

DTS-TRC-06-004

40% Offset Vehicle to Deformable

Barrier Crash Test

GM Daewoo Auto & Technology Company

2006 Suzuki Forenza 4-door sedan

NHTSA Number: R60172

TRC Inc. Test Number: 060530

Prepared By:

Transportation Research Center Inc.

10820 State Route 347

East Liberty, OH 43319



Final Report

June 12, 2006

Prepared For:

U. S. Department of Transportation

Volpe National Transportation Systems Center

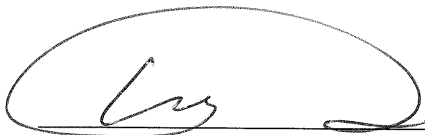
55 Broadway, Kendall Square

Cambridge, MA 02142

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Test Performed By: William Millis, Engineering Technician

Report Approved By:



Walter D. Dudek, Project Manager
Transportation Research Center Inc.

Date 6/9/2006

FINAL REPORT ACCEPTANCE BY COTR:

Contracting Officer's Technical Representative (COTR),
USDOT, Volpe National Transportation Systems Center

Date _____

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16. Abstract A 56.0 km/h 40% frontal offset vehicle to deformable barrier crash test was conducted on a 2006 Suzuki Forenza 4-door sedan, NHTSA No. R60172, at Transportation Research Center Inc. on May 30, 2006. This test was conducted in accordance with Volpe Task Order No. 1, for the evaluation of vehicle and occupant responses. The barrier impact velocity was 55.9 km/h. The vehicle's maximum static crush was 393 millimeters. The ambient temperature was 21° C. The driver's 15 millisecond Head Injury Criteria (HIC) was 895 due to contact with B-pillar. The 15 ms HIC during contact with the airbag was 137. The driver's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 32.6 g. The driver's maximum chest deflection was 25 millimeters. The driver's left and right femur maximum axial compressive forces were -1456 N and -1094 N, respectively.			
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Section 1.0

Purpose and Test Procedure

Purpose

This 56.0 km/h (target speed) Left 40% Offset Deformable Barrier test was conducted for the Volpe National Transportation Systems Center (Volpe) by Transportation Research Center Inc. (TRC Inc).

The purpose of this testing was to evaluate and compare vehicle and occupant responses during 40% frontal offset vehicle to deformable barrier crash tests. For this test, the subject vehicle was a 2006 Suzuki Forenza 4-door sedan with a 50th percentile driver dummy.

Test Procedure

This test was conducted in accordance with VNTSC's instructions for a 40% offset vehicle to deformable barrier crash test. Data was obtained relative to FMVSS 208, "Occupant Crash Protection" performance, FMVSS 212, "Windshield Retention"; FMVSS 219, "Windshield Zone Intrusion"; and FMVSS 301, "Fuel System Integrity," performance.

The test vehicle, a 2006 Suzuki Forenza 4-door sedan, was instrumented with nine (9) accelerometers to measure longitudinal axis accelerations, three (3) accelerometers to measure lateral axis accelerations, and one (1) accelerometer to measure vertical axis accelerations. The driver's primary and secondary airbag signals were monitored with inductive pickups. The vehicle impacted a 40% left offset deformable barrier. The vehicle's specified impact velocity range was 55.2 to 56.8 km/h.

The test vehicle contained one (1) Part 572E 50th percentile adult male Hybrid III anthropomorphic test device (dummy) in the driver position. The 50th percentile dummy was positioned in the front outboard designated seating position according to a procedure provided by NHTSA COTR on March 22, 2006. The seating procedure is included as Appendix D. The driver dummy was restrained with a 3-point seat belt and a front dual stage airbag.

The dummy was instrumented with an array of twelve (12) accelerometers in the head, and six (6) accelerometers in the chest, oriented to measure longitudinal, lateral, and vertical accelerations. The dummy was also instrumented with 6-channel upper and lower neck moment and force load cells, left and right femur load cells to measure axial forces, a chest deflection potentiometer, and knee displacement potentiometers. The dummy was equipped with THOR-LX legs, which included upper and lower tibia load cells to measure forces and moments, longitudinal and lateral tibia accelerometers, three (3) foot accelerometers on each foot to measure accelerations in three (3) axes and three (3) rotary potentiometers at each ankle to measure foot rotations about three (3) axes.

The vehicle impacted a deformable barrier instrumented with 90 load cells to measure longitudinal forces.

The 178 data channels were digitally sampled and recorded at 12,500 samples per second and processed per SAE J211 March 1995.

The crash event was recorded by one (1) real-time panning motion picture camera and fifteen (15) high-speed digital motion picture cameras. The pre-test and post-test conditions were recorded by one (1) real-time motion picture camera.

The 40% left frontal offset vehicle to deformable barrier crash test summary data and all occupant, camera, vehicle, and deformable barrier face measurements are presented in Section 2.0. The occupant, camera, and vehicle measurements are presented in Section 4.0. Appendix A contains the still photographs. Appendix B contains the dummy, vehicle, and barrier data plots. Appendix C contains the dummy verification data. Appendix D contains customer provided seating procedure. Appendix E contains miscellaneous test information. Appendix F contains an INSIA report that was the basis for the Structural Measurements presented in Table 8 of this report.

Section 2.0

Offset Deformable Barrier Test Summary

Test Results Summary

This 56.0 km/h (target speed) left 40% offset vehicle to deformable barrier crash test was conducted by TRC Inc. on May 30, 2006.

The test vehicle, a 2006 Suzuki Forenza 4-door sedan, NHTSA Number R60172, was equipped with a 5.0-liter 4-cylinder transverse engine, manual transmission, power steering, power brakes, and dual stage front airbags. The vehicle's test weight was 1408.0 kg. The vehicle's impact speed was 55.9 km/h. The vehicle sustained 393 mm of static crush during the impact.

The occupant injury assessment values are summarized below.

Injury Criterion	Limits	Driver
Head		
HIC 36 ¹	1000	894
HIC 15 ¹	700	894
Neck		
Upper Neck Tension (N)	4170	1216
Upper Neck Compression (N)	-4000	-606
Neck Injury (NIJ) NTE	1.0	0.4
Neck Injury (NIJ) NTF	1.0	0.3
Neck Injury (NIJ) NCE	1.0	0.3
Neck Injury (NIJ) NCF	1.0	0.0
Chest		
3 ms Clip (g)	60	33
Chest Displacement (mm)	63	25
Femur		
Left Femur Force (N)	-9040	-1456
Right Femur Force (N)	-9040	-1094
Tibia		
Left Upper Tibia Index	0.91	0.29
Right Upper Tibia Index	0.91	0.39
Left Lower Tibia Index	0.91	0.48
Right Lower Tibia Index	0.91	0.41
Left Upper Tibia Force (N)	-5600	-1220
Right Upper Tibia Force (N)	-5600	-909
Left Lower Tibia Force (N)	-5200	-2260
Right Lower Tibia Force (N)	-5200	-1216

¹ Due to contact with the B-pillar. The HIC 36 & 15 as a result of contact with the airbag was 255 and 137.

Test Results Summary, Continued

Injury Criterion	Limits	Driver
Ankle		
Left Inversion (degrees)	-35	0
Left Eversion (degrees)	35	41
Left Plantarflexion (degrees)	-	-29
Left Dorsiflexion (degrees)	35	13
Left External Rotation (degrees)	-	-8
Left Internal Rotation (degrees)	-	-1
Right Eversion (degrees)	-35	-37
Right Inversion (degrees)	35	19
Right Plantarflexion (degrees)	-	-21
Right Dorsiflexion (degrees)	35	1
Right Internal Rotation (degrees)	-	0
Right External Rotation (degrees)	-	20

Data Acquisition Explanations

Electronic data anomalies are summarized below:

Channel Number	Sensor Type	Sensor Location	Sensor Attachment (Name)	Axis	Problem/Action
30	Accel	Chest Red	11CHSTCGRDH3ACZA	Z	No data recorded.
60	Accel	Right Tibia	11TIBIRILXH3ACYA	Y	Questionable data after approximately 135 milliseconds.
76	Accel	Top of Engine Block	12ENGNTF0000ACXA	X	Exceeded full scale at approximately 20 milliseconds.
79	Accel	Left Brake Caliper	11VEHCLE0000ACXA	X	Exceeded full scale at approximately 92 milliseconds.
121	Force	Load Cell Row 3 Column 4	L0FBAR000033FOXA	X	Questionable data throughout the test.
133	Force	Load Cell Row 5 Column 5	L0FBAR000045FOXA	X	Questionable data throughout the test.

DATA SHEET NO. 1
CRASH VEHICLE SUMMARY

Vehicle NHTSA No.: R60172 Test Mode: Left 40% Offset Deformable Barrier

Test Date: 05/30/06 Time: 14:40 Temperature: 21 °C

Vehicle Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan

Vehicle Test Weight: 1408 kg

Vehicle/Barrier Impact Angle: 0 °

Vehicle/Barrier Impact Accuracy: 5 mm Down

12 mm Left

Impact Velocity: 55.9 km/h

Maximum Static Crush: 393 mm

DUMMIES:

DRIVER #202

Type: HIII 50th

Type Lower Leg / Serial Number: THOR-LX/045/046

3 pt. seat belt, dual

Restraint System: stage airbag

Number of Data Channels: 71

Number of Cameras: 1 Real-Time

15 High-Speed Digital

DOOR OPENING DATA:

Difficult - Left Front

Easy - Right Front

Easy - Left Rear

Easy - Right Rear

DATA SHEET NO. 1 (continued)
CRASH VEHICLE SUMMARY

FRONT SEAT(S) DATA:

DRIVER

Seat Track Failure (mm of shift): None

Seat Back Failure: None

LEFT REAR

REAR SEAT(S) DATA:

PASSENGER

Seat Track Failure (mm of shift): N/A

Seat Back Failure: N/A

VISIBLE DUMMY CONTACT

POINTS :

DRIVER

Head: Airbag, B-pillar

Chest: Airbag

Abdomen: None

Left Knee: Knee bolster

Right Knee: Knee bolster

DATA SHEET NO. 2
GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
NHTSA No.: R60172 VIN: KL5JD56Z36K363231 Color: Tan
Engine Data: 4 Cylinders CID 5 Liters 2000 cc
Placement: Longitudinal or In-line X Transverse or Lateral
Transmission Data: 5 Speeds X Manual Automatic Overdrive
Final Drive: Rear Wheel X Front Wheel Four Wheel
Major Options: A/C X Pwr. Steering X Pwr. Brakes Pwr. Seats
 Tilt Wheel Pwr. Windows Pwr. Locks Cruise Control
Date Received: 5/18/2006 Odometer Reading: 81
Selling Dealer: Columbus Suzuki
& Address: 3615 West Dublin-Granville Road, Columbus, OH 43235

DATA FROM TIRE VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured by: GM Daewoo Auto & Technology Company
Date of Manufacture 01/06
GVWR: 1670 kg; GAWR: 920 kg FRONT; 845 kg REAR

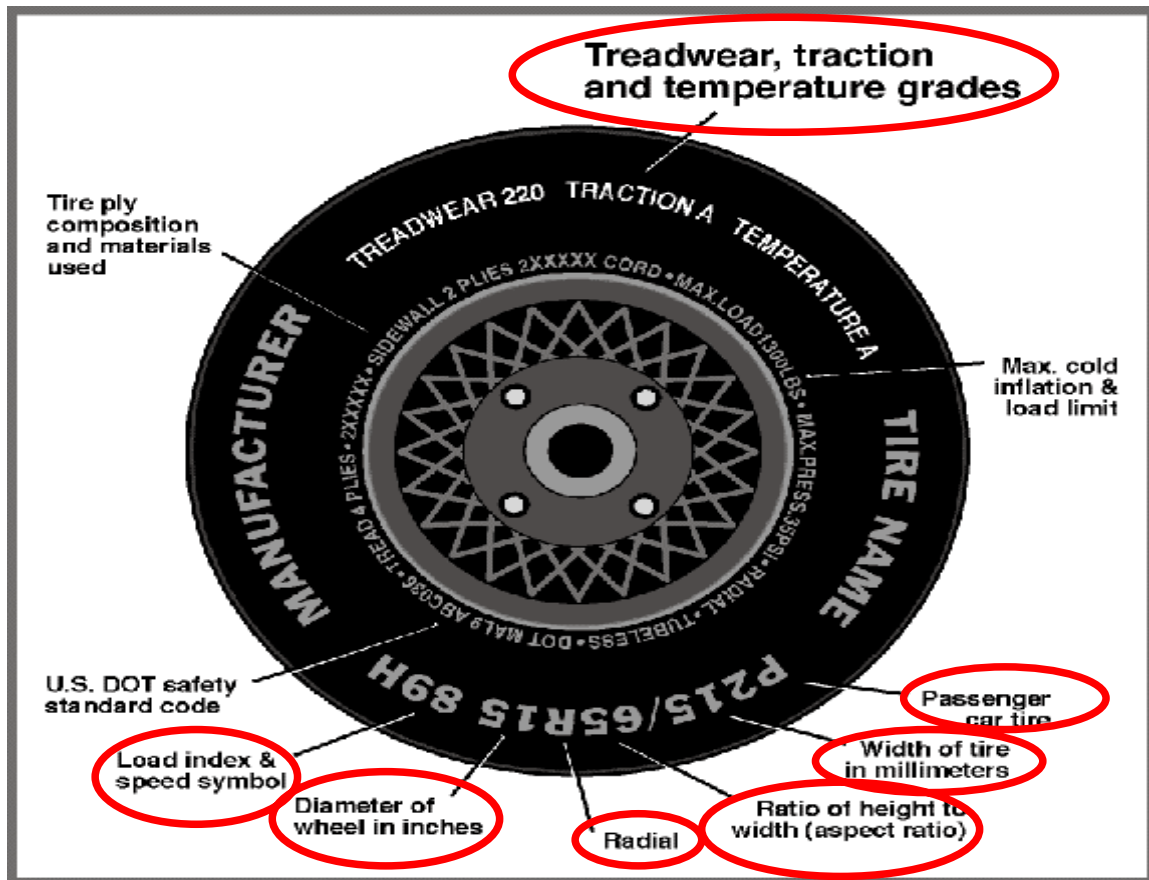
DATA FROM TIRE OR TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load: 210 kPa FRONT
210 kPa REAR
Load Index & Speed Symbol: 84H
Recommended Tire Size: P195/55R15
* Recommended Cold Tire Pressure: 210 kPa FRONT; 210 kPa REAR
Tire Grades: 360 Treadwear; A Temperature; A Traction
Size of Tires on Test Vehicle: P195/55R15 ; Manufacturer: Kumho, Ecsta HP
Vehicle Capacity Data:
Type of Front Seats: Bench; X Bucket; Split Bench
Number of
Occupants: 2 Front; 3 Rear; 5 Total
Vehicle Capacity Weight (VCW) = 396 kg
No. of Occupants x 68 kg = 340 kg
Rated Cargo/Luggage Weight (RCLW) = 56 kg

*Tire pressure used for test

GENERAL TEST AND VEHICLE PARAMETER DATA

NHTSA Test No.:	R60172	Test Date:	05/30/06
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DATA RECORDED FROM ACTUAL TIRES ON TEST VEHICLE

	Front	Rear
Manufacturer	Kumho	Kumho
Brand Name	Ecsta HP	Ecsta HP
Tire Size (ex. P215/65R15)	P195/55R15	P195/55R15
Load Index and Speed Symbol	84H	84H
Treadwear	360	360
Traction	A	A
Temperature	A	A

DATA SHEET NO. 2 (continued)
GENERAL TEST AND VEHICLE PARAMETER DATA

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
 NHTSA Test No.: R60172 Test Date: 05/30/06

WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER (with max. fluids) = UDW:

Right Front	=	<u>386.0</u>	kg	Right Rear	=	<u>244.0</u>	kg
Left Front	=	<u>388.0</u>	kg	Left Rear	=	<u>254.0</u>	kg
TOTAL FRONT	=	<u>774.0</u>	kg	TOTAL REAR	=	<u>498.0</u>	kg
TOTAL DELIVERED WEIGHT =		<u>1272.0</u>	kg				
% of Total Front of Vehicle Weight =		<u>60.8</u>	%				
% of Total Rear of Vehicle Weight =		<u>39.2</u>	%				

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT :

Total Delivered Weight (UDW)	=	<u>1272</u>	kg
Rated Cargo/Luggage Weight (RCLW)	=	<u>56</u>	kg
Weight of 1 Part 572E Dummy @ 76 each	=	<u>76</u>	kg
TARGET TEST WEIGHT	=	<u>1404</u>	kg

WEIGHT OF TEST VEHICLE WITH ONE DUMMY:

Right Front	=	<u>391.5</u>	kg	Right Rear	=	<u>289.0</u>	kg
Left Front	=	<u>412.0</u>	kg	Left Rear	=	<u>315.5</u>	kg
TOTAL FRONT	=	<u>803.5</u>	kg	TOTAL REAR	=	<u>604.5</u>	kg
TOTAL TEST WEIGHT =		<u>1408.0</u>	kg				
% of Total Front of Vehicle Weight =		<u>57.1</u>	%				
% of Total Rear of Vehicle Weight =		<u>42.9</u>	%				
Weight of Ballast Secured in Vehicle Trunk Area =		<u>0</u>	kg				
Vehicle Components Removed for Weight Reduction: <u>Deck lid & seal, right rear, left front & left rear door seals, and taillights</u>							

VEHICLE ATTITUDE (all dimension in millimeters):

AS DELIVERED :	RF	<u>654</u>	LF	<u>653</u>	RR	<u>665</u>	LR	<u>665</u>
FULLY LOADED :	RF	<u>645</u>	LF	<u>640</u>	RR	<u>633</u>	LR	<u>627</u>
AS TESTED :	RF	<u>633</u>	LF	<u>629</u>	RR	<u>624</u>	LR	<u>615</u>
Vehicle's Wheel Base :		<u>2592</u>	mm					
Location of Vehicle's C.G.:		<u>1113</u>	mm rearward of front wheel center.					

FUEL SYSTEM DATA :

Fuel System Capacity From Owner's Manual =	<u>54.9</u>	liters
Usable Capacity Figure Furnished by COTR =	<u>54.9</u>	liters
Test Volume Range (92 to 94% of Usable Capacity) =	<u>50.5</u>	to <u>51.6</u> liters
ACTUAL TEST VOLUME =	<u>51.1</u>	liters (with entire fuel system filled)
Test Fluid Type: <u>Stoddard</u> ;	Specific Gravity =	<u>0.764</u>
Kinematic Viscosity =	<u>0.99</u>	centistokes; Color = <u>Purple</u>
Type of Fuel Pump: Electric- <u>X</u> ;	Mechanical-	<u> </u>
Does Electric Pump operate with ignition switch "ON" & engine "OFF" Yes- <u>X</u> No- <u> </u>		
Details of Fuel System: <u>The fuel tank is located in front of the rear axle under 2nd row seat. The fuel filler neck enters the fuel tank on the right rear corner. The fuel filler cap is located on the right rear quarter panel. The fuel lines run along the right side of center tunnel.</u>		

DATA SHEET NO. 3
POST IMPACT DATA

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
NHTSA Test No.: R60172 Test Date: 05/30/06

TYPE OF TEST:

Type of Test: Left 40% Offset Deformable Barrier Impact Angle: 0 °
Test Date: 05/30/06 Time: 14:40 Temperature: 21 °C
Vehicle NHTSA No.: R60172
Required Impact Velocity Range: 55.2 to 56.8 km/h

BARRIER IMPACT VELOCITY:

Trap No. 1 = 55.9 km/h; Trap No. 2 = 55.9 km/h

VEHICLE STATIC CRUSH: (mm)

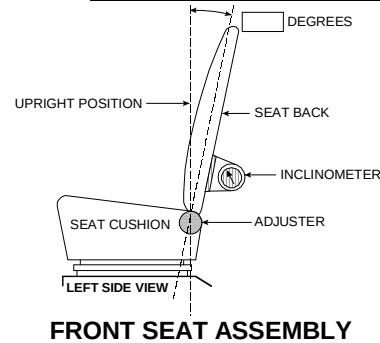
Vehicle Length:

Pre-Test Right = 4206 ; C/L = 4279 ; Left = 4207
Post-Test Right = 4234 ; C/L = 3950 ; Left = 3709
Crush Right = -23 ; C/L = 329 ; Left = 498
AVERAGE = 268 mm

DATA SHEET NO. 4
TEST VEHICLE INFORMATION

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
NHTSA Test No.: R60172 Test Date: 05/30/06

Nominal Design Riding Position for adjustable driver and passenger seat backs. Please describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent, if applicable.



Left Front Seat Cushion Placement: Detent # 17 of 20

Total Length of Fore/Aft Adjustment Travel: 230 mm

Total Number of Adjustment Positions or Detents: 20

Left Front Seat Back Adjustment Position: 9.5°; measured at head restraint support post

Left Front Head Restraint Placement: Full up

Left D-Ring Placement: Full up

Right Front Seat Cushion Placement: N/A - seat removed

Total Length of Fore/Aft Adjustment Travel: N/A mm

Total Number of Adjustment Positions or Detents: N/A

Right Front Seat Back Adjustment Position: N/A

Right Front Head Restraint Placement: N/A

Right D-Ring Placement: N/A

Adjustable Steering Column Position: 23.1°; center of geometric range of travel

Window Positions:

Right Front: Open

Right Rear: Open

Left Front: Open

Left Rear: Open

Amount of Stoddard Solvent In Fuel Tank:

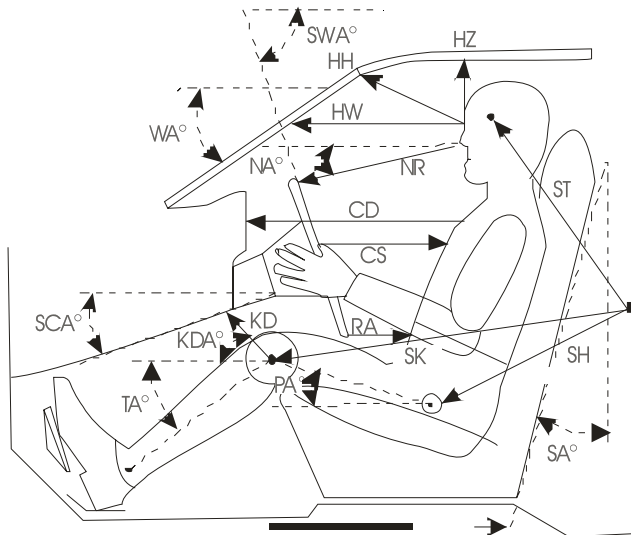
54.9 liters (fuel tank usable capacity)

51.1 liters used in test (92% - 94% of fuel tank usable capacity)

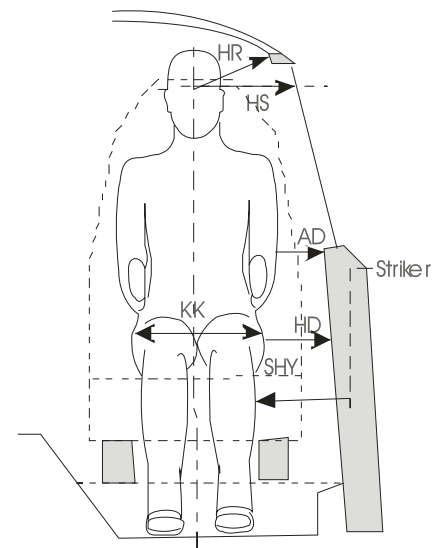
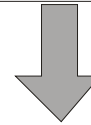
Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan

NHTSA Test No.: R60172

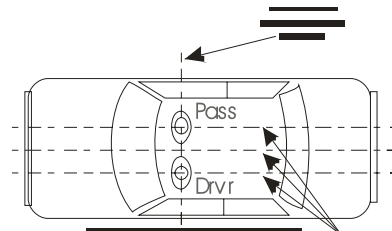
Test Date: 05/30/06



AD Arm to Door
HD H-Point to Door
HR Head to Side Header
HS Head to Side Window
KK Knee to Knee
SHY Striker to H-Point (Y-Axis)



CD Chest to Dash
CS Chest to Steering Wheel Hub
HH Head to Header
HW Head to Windshield
HZ Head to Roof
KDA Knee to Dash Angle
KDL Left Knee to Dash
NA Nose to Rim Angle
NR Nose to Rim
PA Pelvic Angle
RA Rim to Abdomen
SA Seat Back Angle
SCA Steering Column Angle
SH Striker to H-Point
SK Striker to Knee
ST Striker to Head
SWA Steering Wheel Angle
TA Tibial Angle
WA Windshield Angle



DUMMY MEASUREMENTS FOR FRONT SEAT OCCUPANTS

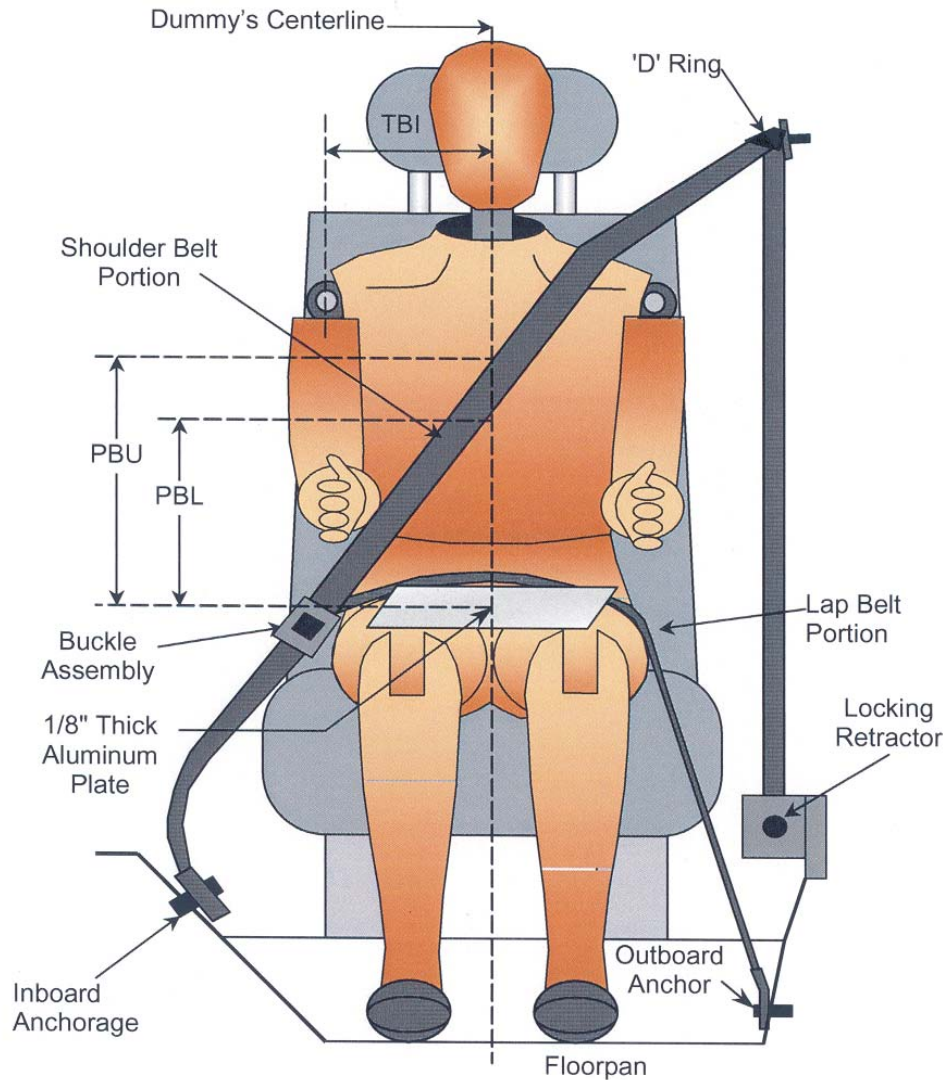
DATA SHEET NO. 5
FRONT SEAT DUMMY POSITIONING MEASUREMENTS IN VEHICLE

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
 NHTSA Test No.: R60172 Test Date: 05/30/06

	DRIVER (Serial #202)		
WA°	23.9°		
SWA°	67.0		
SCA°	23.0°		
SA°	8.1°		
HZ	208 mm		
HH	409 mm		
HW	693 mm		
HR	179 mm		
NR	508 mm		
NA°	9.4°		
CD	638 mm		
CS	404 mm		
RA	296 mm		
KDL	246 mm	Angle (KDA)	15.2 °
KDR	254 mm		
PA°	28.5°		
TA°	38.8°		
KK	342 mm		
ST	514 mm	Angle	83.2°
SK	481 mm	Angle	2.1°
SH	163 mm	Angle	52.4°
SHY	133 mm		
HS	296 mm		
HD	97 mm		
AD	73 mm		

DATA SHEET NO. 6 **SEAT BELT POSITIONING DATA**

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
 NHTSA Test No.: R60172 Test Date: 05/30/06



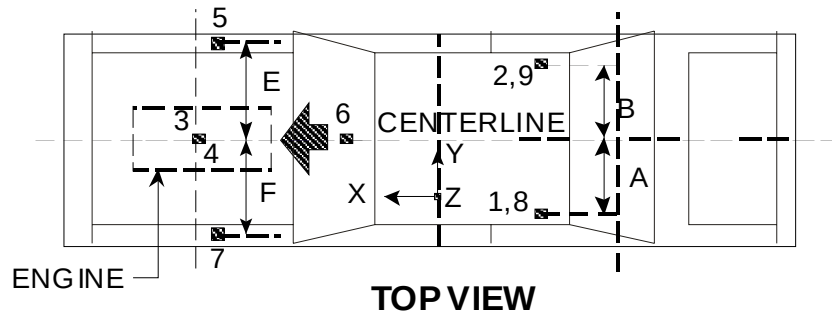
	Driver Dummy
PBU - Top surface of aluminum plate to belt upper edge, mm	359
PBL - Top surface of aluminum plate to belt lower edge, mm	278
Lap Belt Tension, N	N/A
Shoulder Belt Tension, N	N/A

DATA SHEET NO. 7

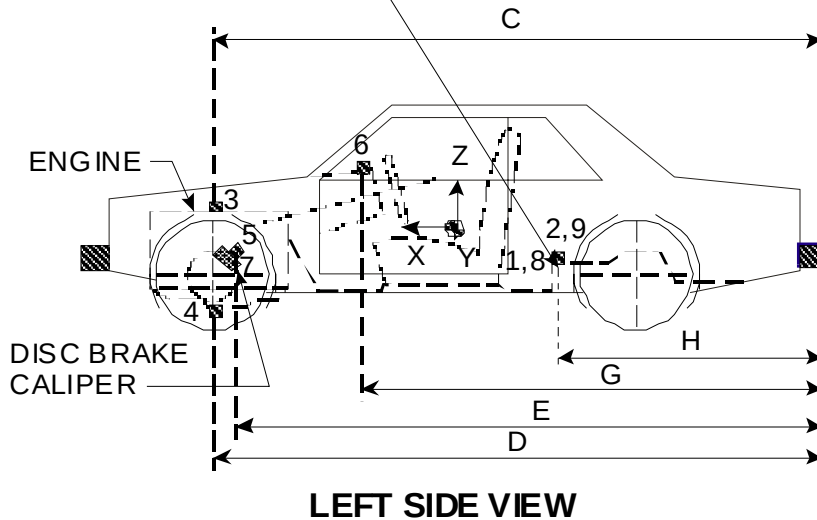
Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan

NHTSA Test No.: R60172 Test Date: 05/30/06

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



REAR SEAT CUSHION
ASSY. FRONT ATTACHMENT
BRACKET SUPPORT



NOTE: Vehicle accelerometer location and data summary shown in DATA SHEET NO. 6.

DATA SHEET NO. 7 (continued)
VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
 NHTSA Test No.: R60172 Test Date: 05/30/06

DIMENSION	LENGTH (mm)
	PRE-TEST VALUES
A Left Rear Seat Crossmember Y	640
B Right Rear Seat Crossmember Y	640
C Top of Engine X	4155
D Bottom of Engine X	4040
E Disc Brake Calipers Y	650
F Disc Brake Calipers Y	650
G Instrument Panel X	3345
H Left Rear Seat Cross Member X	2115
I Right Rear Seat Cross Member X	2115
J Left Side Driver Mid Seat Track X	2735
J Vehicle Center of Gravity X	2997

DATA SHEET NO. 7 (continued)
VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
 NHTSA Test No.: R60172 Test Date: 05/30/06

LOCATION NUMBER	<u>DESCRIPTION</u>	MAXIMUM VALUE (g's)			
		Positive	Time, ms	Negative	Time, ms
1	Left Rear Seat Cross Member X	1.0	265.0	28.6	104.4
2	Right Rear Seat Cross Member X	0.8	168.2	29.1	99.0
3	Top of Engine Block X ¹	---	---	---	---
4	Bottom of Engine Block X	2.7	77.9	47.7	93.0
5	Disc Brake Caliper @ Right Side X	8.7	142.3	37.1	77.4
6	Instrument Panel X	12.9	125.6	34.2	87.4
7	Disc Brake Caliper @ Left Side X ¹	---	---	---	---
8	Left Rear Seat Cross Member Z	4.4	103.9	6.3	128.2
9	Right Rear Seat Cross Member Z	3.3	49.9	5.2	97.8
10	Left Side Driver Mid Seat Track X	0.8	209.4	28.5	103.4
11	Vehicle Center of Gravity X	0.6	172.4	29.4	98.1
	Vehicle Center of Gravity Y	9.6	100.6	1.0	136.6
	Vehicle Center of Gravity Z	6.5	43.6	5.2	27.9

¹ See Data Acquisition Explanations.

DATA SHEET NO. 8
DUMMY INJURY CRITERIA VALUES

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
 NHTSA Test No.: R60172 Test Date: 05/30/06

		MAXIMUM VALUE							
		Driver				Right Front Passenger			
DESCRIPTION	Unit	Positive	Time, ms	Negative	Time, ms	Positive	Time, ms	Negative	Time, ms
Head X	g	209.0	253.0	28.4	112.6				
Head Y	g	27.4	252.8	5.4	266.3				
Head Z	g	67.5	253.2	1.3	45.4				
Head Resultant	g	220.9	253.0						
Head Redundant X	g	209.7	253.0	28.9	112.1				
Head Redundant Y	g	30.6	252.8	5.3	266.3				
Head Redundant Z	g	65.0	253.2	1.3	45.4				
Head Resultant Red.	g	221.3	253.0						
Head (FT) Y	g	44.4	253.1	2.4	284.7				
Head (FT) Z	g	137.7	253.0	14.7	255.8				
Head (TP) X	g	315.3	253.0	34.5	109.3				
Head (TP) Y	g	27.8	252.6	8.8	257.8				
Head (LT) X	g	224.9	253.0	27.1	111.8				
Head (LT) Z	g	63.8	253.1	2.2	45.1				
Upper Neck Fx	N	185.3	243.9	756.3	253.2				
Upper Neck Fy	N	374.3	129.4	144.5	252.9				
Upper Neck Fz	N	1215.7	120.5	606.4	254.5				
Upper Neck Mx	N-m	17.8	137.1	4.5	65.3				
Upper Neck My	N-m	28.7	103.4	51.5	260.3				
Upper Neck Mz	N-m	14.3	117.6	5.7	308.2				
Lower Neck Fx	N	362.9	143.3	351.2	252.6				
Lower Neck Fy	N	375.1	157.3	359.5	119.6				
Lower Neck Fz	N	1828.4	115.6	395.3	255.0				
Lower Neck Mx	N-m	17.4	280.6	81.9	133.5				
Lower Neck My	N-m	100.7	167.8	68.9	244.3				
Lower Neck Mz	N-m	20.8	133.6	11.5	290.3				
Chest X	g	7.9	258.4	31.5	110.0				
Chest Y	g	13.1	120.2	1.4	55.8				
Chest Z	g	13.5	113.0	4.9	151.1				
Chest Resultant	g	34.6	110.1						

DATA SHEET NO. 8 (continued)
DUMMY INJURY CRITERIA VALUES

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan

NHTSA Test No.: R60172 Test Date: 05/30/06

		MAXIMUM VALUE							
		Driver				Right Front Passenger			
DESCRIPTION	Unit	Positive	Time, ms	Negative	Time, ms	Positive	Time, ms	Negative	Time, ms
Chest Redundant X	g	8.0	258.4	31.2	110.1				
Chest Redundant Y	g	13.5	120.3	1.4	55.8				
Chest Redundant Z ¹	g	---	---	---	---				
Chest Resultant Red. ¹	g	---	---						
Chest Displacement	mm	0.2	32.9	24.7	116.5				
Left Femur Z	N	1456.4	110.3	361.2	134.8				
Right Femur Z	N	1093.8	117.6	234.5	135.1				
Left Knee Displacement X	mm	1.1	119.2	0.7	50.2				
Left Upper Tibia Fx	N	375.6	109.8	232.2	47.9				
Left Upper Tibia Fy	N	363.4	127.4	69.1	35.3				
Left Upper Tibia Fz	N	146.6	160.5	1220.2	122.2				
Left Upper Tibia Mx	N-m	31.3	240.1	51.2	97.0				
Left Upper Tibia My	N-m	39.5	121.6	45.3	59.8				
Left Tibia X	g	17.3	48.0	39.1	109.0				
Left Tibia Y	g	15.4	95.7	6.3	31.5				
Left Lower Tibia Fx	N	104.9	122.2	441.6	110.1				
Left Lower Tibia Fy	N	456.5	124.1	80.1	239.8				
Left Lower Tibia Fz	N	191.8	186.4	2260.3	122.2				
Left Lower Tibia Mx	N-m	70.7	126.4	11.5	47.6				
Left Lower Tibia My	N-m	19.8	120.8	39.8	108.2				
Left Foot Angular Displacement X	°	27.1	126.4	14.2	3.8				
Left Foot Angular Displacement Y	°	0.9	116.6	41.2	231.4				
Left Foot Angular Displacement Z	°	43.7	39.3	51.2	124.2				
Left Foot X	g	27.3	32.2	54.3	106.0				
Left Foot Y	g	13.2	89.4	53.7	106.1				
Left Foot Z	g	43.2	32.1	48.2	30.6				
Left Foot Resultant	g	76.4	106.1						

¹ See Data Acquisition Explanations.

DATA SHEET NO. 8 (continued)
DUMMY INJURY CRITERIA VALUES

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
NHTSA Test No.: R60172 Test Date: 05/30/06

		MAXIMUM VALUE							
		Driver				Right Front Passenger			
DESCRIPTION	Unit	Positive	Time, ms	Negative	Time, ms	Positive	Time, ms	Negative	Time, ms
Right Knee Displacement X	mm	0.3	144.6	1.0	128.6				
Right Upper Tibia Fx	N	319.4	117.2	42.6	142.6				
Right Upper Tibia Fy	N	98.1	253.4	301.4	111.5				
Right Upper Tibia Fz	N	191.8	48.8	909.3	130.6				
Right Upper Tibia Mx	N-m	19.0	74.1	68.6	131.8				
Right Upper Tibia My	N-m	33.4	135.8	45.7	101.9				
Right Tibia X	g	9.4	56.8	54.9	56.4				
Right Tibia Y ¹	g	---	---	---	---				
Right Lower Tibia Fx	N	212.0	135.3	338.0	101.3				
Right Lower Tibia Fy	N	124.0	131.8	114.5	115.8				
Right Lower Tibia Fz	N	75.3	171.2	1216.2	127.5				
Right Lower Tibia Mx	N-m	8.6	202.4	74.7	130.6				
Right Lower Tibia My	N-m	9.4	281.0	35.1	101.9				
Right Foot Angular Displacement X	°	20.4	252.2	35.8	126.6				
Right Foot Angular Displacement Y	°	13.2	115.4	34.5	50.4				
Right Foot Angular Displacement Z	°	25.3	115.1	44.9	264.0				
Right Foot X	g	38.4	55.7	115.7	55.4				
Right Foot Y	g	31.0	123.4	16.6	240.3				
Right Foot Z	g	100.1	55.7	122.4	55.3				
Right Foot Resultant	g	159.8	55.3	0.0	15.6				
Lap Belt Load	N	5626.3	109.4	4.9	267.5				
Shoulder Belt	N	4612.0	126.8	43.6	288.6				

¹ See Data Acquisition Explanations.

DATA SHEET NO. 8 (continued)
DUMMY INJURY CRITERIA VALUES

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
 NHTSA Test No.: R60172 Test Date: 05/30/06

	HEAD INJURY CRITERIA			
	HIC**	t₁ (ms)	t₂ (ms)	Average Acceleration t₁ to t₂ (g's)
Left Front - Driver ¹	137	106.64	121.68	38.37
Right Front - Passenger				
Left Rear - Passenger				
Right Rear - Passenger				

** Head Injury Criteria (HIC) is as defined in FMVSS 208. The maximum time interval from t₁ to t₂ is 0.015 seconds.

	CLIP SUMMARY*			
	CLIP (g's)	t₁ (ms)	t₂ (ms)	Chest Severity Index
Left Front - Driver	33	108	111	227
Right Front - Passenger				
Left Rear - Passenger				
Right Rear - Passenger				

* The maximum chest resultant acceleration (clip) is defined as the maximum acceleration that exceeds 0.003 seconds in duration.

¹ The 15 ms HIC calculated for contact with the airbag. HIC 15 for contact with B-pillar was 895.

DATA SHEET NO. 9
SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
NHTSA Test No.: R60172 Test Date: 05/30/06

<u>BELT LENGTH DATA:</u>	<u>Driver*</u>	<u>Right Front Passenger *</u>
Total belt length.	<u>2715</u>	<u>N/A</u>
Shoulder belt length as measured on Part 572 Dummy.	<u>771</u>	<u>N/A</u>
Lap belt length as measured on Part 572 Dummy.	<u>784</u>	<u>N/A</u>
<u>SHOULDER BELT SPOOL-OFF DATA:</u>	<u>Driver*</u>	<u>Right Front Passenger*</u>
As determined mechanically.	<u>N/A¹</u>	<u>N/A</u>

NOTE:

* All measurements in millimeters.

¹ Belt spool data not part of test request.

DATA SHEET NO. 10
SUMMARY OF FMVSS 212 DATA

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
 NHTSA Test No.: R60172 Test Date: 05/30/06

FMVSS No. 212 – “Windshield Mounting” Data

Details Of Windshield Mounting Such As

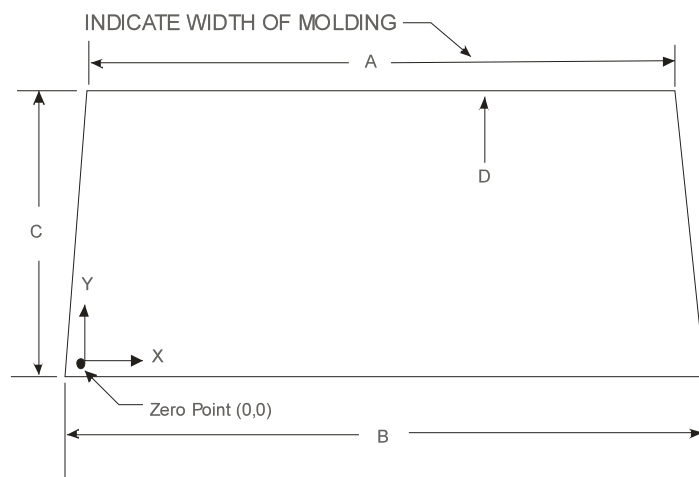
Retention Method, Trim Type, Etc.: Adhesive , Molding, Unknown

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 the windshield for vehicles equipped with automatic restraint systems for front occupants.

	Windshield Periphery		% of Retention
	Pre-Test (mm)	Post-Test (mm)	
Right Side	1990	1943	97.6
Left Side	1990	1990	100.0
Total	3980	3933	98.8

Area of Retention Failure:



Dimensions (mm)	
A	1110
B	1380
C	745
D	16

FRONT VIEW OF WINDSHIELD

Failure Details

DATA SHEET NO. 11
FMVSS 219 (PARTIAL) – “WINDSHIELD ZONE INTRUSION” DATA

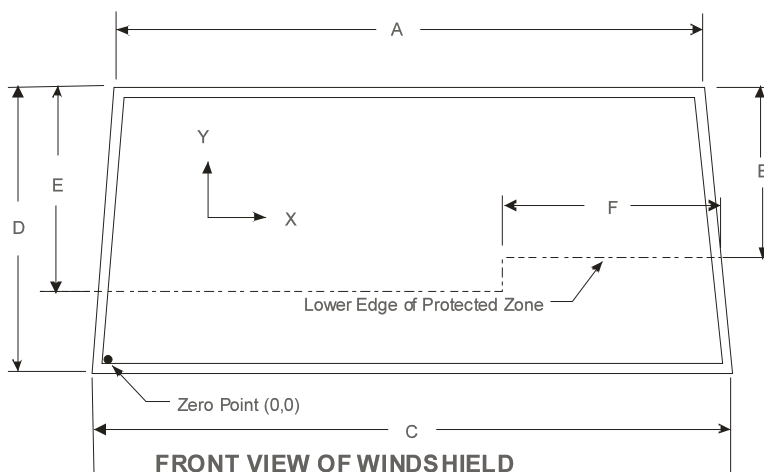
Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
 NHTSA Test No.: R60172 Test Date: 05/30/06

Protected Zone Lower Edge Requirement

The lower edge of the protected zone is determined by placing a 165 mm diameter rigid sphere weighing 6.8 kg in a position such that it simultaneously contacts the inner surface of the windshield and the top of the instrument panel including padding. The locus of points is drawn on the inner surface of the windshield contacted 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; then draw a line on the inner surface of the windshield below and 13 mm distant from the locus line. The LOWER EDGE OF THE PROTECTED ZONE is the longitudinal projection of this line onto the outer surface of the windshield.

FMVSS 219 Test Data

(Dimensions in mm)



Dimensions	
A	1110
B	470
C	1380
D	745
E	510
F	550

(Show location of penetration on the above sketch)

Details of Windshield Glass Penetration Greater Than 6 mm: None

COORDINATES		
	X	Y
1.	0	0
2.		
3.		
4.		

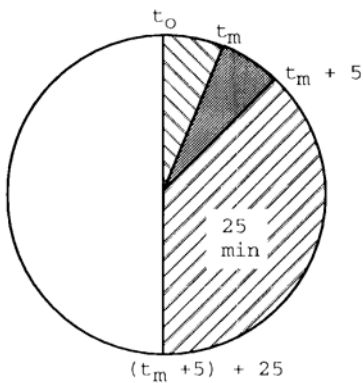
DATA SHEET NO. 12**FMVSS NO. 301-75 "FUEL SYSTEM INTEGRITY" POST IMPACT TEST DATA**

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
 NHTSA Test No.: R60172 Test Date: 05/30/06

The test vehicle was filled from 92% to 94% of the manufacturer's "usable" capacity. The electric fuel pump was operating if it will operate without engine operation. Two Part 572 anthropomorphic test devices were located at each of the front designated seating positions.

TEST VEHICLE IMPACT TYPE

X	Frontal (56 kph)
	Oblique (48 kph) with _____ deg. barrier face first contacting _____ side (driver / passenger)
	Rear Moving Barrier (48 kph)
	Lateral Moving Barrier (32 kph)

FUEL SPILLAGE MEASUREMENT

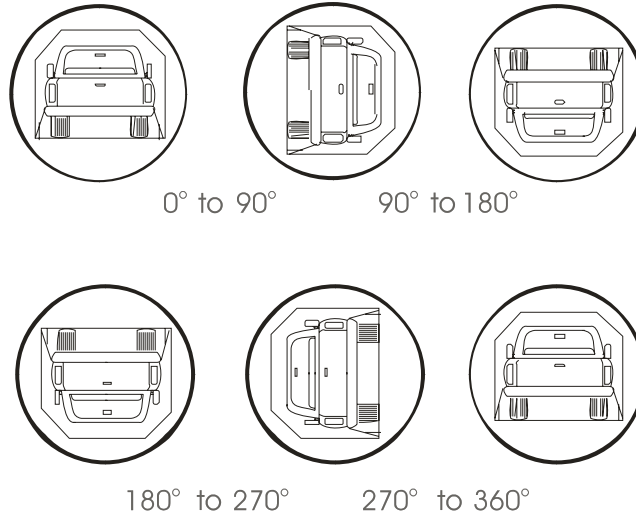
	ACTUAL	MAX. ALLOWED
1. From impact until vehicle motion ceases	0.0 g	28 g
2. For 5 minute period after vehicle motion ceases	0.0 g	141 g
3. For next 25 minutes	0.0 g	28 g/min.

SOLVENT SPILLAGE DETAILS

None

DATA SHEET NO. 13
FMVSS 301 STATIC ROLLOVER DATA SHEET

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
NHTSA Test No.: R60172 Test Date: 05/30/06



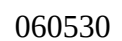
1. The specified fixture rollover rate for each 90° of rotation is 60 to 120 seconds.
2. The position hold time at each position is 300 seconds (minimum).

Details of Stoddard Solvent Spillage Locations

None

Test Phase	Rotation Time (sec.)	Hold Time (sec.)	Spillage (oz.)
0° to 90°	60	300	0
90° to 180°	60	300	0
180° to 270°	60	300	0
270° to 360°	60	300	0

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
 NHTSA Test No.: R60172 Test Date: 05/30/06



DATA SHEET NO. 14 (continued)
VEHICLE MEASUREMENTS

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan

NHTSA Test No.: R60172 Test Date: 05/30/06

No.	Type of measurement	Pre-Test	Post-Test	Difference
X1	Total Length of Vehicle at Centerline	4505	4291	214
X2	Rear Surface of Vehicle to Front of Engine Block	3935	N/A ¹	N/A ¹
X3	Rear Surface of Vehicle to Firewall	3435	N/A ¹	N/A ¹
X4	Rear Surface of Vehicle to Upper Leading Edge of Right Door	3052	3065	-13
X5	Rear Surface of Vehicle to Upper Leading Edge of Left Door	3055	3057	-2
X6	Rear Surface of Vehicle to Lower Leading Edge of Right Door	3062	3051	11
X7	Rear Surface of Vehicle to Lower Leading Edge of Left Door	3068	3034	34
X8	Rear Surface of Vehicle to Upper Trailing Edge of Right Door	2090	2094	-4
X9	Rear Surface of Vehicle to Upper Trailing Edge of Left Door	2090	2084	6
X10	Rear Surface of Vehicle to Lower Trailing Edge of Right Door	2118	2099	19
X11	Rear Surface of Vehicle to Lower Trailing Edge of Left Door	2130	2094	36
X12	Rear Surface of Vehicle to Bottom of " A " Post on Right Side	3045	3057	-12
X13	Rear Surface of Vehicle to Bottom of " A " Post on Left Side	3055	3034	21
X14	Rear Surface of Vehicle to Firewall-Right Side	3492	N/A ¹	N/A ¹
X15	Rear Surface of Vehicle to Firewall-Left Side	3507	N/A ¹	N/A ¹
X16	Rear Surface of Vehicle to Steering Wheel Center	2635	2635	0
X17	Center of Steering Column to " A " Post	306	387	-81
X18	Center of Steering Column to Headliner	460	457	3
X19	Rear Surface of Vehicle to Right Side of Front Bumper	4347	4552	-205
X20	Rear Surface of Vehicle to Left Side of Front Bumper	4347	4041	306
X21	Length of Engine Block	470	470	0
RD	Rear Surface of Vehicle to Right Side of Dash Panel	2910	2915	-5
CD	Rear Surface of Vehicle to Center of Dash Panel	2880	2860	20
LD	Rear Surface of Vehicle to Left Side of Dash Panel	2912	2895	17

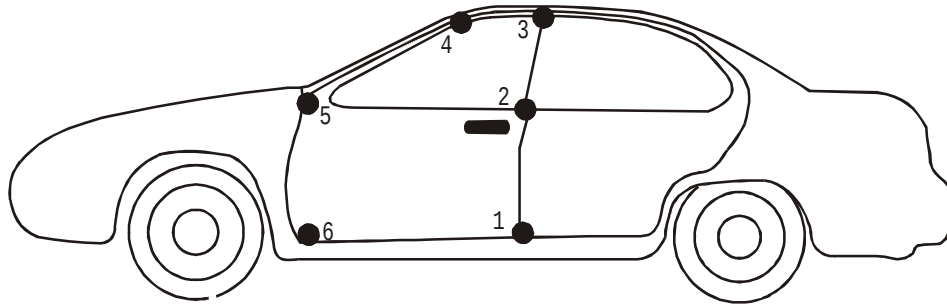
All measurements are in millimeters.

¹ Measurement point could not be located post-test.

DATA SHEET NO. 14 (continued)
VEHICLE MEASUREMENTS

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
 NHTSA Test No.: R60172 Test Date: 05/30/06

DOOR OPENING WIDTH



Left Front

Point Location	Pre-Test (mm)			Post-Test (mm)			Difference (mm)		
	X	Y	Z	X	Y	Z	X	Y	Z
1	2111	-765	247	2106	-766	259	-5	-1	12
2	1982	-738	-137	1979	-736	-125	-3	2	12
3	1851	-545	-695	1851	-543	-684	0	2	11
4	2359	-590	-627	2360	-591	-635	1	-1	-8
5	2872	-724	-136	2850	-739	-116	-22	-15	20
6	2836	-743	266	2825	-757	289	-11	-14	23

DATA SHEET NO. 14 (continued)
VEHICLE MEASUREMENTS

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
 NHTSA Test No.: R60172 Test Date: 05/30/06

	Elements	Pre-Test
1	Total Length ²	4279
2	Total Width	1723
3	Bumper Top Height	518
4	Bumper Bottom Height	376
5	Longitudinal Member Top Height	499
6	Longitudinal Member Bottom Height	401
7	Distance Between Longitudinal Members	1005
7'	Longitudinal Member Width	55
8	Engine Top Height	789
9	Engine Bottom Height	174
10	Engine and Gearbox Width	525
11	Front Bumper - Engine Distance	530
12	Front Shock Absorber Fixing Height	862
13	Bonnet Leading Edge Height	693
14	Front Shock Absorber Fixing Width	1105
15	Front Bumper - Front Axle Distance	890
16	Front Axle - A Pillar Distance	541
17	A Pillar - B Pillar Distance	997
18	B Pillar - Rear Axle Distance	1062
19	B Pillar - C Pillar Distance	920
20	Roof Sill Bottom Height	1314
21	Roof Sill Top Height	1339
22	Floor Sill Bottom Height	284
23	Floor Sill Top Height	335

All distance measurements are in millimeters.

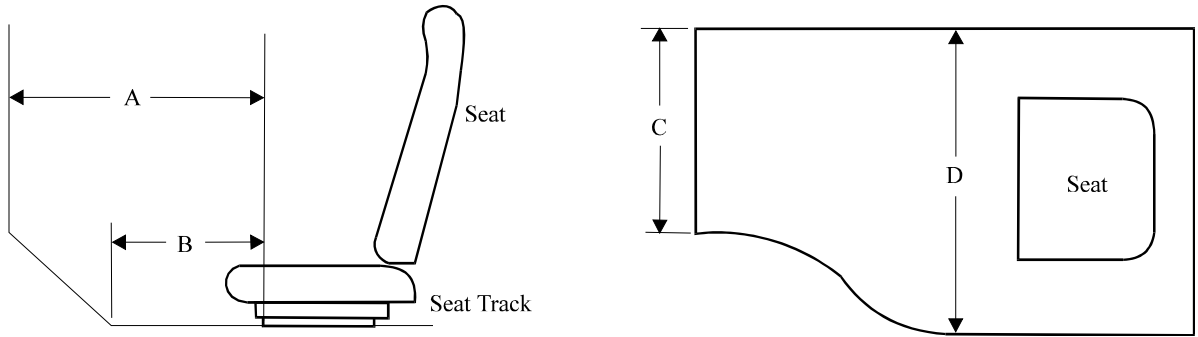
¹ Taken from INSIA report, "Structural Survey of Cars, Methodology of the Main Resistant Elements in the Car Body", March 1999. This report is included in Appendix F.

² Measured to bumper beam.

DATA SHEET NO. 14 (continued)
VEHICLE MEASUREMENTS

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
NHTSA Test No.: R60172 Test Date: 05/30/06

STATIC FOOTWELL DEFORMATION



DRIVER

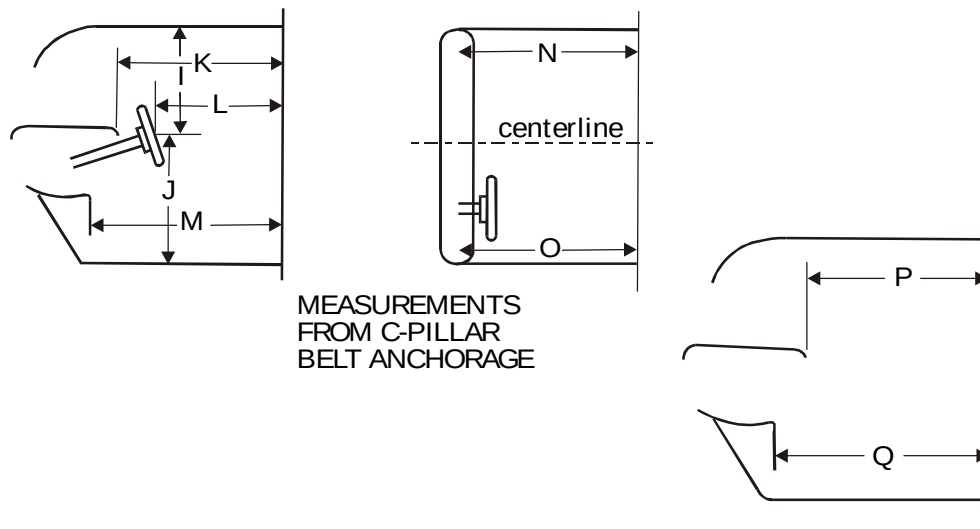
Measurement	Pre-Test	Post-Test	Difference
A	550	524	-26
B	480	476	-4
C	387	384	-3
D	398	398	0

All units in millimeters

DATA SHEET NO. 14 (continued)
VEHICLE MEASUREMENTS

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
 NHTSA Test No.: R60172 Test Date: 05/30/06

STATIC PASSENGER COMPARTMENT INTRUSION



Measurement	Pre-Test	Post-Test	Difference
I	460	418	-42
J	646	723	77
K	2095	2074	-21
L	1845	1813	-32
M	2225	2203	-22
N	2080	2080	0
O	2045	2000	-45
P = K (PASS.)	2095	2102	7
Q = M (PASS.)	2225	2029	-196

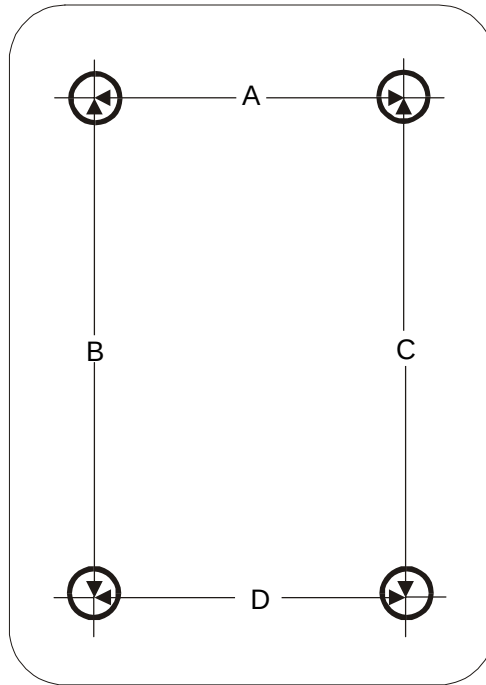
All units in millimeters

DATA SHEET NO. 14 (continued)
VEHICLE MEASUREMENTS

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
NHTSA Test No.: R60172 Test Date: 05/30/06

FLOORBOARD DEFORMATION

DRIVERS SIDE



TOP VIEW THROUGH FLOOR PAN

Measurement	Pre-Test	Post-Test	Difference
A	376	375	-1
B	480	476	-4
C	493	492	-1
D	398	398	0

All units in millimeters

DATA SHEET NO. 14 (continued)
VEHICLE MEASUREMENTS

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
 NHTSA Test No.: R60172 Test Date: 05/30/06

Bottom of Front Bumper

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	4176	-668	218	3813	-714	305	-363	-46	87
2	4295	-416	216	3901	-450	275	-394	-34	59
3	4336	-137	217	3962	-177	245	-374	-40	28
4	4335	148	220	4139	44	236	-196	-104	16
5	4298	430	217	4267	298	225	-31	-132	8
6	4175	688	219	4280	583	225	105	-105	6

Top of Front Bumper

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	4175	-669	84	3824	-729	165	-351	-60	81
2	4296	-417	95	3927	-467	156	-369	-50	61
3	4337	-136	95	3968	-187	126	-369	-51	31
4	4337	148	94	4134	42	112	-203	-106	18
5	4297	429	92	4255	299	102	-42	-130	10
6	4175	688	86	4283	582	93	108	-106	7

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	4064	-687	-22	N/A ¹	N/A ¹	N/A ¹	N/A ¹	N/A ¹	N/A ¹
2	4171	-416	-23	N/A ¹	N/A ¹	N/A ¹	N/A ¹	N/A ¹	N/A ¹
3	4238	-135	-21	N/A ¹	N/A ¹	N/A ¹	N/A ¹	N/A ¹	N/A ¹
4	4239	149	-22	N/A ¹	N/A ¹	N/A ¹	N/A ¹	N/A ¹	N/A ¹
5	4171	428	-22	N/A ¹	N/A ¹	N/A ¹	N/A ¹	N/A ¹	N/A ¹
6	4079	686	-22	N/A ¹	N/A ¹	N/A ¹	N/A ¹	N/A ¹	N/A ¹

Front of Hood

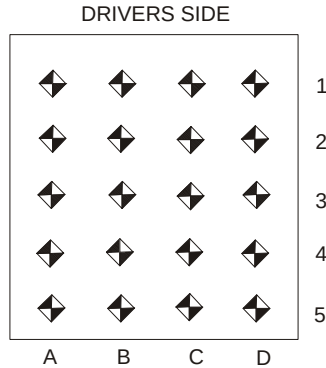
Pre-Test				Post-Test			Difference		
Index	X, mm	Y, mm	Z, mm	X, mm	Y, mm	Z, mm	X, mm	Y, mm	Z, mm
1	3940	-647	-163	3759	-605	-282	-181	42	-119
2	4151	-391	-91	3763	-343	-104	-388	48	-13
3	4199	-135	-125	3858	-115	-91	-341	20	34
4	4200	149	-125	4022	117	-109	-178	-32	16
5	4134	429	-92	4089	390	-143	-45	-39	-51
6	3939	665	-162	3930	643	-246	-9	-22	-84

¹ Measurement point could not be located post-test.

DATA SHEET NO. 14 (continued)
VEHICLE MEASUREMENTS

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
 NHTSA Test No.: R60172 Test Date: 05/30/06

TOE PAN FLOORBOARD INTRUSION



Driver Side Toe Pan and Floorboard Measurements

Intrusion Location	Pre-Test (mm)			Post-Test (mm)			Difference (mm)		
	X	Y	Z	X	Y	Z	X	Y	Z
A1	3011	-539	284	2977	-542	291	-34	-3	7
B1	3132	-411	273	3093	-410	261	-39	1	-12
C1	3151	-280	277	3125	-280	271	-26	0	-6
D1	3157	-152	274	3141	-158	275	-16	-6	1
A2	2967	-538	354	2945	-538	367	-22	0	13
B2	3065	-415	347	3041	-415	345	-24	0	-2
C2	3073	-285	348	3053	-285	347	-20	0	-1
D2	3069	-161	349	3061	-163	359	-8	-2	10
A3	2941	-544	419	2929	-544	435	-12	0	16
B3	2948	-426	406	2932	-427	419	-16	-1	13
C3	2953	-290	416	2942	-290	431	-11	0	15
D3	2953	-168	416	2947	-169	428	-6	-1	12
A4	2679	-558	431	2672	-560	454	-7	-2	23
B4	2695	-427	420	2688	-429	444	-7	-2	24
C4	2693	-296	431	2686	-297	439	-7	-1	8
D4	2692	-164	420	2687	-166	429	-5	-2	9
A5	2461	-566	420	2453	-567	443	-8	-1	23
B5	2480	-422	426	2474	-424	445	-6	-2	19
C5	2468	-292	425	2463	-293	438	-5	-1	13
D5	2460	-168	423	2455	-169	430	-5	-1	7
BP	2993	-273	205	3003	-275	223	10	-2	18
LB	2727	-486	-56	2701	-479	-39	-26	7	17
RB	2712	-186	-57	2694	-179	-45	-18	7	12
SW	2484	-337	-248	2463	-326	-241	-21	11	7
AB	2415	-586	329	2410	-591	352	-5	-5	23

BP=Brake Pedal, LB=Left side of bolster, RB=Right side of bolster, SW=Steering wheel center,
 AB=Front outboard seat anchor bolt.

Procedure for measuring interior points is located in Appendix E.

DATA SHEET NO. 14 (continued)
VEHICLE MEASUREMENTS

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
 NHTSA Test No.: R60172 Test Date: 05/30/06

BUMPER BEAM MEASUREMENTS

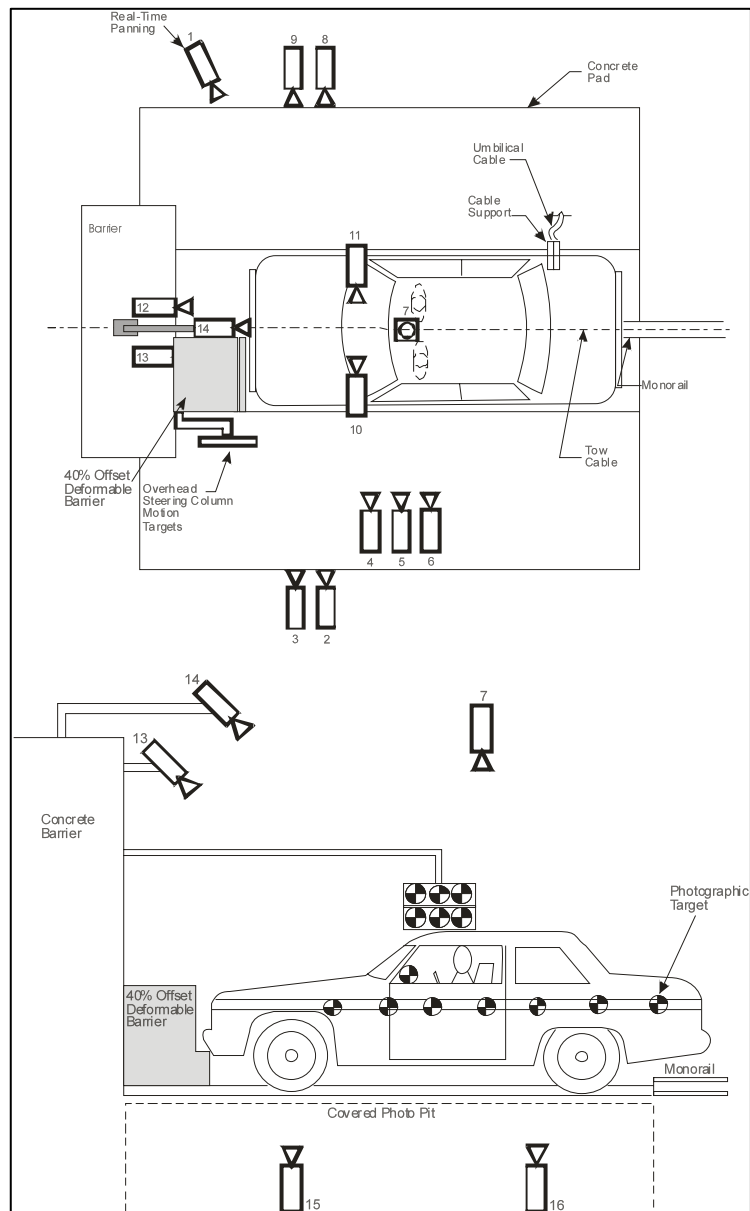
Index	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	4207	-540	162	3709	-468	191	-498	72	29
2	4239	-439	163	3771	-382	201	-468	57	38
3	4258	-329	166	3820	-286	201	-438	43	35
4	4271	-217	166	3881	-192	197	-390	25	31
5	4279	-104	166	3950	-104	189	-329	0	23
6	4282	10	170	4014	-10	187	-268	-20	17
7	4279	121	169	4070	87	181	-209	-34	12
8	4270	234	170	4121	188	175	-149	-46	5
9	4258	343	172	4166	287	171	-92	-56	-1
10	4238	455	172	4210	393	168	-28	-62	-4
11	4206	557	167	4234	497	155	28	-60	-12

All units in millimeters

DATA SHEET NO. 15
CAMERA POSITIONS FOR FRONTAL IMPACTS

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
NHTSA Test No.: R60172 Test Date: 05/30/06

NOTE: Camera information shown in DATA SHEET NO. 15.



DATA SHEET NO. 15 (continued)
HIGH-SPEED CAMERA LOCATIONS

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
 NHTSA Test No.: R60172 Test Date: 05/30/06

CAMERA NO.	VIEW	CAMERA POSITIONS (mm)*			ANGLE (deg)**	FILM PLANE TO HEAD TARGET (mm)	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Real-Time Camera	---	---	---	---	---	zoom	30
2	Overall Left Side	150	6100	970	-3.4	-5700	12.5	1000
3	Left Side View	0	5100	800	-0.5	-4700	25	1000
4	Driver View	500	6400	970	-3.0	-6000	50	1000
5	Steering Column Top	1100	6680	2210	-10.2	-6280	50	1000
6	Steering Column Bottom	1160	6240	1340	-1.7	-5840	50	1000
7	Top View	160	0	5650	-90.0	N/A	12.5	1000
8	Overall Right Side	300	5400	980	-3.1	5700	12.5	1000
9	Right Side View	200	5200	800	-0.5	5500	25	1000
10	Left Driver Foot View	1650	300	300	9.0	N/A	6.5	1000
11	Right Driver Foot View	2000	130	700	-19.3	N/A	6.5	1000
12	Driver Front Angled View	2100	700	2150	-20.4	4560	25	1000
13	Driver Front View	2100	640	2150	-20.4	4560	25	1000
14	Windshield View	2100	0	2150	-30.0	4560	12.5	1000
15	Pit View of Engine	420	0	460	90.0	N/A	25	1000
16	Pit View of Fuel Tank	900	0	440	90.0	N/A	12.5	1000

*X = film plane to impact location

Y = film plane to monorail centerline

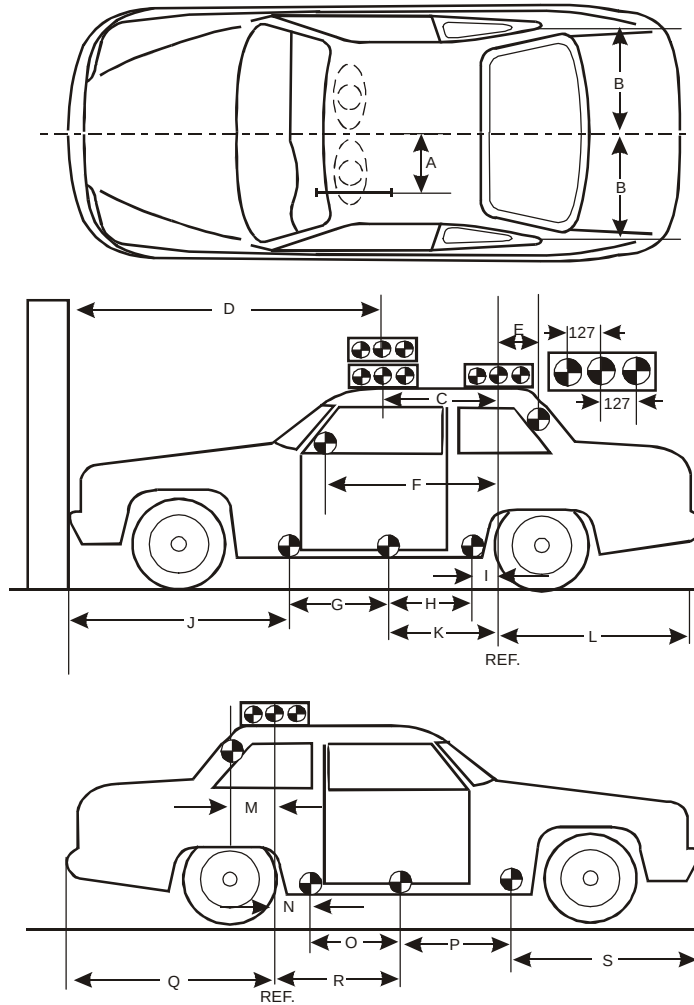
Z = film plane to ground

**Angle = referenced to horizontal plane

DATA SHEET NO. 16
VEHICLE REFERENCE PHOTO TARGET LOCATIONS

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
 NHTSA Test No.: R60172 Test Date: 05/30/06

A	315
B	560
C	610
D	360
E	295
F	1160
G	890
H	890
I	-230
J	1133
K	664
L	1660
M	267
N	-205
O	892
P	885
Q	1627
R	698
S	1137



All measurements in millimeters

The relative target spacing for targets placed on top of the hood and roof top of the vehicle is 300 mm.

DATA SHEET NO. 17
POST TEST AIR BAG DATA

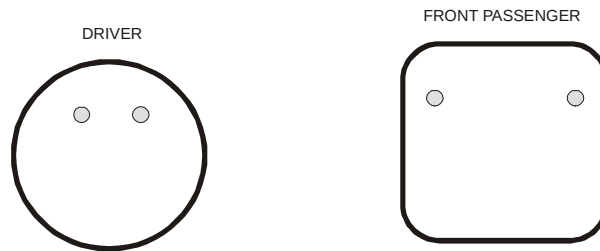
Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
NHTSA Test No.: R60172 Test Date: 05/30/06

NHTSA No.: R60172 Test Date: 05/30/06 Technician: William Millis

Vehicle Model Year/Make/Model: 2006/Suzuki/Forenza

- A. No. of vent holes: 2 -Driver N/A -Passenger
- B. Size of vent holes: (mm²) 409 -Driver N/A -Passenger
- C. Total vent area: (mm²) 2513 -Driver N/A -Passenger
- D. Deflated air bag length and width dimensions or, if round, diameter. (mm)
- Driver: 450 -Height; 600 -Width; 40 -Depth
- Passenger: N/A -Height; N/A -Width; N/A -Depth
- E. Is the air bag tethered?
- Driver: -Yes; X -No; If yes, record length of tether (mm)-
- Passenger: N/A -Yes; -No; If yes, record length of tether (mm)-

Sketch the air bag showing the location of the vent holes, how the bag is tethered, and where the bag is tethered. Also describe how the tethers are attached to the bag and the steering wheel.



(Note: Not to scale; V_n = Vent hole_n , T_n = Tether_n).

- F. Record part numbers and manufacturer name of the air bag and gas generator.

Driver: Mersteller, 1MAKQ2980627, 95D00200

Passenger: N/A

DATA SHEET NO. 18
ACCIDENT INVESTIGATION DIVISION DATA

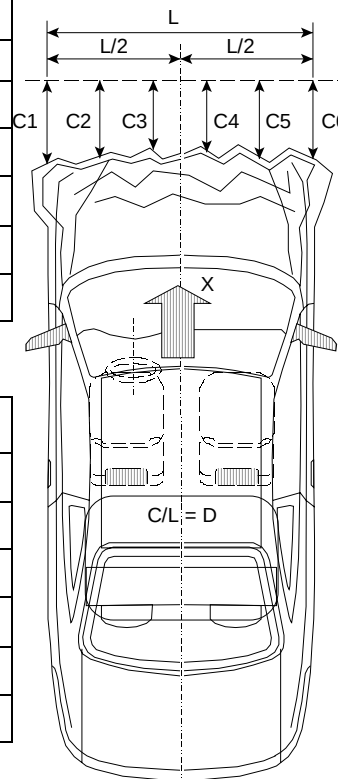
Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
 NHTSA Test No.: R60172 Test Date: 05/30/06

FOR FRONTAL BARRIER IMPACT

NHTSA Test No.: R60172 VIN: KL5JD56Z36K363231
 Model Year: 2006 Build Date: 1/06 Test Date: 05/30/06
 Vehicle Size Category: _____ Test Weight: 1408 kg
 Vehicle Wheelbase: 2592 mm; Front Overhang: 890 mm; Overall Width: 1723 mm
 Collision Deformation Classification (CDC) Code: _____

Crush Depth Dimensions with Bumper

	PRE-TEST	POST-TEST	DIFFERENCE	
C1 =	4347	4041	306	mm
C2 =	4455	4152	303	mm
C3 =	4493	4201	292	mm
C4 =	4493	4384	109	mm
C5 =	4455	4517	-62	mm
C6 =	4347	4552	-205	mm



Crush Depth Dimensions without Bumper¹

	PRE-TEST	POST-TEST	DIFFERENCE	
C1 =	4207	3709	498	mm
C2 =	4258	3820	438	mm
C3 =	4279	3950	329	mm
C4 =	4279	4070	209	mm
C5 =	4258	4166	92	mm
C6 =	4206	4234	-23	mm

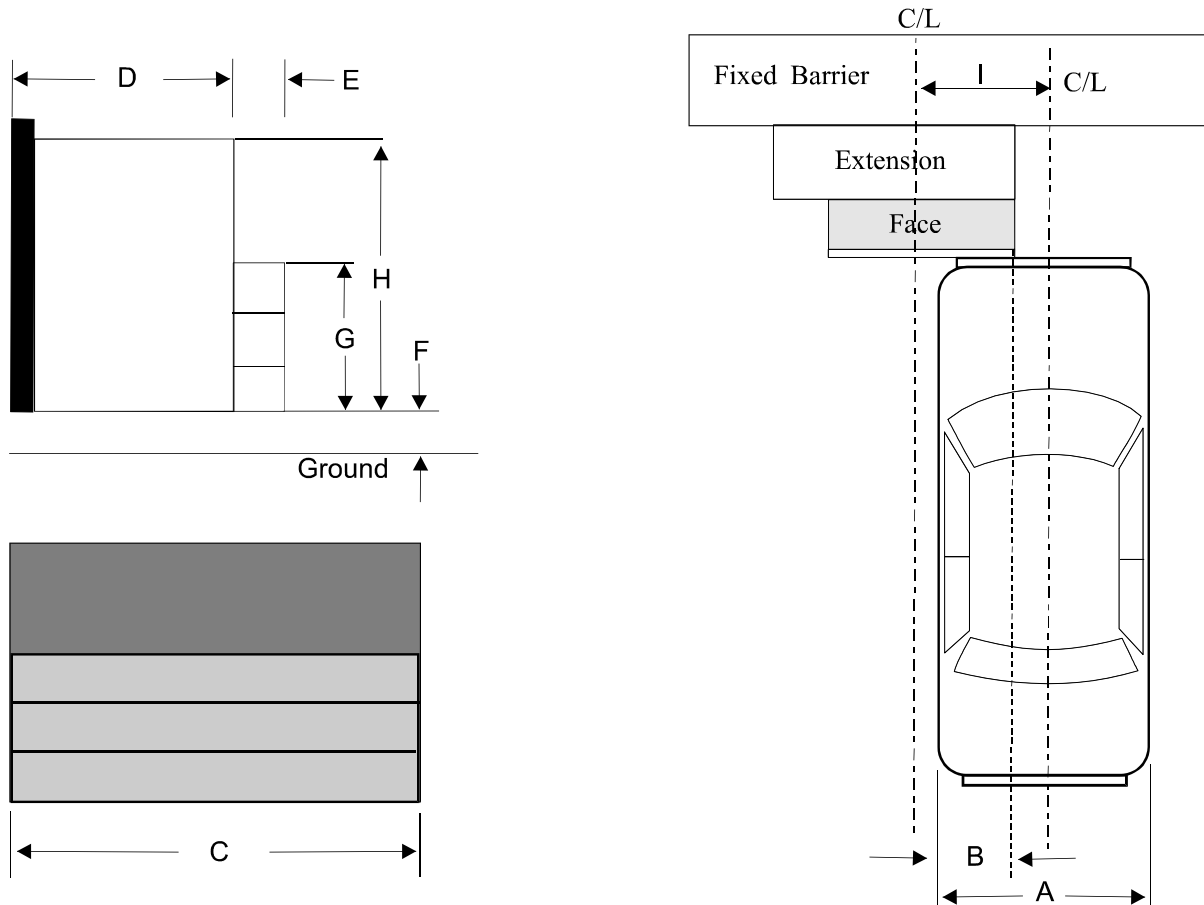
Midpoint of Damage: D = Vehicle Centerline (Longitudinal)

Length of Damaged Region L1= 1430 mm
 L2= 715 mm
 L3= 715 mm

¹ Measured to bumper beam.

DATA SHEET NO. 19
OFFSET BARRIER AND VEHICLE ORIENTATION

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
 NHTSA Test No.: R60172 Test Date: 05/30/06

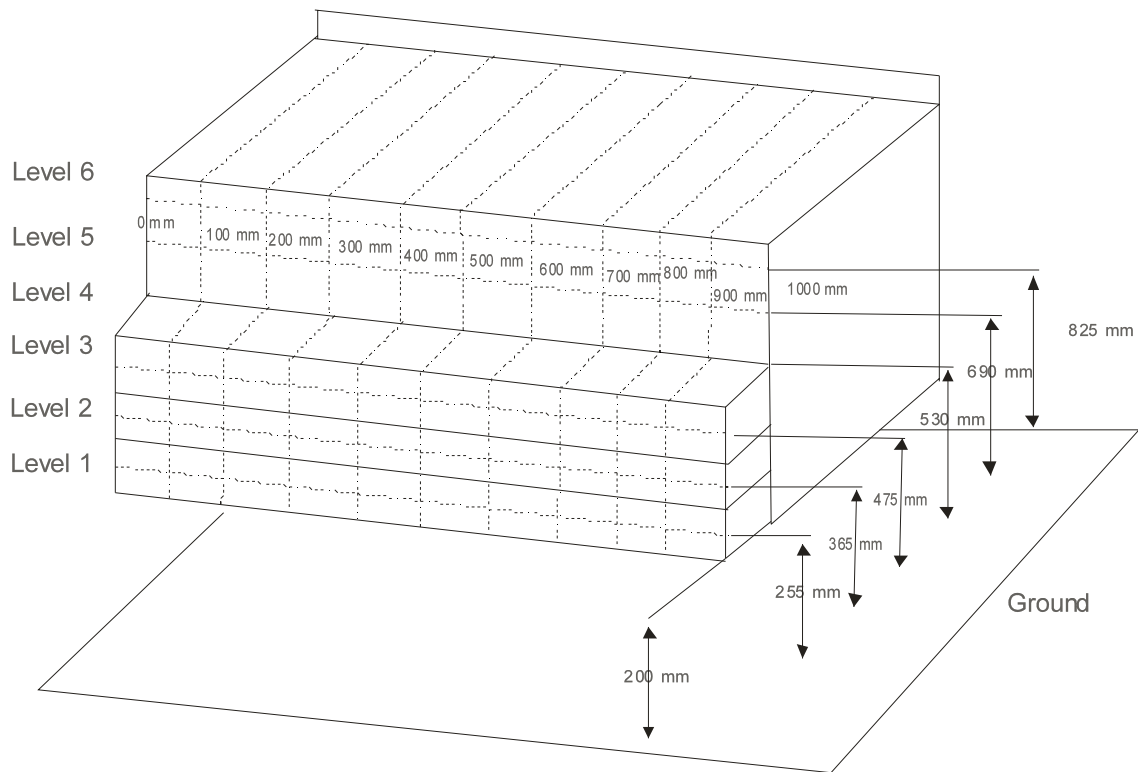


A. Total Vehicle Width	<u>1723</u>	mm
B. 40% Overlap Distance	<u>690</u>	mm
C. Deformable Face Width	<u>1000</u>	mm
D. Single Stage Honeycomb Depth	<u>450</u>	mm
E. Bumper Element Depth	<u>90</u>	mm
F. Lower Edge Height From Ground	<u>200</u>	mm
G. Bumper Element Height*	<u>330</u>	mm
H. Deformable Barrier Honeycomb Height	<u>650</u>	mm
I. Offset	<u>-671</u>	mm

* The bumper element consists of three 110 mm height blocks of 1.723 MPa honeycomb.

DATA SHEET NO. 20
DEFORMABLE BARRIER HONEYCOMB CRUSH

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
NHTSA Test No.: R60172 Test Date: 05/30/06



Deformable Barrier Face Profile

Pre-Test

Index	Xmm	Ymm	Zmm
1	-454.8	495.1	50.4
2	-454.7	400.0	50.5
3	-454.6	300.2	50.3
4	-454.4	200.0	50.2
5	-454.4	99.7	49.7
6	-454.2	0.0	49.8
7	-454.0	-100.0	50.1
8	-453.9	-200.1	50.3
9	-453.6	-300.1	49.7
10	-453.4	-400.2	49.5
11	-453.5	-495.1	48.9
12	-455.0	495.0	-83.6
13	-455.0	400.0	-84.3
14	-454.9	300.0	-84.6
15	-454.7	199.7	-84.9
16	-454.5	100.0	-85.2
17	-454.3	-0.1	-85.3
18	-454.1	-99.9	-85.7
19	-453.9	-200.5	-86.1
20	-453.7	-300.0	-85.8
21	-453.4	-399.9	-86.2
22	-453.3	-495.2	-86.4

Post-Test

Index	Xmm	Ymm	Zmm
1	-501.8	353.9	9.8
2	-465.0	269.6	-13.0
3	-420.1	191.0	-35.3
4	-377.3	100.5	-42.5
5	-317.8	24.7	-68.9
6	-289.1	-60.0	-48.1
7	-212.1	-116.5	-37.5
8	-145.9	-188.1	-42.6
9	-103.4	-274.4	-57.7
10	-100.3	-366.3	-78.5
11	-88.0	-457.7	-99.2
12	-513.9	374.7	-114.1
13	-473.6	289.7	-128.3
14	-441.5	197.0	-145.3
15	-416.6	101.4	-164.9
16	-360.6	19.3	-175.5
17	-279.9	-40.6	-171.9
18	-196.7	-97.1	-169.1
19	-116.4	-157.5	-170.0
20	-51.3	-230.7	-175.1
21	-43.3	-340.5	-193.5
22	-31.4	-434.4	-201.7

Difference

Index	Xmm	Ymm	Zmm
1	47.0	141.2	40.6
2	10.3	130.4	63.5
3	-34.5	109.2	85.6
4	-77.1	99.5	92.7
5	-136.6	75.0	118.6
6	-165.1	60.0	97.9
7	-241.9	16.5	87.6
8	-308.0	-12.0	92.9
9	-350.2	-25.7	107.4
10	-353.1	-33.9	128.0
11	-365.5	-37.4	148.1
12	58.9	120.3	30.5
13	18.6	110.3	44.0
14	-13.4	103.0	60.7
15	-38.1	98.3	80.0
16	-93.9	80.7	90.3
17	-174.4	40.5	86.6
18	-257.4	-2.8	83.4
19	-337.5	-43.0	83.9
20	-402.4	-69.3	89.3
21	-410.1	-59.4	107.3
22	-421.9	-60.8	115.3

Deformable Barrier Face Profile Cont'd.

Pre-Test

Index	Xmm	Ymm	Zmm
23	-455.1	495.9	-223.5
24	-455.1	400.4	-224.5
25	-455.0	300.3	-224.7
26	-454.6	199.7	-225.0
27	-454.4	100.1	-225.1
28	-454.0	0.3	-225.0
29	-453.8	-99.4	-225.4
30	-453.6	-199.1	-225.4
31	-453.4	-299.0	-226.0
32	-453.2	-399.0	-226.1
33	-452.9	-494.2	-226.5
34	-546.3	495.9	-298.0
35	-546.0	401.1	-298.3
36	-545.8	300.9	-298.7
37	-545.6	201.0	-299.3
38	-545.7	100.5	-299.6
39	-545.3	1.0	-300.2
40	-545.0	-99.6	-300.6
41	-544.7	-199.0	-300.7
42	-544.4	-299.3	-300.9
43	-544.2	-398.9	-301.1
44	-544.0	-494.1	-301.7

Post-Test

Index	Xmm	Ymm	Zmm
23	-479.2	412.2	-245.6
24	-475.9	318.9	-259.6
25	N/A	N/A	N/A
26	N/A	N/A	N/A
27	N/A	N/A	N/A
28	-237.9	6.6	-293.6
29	N/A	N/A	N/A
30	-110.3	-143.9	-312.1
31	-63.9	-227.3	-316.8
32	N/A	N/A	N/A
33	N/A	N/A	N/A
34	-610.8	346.9	-286.0
35	-545.1	279.0	-292.4
36	-480.8	202.5	-297.0
37	-424.1	119.5	-299.9
38	-362.6	36.8	-304.2
39	-296.8	-40.7	-313.1
40	-220.2	-106.8	-330.0
41	-147.0	-173.2	-346.1
42	-98.4	-261.6	-350.7
43	-76.4	-358.3	-344.8
44	-39.8	-445.3	-343.6

Difference

Index	Xmm	Ymm	Zmm
23	24.1	83.7	22.1
24	20.8	81.5	35.1
25	N/A	N/A	N/A
26	N/A	N/A	N/A
27	N/A	N/A	N/A
28	-216.1	-6.3	68.6
29	N/A	N/A	N/A
30	-343.3	-55.2	86.7
31	-389.5	-71.7	90.8
32	N/A	N/A	N/A
33	N/A	N/A	N/A
34	64.5	149.0	-12.0
35	-0.9	122.1	-5.9
36	-65.0	98.4	-1.7
37	-121.5	81.5	0.6
38	-183.1	63.7	4.6
39	-248.5	41.7	12.9
40	-324.8	7.2	29.4
41	-397.7	-25.8	45.4
42	-446.0	-37.7	49.8
43	-467.8	-40.6	43.7
44	-504.2	-48.8	41.9

Deformable Barrier Face Profile Cont'd.

Pre-Test

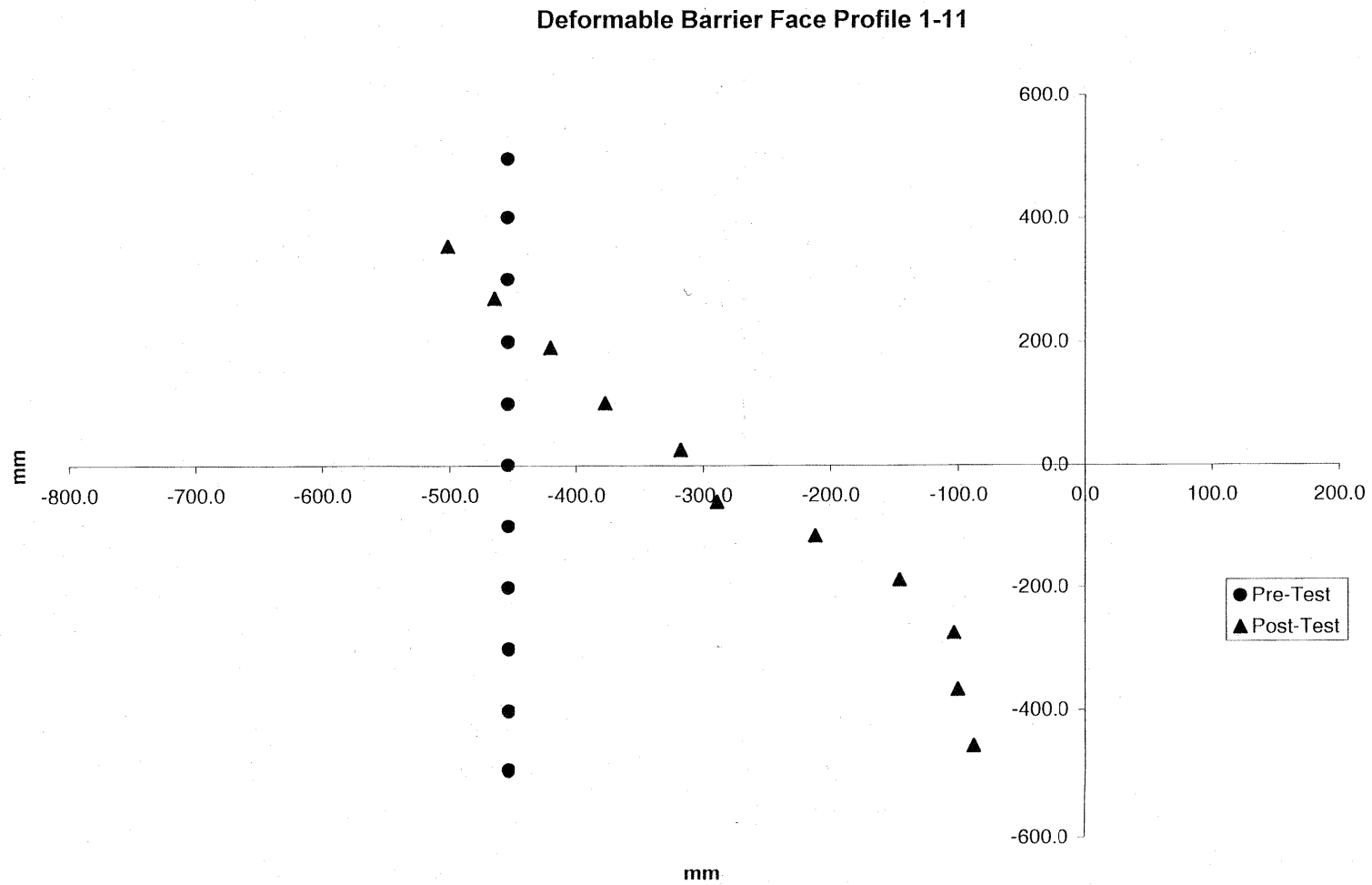
Index	Xmm	Ymm	Zmm
45	-546.2	496.4	-408.4
46	-545.9	401.9	-408.9
47	-545.8	301.9	-409.1
48	-545.6	202.0	-409.5
49	-545.2	102.1	-409.6
50	-545.0	1.8	-410.2
51	-544.7	-98.3	-410.5
52	-544.5	-198.0	-410.9
53	-544.2	-298.1	-411.0
54	-544.0	-397.9	-411.2
55	-543.8	-492.9	-411.5
56	-546.1	496.9	-523.8
57	-545.8	401.7	-523.7
58	-545.8	301.9	-524.2
59	-545.5	201.8	-524.3
60	-545.3	101.6	-524.5
61	-544.7	1.7	-524.7
62	-544.5	-98.4	-525.0
63	-544.2	-198.3	-525.3
64	-543.9	-298.4	-525.5
65	-543.6	-397.9	-525.9
66	-543.7	-493.3	-526.3

Post-Test

Index	Xmm	Ymm	Zmm
45	-605.4	317.7	-465.5
46	-531.3	262.2	-447.1
47	-456.6	198.6	-427.5
48	-427.8	126.3	-412.6
49	-394.6	31.2	-403.2
50	-346.7	-58.0	-400.2
51	-279.9	-134.2	-407.8
52	-211.4	-203.3	-421.6
53	-173.6	-289.8	-425.3
54	-131.6	-379.0	-436.1
55	-88.6	-463.2	-447.9
56	-567.4	387.0	-553.4
57	-518.7	305.4	-553.1
58	-467.7	219.1	-554.3
59	-434.1	143.7	-550.0
60	-415.3	43.9	-541.4
61	-398.0	-55.7	-527.3
62	-350.9	-144.4	-519.6
63	-292.7	-224.5	-515.1
64	-239.7	-309.5	-507.4
65	-184.7	-392.3	-501.9
66	-131.1	-470.7	-496.1

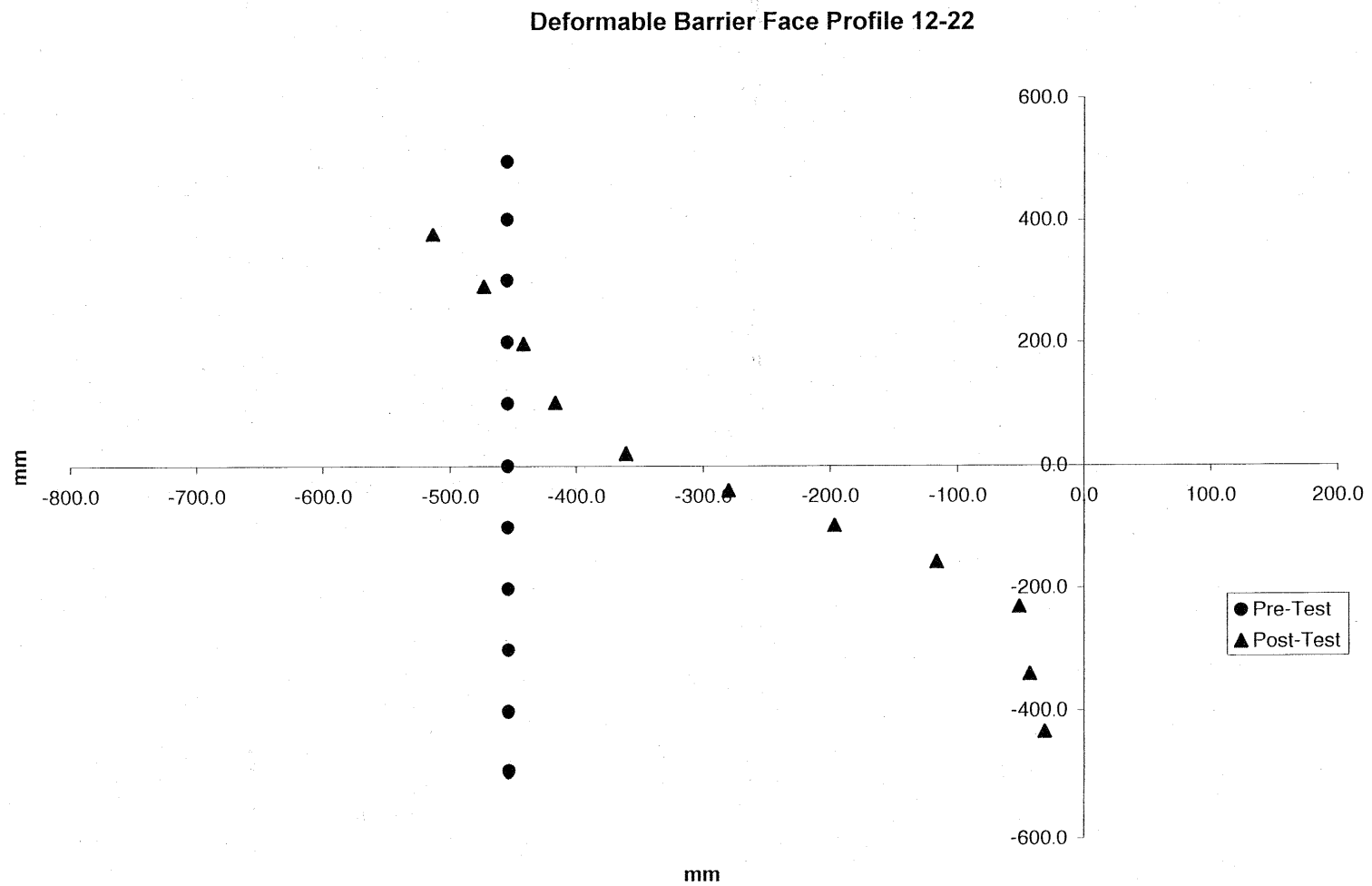
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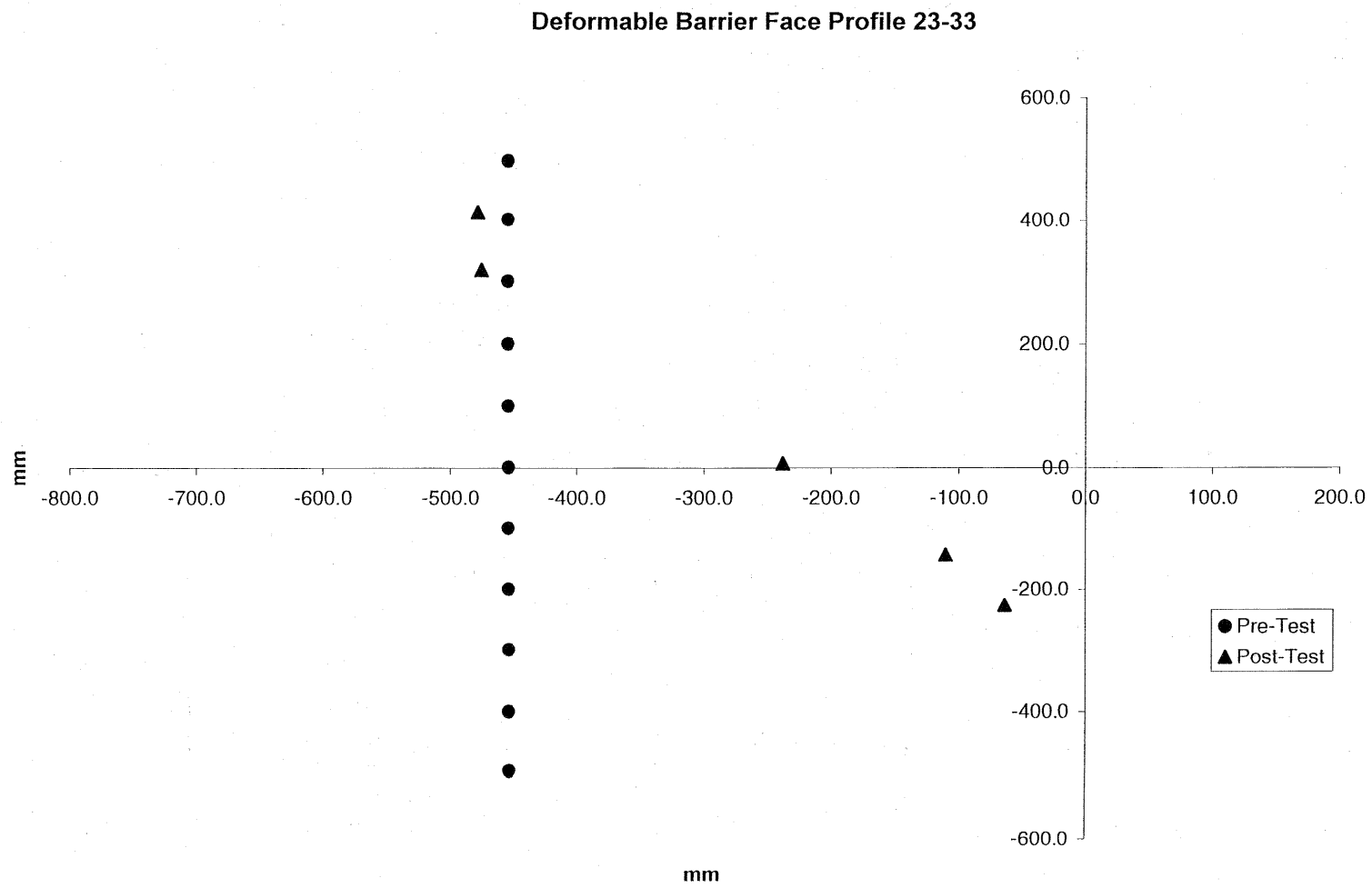
Index	Xmm	Ymm	Zmm
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47	-89.2	103.3	18.4
48	-117.8	75.7	3.1
49	-150.6	70.9	-6.4
50	-198.3	59.8	-10.0
51	-264.8	35.9	-2.7
52	-333.1	5.3	10.7
53	-370.6	-8.3	14.3
54	-412.4	-18.9	24.9
55	-455.2	-29.7	36.4
56	21.3	109.9	29.6
57	-27.1	96.3	29.4
58	-78.1	82.8	30.1
59	-111.4	58.1	25.7
60	-130.0	57.7	16.9
61	-146.7	57.4	2.6
62	-193.6	46.0	-5.4
63	-251.5	26.2	-10.2
64	-304.2	11.1	-18.1
65	-358.9	-5.6	-24.0
66	-412.6	-22.6	-30.2



2-48

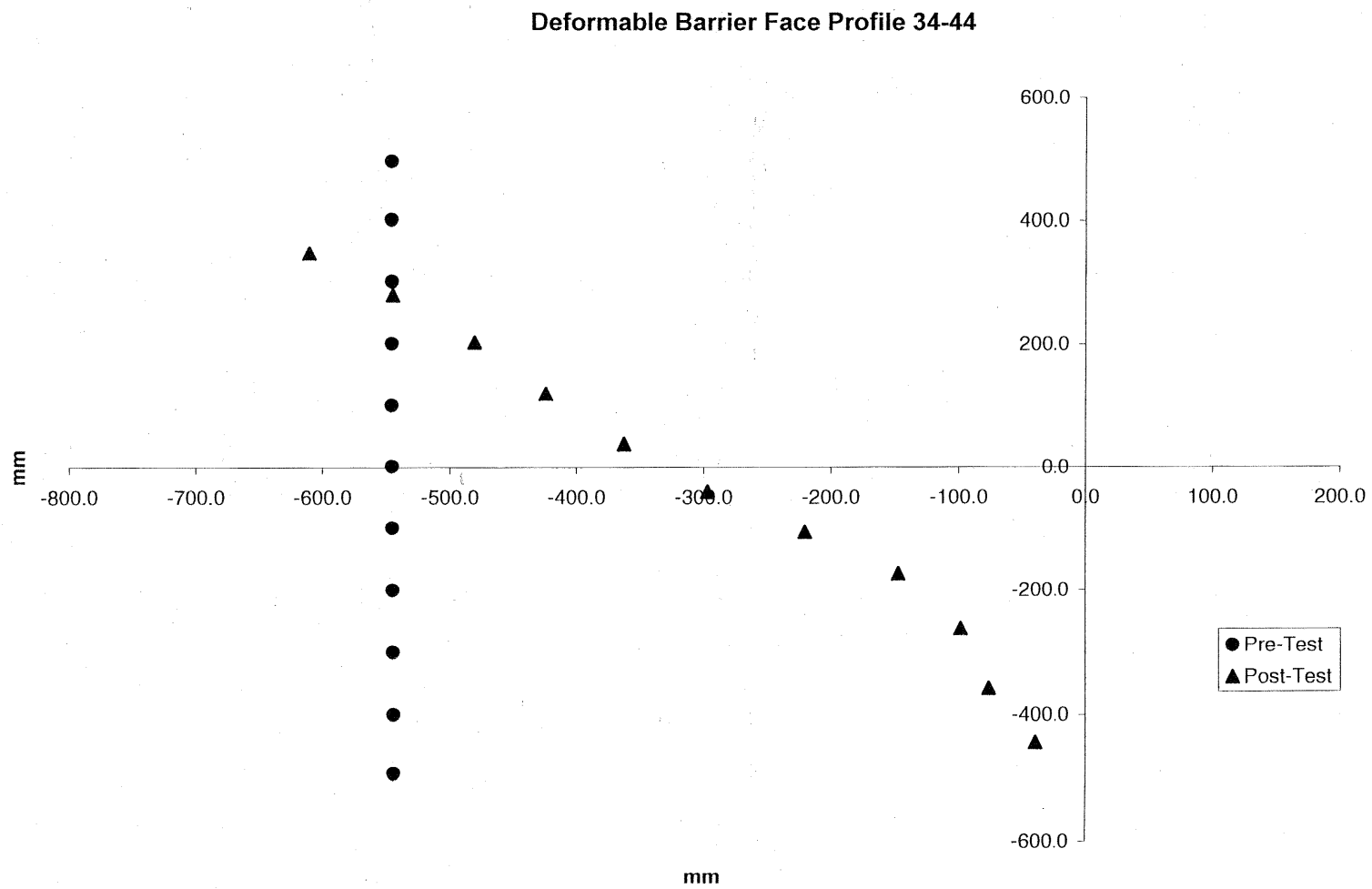
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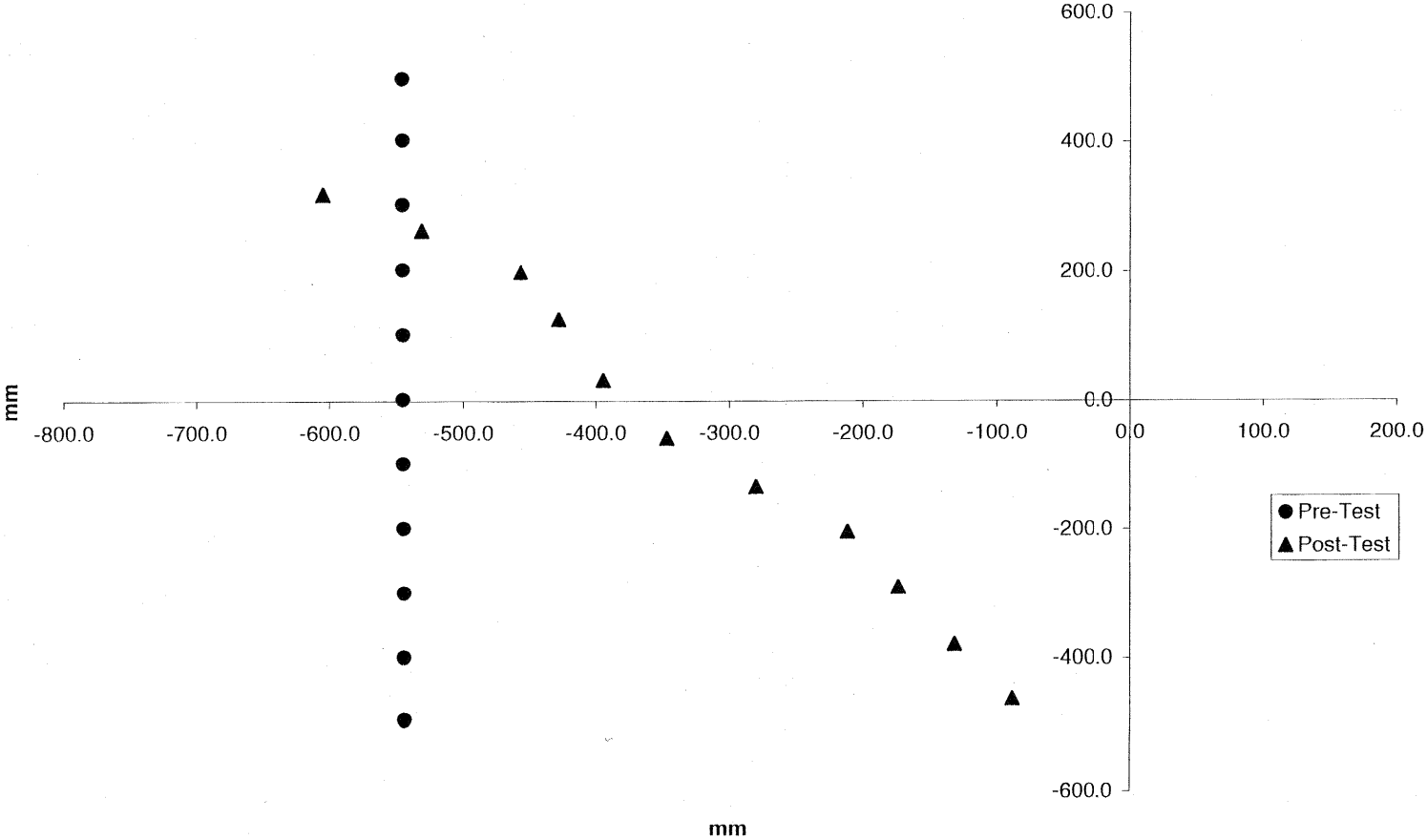


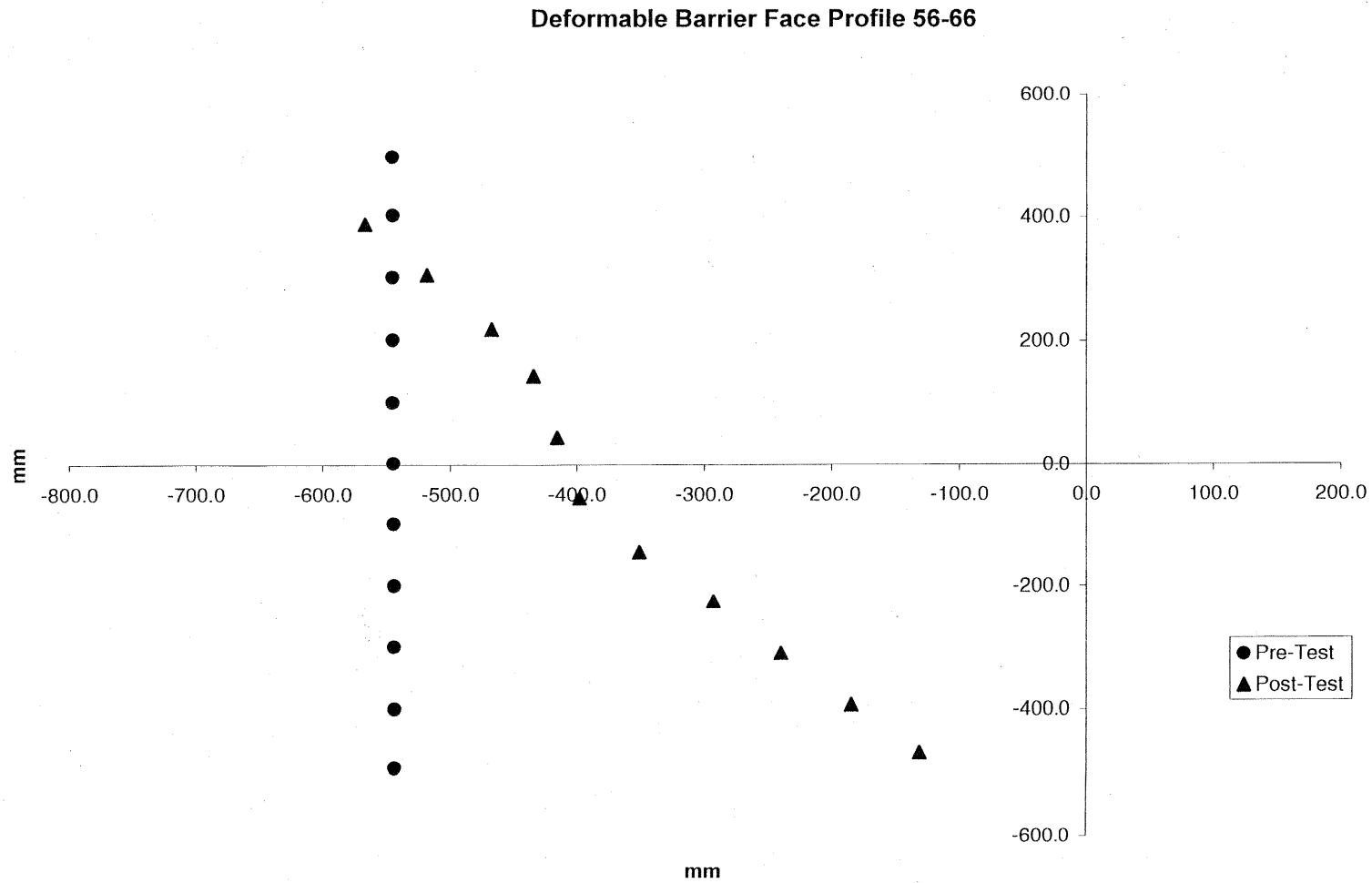
2-50

060530



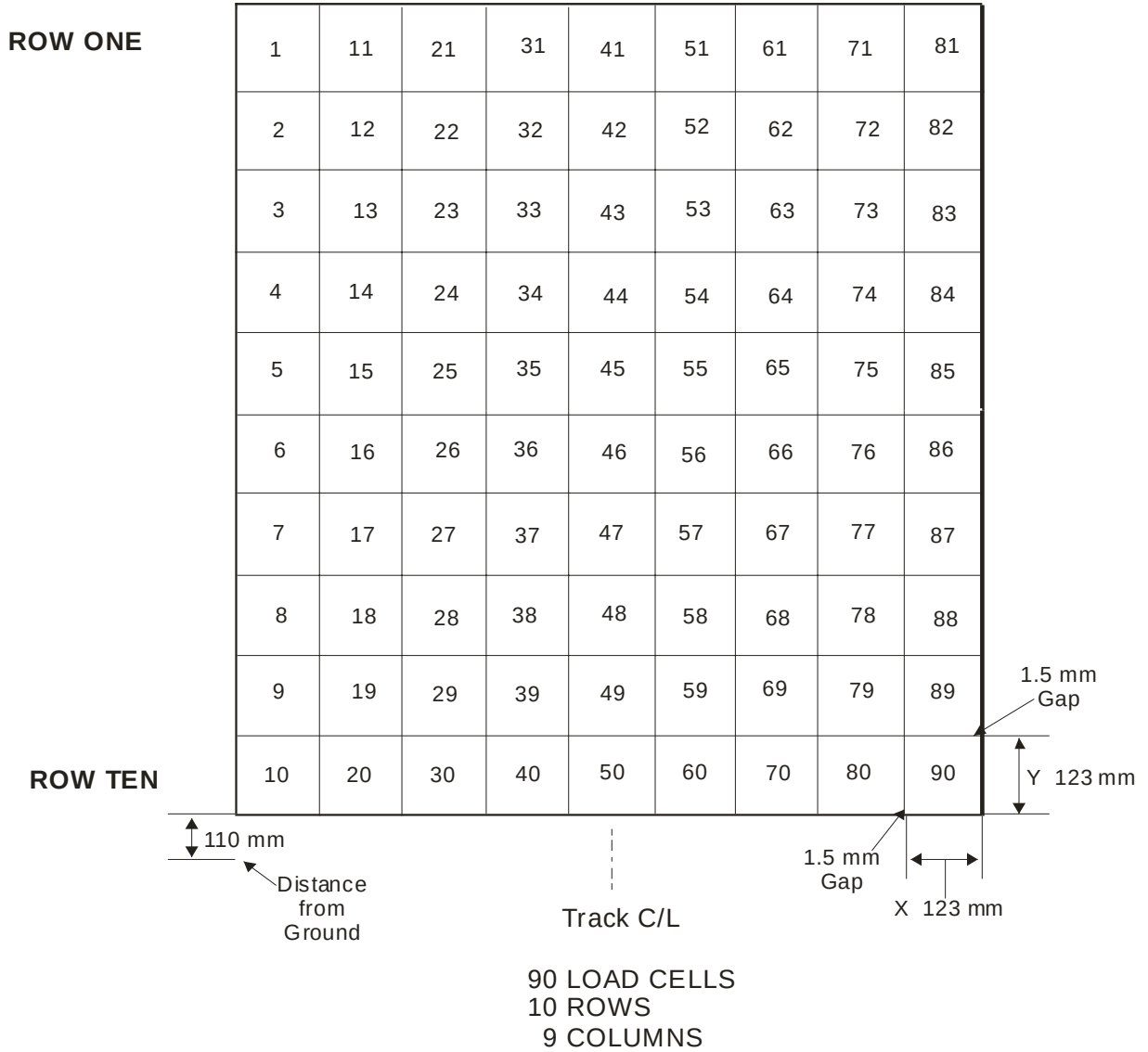
Deformable Barrier Face Profile 45-55





DATA SHEET NO. 21
DEFORMABLE BARRIER LOAD CELL LOCATIONS

Vehicle Year/Make/Model/Body Style: 2006/Suzuki/Forenza/4-door sedan
 NHTSA Test No.: R60172 Test Date: 05/30/06



