

**Vehicle Research and Test Center
2002 Ford Focus SE 4-door into a
Flat Frontal Load Cell Barrier
TRC Inc. Test Number: 060512-2**

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**Prepared For:
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Section 1.0

Purpose and Test Procedure

Purpose

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

The test mode was defined as the vehicle moving at 35 mph (56.2 km/h) striking the flat frontal load cell barrier at an impact angle of 0 degrees. The purpose of this test was to evaluate the vehicle and occupant response of the subject vehicle, a 2002 Ford Focus SE 4-door, in the flat frontal load cell barrier impact mode.

Test Procedure

This test was conducted in accordance with VRTC instructions for a flat frontal load cell barrier impact test. Data was obtained relative to FMVSS 208, "Occupant Crash Protection" (December 18, 2001), FMVSS 212, "Windshield Mounting, and FMVSS 219 (partial), Windshield Zone Intrusion.

The subject vehicle, a 2002 Ford Focus SE 4-door, was instrumented with eighteen (18) accelerometers to measure longitudinal, lateral and vertical axis accelerations. The driver's and passenger's airbag signals were monitored with inductive pickups, and the lap and shoulder belts were monitored for pay-in and pay-out. The vehicle's specified impact velocity range was 55.5 to 57.1 km/h.

One (1) 50th percentile adult male Hybrid III dummy and one (1) 5th percentile adult female dummy were placed in the vehicle's left front and right front designated seating positions, respectively. The dummies were positioned according to NHTSA Laboratory Test Procedure TP-208-12. The driver dummy and passenger dummy were both belted and were restrained with front dual stage airbags.

The vehicle's driver dummy was instrumented with nine (9) accelerometers in the head, plus six (6) chest and three (3) pelvis accelerometers to measure longitudinal, lateral and vertical accelerations (primary and redundant in the chest). The vehicle's driver dummy was also instrumented with upper and lower neck moment and force load cells, a chest deflection potentiometer, left and right femur load cells to measure moments and forces, and tibia to femur displacement potentiometers at each knee.

The vehicle's passenger dummy was instrumented with an array of three (3) accelerometers in the head, chest, and pelvis to measure longitudinal, lateral, and vertical accelerations. The vehicle's passenger dummy was also instrumented with upper and lower neck moment and force load cells, left and right femur load cells to measure axial forces, and a chest deflection potentiometer.

The 221 data channels were digitally sampled and recorded at 12,500 samples per second and processed per SAE J211 March 1995.

The vehicle impacted a high resolution load cell barrier equipped with 132 single axis load cells.

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

The test summary data is presented in Section 2.0. The summaries of data are presented in Section 3.0. The occupant, camera, and vehicle measurements are presented in Section 4.0. Appendix A contains the still photographic prints. Appendix B contains the dummy and vehicle data plots. Appendix C contains the dummy verification data. Appendix D contains miscellaneous test information. Appendix E contains an INSIA report that was the basis for the Structural Measurements presented in Table 12 of this report.

Section 2.0

Flat Frontal Load Cell Barrier Test Summary

Test Results Summary

This 56.2 km/h flat frontal load cell barrier impact test was conducted by TRC Inc. on May 12, 2006.

The subject test vehicle, a 2002 Ford Focus SE 4-door, was equipped 2-liter transverse engine, automatic transmission, power steering, power brakes, and dual stage front airbags. The vehicle's test weight was 1410.0 kg. The vehicle's impact speed was 56.2 km/h.

Injury Criteria Data Summary				
	Limits		Test Results	
	Driver	Passenger	Driver	Passenger
HIC (15 ms)	700	700	337	261
HIC (36 ms)	1000	---	505	465
Chest 3 ms (g)	60	60	43.6	49.2
Chest Deflection (mm)	63	52	35	19
Upper Neck				
Neck Tension-Flexion	1.0	1.0	0.23	0.33
Neck Tension-Extension	1.0	1.0	0.36	0.69
Neck Compression-Flexion	1.0	1.0	0.15	0.27
Neck Compression-Extension	1.0	1.0	0.15	0.36
Neck Tension (N)	4170	2620	1614	1200
Neck Compression (N)	4000	2520	74	836
Left Femur (N)	10000	6805	4612	2735
Right Femur (N)	10000	6805	4087	2132

Data Acquisition Explanations

The driver dummy's left knee X-axis displacement data channel, 11KNSLLE00H3DSXA, recorded questionable data throughout the test.

The passenger dummy's neck lower Y-axis force data channel, 13NECKLO00HFFOYA, recorded intermittent data throughout the test. The channel was repaired post-test.

The vehicle's bottom of engine X-axis acceleration data channel, 12ENGNBO0000ACXA, recorded questionable data throughout the test.

Table 1 Crash Test Summary

Test mode:	Flat Frontal Barrier	
Test date:	05/12/06	
Test time:	15:30	
Ambient temperature:	21.1° C	
Year/make/model/body style:	2002/Ford/Focus SE/4-door	
Test weight:	1410 kg	
Impact angle ¹ :	0°	
Impact velocity ² :	Primary = 56.2 km/h Secondary = 56.2 km/h	
Total number of data channels:	221	
Number of cameras:		
High-speed:	10	
Real-time:	1	
<u>Dummies:</u>	<u>Driver #090</u>	<u>Passenger #070</u>
Type:	Hybrid III 50th	Hybrid III 5th
Location:	Left front	Right front
Restraint:	3 pt. seat belt, dual stage airbag	3 pt. seat belt, dual stage airbag

¹ With respect to tow track centerline.

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

Table 1 Crash Test Summary, Continued

Seat track positions for test:

Driver: Middle; detent # 9 out of 17

Passenger: Full forward

Seat back positions for test:

Driver: 17.2° measured at head restraint support post

Passenger: 9.6° measured at head restraint support post

Head restraint positions for test:

Driver: Full up

Passenger: Full down

Steering column position for test: Middle of geometric range of travel

D-ring positions for test:

Driver: Full up

Passenger: Full down

Table 2 General Test and Vehicle Parameter Data

Year/make/model/body style:	2002/Ford/Focus SE/4-door
VIN:	1FAFP34P02W208870
Model year:	2002
Body style:	4-door
Color:	Tan
Engine data:	
Cylinders:	4
Displacement	2 liters
Type:	Straight
Placement:	Transverse
Transmission data:	<u>3</u> speed, <u> </u> manual, <u>X</u> automatic, <u> </u> overdrive
Final drive:	<u>X</u> FWD, <u> </u> RWD, <u> </u> 4WD
Date vehicle received:	05/09/06
Odometer reading:	120,943 miles
Dealer's name and address:	Vehicle provided 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	Yes
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:	Ford Motor Co.
Date of manufacture:	01/02
VIN:	1FAFP34P02W208870
GVWR:	3620 lbs. (1641 kg)
GAWR: Front:	1965 lbs. (891 kg)
Rear:	1745 lbs. (791 kg)

Table 2 General Test and Vehicle Parameter Data, Continued

Tires on vehicle (mfr., line, size): Mastercraft, Avenger, P195/60R15

Tire pressure with maximum capacity vehicle load:

Front: 32 psi (220 kPa)

Rear: 32 psi (220 kPa)

Spare tire (mfr., line, size): Hankook, Temp, 125/80R15

Type of seats:

Front Bucket

Rear Bench

Maximum width: 1705 mm

Wheelbase: 2600 mm

Location of "Recommended Tire Pressure" label:

Driver door

Data from vehicle's "Recommended Tire Pressure" label:

Recommended tire size: P195/60R15

Recommended cold tire pressure: Front: 32 psi (221 kPa)

Rear: 32 psi (221 kPa)

Seating capacity: Front: 2

Rear: 3

Total: 5

Vehicle capacity weight: 375 kg (827 lbs.)

Rated cargo/luggage weight: 35 kg (77 lbs.)

Test vehicle attitude:

Pre-test attitude: LF 639 mm; RF 640 mm; LR 642 mm; RR 635 mm

Post-test attitude: LF 695 mm; RF 665 mm; LR 647 mm; RR 620 mm

Table 2 General Test and Vehicle Parameter Data Continued

Target Test weight:

Total test weight 1410.0 kg

Weight of test vehicle with required dummies and kg of cargo weight:

Right front	399.4 kg	Right rear	304.4 kg
Left front	403.2 kg	Left rear	303.0 kg
Total front weight	802.6 kg	(56.9% of total vehicle weight)	
Total rear weight	607.4 kg	(43.1% of total vehicle weight)	
Total test weight	1410.0 kg	(100% of target test weight)	

Weight of ballast secured in vehicle: 0 kg

Components removed to meet target test weight: trunk seal, right rear door seal, right tail light

Location of Vehicle's CG: 1120 mm rearward of front wheel centerline

Fuel System Data:

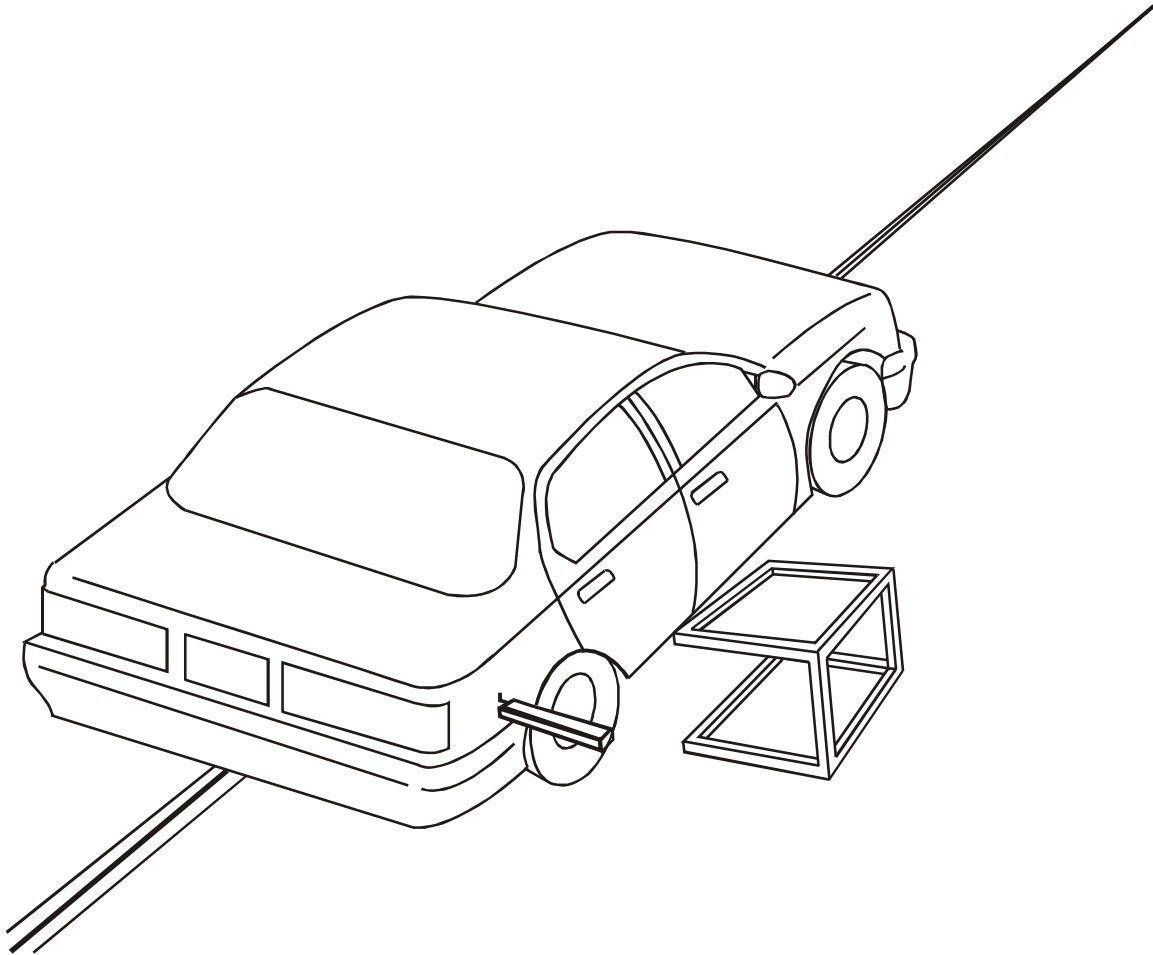
Usable fuel system capacity 50.0 liters (from owner's manual)

Actual test volume: 46.6 liters (93% of usable)

Table 3 Post-Impact Data

Test number:	060512-2
Test date:	05/12/06
Test time:	15:30
Test type:	Flat frontal load cell barrier
Impact angle:	0°
Ambient temperature at impact area: 21.1° C	
Impact velocity:	
Primary:	56.2 km/h
Secondary	56.2 km/h
Required impact velocity range:	55.5 to 57.1 km/h
Impact accuracy:	
Vertical:	Vehicle 0 mm vertical
Horizontal:	Vehicle 19 mm right
Distance from vehicle to barrier:	
Entering velocity trap:	660 mm
Exiting velocity trap:	50 mm, approximately

Figure 1 Impact Velocity Measurement System



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

The emitter/receiver pairs have 610-millimeter spacing.

Table 4 Accelerometer Data Summary

Accel. No.	Location		Positive Direction		Negative Direction	
			Max. (g)	Time (ms)	Max. (g)	Time (ms)
1	Left Rear Seat Cross-member	X	1.4	150.6	41.0	42.0
2	Right Rear Seat Cross-member	X	1.6	124.8	39.9	40.0
3	Top of Engine	X	45.3	45.0	125.1	33.7
4	Bottom of Engine ¹	X	---	---	---	---
5	Right Front Brake Caliper	X	26.0	67.9	106.9	45.3
6	Left Front Brake Caliper	X	61.2	55.1	108.8	41.4
7	Dash Center	X	18.9	83.7	61.3	46.7
8	Toe Pan Accelerator	X	3.3	15.0	59.4	51.4
		Z	27.8	40.2	13.9	76.7
9	Toe Pan Footrest	X	8.3	57.8	63.9	51.4
		Z	22.0	42.0	28.1	51.5
10	Rear Tunnel Center	X	1.0	201.0	50.6	33.2
11	Vehicle Center of Gravity	X	51.2	59.8	60.5	38.8
		Y	35.6	73.0	60.2	68.3
		Z	27.4	39.0	59.2	65.3
	Resultant		81.0	65.4		
12	Vehicle Rear Deck	X	17.9	99.9	49.2	45.2
		Y	5.8	69.4	5.2	54.9
		Z	13.5	18.2	24.9	36.4
	Resultant		52.2	45.2		

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

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

¹ See Data Acquisition Explanations.

Section 3.0

Summary of Data

Table 5 Dummy Injury Criteria Data

	Limits		Test Results	
	Driver	Passenger	Driver	Passenger
HIC (15 ms)	700	700	337	261
Start time (ms)			73.12	55.12
End time (ms)			88.16	70.16
HIC (36 ms) ¹	1000	---	505	465
Start time (ms)			61.68	44.16
End time (ms)			97.68	80.16
Chest 3 ms (g) ²	60	60	43.6	49.2
Start time (ms)			77.36	61.59
End time (ms)			80.36	64.77
Chest Deflection (mm)	63	52	35	19
Upper Neck				
Neck Tension-Flexion	1.0	1.0	0.23	0.33
Neck Tension-Extension	1.0	1.0	0.36	0.69
Neck Compression-Flexion	1.0	1.0	0.15	0.27
Neck Compression-Extension	1.0	1.0	0.15	0.36
Neck Tension (N)	4170	2620	1614	1200
Neck Compression (N)	4000	2520	74	836
Left Femur (N)	10000	6805	4612	2735
Right Femur (N)	10000	6805	4087	2132

¹ As defined in FMVSS No. 208.

² Defined as equal to or exceeding 0.003 sec. duration.

Table 6 Post-Impact Dummy/Vehicle Data

Visible Dummy Contact Points:

	<u>Driver</u>	<u>Passenger</u>
Head	Airbag, head restraint	Airbag, head restraint
Chest	Airbag	Airbag
Abdomen	None	None
Left knee	Knee bolster	Glove box
Right knee	Knee bolster	Glove box

Door opening:

	<u>Left</u>	<u>Right</u>
Front	Easy	Easy
Rear	Easy	Easy

Seat movement:

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

Glazing damage: Windshield broken

Other notable impact effects: None

Section 4.0

Occupant, Camera, and Vehicle Information

Figure 2 Dummy Measurement Locations for Front Seat Occupants

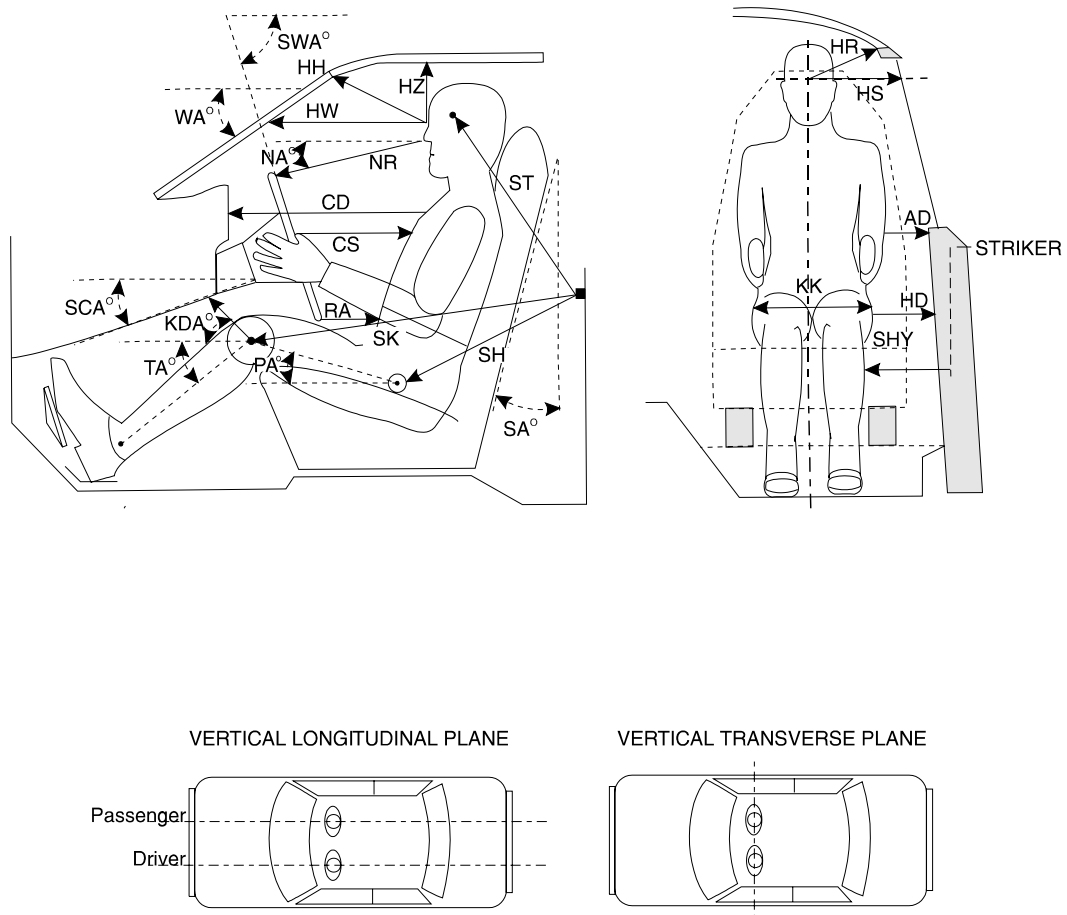


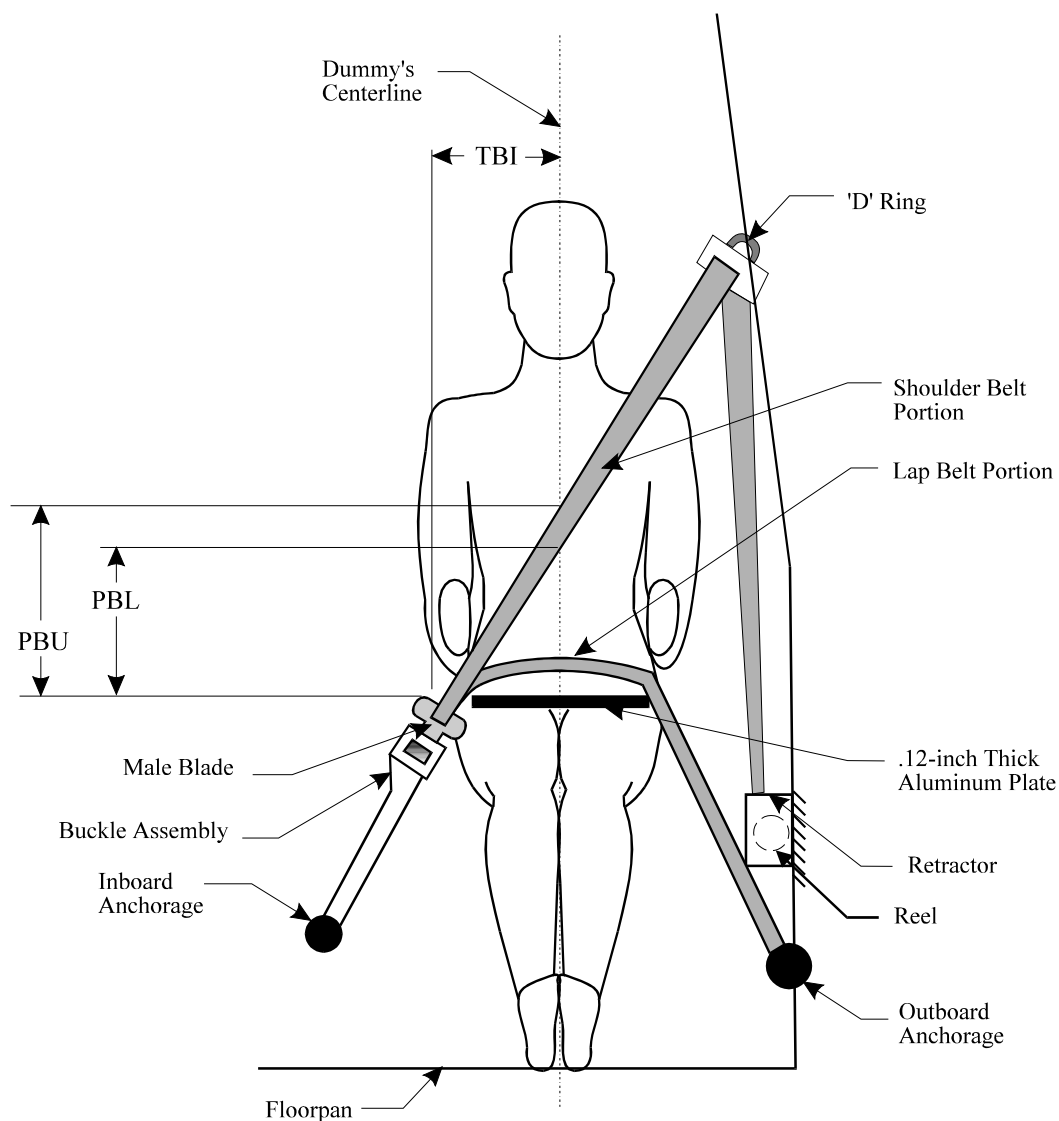
Table 7 Dummy Measurement Data For Front Seat Occupants

<u>Designation</u>	<u>Type of Measurement</u>	<u>Driver (Serial # 090)</u>	<u>Passenger (Serial # 070)</u>
WA	Windshield angle	24.4°	24.4°
SWA	Steering wheel angle	66.5°	N/A
SCA	Steering column angle	23.5°	N/A
SA	Seat back angle	19.0°	10.9°
HZ	Head to roof	222 mm	218 mm
HH	Head to header	363 mm	270 mm
HW	Head to windshield	675 mm	623 mm
HR	Head to side header	207 mm	233 mm
NR	Nose to rim	437 mm	N/A
NA	Nose to rim angle	7.5°	N/A
CD	Chest to dash	587 mm	377 mm
CS	Steering wheel to chest	335 mm	N/A
RA	Rim to abdomen	232 mm	N/A
KDL	Left knee to dash	189 mm	44 mm
KDR	Right knee to dash	182 mm	42 mm
KDA	Outboard knee to dash angle	7.3°	12.5°
PA	Pelvic angle	25.9°	20°
TA	Tibia angle	41.5°	64.1°
KK	Knee to knee	376 mm	172 mm
ST ¹	Striker to head	509 mm	492 mm
	Striker to head angle	-87.1°	-67.2°
SK ¹	Striker to knee	541 mm	697 mm
	Striker to knee angle	-0.5°	-0.3°
SH ¹	Striker to H-point	234 mm	349 mm
	Striker to H-point angle	39.3°	18.9°
SHY	Striker to H-point (Y dir.)	129 mm	127 mm
HS	Head to side window	296 mm	320 mm
HD	H-point to door	20 mm	63 mm
AD	Arm to door	101 mm	148 mm

The seat back angle (SA°) is measured relative to vertical; all other angles are measured relative to horizontal.

¹ A negative angle indicates the measurement point was above the striker.

Figure 3 Seat Belt Positioning Data



	Driver Dummy	Passenger Dummy
PBU - Top surface of aluminum plate to belt upper edge	335 mm	280 mm
PBL - Top surface of aluminum plate to belt lower edge	250 mm	185 mm
TBI - Dummy centerline to intersection of upper torso belt and lap belt	230 mm	220 mm
Total belt length	N/A ¹	N/A ¹
Lap belt length	N/A ¹	N/A ¹
Shoulder belt length	N/A ¹	N/A ¹

¹ Measurement was not recorded.

Figure 4 FMVSS 212 Test Data

Details of windshield mounting such as retention method, trim type, etc.:

Adhesive, plastic

FMVSS 212 requirements: The post-test periphery retention amount must be at least 75% of the pre-test periphery measurement for vehicles NOT equipped with automatic restraints, and 50% for each side of windshield for vehicles equipped with automatic restraint systems for front occupants.

Windshield periphery measurements:

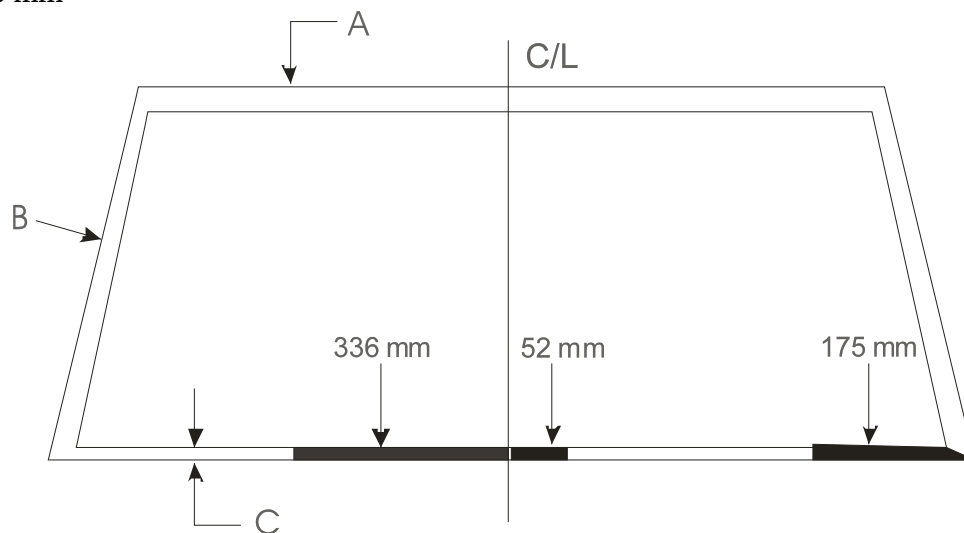
	<u>Pre-test</u>	<u>Post-test</u>	<u>Percent retention</u>
Right side	2130 mm	1903 mm	89.3%
Left side	2130 mm	1794 mm	84.2%
Total	4260 mm	3697 mm	86.8%

Pre-test windshield mounting material temperature: N/A

A = 8 mm

B = 8 mm

C = 15 mm



Front view of windshield

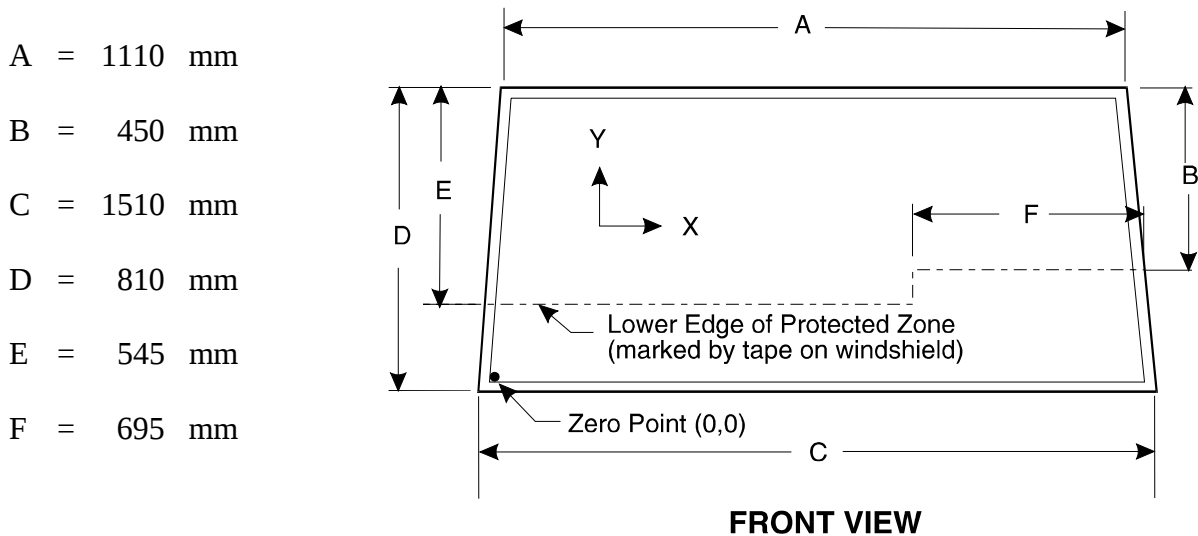
Loss of windshield retention lengths: 336 mm at bottom center right, 52 mm at bottom center left, 175 mm at bottom left.

Figure 5 FMVSS 219 Test Data

Protected zone lower edge requirement:

The lower edge of the protected zone is determined by placing a 165-millimeter diameter rigid sphere weighing 6.8 kg in a position such that it simultaneously contacts the inner surface of the windshield and the top surface of the instrument panel including padding. Draw the locus of points on the inner surface of the windshield contactable by the sphere across the width of the instrument panel. From the outermost contactable points, extend the locus line horizontally to the edges of the windshield, and then draw a line on the inner surface of the windshield below and 13 millimeters from the locus line. The **lower edge of the protected zone** is the longitudinal projection onto the outer surface of the windshield of this line.

Windshield measurements:



Method of adhering protected zone template to windshield: N/A

Areas of windshield template penetration greater than 6 mm: None

Coordinates, mm		
	X	Y
1.	0	0
2.		
3.		

Areas of windshield penetration, below the protected zone, through the inner surface of the windshield: None

1.	0	0
2.		
3.		

Table 8 Structural Measurements¹

	Elements	Pre-Test
1	Total Length	4432
2	Total Width	1705
3	Bumper Top Height	524
4	Bumper Bottom Height	374
5	Longitudinal Member Top Height	512
6	Longitudinal Member Bottom Height	402
7	Distance Between Longitudinal Members	285
7'	Longitudinal Member Width	85
8	Engine Top Height	769
9	Engine Bottom Height	189
10	Engine and Gearbox Width	810
11	Front Bumper - Engine Distance	452
12	Front Shock Absorber Fixing Height	814
13	Bonnet Leading Edge Height	629
14	Front Shock Absorber Fixing Width	1110
15	Front Bumper - Front Axle Distance	872
16	Front Axle - A Pillar Distance	570
17	A Pillar - B Pillar Distance	940
18	B Pillar - Rear Axle Distance	1095
19	B Pillar - C Pillar Distance	865
20	Roof Sill Bottom Height	1309
21	Roof Sill Top Height	1374
22	Floor Sill Bottom Height	259
23	Floor Sill Top Height	341

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.

Figure 6 Pre-Test And Post-Test Measurement Points

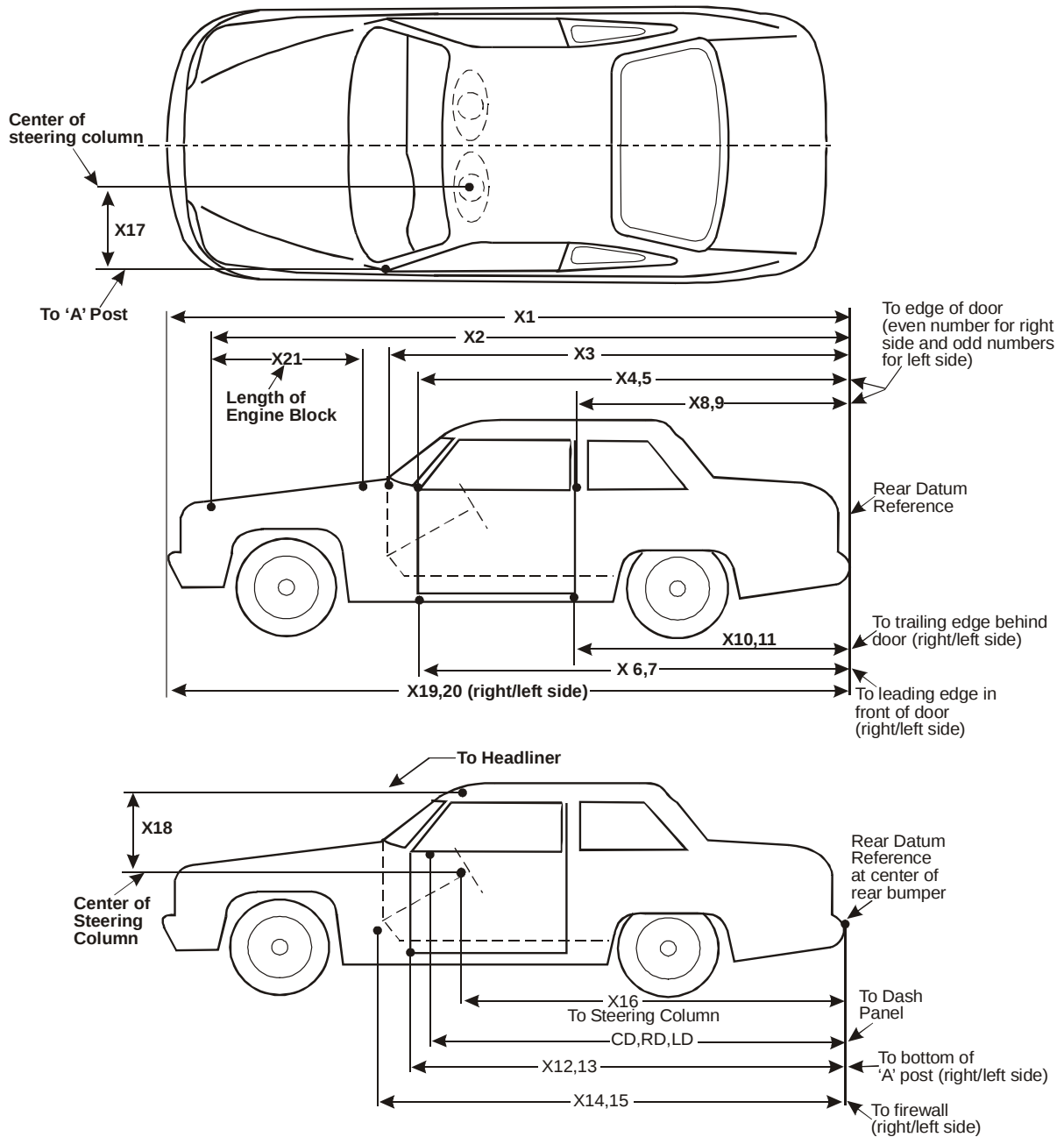


Table 9 Impacted Vehicle Measurements

Test number: 060512-2

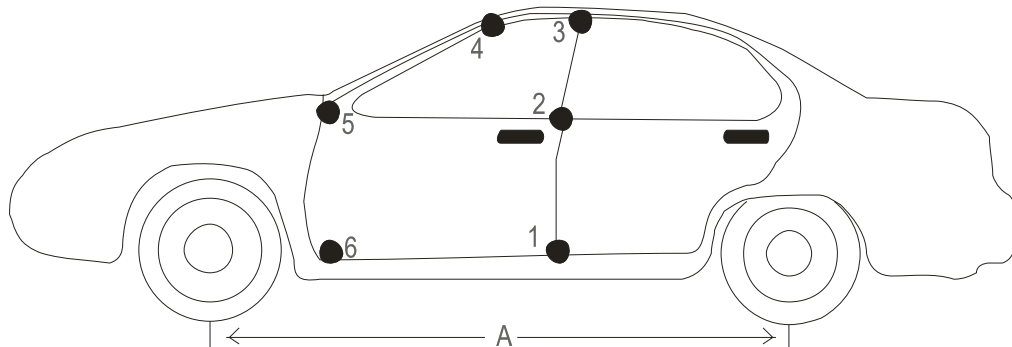
Vehicle year/make/model/body style: 2002/Ford/Focus SE/4-door

No.	Type of measurement	Pre-Test	Post-Test	Difference
X1	Total Length of Vehicle at Centerline	4432	4018	414
X2	Rear Surface of Vehicle to Front of Engine Block	3837	3634	203
X3	Rear Surface of Vehicle to Firewall	3480	3416	64
X4	Rear Surface of Veh. to Upper Leading Edge of Right Door	3064	3064	0
X5	Rear Surface of Veh. to Upper Leading Edge of Left Door	3071	3067	4
X6	Rear Surface of Veh. to Lower Leading Edge of Right Door	3027	3000	27
X7	Rear Surface of Veh. to Lower Leading Edge of Left Door	3040	3004	36
X8	Rear Surface of Veh. to Upper Trailing Edge of Right Door	2056	2057	-1
X9	Rear Surface of Veh. to Upper Trailing Edge of Left Door	2060	2052	8
X10	Rear Surface of Veh. to Lower Trailing Edge of Right Door	2054	2027	27
X11	Rear Surface of Veh. to Lower Trailing Edge of Left Door	2067	2032	35
X12	Rear Surface of Veh. to Bottom of " A " Post on Right Side	2995	3003	-8
X13	Rear Surface of Veh. to Bottom of " A " Post on Left Side	3000	2995	5
X14	Rear Surface of Vehicle to Firewall - Right Side	3480	3374	106
X15	Rear Surface of Vehicle to Firewall - Left Side	3460	3380	80
X16	Rear Surface of Vehicle to Steering Wheel Center	2614	2658	-44
X17	Center of Steering Column to " A " Post	280	279	1
X18	Center of Steering Column to Headliner	420	471	-51
X19	Rear Surface of Vehicle to Right Side of Front Bumper	4373	3917	456
X20	Rear Surface of Vehicle to Left Side of Front Bumper	4348	3962	386
X21	Length of Engine Block	400	400	0
RD	Rear Surface of Vehicle to Right Side of Dash Panel	2932	2914	18
CD	Rear Surface of Vehicle to Center of Dash Panel	2905	2886	19
LD	Rear Surface of Vehicle to Left Side of Dash Panel	2930	2919	11

All distance measurements are in millimeters.

Figure 7 Vehicle Intrusion Measurements

Door Opening Width

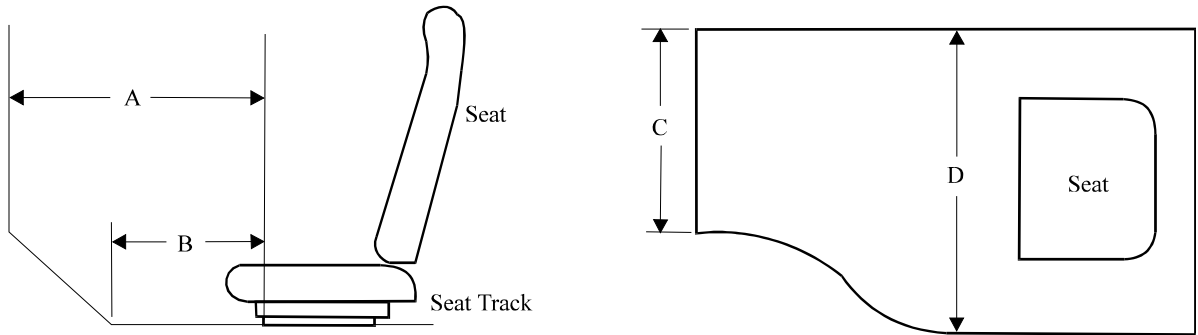


Driver's Side									
Point Location	Pre-Test (mm)			Post-Test (mm)			Difference (mm)		
	X	Y	Z	X	Y	Z	X	Y	Z
1	2046	-734	324	2045	-740	329	-1	-6	5
2	1901	-728	-29	1901	-732	-24	0	-4	5
3	1816	-545	-690	1816	-545	-685	0	-1	6
4	2310	-590	-651	2311	-592	-650	0	-2	0
5	2805	-706	-29	2798	-729	-24	-7	-23	5
6	2754	-732	338	2751	-754	344	-3	-22	6

Passenger's Side									
Point Location	Pre-Test (mm)			Post-Test (mm)			Difference (mm)		
	X	Y	Z	X	Y	Z	X	Y	Z
1	2030	754	314	2027	748	314	-3	-6	0
2	1897	742	-28	1896	737	-28	-1	-5	0
3	1804	566	-686	1804	564	-689	0	-1	-3
4	2313	611	-645	2314	609	-651	1	-3	-6
5	2804	739	-27	2800	732	-26	-4	-7	1
6	2746	753	340	2744	740	341	-2	-13	1

Units (mm)	A = Wheelbase Left	A = Wheelbase Right
Pre-Test	2600 mm	2600 mm
Post-Test	2566 mm	2564 mm
Difference	34 mm	36 mm

Figure 8 Vehicle Intrusion Measurements
Static Footwell Deformation



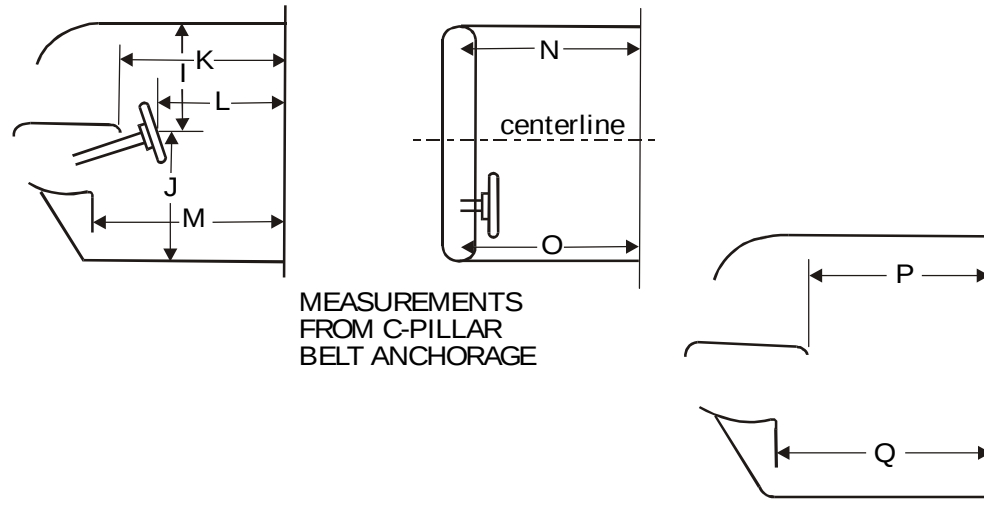
Driver's Side

Measurement	Pre-Test	Post-Test	Difference
A	512 mm	505 mm	-7 mm
B	398 mm	396 mm	-2 mm
C	417 mm	427 mm	10 mm
D	422 mm	419 mm	-3 mm

Passenger's Side

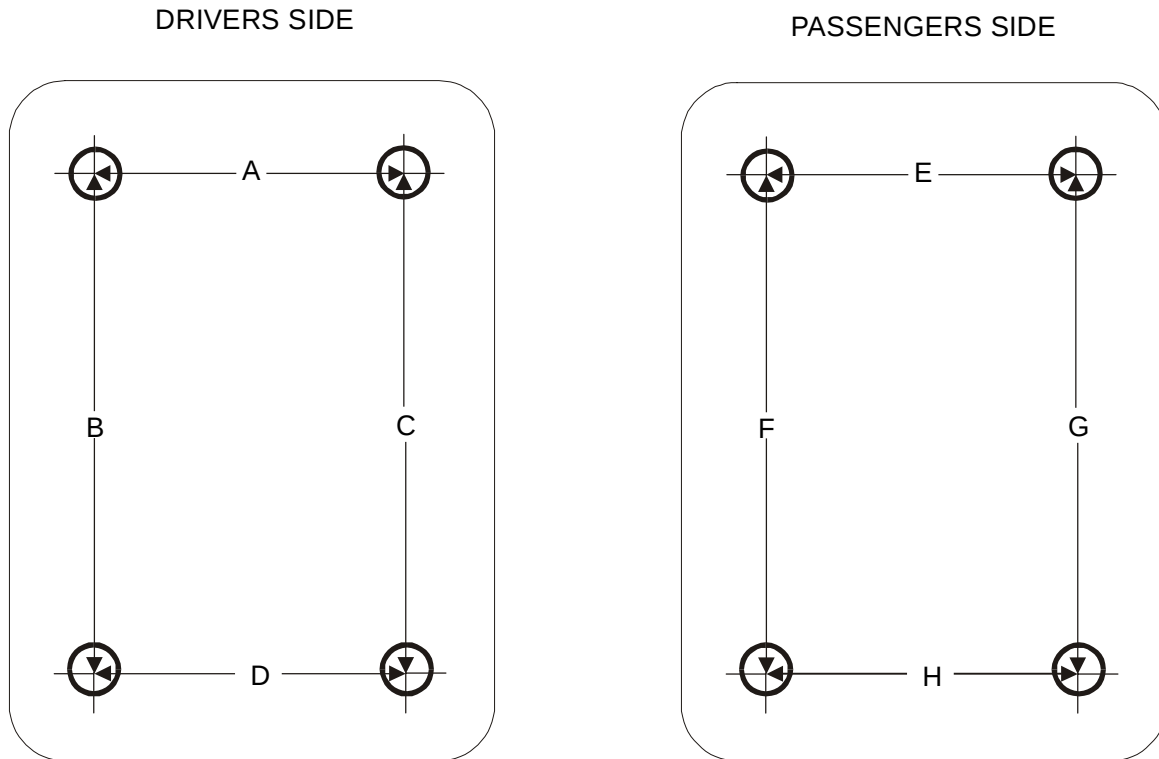
Measurement	Pre-Test	Post-Test	Difference
A	597 mm	574 mm	-23 mm
B	399 mm	393 mm	-6 mm
C	365 mm	379 mm	14 mm
D	427 mm	426 mm	-1 mm

Figure 9 Vehicle Intrusion Measurements
Static Passenger Compartment Intrusion



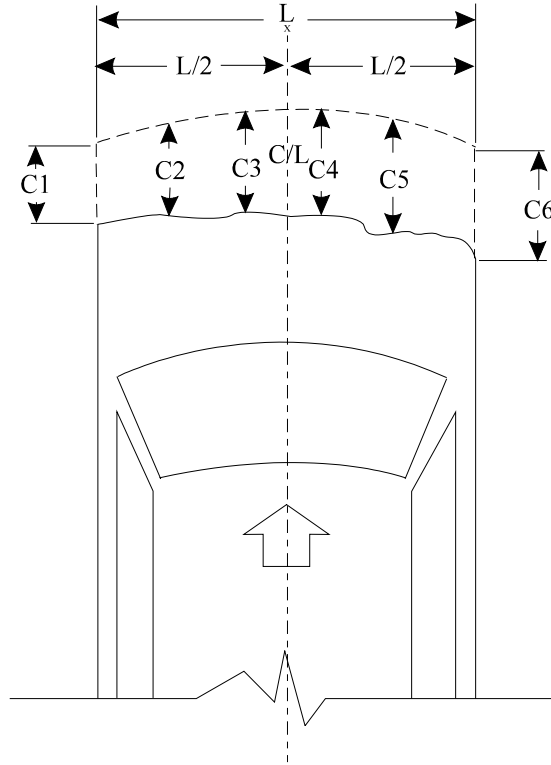
Measurement	Pre-Test	Post-Test	Difference
I	420 mm	471 mm	-51 mm
J	718 mm	724 mm	-6 mm
K (driver's side)	1940 mm	1935 mm	5 mm
L	1640 mm	1683 mm	-43 mm
M (driver's side)	1950 mm	1931 mm	19 mm
N (passenger's side)	1900 mm	1888 mm	12 mm
O (driver's side)	1850 mm	1841 mm	9 mm
P (passenger's side)	1935 mm	1918 mm	17 mm
Q (passenger's side)	1930 mm	1906 mm	24 mm

Figure 10 Vehicle Floorboard Deformation



Measurement	Pre-Test	Post-Test	Difference
A	-418 mm	-415 mm	2 mm
B	398 mm	396 mm	-3 mm
C	393 mm	388 mm	-5 mm
D	-422 mm	-419 mm	3 mm
E	-444 mm	-438 mm	6 mm
F	-399 mm	393 mm	-7 mm
G	-395 mm	387 mm	-9 mm
H	-427 mm	-426 mm	1 mm

Figure 11 Vehicle Crush



Notes: L is pre-test length of contact surface.
C1 through C6 are spaced equally apart.
CL is vehicle centerline.

Vehicle: 2002 Ford Focus SE
Measured with bumper fascia:

Location	Pre-test	Post-test	Difference
L	770 mm		
C1	4348 mm	3962 mm	386 mm
C2	4415 mm	4017 mm	398 mm
C3	4432 mm	4024 mm	408 mm
C4	4431 mm	4010 mm	421 mm
C5	4420 mm	3965 mm	455 mm
C6	4373 mm	3917 mm	456 mm
CL	4432 mm	4018 mm	414 mm

Table 10 Frontal Profile Measurements

Bottom of Front Bumper¹

Pre-Test				Post-Test			Difference		
Index	X, mm	Y, mm	Z, mm	X, mm	Y, mm	Z, mm	X, mm	Y, mm	Z, mm
1	4127	-594	274	3620	-610	183	-506	-16	-91
2	4151	-351	272	3662	-374	172	-489	-22	-100
3	4150	-105	272	3664	-129	172	-485	-24	-101
4	4149	133	271	3665	91	169	-484	-42	-102
5	4148	385	269	3666	342	159	-482	-43	-110
6	4126	627	271	3631	581	166	-496	-46	-105

Top of Front Bumper¹

Pre-Test				Post-Test			Difference ²		
Index	X, mm	Y, mm	Z, mm	X, mm	Y, mm	Z, mm	X, mm	Y, mm	Z, mm
1	4126	-594	125	3619	-617	35	-507	-23	-91
2	4148	-350	127	3640	-373	32	-508	-23	-96
3	4147	-103	128	3627	-127	32	-520	-24	-95
4	4147	135	126	3636	90	28	-511	-45	-98
5	4146	385	124	3641	340	21	-505	-45	-103
6	4122	625	123	3608	575	19	-514	-50	-104

Center of Grill

Pre-Test				Post-Test			Difference		
Index	X, mm	Y, mm	Z, mm	X, mm	Y, mm	Z, mm	X, mm	Y, mm	Z, mm
1	4075	-592	57	N/A ³	N/A ³	N/A ³	N/A ³	N/A ³	N/A ³
2	4137	-356	64	N/A ³	N/A ³	N/A ³	N/A ³	N/A ³	N/A ³
3	4155	-109	65	N/A ³	N/A ³	N/A ³	N/A ³	N/A ³	N/A ³
4	4154	134	65	N/A ³	N/A ³	N/A ³	N/A ³	N/A ³	N/A ³
5	4135	388	64	N/A ³	N/A ³	N/A ³	N/A ³	N/A ³	N/A ³
6	4077	614	56	N/A ³	N/A ³	N/A ³	N/A ³	N/A ³	N/A ³

Front of Hood

Pre-Test				Post-Test			Difference		
Index	X, mm	Y, mm	Z, mm	X, mm	Y, mm	Z, mm	X, mm	Y, mm	Z, mm
1	3860	-592	-104	3704	-621	-328	-156	-28	-224
2	4120	-358	20	3792	-397	-41	-328	-40	-61
3	4131	-109	2	3795	-149	-28	-336	-40	-30
4	4131	132	0	3793	90	-16	-338	-41	-16
5	4120	381	17	3794	340	-7	-325	-41	-24
6	3896	592	-98	3721	562	-237	-174	-31	-138

Pre-test and post-test measurement reference: +X forward; +Y right; +Z down.

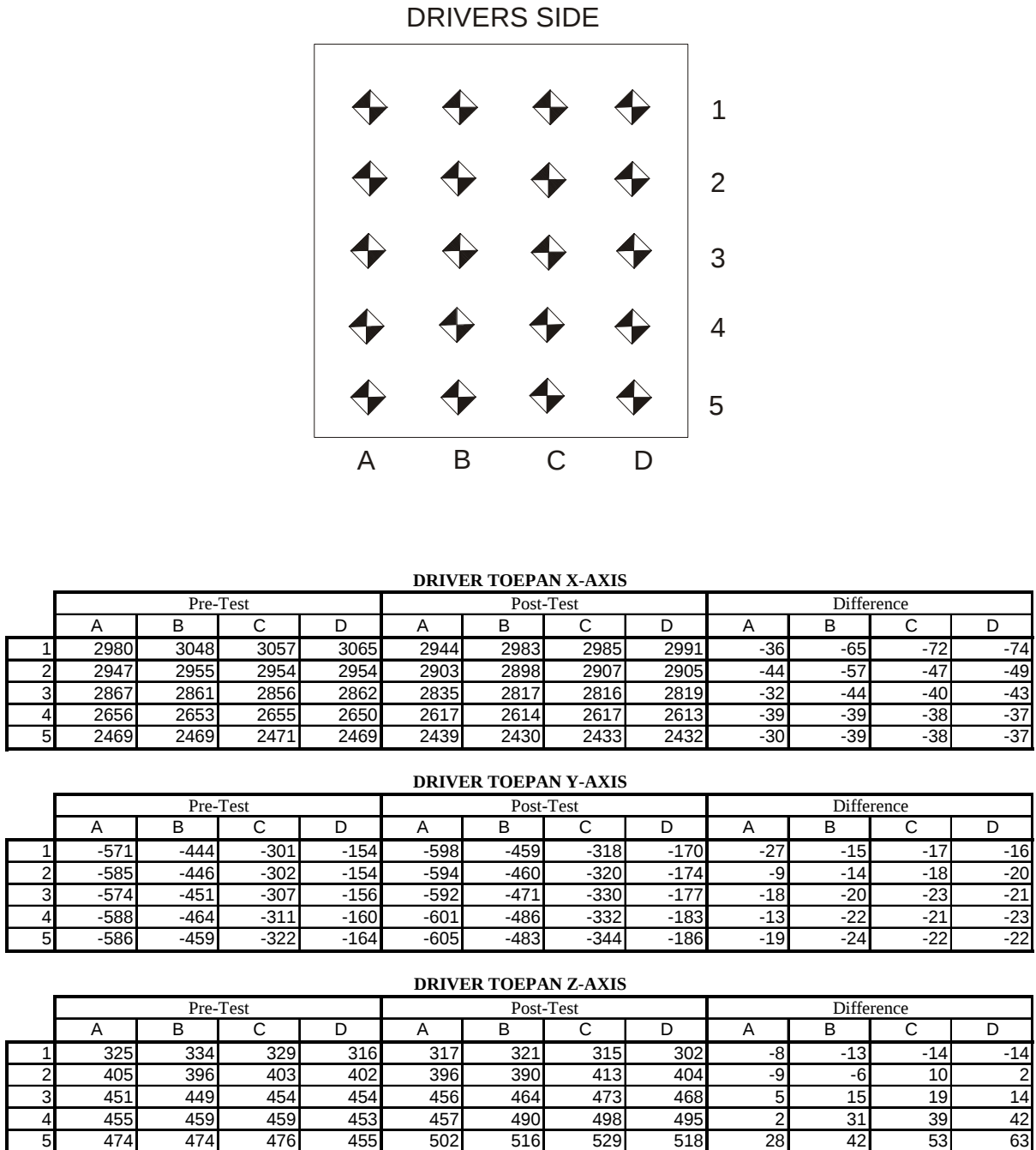
0, 0, 0 origin is center of rear bumper.

¹ Bottom and Top of Front Bumper measurements were taken to the bumper beam.

² Measurements 1-6, Top of Front Bumper, is included in the NHTSA Entrée database submission as Damage Profile Distances 1-6.

³ Measurement point could not be located post-test.

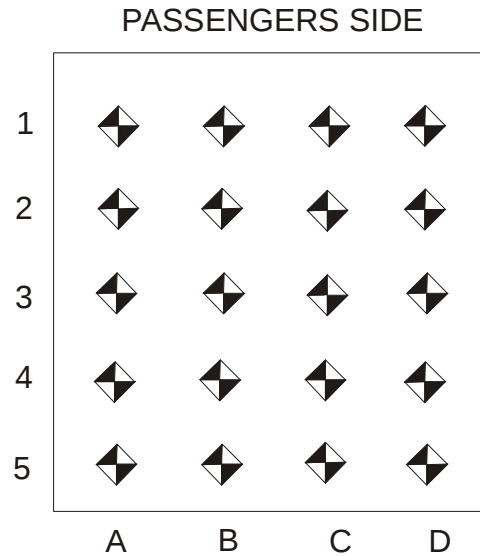
Figure 12 Vehicle Toeboard Measurements



Pre-test and post-test measurement reference: +X forward; +Y right; +Z down.

0, 0, 0 origin is center of rear bumper.

Figure 12 Vehicle Toeboard Measurements, Continued



PASSENGER TOEPAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	3047	3055	3063	2989	2993	2987	2999	2945	-54	-68	-64	-44
2	2956	2951	2954	2957	2910	2915	2910	2933	-46	-36	-44	-24
3	2849	2845	2839	2838	2812	2818	2817	2816	-37	-27	-22	-22
4	2655	2660	2649	2651	2622	2634	2629	2638	-33	-26	-20	-13
5	2450	2451	2455	2442	2420	2424	2435	2430	-30	-27	-20	-12

PASSENGER TOEPAN Y-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	234	334	485	600	209	309	458	588	-25	-25	-27	-12
2	188	326	484	618	165	302	455	597	-23	-24	-29	-21
3	185	326	488	629	165	305	467	603	-20	-21	-21	-26
4	176	318	490	624	162	304	476	596	-14	-14	-14	-28
5	176	297	483	603	169	290	477	594	-7	-7	-6	-9

PASSENGER TOEPAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	334	330	325	287	316	307	295	276	-18	-23	-30	-11
2	400	406	394	368	388	407	388	362	-12	1	-6	-6
3	454	455	454	455	459	473	469	440	5	18	15	-15
4	454	459	461	459	482	489	481	448	28	30	20	-11
5	453	473	476	470	500	512	501	480	47	39	25	10

Pre-test and post-test measurement reference: +X forward; +Y right; +Z down.

0, 0, 0 origin is center of rear bumper.

Table 11 IIHS Measurements

IIHS MEASUREMENTS							
Index	Description	Pre-Test			Post-Test		
		Xmm	Ymm	Zmm	Xmm	Ymm	Zmm
1	Center of Steering Wheel on the Airbag Door	2424	-333	-239	2445	-341	-208
2	Driver's Lower Left Instrument Panel	2671	-483	-13	2668	-501	-15
3	Driver's Lower Right Instrument Panel	2662	-183	-12	2660	-202	-6
4	Brake Pedal Center	2898	-311	246	2789	-319	202
5	Center Left Toeboard 150 mm Left of the Brake Pedal Center at Height of Brake Pedal Center	3116	-460	246	3029	-467	218
6	Toeboard Behind the Center of the Brake Pedal at Height of Brake Pedal	3119	-309	246	3028	-322	219
7	Center Right Toeboard 150 mm Right of the Brake Pedal Center at Height of Brake Pedal Center	N/A	N/A	N/A	N/A	N/A	N/A
8	Foot Rest 250 mm Left of the Brake Pedal Center at Height of Brake Pedal Center	3009	-562	247	2950	-590	236
9	Left Front Driver's Seat Mounting Bolt	2399	-583	383	2396	-590	415
10	Right Front Driver's Seat Mounting Bolt	2388	-130	363	2373	-142	427
11	Left Rear Driver's Seat Mounting Bolt	2012	-619	399	2011	-629	403
12	Right Rear Driver's Seat Mounting Bolt	1960	-97	403	1941	-109	426
17	Exterior A-Pillar at Height of Bottom of Front Window	2832	-689	-260	2824	-709	-254
18	Exterior B-pillar at Height of A-Pillar Measurement Location	1855	-727	-259	1855	-729	-254
Difference							
Index	Description	Pre-Test			Post-Test		
		Xmm	Ymm	Zmm	Xmm	Ymm	Zmm
1	Center of Steering Wheel on the Airbag Door	21	-8	31			
2	Driver's Lower Left Instrument Panel	-3	-18	-2			
3	Driver's Lower Right Instrument Panel	-2	-19	6			
4	Brake Pedal Center	-109	-8	-44			
5	Center Left Toeboard 150 mm Left of the Brake Pedal Center at Height of Brake Pedal Center	-87	-7	-28			
6	Toeboard Behind the Center of the Brake Pedal at Height of Brake Pedal	-91	-13	-27			
7	Center Right Toeboard 150 mm Right of the Brake Pedal Center at Height of Brake Pedal Center	N/A	N/A	N/A			
8	Foot Rest 250 mm Left of the Brake Pedal Center at Height of Brake Pedal Center	-59	-28	-11			
9	Left Front Driver's Seat Mounting Bolt	-3	-7	32			
10	Right Front Driver's Seat Mounting Bolt	-15	-12	64			
11	Left Rear Driver's Seat Mounting Bolt	-1	-10	4			
12	Right Rear Driver's Seat Mounting Bolt	-19	-12	23			
17	Exterior A-Pillar at Height of Bottom of Front Window	-8	-20	6			
18	Exterior B-pillar at Height of A-Pillar Measurement Location	0	-2	5			

Table 12 Bumper Measurements

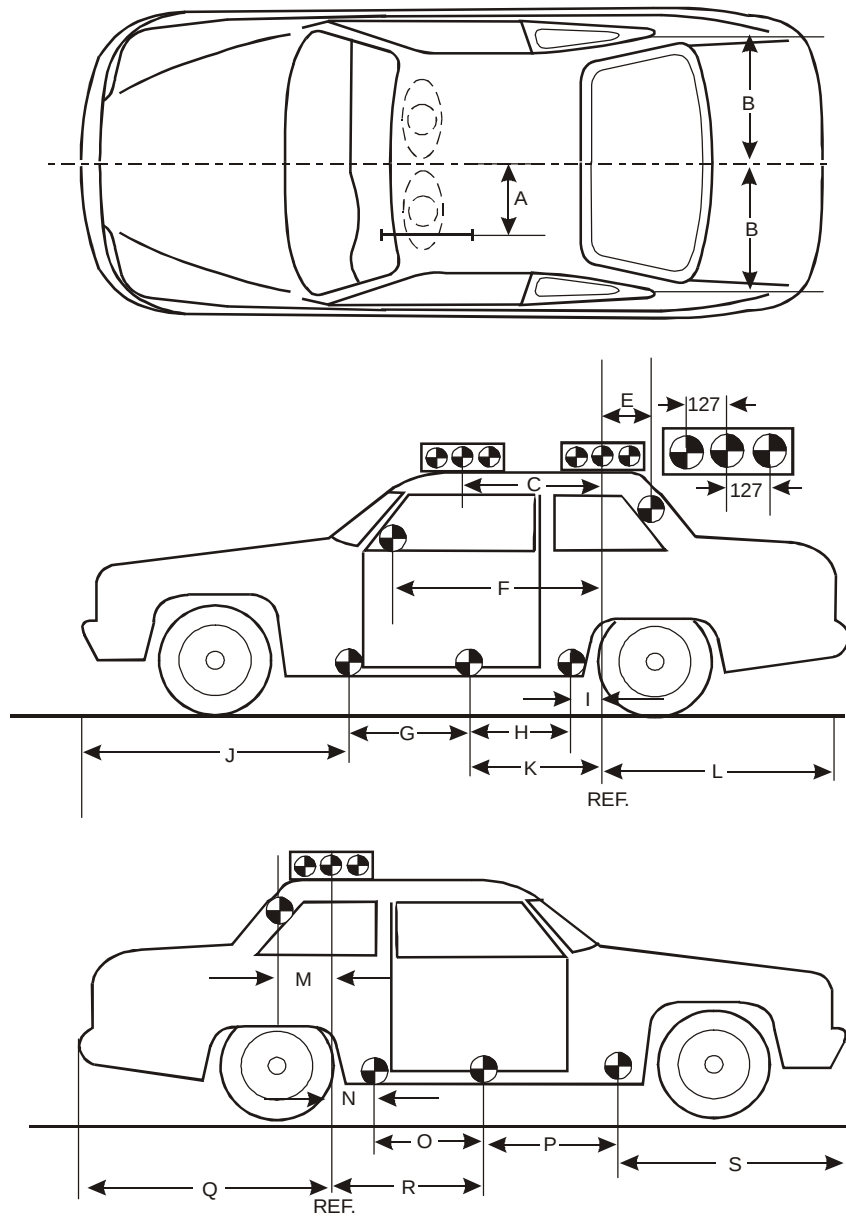
				BUMPER PROFILE					
Pre-Test				Post-Test			Difference		
Index	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm
1	4127	-591	197	3626	-616	106	501	25	90
2	4150	-476	197	3644	-501	104	506	25	93
3	4151	-353	198	3641	-379	105	510	26	93
4	4151	-232	197	3640	-257	103	511	26	94
5	4150	-110	197	3641	-136	102	509	26	95
6	4149	14	197	3622	-26	108	527	40	89
7	4149	136	196	3647	91	98	502	45	99
8	4148	261	197	3643	216	96	505	45	100
9	4148	388	196	3643	344	93	505	45	103
10	4147	509	196	3646	464	90	500	45	106
11	4124	627	197	3627	582	91	497	45	106

Pre-test and post-test measurement references: +X, forward of rear bumper; +Y, rightward from vehicle centerline; +Z, downward from ground level.

0, 0, 0 origin is center of rear bumper.

Measurements taken to bumper beam.

Figure 13 Reference Photo Target Locations



Measurement	Pre-Test	Measurement	Pre-Test	Measurement	Pre-Test
A	Left 345 mm	F	1283 mm	M	331 mm
	Right 345 mm				
B	Left 569 mm	G	866 mm	N	-182 mm
	Right 582 mm				
C	Left 610 mm	H	914 mm	O	912 mm
	Right 610 mm				
E	290 mm	I	-152 mm	P	868 mm
		J	1712 mm	Q	1541 mm
		K	258 mm	R	731 mm
		L	1512 mm	S	1233 mm

¹ The first side target is placed 600 mm from front edge of bumper, and others are at 300 mm intervals

Figure 14 Camera Positions

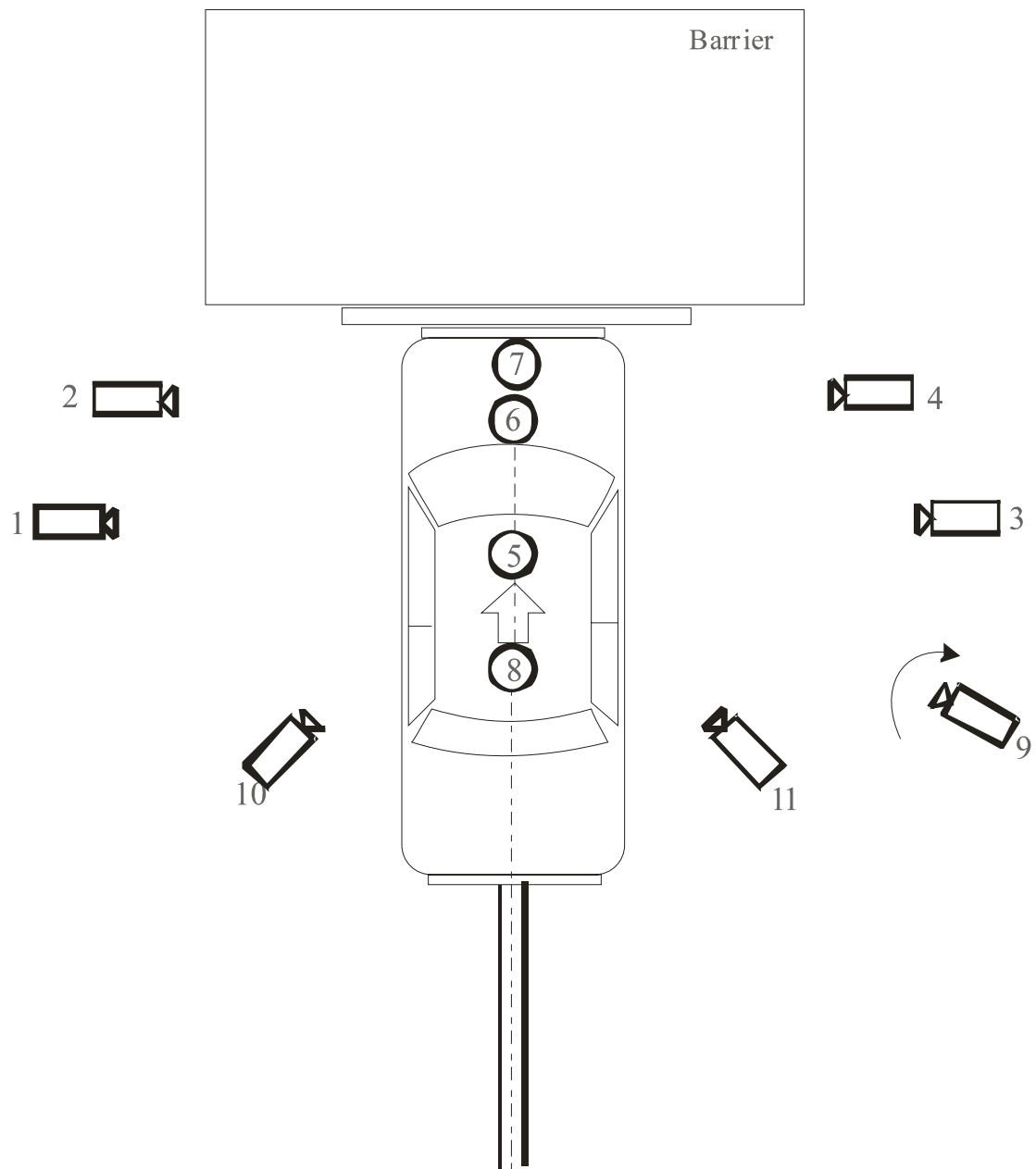


Table 13 Camera Information

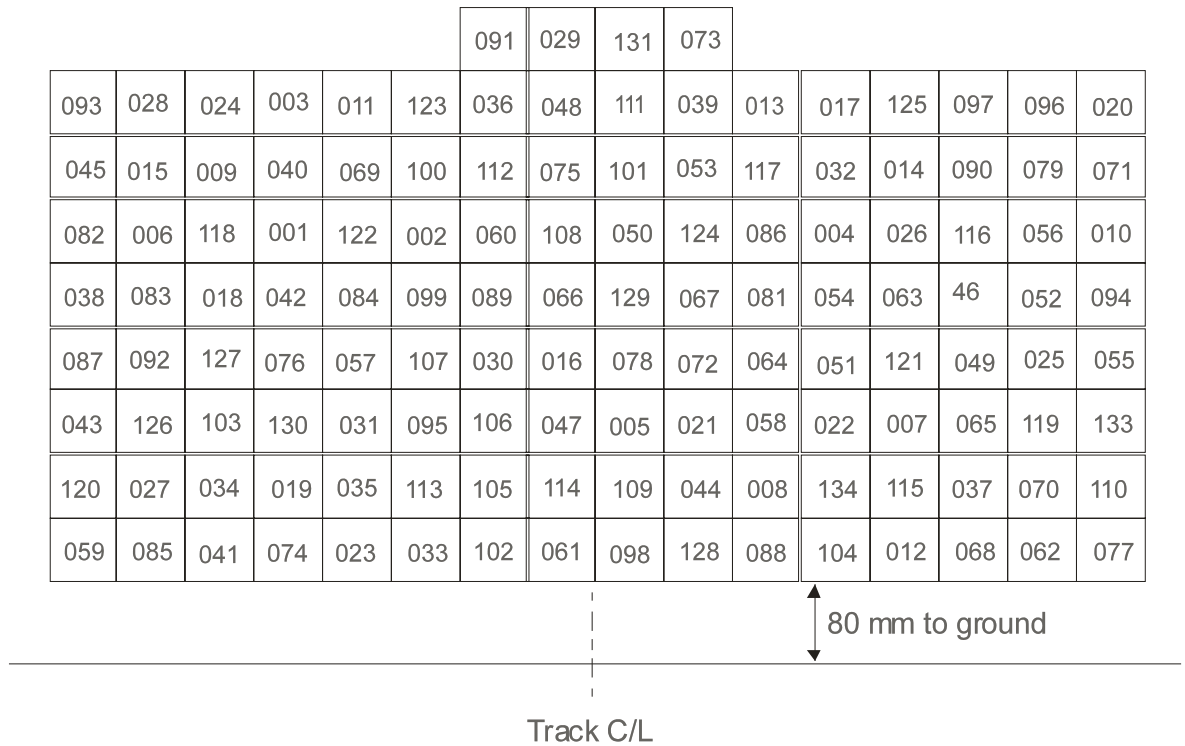
Camera Number	Location	Location, mm			Angle (deg.)	Lens (mm)	Speed (fps)
		X	Y	Z			
1	Left wide	-2050	-5330	-1320	-5.4°	12.5	1000
2	Left tight	-920	-8370	-1170	-1.8°	50	1000
3	Right overall wide	-2140	5030	-1310	-4.4°	12.5	1000
4	Right tight	-1300	5830	-1300	-3.8°	50	1000
5	Overhead wide	-1610	0	-5650	-90.0°	12.5	1000
6	Overhead tight	-1290	0	-5650	-90.0°	25	1000
7	Underbody crush area	-700	50	440	-90.0°	25	1000
8	Underbody wide	-3170	80	470	-90.0°	12.5	1000
9	Panning/documentary	N/A	N/A	N/A	N/A	zoom	30
10	Driver angled	-4480	-3500	-1830	-9.5°	50	1000
11	Passenger angled	-5360	3030	-1830	-103°	50	1000

+X: Forward from impact point

+Y: Rightward from impact point

+Z: Downward from ground level

Figure 15 Barrier Load Cell Locations



LOAD CELL SERIAL NUMBERS

Appendix A

Photographs



Figure A-1 Pre-Test Overhead View



Figure A-2 Post-Test Overhead View



Figure A-3 Pre-Test Front View



Figure A-4 Post-Test Front View



Figure A-5 Pre-Test Left Front View

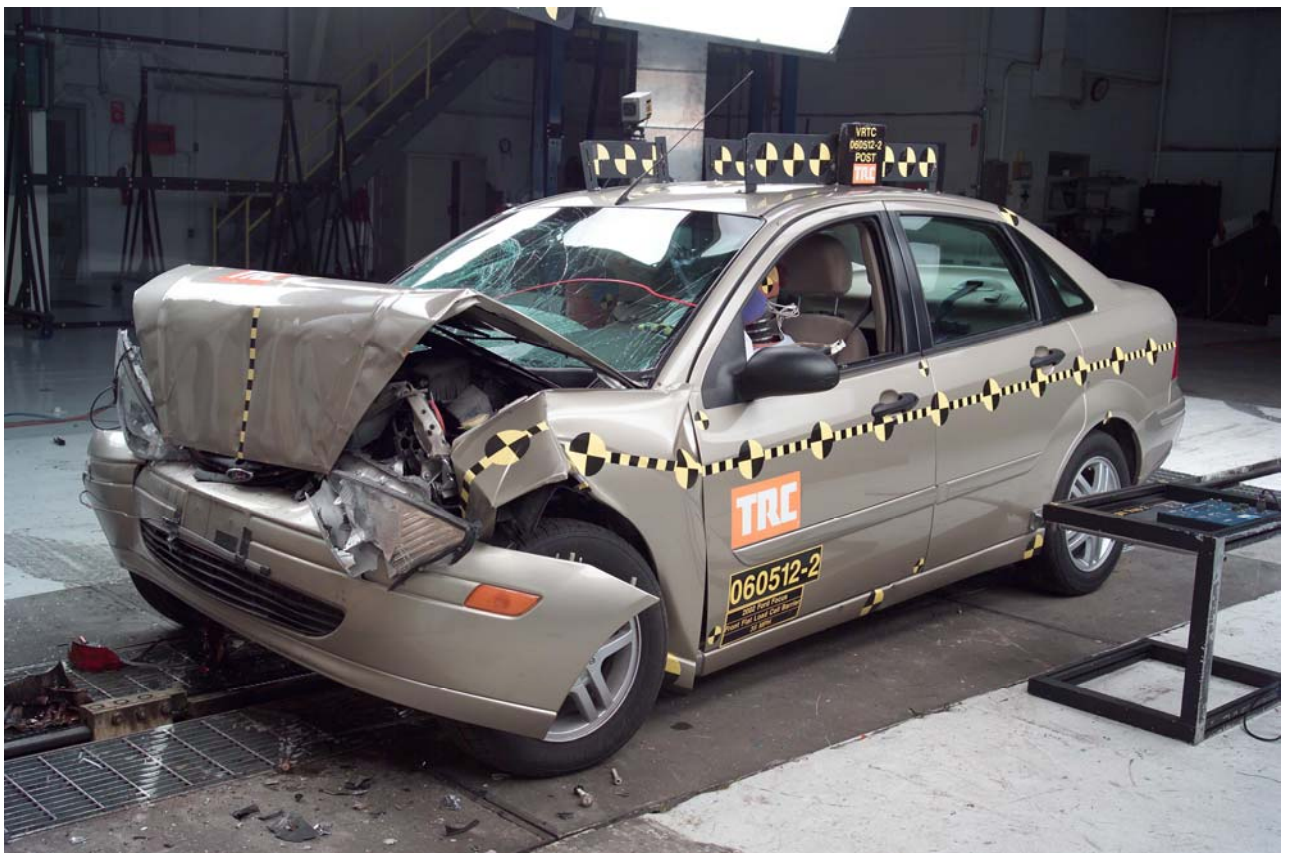


Figure A-6 Post-Test Left Front View



Figure A-7 Pre-Test Left Side View



Figure A-8 Post-Test Left Side View



Figure A-9 Pre-Test Left Rear View



Figure A-10 Post-Test Left Rear View



Figure A-11 Pre-Test Rear View

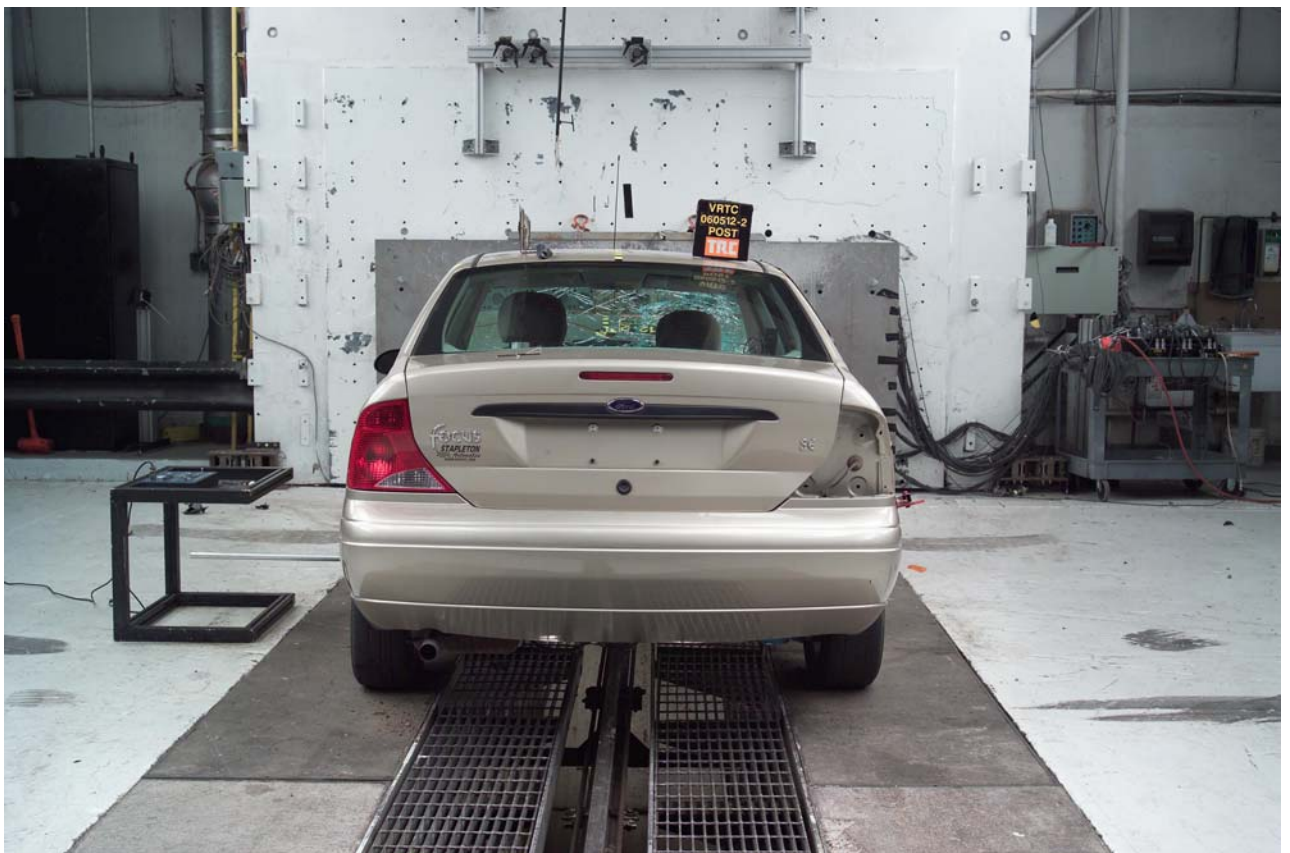


Figure A-12 Post-Test Rear View



Figure A-13 Pre-Test Right Rear View



Figure A-14 Post-Test Right Rear View



Figure A-15 Pre-Test Right Side View



Figure A-16 Post-Test Right Side View



Figure A-17 Pre-Test Right Front View



Figure A-18 Post-Test Right Front View



Figure A-19 Pre-Test Engine Compartment View

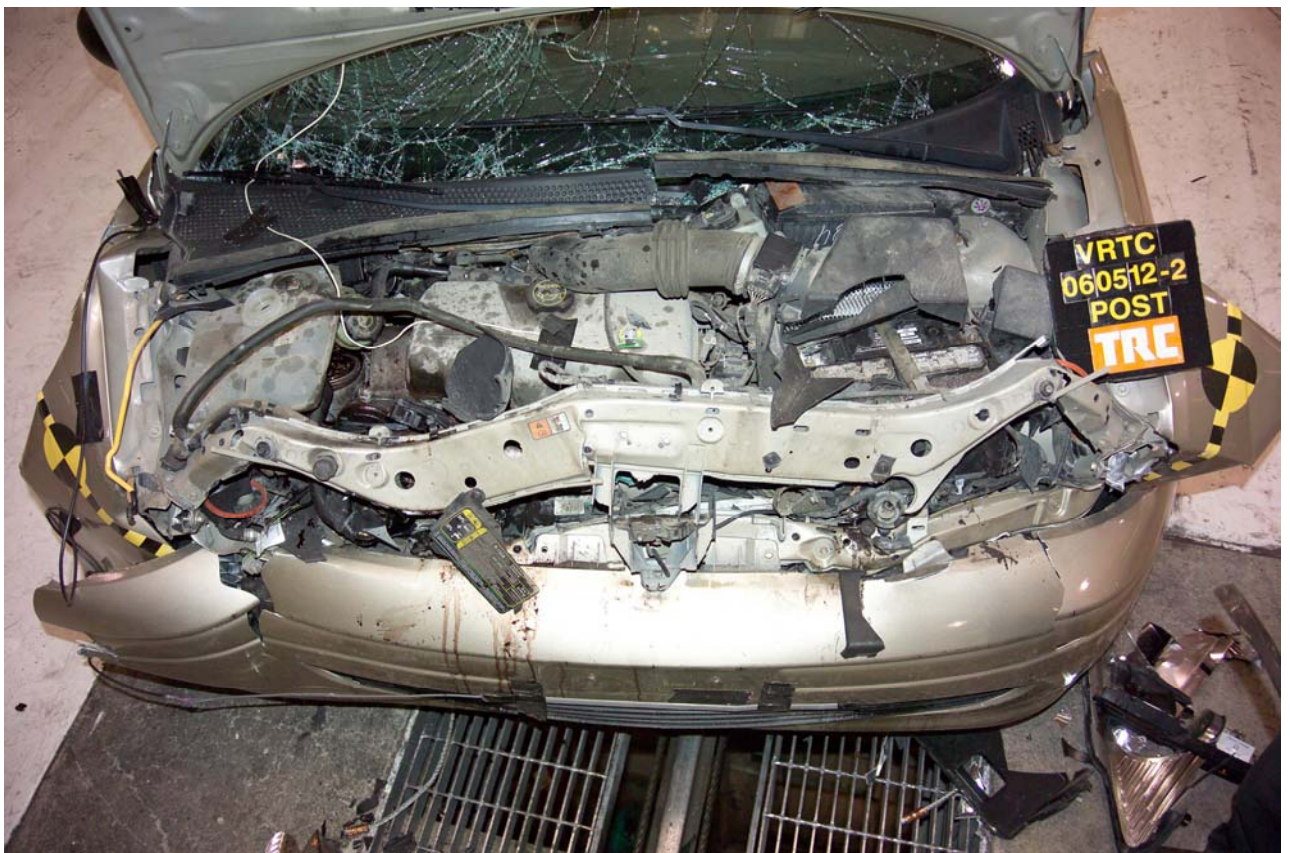


Figure A-20 Post-Test Engine Compartment View

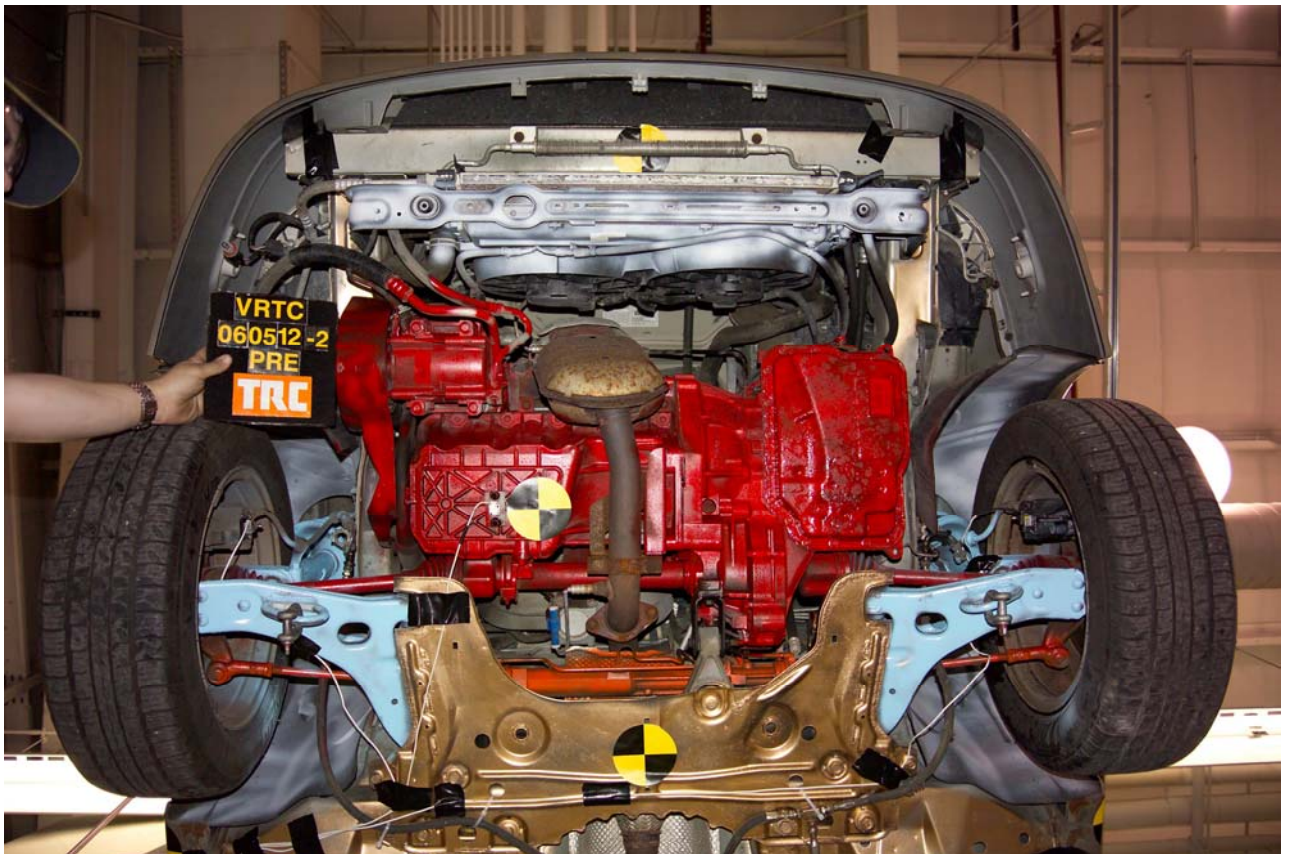


Figure A-21 Pre-Test Front Underbody View

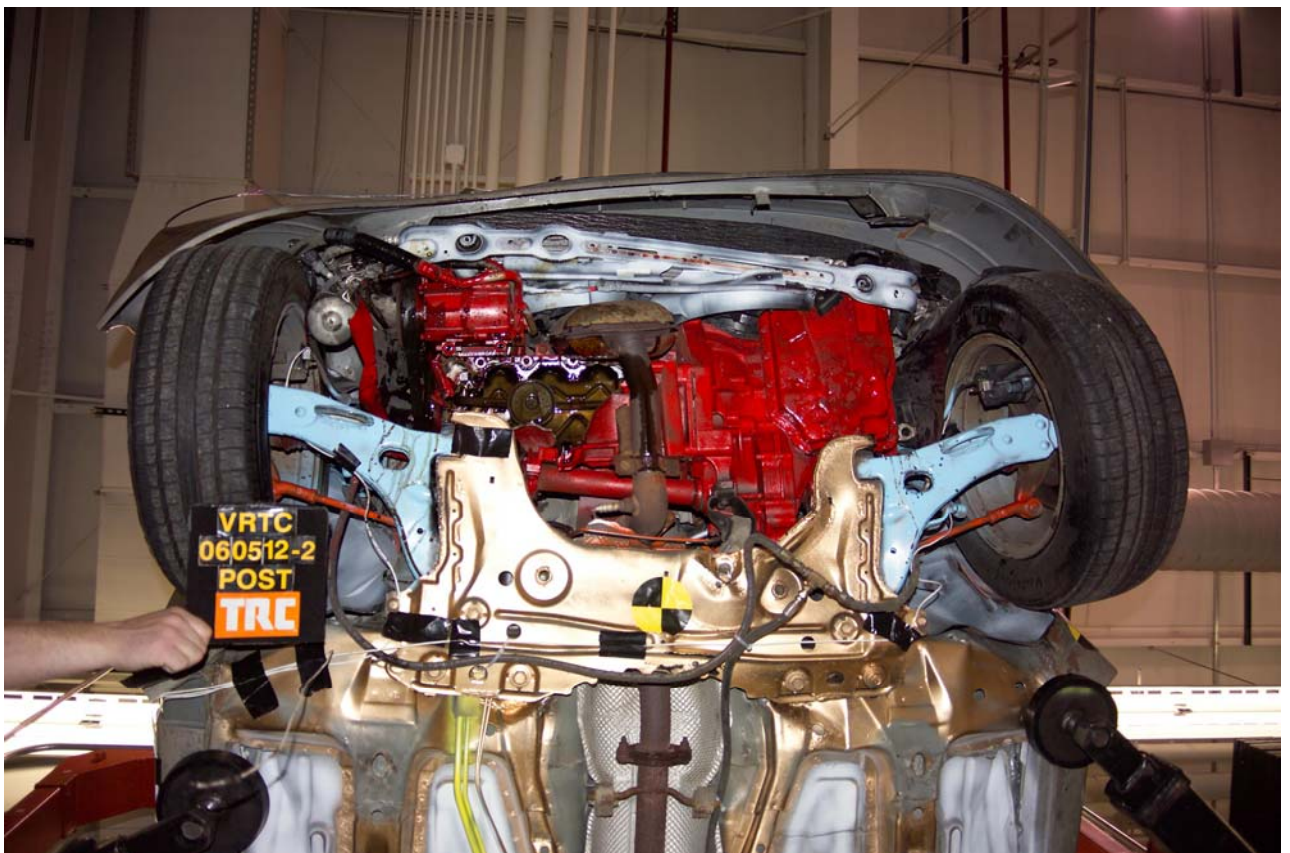


Figure A-22 Post-Test Front Underbody View

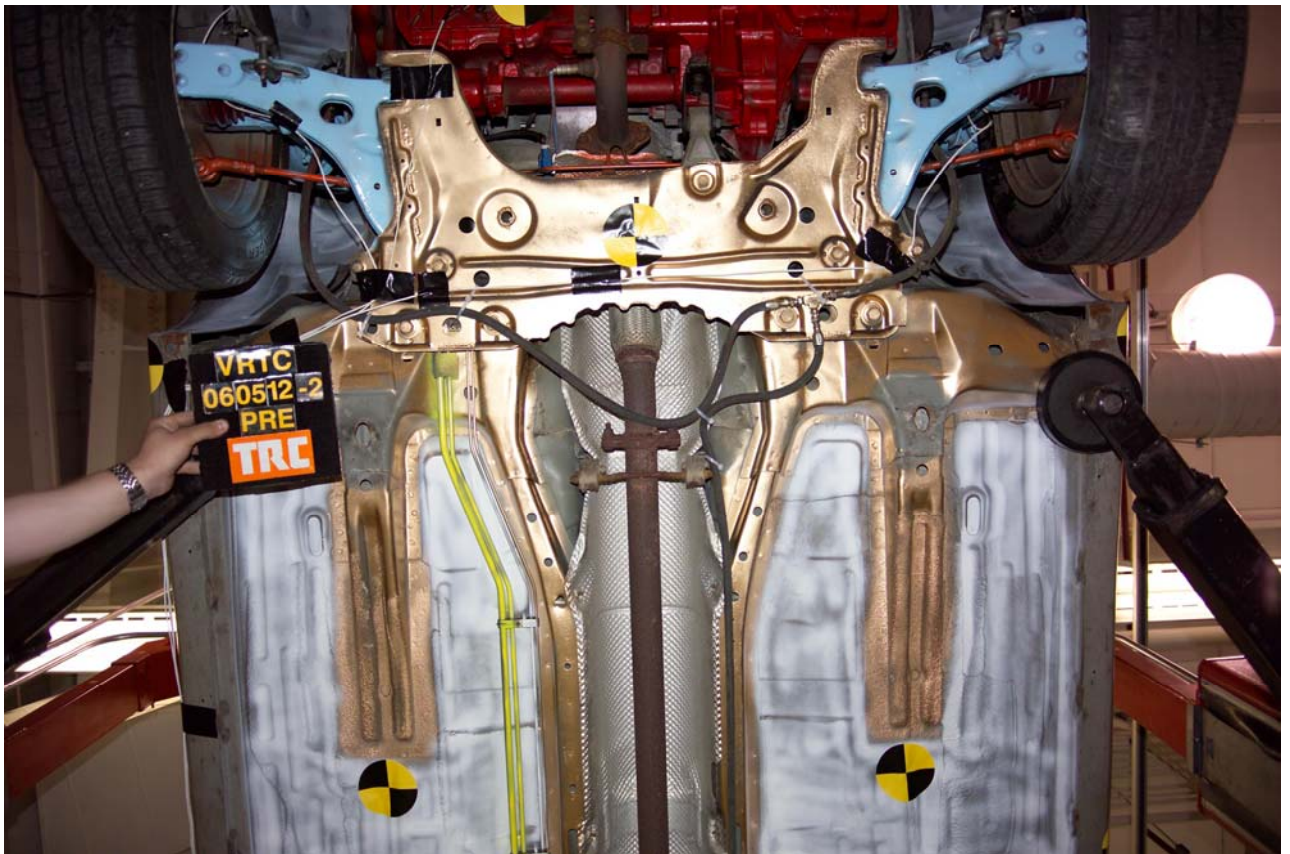


Figure A-23 Pre-Test Mid Front Underbody View

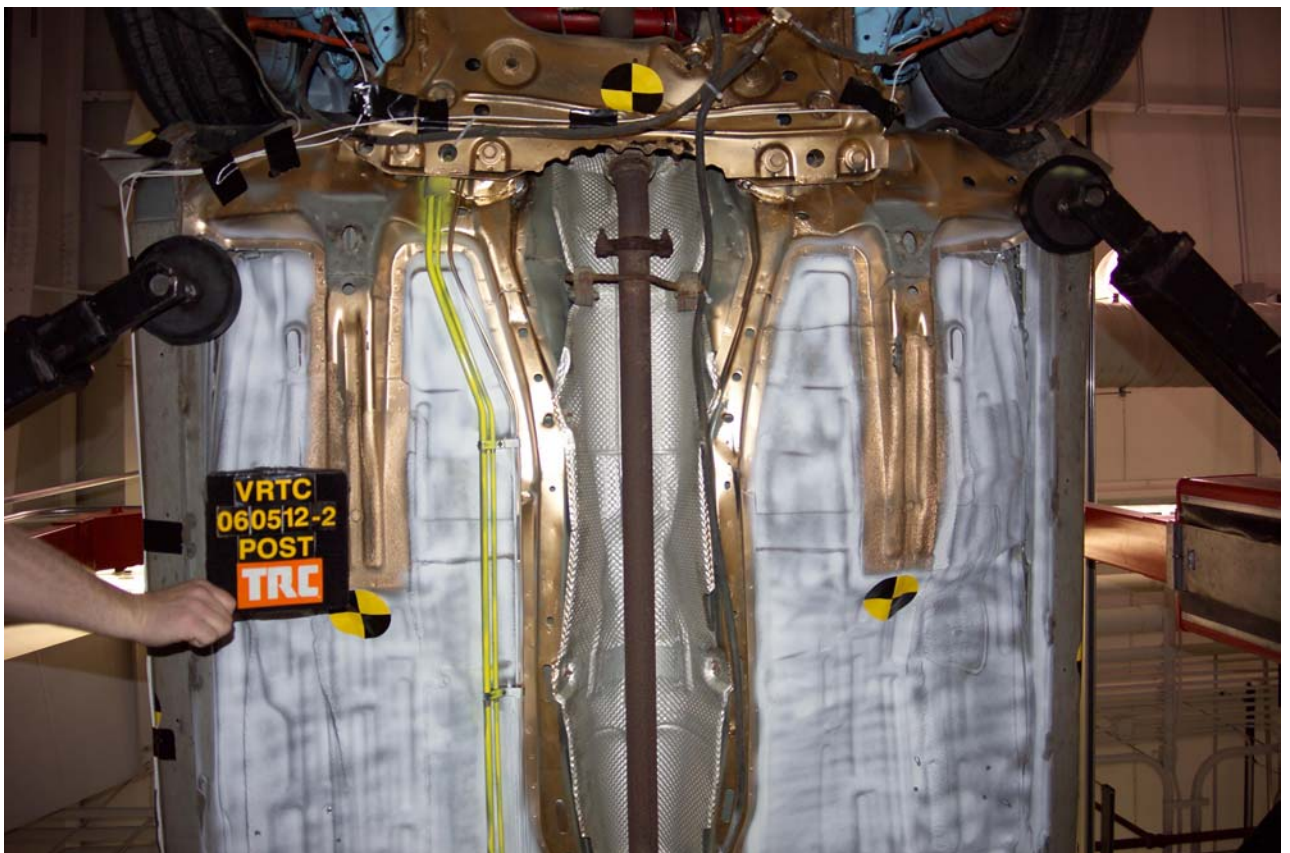


Figure A-24 Post-Test Mid Front Underbody View

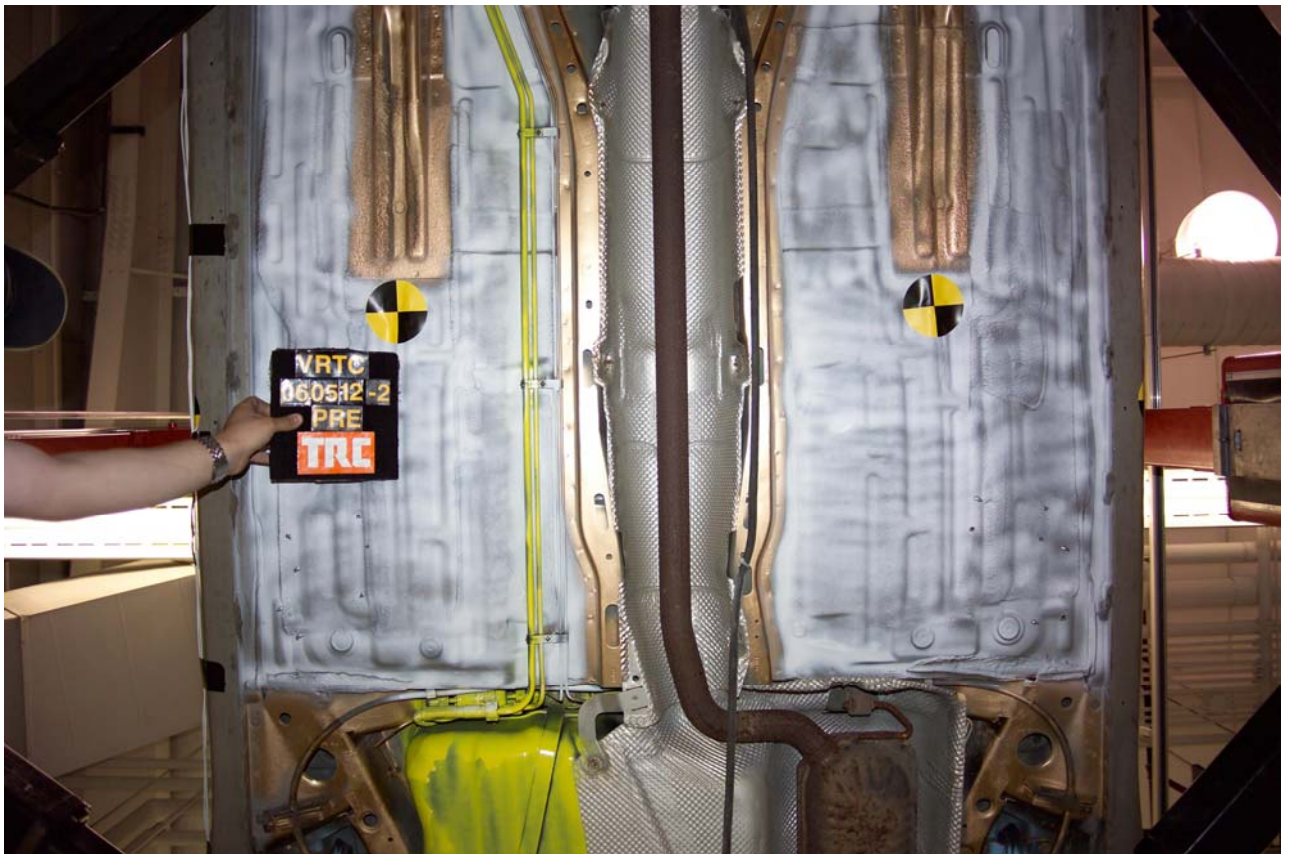


Figure A-25 Pre-Test Mid Underbody View



Figure A-26 Post-Test Mid Underbody View

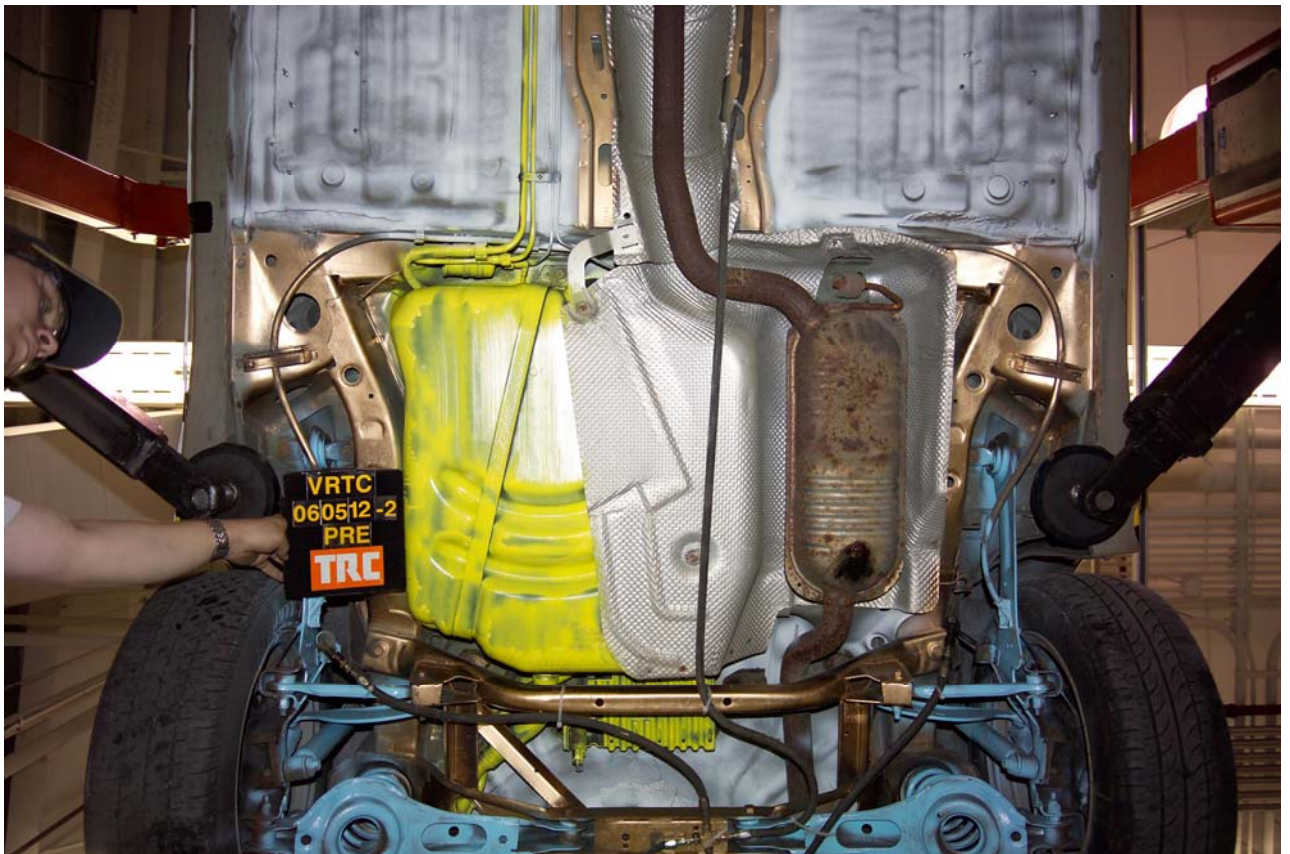


Figure A-27 Pre-Test Mid Rear Underbody View

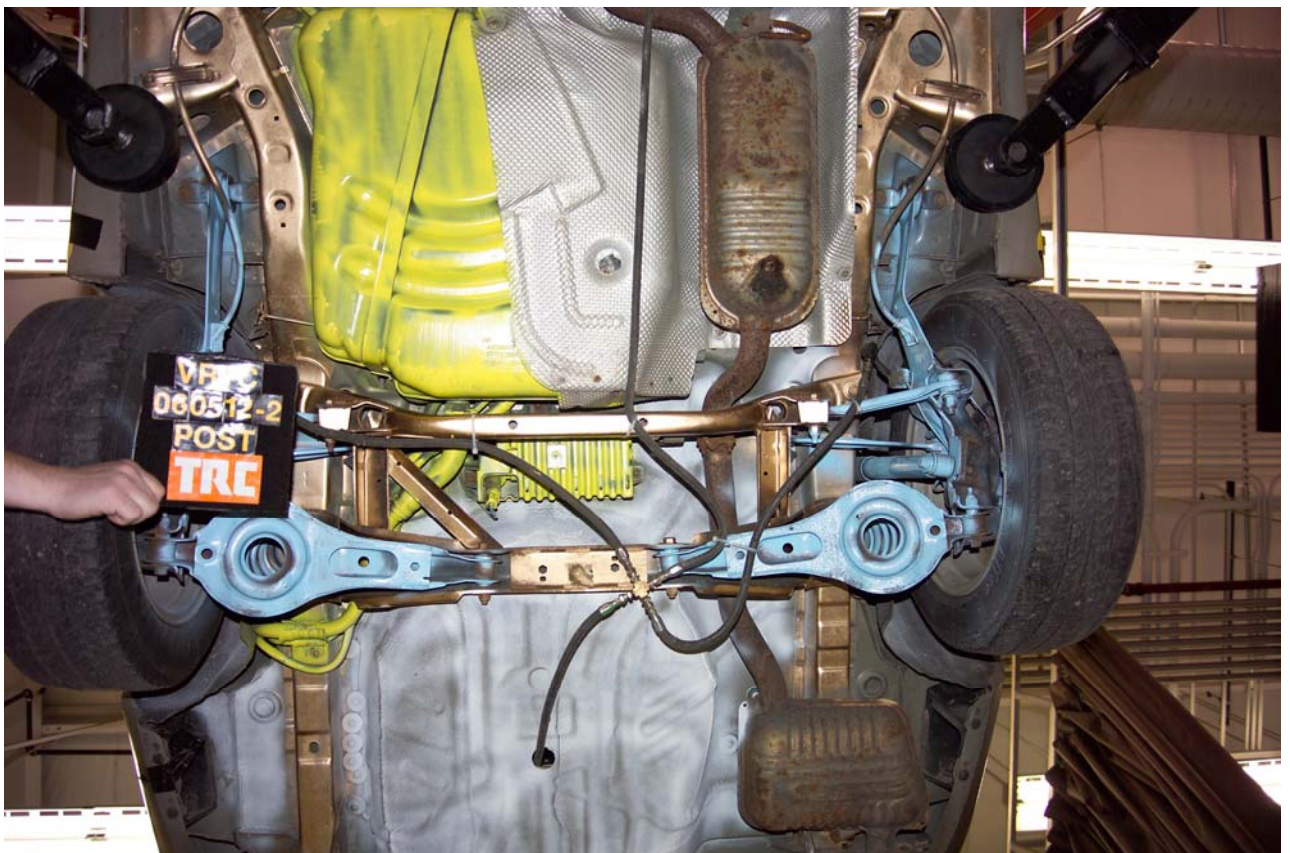


Figure A-28 Post-Test Mid Rear Underbody View

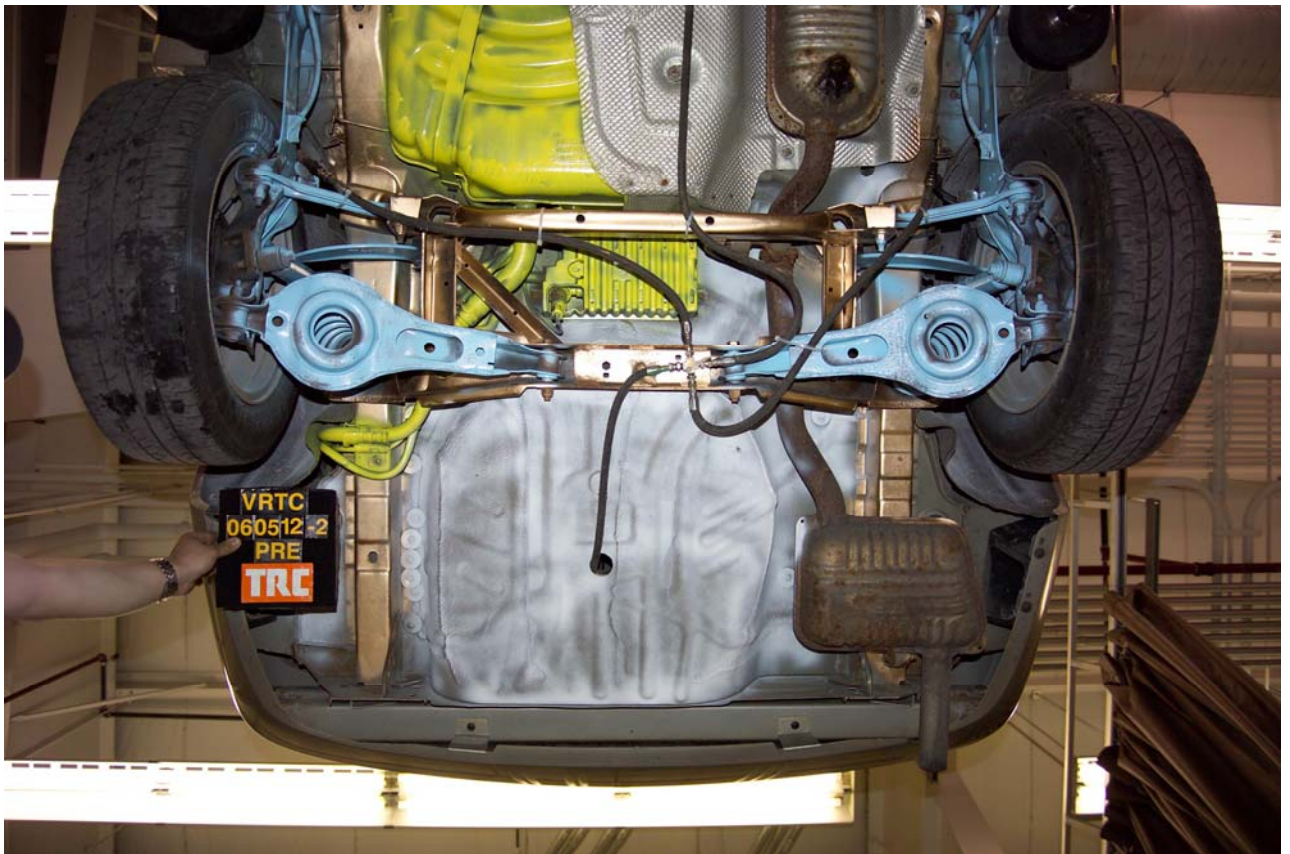


Figure A-29 Pre-Test Rear Underbody View

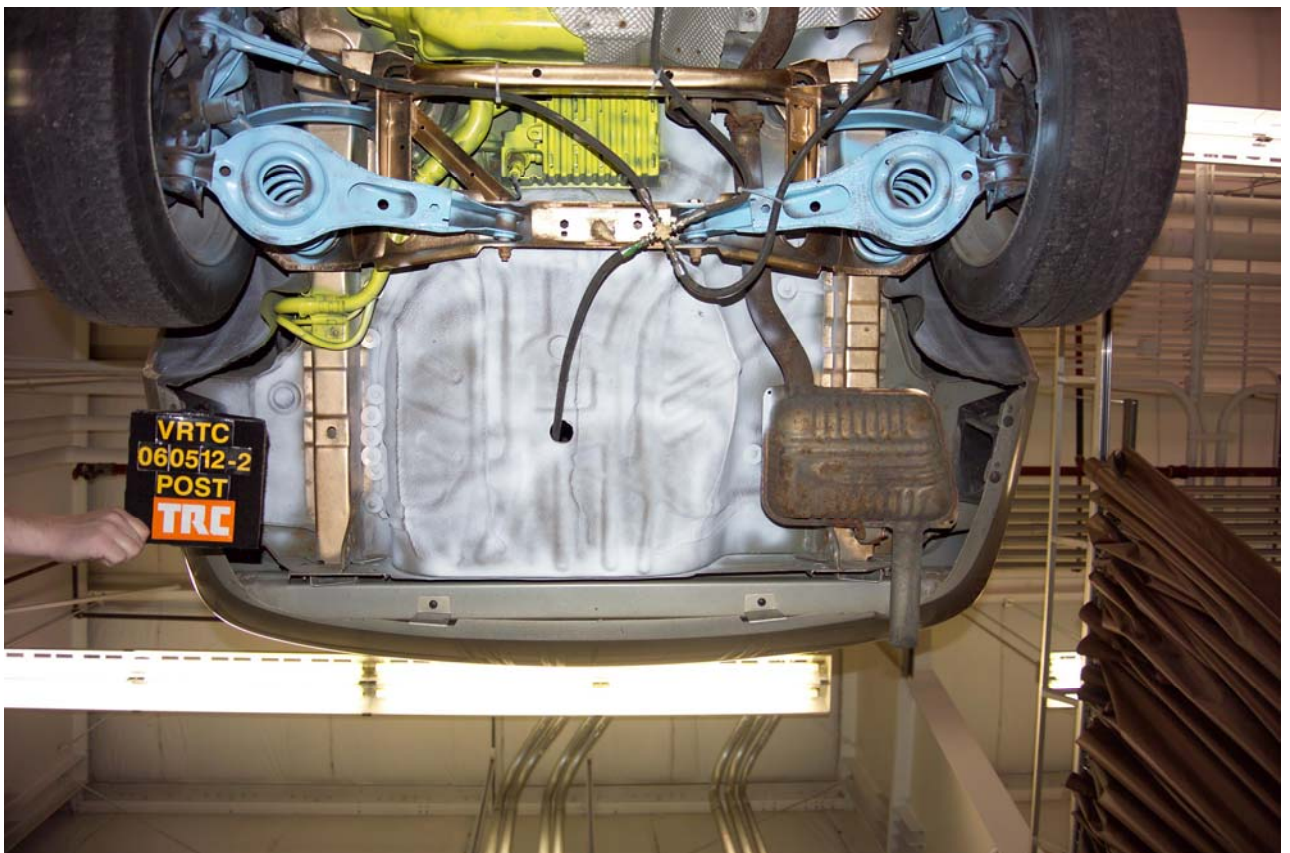


Figure A-30 Post-Test Rear Underbody View



Figure A-31 Pre-Test Windshield View

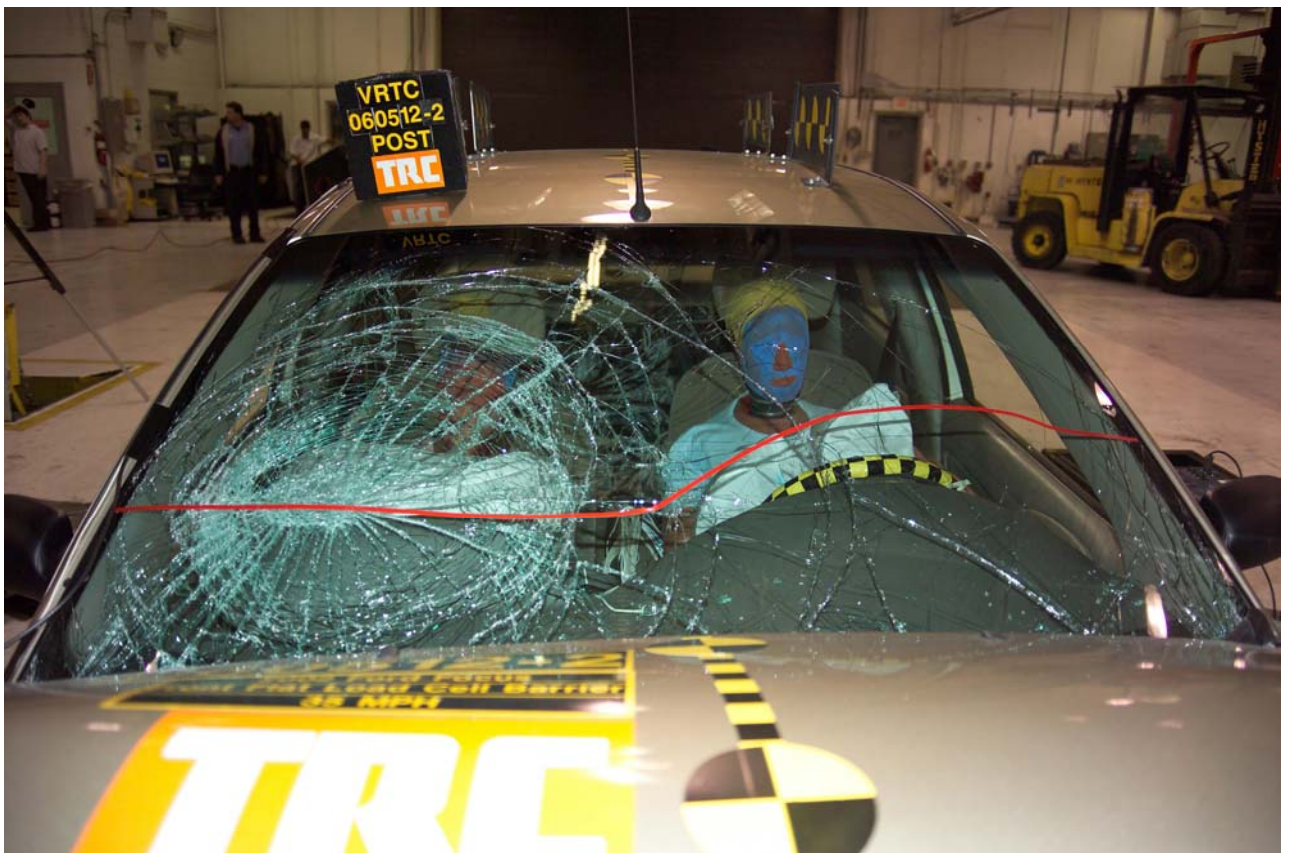


Figure A-32 Post-Test Windshield View

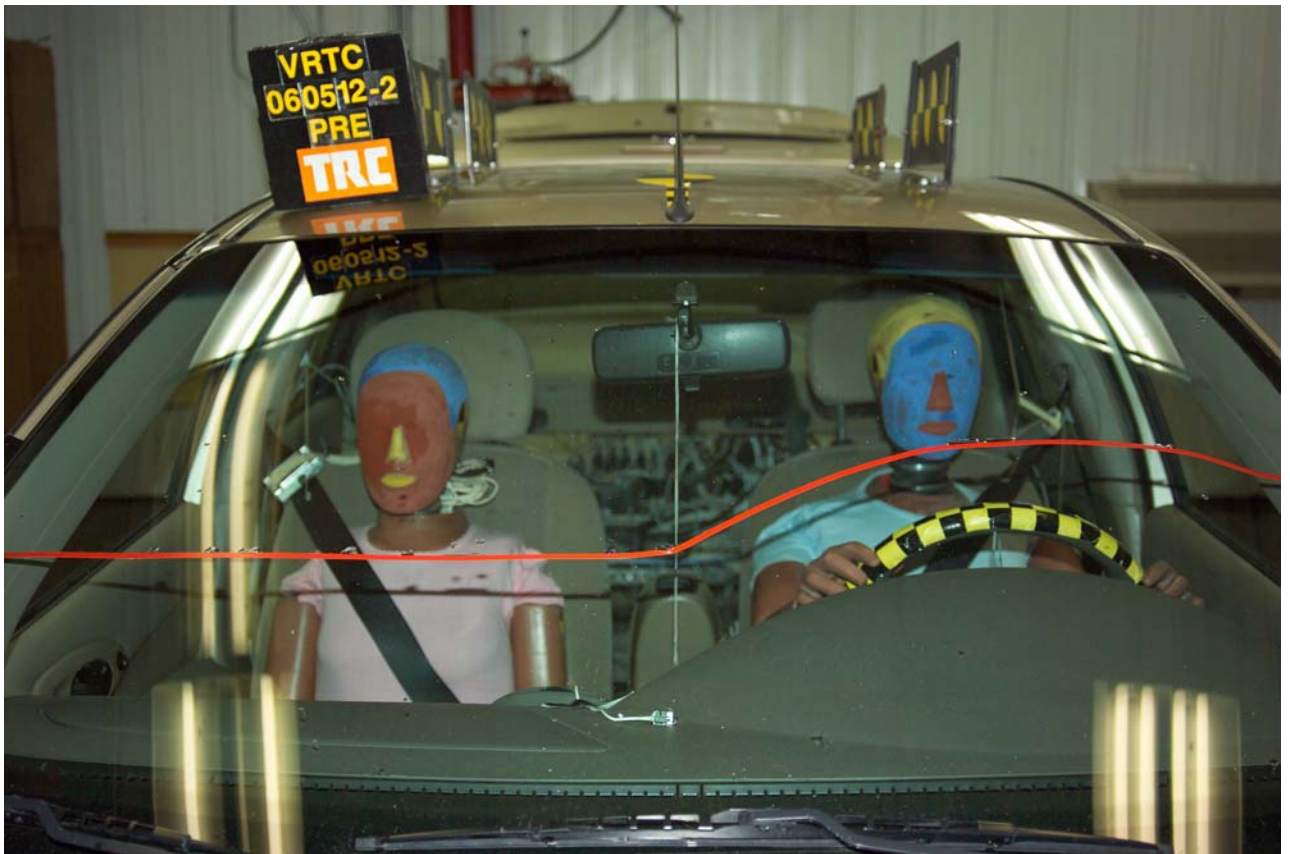


Figure A-33 Pre-Test Driver and Passenger Dummies through Windshield View



Figure A-34 Post-Test Driver and Passenger Dummies through Windshield View



Figure A-35 Pre-Test Driver Dummy - View 1

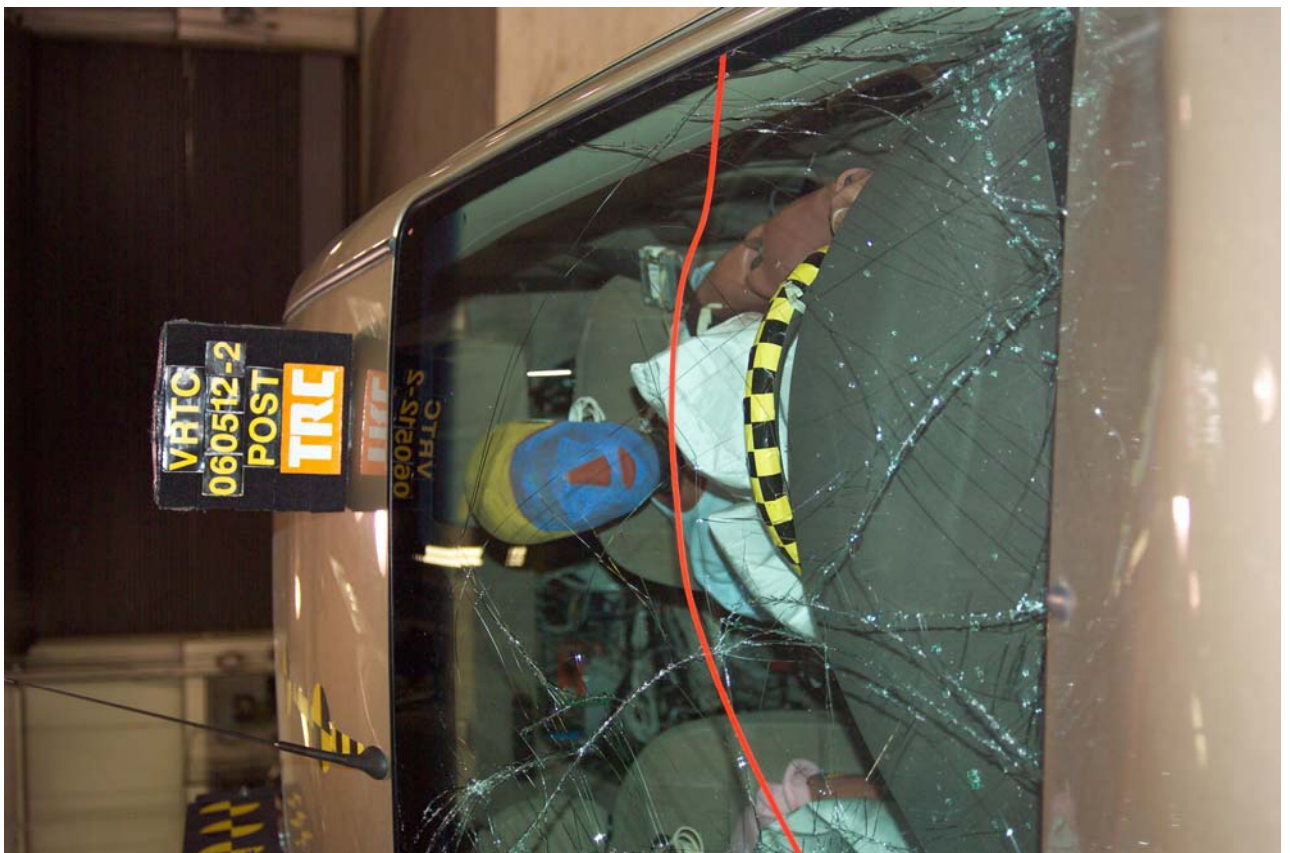


Figure A-36 Post-Test Driver Dummy - View 1



Figure A-37 Pre-Test Driver Dummy - View 2



Figure A-38 Post-Test Driver Dummy - View 2



Figure A-39 Pre-Test Driver Dummy - View 3



Figure A-40 Post-Test Driver Dummy - View 3



Figure A-41 Pre-Test Driver Dummy - View 4



Figure A-42 Post-Test Driver Dummy - View 4

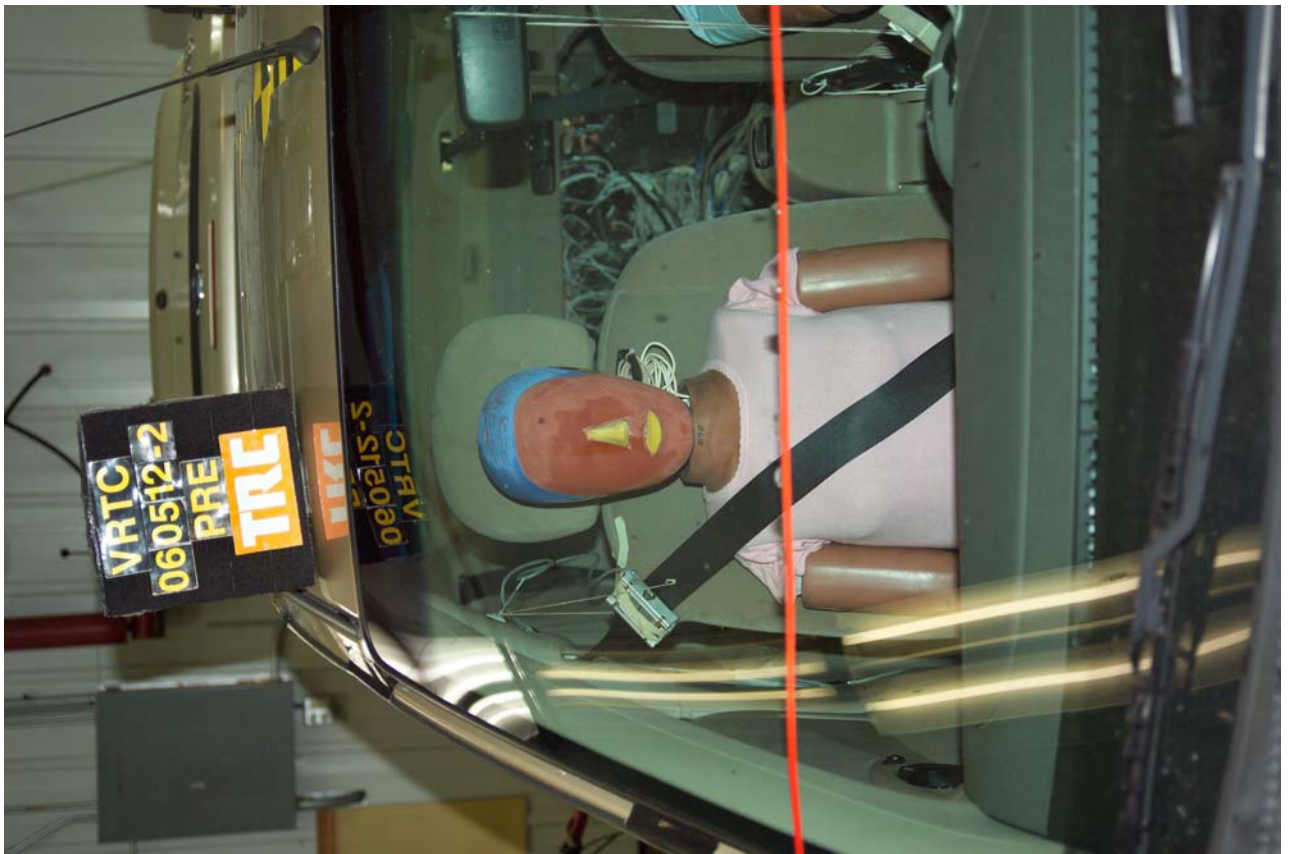


Figure A-43 Pre-Test Passenger Dummy - View 1

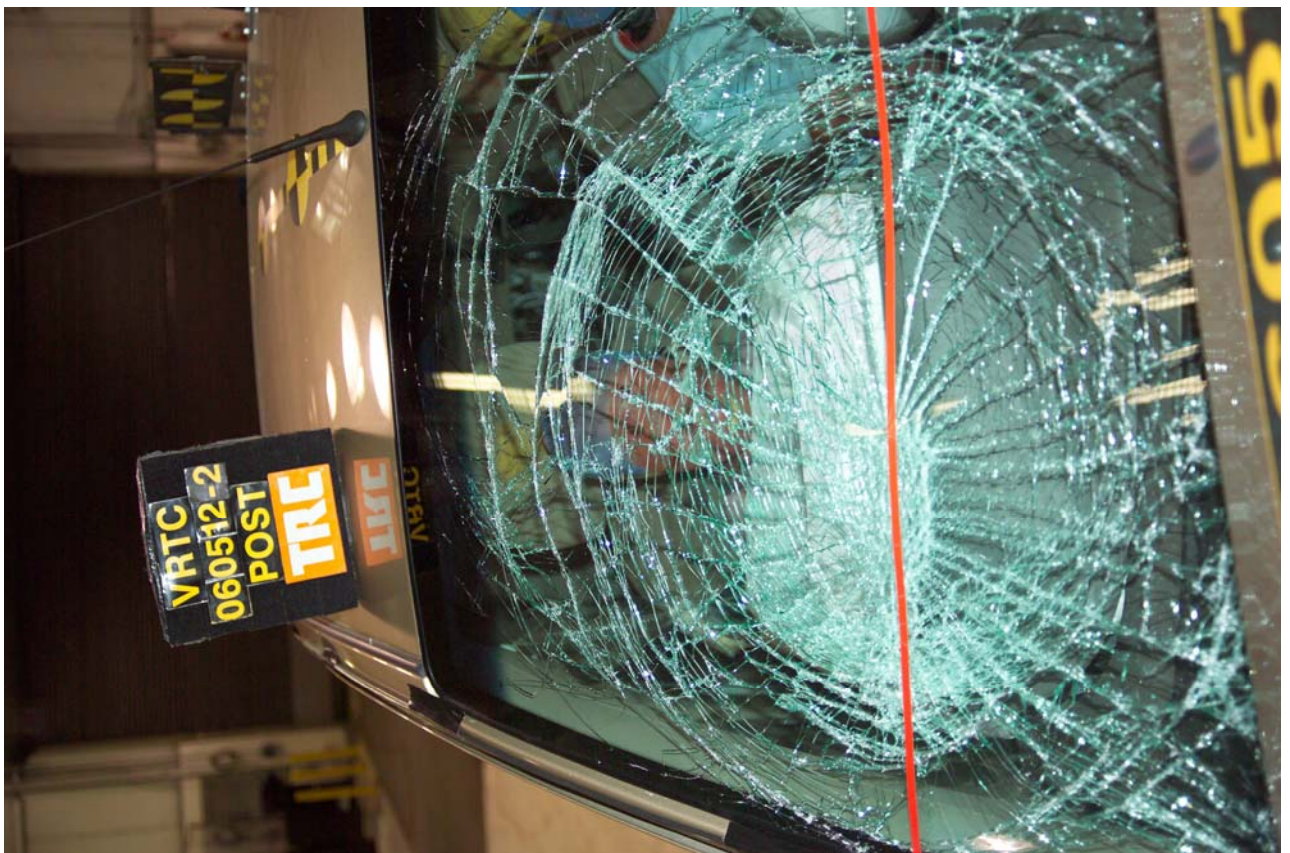


Figure A-44 Post-Test Passenger Dummy - View 1



Figure A-45 Pre-Test Passenger Dummy - View 2



Figure A-46 Post-Test Passenger Dummy - View 2



Figure A-47 Pre-Test Passenger Dummy - View 3



Figure A-48 Post-Test Passenger Dummy - View 3



Figure A-49 Pre-Test Passenger Dummy - View 4



Figure A-50 Post-Test Passenger Dummy - View 4



Figure A-51 Post-Test Driver Dummy Overall Contact View



Figure A-52 Post-Test Driver Dummy Head Contact - View 1



Figure A-53 Post-Test Driver Dummy Head Contact - View 2



Figure A-54 Post-Test Driver Dummy Knee Contact View



Figure A-55 Post-Test Driver Dash Panel Deformation View

Intentionally Left Blank



Figure A-56 Post-Test Driver Floorboard Deformation View



Figure A-57 Post-Test Driver Toeboard Deformation View

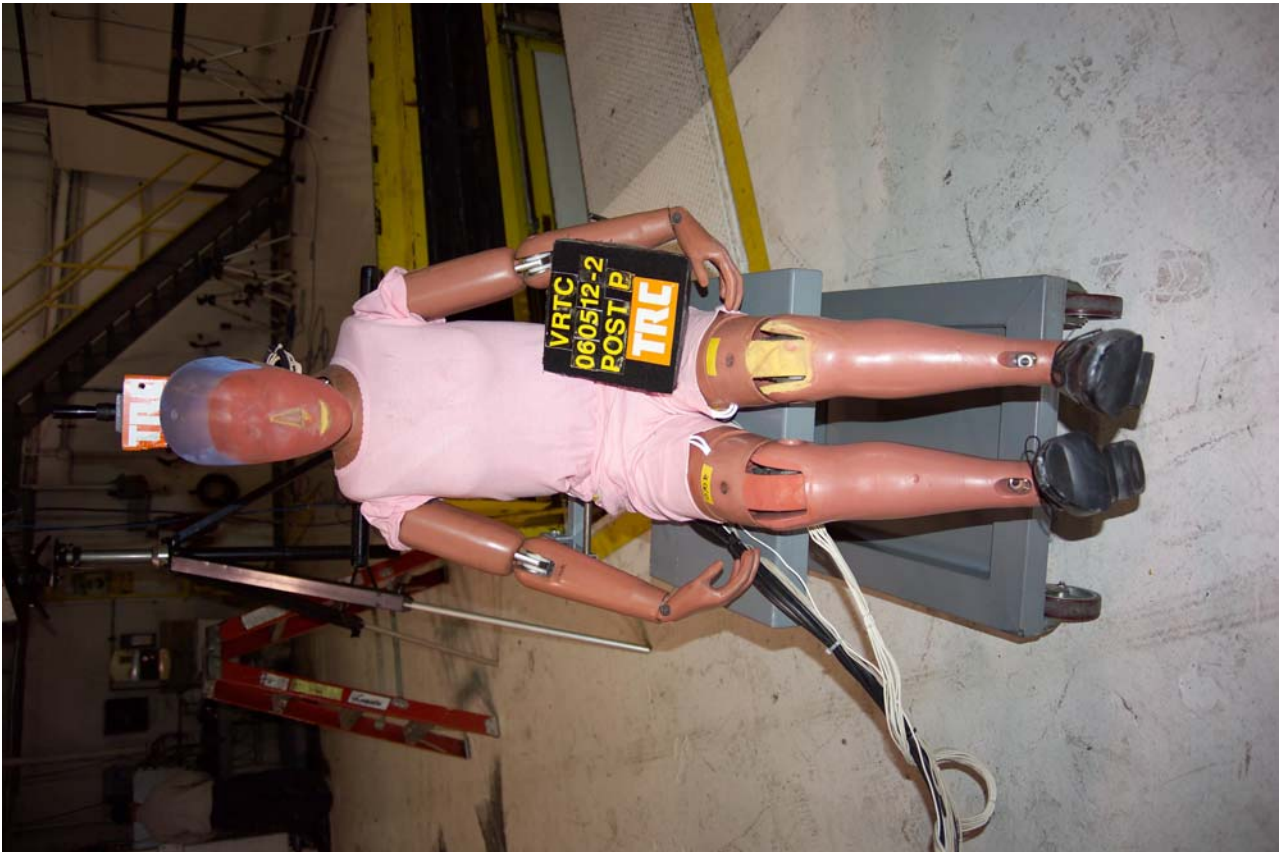


Figure A-58 Post-Test Passenger Dummy Overall Contact View



Figure A-59 Post-Test Passenger Dummy Head Contact - View 1



Figure A-60 Post-Test Passenger Dummy Head Contact - View 2



Figure A-61 Post-Test Passenger Dummy Knee Contact View



Figure A-62 Post-Test Passenger Dash Panel Deformation View

Intentionally Left Blank



Figure A-63 Post-Test Passenger Floorboard Deformation View



Figure A-64 Post-Test Passenger Toeboard Deformation View



Figure A-65 Vehicle Certification and Tire Information Label View



Figure A-66 Post-Test Digital Light Trap Readout - View 1



Figure A-67 Post-Test Digital Light Trap Readout - View 2



Figure A-68 Post-Test Digital Light Trap Readout - View 3

Appendix B

Data Plots



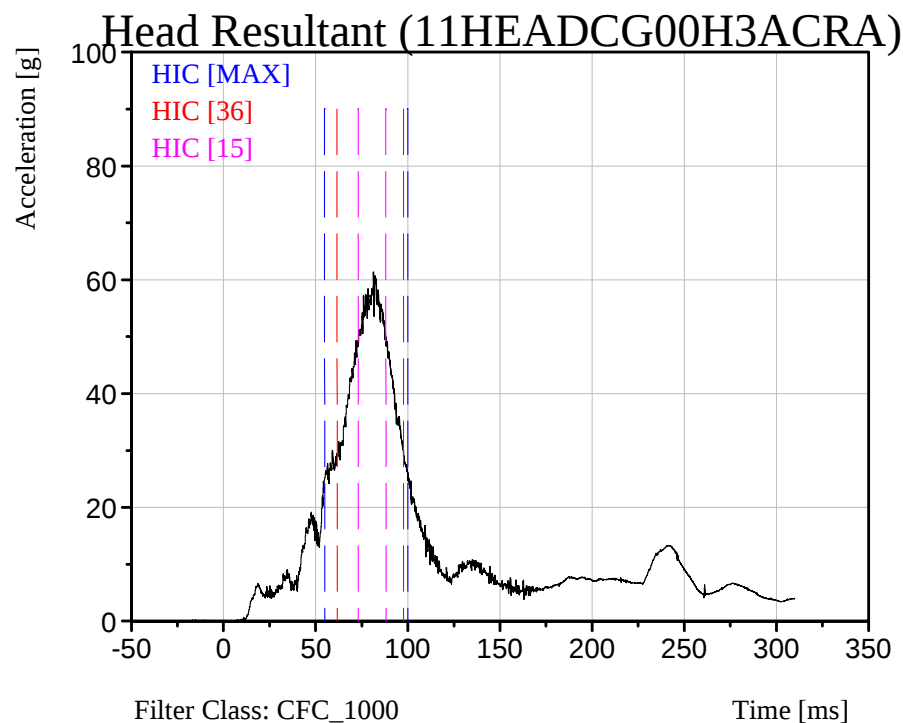
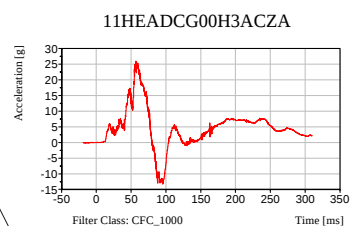
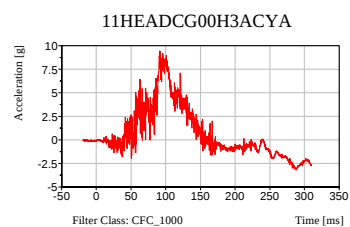
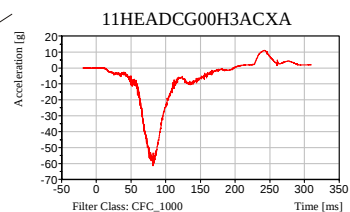
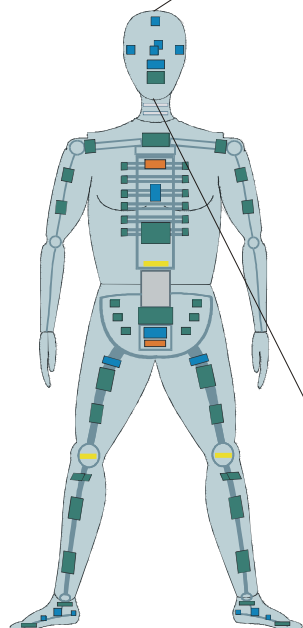
Head Injury Criterion (HIC)

Date: 05/12/2006
Time: 15:38

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 060512-2



Dummy: HIII 50th Male
Seating Position:
Driver

	<u>T1</u> (Begin)	<u>T2</u> (End)	<u>Avg. g T1 to T2</u>
HIC [Max.] = 511.75	54.88 ms	100.00 ms	41.84 g
HIC [36] = 505.22	61.68 ms	97.68 ms	45.55 g
HIC [15] = 336.77	73.12 ms	88.16 ms	54.93 g

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



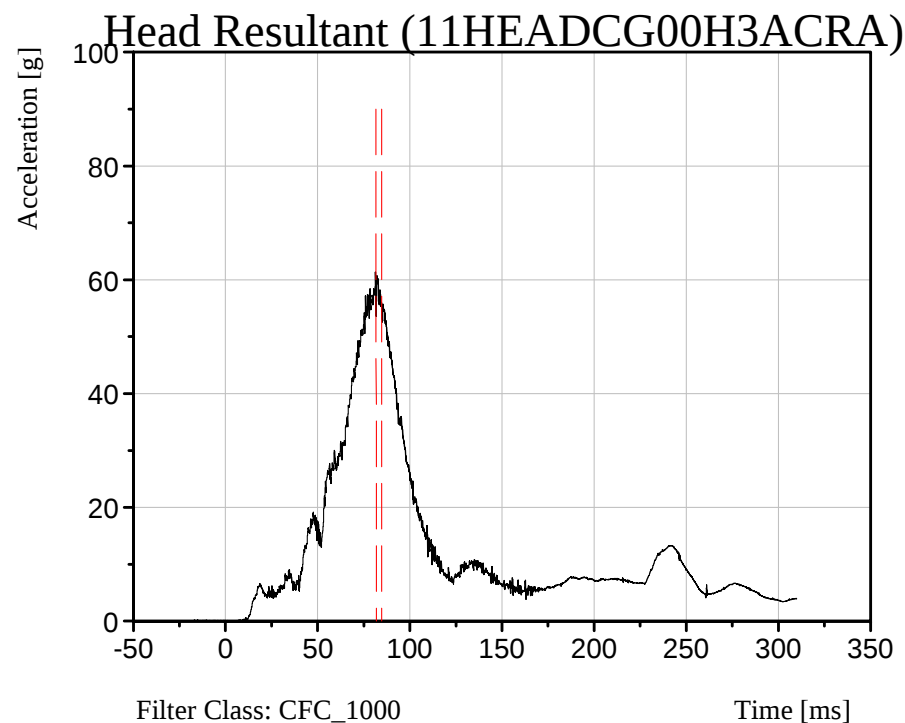
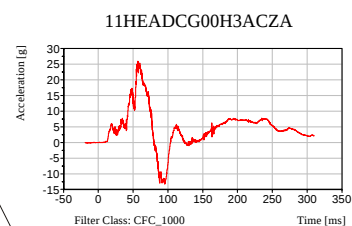
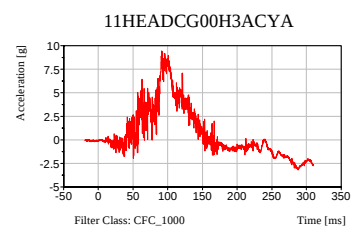
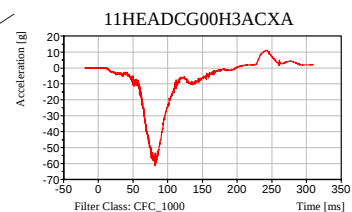
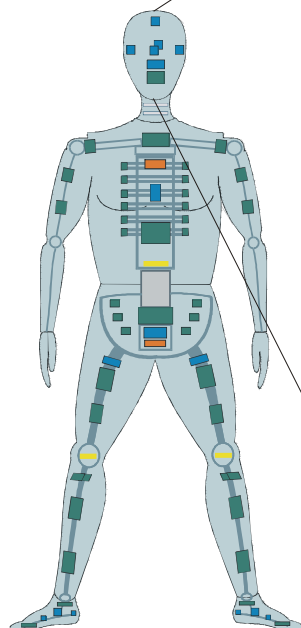
Date: 05/12/2006
Time: 15:38

3 ms Duration Acceleration (Head)

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 060512-2



3 ms Duration Acceleration = 55.04 g

<u>T1</u> (Begin)	<u>T2</u> (End)
81.79 ms	84.79 ms

Dummy: HIII 50th Male

Seating Position:

Driver

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



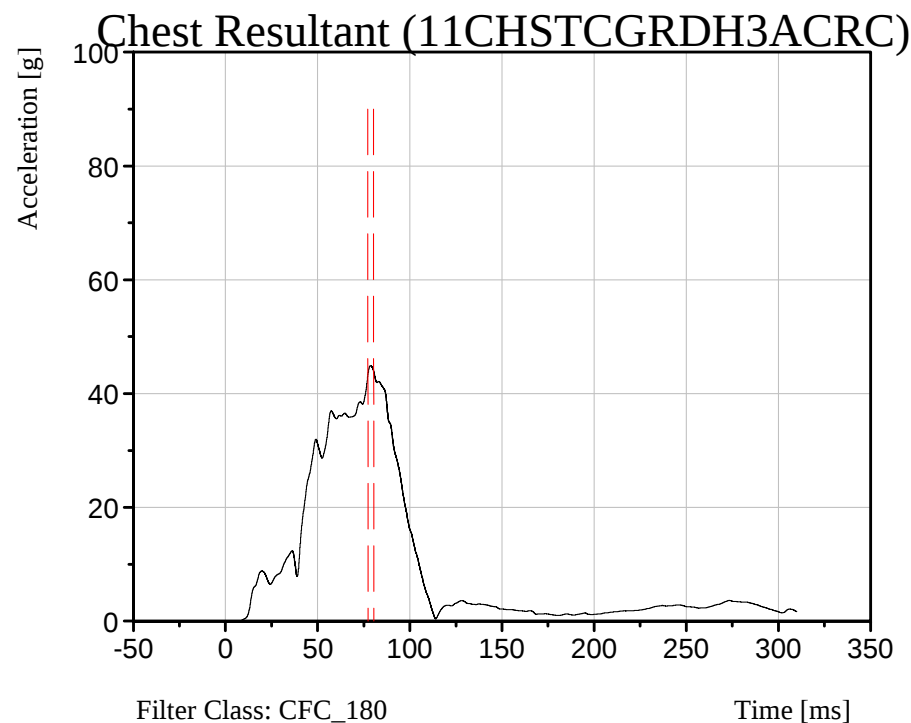
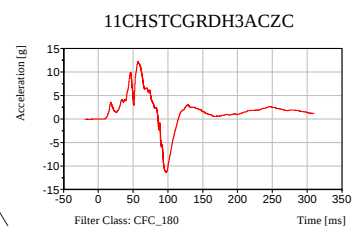
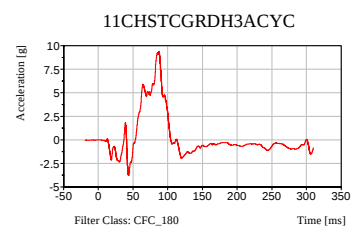
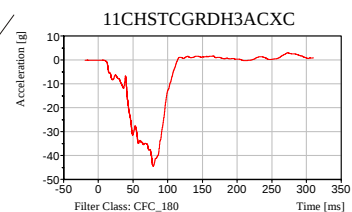
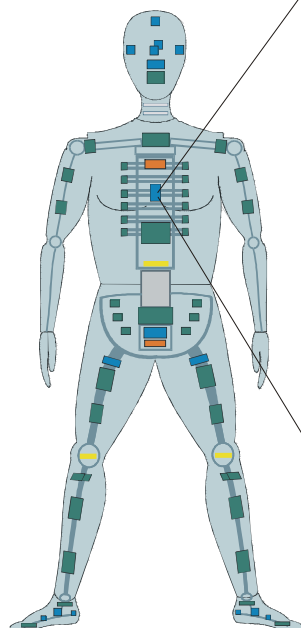
Date: 05/12/2006
Time: 15:38

3 ms Duration Acceleration (Chest)

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 060512-2



3 ms Duration Acceleration = 43.82 g
Chest Severity Index = 424.89

<u>T1</u> (Begin)	<u>T2</u> (End)
77.39 ms	80.39 ms

Dummy: HIII 50th Male
Seating Position:

Driver

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



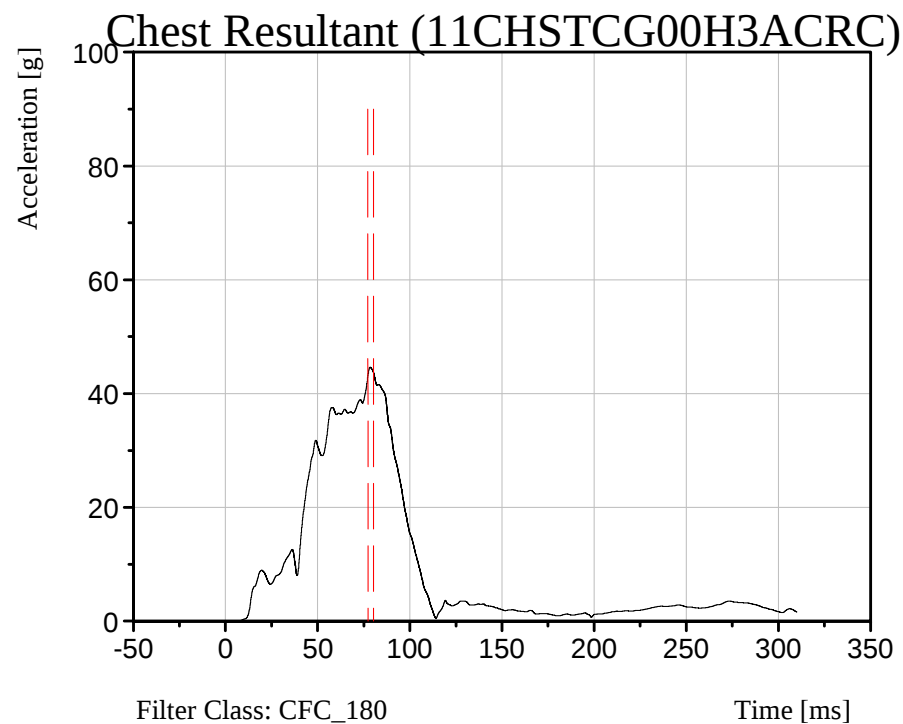
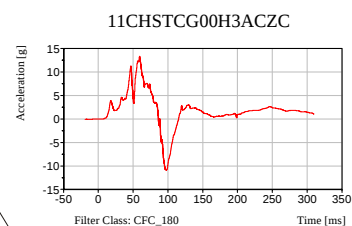
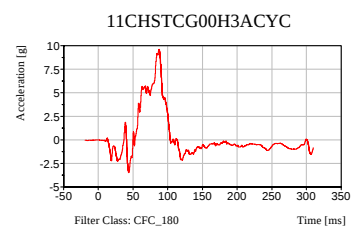
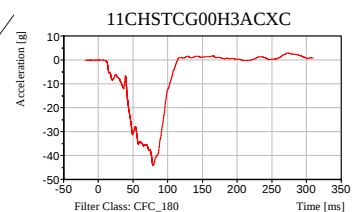
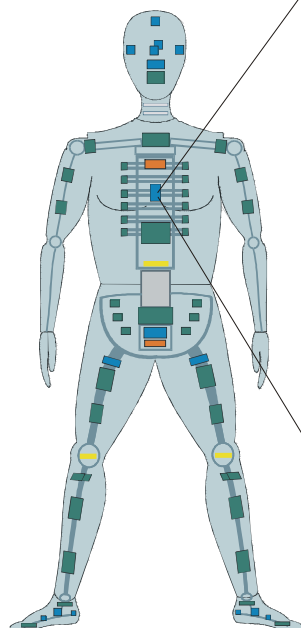
Date: 05/12/2006
Time: 15:38

3 ms Duration Acceleration (Chest)

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 060512-2



3 ms Duration Acceleration = 43.57 g
Chest Severity Index = 425.04

<u>T1</u> (Begin)	<u>T2</u> (End)
77.36 ms	80.36 ms

Dummy: HIII 50th Male
Seating Position:

Driver

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



Date: 05/12/2006
Time: 15:38

Chest Deflection

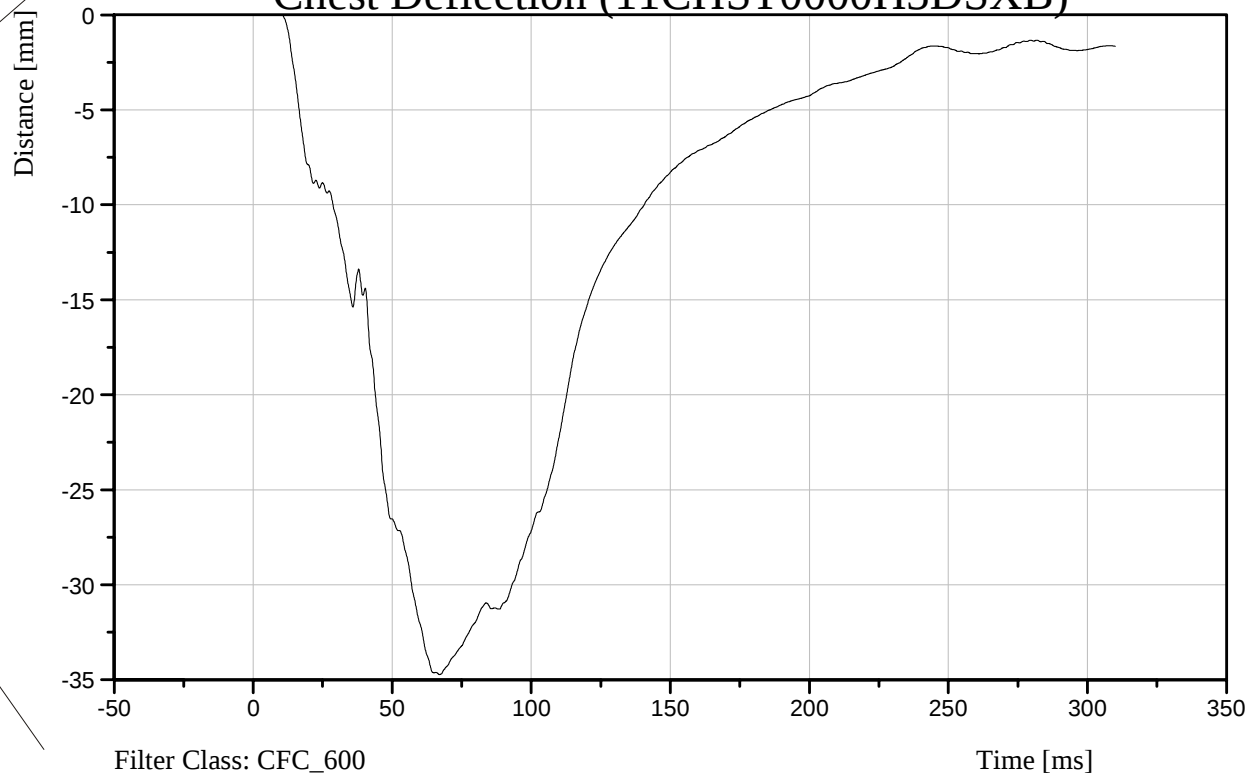
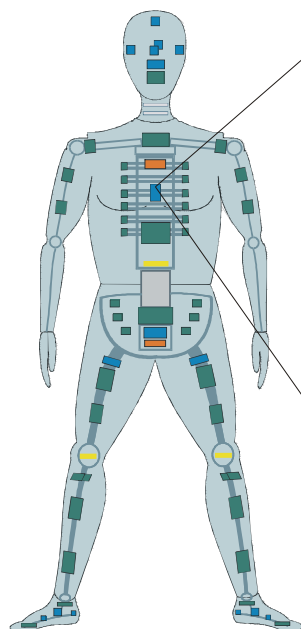
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 060512-2

Test Orientation = Frontal

Chest Deflection (11CHST0000H3DSXB)



Dummy: HIII 50th Male

Seating Position:

Driver

[Max.] 0.00 mm at -2.96 ms

[Min.] -34.73 mm at 66.96 ms

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



Neck Moment about the Occipital Condyle (NECK OM)

Date: 05/12/2006
Time: 15:38

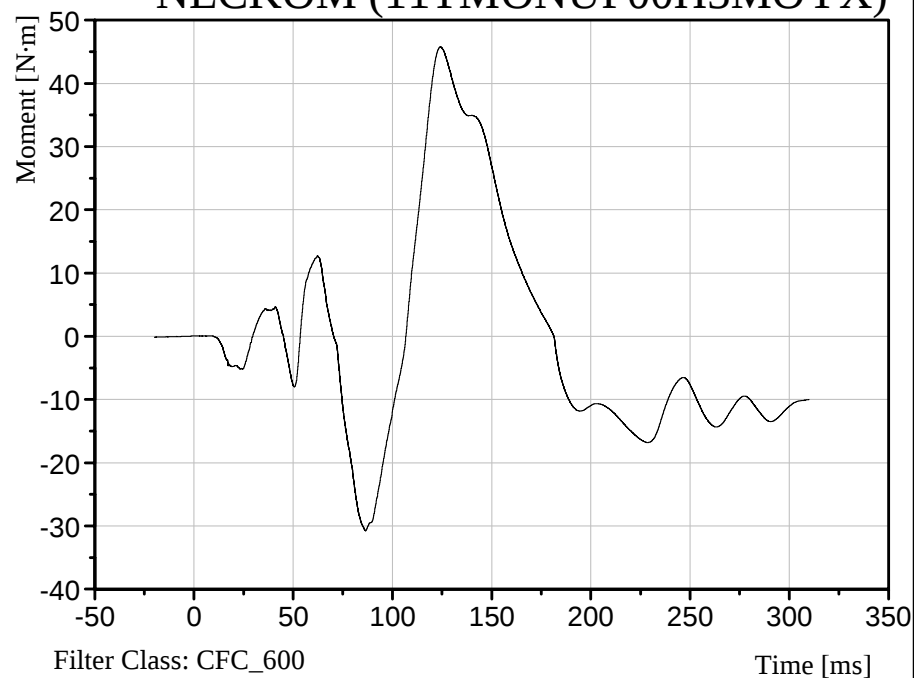
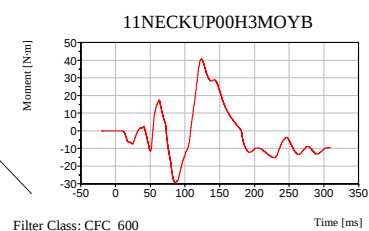
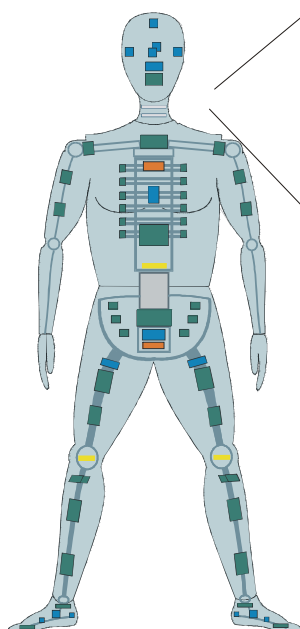
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 060512-2

Test Orientation = Frontal

NECKOM (11TMONUP00H3MOYX)



Dummy: HIII 50th Male
Seating Position:

Driver

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

[Max.] 45.79 N·m at 124.00 ms

[Min.] -30.75 N·m at 86.40 ms

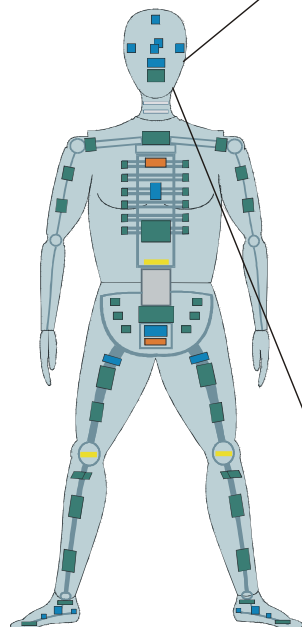


Date: 05/12/2006
Time: 15:38

Neck Injury Predictor (NIJ)

Customer: VRTC

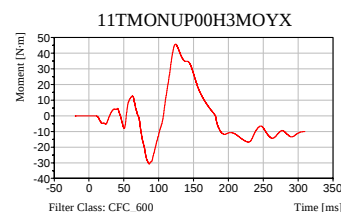
Test Orientation = Frontal
Fzc(Tension) = 6806
Fzc(Compression) = 6160
Myc(Extension) = 135
Myc(Flexion) = 310



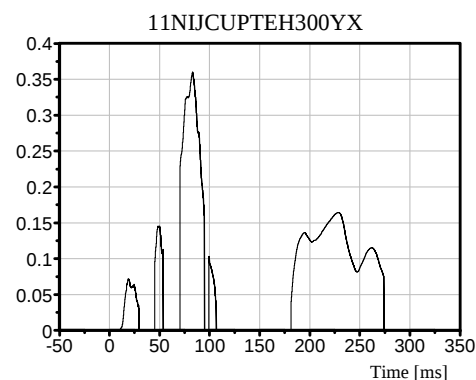
Dummy: HIII 50th Male
Seating Position:

Driver

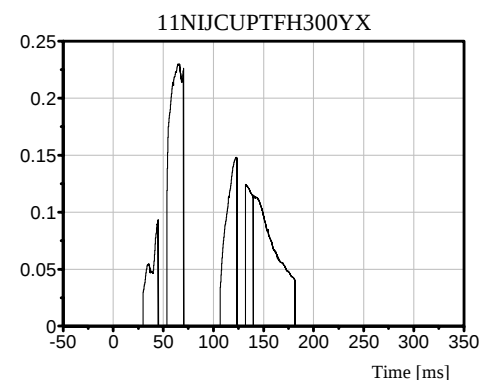
NIJ Source Code: (Fz/Fzc)+(My/Myc)



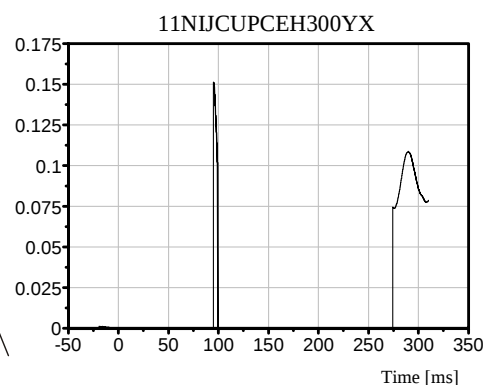
TRC Inc. Test Lab: CTF
Test Number: 060512-2



