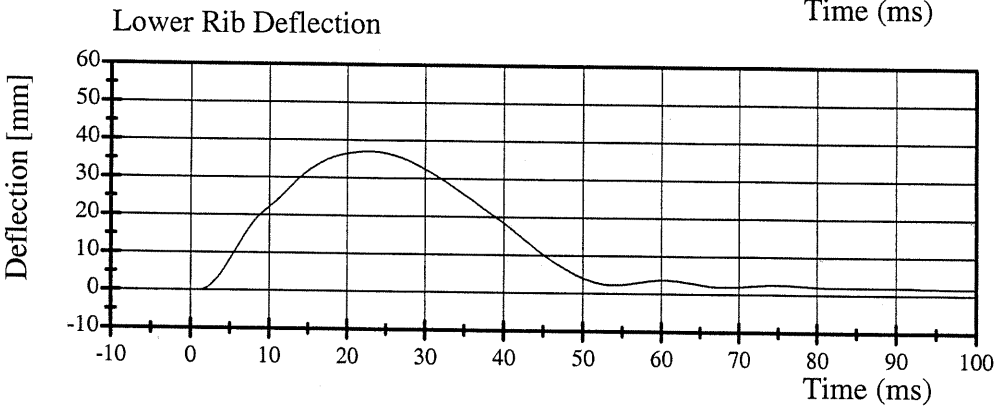
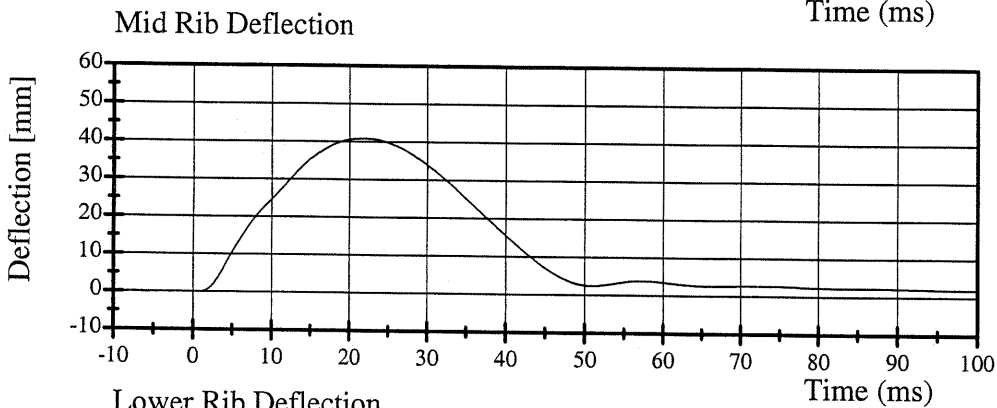
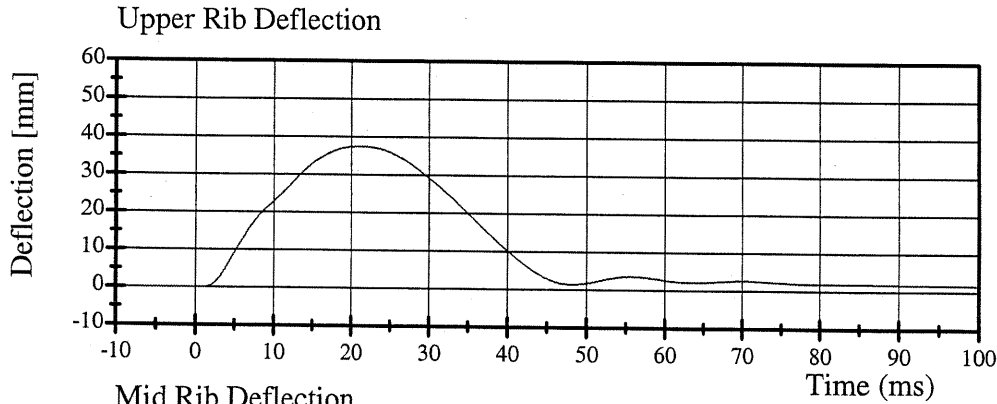


Transportation Research Center Inc.

Left Thorax Without Arm Test

SID-IIs Serial No. 020 Calibration No. 09 - 1

Test Date 09/22/2005



09.22.2005 12:49:26 585



Transportation Research Center Inc.

Left Abdomen Test

SID-IIs Serial No. 020 Calibration No. 09 - 2

Test Date 09/22/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 C	21.3 C	Yes
Relative Humidity	10 - 70 %	57 %	Yes
Pendulum Velocity	4.20 - 4.40 m/sec	4.39 m/sec	Yes
Pendulum Force	1300 - 1900 N	2054 N	No
Upper Spine Peak Acceleration	5 - 9 g	7.1 g	Yes
Lower Spine Peak Acceleration	9 - 13 g	11.3 g	Yes
Upper Abdomen Rib Peak Deflection	44 - 55 mm	41.8 mm	No
Lower Abdomen Rib Peak Deflection	44 - 56 mm	39.6 mm	No

Test does not meet specifications.

Comments:

Technician

Vincent Otinini

Approved

V.F. Walter

09.22.2005 11:03:28 664



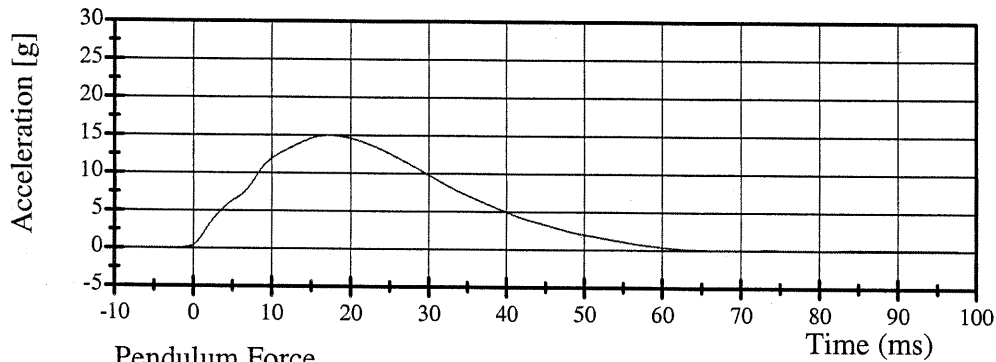
Transportation Research Center Inc.