FRONT VIEW

Appendix A

Photographs

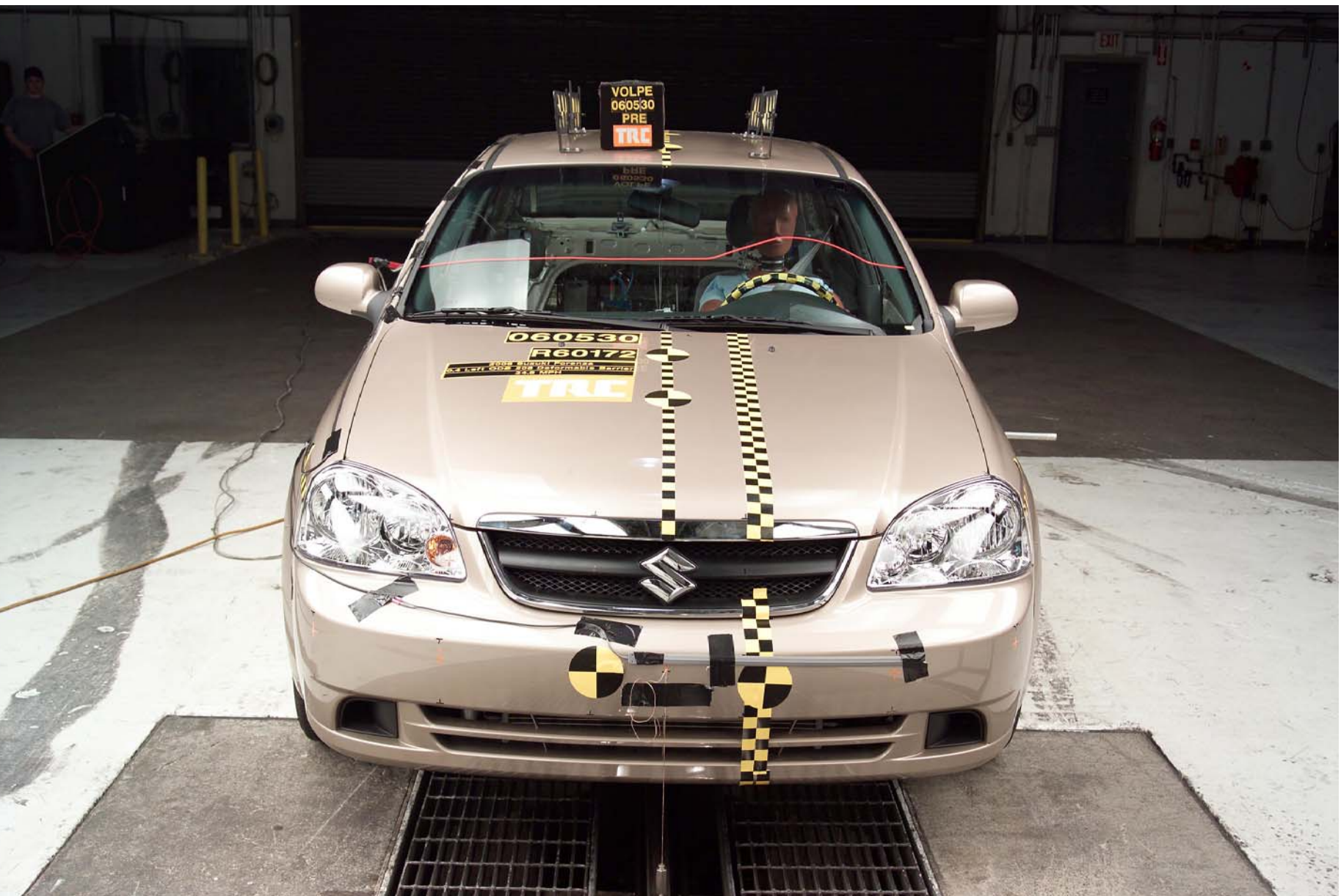


Figure A-1 Pre-Test Front View



Figure A-2 Post-Test Front View



Figure A-4 Post-Test Left Front View



Figure A-5 Pre-Test Left Side View



Figure A-6 Post-Test Left Side View

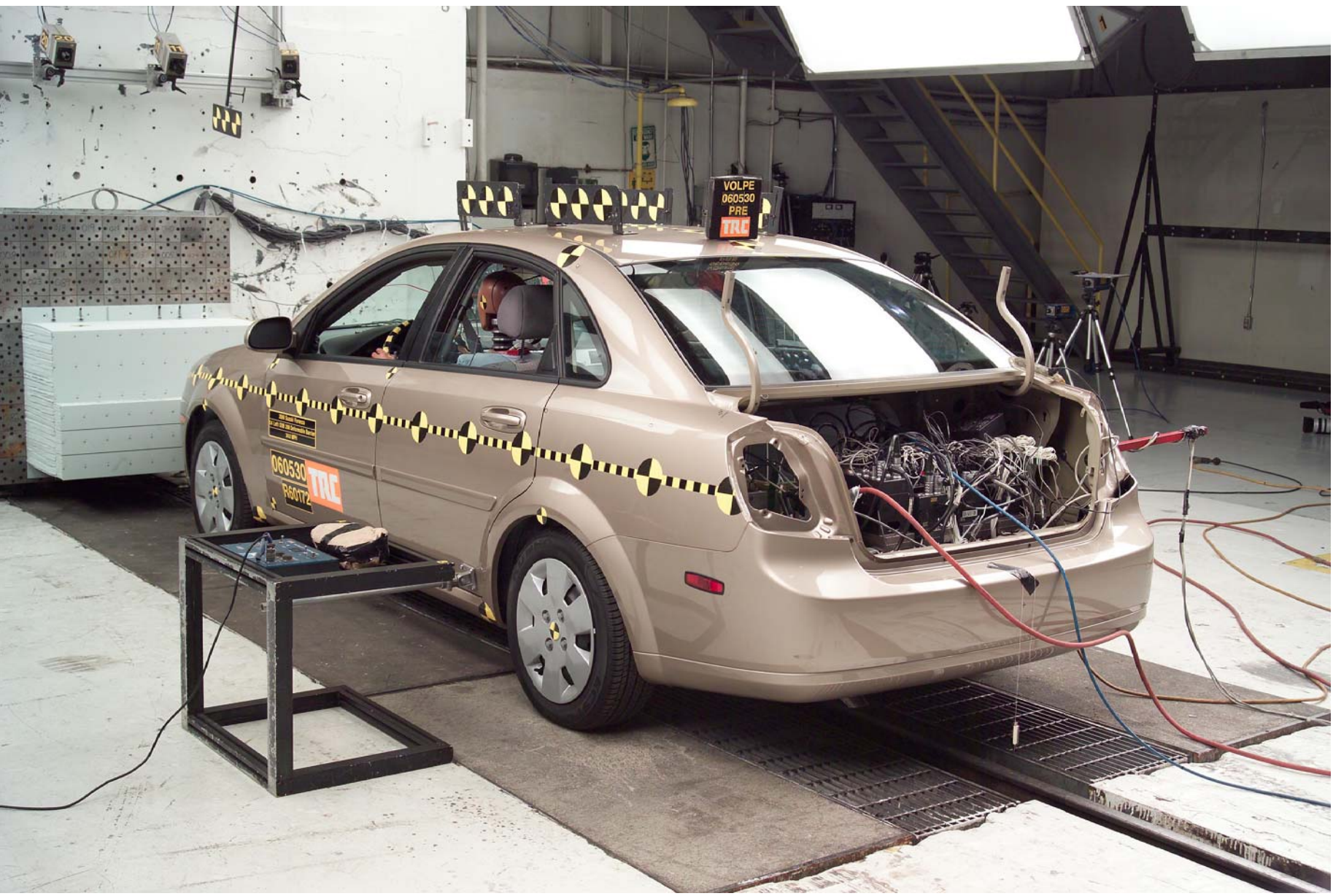


Figure A-7 Pre-Test Left Rear View



Figure A-8 Post-Test Left Rear View

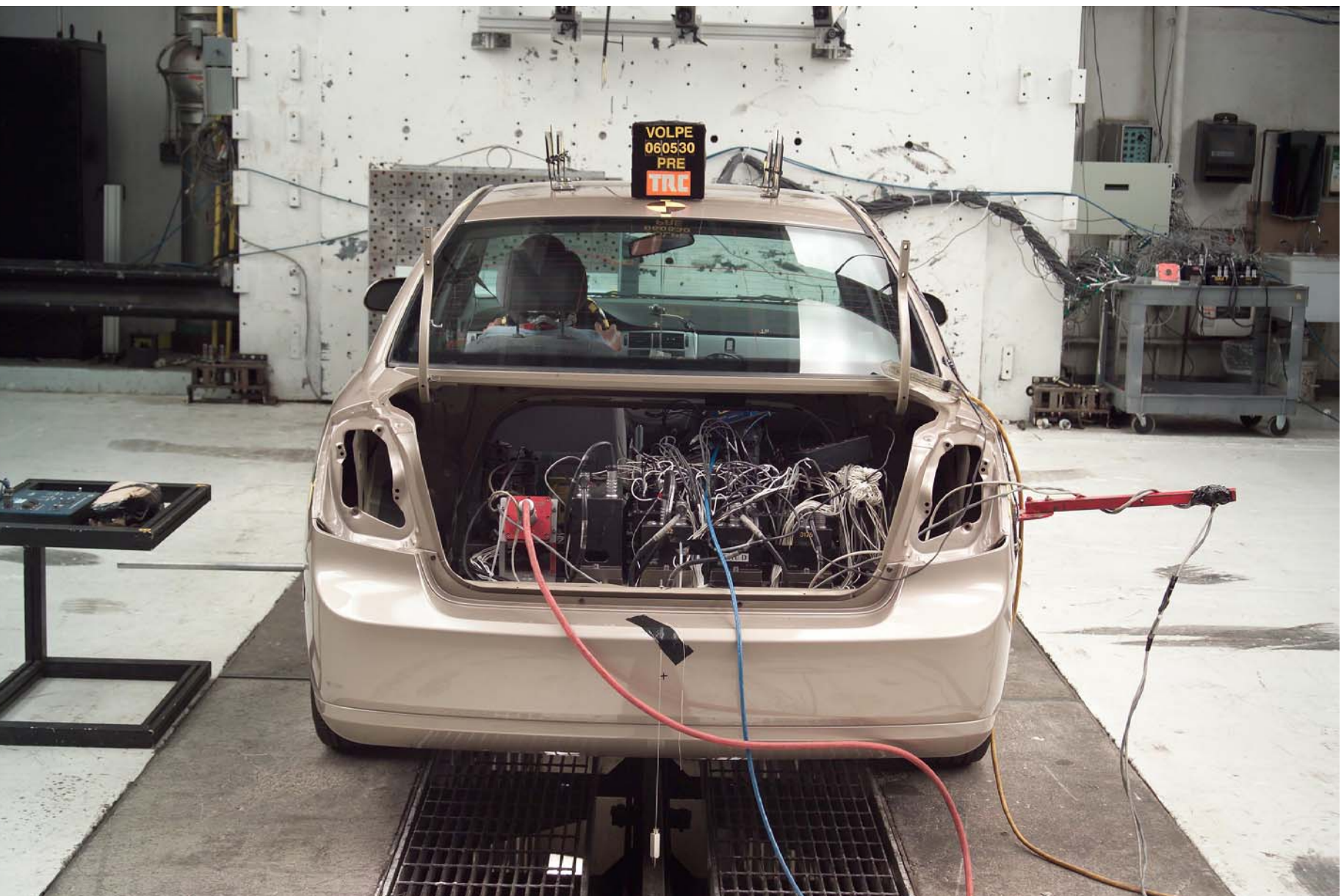


Figure A-9 Pre-Test Rear View

A-10

060530

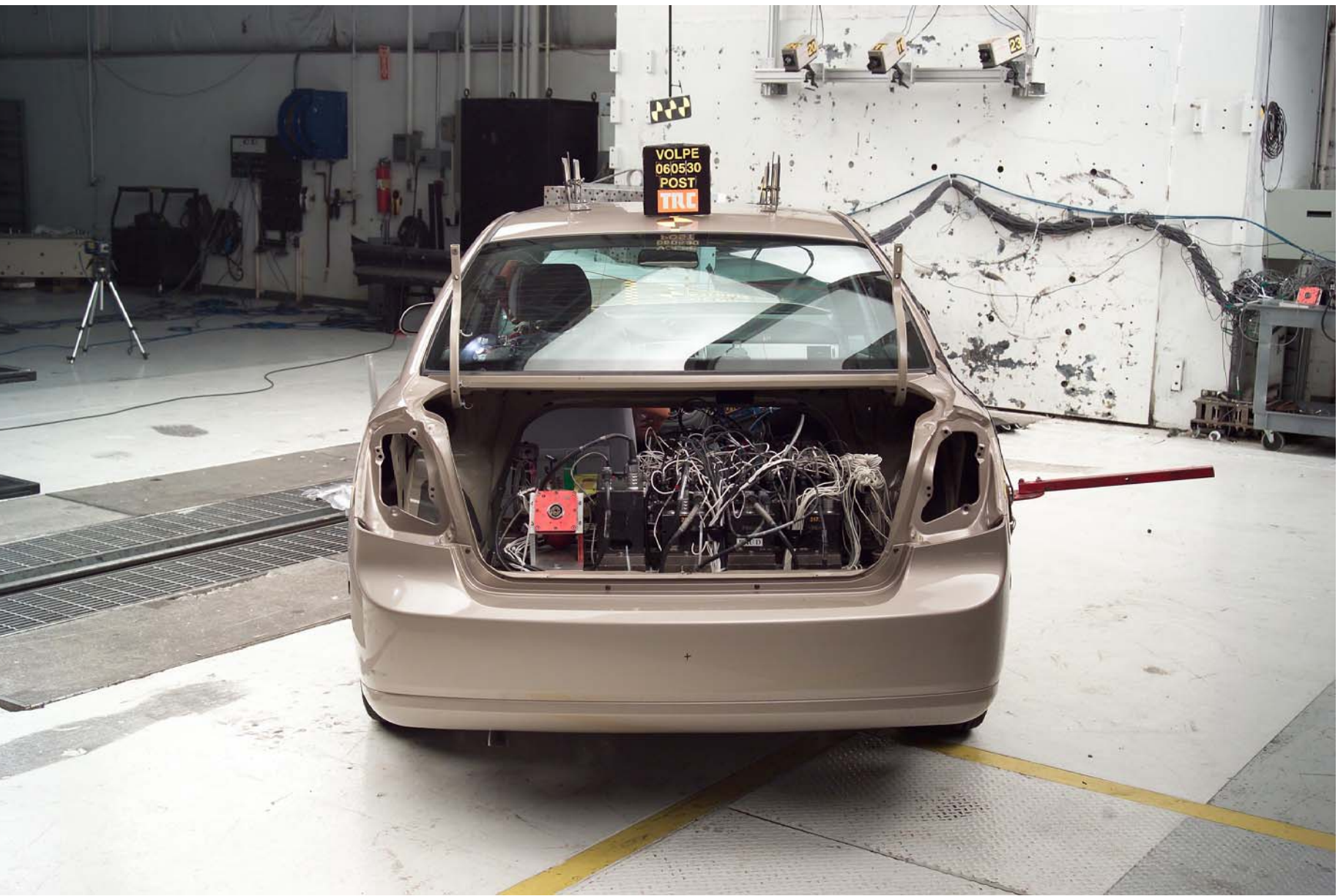


Figure A-10 Post-Test Rear View

A-11

060530



Figure A-11 Pre-Test Right Rear View



Figure A-12 Post-Test Right Rear View



Figure A-13 Pre-Test Right Side View



Figure A-14 Post-Test Right Side View



Figure A-15 Pre-Test Right Front View



Figure A-16 Post-Test Right Front View



Figure A-17 Pre-Test Overhead View

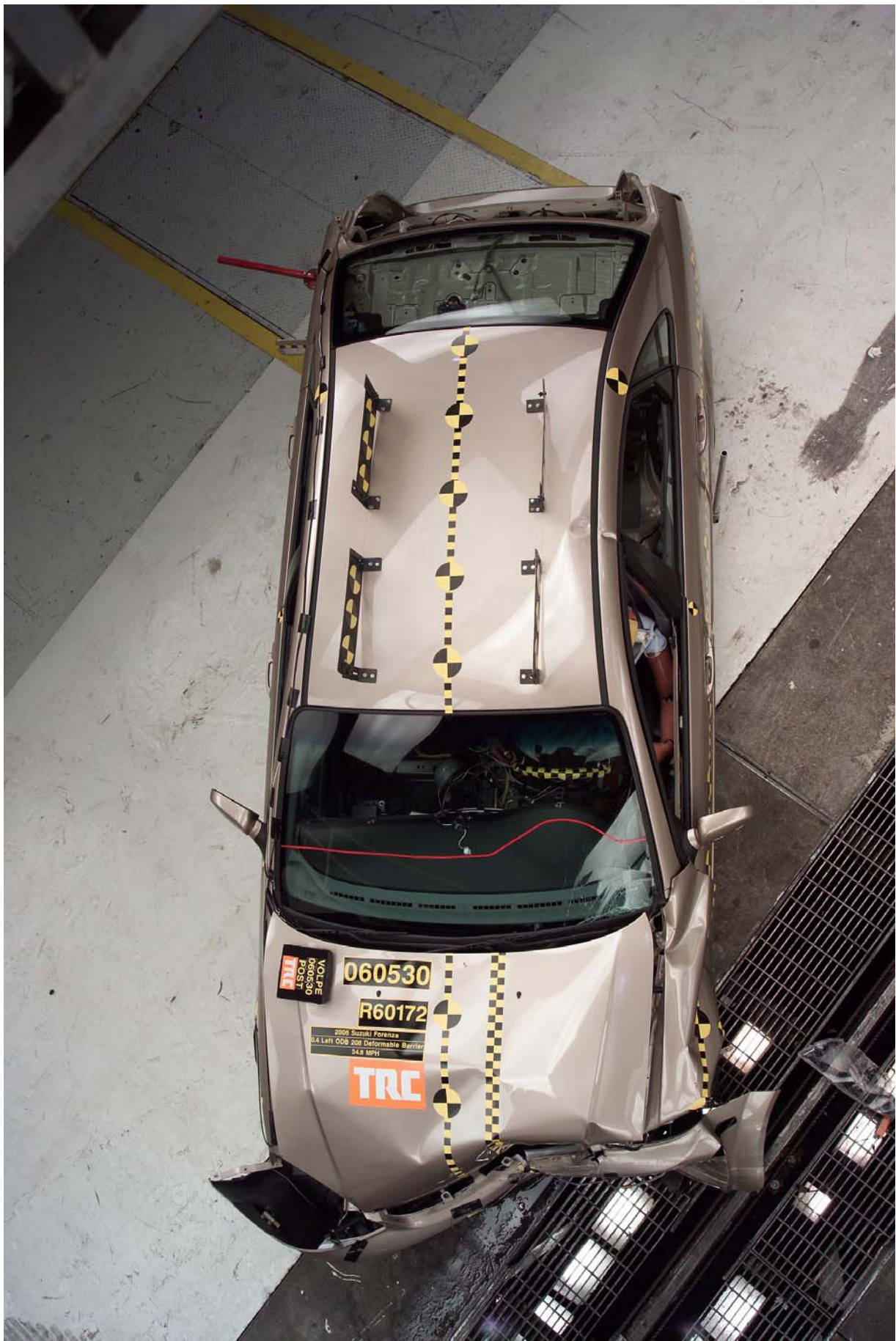


Figure A-18 Post-Test Overhead View



Figure A-19 Pre-Test Front Underbody View

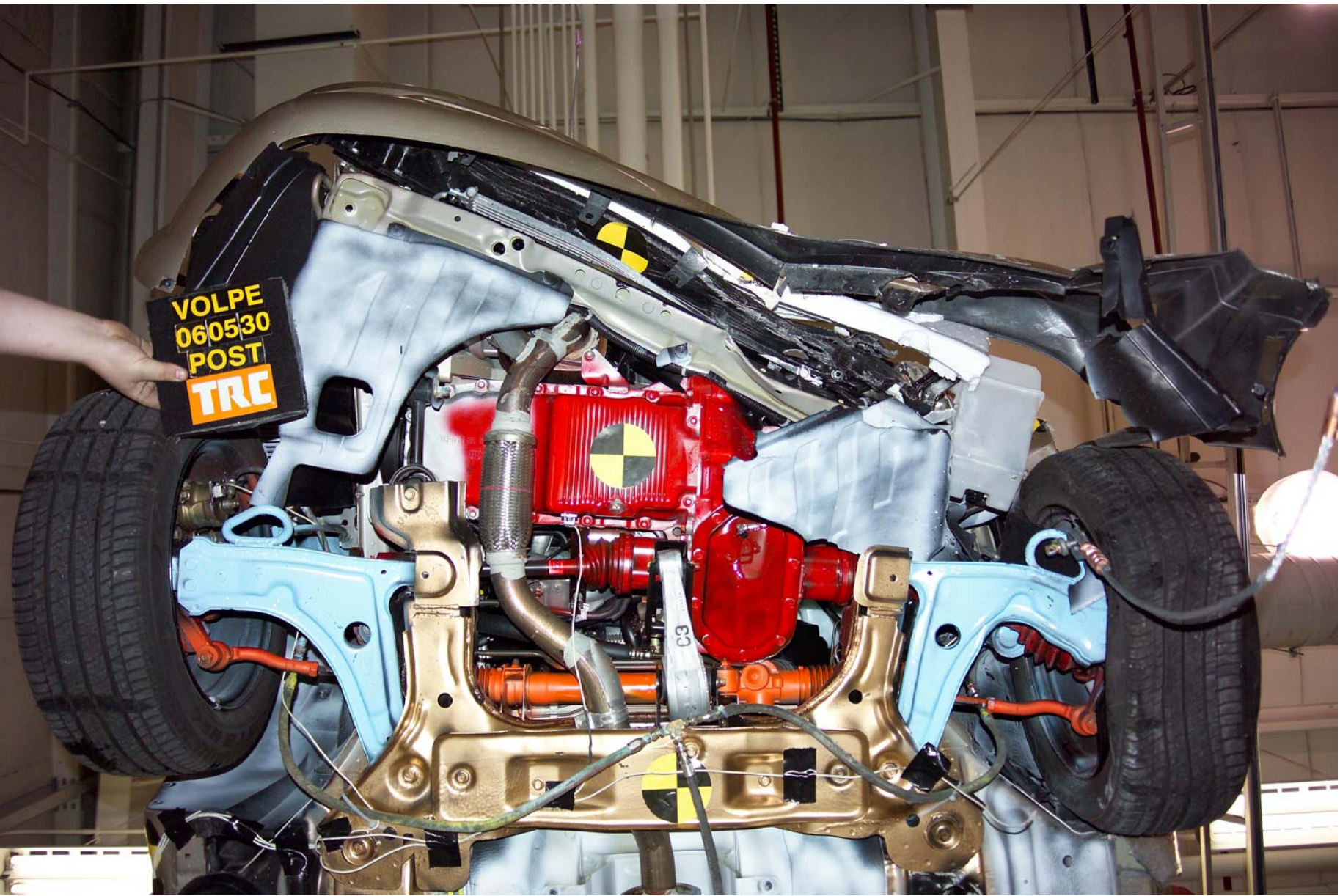


Figure A-20 Post-Test Front Underbody View

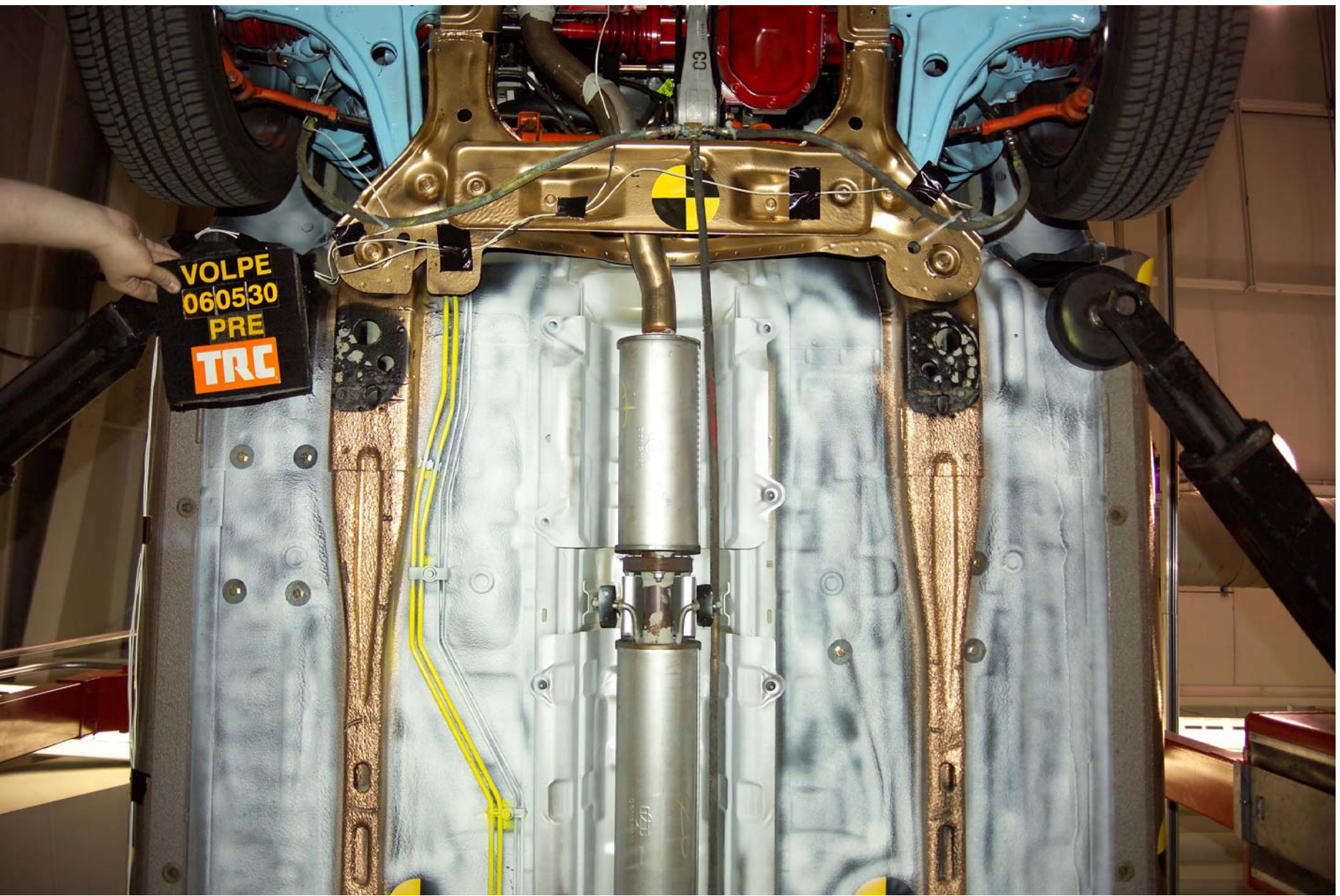


Figure A-21 Pre-Test Mid Front Underbody View

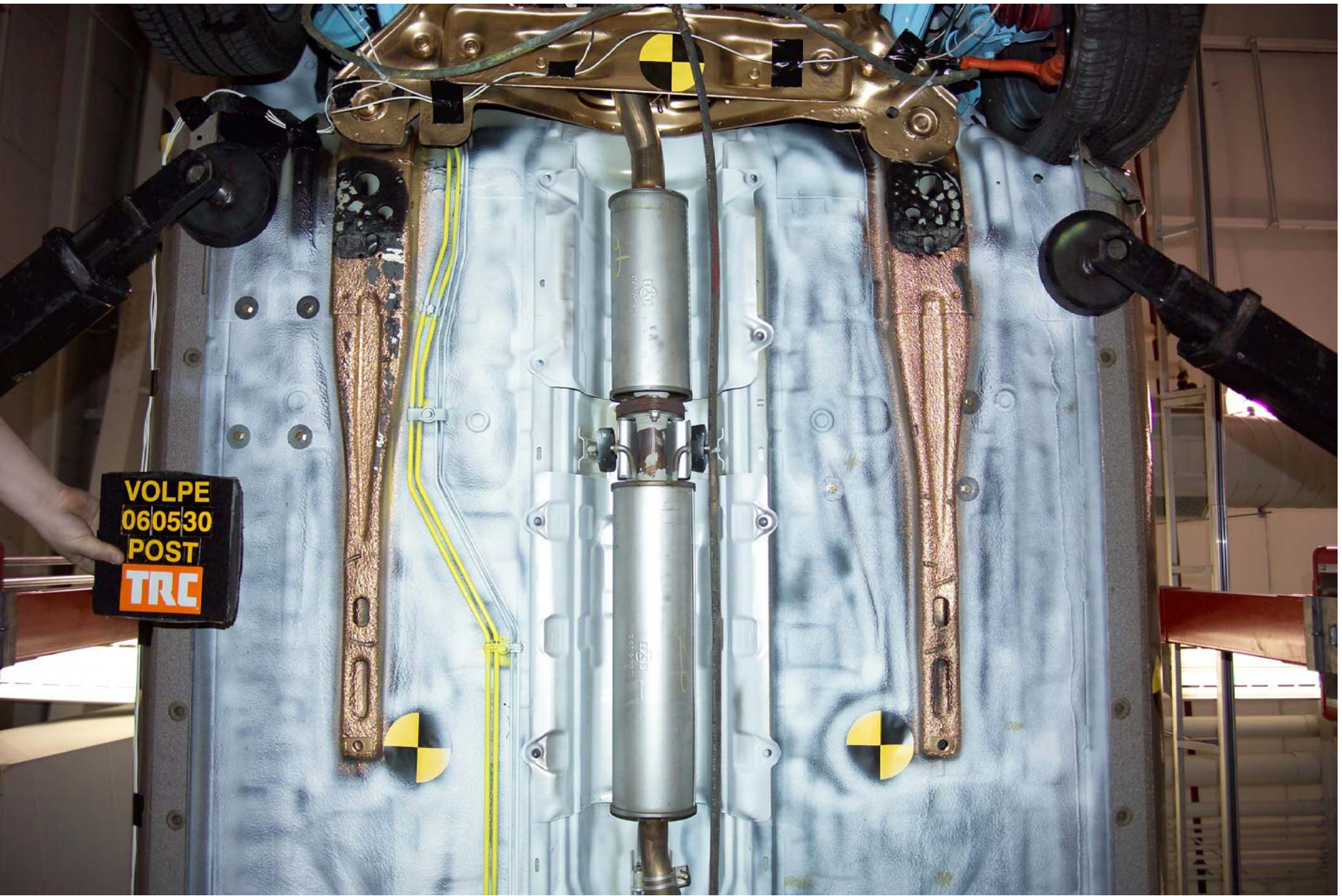


Figure A-22 Post-Test Mid Front Underbody View

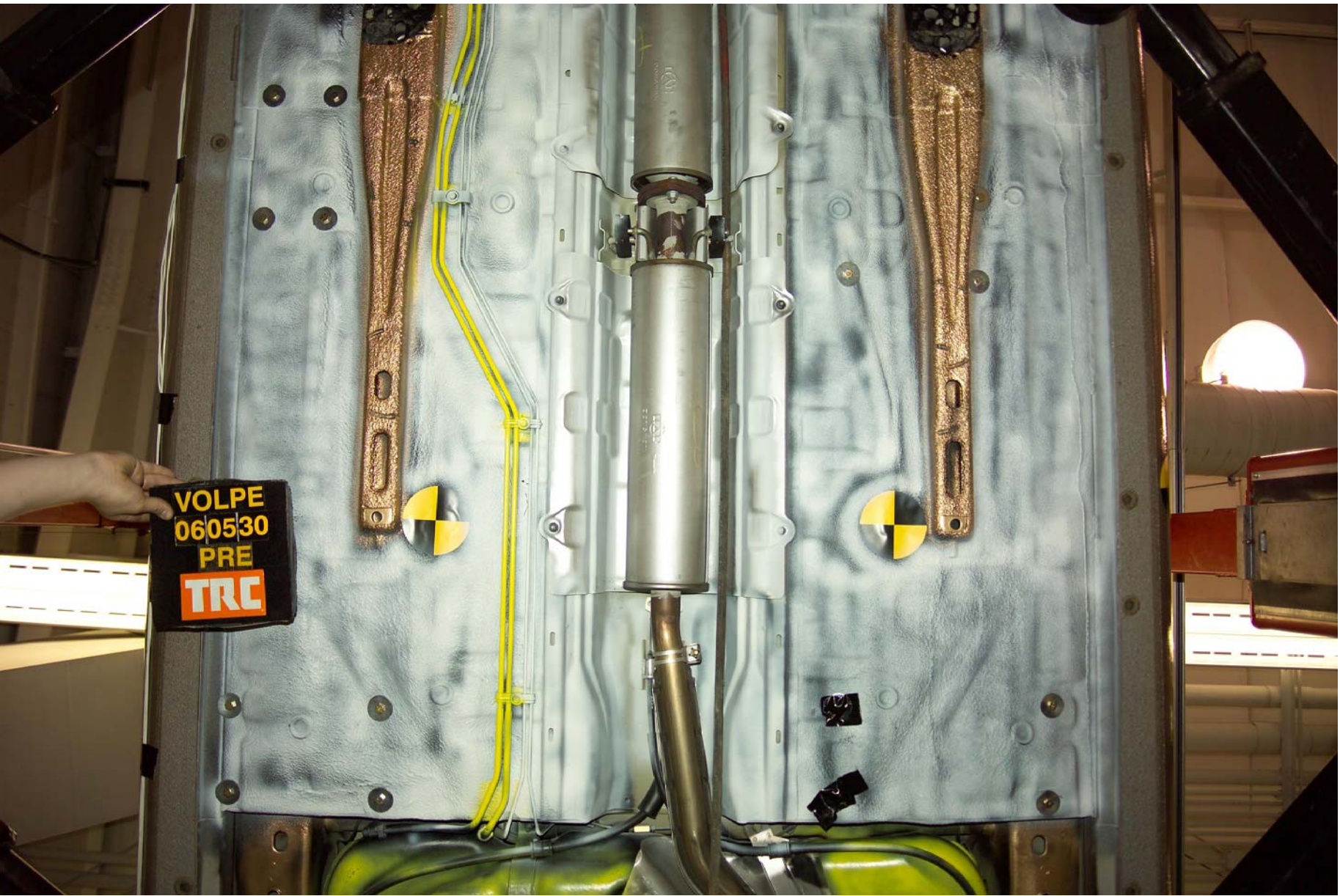


Figure A-23 Pre-Test Mid Underbody View



Figure A-24 Post-Test Mid Underbody View

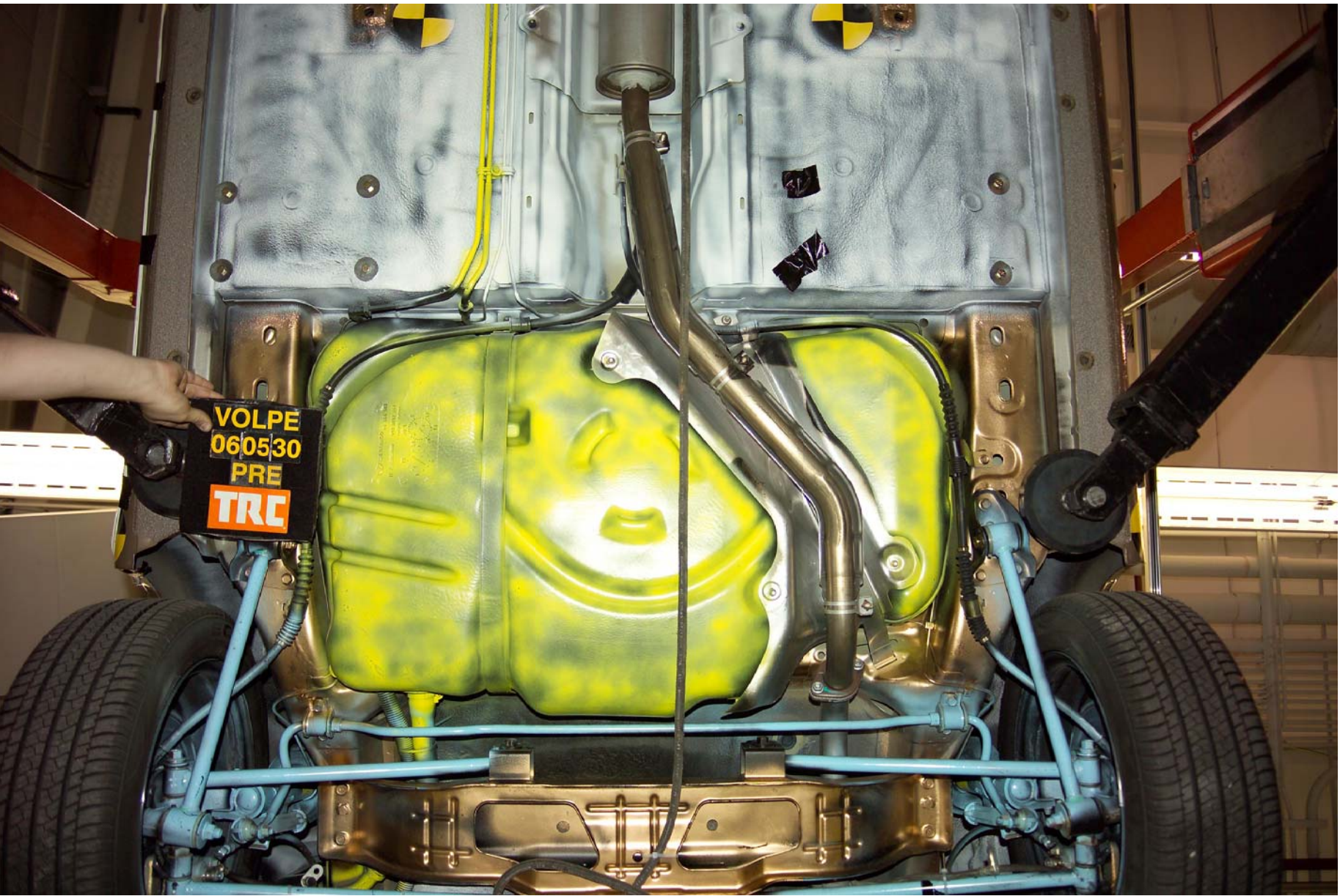


Figure A-25 Pre-Test Mid Rear Underbody View

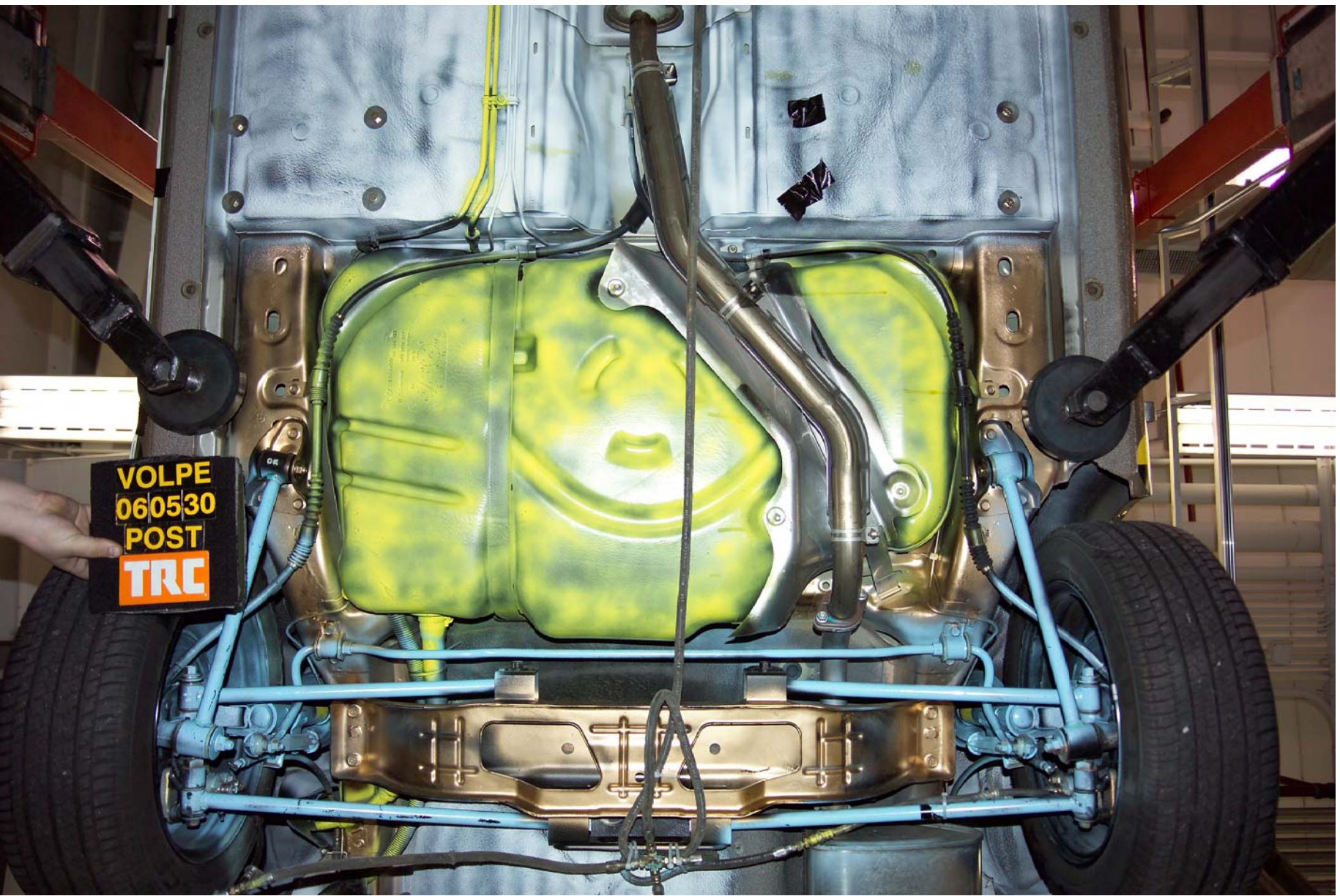


Figure A-26 Post-Test Mid Rear Underbody View

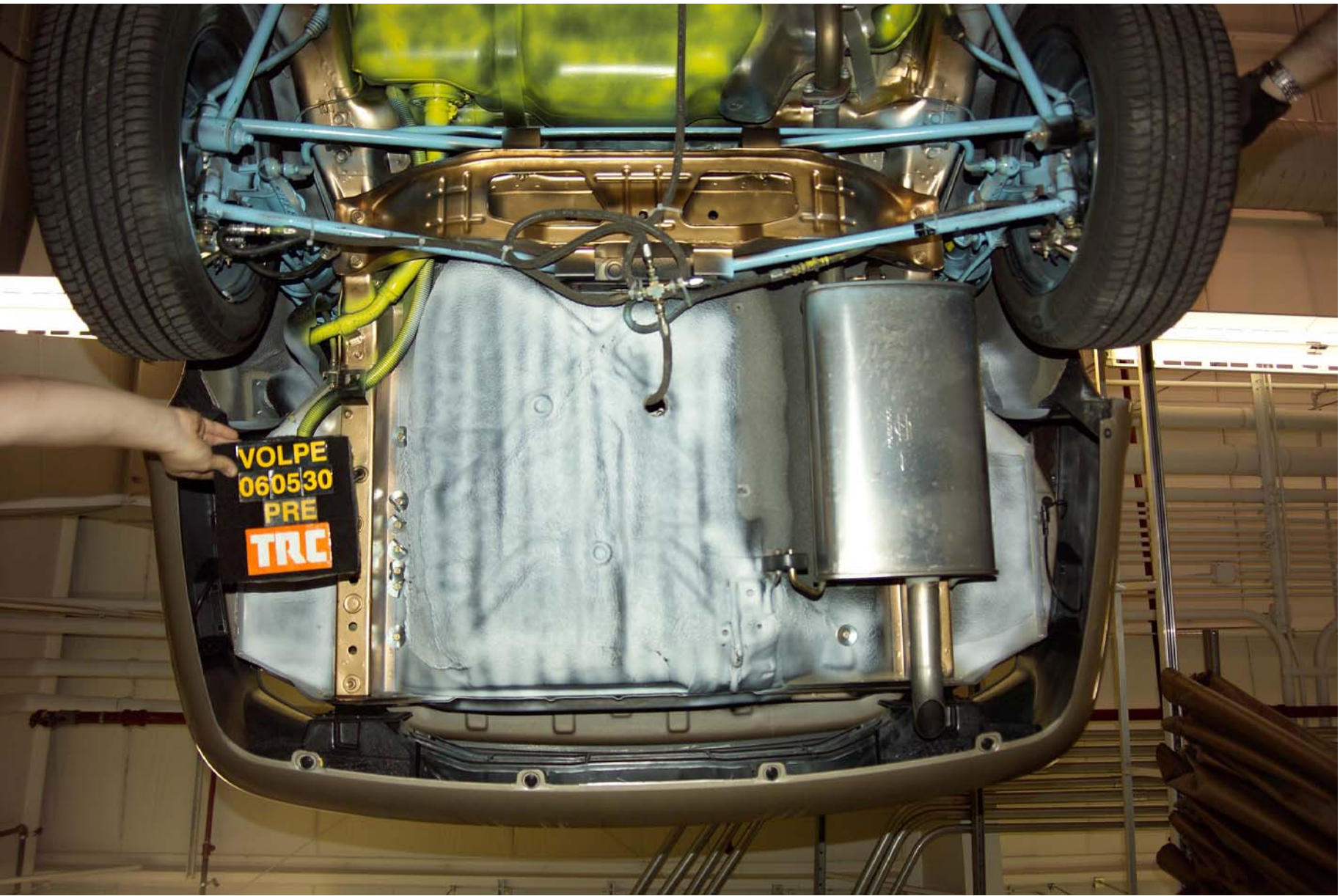


Figure A-27 Pre-Test Rear Underbody View



Figure A-28 Post-Test Rear Underbody View

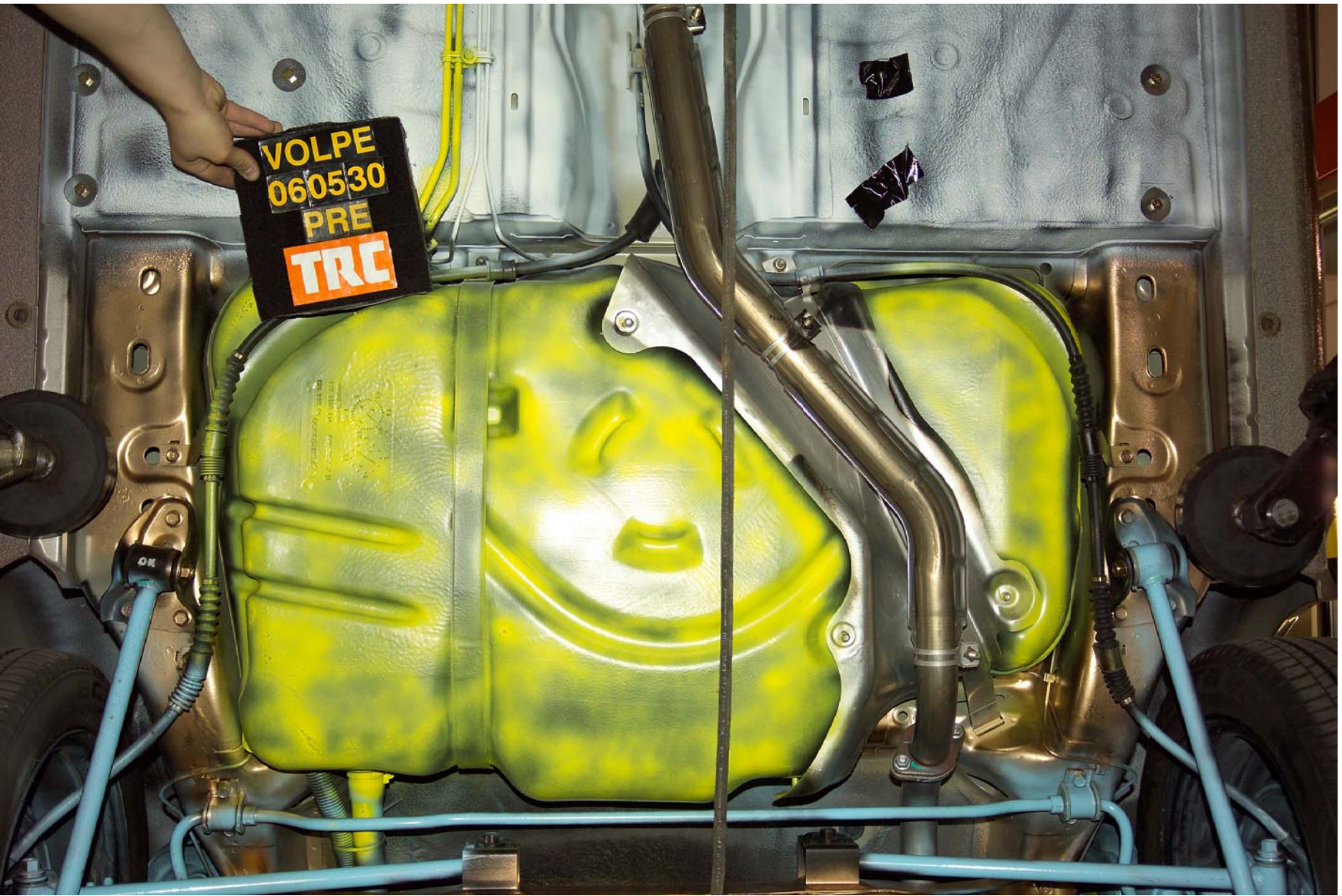


Figure A-29 Pre-Test Fuel Tank View

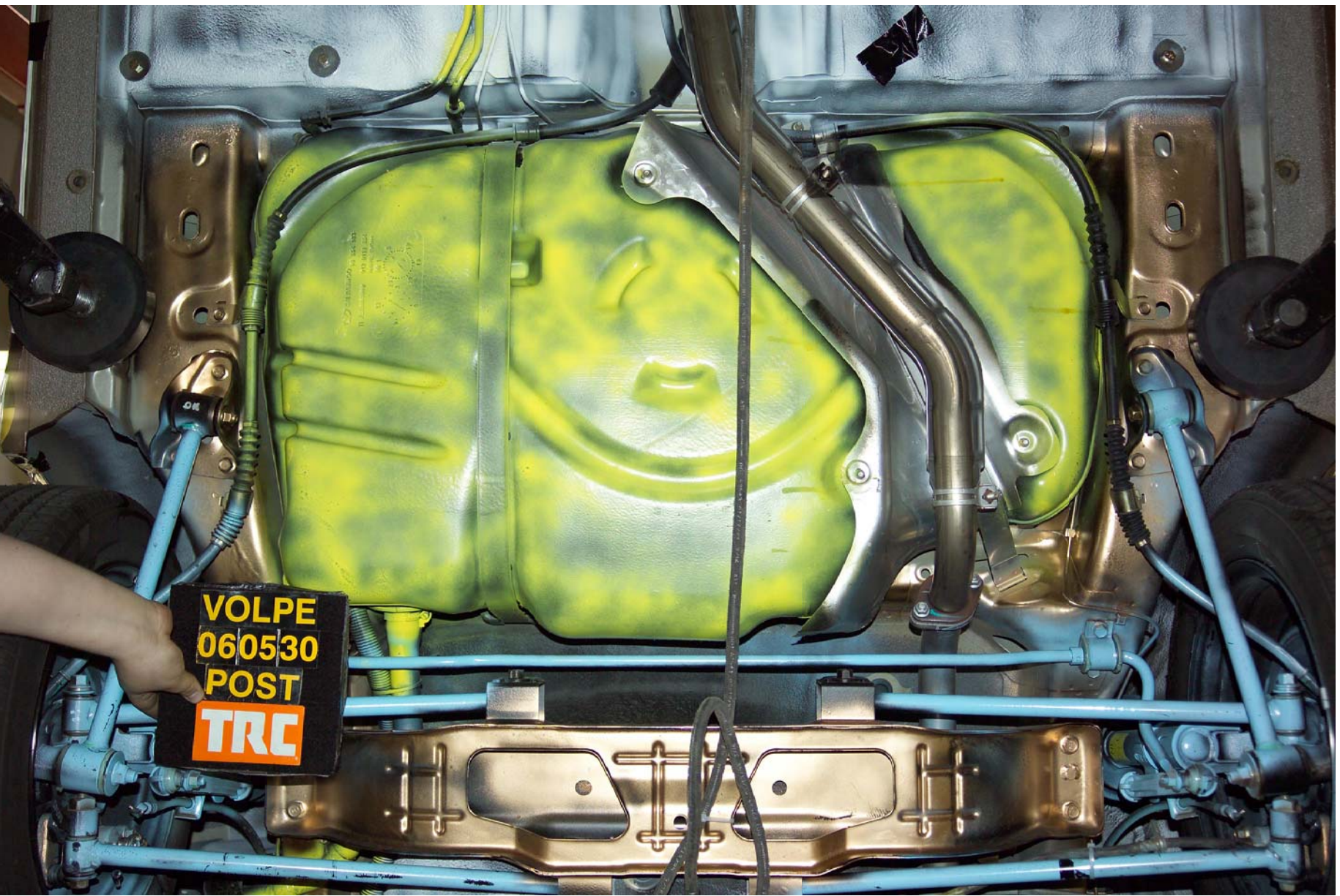


Figure A-30 Post-Test Fuel Tank View



Figure A-31 Pre-Test Fuel Filler Neck View

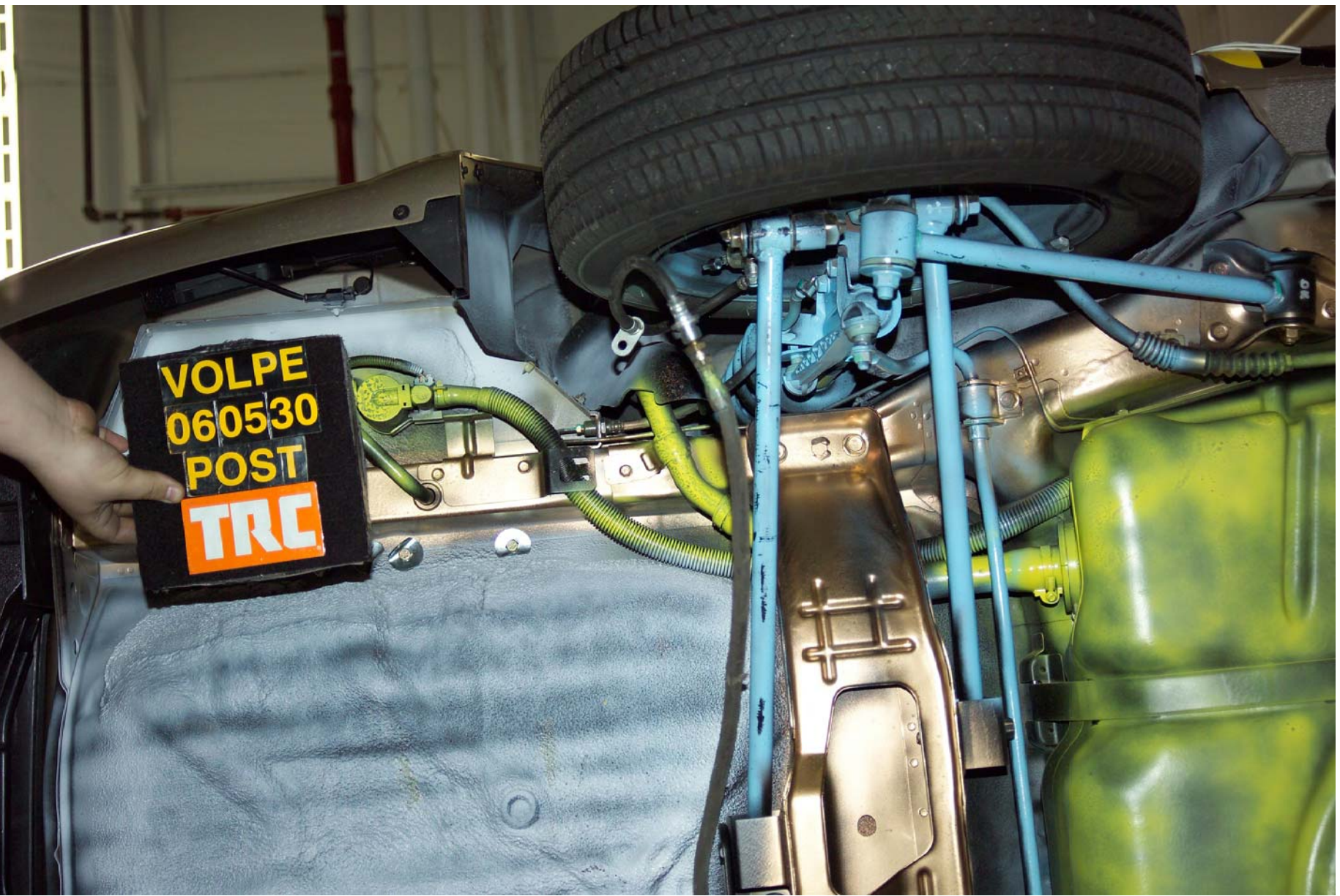


Figure A-32 Post-Test Fuel Filler Neck View

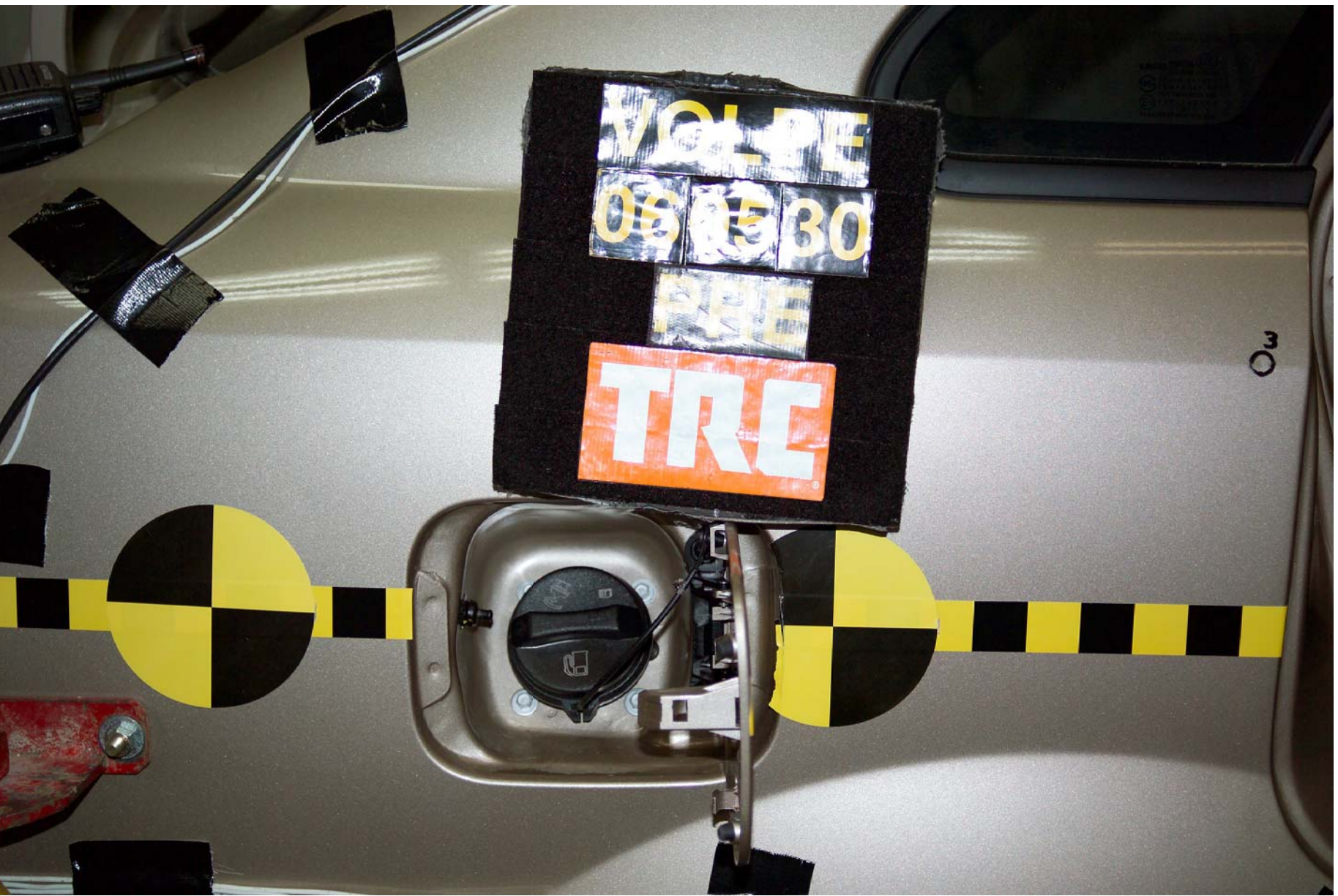


Figure A-33 Pre-Test Fuel Filler Cap View



Figure A-34 Post-Test Fuel Filler Cap View



Figure A-35 Pre-Test Engine Compartment View



Figure A-36 Pre-Test Engine Compartment View

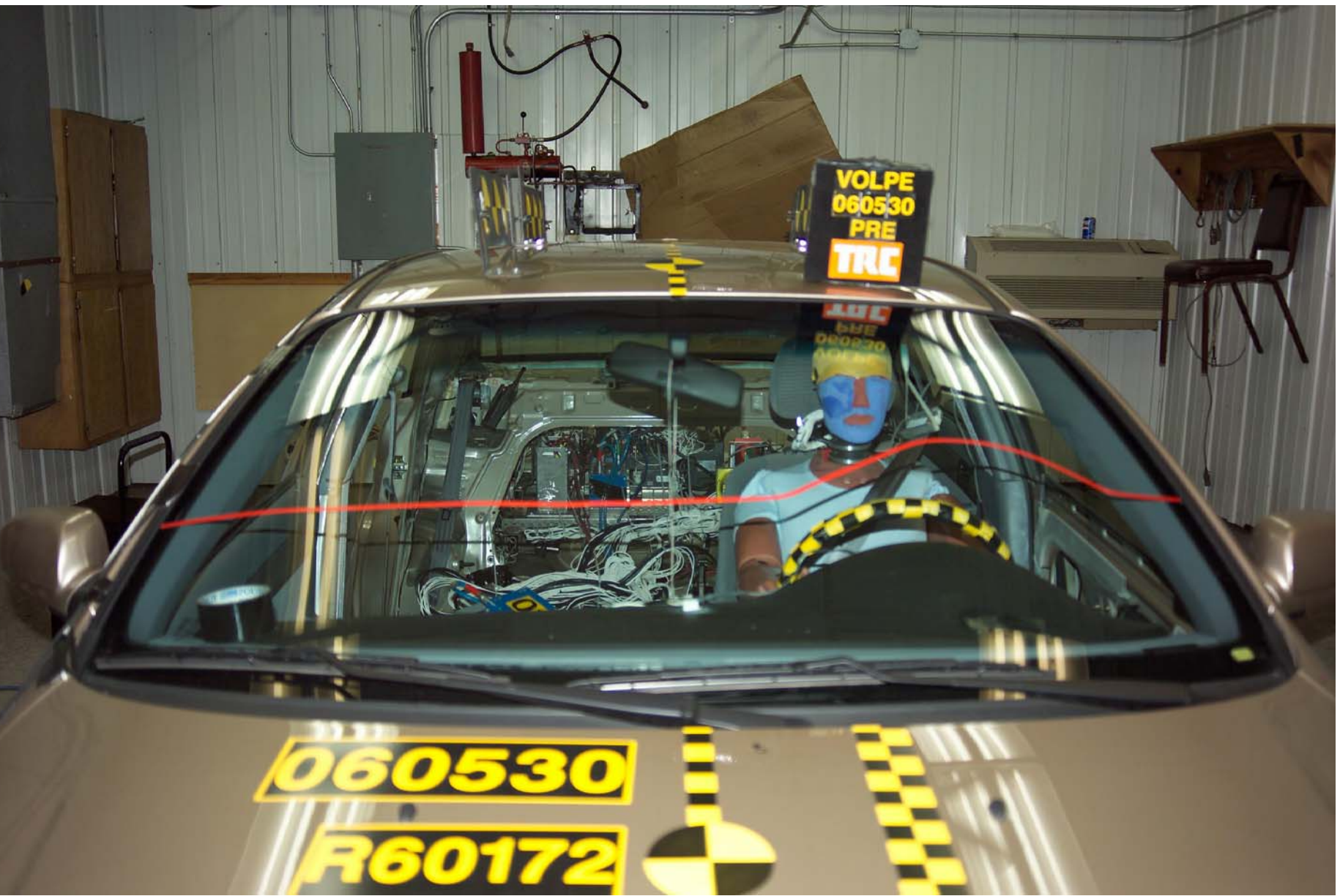


Figure A-37 Pre-Test Windshield View

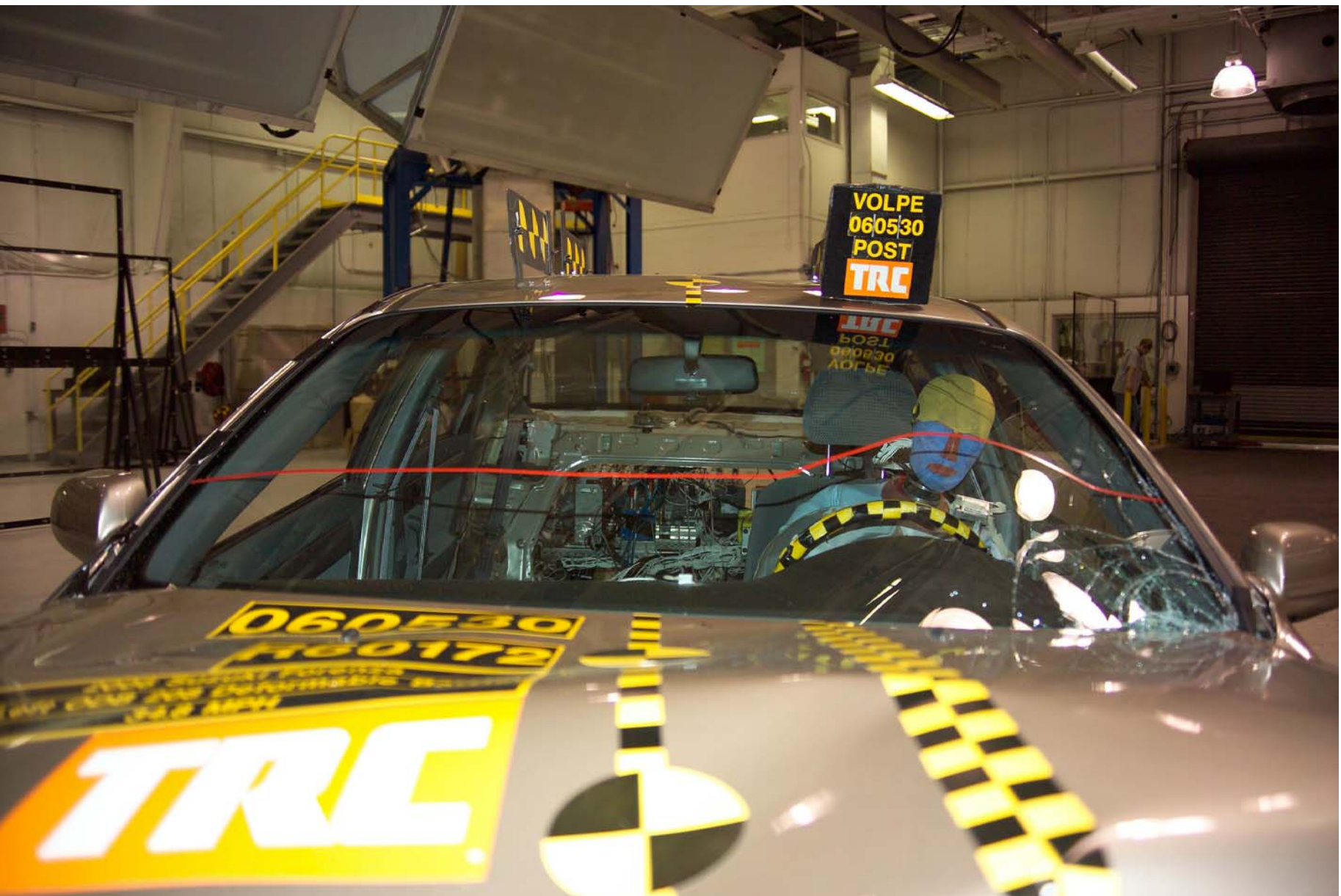


Figure A-38 Post-Test Windshield View

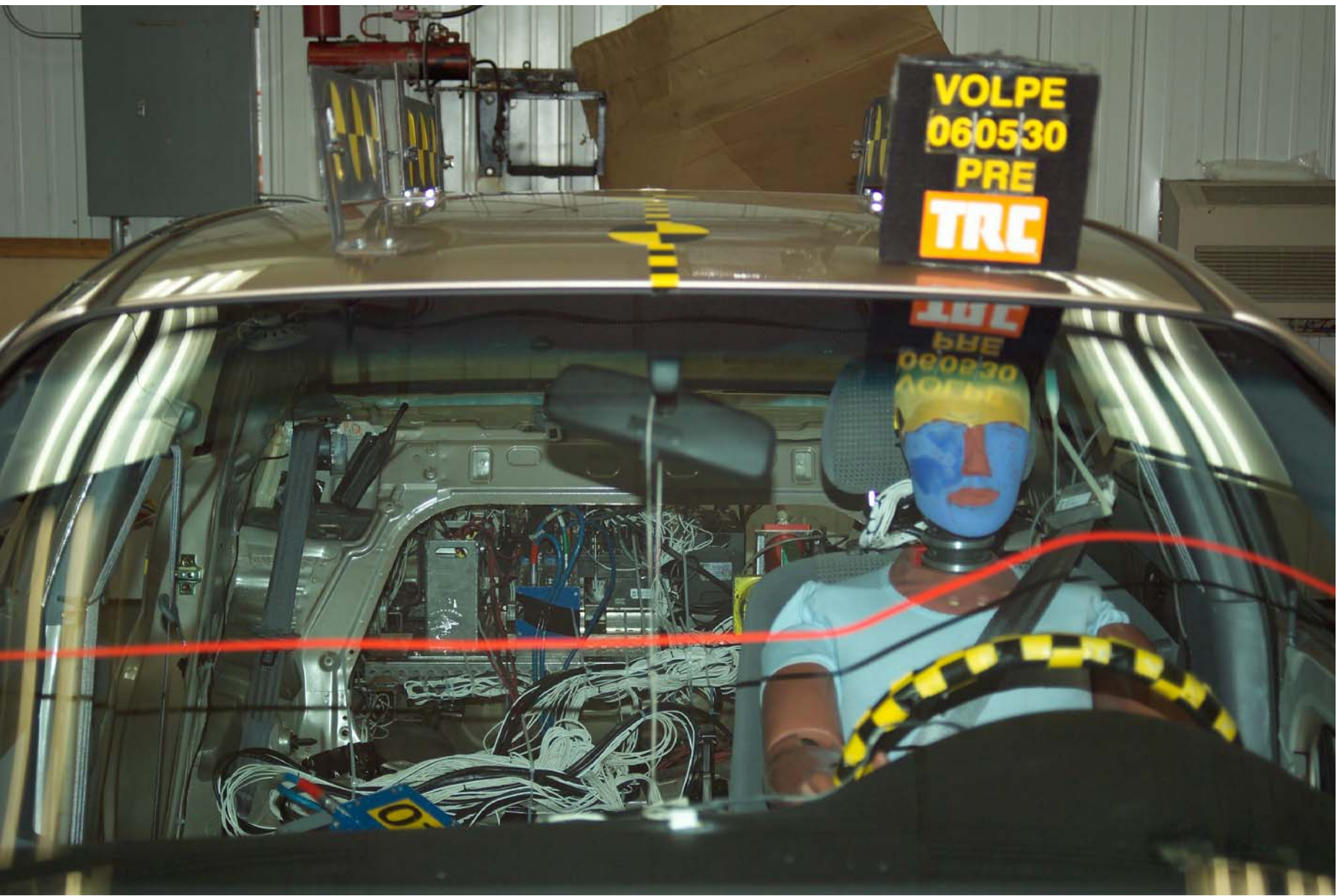


Figure A-39 Pre-Test Windshield - Driver Dummy View

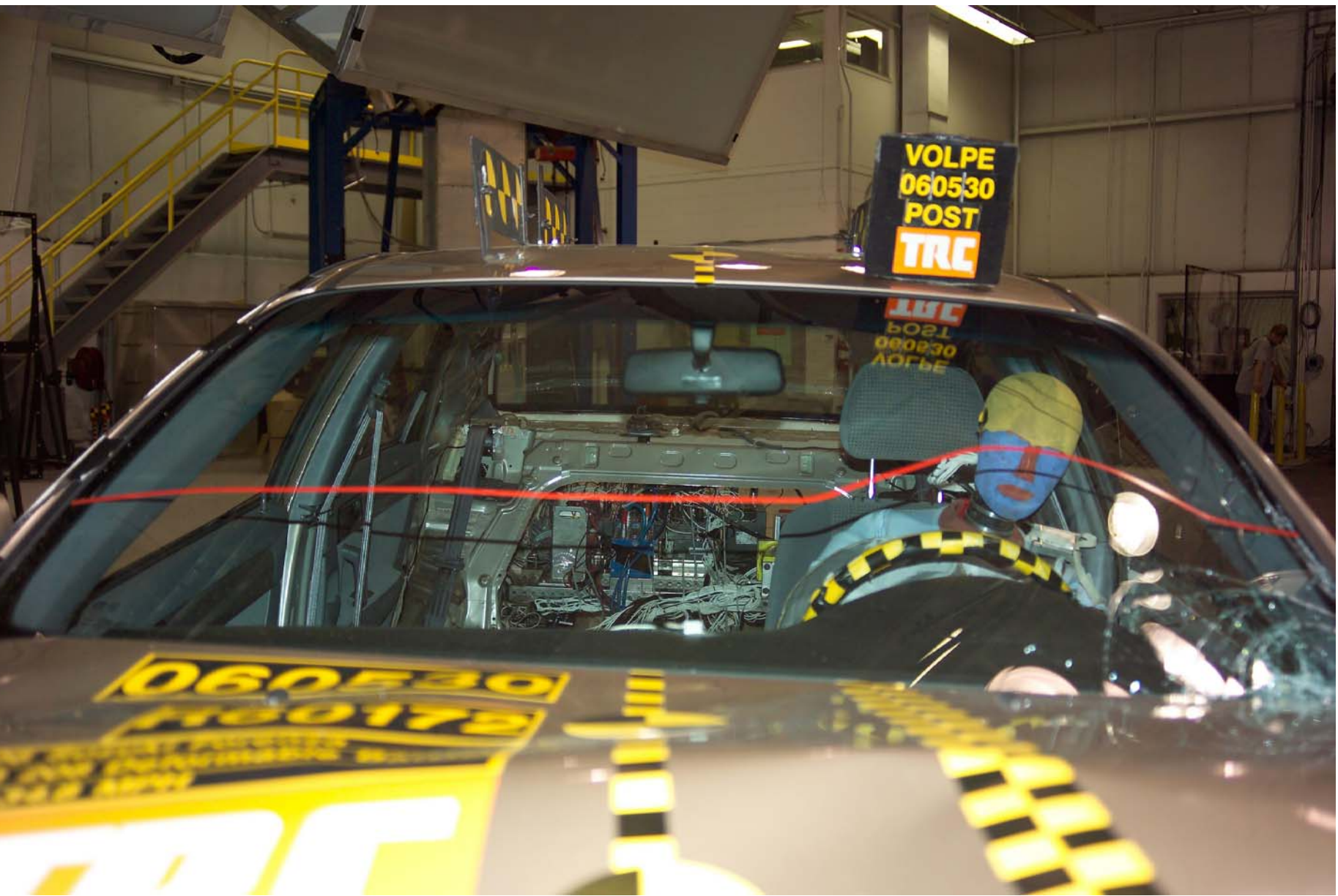


Figure A-40 Post-Test Windshield - Driver Dummy View

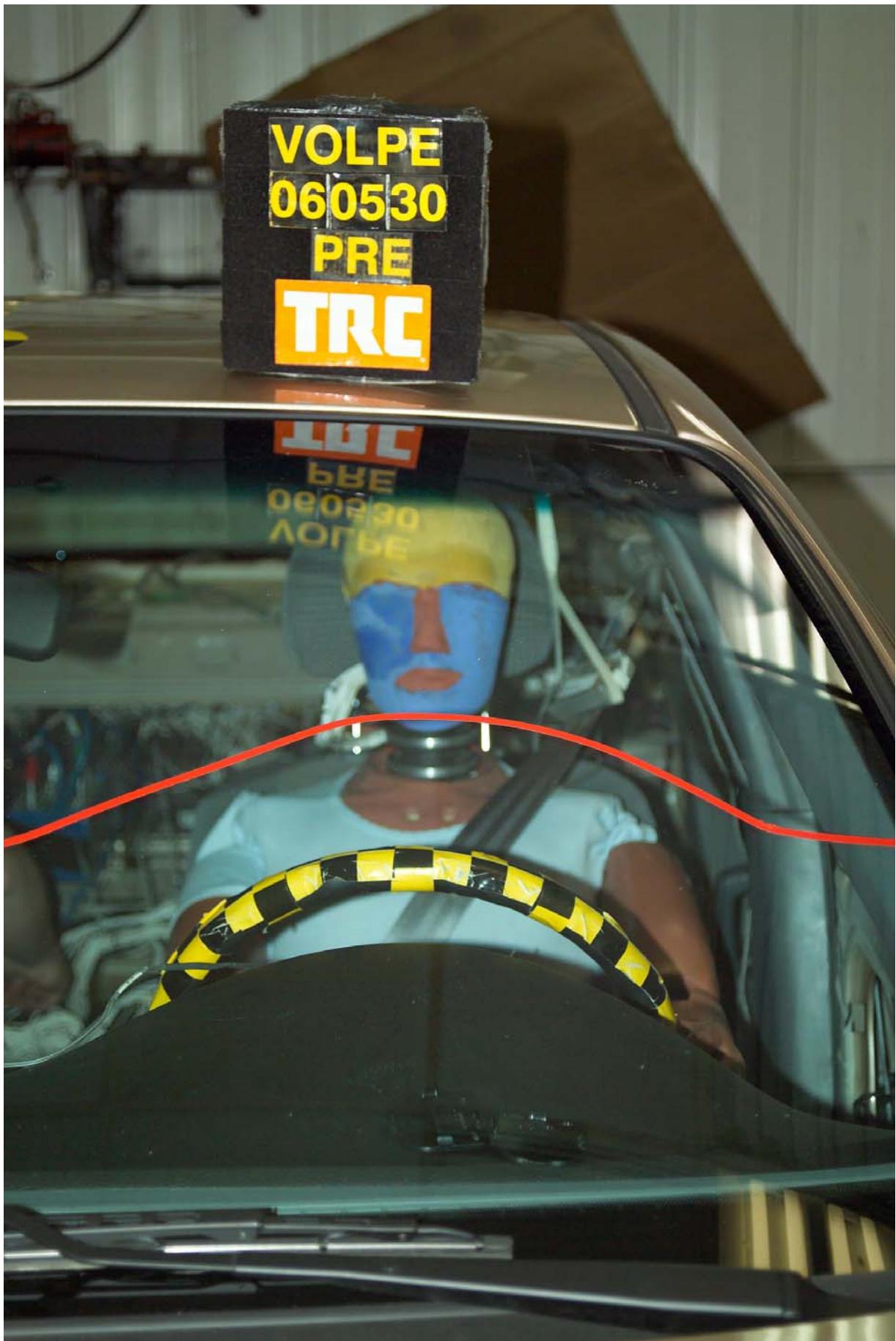


Figure A-41 Pre-Test Driver Dummy - View 1



Figure A-42 Post-Test Driver Dummy - View 1



Figure A-43 Pre-Test Driver Dummy - View 2



Figure A-44 Post-Test Driver Dummy - View 2



Figure A-45 Pre-Test Driver Dummy - View 3



Figure A-46 Post-Test Driver Dummy - View 3





Figure A-48 Post-Test Driver Dummy - View 4



Figure A-49 Post-Test Driver Dummy Overall View



Figure A-50 Post-Test Driver Dummy Head Contact - View 1



Figure A-51 Post-Test Driver Dummy Head Contact - View 2



Figure A-52 Post-Test Driver Dummy Knee Contact View



Figure A-53 Pre-Test Driver Dummy Knee Bolster View



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



Figure A-55 Pre-Test Driver Floorboard Deformation - View 1



Figure A-56 Post-Test Driver Floorboard Deformation - View 1



Figure A-57 Post-Test Driver Floorboard Deformation - View 2



Figure A-58 Pre-Test Driver Toeboard Deformation View



Figure A-59 Post-Test Driver Toeboard Deformation View



Figure A-60 Pre-Test Barrier Front View



Figure A-61 Post-Test Barrier Front View



Figure A-62 Pre-Test Barrier Left Side View

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Figure A-63 Post-Test Barrier Left Side View



Figure A-64 Pre-Test Barrier Right Side View



Figure A-65 Post-Test Barrier Right Side View



Figure A-66 Pre-Test Barrier Top View



Figure A-67 Post-Test Barrier Top View

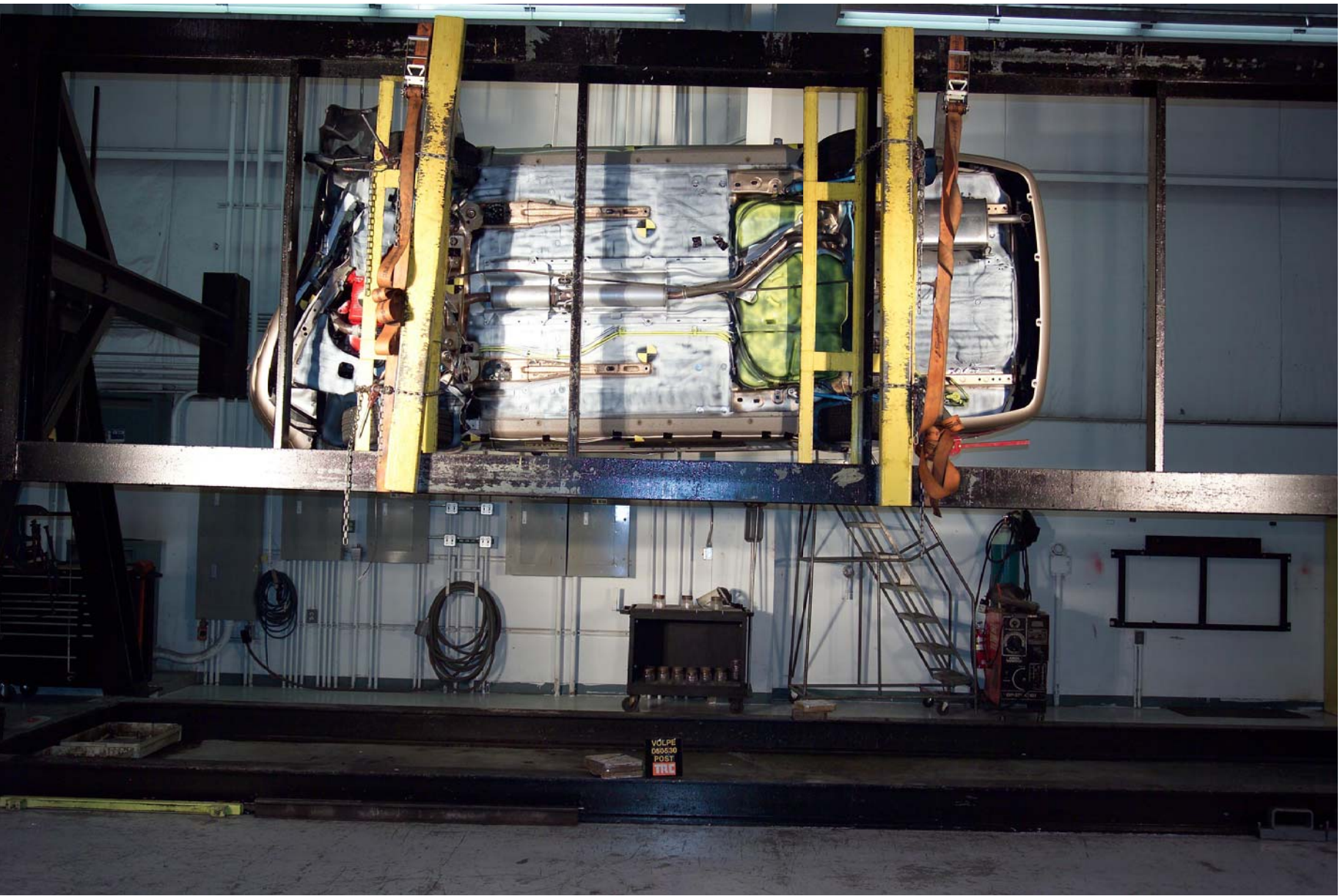


Figure A-68 Vehicle on Rollover Device - 90°

A-69

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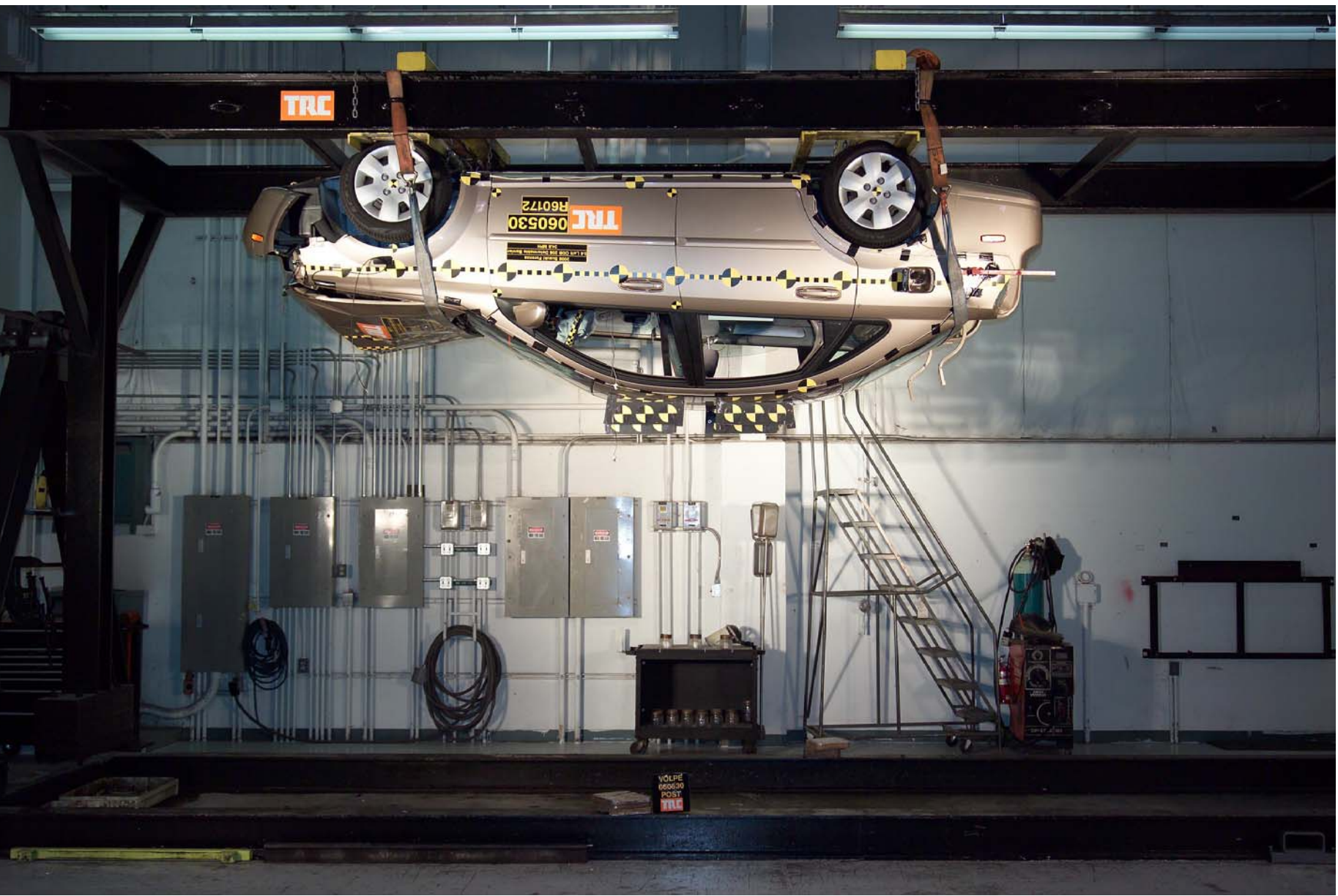


Figure A-69 Vehicle on Rollover Device - 180°

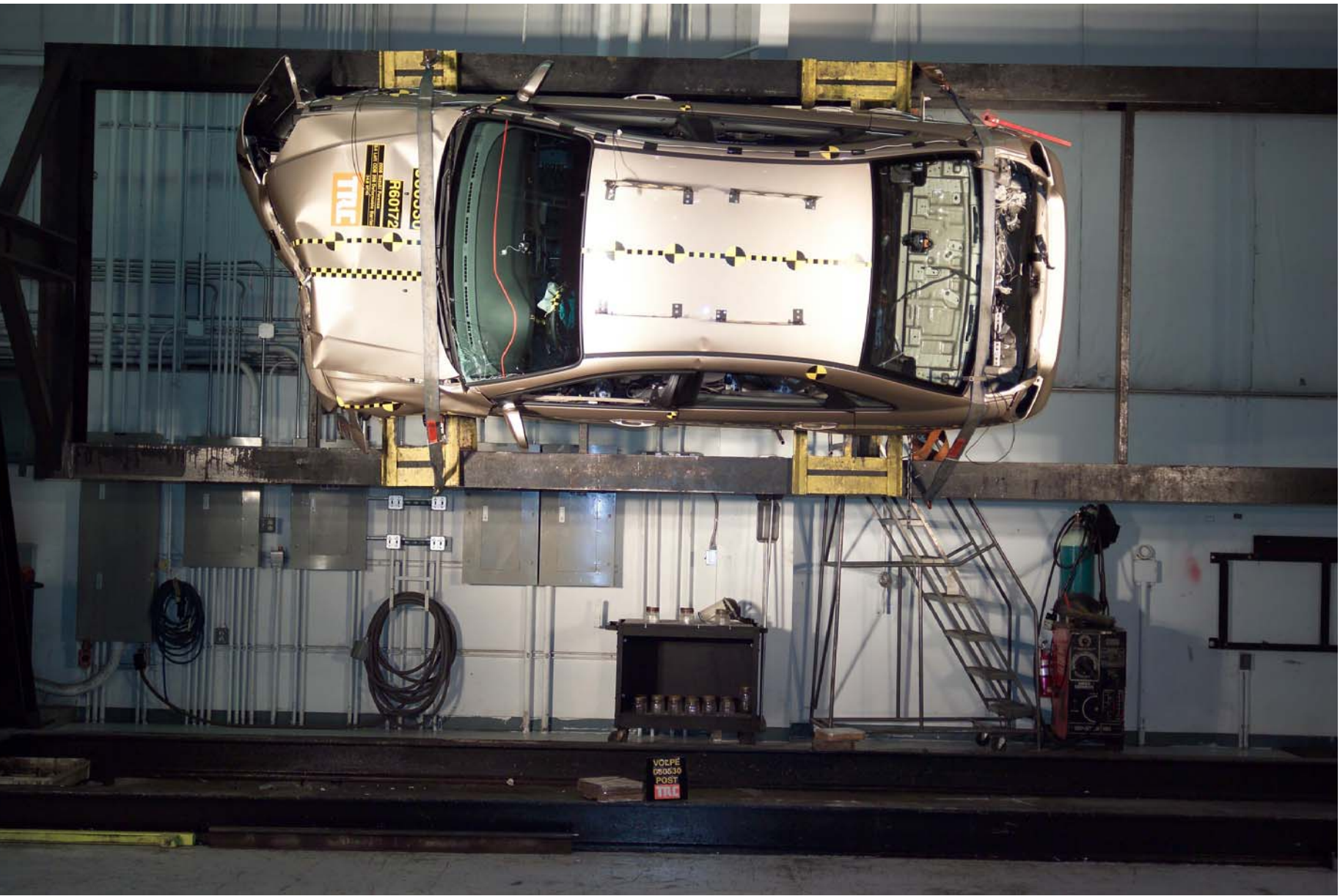


Figure A-70 Vehicle on Rollover Device - 270°

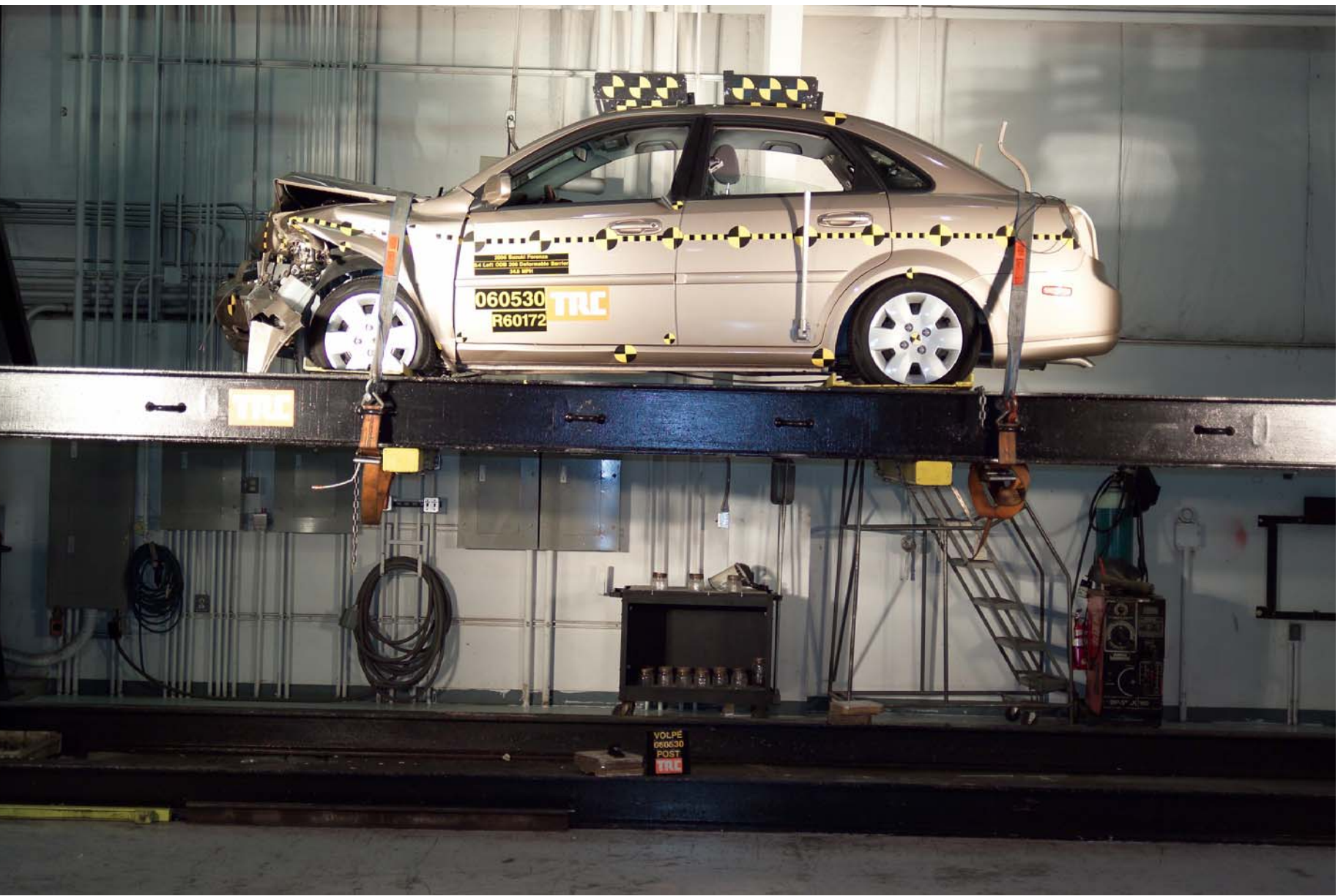


Figure A-71 Vehicle on Rollover Device - 360°



Figure A-72 Vehicle Certification Label View

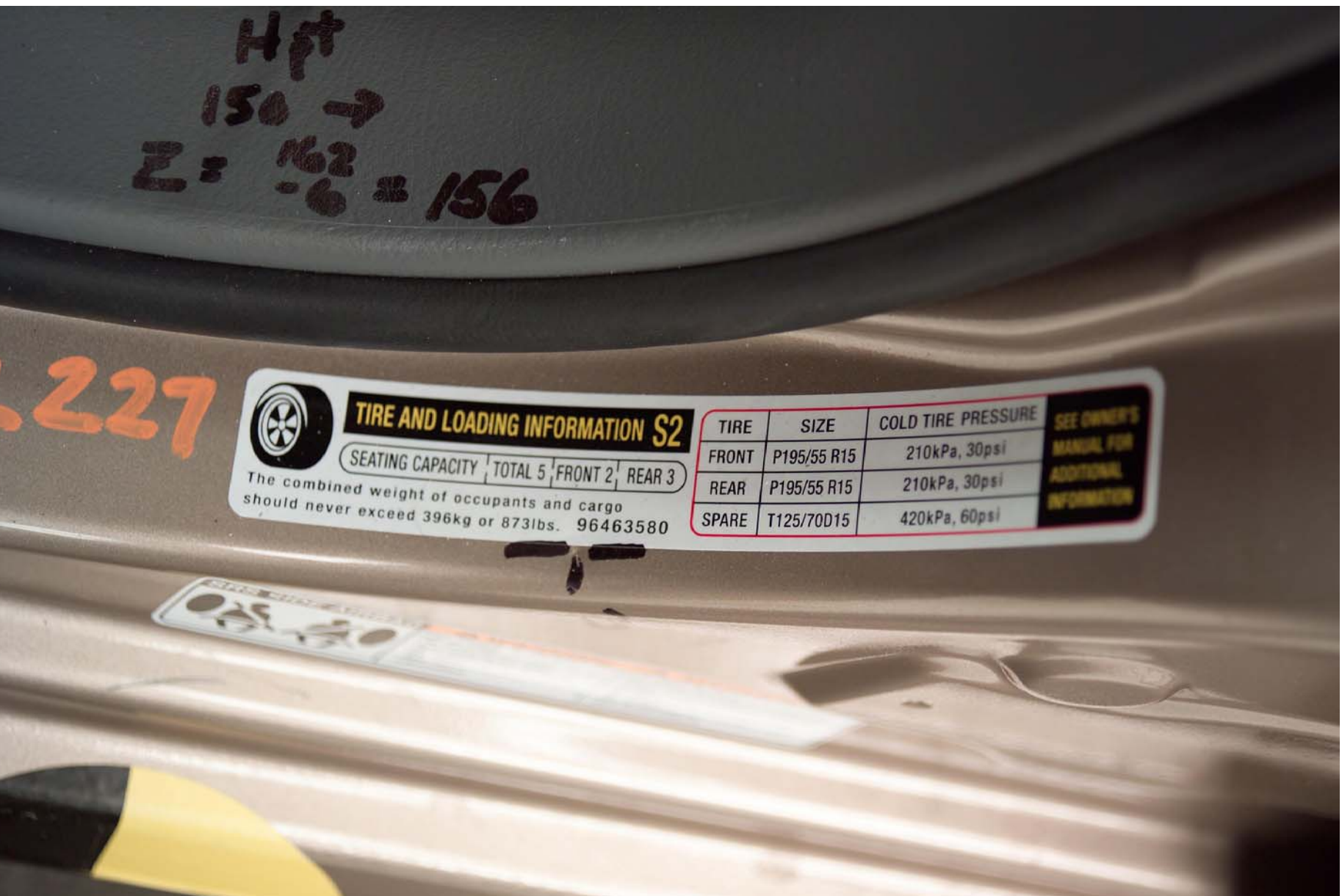


Figure A-73 Vehicle Tire Load Label View

Appendix B

Dummy, Vehicle, and Load Cell Barrier Data Plots

Table of Data Plots
Curve Number Corresponds to NHTSA Database Sequence

<u>Curve No.</u>	<u>Data Plot Title</u>	<u>Page</u>
1	Driver Head X-Axis Acceleration	B-9
2	Driver Head Y-Axis Acceleration	B-10
3	Driver Head Z-Axis Acceleration	B-11
--- ¹	Driver Head Resultant Acceleration	B-12
4	Driver Head X-Axis Acceleration Redundant	B-13
5	Driver Head Y-Axis Acceleration Redundant	B-14
6	Driver Head Z-Axis Acceleration Redundant	B-15
--- ¹	Driver Head Redundant Resultant Acceleration	B-16
7	Driver Head Y-Axis (FT) Acceleration	B-17
8	Driver Head Z-Axis (FT) Acceleration	B-18
9	Driver Head X-Axis (TP) Acceleration	B-19
10	Driver Head Y-Axis (TP) Acceleration	B-20
11	Driver Head X-Axis (LT) Acceleration	B-21
12	Driver Head Z-Axis (LT) Acceleration	B-22
13	Driver Neck X-Axis Shear Force	B-23
14	Driver Neck Y-Axis Shear Force	B-24
15	Driver Neck Z-Axis Axial Force	B-25
16	Driver Neck Moment About X Axis	B-26
17	Driver Neck Moment About Y Axis	B-27
18	Driver Neck Moment About Z Axis	B-28
19	Driver Neck Lower X-Axis Shear Force	B-29
20	Driver Neck Lower Y-Axis Shear Force	B-30
21	Driver Neck Lower Z-Axis Axial Force	B-31
22	Driver Neck Lower Moment About X Axis	B-32
23	Driver Neck Lower Moment About Y Axis	B-33
24	Driver Neck Lower Moment About Z Axis	B-34
25	Driver Chest X-Axis Acceleration	B-35
26	Driver Chest Y-Axis Acceleration	B-36
27	Driver Chest Z-Axis Acceleration	B-37
--- ¹	Driver Chest Resultant Acceleration	B-38
28	Driver Chest X-Axis Acceleration Redundant	B-39

Table of Data Plots, Continued

<u>Curve No.</u>	<u>Data Plot Title</u>	<u>Page</u>
29	Driver Chest Y-Axis Acceleration Redundant	B-40
30	Driver Chest Z-Axis Acceleration Redundant	B-41
--- ¹	Driver Chest Redundant Resultant Acceleration	B-42
31	Driver Chest Deflection	B-43
32	Driver Left Femur Force	B-44
33	Driver Right Femur Force	B-45
34	Driver Left Knee Displacement	B-46
35	Driver Left Upper Tibia X-Axis Force	B-47
36	Driver Left Upper Tibia Y-Axis Force	B-48
37	Driver Left Upper Tibia Z-Axis Force	B-49
38	Driver Left Upper Tibia Moment About X Axis	B-50
39	Driver Left Upper Tibia Moment About Y Axis	B-51
40	Driver Left Tibia X-Axis Acceleration	B-52
41	Driver Left Tibia Y-Axis Acceleration	B-53
42	Driver Left Lower Tibia X-Axis Force	B-54
43	Driver Left Lower Tibia Y-Axis Force	B-55
44	Driver Left Lower Tibia Z-Axis Force	B-56
45	Driver Left Lower Tibia Moment About X-Axis	B-57
46	Driver Left Lower Tibia Moment About Y-Axis	B-58
47	Driver Left Foot Angular X-Axis Rotation	B-59
48	Driver Left Foot Angular Y-Axis Rotation	B-60
49	Driver Left Foot Angular Z-Axis Rotation	B-61
50	Driver Left Foot X-Axis Acceleration	B-62
51	Driver Left Foot Y-Axis Acceleration	B-63
52	Driver Left Foot Z-Axis Acceleration	B-64
--- ¹	Driver Left Foot Resultant Acceleration	B-65
53	Driver Right Knee Displacement	B-66
54	Driver Right Upper Tibia X-Axis Force	B-67
55	Driver Right Upper Tibia Y-Axis Force	B-68
56	Driver Right Upper Tibia Z-Axis Force	B-69
57	Driver Right Upper Tibia Moment About X-Axis	B-70
58	Driver Right Upper Tibia Moment About Y-Axis	B-71

Table of Data Plots, Continued

<u>Curve No.</u>	<u>Data Plot Title</u>	<u>Page</u>
59	Driver Right Tibia X-Axis Acceleration	B-72
60	Driver Right Tibia Y-Axis Acceleration	B-73
61	Driver Right Lower Tibia X-Axis Force	B-74
62	Driver Right Lower Tibia Y-Axis Force	B-75
63	Driver Right Lower Tibia Z-Axis Force	B-76
64	Driver Right Lower Tibia Moment About X-Axis	B-77
65	Driver Right Lower Tibia Moment About Y-Axis	B-78
66	Driver Right Foot to Ankle X-Axis Rotation	B-79
67	Driver Right Foot to Ankle Y-Axis Rotation	B-80
68	Driver Right Foot to Ankle Z-Axis Rotation	B-81
69	Driver Right Foot X-Axis Acceleration	B-82
70	Driver Right Foot Y-Axis Acceleration	B-83
71	Driver Right Foot Z-Axis Acceleration	B-84
--- ¹	Driver Right Foot Resultant Acceleration	B-85
72	Left Rear Seat Crossmember X-Axis Acceleration	B-86
73	Right Rear Seat Crossmember X-Axis Acceleration	B-87
74	Left Rear Seat Crossmember Y-Axis Acceleration	B-88
75	Right Rear Seat Crossmember Y-Axis Acceleration	B-89
76	Top of Engine Block X-Axis Acceleration	B-90
77	Bottom of Engine Block X-Axis Acceleration	B-91
78	Left Front Brake Caliper X-Axis Acceleration	B-92
79	Right Front Brake Caliper X-Axis Acceleration	B-93
80	Instrument Panel X-Axis Acceleration	B-94
81	Left Side Driver Mid Seat Track X-Axis Acceleration	B-95
82	Vehicle CG X-Axis Acceleration	B-96
83	Vehicle CG X-Axis Velocity	B-97
84	Vehicle CG X-Axis Displacement	B-98
85	Vehicle CG Y-Axis Acceleration	B-99
86	Vehicle CG Y-Axis Velocity	B-100
87	Vehicle CG Y-Axis Displacement	B-101
88	Vehicle CG Z-Axis Acceleration	B-102
89	Vehicle CG Z-Axis Velocity	B-103

Table of Data Plots, Continued

<u>Curve No.</u>	<u>Data Plot Title</u>	<u>Page</u>
90	Vehicle CG Z-Axis Displacement	B-104
91	Vehicle CG Resultant Acceleration	B-105
92	Driver Front Airbag 1 Inductive	B-106
93	Driver Front Airbag 2 Inductive	B-107
94	Driver Lap Belt	B-108
95	Driver Shoulder Belt	B-109
96	Load Cell Row 1 Column 1	B-110
97	Load Cell Row 2 Column 1	B-111
98	Load Cell Row 3 Column 1	B-112
99	Load Cell Row 4 Column 1	B-113
100	Load Cell Row 5 Column 1	B-114
101	Load Cell Row 6 Column 1	B-115
102	Load Cell Row 7 Column 1	B-116
103	Load Cell Row 8 Column 1	B-117
104	Load Cell Row 9 Column 1	B-118
105	Load Cell Row 10 Column 1	B-119
106	Load Cell Row 1 Column 2	B-120
107	Load Cell Row 2 Column 2	B-121
108	Load Cell Row 3 Column 2	B-122
109	Load Cell Row 4 Column 2	B-123
110	Load Cell Row 5 Column 2	B-124
111	Load Cell Row 6 Column 2	B-125
112	Load Cell Row 7 Column 2	B-126
113	Load Cell Row 8 Column 2	B-127
114	Load Cell Row 9 Column 2	B-128
115	Load Cell Row 10 Column 2	B-129
116	Load Cell Row 1 Column 3	B-130
117	Load Cell Row 2 Column 3	B-131
118	Load Cell Row 3 Column 3	B-132
119	Load Cell Row 4 Column 3	B-133
120	Load Cell Row 5 Column 3	B-134
121	Load Cell Row 6 Column 3	B-135

Table of Data Plots, Continued

<u>Curve No.</u>	<u>Data Plot Title</u>	<u>Page</u>
122	Load Cell Row 7 Column 3	B-136
123	Load Cell Row 8 Column 3	B-137
124	Load Cell Row 9 Column 3	B-138
125	Load Cell Row 10 Column 3	B-139
126	Load Cell Row 1 Column 4	B-140
127	Load Cell Row 2 Column 4	B-141
128	Load Cell Row 3 Column 4	B-142
129	Load Cell Row 4 Column 4	B-143
130	Load Cell Row 5 Column 4	B-144
131	Load Cell Row 6 Column 4	B-145
132	Load Cell Row 7 Column 4	B-146
133	Load Cell Row 8 Column 4	B-147
134	Load Cell Row 9 Column 4	B-148
135	Load Cell Row 10 Column 4	B-149
136	Load Cell Row 1 Column 5	B-150
137	Load Cell Row 2 Column 5	B-151
138	Load Cell Row 3 Column 5	B-152
139	Load Cell Row 4 Column 5	B-153
140	Load Cell Row 5 Column 5	B-154
141	Load Cell Row 6 Column 5	B-155
142	Load Cell Row 7 Column 5	B-156
143	Load Cell Row 8 Column 5	B-157
144	Load Cell Row 9 Column 5	B-158
145	Load Cell Row 10 Column 5	B-159
146	Load Cell Row 1 Column 6	B-160
147	Load Cell Row 2 Column 6	B-161
148	Load Cell Row 3 Column 6	B-162
149	Load Cell Row 4 Column 6	B-163
141	Load Cell Row 5 Column 6	B-164
142	Load Cell Row 6 Column 6	B-165
143	Load Cell Row 7 Column 6	B-166

Table of Data Plots, Continued

<u>Curve No.</u>	<u>Data Plot Title</u>	<u>Page</u>
144	Load Cell Row 8 Column 6	B-167
145	Load Cell Row 9 Column 6	B-168
146	Load Cell Row 10 Column 6	B-169
147	Load Cell Row 1 Column 7	B-170
148	Load Cell Row 2 Column 7	B-171
149	Load Cell Row 3 Column 7	B-172
150	Load Cell Row 4 Column 7	B-173
151	Load Cell Row 5 Column 7	B-174
152	Load Cell Row 6 Column 7	B-175
153	Load Cell Row 7 Column 7	B-176
154	Load Cell Row 8 Column 7	B-177
155	Load Cell Row 9 Column 7	B-178
156	Load Cell Row 10 Column 7	B-179
157	Load Cell Row 1 Column 8	B-180
158	Load Cell Row 2 Column 8	B-181
159	Load Cell Row 3 Column 8	B-182
160	Load Cell Row 4 Column 8	B-183
161	Load Cell Row 5 Column 8	B-184
162	Load Cell Row 6 Column 8	B-185
163	Load Cell Row 7 Column 8	B-186
164	Load Cell Row 8 Column 8	B-187
165	Load Cell Row 9 Column 8	B-188
166	Load Cell Row 10 Column 8	B-189
167	Load Cell Row 1 Column 9	B-190
168	Load Cell Row 2 Column 9	B-191
169	Load Cell Row 3 Column 9	B-192
170	Load Cell Row 4 Column 9	B-193
171	Load Cell Row 5 Column 9	B-194
172	Load Cell Row 6 Column 9	B-195
173	Load Cell Row 7 Column 9	B-196
174	Load Cell Row 8 Column 9	B-197

Table of Data Plots, Continued

<u>Curve No.</u>	<u>Data Plot Title</u>	<u>Page</u>
175	Load Cell Row 9 Column 9	B-198
176	Load Cell Row 10 Column 9	B-199

¹ Curve is not included in NHTSA database.



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

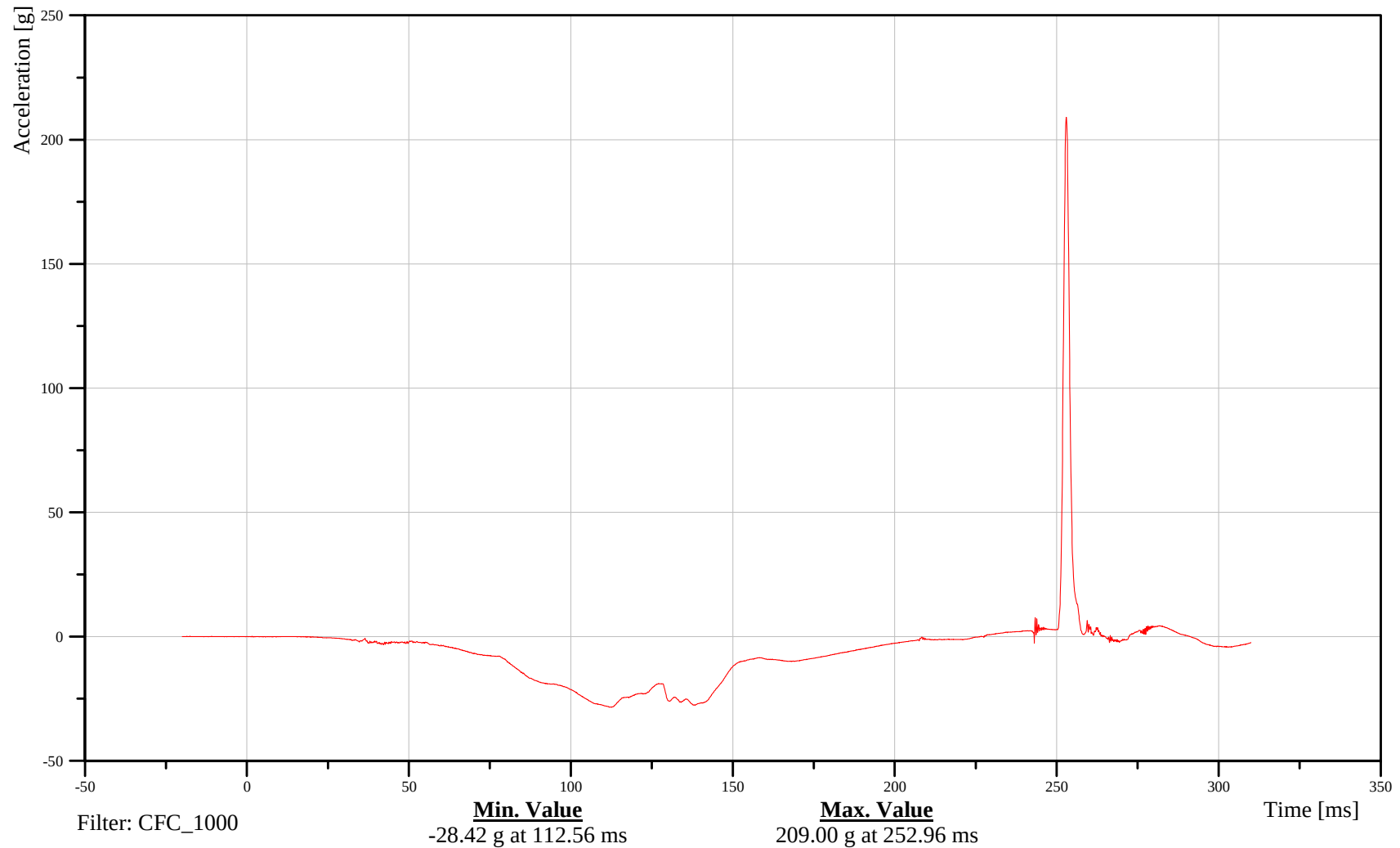
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Time: 14:51