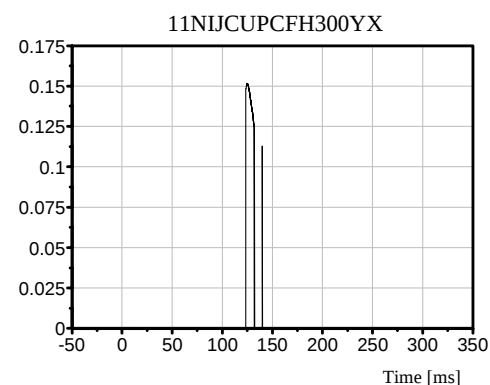
Max [NTE] 0.3600 at 82.88 ms



Max [NTF] 0.2301 at 65.92 ms



Max [NCE] 0.1514 at 95.04 ms



Max [NCF] 0.1517 at 124.72 ms



Neck Shear Force

Date: 05/12/2006
Time: 15:38

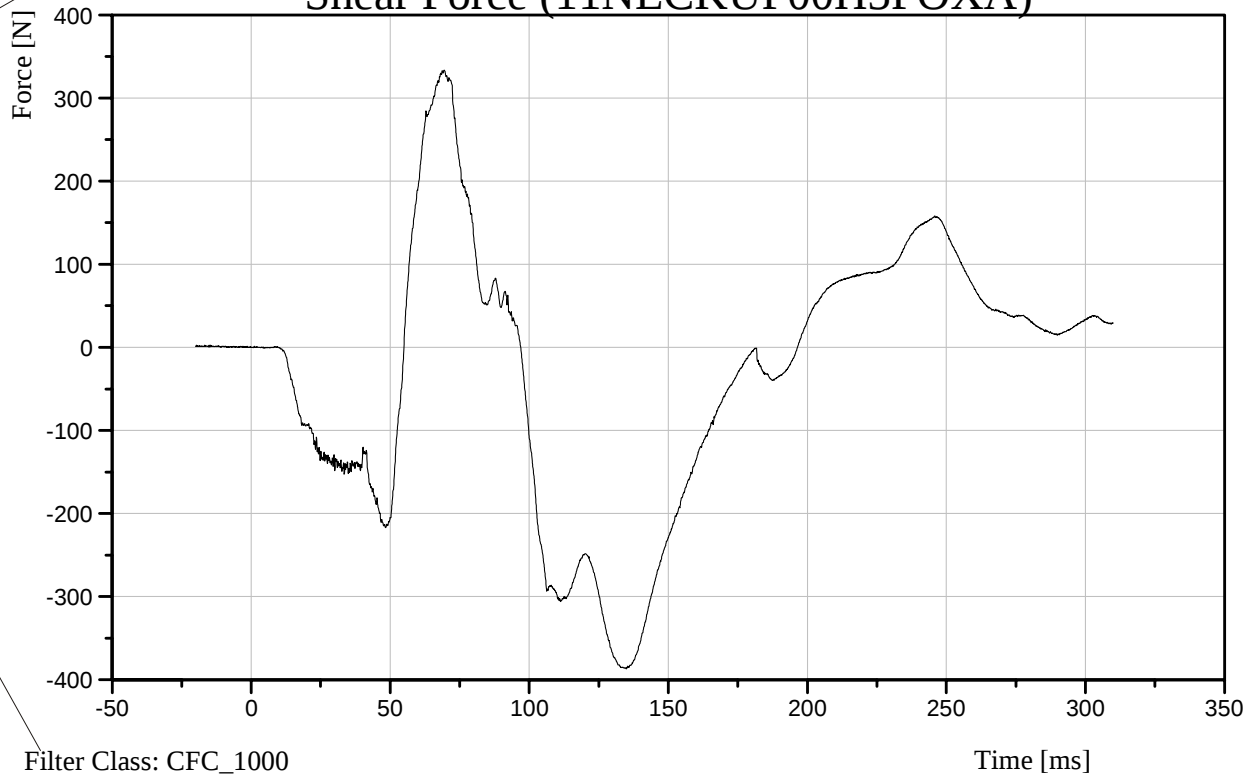
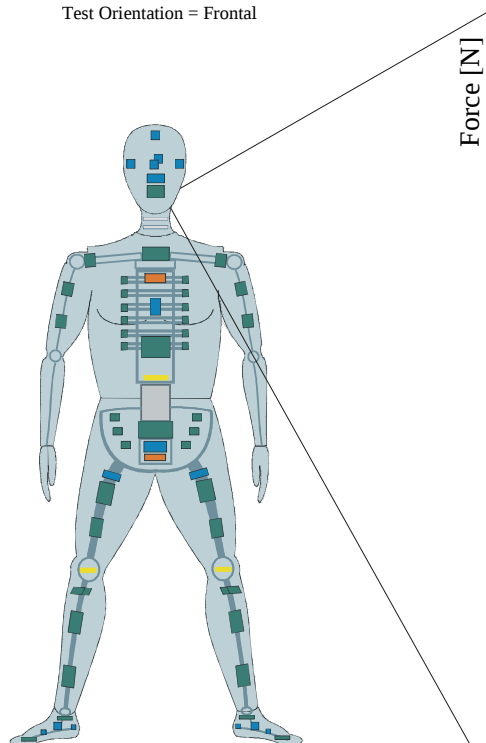
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 060512-2

Test Orientation = Frontal

Shear Force (11NECKUP00H3FOXA)



Dummy:HIII 50th Male
Seating Position:
Driver

[Max.] 333.28 N at 69.36 ms

[Min.] -386.78 N at 134.88 ms

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



Neck Shear Force

Date: 05/12/2006
Time: 15:38

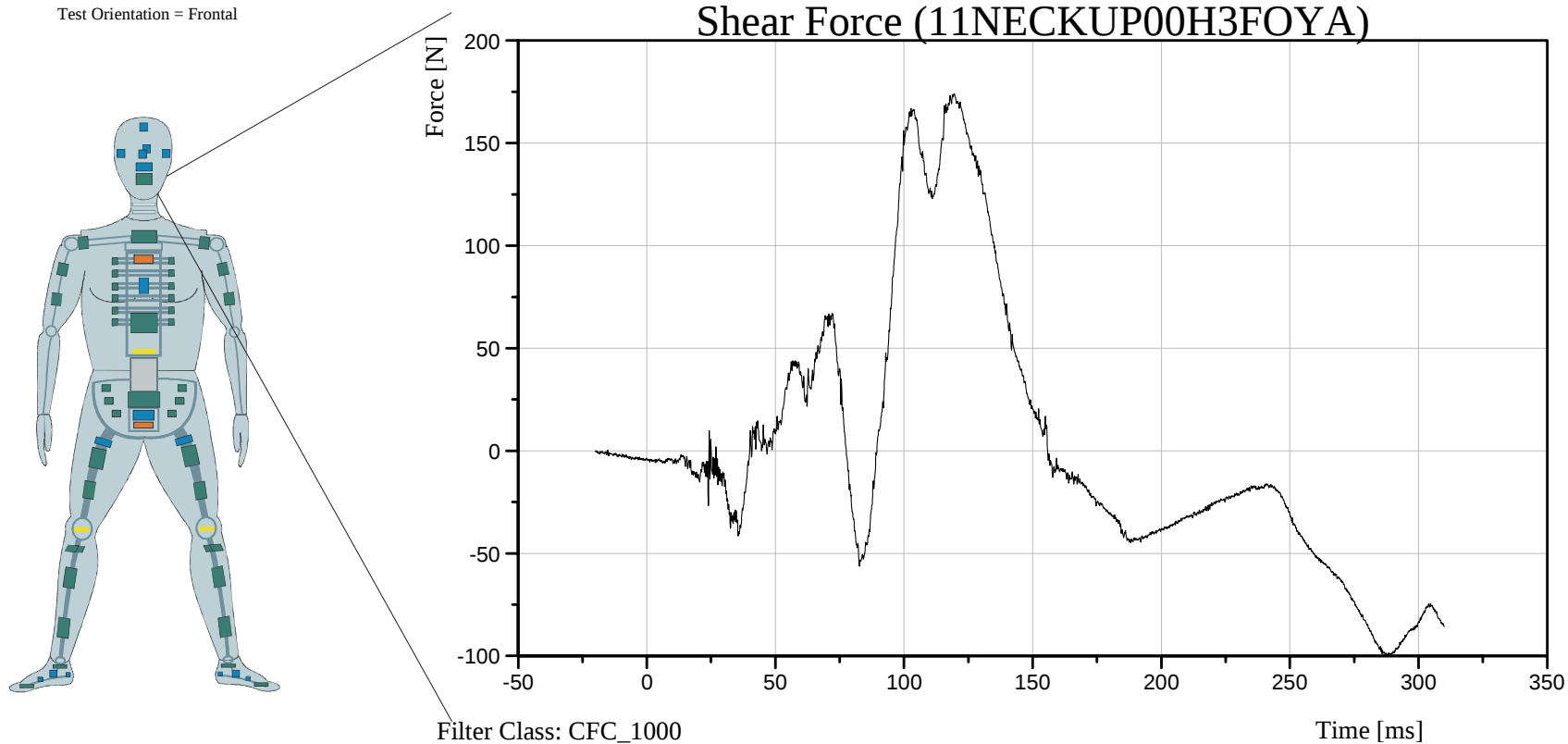
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 060512-2

Test Orientation = Frontal

Shear Force (11NECKUP00H3FOYA)



Dummy: HIII 50th Male

Seating Position:

Driver

[Max.] 174.02 N at 119.44 ms

[Min.] -99.70 N at 287.76 ms

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



Neck Axial Force

Date: 05/12/2006
Time: 15:38

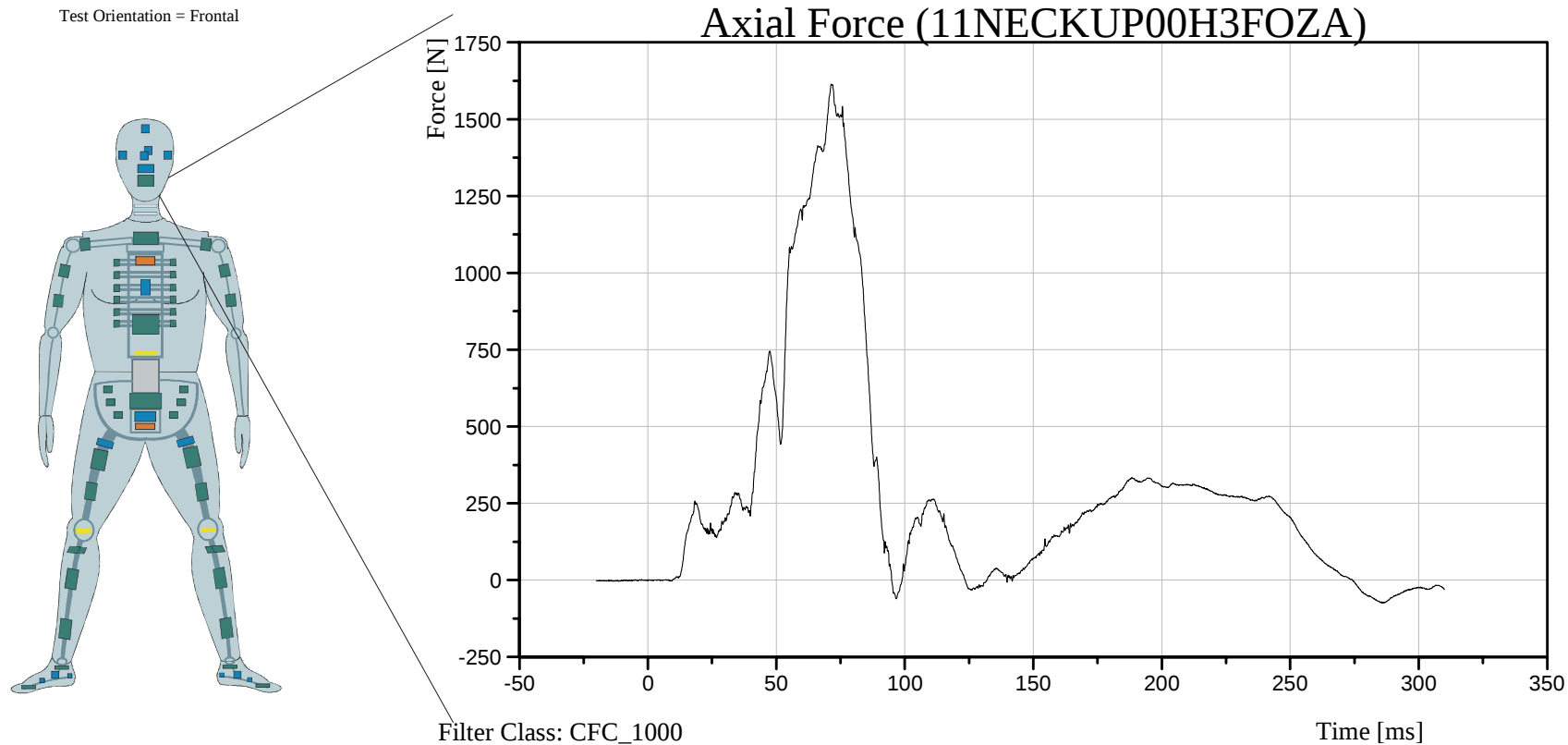
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 060512-2

Test Orientation = Frontal

Axial Force (11NECKUP00H3FOZA)



Dummy: HIII 50th Male
Seating Position:
Driver

[Max.] 1,614.52 N at 71.36 ms

[Min.] -74.26 N at 285.60 ms

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



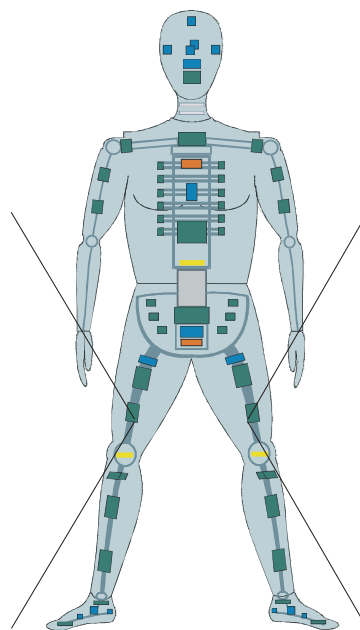
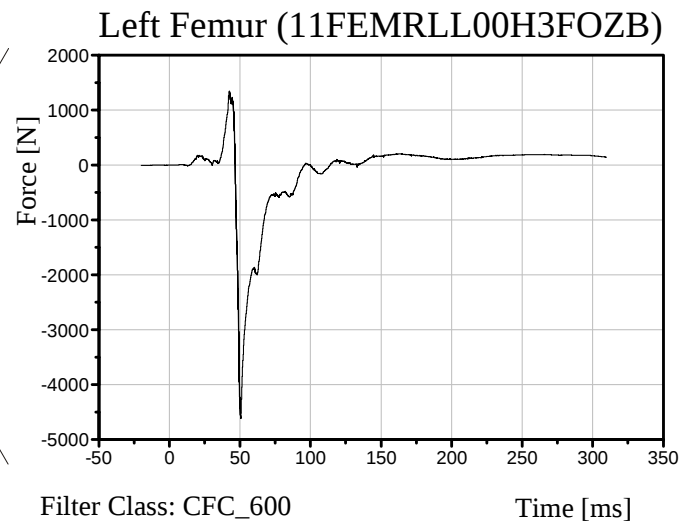
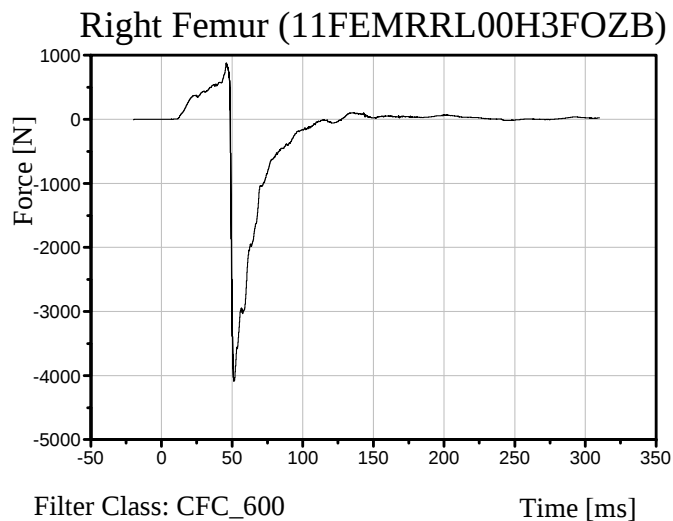
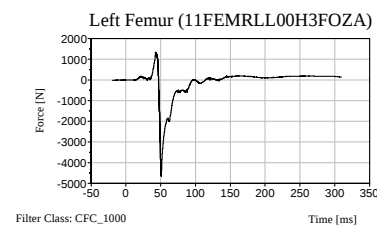
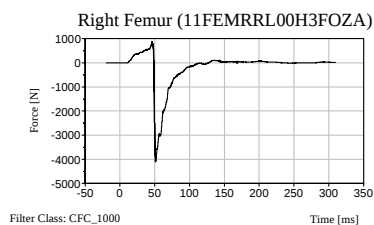
Femur Load

Date: 05/12/2006
Time: 15:38

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 060512-2



Max [Tension] 882.22 N at 45.84 ms
Min [Compression] -4,086.74 N at 51.12 ms

Dummy: HIII 50th Male
Seating Position:
Driver

Max [Tension] 1,350.32 N at 42.56 ms
Min [Compression] -4,612.41 N at 50.64 ms

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



2002 Ford Focus into Flat High Resolution LCB

Knee Slider Displacement

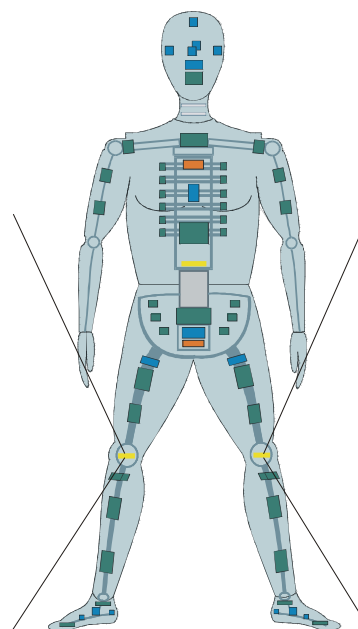
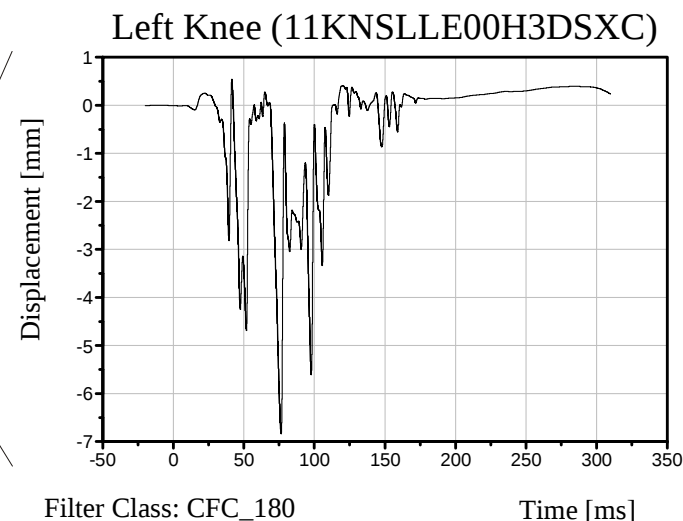
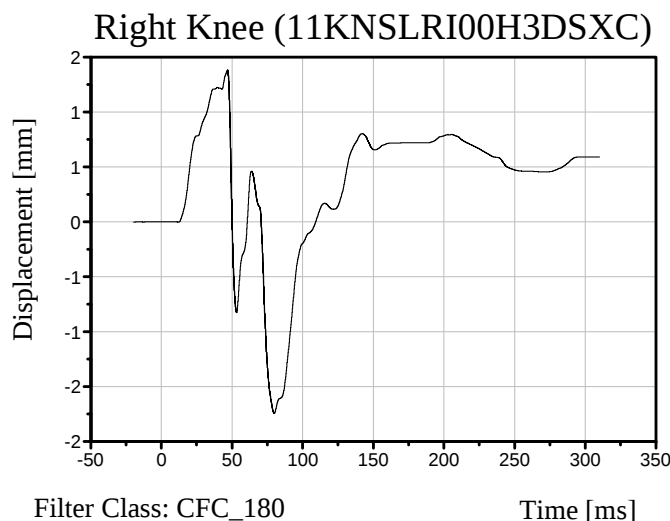
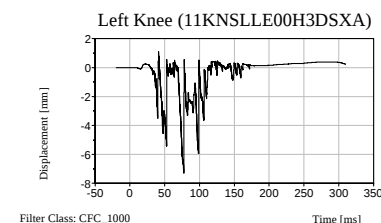
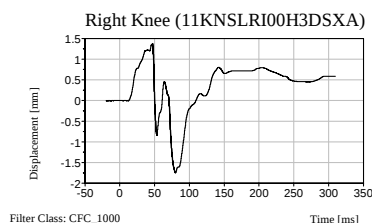
Date: 08/06/2006

Time: 15:14:26

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 060512-2



Max. [Tension] 1.38 mm at 46.72 ms
Min. [Compression] -1.74 mm at 79.76 ms

Dummy: HIII 50th Male
Seating Position:
Driver

Max. [Tension] 0.54 mm at 41.60 ms
Min. [Compression] -6.84 mm at 76.48 ms

Knee Displacement Source Code : Min/Max of 11KNSLRI00H3DSXC and 11KNSLLE00H3DSXC (CFC 600)



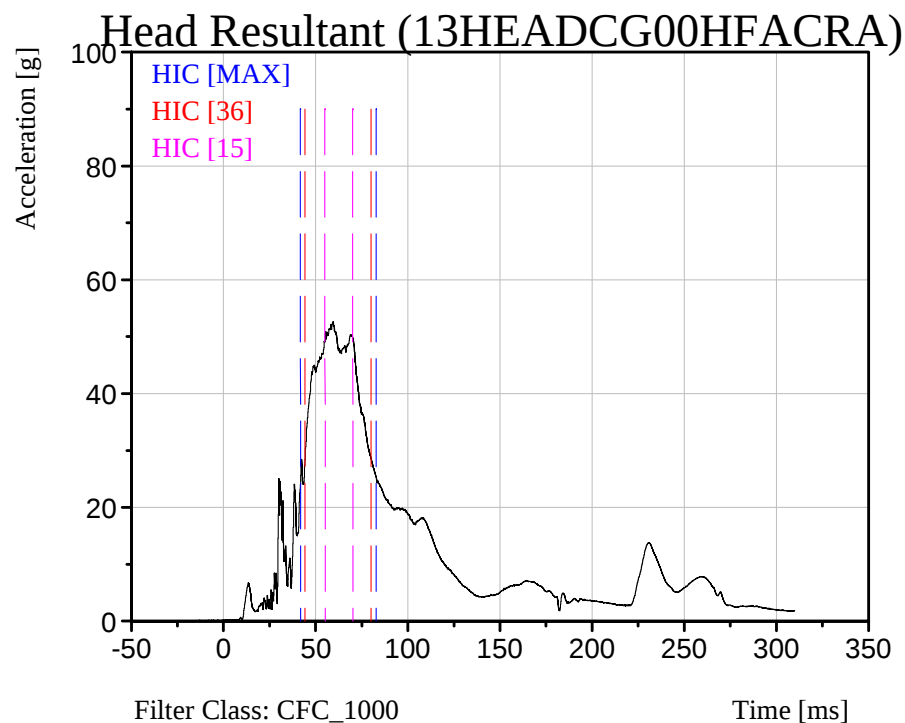
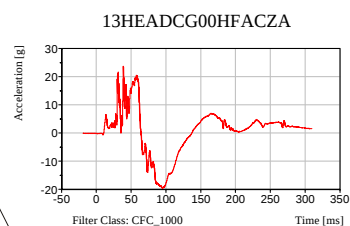
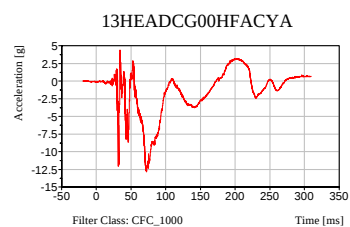
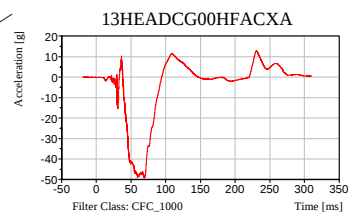
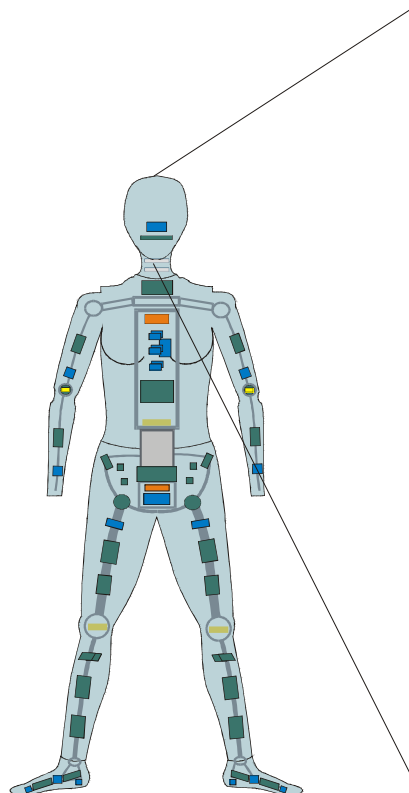
Head Injury Criterion (HIC)

Date: 05/12/2006
Time: 15:38

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 060512-2



Dummy: HIII 5th Female
Seating Position:
Right Front Passenger

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

	<u>T1</u> (Begin)	<u>T2</u> (End)	<u>Avg. g T1 to T2</u>
HIC [Max.] = 467.45	41.76 ms	82.88 ms	41.87 g
HIC [36] = 465.48	44.16 ms	80.16 ms	44.09 g
HIC [15] = 260.66	55.12 ms	70.16 ms	49.61 g



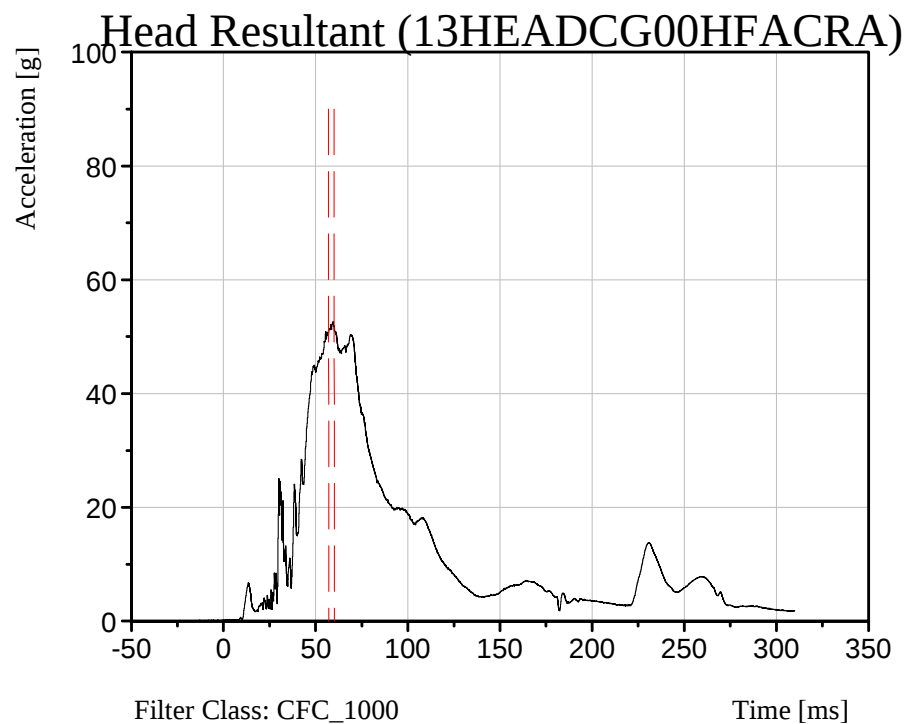
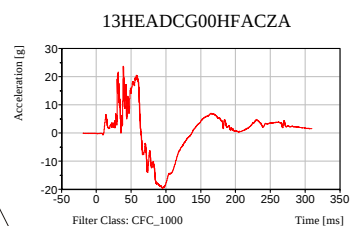
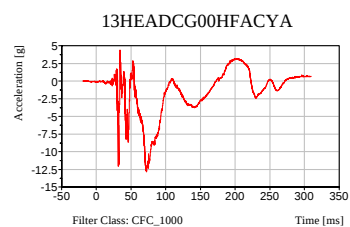
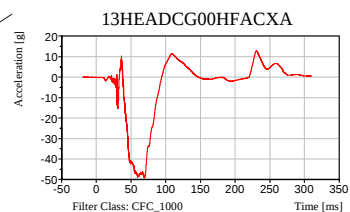
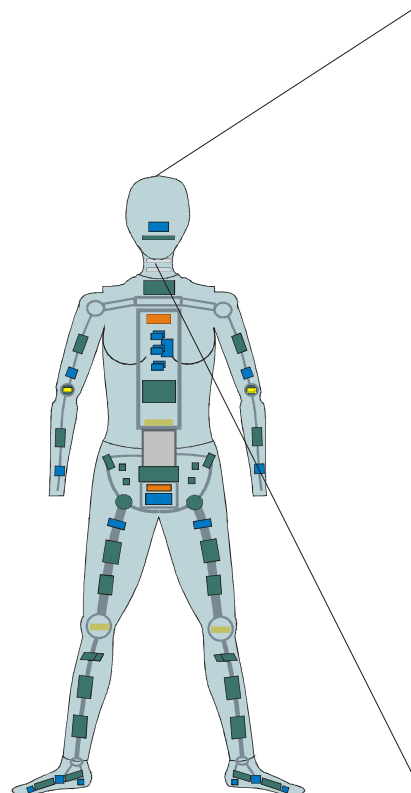
Date: 05/12/2006
Time: 15:38

3 ms Duration Acceleration (Head)

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 060512-2



3 ms Duration Acceleration = 51.19 g

T1 (Begin)
57.03 ms

T2 (End)
60.17 ms

Dummy: HIII 5th Female
Seating Position:
Right Front Passenger

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



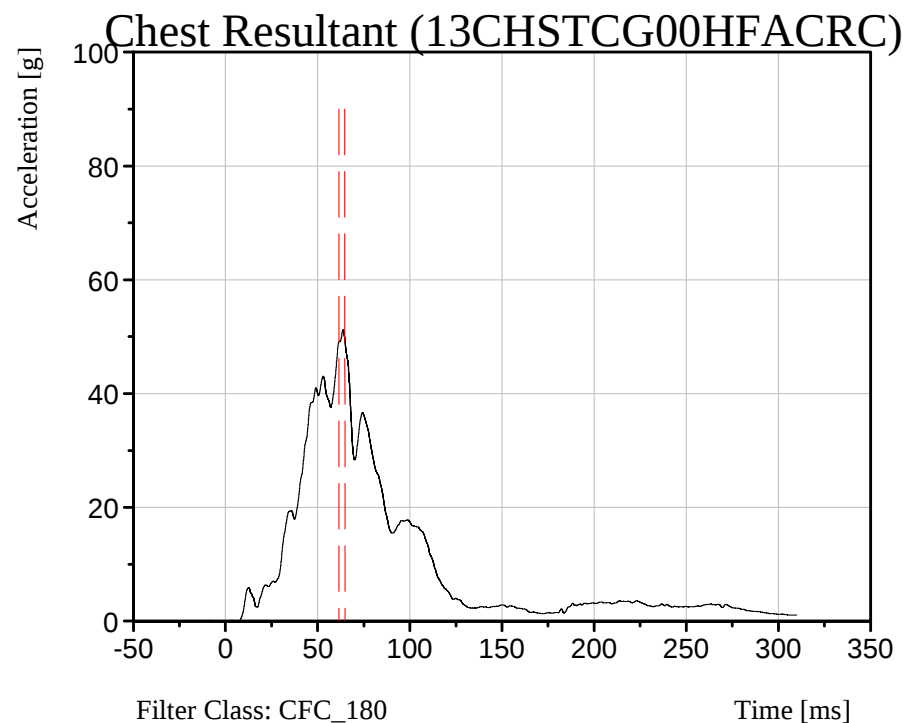
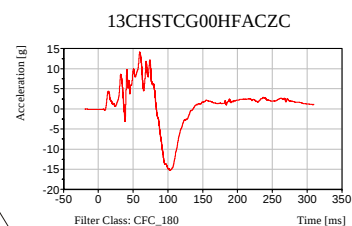
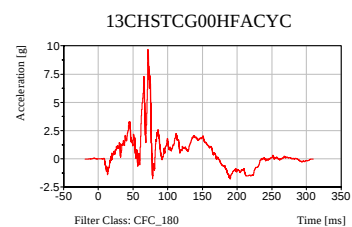
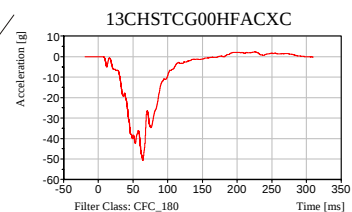
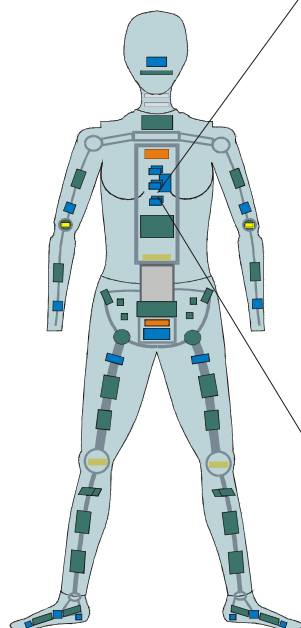
Date: 05/12/2006
Time: 15:38

3 ms Duration Acceleration (Chest)

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 060512-2



Dummy: HIII 5th Female
Seating Position:
Right Front Passenger

3 ms Duration Acceleration = 49.16 g
Chest Severity Index = 440.55

<u>T1</u> (Begin)	<u>T2</u> (End)
61.59 ms	64.77 ms

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



Chest Deflection

Date: 05/12/2006
Time: 15:38

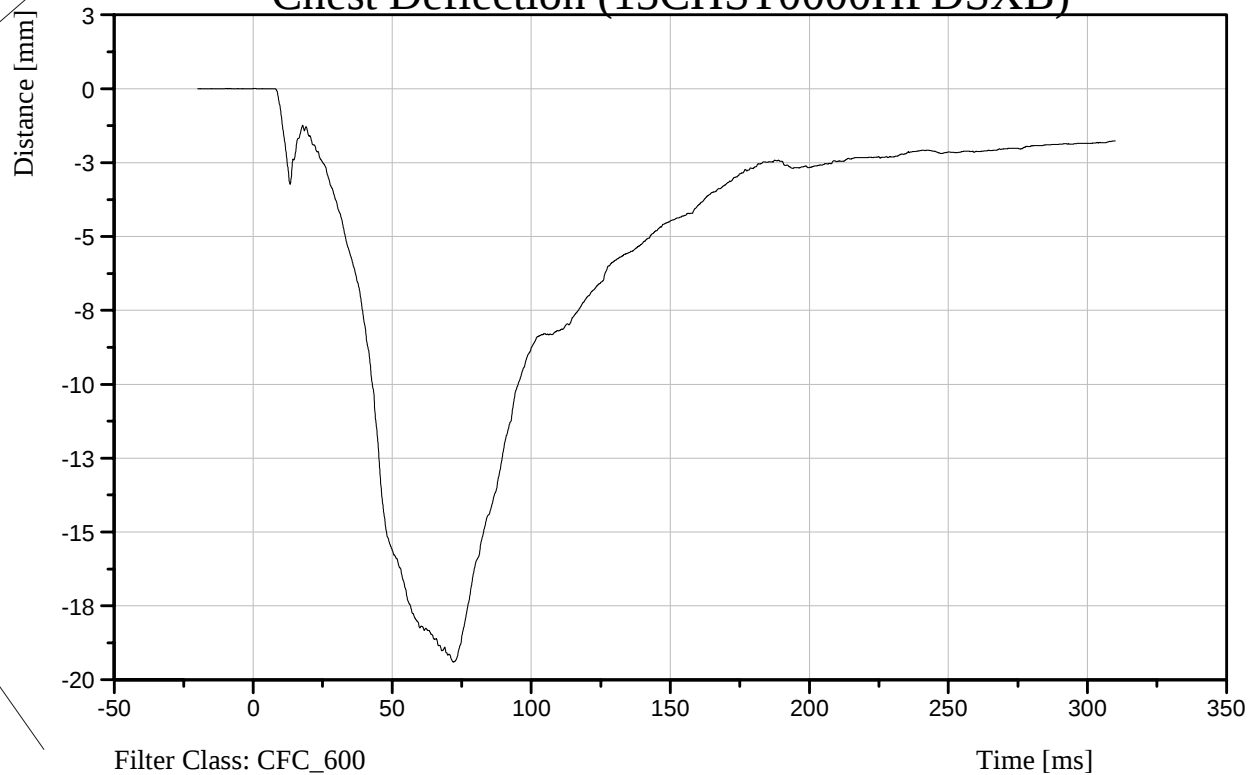
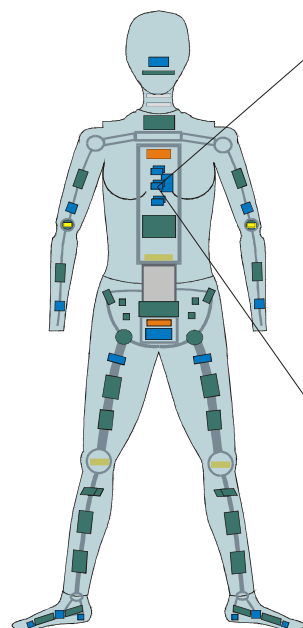
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 060512-2

Test Orientation = Frontal

Chest Deflection (13CHST0000HFDSXB)



Dummy: HIII 5th Female
Seating Position:
Right Front Passenger

[Max.] 0.00 mm at 0.48 ms

[Min.] -19.40 mm at 71.92 ms

ChestDeflection Source Code : Min/Max of 13CHST0000HFDSXB (CFC_600)



Neck Moment about the Occipital Condyle (NECK OM)

Date: 05/12/2006
Time: 15:38

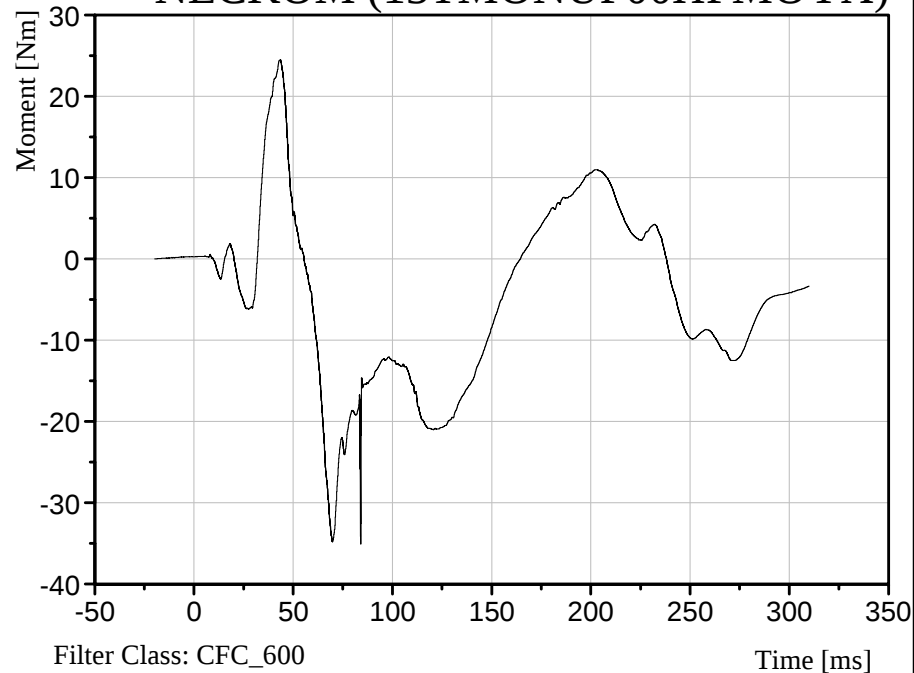
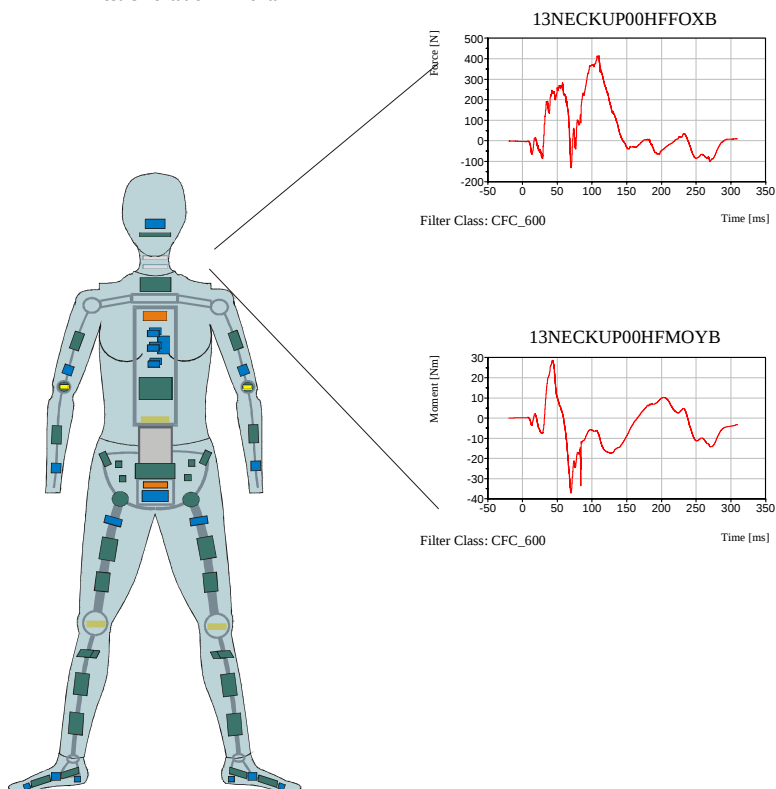
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 060512-2

Test Orientation = Frontal

NECKOM (13TMONUP00HFM0YX)



Dummy: HIII 5th Female
Seating Position:
Right Front Passenger

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

[Max.] 24.55 Nm at 43.52 ms

[Min.] -35.05 Nm at 84.00 ms

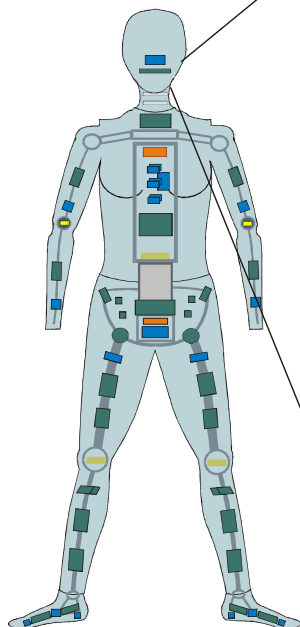


Date: 05/12/2006
Time: 15:38

Neck Injury Predictor (NIJ)

Customer: VRTC

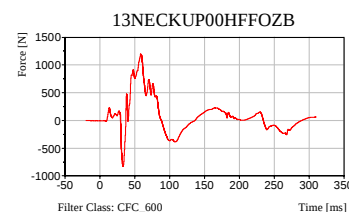
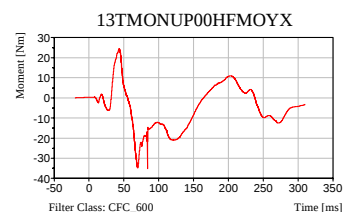
Test Orientation = Frontal
Fzc(Tension) = 4287
Fzc(Compression) = 3880
Myc(Extension) = 67
Myc(Flexion) = 155



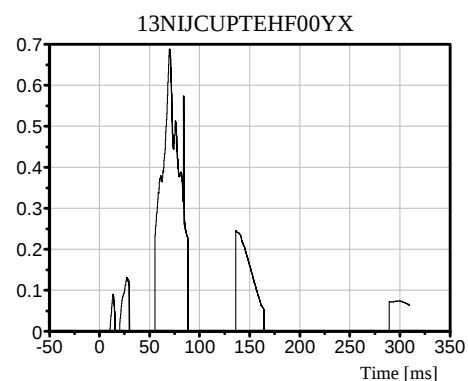
Dummy: HIII 5th Female
Seating Position:

Right Front Passenger

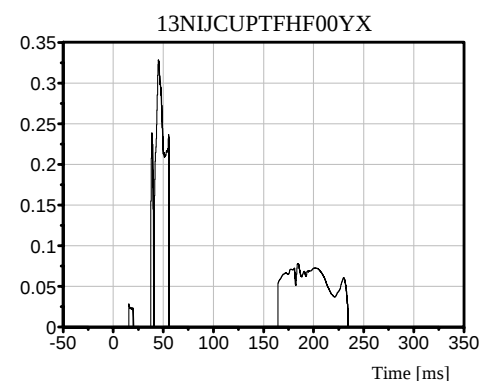
NIJ Source Code: (Fz/Fzc)+(Myc/Myc)



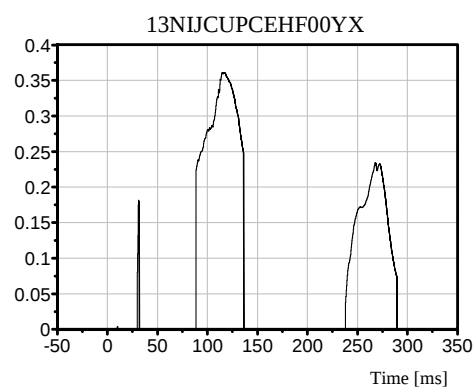
TRC Inc. Test Lab: CTF
Test Number: 060512-2



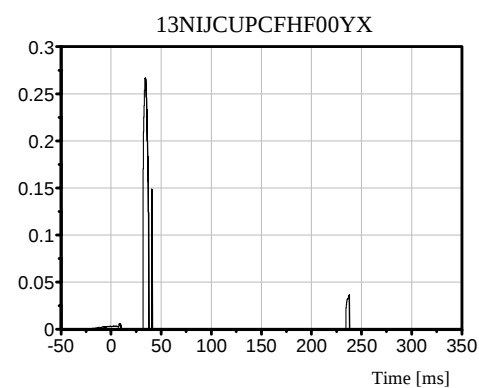
Max [NTE] 0.6894 at 69.92 ms



Max [NTF] 0.3281 at 45.20 ms



Max [NCE] 0.3613 at 114.64 ms



Max [NCF] 0.2669 at 33.92 ms



Neck Shear Force

Date: 05/12/2006
Time: 15:38

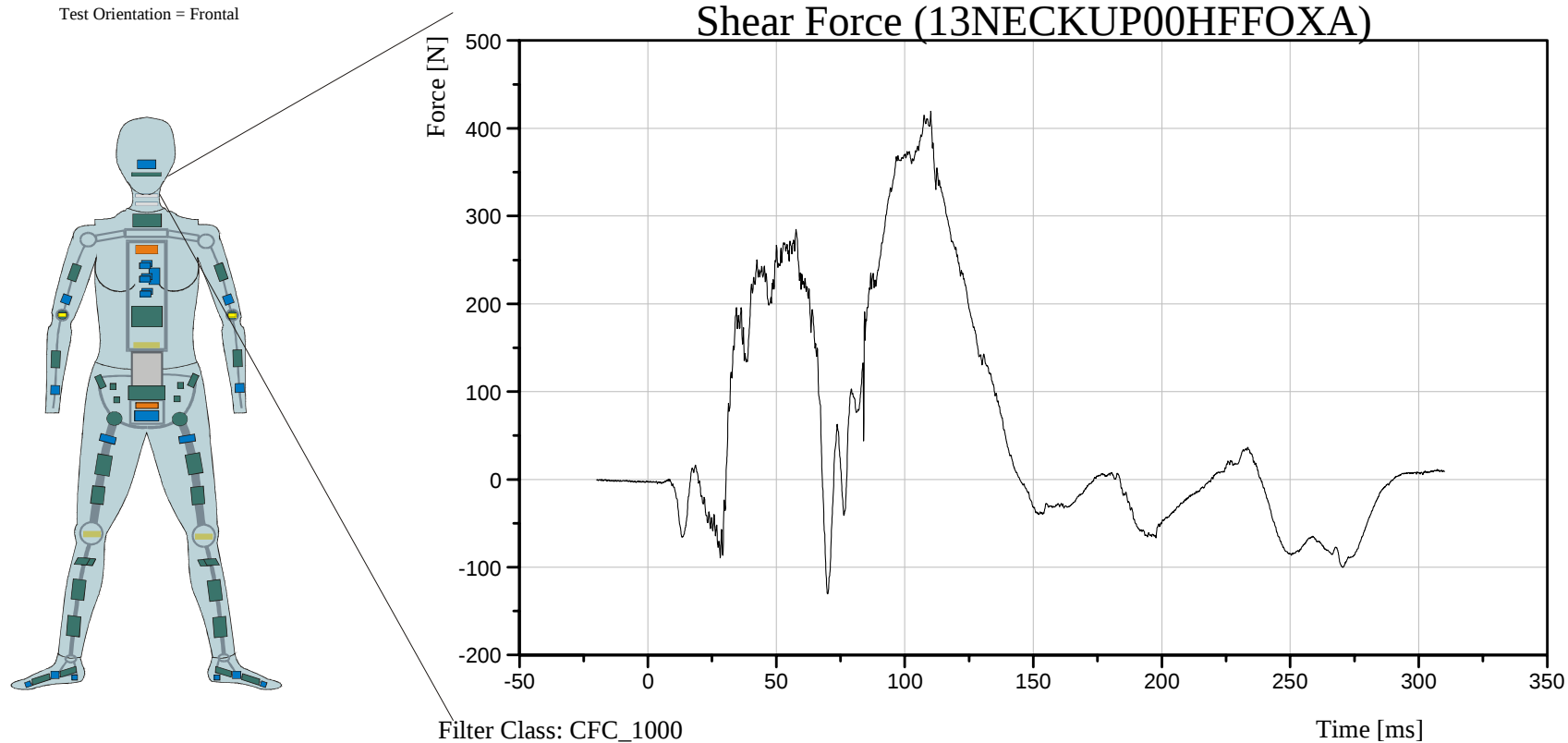
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 060512-2

Test Orientation = Frontal

Shear Force (13NECKUP00HFFOXA)



Dummy: HIII 5th Female
Seating Position:
Right Front Passenger

[Max.] 419.53 N at 110.08 ms

[Min.] -130.39 N at 69.92 ms

Neck Shear Force Source Code: Min/Max of 13NECKUP00HFFOXA



Neck Shear Force

Date: 05/12/2006
Time: 15:38

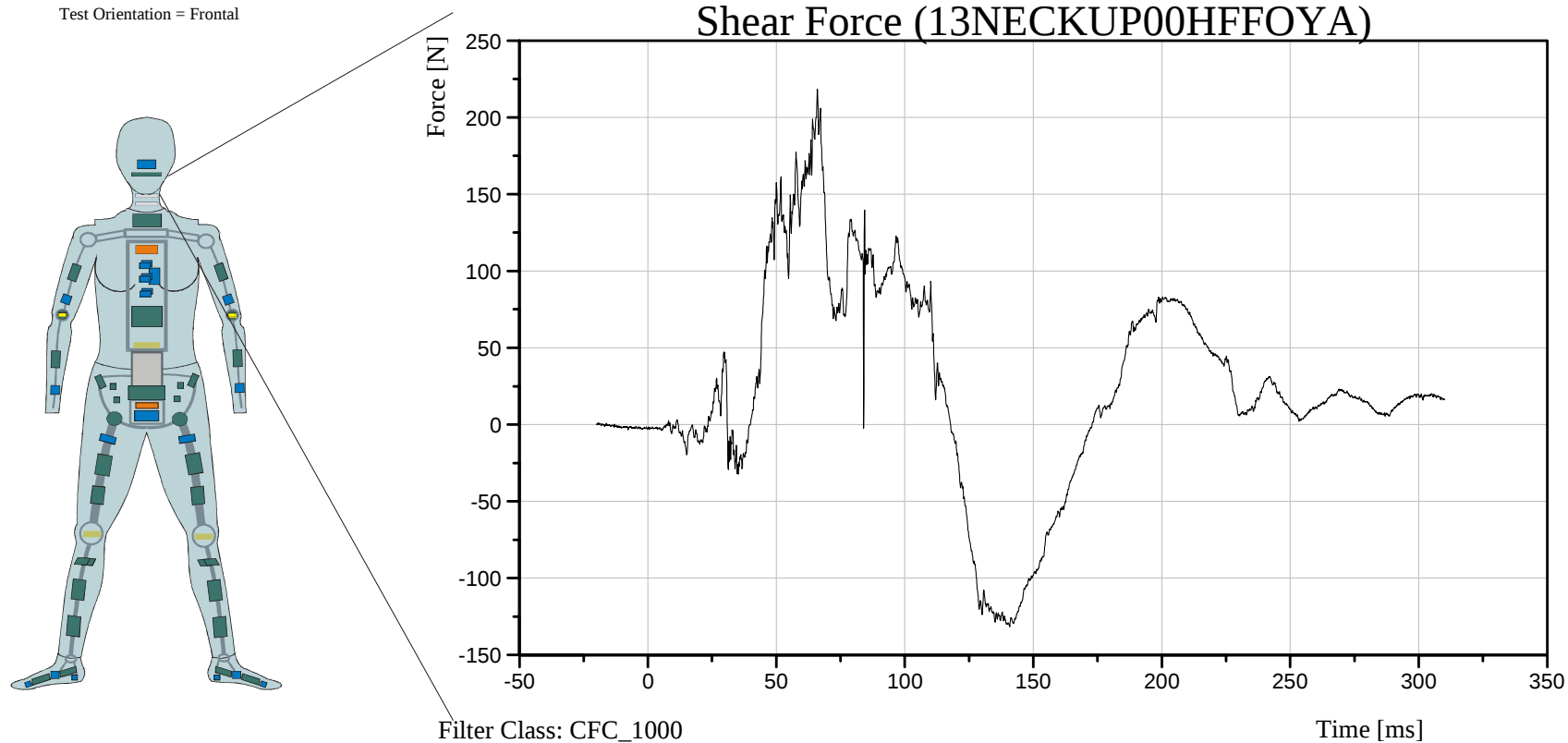
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 060512-2

Test Orientation = Frontal

Shear Force (13NECKUP00HFFOYA)



Dummy: HIII 5th Female
Seating Position:
Right Front Passenger

[Max.] 218.37 N at 65.92 ms

[Min.] -131.61 N at 140.80 ms

Neck Shear Force Source Code: Min/Max of 13NECKUP00HFFOYA



Neck Axial Force

Date: 05/12/2006
Time: 15:38

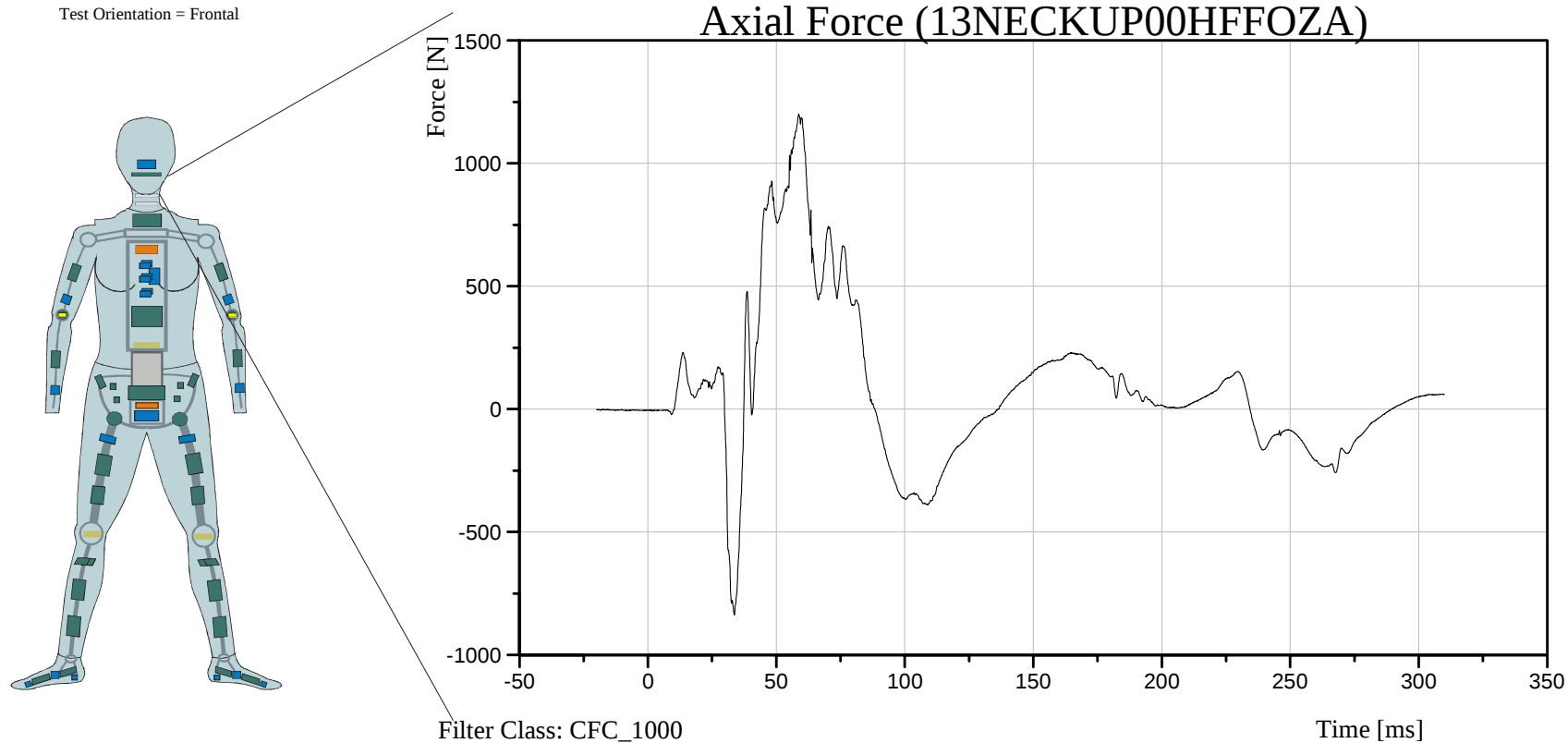
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 060512-2

Test Orientation = Frontal

Axial Force (13NECKUP00HFFOZA)



Dummy: HIII 5th Female
Seating Position:
Right Front Passenger

[Max.] 1,200.10 N at 58.64 ms

[Min.] -836.47 N at 33.68 ms

Neck Axial Force Source Code: Min/Max of 13NECKUP00HFFOZA



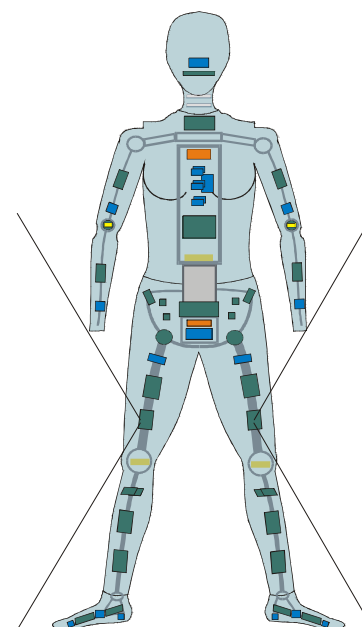
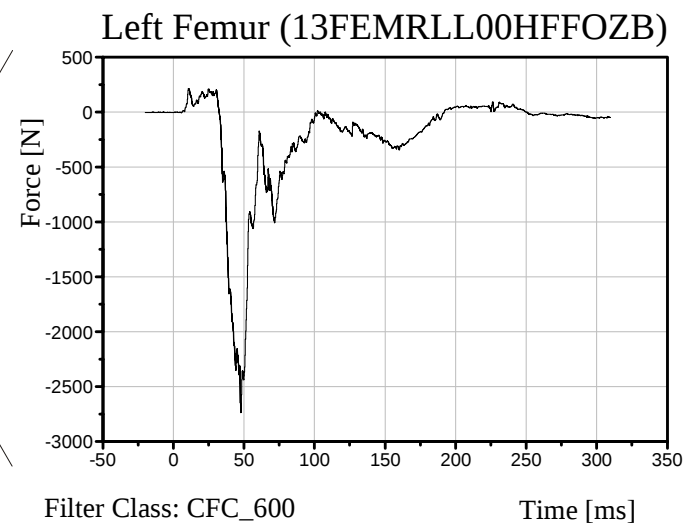
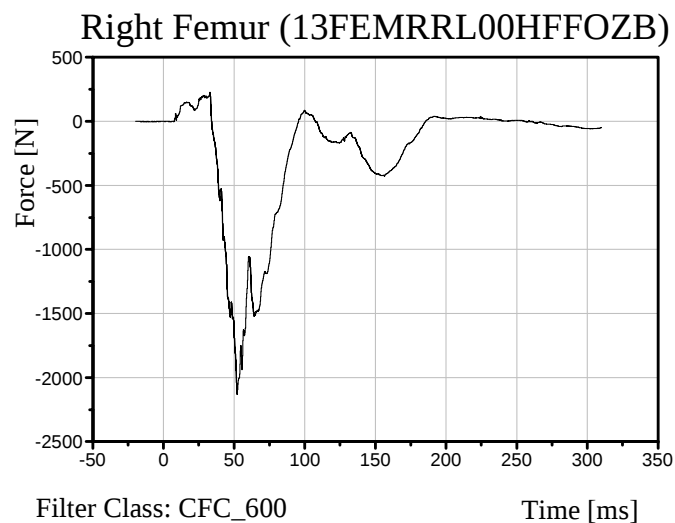
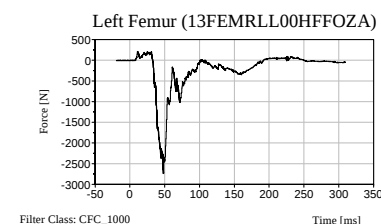
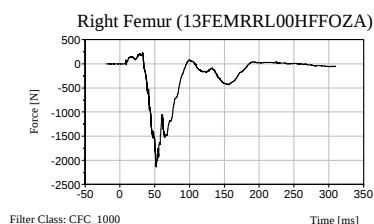
Femur Load

Date: 05/12/2006
Time: 15:38

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 060512-2



Max [Tension] 228.73 N at 32.88 ms
Min [Compression] -2,132.07 N at 52.08 ms

Dummy: HIII 5th Female
Seating Position:
Right Front Passenger

Max [Tension] 216.13 N at 10.88 ms
Min [Compression] -2,735.17 N at 47.92 ms

Femur Load Source Code : Min/Max of 13FEMRRL00HFFOZB and 13FEMRLL00HFFOZB (CFC 600)



2002 Ford Focus into Flat High Resolution LCB

Driver Head X-Axis Acceleration

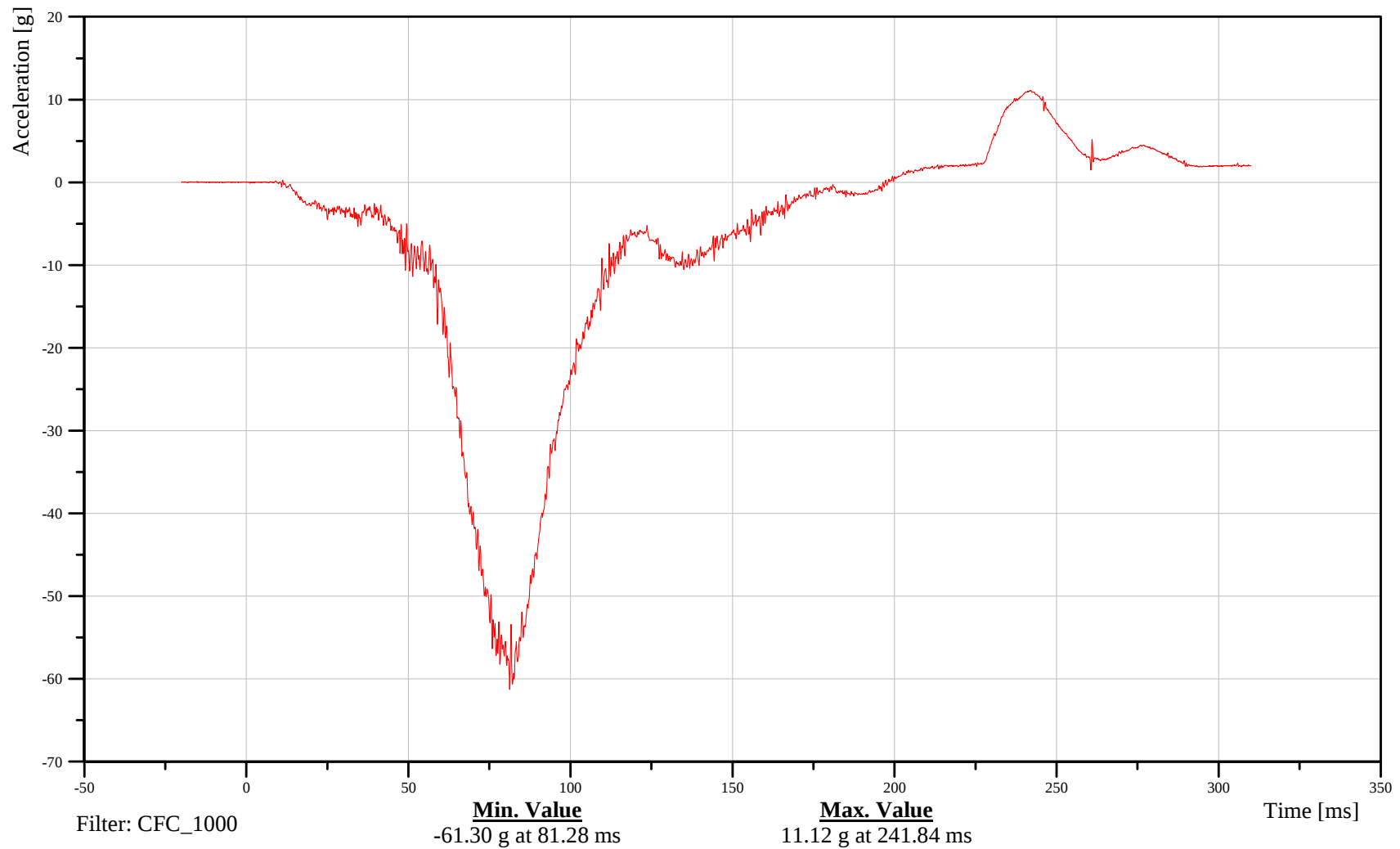
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11HEADCG00H3ACXA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Head Y-Axis Acceleration

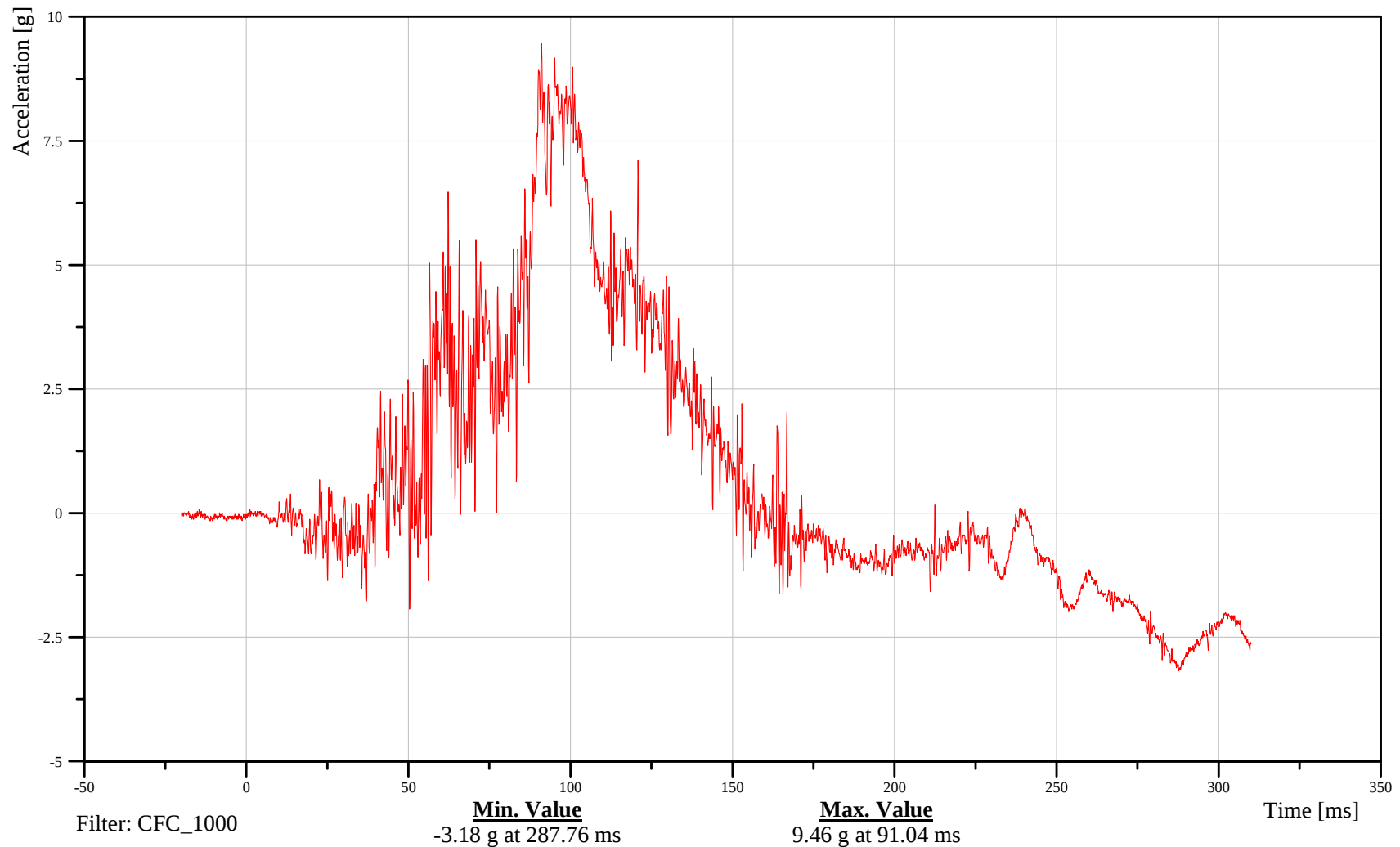
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11HEADCG00H3ACYA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Head Z-Axis Acceleration

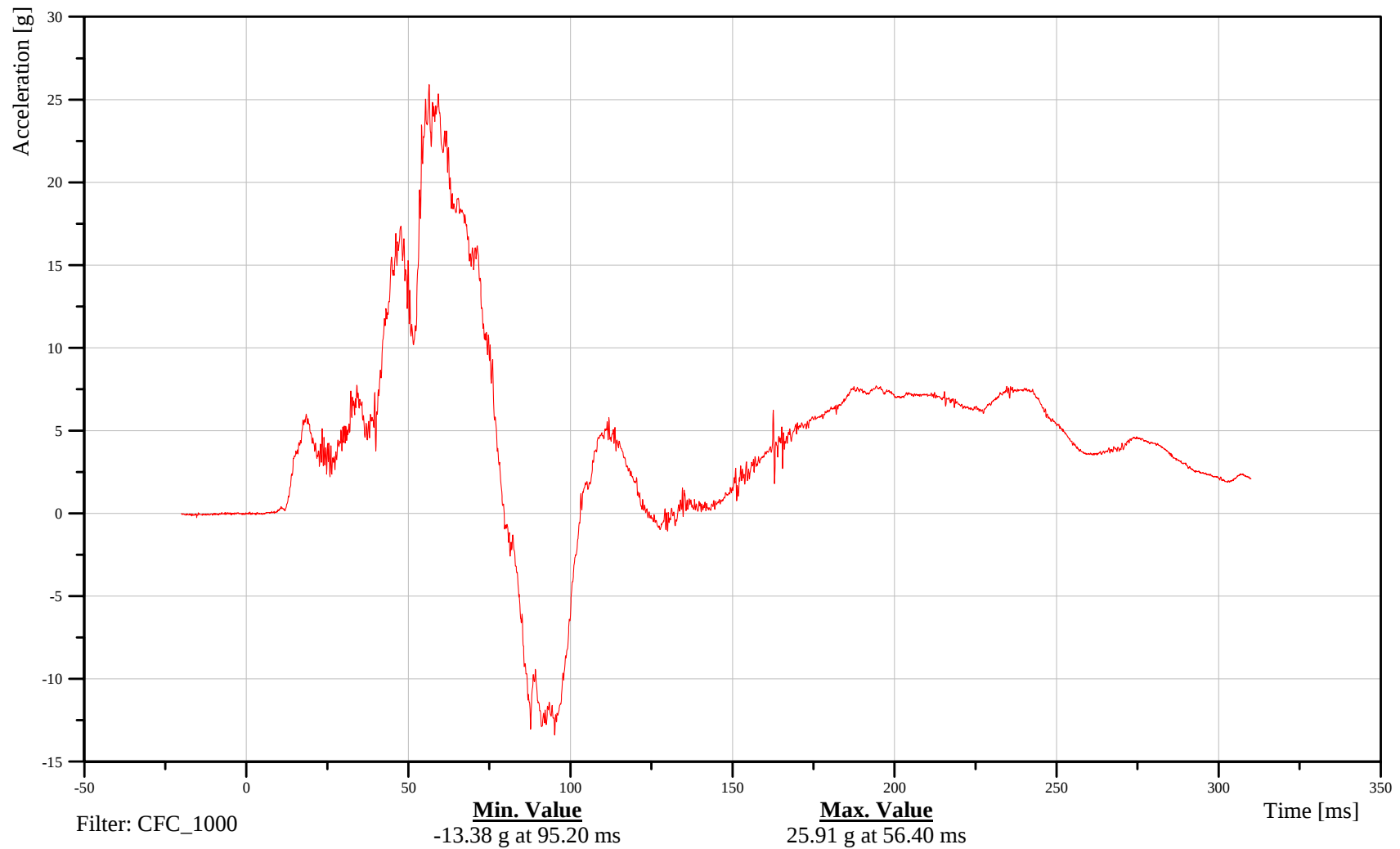
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11HEADCG00H3ACZA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Head Resultant Acceleration

Date: 05/12/2006

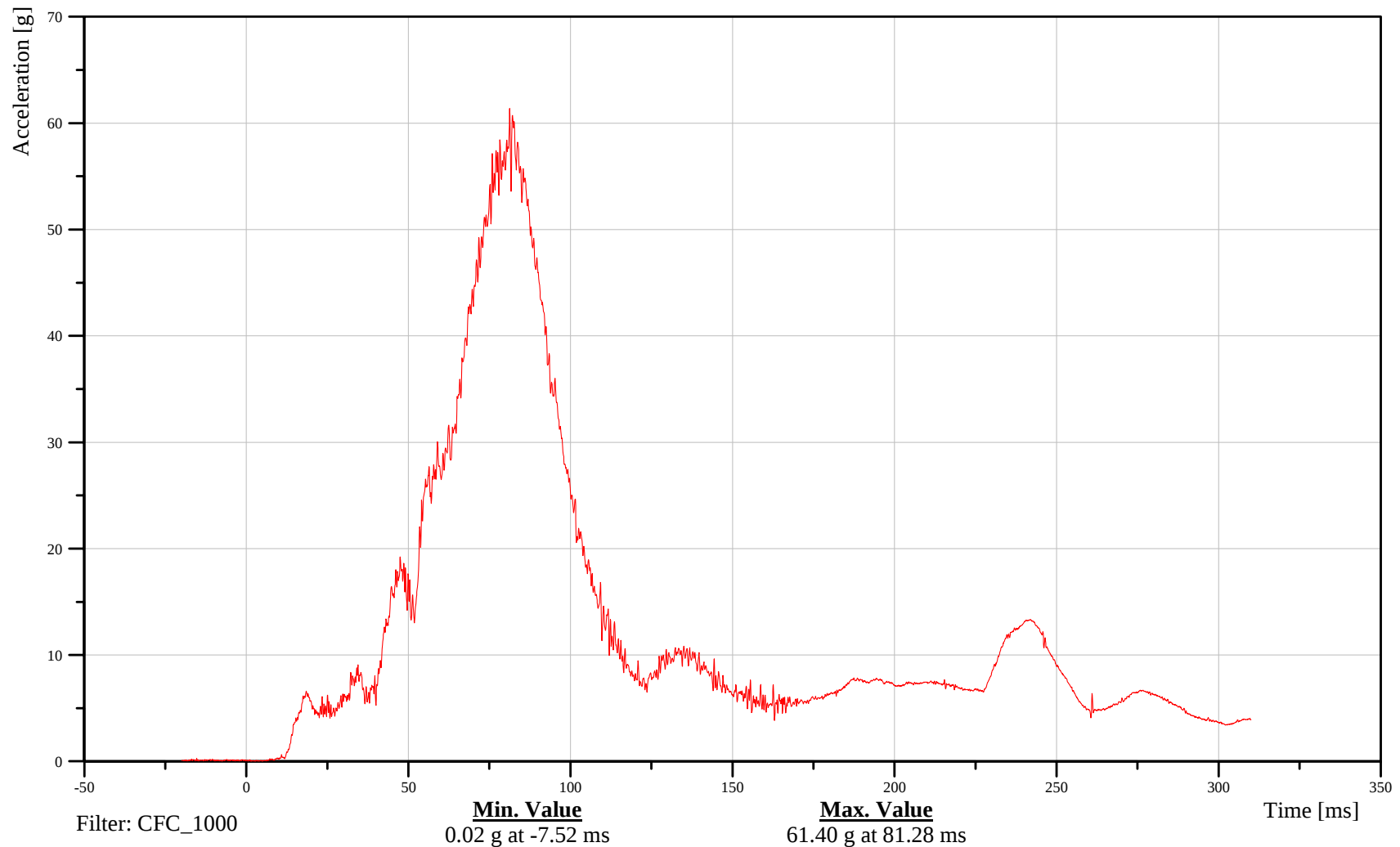
Time: 15:38

Customer: VRTC

11HEADCG00H3ACRA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Head Front Y-Axis Acceleration

Date: 05/12/2006

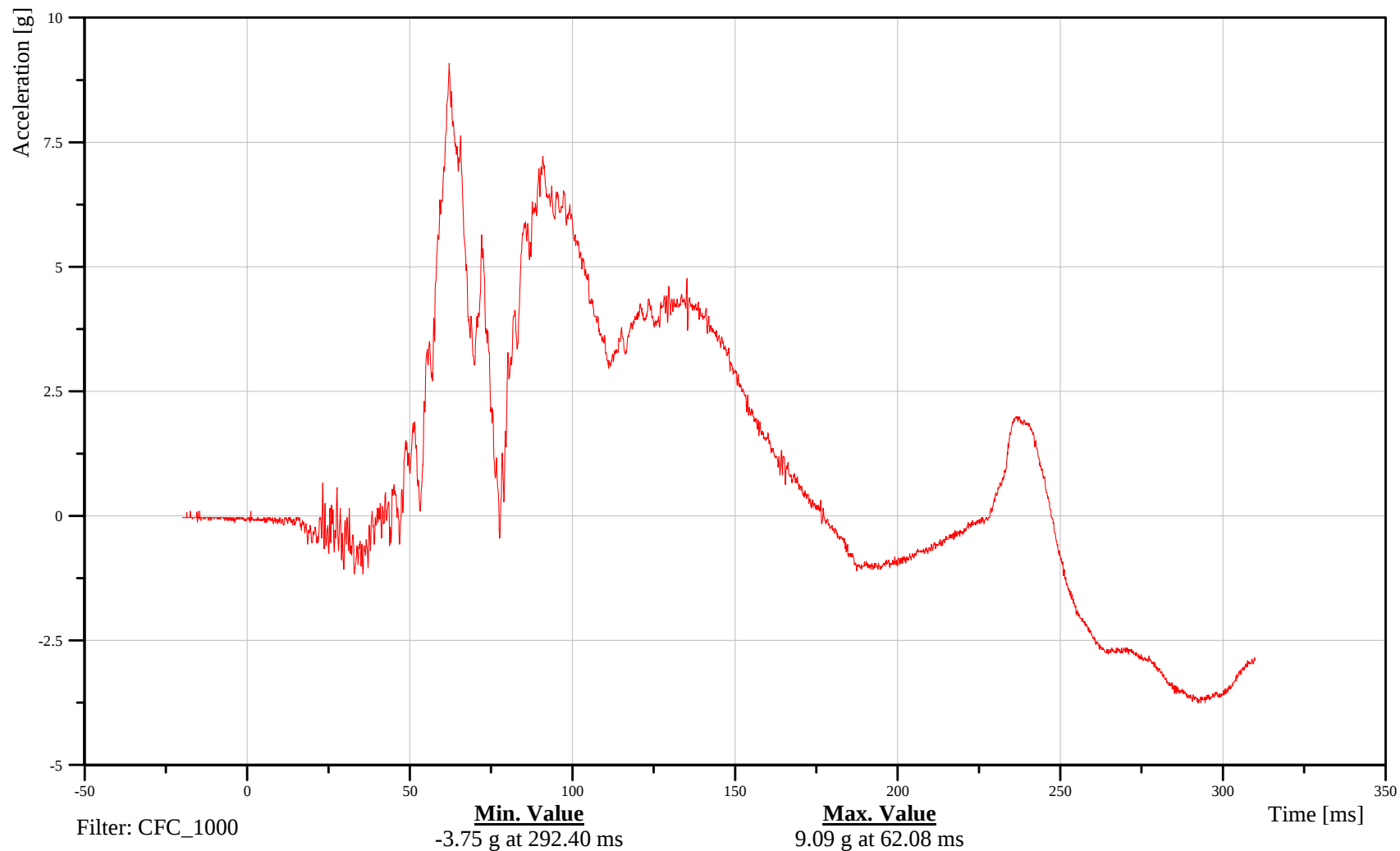
Time: 15:38

Customer: VRTC

11HEADFR00H3ACYA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Head Front Z-Axis Acceleration

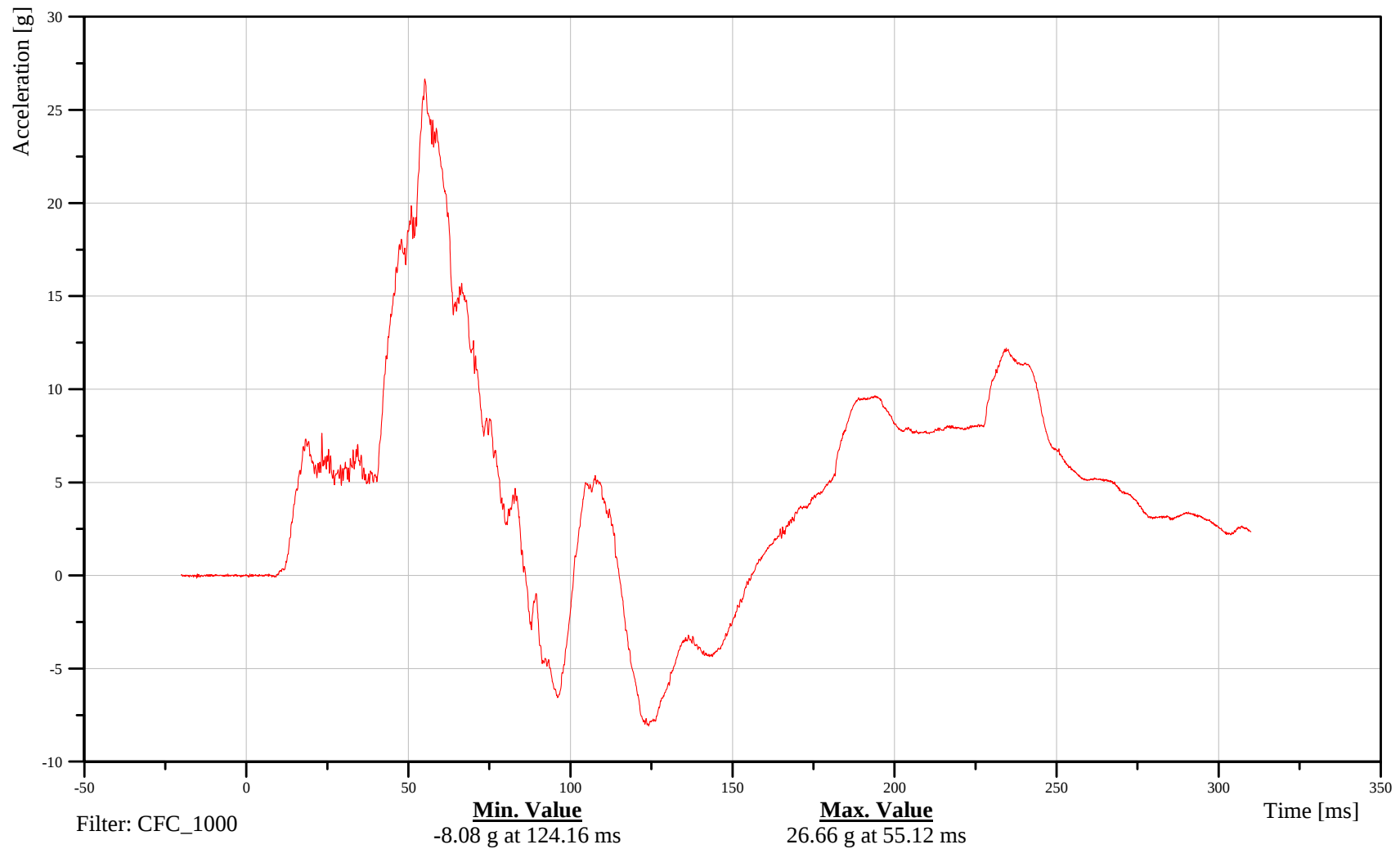
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11HEADFR00H3ACZA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Head Top X-Axis Acceleration

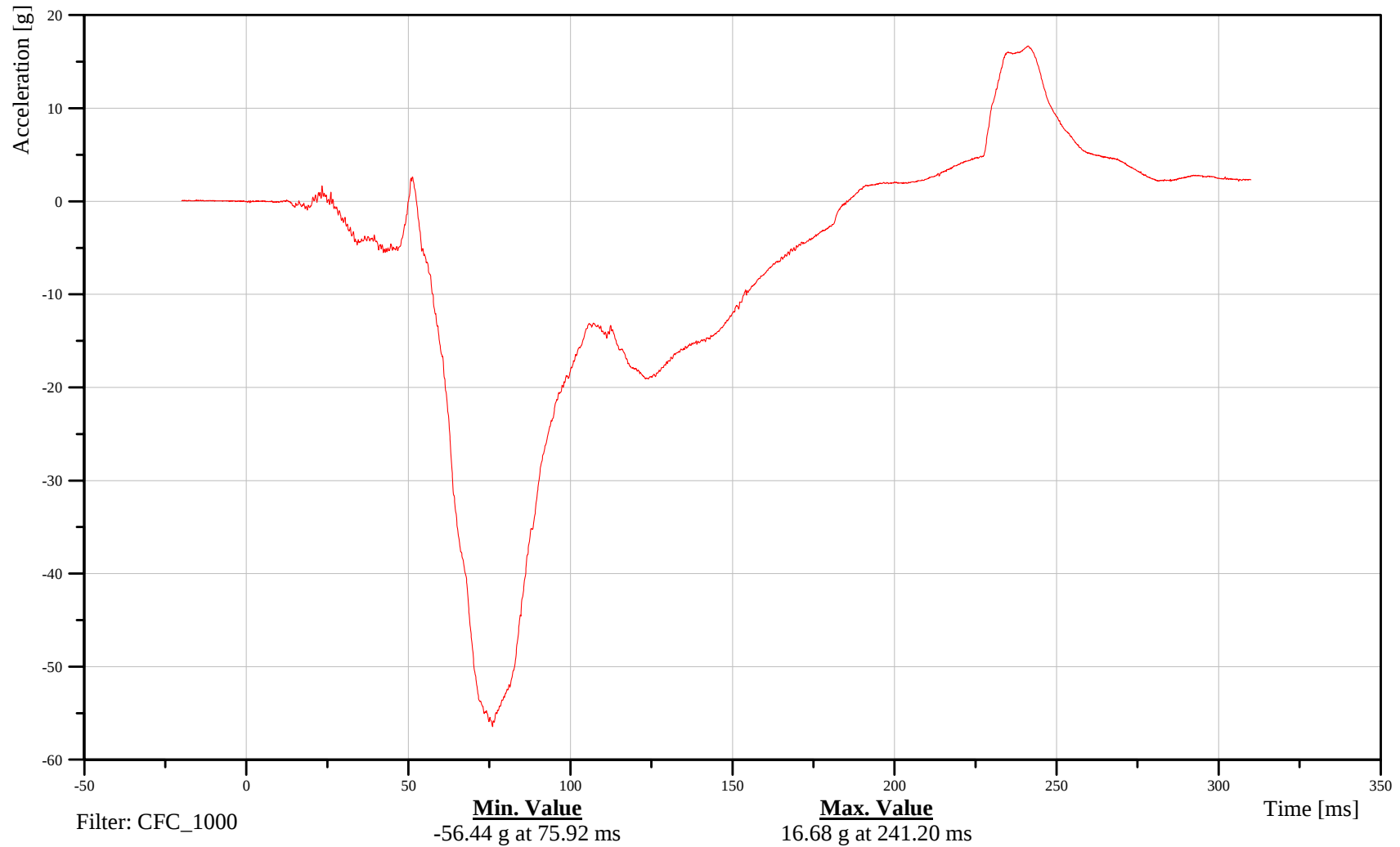
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11HEADUP00H3ACXA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Head Top Y-Axis Acceleration

Date: 05/12/2006

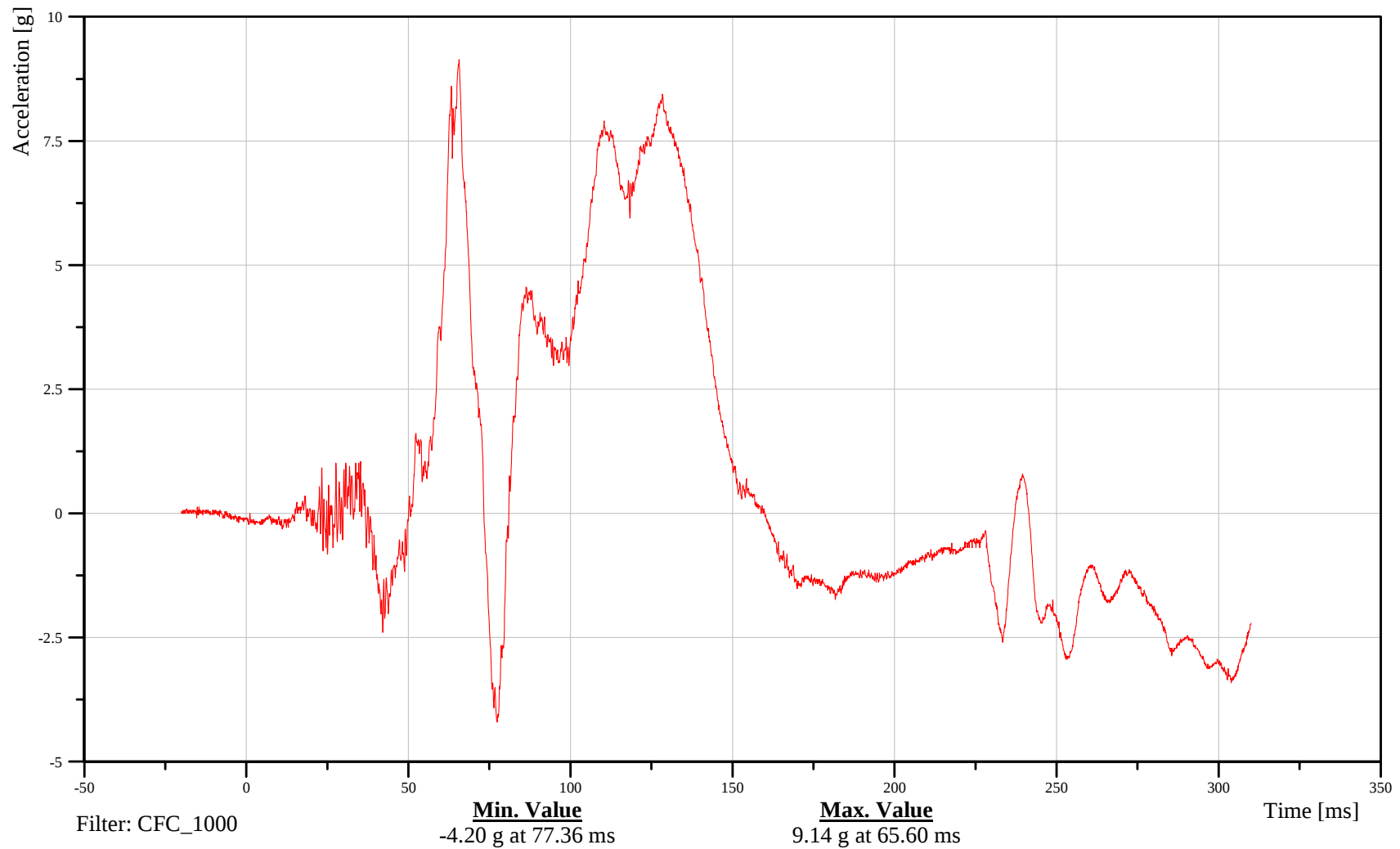
Time: 15:38

Customer: VRTC

11HEADUP00H3ACYA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Head Side X-Axis Acceleration

Date: 05/12/2006

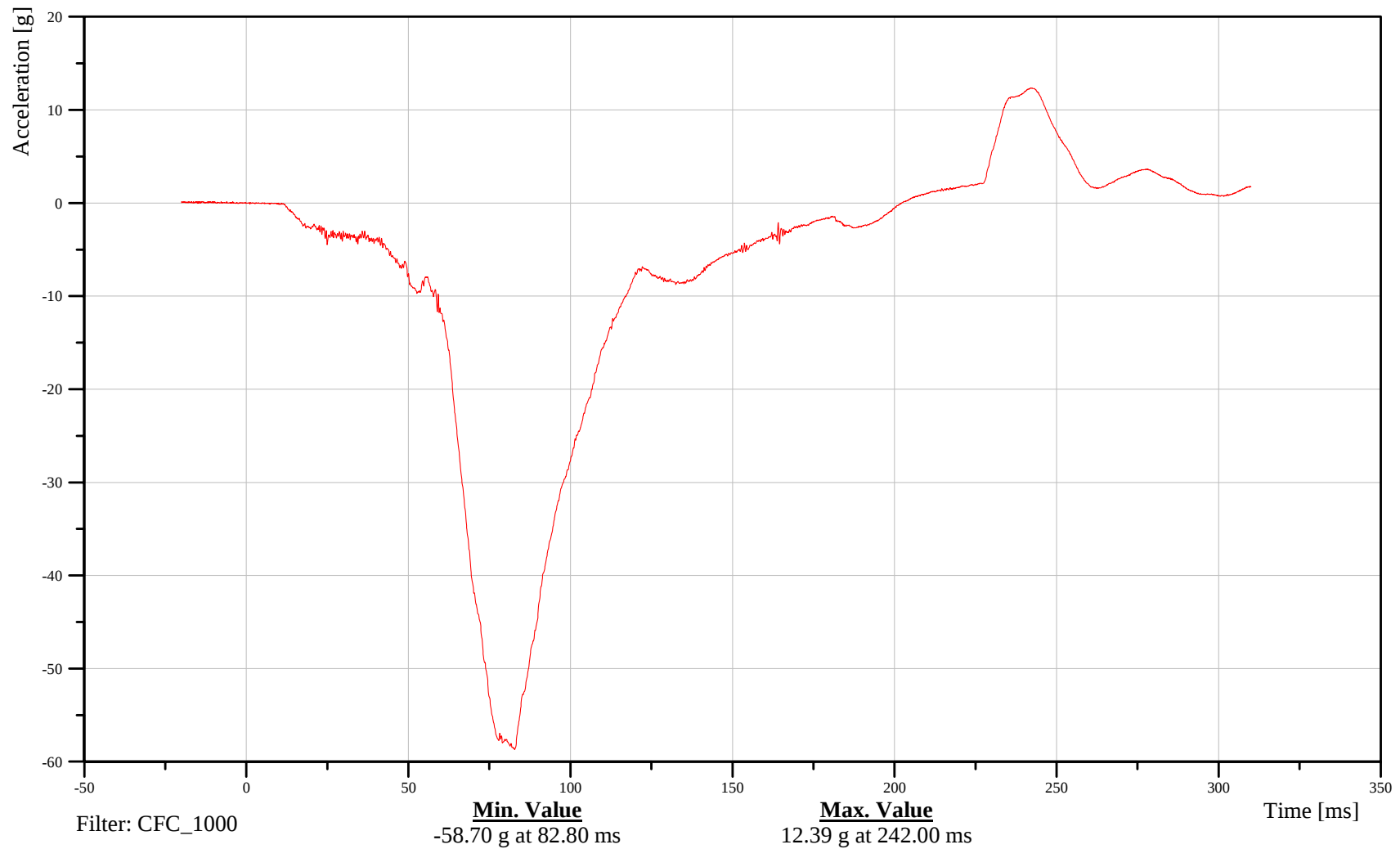
Time: 15:38

Customer: VRTC

11HEADLE00H3ACXA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Head Side Z-Axis Acceleration

Date: 05/12/2006

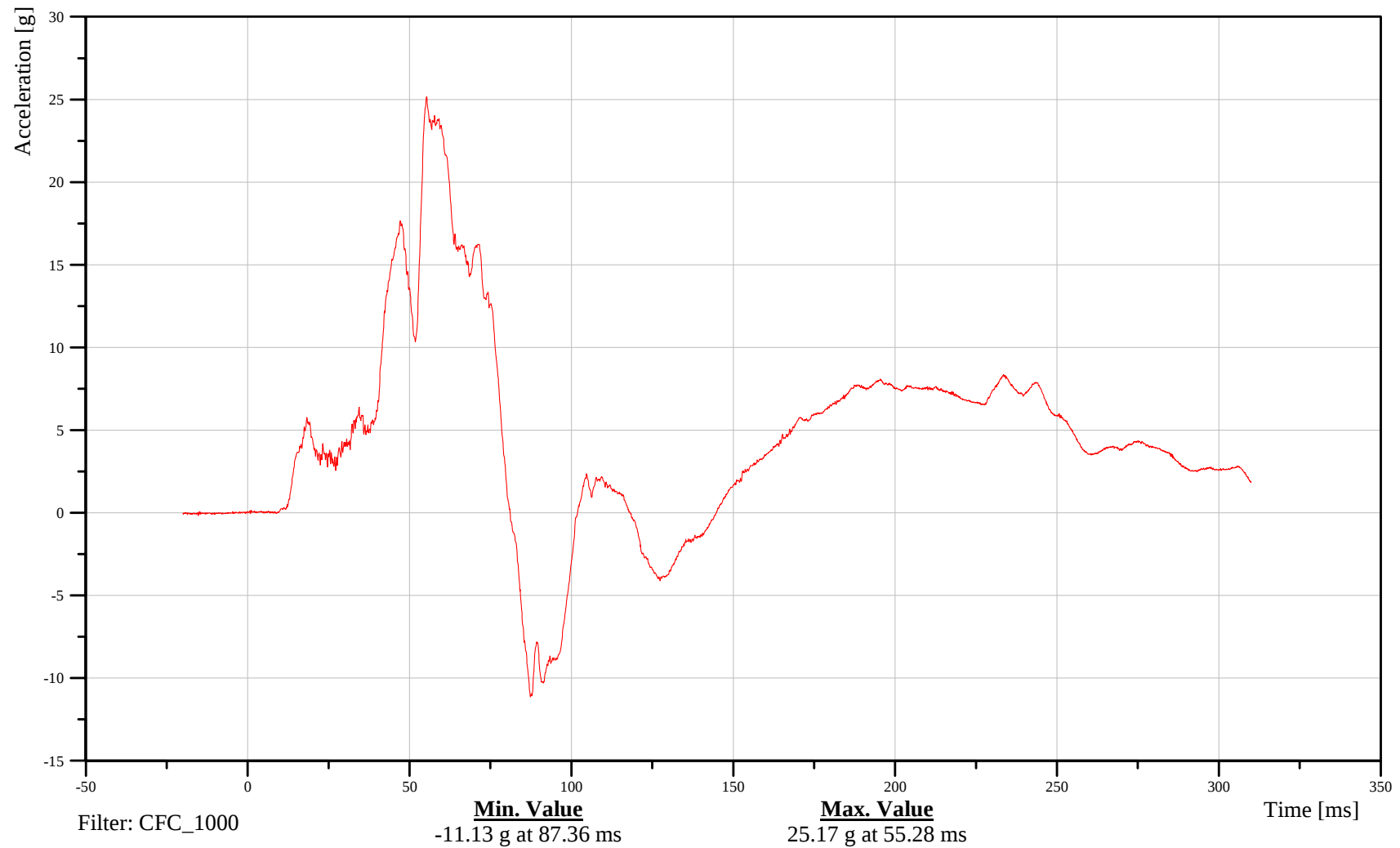
Time: 15:38

Customer: VRTC

11HEADLE00H3ACZA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Upper Neck X-Axis Force

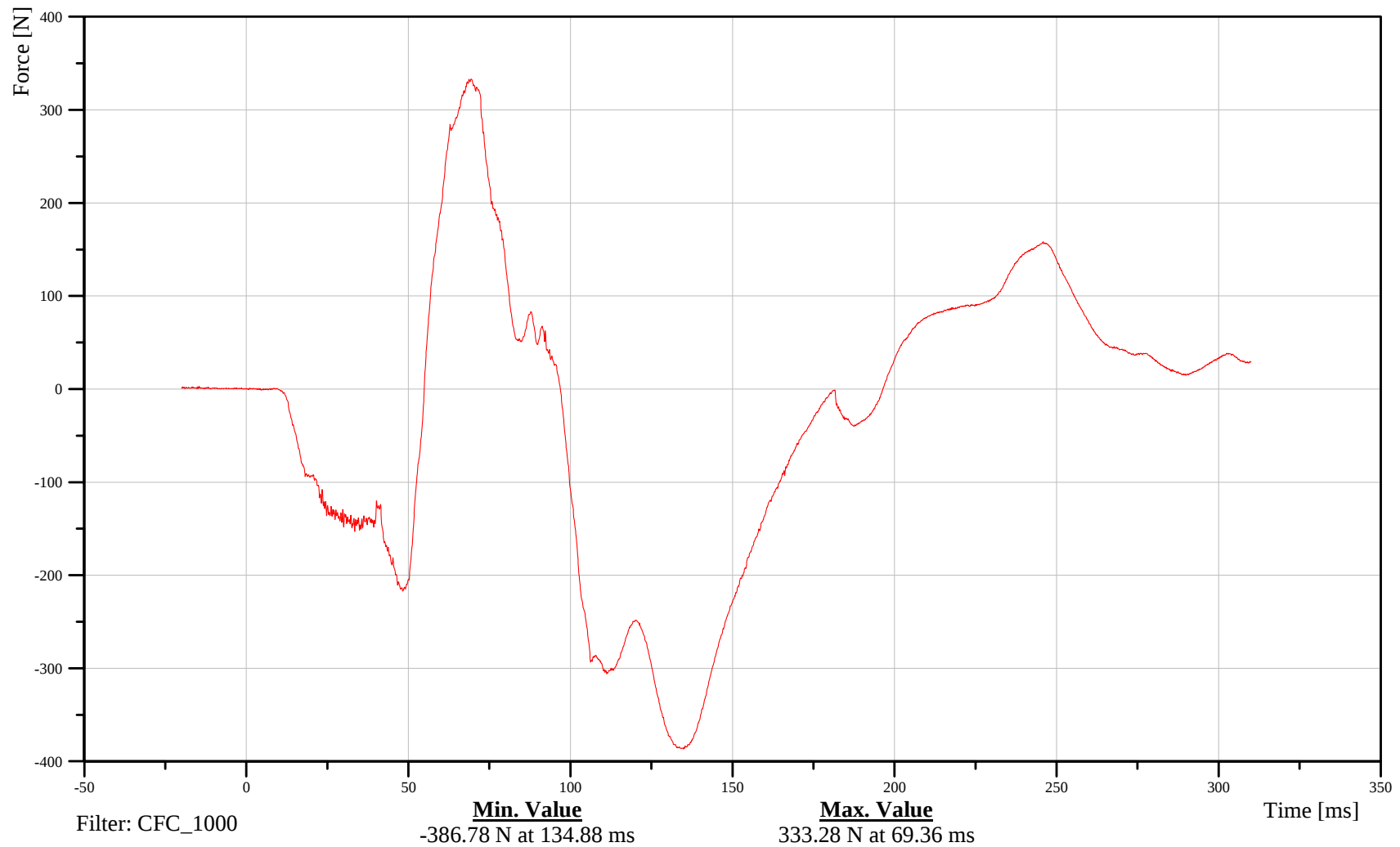
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11NECKUP00H3FOXA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Upper Neck Y-Axis Force

Date: 05/12/2006

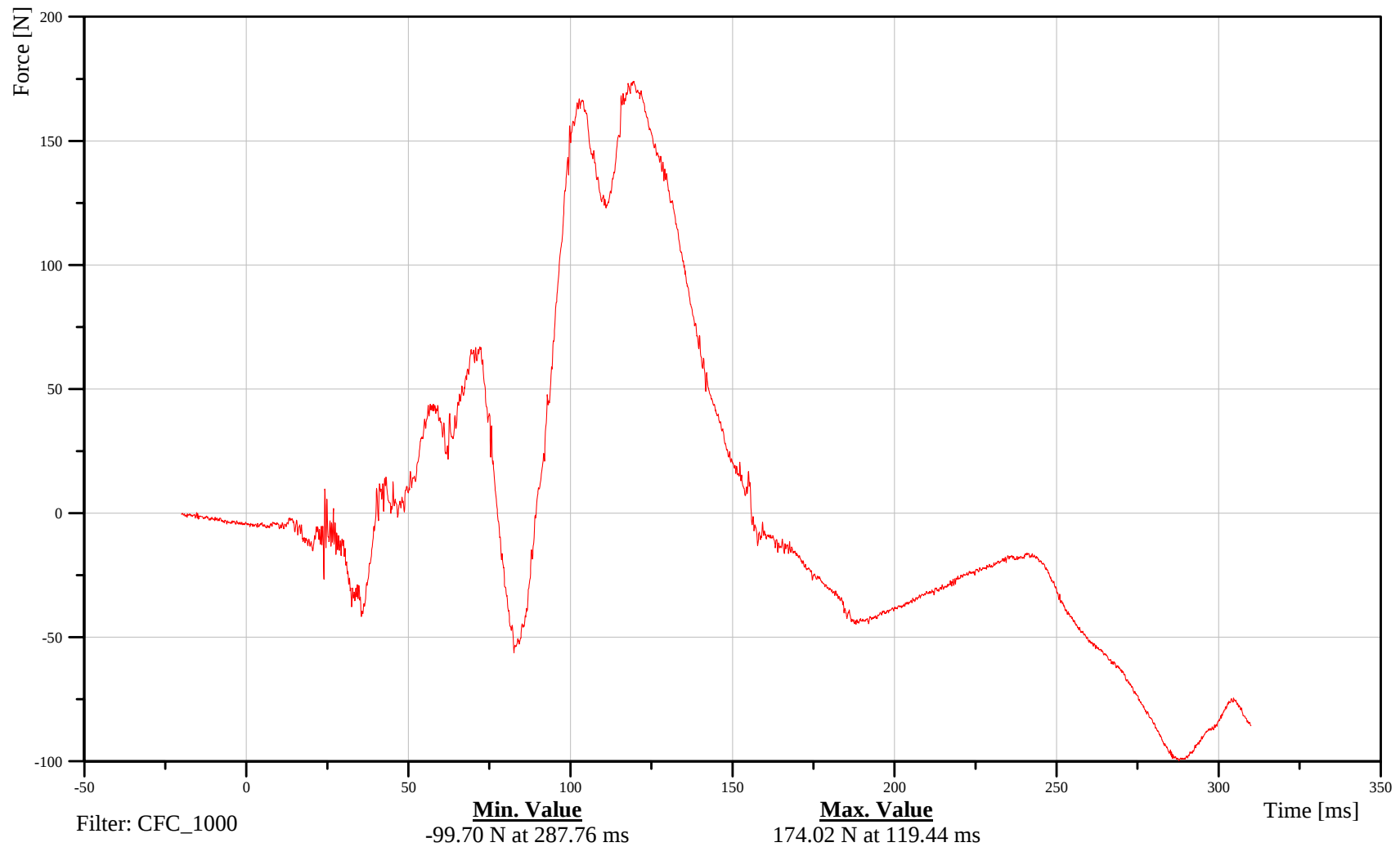
Time: 15:38

Customer: VRTC

11NECKUP00H3FOYA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Upper Neck Z-Axis Force

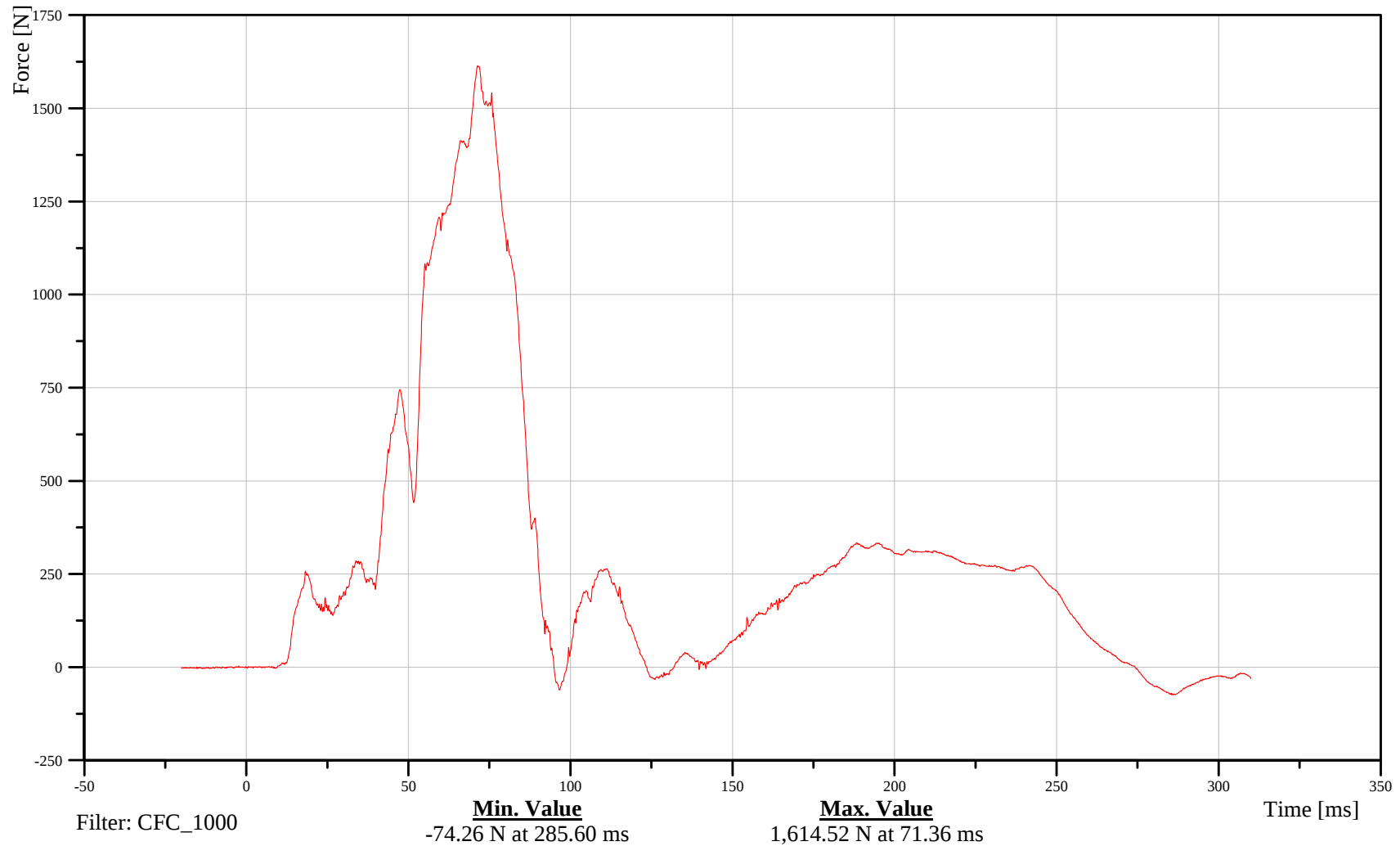
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11NECKUP00H3FOZA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Upper Neck Moment About X Axis

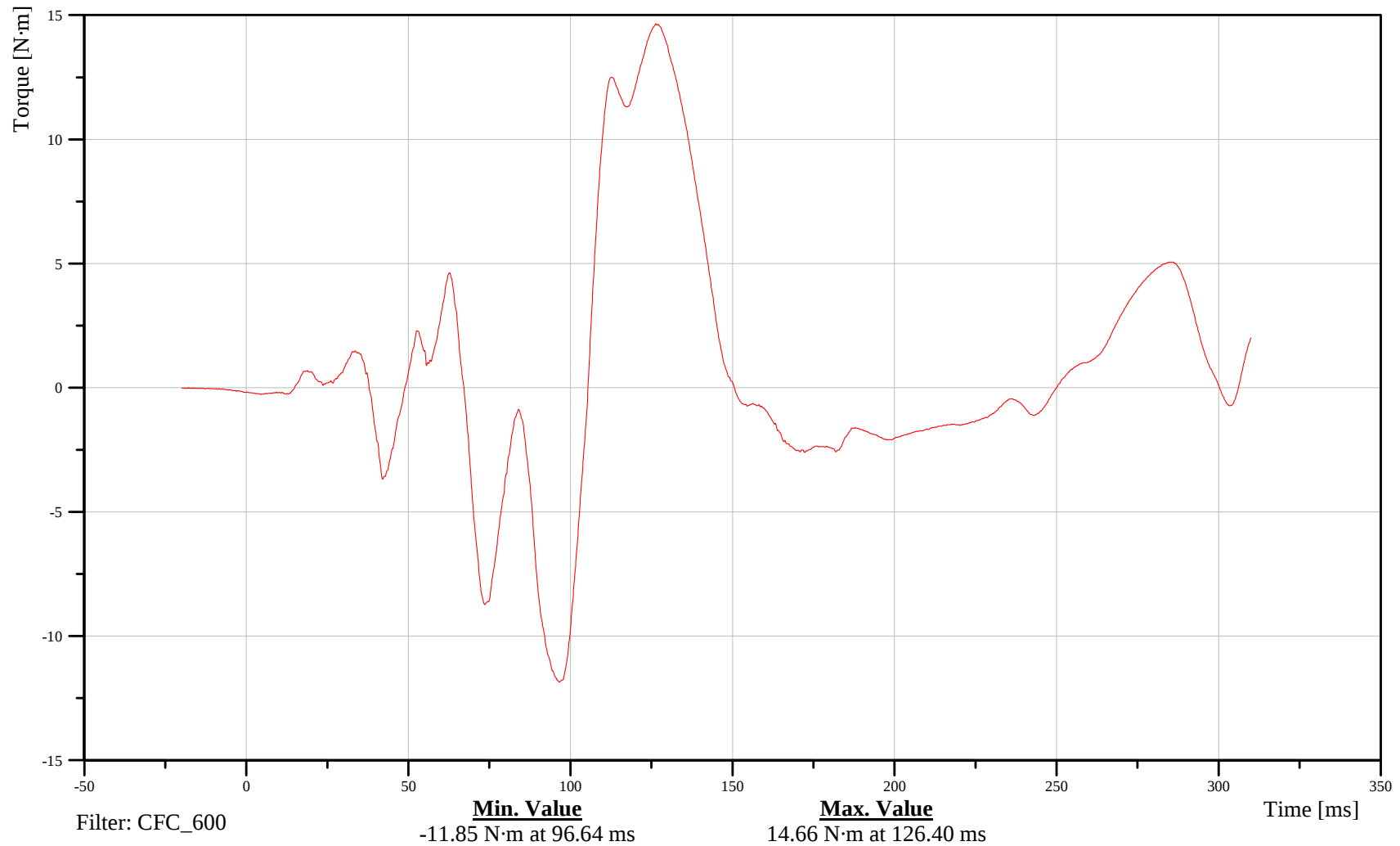
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11NECKUP00H3MOXB

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Date: 05/12/2006

Driver Upper Neck Moment About Y Axis

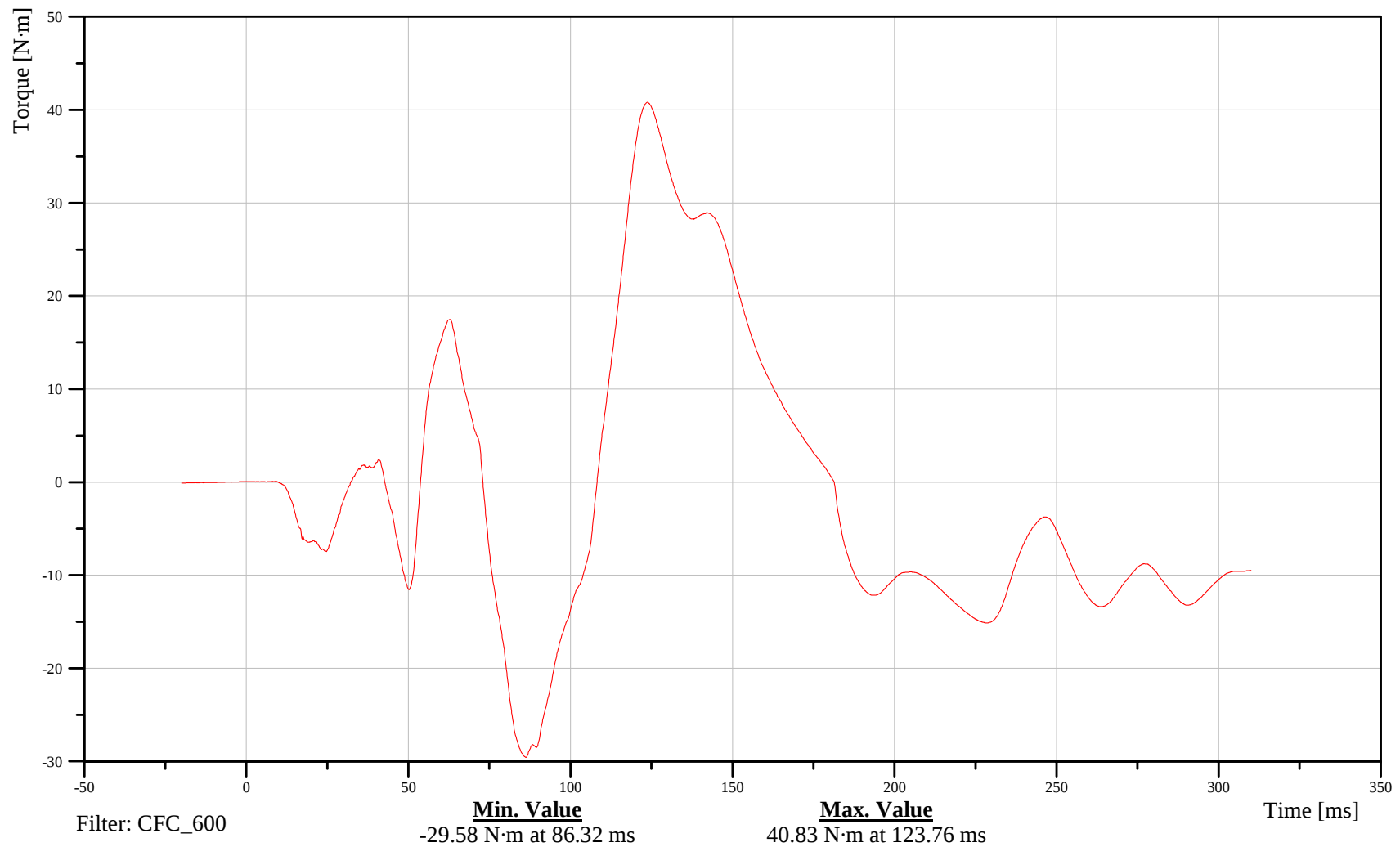
Time: 15:38

Customer: VRTC

11NECKUP00H3MOYB

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Upper Neck Moment About Z Axis

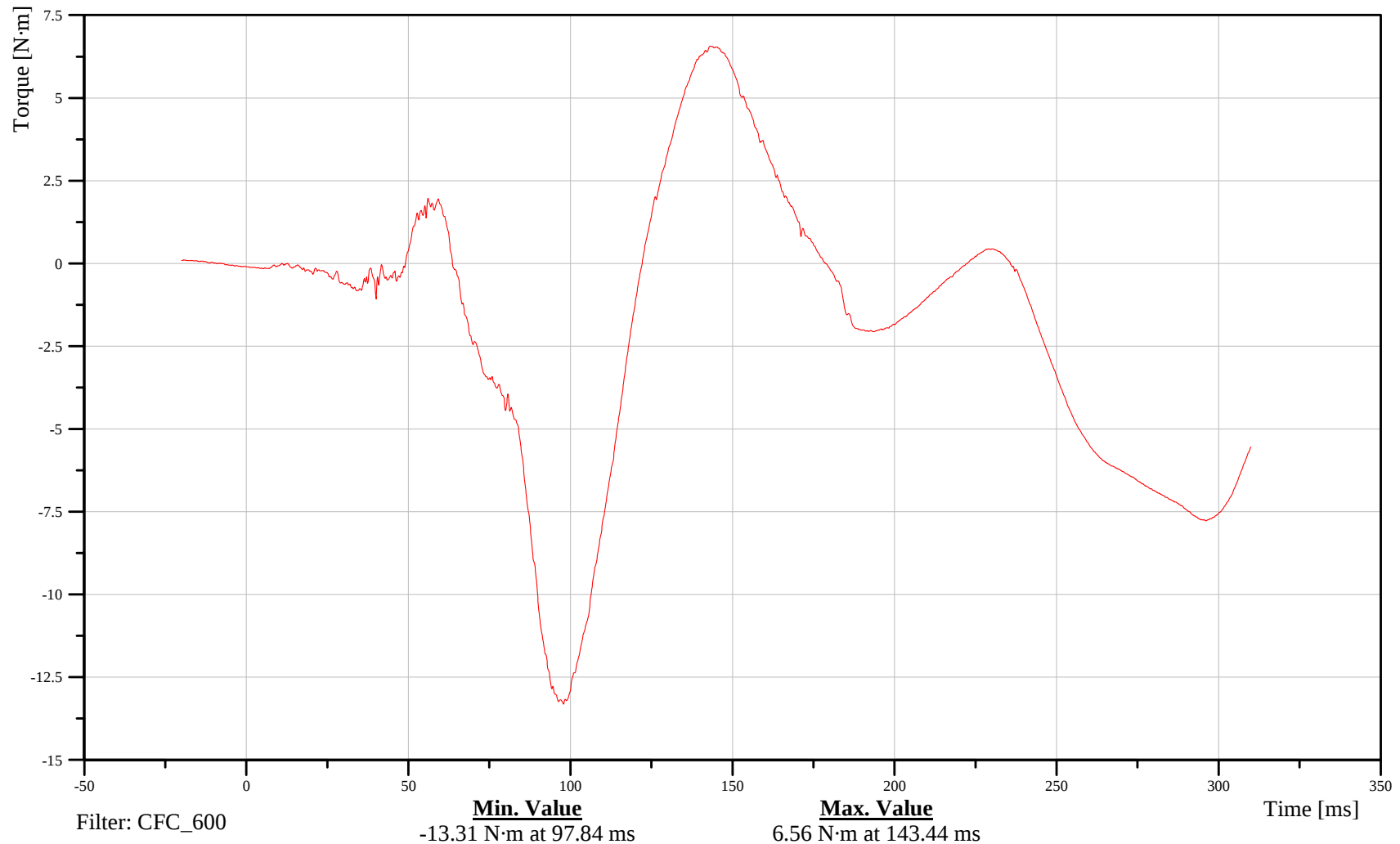
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11NECKUP00H3MOZB

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Lower Neck X-Axis Force

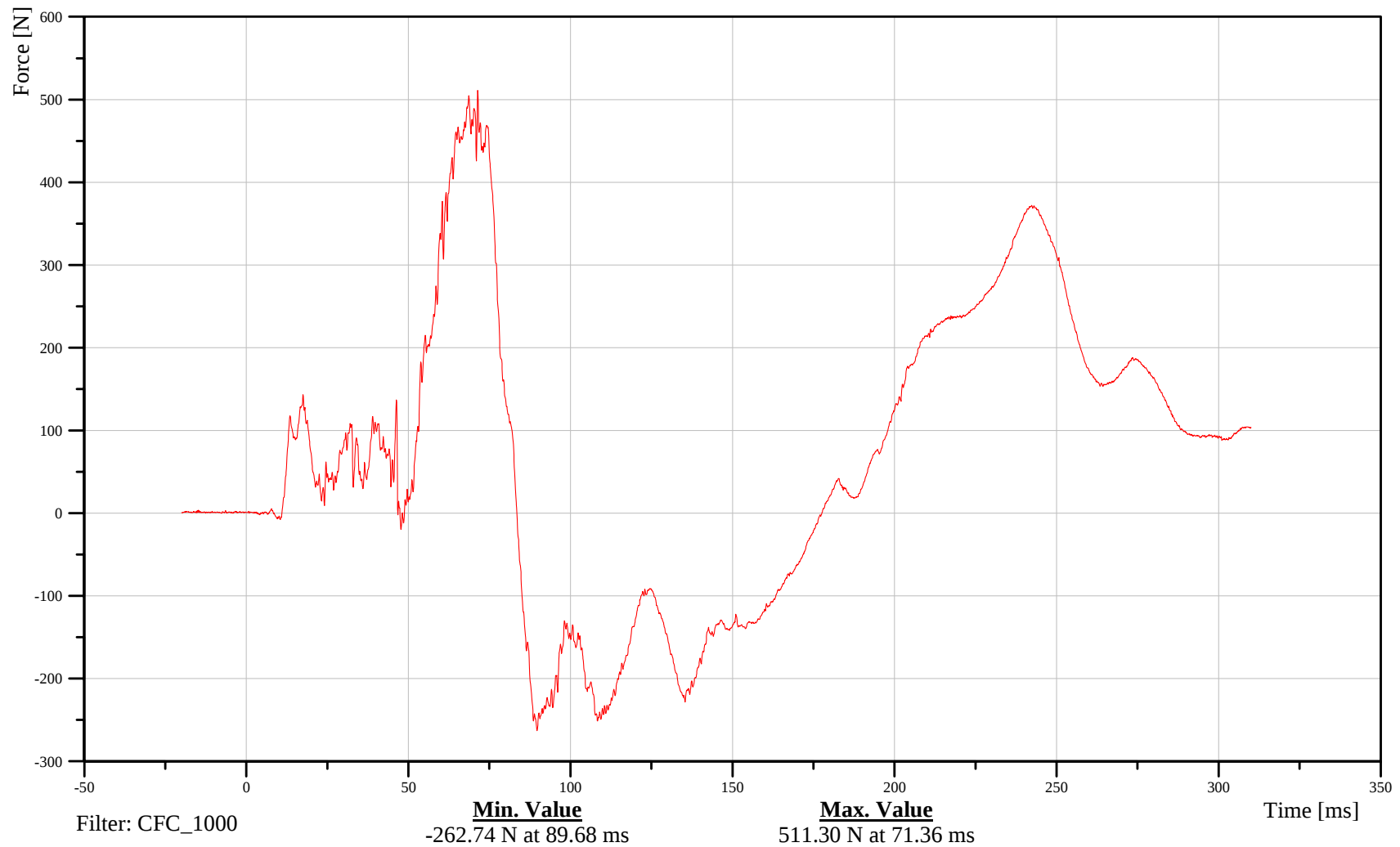
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11NECKLO00H3FOXA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Lower Neck Y-Axis Force

Date: 05/12/2006

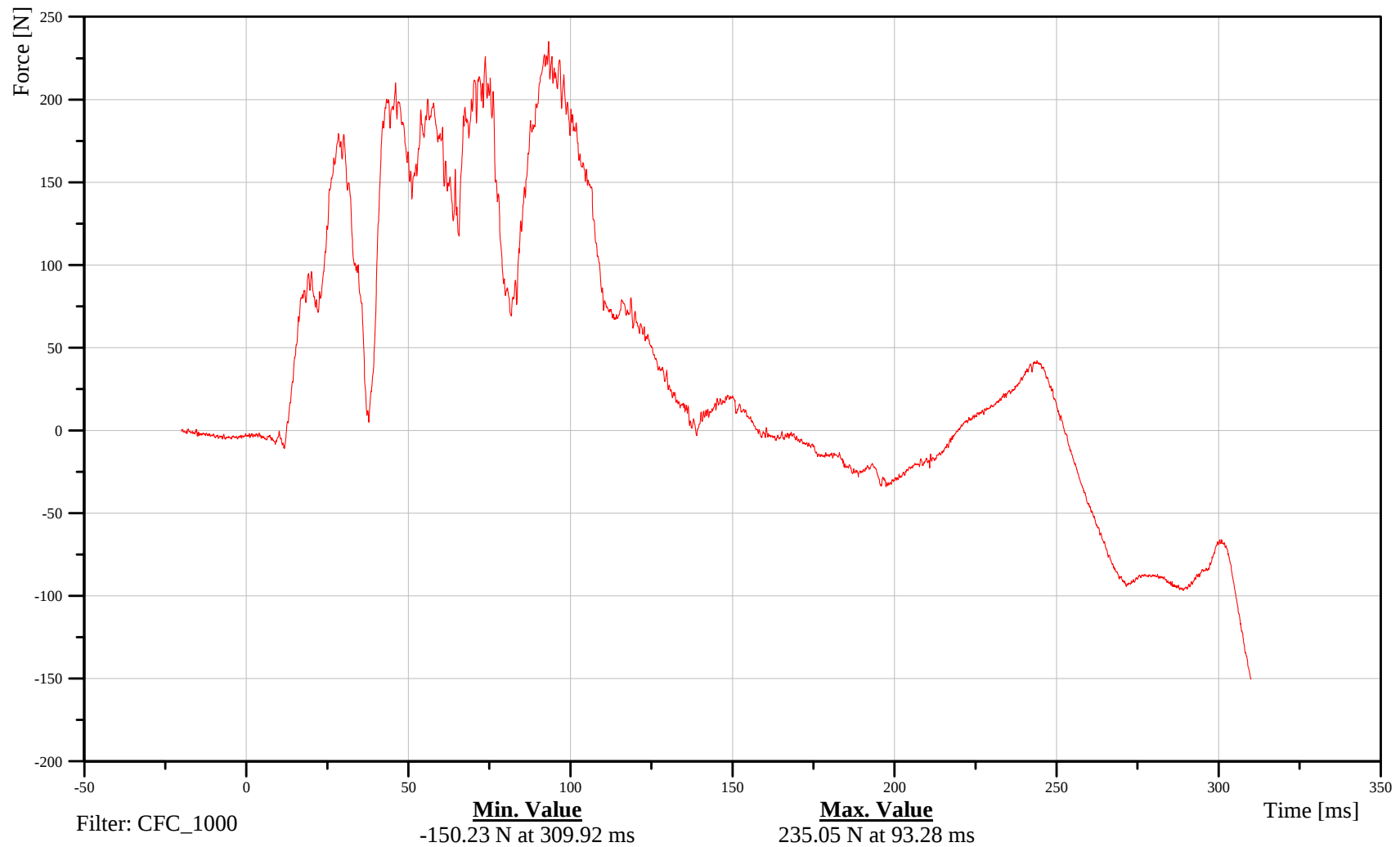
Time: 15:38

Customer: VRTC

11NECKLO00H3FOYA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Lower Neck Z-Axis Force

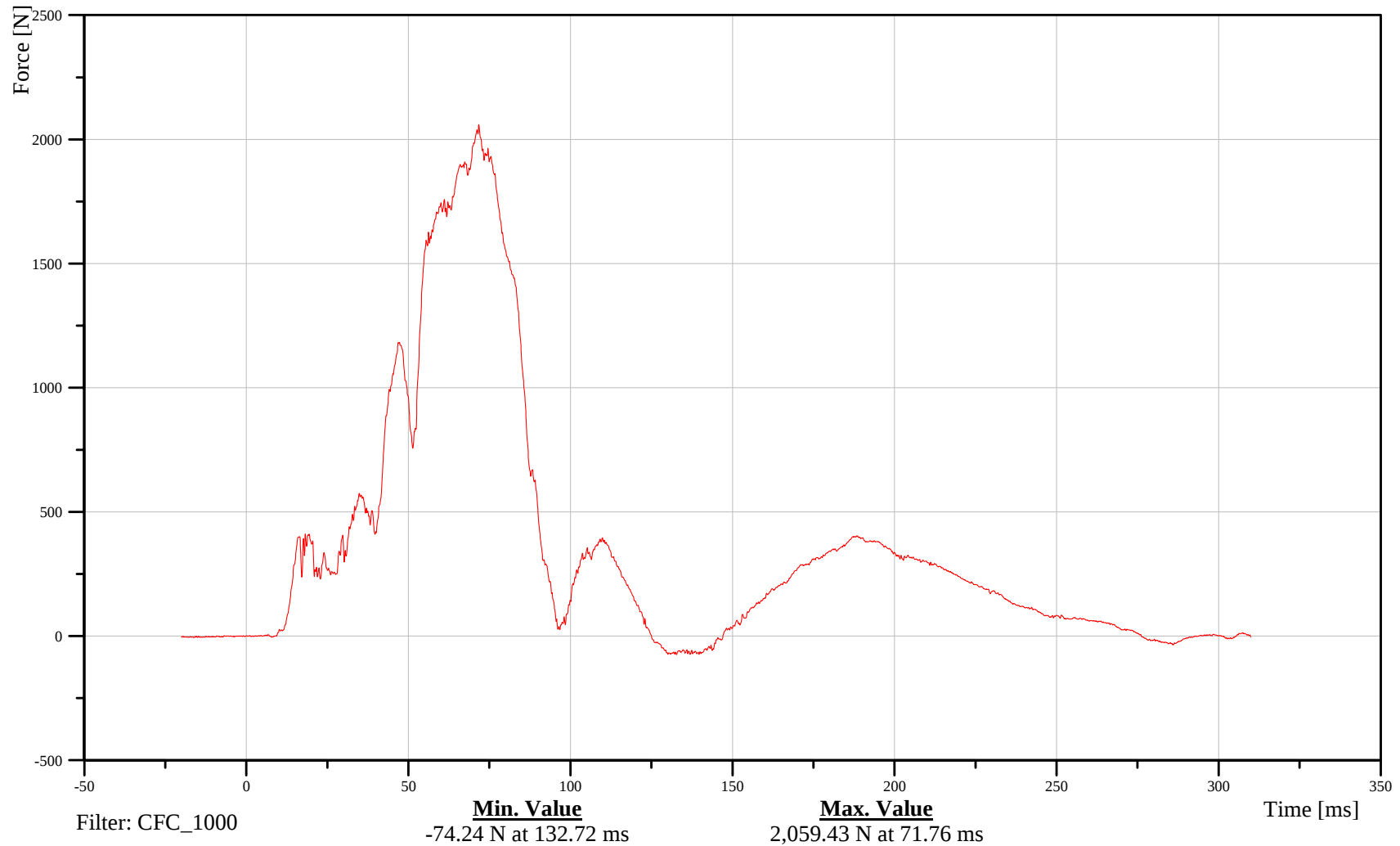
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11NECKLO00H3FOZA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Lower Neck Moment About X Axis

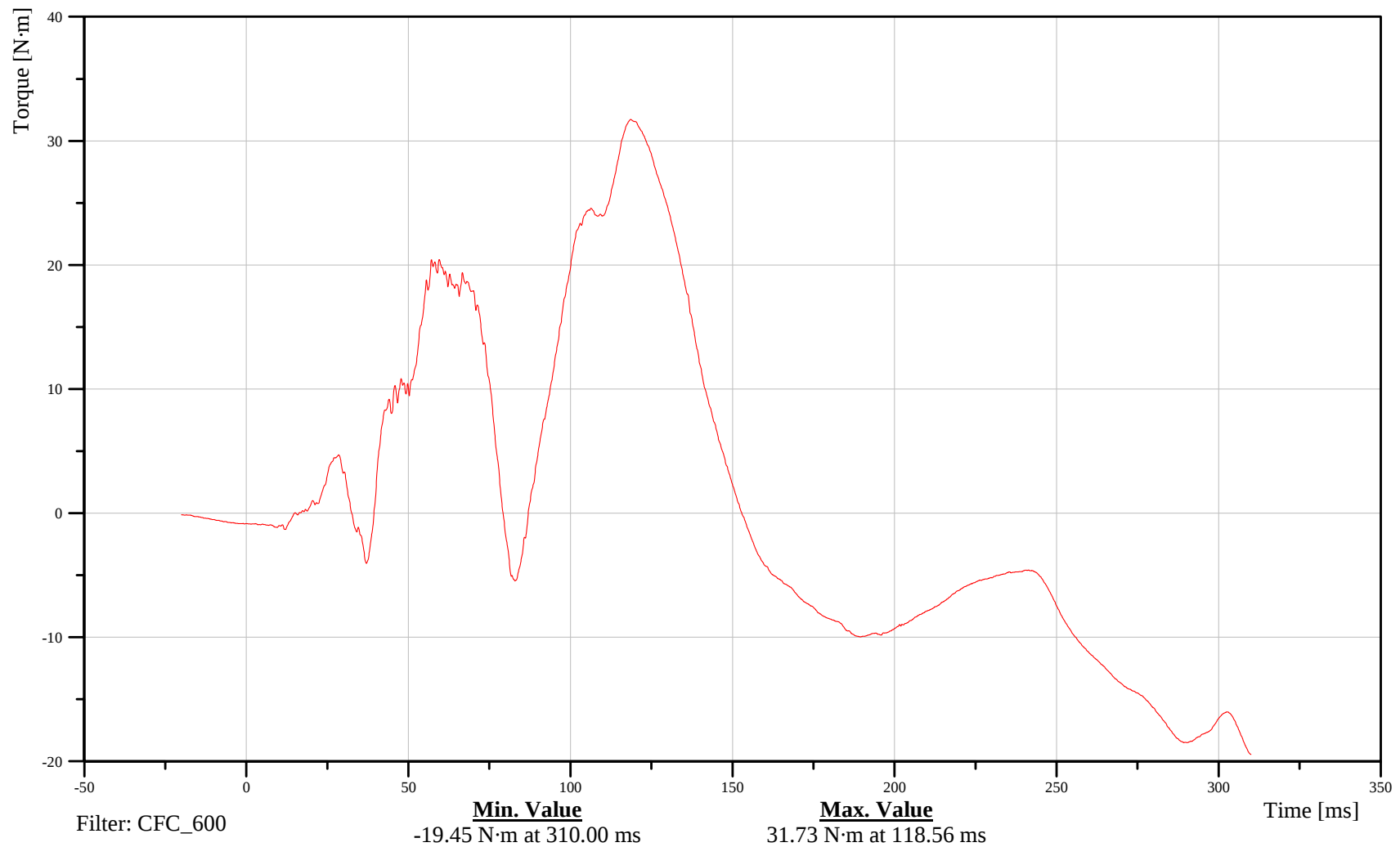
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11NECKLO00H3MOXB

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Lower Neck Moment About Y Axis

Date: 05/12/2006

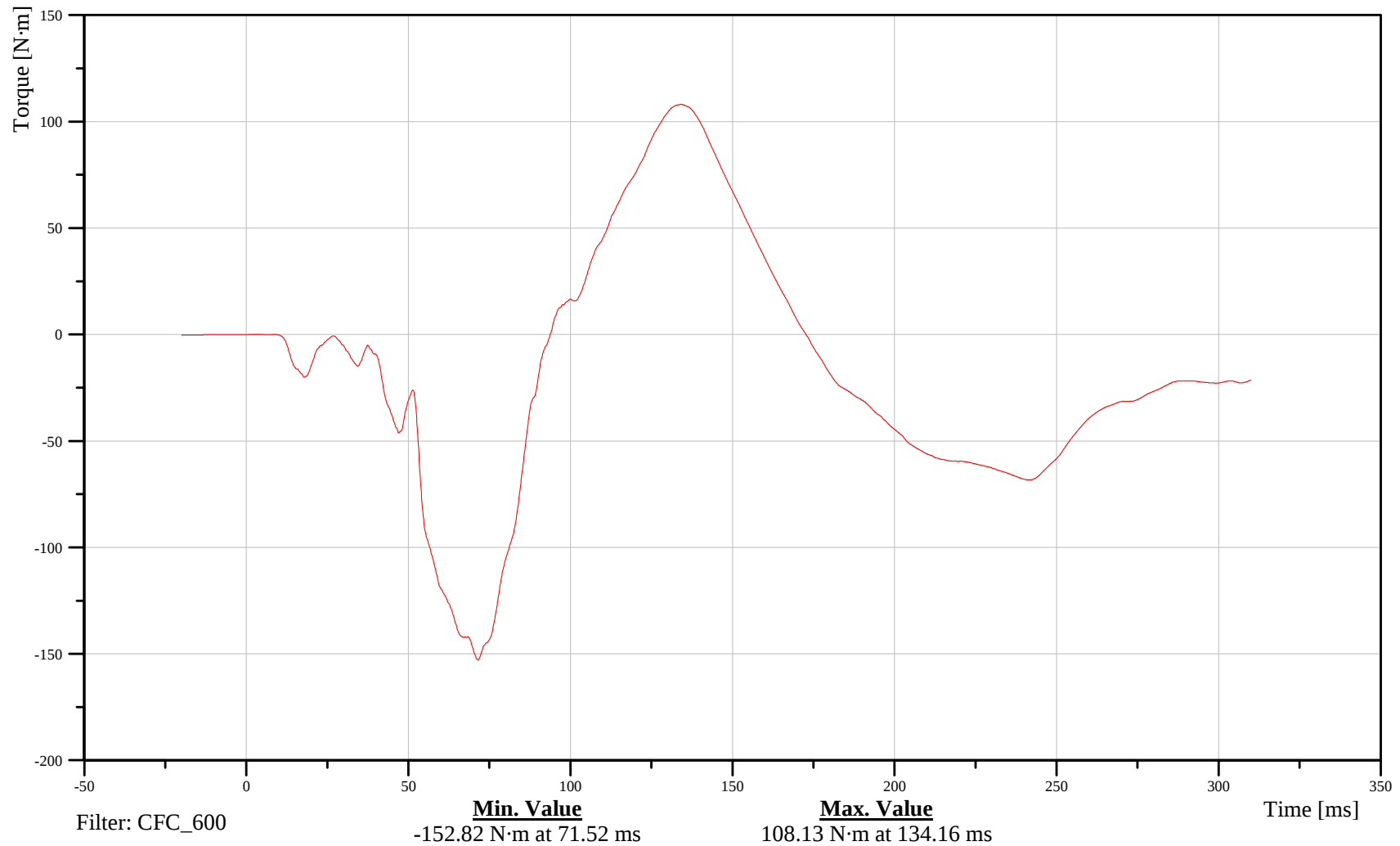
Time: 15:38

Customer: VRTC

11NECKLO00H3MOYB

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Lower Neck Moment About Z Axis

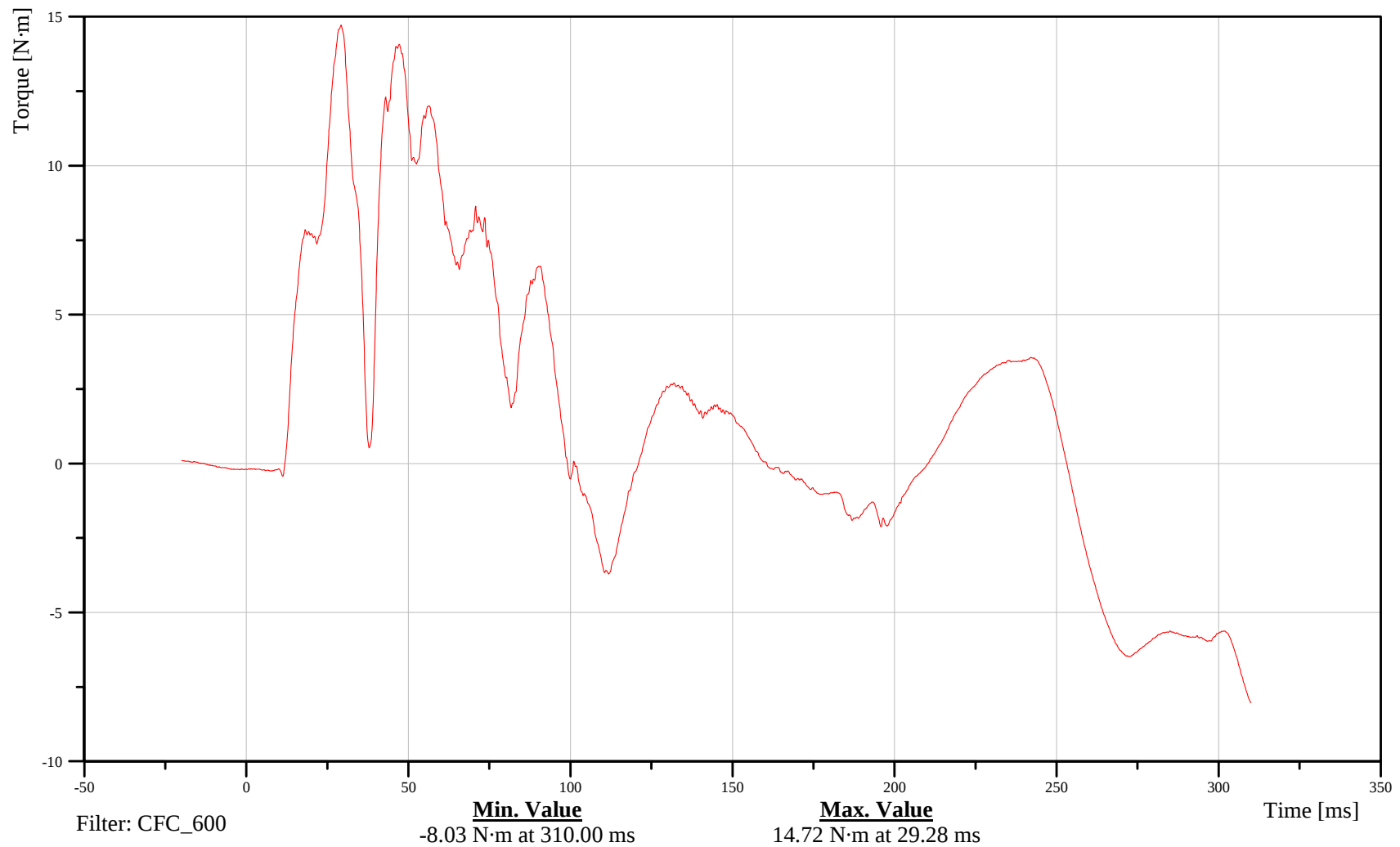
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11NECKLO00H3MOZB

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Chest CG X-Axis Acceleration

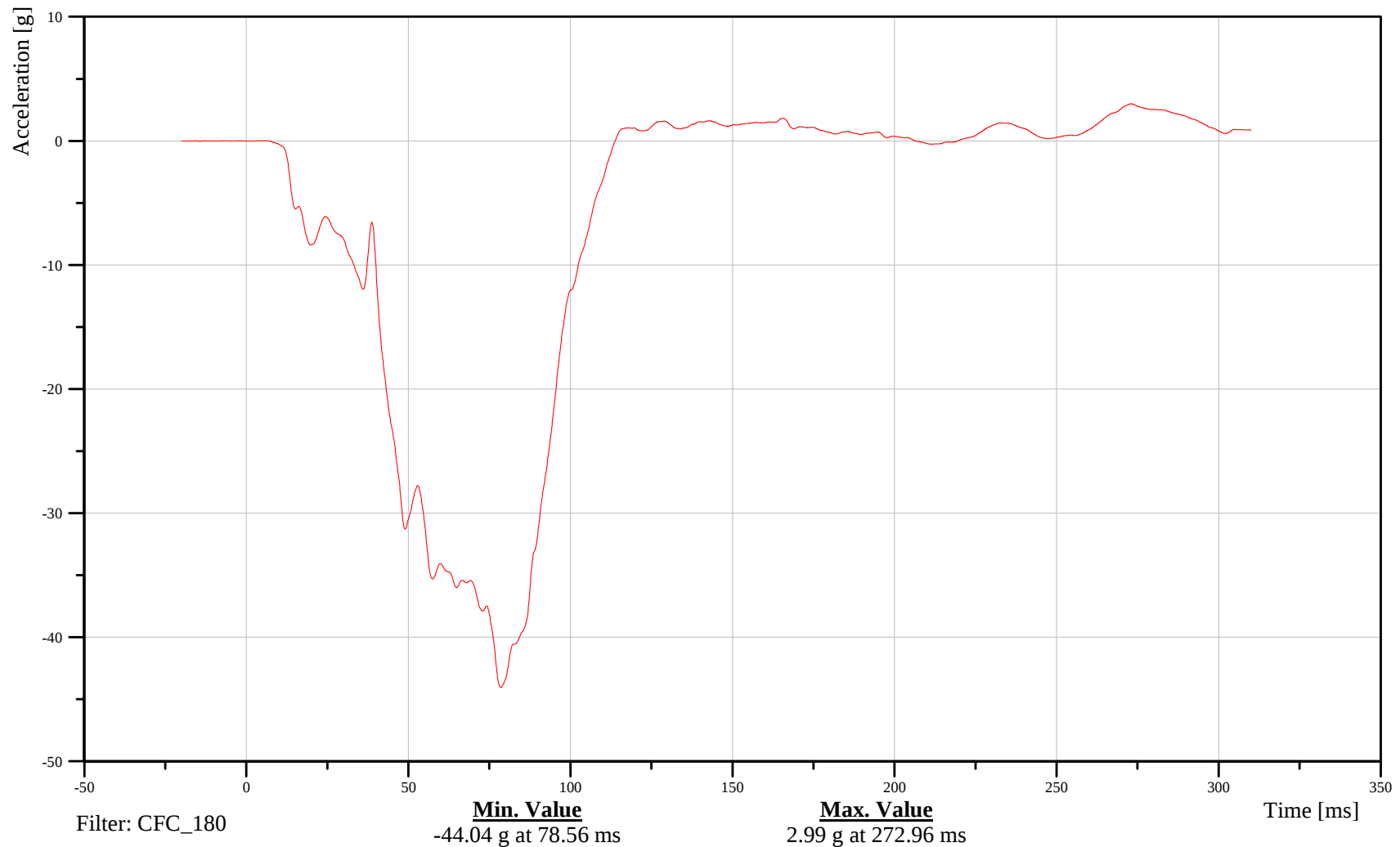
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Chest CG Y-Axis Acceleration

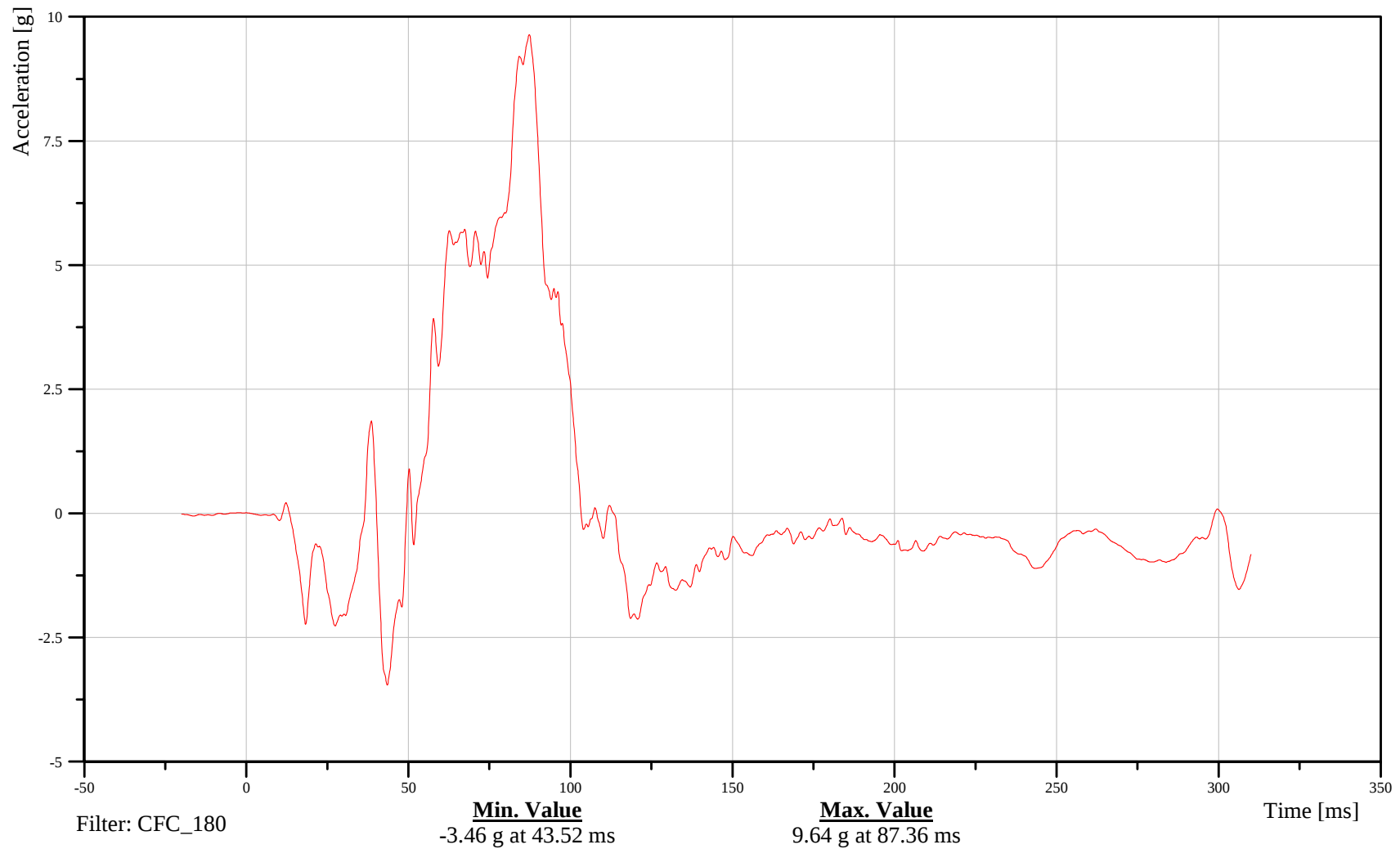
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Chest CG Z-Axis Acceleration

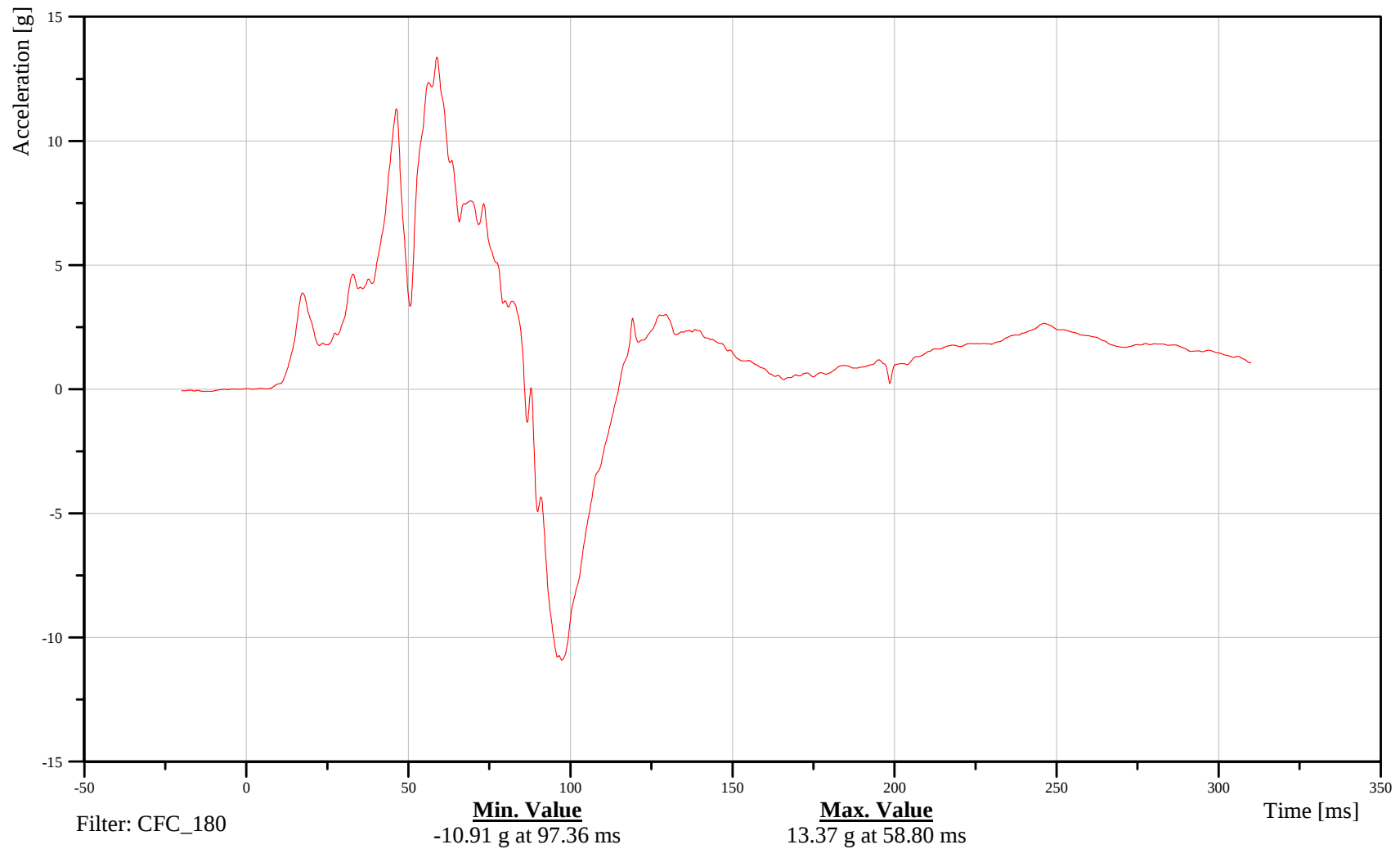
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Chest CG Resultant Acceleration

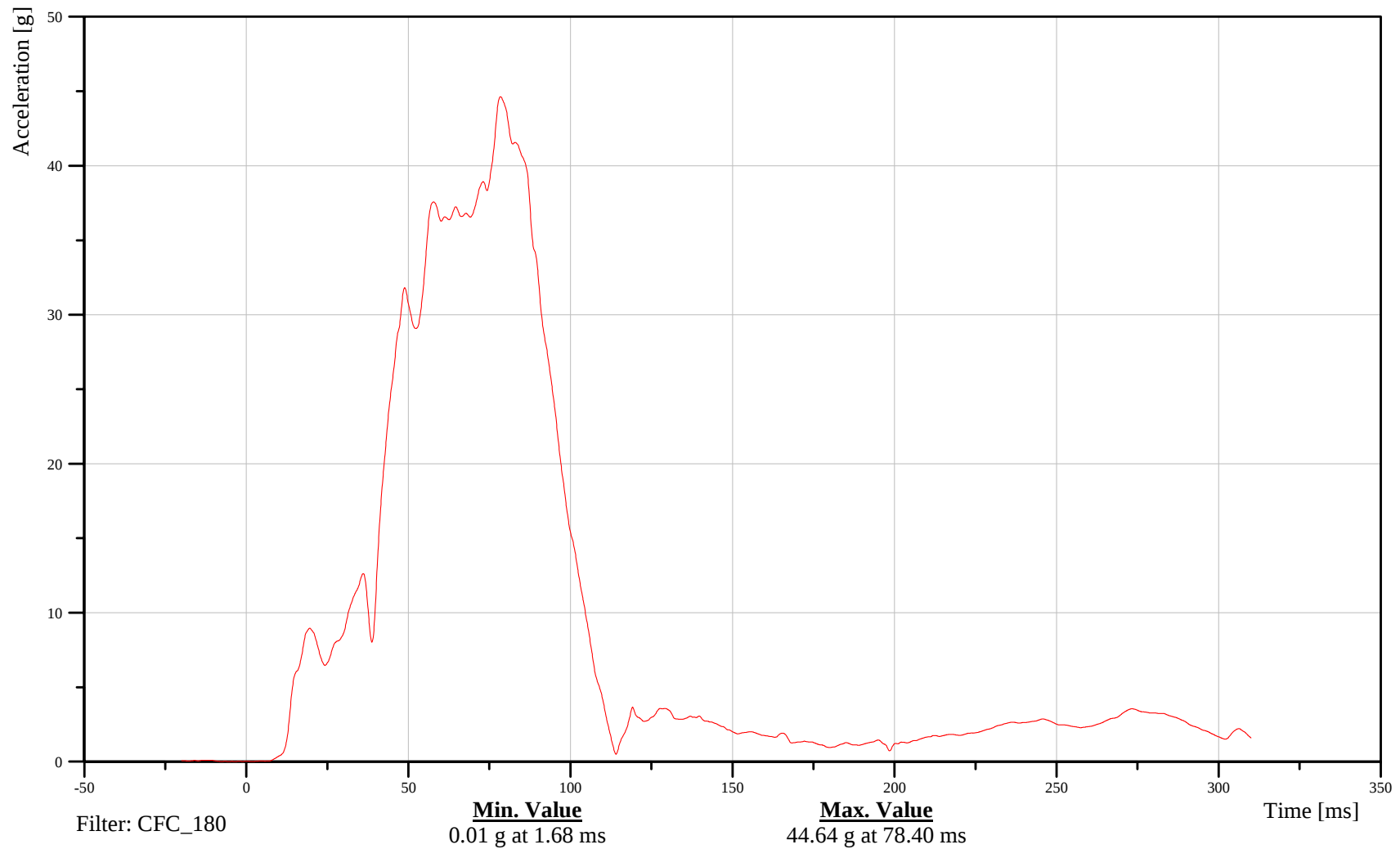
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Redundant Chest CG X-Axis Acceleration

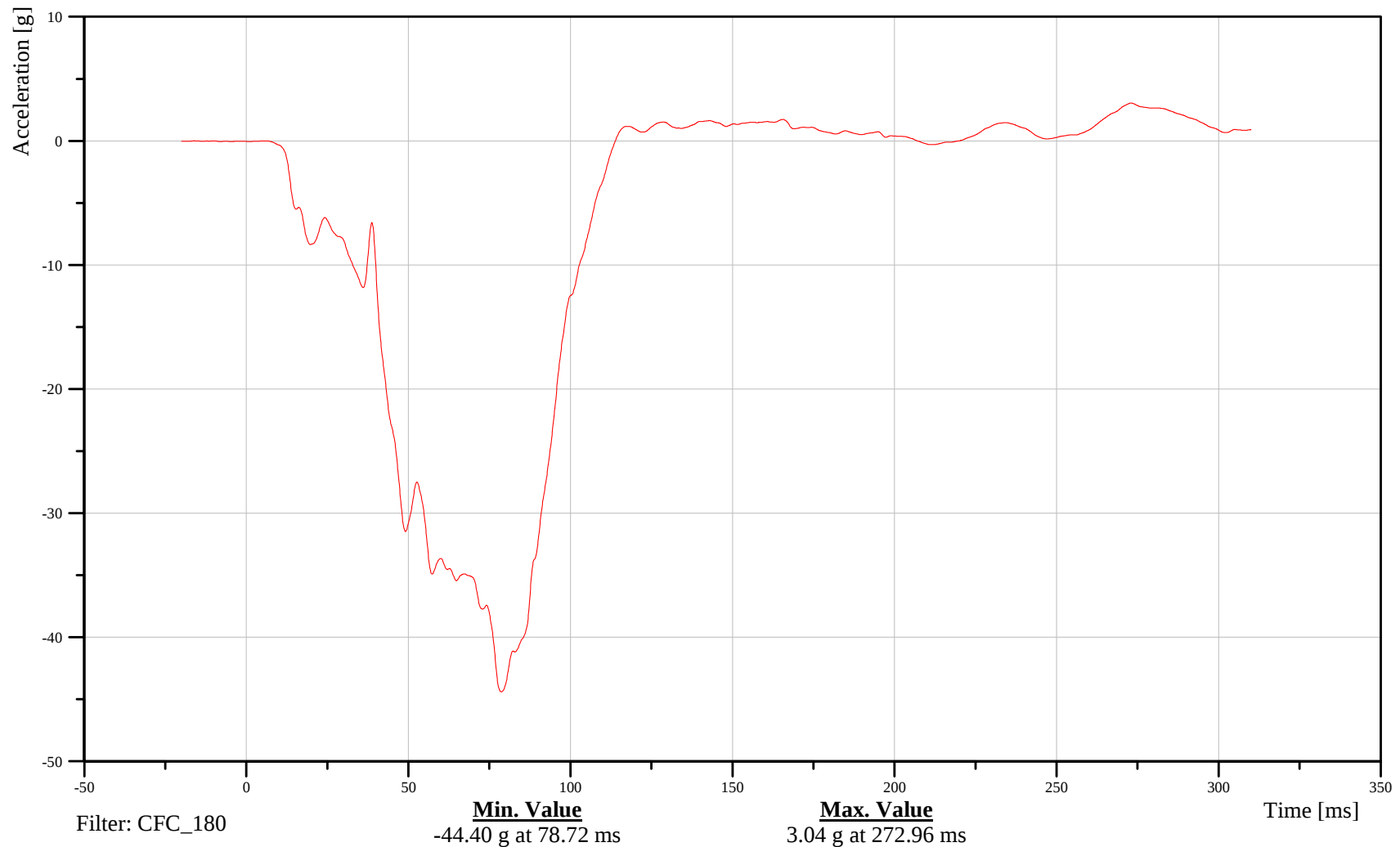
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11CHSTCGRDH3ACXC

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Redundant Chest CG Y-Axis Acceleration

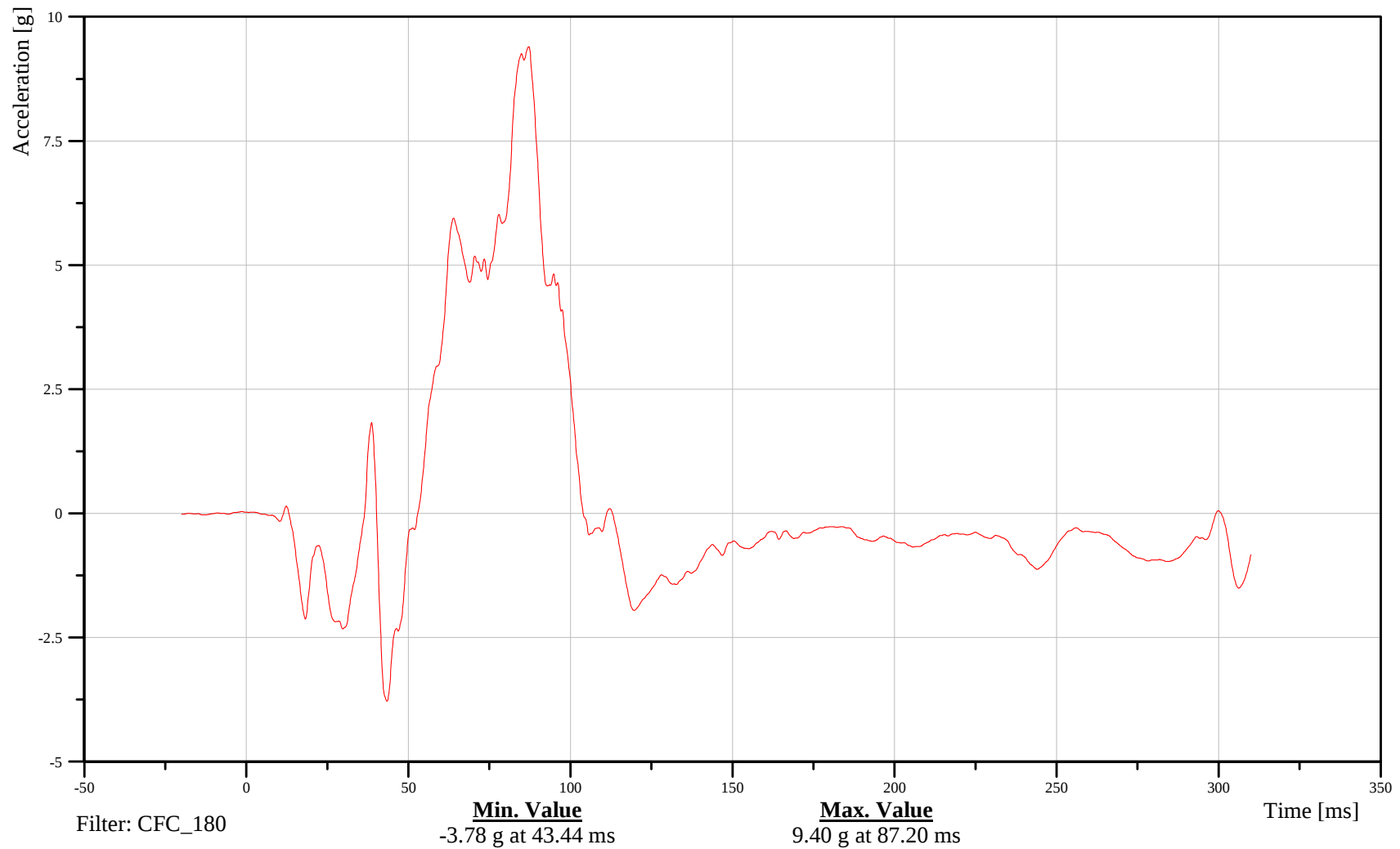
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11CHSTCGRDH3ACYC