Left Abdomen Test

SID-IIs Serial No. 020 Calibration No. 09 - 2

Test Date 09/22/2005

Pendulum Deceleration

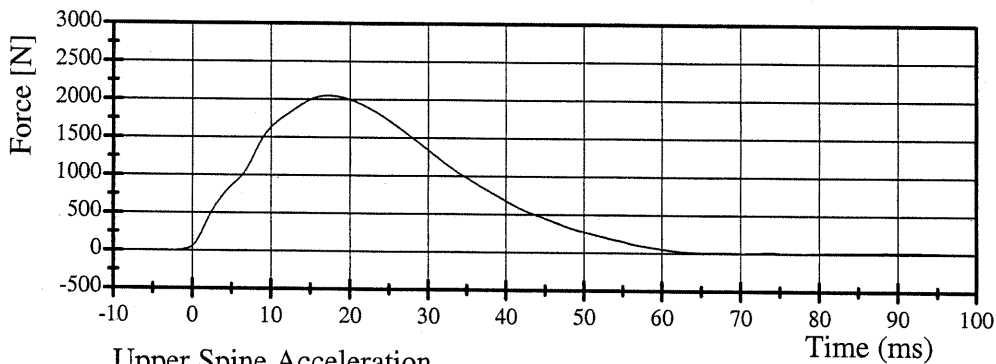


Filter Class: CFC 180

Max: 15.0 g at 17.4 ms

Min: -0.0 g at -53.0 ms

Pendulum Force

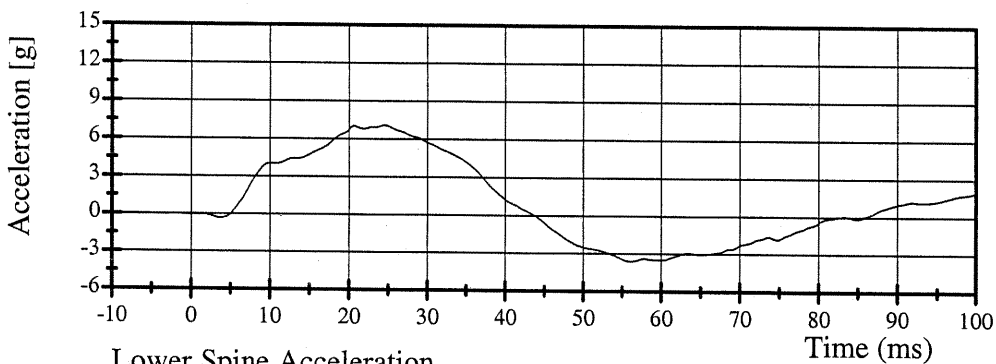


Filter Class: CFC 180

Max: 2054 N at 17.4 ms

Min: -5 N at -53.0 ms

Upper Spine Acceleration

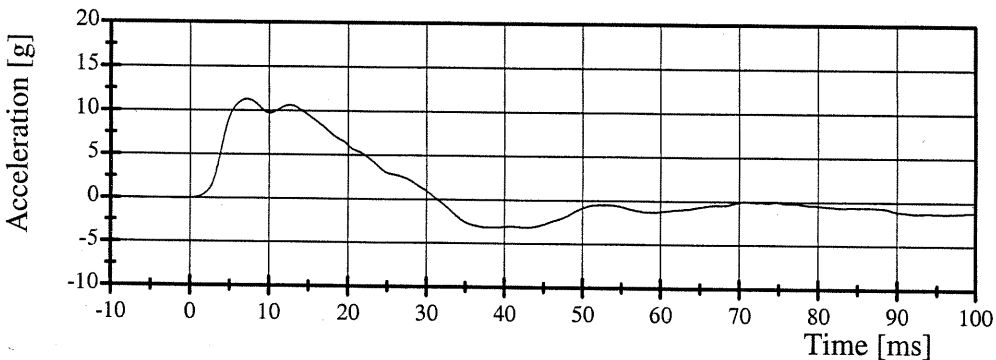


Filter Class: CFC 180

Max: 7.1 g at 24.5 ms

Min: -3.6 g at 56.2 ms

Lower Spine Acceleration



Filter Class: CFC 180

Max: 11.3 g at 7.2 ms

Min: -3.1 g at 38.5 ms

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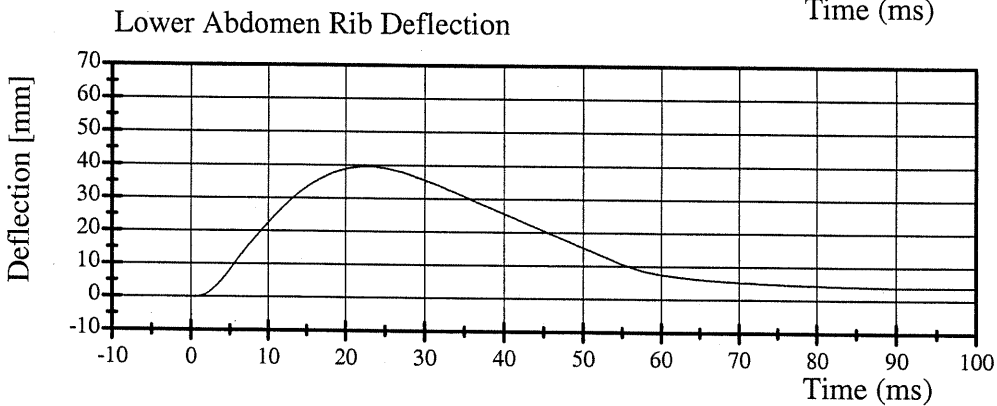
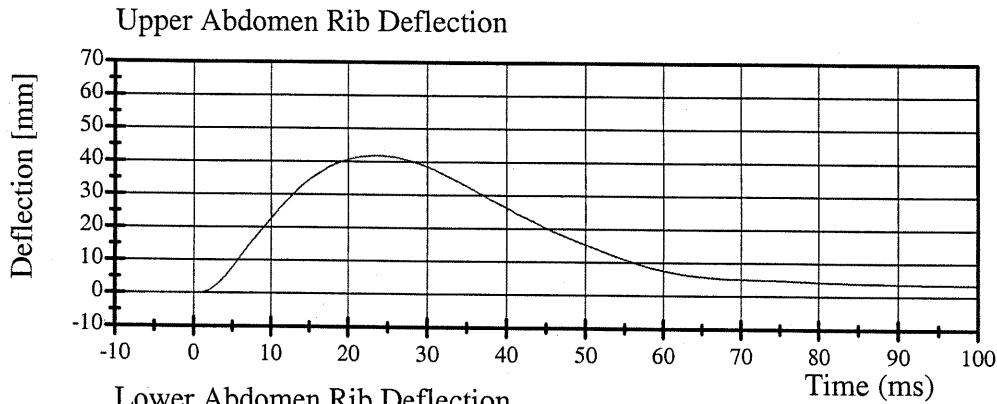


Transportation Research Center Inc.

Left Abdomen Test

SID-II's Serial No. 020 Calibration No. 09 - 2

Test Date 09/22/2005



Transportation Research Center Inc.

Left Pelvis Test

SID-IIs Serial No. 020 Calibration No. 09 - 1

Test Date 09/22/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 C	21.2 C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Pendulum Velocity	6.60 - 6.80 m/sec	6.65 m/sec	Yes
Pendulum Acceleration	40 - 48 g	42.2 g	Yes
Pelvis Peak Acceleration	40 - 48 g	47.2 g	Yes
Peak Acetabulum Force	3803 - 4505 g	3955 N	Yes

Test meets specifications.

Comments:

Technician

Vincent D. Dineen

Approved

V. J. Walke

09.22.2005 09:05:56 406



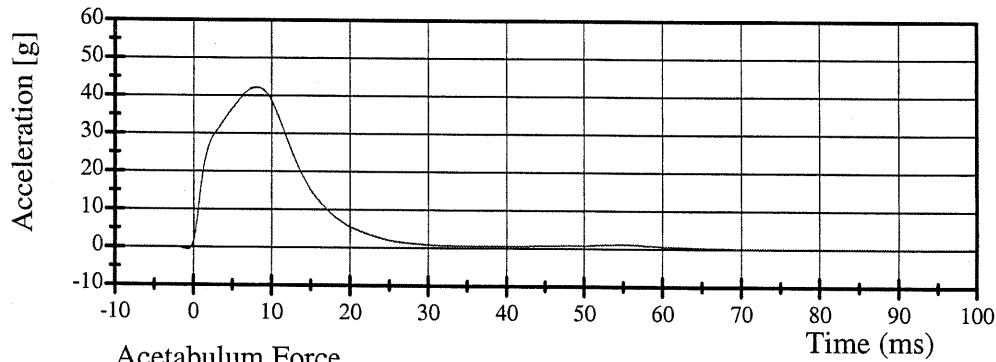
Transportation Research Center Inc.

Left Pelvis Test

SID-IIs Serial No. 020 Calibration No. 09 - 1

Test Date 09/22/2005

Pendulum Deceleration

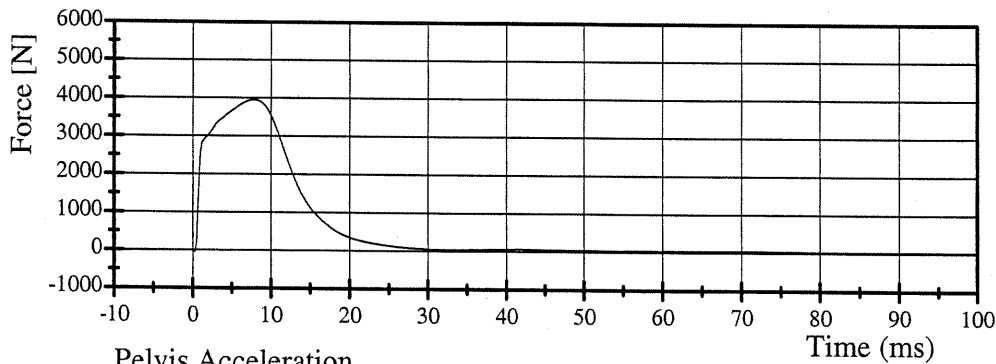


Filter Class: CFC 180

Max: 42.2 g at 8.1 ms

Min: -0.6 g at -0.8 ms

Acetabulum Force

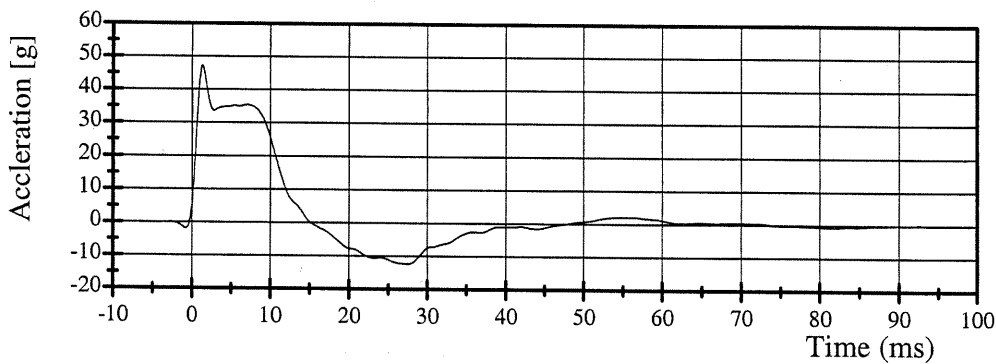


Filter Class: CFC 600

Max: 3955 N at 7.8 ms

Min: -50 N at 0.2 ms

Pelvis Acceleration



Filter Class: CFC 180

Max: 47.2 g at 1.4 ms

Min: -12.3 g at 27.4 ms

Appendix D

Miscellaneous Test 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

Sign Convention, Continued
SAE J211 MAR95

<u>Lumbar load cells:</u>	+X force:	Chest rearward, pelvis forward
	+Y force:	Chest leftward, pelvis rightward
	+Z force:	Chest upward, pelvis downward
	+X moment:	Left shoulder toward left hip
	+Y moment:	Sternum toward front of legs
	+Z moment:	Right shoulder forward, left shoulder rearward

Frequency Response Classes
Used for 050916 Test

<u>Typical Test Measurements</u>	<u>Channel Class</u>
Vehicle Structural Accelerations for use in:	
Total vehicle comparison	60
Integration for velocity or displacement	180
Anthropomorphic Test Device	
Head accelerations	1000
Upper neck force	1000
Upper neck moment	600
Shoulder accelerations	1000
Shoulder force	600
Shoulder displacement	180
Spine acceleration	180
Rib Y-axis acceleration	180
Rib displacement	180
Lumbar moment	600
Pelvis acceleration	1000
Iliac wing force	600
Acetabulum force	600
Femur force	600
Femur moment	600

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 050916

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	Assembly
1	Trig D1	10ZERO000000EV00	EVENT		1 Logic	
2	03F03E29-N04	11HEADCG00S2ACXA	Head Accel X	1000	g	1-056 SIDIIs FTSS.001
3	01G18-F08	11HEADCG00S2ACYA	Head Accel Y	1000	g	1-056 SIDIIs FTSS.002
4	03E03E18-F21	11HEADCG00S2ACZA	Head Accel Z	1000	g	1-056 SIDIIs FTSS.003
5	IF-205-283-FX	11NECKUP00S2FOXA	Neck Force X	8896	N	1-056 SIDIIs FTSS.004
6	IF-205-283-FY	11NECKUP00S2FOYA	Neck Force Y	8896	N	1-056 SIDIIs FTSS.005
7	IF-205-283-FZ	11NECKUP00S2FOZA	Neck Force Z	13344	N	1-056 SIDIIs FTSS.006
8	IF-205-283-MX	11NECKUP00S2MOXA	Neck Moment X	282.5	N	1-056 SIDIIs FTSS.007
9	IF-205-283-MY	11NECKUP00S2MOYA	Neck Moment Y	282.5	N	1-056 SIDIIs FTSS.008
10	IF-205-283-MZ	11NECKUP00S2MOZA	Neck Moment Z	282.5	N	1-056 SIDIIs FTSS.009
11	03E03E20-N05	11SHLDLE00S2ACXA	Shoulder Accel X	2000	g	1-056 SIDIIs FTSS.013
12	03D03D16-F13	11SHLDLE00S2ACYA	Shoulder Accel Y	2000	g	1-056 SIDIIs FTSS.014
13	02I02I05-F07	11SHLDLE00S2ACZA	Shoulder Accel Z	2000	g	1-056 SIDIIs FTSS.015
14	3167-142-FX	11SHLDLE00S2FOXA	Shoulder Force X	4448	N	1-056 SIDIIs FTSS.010
15	3167-142-FY	11SHLDLE00S2FOYA	Shoulder Force Y	4448	N	1-056 SIDIIs FTSS.011
16	3167-142-FZ	11SHLDLE00S2FOZA	Shoulder Force Z	4448	N	1-056 SIDIIs FTSS.012
17	180-3860-056SHLD	11SHRILE00S2DSYA	Shoulder Disp. Y	75	mm	1-056 SIDIIs FTSS.016
18	P17846	11SPIN0100S2ACXA	Upper Spine Accel X	2000	g	1-056 SIDIIs FTSS.017
19	00L13-F71	11SPIN0100S2ACYA	Upper Spine Accel Y	2000	g	1-056 SIDIIs FTSS.018
20	02I02I05-F14	11SPIN0100S2ACZA	Upper Spine Accel Z	2000	g	1-056 SIDIIs FTSS.019
21	03E03D30-N08	11THSP01RIS2ACXA	Spine Rib 1 Accel X	2000	g	1-056 SIDIIs FTSS.020
22	04J04I01-R04	11THSP01RIS2ACYA	Spine Rib 1 Accel Y	2000	g	1-056 SIDIIs FTSS.021
23	04J04I20-Z05	11THSP01RIS2ACZA	Spine Rib 1 Accel Z	2000	g	1-056 SIDIIs FTSS.022
24	03D03D16-F18	11THSP02RIS2ACXA	Spine Rib 2 Accel X	2000	g	1-056 SIDIIs FTSS.023
25	01G18-F15	11THSP02RIS2ACYA	Spine Rib 2 Accel Y	2000	g	1-056 SIDIIs FTSS.024
26	01G18-F12	11THSP02RIS2ACZA	Spine Rib 2 Accel Z	2000	g	1-056 SIDIIs FTSS.025
27	04J04I20-Z14	11THSP03RIS2ACXA	Spine Rib 3 Accel X	2000	g	1-056 SIDIIs FTSS.026
28	03D03D09-N10	11THSP03RIS2ACYA	Spine Rib 3 Accel Y	2000	g	1-056 SIDIIs FTSS.027
29	03F03F09-N17	11THSP03RIS2ACZA	Spine Rib 3 Accel Z	2000	g	1-056 SIDIIs FTSS.028
30	04J04I01-R18	11SPIN1200S2ACXA	Lower Spine Accel X	2000	g	1-056 SIDIIs FTSS.029
31	03E03D30-N04	11SPIN1200S2ACYA	Lower Spine Accel Y	2000	g	1-056 SIDIIs FTSS.030
32	04J04I01-R10	11SPIN1200S2ACZA	Lower Spine Accel Z	2000	g	1-056 SIDIIs FTSS.031
33	04J04I08-F25	11ABSP02RIS2ACXA	Spine Rib 5 Accel X	2000	g	1-056 SIDIIs FTSS.032
34	00L13-F04	11ABSP02RIS2ACYA	Spine Rib 5 Accel Y	2000	g	1-056 SIDIIs FTSS.033
35	04J04I20-Z08	11ABSP02RIS2ACZA	Spine Rib 5 Accel Z	2000	g	1-056 SIDIIs FTSS.034
36	IF-414-101-MX	11LUSP0000S2MOXA	Lumbar Moment X	452	N	1-056 SIDIIs FTSS.058
37	IF-414-101-MY	11LUSP0000S2MOYA	Lumbar Moment Y	452	N	1-056 SIDIIs FTSS.059
38	IF-414-101-MZ	11LUSP0000S2MOZA	Lumbar Moment Z	226	N	1-056 SIDIIs FTSS.060