Head X-Axis Acceleration

Customer: Volpe
Test Number: R60172

11HEADCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-9

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

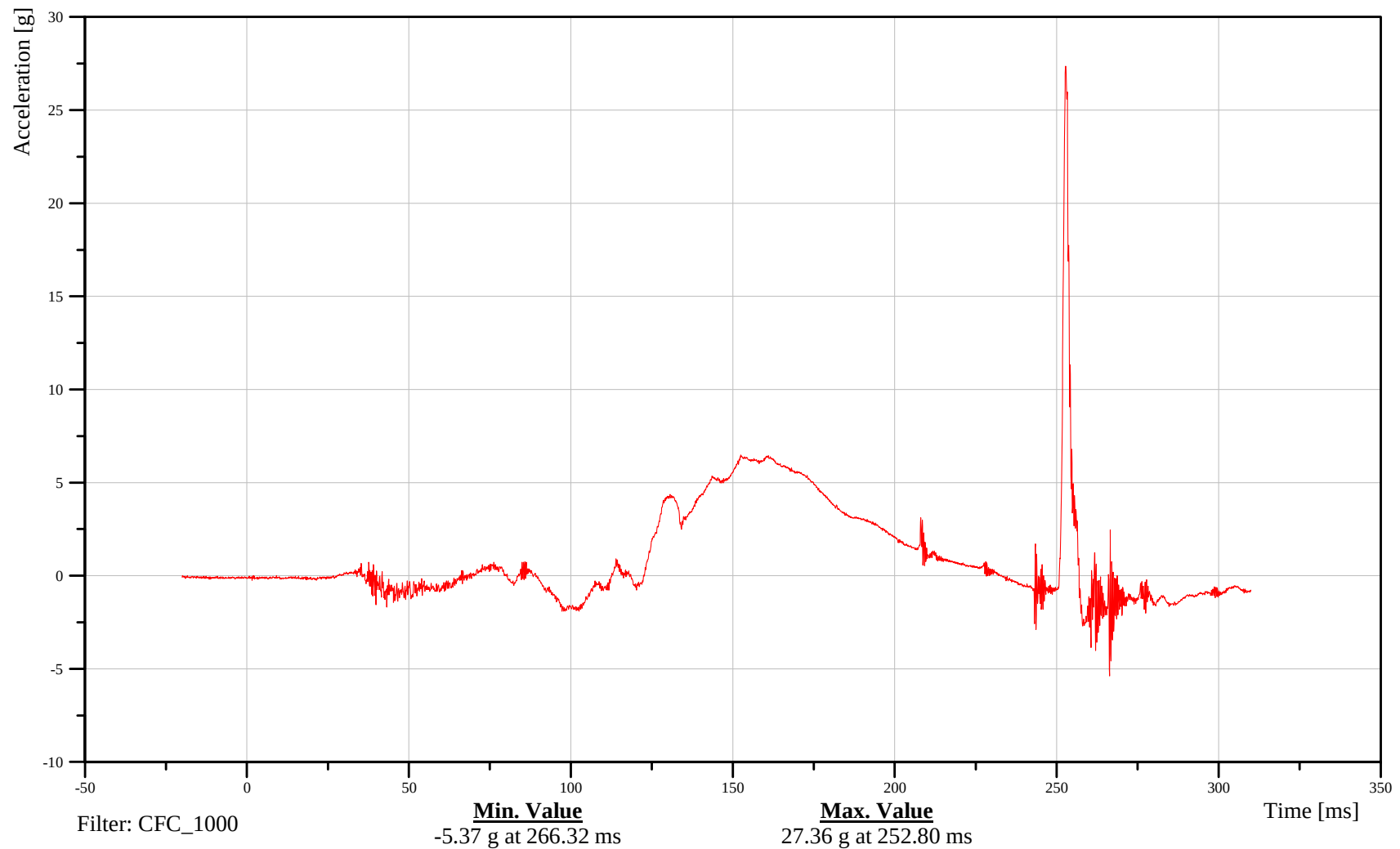
Date: 05/30/2006
Time: 14:51

Head Y-Axis Acceleration

Customer: Volpe
Test Number: R60172

11HEADCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-10

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

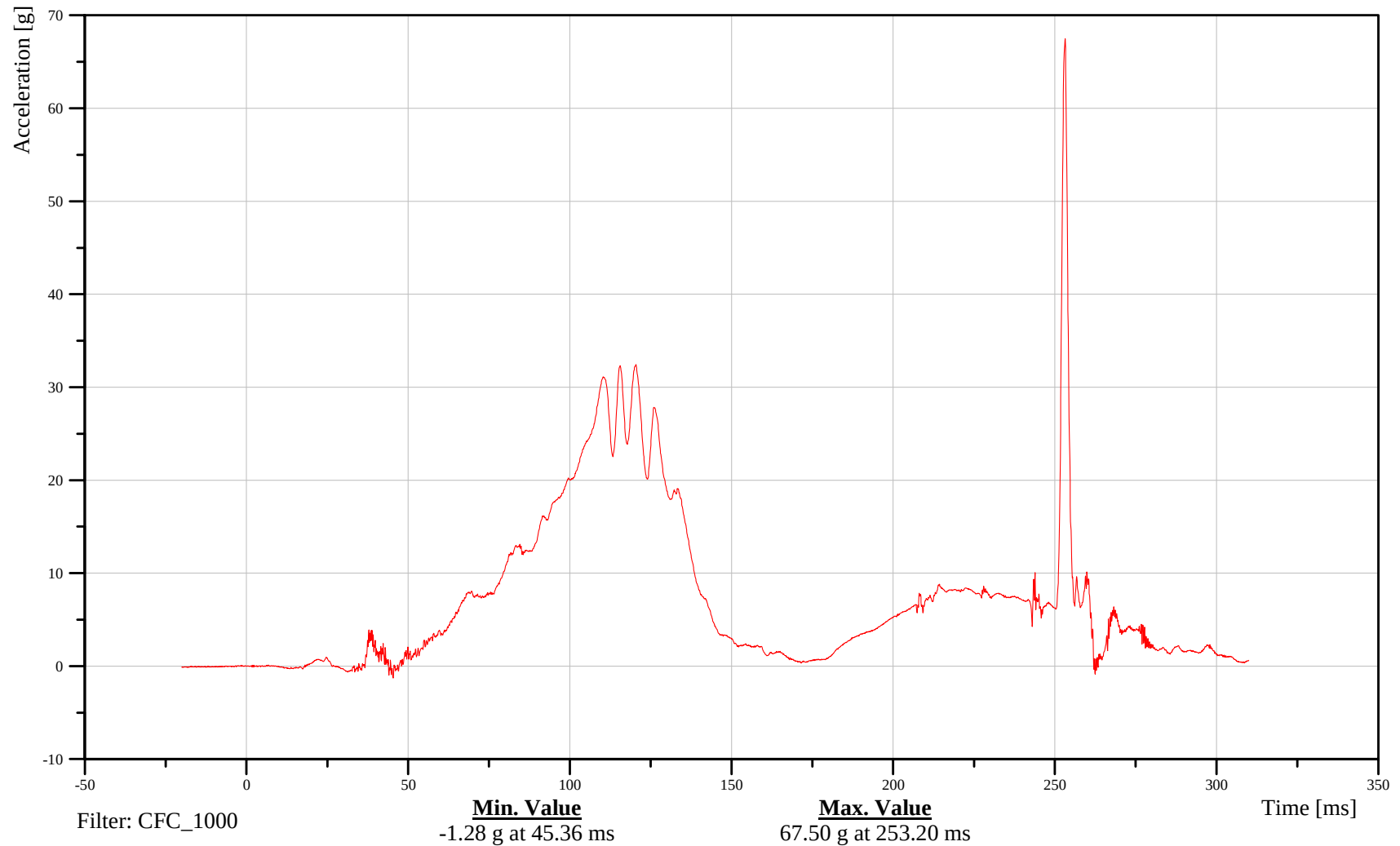
Date: 05/30/2006
Time: 14:51

Head Z-Axis Acceleration

Customer: Volpe
Test Number: R60172

11HEADCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-11

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

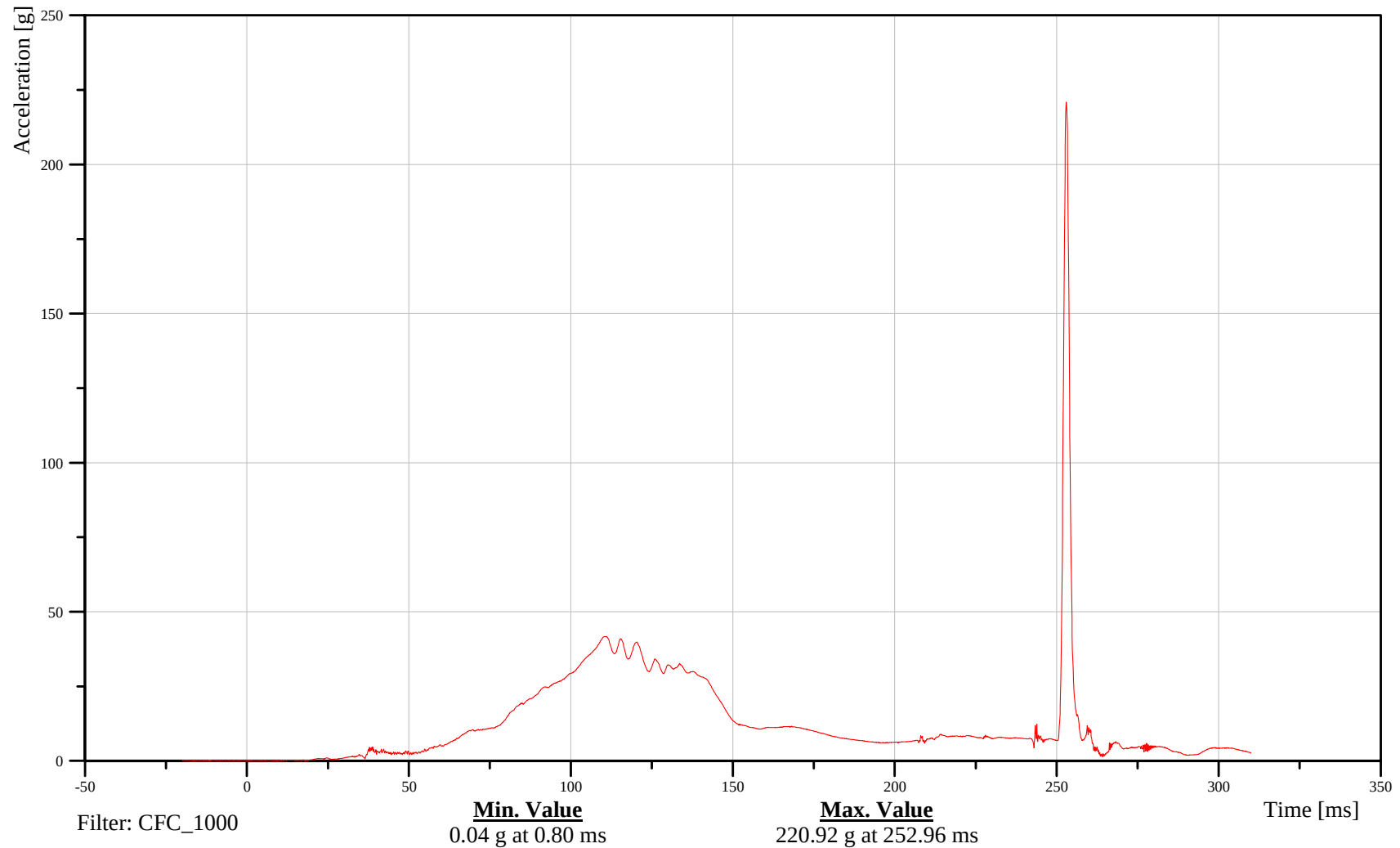
Date: 05/30/2006
Time: 14:51

Head Resultant Acceleration

Customer: Volpe
Test Number: R60172

11HEADCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-12

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

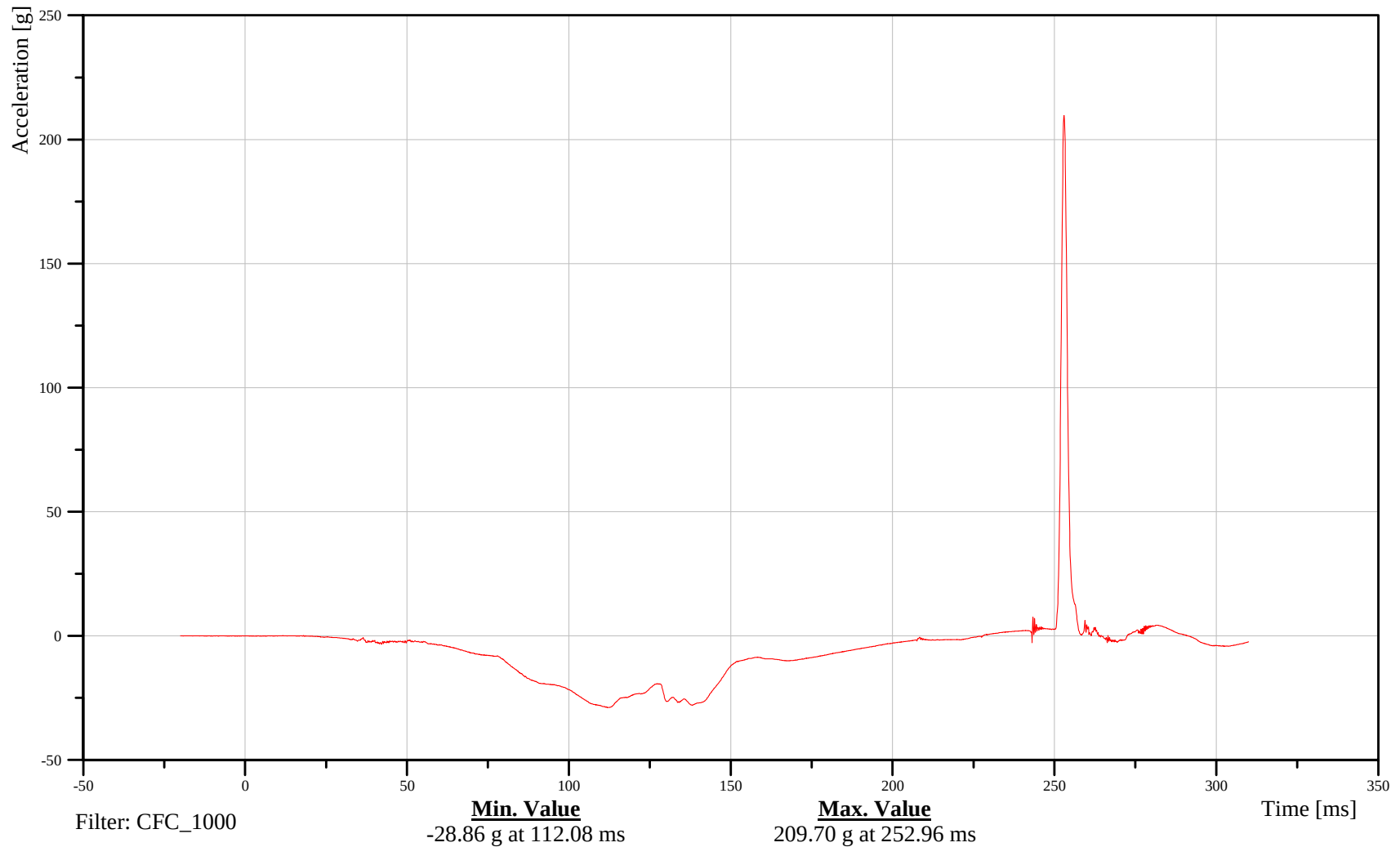
Date: 05/30/2006
Time: 14:51

Head X-Axis Redundant Acceleration

Customer: Volpe
Test Number: R60172

11HEADCGRDH3ACXA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-13

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

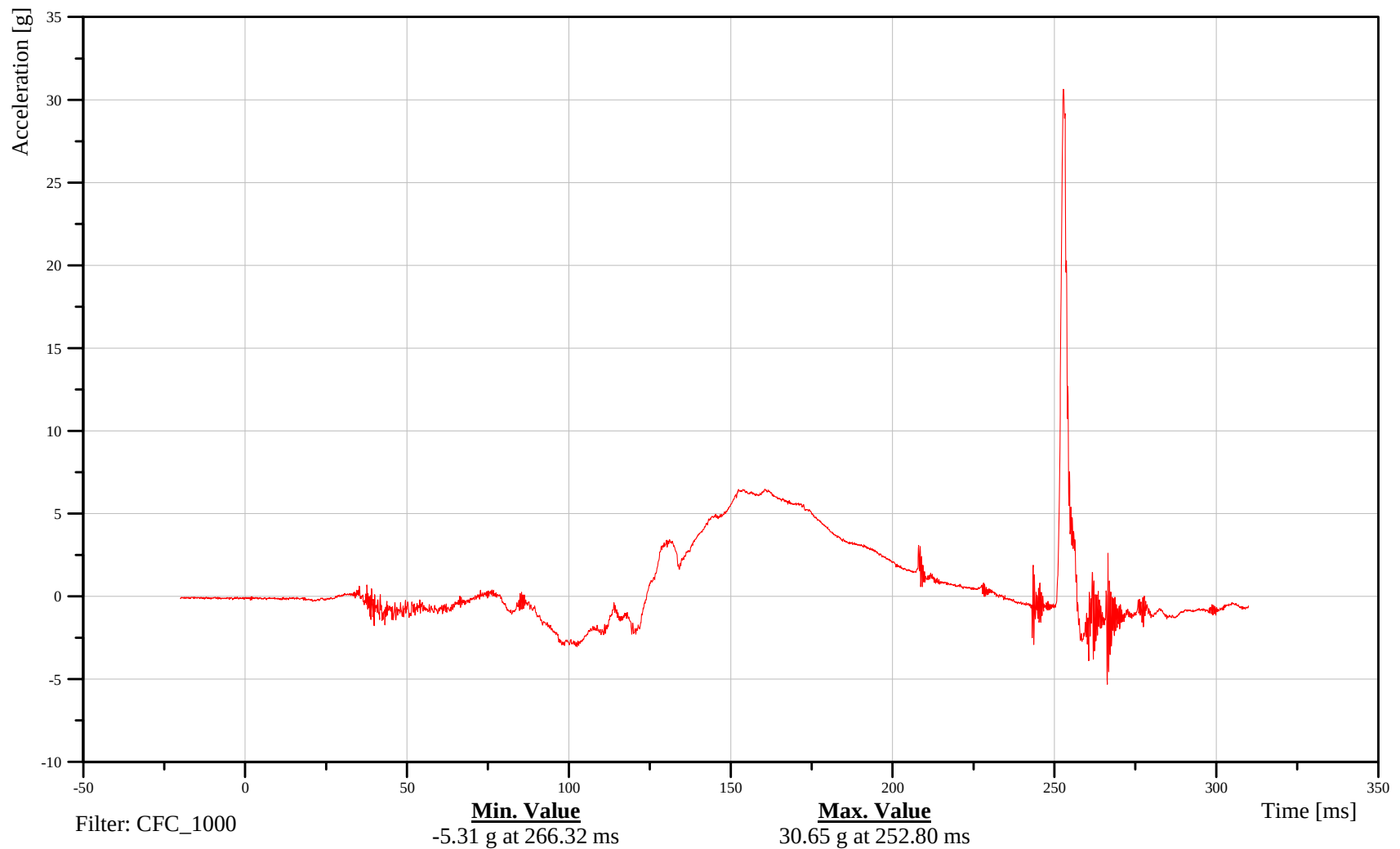
Date: 05/30/2006
Time: 14:51

Head Y-Axis Redundant Acceleration

Customer: Volpe
Test Number: R60172

11HEADCGRDH3ACYA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-14

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

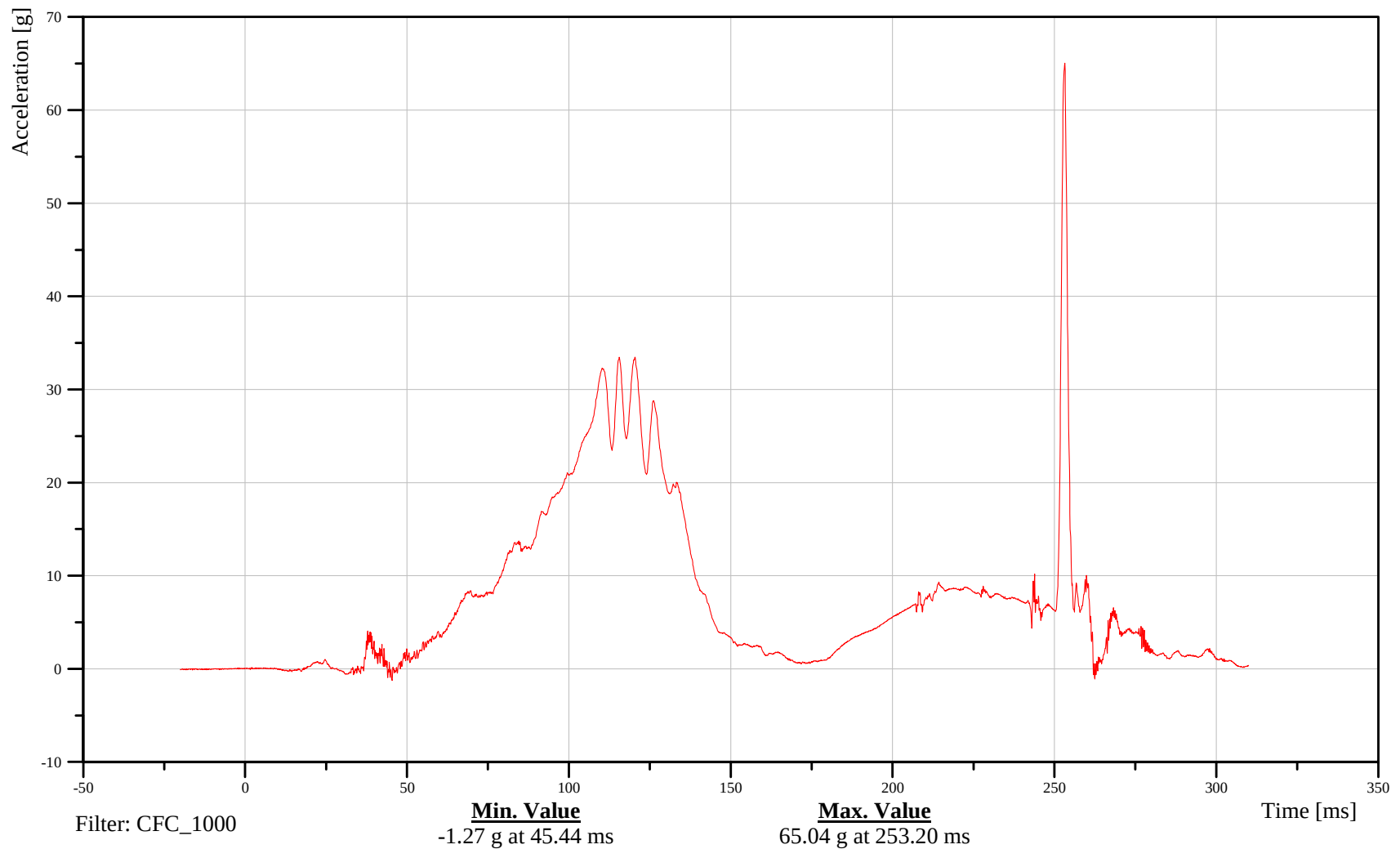
Date: 05/30/2006
Time: 14:51

Head Z-Axis Redundant Acceleration

Customer: Volpe
Test Number: R60172

11HEADCGRDH3ACZA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-15

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

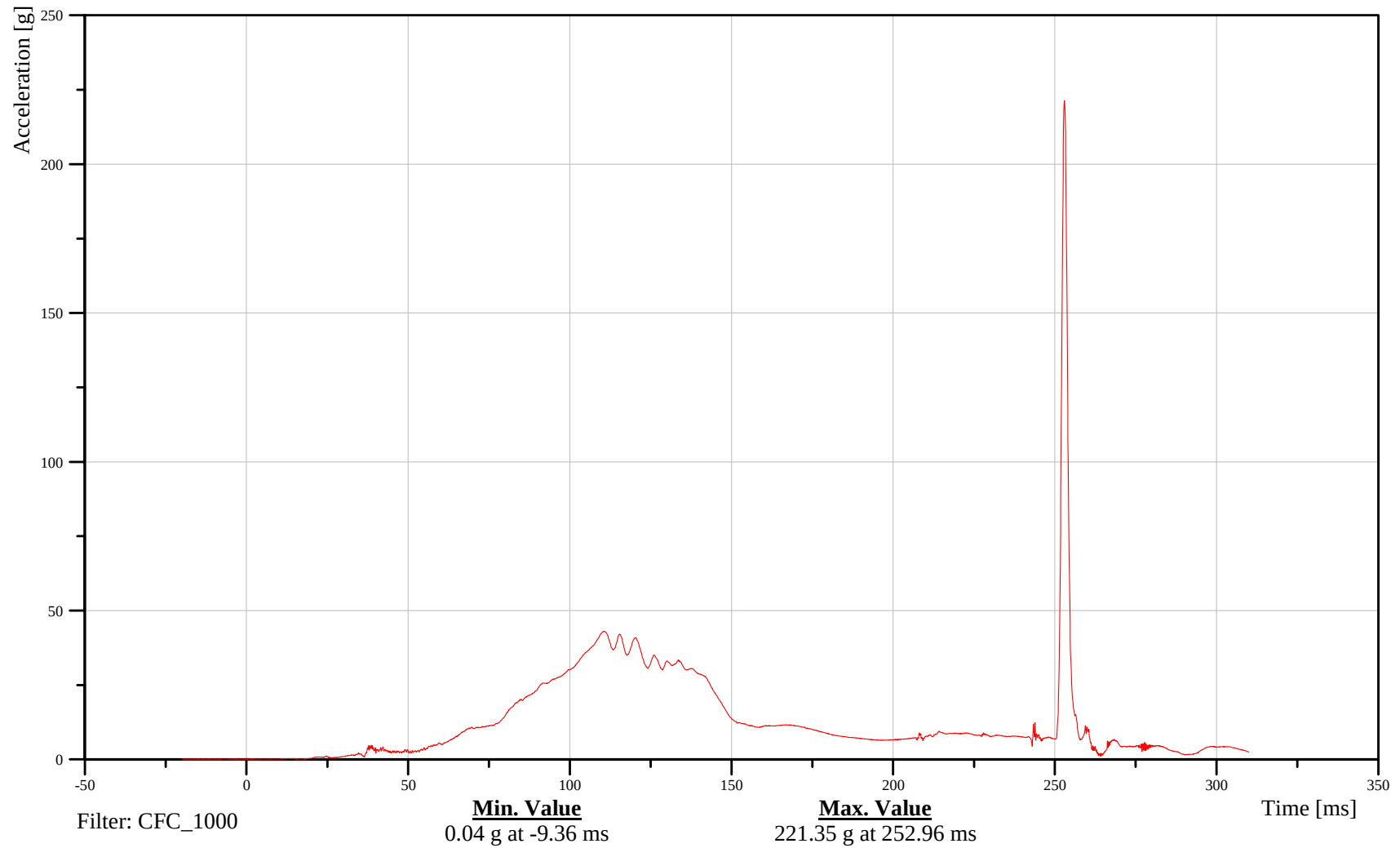
Date: 05/30/2006
Time: 14:51

Head Redundant Resultant Acceleration

Customer: Volpe
Test Number: R60172

11HEADCGRDH3ACRA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-16

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

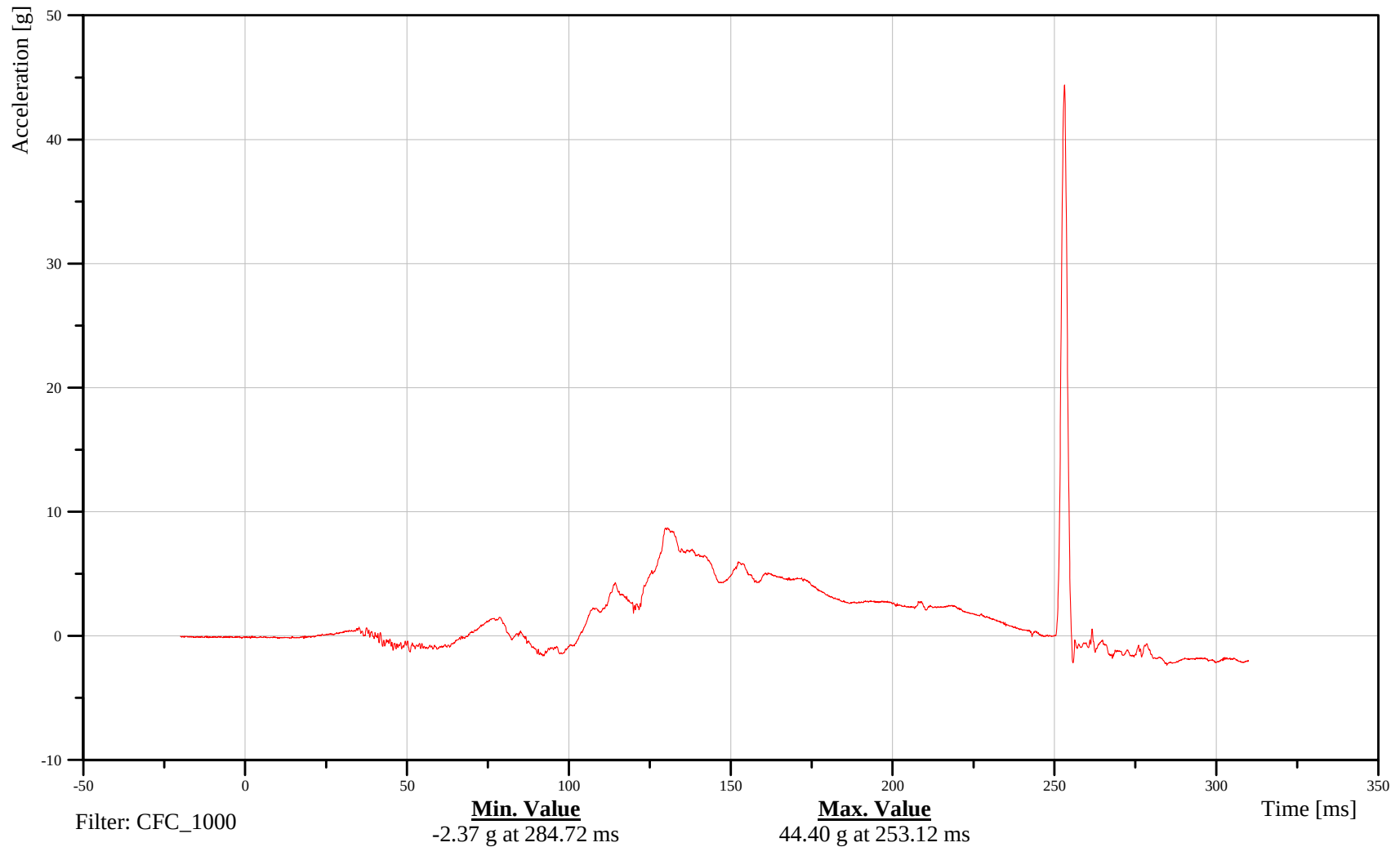
Date: 05/30/2006
Time: 14:51

Head (FT) Y-Axis Acceleration

Customer: Volpe
Test Number: R60172

11HEADFR00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-17

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

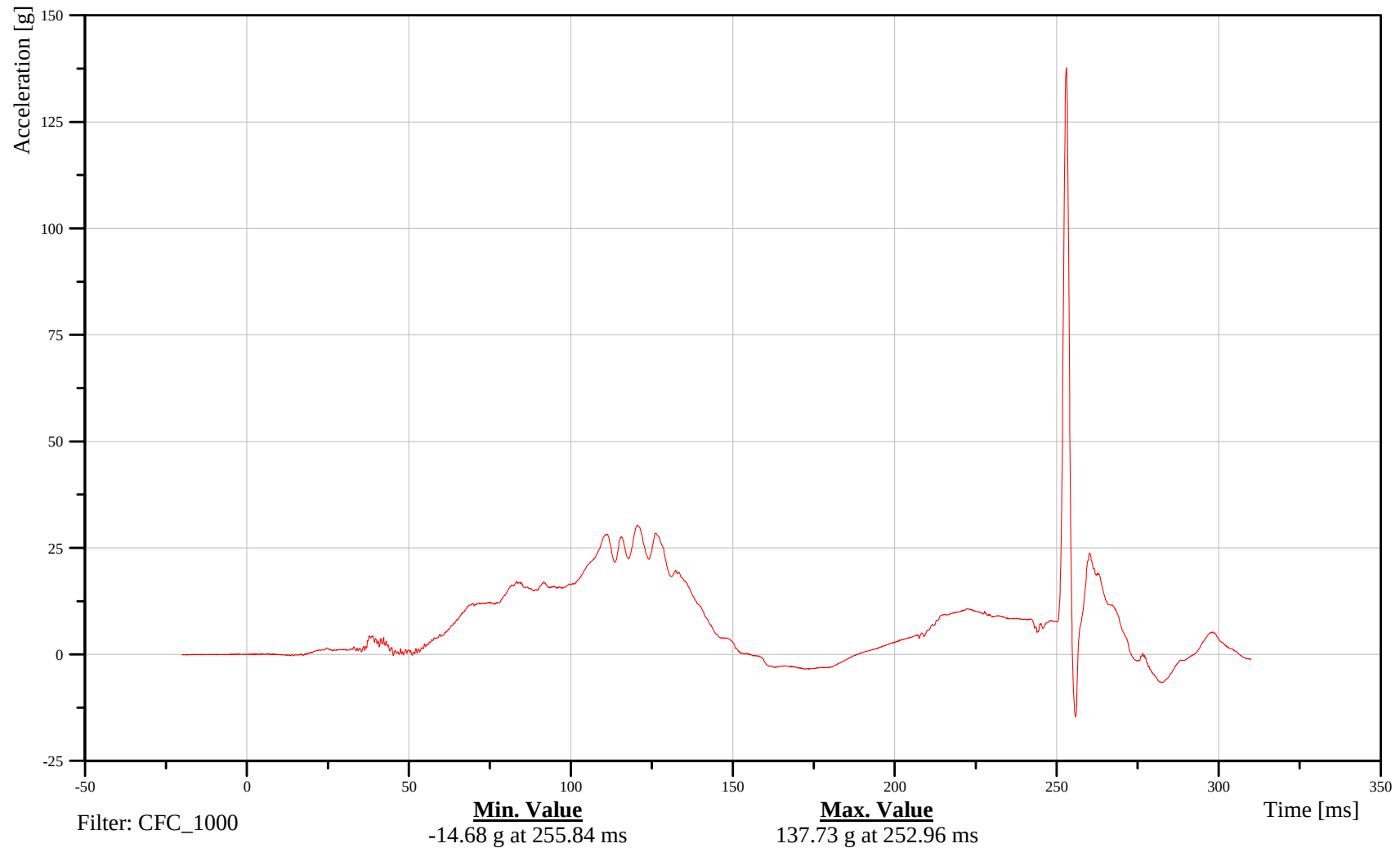
Date: 05/30/2006
Time: 14:51

Head (FT) Z-Axis Acceleration

Customer: Volpe
Test Number: R60172

11HEADFR00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-18

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

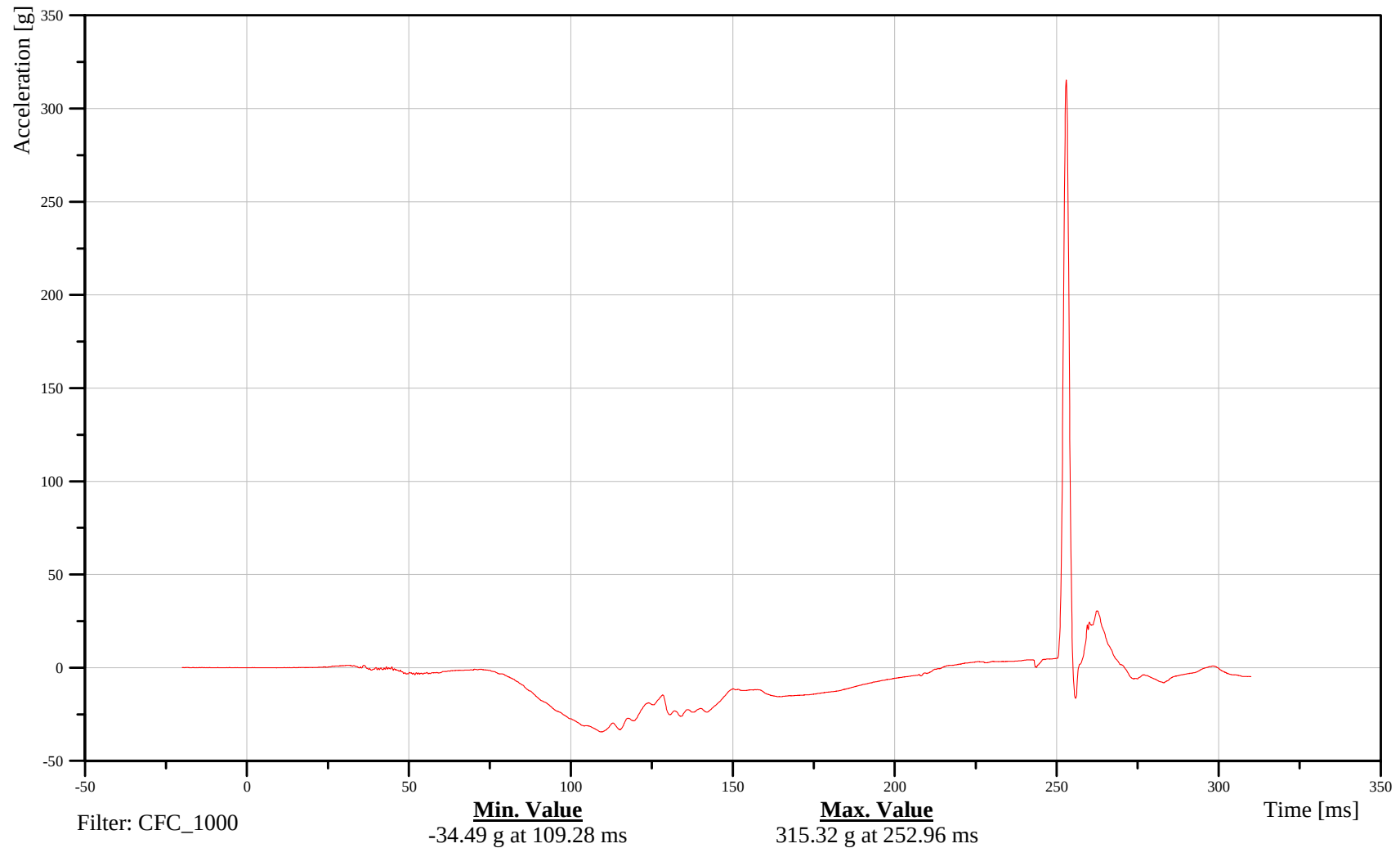
Date: 05/30/2006
Time: 14:51

Head (TP) X-Axis Acceleration

Customer: Volpe
Test Number: R60172

11HEADUP00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-19

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

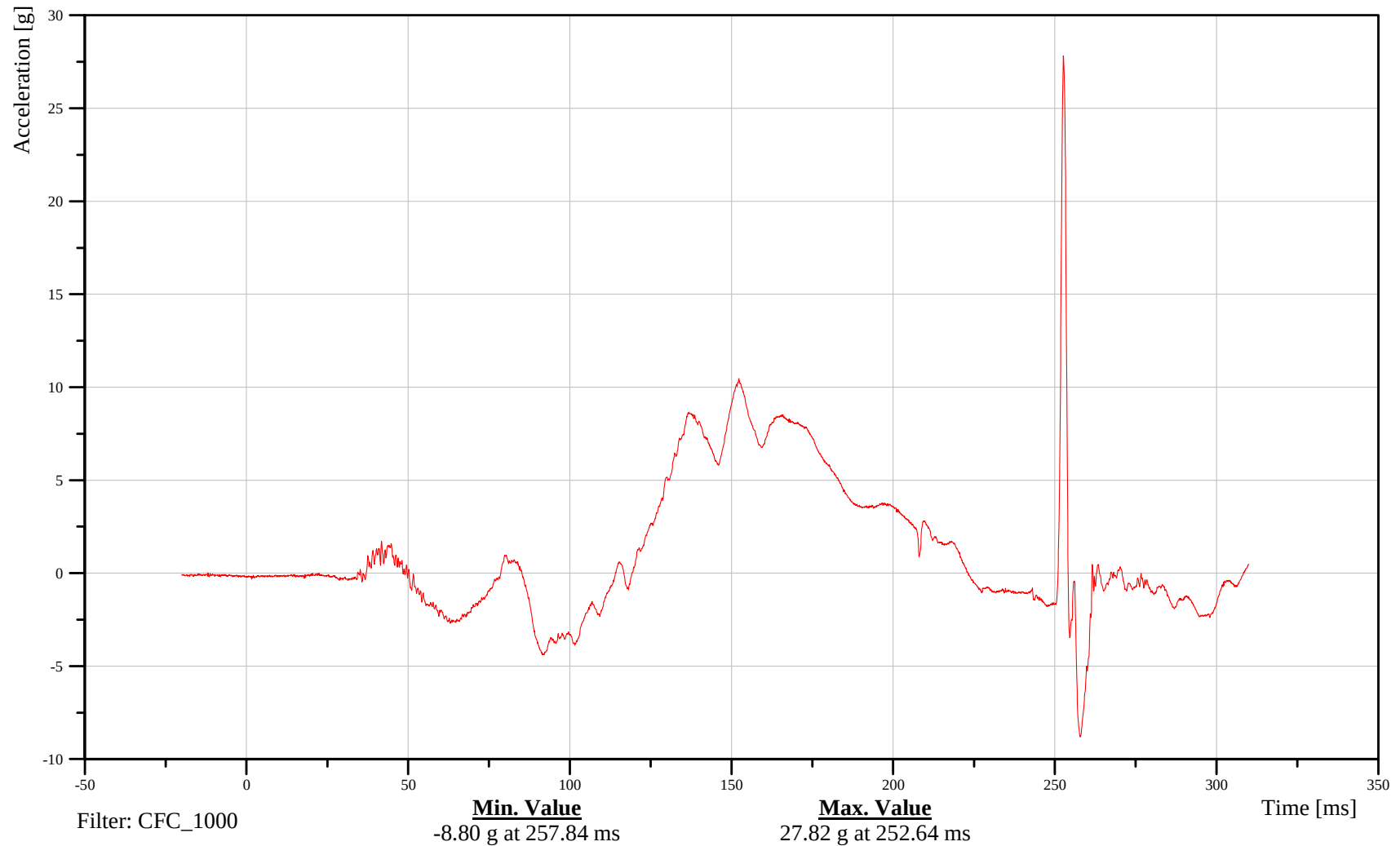
Date: 05/30/2006
Time: 14:51

Head (TP) Y-Axis Acceleration

Customer: Volpe
Test Number: R60172

11HEADUP00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-20

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

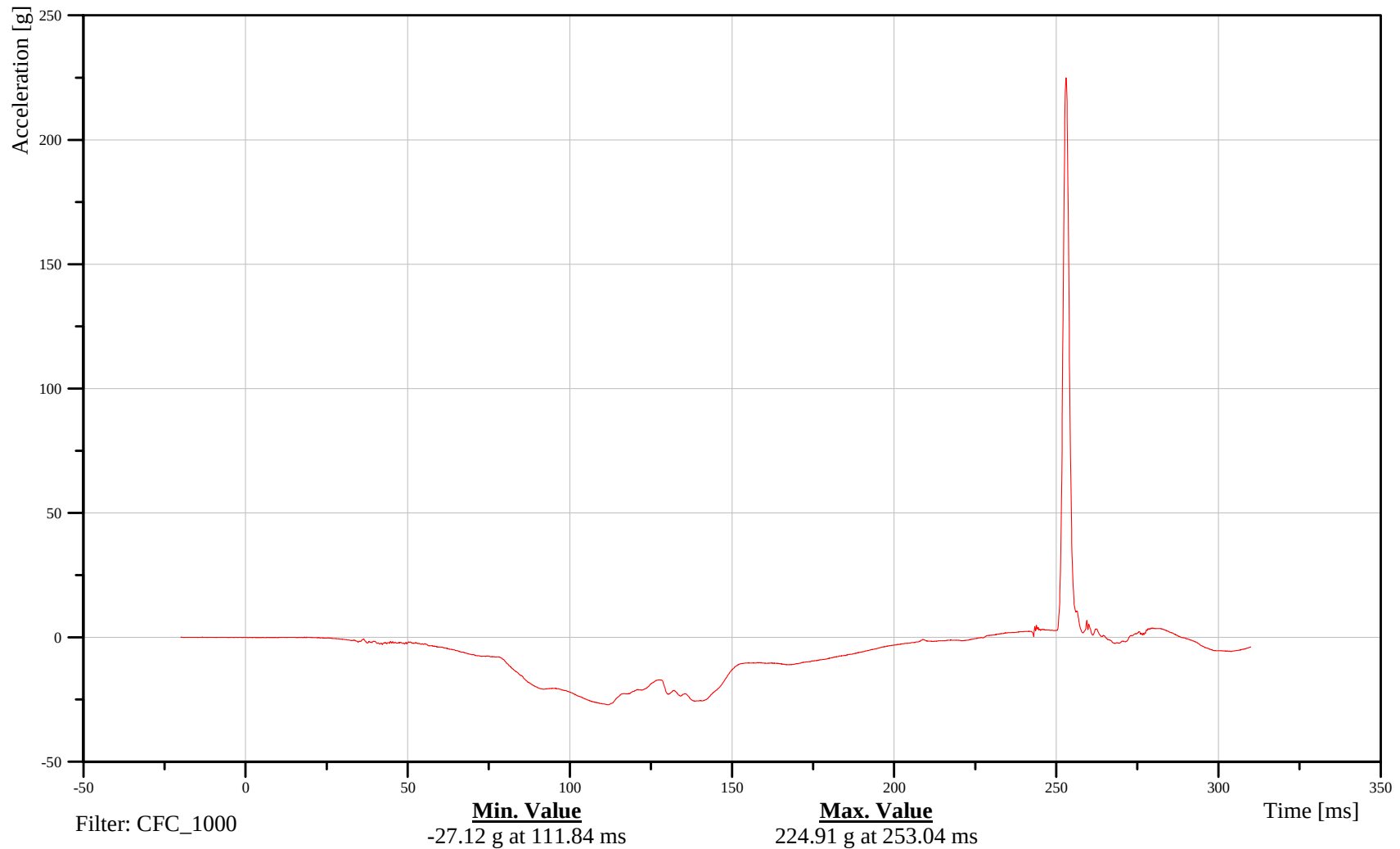
Date: 05/30/2006
Time: 14:51

Head (LT) X-Axis Acceleration

Customer: Volpe
Test Number: R60172

11HEADLE00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-21

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

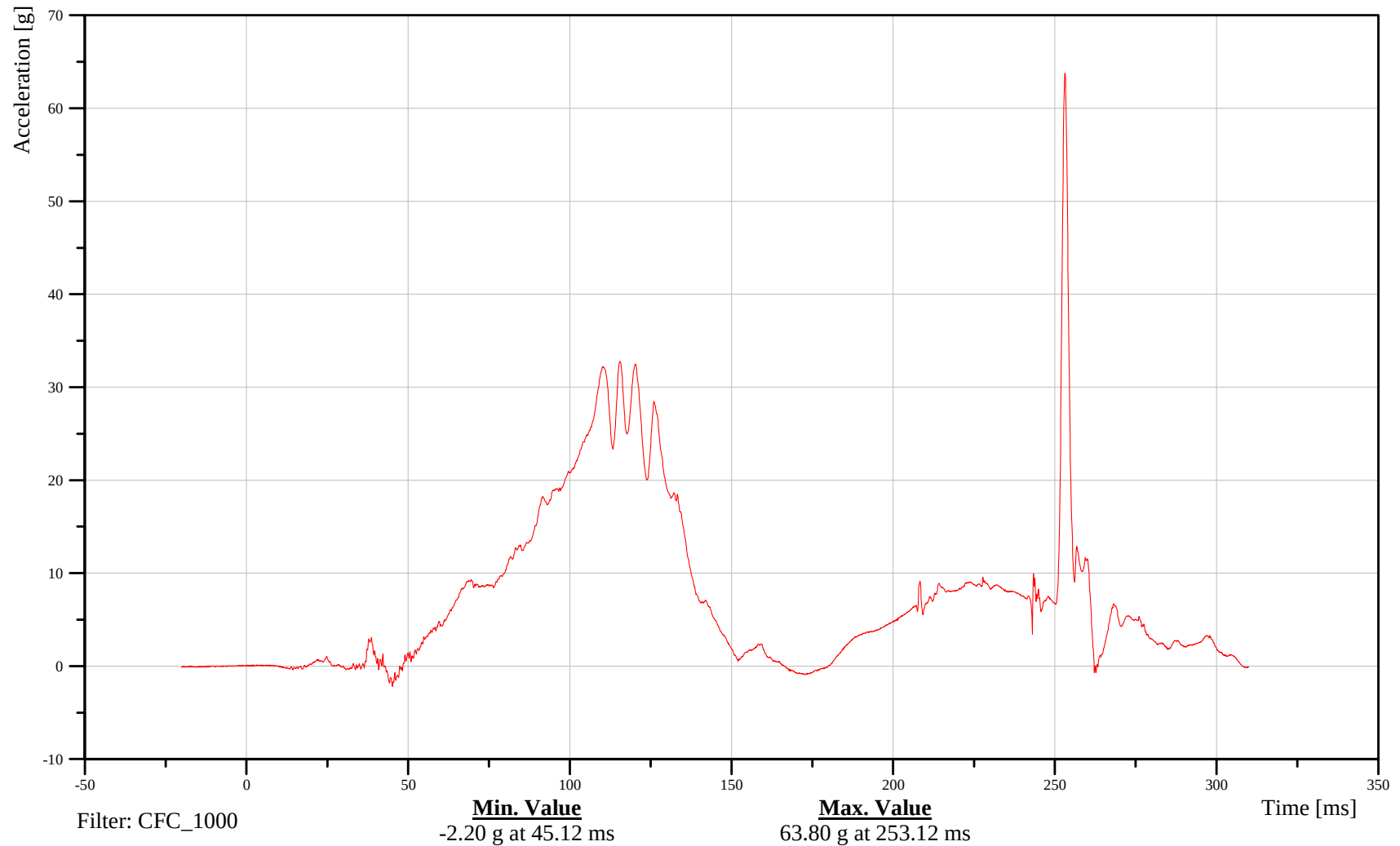
Date: 05/30/2006
Time: 14:51

Head (LT) Z-Axis Acceleration

Customer: Volpe
Test Number: R60172

11HEADLE00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-22

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

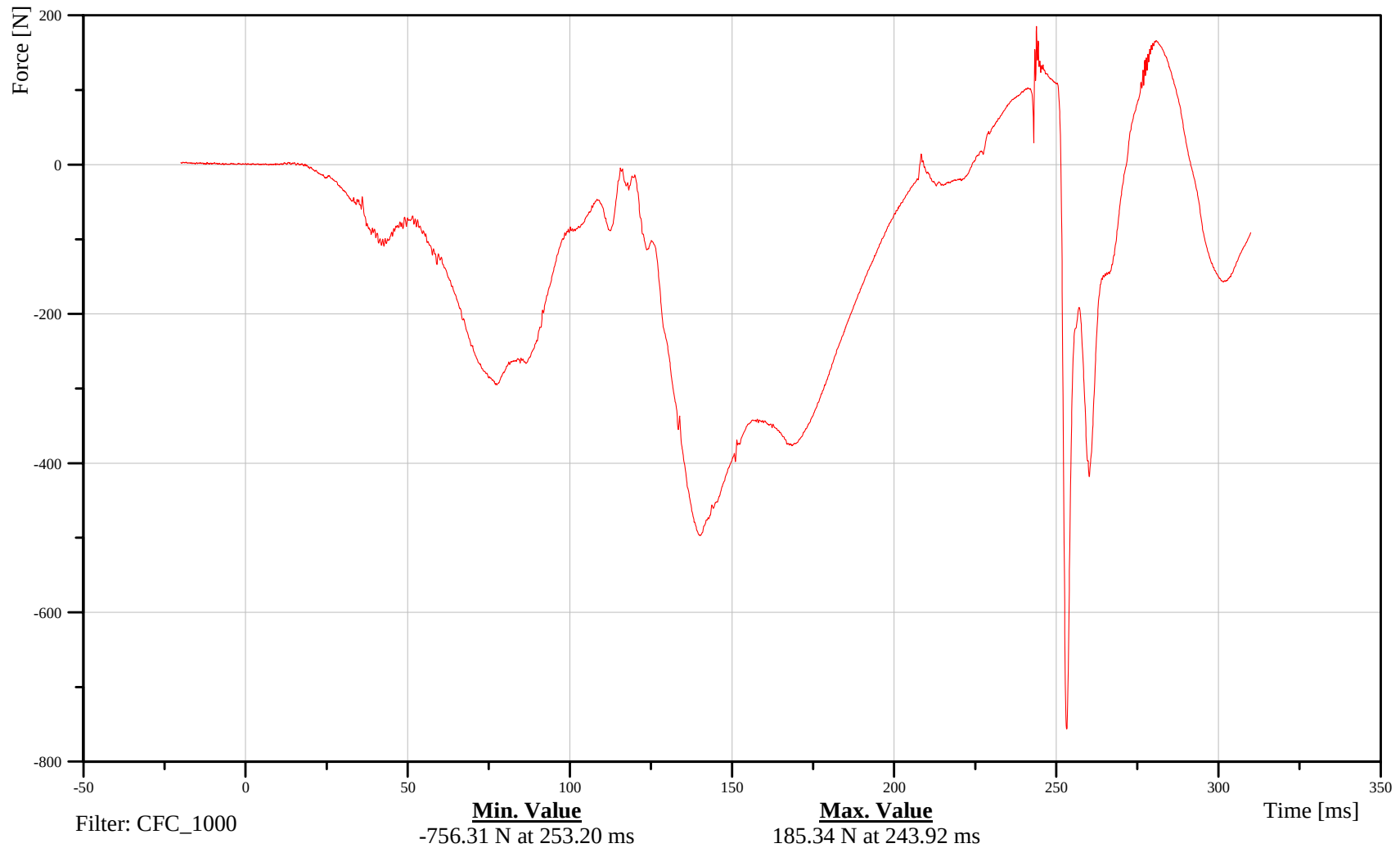
Date: 05/30/2006
Time: 14:51

Upper Neck X-Axis Force

Customer: Volpe
Test Number: R60172

11NECKUP00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-23

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

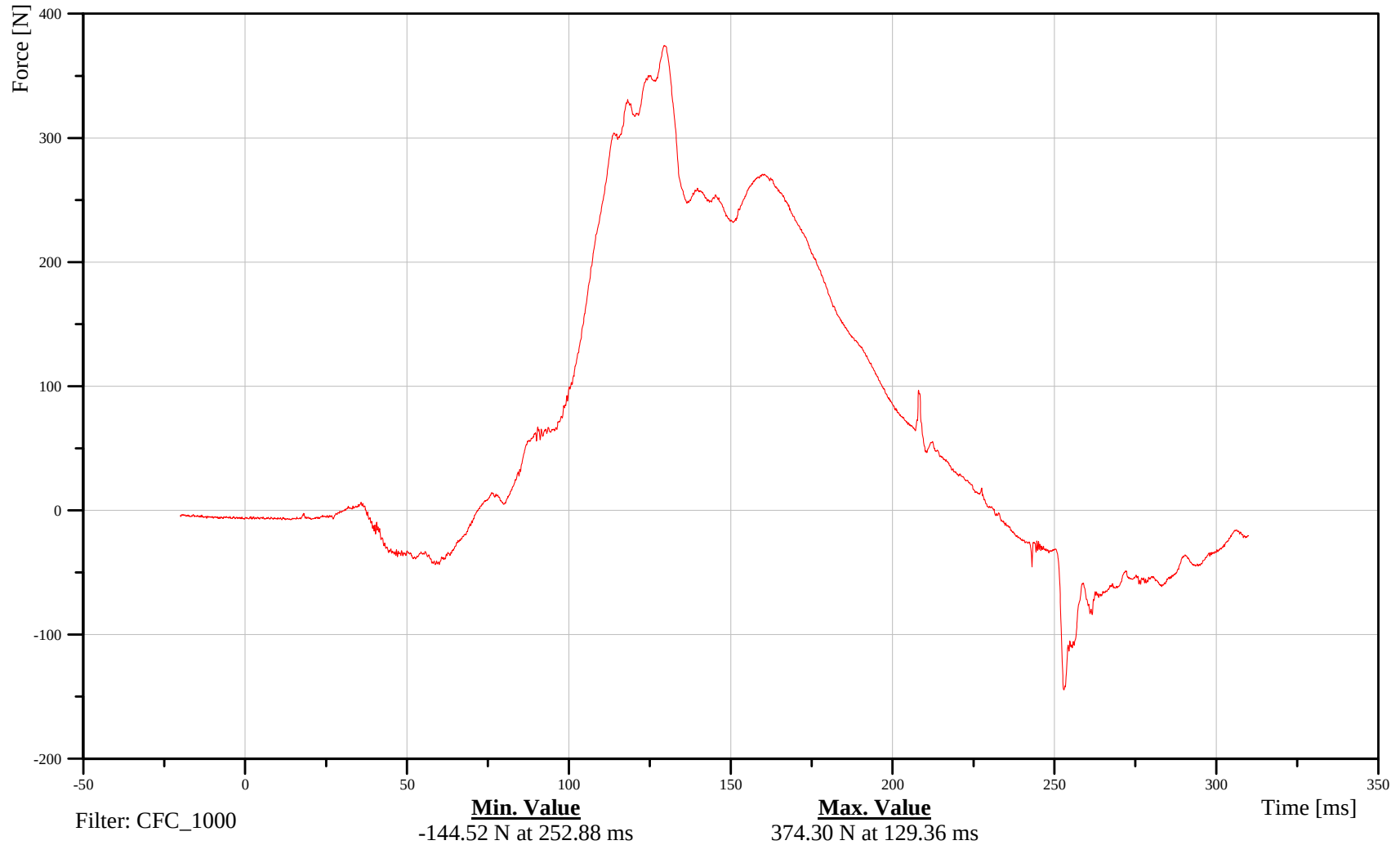
Date: 05/30/2006
Time: 14:51

Upper Neck Y-Axis Force

Customer: Volpe
Test Number: R60172

11NECKUP00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-24

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

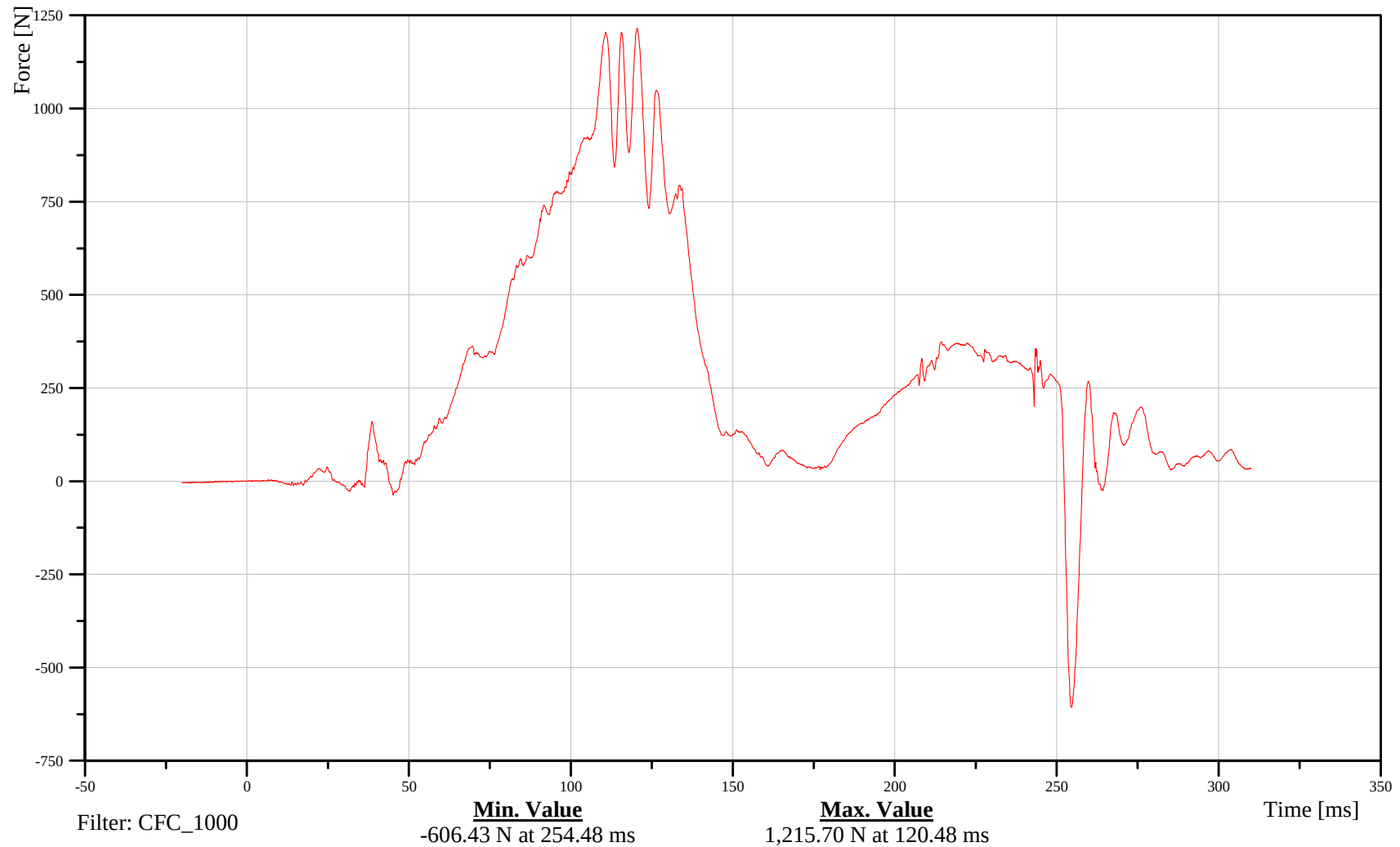
Date: 05/30/2006
Time: 14:51

Upper Neck Z-Axis Force

Customer: Volpe
Test Number: R60172

11NECKUP00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-25

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

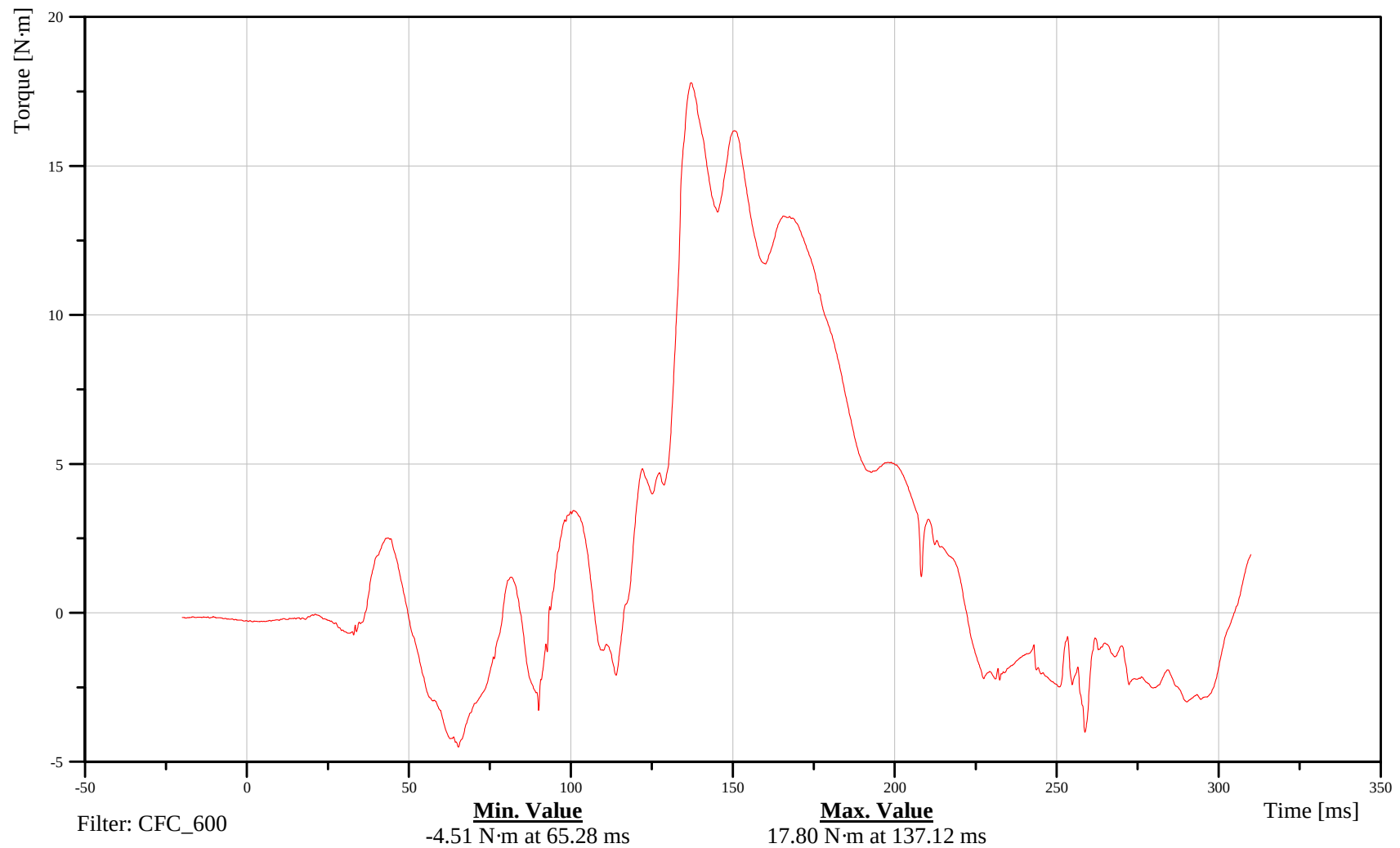
Date: 05/30/2006
Time: 14:51

Upper Neck Moment About X Axis

Customer: Volpe
Test Number: R60172

11NECKUP00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-26

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

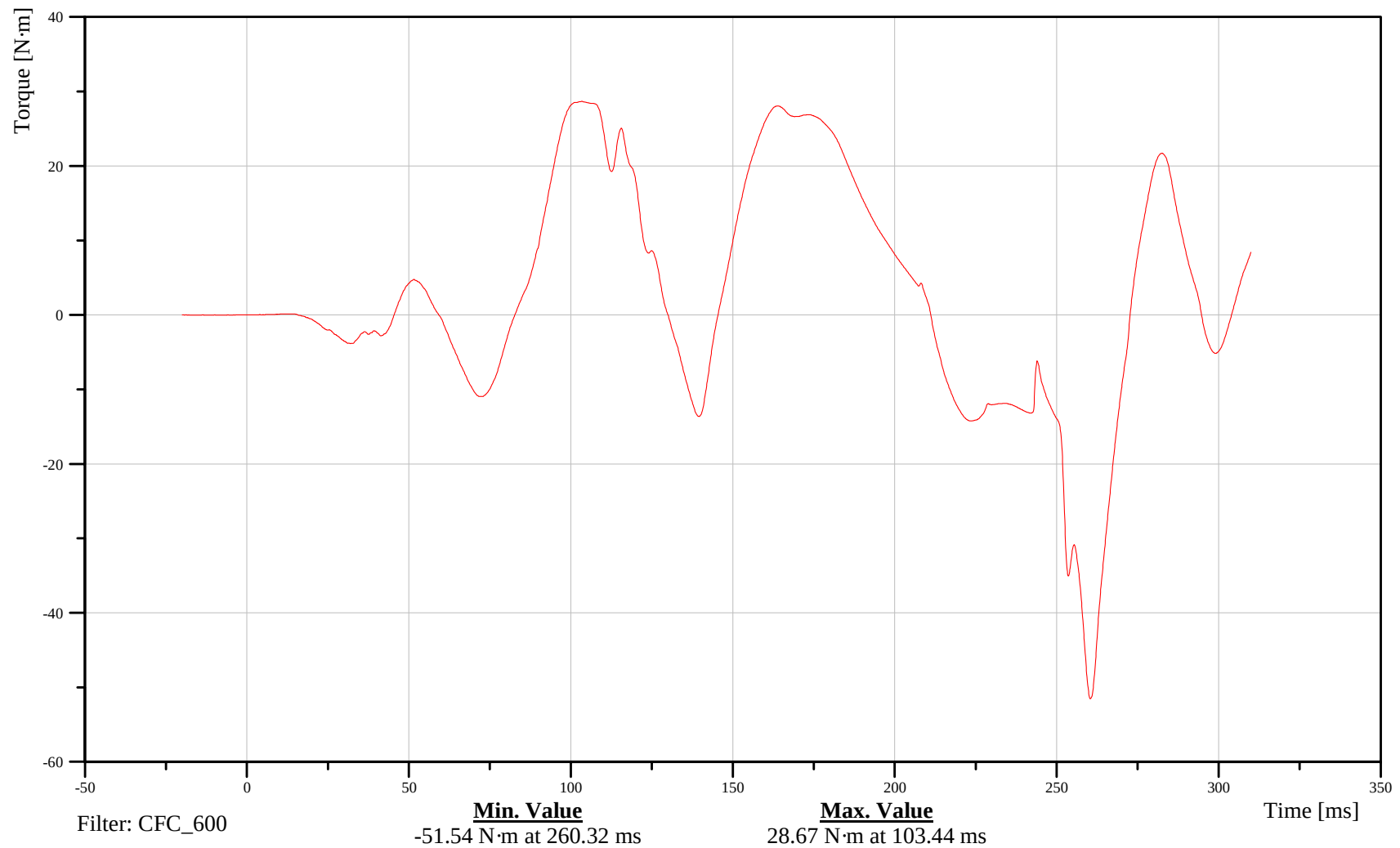
Date: 05/30/2006
Time: 14:51

Upper Neck Moment About Y Axis

Customer: Volpe
Test Number: R60172

11NECKUP00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-27

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

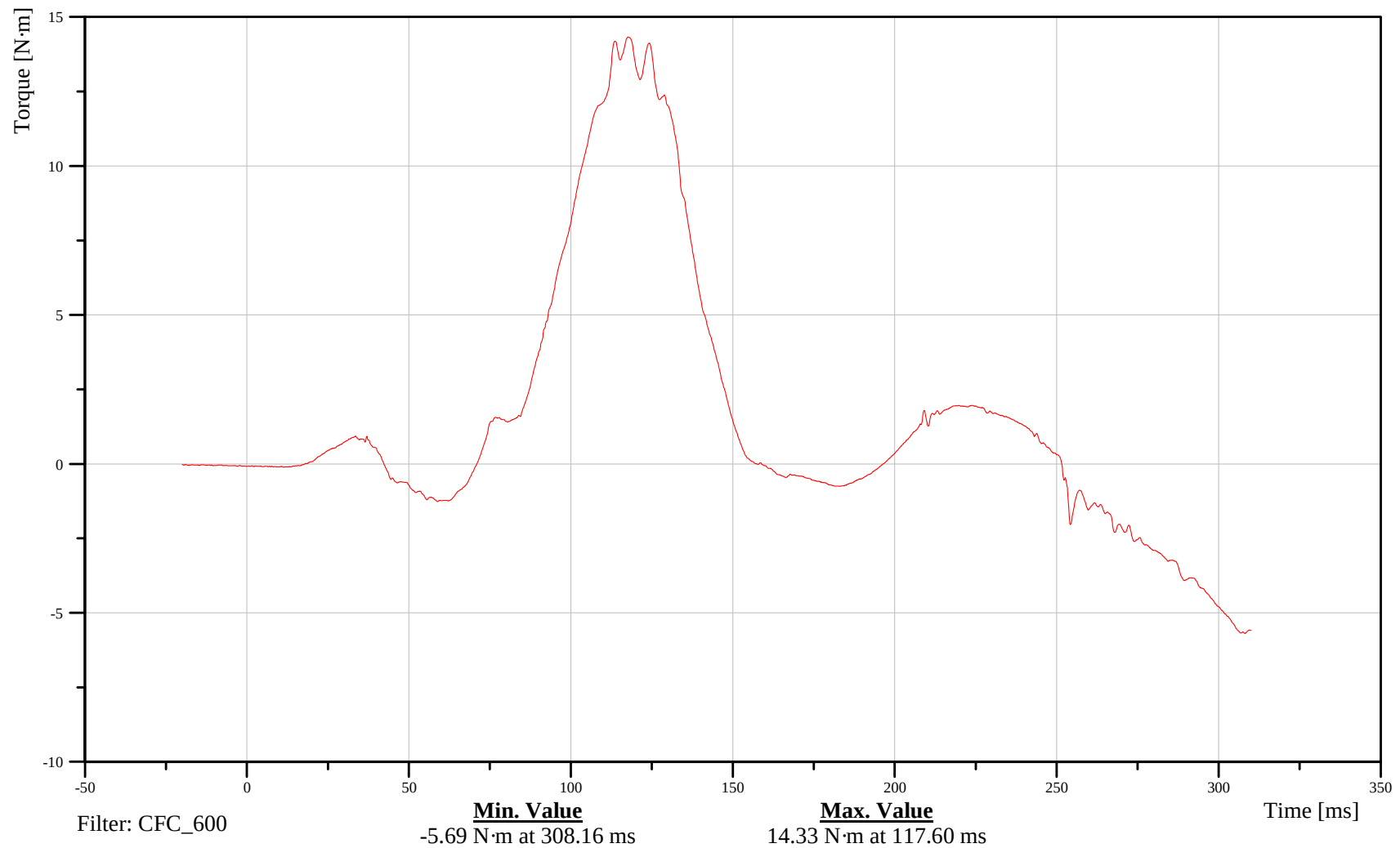
Date: 05/30/2006
Time: 14:51

Upper Neck Moment About Z Axis

Customer: Volpe
Test Number: R60172

11NECKUP00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-28

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

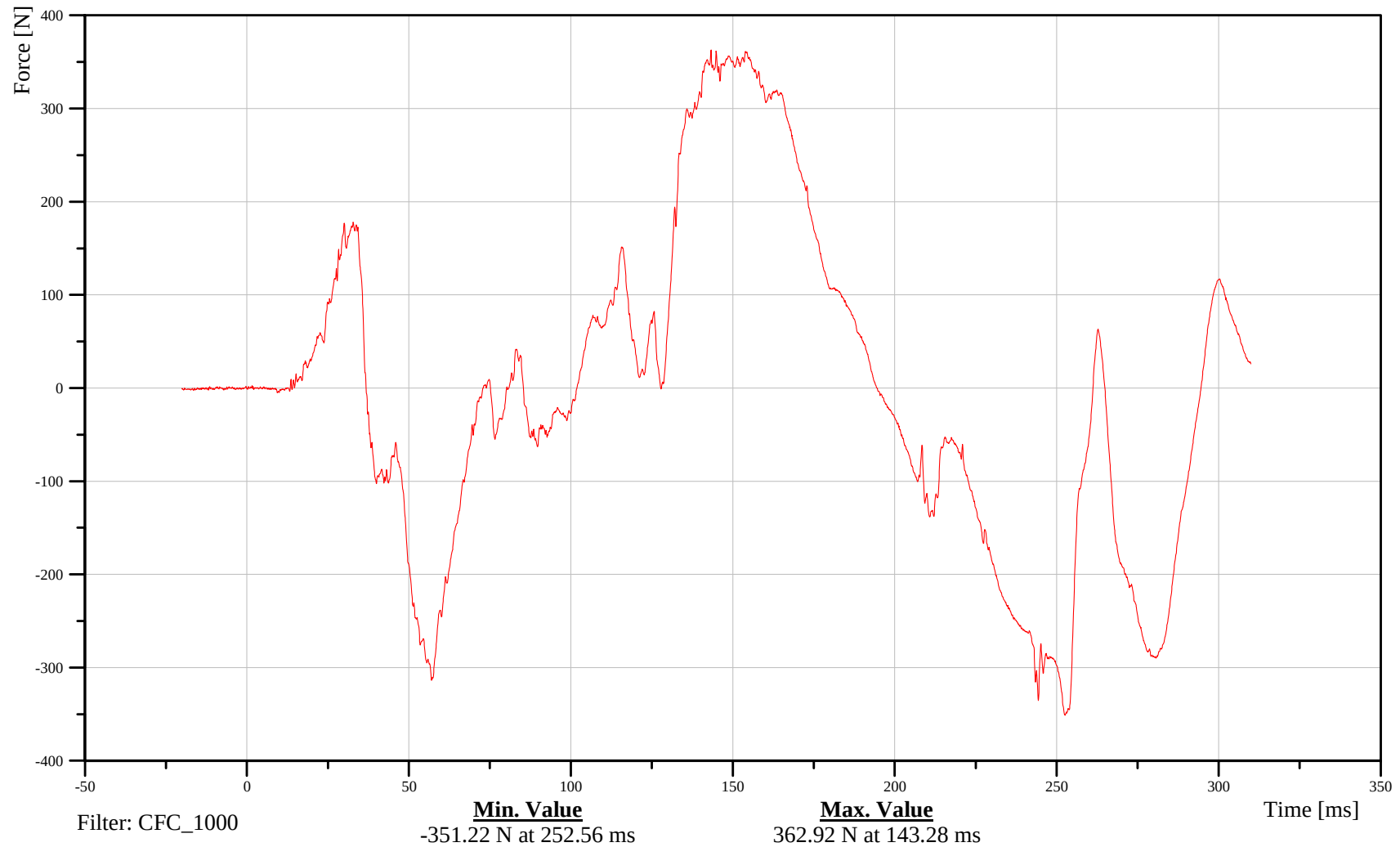
Date: 05/30/2006
Time: 14:51

Lower Neck X-Axis Force

Customer: Volpe
Test Number: R60172

11NECKLO00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-29

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

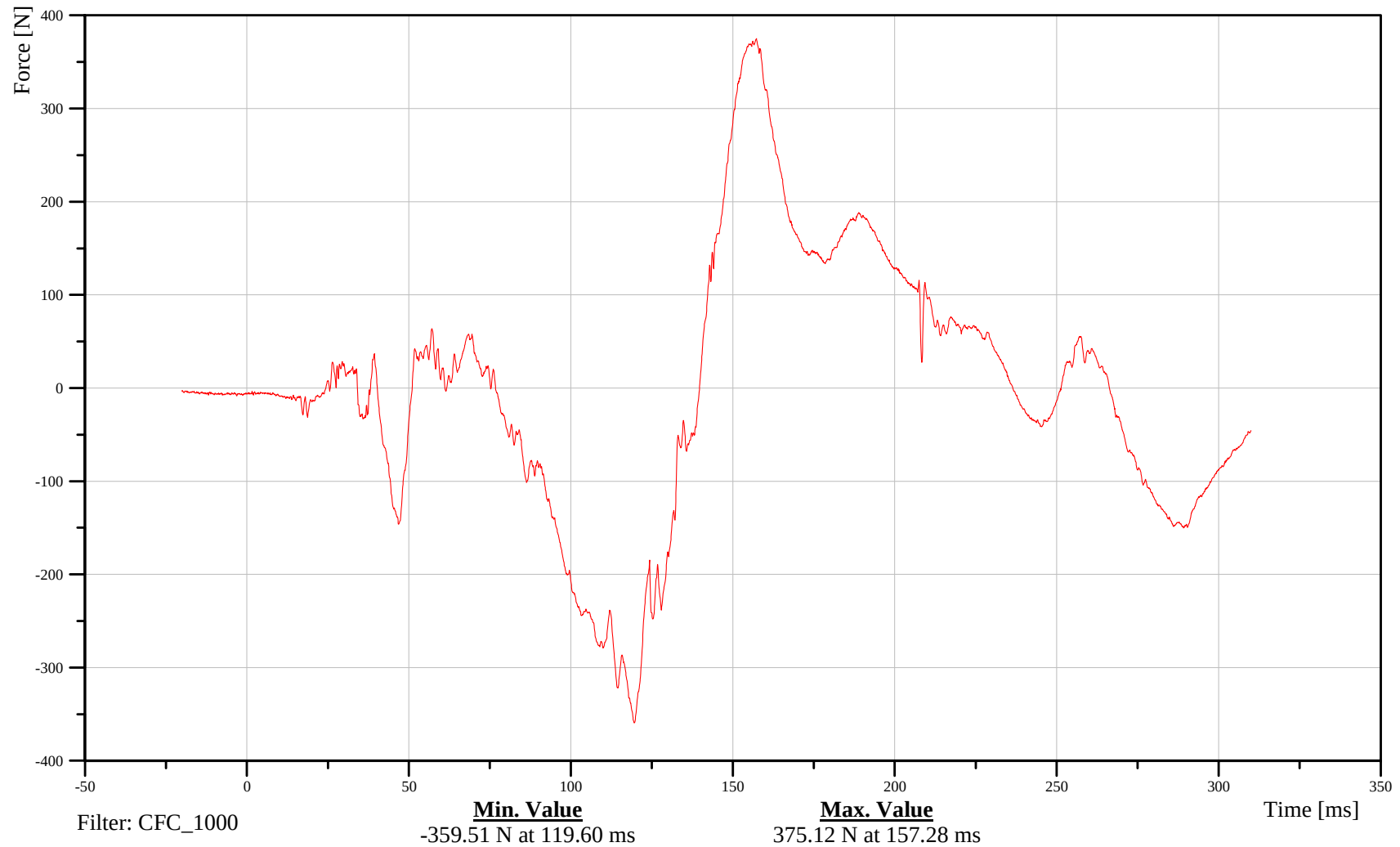
Date: 05/30/2006
Time: 14:51

Lower Neck Y-Axis Force

Customer: Volpe
Test Number: R60172

11NECKLO00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-30

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

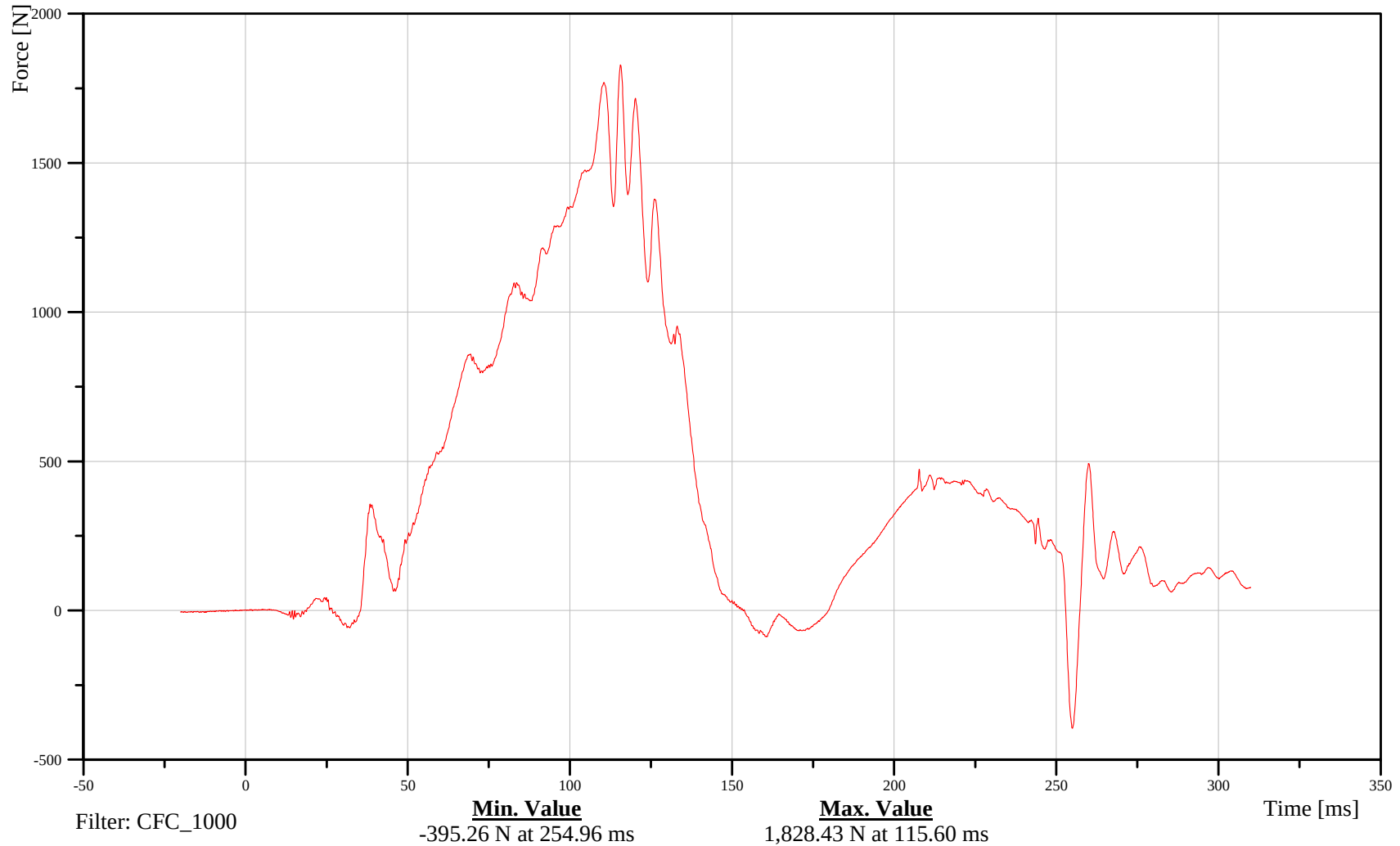
Date: 05/30/2006
Time: 14:51

Lower Neck Z-Axis Force

Customer: Volpe
Test Number: R60172

11NECKLO00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-31

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

Date: 05/30/2006
Time: 14:51

Lower Neck Moment About X Axis

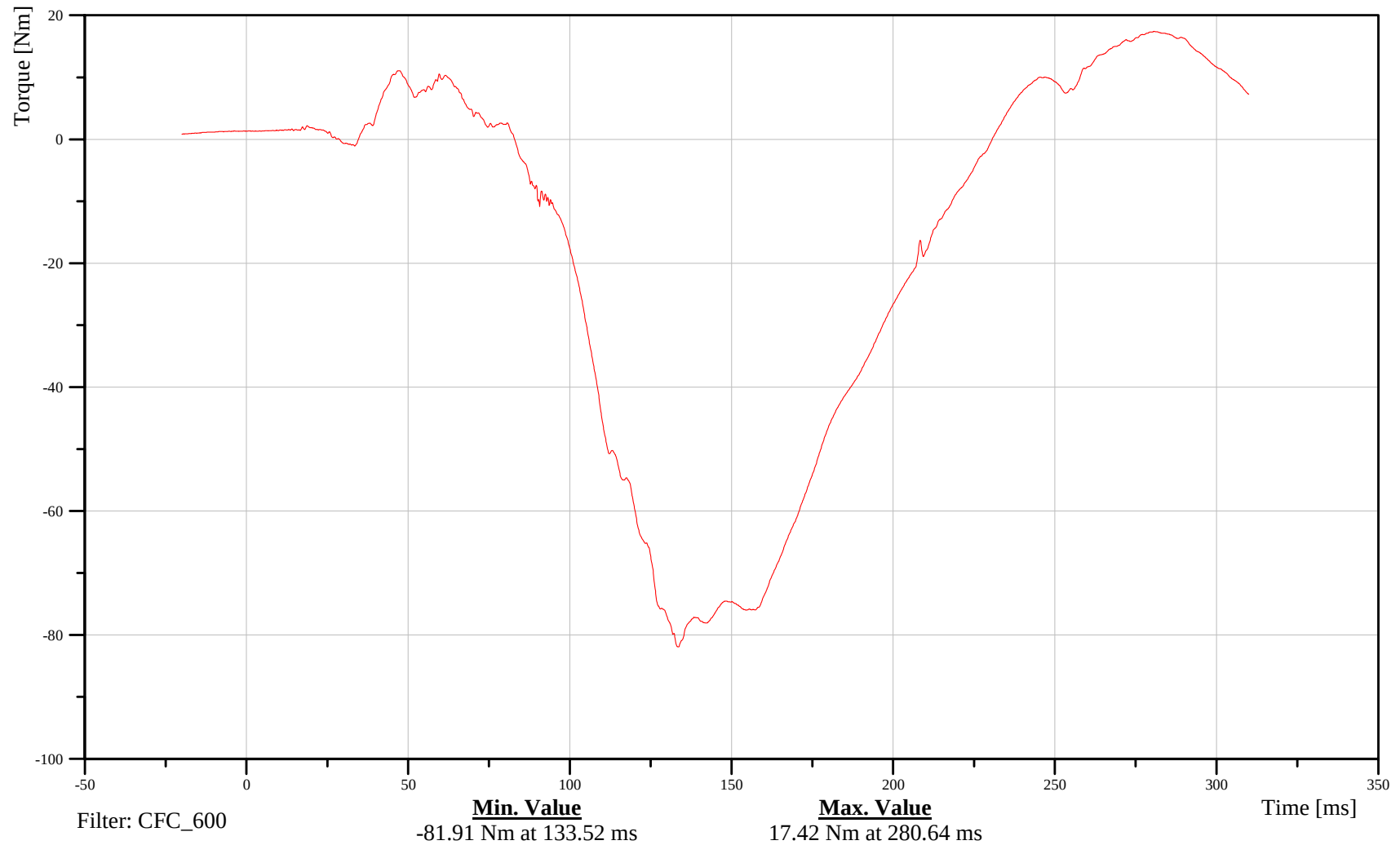
Customer: Volpe

Test Number: R60172

11NECKLO00H3MOXB

TRC Inc. Test Lab: CTF

Test Number: 060530



B-32

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

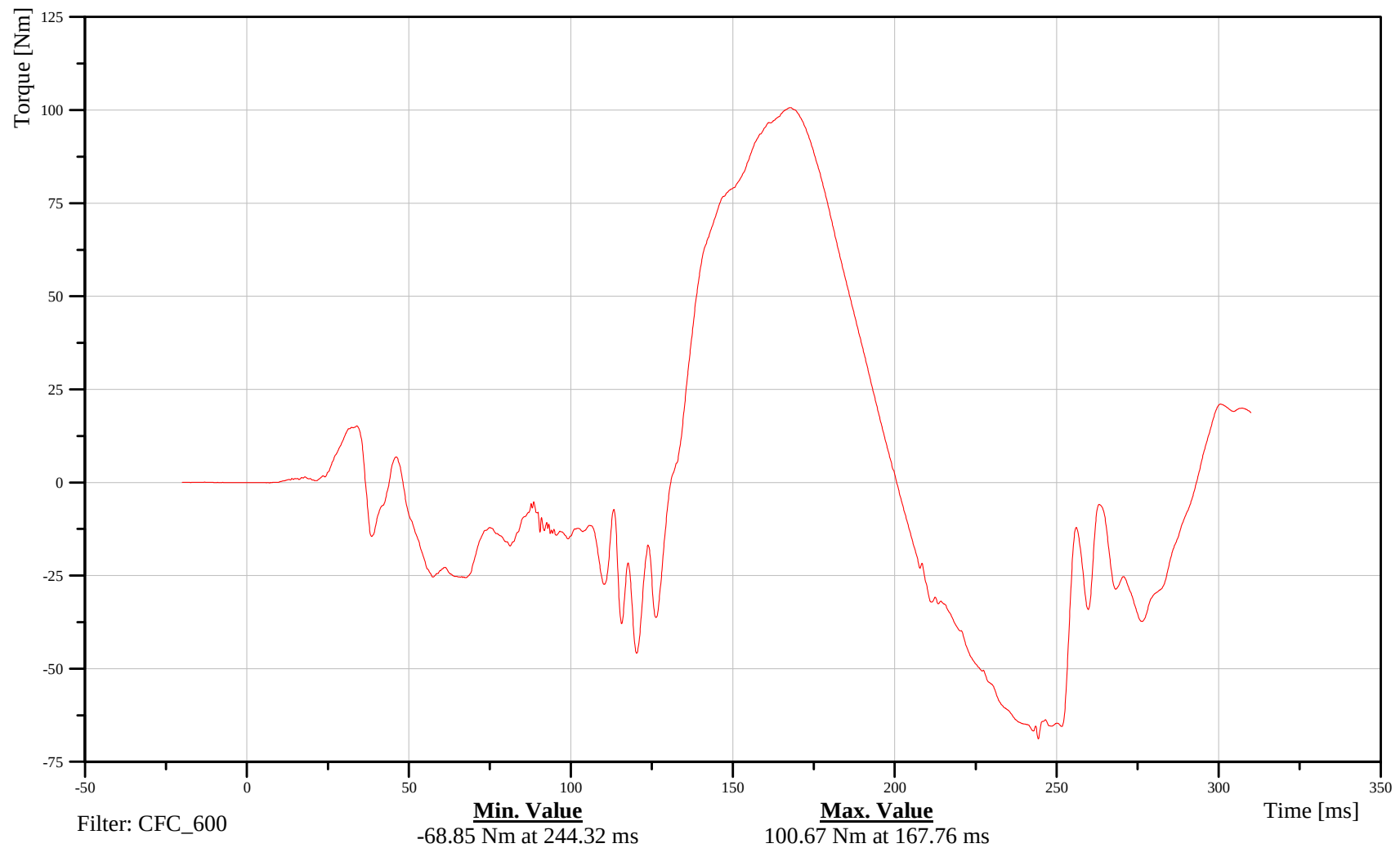
Date: 05/30/2006
Time: 14:51

Lower Neck Moment About Y Axis

Customer: Volpe
Test Number: R60172

11NECKLO00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-33

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

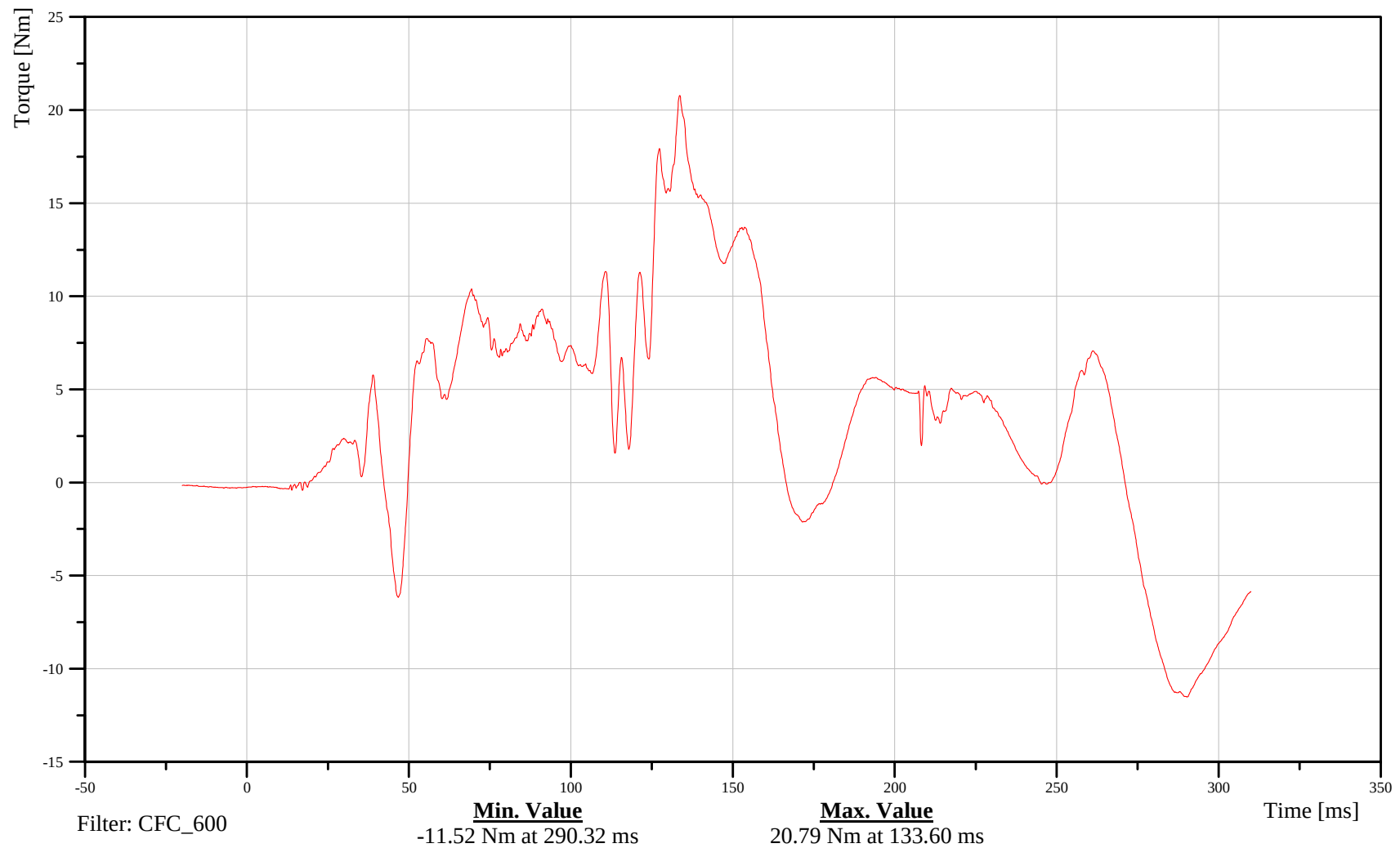
Date: 05/30/2006
Time: 14:51

Lower Neck Moment About Z Axis

Customer: Volpe
Test Number: R60172

11NECKLO00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-34

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

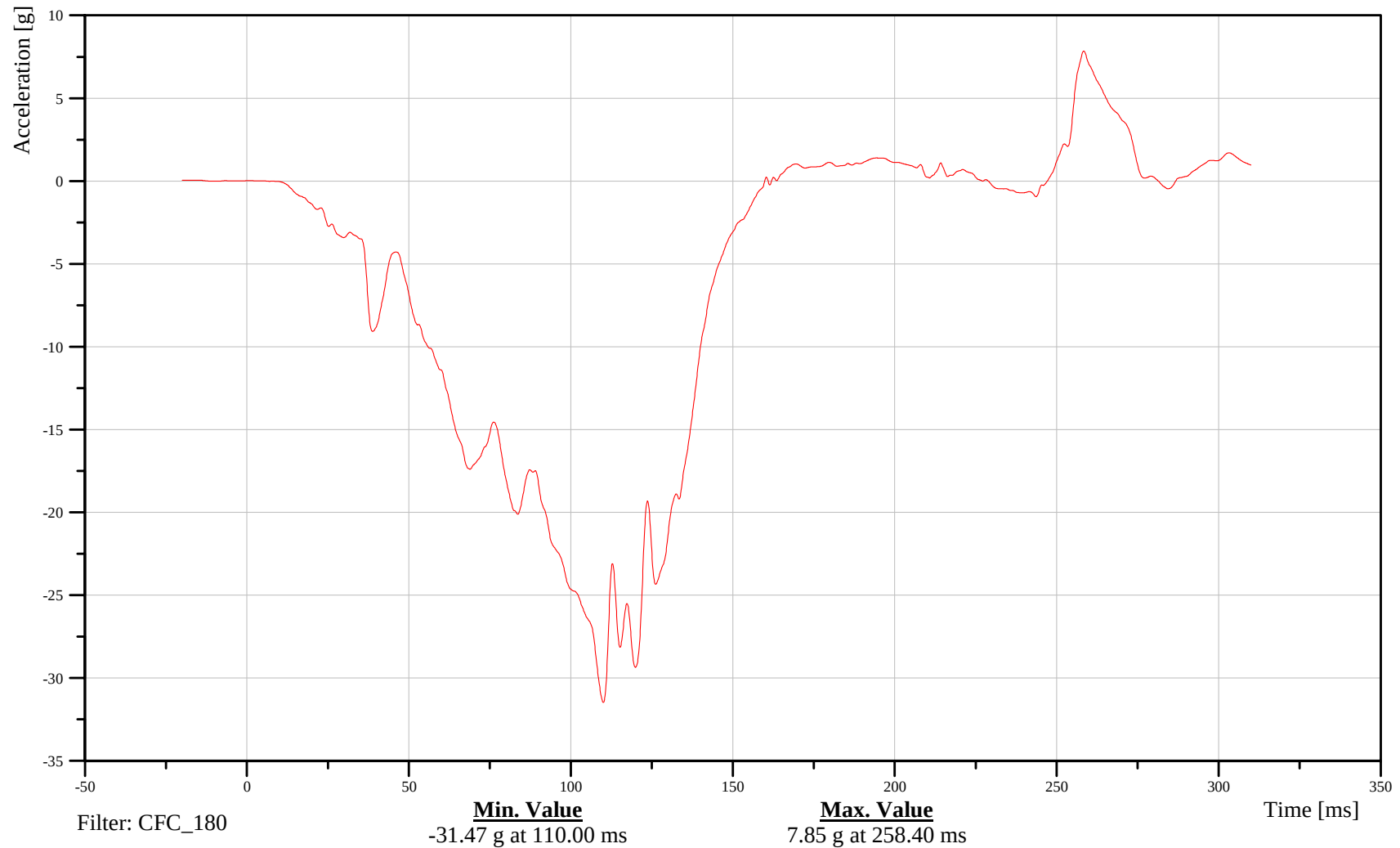
Date: 05/30/2006
Time: 14:51

Chest X-Axis Acceleration

Customer: Volpe
Test Number: R60172

11CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF
Test Number: 060530



B-35

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

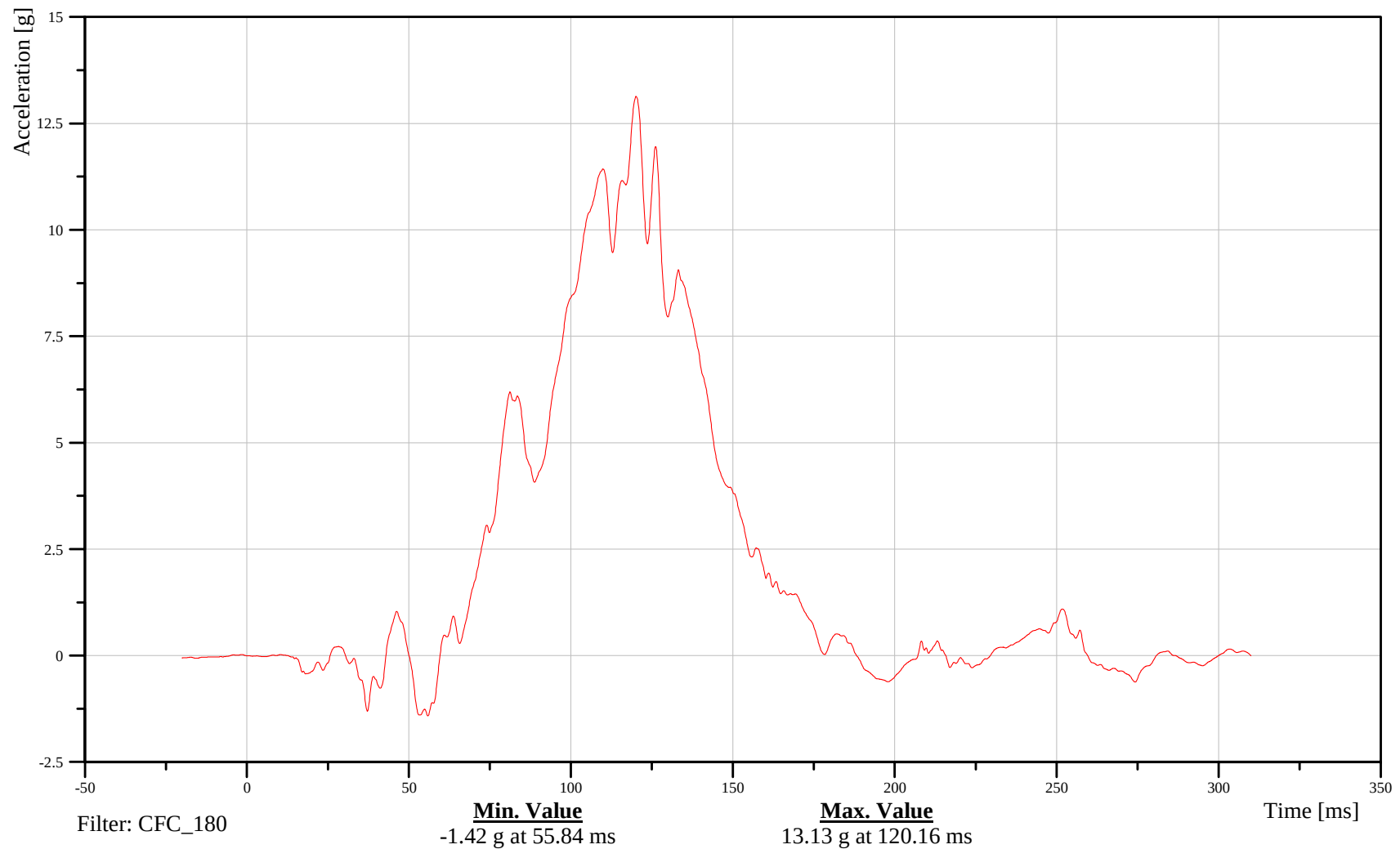
Date: 05/30/2006
Time: 14:51

Chest Y-Axis Acceleration

Customer: Volpe
Test Number: R60172

11CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF
Test Number: 060530



B-36

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

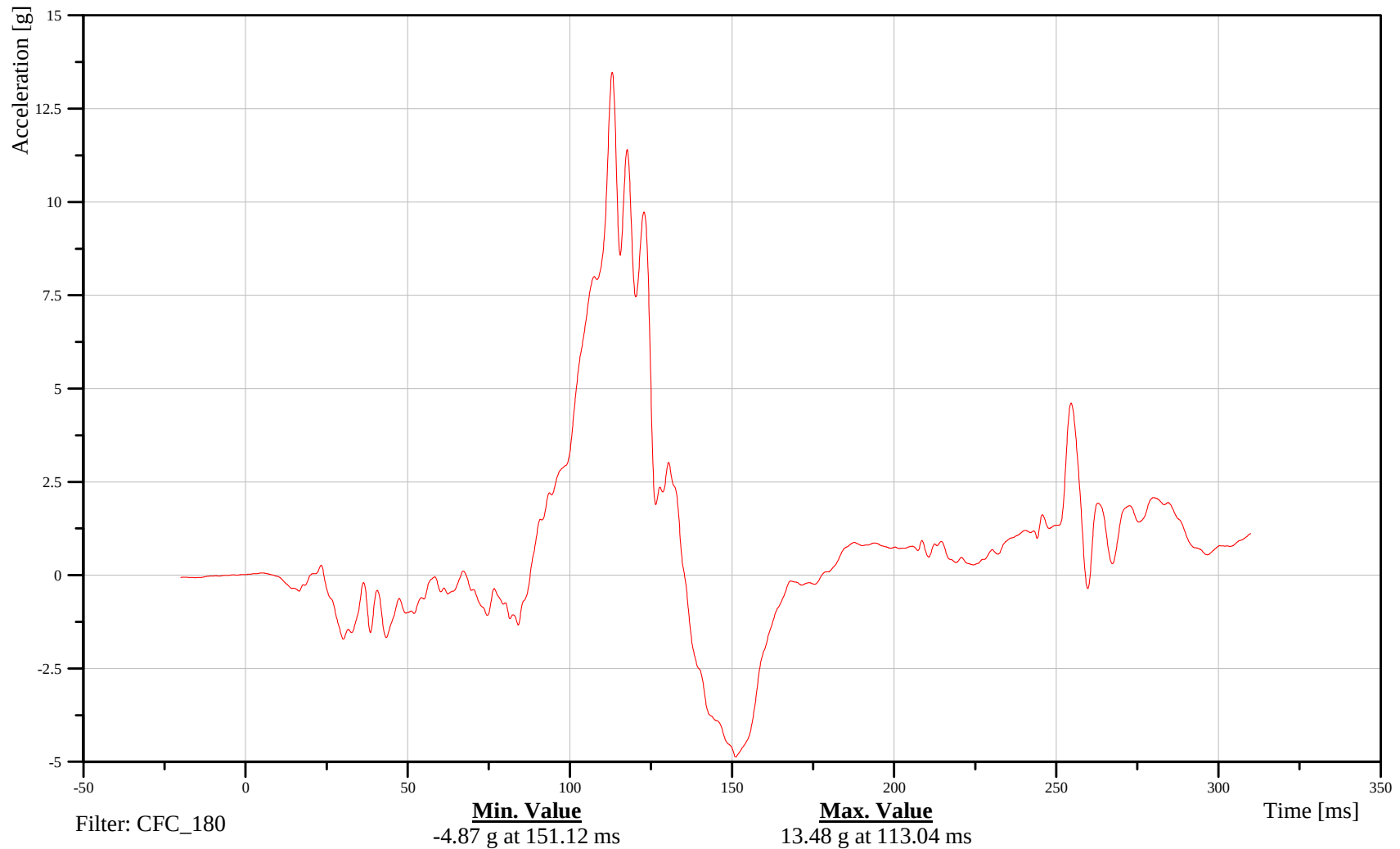
Date: 05/30/2006
Time: 14:51

Chest Z-Axis Acceleration

Customer: Volpe
Test Number: R60172

11CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF
Test Number: 060530



B-37

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

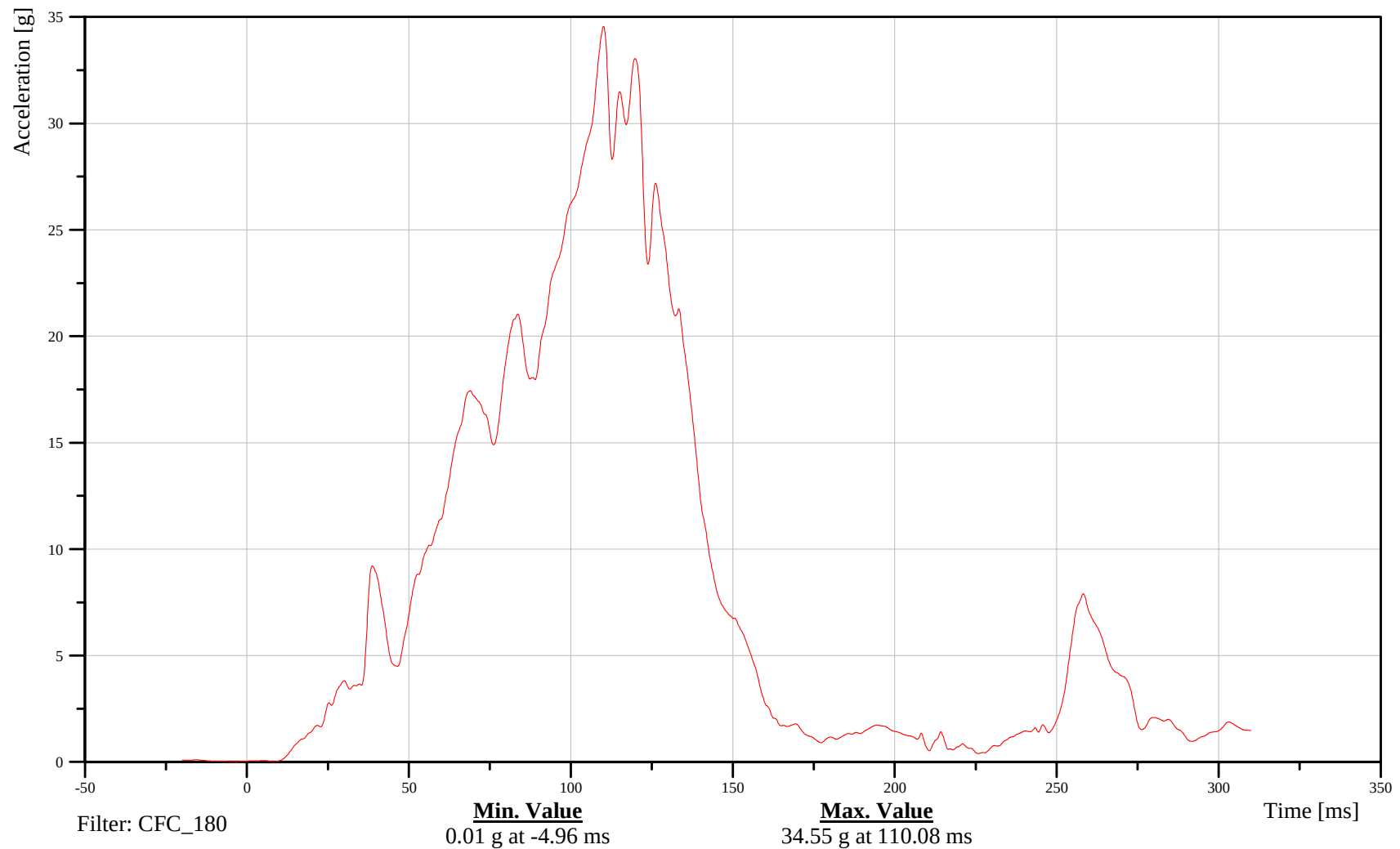
Date: 05/30/2006
Time: 14:51

Chest Resultant Acceleration

Customer: Volpe
Test Number: R60172

11CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF
Test Number: 060530



B-38

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

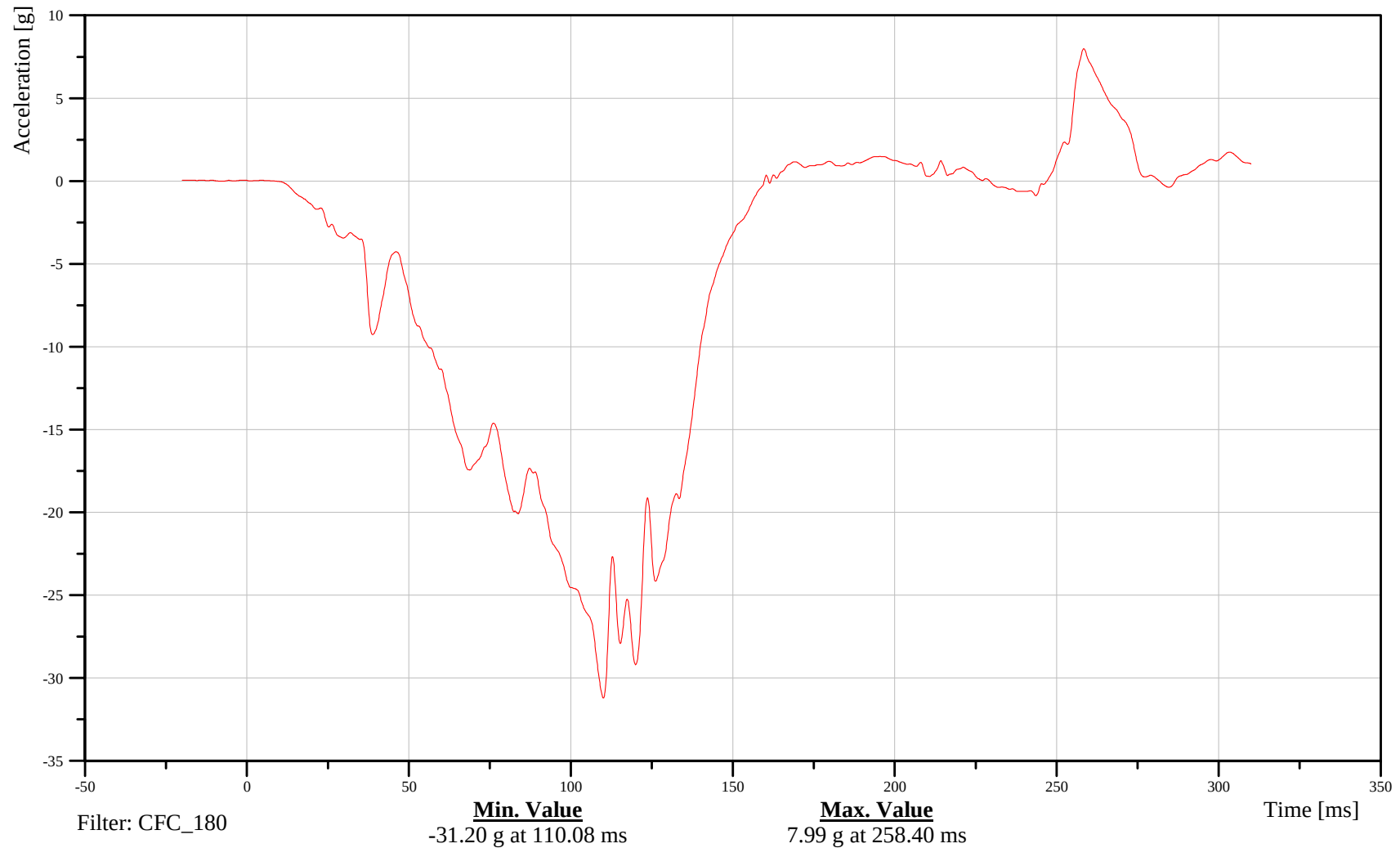
Date: 05/30/2006
Time: 14:51

Chest X-Axis Redundant Acceleration

Customer: Volpe
Test Number: R60172

11CHSTCGRDH3ACXC

TRC Inc. Test Lab: CTF
Test Number: 060530



B-39

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

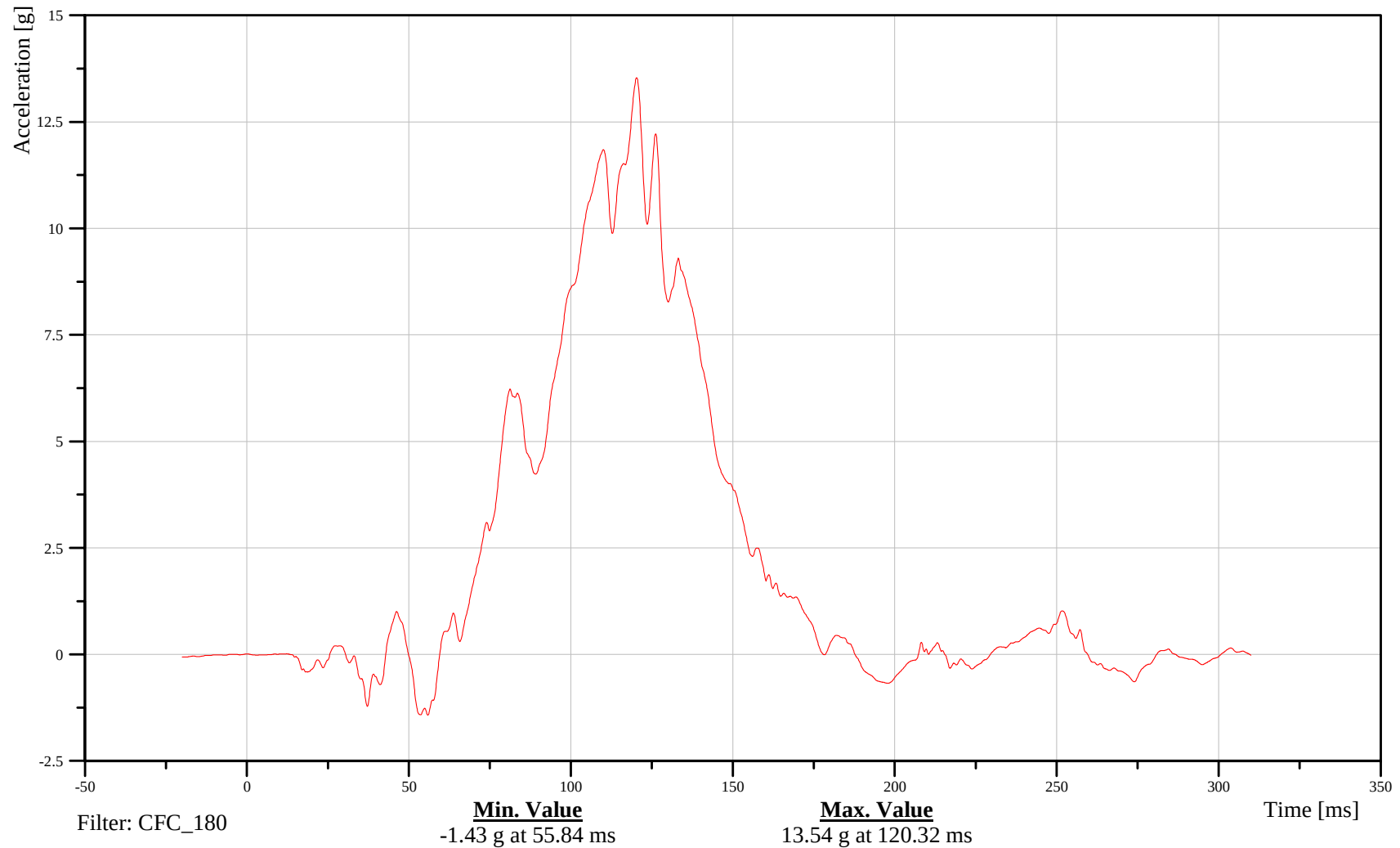
Date: 05/30/2006
Time: 14:51

Chest Y-Axis Redundant Acceleration

Customer: Volpe
Test Number: R60172

11CHSTCGRDH3ACYC

TRC Inc. Test Lab: CTF
Test Number: 060530



B-40

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

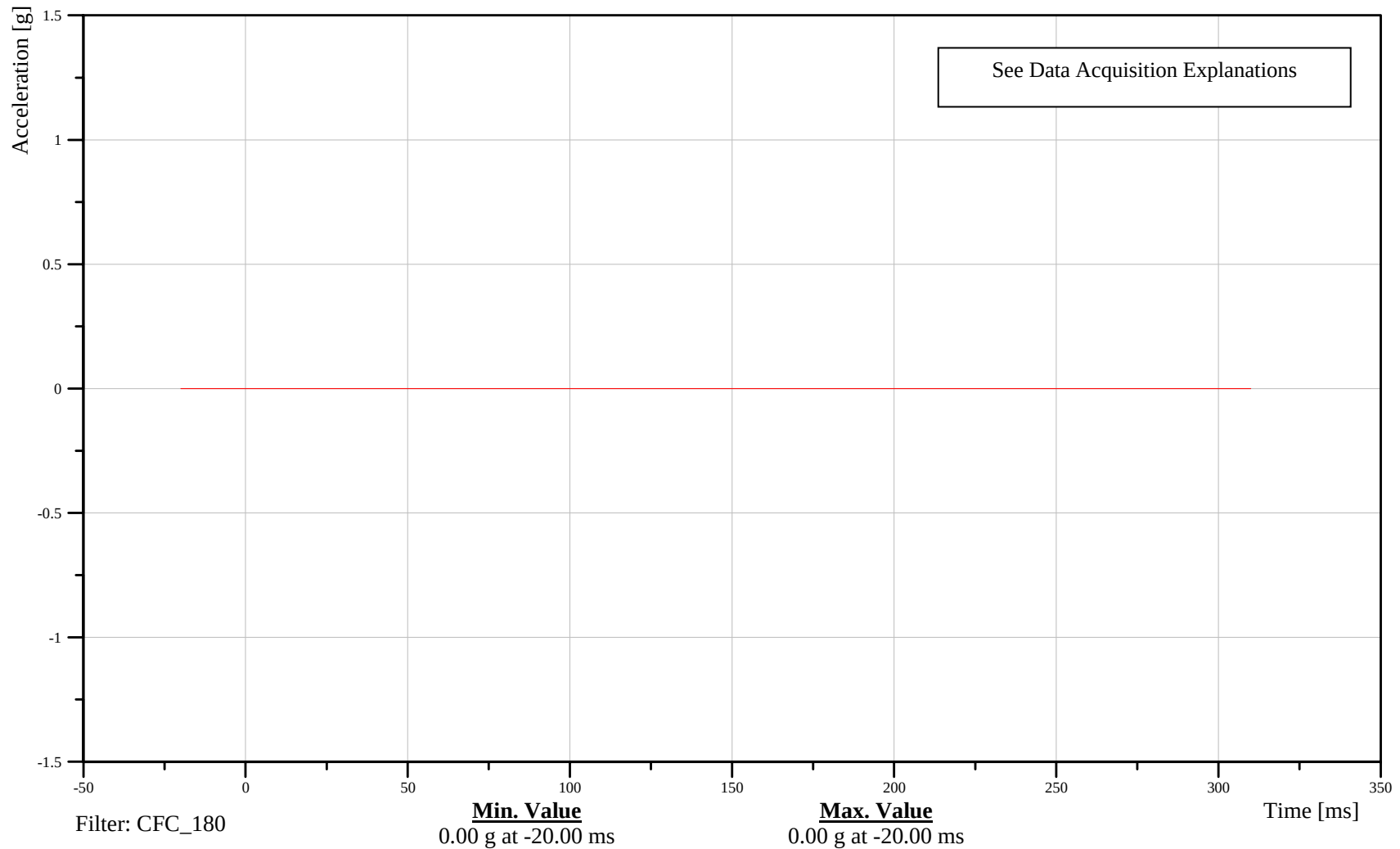
Date: 05/30/2006
Time: 14:51

Chest Z-Axis Redundant Acceleration

Customer: Volpe
Test Number: R60172

11CHSTCGRDH3ACZC

TRC Inc. Test Lab: CTF
Test Number: 060530



B-41

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

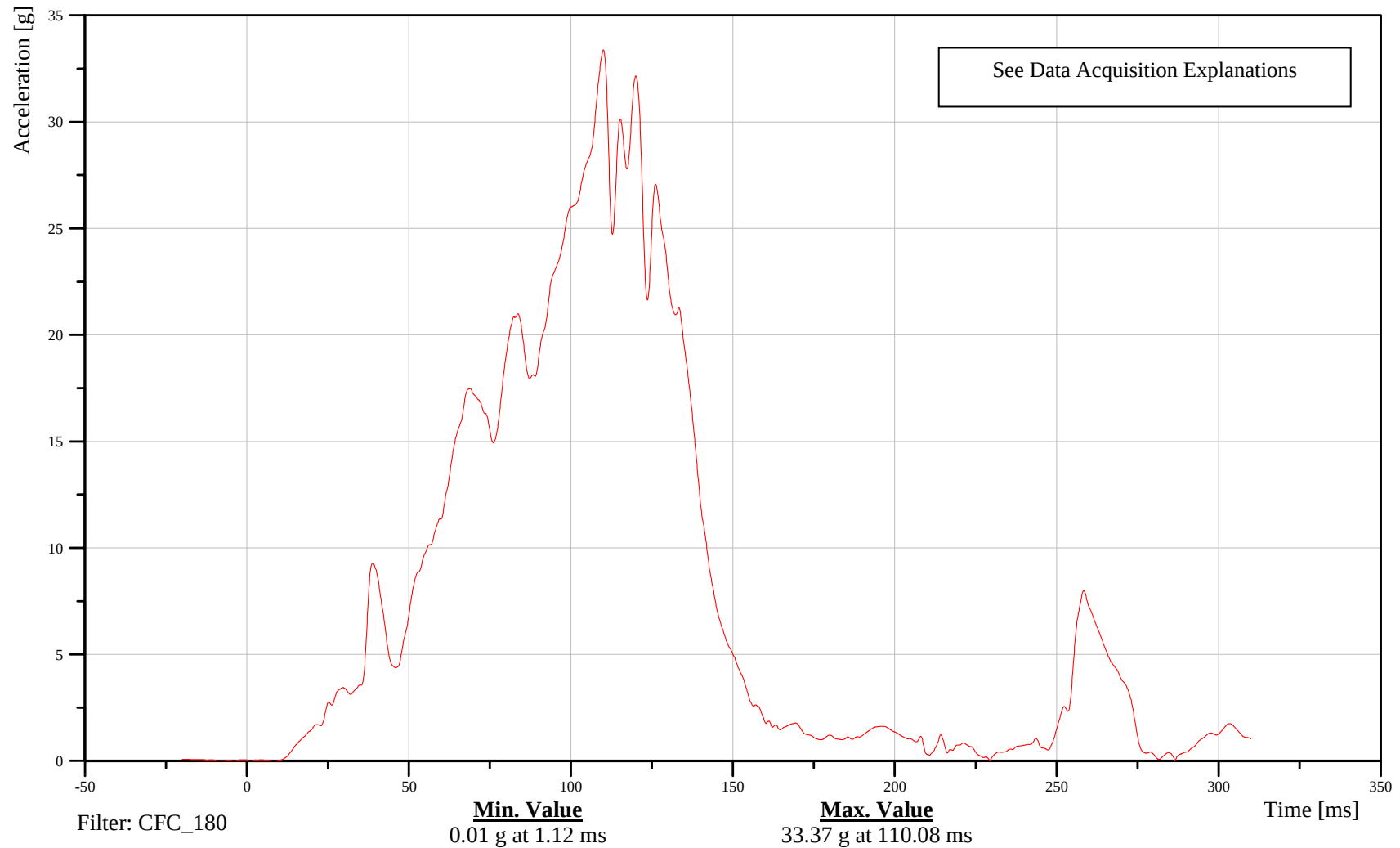
Date: 05/30/2006
Time: 14:51

Chest Redundant Resultant Acceleration

Customer: Volpe
Test Number: R60172

11CHSTCGRDH3ACRC

TRC Inc. Test Lab: CTF
Test Number: 060530



B-42

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

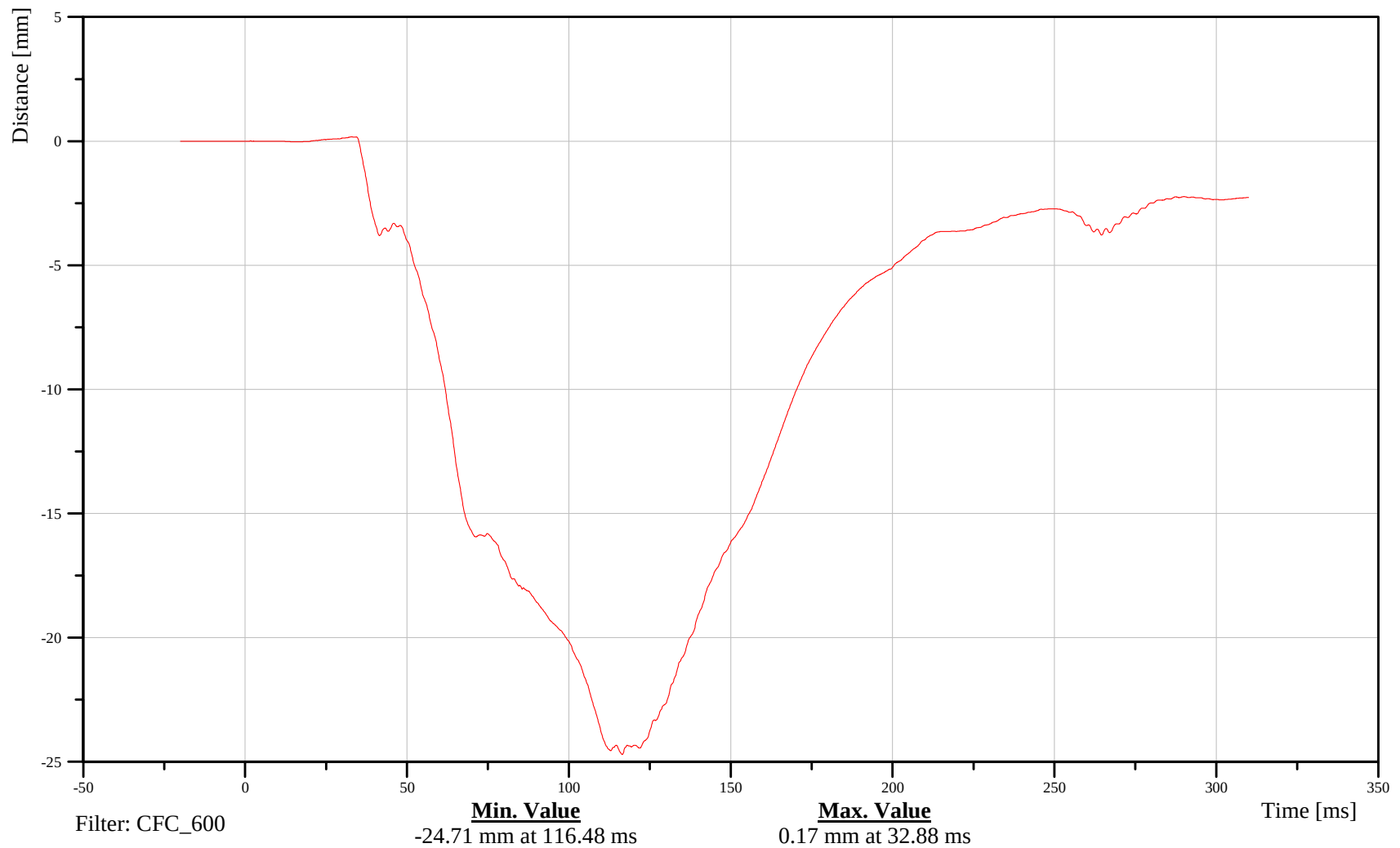
Date: 05/30/2006
Time: 14:51

Chest Displacement

Customer: Volpe
Test Number: R60172

11CHST0000H3DSXB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-43

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

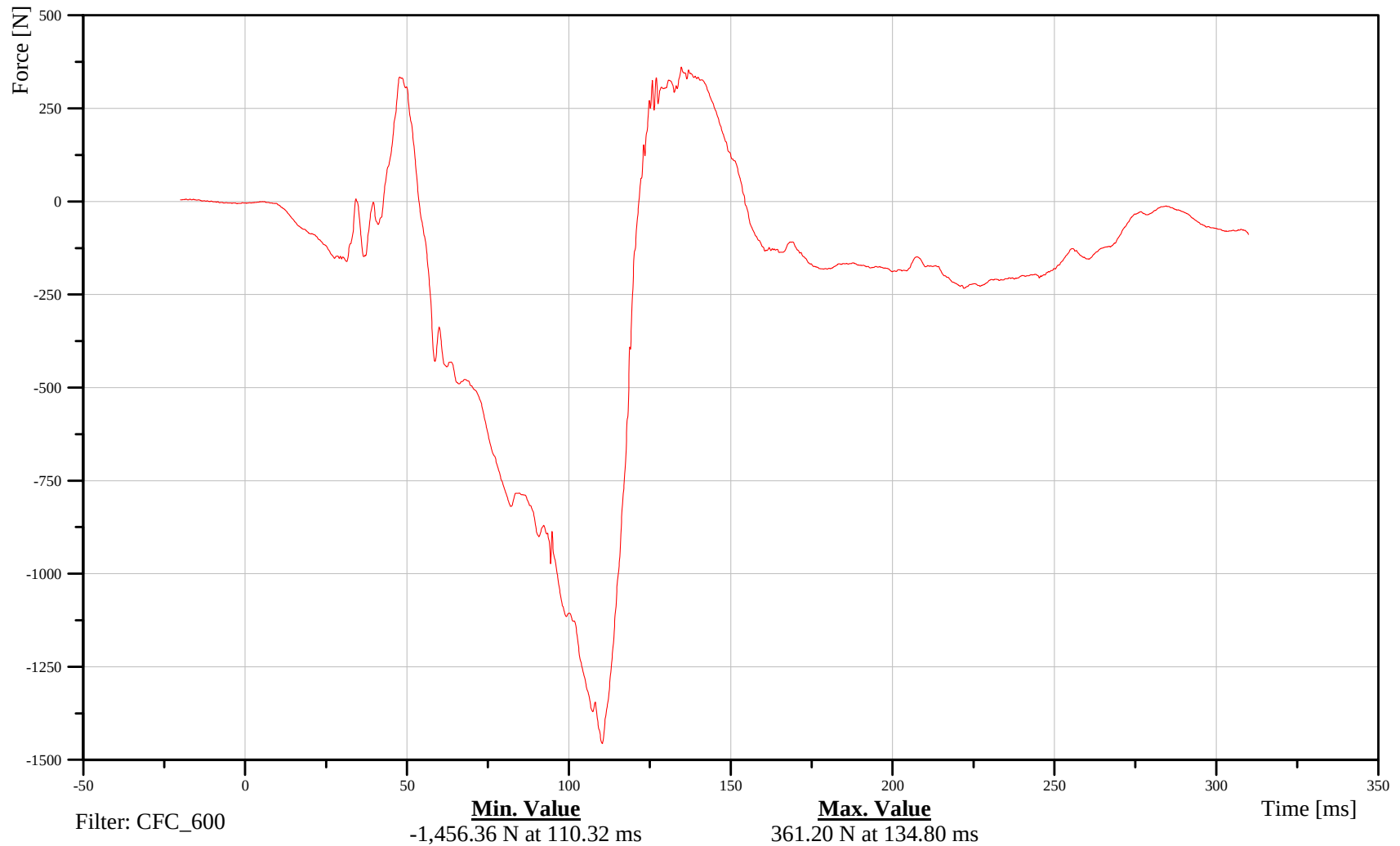
Date: 05/30/2006
Time: 14:51

Left Femur Z-Axis Force

Customer: Volpe
Test Number: R60172

11FEMRLL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-44

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

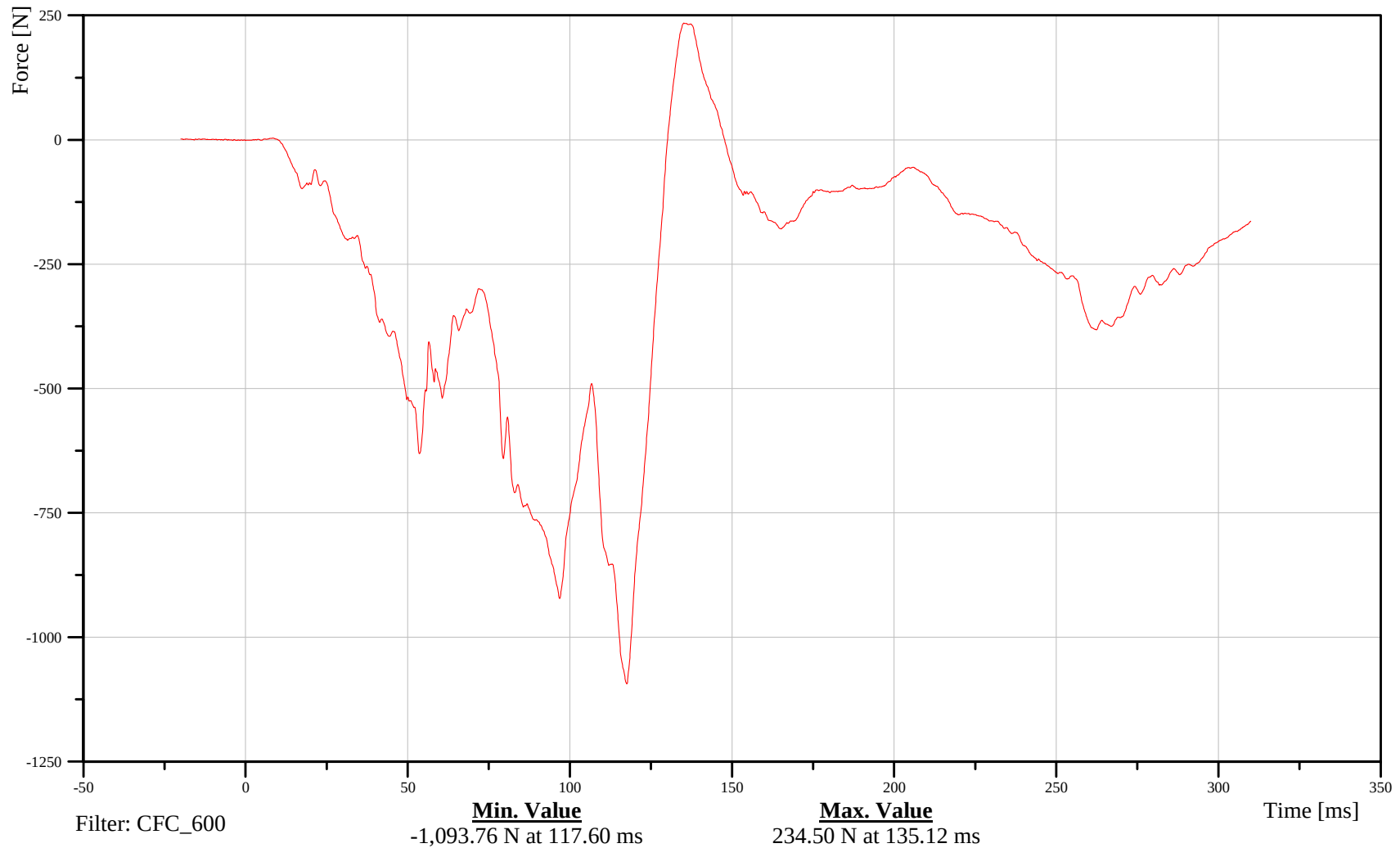
Date: 05/30/2006
Time: 14:51

Right Femur Z-Axis Force

Customer: Volpe
Test Number: R60172

11FEMRRL00H3FOZB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-45

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

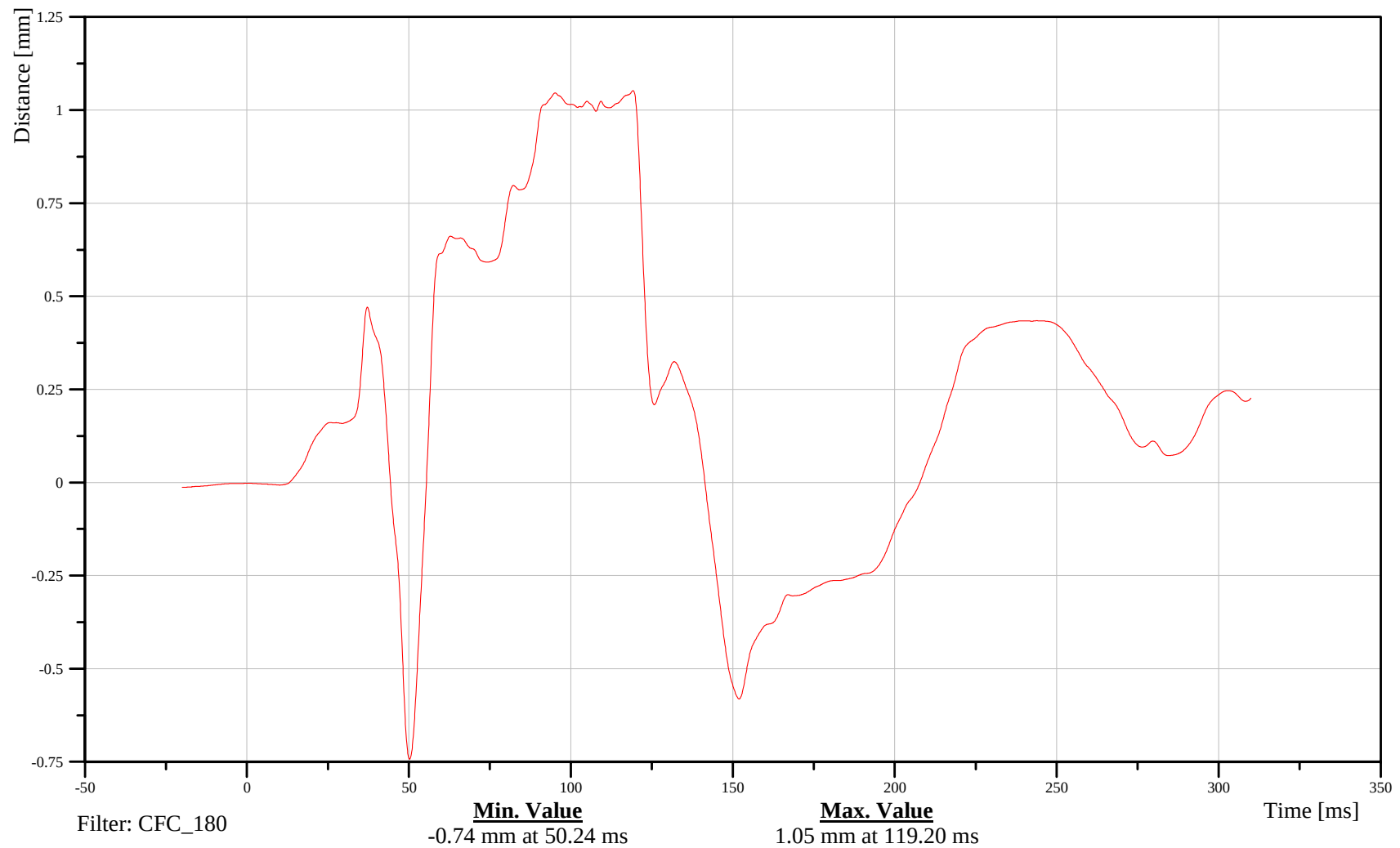
Date: 05/30/2006
Time: 14:51

Left Knee Displacement

Customer: Volpe
Test Number: R60172

11KNSLLE00H3DSXC

TRC Inc. Test Lab: CTF
Test Number: 060530



B-46

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

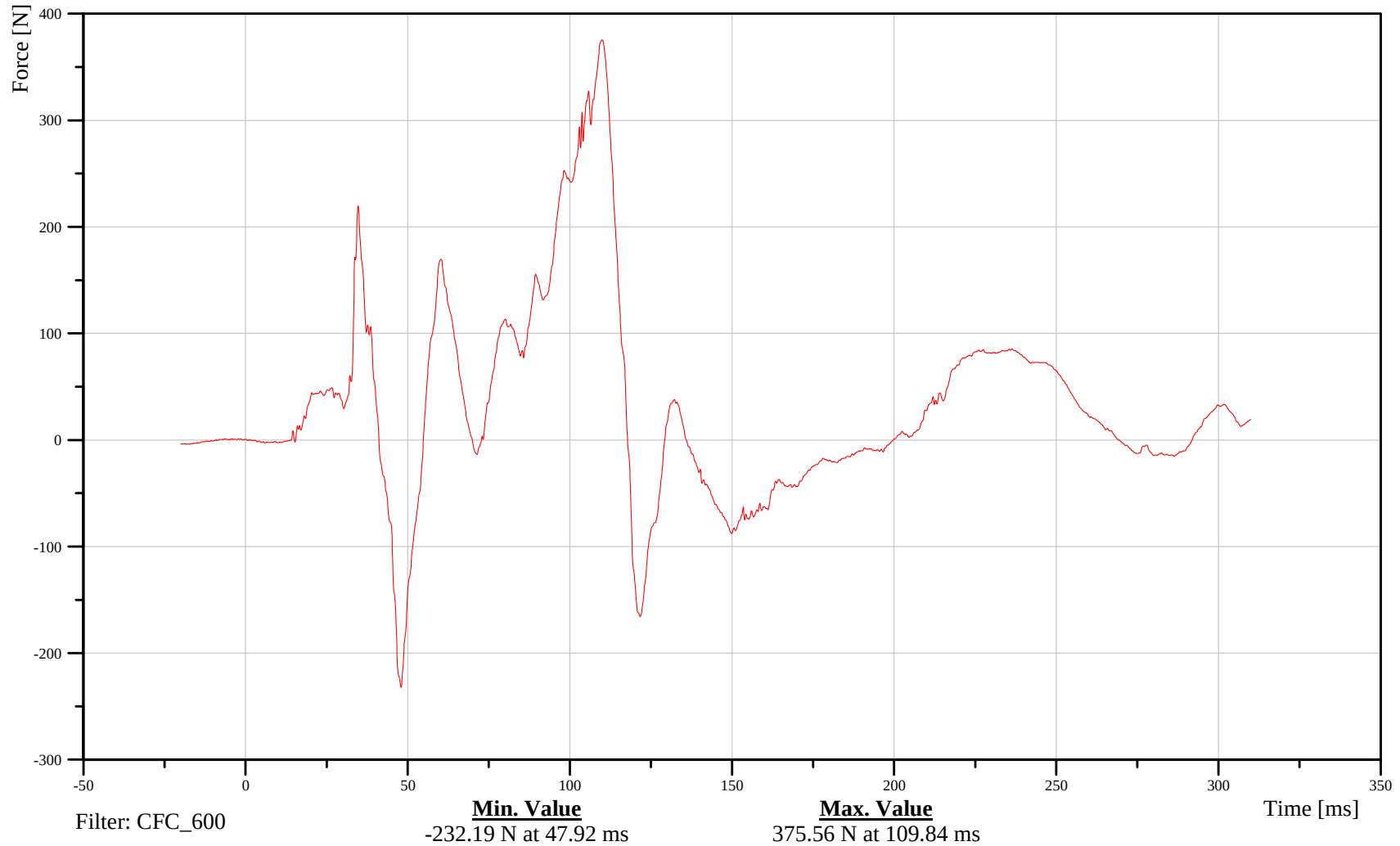
Date: 05/30/2006
Time: 14:51

Left Upper Tibia X-Axis Force

Customer: Volpe
Test Number: R60172

11TIBILULXH3FOXB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-47

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

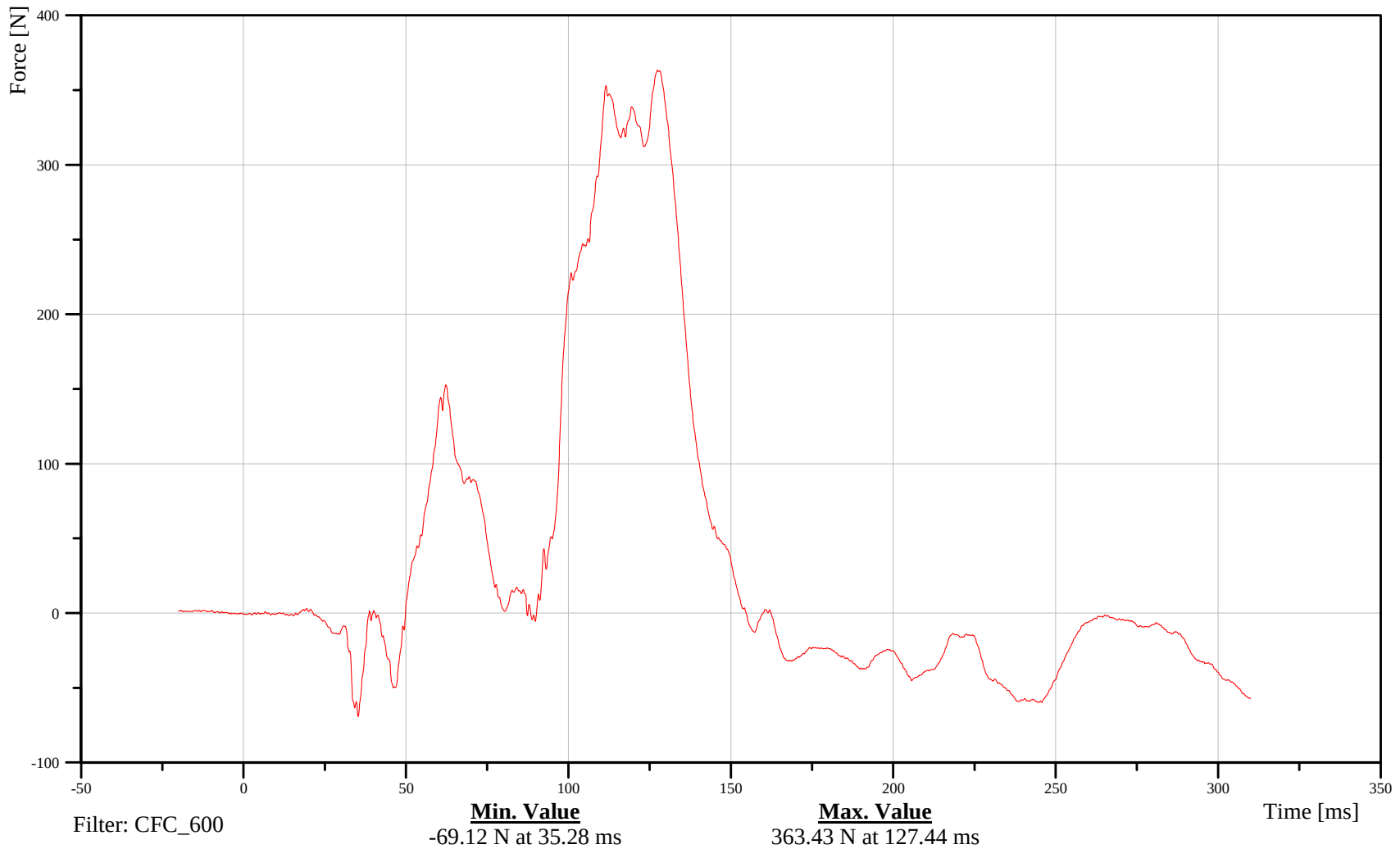
Date: 05/30/2006
Time: 14:51

Left Upper Tibia Y-Axis Force

Customer: Volpe
Test Number: R60172

11TIBILULXH3FOYB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-48

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

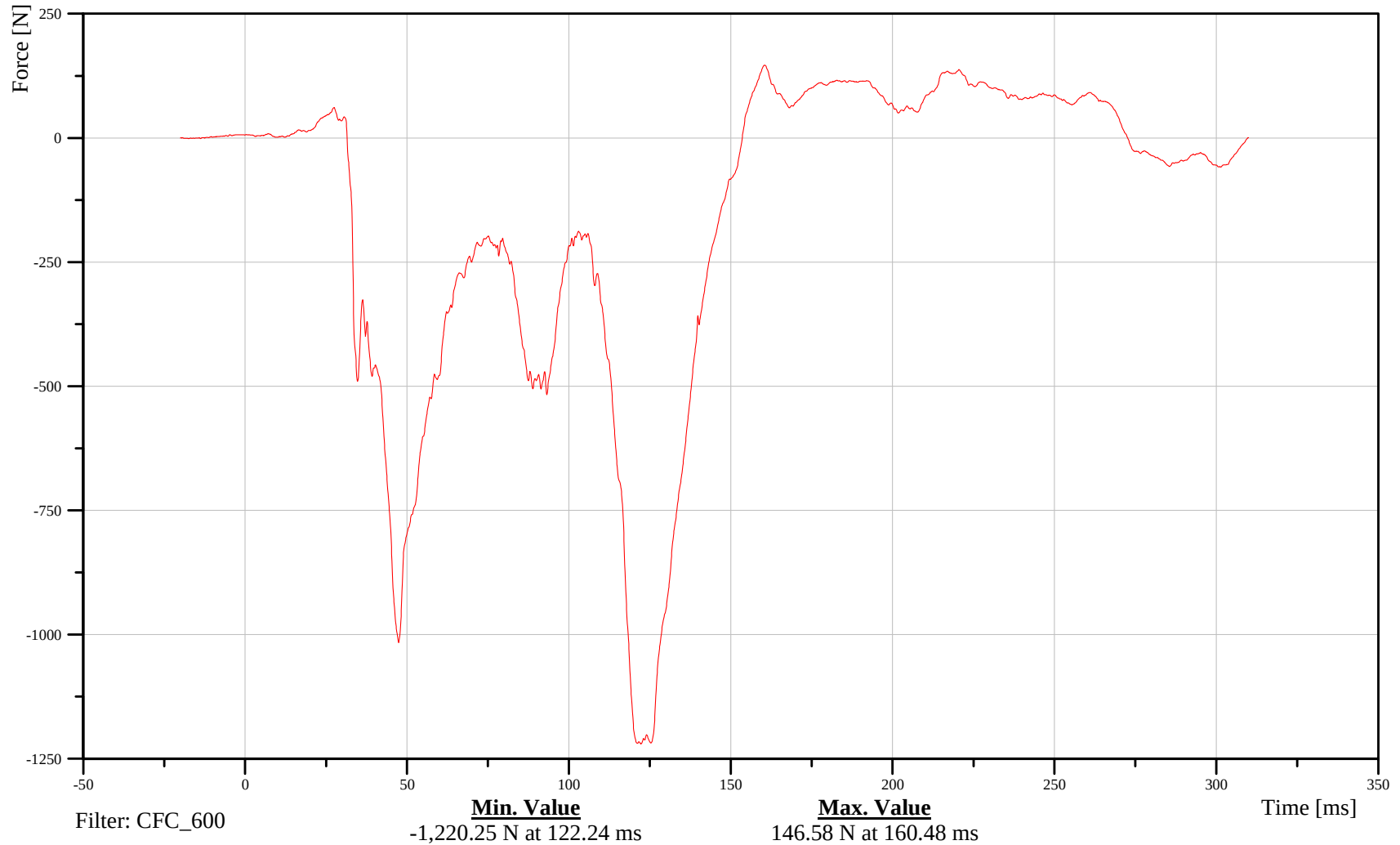
Date: 05/30/2006
Time: 14:51

Left Upper Tibia Z-Axis Force

Customer: Volpe
Test Number: R60172

11TIBILULXH3FOZB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-49

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

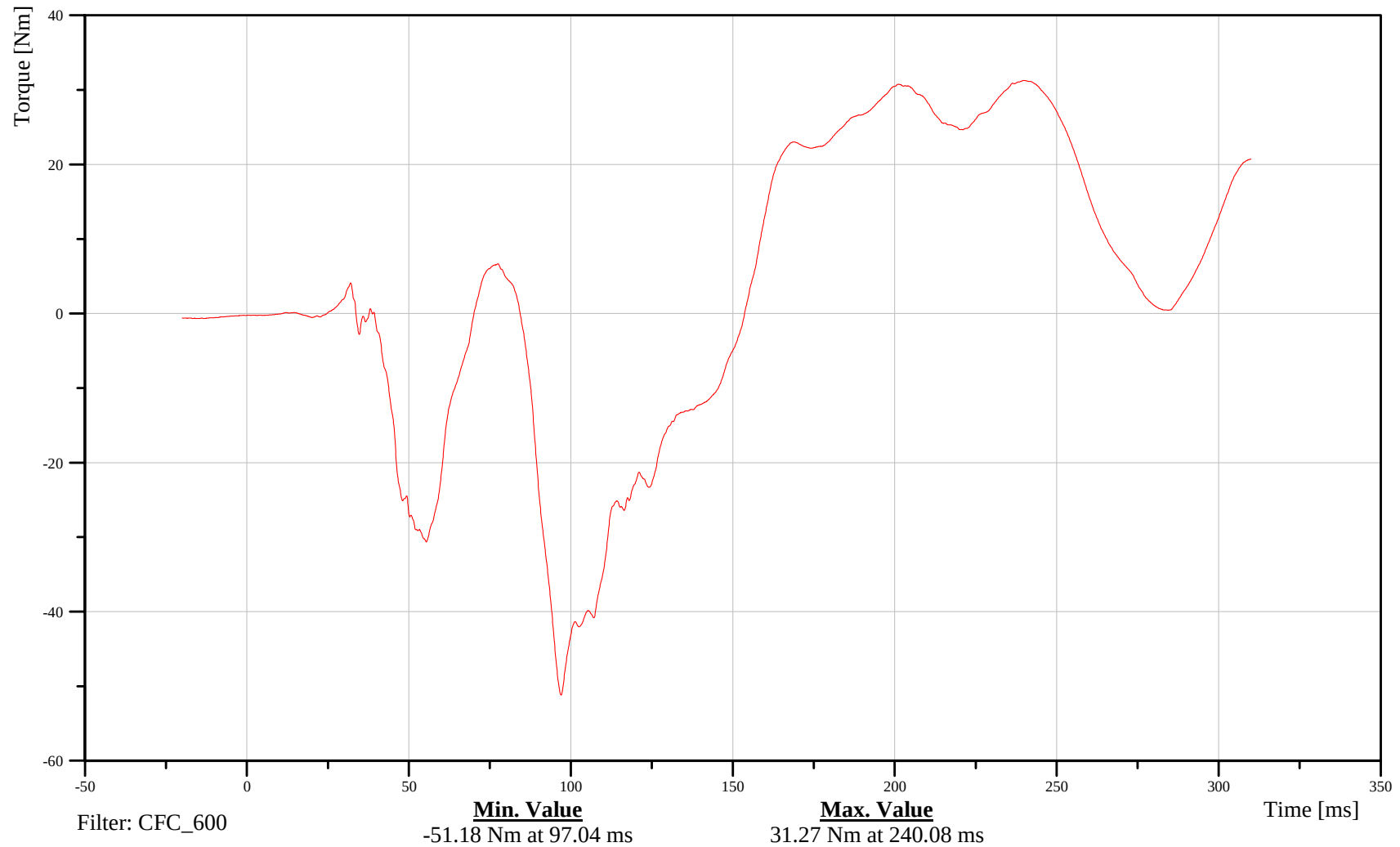
Date: 05/30/2006
Time: 14:51

Left Upper Tibia Moment About X Axis

Customer: Volpe
Test Number: R60172

11TIBILULXH3MOXB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-50

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

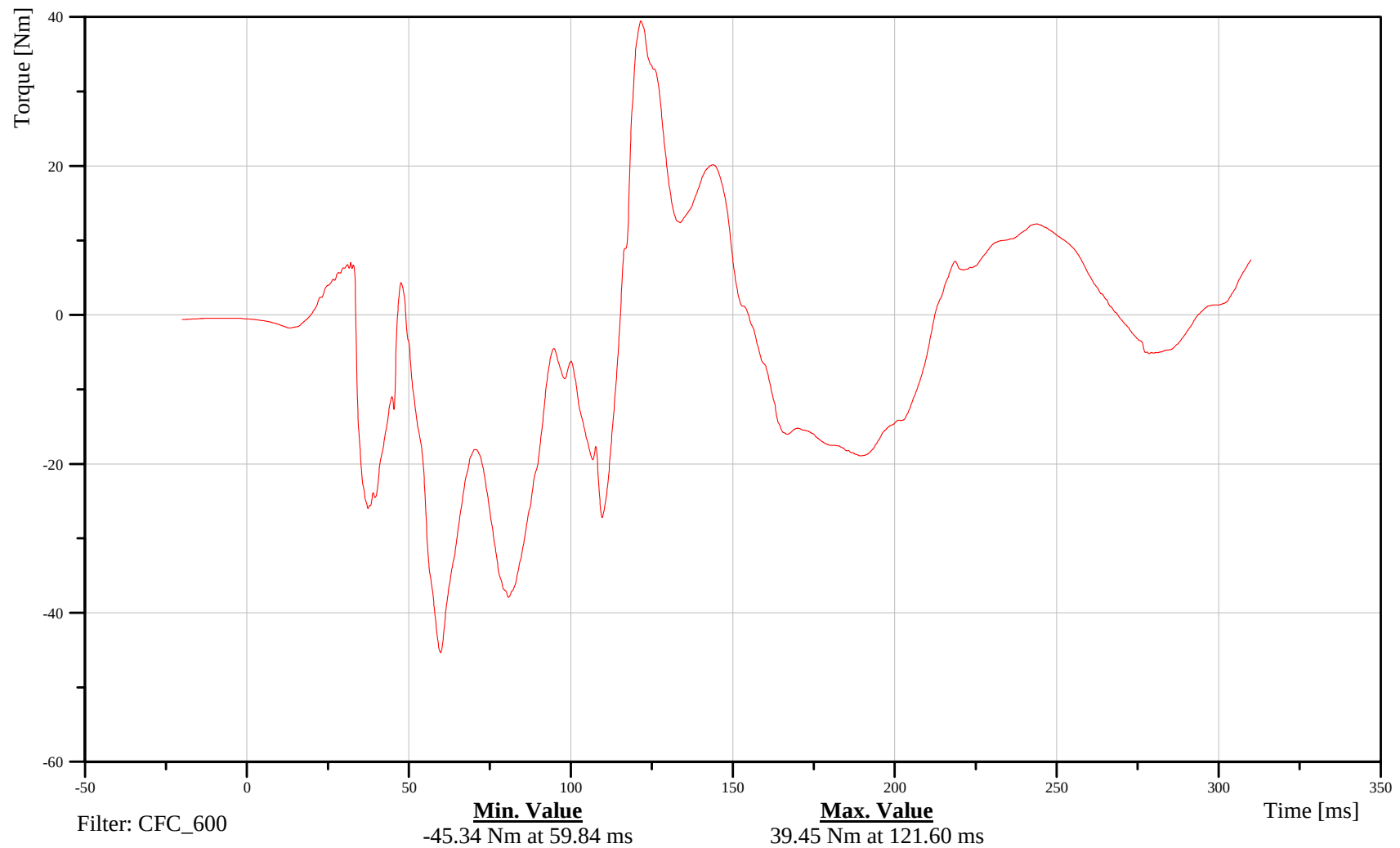
Date: 05/30/2006
Time: 14:51

Left Upper Tibia Moment About Y Axis

Customer: Volpe
Test Number: R60172

11TIBILULXH3MOYB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-51

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

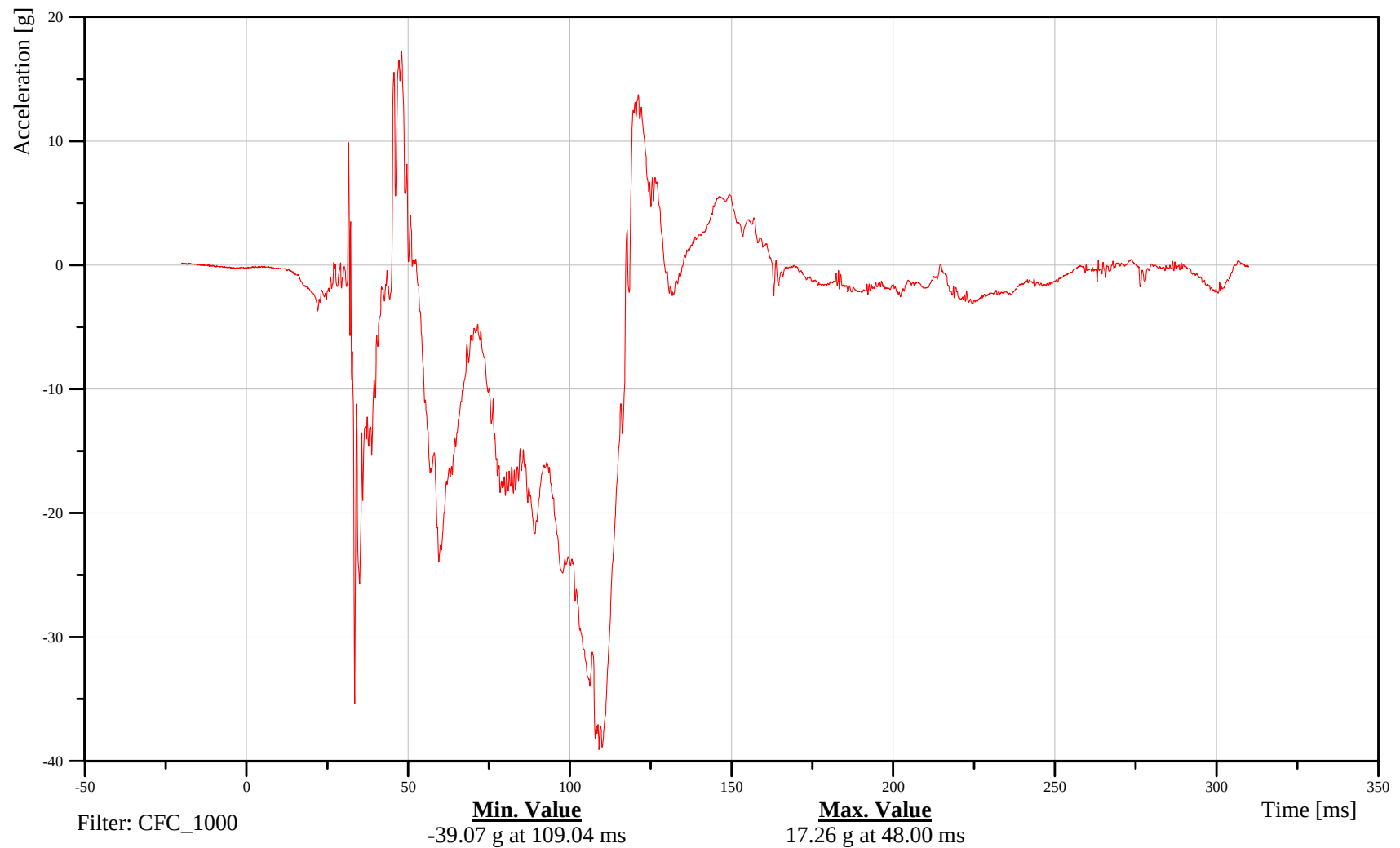
Date: 05/30/2006
Time: 14:51

Left Tibia X-Axis Acceleration

Customer: Volpe
Test Number: R60172

11TIBILELXH3ACXA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-52

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

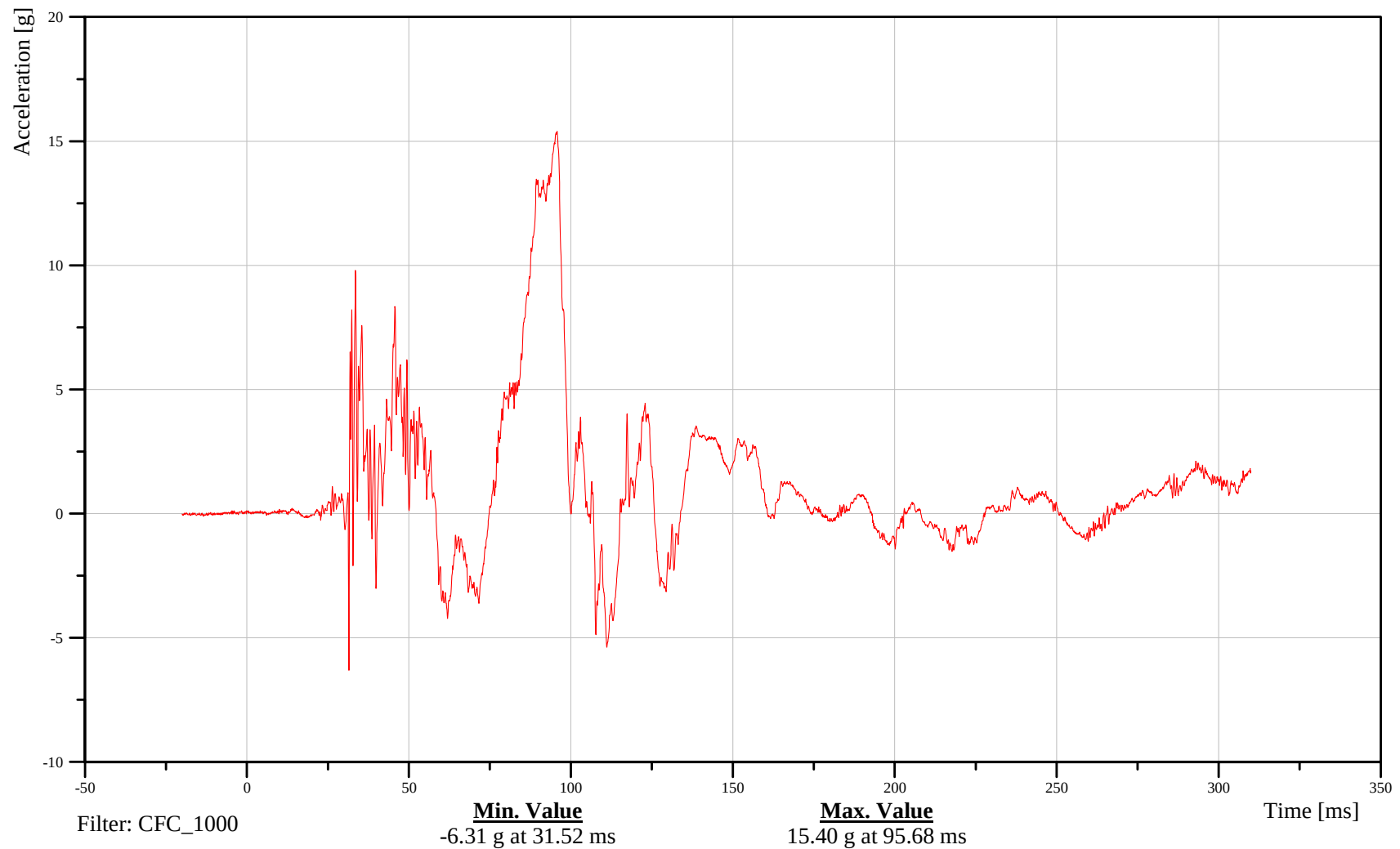
Date: 05/30/2006
Time: 14:51

Left Tibia Y-Axis Acceleration

Customer: Volpe
Test Number: R60172

11TIBILELXH3ACYA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-53

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

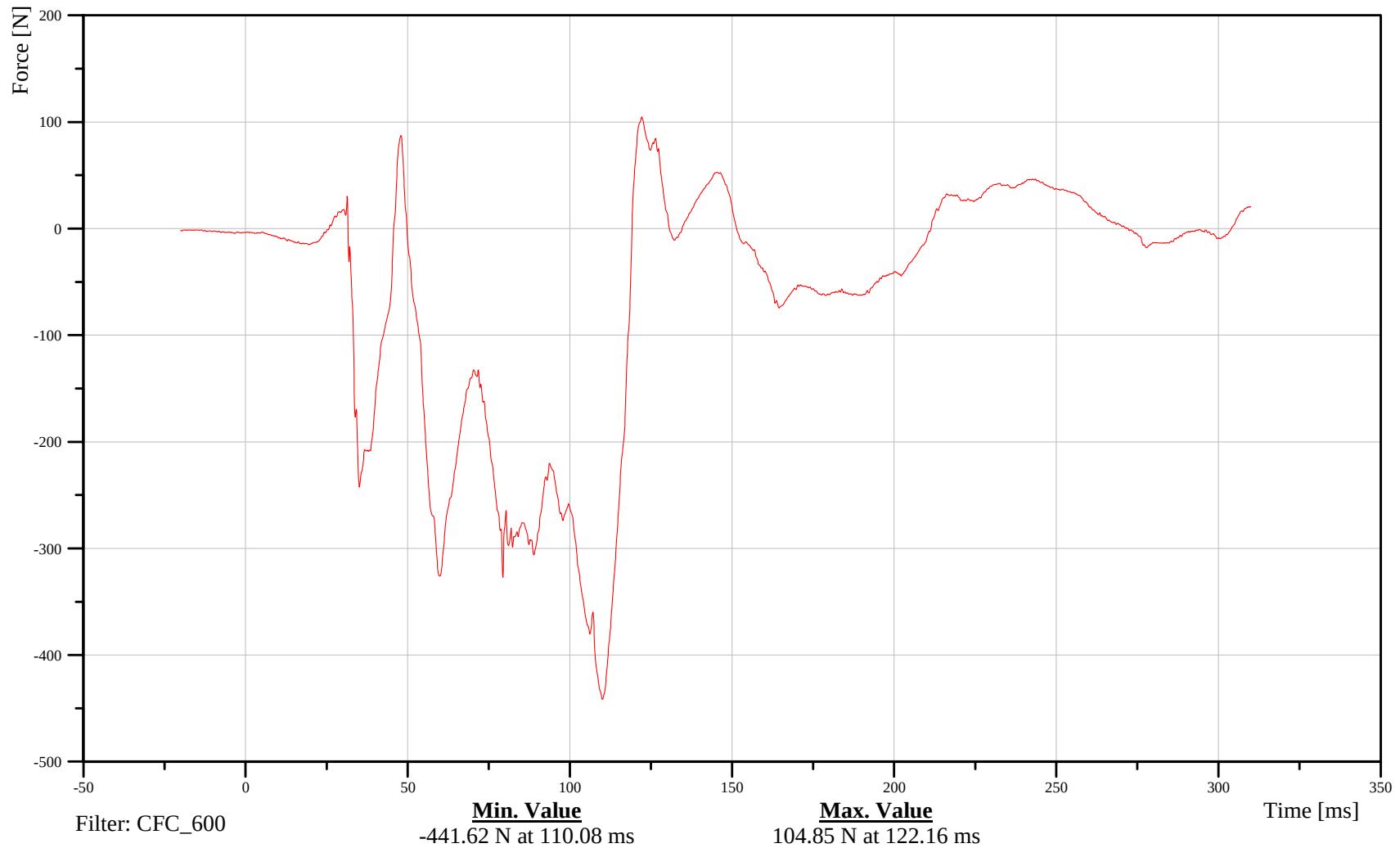
Date: 05/30/2006
Time: 14:51

Left Lower Tibia X-Axis Force

Customer: Volpe
Test Number: R60172

11TIBILLXH3FOXB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-54

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

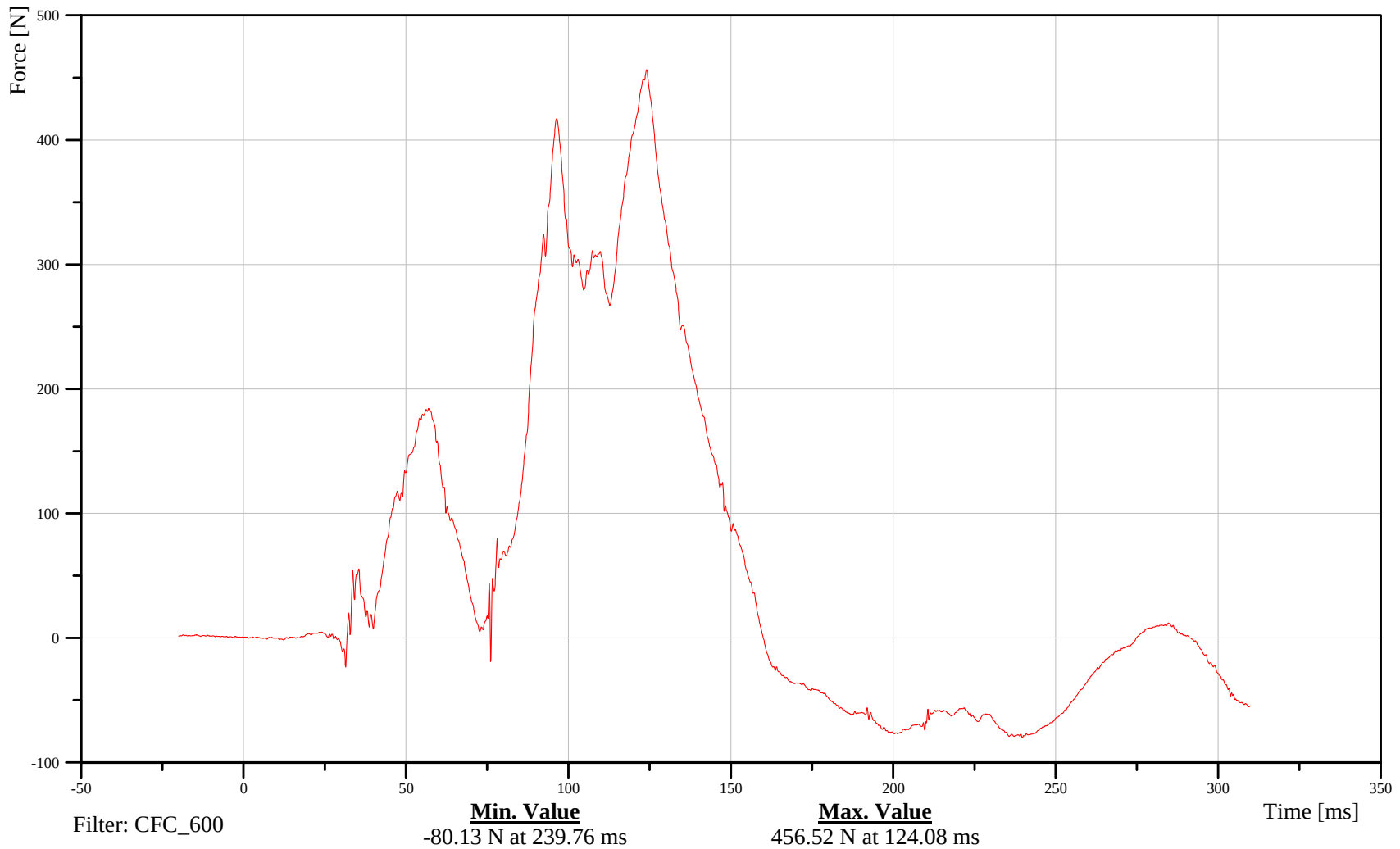
Date: 05/30/2006
Time: 14:51

Left Lower Tibia Y-Axis Force

Customer: Volpe
Test Number: R60172

11TIBILLXH3FOYB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-55

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