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Redundant Chest CG Z-Axis Acceleration

Date: 05/12/2006

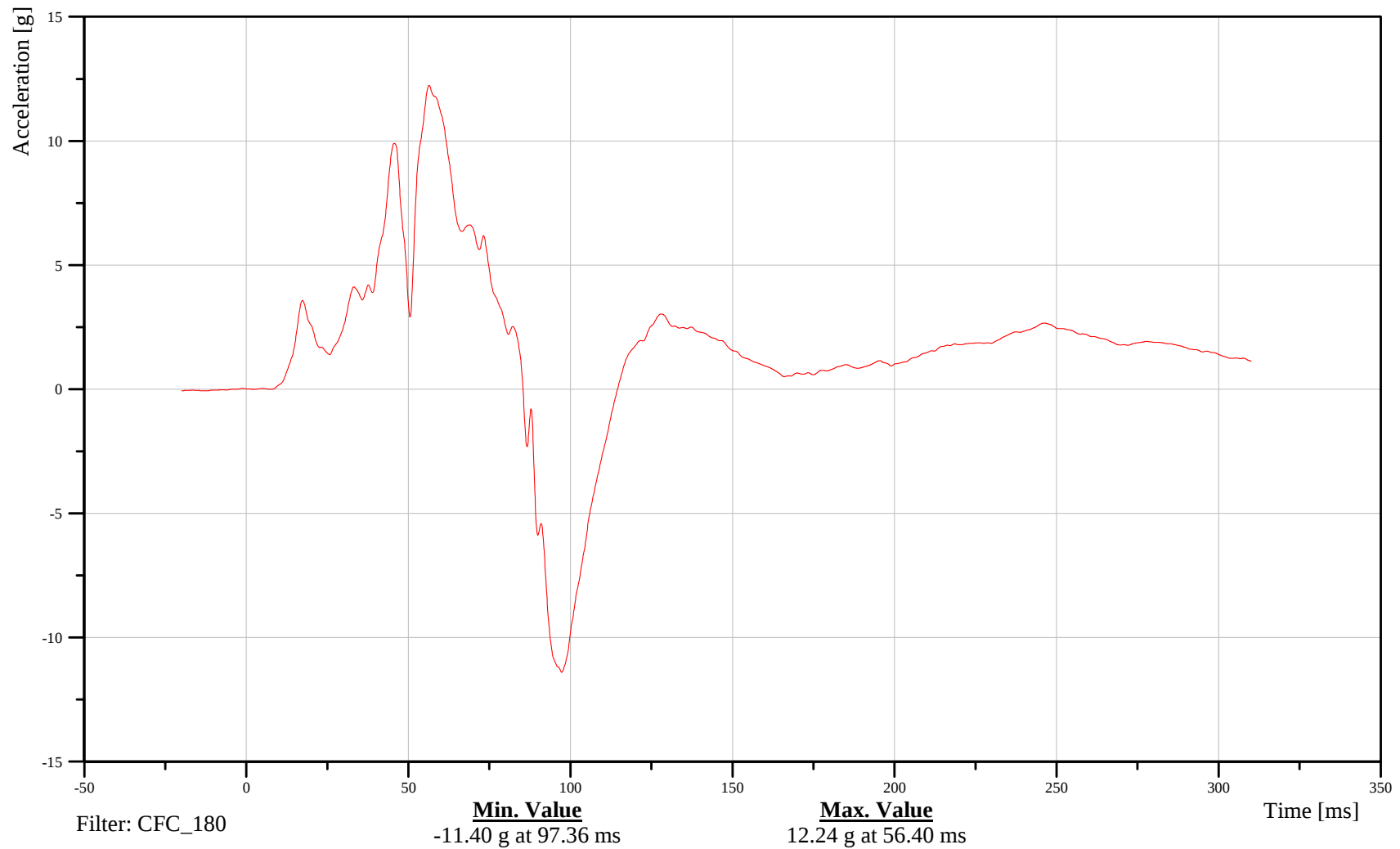
Time: 15:38

Customer: VRTC

11CHSTCGRDH3ACZC

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Date: 05/12/2006

Time: 15:38

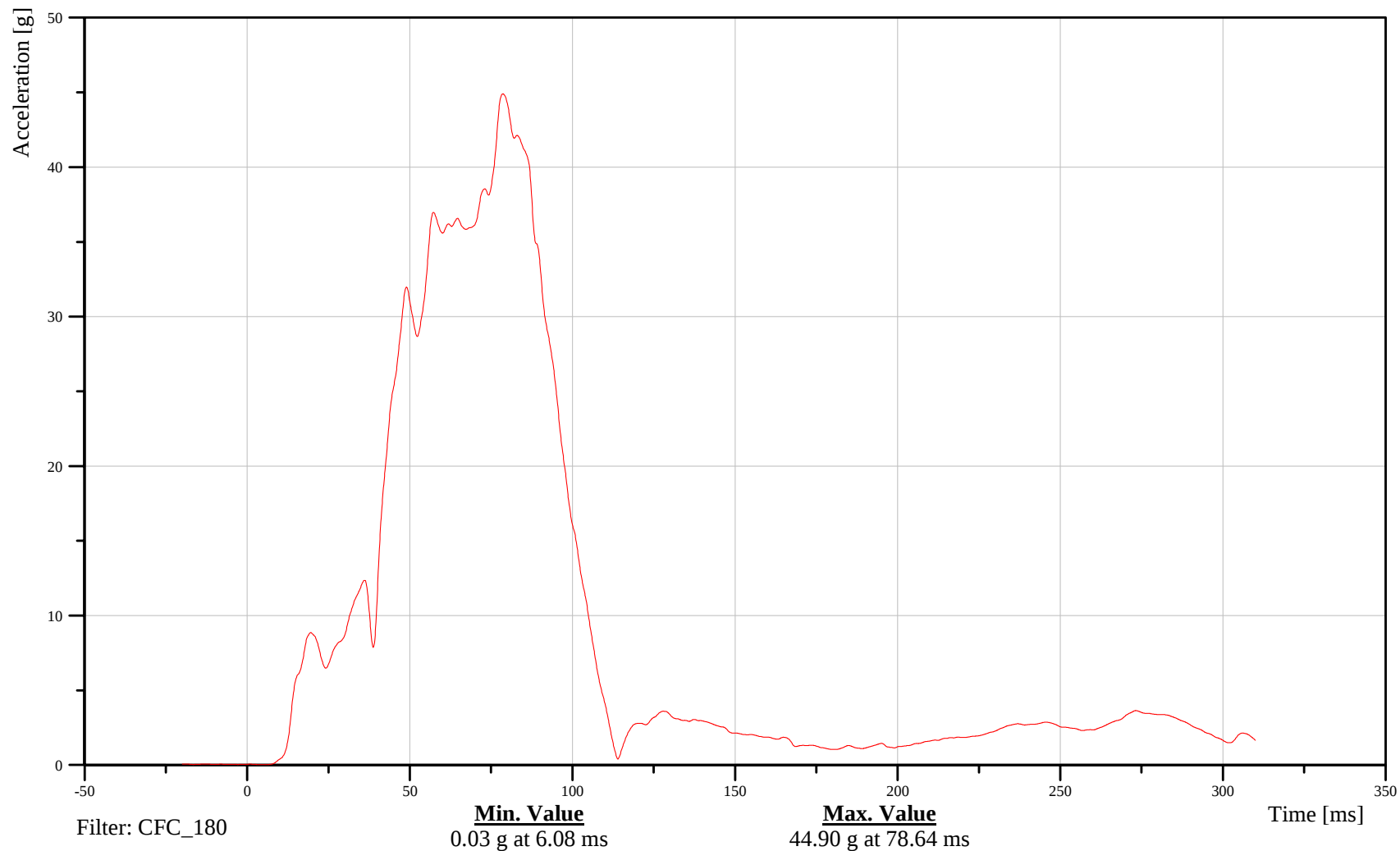
Driver Redundant Chest CG Resultant Acceleration

Customer: VRTC

11CHSTCGRDH3ACRC

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Chest Displacement

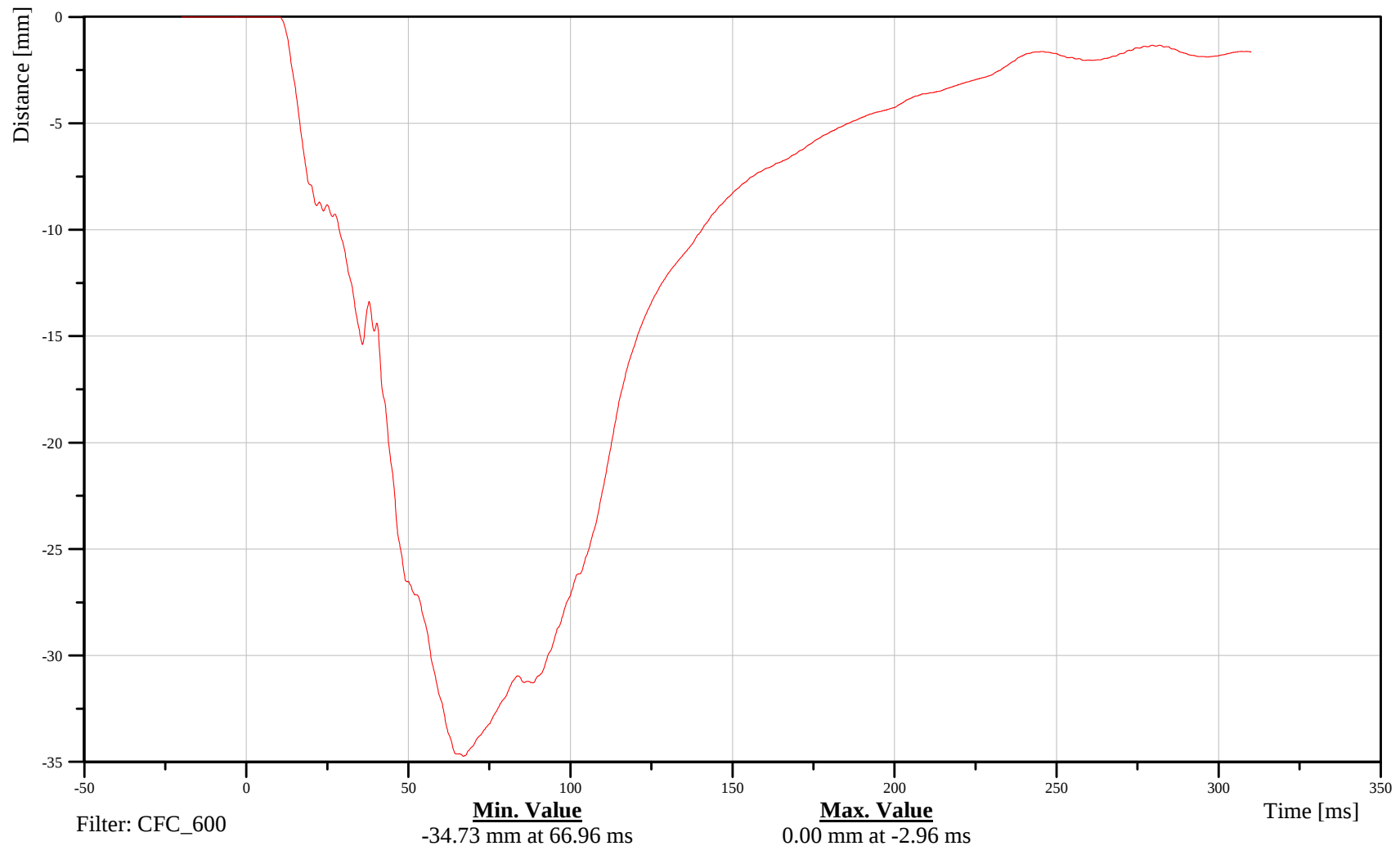
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11CHST0000H3DSXB

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Pelvis CG X-Axis Acceleration

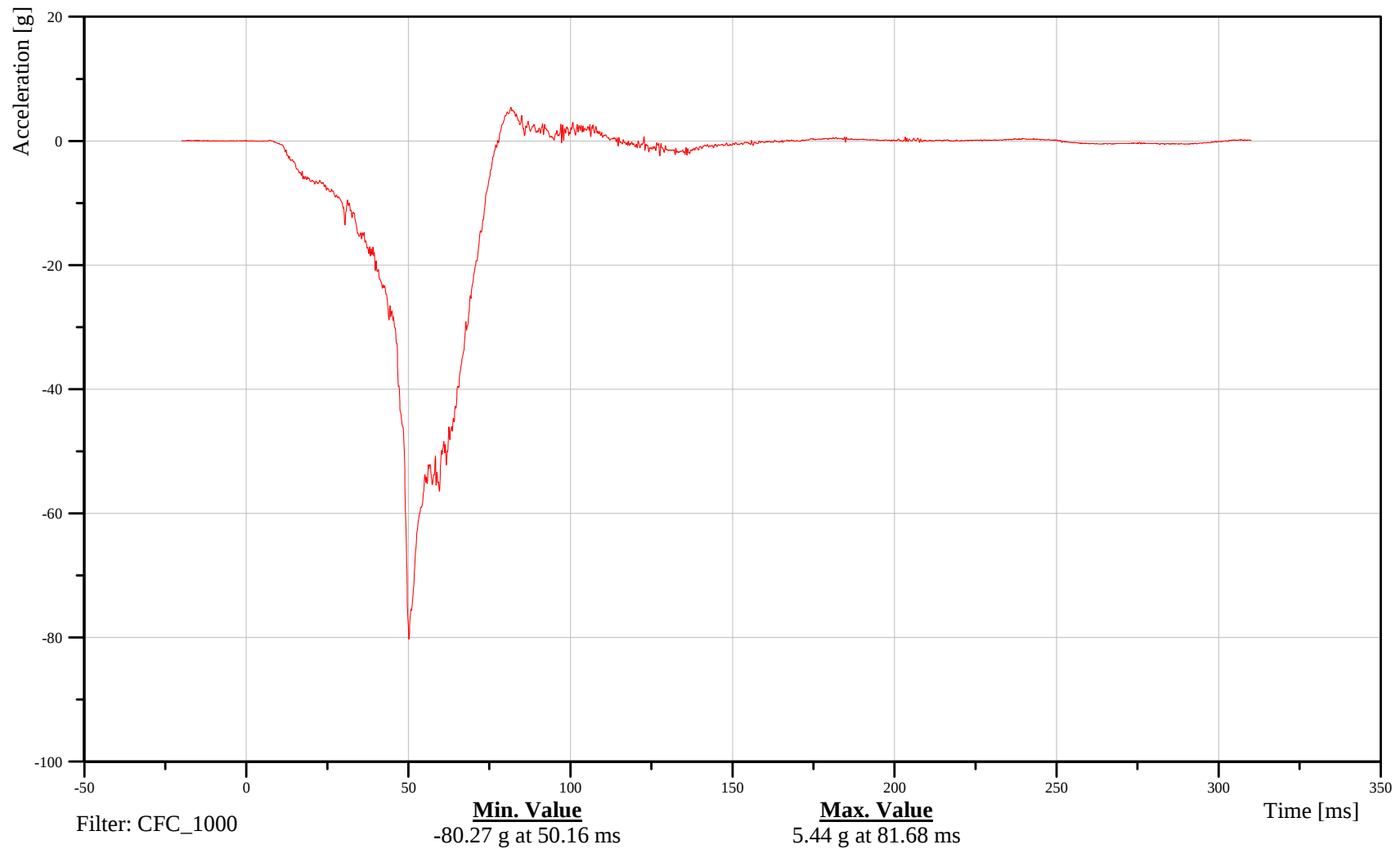
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11PELVCG00H3ACXA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Pelvis CG Y-Axis Acceleration

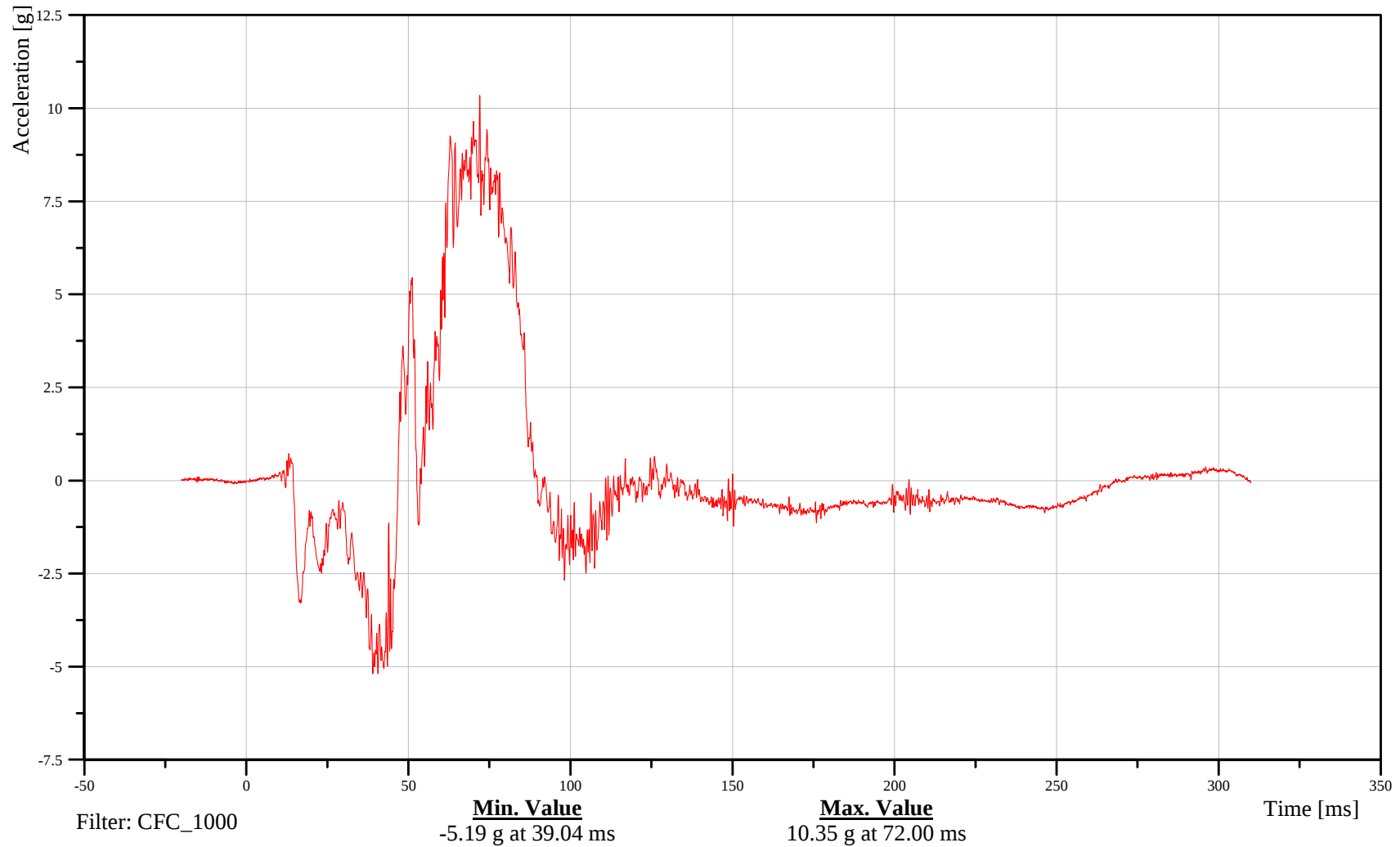
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11PELVCG00H3ACYA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Pelvis CG Z-Axis Acceleration

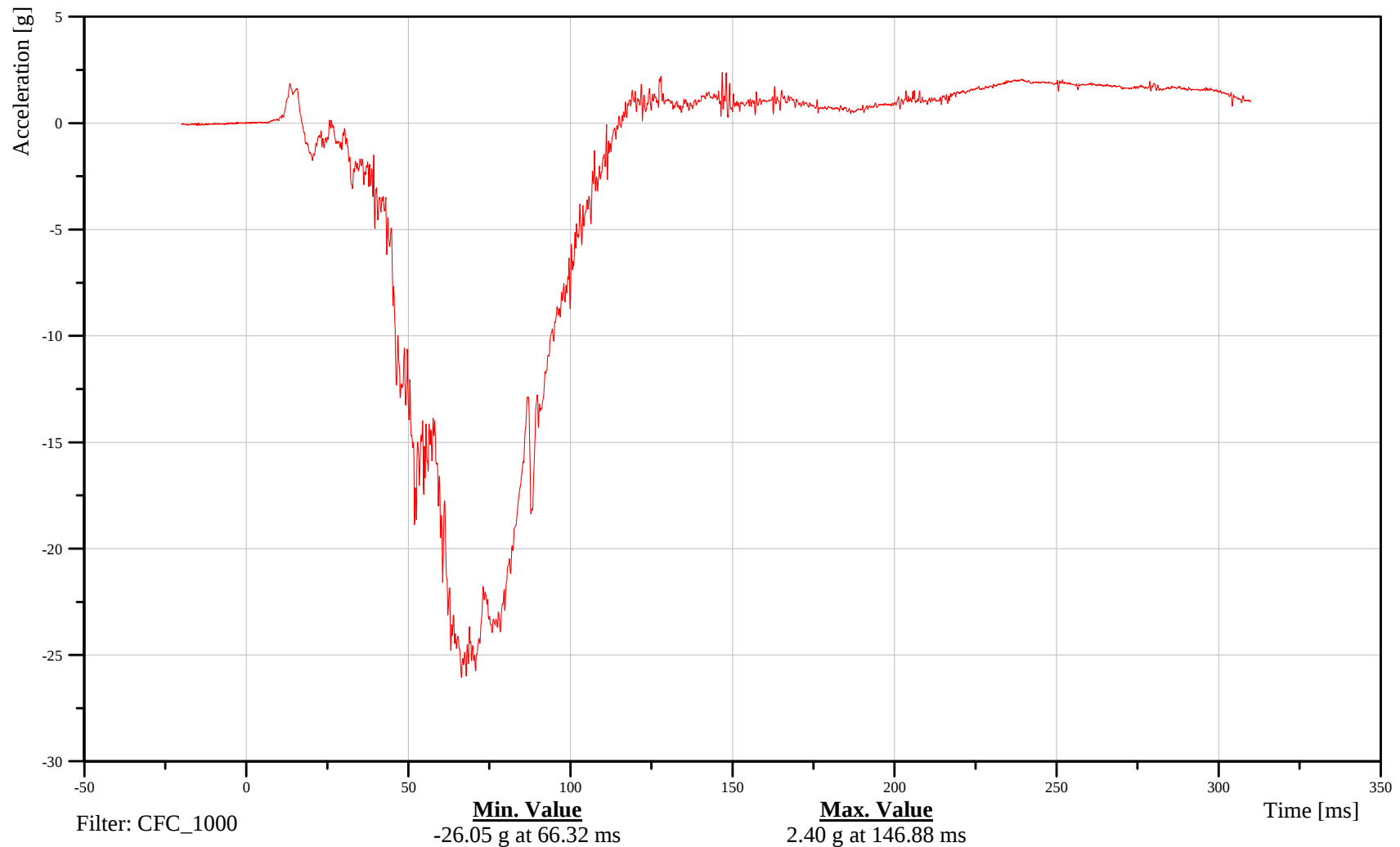
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11PELVCG00H3ACZA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Pelvis CG Resultant Acceleration

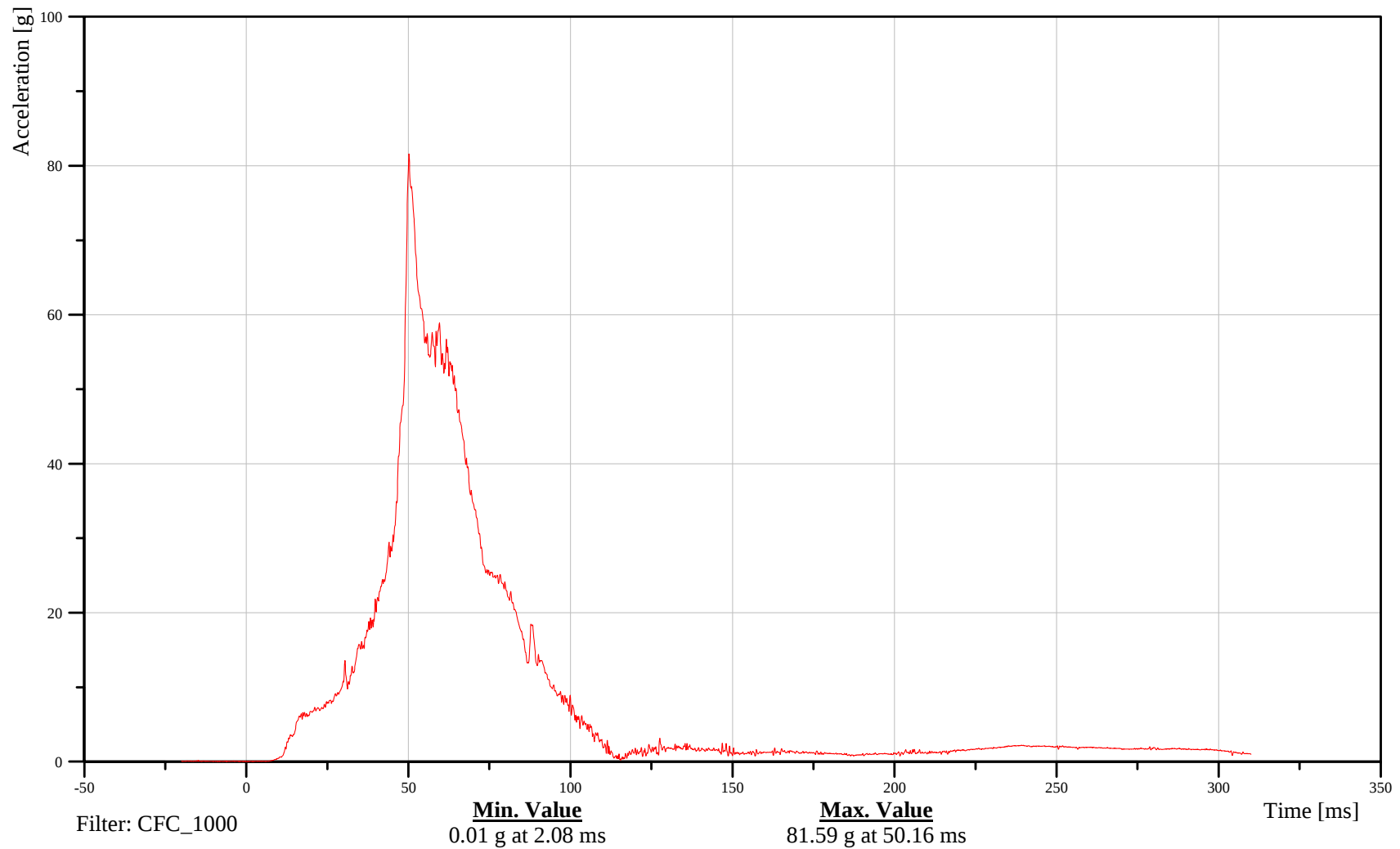
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11PELVCG00H3ACRA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Left Femur Force Z

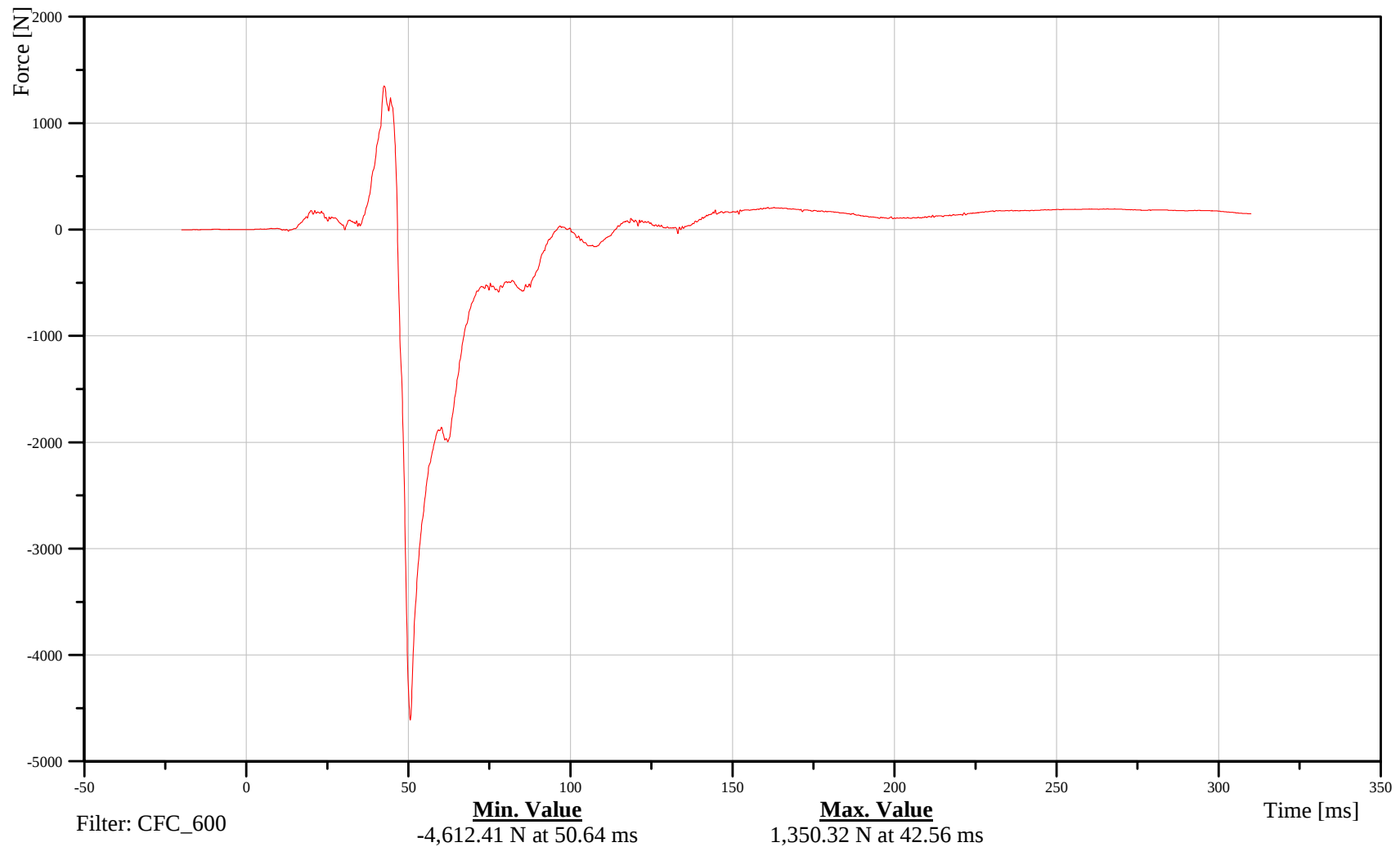
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11FEMRLL00H3FOZB

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Right Femur Force Z

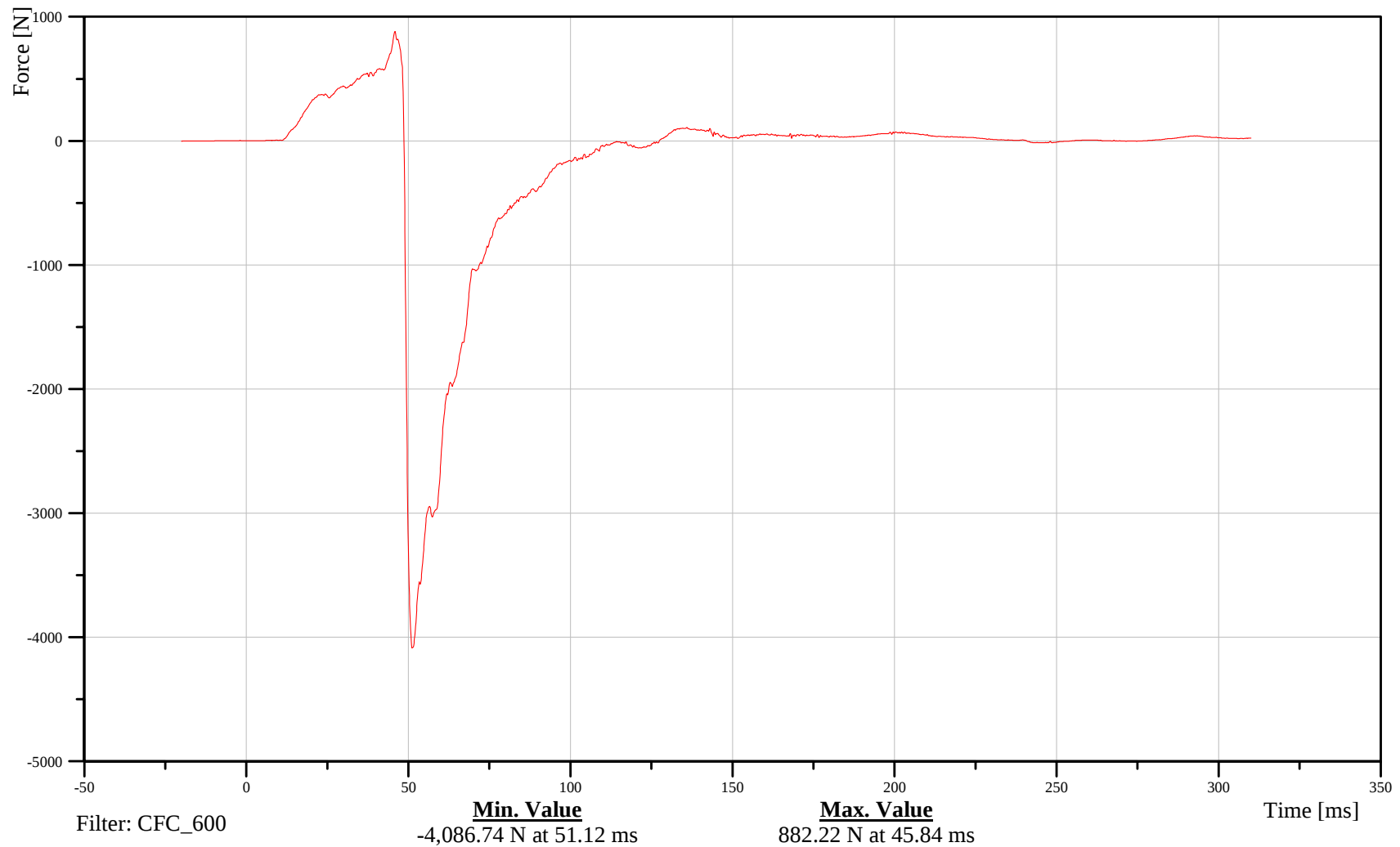
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11FEMRRL00H3FOZB

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Date: 08/06/2006

Time: 15:14:26

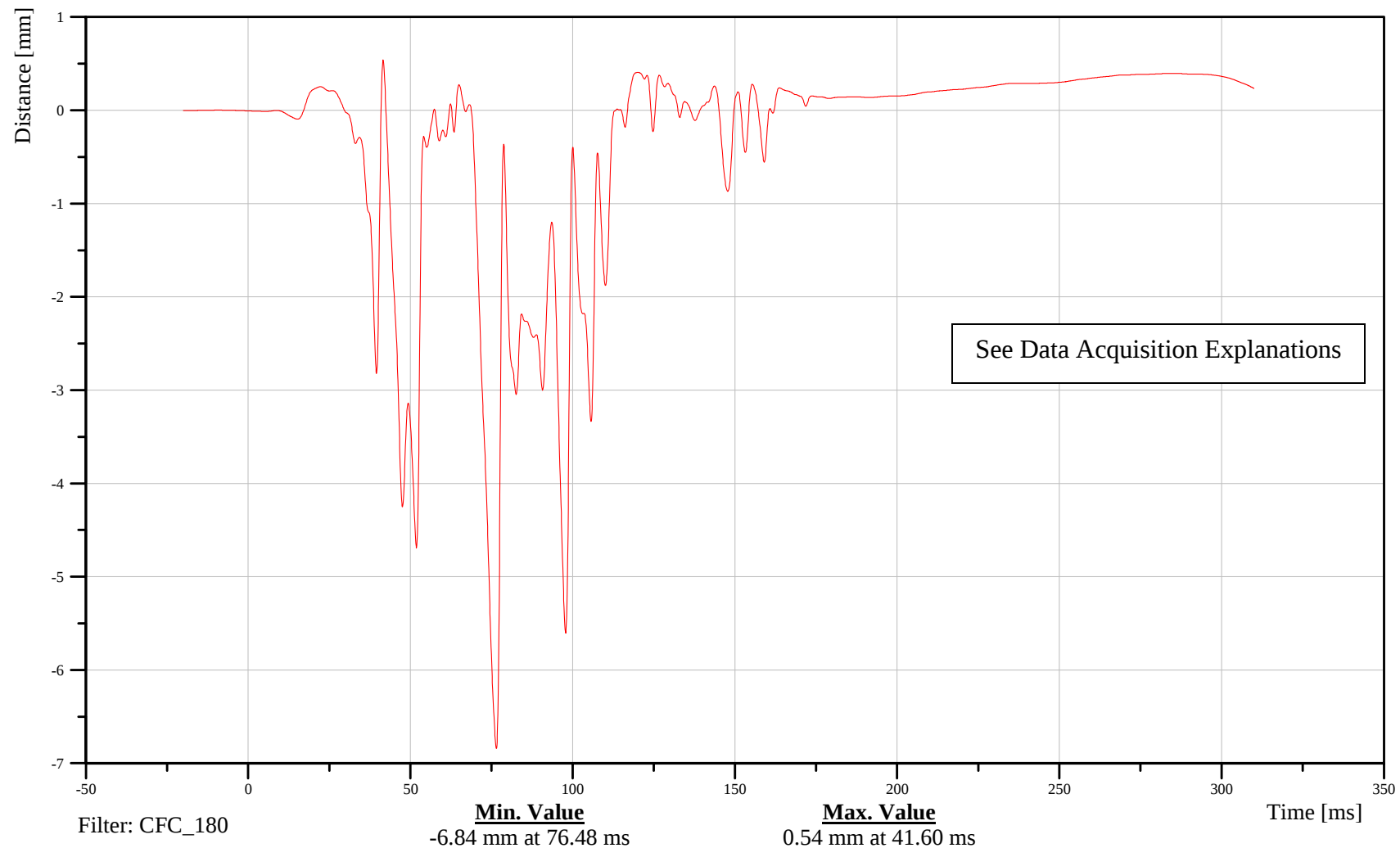
Driver Left Knee Displacement X

Customer: VRTC

11KNSLLE00H3DSXC

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Date: 08/06/2006

Time: 15:14:26

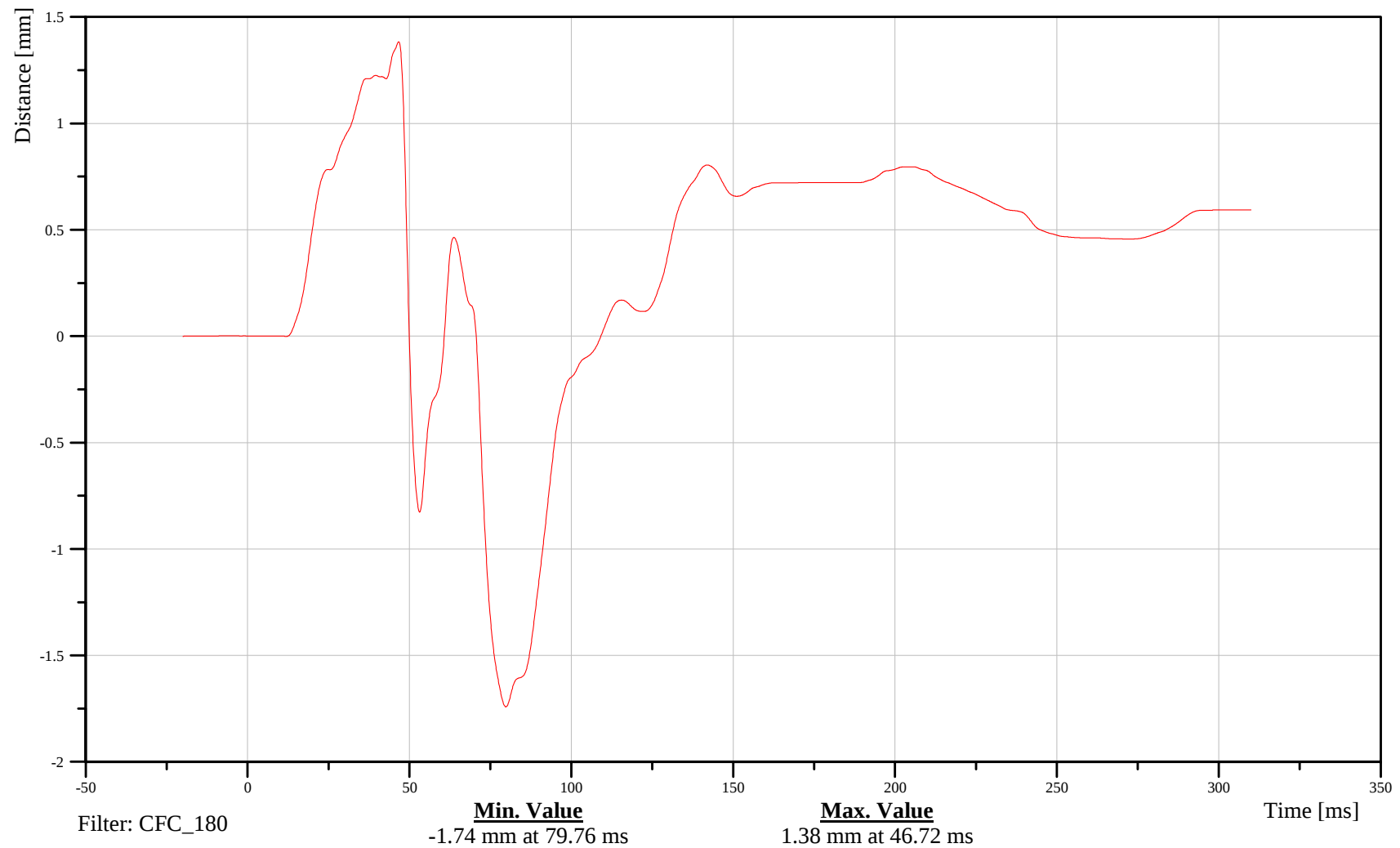
Driver Right Knee Displacement X

Customer: VRTC

11KNSLRI00H3DSXC

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Date: 05/12/2006

Time: 15:38

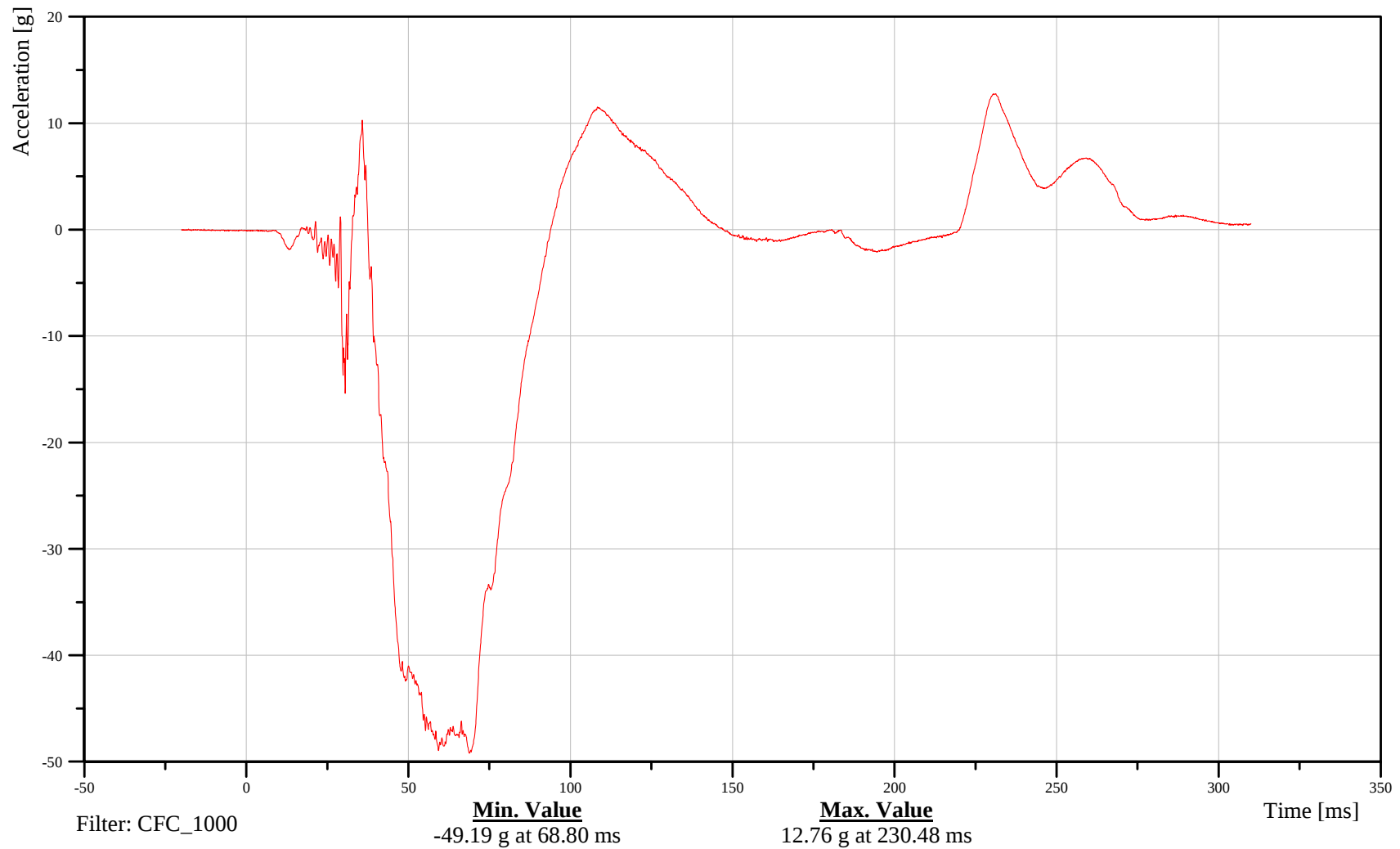
Passenger Head CG X-Axis Acceleration

Customer: VRTC

13HEADCG00HFACXA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Passenger Head CG Y-Axis Acceleration

Date: 05/12/2006

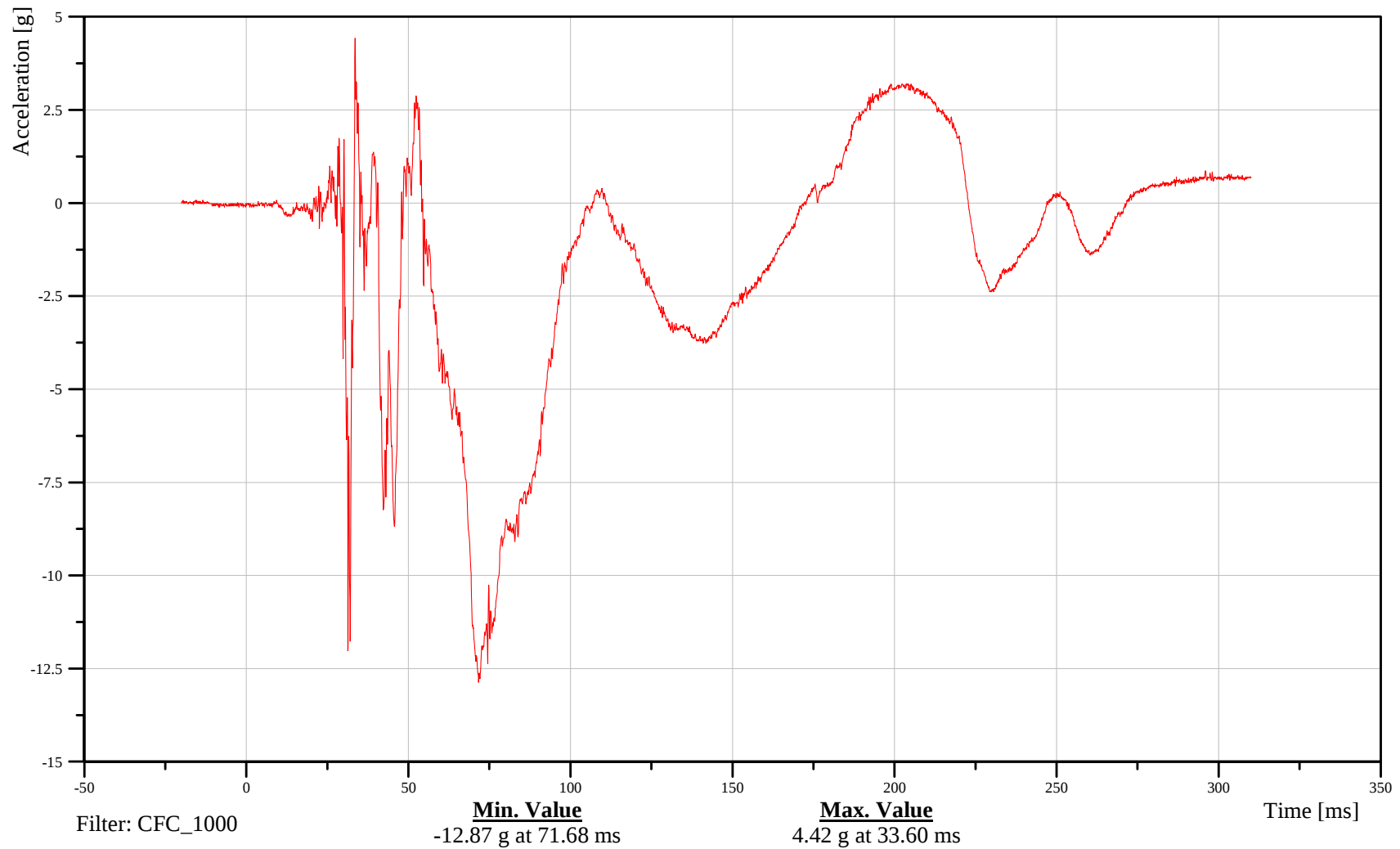
Time: 15:38

Customer: VRTC

13HEADCG00HFACYA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Passenger Head CG Z-Axis Acceleration

Date: 05/12/2006

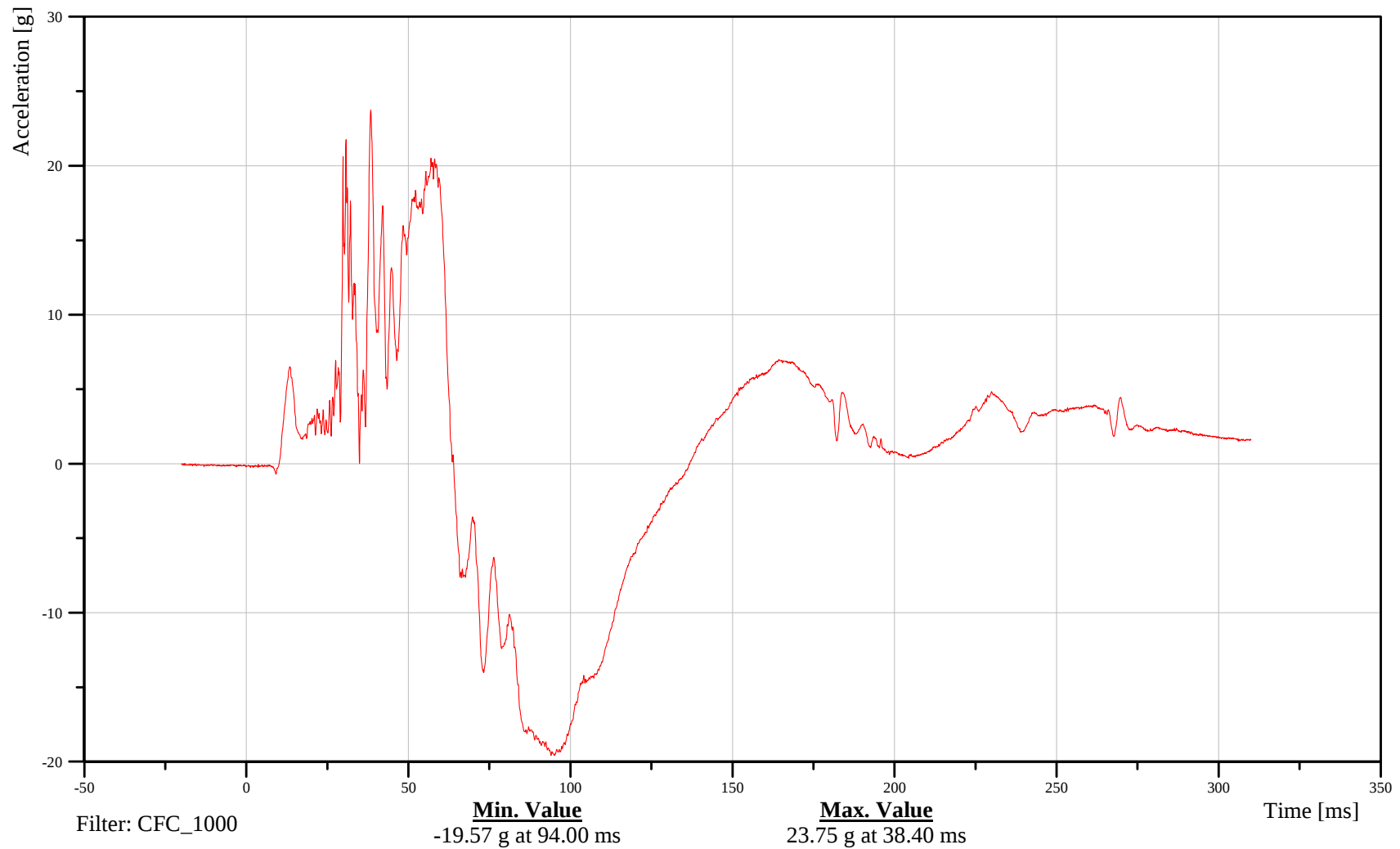
Time: 15:38

Customer: VRTC

13HEADCG00HFACZA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Date: 05/12/2006

Time: 15:38

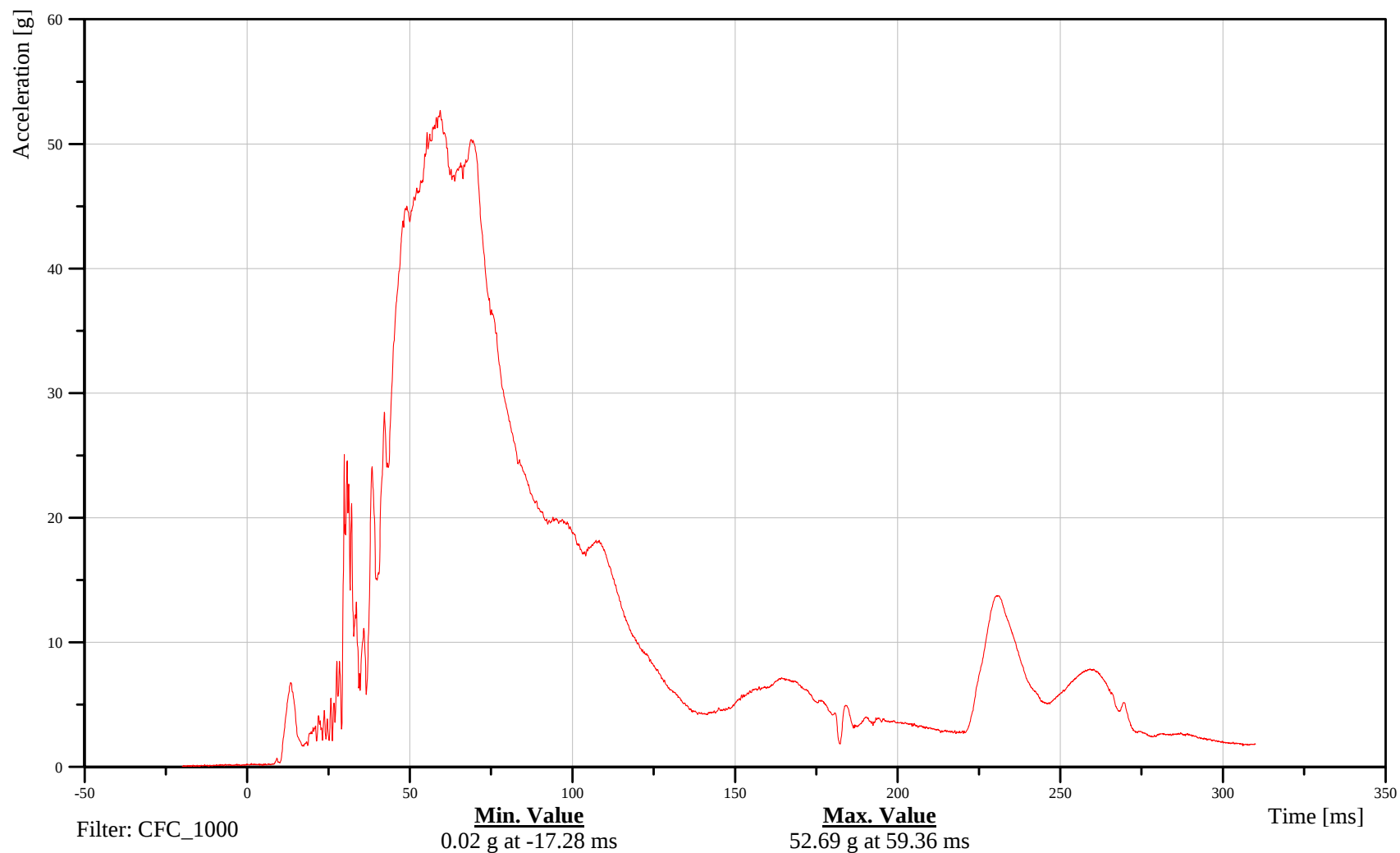
Passenger Head CG Resultant Acceleration

Customer: VRTC

13HEADCG00HFACRA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Passenger Upper Neck X-Axis Force

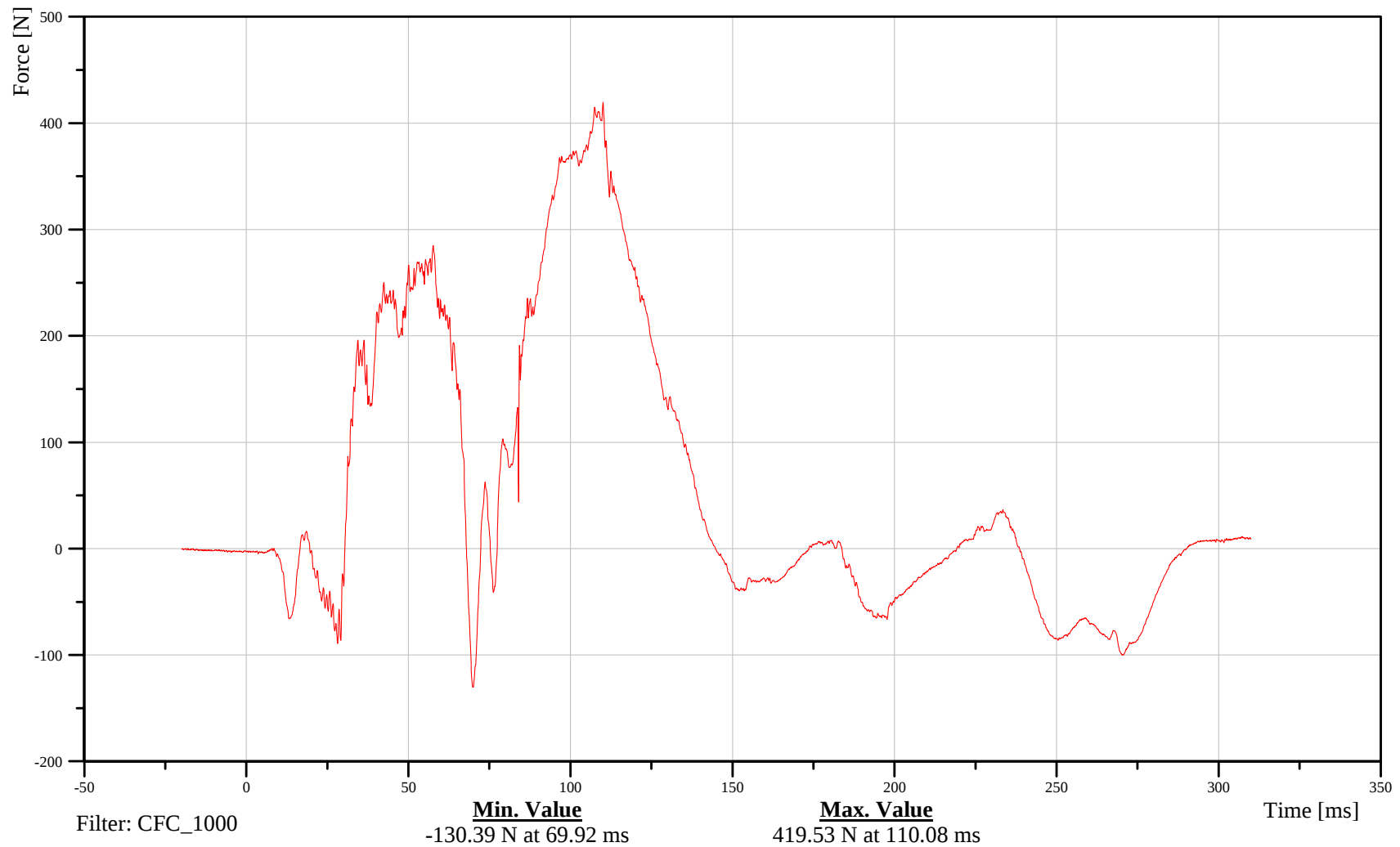
Date: 05/12/2006
Time: 15:38

Customer: VRTC

13NECKUP00HFFOXA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Passenger Upper Neck Y-Axis Force

Date: 05/12/2006

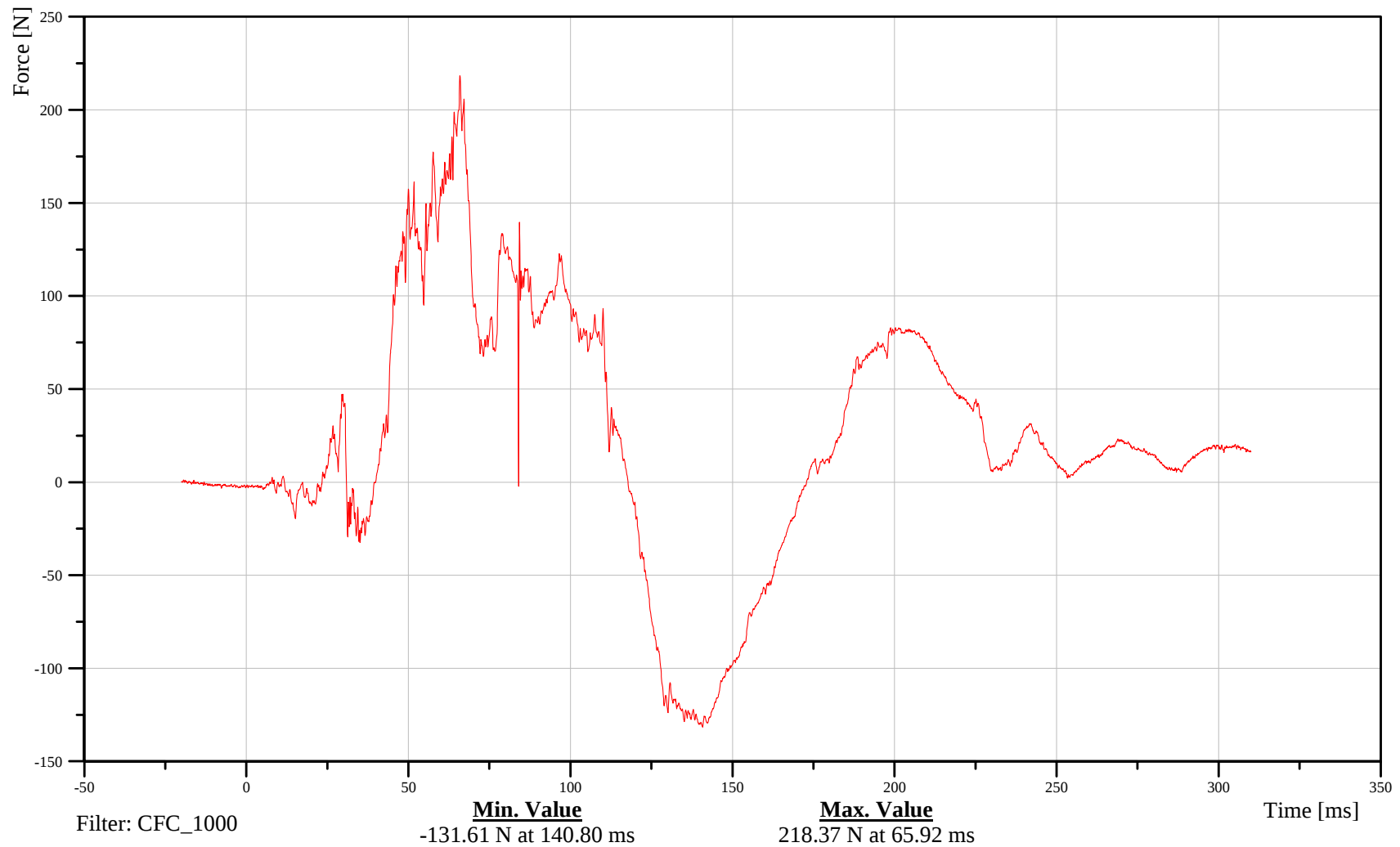
Time: 15:38

Customer: VRTC

13NECKUP00HFFOYA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Passenger Upper Neck Z-Axis Force

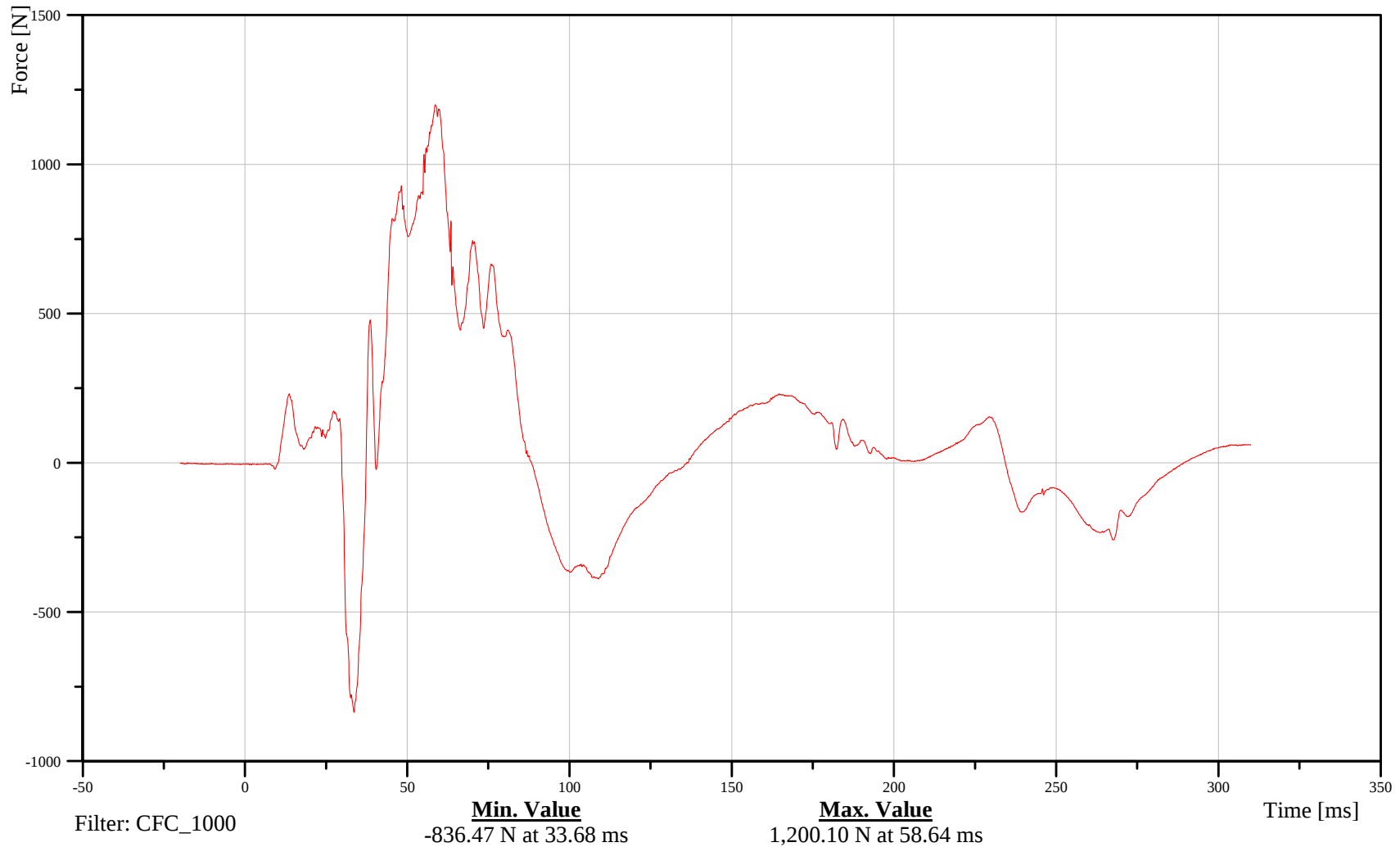
Date: 05/12/2006
Time: 15:38

Customer: VRTC

13NECKUP00HFFOZA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Passenger Upper Neck Moment About X Axis

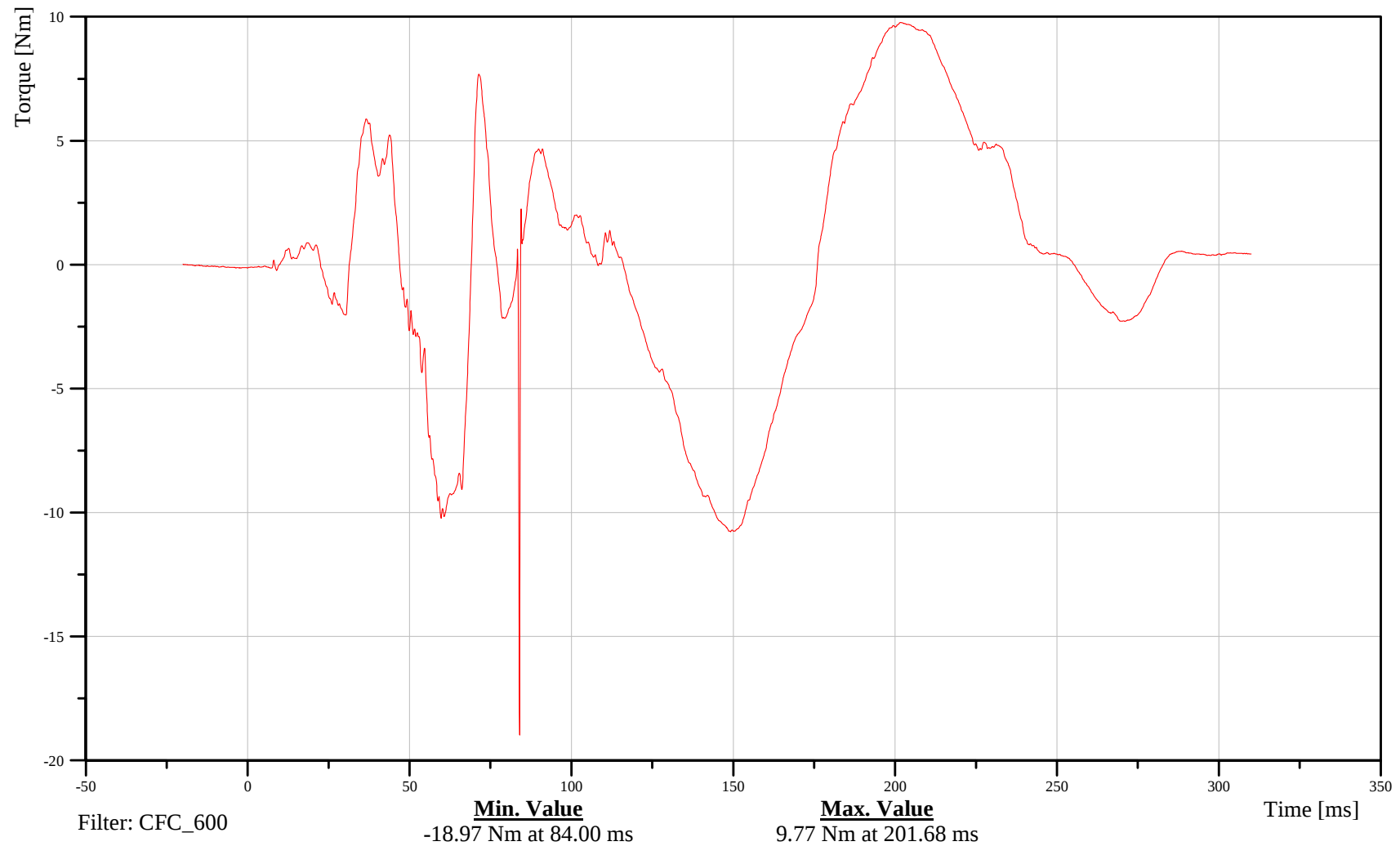
Date: 05/12/2006
Time: 15:38

Customer: VRTC

13NECKUP00HFMOXB

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Date: 05/12/2006

Passenger Upper Neck Moment About Y Axis

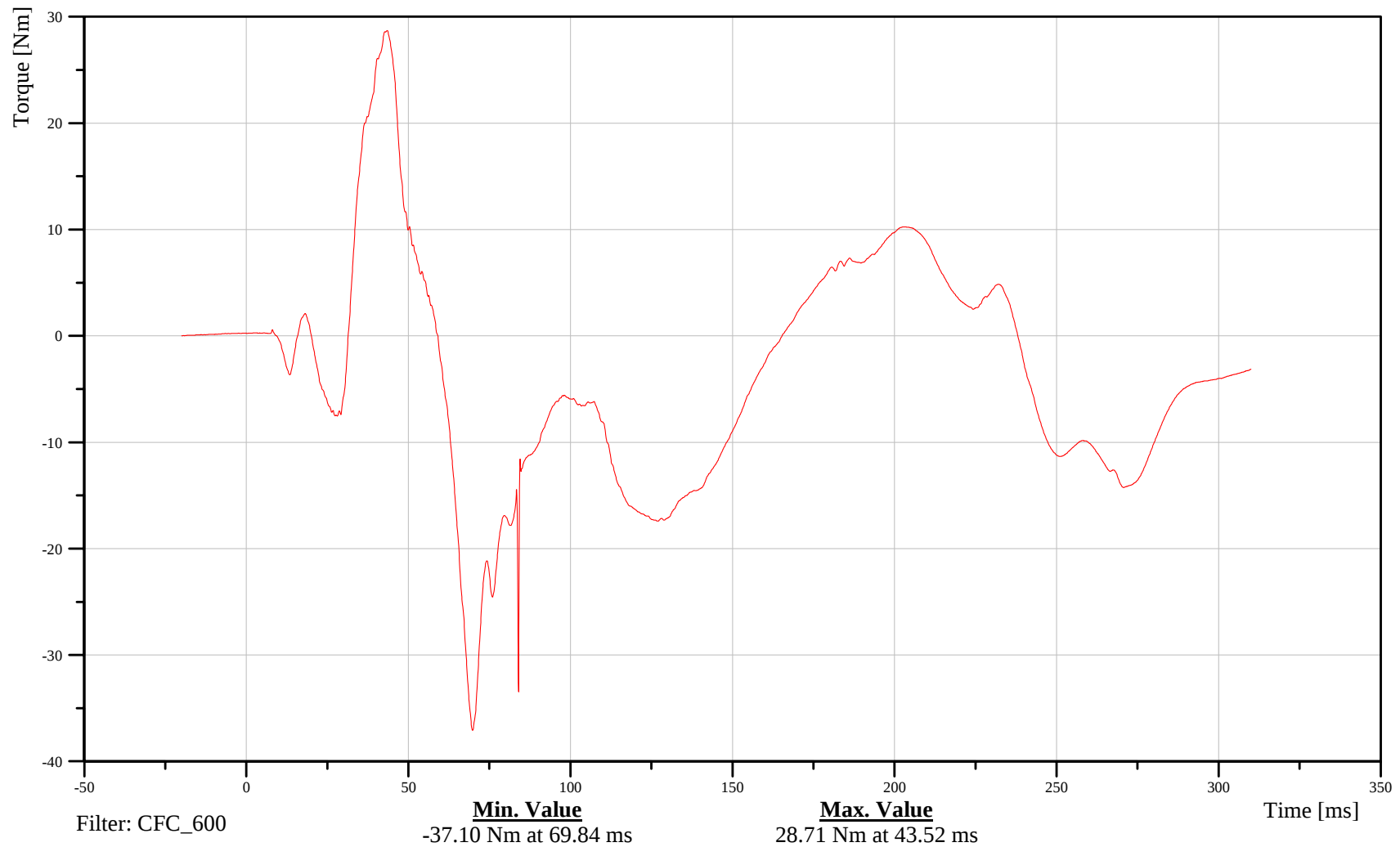
Time: 15:38

Customer: VRTC

13NECKUP00HFMOYB

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Passenger Upper Neck Moment About Z Axis

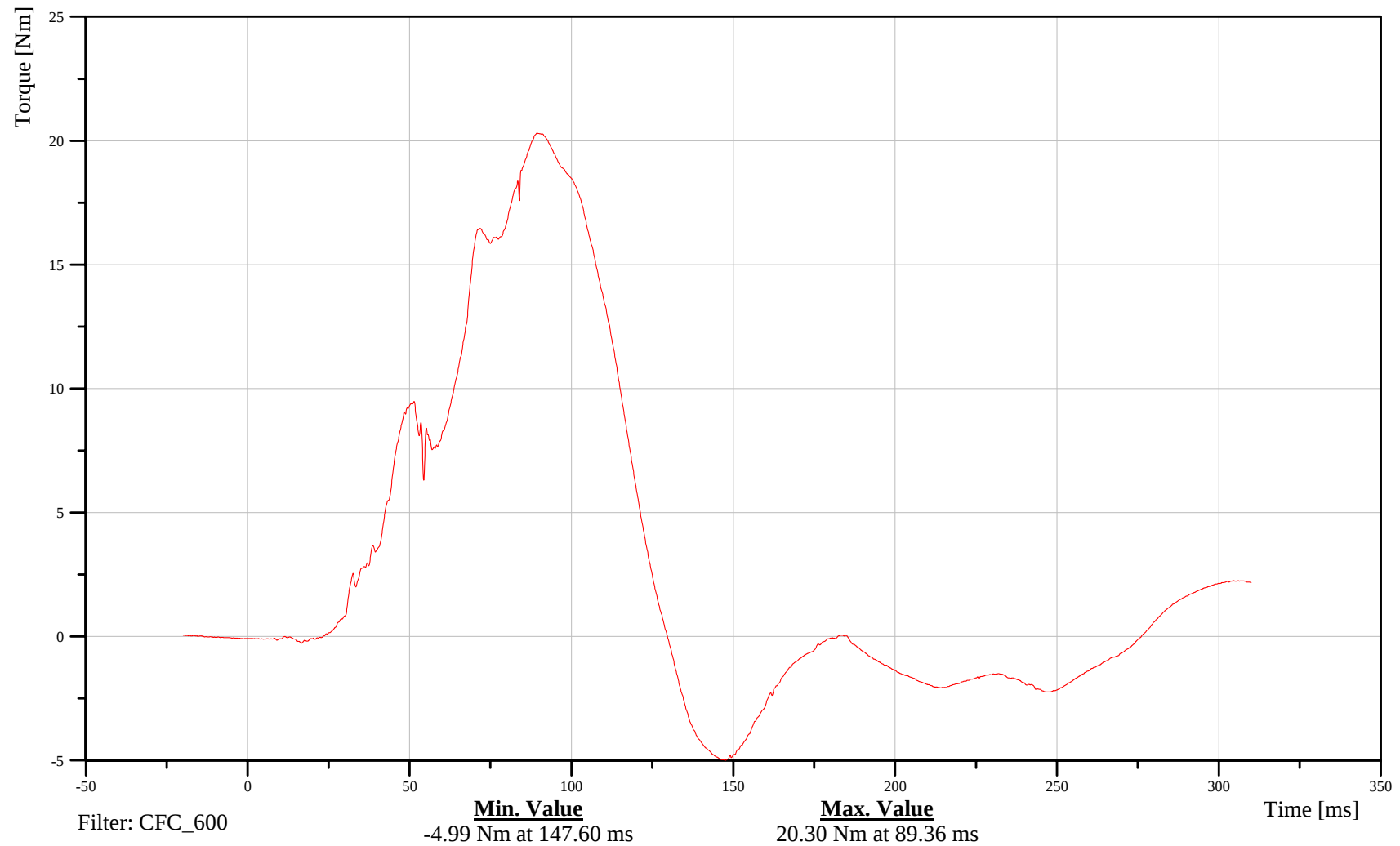
Date: 05/12/2006
Time: 15:38

Customer: VRTC

13NECKUP00HFMOZB

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Date: 05/12/2006

Passenger Lower Neck X-Axis Force

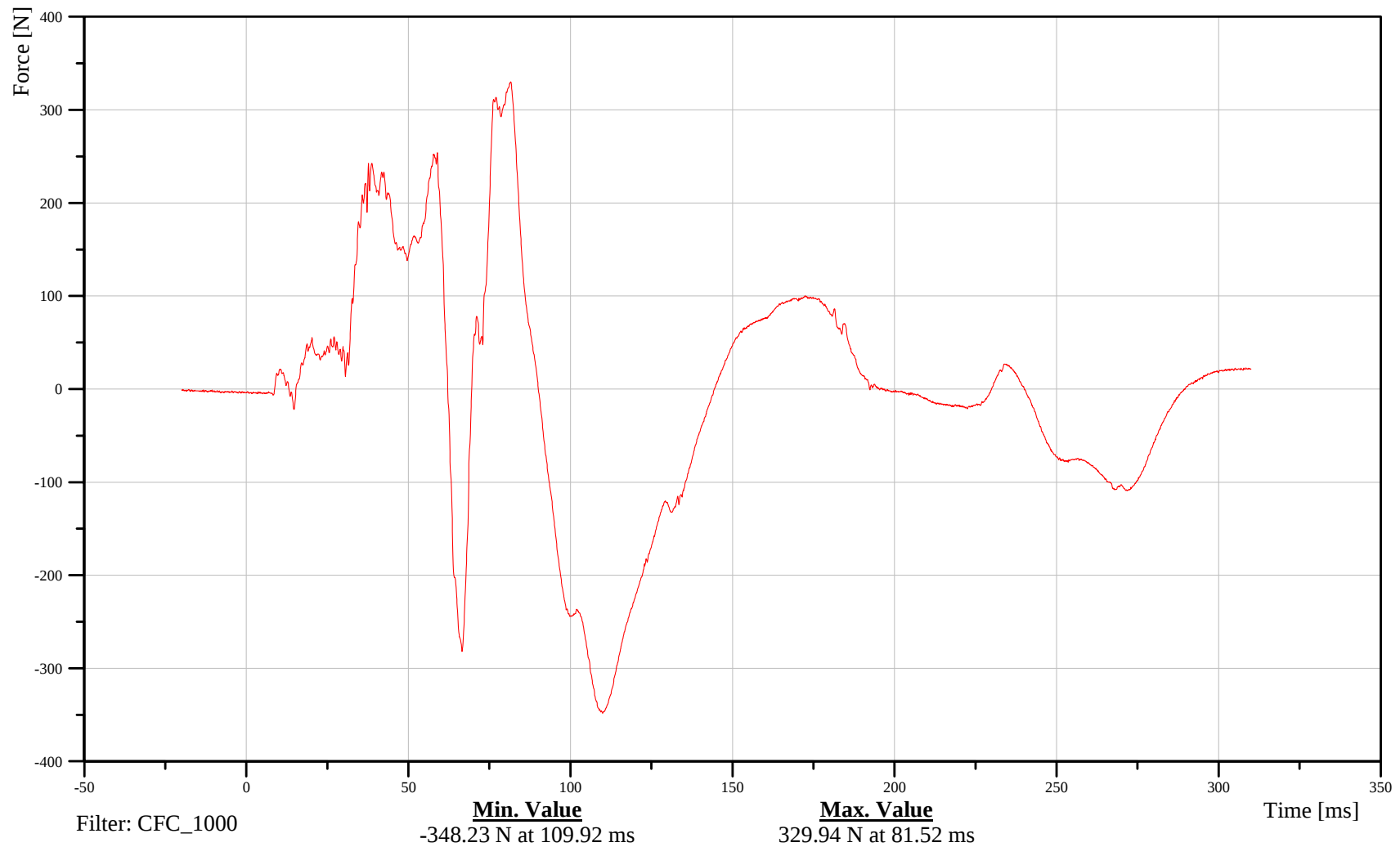
Time: 15:38

Customer: VRTC

13NECKLO00HFFOXA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Passenger Lower Neck Y-Axis Force

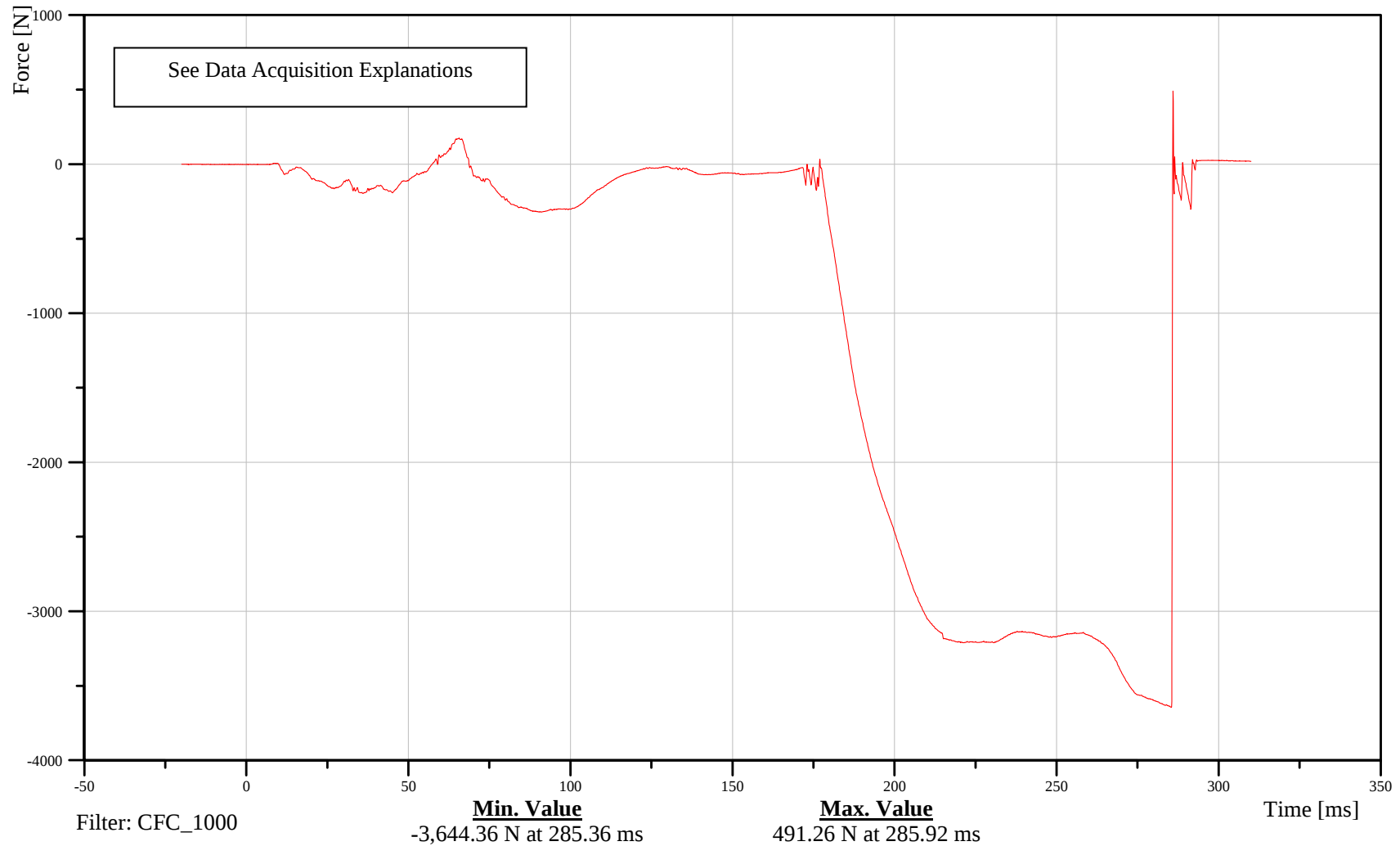
Date: 05/12/2006
Time: 15:38

Customer: VRTC

13NECKLO00HFFOYA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Passenger Lower Neck Z-Axis Force

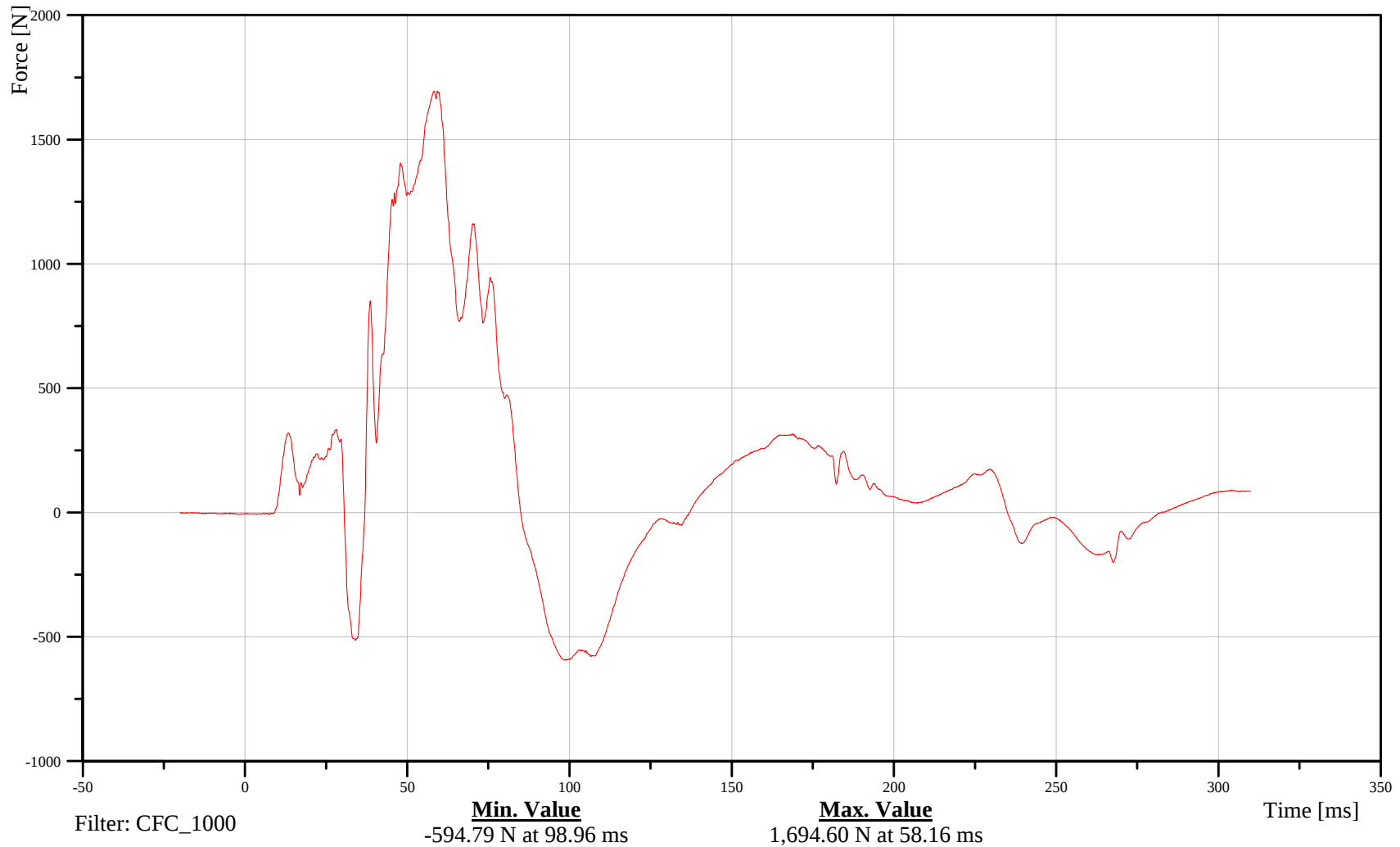
Date: 05/12/2006
Time: 15:38

Customer: VRTC

13NECKLO00HFFOZA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Date: 05/12/2006

Passenger Lower Neck Moment About X Axis

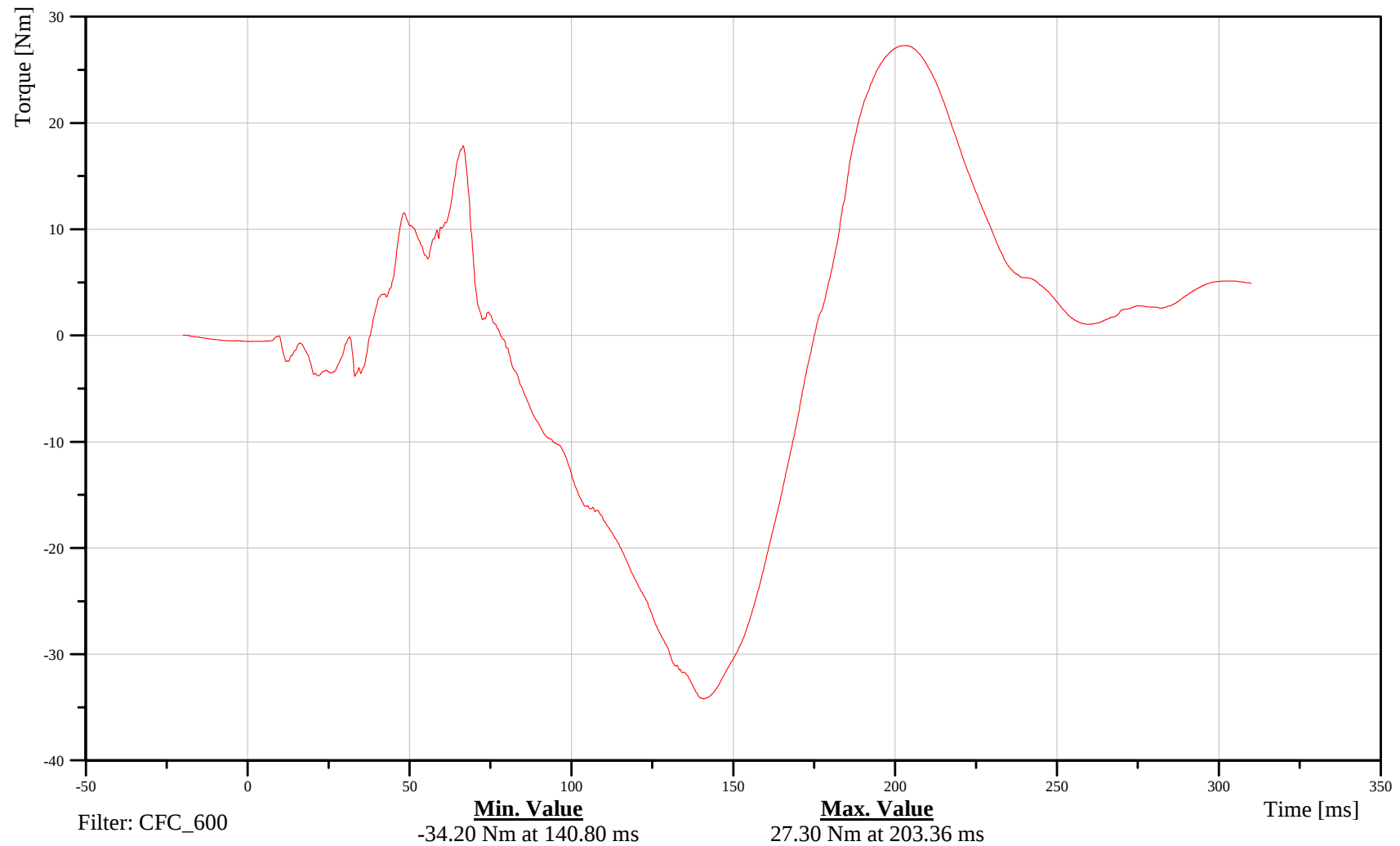
Time: 15:38

Customer: VRTC

13NECKLO00HFMOXB

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Passenger Lower Neck Moment About Y Axis

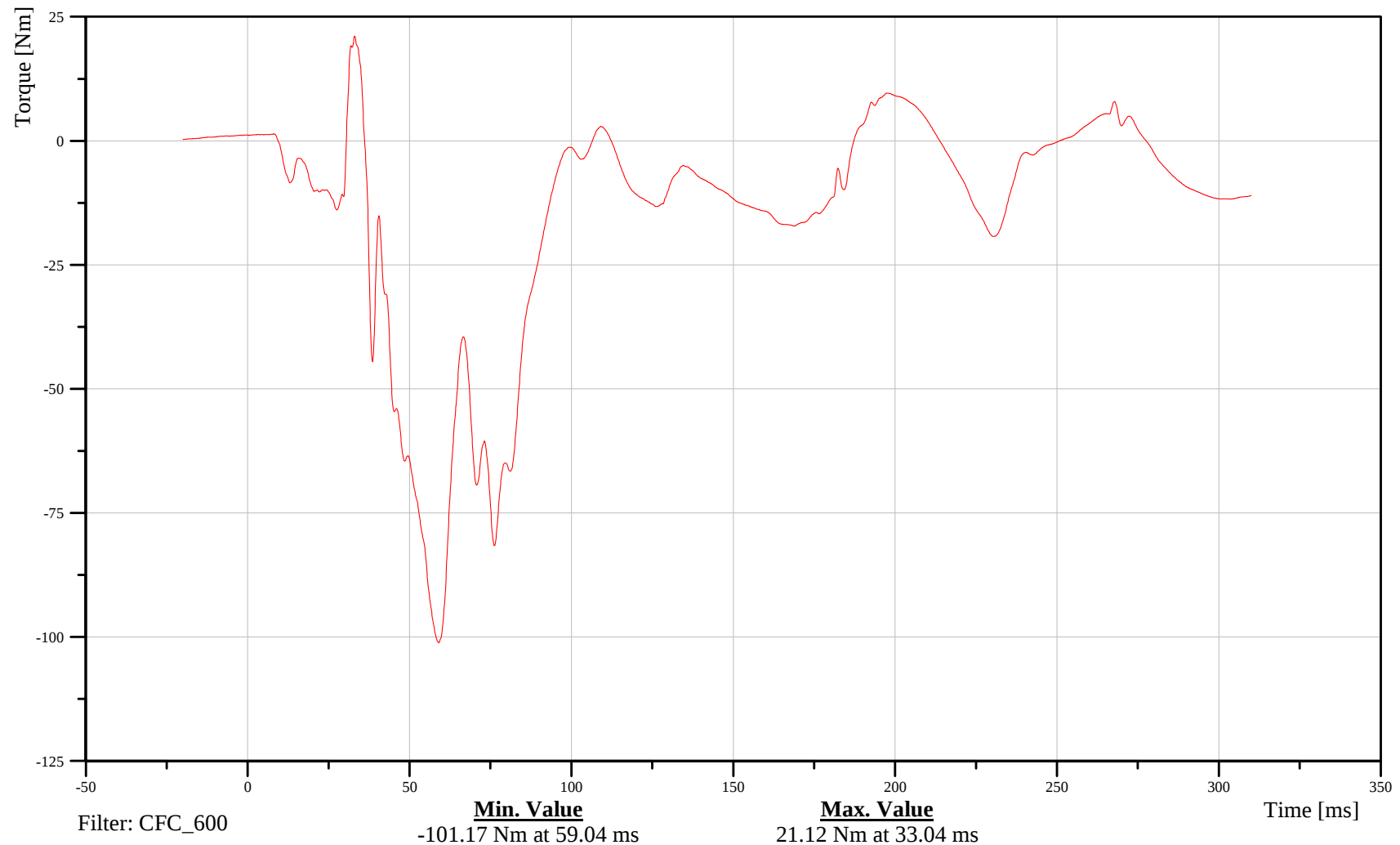
Date: 05/12/2006
Time: 15:38

Customer: VRTC

13NECKLO00HFMOYB

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Passenger Lower Neck Moment About Z Axis

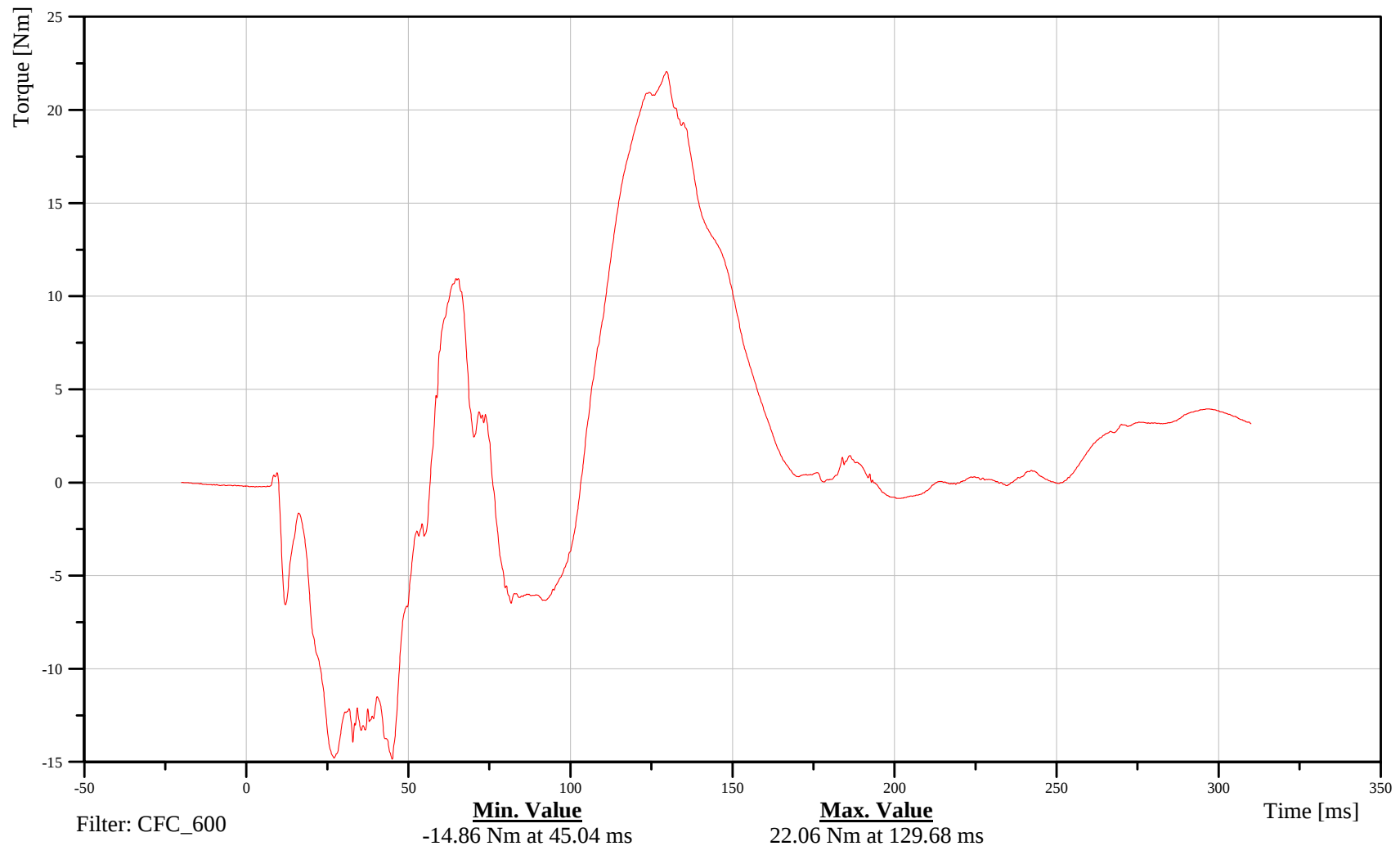
Date: 05/12/2006
Time: 15:38

Customer: VRTC

13NECKLO00HFMOZB

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Passenger Chest CG X-Axis Acceleration

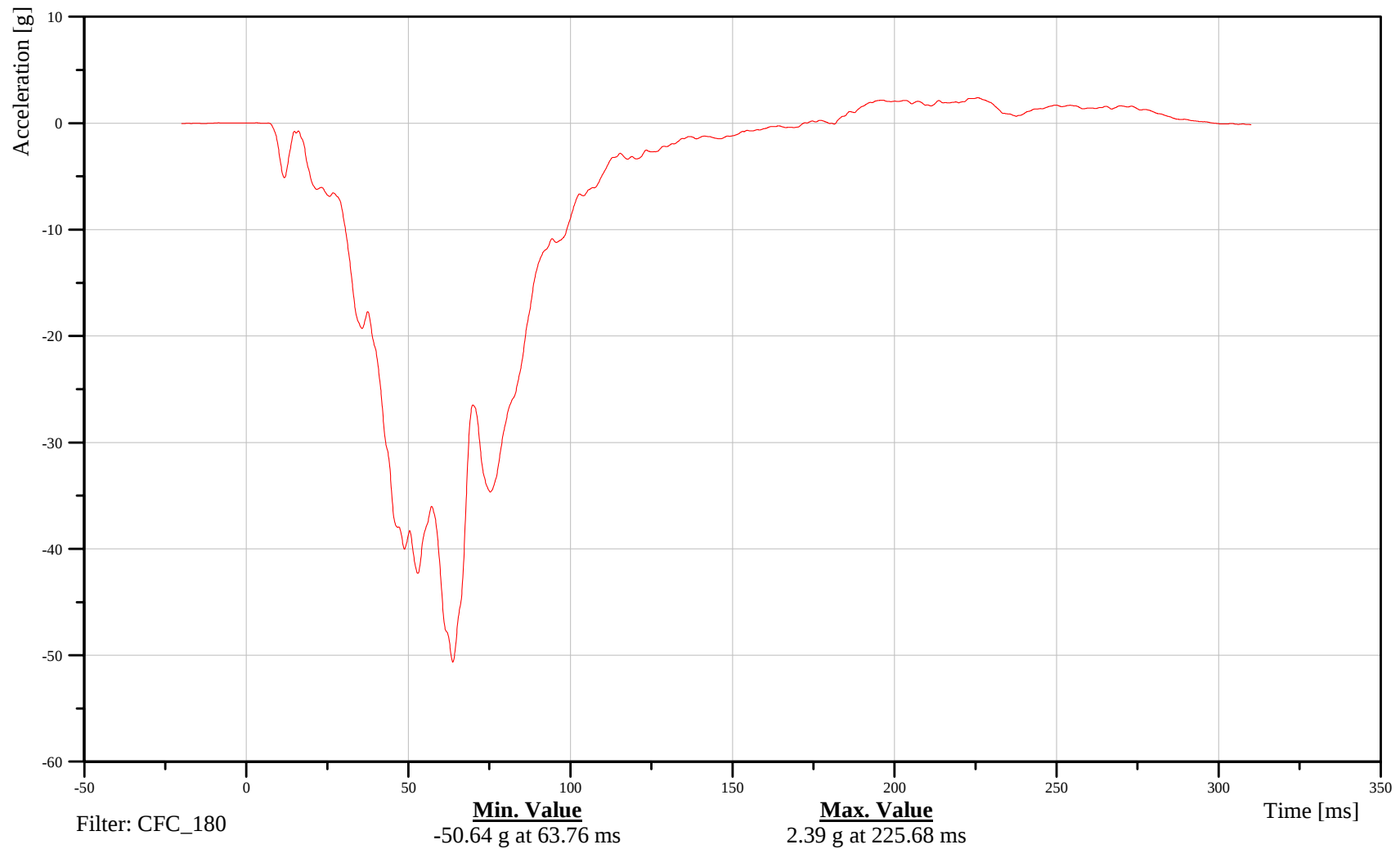
Date: 05/12/2006
Time: 15:38

Customer: VRTC

13CHSTCG00HFACXC

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Date: 05/12/2006

Passenger Chest CG Y-Axis Acceleration

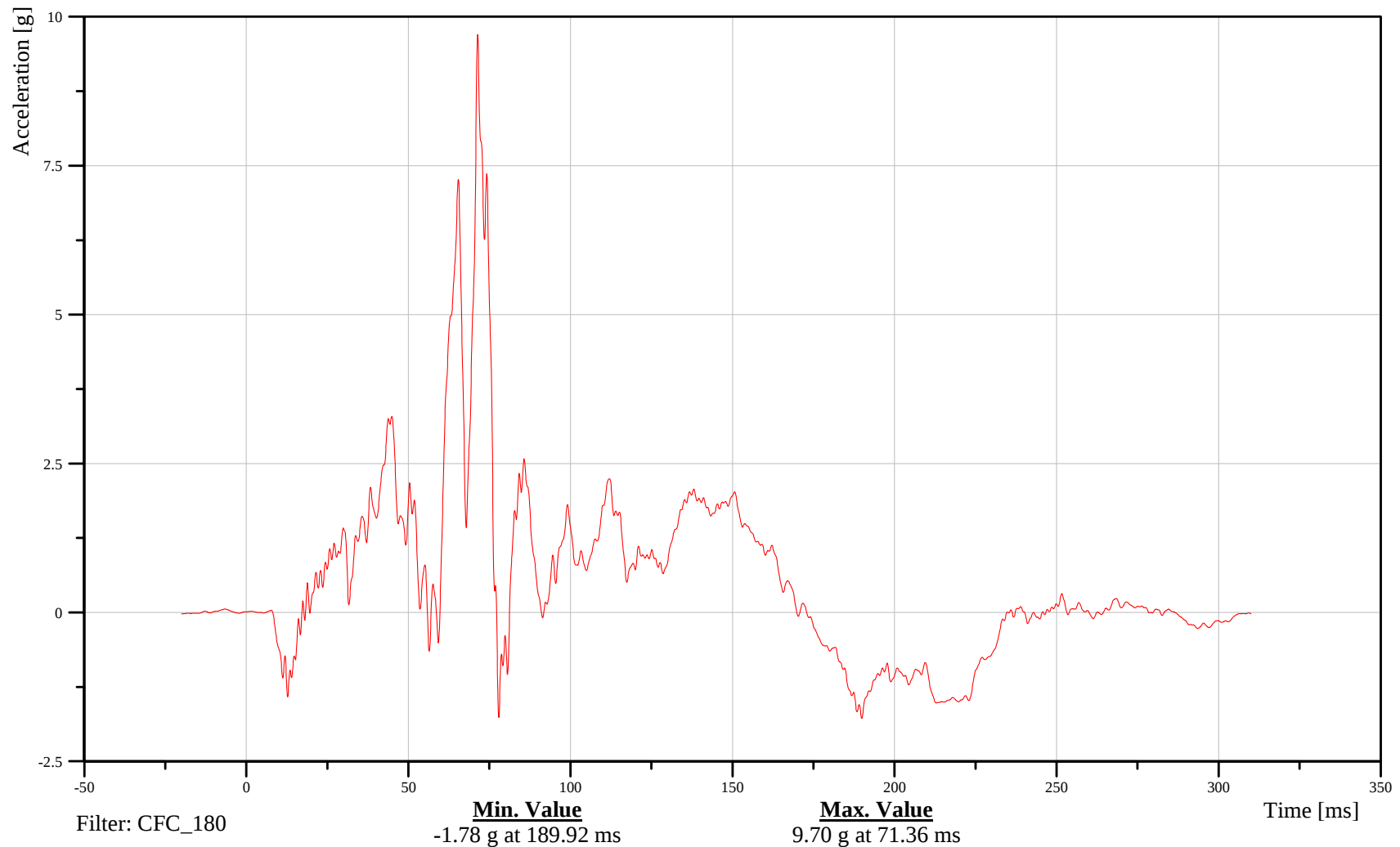
Time: 15:38

Customer: VRTC

13CHSTCG00HFACYC

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Passenger Chest CG Z-Axis Acceleration

Date: 05/12/2006

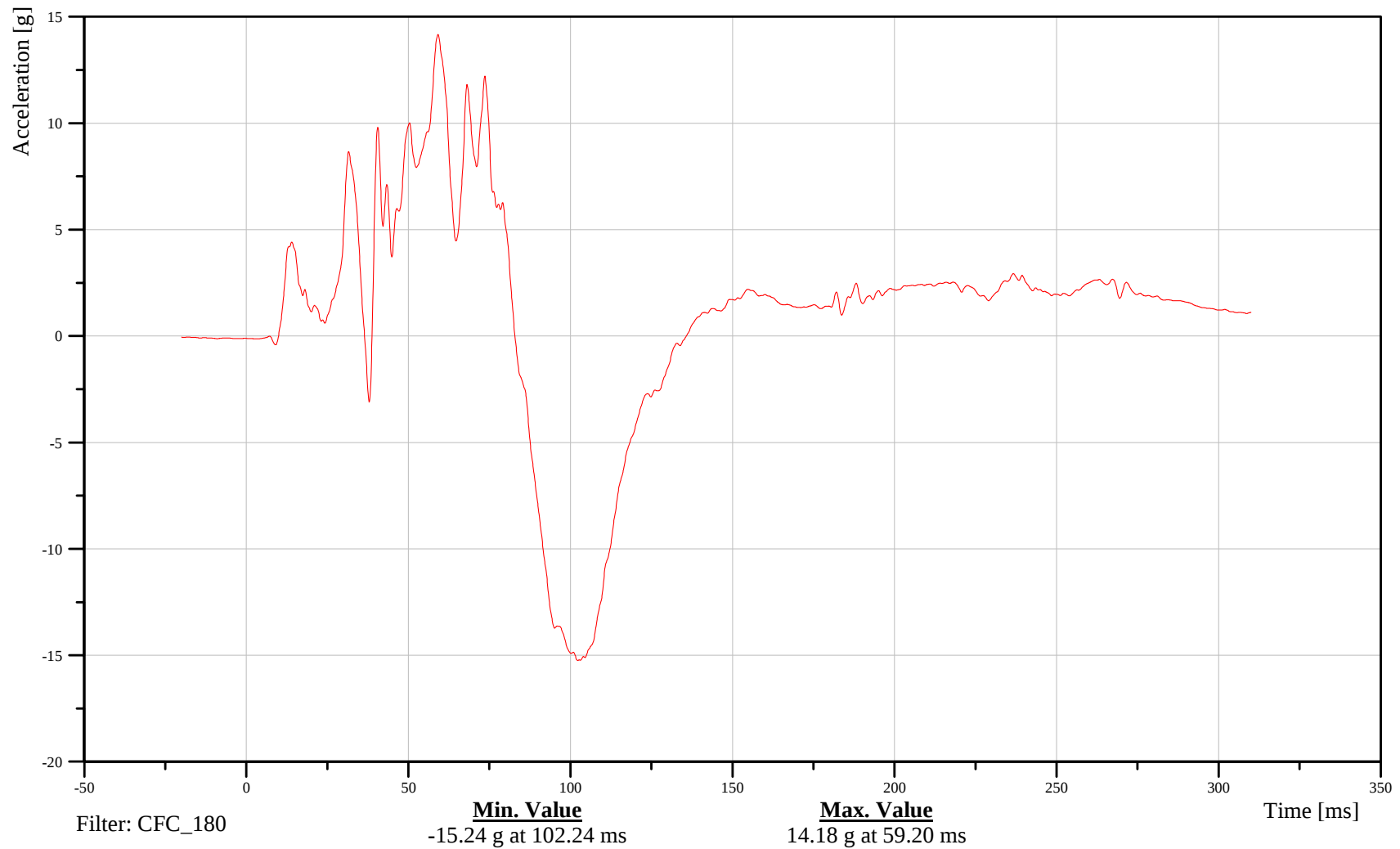
Time: 15:38

Customer: VRTC

13CHSTCG00HFACZC

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Passenger Chest CG Resultant Acceleration

Date: 05/12/2006

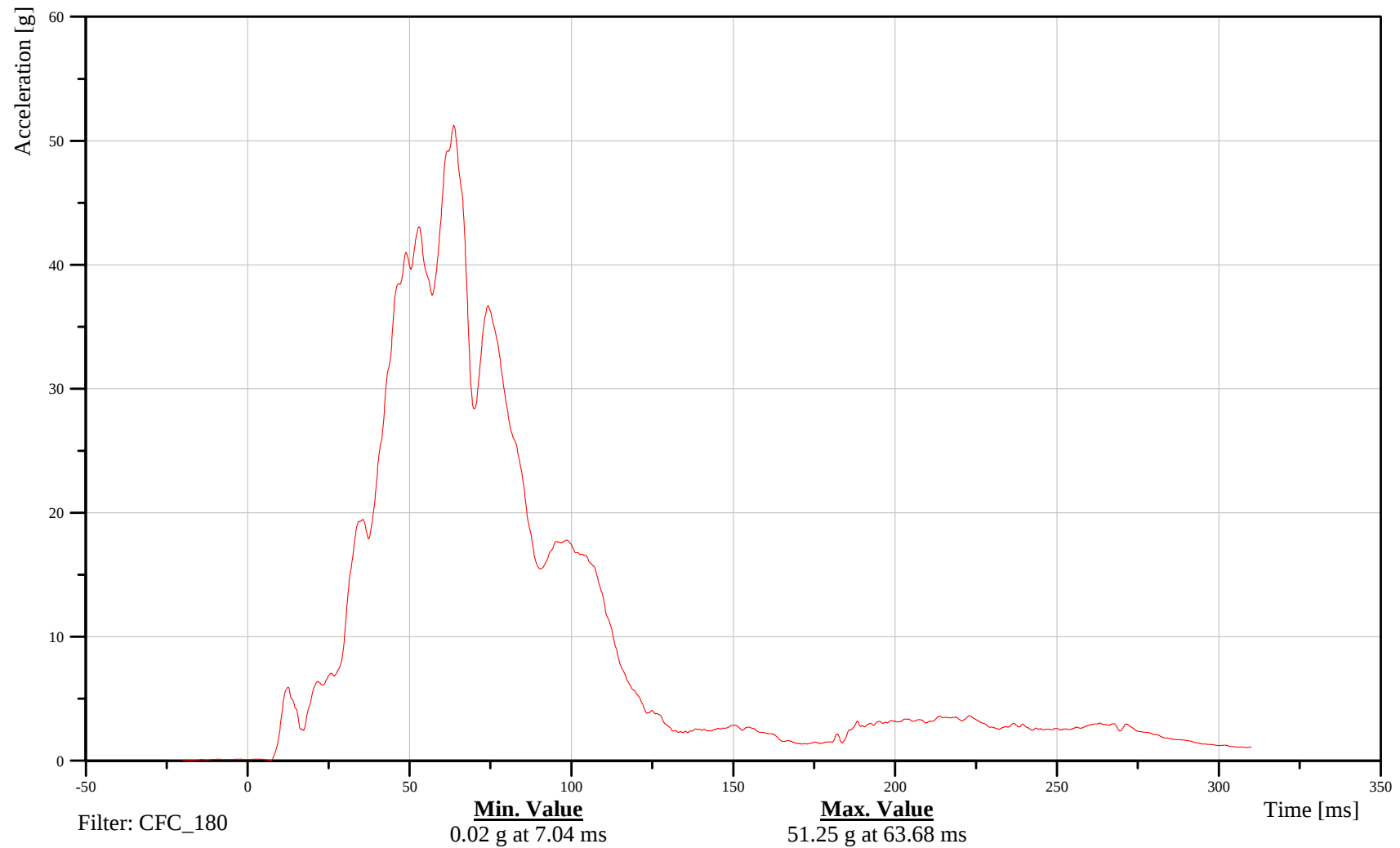
Time: 15:38

Customer: VRTC

13CHSTCG00HFACRC

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Passenger Chest Displacement

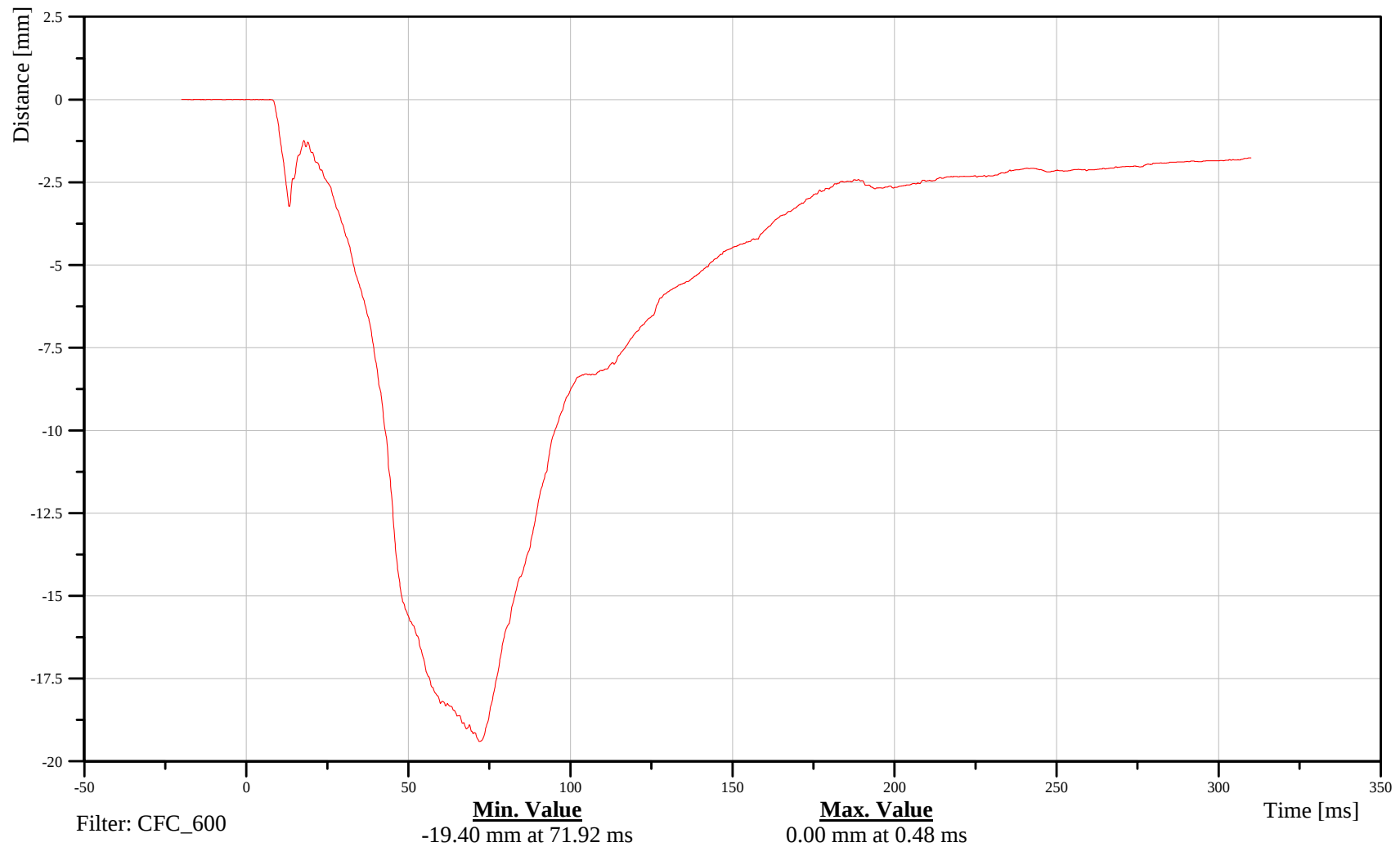
Date: 05/12/2006
Time: 15:38

Customer: VRTC

13CHST0000HFDSXB

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Date: 05/12/2006

Time: 15:38

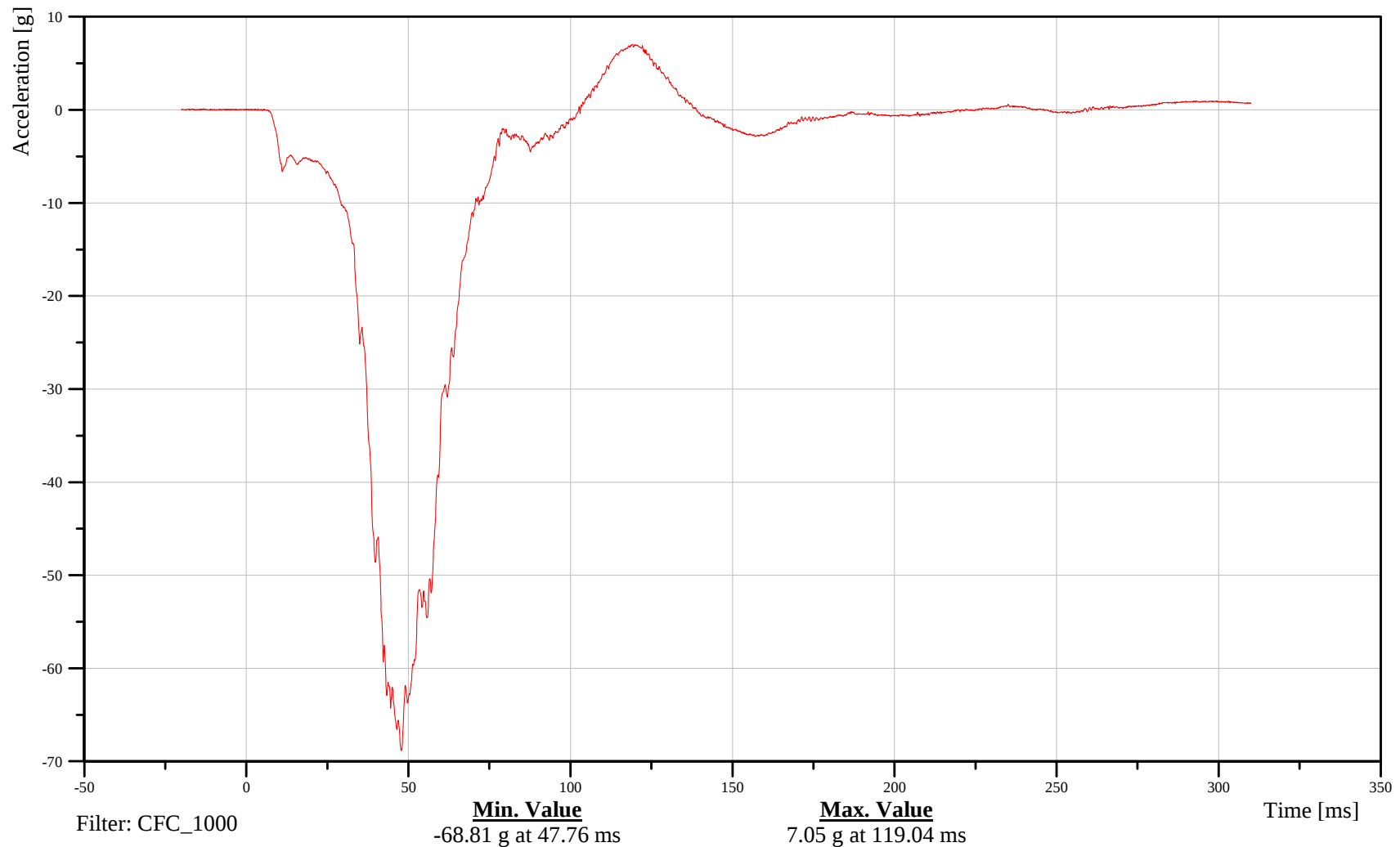
Passenger Pelvis CG X-Axis Acceleration

Customer: VRTC

13PELVCG00HFACXA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Date: 05/12/2006

Passenger Pelvis CG Y-Axis Acceleration

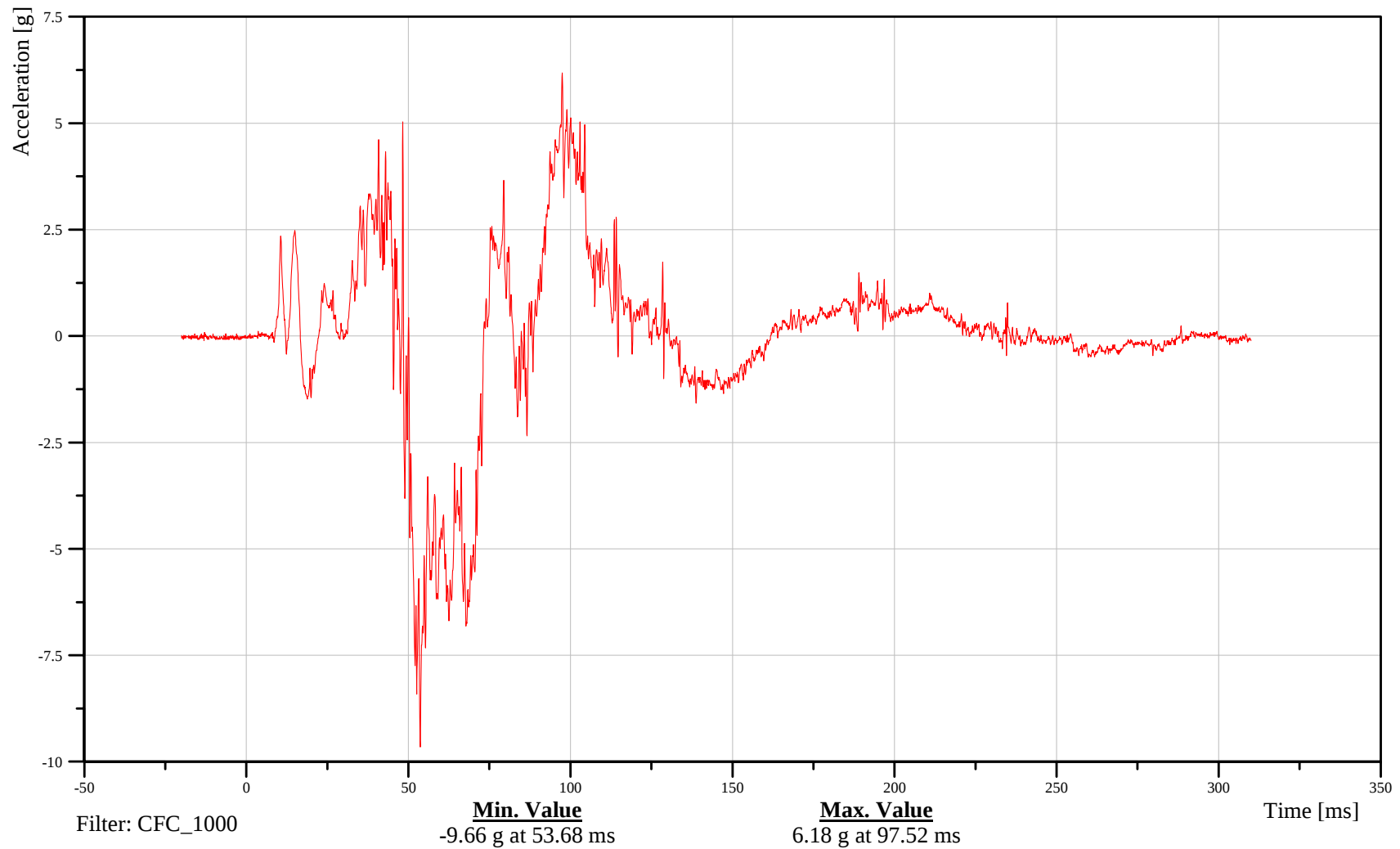
Time: 15:38

Customer: VRTC

13PELVCG00HFACYA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Passenger Pelvis CG Z-Axis Acceleration

Date: 05/12/2006

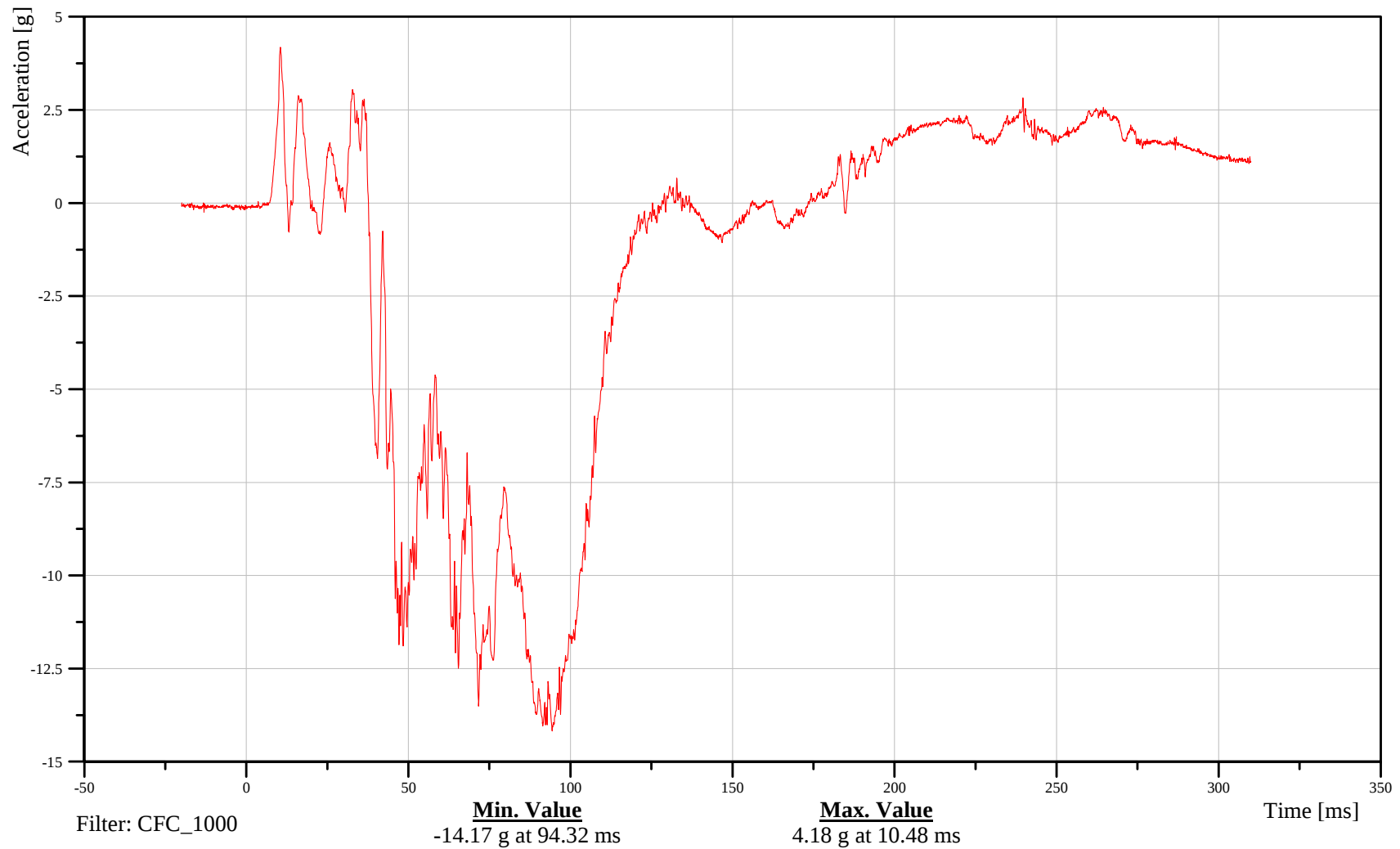
Time: 15:38

Customer: VRTC

13PELVCG00HFACZA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Passenger Pelvis CG Resultant Acceleration

Date: 05/12/2006

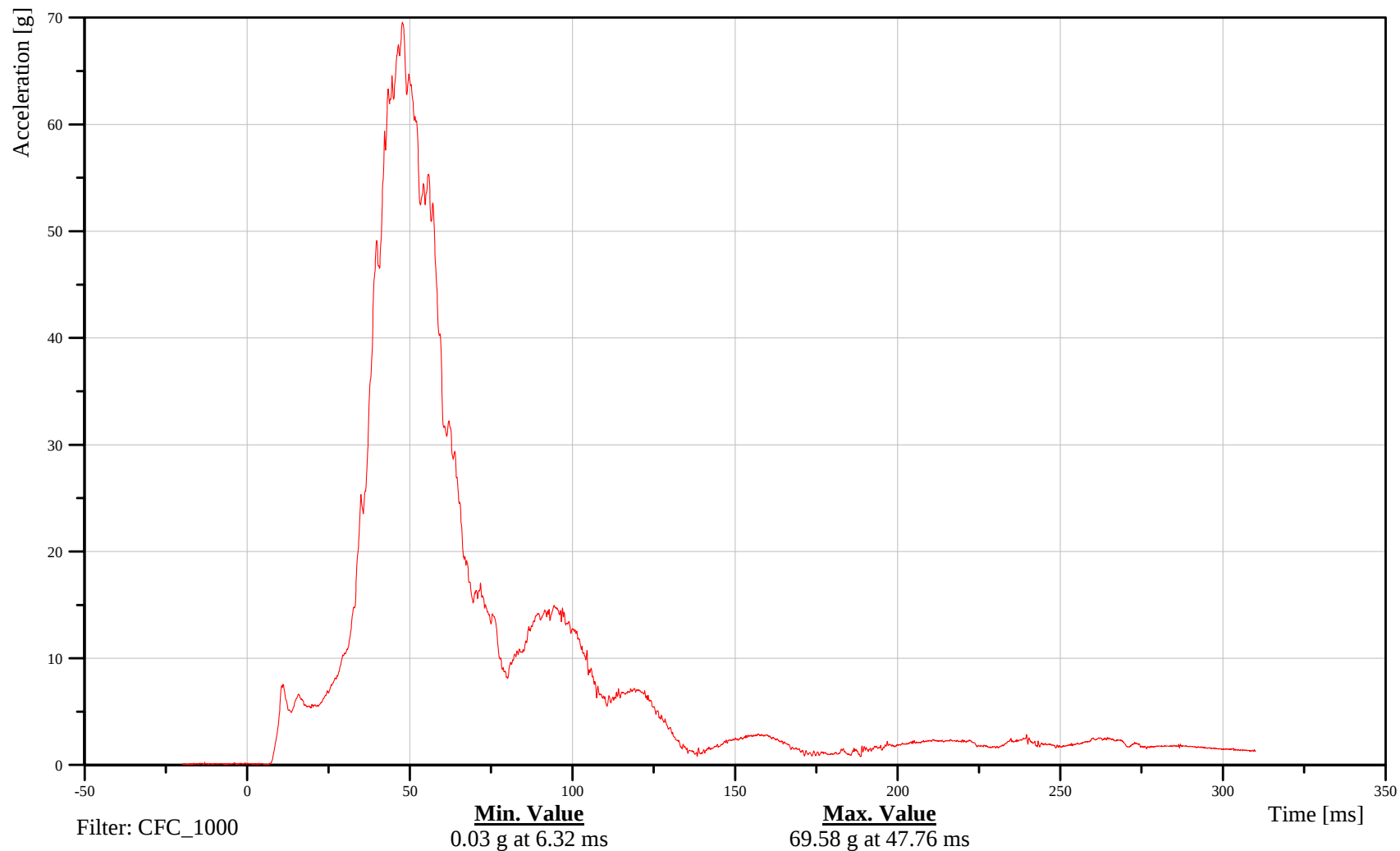
Time: 15:38

Customer: VRTC

13PELVCG00HFACRA

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Passenger Left Femur Z-Axis Force

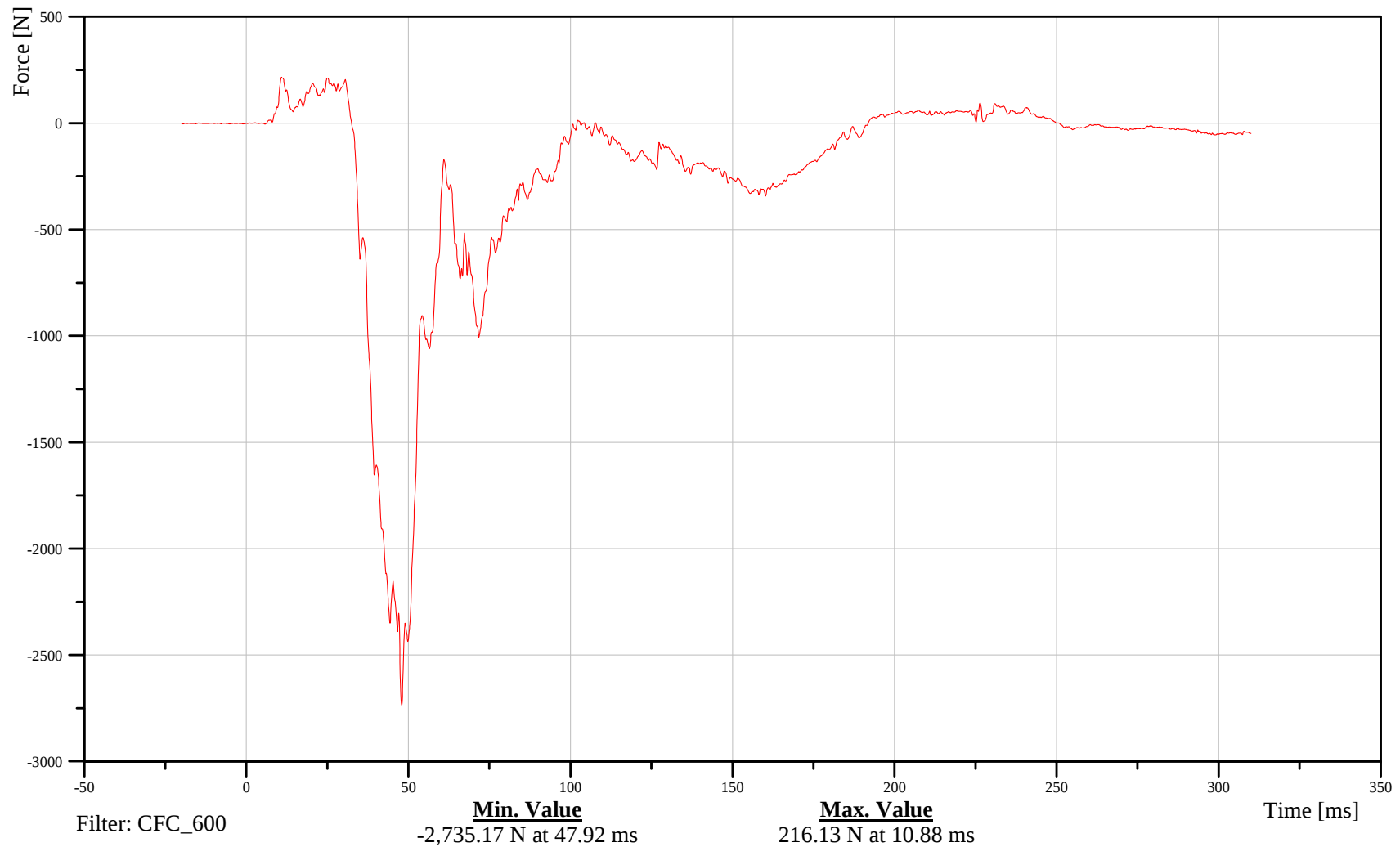
Date: 05/12/2006
Time: 15:38

Customer: VRTC

13FEMRLL00HFFOZB

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Date: 05/12/2006

Time: 15:38

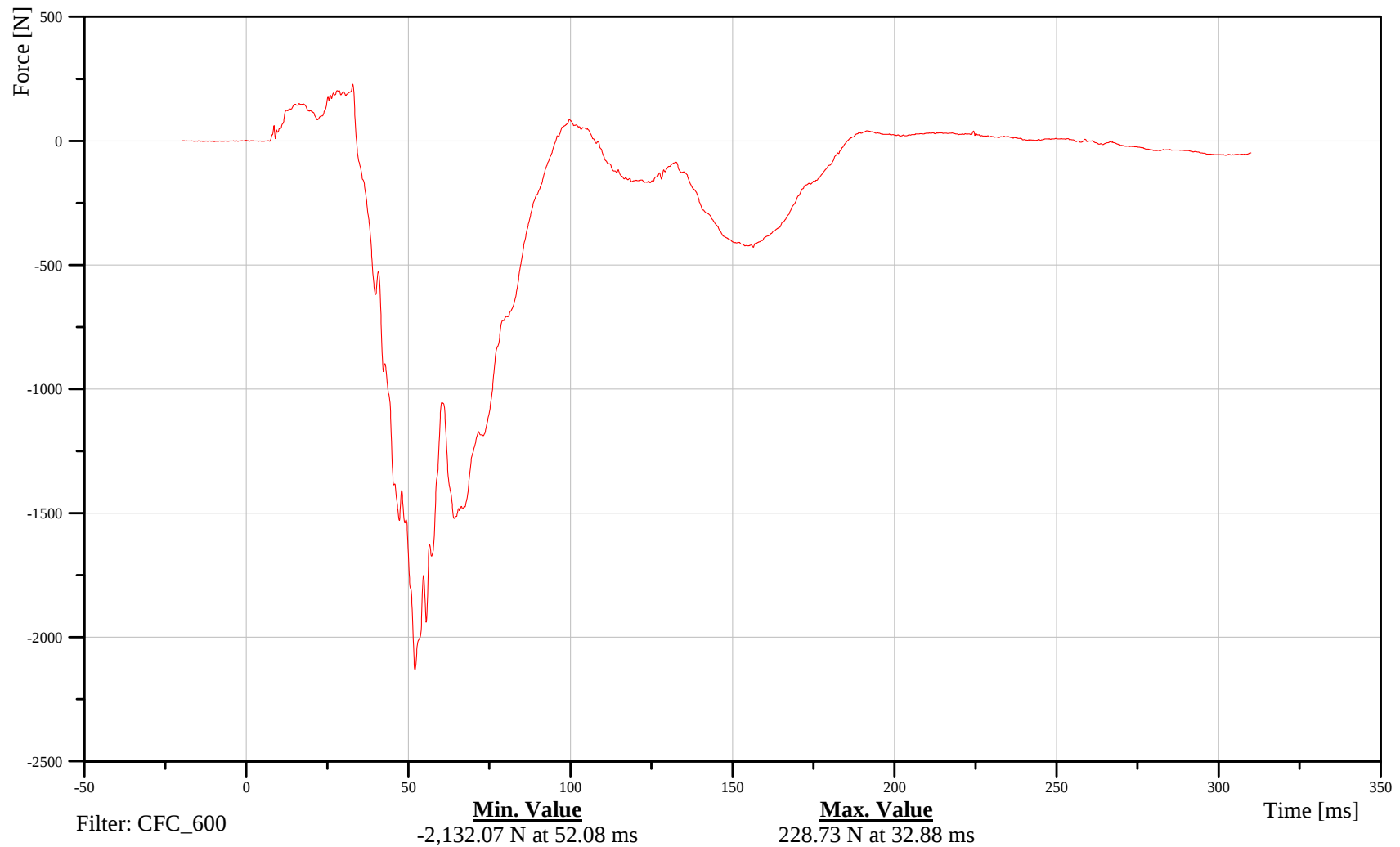
Passenger Right Femur Z-Axis Force

Customer: VRTC

13FEMRRL00HFFOZB

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Left Rear Seat Crossmember X-Axis Acceleration

Date: 05/12/2006

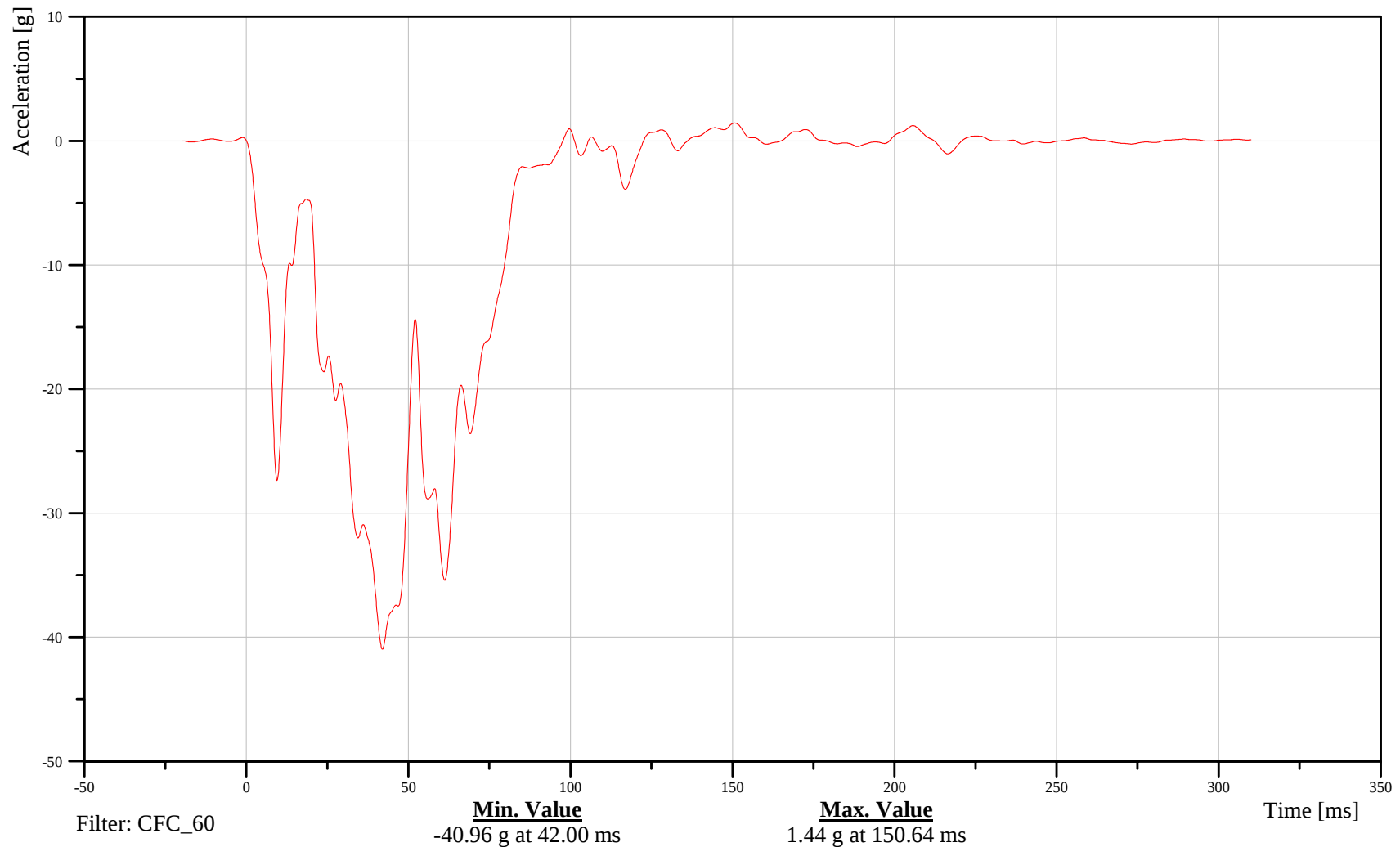
Time: 15:38

Customer: VRTC

14CRME000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Date: 05/12/2006

Time: 15:38

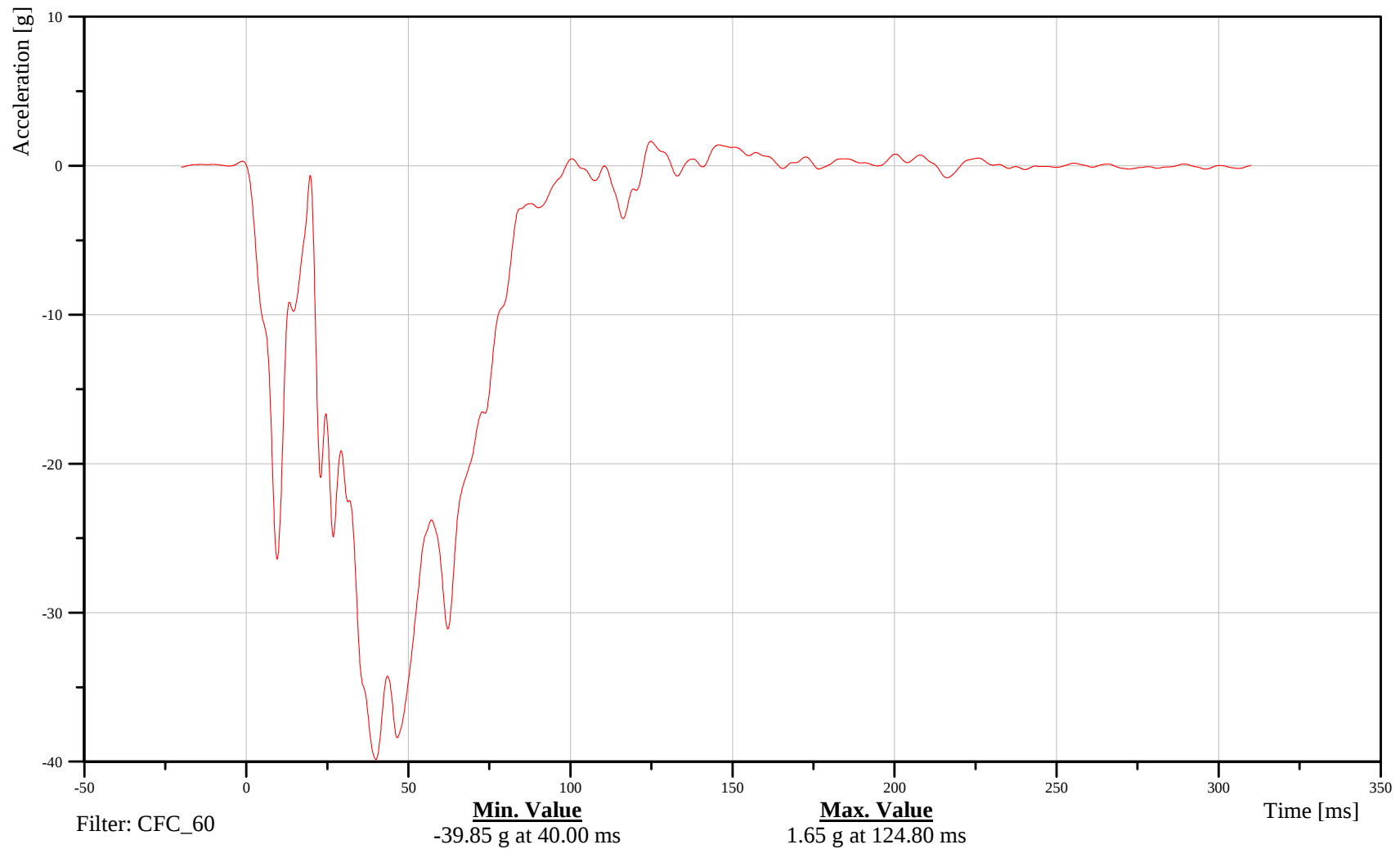
Right Rear Seat Crossmember X-Axis Acceleration

Customer: VRTC

16CRME000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Top of Engine X-Axis Acceleration

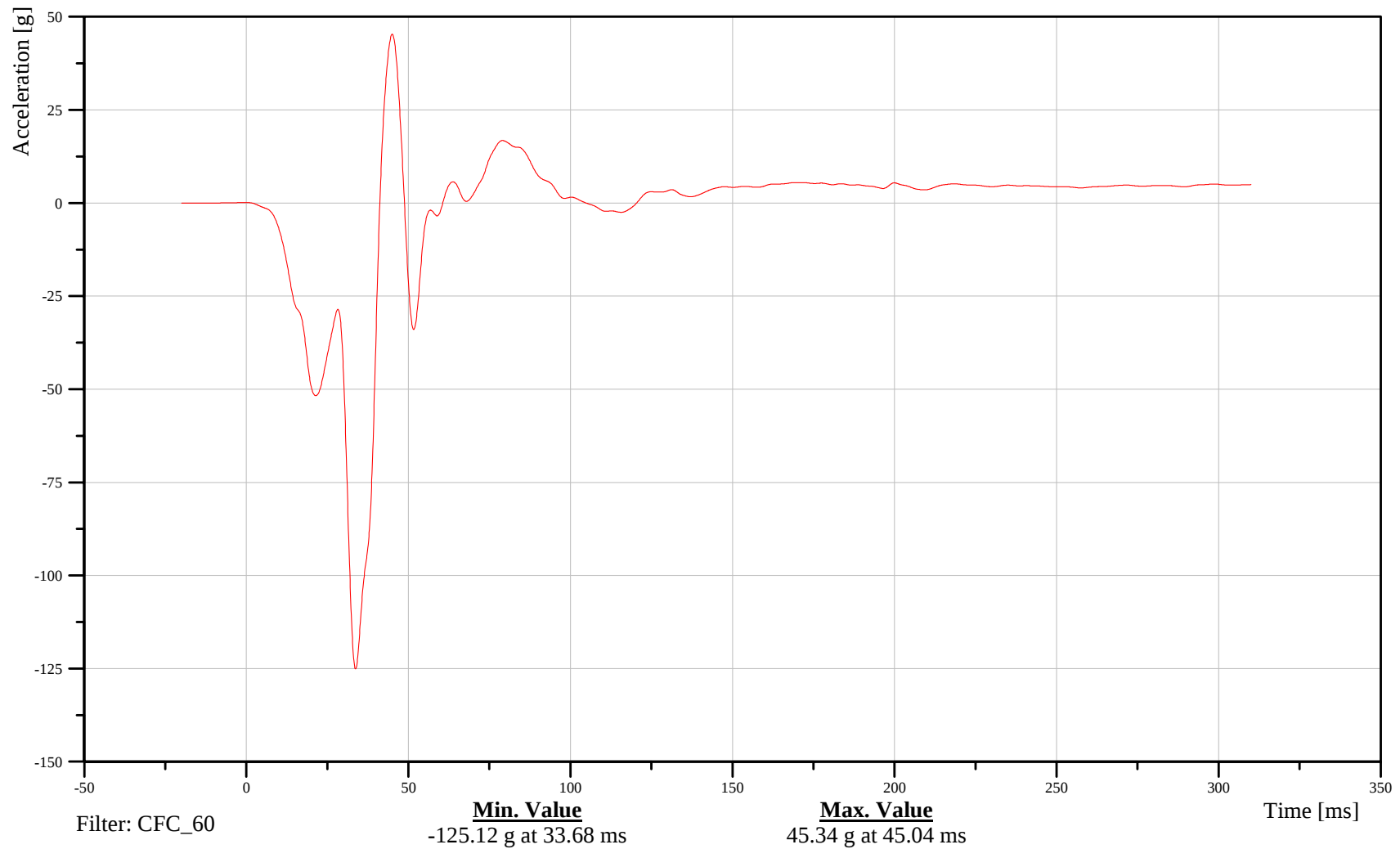
Date: 05/12/2006
Time: 15:38

Customer: VRTC

12ENGNTTP0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Bottom of Engine X-Axis Acceleration

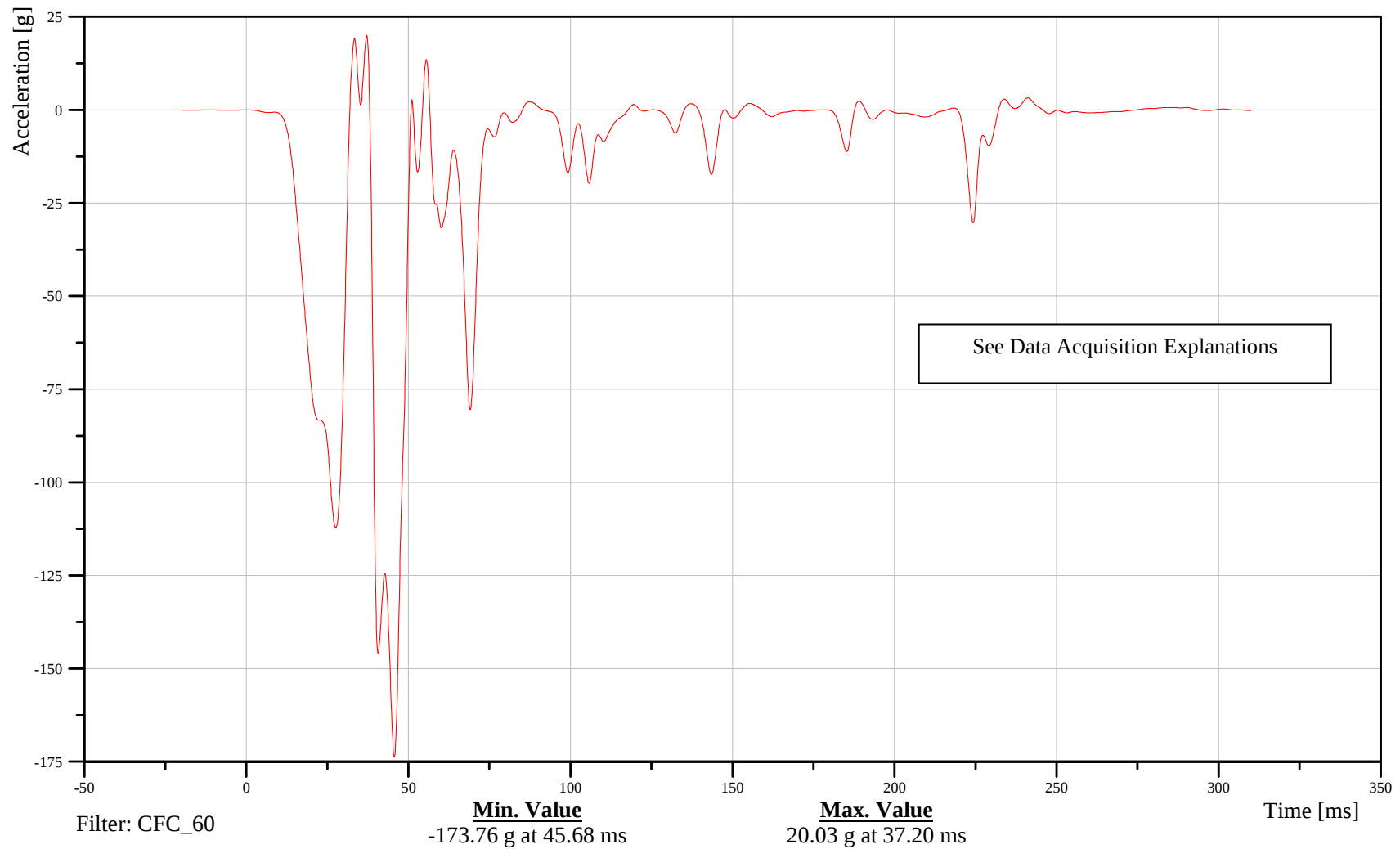
Date: 05/12/2006
Time: 15:38

Customer: VRTC

12ENGNB00000ACXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Right Front Brake Caliper X-Axis Acceleration

Date: 05/12/2006

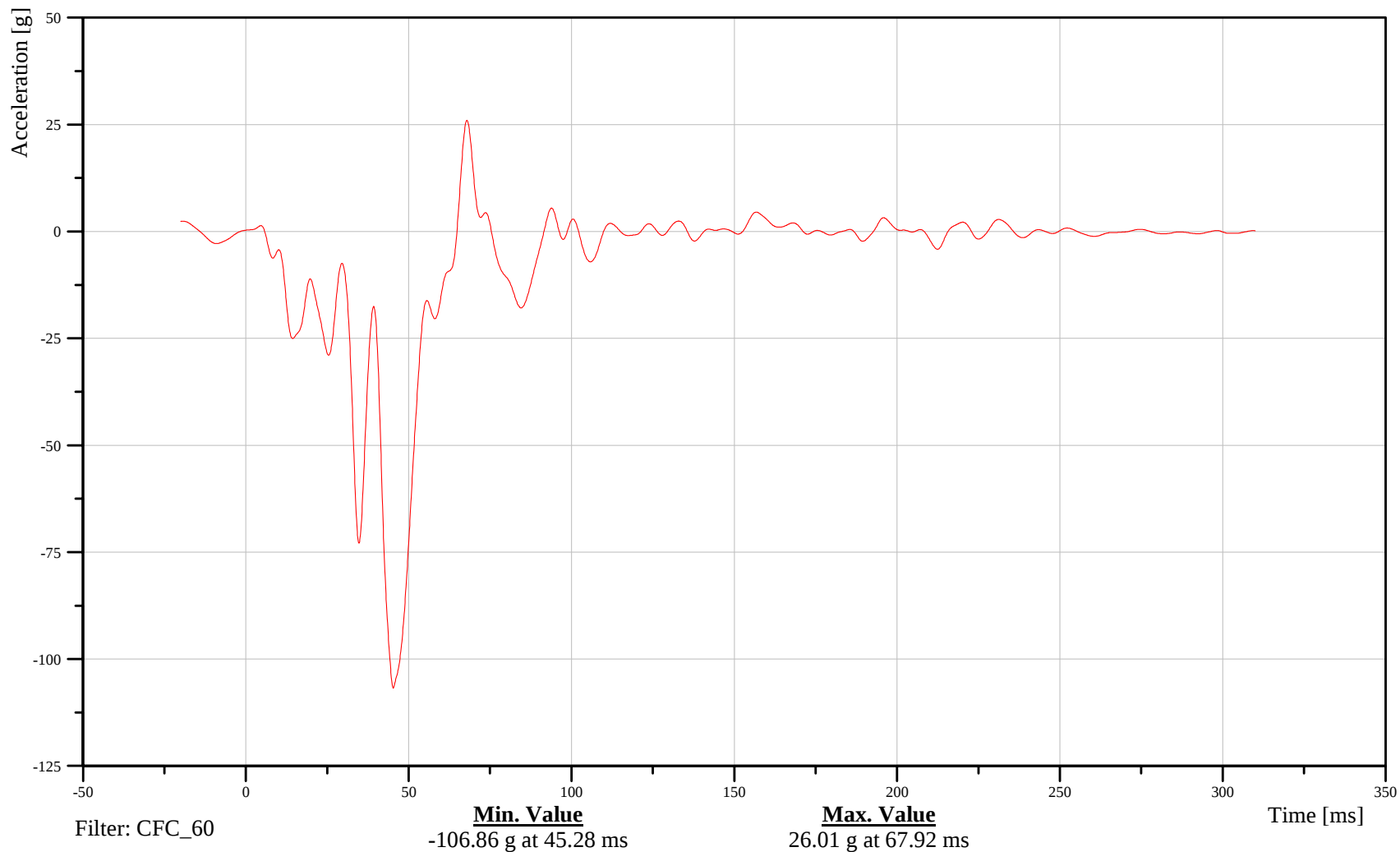
Time: 15:38

Customer: VRTC

13VEHCRI0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Date: 05/12/2006

Left Front Brake Caliper X-Axis Acceleration

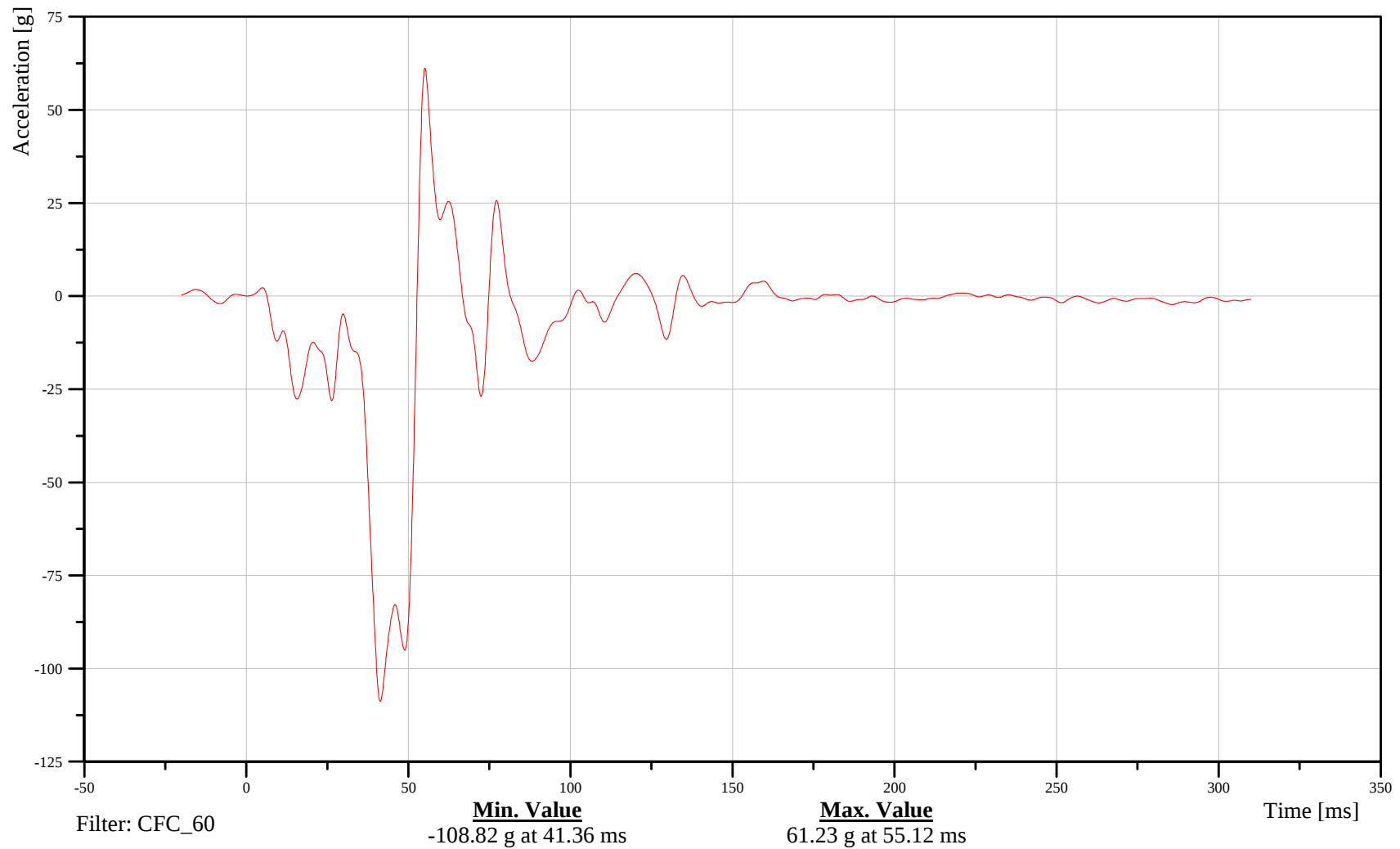
Time: 15:38

Customer: VRTC

11VEHICLE0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Dash Center X-Axis Acceleration