D-6

050916

39 02I02I10-N22	11TRRI01LES2ACXA	Thorax Rib 1 Accel X	2000 g	1-056 SIDIs FTSS.035
40 99H12-F11	11TRRI01LES2ACYA	Thorax Rib 1 Accel Y	2000 g	1-056 SIDIs FTSS.036
41 03E03E20-N04	11TRRI01LES2ACZA	Thorax Rib 1 Accel Z	2000 g	1-056 SIDIs FTSS.037
42 02A16-A07	11TRRI02LES2ACXA	Thorax Rib 2 Accel X	2000 g	1-056 SIDIs FTSS.038
43 02I02I05-F23	11TRRI02LES2ACYA	Thorax Rib 2 Accel Y	2000 g	1-056 SIDIs FTSS.039
44 02A16-A10	11TRRI02LES2ACZA	Thorax Rib 2 Accel Z	2000 g	1-056 SIDIs FTSS.040
45 04J04I07-Z16	11TRRI03LES2ACXA	Thorax Rib 3 Accel X	2000 g	1-056 SIDIs FTSS.041
46 04J04I01-R06	11TRRI03LES2ACYA	Thorax Rib 3 Accel Y	2000 g	1-056 SIDIs FTSS.042
47 04J04I01-R13	11TRRI03LES2ACZA	Thorax Rib 3 Accel Z	2000 g	1-056 SIDIs FTSS.043
48 03D03D16-F04	11ABRI01LES2ACXA	Abdomin Rib 1 Accel X	2000 g	1-056 SIDIs FTSS.044
49 03D03D09-N07	11ABRI01LES2ACYA	Abdomin Rib 1 Accel Y	2000 g	1-056 SIDIs FTSS.045
50 04J04I20-Z23	11ABRI01LES2ACZA	Abdomin Rib 1 Accel Z	2000 g	1-056 SIDIs FTSS.046
51 99H12-F20	11ABRI02LES2ACXA	Abdomin Rib 2 Accel X	2000 g	1-056 SIDIs FTSS.047
52 99H12-F24	11ABRI02LES2ACYA	Abdomin Rib 2 Accel Y	2000 g	1-056 SIDIs FTSS.048
53 03E03E21-M19	11ABRI02LES2ACZA	Abdomin Rib 2 Accel Z	2000 g	1-056 SIDIs FTSS.049
54 180-3860-056RIB1	11TRRI01LES2DSYA	Thorax Rib 1 Disp. Y	75 mm	1-056 SIDIs FTSS.050
55 180-3860-056RIB2	11TRRI02LES2DSYA	Thorax Rib 2 Disp. Y	75 mm	1-056 SIDIs FTSS.051
56 180-3860-056RIB3	11TRRI03LES2DSYA	Thorax Rib 3 Disp. Y	75 mm	1-056 SIDIs FTSS.052
57 180-3860-056RIB4	11ABRI01LES2DSYA	Abdomin Rib 1 Disp. Y	75 mm	1-056 SIDIs FTSS.053
58 180-3860-056RIB5	11ABRI02LES2DSYA	Abdomin Rib 2 Disp. Y	75 mm	1-056 SIDIs FTSS.054
59 01G25-N14	11PELVCG00S2ACXA	Pelvis Accel X	2000 g	1-056 SIDIs FTSS.061
60 01G25-N05	11PELVCG00S2ACYA	Pelvis Accel Y	2000 g	1-056 SIDIs FTSS.062
61 03E03E18-F05	11PELVCG00S2ACZA	Pelvis Accel Z	2000 g	1-056 SIDIs FTSS.063
62 IF-520-102-FY	11ACTBLE00S2FOYA	Left Acetabulum Force Y	8896 N	1-056 SIDIs FTSS.064
63 IF-507-101-FY	11ILACLE00S2FOYA	Left Illiac Wing Force Y	13344 N	1-056 SIDIs FTSS.065
64 IF-625-110-FX	11FEMRLE00S2FOXA	Left Femur Force X	13344 N	1-056 SIDIs FTSS.066
65 IF-625-110-FY	11FEMRLE00S2FOYA	Left Femur Force Y	13344 N	1-056 SIDIs FTSS.067
66 IF-625-110-FZ	11FEMRLE00S2FOZA	Left Femur Force Z	22240 N	1-056 SIDIs FTSS.068
67 IF-625-110-MX	11FEMRLE00S2MOXA	Left Femur Moment X	339 N·m	1-056 SIDIs FTSS.069
68 IF-625-110-MY	11FEMRLE00S2MOYA	Left Femur Moment Y	339 N·m	1-056 SIDIs FTSS.070
69 IF-625-110-MZ	11FEMRLE00S2MOZA	Left Femur Moment Z	339 N·m	1-056 SIDIs FTSS.071
70 IF-625-111-FX	11FEMRRI00S2FOXA	Right Femur Force X	13344 N	1-056 SIDIs FTSS.072
71 IF-625-111-FY	11FEMRRI00S2FOYA	Right Femur Force Y	13344 N	1-056 SIDIs FTSS.073
72 IF-625-111-FZ	11FEMRRI00S2FOZA	Right Femur Force Z	22240 N	1-056 SIDIs FTSS.074
73 IF-625-111-MX	11FEMRRI00S2MOXA	Right Femur Moment X	339 N·m	1-056 SIDIs FTSS.075
74 IF-625-111-MY	11FEMRRI00S2MOYA	Right Femur Moment Y	339 N·m	1-056 SIDIs FTSS.076
75 IF-625-111-MZ	11FEMRRI00S2MOZA	Right Femur Moment Z	339 N·m	1-056 SIDIs FTSS.077
76 02I02I24-N07	14HEADCG00S2ACXA	Head Accel X	1000 g	4-020 SIDIs FTSS.001
77 04J04I20-Z24	14HEADCG00S2ACYA	Head Accel Y	1000 g	4-020 SIDIs FTSS.002
78 04J04I08-F24	14HEADCG00S2ACZA	Head Accel Z	1000 g	4-020 SIDIs FTSS.003

79 IF-205-286-FX	14NECKUP00S2FOXA	Neck Force X	8896 N	4-020 SIDiIs FTSS.004
80 IF-205-286-FY	14NECKUP00S2FOYA	Neck Force Y	8896 N	4-020 SIDiIs FTSS.005
81 IF-205-286-FZ	14NECKUP00S2FOZA	Neck Force Z	13344 N	4-020 SIDiIs FTSS.006
82 IF-205-286-MX	14NECKUP00S2MOXA	Neck Moment X	282.5 N·m	4-020 SIDiIs FTSS.007
83 IF-205-286-MY	14NECKUP00S2MOYA	Neck Moment Y	282.5 N·m	4-020 SIDiIs FTSS.008
84 IF-205-286-MZ	14NECKUP00S2MOZA	Neck Moment Z	282.5 N·m	4-020 SIDiIs FTSS.009
85 01G18-F05	14SHLDLE00S2ACXA	Shoulder Accel X	2000 g	4-020 SIDiIs FTSS.016
86 04J04I20-Z06	14SHLDLE00S2ACYA	Shoulder Accel Y	2000 g	4-020 SIDiIs FTSS.017
87 03E03E18-F18	14SHLDLE00S2ACZA	Shoulder Accel Z	2000 g	4-020 SIDiIs FTSS.018
88 IF-344-110-FX	14SHLDLE00S2FOXA	Shoulder Force X	4448 N	4-020 SIDiIs FTSS.013
89 IF-344-110-FY	14SHLDLE00S2FOYA	Shoulder Force Y	4448 N	4-020 SIDiIs FTSS.014
90 IF-344-110-FZ	14SHLDLE00S2FOZA	Shoulder Force Z	4448 N	4-020 SIDiIs FTSS.015
91 3860-020SHD	14SHRILE00S2DSYA	Shoulder Disp. Y	75 mm	4-020 SIDiIs FTSS.019
92 03E03E18-F09	14SPIN0100S2ACXA	Upper Spine Accel X	2000 g	4-020 SIDiIs FTSS.010
93 04J04I01-R24	14SPIN0100S2ACYA	Upper Spine Accel Y	2000 g	4-020 SIDiIs FTSS.011
94 02I02I05-F04	14SPIN0100S2ACZA	Upper Spine Accel Z	2000 g	4-020 SIDiIs FTSS.012
95 04J04I07-Z15	14THSP01RIS2ACXA	Spine Rib 1 Accel X	2000 g	4-020 SIDiIs FTSS.020
96 04J04I20-A17	14THSP01RIS2ACYA	Spine Rib 1 Accel Y	2000 g	4-020 SIDiIs FTSS.021
97 03F03E29-N17	14THSP01RIS2ACZA	Spine Rib 1 Accel Z	2000 g	4-020 SIDiIs FTSS.022
98 03F03F09-N03	14THSP02RIS2ACXA	Spine Rib 2 Accel X	2000 g	4-020 SIDiIs FTSS.023
99 03E03E20-N14	14THSP02RIS2ACYA	Spine Rib 2 Accel Y	2000 g	4-020 SIDiIs FTSS.024
100 03E03E20-N12	14THSP02RIS2ACZA	Spine Rib 2 Accel Z	2000 g	4-020 SIDiIs FTSS.025
101 01H02-N07	14THSP03RIS2ACXA	Spine Rib 3 Accel X	2000 g	4-020 SIDiIs FTSS.026
102 00L20-A14	14THSP03RIS2ACYA	Spine Rib 3 Accel Y	2000 g	4-020 SIDiIs FTSS.027
103 03F03E29-N10	14THSP03RIS2ACZA	Spine Rib 3 Accel Z	2000 g	4-020 SIDiIs FTSS.028
104 01J02-F22	14SPIN1200S2ACXA	Lower Spine Accel X	2000 g	4-020 SIDiIs FTSS.029
105 B02A09-F04	14SPIN1200S2ACYA	Lower Spine Accel Y	2000 g	4-020 SIDiIs FTSS.030
106 01G25-N16	14SPIN1200S2ACZA	Lower Spine Accel Z	2000 g	4-020 SIDiIs FTSS.031
107 01G18-F13	14ABSP02RIS2ACXA	Spine Rib 5 Accel X	2000 g	4-020 SIDiIs FTSS.032
108 00L13-F37	14ABSP02RIS2ACYA	Spine Rib 5 Accel Y	2000 g	4-020 SIDiIs FTSS.033
109 01J02-F07	14ABSP02RIS2ACZA	Spine Rib 5 Accel Z	2000 g	4-020 SIDiIs FTSS.034
110 IF-414-107-MX	14LUSP0000S2MOXA	Lumbar Moment X	452 N·m	4-020 SIDiIs FTSS.058
111 IF-414-107-MY	14LUSP0000S2MOYA	Lumbar Moment Y	452 N·m	4-020 SIDiIs FTSS.059
112 IF-414-107-MZ	14LUSP0000S2MOZA	Lumbar Moment Z	226 N·m	4-020 SIDiIs FTSS.060
113 02I02I05-F24	14TRRI01LES2ACXA	Thorax Rib 1 Accel X	2000 g	4-020 SIDiIs FTSS.035
114 04J04I01-R11	14TRRI01LES2ACYA	Thorax Rib 1 Accel Y	2000 g	4-020 SIDiIs FTSS.036
115 98H10-F03	14TRRI01LES2ACZA	Thorax Rib 1 Accel Z	2000 g	4-020 SIDiIs FTSS.037
116 03E03E21-M09	14TRRI02LES2ACXA	Thorax Rib 2 Accel X	2000 g	4-020 SIDiIs FTSS.038
117 01G18-F03	14TRRI02LES2ACYA	Thorax Rib 2 Accel Y	2000 g	4-020 SIDiIs FTSS.039
118 03E03E20-N13	14TRRI02LES2ACZA	Thorax Rib 2 Accel Z	2000 g	4-020 SIDiIs FTSS.040