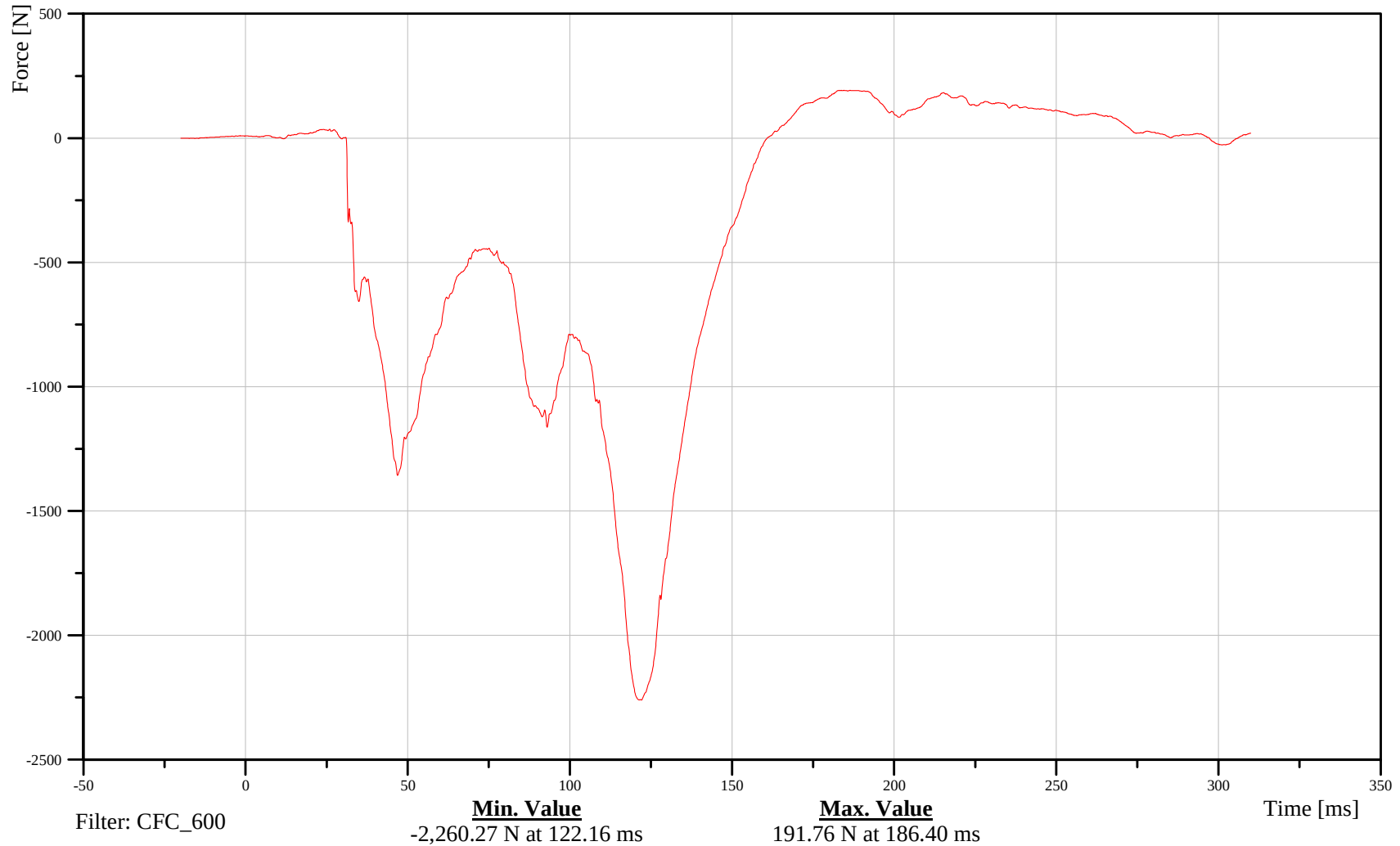
Date: 05/30/2006
Time: 14:51

Left Lower Tibia Z-Axis Force

Customer: Volpe
Test Number: R60172

11TIBILLXH3FOZB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-56

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

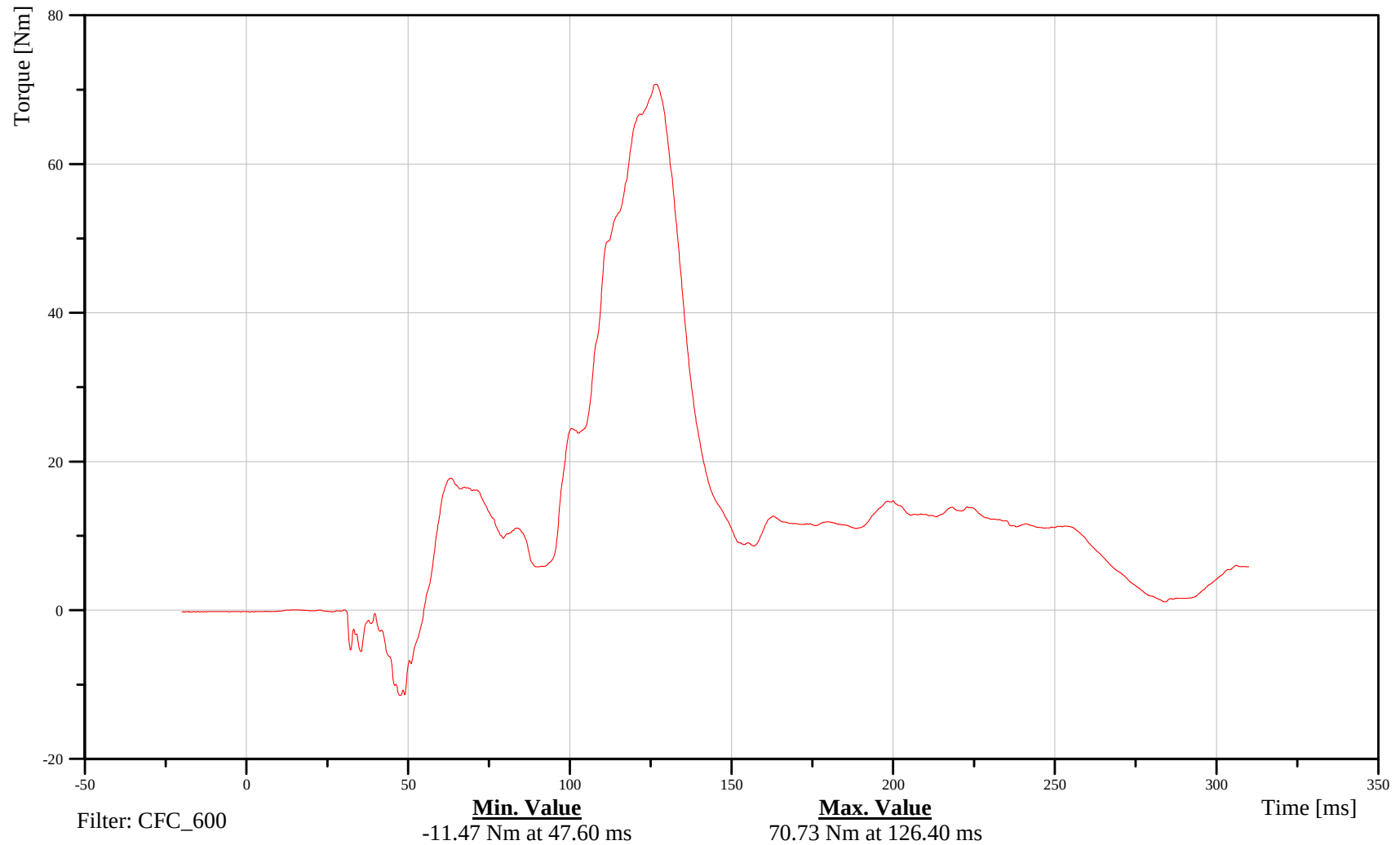
Date: 05/30/2006
Time: 14:51

Left Lower Tibia Moment About X Axis

Customer: Volpe
Test Number: R60172

11TIBILLXH3MOXB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-57

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

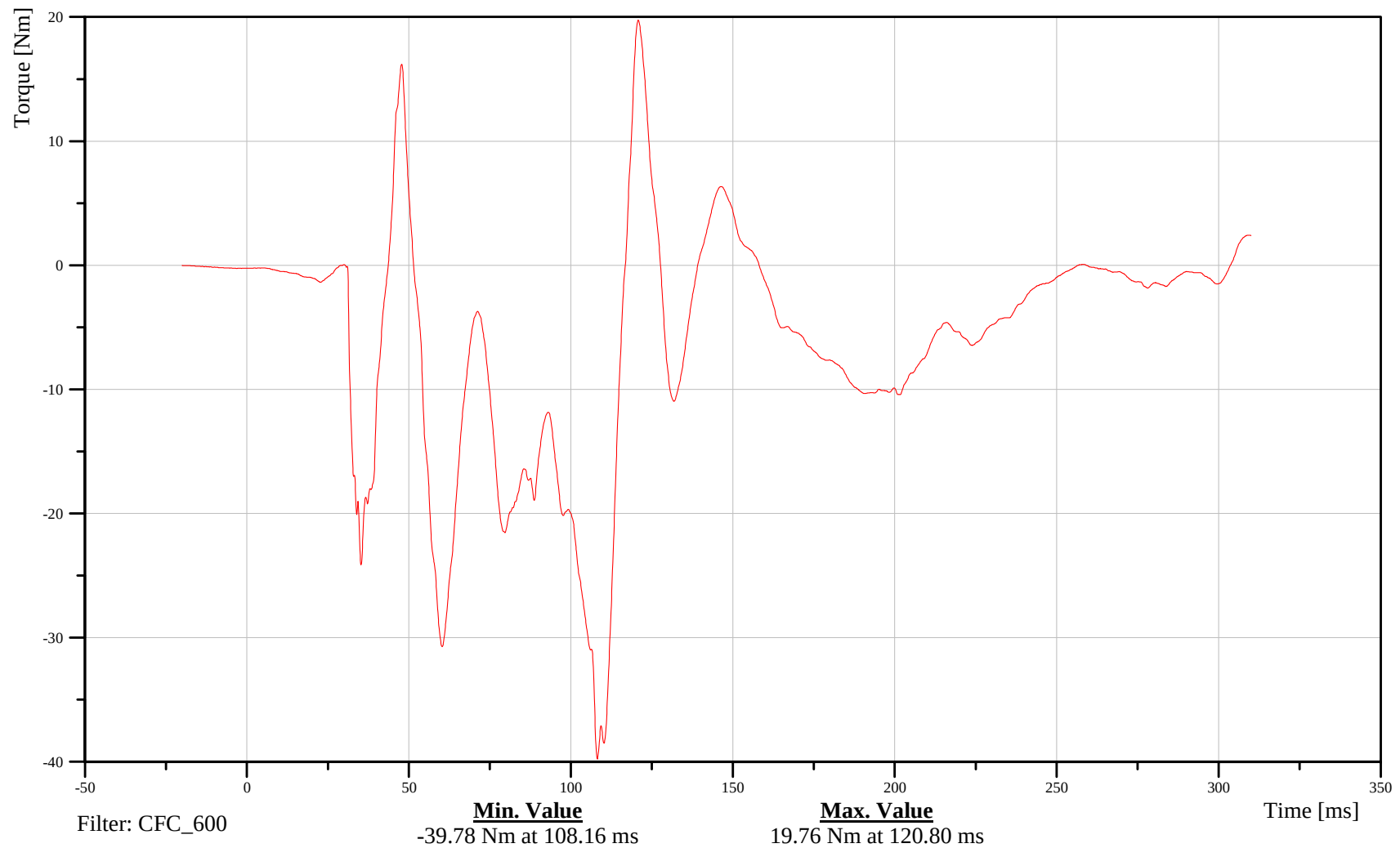
Date: 05/30/2006
Time: 14:51

Left Lower Tibia Moment About Y Axis

Customer: Volpe
Test Number: R60172

11TIBILLXH3MOYB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-58

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

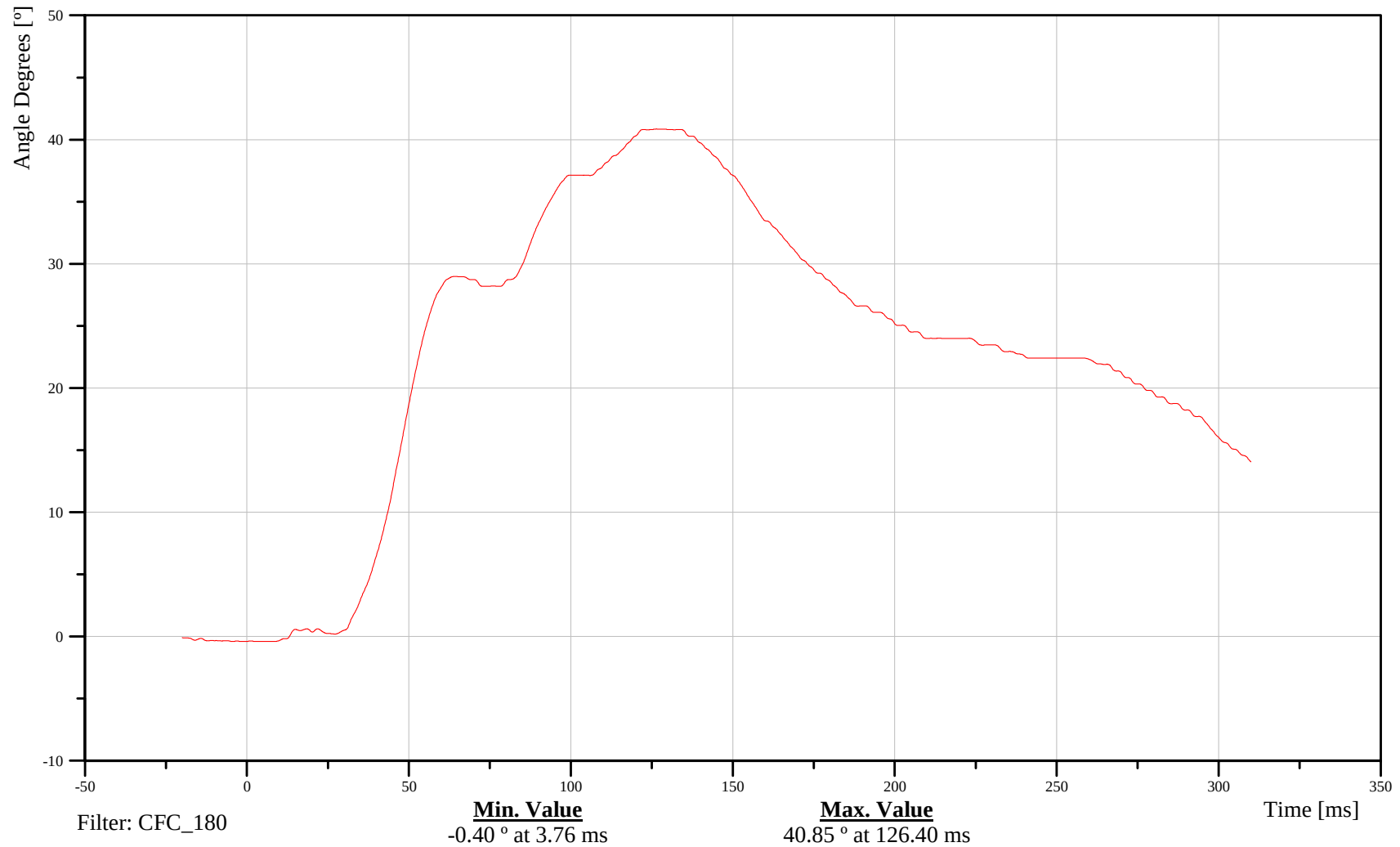
Date: 05/30/2006
Time: 14:51

Left Foot X-Axis Rotation

Customer: Volpe
Test Number: R60172

11FOOTLELXH3ANXC

TRC Inc. Test Lab: CTF
Test Number: 060530



B-59

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

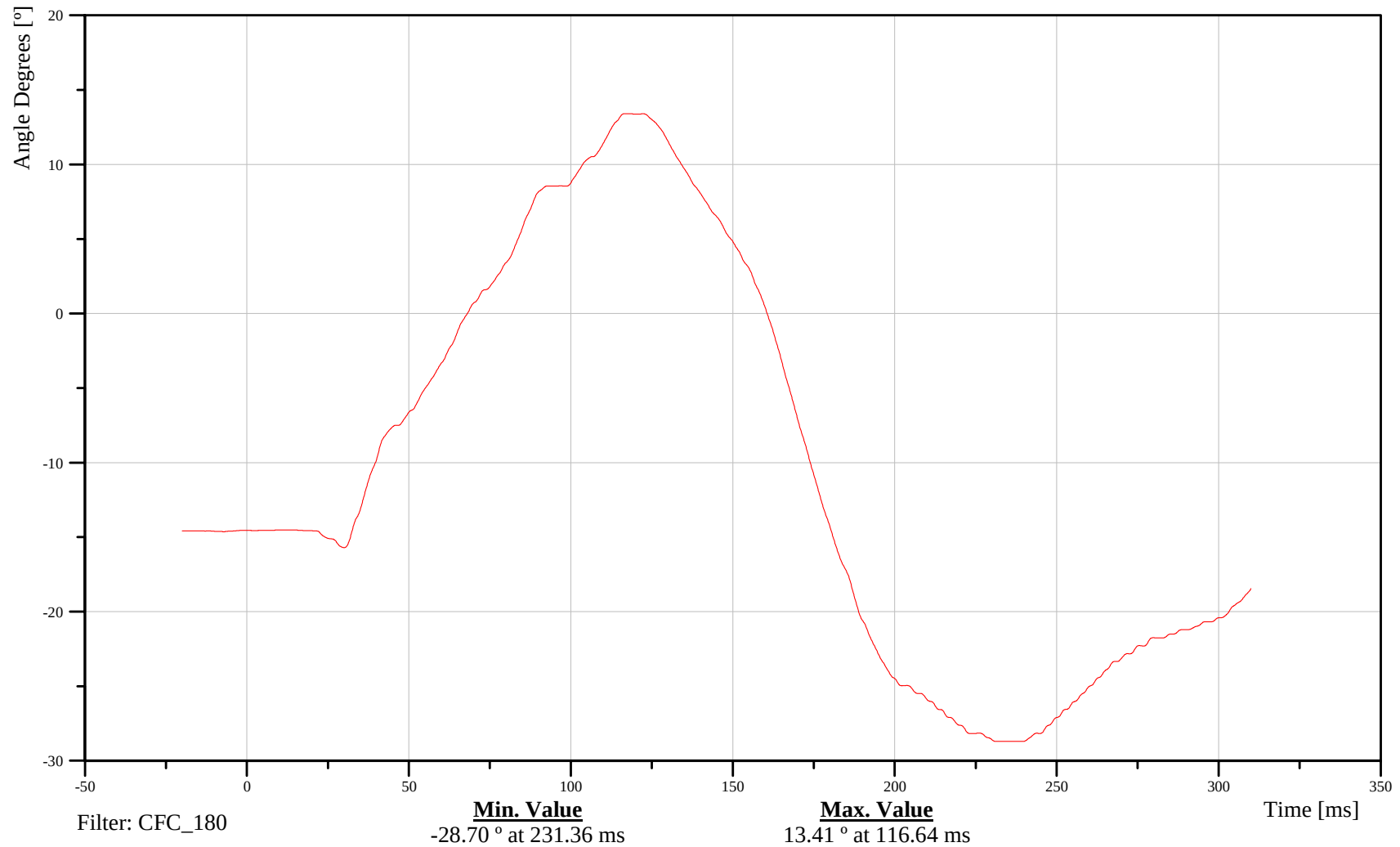
Date: 05/30/2006
Time: 14:51

Left Foot Y-Axis Rotation

Customer: Volpe
Test Number: R60172

11FOOTLELXH3ANYC

TRC Inc. Test Lab: CTF
Test Number: 060530



B-60

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

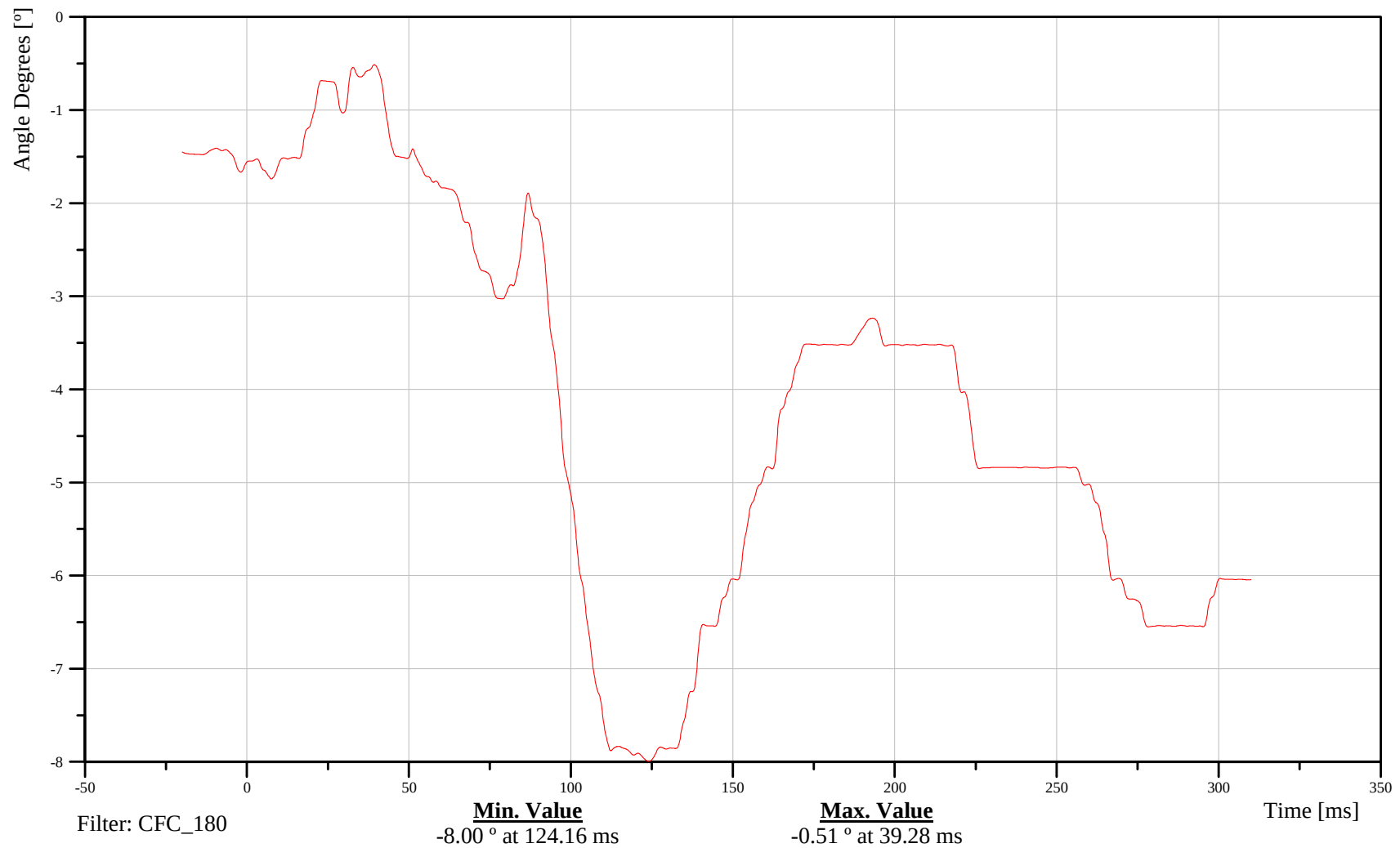
Date: 05/30/2006
Time: 14:51

Left Foot Z-Axis Rotation

Customer: Volpe
Test Number: R60172

11FOOTLELXH3ANZC

TRC Inc. Test Lab: CTF
Test Number: 060530



B-61

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

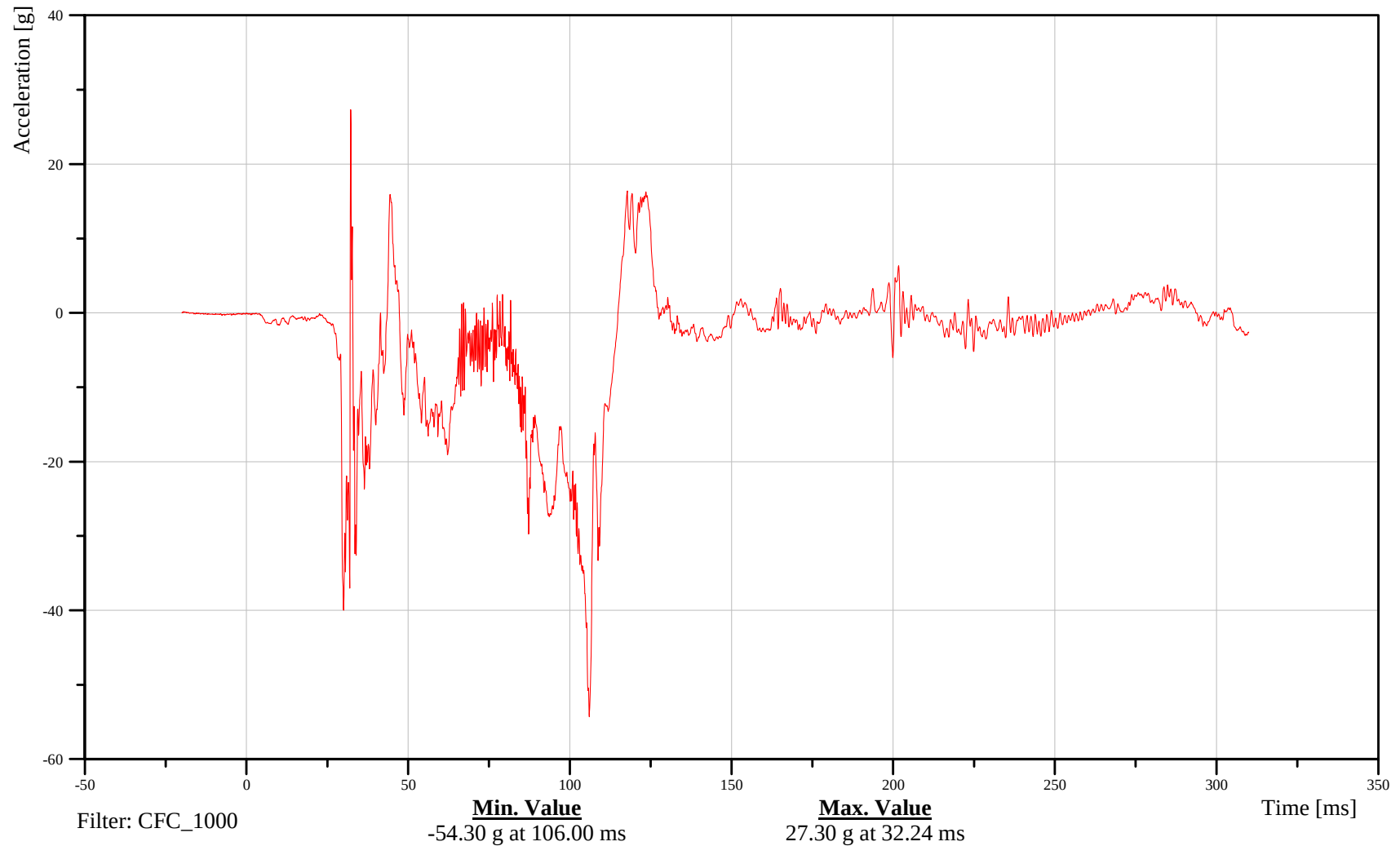
Date: 05/30/2006
Time: 14:51

Left Foot X-Axis Acceleration

Customer: Volpe
Test Number: R60172

11FOOTLELXH3ACXA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-62

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

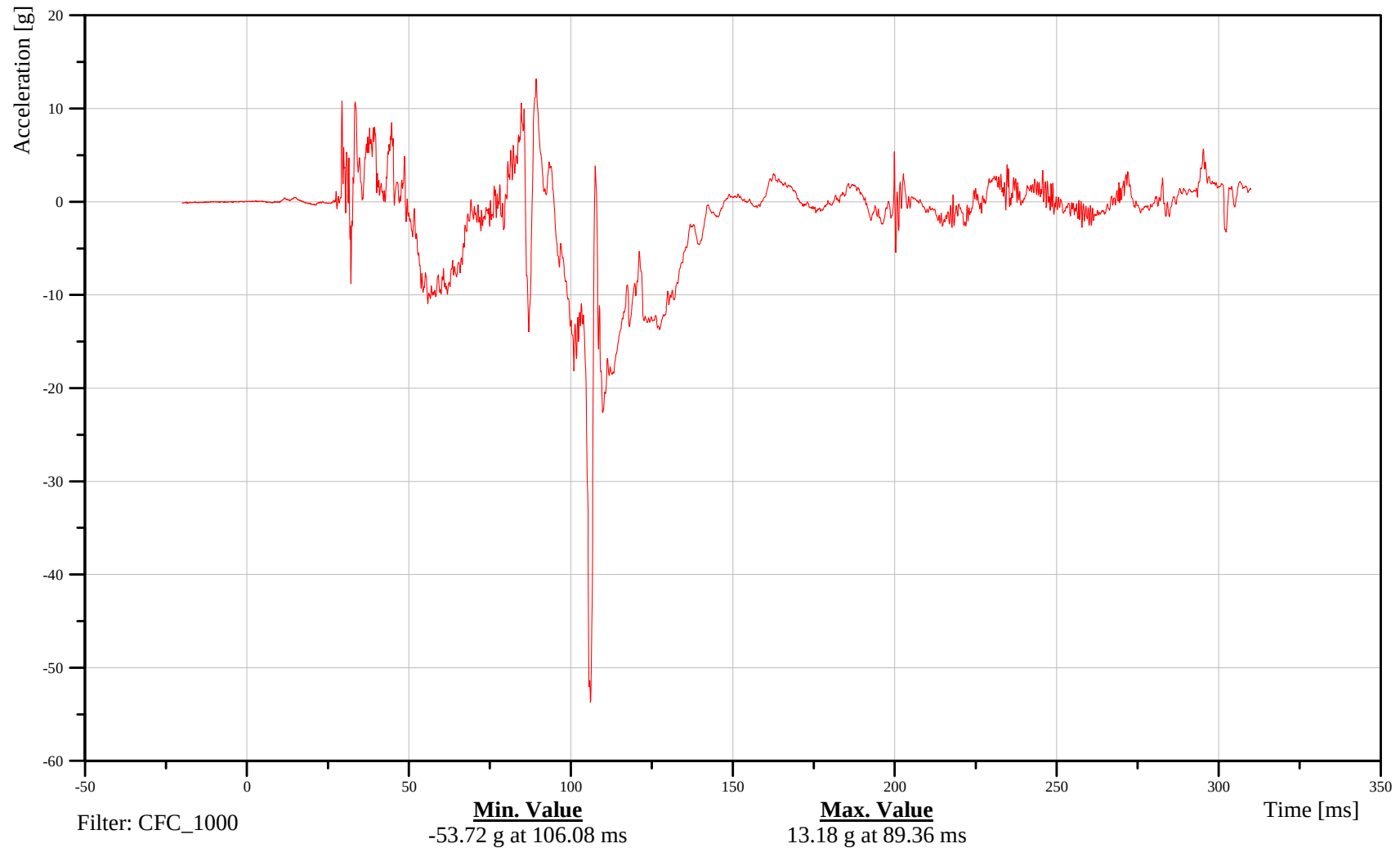
Date: 05/30/2006
Time: 14:51

Left Foot Y-Axis Acceleration

Customer: Volpe
Test Number: R60172

11FOOTLELXH3ACYA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-63

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

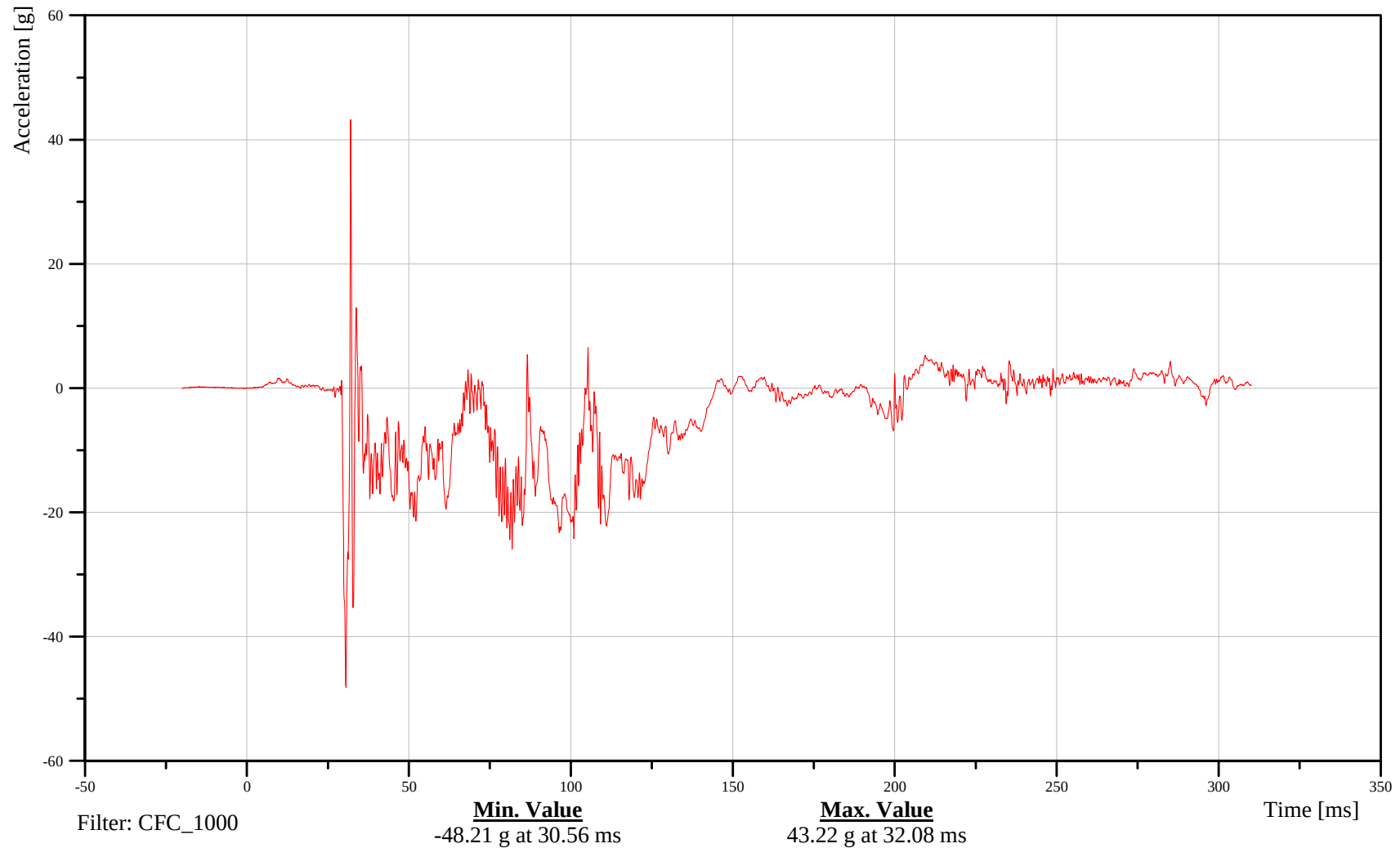
Date: 05/30/2006
Time: 14:51

Left Foot Z-Axis Acceleration

Customer: Volpe
Test Number: R60172

11FOOTLELXH3ACZA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-64

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

Date: 05/30/2006
Time: 14:51

Left Foot Resultant Acceleration

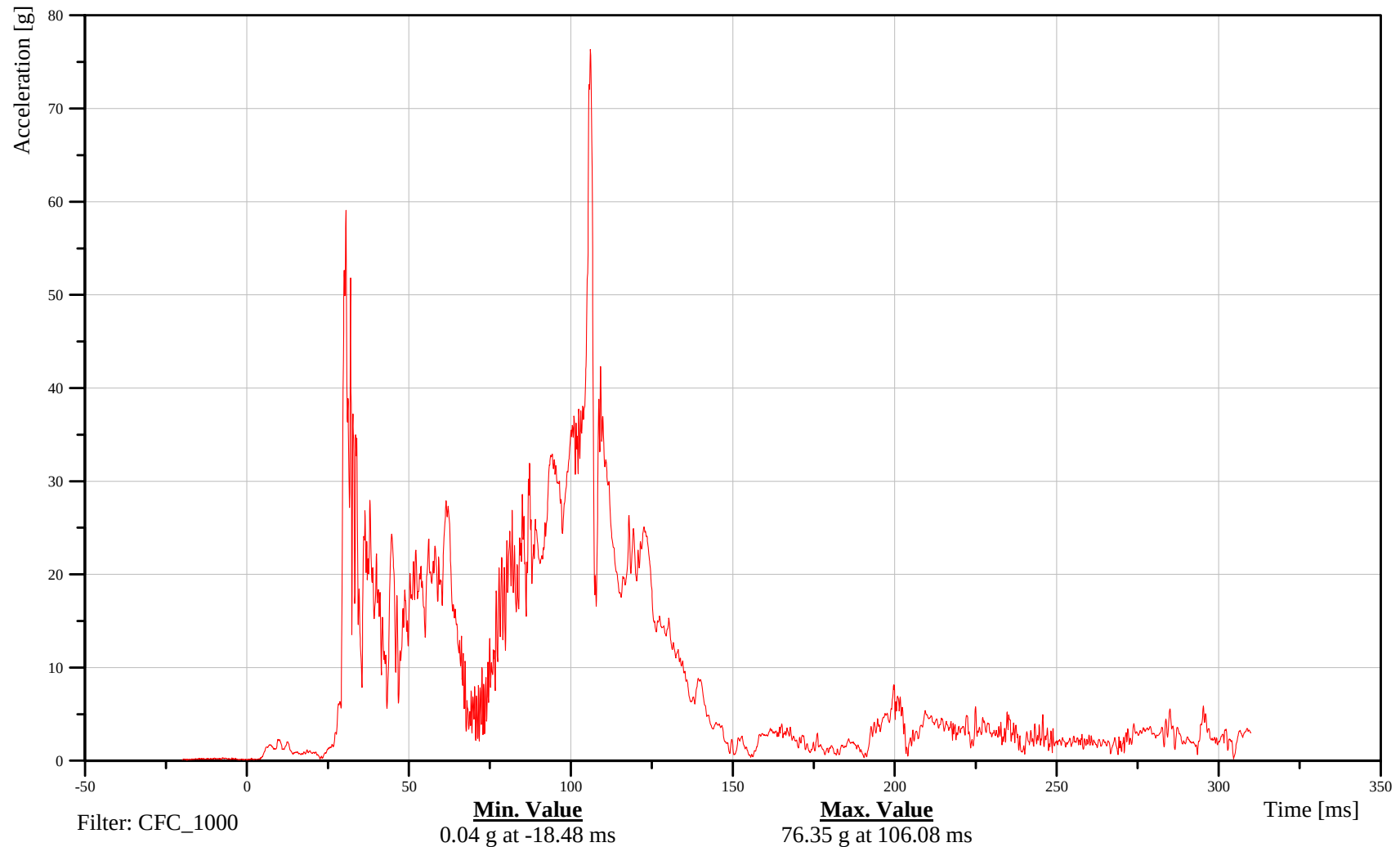
Customer: Volpe

Test Number: R60172

11FOOTLELXH3ACRA

TRC Inc. Test Lab: CTF

Test Number: 060530



B-65

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

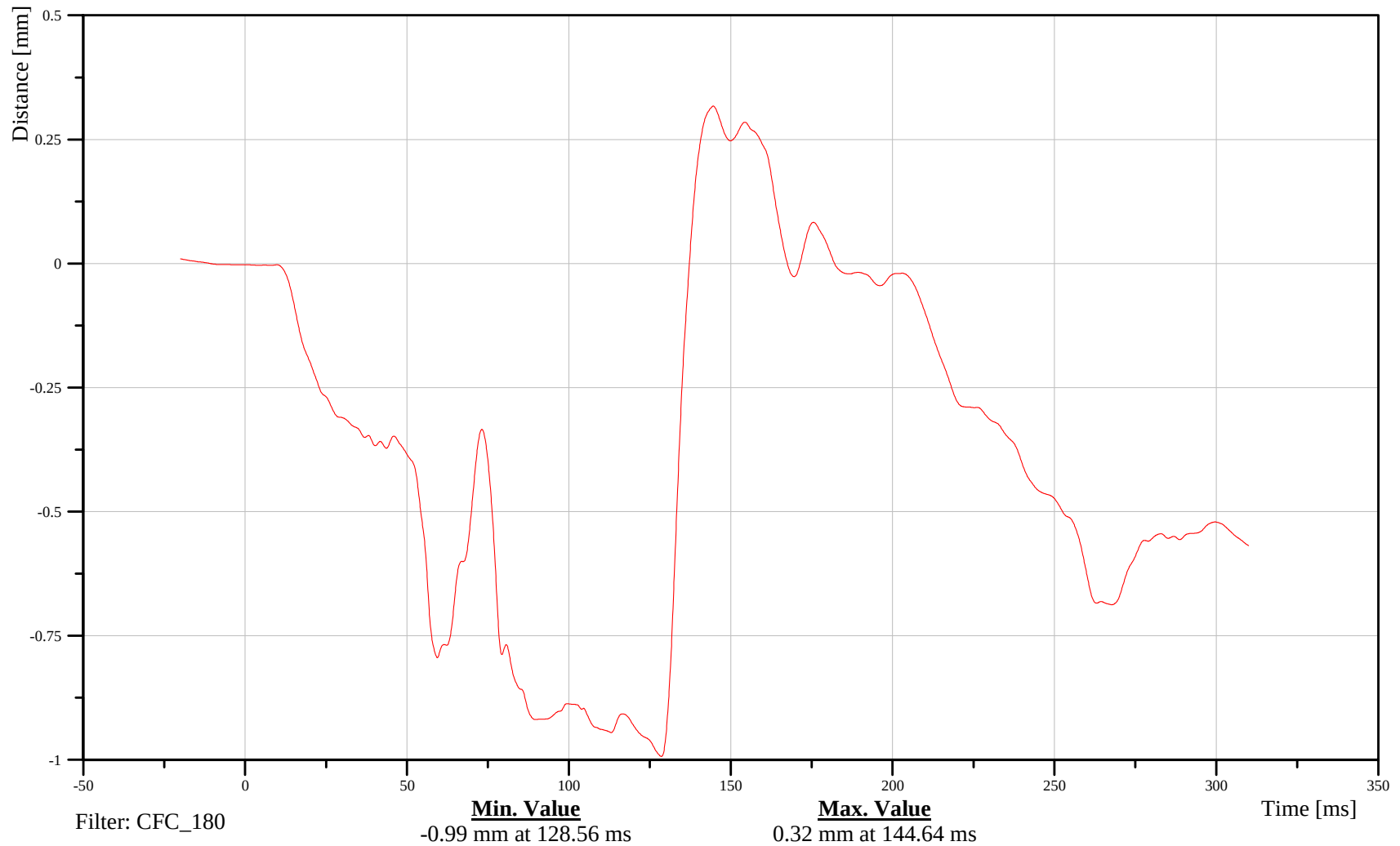
Date: 05/30/2006
Time: 14:51

Right Knee Displacement

Customer: Volpe
Test Number: R60172

11KNSLRI00H3DSXC

TRC Inc. Test Lab: CTF
Test Number: 060530



B-66

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

Date: 05/30/2006
Time: 14:51

Right Upper Tibia X-Axis Force

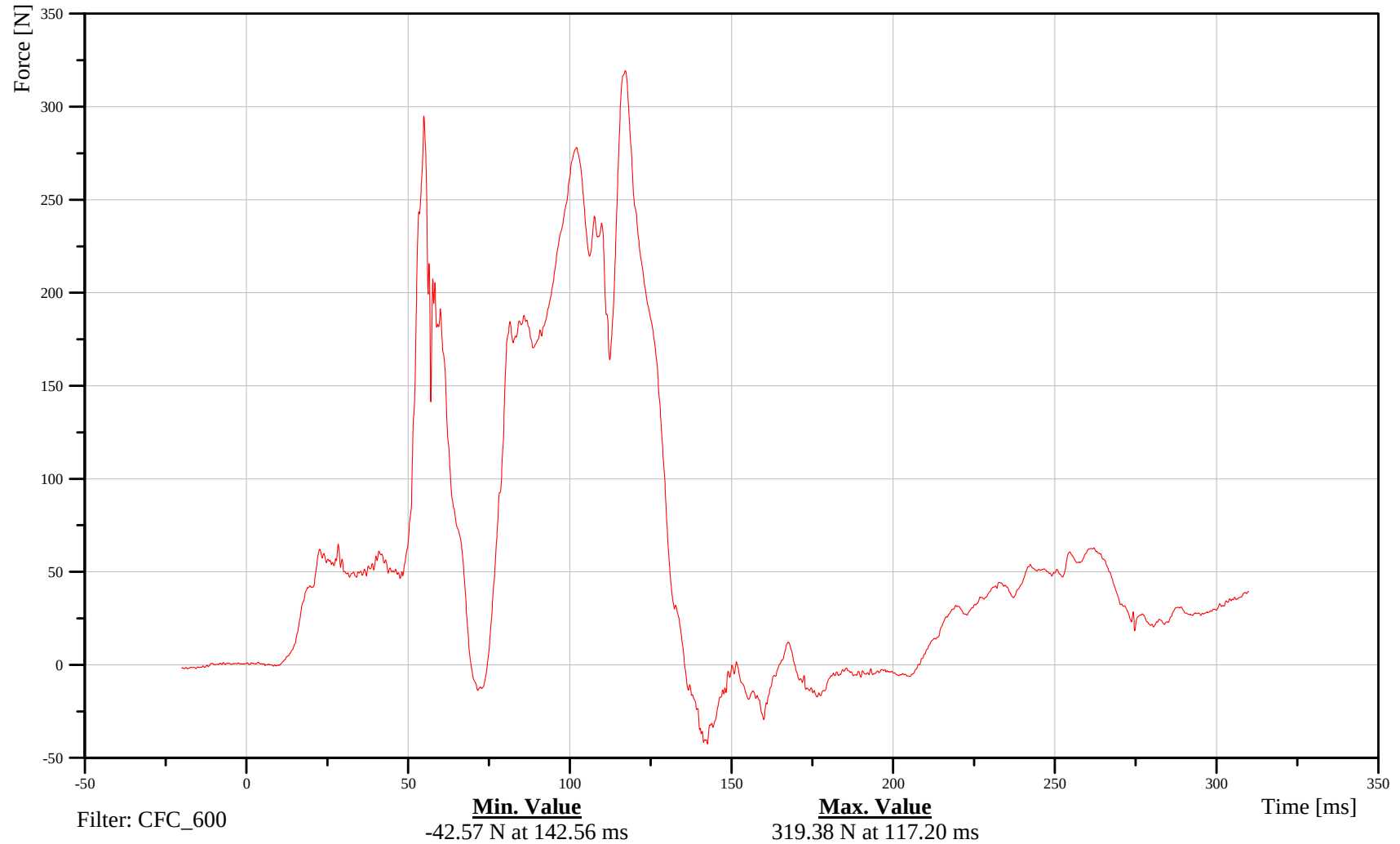
Customer: Volpe

Test Number: R60172

11TIBIRULXH3FOXB

TRC Inc. Test Lab: CTF

Test Number: 060530



B-67

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

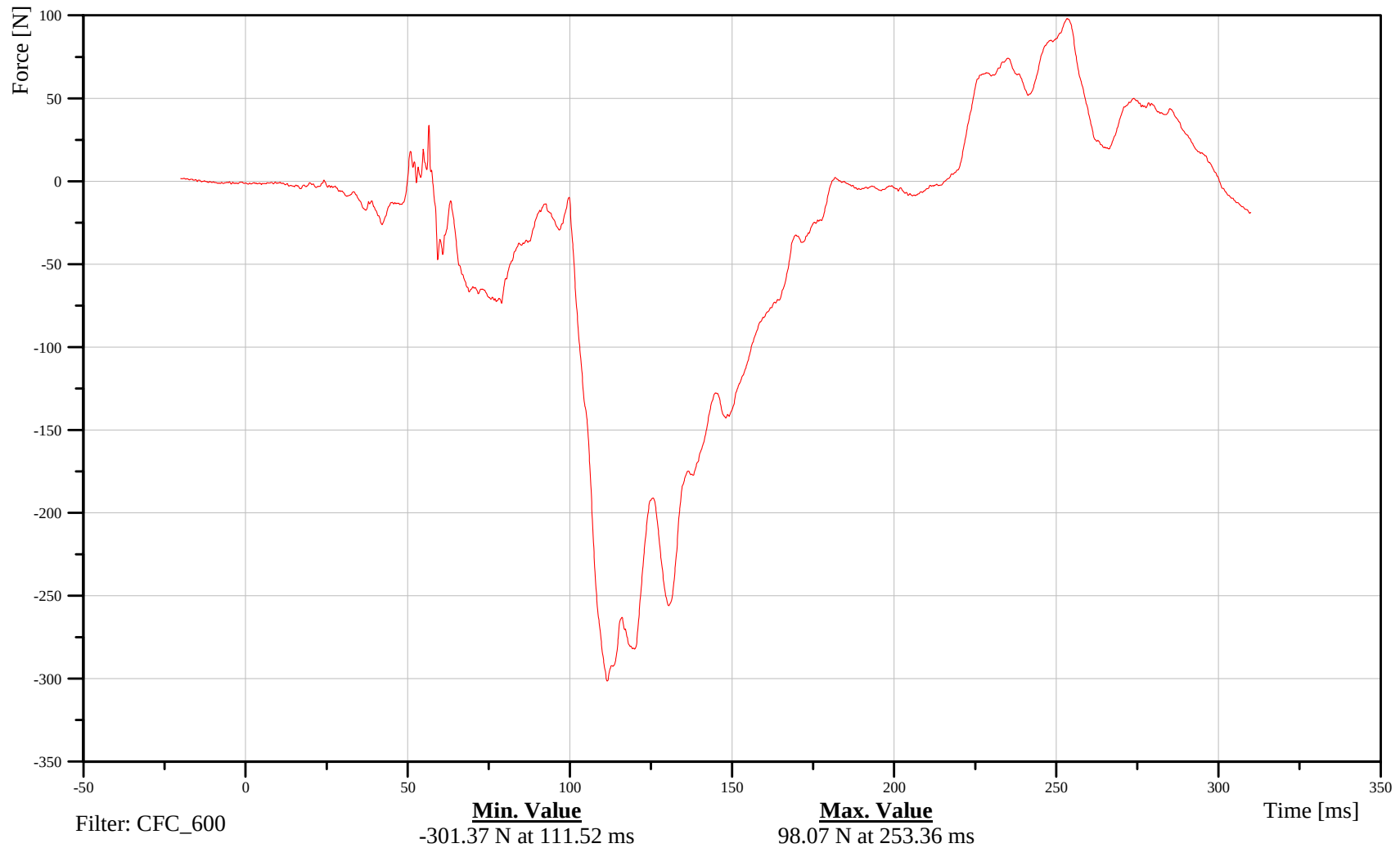
Date: 05/30/2006
Time: 14:51

Right Upper Tibia Y-Axis Force

Customer: Volpe
Test Number: R60172

11TIBIRLUXH3FOYB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-68

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

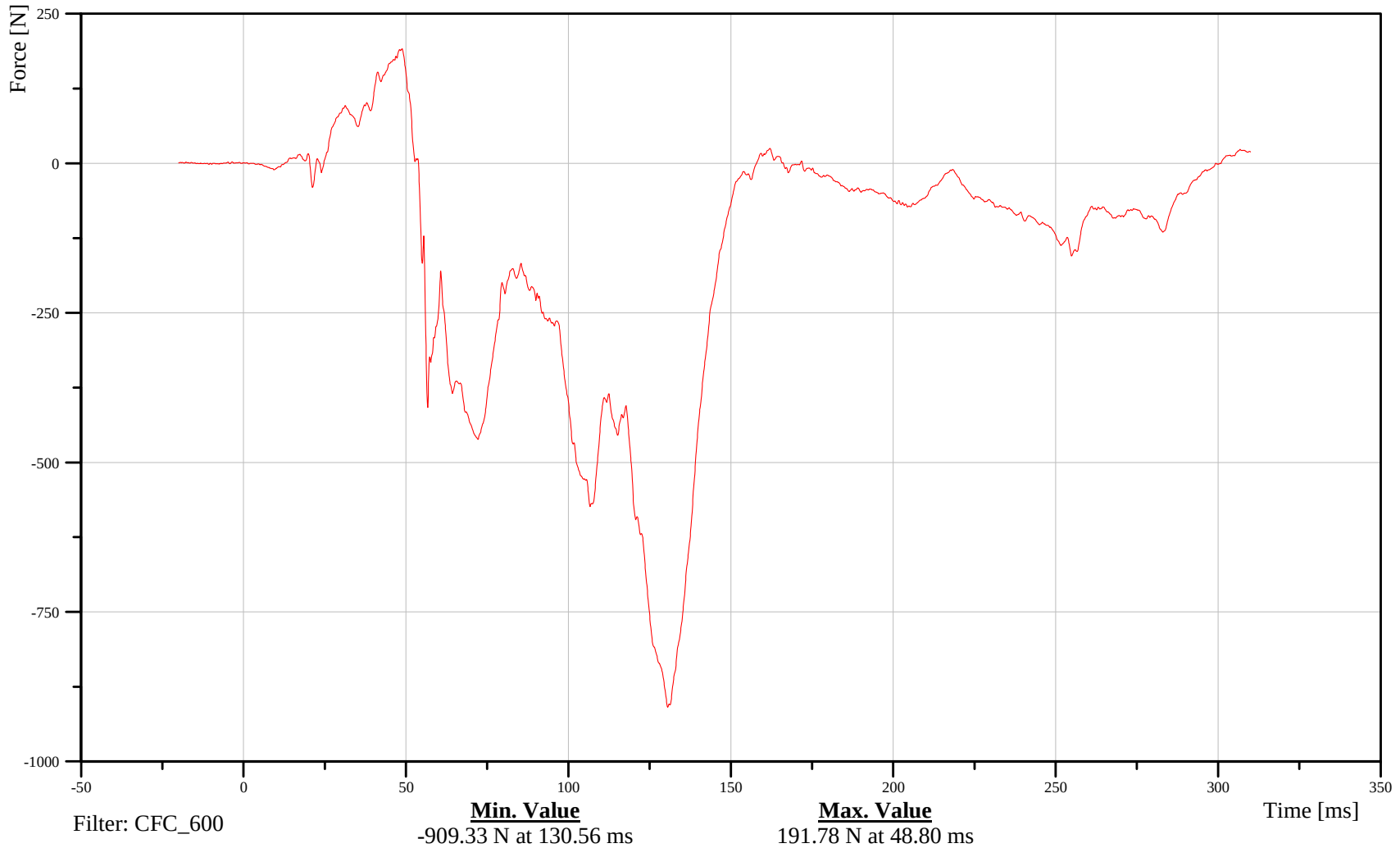
Date: 05/30/2006
Time: 14:51

Right Upper Tibia Z-Axis Force

Customer: Volpe
Test Number: R60172

11TIBIRULXH3FOZB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-69

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

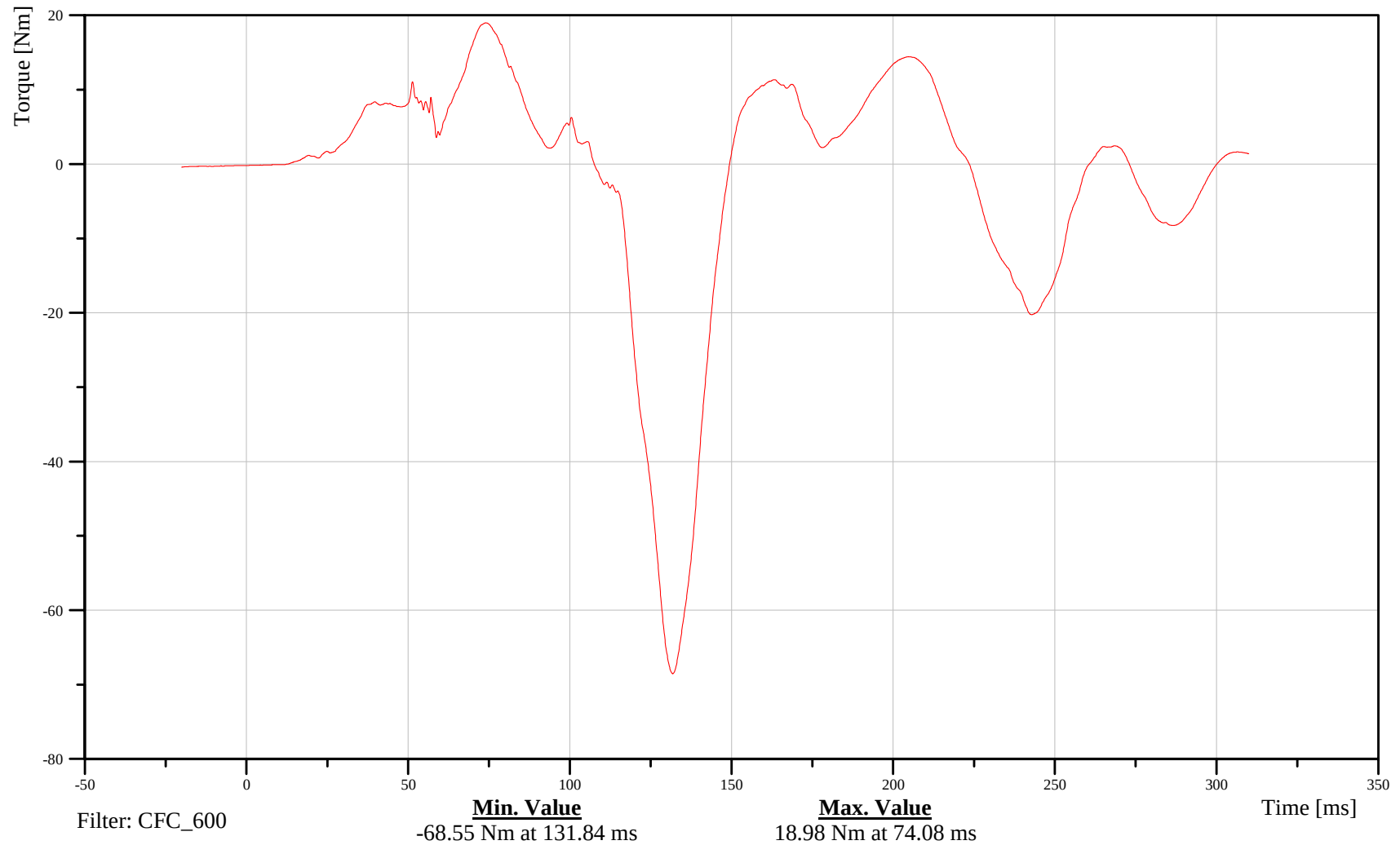
Date: 05/30/2006
Time: 14:51

Right Upper Tibia Moment About X Axis

Customer: Volpe
Test Number: R60172

11TIBIRULXH3MOXB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-70

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

Date: 05/30/2006
Time: 14:51

Right Upper Tibia Moment About Y Axis

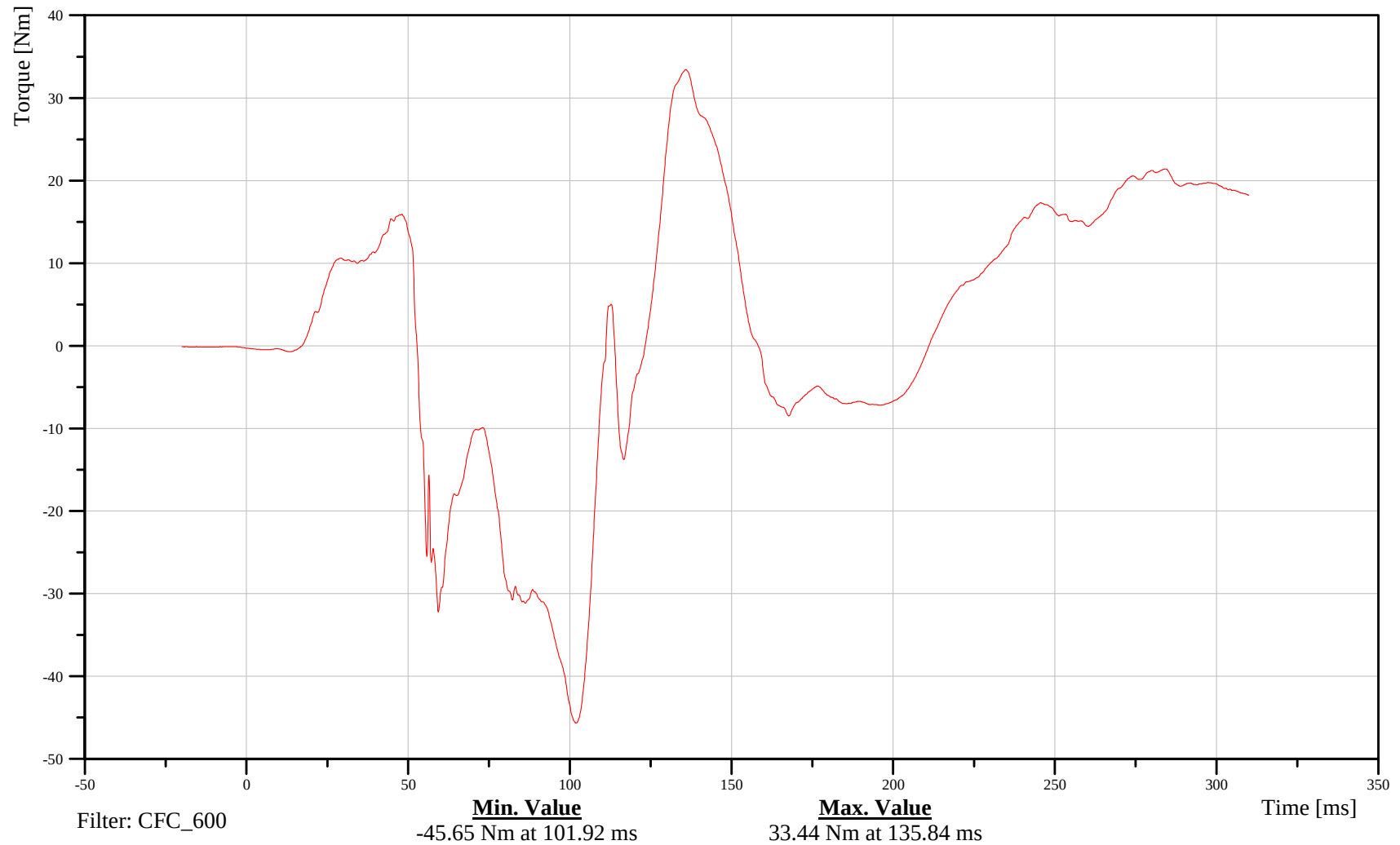
Customer: Volpe

Test Number: R60172

11TIBIRULXH3MOYB

TRC Inc. Test Lab: CTF

Test Number: 060530



B-71

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

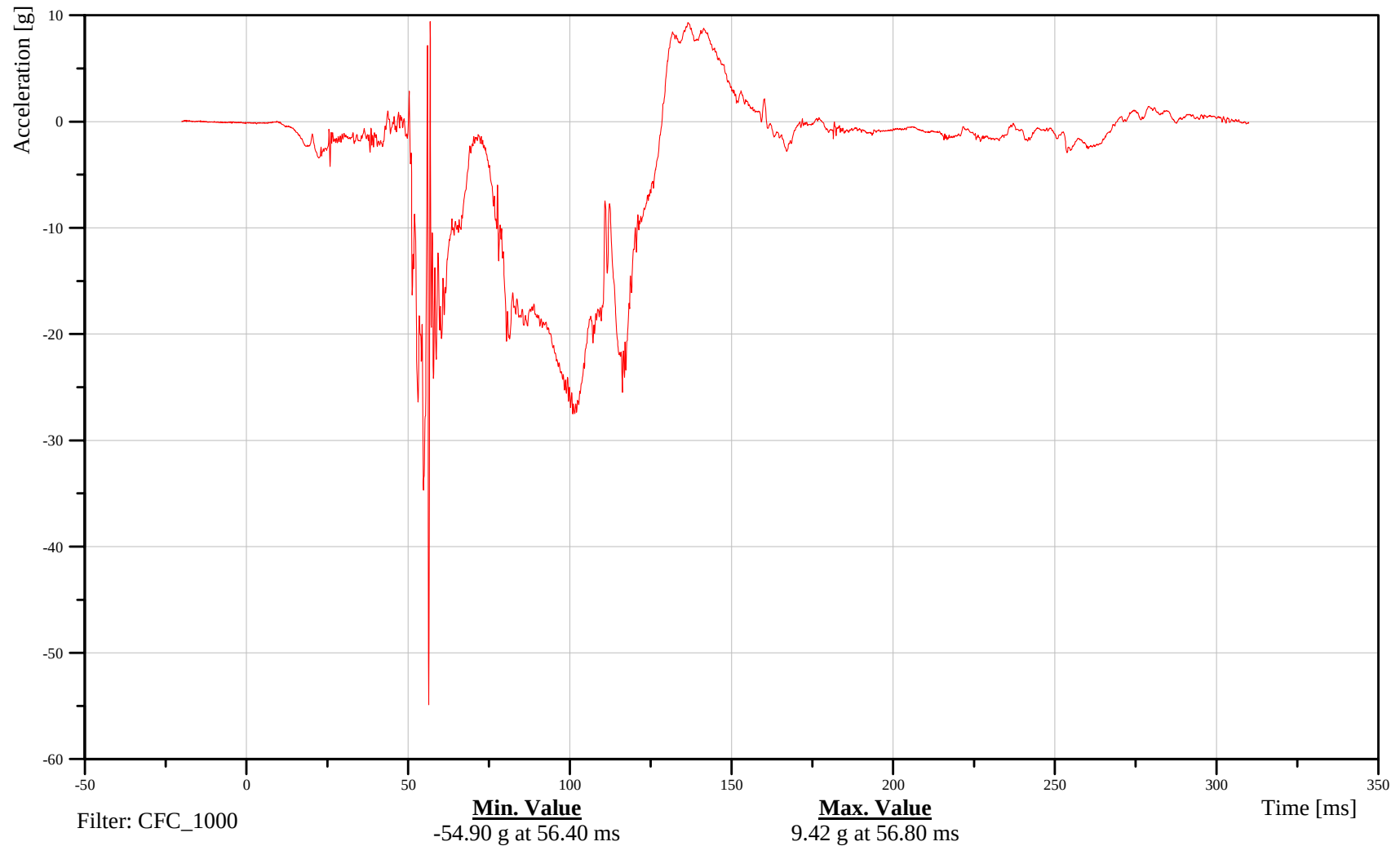
Date: 05/30/2006
Time: 14:51

Right Tibia X-Axis Acceleration

Customer: Volpe
Test Number: R60172

11TIBIRILXH3ACXA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-72

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

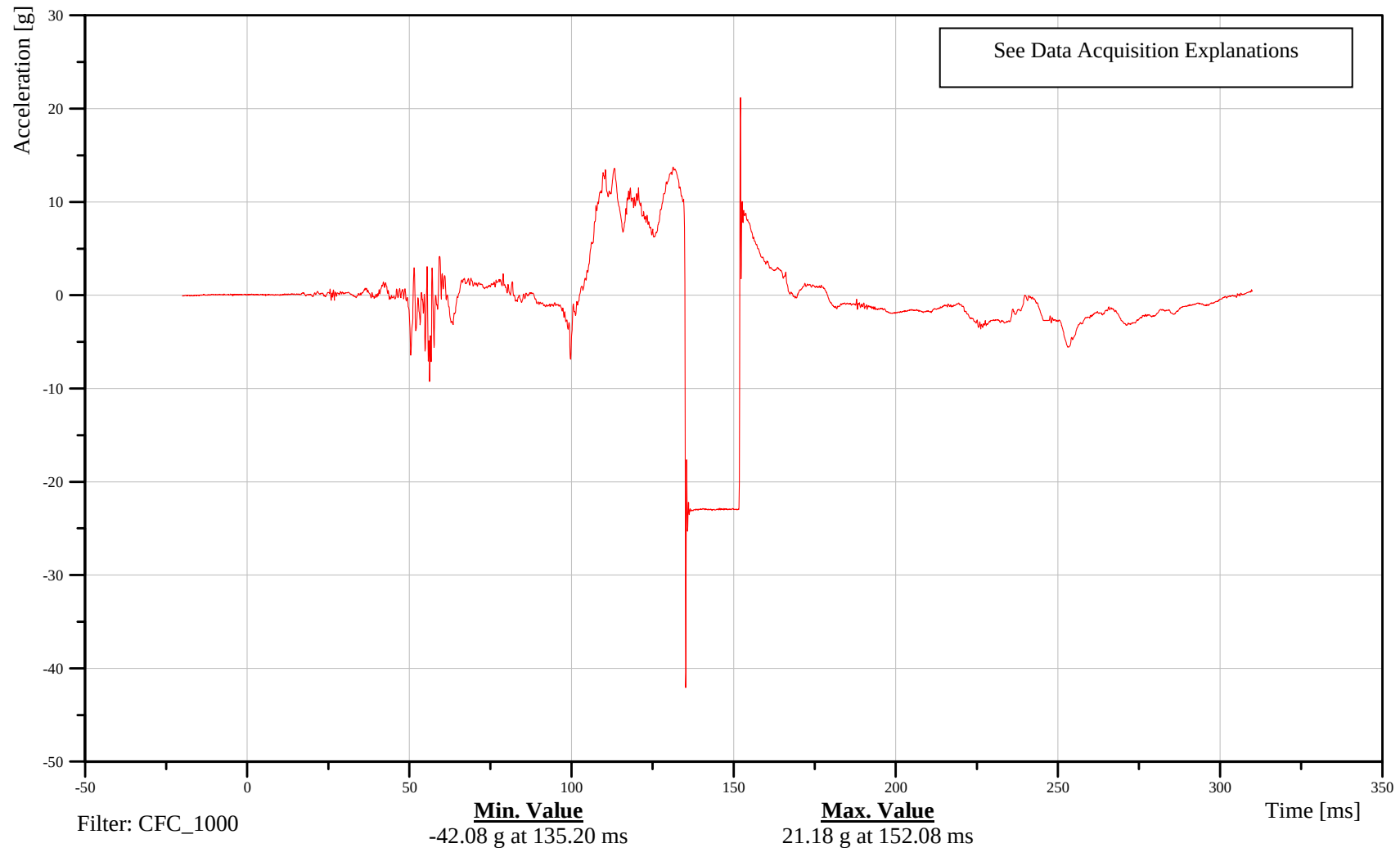
Date: 05/30/2006
Time: 14:51

Right Tibia Y-Axis Acceleration

Customer: Volpe
Test Number: R60172

11TIBIRILXH3ACYA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-73

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

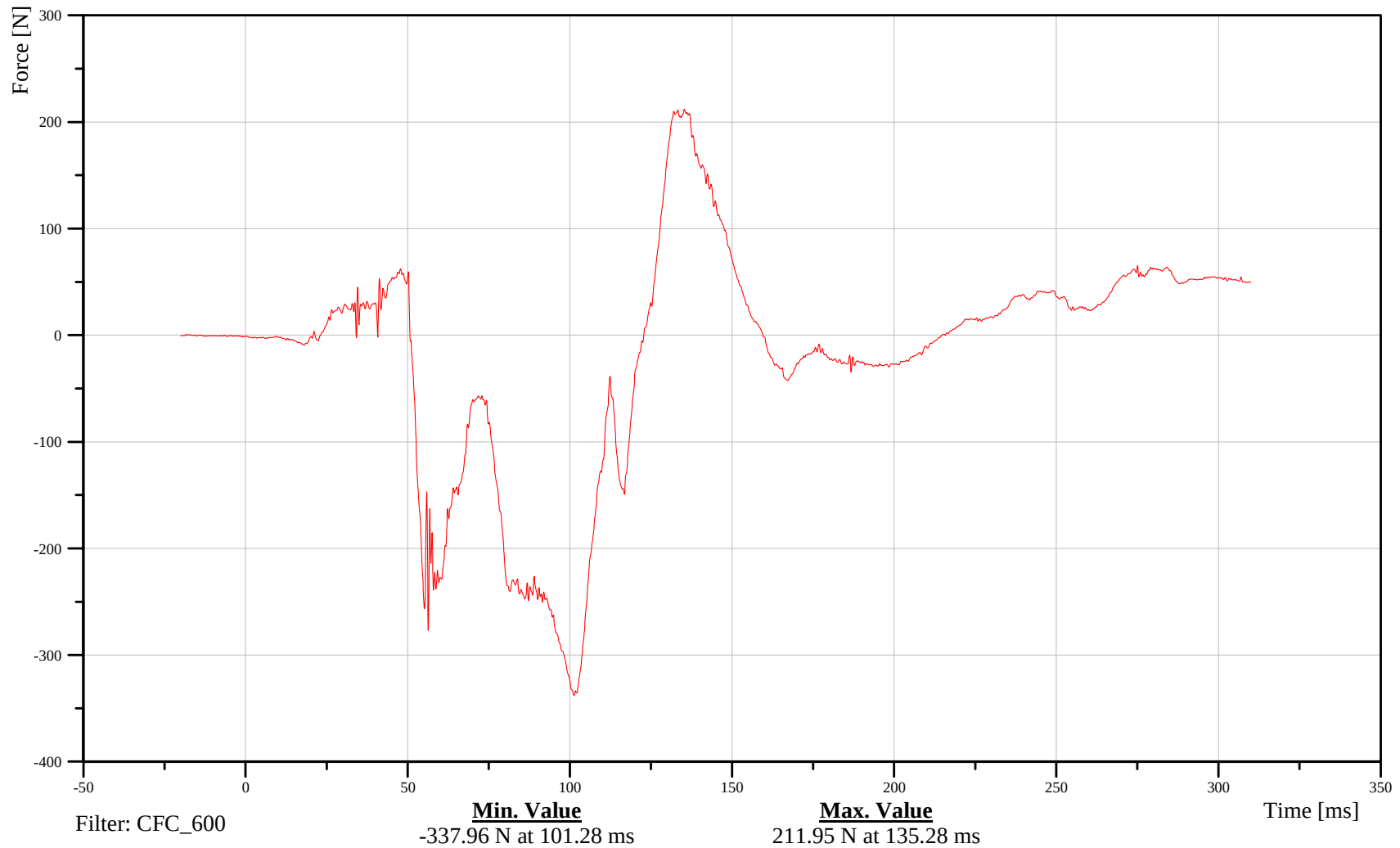
Date: 05/30/2006
Time: 14:51

Right Lower Tibia X-Axis Force

Customer: Volpe
Test Number: R60172

11TIBIRLLXH3FOXB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-74

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

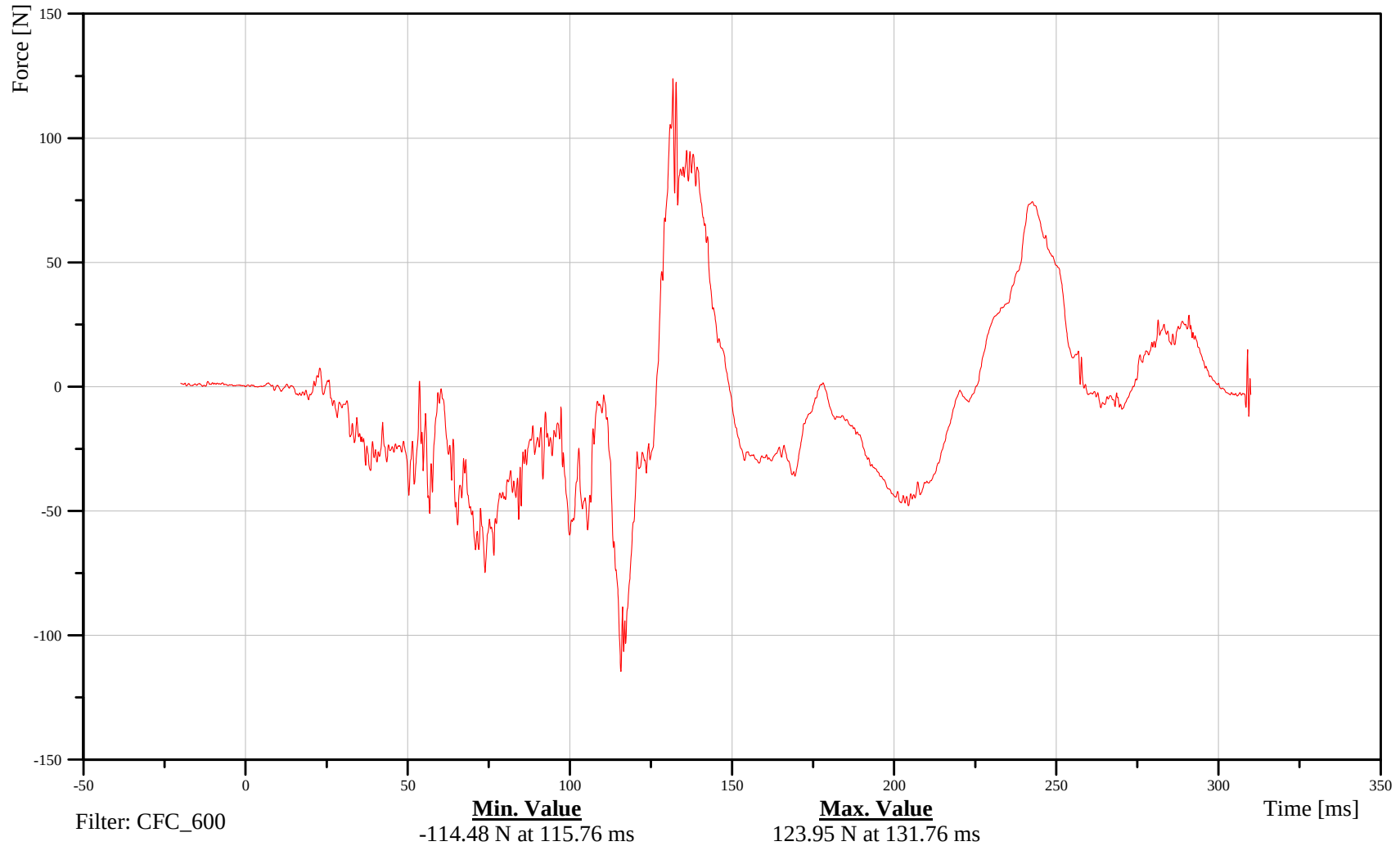
Date: 05/30/2006
Time: 14:51

Right Lower Tibia Y-Axis Force

Customer: Volpe
Test Number: R60172

11TIBIRLLXH3FOYB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-75

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

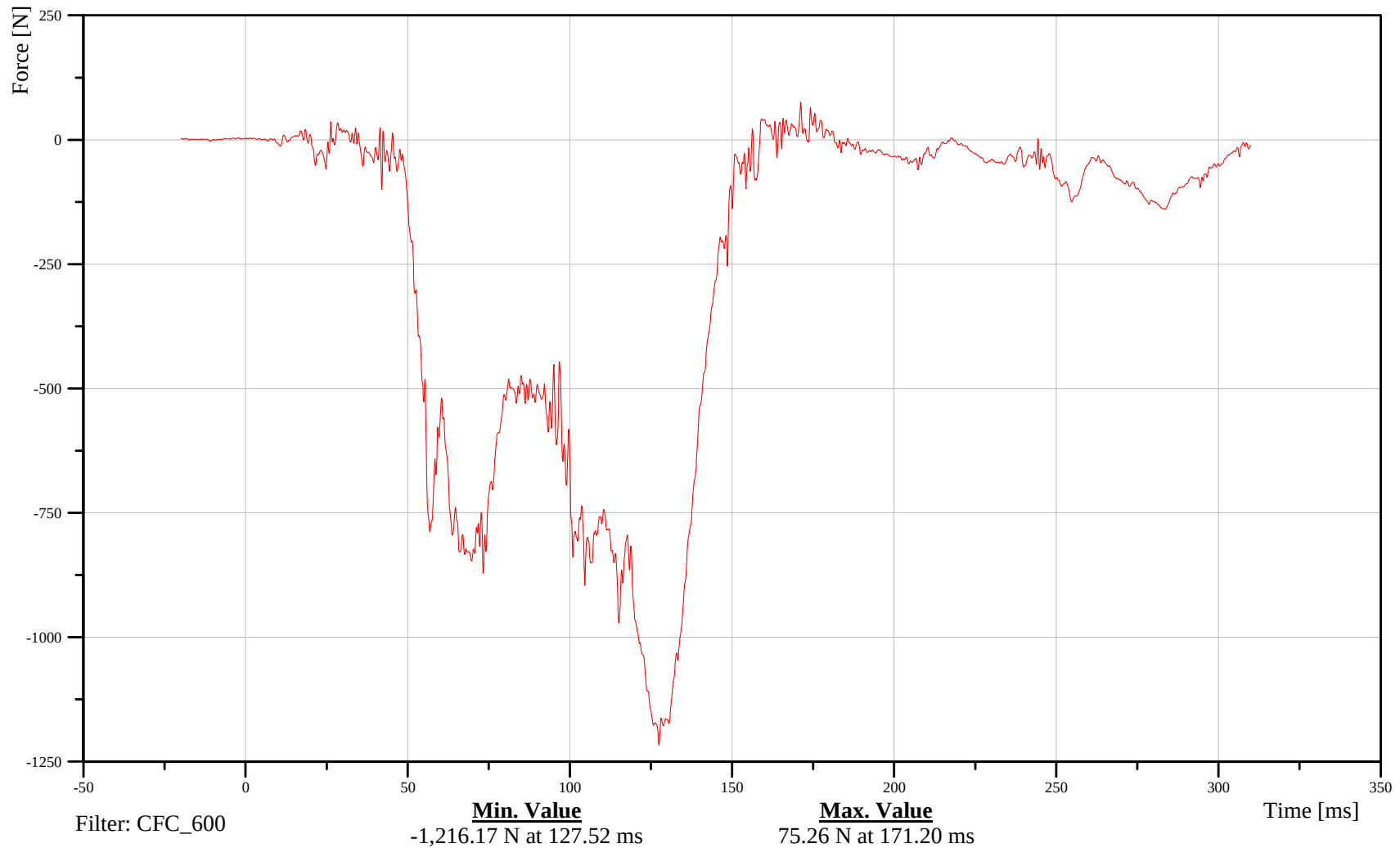
Date: 05/30/2006
Time: 14:51

Right Lower Tibia Z-Axis Force

Customer: Volpe
Test Number: R60172

11TIBIRLLXH3FOZB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-76

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

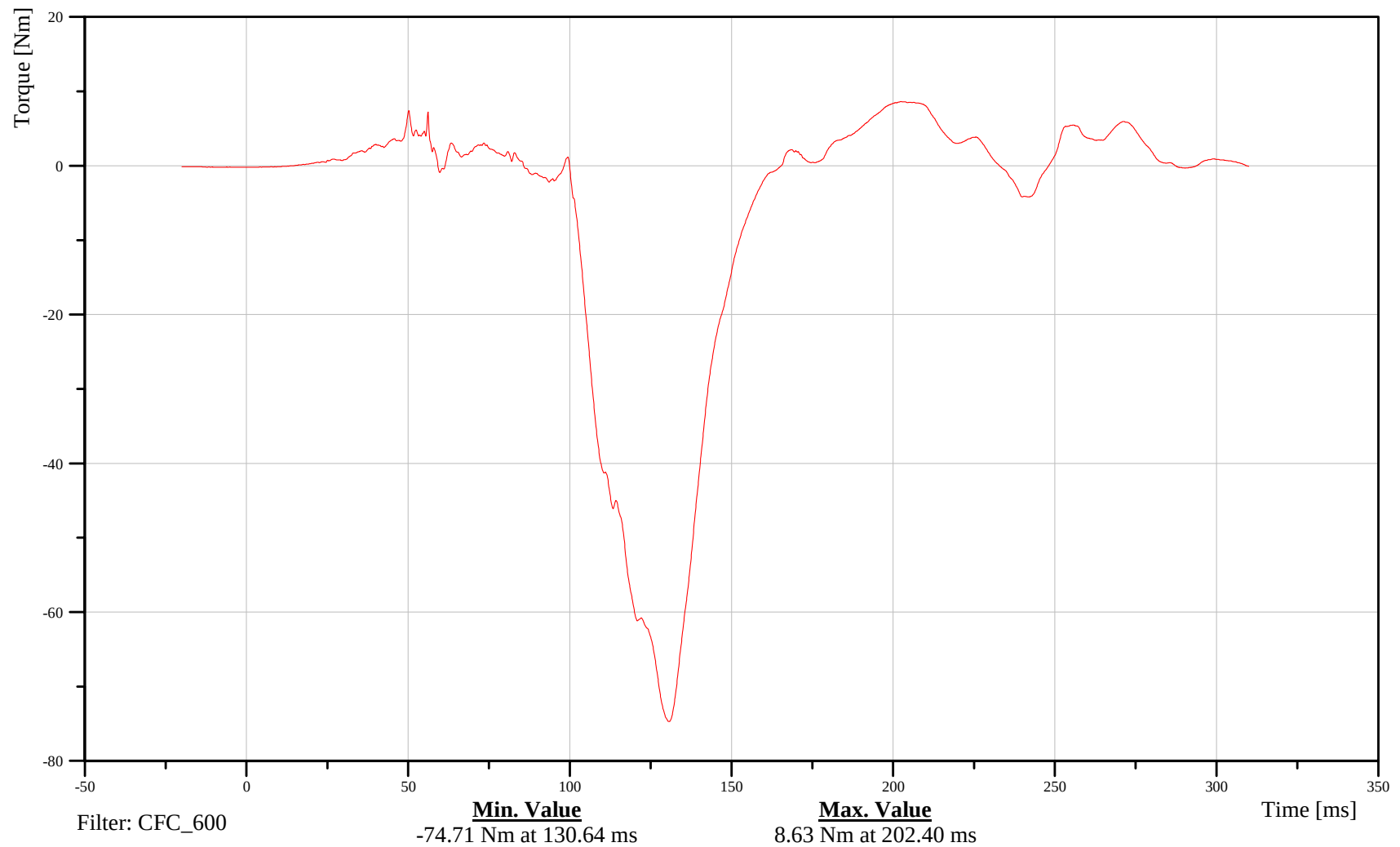
Date: 05/30/2006
Time: 14:51

Right Lower Tibia Moment About X Axis

Customer: Volpe
Test Number: R60172

11TIBIRLLXH3MOXB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-77

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

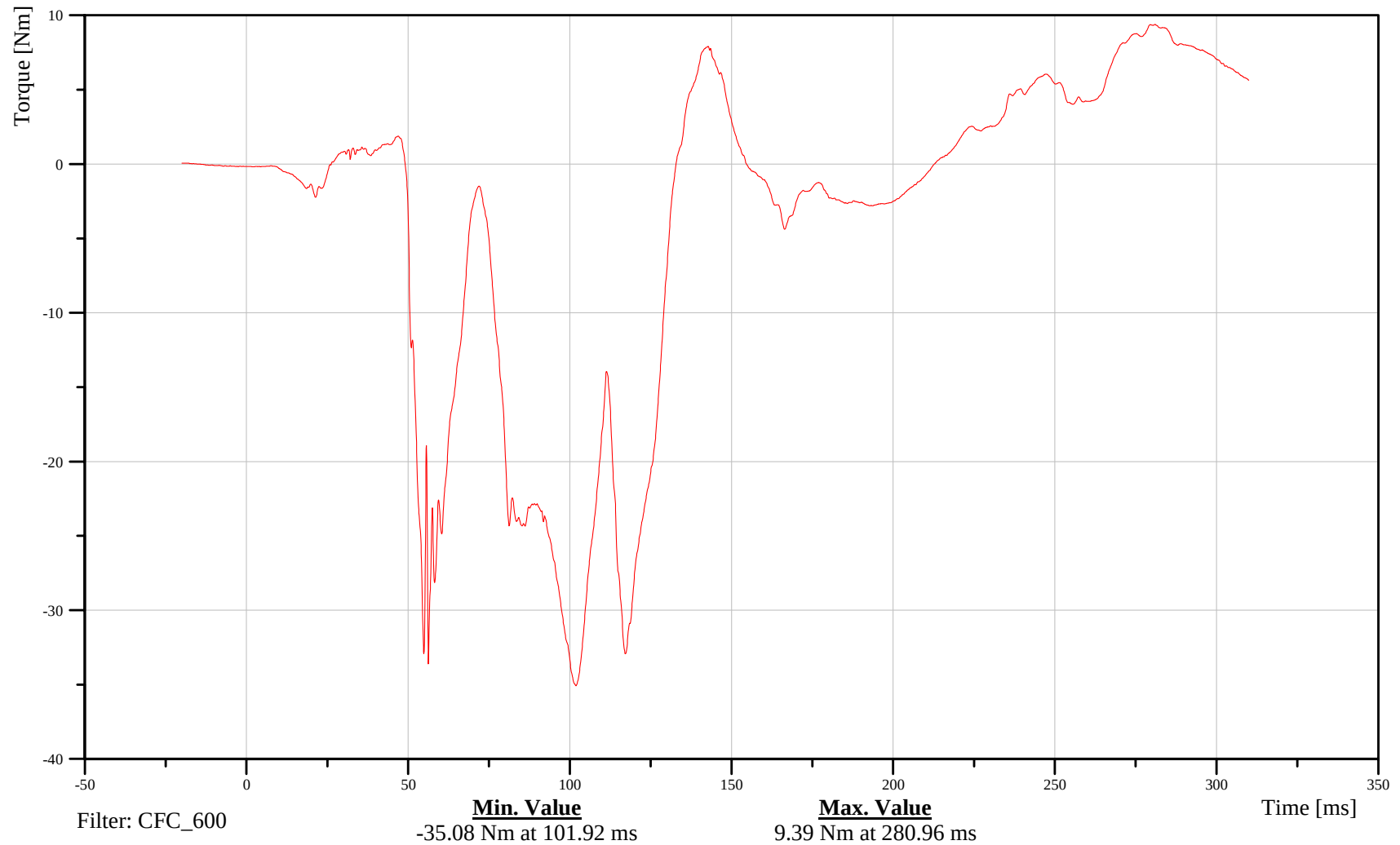
Date: 05/30/2006
Time: 14:51

Right Lower Tibia Moment About Y Axis

Customer: Volpe
Test Number: R60172

11TIBIRLLXH3MOYB

TRC Inc. Test Lab: CTF
Test Number: 060530



B-78

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

Date: 05/30/2006
Time: 14:51

Right Foot X-Axis Rotation

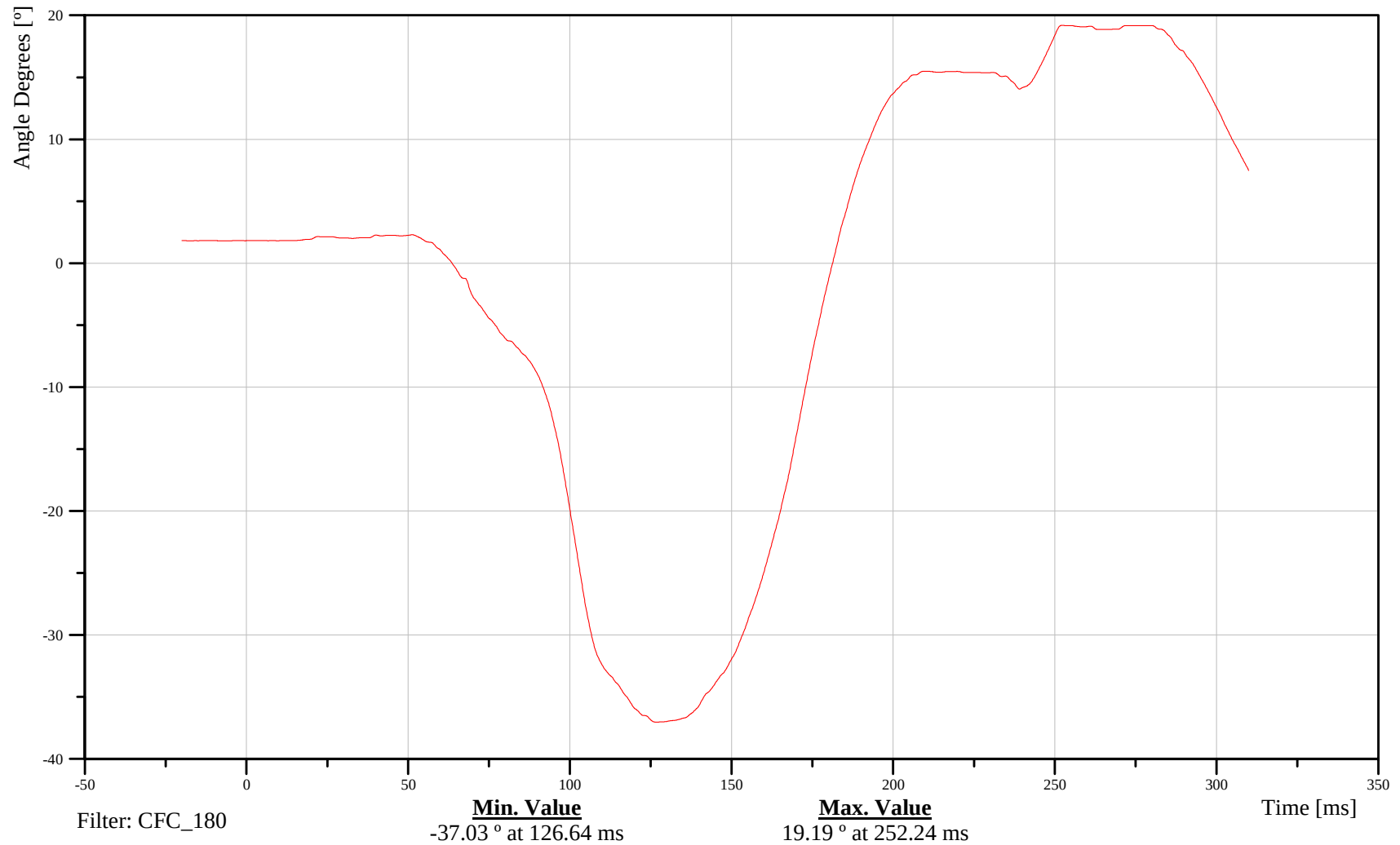
Customer: Volpe

Test Number: R60172

11FOOTRILXH3ANXC

TRC Inc. Test Lab: CTF

Test Number: 060530



B-79

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

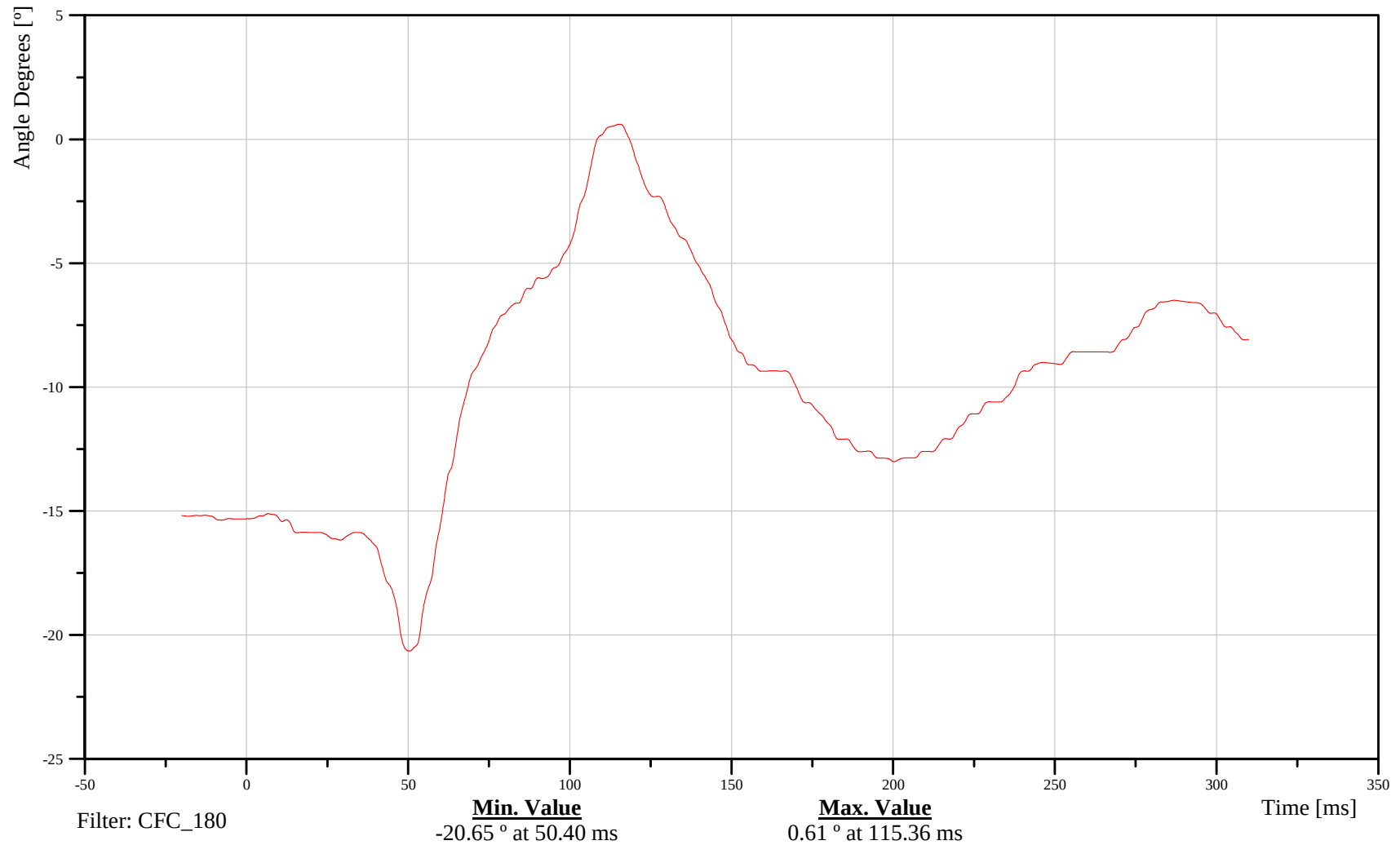
Date: 05/30/2006
Time: 14:51

Right Foot Y-Axis Rotation

Customer: Volpe
Test Number: R60172

11FOOTRILXH3ANYC

TRC Inc. Test Lab: CTF
Test Number: 060530



B-80

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

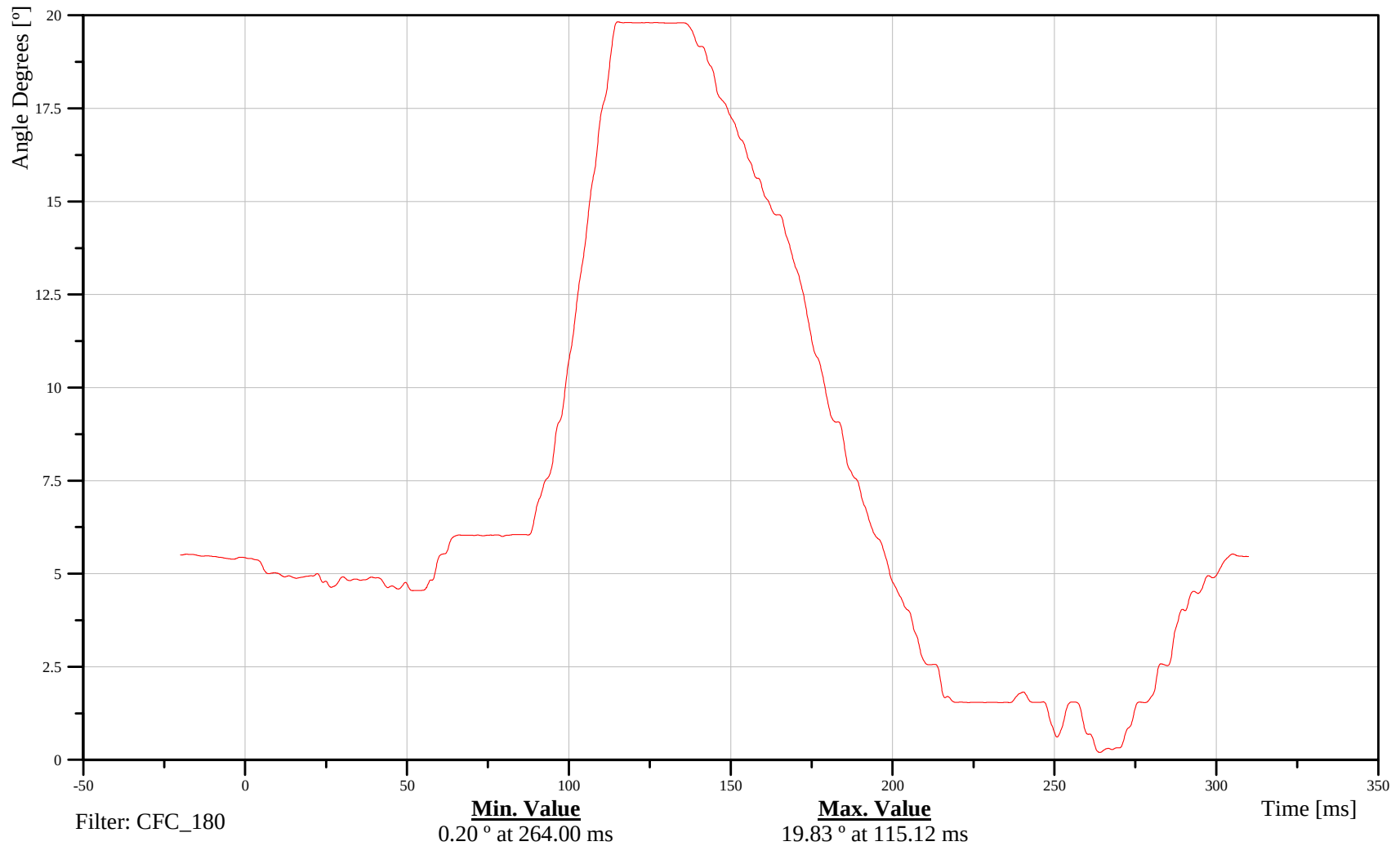
Date: 05/30/2006
Time: 14:51

Right Foot Z-Axis Rotation

Customer: Volpe
Test Number: R60172

11FOOTRILXH3ANZC

TRC Inc. Test Lab: CTF
Test Number: 060530



B-81

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

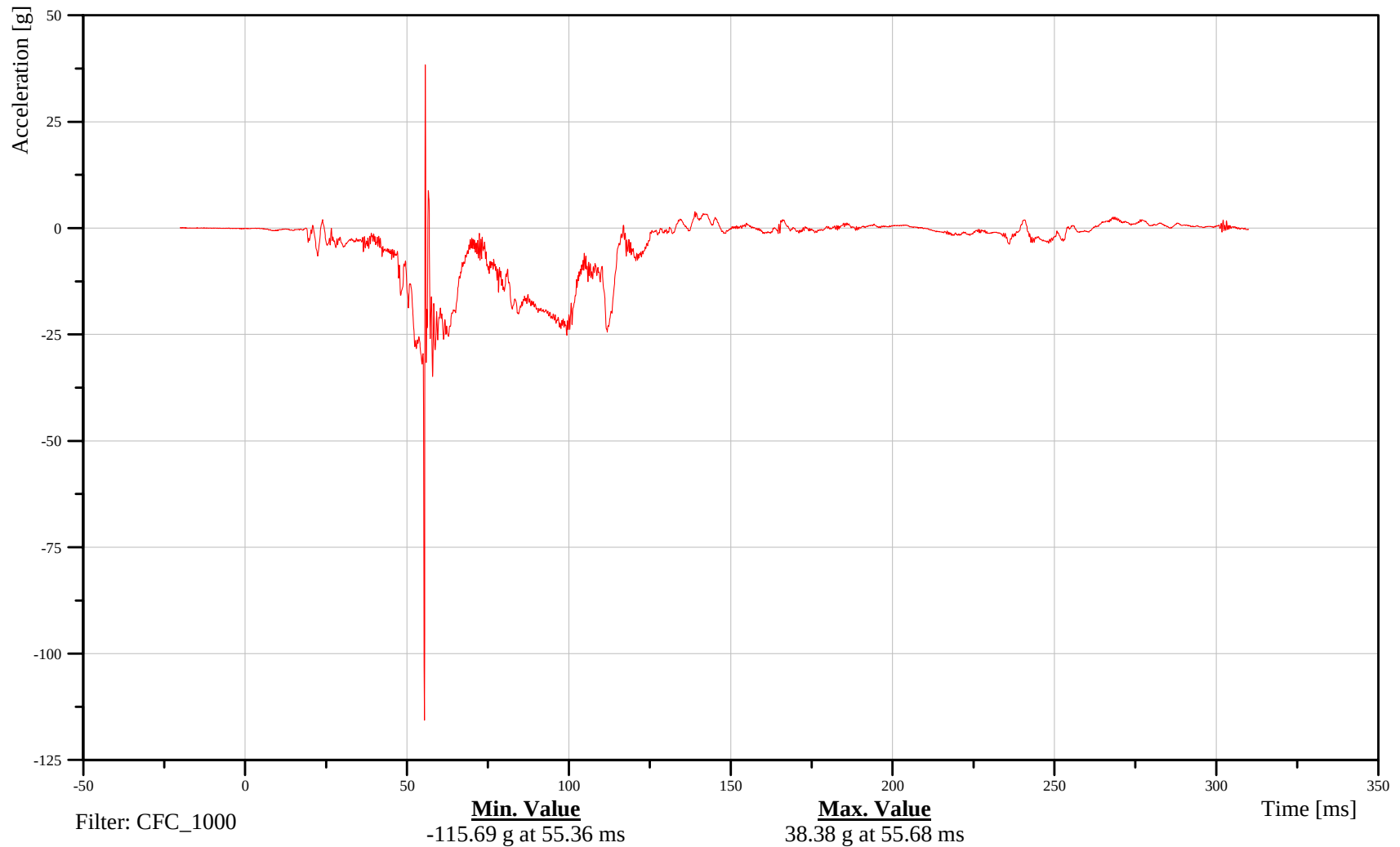
Date: 05/30/2006
Time: 14:51

Right Foot X-Axis Acceleration

Customer: Volpe
Test Number: R60172

11FOOTRILXH3ACXA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-82

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

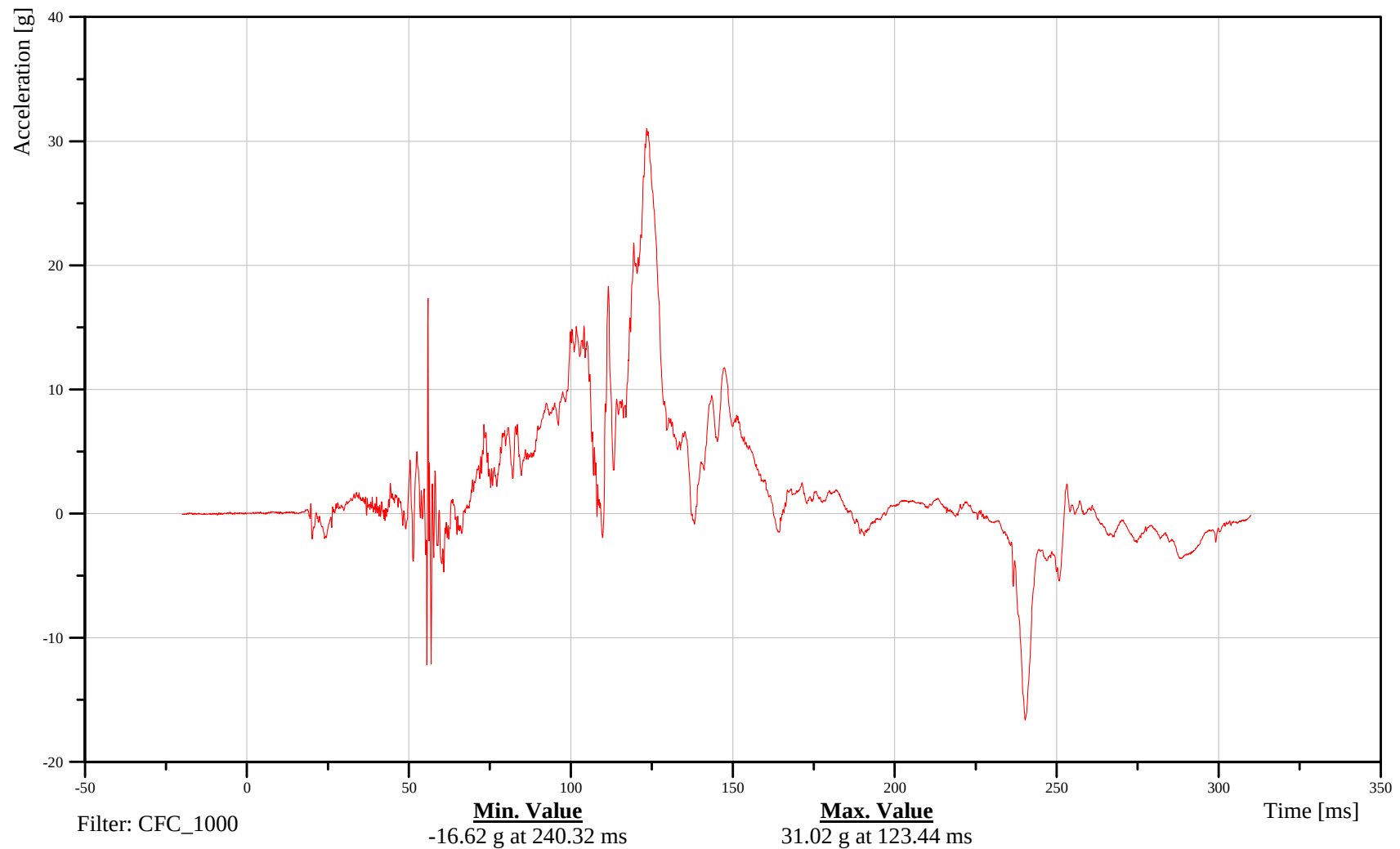
Date: 05/30/2006
Time: 14:51

Right Foot Y-Axis Acceleration

Customer: Volpe
Test Number: R60172

11FOOTRILXH3ACYA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-83

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

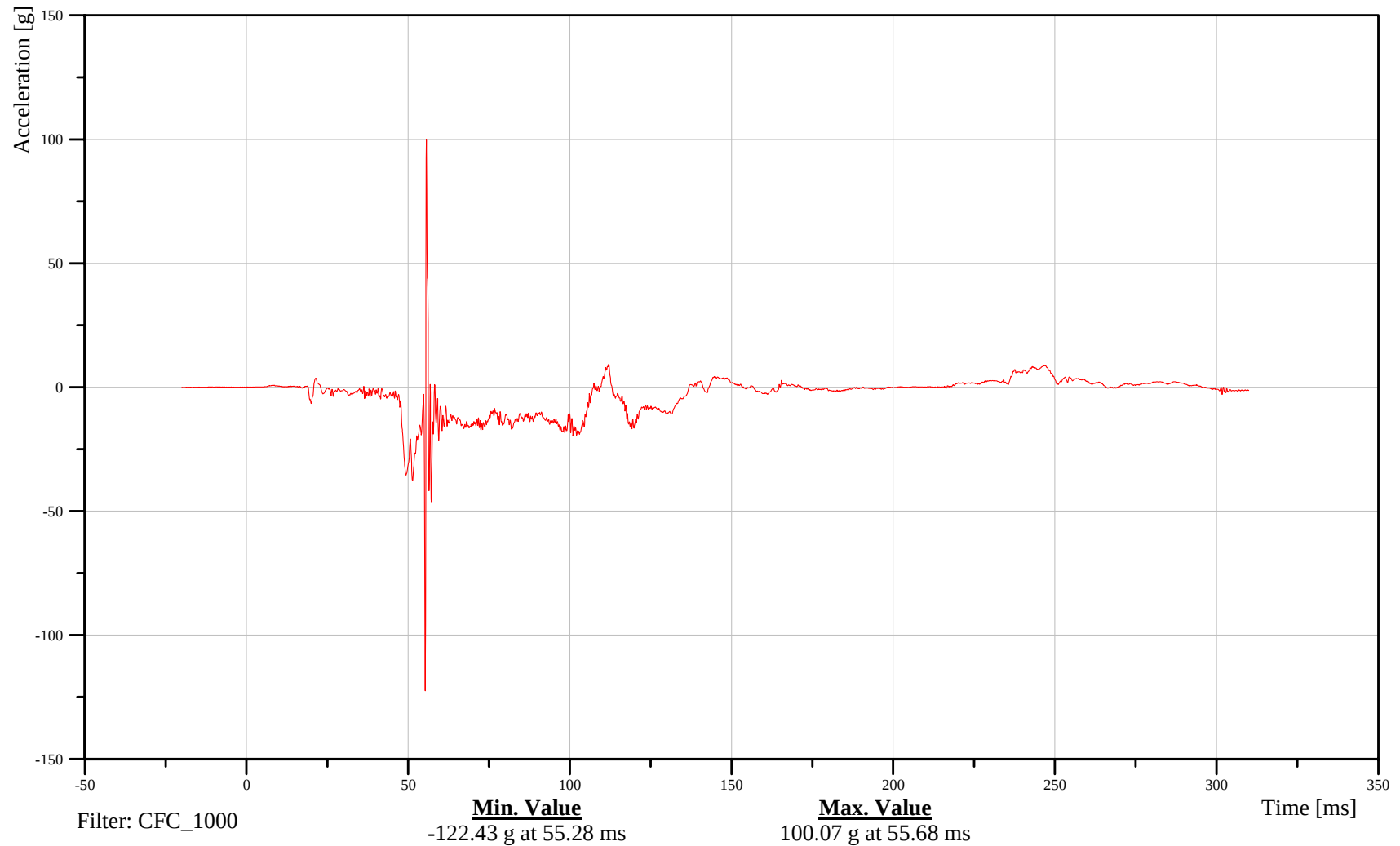
Date: 05/30/2006
Time: 14:51

Right Foot Z-Axis Acceleration

Customer: Volpe
Test Number: R60172

11FOOTRILXH3ACZA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-84

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

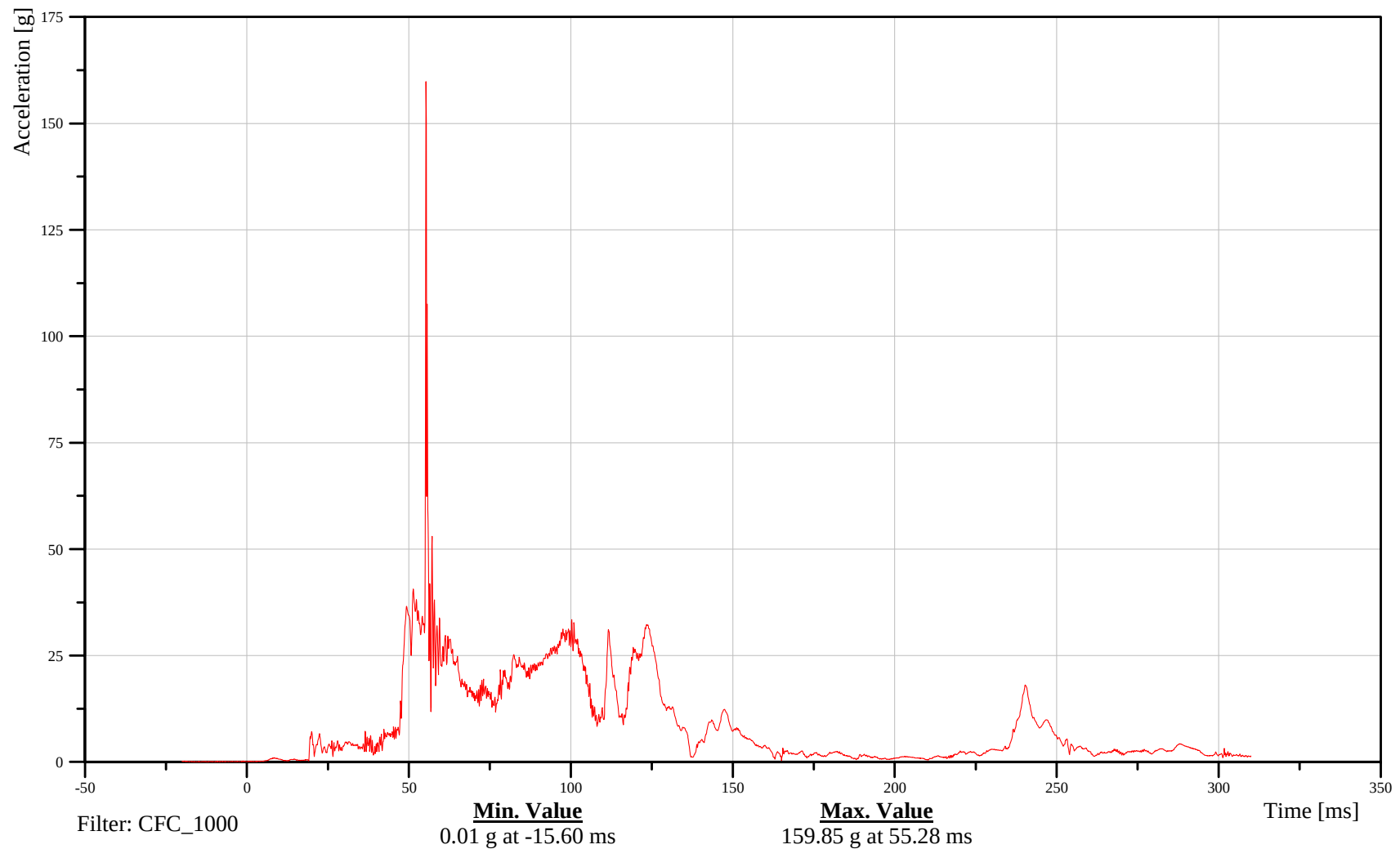
Date: 05/30/2006
Time: 14:51

Right Foot Resultant Acceleration

Customer: Volpe
Test Number: R60172

11FOOTRILXH3ACRA

TRC Inc. Test Lab: CTF
Test Number: 060530



B-85

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

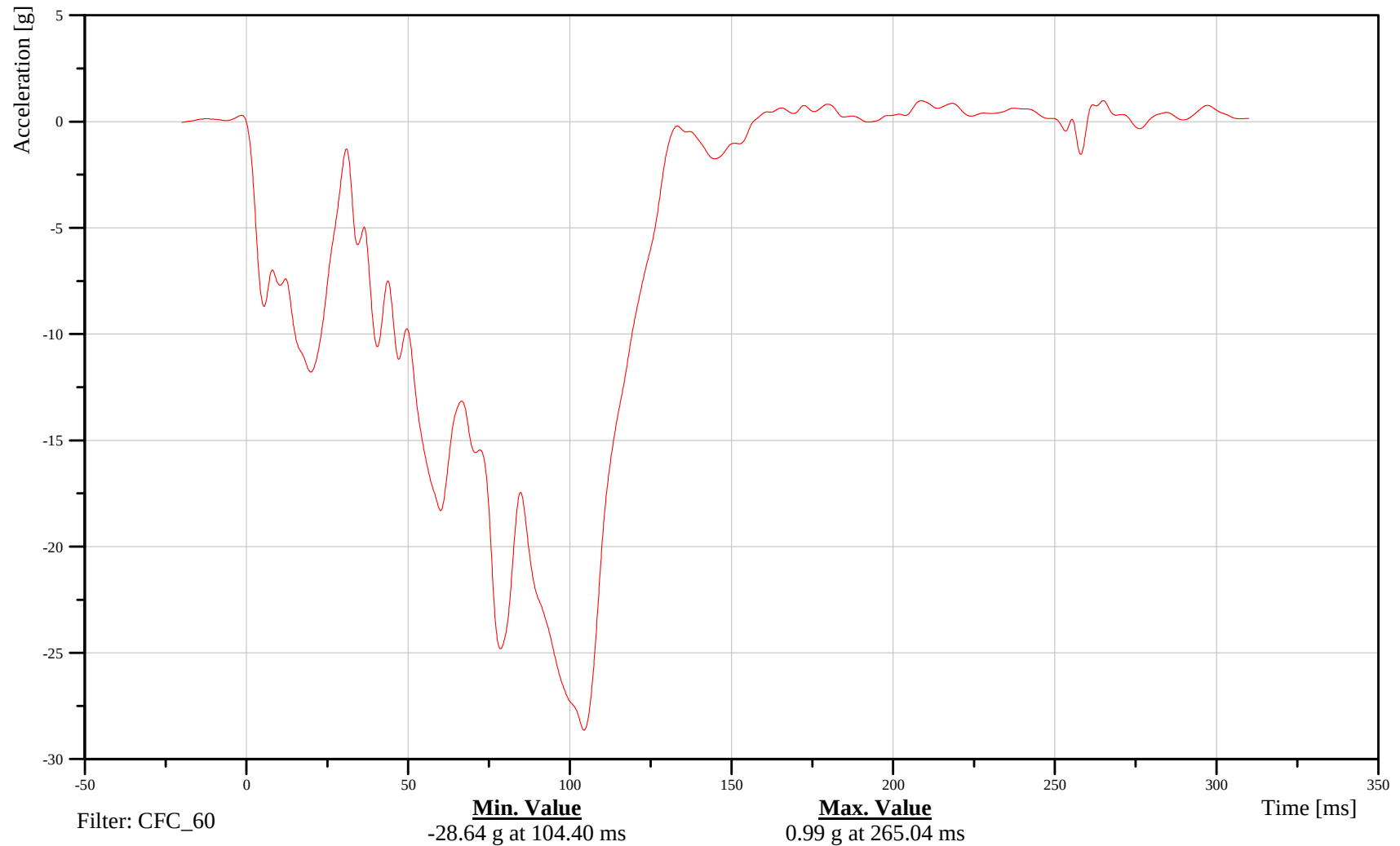
Date: 05/30/2006
Time: 14:51

Left Rear Seat Cross-Member X-Axis Acceleration

Customer: Volpe
Test Number: R60172

14CRME000000ACXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-86

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

Date: 05/30/2006
Time: 14:51

Right Rear Seat Cross-Member X-Axis Acceleration

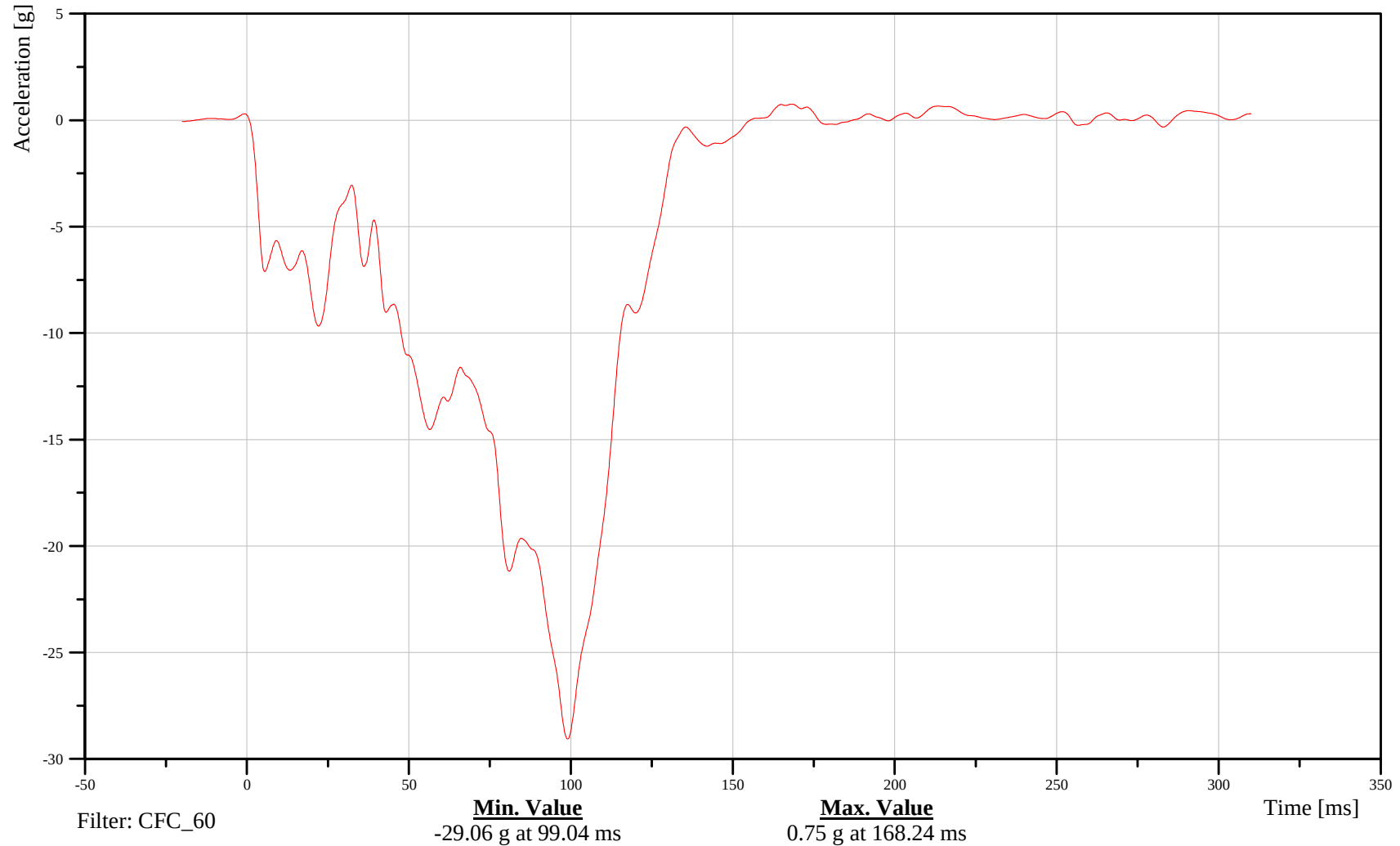
Customer: Volpe

Test Number: R60172

16CRME000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 060530



B-87

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

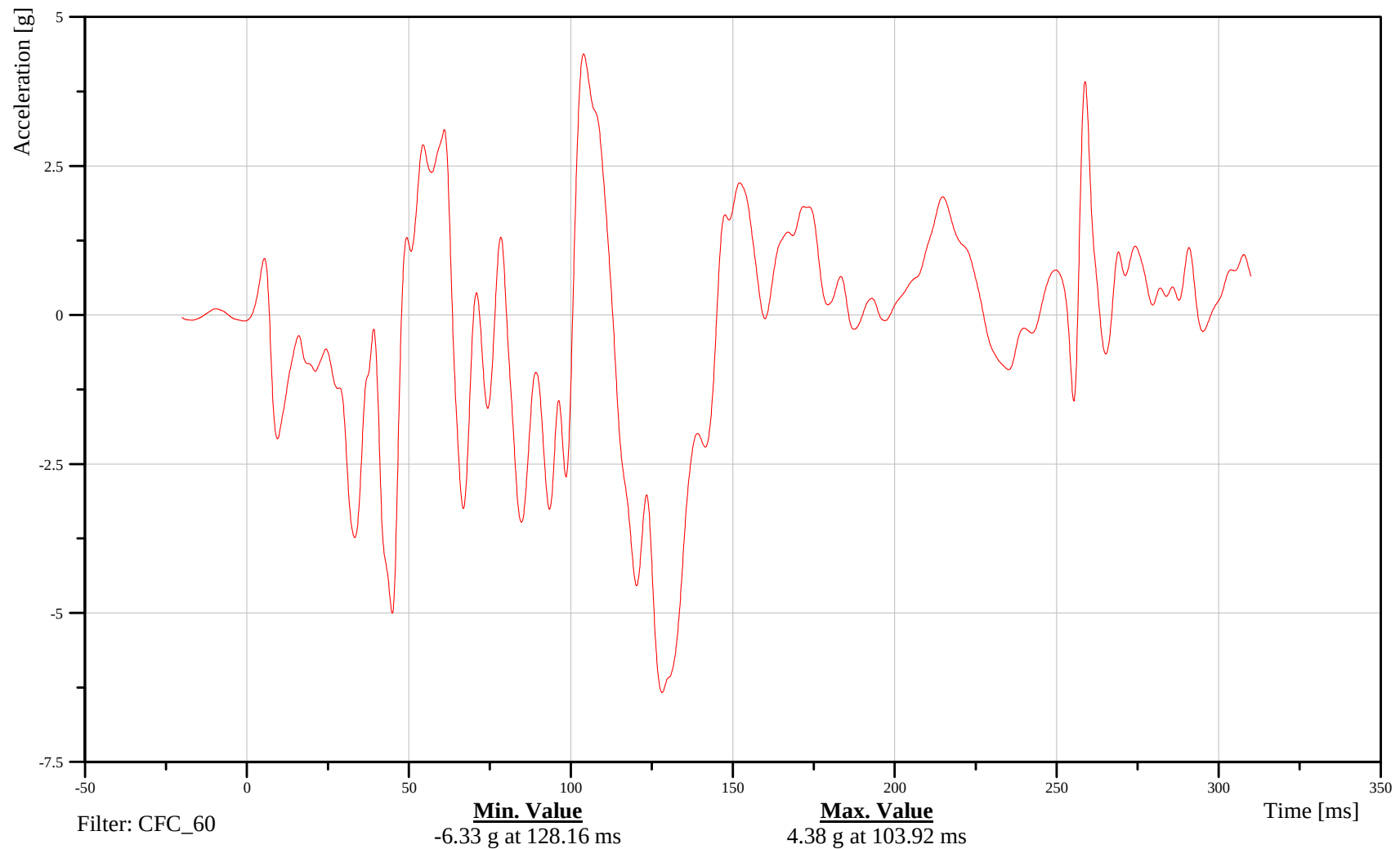
Date: 05/30/2006
Time: 14:51

Left Rear Seat Cross-Member Z-Axis Acceleration

Customer: Volpe
Test Number: R60172

14CRME000000ACZD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-88

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

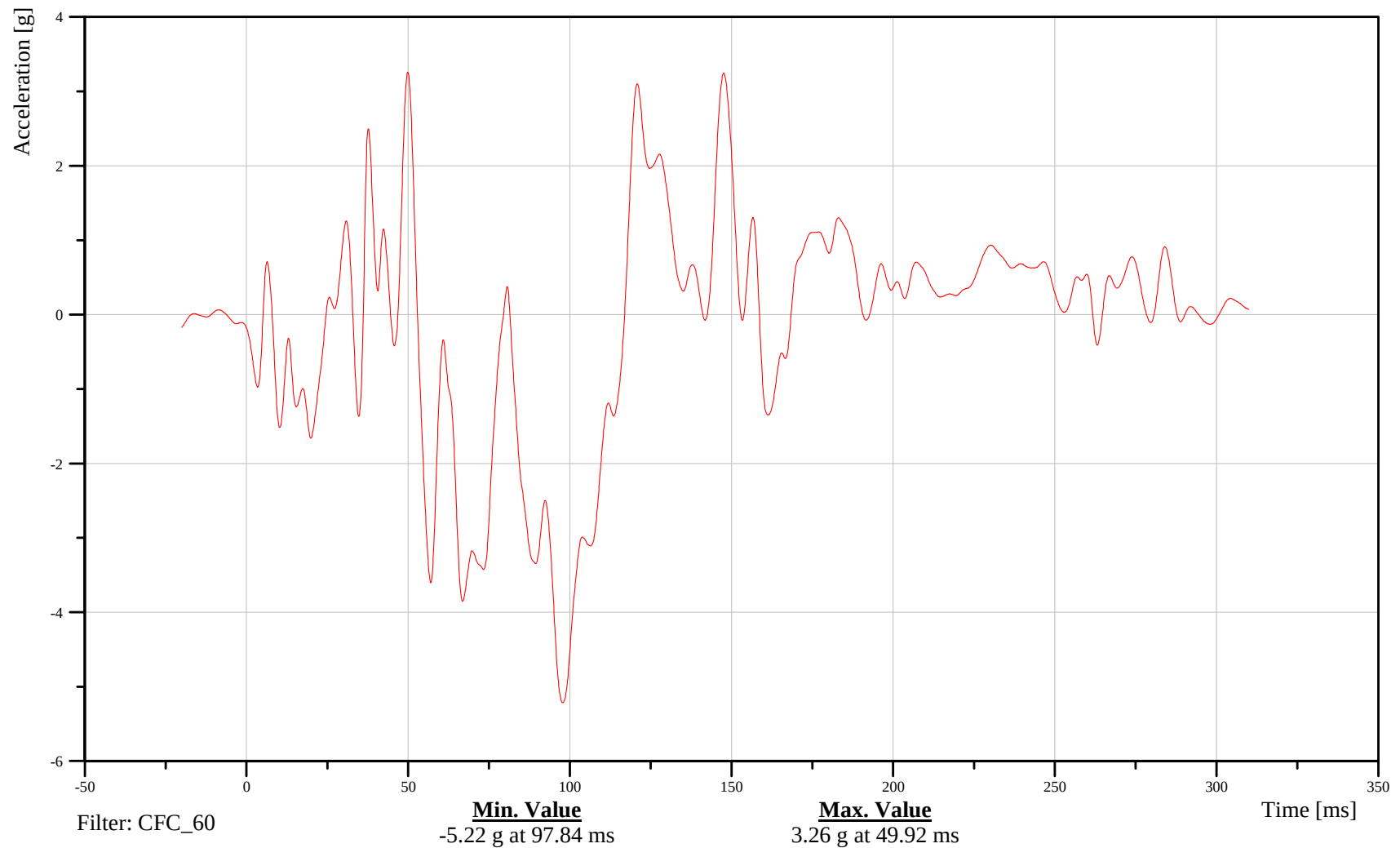
Date: 05/30/2006
Time: 14:51

Right Rear Seat Cross-Member Z-Axis Acceleration

Customer: Volpe
Test Number: R60172

16CRME000000ACZD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-89

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

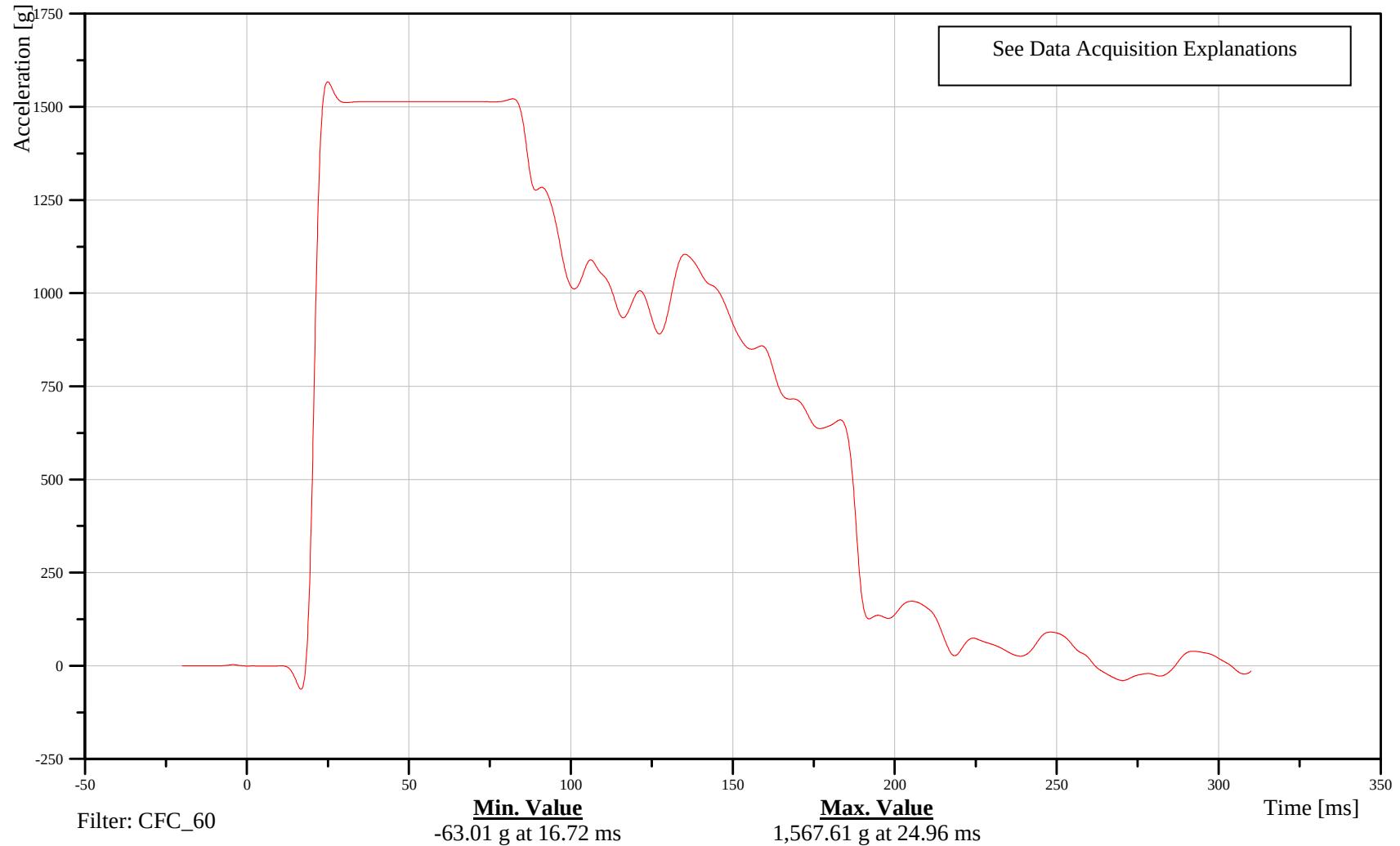
Date: 05/30/2006
Time: 14:51

Top of Engine Block X-Axis Acceleration

Customer: Volpe
Test Number: R60172

12ENGNTTP0000ACXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-90

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

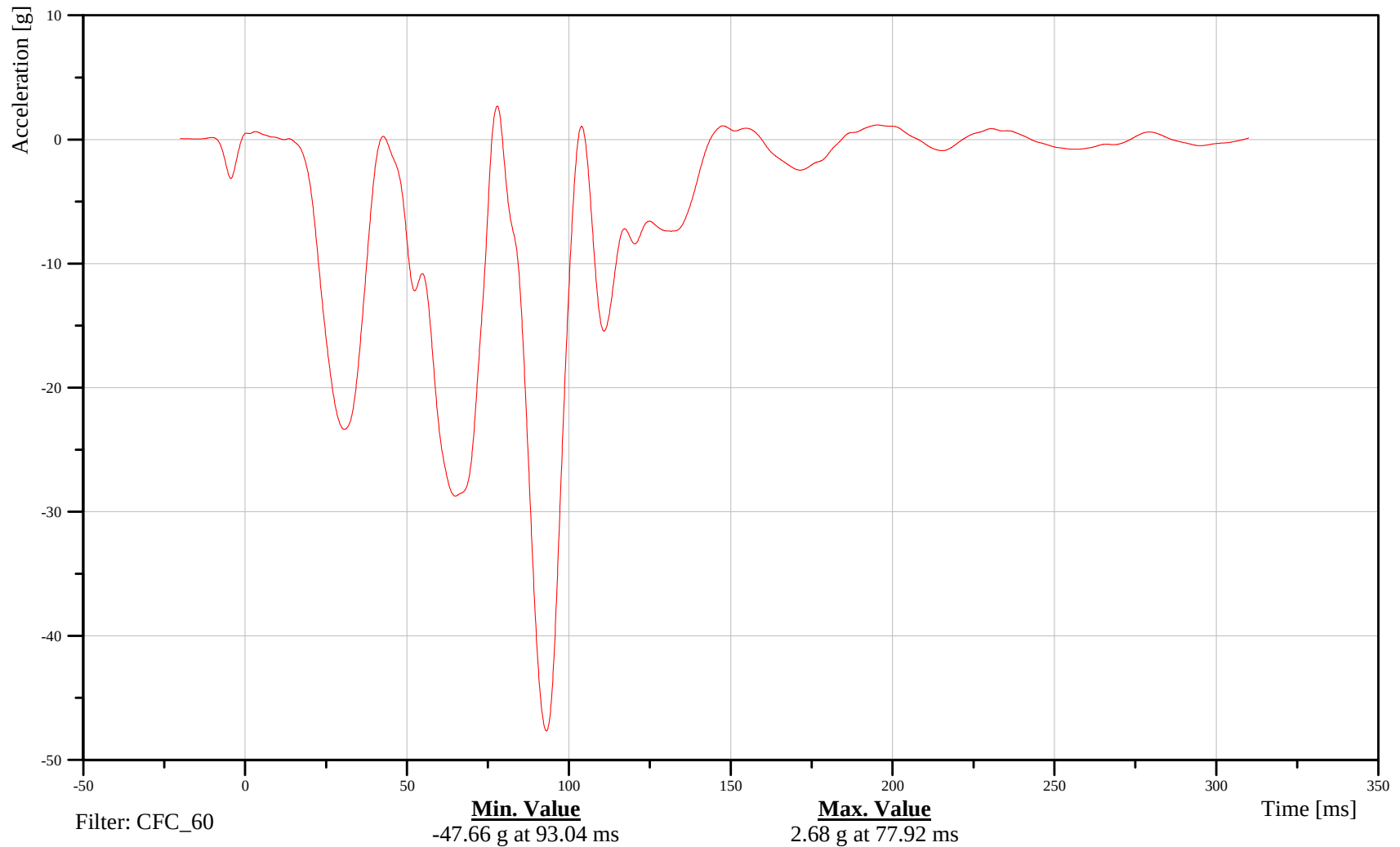
Date: 05/30/2006
Time: 14:51

Bottom of Engine Block X-Axis Acceleration

Customer: Volpe
Test Number: R60172

12ENGNBO0000ACXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-91

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

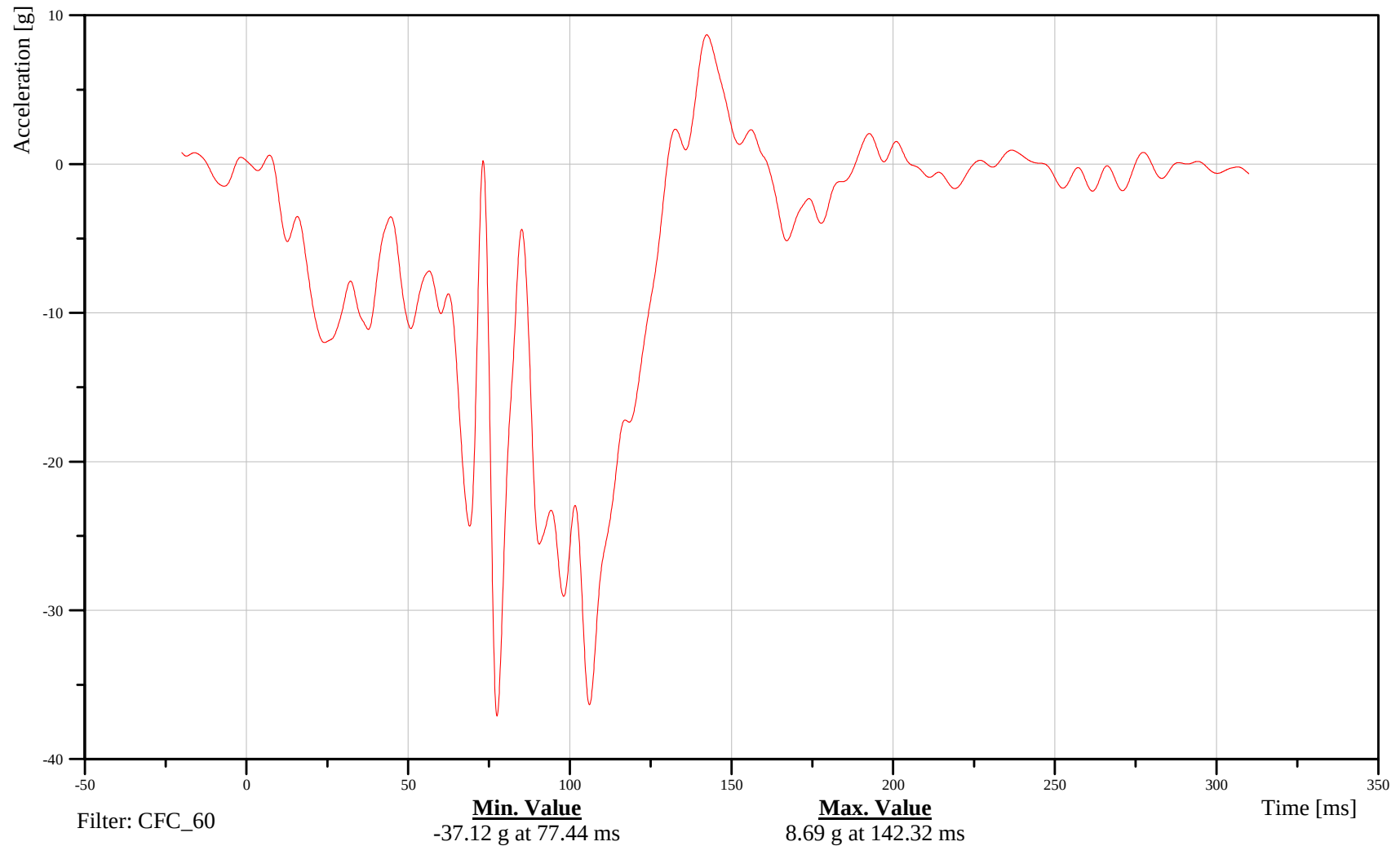
Date: 05/30/2006
Time: 14:51

Right Brake Caliper X-Axis Acceleration

Customer: Volpe
Test Number: R60172

13VEHCRI0000ACXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-92

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

Date: 05/30/2006
Time: 14:51

Left Brake Caliper X-Axis Acceleration

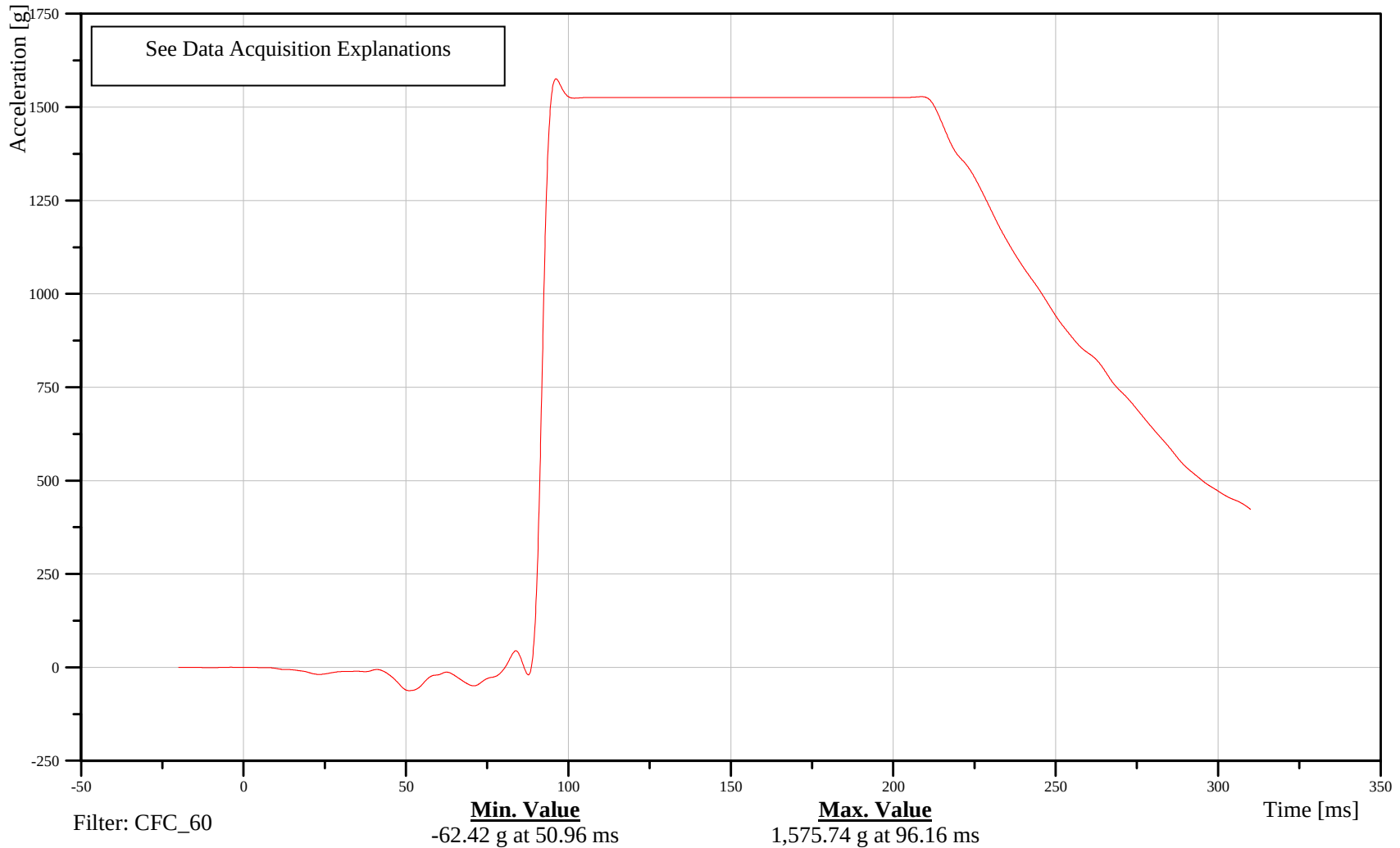
Customer: Volpe

Test Number: R60172

11VEHICLE0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 060530



B-93

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

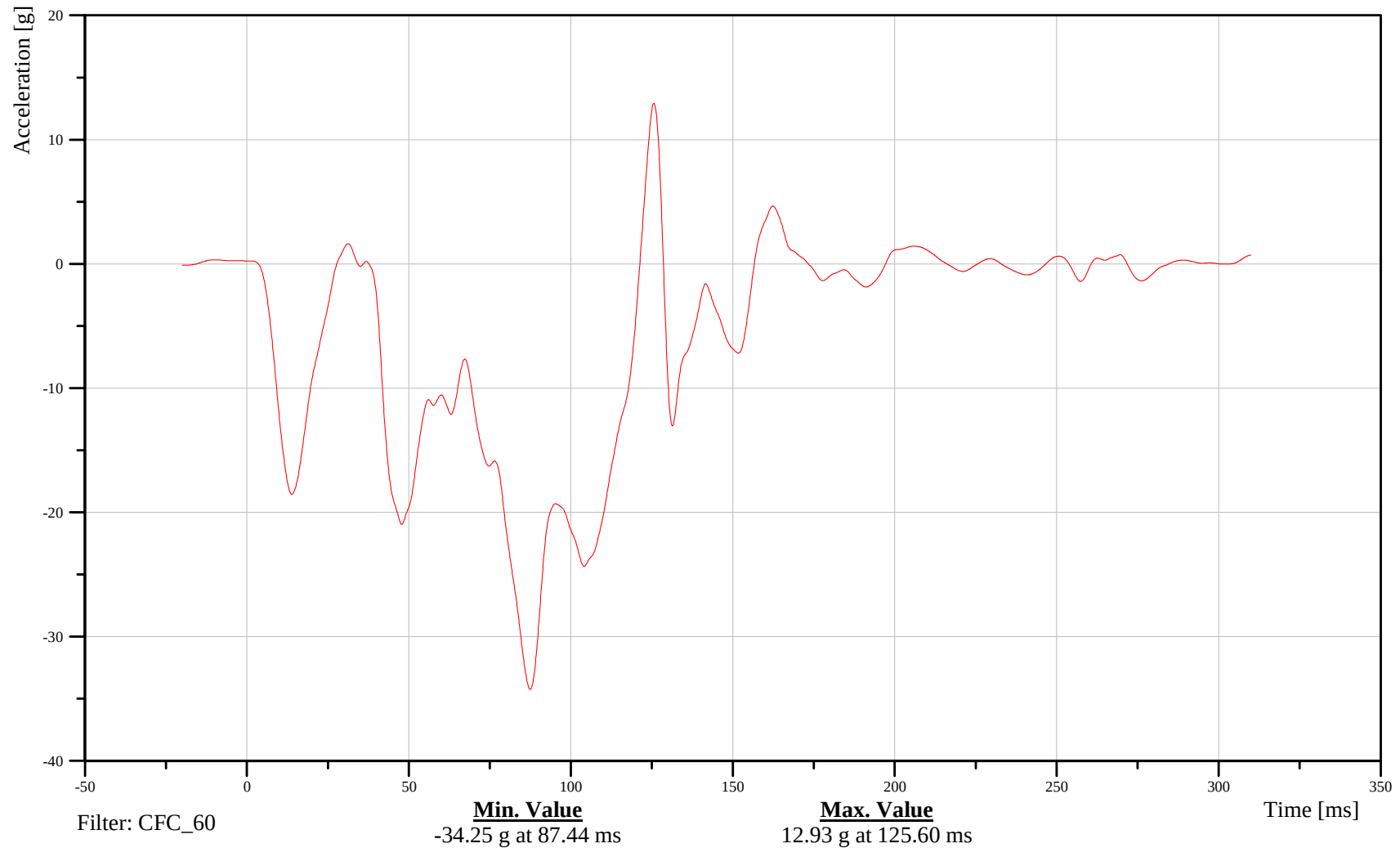
Date: 05/30/2006
Time: 14:51

Instrument Panel X-Axis Acceleration

Customer: Volpe
Test Number: R60172

12DASH000000ACXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-94

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

Date: 05/30/2006

Time: 14:51

Left Side Driver Mid Seat Track X-Axis Acceleration

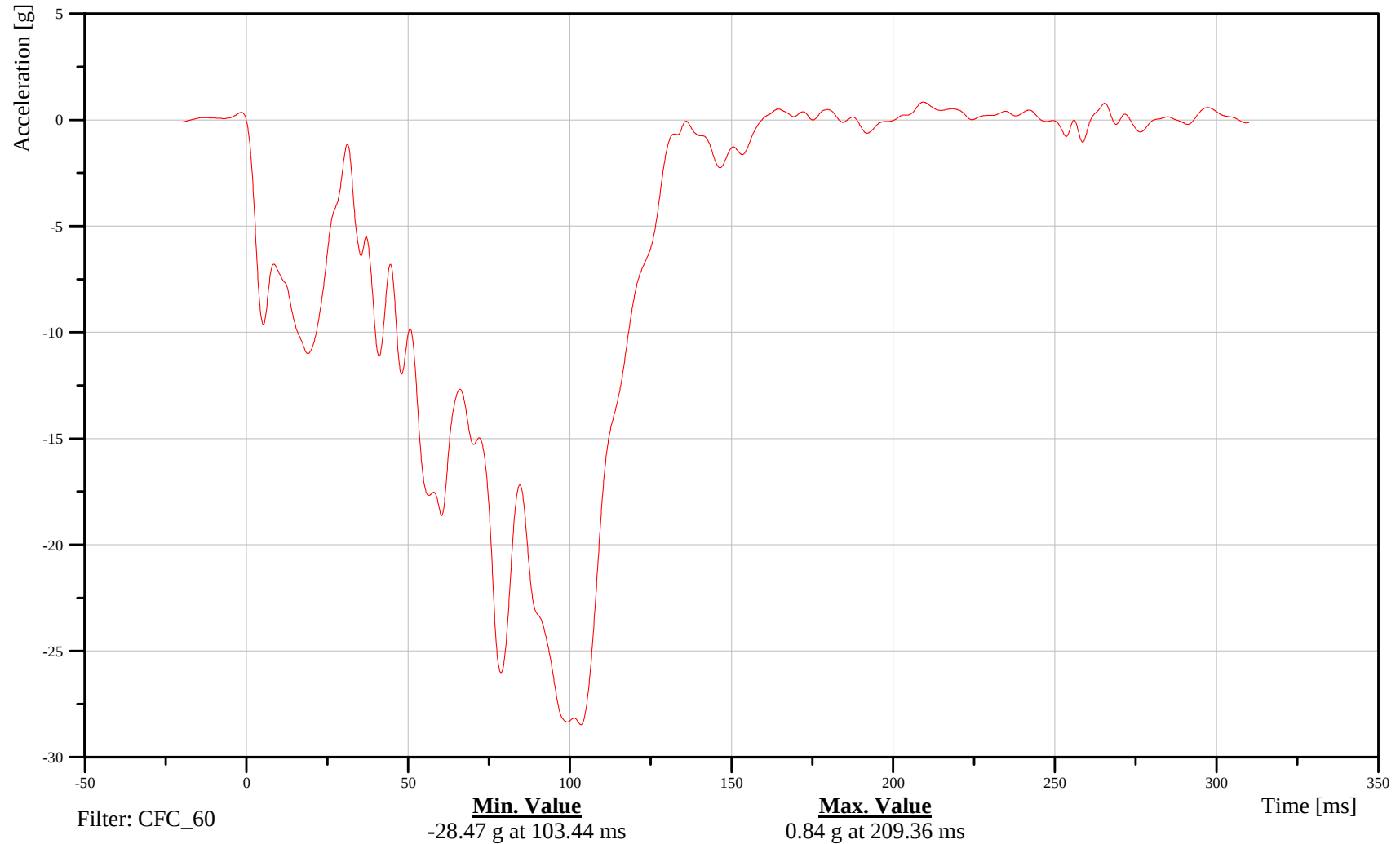
Customer: Volpe

Test Number: R60172

11SETR000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 060530



B-95

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

Date: 05/30/2006
Time: 14:51

Vehicle CG X-Axis Acceleration

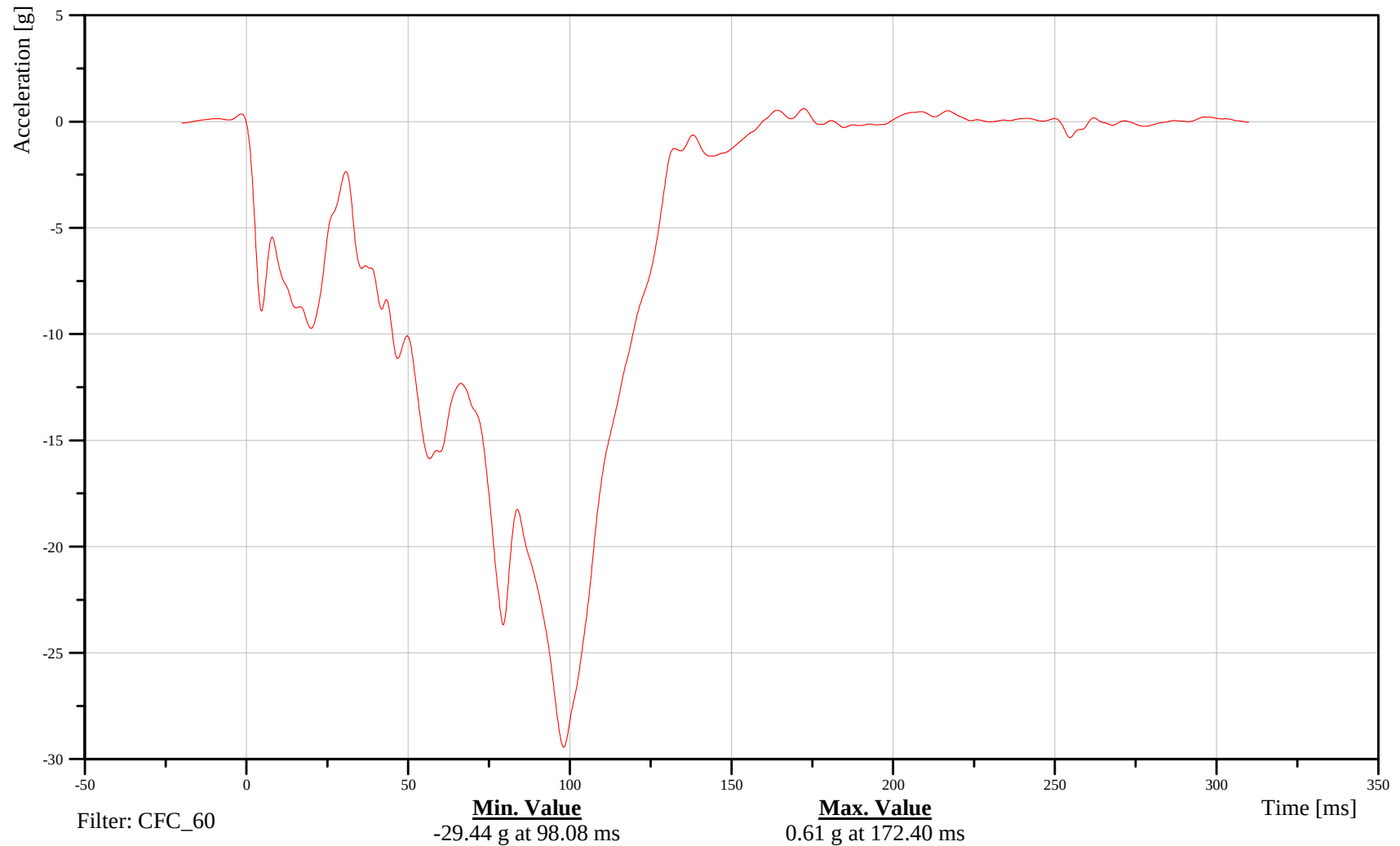
Customer: Volpe

Test Number: R60172

10VEHCCG0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 060530



B-96

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

Date: 05/30/2006
Time: 14:51

Vehicle CG X-Axis Velocity

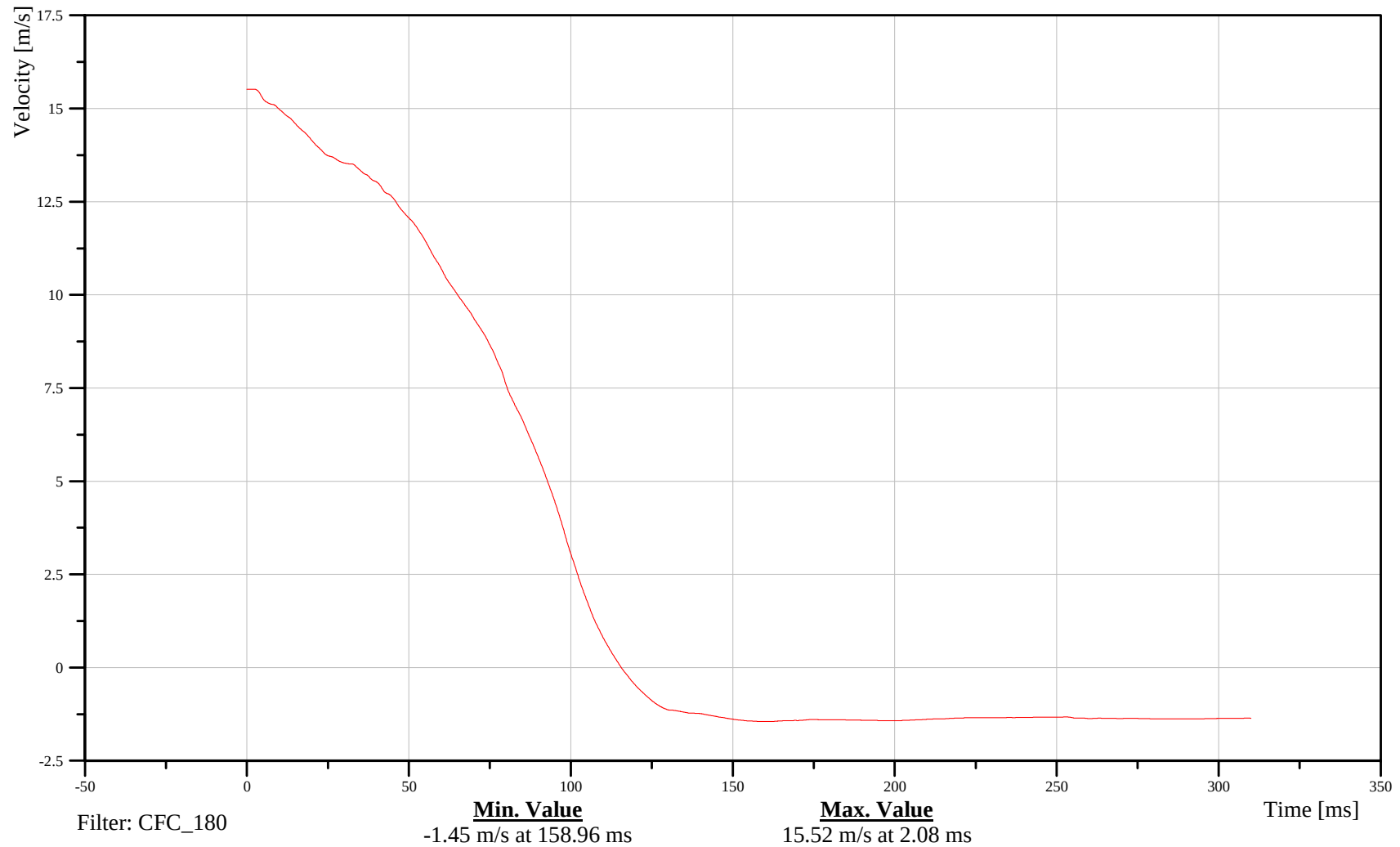
Customer: Volpe

Test Number: R60172

10VEHCCG0000VEXC

TRC Inc. Test Lab: CTF

Test Number: 060530



B-97

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

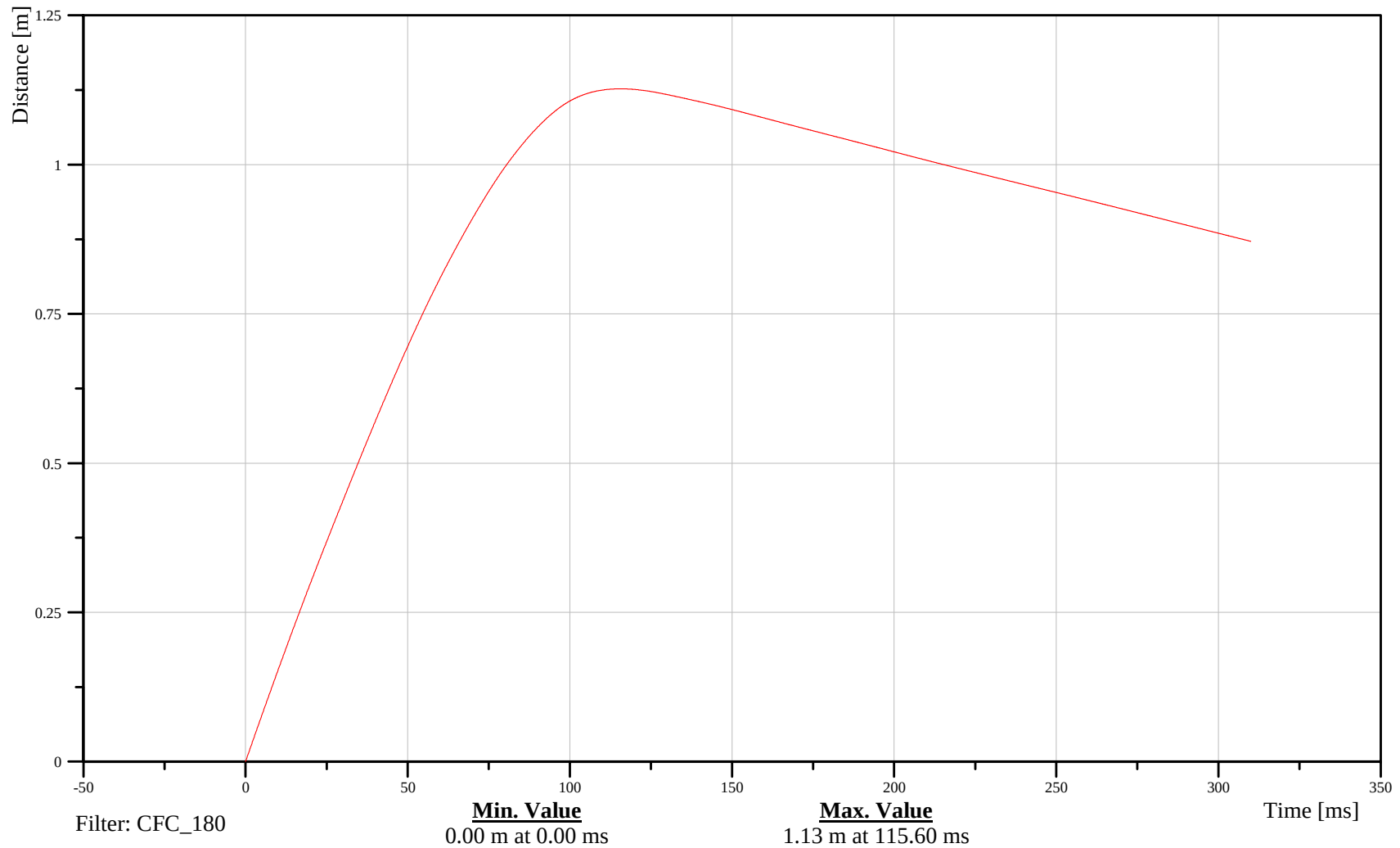
Date: 05/30/2006
Time: 14:51

Vehicle CG X-Axis Displacement

Customer: Volpe
Test Number: R60172

10VEHCCG0000DCXC

TRC Inc. Test Lab: CTF
Test Number: 060530



B-98

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

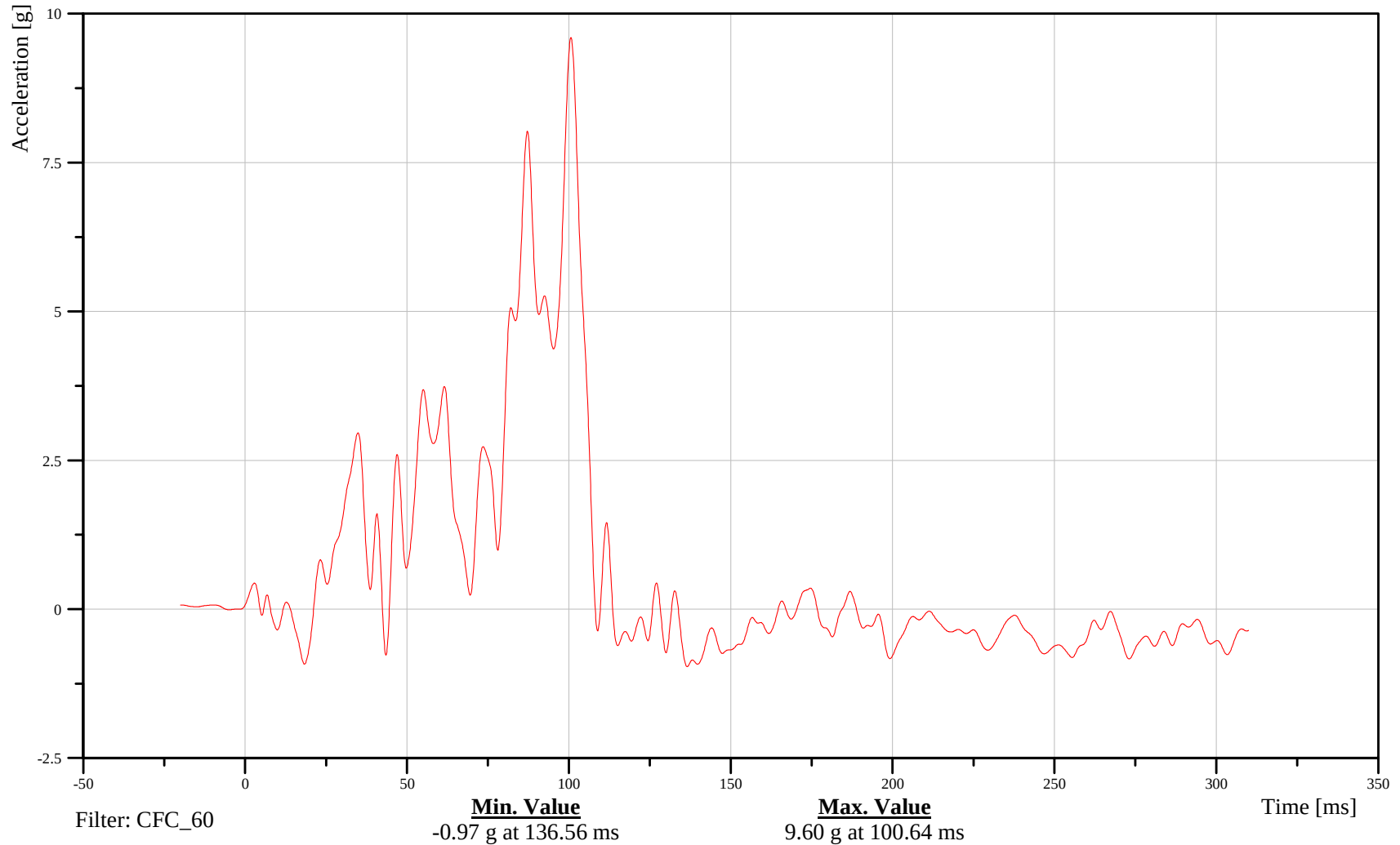
Date: 05/30/2006
Time: 14:51

Vehicle CG Y-Axis Acceleration

Customer: Volpe
Test Number: R60172

10VEHCCG0000ACYD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-99

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

Date: 05/30/2006
Time: 14:51

Vehicle CG Y-Axis Velocity

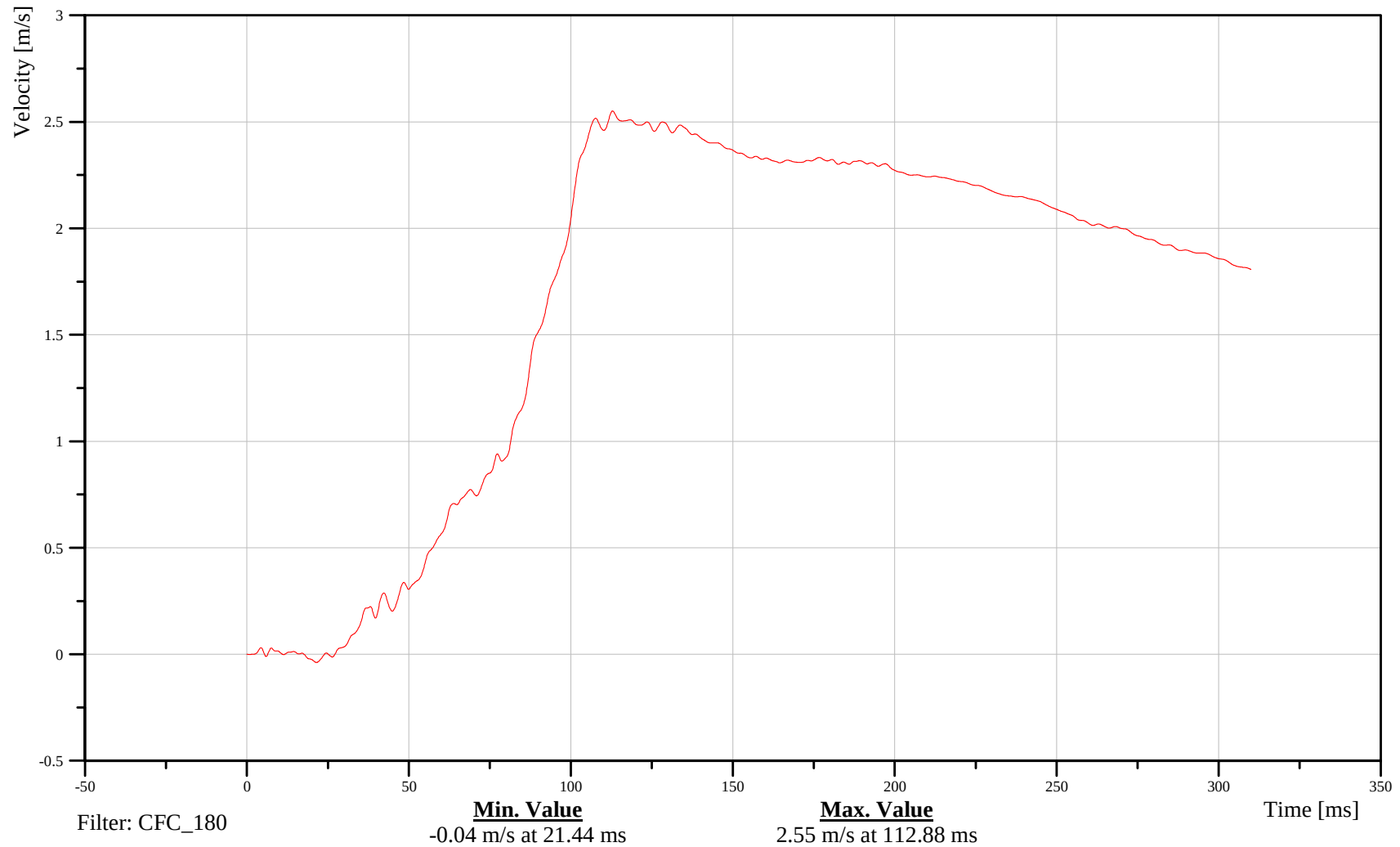
Customer: Volpe

Test Number: R60172

10VEHCCG0000VEYC

TRC Inc. Test Lab: CTF

Test Number: 060530



B-100

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

Date: 05/30/2006
Time: 14:51

Vehicle CG Y-Axis Displacement

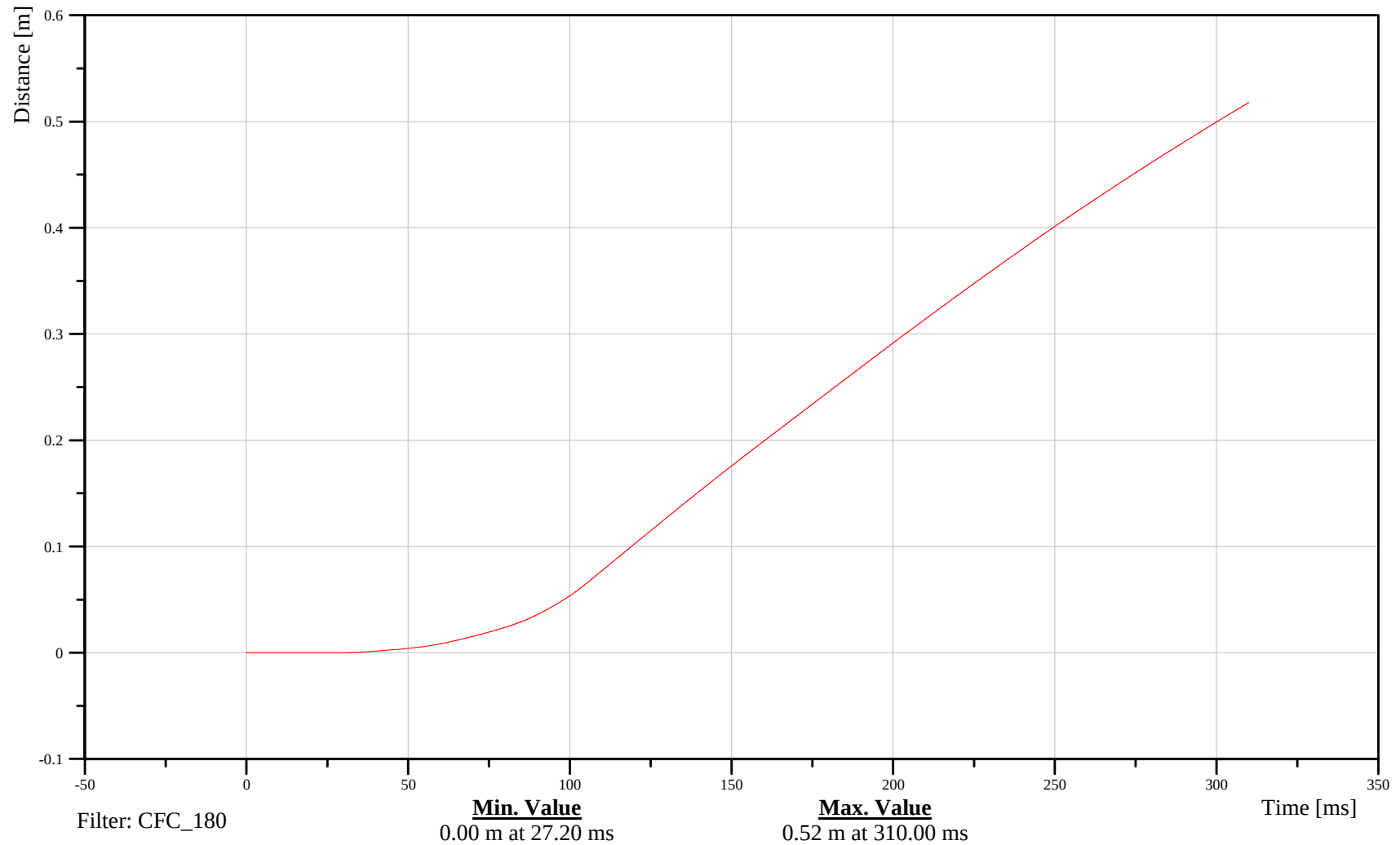
Customer: Volpe

