

Report Number: 214-TRC-06-003

Safety Compliance Testing For FMVSS 214

Side Impact Protection

Indicant

**Suzuki Motor Corporation
2006 Suzuki Grand Vitara MPV**

NHTSA Number: C60507

Transportation Research Center Inc.

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P. O. Box B-67

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Test Date: June 2, 2006

Final Report: June 15, 2006

**U. S. Department Of Transportation
National Highway Traffic Safety Administration**

Enforcement

Office of Vehicle Safety Compliance

400 Seventh Street, S. W.

Room No. 6111 (NVS-220)

Washington, DC 20590

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15. Supplemental Notes	16. Abstract This 56/28 km/h 90° Impact (Moving Deformable Barrier) Compliance Test was conducted on the subject vehicle, a 2006 Suzuki Grand Vitara MPV in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-214D-06 (except the test was conducted 8 km/h (5 mph) faster than the standard specifies) to determine FMVSS 214 Side Impact Protection compliance. This test was conducted by Transportation Research Center Inc. in East Liberty, Ohio, on June 2, 2006. The impact velocity of the Moving Deformable Barrier (MDB) was 61.6 km/h, and the ambient temperature at the struck (driver) side of the target vehicle at the time of impact was 21° C. The target vehicle's post-test maximum crush was 238 mm at Level 2. The test or target vehicle's performance is given below (with FIR filter): <table border="0"> <thead> <tr> <th></th> <th><u>Front SID HIII</u></th> <th></th> <th><u>Rear SID HIII</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib Acceleration:</td> <td><u>45.3</u></td> <td>g's</td> <td><u>39.1</u></td> <td>g's</td> </tr> <tr> <td>Left Lower Rib Acceleration:</td> <td><u>39.0</u></td> <td>g's</td> <td><u>36.2</u></td> <td>g's</td> </tr> <tr> <td>Lower Spine Acceleration:</td> <td><u>33.2</u></td> <td>g's</td> <td><u>43.2</u></td> <td>g's</td> </tr> <tr> <td>Thoracic Trauma Index, (TTI):</td> <td><u>39.2</u></td> <td>g's</td> <td><u>41.2</u></td> <td>g's</td> </tr> <tr> <td>Pelvis Acceleration (PEV):</td> <td><u>49.5</u></td> <td>g's</td> <td><u>50.1</u></td> <td>g's</td> </tr> </tbody> </table> The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during side impact event.		<u>Front SID HIII</u>		<u>Rear SID HIII</u>		Left Upper Rib Acceleration:	<u>45.3</u>	g's	<u>39.1</u>	g's	Left Lower Rib Acceleration:	<u>39.0</u>	g's	<u>36.2</u>	g's	Lower Spine Acceleration:	<u>33.2</u>	g's	<u>43.2</u>	g's	Thoracic Trauma Index, (TTI):	<u>39.2</u>	g's	<u>41.2</u>	g's	Pelvis Acceleration (PEV):	<u>49.5</u>	g's	<u>50.1</u>	g's
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Section 1

Purpose and Test Procedure

This side impact test is part of the FMVSS 214 Side Impact Protection Compliance Test Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-02-D-11114. The purpose of this test was to evaluate side impact protection in a 2006 Suzuki Grand Vitara MPV. The test was conducted in accordance with the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-06, dated July 2001) (except the test was conducted 8 km/h (5 mph) faster than the standard specifies).

Section 2

Summary of Side Impact Test

A 2006 Suzuki Grand Vitara MPV was impacted on the left side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the monorail at a velocity of 61.6 km/h (38.3 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by Transportation Research Center Inc. in East Liberty, Ohio on June 2, 2006. Pre-test and post-test photographs of the test vehicle, the moving deformable barrier (MDB), and the side impact dummies (SID HIIIs) are included in Appendix A.

Two restrained Side Impact Dummies (SID HIIIs) were placed in the driver (Pos. #1) and left rear (Pos. #4) designated seating positions according to the instructions specified in the OVSC Side Impact Laboratory Test Procedure (TP-214D-06, dated July 2001). Both SID HIII dummies were certified prior to this test. The side impact test was documented by one real-time camera and 9 high-speed cameras. Camera locations and other pertinent camera information are included in this report.

The SID HIIIs were instrumented with the following accelerometers:

1. Head (HED) triaxial and redundant accelerometers (X, Y, and Z-directions)
2. Neck (NEK) triaxial force and moment load cells (X, Y, and Z-directions)
3. Left Upper Rib (LUR) uniaxial and redundant accelerometer (Y-direction)
4. Left Lower Rib (LLR) uniaxial and redundant accelerometer (Y-direction)
5. Lower Thoracic Spine (T₁₂) uniaxial and redundant accelerometer (Y-direction)
6. Pelvic (PEV) section uniaxial accelerometer (Y-direction)

A summary of the side impact dummy (SID HIII) configuration and verification test data can be found in Appendix C. A total of sixty-six (66) channels of data were recorded. Appendix B contains the vehicle, MDB, and dummy response data traces.

The following tables summarize the results of the test:

Injury Criteria	Front SID HIII	Rear SID HIII
TTI (g)	39.2	41.2
PEV (g)	49.5	50.1

Data Acquisition Explanations

The vehicle's left lower A-post Y-axis acceleration data channel, 11APILLO0000ACYA, exceeded full-scale at approximately 21 milliseconds. The velocity was also affected.

The vehicle's left mid A-post Y-axis acceleration data channel, 11APILMI0000ACYA, exceeded full-scale at approximately 23 milliseconds. The velocity was also affected.

The vehicle's left lower B-post Y-axis acceleration data channel, 14BPILLO0000ACYA, exceeded full-scale at approximately 5 milliseconds. The velocity was also affected.

The vehicle's left rear seat track Y-axis acceleration data channel, 14SETRLERE00ACYA, recorded questionable data after approximately 45 milliseconds. The velocity was also affected.

Section 3

Summary of Test Results

Data Sheet 1

General Test Vehicle Parameter Data

Test Vehicle Information:

Vehicle Year/Make/Model: 2006 Suzuki Grand Vitara
Vehicle Body Style/Color: MPV/White VIN: JS3TE941764101027
Vehicle NHTSA No.: C60507 Build Date: 08/06
Engine Data: 6 Cylinders; CID; 2.7 Liters; cc
Placement: - Longitudinal; or - Lateral; or - Horizontal
Transmission: 5 Speed; Manual; Automatic; Overdrive
Final Drive: - RWD; - FWD; - Four-Wheel Drive
Odometer Reading: 54 miles
Options: X A/C; X Power steering; X Power brakes; X Power windows

Data From Vehicle's Tire Placard:

Tire Pressure (at capacity)¹ 220 kPa Front; 220 kPa Rear
Recommended Tire Size: P225 / 70R16
Tires on Test Vehicle: P225/70R16 Manufacturer: Yokohama, Geolander G92

Vehicle Capacity Data:

Number of Occupants: 2 Front; 3 Rear; 0 3rd seat; 5 Total
Type of Front Seats: - Bucket; - Bench; - Split bench
Type of Front Seat Back: - Fixed; X Adjustable with X Lever or - Knob
Vehicle Max. Capacity Loading = 410 kg (A)
No. of Occupants x 68.04 kg. = 340 kg (B)
Vehicle Cargo Capacity (A-B) = 70 kg

Test Vehicle Delivered Weight With Maximum Fluids:

Left Front	=	<u>387.0</u> kg	Left Rear	=	<u>398.0</u> kg
Right Front	=	<u>381.5</u> kg	Right Rear	=	<u>399.5</u> kg
Total Front	=	<u>768.5</u> kg	Total Rear	=	<u>797.5</u> kg
Front % of Total Weight	=	<u>49.1</u> %	Rear % of Total Weight	=	<u>50.9</u> %
Total Weight	=	<u>1566.0</u> kg			

¹ Tire pressure used in test.

Data Sheet 1 (Continued)

General Test Vehicle Parameter Data

Calculation Of Vehicle's Target Test Weight:

Total Test Vehicle Delivered Weight With Max. Fluids	=	<u>1566.0</u> kg (A)
Maximum Cargo Carrying Capacity of Test Vehicle	=	<u>70.0</u> kg (B)
Weight of Instrumented Side Impact Dummies (2 X <u>84.0</u> kg)	=	<u>168.0</u> kg (C)
Test Vehicle Target Weight:	=	<u>1804.0</u> kg (A+B+C)

Fully Loaded Test Vehicle (UDW + 2 SID HIII s + Cargo):

Left Front	=	<u>431.5</u> kg	Left Rear	=	<u>499.5</u> kg
Right Front	=	<u>381.5</u> kg	Right Rear	=	<u>478.5</u> kg
Total Front	=	<u>813.0</u> kg	Total Rear	=	<u>978.0</u> kg
Front % of Total Weight	=	<u>45.4</u> %	Rear % of Total Weight	=	<u>54.6</u> %
Total Weight	=	<u>1791.0</u> kg			

As Tested Weight of Test Vehicle (2 SID HIII s + Cargo + Equipment & Instrumentation):

Left Front	=	<u>445.2</u> kg	Left Rear	=	<u>475.0</u> kg
Right Front	=	<u>412.8</u> kg	Right Rear	=	<u>463.2</u> kg
Total Front	=	<u>858.0</u> kg	Total Rear	=	<u>938.2</u> kg
Front % of Total Weight	=	<u>47.8</u> %	Rear % of Total Weight	=	<u>52.2</u> %
Total Weight	=	<u>1796.2</u> kg			

Test Vehicle Attitude (all dimensions in millimeters):

As Delivered	Fully Loaded	Ready For Test
Right Front <u>812</u>	Right Front <u>798</u>	Right Front <u>798</u>
Left Front <u>814</u>	Left Front <u>790</u>	Left Front <u>793</u>
Right Rear <u>803</u>	Right Rear <u>765</u>	Right Rear <u>784</u>
Left Rear <u>805</u>	Left Rear <u>755</u>	Left Rear <u>797</u>

Data Sheet 1 (Continued)

General Test Vehicle Parameter Data

Test Vehicle Attitude:

	Left Sill Pitch	Right Sill Pitch	Front Bumper L-R Roll	Rear Bumper L-R Roll
As Delivered:	N/A	N/A	N/A	N/A
Fully Loaded:	N/A	N/A	N/A	N/A
As Tested:	-0.6°	-0.4°	0°	0°
Negative Pitch Angle	= Vehicle front down			
Negative Roll Angle	= Driver side down			

Test Vehicle Wheelbase: 2640 mm

C.G. = 1378 mm rearward of front wheel centerline

Total Vehicle Length:

Right Side = 4060 mm

Left Side = 4060 mm

Centerline = 4280 mm

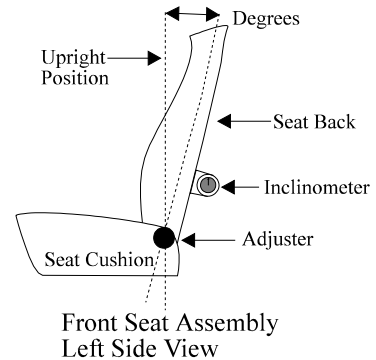
Data Sheet 1 (Continued)

General Test Vehicle Parameter Data

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507

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.



Front Seat Cushion Placement: 8th detent rearward of full forward

Total Length of Fore/Aft Adjustment Travel: 255 mm

Total Number of Adjustment Positions or Detents: 18

Front Seat Back Adjustment Position: The seat back was adjusted to the 11.3° at headrest

Seat Back Torso Angle: 22° degrees

Second Position Seat Placement: Fixed

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

Seat Back Adjustment Position: The seat back was adjusted to the 17.5° at headrest

Adjustable Steering Column Position: 25°; middle of geometric range of travel

Window Positions:

Right Front: Open

Right Rear: Open

Left Front: Closed

Left Rear: Closed

Note: Windows will be in closed position on struck side of test vehicle and in open position on opposite side.

Amount of Stoddard Solvent In Fuel Tank:

65.9 liters (fuel tank usable capacity)

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

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

Wheelbase = 2640 millimeters

Intended impact point is 380 millimeters rearward of front axle centerline
(which is 940 millimeters forward of the wheelbase midpoint)

Actual Impact Point is 395 millimeters rearward of front axle centerline

Data Sheet 2

Test Vehicle Summary of Results

Vehicle Year/Make/Model: 2006/Suzuki/Grand Vitara

Body Style: MPV

VIN: JS3TE941764101027

NHTSA No.: C60507

Build Date: 08/05

Test Date: 06/02/06

Vehicle Overall Length = 4280 mm

Overall Width = 1800 mm

Vehicle Test Weight (Pre-Test):

Left Front = 445.2 kg Left Rear = 475.0 kg

Right Front = 412.8 kg Right Rear = 463.2 kg

Total Front = 858.0 kg Total Rear = 938.2 kg

Total Weight = 1796.2 kg

Wheelbase = 2640 mm

Longitudinal C.G. From Center Of Front Axle = 1378 mm

Impact Angle With Respect To Impactor = 90 degrees

Impact Point:

Actual Impact Point is 15 mm right of nominal impact ref. line (Lateral)

Actual Impact Point is 1 mm up from nominal impact point (Vertical)

Maximum Exterior Static Crush:

1. Level 1 (340 mm above ground) = 100 mm

2. Level 2 (719 mm above ground) = 230 mm

3. Level 3 (728 mm above ground) = 238 mm

4. Level 4 (1060 mm above ground) = 142 mm

5. Level 5 (1618 mm above ground) = 0 mm

Maximum Post-Test Intrusion = 238 mm

Occupants:

Front Passenger

Rear Passenger

Dummy Identification 059

066

Restraints Used 3-pt. seat belt, side curtain
airbag, torso airbag

Seat belt, side curtain
airbag

Instrumentation:

Number of Vehicle Data Channels: = 21

Number of Cameras: Onboard = 3 Offboard = 6 Total = 9

Data Sheet 3

Moving Deformable Barrier (MDB) Summary

MDB Face Manufacturer And Serial Number:

Plascore, 03A0306, 118B0306

Position Of Impactor (MDB) On Monorail:

Crabbed 27° to the left

MDB Specifications:

Overall Width of Framework Carriage = 1251 mm
Overall Length of MDB (Incl. honeycomb impact face) = 4014 mm
Wheelbase of Framework Carriage = 2591 mm
Track of Framework Carriage (Front & Rear) = 1881 mm
C.G. Location Rearward of Front Axle = 1108 mm

MDB Weight:

Left Front	=	<u>529.2</u>	kg	Left Rear	=	<u>159.6</u>	kg
Right Front	=	<u>253.8</u>	kg	Right Rear	=	<u>425.0</u>	kg
Total Front	=	<u>783.0</u>	kg	Total Rear	=	<u>584.6</u>	kg
Total MDB Weight	=	<u>1367.6</u>	kg				

Impact Angle (MDB C/L to Target Vehicle C/L) = 90 degrees
Impact Speed = 61.6 km/h

Maximum Static Crush of Honeycomb Impact Face:

1. Row A at Center of Bumper Level	=	<u>175</u>	millimeters
2. Row B at Top of Bumper Level	=	<u>100</u>	millimeters
3. Row C at Mid Level	=	<u>142</u>	millimeters
4. Row D at Top of Stack Level	=	<u>228</u>	millimeters

Instrumentation:

Number of MDB Data Channels = 7

Data Sheet 4

Post-Test Observations

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507

Visible Dummy Contact Points:

	<u>Left Front SID HIII</u>	<u>Left Rear SID HIII</u>
Head:	<u>Side curtain airbag</u>	<u>Side curtain airbag</u>
Upper Torso:	<u>Side torso airbag</u>	<u>Door panel</u>
Lower Torso:	<u>Side torso airbag</u>	<u>Door panel</u>
Left Knee:	<u>Door panel</u>	<u>Door panel</u>
Right Knee:	<u>None</u>	<u>None</u>

Door Opening:

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

MDB Distance From Target Impact Point:

Vertical: 1 mm up from target

Horizontal: 15 mm right from target

Arm Rest Locations:

Front: 202 mm below the bottom of the window

Rear: 206 mm below the bottom of the window

Seat Movement:

Front: None

Rear: None

Glazing Damage:

Windshield: None

Window: Driver's left side window broken

Pillar Separation: No

Sill Separation: No

Other Notable Impact Effects:

Left front tire flattened during test.

Section 4

Occupant and Vehicle Information

Data Sheet 5

SID HIII Instrumentation Data

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507

Test Number: 060602-1

Driver Dummy Serial Number: 059

Location	Positive Direction Max. Time (g) (ms)		Negative Direction Max. Time (g) (ms)		
Head Acceleration (g)					
	Longitudinal X	3.2	18.6	13.2	67.4
	Lateral Y	36.7	55.4	5.1	151.4
	Vertical Z	6.7	38.3	8.3	58.7
	Resultant	38.4	55.4		
	HIC 36	151			
Head Redundant Acceleration (g)					
	Longitudinal X	3.2	18.6	13.7	68.7
	Lateral Y	36.7	56.0	5.1	149.4
	Vertical Z	7.1	41.6	7.9	58.8
	Resultant	38.3	56.0		
Neck Force					
	X-Axis Shear	99.3	59.0	65.0	109.9
	Y-Axis Shear	183.6	55.6	110.8	85.1
	Z-Axis Shear	269.7	41.4	193.1	58.5
Neck Moment					
	About X-Axis	8.8	130.6	39.4	55.6
	About Y-Axis	9.5	36.6	6.8	51.8
	About Z-Axis	19.4	61.8	19.2	170.5
	Occipital Cond				
Left Upper Rib Acceleration					
	Lateral (P)	45.3	56.2	3.0	174.4
	Lateral (R)	43.9	56.2	2.9	174.4
Left Lower Rib Acceleration					
	Lateral (P)	39.0	55.7	3.2	193.1
	Lateral (R)	37.4	55.7	3.2	193.1

Data Sheet 5 (Continued)

SID Instrumentation Data

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507

Test Number: 060602-1

Driver Dummy Serial Number: 059

Location	Positive Direction		Negative Direction	
	Max. (g)	Time (ms)	Max. (g)	Time (ms)
Lower Spine Acceleration				
Lateral (P)	33.2	40.6	3.0	66.2
Lateral (R)	32.9	41.2	3.0	66.2
Pelvis Acceleration				
Lateral (P)	49.5	36.9	13.6	63.1
TTI	39.2			

Positive Direction

Longitudinal: Forward

Lateral: Rightward

Vertical: Downward

Negative Direction

Longitudinal: Rearward

Lateral: Leftward

Vertical: Upward

Data Sheet 5 (Continued)

SID Instrumentation Data

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507

Test Number: 060602-1

Left Rear Dummy Serial Number: 066

Location	Positive Direction		Negative Direction	
	Max. (g)	Time (ms)	Max. (g)	Time (ms)
Head Acceleration (g)				
Longitudinal X	8.4	73.3	8.9	86.3
Lateral Y	53.4	60.2	20.5	82.2
Vertical Z	16.1	54.1	21.6	71.9
Resultant	54.0	59.7		
HIC 36	224			
Head Redundant Acceleration (g)				
Longitudinal X	3.2	18.6	13.7	68.7
Lateral Y	36.7	56.0	5.1	149.4
Vertical Z	7.1	41.6	7.9	58.8
Resultant	38.3	56.0		
Neck Force				
X-Axis Shear	528.0	73.3	80.0	310.0
Y-Axis Shear	122.2	216.3	1979.7	71.4
Z-Axis Shear	253.7	109.5	1040.5	71.4
Neck Moment				
About X-Axis	18.6	55.3	48.9	79.0
About Y-Axis	23.7	97.8	9.9	229.1
About Z-Axis	5.0	50.8	18.7	233.4
Occipital Cond				
Left Upper Rib Acceleration				
Lateral (P)	39.1	71.8	3.3	216.2
Lateral (R)	39.2	71.9	3.3	216.2
Left Lower Rib Acceleration				
Lateral (P)	36.2	58.7	3.1	188.7
Lateral (R)	36.1	58.7	3.1	201.8

Data Sheet 5 (Continued)

SID Instrumentation Data

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507

Test Number: 060602-1

Left Rear Dummy Serial Number: 066

Location	Positive Direction		Negative Direction	
	Max. (g)	Time (ms)	Max. (g)	Time (ms)
Lower Spine Acceleration				
Lateral (P)	43.2	54.4	3.1	163.8
Lateral (R)	42.7	54.4	3.2	164.3
Pelvis Acceleration				
Lateral (P)	50.1	46.2	7.7	64.4
TTI	41.2			

Positive Direction

Longitudinal: Forward

Lateral: Rightward

Vertical: Downward

Negative Direction

Longitudinal: Rearward

Lateral: Leftward

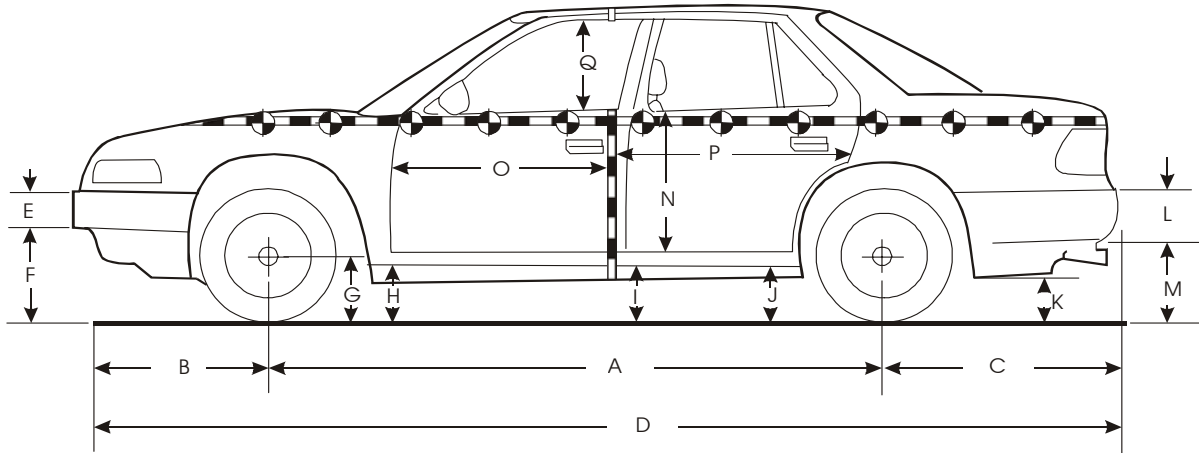
Vertical: Upward

Data Sheet 6

Vehicle Pre-Test And Post-Test Measurements

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507



Left Side View

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

	Pre-Test (as delivered)	Pre-Test (as tested)	Post-Test (as tested)	Change
A	2640	2640	2626	14
B	730	730	804	-74
C	910	910	910	0
D	4280	4280	4277	3
E	300	300	300	0
F	275	380	382	-2
G	345	344	279	65
H	281	259	270	-11
I	337	315	343	-28
J1	295	271	290	-19
J2	353	333	N/A	N/A
K	387	354	346	8
L	326	326	326	0
M	476	446	437	9
N	850	850	793	57
O	690	690	696	-6
P	1452	1452	1416	36
Q	460	460	462	-2
R	4060	4060	4068	-8
S	4060	4060	4064	-4
T	1316	1346	1249	97

D = Length at centerline

E and L = Bumper Thickness

R = Right Side Length

S = Left Side Length

T = Width at B-pillar

J1 = To Pinch Weld

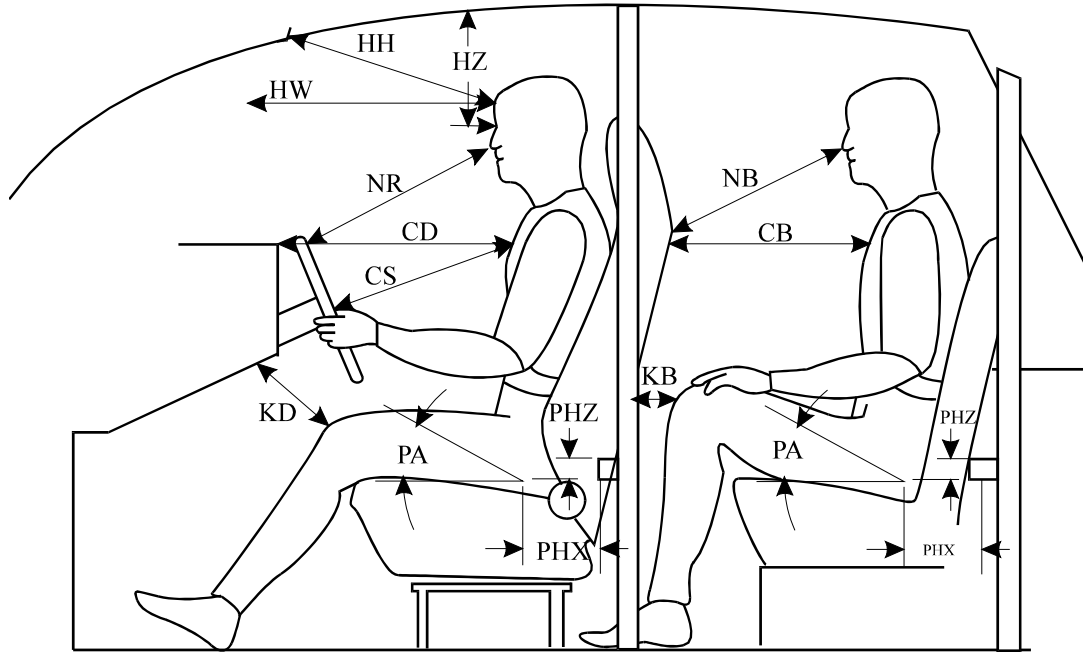
J2 = To Sill

Data Sheet 7

SID HIII Longitudinal Clearance Dimensions

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507



Left Side View

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

Measurement	Driver SID HIII # 059	Left Rear Pass. SID HIII # 066
HH	477	N/A
HW	634	N/A
HZ	210	164
NR/NB	484	633
CD/CB	582	543
CS	387	N/A
KDL(KDA°)/KBL(KBA°)	91/(13.8°)	127/(20.6°)
KDR(KDA°)/KBR(KBA°)	96/(27.5°)	127/(20.6°)
PA°	24.6°	22.6°
PHX	175	228
PHZ	190	220

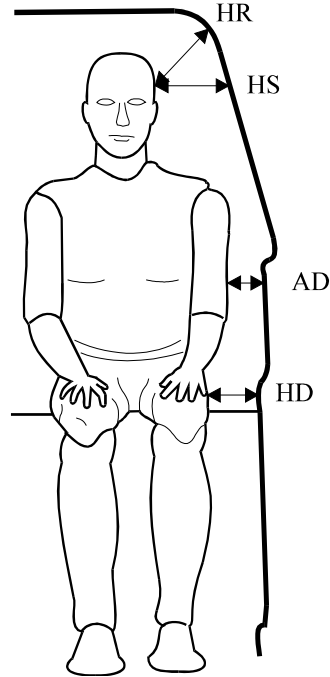
Note: 2-door vehicle shown. Rear dummy PHX and PHZ measurements for 4-door vehicle would use the C-post striker as a reference point.

Data Sheet 8

SID HIII Lateral Clearance Dimensions

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507



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

Measurement	Driver SID HIII # 059	Left Rear Pass. SID HIII # 066
HR	240	230
HS	304	340
AD*	Lower: 63 Upper: 88	Lower: 95 Upper: 97
HD	148	165

* Lower measurement is taken laterally at center of the lower rib accelerometer height from the SID HIII arm segment to the closest part of the vehicle side.

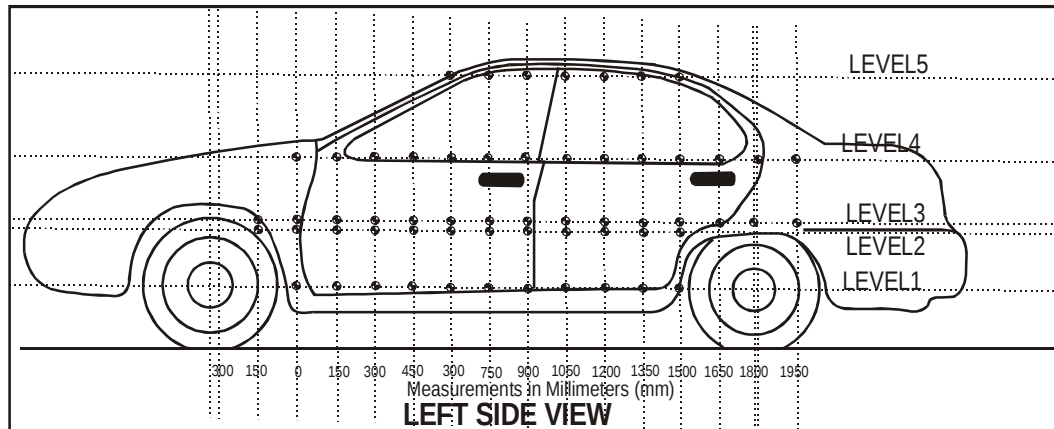
Upper measurement is taken laterally at center of the upper rib accelerometer height from the SID HIII arm segment to the closest part of the vehicle side.

Data Sheet 9

Vehicle Side Measurements

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507



Level 5 - Window Top

Level 4 - Window Sill

Level 3 - Mid-Door

Level 2 - Occupant H-Point

Level 1 - Axle Centerline Height or Sill Top Height

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

Measurements along the vertical 750 mm line shown above:

Level 5 @ Window Top	=	<u>1618</u>	mm
Level 4 @ Window Sill	=	<u>1060</u>	mm
Level 3 @ Mid Door	=	<u>728</u>	mm
Level 2 @ Occupant H-Point	=	<u>719</u>	mm
Level 1 @ Axle Centerline Height (or Sill Top Height)	=	<u>340</u>	mm

Data Sheet 10

Vehicle Exterior Crush Profiles - All Levels

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507

		(mm) From Impact Point														
Location	Height		-1200	-1050	-900	-750	-600	-450	-300	-150	0	150	300	450	600	750
Level 1 Side Sill	340	Pre	---	---	---	---	---	---	---	---	---	861	855	855	857	857
		Post	---	---	---	---	---	---	---	---	---	822	787	784	778	775
		Crush	---	---	---	---	---	---	---	---	---	39	68	71	79	82
Level 2 H-Point	719	Pre	---	---	---	---	---	---	---	---	898	879	880	882	883	883
		Post	---	---	---	---	---	---	---	---	829	735	708	700	689	681
		Crush	---	---	---	---	---	---	---	---	69	144	172	182	194	202
Level 3 Mid-Door	728	Pre	---	---	---	---	---	---	---	---	898	879	880	882	883	883
		Post	---	---	---	---	---	---	---	---	831	734	704	694	683	674
		Crush	---	---	---	---	---	---	---	---	67	145	176	188	200	209
Level 4 Window Sill	1060	Pre	---	---	---	---	---	---	779	796	807	815	820	828	834	838
		Post	---	---	---	---	---	---	782	798	808	813	821	812	801	788
		Crush	---	---	---	---	---	---	-3	-2	-1	2	-1	16	33	50
Level 5 Window Top	1618	Pre	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Post	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Crush	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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

Data Sheet 10 (Continued)

Vehicle Exterior Crush Profiles - All Levels

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507

		(mm) From Impact Point													
Location	Height		900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700
Level 1 Side Sill	340	Pre	857	855	851	850	849	847	861	---	---	---	---	---	---
		Post	771	763	751	756	770	779	810	---	---	---	---	---	---
		Crush	86	92	100	94	79	68	51	---	---	---	---	---	---
Level 2 H-Point	719	Pre	883	882	879	877	875	873	878	897	---	---	---	---	871
		Post	673	666	660	649	645	657	683	815	---	---	---	---	873
		Crush	210	216	219	228	230	216	195	82	---	---	---	---	-2
Level 3 Mid-Door	728	Pre	883	882	881	877	875	873	876	897	---	---	---	---	865
		Post	665	658	648	642	637	650	673	806	---	---	---	---	870
		Crush	218	224	233	235	238	223	203	91	---	---	---	---	-5
Level 4 Window Sill	1060	Pre	842	844	846	846	846	845	843	841	861	832	825	815	802
		Post	775	762	746	704	715	746	775	801	849	848	823	821	813
		Crush	67	82	100	142	131	99	68	40	12	-16	2	-6	-11
Level 5 Window Top	1618	Pre	615	620	621	620	618	616	614	611	608	602	595	585	567
		Post	620	624	623	621	620	619	617	615	614	610	601	580	577
		Crush	-5	-4	-2	-1	-2	-3	-3	-4	-6	-8	-6	5	-10

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

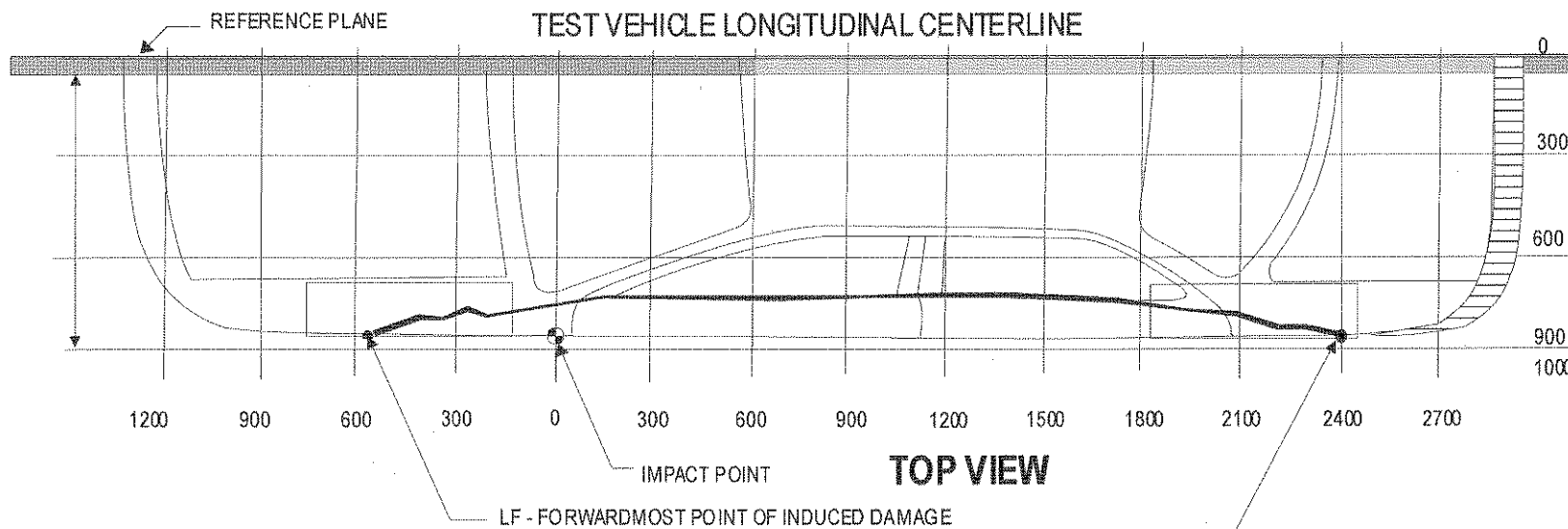
Data Sheet 11

Vehicle Damage Profile Distances

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507

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



MEASUREMENT CONVENTIONS:

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

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

DPD Measurements	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
6: LF = 0 mm (Level 2)	898	829	69
5: 450 mm (Level 3)	882	694	188
4: 900 mm (Level 3)	883	665	218
3: 1050 mm (Level 3)	882	658	224
2: 1500 mm (Level 3)	875	637	238
1: LR = 1950 mm (Level 3)	897	806	91

Full length of induced damage was 1950 mm.

(Grid as looking at MDB from front)

NHTSA No.: C60507



060602-1

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507

		Distance Right of Center (mm)									Distance Left of Center (mm)							
Location	Height At CL	800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800
Top Stack Level - Level D	814	-55	-40	-30	-22	-35	-57	-43	-37	-42	-49	-54	-61	-66	-77	-100	-138	-175
Mid Level Level C	685	-76	-65	-46	-38	-34	-29	-33	-33	N/A	-29	-28	-31	-38	-47	-57	-75	-100
Top Bumper Level-Level B ¹	560	-142	-125	-113	-103	-96	-91	-88	-86	-84	-83	-81	-80	-79	-79	-81	-85	-100
Mid Bumper Level - Level A	432	-228	-209	-192	-178	-173	-171	-170	-167	-166	-165	-164	-164	-163	-162	-164	-175	-178

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

¹ Top Bumper measurements are collected at 560 mm to eliminate post-test measurement point obstruction by the bumper element.

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507

Deformable Barrier Face Profile

Pre-Test

Index	Xmm	Ymm	Zmm
1	-383.5	800.2	-53.1
2	-383.5	699.4	-53.3
3	-383.6	599.5	-54.0
4	-383.7	499.4	-53.2
5	-383.7	398.8	-53.9
6	-383.7	299.6	-53.7
7	-383.6	199.2	-53.9
8	-383.6	99.3	-53.4
9	-383.6	0.0	-54.2
10	-383.5	-100.4	-54.0
11	-383.3	-200.2	-54.0
12	-383.2	-299.9	-54.2
13	-383.1	-400.2	-54.1
14	-382.9	-501.0	-53.9
15	-382.7	-600.3	-54.0
16	-382.5	-700.0	-54.0
17	-382.4	-799.9	-54.6
18	-383.0	800.8	-181.9
19	-383.2	699.6	-182.2
20	-383.2	600.3	-182.7
21	-383.3	499.8	-182.7
22	-383.2	400.0	-182.8
23	-383.2	299.9	-182.7

Post-Test

Index	Xmm	Ymm	Zmm
1	-328.2	742.0	-92.8
2	-343.6	642.6	-96.9
3	-353.3	544.3	-101.8
4	-362.2	445.6	-103.9
5	-349.1	346.1	-107.9
6	-326.9	250.8	-115.7
7	-340.6	153.1	-107.4
8	-346.3	53.5	-102.5
9	-341.6	-45.5	-100.1
10	-334.2	-145.4	-98.2
11	-329.6	-244.5	-94.9
12	-322.4	-343.2	-91.1
13	-316.8	-442.0	-82.5
14	-306.2	-541.0	-75.6
15	-282.8	-637.3	-74.3
16	-244.4	-729.3	-81.4
17	-207.2	-821.5	-88.3
18	-306.7	744.0	-218.5
19	-318.5	644.4	-221.5
20	-336.9	547.0	-228.0
21	-345.6	446.7	-230.7
22	-349.2	346.7	-232.0
23	-354.0	246.7	-233.6

Difference

Index	Xmm	Ymm	Zmm
1	-55.3	58.2	39.7
2	-39.9	56.8	43.6
3	-30.3	55.2	47.8
4	-21.5	53.8	50.7
5	-34.6	52.7	54.0
6	-56.8	48.8	62.0
7	-43.0	46.1	53.5
8	-37.3	45.8	49.1
9	-42.0	45.5	45.9
10	-49.3	45.0	44.2
11	-53.7	44.3	40.9
12	-60.8	43.3	36.9
13	-66.3	41.8	28.4
14	-76.7	40.0	21.7
15	-99.9	37.0	20.3
16	-138.1	29.3	27.4
17	-175.2	21.6	33.7
18	-76.3	56.8	36.6
19	-64.7	55.2	39.3
20	-46.3	53.3	45.3
21	-37.7	53.1	48.0
22	-34.0	53.3	49.2
23	-29.2	53.2	50.9

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507

Deformable Barrier Face Profile Cont'd.

Pre-Test

Index	Xmm	Ymm	Zmm
24	-383.2	200.0	-183.1
25	-383.2	100.2	-183.1
26	-383.1	-0.2	-183.2
27	-383.0	-99.9	-183.3
28	-382.7	-199.5	-182.7
29	-382.6	-300.0	-183.4
30	-382.4	-399.5	-183.4
31	-382.2	-499.1	-183.8
32	-382.0	-600.1	-183.7
33	-381.7	-700.0	-184.5
34	-381.5	-799.1	-184.1
35	-382.7	801.3	-307.7
36	-382.7	701.2	-308.1
37	-382.8	600.8	-308.6
38	-382.8	500.9	-308.3
39	-382.8	401.3	-308.7
40	-382.7	300.8	-308.4
41	-382.7	200.7	-308.9
42	-382.7	101.6	-308.6
43	-382.4	1.0	-308.4
44	-382.4	-99.5	-308.6
45	-382.2	-199.1	-308.4
46	-381.9	-299.3	-309.1

Post-Test

Index	Xmm	Ymm	Zmm
24	-350.1	147.6	-235.2
25	-350.7	48.1	-229.8
26	N/A	N/A	N/A
27	-354.2	-151.9	-220.4
28	-354.4	-251.7	-215.4
29	-351.3	-352.3	-211.3
30	-344.8	-451.7	-206.0
31	-335.6	-550.9	-200.1
32	-324.6	-651.3	-193.9
33	-306.9	-749.6	-188.4
34	-281.1	-844.3	-183.2
35	-240.3	741.4	-312.0
36	-257.3	643.4	-323.9
37	-269.9	543.9	-325.2
38	-280.2	444.6	-329.3
39	-287.2	345.1	-333.1
40	-292.1	244.4	-333.2
41	-294.9	143.9	-333.9
42	-296.9	44.6	-331.9
43	-298.2	-56.0	-328.4
44	-299.1	-156.6	-324.5
45	-300.8	-256.1	-321.3
46	-302.2	-356.5	-320.1

Difference

Index	Xmm	Ymm	Zmm
24	-33.1	52.4	52.1
25	-32.5	52.1	46.7
26	N/A	N/A	N/A
27	-28.8	52.0	37.1
28	-28.3	52.2	32.7
29	-31.3	52.3	27.9
30	-37.6	52.2	22.6
31	-46.6	51.8	16.3
32	-57.4	51.2	10.2
33	-74.8	49.6	3.9
34	-100.4	45.2	-0.9
35	-142.4	59.9	4.3
36	-125.4	57.8	15.8
37	-112.9	56.9	16.6
38	-102.6	56.3	21.0
39	-95.6	56.2	24.4
40	-90.6	56.4	24.8
41	-87.8	56.8	25.0
42	-85.8	57.0	23.3
43	-84.2	57.0	20.0
44	-83.3	57.1	15.9
45	-81.4	57.0	12.9
46	-79.7	57.2	11.0

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507

Deformable Barrier Face Profile Cont'd.

Pre-Test

Index	Xmm	Ymm	Zmm
47	-381.8	-399.2	-309.1
48	-381.4	-499.0	-308.9
49	-381.3	-598.5	-309.3
50	-381.0	-698.6	-309.2
51	-380.8	-799.0	-309.3
52	-476.5	797.5	-436.1
53	-484.4	700.4	-436.8
54	-484.4	600.2	-436.6
55	-484.4	500.4	-436.6
56	-484.2	400.3	-436.4
57	-484.2	299.7	-436.6
58	-484.1	200.2	-436.4
59	-484.0	100.3	-436.4
60	-483.9	0.1	-436.4
61	-483.6	-99.7	-435.8
62	-483.5	-199.7	-436.2
63	-483.3	-299.7	-436.1
64	-483.0	-399.4	-436.6
65	-482.8	-499.8	-436.1
66	-482.7	-599.9	-436.2
67	-482.4	-700.1	-436.0
68	-469.9	-795.9	-435.9

Post-Test

Index	Xmm	Ymm	Zmm
47	-302.8	-456.6	-317.7
48	-302.0	-556.4	-313.6
49	-300.8	-656.1	-310.5
50	-296.1	-756.3	-305.8
51	-280.5	-856.0	-300.7
52	-248.1	731.3	-446.5
53	-275.2	638.0	-458.1
54	-292.5	539.6	-465.7
55	-306.5	441.0	-472.1
56	-310.8	340.7	-473.2
57	-313.4	240.5	-473.9
58	-314.5	141.1	-473.3
59	-316.6	41.1	-473.3
60	-317.7	-58.8	-472.8
61	-318.6	-158.6	-471.4
62	-319.1	-258.7	-470.9
63	-319.8	-358.8	-470.0
64	-319.9	-458.3	-469.1
65	-320.5	-558.8	-467.6
66	-319.0	-658.9	-465.7
67	-307.9	-758.3	-458.2
68	-292.0	-854.3	-449.9

Difference

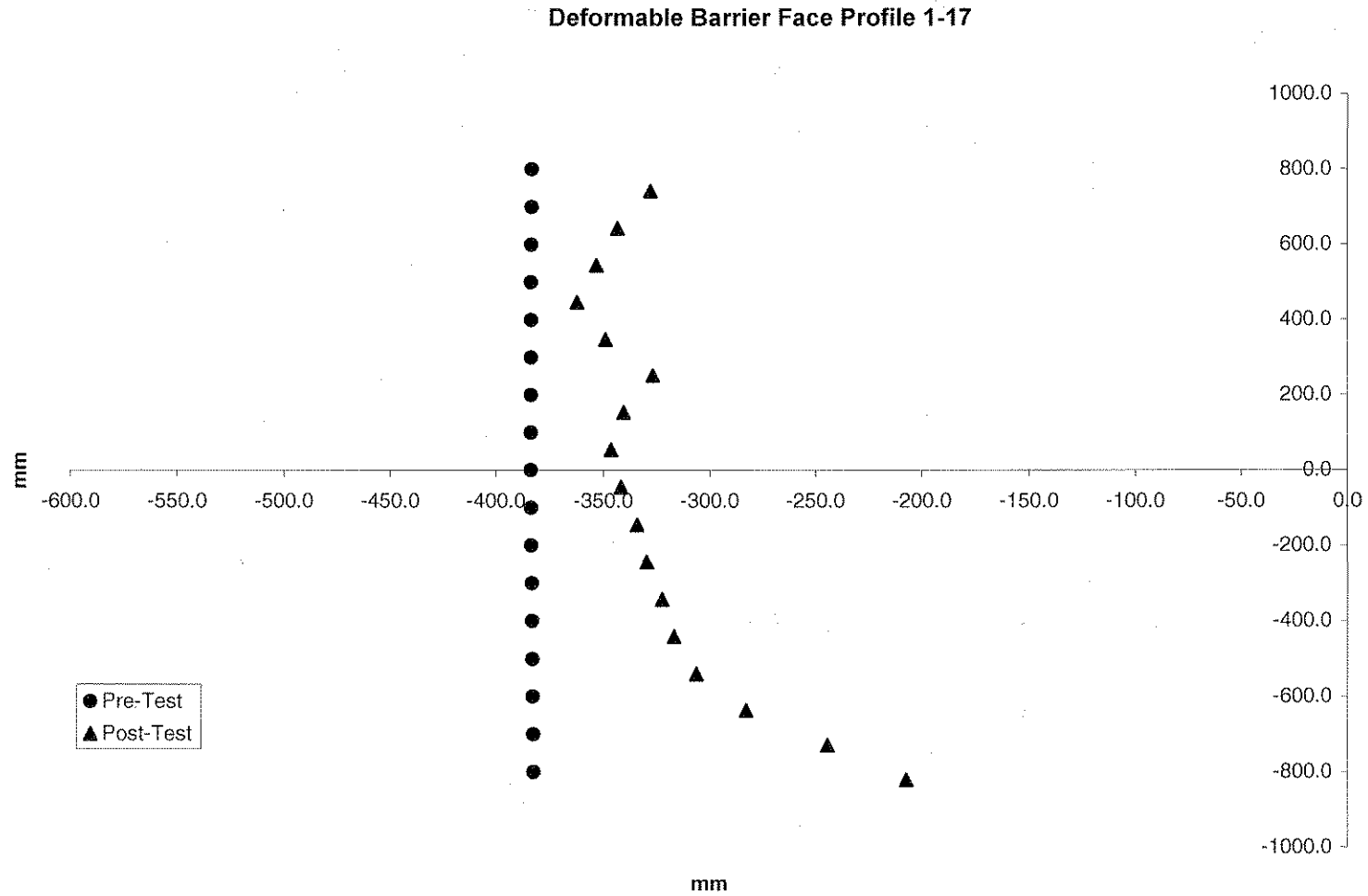
Index	Xmm	Ymm	Zmm
47	-79.0	57.4	8.6
48	-79.4	57.4	4.7
49	-80.5	57.6	1.2
50	-84.9	57.7	-3.4
51	-100.3	57.0	-8.6
52	-228.4	66.2	10.4
53	-209.2	62.4	21.3
54	-191.9	60.6	29.1
55	-177.9	59.4	35.5
56	-173.4	59.6	36.8
57	-170.8	59.2	37.3
58	-169.6	59.1	36.9
59	-167.4	59.2	36.9
60	-166.2	58.9	36.4
61	-165.0	58.9	35.6
62	-164.4	59.0	34.7
63	-163.5	59.1	33.9
64	-163.1	58.9	32.5
65	-162.3	59.0	31.5
66	-163.7	59.0	29.5
67	-174.5	58.2	22.2
68	-177.9	58.4	14.0

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507



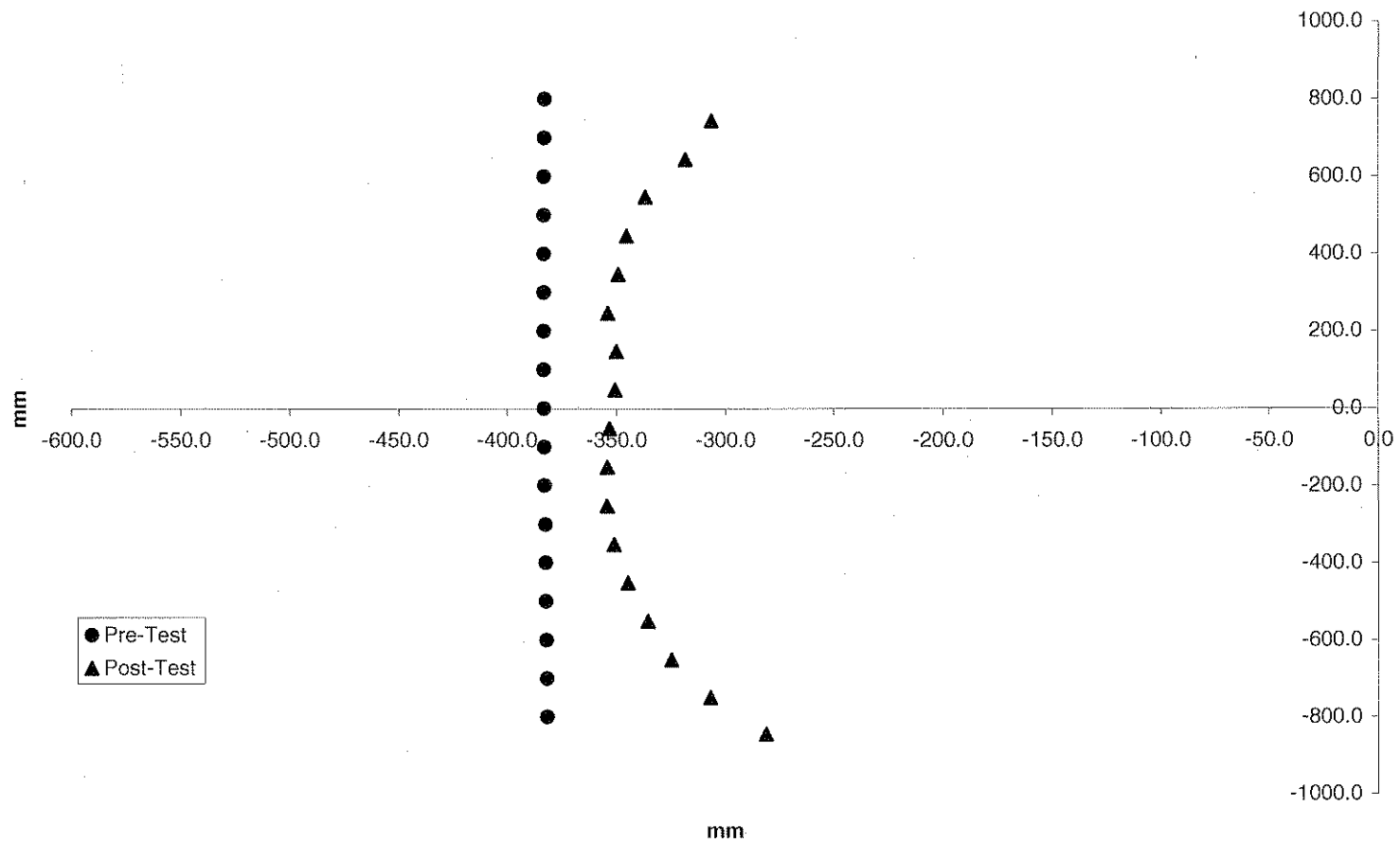
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507