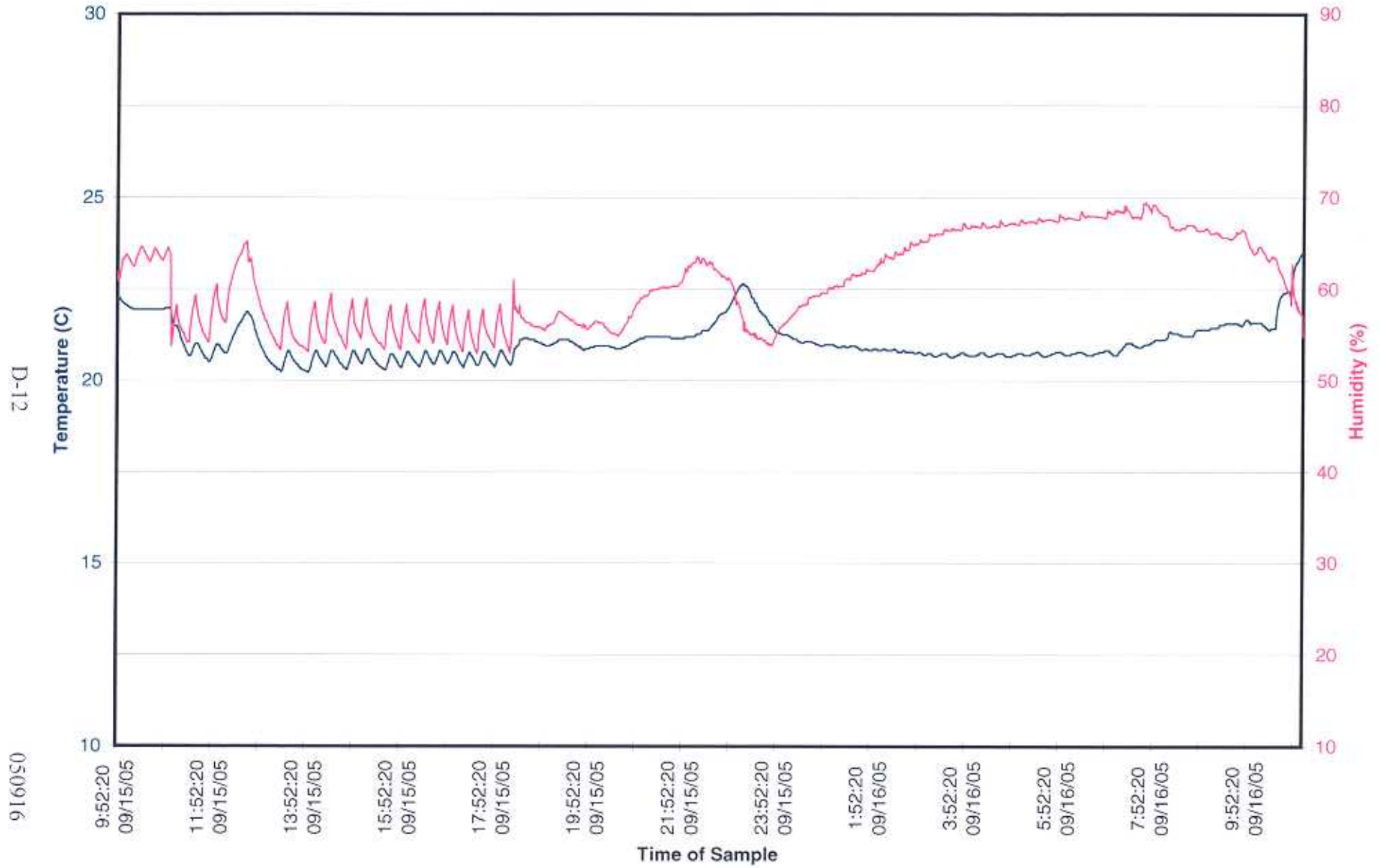
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120	98H13-F11	14TRRI03LES2ACYA	Thorax Rib 3 Accel Y	2000 g	4-020 SIDIs FTSS.042
121	03D03D09-N02	14TRRI03LES2ACZA	Thorax Rib 3 Accel Z	2000 g	4-020 SIDIs FTSS.043
122	02A16-A15	14ABRI01LES2ACXA	Abdomin Rib 1 Accel X	2000 g	4-020 SIDIs FTSS.044
123	99H12-F26	14ABRI01LES2ACYA	Abdomin Rib 1 Accel Y	2000 g	4-020 SIDIs FTSS.045
124	02I02I05-F22	14ABRI01LES2ACZA	Abdomin Rib 1 Accel Z	2000 g	4-020 SIDIs FTSS.046
125	04J04I10-H10	14ABRI02LES2ACXA	Abdomin Rib 2 Accel X	2000 g	4-020 SIDIs FTSS.047
126	04J04I20-Z18	14ABRI02LES2ACYA	Abdomin Rib 2 Accel Y	2000 g	4-020 SIDIs FTSS.048
127	02I02I05-F09	14ABRI02LES2ACZA	Abdomin Rib 2 Accel Z	2000 g	4-020 SIDIs FTSS.049
128	3861-020RB1	14TRRI01LES2DSYA	Thorax Rib 1 Disp. Y	75 mm	4-020 SIDIs FTSS.050
129	3861-020RB2	14TRRI02LES2DSYA	Thorax Rib 2 Disp. Y	75 mm	4-020 SIDIs FTSS.051
130	3861-020RB3	14TRRI03LES2DSYA	Thorax Rib 3 Disp. Y	75 mm	4-020 SIDIs FTSS.052
131	3861-020RB4	14ABRI01LES2DSYA	Abdomin Rib 1 Disp. Y	75 mm	4-020 SIDIs FTSS.053
132	3861-020RB5	14ABRI02LES2DSYA	Abdomin Rib 2 Disp. Y	75 mm	4-020 SIDIs FTSS.054
133	01J02-F16	14PELVCG00S2ACXA	Pelvis Accel X	2000 g	4-020 SIDIs FTSS.061
134	03E03E18-F03	14PELVCG00S2ACYA	Pelvis Accel Y	2000 g	4-020 SIDIs FTSS.062
135	03F03E29-N13	14PELVCG00S2ACZA	Pelvis Accel Z	2000 g	4-020 SIDIs FTSS.063
136	IF-520-115-FY	14ACTBLE00S2FOYA	Left Acetabulum Force Y	8896 N	4-020 SIDIs FTSS.064
137	IF-507-112-FY	14ILACLE00S2FOYA	Left Iliac Wing Force Y	13344.6 N	4-020 SIDIs FTSS.065
138	IF-625-107-FX	14FEMRLE00S2FOXA	Left Femur Force X	13344 N	4-020 SIDIs FTSS.066
139	IF-625-107-FY	14FEMRLE00S2FOYA	Left Femur Force Y	13344 N	4-020 SIDIs FTSS.067
140	IF-625-107-FZ	14FEMRLE00S2FOZA	Left Femur Force Z	22240 N	4-020 SIDIs FTSS.068
141	IF-625-107-MX	14FEMRLE00S2MOXA	Left Femur Moment X	339 N·m	4-020 SIDIs FTSS.069
142	IF-625-107-MY	14FEMRLE00S2MOYA	Left Femur Moment Y	339 N·m	4-020 SIDIs FTSS.070
143	IF-625-107-MZ	14FEMRLE00S2MOZA	Left Femur Moment Z	339 N·m	4-020 SIDIs FTSS.071
144	IF-625-142-FX	14FEMRRI00S2FOXA	Right Femur Force X	13344 N	4-020 SIDIs FTSS.072
145	IF-625-142-FY	14FEMRRI00S2FOYA	Right Femur Force Y	13344 N	4-020 SIDIs FTSS.073
146	IF-625-142-FZ	14FEMRRI00S2FOZA	Right Femur Force Z	22240 N	4-020 SIDIs FTSS.074
147	IF-625-142-MX	14FEMRRI00S2MOXA	Right Femur Moment X	339 N	4-020 SIDIs FTSS.075
148	IF-625-142-MY	14FEMRRI00S2MOYA	Right Femur Moment Y	339 N	4-020 SIDIs FTSS.076
149	IF-625-142-MZ	14FEMRRI00S2MOZA	Right Femur Moment Z	339 Nm	4-020 SIDIs FTSS.077
150	P48657	16SILBFR0000ACXA	Right Side Sill at Front Seat X-axis Acceleration	400 g	
151	P48670	16SILBFR0000ACYA	Right Side Sill at Front Seat Y-axis Acceleration	1000 g	
152	P47311	16SILBFR0000ACZA	Right Side Sill at Front Seat Z-axis Acceleration	400 g	
153	P48677	16SILBRE0000ACXA	Right Side Sill at Rear Seat X-axis Acceleration	400 g	
154	P46500	16SILBRE0000ACYA	Right Side Sill at Rear Seat Y-axis Acceleration	1000 g	
155	P46498	16SILBRE0000ACZA	Right Side Sill at Rear Seat Z-axis Acceleration	400 g	
156	P33806	18FORA000000ACXA	Rear Floorpan Above Axle X-axis Acceleration	1000 g	
157	P39863	18FORA000000ACYA	Rear Floorpan Above Axle Y-axis Acceleration	1000 g	
158	P25874	18FORA000000ACZA	Rear Floorpan Above Axle Z-axis Acceleration	1000 g	