Test Number: R60172

10VEHCCG0000DCYC

TRC Inc. Test Lab: CTF

Test Number: 060530



B-101

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

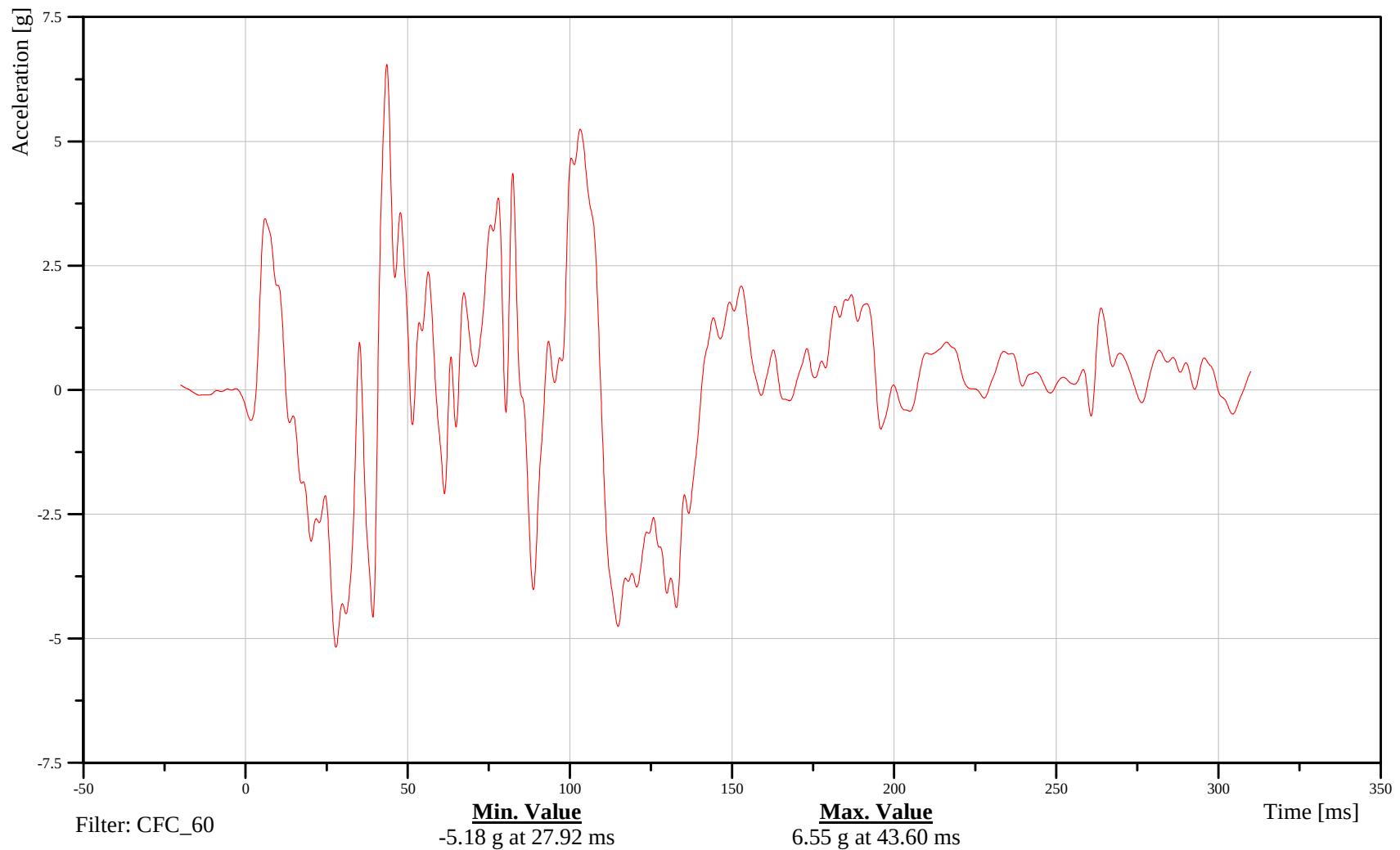
Date: 05/30/2006
Time: 14:51

Vehicle CG Z-Axis Acceleration

Customer: Volpe
Test Number: R60172

10VEHCCG0000ACZD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-102

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

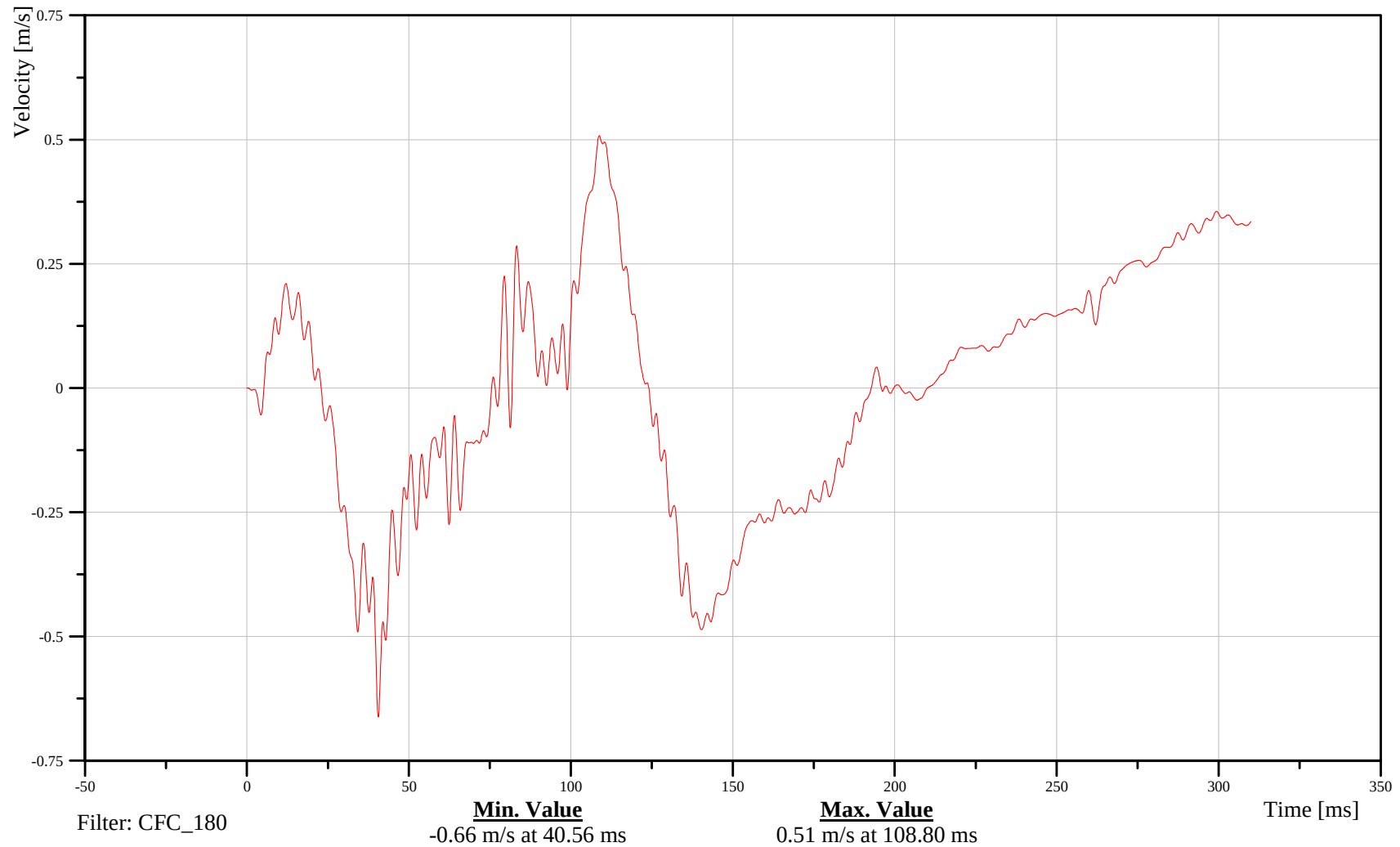
Date: 05/30/2006
Time: 14:51

Vehicle CG Z-Axis Velocity

Customer: Volpe
Test Number: R60172

10VEHCCG0000VEZC

TRC Inc. Test Lab: CTF
Test Number: 060530



B-103

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

Date: 05/30/2006
Time: 14:51

Vehicle CG Z-Axis Displacement

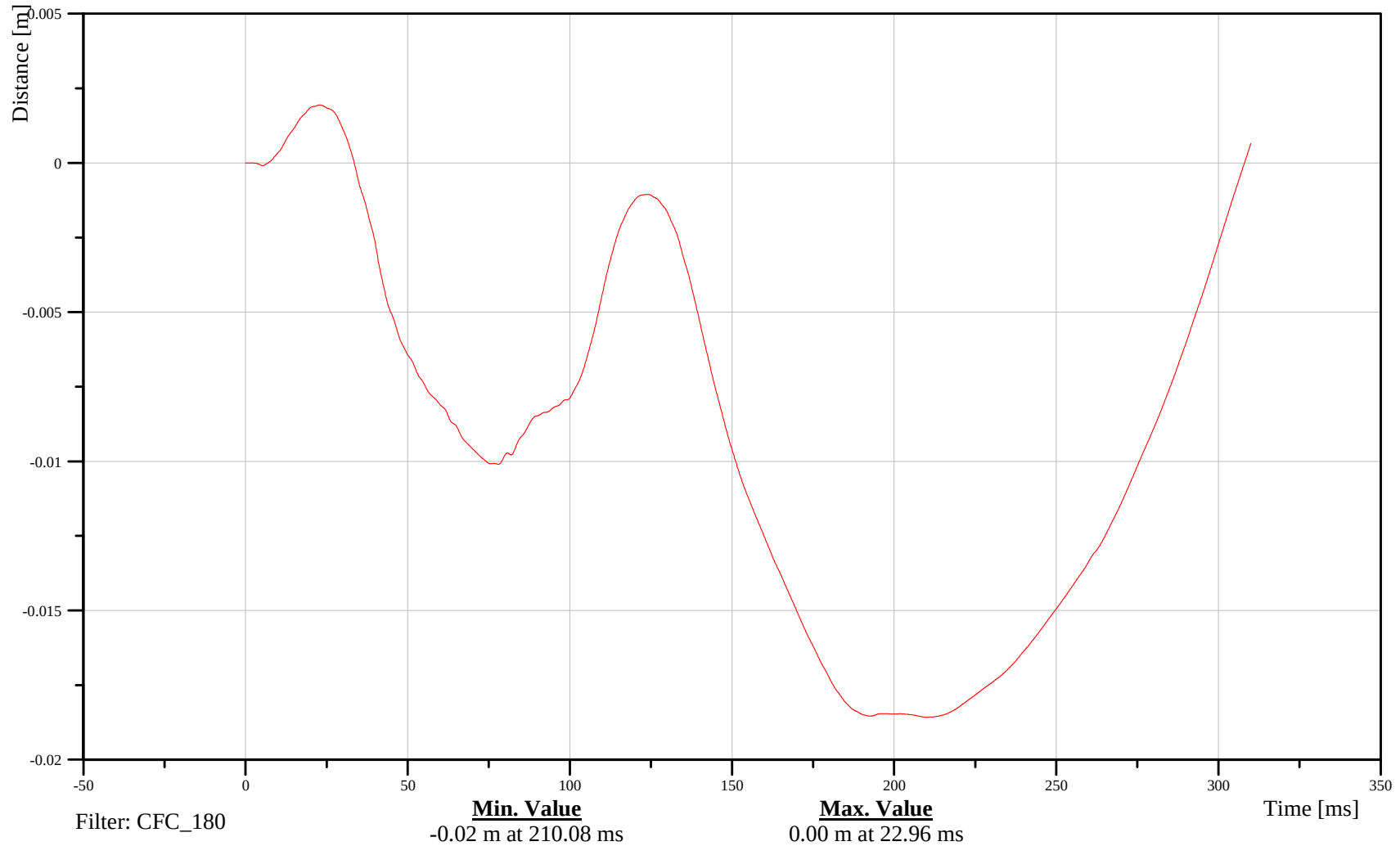
Customer: Volpe

Test Number: R60172

10VEHCCG0000DCZC

TRC Inc. Test Lab: CTF

Test Number: 060530



B-104

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

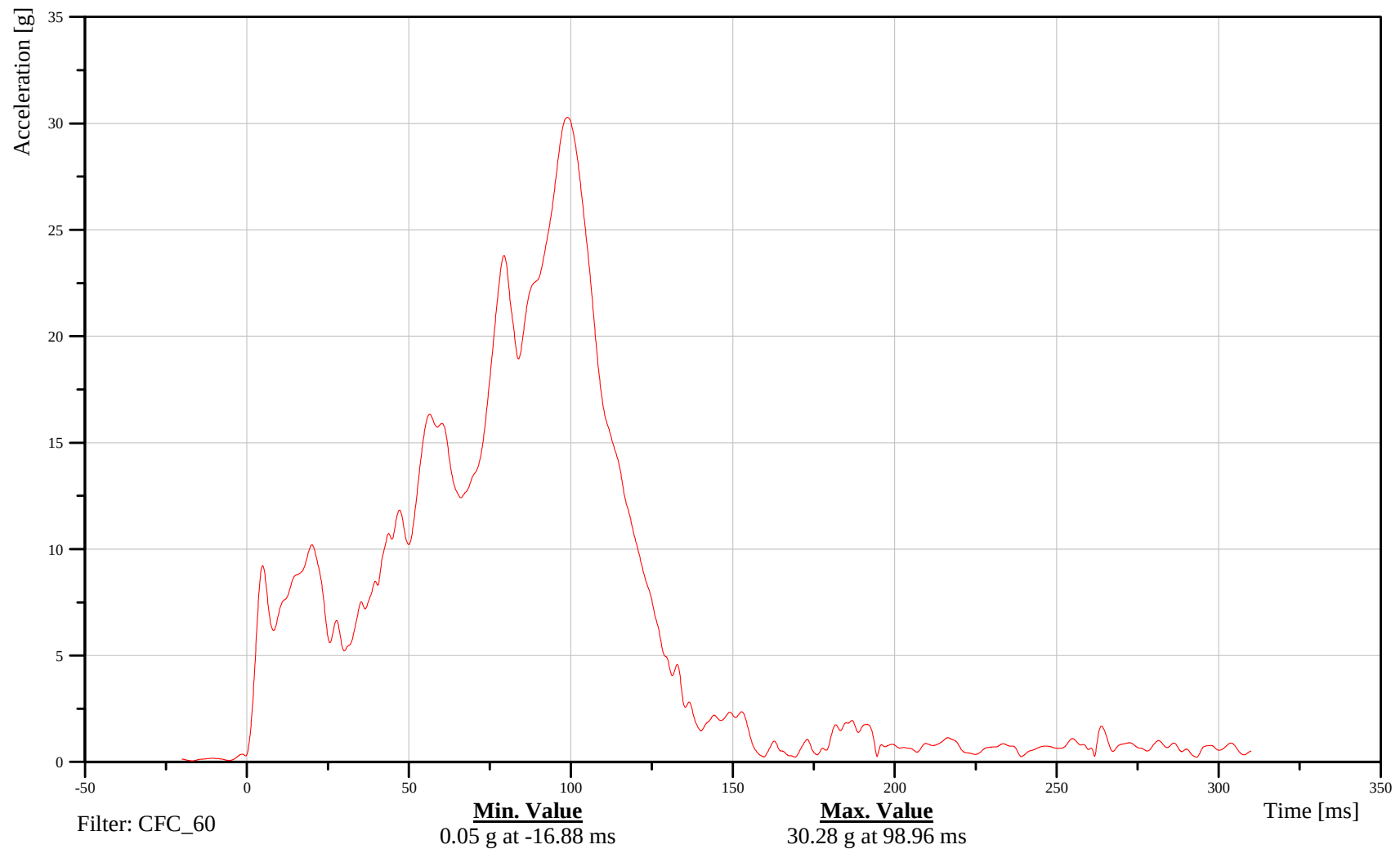
Date: 05/30/2006
Time: 14:51

Vehicle CG Resultant Acceleration

Customer: Volpe
Test Number: R60172

10VEHCCG0000ACRD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-105

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

Date: 05/30/2006

Time: 14:51

Driver Front Airbag 1 Ind

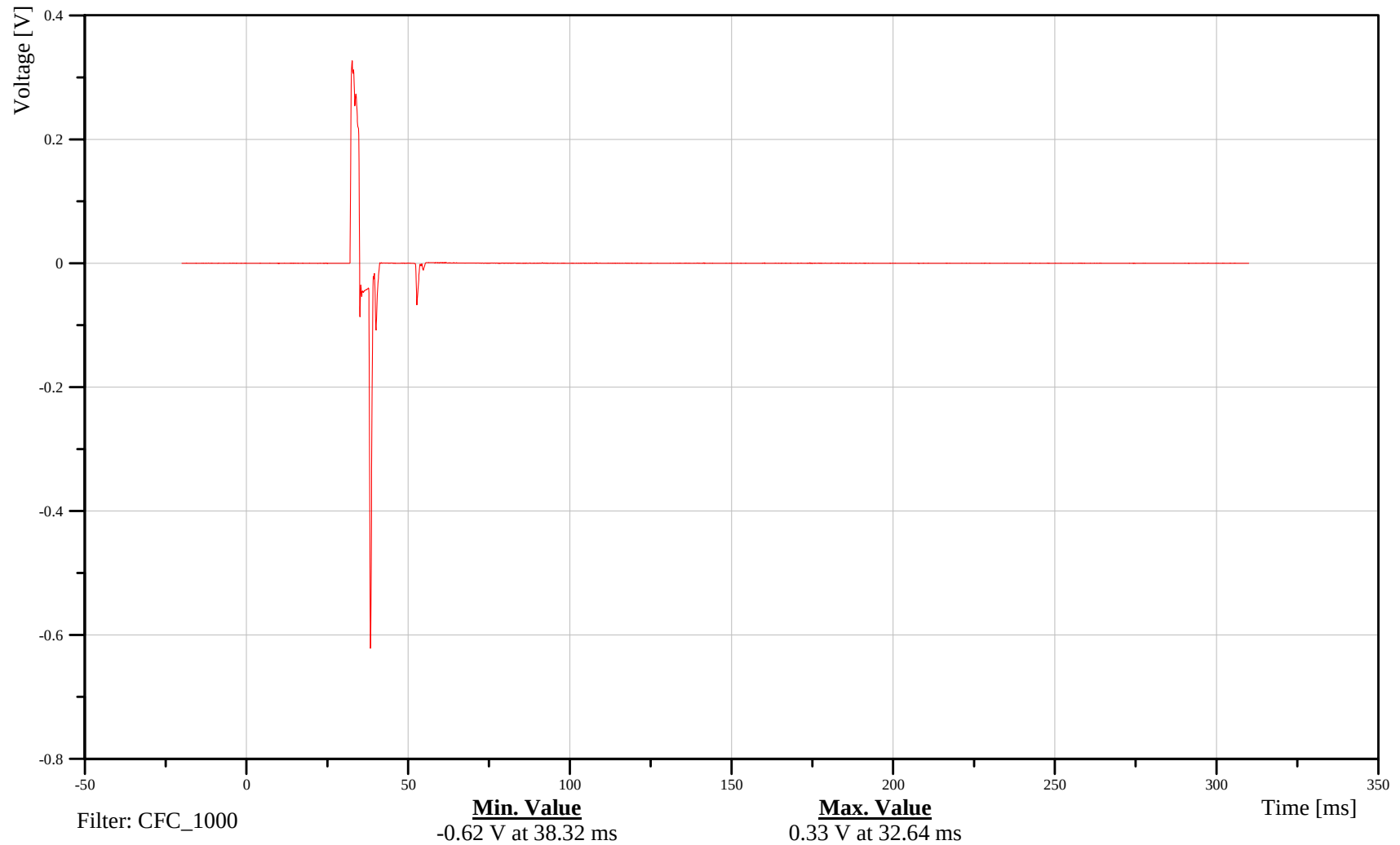
Customer: Volpe

Test Number: R60172

11AIRBFR0100EV0A

TRC Inc. Test Lab: CTF

Test Number: 060530



B-106

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

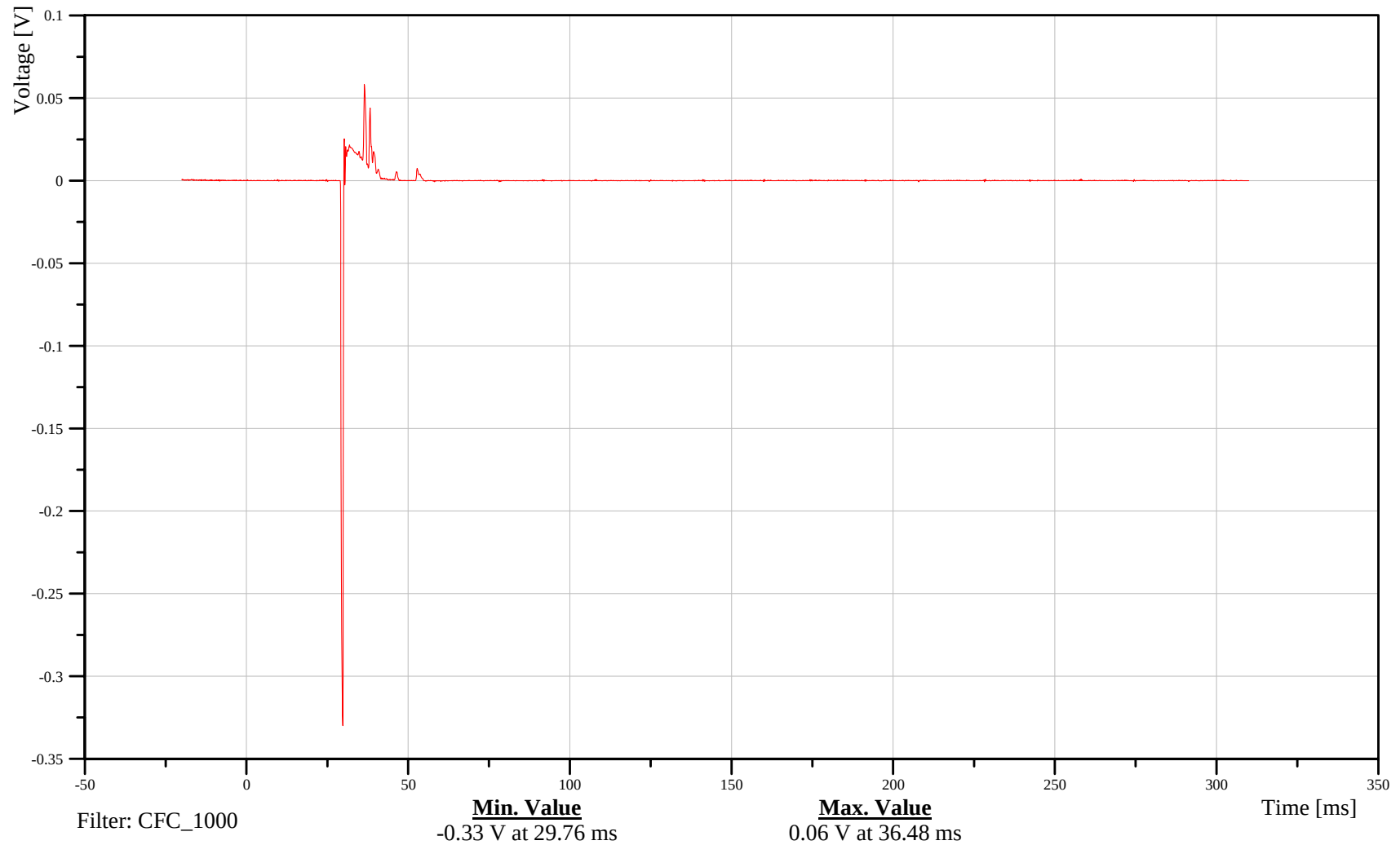
Date: 05/30/2006
Time: 14:51

Driver Front Airbag 2 Ind

Customer: Volpe
Test Number: R60172

11AIRBFR0200EV0A

TRC Inc. Test Lab: CTF
Test Number: 060530



B-107

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

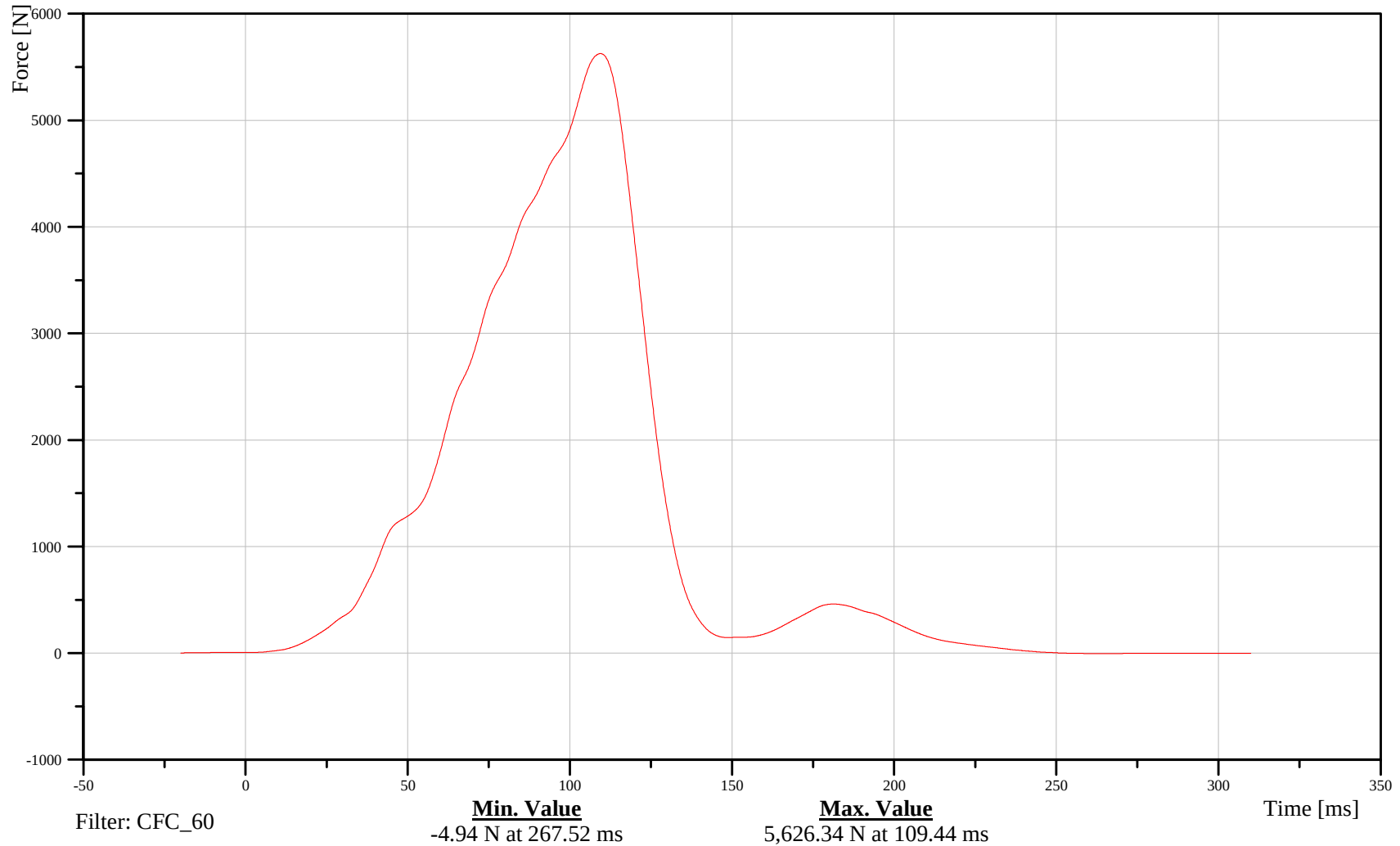
Date: 05/30/2006
Time: 14:51

Driver Lap Belt

Customer: Volpe
Test Number: R60172

11SEBE0000B5FOOD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-108

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

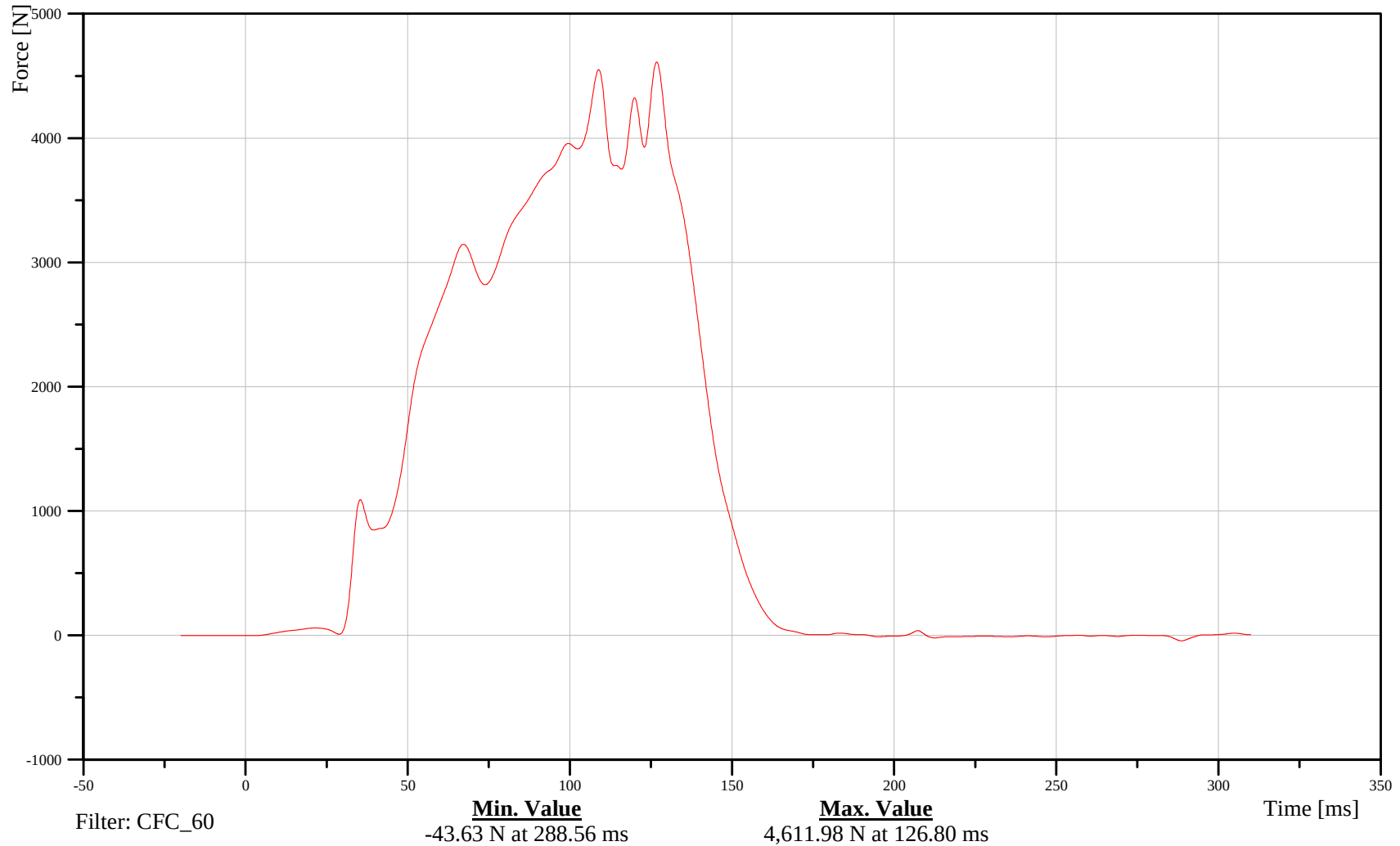
Date: 05/30/2006
Time: 14:51

Driver Shoulder Belt

Customer: Volpe
Test Number: R60172

11SEBE0000B3FOOD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-109

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

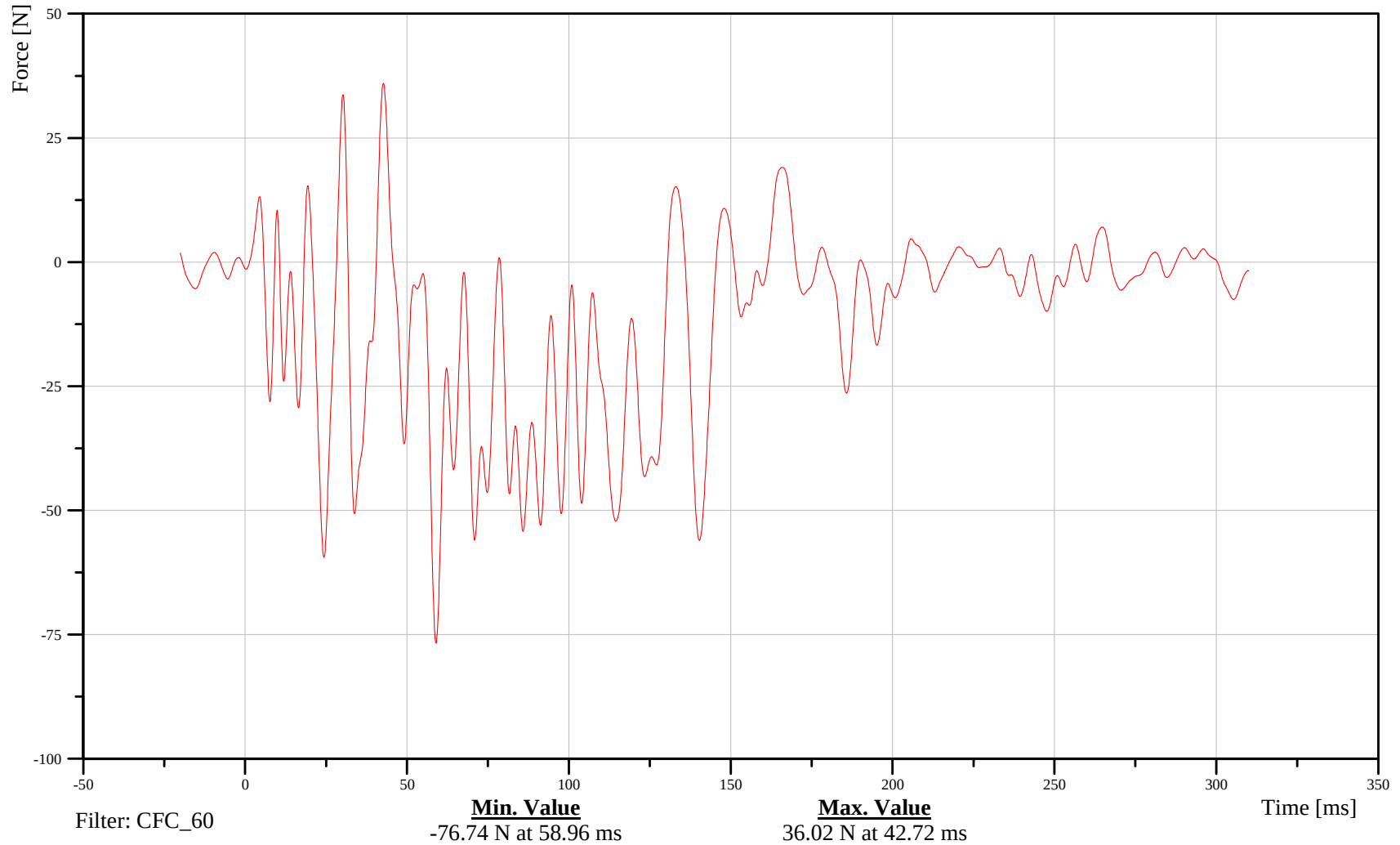
Date: 05/30/2006
Time: 14:51

Load Cell Row 1 Column 1

Customer: Volpe
Test Number: R60172

L0FBAR000001FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-110

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

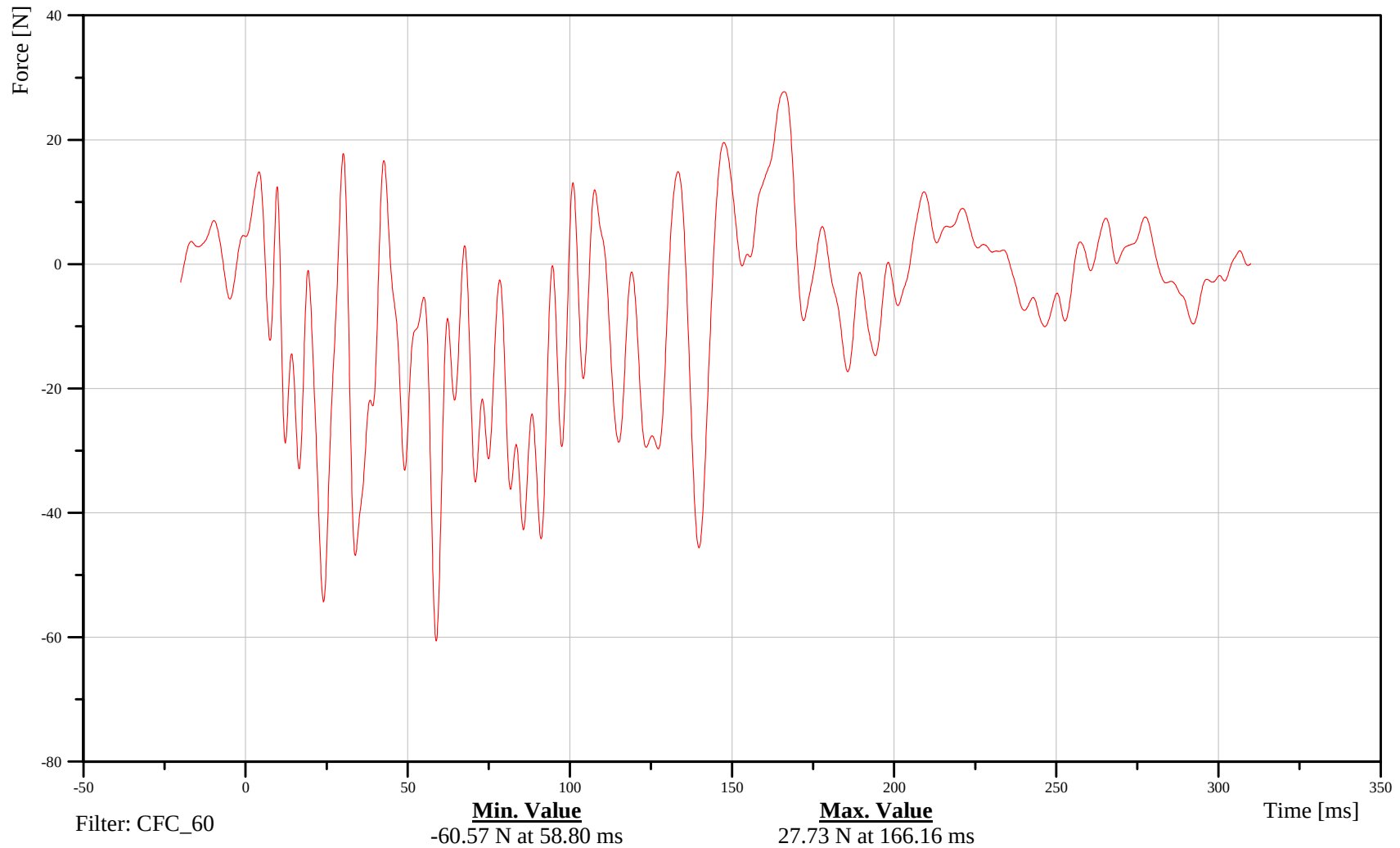
Date: 05/30/2006
Time: 14:51

Load Cell Row 2 Column 1

Customer: Volpe
Test Number: R60172

L0FBAR000002FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-111

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

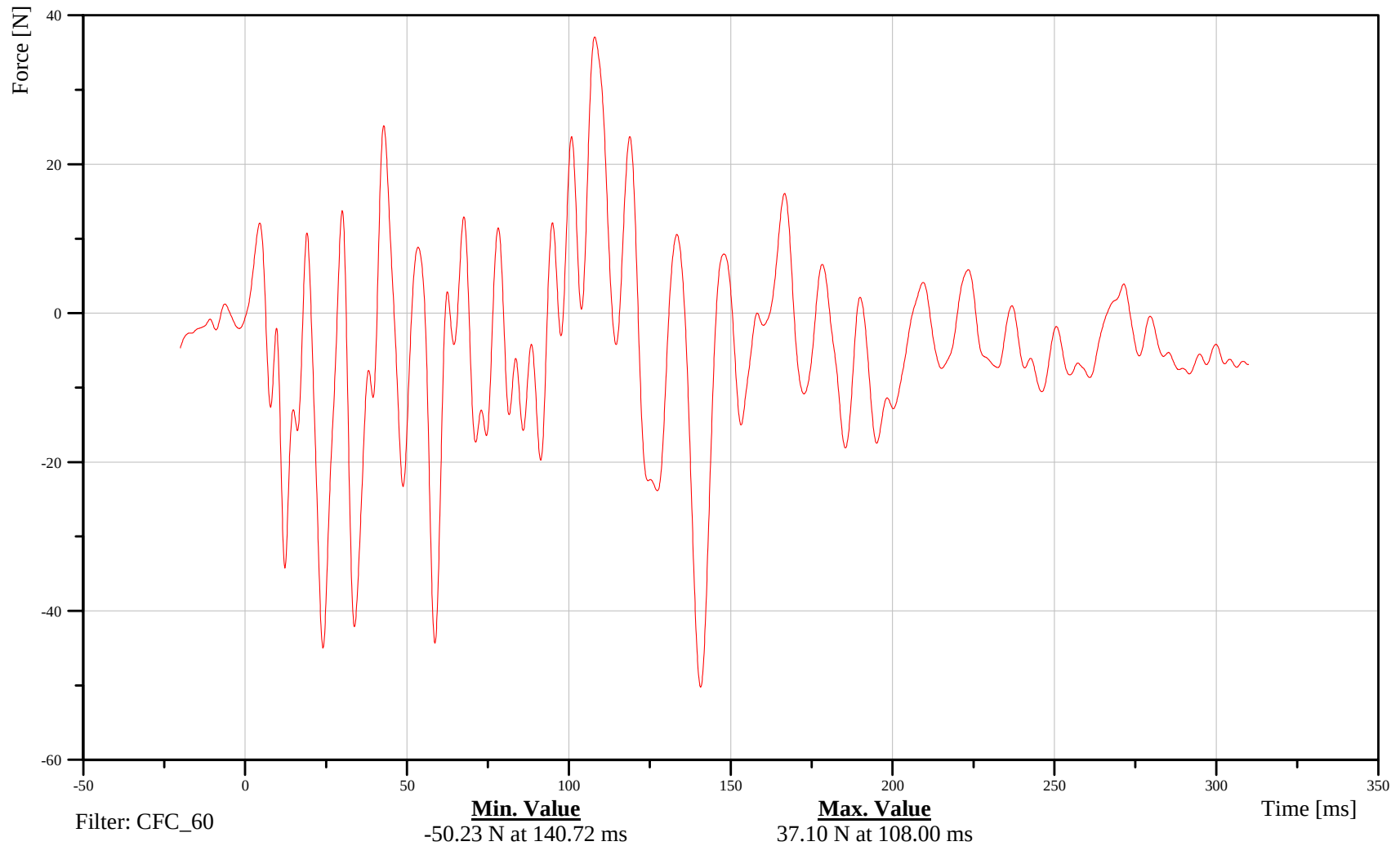
Date: 05/30/2006
Time: 14:51

Load Cell Row 3 Column 1

Customer: Volpe
Test Number: R60172

L0FBAR000003FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-112

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

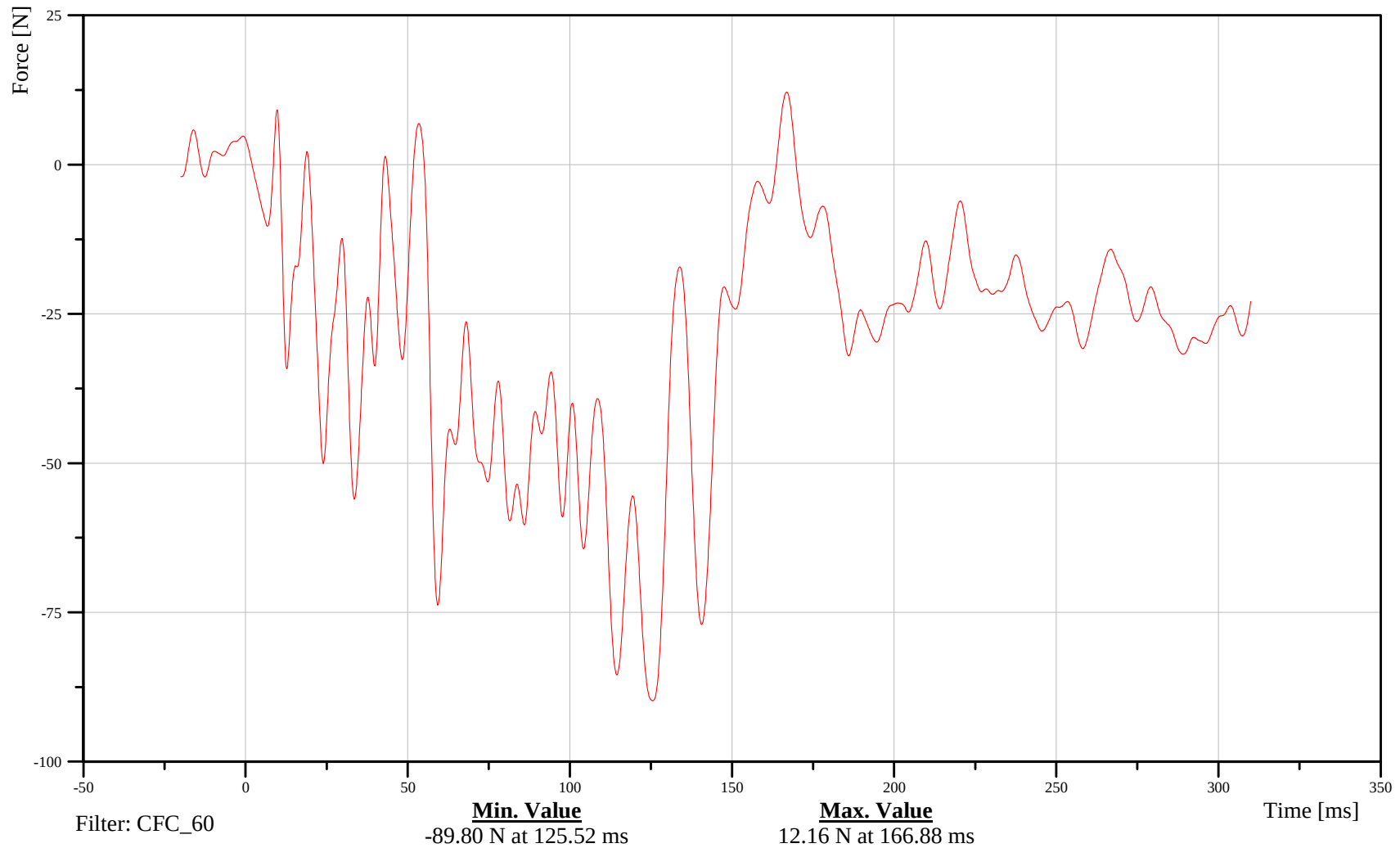
Date: 05/30/2006
Time: 14:51

Load Cell Row 4 Column 1

Customer: Volpe
Test Number: R60172

L0FBAR000004FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-113

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

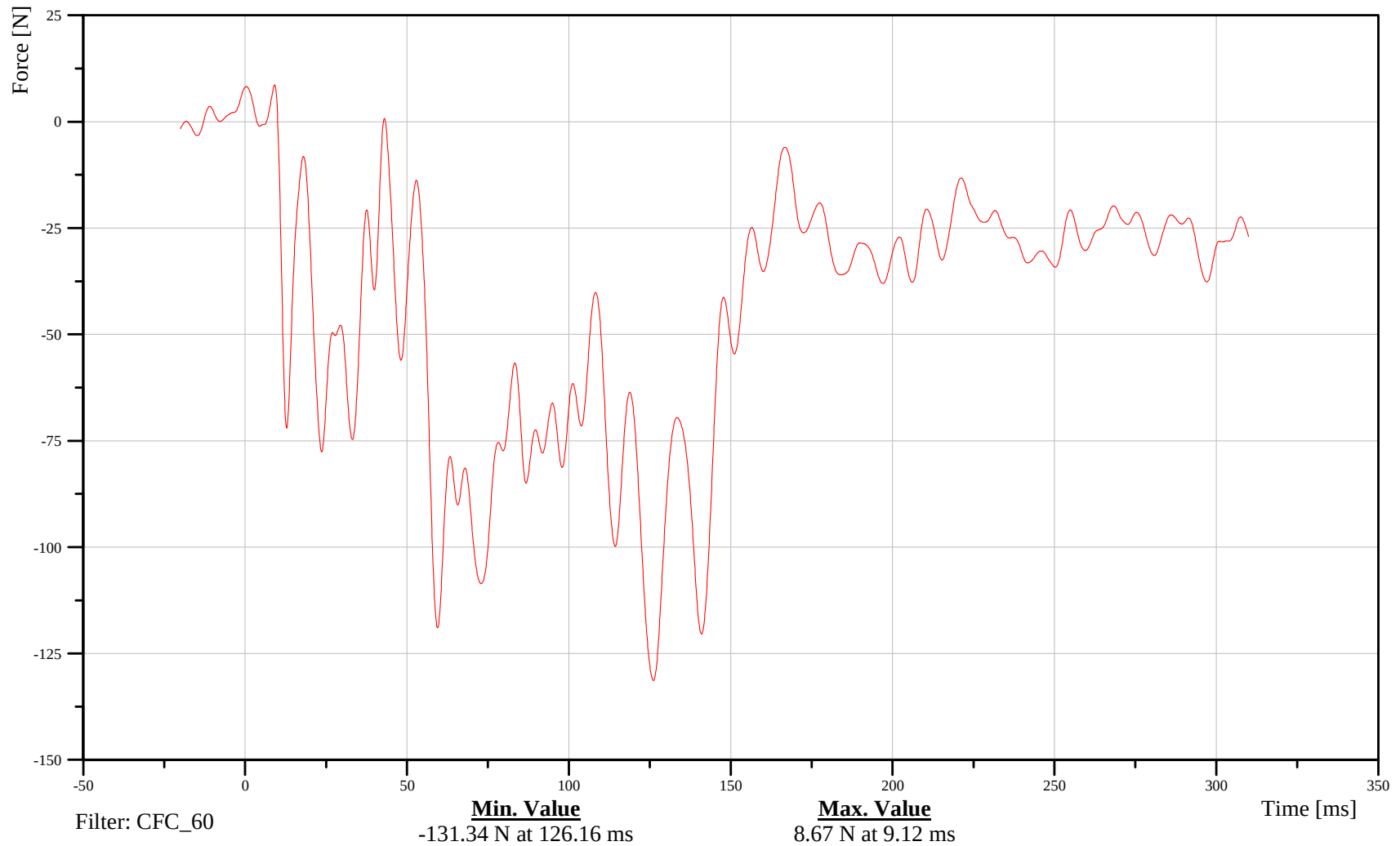
Date: 05/30/2006
Time: 14:51

Load Cell Row 5 Column 1

Customer: Volpe
Test Number: R60172

L0FBAR000005FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-114

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

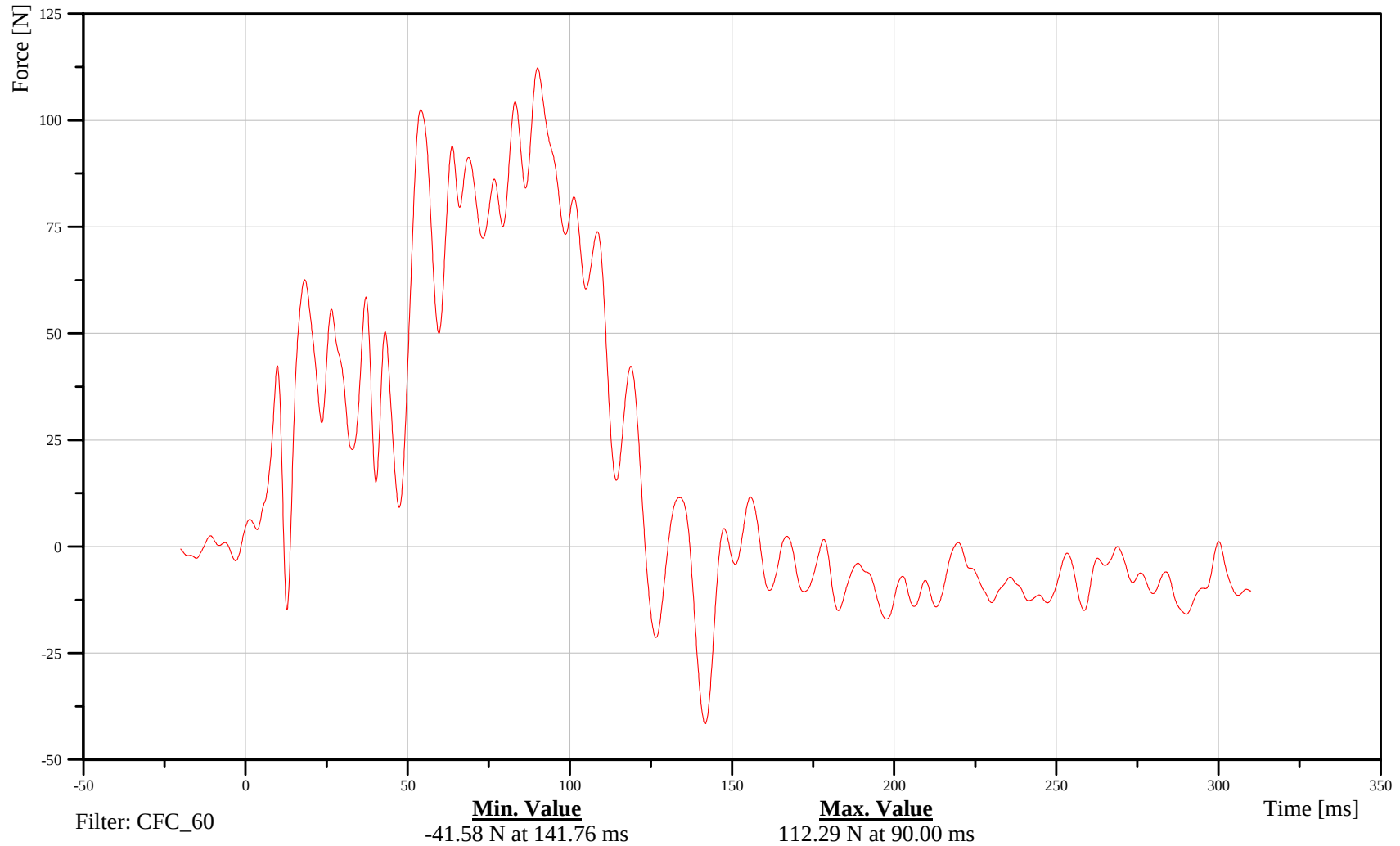
Date: 05/30/2006
Time: 14:51

Load Cell Row 6 Column 1

Customer: Volpe
Test Number: R60172

L0FBAR000006FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-115

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

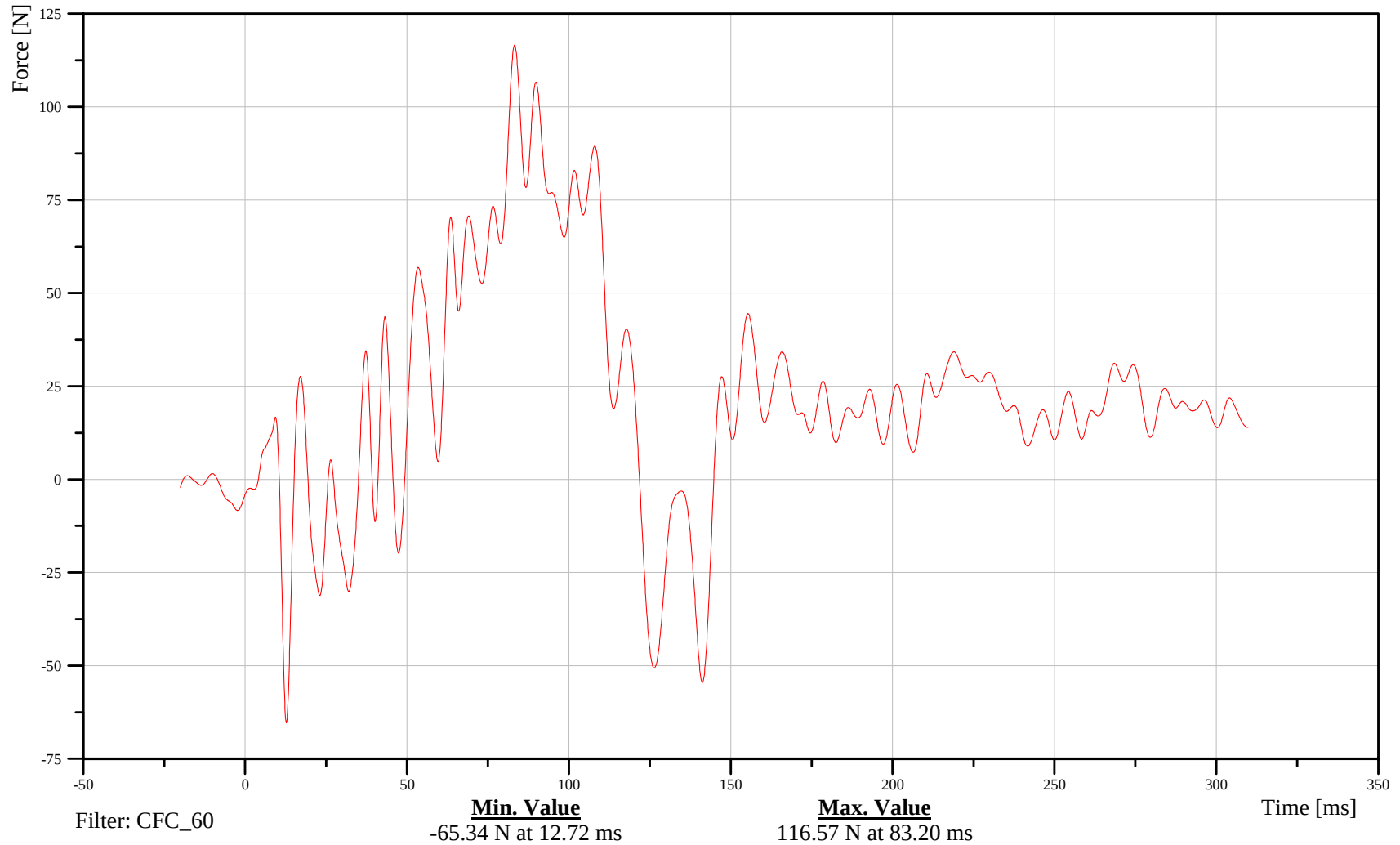
Date: 05/30/2006
Time: 14:51

Load Cell Row 7 Column 1

Customer: Volpe
Test Number: R60172

L0FBAR000007FOX D

TRC Inc. Test Lab: CTF
Test Number: 060530



B-116

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

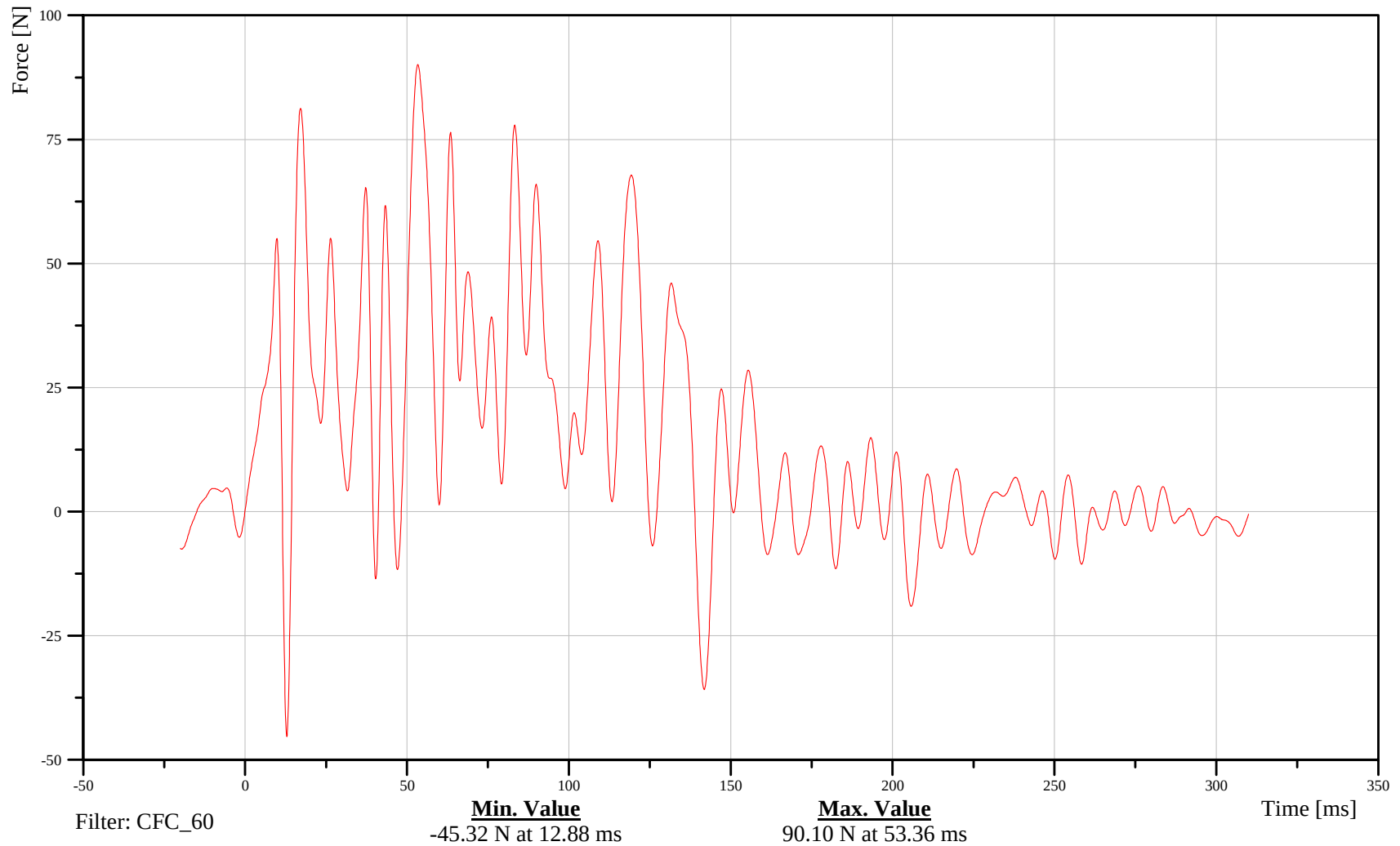
Date: 05/30/2006
Time: 14:51

Load Cell Row 8 Column 1

Customer: Volpe
Test Number: R60172

L0FBAR000008FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-117

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

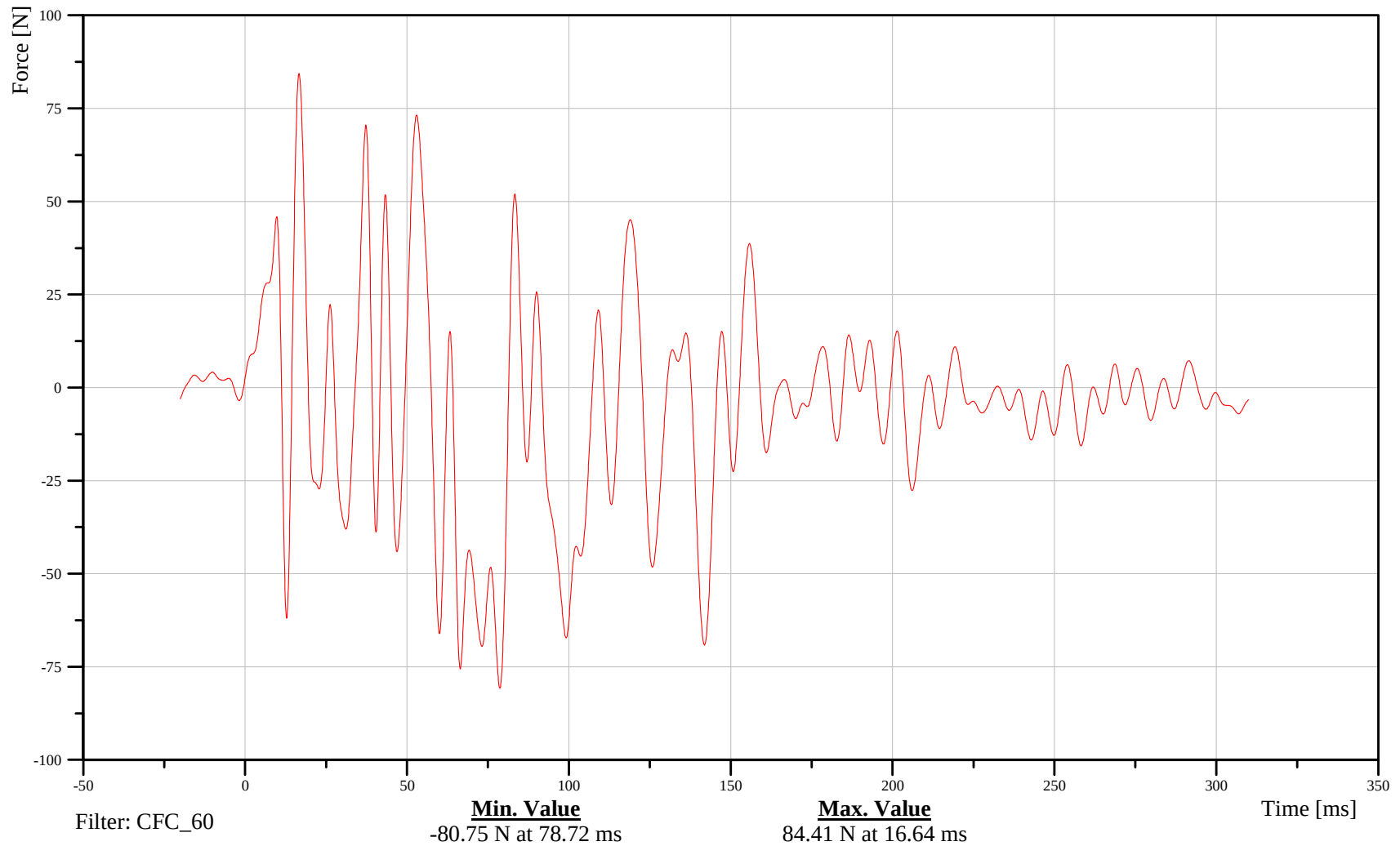
Date: 05/30/2006
Time: 14:51

Load Cell Row 9 Column 1

Customer: Volpe
Test Number: R60172

L0FBAR000009FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-118

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

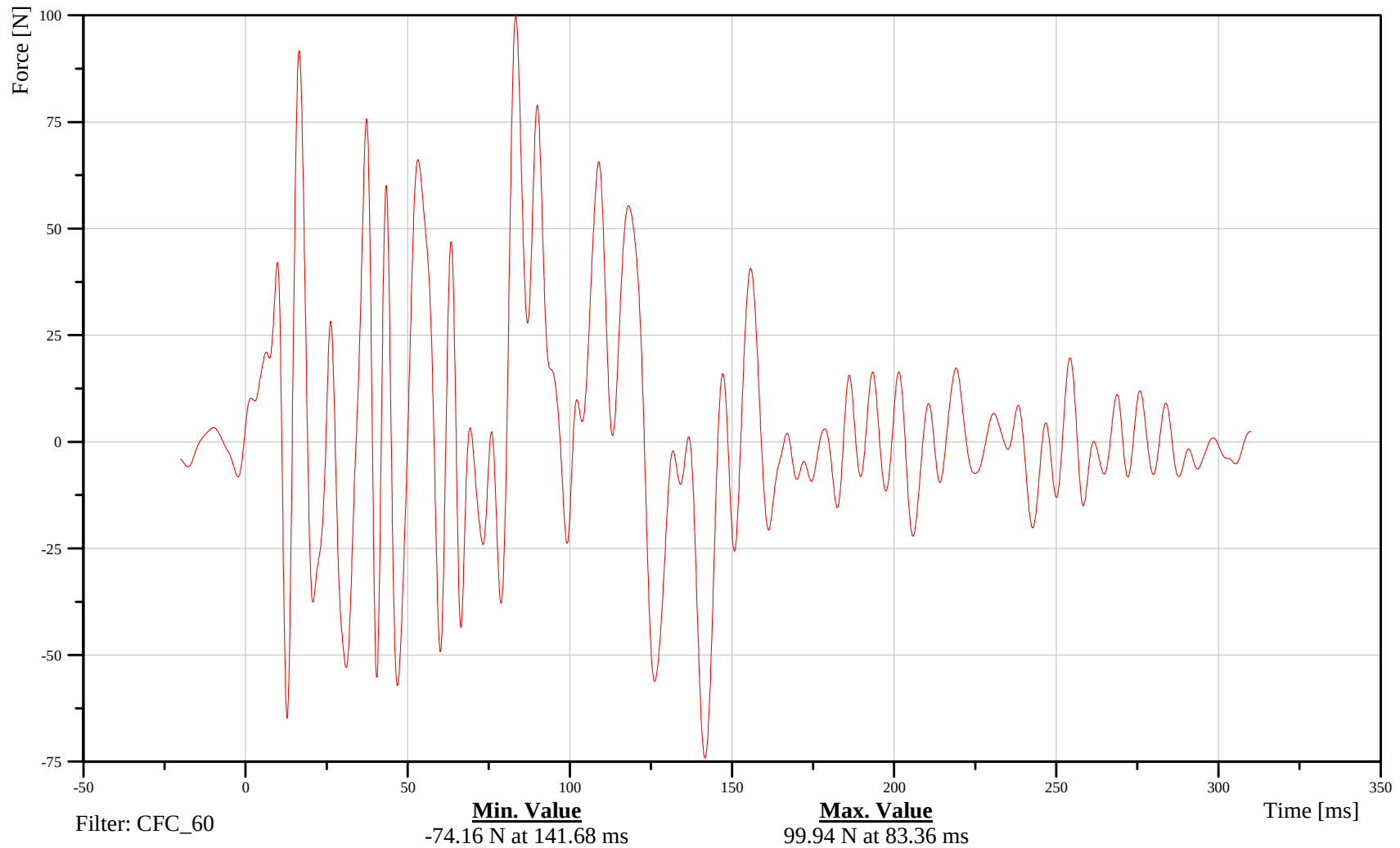
Date: 05/30/2006
Time: 14:51

Load Cell Row 10 Column 1

Customer: Volpe
Test Number: R60172

L0FBAR000010FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-119

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

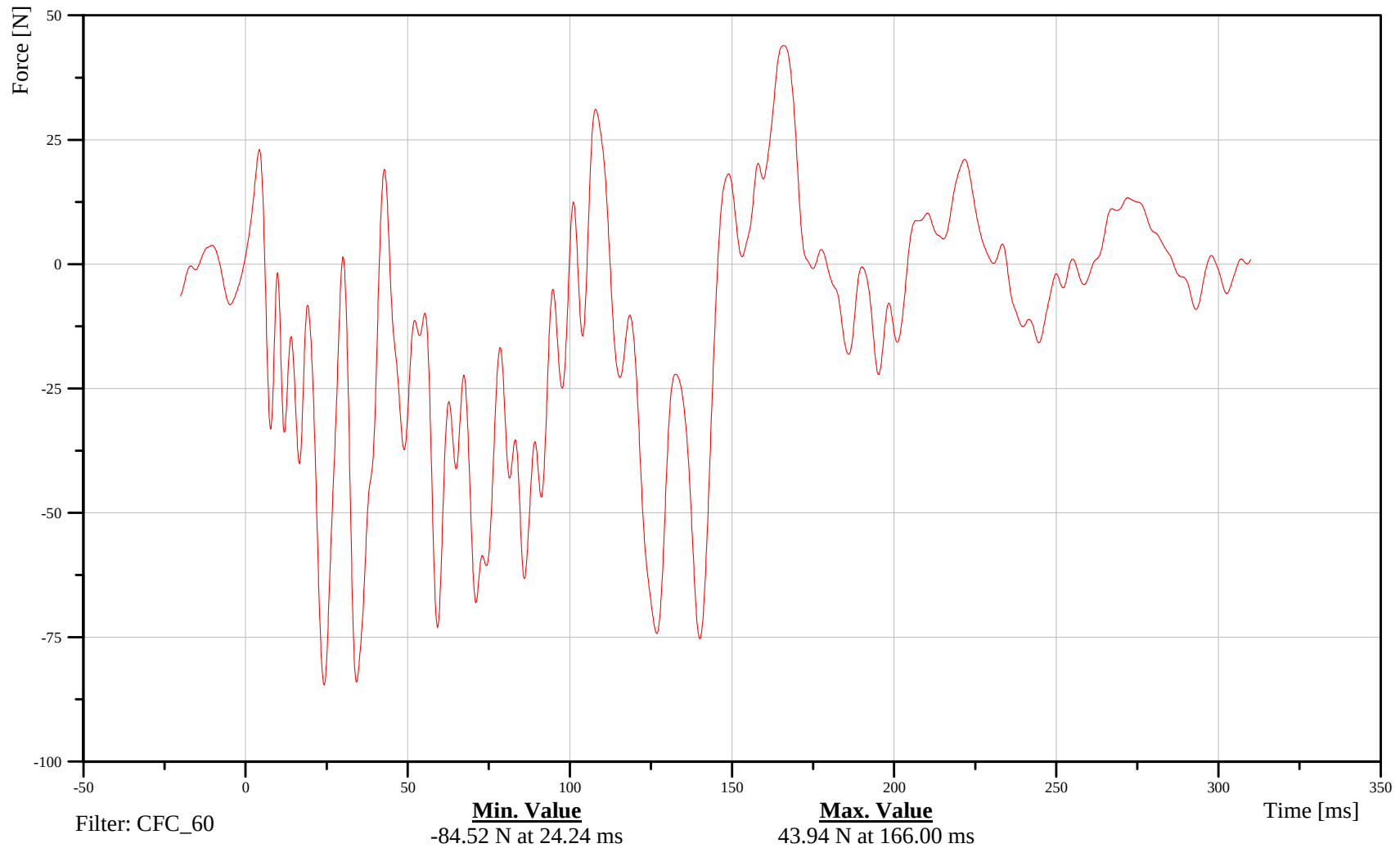
Date: 05/30/2006
Time: 14:51

Load Cell Row 1 Column 2

Customer: Volpe
Test Number: R60172

L0FBAR000011FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-120

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

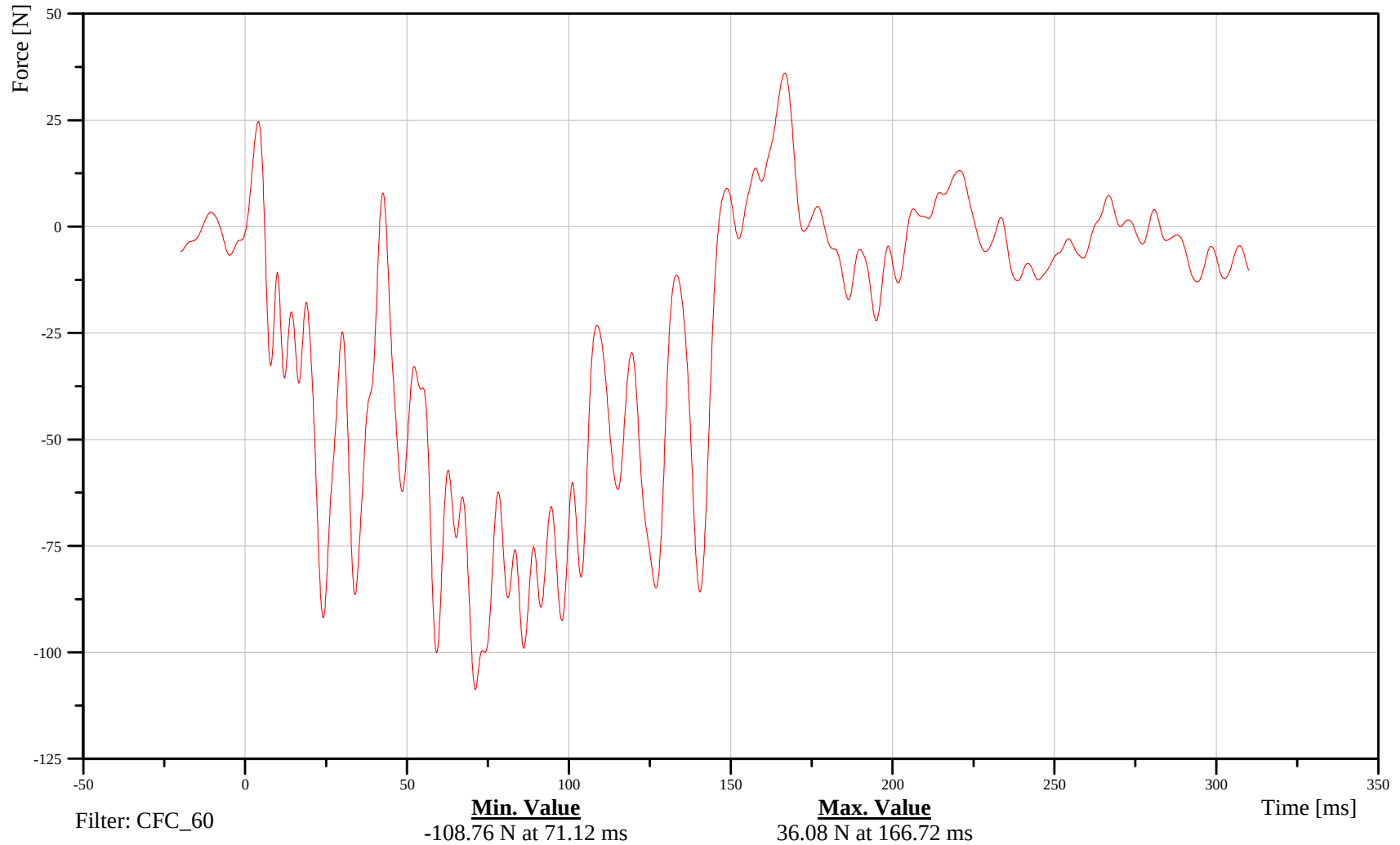
Date: 05/30/2006
Time: 14:51

Load Cell Row 2 Column 2

Customer: Volpe
Test Number: R60172

L0FBAR000012FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-121

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

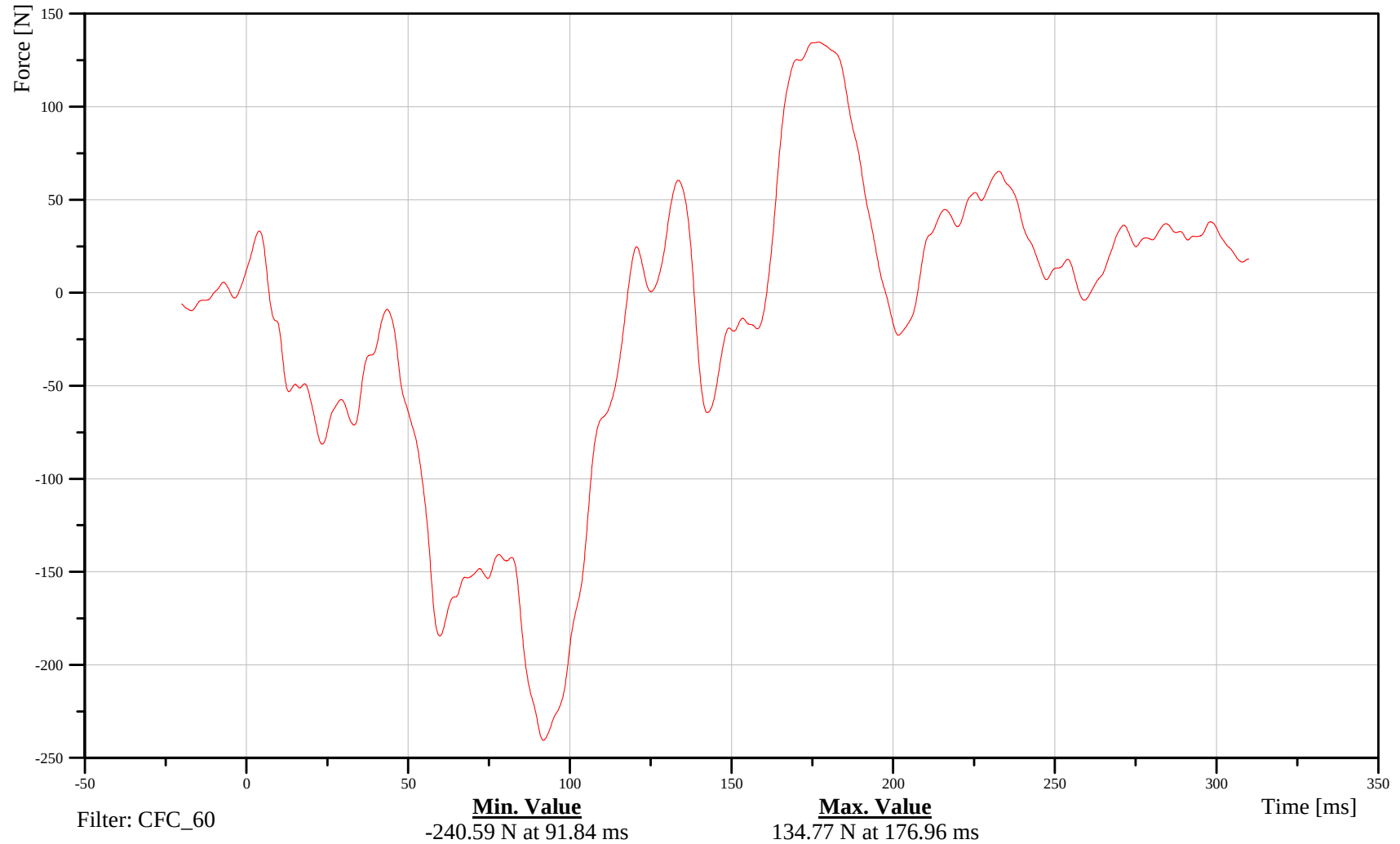
Date: 05/30/2006
Time: 14:51

Load Cell Row 3 Column 2

Customer: Volpe
Test Number: R60172

L0FBAR000013FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-122

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

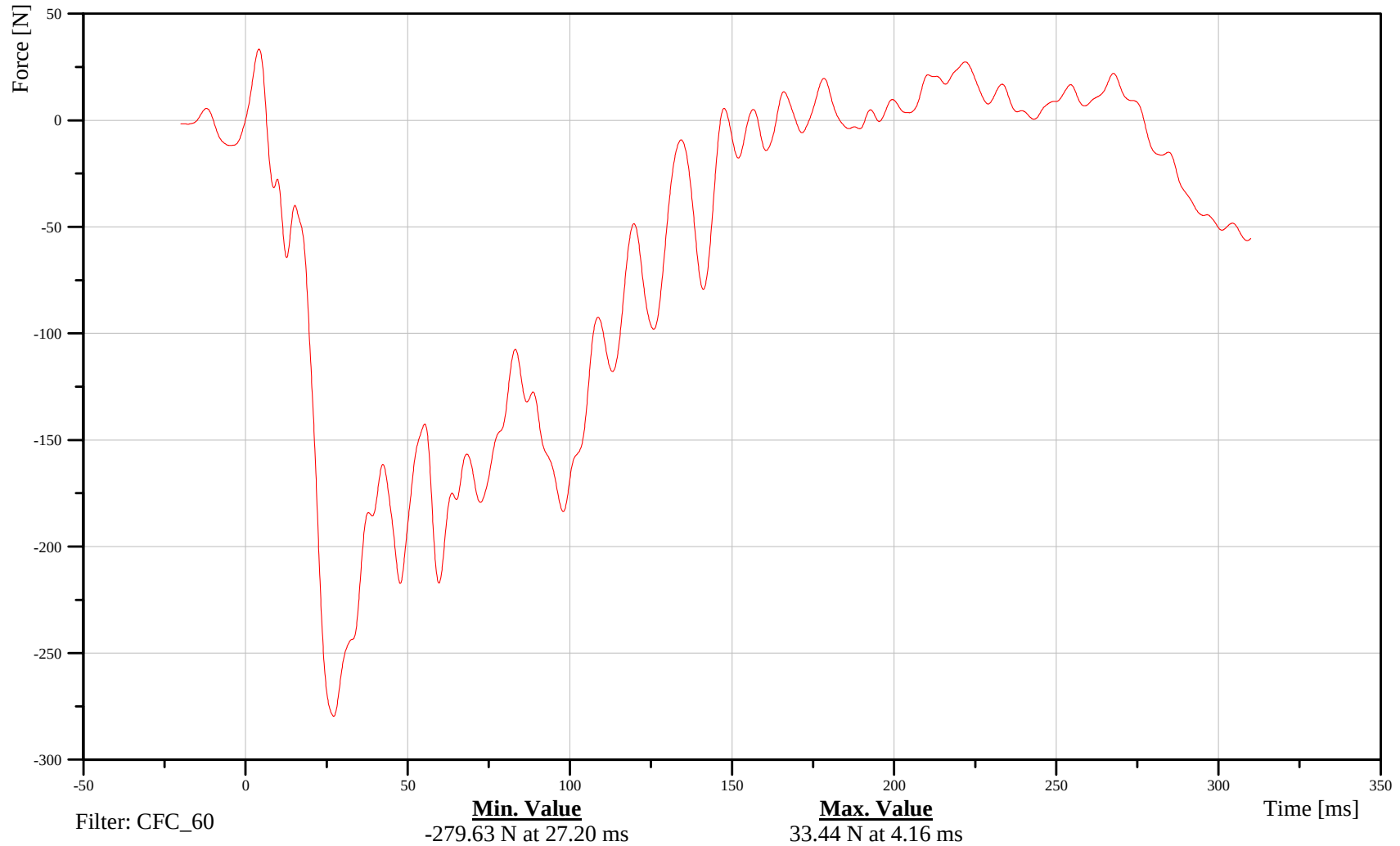
Date: 05/30/2006
Time: 14:51

Load Cell Row 4 Column 2

Customer: Volpe
Test Number: R60172

L0FBAR000014FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-123

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

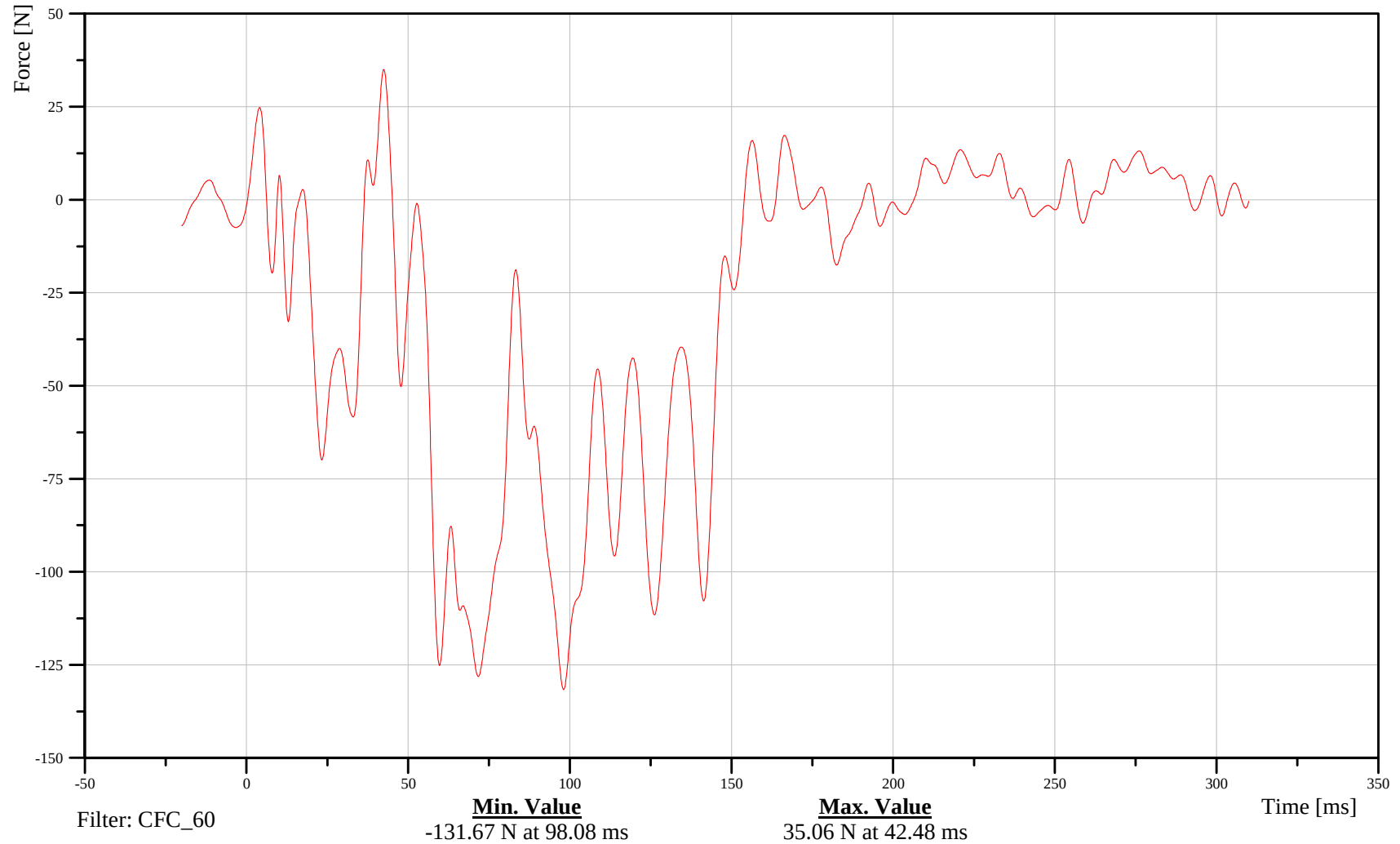
Date: 05/30/2006
Time: 14:51

Load Cell Row 5 Column 2

Customer: Volpe
Test Number: R60172

L0FBAR000015FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-124

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

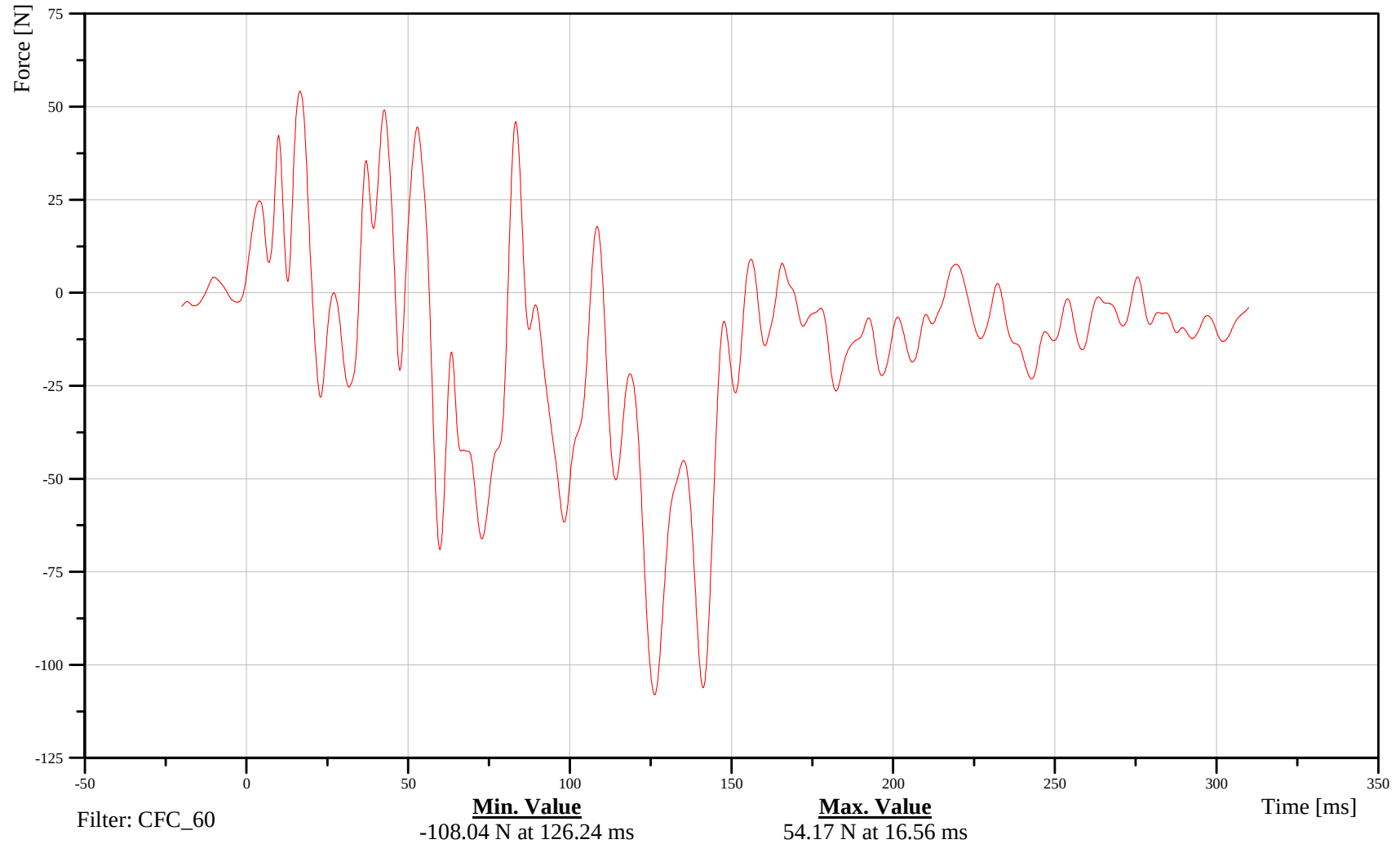
Date: 05/30/2006
Time: 14:51

Load Cell Row 6 Column 2

Customer: Volpe
Test Number: R60172

L0FBAR000016FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-125

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

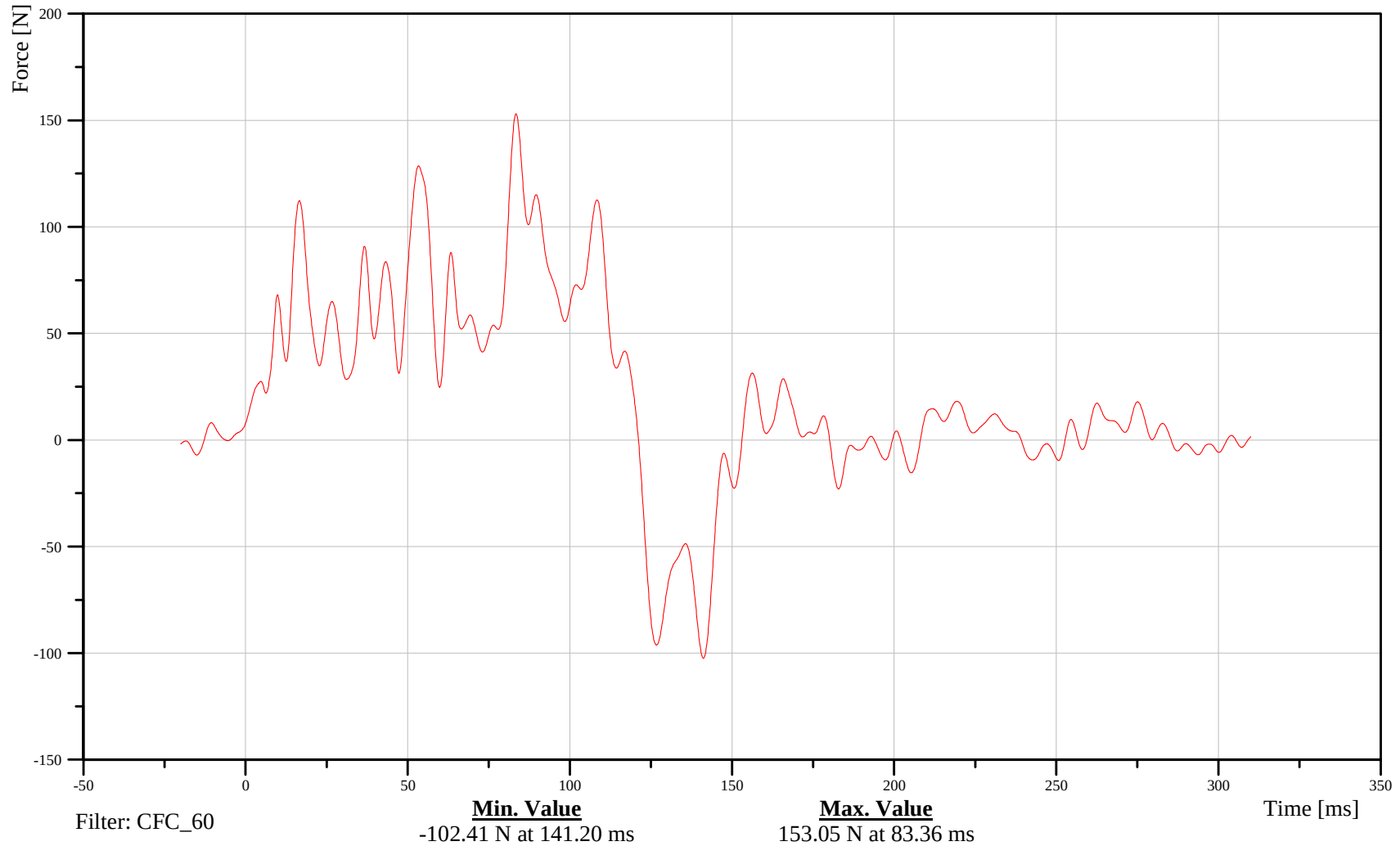
Date: 05/30/2006
Time: 14:51

Load Cell Row 7 Column 2

Customer: Volpe
Test Number: R60172

L0FBAR000017FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-126

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

Date: 05/30/2006

Load Cell Row 8 Column 2

Time: 14:51

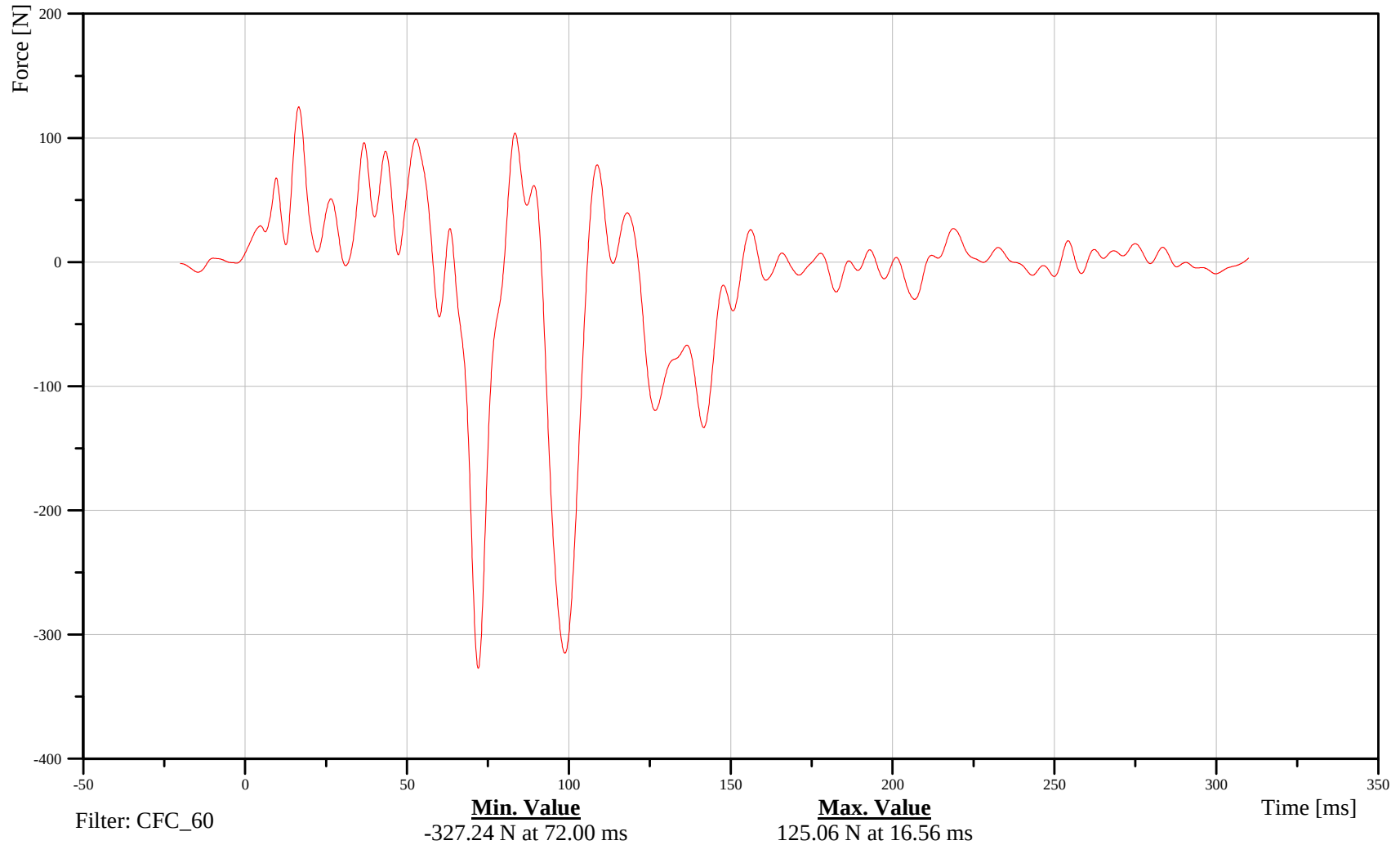
Customer: Volpe

Test Number: R60172

L0FBAR000018FOXD

TRC Inc. Test Lab: CTF

Test Number: 060530



B-127

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

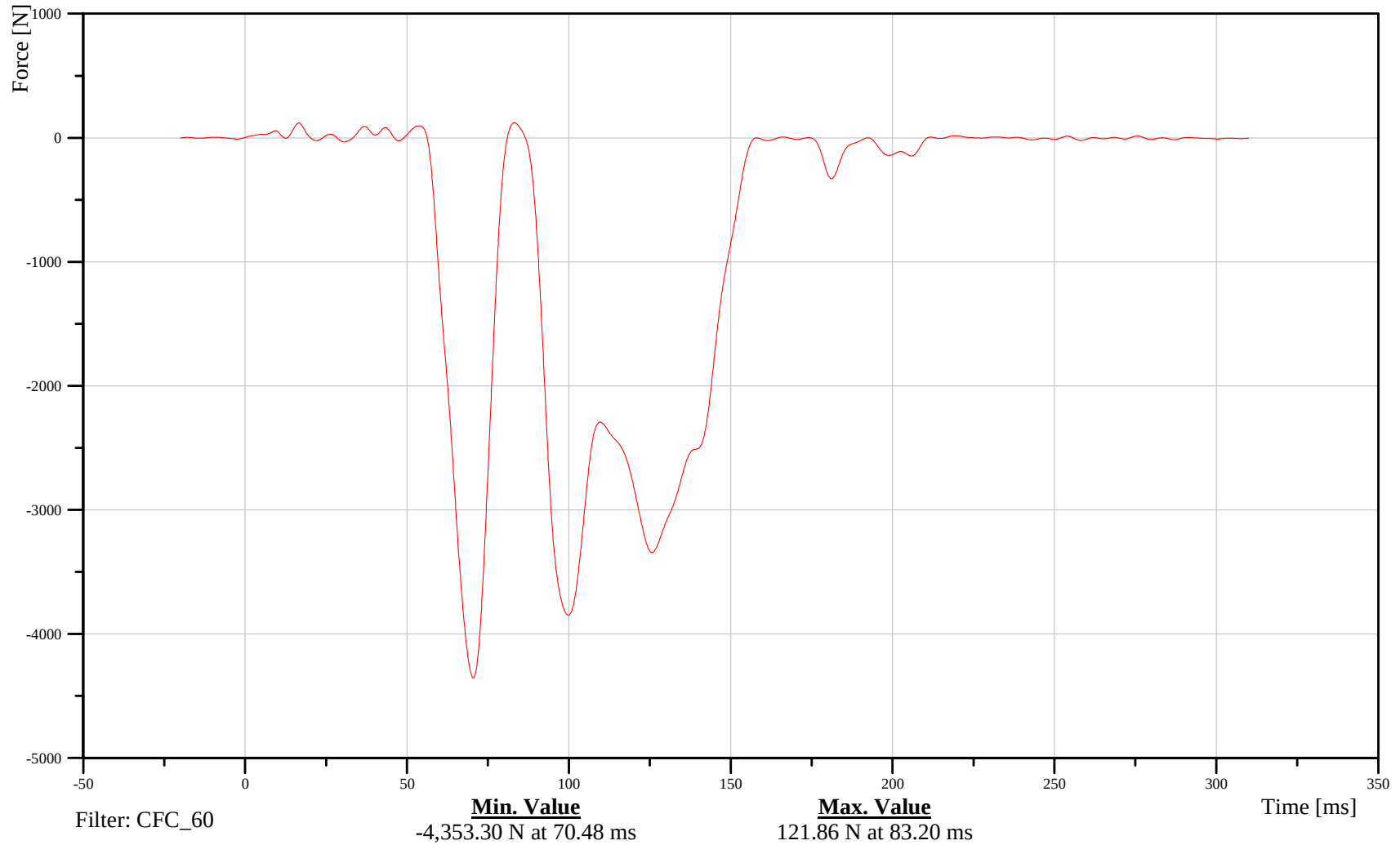
Date: 05/30/2006
Time: 14:51

Load Cell Row 9 Column 2

Customer: Volpe
Test Number: R60172

L0FBAR000019FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-128

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

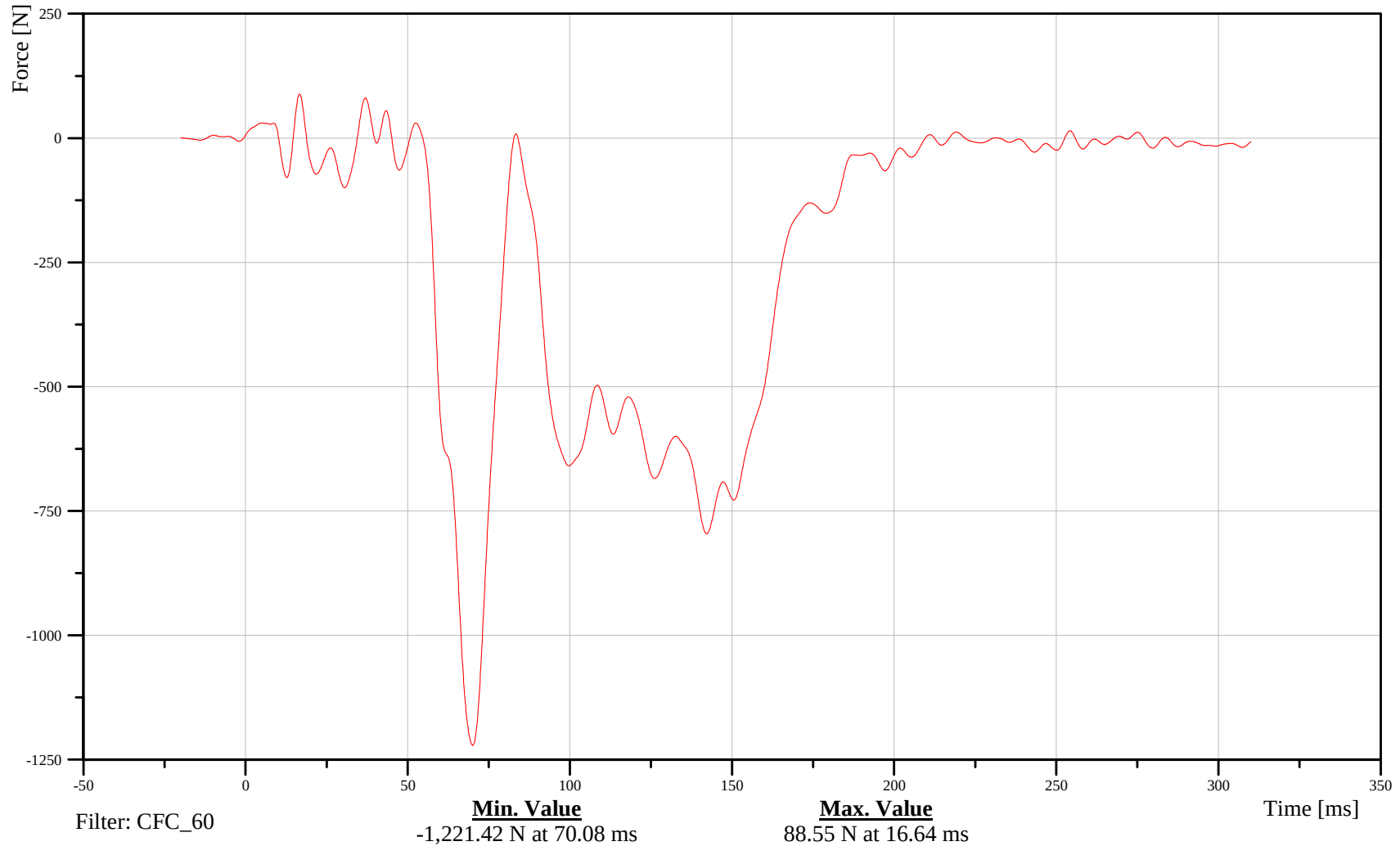
Date: 05/30/2006
Time: 14:51

Load Cell Row 10 Column 2

Customer: Volpe
Test Number: R60172

L0FBAR000020FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-129

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

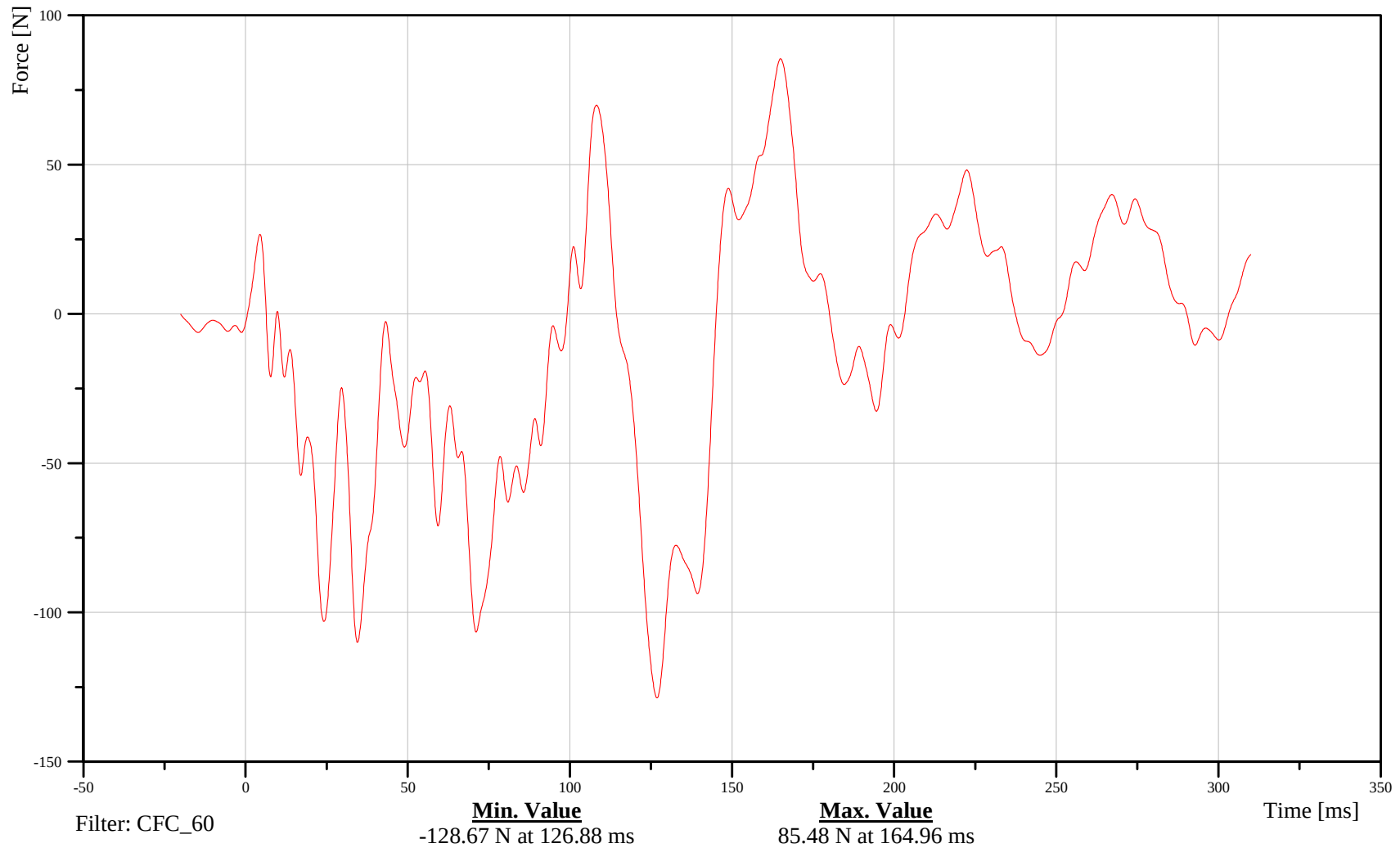
Date: 05/30/2006
Time: 14:51

Load Cell Row 1 Column 3

Customer: Volpe
Test Number: R60172

L0FBAR000021FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-130

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

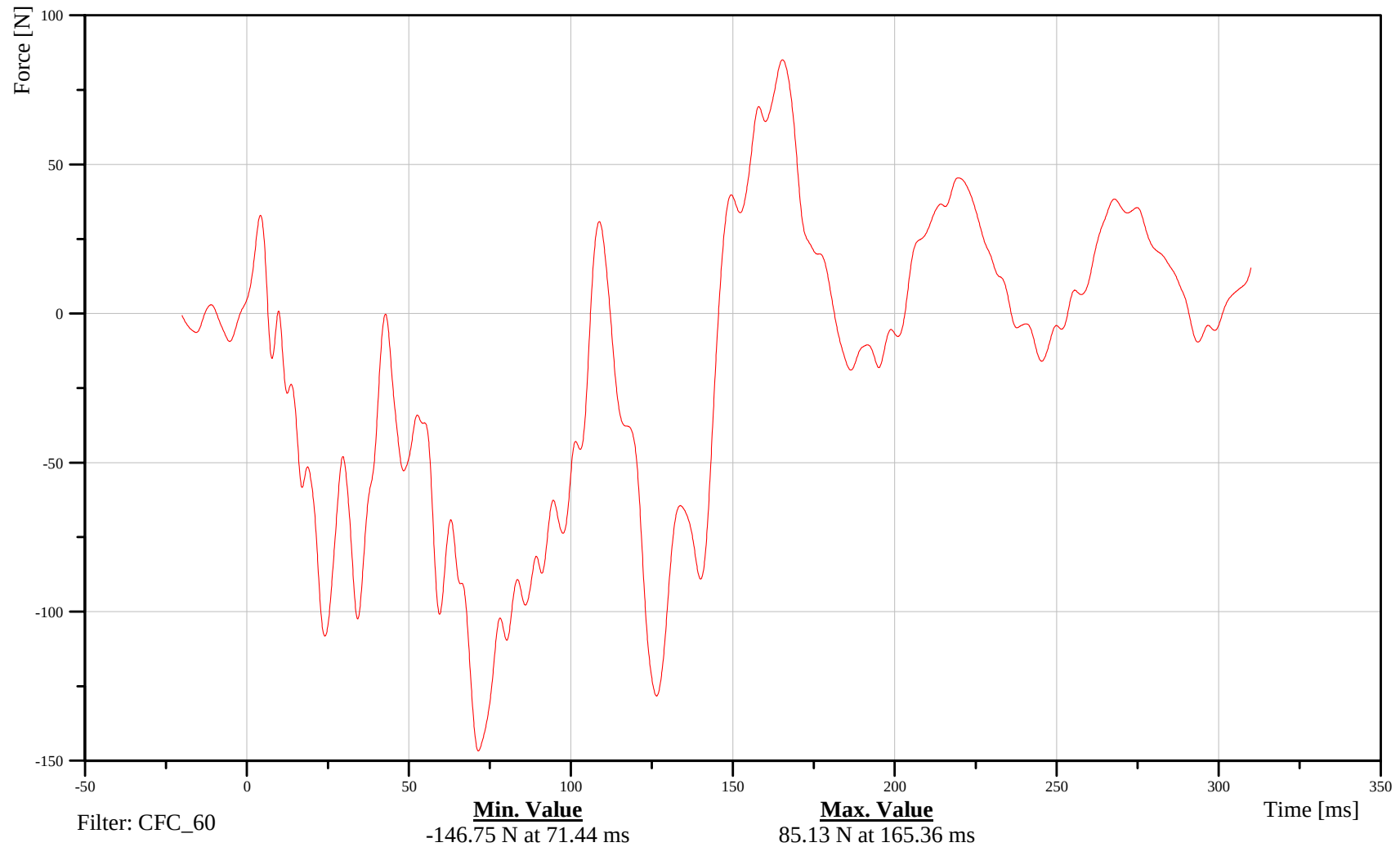
Date: 05/30/2006
Time: 14:51

Load Cell Row 2 Column 3

Customer: Volpe
Test Number: R60172

L0FBAR000022FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-131

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

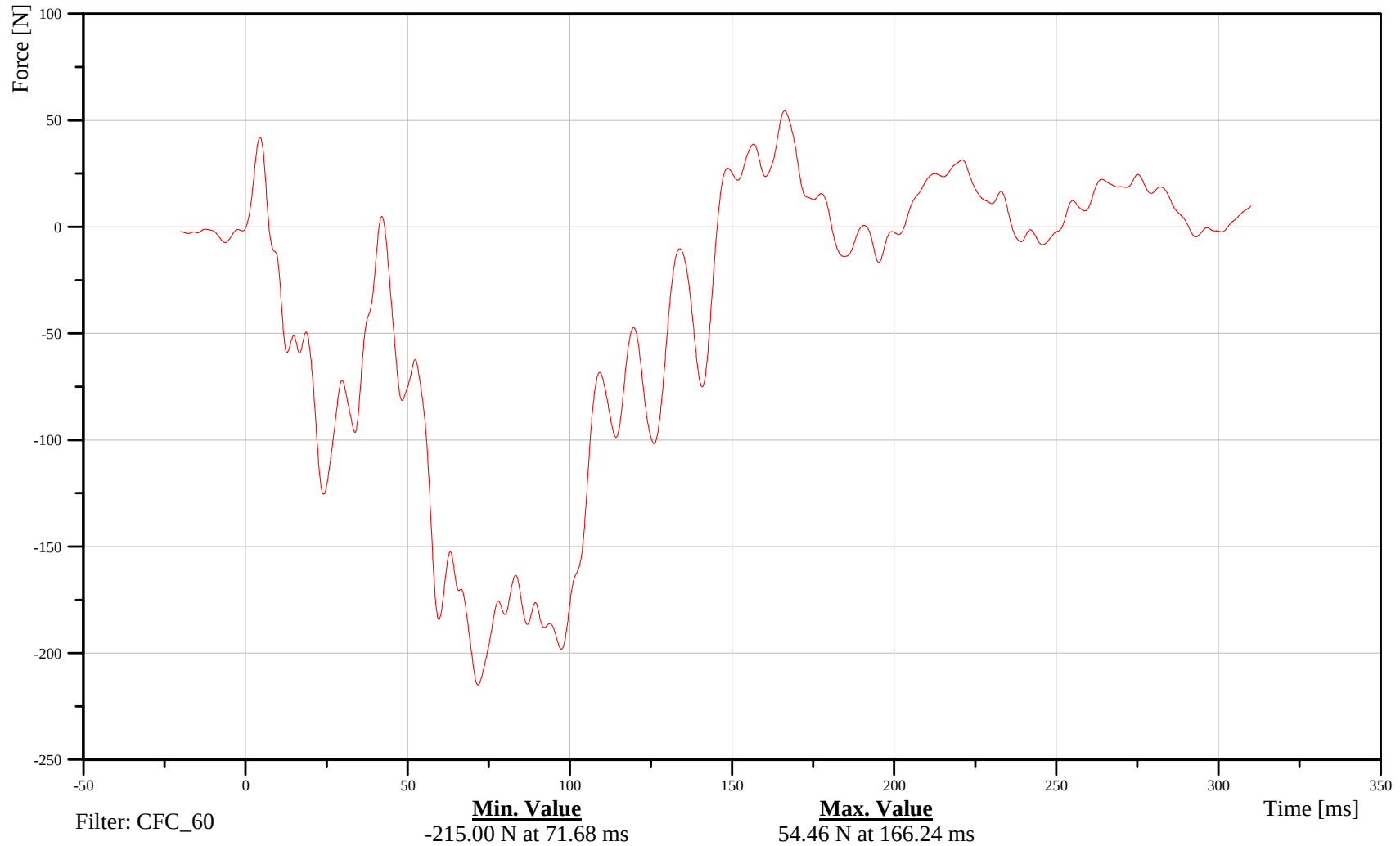
Date: 05/30/2006
Time: 14:51

Load Cell Row 3 Column 3

Customer: Volpe
Test Number: R60172

L0FBAR000023FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-132

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

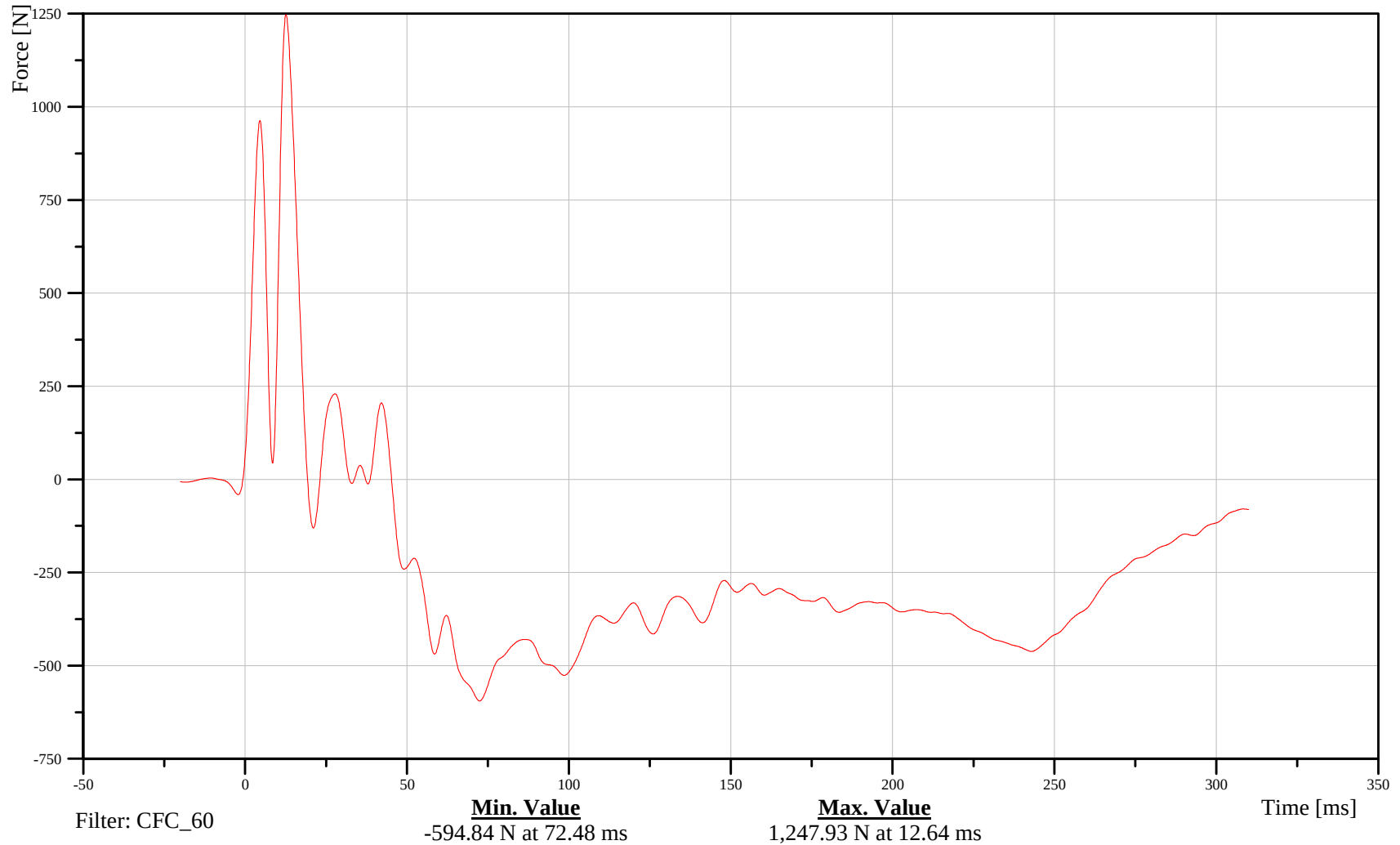
Date: 05/30/2006
Time: 14:51

Load Cell Row 4 Column 3

Customer: Volpe
Test Number: R60172

L0FBAR000024FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-133

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

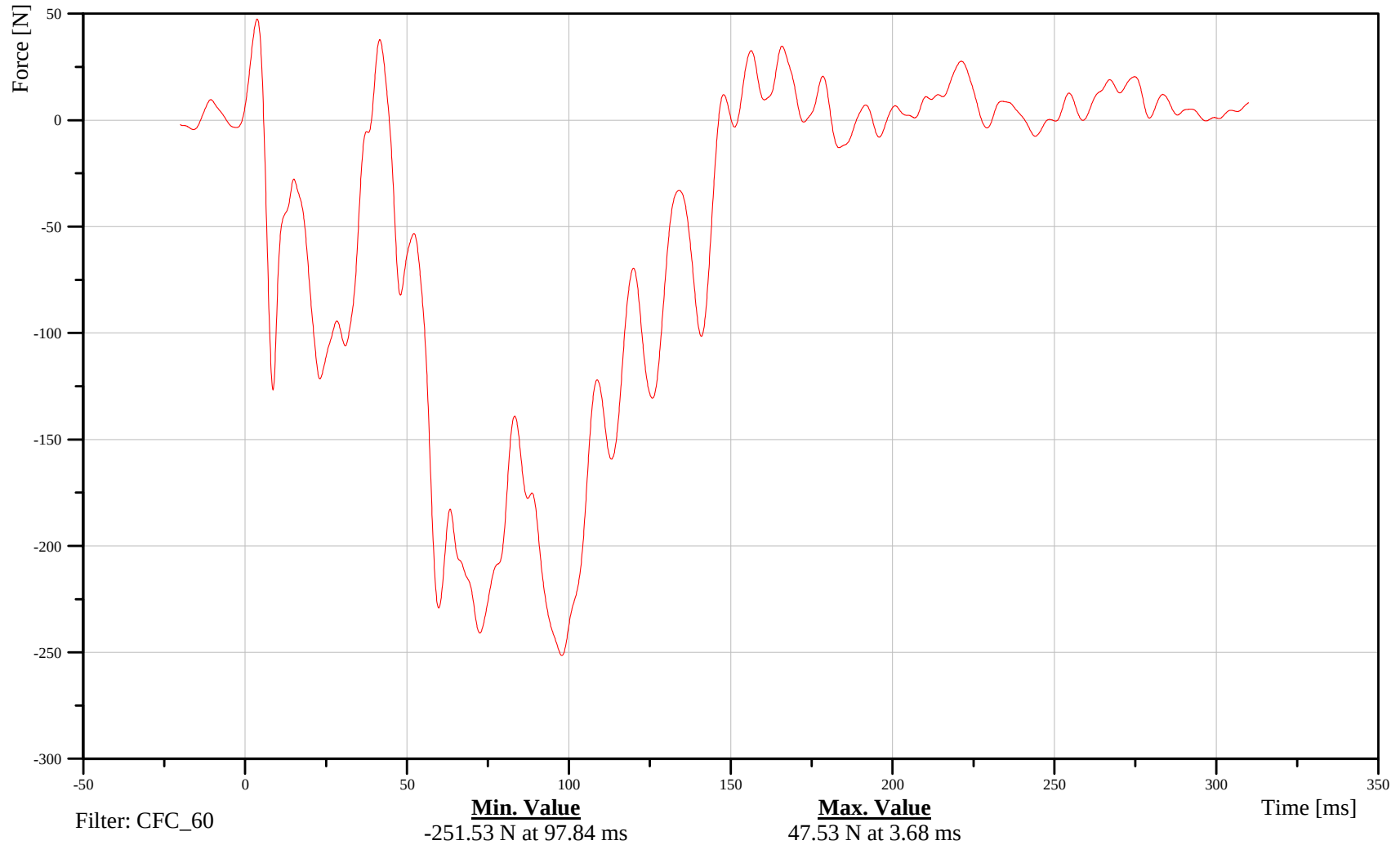
Date: 05/30/2006
Time: 14:51

Load Cell Row 5 Column 3

Customer: Volpe
Test Number: R60172

L0FBAR000025FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-134

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

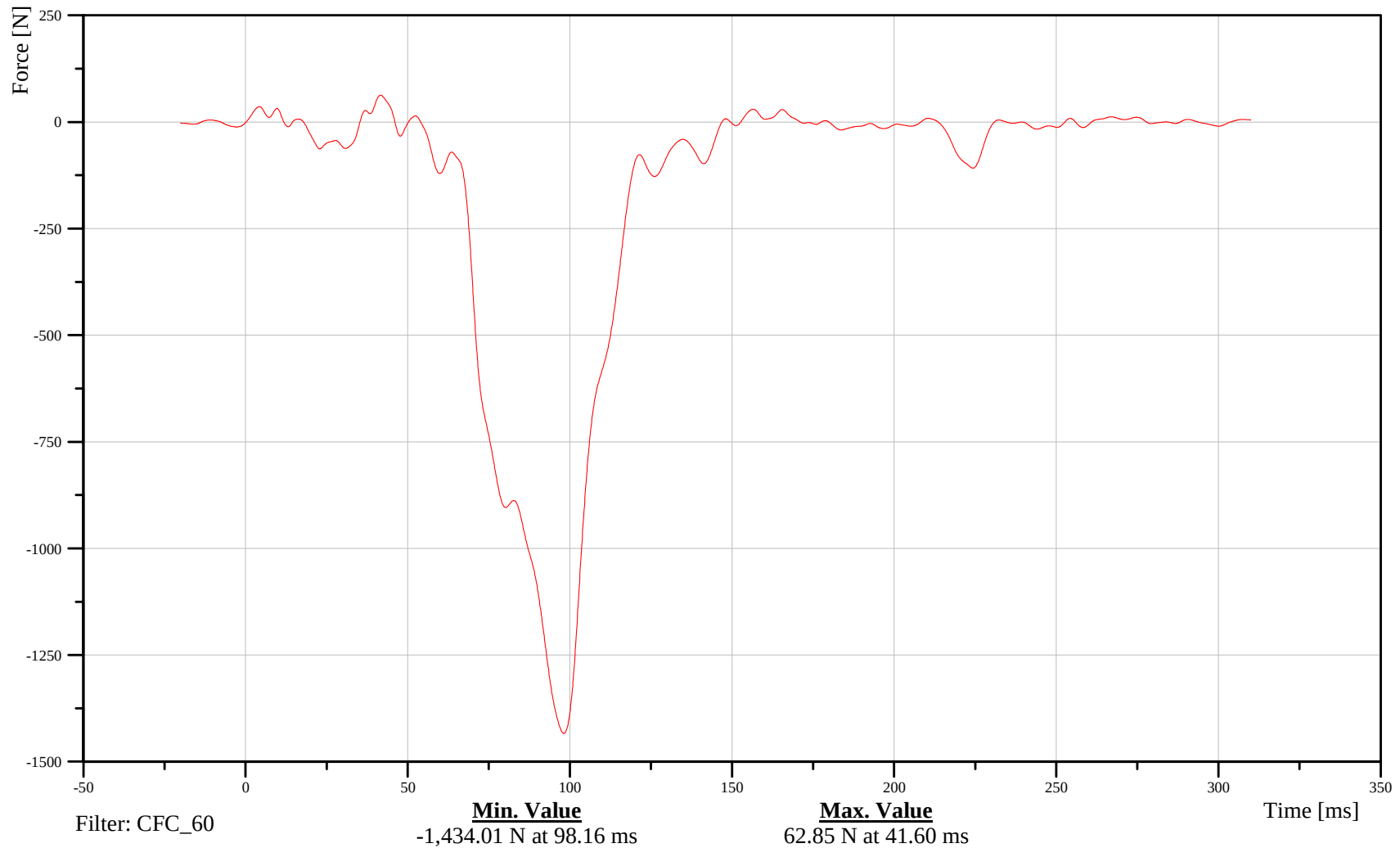
Date: 05/30/2006
Time: 14:51

Load Cell Row 6 Column 3

Customer: Volpe
Test Number: R60172

L0FBAR000026FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-135

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

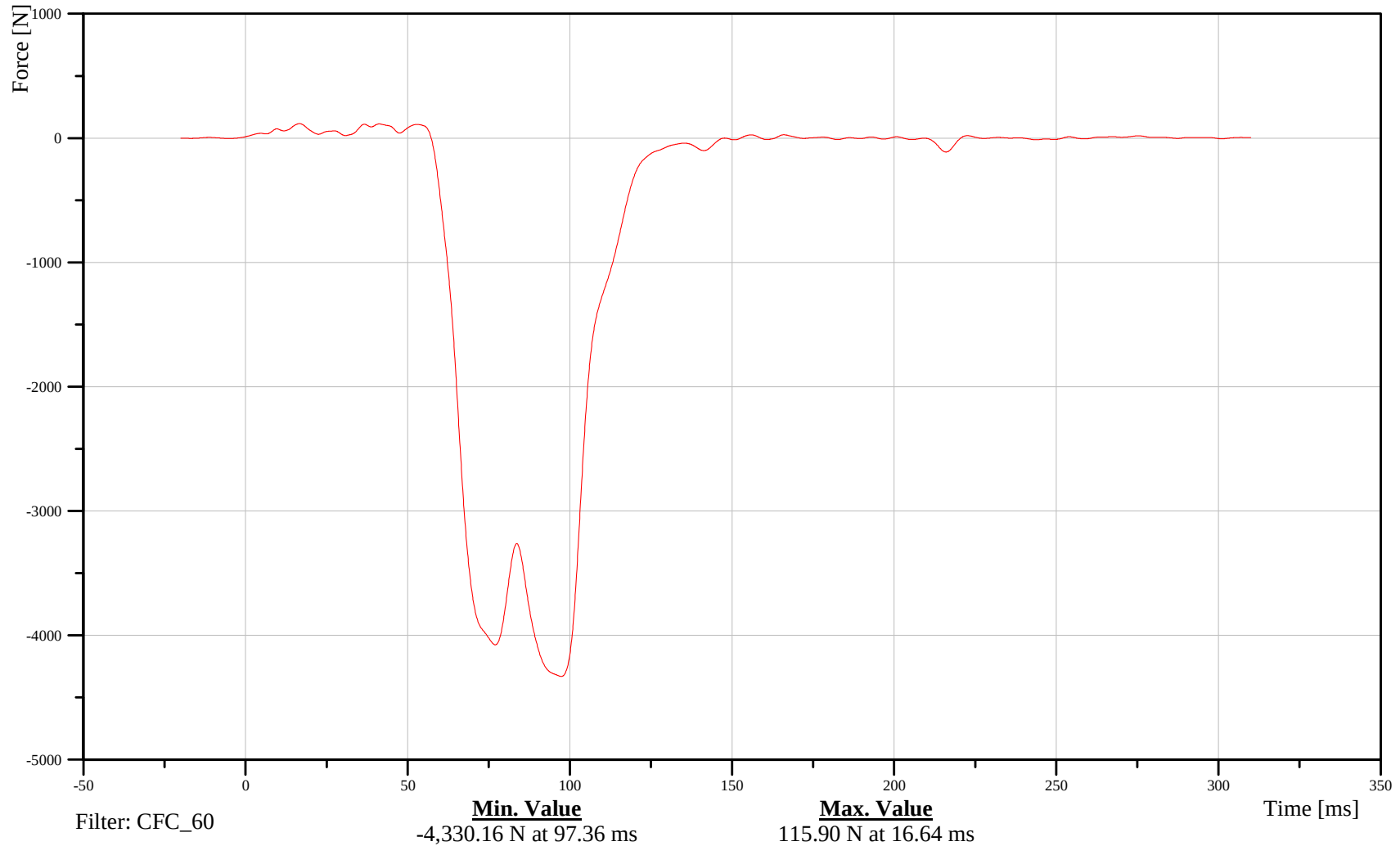
Date: 05/30/2006
Time: 14:51

Load Cell Row 7 Column 3

Customer: Volpe
Test Number: R60172

L0FBAR000027FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-136

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

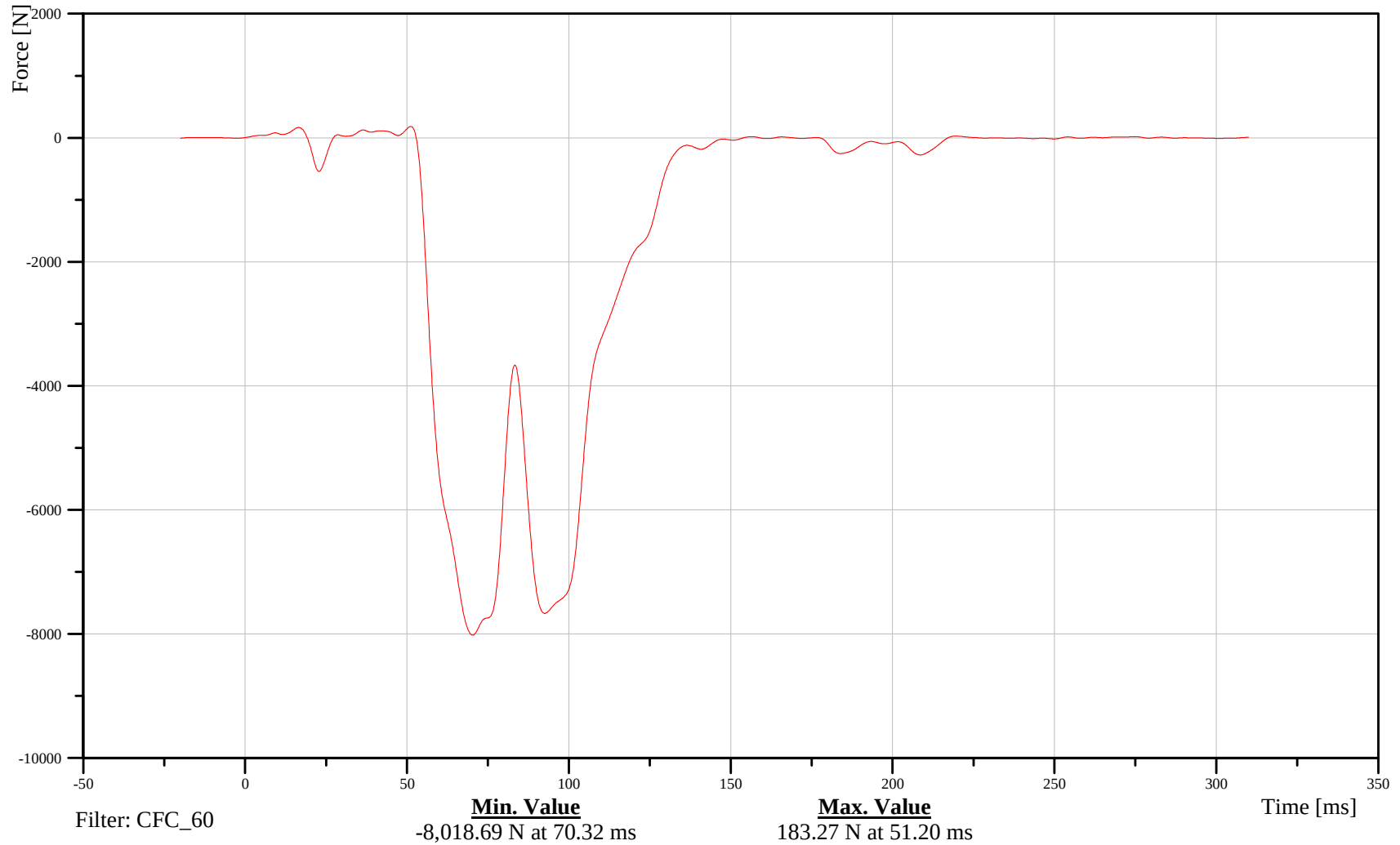
Date: 05/30/2006
Time: 14:51

Load Cell Row 8 Column 3

Customer: Volpe
Test Number: R60172

L0FBAR000028FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-137

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

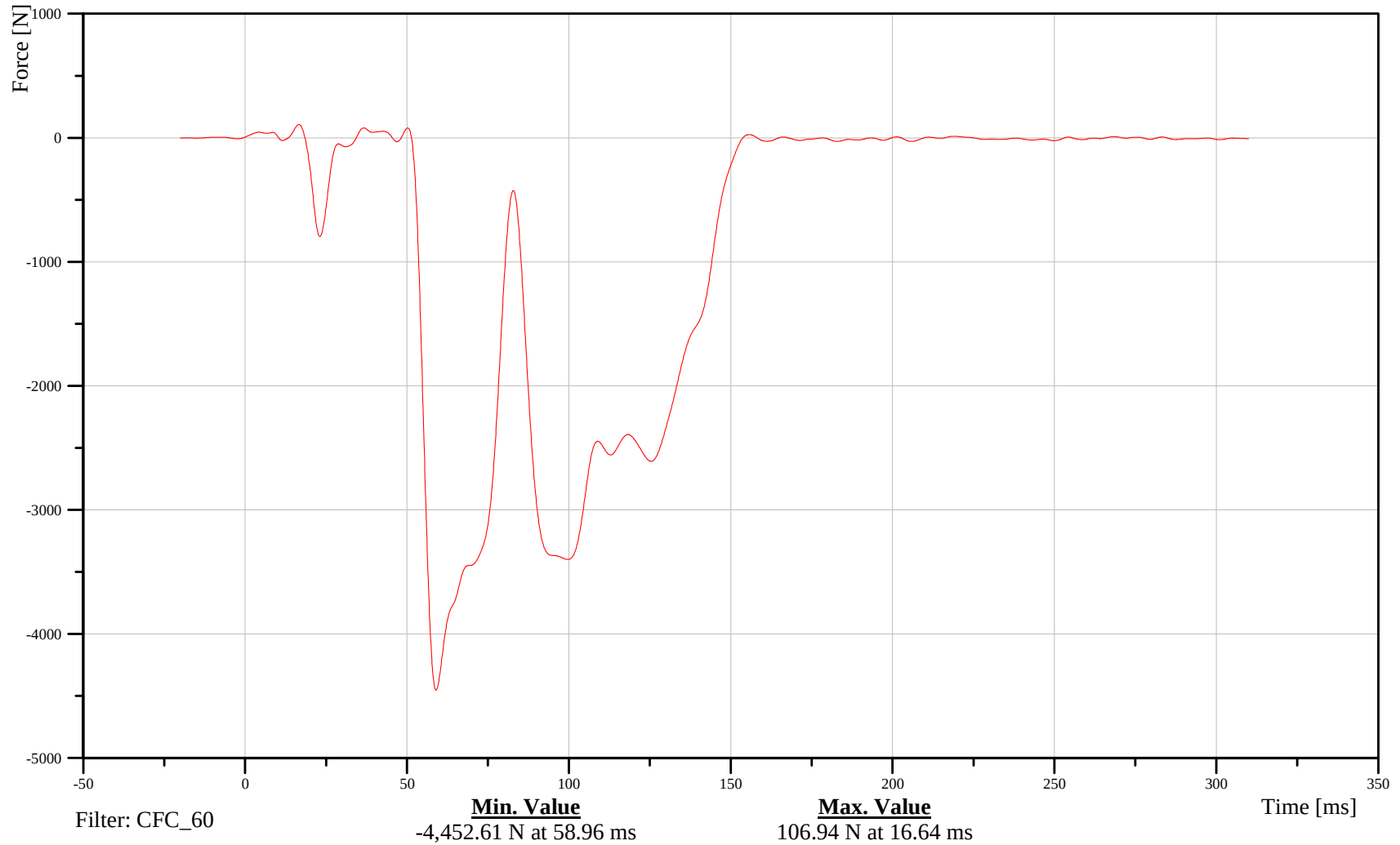
Date: 05/30/2006
Time: 14:51

Load Cell Row 9 Column 3

Customer: Volpe
Test Number: R60172

L0FBAR000029FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-138

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

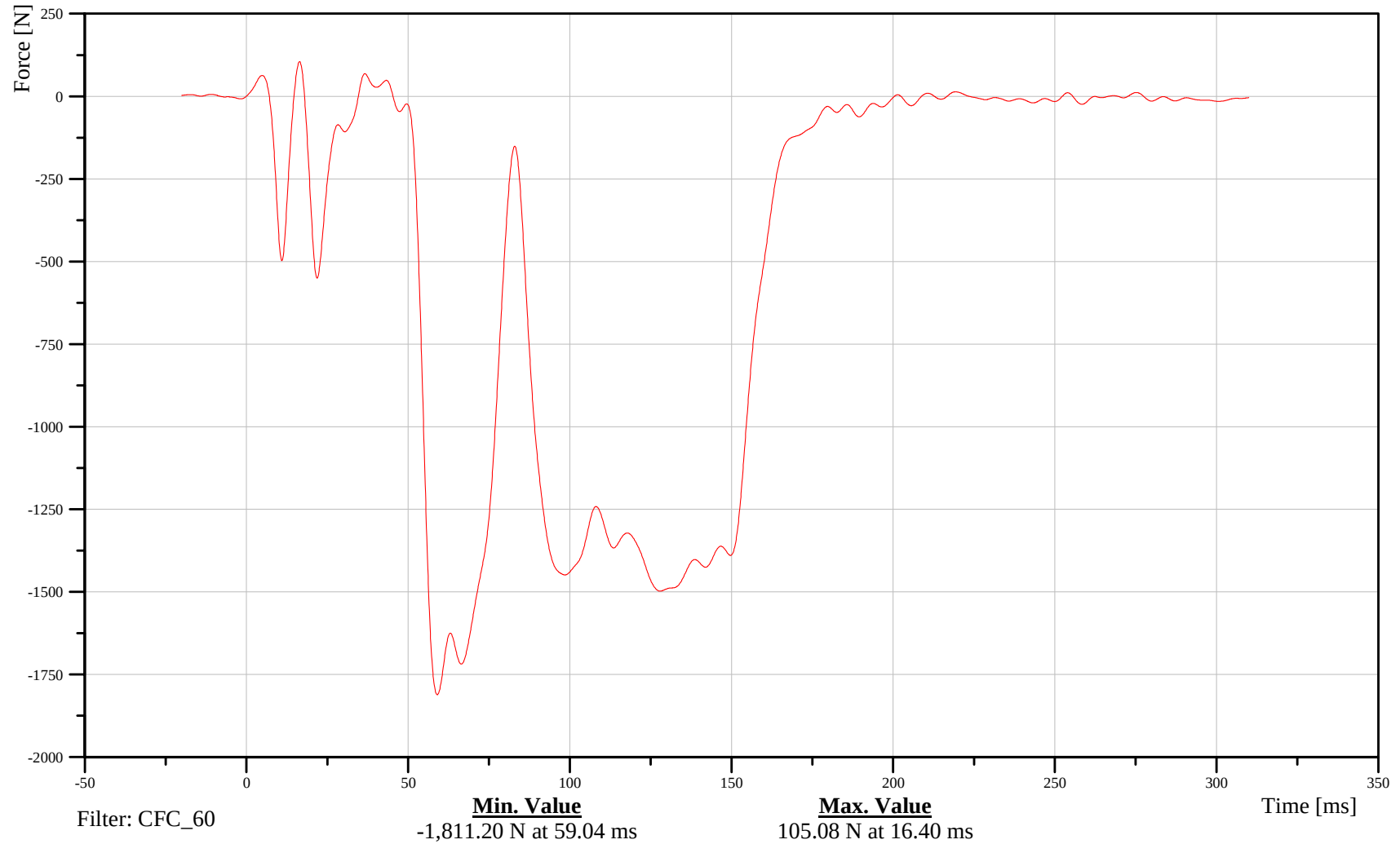
Date: 05/30/2006
Time: 14:51

Load Cell Row 10 Column 3

Customer: Volpe
Test Number: R60172

L0FBAR000030FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-139

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

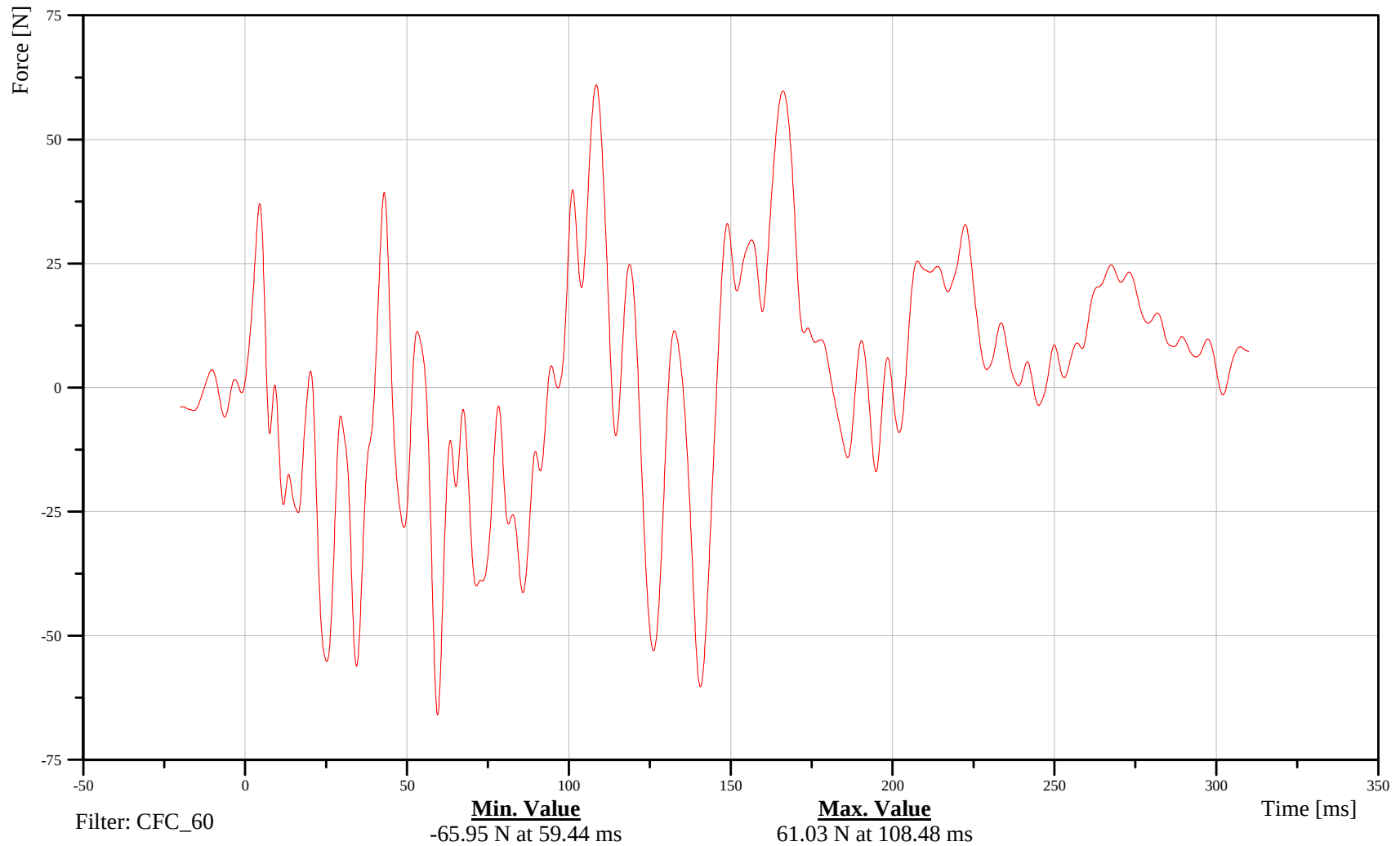
Date: 05/30/2006
Time: 14:51

Load Cell Row 1 Column 4

Customer: Volpe
Test Number: R60172

L0FBAR000031FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-140

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

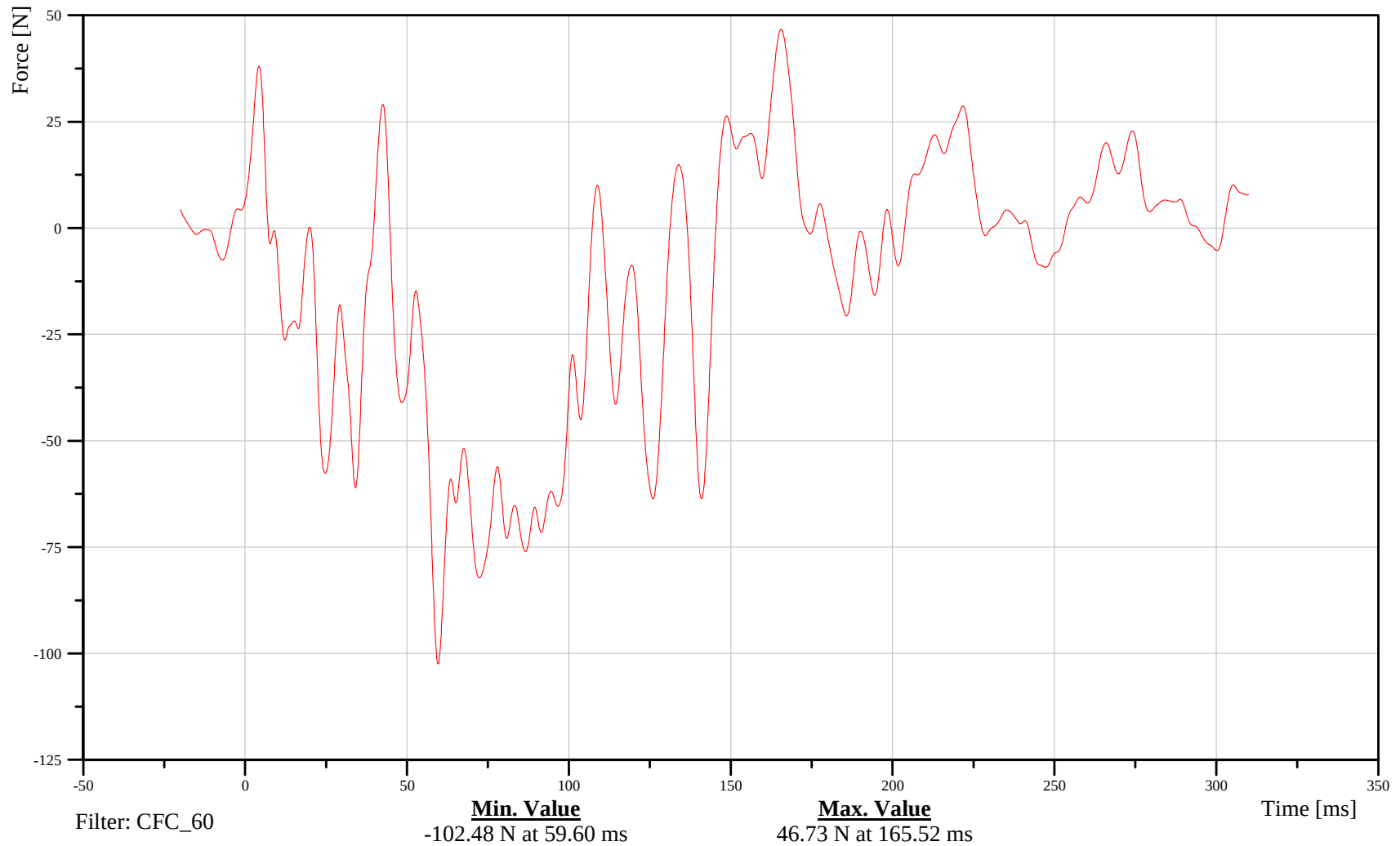
Date: 05/30/2006
Time: 14:51

Load Cell Row 2 Column 4

Customer: Volpe
Test Number: R60172

L0FBAR000032FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-141

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

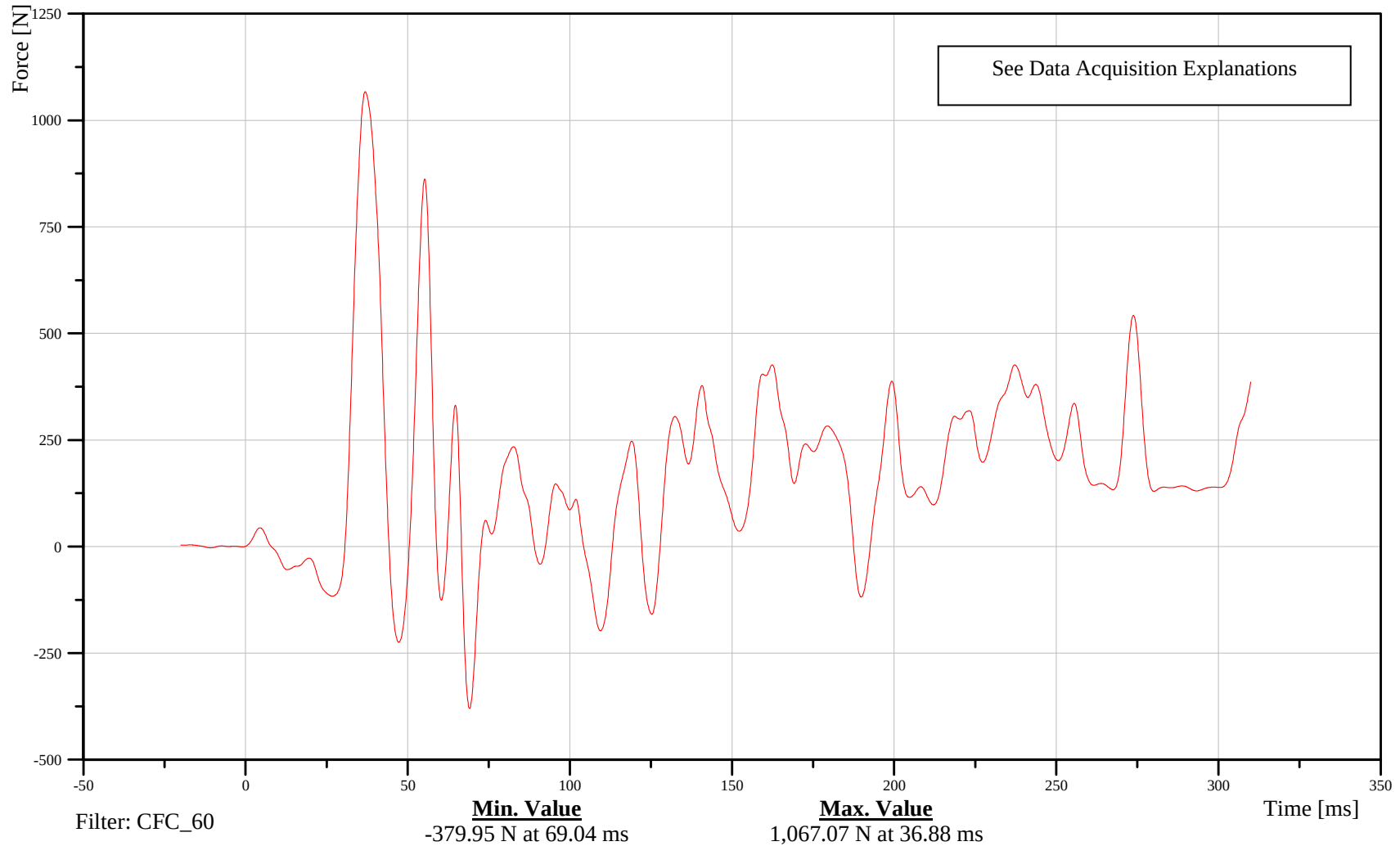
Date: 05/30/2006
Time: 14:51

Load Cell Row 3 Column 4

Customer: Volpe
Test Number: R60172

L0FBAR000033FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-142

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

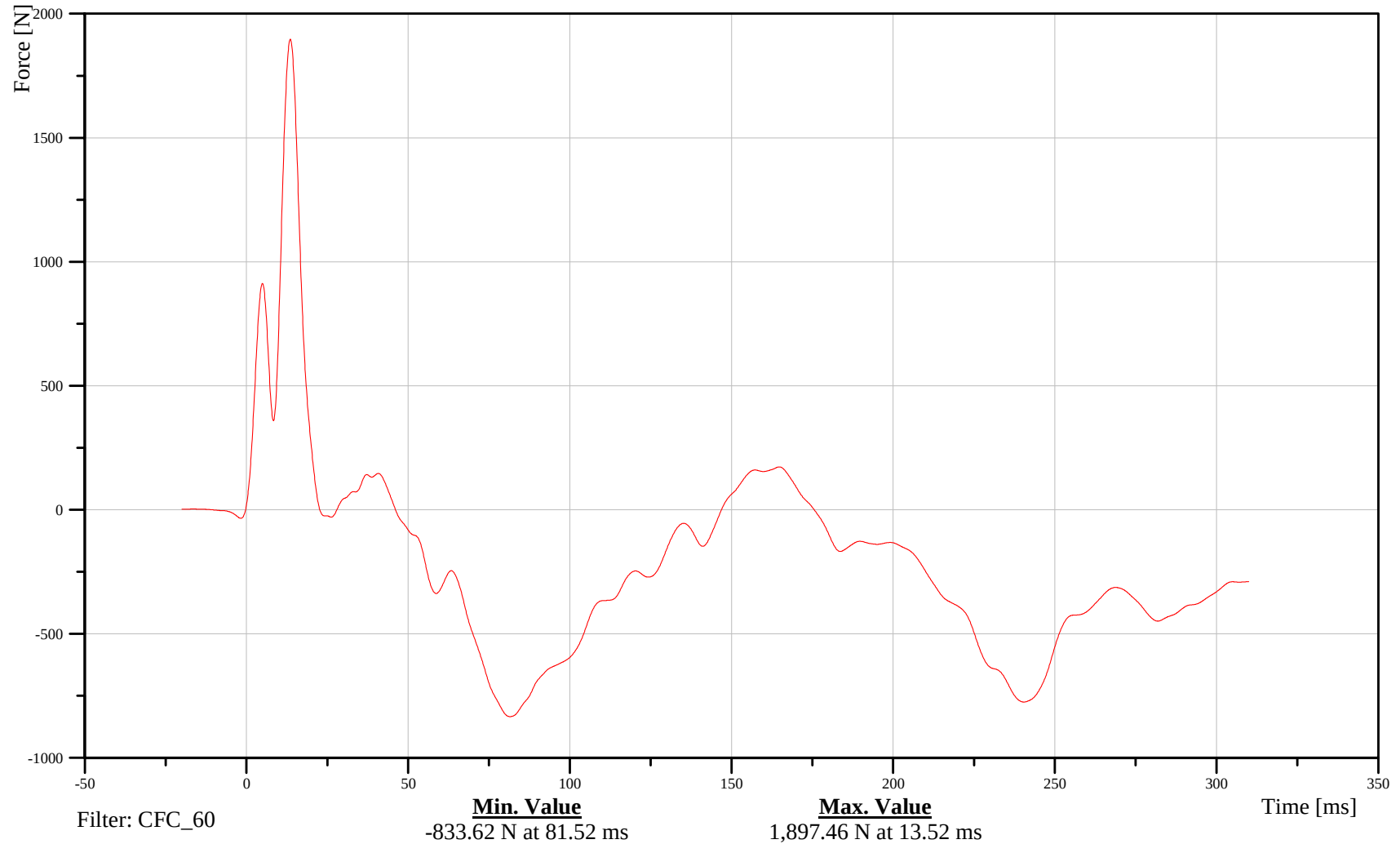
Date: 05/30/2006
Time: 14:51

Load Cell Row 4 Column 4

Customer: Volpe
Test Number: R60172

L0FBAR000034FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-143

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

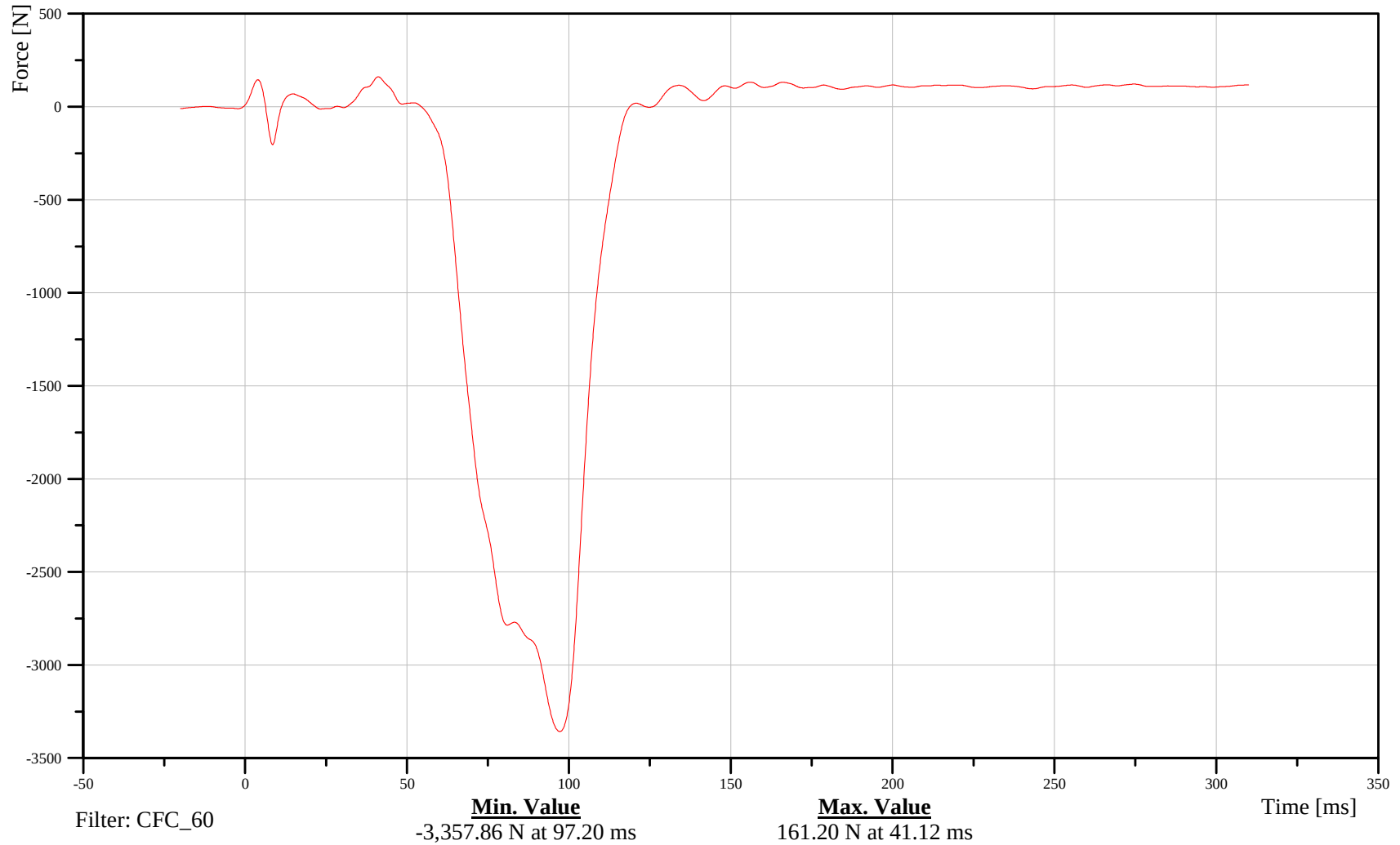
Date: 05/30/2006
Time: 14:51

Load Cell Row 5 Column 4

Customer: Volpe
Test Number: R60172

L0FBAR000035FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-144

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

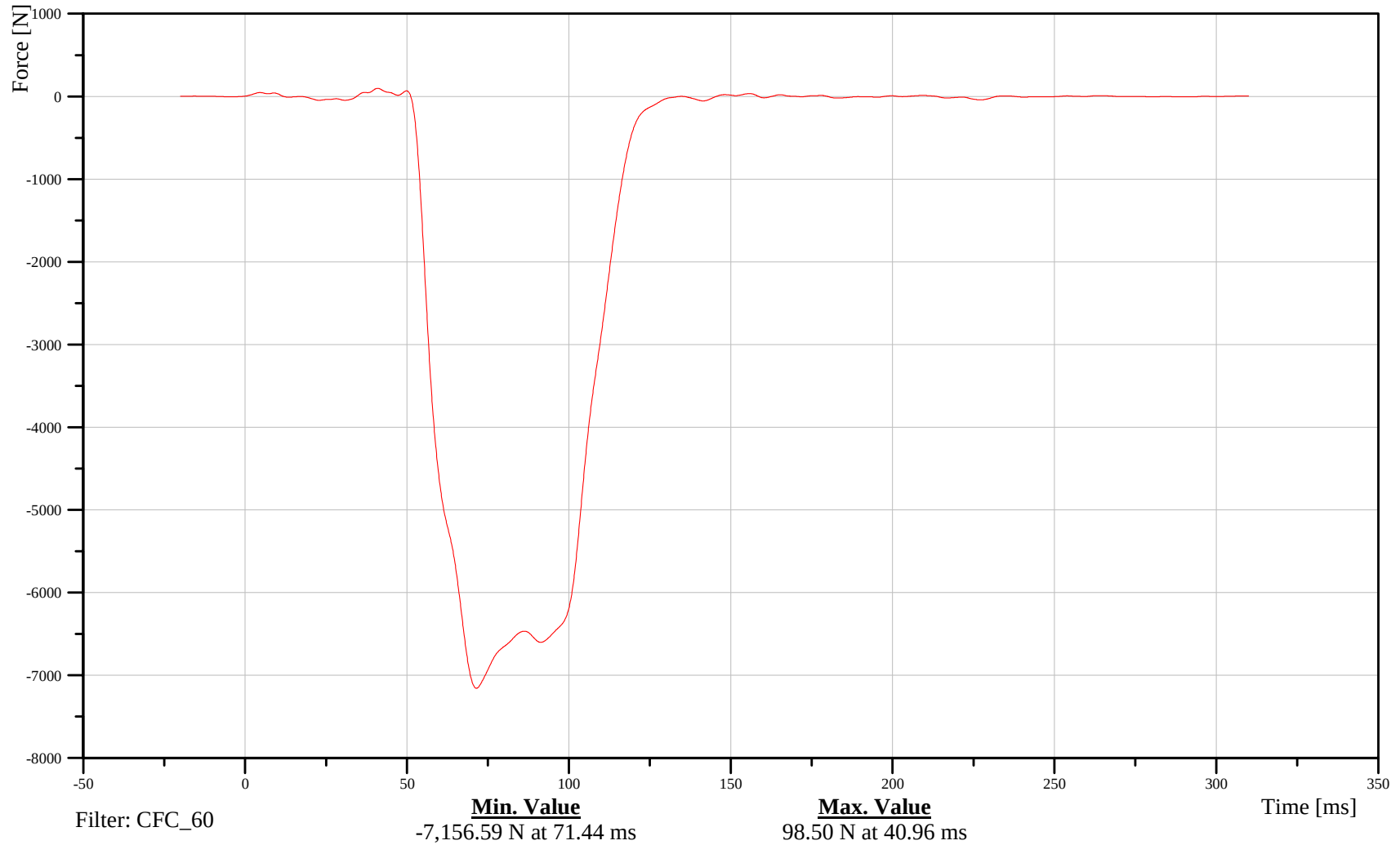
Date: 05/30/2006
Time: 14:51

Load Cell Row 6 Column 4

Customer: Volpe
Test Number: R60172

L0FBAR000036FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-145

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

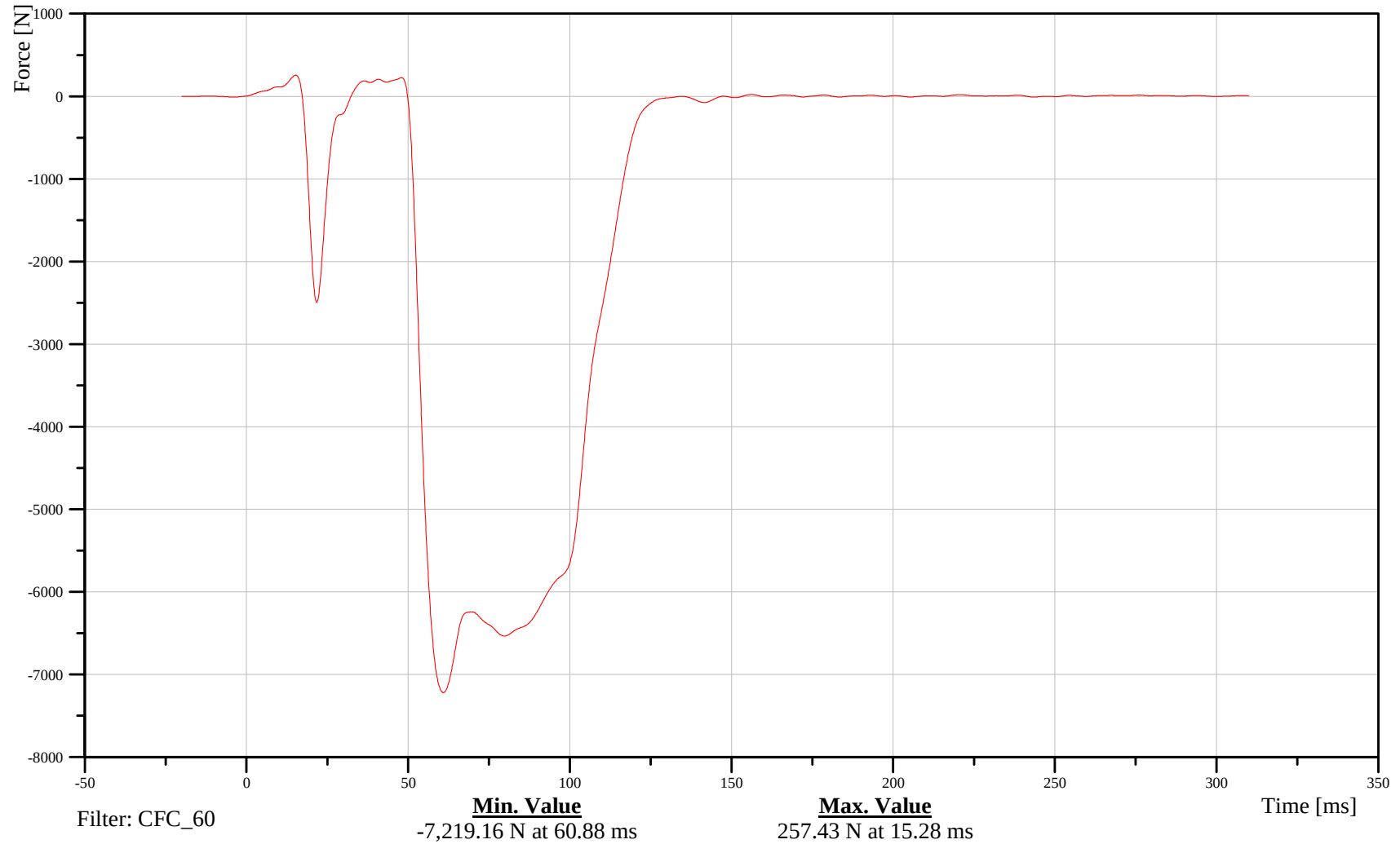
Date: 05/30/2006
Time: 14:51

Load Cell Row 7 Column 4

Customer: Volpe
Test Number: R60172

L0FBAR000037FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-146

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

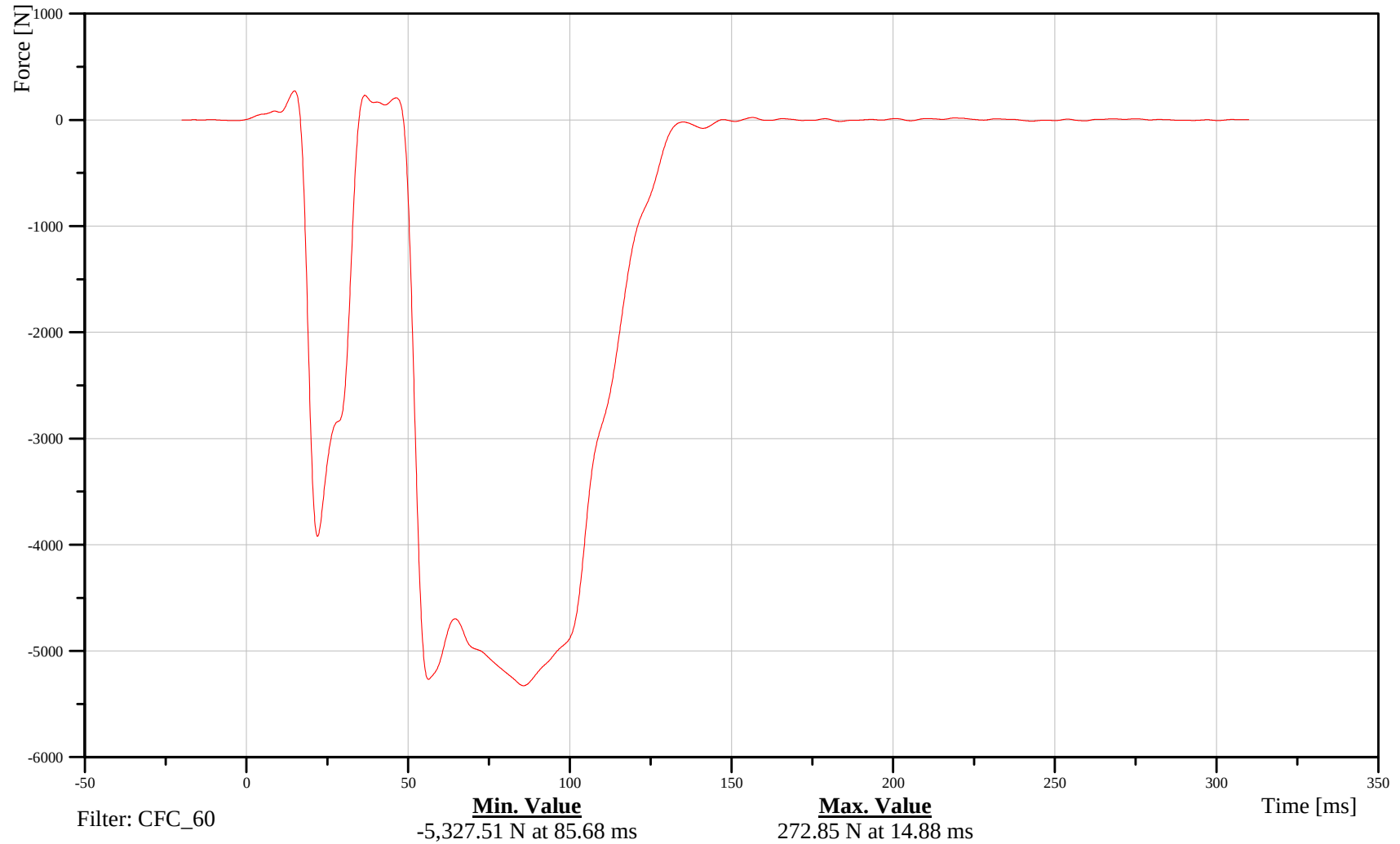
Date: 05/30/2006
Time: 14:51

Load Cell Row 8 Column 4

Customer: Volpe
Test Number: R60172

L0FBAR000038FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-147

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

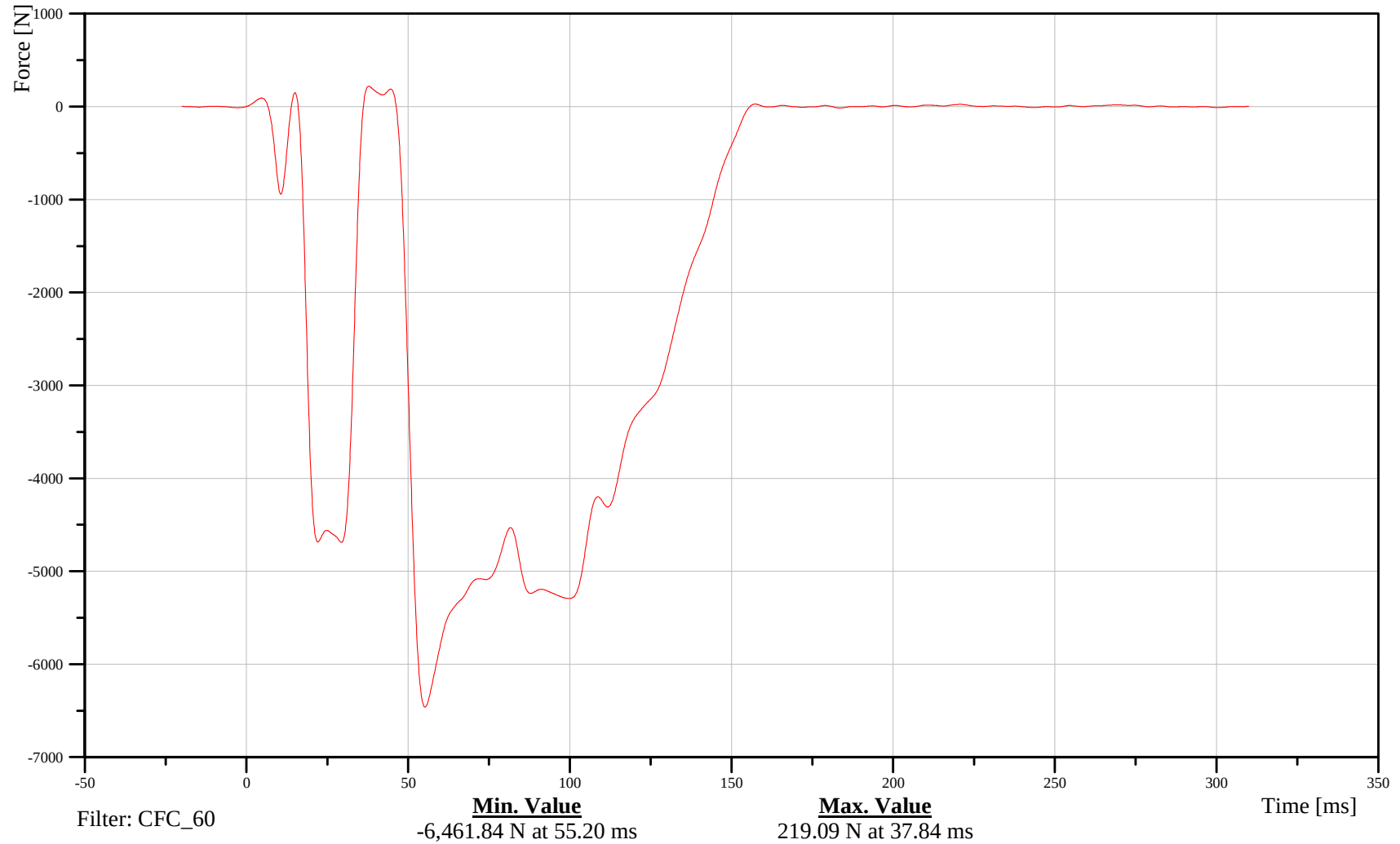
Date: 05/30/2006
Time: 14:51

Load Cell Row 9 Column 4

Customer: Volpe
Test Number: R60172

L0FBAR000039FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-148