Deformable Barrier Face Profile 18-34



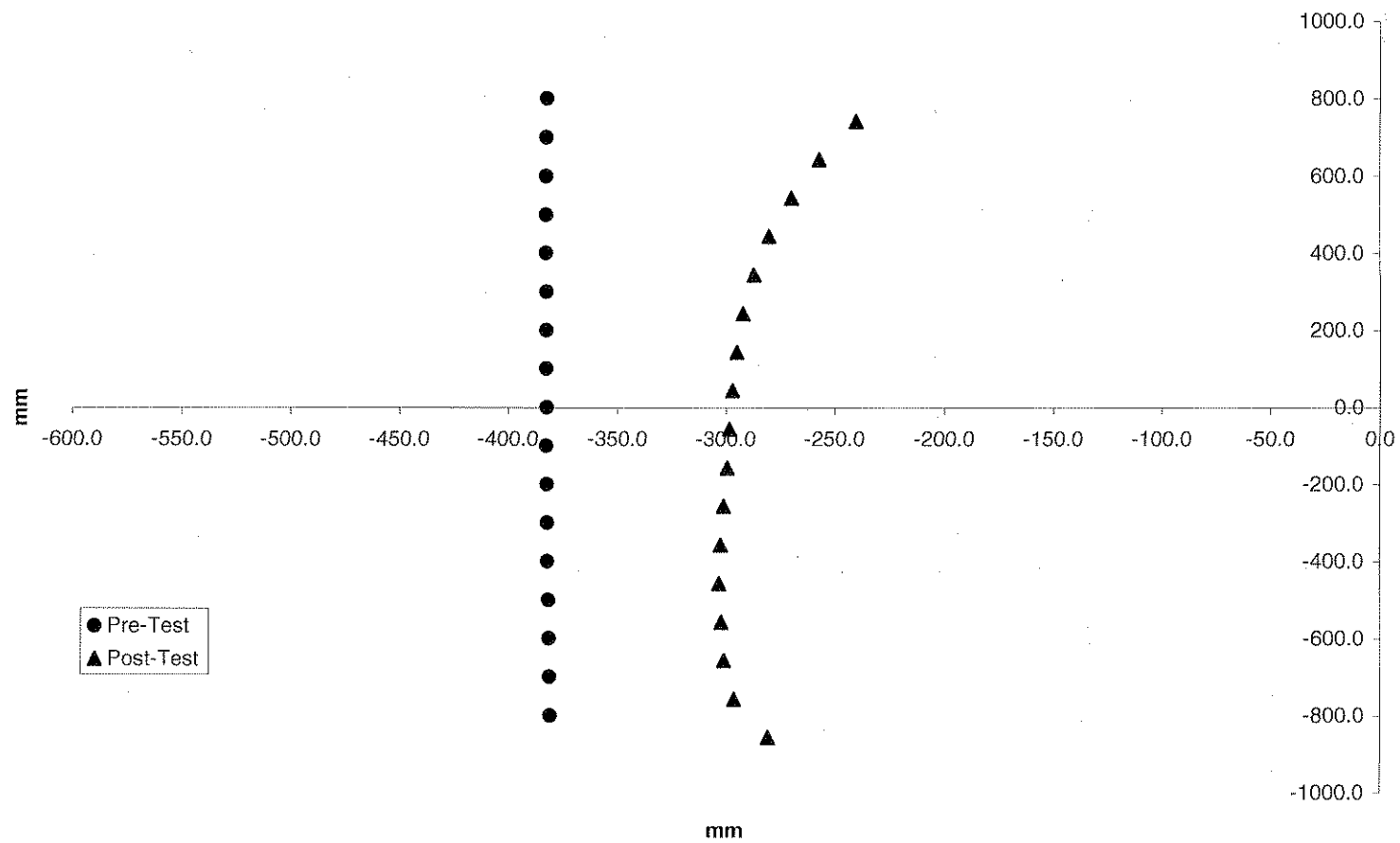
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507

Deformable Barrier Face Profile 35-51



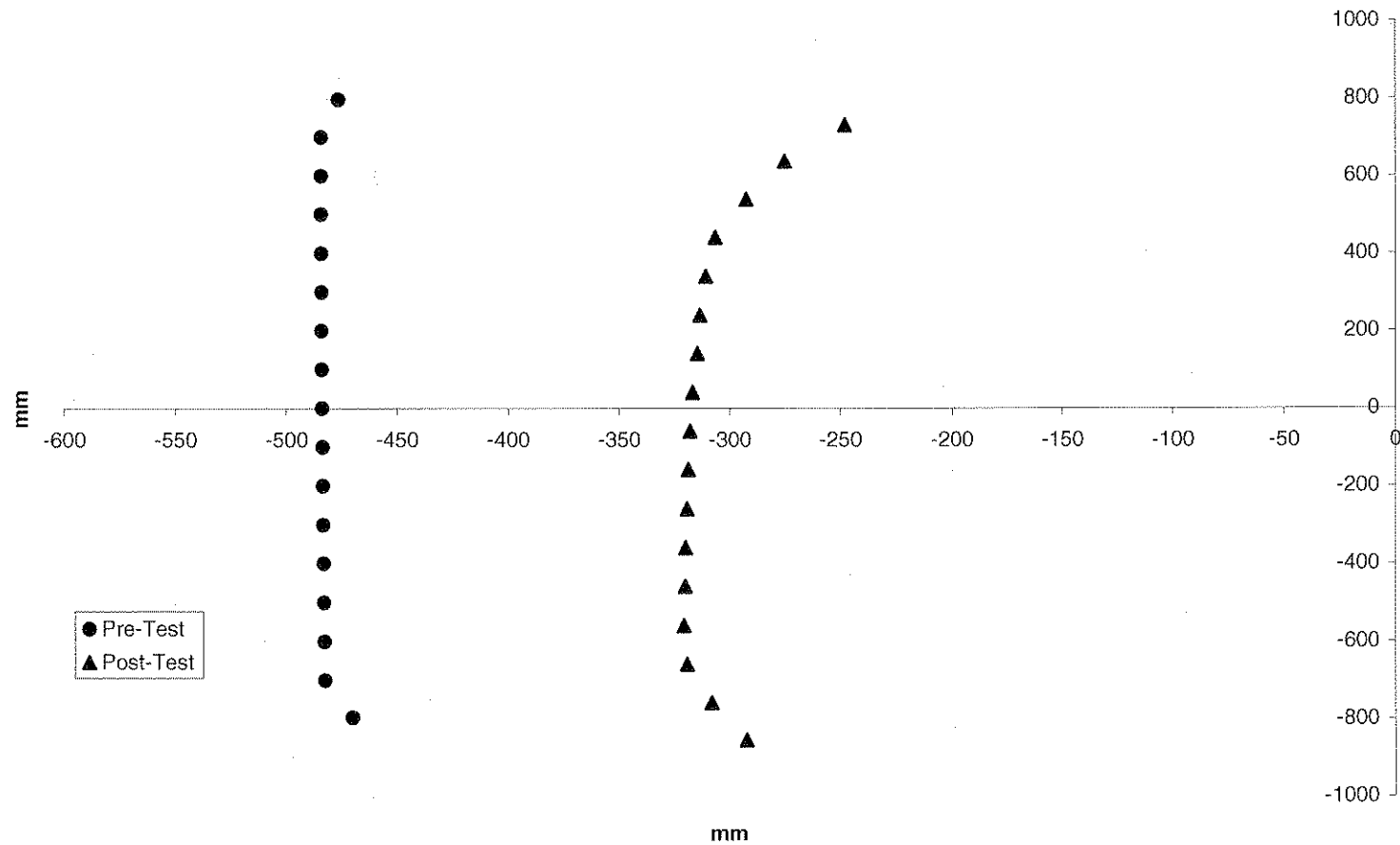
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507

Deformable Barrier Face Profile 52-68

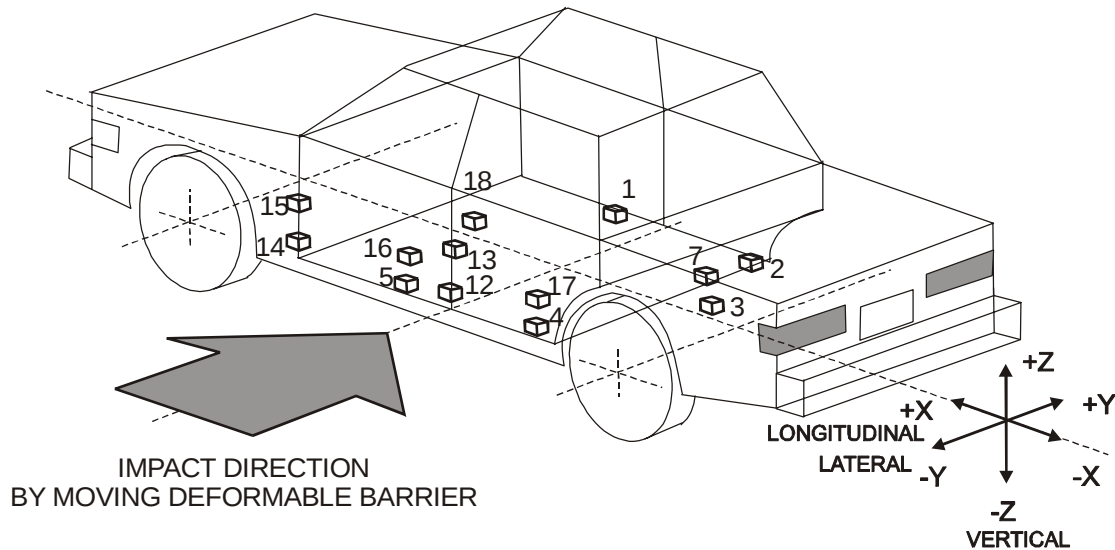


Data Sheet 13

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507



1-Right Front Side Sill
2-Right Side Sill at Rear Seat
3-Rear Floorpan above Axle
4-Left Side Sill at Rear Seat
5-Left Front Side Sill
7-Right Rear Occupant Compartment
12-Left Side Lower B-pillar

13-Left Side Middle B-pillar
14-Left Side Lower A-pillar
15-Left Side Middle A-pillar
16-Left Side Front Seat Track at H-point
17-Left Rear Seat Track at H-point
18-Vehicle Center of Gravity

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507

Location	Coordinates (millimeters)			Positive Direction Max. Time (g) (ms)		Negative Direction Max. Time (g) (ms)	
	X	Y	Z				
1 Right Side Sill at Front Seat	3925	750	405				
Longitudinal				4.3	55.9	5.5	9.0
Lateral				24.9	8.9	3.7	92.2
Vertical				4.9	66.1	10.2	9.1
Resultant				27.4	9.0		
2 Right Side Sill at Rear Seat	2878	713	404				
Longitudinal				4.5	55.9	10.3	8.7
Lateral				26.2	7.2	3.0	92.8
Vertical				5.2	94.2	10.2	21.2
Resultant				27.6	7.4		
3 Rear Floorpan Above Axle	1910	5	583				
Longitudinal				5.4	56.6	7.6	25.0
Lateral				21.3	7.8	2.6	99.9
Vertical				5.0	21.0	6.1	8.6
Resultant				22.7	8.1		
4 Left Side Sill at Rear Seat	2888	713	373				
Longitudinal							
Lateral				115.5	5.0	75.1	17.4
Vertical							
Resultant							
5 Left Side Sill at Front Seat	3934	750	395				
Longitudinal							
Lateral				137.9	20.3	12.2	45.8
Vertical							
Resultant							

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507

Location	Coordinates (millimeters)			Positive Direction		Negative Direction	
	X	Y	Z	Max. (g)	Time (ms)	Max. (g)	Time (ms)
7 Right Rear Occupant Compartment	2772	425	452				
Longitudinal							
Lateral				26.6	6.9	2.8	97.0
Vertical							
Resultant							
12 Left Lower B-Pillar	3082	818	470				
Longitudinal							
Lateral ¹				----	----	----	----
Vertical							
Resultant							
13 Left Middle B-Pillar	3040	814	819				
Longitudinal							
Lateral				121.4	5.0	16.2	21.7
Vertical							
Resultant							
14 Left Lower A-Pillar	4111	808	453				
Longitudinal							
Lateral ¹				----	----	----	----
Vertical							
Resultant							
15 Left Middle A-Pillar	4121	808	752				
Longitudinal							
Lateral ¹				----	----	----	----
Vertical							
Resultant							

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507

Location	Coordinates (millimeters)			Positive Direction		Negative Direction	
	X	Y	Z	Max. (g)	Time (ms)	Max. (g)	Time (ms)
16 Left Front Seat Track	3316	606	366				
Longitudinal							
Lateral				37.5	5.9	7.0	52.6
Vertical							
Resultant							
17 Left Rear Seat Track	2395	516	594				
Longitudinal							
Lateral ¹				----	----	----	----
Vertical							
Resultant							
18 Vehicle CG	3329	0	693				
Longitudinal				11.2	31.1	19.1	27.1
Lateral				100.5	21.0	43.5	26.6
Vertical				27.2	46.6	36.1	30.5
Resultant				100.7	21.0		

Reference: X: + Forward from rear bumper
 Y: + Rightward from vehicle centerline
 Z: + Downward from ground level

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

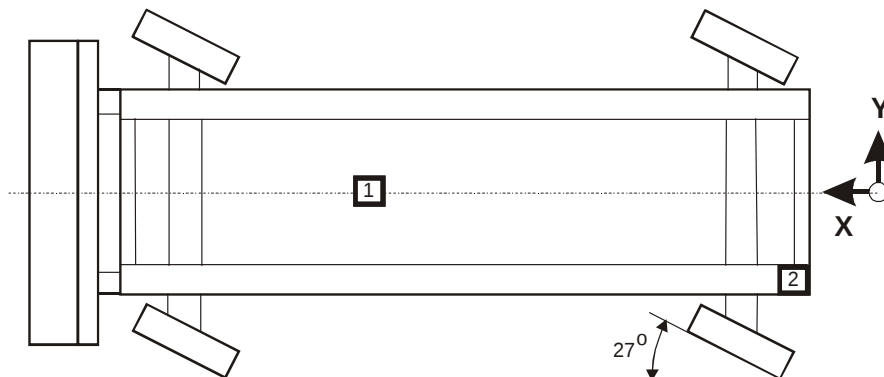
¹ See Data Acquisition Explanations

Data Sheet 14

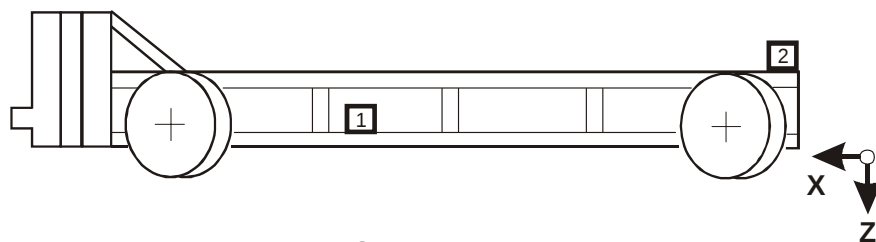
MDB Accelerometer Locations and Data Summary

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507



TOP VIEW



SIDE VIEW

Accel. No.	Location	Coordinates (millimeters)			Positive Direction		Negative Direction	
		X*	Y*	Z*	Max. (g)	Time (ms)	Max. (g)	Time (ms)
1	MDB Center of Gravity	1855	0	-520				
	Longitudinal X				1.8	120.4	21.7	35.5
	Lateral Y				2.0	79.9	8.5	32.2
	Vertical Z				4.2	46.7	5.3	132.3
	Resultant R				22.6	35.0		
2	Rear Frame Member	412	-677	-625				
	Longitudinal X				2.4	94.8	23.7	30.2
	Lateral Y				1.7	28.4	5.0	58.2

*Reference: X = Rear Bumper (+ Forward)

Y = Vehicle Centerline (+ To Right)

Z = Ground Level (+ Down)

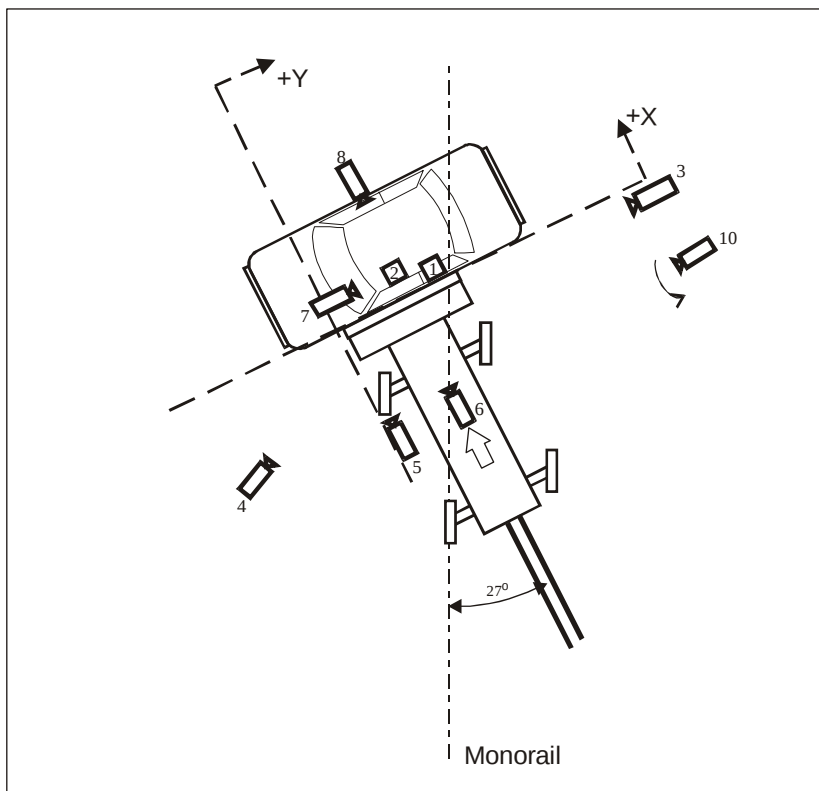
All measurements accurate to within ± 3 mm.

Data Sheet 15

High-Speed Camera Locations and Data Summary

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507



Impact
Area

Camera Number	Location	Location, mm			Angle (deg.)	Lens (mm)	Speed (fps)
		X	Y	Z			
1	Overhead wide	250	2150	-5750	-77.5	10	1000
2	Overhead tight	370	1800	-5750	-85.5	25	1000
3	Right side of MDB	0	12090	-1020	-1.0	25	1000
4	Left side of MDB	-1500	-6930	-1300	-4.5	25	1000
5	Onboard MDB left side	-1750	-40	-720	-0.5	13	1000
6	Onboard MDB center	-2480	830	-1353	-5.2	13	1000
7	Onboard vehicle front	550	200	-500	-7.0	12.5	1000
8	Onboard side front door	1850	770	-1300	-10.4	6.5	1000
9	Onboard side rear door	1650	1670	-1330	-8.5	6.5	1000
10	Documentary/Panning	N/A	N/A	N/A	N/A	Zoom	30

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

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

+Z: Downward from ground level

Section 5

Vehicle Fuel System Integrity

Data Sheet 16

FMVSS 301 Fuel System Integrity Data

NHTSA No.: C60507

Test Date: 06/02/06

Vehicle Year/Make/Model/Body Style: 2006 Suzuki Grand Vitara MPV

Test Vehicle Impact Type : _____ Frontal (48.3 km/h)
 _____ Oblique (48.3 km/h) with _____° barrier face
 first contacting the (driver/passenger) side
 _____ Rear Moving Barrier (48.3 km/h)
 _____ Lateral Moving Barrier (32.2 km/h)
 X Side Impact Moving Deformable Barrier (61.6
 km/h) contacting the driver side

Fuel Spillage Measurement:

1. From impact until vehicle motion ceases
2. For five-minute period after vehicle motion ceases
3. For next 25 minutes.

Actual	Maximum Allowed
0 g	28 g
0 g	142 g
0 g	28 g/1 minute

Solvent Spillage Details :

None

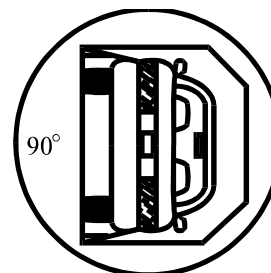
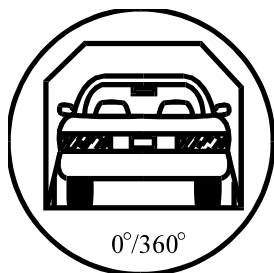
Data Sheet 17

FMVSS 301 Rollover Data

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507

0 - 90 Degrees



1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time 1 minutes 30 seconds
(Spec. Range = 1 to 3 minutes)
FMVSS 301 Position Hold Time + 5 minutes 0 seconds
Total 6 minutes 30 seconds
Next whole minute interval 7 minutes

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

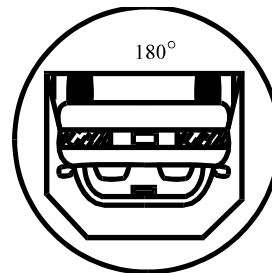
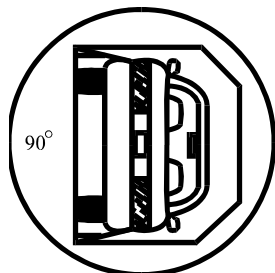
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507

90 - 180 Degrees



1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time 1 minutes 30 seconds
(Spec. Range = 1 to 3 minutes)
FMVSS 301 Position Hold Time + 5 minutes 0 seconds
Total 6 minutes 30 seconds
Next whole minute interval 7 minutes

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

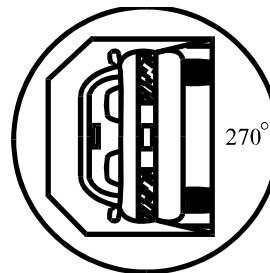
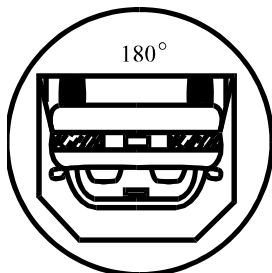
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507

180 - 270 Degrees



1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time 1 minutes 30 seconds
(Spec. Range = 1 to 3 minutes)
FMVSS 301 Position Hold Time + 5 minutes 0 seconds
Total 6 minutes 30 seconds
Next whole minute interval 7 minutes

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

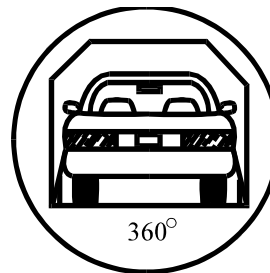
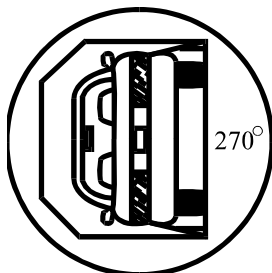
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2006 Suzuki Grand Vitara MPV

NHTSA No.: C60507

270 - 360 Degrees



1. Determination Of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time 1 minutes 30 seconds
(Spec. Range = 1 to 3 minutes)
FMVSS 301 Position Hold Time + 5 minutes 0 seconds
Total 6 minutes 30 seconds
Next whole minute interval 7 minutes

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

Appendix A

Photographs

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Figure A-1 Pre-Test Front View of Test Vehicle



Figure A-2 Post-Test Front View of Test Vehicle



Figure A-3 Pre-Test Left Front View of Test Vehicle



Figure A-4 Post-Test Left Front View of Test Vehicle



Figure A-5 Pre-Test Impacted Side View of Test Vehicle



Figure A-6 Post-Test Impacted Side View of Test Vehicle

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Figure A-7 Pre-Test Left Rear View of Test Vehicle



Figure A-8 Post-Test Left Rear View of Test Vehicle



Figure A-9 Pre-Test Rear View of Test Vehicle



Figure A-10 Post-Test Rear View of Test Vehicle



Figure A-11 Pre-Test Right Rear View of Test Vehicle

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Figure A-12 Post-Test Right Rear View of Test Vehicle



Figure A-13 Pre-Test Right Side View of Test Vehicle



Figure A-14 Post-Test Right Side View of Test Vehicle



Figure A-15 Pre-Test Right Front View of Test Vehicle



Figure A-16 Post-Test Right Front View of Test Vehicle

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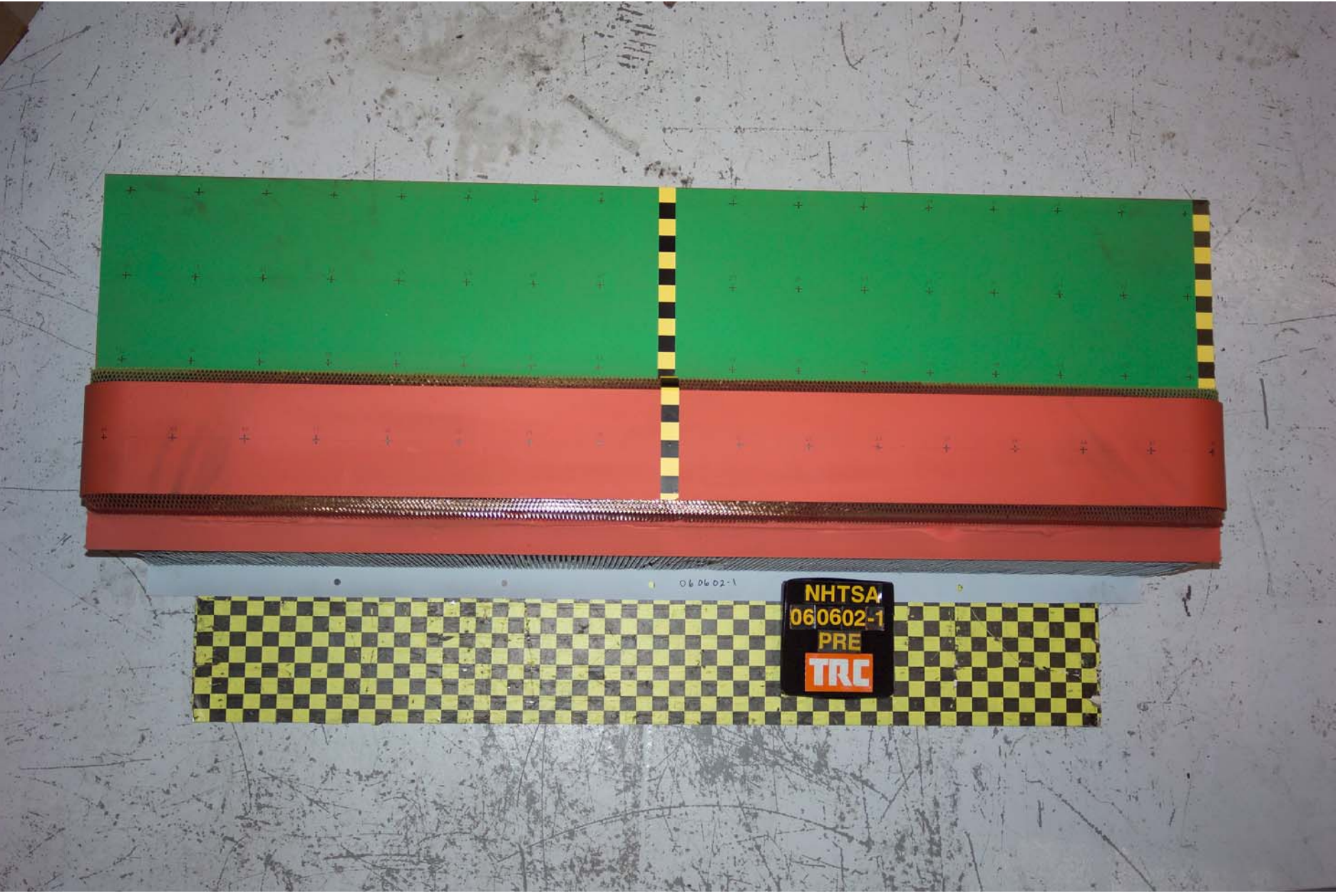