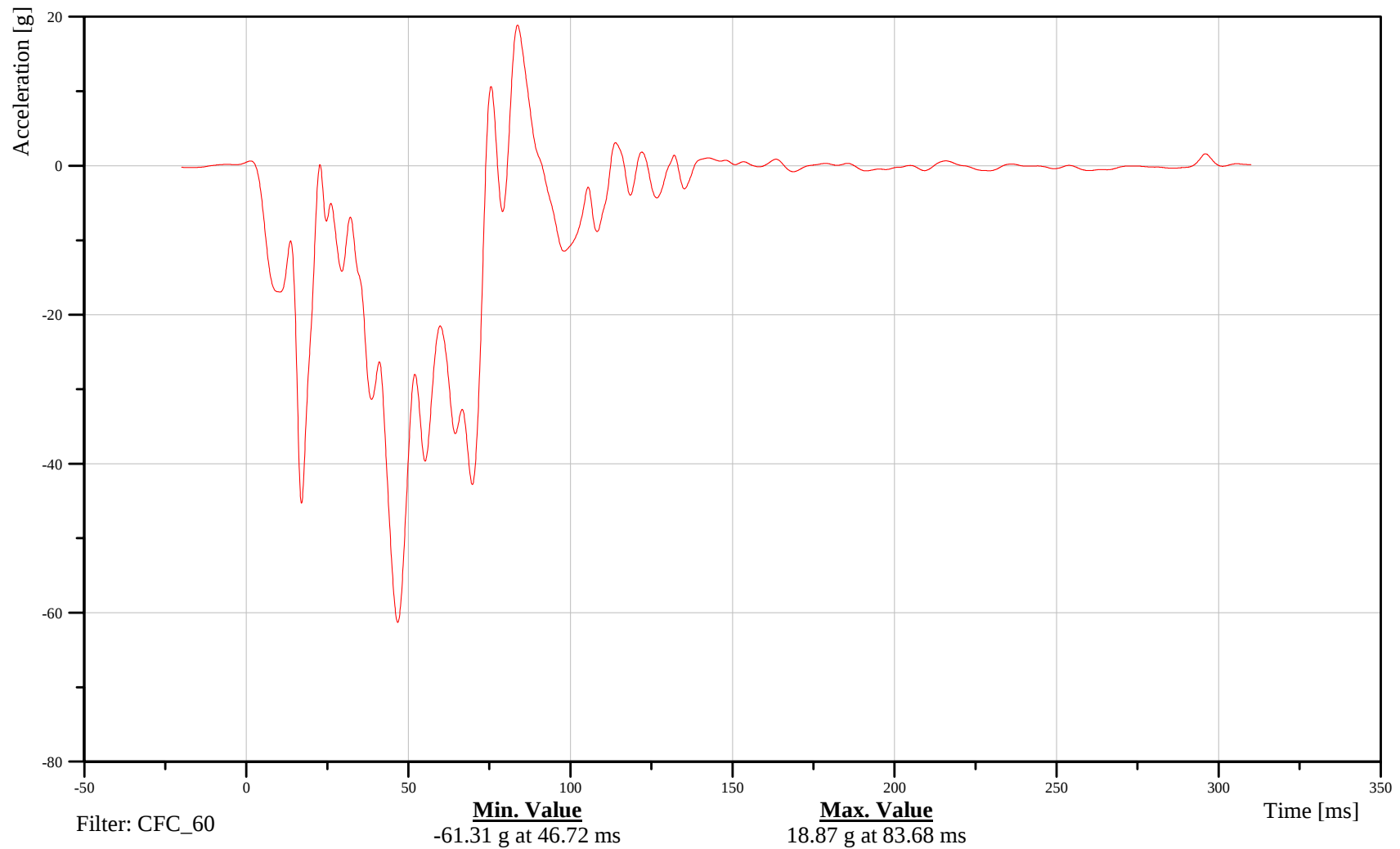
Date: 05/12/2006
Time: 15:38

Customer: VRTC

12DASH000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Toe Pan Accelerator X-Axis Acceleration

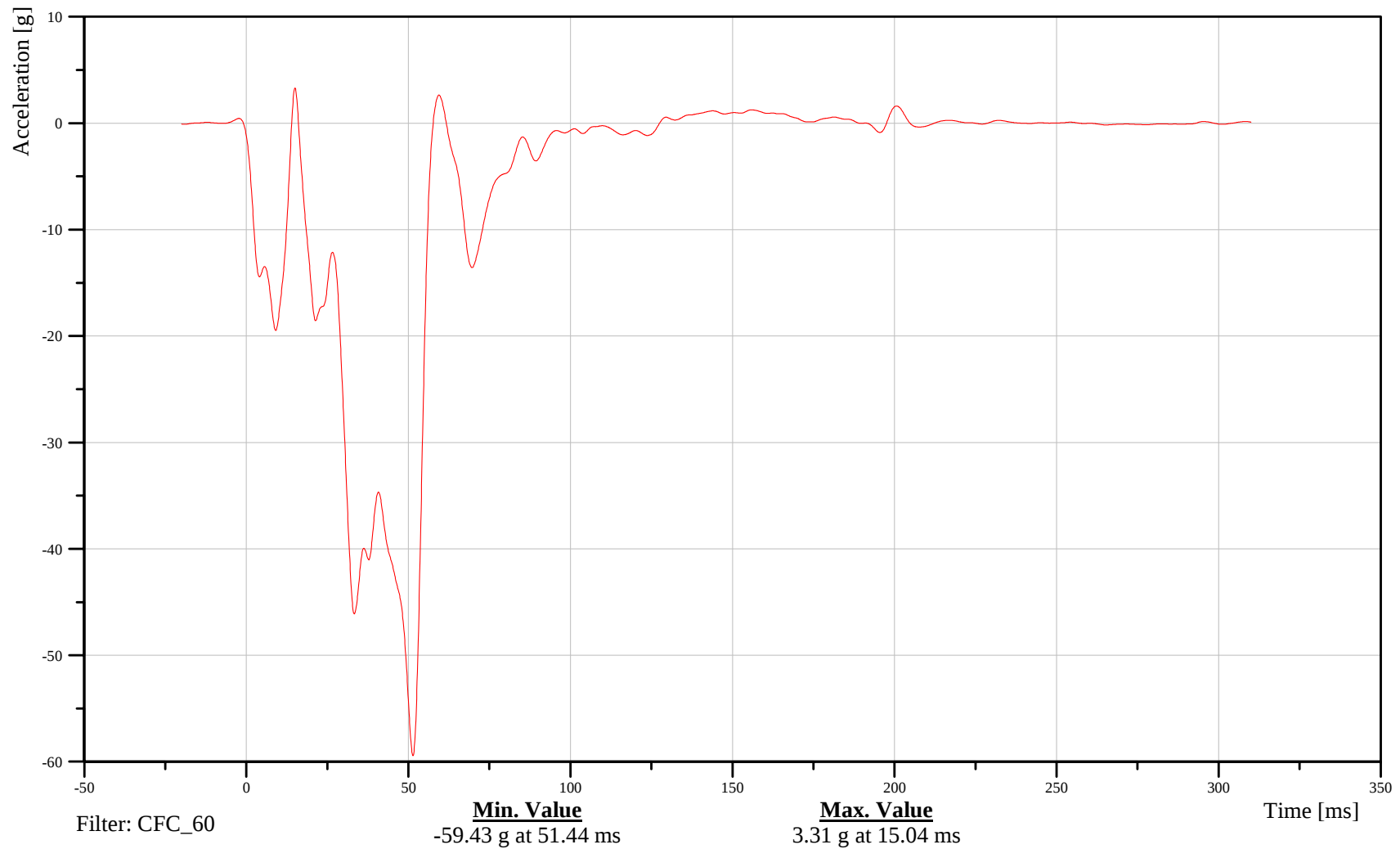
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11PEAC000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Date: 05/12/2006

Toe Pan Accelerator Z-Axis Acceleration

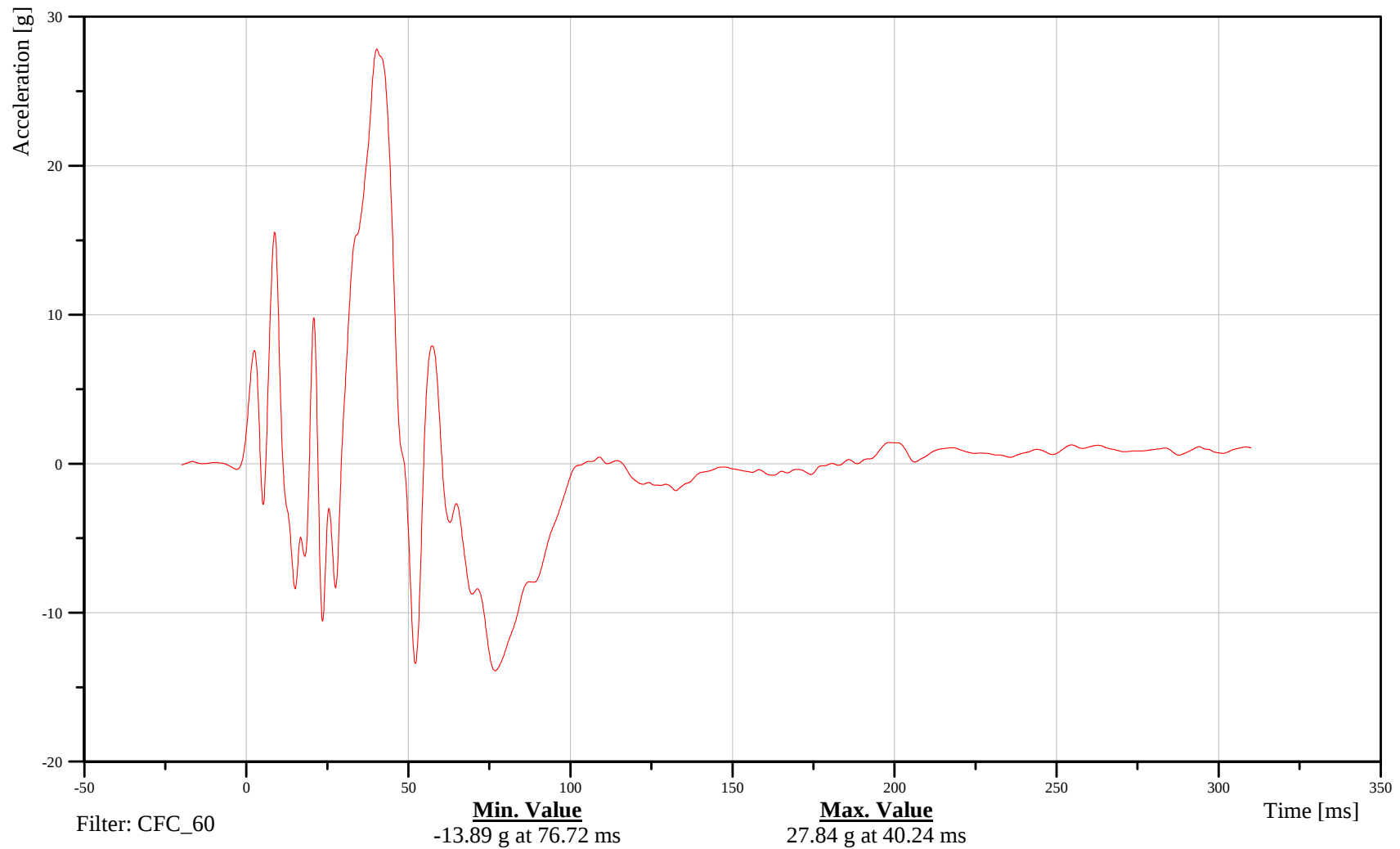
Time: 15:38

Customer: VRTC

11PEAC000000ACZD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Toe Pan Footrest X-Axis Acceleration

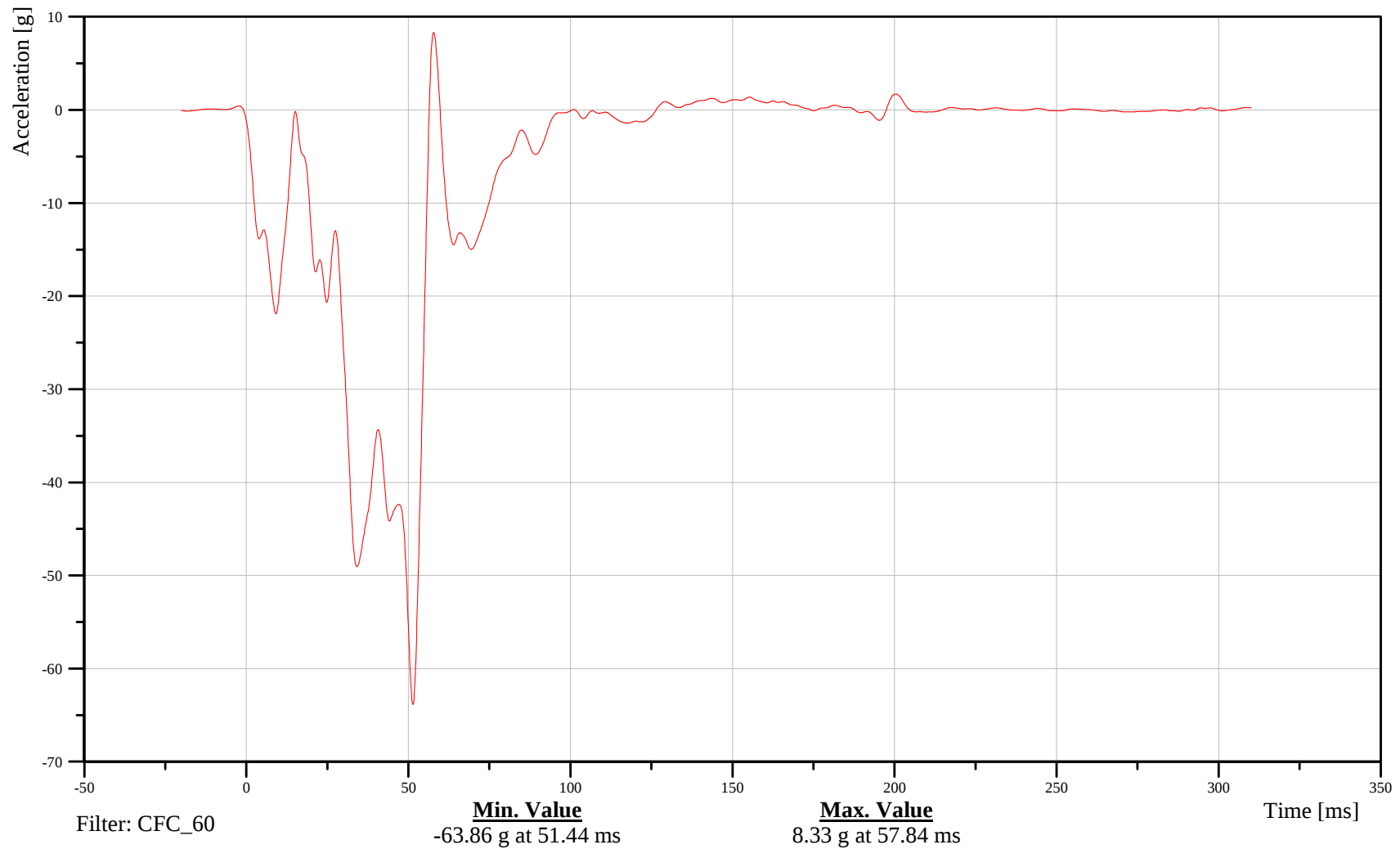
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11VEHC000001ACXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Toe Pan Footrest Z-Axis Acceleration

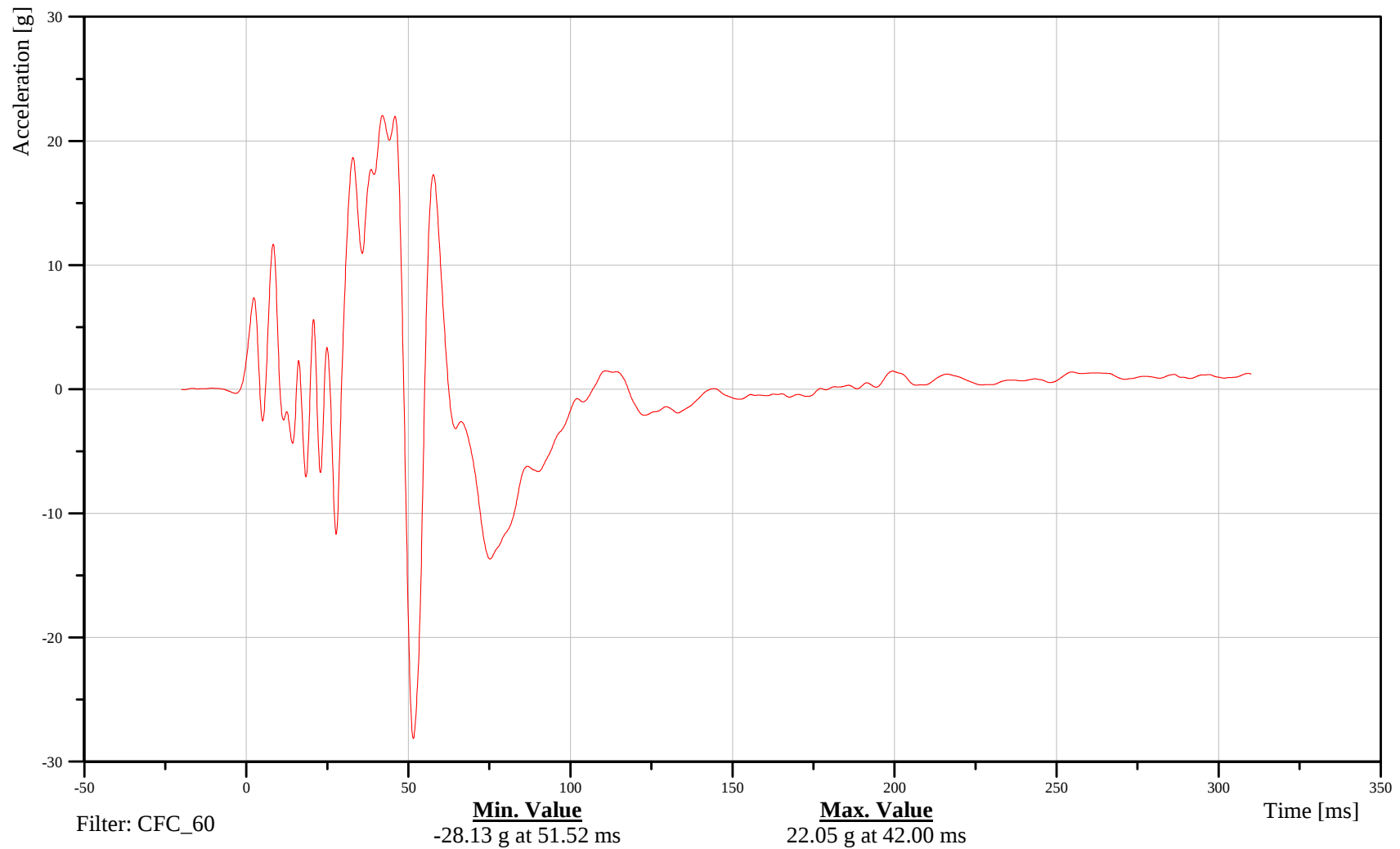
Date: 05/12/2006
Time: 15:38

Customer: VRTC

11VEHC000001ACZD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Date: 05/12/2006

Time: 15:38

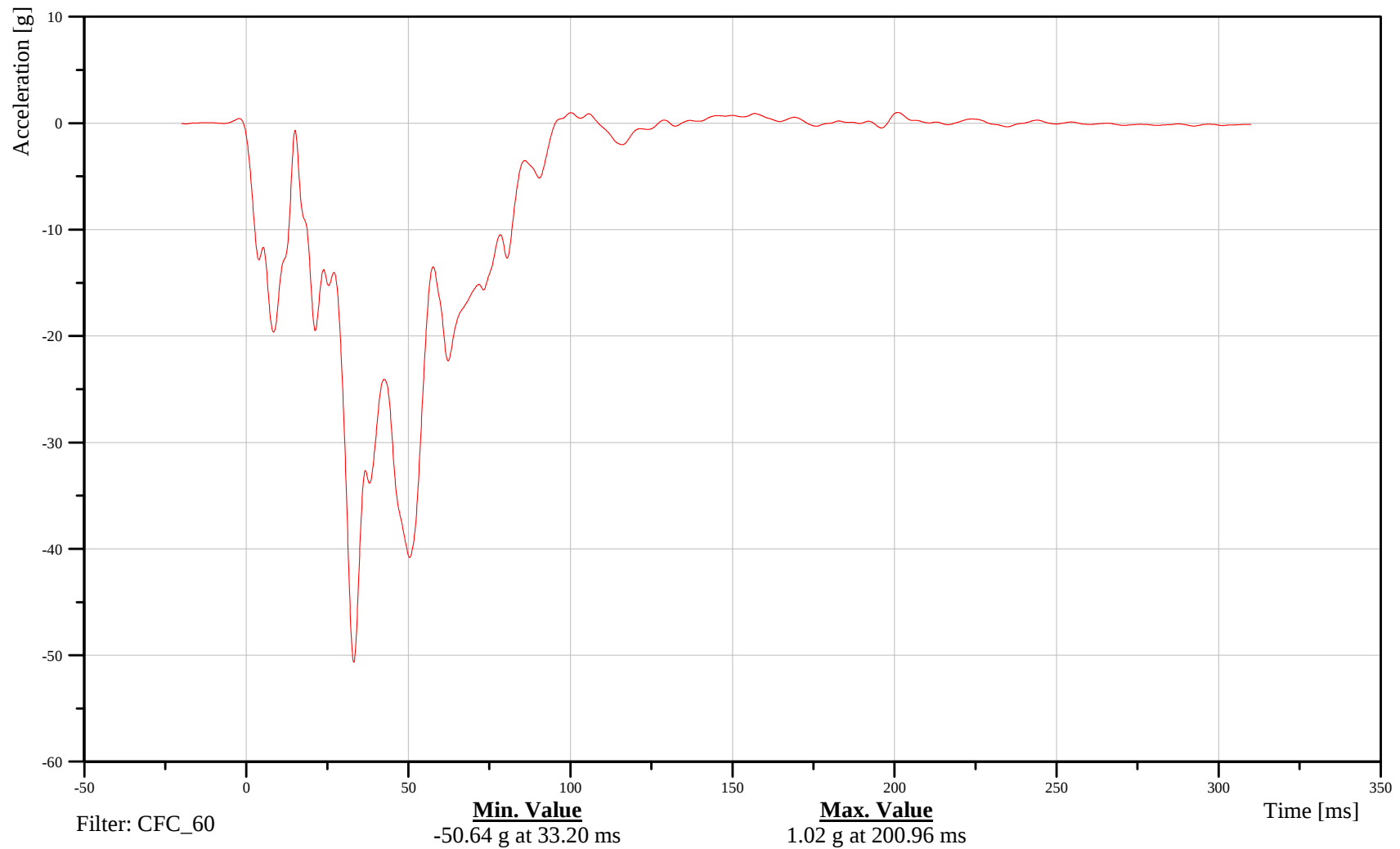
Rear Tunnel Center X-Axis Acceleration

Customer: VRTC

15TUNNCY0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Vehicle CG X-Axis Acceleration

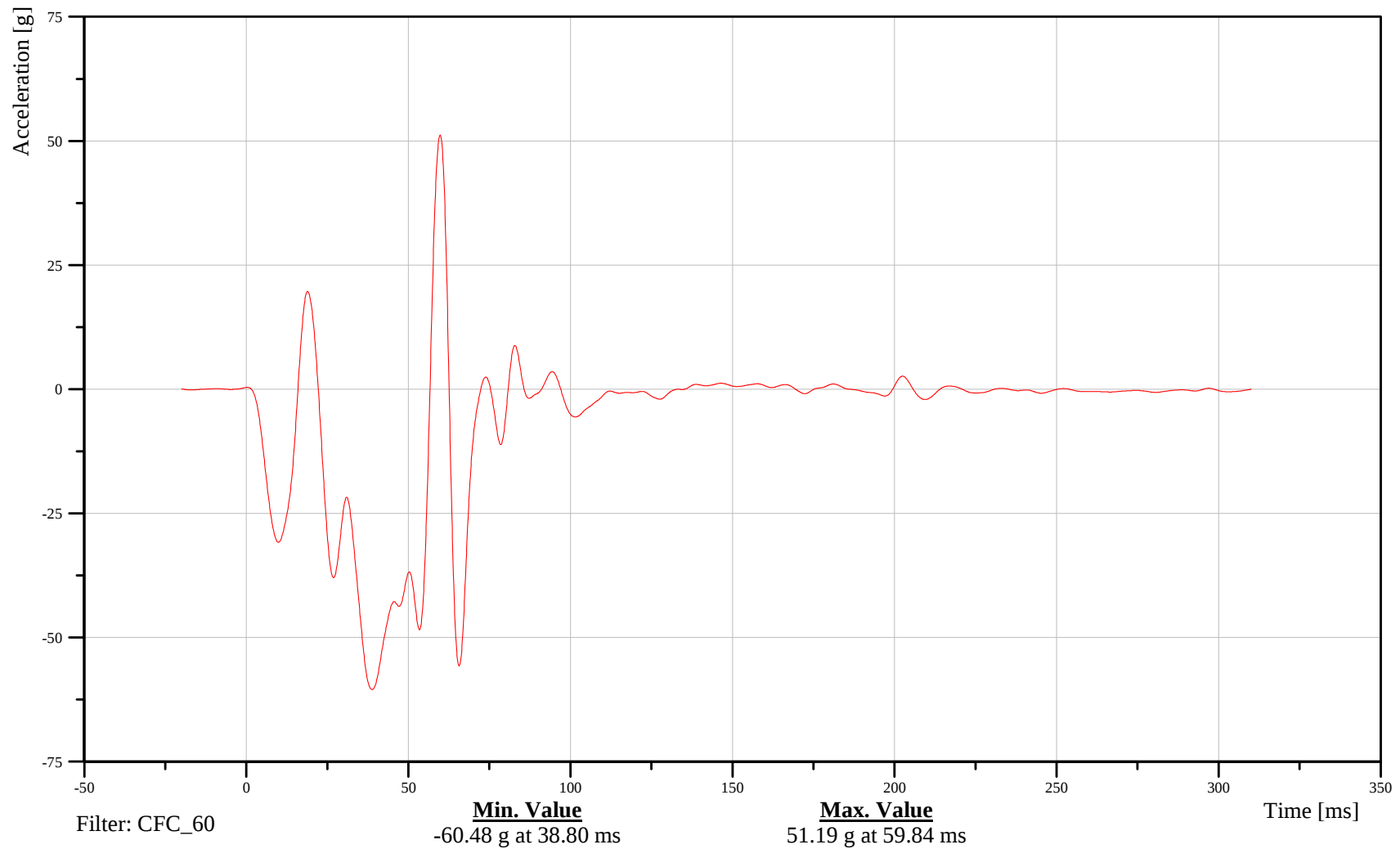
Date: 05/12/2006
Time: 15:38

Customer: VRTC

10VEHCCG0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Vehicle CG X-Axis Velocity

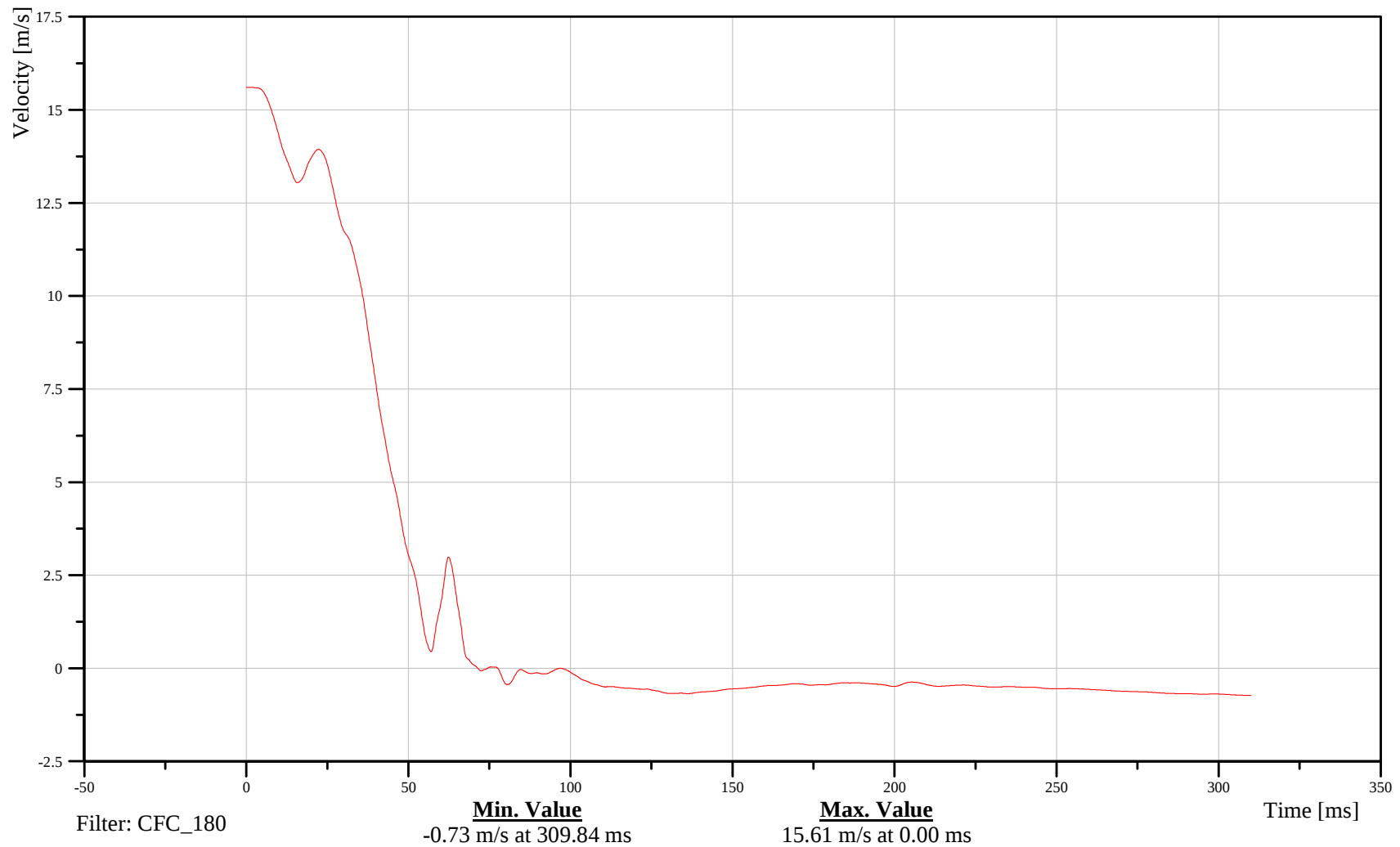
Date: 05/12/2006
Time: 15:38

Customer: VRTC

10VEHCCG0000VEXC

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Vehicle CG X-Axis Displacement

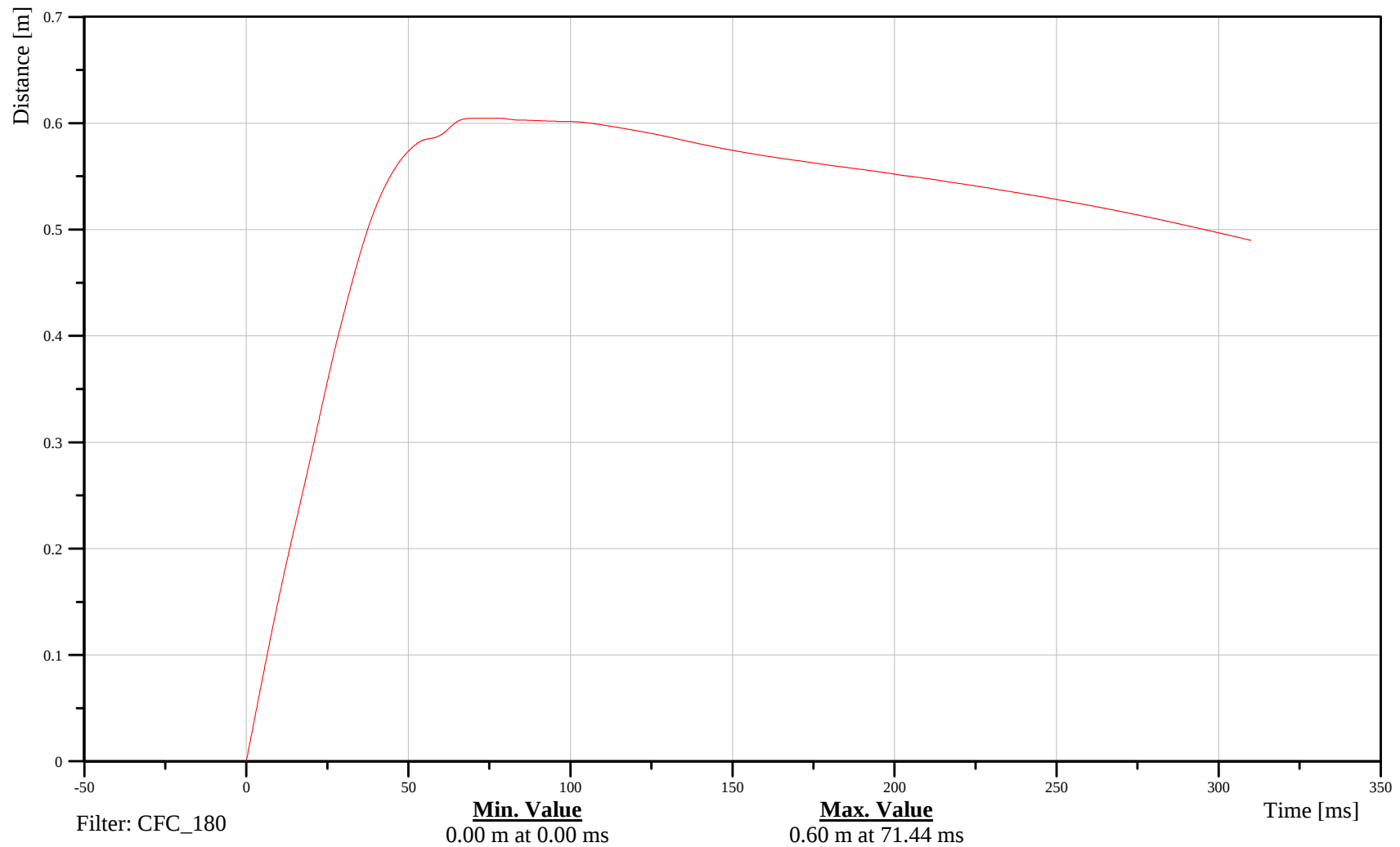
Date: 05/12/2006
Time: 15:38

Customer: VRTC

10VEHCCG0000DCXC

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Vehicle CG Y-Axis Acceleration

Date: 05/12/2006

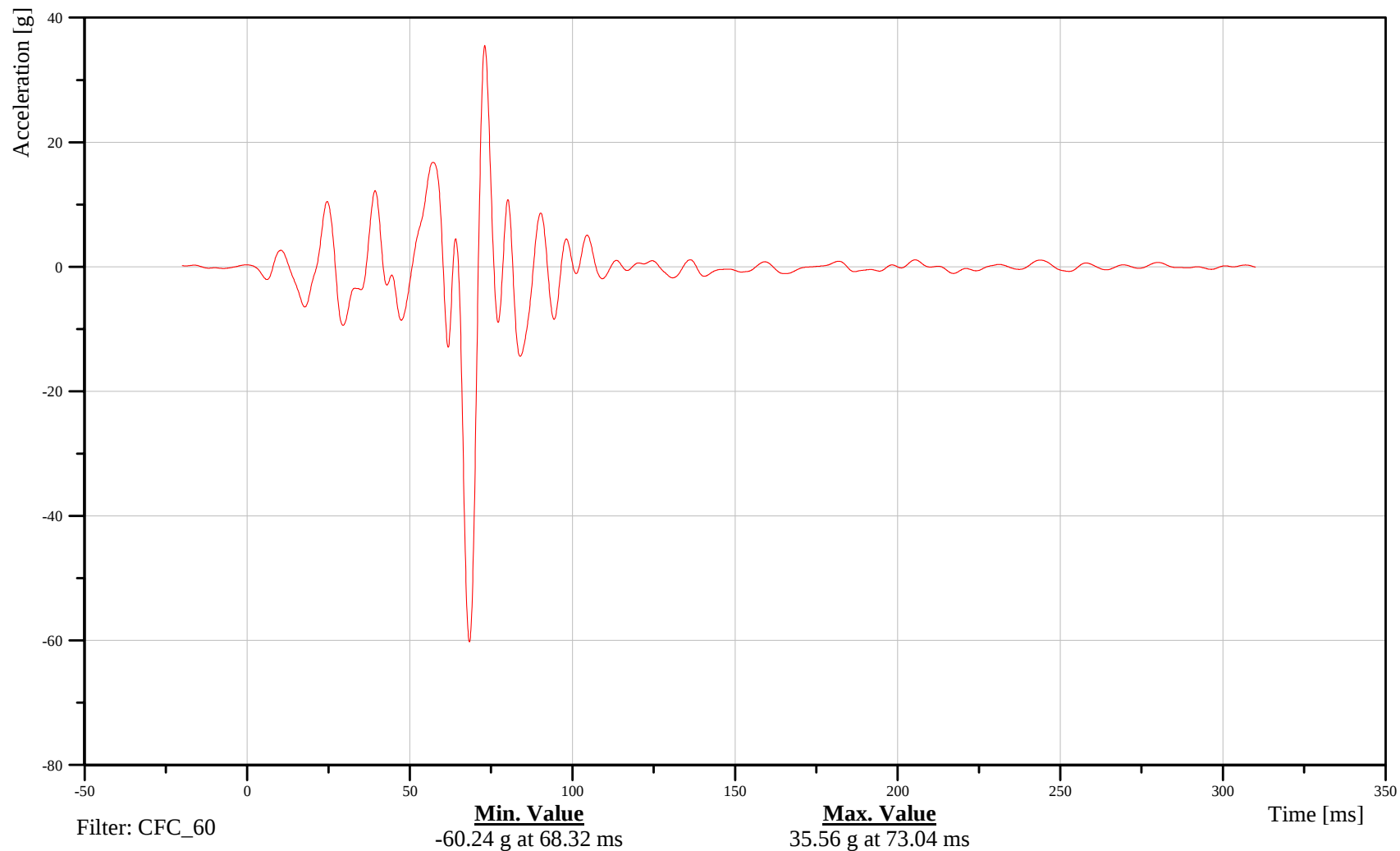
Time: 15:38

Customer: VRTC

10VEHCCG0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Vehicle CG Y-Axis Velocity

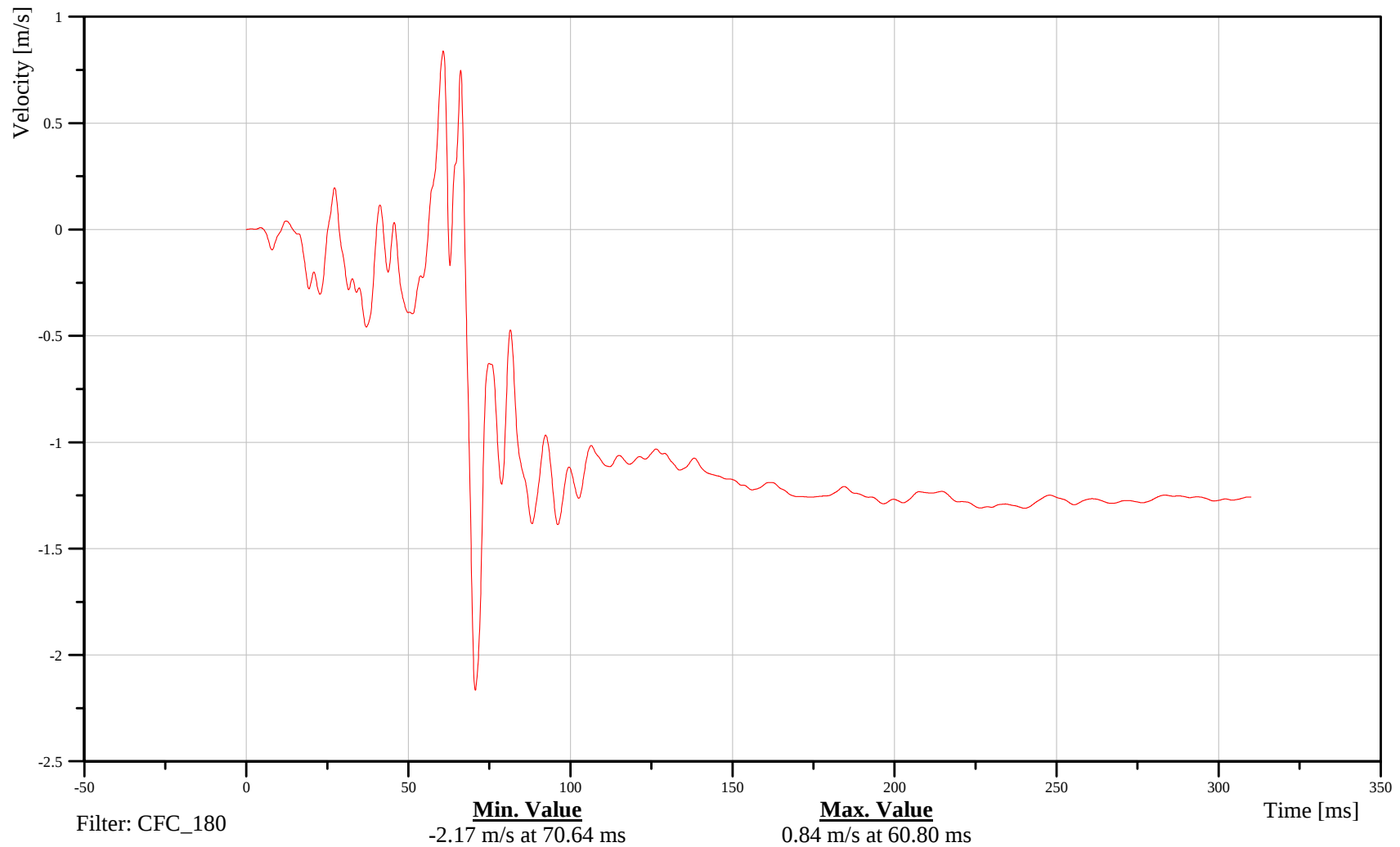
Date: 05/12/2006
Time: 15:38

Customer: VRTC

10VEHCCG0000VEYC

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Vehicle CG Y-Axis Displacement

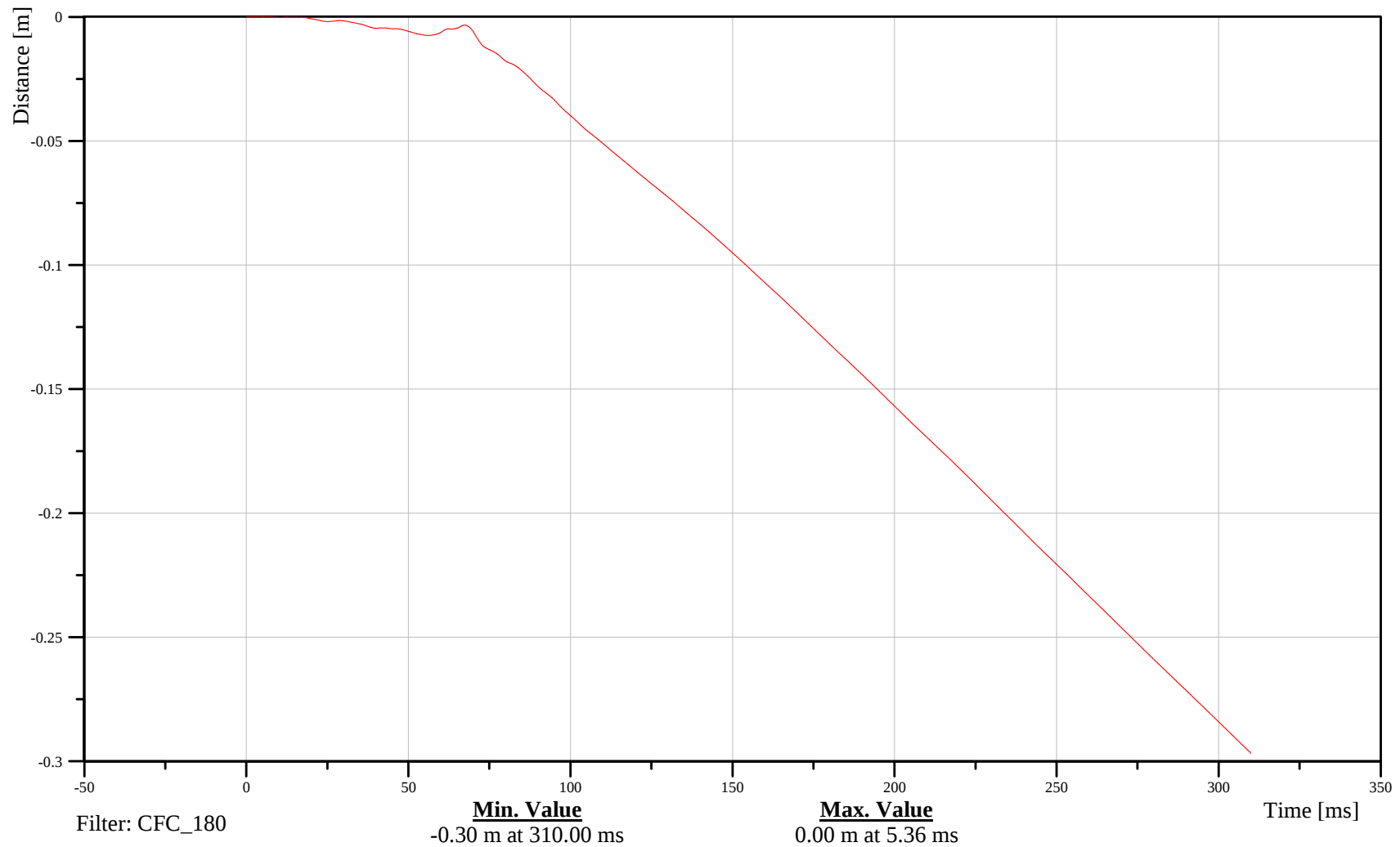
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Time: 15:38

Customer: VRTC

10VEHCCG0000DCYC

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Vehicle CG Z-Axis Acceleration

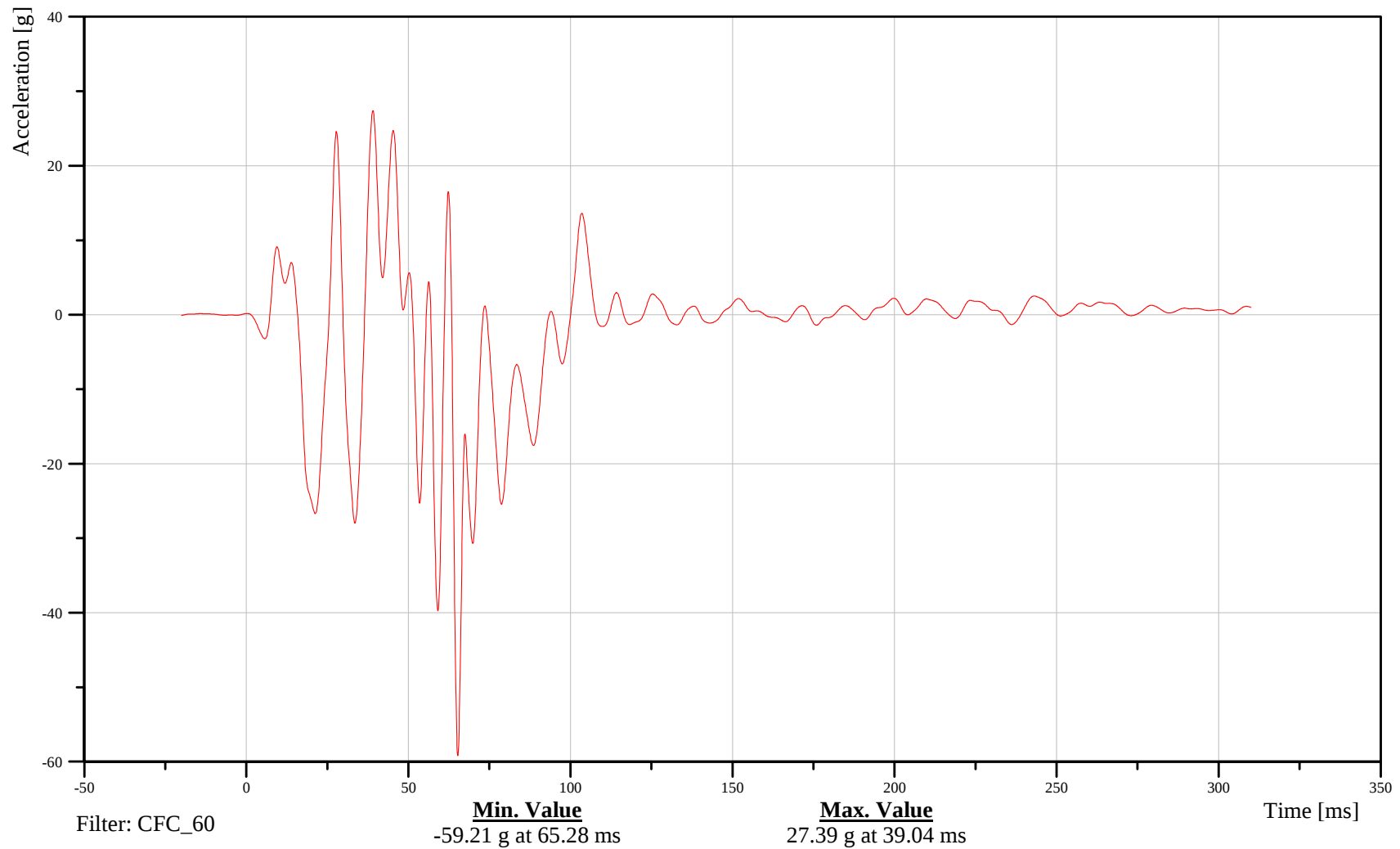
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Time: 15:38

Customer: VRTC

10VEHCCG0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Vehicle CG Z-Axis Velocity

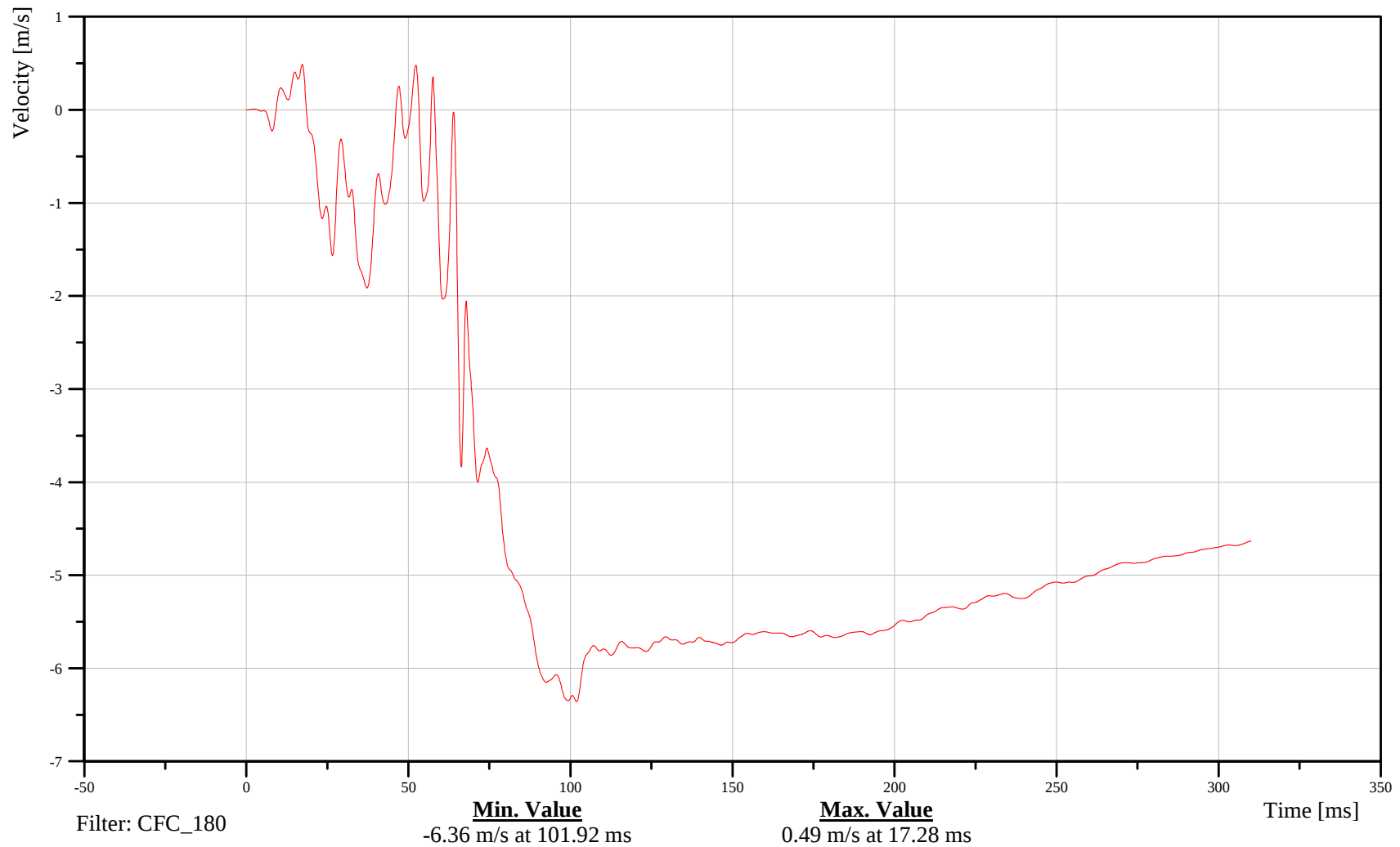
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Time: 15:38

Customer: VRTC

10VEHCCG0000VEZC

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Vehicle CG Z-Axis Displacement

Date: 05/12/2006

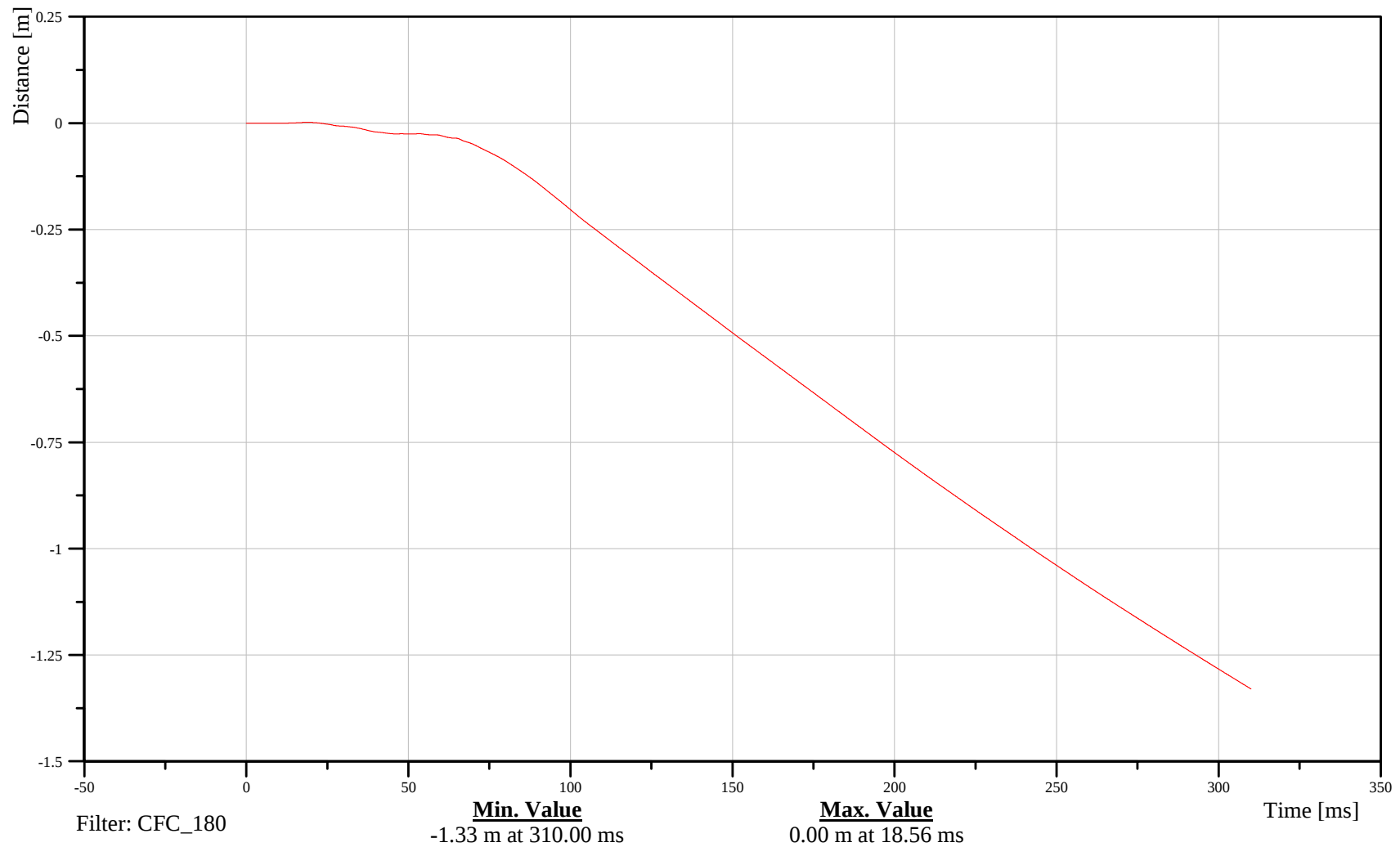
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Customer: VRTC

10VEHCCG0000DCZC

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Vehicle CG Resultant Acceleration

Date: 05/12/2006

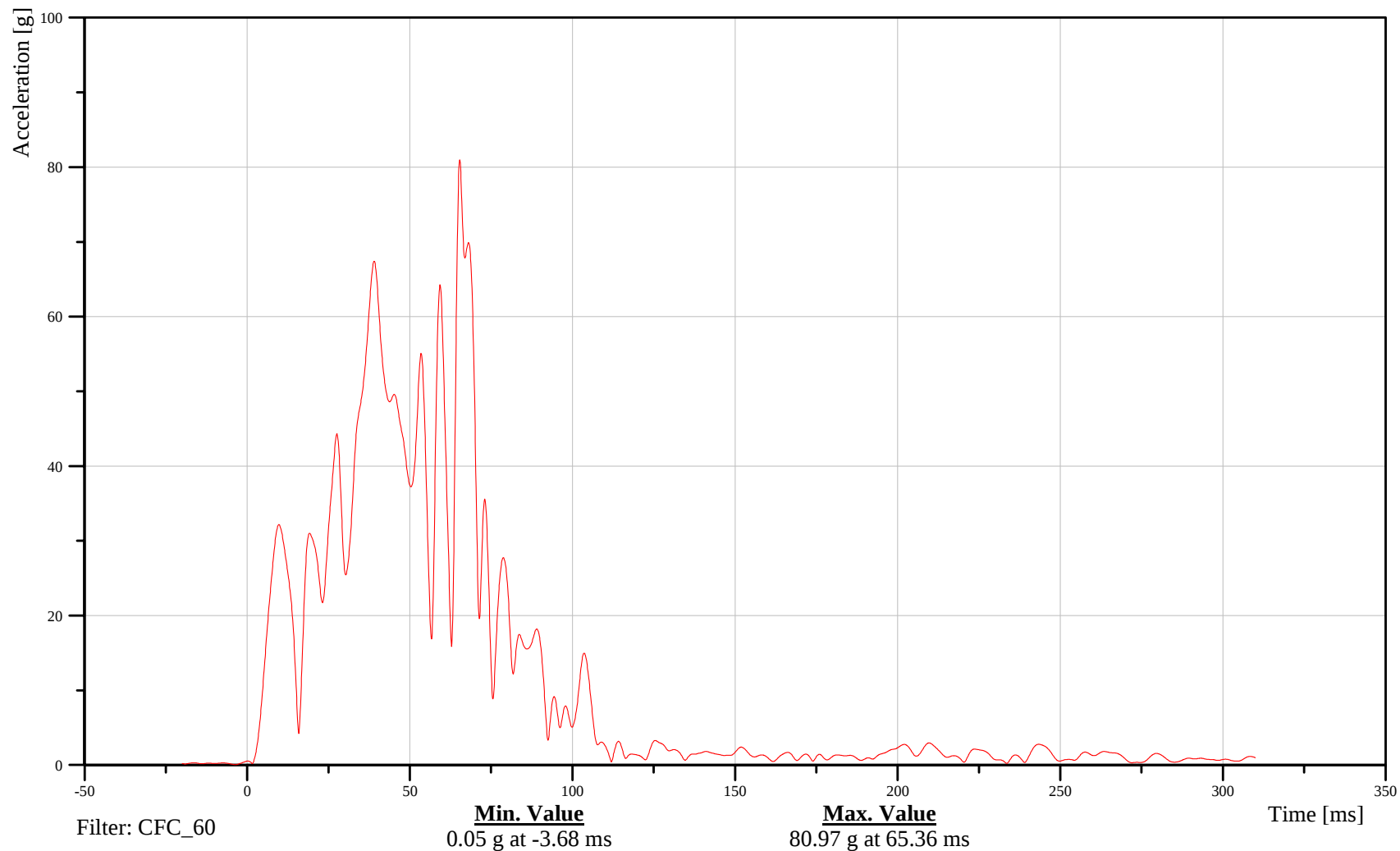
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Customer: VRTC

10VEHCCG0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Vehicle Rear Deck X-Axis Acceleration

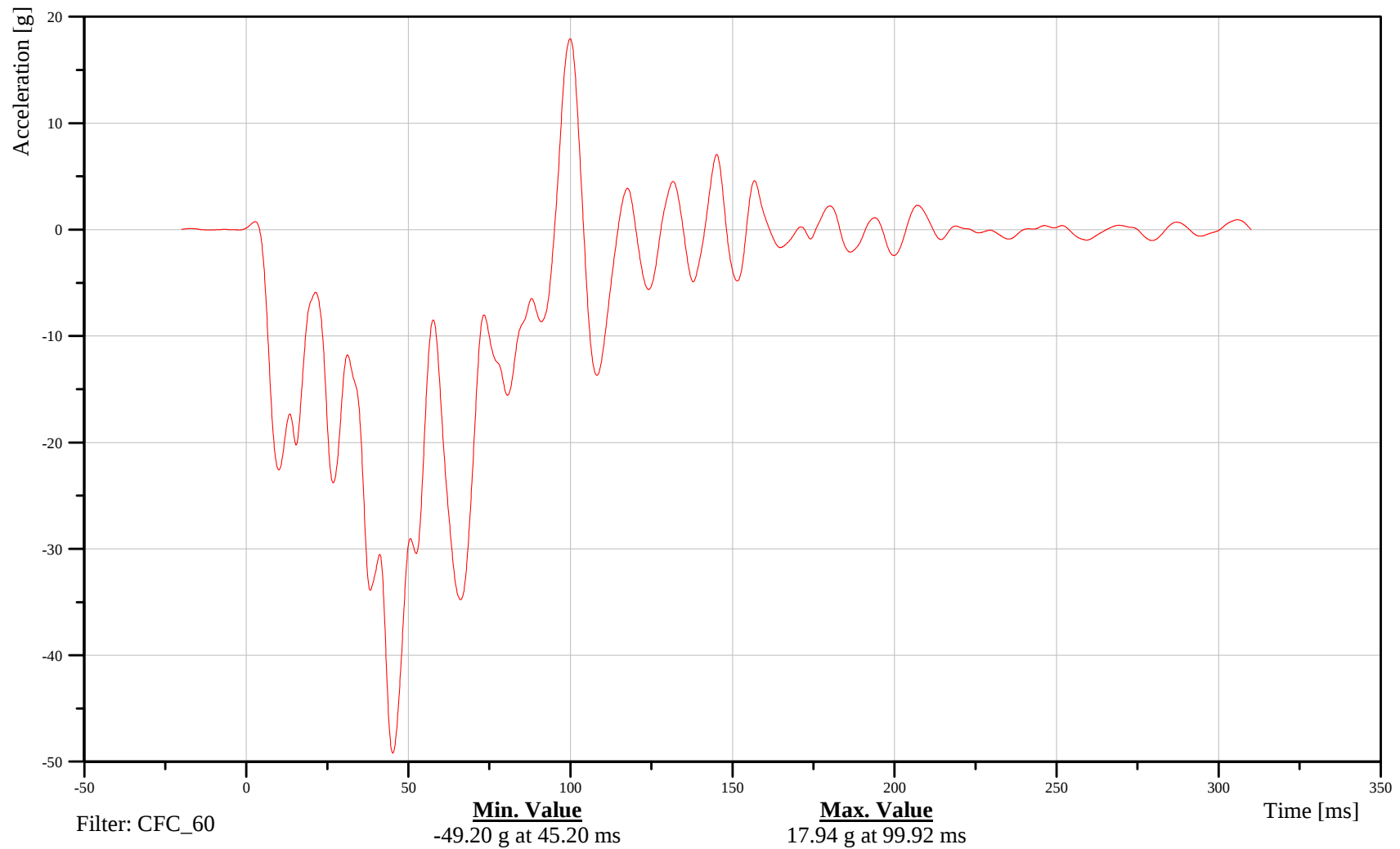
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Time: 15:38

Customer: VRTC

18VEHC000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Vehicle Rear Deck Y-Axis Acceleration

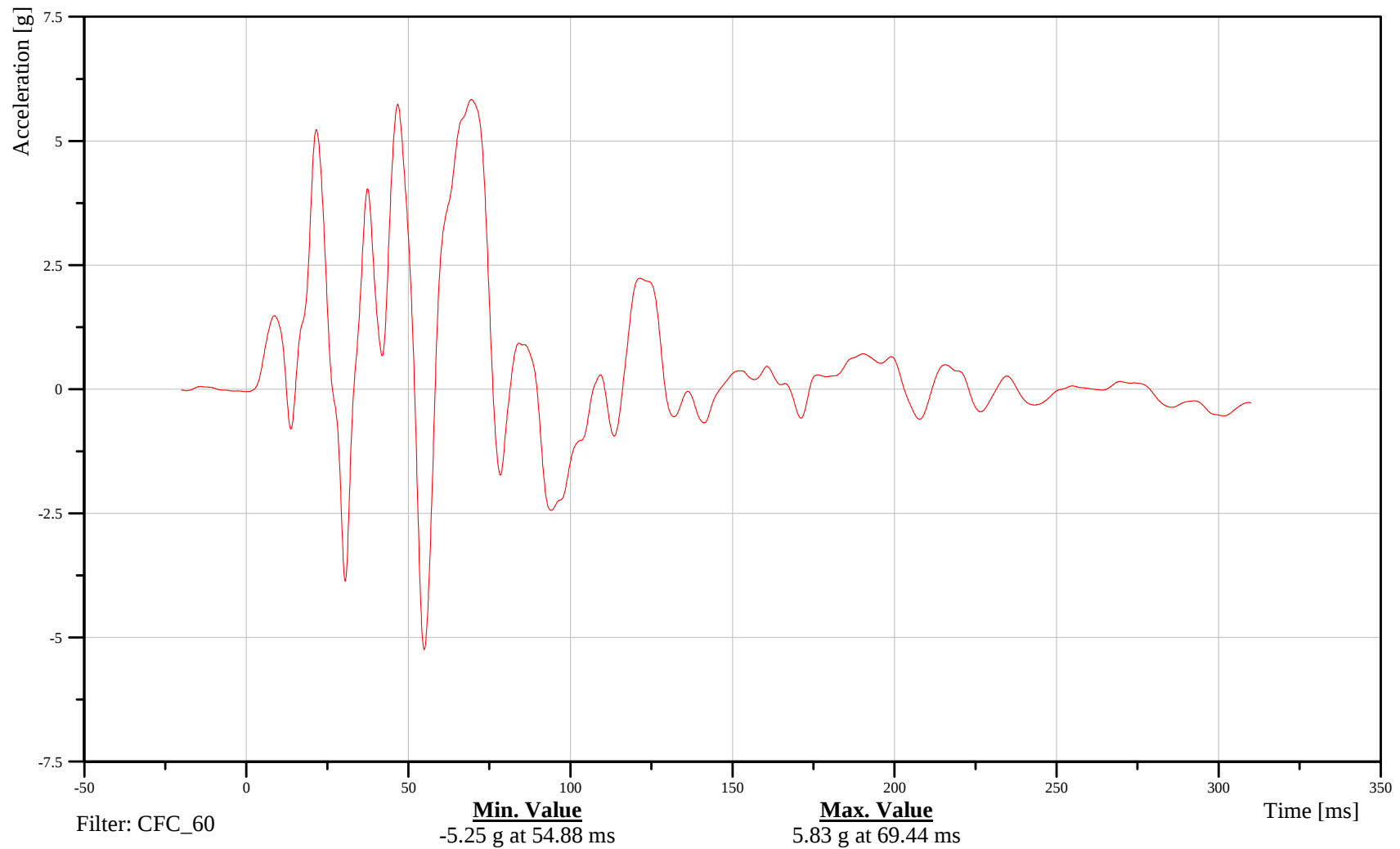
Date: 05/12/2006
Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Vehicle Rear Deck Z-Axis Acceleration

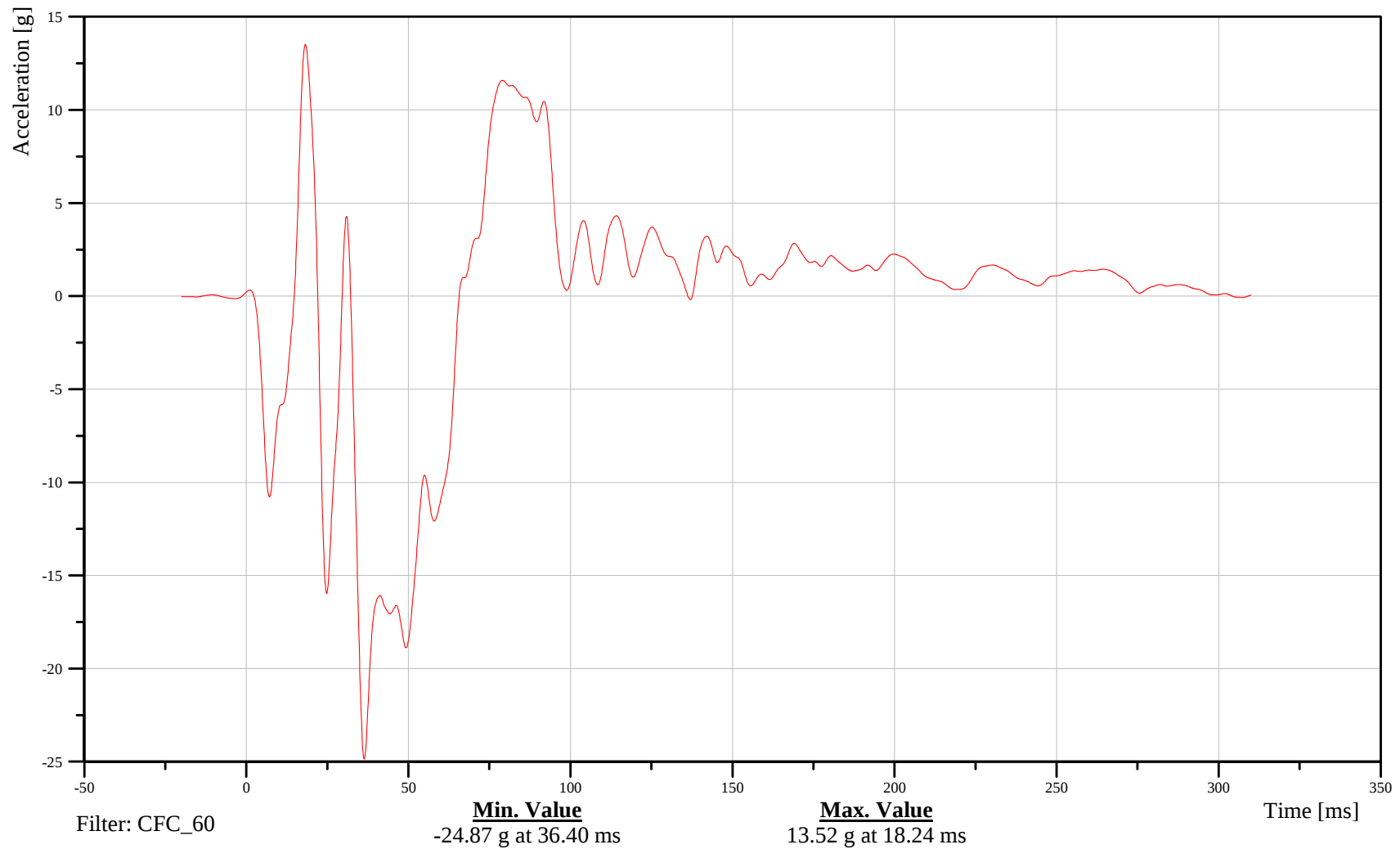
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Time: 15:38

Customer: VRTC

18VEHC000000ACZD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Vehicle Rear Deck Resultant Acceleration

Date: 05/12/2006

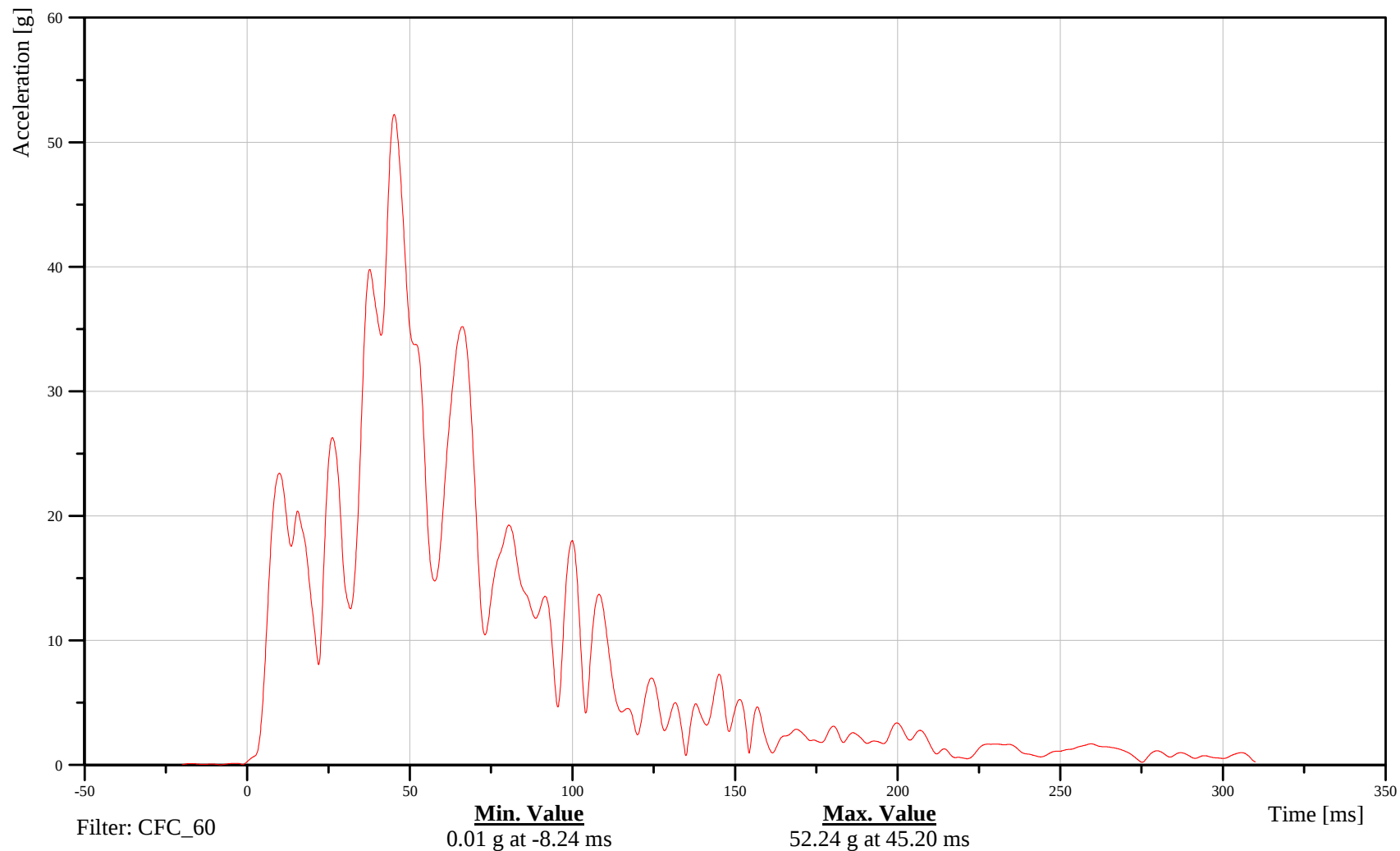
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Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Lap Belt Spool

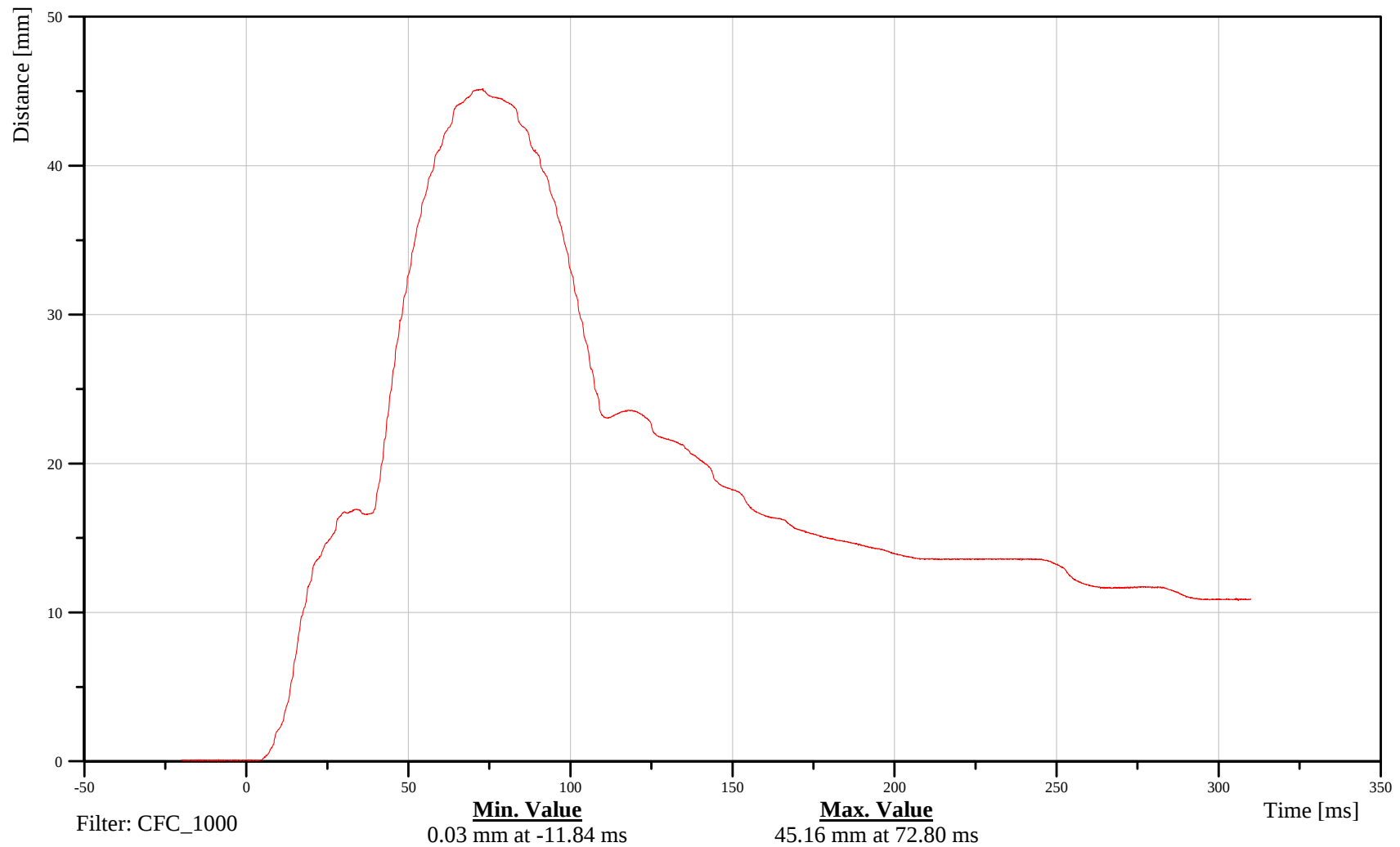
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Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Shoulder Belt Spool and Retraction

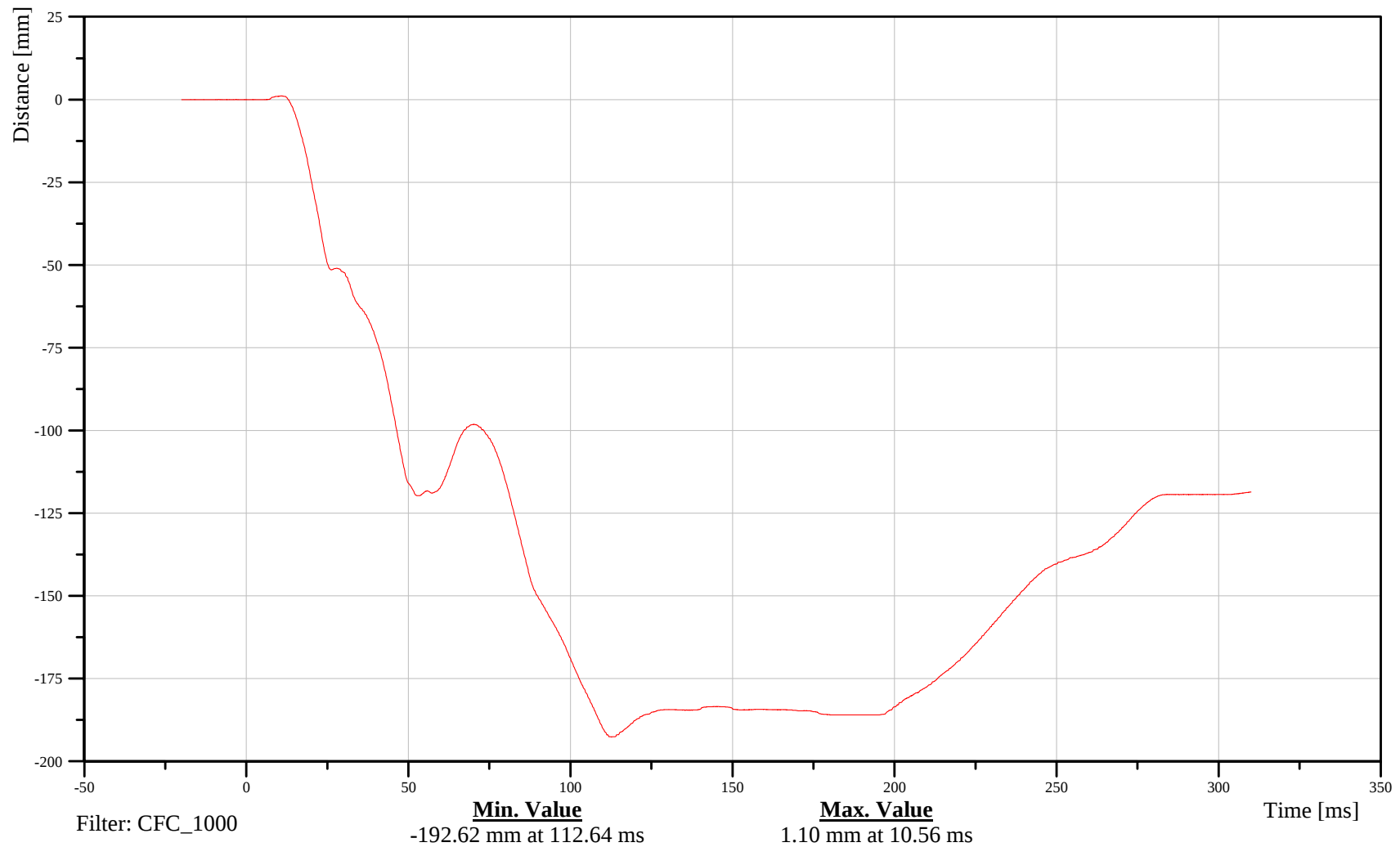
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Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Passenger Lap Belt Spool

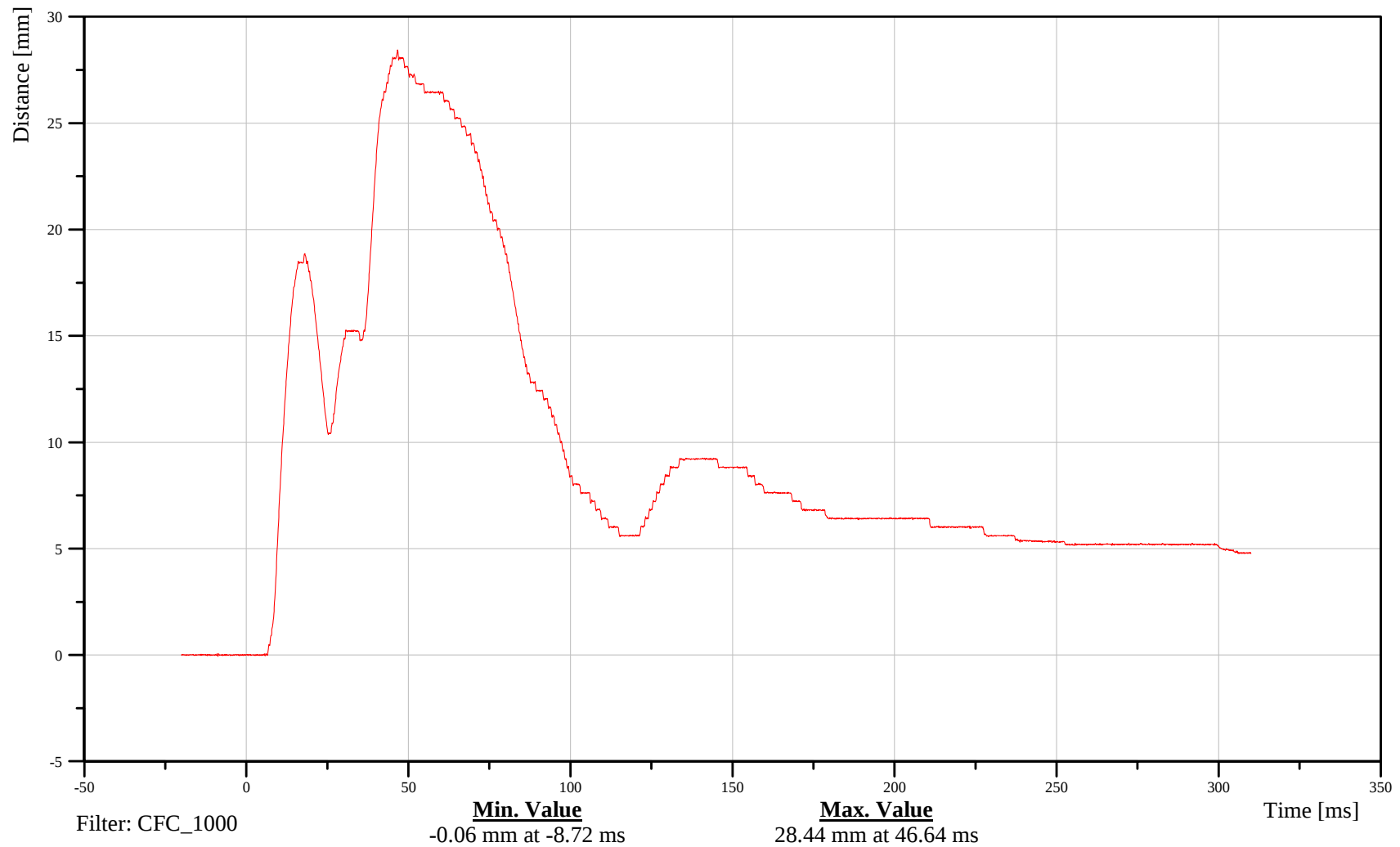
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Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Date: 05/12/2006

Time: 15:38

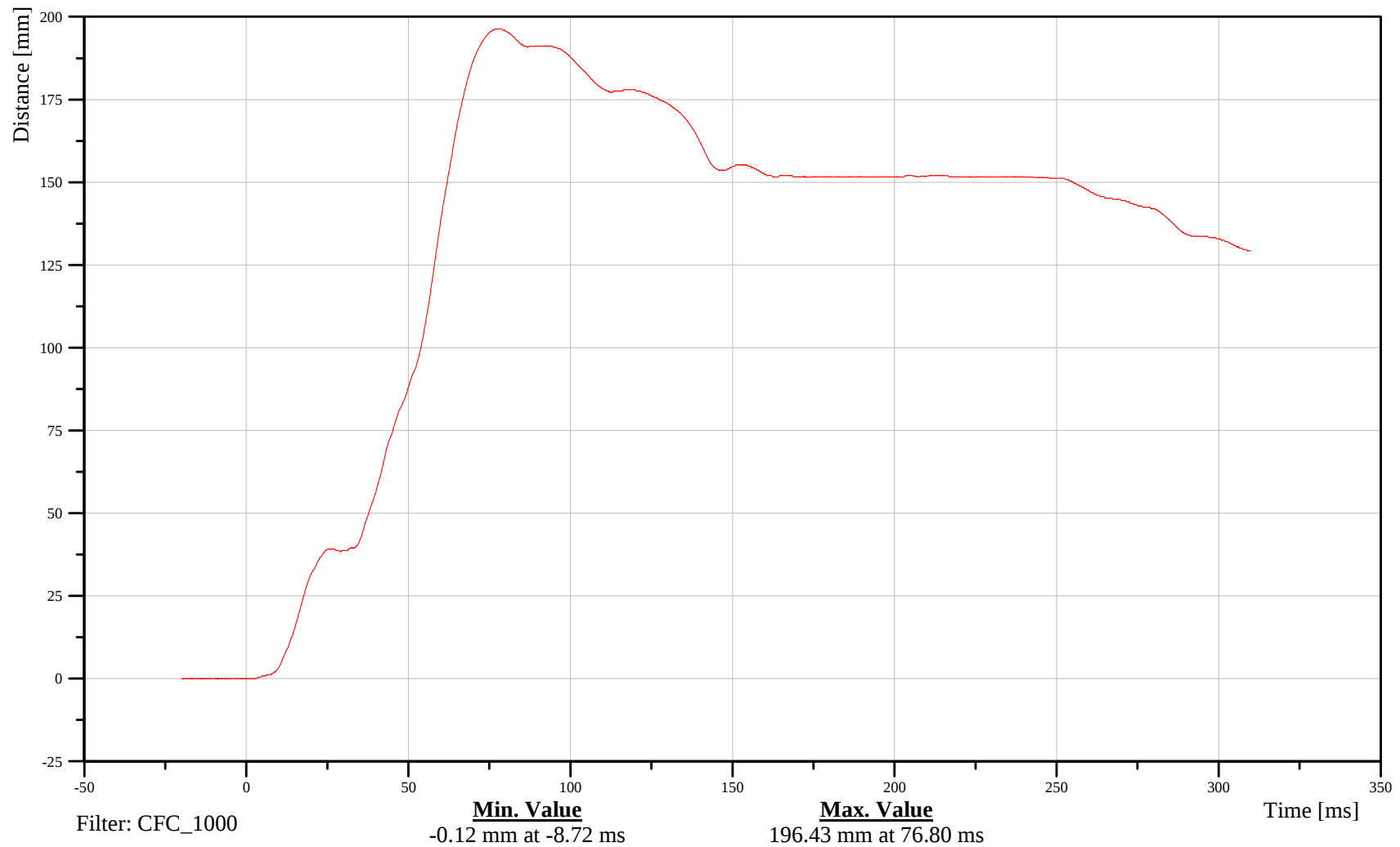
Passenger Shoulder Belt Spool and Retraction

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Lap Belt Force

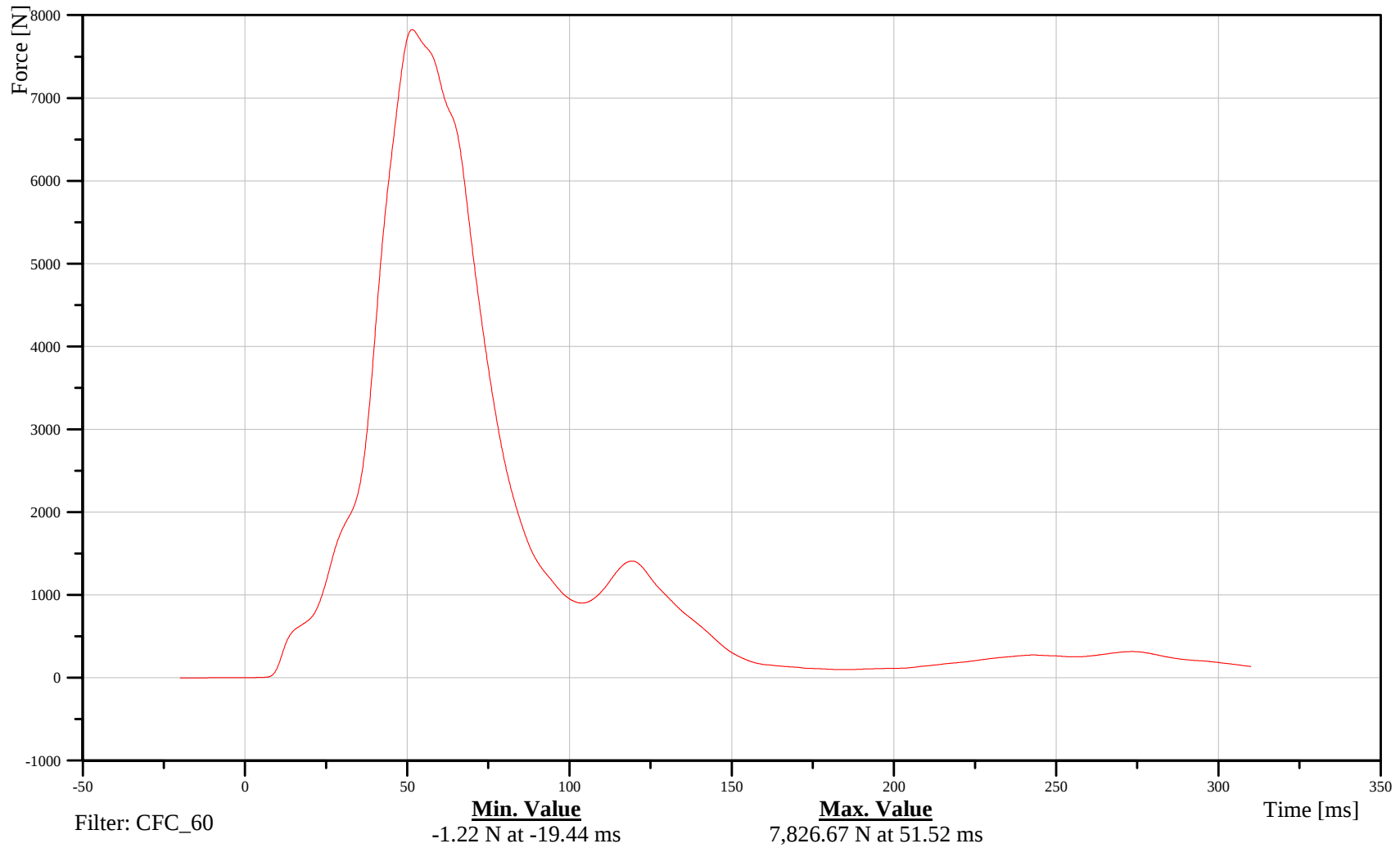
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Time: 15:38

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Shoulder Belt Force

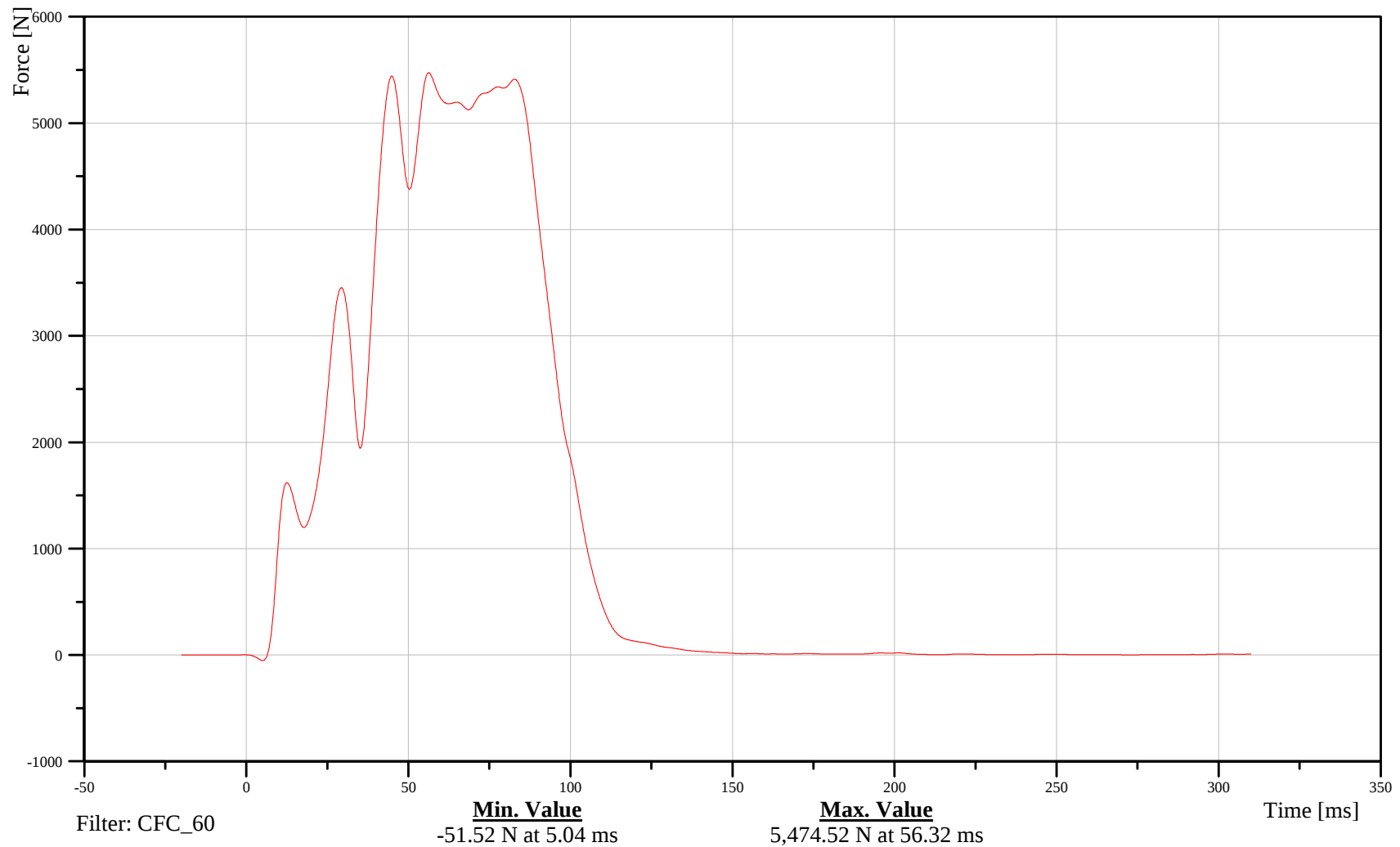
Date: 05/12/2006
Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Date: 05/12/2006
Time: 15:38

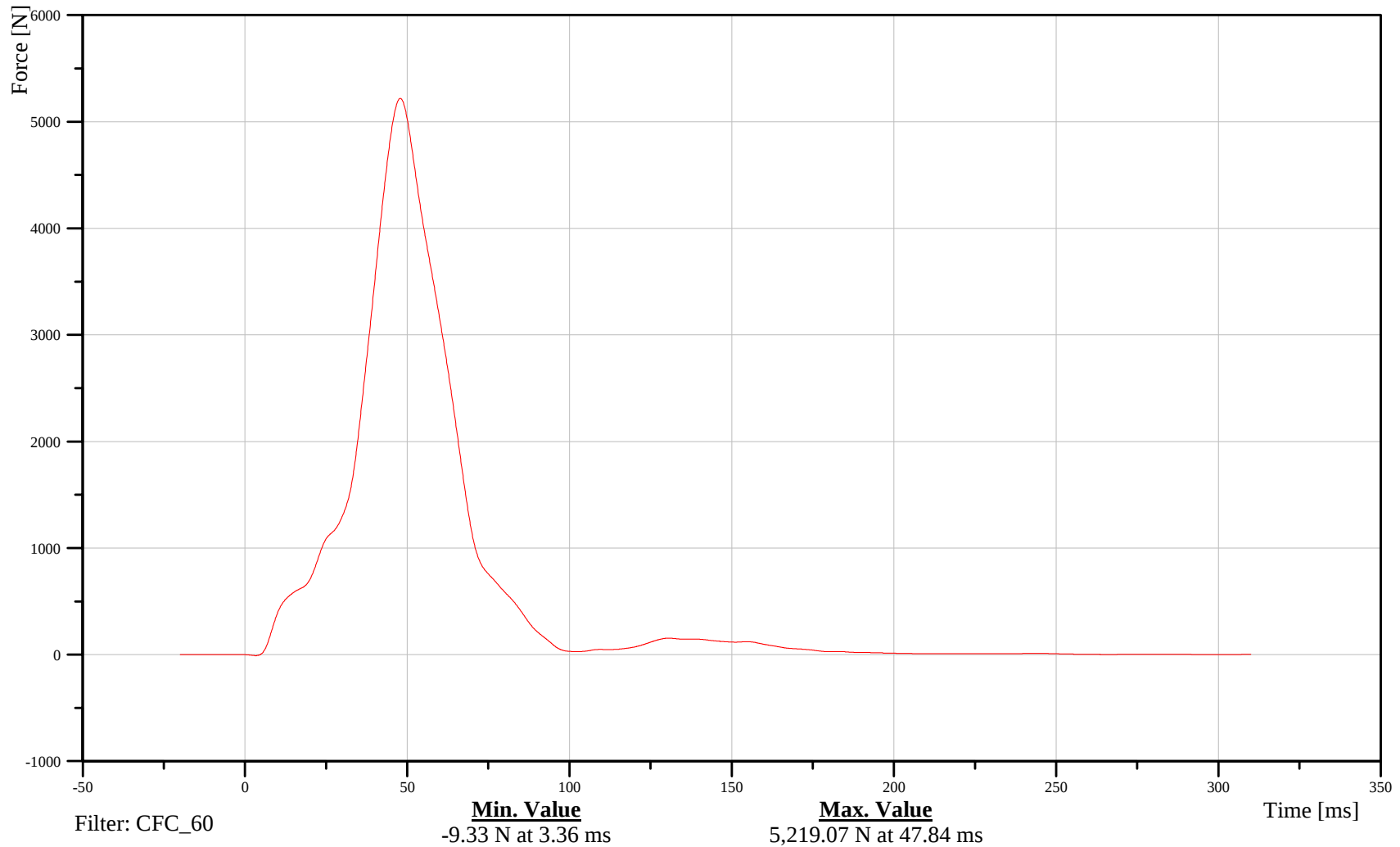
Passenger Lap Belt Force

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Passenger Shoulder Belt Force

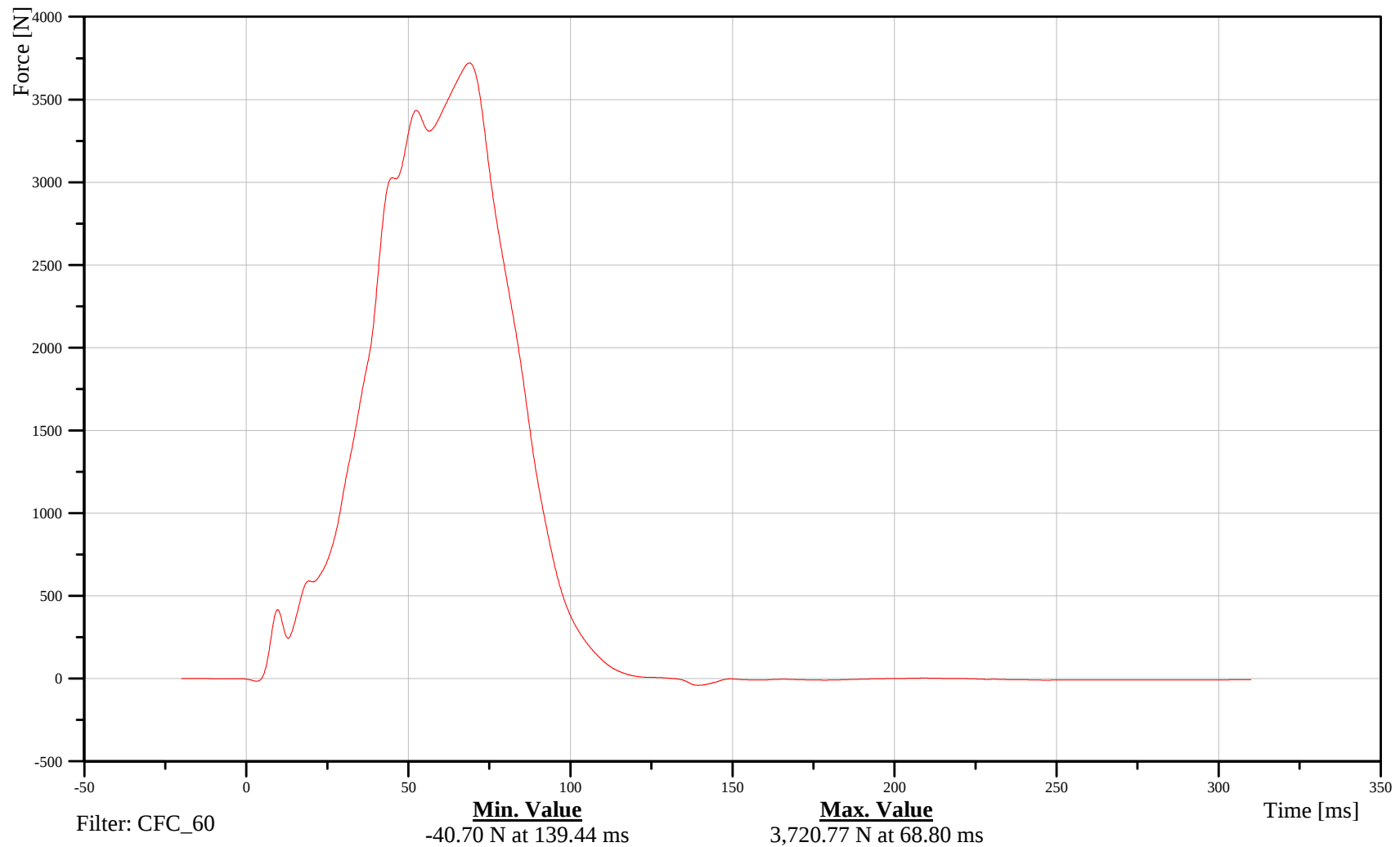
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Time: 15:38

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Airbag - Primary

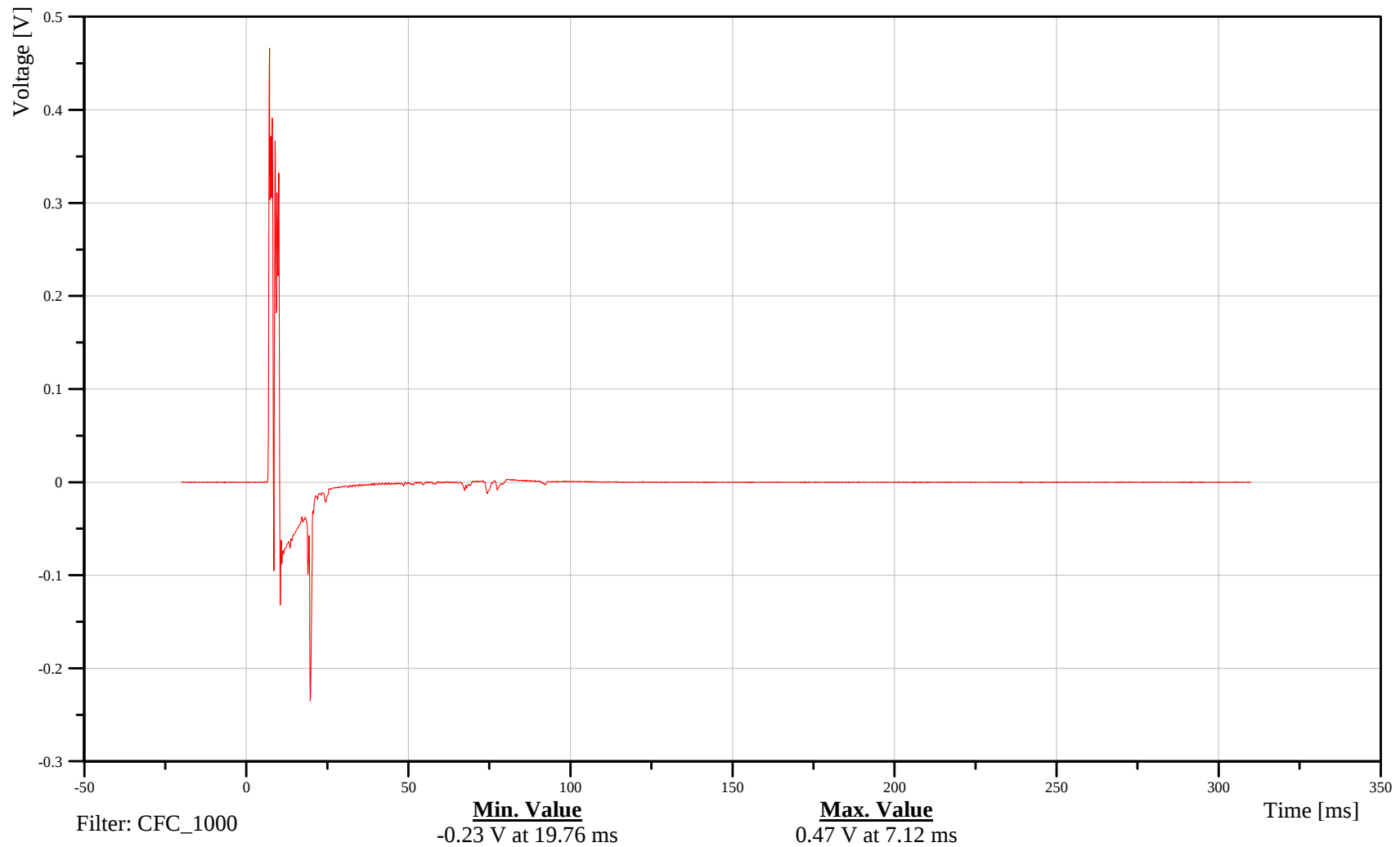
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Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Driver Airbag - Secondary

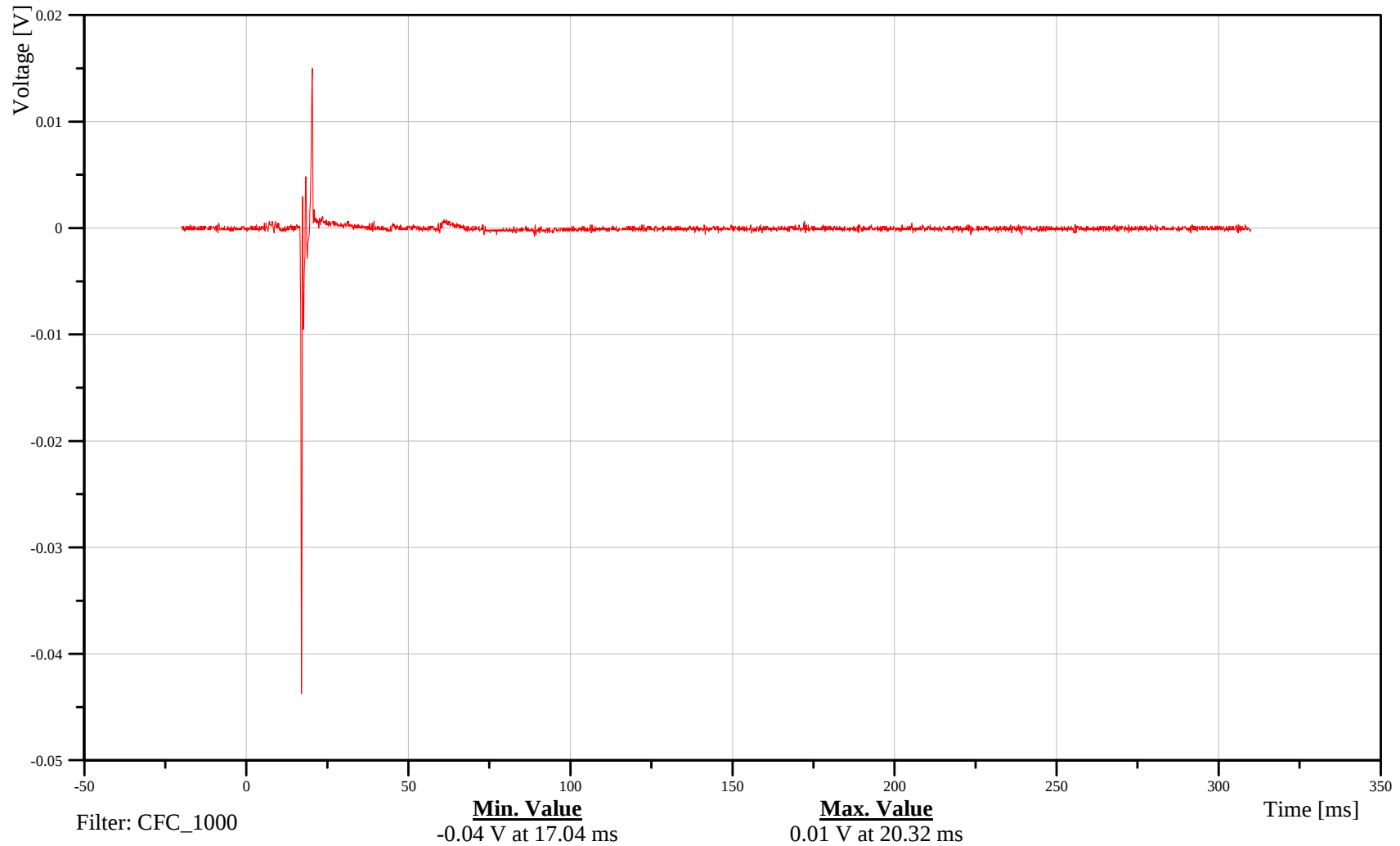
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Time: 15:38

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Passenger Airbag - Primary

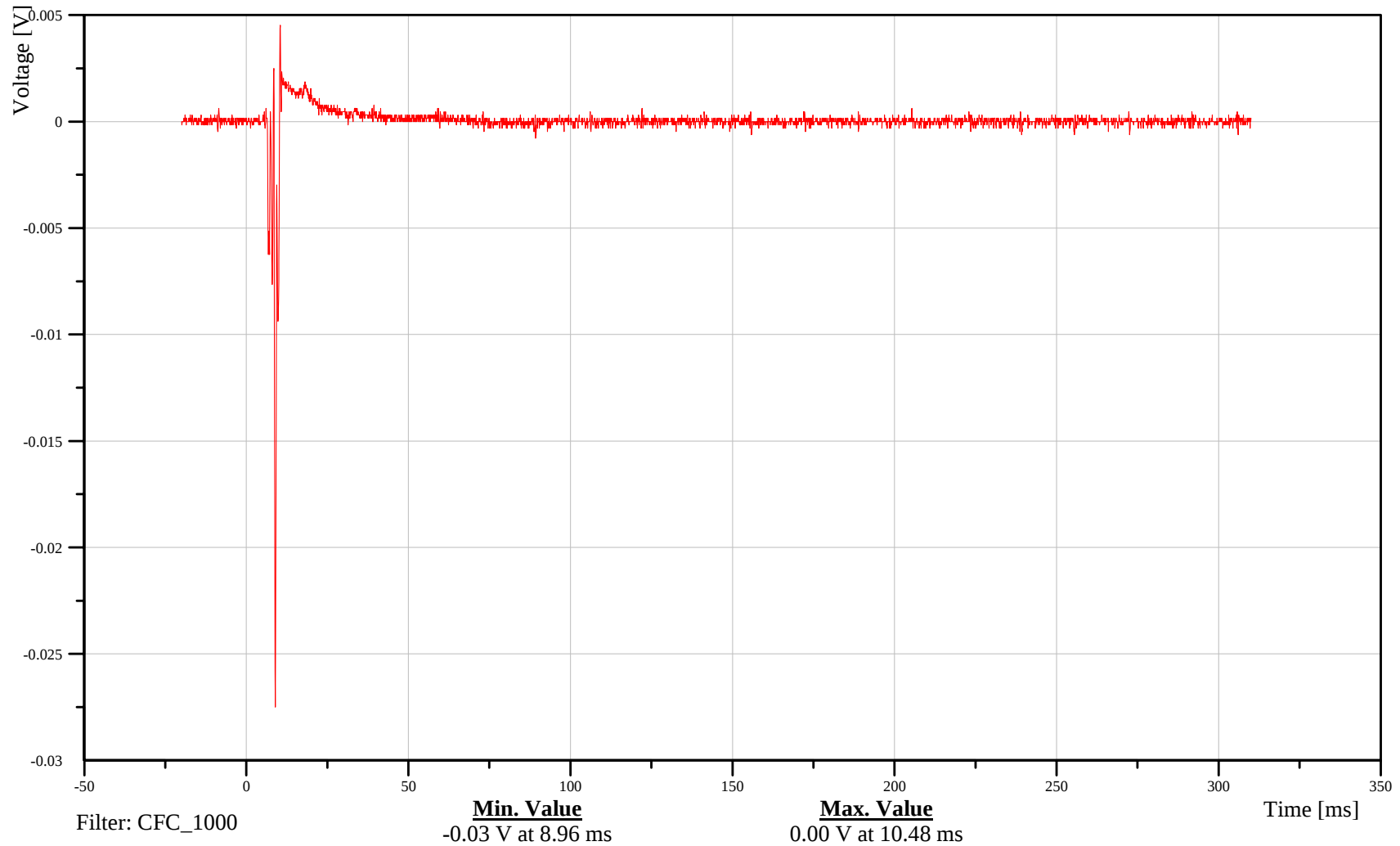
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Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Passenger Airbag - Secondary

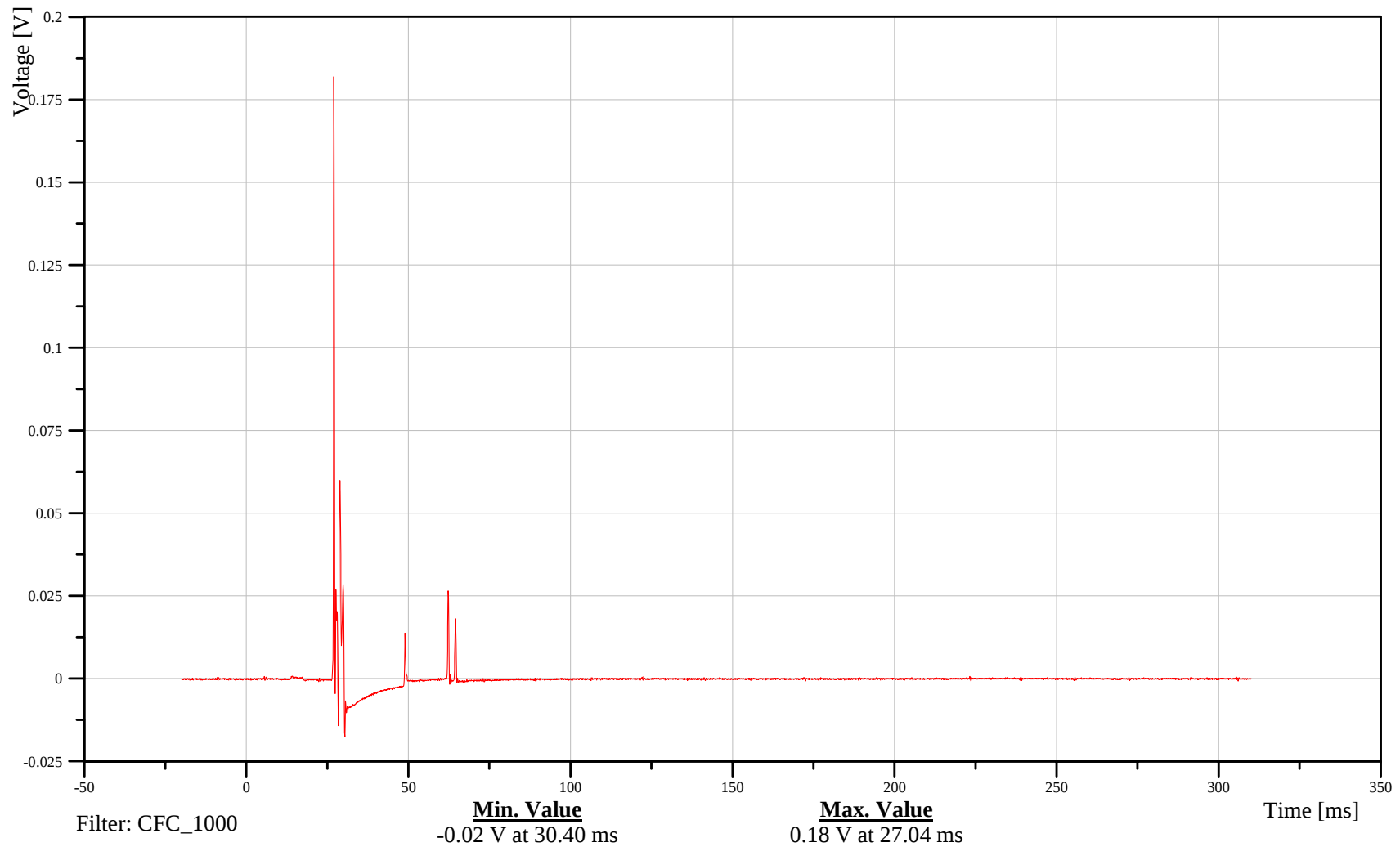
Date: 05/12/2006
Time: 15:38

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13AIRBFR0200EV0A

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 9 Column 7

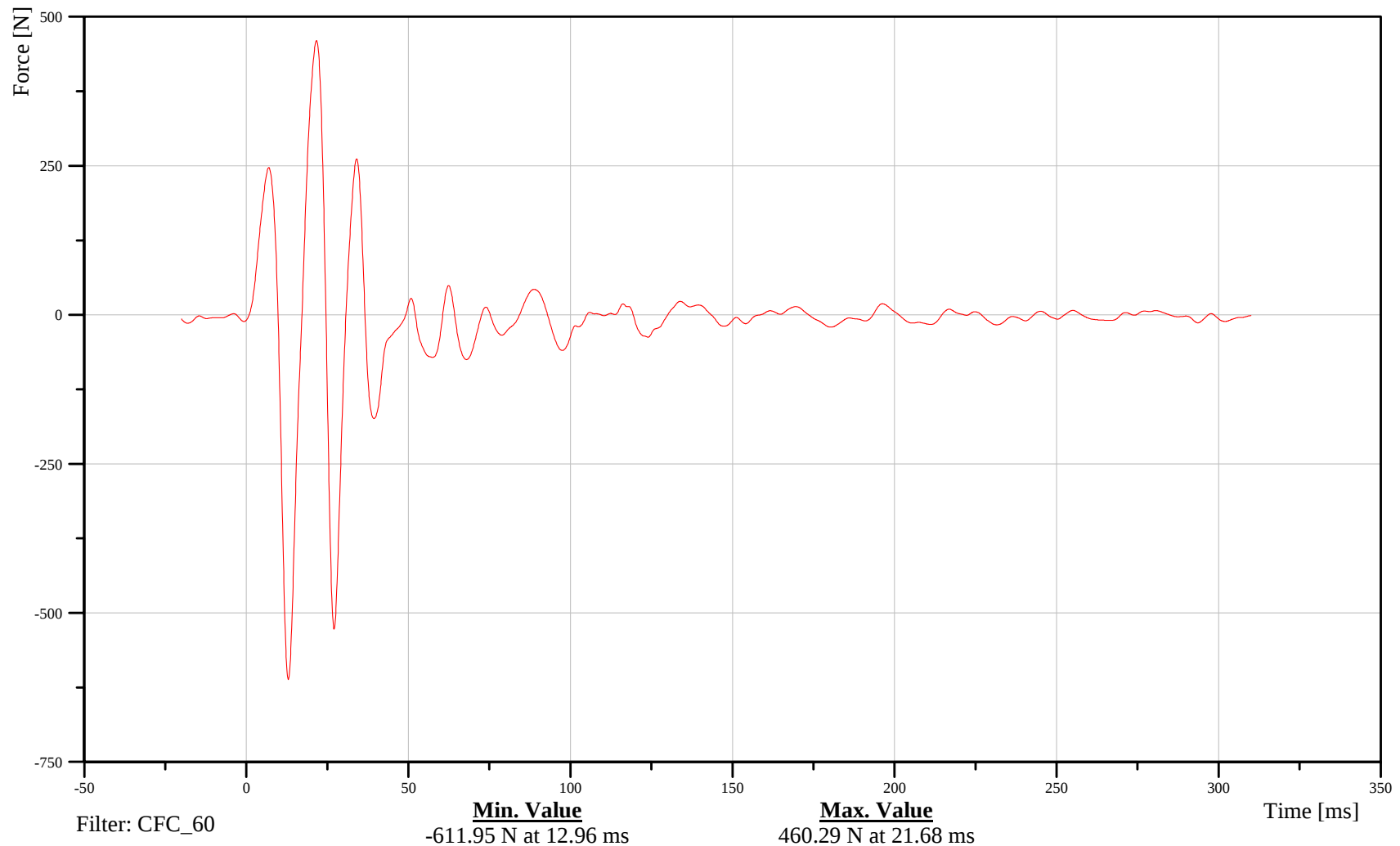
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Time: 15:38

Customer: VRTC

L0FBAR000A07FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

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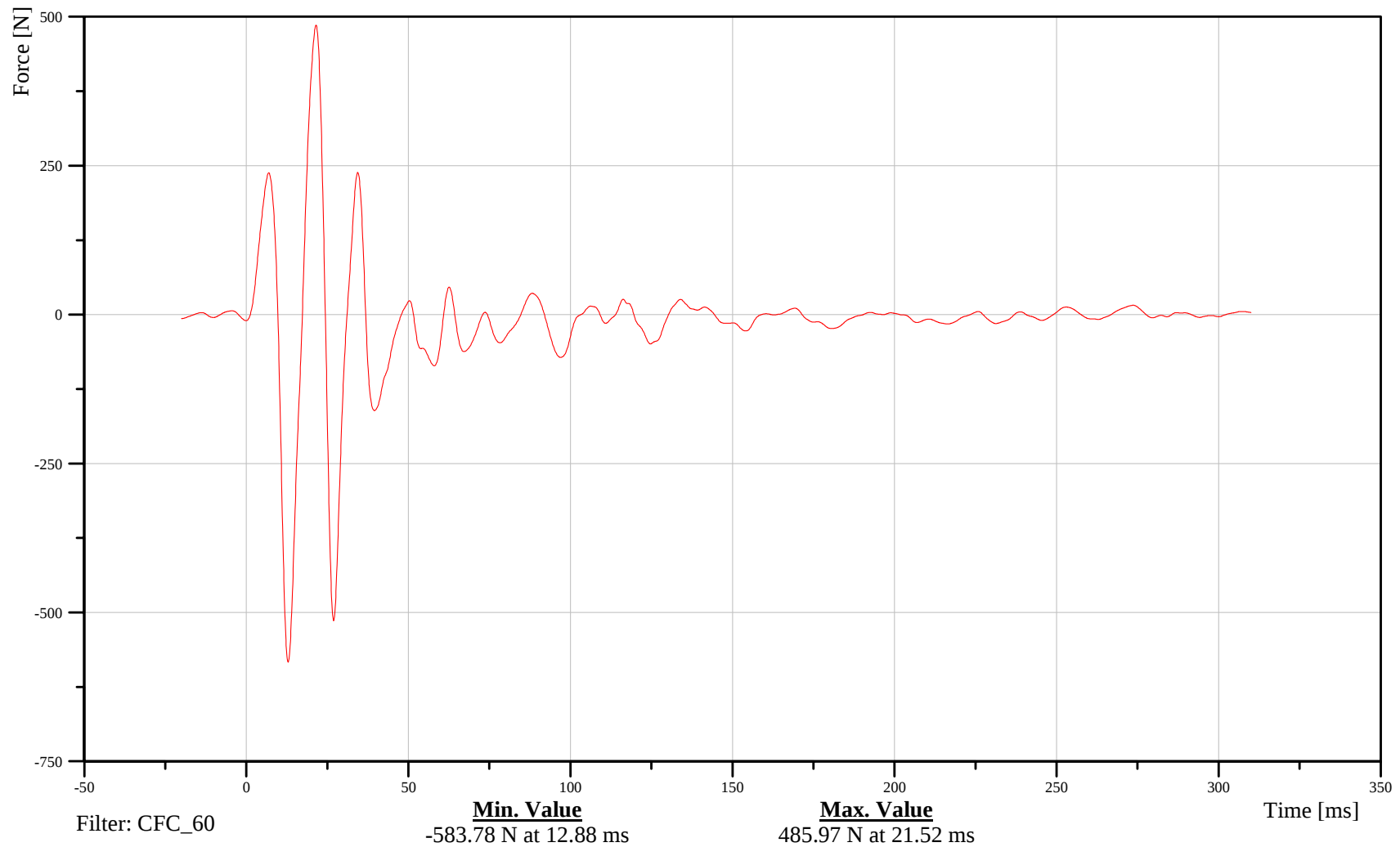
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Time: 15:38

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

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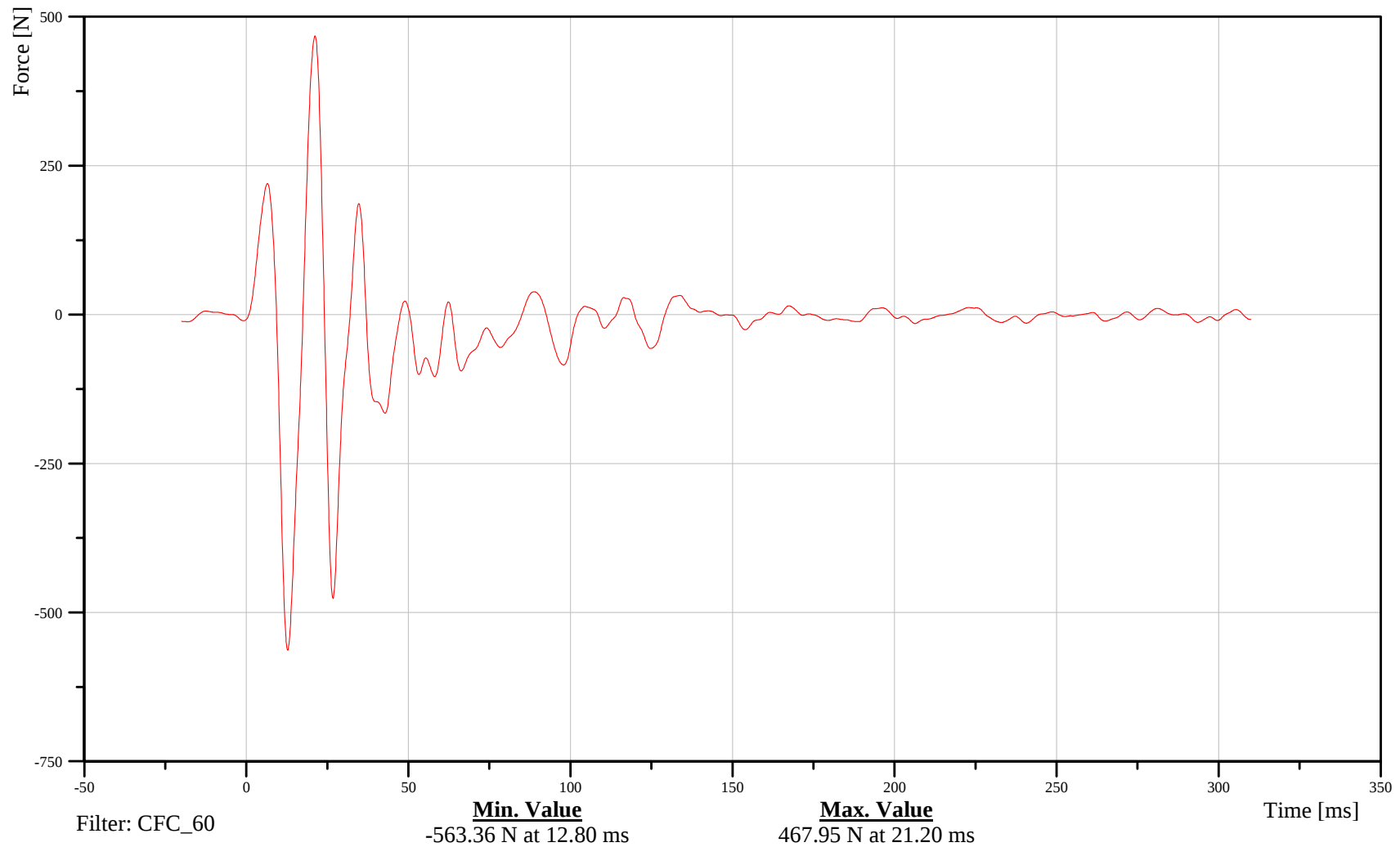
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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 9 Column 10

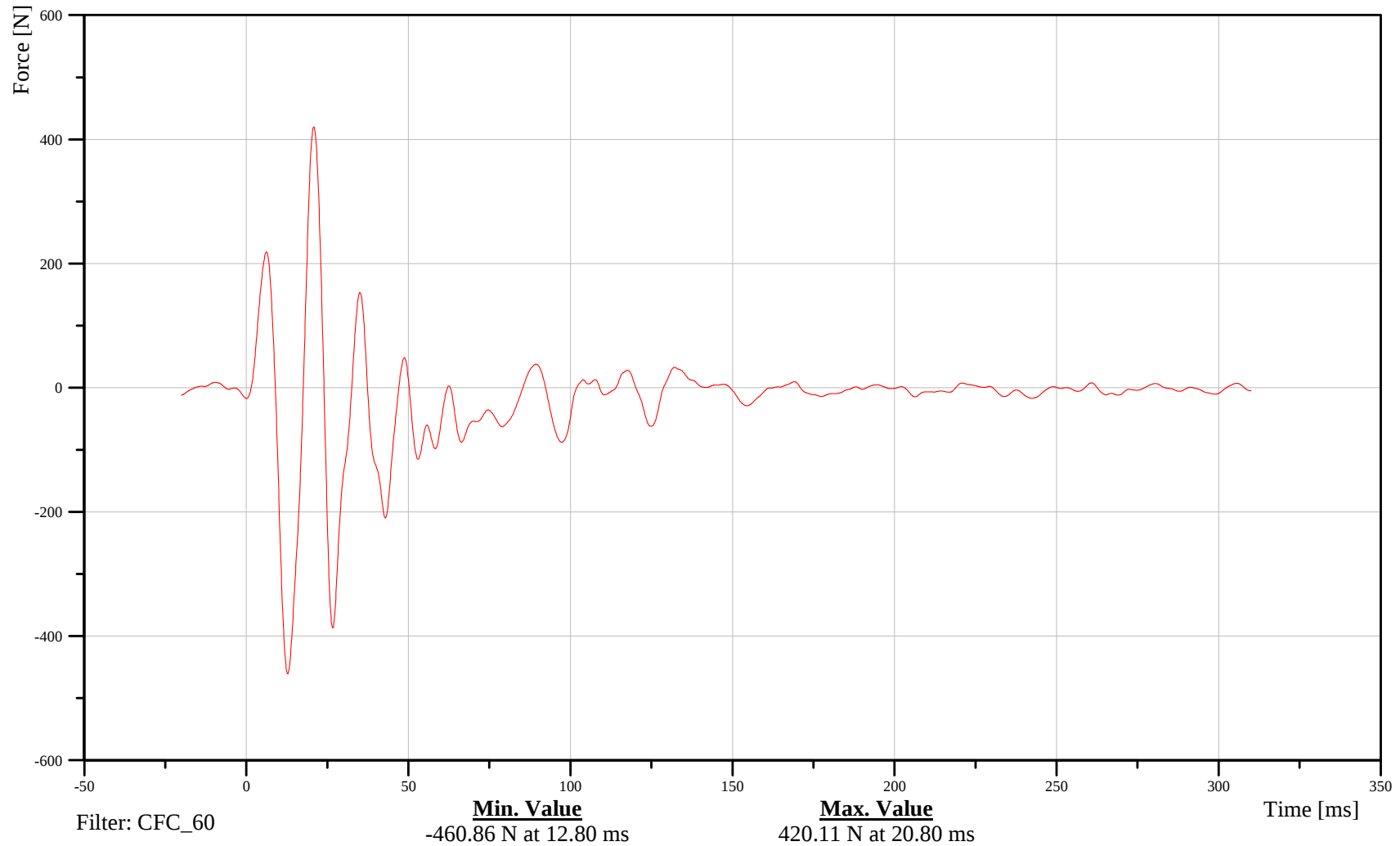
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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 8 Column 1

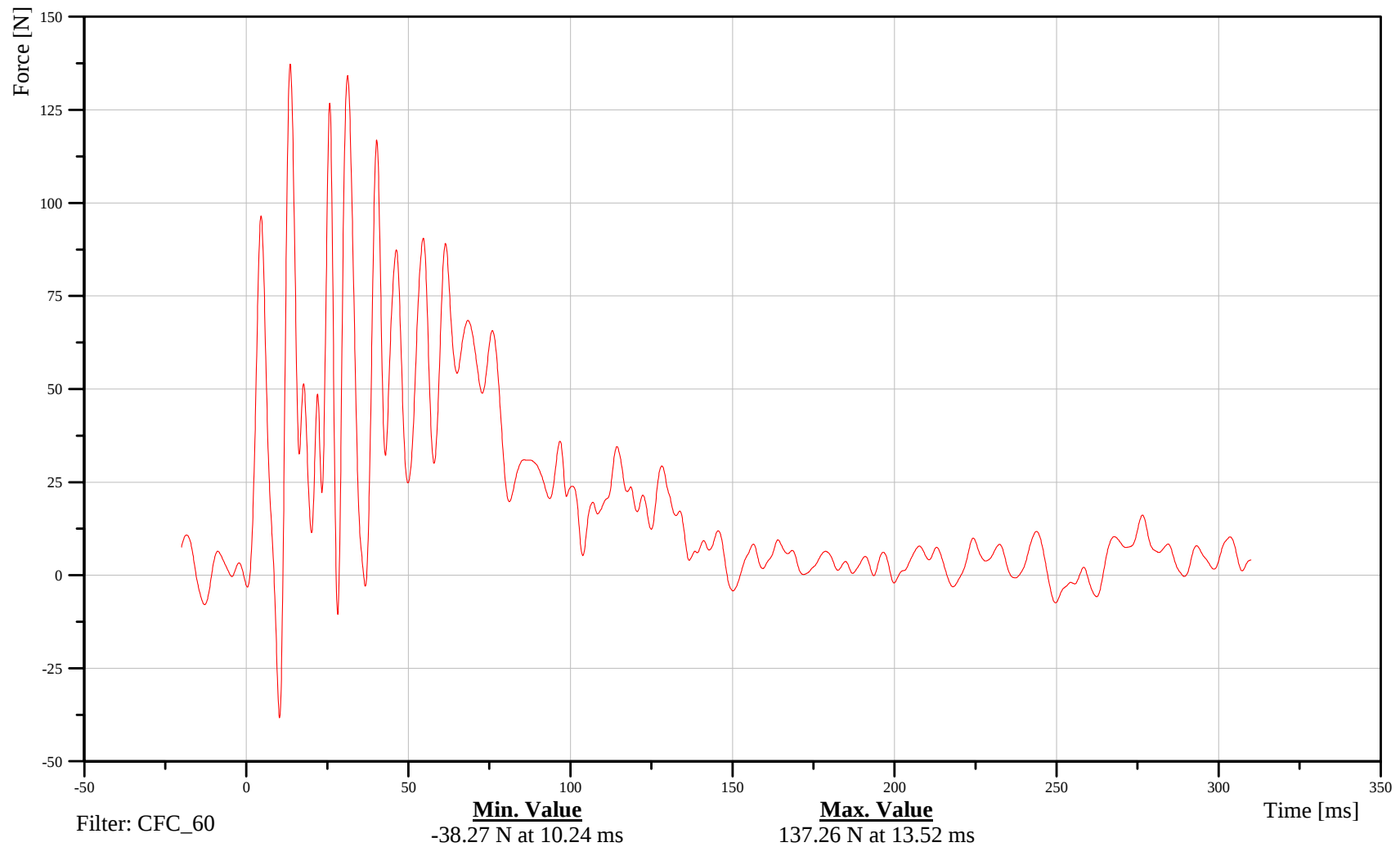
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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

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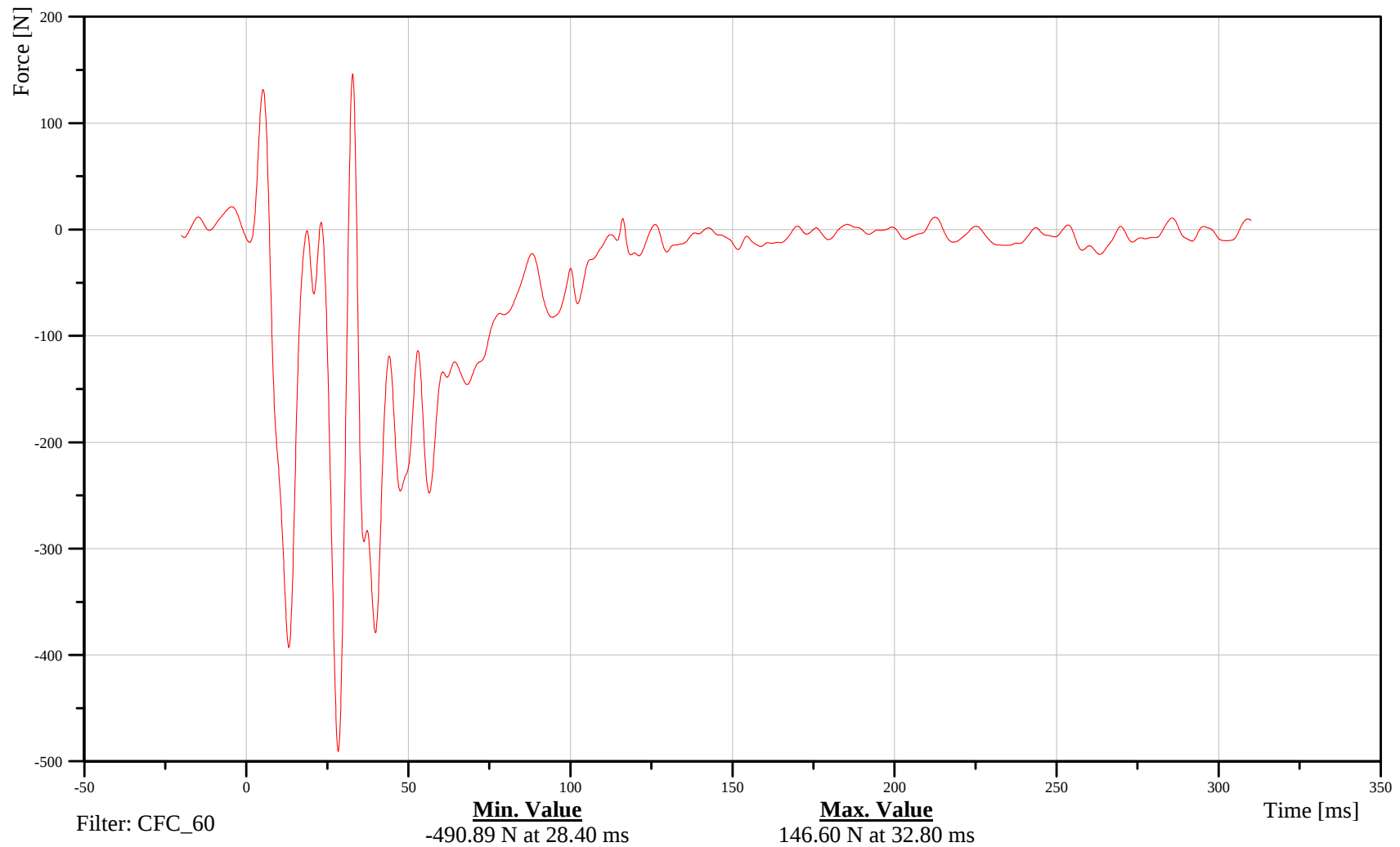
Date: 05/12/2006
Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 8 Column 3

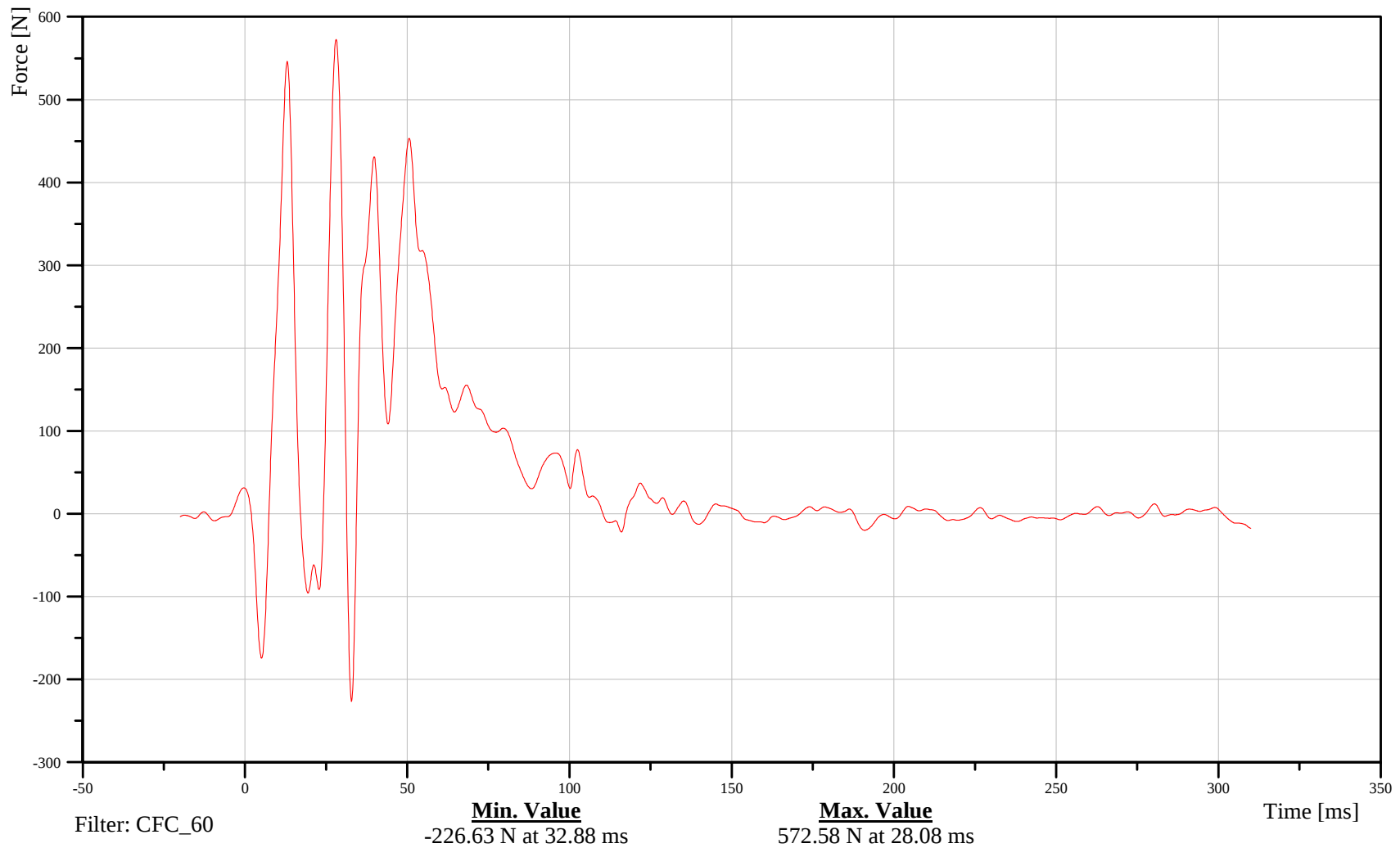
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Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 8 Column 4

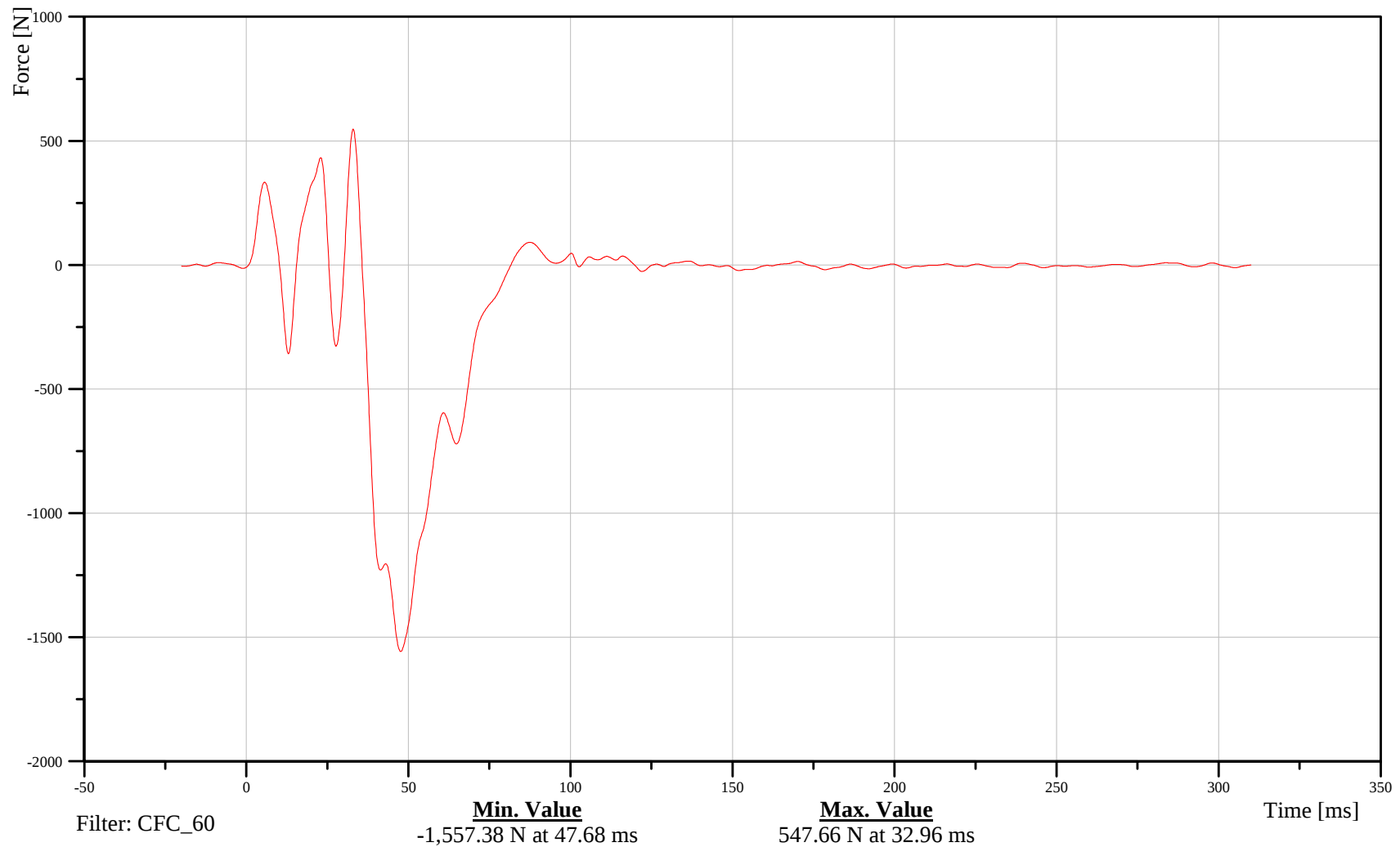
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Time: 15:38

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

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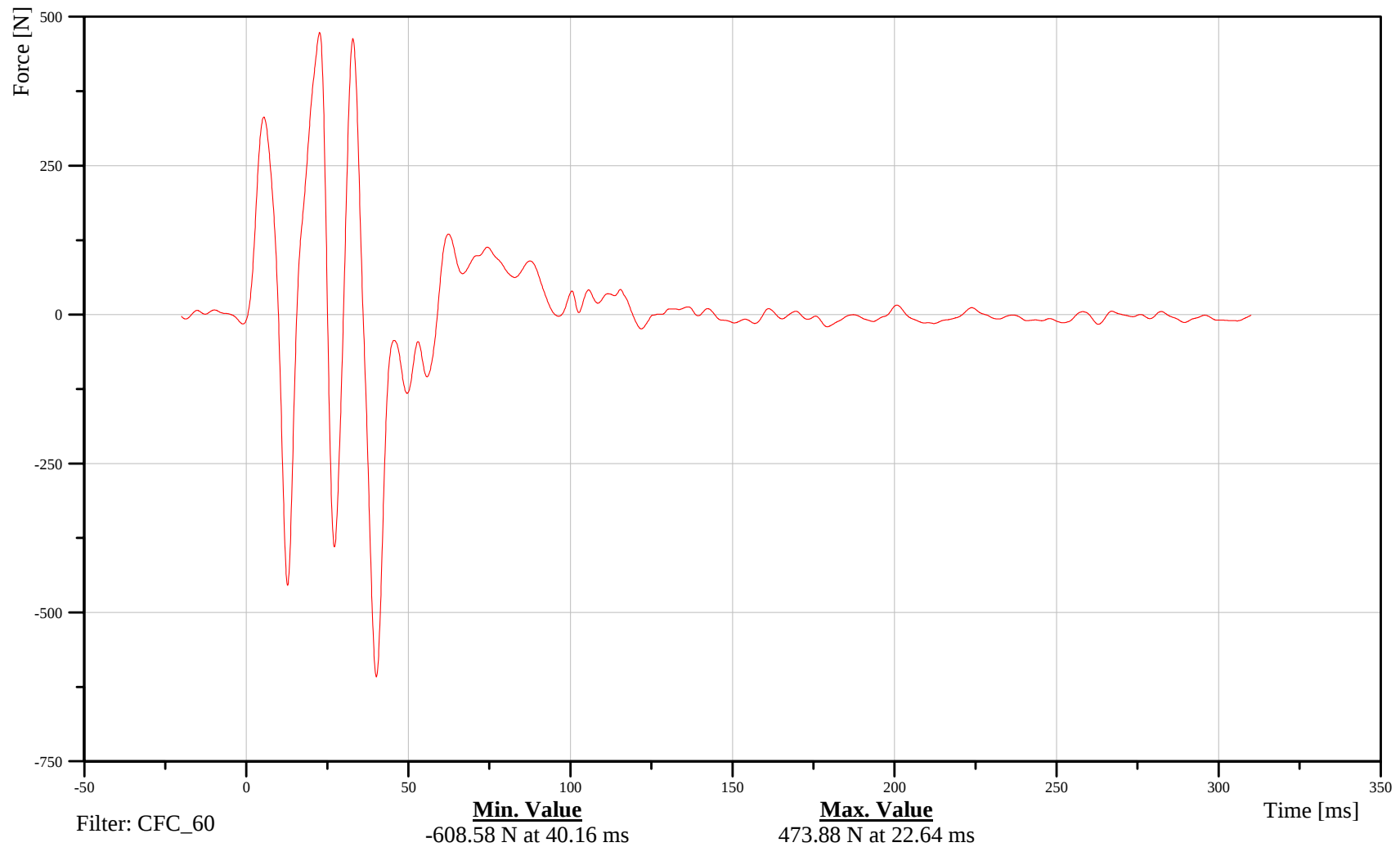
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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

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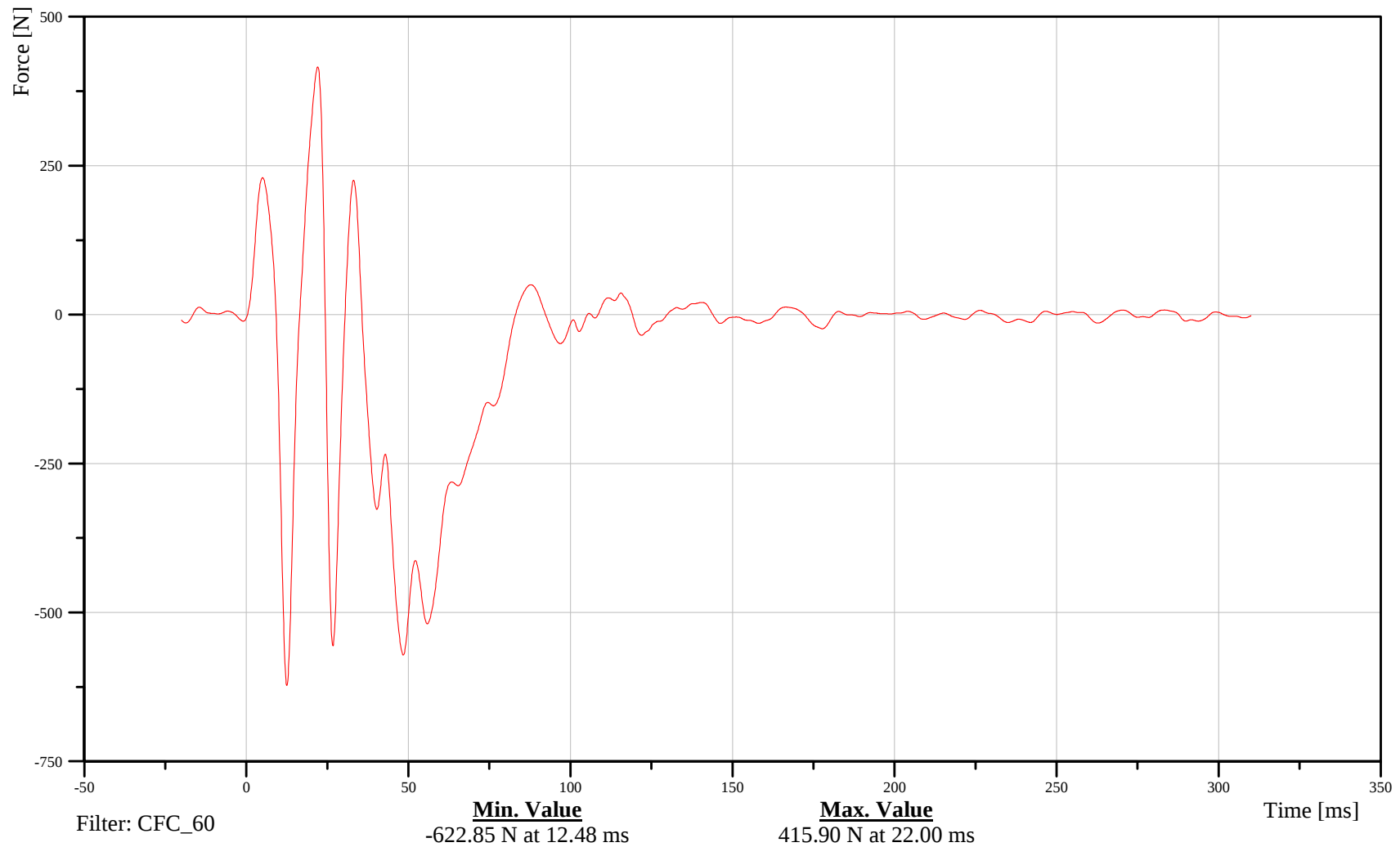
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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

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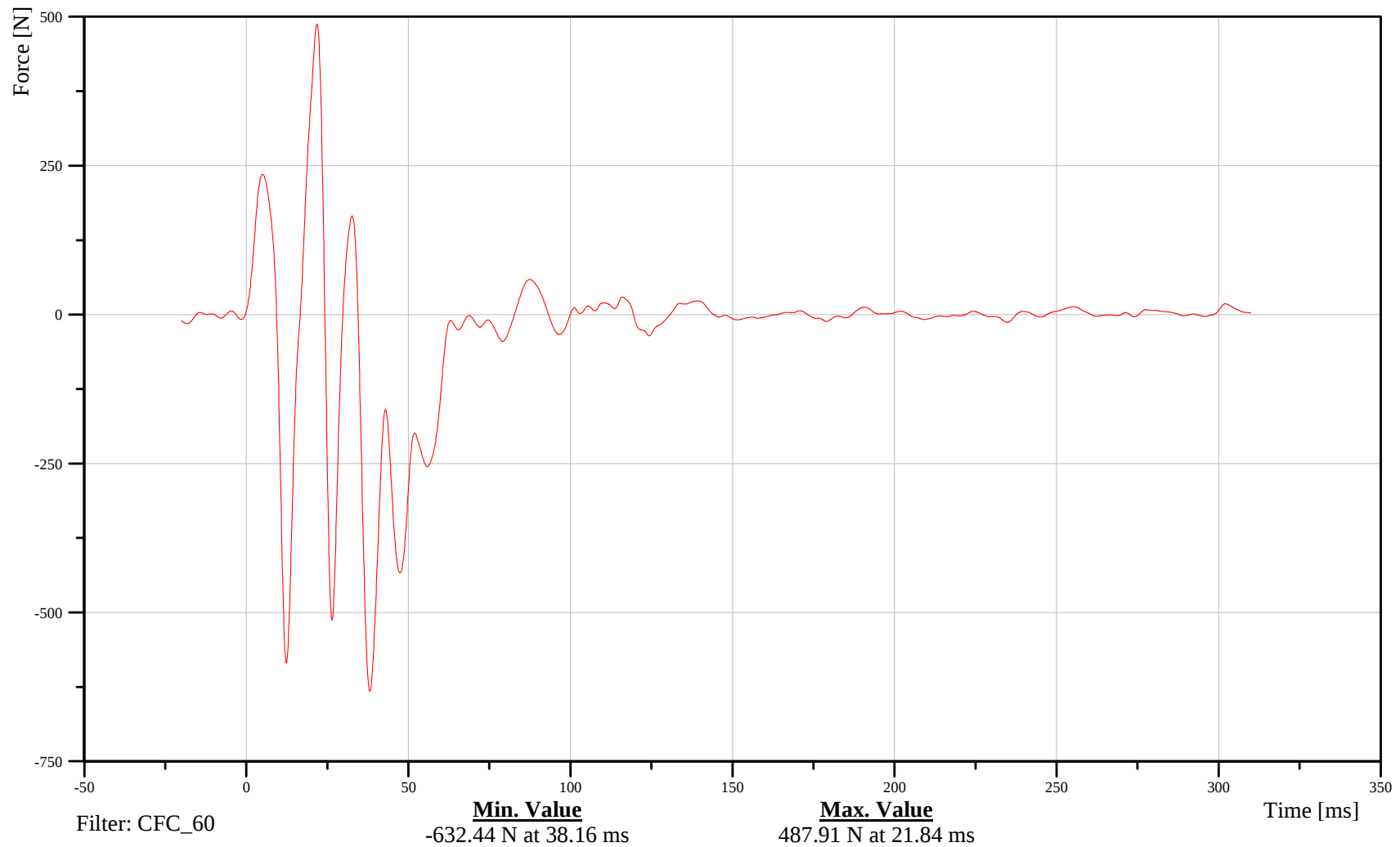
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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