159 P33575	14SILBRE0000ACYA	Left Side Sill at Rear Seat Y-axis Acceleration	1000 g
160 P42110	14SILBFR0000ACYA	Left Side Sill at Front Seat Y-axis Acceleration	1000 g
161 P38842	16VEHCRE0000ACYA	Right Rear Occupant Compartment Y-axis Accel	1500 g
162 P32538	14BPILLO0000ACYA	Left Lower B-Post Y-axis Accel	1500 g
163 P30407	14BPILMI0000ACYA	Left Middle B-Post Y-axis Accel	1500 g
164 P48667	11APILLO0000ACYA	Left Lower A-Post Y-axis Accel	1500 g
165 P48666	11APILMI0000ACYA	Left Middle A-Post Y-axis Accel	1500 g
166 P38616	11SETRFR0000ACYA	Left Front Seat Track Y-axis Acceleration	1500 g
167 P35217	14SETRLERE00ACYA	Left Rear Seat Track Y-axis Acceleration	1500 g
168 P46486	10VEHCCG0000ACXA	Vehicle Center of Gravity X-axis Acceleration	1000 g
169 P48690	10VEHCCG0000ACYA	Vehicle Center of Gravity Y-axis Acceleration	1000 g
170 P46492	10VEHCCG0000ACZA	Vehicle Center of Gravity Z-axis Acceleration	1000 g
171 P39867	12ENGN000000ACXA	Top of Engine X-axis Acceleration	1000 g
172 P40424	12ENGN000000ACYA	Top of Engine Y-axis Acceleration	1000 g
173 P39976	12VEHC000000ACXA	Firewall X-axis Acceleration	1000 g
174 P42098	12VEHC000000ACYA	Firewall Y-axis Acceleration	1000 g
175 P38439	13ROFR000000ACXA	Right Roof Rail X-axis Acceleration	1000 g
176 P39852	13ROFR000000ACYA	Right Roof Rail Y-axis Acceleration	1000 g
177 P47499	11DOOR000001ACYA	Left Front Door centerline 430 mm above ground Y-axis accel (NHTSA #6)	1000 g
178 P48681	11DOOR000002ACYA	Left Front Door mid-rear 430 mm above ground Y-axis accel (NHTSA #8)	1000 g
179 P45642	11DOOR000003ACYA	Left Front Door upper centerline 685 mm above ground Y-axis accel (NHTSA #9)	1000 g
180 P45612	14DOOR000001ACYA	Left Rear Door mid-rear 685 mm above ground Y-axis accel (NHTSA #10)	1000 g
181 P46471	14DOOR000002ACYA	Left Rear Door upper centerline 685 mm above ground Y-axis accel (NHTSA #11)	1000 g
182 ABFire1	11SENS000001VO0A	Side torso Airbag fire	5 V
183 ABFire2	11SENS000002VO0A	Side curtain airbag fire	5 V
184 ABFire3	13SENS000001VO0A	Non-struck Side torso Airbag fire (disable bag)	5 V
185 P45993	14SILBLE0000ACXA	TRC TEST ACCEL LEFT REAR SILL	1000 g
186 Bit.00	11CONT000001EV00	Dummy head contact	1 Logic
187 Bit.01	11CONT000002EV00	Dummy shoulder contact	1 Logic
188 Bit.02	11CONT000003EV00	Dummy torso contact	1 Logic
189 Bit.03	11CONT000004EV00	Dummy leg contact	1 Logic
190 Bit.04	14CONT000001EV00	Dummy head contact	1 Logic
191 Bit.05	14CONT000002EV00	Dummy shoulder contact	1 Logic
192 Bit.06	14CONT000003EV00	Dummy torso contact	1 Logic
193 Bit.07	14CONT000004EV00	Dummy leg contact	1 Logic

Channel Report Test Number 050916

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units
1	P34257	M0VEHCCG0000ACXA	MDB Center of Gravity X-axis Acceleration	600	g
2	P44300	M0VEHCCG0000ACYA	MDB Center of Gravity Y-axis Acceleration	600	g
3	P33830	M0VEHCCG0000ACZA	MDB Center of Gravity Z-axis Acceleration	600	g
4	P47531	M7FRAM000000ACXA	MDB Left Rear X-axis Acceleration (on left frame over axle)	600	g
5	P46463	M7FRAM000000ACYA	MDB Left Rear Y-axis Acceleration (on left frame over axle)	600	g
6	Bit.00	M3CONT000000EV00	MDB Right Side Contact Switch	1	Logic
7	Bit.01	M1CONT000000EV00	MDB Left Side Contact Switch	1	Logic

LEFT SIDE IMPACT OF 2005 SUZUKI FORENZA / 050916





CERTIFICATE OF CONFORMITY

Certificate No. **23786**
Serial No. **FE 304**

Cellbond Composites Ltd
5 Stukeley Business Centre
Blackstone Road
Huntingdon
Cambridgeshire
PE29 6EF
United Kingdom

Product Description	FMVSS 214 - 1750x740x550mm Spec with 1.6 3/8 5052 Painted Grey
Cellbond Part No.	70NHTSASIUS G

telephone
+44 (0) 1480 435302
telefax
+44 (0) 1480 450181
email
sales@cellbond.com
website
www.cellbond.com

	Test Results	GR No.	Blk No.
1	34197-204	P179898B00	N/A
2	34230-37	CHC05015FC	N/A

Declaration.

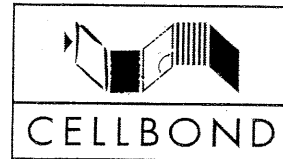
The above moving deformable barrier has been manufactured in accordance with the provisions of FMVSS 214.

Additional Information...

company registration
England 1944904

registered office
5 Stukeley Business Centre
Blackstone Road
Huntingdon
Cambridgeshire
PE29 6EF

Cellbond Offices
United Kingdom
United States of America



NHTSA DEFORMABLE SIDE IMPACT BARRIER
ALUMINIUM HONEYCOMB CERTIFICATION
STATIC TEST RESULTS

MAIN BLOCK
Core: 1.6 3/8 5052

Required Crush Strength
42.5 PSI to 47.5 PSI

Test No: 34197-204

GR No: P179898-B01

Block No: N/A

	Crush Strength (PSI)			RESULT
	0.25 to 0.38 inch	0.38 to 0.52 inch	0.52 to 0.65 inch	
Sample* 1	44.926	45.500	45.289	PASS
Sample 2	46.039	46.075	47.023	PASS
Sample 3	46.625	46.777	47.102	PASS
Sample 4	44.992	44.773	44.625	PASS
Sample 5	44.980	45.044	46.245	PASS
Sample 6	45.469	45.855	46.292	PASS
Sample 7	46.150	46.499	47.044	PASS
Sample 8	46.538	47.396	46.833	PASS

Seven out of the eight samples must fulfil the crush strength
requirement in order to pass the block certification

*Sample size and location as per R94.

RESULT: PASSED

NHTSA DEFORMABLE SIDE IMPACT BARRIER MAIN BLOCK

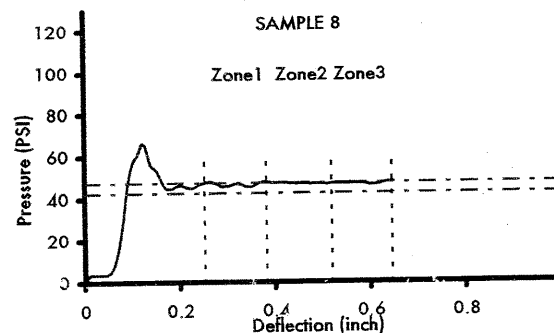
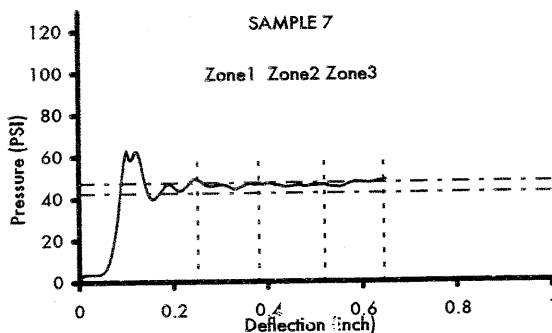
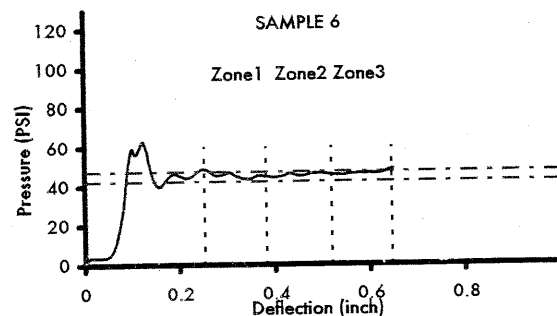
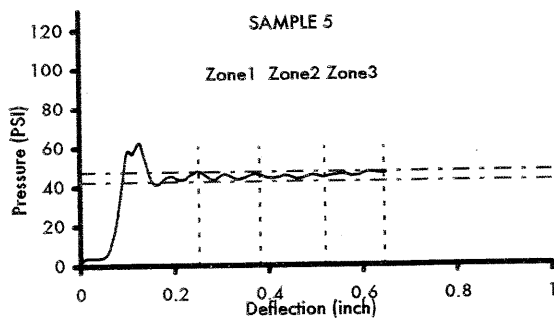
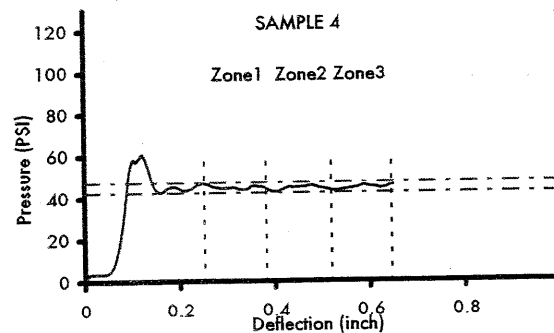
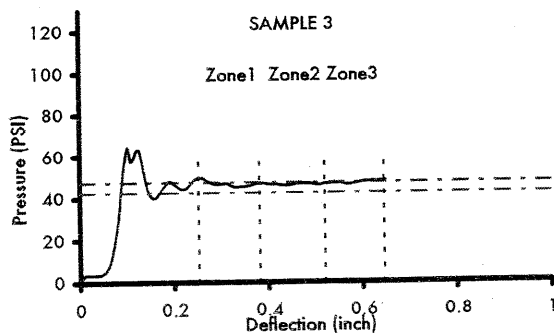
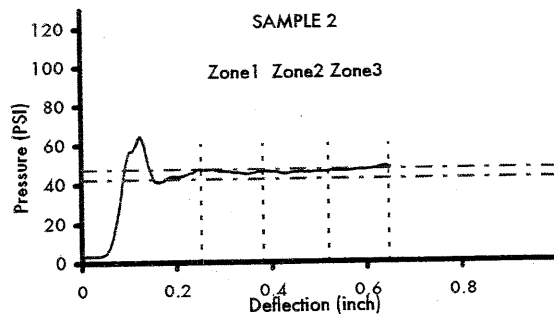
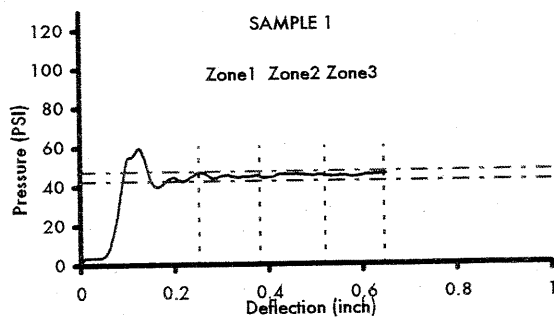
Honeycomb Type: 1.6 3/8 5052
Higher Acceptable Crush Strength Limit: 47.5 PSI
Lower Acceptable Crush Strength Limit: 42.5 PSI