Figure A-17 Pre-Test Frontal View of Impactor Face



Figure A-18 Post-Test Frontal View of Impactor Face

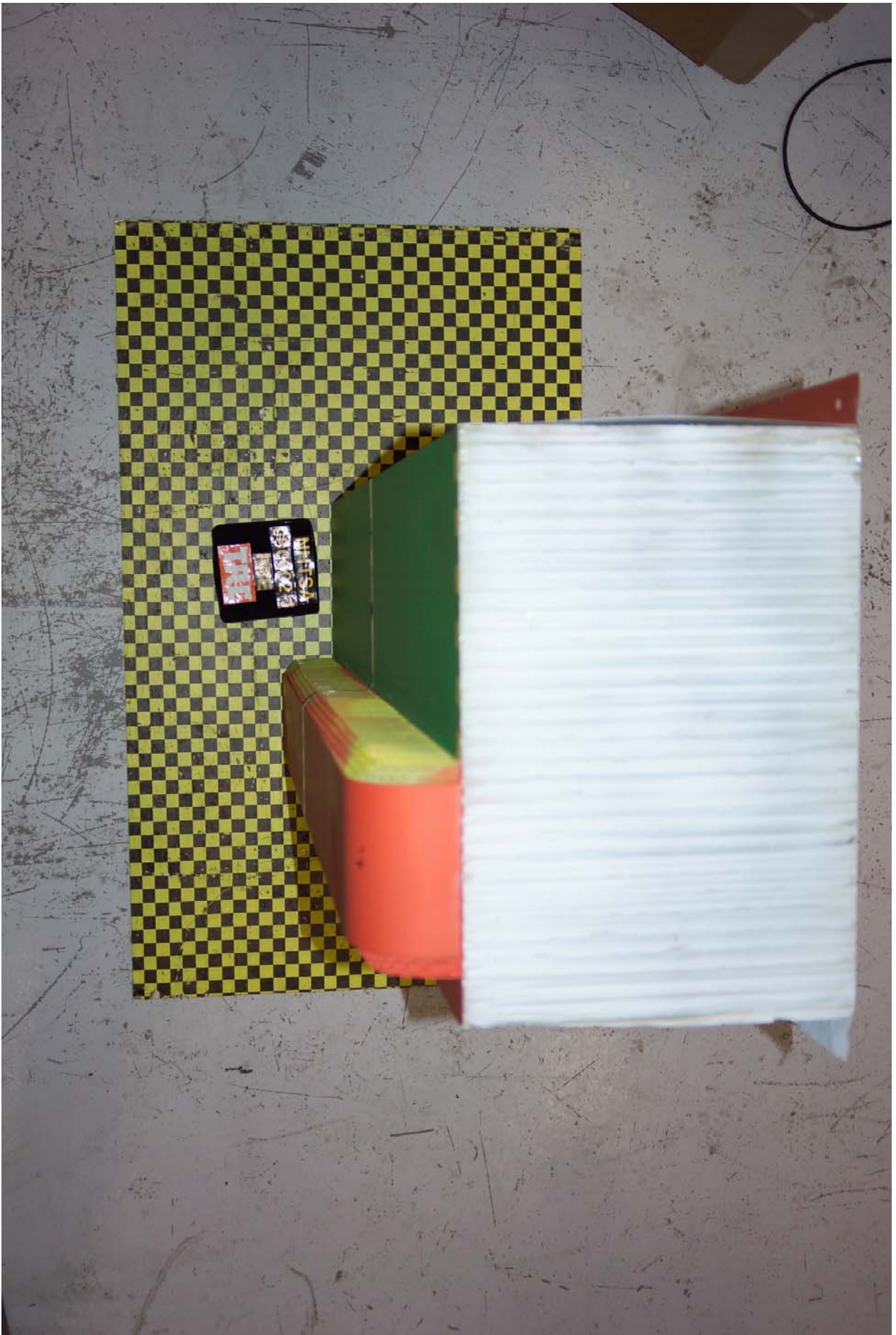


Figure A-19 Pre-Test Left Side View of Impactor Face



Figure A-20 Post-Test Left Side View of Impactor Face

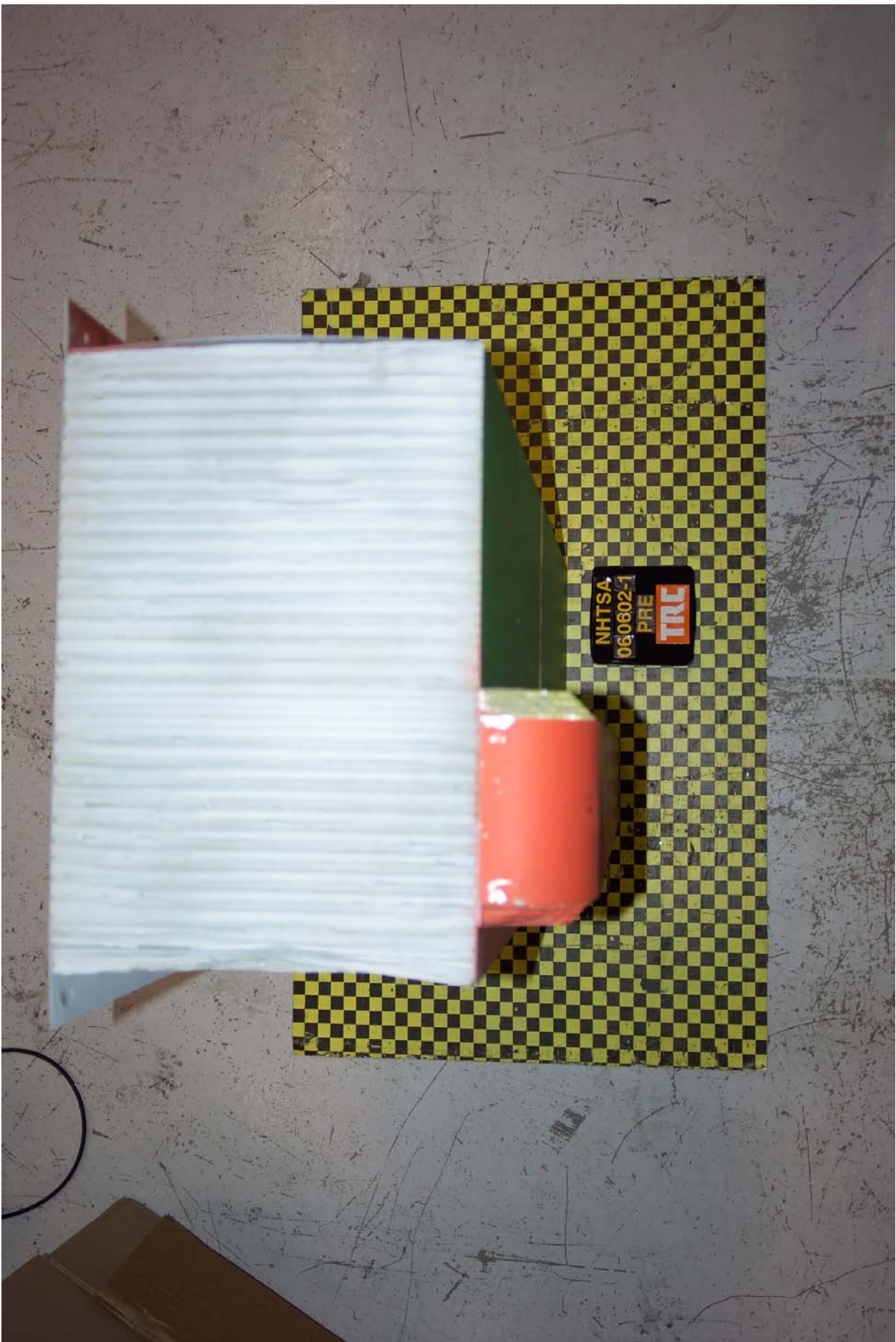


Figure A-21 Pre-Test Right Side View of Impactor Face

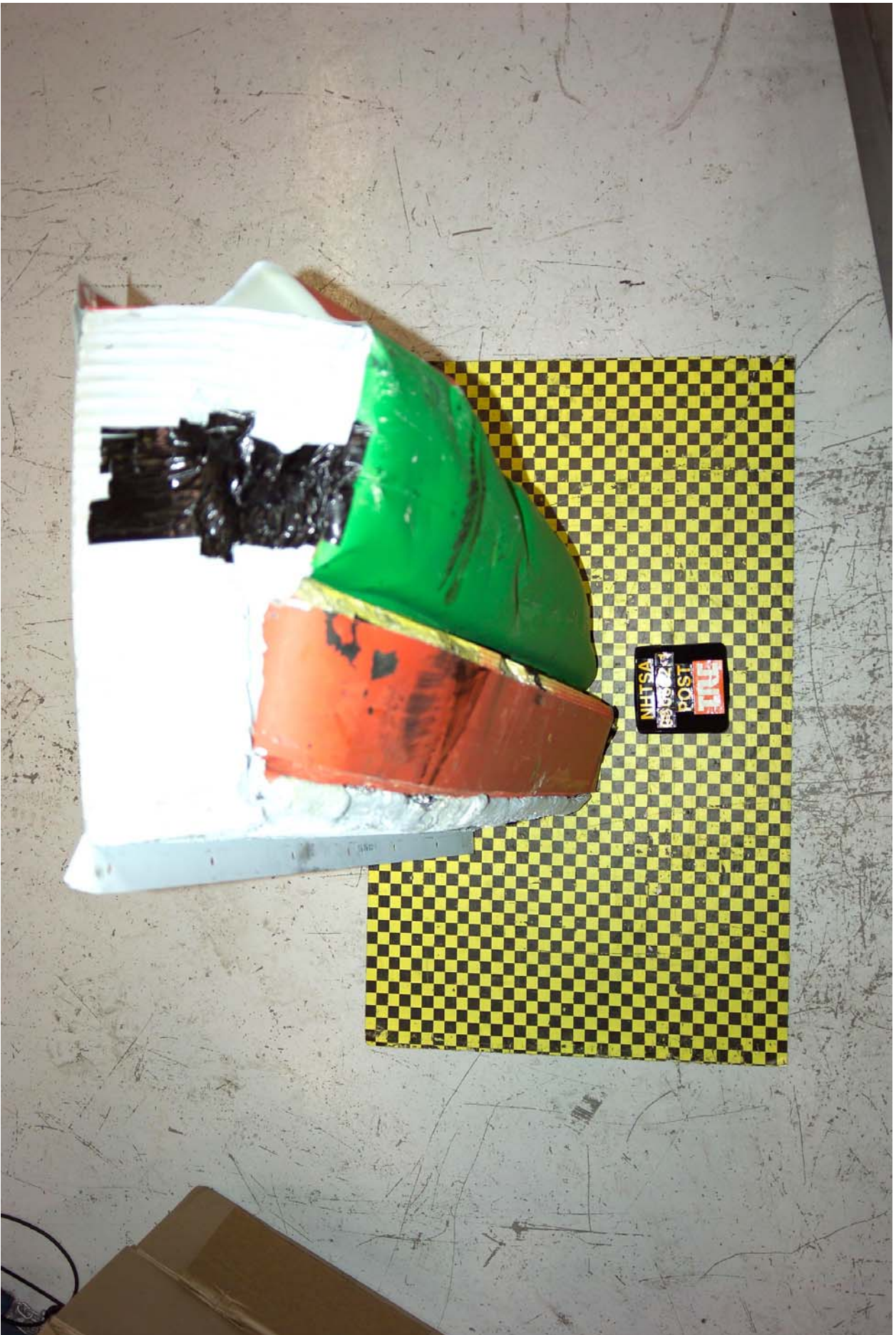


Figure A-22 Post-Test Right Side View of Impactor Face

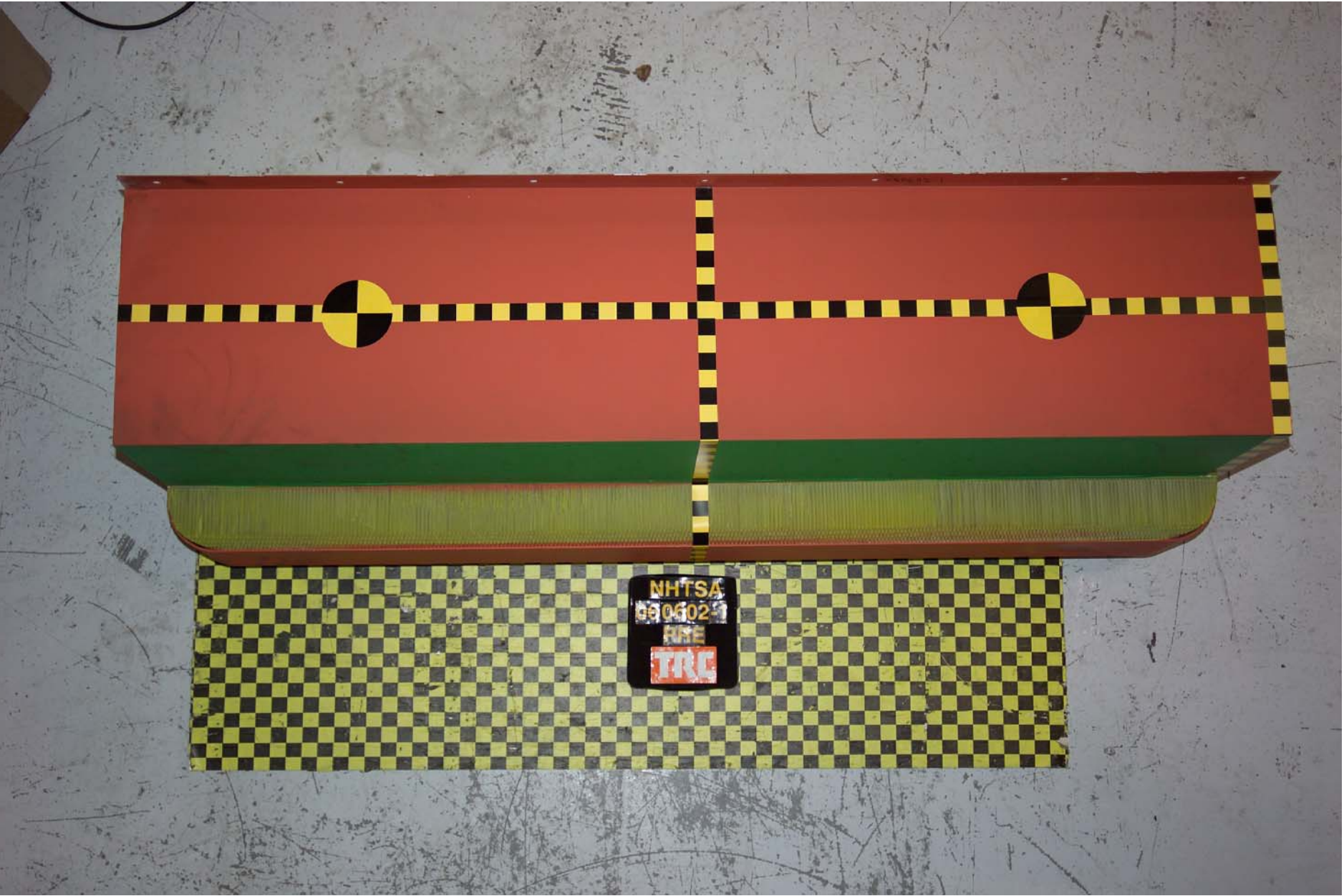


Figure A-23 Pre-Test Top View of Impactor Face

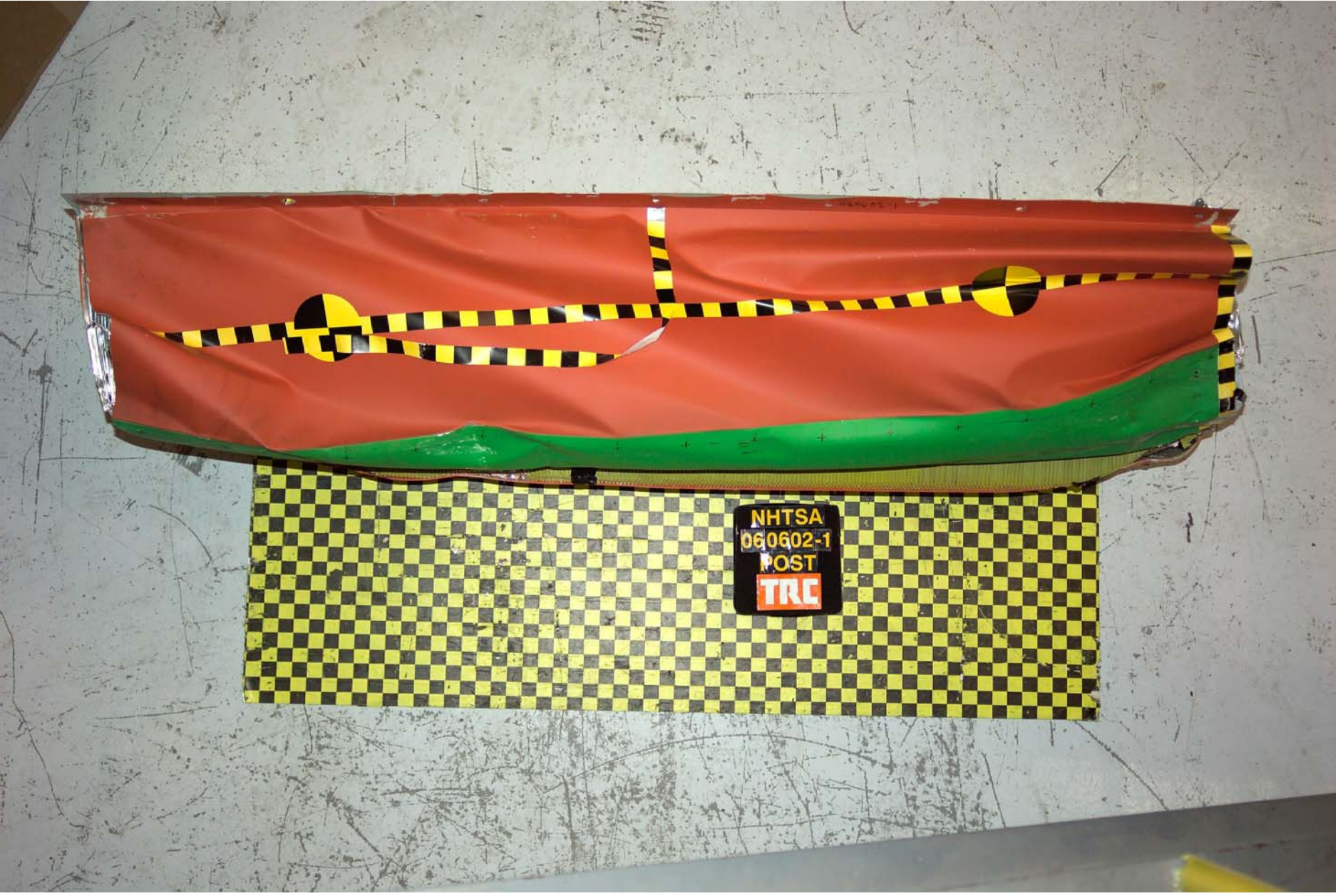


Figure A-24 Post-Test Top View of Impactor Face

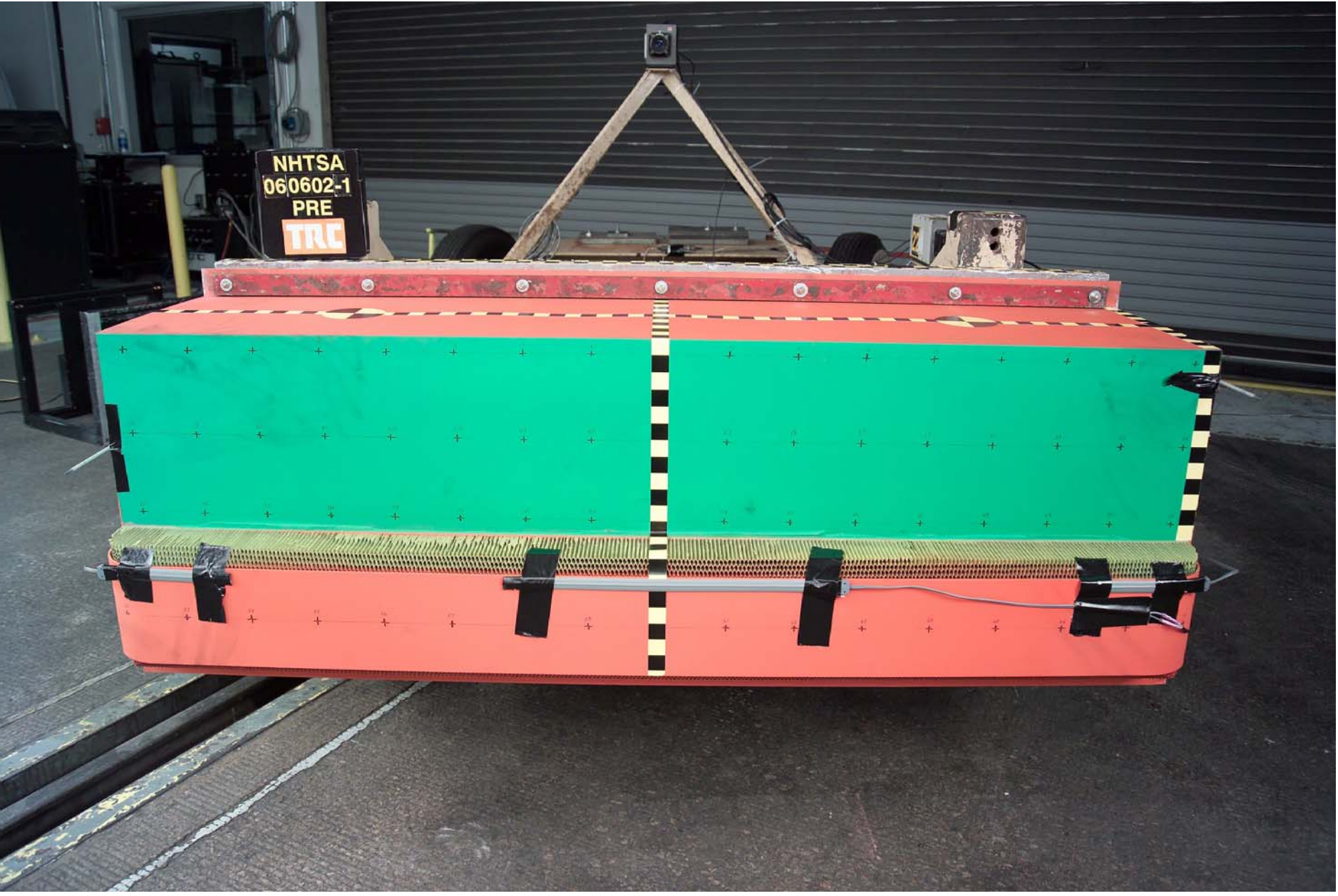


Figure A-25 Pre-Test Front View of Impactor

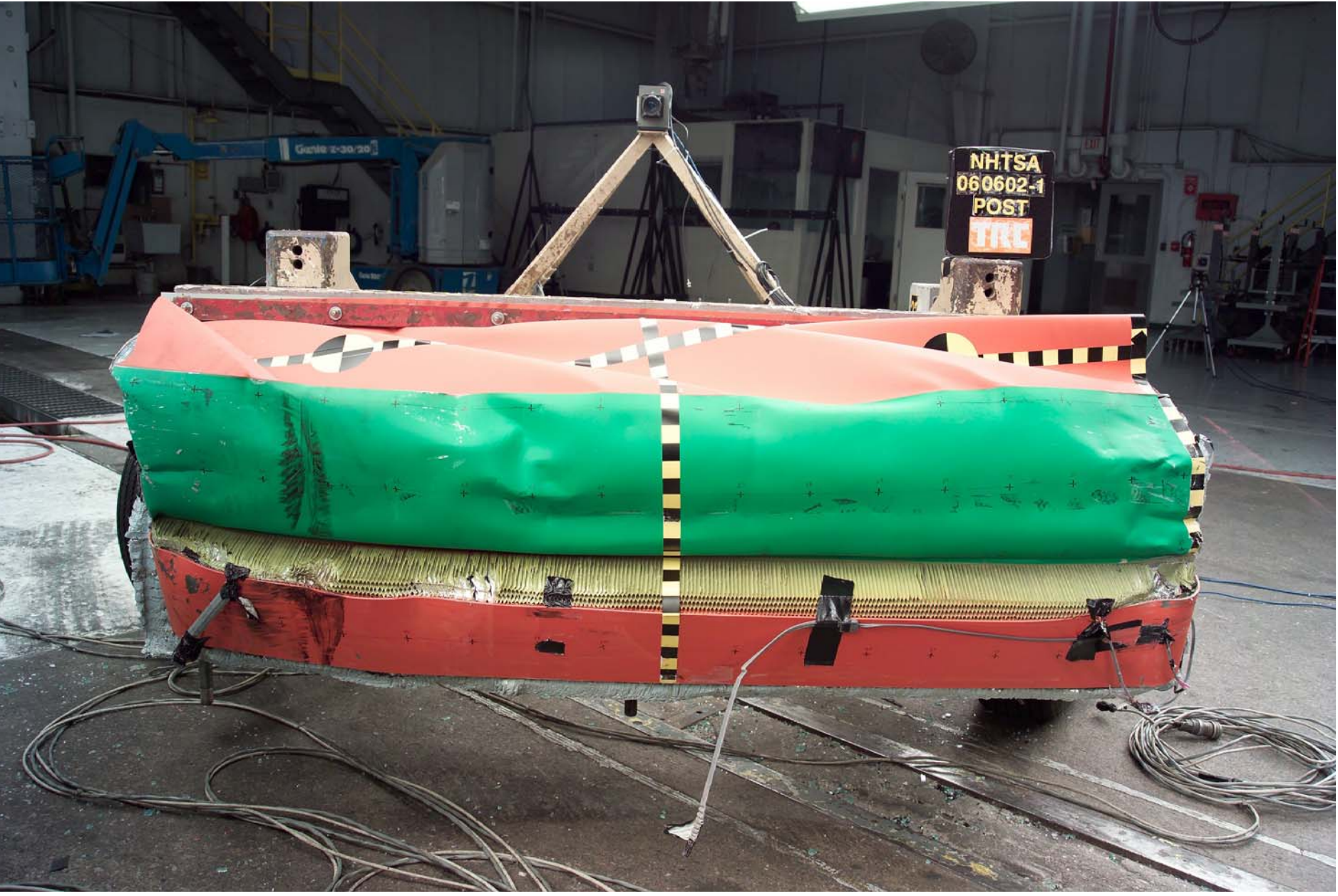


Figure A-26 Post-Test Front View of Impactor



Figure A-27 Pre-Test Left Side View of Impactor



Figure A-28 Post-Test Left Side View of Impactor



Figure A-29 Pre-Test Right Side View of Impactor



Figure A-30 Post-Test Right Side View of Impactor



Figure A-31 Pre-Test Top View of Impactor



Figure A-32 Post-Test Top View of Impactor

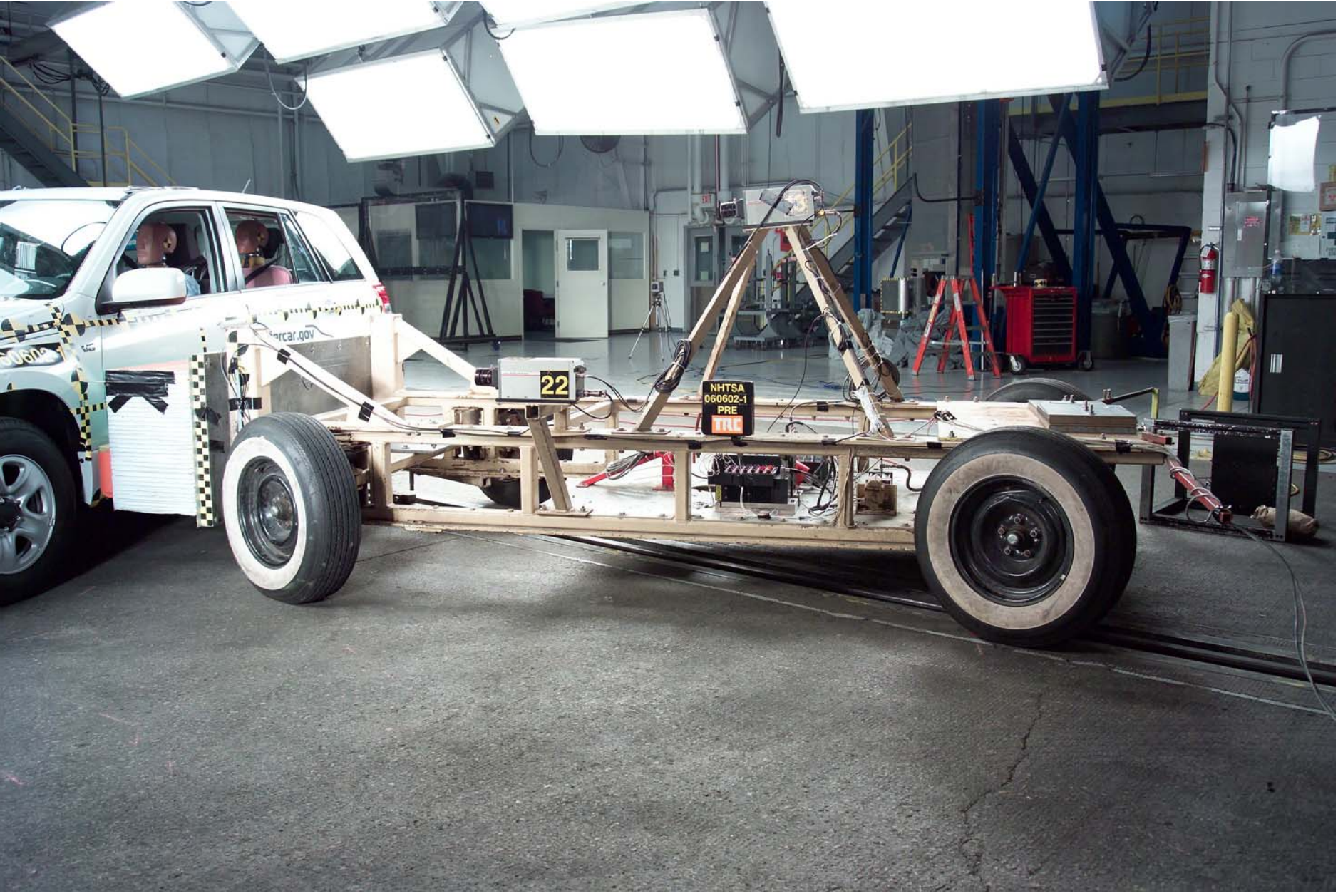


Figure A-33 Pre-Test Left Side Overall View of Impactor

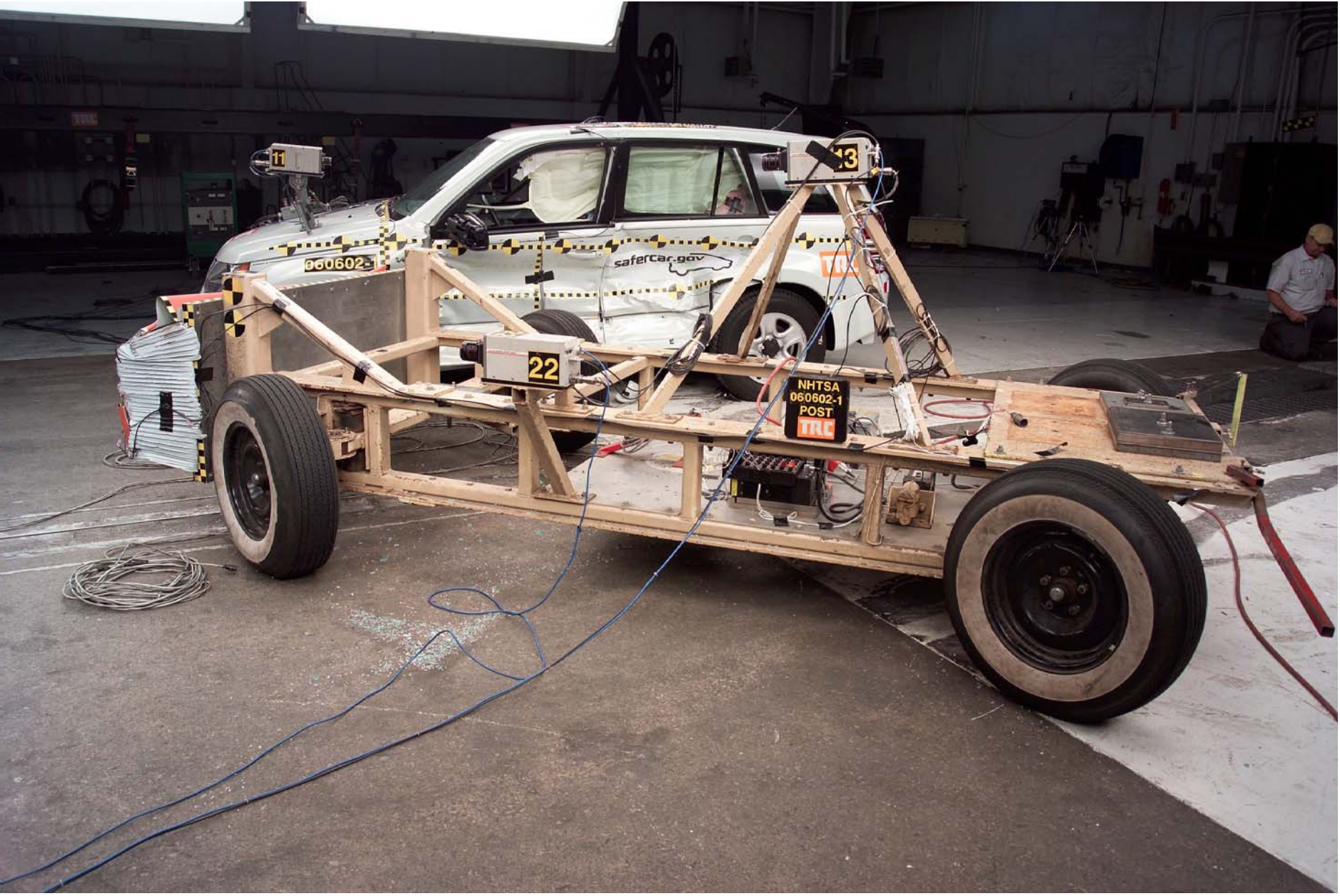


Figure A-34 Post-Test Left Side Overall View of Impactor

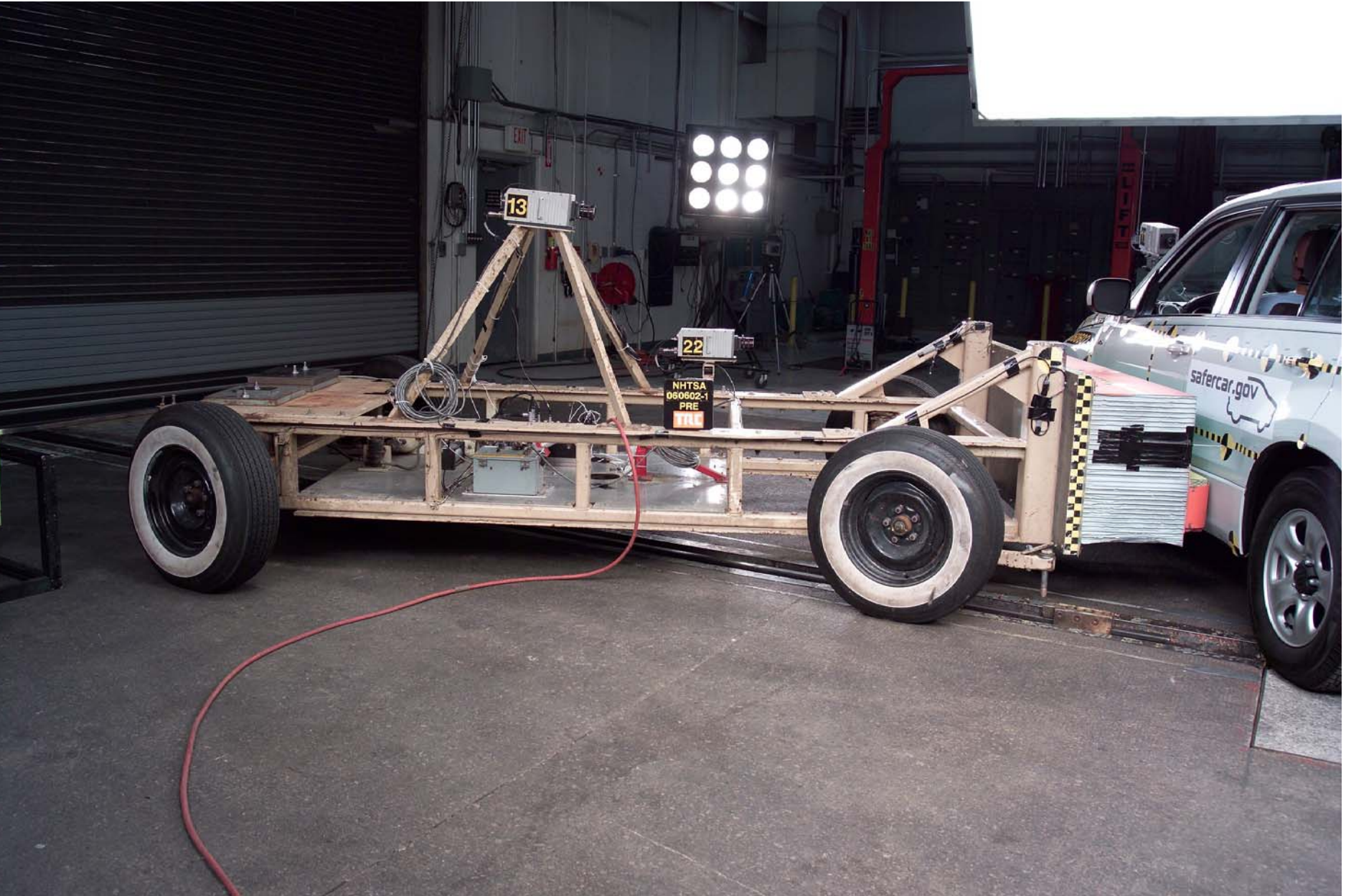


Figure A-35 Pre-Test Right Side Overall View of Impactor

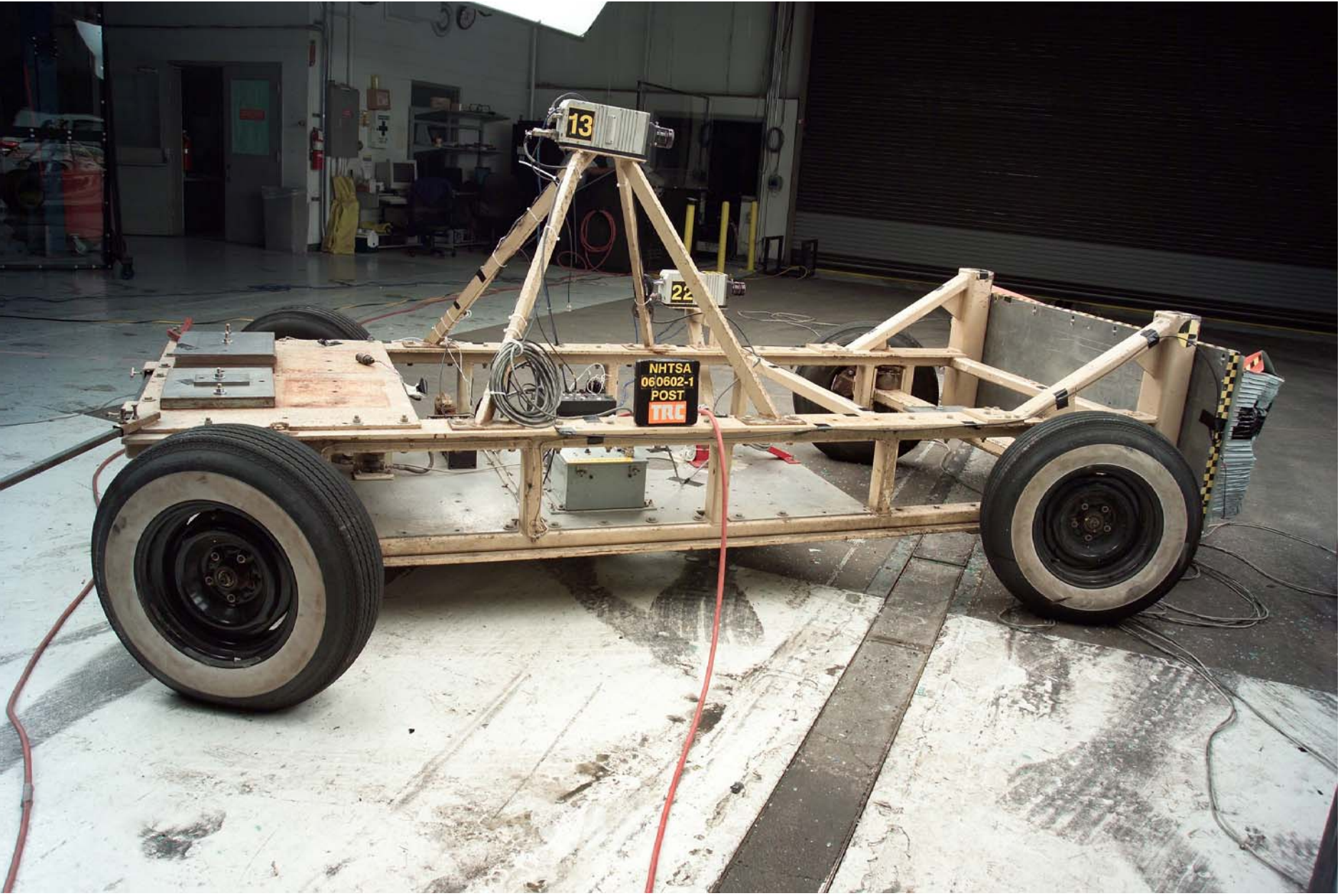


Figure A-36 Post-Test Right Side Overall View of Impactor



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



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



Figure A-39 Pre-Test Overhead View of MDB Aligned with Vehicle



Figure A-40 Post-Test Overhead View of MDB and Vehicle



Figure A-41 Pre-Test Right Occupant Compartment View of Front SID HIII



Figure A-42 Post-Test Right Occupant Compartment View of Front SID HIII



Figure A-43 Pre-Test Right Occupant Compartment View of Rear SID HIII



Figure A-44 Post-Test Right Occupant Compartment View of Rear SID HIII



Figure A-45 Pre-Test Left View of Front SID HIII



Figure A-46 Post-Test Left View of Front SID HIII



Figure A-47 Pre-Test Left View of Front SID HIII and Belt Position



Figure A-48 Pre-Test Left View of Front SID HIII and Door Clearance



Figure A-49 Post-Test Left View of Front SID HIII and Door Clearance



Figure A-50 Pre-Test Left View of Rear SID HIII



Figure A-51 Post-Test Left View of Rear SID HIII

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Figure A-52 Pre-Test Left of Rear SID HIII and Belt Position

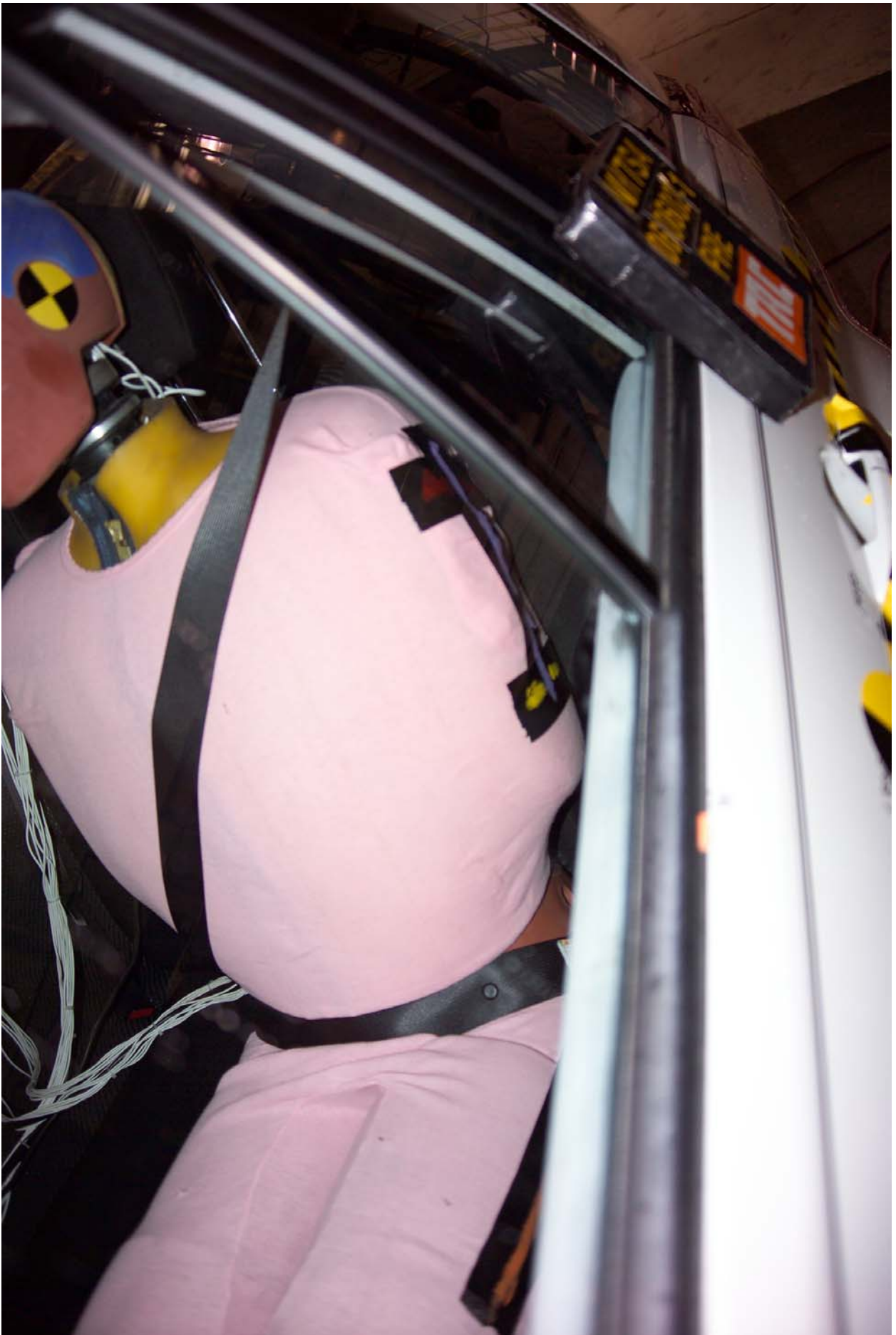


Figure A-53 Pre-Test Left View of Rear SID HIII and Door Clearance



Figure A-54 Post-Test Left View of Rear SID HIII and Door Clearance



Figure A-55 Pre-Test Interior of Front Door

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060602-1



Figure A-56 Post-Test Interior of Front Door Showing SID HIII Impact Locations



Figure A-57 Post-Test Front SID HIII Contact - View 1

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Figure A-58 Post-Test Front SID HIII Contact - View 2

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Figure A-59 Post-Test Front SID HIII Contact - View 3

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Figure A-60 Pre-Test Interior of Rear Panel

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Figure A-61 Post-Test Interior of Rear Panel Showing SID HIII Impact Locations



Figure A-62 Post-Test Rear SID HIII Contact - View 1

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Figure A-63 Post-Test Rear SID HIII Contact - View 2

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Figure A-64 Post-Test Rear SID HIII Contact - View 3

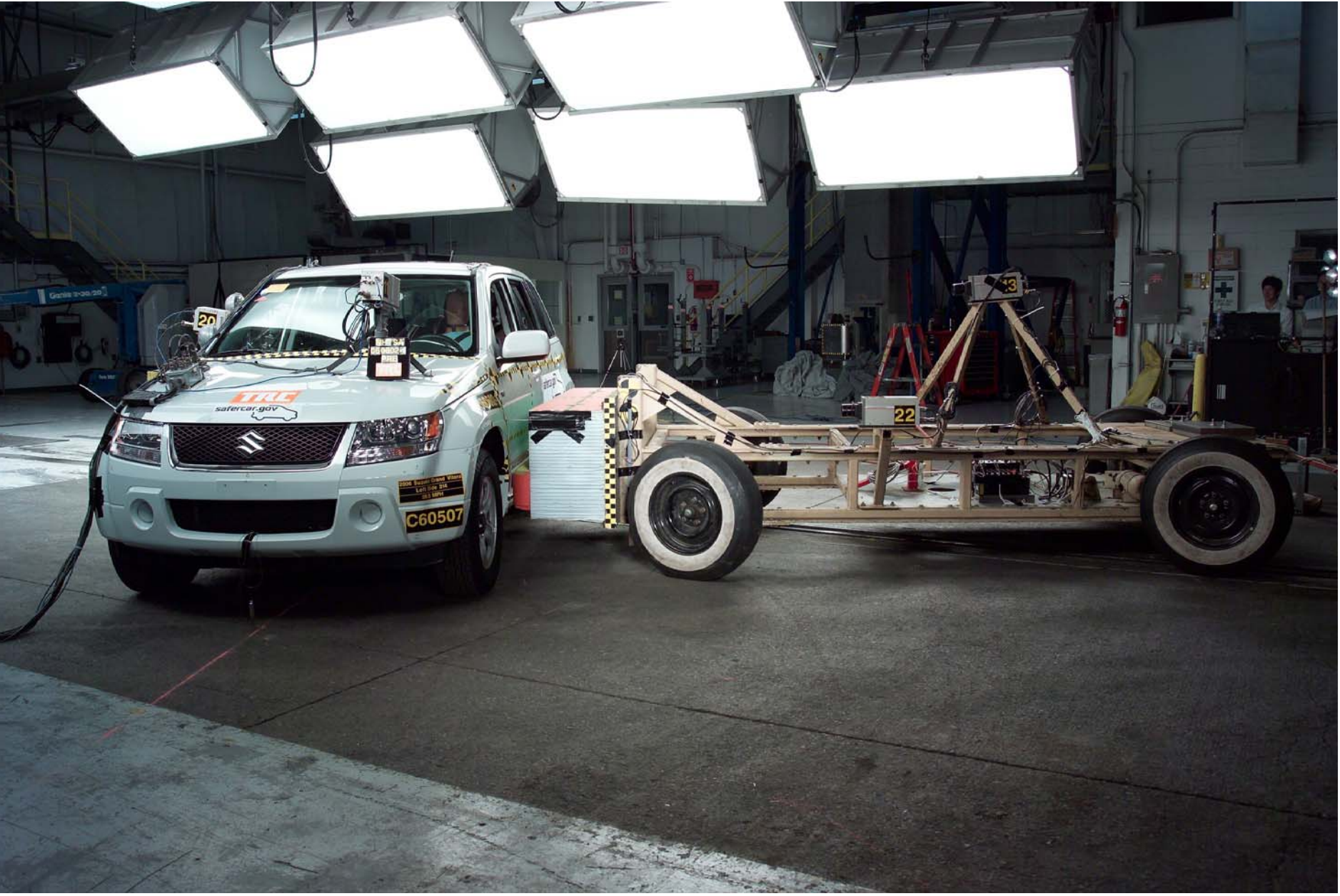


Figure A-65 Pre-Test Left Side View of MDB With Impactor Face in Position



Figure A-66 Post-Test Left Side View of MDB With Impactor Face in Position



Figure A-67 Pre-Test Primary Impact Point View



Figure A-68 Post-Test Primary Impact Point View



Figure A-69 Pre-Test Right Side View of MDB With Impactor Face in Position



Figure A-70 Post-Test Right Side View of MDB With Impactor Face in Position

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Figure A-71 Pre-Test Secondary Impact Point View



Figure A-72 Post-Test Secondary Impact Point View

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Figure A-73 Pre-Test Vehicle Certification Label View



Figure A-74 Pre-Test Vehicle Recommended Tire Pressure Label View



Figure A-75 Post-Test Light Trap Digital Readout - View 1



Figure A-76 Post-Test Light Trap Digital Readout - View 2



Figure A-77 Post-Test Light Trap Digital Readout - View 3



Figure A-78 Impact Event



Figure A-79 Pre-Test Fuel Cap



Figure A-80 Post-Test Fuel Cap

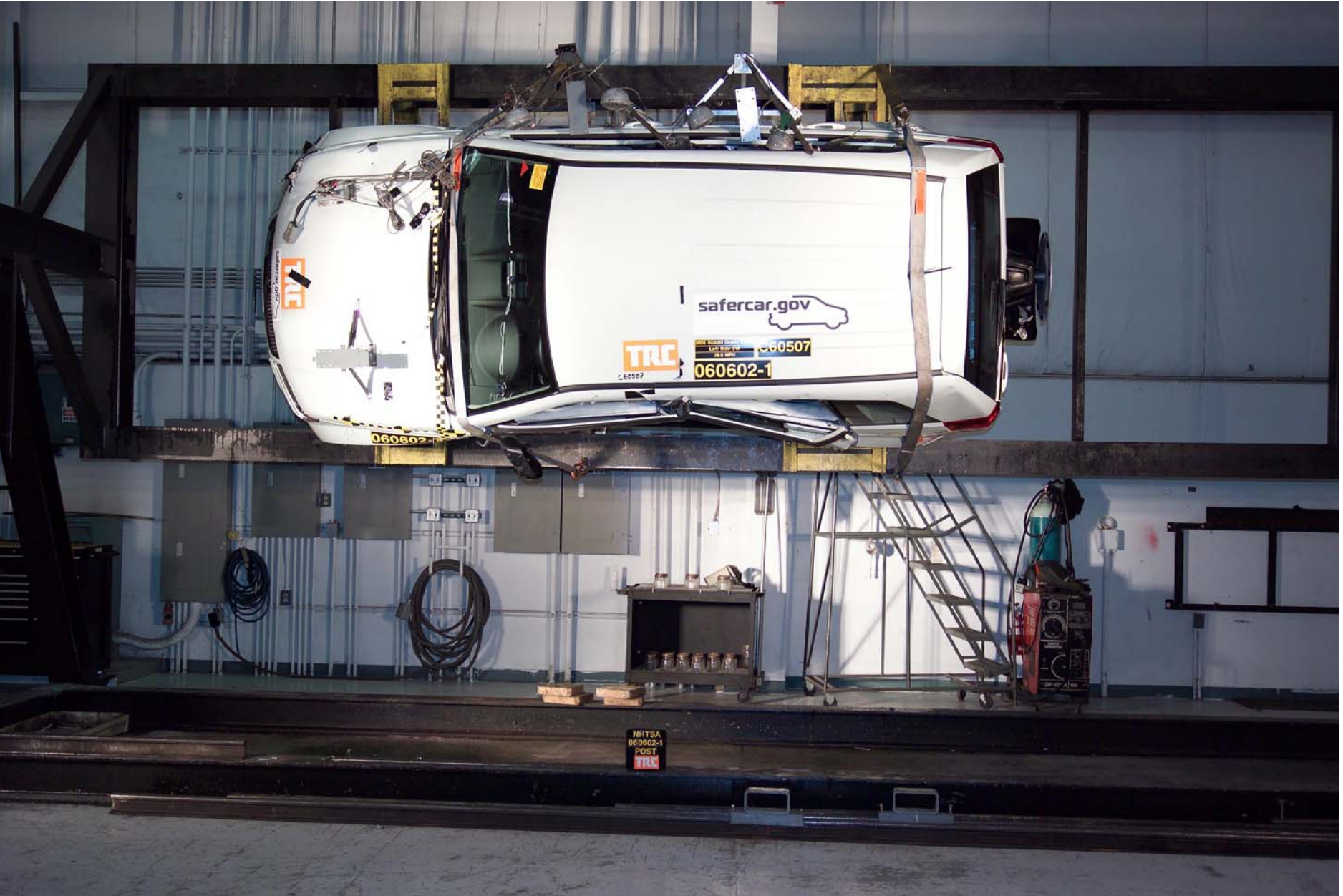


Figure A-81 FMVSS 301 Rollover View at 90°

A-85

060602-1

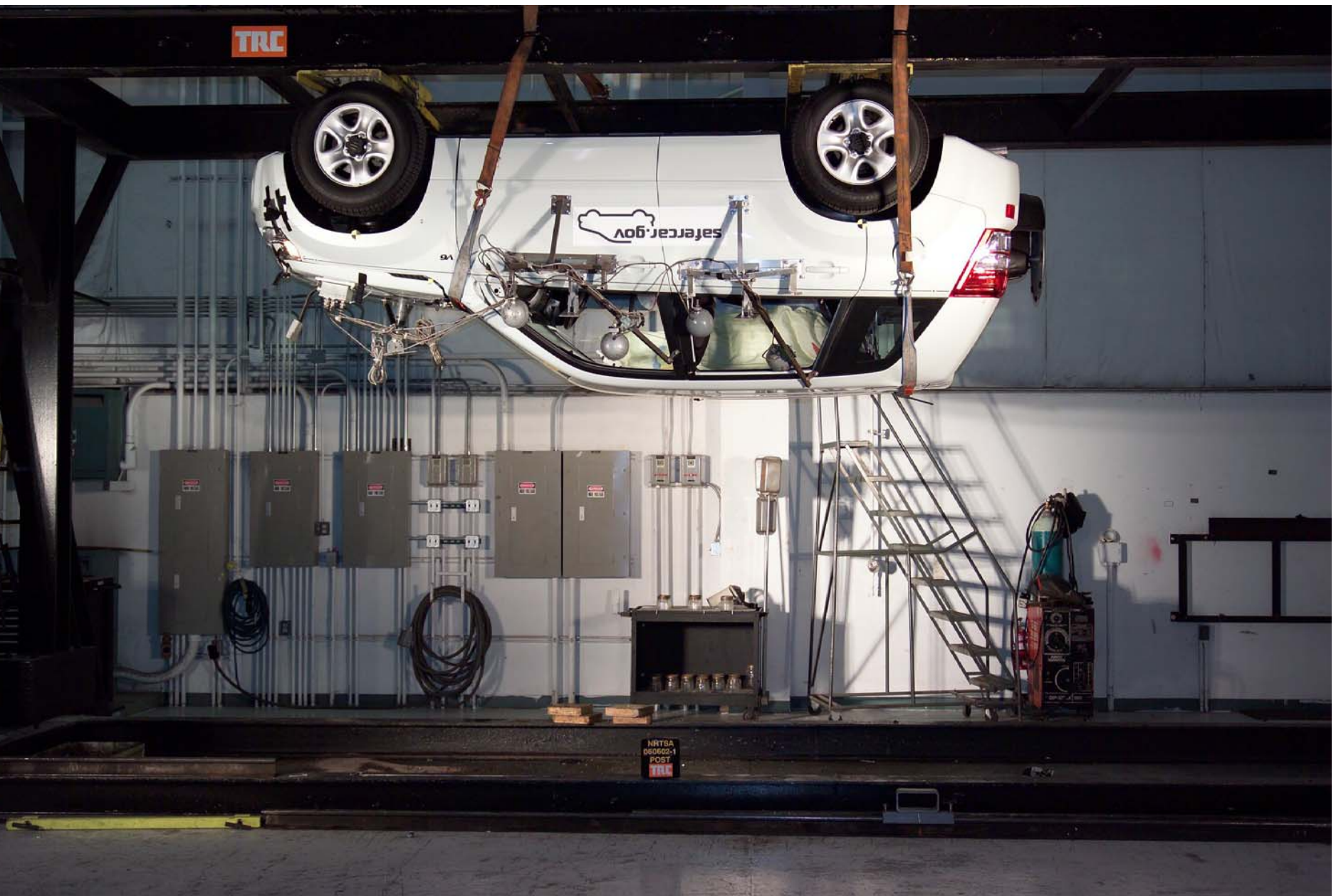


Figure A-82 FMVSS 301 Rollover View at 180°

A-86

060602-1

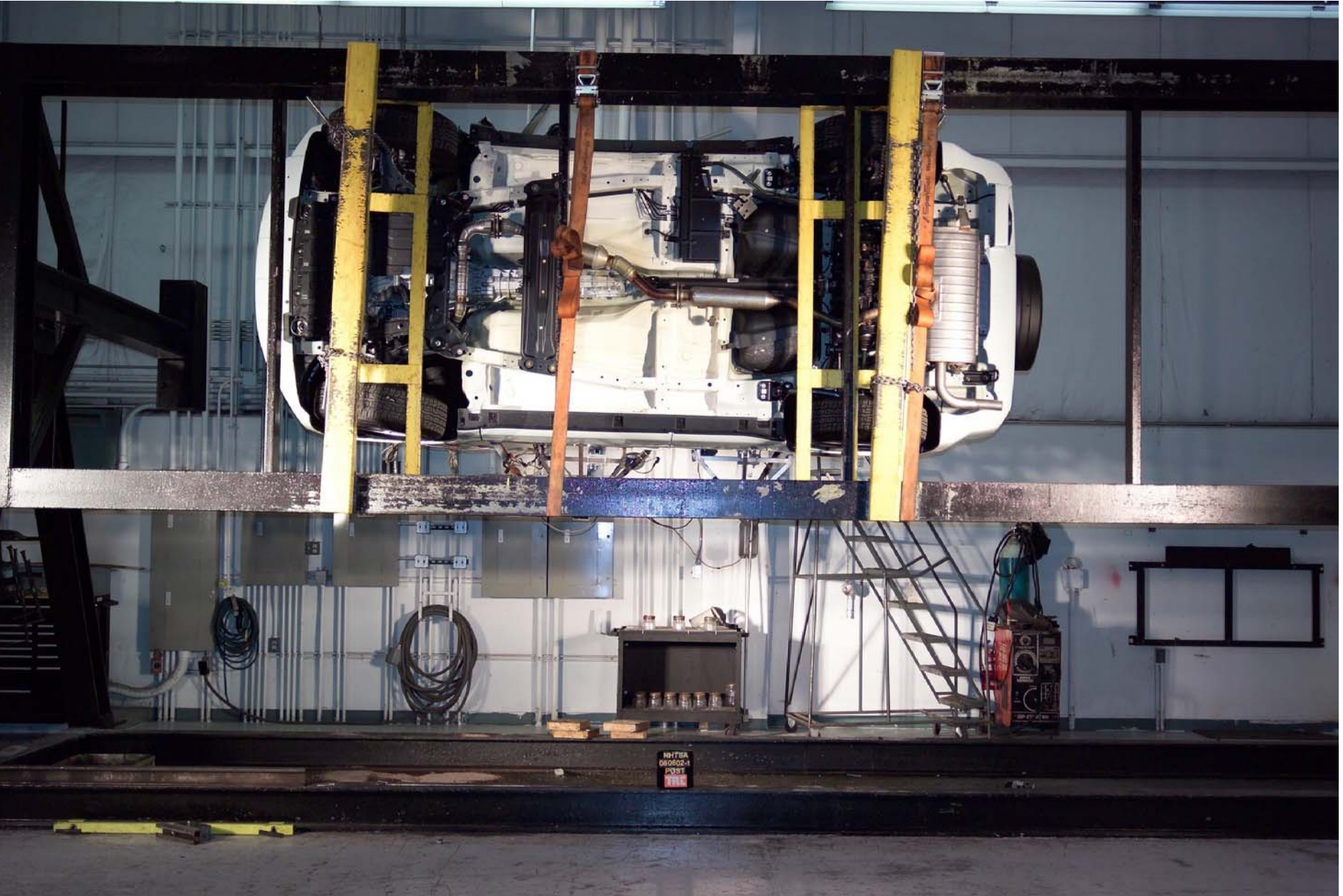


Figure A-83 FMVSS 301 Rollover View at 270°

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Figure A-84 FMVSS 301 Rollover View at 360°

A-88

060602-1

Appendix B

Data Plots

Table of Data Plots
Driver and Passenger Dummy Instrumentation Plots
Acceleration Data - Filter Class 1000
Integration Data - Filter Class 180
Force Data - Filter Class 1000
Moment Data - Filter Class 600
Contact Data - Filter Class 1000

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
1	Driver Head X-Axis Acceleration	B-10
2	Driver Head X-Axis Velocity	B-11
3	Driver Head Y-Axis Acceleration	B-12
4	Driver Head Y-Axis Velocity	B-13
5	Driver Head Z-Axis Acceleration	B-14
6	Driver Head Z-Axis Velocity	B-15
7	Driver Head Resultant Acceleration	B-16
8	Driver Neck X-Axis Shear Force	B-17
9	Driver Neck Y-Axis Shear Force	B-18
10	Driver Neck Z-Axis Axial Force	B-19
11	Driver Neck Moment about X Axis	B-20
12	Driver Neck Moment about Y Axis	B-21
13	Driver Neck Moment about Z Axis	B-22
14	Driver Neck Occipital Condyle Moment about X Axis	B-23
15	Driver Upper Rib Y-Axis Acceleration	B-24
16	Driver Upper Rib Y-Axis Velocity	B-25
17	Driver Lower Rib Y-Axis Acceleration	B-26
18	Driver Lower Rib Y-Axis Velocity	B-27
19	Driver Lower Spine Y-Axis Acceleration	B-28
20	Driver Lower Spine Y-Axis Velocity	B-29
21	Driver Pelvis Y-Axis Acceleration	B-30
22	Driver Pelvis Y-Axis Velocity	B-31
23	Left Rear Passenger Head X-Axis Acceleration	B-32
24	Left Rear Passenger Head X-Axis Velocity	B-33

Table of Data Plots (Continued)

Driver and Passenger Dummy Instrumentation Plots (Continued)

Acceleration Data - Filter Class 1000

Integration Data - Filter Class 180

Force Data - Filter Class 1000

Moment Data - Filter Class 600

Contact Data - Filter Class 1000

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
25	Left Rear Passenger Head Y-Axis Acceleration	B-34
26	Left Rear Passenger Head Y-Axis Velocity	B-35
27	Left Rear Passenger Head Z-Axis Acceleration	B-36
28	Left Rear Passenger Head Z-Axis Velocity	B-37
29	Left Rear Passenger Head Resultant Acceleration	B-38
30	Left Rear Passenger Neck X-Axis Shear Force	B-39
31	Left Rear Passenger Neck Y-Axis Shear Force	B-40
32	Left Rear Passenger Neck Z-Axis Axial Force	B-41
33	Left Rear Passenger Neck Moment about X Axis	B-42
34	Left Rear Passenger Neck Moment about Y Axis	B-43
35	Left Rear Passenger Neck Moment about Z Axis	B-44
36	Left Rear Passenger Neck Occipital Condyle Moment about X Axis	B-45
37	Left Rear Passenger Upper Rib Y-Axis Acceleration	B-46
38	Left Rear Passenger Upper Rib Y-Axis Velocity	B-47
39	Left Rear Passenger Lower Rib Y-Axis Acceleration	B-48
40	Left Rear Passenger Lower Rib Y-Axis Velocity	B-49
41	Left Rear Passenger Lower Spine Y-Axis Acceleration	B-50
42	Left Rear Passenger Lower Spine Y-Axis Velocity	B-51
43	Left Rear Passenger Pelvis Y-Axis Acceleration	B-52
44	Left Rear Passenger Pelvis Y-Axis Velocity	B-53

Table of Data Plots (Continued)

Driver and Passenger Dummy Redundant Instrumentation Plots

Acceleration Data - Filter Class 1000 - Redundant

Integration Data - Filter Class 180 - Redundant

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
45	Driver Head X-Axis Redundant Acceleration	B-55
46	Driver Head X-Axis Redundant Velocity	B-56
47	Driver Head Y-Axis Redundant Acceleration	B-57
48	Driver Head Y-Axis Redundant Velocity	B-58
49	Driver Head Z-Axis Redundant Acceleration	B-59
50	Driver Head Z-Axis Redundant Velocity	B-60
51	Driver Head Resultant Redundant Acceleration	B-61
52	Driver Upper Rib Y-Axis Redundant Acceleration	B-62
53	Driver Upper Rib Y-Axis Redundant Velocity	B-63
54	Driver Lower Rib Y-Axis Redundant Acceleration	B-64
55	Driver Lower Rib Y-Axis Redundant Velocity	B-65
56	Driver Lower Spine Y-Axis Redundant Acceleration	B-66
57	Driver Lower Spine Y-Axis Redundant Velocity	B-67
58	Left Rear Passenger Head X-Axis Redundant Acceleration	B-68
59	Left Rear Passenger Head X-Axis Redundant Velocity	B-69
60	Left Rear Passenger Head Y-Axis Redundant Acceleration	B-70
61	Left Rear Passenger Head Y-Axis Redundant Velocity	B-71
62	Left Rear Passenger Head Z-Axis Redundant Acceleration	B-72
63	Left Rear Passenger Head Z-Axis Redundant Velocity	B-73
64	Left Rear Passenger Head Resultant Redundant Acceleration	B-74
65	Left Rear Passenger Upper Rib Y-Axis Redundant Acceleration	B-75
66	Left Rear Passenger Upper Rib Y-Axis Redundant Velocity	B-76
67	Left Rear Passenger Lower Rib Y-Axis Redundant Acceleration	B-77
68	Left Rear Passenger Lower Rib Y-Axis Redundant Velocity	B-78
69	Left Rear Passenger Lower Spine Y-Axis Redundant Acceleration	B-79
70	Left Rear Passenger Lower Spine Y-Axis Redundant Velocity	B-80

Table of Data Plots (Continued)
Test Vehicle Instrumentation Plots
Acceleration Data - Filter Class 60
Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
71	Right Side Sill at Front Seat X-Axis Acceleration	B-82
72	Right Side Sill at Front Seat X-Axis Velocity	B-83
73	Right Side Sill at Front Seat Y-Axis Acceleration	B-84
74	Right Side Sill at Front Seat Y-Axis Velocity	B-85
75	Right Side Sill at Front Seat Z-Axis Acceleration	B-86
76	Right Side Sill at Front Seat Z-Axis Velocity	B-87
77	Right Side Sill at Front Seat Resultant Acceleration	B-88
78	Right Side Sill at Rear Seat X-Axis Acceleration	B-89
79	Right Side Sill at Rear Seat X-Axis Velocity	B-90
80	Right Side Sill at Rear Seat Y-Axis Acceleration	B-91
81	Right Side Sill at Rear Seat Y-Axis Velocity	B-92
82	Right Side Sill at Rear Seat Z-Axis Acceleration	B-93
83	Right Side Sill at Rear Seat Z-Axis Velocity	B-94
84	Right Side Sill at Rear Seat Resultant Acceleration	B-95
85	Rear Floorpan Above Axle X-Axis Acceleration	B-96
86	Rear Floorpan Above Axle X-Axis Velocity	B-97
87	Rear Floorpan Above Axle Y-Axis Acceleration	B-98
88	Rear Floorpan Above Axle Y-Axis Velocity	B-99
89	Rear Floorpan Above Axle Z-Axis Acceleration	B-100
90	Rear Floorpan Above Axle Z-Axis Velocity	B-101
91	Rear Floorpan Above Axle Resultant Acceleration	B-102
92	Left Side Sill at Front Seat Y-Axis Acceleration	B-103
93	Left Side Sill at Front Seat Y-Axis Velocity	B-104
94	Left Side Sill at Front Seat Y-Axis Displacement	B-105

Table of Data Plots (Continued)
Test Vehicle Instrumentation Plots (Continued)
Acceleration Data - Filter Class 60
Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
95	Left Side Sill at Rear Seat Y-Axis Acceleration	B-106
96	Left Side Sill at Rear Seat Y-Axis Velocity	B-107
97	Left Side Sill at Rear Seat Y-Axis Displacement	B-108
98	Right Rear Occupant Compartment Y-Axis Acceleration	B-109
99	Right Rear Occupant Compartment Y-Axis Velocity	B-110
100	Right Rear Occupant Compartment Y-Axis Displacement	B-111
101	Left Lower A-Post Y-Axis Acceleration	B-112
102	Left Lower A-Post Y-Axis Velocity	B-113
103	Left Middle A-Post Y-Axis Acceleration	B-114
104	Left Middle A-Post Y-Axis Velocity	B-115
105	Left Lower B-Post Y-Axis Acceleration	B-116
106	Left Lower B-Post Y-Axis Velocity	B-117
107	Left Middle B-Post Y-Axis Acceleration	B-118
108	Left Middle B-Post Y-Axis Velocity	B-119
109	Left Front Seat Track Y-Axis Acceleration	B-120
110	Left Front Seat Track Y-Axis Velocity	B-121
111	Left Rear Seat Track Y-Axis Acceleration	B-122
112	Left Rear Seat Track Y-Axis Velocity	B-123
113	Vehicle Center of Gravity X-Axis Acceleration	B-124
114	Vehicle Center of Gravity X-Axis Velocity	B-125
115	Vehicle Center of Gravity Y-Axis Acceleration	B-126
116	Vehicle Center of Gravity Y-Axis Velocity	B-127
117	Vehicle Center of Gravity Z-Axis Acceleration	B-128
118	Vehicle Center of Gravity Z-Axis Velocity	B-129
119	Vehicle Center of Gravity Resultant Acceleration	B-130

Table of Data Plots (Continued)
 MDB Instrumentation Plots
 Acceleration Data - Filter Class 60
 Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
120	MDB Center of Gravity X-Axis Acceleration	B-132
121	MDB Center of Gravity X-Axis Velocity	B-133
122	MDB Center of Gravity Y-Axis Acceleration	B-134
123	MDB Center of Gravity Y-Axis Velocity	B-135
124	MDB Center of Gravity Z-Axis Acceleration	B-136
125	MDB Center of Gravity Z-Axis Velocity	B-137
126	MDB Center of Gravity Resultant Acceleration	B-138
127	MDB Rear X-Axis Acceleration	B-139
128	MDB Rear X-Axis Velocity	B-140
129	MDB Rear Y-Axis Acceleration	B-141
130	MDB Rear Y-Axis Velocity	B-142
131	MDB Right Contact Switch	B-143
132	MDB Left Contact Switch	B-144

Table of Data Plots (Continued)
Driver and Passenger Dummy Instrumentation Plots
Acceleration Data - FIR Filtered

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
133	Driver Upper Rib Y-Axis Acceleration	B-146
134	Driver Lower Rib Y-Axis Acceleration	B-147
135	Driver Lower Spine Y-Axis Acceleration	B-148
136	Driver Pelvis Y-Axis Acceleration	B-149
137	Left Rear Passenger Upper Rib Y-Axis Acceleration	B-150
138	Left Rear Passenger Lower Rib Y-Axis Acceleration	B-151
139	Left Rear Passenger Lower Spine Y-Axis Acceleration	B-152
140	Left Rear Passenger Pelvis Y-Axis Acceleration	B-153
141	Driver Upper Rib Y-Axis Redundant Acceleration	B-154
142	Driver Lower Rib Y-Axis Redundant Acceleration	B-155
143	Driver Lower Spine Y-Axis Redundant Acceleration	B-156
144	Left Rear Passenger Upper Rib Y-Axis Redundant Acceleration	B-157
145	Left Rear Passenger Lower Rib Y-Axis Redundant Acceleration	B-158
146	Left Rear Passenger Lower Spine Y-Axis Redundant Acceleration	B-159