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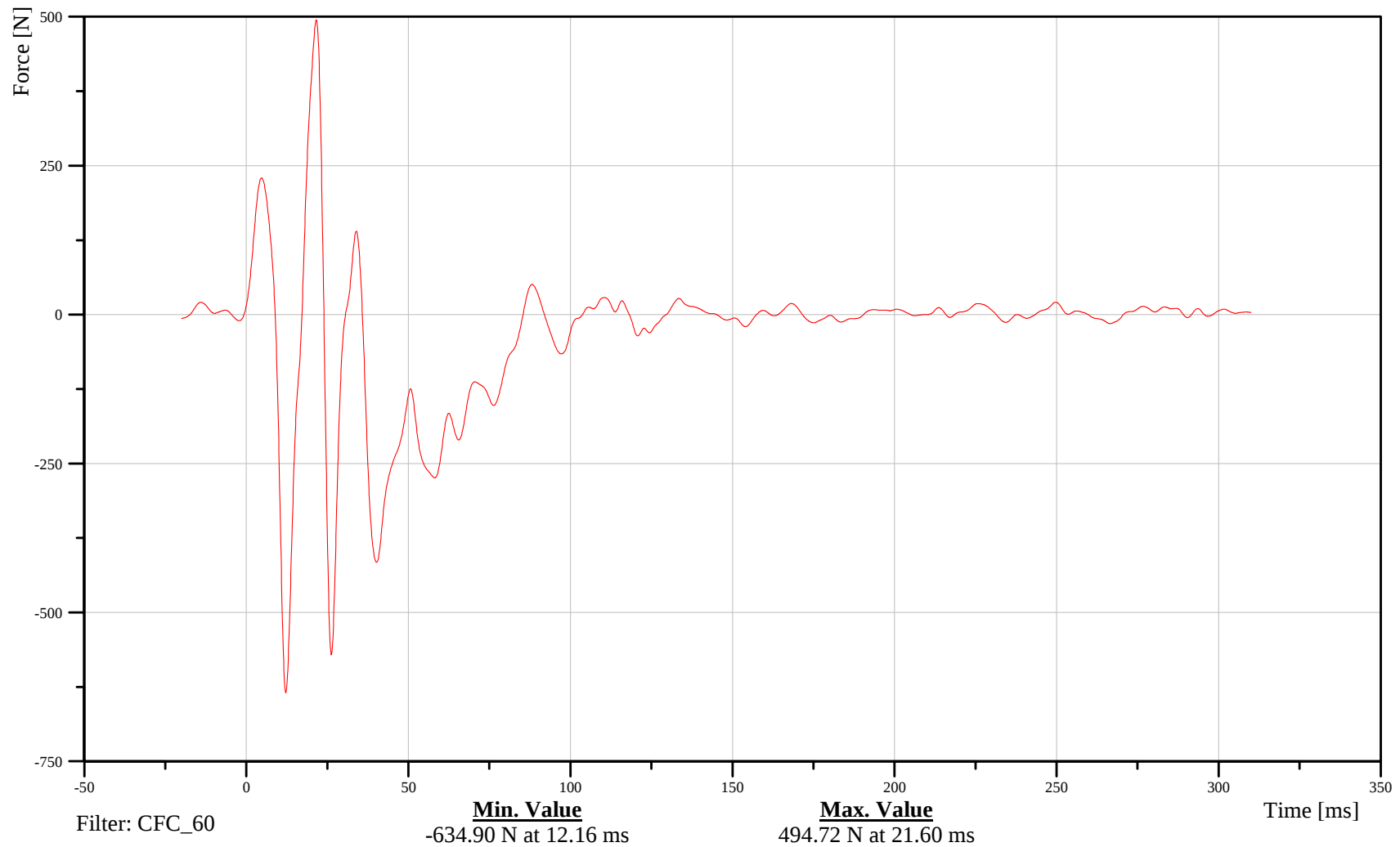
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Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

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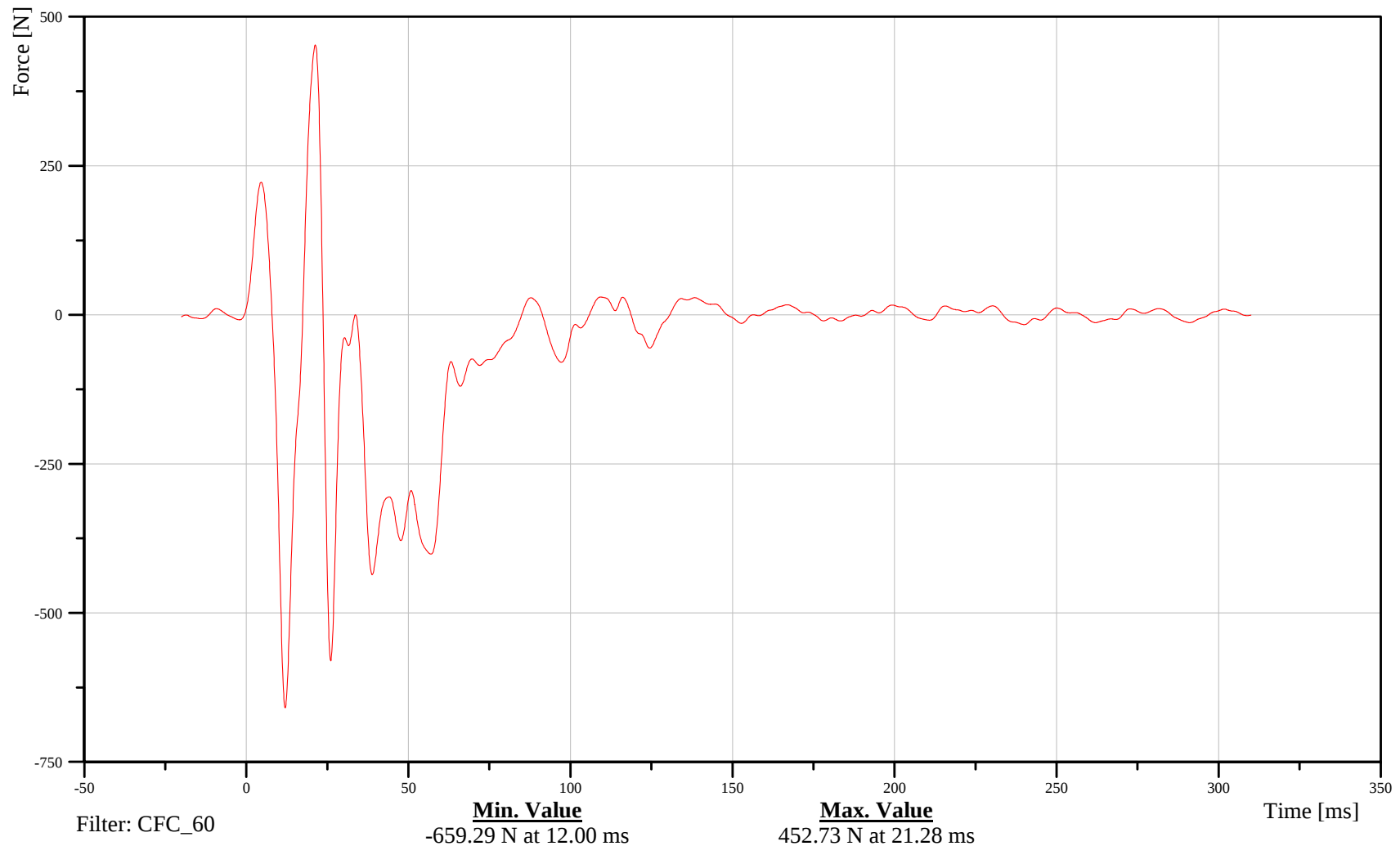
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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 8 Column 10

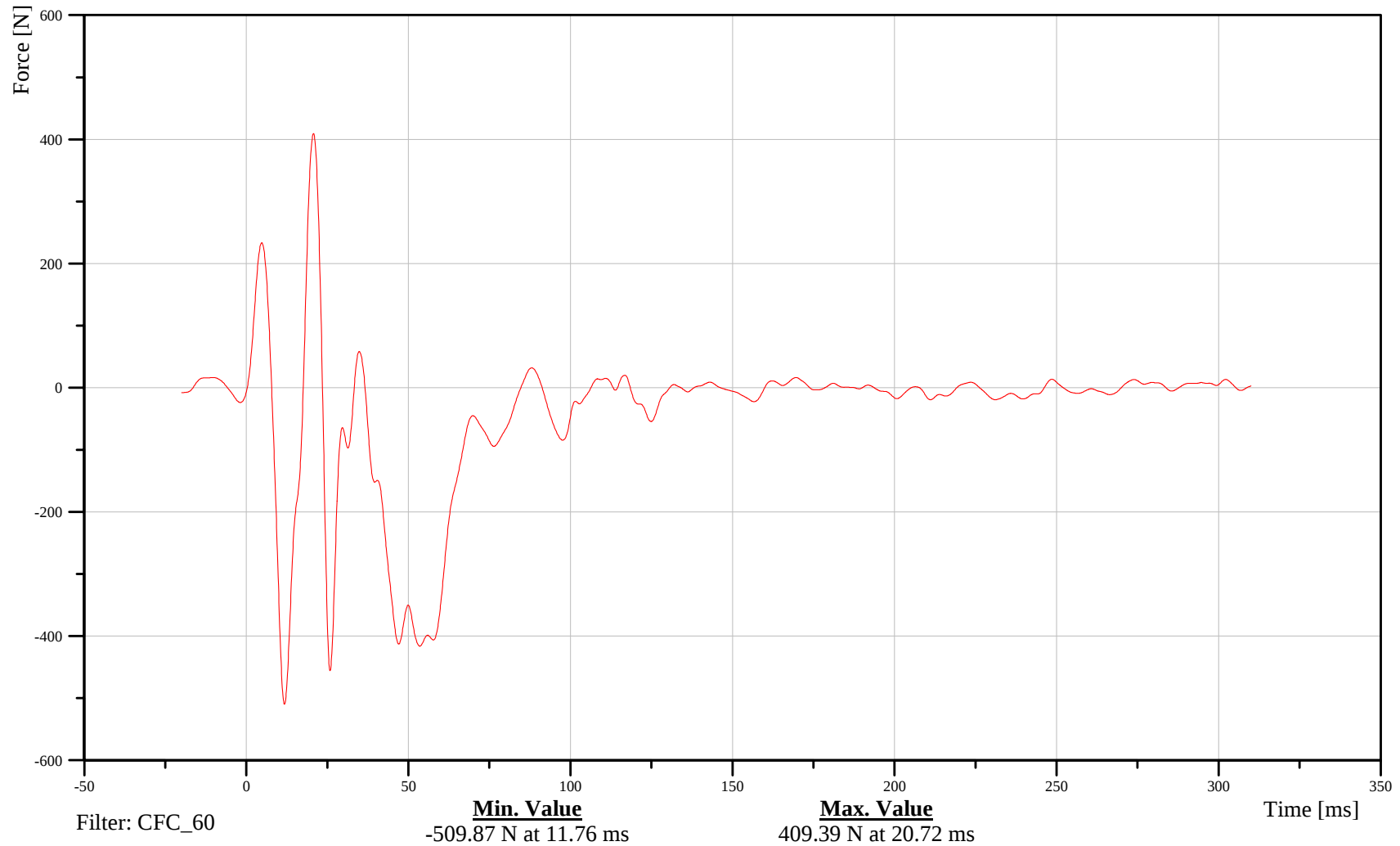
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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

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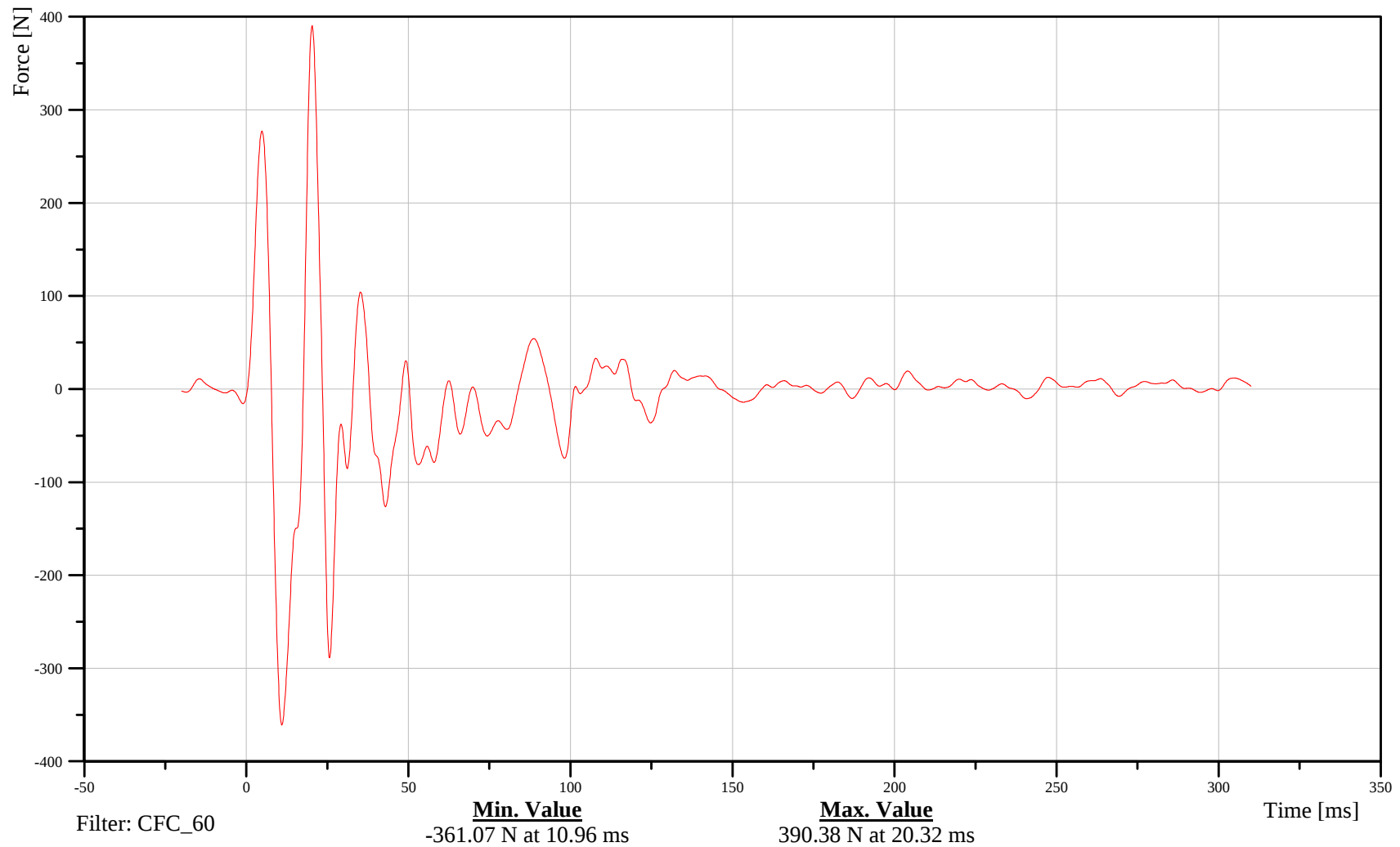
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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

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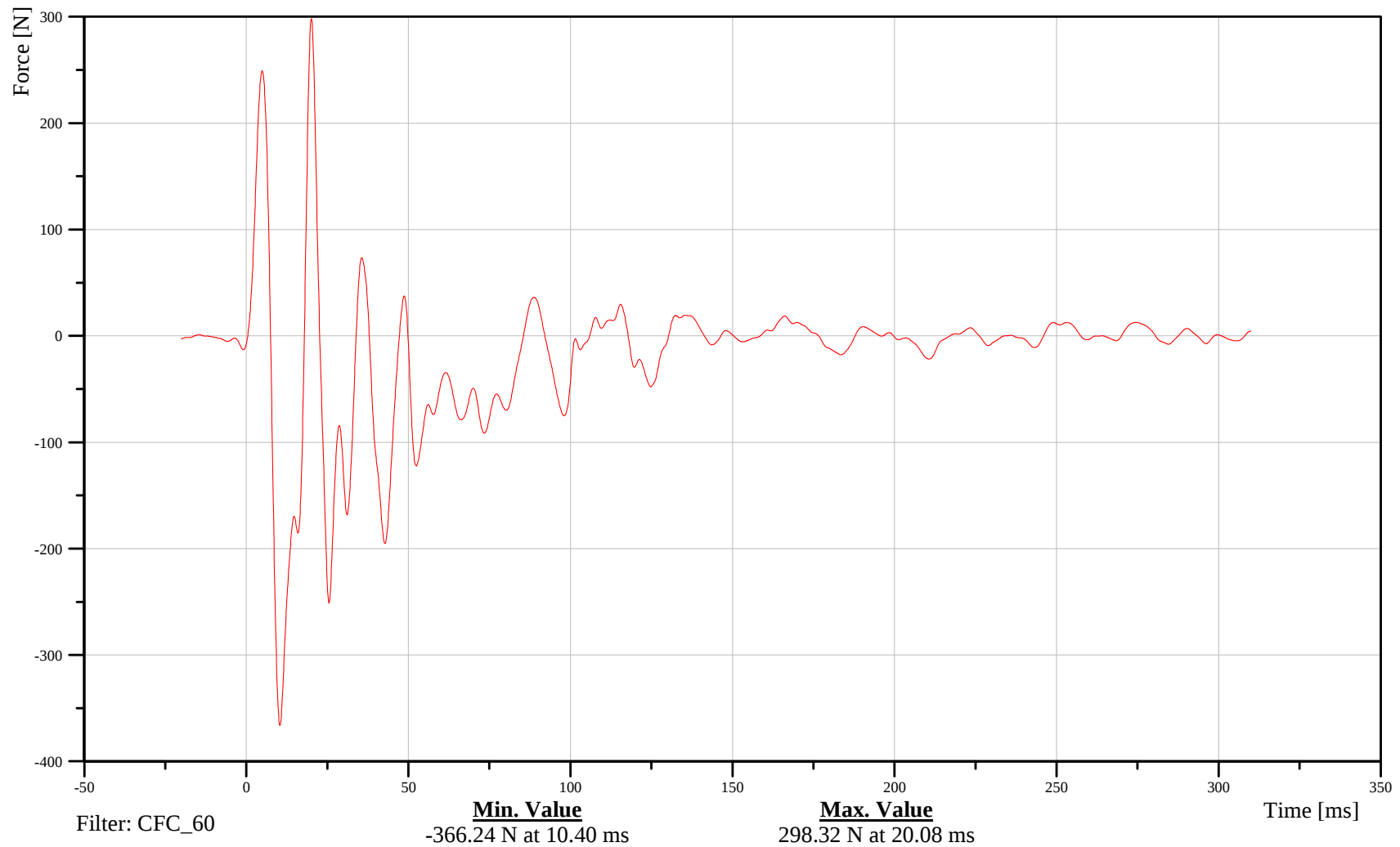
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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

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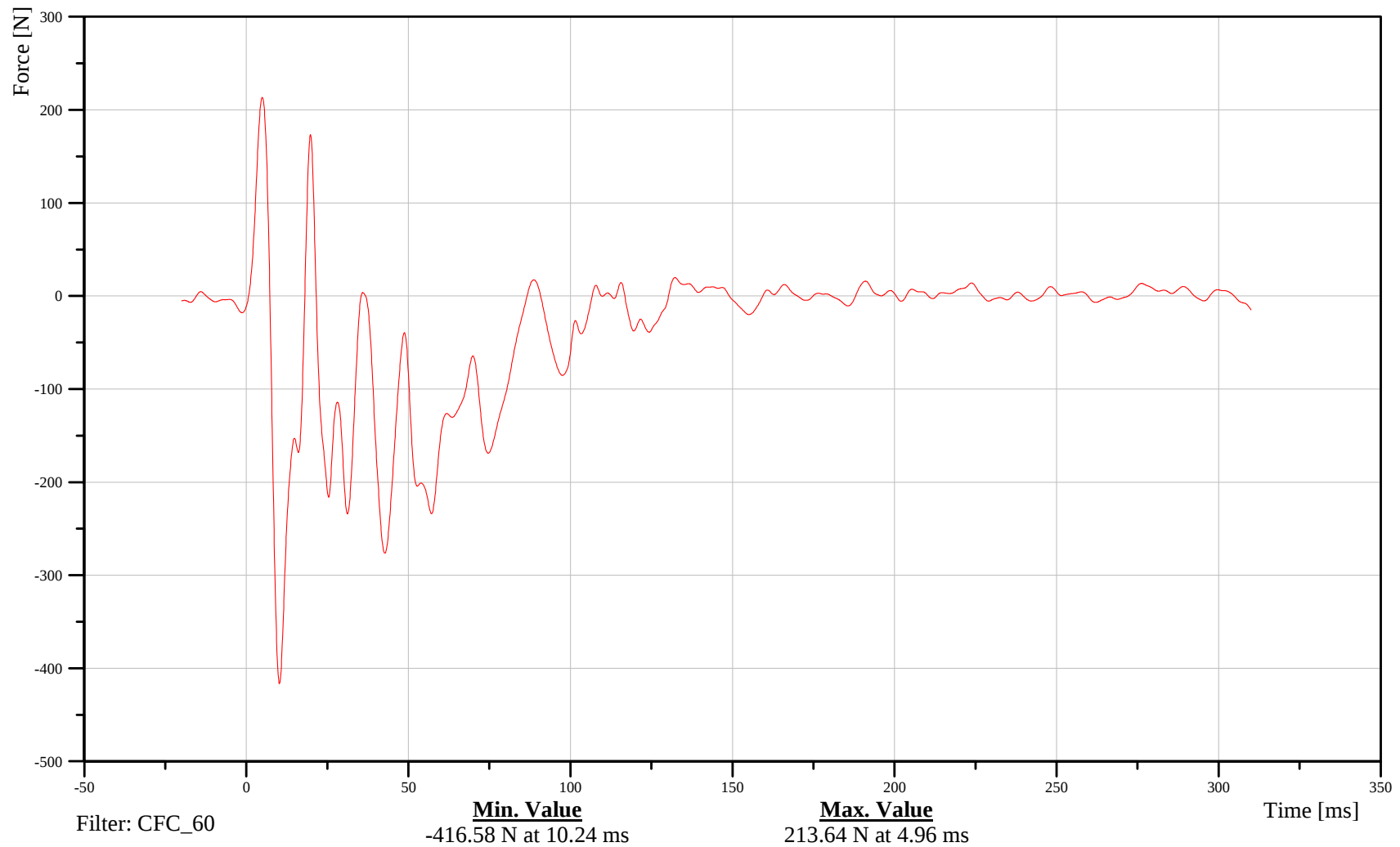
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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

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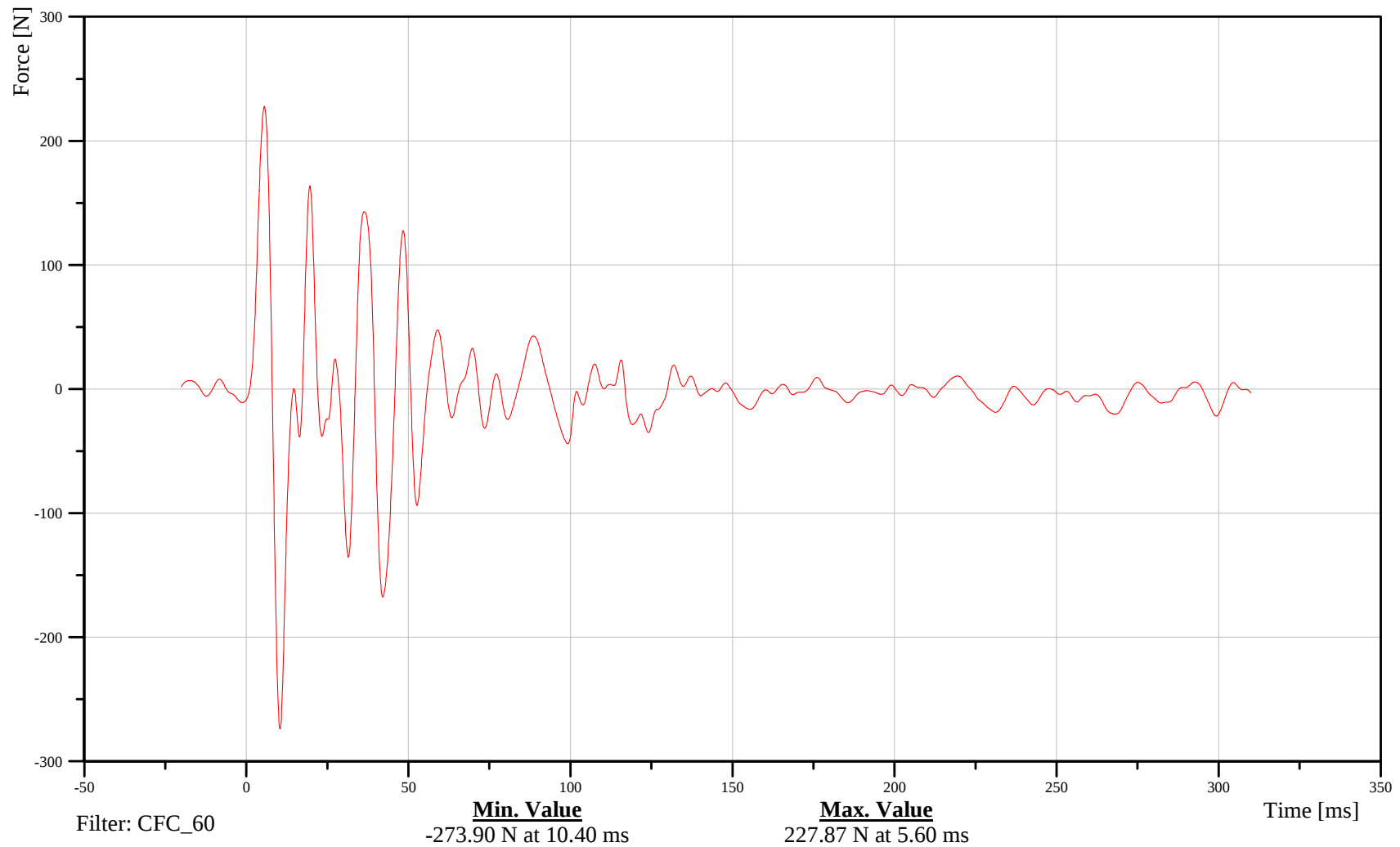
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Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 8 Column 15

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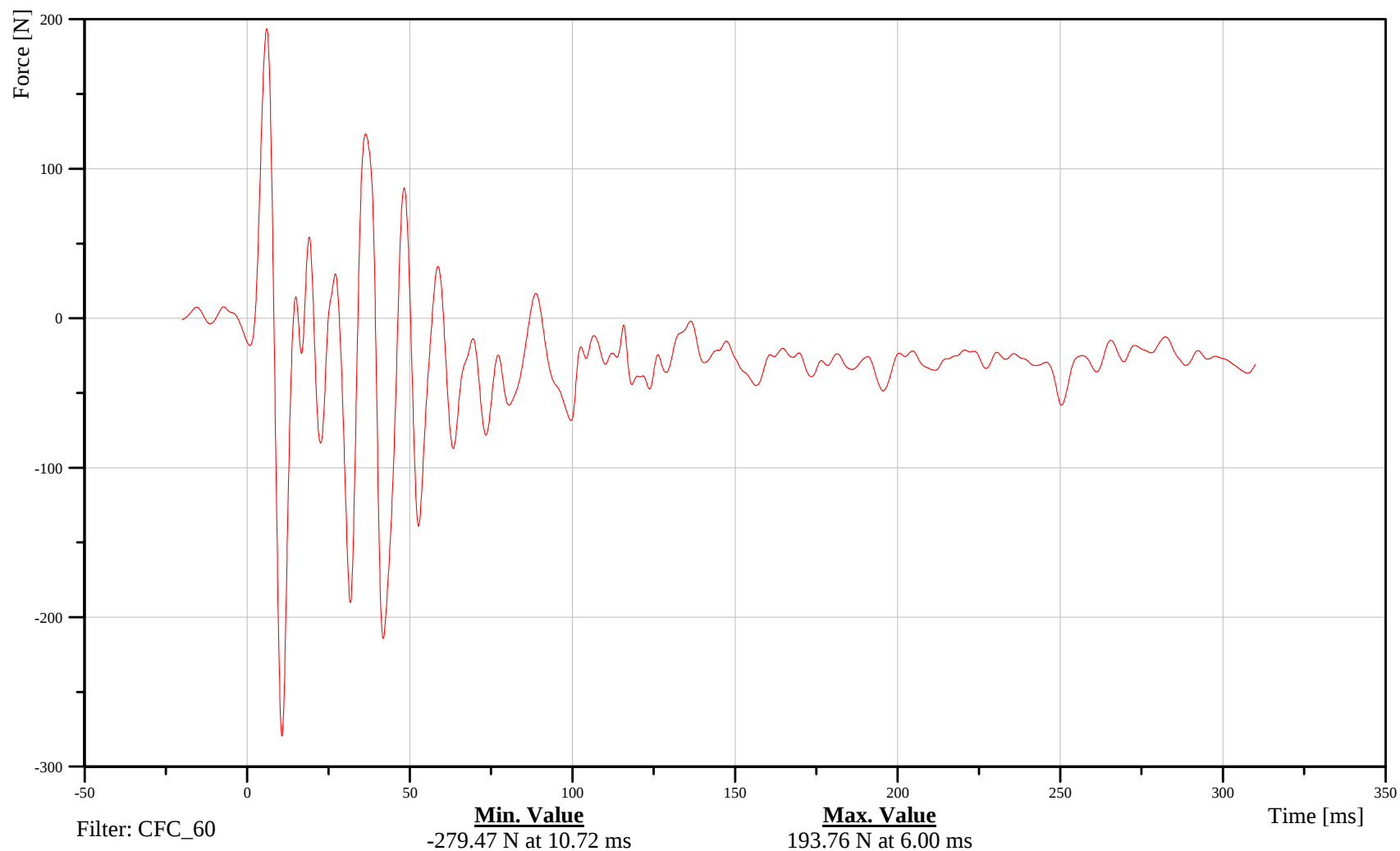
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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 8 Column 16

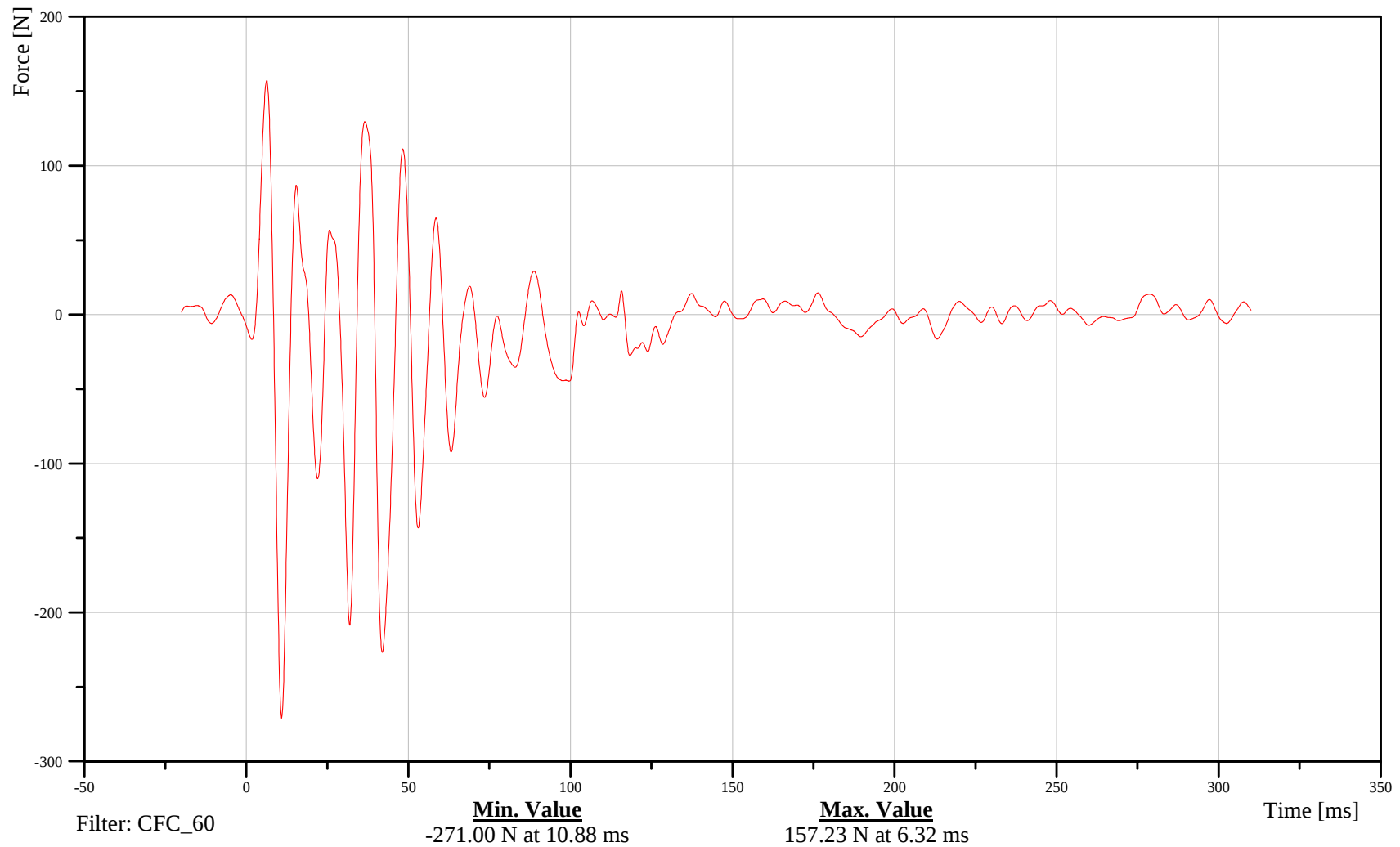
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Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 7 Column 1

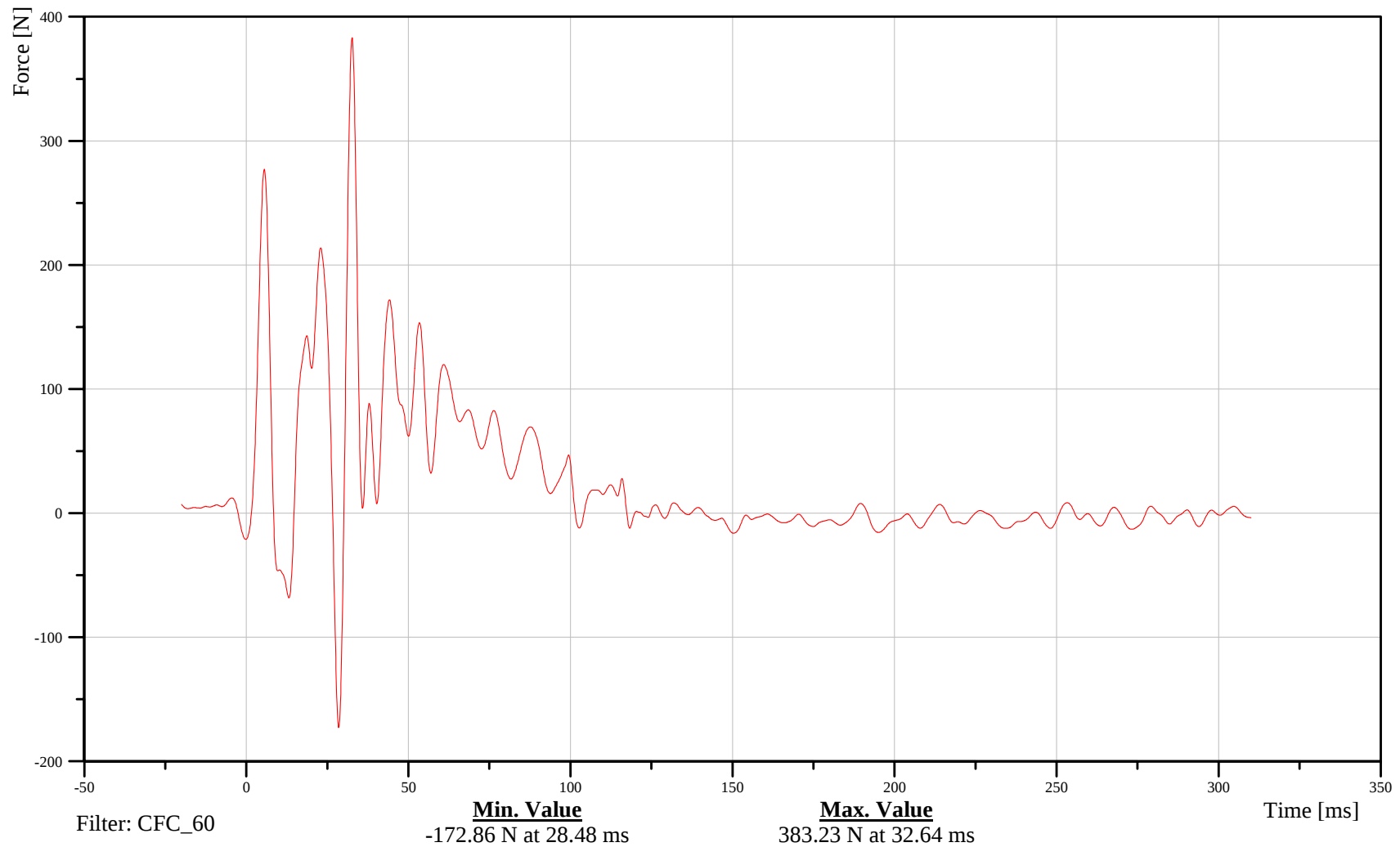
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Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 7 Column 2

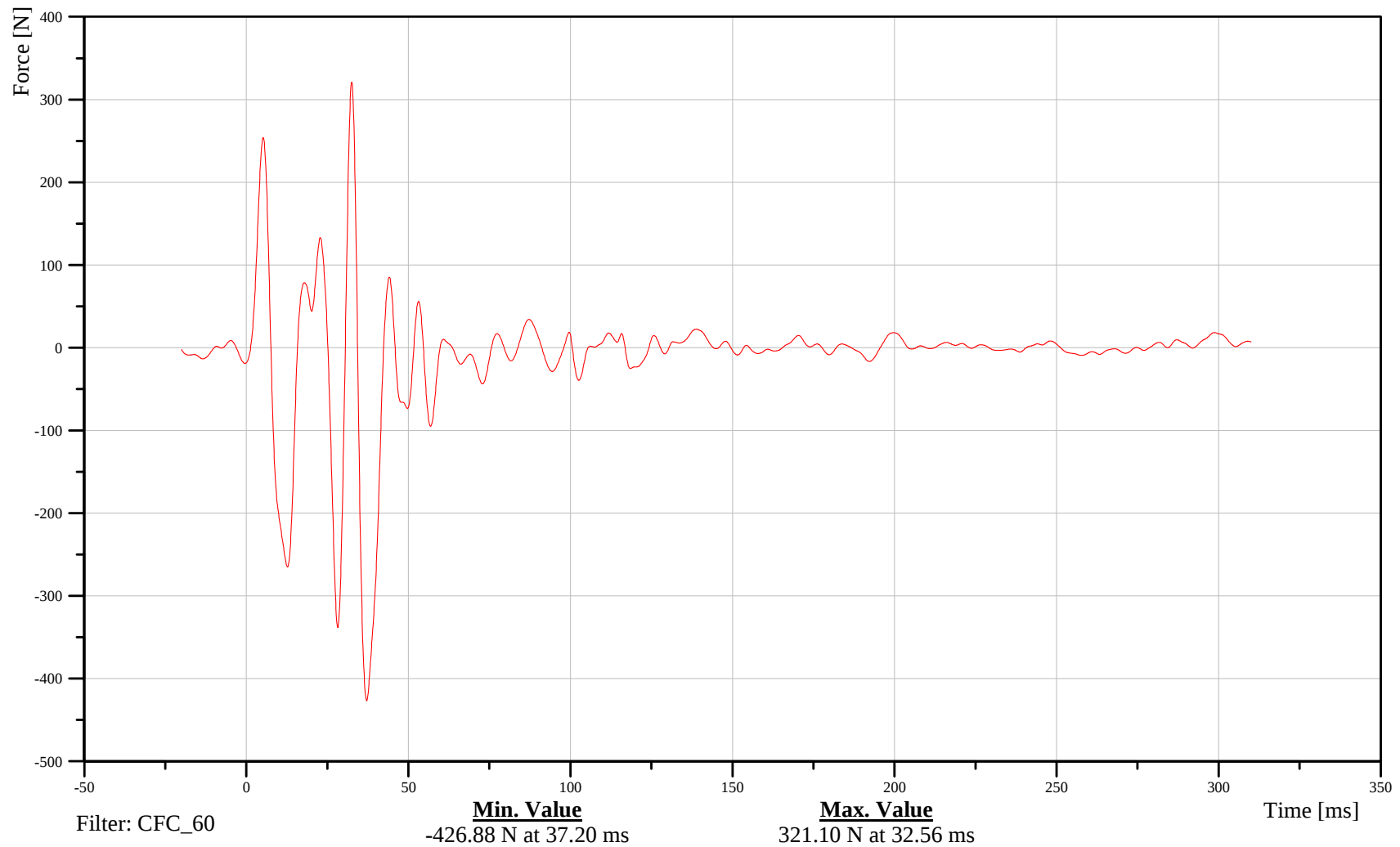
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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 7 Column 3

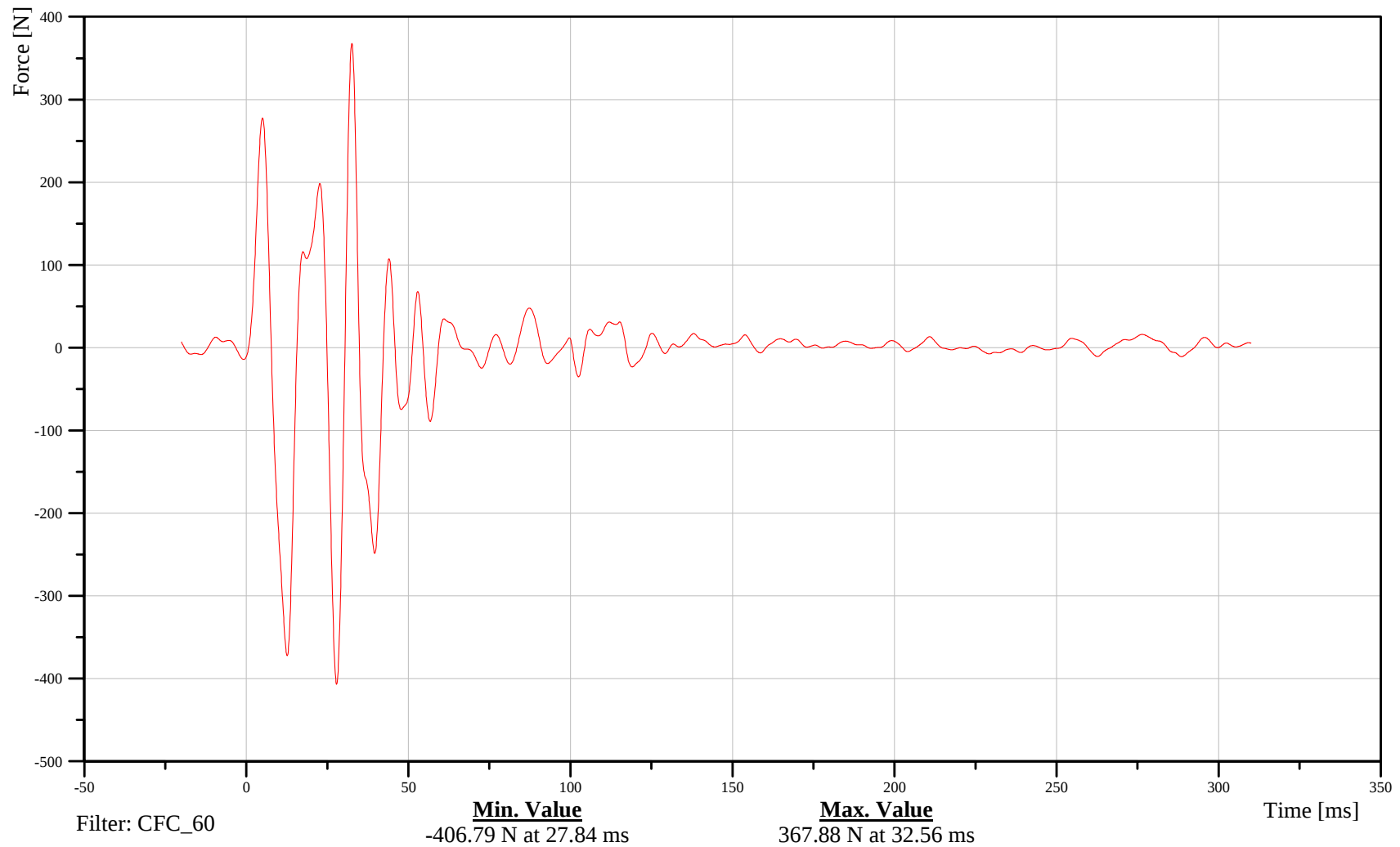
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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

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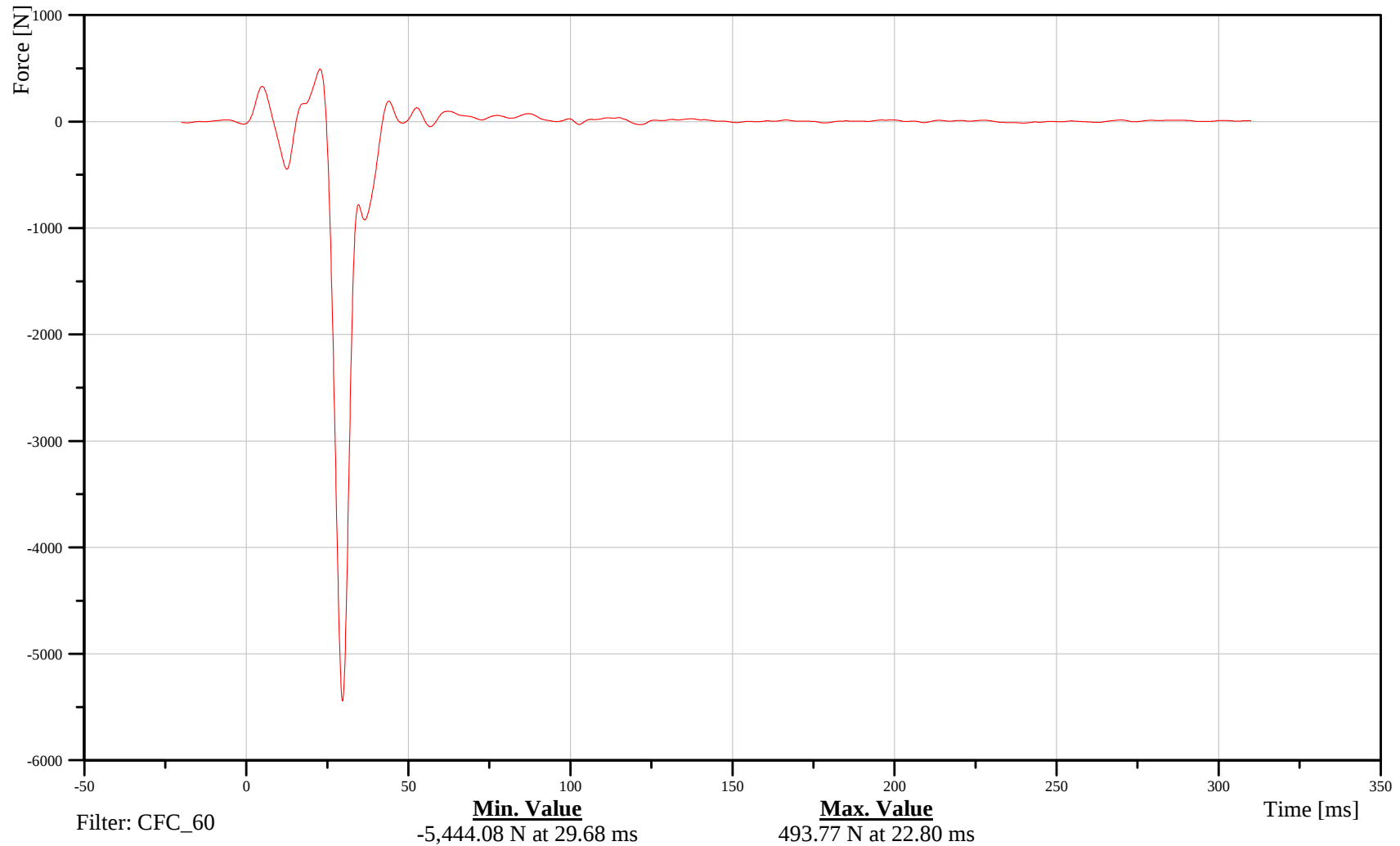
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Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 7 Column 5

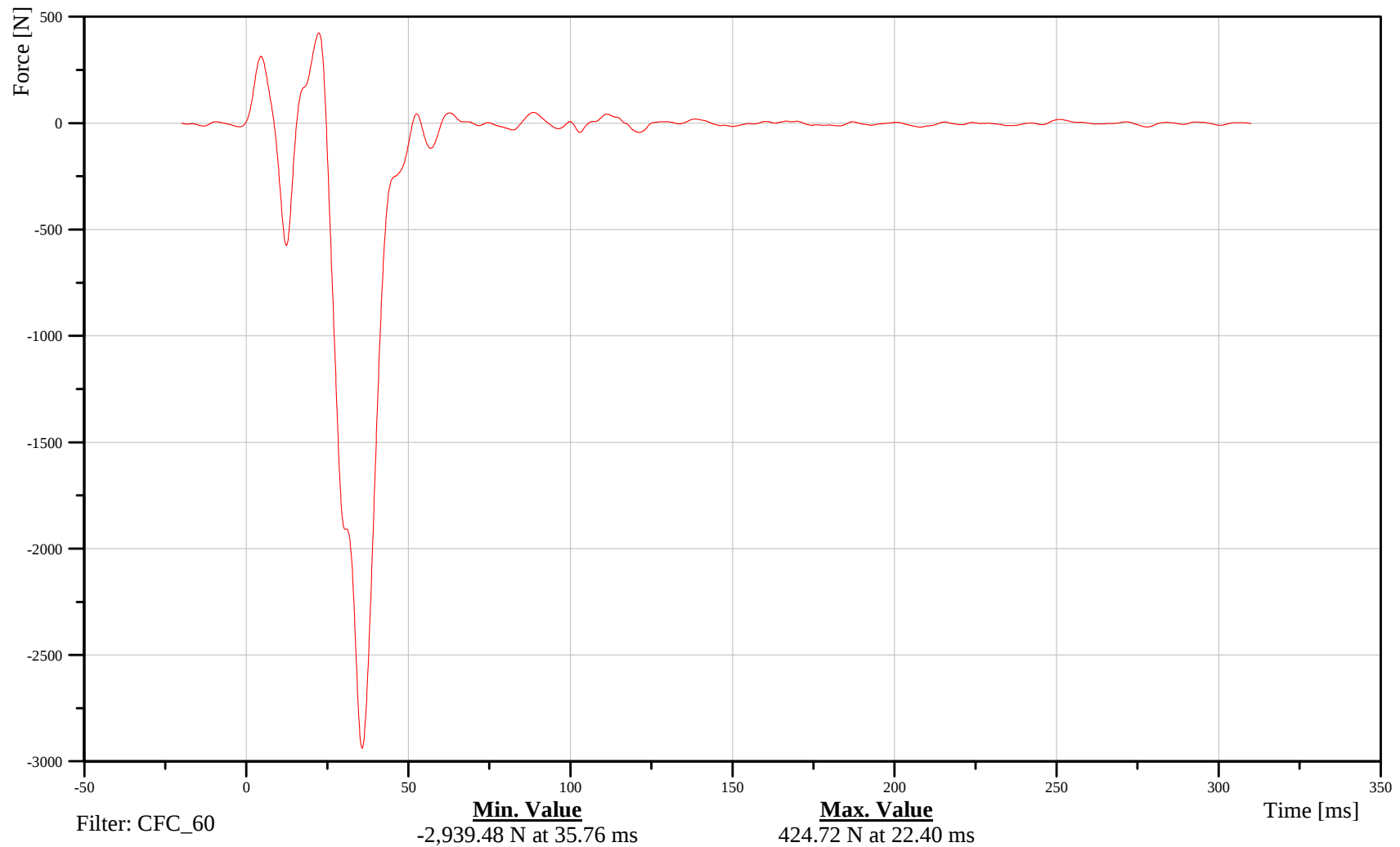
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000C05FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 7 Column 6

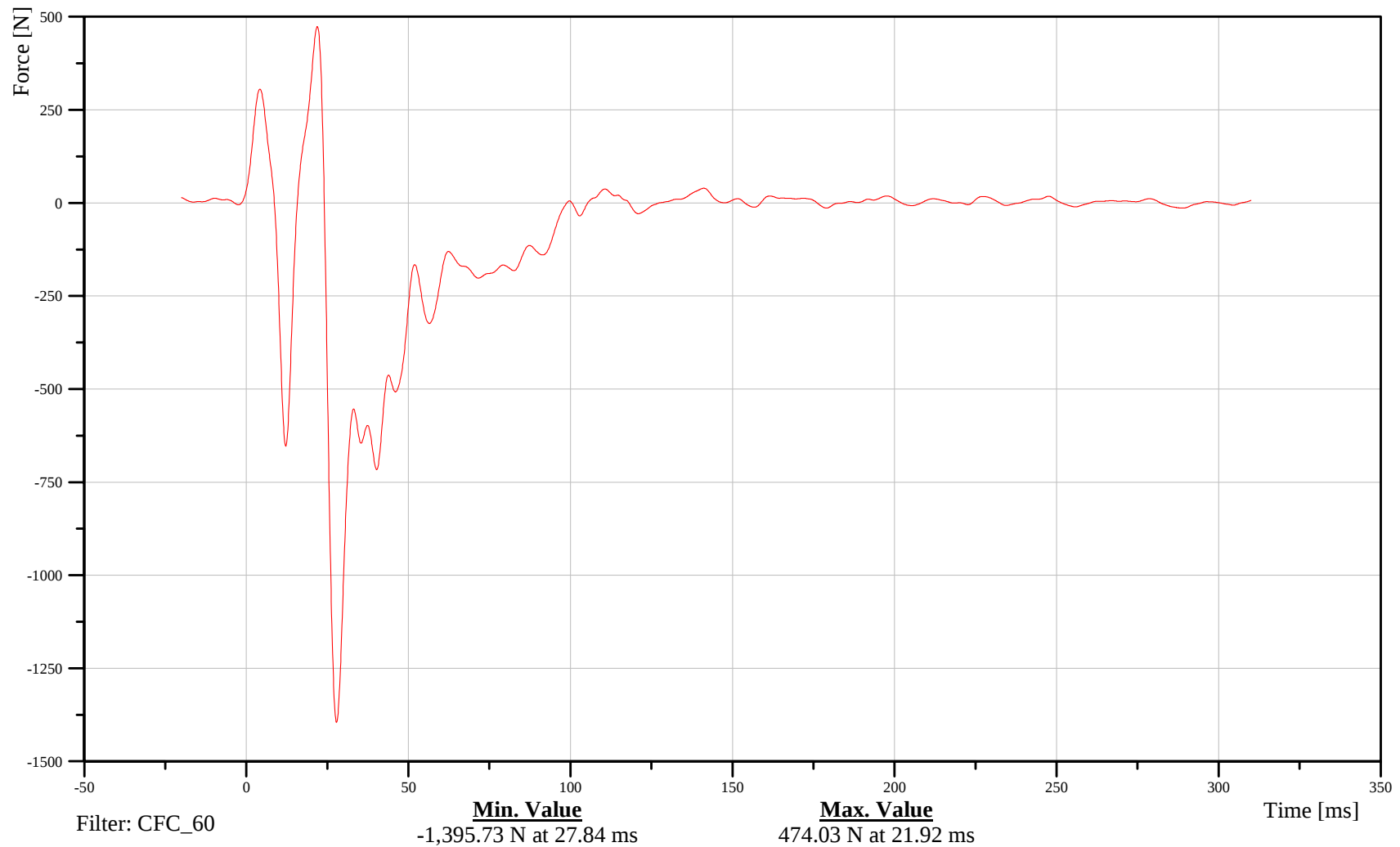
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000C06FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 7 Column 7

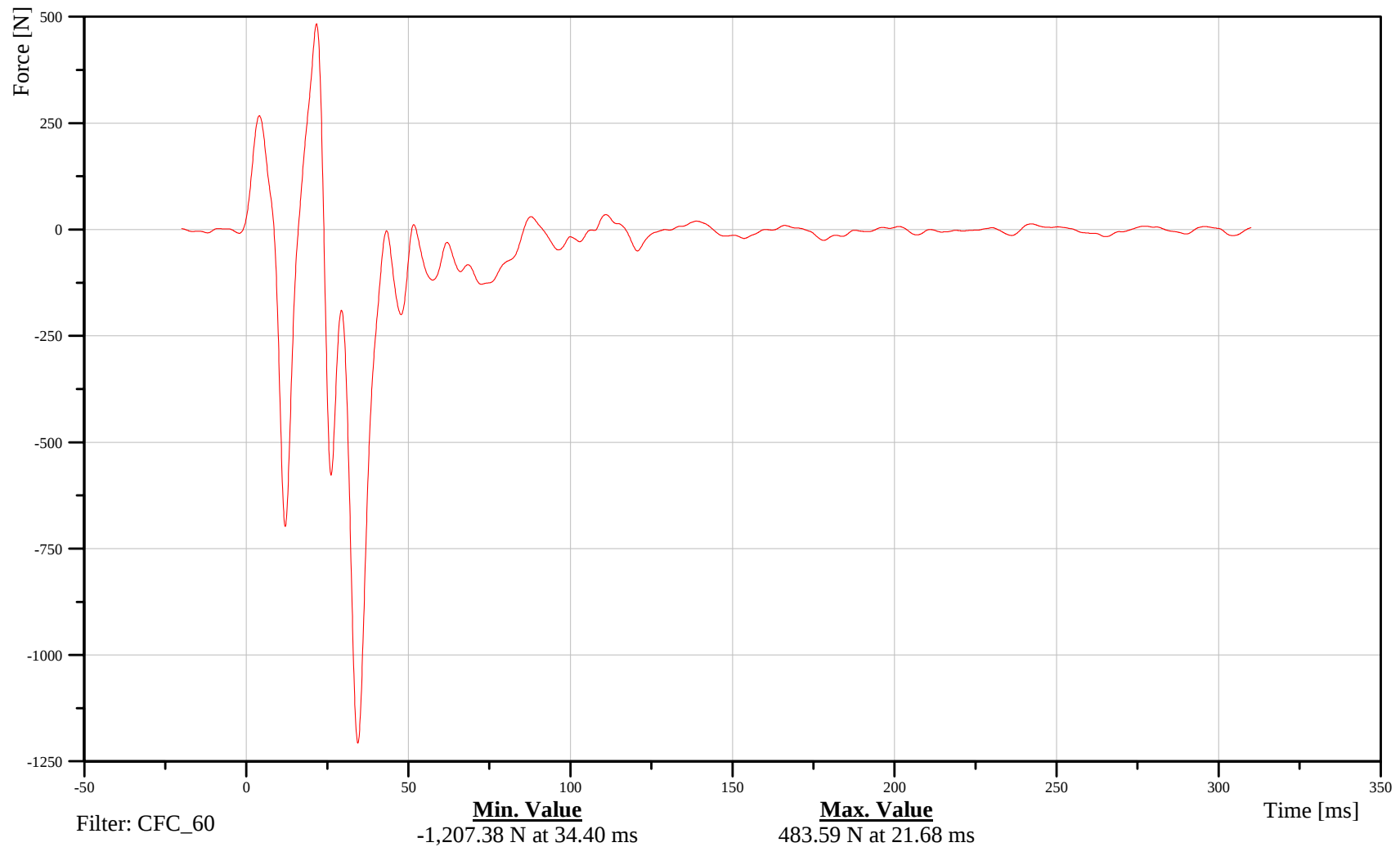
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000C07FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 7 Column 8

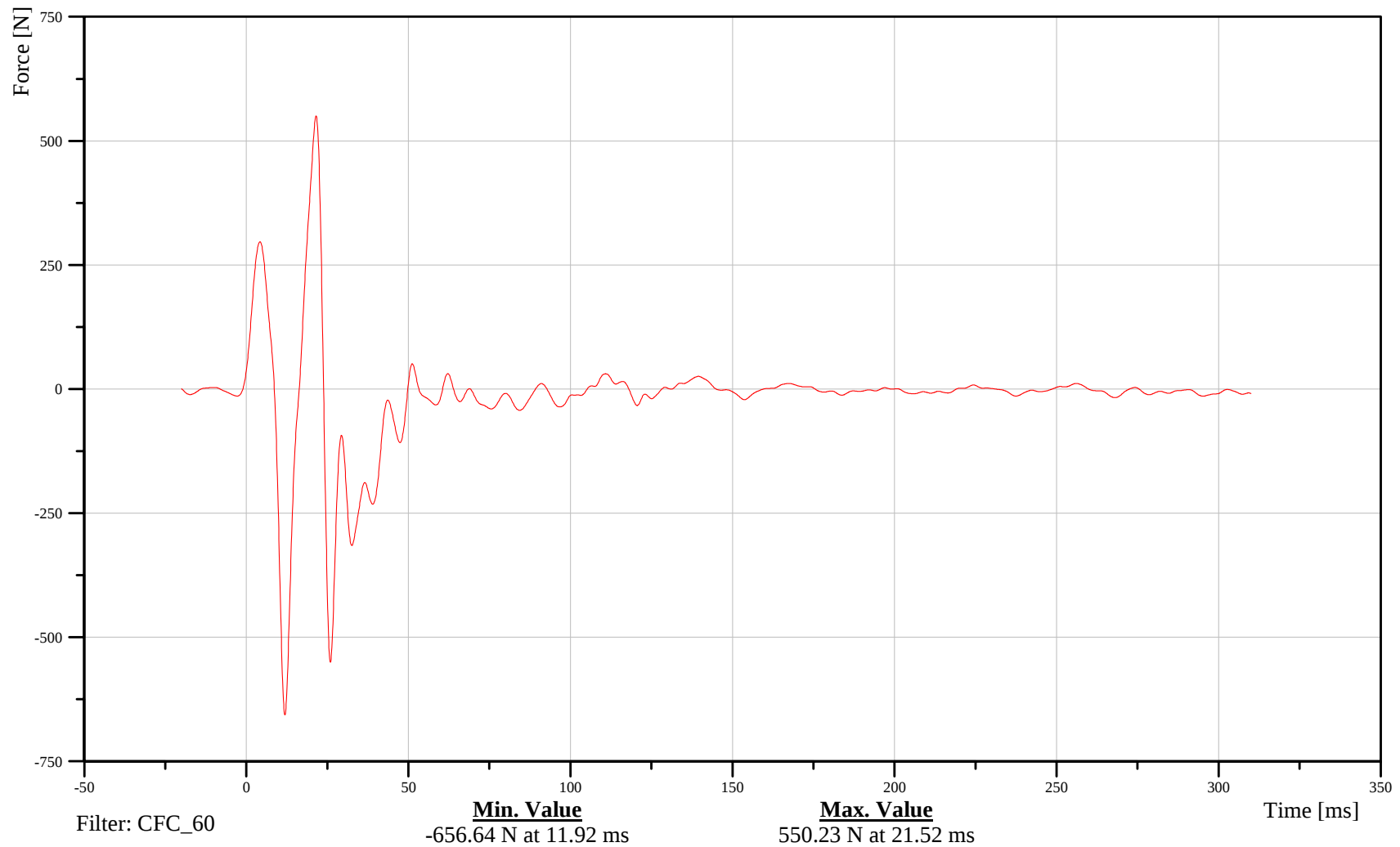
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000C08FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 7 Column 9

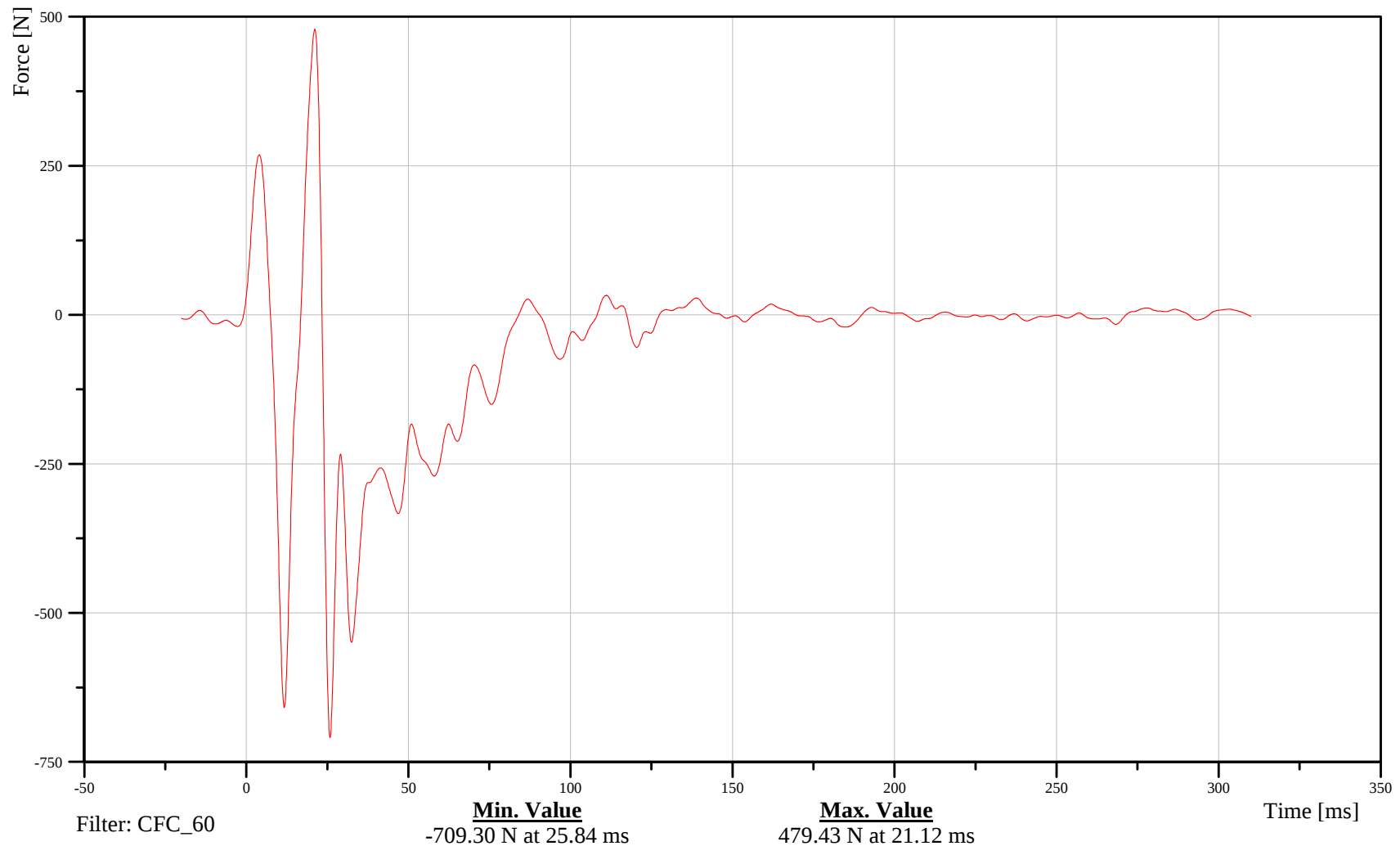
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000C09FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 7 Column 10

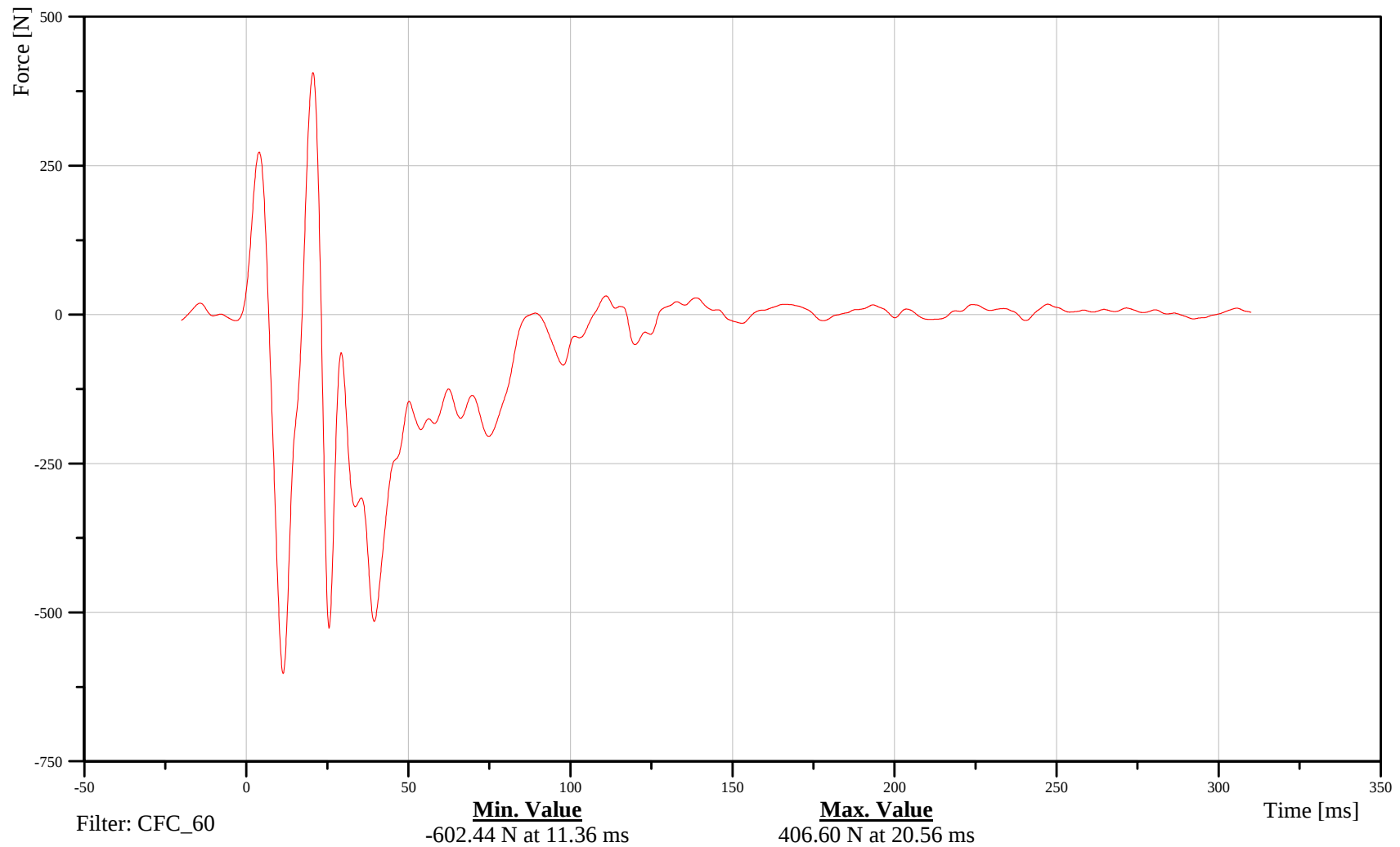
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000C10FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 7 Column 11

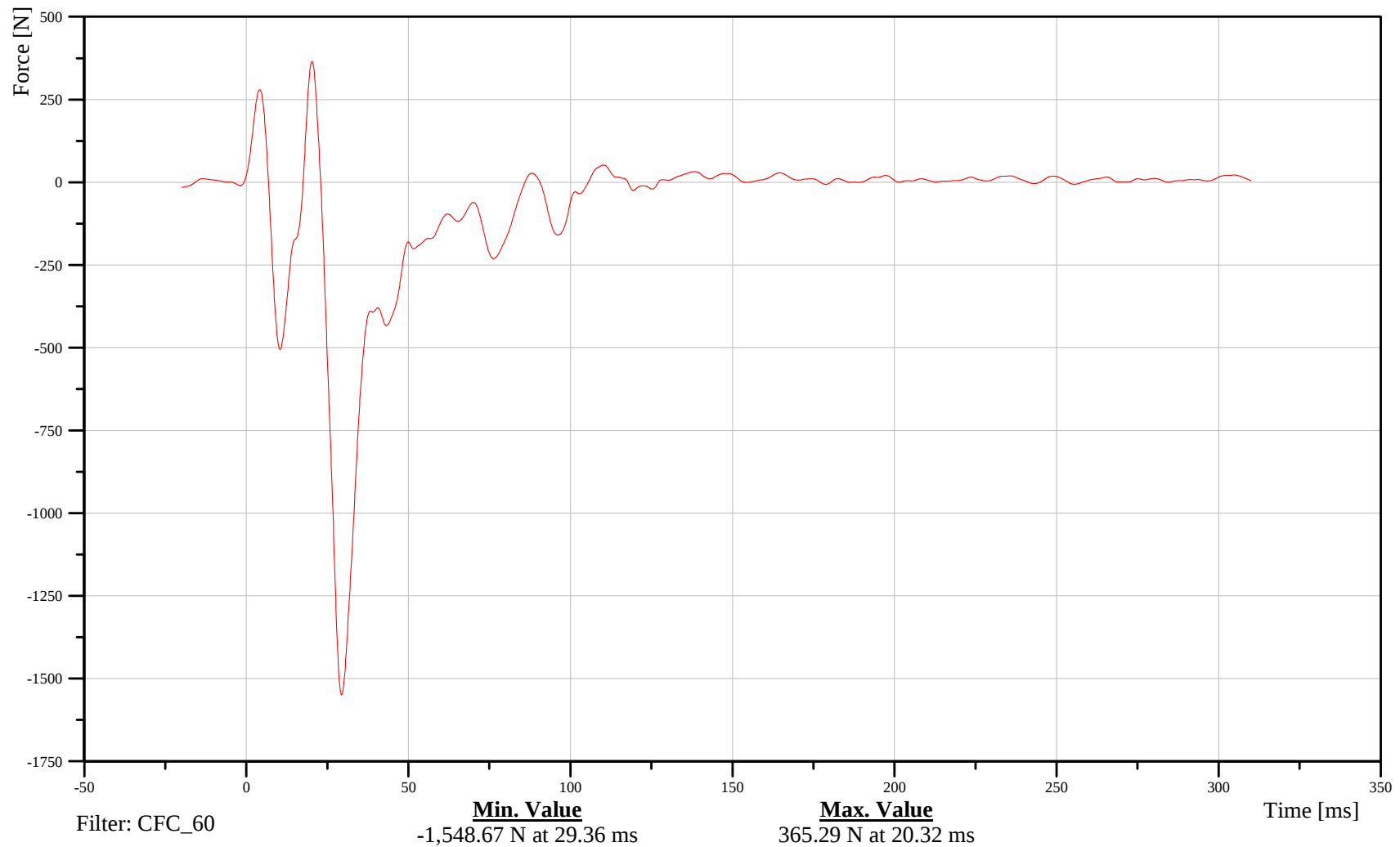
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000C11FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 7 Column 12

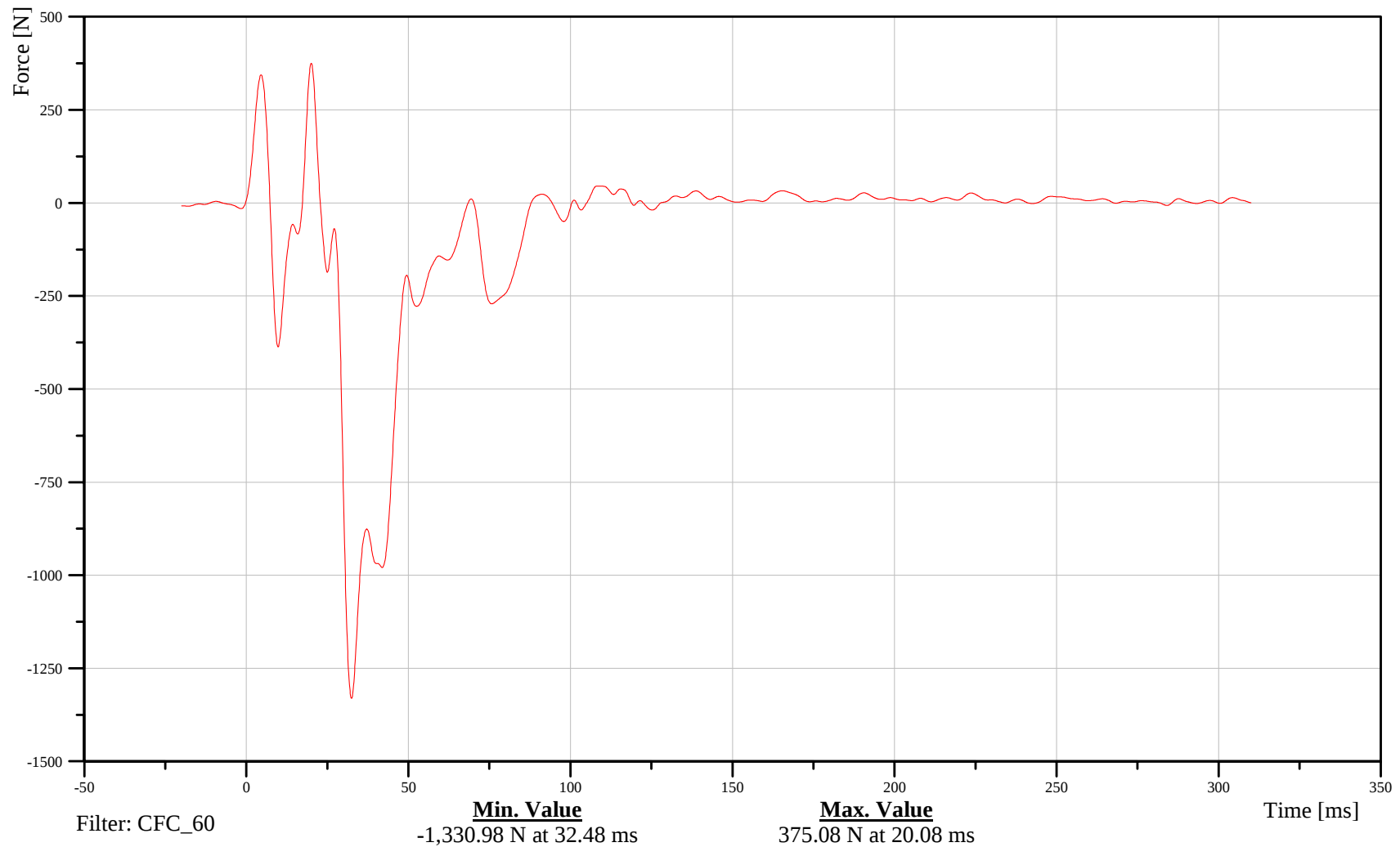
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000C12FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 7 Column 13

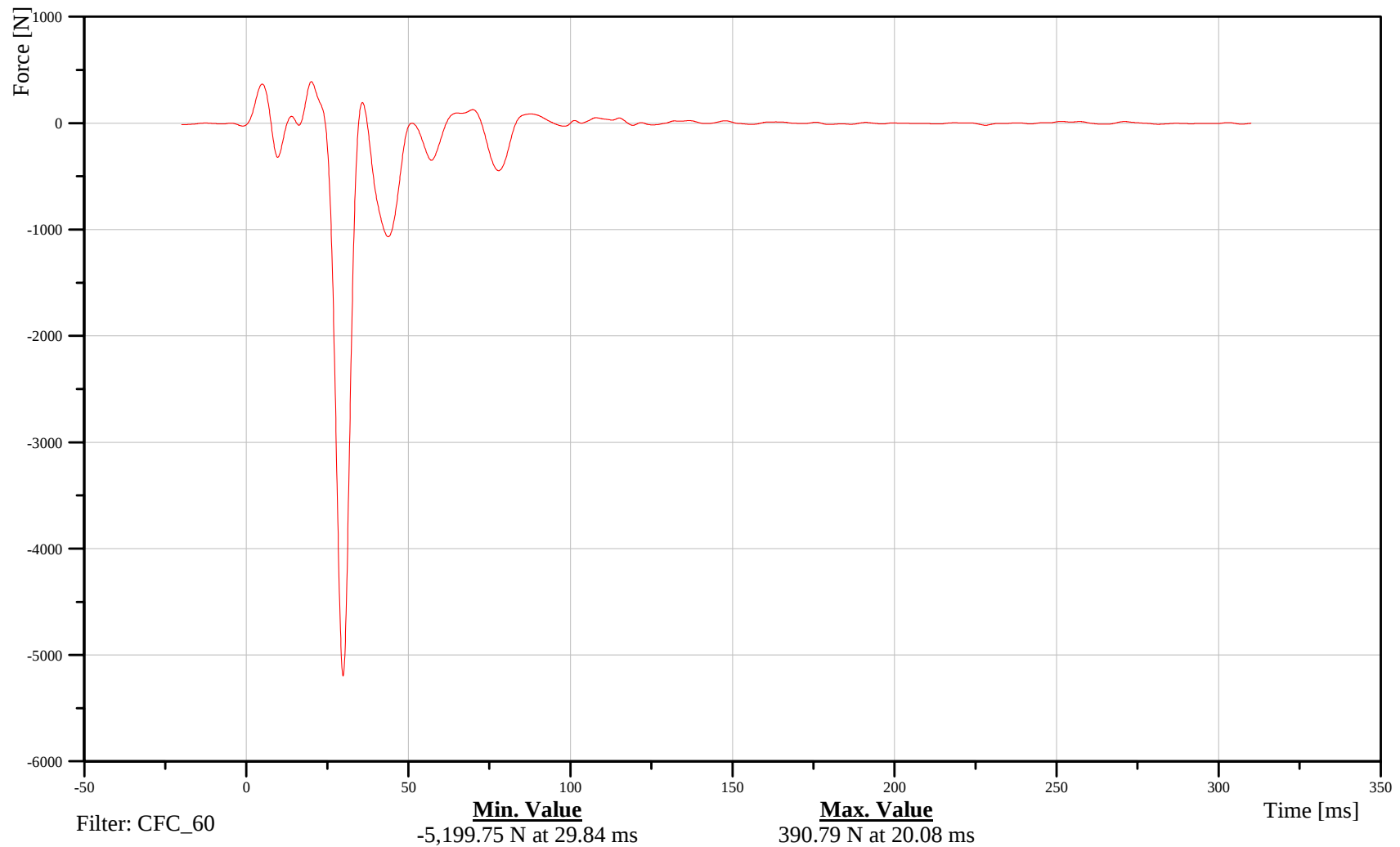
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000C13FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 7 Column 14

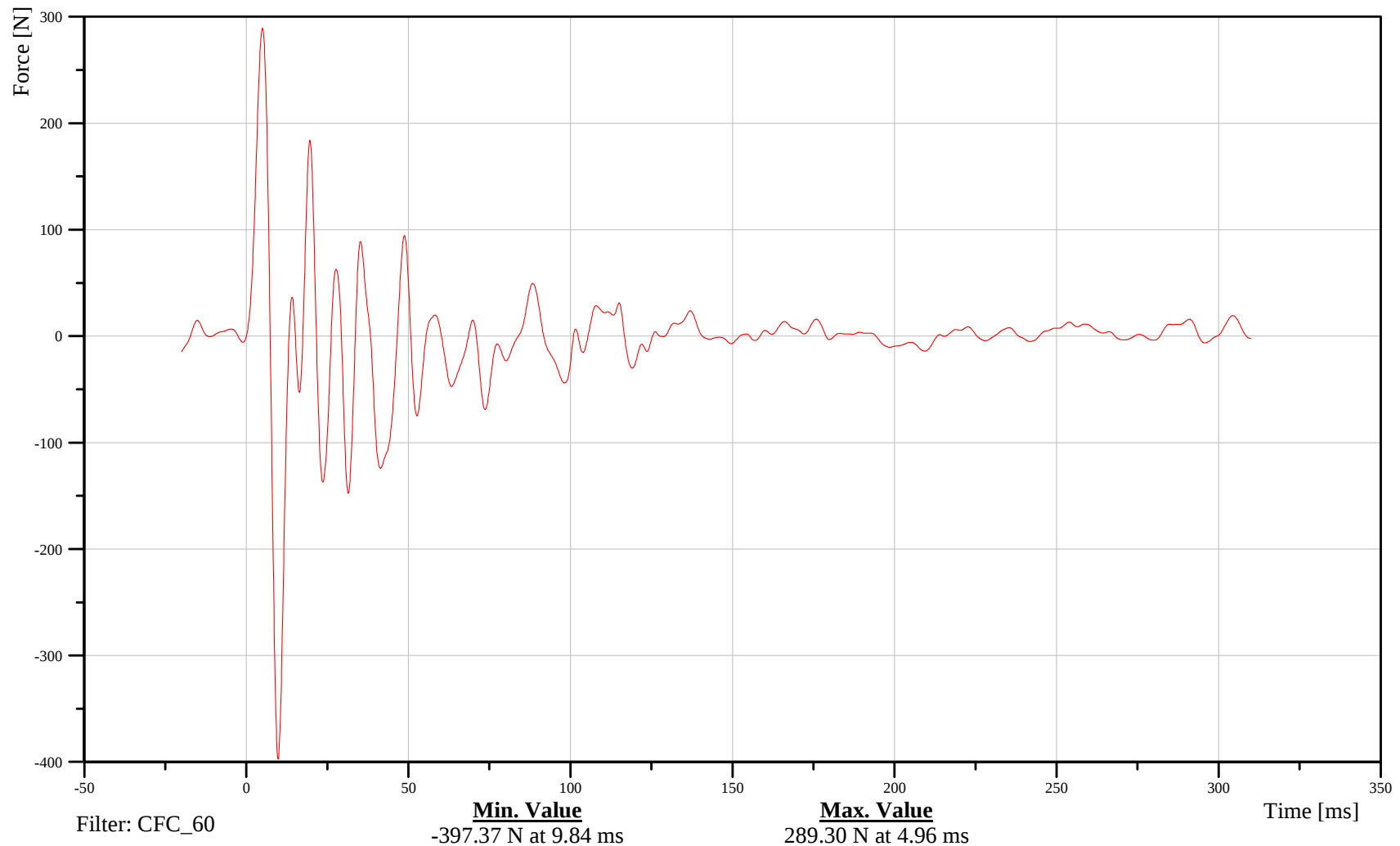
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000C14FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 7 Column 15

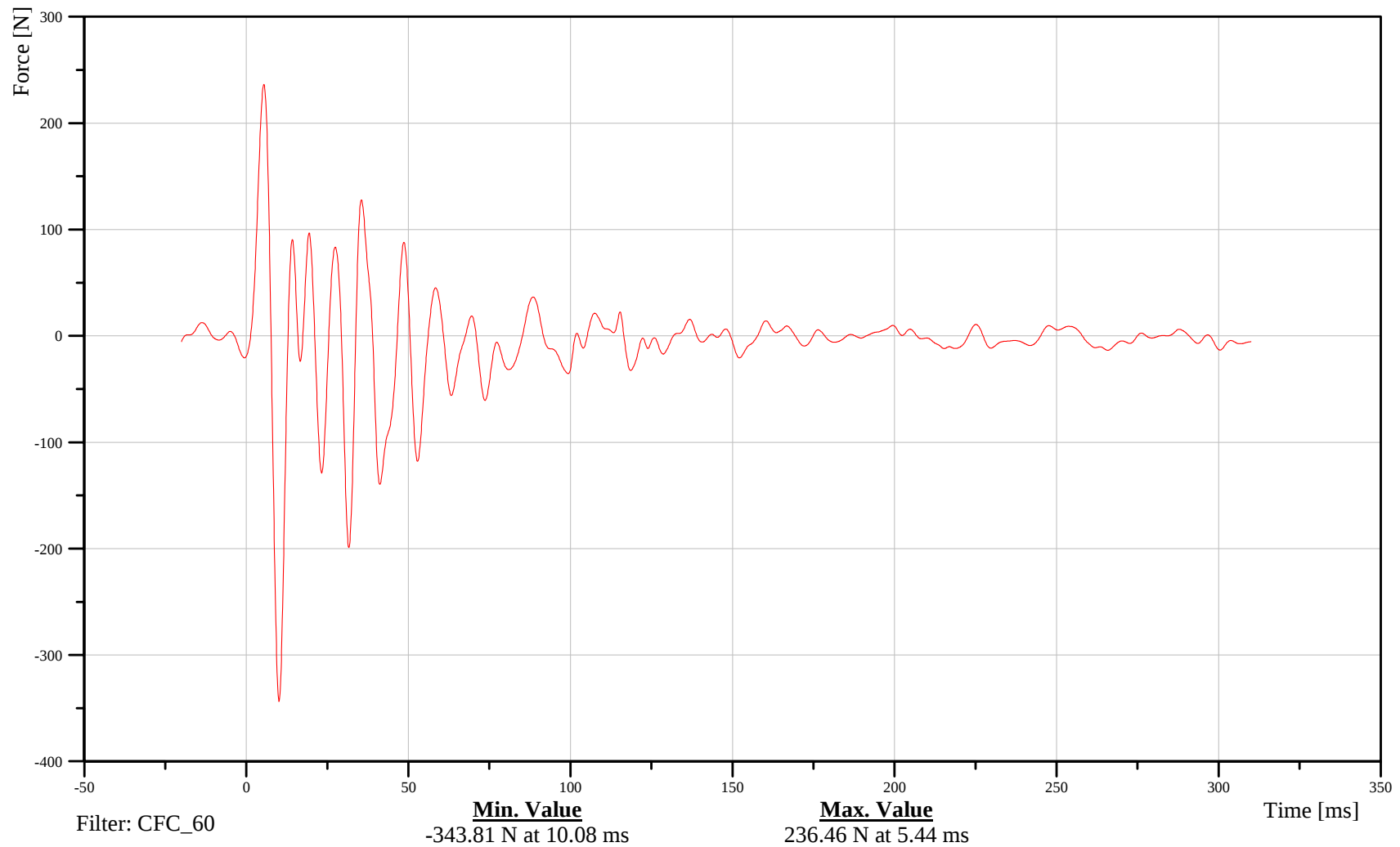
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000C15FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 7 Column 16

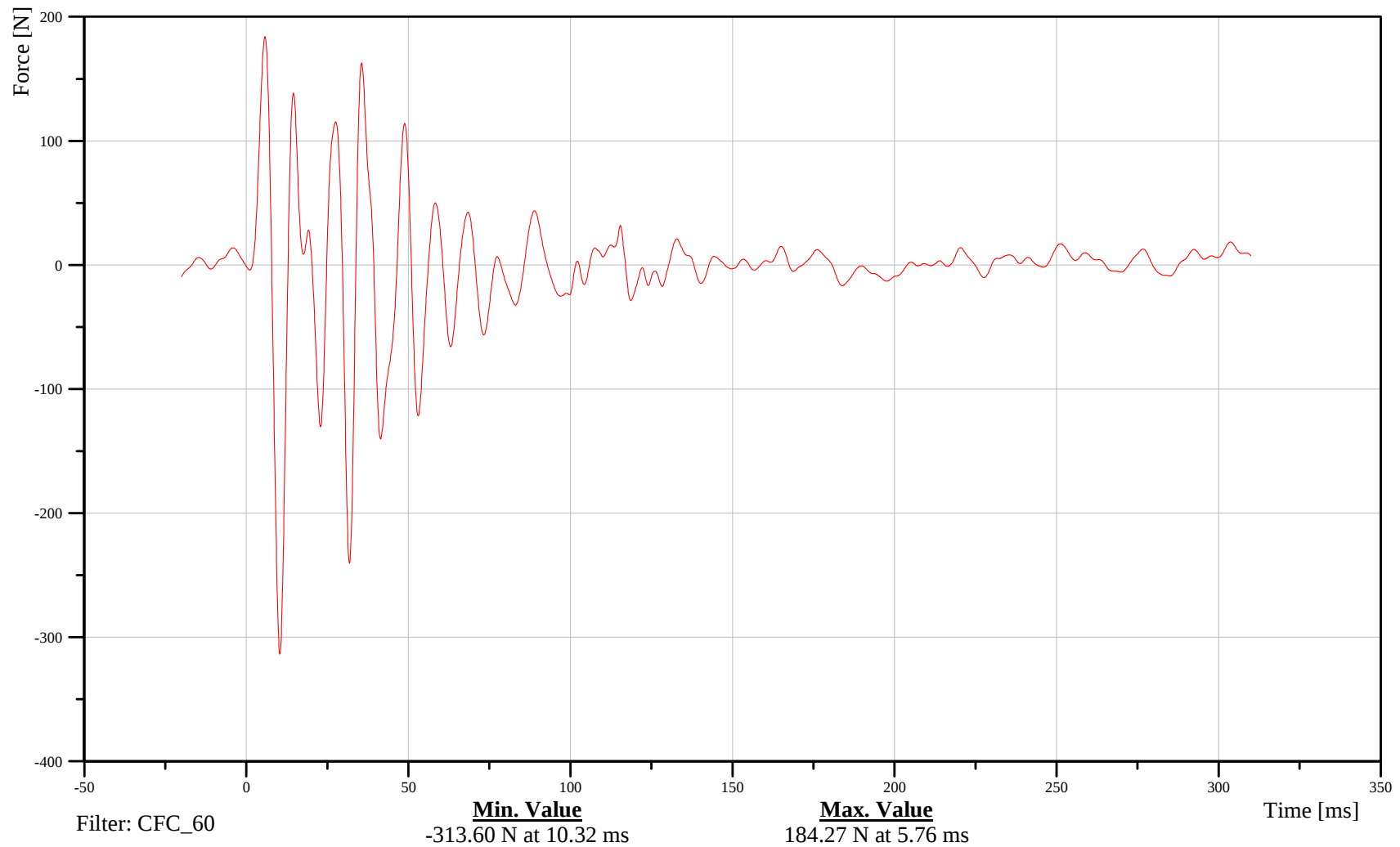
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000C16FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 6 Column 1

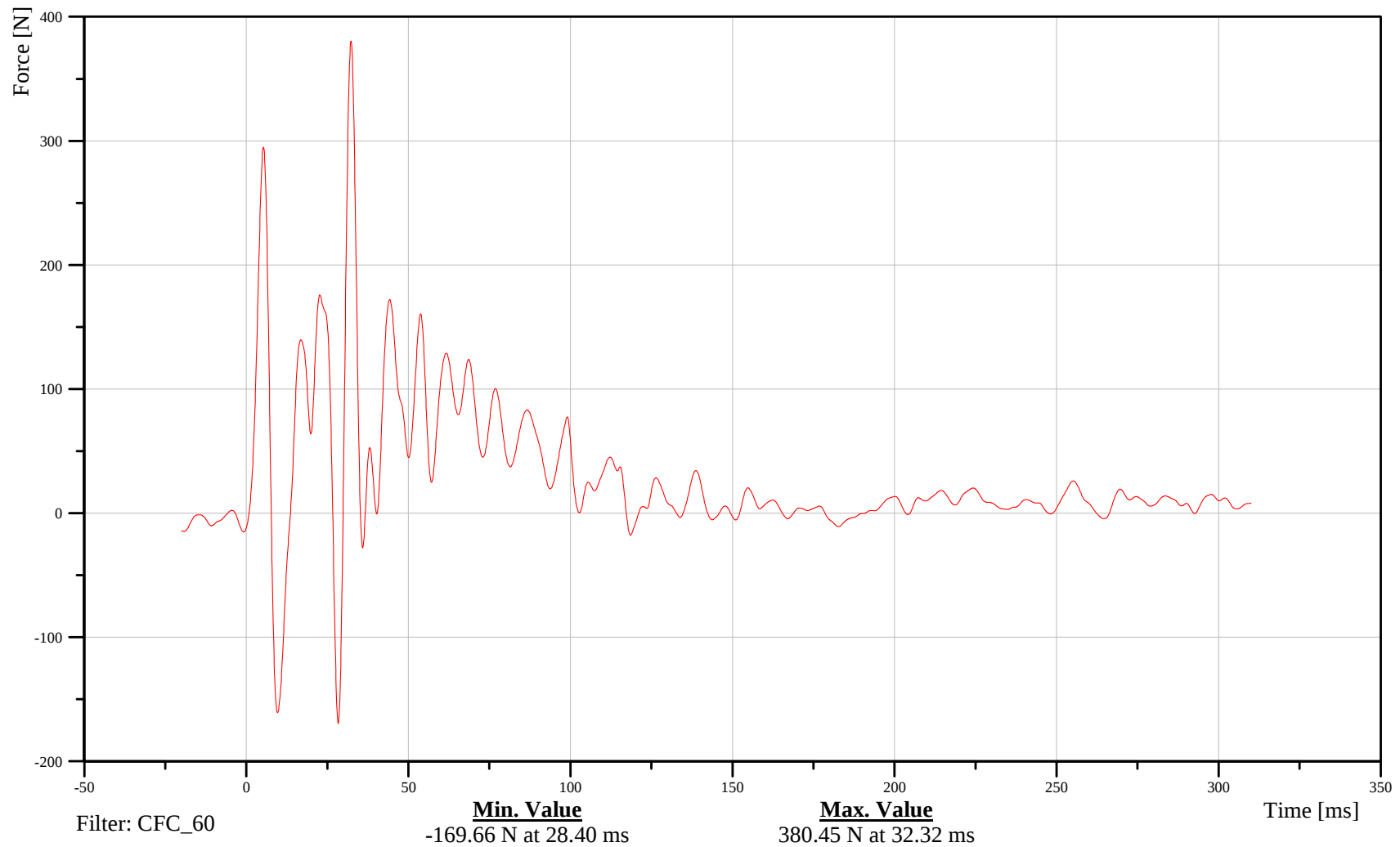
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000D01FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 6 Column 2

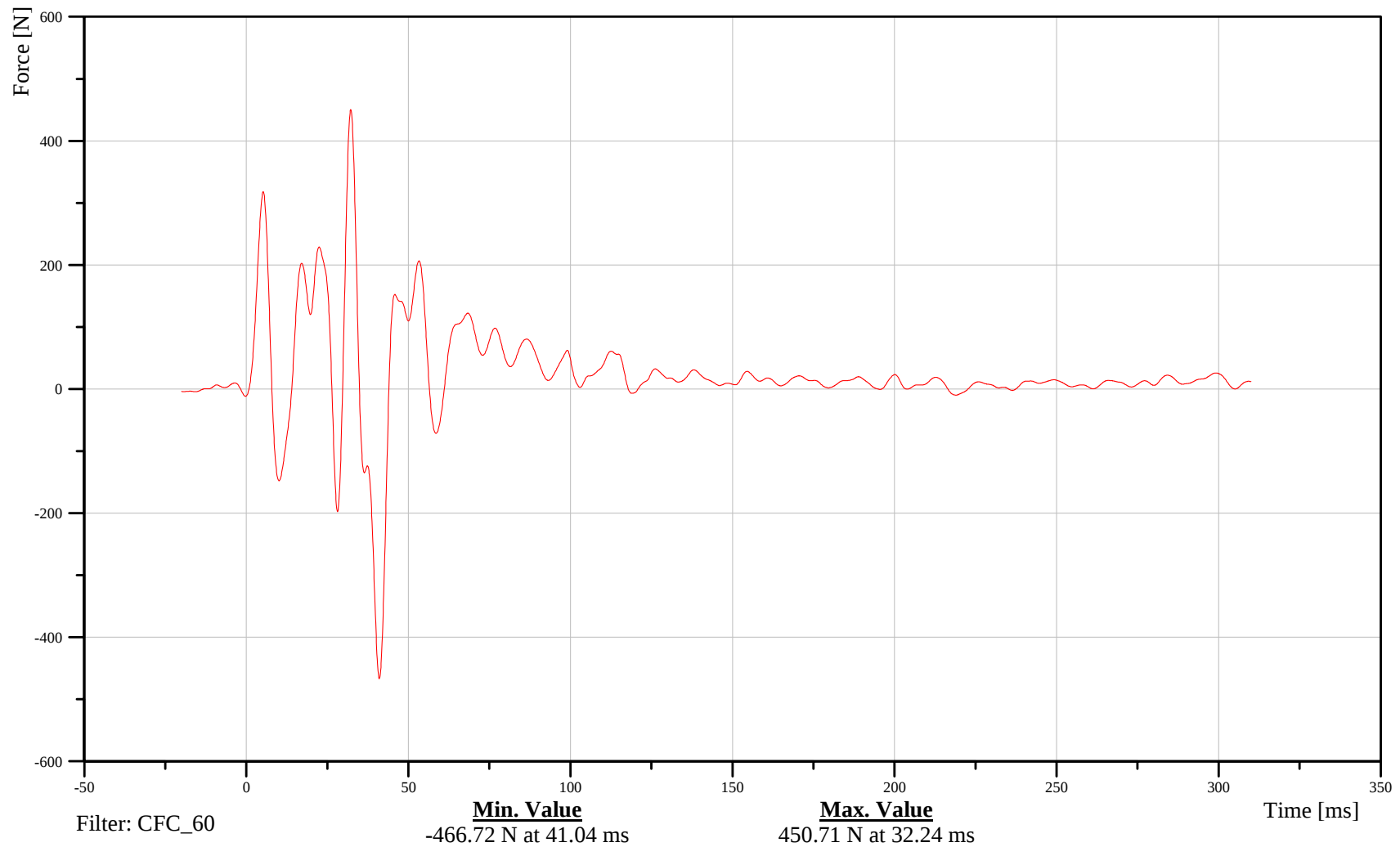
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000D02FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 6 Column 3

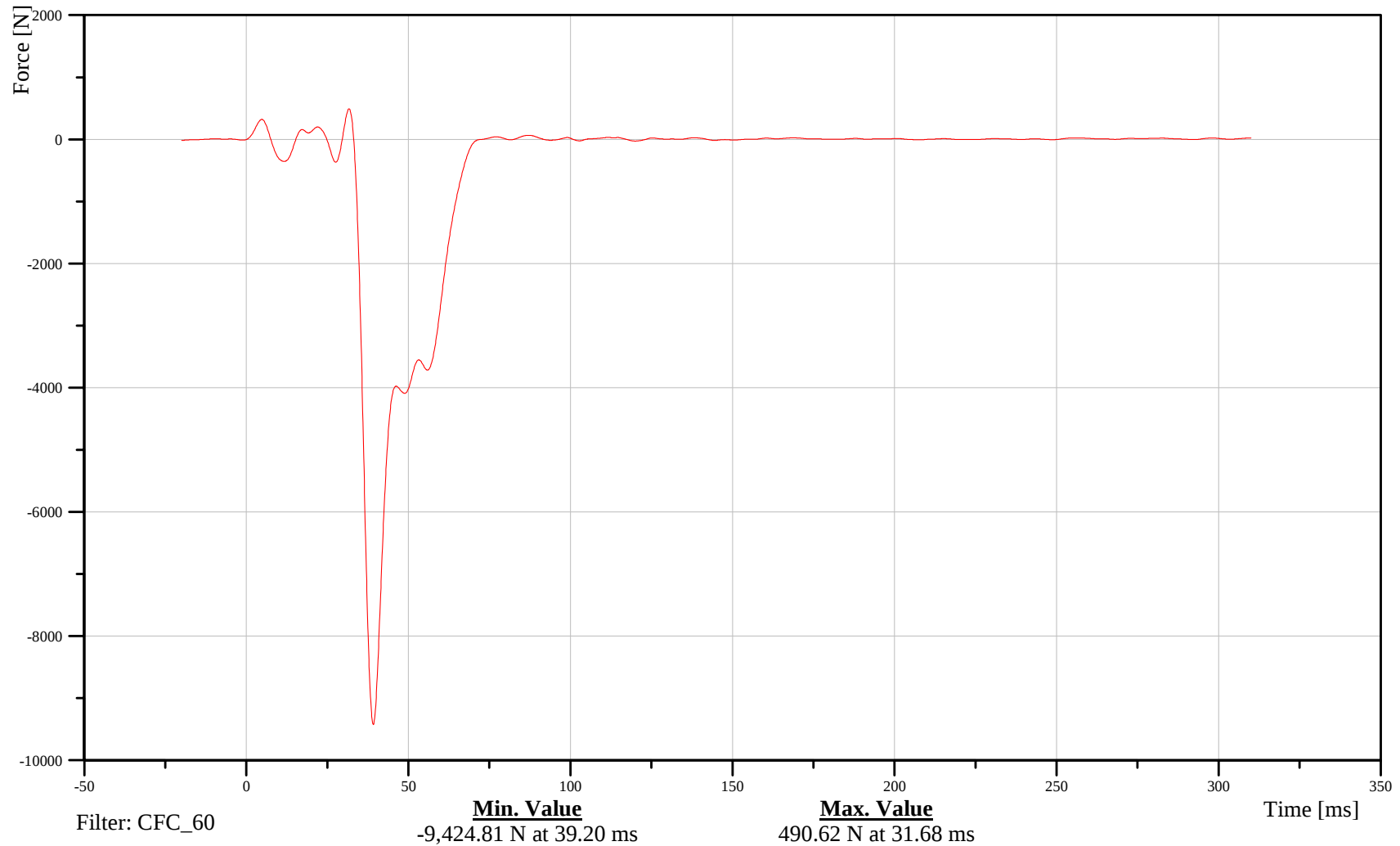
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000D03FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 6 Column 4

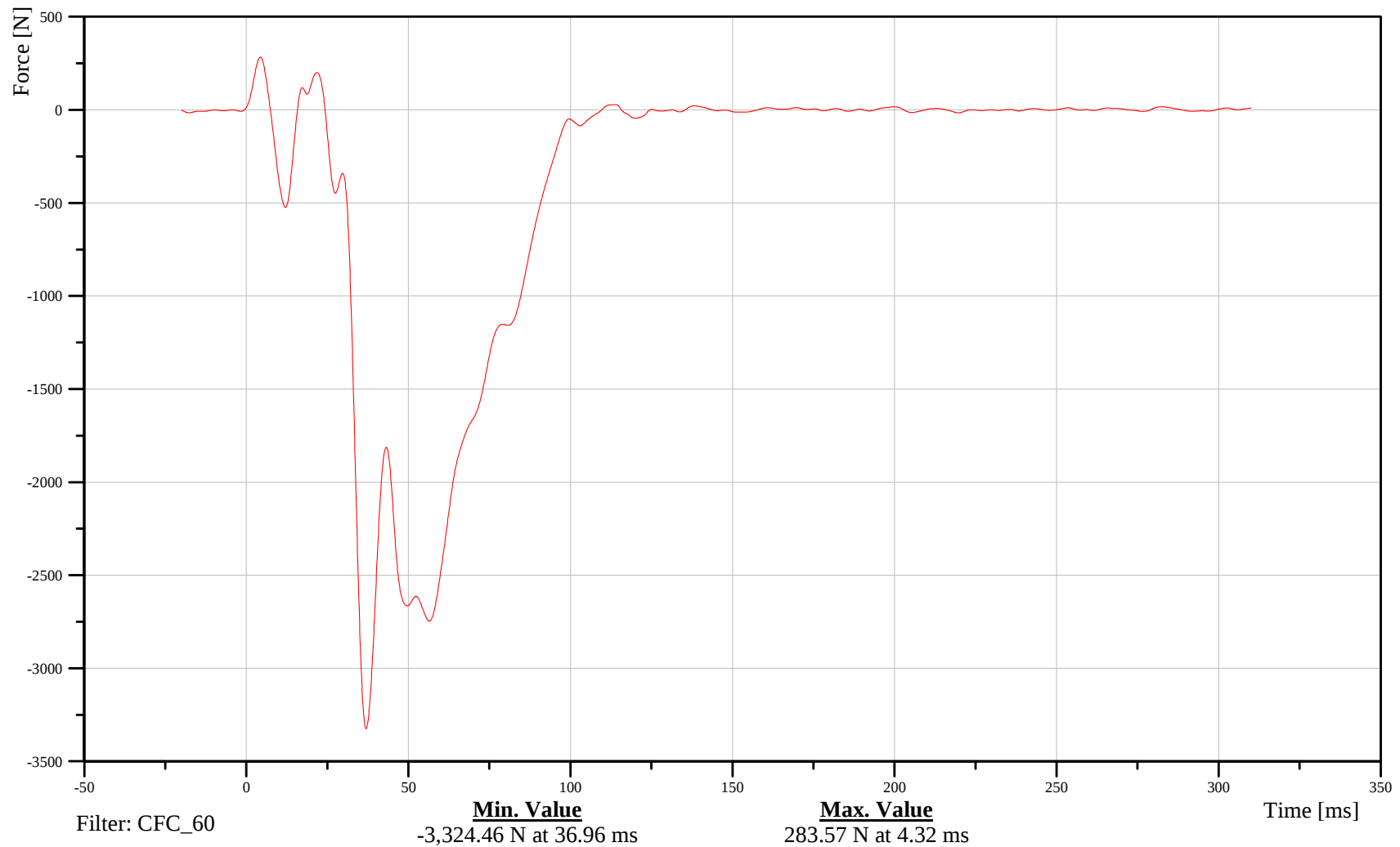
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Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 6 Column 5

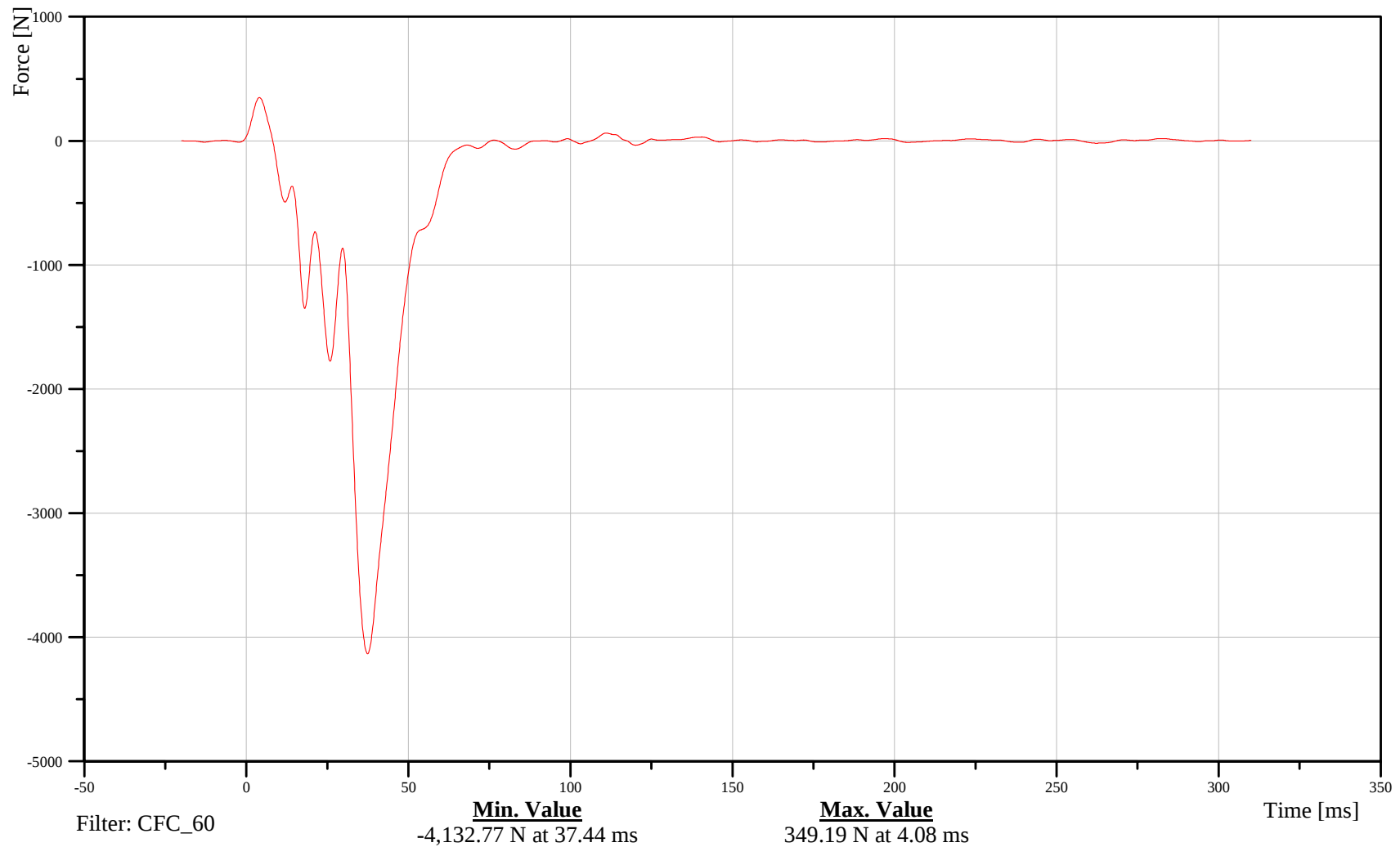
Date: 05/12/2006
Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 6 Column 6

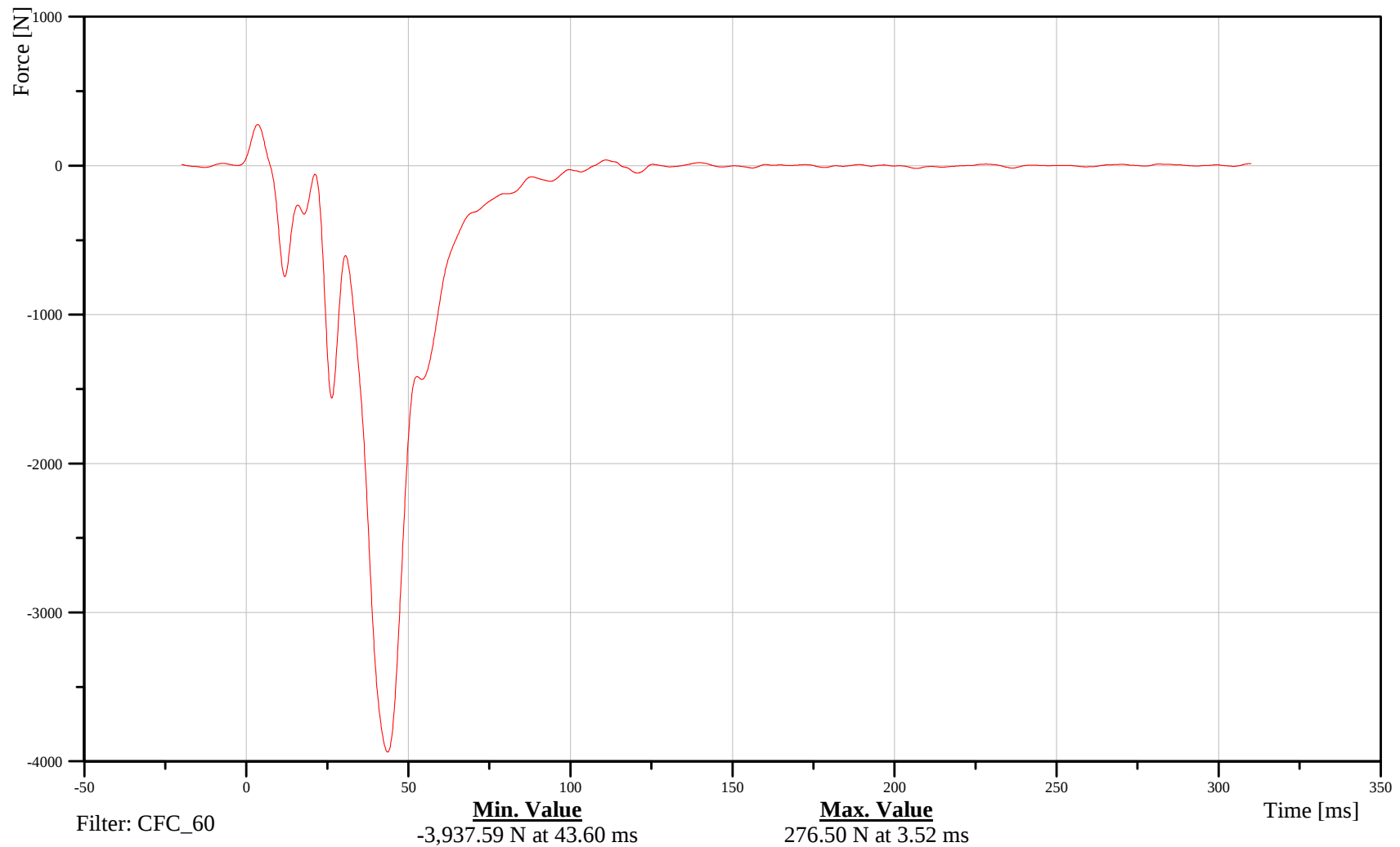
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Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 6 Column 7

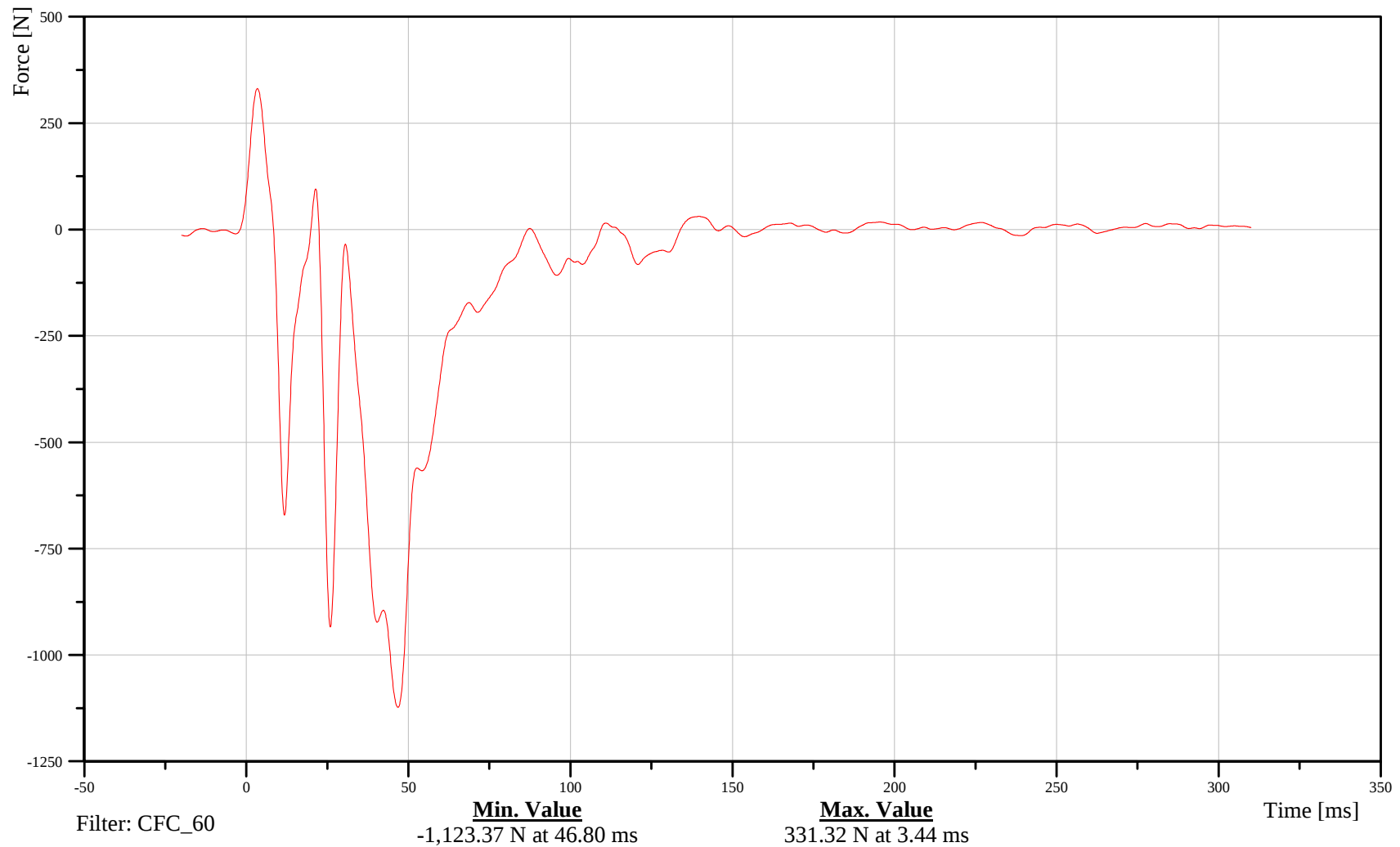
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Customer: VRTC

L0FBAR000D07FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 6 Column 8

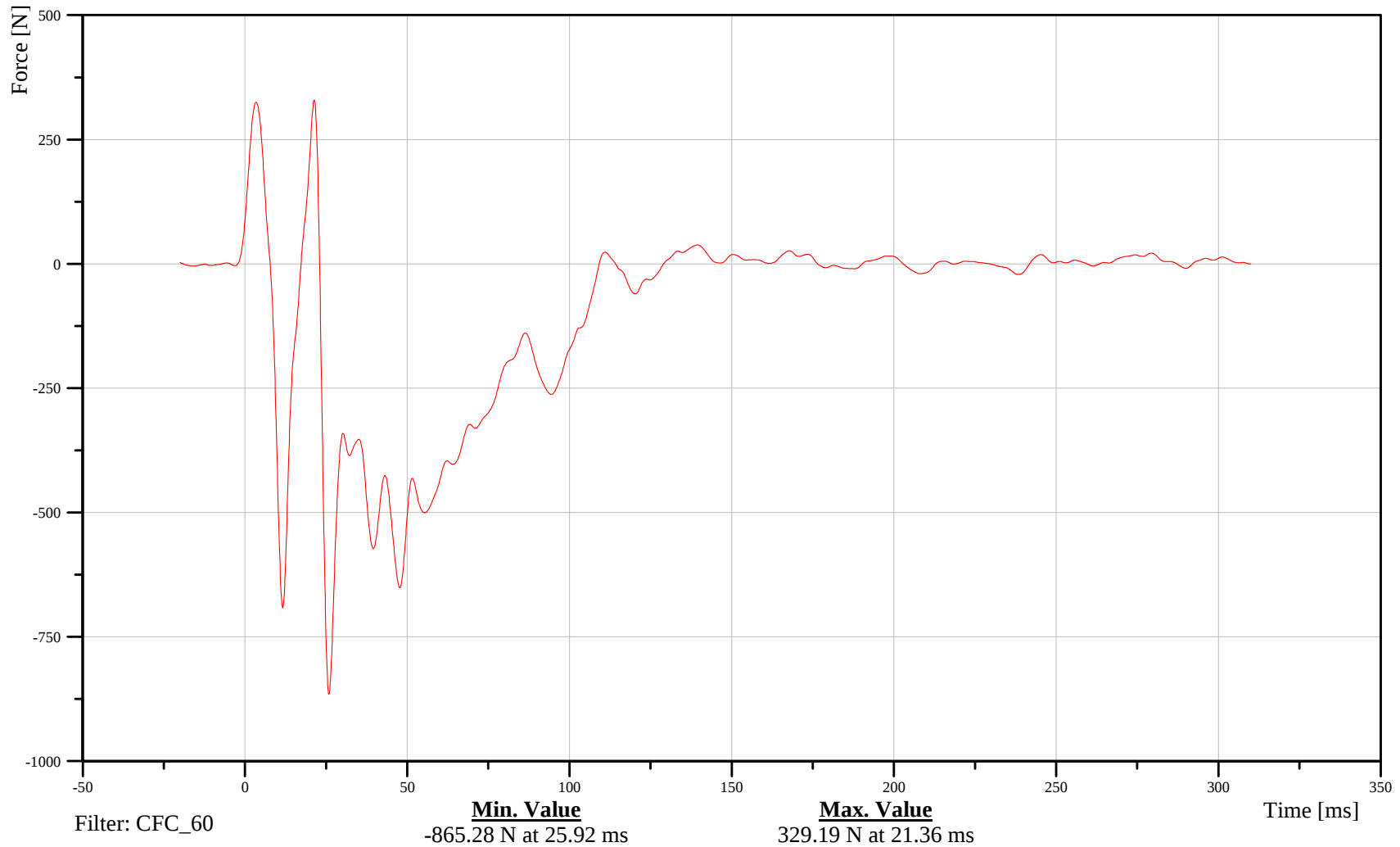
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000D08FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 6 Column 9

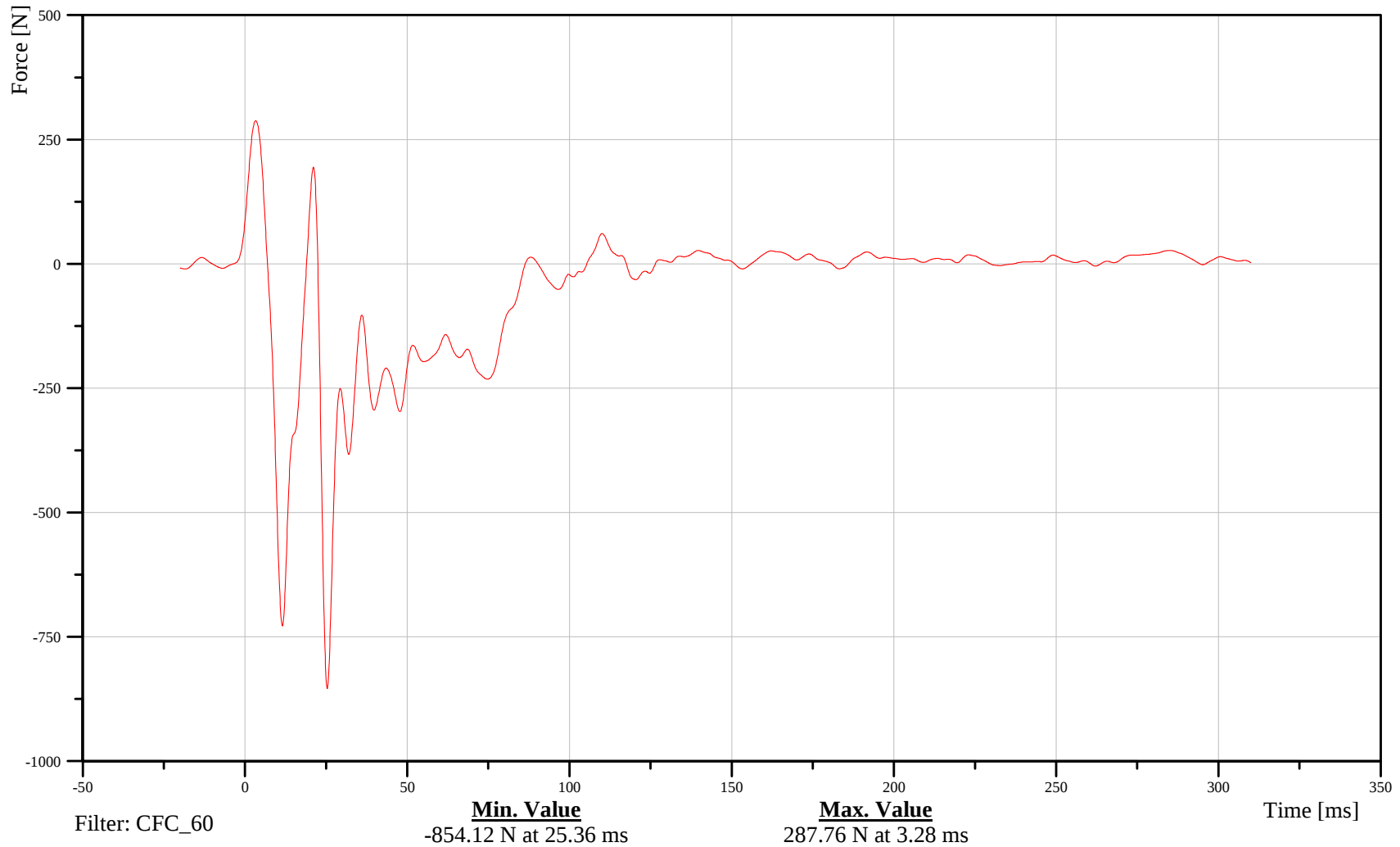
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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 6 Column 10

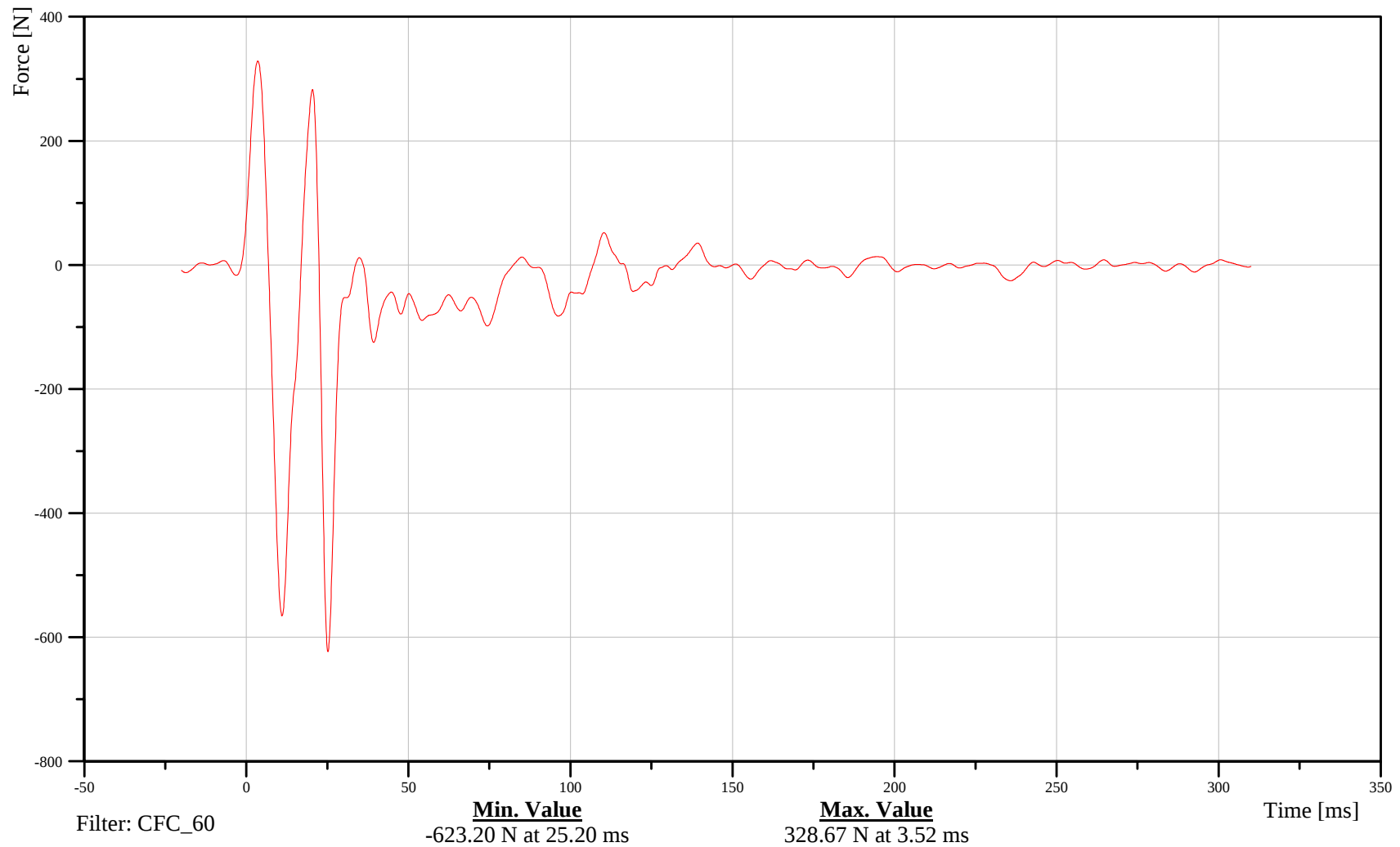
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Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 6 Column 11

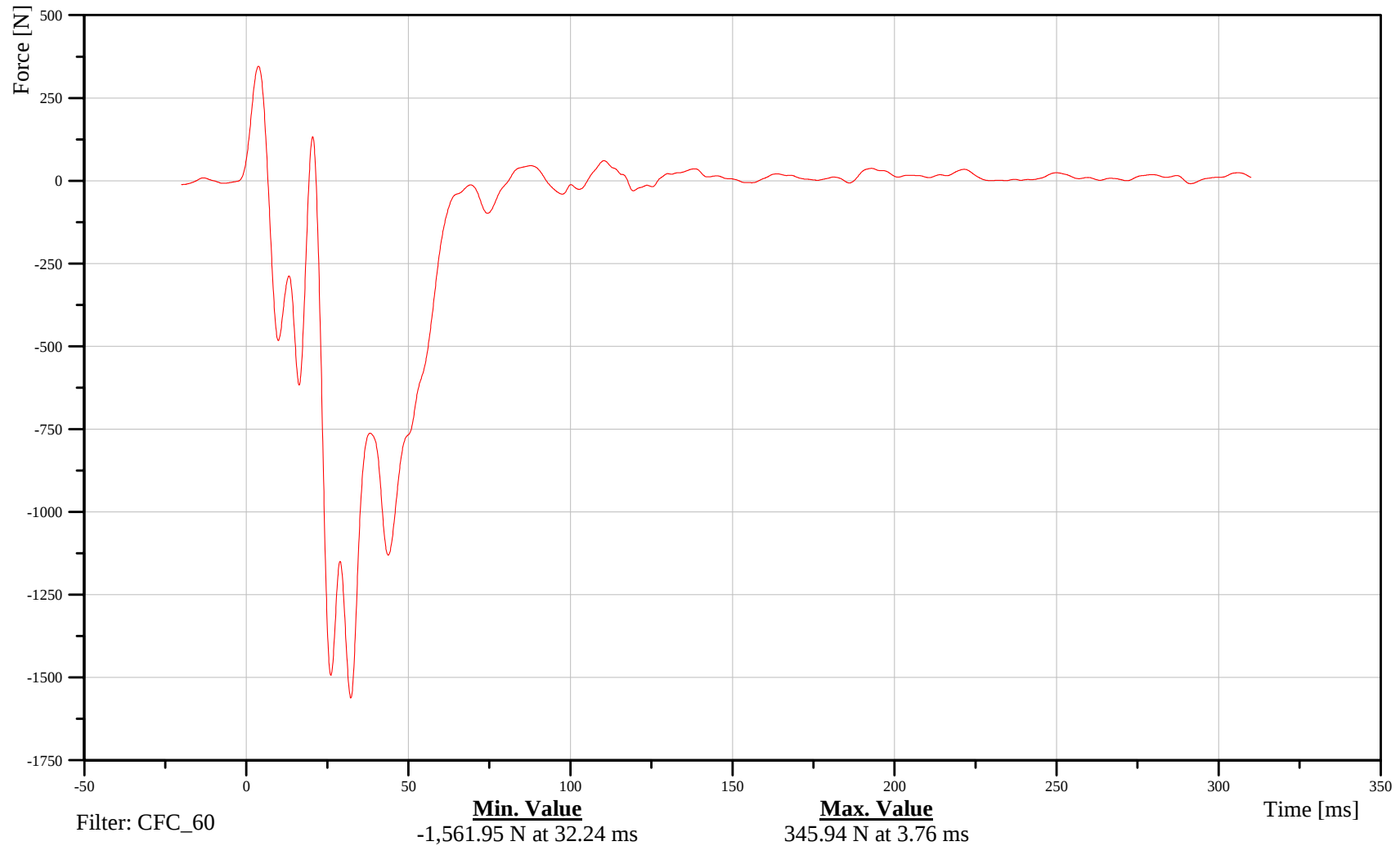
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Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 6 Column 12

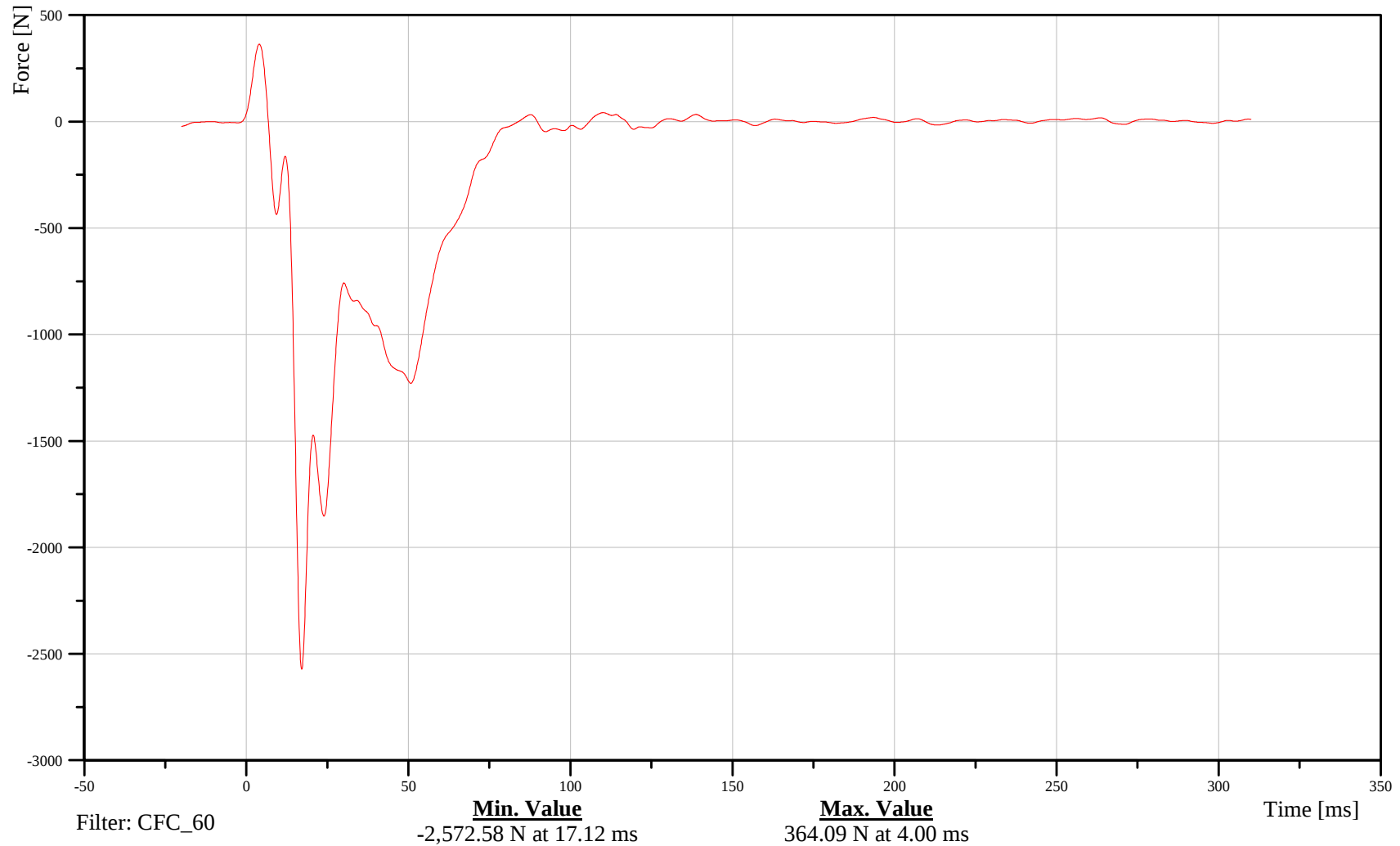
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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 6 Column 13

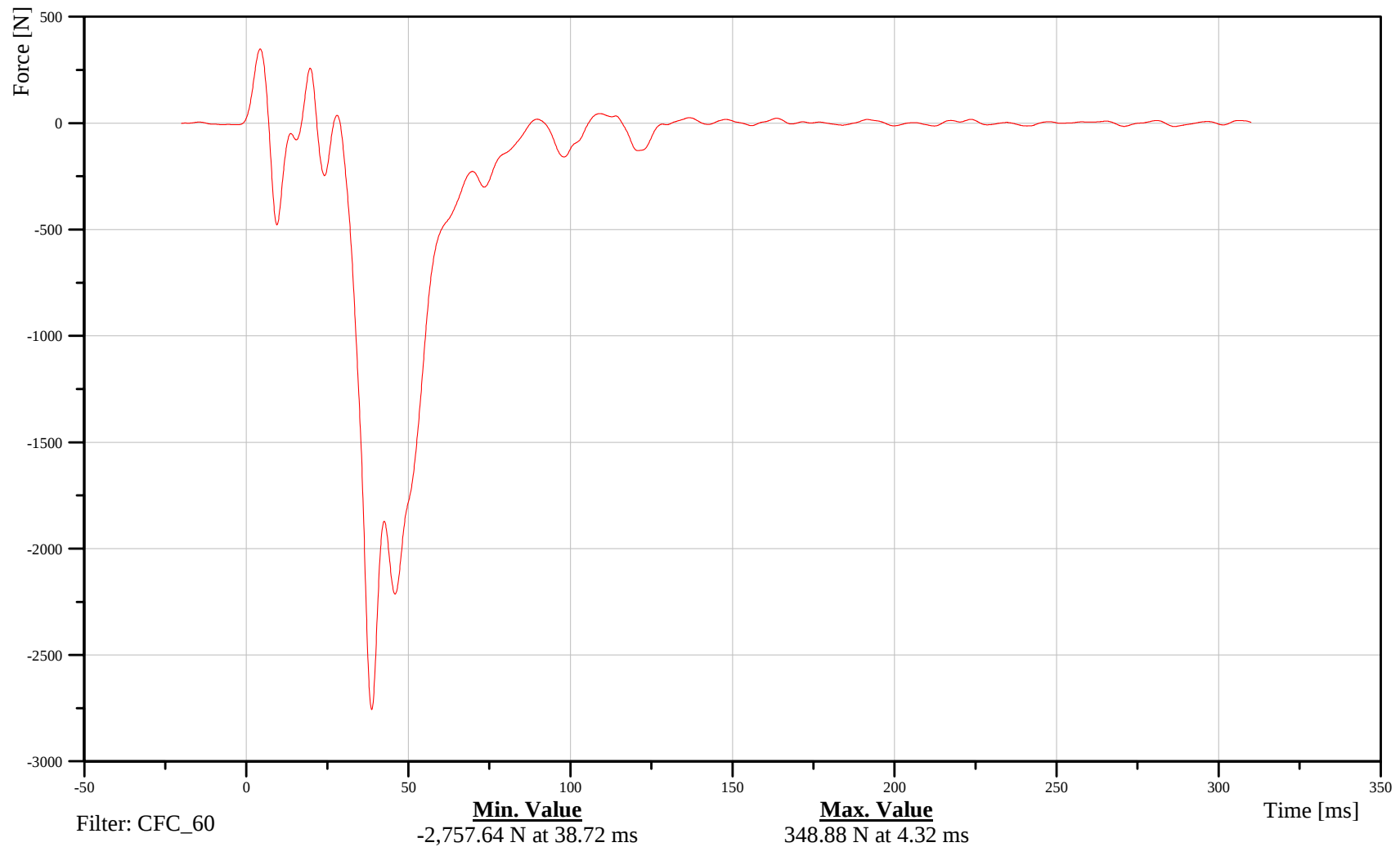
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Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 6 Column 14

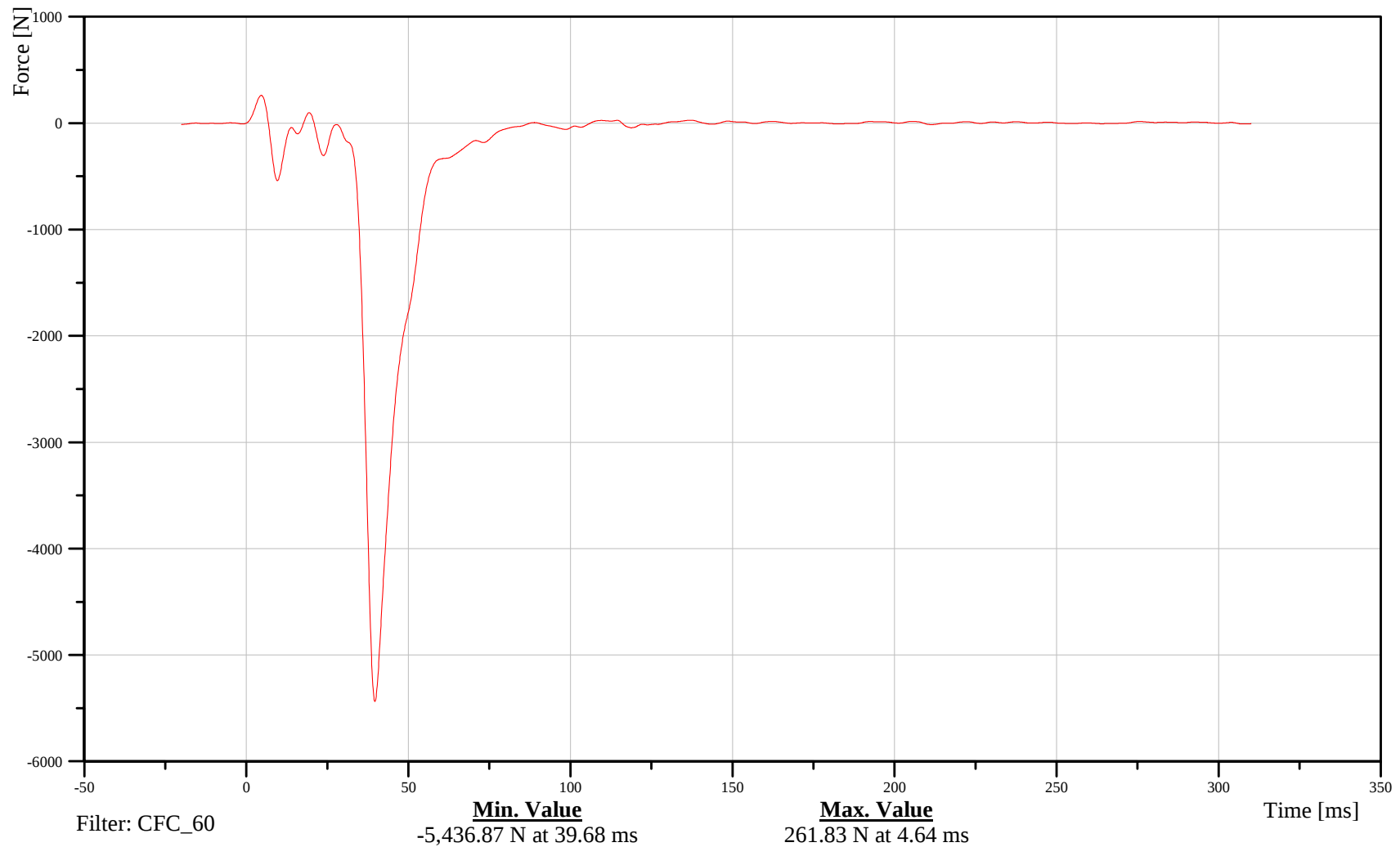
Date: 05/12/2006
Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 6 Column 15

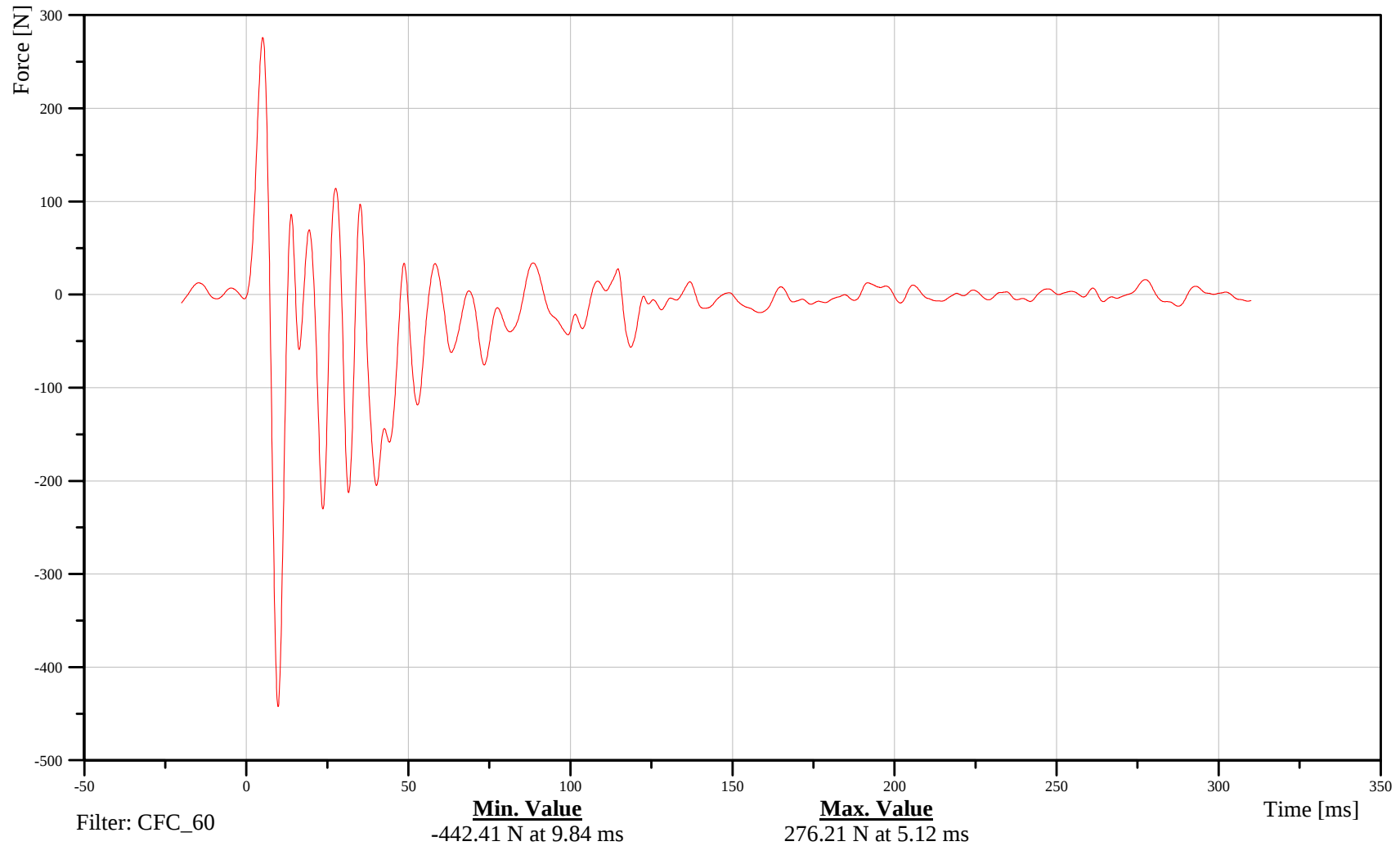
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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

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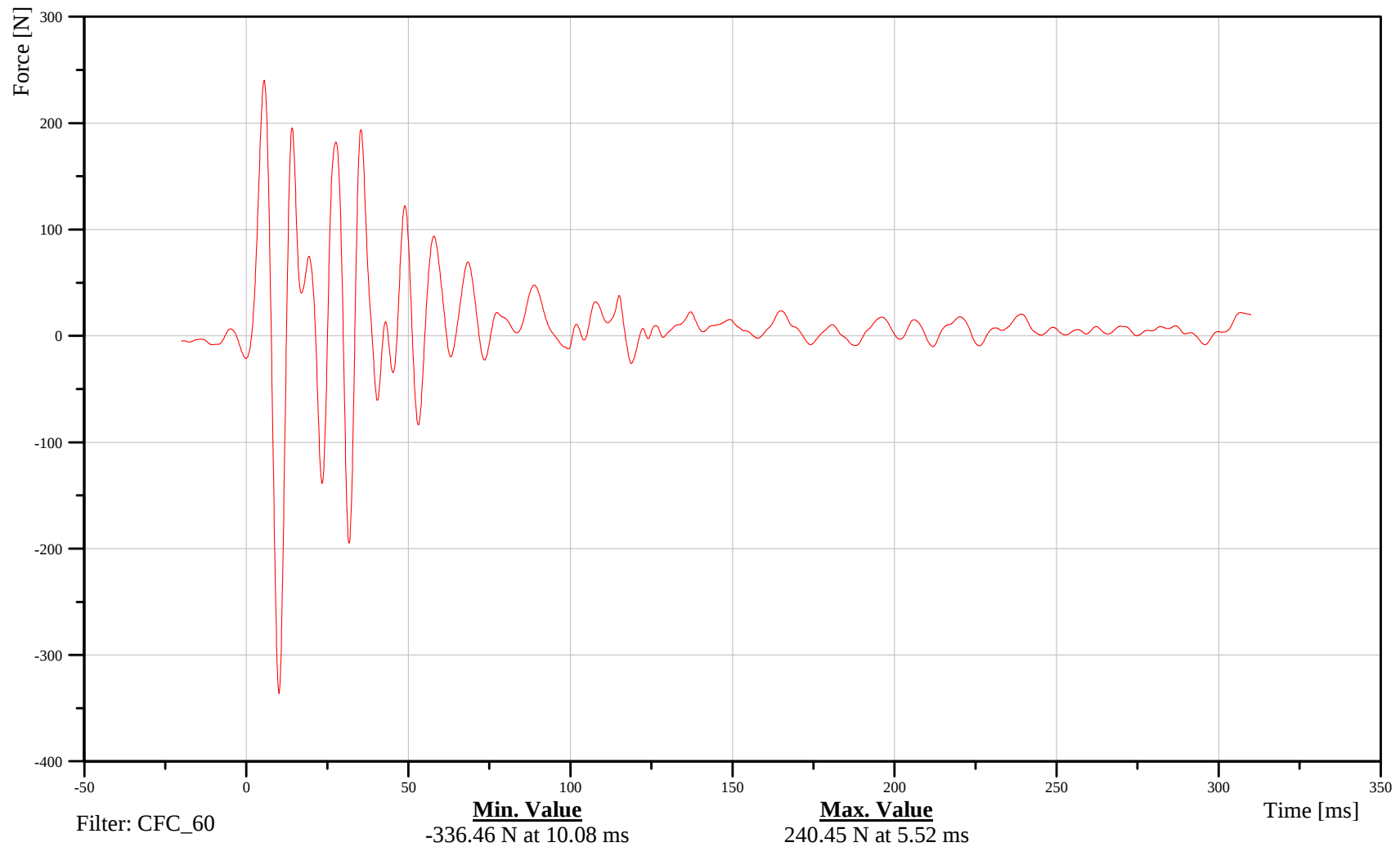
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000D16FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 5 Column 1

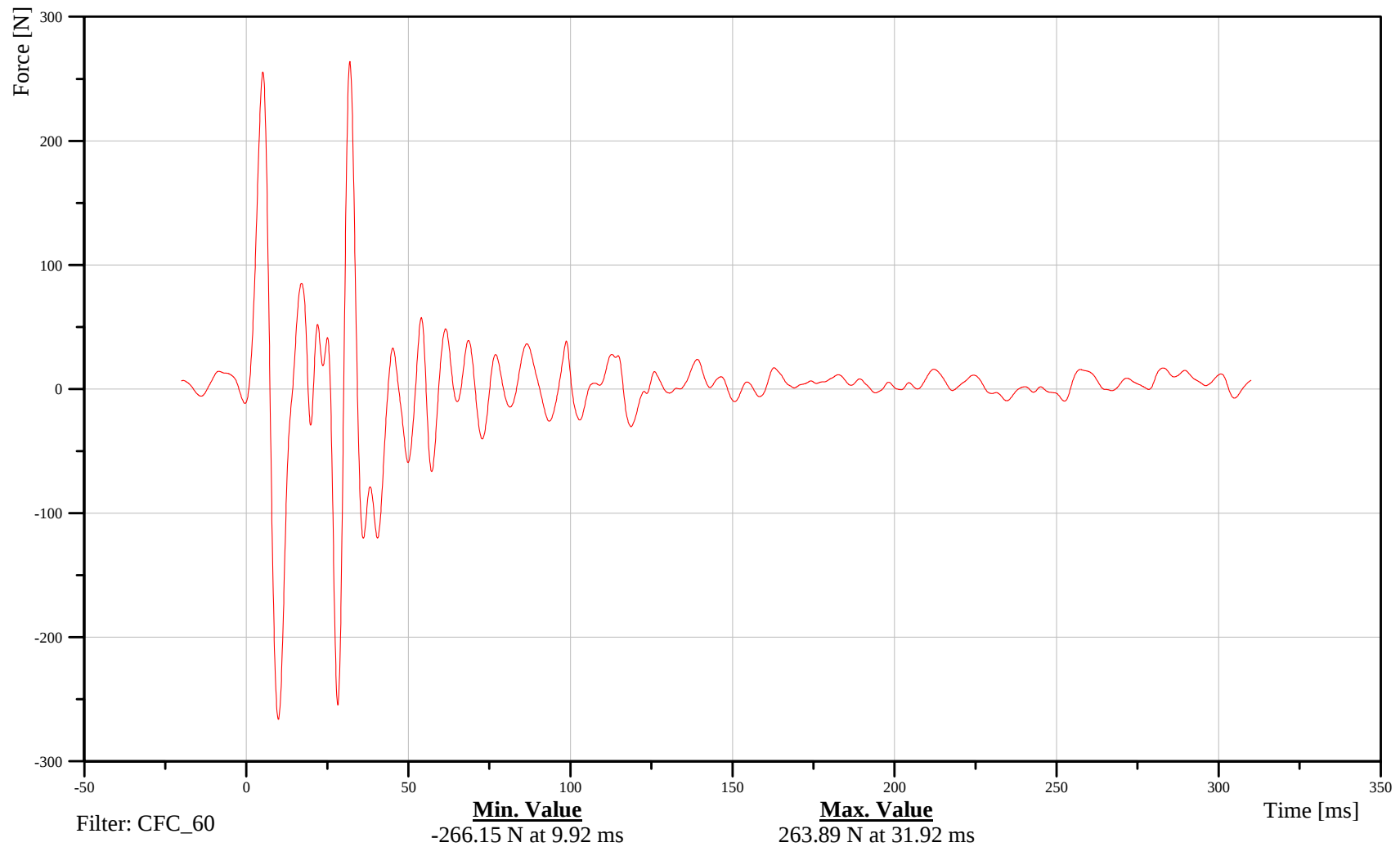
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Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 5 Column 2

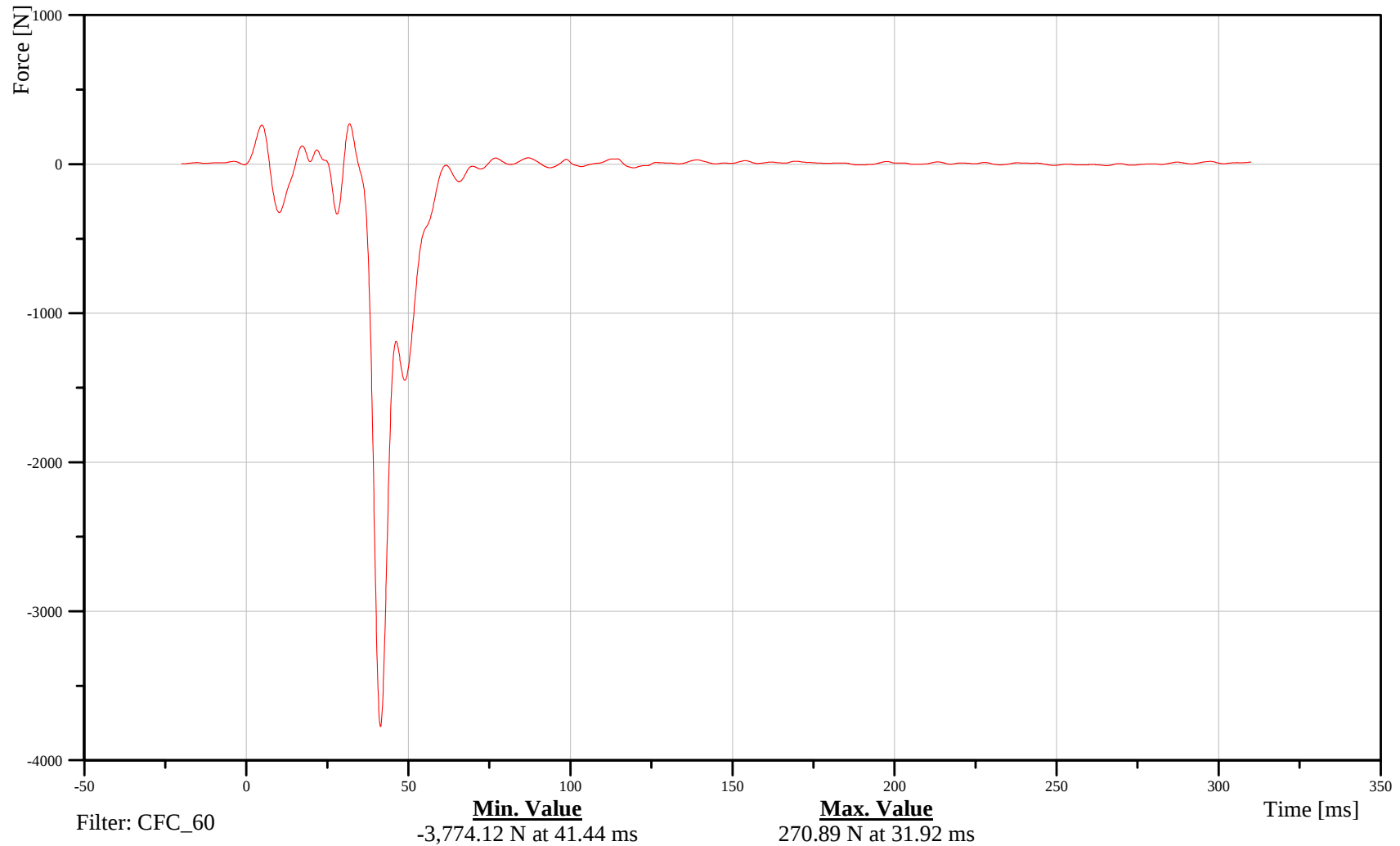
Date: 05/12/2006
Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

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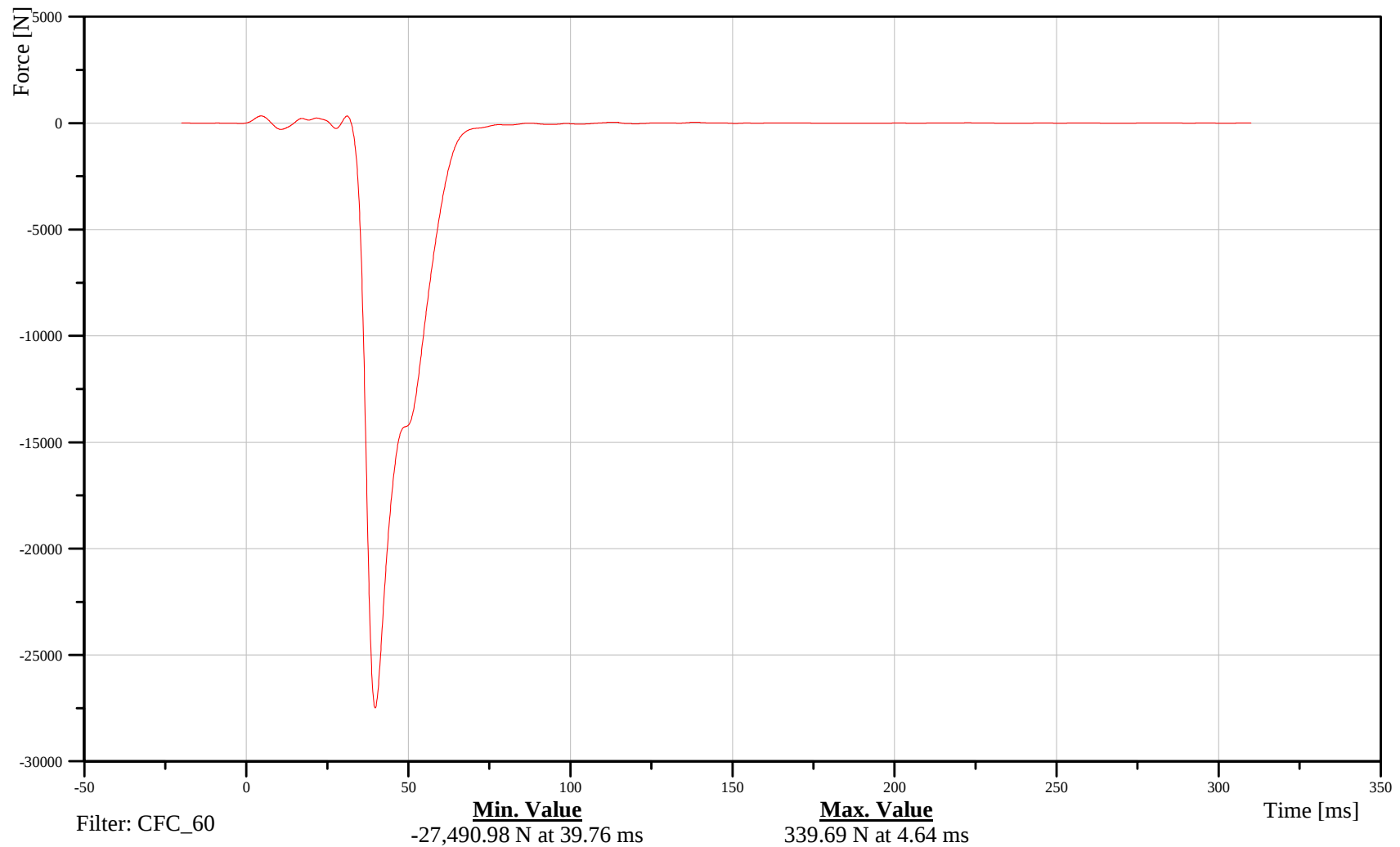
Date: 05/12/2006
Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 5 Column 4

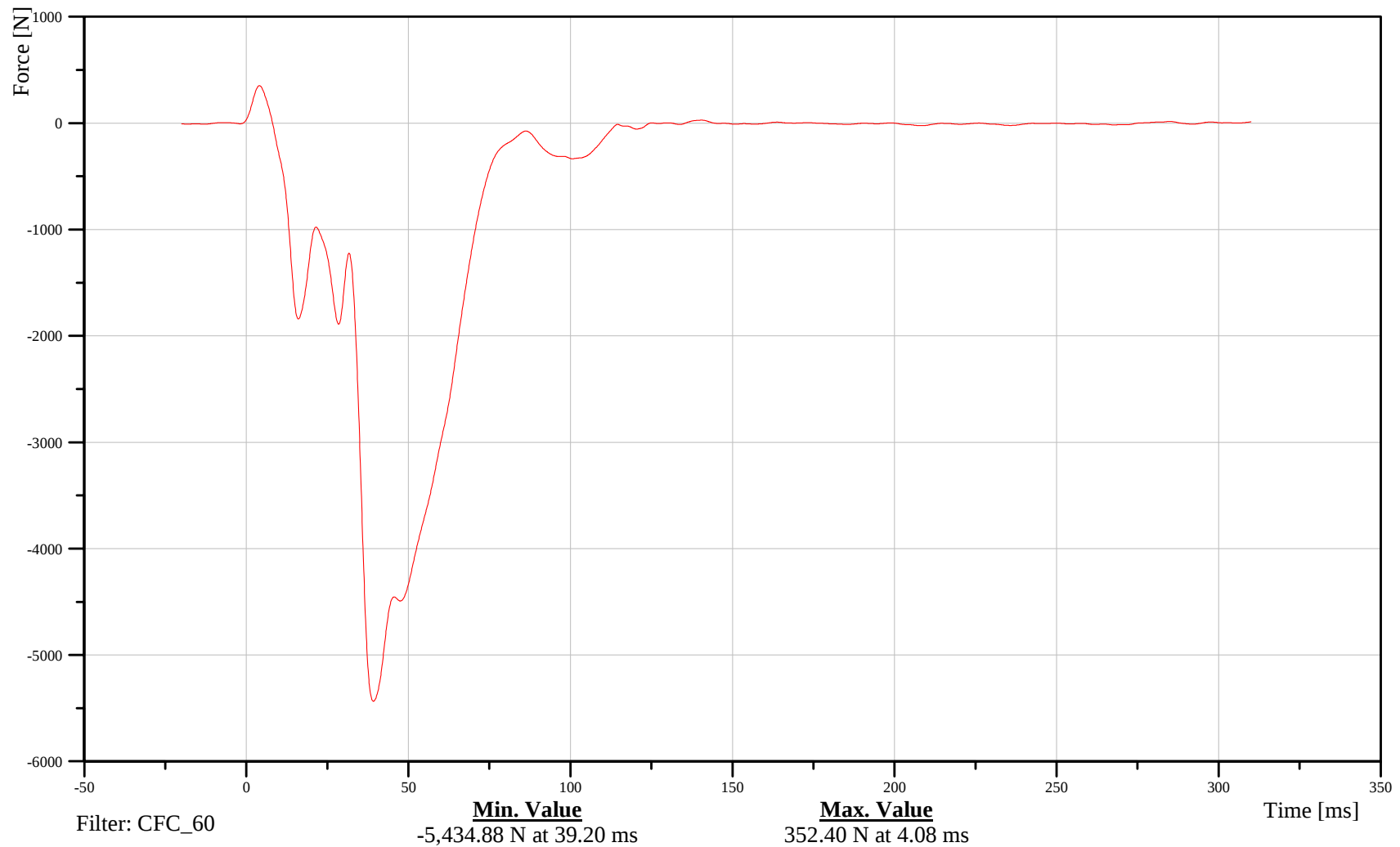
Date: 05/12/2006
Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 5 Column 5