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

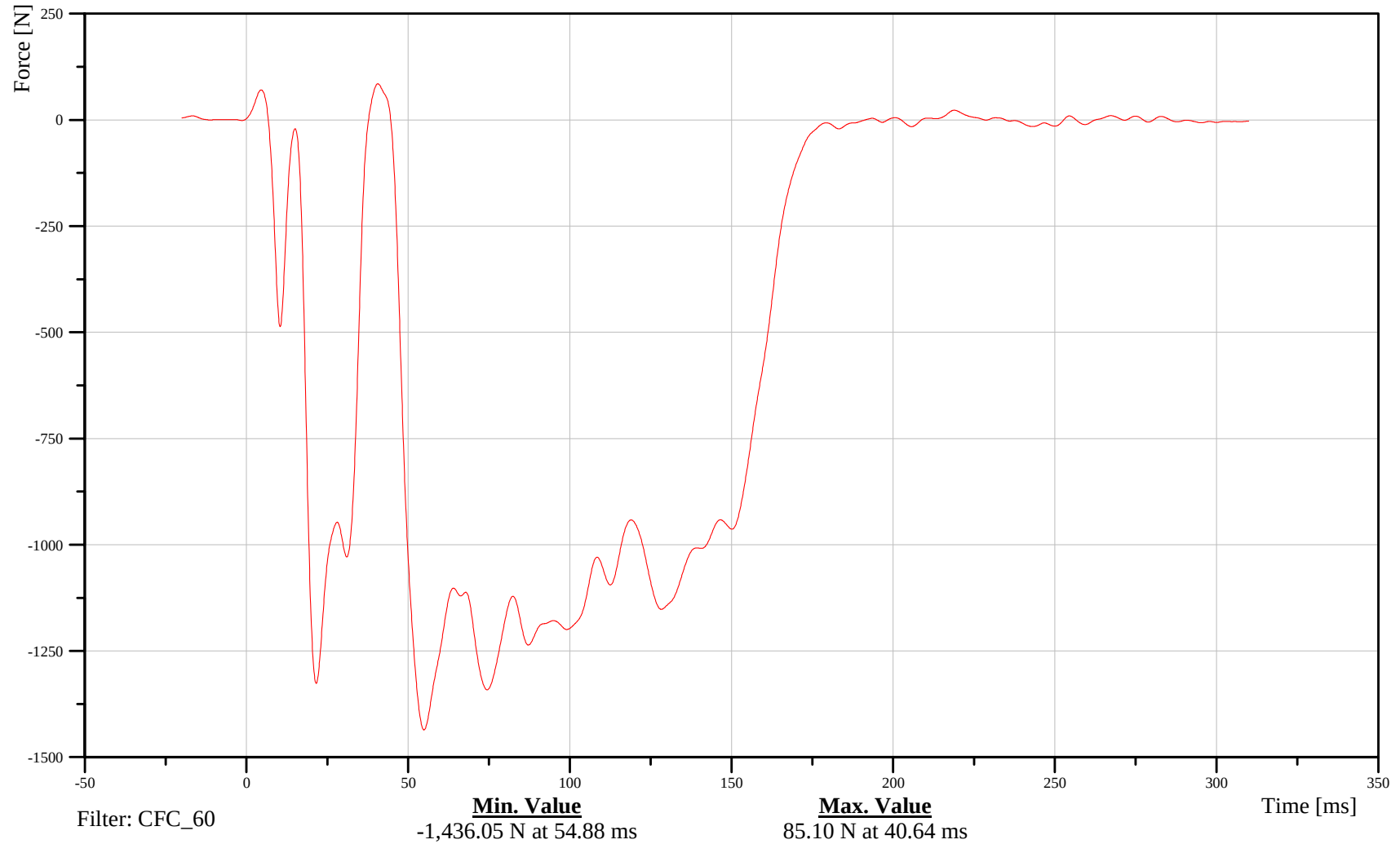
Date: 05/30/2006
Time: 14:51

Load Cell Row 10 Column 4

Customer: Volpe
Test Number: R60172

L0FBAR000040FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-149

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

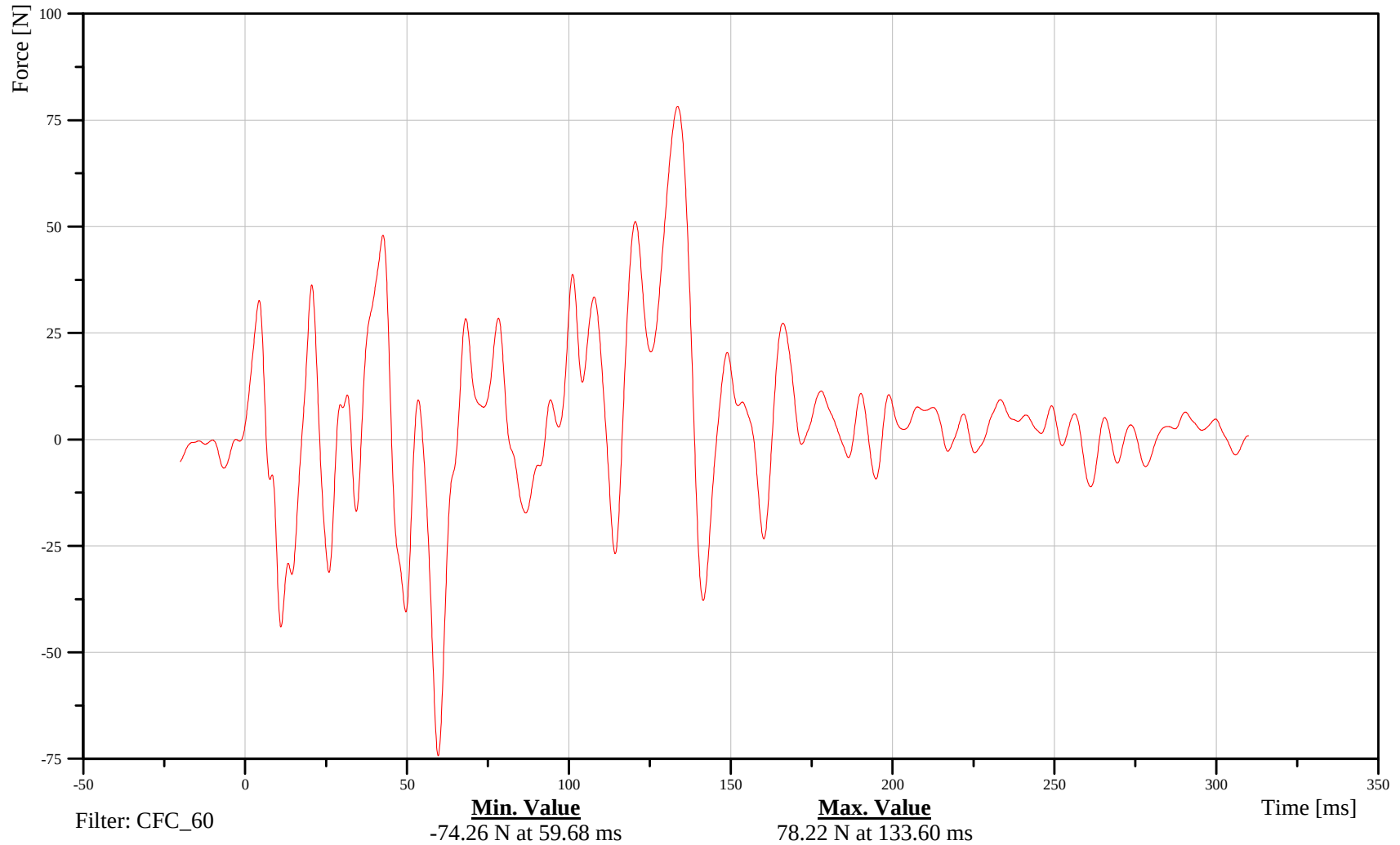
Date: 05/30/2006
Time: 14:51

Load Cell Row 1 Column 5

Customer: Volpe
Test Number: R60172

L0FBAR000041FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-150

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

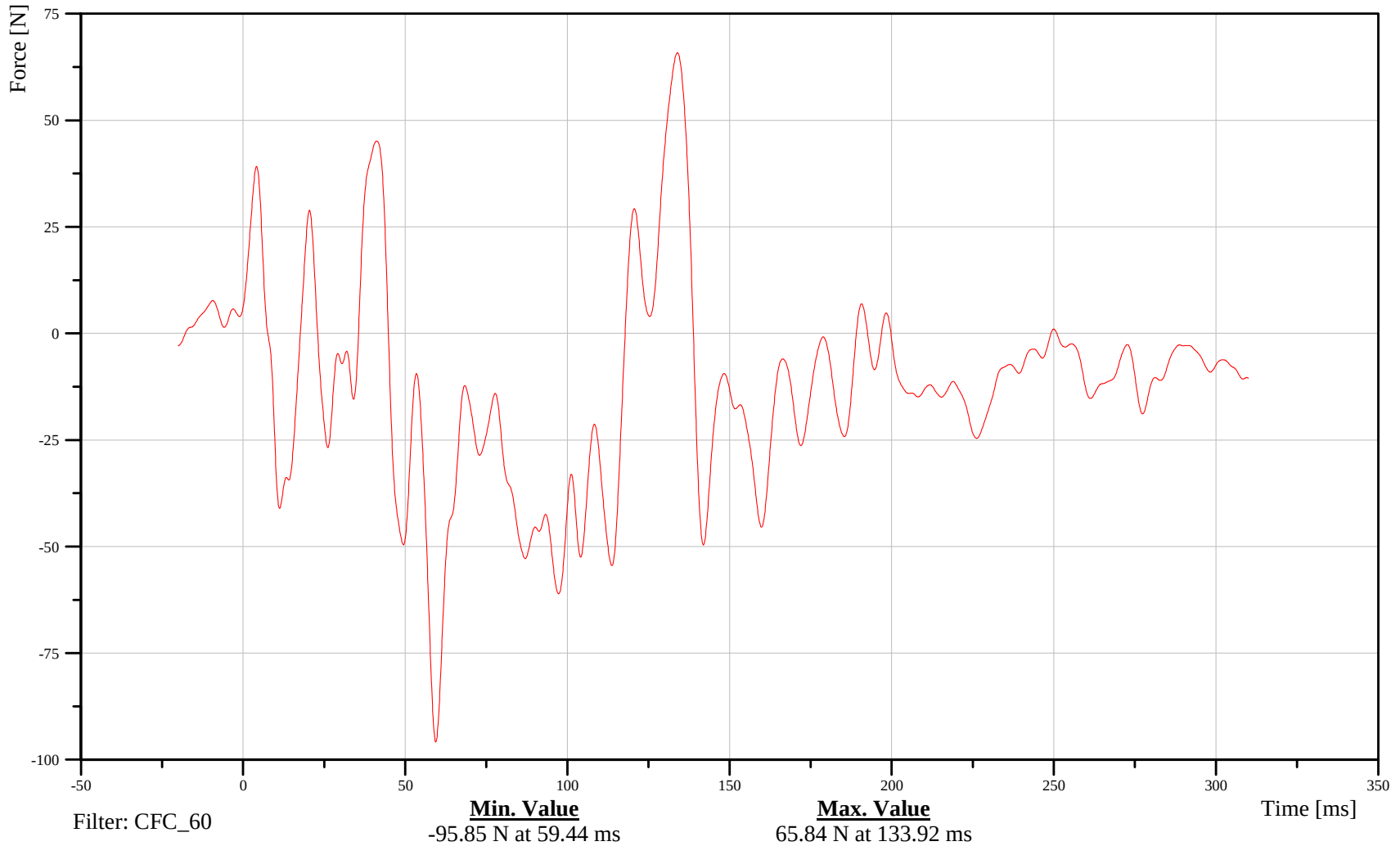
Date: 05/30/2006
Time: 14:51

Load Cell Row 2 Column 5

Customer: Volpe
Test Number: R60172

L0FBAR000042FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-151

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

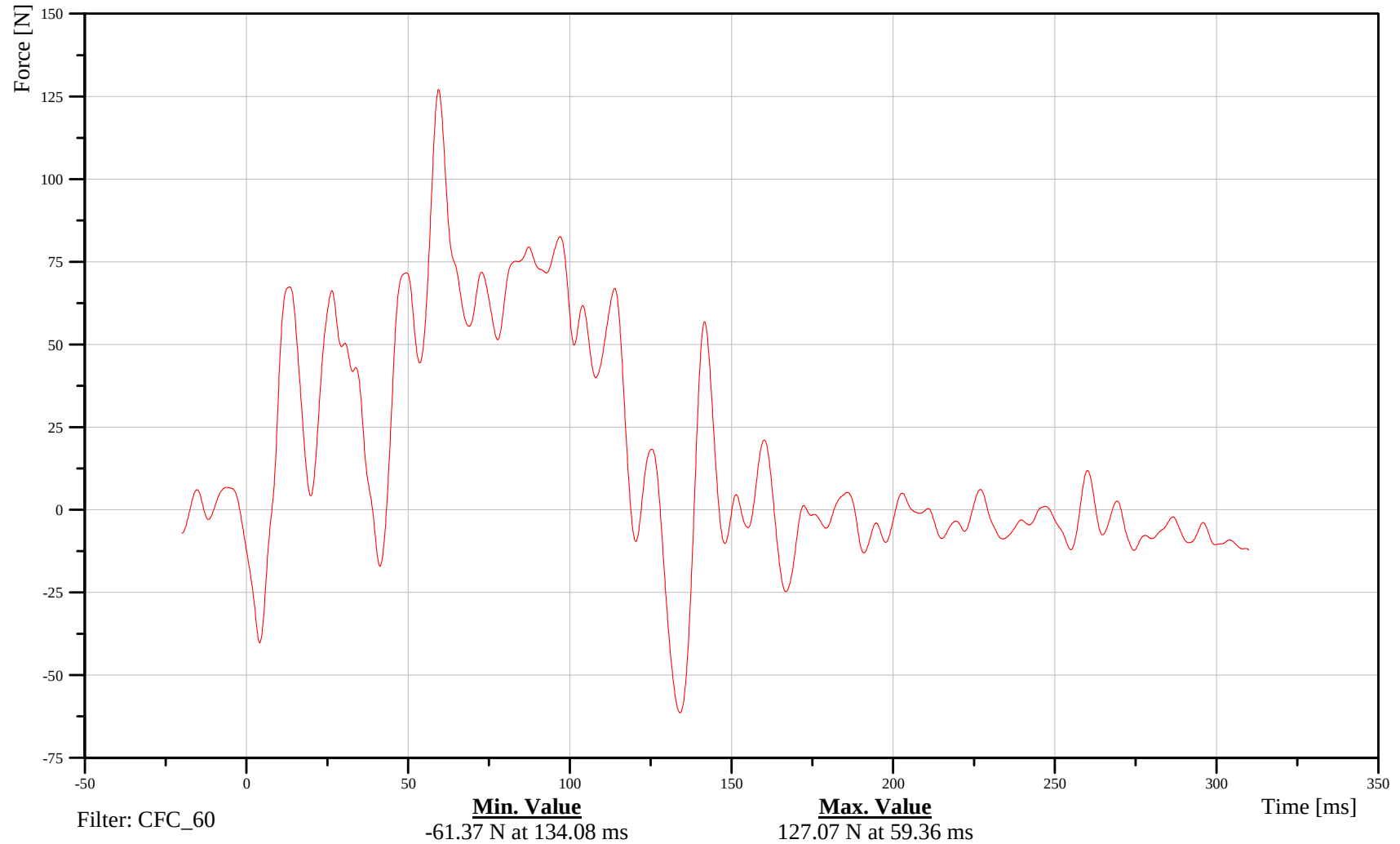
Date: 05/30/2006
Time: 14:51

Load Cell Row 3 Column 5

Customer: Volpe
Test Number: R60172

L0FBAR000043FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-152

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

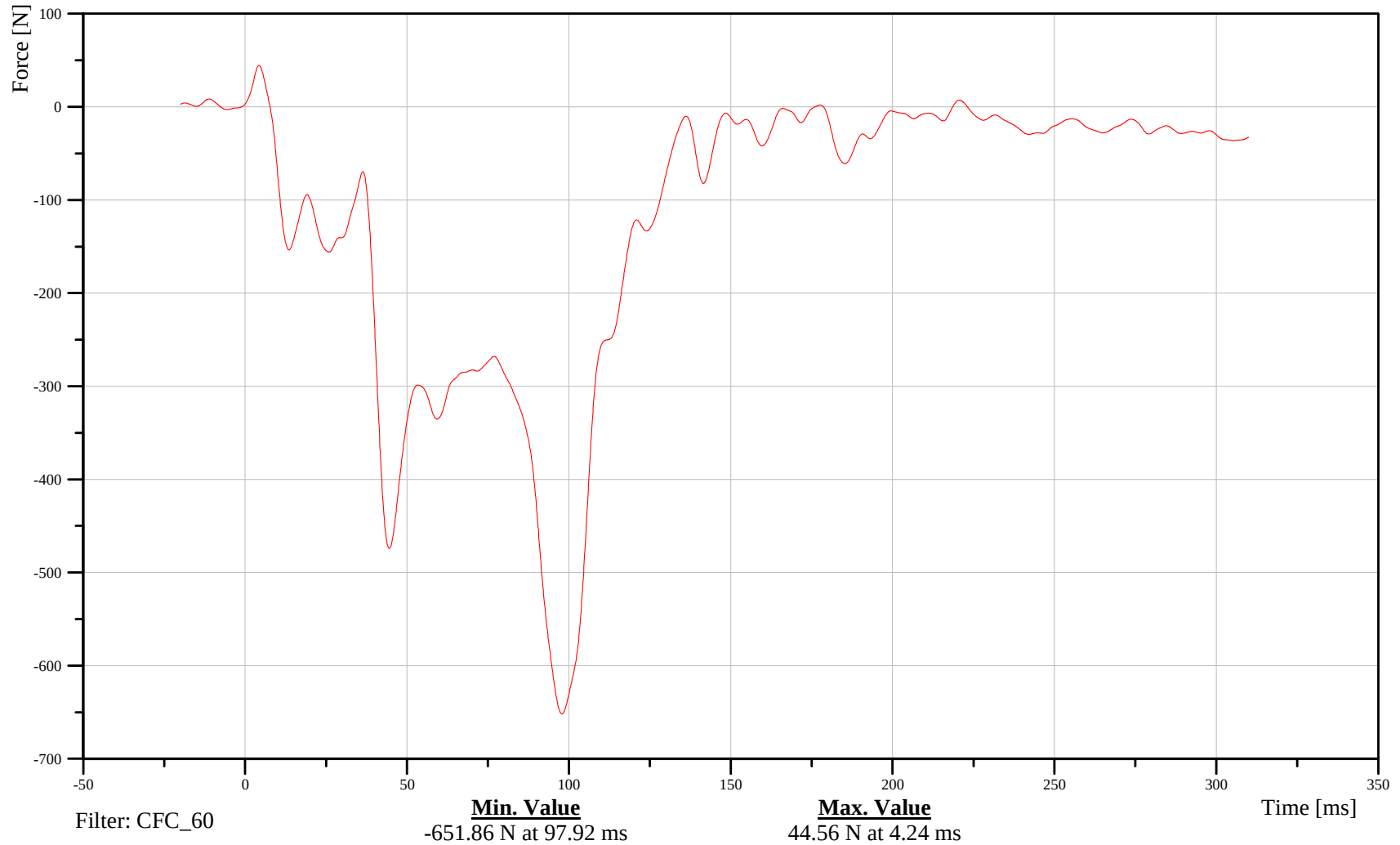
Date: 05/30/2006
Time: 14:51

Load Cell Row 4 Column 5

Customer: Volpe
Test Number: R60172

L0FBAR000044FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-153

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

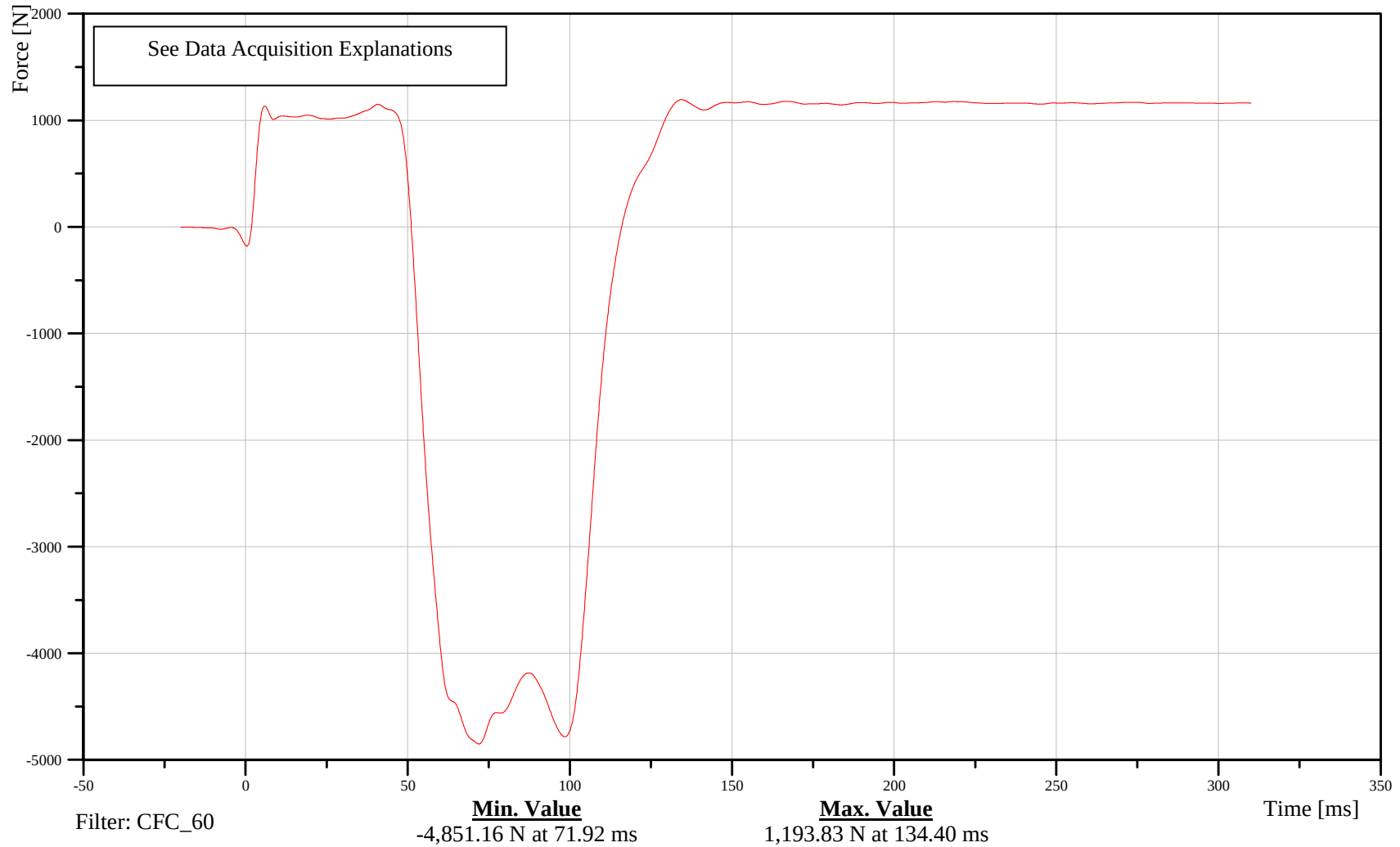
Date: 05/30/2006
Time: 14:51

Load Cell Row 5 Column 5

Customer: Volpe
Test Number: R60172

L0FBAR000045FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-154

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

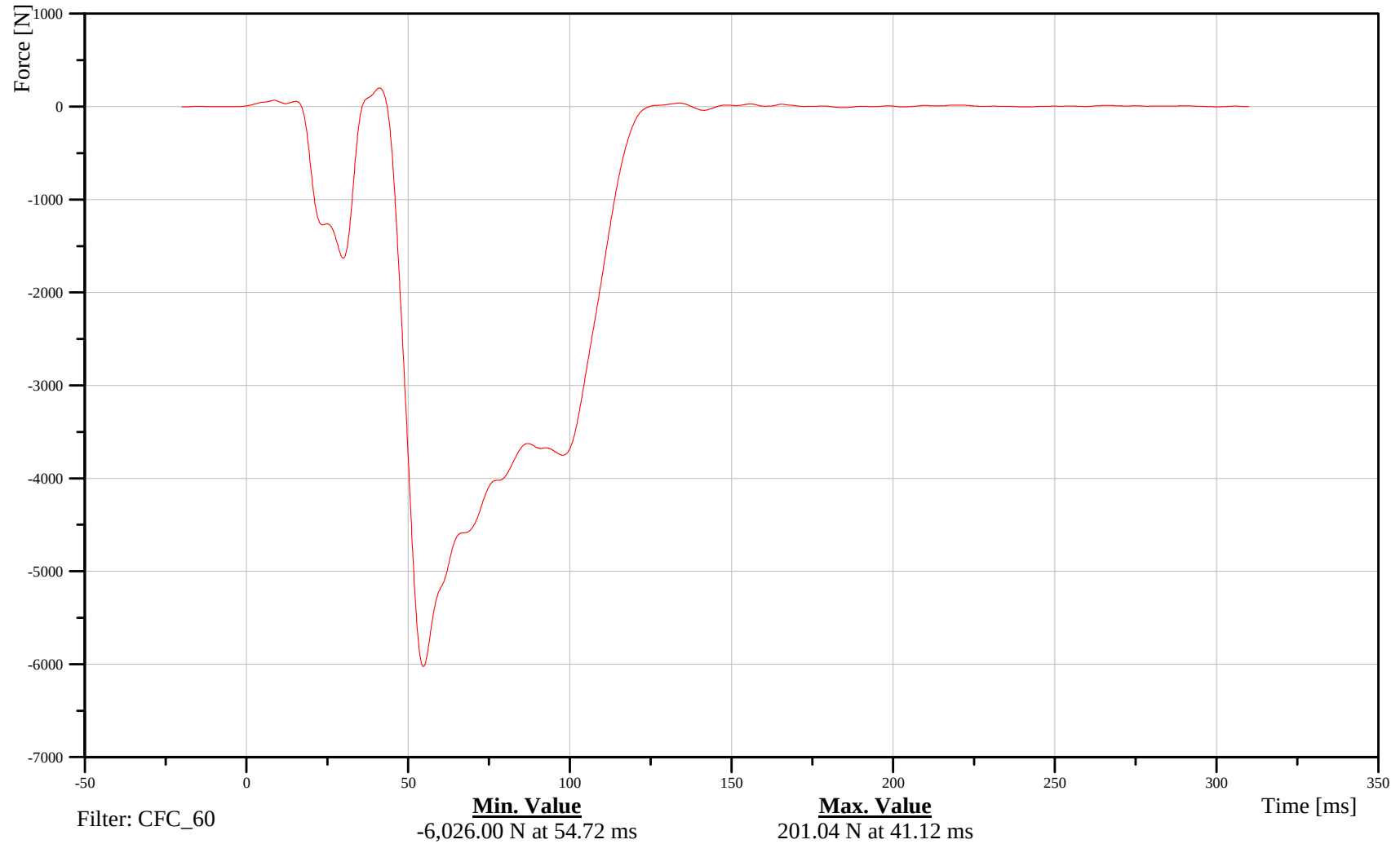
Date: 05/30/2006
Time: 14:51

Load Cell Row 6 Column 5

Customer: Volpe
Test Number: R60172

L0FBAR000046FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-155

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

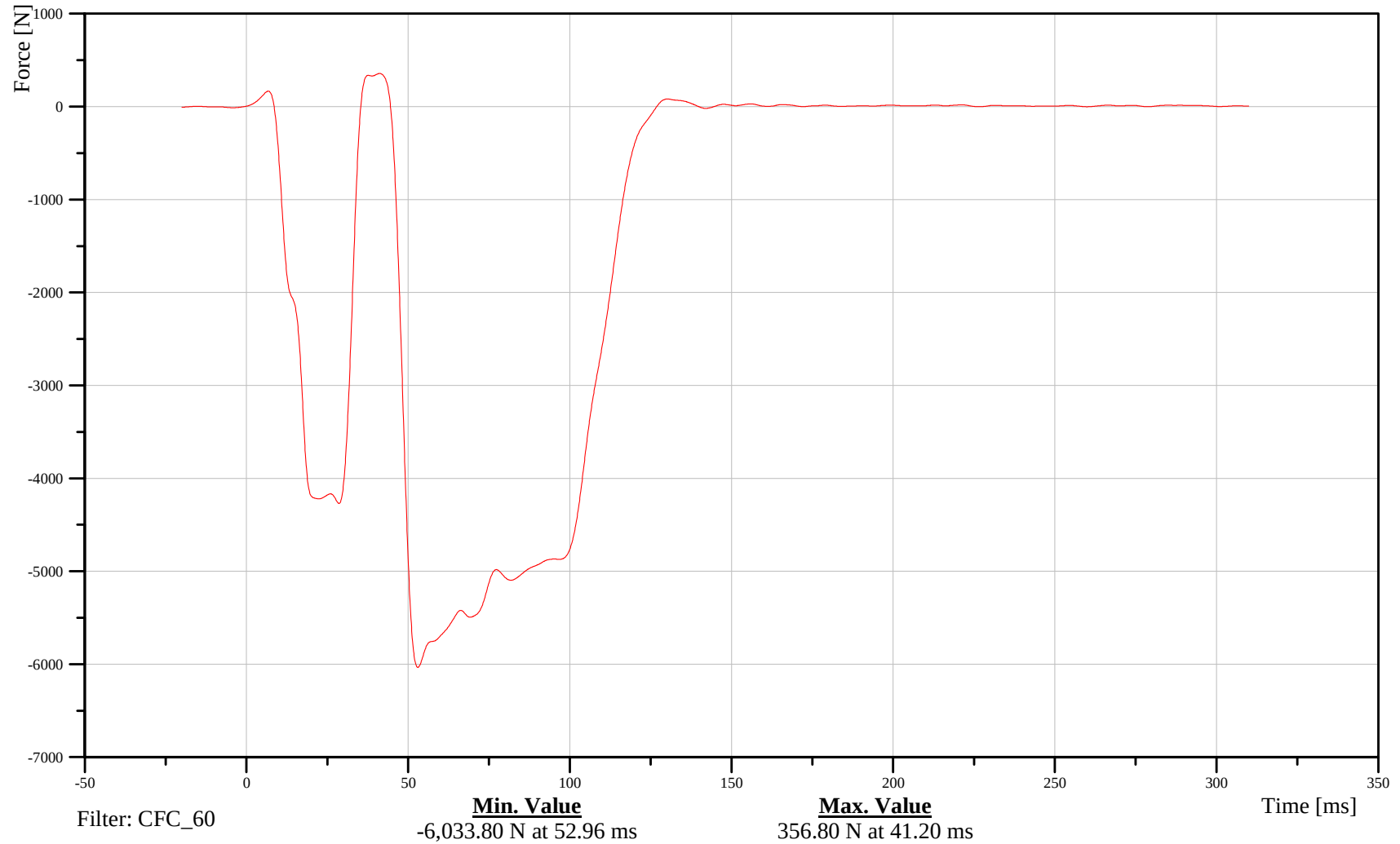
Date: 05/30/2006
Time: 14:51

Load Cell Row 7 Column 5

Customer: Volpe
Test Number: R60172

L0FBAR000047FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-156

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

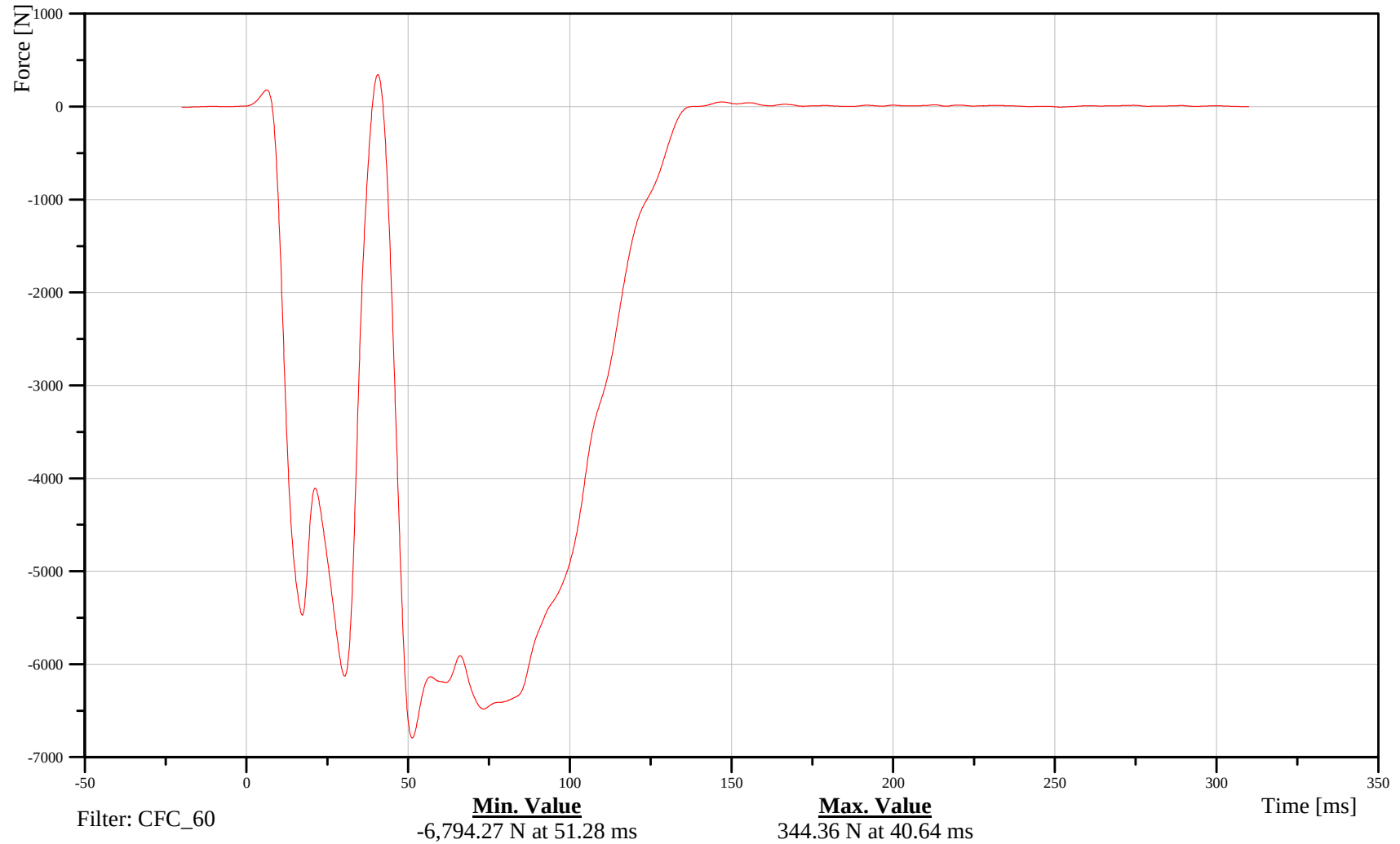
Date: 05/30/2006
Time: 14:51

Load Cell Row 8 Column 5

Customer: Volpe
Test Number: R60172

L0FBAR000048FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-157

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

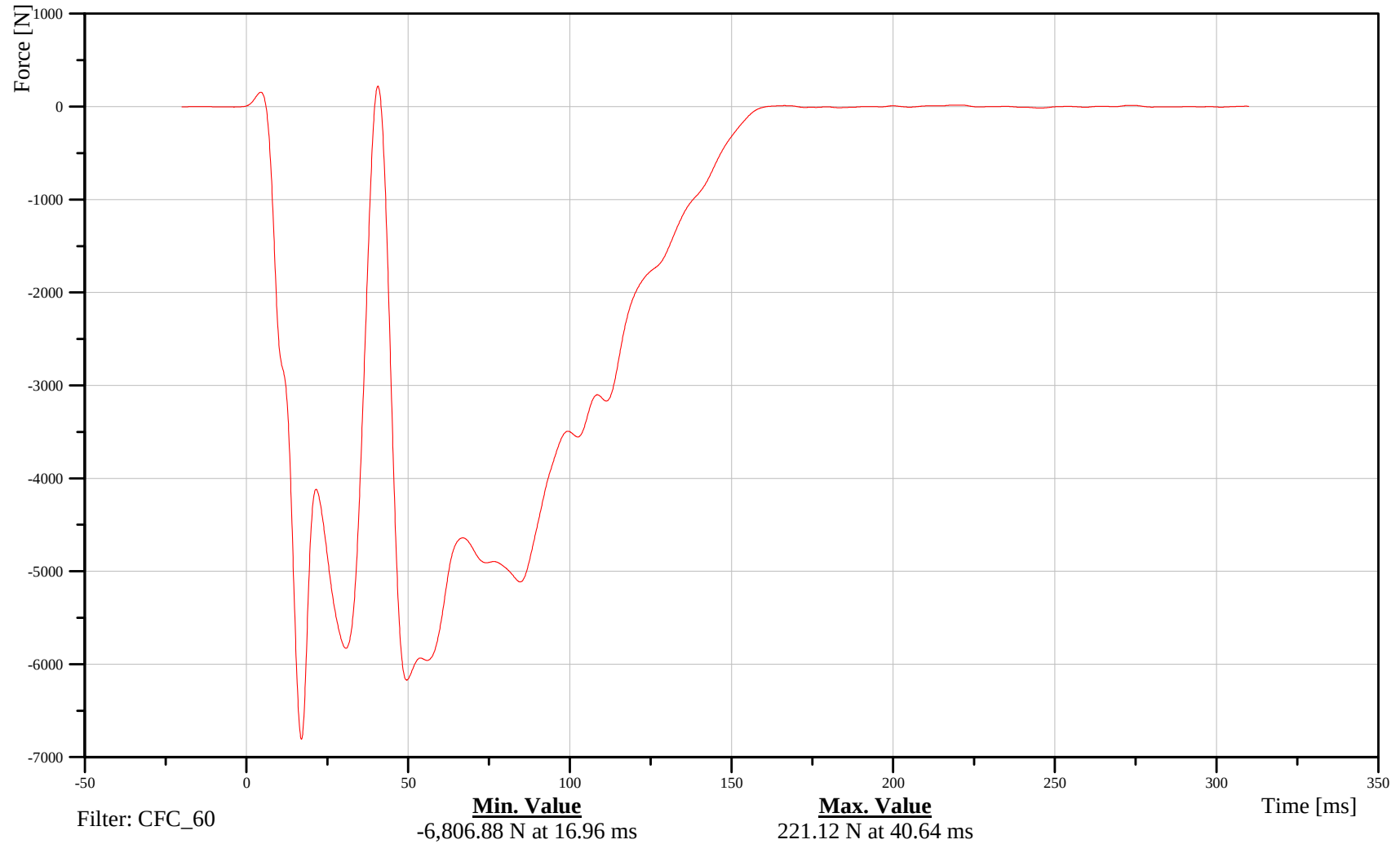
Date: 05/30/2006
Time: 14:51

Load Cell Row 9 Column 5

Customer: Volpe
Test Number: R60172

L0FBAR000049FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-158

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

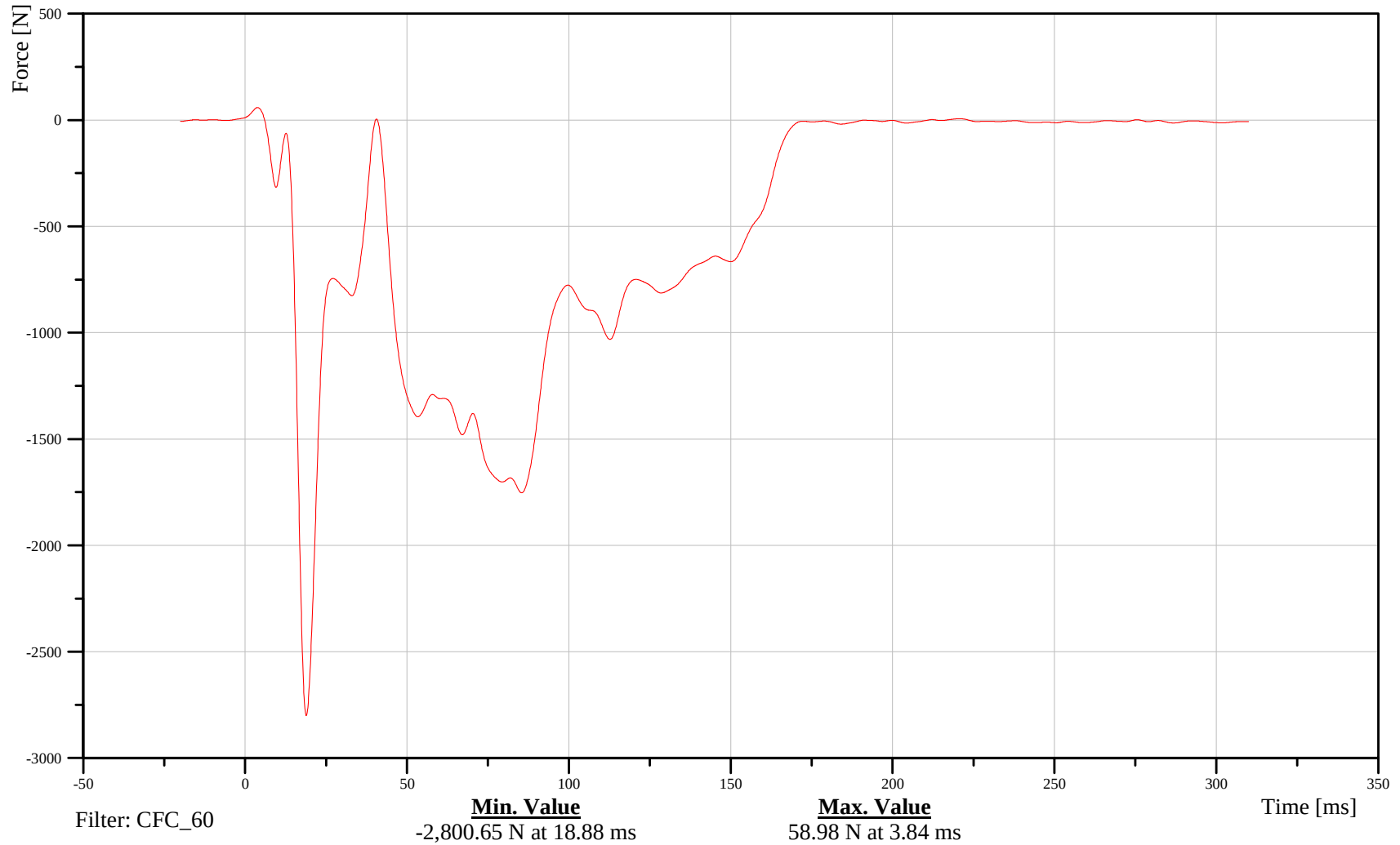
Date: 05/30/2006
Time: 14:51

Load Cell Row 10 Column 5

Customer: Volpe
Test Number: R60172

L0FBAR000050FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-159

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

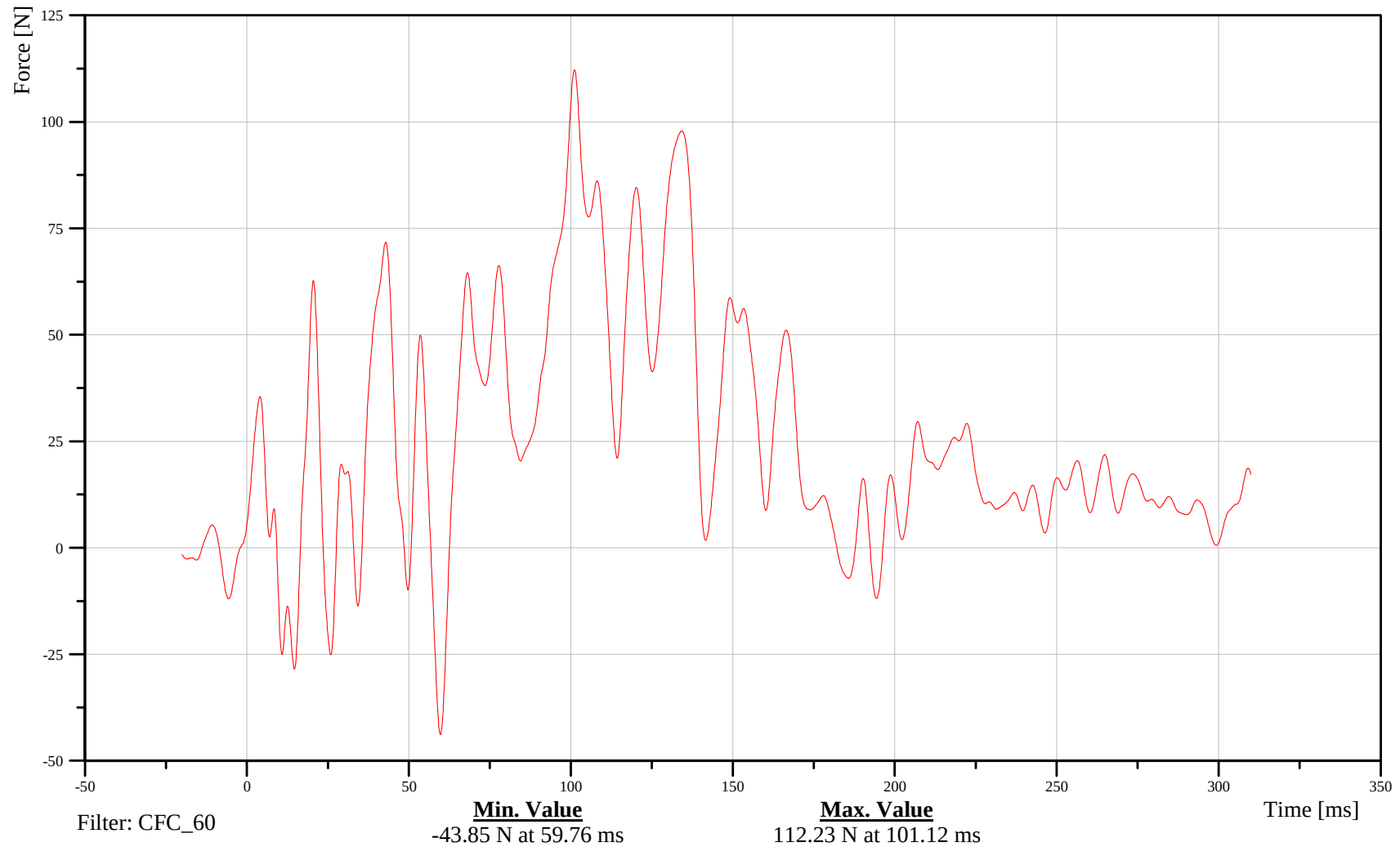
Date: 05/30/2006
Time: 14:51

Load Cell Row 1 Column 6

Customer: Volpe
Test Number: R60172

L0FBAR000051FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-160

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

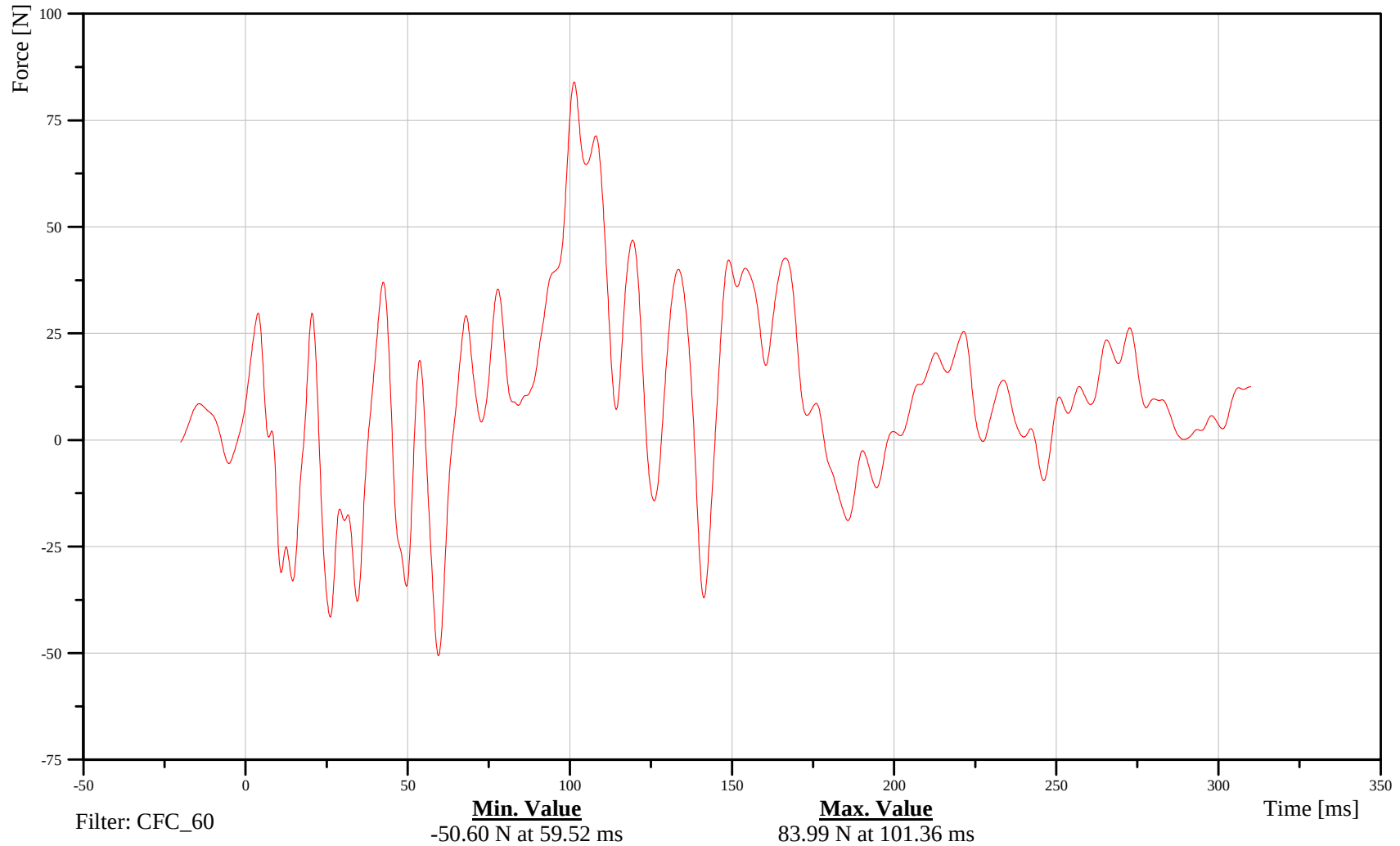
Date: 05/30/2006
Time: 14:51

Load Cell Row 2 Column 6

Customer: Volpe
Test Number: R60172

L0FBAR000052FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-161

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

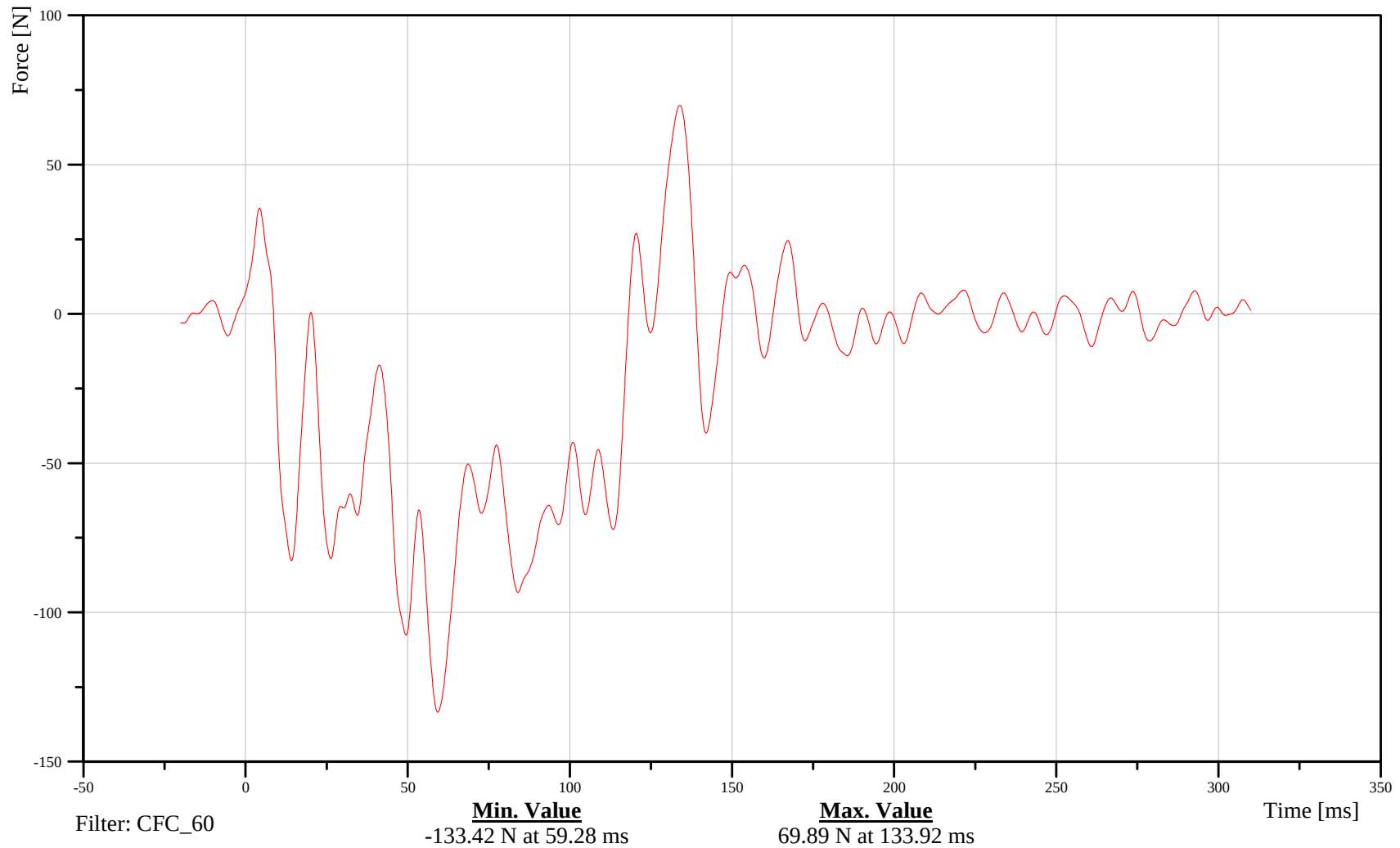
Date: 05/30/2006
Time: 14:51

Load Cell Row 3 Column 6

Customer: Volpe
Test Number: R60172

L0FBAR000053FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-162

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

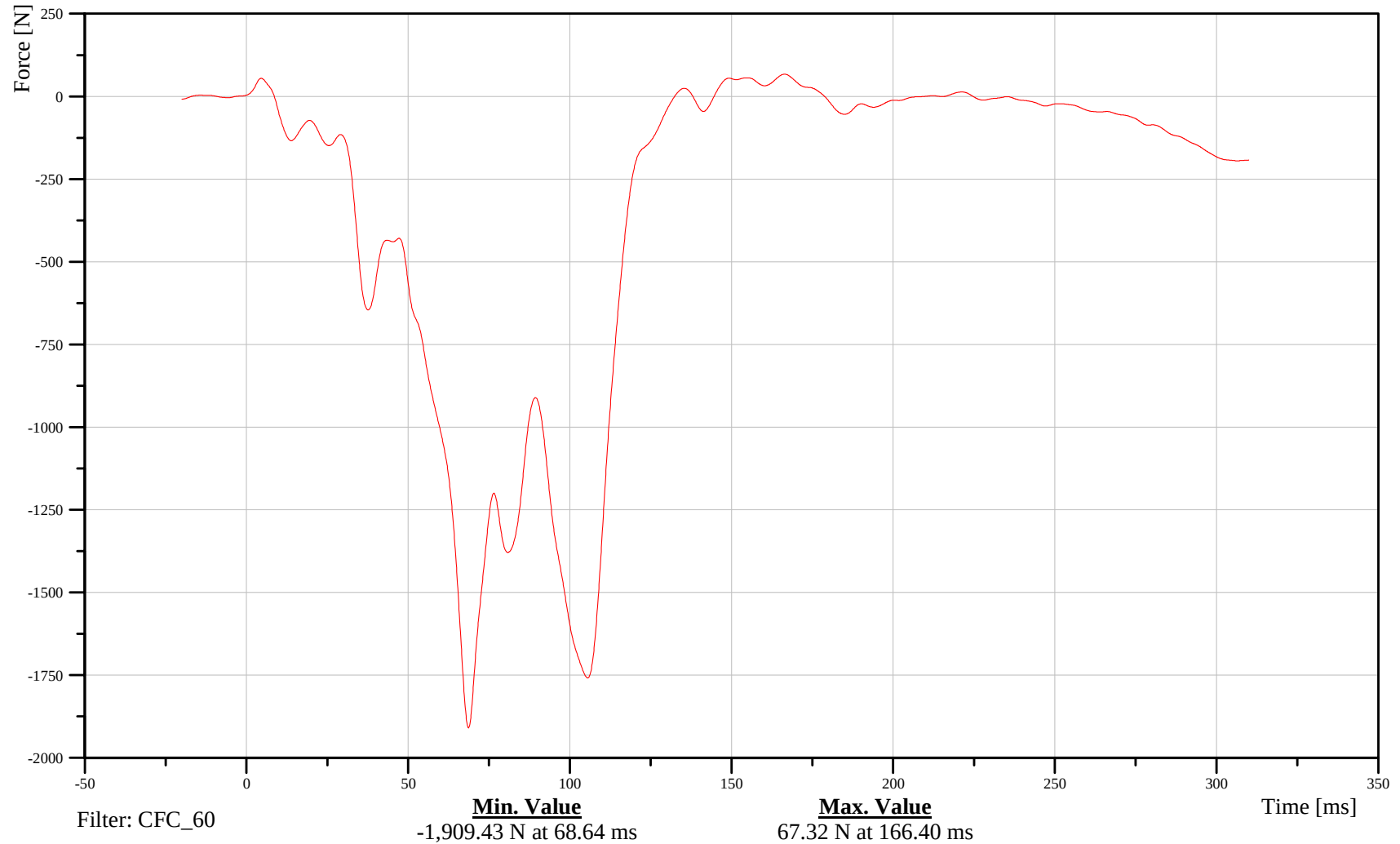
Date: 05/30/2006
Time: 14:51

Load Cell Row 4 Column 6

Customer: Volpe
Test Number: R60172

L0FBAR000054FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-163

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

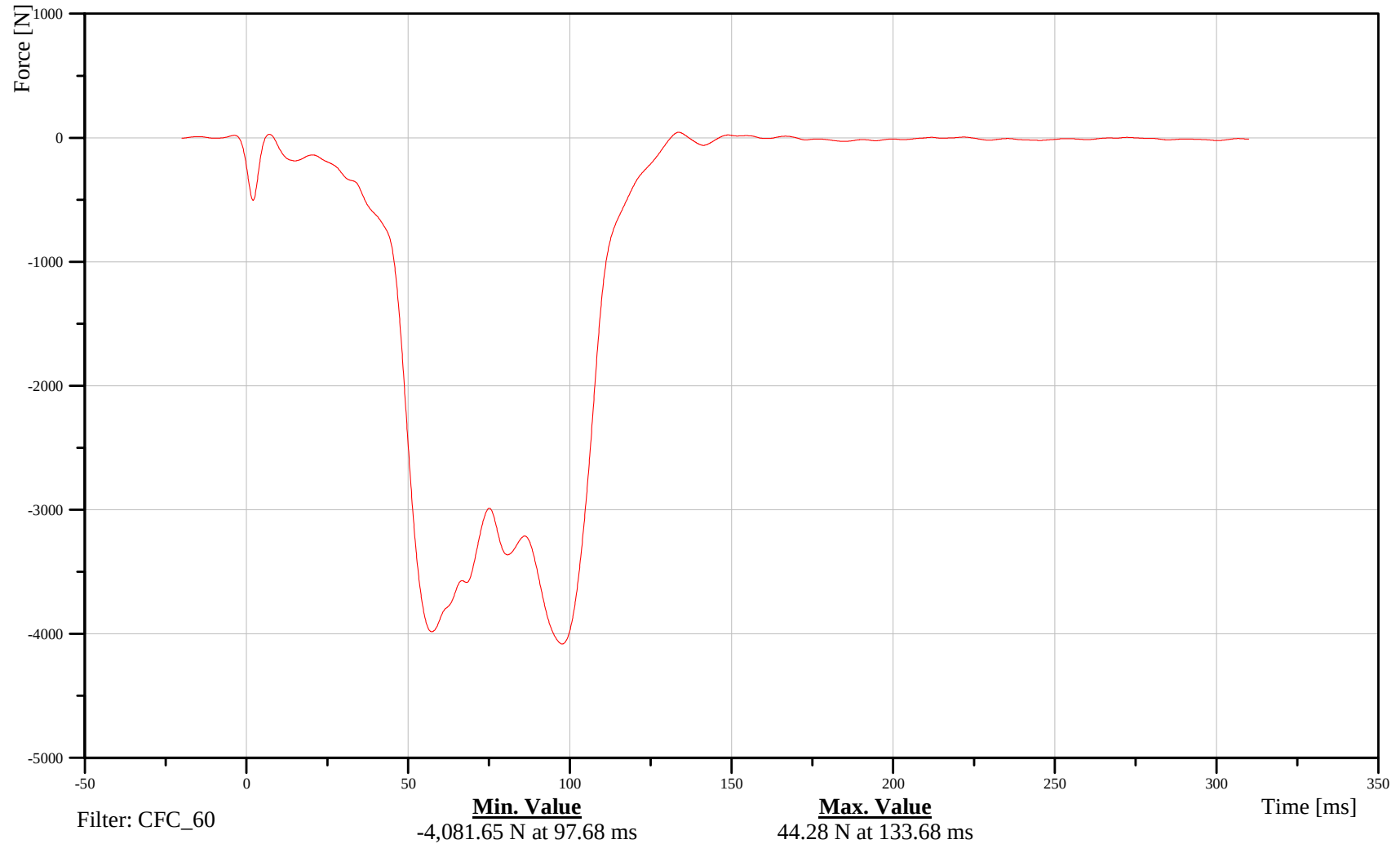
Date: 05/30/2006
Time: 14:51

Load Cell Row 5 Column 6

Customer: Volpe
Test Number: R60172

L0FBAR000055FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-164

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

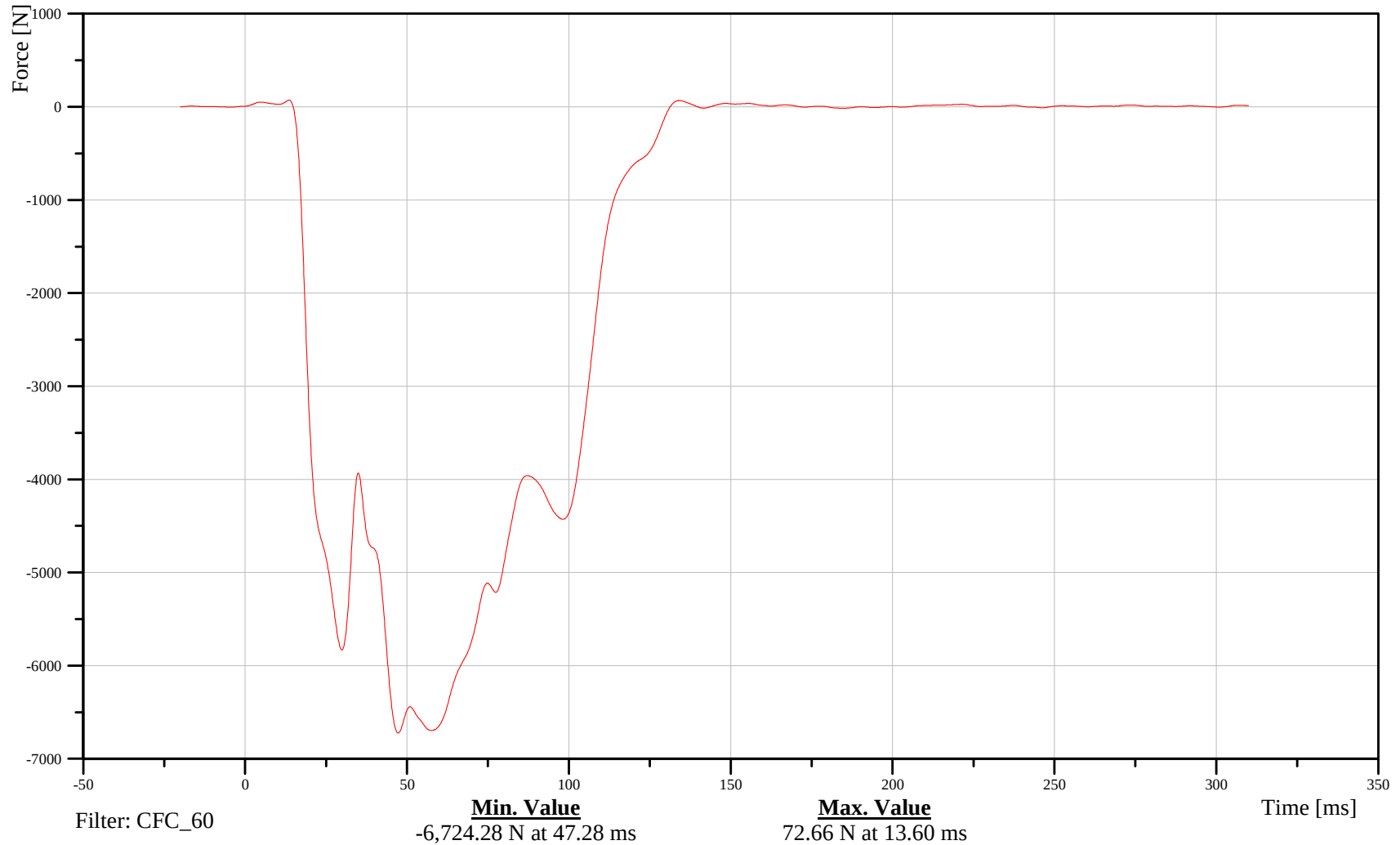
Date: 05/30/2006
Time: 14:51

Load Cell Row 6 Column 6

Customer: Volpe
Test Number: R60172

L0FBAR000056FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-165

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

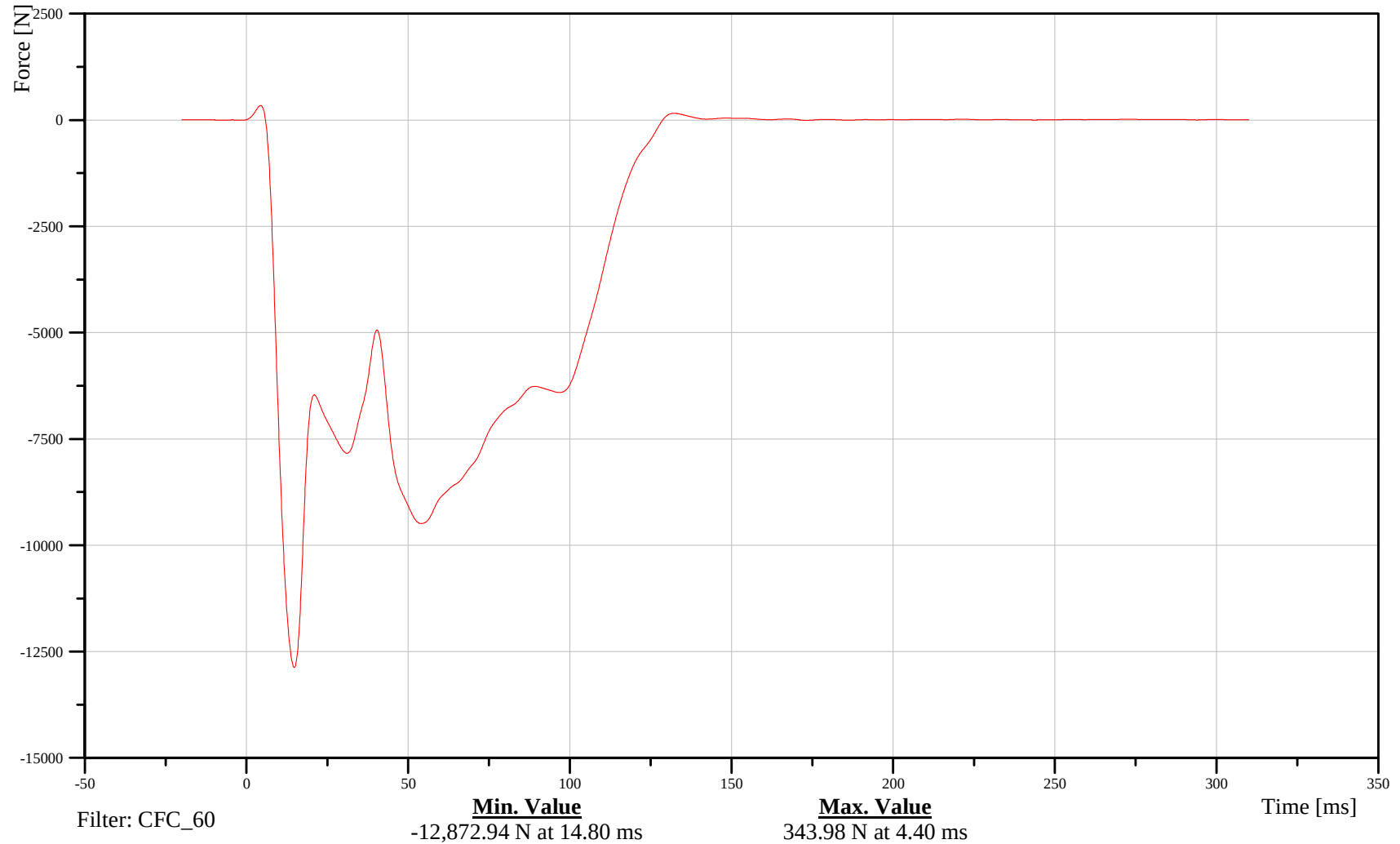
Date: 05/30/2006
Time: 14:51

Load Cell Row 7 Column 6

Customer: Volpe
Test Number: R60172

L0FBAR000057FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-166

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

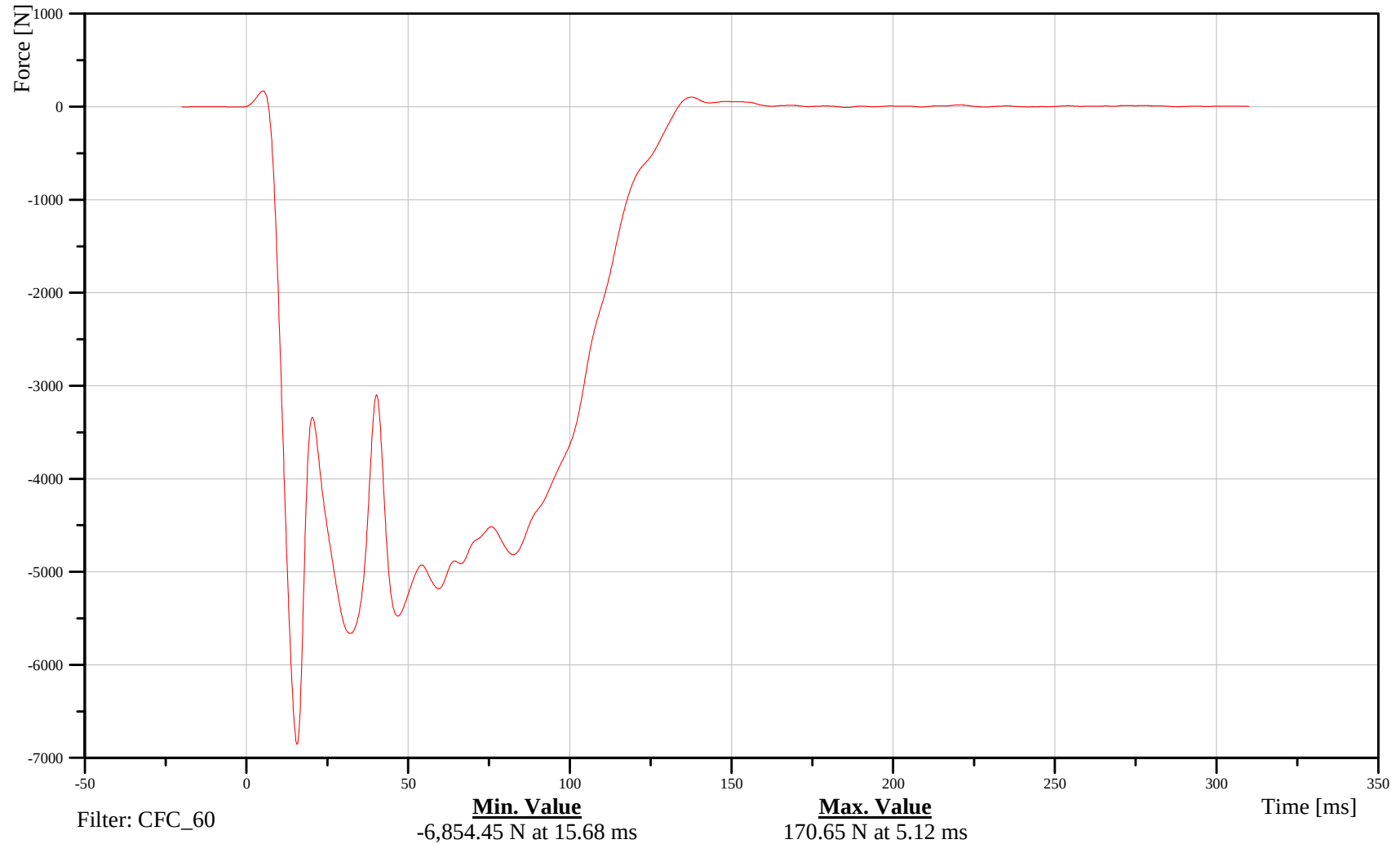
Date: 05/30/2006
Time: 14:51

Load Cell Row 8 Column 6

Customer: Volpe
Test Number: R60172

L0FBAR000058FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-167

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

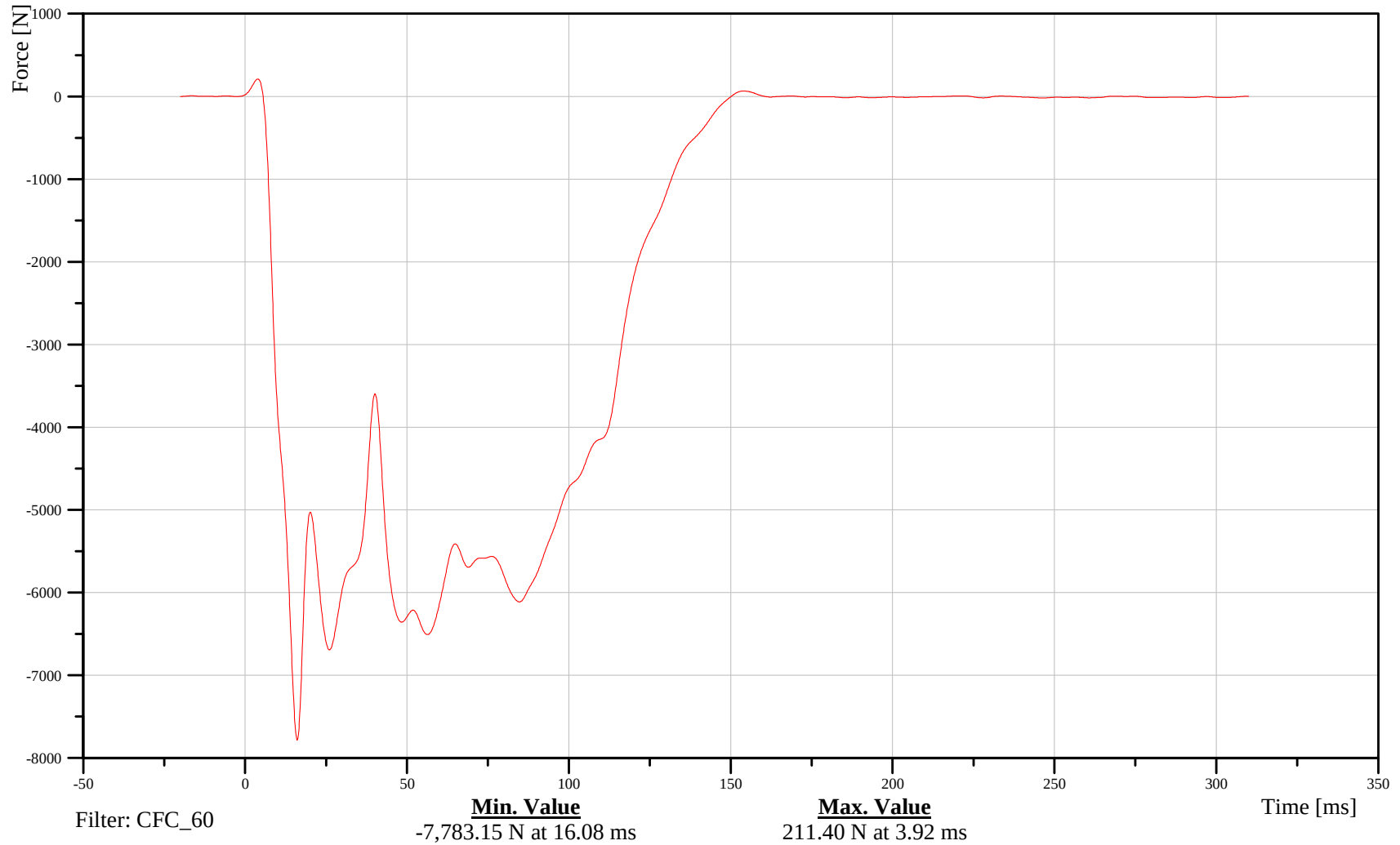
Date: 05/30/2006
Time: 14:51

Load Cell Row 9 Column 6

Customer: Volpe
Test Number: R60172

L0FBAR000059FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-168

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

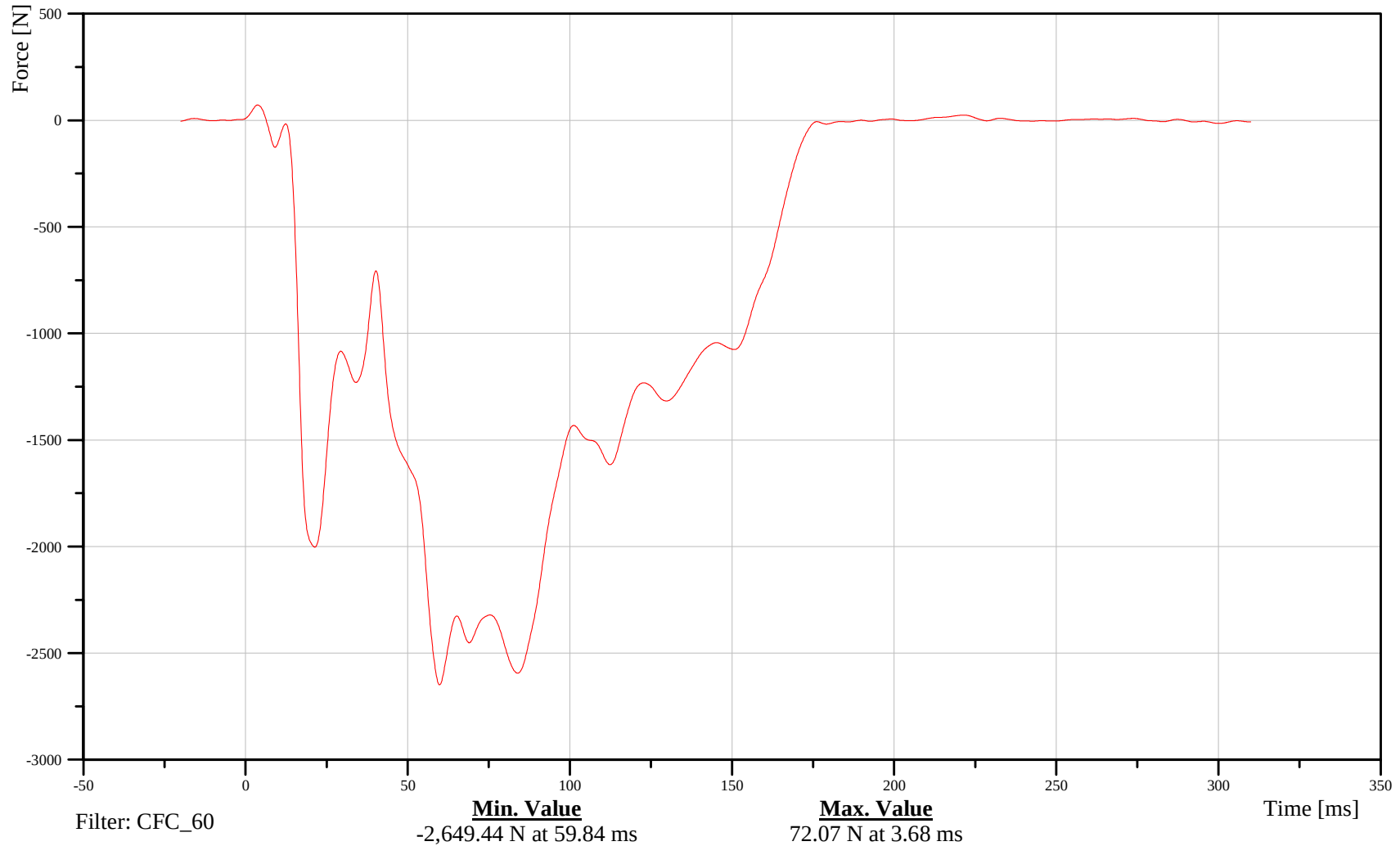
Date: 05/30/2006
Time: 14:51

Load Cell Row 10 Column 6

Customer: Volpe
Test Number: R60172

L0FBAR000060FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-169

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

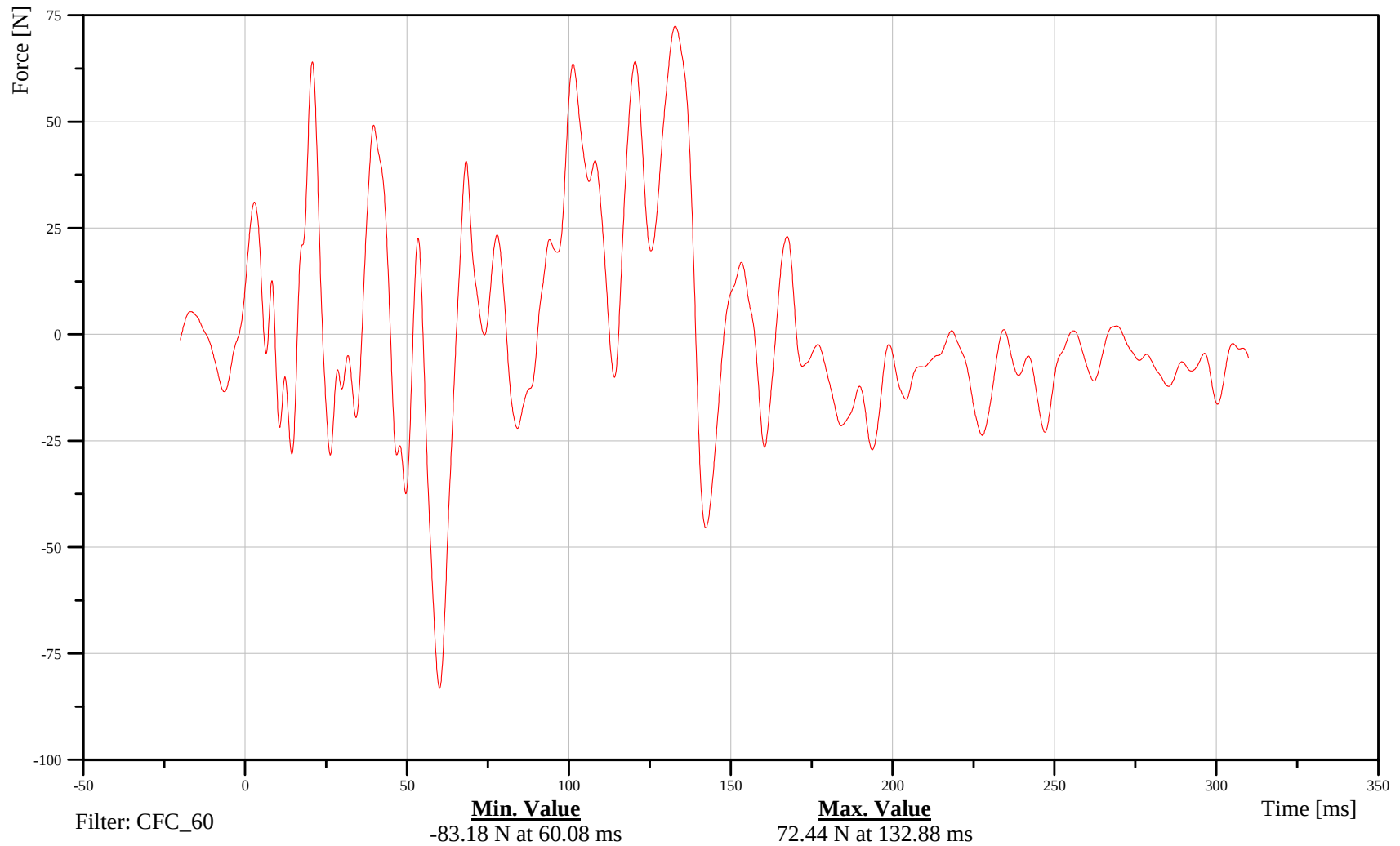
Date: 05/30/2006
Time: 14:51

Load Cell Row 1 Column 7

Customer: Volpe
Test Number: R60172

L0FBAR000061FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-170

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

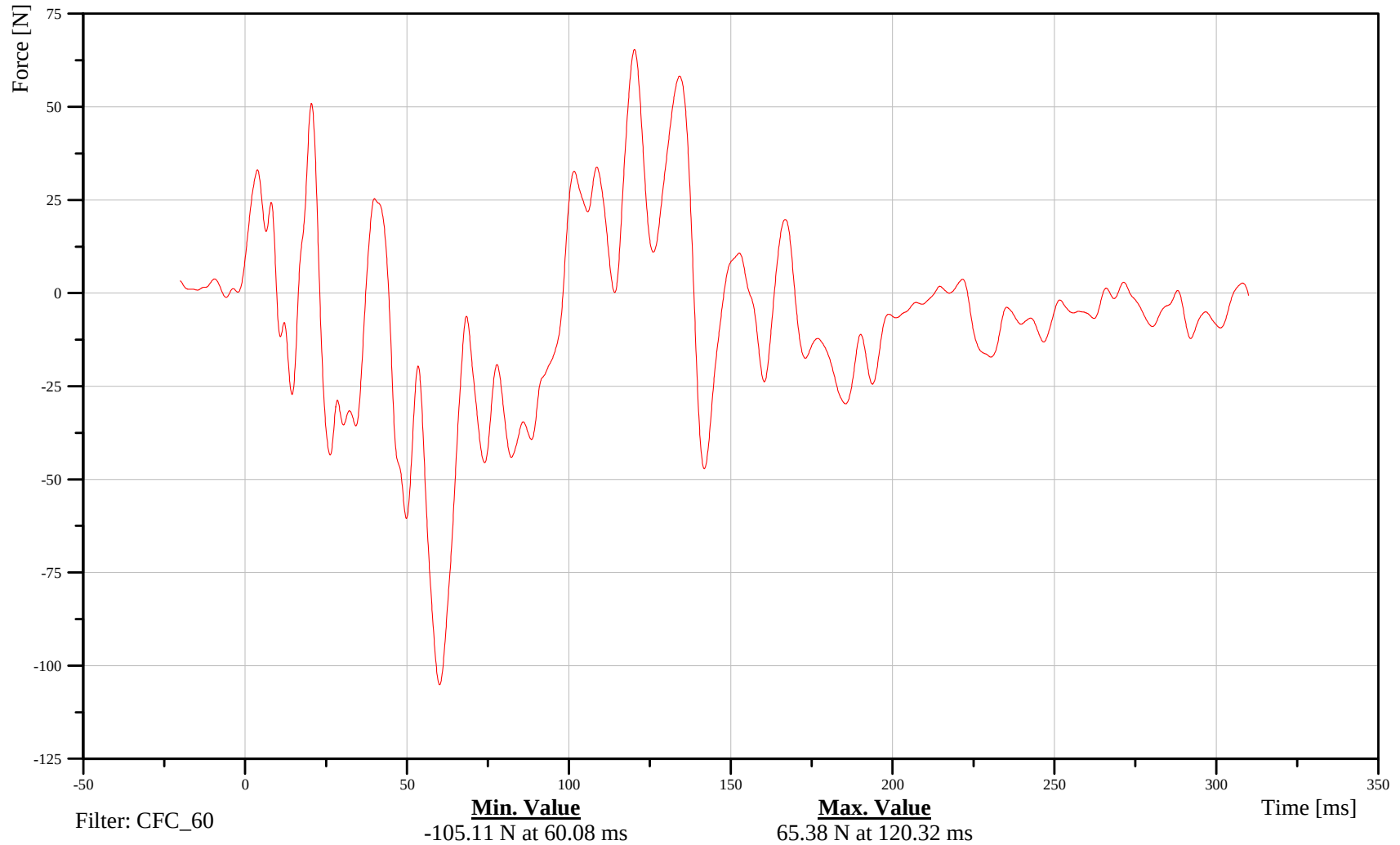
Date: 05/30/2006
Time: 14:51

Load Cell Row 2 Column 7

Customer: Volpe
Test Number: R60172

L0FBAR000062FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-171

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

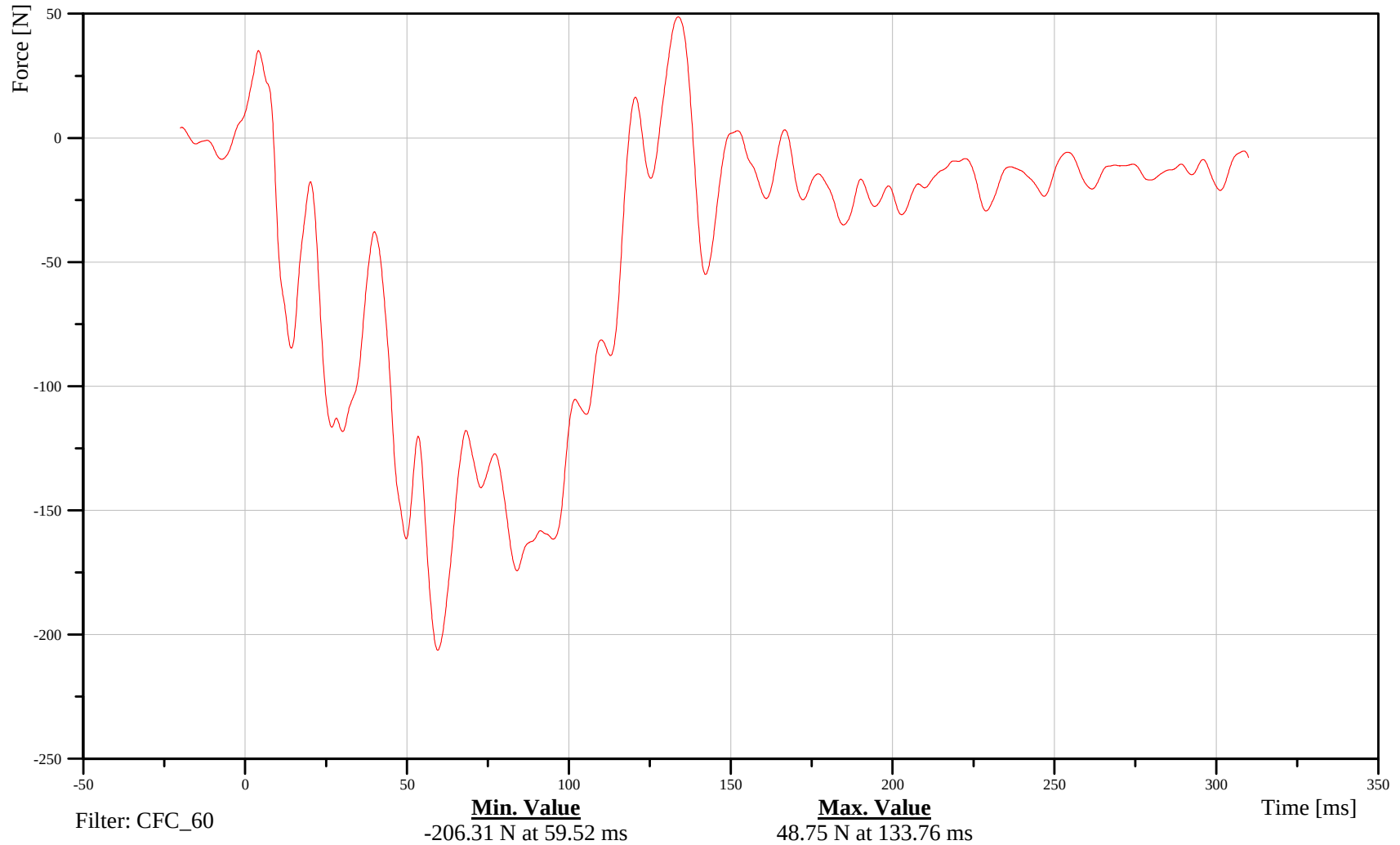
Date: 05/30/2006
Time: 14:51

Load Cell Row 3 Column 7

Customer: Volpe
Test Number: R60172

L0FBAR000063FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-172

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

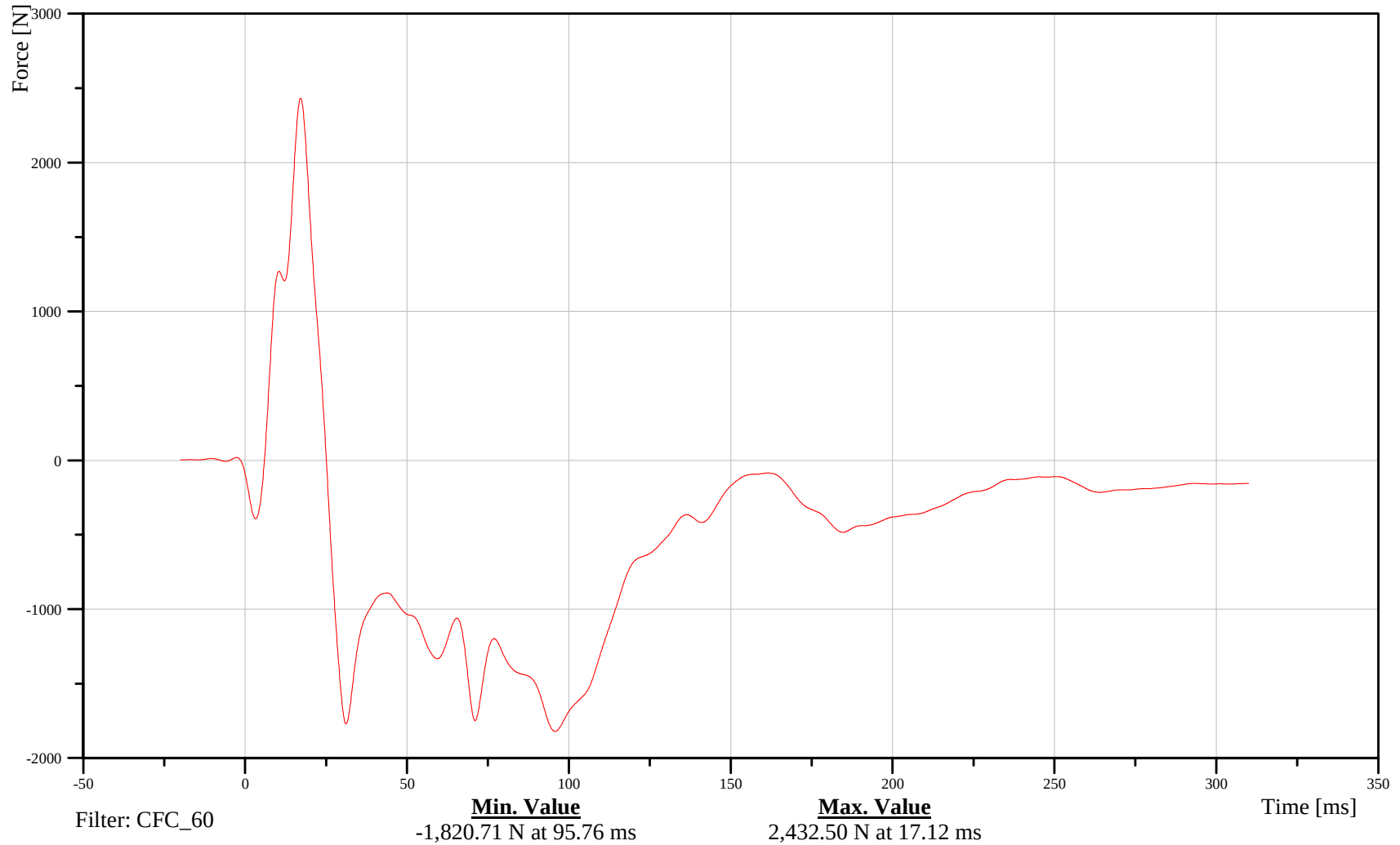
Date: 05/30/2006
Time: 14:51

Load Cell Row 4 Column 7

Customer: Volpe
Test Number: R60172

L0FBAR000064FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-173

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

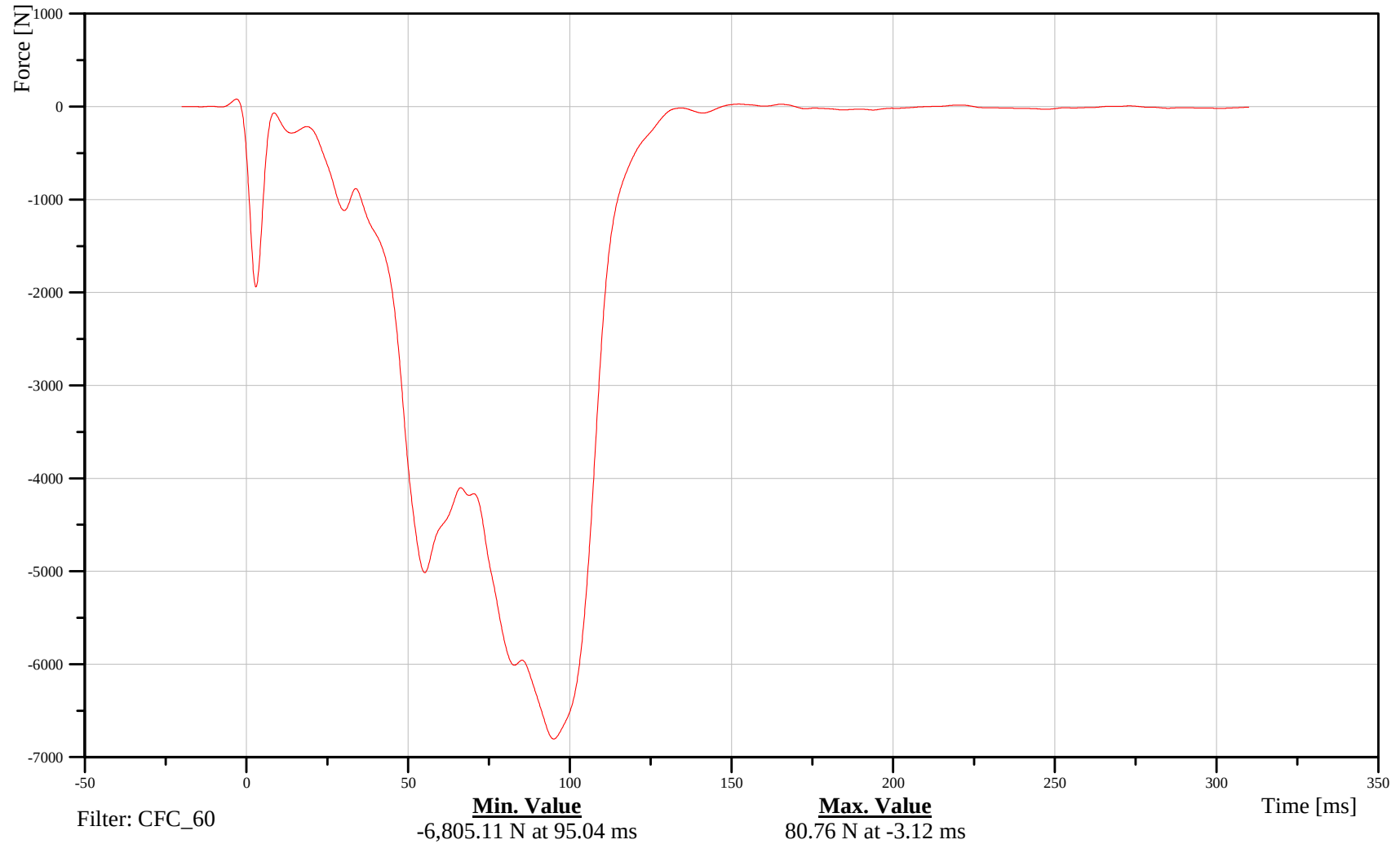
Date: 05/30/2006
Time: 14:51

Load Cell Row 5 Column 7

Customer: Volpe
Test Number: R60172

L0FBAR000065FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-174

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

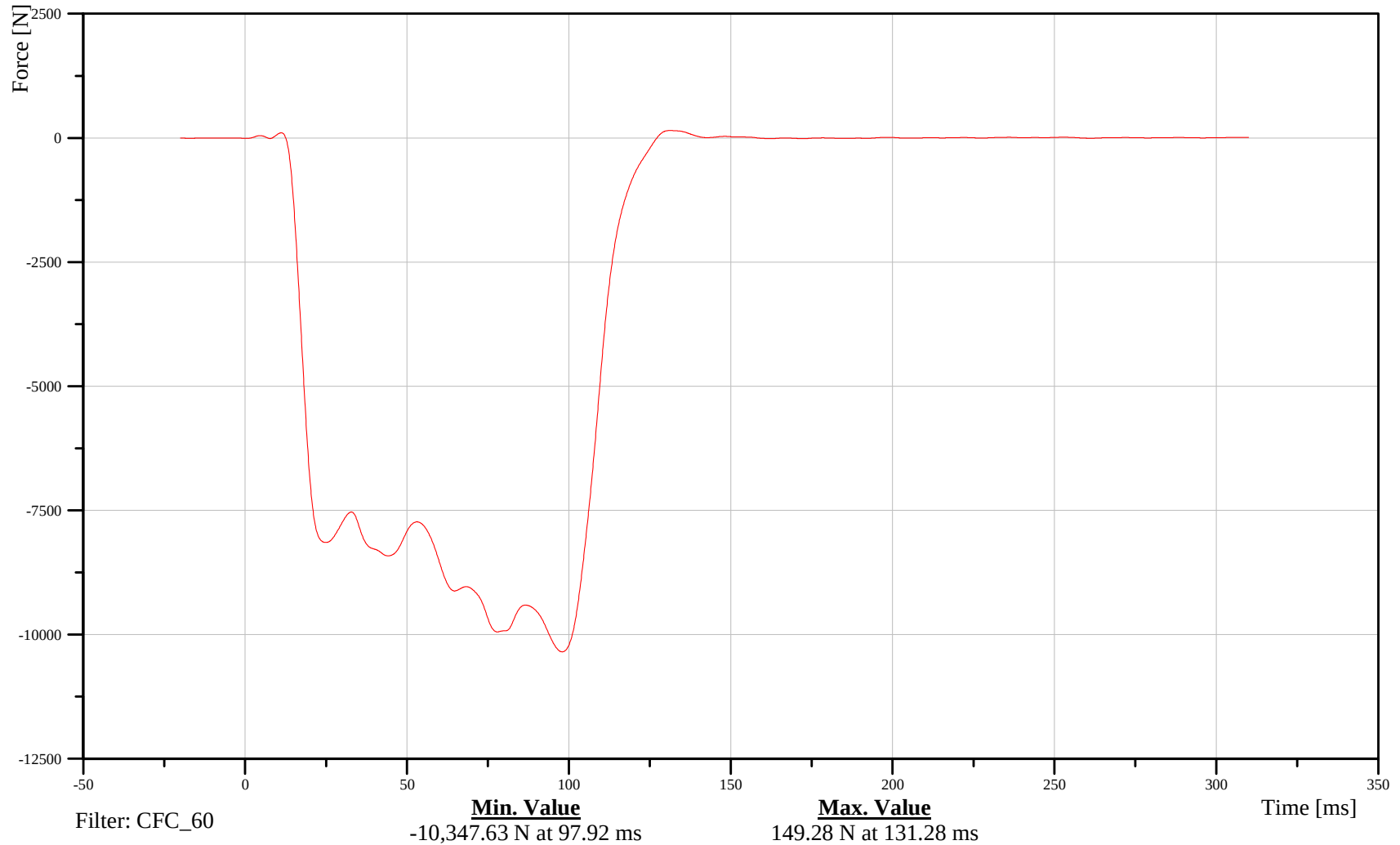
Date: 05/30/2006
Time: 14:51

Load Cell Row 6 Column 7

Customer: Volpe
Test Number: R60172

L0FBAR000066FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-175

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

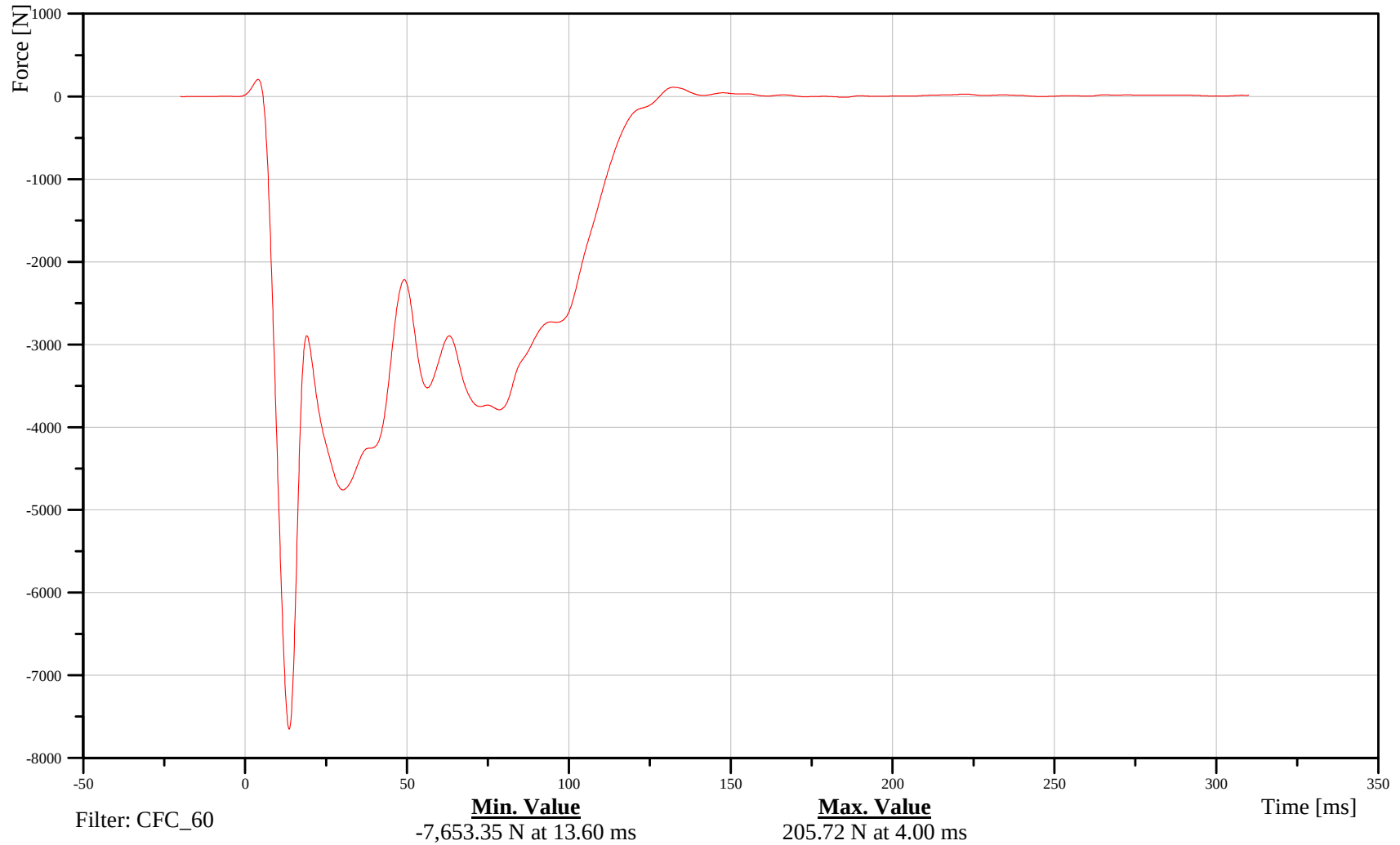
Date: 05/30/2006
Time: 14:51

Load Cell Row 7 Column 7

Customer: Volpe
Test Number: R60172

L0FBAR000067FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-176

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

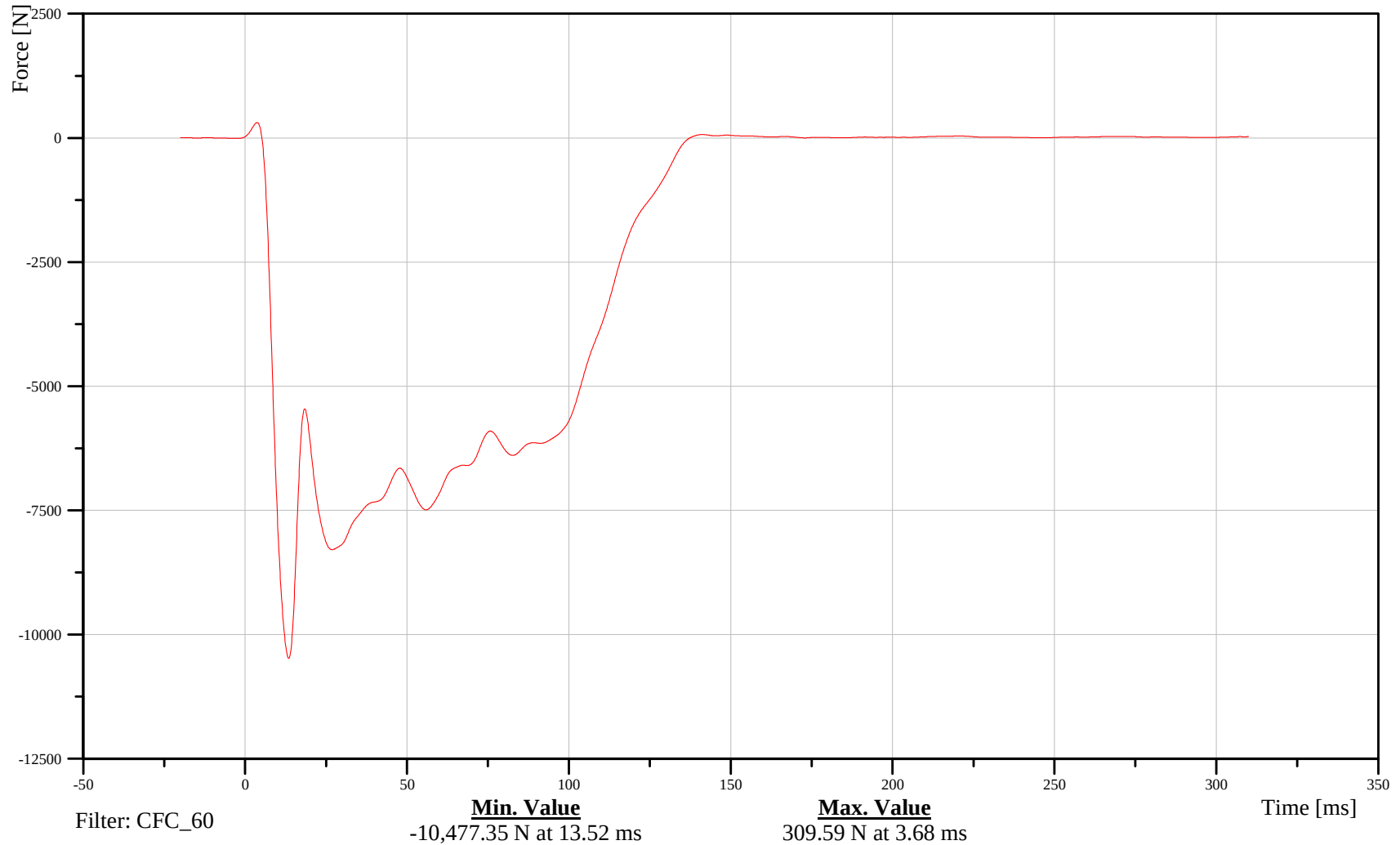
Date: 05/30/2006
Time: 14:51

Load Cell Row 8 Column 7

Customer: Volpe
Test Number: R60172

L0FBAR000068FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-177

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

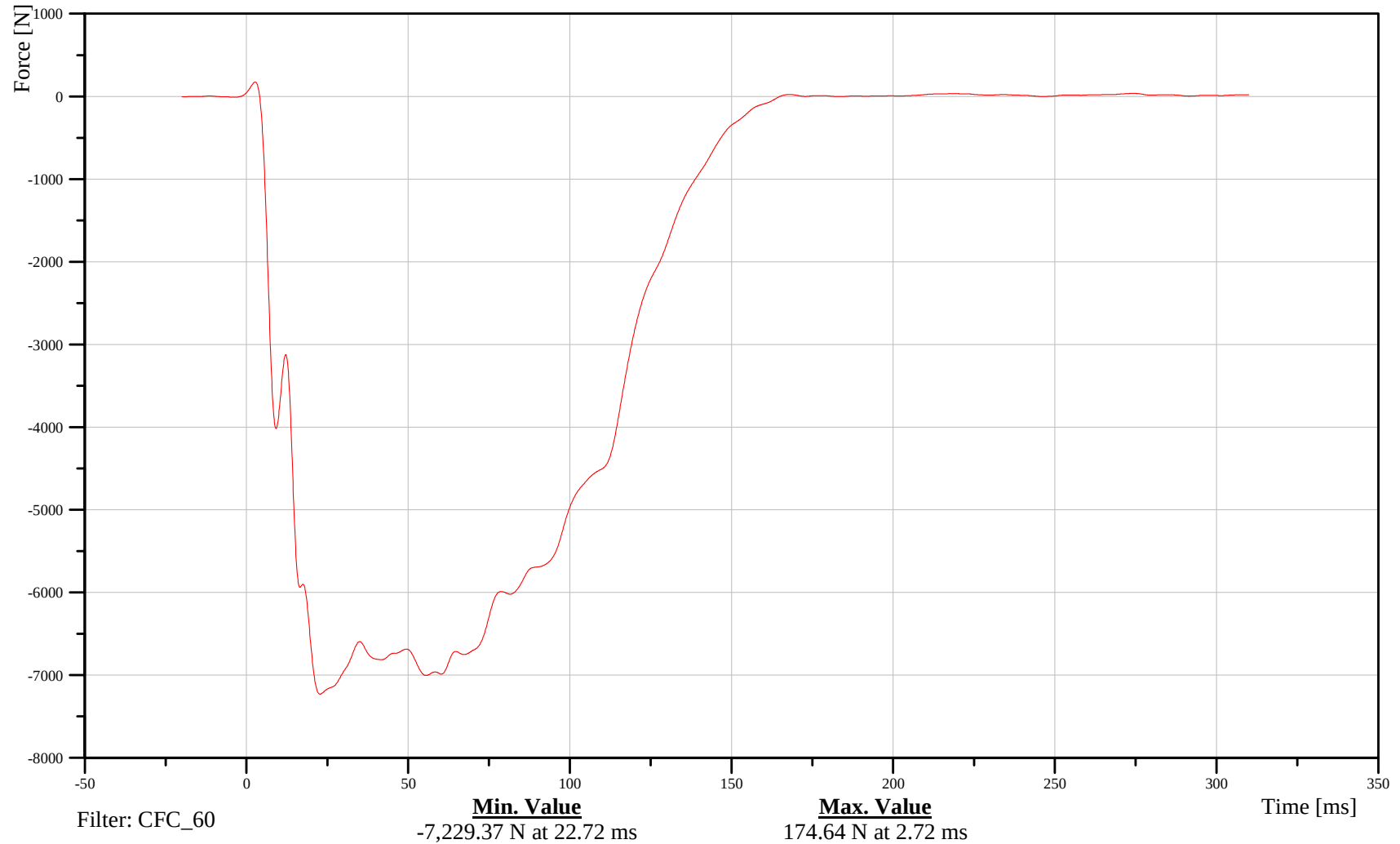
Date: 05/30/2006
Time: 14:51

Load Cell Row 9 Column 7

Customer: Volpe
Test Number: R60172

L0FBAR000069FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-178

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

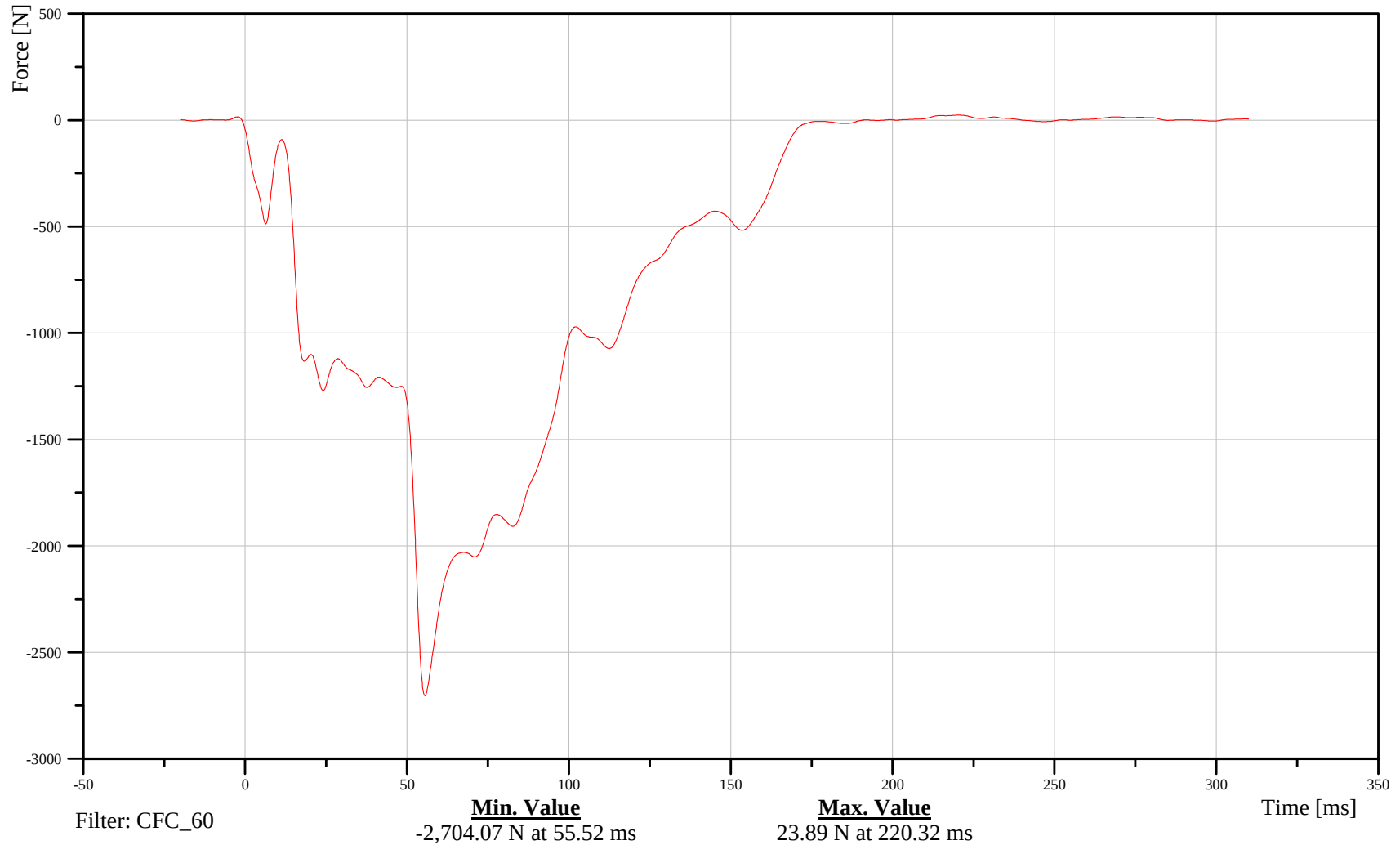
Date: 05/30/2006
Time: 14:51

Load Cell Row 10 Column 7

Customer: Volpe
Test Number: R60172

L0FBAR000070FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-179

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

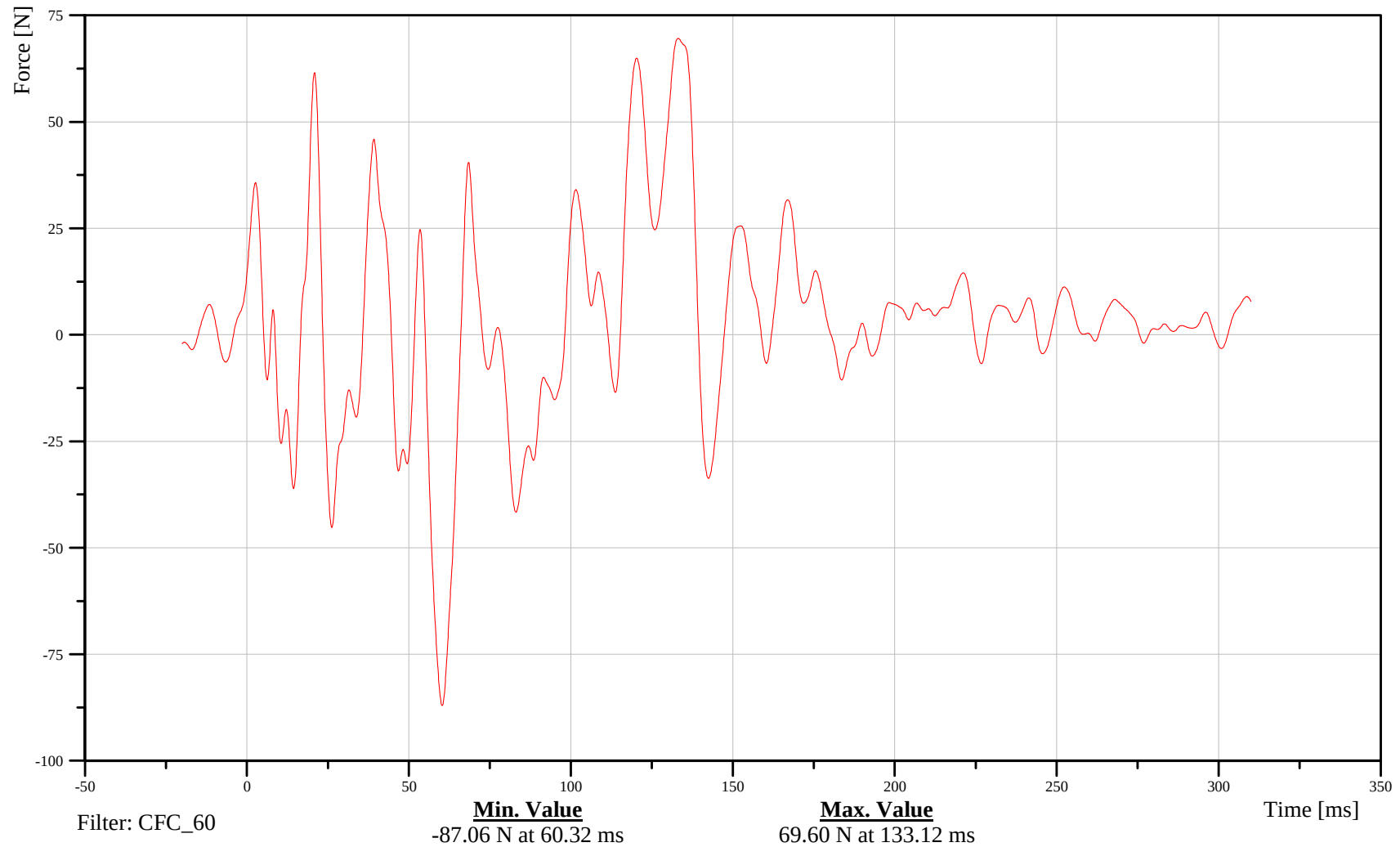
Date: 05/30/2006
Time: 14:51

Load Cell Row 1 Column 8

Customer: Volpe
Test Number: R60172

L0FBAR000071FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-180

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

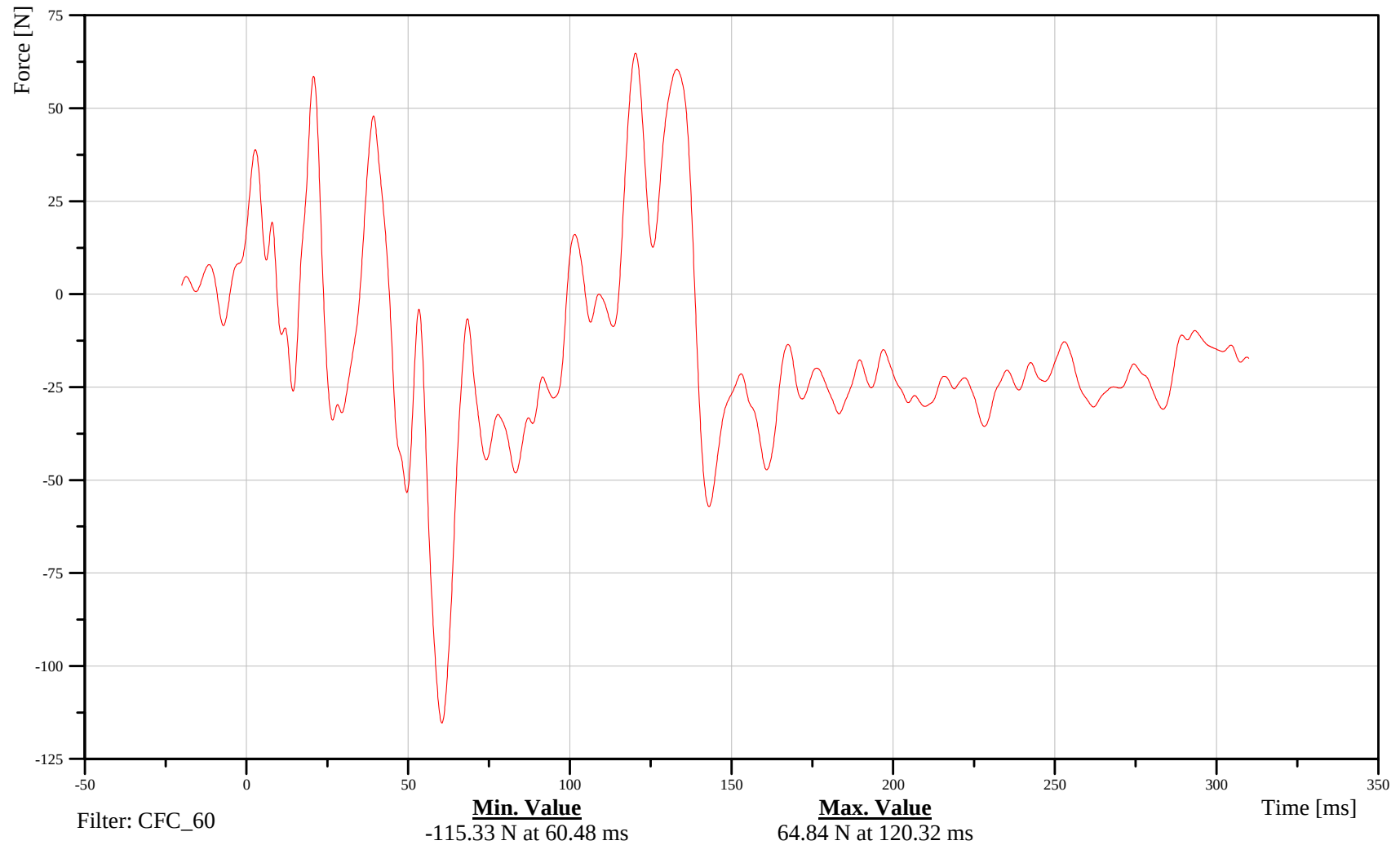
Date: 05/30/2006
Time: 14:51

Load Cell Row 2 Column 8

Customer: Volpe
Test Number: R60172

L0FBAR000072FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-181

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

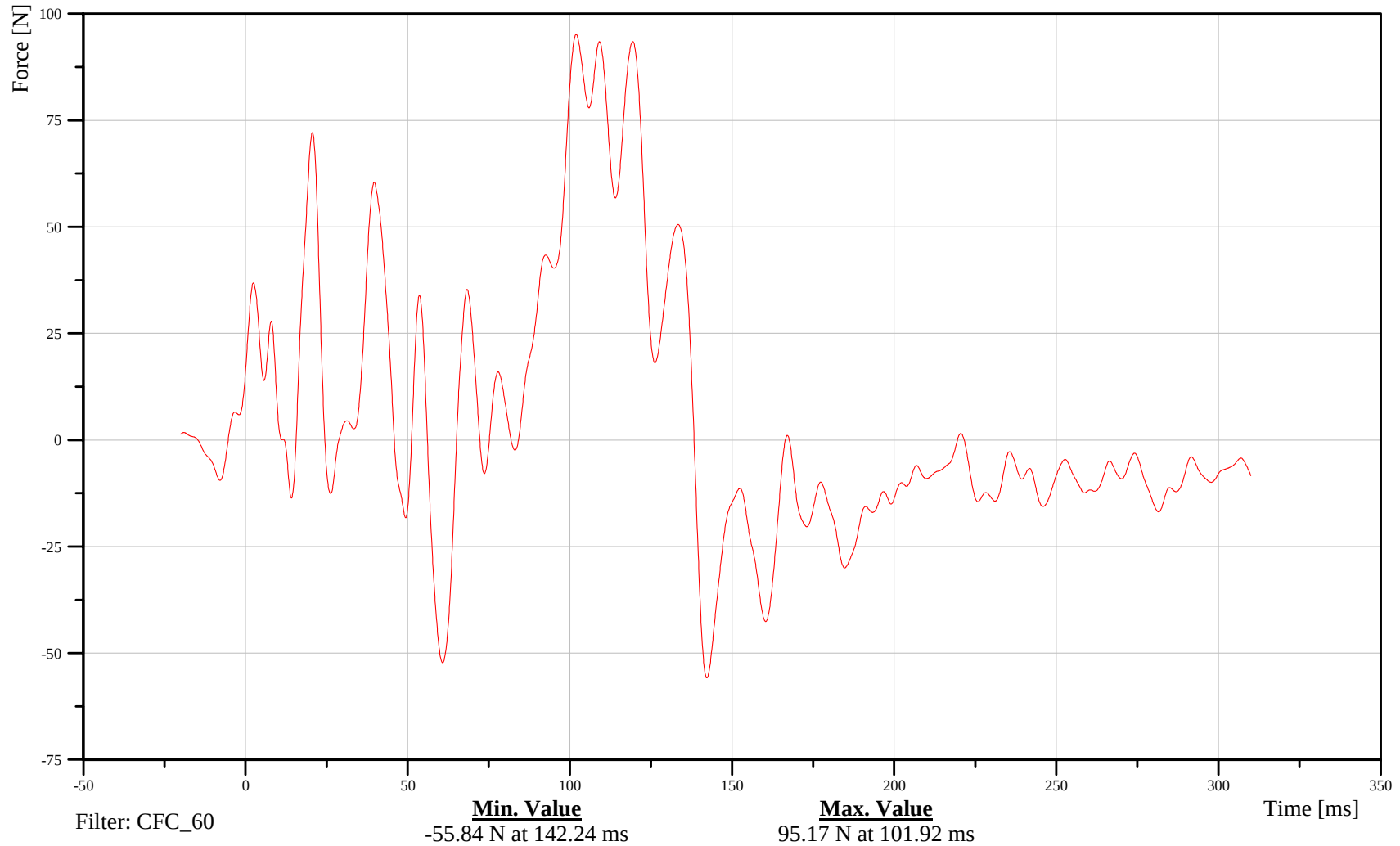
Date: 05/30/2006
Time: 14:51

Load Cell Row 3 Column 8

Customer: Volpe
Test Number: R60172

L0FBAR000073FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-182

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

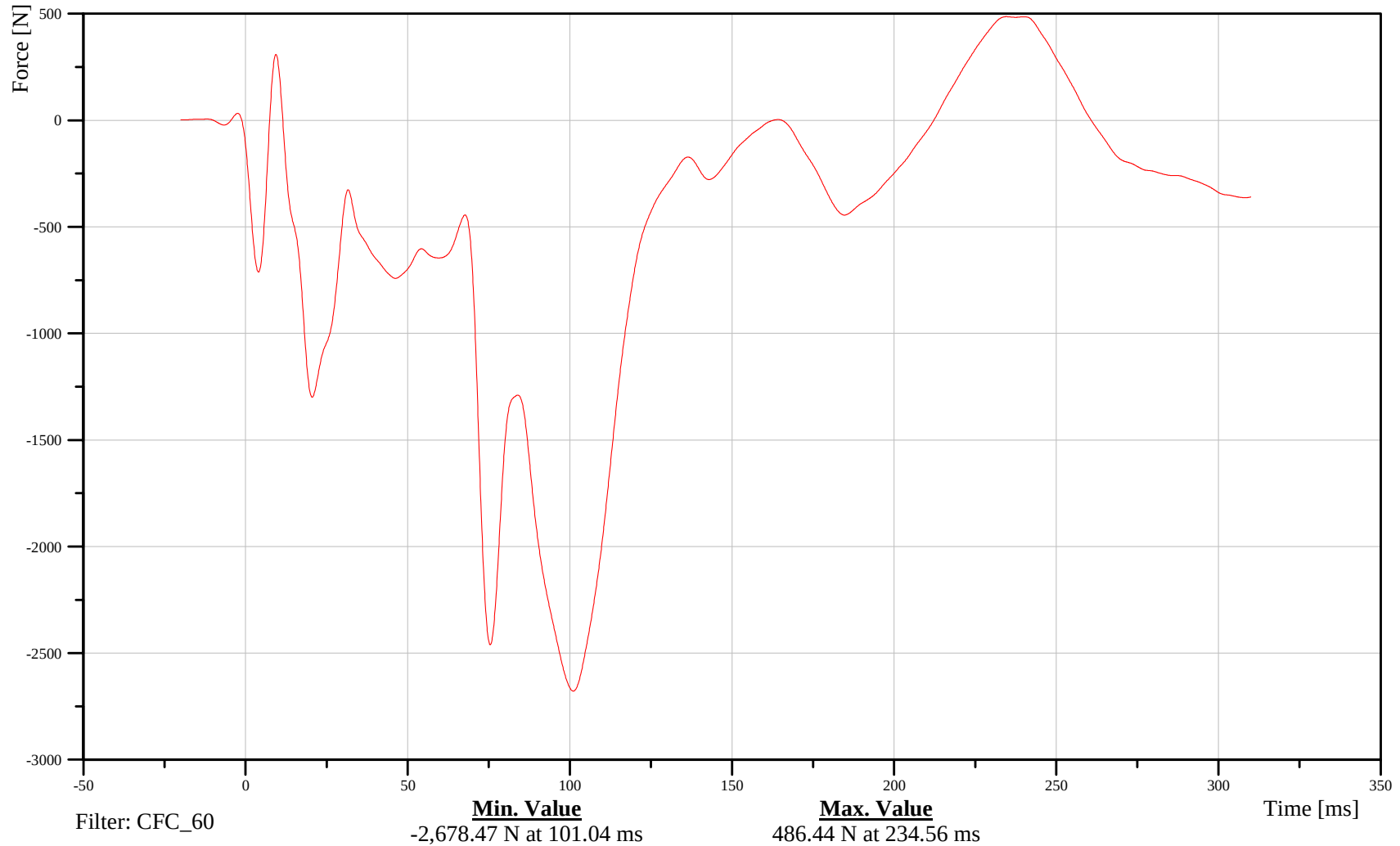
Date: 05/30/2006
Time: 14:51

Load Cell Row 4 Column 8

Customer: Volpe
Test Number: R60172

L0FBAR000074FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-183

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

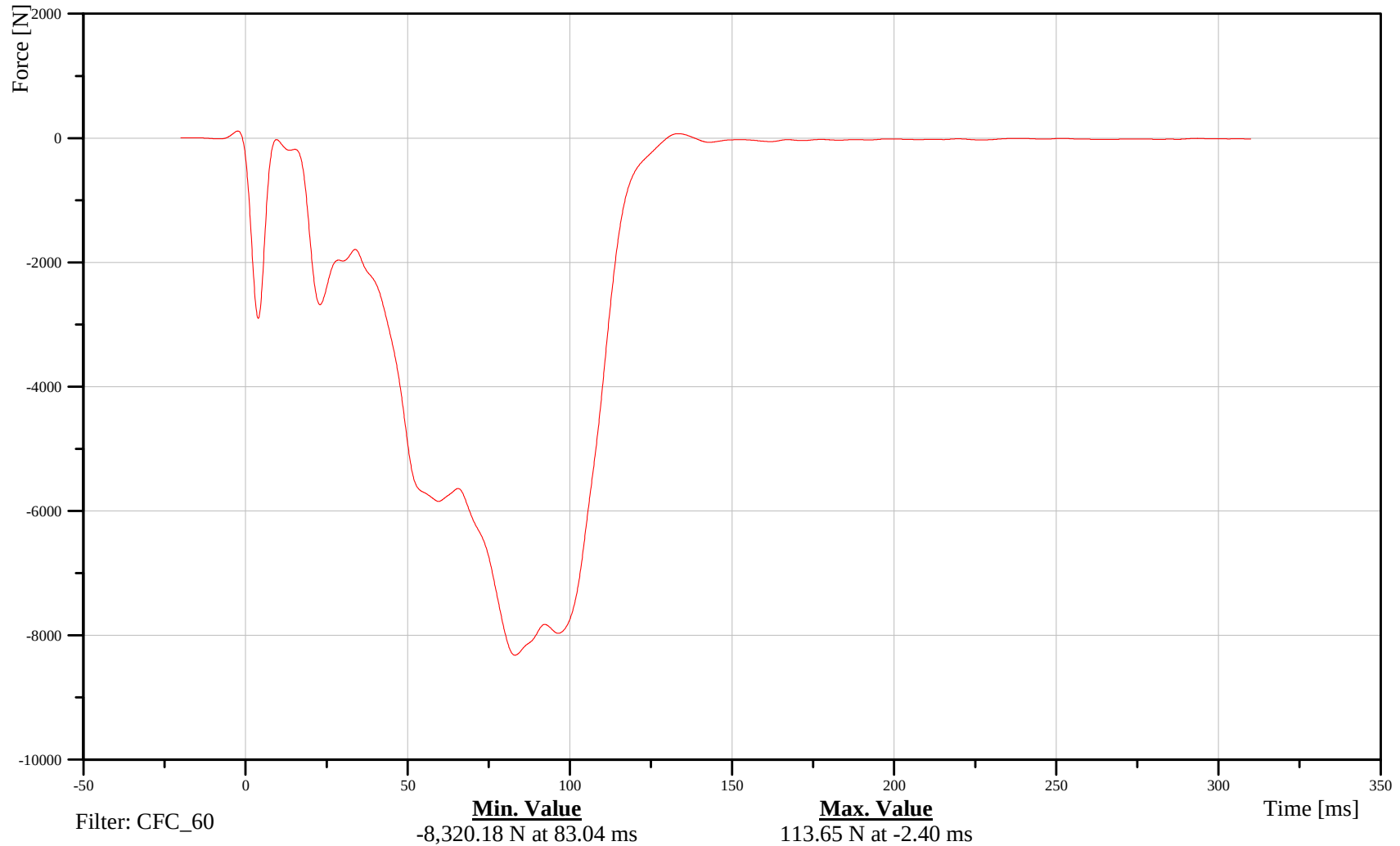
Date: 05/30/2006
Time: 14:51

Load Cell Row 5 Column 8

Customer: Volpe
Test Number: R60172

L0FBAR000075FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-184

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

Date: 05/30/2006

Time: 14:51

Load Cell Row 6 Column 8

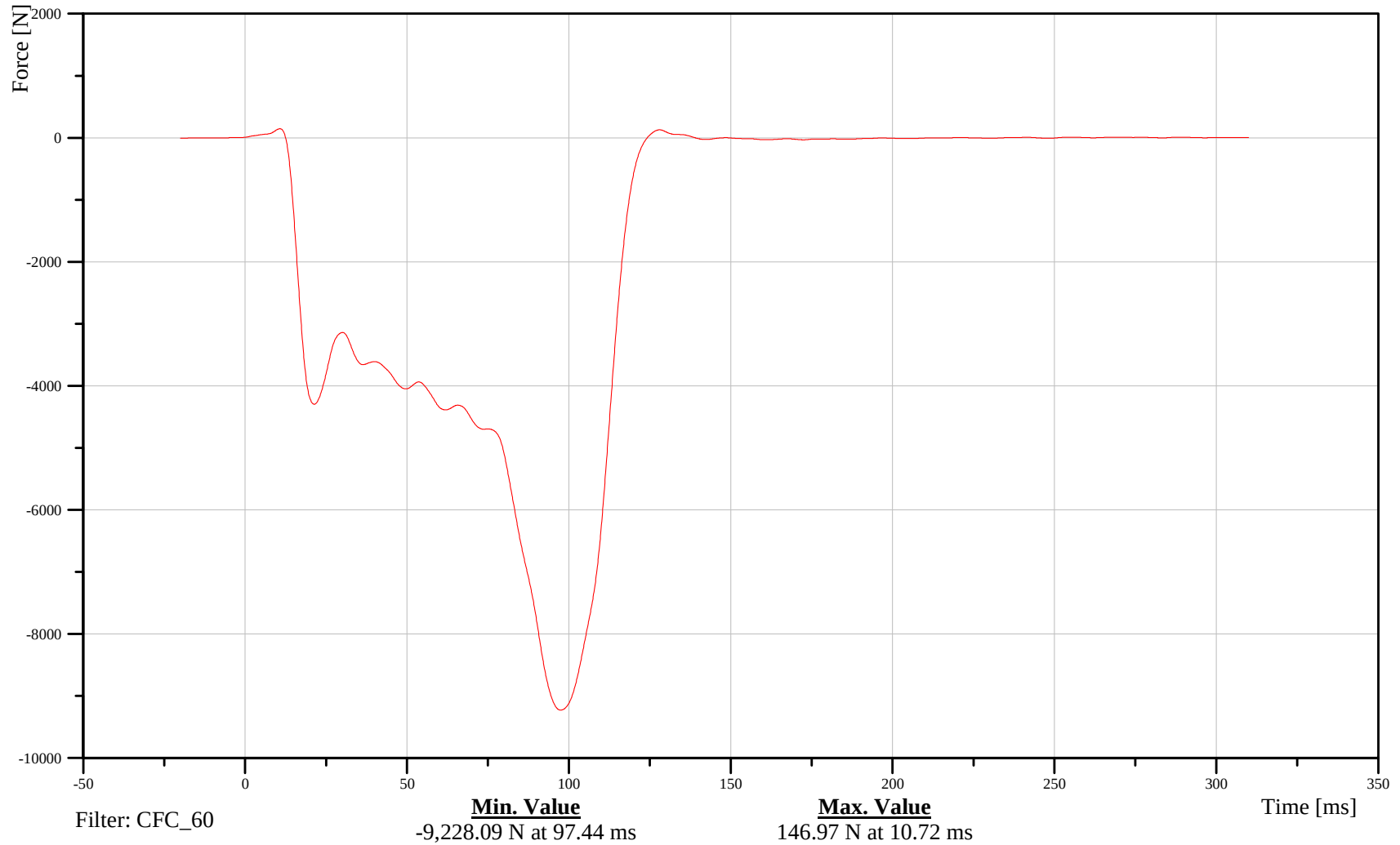
Customer: Volpe

Test Number: R60172

L0FBAR000076FOXD

TRC Inc. Test Lab: CTF

Test Number: 060530



B-185

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

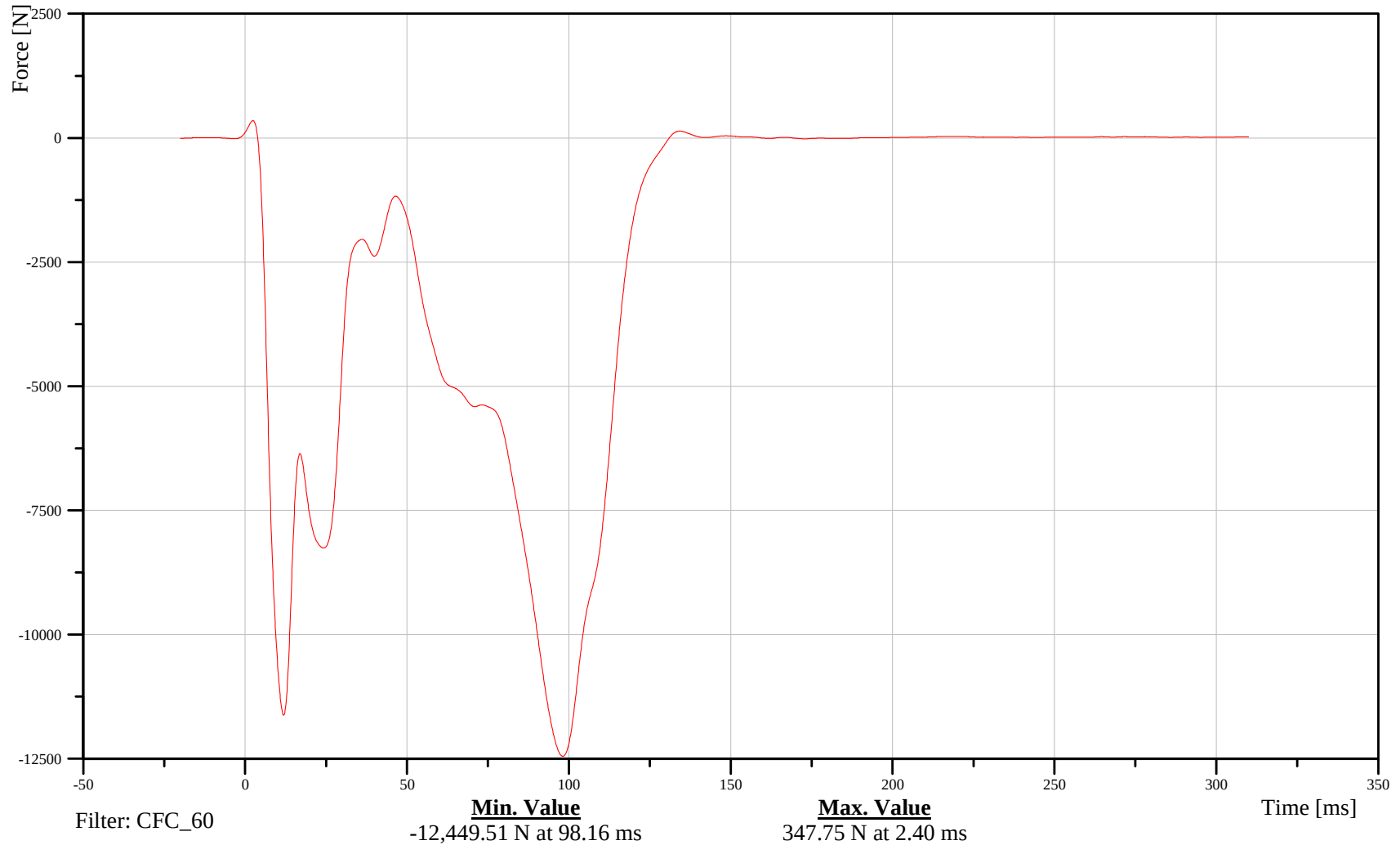
Date: 05/30/2006
Time: 14:51

Load Cell Row 7 Column 8

Customer: Volpe
Test Number: R60172

L0FBAR000077FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-186

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

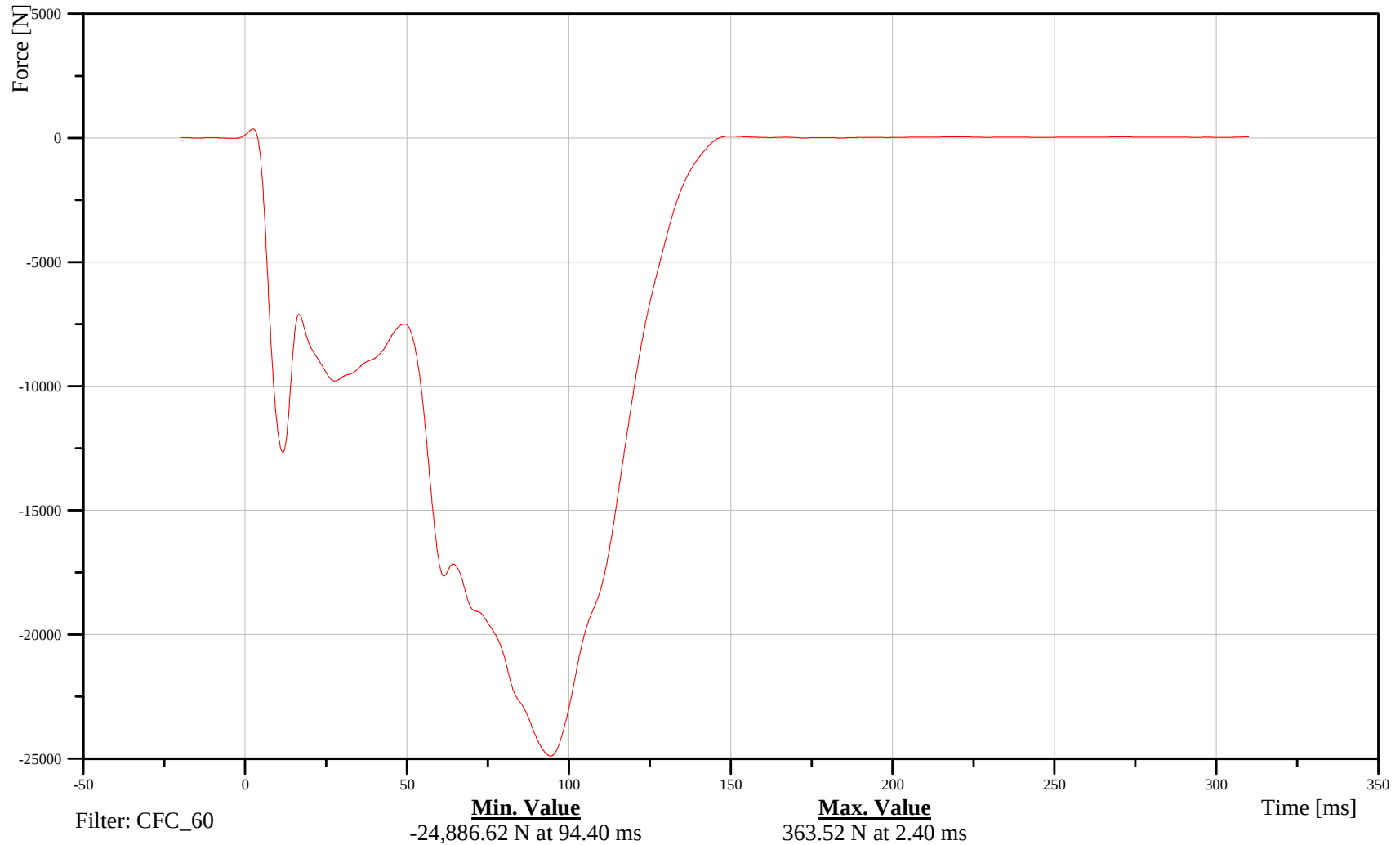
Date: 05/30/2006
Time: 14:51

Load Cell Row 8 Column 8

Customer: Volpe
Test Number: R60172

L0FBAR000078FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-187

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

Date: 05/30/2006

Time: 14:51

Load Cell Row 9 Column 8

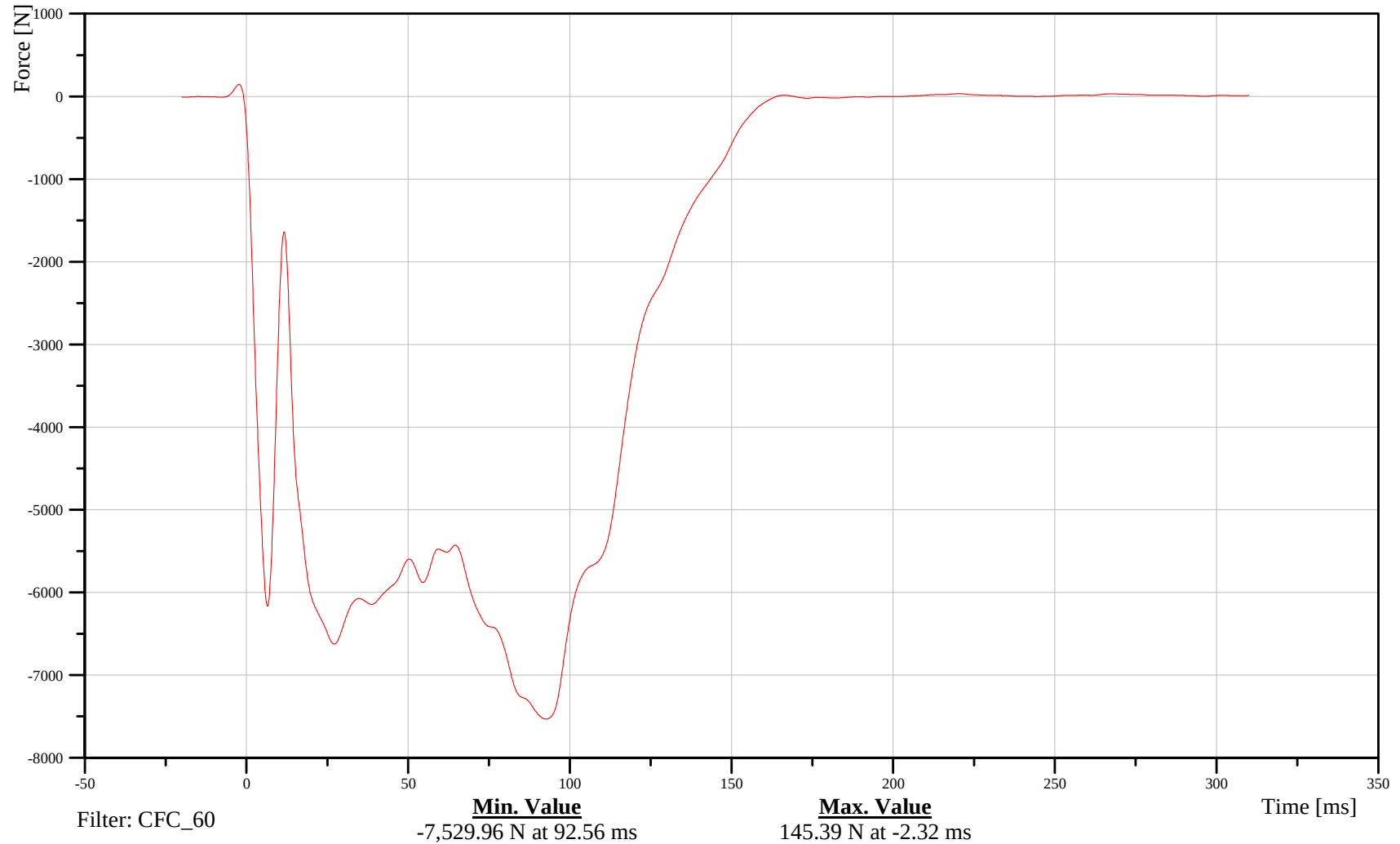
Customer: Volpe

Test Number: R60172

L0FBAR000079FOXD

TRC Inc. Test Lab: CTF

Test Number: 060530



B-188

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

Date: 05/30/2006

Load Cell Row 10 Column 8

Time: 14:51

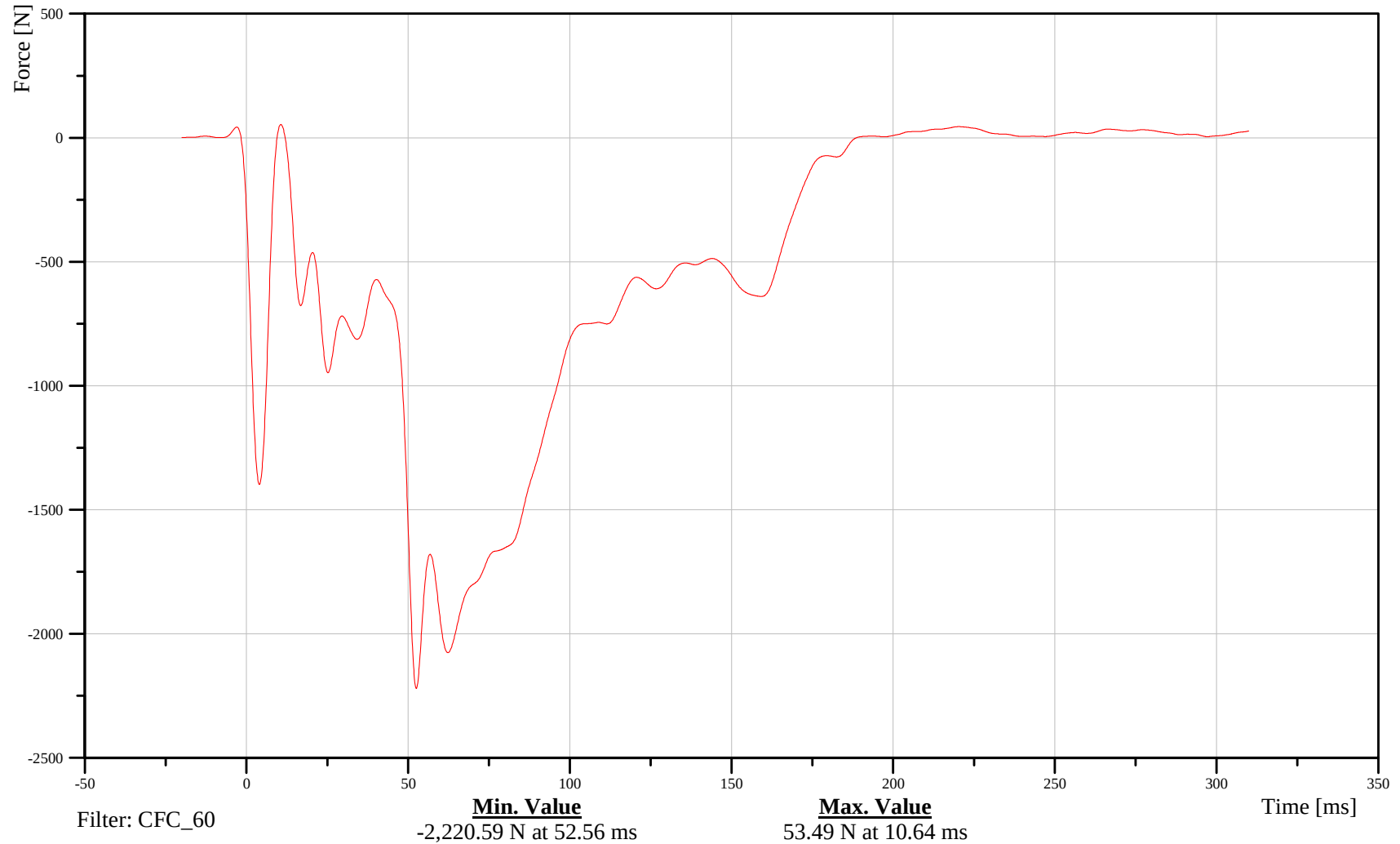
Customer: Volpe

Test Number: R60172

L0FBAR000080FOXD

TRC Inc. Test Lab: CTF

Test Number: 060530



B-189

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

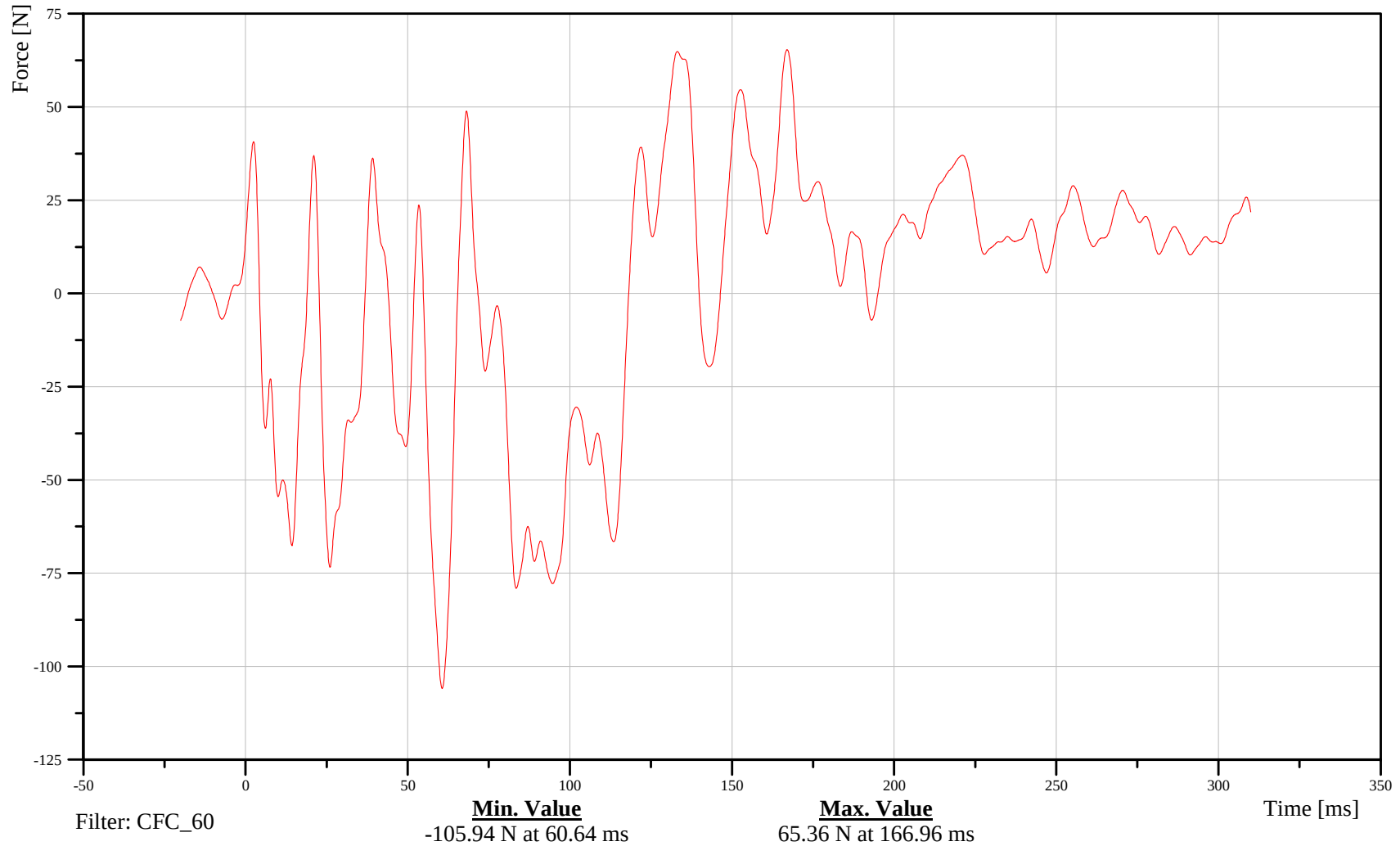
Date: 05/30/2006
Time: 14:51

Load Cell Row 1 Column 9

Customer: Volpe
Test Number: R60172

L0FBAR000081FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-190

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

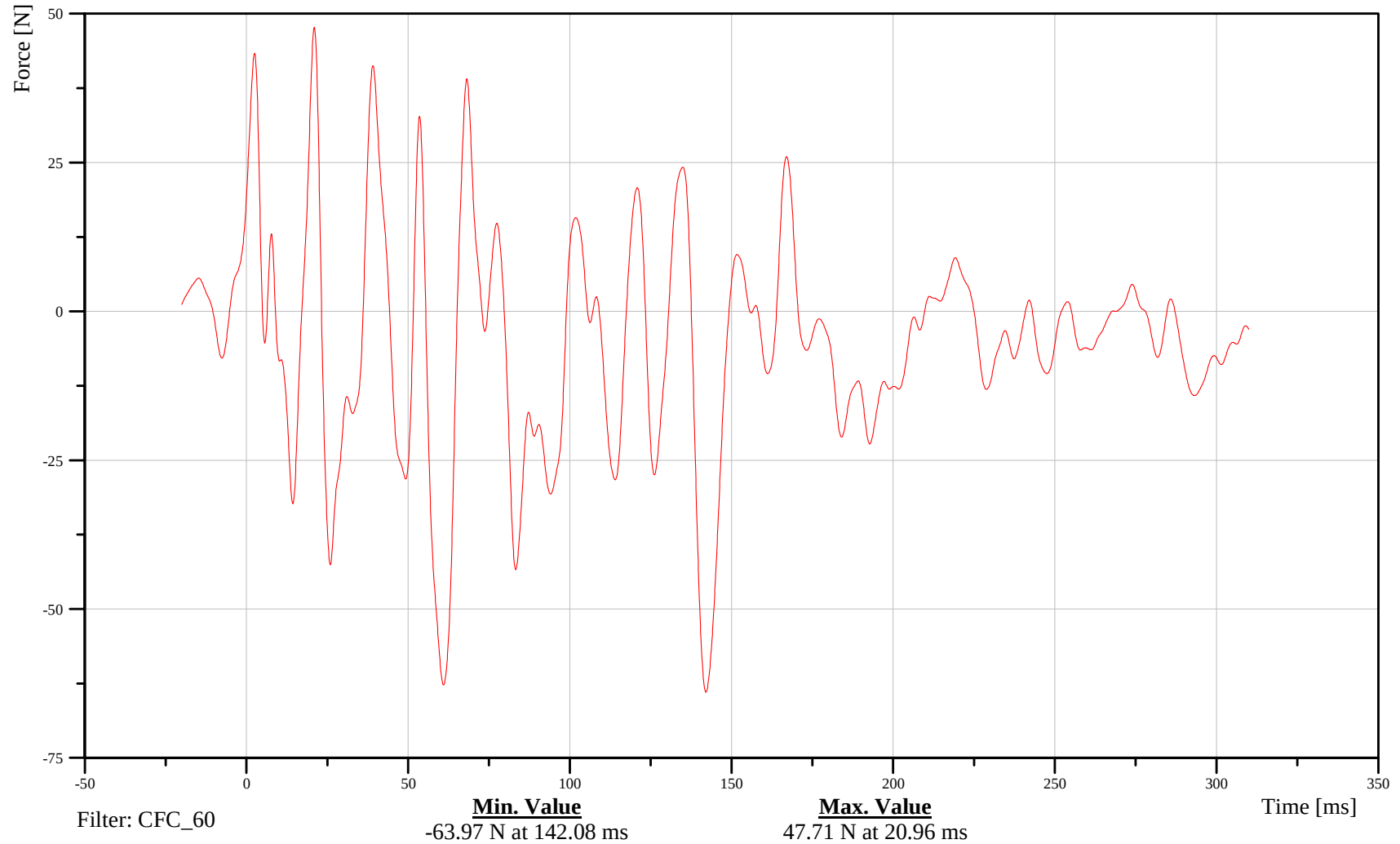
Date: 05/30/2006
Time: 14:51

Load Cell Row 2 Column 9

Customer: Volpe
Test Number: R60172

L0FBAR000082FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-191

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

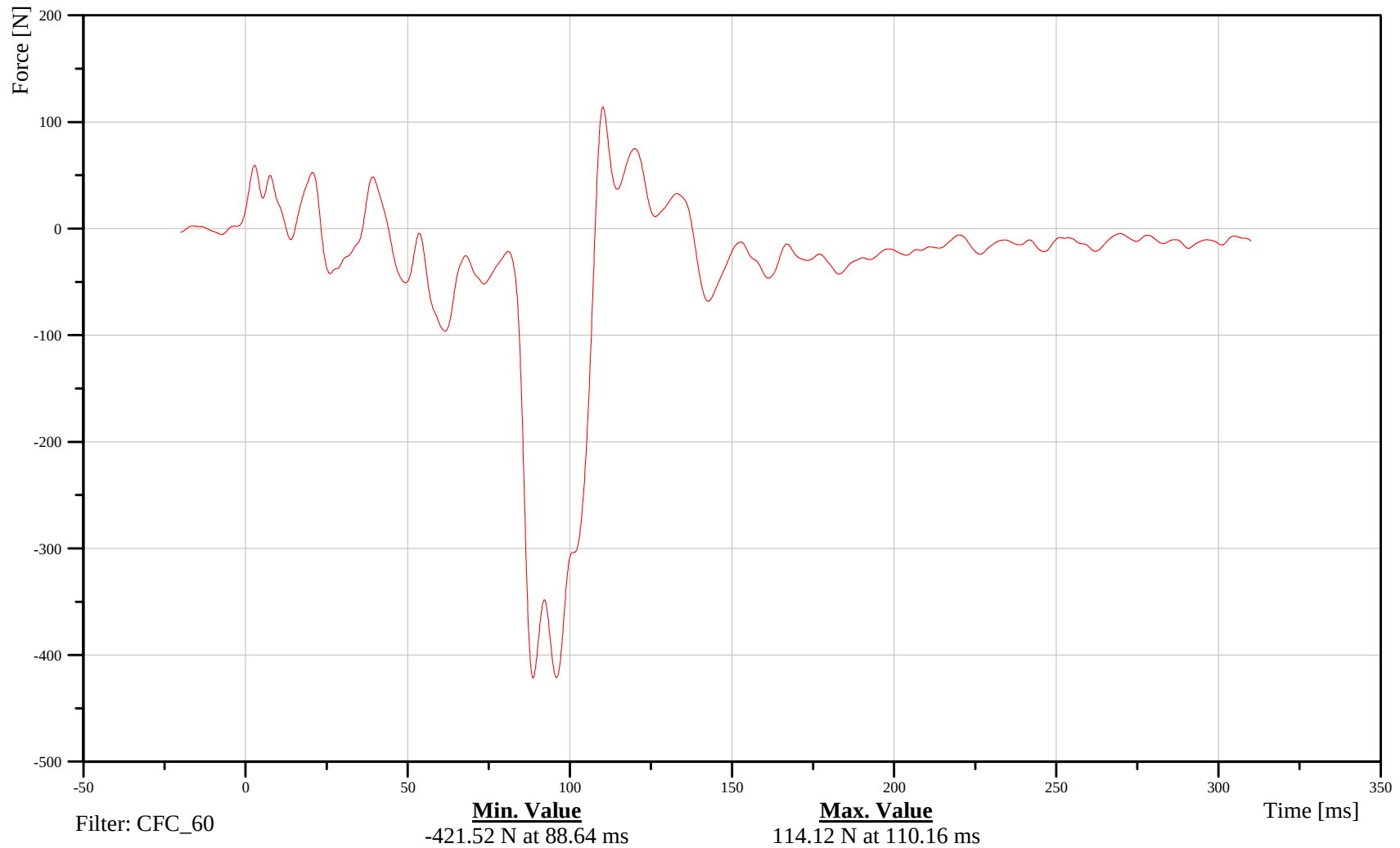
Date: 05/30/2006
Time: 14:51

Load Cell Row 3 Column 9

Customer: Volpe
Test Number: R60172

L0FBAR000083FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-192

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

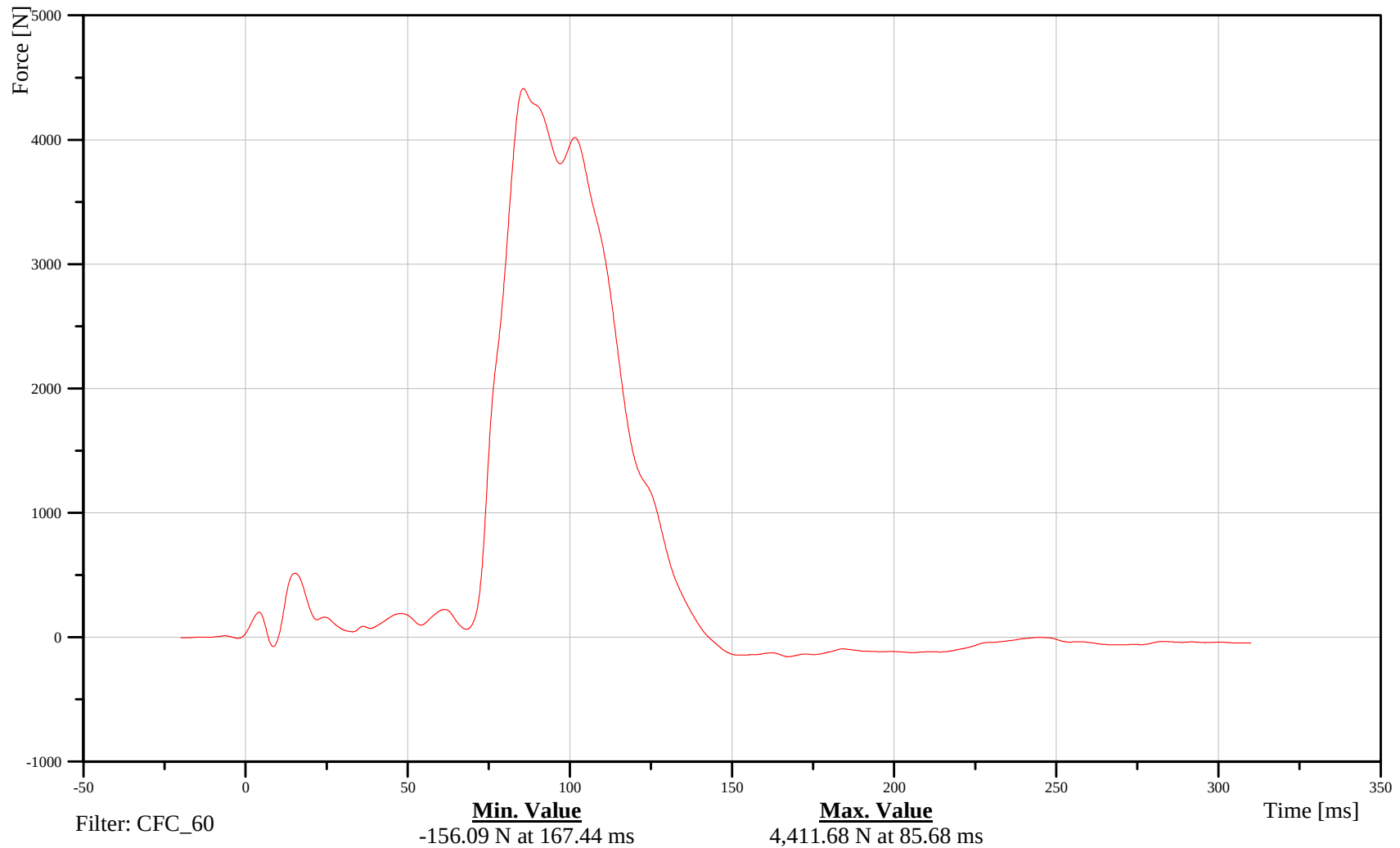
Date: 05/30/2006
Time: 14:51

Load Cell Row 4 Column 9

Customer: Volpe
Test Number: R60172

L0FBAR000084FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-193

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

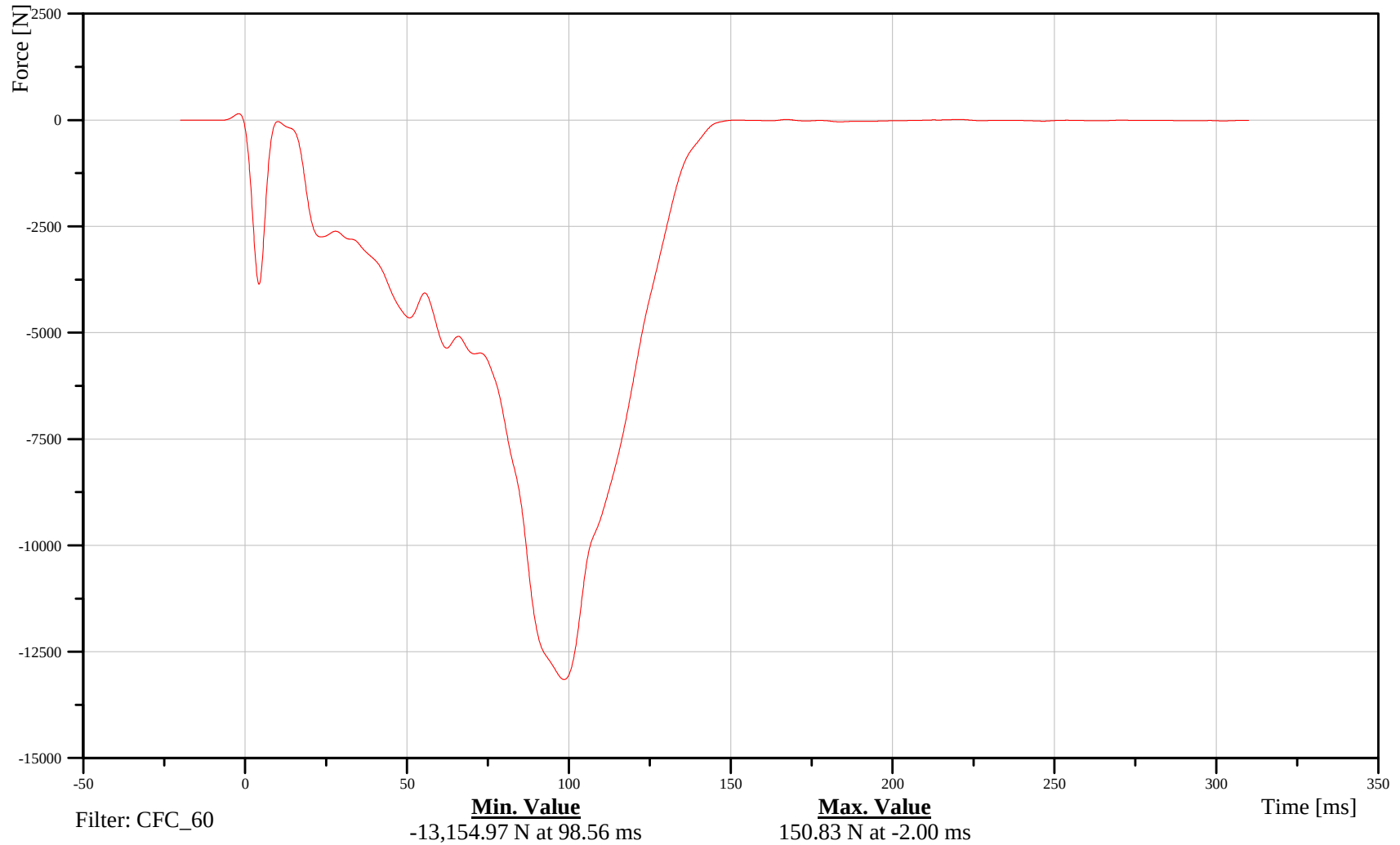
Date: 05/30/2006
Time: 14:51

Load Cell Row 5 Column 9

Customer: Volpe
Test Number: R60172

L0FBAR000085FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-194

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

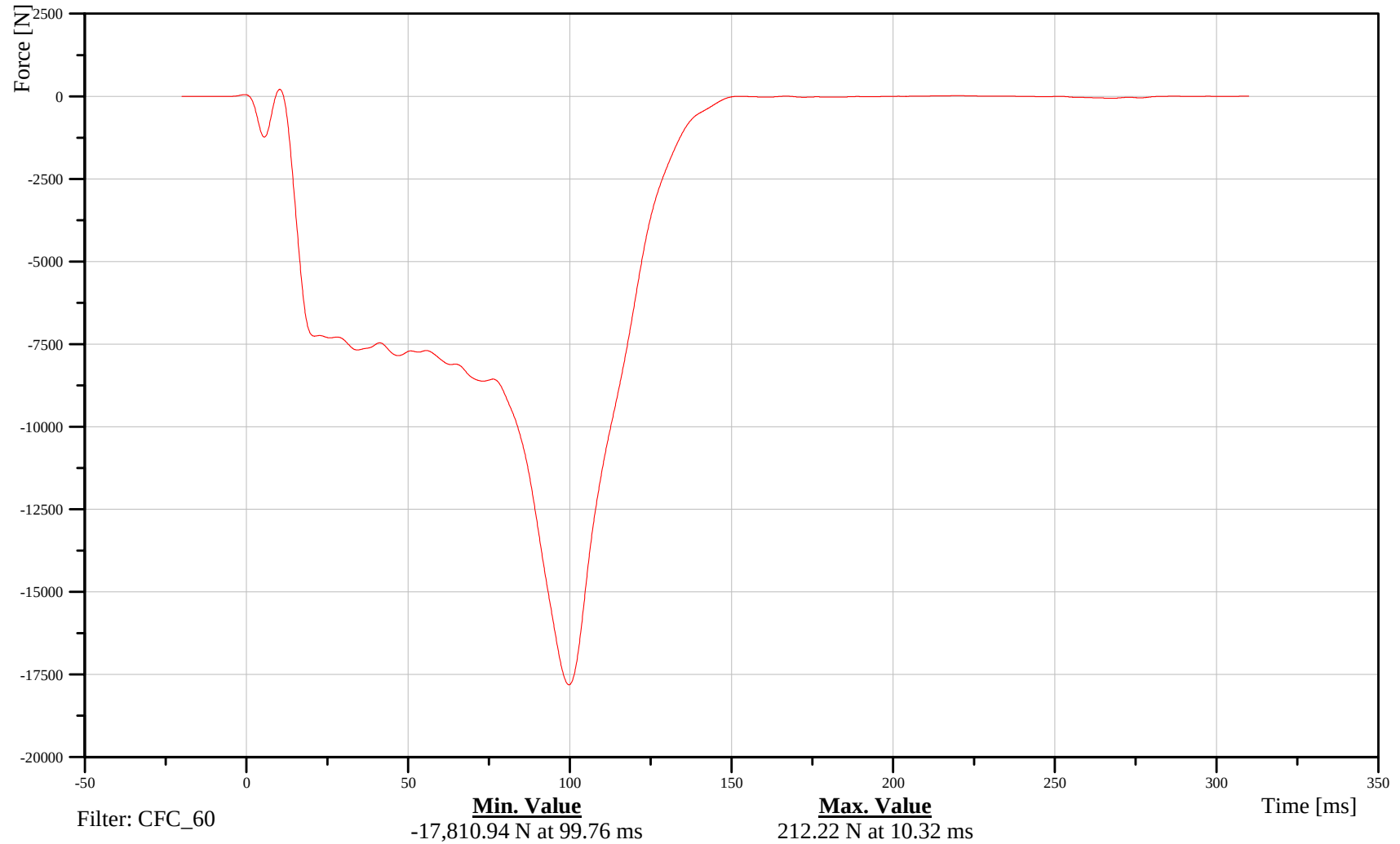
Date: 05/30/2006
Time: 14:51

Load Cell Row 6 Column 9

Customer: Volpe
Test Number: R60172

L0FBAR000086FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-195

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