Driver and Passenger Dummy Instrumentation Plots



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

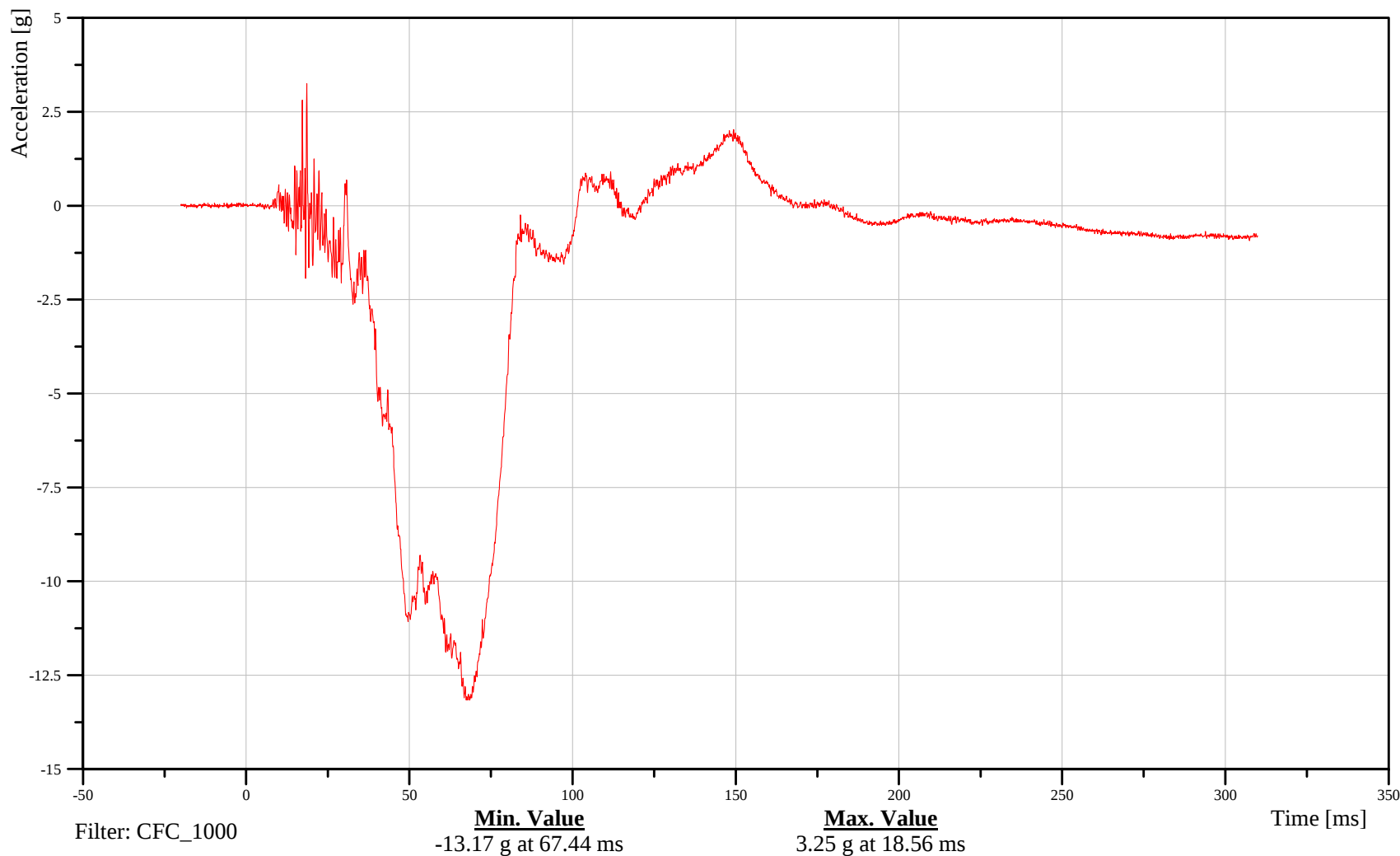
Time: 11:34

DRIVER HEAD X-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

11HEADCG00SHACXA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-10

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Test: 06/02/2006

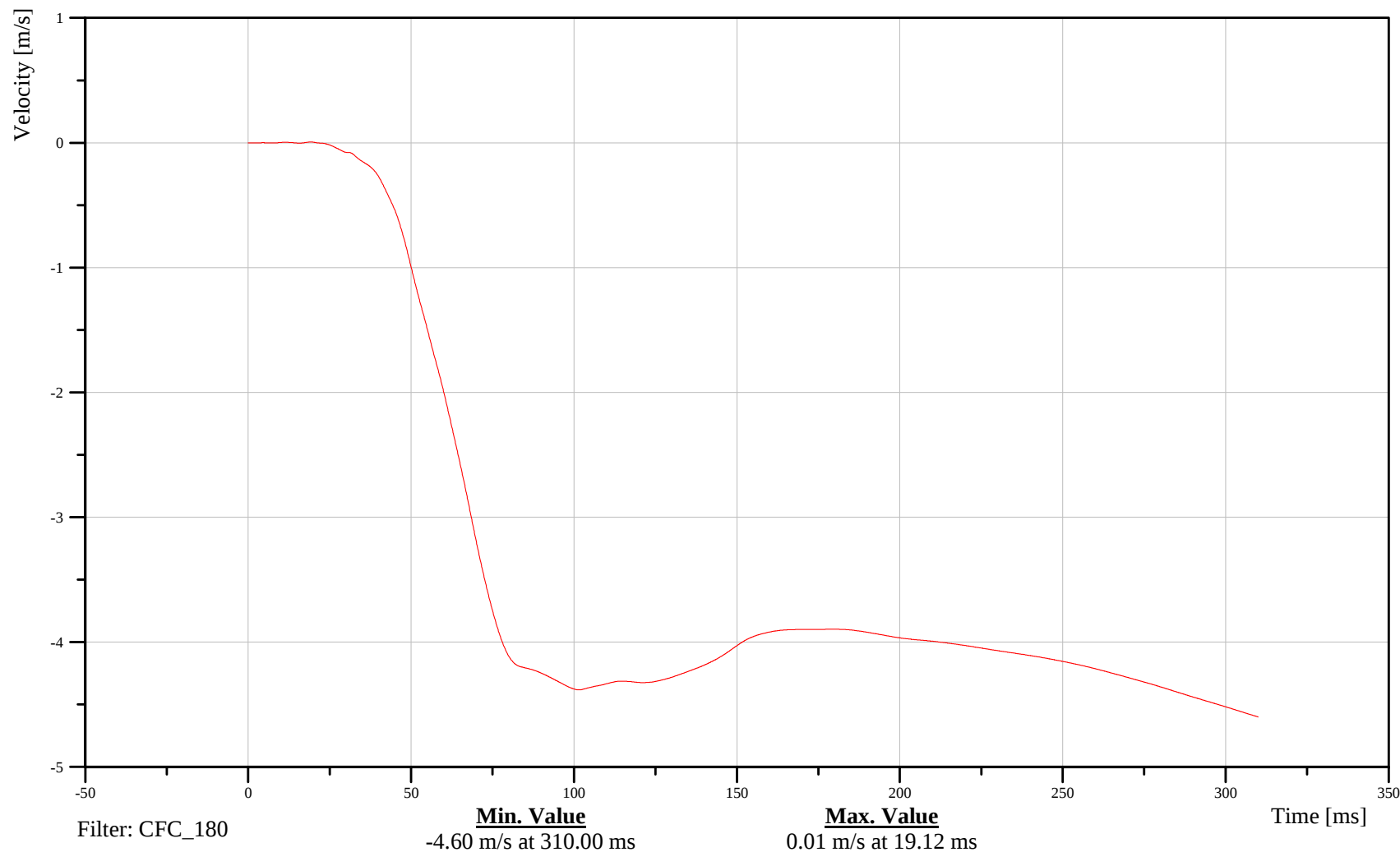
Time: 11:34

DRIVER HEAD X-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

11HEADCG00SHVEXC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-11

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

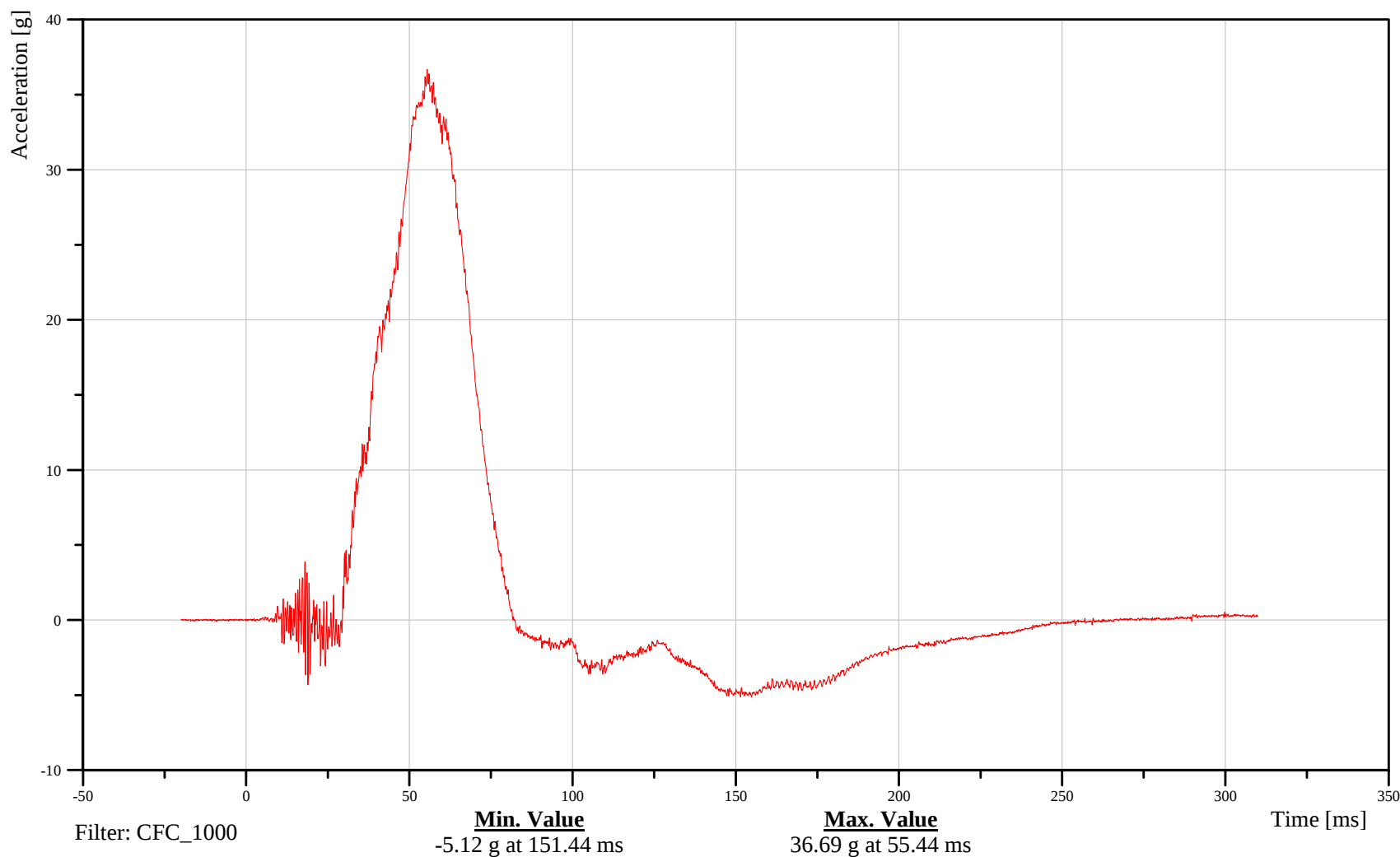
Time: 11:34

DRIVER HEAD Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

11HEADCG00SHACYA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-12

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

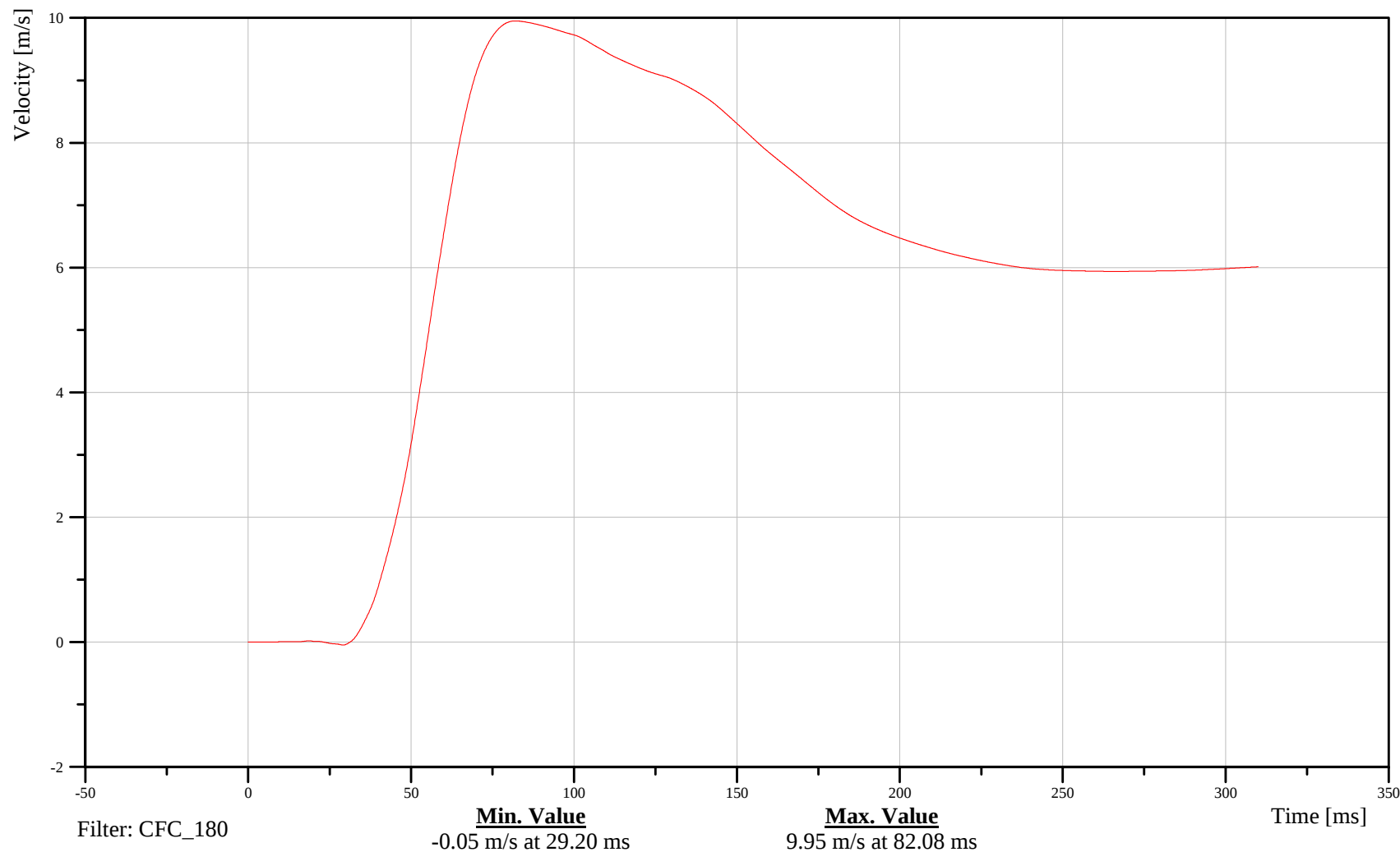
Time: 11:34

DRIVER HEAD Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

11HEADCG00SHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-13

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

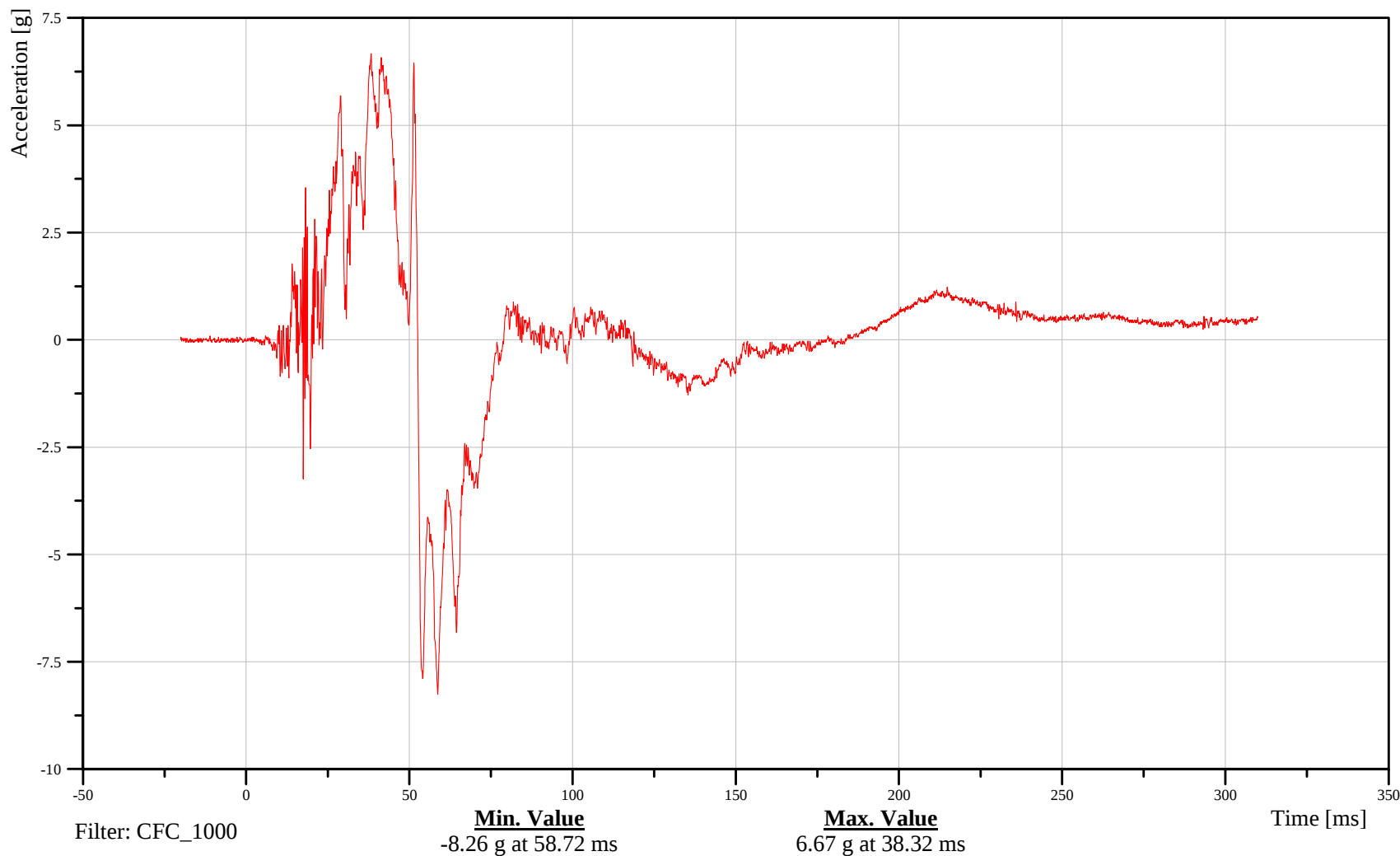
Time: 11:34

DRIVER HEAD Z-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

11HEADCG00SHACZA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-14

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Test: 06/02/2006

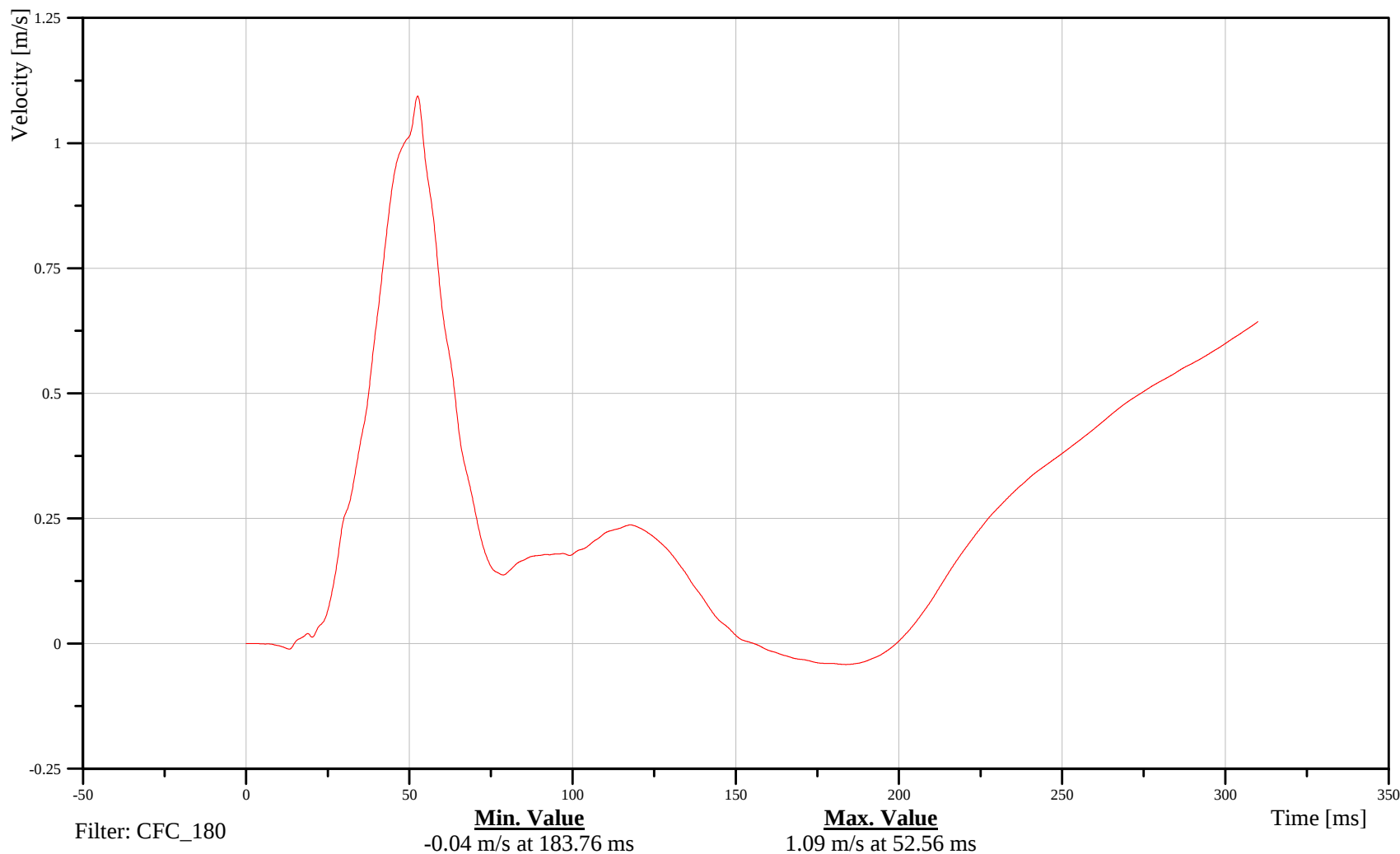
Time: 11:34

DRIVER HEAD Z-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

11HEADCG00SHVEZC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



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060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

Time: 11:34

DRIVER HEAD RESULTANT ACCELERATION

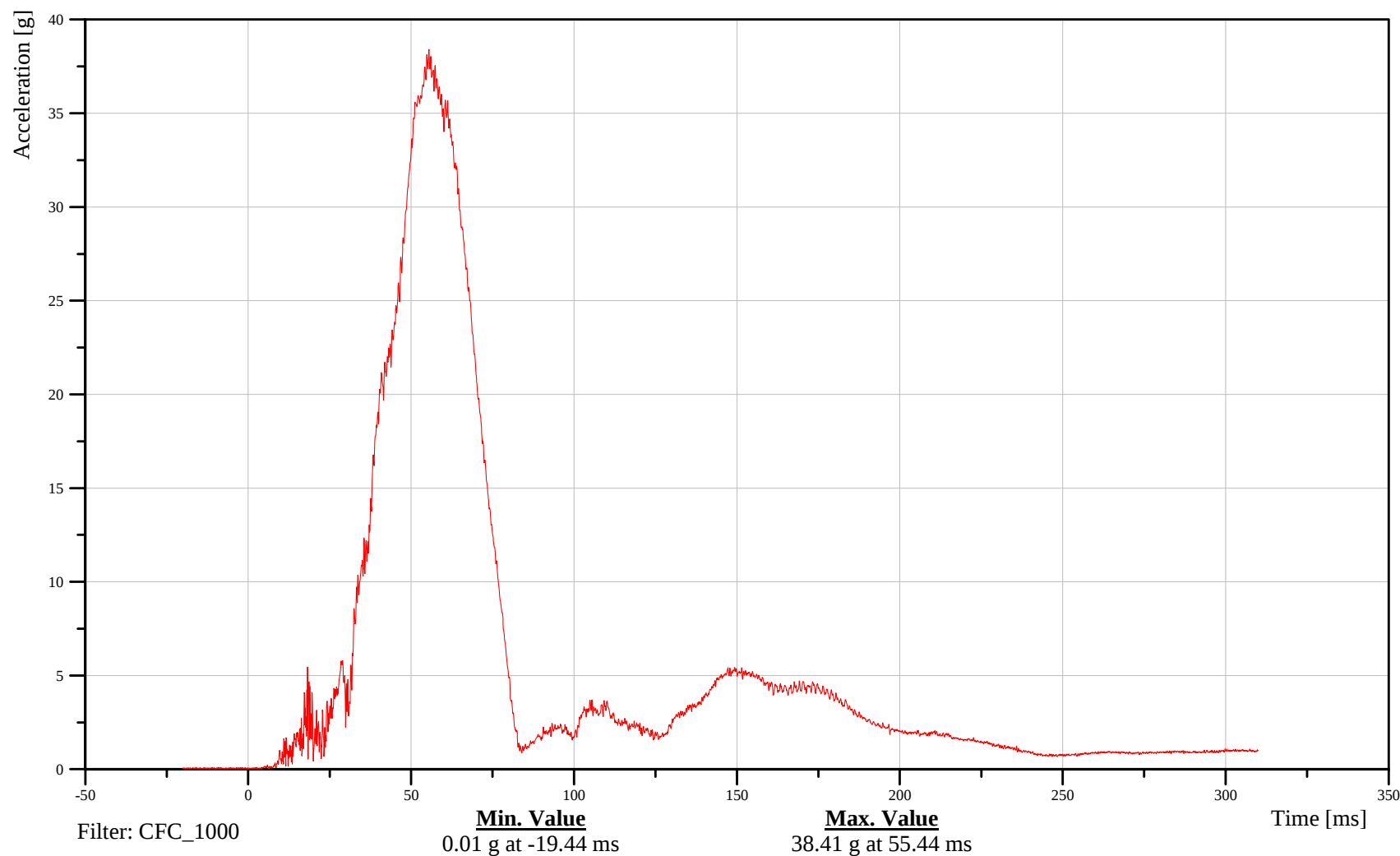
Customer: NHTSA

Test Number: C60507

11HEADCG00SHACRA

TRC Inc. Test Lab: CTF

Test Number: 060602-1



B-16

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

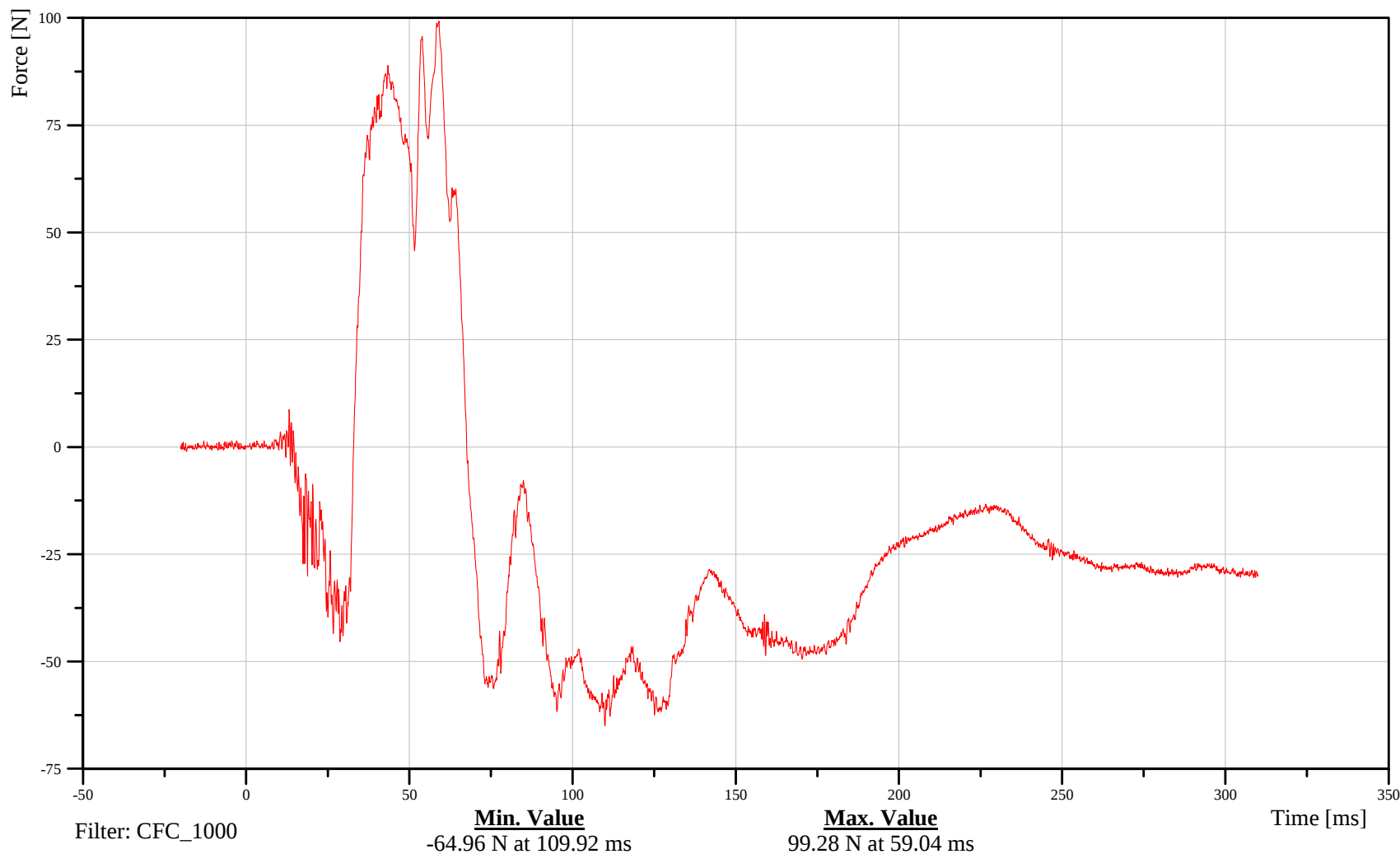
Time: 11:34

DRIVER NECK X-AXIS SHEAR FORCE

Customer: NHTSA
Test Number: C60507

11NECKUP00SHFOXA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-17

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

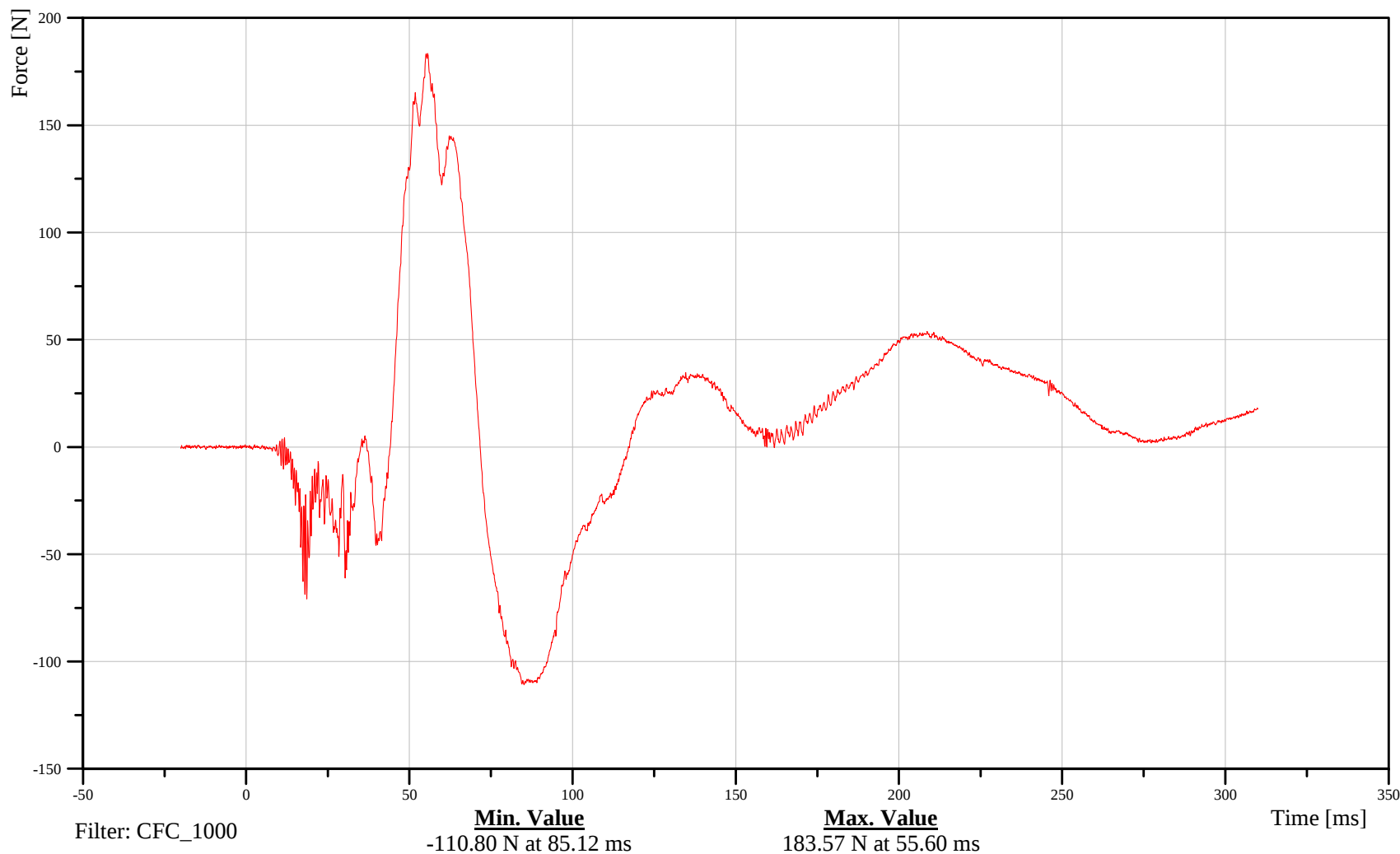
Time: 11:34

DRIVER NECK Y-AXIS SHEAR FORCE

Customer: NHTSA
Test Number: C60507

11NECKUP00SHFOYA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-18

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

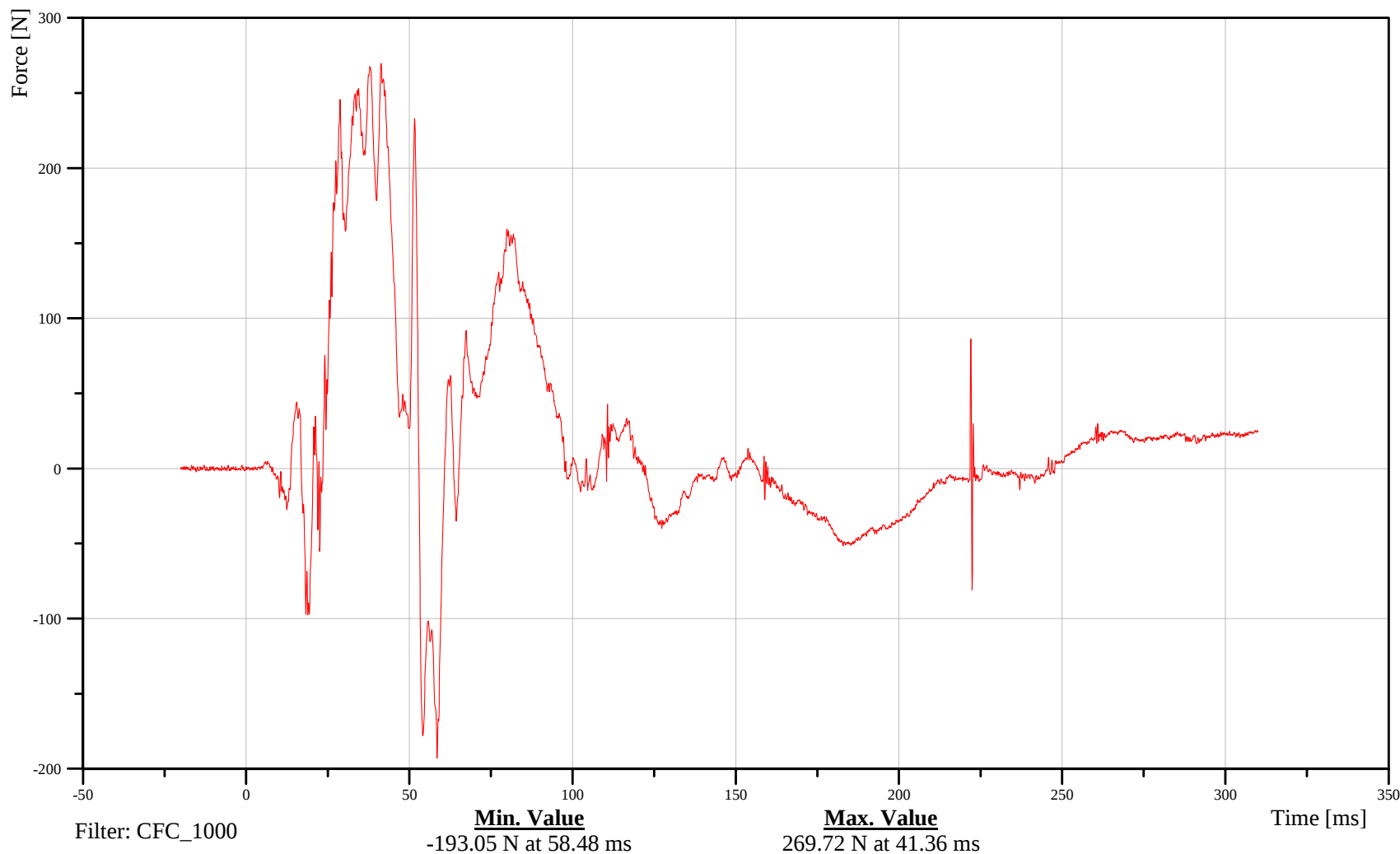
Time: 11:34

DRIVER NECK Z-AXIS AXIAL FORCE

Customer: NHTSA
Test Number: C60507

11NECKUP00SHFOZA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-19

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

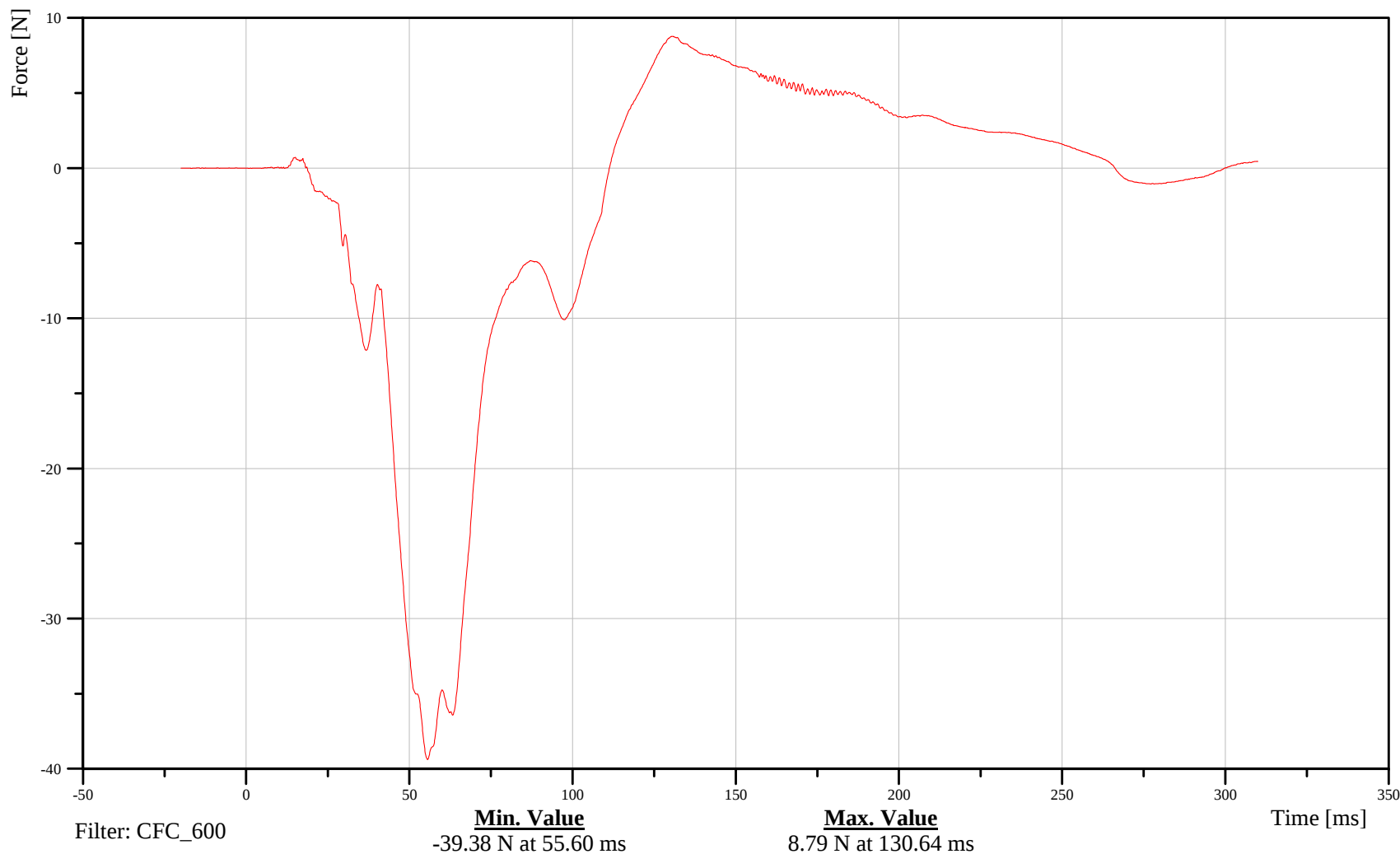
Time: 11:34

DRIVER NECK MOMENT ABOUT X AXIS

Customer: NHTSA
Test Number: C60507

11NECKUP00SHMOXB

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-20

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Test: 06/02/2006

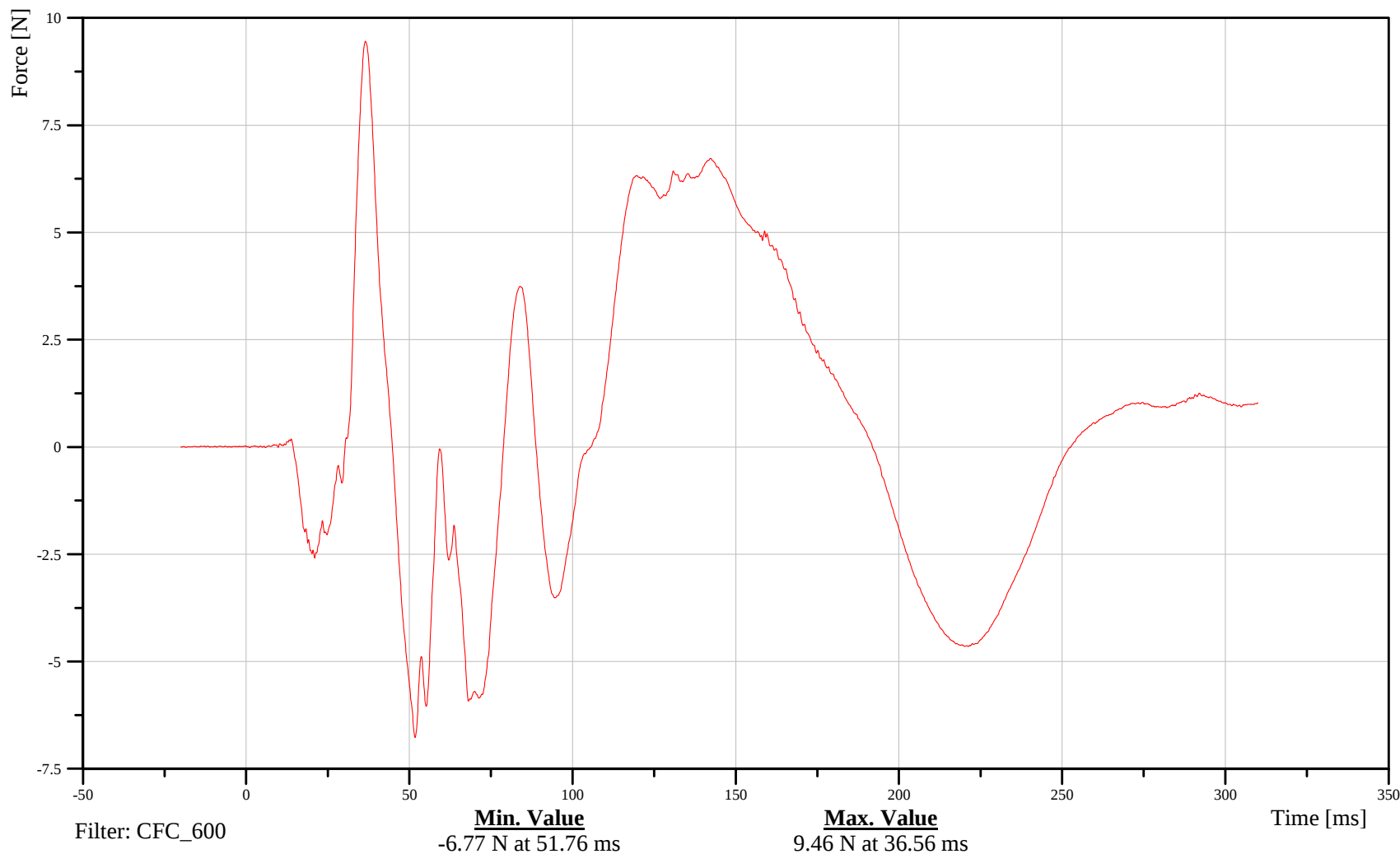
Time: 11:34

DRIVER NECK MOMENT ABOUT Y AXIS

Customer: NHTSA
Test Number: C60507

11NECKUP00SHMOYB

TRC Inc. Test Lab: CTF
Test Number: 060602-1



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060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

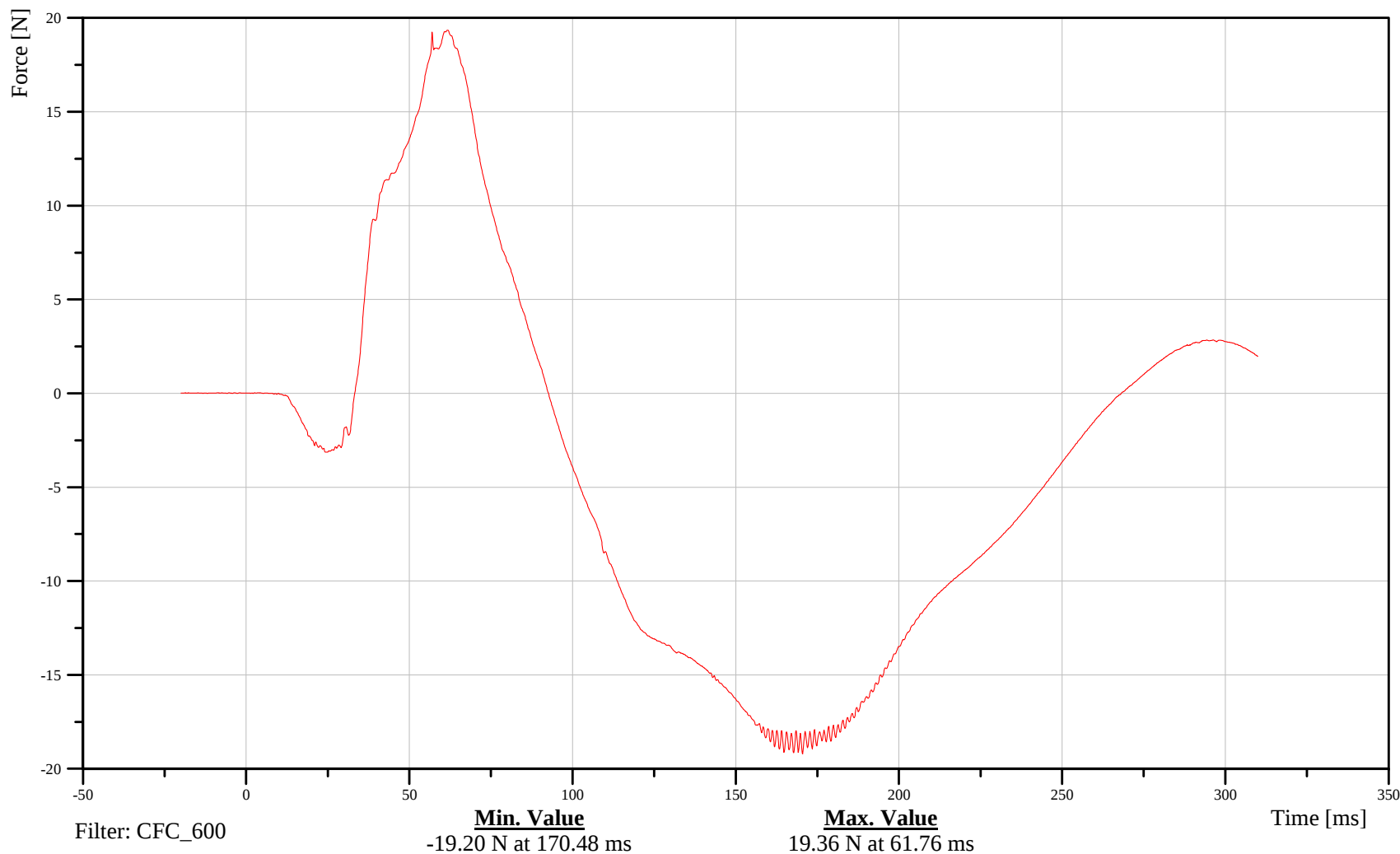
Time: 11:34

DRIVER NECK MOMENT ABOUT Z AXIS

Customer: NHTSA
Test Number: C60507

11NECKUP00SHMOZB

TRC Inc. Test Lab: CTF
Test Number: 060602-1



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060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara Neck Moment about the Occipital Condyle (NECK OM)

Date: 06/02/2006
Time: 11:34

Customer: NHTSA

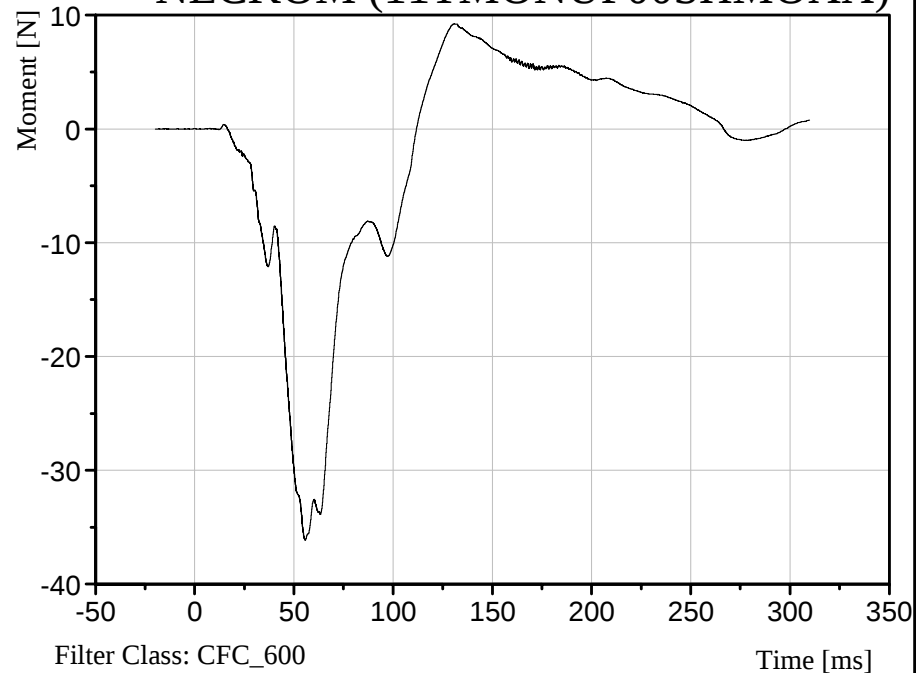
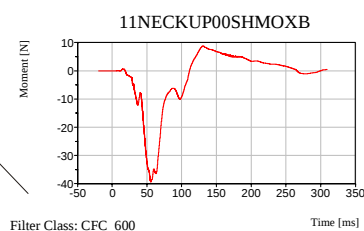
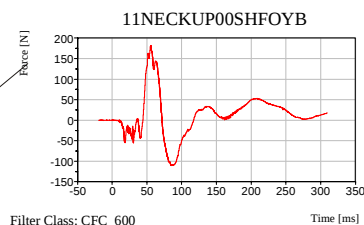
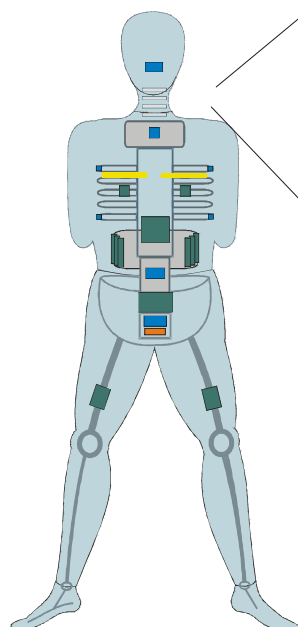
Test Number: C60507

Test Orientation = Side

TRC Inc. Test Lab: CTF

Test Number: 060602-1

NECKOM (11TMONUP00SHMOXX)



Dummy: HIII/SID

Seating Position:

Driver

Neck OM Source Code: $M_x + (D \cdot F_y)$

[Max.] 9.23 N at 130.56 ms

[Min.] -36.14 N at 55.60 ms

B-23

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

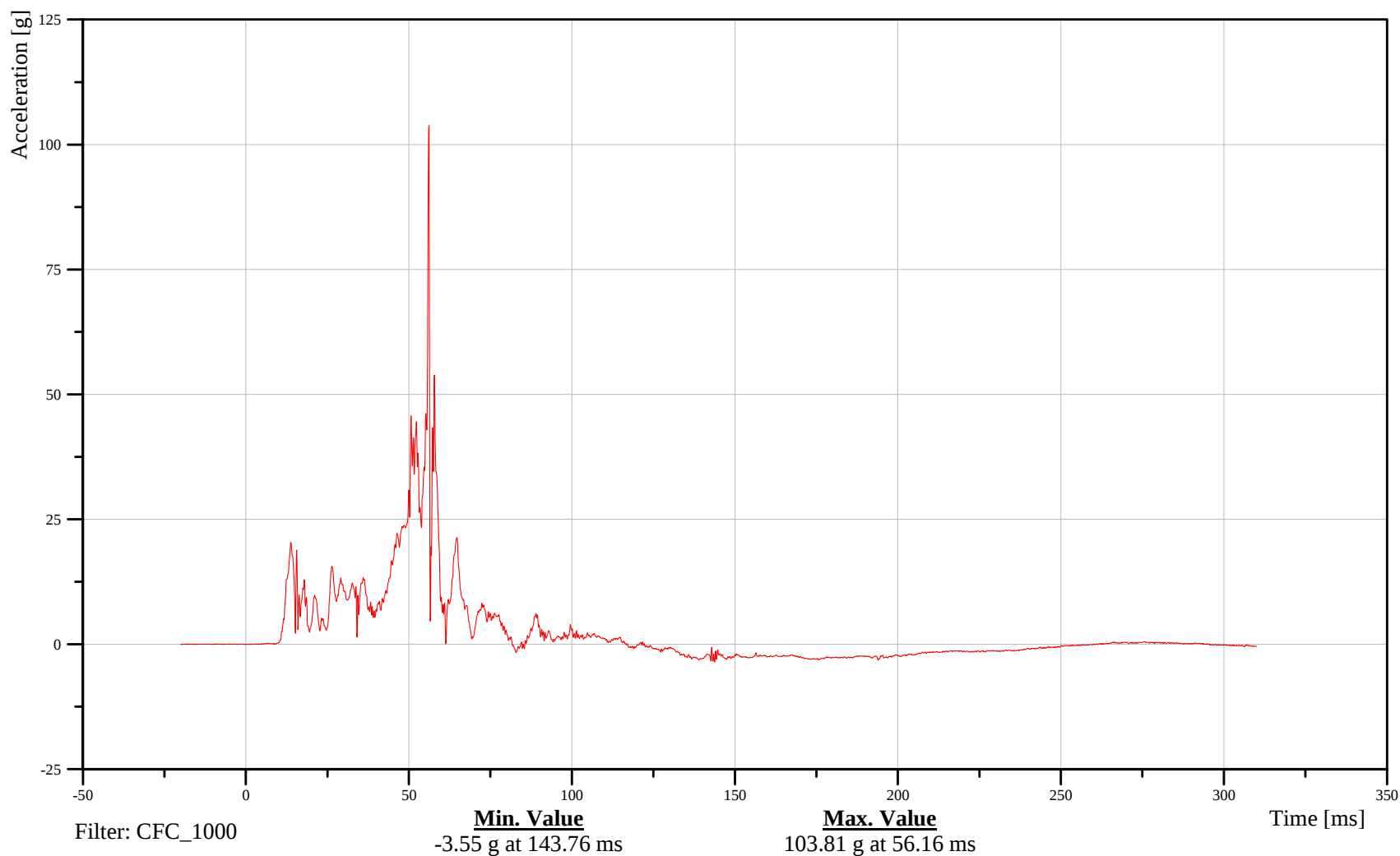
Time: 11:34

DRIVER UPPER RIB Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

11RIBSLU00SHACYA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



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060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