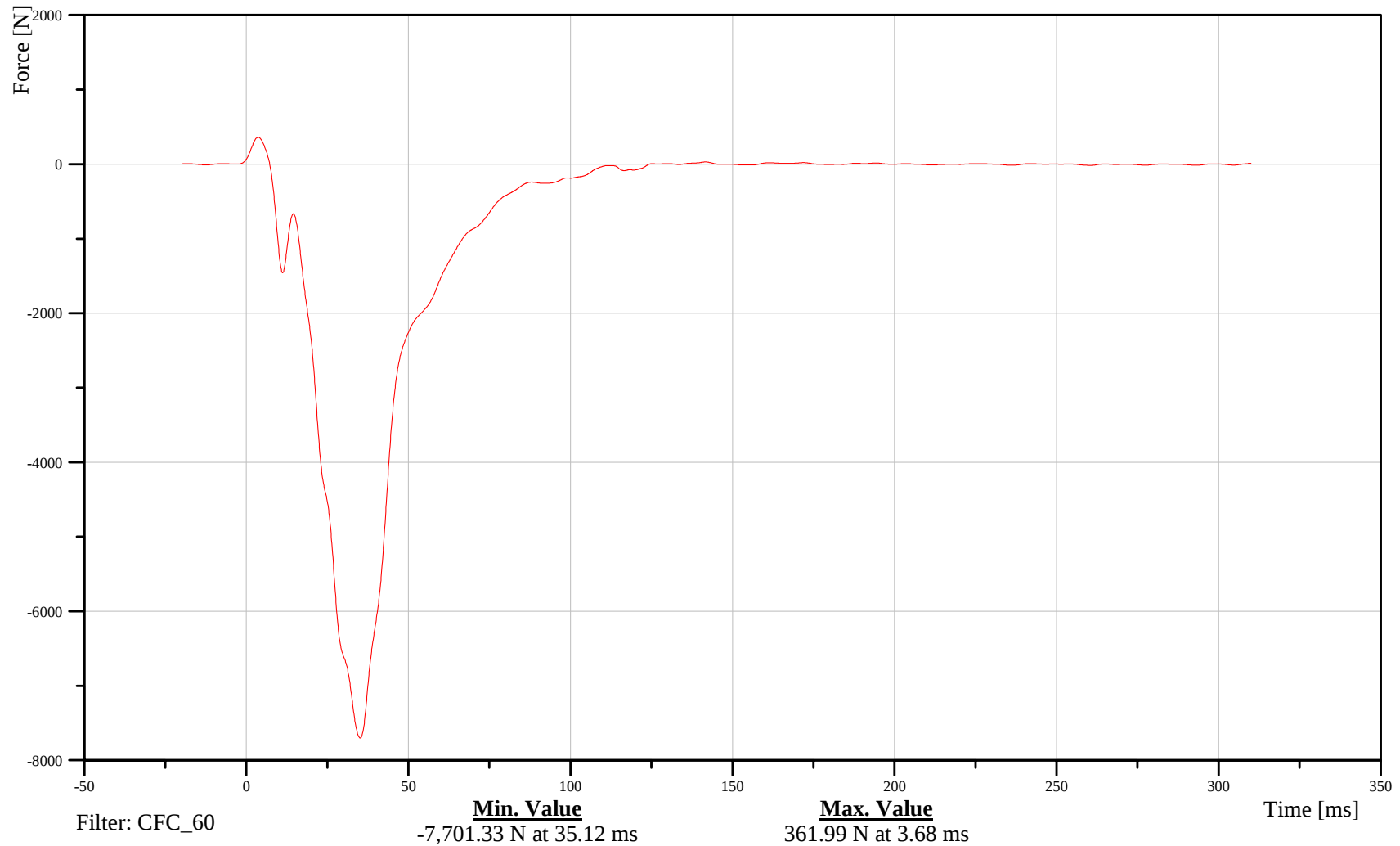
Date: 05/12/2006
Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

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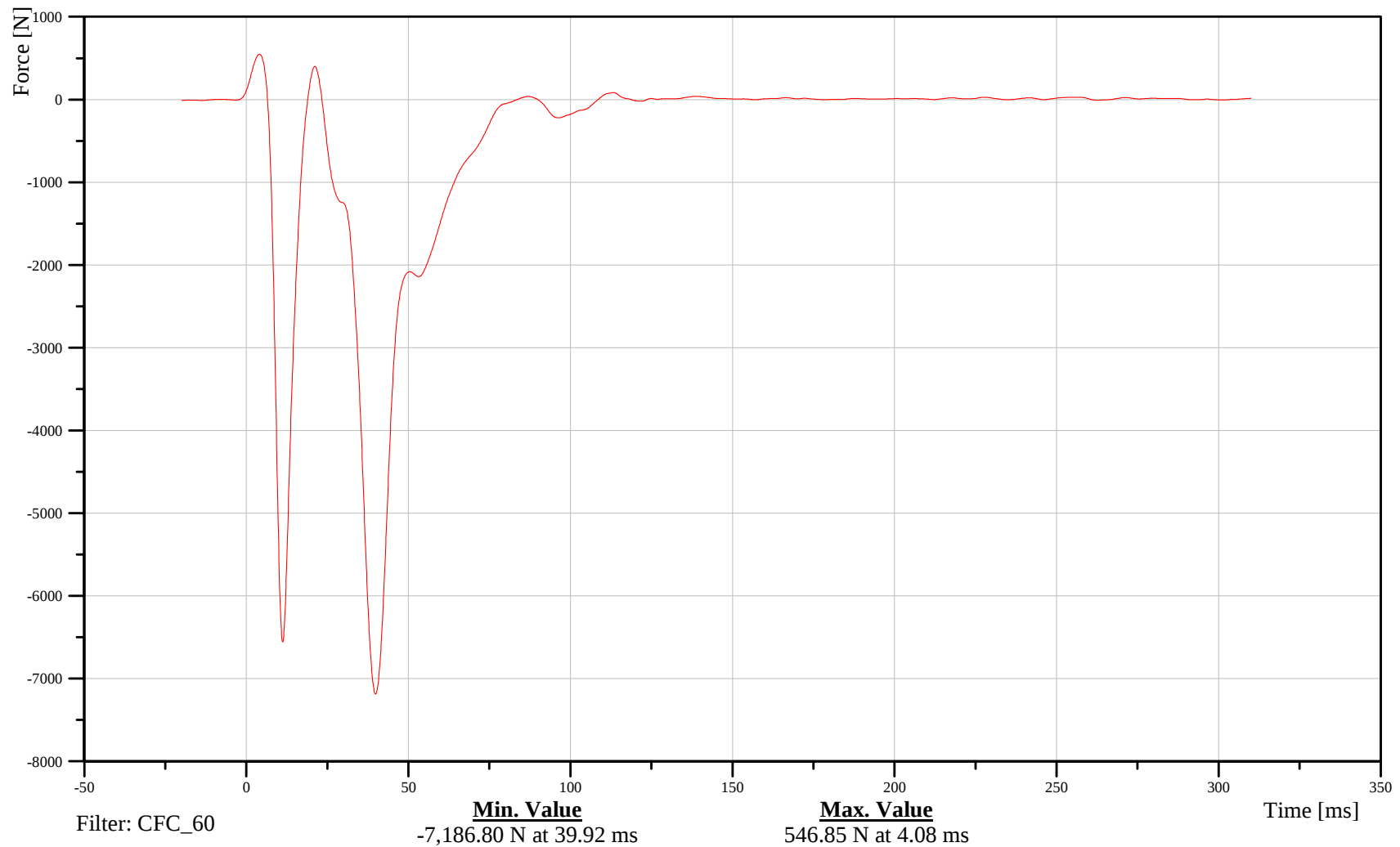
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000E06FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 5 Column 7

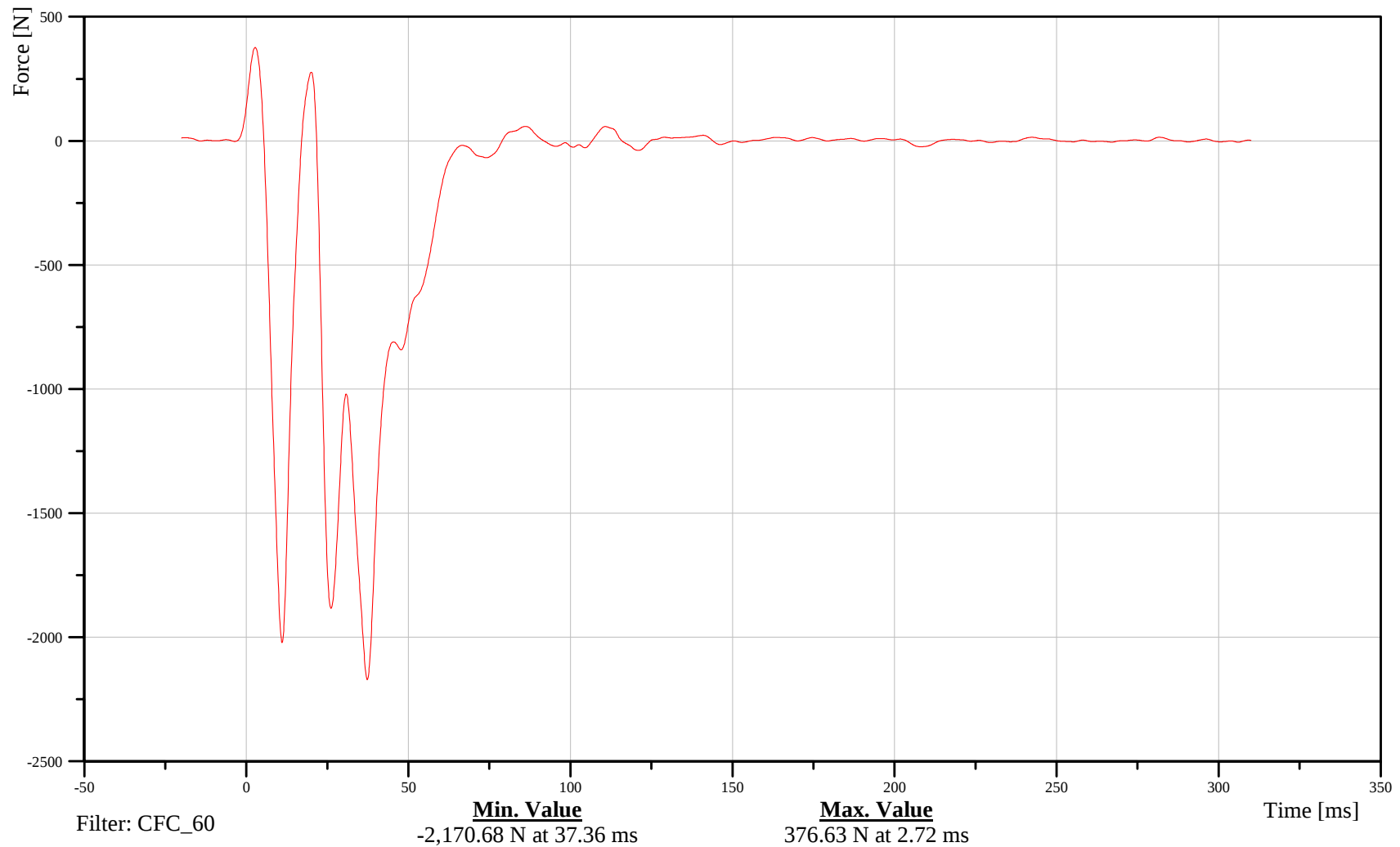
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000E07FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 5 Column 8

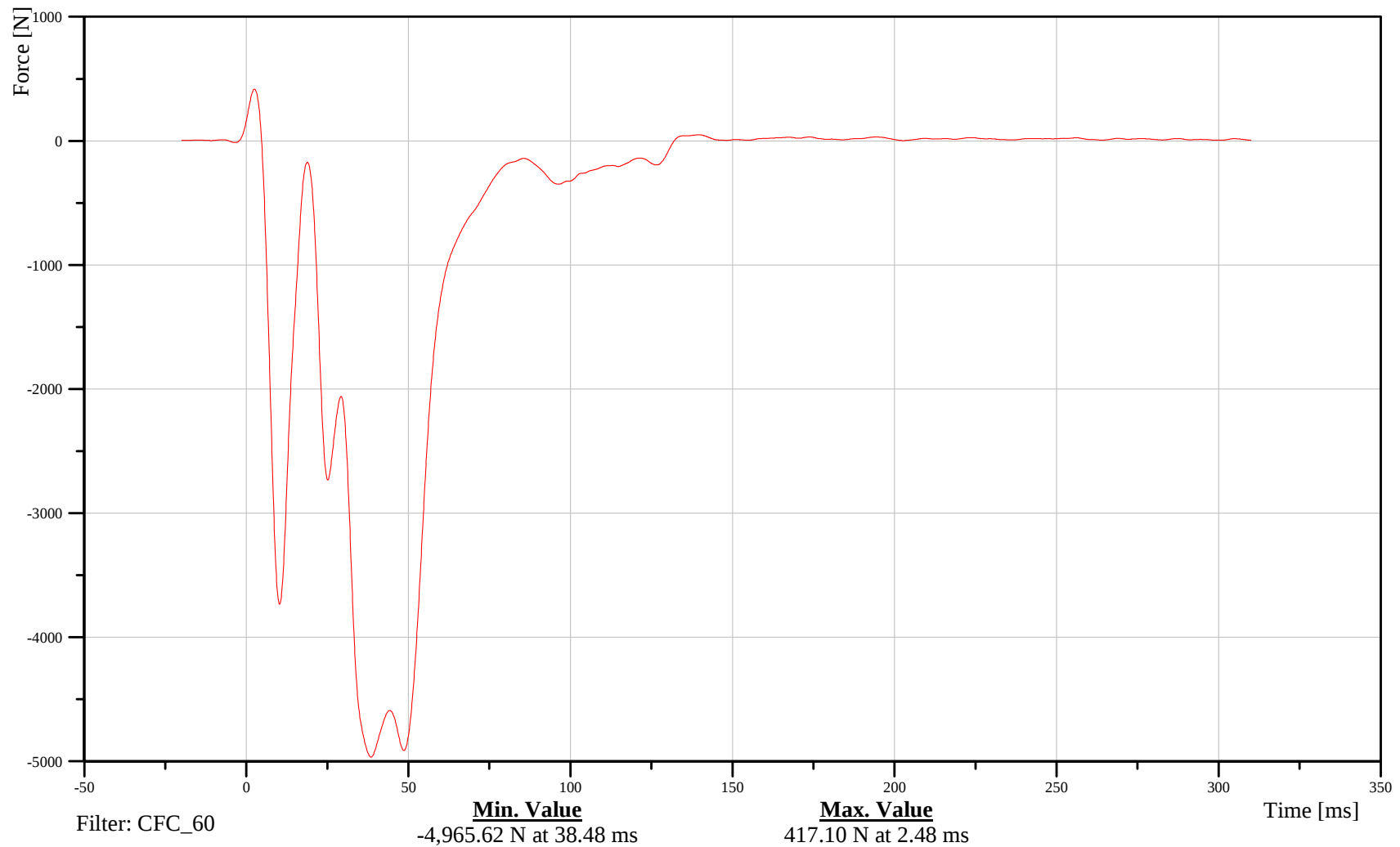
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000E08FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 5 Column 9

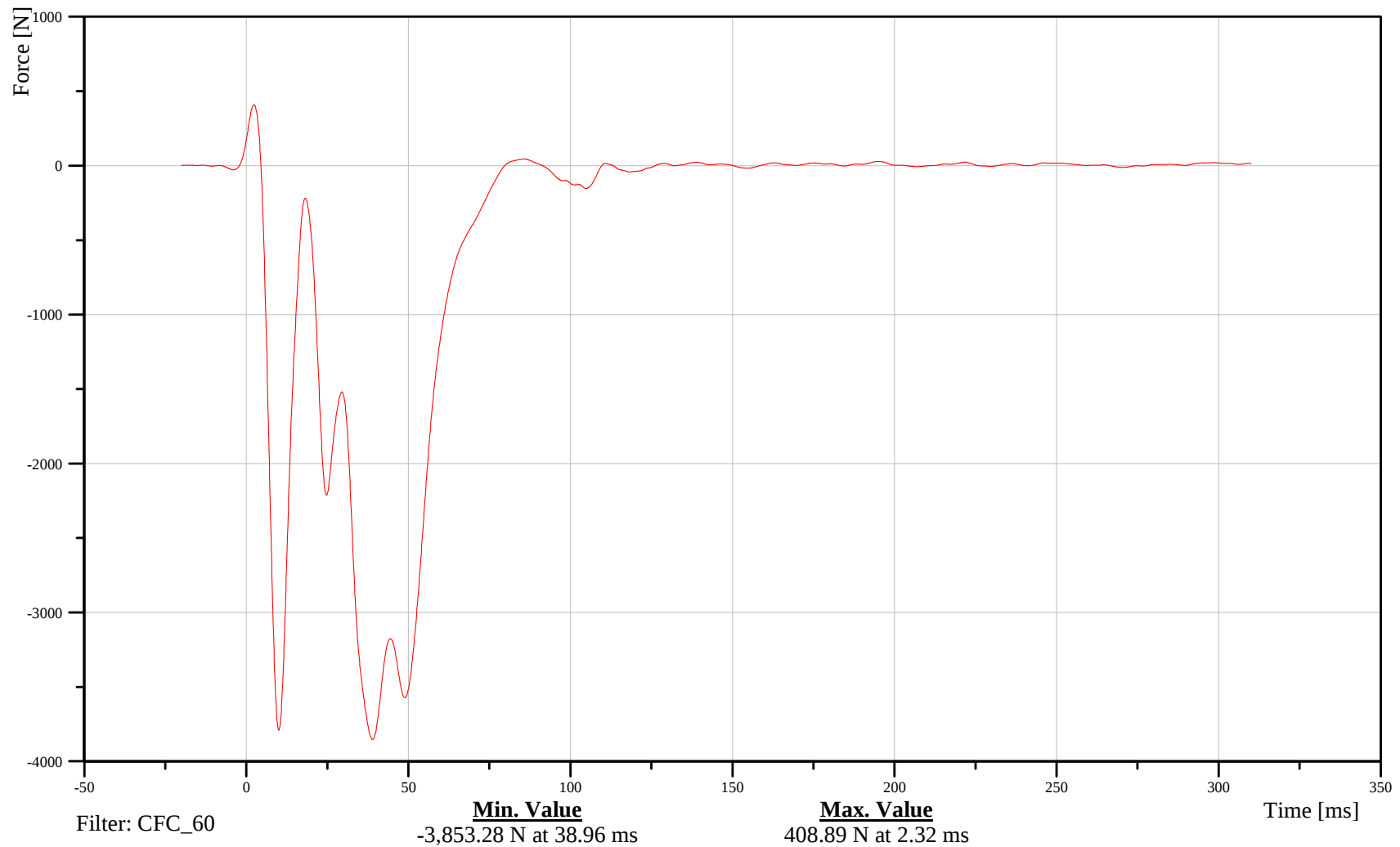
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000E09FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 5 Column 10

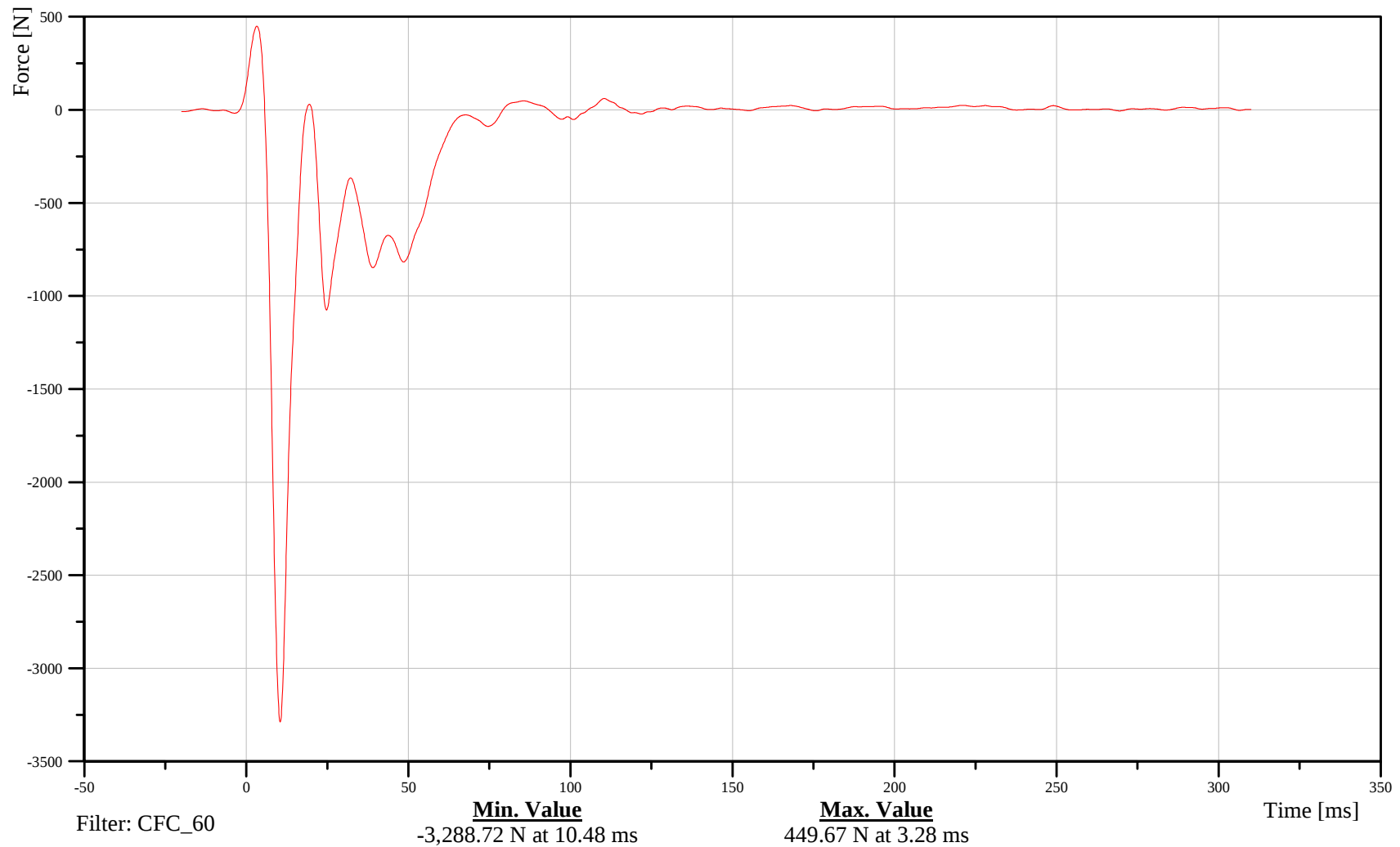
Date: 05/12/2006
Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 5 Column 11

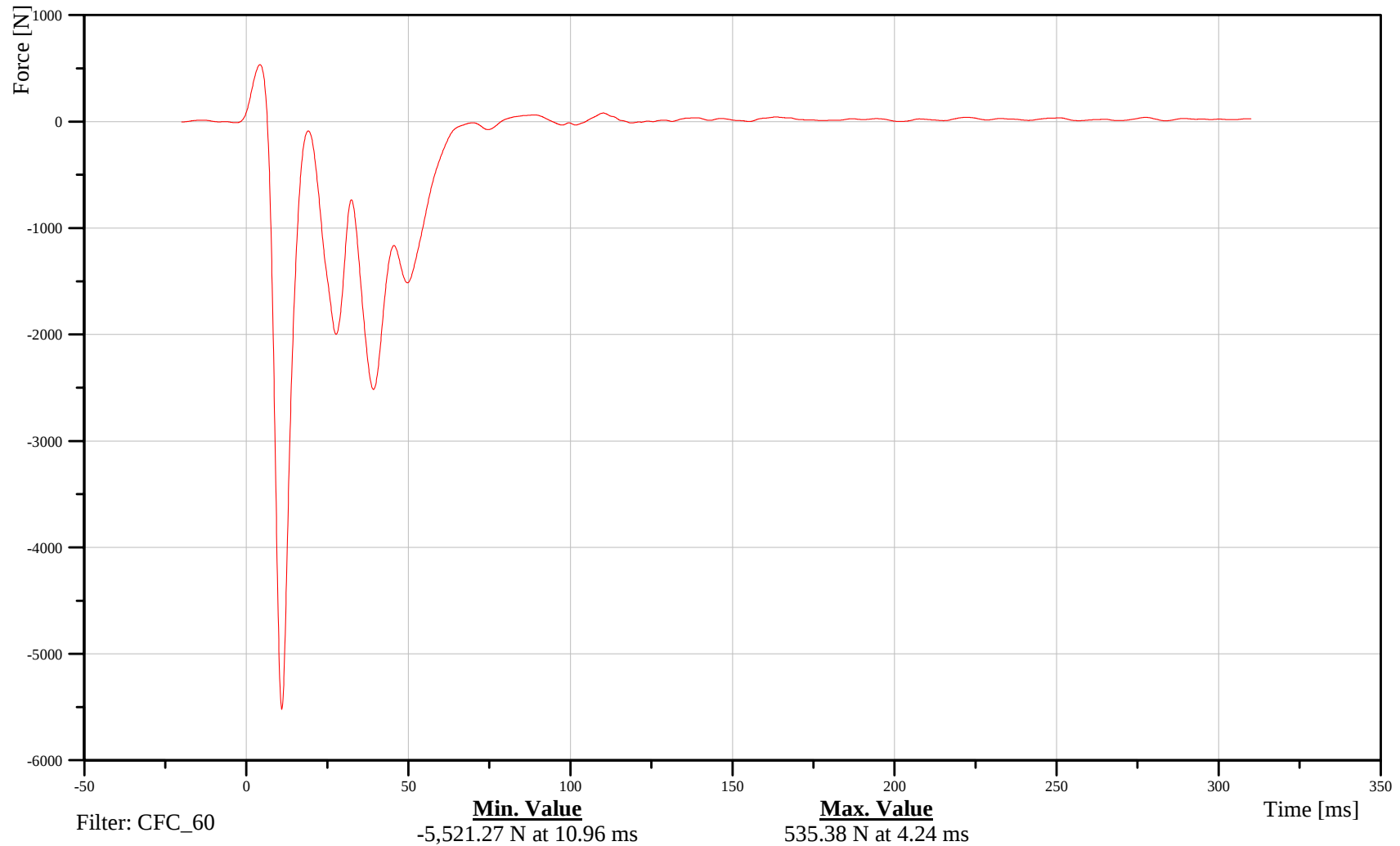
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Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 5 Column 12

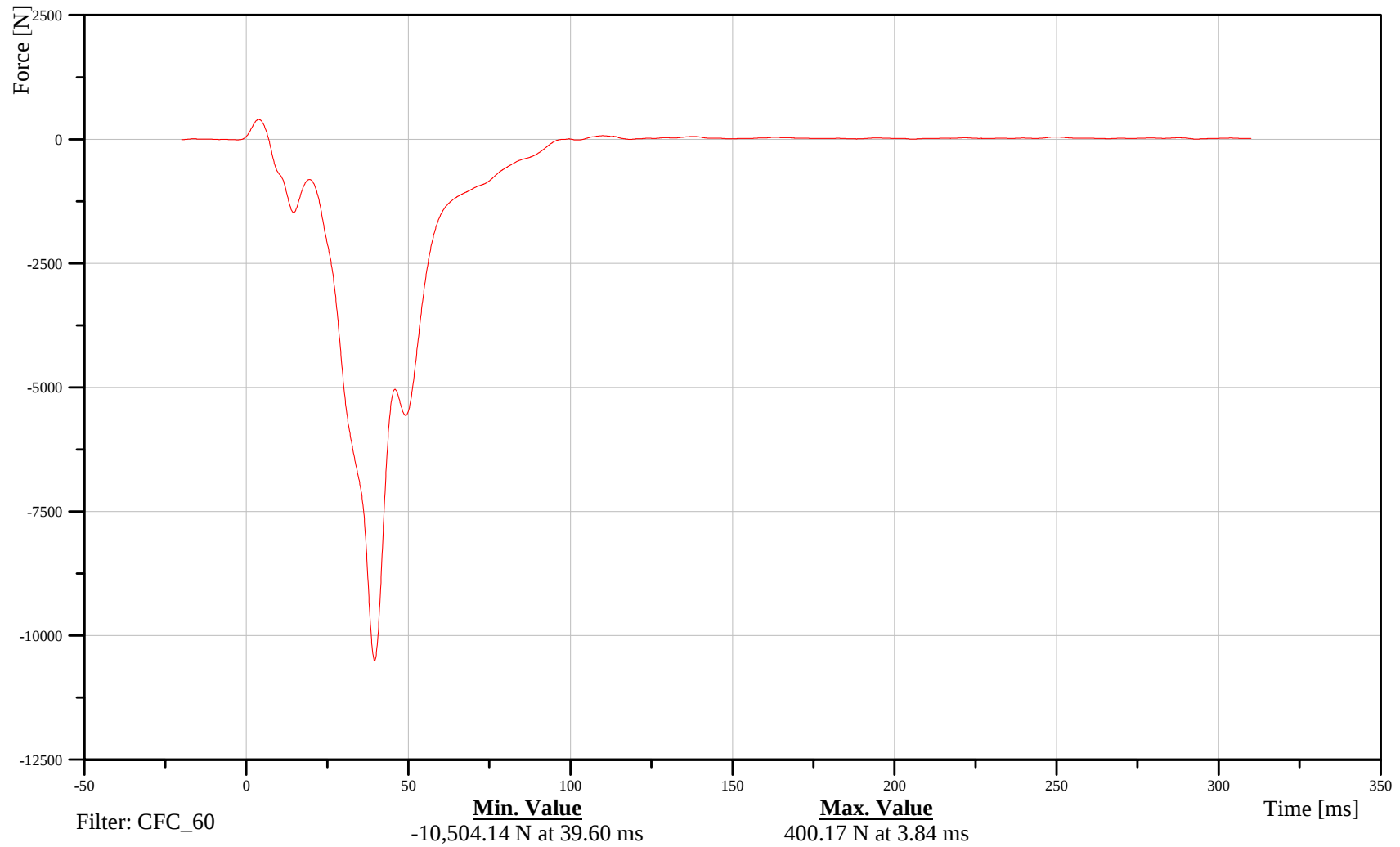
Date: 05/12/2006
Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 5 Column 13

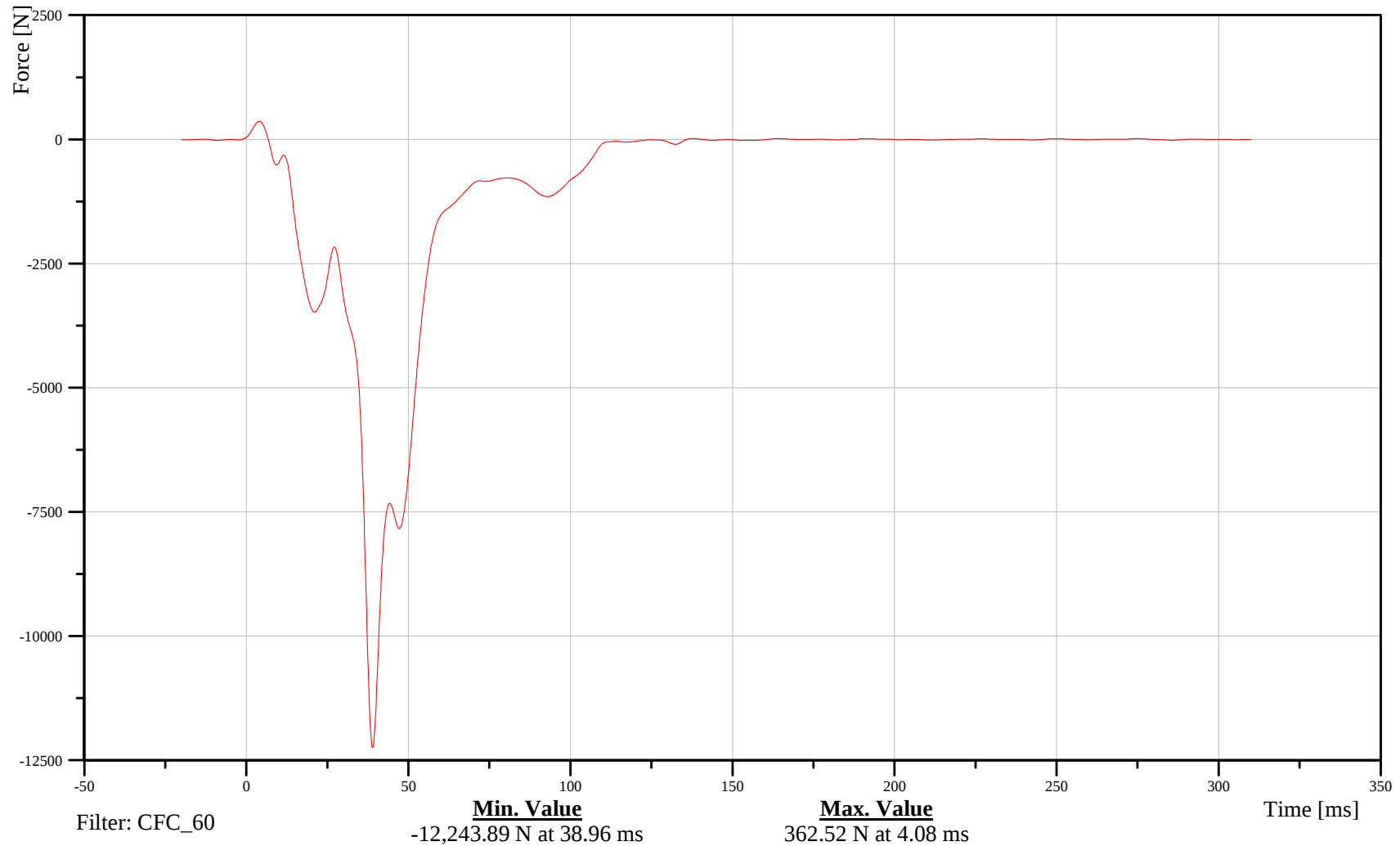
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000E13FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 5 Column 14

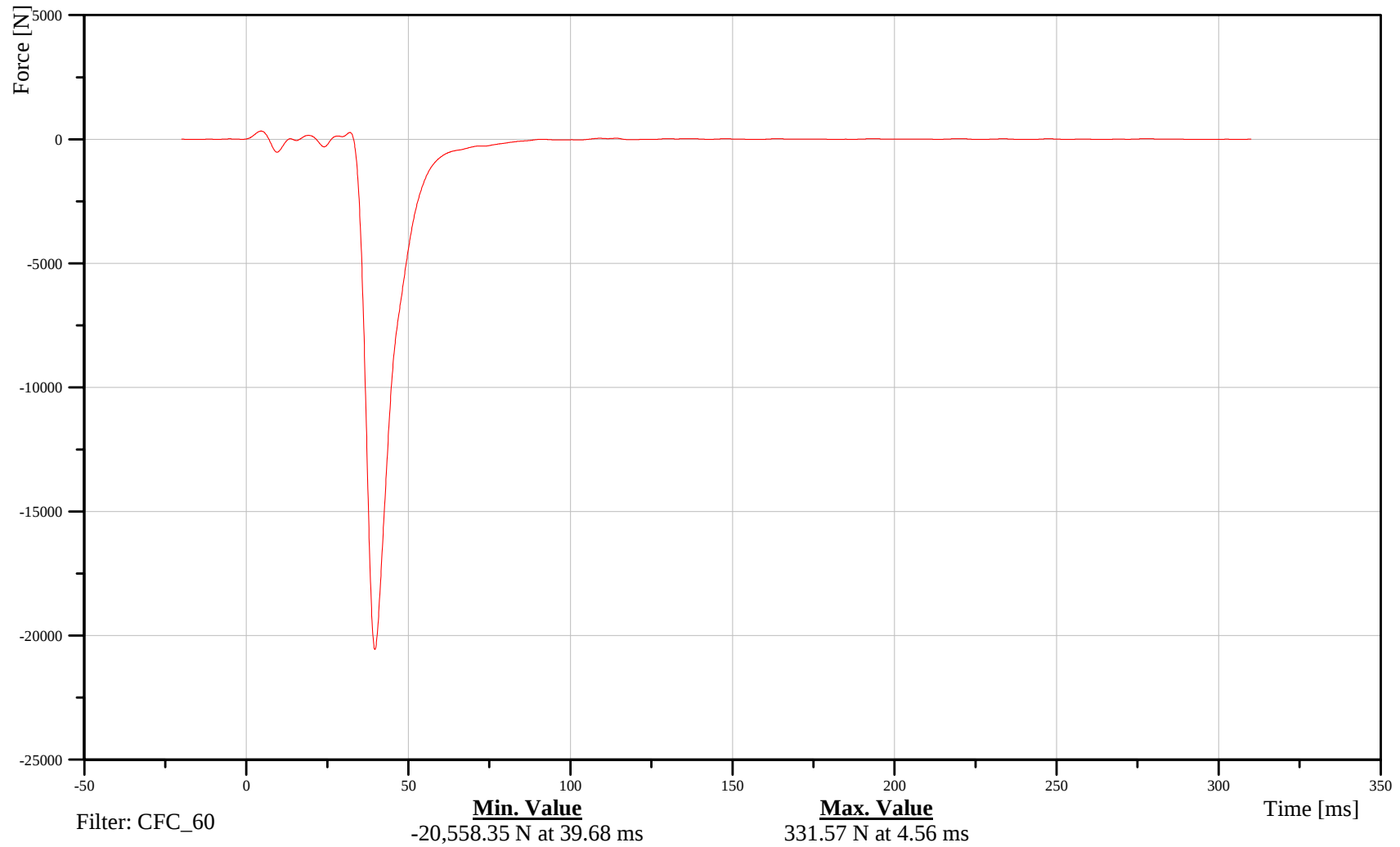
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000E14FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 5 Column 15

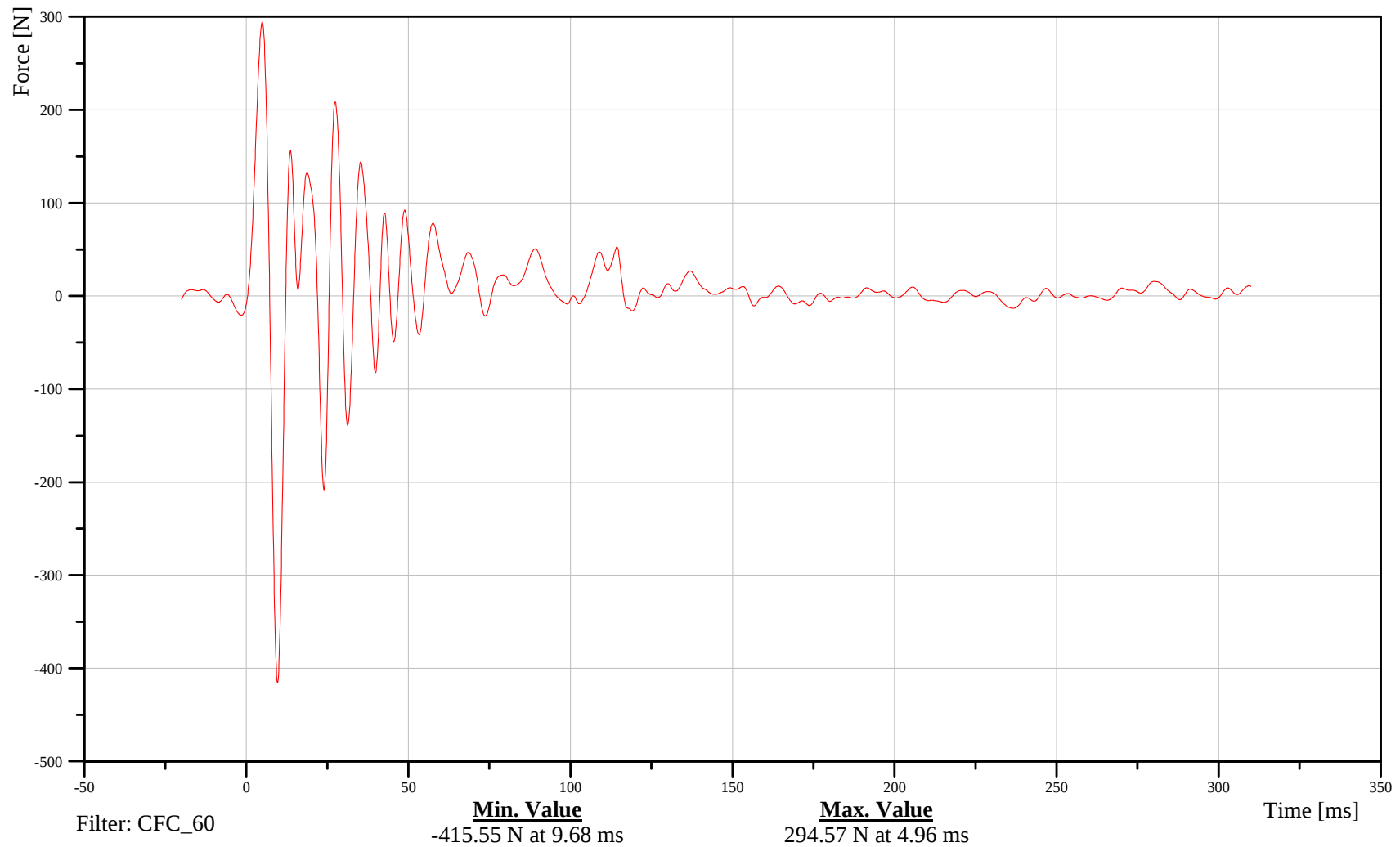
Date: 05/12/2006
Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 5 Column 16

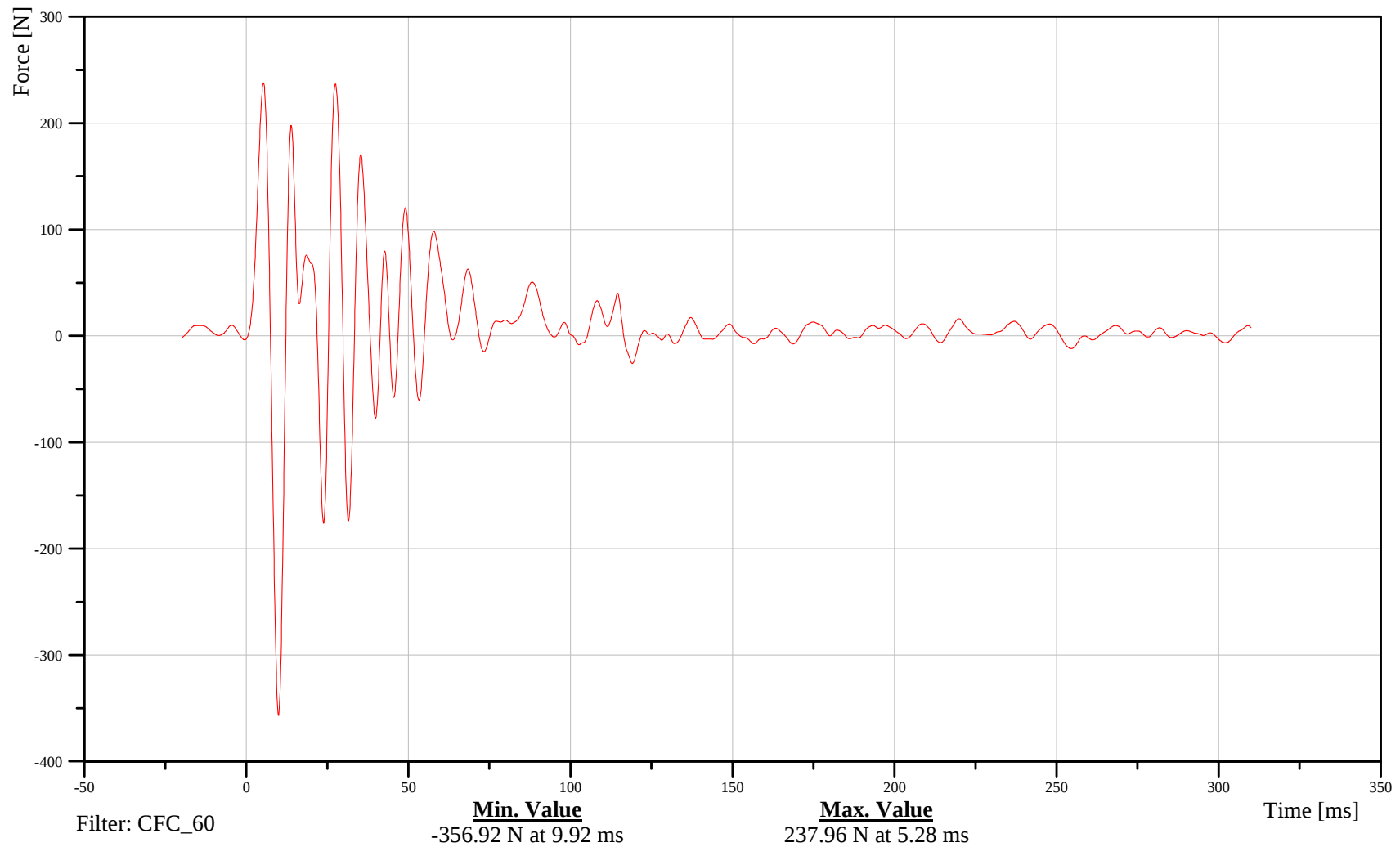
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000E16FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 4 Column 1

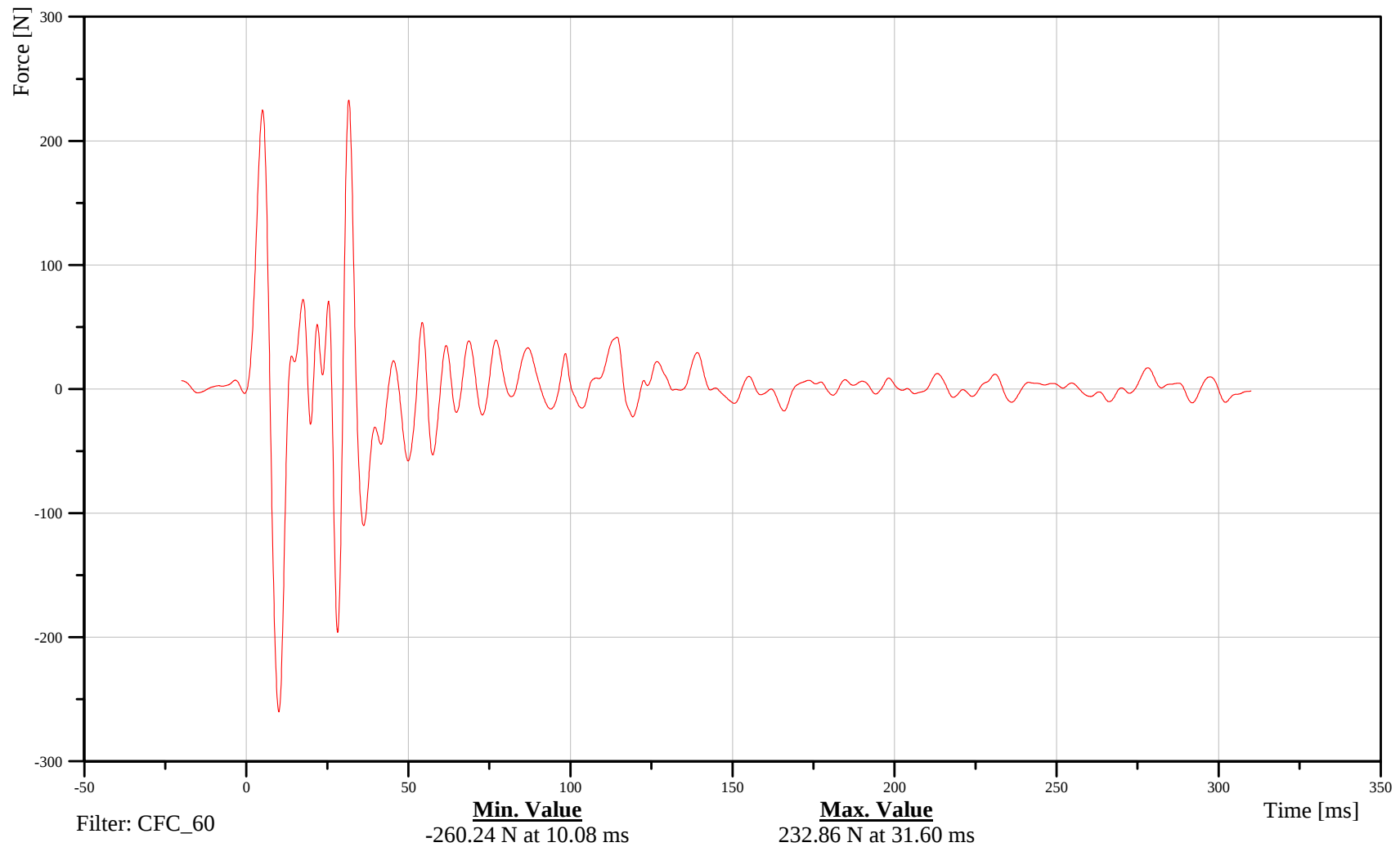
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000F01FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 4 Column 2

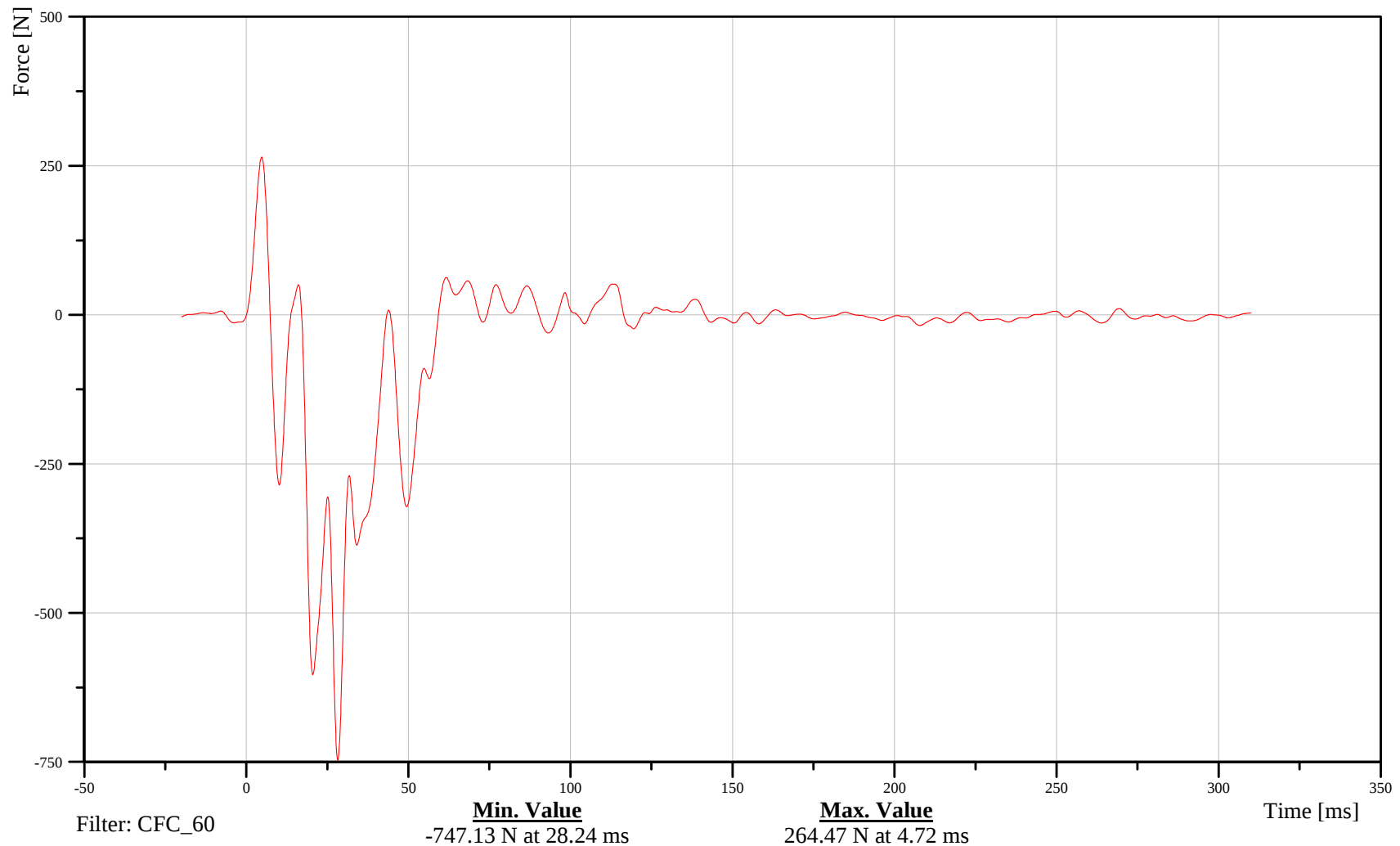
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000F02FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 4 Column 3

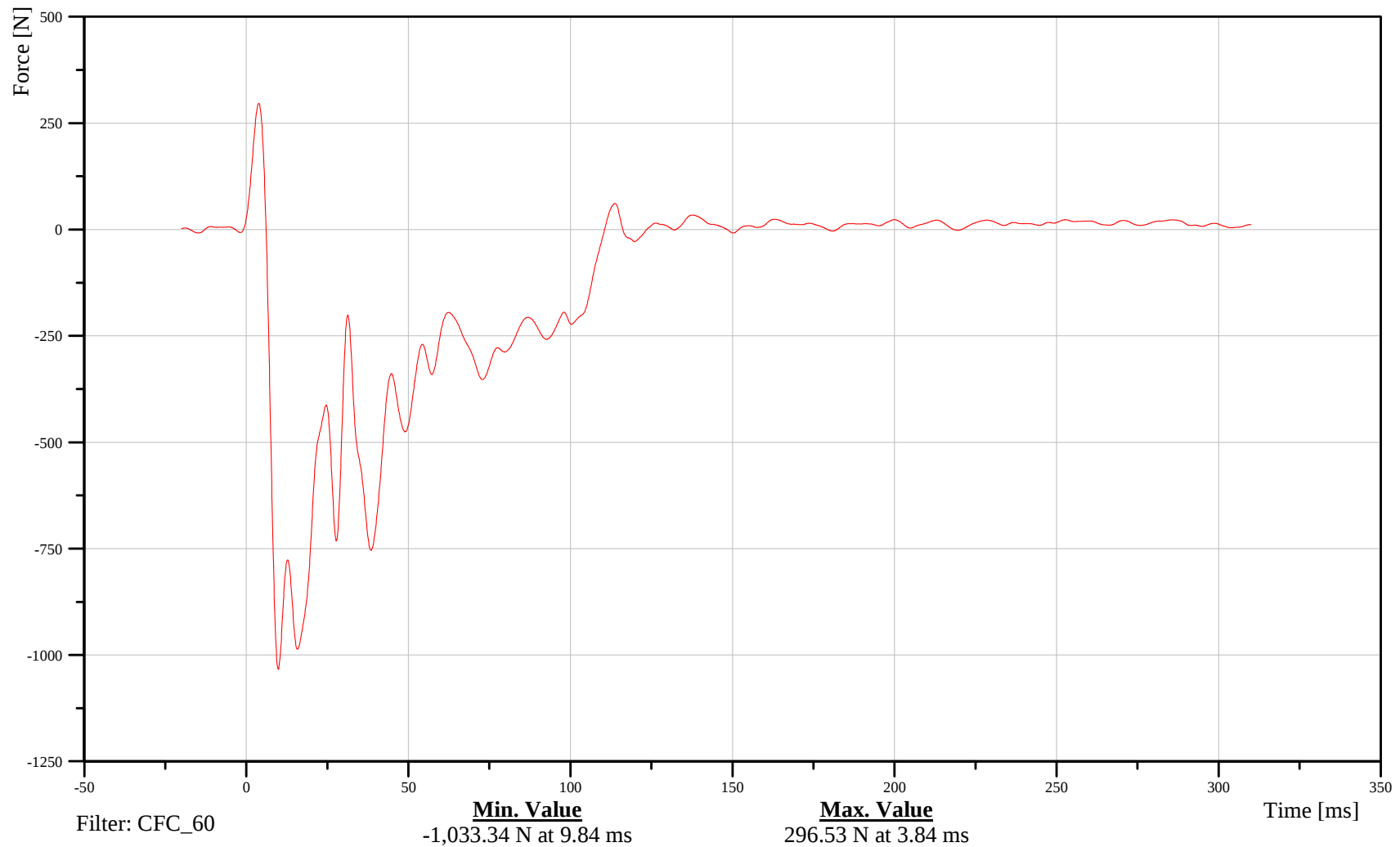
Date: 05/12/2006
Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 4 Column 4

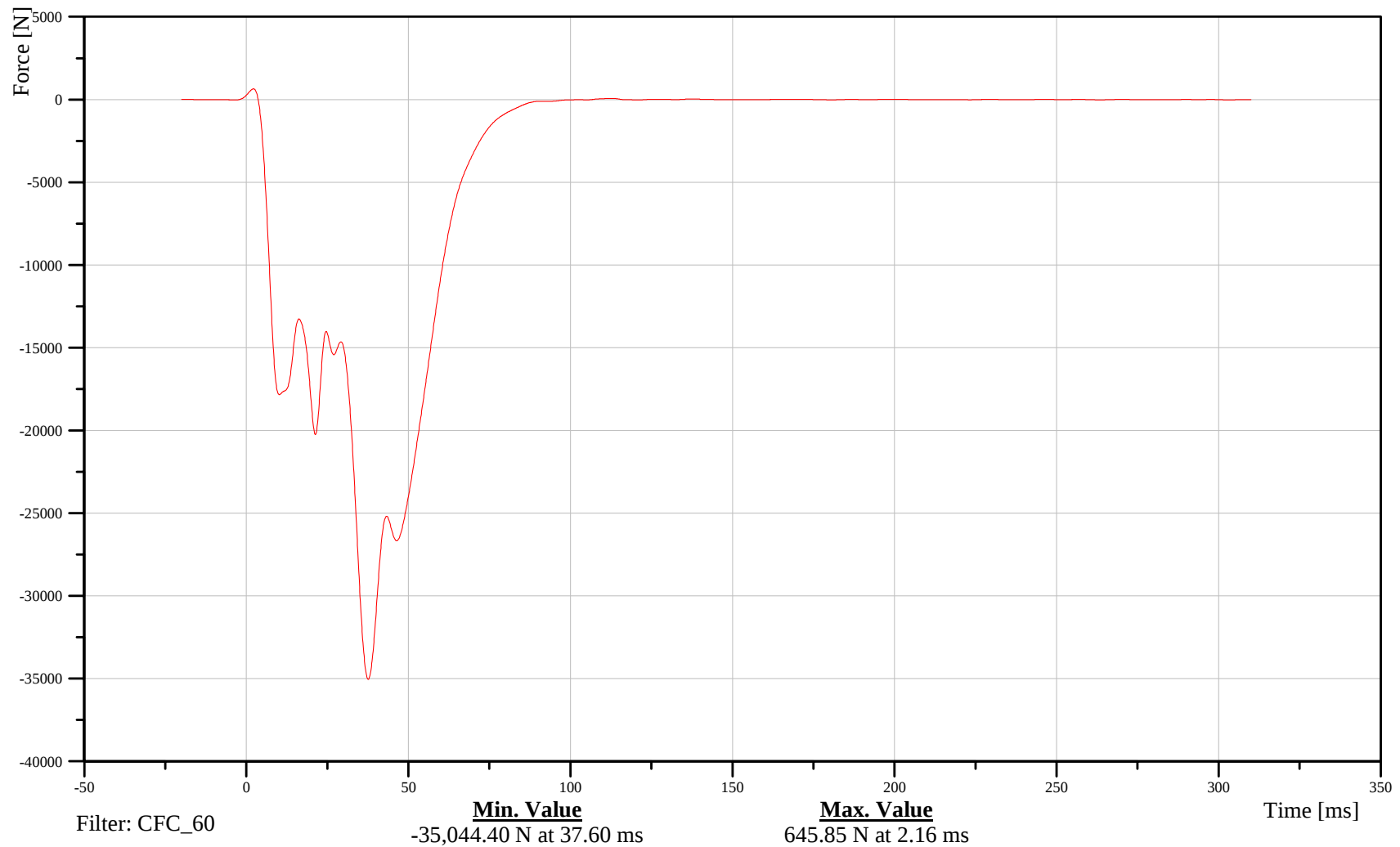
Date: 05/12/2006
Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 4 Column 5

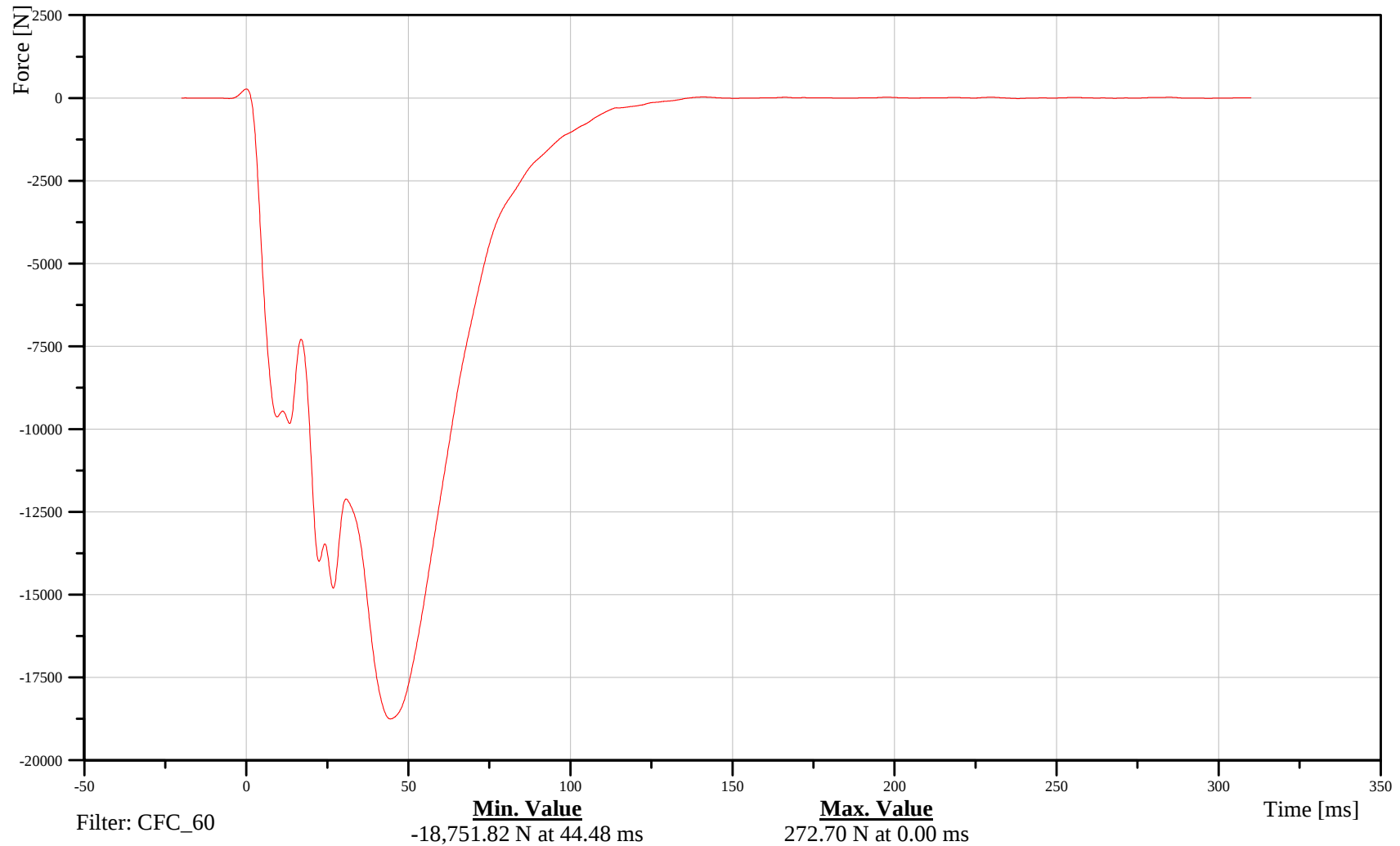
Date: 05/12/2006
Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 4 Column 6

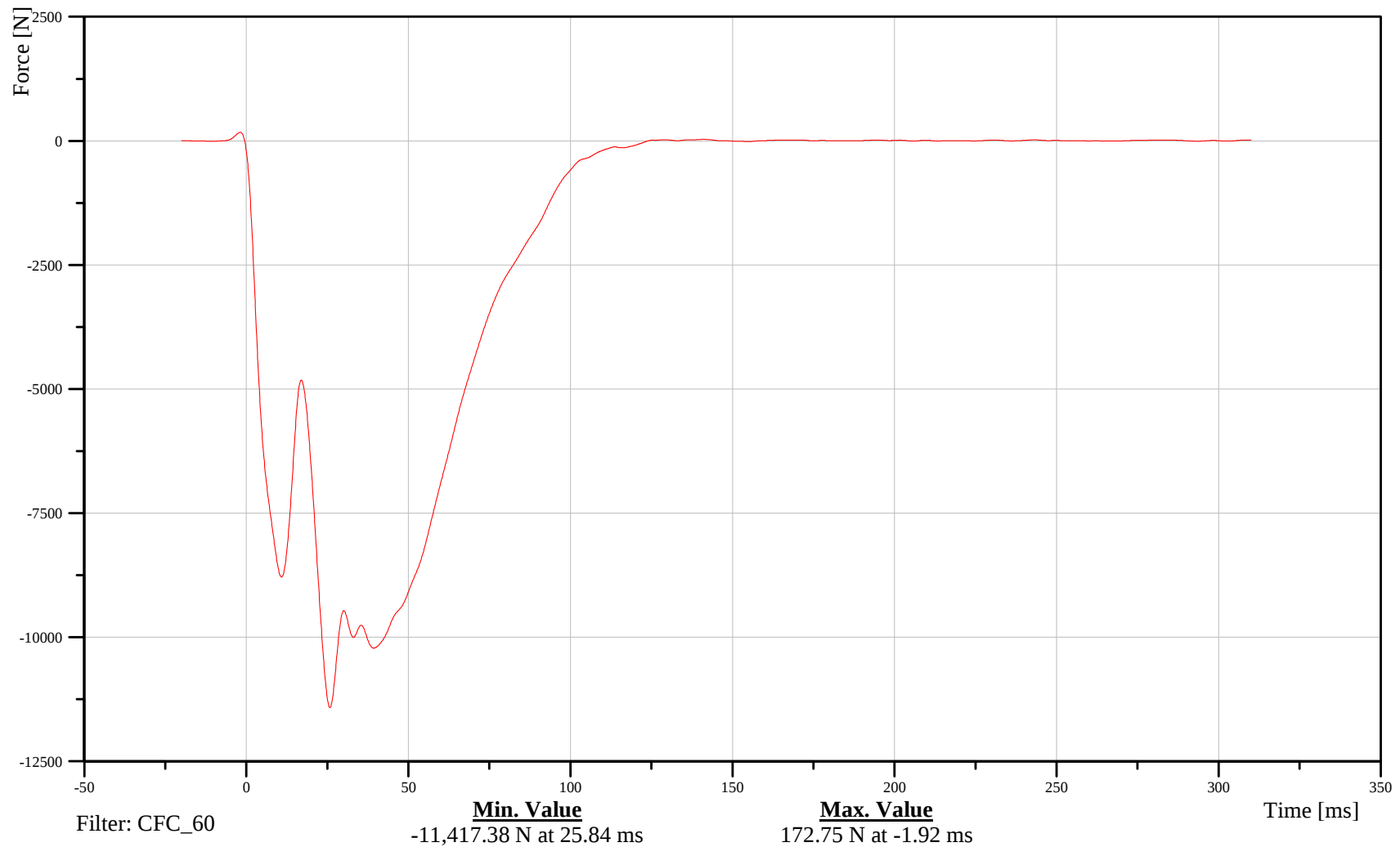
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000F06FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 4 Column 7

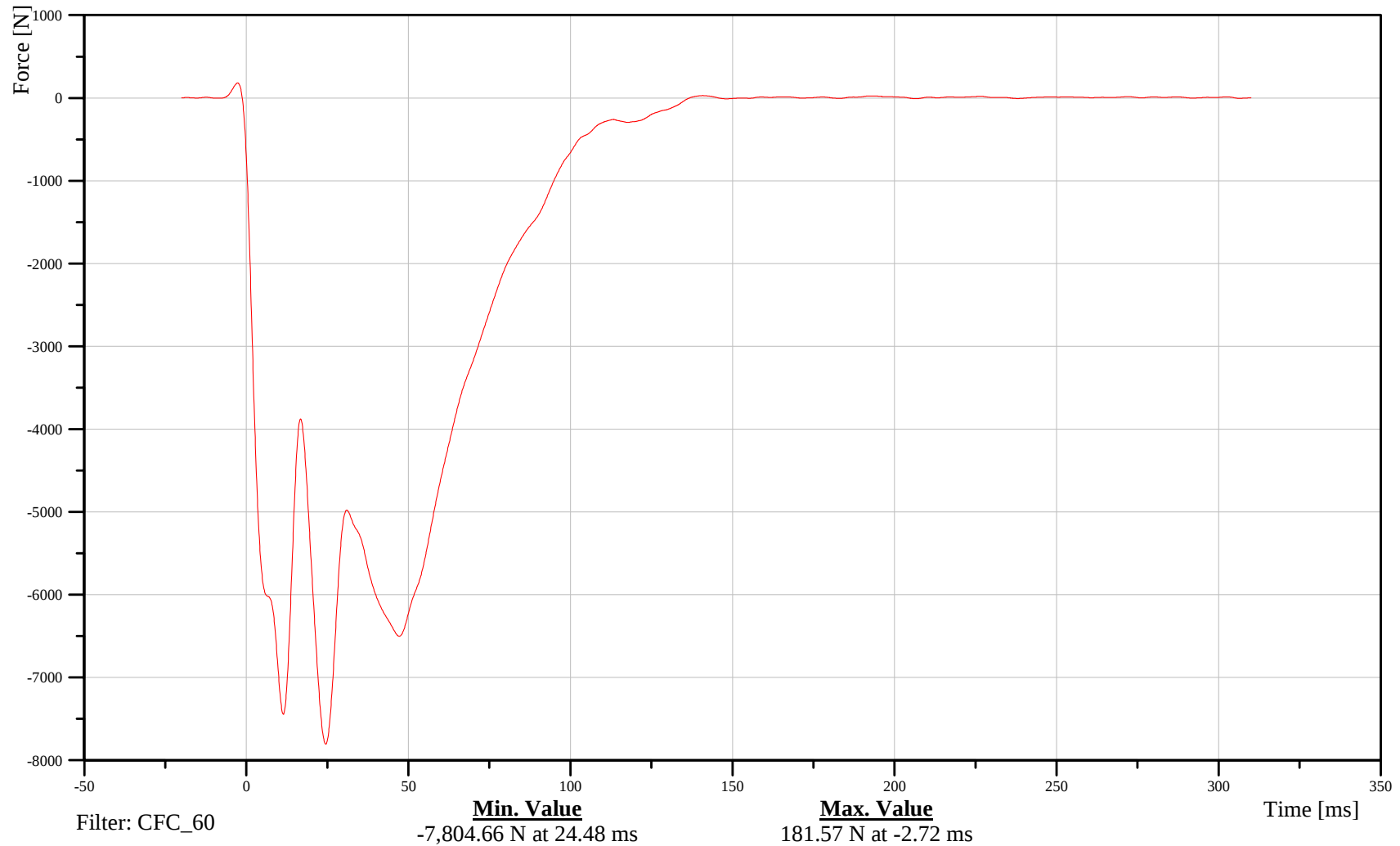
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000F07FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 4 Column 8

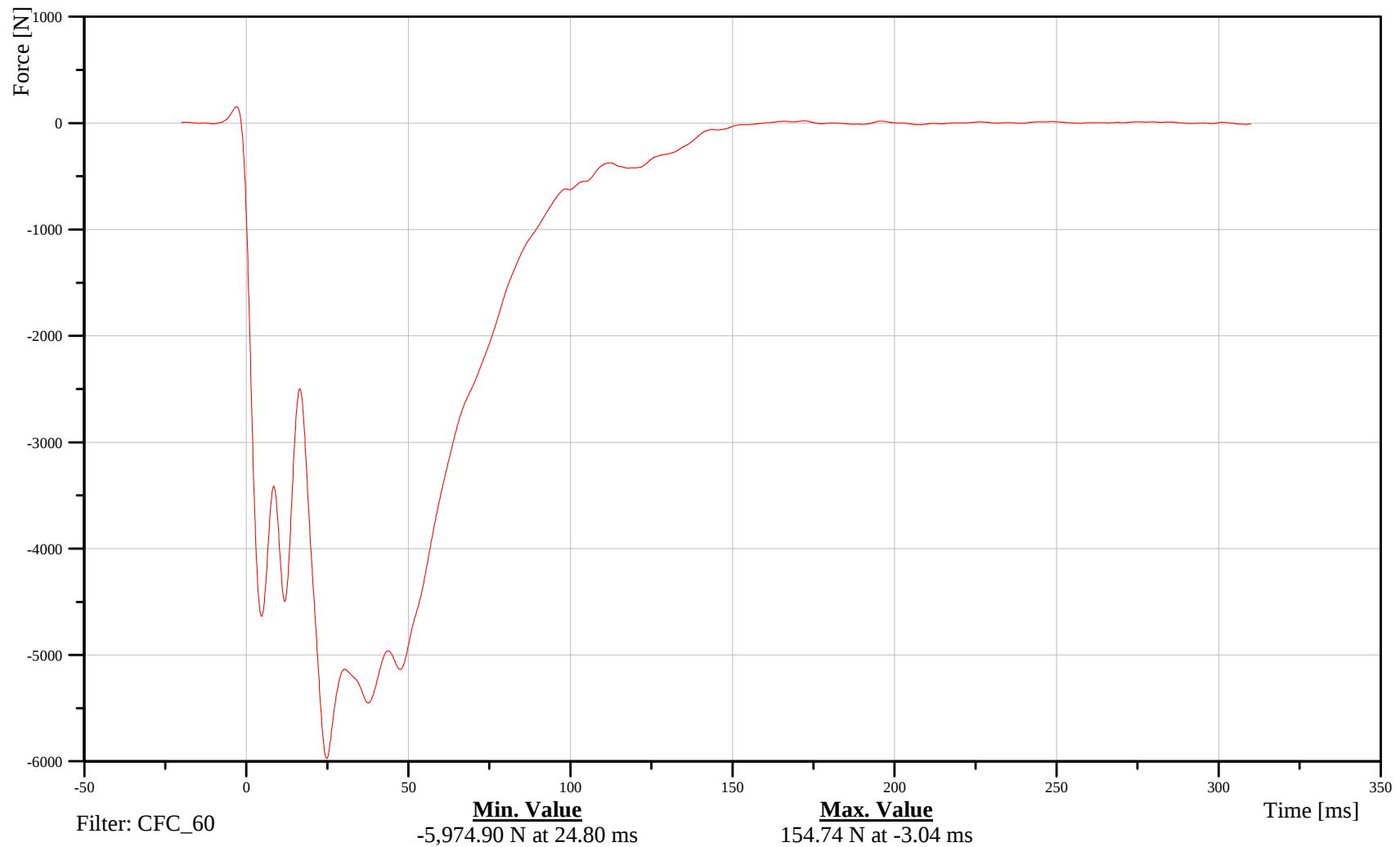
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000F08FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 4 Column 9

Date: 05/12/2006

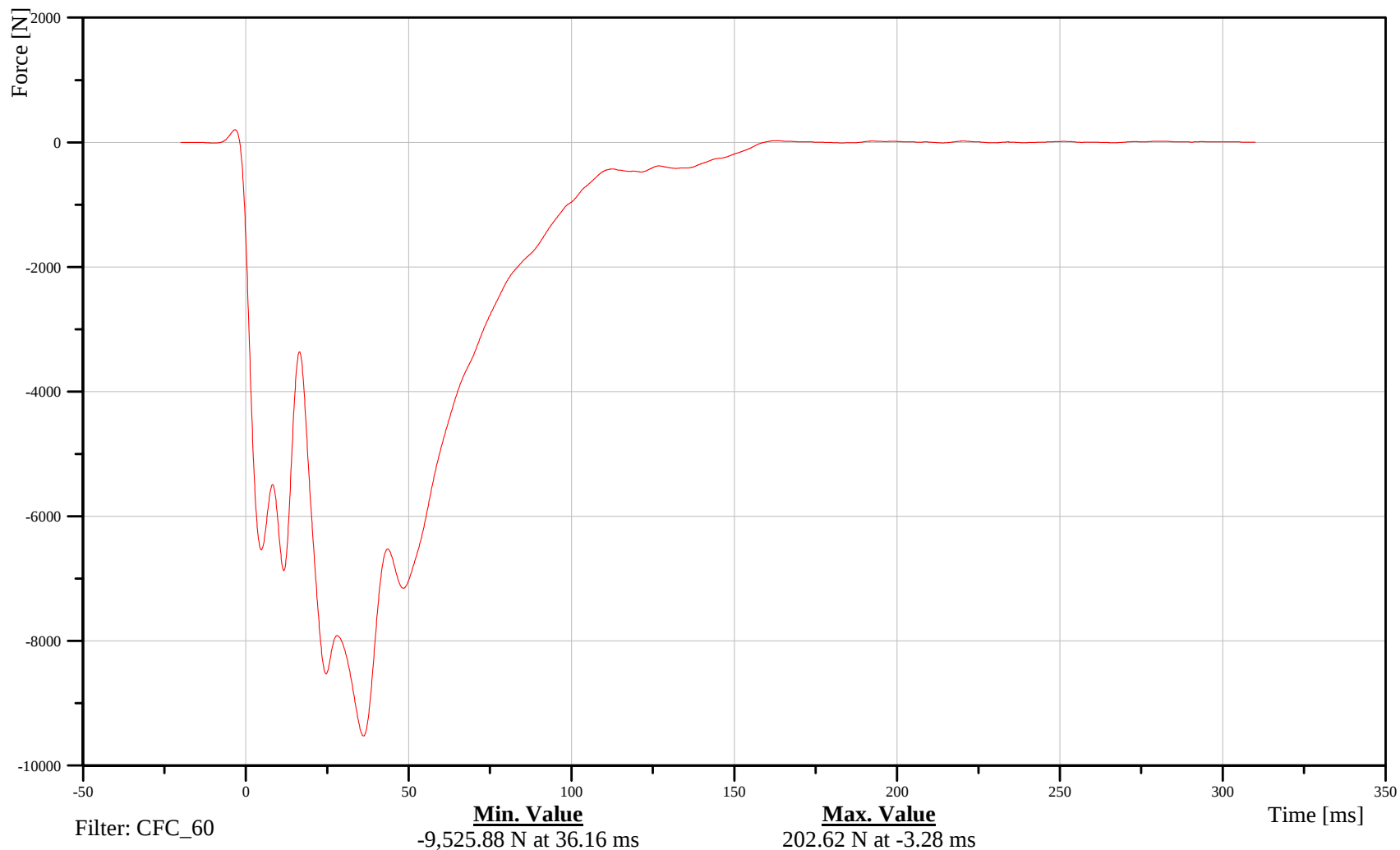
Time: 15:38

Customer: VRTC

L0FBAR000F09FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 4 Column 10

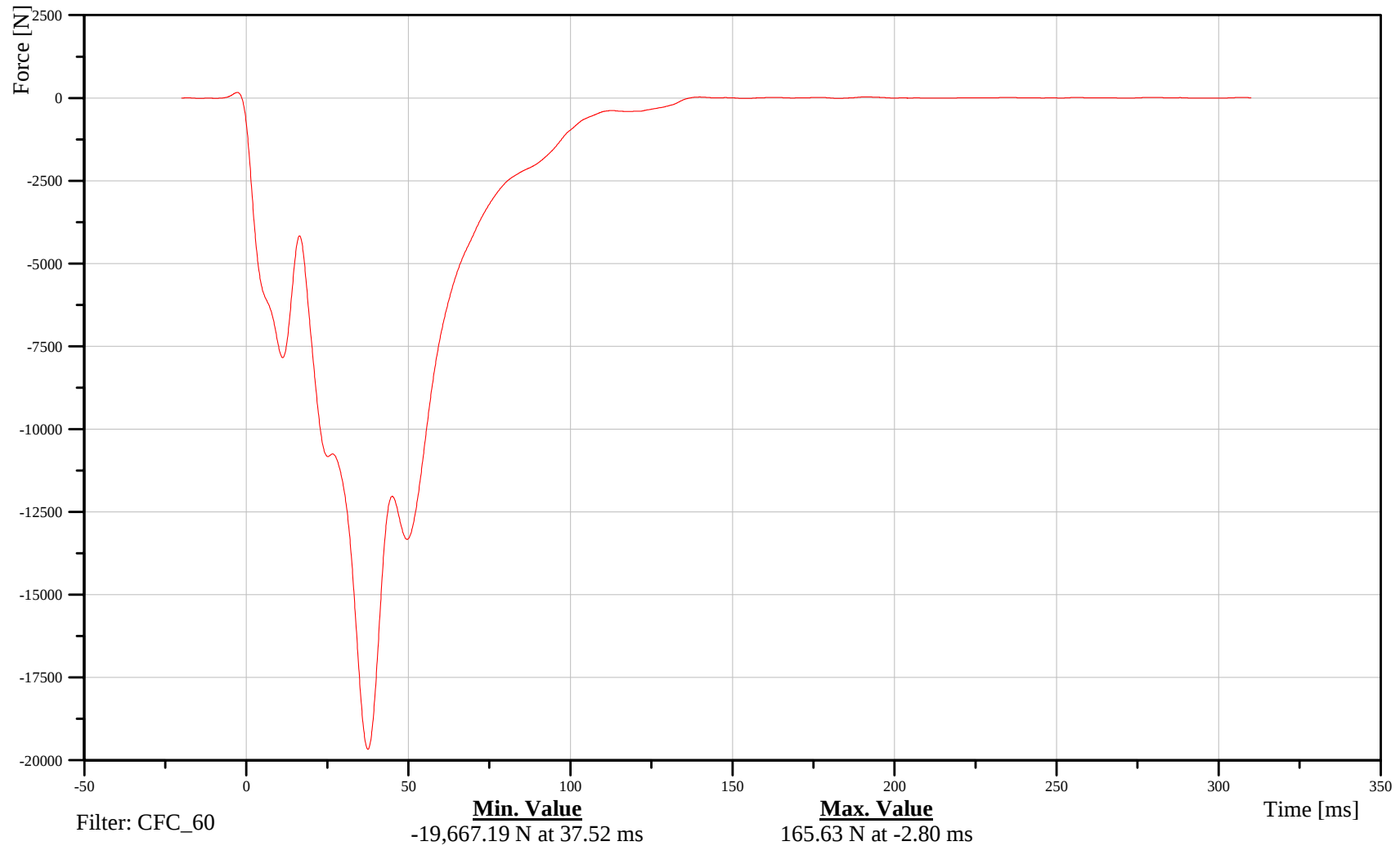
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000F10FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 4 Column 11

Date: 05/12/2006

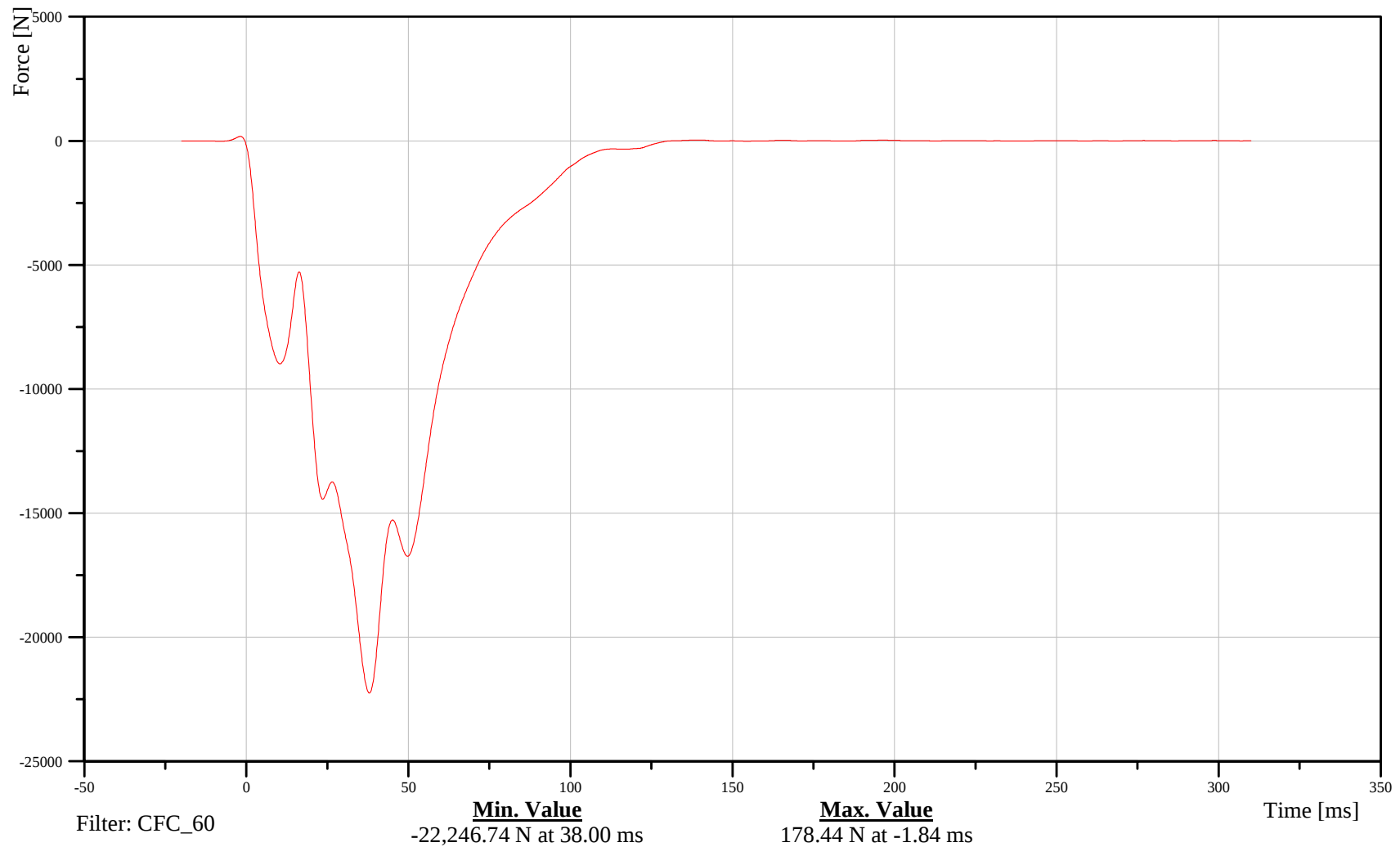
Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 4 Column 12

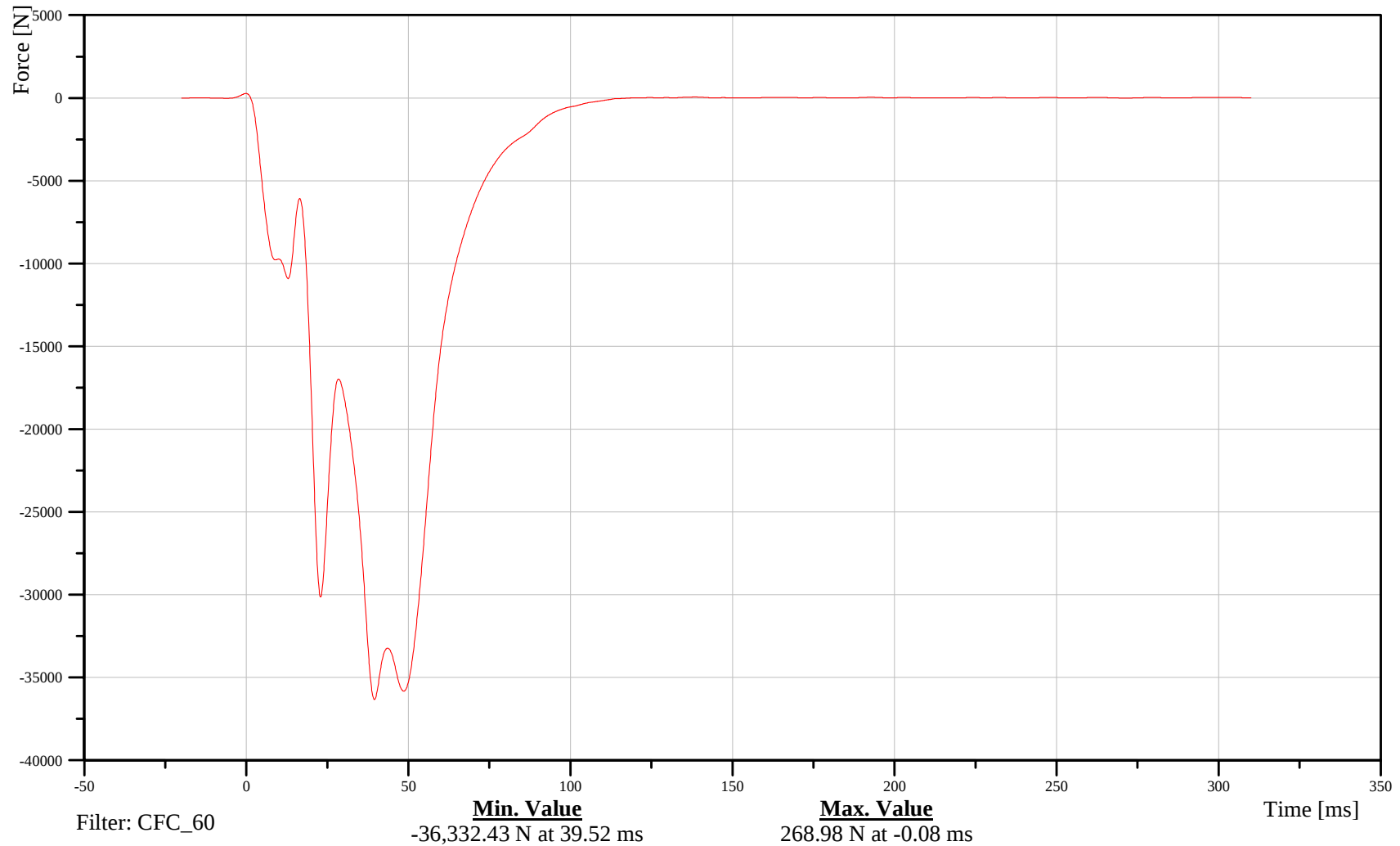
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000F12FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 4 Column 13

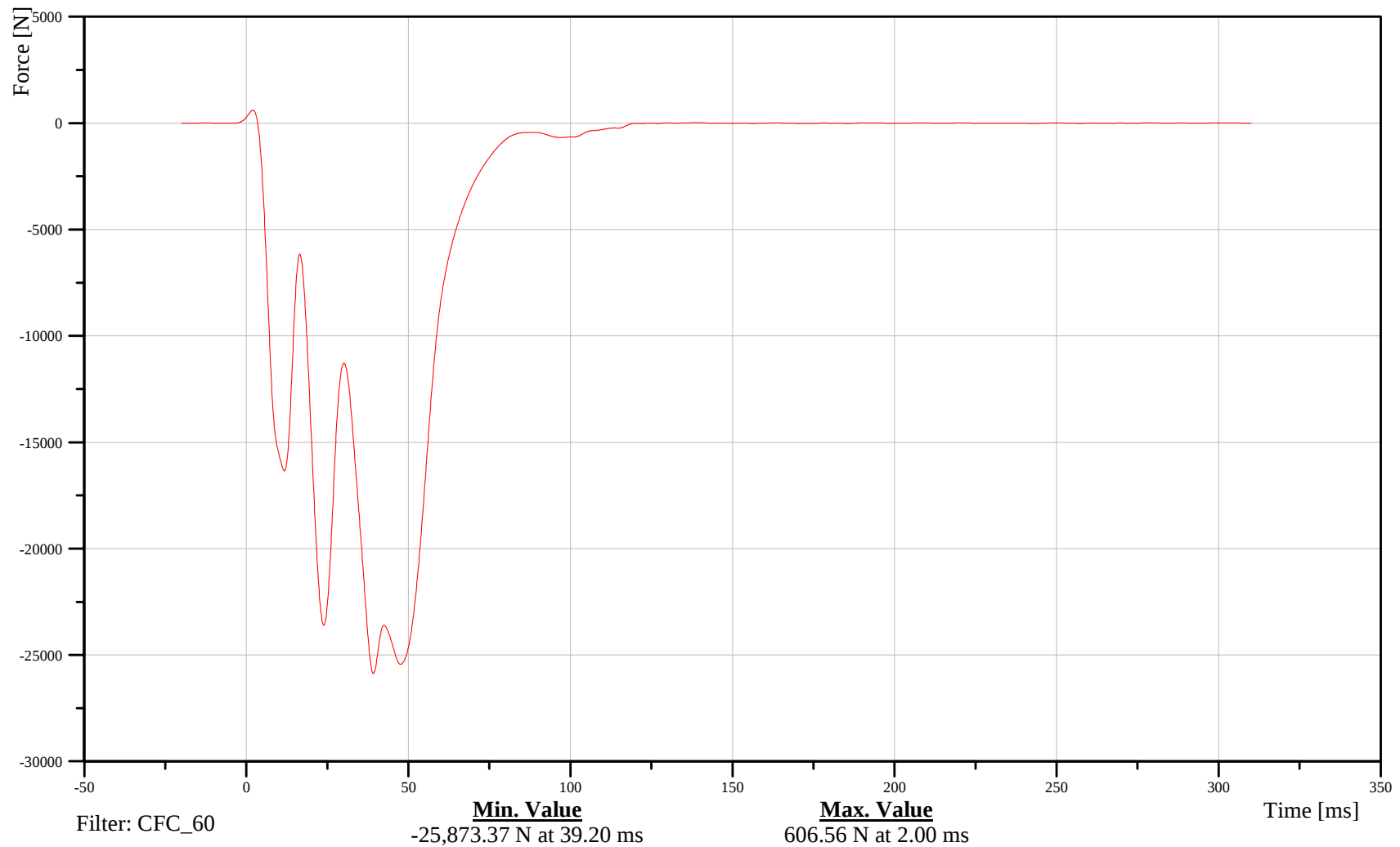
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000F13FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 4 Column 14

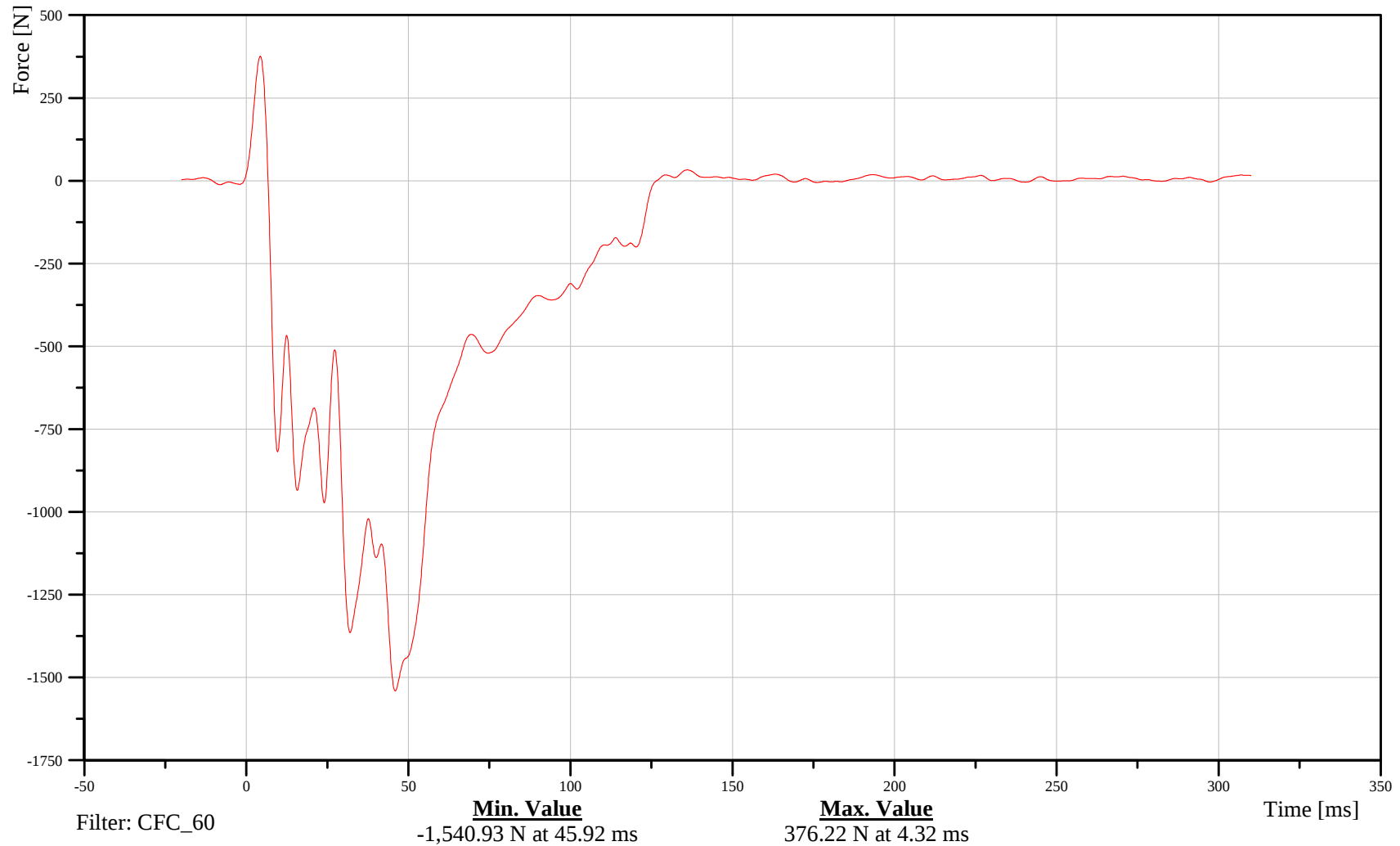
Date: 05/12/2006
Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 4 Column 15

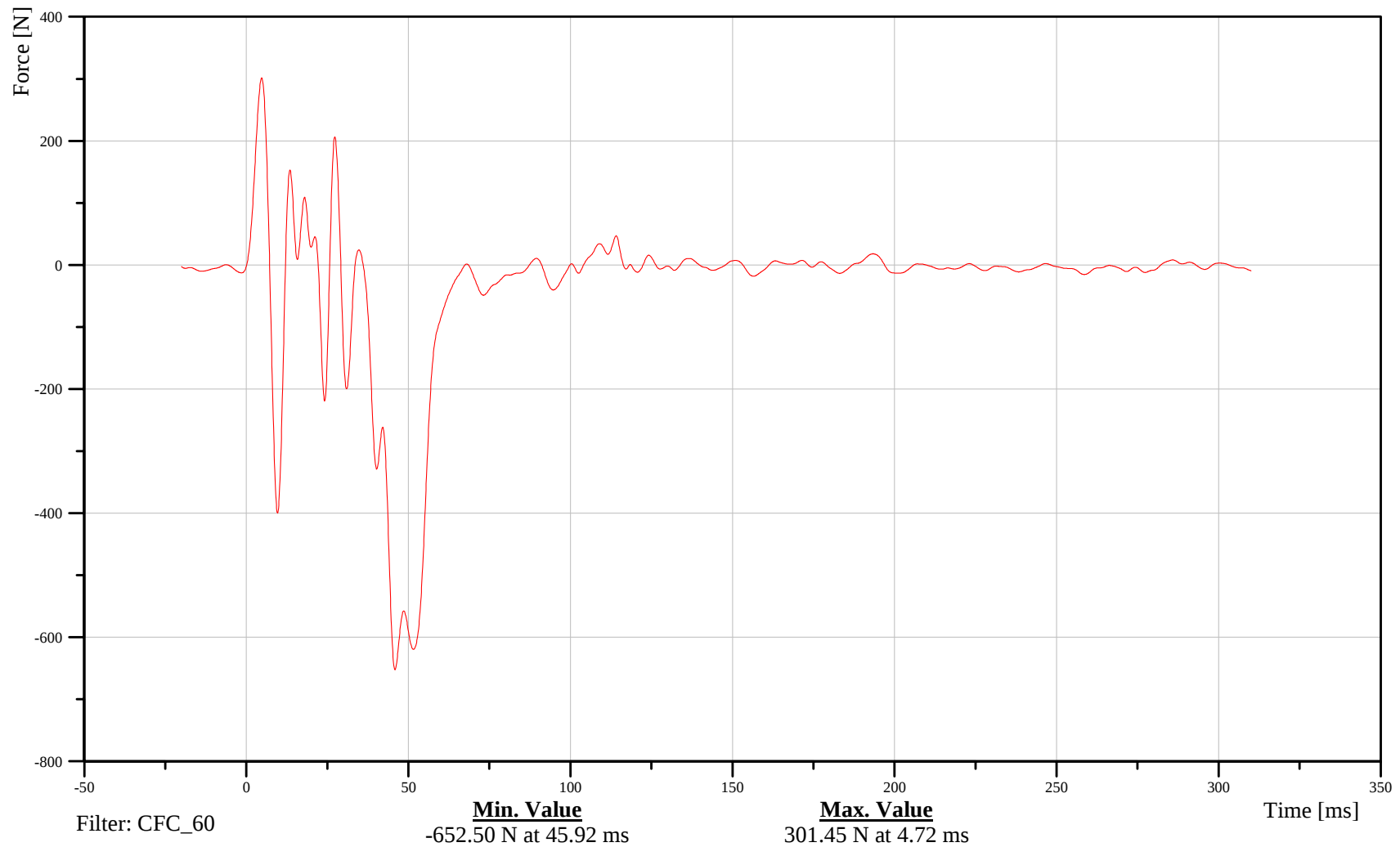
Date: 05/12/2006
Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 4 Column 16

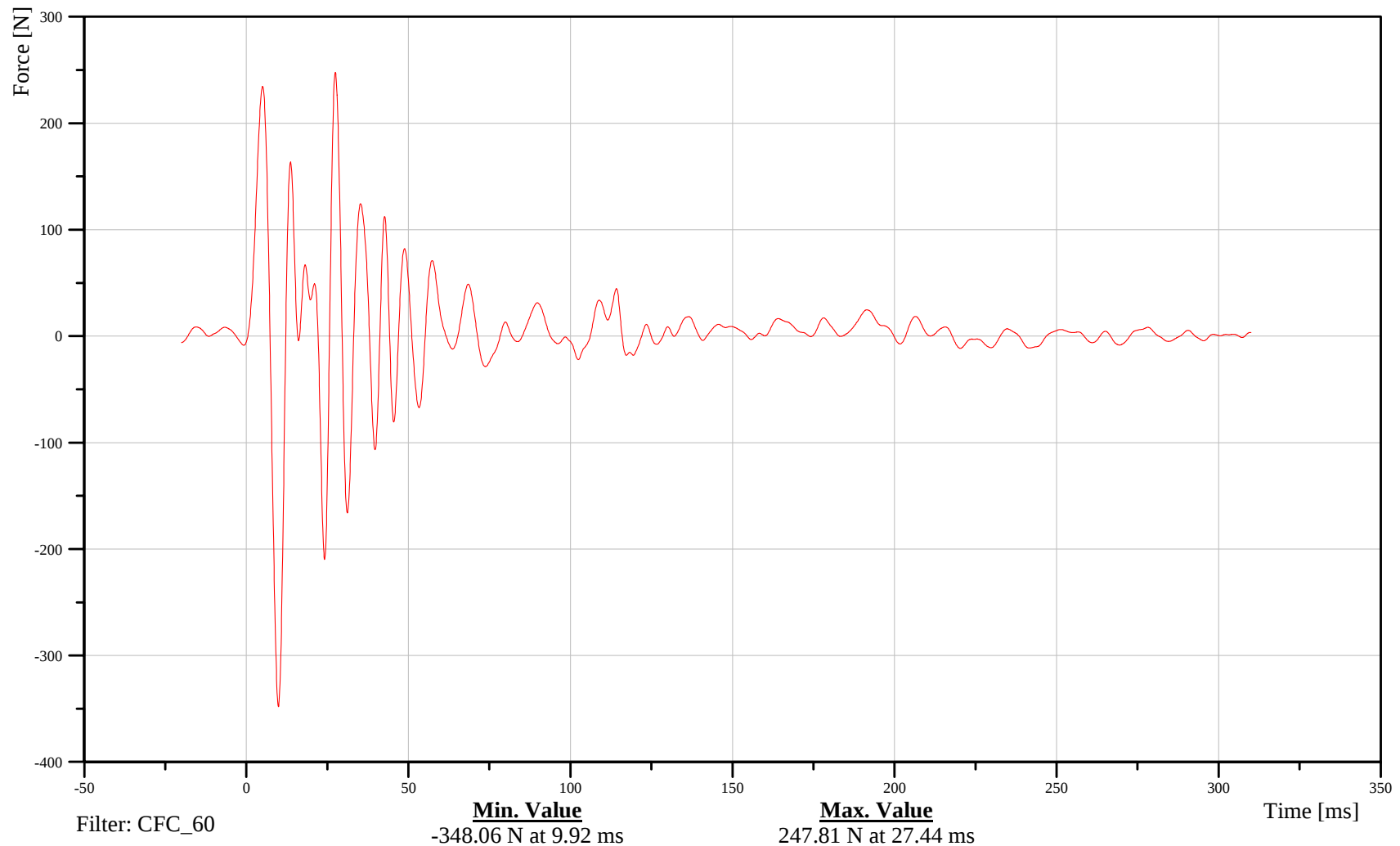
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000F16FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 3 Column 1

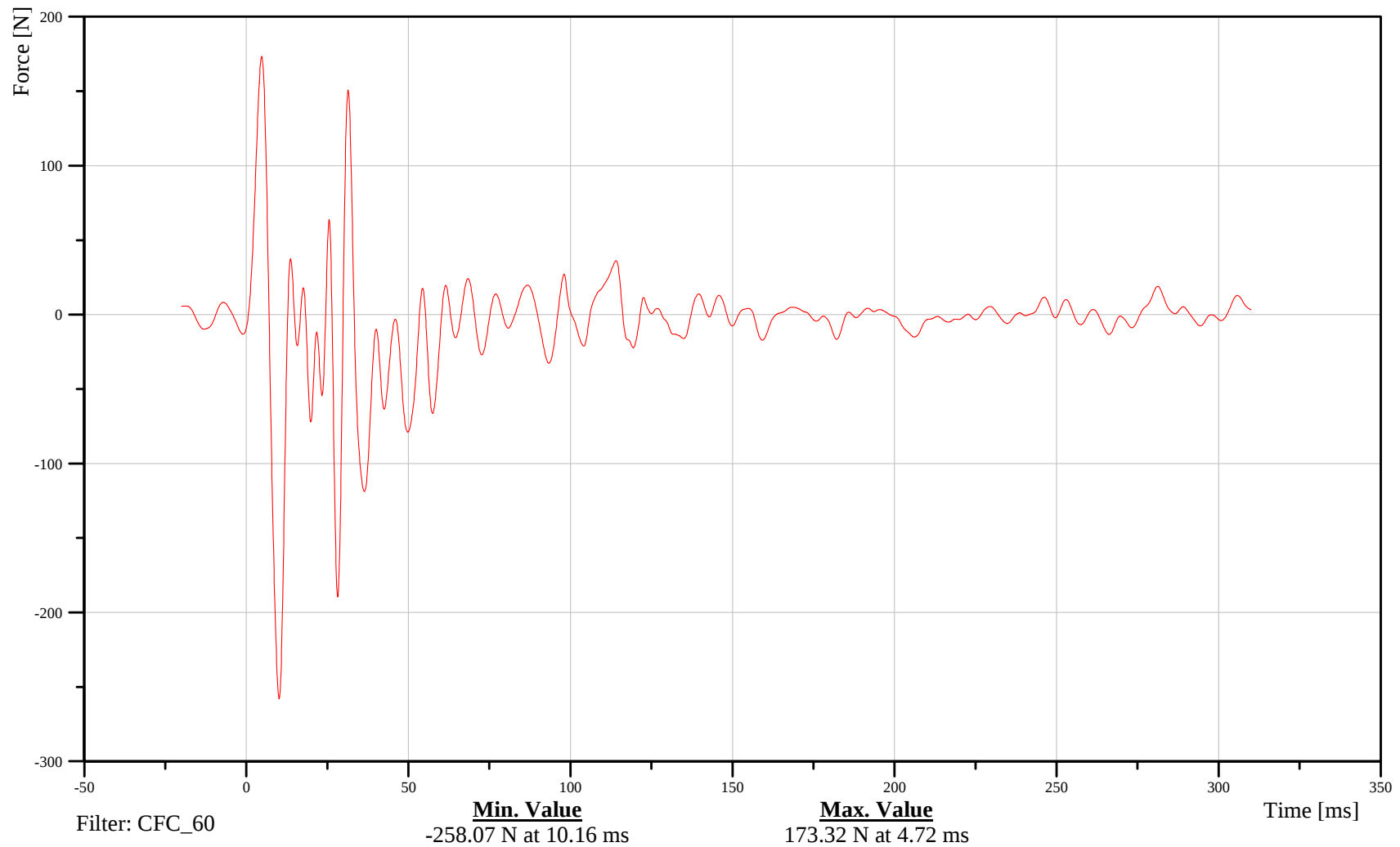
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Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 3 Column 2

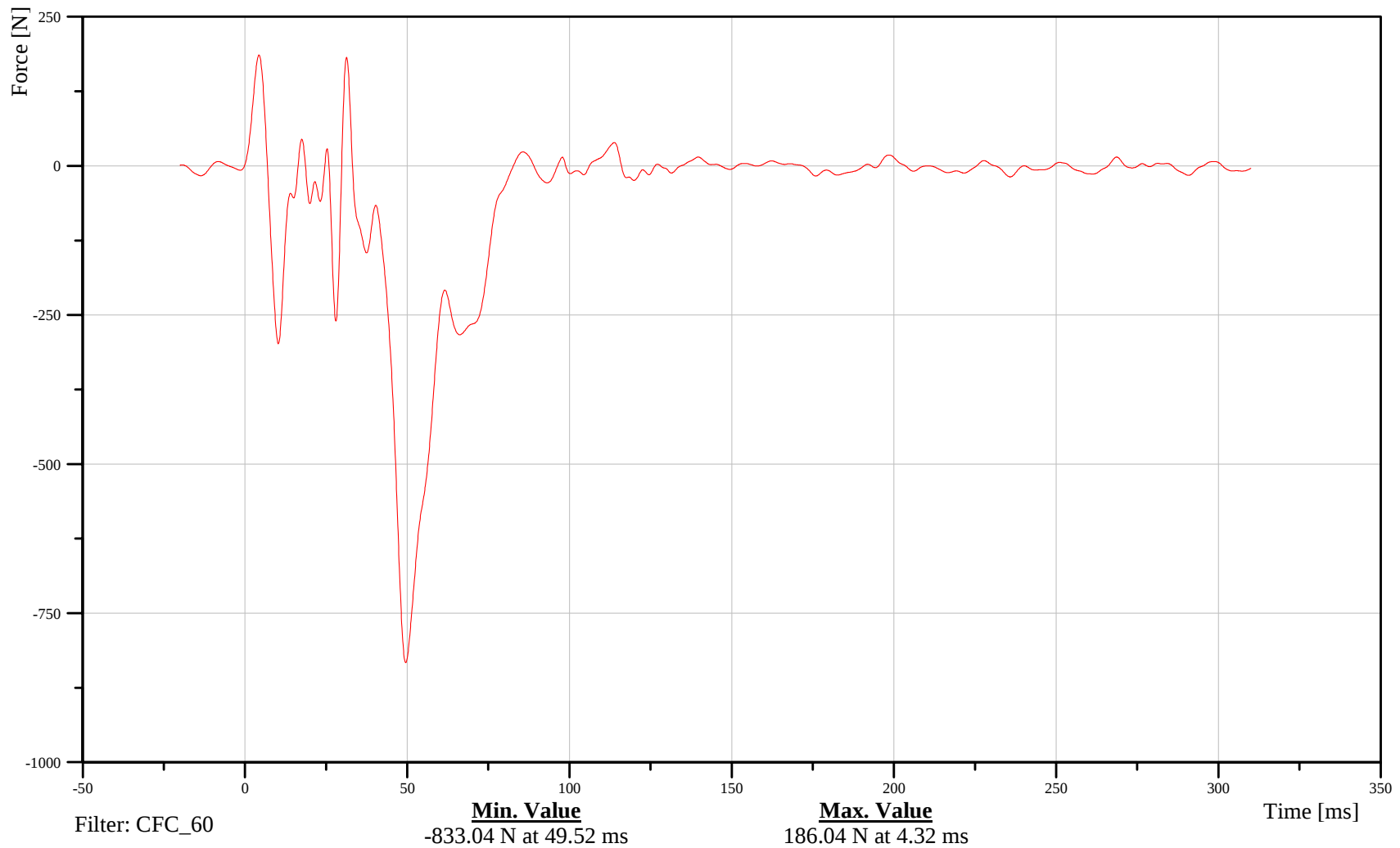
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000G02FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 3 Column 3

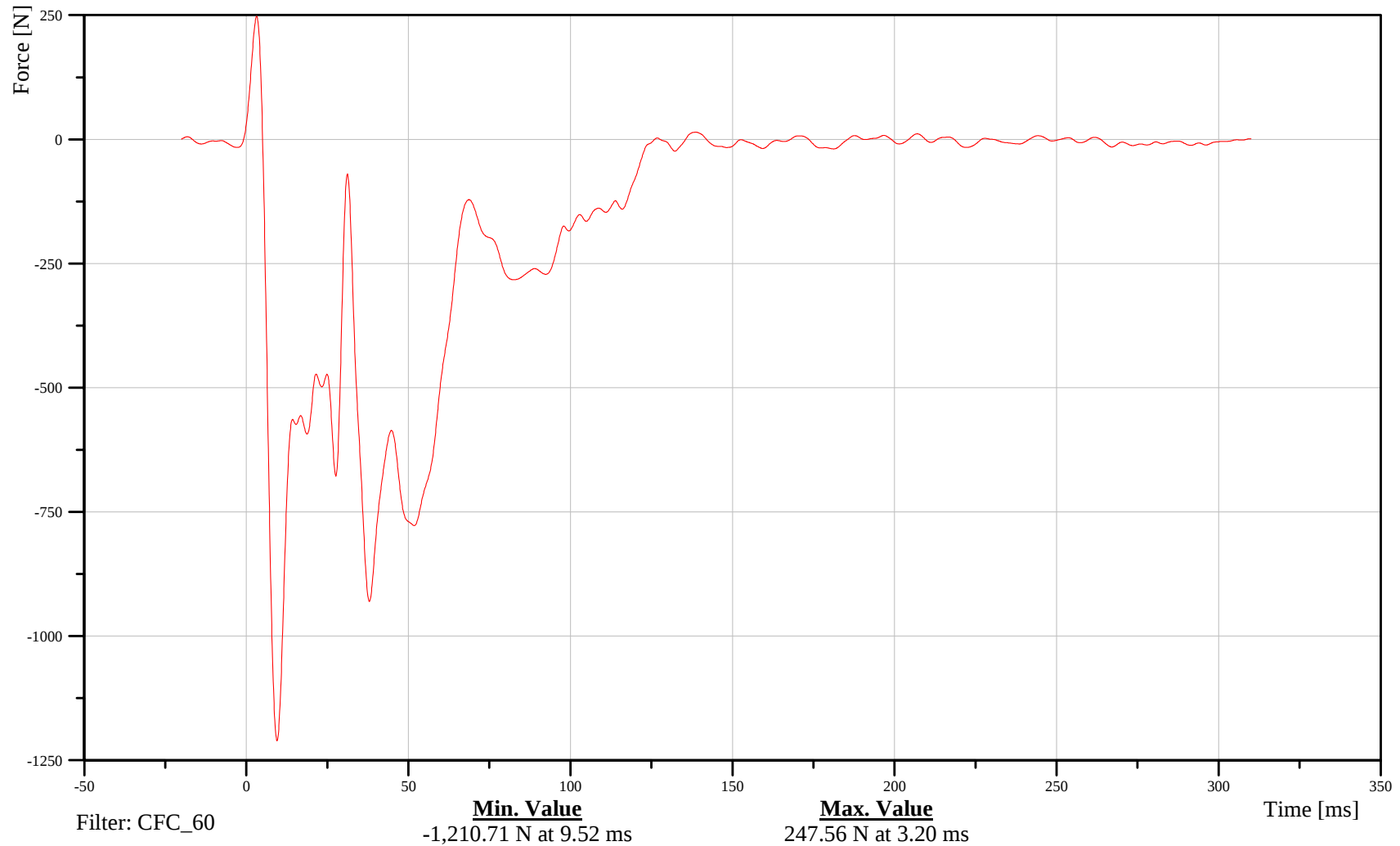
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000G03FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 3 Column 4

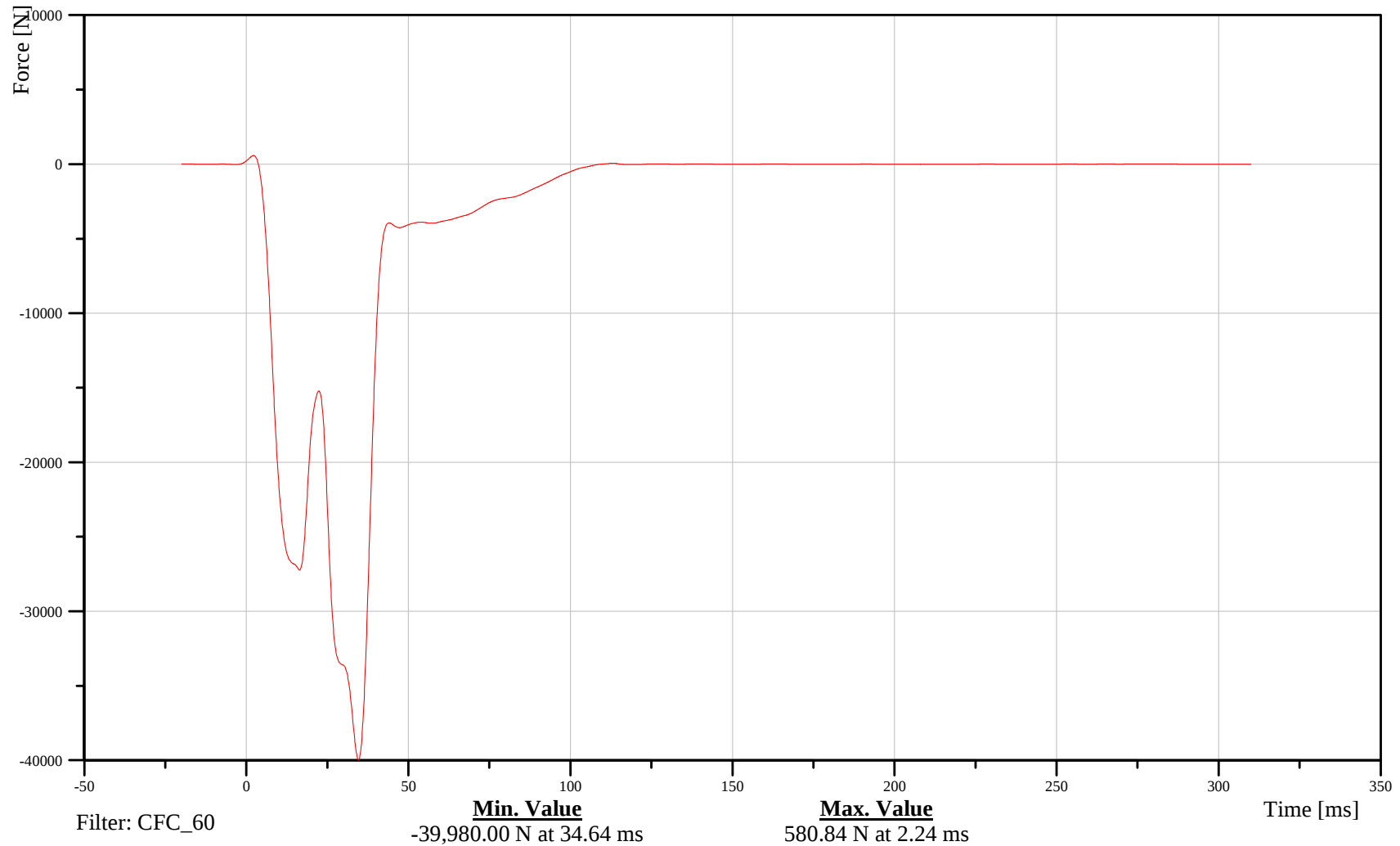
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000G04FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 3 Column 5

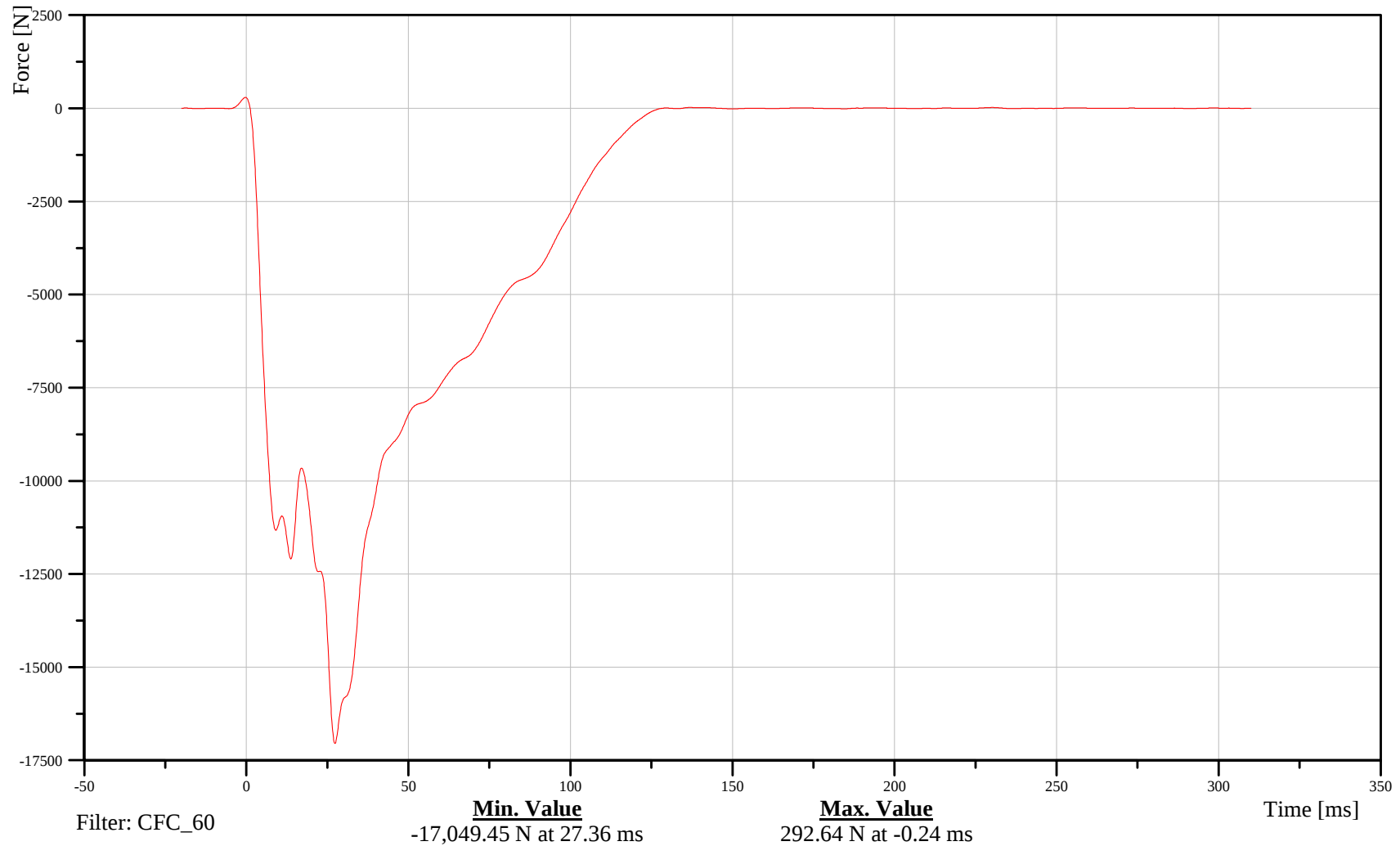
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Time: 15:38

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 3 Column 6

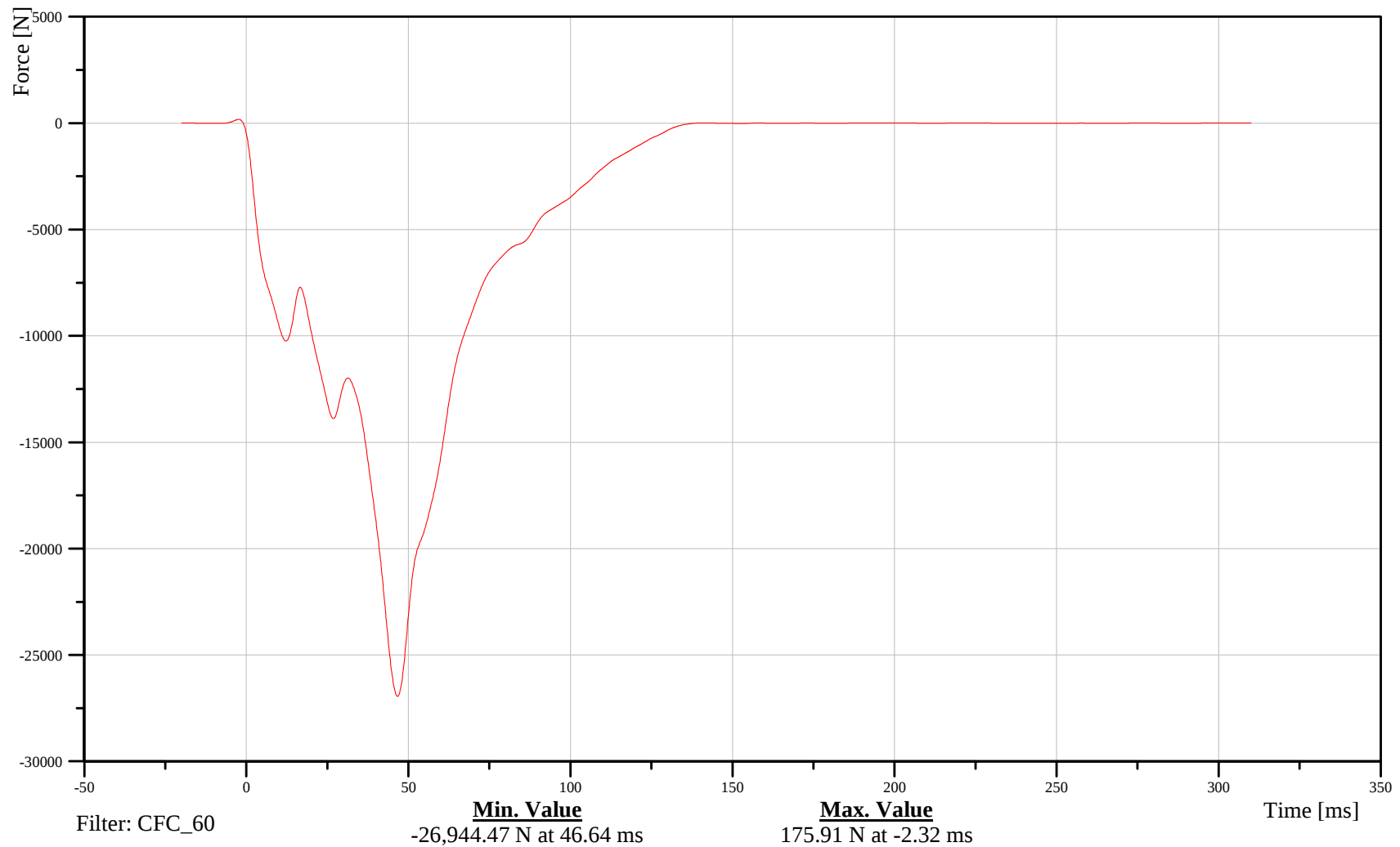
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Customer: VRTC

L0FBAR000G06FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 3 Column 7

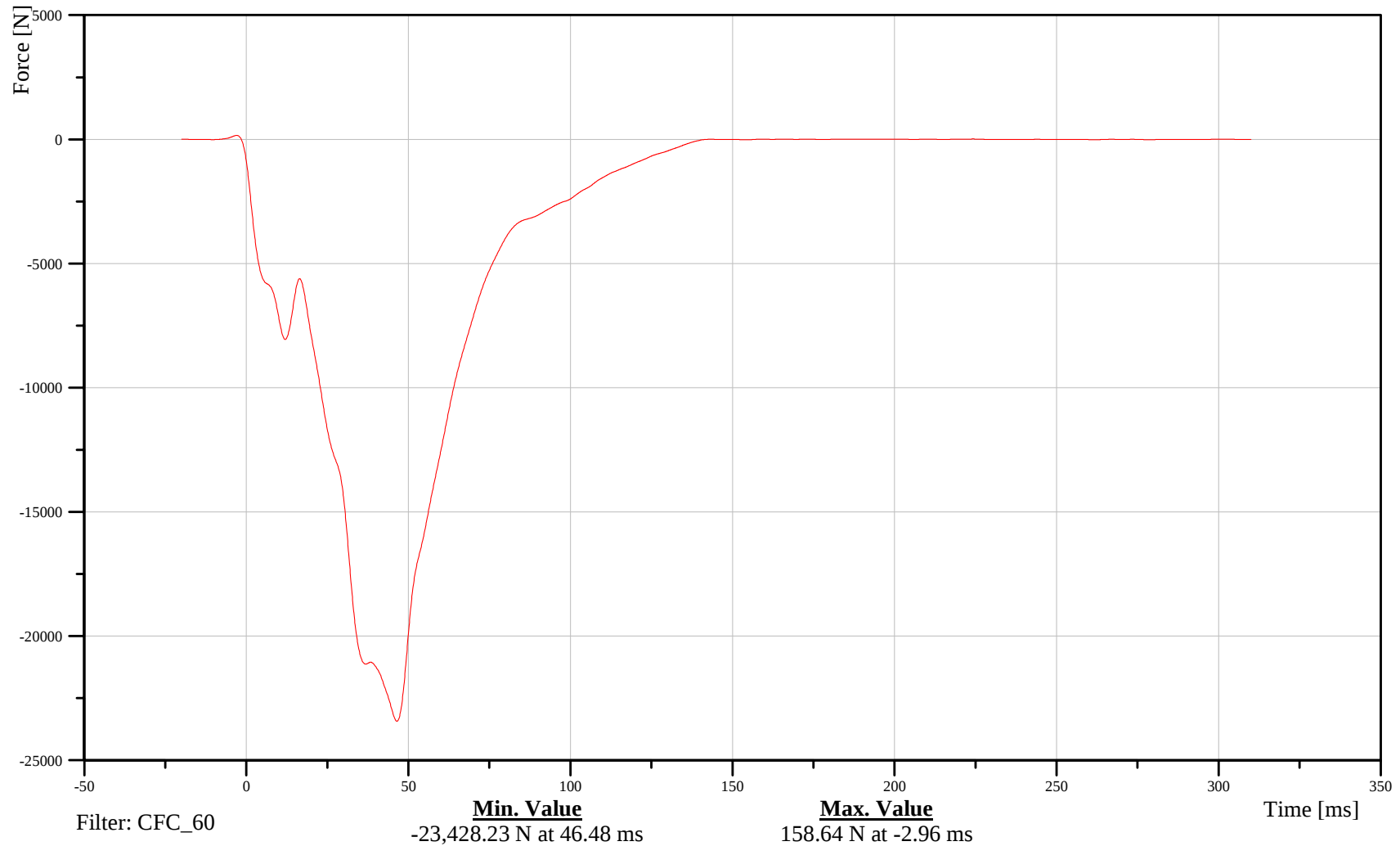
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000G07FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 3 Column 8

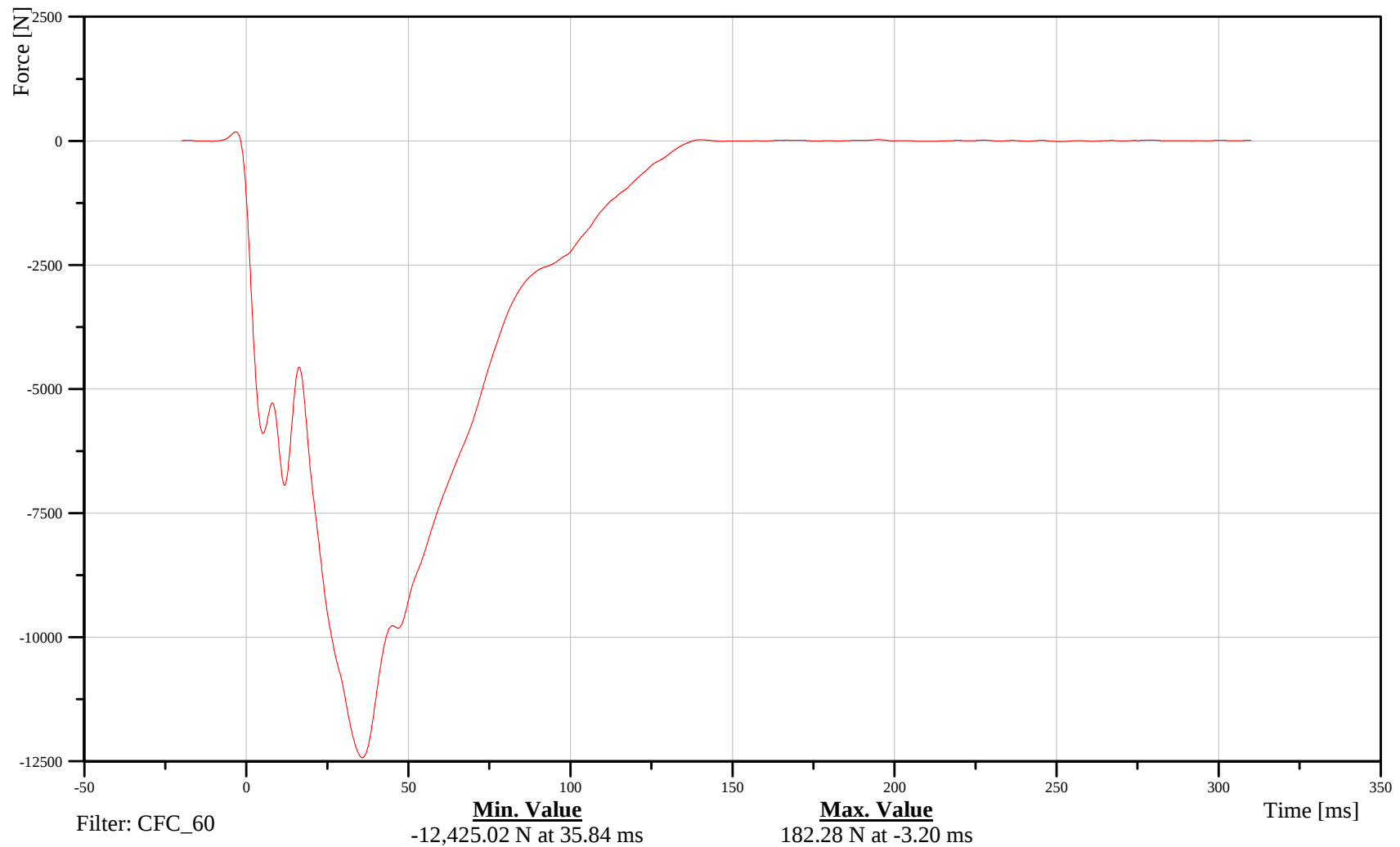
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Time: 15:38

Customer: VRTC

L0FBAR000G08FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 3 Column 9

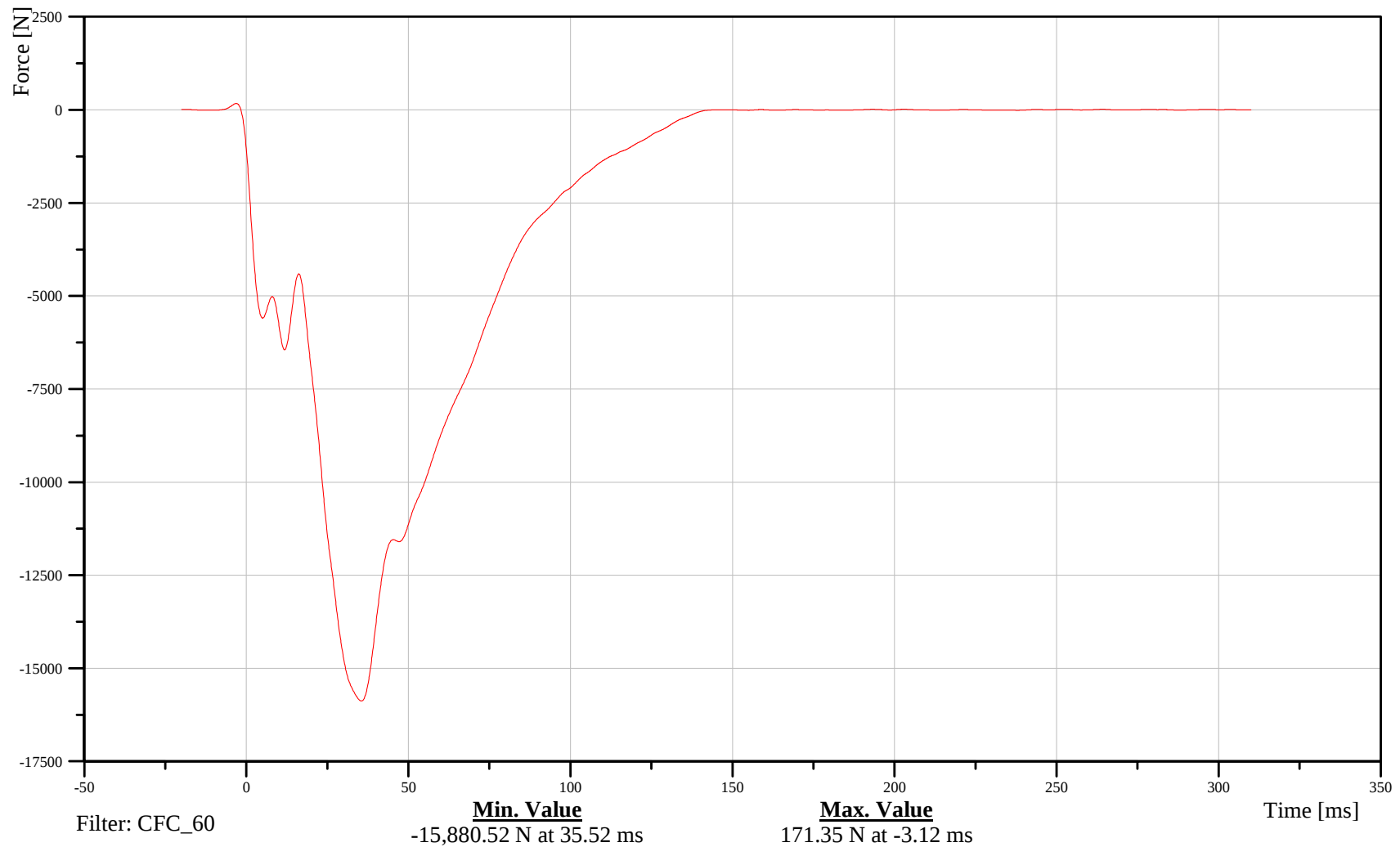
Date: 05/12/2006
Time: 15:38

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L0FBAR000G09FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 3 Column 10

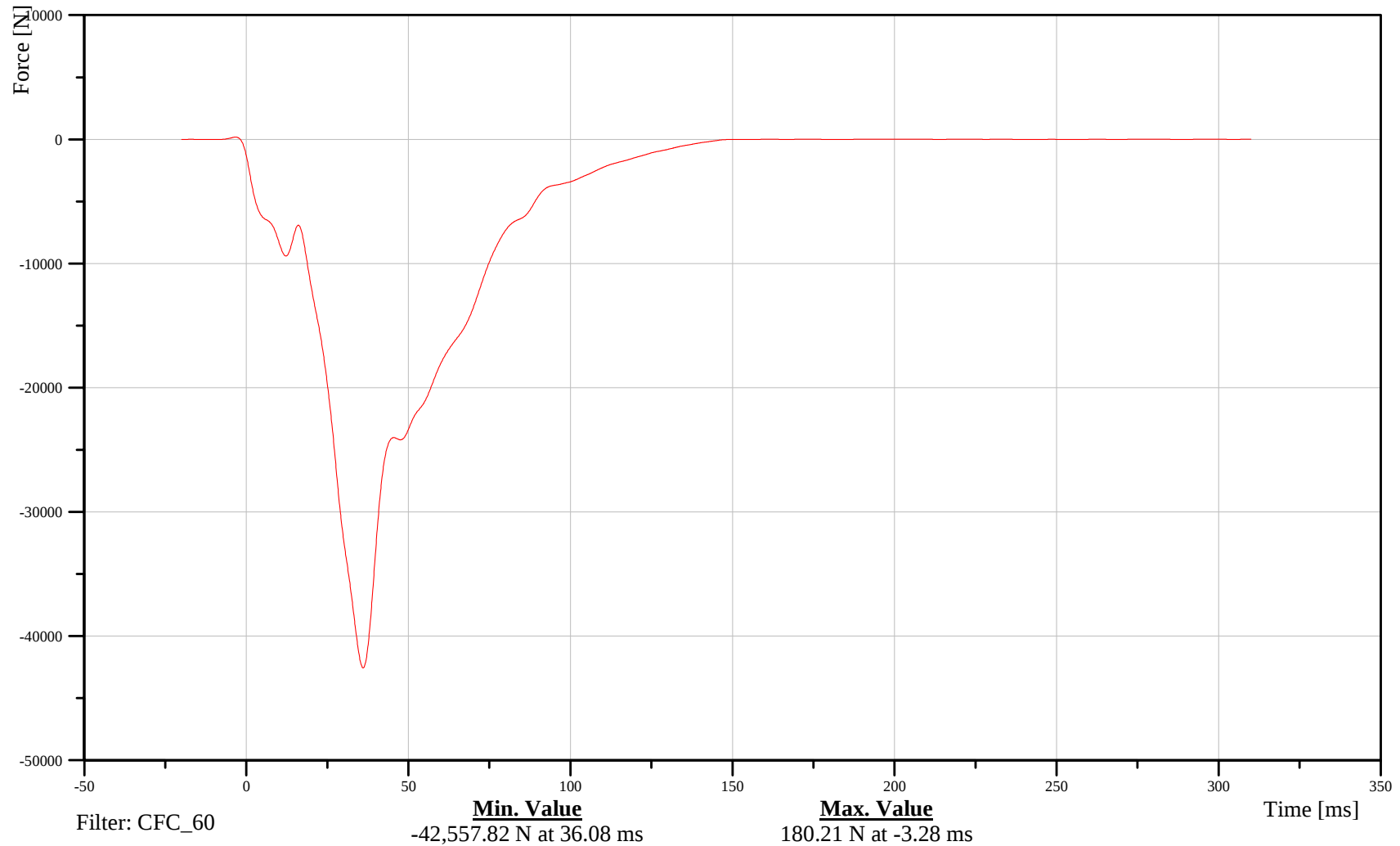
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000G10FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 3 Column 11

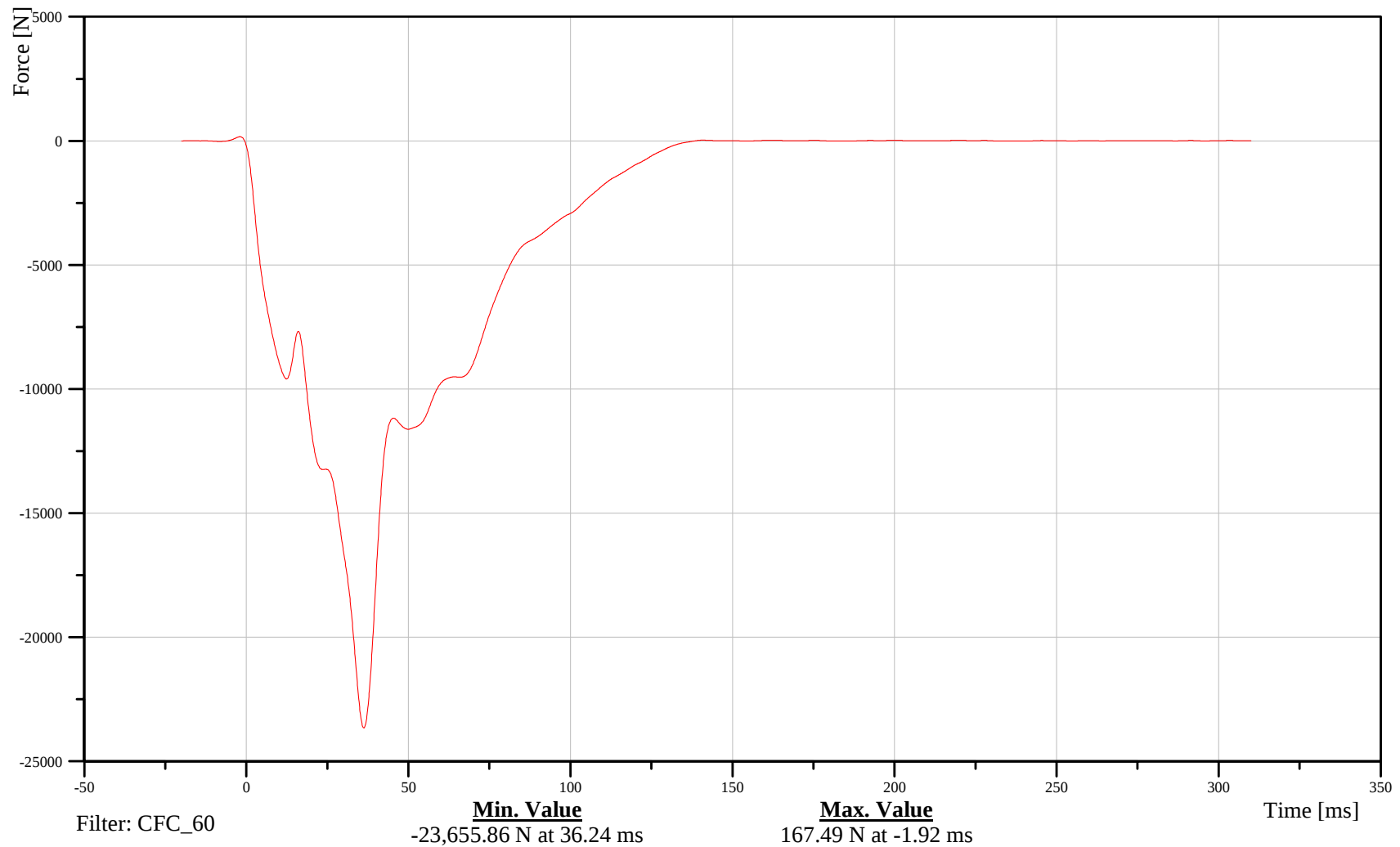
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Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 3 Column 12

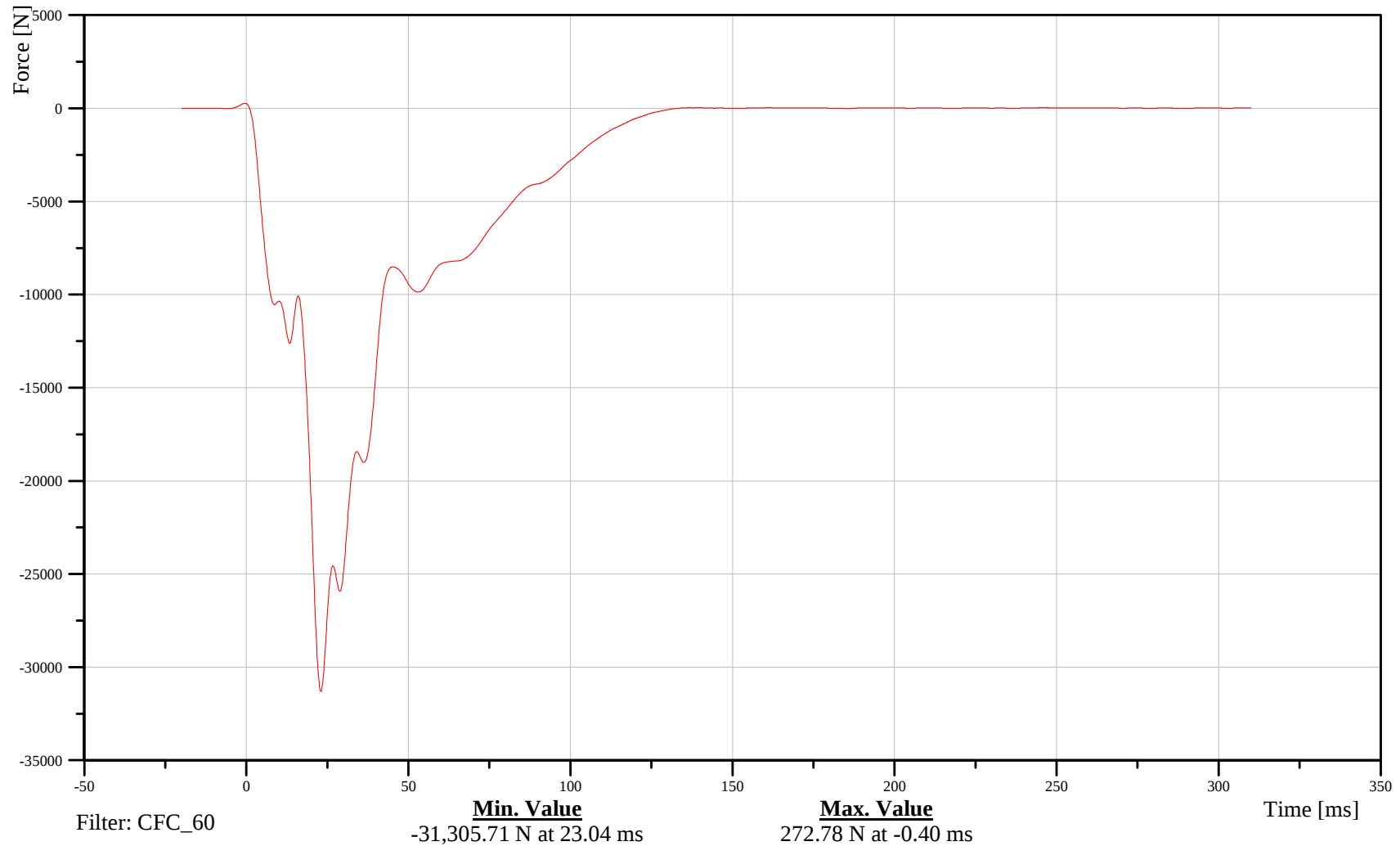
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Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 3 Column 13

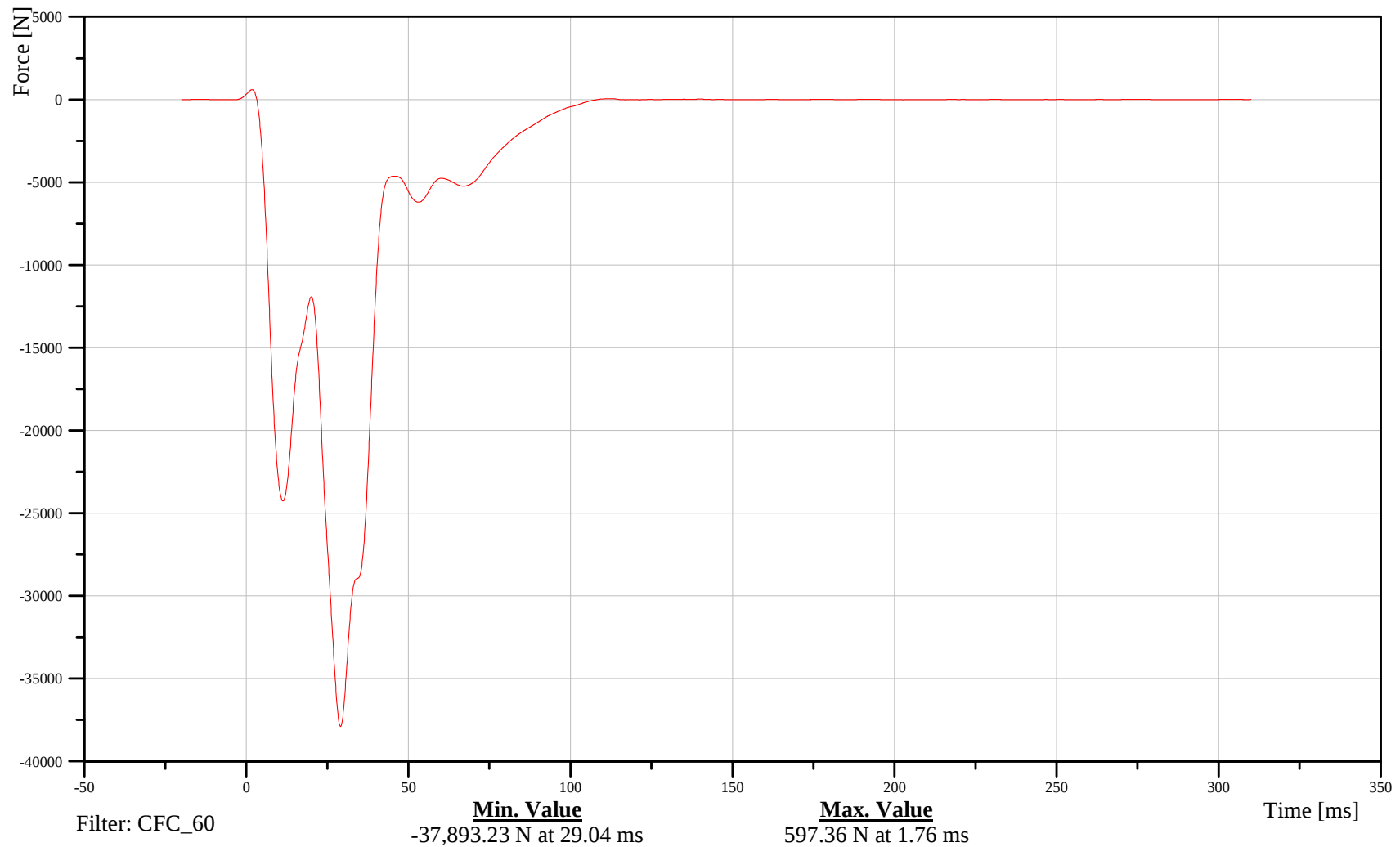
Date: 05/12/2006
Time: 15:38

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L0FBAR000G13FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 3 Column 14

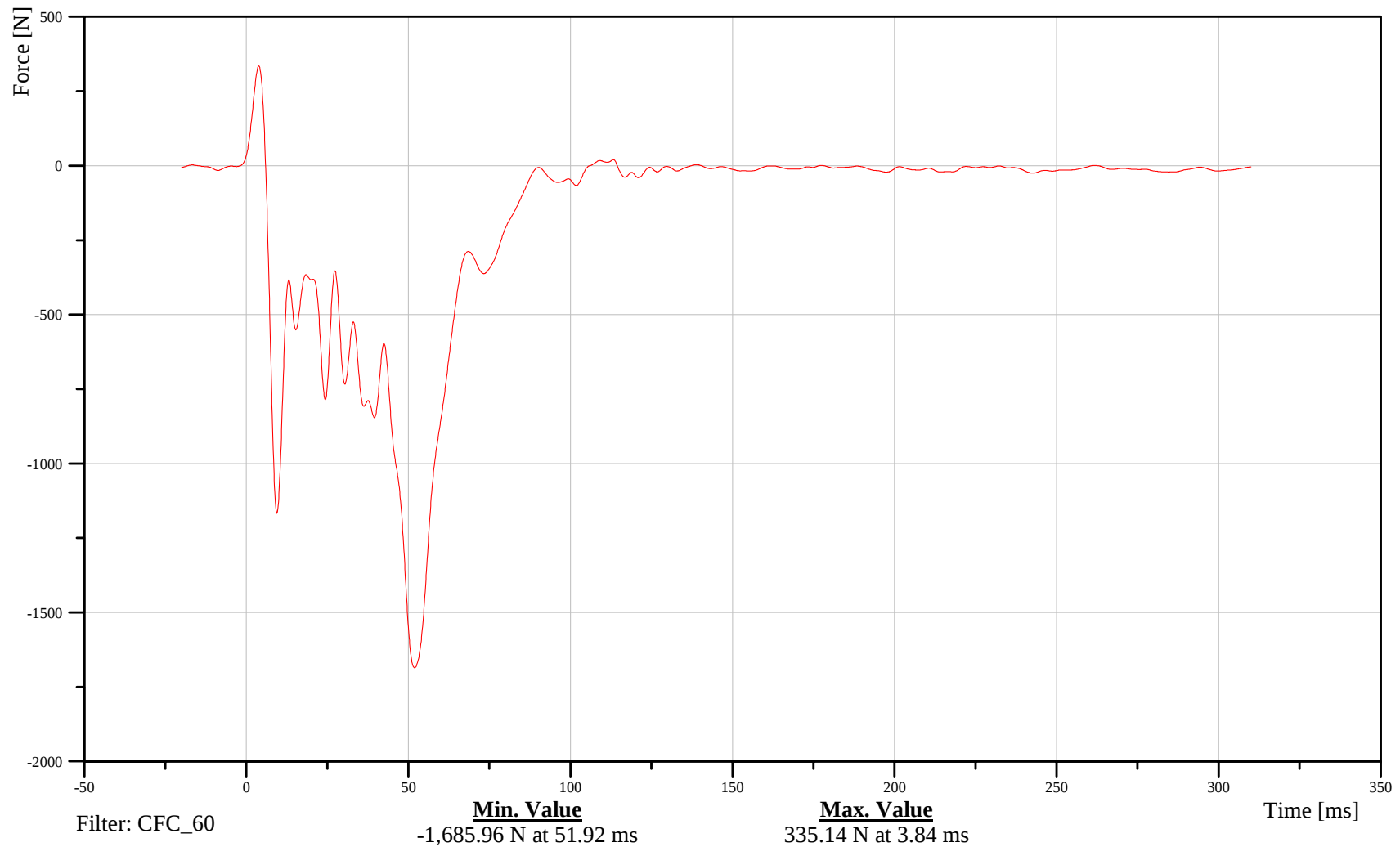
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Time: 15:38

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 3 Column 15

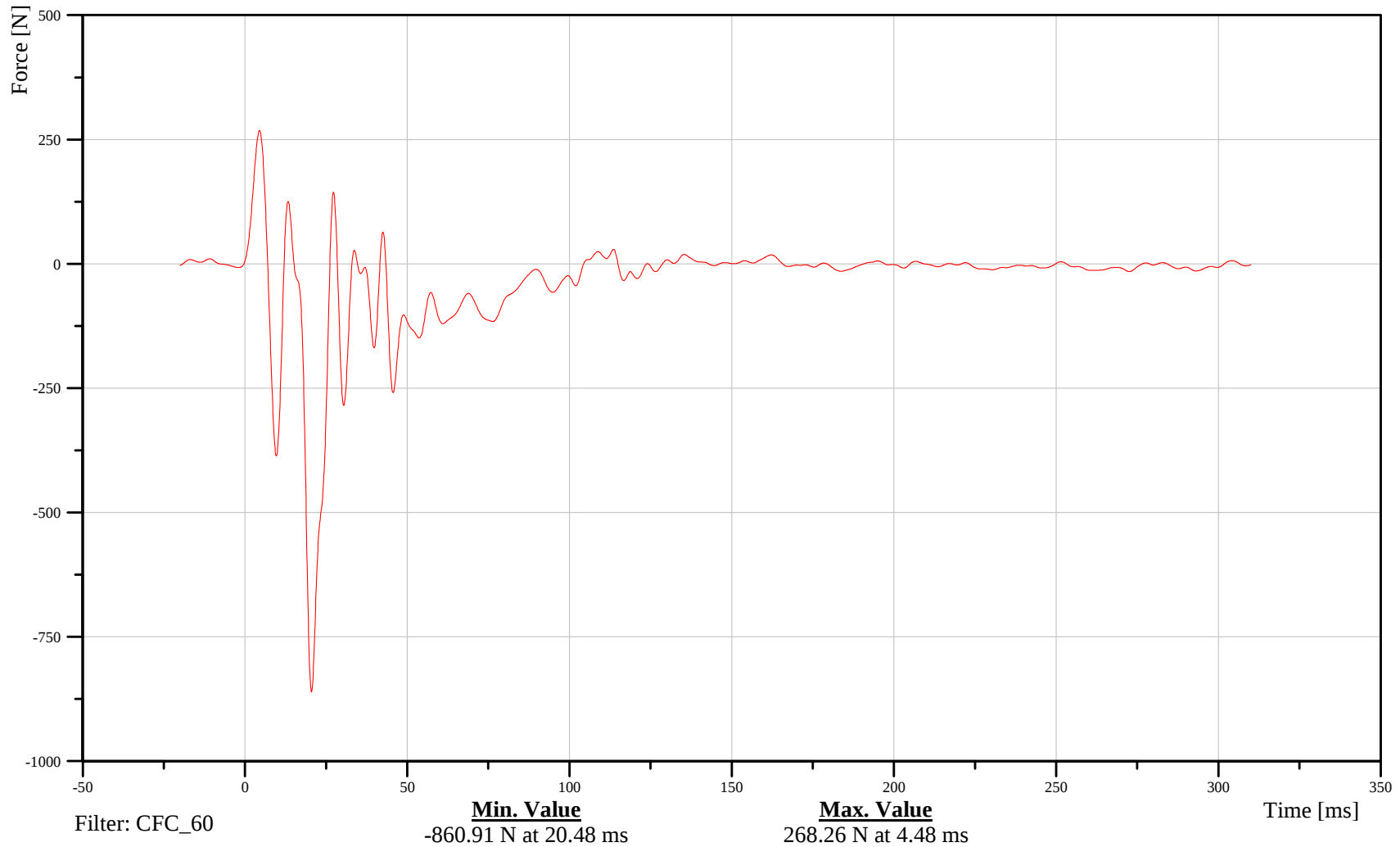
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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 3 Column 16

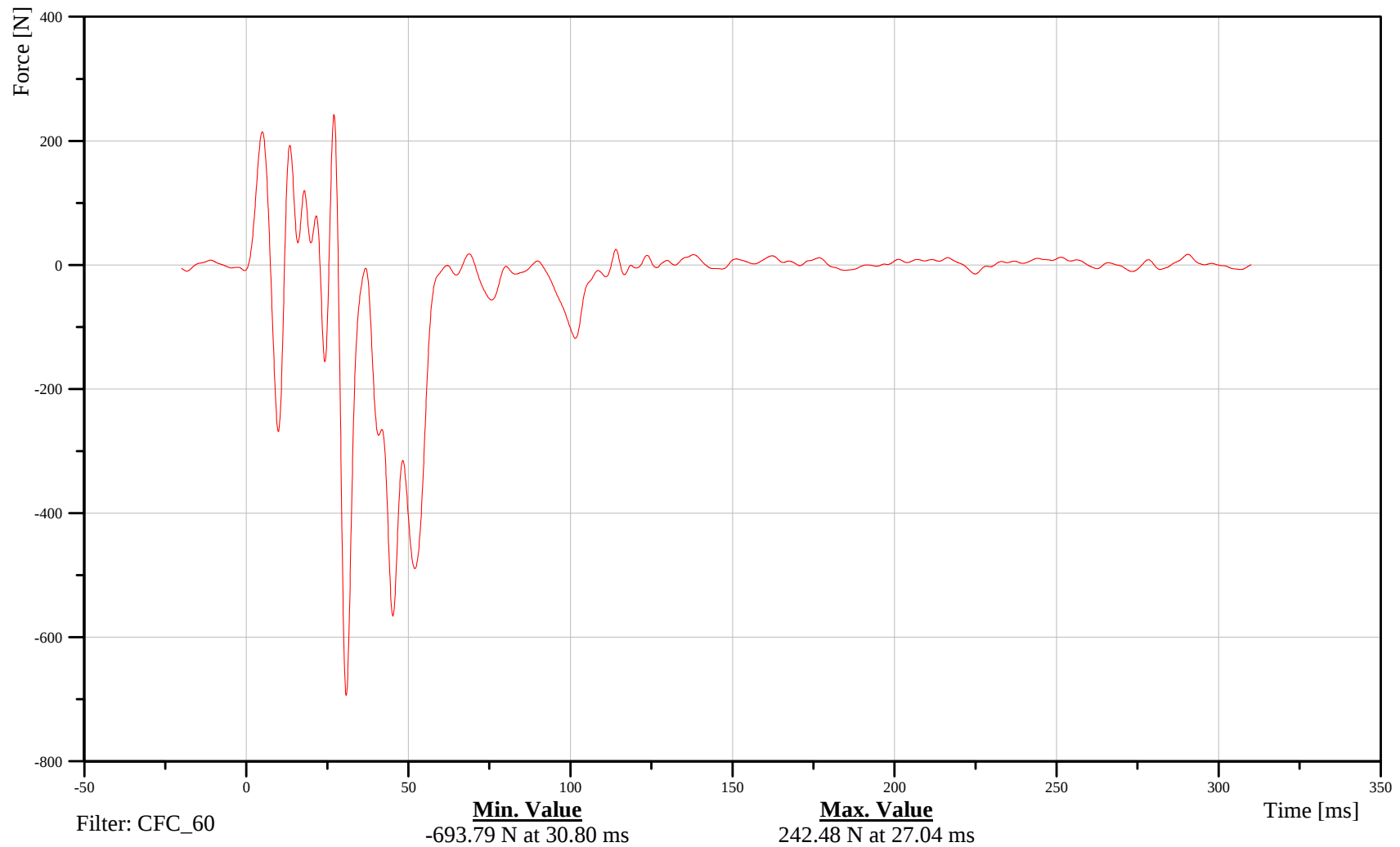
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000G16FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 2 Column 1

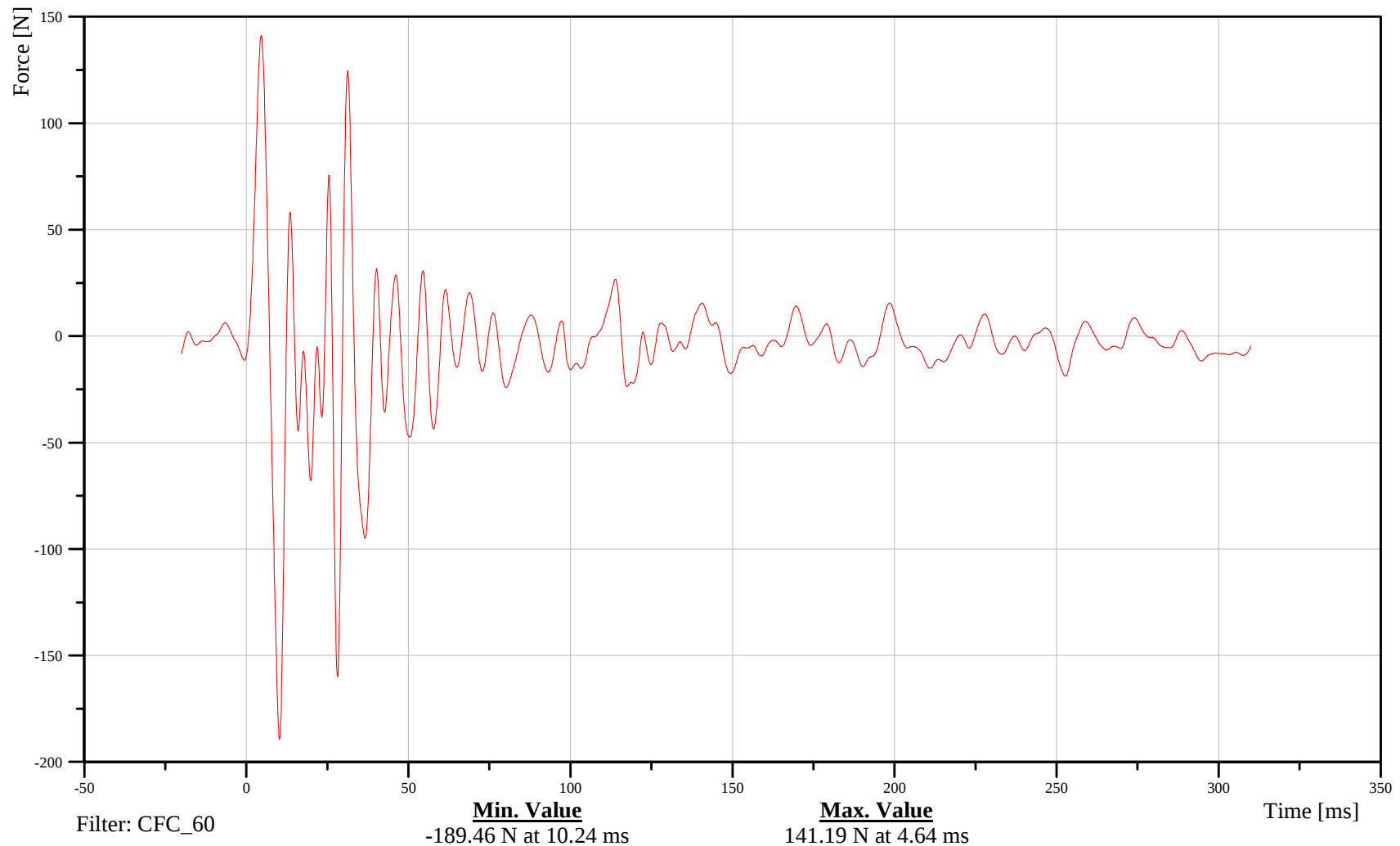
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Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 2 Column 2