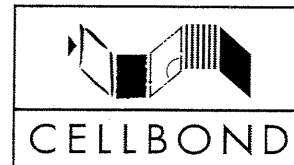
Section 1: 0.25 - 0.38 inch
Section 2: 0.38 - 0.52 inch
Section 3: 0.52 - 0.65 inch
Speed: 0.25 inch/min

Test No: 34197-204

GR No: P179898-B01

Block No: N/A





NHTSA / IIHS DEFORMABLE SIDE IMPACT BARRIER
ALUMINIUM HONEYCOMB CERTIFICATION
STATIC TEST RESULTS

BUMPER
Core: 5.2 1/4 3003

Required Crush Strength
230 PSI to 260 PSI

Test No: 34230-37

GR No: CHC05015FC

Block No: N/A

	Crush Strength (PSI)			RESULT
	0.25 to 0.38	0.38 to 0.52	0.52 to 0.65	
Sample* 1	234.47	234.36	235.20	PASS
Sample 2	241.15	241.13	240.35	PASS
Sample 3	258.33	259.47	258.04	PASS
Sample 4	244.27	238.32	237.41	PASS
Sample 5	242.64	243.25	243.23	PASS
Sample 6	254.09	254.99	254.66	PASS
Sample 7	256.65	256.34	255.63	PASS
Sample 8	251.96	247.45	248.95	PASS

Seven out of the eight samples must fulfil the crush strength
requirement in order to pass the block certification

*Sample size and location as per R94.

RESULT: PASSED

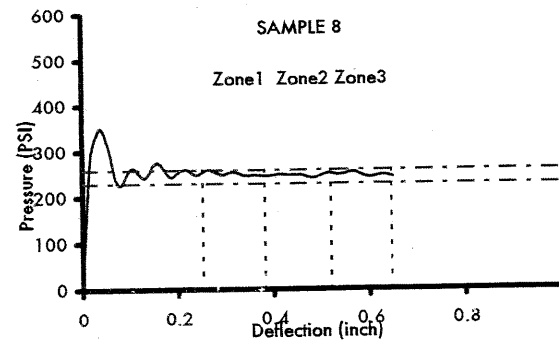
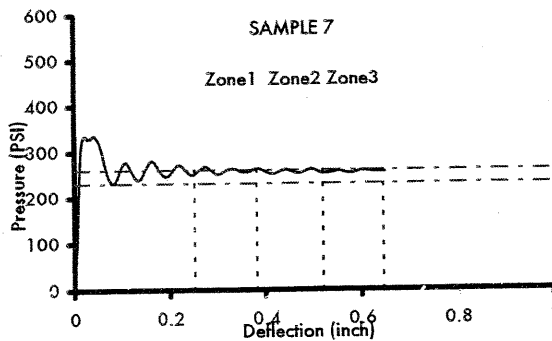
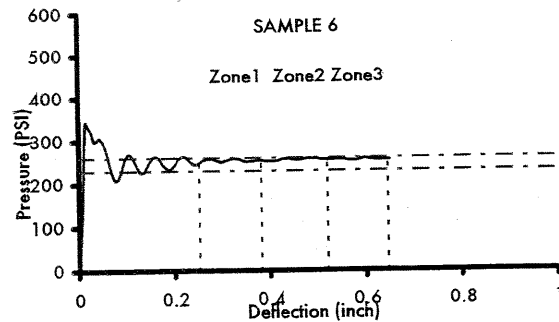
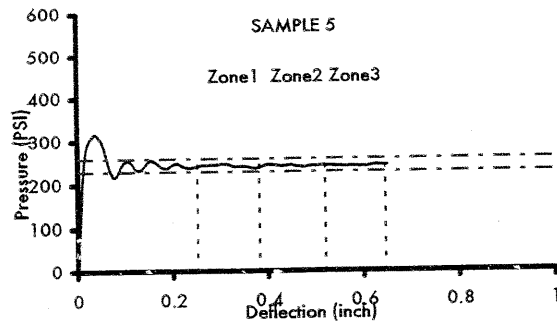
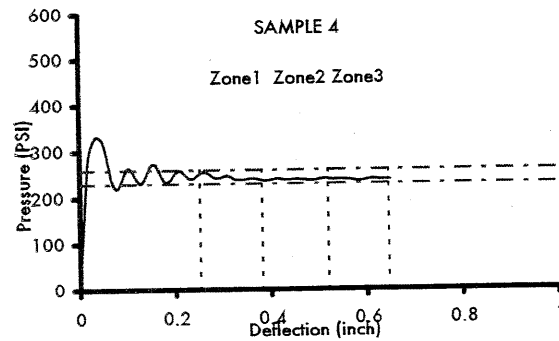
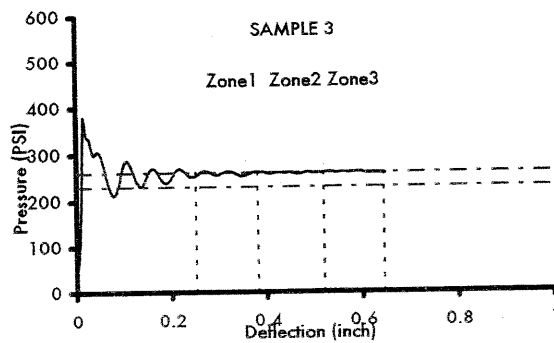
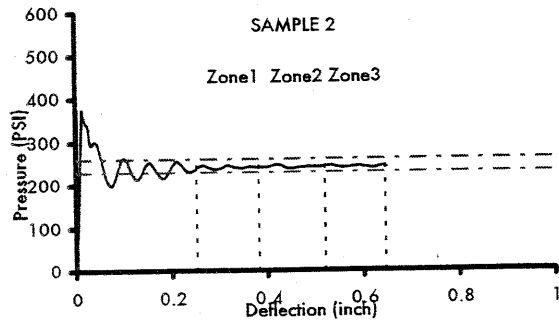
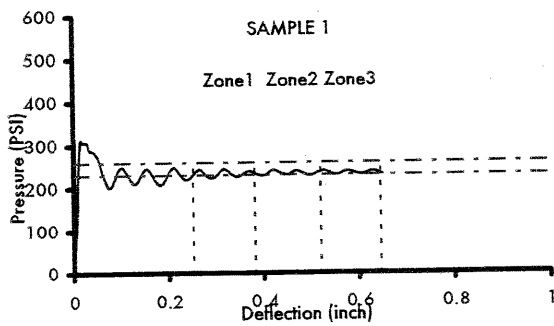
NHTSA / IIHS DEFORMABLE SIDE IMPACT BARRIER BUMPER

Honeycomb Type: 5.2 1/4 3003
Higher Acceptable Crush Strength Limit: 260 PSI
Lower Acceptable Crush Strength Limit: 230 PSI

Section 1: 0.25 - 0.38 inch
Section 2: 0.38 - 0.52 inch
Section 3: 0.52 - 0.65 inch
Speed: 0.25 inch/min
Block No: N/A

Test No: 34230-37

GR No: CHC05015FC



Appendix E

INSIA Report on Structural Measurements



STRUCTURAL SURVEY OF CARS. MEASUREMENT METHODOLOGY OF THE MAIN RESISTANT ELEMENTS IN THE CAR BODY

**APARICIO IZQUIERDO, FRANCISCO
PÁEZ AYUSO, FRANCISCO JAVIER**

**INSIA
Carretera de Valencia, km. 7
Campus Sur de la Universidad Politécnica de Madrid
28031 – MADRID – (SPAIN)**

March, 1999

REPORT DOCUMENTATION PAGE	
Title:	<i>STRUCTURAL SURVEY OF CARS. MEASUREMENT METHODOLOGY OF THE MAIN RESISTANT ELEMENTS IN THE CAR BODY</i>
Author(s):	Aparicio Izquierdo, Francisco Páez Ayuso, Francisco Javier
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
Supplementary notes:	Under contract to: THE EUROPEAN COMMUNITY Project: “Improvement of Crash Compatibility between Cars” Contract N°: RO – 97 – SC.1064
Abstract:	The main aim of this working package -<i>Structural Survey of Cars</i>- 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.

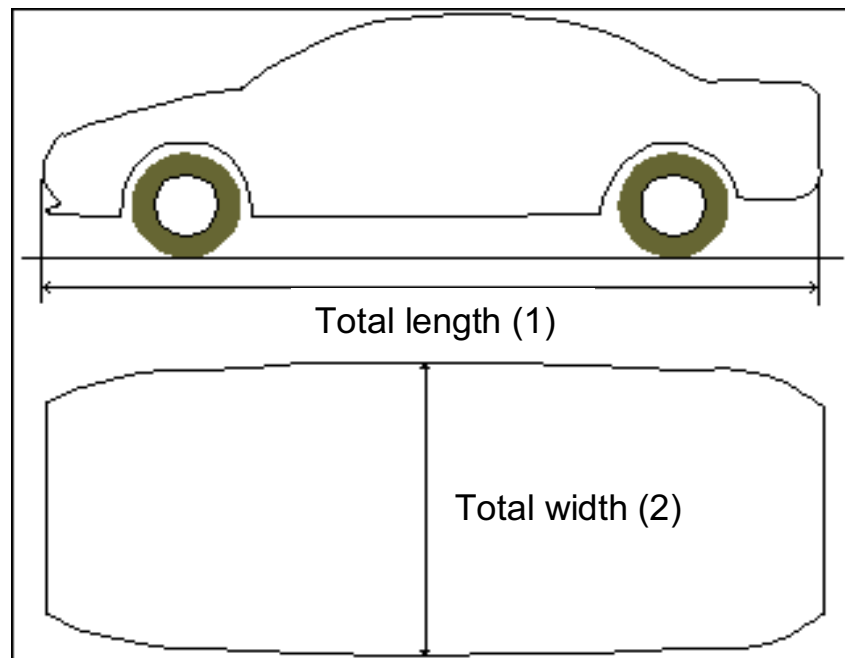


Figure 1.- Definition of the main resistant elements. General dimensions.