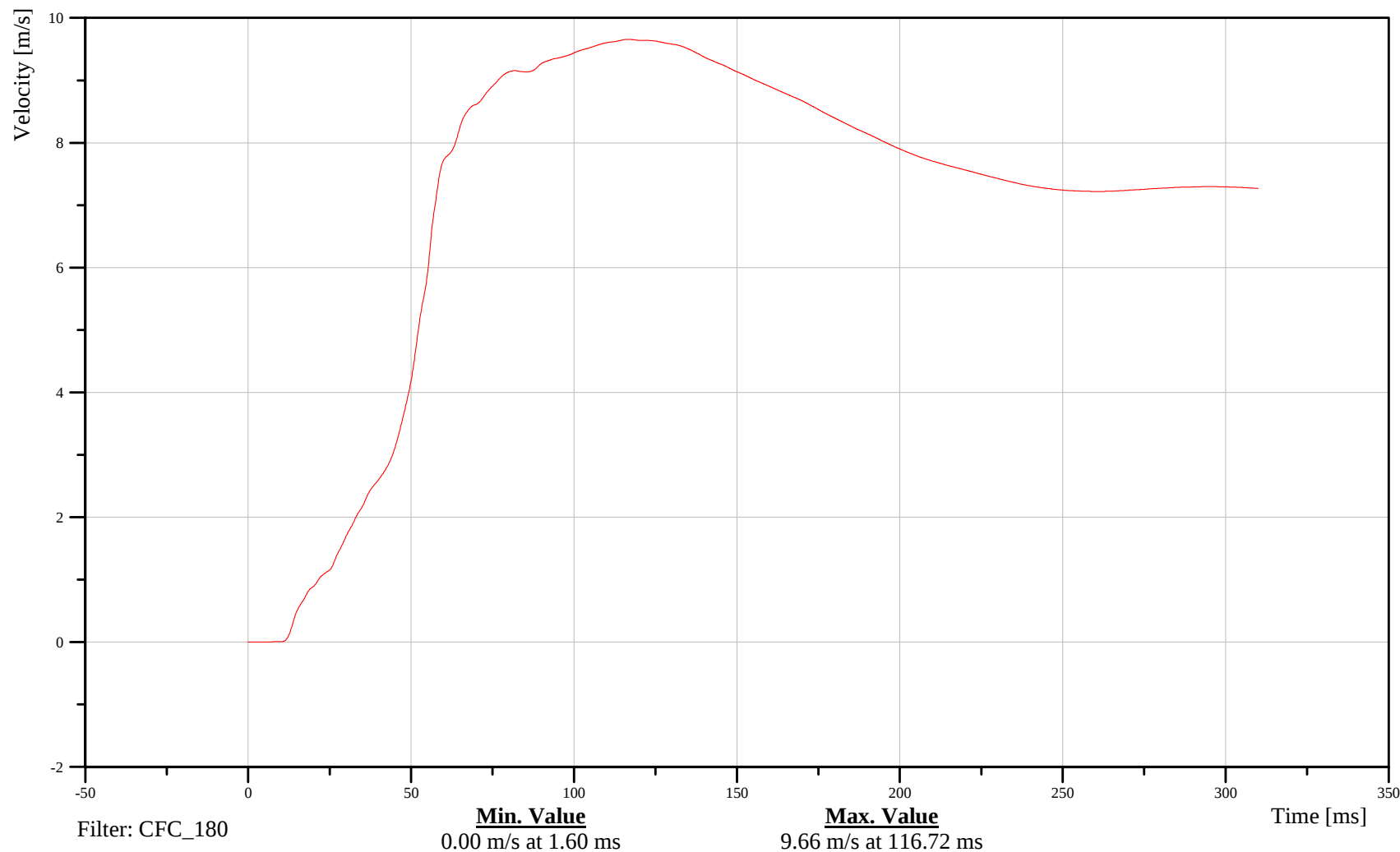
Time: 11:34

DRIVER UPPER RIB Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

11RIBSLU00SHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-25

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

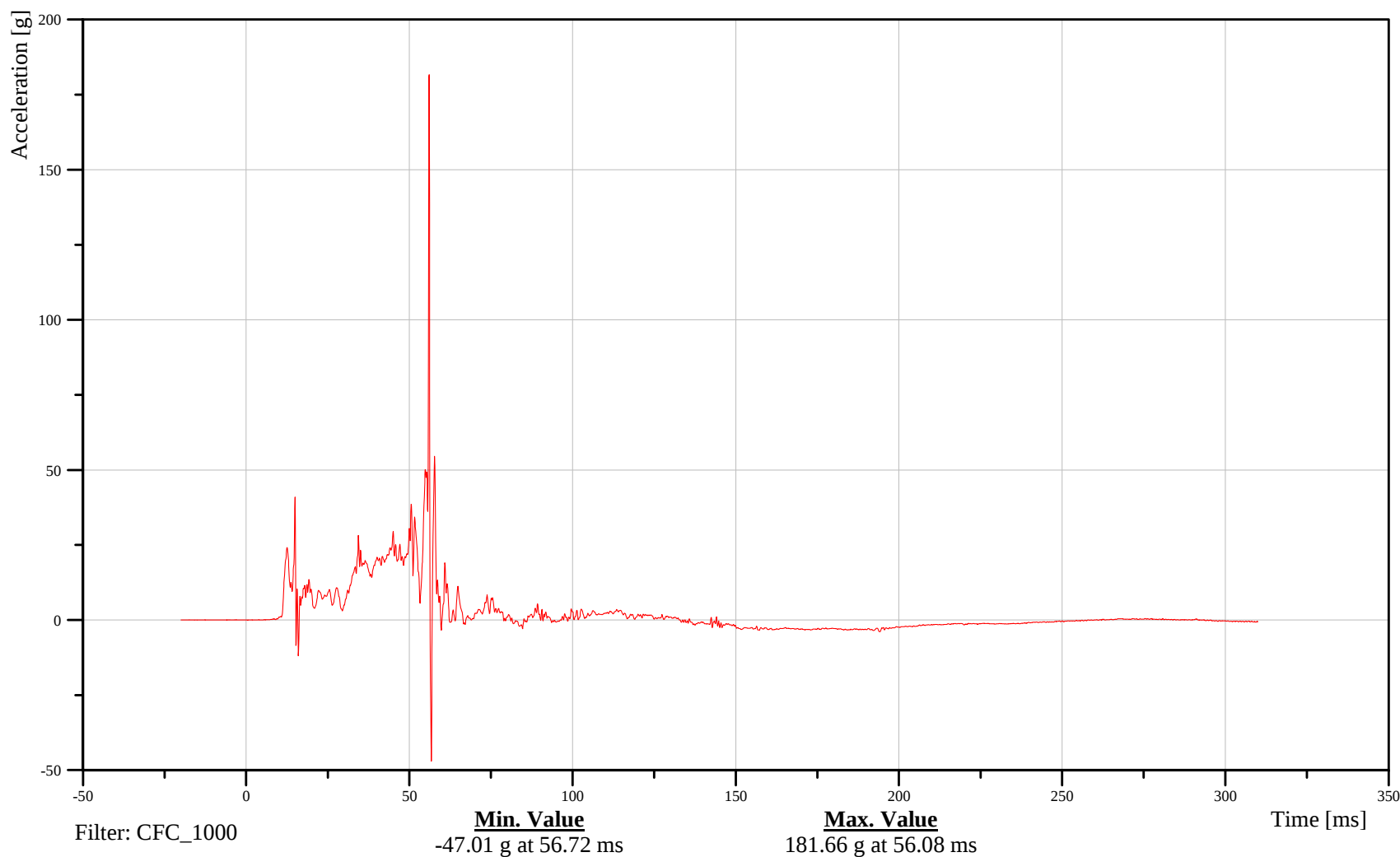
Time: 11:34

DRIVER LOWER RIB Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

11RIBSLL00SHACYA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



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060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

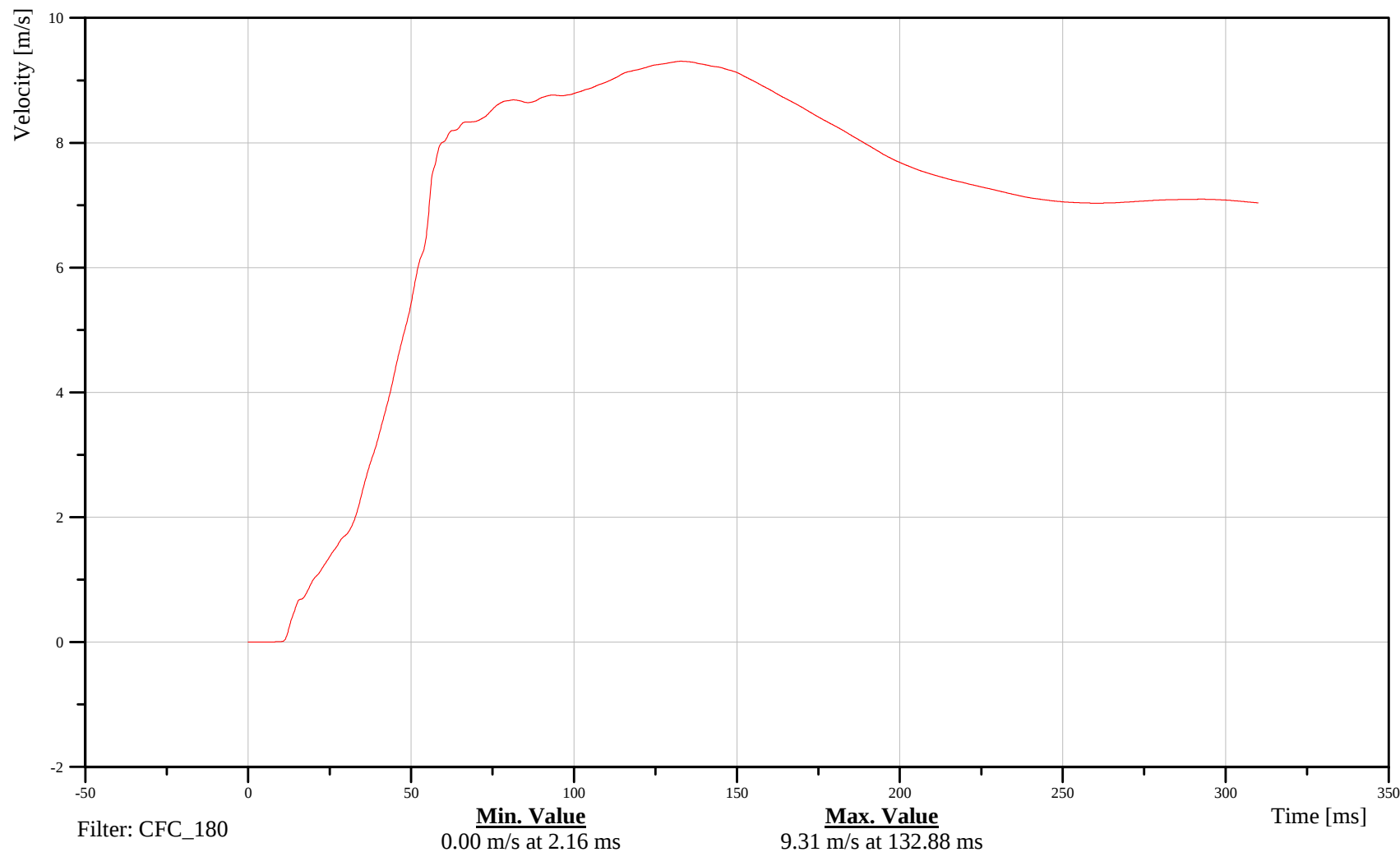
Time: 11:34

DRIVER LOWER RIB Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

11RIBSLL00SHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



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060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