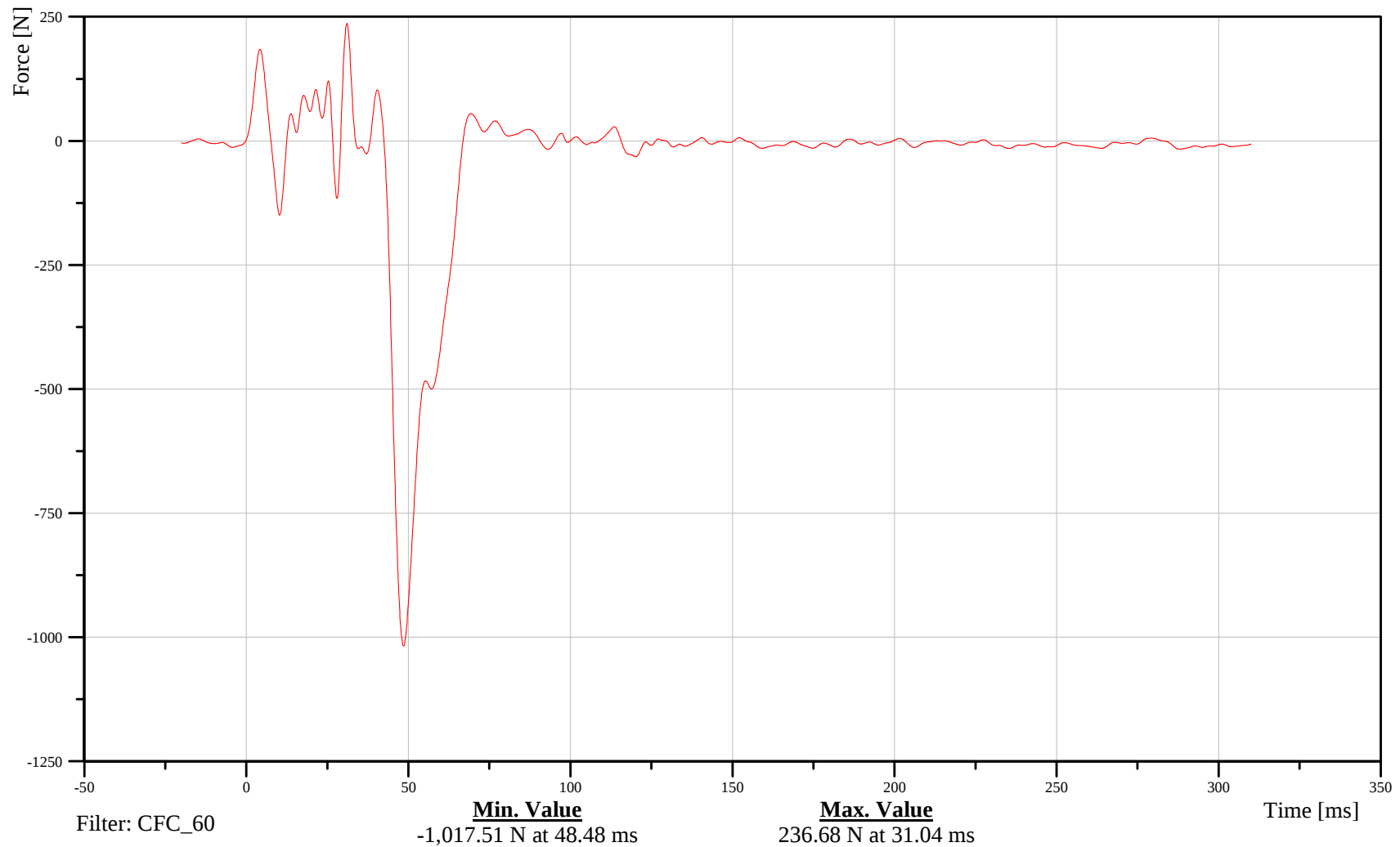
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000H02FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 2 Column 3

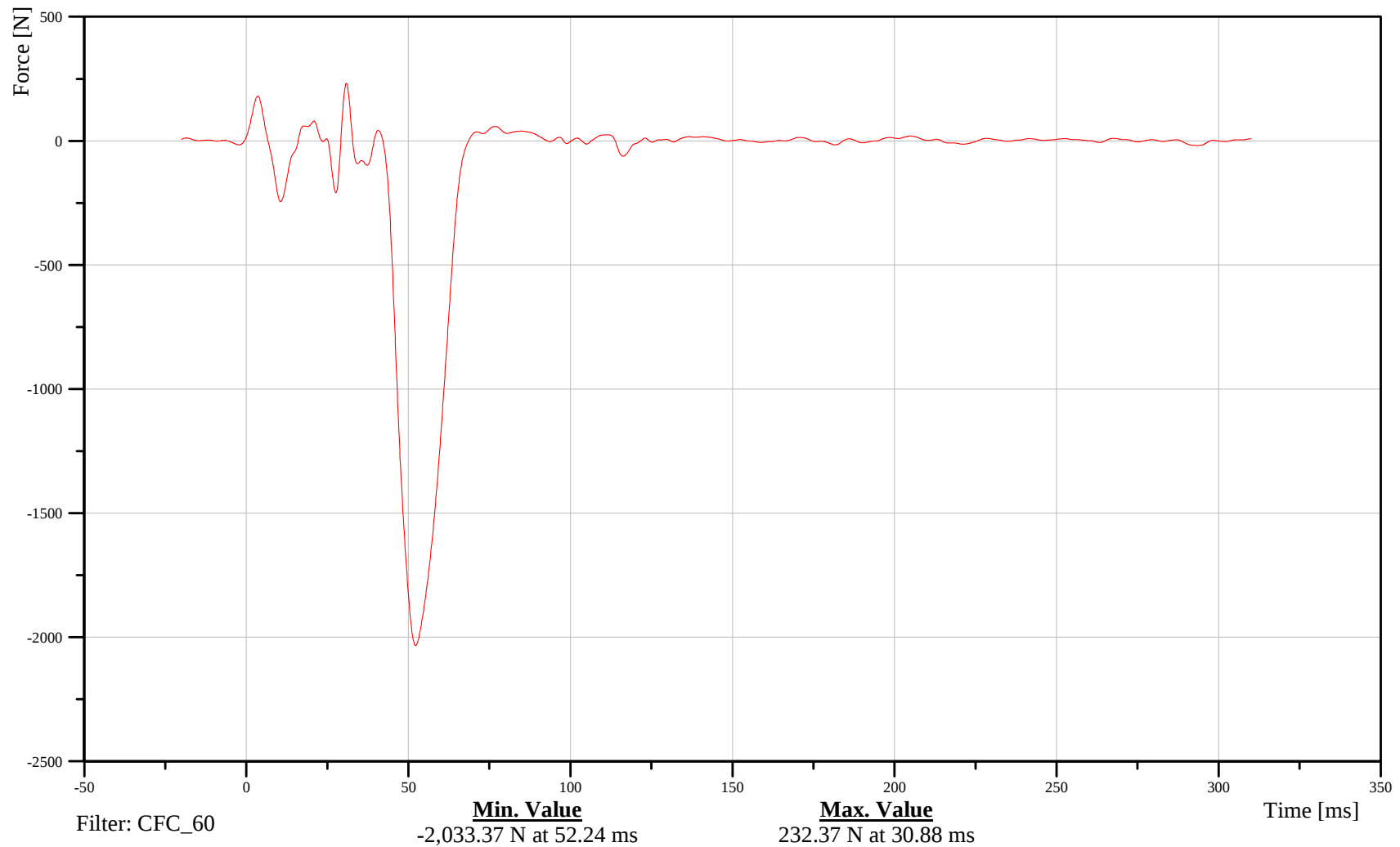
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000H03FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 2 Column 4

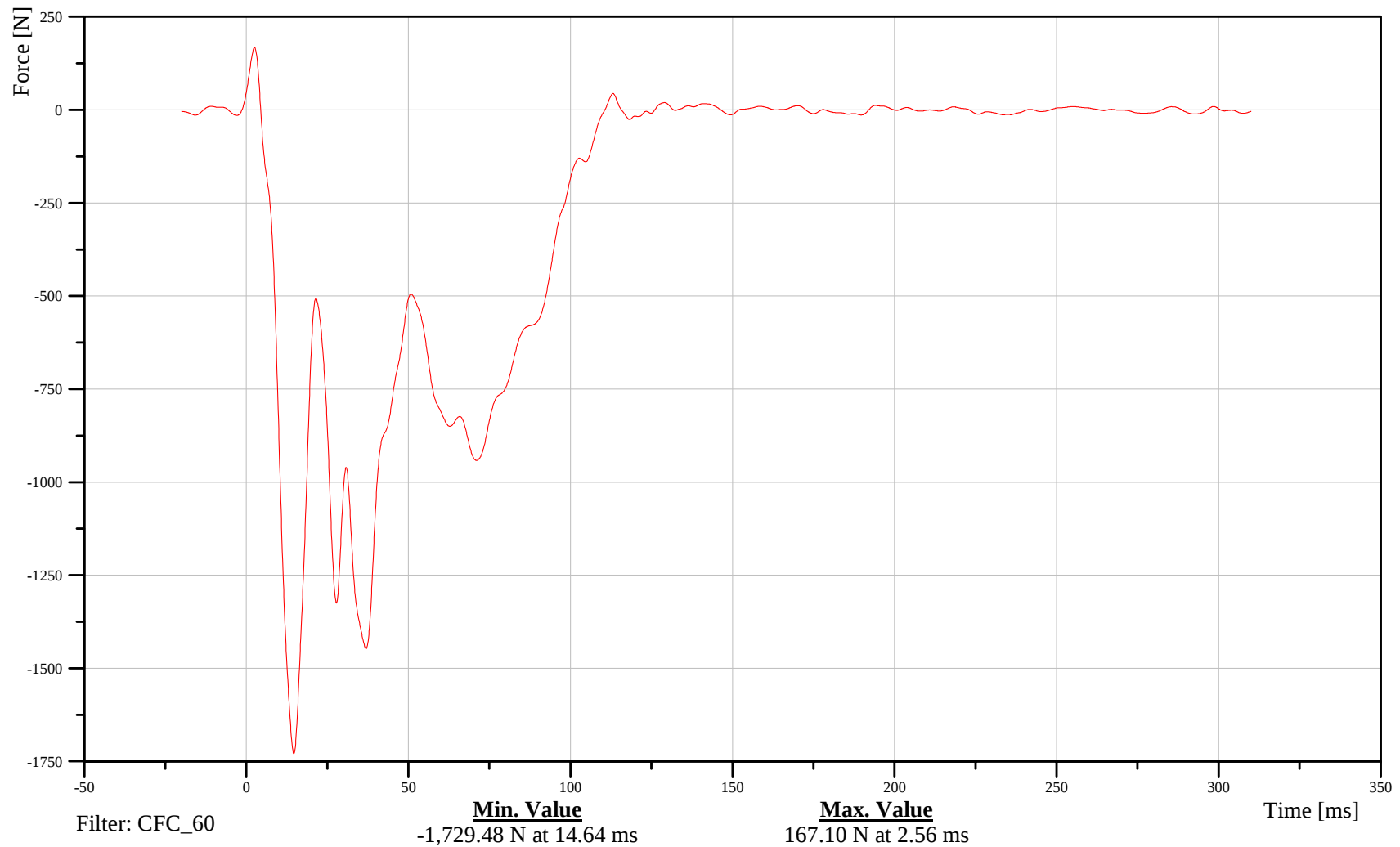
Date: 05/12/2006
Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 2 Column 5

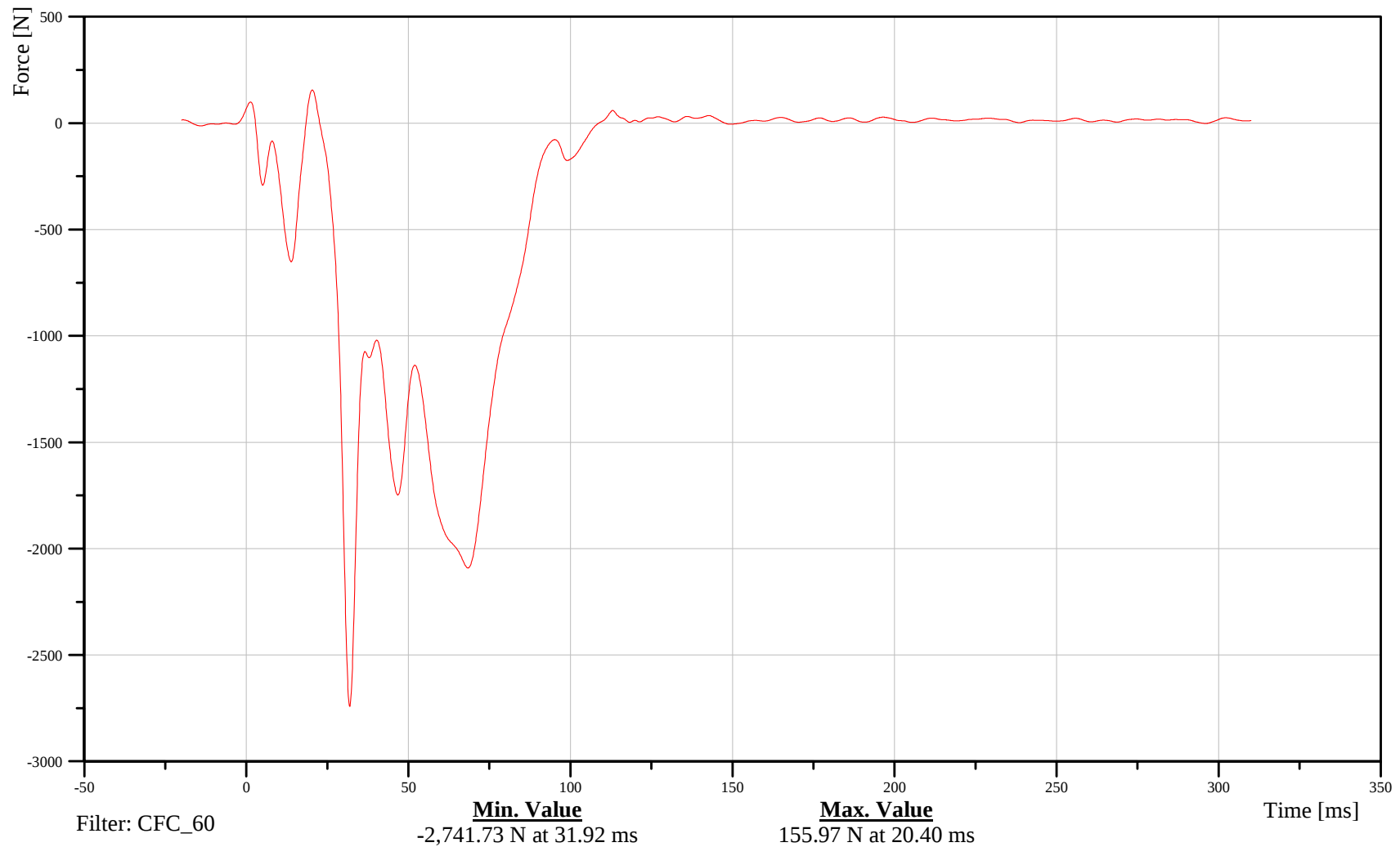
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Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 2 Column 6

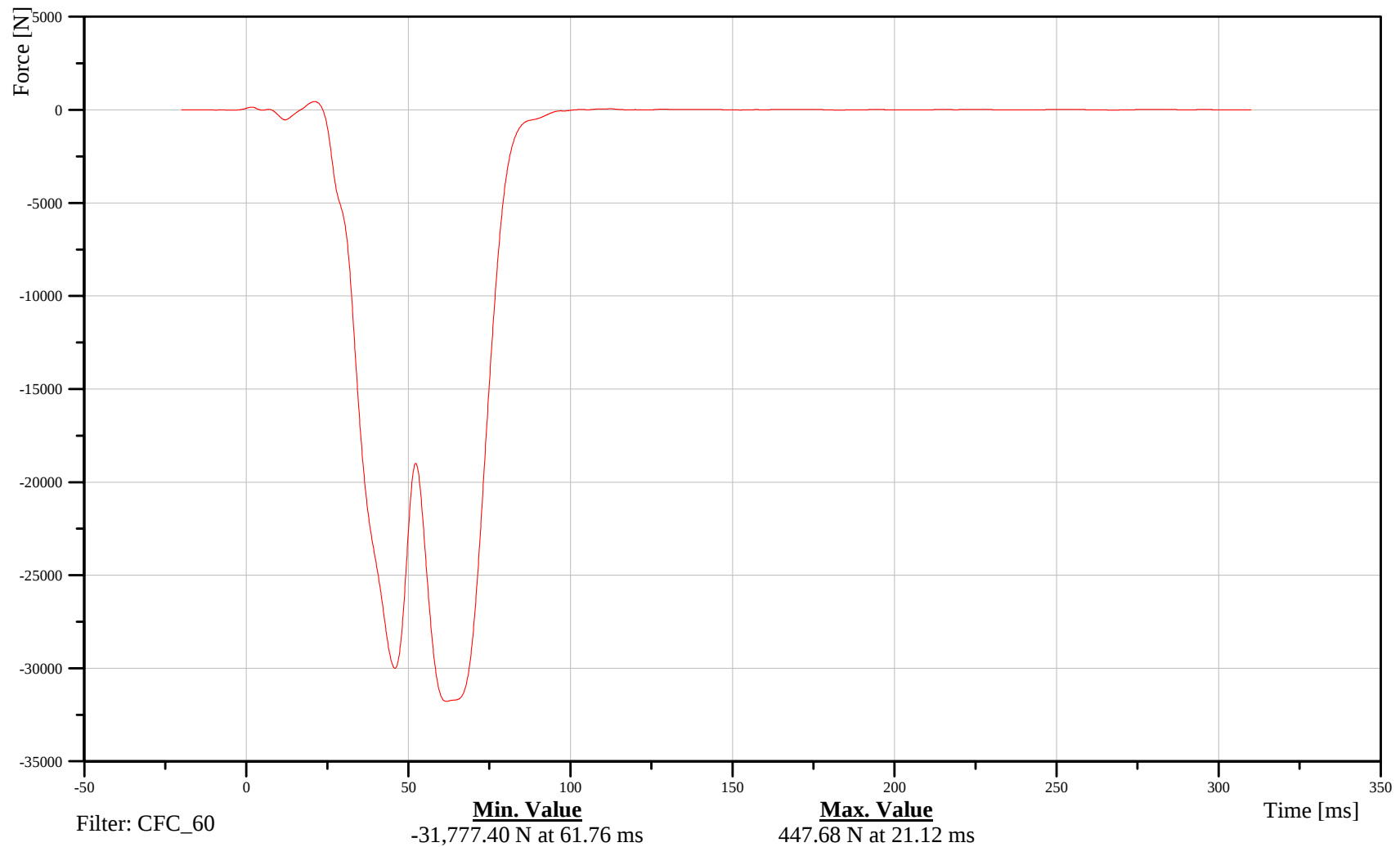
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Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 2 Column 7

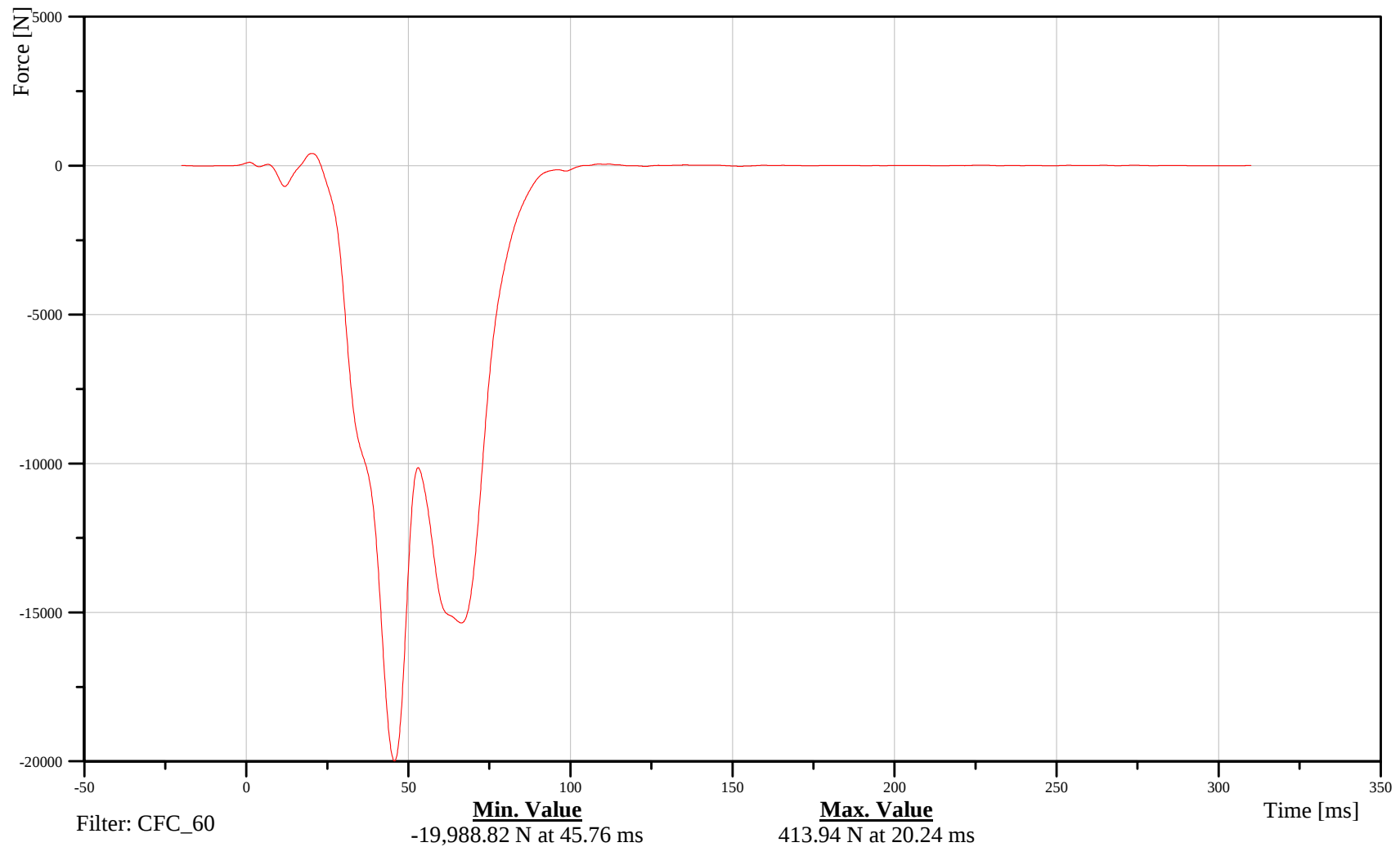
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000H07FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 2 Column 8

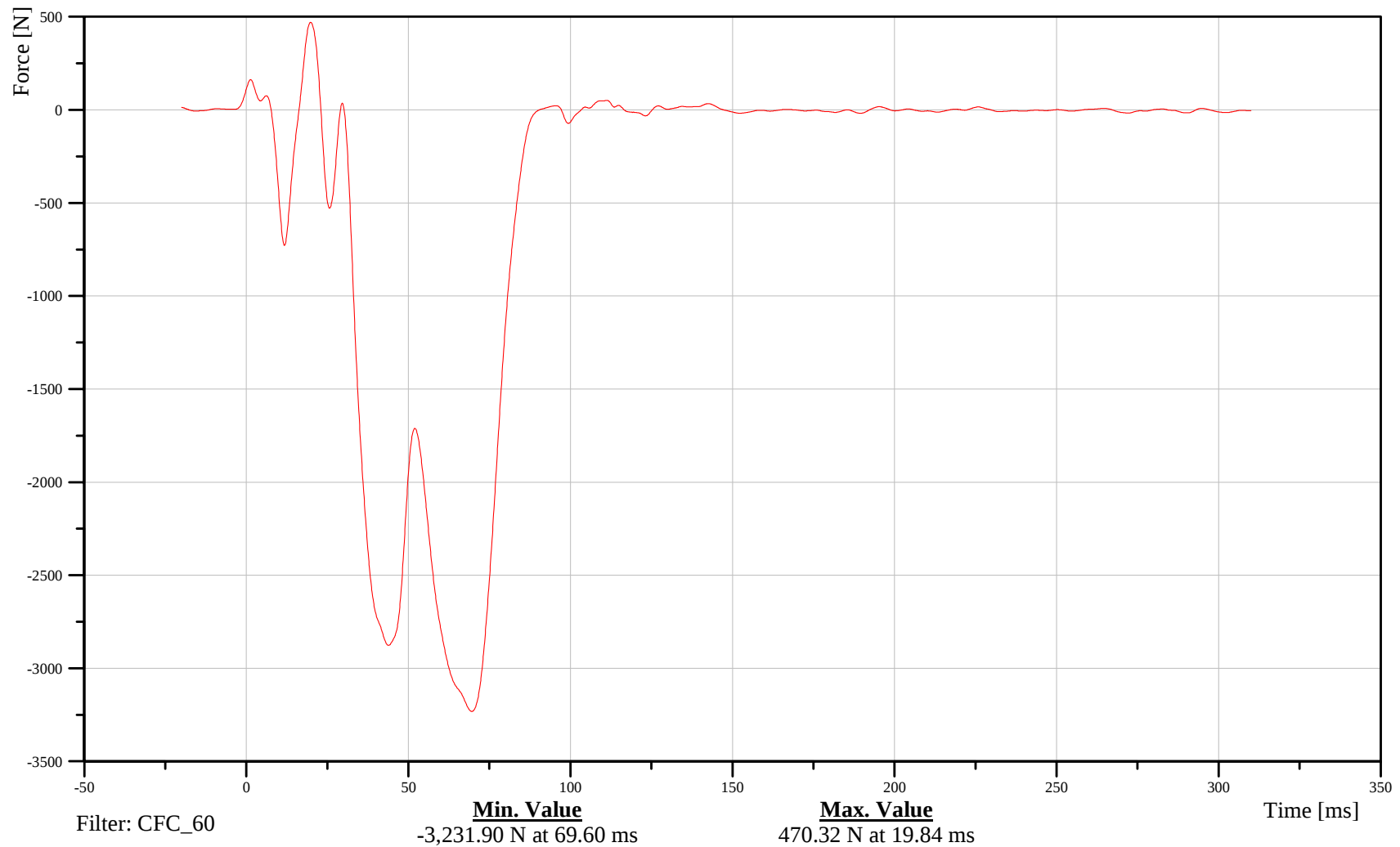
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000H08FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 2 Column 9

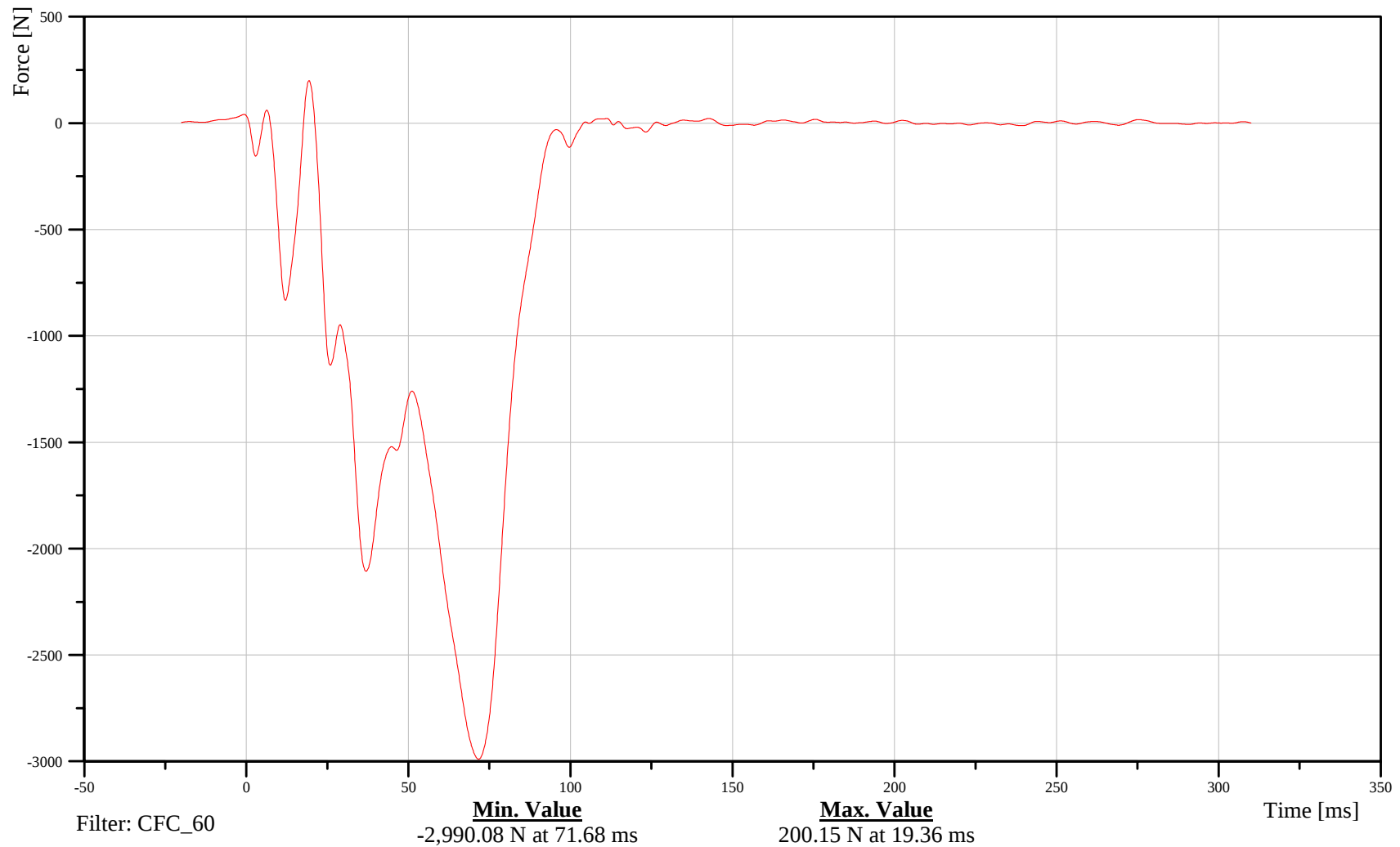
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Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 2 Column 10

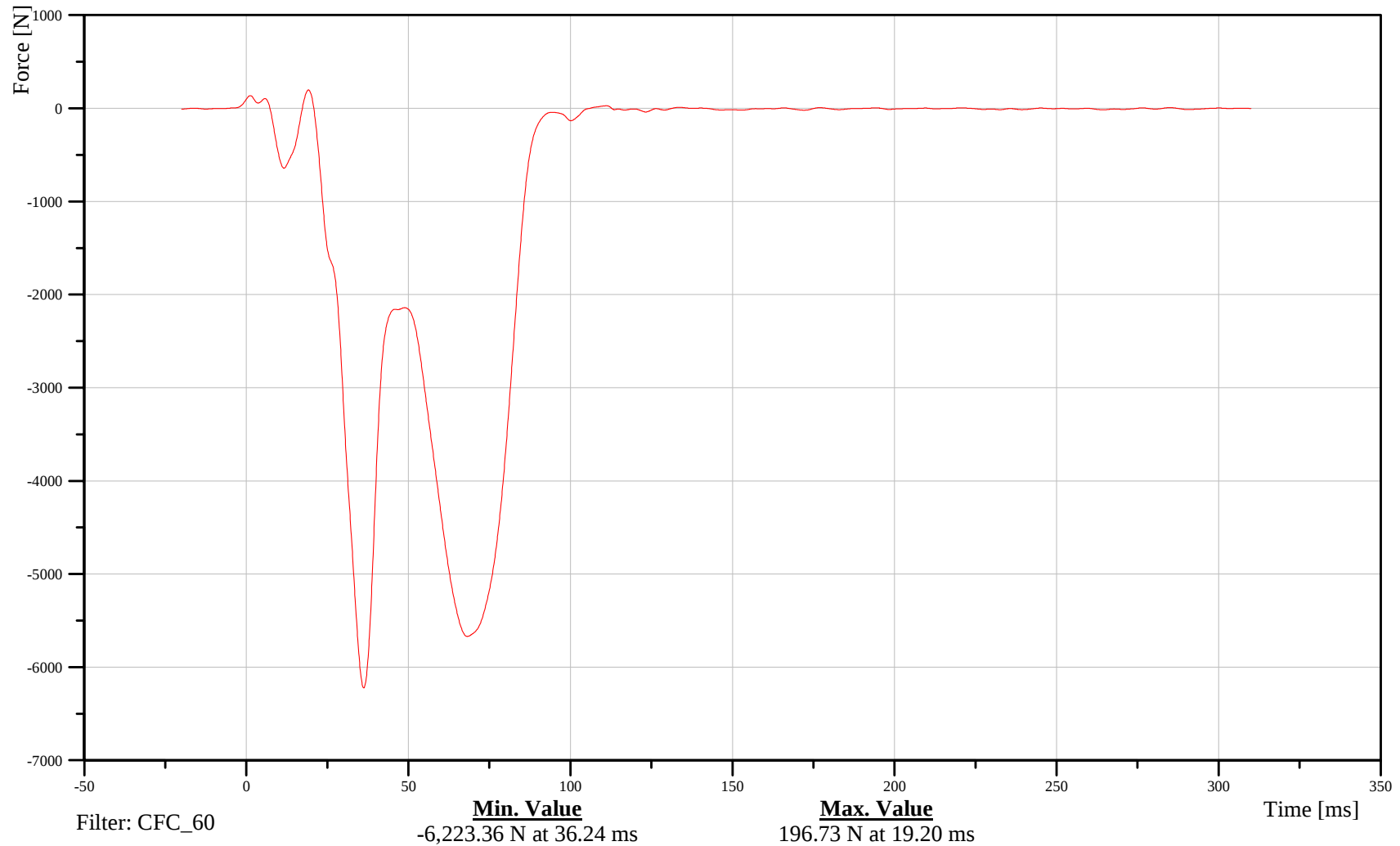
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000H10FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 2 Column 11

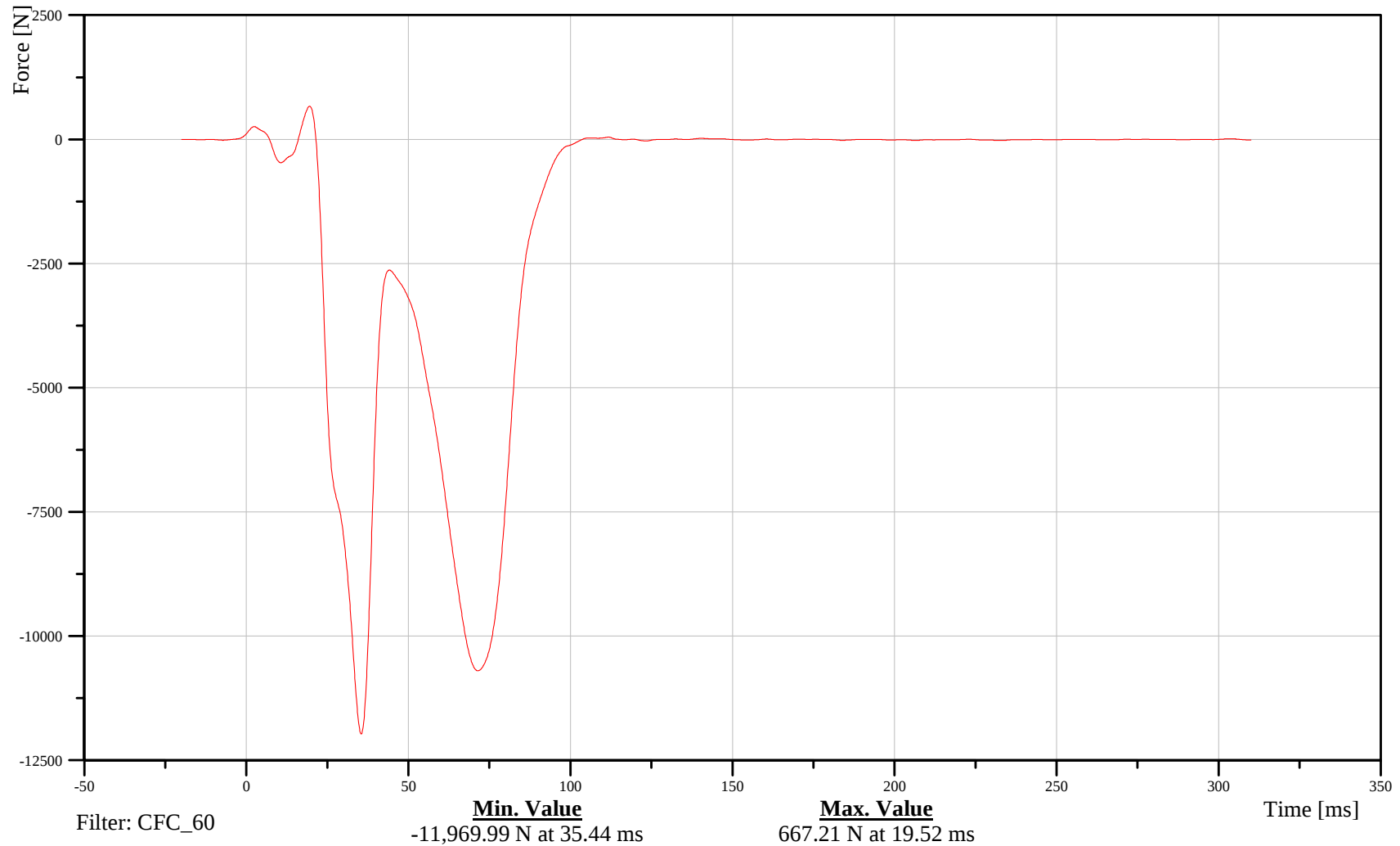
Date: 05/12/2006
Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 2 Column 12

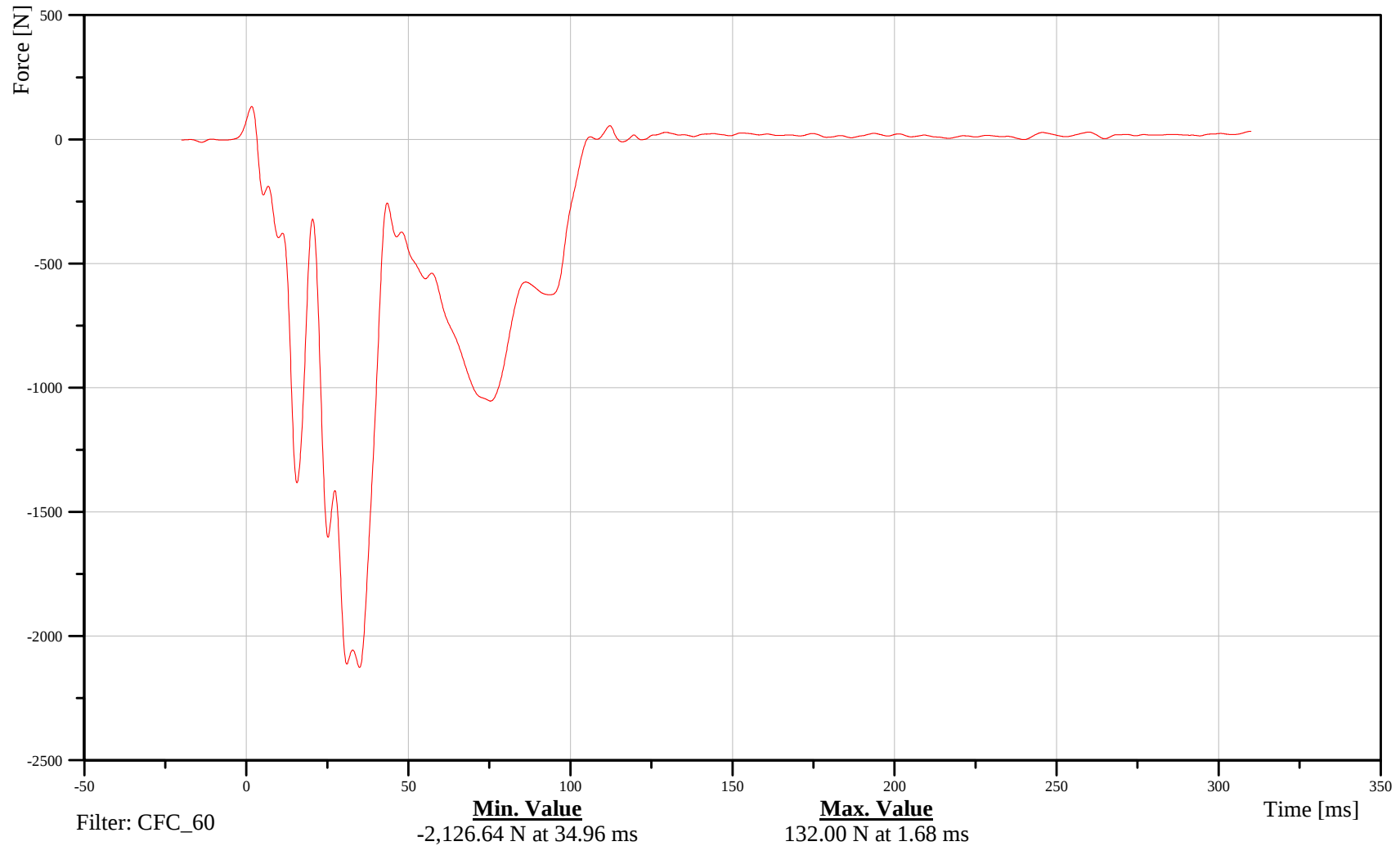
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000H12FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 2 Column 13

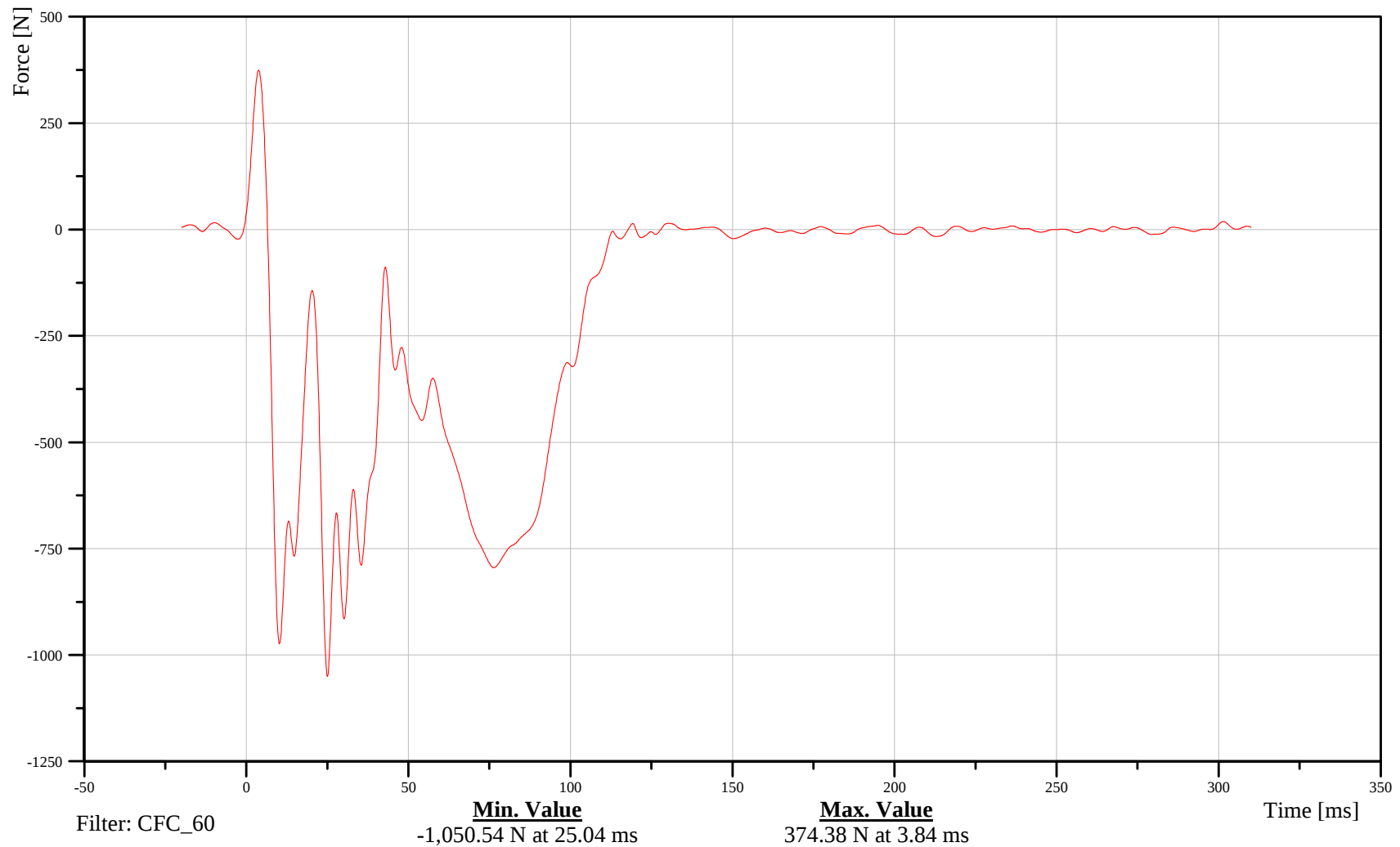
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000H13FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 2 Column 14

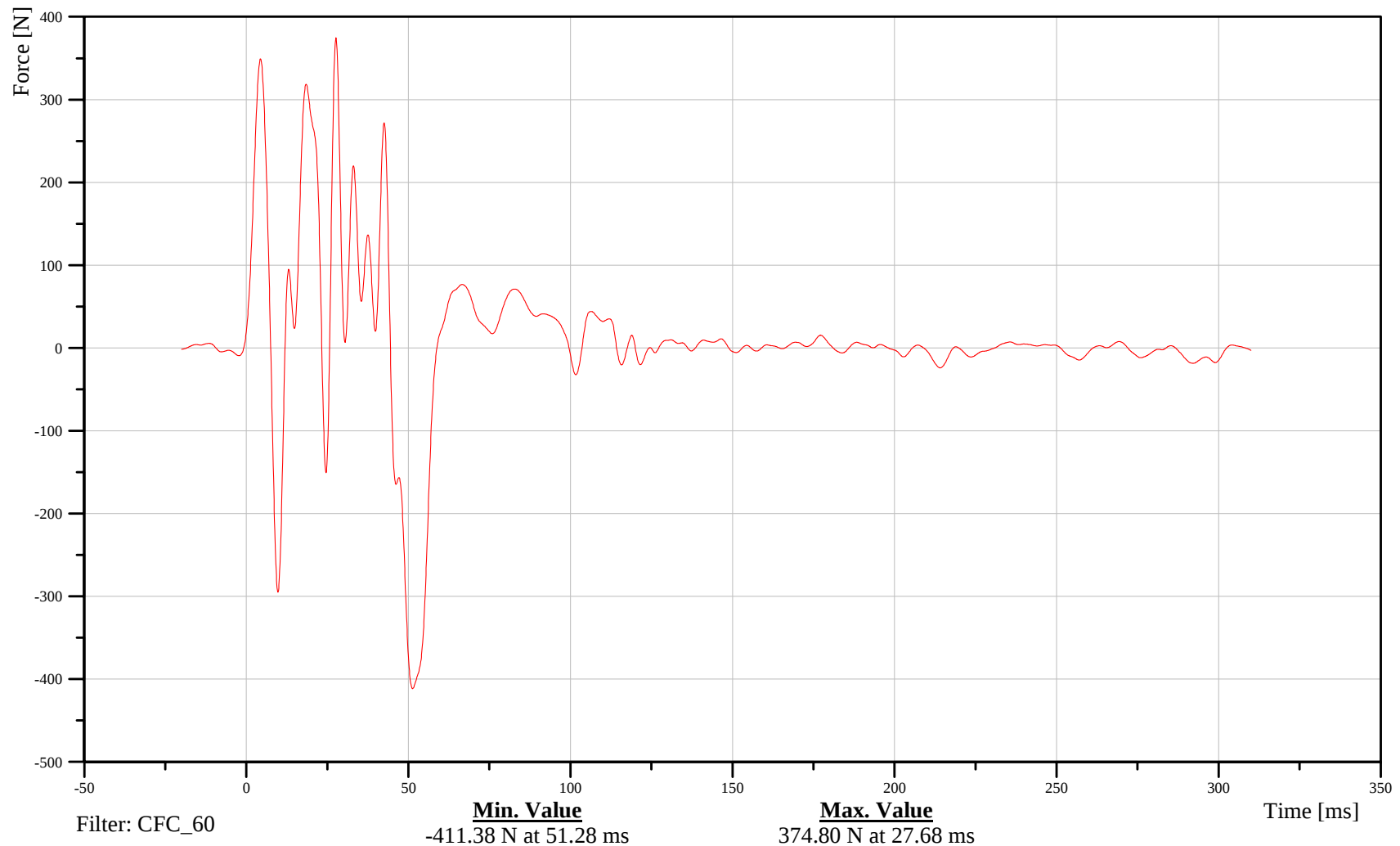
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000H14FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 2 Column 15

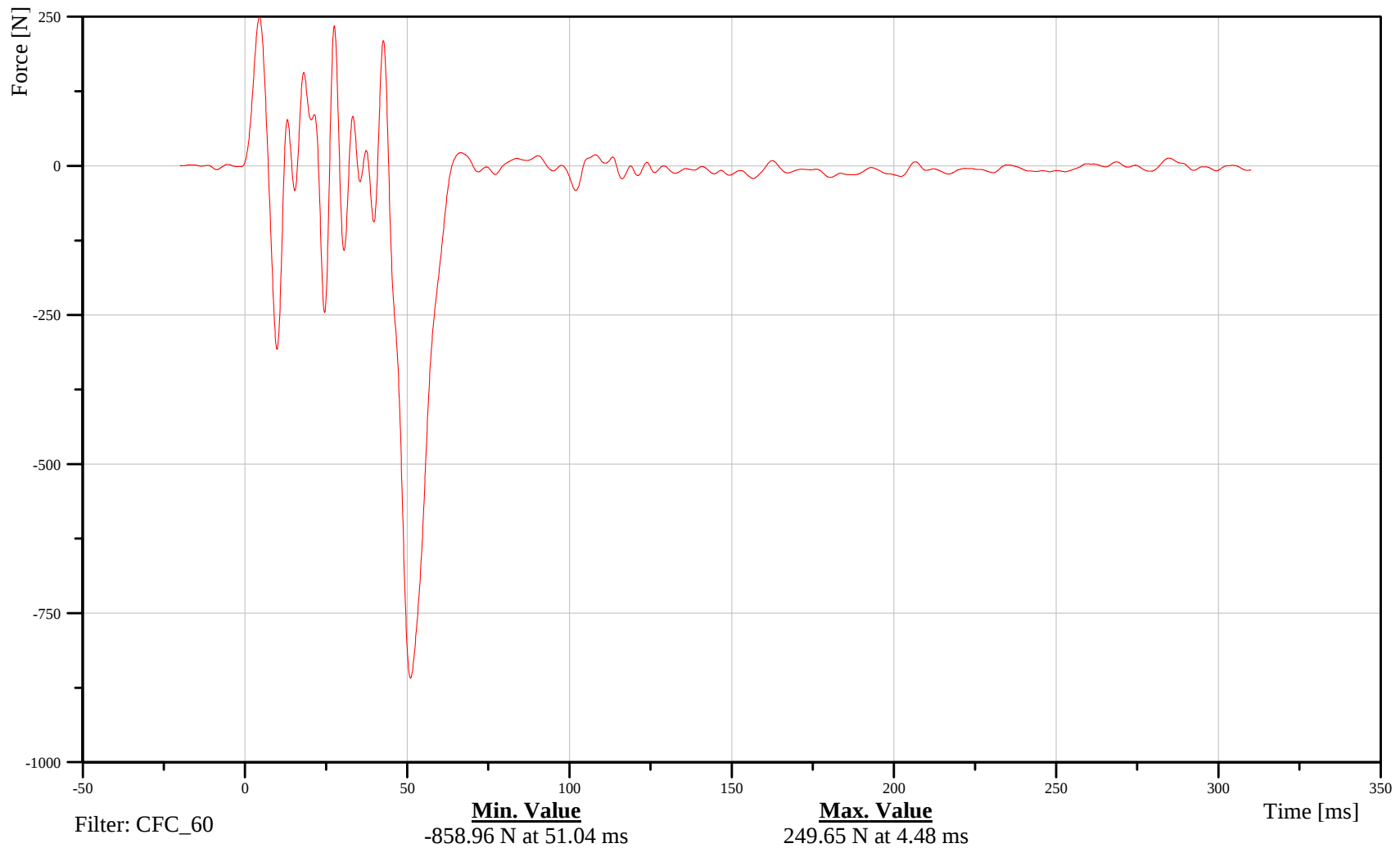
Date: 05/12/2006
Time: 15:38

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 2 Column 16

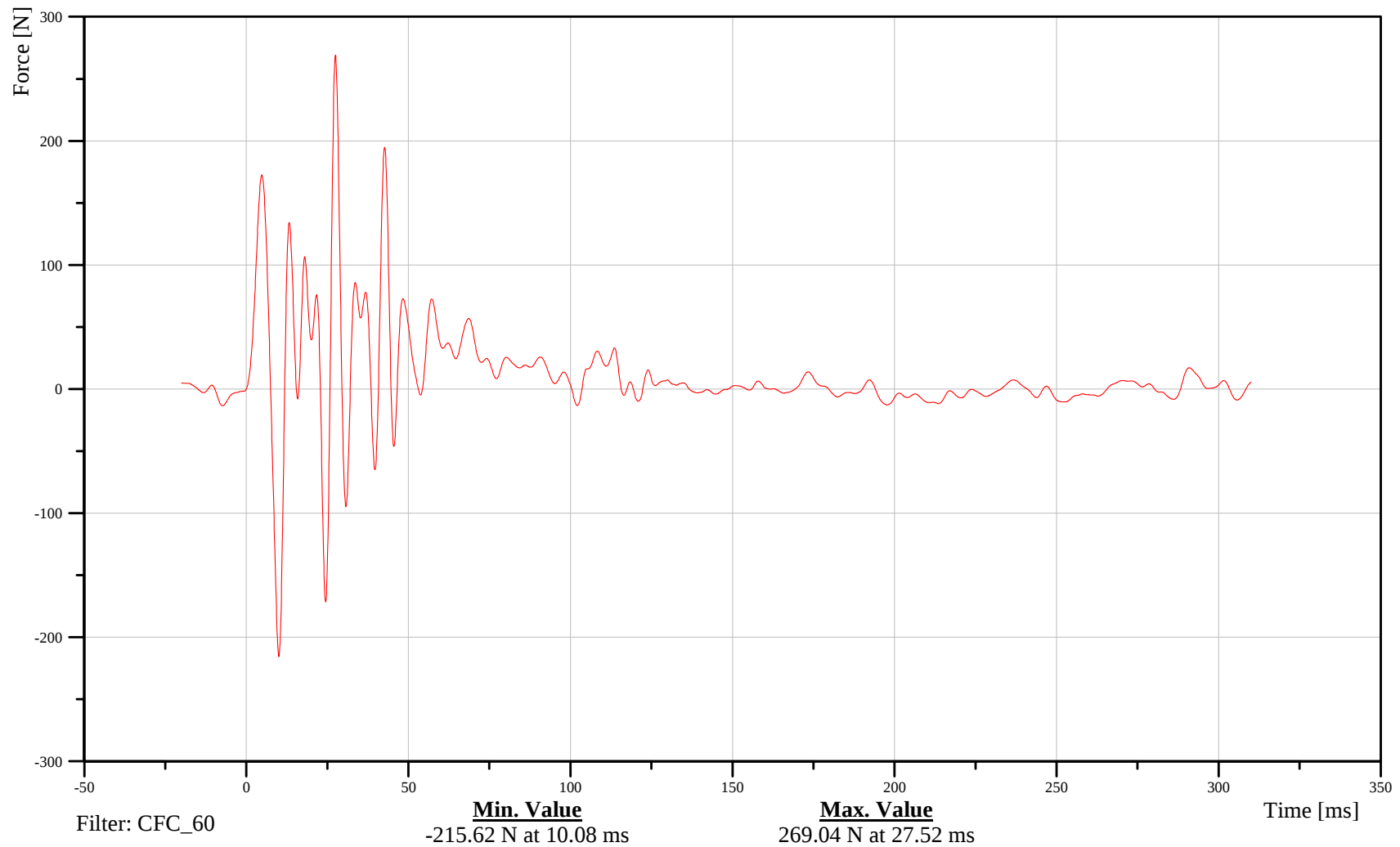
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000H16FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 1 Column 1

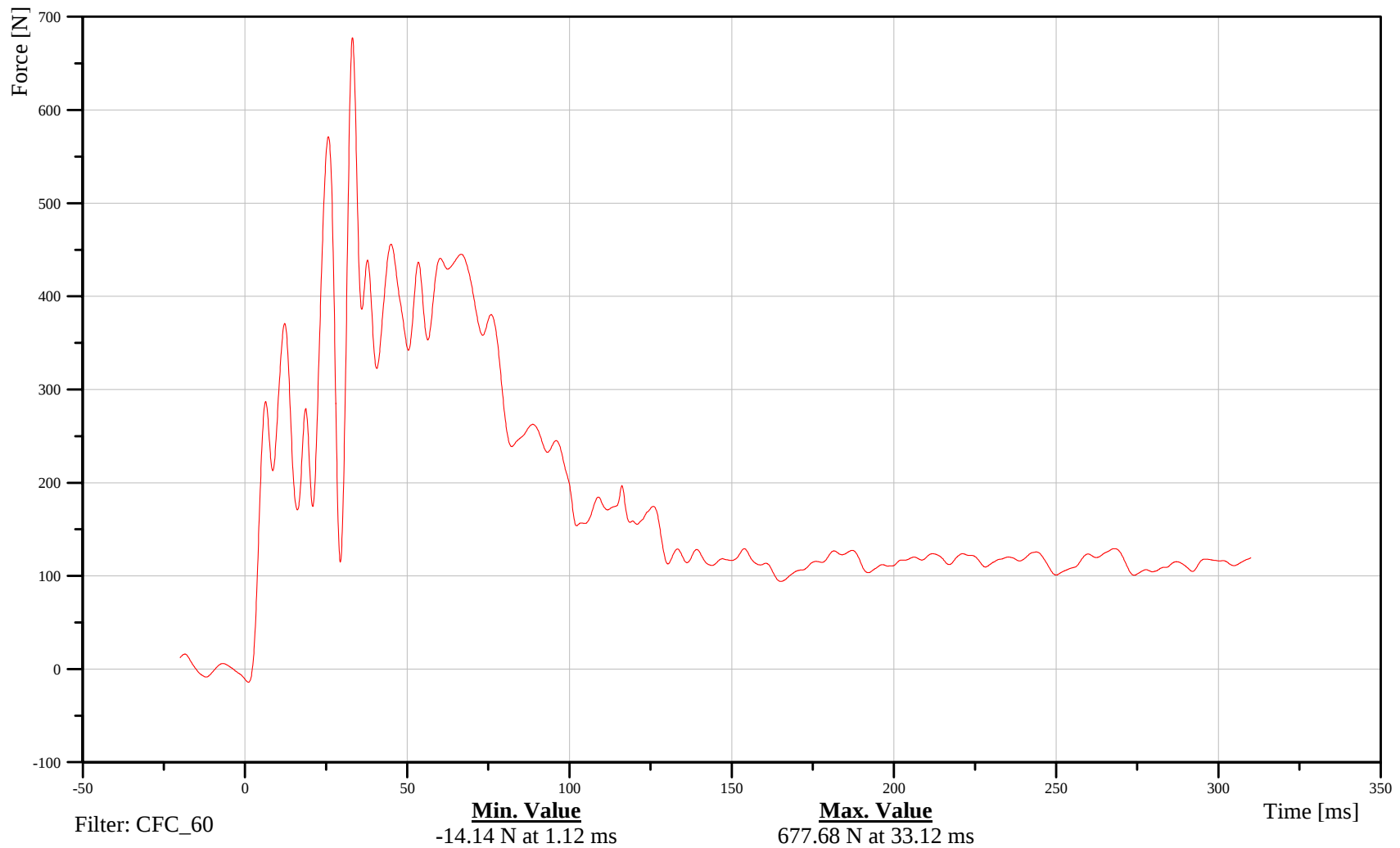
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000I01FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 1 Column 2

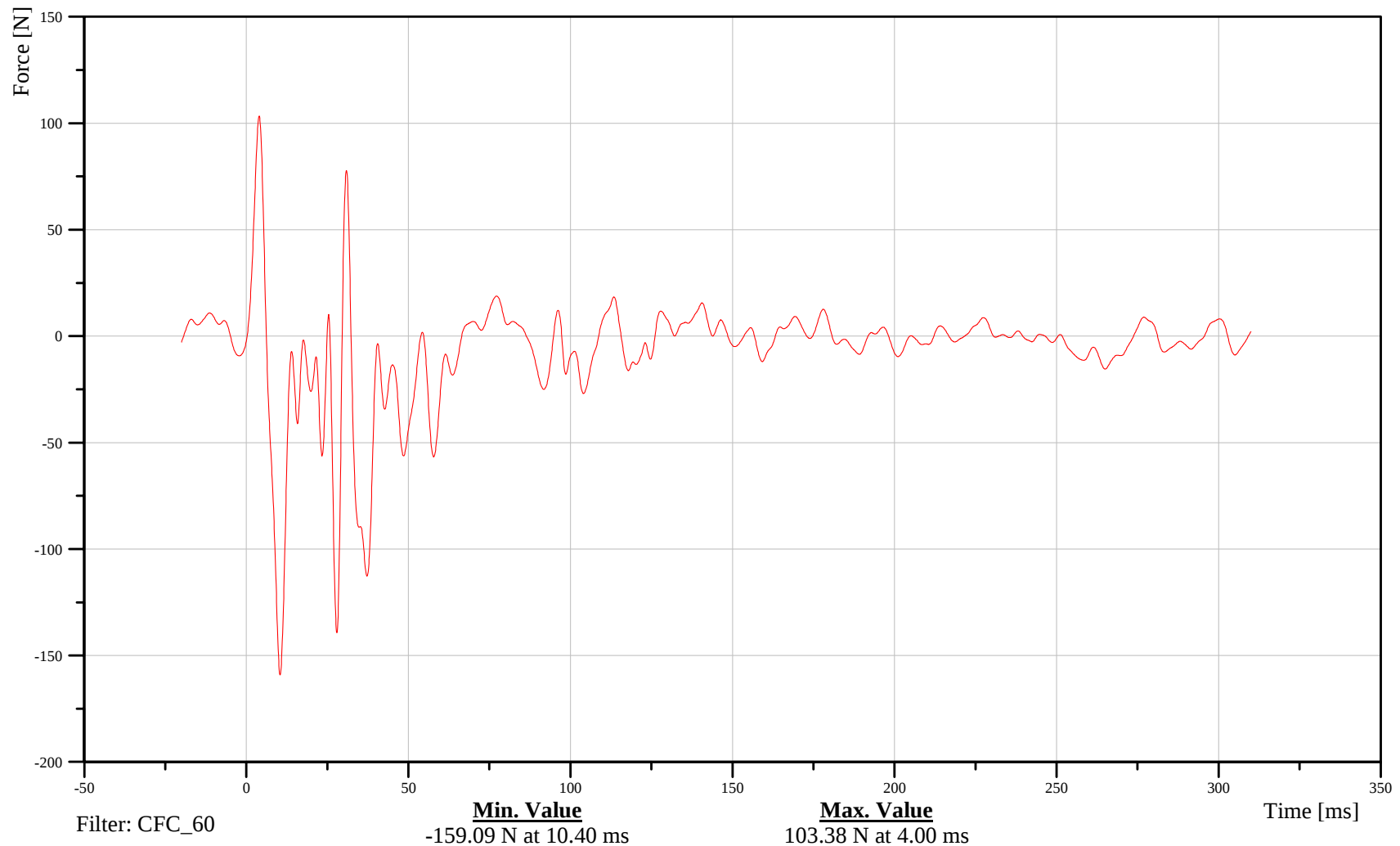
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000I02FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 1 Column 3

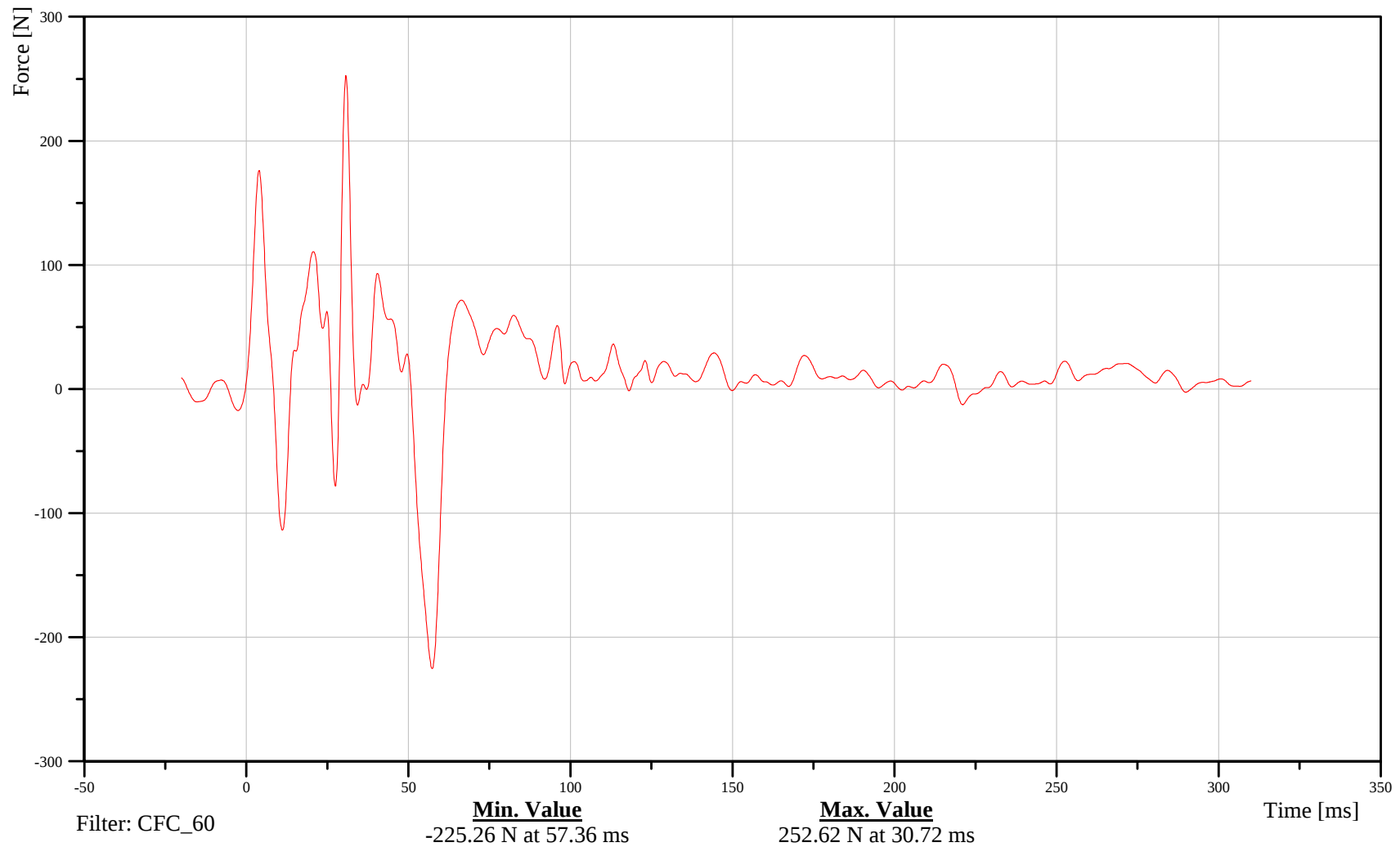
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000I03FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 1 Column 4

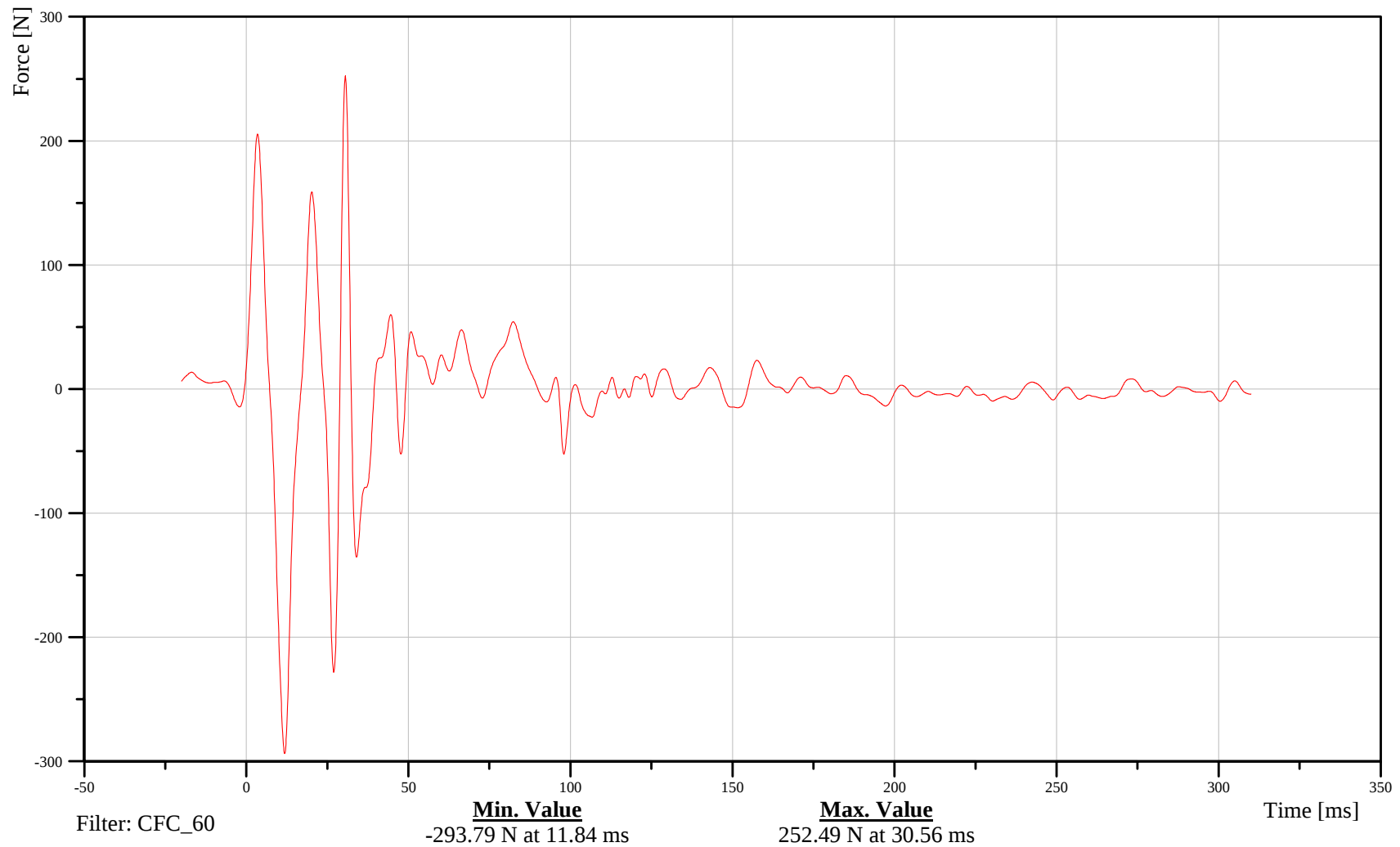
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000I04FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 1 Column 5

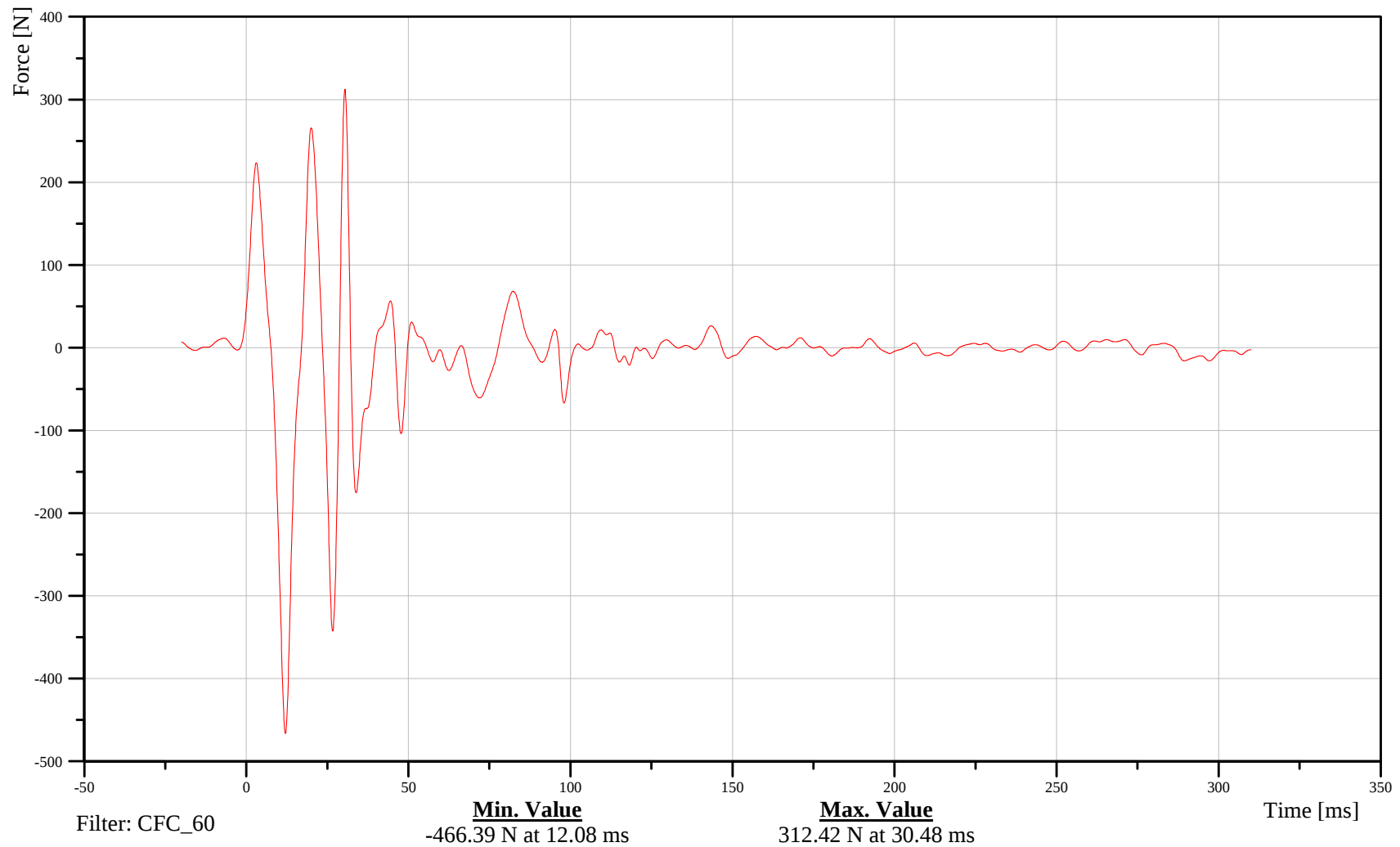
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000I05FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 1 Column 6

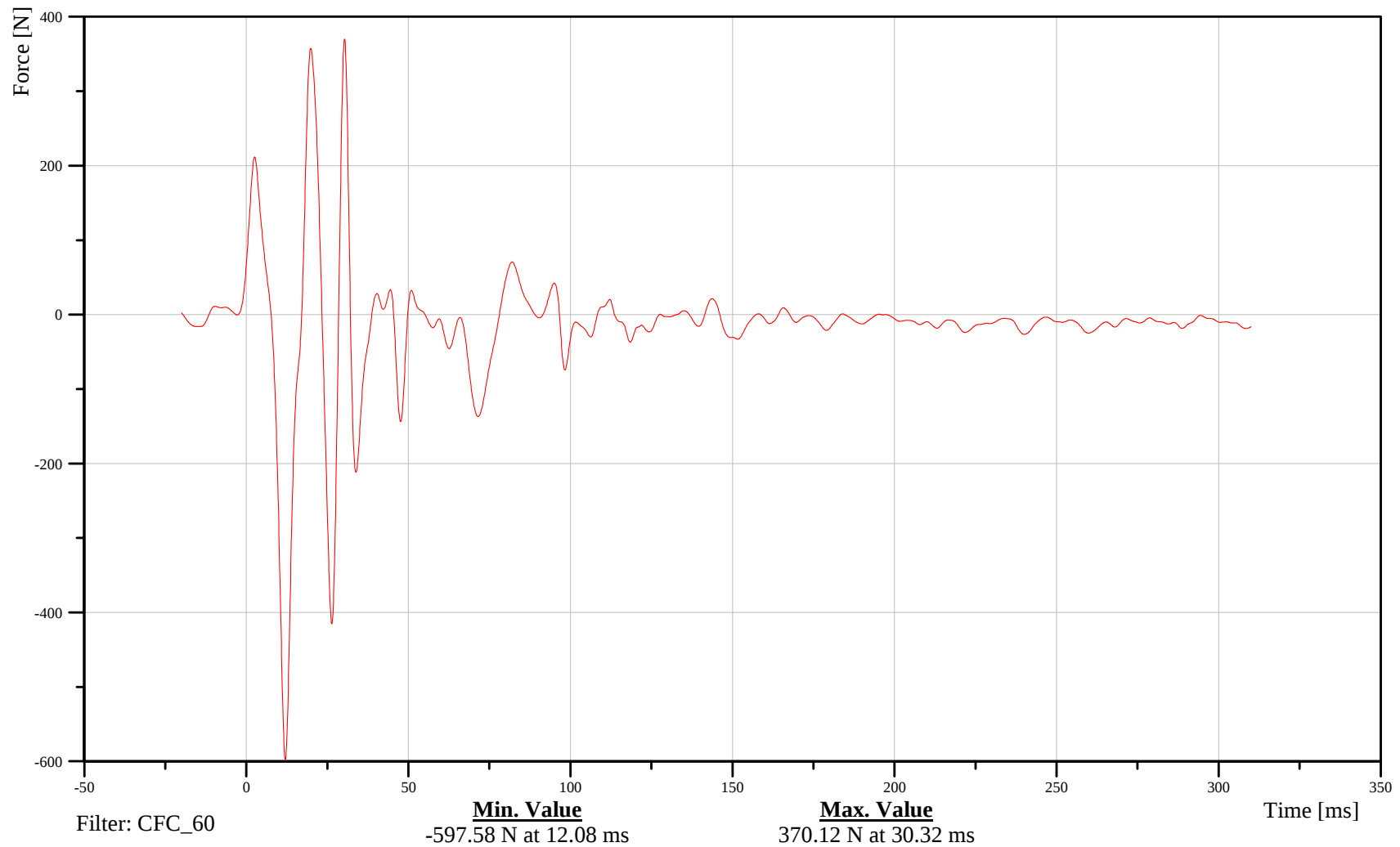
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000I06FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 1 Column 7

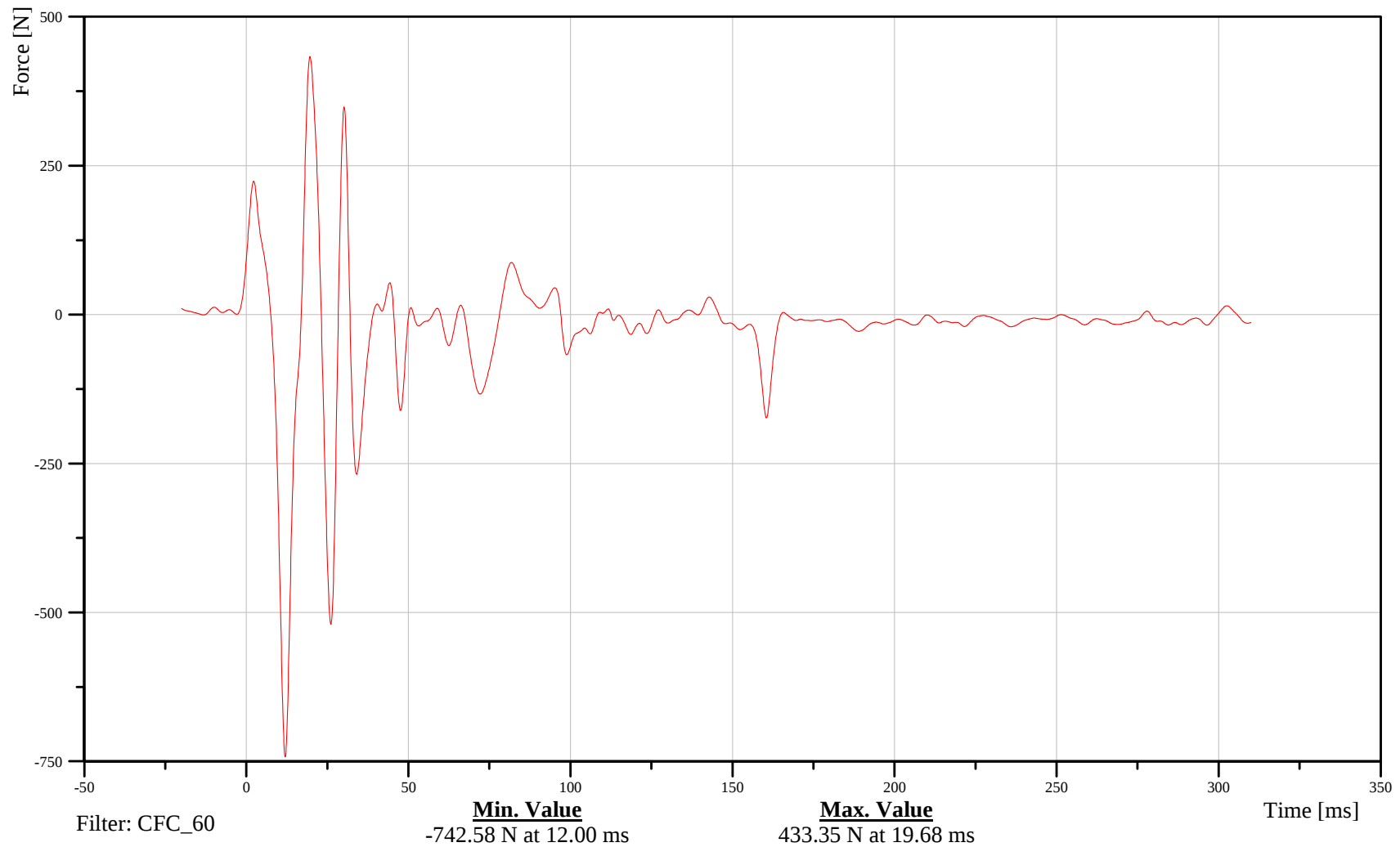
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000I07FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 1 Column 8

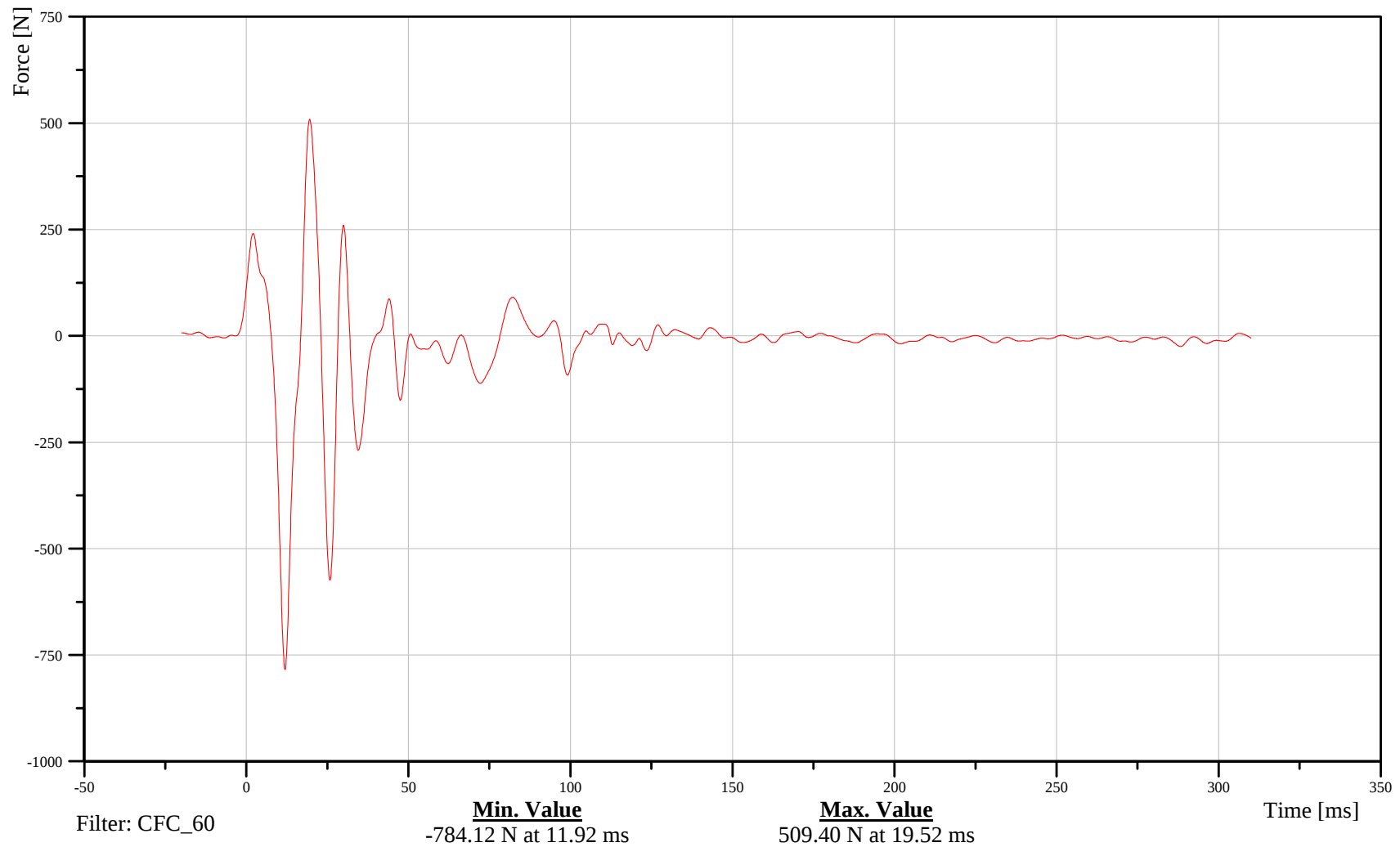
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000I08FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 1 Column 9

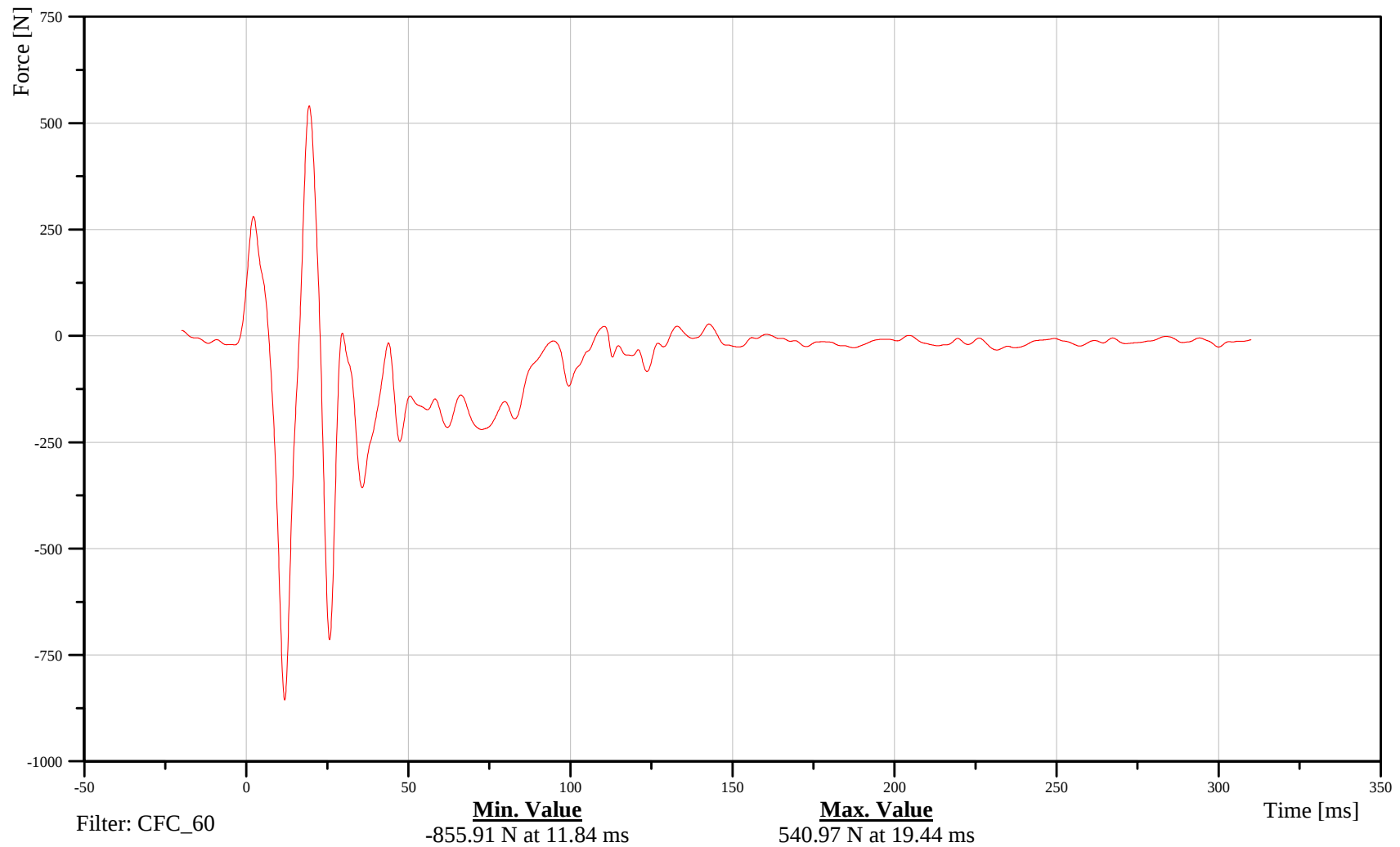
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000I09FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 1 Column 10

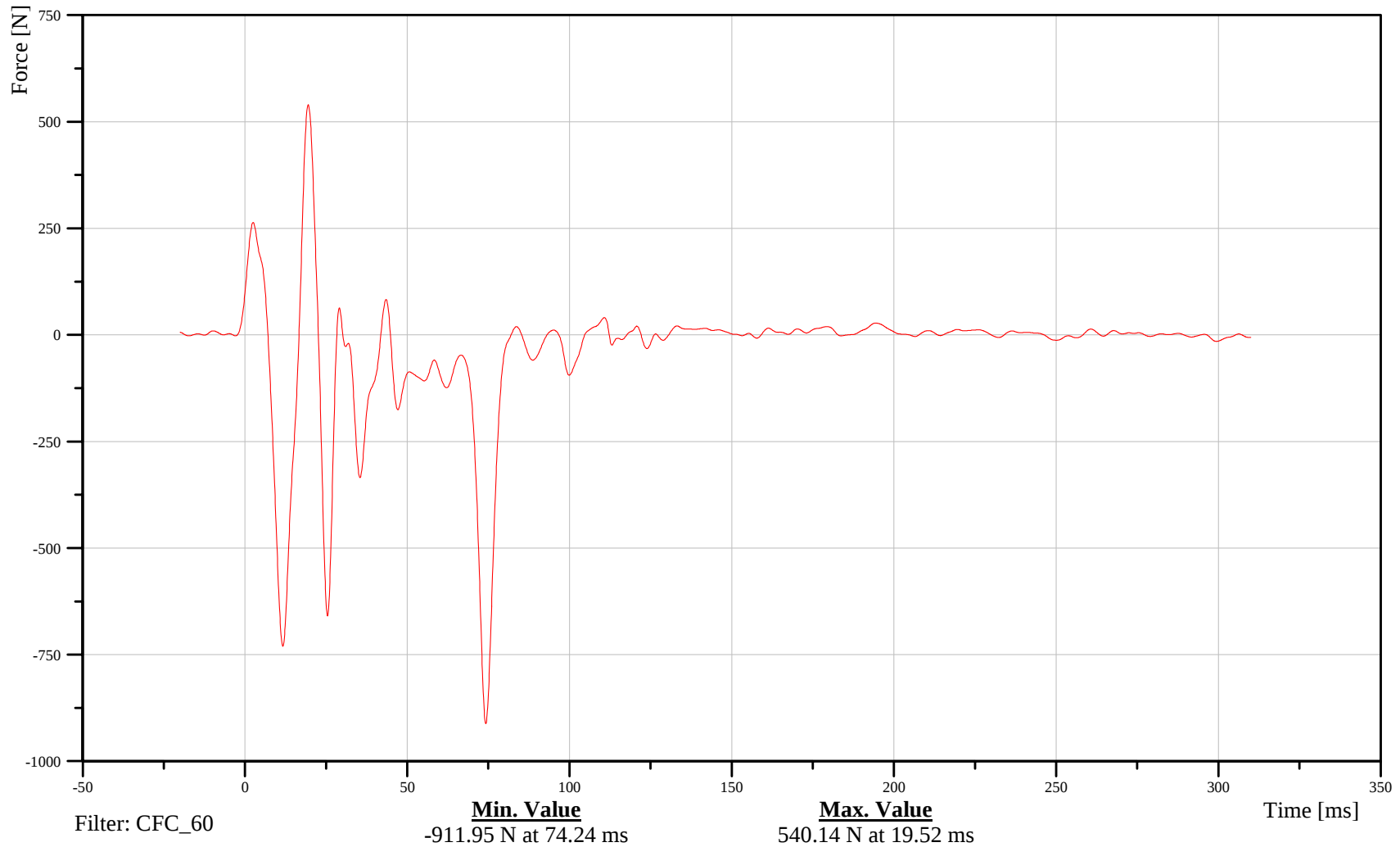
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000I10FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 1 Column 11

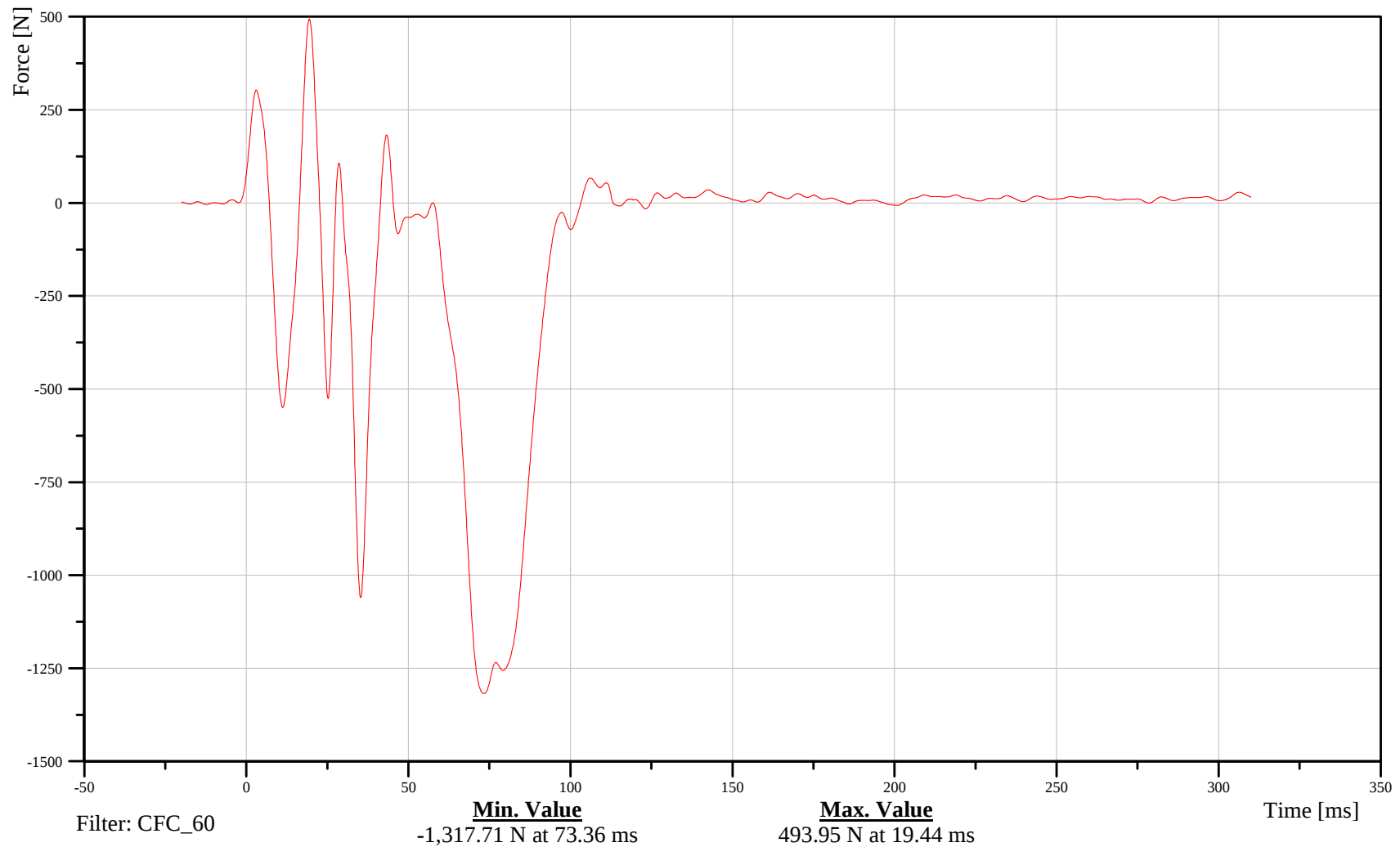
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000I11FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 1 Column 12

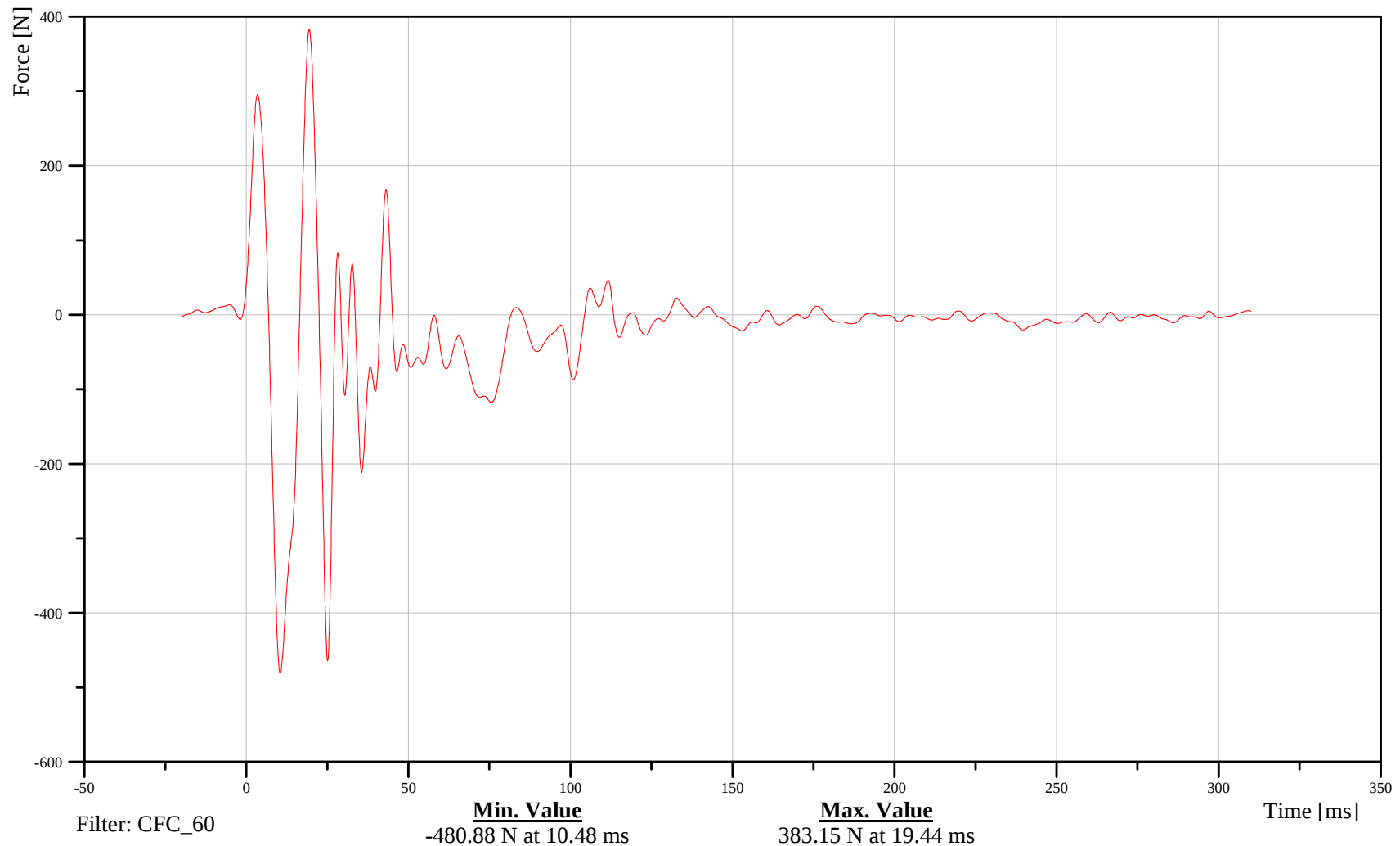
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000I12FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 1 Column 13

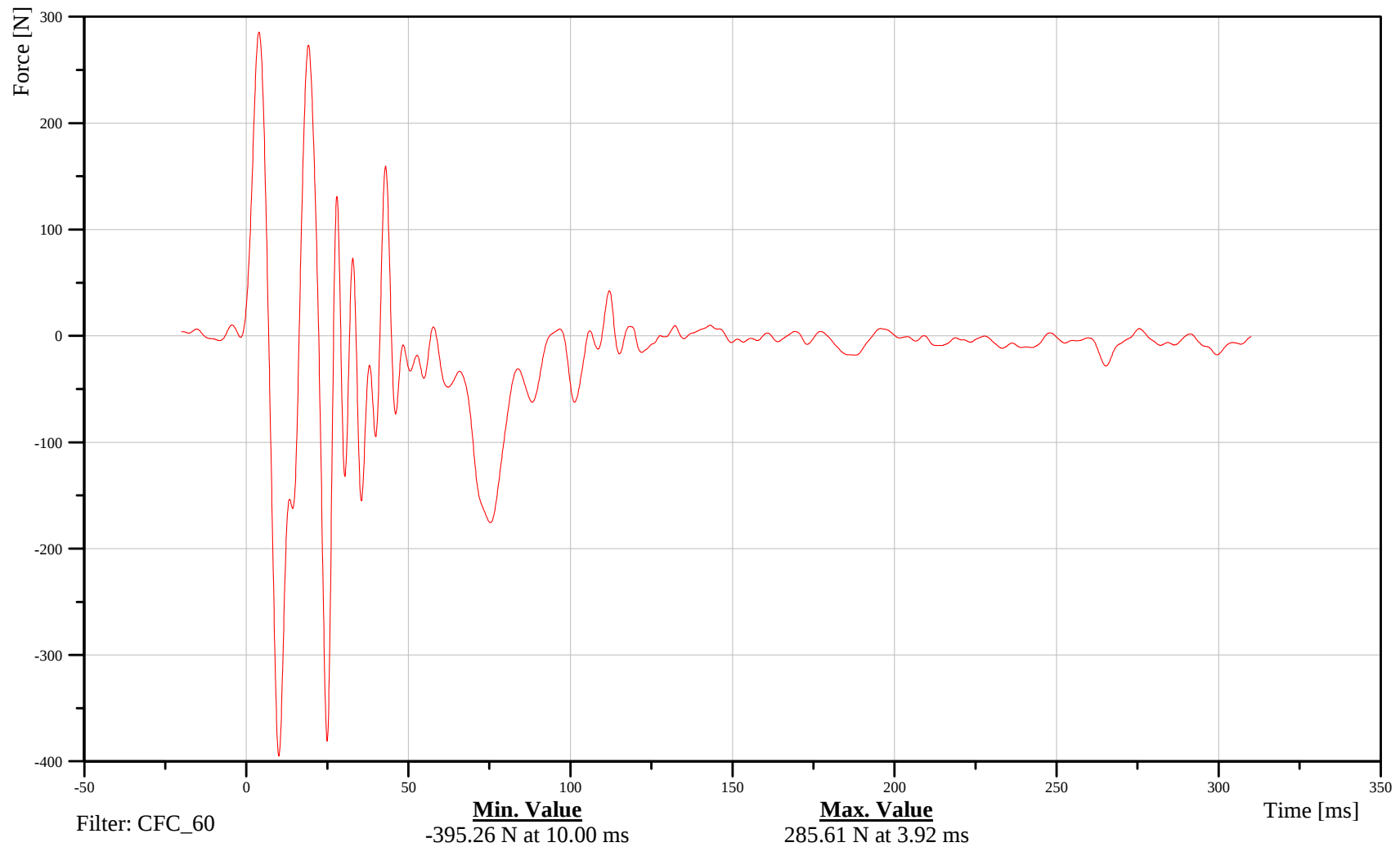
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000I13FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 1 Column 14

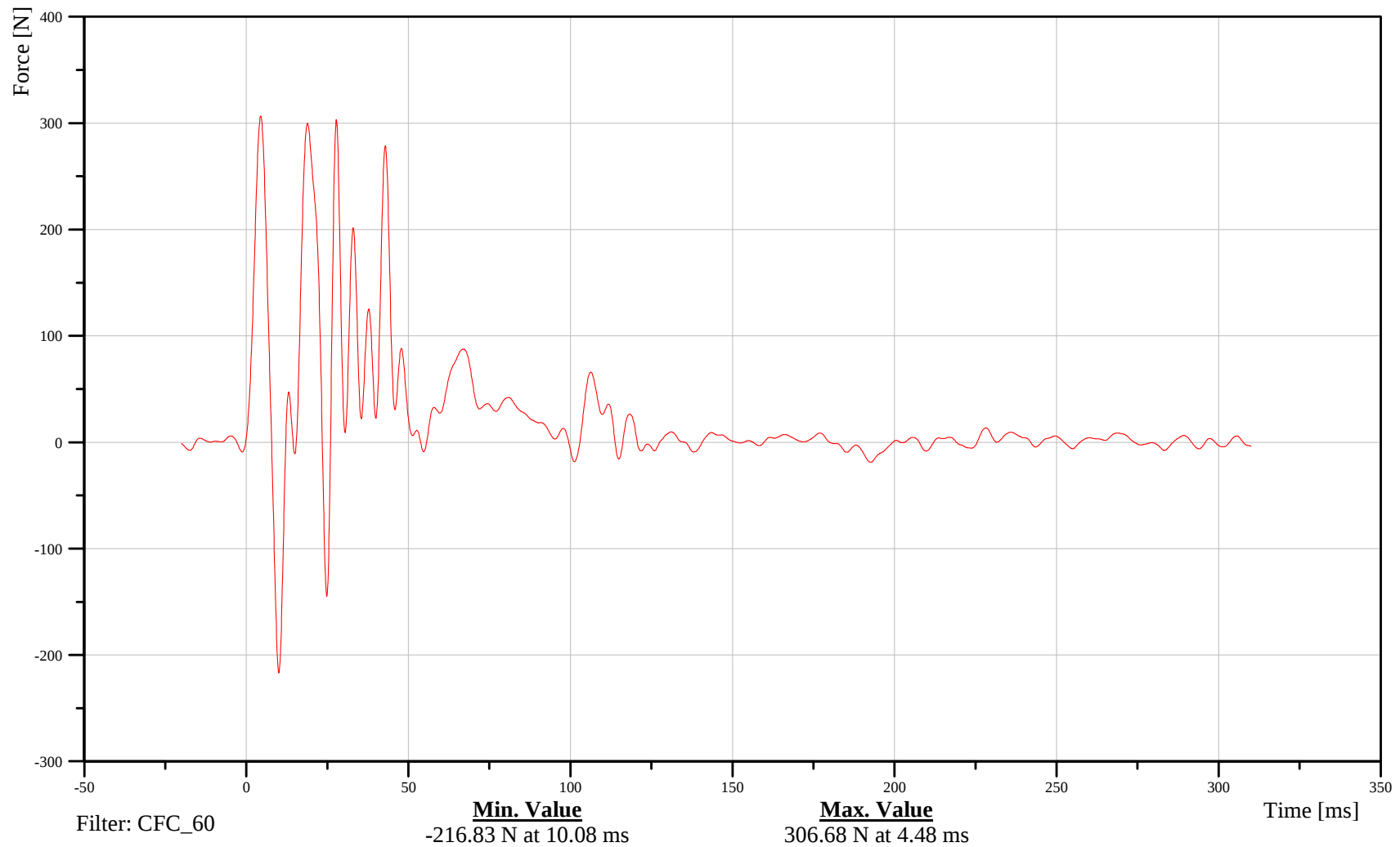
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000I14FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 1 Column 15

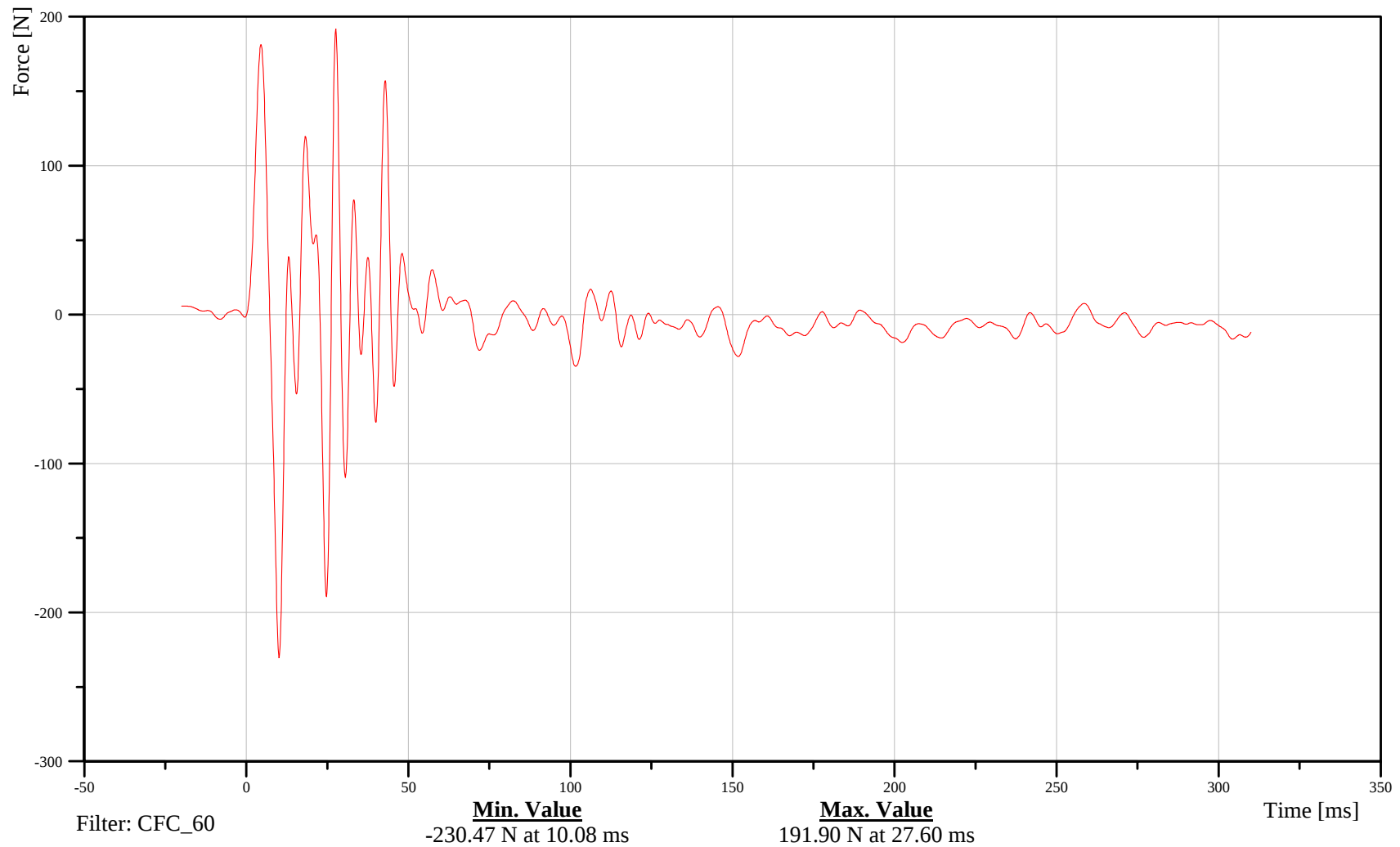
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000I15FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2





2002 Ford Focus into Flat High Resolution LCB

Load Cell Row 1 Column 16

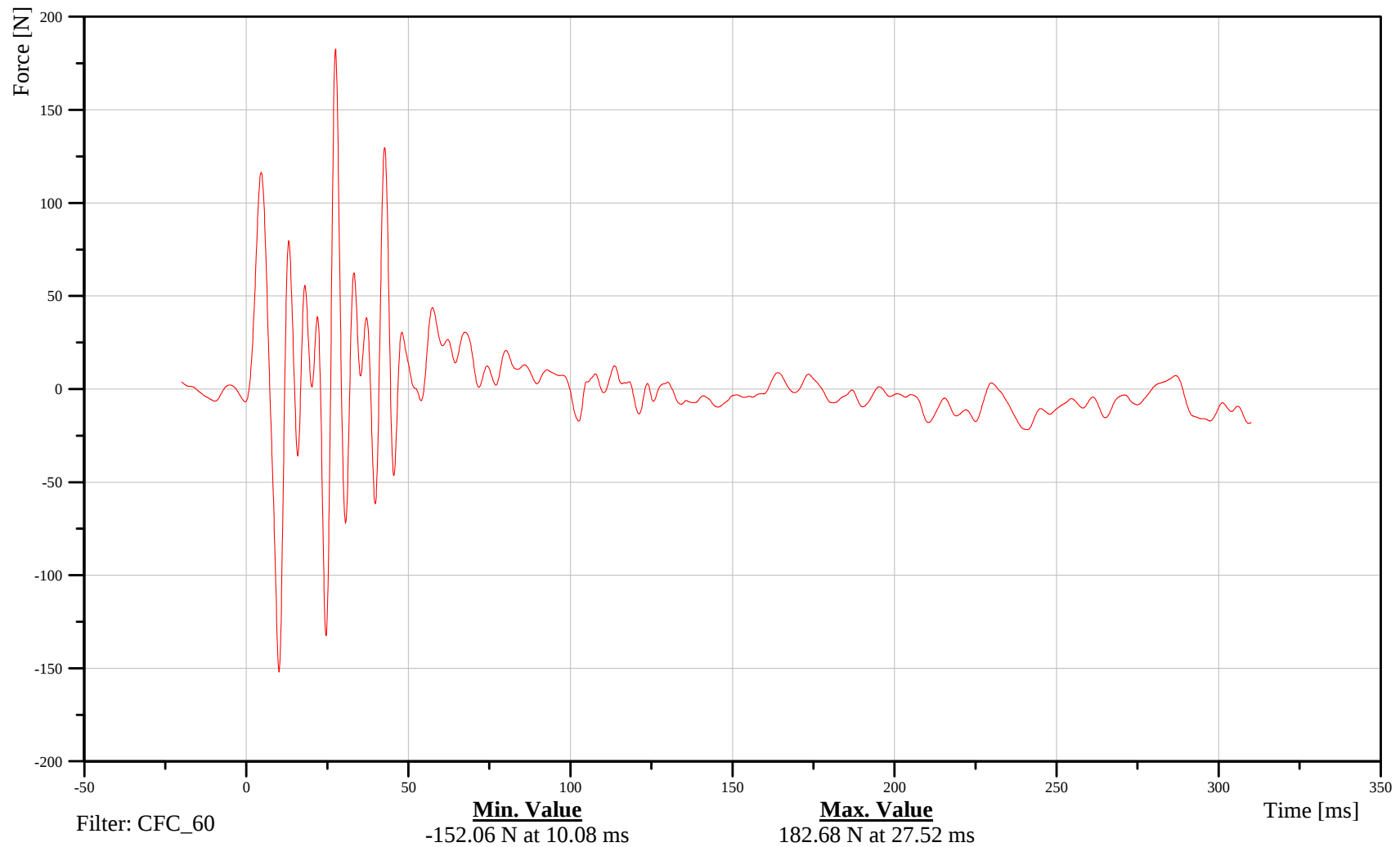
Date: 05/12/2006
Time: 15:38

Customer: VRTC

L0FBAR000I16FOXD

TRC Inc. Test Lab: CTF

Test Number: 060512-2



Appendix C

Dummy Configuration and Performance Verification Data

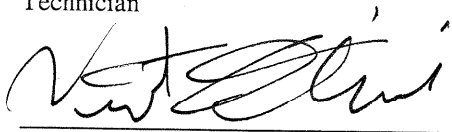
Pre-Test Dummy Configuration and Performance Verification Data

Driver Dummy S/N: 090

NHTSA/VRTC
572E HIII 50th Male Dummy
External Dimensions
Serial No. 090 w/ THOR-LX legs Calibration No. 56

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	881	Yes
B	Shoulder Pivot Height	505.5 - 520.7	511	Yes
C	H-Point Height	83.8 - 88.9	86	Yes
D	H-Point From Seatback	134.6 - 139.7	136	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	90	Yes
F	Thigh Clearance	139.7 - 154.9	152	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	294	Yes
H	Skull Cap To Backline	40.6 - 45.7	43	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	342	Yes
J	Elbow Rest Height	190.5 - 210.8	202	Yes
K	Buttock Knee Length	579.1 - 604.5	598	Yes
L	Popliteal Height	429.3 - 454.7	445	Yes
M	Knee Pivot Height	485.1 - 500.4	495	Yes
N	Buttock Popliteal Length	452.1 - 477.5	468	Yes
O	Chest Depth	213.4 - 228.6	221	Yes
P	Foot Length	251.5 - 266.7	253	Yes
V	Shoulder Breadth	421.6 - 436.9	430	Yes
W	Foot Breadth	91.4 - 106.7	98	Yes
Y	Chest Circumference	970.3 - 1000.8	991	Yes
Z	Waist Circumference	835.7 - 866.1	855	Yes
AA	Location For Chest Circumference	429.3 - 434.3	432	Yes
BB	Location For Waist Circumference	226.1 - 231.1	229	Yes

Technician



Approved



Transportation Research Center Inc.

Front Head Drop

HIII 50th Serial No. 090 Certification No. 56-1

Test Date: 05/10/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	48 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	240.1 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-2.6 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician



Approved

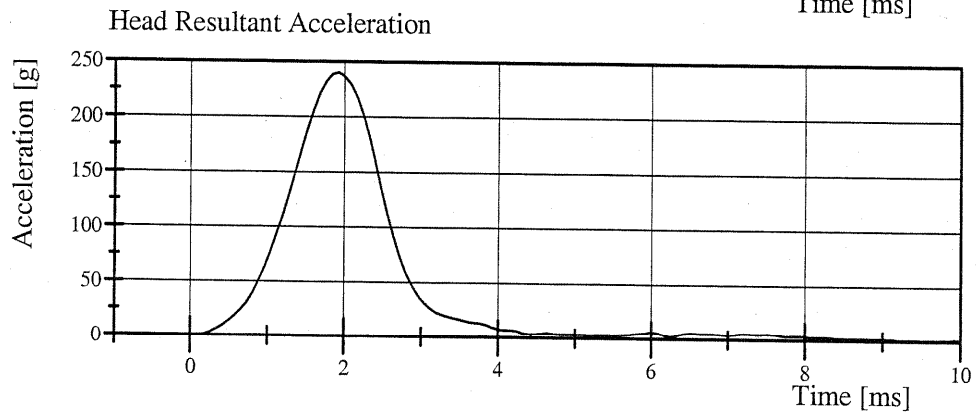
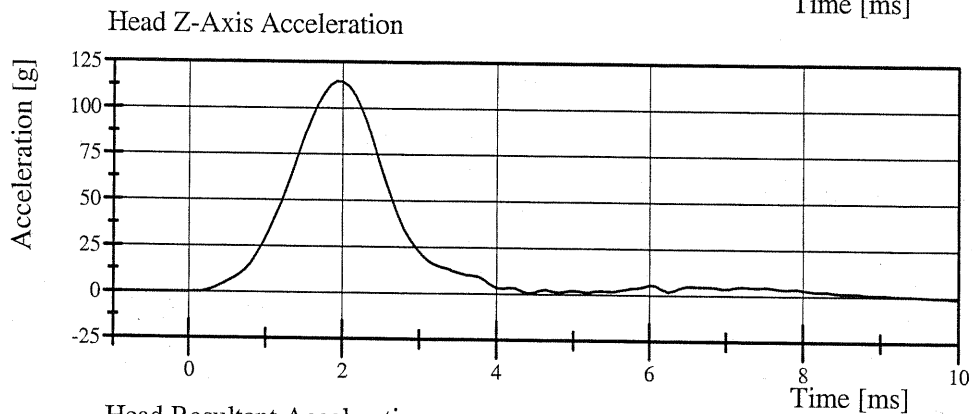
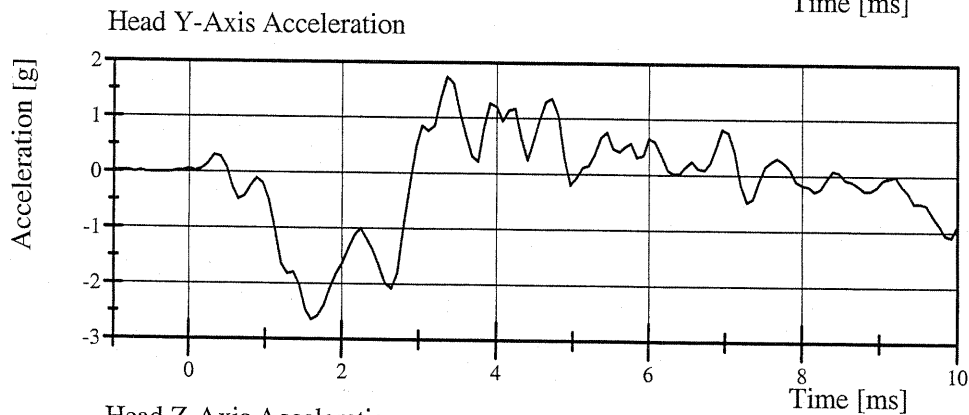
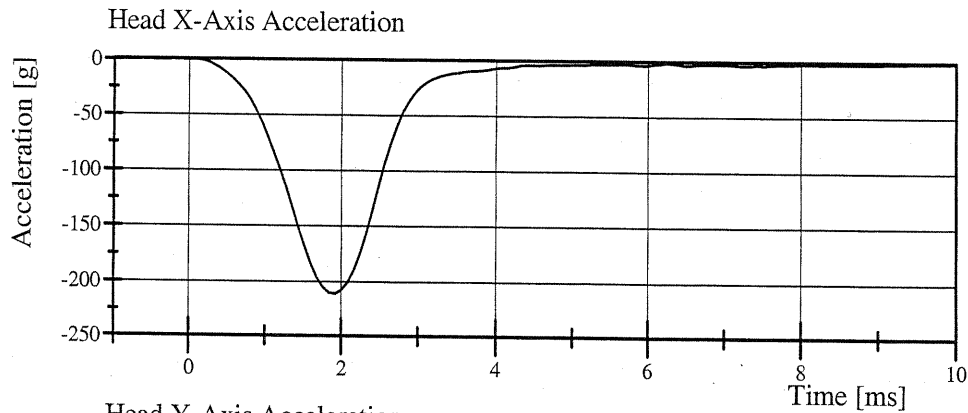


Transportation Research Center Inc.

Front Head Drop

HHH 50th Serial No. 090 Certification No. 56-1

Test Date: 05/10/2006



Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 090 Certification No. 56-1

Test Date: 05/10/2006

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.946 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	38.3 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-24.12 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-21.14 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-15.85 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-15.85 g	Yes
Total Head D-Plane Rotation Peak	(-64) - (-78) °	-74.6 °	Yes
Time of Peak	57 - 64 ms	59.8 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	120.2 ms	Yes
Total Neck Occipital Condyles Moment Peak	88 - 108 N·m	101.0 N·m	Yes
Time of Peak	47 - 58 ms	50.6 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	104.6 ms	Yes

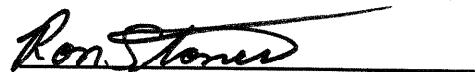
Test meets specifications.

Comments:

Technician



Approved

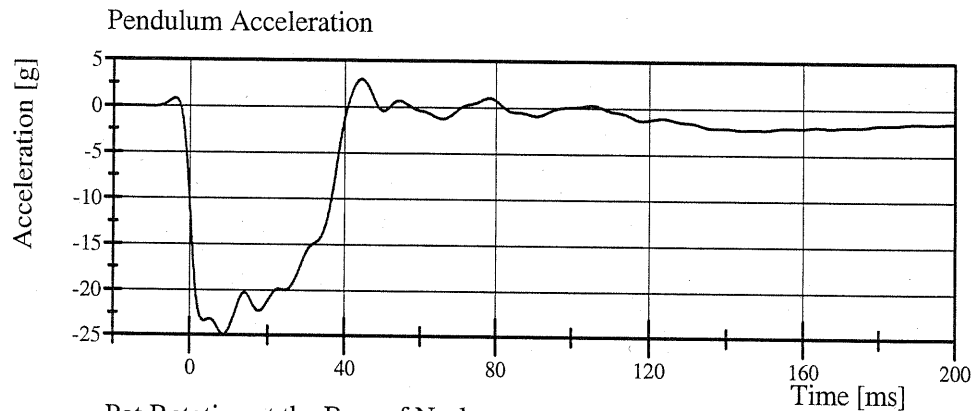


Transportation Research Center Inc.

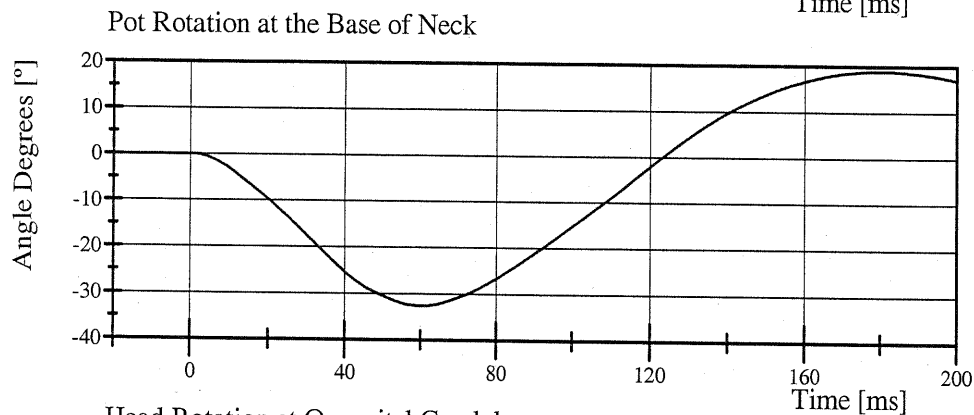
Neck Flexion

HIH 50th Serial No. 090 Certification No. 56-1

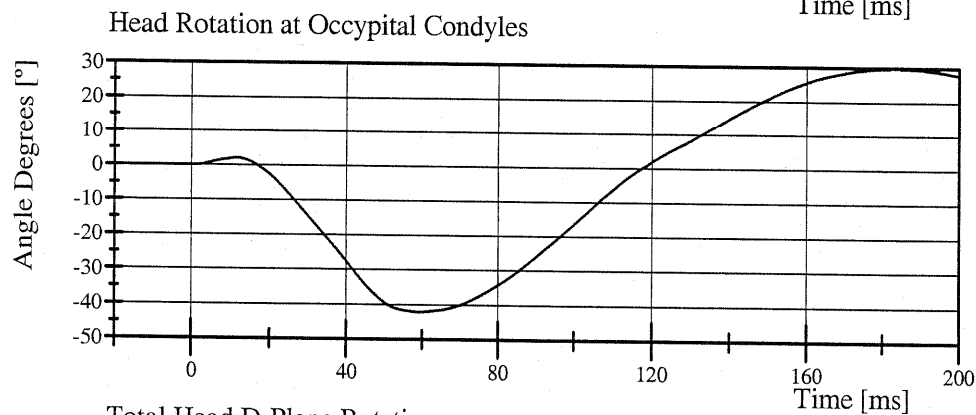
Test Date: 05/10/2006



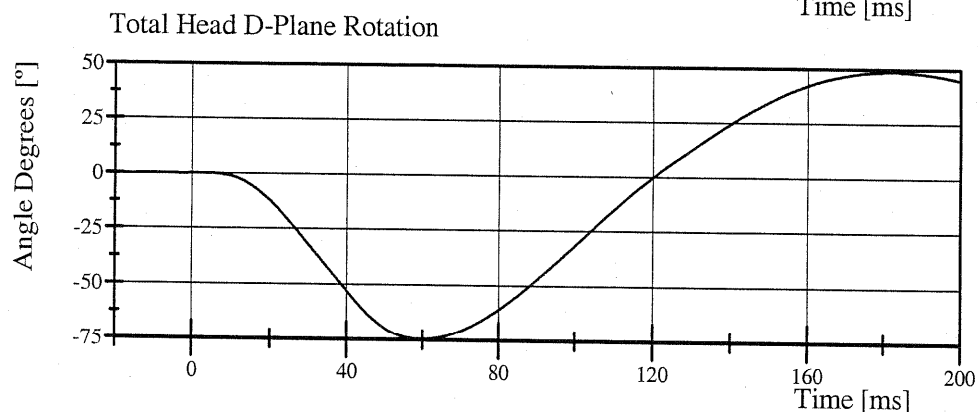
Filter Class: CFC_60
Max: 3.0 g at 44.4 ms
Min: -24.9 g at 8.5 ms



Filter Class: CFC_60
Max: 19.0 ° at 179.9 ms
Min: -32.6 ° at 60.5 ms



Filter Class: CFC_60
Max: 29.9 ° at 183.3 ms
Min: -42.0 ° at 59.4 ms



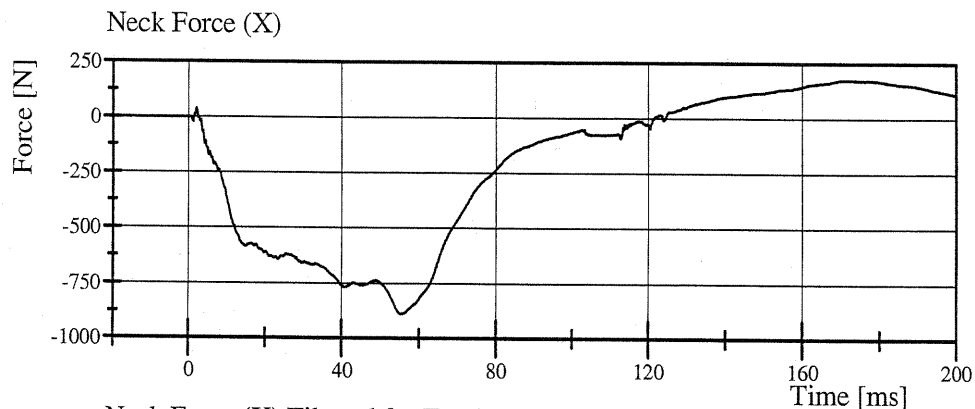
Filter Class: CFC_60
Max: 48.8 ° at 182.0 ms
Min: -74.6 ° at 59.8 ms

Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 090 Certification No. 56-1

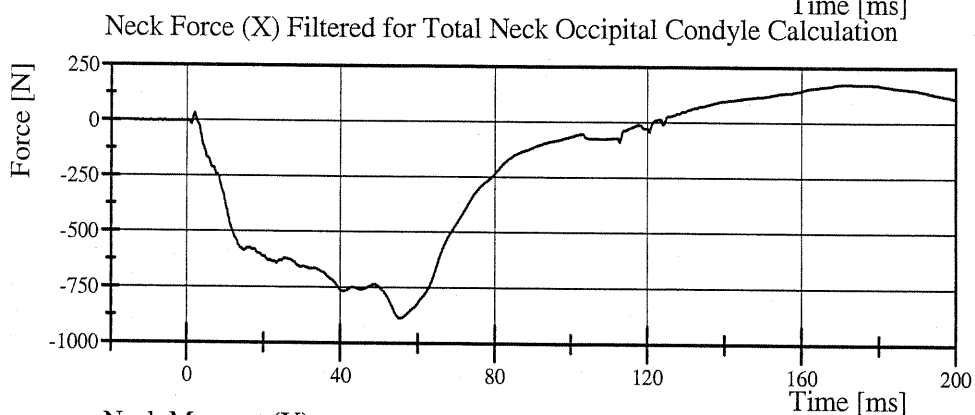
Test Date: 05/10/2006



Filter Class: CFC_1000

Max: 176.9 N at 171.6 ms

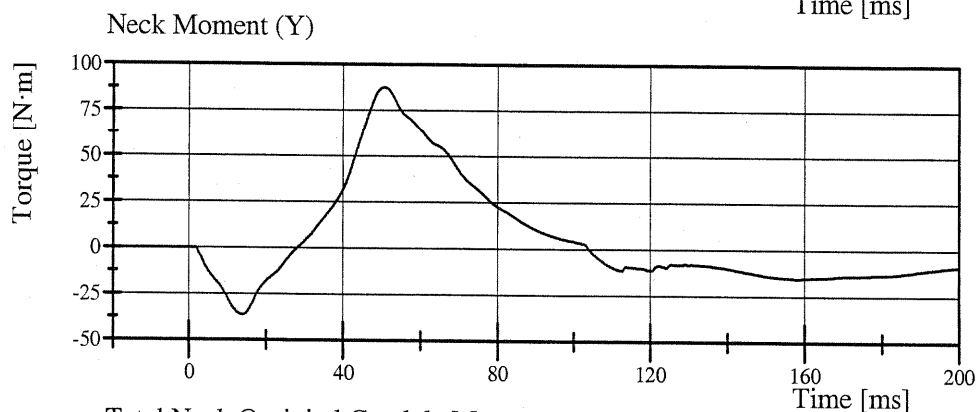
Min: -887.1 N at 55.1 ms



Filter Class: CFC_600

Max: 176.5 N at 171.5 ms

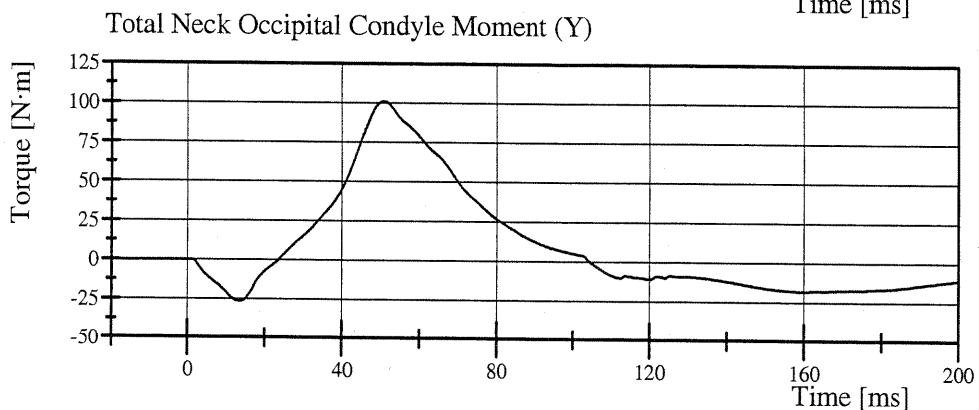
Min: -887.2 N at 55.3 ms



Filter Class: CFC_600

Max: 87.6 N·m at 50.6 ms

Min: -36.3 N·m at 13.8 ms



Filter Class: CFC_600

Max: 101.0 N·m at 50.6 ms

Min: -26.3 N·m at 13.6 ms

Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 090 Certification No. 56-1

Test Date: 05/10/2006

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	47 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-5.984 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	41.9 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	18.81 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	16.61 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	14.38 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	14.38 g	Yes
Total Head D-Plane Rotation Peak	81 - 106 °	97.1 °	Yes
Time of Peak	72 - 82 ms	77.6 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	161.7 ms	Yes
Total Neck Occipital Condyles Moment Peak	(-53) - (-80) N·m	-68.4 N·m	Yes
Time of Peak	65 - 79 ms	73.0 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	145.3 ms	Yes

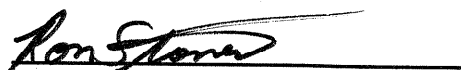
Test meets specifications.

Comments:

Technician



Approved

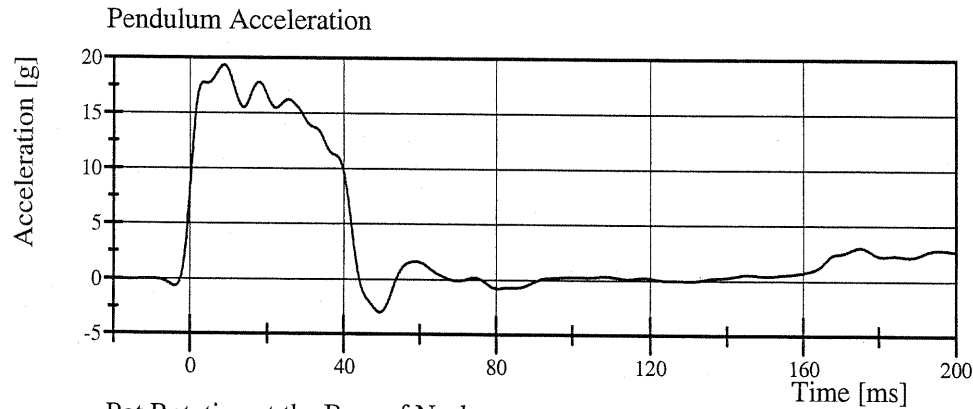


Transportation Research Center Inc.

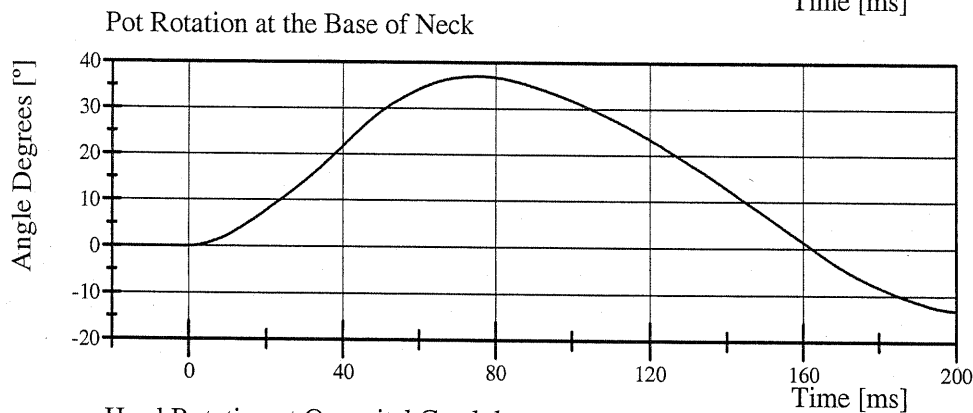
Neck Extension

HIII 50th Serial No. 090 Certification No. 56-1

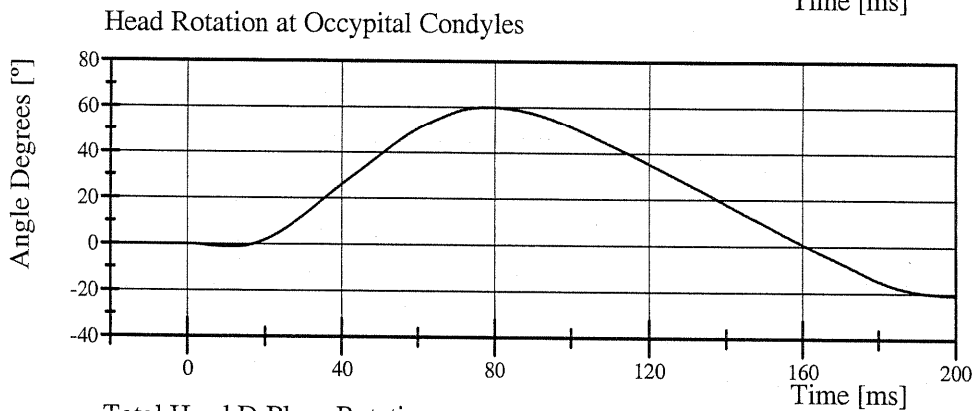
Test Date: 05/10/2006



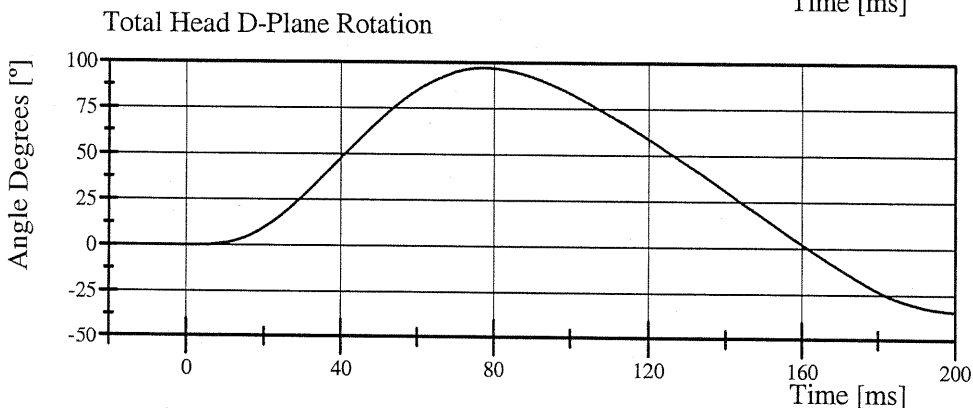
Filter Class: CFC_60
Max: 19.4 g at 8.7 ms
Min: -2.9 g at 49.5 ms



Filter Class: CFC_60
Max: 37.0 ° at 75.8 ms
Min: -13.2 ° at 200.0 ms



Filter Class: CFC_60
Max: 60.1 ° at 78.5 ms
Min: -20.9 ° at 200.0 ms



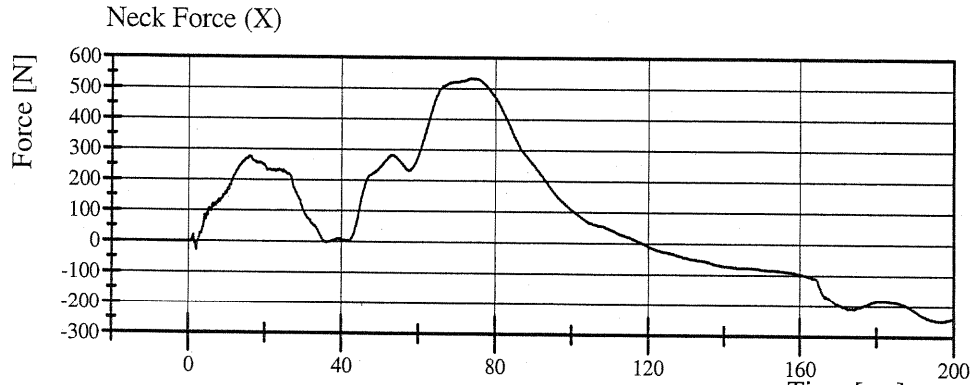
Filter Class: CFC_60
Max: 97.1 ° at 77.6 ms
Min: -34.1 ° at 200.0 ms

Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 090 Certification No. 56-1

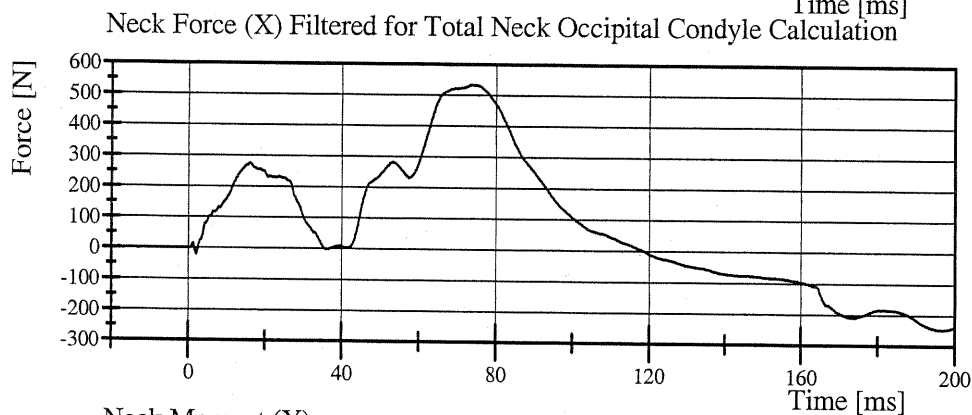
Test Date: 05/10/2006



Filter Class: CFC_1000

Max: 533.9 N at 73.6 ms

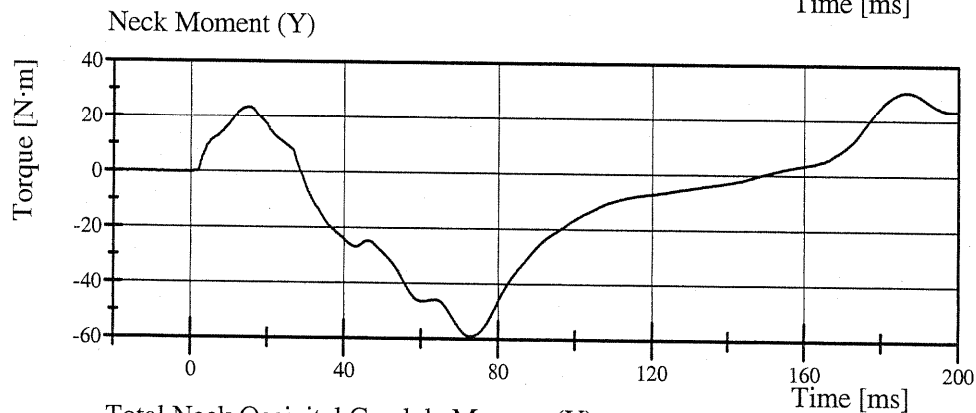
Min: -247.7 N at 196.6 ms



Filter Class: CFC_600

Max: 533.7 N at 73.7 ms

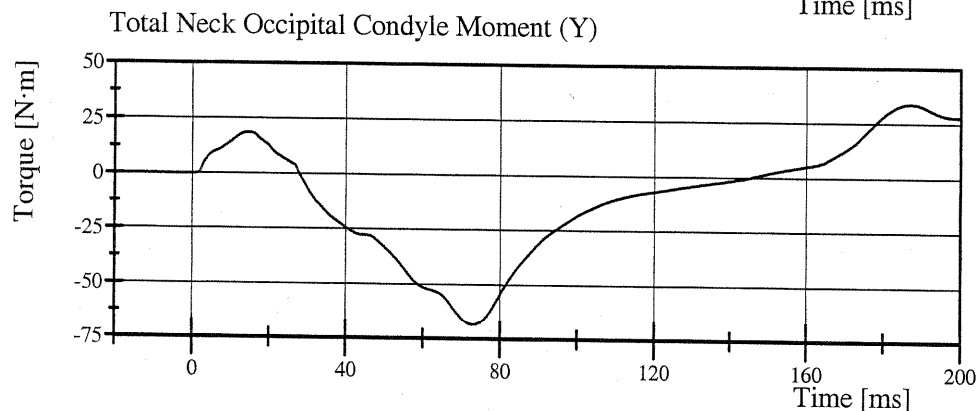
Min: -247.3 N at 197.0 ms



Filter Class: CFC_600

Max: 30.5 N·m at 186.8 ms

Min: -59.0 N·m at 72.9 ms



Filter Class: CFC_600

Max: 34.0 N·m at 187.0 ms

Min: -68.4 N·m at 73.0 ms

Applied Safety Technologies Corp.

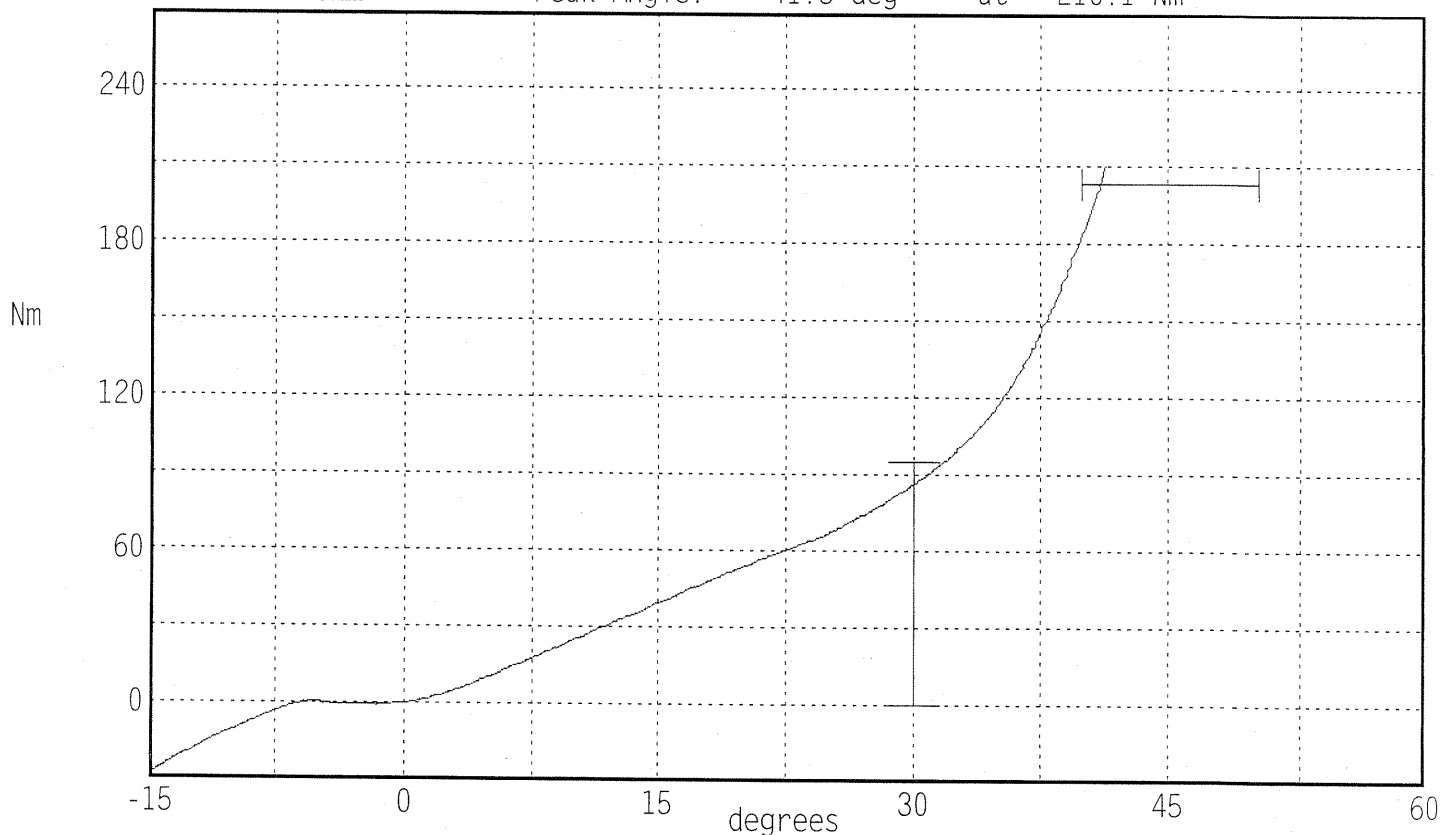
Hybrid III Hip Range of Motion

Serial Number: 090L
Test Number: 090C56
Comments:

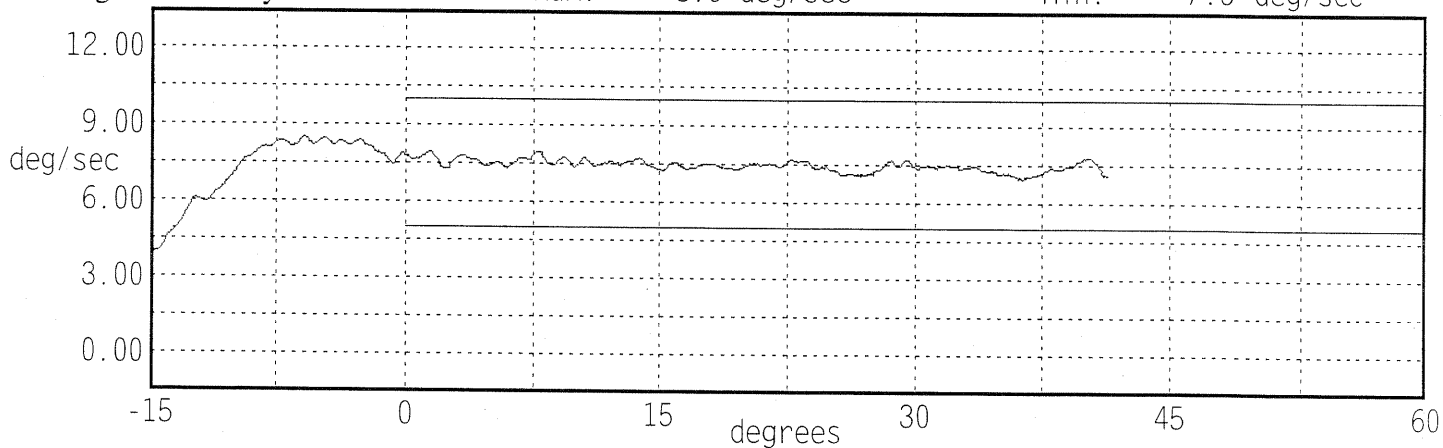
Date: 05/10/2006
Time: 09:09

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.6 °C Pass
Humidity	10 - 70	46 % Pass
Moment at 30 deg	<= 94.9	86.6 Nm Pass
Angle at 203 Nm	40.0 - 50.0	41.0 deg Pass
Average Velocity	5.0 - 10.0	7.5 deg/sec Pass

Moment About H-Point
Peak Moment: 210.1 Nm at 41.3 deg
Peak Angle: 41.3 deg at 210.1 Nm



Angular Velocity
Max: 8.0 deg/sec
Min: 7.0 deg/sec



Applied Safety Technologies Corp.

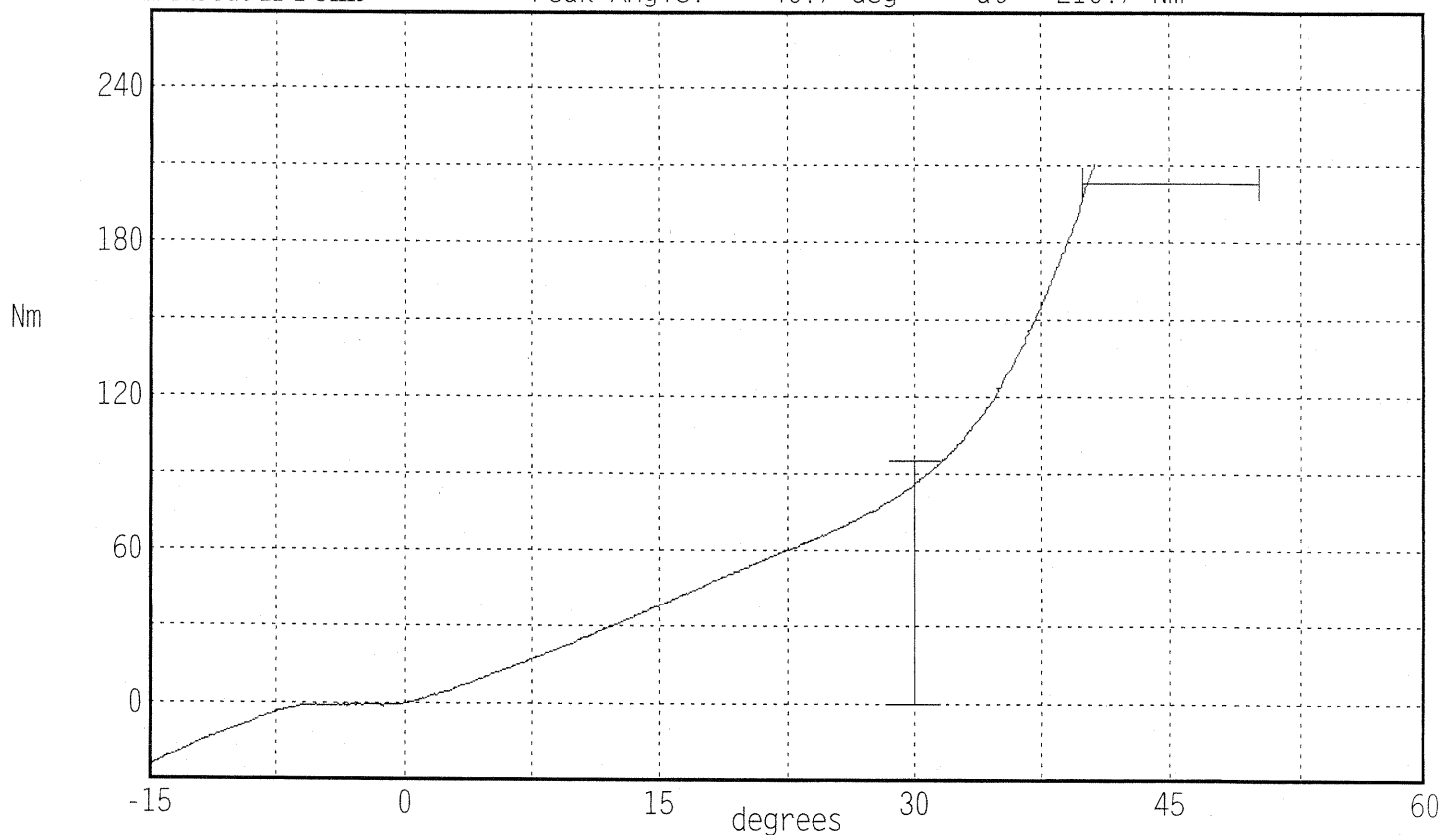
Hybrid III Hip Range of Motion

Serial Number: 090R
Test Number: 090C56
Comments:

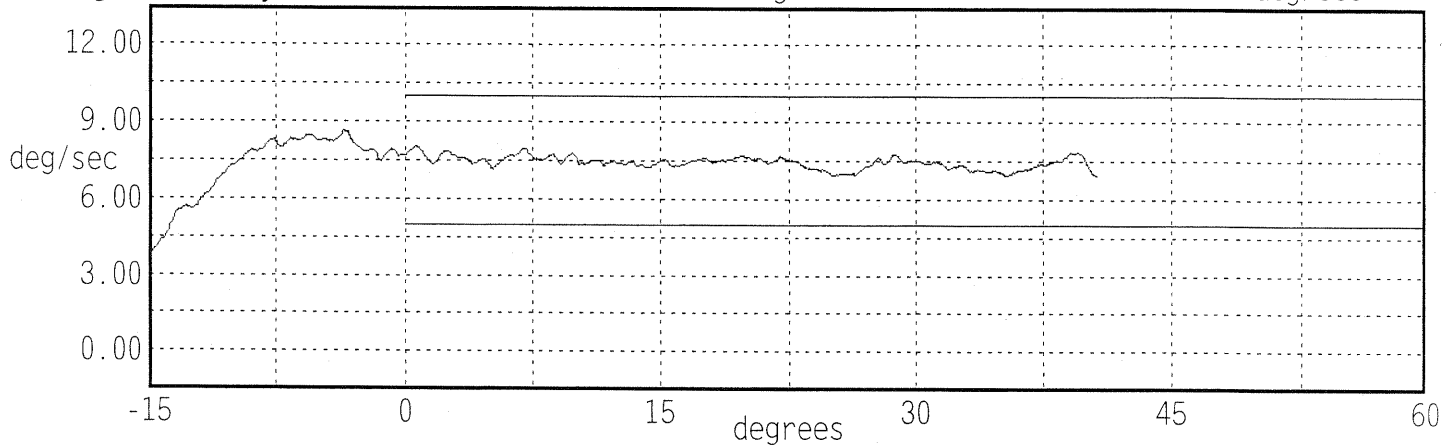
Date: 05/10/2006
Time: 09:17

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.6 °C Pass
Humidity	10 - 70	46 % Pass
Moment at 30 deg	<= 94.9	86.2 Nm Pass
Angle at 203 Nm	40.0 - 50.0	40.3 deg Pass
Average Velocity	5.0 - 10.0	7.4 deg/sec Pass

Moment About H-Point
Peak Moment: 210.7 Nm at 40.7 deg
Peak Angle: 40.7 deg at 210.7 Nm



Angular Velocity
Max: 8.0 deg/sec
Min: 7.0 deg/sec



Transportation Research Center Inc.

Front Thorax

HIII 50th Serial No. 090 Certification No. 56-1

Test Date: 05/10/2006

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	48 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.622 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,711.1 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-67.61 mm	Yes
Internal Hysteresis	65 - 85 %	73.2 %	Yes

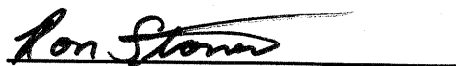
Test meets specifications.

Comments:

Technician



Approved

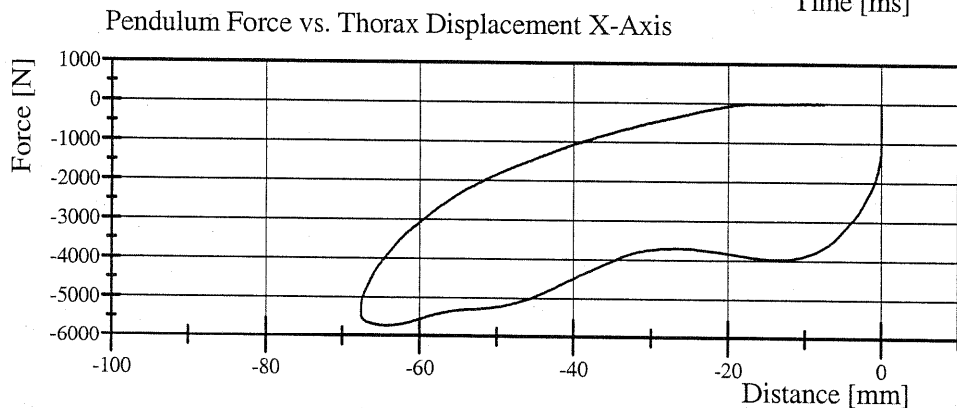
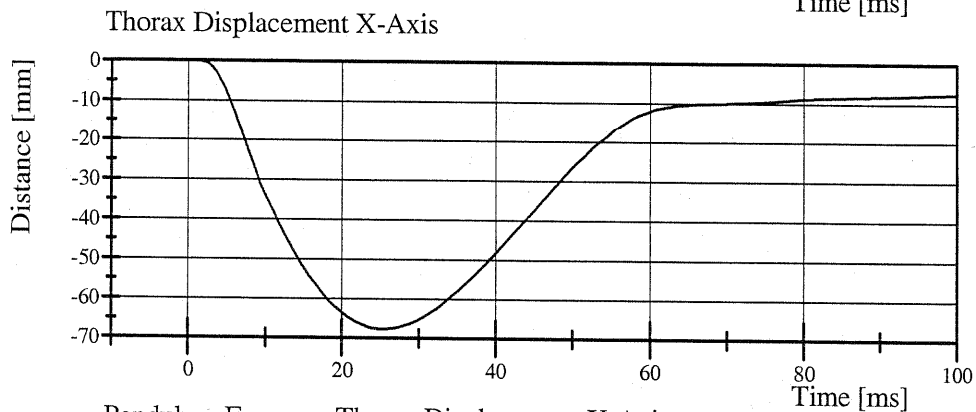
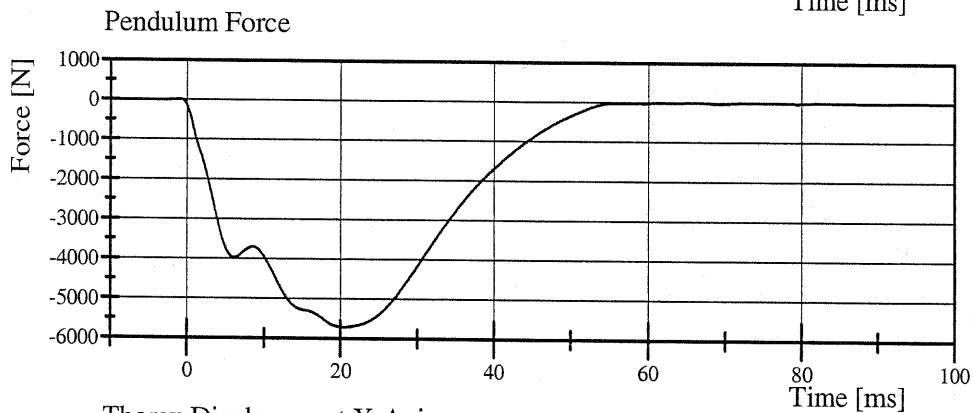
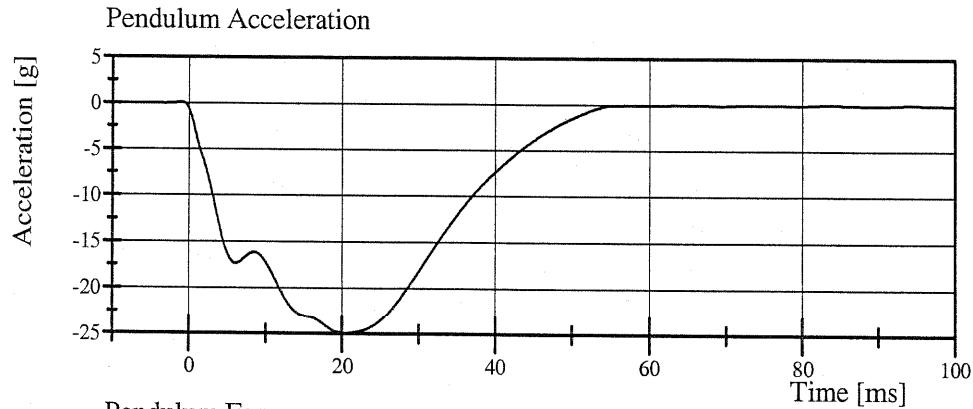


Transportation Research Center Inc.

Front Thorax

HIH 50th Serial No. 090 Certification No. 56-1

Test Date: 05/10/2006



Transportation Research Center Inc.

Left Knee Femur Response Test

HIII 50th Serial No. LX116117 Certification No. 7-2

Test Date: 05/01/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	42 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.095 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,308.17 N	Yes

Test meets specifications.