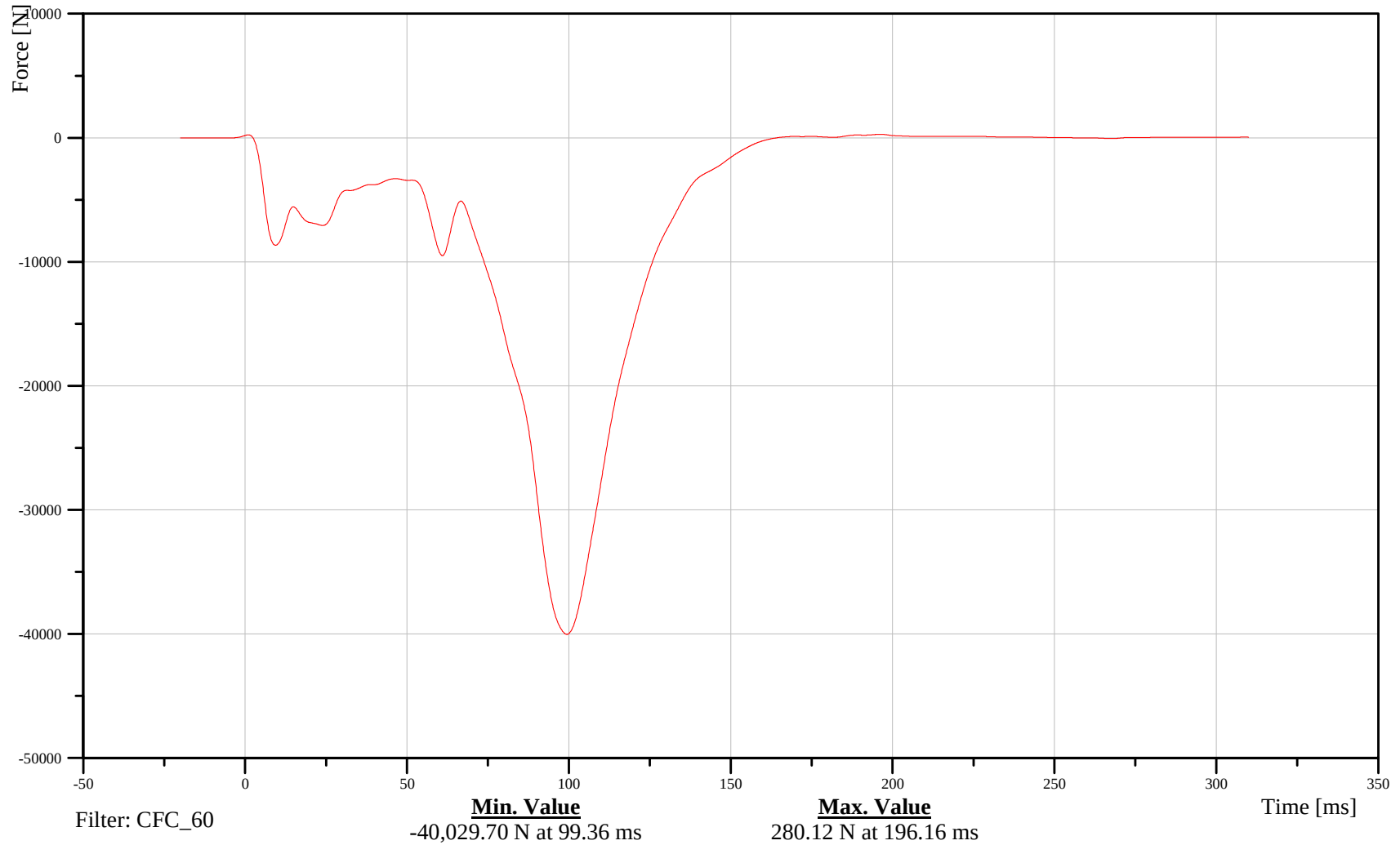
Date: 05/30/2006
Time: 14:51

Load Cell Row 7 Column 9

Customer: Volpe
Test Number: R60172

L0FBAR000087FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-196

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

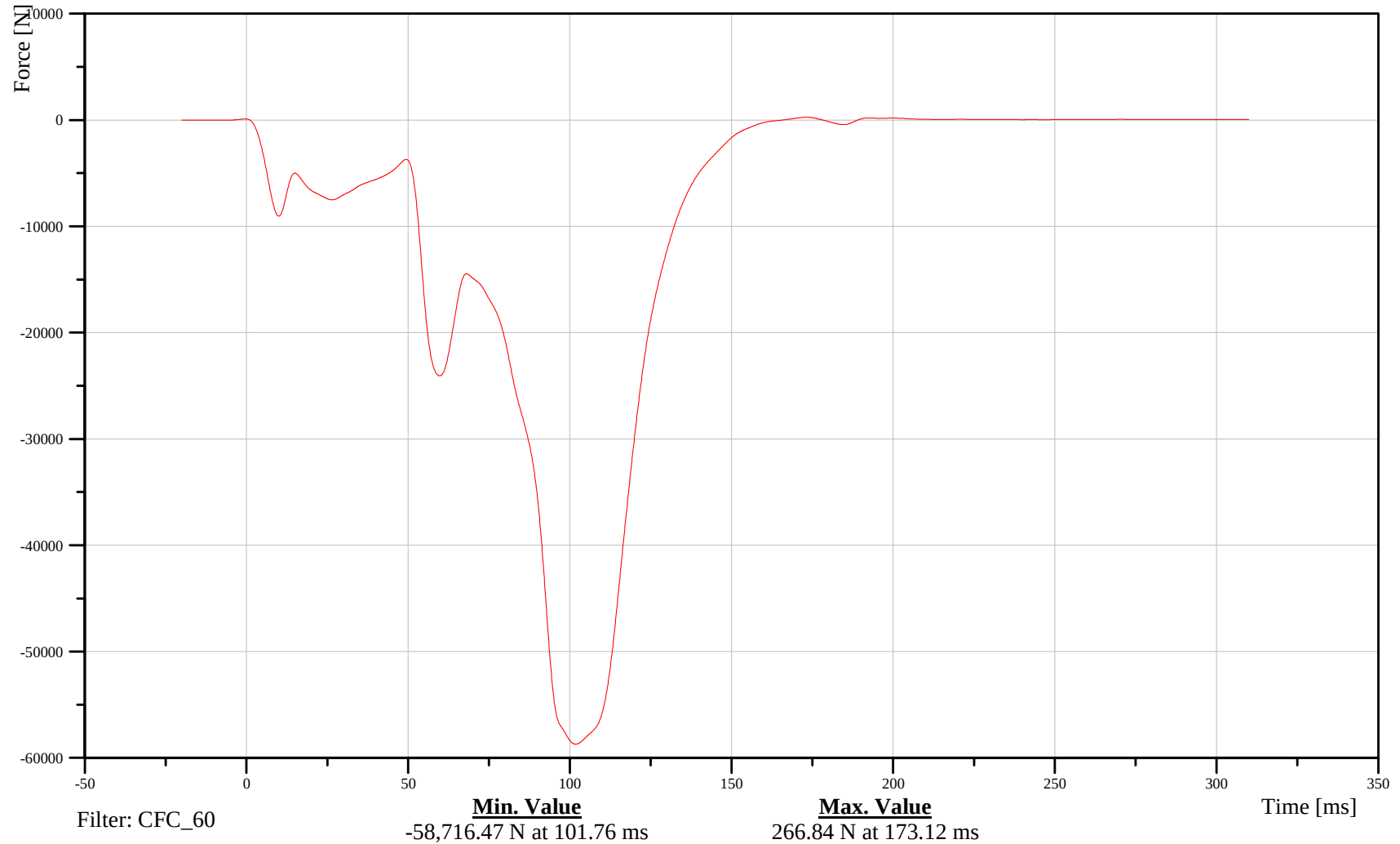
Date: 05/30/2006
Time: 14:51

Load Cell Row 8 Column 8

Customer: Volpe
Test Number: R60172

L0FBAR000088FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-197

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

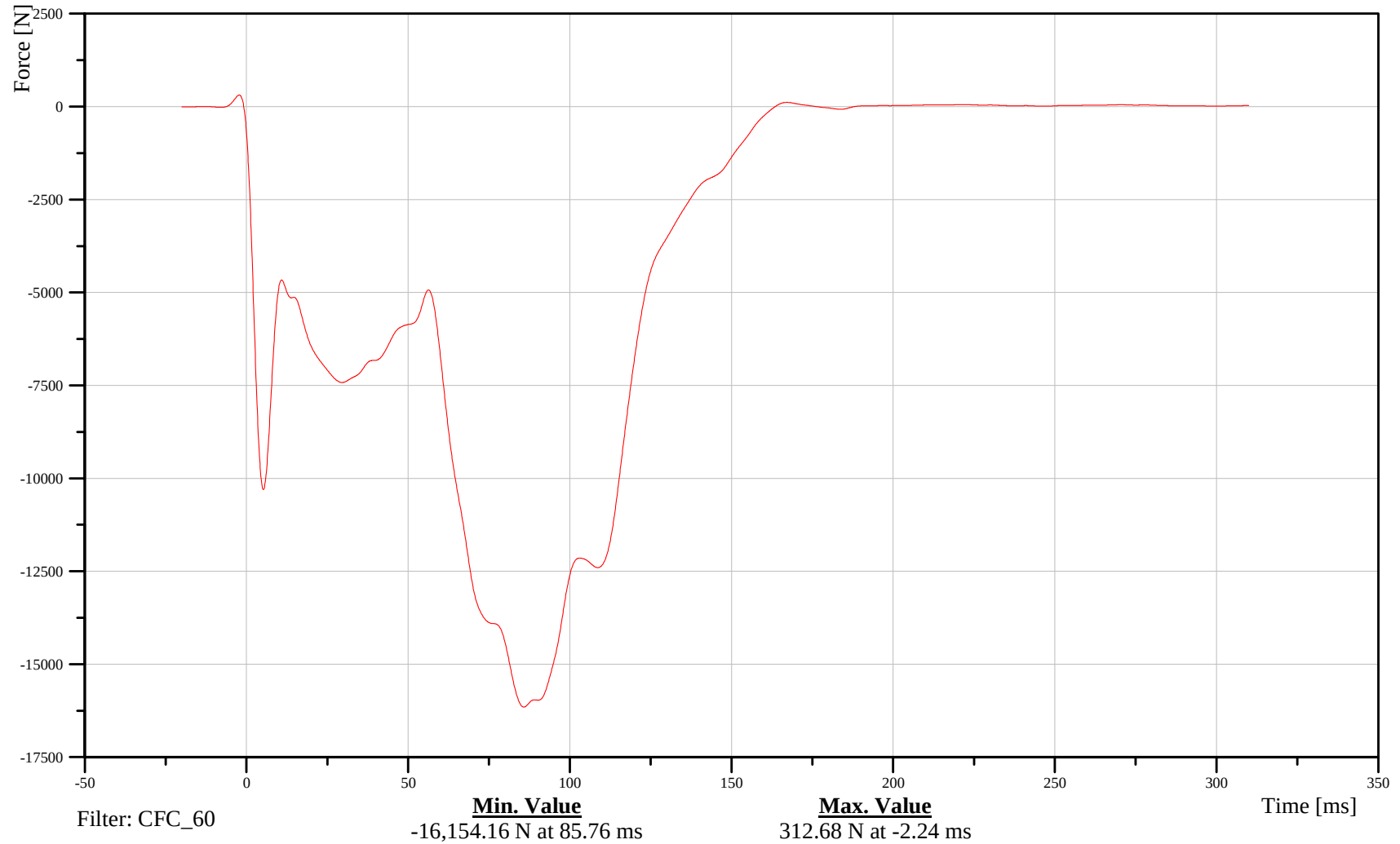
Date: 05/30/2006
Time: 14:51

Load Cell Row 9 Column 9

Customer: Volpe
Test Number: R60172

L0FBAR000089FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-198

060530



2006 Suzuki Forenza into Left 40% Offset Deformable LCB at 56 kph

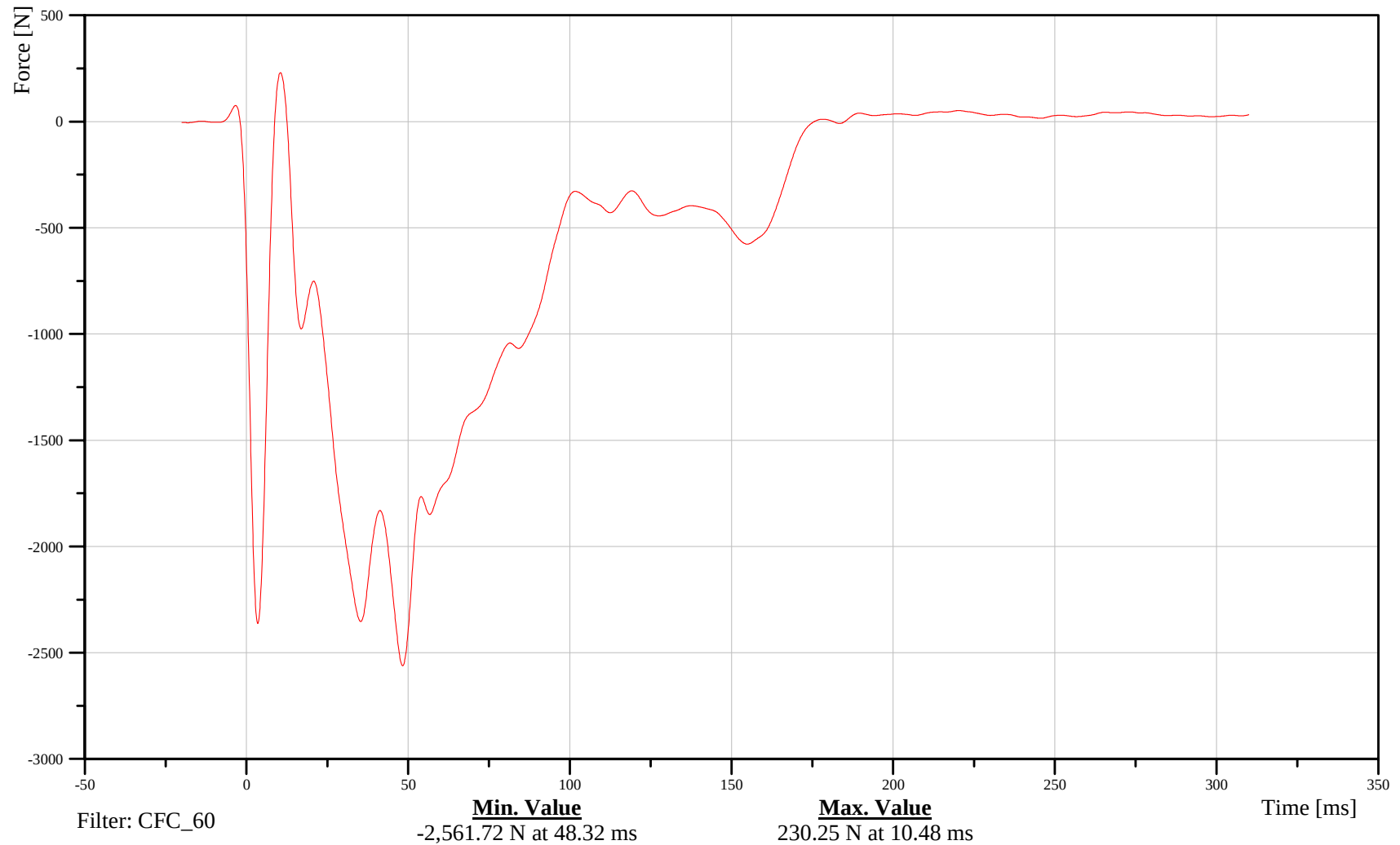
Date: 05/30/2006
Time: 14:51

Load Cell Row 10 Column 9

Customer: Volpe
Test Number: R60172

L0FBAR000090FOXD

TRC Inc. Test Lab: CTF
Test Number: 060530



B-199

060530

Appendix C

Dummy Certification Data

Pre-test Dummy Configuration and Performance Verification Data

Driver Dummy S/N: 202

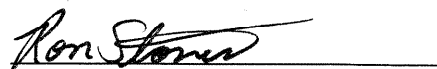
Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 202 Calibration No. 17

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	882	Yes
B	Shoulder Pivot Height	505.5 - 520.7	517	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	151	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	292	Yes
H	Skull Cap To Backline	40.6 - 45.7	43	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	340	Yes
J	Elbow Rest Height	190.5 - 210.8	198	Yes
K	Buttock Knee Length	579.1 - 604.5	597	Yes
L	Popliteal Height	429.3 - 454.7	440	Yes
M	Knee Pivot Height	485.1 - 500.4	495	Yes
N	Buttock Popliteal Length	452.1 - 477.5	458	Yes
O	Chest Depth	213.4 - 228.6	218	Yes
P	Foot Length	251.5 - 266.7	259	Yes
V	Shoulder Breadth	421.6 - 436.9	431	Yes
W	Foot Breadth	91.4 - 106.7	102	Yes
Y	Chest Circumference	970.3 - 1000.8	993	Yes
Z	Waist Circumference	835.7 - 866.1	844	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. 202 Certification No. 17-1

Test Date: 05/09/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	41 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	257.7 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	12.9 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician



Approved

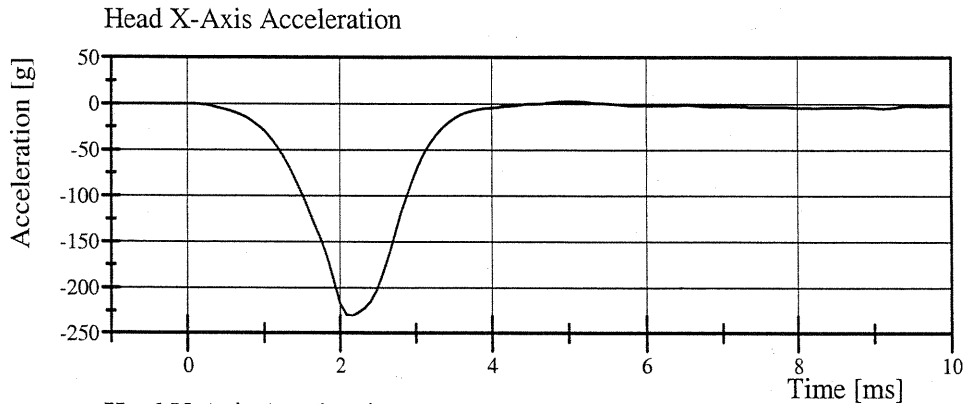


Transportation Research Center Inc.

Front Head Drop

HHH 50th Serial No. 202 Certification No. 17-1

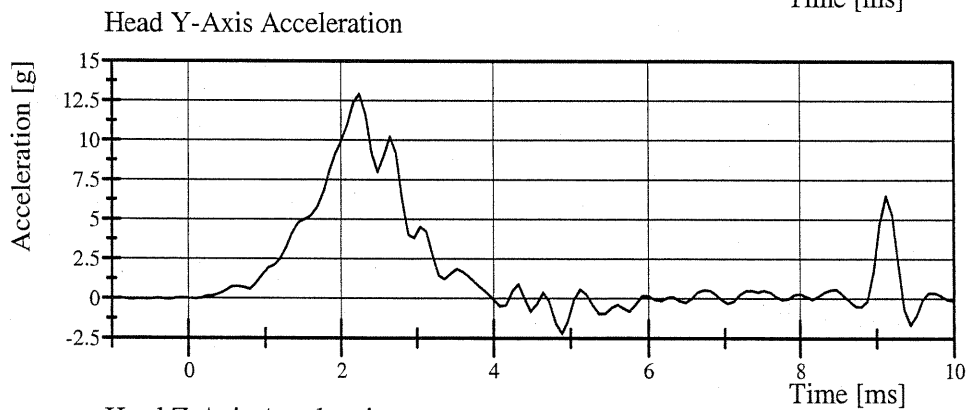
Test Date: 05/09/2006



Filter Class: CFC_1000

Max: 2.7 g at 5.0 ms

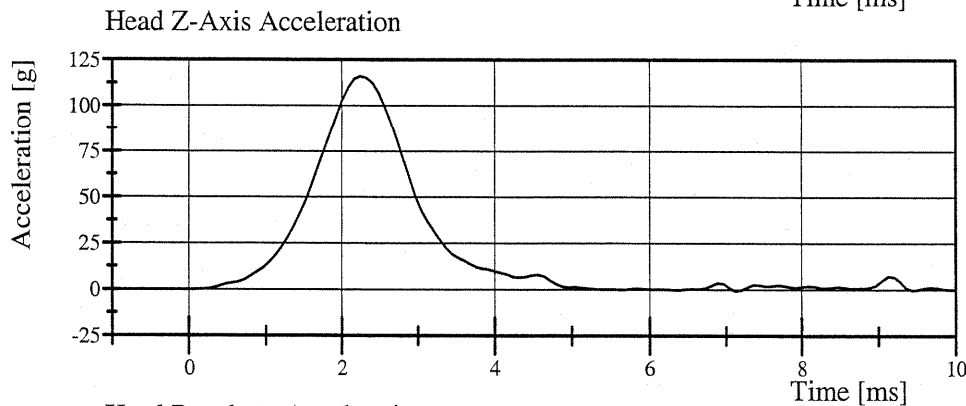
Min: -230.5 g at 2.2 ms



Filter Class: CFC_1000

Max: 12.9 g at 2.2 ms

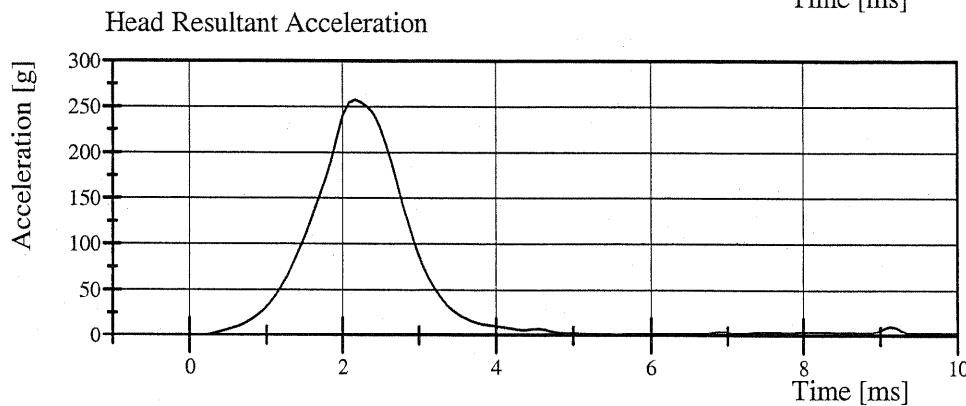
Min: -2.2 g at 4.9 ms



Filter Class: CFC_1000

Max: 116.1 g at 2.2 ms

Min: -0.7 g at 7.1 ms



Filter Class: CFC_1000

Max: 257.7 g at 2.2 ms

Min: 0.0 g at -1.0 ms

Transportation Research Center Inc.

Neck Flexion

HHH 50th Serial No. 202 Certification No. 17-1

Test Date: 05/09/2006

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.933 m/s	Yes
Pendulum Acceleration Decay			
Crossing -5g	34 - 42 ms	40.8 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-23.26 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-20.41 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-14.98 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-14.98 g	Yes
Total Head D-Plane Rotation			
Peak	(-64) - (-78) °	-69.4 °	Yes
Time of Peak	57 - 64 ms	57.9 ms	Yes
Total Head D-Plane Rotation			
Decay to 0°	113 - 128 ms	113.8 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	88 - 108 N·m	102.4 N·m	Yes
Time of Peak	47 - 58 ms	52.6 ms	Yes
Total Neck Occipital Condyles Moment			
Decay to 0 N·m	97 - 107 ms	98.0 ms	Yes

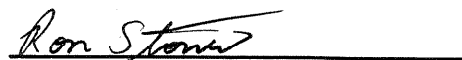
Test meets specifications.

Comments:

Technician



Approved



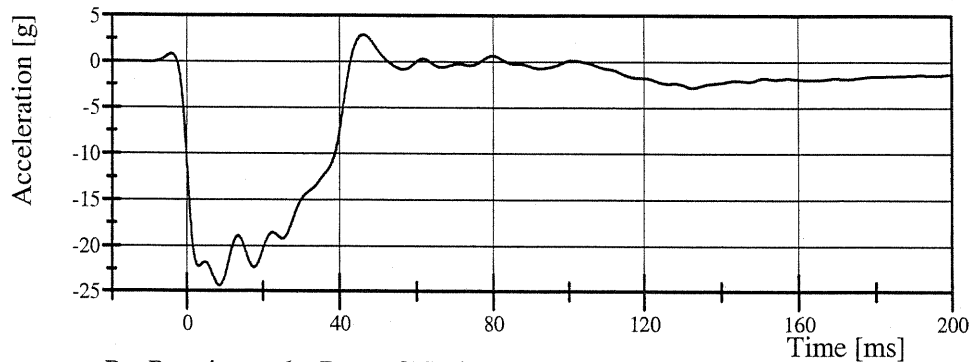
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 202 Certification No. 17-1

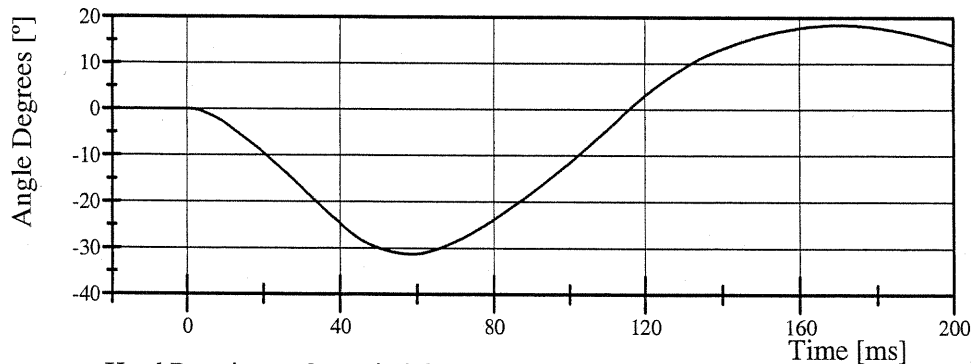
Test Date: 05/09/2006

Pendulum Acceleration



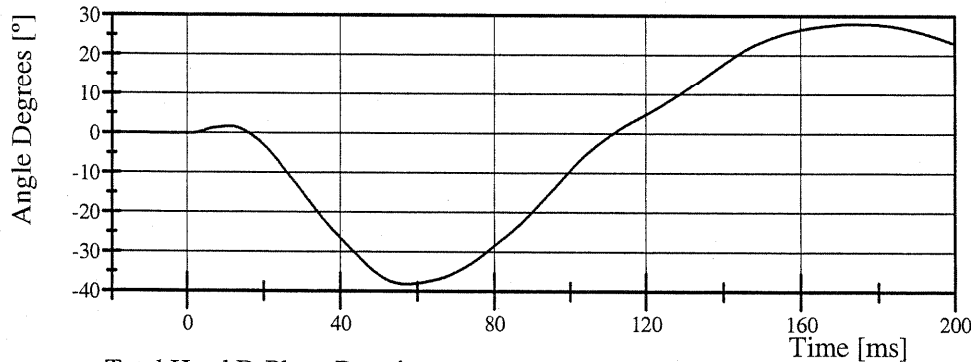
Filter Class: CFC_60
Max: 2.9 g at 46.2 ms
Min: -24.4 g at 8.5 ms

Pot Rotation at the Base of Neck



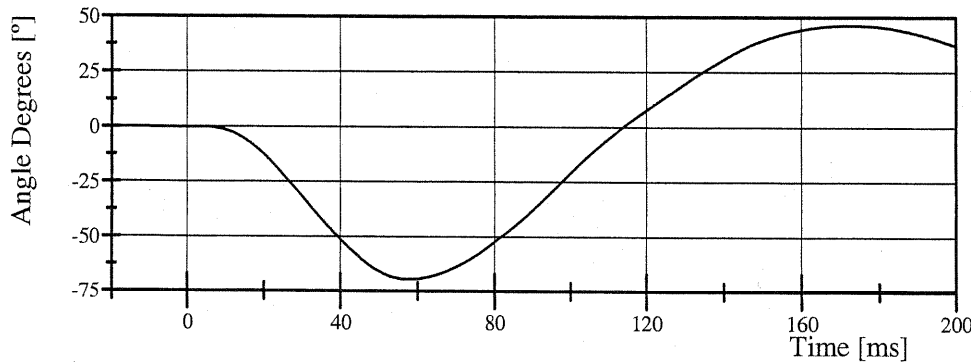
Filter Class: CFC_60
Max: 18.4 ° at 170.0 ms
Min: -31.3 ° at 58.9 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 28.0 ° at 173.8 ms
Min: -38.1 ° at 57.3 ms

Total Head D-Plane Rotation



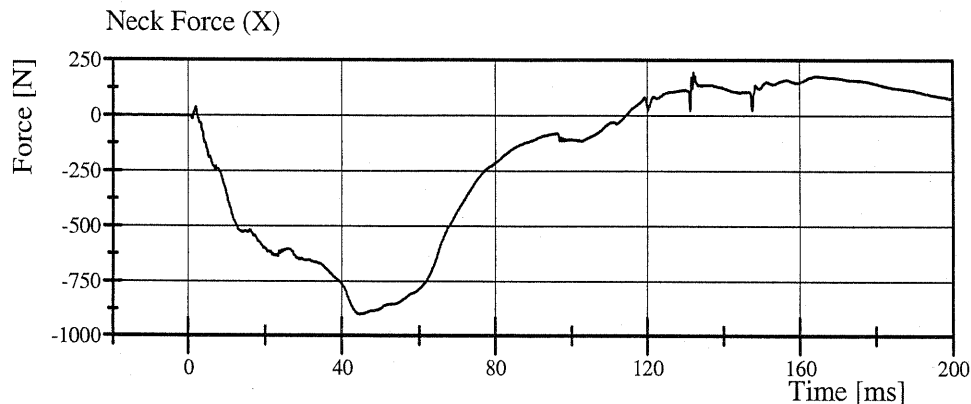
Filter Class: CFC_60
Max: 46.4 ° at 172.6 ms
Min: -69.4 ° at 57.9 ms

Transportation Research Center Inc.

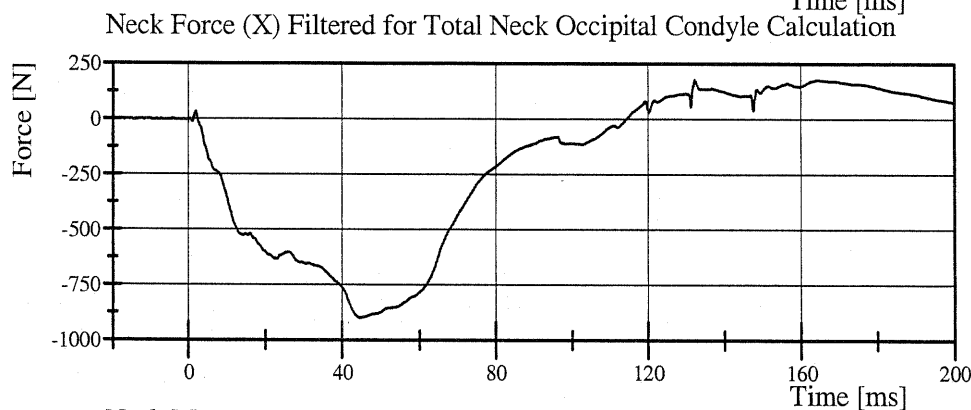
Neck Flexion

HIII 50th Serial No. 202 Certification No. 17-1

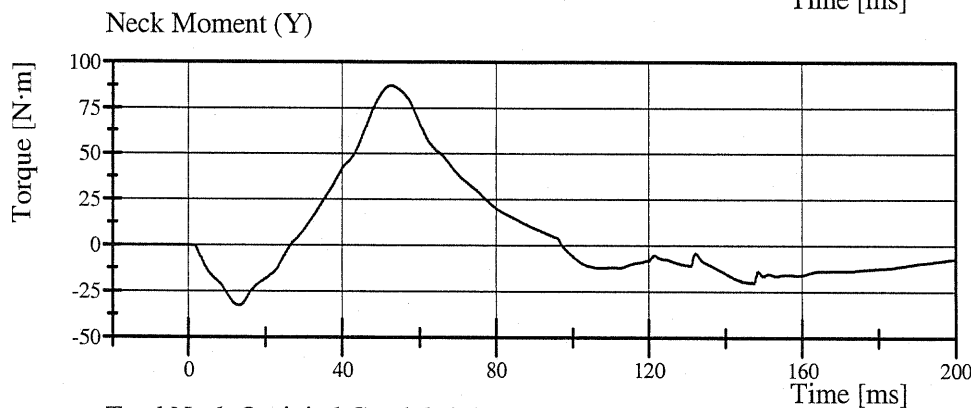
Test Date: 05/09/2006



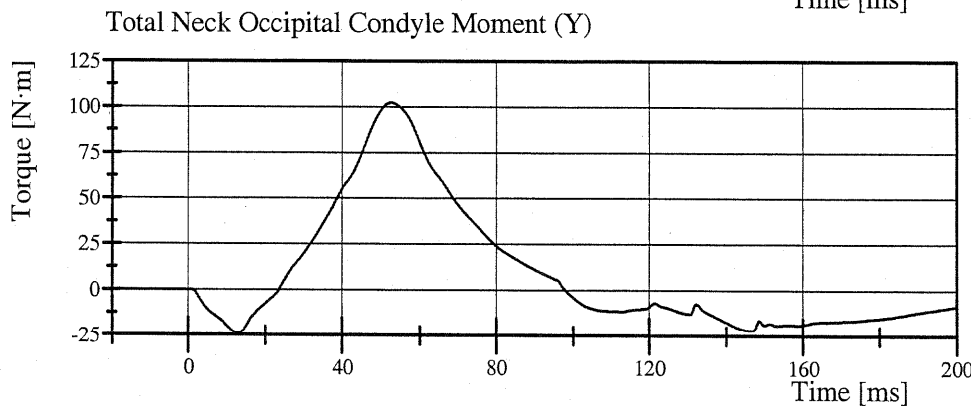
Filter Class: CFC_1000
Max: 195.7 N at 132.2 ms
Min: -898.9 N at 44.7 ms



Filter Class: CFC_600
Max: 177.7 N at 164.4 ms
Min: -898.6 N at 44.6 ms



Filter Class: CFC_600
Max: 87.3 N·m at 52.6 ms
Min: -32.8 N·m at 13.0 ms



Filter Class: CFC_600
Max: 102.4 N·m at 52.6 ms
Min: -23.8 N·m at 12.8 ms

Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 202 Certification No. 17-1

Test Date: 05/09/2006

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-5.999 m/s	Yes
Pendulum Acceleration Decay			
Crossing 5g	38 - 46 ms	42.3 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	18.71 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	15.80 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	14.24 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	14.24 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	95.9 °	Yes
Time of Peak	72 - 82 ms	76.8 ms	Yes
Total Head D-Plane Rotation			
Decay to 0°	147 - 174 ms	156.6 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-53) - (-80) N·m	-65.1 N·m	Yes
Time of Peak	65 - 79 ms	71.9 ms	Yes
Total Neck Occipital Condyles Moment			
Decay to 0 N·m	120 - 148 ms	141.8 ms	Yes

Test meets specifications.

Comments:

Technician



Approved



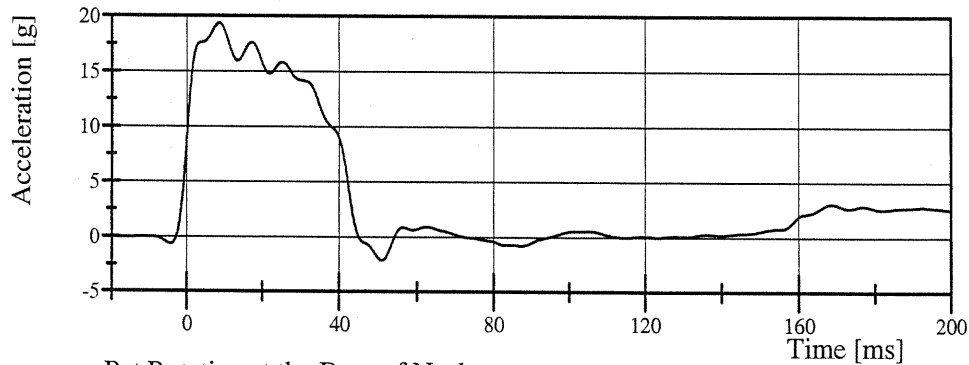
Transportation Research Center Inc.

Neck Extension

HHH 50th Serial No. 202 Certification No. 17-1

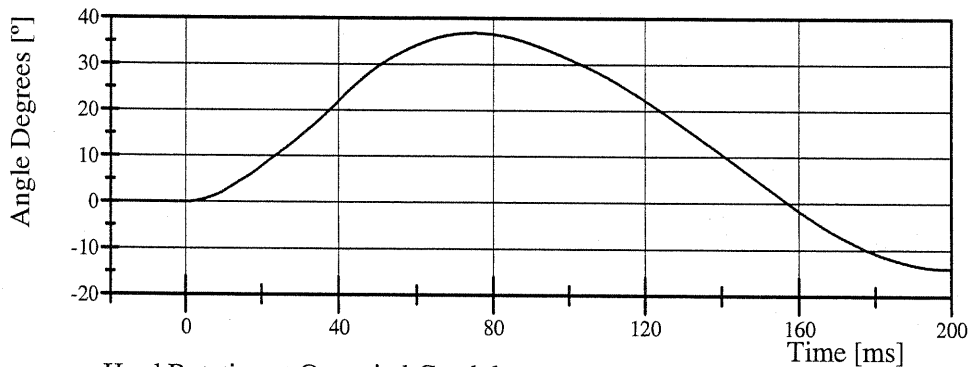
Test Date: 05/09/2006

Pendulum Acceleration



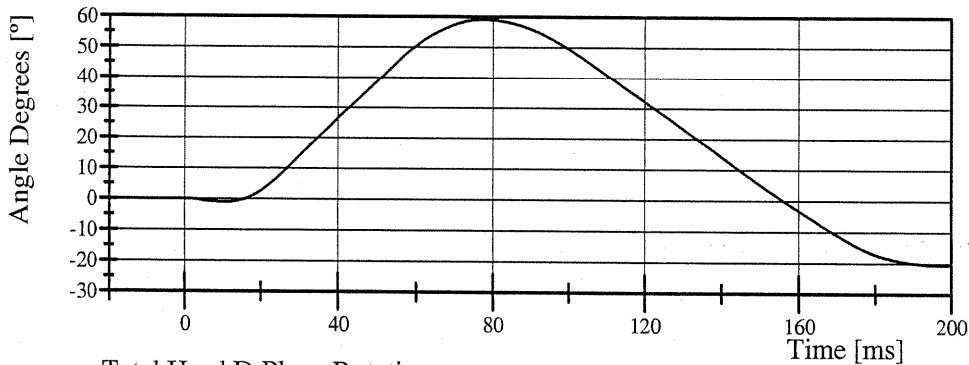
Filter Class: CFC_60
Max: 19.4 g at 8.6 ms
Min: -2.1 g at 50.9 ms

Pot Rotation at the Base of Neck



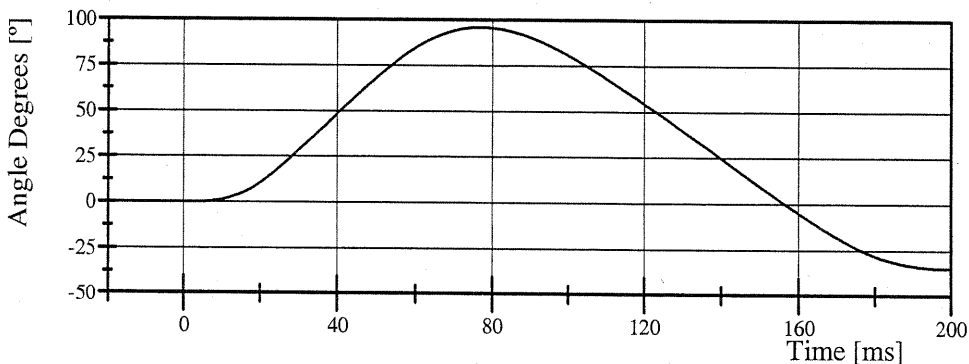
Filter Class: CFC_60
Max: 36.8 ° at 75.0 ms
Min: -14.1 ° at 199.3 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 59.1 ° at 77.6 ms
Min: -20.5 ° at 197.5 ms

Total Head D-Plane Rotation



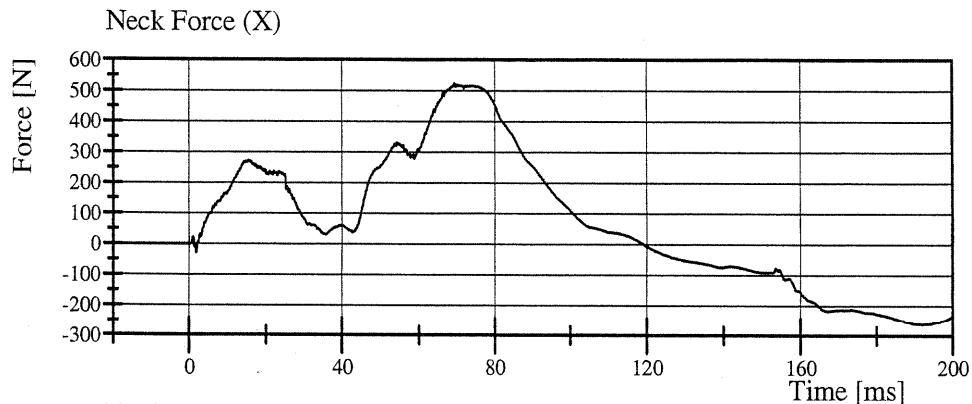
Filter Class: CFC_60
Max: 95.9 ° at 76.8 ms
Min: -34.6 ° at 198.4 ms

Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 202 Certification No. 17-1

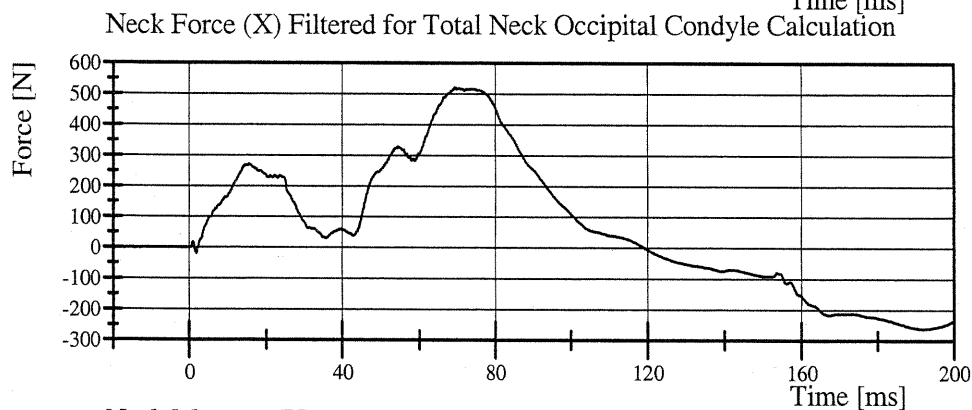
Test Date: 05/09/2006



Filter Class: CFC_1000

Max: 524.3 N at 69.5 ms

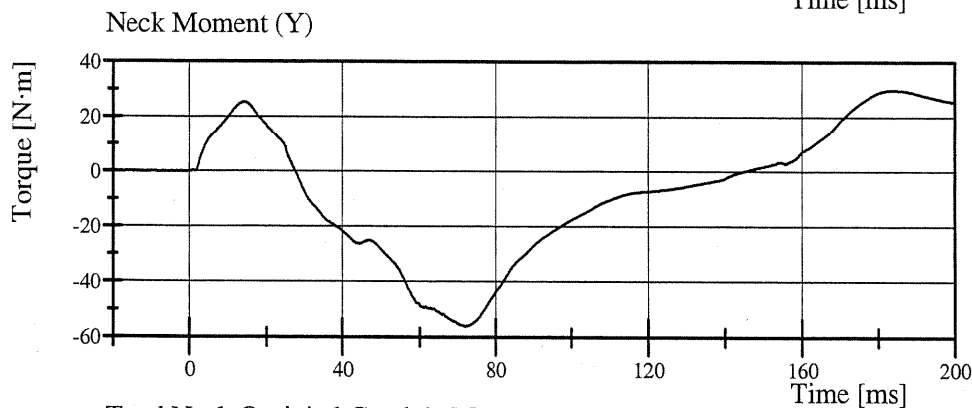
Min: -262.3 N at 191.8 ms



Filter Class: CFC_600

Max: 521.1 N at 69.5 ms

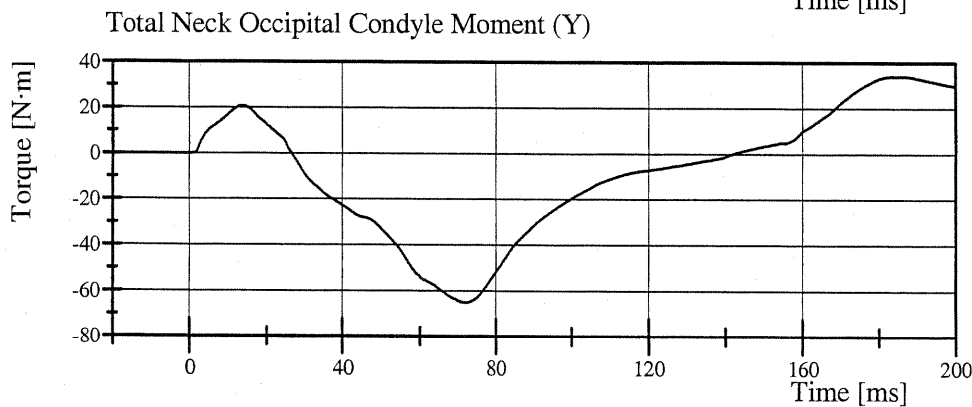
Min: -262.1 N at 191.9 ms



Filter Class: CFC_600

Max: 29.9 N·m at 184.0 ms

Min: -56.1 N·m at 71.9 ms



Filter Class: CFC_600

Max: 34.2 N·m at 185.0 ms

Min: -65.1 N·m at 71.9 ms

Transportation Research Center Inc.

Front Thorax

HIH 50th Serial No. 202 Certification No. 17-1

Test Date: 05/25/2006

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	47 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.600 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,845.6 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-65.92 mm	Yes
Internal Hysteresis	65 - 85 %	75.1 %	Yes

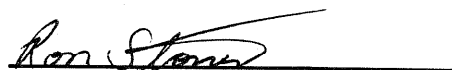
Test meets specifications.

Comments:

Technician



Approved



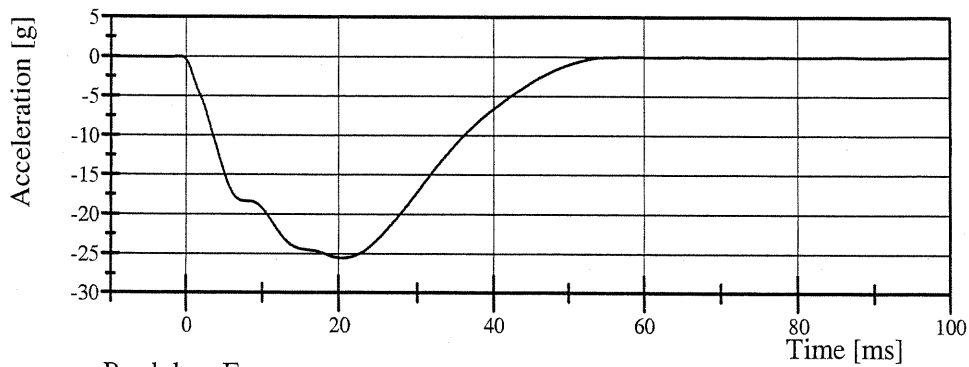
Transportation Research Center Inc.

Front Thorax

HHH 50th Serial No. 202 Certification No. 17-1

Test Date: 05/25/2006

Pendulum Acceleration

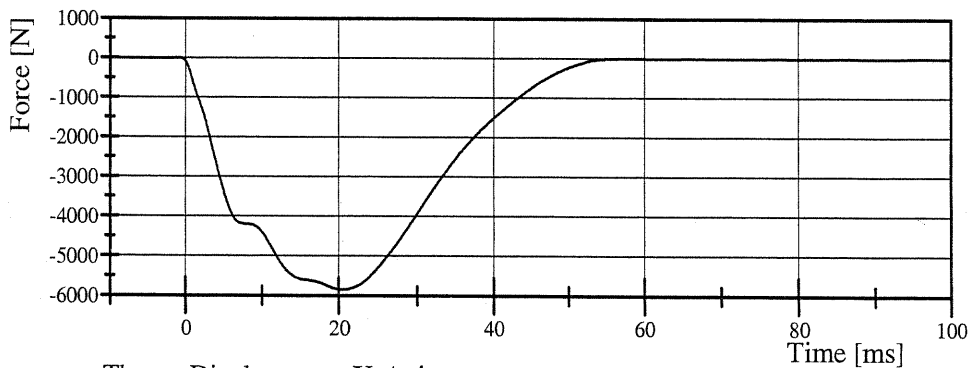


Filter Class: CFC_180

Max: 0.0 g at -0.9 ms

Min: -25.5 g at 20.5 ms

Pendulum Force

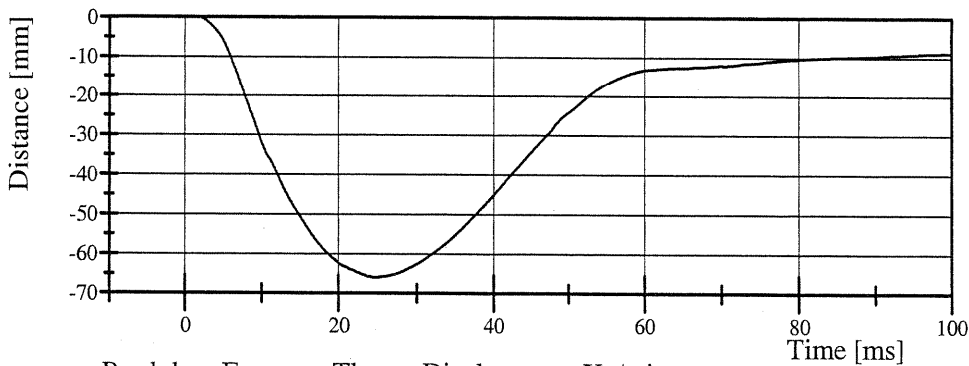


Filter Class: CFC_180

Max: 7.9 N at -0.9 ms

Min: -5,845.6 N at 20.5 ms

Thorax Displacement X-Axis

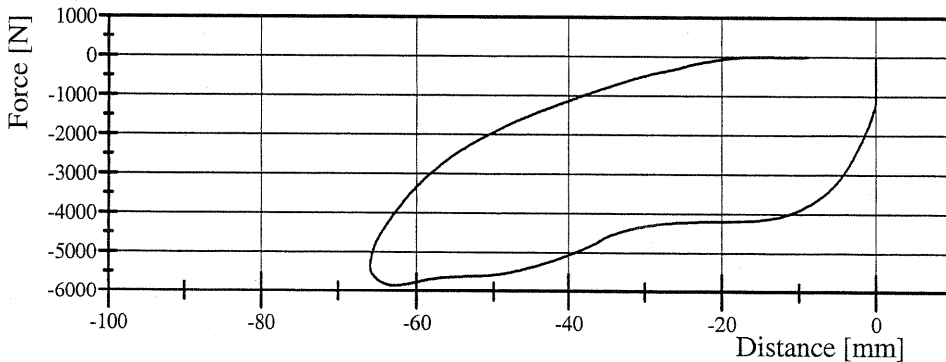


Filter Class: CFC_600

Max: 0.0 mm at 1.7 ms

Min: -65.9 mm at 24.6 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180

Max: 7.9 N at -0.0 mm

Min: -5,845.6 N at -62.9 mm

Applied Safety Technologies Corp.

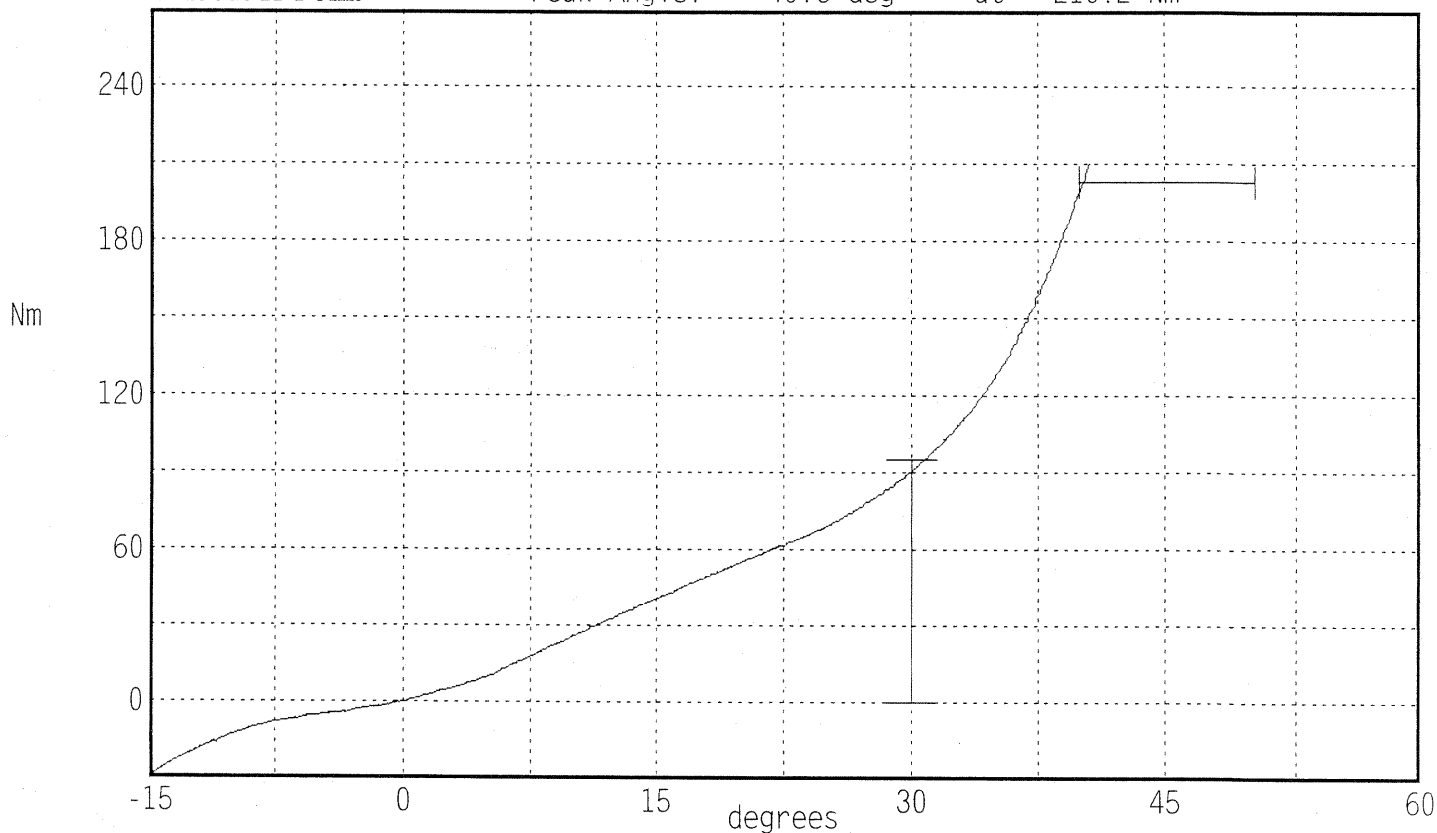
Hybrid III Hip Range of Motion

Serial Number: 202L
Test Number: 202C17
Comments:

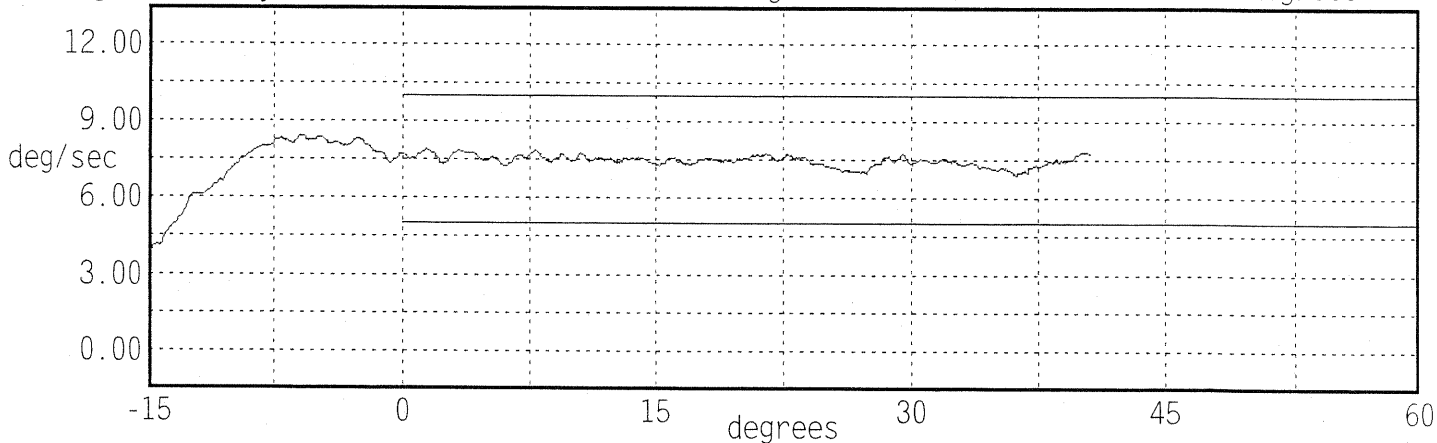
Date: 05/09/2006
Time: 14:44

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.5 °C Pass
Humidity	10 - 70	41 % Pass
Moment at 30 deg	<= 94.9	90.7 Nm Pass
Angle at 203 Nm	40.0 - 50.0	40.2 deg Pass
Average Velocity	5.0 - 10.0	7.5 deg/sec Pass

Moment About H-Point
Peak Moment: 210.2 Nm at 40.6 deg
Peak Angle: 40.6 deg at 210.2 Nm



Angular Velocity Max: 7.9 deg/sec Min: 7.0 deg/sec



Applied Safety Technologies Corp.

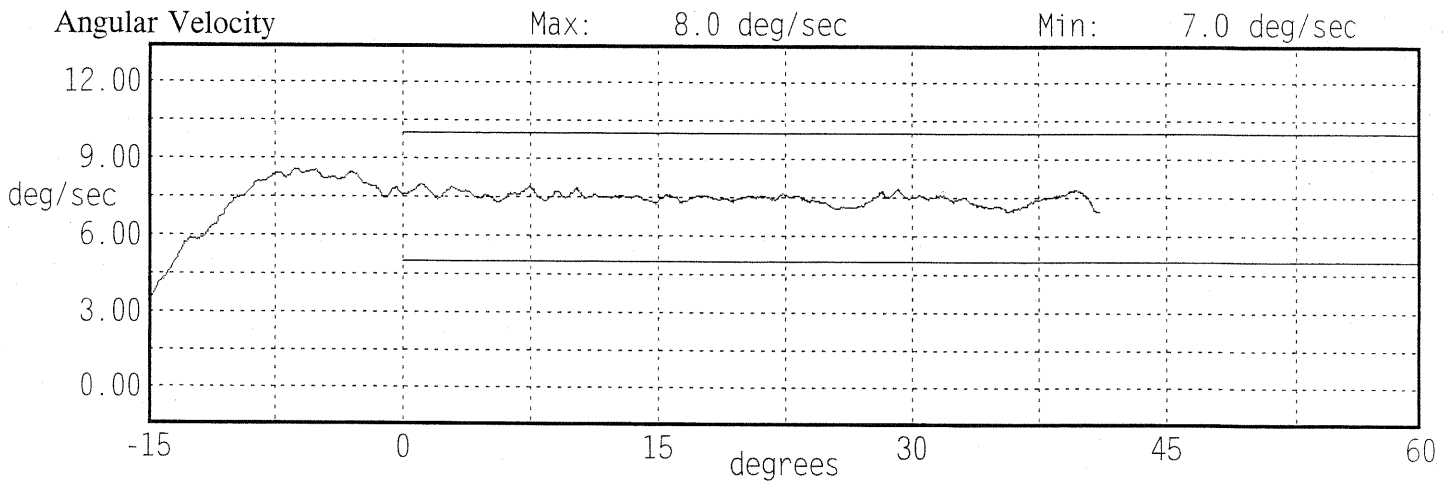
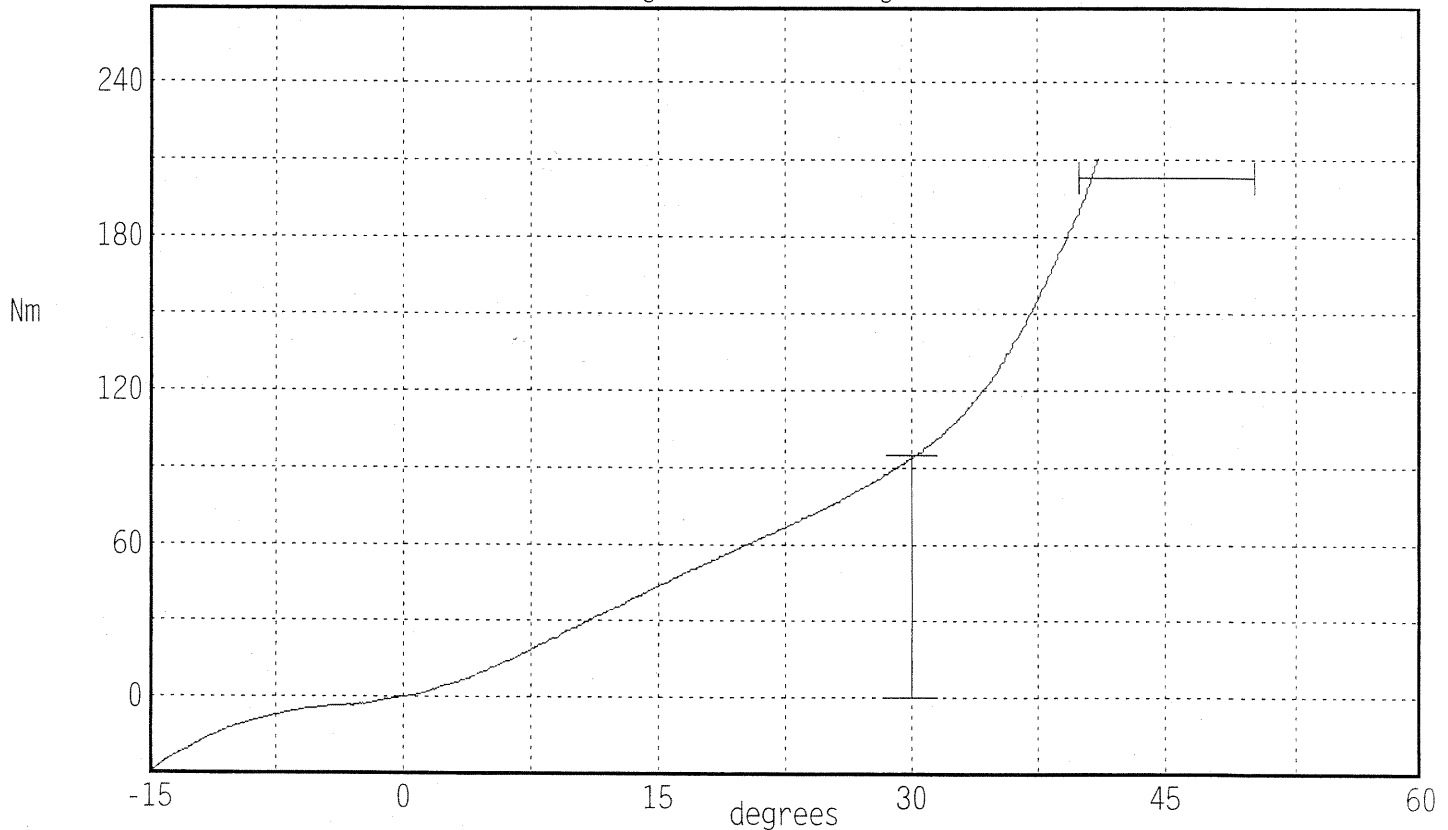
Hybrid III Hip Range of Motion

Serial Number: 202R
Test Number: 202C17
Comments:

Date: 05/09/2006
Time: 14:39

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.5 °C	Pass	
Humidity	10 - 70	41 %	Pass	
Moment at 30 deg	<= 94.9	94.2 Nm	Pass	
Angle at 203 Nm	40.0 - 50.0	40.7 deg	Pass	
Average Velocity	5.0 - 10.0	7.5 deg/sec	Pass	

Moment About H-Point
Peak Moment: 210.5 Nm at 41.1 deg
Peak Angle: 41.1 deg at 210.5 Nm



Transportation Research Center Inc.

Left Knee Femur Response Test

HIII 50th Serial No. 202 Certification No. 17-1

Test Date: 05/09/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	42 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.102 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,416.24 N	Yes

Test meets specifications.

Comments:

Technician



Approved

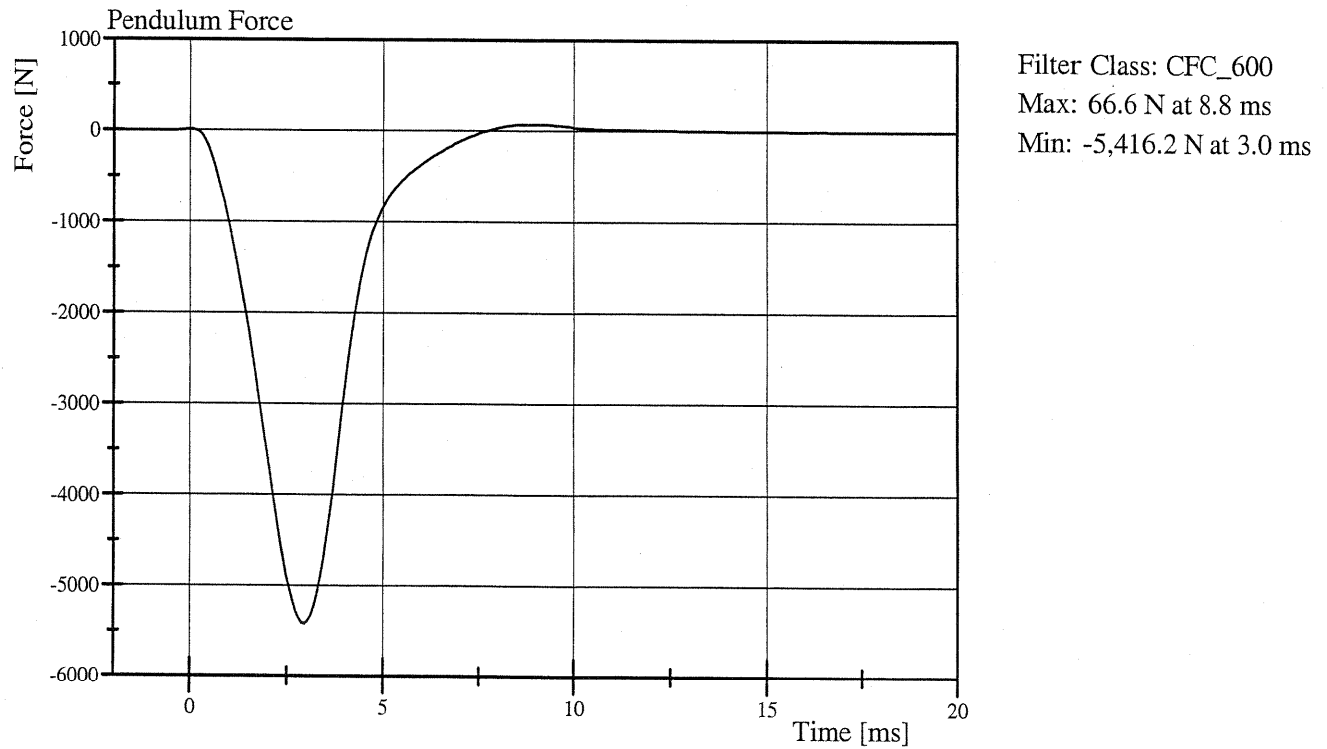
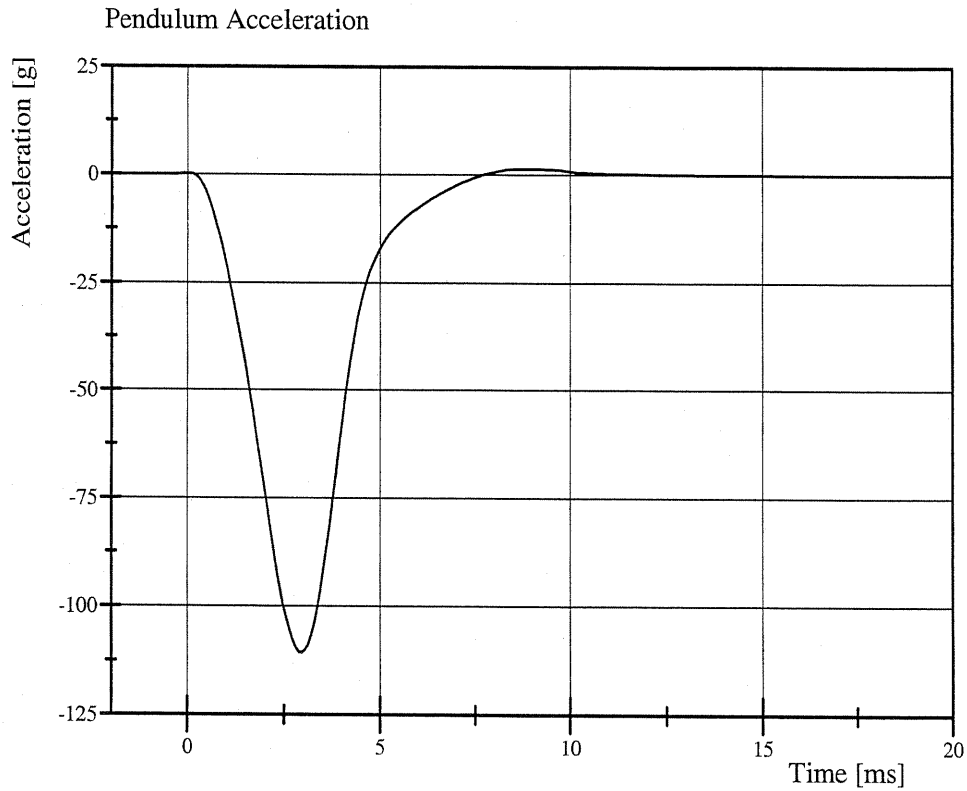


Transportation Research Center Inc.

Left Knee Femur Response Test

HIII 50th Serial No. 202 Certification No. 17-1

Test Date: 05/09/2006



Transportation Research Center Inc.

Right Knee Femur Response Test

HIII 50th Serial No. 202 Certification No. 17-3

Test Date: 05/09/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	43 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.083 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,736.42 N	Yes

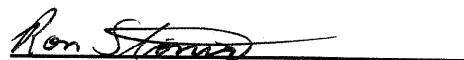
Test meets specifications.

Comments:

Technician

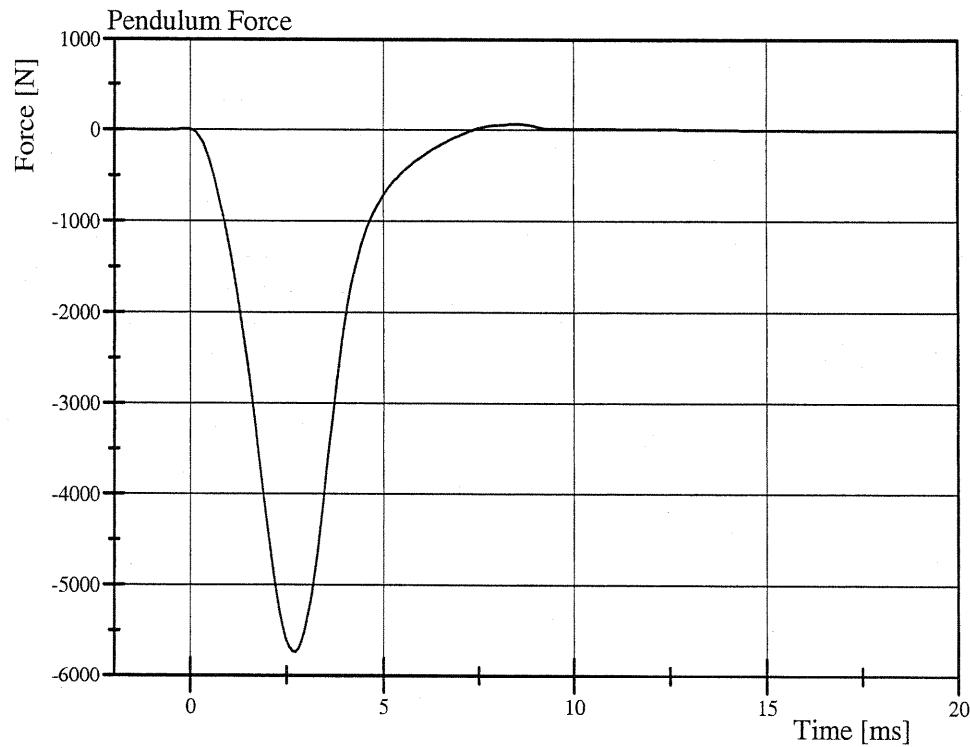
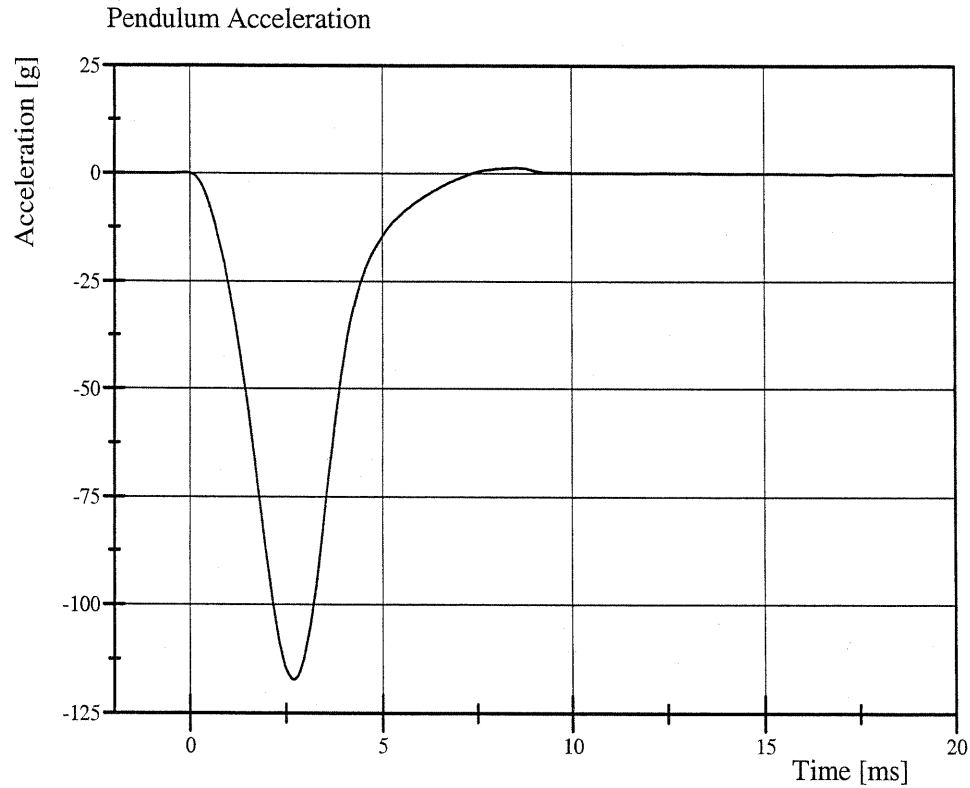


Approved



Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 202 Certification No. 17-3
Test Date: 05/09/2006



Transportation Research Center Inc.

Left Knee Slider

HIII 50th Serial No. 202 Certification No. 17-2

Test Date: 05/12/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Probe Velocity	2.70 - 2.80 m/s	2.766 m/s	Yes
Force Peak at 10.0 mm Deflection	(-1,260) - (-1,720) N	-1,553.1 N	Yes
Force Peak at 18.0 mm Deflection	(-2,270) - (-3,100) N	-3,051.5 N	Yes

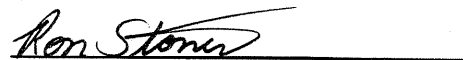
Test meets specifications.

Comments:

Technician



Approved



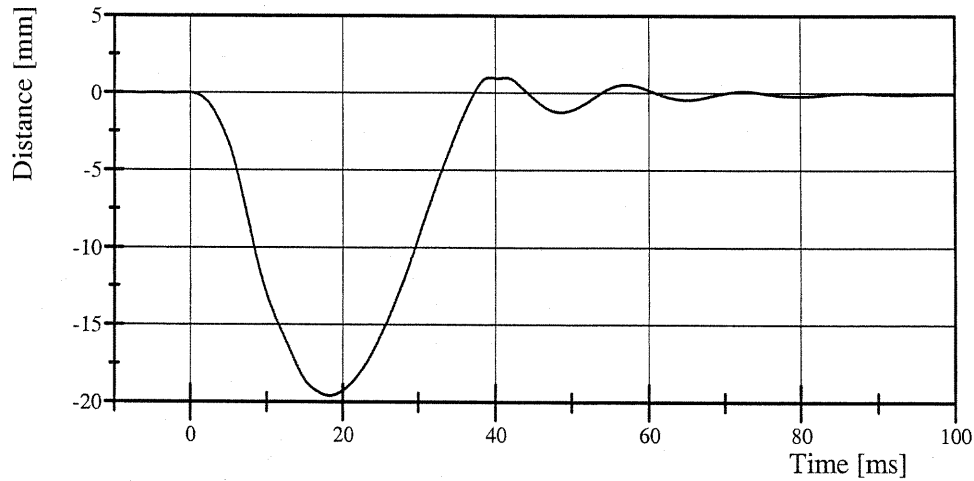
Transportation Research Center Inc.

Left Knee Slider

HIII 50th Serial No. 202 Certification No. 17-2

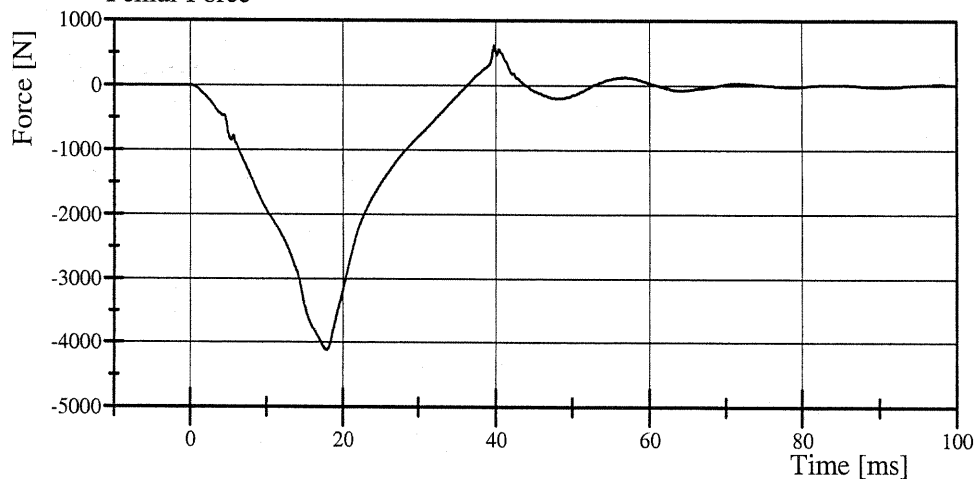
Test Date: 05/12/2006

Knee Slider Displacement



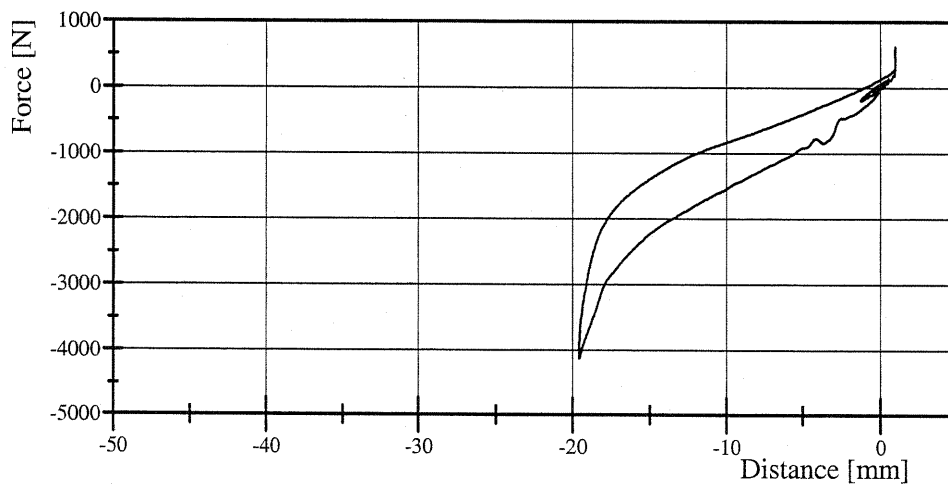
Filter Class: CFC_180
Max: 1.0 mm at 39.3 ms
Min: -19.6 mm at 18.2 ms

Femur Force



Filter Class: CFC_600
Max: 619.0 N at 39.8 ms
Min: -4,117.2 N at 17.8 ms

Femur Force vs. Knee Slider Displacement



Filter Class: CFC_600
Max: 619.0 N at 1.0 mm
Min: -4,117.2 N at -19.6 mm

Transportation Research Center Inc.

Right Knee Slider

HIII 50th Serial No. 202 Certification No. 17-1

Test Date: 05/09/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Probe Velocity	2.70 - 2.80 m/s	2.728 m/s	Yes
Force Peak at 10.0 mm Deflection	(-1,260) - (-1,720) N	-1,357.6 N	Yes
Force Peak at 18.0 mm Deflection	(-2,270) - (-3,100) N	-2,897.5 N	Yes

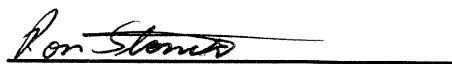
Test meets specifications.