Time: 11:34

DRIVER LOWER SPINE Y-AXIS ACCELERATION

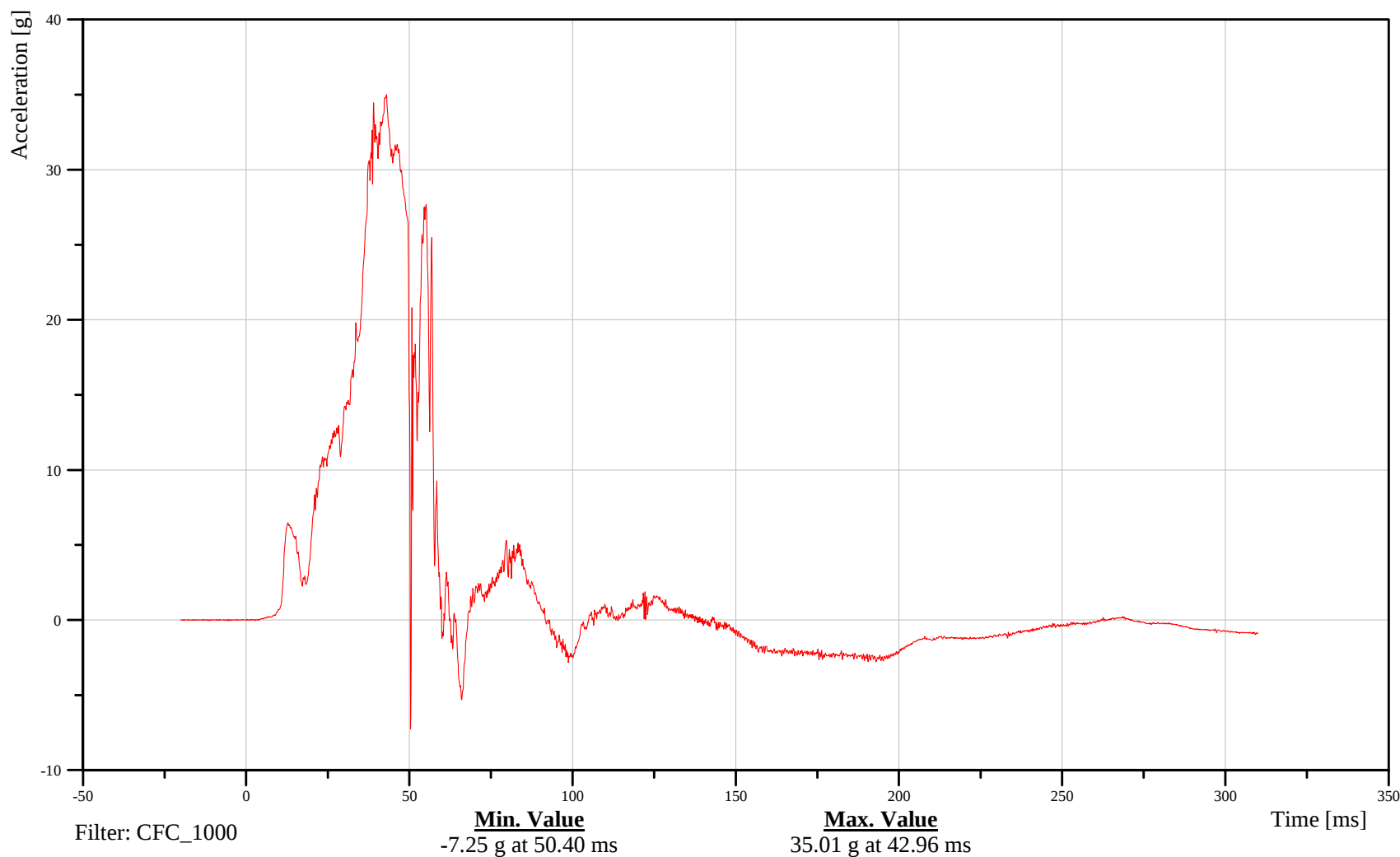
Customer: NHTSA

Test Number: C60507

11SPIN1200SHACYA

TRC Inc. Test Lab: CTF

Test Number: 060602-1



B-28

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

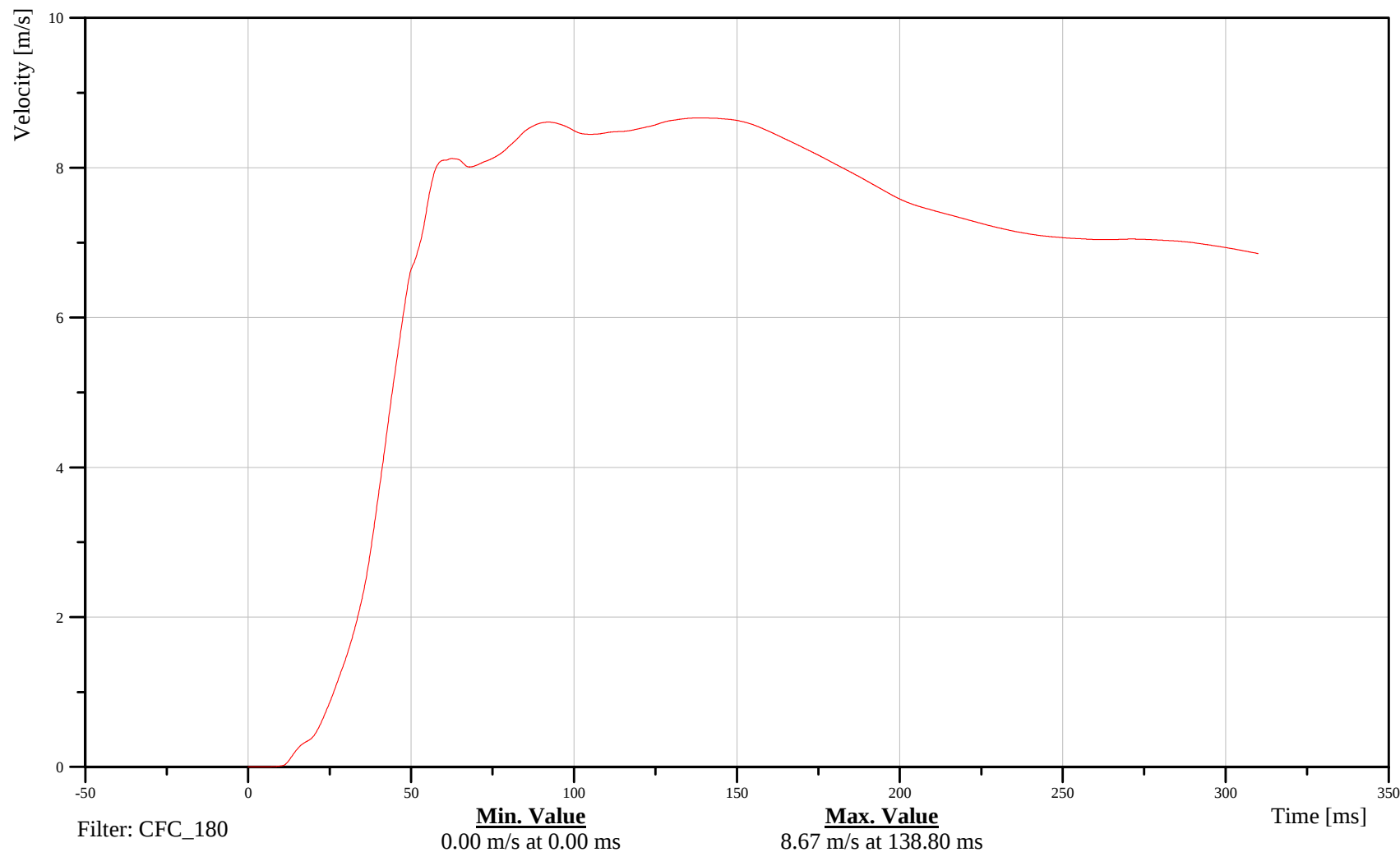
Time: 11:34

DRIVER LOWER SPINE Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

11SPIN1200SHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-29

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

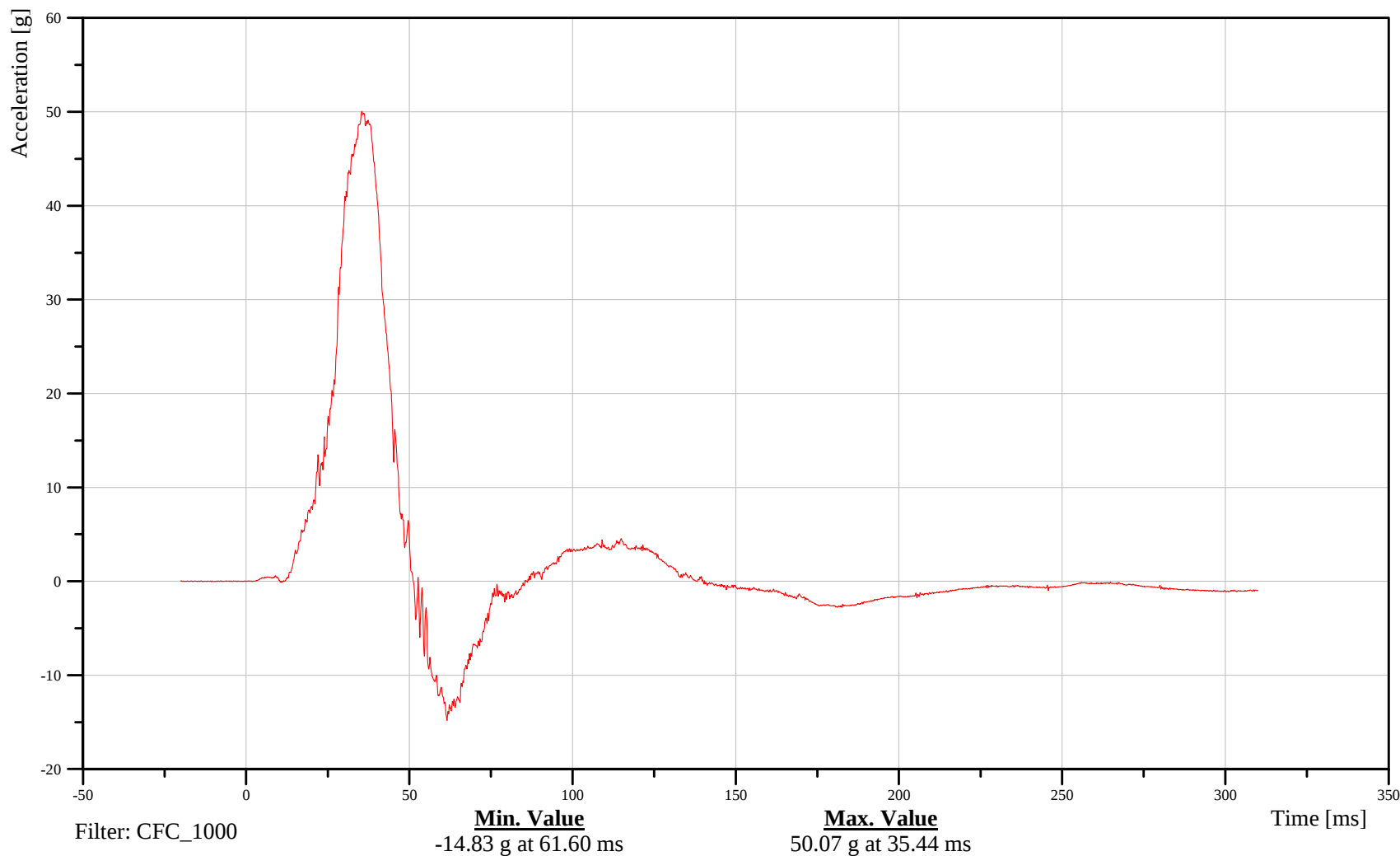
Time: 11:34

DRIVER PELVIS Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

11PELVCG00SHACYA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-30

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

Time: 11:34

DRIVER PELVIS Y-AXIS VELOCITY

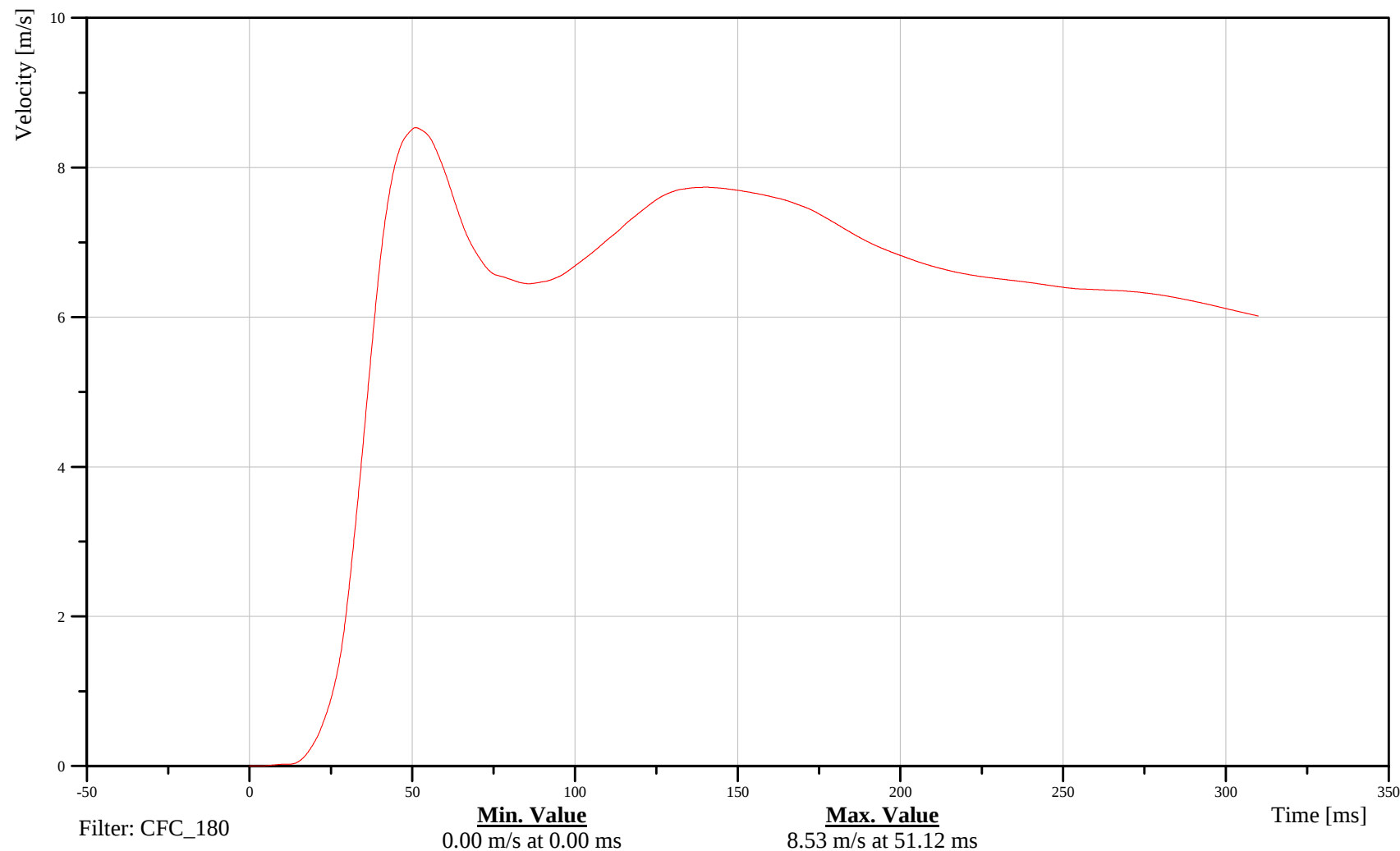
Customer: NHTSA

Test Number: C60507

11PELVCG00SHVEYC

TRC Inc. Test Lab: CTF

Test Number: 060602-1



B-31

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

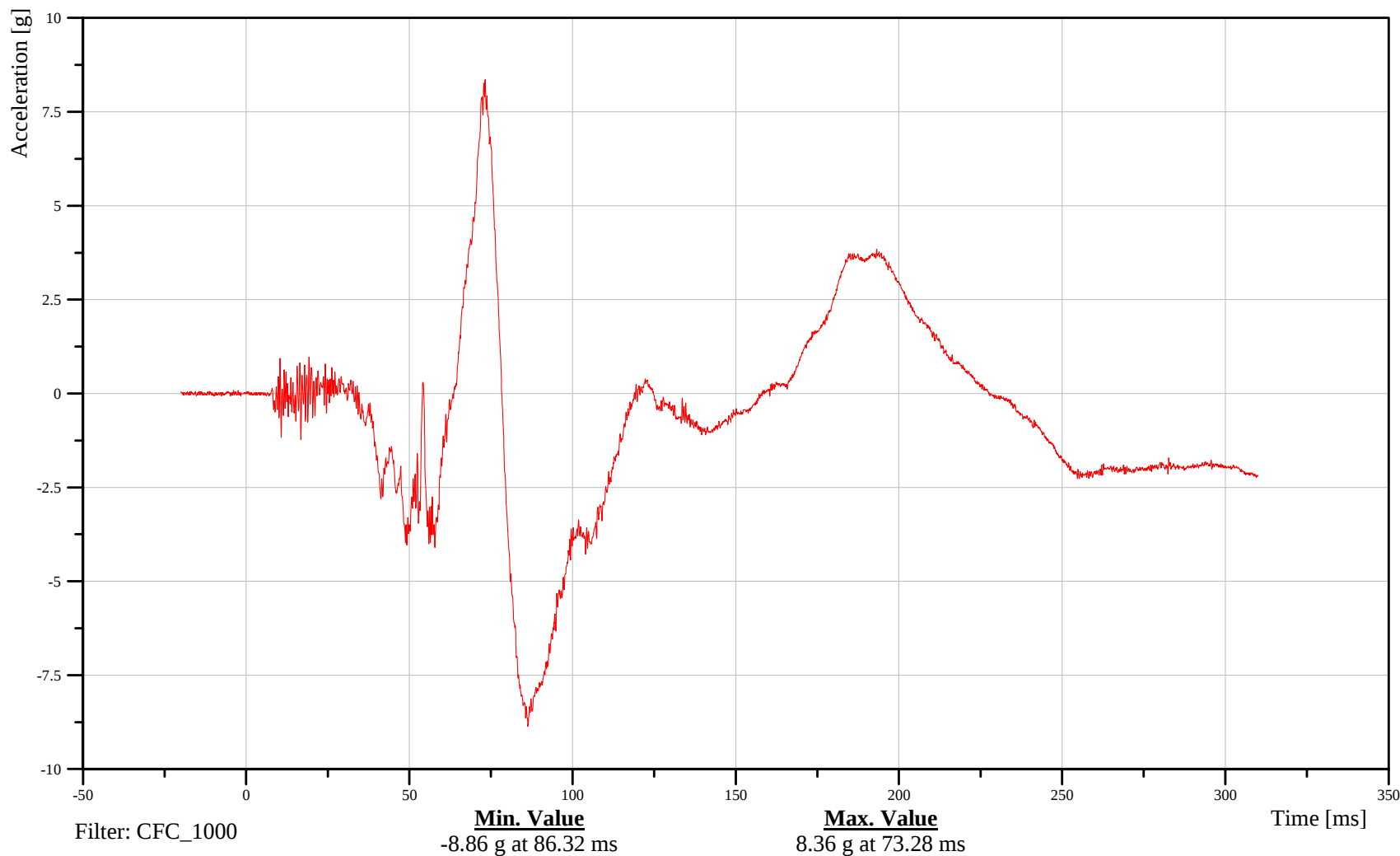
Time: 11:34

LEFT REAR PASSENGER HEAD X-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

14HEADCG00SHACXA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-32

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Test: 06/02/2006

Time: 11:34

LEFT REAR PASSENGER HEAD X-AXIS VELOCITY

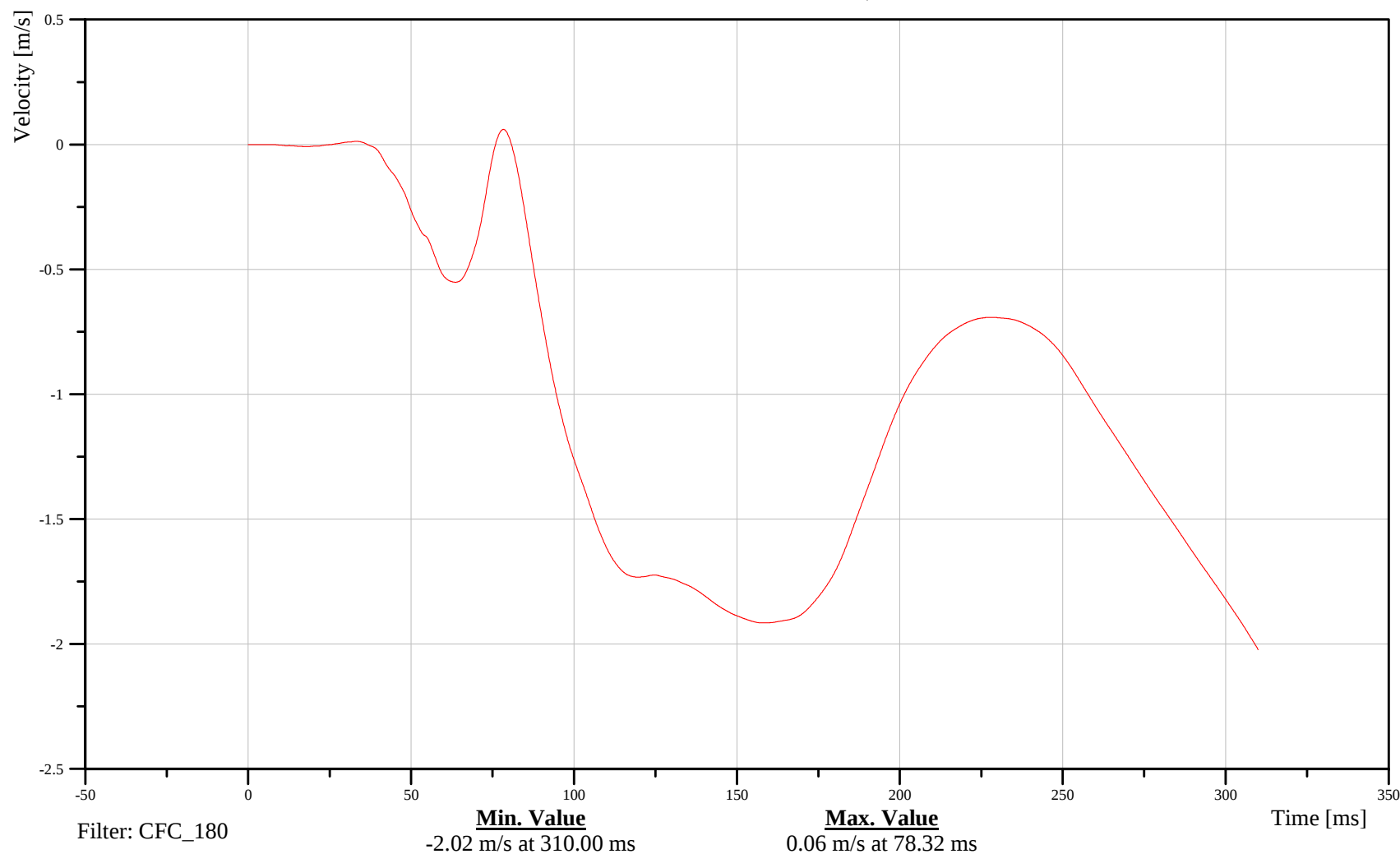
Customer: NHTSA

Test Number: C60507

14HEADCG00SHVEXC

TRC Inc. Test Lab: CTF

Test Number: 060602-1



B-33

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

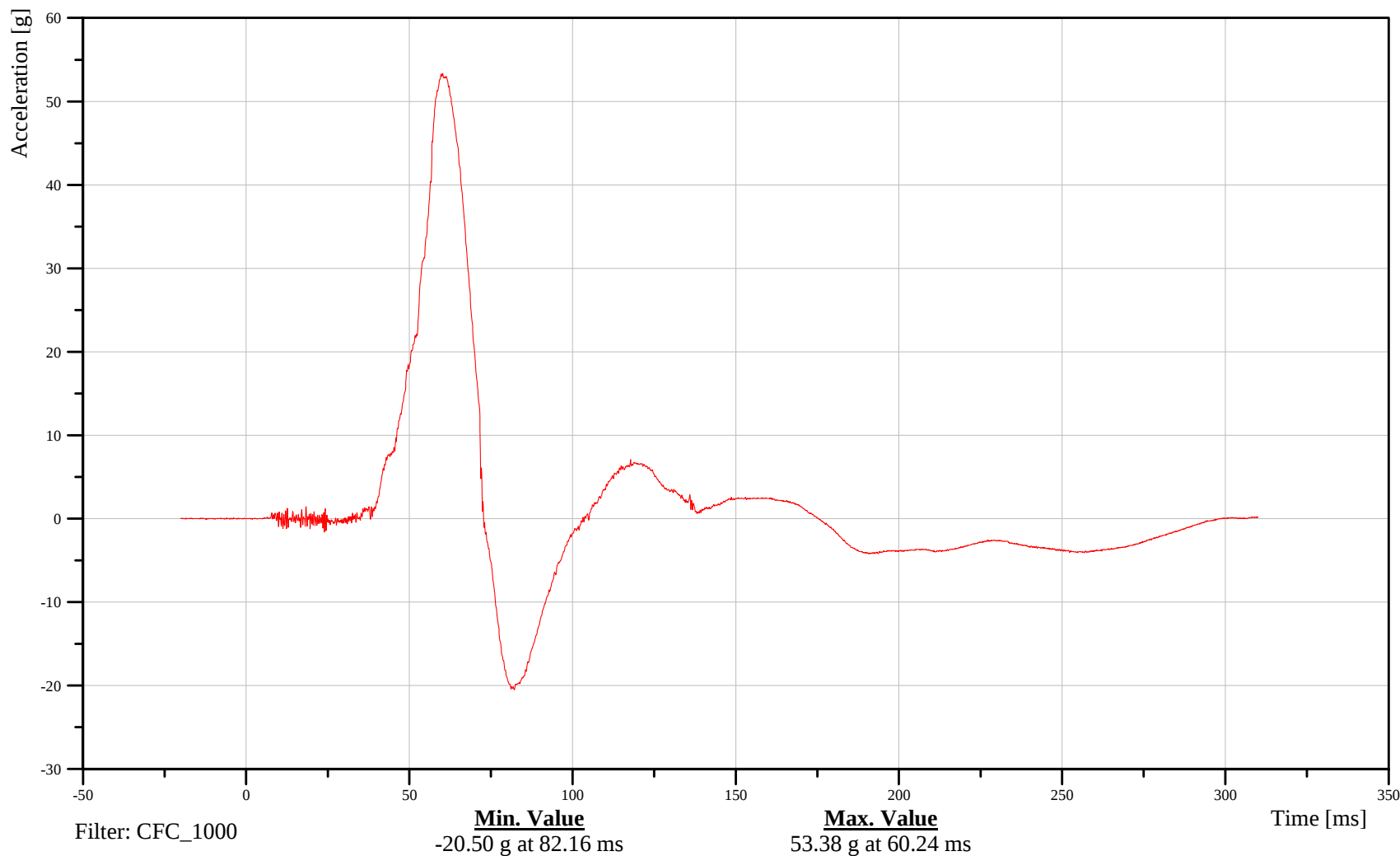
Time: 11:34

LEFT REAR PASSENGER HEAD Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

14HEADCG00SHACYA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-34

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

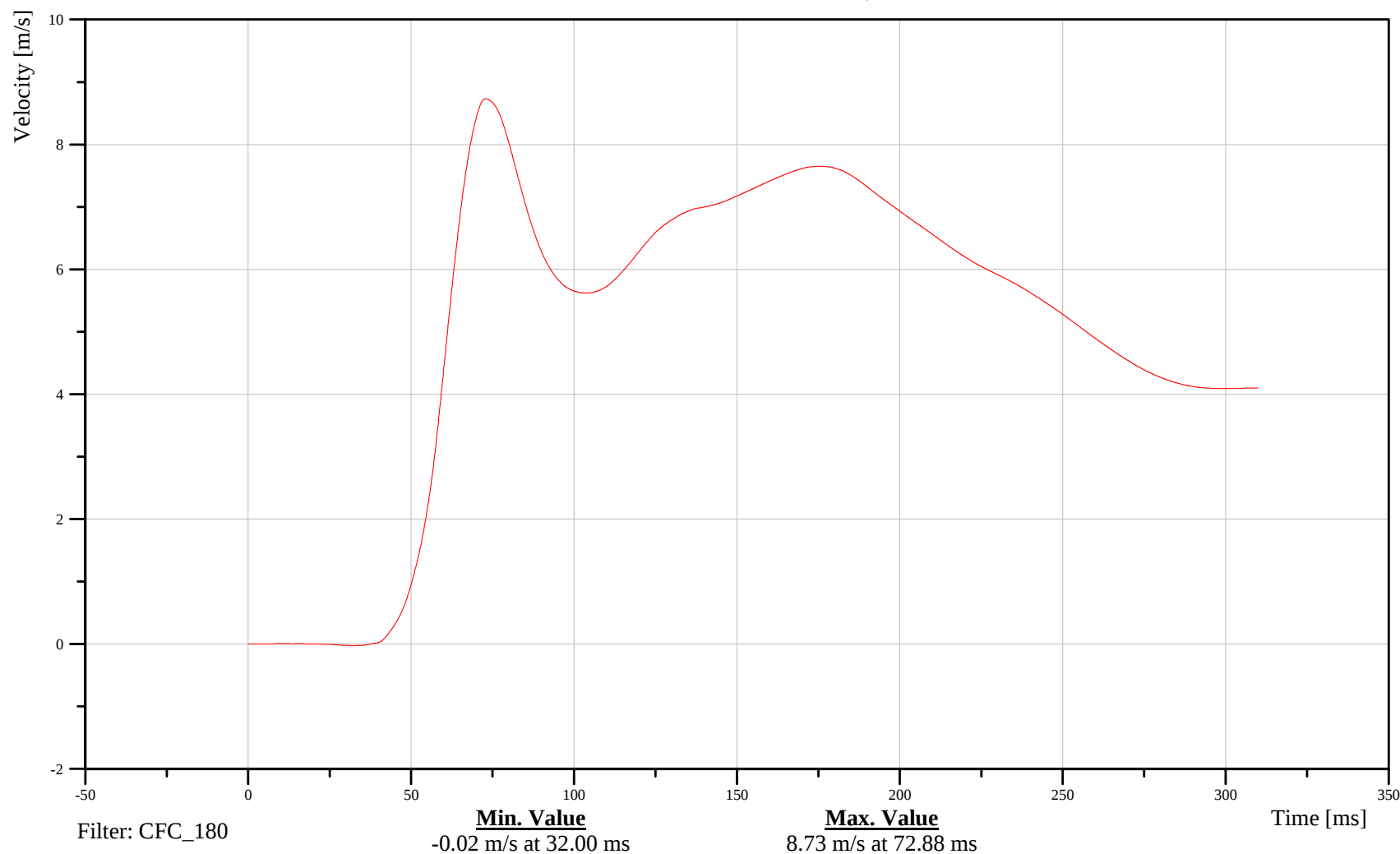
Time: 11:34

LEFT REAR PASSENGER HEAD Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

14HEADCG00SHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-35

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

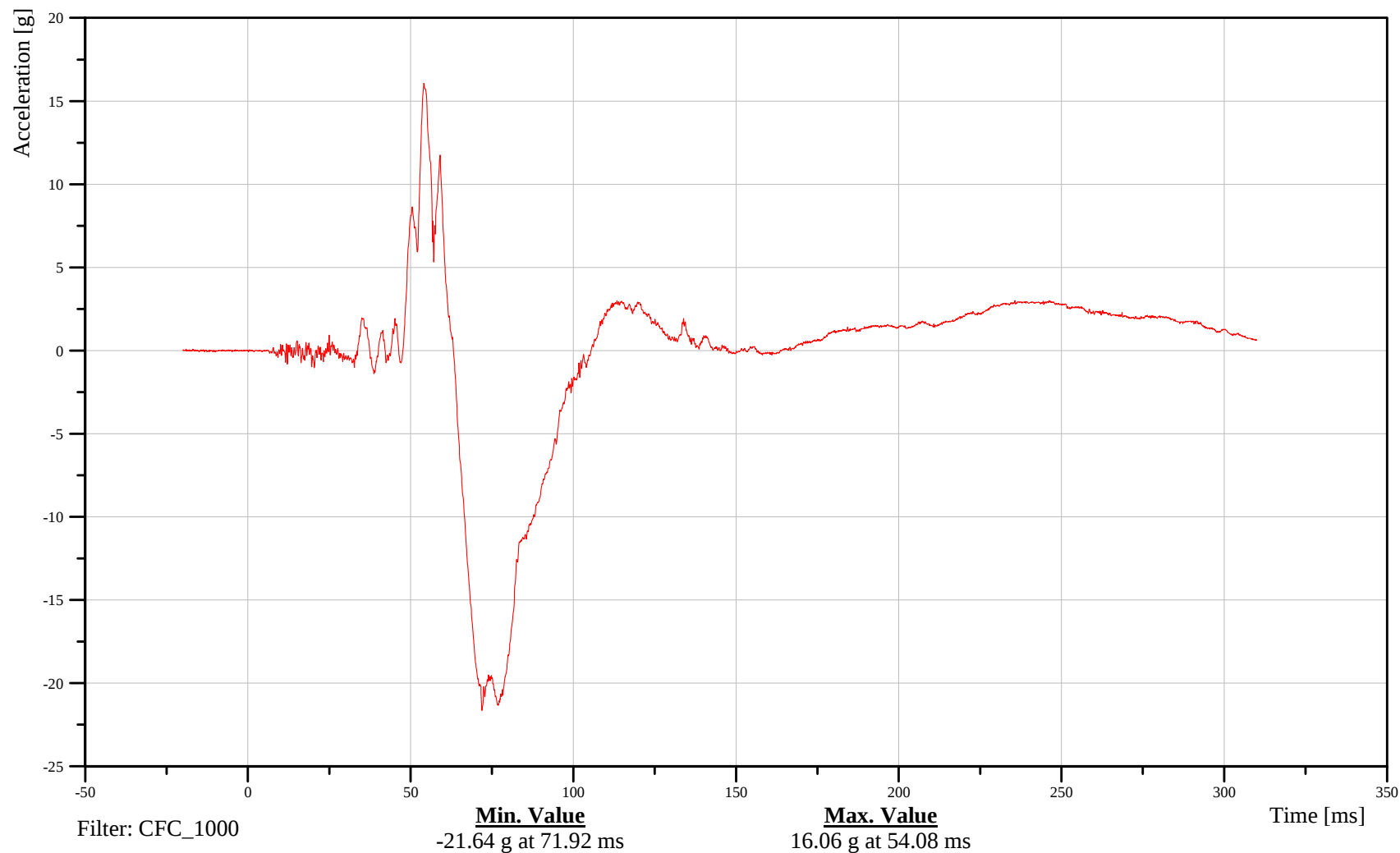
Time: 11:34

LEFT REAR PASSENGER HEAD Z-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

14HEADCG00SHACZA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-36

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

Date: 06/02/2006

Time: 11:34

LEFT REAR PASSENGER HEAD Z-AXIS VELOCITY

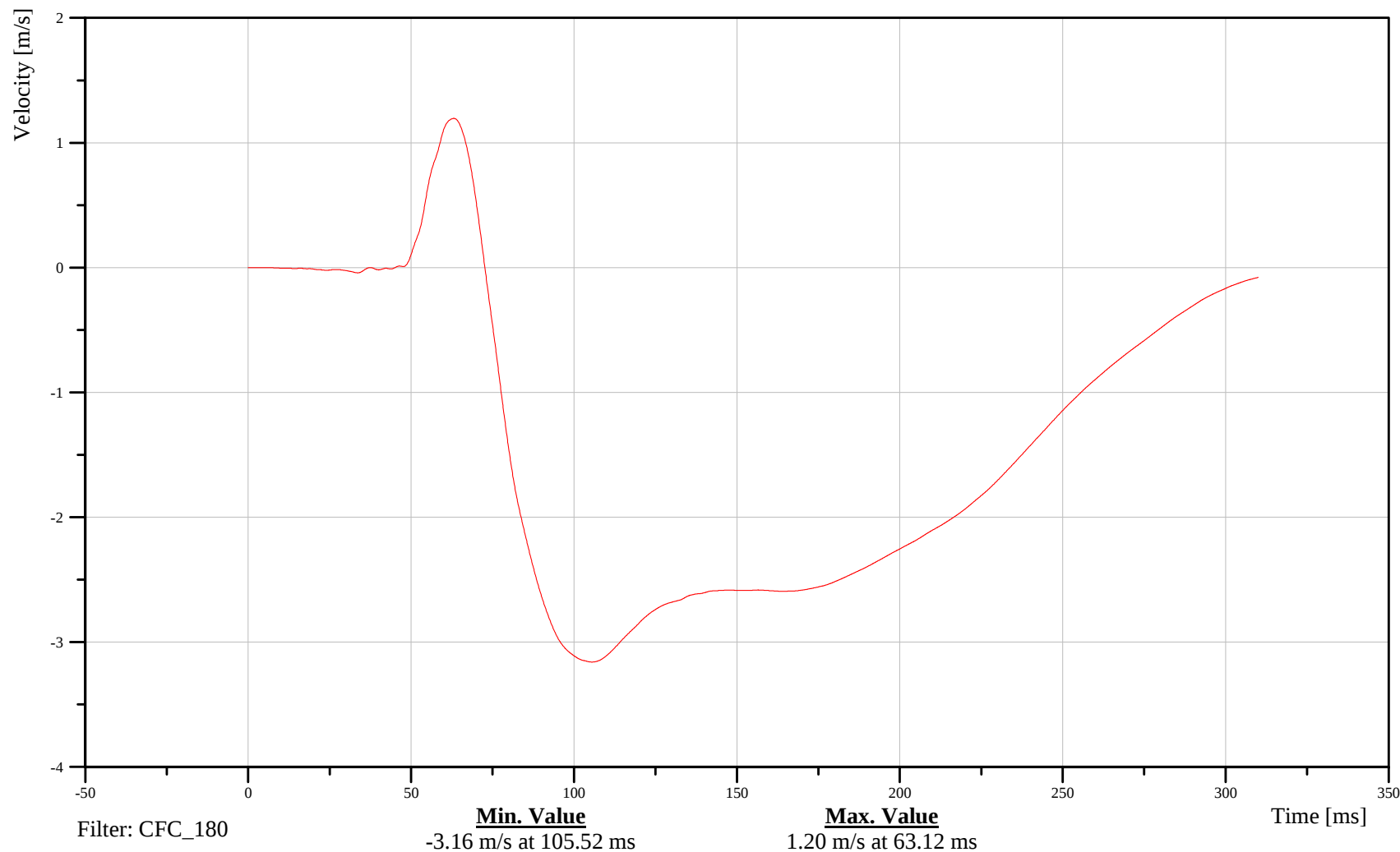
Customer: NHTSA

Test Number: C60507

14HEADCG00SHVEZC

TRC Inc. Test Lab: CTF

Test Number: 060602-1



B-37

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

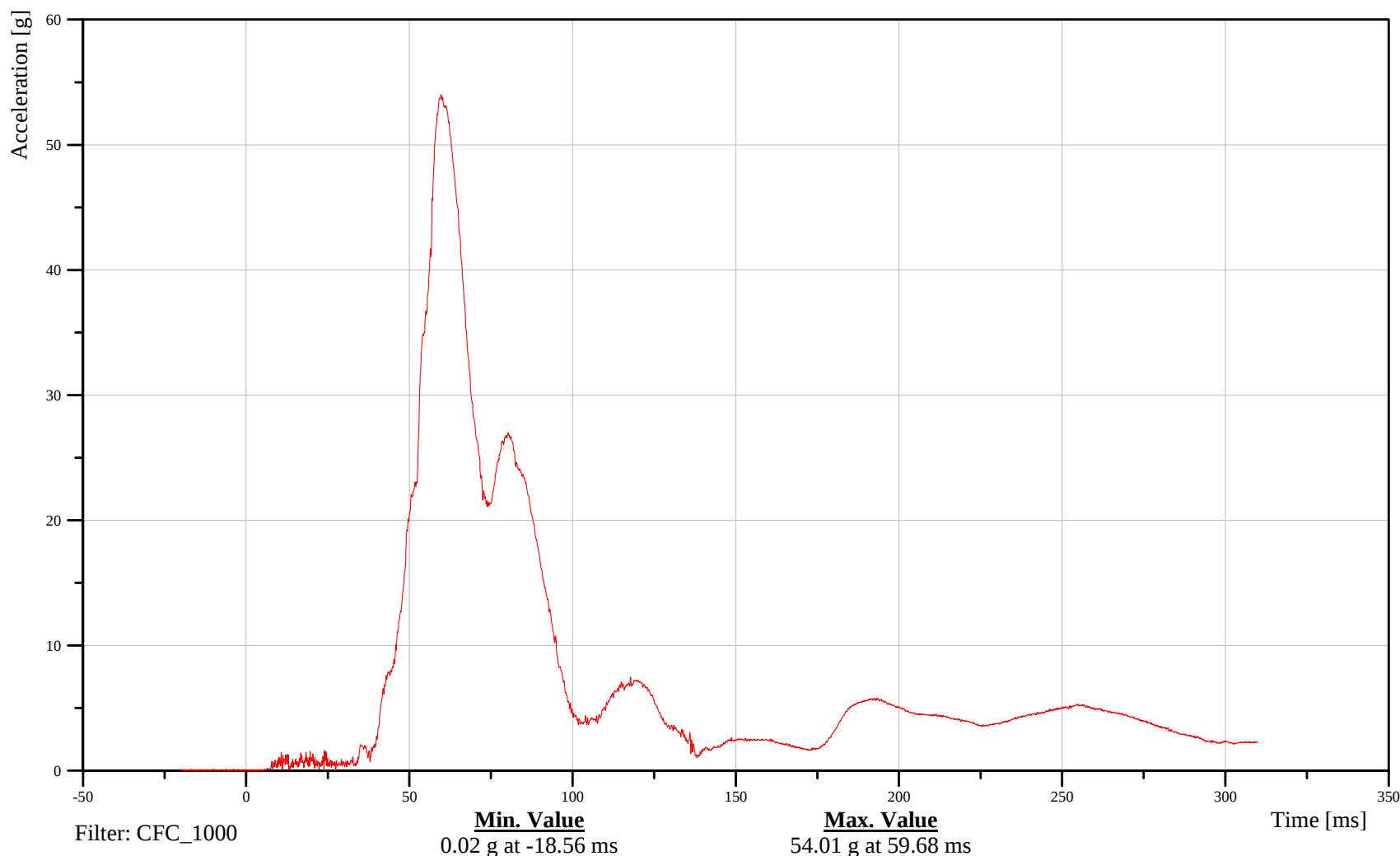
Time: 11:34

LEFT REAR PASSENGER HEAD RESULTANT ACCELERATION

Customer: NHTSA
Test Number: C60507

14HEADCG00SHACRA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-38

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

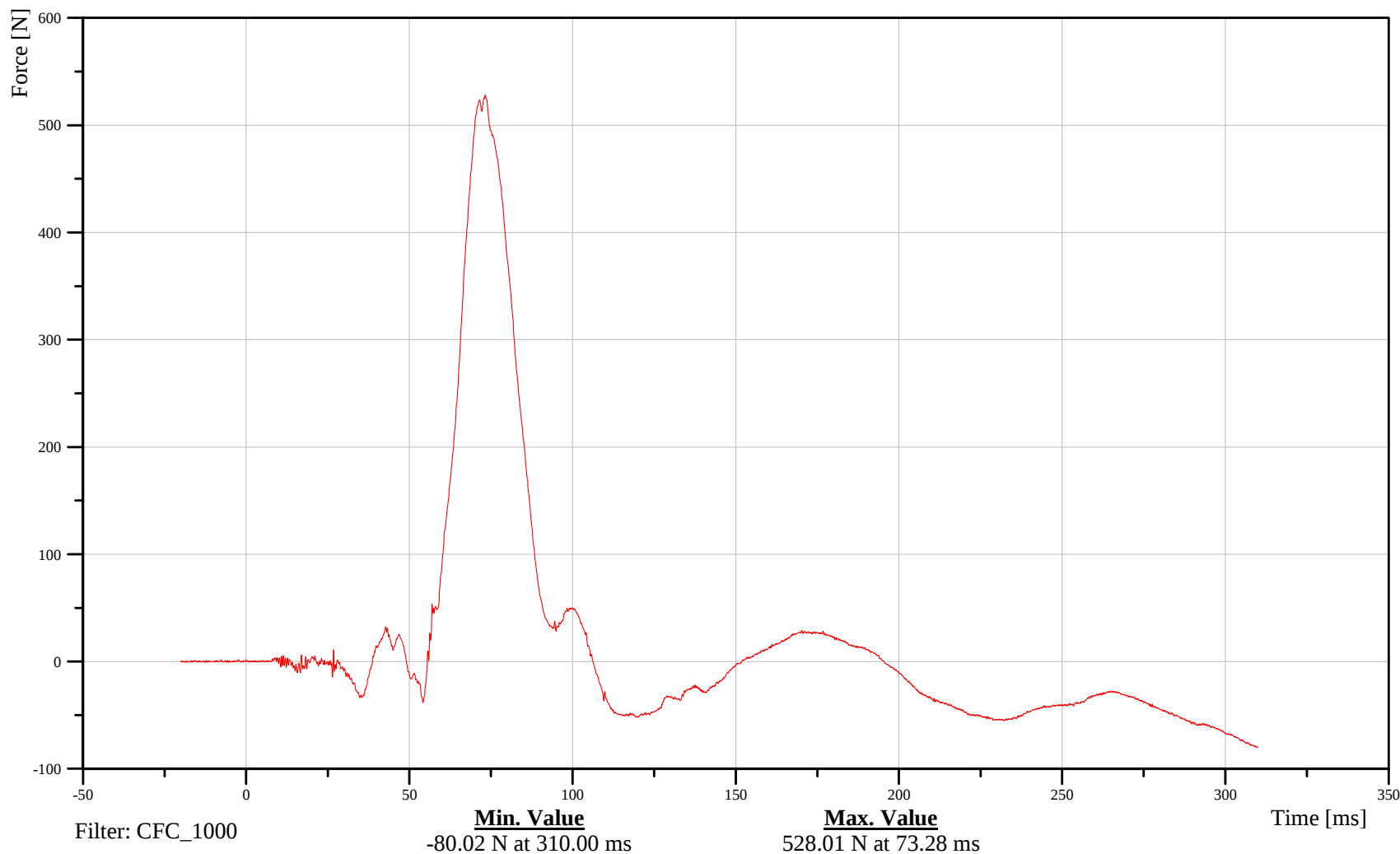
Time: 11:34

LEFT REAR PASSENGER NECK X-AXIS SHEAR FORCE

Customer: NHTSA
Test Number: C60507

14NECKUP00SHFOXA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-39

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

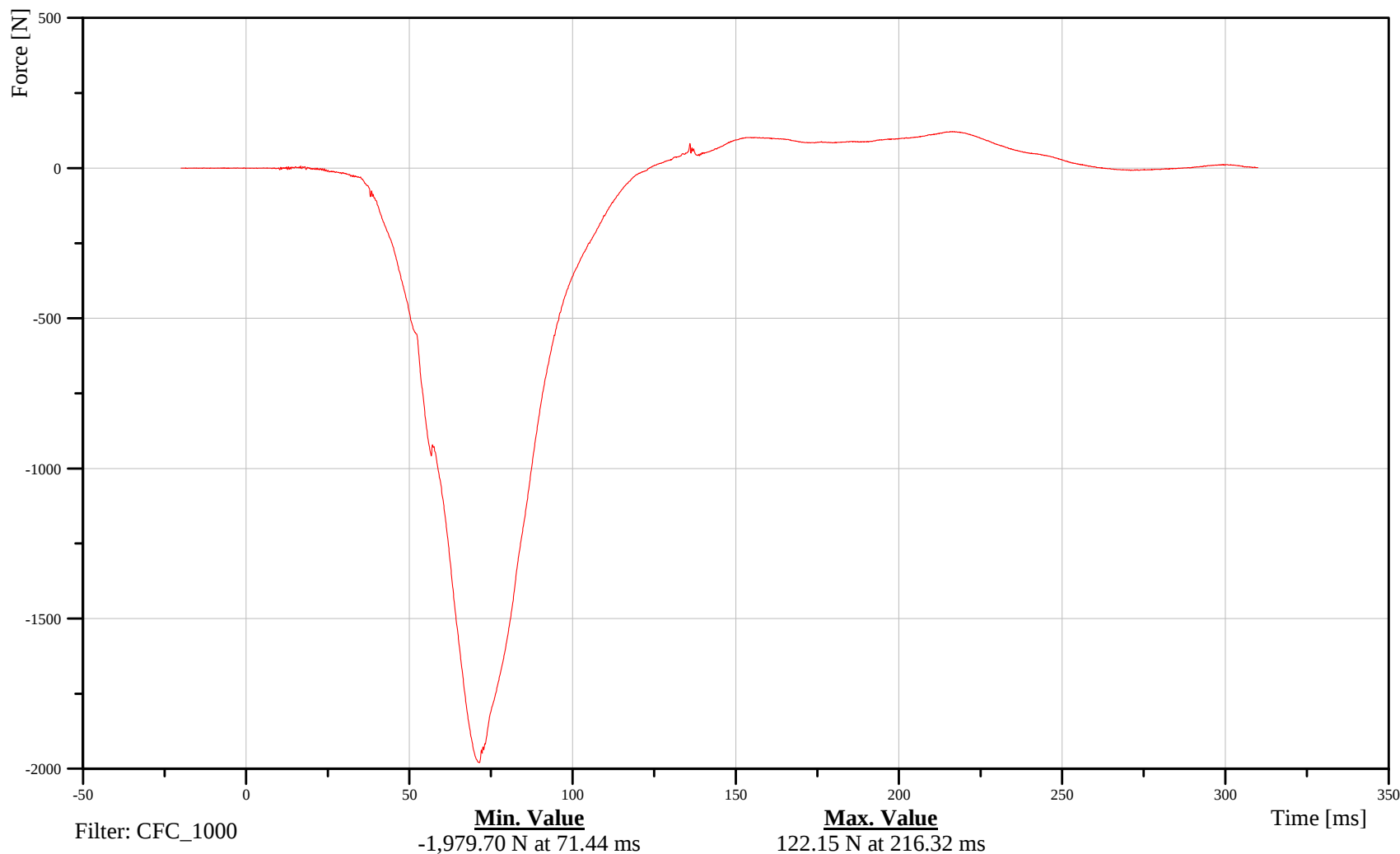
Time: 11:34

LEFT REAR PASSENGER NECK Y-AXIS SHEAR FORCE

Customer: NHTSA
Test Number: C60507

14NECKUP00SHFOYA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-40

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

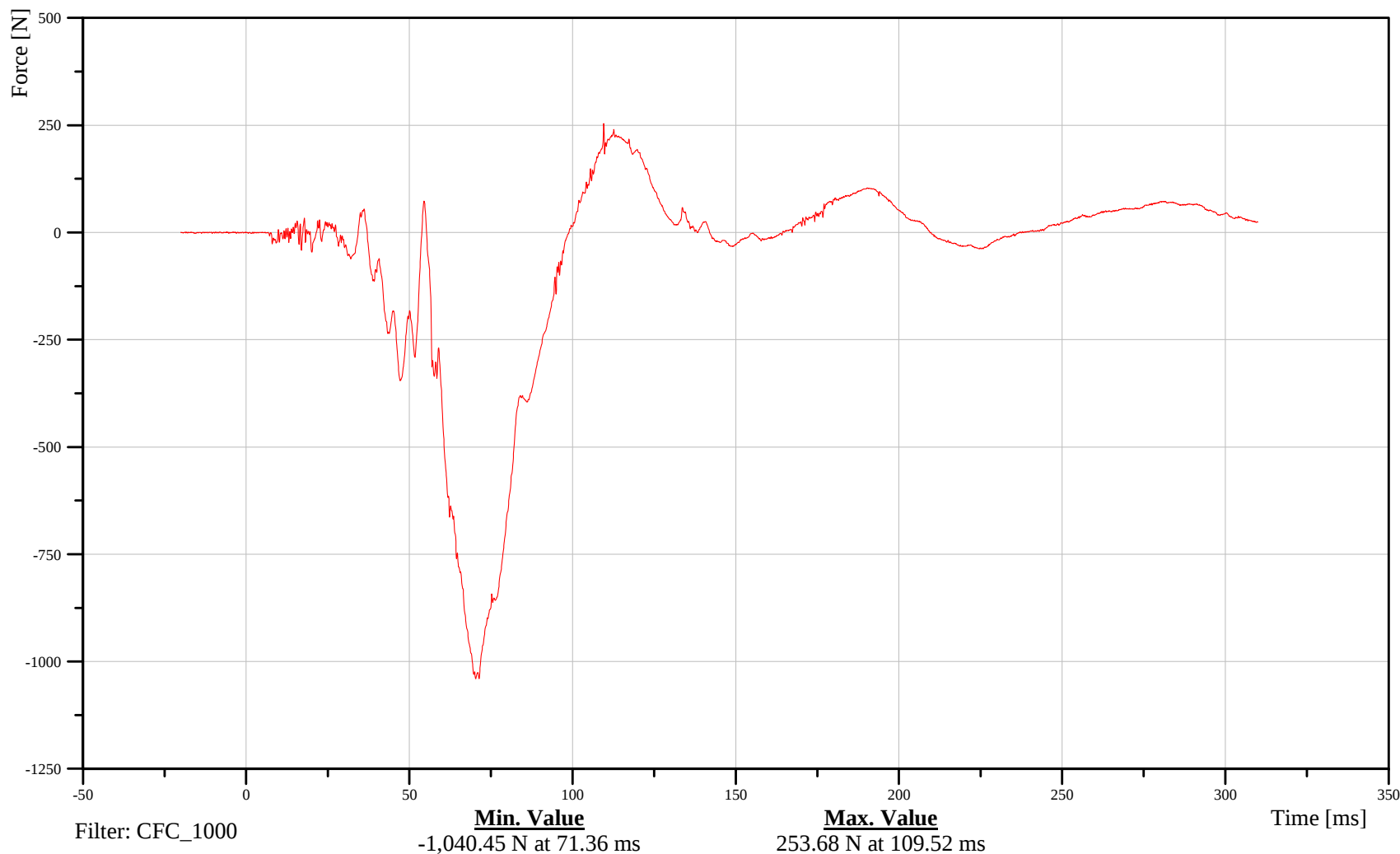
Time: 11:34

LEFT REAR PASSENGER NECK Z-AXIS AXIAL FORCE

Customer: NHTSA
Test Number: C60507

14NECKUP00SHFOZA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-41

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

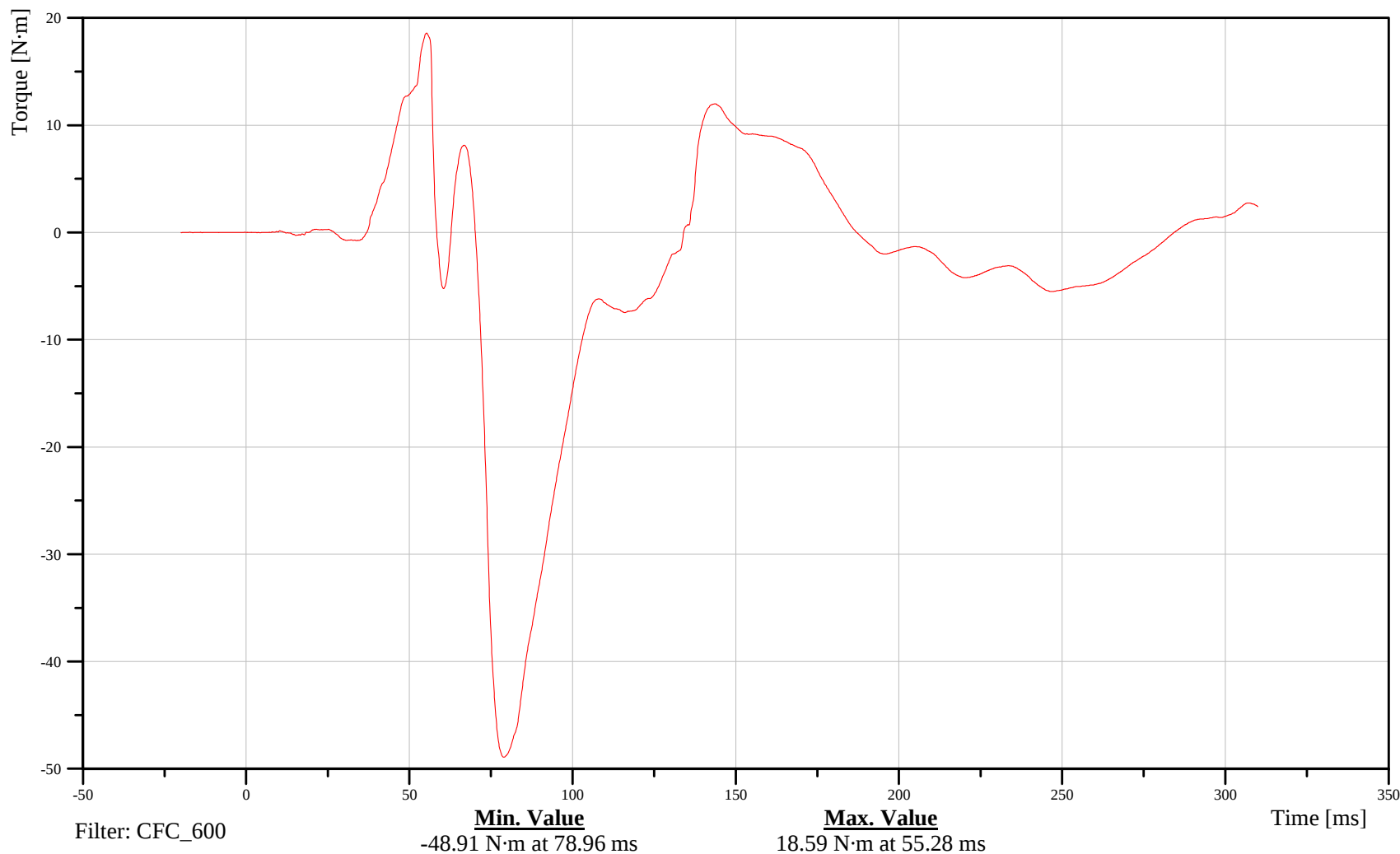
Time: 11:34

LEFT REAR PASSENGER NECK MOMENT ABOUT X AXIS

Customer: NHTSA
Test Number: C60507

14NECKUP00SHMOXB

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-42

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

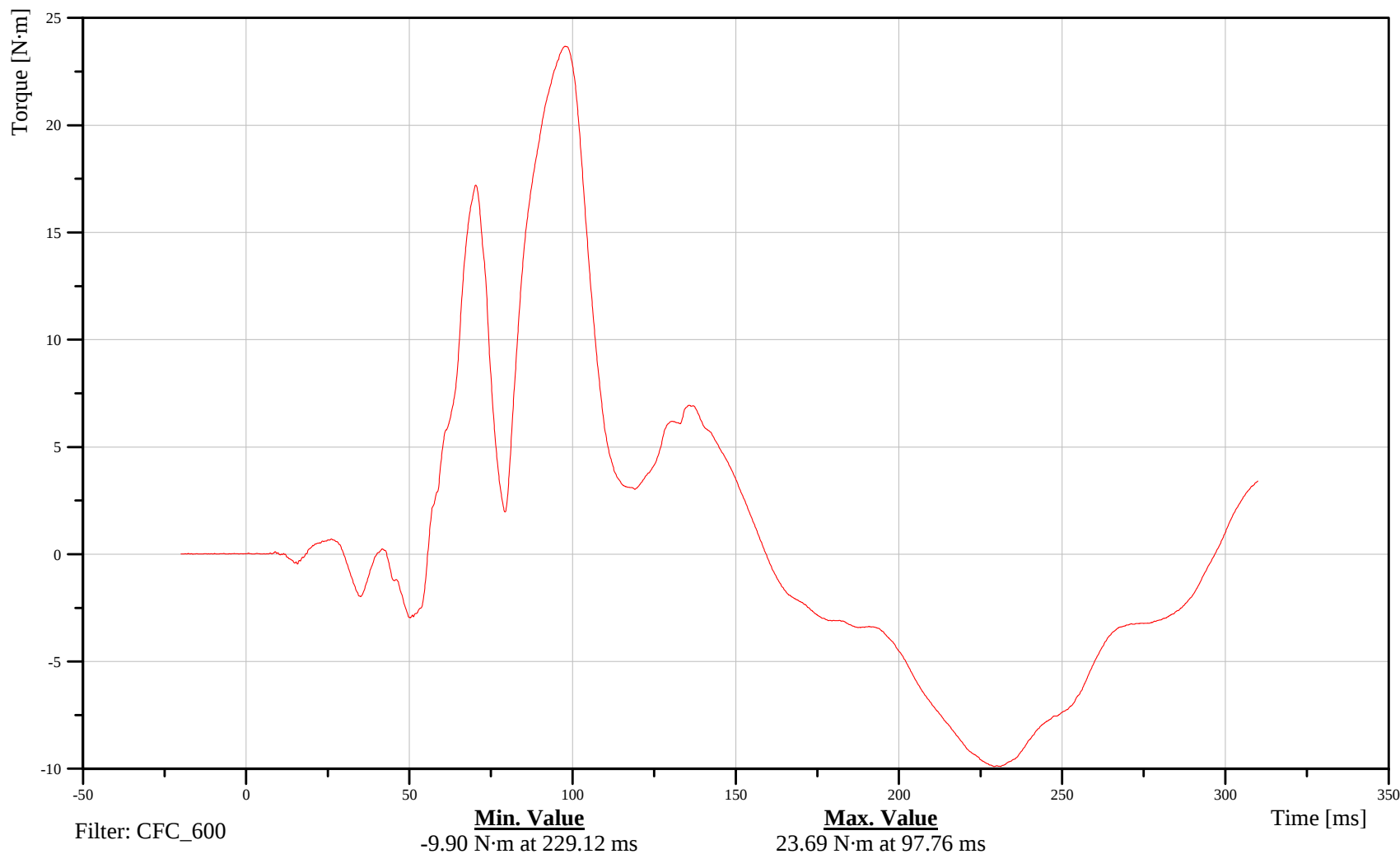
Time: 11:34

LEFT REAR PASSENGER NECK MOMENT ABOUT Y AXIS

Customer: NHTSA
Test Number: C60507

14NECKUP00SHMOYB

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-43

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

Time: 11:34

LEFT REAR PASSENGER NECK MOMENT ABOUT Z AXIS

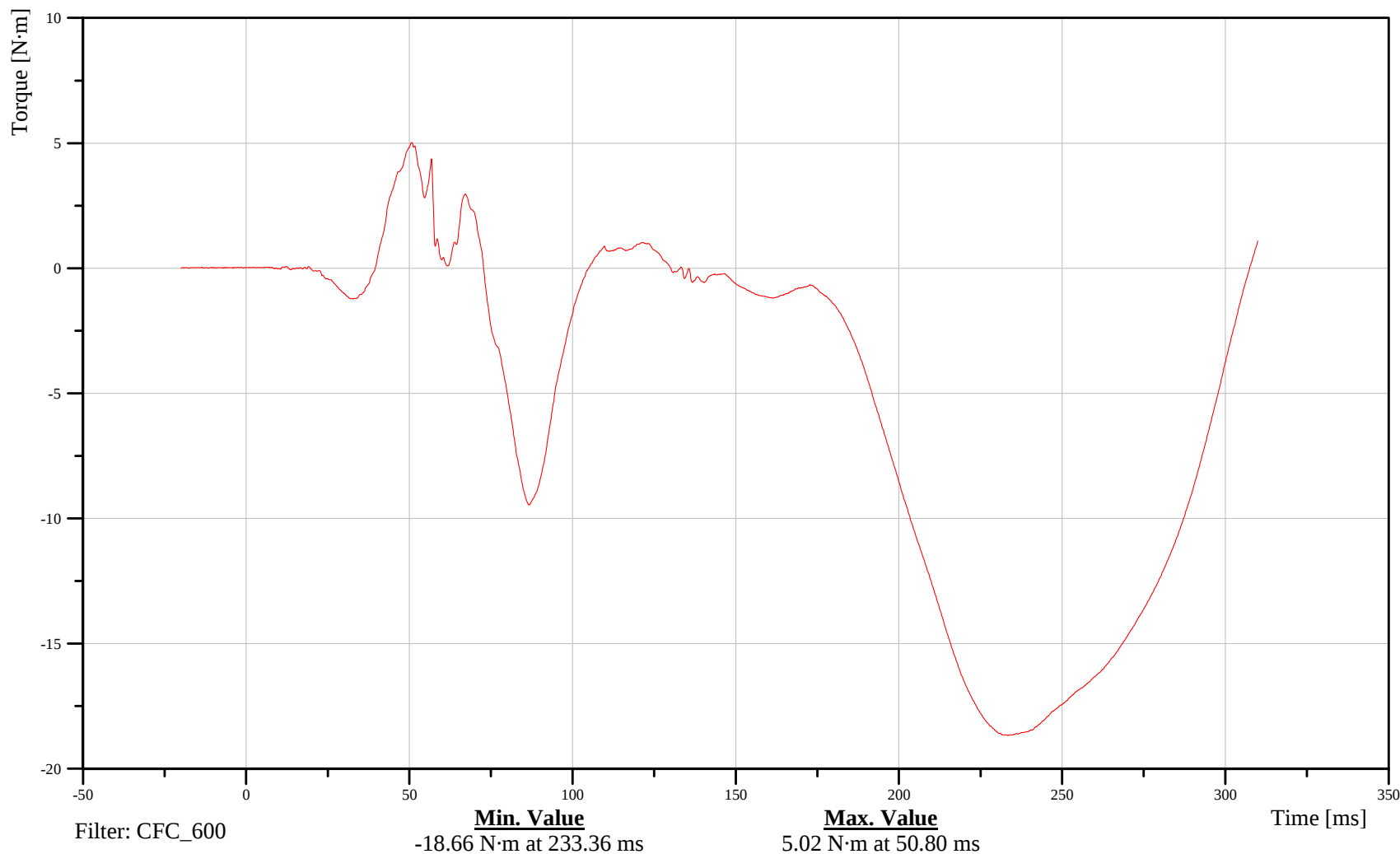
Customer: NHTSA

Test Number: C60507

14NECKUP00SHMOZB

TRC Inc. Test Lab: CTF

Test Number: 060602-1



B-44

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara Neck Moment about the Occipital Condyle (NECK OM)

Date: 06/02/2006
Time: 11:34

Customer: NHTSA

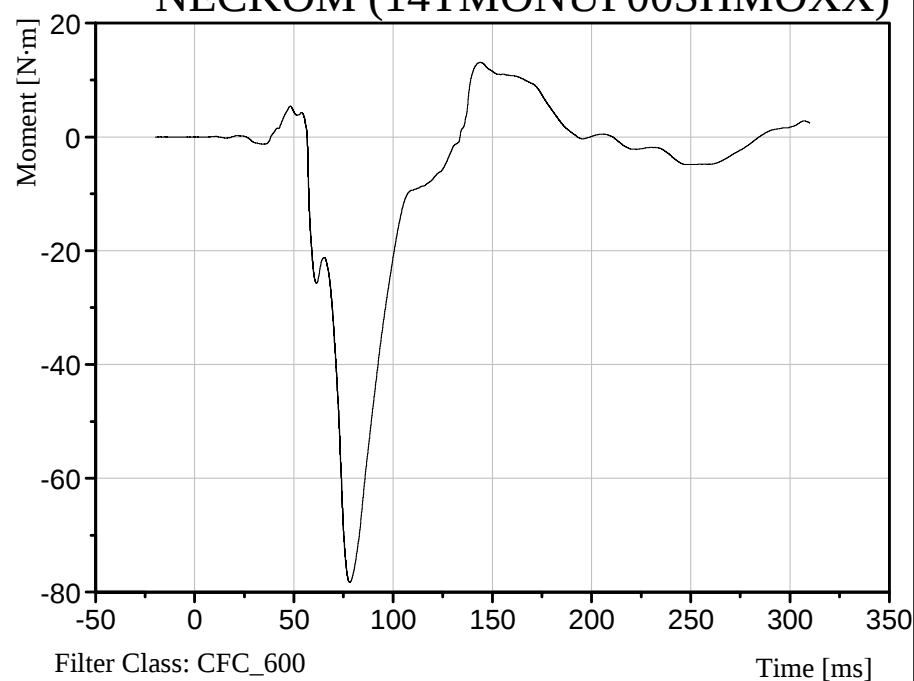
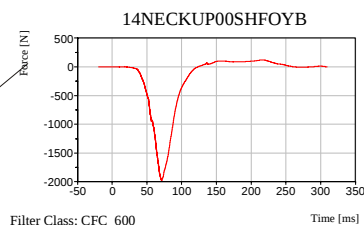
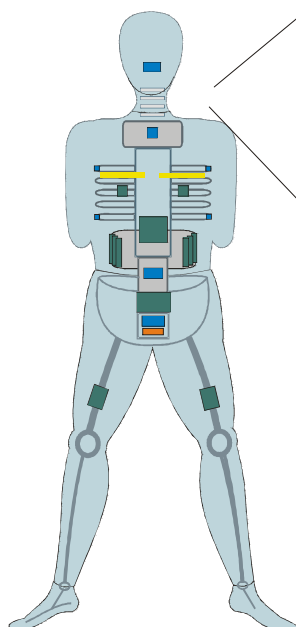
Test Number: C60507

Test Orientation = Side

TRC Inc. Test Lab: CTF

Test Number: 060602-1

NECKOM (14TMONUP00SHMOXX)



Dummy: HIII/SID

Seating Position:

Left Rear Passenger

Neck OM Source Code: $Mx + (D \cdot Fy)$

[Max.] 13.13 N·m at 143.76 ms

[Min.] -78.25 N·m at 78.16 ms

B-45

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

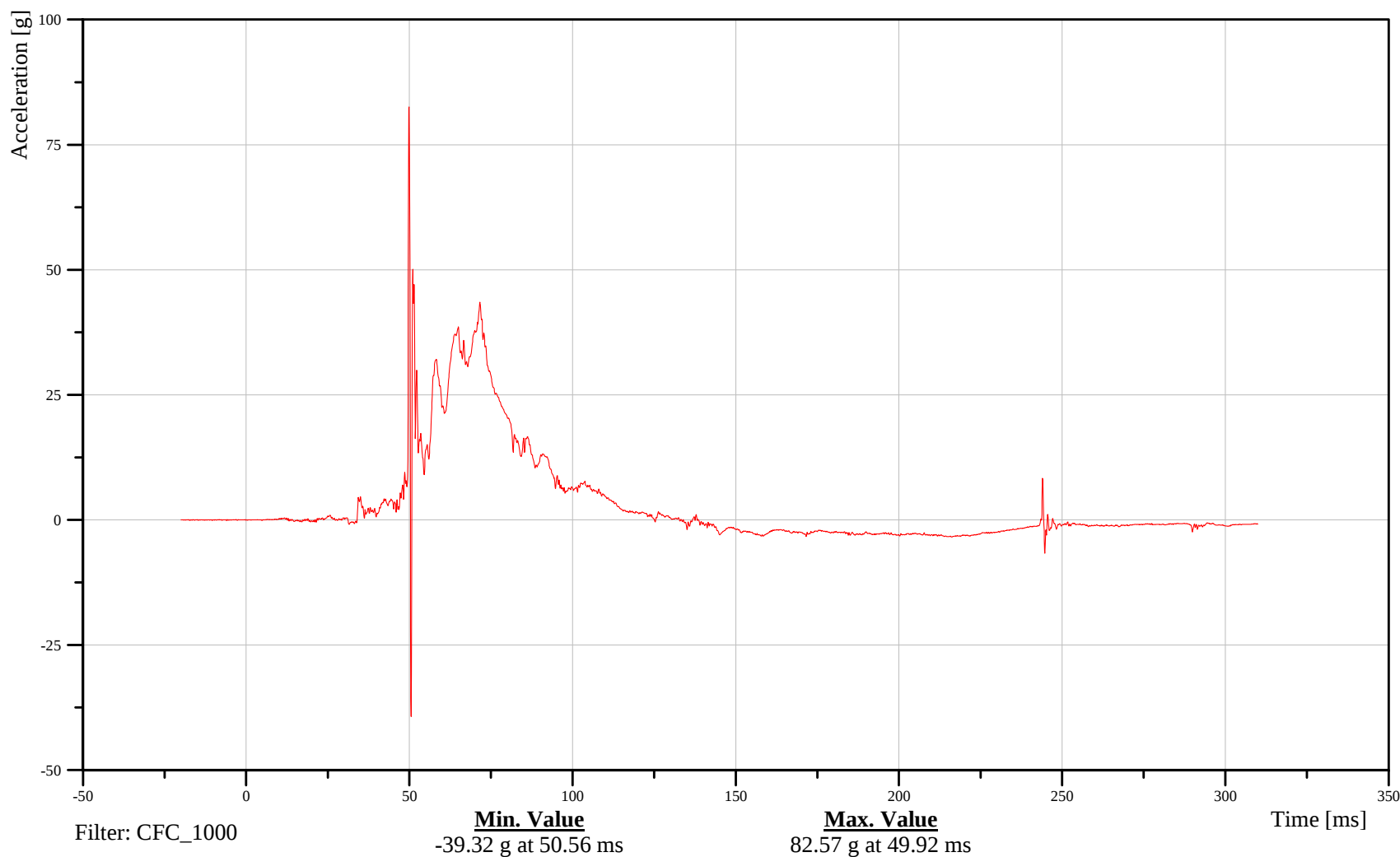
Time: 11:34

LEFT REAR PASSENGER UPPER RIB Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

14RIBSLU00SHACYA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-46

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

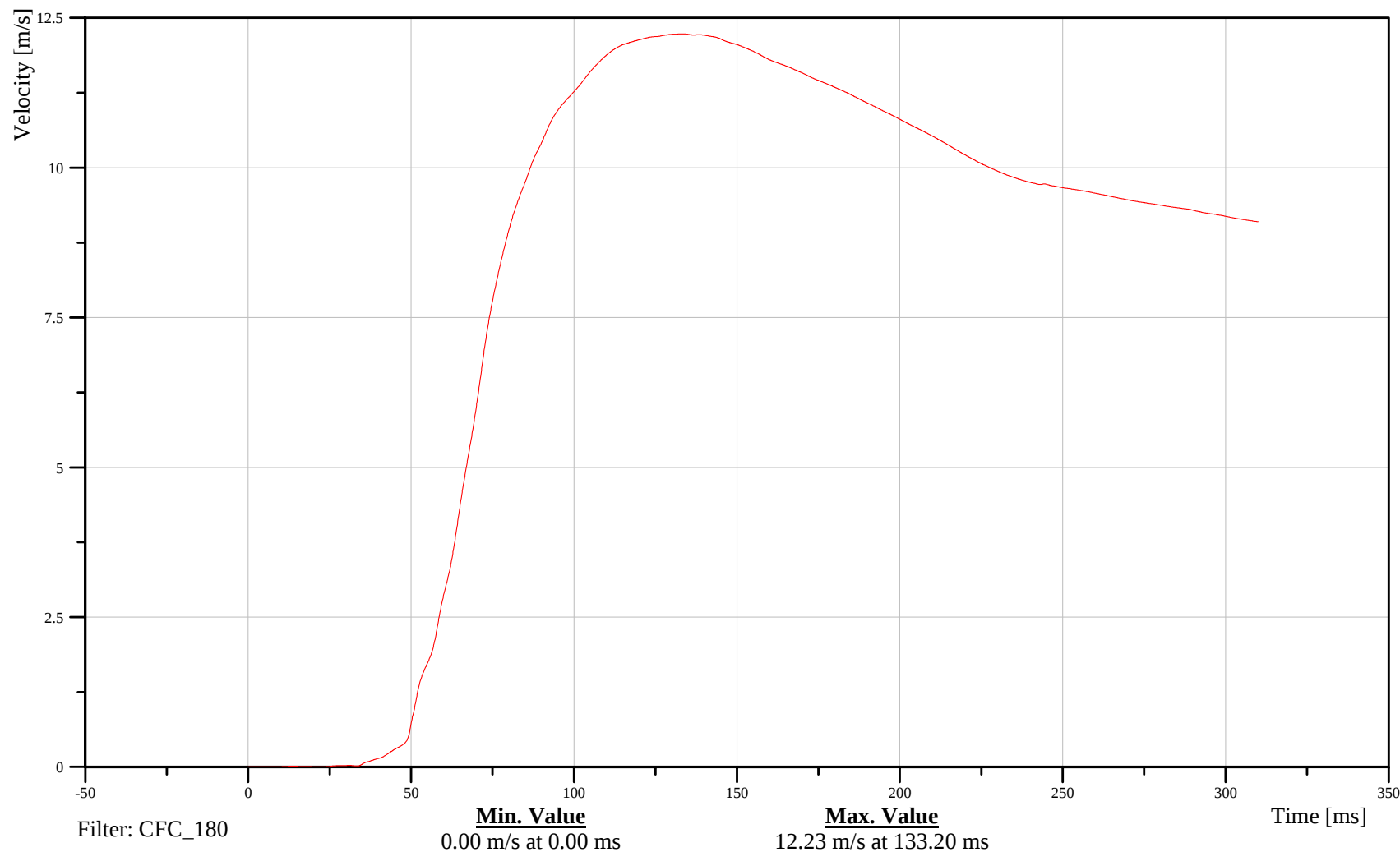
Time: 11:34

LEFT REAR PASSENGER UPPER RIB Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

14RIBSLU00SHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-47

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

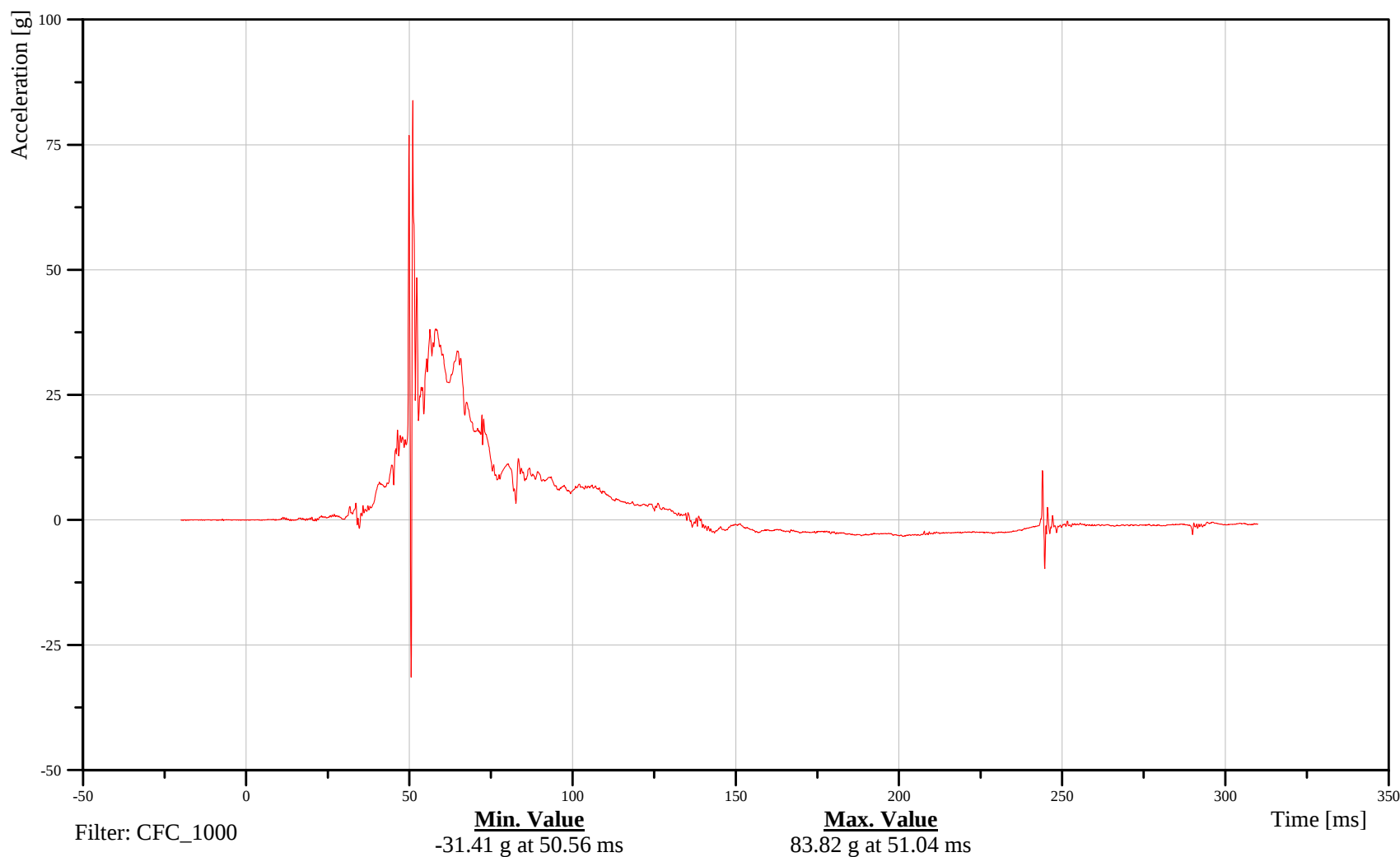
Time: 11:34

LEFT REAR PASSENGER LOWER RIB Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

14RIBSLL00SHACYA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-48

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

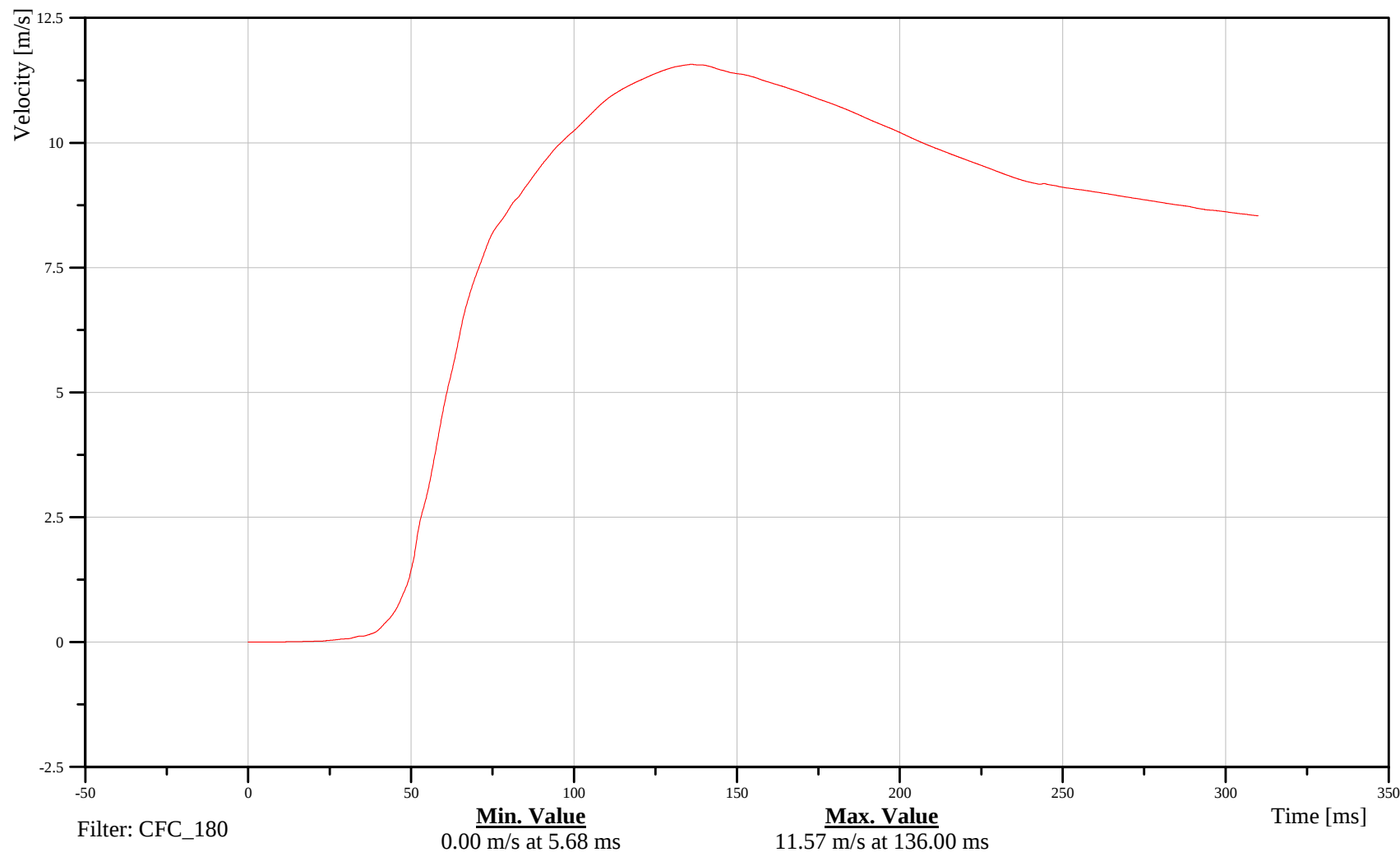
Time: 11:34

LEFT REAR PASSENGER LOWER RIB Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

14RIBSLL00SHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-49

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

Date: 06/02/2006

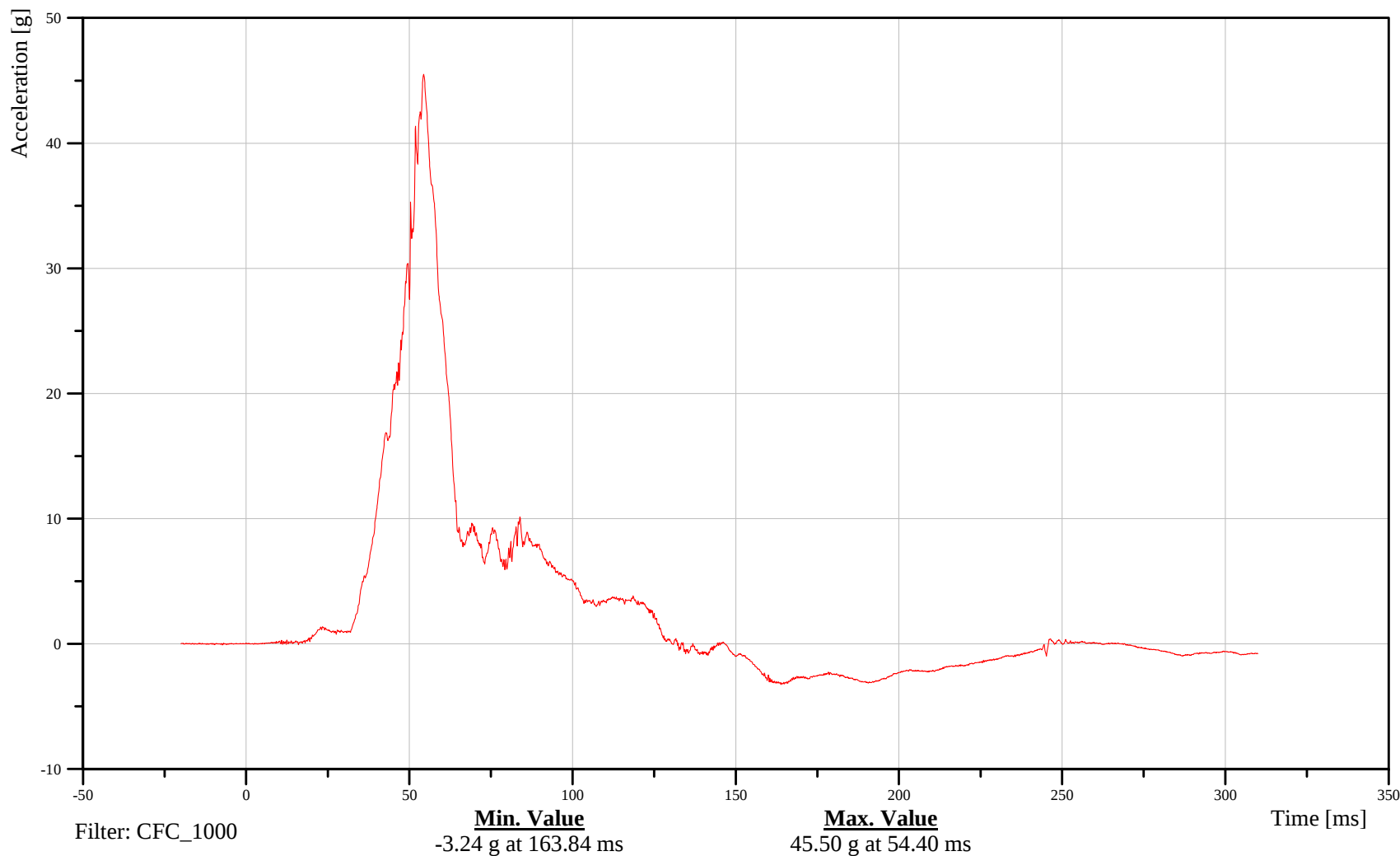
Time: 11:34

LEFT REAR PASSENGER LOWER SPINE Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

14SPIN1200SHACYA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-50

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Test: 06/02/2006

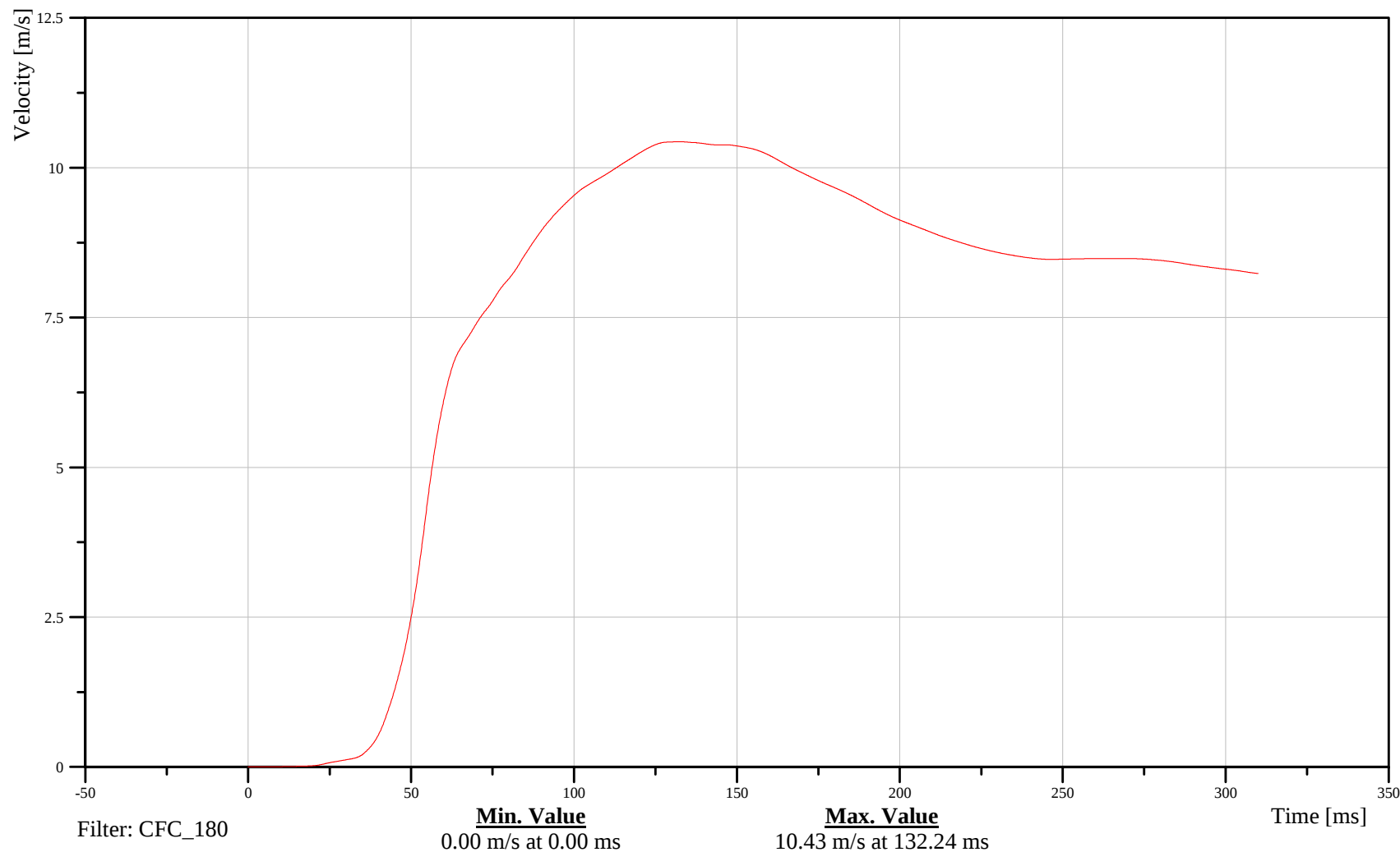
Time: 11:34

LEFT REAR PASSENGER LOWER SPINE Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