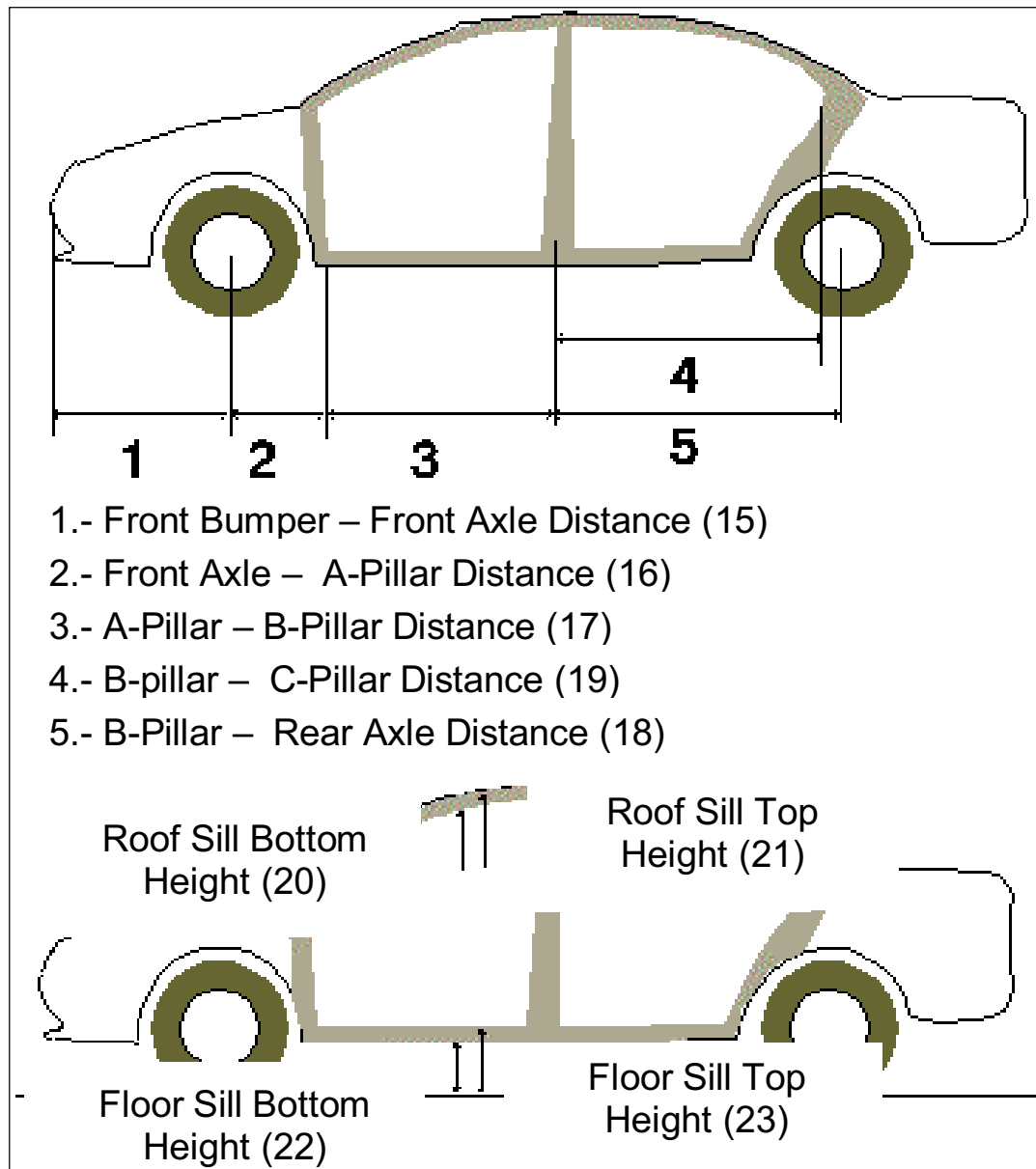


Figure 2.- Definition of the main resistant elements. Side elements.

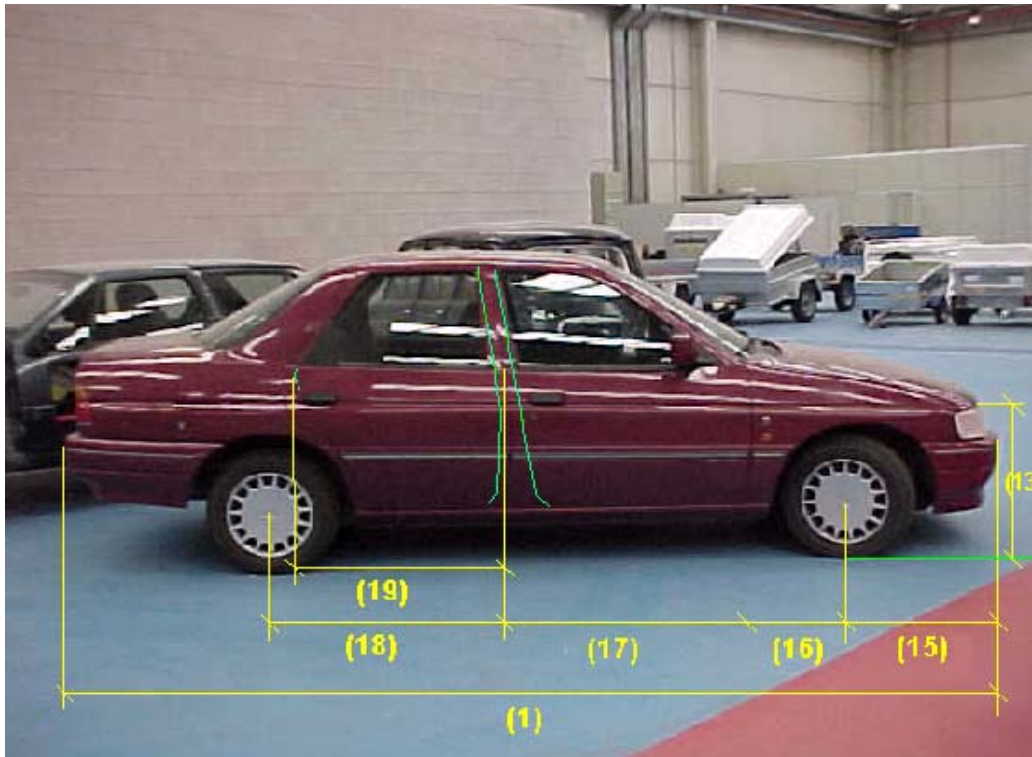


Figure 3.-
Measurements of
the side resistant
elements (outer).

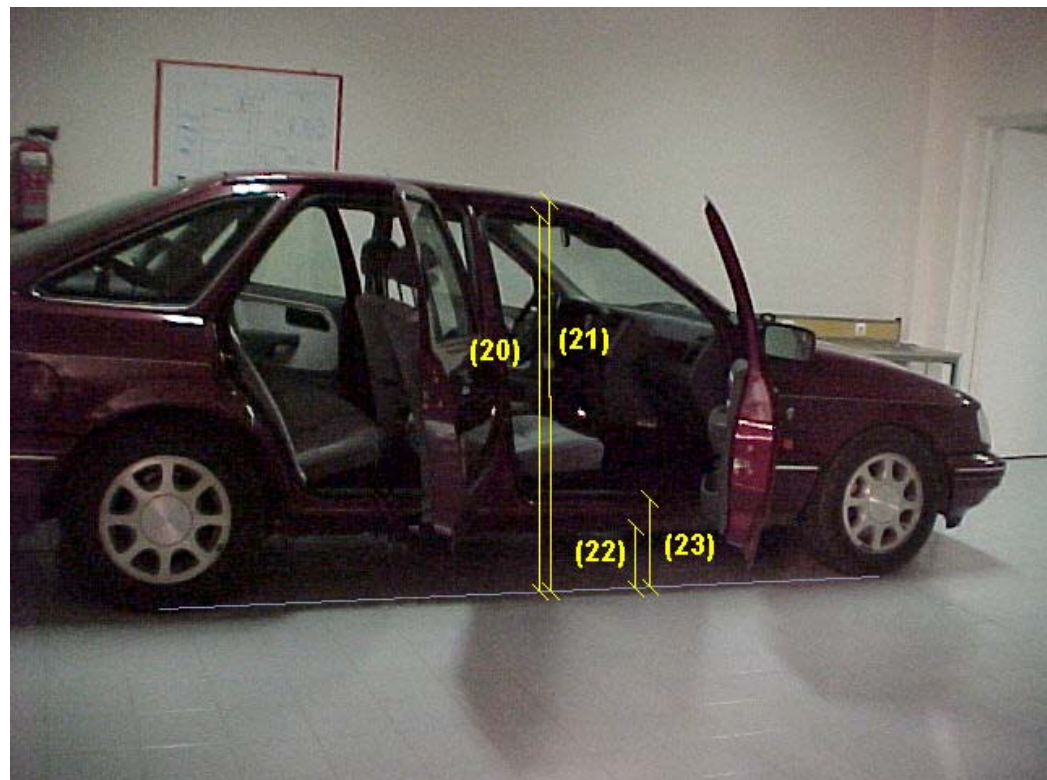


Figure 4.- Measurements
of the side resistant
elements (inner).

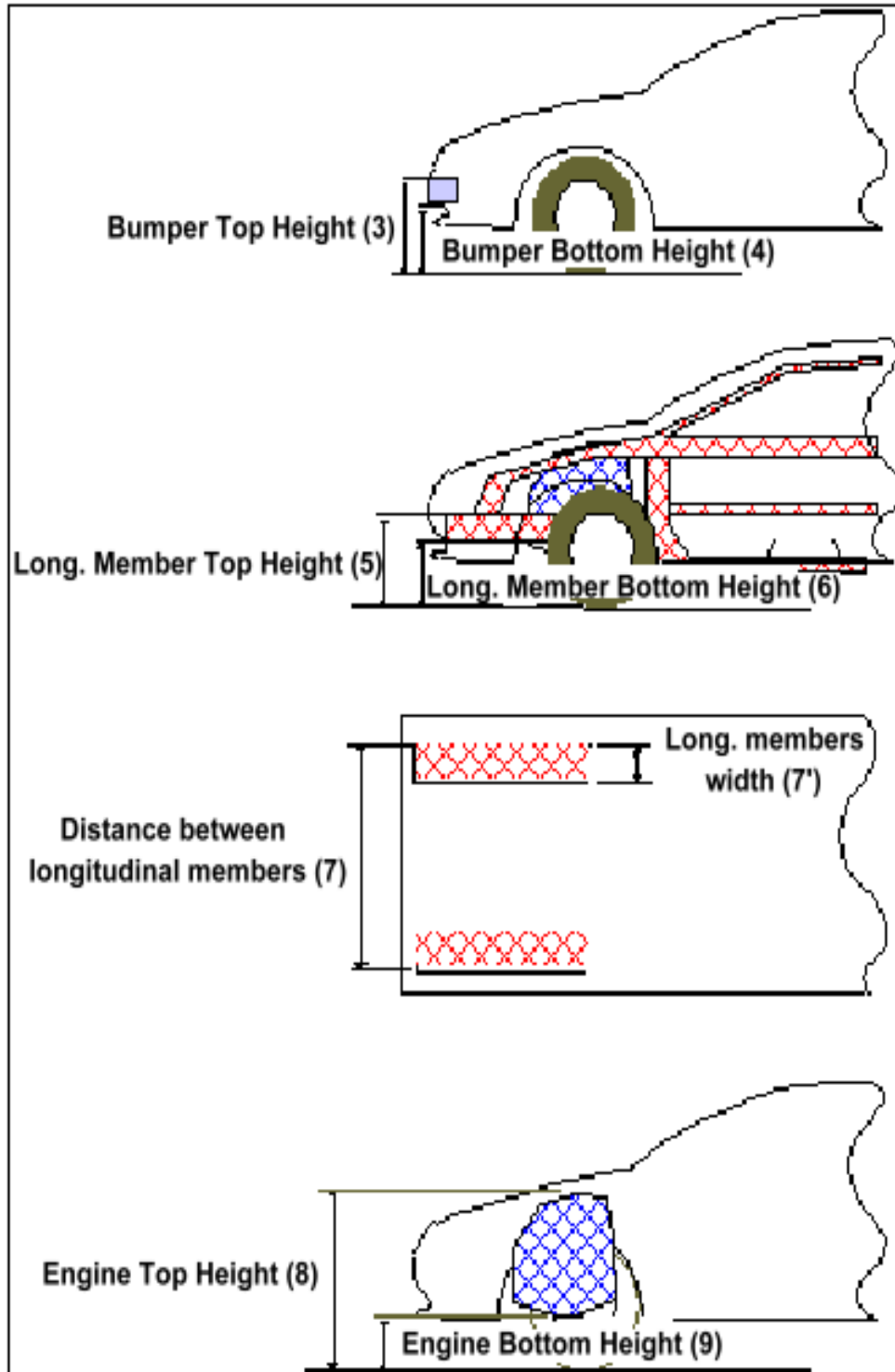


Figure 5.- Definition of the main resistant elements. Front elements.