Comments:

Technician



Approved



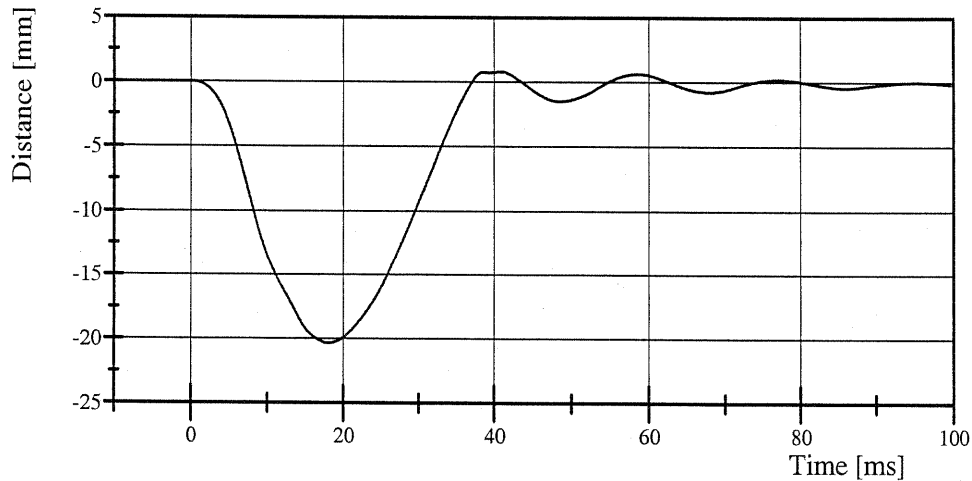
Transportation Research Center Inc.

Right Knee Slider

HIII 50th Serial No. 202 Certification No. 17-1

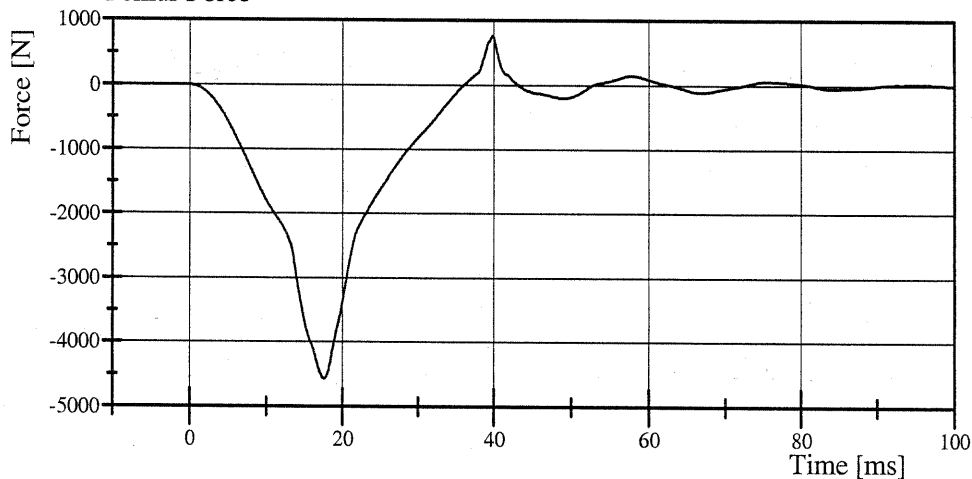
Test Date: 05/09/2006

Knee Slider Displacement



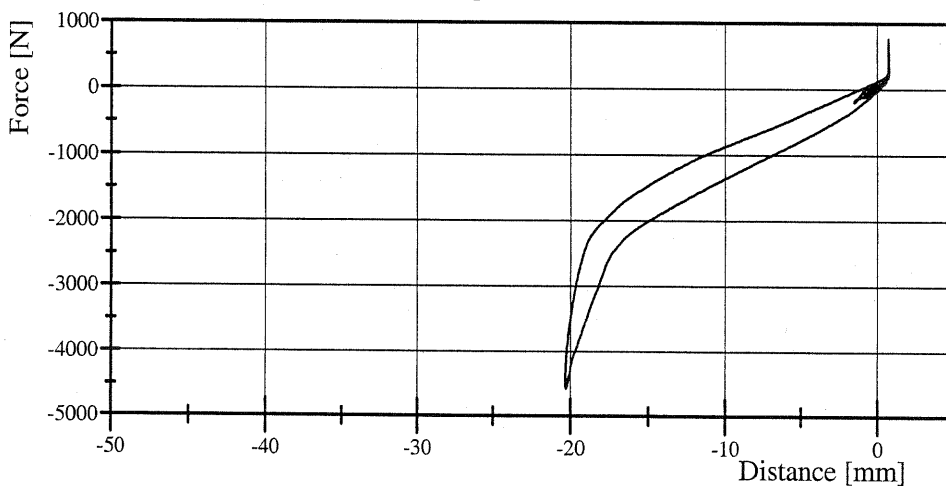
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Min: -20.3 mm at 18.1 ms

Femur Force



Filter Class: CFC_600
Max: 763.5 N at 39.8 ms
Min: -4,563.1 N at 17.6 ms

Femur Force vs. Knee Slider Displacement



Filter Class: CFC_600
Max: 763.5 N at 0.7 mm
Min: -4,563.1 N at -20.3 mm

Ball of Foot Impact				Probe weight 5.00 +/- .02kg or 11.02 +/- .04lbs		Temperature	Humidity	Impact Speed	Peak Tibia Compressive Load	Peak Ankle Resistive Moment	Peak Ankle Y-axis Rotation	Time between tests	
					%		m/sec	N	Nm	deg			
Test				Soak for 4 hours @ 69° - 72° F			Class 600	Class 600	Class 180	30 min			
Test No.	Leg No.	Performer	Date of Cal.				2956 - 3613	77.1 - 94.2	32.7 - 39.9				
LX0045NOV302005DORSI_02	LX0045	RP	11/30/2005	70	31	5.08	-3191.79	78.31	33.43				
LX0046DEC012005DORSI_02	LX0046	RP	12/1/2005	70	33	5.08	-3173.77	81.16	34.41				

Heel Impact				Probe weight 5.00 +/- .02kg or 11.02 +/- .04lbs		Temperature	Humidity	Impact Speed	Peak Tibia Compressive Load	Time between tests	
							%	m/sec	N		
						Soak for 4 hours @ 69° - 72° F			Class 600	30 min	Comments
Test No.	Leg No.	Test Performer	Date of Cal.						N/A		
LX0045DEC052005HEEL_01	LX0045	RP	12/5/2005			70	37	3.91	-3291.55		
LX0046DEC012005HEEL_05	LX0046	RP	12/1/2005			70	35	3.91	-3864.23		

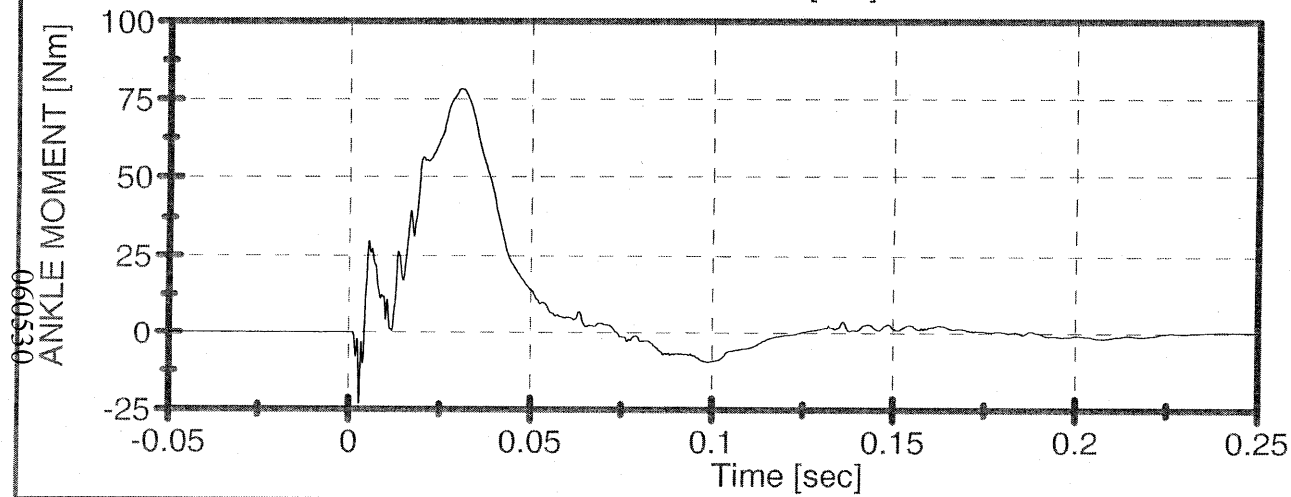
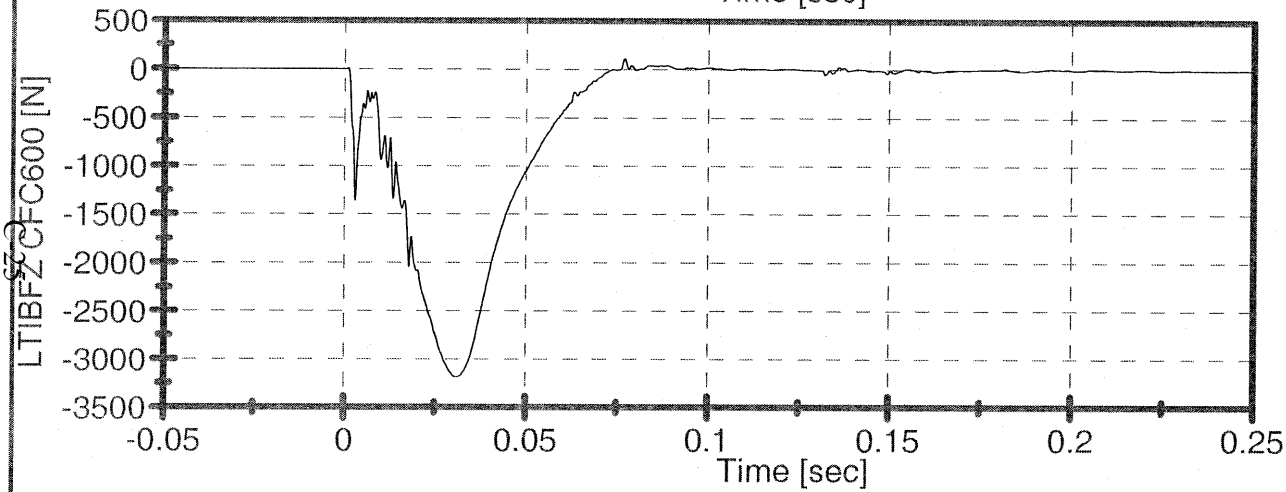
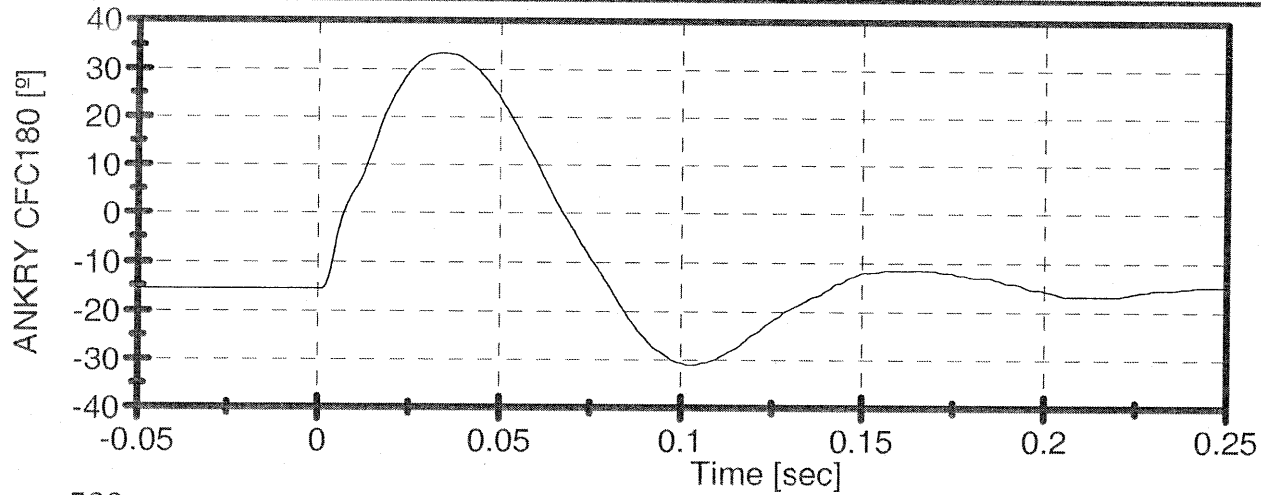
24

Inversion				Probe weight 5.00 +/- .02kg or 11.02 +/- .04lbs	Temperature	Humidity	Impact Speed	Peak Tibia Compressive Load	Peak Ankle Resistive Moment	Peak Ankle X-axis Rotation	Time between tests	Comments
						%	m/sec	N	Nm	deg		
				Soak for 4 hours @ 69° - 72° F			Class 600	Class 600	Class 180	30 min		
Test No.	Leg No.	Test Performer	Date of Cal.				N/A	1.9 - 2.1	552 - 675		36.3 - 44.4	
LX0045NOV302005INVER_01	LX0045	RP	11/30/2005	70	31	1.95	-549.26	38.66	-34.29			
LX0046DEC012005INVER_01	LX0046	RP	12/1/2005	70	32	1.95	-586.6	-42.18	33.37			

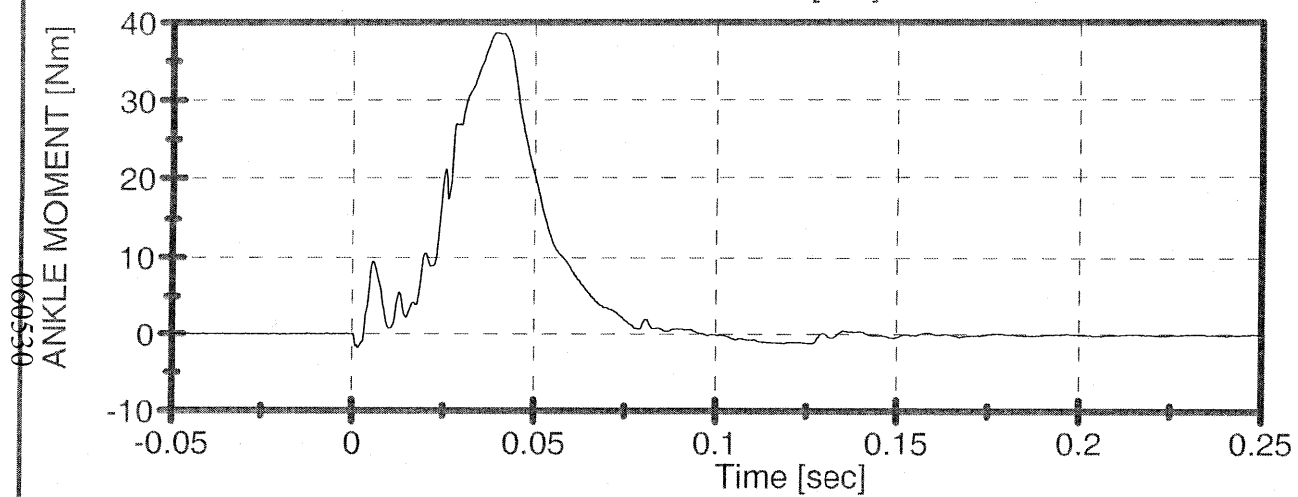
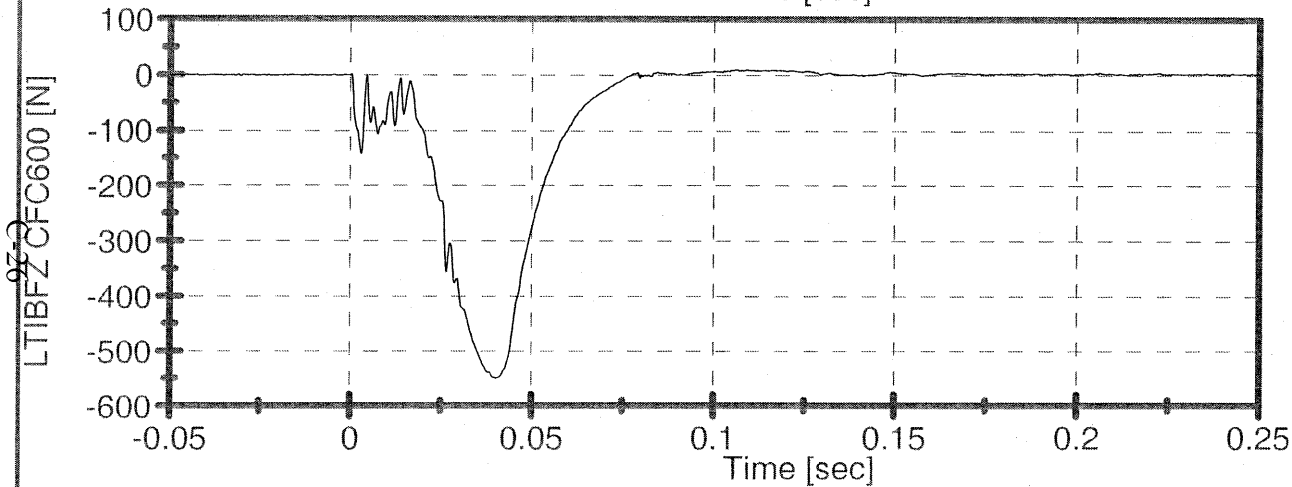
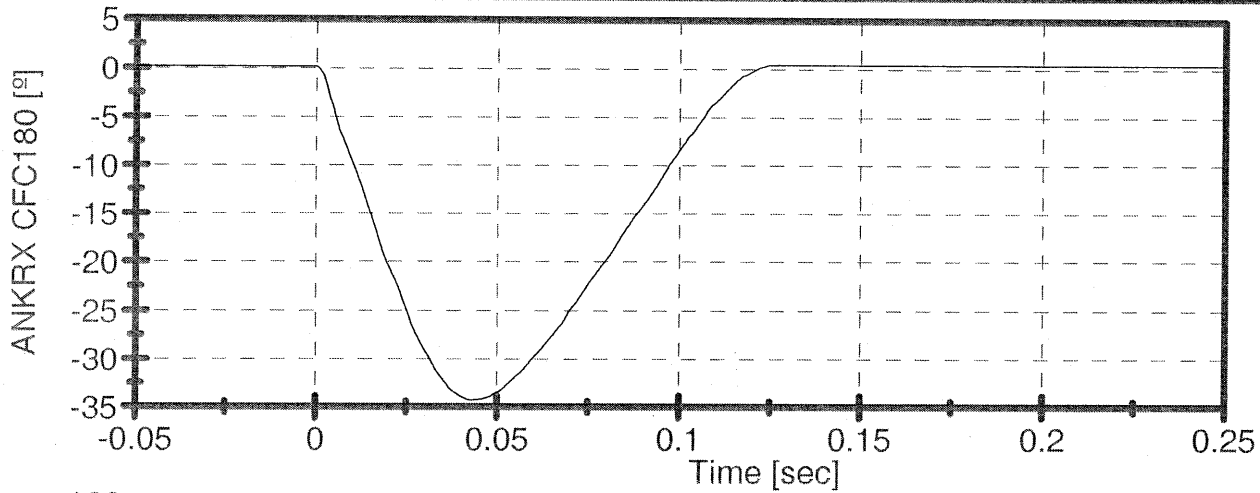
Eversion				Probe weight	Temperature	Humidity	Impact Speed	Peak Tibia Compressive Load	Peak Ankle Resistive Moment	Peak Ankle X-axis Rotation	Time between tests	
5.00 +/- .02kg or 11.02 +/- .04lbs				%		m/sec	N	Nm	deg			
							Class 600	Class 600	Class 180			
Test No.	Leg No.	Test Performer	Date of Cal.	Soak for 4 hours @ 69° - 72° F		1.9 - 2.1	552 - 675	36.3 - 44.4	30.3 - 37.0	30 min	Comments	
LX0045NOV302005EVER_01	LX0045	RP	11/30/2005	70	32	1.95	-575.84	-41.89	33.3			
LX0046DEC012005EVER_01	LX0046	RP	11/28/2005	70	32	1.95	-628.14	43.53	-34.1			

Specs were created by Dan Rhule. These specs. are preliminary.

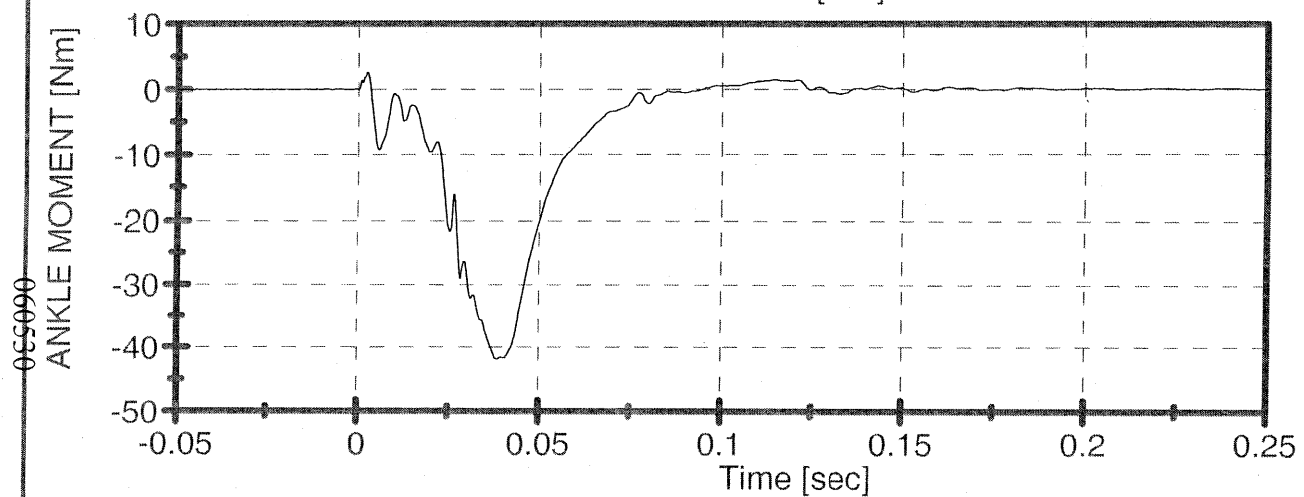
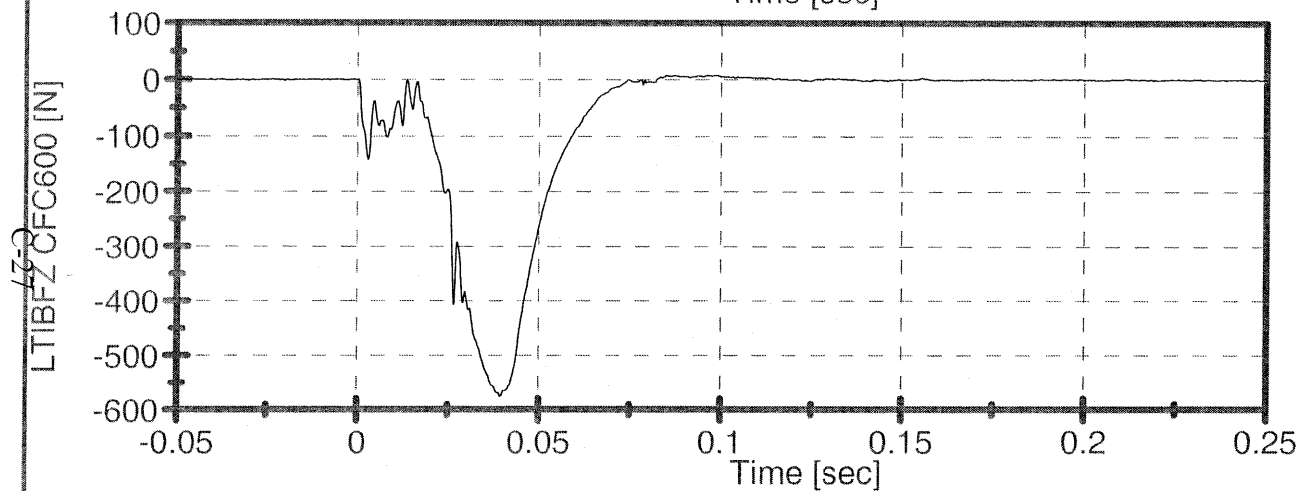
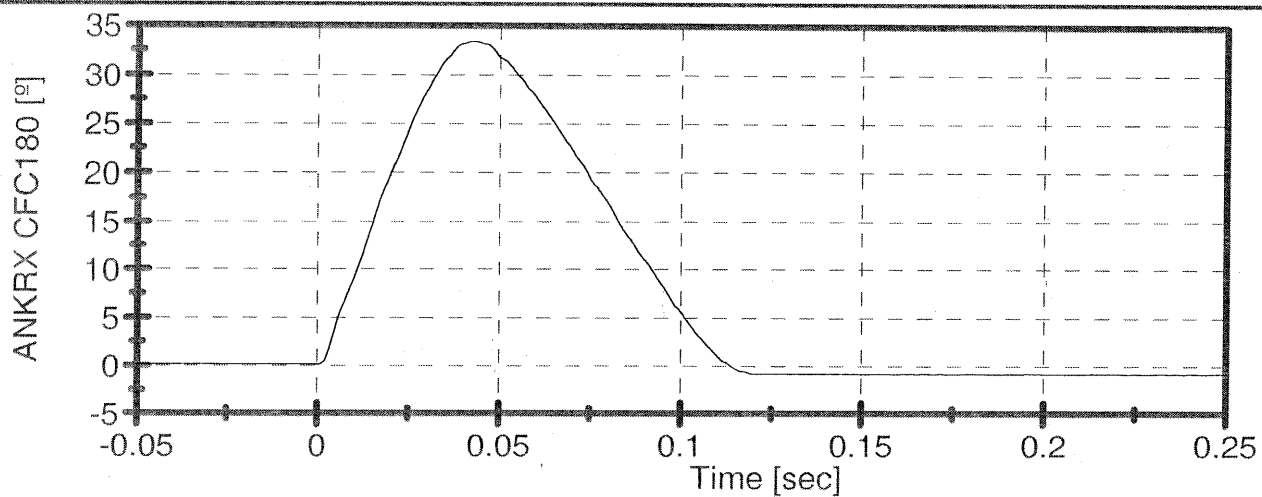
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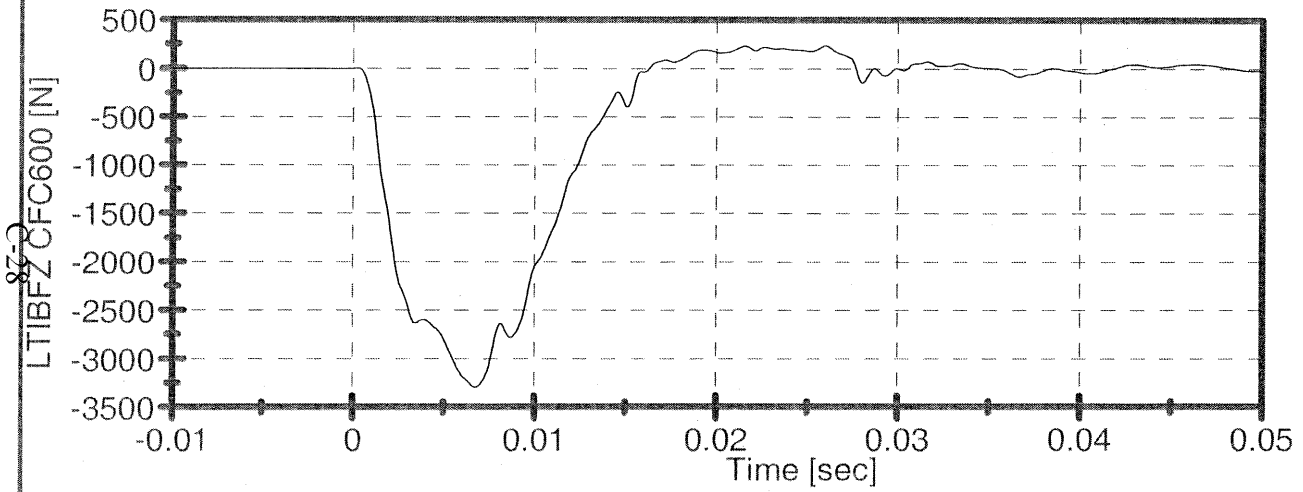
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LX0045NOV302005EVER_01

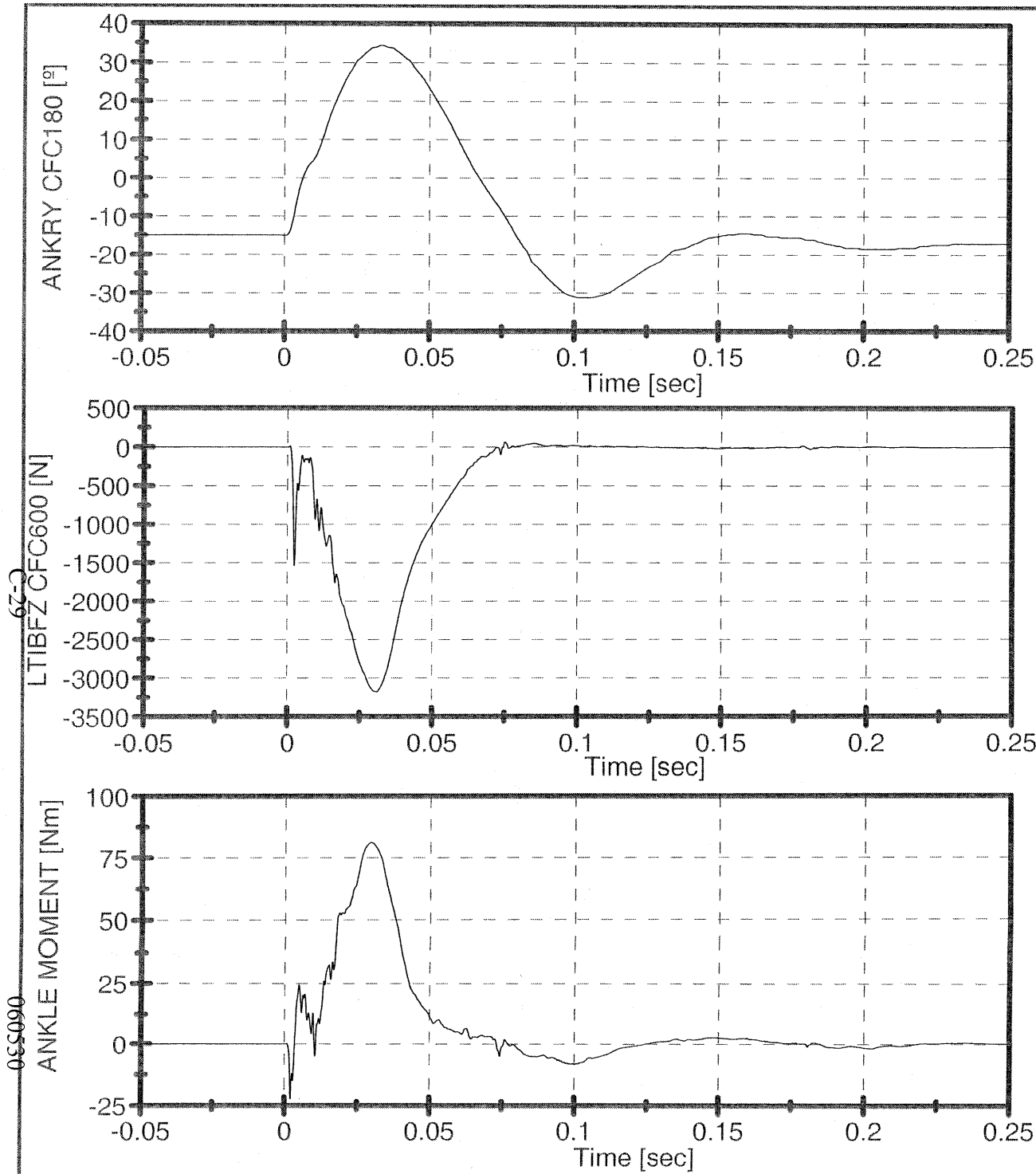


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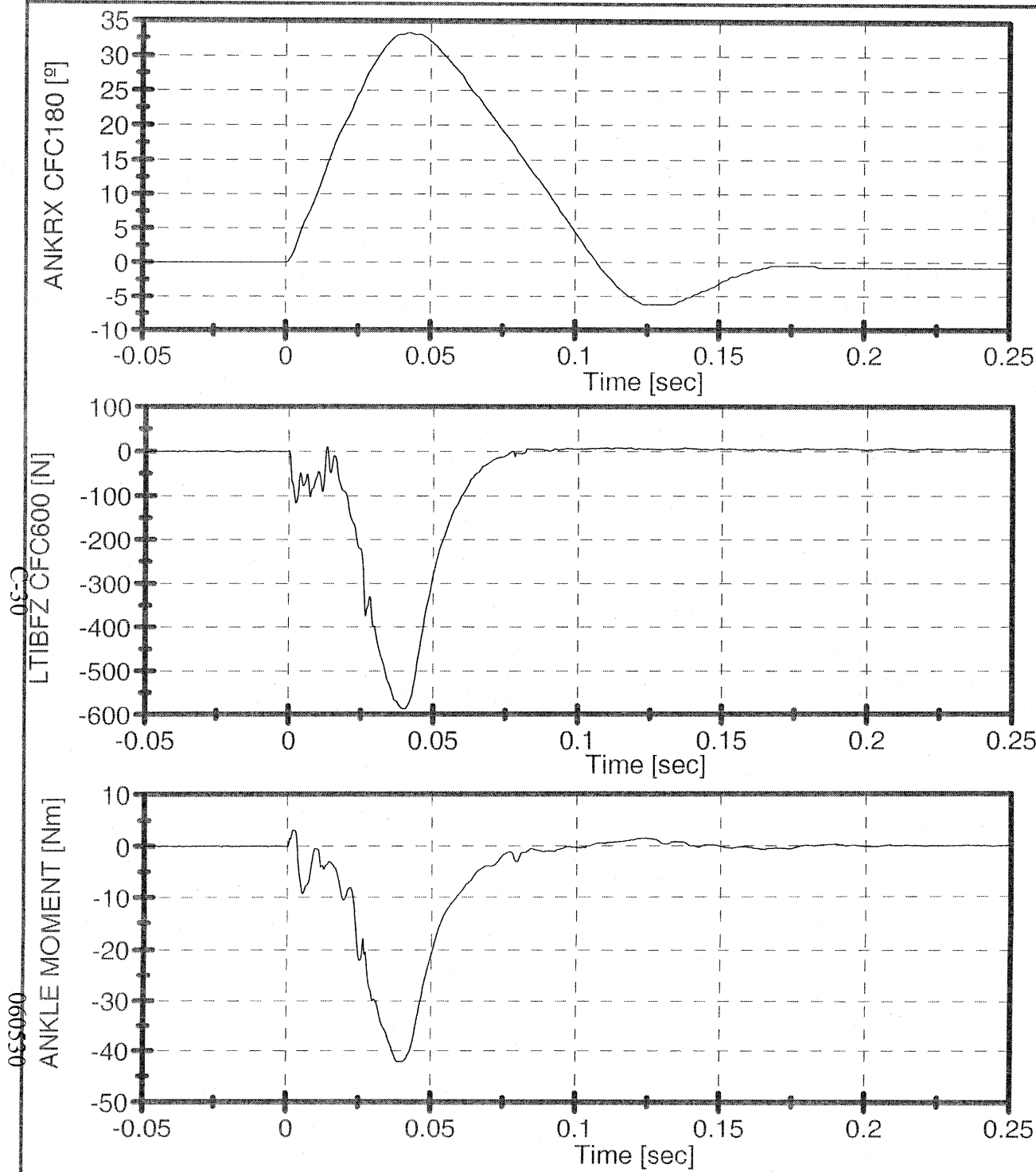
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Min = -22.018288643543

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LX0046DEC012005DORSI_02



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Max = 33.3754797800285

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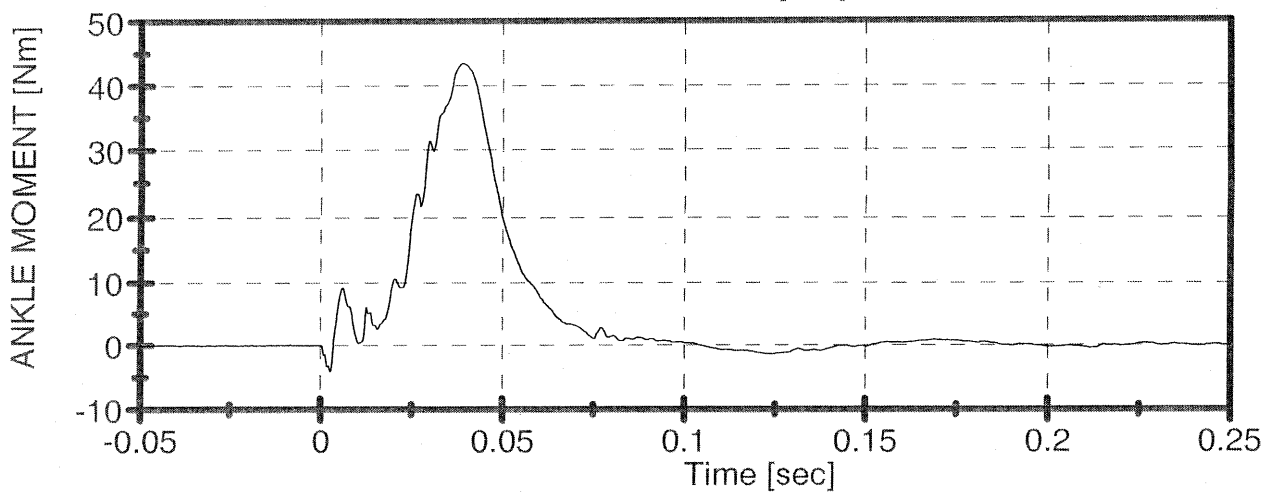
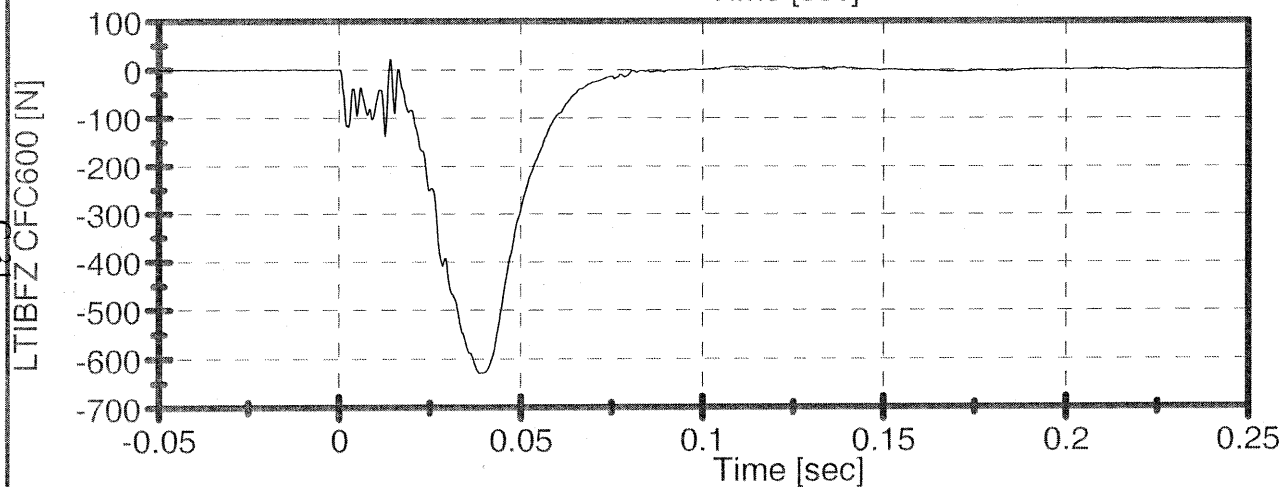
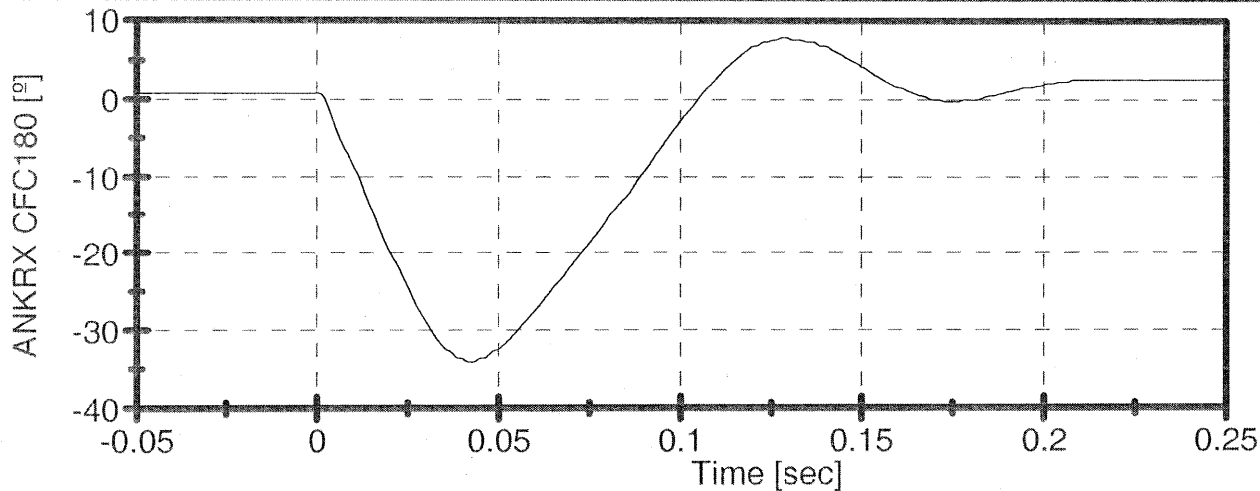
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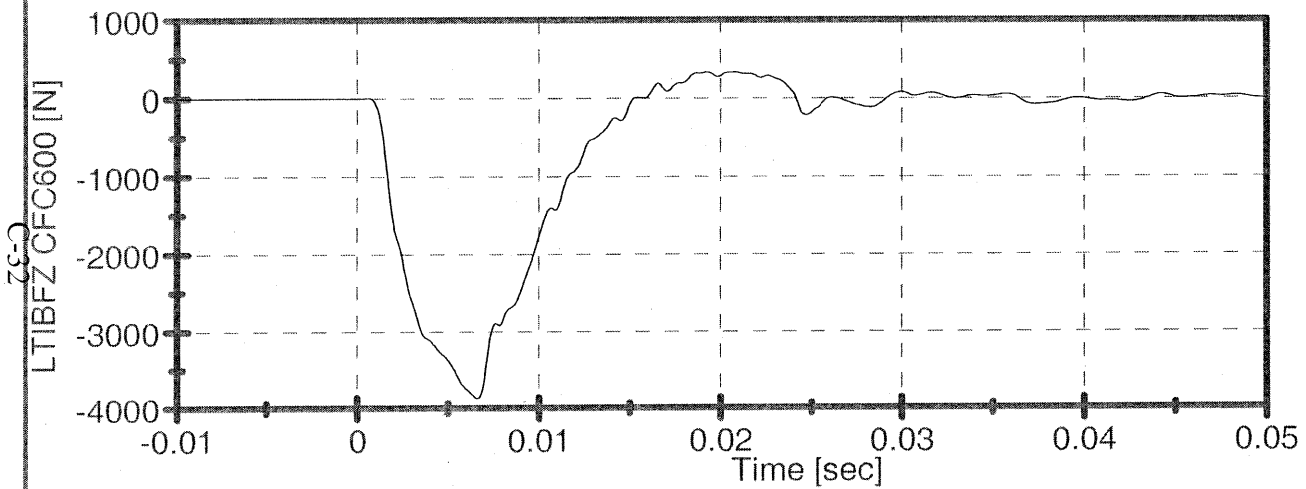
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IS-C

060530

LX0046DEC012005HEEL_05



Min = -3864.23552407864

Max = 338.175272393699

Transportation Research Center Inc.
Hybrid III Dummy Pre-Use Inspection

Type: 50th S/N: 202 Mfg.: ASTC Test Date: 05/30/06
 Proj./Seg. No.: 20040479-1071 Test Eng. William Millis

ITEM	PRE-USE
HEAD:	
Skull Cap Bolts	X
Accel. Cable Exit (left or right)	X
NECK: Lower Neck LC	
* Bracket at specified setting, Serration Alignment, Bolt	N/A
* Condyle Pin, Set Screws	X
* Rubber Condition	X
* Neck Cable Torque (5 th /50 th /95 th : 10 – 14 in-lb / 6YO 1.8 – 2.2 in-lb) Actual: 12	X
* Nodding Blocks Condition and Position	X
ARMS AND HANDS:	
Clavicle and Shoulder Bumpers Condition	X
Range of Motion Stops: Elbow, Top and Rear Shoulder	X
THORAX:	
Front and Rear Rib Bolts, Rib Ends Position, Rib Spacing	X
Chest Pot Arm, Ball Movement, Set Screws	X
Sternum Bolts and Sternum Bumpers Condition	X
Jacket Condition	X
Abdominal Insert Condition	X
Rib Damping Material and Stiffeners Condition	X
Rib Minimum Depth	X
Accel. Mount Bolts	X
Lumbar Spine Rubber Condition, Spine Angle, (4) Attachment Bolts	X
PELVIS:	
Iliac Crest Bone	X
Flesh Condition	X
Accel. Mount Bolt	X
Lumbar Block Bolts	X
LEGS AND FEET:	
* Femur Load Cell Bolts (5 th /50 th /95 th : 30 ft-lb / 6YO: 16 ft-lb)	X
Knee Joint Function and Range of Motion	X
Knee Skins, Inserts and Castings Condition	X
Knee Slider Zero Position	X
Ankle Range of Motion, Bumper Condition	X
Foot Condition	X
OTHER:	
Cleanliness / Skin Condition & Position	X
Target Position	X
Clothes Blue	X
Shoes	X
One G Joint Adjustments	X

* Items to be checked during calibration.

Inspection Completed By: J. Clarridge

Date: 05/26/06

Transportation Research Center Inc.

Hybrid III Dummy Post-Use Inspection

Type: 50th S/N: 202 Mfg.: ASTC Test Date: 05/30/06
 Proj./Seg. No.: 20040479-1071 Test Eng. William Millis

ITEM	POST-USE
HEAD:	
Head Skin Condition	X
NECK:	
Rubber Condition	X
Nodding Blocks Condition and Position	X
Nodding Joint Function (no lateral motion)	X
Adjustable (upper and lower) Neck Bracket	X
ARMS AND HANDS:	
Skin Condition	X
THORAX:	
Jacket Condition	X
Rib Damping Material and Stiffeners Condition	X
Chest Pot Arm and Ball Movement	X
Spine Condition	X
Sternum Assembly Condition	X
PELVIS:	
Flesh Condition	X
Iliac Crest Bone	X
Range of Motion Bumpers and Leg Cavity	X
LEGS AND FEET:	
Knee Skins, Inserts, and Castings Condition	X
Leg Skin Condition and Position	X
Foot Condition	X

NOTES: No damage to report.

Inspection Completed By: J. Clarridge Date: 06/07/06

Appendix D

Customer Provided Seating Procedure

A.2 Driver side (with Brake and clutch pedals in place while avoiding pedal interaction)

- ___1. Position the seat's adjustable lumbar supports so that the lumbar supports are in the lowest, retracted or deflated adjustment positions. (S16.2.10.1, S20.1.9.1, S20.4.1, S22.1.7.1)
___ N/A – No lumbar adjustment
- ___2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2, S20.1.9.2, S20.4.1, S22.1.7.1, S22.4.2.1, S22.4.3.1, S24.4.2.1, S26.2.3, S26.3.1)
___ N/A – No additional support adjustment
- ___3. Position an adjustable leg support system in its rearmost position. (8/27/04 interpretation to Toyota)
___ N/A – No adjustable leg support system
- ___4. Mark a point (seat cushion reference point) on the side of the seat cushion that is between 150 mm and 250 mm from the front edge of the seat cushion. (S16.3.1.12)
- ___5. Draw a line (seat cushion reference line) through the seat cushion reference point. (S16.3.1.13)
- ___6. Use only the controls that primarily move the seat in the fore-aft direction to move the seat cushion reference point to the rearmost position. (S16.2.10.3.1, S22.1.7.3)
- ___7. If the seat cushion adjusts fore-aft, independent of the seat back, use only the controls that primarily move the seat cushion in the fore-aft direction to move the seat cushion reference point to the rearmost position. (S16.2.10.3.1, S20.1.9.3)
___ N/A – No independent fore-aft seat cushion adjustment
- ___8. Use any part of any control, other than the parts just used for fore-aft positioning, to determine the range of angles of the seat cushion reference line and to set the seat cushion reference line at the mid-angle. (S16.2.10.3.1)
Maximum angle _____
Minimum angle _____
Mid-angle _____
- ___9. If the seat and/or seat cushion height is adjustable, use any part of any control other than the parts which primarily move the seat or seat cushion fore-aft, to put the seat cushion reference point in its lowest position with the seat cushion reference line angle at the mid-angle found in 8. (S16.2.10.3.1)
___ N/A – No seat height adjustment
- ___10. Use only the controls that primarily move the seat in the fore-aft direction to verify the seat is in the rearmost position.
- ___12. Use only the controls that primarily move the seat in the fore-aft direction to place the seat in the rearmost position.
- ___14. Visually mark for future reference the seat back angle at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer for the rearmost seat position. (S20.1.9.5, S22.1.7.5, S22.4.2.1, S22.4.3.1, S24.1.2, S24.4.2.1, S26.2.3, S26.3.1)
___ N/A – No seat back angle adjustment
Manufacturer's design seat back angle _____
- ___15. Is the seat a bucket seat?
___ Yes, go to 16 and skip 17
___ No, go to 17 and skip 16
- ___16. Bucket seats:
Locate and mark for future reference the longitudinal centerline of the seat cushion. The intersection of the vertical longitudinal plane that passes through the SgRP and the seat cushion upper surface determines the longitudinal centerline of a bucket seat cushion. (S16.3.1.10 & S20.1.10)
- ___17. Bench seats

Locate and mark for future reference the longitudinal line on the seat cushion that marks the intersection of the vertical longitudinal plane through the centerline of the steering wheel and the seat cushion upper surface.

- ___18. Head Restraint Position
___N/A Vehicle contains automatic head restraints.
___N/A, there is no head restraint adjustment
___Adjust the head restraint to its highest position. (S8.1.3)
- ___19. Place any adjustable seat belt anchorages at the vehicle manufacturer's nominal design position for a 50th percentile adult male occupant (S8.1.3)
___N/A – No adjustable upper seat belt anchorage
Manufacturer's specified anchorage position. _____
Tested anchorage position _____
- ___20. Place adjustable pedals in the full forward position (towards the front of the vehicle.)
___N/A – the pedals are not adjustable.
- ___21. Locate and mark the right heel point (RHP) on the carpet.
Flat accelerator pedals: Extend a line through the axis of symmetry (that is closest to the vertical plane) of the accelerator pedal. The RHP is the intersection of that line with the floorpan.
Curved accelerator pedals: Construct a line in the side view tangent to the accelerator pedal such that the distance from the contact point on the pedal to the floorpan, along the tangent line, is 200 mm. The RHP is at the intersection of this tangent line and the floorpan
- ___22. Locate a longitudinal line L1 and a transverse line T1 on the floorpan through the RHP. Locate a Left Heel Point (LHP) point on the line T1 that is to the left of the seat centerline at the same distance from the seat centerline as the RHP. Locate a longitudinal line L2 through the LHP.
- ___23. Set the steering wheel hub at the geometric center of the full range of driving positions including any telescoping positions as determined in data sheet 14.3.
- ___24. Verify that the seat is in the rearmost seat track position and full down height adjustment with the seat cushion at the mid-angle with the seat back at the manufacturer's nominal seat back angle.
- ___25. With the seat in the rearmost, full down, mid-angle position, determine the H-point using SAE J826 and the FMVSS 208 leg and thigh dimensions.
- ___26. Place the dummy in the seat such that the midsagittal plane is coincident with the longitudinal seat cushion markings and the upper torso resting against the seat back. (S10.4.1.1 & S10.4.1.2)
- ___27. Rest the thighs on the seat cushion. (S10.5)
- ___28. Set the distance between the outboard knee clevis flange surfaces at 10.6 inches.
___measured distance (10.6 inches) (S10.5)
- ___29. Set the heels of the feet on the floor pan.
- ___30. Position the H-point of the dummy within 0.5 inch of the vertical dimension and 0.5 inch of the horizontal dimension of a point 0.25 inch below the H-point determined in Data Sheet 15. (S10.4.2.1)
Then measure the pelvic angle with respect to the horizontal using the pelvic angle gage. Adjust the dummy position until these three measurements are within the specifications. (S10.4.2.1 and S10.4.2.2)
___horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
___vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
___pelvic angle (20° to 25°)
The H-point and pelvic angle are not adjusted after this step.
- ___31. Set the left and right feet in the neutral position (longitudinal centerline of foot in the same plane as the lower leg/thigh, foot at -15 degrees +/- 2 degrees to lower leg), as determined by the output of the potentiometers at the ankle.

- __32. Without moving the seat, and while keeping the right thigh and leg in the same vertical plane, set the right foot heel on Line L1.
- __32.1. Without moving the seat, and while keeping the left thigh and leg in the same vertical plane, move the left foot laterally to the left until
- The right edge of the foot is clear of the brake or clutch pedal by 0.25" laterally
 - The left heel is on Line L2
 - The left edge of the shoe contacts the vehicle interior
- whichever occurs first.
- __33. Place a 100 N +0, -5N weight (e.g. 100 N shot bag), no larger than 4" x 4", on each knee-thigh area. The weight should be centered on the assembly-hole on the top of the knee.
- __34. Raise the heels off the floor pan so that the seat can be moved forward.
- __35. Using only the control that primarily moves the seat in the fore-aft direction, move the seat forward and rest the rearmost point of the right foot heel on the floor pan such that:
- the heel is on the line L1
 - the foot is in the same plane as the lower leg/thigh, foot at -15 degrees +/- 2 degrees (about the Y- axis) to lower leg,
 - foot is contacting the accelerator pedal
 - the thighs are resting on the seat cushion
 - the thigh, leg and foot are in the same vertical plane
- If the heel is unable to reach line L1 because the foot contacts the vehicle interior, place the foot as close to the line L1 as possible while maintaining a gap of no more than 5 mm between the shoe and the vehicle interior.
- If the left foot contacts the brake or clutch pedals or the vehicle interior, then stop the forward movement of the left foot, raising the left knee off the seat cushion if needed. The pedals should not be depressed.
- __36. If the right foot does not reach the accelerator pedal, move the adjustable pedal until it contacts the foot. Locate a new heel point. Repeat steps 21 – 35 to re-position the seat. If the pedals are not adjustable, place the heel at the point closest to the pedal, in the same longitudinal vertical plane as the line L1.
- __N/A – the accelerator pedal is not adjustable
 - __N/A – the accelerator pedal did not need to be moved.
- __37. Verify that the left thigh and leg are in a vertical longitudinal plane, the foot in the neutral position (longitudinal centerline of foot in the same plane as the lower leg/thigh, foot at -15 degrees +/- 2 degrees (Y-axis) to lower leg), the heel on the floor pan, and the heel is on the line L2, unless the left edge of the shoe contacts the vehicle, preventing the heel from reaching Line L2.
- __38. Remove the leg weights.
- __39. Verify that the right foot is in the neutral position and is contacting the accelerator pedal. If the foot is not contacting the accelerator pedal, move the seat forward to rest the right foot on the accelerator pedal, keeping the foot in the neutral position
- __40. While holding the thighs in place, push with a 50 lb force on a 3 inch diameter area of the chest that is centered 5" (127mm) vertically below the chin on the midsagittal plane of the dummy.
- __41.1 Fasten the seat belt around the dummy.
- __41.2 Remove all slack from the lap belt portion. (S10.9)
- __41.3 Pull the upper torso webbing out of the retractor and allow it to retract; repeat this four times. (S10.9)
- __41.4 Apply a 2 to 4 pound tension load to the lap belt. (S10.9)
- __pound load applied
- __41.5 Is the belt system equipped with a tension-relieving device?
- __Yes, continue
 - __No, go to 42
- __41.6 Introduce the maximum amount of slack into the upper torso belt that is recommended by the vehicle manufacturer in the vehicle owner's manual. (S10.9).

- ___42. Place the upper arms adjacent to the torso with the centerline as close to a vertical plane as possible. (S10.2.1)
- ___43. Adjust the head level within ± 0.5 degrees using the seat back adjustment. Check the head angle after pushing on the chest with a 50 lb force on a 3 inch diameter area of the chest that is centered 5" (127mm) vertically below the chin on the midsagittal plane of the dummy, while holding the thighs in place, and releasing.
- ___43.1 No seat back adjustment. Adjust the neck bracket to achieve head level within ± 0.5 degrees. Record neck bracket setting. _____
- ___44. Maintaining the head alignment as determined above, place the right hand with the palm in contact with the steering wheel at the rim's horizontal centerline and with the thumb over the steering wheel. (S10.3.1)
- ___45. Maintaining the head alignment as determined above place the left hand with the palm in contact with the steering wheel at the rim's horizontal centerline and with the thumb over the steering wheel. (S10.3.1)
- ___46. If the hands don't reach the steering wheel at the horizontal centerline, maintaining the head alignment place them at symmetric location on the wheel, below the horizontal centerline.
- ___47. Tape the thumb of each hand to the steering wheel by using masking tape with a width of 0.25 inch. The length of the tape shall only be enough to go around the thumb and steering wheel one time.
- ___48. Verify that the feet are in the neutral position (± 2 deg) and the head is level (± 0.5 deg). Adjust and repeat until the feet and head angles are within this range.

Appendix E

Test Equipment and Instrumentation 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 060530

Ref	Transducer ID	ISO Signal Identifier	Description	DAS			Assembly
				FScale	Units	Flip Positive Polarity	
1	Trig D1	10ZERO000000EV00	Event		1 Logic	+ Bipolar	
2	05G15-L07	11HEADCG00H3ACXA	Head Accel X	1000	g	+ Forward	1-202 HIII 50th ASTC.001
3	03E03E18-F05	11HEADCG00H3ACYA	Head Accel Y	1000	g	- Leftward	1-202 HIII 50th ASTC.002
4	05I07-Z17	11HEADCG00H3ACZA	Head Accel Z	1000	g	- Upward	1-202 HIII 50th ASTC.003
5	03E03E18-F10	11HEADCGRDH3ACXA	Head Accel X Red	1000	g	+ Forward	1-202 HIII 50th ASTC.004
6	01G25-N10	11HEADCGRDH3ACYA	Head Accel Y Red	1000	g	- Leftward	1-202 HIII 50th ASTC.005
7	02I02I16-A12	11HEADCGRDH3ACZA	Head Accel Z Red	1000	g	- Upward	1-202 HIII 50th ASTC.006
8	05G20-L21	11HEADFR00H3ACYA	Head (FT) Accel Y	1000	g	- Leftward	1-202 HIII 50th ASTC.007
9	05H25-L15	11HEADFR00H3ACZA	Head (FT) Accel Z	1000	g	- Upward	1-202 HIII 50th ASTC.008
10	05I07-Z05	11HEADUP00H3ACXA	Head (TP) Accel X	1000	g	+ Forward	1-202 HIII 50th ASTC.009
11	05G20-L01	11HEADUP00H3ACYA	Head (TP) Accel Y	1000	g	- Leftward	1-202 HIII 50th ASTC.010
12	05G29-X51	11HEADLE00H3ACXA	Head (LT) Accel X	1000	g	+ Forward	1-202 HIII 50th ASTC.011
13	05G20-L18	11HEADLE00H3ACZA	Head (LT) Accel Z	1000	g	- Upward	1-202 HIII 50th ASTC.012
14	1716A-1872-FX	11NECKUP00H3FOXA	Neck Force X	8896.4	N	- Head forward, chest rearward	1-202 HIII 50th ASTC.013
15	1716A-1872-FY	11NECKUP00H3FOYA	Neck Force Y	8896.4	N	+ Head leftward, chest rightward	1-202 HIII 50th ASTC.014
16	1716A-1872-FZ	11NECKUP00H3FOZA	Neck Force Z	13344	N	+ Head upward, chest downward	1-202 HIII 50th ASTC.015
17	1716A-1872-MX	11NECKUP00H3MOXA	Neck Moment X	282	N·m	- Right ear toward right shoulder	1-202 HIII 50th ASTC.016
18	1716A-1872-MY	11NECKUP00H3MOYA	Neck Moment Y	282	N·m	+ Chin toward sternum	1-202 HIII 50th ASTC.017
19	1716A-1872-MZ	11NECKUP00H3MOZA	Neck Moment Z	282	N·m	+ Chin toward left shoulder	1-202 HIII 50th ASTC.018
20	1794S-078-FX	11NECKLO00H3FOXA	Neck Lower Force X	13344.6	N	+ Head rearward, chest forward	1-202 HIII 50th ASTC.019
21	1794S-078-FY	11NECKLO00H3FOYA	Neck Lower Force Y	13344.6	N	+ Head leftward, chest rightward	1-202 HIII 50th ASTC.020
22	1794S-078-FZ	11NECKLO00H3FOZA	Neck Lower Force Z	13344.6	N	+ Head upward, chest downward	1-202 HIII 50th ASTC.021
23	1794S-078-MX	11NECKLO00H3MOXA	Neck Lower Moment X	452	Nm	+ Left ear toward left shoulder	1-202 HIII 50th ASTC.022
24	1794S-078-MY	11NECKLO00H3MOYA	Neck Lower Moment Y	452	Nm	+ Chin toward sternum	1-202 HIII 50th ASTC.023
25	1794S-078-MZ	11NECKLO00H3MOZA	Neck Lower Moment Z	452	Nm	+ Chin toward left shoulder	1-202 HIII 50th ASTC.024
26	03E03E02-N01	11CHSTCG00H3ACXA	Chest Accel X	1000	g	+ Forward	1-202 HIII 50th ASTC.025
27	03E03E02-N06	11CHSTCG00H3ACYA	Chest Accel Y	1000	g	- Leftward	1-202 HIII 50th ASTC.026
28	03E03E02-N02	11CHSTCG00H3ACZA	Chest Accel Z	1000	g	- Upward	1-202 HIII 50th ASTC.027
29	02I02I05-F02	11CHSTCGRDH3ACXA	Chest Accel X Red.	1000	g	- Rearward	1-202 HIII 50th ASTC.028
30	03E03E02-N04	11CHSTCGRDH3ACYA	Chest Accel Y Red.	1000	g	- Leftward	1-202 HIII 50th ASTC.029

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Channel Report Test Number 060530

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS		Assembly
						Flip	Positive Polarity	
31	03E03E02-N15	11CHSTCGRDH3ACZA	Chest Accel Z Red.	1000	g	-	Upward	1-202 HIII 50th ASTC.030
32	CST202	11CHST0000H3DSXA	Chest Deflection X		84 mm	-	Rearward	1-202 HIII 50th ASTC.031
33	2121AJ-1520	11FEMRLL00H3FOZA	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	1-202 HIII 50th ASTC.032
34	2121AJ-1517	11FEMRRL00H3FOZA	Right Femur Force Z	13344	N	+	Knee forward, pelvis rearward	1-202 HIII 50th ASTC.052
35	150-0121VR-018026	11KNSLLE00H3DSXA	Left Knee Displacement X		40 mm	-	Hold femur in place, tibia rearward	1-202 HIII 50th ASTC.033
36	4509J-107-FX	11TIBILULXH3FOXA	Left Upper Tibia Force X	11120	N	+	Tibia forward, knee rearward	1-202 HIII 50th ASTC.034
37	4509J-107-FY	11TIBILULXH3FOYA	Left Upper Tibia Force Y	11120	N	+	Tibia rightward, knee leftward	1-202 HIII 50th ASTC.035
38	4509J-107-FZ	11TIBILULXH3FOZA	Left Upper Tibia Force Z	11120	N	+	Tibia downward, femur upward	1-202 HIII 50th ASTC.036
39	4509J-107-MX	11TIBILULXH3MOXA	Left Upper Tibia Moment X	395.4	Nm	+	Ankle leftward, hold knee in place	1-202 HIII 50th ASTC.037
40	4509J-107-MY	11TIBILULXH3MOYA	Left Upper Tibia Moment Y	395.4	Nm	+	Ankle forward, hold knee in place	1-202 HIII 50th ASTC.038
41	01G18-F15	11TIBILELXH3ACXA	Left Tibia Accel X	1000	g	+	Tibia forward	1-202 HIII 50th ASTC.039
42	05I07-Z13	11TIBILELXH3ACYA	Left Tibia Accel Y	1000	g	+	Tibia right	1-202 HIII 50th ASTC.040
43	4929J-139-FX	11TIBILLXH3FOXA	Left Lower Tibia Force X	11120	N	+	Ankle forward, knee rearward	1-202 HIII 50th ASTC.041
44	4929J-139-FY	11TIBILLXH3FOYA	Left Lower Tibia Force Y	11120	N	+	Ankle rightward, knee leftward	1-202 HIII 50th ASTC.042
45	4929J-139-FZ	11TIBILLXH3FOZA	Left Lower Tibia Force Z	11120	N	+	Ankle downward, knee upward	1-202 HIII 50th ASTC.043
46	4929J-139-MX	11TIBILLXH3MOXA	Left Lower Tibia Moment X	395.4	Nm	+	Ankle leftward, hold knee in place	1-202 HIII 50th ASTC.044
47	4929J-139-MY	11TIBILLXH3MOYA	Left Lower Tibia Moment Y	395.4	Nm	+	Ankle forward, hold knee in place	1-202 HIII 50th ASTC.045
48	PD210-4B-426	11FOOTLELXH3ANXA	Left Foot Angular Dis. X	318	°	-	Inversion	1-202 HIII 50th ASTC.046
49	PD210-4B-424	11FOOTLELXH3ANYA	Left Foot Angular Dis. Y	318	°	+	Dorsiflexion	1-202 HIII 50th ASTC.047
50	PD210-4B-423	11FOOTLELXH3ANZA	Left Foot Angular Dis. Z	318	°	-	External rotation	1-202 HIII 50th ASTC.048
51	05G20-L14	11FOOTLELXH3ACXA	Left Foot Accel X	1000	g	+	Foot forward	1-202 HIII 50th ASTC.049
52	05G20-L12	11FOOTLELXH3ACYA	Left Foot Accel Y	1000	g	+	Foot rightward	1-202 HIII 50th ASTC.050
53	06A04-R12	11FOOTLELXH3ACZA	Left Foot Accel Z	1000	g	+	Foot down	1-202 HIII 50th ASTC.051

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Channel Report Test Number 060530

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
54	150-0121VL-33646	11KNSLRIO0H3DSXA	Right Knee Displacement X		40 mm	-	Hold femur in place, tibia rearward	1-202 HIII 50th ASTC.053
55	4509J-104-FX	11TIBIRULXH3FOXA	Right Upper Tibia Force X	11120	N	+	Tibia forward, knee rearward	1-202 HIII 50th ASTC.054
56	4509J-104-FY	11TIBIRLUXH3FOYA	Right Upper Tibia Force Y	11120	N	+	Tibia rightward, knee leftward	1-202 HIII 50th ASTC.055
57	4509J-104-FZ	11TIBIRULXH3FOZA	Right Upper Tibia Force Z	11120	N	+	Tibia downward, femur upward	1-202 HIII 50th ASTC.056
58	4509J-104-MX	11TIBIRULXH3MOXA	Right Upper Tibia Moment X	395.4	Nm	+	Ankle leftward, hold knee in place	1-202 HIII 50th ASTC.057
59	4509J-104-MY	11TIBIRULXH3MOYA	Right Upper Tibia Moment Y	395.4	Nm	+	Ankle forward, hold knee in place	1-202 HIII 50th ASTC.058
60	05G20-L06	11TIBIRILXH3ACXA	Right Tibia Accel X	1000	g	+	Tibia forward	1-202 HIII 50th ASTC.059
61	05I07-Z23	11TIBIRILXH3ACYA	Right Tibia Accel Y	1000	g	+	Tibia right	1-202 HIII 50th ASTC.060
62	4929J-138-FX	11TIBIRLLXH3FOXA	Right Lower Tibia Force X	11120	N	+	Ankle forward, knee rearward	1-202 HIII 50th ASTC.061
63	4929J-138-FY	11TIBIRLLXH3FOYA	Right Lower Tibia Force Y	11120	N	+	Ankle rightward, knee leftward	1-202 HIII 50th ASTC.062
64	4929J-138-FZ	11TIBIRLLXH3FOZA	Right Lower Tibia Force Z	11120	N	+	Ankle downward, knee upward	1-202 HIII 50th ASTC.063
65	4929J-138-MX	11TIBIRLLXH3MOXA	Right Lower Tibia Moment X	395.4	Nm	+	Ankle leftward, hold knee in place	1-202 HIII 50th ASTC.064
66	4929J-138-MY	11TIBIRLLXH3MOYA	Right Lower Tibia Moment Y	395.4	Nm	+	Ankle forward, hold knee in place	1-202 HIII 50th ASTC.065
67	PD210-4B-427	11FOOTRILXH3ANXA	Right Foot Angular Dis. X	318	°	-	Eversion	1-202 HIII 50th ASTC.066
68	PD210-4B-425	11FOOTRILXH3ANYA	Right Foot Angular Dis. Y	318	°	+	Dorsiflexion	1-202 HIII 50th ASTC.067
69	PD210-4B-422	11FOOTRILXH3ANZA	Right Foot Angular Dis. Z	318	°	-	Internal rotation	1-202 HIII 50th ASTC.068
70	05I07-Z07	11FOOTRILXH3ACXA	Right Foot Accel X	1000	g	+	Foot forward	1-202 HIII 50th ASTC.069
71	05H31-Z12	11FOOTRILXH3ACYA	Right Foot Accel Y	1000	g	+	Foot rightward	1-202 HIII 50th ASTC.070
72	05G20-L03	11FOOTRILXH3ACZA	Right Foot Accel Z	1000	g	+	Foot down	1-202 HIII 50th ASTC.071
73	P50422	14CRME000000ACXA	Left Rear Seat Cross-member X-axis Acceleration	1000	g	-	Rearward	
74	P49781	16CRME000000ACXA	Right Rear Seat Cross-member X-axis Acceleration	1000	g	+	Forward	
75	P45773	14CRME000000ACZA	Left Rear Seat Cross-member Z-axis Acceleration	1000	g	-	Upward	
76	P33852	16CRME000000ACZA	Right Rear Seat Cross-member Z-axis Acceleration	1000	g	-	Upward	
77	P50404	12ENGNTPO000ACXA	Top of Engine Block X-axis acceleration	1500	g	+	Forward	
78	P49747	12ENGNB00000ACXA	Bottom of Engine Block X-axis acceleration	1500	g	-	Rearward	
79	P48685	13VEHCRI0000ACXA	Right Brake Caliper X-axis Acceleration	1500	g	+	Forward	

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Channel Report Test Number 060530

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS		Assembly
						Flip	Positive Polarity	
80	P46468	11VEHCLE0000ACXA	Left Brake Caliper X-axis Acceleration	1500	g	-	Rearward	
81	P49968	12DASH000000ACXA	Instrumnet Pannel X-axis Acceleration	1500	g	-	Rearward	
82	P47526	11SETR000000ACXA	Left Side Driver Mid Seat Track X-axis Acceleration	1500	g	+	Forward	
83	P50291	10VEHCCG0000ACXA	Vehicle CG X-axis acceleration	1000	g	+	Forward	
84	P50297	10VEHCCG0000ACYA	Vehicle CG Y-axis acceleration	1000	g	-	Leftward	
85	P50307	10VEHCCG0000ACZA	Vehicle CG Z-axis acceleration	1000	g	-	Upward	
86	ABFire1	11AIRBFR0100EV0A	DRIV. FRONT AIRBAG1 IND (IP61)	5	V	+	Bipolar	
87	ABFire2	11AIRBFR0200EV0A	DRIV. FRONT AIRBAG2 IND (IP24)	5	V	+	Bipolar	
88	3419T-828	11SEBE0000B5FOOA	Driver lap belt (P18)	13500	N	+	Tension	
89	3419-835	11SEBE0000B3FOOA	Driver shoulder belt (5)	13500	N	+	Tension	
90	476830002	L0FBAR000001FOXA	Load Cell Row 1 Column 1	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.001
91	476830008	L0FBAR000002FOXA	Load Cell Row 2 Column 1	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.002
92	476830086	L0FBAR000003FOXA	Load Cell Row 3 Column 1	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.003
93	476830071	L0FBAR000004FOXA	Load Cell Row 4 Column 1	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.004
94	476830044	L0FBAR000005FOXA	Load Cell Row 5 Column 1	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.005
95	476830038	L0FBAR000006FOXA	Load Cell Row 6 Column 1	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.006
96	476830036	L0FBAR000007FOXA	Load Cell Row 7 Column 1	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.007
97	476830082	L0FBAR000008FOXA	Load Cell Row 8 Column 1	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.008
98	476830065	L0FBAR000009FOXA	Load Cell Row 9 Column 1	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.009
99	476830068	L0FBAR000010FOXA	Load Cell Row 10 Column 1	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.010
100	476830069	L0FBAR000011FOXA	Load Cell Row 1 Column 2	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.011
101	476830080	L0FBAR000012FOXA	Load Cell Row 2 Column 2	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.012
102	476830023	L0FBAR000013FOXA	Load Cell Row 3 Column 2	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.013
103	476830012	L0FBAR000014FOXA	Load Cell Row 4 Column 2	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.014
104	476830015	L0FBAR000015FOXA	Load Cell Row 5 Column 2	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.015
105	476830043	L0FBAR000016FOXA	Load Cell Row 6 Column 2	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.016

Channel Report Test Number 060530

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS		Assembly
						Flip	Positive Polarity	
106	476830088	L0FBAR000017FOXA	Load Cell Row 7 Column 2	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.017
107	476830017	L0FBAR000018FOXA	Load Cell Row 8 Column 2	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.018
108	476830034	L0FBAR000019FOXA	Load Cell Row 9 Column 2	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.019
109	476830007	L0FBAR000020FOXA	Load Cell Row 10 Column 2	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.020
110	476830018	L0FBAR000021FOXA	Load Cell Row 1 Column 3	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.021
111	476830016	L0FBAR000022FOXA	Load Cell Row 2 Column 3	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.022
112	476830089	L0FBAR000023FOXA	Load Cell Row 3 Column 3	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.023
113	476830026	L0FBAR000024FOXA	Load Cell Row 4 Column 3	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.024
114	476830009	L0FBAR000025FOXA	Load Cell Row 5 Column 3	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.025
115	476830067	L0FBAR000026FOXA	Load Cell Row 6 Column 3	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.026
116	476830051	L0FBAR000027FOXA	Load Cell Row 7 Column 3	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.027
117	476830003	L0FBAR000028FOXA	Load Cell Row 8 Column 3	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.028
118	476830021	L0FBAR000029FOXA	Load Cell Row 9 Column 3	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.029
119	476830013	L0FBAR000030FOXA	Load Cell Row 10 Column 3	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.030
120	476830019	L0FBAR000031FOXA	Load Cell Row 1 Column 4	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.031
121	476830042	L0FBAR000032FOXA	Load Cell Row 2 Column 4	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.032
122	476830070	L0FBAR000033FOXA	Load Cell Row 3 Column 4	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.033
123	476830075	L0FBAR000034FOXA	Load Cell Row 4 Column 4	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.034
124	476830063	L0FBAR000035FOXA	Load Cell Row 5 Column 4	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.035
125	476830027	L0FBAR000036FOXA	Load Cell Row 6 Column 4	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.036
126	476830052	L0FBAR000037FOXA	Load Cell Row 7 Column 4	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.037

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Channel Report Test Number 060530

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
127	476830059	L0FBAR000038FOXA	Load Cell Row 8 Column 4	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.038
128	476830029	L0FBAR000039FOXA	Load Cell Row 9 Column 4	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.039
129	476830072	L0FBAR000040FOXA	Load Cell Row 10 Column 4	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.040
130	476830028	L0FBAR000041FOXA	Load Cell Row 1 Column 5	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.041
131	476830011	L0FBAR000042FOXA	Load Cell Row 2 Column 5	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.042
132	476830053	L0FBAR000043FOXA	Load Cell Row 3 Column 5	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.043
133	476830076	L0FBAR000044FOXA	Load Cell Row 4 Column 5	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.044
134	476830049	L0FBAR000045FOXA	Load Cell Row 5 Column 5	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.045
135	476830058	L0FBAR000046FOXA	Load Cell Row 6 Column 5	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.046
136	476830048	L0FBAR000047FOXA	Load Cell Row 7 Column 5	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.047
137	476830001	L0FBAR000048FOXA	Load Cell Row 8 Column 5	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.048
138	476830006	L0FBAR000049FOXA	Load Cell Row 9 Column 5	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.049
139	476830014	L0FBAR000050FOXA	Load Cell Row 10 Column 5	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.050
140	476830032	L0FBAR000051FOXA	Load Cell Row 1 Column 6	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.051
141	476830037	L0FBAR000052FOXA	Load Cell Row 2 Column 6	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.052
142	476830083	L0FBAR000053FOXA	Load Cell Row 3 Column 6	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.053
143	476830064	L0FBAR000054FOXA	Load Cell Row 4 Column 6	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.054
144	476830087	L0FBAR000055FOXA	Load Cell Row 5 Column 6	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.055
145	476830091	L0FBAR000056FOXA	Load Cell Row 6 Column 6	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.056
146	476830004	L0FBAR000057FOXA	Load Cell Row 7 Column 6	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.057
147	476830041	L0FBAR000058FOXA	Load Cell Row 8 Column 6	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.058

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
148	476830024	L0FBAR000059FOXA	Load Cell Row 9 Column 6	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.059
149	476830054	L0FBAR000060FOXA	Load Cell Row 10 Column 6	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.060
150	476830040	L0FBAR000061FOXA	Load Cell Row 1 Column 7	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.061
151	476830005	L0FBAR000062FOXA	Load Cell Row 2 Column 7	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.062
152	476830061	L0FBAR000063FOXA	Load Cell Row 3 Column 7	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.063
153	476830050	L0FBAR000064FOXA	Load Cell Row 4 Column 7	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.064
154	476830090	L0FBAR000065FOXA	Load Cell Row 5 Column 7	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.065
155	476830073	L0FBAR000066FOXA	Load Cell Row 6 Column 7	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.066
156	476830055	L0FBAR000067FOXA	Load Cell Row 7 Column 7	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.067
157	476830085	L0FBAR000068FOXA	Load Cell Row 8 Column 7	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.068
158	476830056	L0FBAR000069FOXA	Load Cell Row 9 Column 7	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.069
159	476830084	L0FBAR000070FOXA	Load Cell Row 10 Column 7	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.070
160	476830093	L0FBAR000071FOXA	Load Cell Row 1 Column 8	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.071
161	476830074	L0FBAR000072FOXA	Load Cell Row 2 Column 8	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.072
162	476830047	L0FBAR000073FOXA	Load Cell Row 3 Column 8	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.073
163	476830057	L0FBAR000074FOXA	Load Cell Row 4 Column 8	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.074
164	476830030	L0FBAR000075FOXA	Load Cell Row 5 Column 8	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.075
165	476830039	L0FBAR000076FOXA	Load Cell Row 6 Column 8	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.076
166	476830025	L0FBAR000077FOXA	Load Cell Row 7 Column 8	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.077
167	476830045	L0FBAR000078FOXA	Load Cell Row 8 Column 8	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.078
168	476830079	L0FBAR000079FOXA	Load Cell Row 9 Column 8	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.079

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
169	476830010	L0FBAR000080FOXA	Load Cell Row 10 Column 8	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.080
170	476830020	L0FBAR000081FOXA	Load Cell Row 1 Column 9	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.081
171	476830046	L0FBAR000082FOXA	Load Cell Row 2 Column 9	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.082
172	476830033	L0FBAR000083FOXA	Load Cell Row 3 Column 9	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.083
173	476830092	L0FBAR000084FOXA	Load Cell Row 4 Column 9	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.084
174	476830031	L0FBAR000085FOXA	Load Cell Row 5 Column 9	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.085
175	476830035	L0FBAR000086FOXA	Load Cell Row 6 Column 9	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.086
176	476830078	L0FBAR000087FOXA	Load Cell Row 7 Column 9	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.087
177	476830062	L0FBAR000088FOXA	Load Cell Row 8 Column 8	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.088
178	476830022	L0FBAR000089FOXA	Load Cell Row 9 Column 9	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.089
179	476830060	L0FBAR000090FOXA	Load Cell Row 10 Column 9	311376	N	-	Compression force	0-Barrier VRTC 90 channel Offset.090

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Channel	Mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
1	11HEADCG00H3ACXA	Head X-Axis Acceleration	1000	+	yes	1000
2	11HEADCG00H3ACYA	Head Y-Axis Acceleration	1000	+	yes	1000
3	11HEADCG00H3ACZA	Head Z-Axis Acceleration	1000	+	yes	1000
3A	11HEADCG00H3ACRA	Head Resultant Acceleration	1000			
4	11HEADCGRDH3ACXA	Head X-Axis Redundant Acceleration	1000	+	yes	1000
5	11HEADCGRDH3ACYA	Head Y-Axis Redundant Acceleration	1000	+	yes	1000
6	11HEADCGRDH3ACZA	Head Z-Axis Redundant Acceleration	1000	+	yes	1000
6A	11HEADCGRDH3ACRA	Head Redundant Resultant Acceleration	1000			
7	11HEADFR00H3ACYA	Head (FT) Y-Axis Acceleration	1000	+	yes	1000
8	11HEADFR00H3ACZA	Head (FT) Z-Axis Acceleration	1000	+	yes	1000
9	11HEADUP00H3ACXA	Head (TP) X-Axis Acceleration	1000	+	yes	1000
10	11HEADUP00H3ACYA	Head (TP) Y-Axis Acceleration	1000	+	yes	1000
11	11HEADLE00H3ACXA	Head (LT) X-Axis Acceleration	1000	+	yes	1000
12	11HEADLE00H3ACZA	Head (LT) Z-Axis Acceleration	1000	+	yes	1000
13	11NECKUP00H3FOXA	Upper Neck X-Axis Force	1000	+	yes	8896.4
14	11NECKUP00H3FOYA	Upper Neck Y-Axis Force	1000	+	yes	8896.4
15	11NECKUP00H3FOZA	Upper Neck Z-Axis Force	1000	+	yes	13344
16	11NECKUP00H3MOXA	Upper Neck Moment About X Axis	600	+	yes	282
17	11NECKUP00H3MOYA	Upper Neck Moment About Y Axis	600	+	yes	282
18	11NECKUP00H3MOZA	Upper Neck Moment About Z Axis	600	+	yes	282
19	11NECKLO00H3FOXA	Lower Neck X-Axis Force	1000	+	yes	13344.6
20	11NECKLO00H3FOYA	Lower Neck Y-Axis Force	1000	+	yes	13344.6
21	11NECKLO00H3FOZA	Lower Neck Z-Axis Force	1000	+	yes	13344.6
22	11NECKLO00H3MOXA	Lower Neck Moment About X Axis	600	+	yes	452
23	11NECKLO00H3MOYA	Lower Neck Moment About Y Axis	600	+	yes	452
24	11NECKLO00H3MOZA	Lower Neck Moment About Z Axis	600	+	yes	452
25	11CHSTCG00H3ACXA	Chest X-Axis Acceleration	180	+	yes	1000
26	11CHSTCG00H3ACYA	Chest Y-Axis Acceleration	180	+	yes	1000
27	11CHSTCG00H3ACZA	Chest Z-Axis Acceleration	180	+	yes	1000
27A	11CHSTCG00H3ACRA	Chest Resultant Acceleration	180			
28	11CHSTCGRDH3ACXA	Chest X-Axis Redundant Acceleration	180	+	yes	1000

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Channel	Mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
29	11CHSTCGRDH3ACYA	Chest Y-Axis Redundant Acceleration	180	+	yes	1000
30	11CHSTCGRDH3ACZA	Chest Z-Axis Redundant Acceleration	180	+	yes	1000
30A	11CHSTCGRDH3ACRA	Chest Redundant Resultant Acceleration	180			
31	11CHST0000H3DSXA	Chest Displacement	600	-	yes	84
32	11FEMRL00H3FOZA	Left Femur Z-Axis Force	600	+	yes	13344
33	11FEMRRL00H3FOZA	Right Femur Z-Axis Force	600	+	yes	13344
34	11KNSLLE00H3DSXA	Left Knee Displacement	180	+	yes	40
35	11TIBILULXH3FOXA	Left Upper Tibia X-Axis Force	600	+	yes	11120
36	11TIBILULXH3FOYA	Left Upper Tibia Y-Axis Force	600	+	yes	11120
37	11TIBILULXH3FOZA	Left Upper Tibia Z-Axis Force	600	+	yes	11120
38	11TIBILULXH3MOXA	Left Upper Tibia Moment About X Axis	600	+	yes	395.4
39	11TIBILULXH3MOYA	Left Upper Tibia Moment About Y Axis	600	+	yes	395.4
40	11TIBILELXH3ACXA	Left Tibia X-Axis Acceleration	1000	+	yes	1000
41	11TIBILELXH3ACYA	Left Tibia Y-Axis Acceleration	1000	+	yes	1000
42	11TIBILLX3H3FOXA	Left Lower Tibia X-Axis Force	600	+	yes	11120
43	11TIBILLX3H3FOYA	Left Lower Tibia Y-Axis Force	600	+	yes	11120
44	11TIBILLX3H3FOZA	Left Lower Tibia Z-Axis Force	600	+	yes	11120
45	11TIBILLX3H3MOXA	Left Lower Tibia Moment About X Axis	600	+	yes	395.4
46	11TIBILLX3H3MOYA	Left Lower Tibia Moment About Y Axis	600	+	yes	395.4
47	11FOOTLELXH3ANXA	Left Foot X-Axis Rotation	180	+	no	318
48	11FOOTLELXH3ANYA	Left Foot Y-Axis Rotation	180	+	no	318
49	11FOOTLELXH3ANZA	Left Foot Z-Axis Rotation	180	+	no	318
50	11FOOTLELXH3ACXA	Left Foot X-Axis Acceleration	1000	+	yes	1000
51	11FOOTLELXH3ACYA	Left Foot Y-Axis Acceleration	1000	+	yes	1000
52	11FOOTLELXH3ACZA	Left Foot Z-Axis Acceleration	1000	+	yes	1000
52A	11FOOTLELXH3ACRA	Left Foot Resultant Acceleration	1000			
53	11KNSLR00H3DSXA	Right Knee Displacement	180	+	yes	40
54	11TIBIRULXH3FOXA	Right Upper Tibia X-Axis Force	600	+	yes	11120
55	11TIBIRLUXH3FOYA	Right Upper Tibia Y-Axis Force	600	+	yes	11120
56	11TIBIRULXH3FOZA	Right Upper Tibia Z-Axis Force	600	+	yes	11120
57	11TIBIRULXH3MOXA	Right Upper Tibia Moment About X Axis	600	+	yes	395.4

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Channel	Mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
58	11TIBIRULXH3MOYA	Right Upper Tibia Moment About Y Axis	600	+	yes	395.4
59	11TIBIRILXH3ACXA	Right Tibia X-Axis Acceleration	1000	+	yes	1000
60	11TIBIRILXH3ACYA	Right Tibia Y-Axis Acceleration	1000	+	yes	1000
61	11TIBIRLLXH3FOXA	Right Lower Tibia X-Axis Force	600	+	yes	11120
62	11TIBIRLLXH3FOYA	Right Lower Tibia Y-Axis Force	600	+	yes	11120
63	11TIBIRLLXH3FOZA	Right Lower Tibia Z-Axis Force	600	+	yes	11120
64	11TIBIRLLXH3MOXA	Right Lower Tibia Moment About X Axis	600	+	yes	395.4
65	11TIBIRLLXH3MOYA	Right Lower Tibia Moment About Y Axis	600	+	yes	395.4
66	11FOOTRILXH3ANXA	Right Foot X-Axis Rotation	180	+	no	318
67	11FOOTRILXH3ANYA	Right Foot Y-Axis Rotation	180	+	no	318
68	11FOOTRILXH3ANZA	Right Foot Z-Axis Rotation	180	+	no	318
69	11FOOTRILXH3ACXA	Right Foot X-Axis Acceleration	1000	+	yes	1000
70	11FOOTRILXH3ACYA	Right Foot Y-Axis Acceleration	1000	+	yes	1000
71	11FOOTRILXH3ACZA	Right Foot Z-Axis Acceleration	1000	+	yes	1000
71A	11FOOTRILXH3ACRA	Right Foot Resultant Acceleration	1000			
72	14CRME000000ACXA	Left Rear Seat Cross-Member X-Axis Acceleration	60	+	yes	1000
73	16CRME000000ACXA	Right Rear Seat Cross-Member X-Axis Acceleration	60	+	yes	1000
74	14CRME000000ACZA	Left Rear Seat Cross-Member Z-Axis Acceleration	60	+	yes	1000
75	16CRME000000ACZA	Right Rear Seat Cross-Member Z-Axis Acceleration	60	+	yes	1000
76	12ENGNTPO000ACXA	Top of Engine Block X-Axis Acceleration	60	+	yes	1500
77	12ENGNB0000ACXA	Bottom of Engine Block X-Axis Acceleration	60	+	yes	1500
78	13VEHCRI0000ACXA	Right Brake Caliper X-Axis Acceleration	60	+	yes	1500
79	11VEHCLE0000ACXA	Left Brake Caliper X-Axis Acceleration	60	+	yes	1500
80	12DASH000000ACXA	Instrument Panel X-Axis Acceleration	60	+	yes	1500
81	11SETR000000ACXA	Left Side Driver Mid Seat Track X-Axis Acceleration	60	+	yes	1500
82	10VEHCCG0000ACXA	Vehicle CG X-Axis Acceleration	60	+	yes	1000
82A	10VEHCCG0000VEXA	Vehicle CG X-Axis Velocity	180			
82B	10VEHCCG0000DCXA	Vehicle CG X-Axis Displacement	180			
83	10VEHCCG0000ACYA	Vehicle CG Y-Axis Acceleration	60	+	yes	1000
83A	10VEHCCG0000VEYA	Vehicle CG Y-Axis Velocity	180			
83B	10VEHCCG0000DCYA	Vehicle CG Y-Axis Displacement	180			

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Channel	Mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
84	10VEHCCG0000ACZA	Vehicle CG Z-Axis Acceleration	60	+	yes	1000
84A	10VEHCCG0000VEZA	Vehicle CG Z-Axis Velocity	180			
84B	10VEHCCG0000DCZA	Vehicle CG Z-Axis Displacement	180			
84C	10VEHCCG0000ACRA	Vehicle CG Resultant Acceleration	60			
85	11AIRBFR0100EV0A	Driver Front Airbag 1 Ind	1000	+	no	5
86	11AIRBFR0200EV0A	Driver Front Airbag 2 Ind	1000	+	no	5
87	11SEBE0000B5FOOA	Driver Lap Belt	60	+	yes	13500
88	11SEBE0000B3FOOA	Driver Shoulder Belt	60	+	yes	13500
89	L0FBAR000001FOXA	Load Cell Row 1 Column 1	60	+	yes	311376
90	L0FBAR000002FOXA	Load Cell Row 2 Column 1	60	+	yes	311376
91	L0FBAR000003FOXA	Load Cell Row 3 Column 1	60	+	yes	311376
92	L0FBAR000004FOXA	Load Cell Row 4 Column 1	60	+	yes	311376
93	L0FBAR000005FOXA	Load Cell Row 5 Column 1	60	+	yes	311376
94	L0FBAR000006FOXA	Load Cell Row 6 Column 1	60	+	yes	311376
95	L0FBAR000007FOXA	Load Cell Row 7 Column 1	60	+	yes	311376
96	L0FBAR000008FOXA	Load Cell Row 8 Column 1	60	+	yes	311376
97	L0FBAR000009FOXA	Load Cell Row 9 Column 1	60	+	yes	311376
98	L0FBAR000010FOXA	Load Cell Row 10 Column 1	60	+	yes	311376
99	L0FBAR000011FOXA	Load Cell Row 1 Column 2	60	+	yes	311376
100	L0FBAR000012FOXA	Load Cell Row 2 Column 2	60	+	yes	311376
101	L0FBAR000013FOXA	Load Cell Row 3 Column 2	60	+	yes	311376
102	L0FBAR000014FOXA	Load Cell Row 4 Column 2	60	+	yes	311376
103	L0FBAR000015FOXA	Load Cell Row 5 Column 2	60	+	yes	311376
104	L0FBAR000016FOXA	Load Cell Row 6 Column 2	60	+	yes	311376
105	L0FBAR000017FOXA	Load Cell Row 7 Column 2	60	+	yes	311376
106	L0FBAR000018FOXA	Load Cell Row 8 Column 2	60	+	yes	311376
107	L0FBAR000019FOXA	Load Cell Row 9 Column 2	60	+	yes	311376
108	L0FBAR000020FOXA	Load Cell Row 10 Column 2	60	+	yes	311376
109	L0FBAR000021FOXA	Load Cell Row 1 Column 3	60	+	yes	311376
110	L0FBAR000022FOXA	Load Cell Row 2 Column 3	60	+	yes	311376
111	L0FBAR000023FOXA	Load Cell Row 3 Column 3	60	+	yes	311376

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Channel	Mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
112	L0FBAR000024FOXA	Load Cell Row 4 Column 3	60	+	yes	311376
113	L0FBAR000025FOXA	Load Cell Row 5 Column 3	60	+	yes	311376
114	L0FBAR000026FOXA	Load Cell Row 6 Column 3	60	+	yes	311376
115	L0FBAR000027FOXA	Load Cell Row 7 Column 3	60	+	yes	311376
116	L0FBAR000028FOXA	Load Cell Row 8 Column 3	60	+	yes	311376
117	L0FBAR000029FOXA	Load Cell Row 9 Column 3	60	+	yes	311376
118	L0FBAR000030FOXA	Load Cell Row 10 Column 3	60	+	yes	311376
119	L0FBAR000031FOXA	Load Cell Row 1 Column 4	60	+	yes	311376
120	L0FBAR000032FOXA	Load Cell Row 2 Column 4	60	+	yes	311376
121	L0FBAR000033FOXA	Load Cell Row 3 Column 4	60	+	yes	311376
122	L0FBAR000034FOXA	Load Cell Row 4 Column 4	60	+	yes	311376
123	L0FBAR000035FOXA	Load Cell Row 5 Column 4	60	+	yes	311376
124	L0FBAR000036FOXA	Load Cell Row 6 Column 4	60	+	yes	311376
125	L0FBAR000037FOXA	Load Cell Row 7 Column 4	60	+	yes	311376
126	L0FBAR000038FOXA	Load Cell Row 8 Column 4	60	+	yes	311376
127	L0FBAR000039FOXA	Load Cell Row 9 Column 4	60	+	yes	311376
128	L0FBAR000040FOXA	Load Cell Row 10 Column 4	60	+	yes	311376
129	L0FBAR000041FOXA	Load Cell Row 1 Column 5	60	+	yes	311376
130	L0FBAR000042FOXA	Load Cell Row 2 Column 5	60	+	yes	311376
131	L0FBAR000043FOXA	Load Cell Row 3 Column 5	60	+	yes	311376
132	L0FBAR000044FOXA	Load Cell Row 4 Column 5	60	+	yes	311376
133	L0FBAR000045FOXA	Load Cell Row 5 Column 5	60	+	yes	311376
134	L0FBAR000046FOXA	Load Cell Row 6 Column 5	60	+	yes	311376
135	L0FBAR000047FOXA	Load Cell Row 7 Column 5	60	+	yes	311376
136	L0FBAR000048FOXA	Load Cell Row 8 Column 5	60	+	yes	311376
137	L0FBAR000049FOXA	Load Cell Row 9 Column 5	60	+	yes	311376
138	L0FBAR000050FOXA	Load Cell Row 10 Column 5	60	+	yes	311376
139	L0FBAR000051FOXA	Load Cell Row 1 Column 6	60	+	yes	311376
140	L0FBAR000052FOXA	Load Cell Row 2 Column 6	60	+	yes	311376
141	L0FBAR000053FOXA	Load Cell Row 3 Column 6	60	+	yes	311376
142	L0FBAR000054FOXA	Load Cell Row 4 Column 6	60	+	yes	311376

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Channel	Mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
143	L0FBAR000055FOXA	Load Cell Row 5 Column 6	60	+	yes	311376
144	L0FBAR000056FOXA	Load Cell Row 6 Column 6	60	+	yes	311376
145	L0FBAR000057FOXA	Load Cell Row 7 Column 6	60	+	yes	311376
146	L0FBAR000058FOXA	Load Cell Row 8 Column 6	60	+	yes	311376
147	L0FBAR000059FOXA	Load Cell Row 9 Column 6	60	+	yes	311376
148	L0FBAR000060FOXA	Load Cell Row 10 Column 6	60	+	yes	311376
149	L0FBAR000061FOXA	Load Cell Row 1 Column 7	60	+	yes	311376
150	L0FBAR000062FOXA	Load Cell Row 2 Column 7	60	+	yes	311376
151	L0FBAR000063FOXA	Load Cell Row 3 Column 7	60	+	yes	311376
152	L0FBAR000064FOXA	Load Cell Row 4 Column 7	60	+	yes	311376
153	L0FBAR000065FOXA	Load Cell Row 5 Column 7	60	+	yes	311376
154	L0FBAR000066FOXA	Load Cell Row 6 Column 7	60	+	yes	311376
155	L0FBAR000067FOXA	Load Cell Row 7 Column 7	60	+	yes	311376
156	L0FBAR000068FOXA	Load Cell Row 8 Column 7	60	+	yes	311376
157	L0FBAR000069FOXA	Load Cell Row 9 Column 7	60	+	yes	311376
158	L0FBAR000070FOXA	Load Cell Row 10 Column 7	60	+	yes	311376
159	L0FBAR000071FOXA	Load Cell Row 1 Column 8	60	+	yes	311376
160	L0FBAR000072FOXA	Load Cell Row 2 Column 8	60	+	yes	311376
161	L0FBAR000073FOXA	Load Cell Row 3 Column 8	60	+	yes	311376
162	L0FBAR000074FOXA	Load Cell Row 4 Column 8	60	+	yes	311376
163	L0FBAR000075FOXA	Load Cell Row 5 Column 8	60	+	yes	311376
164	L0FBAR000076FOXA	Load Cell Row 6 Column 8	60	+	yes	311376
165	L0FBAR000077FOXA	Load Cell Row 7 Column 8	60	+	yes	311376
166	L0FBAR000078FOXA	Load Cell Row 8 Column 8	60	+	yes	311376
167	L0FBAR000079FOXA	Load Cell Row 9 Column 8	60	+	yes	311376
168	L0FBAR000080FOXA	Load Cell Row 10 Column 8	60	+	yes	311376
169	L0FBAR000081FOXA	Load Cell Row 1 Column 9	60	+	yes	311376
170	L0FBAR000082FOXA	Load Cell Row 2 Column 9	60	+	yes	311376
171	L0FBAR000083FOXA	Load Cell Row 3 Column 9	60	+	yes	311376
172	L0FBAR000084FOXA	Load Cell Row 4 Column 9	60	+	yes	311376
173	L0FBAR000085FOXA	Load Cell Row 5 Column 9	60	+	yes	311376

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Channel	Mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
174	L0FBAR000086FOXA	Load Cell Row 6 Column 9	60	+	yes	311376
175	L0FBAR000087FOXA	Load Cell Row 7 Column 9	60	+	yes	311376
176	L0FBAR000088FOXA	Load Cell Row 8 Column 8	60	+	yes	311376
177	L0FBAR000089FOXA	Load Cell Row 9 Column 9	60	+	yes	311376
178	L0FBAR000090FOXA	Load Cell Row 10 Column 9	60	+	yes	311376



CERTIFICATE OF CONFORMITY

Certificate No. 26723
Serial No. FL139

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

Product Description	Frontal ODB painted grey
Cellbond Part No.	70EEVCFIUS

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

	Test Results	GR No.	Blk No.
1	8032-8	CHC0303103GB	N/A
2	7558-8	CHC0511016FL	N/A

Declaration.

The above moving deformable barrier has been manufactured in accordance with the provisions of the European Parliament and Council No 96/79/EC Directive (Regulation ECE R94)

Additional Information...

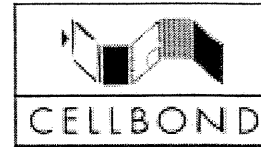
company registration
England 1944904

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

Cellbond Offices
United Kingdom
United States of America



060530 78320 31401



EEVC DEFORMABLE FRONTAL BARRIER
ALUMINIUM HONEYCOMB CERTIFICATION
STATIC TEST RESULTS

MAIN BLOCK
Core: 1.8 3/4 3003

Required Crush Strength
0.308 MPa to 0.342 MPa

Test No: 8032-8

GR No : CHC0303103GB

Block No: N/A

	Crush Strength (MPa)			RESULT
	6.4 to 9.7 mm	9.7 to 13.2 mm	13.2 to 16.5 mm	
Sample* 1	0.3292	0.3267	0.3288	PASS
Sample 2	0.3441	0.3404	0.3296	FAIL
Sample 3	0.3194	0.3247	0.3188	PASS
Sample 4	0.3306	0.3288	0.3270	PASS
Sample 5	0.3380	0.3330	0.3383	PASS
Sample 6	0.3391	0.3365	0.3335	PASS
Sample 7	0.3355	0.3379	0.3325	PASS
Sample 8	0.3260	0.3314	0.3331	PASS

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

*Sample size and location as per R94.

RESULT: PASSED

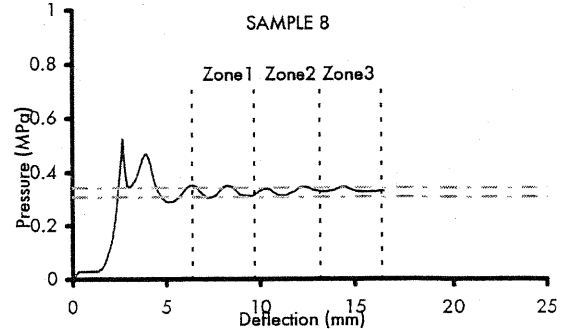
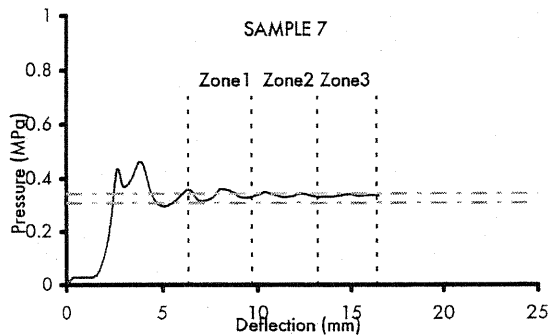
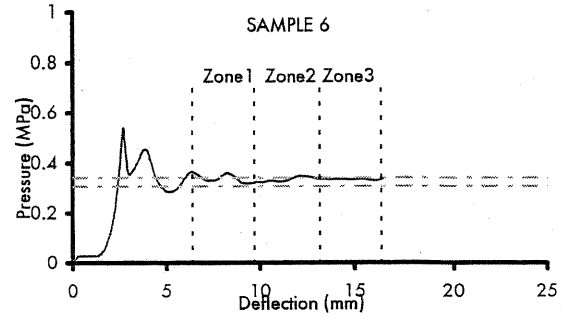
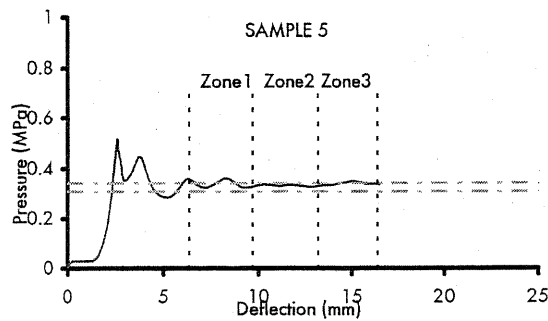
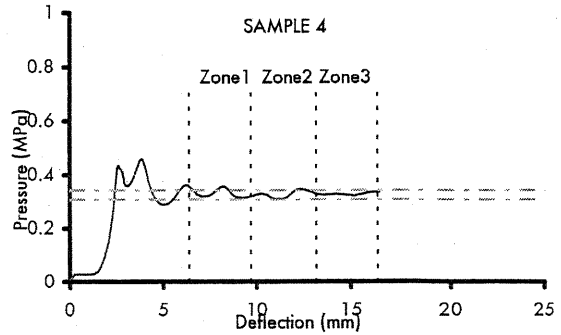
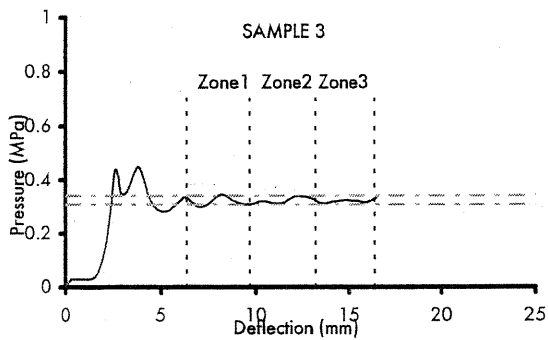
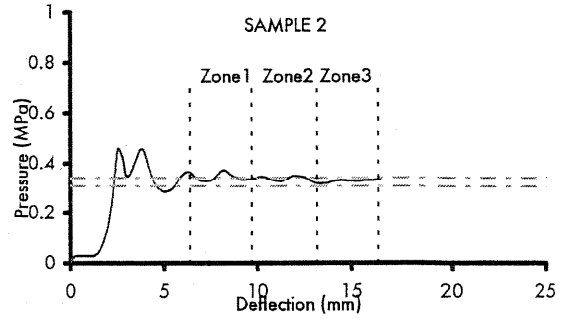
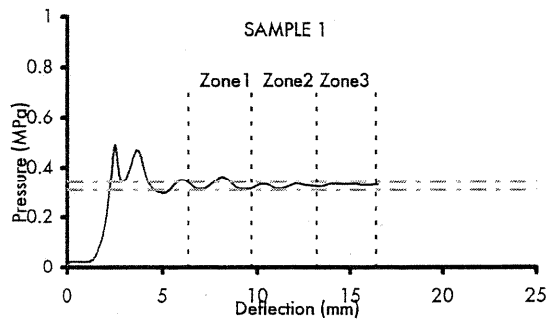
EEVC DEFORMABLE FRONTAL BARRIER
MAIN BLOCK

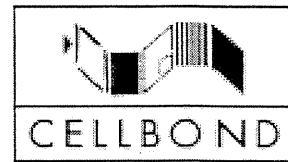
Honeycomb Type: 1.8 3/4 3003
Higher Acceptable Crush Strength Limit: 0.342 MPa
Lower Acceptable Crush Strength Limit: 0.308 MPa

Section 1: 6.4 - 9.7mm
Section 2: 9.7 - 13.2mm
Section 3: 13.2 - 16.5mm
Speed: 6.35 mm/min
Block No: N/A

Test No: 8032-8

GR No: CHC0303103GB





EEVC DEFORMABLE FRONTAL BARRIER
ALUMINIUM HONEYCOMB CERTIFICATION
STATIC TEST RESULTS

BUMPER
Core: 5.2 1/4 3003

Required Crush Strength
1.540 MPa to 1.711 MPa

Test No: 7558-8

GR No: CHC0511016FL
Block No: N/A

	Crush Strength (MPa)			RESULT
	6.4 to 9.7 mm	9.7 to 13.2 mm	13.2 to 16.5 mm	
Sample* 1	1.697	1.713	1.709	FAIL
Sample 2	1.548	1.549	1.567	PASS
Sample 3	1.630	1.636	1.639	PASS
Sample 4	1.552	1.554	1.580	PASS
Sample 5	1.572	1.559	1.549	PASS
Sample 6	1.573	1.572	1.569	PASS
Sample 7	1.573	1.596	1.567	PASS
Sample 8	1.543	1.549	1.541	PASS

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

*Sample size and location as per R94.

RESULT: PASSED

EEVC DEFORMABLE FRONTAL BARRIER
BUMPER

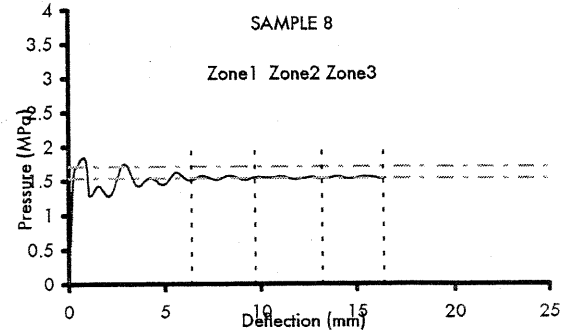
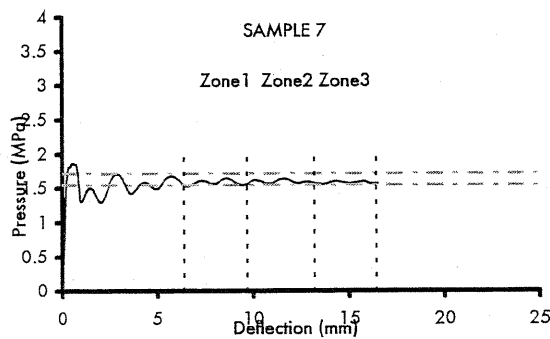
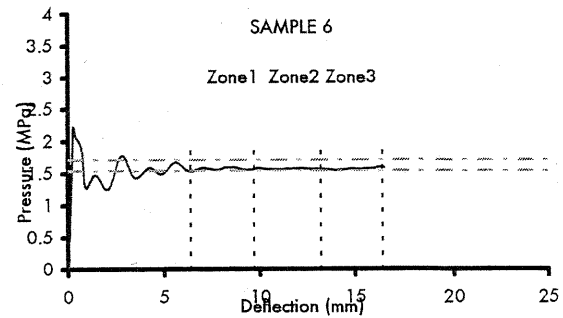
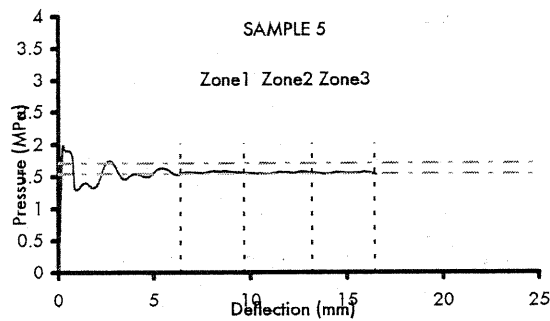
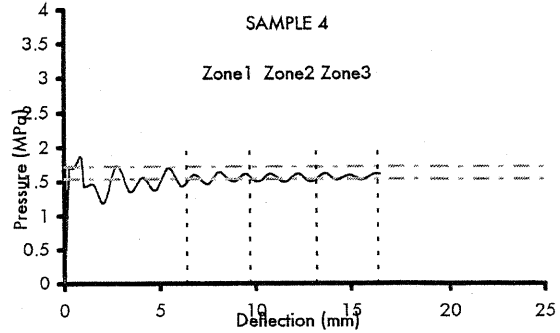
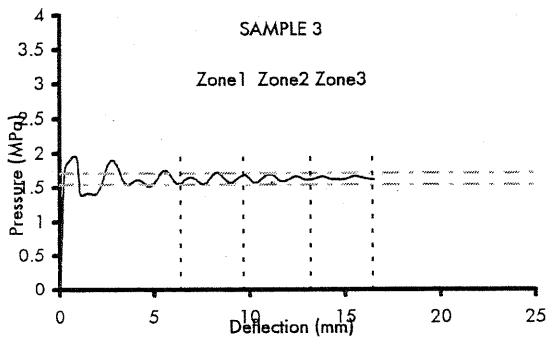
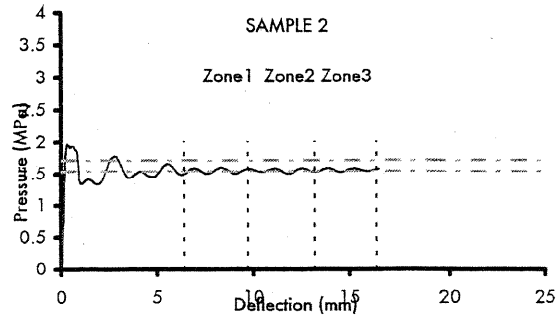
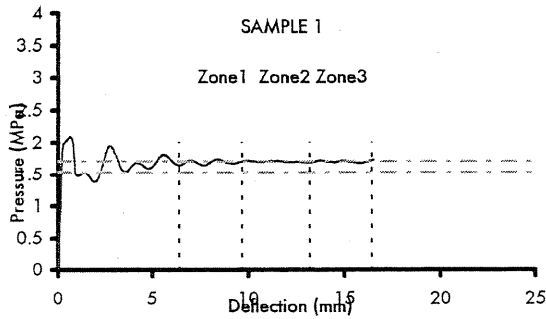
Honeycomb Type: 5.2 1/4 3003
Higher Acceptable Crush Strength Limit: 1.711 MPa
Lower Acceptable Crush Strength Limit: 1.540 MPa

Section 1: 6.4 - 9.7mm
Section 2: 9.7 - 13.2mm
Section 3: 13.2 - 16.5mm
Speed: 6.35 mm/min

Test No: 7558-8

GR No: CHC0511016FL

Block No: N/A



Procedure For Vehicle Interior Intrusion Measurements

The interior intrusion measurement locations are marked on both the driver and passenger side of the vehicle and are to be recorded using a coordinate measuring machine (CMM). The coordinate system for intrusion measurements is based on SAE J211 vehicle and laboratory coordinates. The X-direction is positive from the left of the vehicle to the right of the vehicle. The Z-direction is positive from the top of the vehicle to the ground. The frame of reference for the vehicle coordinate system is the non-deforming part of the vehicle.

The Contractor shall level the vehicle (Note: do not use suspension) and locate the vehicle coordinate system on a rigid surface of the vehicle's bumper at centerline of the vehicle. The post-test intrusion measurement points shall be measured using the same reference coordinate system by leveling the vehicle to the same pretest condition. The before and after impact measurements are in millimeters in the range -10,000 to 10,000 millimeters. A unique intrusion point number (IPNO) further identifies an intrusion point within each possible intrusion point location. The unique IPNO codes are identified in Table E1. The locations of the toe pan intrusion points are depicted in Figure E1. The Contractor shall record the intrusion measurements described in Figure E1. The COTR reserves the right to modify these measurements and the procedure.

Table E1: Intrusion Point Numbers (IPNO) Codes

Intrusion Point Number (IPNO) Format: Integer	Description
1	Toe pan point A1 (See Figure E1)
2	Toe pan point B1 (See Figure E1)
3	Toe pan point C1 (See Figure E1)
4	Toe pan point D1 (See Figure E1)
5	Toe pan point A2 (See Figure E1)
6	Toe pan point B2 (See Figure E1)
7	Toe pan point C2 (See Figure E1)
8	Toe pan point D2 (See Figure E1)
9	Toe pan point A3 (See Figure E1)
10	Toe pan point B3 (See Figure E1)
11	Toe pan point C3 (See Figure E1)
12	Toe pan point D3 (See Figure E1)
13	Floorboard point A4 (See Figure E1)
14	Floorboard point B4 (See Figure E1)
15	Floorboard point C4 (See Figure E1)
16	Floorboard point D4 (See Figure E1)
17	Floorboard point A5 (See Figure E1)
18	Floorboard point B5 (See Figure E1)
19	Floorboard point C5 (See Figure E1)
20	Floorboard point D5 (See Figure E1)
21	Geometric center of brake pedal (See Figure E1)
22	Upper instrument panel (IP) left knee (located above where dummy's knees contact dash)
23	Upper IP right knee (located above where dummy's knees contact dash)
24	Steering column
25	Front outboard seat attachment point

Procedure for Marking Toe Pan and Floorboard

1. Locate and mark point D1 (column D row 1): Project a line 45 degrees (from the horizontal) down and forward from the center of the top accelerometer pedal in x-z plane until the line intersects the interior of the vehicle. Mark this point by cutting a small “v” in the carpet and underlying padding and peeling back and exposing the floor. The carpet and padding are then refitted prior to crash.
2. ST plane: The ST plane is a y-z plane that passes through the front edge of the right seat track.
3. AP1 plane: The AP1 plane is a y-z plane that passes through point D1.
4. AP2 plane: The AP2 plane is an x-z plane that passes through point D1.
5. AP3 plane: The AP3 plane is an x-y plane that passes through point D1.
6. MP plane: The MP plane is a y-z plane located halfway between the ST plane and AP1 plane.

7. CF plane: The CF plane is an x-z plane that passes through the center of the footrest. If there is no visible footrest, locate the x-z plane to pass through a point located 64 mm measured along the MP plane in the y-direction from the intersection of the door sill and floorboard.
8. BP plane: The BP plane is an x-z plane that passes through the center of the brake pedal.
9. TP plane: The TP plane is a y-z plane at the intersection of the BP plane and the intersection of the toe pan and floorboard.
10. Column A is at the intersection of the vehicle and the CF plane.
11. Column D is at the intersection of the vehicle and the AP2 plane.
12. Row 1 is at the intersection of the vehicle and the AP3 plane.
13. Row 3 is at the intersection of the vehicle and the TP plane.
14. Row 5 is at the intersection of the vehicle and MP plane.
15. Columns B and C are evenly spaced between Columns A and D.
16. Row 2 is evenly spaced between Row 1 and Row 3.
17. Row 4 is evenly spaced between Row 3 and Row 5.
18. Map and mark additional driver points:
 - a. Mark the center of the brake pedal.
 - b. Mark the left upper IP located above where dummy's knees contact the dash.
 - c. Mark the right upper IP located above where dummy's knees contact the dash.
 - d. Mark the center of the steering wheel.
 - e. Mark the front outboard seat attachment point.
19. Map all driver side toe pan and floorboard points to the passenger side from the center line of the vehicle.
20. Map and mark additional driver points:
 - a. Mark the left upper IP located above where dummy's knees contact dash.
 - b. Mark the right upper IP located above where dummy's knees contact dash.
 - c. Mark the front outboard seat attachment point.

Data Submission

For each intrusion point, six measurements may be taken. The Contractor shall submit a table that describes the data from three pre-test and three post-test measurements in the test report. The data shall be submitted in ENTRÉE format:

- Notes: (1) If no data is taken for one of the coordinate systems please leave blank - do not put a zero.
(2) VEHNO denotes Vehicle Number
(3) TSTREF denotes Test Reference Number
(4) Table E2 defines IPLOC
(5) Table E3 defines measurement format

Table E2: Intrusion Point Location Format

Intrusion Point Locations (IPLOC) Format: Text	Description
C	Steering Column
D	Driver Side
P	Passenger Side

Table E3: Intrusion Measurement Format

Intrusion Measurements (Millimeters) Format: Integer	Description
BIX, BIY, BIZ	Pre-test measurements for x, y, z axis respectively
AIX, AIY, AIZ	Post-test measurements for x, y, z axis respectively

Appendix F

INSIA Report on Structural Measurements



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

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

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

March, 1999

REPORT DOCUMENTATION PAGE	
Title:	<i>STRUCTURAL SURVEY OF CARS. MEASUREMENT METHODOLOGY OF THE MAIN RESISTANT ELEMENTS IN THE CAR BODY</i>
Author(s):	Aparicio Izquierdo, Francisco Páez Ayuso, Francisco Javier
Performing Organisation name and address:	INSIA – University Institute for Automobile Research Carretera de Valencia, Km. 7 – Campus Sur de la Universidad Politécnica de Madrid 28031 – Madrid – Spain
Supplementary notes:	Under contract to: THE EUROPEAN COMMUNITY Project: “Improvement of Crash Compatibility between Cars” Contract N°: RO – 97 – SC.1064
Abstract:	The main aim of this working package -<i>Structural Survey of Cars</i>- is the reduction of incompatibilities, both structural and geometric, between passenger vehicles and their potential collision partners. The understanding of these incompatibilities needs a previous step for the knowledge of the existing car fleet. Firstly, it is necessary to select the main resistant elements in the car body. These elements have to be chosen from the point of view of the sort of collision that we want to study, that is to say, frontal and side impacts. Detailed measurements have been taken from exterior and interior elements, spread to a total number of 74 models selected from the main vehicle manufacturers at Spain. All of them are being sold this year. Using the information available from the previous measurements in vehicles, the geometric characteristics of the main resistant elements involved in the geometric compatibility between cars will be defined. This report shows the methodology followed to get these measurements.
Subject terms:	Crash compatibility, geometric compatibility, resistant elements, measure methodology
Date:	March, 1999

1.- METHODOLOGY.

Detailed measurements have been taken from exterior and interior elements. Using the information available from the previous measurements in vehicles, the geometric characteristics of the main resistant elements involved in the geometric compatibility between cars have been defined. These elements are presented in the following figures, and have been divided in two main groups according to the vehicle zones studied in this project.

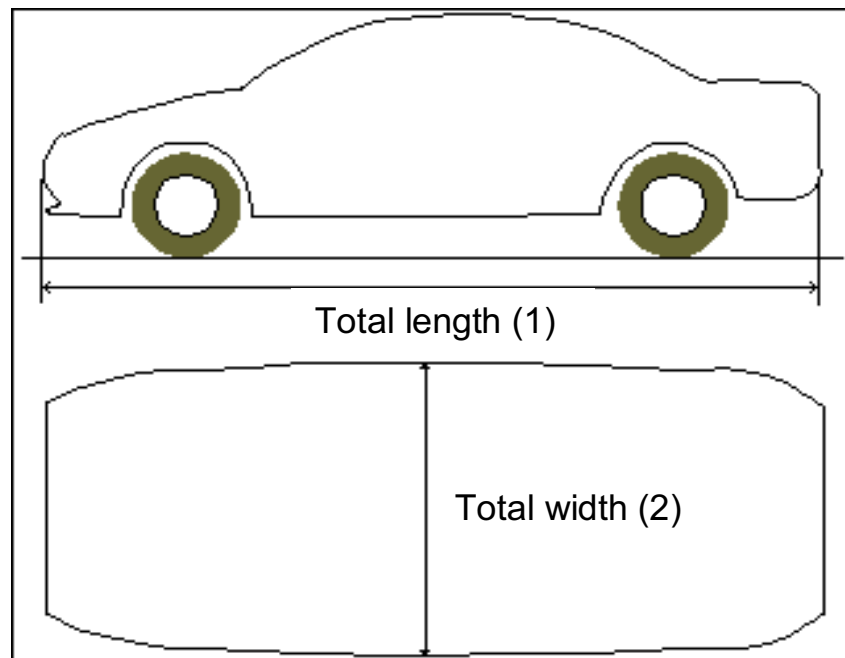


Figure 1.- Definition of the main resistant elements. General dimensions.

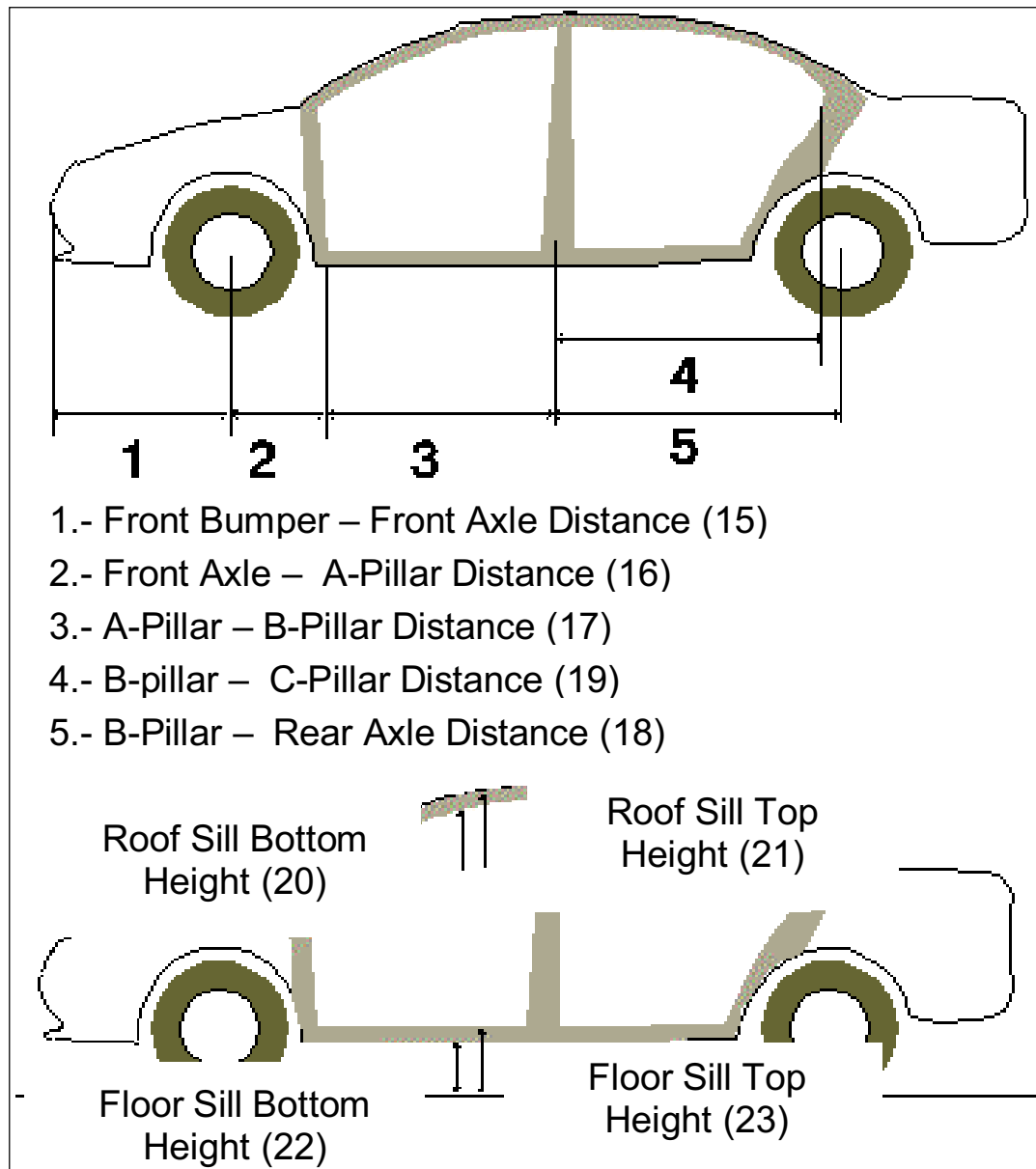


Figure 2.- Definition of the main resistant elements. Side elements.

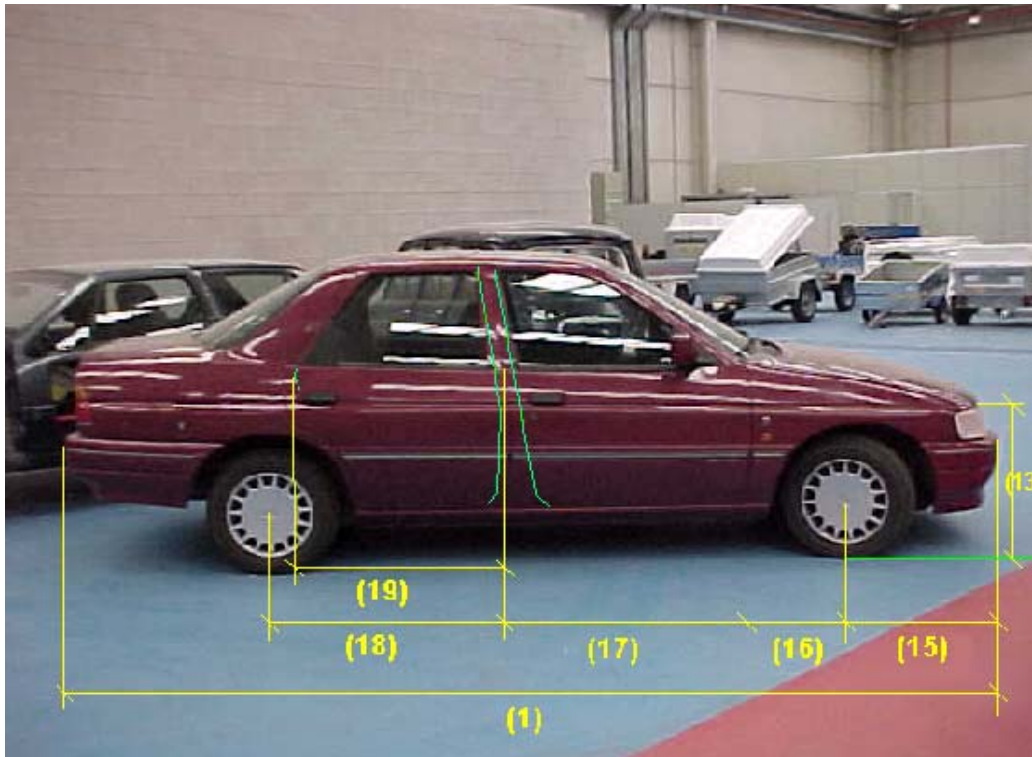


Figure 3.-
Measurements of
the side resistant
elements (outer).

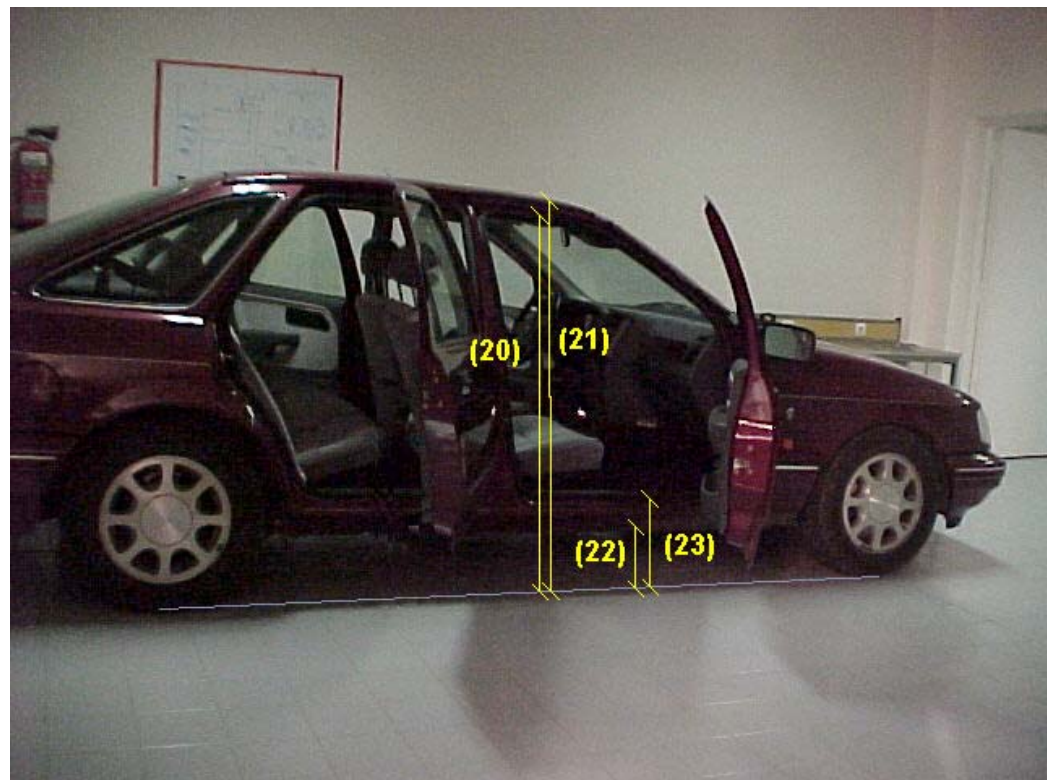


Figure 4.- Measurements
of the side resistant
elements (inner).

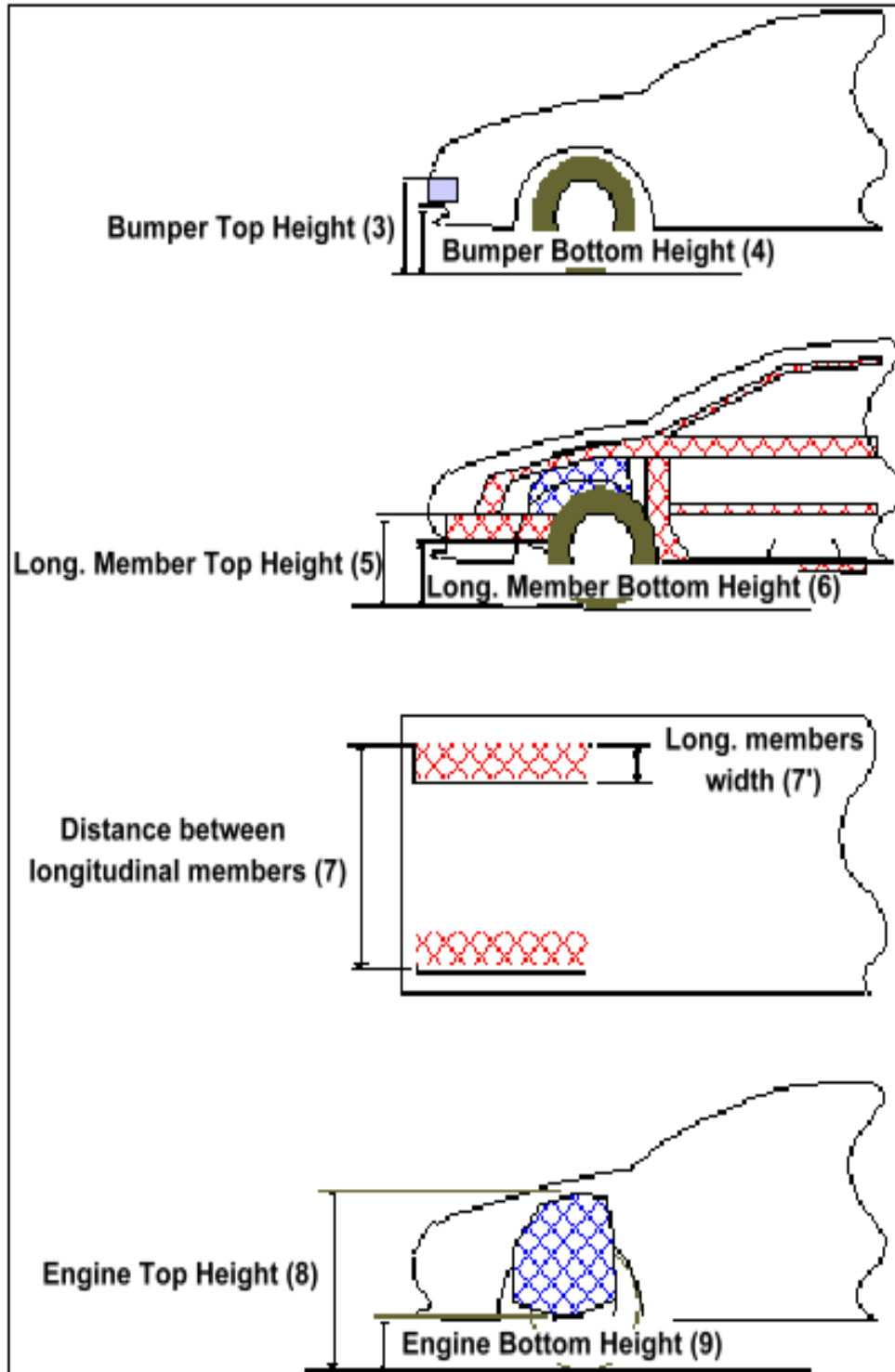


Figure 5.- Definition of the main resistant elements. Front elements.

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

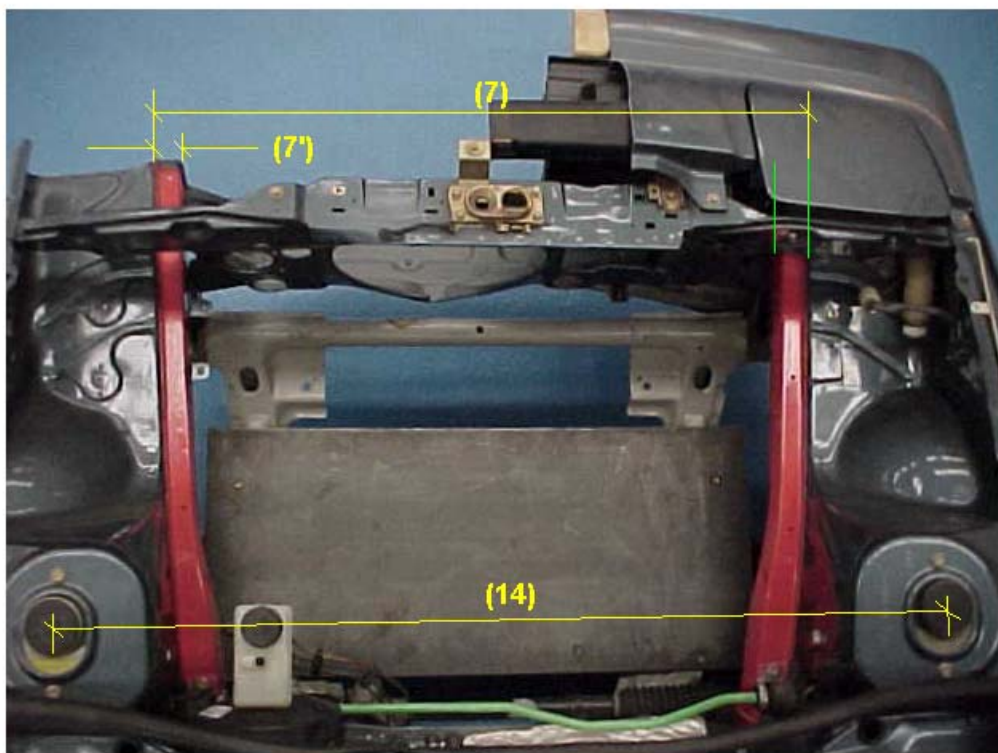
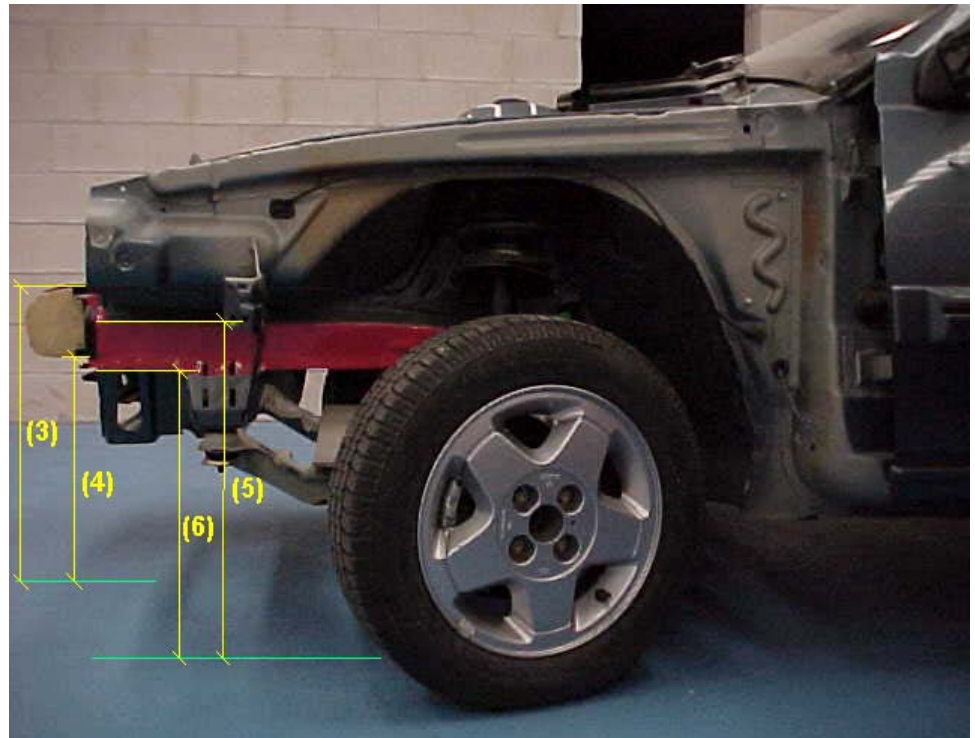


Figure 7.-
Measurements
of the main
resistant
elements. Front
elements 2.

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

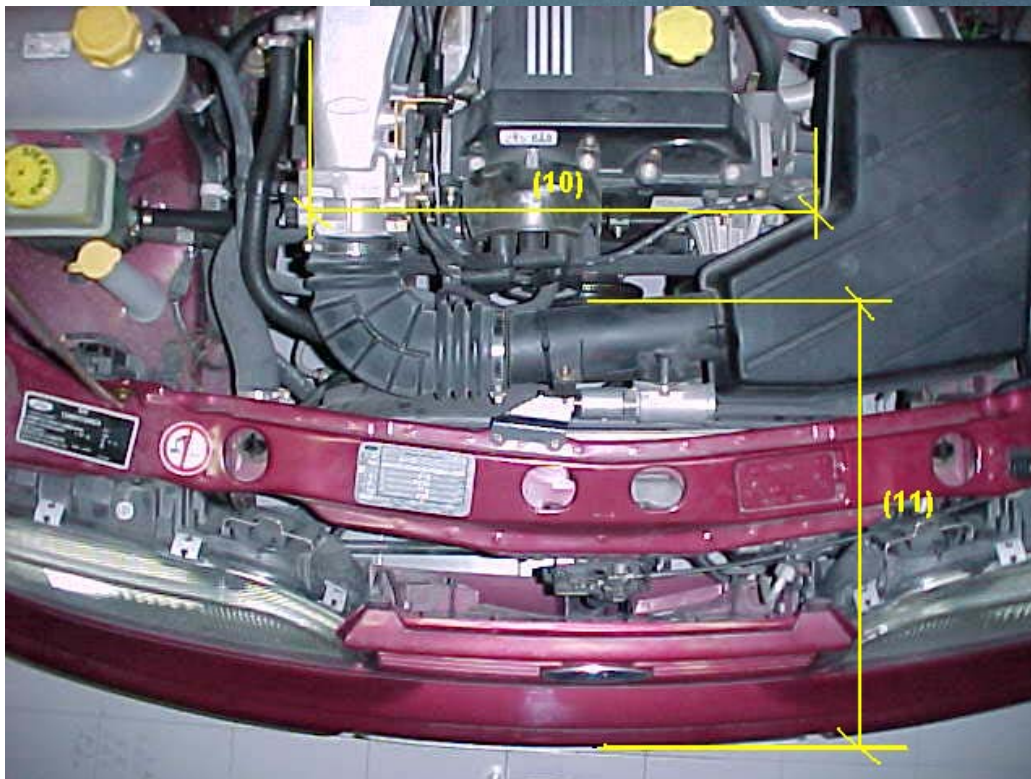
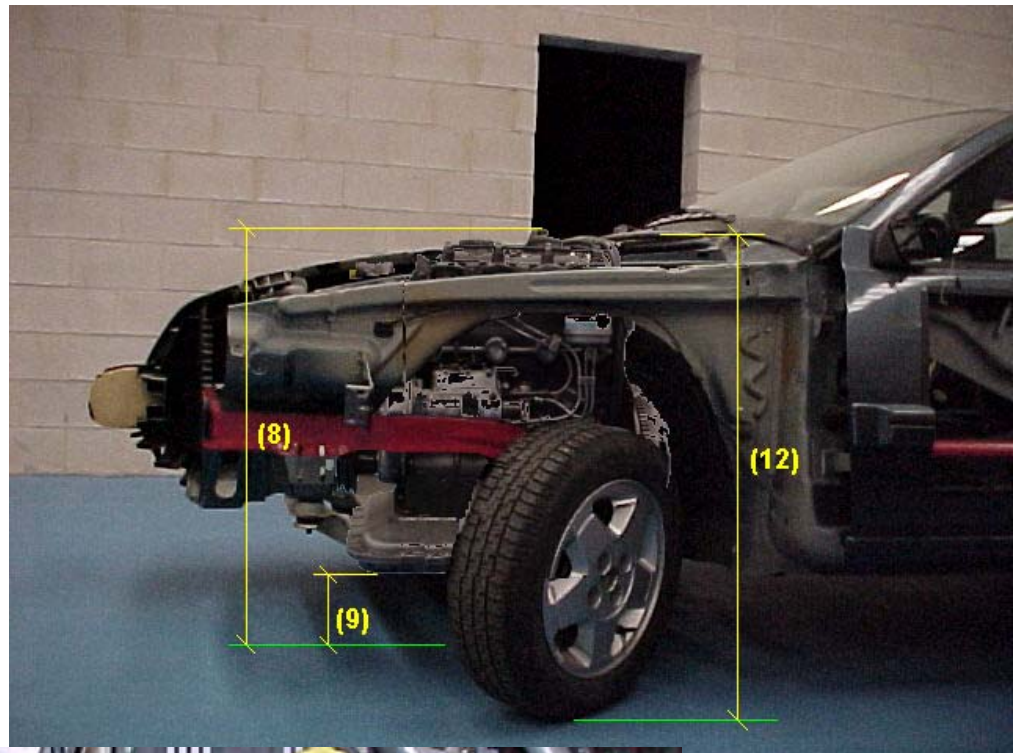


Figure 9.-
Definition of
the main
resistant
elements. Front
elements
(Longitudinal
engine).



The procedure considered to measure these elements is described as follows, where it is indicated the location of these ones in the Excel Sheet (SURVEY.XLS) into brackets:

FRONT ELEMENTS

- **Total Length –(1)- (Side & Front Sheets - C column):** distance between the point in the front bumper further on and the point in the rear bumper further back.
- **Weight (Side & Front Sheets - D column):** mass, including an average driver weight (70 kg), and the fuel tank mass (at half-capacity).
- **Total Width –(2)- (Side & Front Sheets - E column):** distance between the outer side points in a transverse plane of the vehicle (middle plane between the front and rear axles).
- **Bumper bottom height –(4)- (Front Sheet G column):** distance between the ground and the lowest point on the front bumper, being a resistant member (aerodynamic elements under the front bumper are not considered).
- **Bumper top height –(3)- (Front Sheet H column):** distance between the ground and the highest point on the front bumper, being a resistant member (aerodynamic elements are not considered).
- **Longitudinal member top height –(5)- (Front Sheet I column):** distance between the ground and the highest point on the longitudinal members, measured approximately in the front bumper-longitudinal member joint (when accessible).
- **Longitudinal member bottom height –(6)- (Front Sheet J column):** distance between the ground and the lowest point on the longitudinal members, measured approximately in the front bumper-longitudinal member joint.
- **Distance between longitudinal members (Front Sheet K column):** transverse distance between extreme points in longitudinal members, measured approximately in the front bumper-longitudinal member joint.

Depending on the accessibility of these members, the extreme points are the inner points (I) or the outer points (O).

- **Longitudinal member width -7'- (Front Sheet L column):** width of one of the longitudinal members, measured approximately in the front bumper-longitudinal member joint.

- **Engine top height (8) (Front Sheet N column):** distance between the ground and the highest point on the engine that can be a resistant member in case of accident (usually, the highest point on the head, or the highest point of the inlet or exhaust manifolds).
- **Engine bottom height (9) (Front Sheet M column):** distance between the ground and the lowest point on the engine (usually, the lowest point on the crankcase).
- **Engine and Gearbox width (10) (Front Sheet O & P columns):**
 - *Transverse configuration engine:* distance between extreme points in the gearbox-cylinder block unit or others resistant members attached to the cylinder block unit, i.e. fan belts (from a front point of view).
 - *Longitudinal configuration engine:* distance between extreme points in the cylinder block unit (from a front point of view).
- **Front bumper - Engine distance (11) (Front Sheet Q column):** distance between the point in the front bumper further on and the point in the engine further on that is a resistant element, i.e. the further on point of the exhaust manifold placed in the front of the engine.
- **Front shock absorber fixing width (14) (Front Sheet R column):** transverse distance between the front shock absorber - body car joints.
- **Front shock absorber fixing height (12) (Front Sheet S column):** distance between the ground and the front shock absorber-body car joint.
- **Bonnet leading edge height (Front Sheet T column):** distance between the ground and the bonnet edge further on.

SIDE ELEMENTS

- **Front bumper - Front axle distance (15) (Side Sheet G column):** distance between the point in the front bumper further on and the middle point in the front tyre-road contact patch.
- **Front axle - A Pillar distance (16) (Side Sheet H column):** distance between the middle point in the front tyre-road contact patch and the point in the A-pillar further back.
- **A Pillar - B Pillar distance (17) (Side Sheet I column):** distance between the point in the A-pillar further back and the middle point in the B-pillar.
- **B Pillar - C Pillar distance (19) (Side Sheet J column):** distance between the middle point in the B-pillar and the point in the C-pillar further back (only 4/5-door vehicles).
- **B Pillar - Rear axle distance (18) (Side Sheet K column):** distance between the middle point in the B-pillar and the middle point in the rear tyre-road contact patch.
- **Roof sill bottom height (20) (Side Sheet L column):** distance between the ground and the lowest point on the roof sill, measured in the front door middle point.
- **Roof sill top height (21) (Side Sheet M column):** distance between the ground and the highest point on the roof sill (usually located in the sill-roof joint), measured in the front door middle point.
- **Floor sill bottom height (22) (Side Sheet N column):** distance between the ground and the lowest point on the floor sill, measured in the front door middle point.
- **Floor sill top height (23) (Side Sheet O column):** distance between the ground and the highest point on the floor sill, measured in the front door middle point.

NOTE

- N/A: dimension not available.