14SPIN1200SHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-51

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

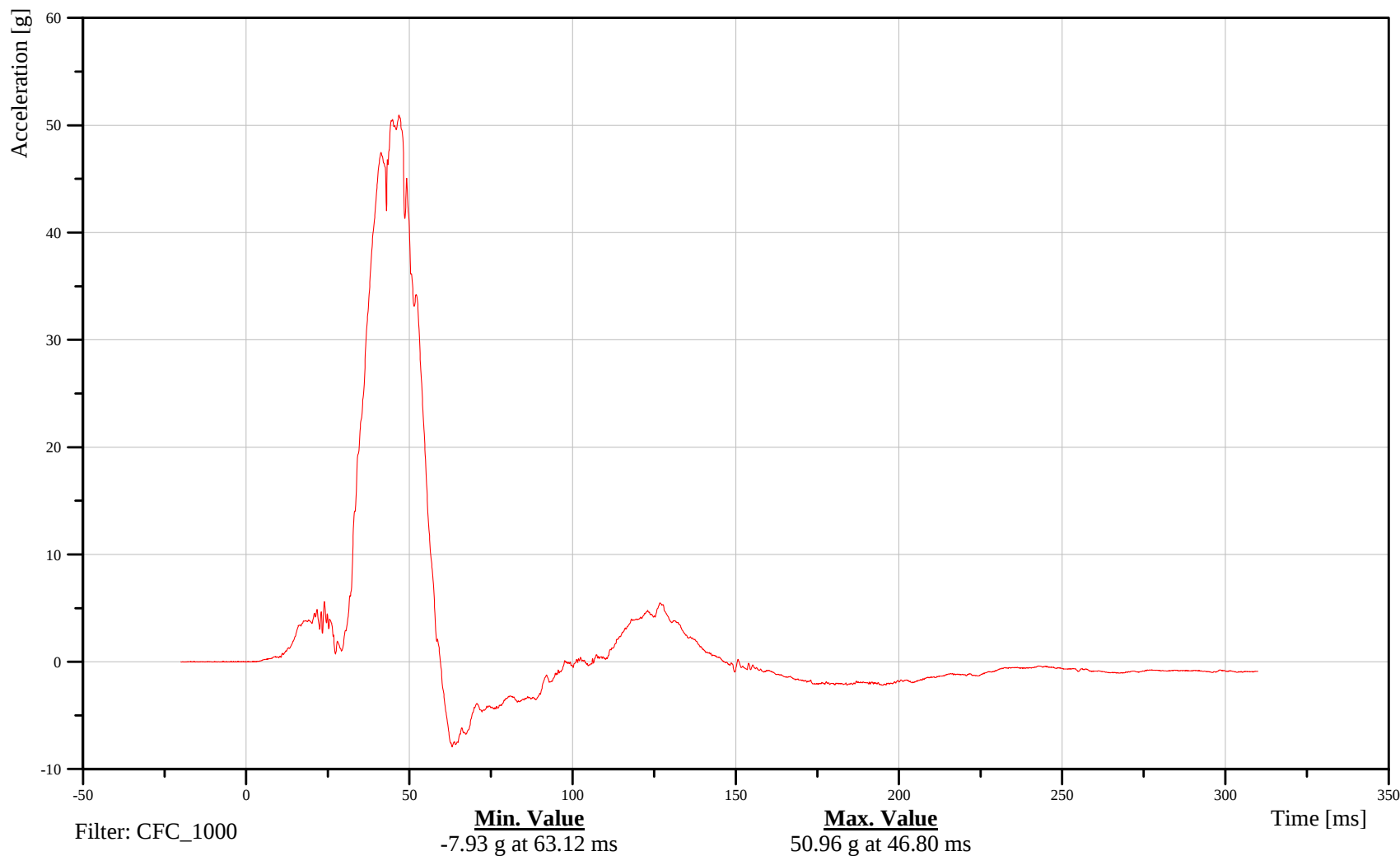
Time: 11:34

LEFT REAR PASSENGER PELVIS Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

14PELVCG00SHACYA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-52

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Test: 06/02/2006

Time: 11:34

LEFT REAR PASSENGER PELVIS Y-AXIS VELOCITY

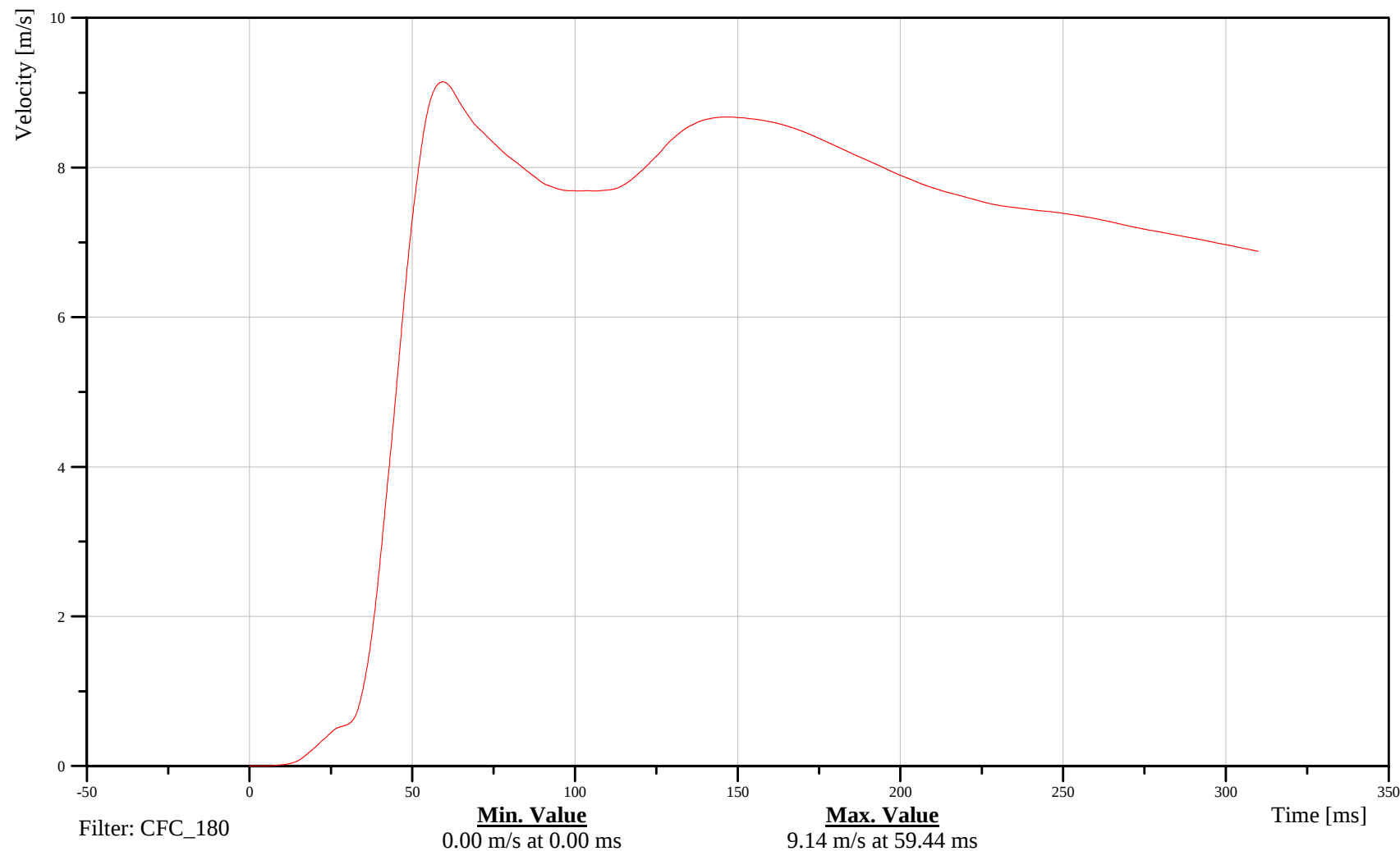
Customer: NHTSA

Test Number: C60507

14PELVCG00SHVEYC

TRC Inc. Test Lab: CTF

Test Number: 060602-1



B-53

060602-1

Driver and Passenger Dummy Redundant Instrumentation Plots



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

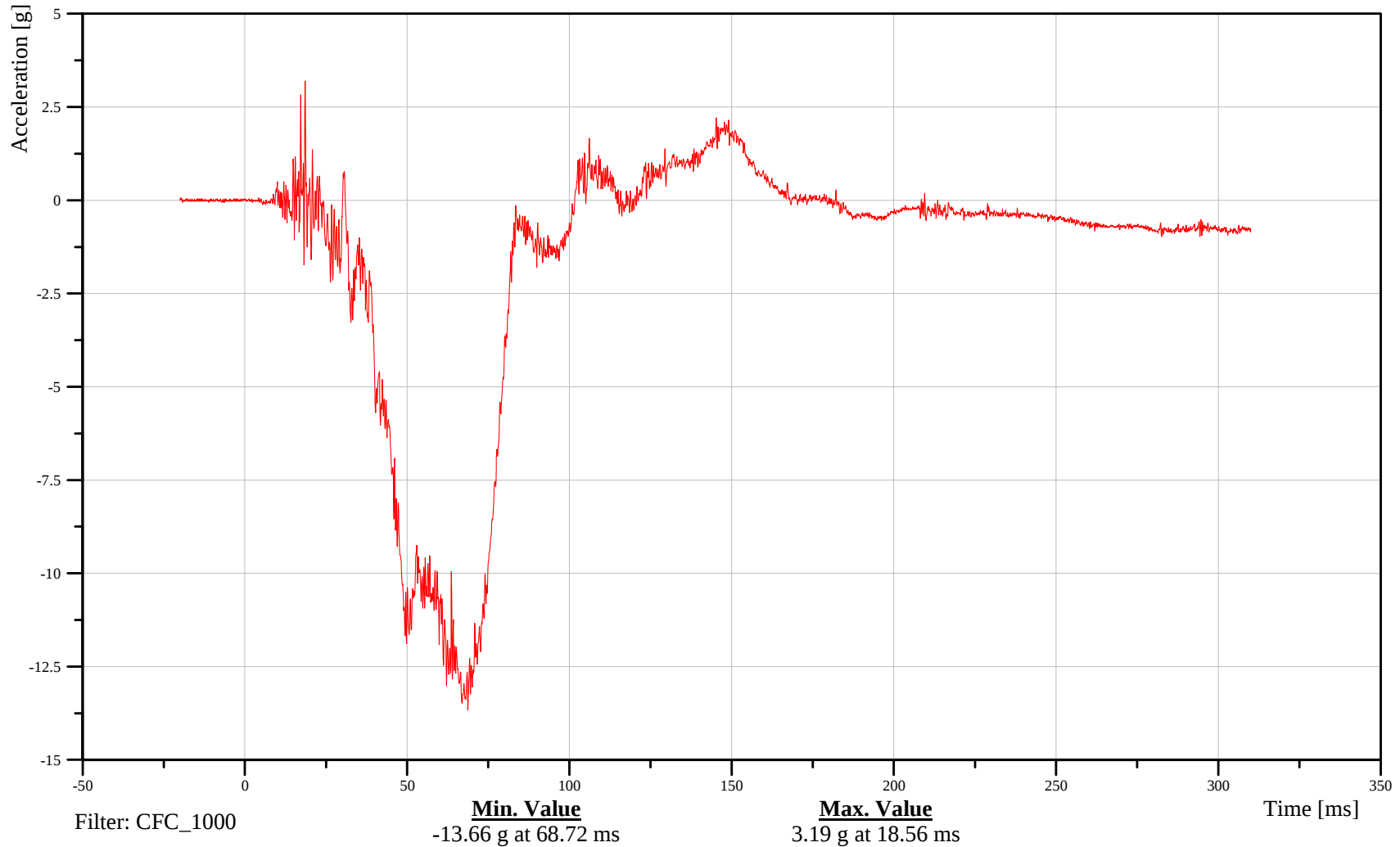
Case: 06/02/2006
Time: 11:34

DRIVER HEAD X-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60507

11HEADCGRDSHACXA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-55

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

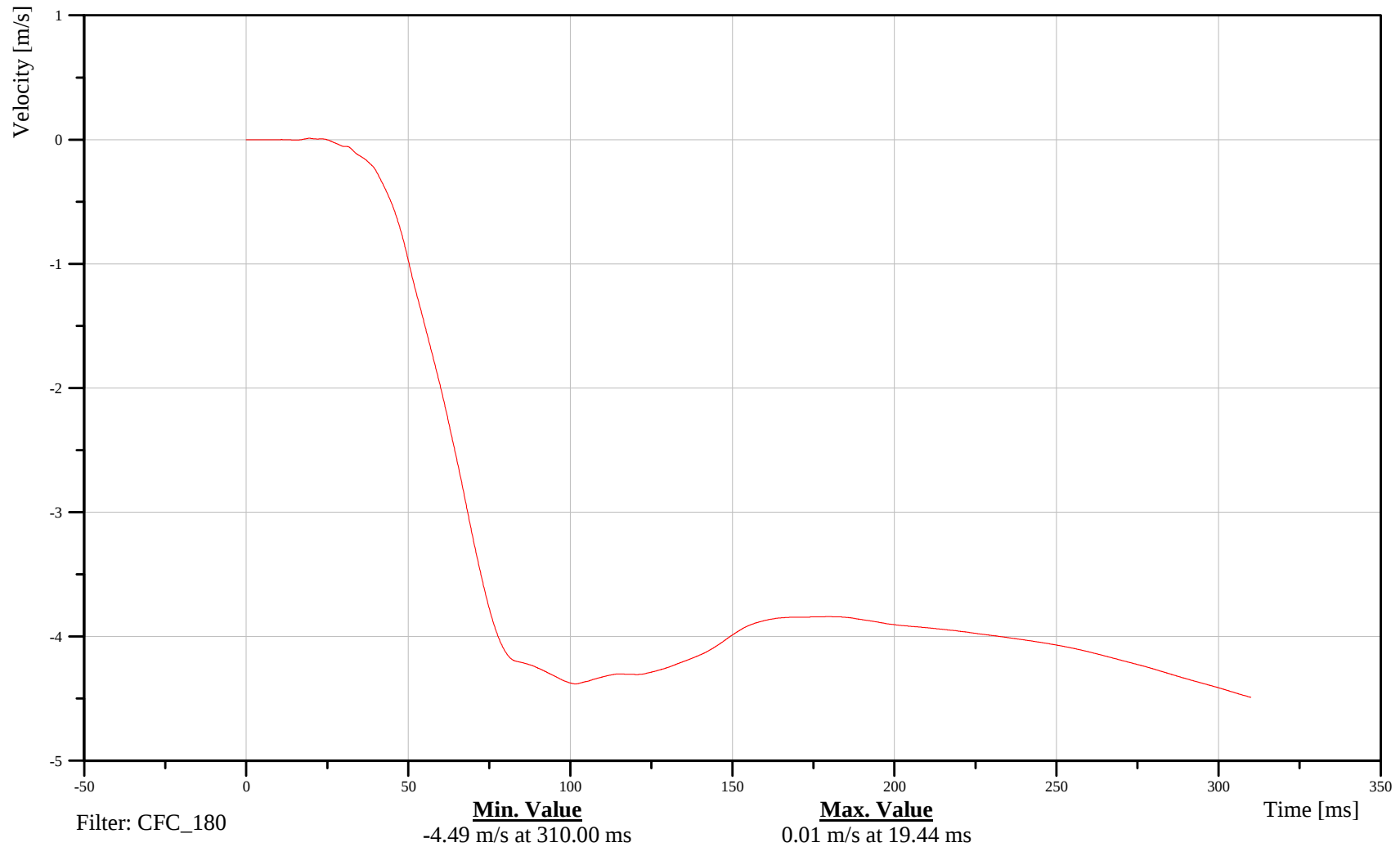
Case: 06/02/2006
Time: 11:34

DRIVER HEAD X-AXIS REDUNDANT VELOCITY

Customer: NHTSA
Test Number: C60507

11HEADCGRDSHVEXC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-56

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

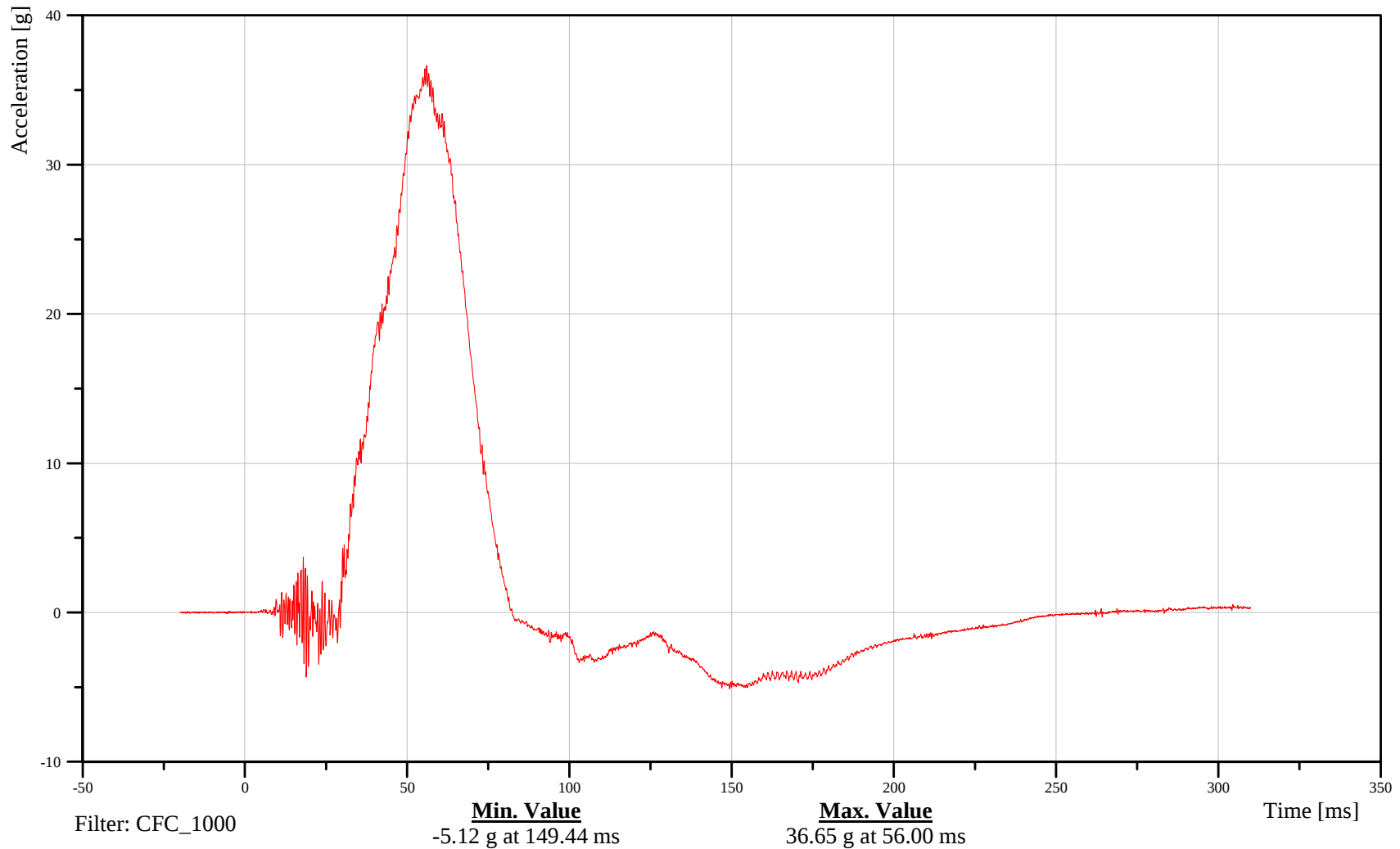
Time: 11:34

DRIVER HEAD Y-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60507

11HEADCGRDSHACYA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-57

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

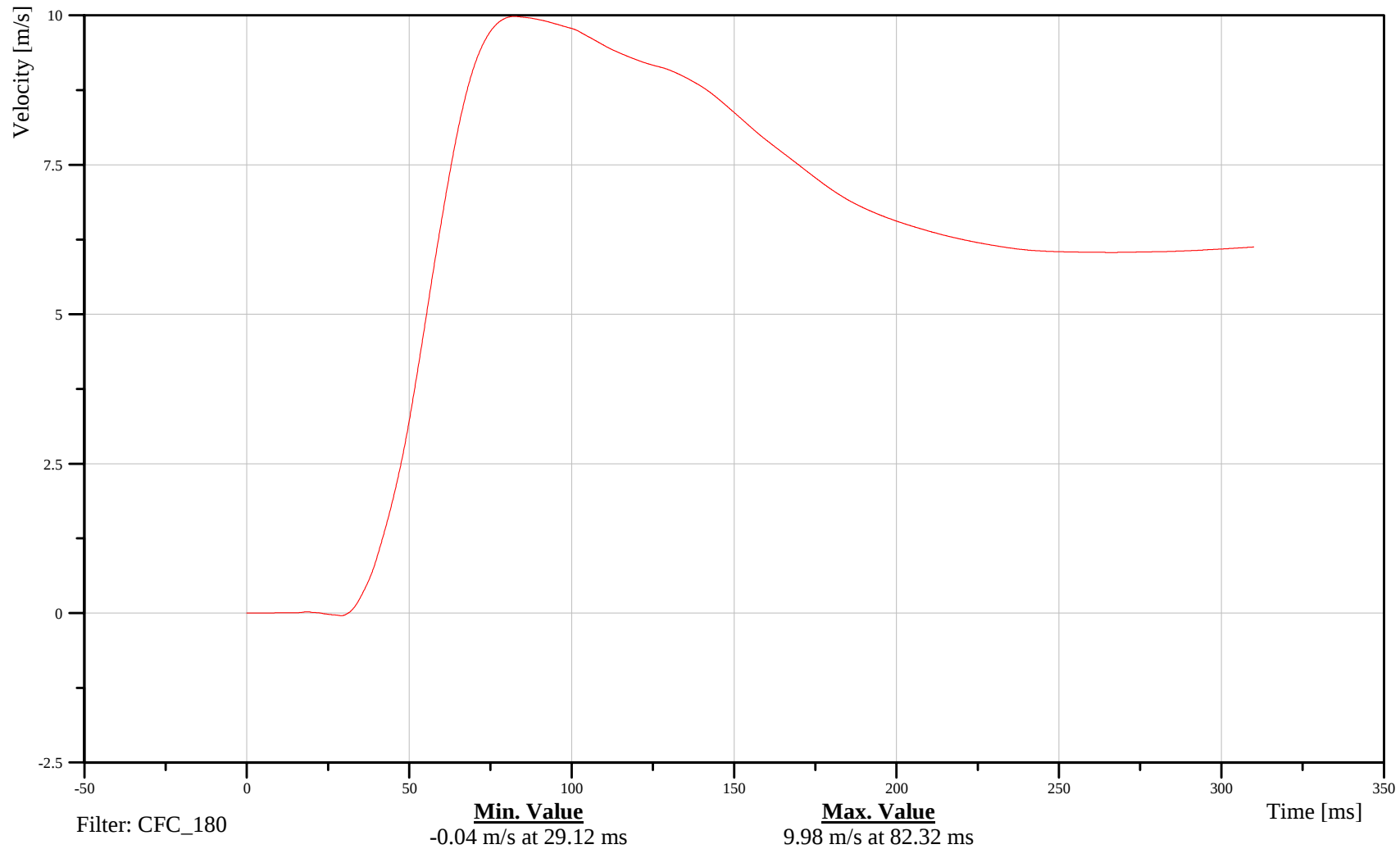
Date: 06/02/2006
Time: 11:34

DRIVER HEAD Y-AXIS REDUNDANT VELOCITY

Customer: NHTSA
Test Number: C60507

11HEADCGRDSHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-58

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

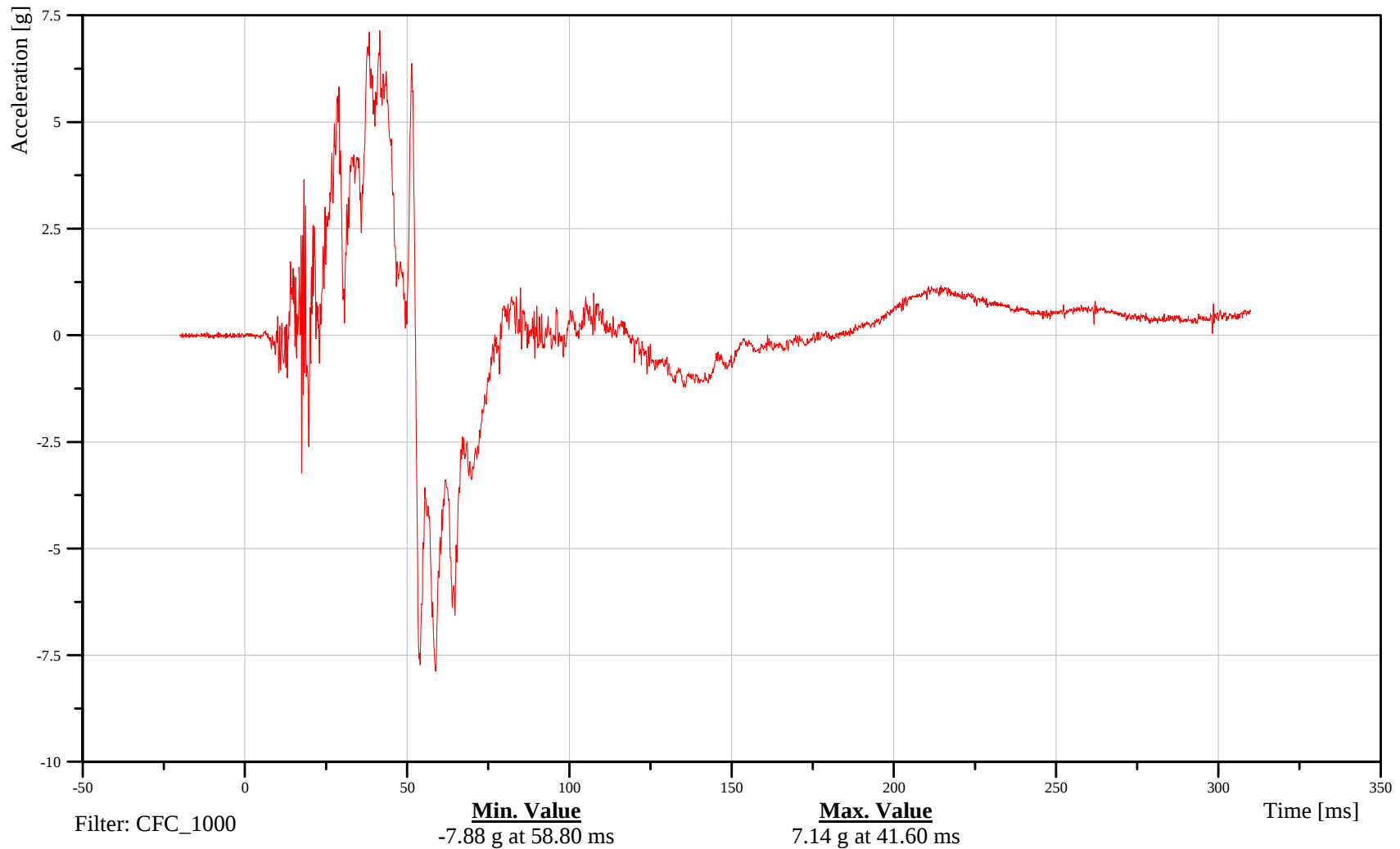
Case: 06/02/2006
Time: 11:34

DRIVER HEAD Z-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60507

11HEADCGRDSHACZA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-59

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

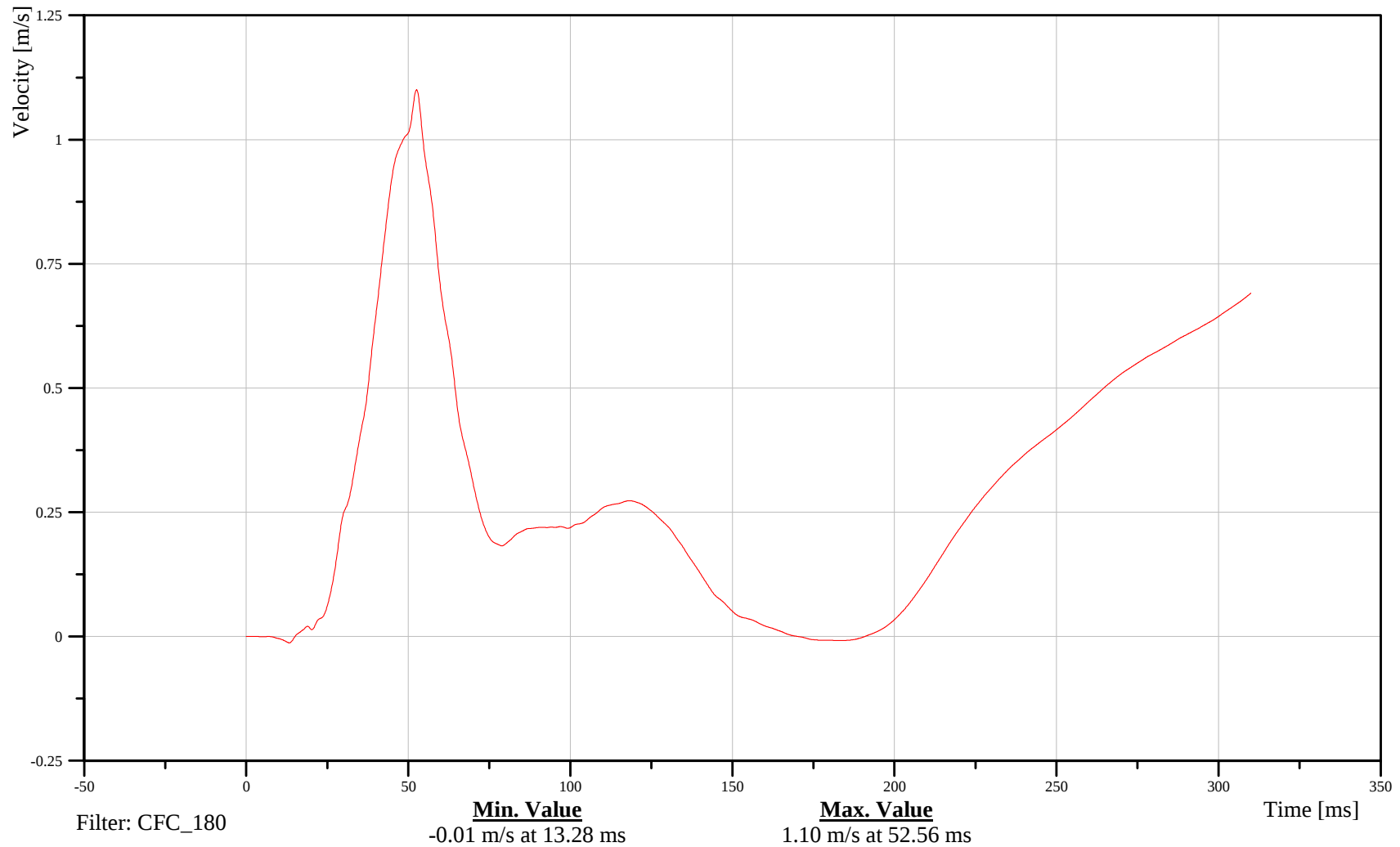
Date: 06/02/2006
Time: 11:34

DRIVER HEAD Z-AXIS REDUNDANT VELOCITY

Customer: NHTSA
Test Number: C60507

11HEADCGRDSHVEZC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-60

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

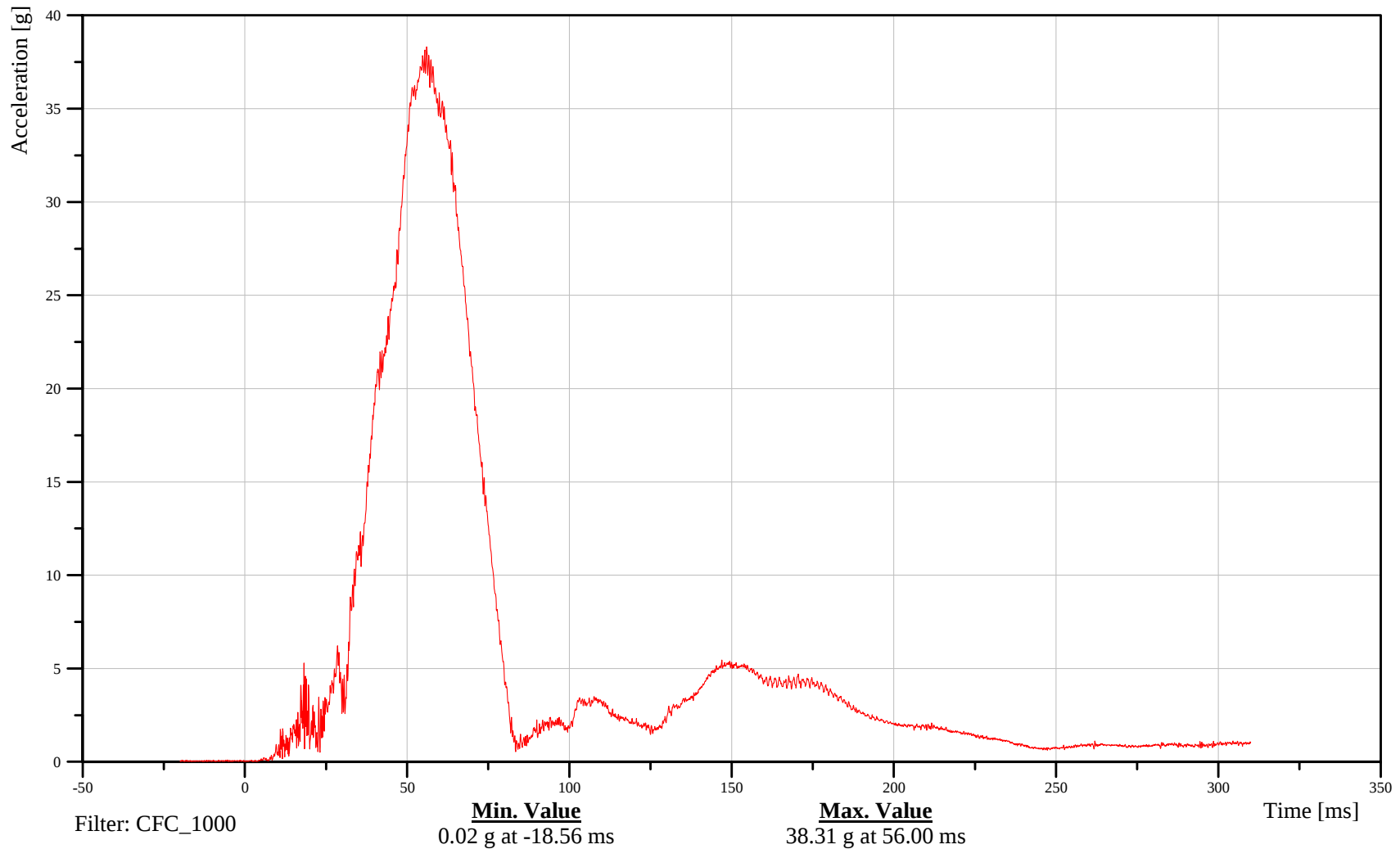
Case: 06/02/2006
Time: 11:34

DRIVER HEAD RESULTANT REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60507

11HEADCGRDSHACRA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-61

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

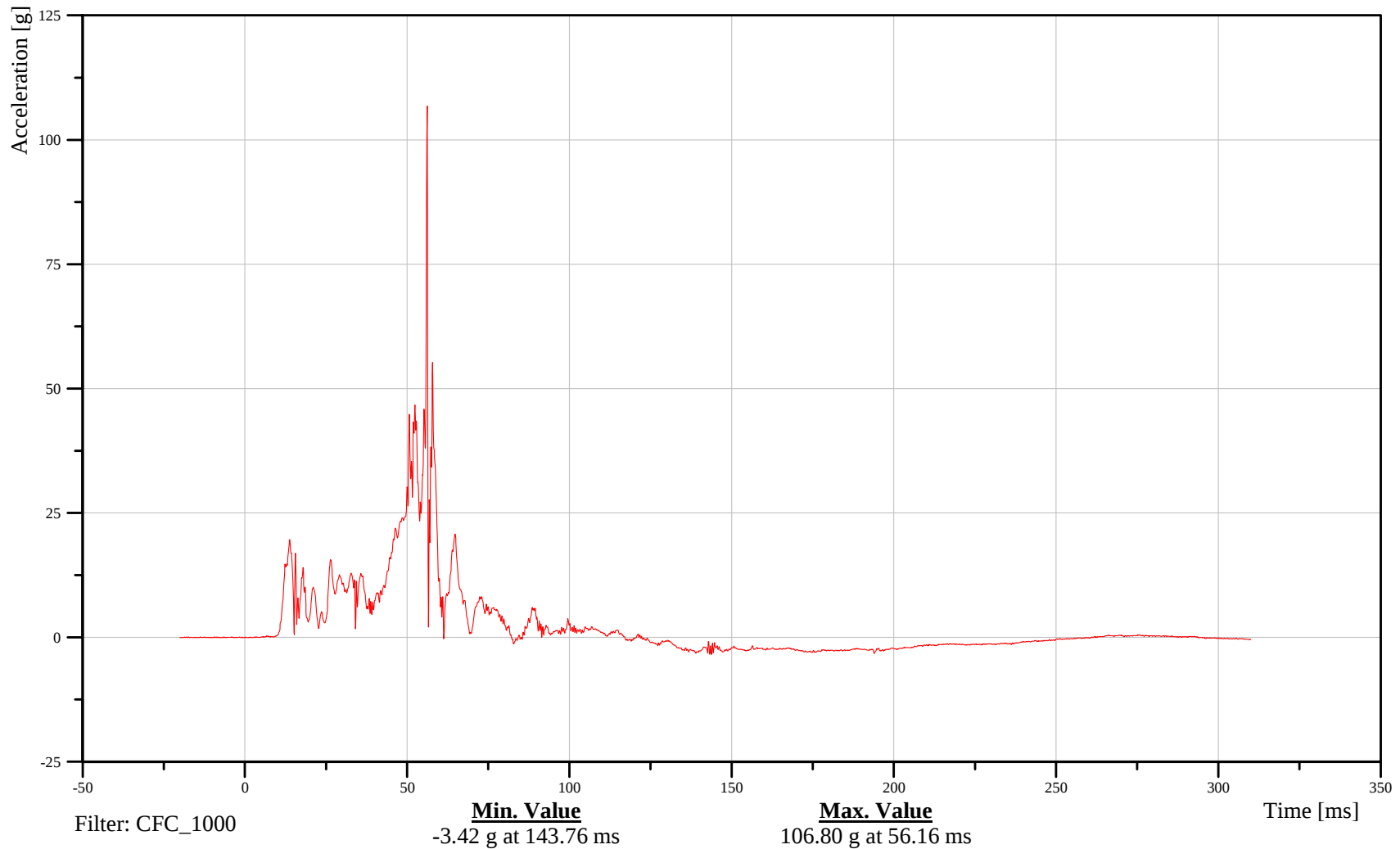
Case: 06/02/2006
Time: 11:34

DRIVER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60507

11RIBSLURESHACYA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-62

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

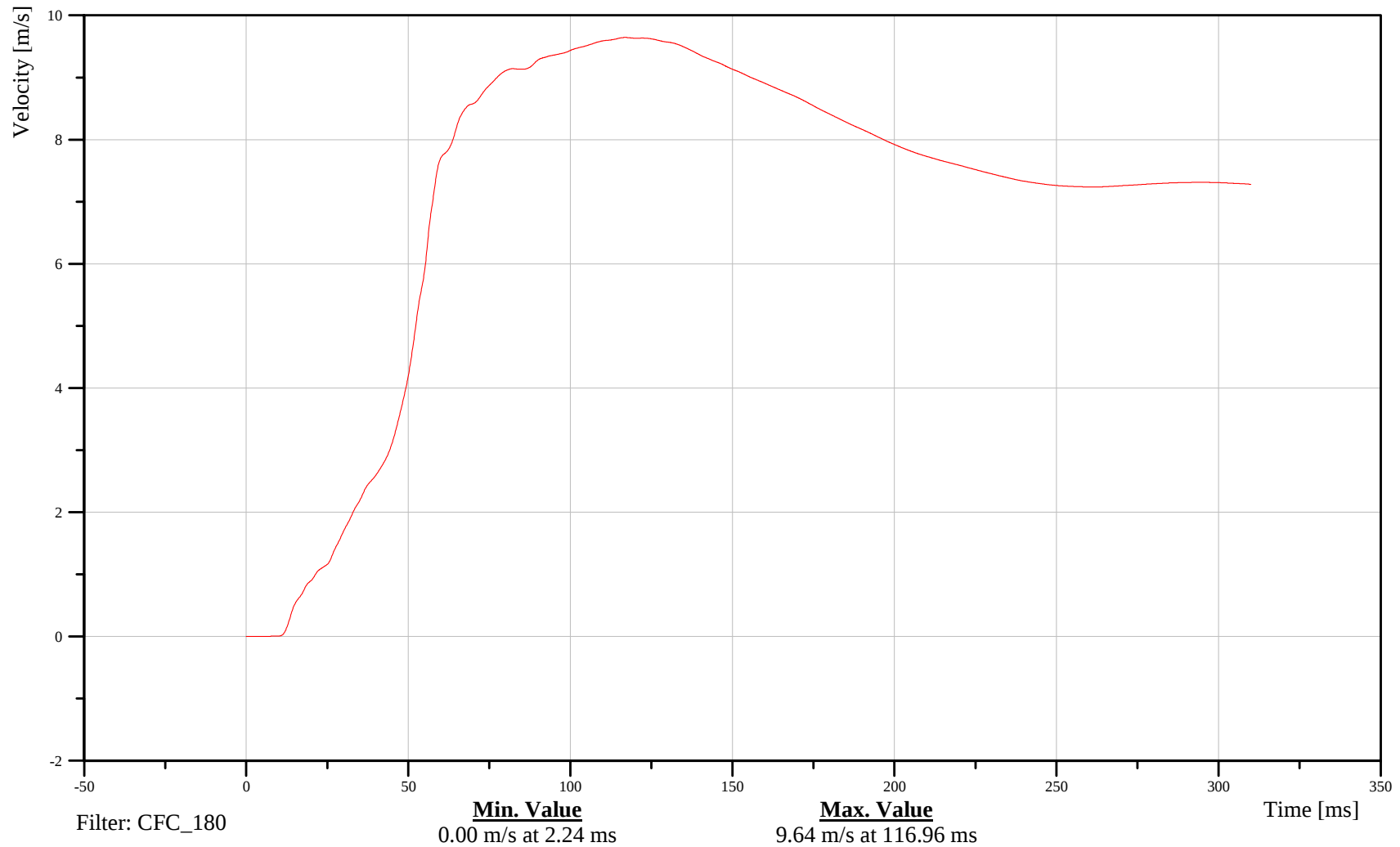
Case: 060602/2006
Time: 11:34

DRIVER UPPER RIB Y-AXIS REDUNDANT VELOCITY

Customer: NHTSA
Test Number: C60507

11RIBSLURESHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-63

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

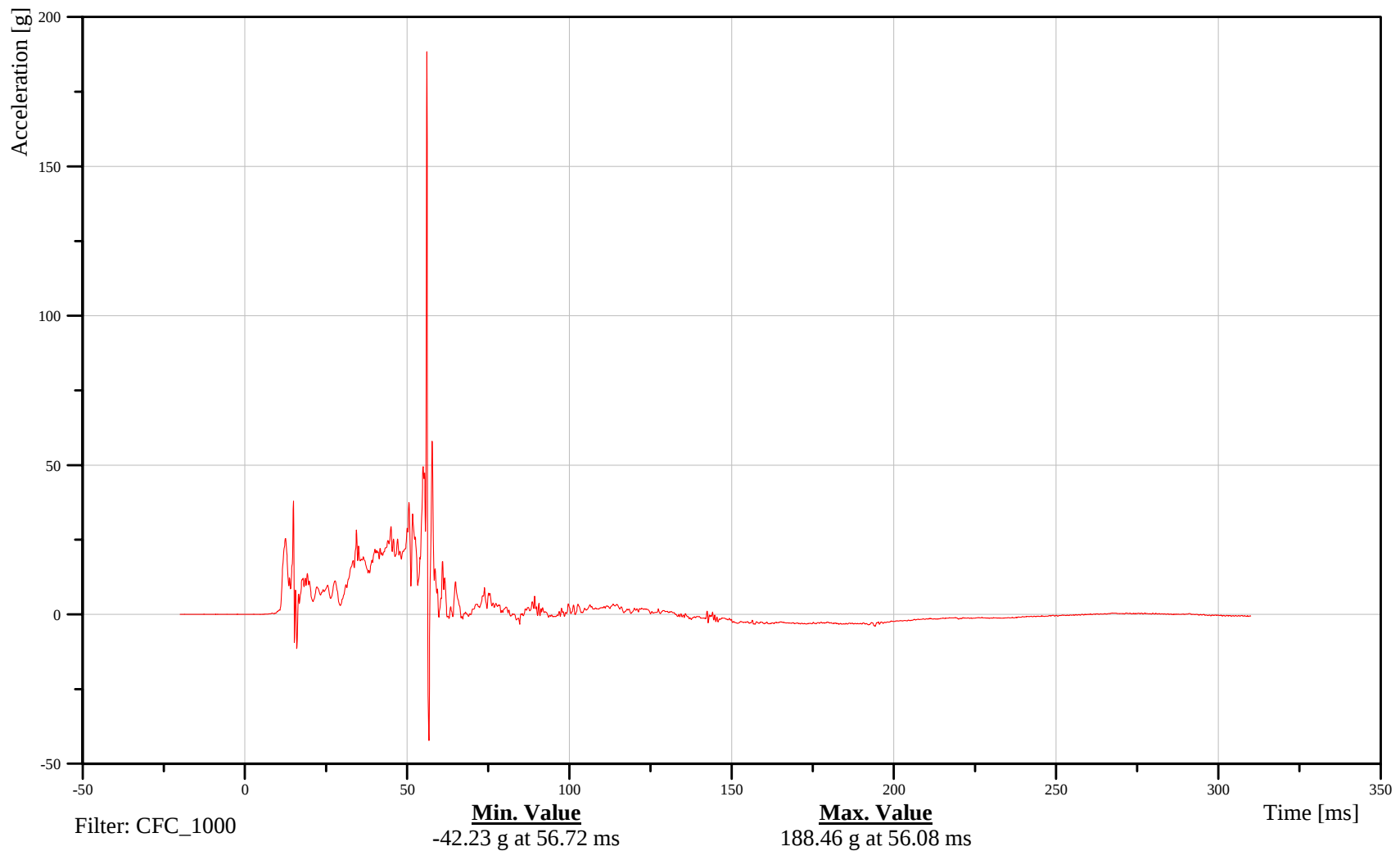
Test: 06/02/2006
Time: 11:34

DRIVER LOWER RIB Y-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60507

11RIBSLLRSHACYA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-64

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

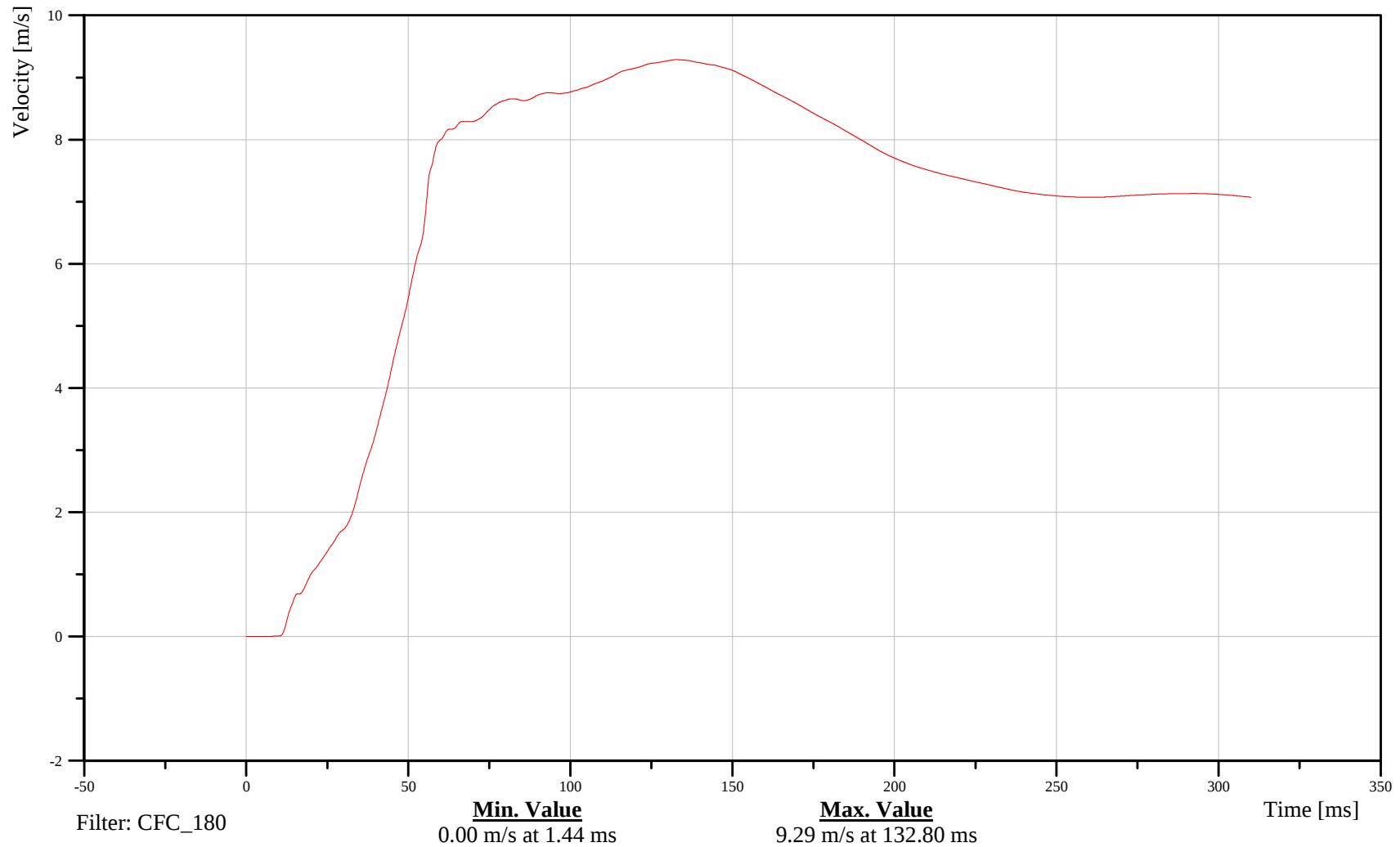
Case: 06/02/2006
Time: 11:34

DRIVER LOWER RIB Y-AXIS REDUNDANT VELOCITY

Customer: NHTSA
Test Number: C60507

11RIBSLLRESHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-65

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

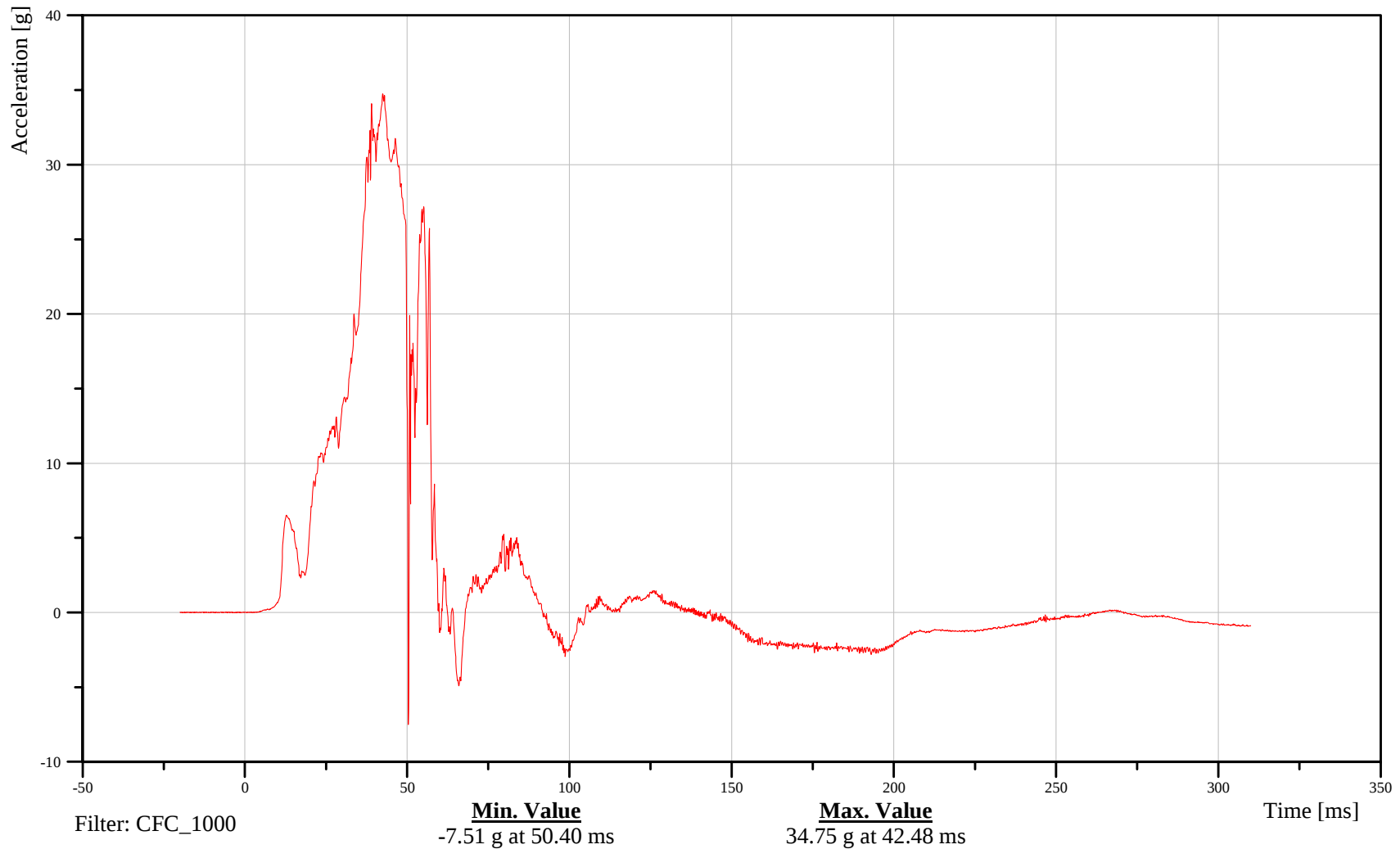
Time: 11:34

DRIVER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60507

11SPIN12RDSHACYA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-66

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

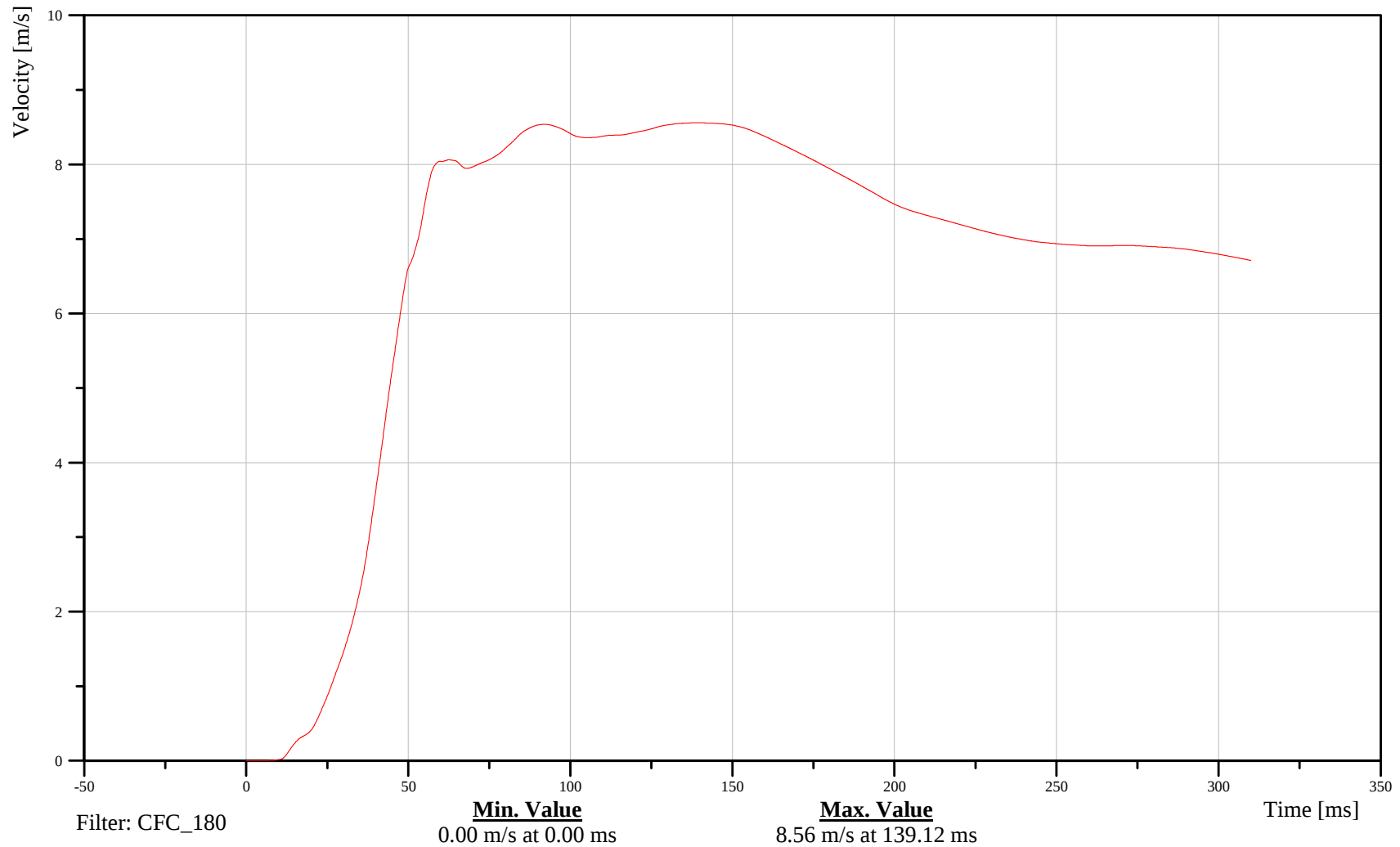
Test: 06/02/2006
Time: 11:34

DRIVER LOWER SPINE Y-AXIS REDUNDANT VELOCITY

Customer: NHTSA
Test Number: C60507

11SPIN12RDSHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-67

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

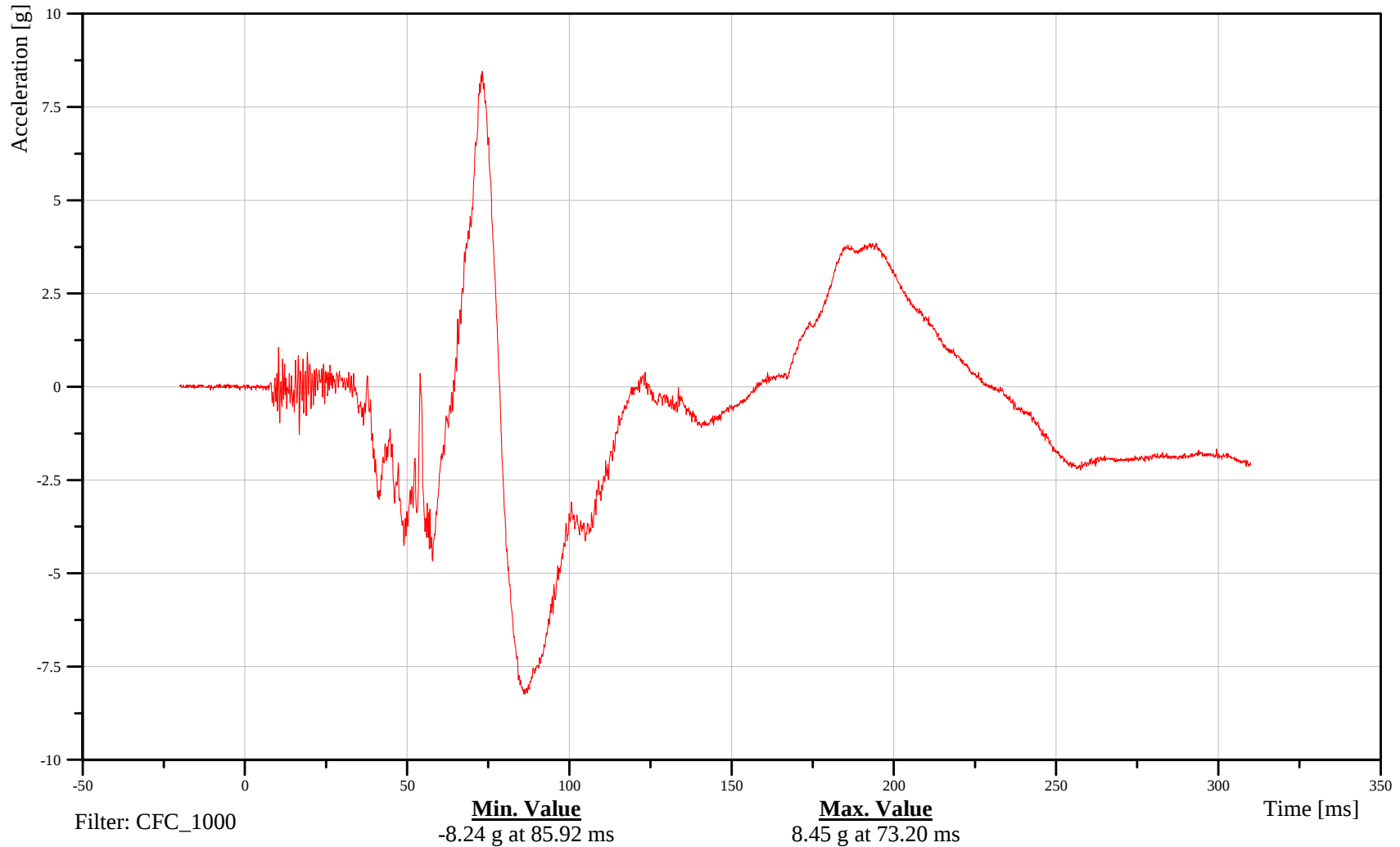
Time: 11:34

LEFT REAR PASSENGER HEAD X-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60507