Figure 6.-
Measurements of the
main resistant elements.
Front elements 1.

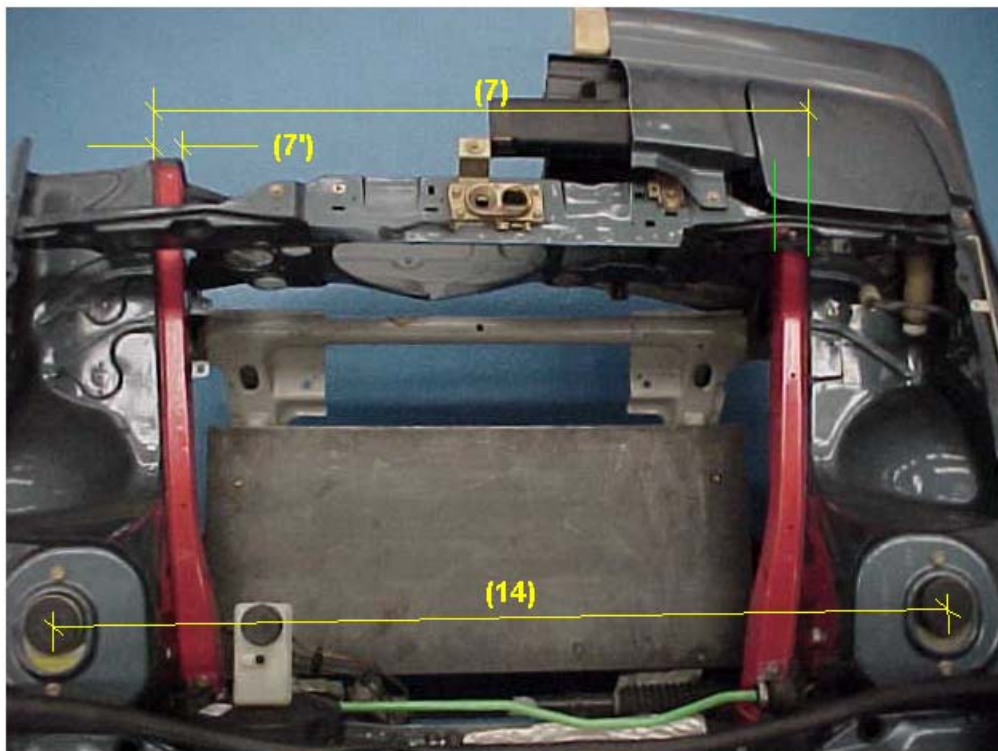
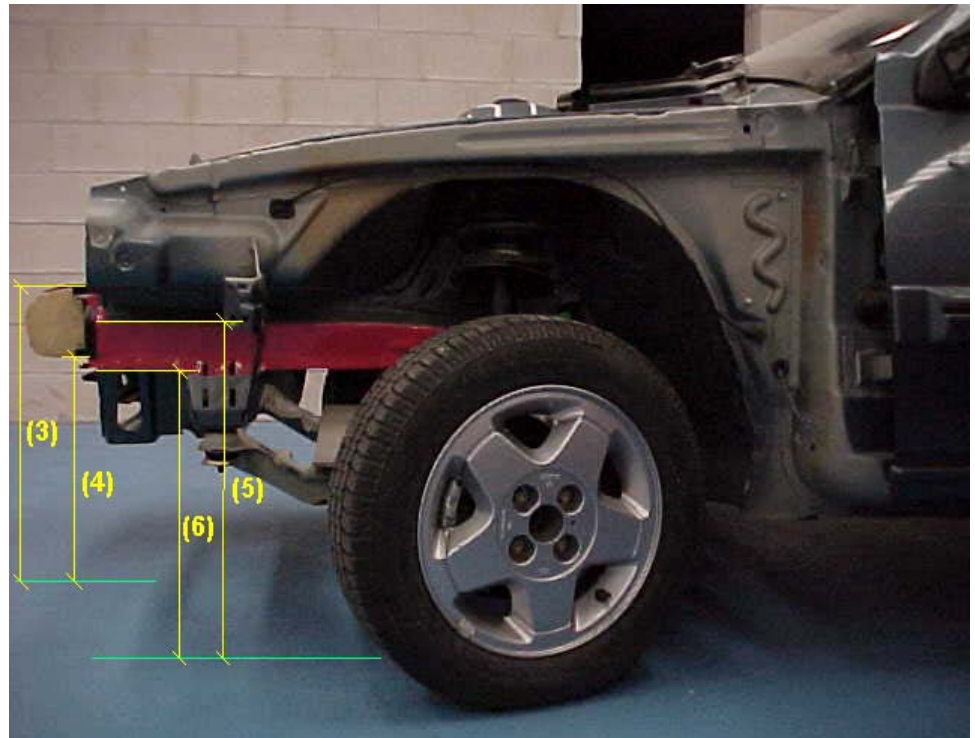


Figure 7.-
Measurements
of the main
resistant
elements. Front
elements 2.

Figure 8.-
Measurements of
the main resistant
elements. Front
elements 3.

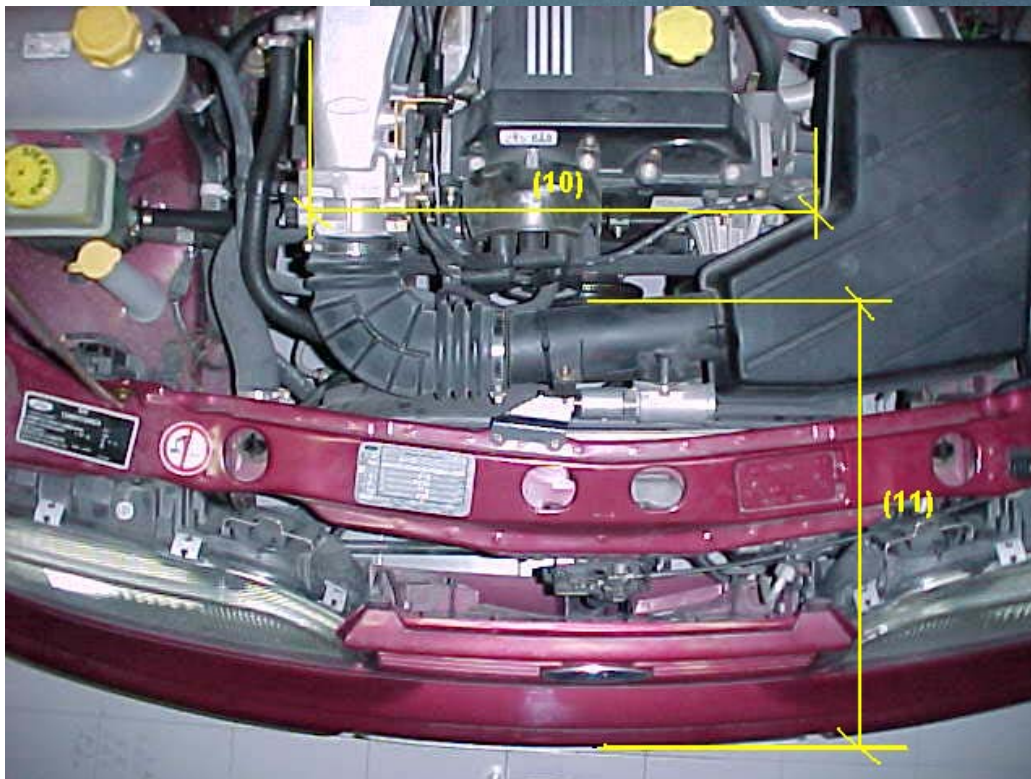
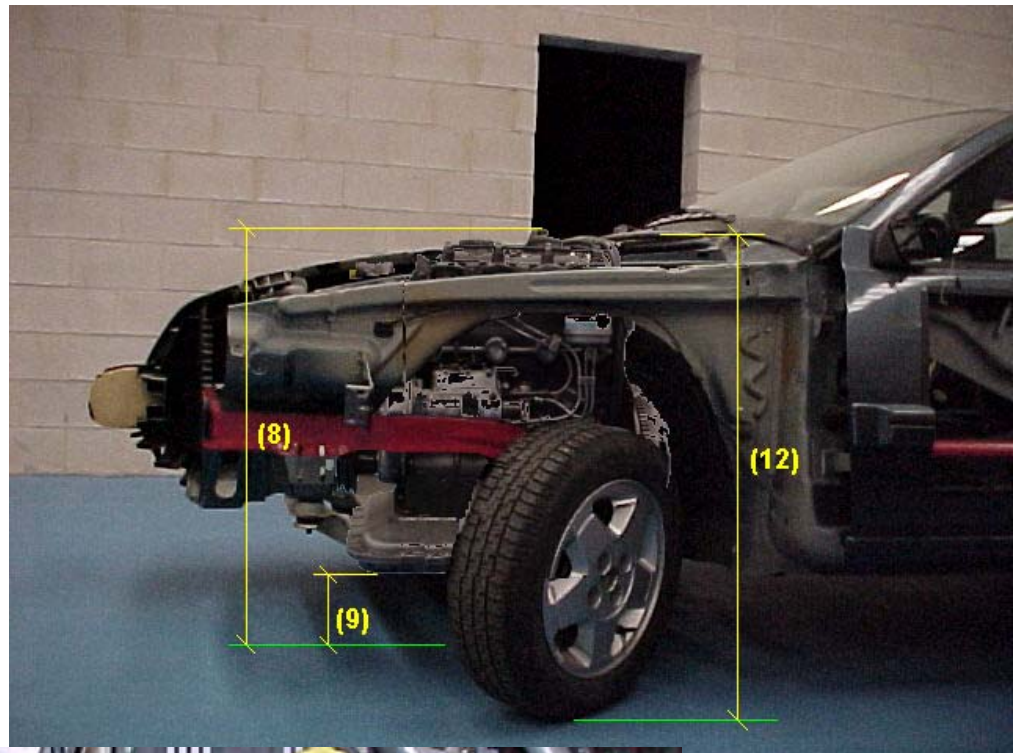


Figure 9.-
Definition of
the main
resistant
elements. Front
elements
(Longitudinal
engine).



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.