Comments:

Technician



Approved

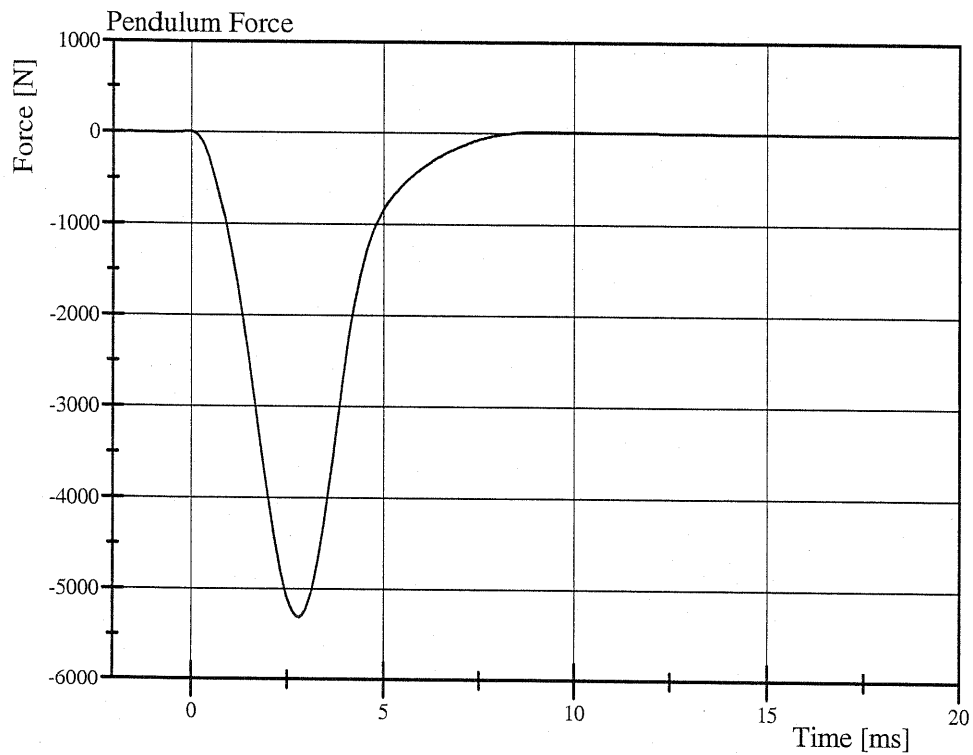
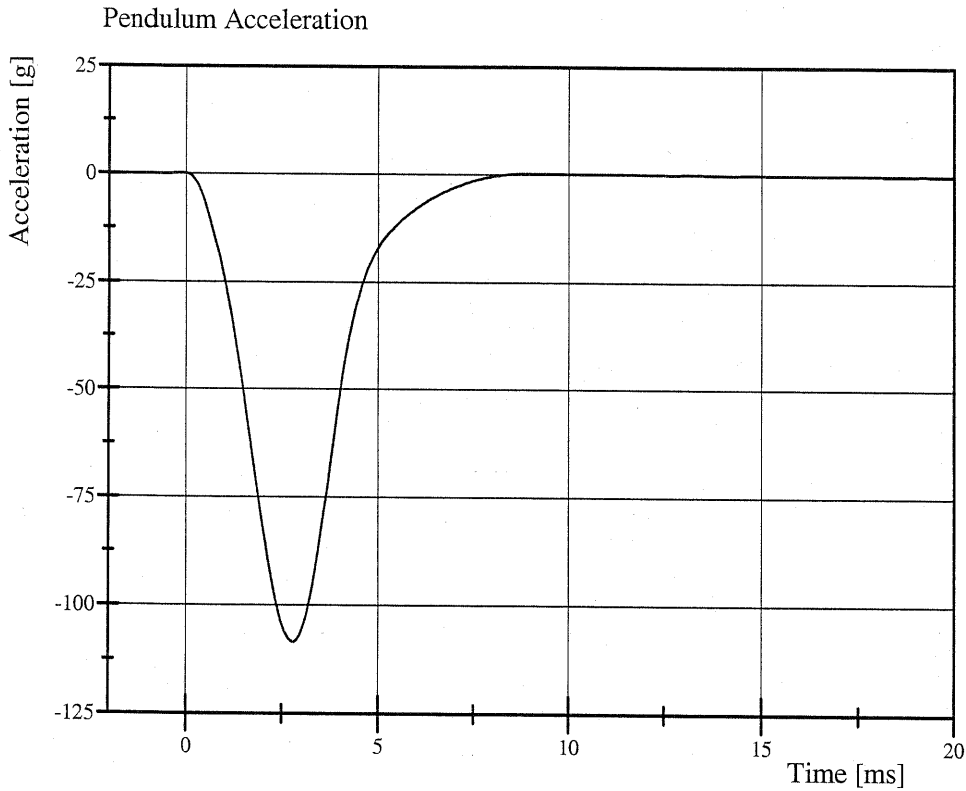

_____

Transportation Research Center Inc.

Left Knee Femur Response Test

HIII 50th Serial No. LX116117 Certification No. 7-2

Test Date: 05/01/2006



Transportation Research Center Inc.

Right Knee Femur Response Test

HIII 50th Serial No. LX116117 Certification No. 7-1

Test Date: 04/26/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.086 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,372.91 N	Yes

Test meets specifications.

Comments:

Technician



Approved

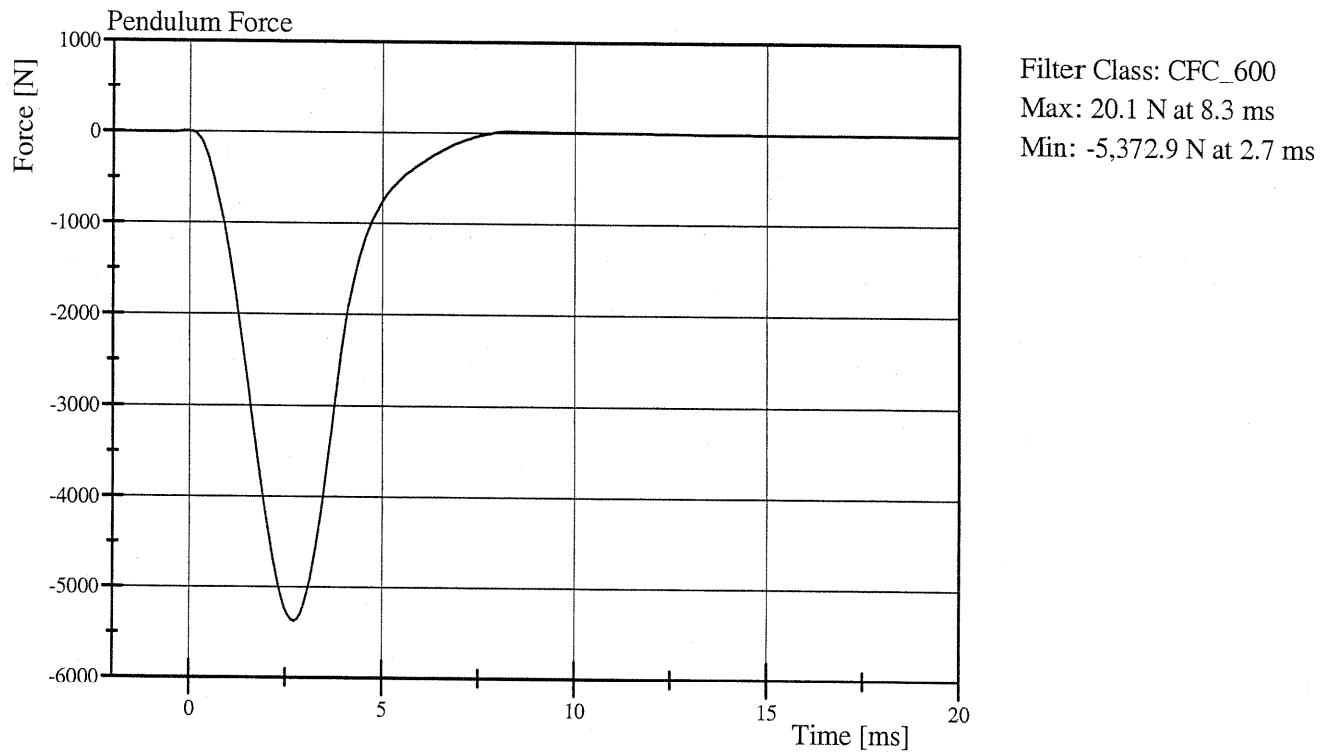
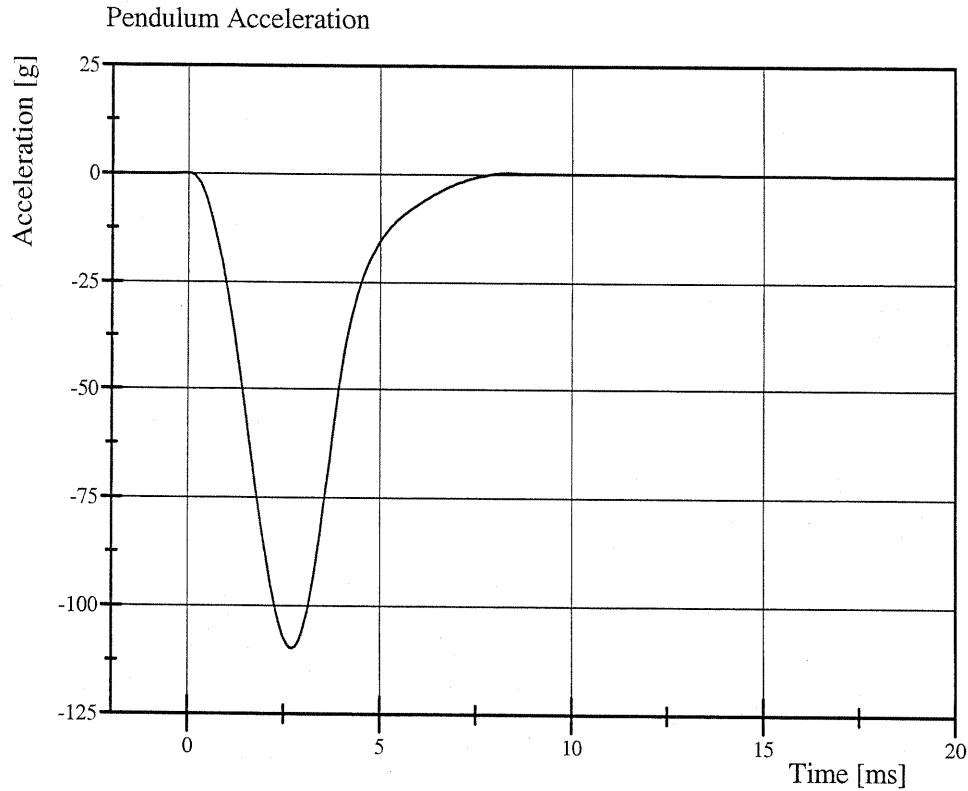


Transportation Research Center Inc.

Right Knee Femur Response Test

HIH 50th Serial No. LX116117 Certification No. 7-1

Test Date: 04/26/2006



Transportation Research Center Inc.

Left Knee Slider

HIII 50th Serial No. LX116117 Certification No. 7-1

Test Date: 04/26/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Probe Velocity	2.70 - 2.80 m/s	2.745 m/s	Yes
Force Peak at 10.0 mm Deflection	(-1,260) - (-1,720) N	-1,277.0 N	Yes
Force Peak at 18.0 mm Deflection	(-2,270) - (-3,100) N	-2,348.8 N	Yes

Test meets specifications.

Comments:

Technician



Approved

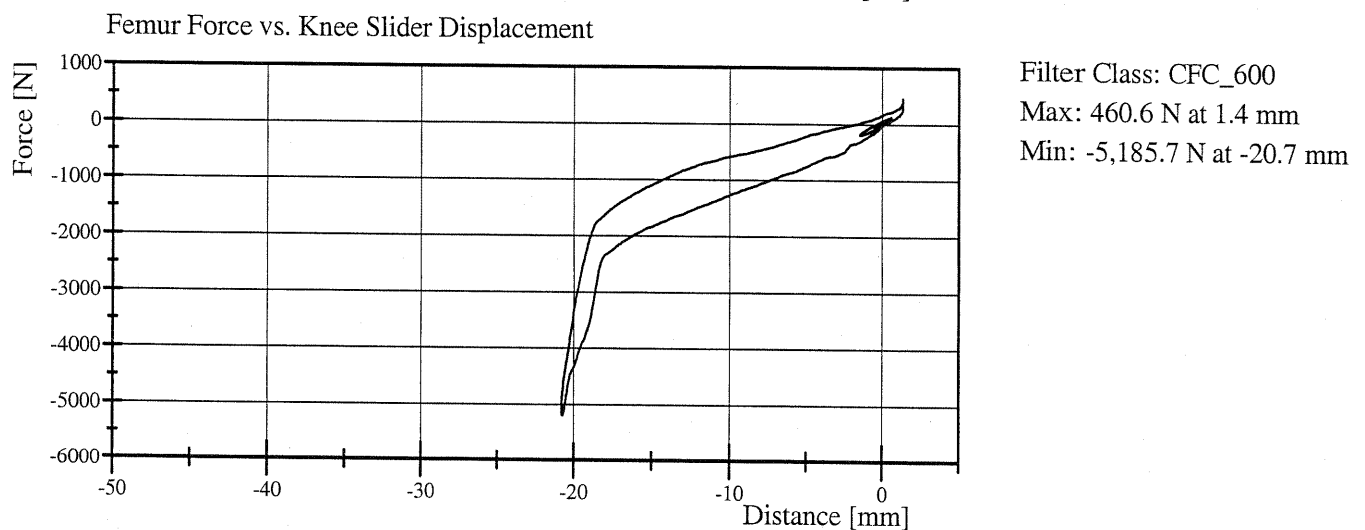
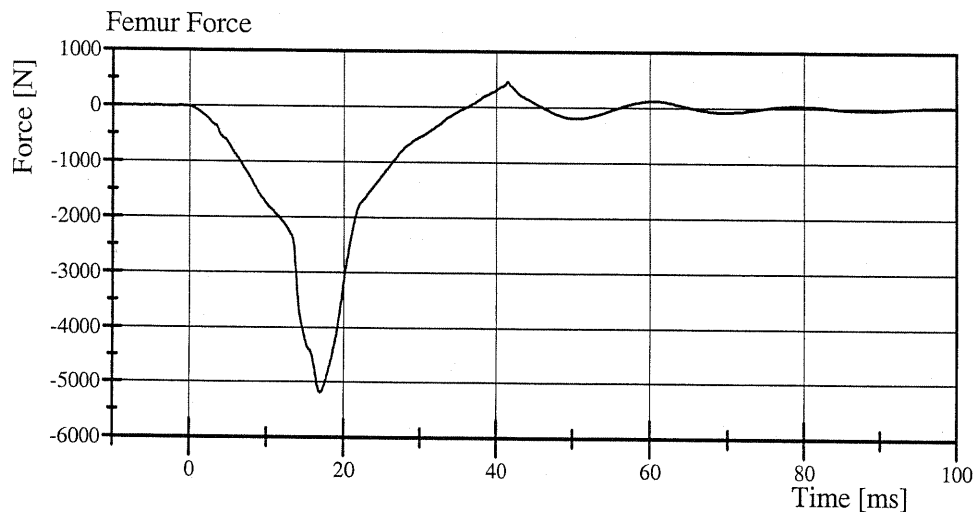
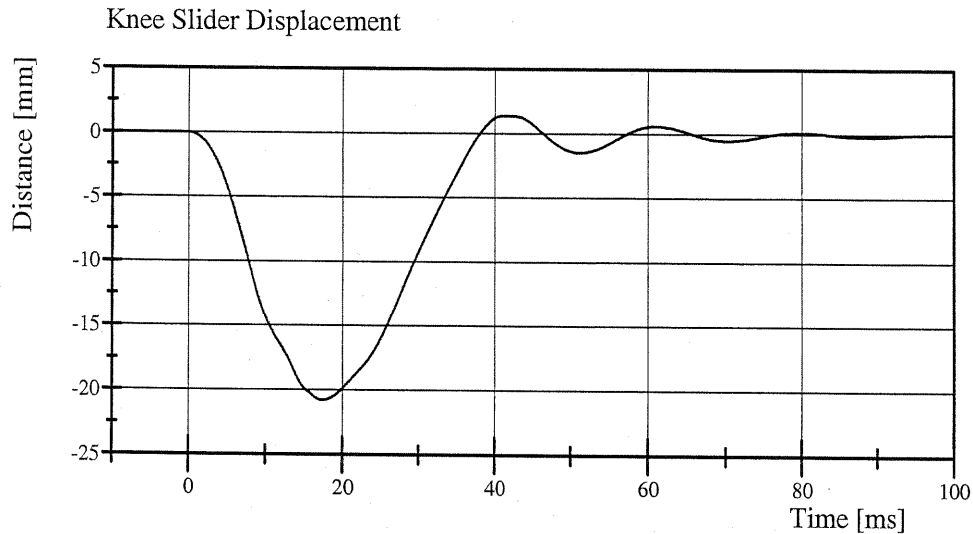


Transportation Research Center Inc.

Left Knee Slider

HIH 50th Serial No. LX116117 Certification No. 7-1

Test Date: 04/26/2006



Transportation Research Center Inc.

Right Knee Slider

HHH 50th Serial No. LX116117 Certification No. 7-1

Test Date: 04/26/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Probe Velocity	2.70 - 2.80 m/s	2.745 m/s	Yes
Force Peak at 10.0 mm Deflection	(-1,260) - (-1,720) N	-1,407.3 N	Yes
Force Peak at 18.0 mm Deflection	(-2,270) - (-3,100) N	-2,708.7 N	Yes

Test meets specifications.

Comments:

Technician



Approved

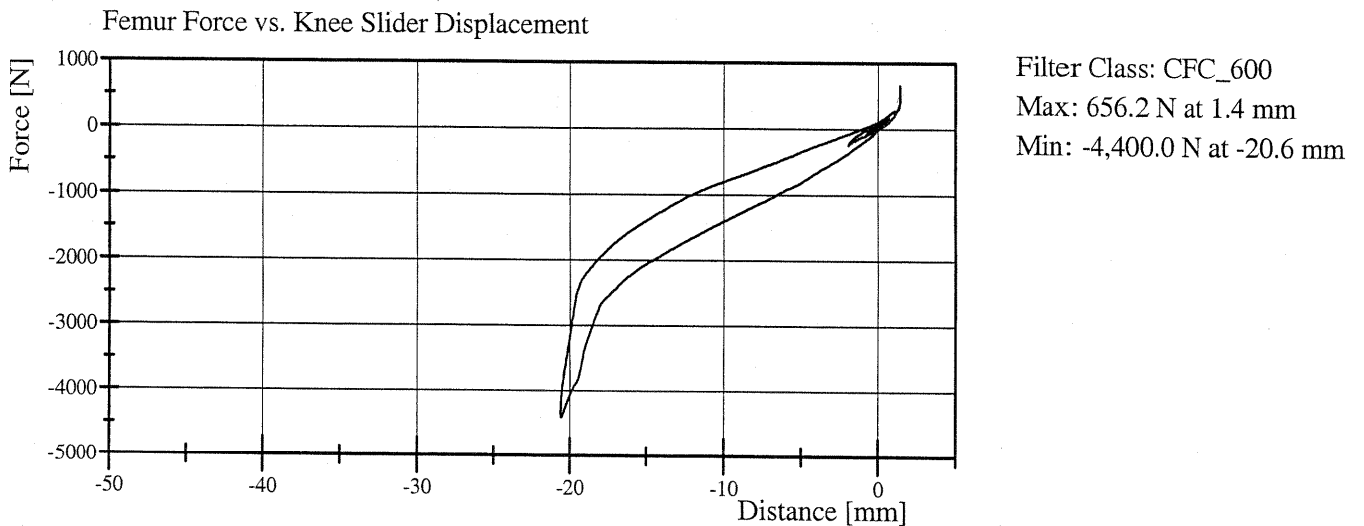
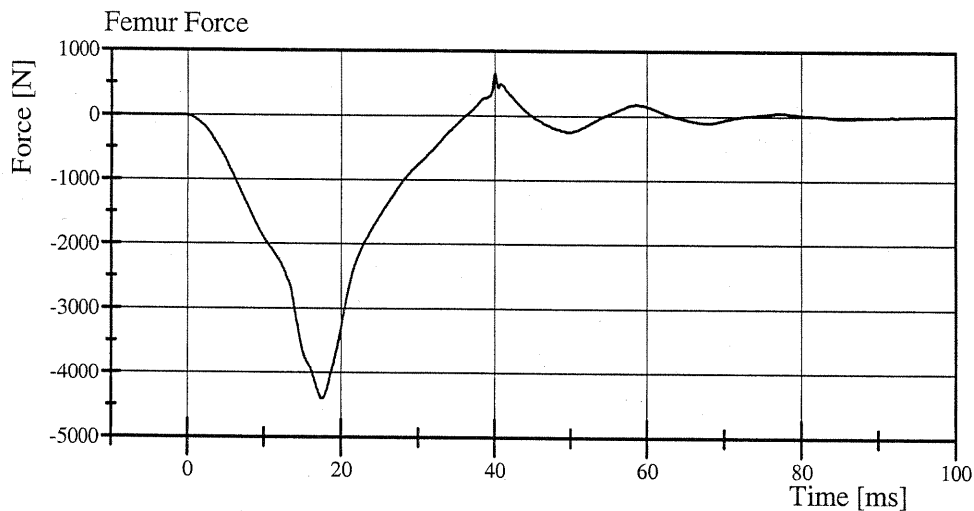
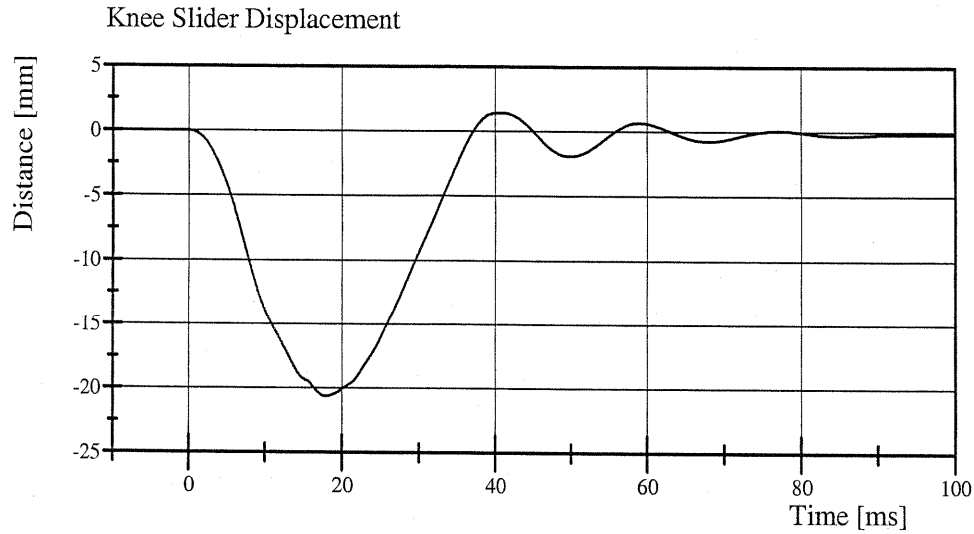


Transportation Research Center Inc.

Right Knee Slider

HIII 50th Serial No. LX116117 Certification No. 7-1

Test Date: 04/26/2006



Pre-Test Dummy Configuration and Performance Verification Data

Passenger Dummy S/N: 070

Transportation Research Center Inc.
5720 HIII 5th Female Dummy
External Dimensions
Serial No. 070 Calibration No. 16

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	774.7 - 800.1	782	Yes
B	Shoulder Pivot Height	431.8 - 457.2	450	Yes
C	Hip Pivot Height	81.3 - 86.3	86	Yes
D	Hip Pivot from Backline	144.8 - 149.8	149	Yes
E	Shoulder Pivot from Backline	68.6 - 83.8	77	Yes
F	Thigh Clearance	119.4 - 134.6	131	Yes
G	Back of Elbow to Wrist Pivot	243.9 - 259.1	253	Yes
H	Head Back to Backline	43.2 - 48.2	44	Yes
I	Shoulder to Elbow Length	276.8 - 297.2	289	Yes
J	Elbow Rest Height	182.8 - 203.2	191	Yes
K	Buttock Knee Length	520.7 - 546.1	532	Yes
L	Popliteal Height	355.6 - 376.0	360	Yes
M	Knee Pivot Height	393.7 - 419.1	403	Yes
N	Buttock Popliteal Length	414.0 - 439.4	418	Yes
O	Chest Depth without Jacket	175.3 - 190.5	181	Yes
P	Foot Length	218.5 - 233.7	221	Yes
R	Buttock to Knee Pivot Length	457.2 - 482.6	477	Yes
S	Head Breadth	137.1 - 147.3	141	Yes
T	Head Depth	177.8 - 188.0	184	Yes
U	Hip Breadth	299.7 - 314.9	305	Yes
V	Shoulder Breadth	350.5 - 365.7	357	Yes
W	Foot Breadth	78.8 - 94.0	88	Yes
X	Head Circumference	528.3 - 548.7	539	Yes
Y	Chest Circumference with Jacket	850.9 - 881.3	855	Yes
Z	Waist Circumference	759.5 - 789.9	774	Yes
AA	Reference Location for Chest Circumference	332.7 - 358.1	355	Yes
BB	Reference Location for Waist Circumference	160.0 - 170.2	165	Yes

* Partial Set

Technician

Approved

Ron Storer

V. J. Webb

Transportation Research Center Inc.

Front Head Drop

HIII 5th Serial No. 070 Certification No. 16-1

Test Date: 05/04/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Peak Head Resultant Acceleration	250 - 300 g	263.1 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-5.0 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Ron Storner

Approved

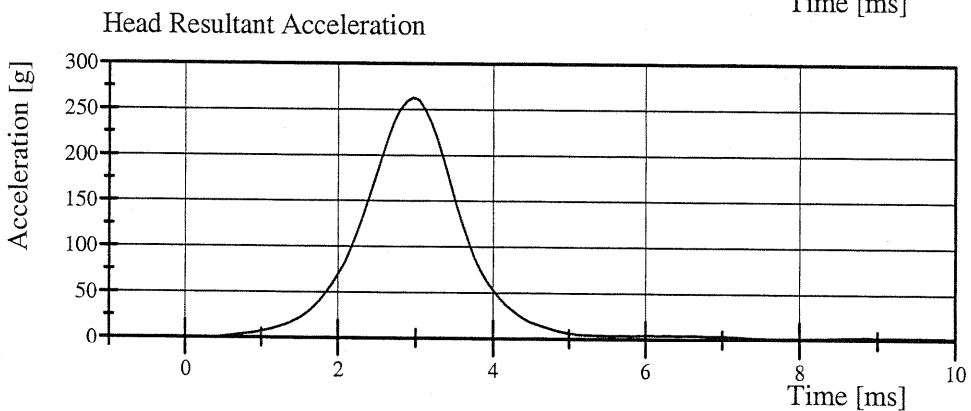
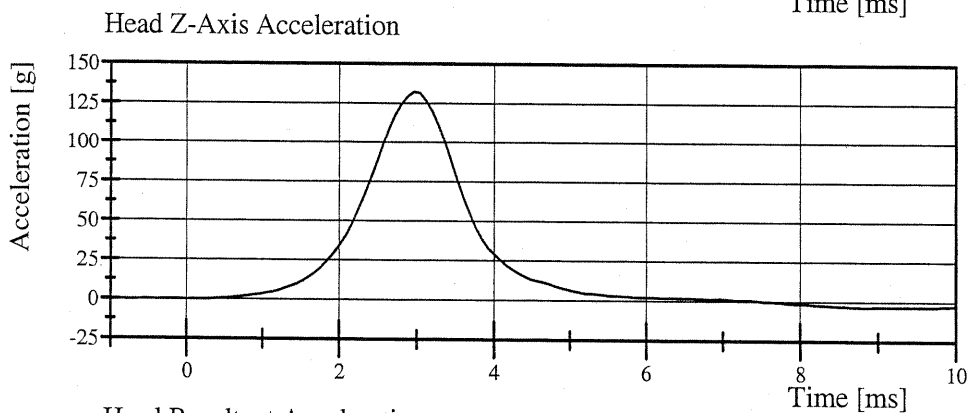
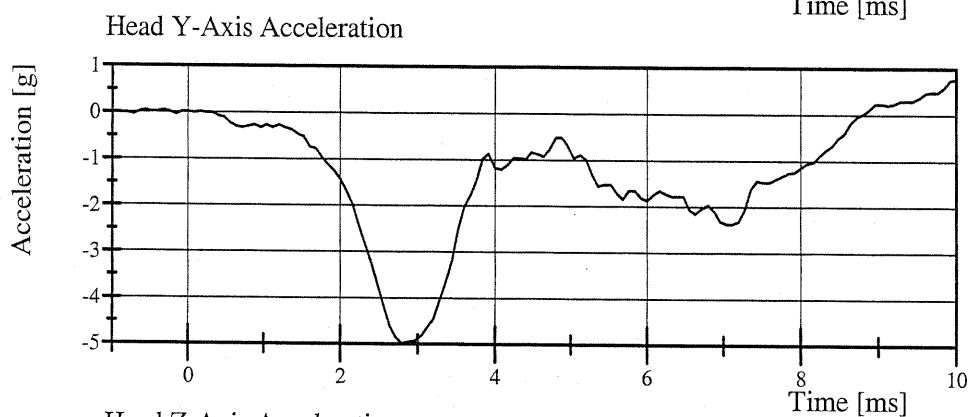
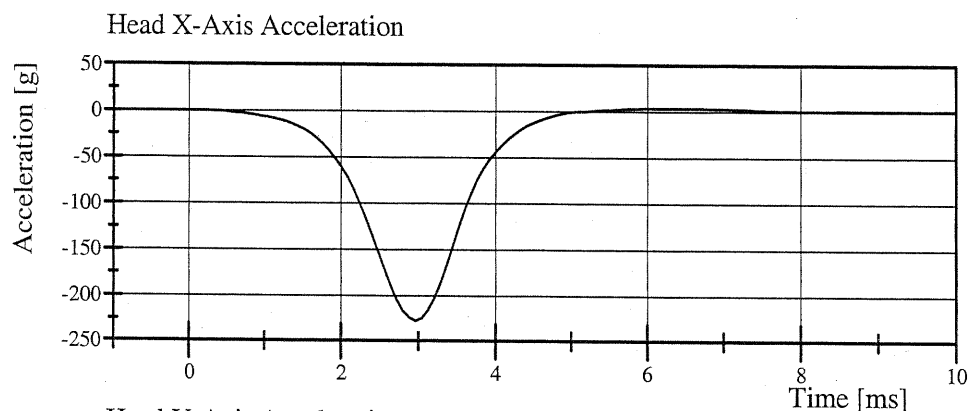
V.L. Watts

Transportation Research Center Inc.

Front Head Drop

HIII 5th Serial No. 070 Certification No. 16-1

Test Date: 05/04/2006



Transportation Research Center Inc.

Neck Flexion

HIH 5th Serial No. 070 Certification No. 16-2

Test Date: 05/05/2006

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	7.061 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	(-2.1) - (-2.5) m/s	-2.38 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	(-4.0) - (-5.0) m/s	-4.63 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	(-5.8) - (-7.0) m/s	-6.74 m/s	Yes
Total Head D-Plane Rotation	(-77) - (-91) °	-77.0 °	Yes
Total Neck Occipital Condyles Moment Between -77° and -91° Rotation	69 - 83 N·m	69.0 N·m	Yes
Total Neck Occipital Condyles Moment Decay to 10 N·m	80 - 100 ms	87.4 ms	Yes

Test meets specifications.

Comments:

Technician

Ron Storer

Approved

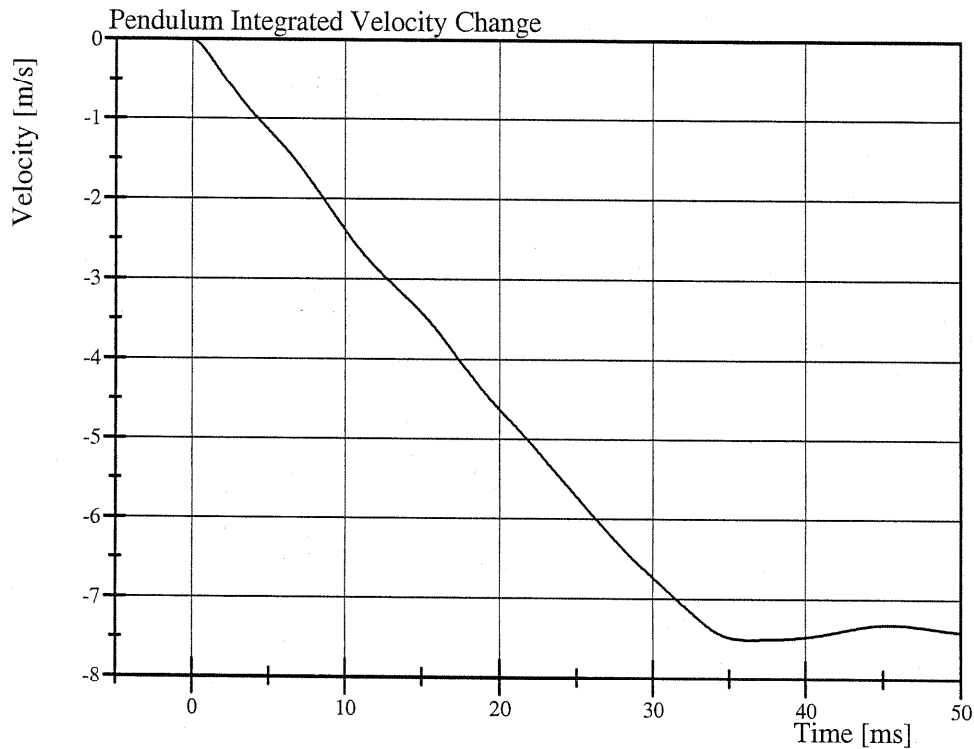
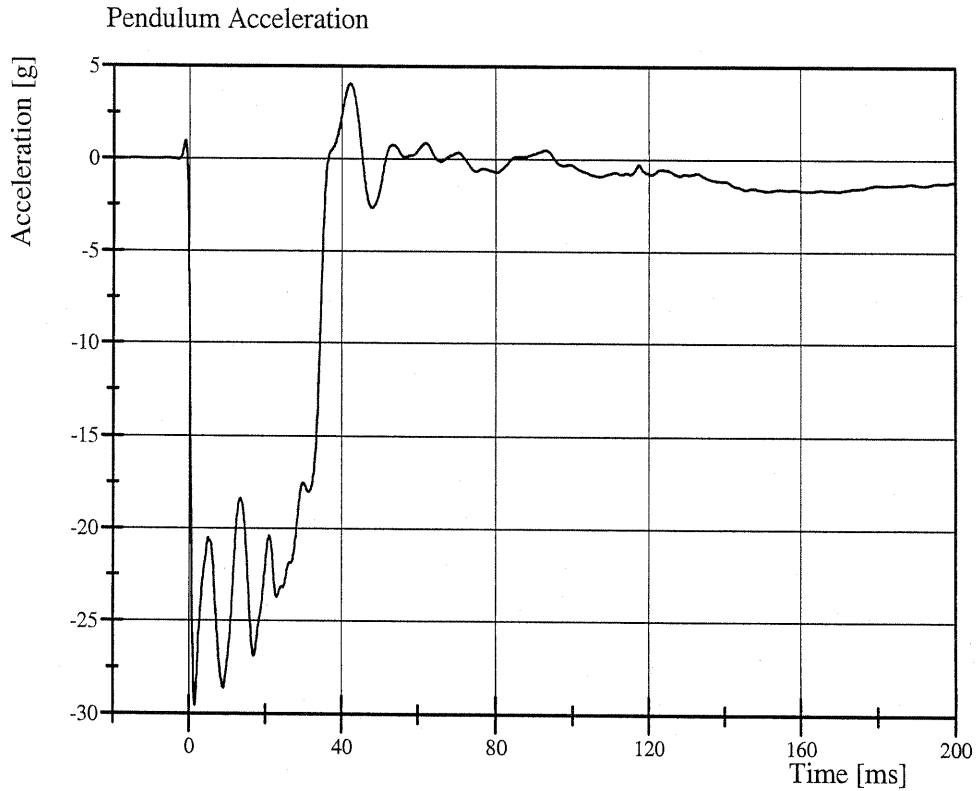
V. J. Walter

Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 070 Certification No. 16-2

Test Date: 05/05/2006



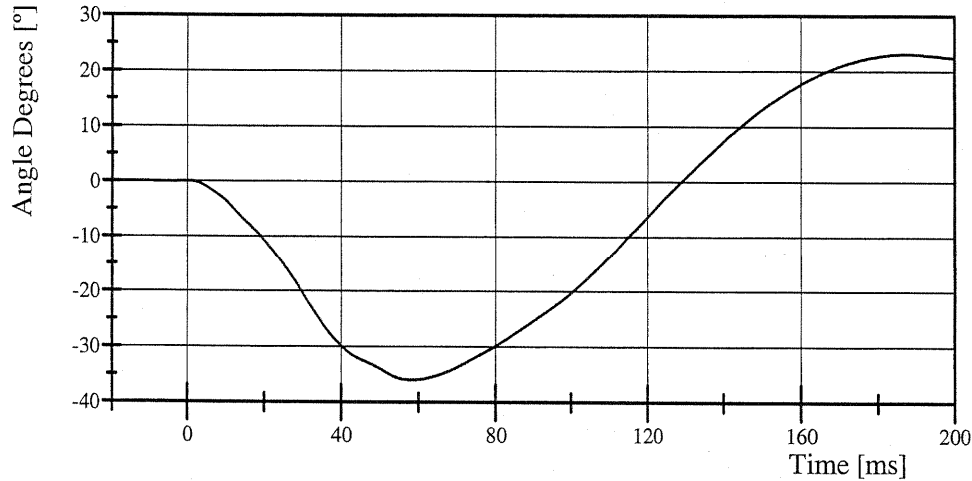
Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 070 Certification No. 16-2

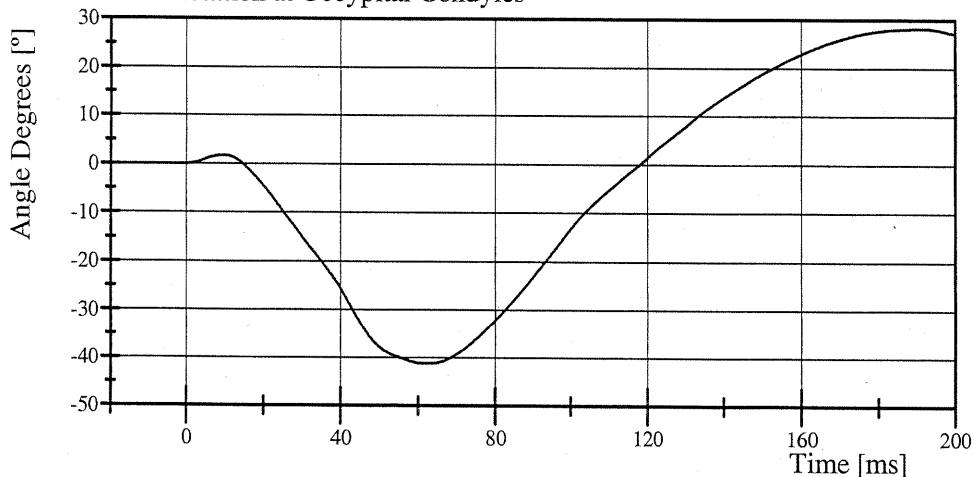
Test Date: 05/05/2006

Pot Rotation at the Base of Neck



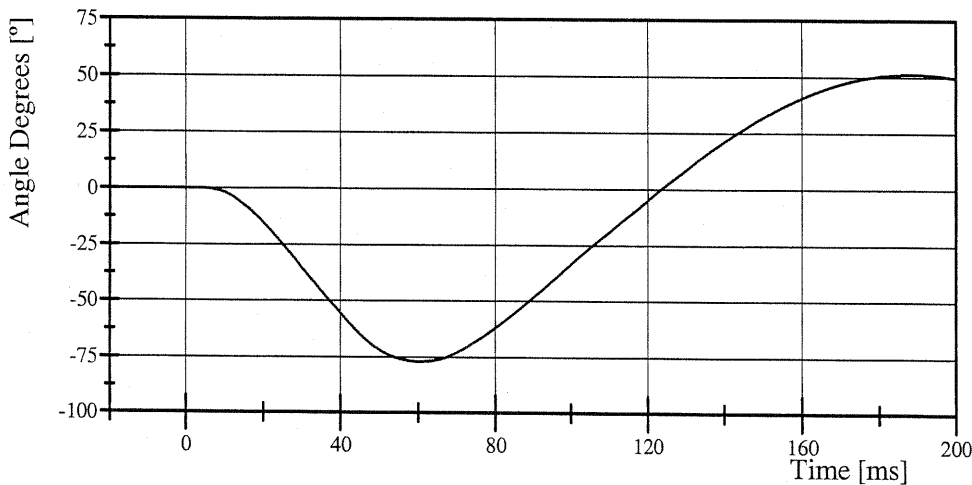
Filter Class: CFC_60
Max: 23.2 ° at 187.4 ms
Min: -36.0 ° at 58.2 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 28.3 ° at 191.4 ms
Min: -41.2 ° at 62.1 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 51.4 ° at 188.6 ms
Min: -77.0 ° at 60.4 ms

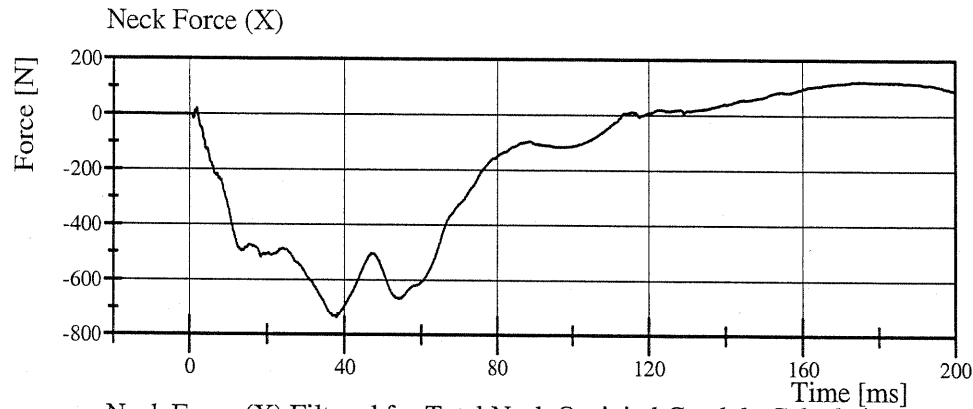


Transportation Research Center Inc.

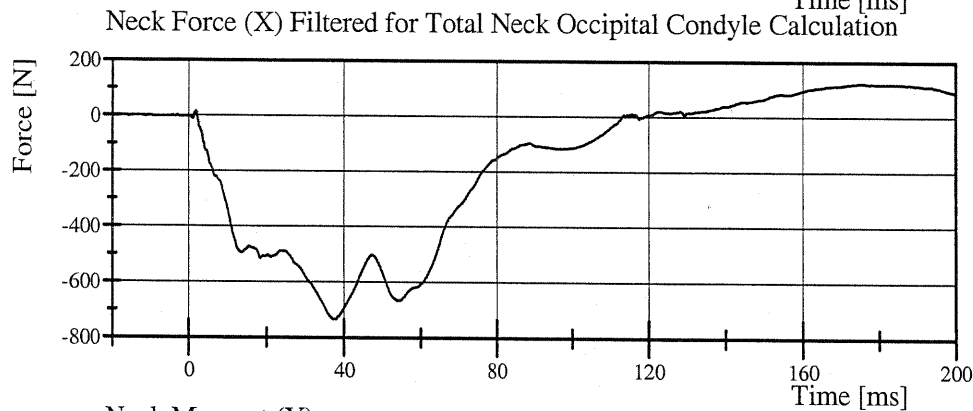
Neck Flexion

HHH 5th Serial No. 070 Certification No. 16-2

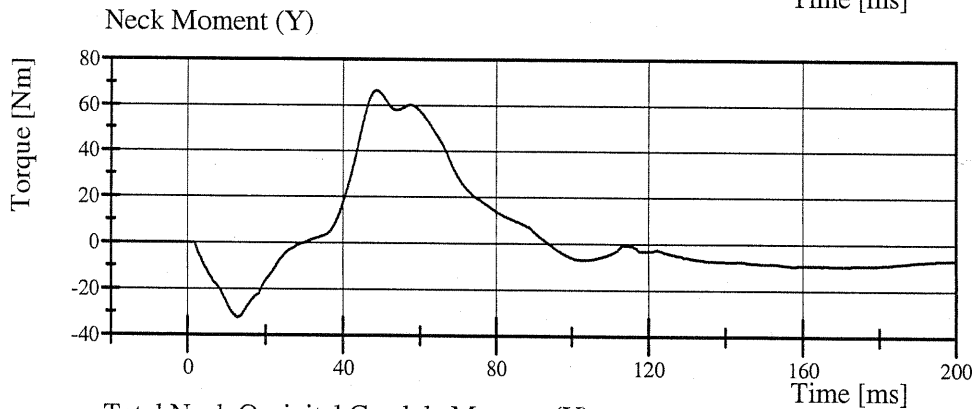
Test Date: 05/05/2006



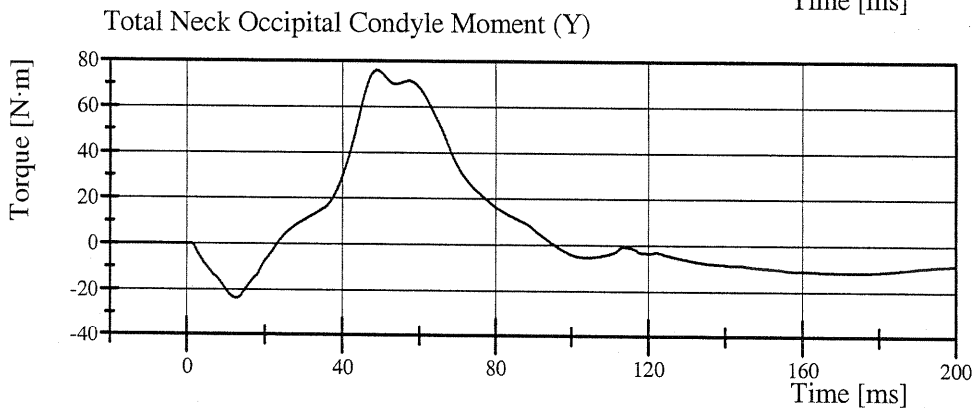
Filter Class: CFC_1000
Max: 123.9 N at 174.9 ms
Min: -737.3 N at 37.9 ms



Filter Class: CFC_600
Max: 123.5 N at 174.9 ms
Min: -734.1 N at 37.8 ms



Filter Class: CFC_600
Max: 66.6 Nm at 48.7 ms
Min: -32.3 Nm at 12.7 ms



Filter Class: CFC_600
Max: 75.9 N·m at 48.9 ms
Min: -23.7 N·m at 12.6 ms

Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 070 Certification No. 16-1

Test Date: 05/05/2006

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Pendulum Velocity	(-5.95) - (-6.19) m/s	-6.064 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	1.5 - 1.9 m/s	1.90 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	3.1 - 3.9 m/s	3.68 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	4.6 - 5.6 m/s	5.45 m/s	Yes
Total Head D-Plane Rotation	99 - 114 °	104.4 °	Yes
Total Neck Occipital Condyles Moment Between 99° and 114° Rotation	(-53) - (-65) N·m	-54.1 N·m	Yes
Total Neck Occipital Condyles Moment Decay to -10 N·m	94 - 114 ms	102.9 ms	Yes

Test meets specifications.

Comments:

Technician

Ron Storer

Approved

V. L. Watts

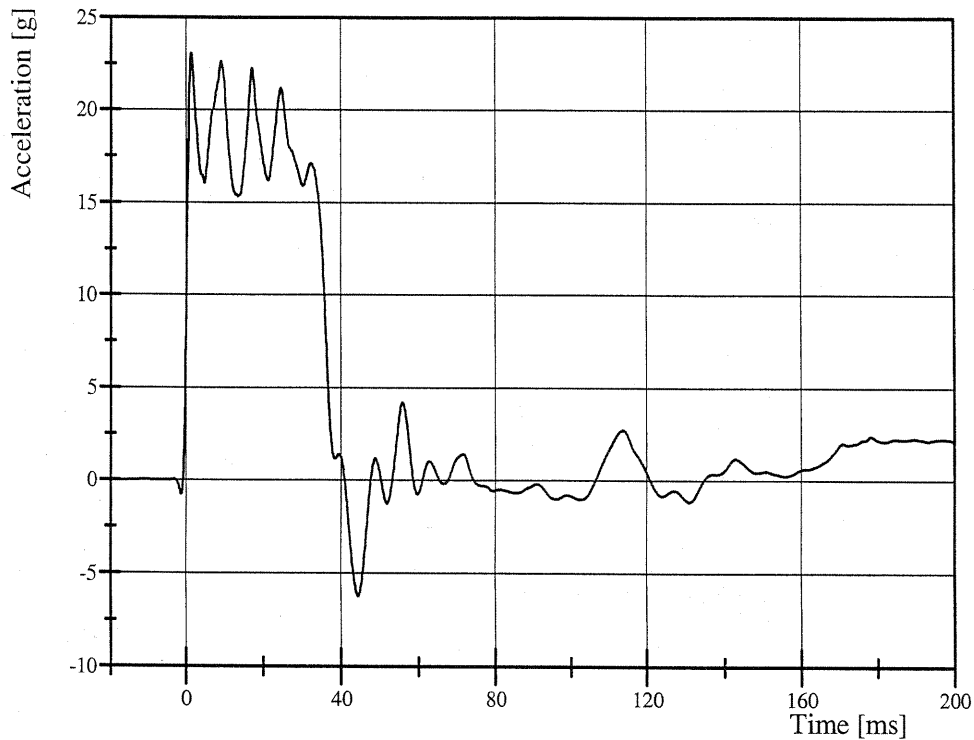
Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 070 Certification No. 16-1

Test Date: 05/05/2006

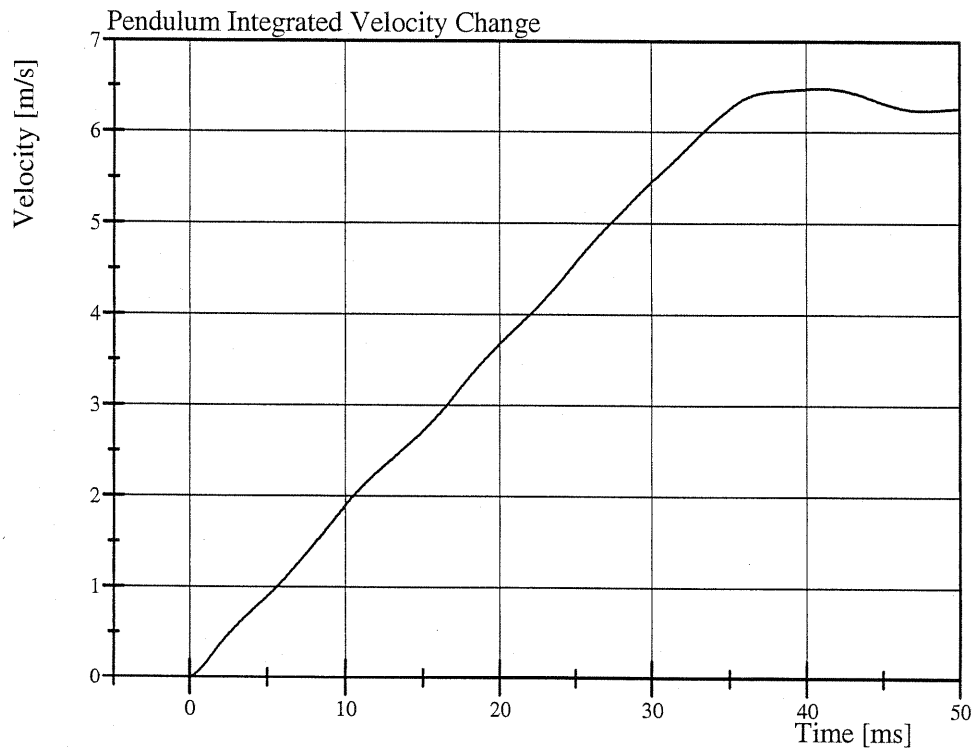
Pendulum Acceleration



Filter Class: CFC_180

Max: 23.1 g at 1.4 ms

Min: -6.2 g at 44.4 ms



Filter Class: CFC_180

Max: 6.5 m/s at 41.0 ms

Min: 0.0 m/s at 0.0 ms

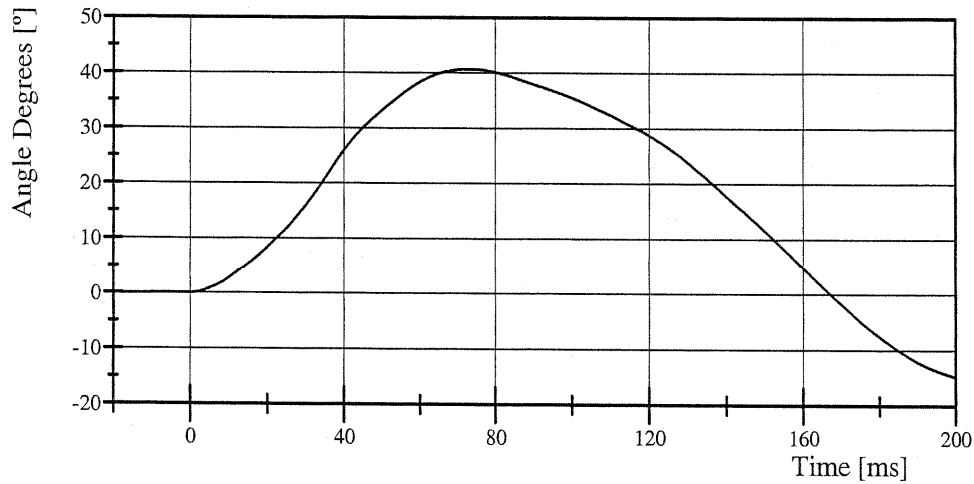
Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 070 Certification No. 16-1

Test Date: 05/05/2006

Pot Rotation at the Base of Neck

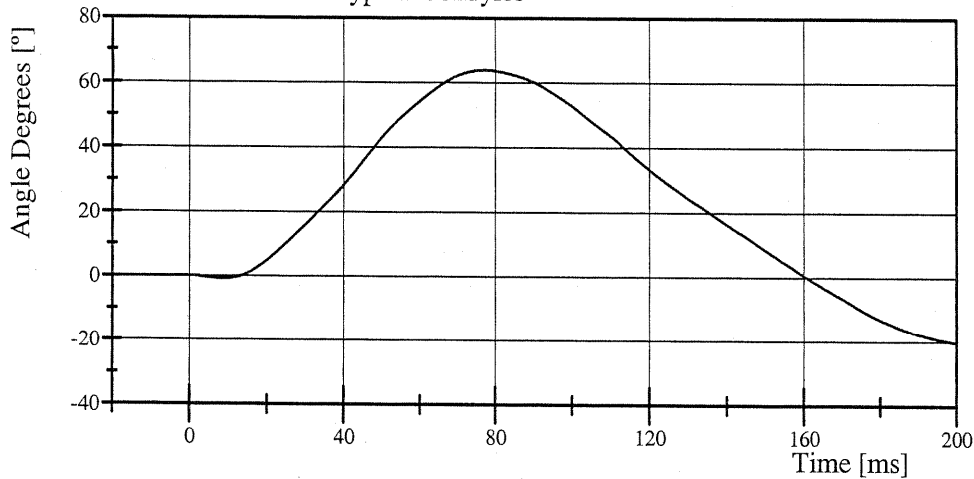


Filter Class: CFC_60

Max: 40.7 ° at 73.6 ms

Min: -14.7 ° at 200.0 ms

Head Rotation at Occypital Condyles

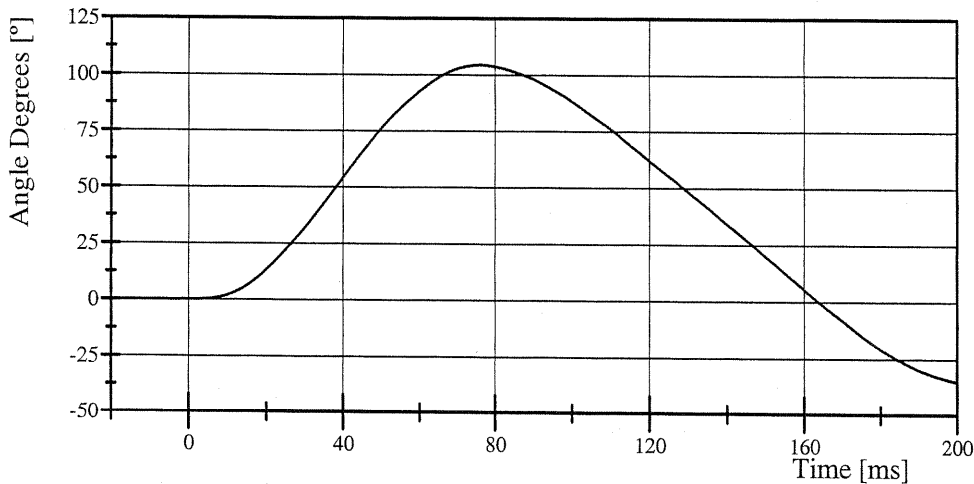


Filter Class: CFC_60

Max: 63.8 ° at 77.3 ms

Min: -20.3 ° at 200.0 ms

Total Head D-Plane Rotation



Filter Class: CFC_60

Max: 104.4 ° at 76.1 ms

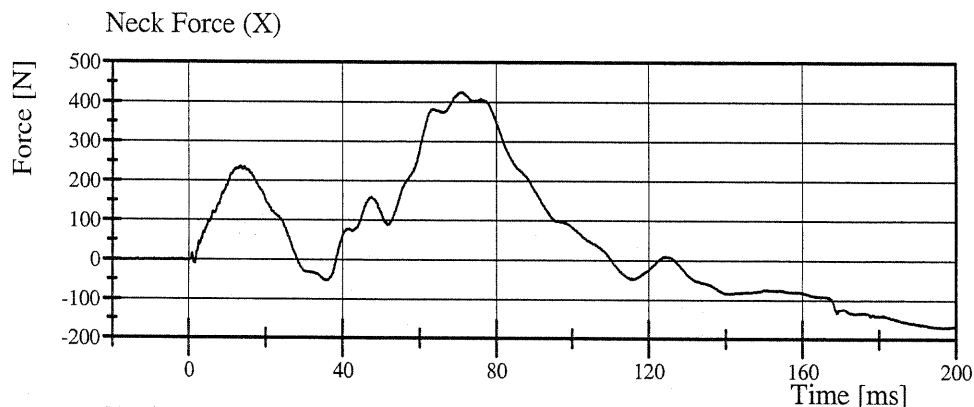
Min: -35.0 ° at 200.0 ms

Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 070 Certification No. 16-1

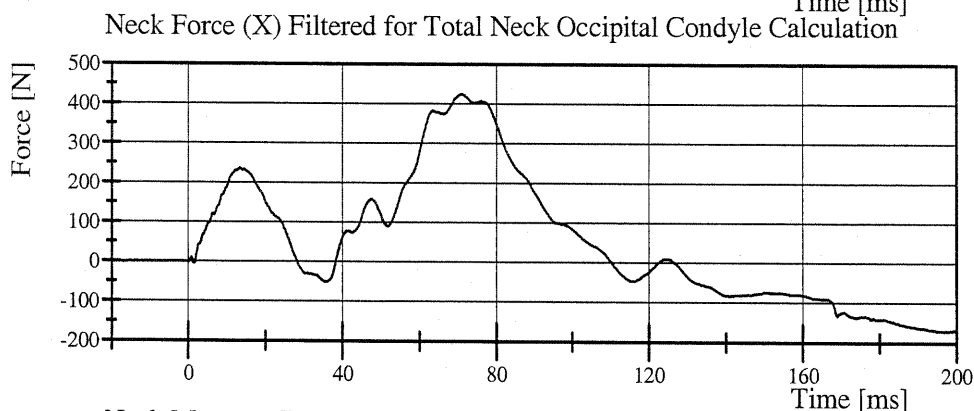
Test Date: 05/05/2006



Filter Class: CFC_1000

Max: 425.8 N at 70.9 ms

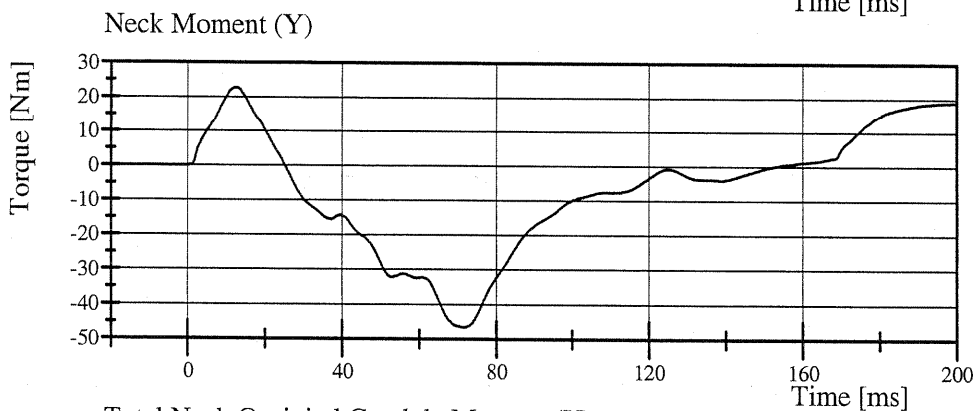
Min: -170.9 N at 197.8 ms



Filter Class: CFC_600

Max: 425.3 N at 71.0 ms

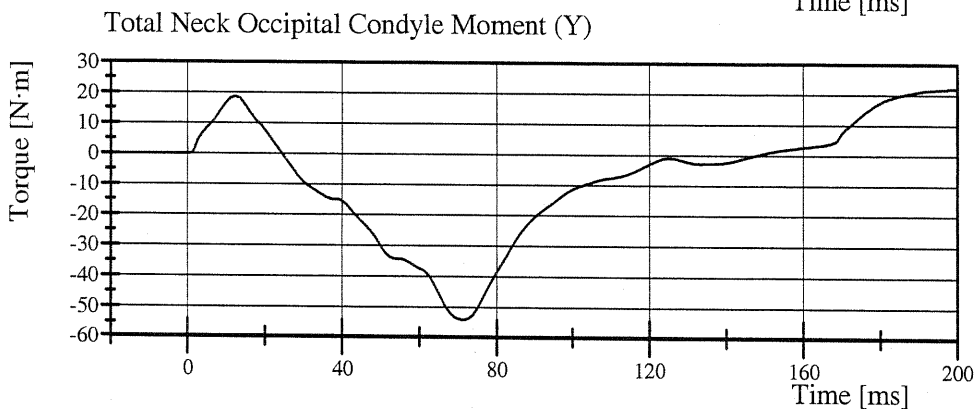
Min: -170.5 N at 196.8 ms



Filter Class: CFC_600

Max: 22.8 Nm at 12.3 ms

Min: -46.5 Nm at 71.6 ms



Filter Class: CFC_600

Max: 22.0 N·m at 199.1 ms

Min: -54.1 N·m at 71.2 ms

Transportation Research Center Inc.

Front Thorax

HIII 5th Serial No. 070 Certification No. 16-1

Test Date: 05/05/2006

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	42 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.669 m/s	Yes
Probe Force Peak Between 50.0 mm and 58.0 mm Chest Deflection	(-3,900) - (-4,400) N	-4,212.3 N	Yes
Probe Force Peak Between 18.0 mm and 50.0 mm Chest Deflection	$\geq$ (-4,600) N	-4,213.2 N	Yes
Maximum Chest Compression	(-50) - (-58) mm	-52.8 mm	Yes
Internal Hysteresis	69 - 85 %	72.7 %	Yes

Test meets specifications.

Comments:

Technician

Ron Storer

Approved

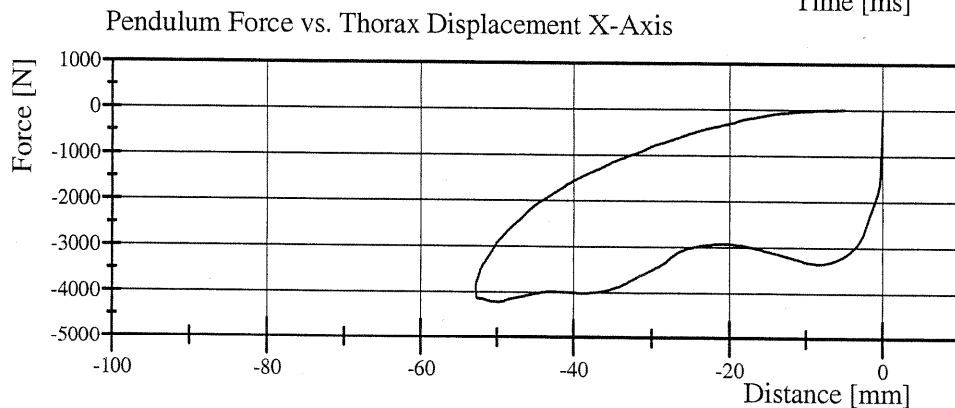
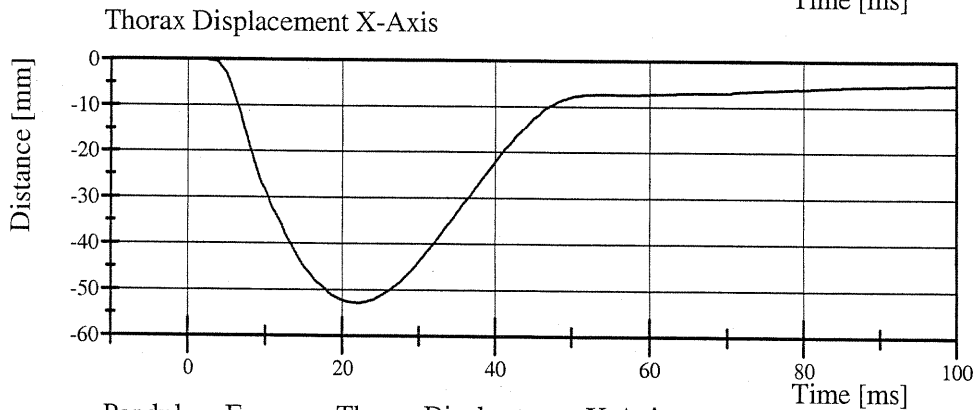
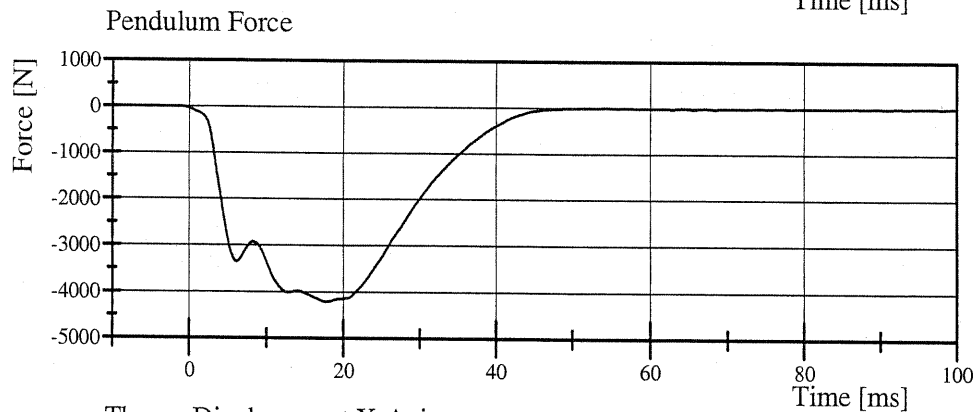
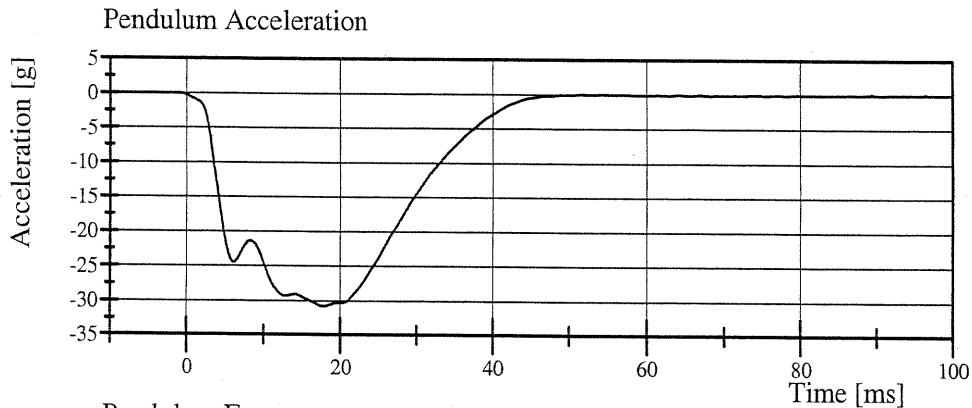
V. J. Walter

Transportation Research Center Inc.

Front Thorax

HIII 5th Serial No. 070 Certification No. 16-1

Test Date: 05/05/2006



TRANSPORTATION RESEARCH CENTER INC.

TORSO FLEXION TEST

HYBRID III SMALL FEMALE

CAL DATE: 05-May-06

TRC, INC.

TEST NO: TOFL-01

572 O SN070 TORSO FLEX CAL 16

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6 – 22.2° C	21.0 ° C
RELATIVE HUMIDITY	10 – 70 %	38 %
INITIAL ANGLE OF UNSUPPORTRED DUMMY	<= 22° REFERENCED TO VERTICAL	17.6 °
MAXIMUM FORCE AT 45 DEG. DURING 10 SECOND PERIOD	147 - 200 N	355.7 N
RETURN ANGLE		22.3 °
DIFFERENCE BETWEEN RETURN ANGLE & INTIAL ANGLE	+/- 8 ° OF INTIAL ANGLE	4.7 °
RATE	0.5° - 1.5°/sec	0.98 °/sec

TEST MEETS SPECIFICATIONS

Comments:

TECHNICIAN

Ron Stoner

Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 5th Serial No. 070 Certification No. 16-1
Test Date: 05/04/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	48 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.119 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,603.4 N	Yes

Test meets specifications.

Comments:

Technician

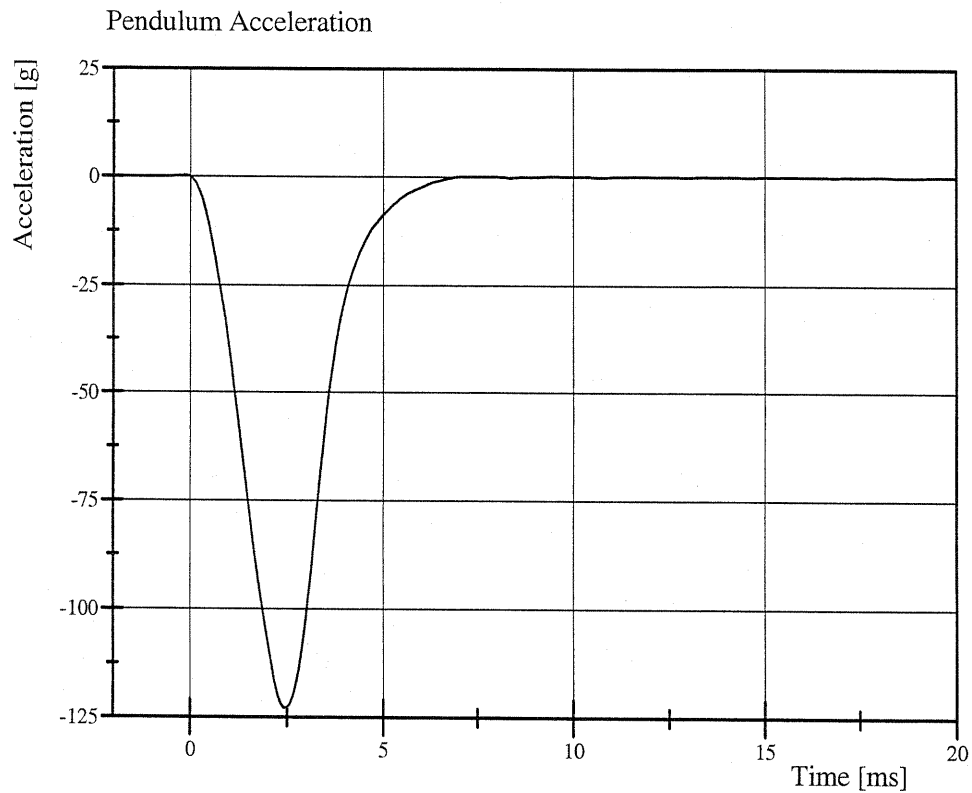
Ron Storer

Approved

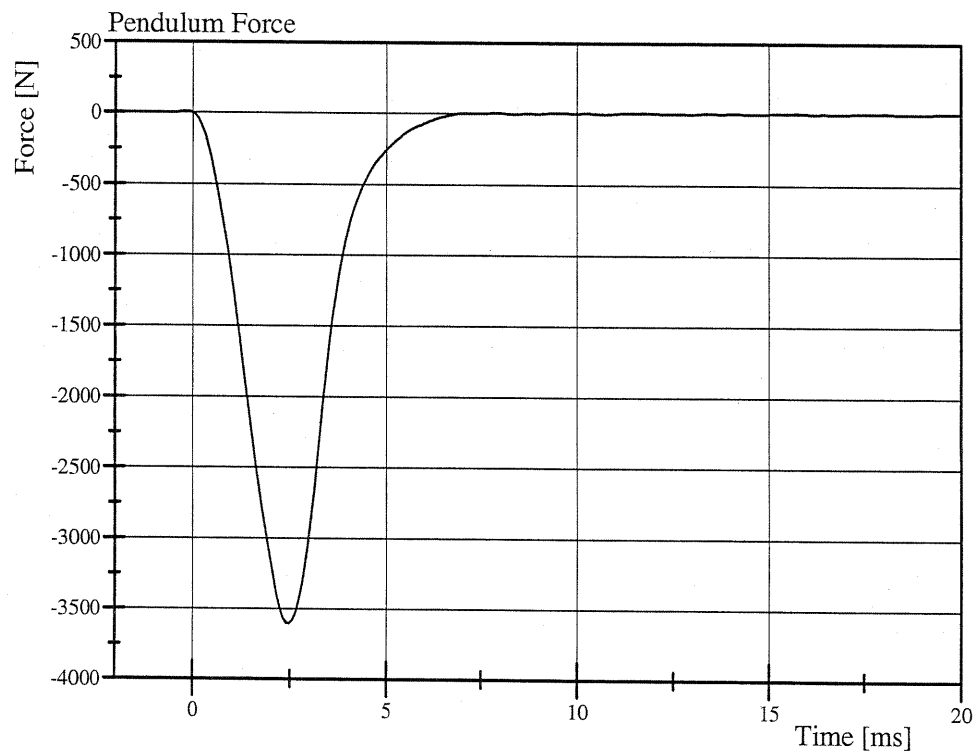
V. E. Walther

Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 5th Serial No. 070 Certification No. 16-1
Test Date: 05/04/2006



Filter Class: CFC_600
Max: 0.2 g at -0.2 ms
Min: -122.9 g at 2.5 ms



Filter Class: CFC_600
Max: 7.2 N at -0.2 ms
Min: -3,603.4 N at 2.5 ms

Transportation Research Center Inc.

Right Knee Femur Response Test

HIII 5th Serial No. 070 Certification No. 16-4

Test Date: 5/5/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.114 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,788.7 N	Yes

Test meets specifications.

Comments:

Technician

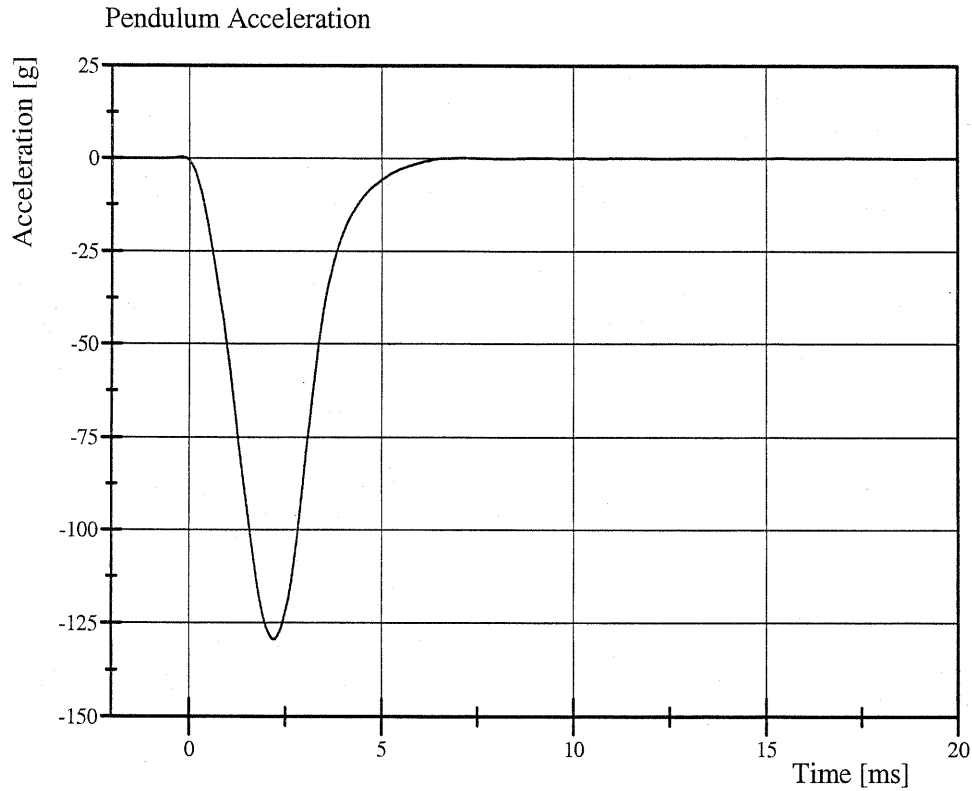
Ron Stoner

Approved

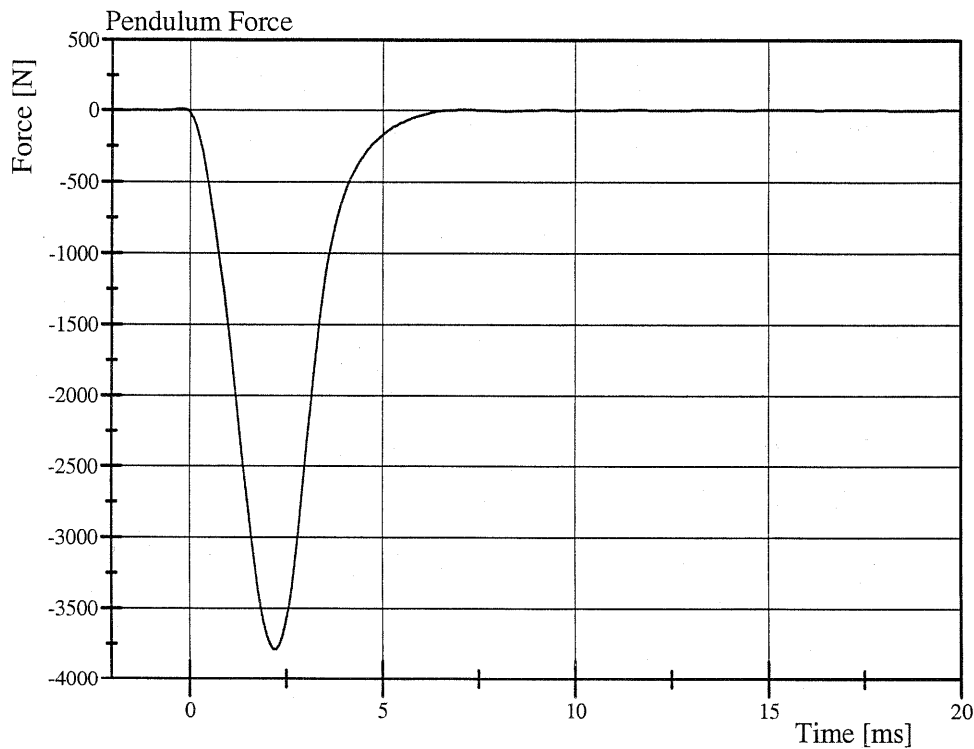
V. L. Walter

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 5th Serial No. 070 Certification No. 16-4
Test Date: 5/5/2006



Filter Class: CFC_600
Max: 0.3 g at -0.2 ms
Min: -129.2 g at 2.2 ms



Filter Class: CFC_600
Max: 8.7 N at -0.2 ms
Min: -3,788.7 N at 2.2 ms

Appendix D

Test Equipment and Instrumentation Calibration Information

Sign Convention
SAE J211 MAR95

Accelerometers:

+X: Forward
+Y: Rightward
+Z: Downward

Potentiometers:

+Chest longitudinal deflection: Outward
+Chest lateral deflection: Rightward
+Seat belt displacement: Outward
+Seat belt extension: Elongation
+Knee slider displacement: Distance between femur and tibia increased (in relation to a seated dummy)

Rotation potentiometers:

+About the X-axis: Left foot-eversion
Right foot-inversion
+About the Y-axis: Left/right foot-dorsiflexion
+About the Z-axis: Left foot-internal
Right foot-external

Load cells:

+Femur force: Tension
+Seat belt force: Tension
+Barrier force: Tension

Neck load cells:

+X force: Head pushed rearward
+Y force: Head pushed leftward
+Z force: Head pulled upward (tension on neck)
+X moment: Left ear rotating toward left shoulder
+Y moment: Chin rotating toward chest
+Z moment: Chin rotating toward left shoulder

Tibia load cells:

+X force: Ankle forward, knee rearward
+Y force: Ankle rightward, knee leftward
+Z force: Tension
+X moment: Bottom of tibia moving leftward
+Y moment: Bottom of tibia moving rearward

Frequency Response Classes
SAE J211 MAR95

<u>Typical Test Measurements</u>	<u>Channel Class</u>
Vehicle Structural Accelerations for use in:	
Total vehicle comparison	60
Collision simulation input	60
Component analysis	600
Integration for velocity or displacement	180
Barrier Face Forces	60
Belt Restraint System Loads	60
Anthropomorphic Test Device	
Head accelerations (linear and angular)	1000
Neck	
Forces	1000
Moments	600
Thorax	
Spine accelerations	180
Rib accelerations	1000
Sternum accelerations	1000
Deflections	600
Lumbar	
Forces	1000
Moments	1000
Pelvis	
Accelerations	1000
Forces	1000
Moments	1000
Femur/Knee/Tibia/Ankle	
Forces	600
Moments	600
Displacements	180
Sled Accelerations	60
Steering Column Loads	600
Head form Accelerations	1000

The direction column on the following sheets describes the transducer output as mounted and wired in the test location. The polarity column indicates whether a polarity change occurred during data acquisition to conform to J211 MAR95. See Report Sign Convention sheet for description of data output as presented in the report: occasionally channels have been adjusted in post-acquisition processing to conform to J211 MAR95.

Channel Report Test Number 060512-2

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS		Assembly
						Flip	Positive Polarity	
1	Trig D1	10ZERO00000VO0A	EVENT		1 Logic	+	Bipolar	
2	J32101	11HEADCG00H3ACXA	Head Accel X	1000	g	+	Forward	1-090 HIII 50th Alderson.001
3	AJ4J6	11HEADCG00H3ACYA	Head Accel Y	1000	g	-	Leftward	1-090 HIII 50th Alderson.002
4	DW83J	11HEADCG00H3ACZA	Head Accel Z	1000	g	-	Upward	1-090 HIII 50th Alderson.003
5	98H14-K15	11HEADFR00H3ACYA	Head (FT) Accel Y	1000	g	-	Leftward	1-090 HIII 50th Alderson.004
6	03F03E29-N01	11HEADFR00H3ACZA	Head (FT) Accel Z	1000	g	-	Upward	1-090 HIII 50th Alderson.005
7	02I02I10-N04	11HEADUP00H3ACXA	Head (TP) Accel X	1000	g	+	Forward	1-090 HIII 50th Alderson.006
8	98H10-F02	11HEADUP00H3ACYA	Head (TP) Accel Y	1000	g	-	Leftward	1-090 HIII 50th Alderson.007
9	03G03F23-M09	11HEADLE00H3ACXA	Head (LT) Accel X	1000	g	+	Forward	1-090 HIII 50th Alderson.008
10	05G20-L24	11HEADLE00H3ACZA	Head (LT) Accel Z	1000	g	-	Upward	1-090 HIII 50th Alderson.009
11	1716A-810-FX	11NECKUP00H3FOXA	Neck Force X	8896.4	N	-	Head forward, chest rearward	1-090 HIII 50th Alderson.010
12	1716A-810-FY	11NECKUP00H3FOYA	Neck Force Y	8896.4	N	+	Head leftward, chest rightward	1-090 HIII 50th Alderson.011
13	1716A-810-FZ	11NECKUP00H3FOZA	Neck Force Z	13344	N	+	Head upward, chest downward	1-090 HIII 50th Alderson.012
14	1716A-810-MX	11NECKUP00H3MOXA	Neck Moment X	282	N-m	-	Right ear toward right shoulder	1-090 HIII 50th Alderson.013
15	1716A-810-MY	11NECKUP00H3MOYA	Neck Moment Y	282	N-m	+	Chin toward sternum	1-090 HIII 50th Alderson.014
16	1716A-810-MZ	11NECKUP00H3MOZA	Neck Moment Z	282	N-m	+	Chin toward left shoulder	1-090 HIII 50th Alderson.015
17	1794A-0121-FX	11NECKLO00H3FOXA	Neck Lower Force X	13344	N	-	Head forward, chest rearward	1-090 HIII 50th Alderson.016
18	1794A-0121-FY	11NECKLO00H3FOYA	Neck Lower Force Y	13344	N	+	Head leftward, chest rightward	1-090 HIII 50th Alderson.017
19	1794A-0121-FZ	11NECKLO00H3FOZA	Neck Lower Force Z	13344	N	+	Head upward, chest downward	1-090 HIII 50th Alderson.018
20	1794A-0121-MX	11NECKLO00H3MOXA	Neck Lower Moment X	452	N-m	-	Right ear toward right shoulder	1-090 HIII 50th Alderson.019
21	1794A-0121-MY	11NECKLO00H3MOYA	Neck Lower Moment Y	452	N-m	+	Chin toward sternum	1-090 HIII 50th Alderson.020
22	1794A-0121-MZ	11NECKLO00H3MOZA	Neck Lower Moment Z	452	N-m	+	Chin toward left shoulder	1-090 HIII 50th Alderson.021
23	P16155	11CHSTCG00H3ACXA	Chest Accel X	1000	g	+	Forward	1-090 HIII 50th Alderson.022
24	J27430	11CHSTCG00H3ACYA	Chest Accel Y	1000	g	-	Leftward	1-090 HIII 50th Alderson.023
25	J13739	11CHSTCG00H3ACZA	Chest Accel Z	1000	g	-	Upward	1-090 HIII 50th Alderson.024
26	B02A25-N09	11CHSTCGRDH3ACXA	Chest Accel X Red.	1000	g	-	Rearward	1-090 HIII 50th Alderson.025
27	04J04I20-Z05	11CHSTCGRDH3ACYA	Chest Accel Y Red.	1000	g	-	Leftward	1-090 HIII 50th Alderson.026

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060512-2

Channel Report Test Number 060512-2

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS		Assembly
						Flip	Positive Polarity	
28	00L13-F05	11CHSTCGRDH3ACZA	Chest Accel Z Red.	1000	g	-	Upward	1-090 HIII 50th Alderson.027
29	CST090	11CHST0000H3DSXA	Chest Deflection X	100	mm	+	Forward	1-090 HIII 50th Alderson.028
30	AGR67	11PELVCG00H3ACXA	Pelvis Accel X	600	g	-	Rearward	1-090 HIII 50th Alderson.029
31	J29023	11PELVCG00H3ACYA	Pelvis Accel Y	600	g	-	Leftward	1-090 HIII 50th Alderson.030
32	ACCT5	11PELVCG00H3ACZA	Pelvis Accel Z	600	g	-	Upward	1-090 HIII 50th Alderson.031
33	2121A-1420	11FEMRLL00H3FOZA	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	1-090 HIII 50th Alderson.032
34	2121A-1421	11FEMRRL00H3FOZA	Right Femur Force Z	13344	N	+	Knee forward, pelvis rearward	1-090 HIII 50th Alderson.033
35	150-0121VL-14696	11KNSLLE00H3DSXA	Left Knee Displacement X	21.5	mm	-	Hold femur in place, tibia rearward	1-LX116-117.001
36	150-0121VL-14672	11KNSLRI00H3DSXA	Right Knee Displacement X	21.5	mm	-	Hold femur in place, tibia rearward	1-LX116-117.019
37	98H13-F03	13HEADCG00HFACXA	Head Accel X	1000	g	+	Forward	3-070 HIII 5th Denton.001
38	03E03E21-M01	13HEADCG00HFACYA	Head Accel Y	1000	g	-	Leftward	3-070 HIII 5th Denton.002
39	02I02I05-F15	13HEADCG00HFACZA	Head Accel Z	1000	g	-	Upward	3-070 HIII 5th Denton.003
40	1716AJ-1563-FX	13NECKUP00HFFOXA	Neck Force X	8896.4	N	+	Head rearward, chest forward	3-070 HIII 5th Denton.010
41	1716AJ-1563-FY	13NECKUP00HFFOYA	Neck Force Y	8896.4	N	+	Head leftward, chest rightward	3-070 HIII 5th Denton.011
42	1716AJ-1563-FZ	13NECKUP00HFFOZA	Neck Force Z	13344	N	+	Head upward, chest downward	3-070 HIII 5th Denton.012
43	1716AJ-1563-MX	13NECKUP00HFMOXA	Neck Moment X	282	Nm	+	Left ear toward left shoulder	3-070 HIII 5th Denton.013
44	1716AJ-1563-MY	13NECKUP00HFMOYA	Neck Moment Y	282	Nm	+	Chin toward sternum	3-070 HIII 5th Denton.014
45	1716AJ-1563-MZ	13NECKUP00HFMOZA	Neck Moment Z	282	Nm	+	Chin toward left shoulder	3-070 HIII 5th Denton.015
46	3251-107-FX	13NECKLO00HFFOXA	Neck Lower Force X	13344	N	-	Head forward, chest rearward	3-070 HIII 5th Denton.016
47	3251-107-FY	13NECKLO00HFFOYA	Neck Lower Force Y	13344	N	+	Head leftward, chest rightward	3-070 HIII 5th Denton.017
48	3251-107-FZ	13NECKLO00HFFOZA	Neck Lower Force Z	13344	N	+	Head upward, chest downward	3-070 HIII 5th Denton.018
49	3251-107-MX	13NECKLO00HFMOXA	Neck Lower Moment X	452	Nm	-	Right ear toward right shoulder	3-070 HIII 5th Denton.019

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060512-2

Channel Report Test Number 060512-2

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
50	3251-107-MY	13NECKLO00HFMOYA	Neck Lower Moment Y	452	Nm	+	Chin toward sternum	3-070 HIII 5th Denton.020
51	3251-107-MZ	13NECKLO00HFMOZA	Neck Lower Moment Z	339	Nm	+	Chin toward left shoulder	3-070 HIII 5th Denton.021
52	AAJY4	13CHSTCG00HFACXA	Chest Accel X	1000	g	+	Forward	3-070 HIII 5th Denton.022
53	AKAA4	13CHSTCG00HFACYA	Chest Accel Y	1000	g	-	Leftward	3-070 HIII 5th Denton.023
54	ACC63	13CHSTCG00HFACZA	Chest Accel Z	1000	g	-	Upward	3-070 HIII 5th Denton.024
55	14CB1-2897-070	13CHST0000HFDSXA	Chest Deflection X	81	mm	+	Forward	3-070 HIII 5th Denton.025
56	04J04I07-Z16	13PELVCG00HFACXA	Pelvis Accel X	1000	g	-	Rearward	3-070 HIII 5th Denton.026
57	J35770	13PELVCG00HFACYA	Pelvis Accel Y	1000	g	-	Leftward	3-070 HIII 5th Denton.027
58	J20014	13PELVCG00HFACZA	Pelvis Accel Z	1000	g	-	Upward	3-070 HIII 5th Denton.028
59	IF-625-140-FZ	13FEMRLL00HFFOZA	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	3-070 HIII 5th Denton.029
60	IF-625-141-FZ	13FEMRRL00HFFOZA	Right Femur Force Z	13344	N	+	Knee forward, pelvis rearward	3-070 HIII 5th Denton.030
61	P49957	14CRME000000ACXA	Left Rear Seat Cross-member X-axis Acceleration	1000	g	+	Forward	
62	P50567	16CRME000000ACXA	Right Rear Seat Cross-member X-axis Acceleration	1000	g	+	Forward	
63	P47526	12ENGNT000000ACXA	Top of Engine X-axis Acceleration	2000	g	+	Forward	
64	P50454	12ENGNB000000ACXA	Bottom of Engine X-axis Acceleration	2000	g	+	Forward	
65	P50578	13VEHCRI000000ACXA	Right Front Brake Caliper X-axis acceleration	2000	g	+	Forward	
66	P46521	11VEHCLE000000ACXA	Left Front Brake Caliper X-axis acceleration	2000	g	+	Forward	
67	P49966	12DASH000000ACXA	Dash Center X-axis acceleration	1500	g	+	Forward	
68	P50568	11PEAC000000ACXA	Toe Pan Accelerator x-axis acceleration	2000	g	+	Forward	
69	P50621	11PEAC000000ACZA	Toe Pan Accelerator z-axis acceleration	2000	g	-	Upward	
70	P50432	11VEHC000001ACXA	Toe Pan footrest x-axis acceleration	2000	g	+	Forward	
71	P50305	11VEHC000001ACZA	Toe Pan footrest z-axis acceleration	2000	g	-	Upward	
72	P49973	15TUNNCY000000ACXA	Rear Tunnel center x-axis acceleration	1000	g	+	Forward	
73	P49967	10VEHCCG000000ACXA	Vehicle CG X-axis acceleration	1500	g	+	Forward	
74	P49781	10VEHCCG000000ACYA	Vehicle CG Y-axis acceleration	1500	g	-	Leftward	
75	P33852	10VEHCCG000000ACZA	Vehicle CG Z-axis acceleration	1500	g	-	Upward	
76	P50411	18VEHC000000ACXA	Vehicle rear deck X-axis acceleration	1000	g	+	Forward	
77	P50457	18VEHC000000ACYA	Vehicle rear deck Y-axis acceleration	1000	g	-	Leftward	
78	P37755	18VEHC000000ACZA	Vehicle rear deck Z-axis acceleration	1000	g	-	Upward	
79	K1506282A	11SEBA0000B5DS0A	Driver lap belt spool (SP08)	635	mm	+	Bipolar	
80	14672	11SEBA0000B3DS0A	Driver shoulder belt spool and retraction (S3)	635	mm	+	Bipolar	
81	A60897	13SEBA0000B5DS0A	RF Pass lap belt spool (5S)	635	mm	+	Bipolar	
82	A37490	13SEBA0000B3DS0A	RF Pass shoulder belt spool and retraction (SP03)	1270	mm	+	Bipolar	
83	3419T-843	11SEBA0000B5FO0A	Driver lap belt Force (606)	15568	N	+	Tension	
84	3419T-840	11SEBA0000B3FO0A	Driver shoulder belt force (610)	15568	N	+	Tension	

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060512-2

Channel Report Test Number 060512-2

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS		Assembly
						Flip	Positive Polarity	
85	3419T-828	13SEBA0000B5FO0A	RF Pass lap belt force (512)	15568	N	+	Tension	
86	3419T-842	13SEBA0000B3FO0A	RF Pass shoulder belt force (152)	15568	N	+	Tension	
87	ABFire1	11AIRBFR0100EV0A	DRIV. FRONT AIRBAG1 IND (IP24)	5	V	+	Bipolar	
88	ABFire2	11AIRBFR0200EV0A	DRIV. FRONT AIRBAG2 IND (IP61)	5	V	+	Bipolar	
89	ABFire3	13AIRBFR0100EV0A	PASS. FRONT AIRBAG1 IND (IP26)	5	V	+	Bipolar	
90	ABFire4	13AIRBFR0200EV0A	PASS. FRONT AIRBAG2 IND (IP62)	5	V	+	Bipolar	
91	398390091	L0FBAR000A07FOXA	Load Cell Row 9 Column 7	300000	N	-	Compression force	0-Barrier VRTC Flat 132.001
92	398390029	L0FBAR000A08FOXA	Load Cell Row 9 Column 8	300000	N	-	Compression force	0-Barrier VRTC Flat 132.002
93	398390131	L0FBAR000A09FOXA	Load Cell Row 9 Column 9	300000	N	-	Compression force	0-Barrier VRTC Flat 132.003
94	398390073	L0FBAR000A10FOXA	Load Cell Row 9 Column 10	300000	N	-	Compression force	0-Barrier VRTC Flat 132.004
95	398390093	L0FBAR000B01FOXA	Load Cell Row 8 Column 1	300000	N	-	Compression force	0-Barrier VRTC Flat 132.005
96	398390028	L0FBAR000B02FOXA	Load Cell Row 8 Column 2	300000	N	-	Compression force	0-Barrier VRTC Flat 132.006
97	398390024	L0FBAR000B03FOXA	Load Cell Row 8 Column 3	300000	N	-	Compression force	0-Barrier VRTC Flat 132.007
98	398390003	L0FBAR000B04FOXA	Load Cell Row 8 Column 4	300000	N	-	Compression force	0-Barrier VRTC Flat 132.008
99	398390011	L0FBAR000B05FOXA	Load Cell Row 8 Column 5	300000	N	-	Compression force	0-Barrier VRTC Flat 132.009
100	398390123	L0FBAR000B06FOXA	Load Cell Row 8 Column 6	300000	N	-	Compression force	0-Barrier VRTC Flat 132.010
101	398390036	L0FBAR000B07FOXA	Load Cell Row 8 Column 7	300000	N	-	Compression force	0-Barrier VRTC Flat 132.011
102	398390048	L0FBAR000B08FOXA	Load Cell Row 8 Column 8	300000	N	-	Compression force	0-Barrier VRTC Flat 132.012
103	398390111	L0FBAR000B09FOXA	Load Cell Row 8 Column 9	300000	N	-	Compression force	0-Barrier VRTC Flat 132.013
104	398390039	L0FBAR000B10FOXA	Load Cell Row 8 Column 10	300000	N	-	Compression force	0-Barrier VRTC Flat 132.014
105	398390013	L0FBAR000B11FOXA	Load Cell Row 8 Column 11	300000	N	-	Compression force	0-Barrier VRTC Flat 132.015
106	398390017	L0FBAR000B12FOXA	Load Cell Row 8 Column 12	300000	N	-	Compression force	0-Barrier VRTC Flat 132.016

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060512-2

Channel Report Test Number 060512-2

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS		Assembly
						Flip	Positive Polarity	
107	398390125	L0FBAR000B13FOXA	Load Cell Row 8 Column 13	300000	N	-	Compression force	0-Barrier VRTC Flat 132.017
108	398390097	L0FBAR000B14FOXA	Load Cell Row 8 Column 14	300000	N	-	Compression force	0-Barrier VRTC Flat 132.018
109	398390096	L0FBAR000B15FOXA	Load Cell Row 8 Column 15	300000	N	-	Compression force	0-Barrier VRTC Flat 132.019
110	398390020	L0FBAR000B16FOXA	Load Cell Row 8 Column 16	300000	N	-	Compression force	0-Barrier VRTC Flat 132.020
111	398390045	L0FBAR000C01FOXA	Load Cell Row 7 Column 1	300000	N	-	Compression force	0-Barrier VRTC Flat 132.021
112	398390015	L0FBAR000C02FOXA	Load Cell Row 7 Column 2	300000	N	-	Compression force	0-Barrier VRTC Flat 132.022
113	398390009	L0FBAR000C03FOXA	Load Cell Row 7 Column 3	300000	N	-	Compression force	0-Barrier VRTC Flat 132.023
114	398390040	L0FBAR000C04FOXA	Load Cell Row 7 Column 4	300000	N	-	Compression force	0-Barrier VRTC Flat 132.024
115	398390069	L0FBAR000C05FOXA	Load Cell Row 7 Column 5	300000	N	-	Compression force	0-Barrier VRTC Flat 132.025
116	398390100	L0FBAR000C06FOXA	Load Cell Row 7 Column 6	300000	N	-	Compression force	0-Barrier VRTC Flat 132.026
117	398390112	L0FBAR000C07FOXA	Load Cell Row 7 Column 7	300000	N	-	Compression force	0-Barrier VRTC Flat 132.027
118	398390075	L0FBAR000C08FOXA	Load Cell Row 7 Column 8	300000	N	-	Compression force	0-Barrier VRTC Flat 132.028
119	398390101	L0FBAR000C09FOXA	Load Cell Row 7 Column 9	300000	N	-	Compression force	0-Barrier VRTC Flat 132.029
120	398390053	L0FBAR000C10FOXA	Load Cell Row 7 Column 10	300000	N	-	Compression force	0-Barrier VRTC Flat 132.030
121	398390117	L0FBAR000C11FOXA	Load Cell Row 7 Column 11	300000	N	-	Compression force	0-Barrier VRTC Flat 132.031
122	398390032	L0FBAR000C12FOXA	Load Cell Row 7 Column 12	300000	N	-	Compression force	0-Barrier VRTC Flat 132.032
123	398390014	L0FBAR000C13FOXA	Load Cell Row 7 Column 13	300000	N	-	Compression force	0-Barrier VRTC Flat 132.033
124	398390090	L0FBAR000C14FOXA	Load Cell Row 7 Column 14	300000	N	-	Compression force	0-Barrier VRTC Flat 132.034
125	398390079	L0FBAR000C15FOXA	Load Cell Row 7 Column 15	300000	N	-	Compression force	0-Barrier VRTC Flat 132.035

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060512-2

Channel Report Test Number 060512-2

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS		Assembly
						Flip	Positive Polarity	
126	398390071	L0FBAR000C16FOXA	Load Cell Row 7 Column 16	300000	N	-	Compression force	0-Barrier VRTC Flat 132.036
127	398390082	L0FBAR000D01FOXA	Load Cell Row 6 Column 1	300000	N	-	Compression force	0-Barrier VRTC Flat 132.037
128	398390006	L0FBAR000D02FOXA	Load Cell Row 6 Column 2	300000	N	-	Compression force	0-Barrier VRTC Flat 132.038
129	398390118	L0FBAR000D03FOXA	Load Cell Row 6 Column 3	300000	N	-	Compression force	0-Barrier VRTC Flat 132.039
130	398390001	L0FBAR000D04FOXA	Load Cell Row 6 Column 4	300000	N	-	Compression force	0-Barrier VRTC Flat 132.040
131	398390122	L0FBAR000D05FOXA	Load Cell Row 6 Column 5	300000	N	-	Compression force	0-Barrier VRTC Flat 132.041
132	398390002	L0FBAR000D06FOXA	Load Cell Row 6 Column 6	300000	N	-	Compression force	0-Barrier VRTC Flat 132.042
133	398390060	L0FBAR000D07FOXA	Load Cell Row 6 Column 7	300000	N	-	Compression force	0-Barrier VRTC Flat 132.043
134	398390108	L0FBAR000D08FOXA	Load Cell Row 6 Column 8	300000	N	-	Compression force	0-Barrier VRTC Flat 132.044
135	398390050	L0FBAR000D09FOXA	Load Cell Row 6 Column 9	300000	N	-	Compression force	0-Barrier VRTC Flat 132.045
136	398390124	L0FBAR000D10FOXA	Load Cell Row 6 Column 10	300000	N	-	Compression force	0-Barrier VRTC Flat 132.046
137	398390086	L0FBAR000D11FOXA	Load Cell Row 6 Column 11	300000	N	-	Compression force	0-Barrier VRTC Flat 132.047
138	398390004	L0FBAR000D12FOXA	Load Cell Row 6 Column 12	300000	N	-	Compression force	0-Barrier VRTC Flat 132.048
139	398390026	L0FBAR000D13FOXA	Load Cell Row 6 Column 13	300000	N	-	Compression force	0-Barrier VRTC Flat 132.049
140	398390116	L0FBAR000D14FOXA	Load Cell Row 6 Column 14	300000	N	-	Compression force	0-Barrier VRTC Flat 132.050
141	398390056	L0FBAR000D15FOXA	Load Cell Row 6 Column 15	300000	N	-	Compression force	0-Barrier VRTC Flat 132.051
142	398390010	L0FBAR000D16FOXA	Load Cell Row 6 Column 16	300000	N	-	Compression force	0-Barrier VRTC Flat 132.052
143	398390038	L0FBAR000E01FOXA	Load Cell Row 5 Column 1	300000	N	-	Compression force	0-Barrier VRTC Flat 132.053
144	398390083	L0FBAR000E02FOXA	Load Cell Row 5 Column 2	300000	N	-	Compression force	0-Barrier VRTC Flat 132.054

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060512-2

Channel Report Test Number 060512-2

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS		Assembly
						Flip	Positive Polarity	
145	398390018	L0FBAR000E03FOXA	Load Cell Row 5 Column 3	300000	N	-	Compression force	0-Barrier VRTC Flat 132.055
146	398390042	L0FBAR000E04FOXA	Load Cell Row 5 Column 4	300000	N	-	Compression force	0-Barrier VRTC Flat 132.056
147	398390084	L0FBAR000E05FOXA	Load Cell Row 5 Column 5	300000	N	-	Compression force	0-Barrier VRTC Flat 132.057
148	398390099	L0FBAR000E06FOXA	Load Cell Row 5 Column 6	300000	N	-	Compression force	0-Barrier VRTC Flat 132.058
149	398390089	L0FBAR000E07FOXA	Load Cell Row 5 Column 7	300000	N	-	Compression force	0-Barrier VRTC Flat 132.059
150	398390066	L0FBAR000E08FOXA	Load Cell Row 5 Column 8	300000	N	-	Compression force	0-Barrier VRTC Flat 132.060
151	398390129	L0FBAR000E09FOXA	Load Cell Row 5 Column 9	300000	N	-	Compression force	0-Barrier VRTC Flat 132.061
152	398390067	L0FBAR000E10FOXA	Load Cell Row 5 Column 10	300000	N	-	Compression force	0-Barrier VRTC Flat 132.062
153	398390081	L0FBAR000E11FOXA	Load Cell Row 5 Column 11	300000	N	-	Compression force	0-Barrier VRTC Flat 132.063
154	398390054	L0FBAR000E12FOXA	Load Cell Row 5 Column 12	300000	N	-	Compression force	0-Barrier VRTC Flat 132.064
155	398390063	L0FBAR000E13FOXA	Load Cell Row 5 Column 13	300000	N	-	Compression force	0-Barrier VRTC Flat 132.065
156	398390046	L0FBAR000E14FOXA	Load Cell Row 5 Column 14	300000	N	-	Compression force	0-Barrier VRTC Flat 132.066
157	398390052	L0FBAR000E15FOXA	Load Cell Row 5 Column 15	300000	N	-	Compression force	0-Barrier VRTC Flat 132.067
158	398390094	L0FBAR000E16FOXA	Load Cell Row 5 Column 16	300000	N	-	Compression force	0-Barrier VRTC Flat 132.068
159	398390087	L0FBAR000F01FOXA	Load Cell Row 4 Column 1	300000	N	-	Compression force	0-Barrier VRTC Flat 132.069
160	398390092	L0FBAR000F02FOXA	Load Cell Row 4 Column 2	300000	N	-	Compression force	0-Barrier VRTC Flat 132.070
161	398390127	L0FBAR000F03FOXA	Load Cell Row 4 Column 3	300000	N	-	Compression force	0-Barrier VRTC Flat 132.071
162	398390076	L0FBAR000F04FOXA	Load Cell Row 4 Column 4	300000	N	-	Compression force	0-Barrier VRTC Flat 132.072
163	398390057	L0FBAR000F05FOXA	Load Cell Row 4 Column 5	300000	N	-	Compression force	0-Barrier VRTC Flat 132.073

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060512-2

Channel Report Test Number 060512-2

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS		Assembly
						Flip	Positive Polarity	
164	398390107	L0FBAR000F06FOXA	Load Cell Row 4 Column 6	300000	N	-	Compression force	0-Barrier VRTC Flat 132.074
165	398390030	L0FBAR000F07FOXA	Load Cell Row 4 Column 7	300000	N	-	Compression force	0-Barrier VRTC Flat 132.075
166	398390016	L0FBAR000F08FOXA	Load Cell Row 4 Column 8	300000	N	-	Compression force	0-Barrier VRTC Flat 132.076
167	398390078	L0FBAR000F09FOXA	Load Cell Row 4 Column 9	300000	N	-	Compression force	0-Barrier VRTC Flat 132.077
168	398390072	L0FBAR000F10FOXA	Load Cell Row 4 Column 10	300000	N	-	Compression force	0-Barrier VRTC Flat 132.078
169	398390064	L0FBAR000F11FOXA	Load Cell Row 4 Column 11	300000	N	-	Compression force	0-Barrier VRTC Flat 132.079
170	398390051	L0FBAR000F12FOXA	Load Cell Row 4 Column 12	300000	N	-	Compression force	0-Barrier VRTC Flat 132.080
171	398390121	L0FBAR000F13FOXA	Load Cell Row 4 Column 13	300000	N	-	Compression force	0-Barrier VRTC Flat 132.081
172	398390049	L0FBAR000F14FOXA	Load Cell Row 4 Column 14	300000	N	-	Compression force	0-Barrier VRTC Flat 132.082
173	398390025	L0FBAR000F15FOXA	Load Cell Row 4 Column 15	300000	N	-	Compression force	0-Barrier VRTC Flat 132.083
174	398390055	L0FBAR000F16FOXA	Load Cell Row 4 Column 16	300000	N	-	Compression force	0-Barrier VRTC Flat 132.084
175	398390043	L0FBAR000G01FOXA	Load Cell Row 3 Column 1	300000	N	-	Compression force	0-Barrier VRTC Flat 132.085
176	398390126	L0FBAR000G02FOXA	Load Cell Row 3 Column 2	300000	N	-	Compression force	0-Barrier VRTC Flat 132.086
177	398390103	L0FBAR000G03FOXA	Load Cell Row 3 Column 3	300000	N	-	Compression force	0-Barrier VRTC Flat 132.087
178	398390130	L0FBAR000G04FOXA	Load Cell Row 3 Column 4	300000	N	-	Compression force	0-Barrier VRTC Flat 132.088
179	398390031	L0FBAR000G05FOXA	Load Cell Row 3 Column 5	300000	N	-	Compression force	0-Barrier VRTC Flat 132.089
180	398390095	L0FBAR000G06FOXA	Load Cell Row 3 Column 6	300000	N	-	Compression force	0-Barrier VRTC Flat 132.090
181	398390106	L0FBAR000G07FOXA	Load Cell Row 3 Column 7	300000	N	-	Compression force	0-Barrier VRTC Flat 132.091
182	398390047	L0FBAR000G08FOXA	Load Cell Row 3 Column 8	300000	N	-	Compression force	0-Barrier VRTC Flat 132.092

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060512-2

Channel Report Test Number 060512-2

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS		Assembly
						Flip	Positive Polarity	
183	398390005	L0FBAR000G09FOXA	Load Cell Row 3 Column 9	300000	N	-	Compression force	0-Barrier VRTC Flat 132.093
184	398390021	L0FBAR000G10FOXA	Load Cell Row 3 Column 10	300000	N	-	Compression force	0-Barrier VRTC Flat 132.094
185	398390058	L0FBAR000G11FOXA	Load Cell Row 3 Column 11	300000	N	-	Compression force	0-Barrier VRTC Flat 132.095
186	398390022	L0FBAR000G12FOXA	Load Cell Row 3 Column 12	300000	N	-	Compression force	0-Barrier VRTC Flat 132.096
187	398390007	L0FBAR000G13FOXA	Load Cell Row 3 Column 13	300000	N	-	Compression force	0-Barrier VRTC Flat 132.097
188	398390065	L0FBAR000G14FOXA	Load Cell Row 3 Column 14	300000	N	-	Compression force	0-Barrier VRTC Flat 132.098
189	398390119	L0FBAR000G15FOXA	Load Cell Row 3 Column 15	300000	N	-	Compression force	0-Barrier VRTC Flat 132.099
190	398390133	L0FBAR000G16FOXA	Load Cell Row 3 Column 16	300000	N	-	Compression force	0-Barrier VRTC Flat 132.100
191	398390120	L0FBAR000H01FOXA	Load Cell Row 2 Column 1	300000	N	-	Compression force	0-Barrier VRTC Flat 132.101
192	398390027	L0FBAR000H02FOXA	Load Cell Row 2 Column 2	300000	N	-	Compression force	0-Barrier VRTC Flat 132.102
193	398390034	L0FBAR000H03FOXA	Load Cell Row 2 Column 3	300000	N	-	Compression force	0-Barrier VRTC Flat 132.103
194	398390019	L0FBAR000H04FOXA	Load Cell Row 2 Column 4	300000	N	-	Compression force	0-Barrier VRTC Flat 132.104
195	398390035	L0FBAR000H05FOXA	Load Cell Row 2 Column 5	300000	N	-	Compression force	0-Barrier VRTC Flat 132.105
196	398390113	L0FBAR000H06FOXA	Load Cell Row 2 Column 6	300000	N	-	Compression force	0-Barrier VRTC Flat 132.106
197	398390105	L0FBAR000H07FOXA	Load Cell Row 2 Column 7	300000	N	-	Compression force	0-Barrier VRTC Flat 132.107
198	398390114	L0FBAR000H08FOXA	Load Cell Row 2 Column 8	300000	N	-	Compression force	0-Barrier VRTC Flat 132.108
199	398390109	L0FBAR000H09FOXA	Load Cell Row 2 Column 9	300000	N	-	Compression force	0-Barrier VRTC Flat 132.109
200	398390044	L0FBAR000H10FOXA	Load Cell Row 2 Column 10	300000	N	-	Compression force	0-Barrier VRTC Flat 132.110
201	398390008	L0FBAR000H11FOXA	Load Cell Row 2 Column 11	300000	N	-	Compression force	0-Barrier VRTC Flat 132.111

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060512-2

Channel Report Test Number 060512-2

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS		Assembly
						Flip	Positive Polarity	
202	398390134	L0FBAR000H12FOXA	Load Cell Row 2 Column 12	300000	N	-	Compression force	0-Barrier VRTC Flat 132.112
203	398390115	L0FBAR000H13FOXA	Load Cell Row 2 Column 13	300000	N	-	Compression force	0-Barrier VRTC Flat 132.113
204	398390037	L0FBAR000H14FOXA	Load Cell Row 2 Column 14	300000	N	-	Compression force	0-Barrier VRTC Flat 132.114
205	398390070	L0FBAR000H15FOXA	Load Cell Row 2 Column 15	300000	N	-	Compression force	0-Barrier VRTC Flat 132.115
206	398390110	L0FBAR000H16FOXA	Load Cell Row 2 Column 16	300000	N	-	Compression force	0-Barrier VRTC Flat 132.116
207	398390059	L0FBAR000I01FOXA	Load Cell Row 1 Column 1	222400	N	-	Compression force	0-Barrier VRTC Flat 132.117
208	398390085	L0FBAR000I02FOXA	Load Cell Row 1 Column 2	300000	N	-	Compression force	0-Barrier VRTC Flat 132.118
209	398390041	L0FBAR000I03FOXA	Load Cell Row 1 Column 3	300000	N	-	Compression force	0-Barrier VRTC Flat 132.119
210	398390074	L0FBAR000I04FOXA	Load Cell Row 1 Column 4	300000	N	-	Compression force	0-Barrier VRTC Flat 132.120
211	398390023	L0FBAR000I05FOXA	Load Cell Row 1 Column 5	300000	N	-	Compression force	0-Barrier VRTC Flat 132.121
212	398390033	L0FBAR000I06FOXA	Load Cell Row 1 Column 6	300000	N	-	Compression force	0-Barrier VRTC Flat 132.122
213	398390102	L0FBAR000I07FOXA	Load Cell Row 1 Column 7	300000	N	-	Compression force	0-Barrier VRTC Flat 132.123
214	398390061	L0FBAR000I08FOXA	Load Cell Row 1 Column 8	300000	N	-	Compression force	0-Barrier VRTC Flat 132.124
215	398390098	L0FBAR000I09FOXA	Load Cell Row 1 Column 9	300000	N	-	Compression force	0-Barrier VRTC Flat 132.125
216	398390128	L0FBAR000I10FOXA	Load Cell Row 1 Column 10	300000	N	-	Compression force	0-Barrier VRTC Flat 132.126
217	398390088	L0FBAR000I11FOXA	Load Cell Row 1 Column 11	300000	N	-	Compression force	0-Barrier VRTC Flat 132.127
218	398390104	L0FBAR000I12FOXA	Load Cell Row 1 Column 12	300000	N	-	Compression force	0-Barrier VRTC Flat 132.128
219	398390012	L0FBAR000I13FOXA	Load Cell Row 1 Column 13	300000	N	-	Compression force	0-Barrier VRTC Flat 132.129
220	398390068	L0FBAR000I14FOXA	Load Cell Row 1 Column 14	300000	N	-	Compression force	0-Barrier VRTC Flat 132.130

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060512-2

Channel Report Test Number 060512-2

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
221	398390062	L0FBAR000I15FOXA	Load Cell Row 1 Column 15	300000	N	-	Compression force	0-Barrier VRTC Flat 132.131
222	398390077	L0FBAR000I16FOXA	Load Cell Row 1 Column 16	300000	N	-	Compression force	0-Barrier VRTC Flat 132.132

Command File Test Number 060512-2

Channel	Mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
1	11HEADCG00H3ACXA	Driver Head X-Axis Acceleration	1000	+	yes	1000
2	11HEADCG00H3ACYA	Driver Head Y-Axis Acceleration	1000	+	yes	1000
3	11HEADCG00H3ACZA	Driver Head Z-Axis Acceleration	1000	+	yes	1000
3A	11HEADCG00H3ACRA	Driver Head Resultant Acceleration	1000			
4	11HEADFR00H3ACYA	Driver Head Front Y-Axis Acceleration	1000	+	yes	1000
5	11HEADFR00H3ACZA	Driver Head Front Z-Axis Acceleration	1000	+	yes	1000
6	11HEADUP00H3ACXA	Driver Head Top X-Axis Acceleration	1000	+	yes	1000
7	11HEADUP00H3ACYA	Driver Head Top Y-Axis Acceleration	1000	+	yes	1000
8	11HEADLE00H3ACXA	Driver Head Side X-Axis Acceleration	1000	+	yes	1000
9	11HEADLE00H3ACZA	Driver Head Side Z-Axis Acceleration	1000	+	yes	1000
10	11NECKUP00H3FOXA	Driver Upper Neck X-Axis Force	1000	+	yes	8896.4
11	11NECKUP00H3FOYA	Driver Upper Neck Y-Axis Force	1000	+	yes	8896.4
12	11NECKUP00H3FOZA	Driver Upper Neck Z-Axis Force	1000	+	yes	13344
13	11NECKUP00H3MOXA	Driver Upper Neck Moment About X Axis	600	+	yes	282
14	11NECKUP00H3MOYA	Driver Upper Neck Moment About Y Axis	600	+	yes	282
15	11NECKUP00H3MOZA	Driver Upper Neck Moment About Z Axis	600	+	yes	282
16	11NECKLO00H3FOXA	Driver Lower Neck X-Axis Force	1000	+	yes	13344
17	11NECKLO00H3FOYA	Driver Lower Neck Y-Axis Force	1000	+	yes	13344
18	11NECKLO00H3FOZA	Driver Lower Neck Z-Axis Force	1000	+	yes	13344
19	11NECKLO00H3MOXA	Driver Lower Neck Moment About X Axis	600	+	yes	452
20	11NECKLO00H3MOYA	Driver Lower Neck Moment About Y Axis	600	+	yes	452
21	11NECKLO00H3MOZA	Driver Lower Neck Moment About Z Axis	600	+	yes	452
22	11CHSTCG00H3ACXA	Driver Chest CG X-Axis Acceleration	180	+	yes	1000
23	11CHSTCG00H3ACYA	Driver Chest CG Y-Axis Acceleration	180	+	yes	1000
24	11CHSTCG00H3ACZA	Driver Chest CG Z-Axis Acceleration	180	+	yes	1000
24A	11CHSTCG00H3ACRA	Driver Chest CG Resultant Acceleration	180			
25	11CHSTCGRDH3ACXA	Driver Redundant Chest CG X-Axis Acceleration	180	+	yes	1000
26	11CHSTCGRDH3ACYA	Driver Redundant Chest CG Y-Axis Acceleration	180	+	yes	1000
27	11CHSTCGRDH3ACZA	Driver Redundant Chest CG Z-Axis Acceleration	180	+	yes	1000
27A	11CHSTCGRDH3ACRA	Driver Redundant Chest CG Resultant Acceleration	180			
28	11CHST0000H3DSXA	Driver Chest Displacement	600	+	yes	100

Command File Test Number 060512-2

Channel	Mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
29	11PELVCG00H3ACXA	Driver Pelvis CG X-Axis Acceleration	1000	+	yes	600
30	11PELVCG00H3ACYA	Driver Pelvis CG Y-Axis Acceleration	1000	+	yes	600
31	11PELVCG00H3ACZA	Driver Pelvis CG Z-Axis Acceleration	1000	+	yes	600
31A	11PELVCG00H3ACRA	Driver Pelvis CG Resultant Acceleration	1000			
32	11FEMRLL00H3FOZA	Driver Left Femur Force Z	600	+	yes	13344
33	11FEMRRL00H3FOZA	Driver Right Femur Force Z	600	+	yes	13344
34	11KNSLLE00H3DSXA	Driver Left Knee Displacement X	180	+	yes	21.5
35	11KNSLRI00H3DSXA	Driver Right Knee Displacement X	180	+	yes	21.5
36	13HEADCG00HFACXA	Passenger Head CG X-Axis Acceleration	1000	+	yes	1000
37	13HEADCG00HFACYA	Passenger Head CG Y-Axis Acceleration	1000	+	yes	1000
38	13HEADCG00HFACZA	Passenger Head CG Z-Axis Acceleration	1000	+	yes	1000
38A	13HEADCG00HFACRA	Passenger Head CG Resultant Acceleration	1000			
39	13NECKUP00HFFOXA	Passenger Upper Neck X-Axis Force	1000	+	yes	8896.4
40	13NECKUP00HFFOYA	Passenger Upper Neck Y-Axis Force	1000	+	yes	8896.4
41	13NECKUP00HFFOZA	Passenger Upper Neck Z-Axis Force	1000	+	yes	13344
42	13NECKUP00HFMOXA	Passenger Upper Neck Moment About X Axis	600	+	yes	282
43	13NECKUP00HFMOYA	Passenger Upper Neck Moment About Y Axis	600	+	yes	282
44	13NECKUP00HFMOZA	Passenger Upper Neck Moment About Z Axis	600	+	yes	282
45	13NECKLO00HFFOXA	Passenger Lower Neck X-Axis Force	1000	+	yes	13344
46	13NECKLO00HFFOYA	Passenger Lower Neck Y-Axis Force	1000	+	yes	13344
47	13NECKLO00HFFOZA	Passenger Lower Neck Z-Axis Force	1000	+	yes	13344
48	13NECKLO00HFMOXA	Passenger Lower Neck Moment About X Axis	600	+	yes	452
49	13NECKLO00HFMOYA	Passenger Lower Neck Moment About Y Axis	600	+	yes	452
50	13NECKLO00HFMOZA	Passenger Lower Neck Moment About Z Axis	600	+	yes	339
51	13CHSTCG00HFACXA	Passenger Chest CG X-Axis Acceleration	180	+	yes	1000
52	13CHSTCG00HFACYA	Passenger Chest CG Y-Axis Acceleration	180	+	yes	1000
53	13CHSTCG00HFACZA	Passenger Chest CG Z-Axis Acceleration	180	+	yes	1000
53A	13CHSTCG00HFACRA	Passenger Chest CG Resultant Acceleration	180			
54	13CHST0000HFDSXA	Passenger Chest Displacement	600	+	yes	81
55	13PELVCG00HFACXA	Passenger Pelvis CG X-Axis Acceleration	1000	+	yes	1000
56	13PELVCG00HFACYA	Passenger Pelvis CG Y-Axis Acceleration	1000	+	yes	1000

Command File Test Number 060512-2

Channel	Mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
57	13PELVCG00HFACZA	Passenger Pelvis CG Z-Axis Acceleration	1000	+	yes	1000
57A	13PELVCG00HFACRA	Passenger Pelvis CG Resultant Acceleration	1000			
58	13FEMRL00HFFOZA	Passenger Left Femur Z-Axis Force	600	+	yes	13344
59	13FEMRRL00HFFOZA	Passenger Right Femur Z-Axis Force	600	+	yes	13344
60	14CRME000000ACXA	Left Rear Seat Crossmember X-Axis Acceleration	60	+	yes	1000
61	16CRME000000ACXA	Right Rear Seat Crossmember X-Axis Acceleration	60	+	yes	1000
62	12ENGNT000000ACXA	Top of Engine X-Axis Acceleration	60	+	yes	2000
63	12ENGNB000000ACXA	Bottom of Engine X-Axis Acceleration	60	+	yes	2000
64	13VEHCRI0000ACXA	Right Front Brake Caliper X-Axis Acceleration	60	+	yes	2000
65	11VEHCLE0000ACXA	Left Front Brake Caliper X-Axis Acceleration	60	+	yes	2000
66	12DASH000000ACXA	Dash Center X-Axis Acceleration	60	+	yes	1500
67	11PEAC000000ACXA	Toe Pan Accelerator X-Axis Acceleration	60	+	yes	2000
68	11PEAC000000ACZA	Toe Pan Accelerator Z-Axis Acceleration	60	+	yes	2000
69	11VEHC000001ACXA	Toe Pan Footrest X-Axis Acceleration	60	+	yes	2000
70	11VEHC000001ACZA	Toe Pan Footrest Z-Axis Acceleration	60	+	yes	2000
71	15TUNNCY0000ACXA	Rear Tunnel Center X-Axis Acceleration	60	+	yes	1000
72	10VEHCCG0000ACXA	Vehicle CG X-Axis Acceleration	60	+	yes	1500
72A	10VEHCCG0000VEXA	Vehicle CG X-Axis Velocity	180			
72B	10VEHCCG0000DCXA	Vehicle CG X-Axis Displacement	180			
73	10VEHCCG0000ACYA	Vehicle CG Y-Axis Acceleration	60	+	yes	1500
73A	10VEHCCG0000VEYA	Vehicle CG Y-Axis Velocity	180			
73B	10VEHCCG0000DCYA	Vehicle CG Y-Axis Displacement	180			
74	10VEHCCG0000ACZA	Vehicle CG Z-Axis Acceleration	60	+	yes	1500
74A	10VEHCCG0000VEZA	Vehicle CG Z-Axis Velocity	180			
74B	10VEHCCG0000DCZA	Vehicle CG Z-Axis Displacement	180			
74C	10VEHCCG0000ACRA	Vehicle CG Resultant Acceleration	60			
75	18VEHC000000ACXA	Vehicle Rear Deck X-Axis Acceleration	60	+	yes	1000
76	18VEHC000000ACYA	Vehicle Rear Deck Y-Axis Acceleration	60	+	yes	1000
77	18VEHC000000ACZA	Vehicle Rear Deck Z-Axis Acceleration	60	+	yes	1000
77A	18VEHC000000ACRA	Vehicle Rear Deck Resultant Acceleration	60			
78	11SEBA0000B5DS0A	Driver lap belt spool	1000	+	yes	635

Command File Test Number 060512-2

Channel	Mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
79	11SEBA0000B3DS0A	Driver shoulder belt spool and retraction	1000	+	yes	635
80	13SEBA0000B5DS0A	Passenger lap belt spool	1000	+	yes	635
81	13SEBA0000B3DS0A	Passenger shoulder belt spool and retraction	1000	+	yes	1270
82	11SEBA0000B5FO0A	Driver lap belt Force	1000	+	yes	15568
83	11SEBA0000B3FO0A	Driver shoulder belt force	1000	+	yes	15568
84	13SEBA0000B5FO0A	Passenger lap belt force	1000	+	yes	15568
85	13SEBA0000B3FO0A	Passenger shoulder belt force	1000	+	yes	15568
86	11AIRBFR0100EV0A	Driver Airbag - Primary	1000	+	no	5
87	11AIRBFR0200EV0A	Driver Airbag - Secondary	1000	+	no	5
88	13AIRBFR0100EV0A	Passenger Airbag - Primary	1000	+	no	5
89	13AIRBFR0200EV0A	Passenger Airbag - Secondary	1000	+	no	5
90	L0FBAR000A07FOXA	Load Cell Row 9 Column 7	60	+	yes	300000
91	L0FBAR000A08FOXA	Load Cell Row 9 Column 8	60	+	yes	300000
92	L0FBAR000A09FOXA	Load Cell Row 9 Column 9	60	+	yes	300000
93	L0FBAR000A10FOXA	Load Cell Row 9 Column 10	60	+	yes	300000
94	L0FBAR000B01FOXA	Load Cell Row 8 Column 1	60	+	yes	300000
95	L0FBAR000B02FOXA	Load Cell Row 8 Column 2	60	+	yes	300000
96	L0FBAR000B03FOXA	Load Cell Row 8 Column 3	60	+	yes	300000
97	L0FBAR000B04FOXA	Load Cell Row 8 Column 4	60	+	yes	300000
98	L0FBAR000B05FOXA	Load Cell Row 8 Column 5	60	+	yes	300000
99	L0FBAR000B06FOXA	Load Cell Row 8 Column 6	60	+	yes	300000
100	L0FBAR000B07FOXA	Load Cell Row 8 Column 7	60	+	yes	300000
101	L0FBAR000B08FOXA	Load Cell Row 8 Column 8	60	+	yes	300000
102	L0FBAR000B09FOXA	Load Cell Row 8 Column 9	60	+	yes	300000
103	L0FBAR000B10FOXA	Load Cell Row 8 Column 10	60	+	yes	300000
104	L0FBAR000B11FOXA	Load Cell Row 8 Column 11	60	+	yes	300000
105	L0FBAR000B12FOXA	Load Cell Row 8 Column 12	60	+	yes	300000
106	L0FBAR000B13FOXA	Load Cell Row 8 Column 13	60	+	yes	300000
107	L0FBAR000B14FOXA	Load Cell Row 8 Column 14	60	+	yes	300000
108	L0FBAR000B15FOXA	Load Cell Row 8 Column 15	60	+	yes	300000
109	L0FBAR000B16FOXA	Load Cell Row 8 Column 16	60	+	yes	300000

Command File Test Number 060512-2

Channel I Mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
110	L0FBAR000C01FOXA	Load Cell Row 7 Column 1	60	+	yes 300000
111	L0FBAR000C02FOXA	Load Cell Row 7 Column 2	60	+	yes 300000
112	L0FBAR000C03FOXA	Load Cell Row 7 Column 3	60	+	yes 300000
113	L0FBAR000C04FOXA	Load Cell Row 7 Column 4	60	+	yes 300000
114	L0FBAR000C05FOXA	Load Cell Row 7 Column 5	60	+	yes 300000
115	L0FBAR000C06FOXA	Load Cell Row 7 Column 6	60	+	yes 300000
116	L0FBAR000C07FOXA	Load Cell Row 7 Column 7	60	+	yes 300000
117	L0FBAR000C08FOXA	Load Cell Row 7 Column 8	60	+	yes 300000
118	L0FBAR000C09FOXA	Load Cell Row 7 Column 9	60	+	yes 300000
119	L0FBAR000C10FOXA	Load Cell Row 7 Column 10	60	+	yes 300000
120	L0FBAR000C11FOXA	Load Cell Row 7 Column 11	60	+	yes 300000
121	L0FBAR000C12FOXA	Load Cell Row 7 Column 12	60	+	yes 300000
122	L0FBAR000C13FOXA	Load Cell Row 7 Column 13	60	+	yes 300000
123	L0FBAR000C14FOXA	Load Cell Row 7 Column 14	60	+	yes 300000
124	L0FBAR000C15FOXA	Load Cell Row 7 Column 15	60	+	yes 300000
125	L0FBAR000C16FOXA	Load Cell Row 7 Column 16	60	+	yes 300000
126	L0FBAR000D01FOXA	Load Cell Row 6 Column 1	60	+	yes 300000
127	L0FBAR000D02FOXA	Load Cell Row 6 Column 2	60	+	yes 300000
128	L0FBAR000D03FOXA	Load Cell Row 6 Column 3	60	+	yes 300000
129	L0FBAR000D04FOXA	Load Cell Row 6 Column 4	60	+	yes 300000
130	L0FBAR000D05FOXA	Load Cell Row 6 Column 5	60	+	yes 300000
131	L0FBAR000D06FOXA	Load Cell Row 6 Column 6	60	+	yes 300000
132	L0FBAR000D07FOXA	Load Cell Row 6 Column 7	60	+	yes 300000
133	L0FBAR000D08FOXA	Load Cell Row 6 Column 8	60	+	yes 300000
134	L0FBAR000D09FOXA	Load Cell Row 6 Column 9	60	+	yes 300000
135	L0FBAR000D10FOXA	Load Cell Row 6 Column 10	60	+	yes 300000
136	L0FBAR000D11FOXA	Load Cell Row 6 Column 11	60	+	yes 300000
137	L0FBAR000D12FOXA	Load Cell Row 6 Column 12	60	+	yes 300000
138	L0FBAR000D13FOXA	Load Cell Row 6 Column 13	60	+	yes 300000
139	L0FBAR000D14FOXA	Load Cell Row 6 Column 14	60	+	yes 300000
140	L0FBAR000D15FOXA	Load Cell Row 6 Column 15	60	+	yes 300000

Command File Test Number 060512-2

Channel I	Mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
141	L0FBAR000D16FOXA	Load Cell Row 6 Column 16	60	+	yes	300000
142	L0FBAR000E01FOXA	Load Cell Row 5 Column 1	60	+	yes	300000
143	L0FBAR000E02FOXA	Load Cell Row 5 Column 2	60	+	yes	300000
144	L0FBAR000E03FOXA	Load Cell Row 5 Column 3	60	+	yes	300000
145	L0FBAR000E04FOXA	Load Cell Row 5 Column 4	60	+	yes	300000
146	L0FBAR000E05FOXA	Load Cell Row 5 Column 5	60	+	yes	300000
147	L0FBAR000E06FOXA	Load Cell Row 5 Column 6	60	+	yes	300000
148	L0FBAR000E07FOXA	Load Cell Row 5 Column 7	60	+	yes	300000
149	L0FBAR000E08FOXA	Load Cell Row 5 Column 8	60	+	yes	300000
150	L0FBAR000E09FOXA	Load Cell Row 5 Column 9	60	+	yes	300000
151	L0FBAR000E10FOXA	Load Cell Row 5 Column 10	60	+	yes	300000
152	L0FBAR000E11FOXA	Load Cell Row 5 Column 11	60	+	yes	300000
153	L0FBAR000E12FOXA	Load Cell Row 5 Column 12	60	+	yes	300000
154	L0FBAR000E13FOXA	Load Cell Row 5 Column 13	60	+	yes	300000
155	L0FBAR000E14FOXA	Load Cell Row 5 Column 14	60	+	yes	300000
156	L0FBAR000E15FOXA	Load Cell Row 5 Column 15	60	+	yes	300000
157	L0FBAR000E16FOXA	Load Cell Row 5 Column 16	60	+	yes	300000
158	L0FBAR000F01FOXA	Load Cell Row 4 Column 1	60	+	yes	300000
159	L0FBAR000F02FOXA	Load Cell Row 4 Column 2	60	+	yes	300000
160	L0FBAR000F03FOXA	Load Cell Row 4 Column 3	60	+	yes	300000
161	L0FBAR000F04FOXA	Load Cell Row 4 Column 4	60	+	yes	300000
162	L0FBAR000F05FOXA	Load Cell Row 4 Column 5	60	+	yes	300000
163	L0FBAR000F06FOXA	Load Cell Row 4 Column 6	60	+	yes	300000
164	L0FBAR000F07FOXA	Load Cell Row 4 Column 7	60	+	yes	300000
165	L0FBAR000F08FOXA	Load Cell Row 4 Column 8	60	+	yes	300000
166	L0FBAR000F09FOXA	Load Cell Row 4 Column 9	60	+	yes	300000
167	L0FBAR000F10FOXA	Load Cell Row 4 Column 10	60	+	yes	300000
168	L0FBAR000F11FOXA	Load Cell Row 4 Column 11	60	+	yes	300000
169	L0FBAR000F12FOXA	Load Cell Row 4 Column 12	60	+	yes	300000
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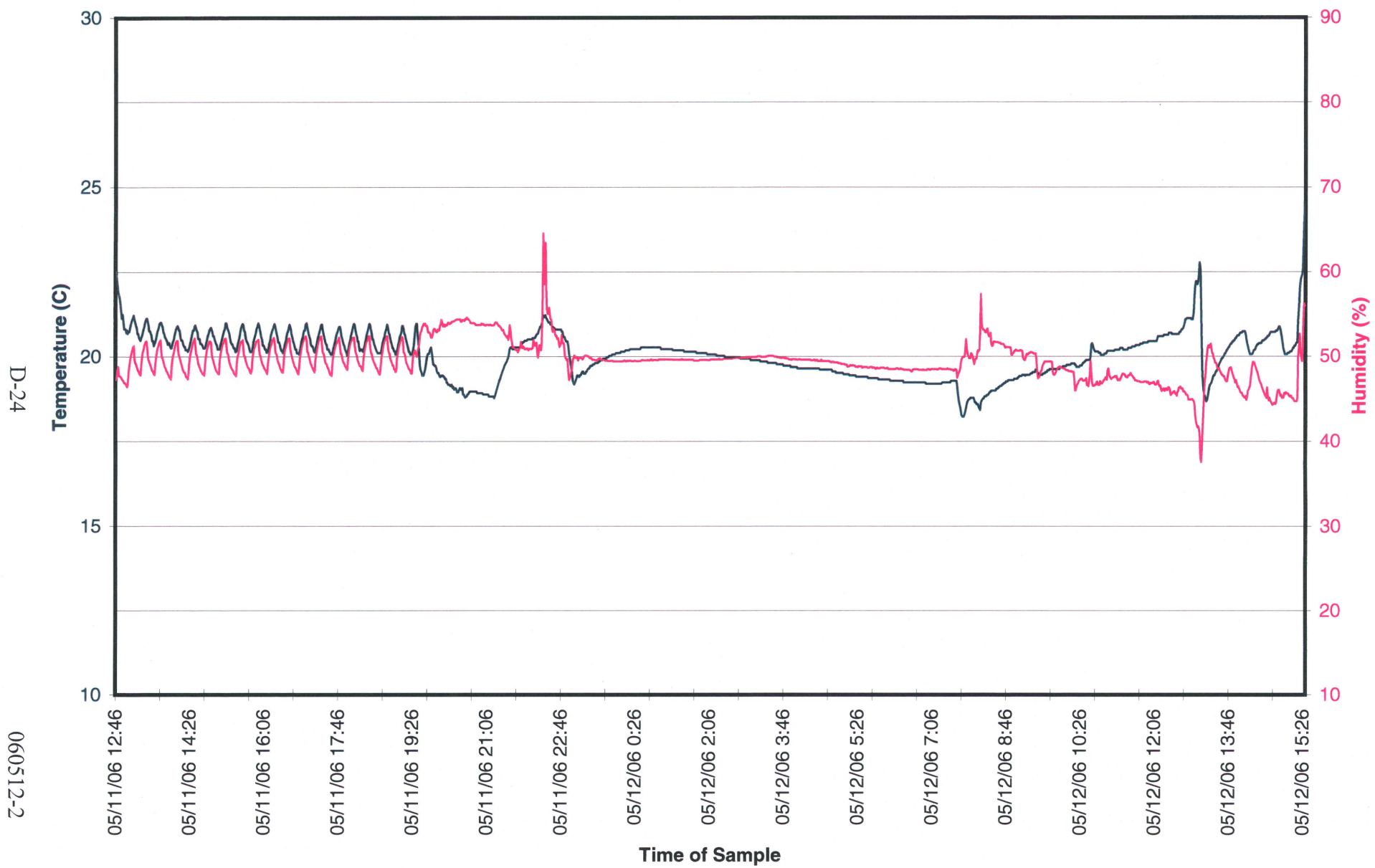
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176 L0FBAR000G03FOXA	Load Cell Row 3 Column 3	60	+	yes	300000
177 L0FBAR000G04FOXA	Load Cell Row 3 Column 4	60	+	yes	300000
178 L0FBAR000G05FOXA	Load Cell Row 3 Column 5	60	+	yes	300000
179 L0FBAR000G06FOXA	Load Cell Row 3 Column 6	60	+	yes	300000
180 L0FBAR000G07FOXA	Load Cell Row 3 Column 7	60	+	yes	300000
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182 L0FBAR000G09FOXA	Load Cell Row 3 Column 9	60	+	yes	300000
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184 L0FBAR000G11FOXA	Load Cell Row 3 Column 11	60	+	yes	300000
185 L0FBAR000G12FOXA	Load Cell Row 3 Column 12	60	+	yes	300000
186 L0FBAR000G13FOXA	Load Cell Row 3 Column 13	60	+	yes	300000
187 L0FBAR000G14FOXA	Load Cell Row 3 Column 14	60	+	yes	300000
188 L0FBAR000G15FOXA	Load Cell Row 3 Column 15	60	+	yes	300000
189 L0FBAR000G16FOXA	Load Cell Row 3 Column 16	60	+	yes	300000
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191 L0FBAR000H02FOXA	Load Cell Row 2 Column 2	60	+	yes	300000
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193 L0FBAR000H04FOXA	Load Cell Row 2 Column 4	60	+	yes	300000
194 L0FBAR000H05FOXA	Load Cell Row 2 Column 5	60	+	yes	300000
195 L0FBAR000H06FOXA	Load Cell Row 2 Column 6	60	+	yes	300000
196 L0FBAR000H07FOXA	Load Cell Row 2 Column 7	60	+	yes	300000
197 L0FBAR000H08FOXA	Load Cell Row 2 Column 8	60	+	yes	300000
198 L0FBAR000H09FOXA	Load Cell Row 2 Column 9	60	+	yes	300000
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201 L0FBAR000H12FOXA	Load Cell Row 2 Column 12	60	+	yes	300000
202 L0FBAR000H13FOXA	Load Cell Row 2 Column 13	60	+	yes	300000

Command File Test Number 060512-2

Channel I Mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
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208 L0FBAR000I03FOXA	Load Cell Row 1 Column 3	60	+	yes	300000
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210 L0FBAR000I05FOXA	Load Cell Row 1 Column 5	60	+	yes	300000
211 L0FBAR000I06FOXA	Load Cell Row 1 Column 6	60	+	yes	300000
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214 L0FBAR000I09FOXA	Load Cell Row 1 Column 9	60	+	yes	300000
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217 L0FBAR000I12FOXA	Load Cell Row 1 Column 12	60	+	yes	300000
218 L0FBAR000I13FOXA	Load Cell Row 1 Column 13	60	+	yes	300000
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221 L0FBAR000I16FOXA	Load Cell Row 1 Column 16	60	+	yes	300000

2002 Ford Focus into High Resolution Load Cell Barrier / 060512-2



Appendix E

INSIA Report on Structural Measurements



UPM



INSIA

Compatibility Project
EEVC - WG15

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

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March, 1999

REPORT DOCUMENTATION PAGE	
Title:	<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.

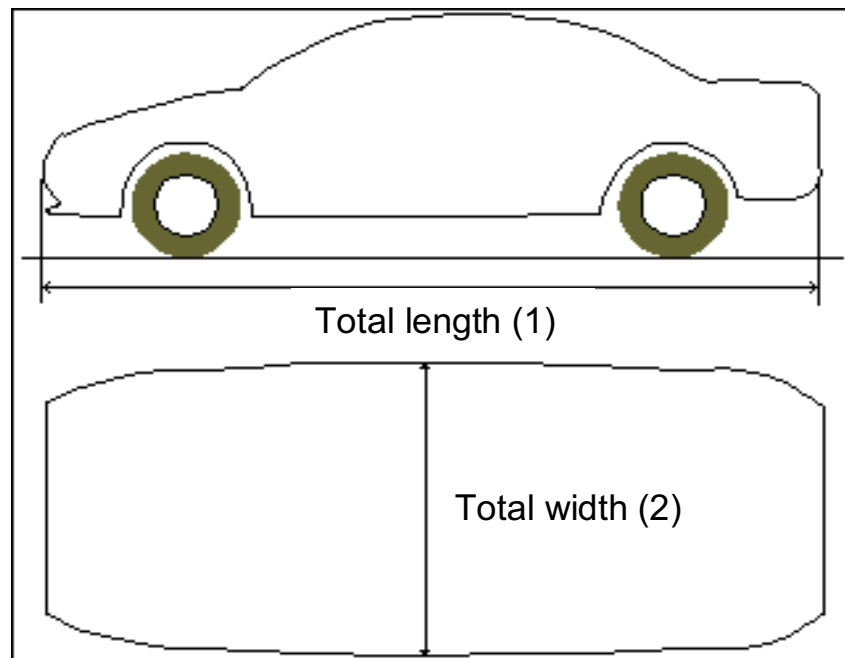


Figure 1.- Definition of the main resistant elements. General dimensions.

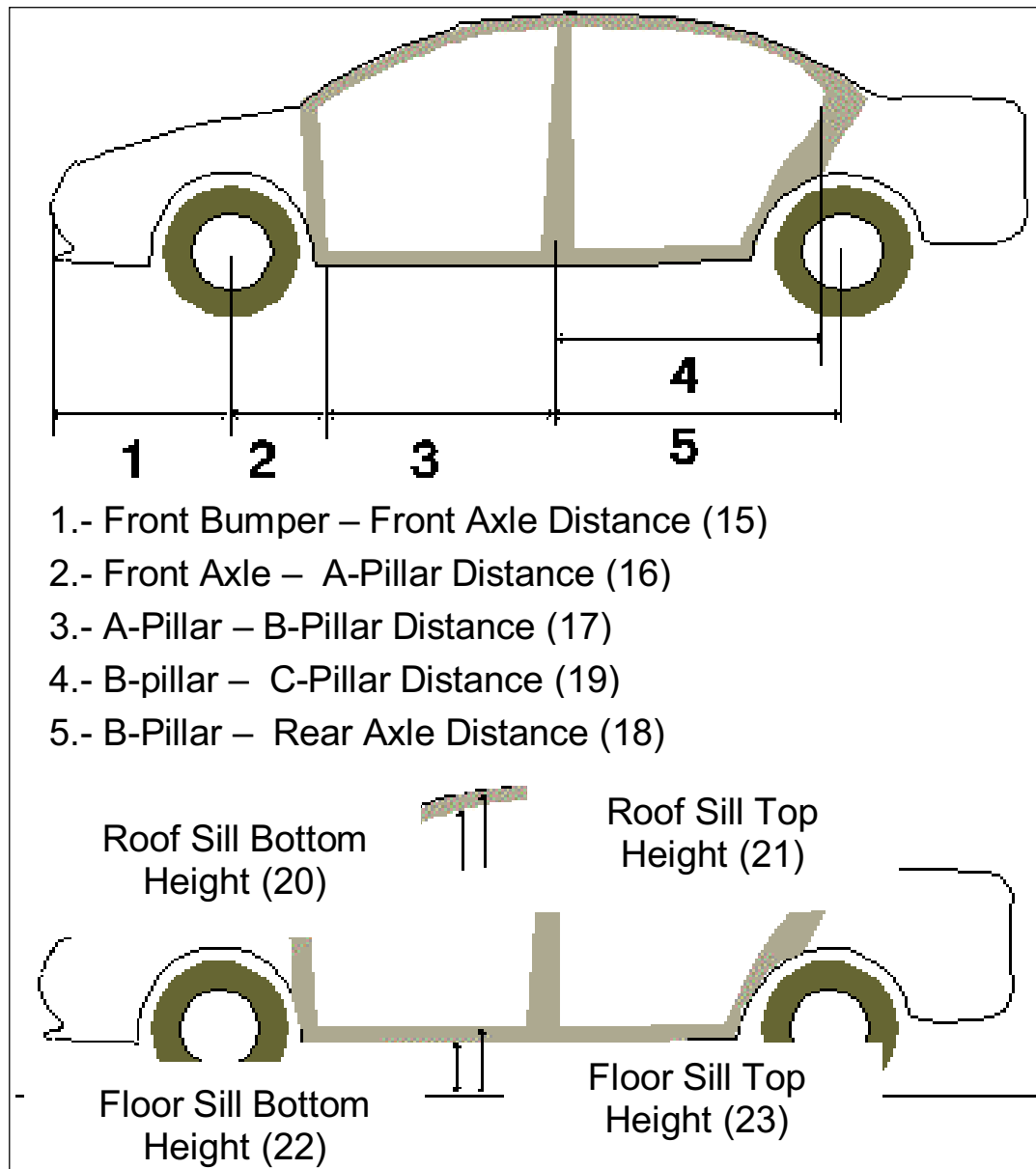


Figure 2.- Definition of the main resistant elements. Side elements.

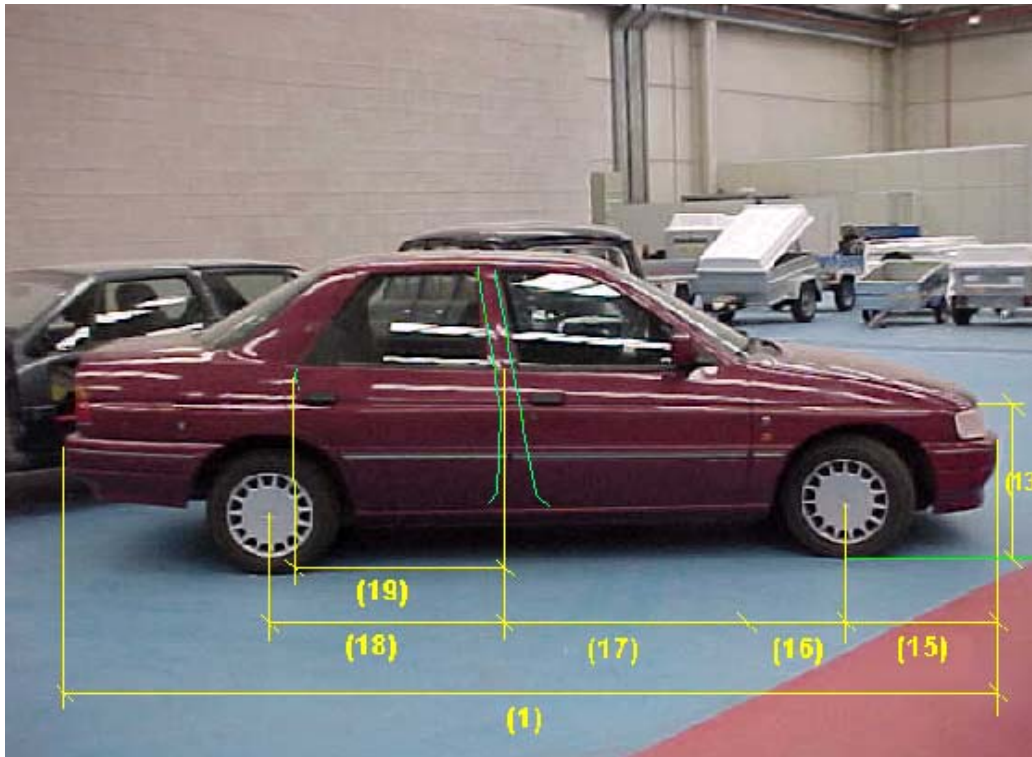


Figure 3.-
Measurements of
the side resistant
elements (outer).

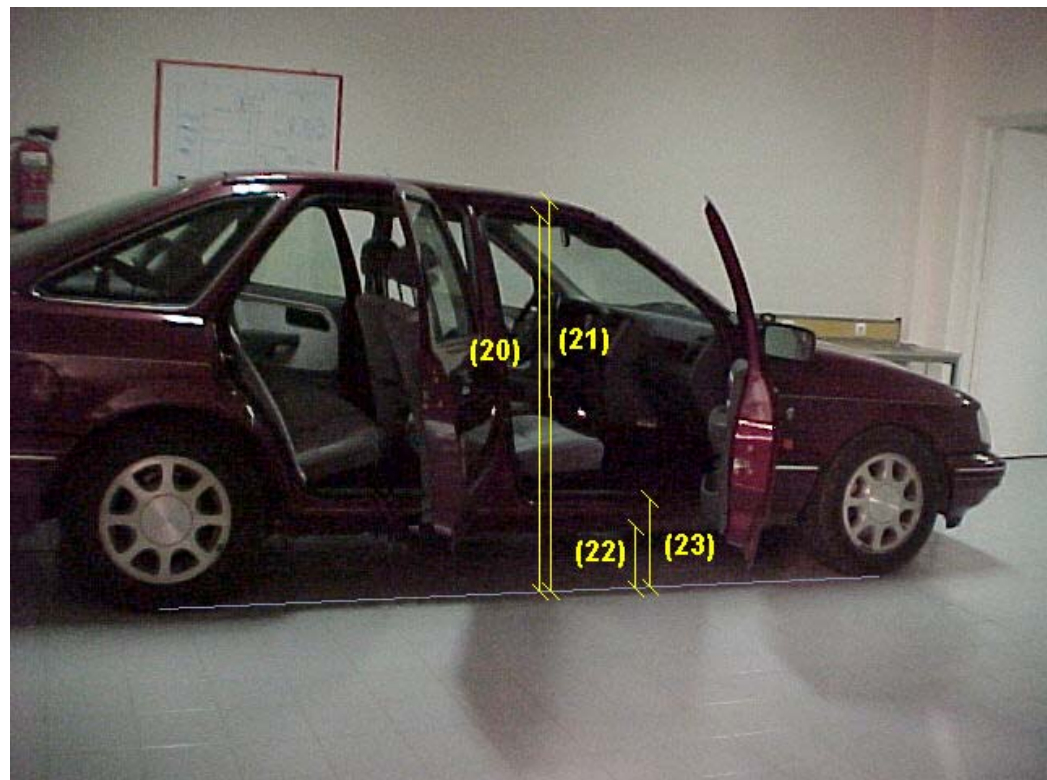


Figure 4.- Measurements
of the side resistant
elements (inner).

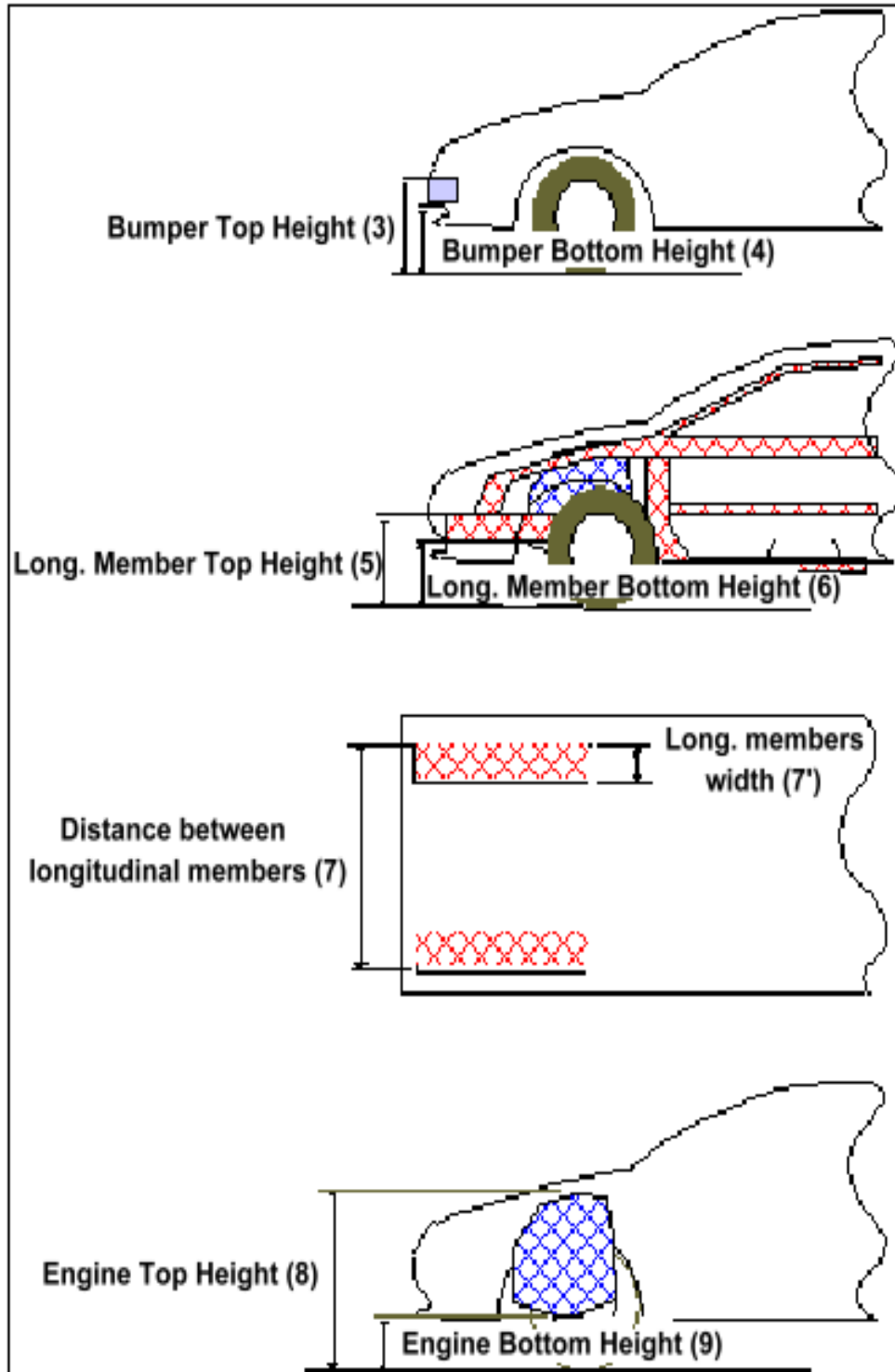


Figure 5.- Definition of the main resistant elements. Front elements.

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

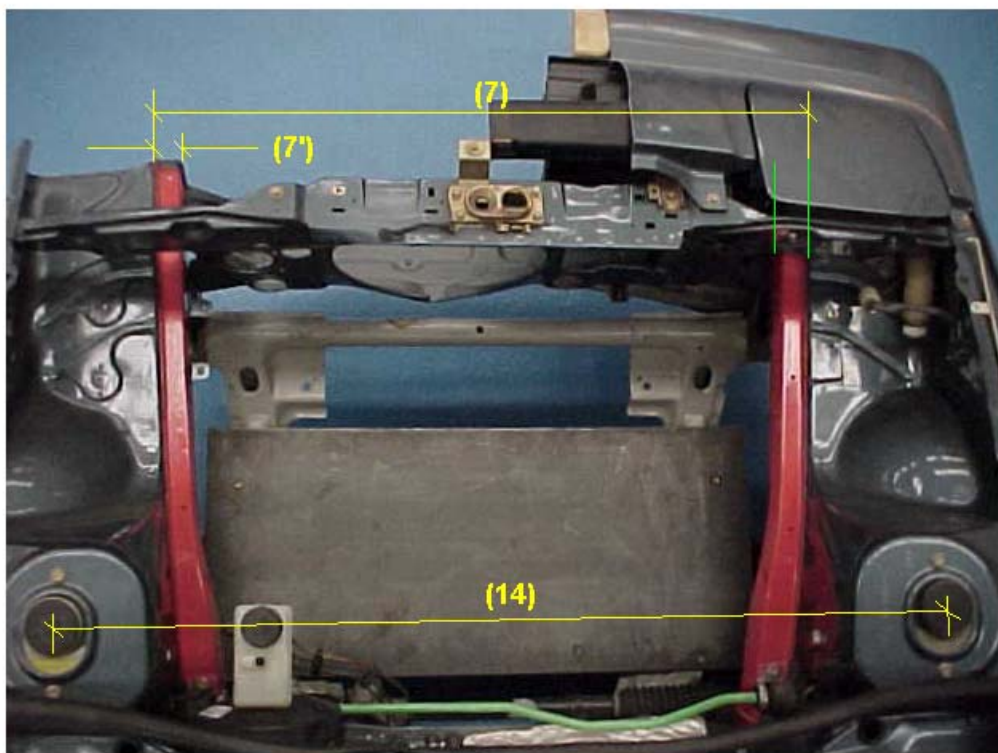
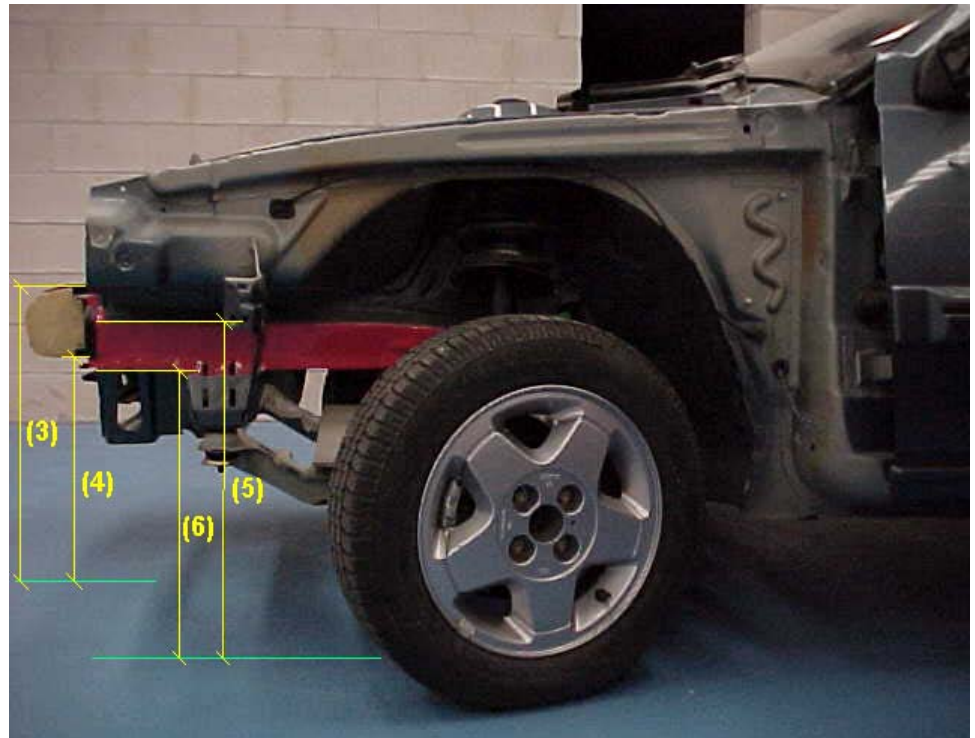


Figure 7.-
Measurements
of the main
resistant
elements. Front
elements 2.

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

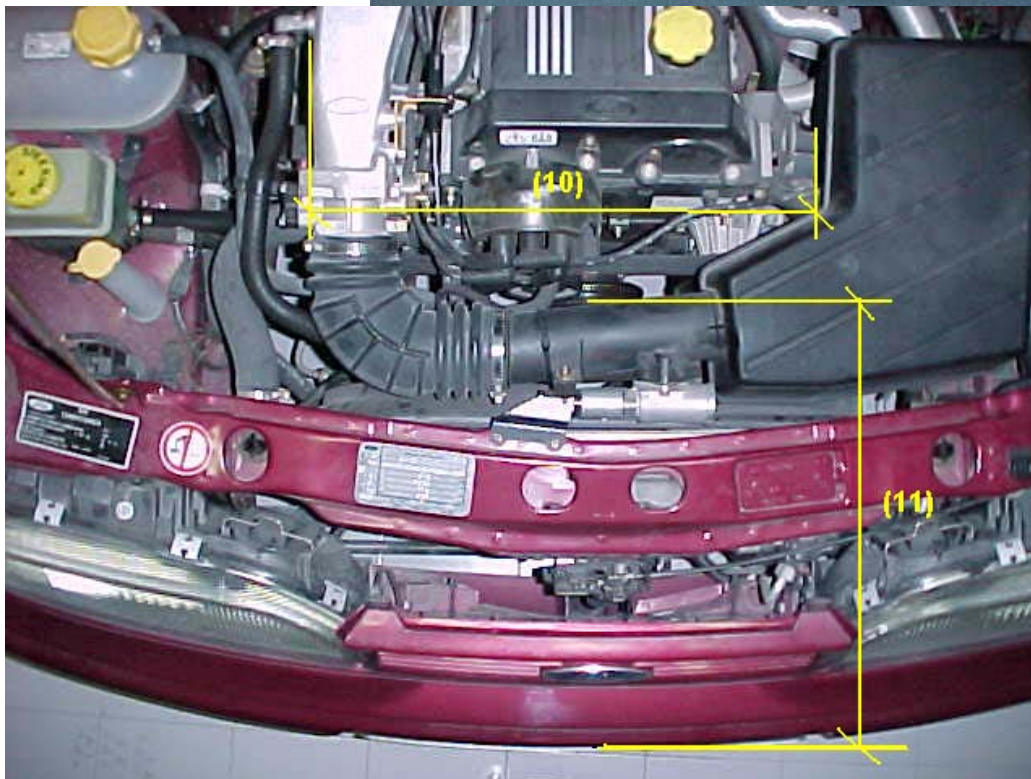
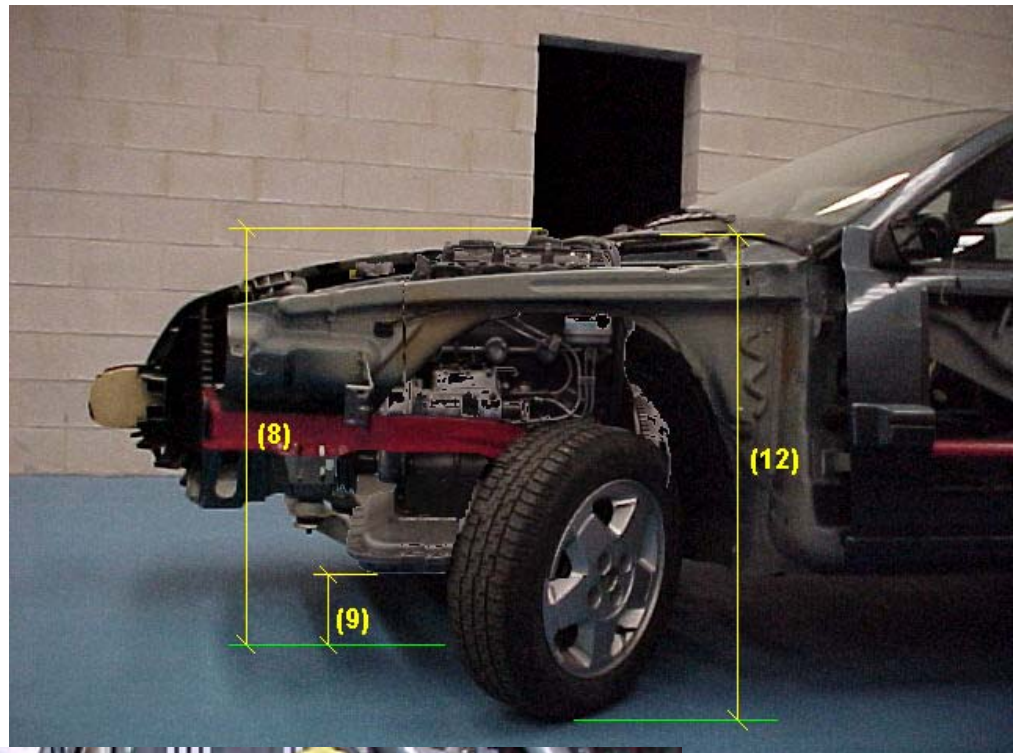


Figure 9.-
Definition of
the main
resistant
elements. Front
elements
(Longitudinal
engine).



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.