14HEADCGRDSHACXA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-68

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

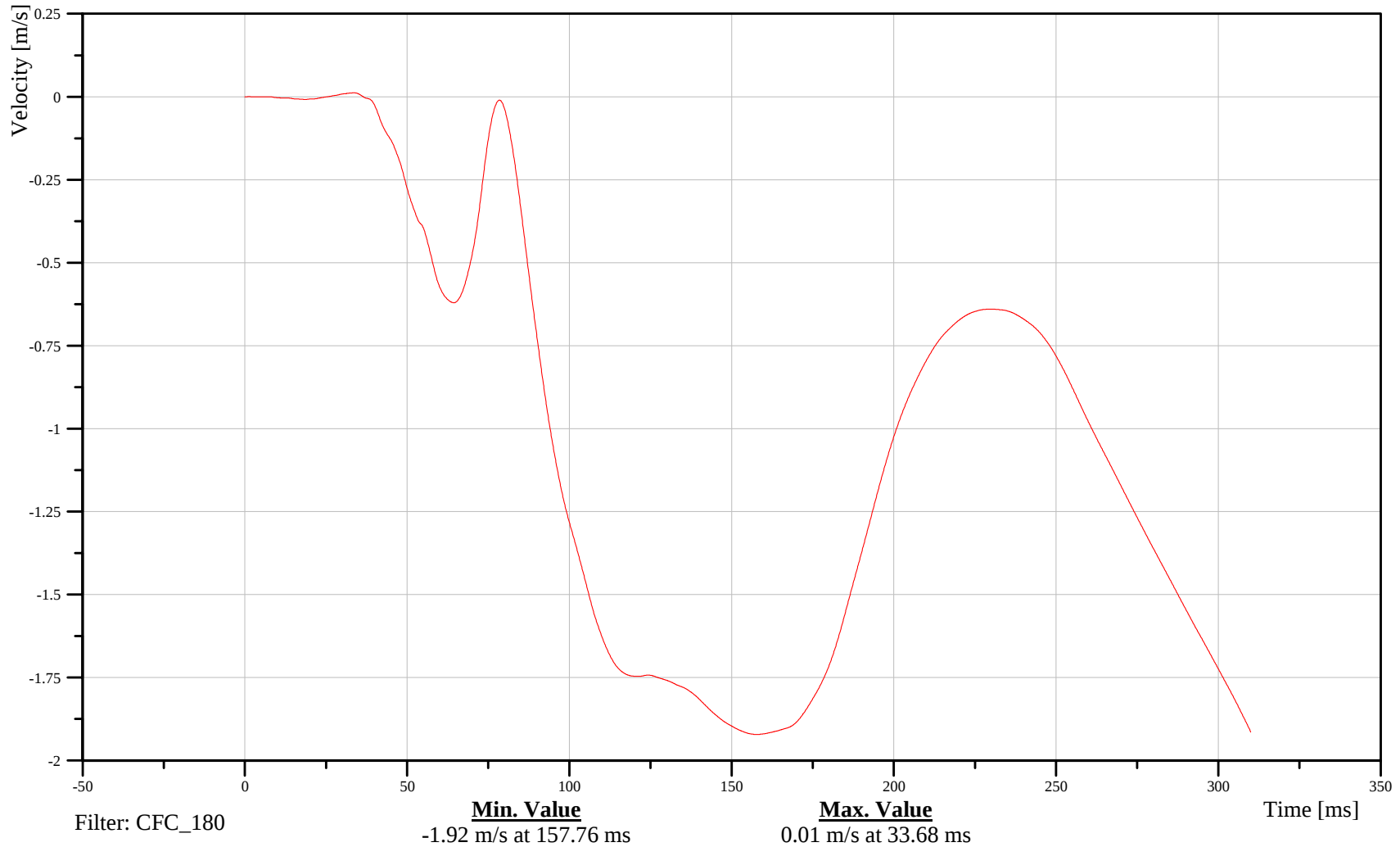
Time: 11:34

LEFT REAR PASSENGER HEAD X-AXIS REDUNDANT VELOCITY

Customer: NHTSA
Test Number: C60507

14HEADCGRDSHVEXC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-69

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

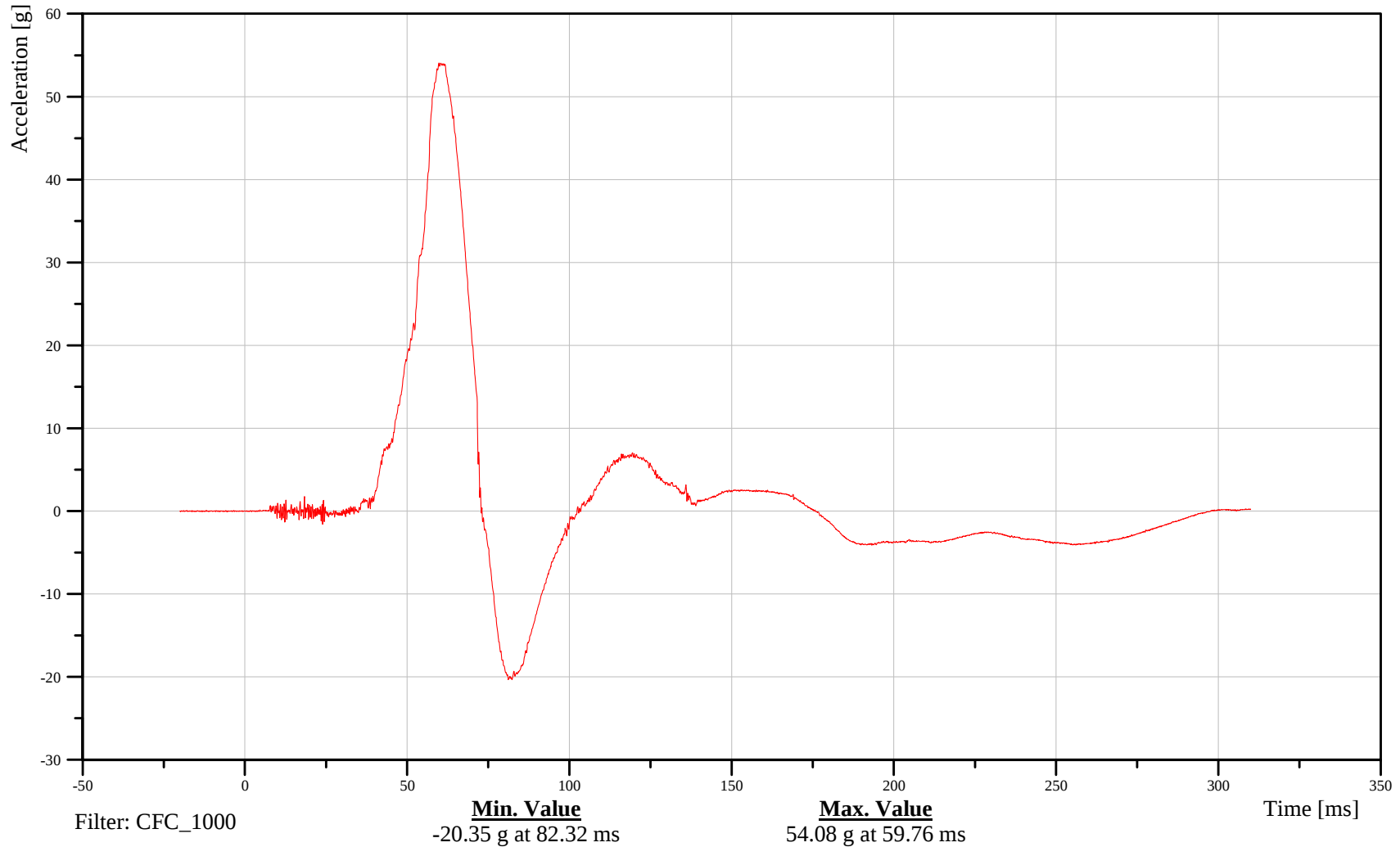
Date: 06/02/2006
Time: 11:34

LEFT REAR PASSENGER HEAD Y-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60507

14HEADCGRDSHACYA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-70

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

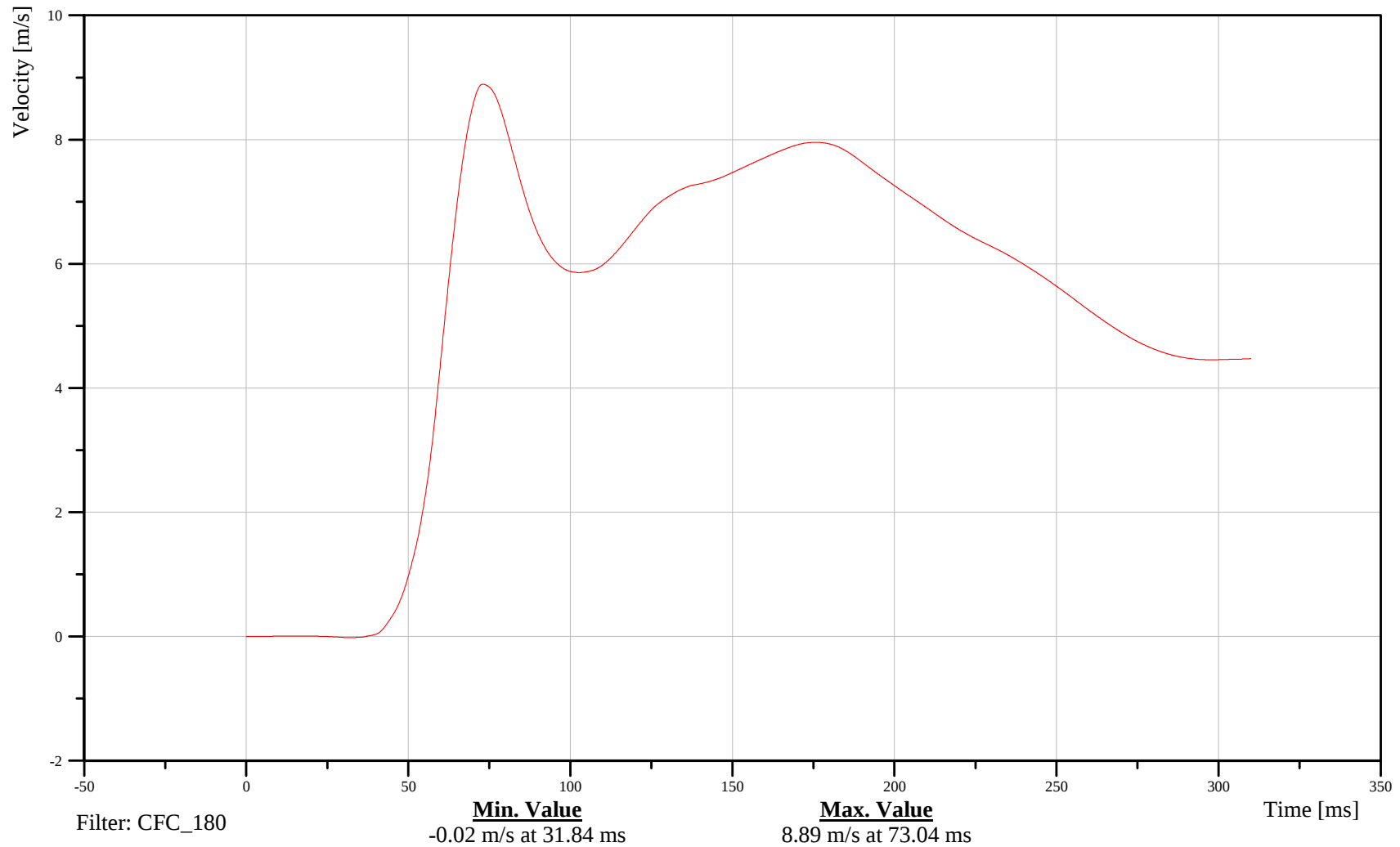
Time: 11:34

LEFT REAR PASSENGER HEAD Y-AXIS REDUNDANT VELOCITY

Customer: NHTSA
Test Number: C60507

14HEADCGRDSHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-71

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

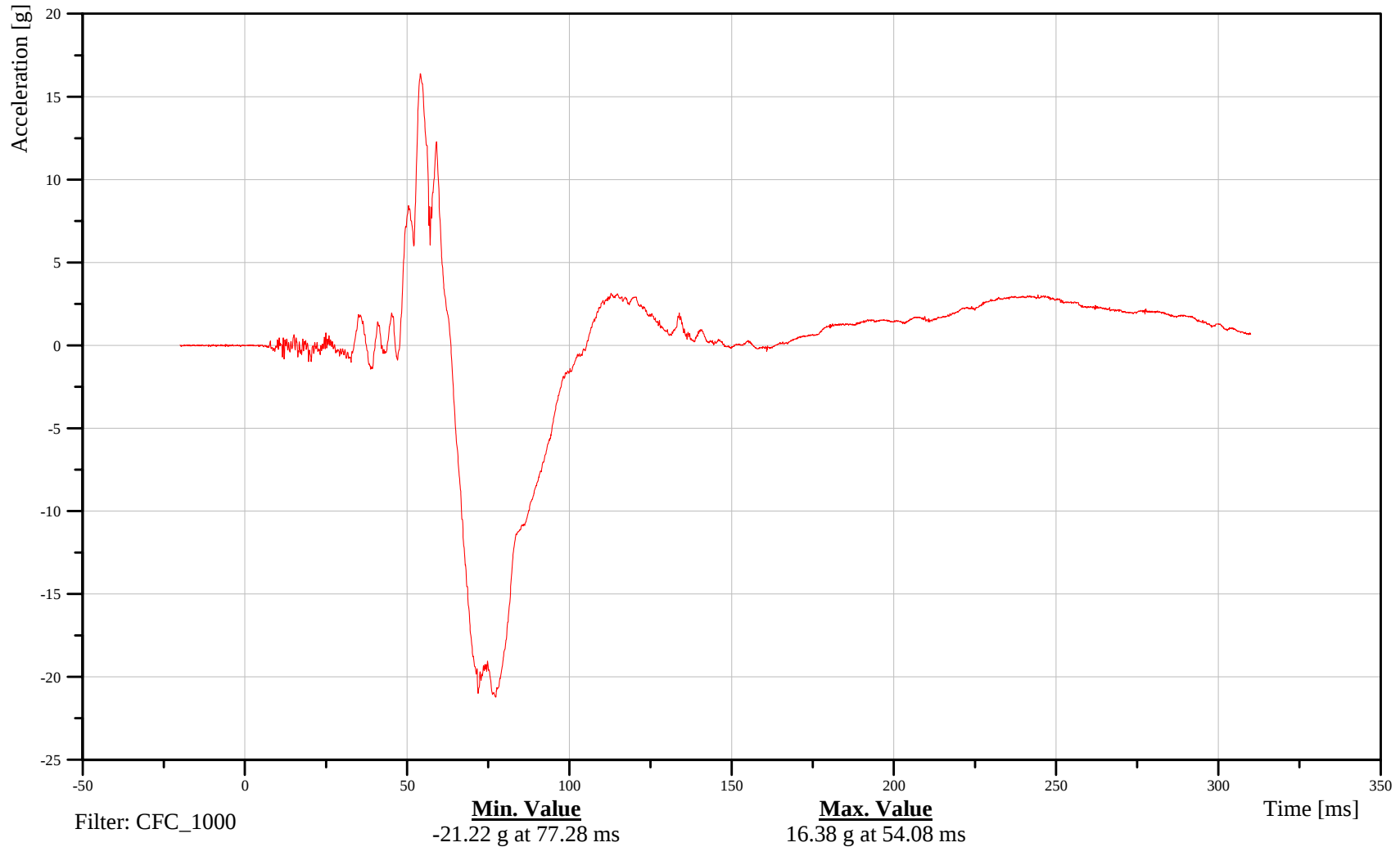
Date: 06/02/2006
Time: 11:34

LEFT REAR PASSENGER HEAD Z-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60507

14HEADCGRDSHACZA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-72

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

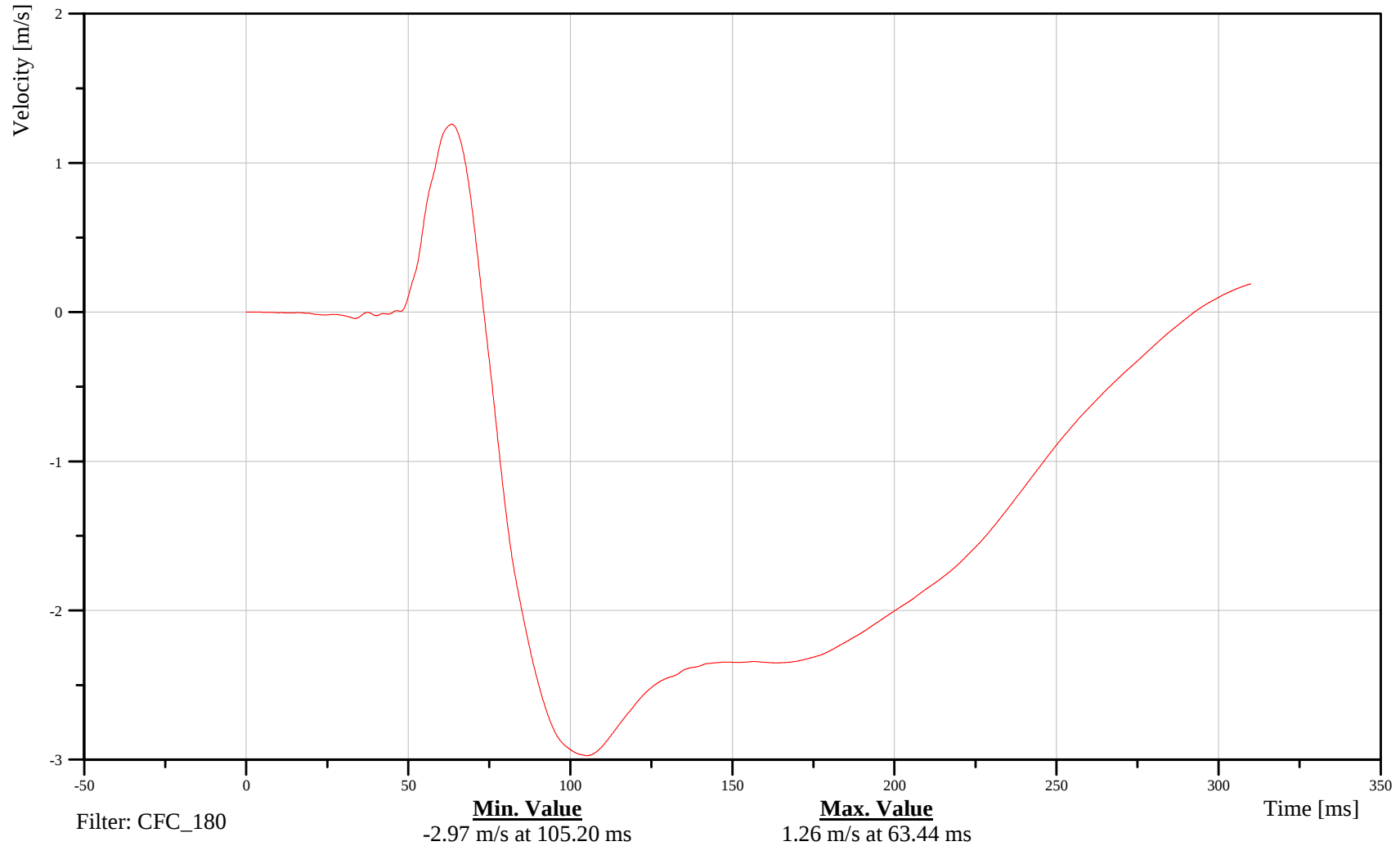
Time: 11:34
Date: 06/02/2006

LEFT REAR PASSENGER HEAD Z-AXIS REDUNDANT VELOCITY

Customer: NHTSA
Test Number: C60507

14HEADCGRDSHVEZC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-73

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

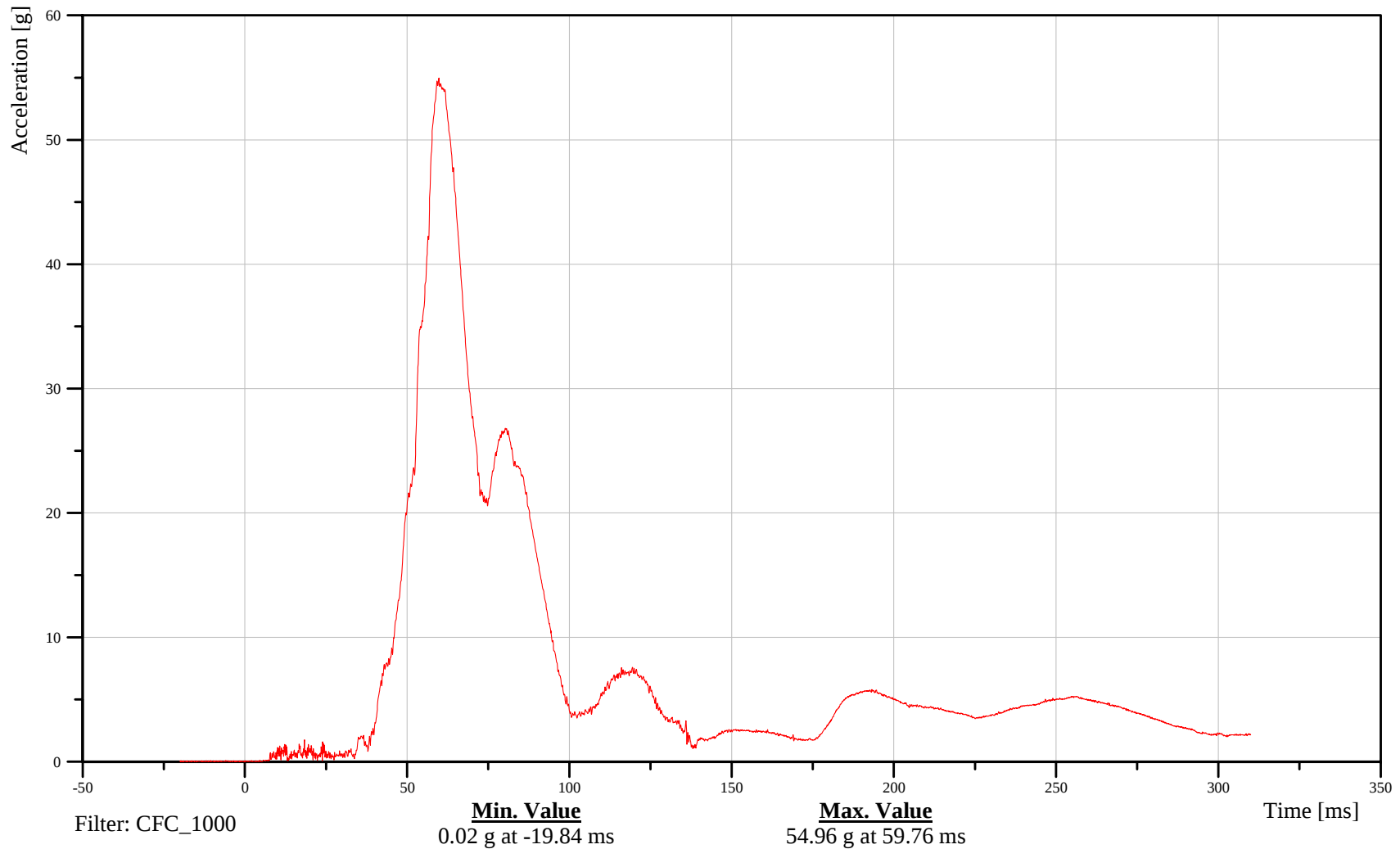
Test: 06/02/2006
Time: 11:34

LEFT REAR PASSENGER HEAD RESULTANT ACCELERATION

Customer: NHTSA
Test Number: C60507

14HEADCGRDSHACRA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-74

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

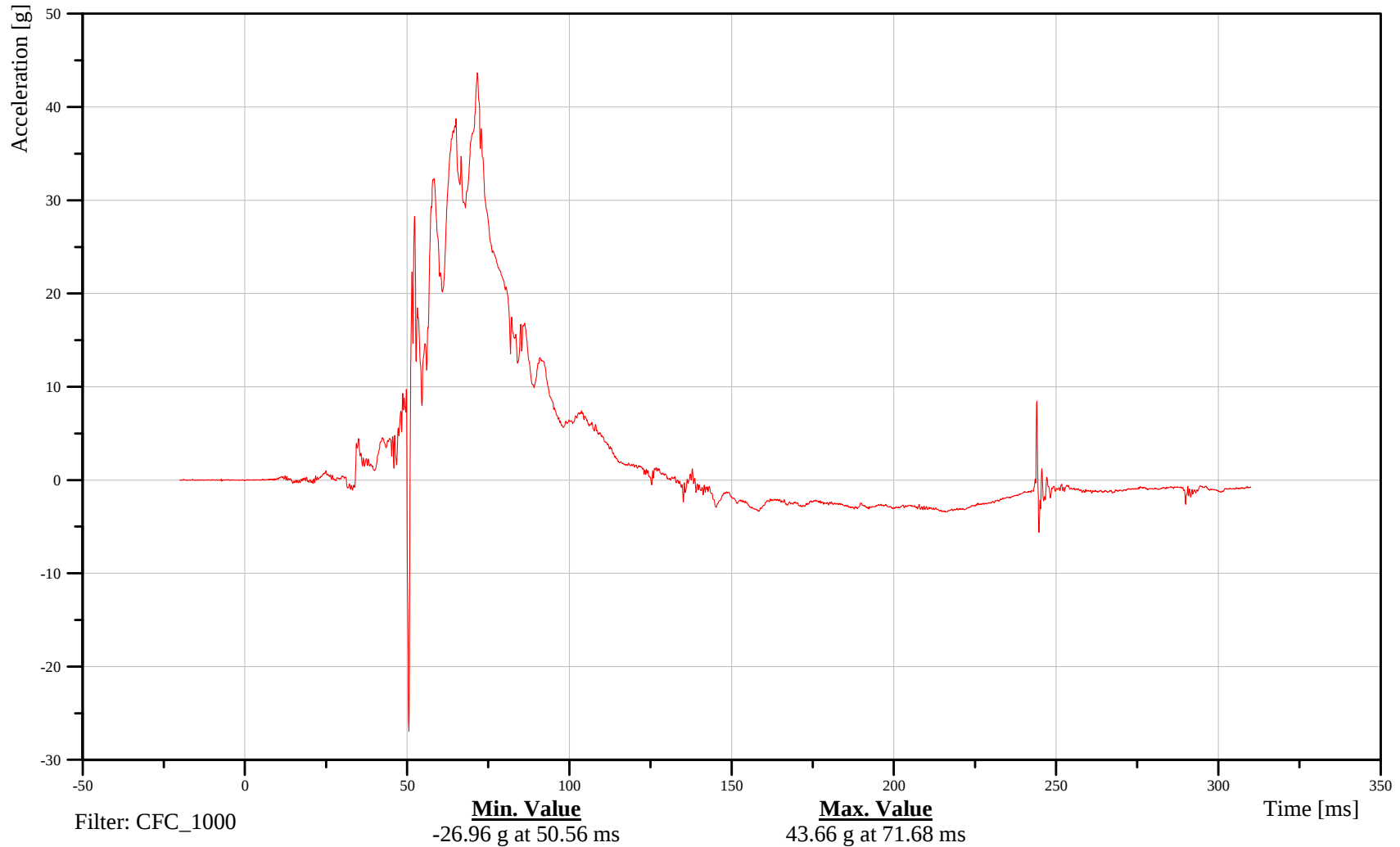
Time: 11:34

LEFT REAR PASSENGER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60507

14RIBSLURESHACYA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-75

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

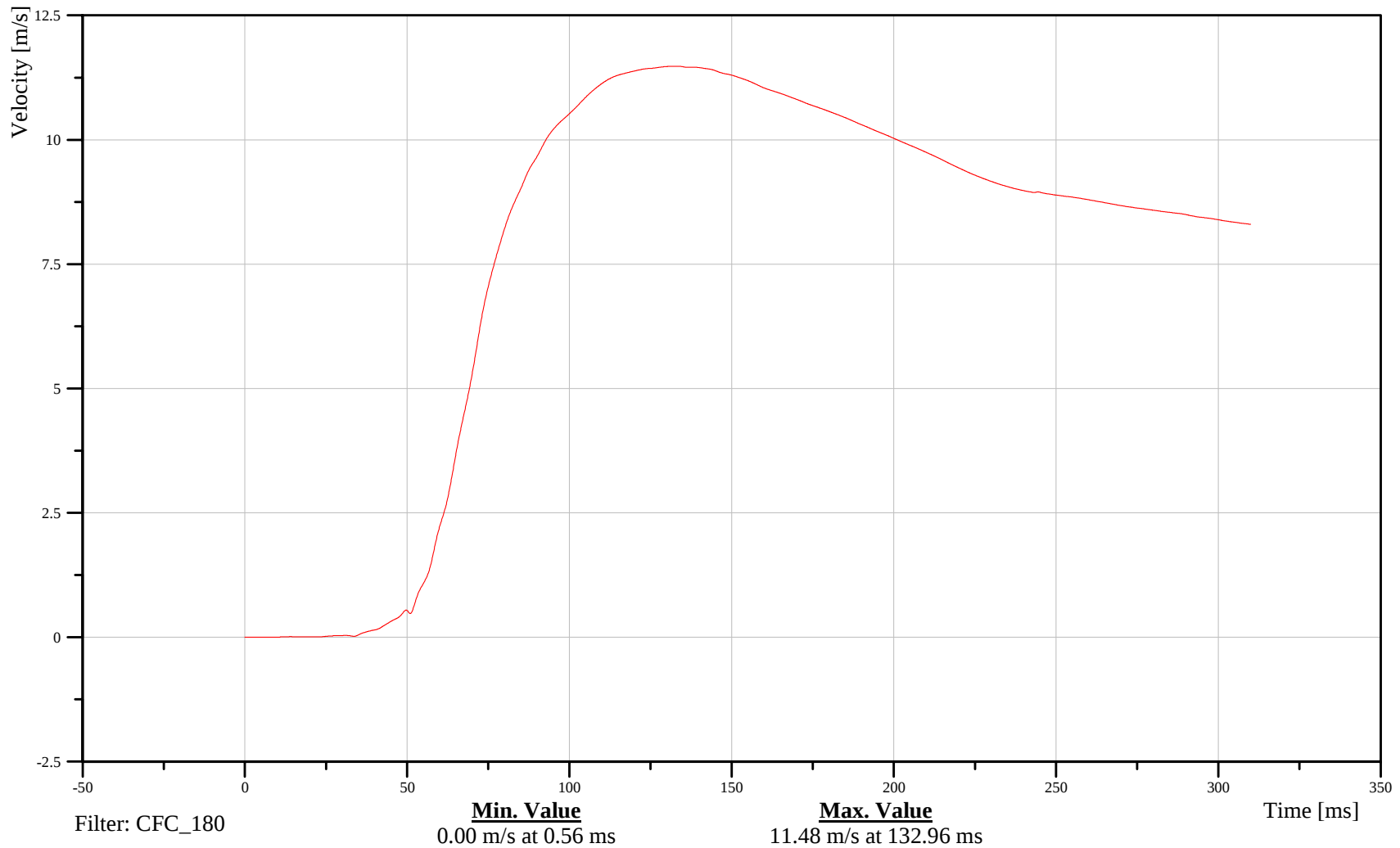
Time: 11:34

LEFT REAR PASSENGER UPPER RIB Y-AXIS REDUNDANT VELOCITY

Customer: NHTSA
Test Number: C60507

14RIBSLURESHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-76

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

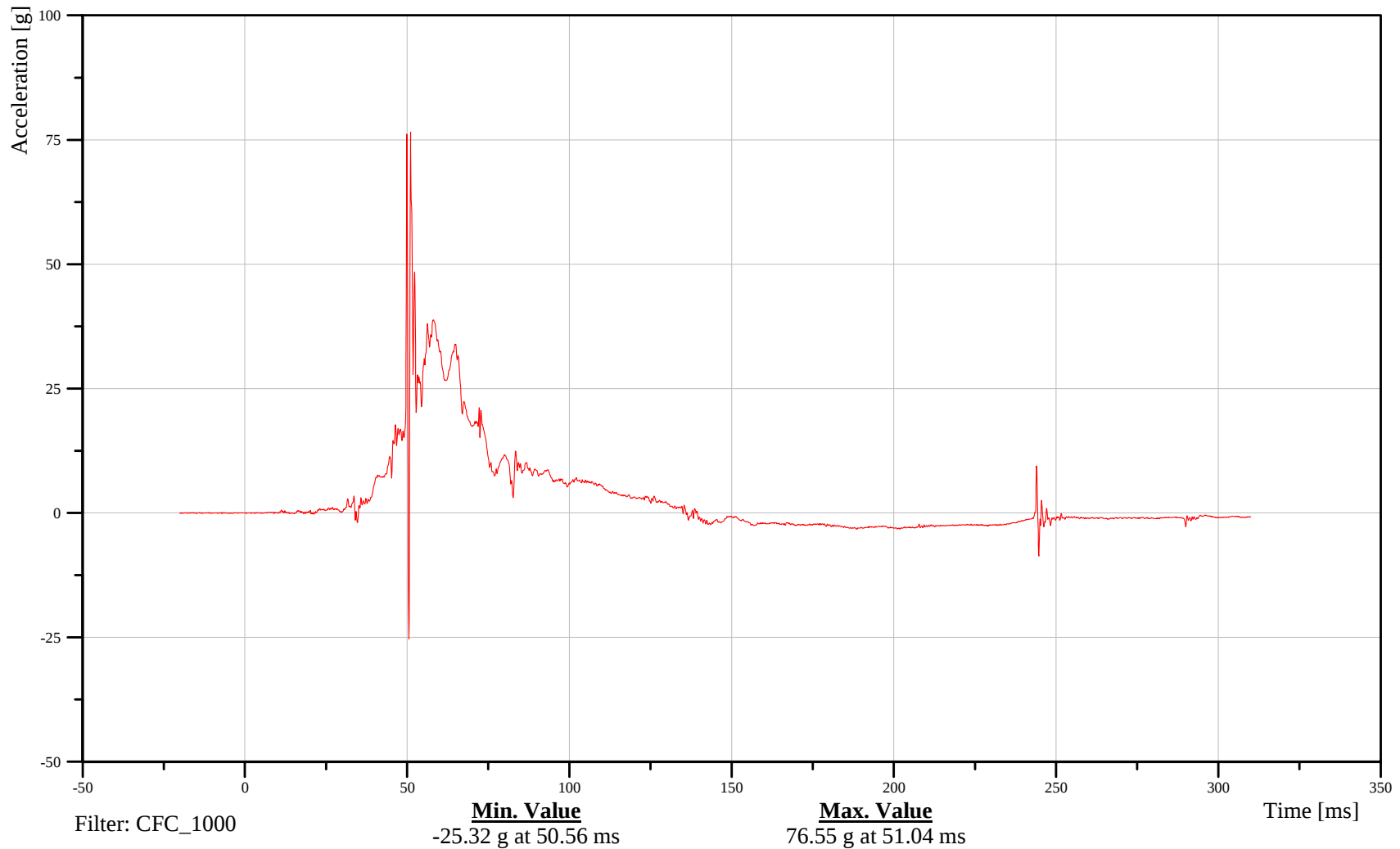
Time: 11:34

LEFT REAR PASSENGER LOWER RIB Y-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60507

14RIBSLLRESHACYA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-77

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

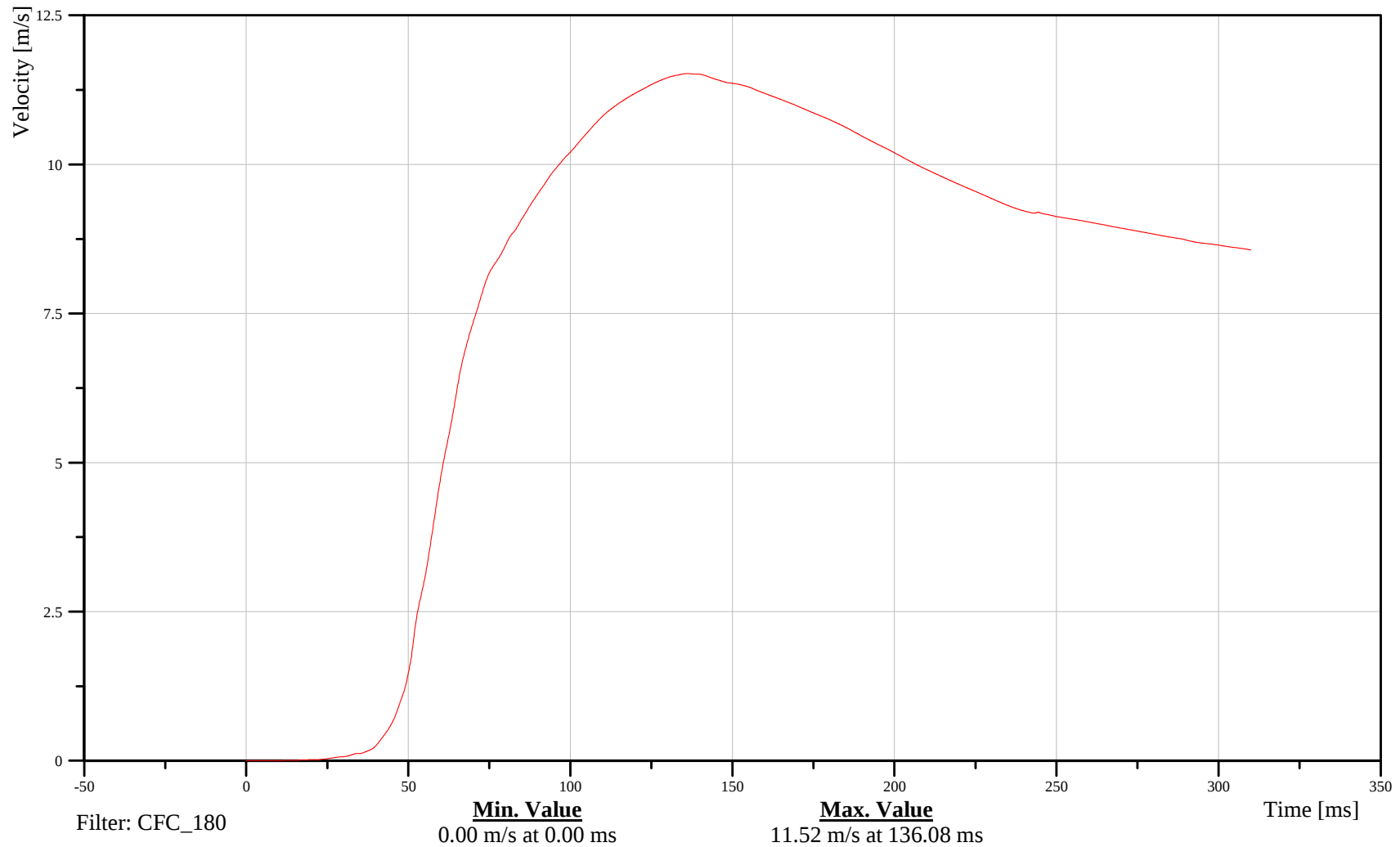
Time: 11:34

LEFT REAR PASSENGER LOWER RIB Y-AXIS REDUNDANT VELOCITY

Customer: NHTSA
Test Number: C60507

14RIBSLLRESHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-78

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

Date: 06/02/2006

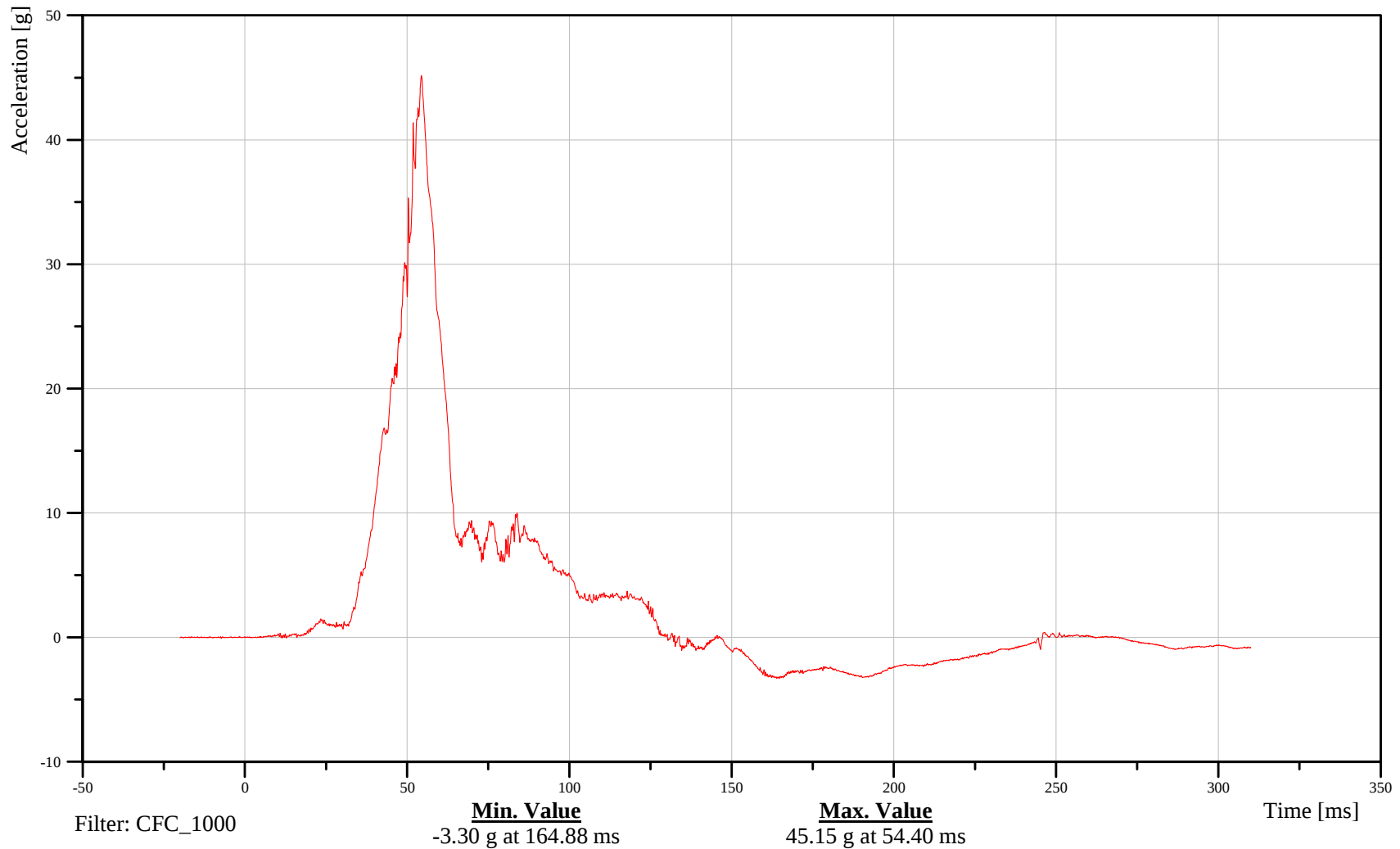
Time: 11:34

LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60507

14SPIN12RDSHACYA

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-79

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

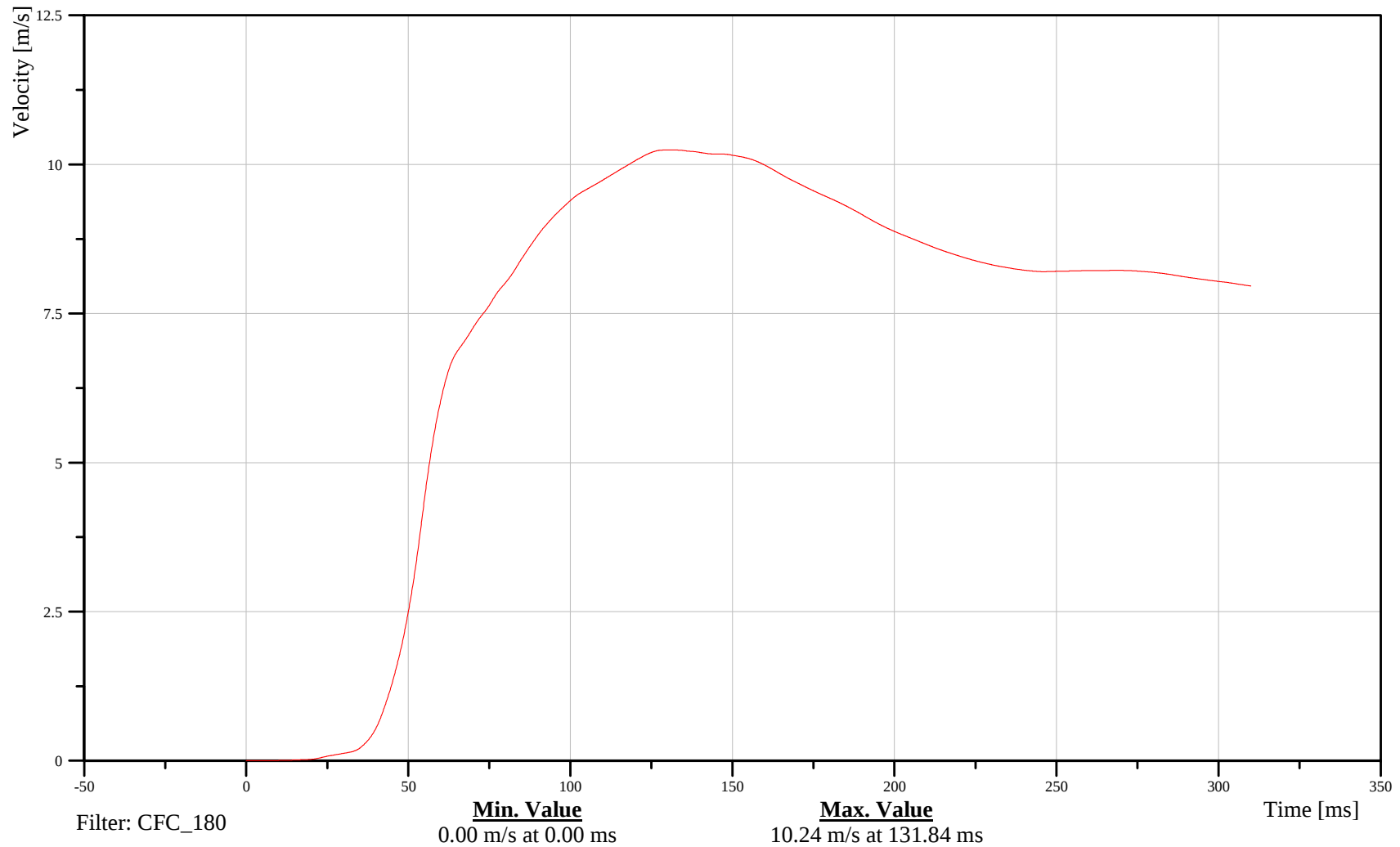
Time: 11:34
Date: 06/02/2006

LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT VELOCITY

Customer: NHTSA
Test Number: C60507

14SPIN12RDSHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-80

060602-1

Test Vehicle Instrumentation Plots



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

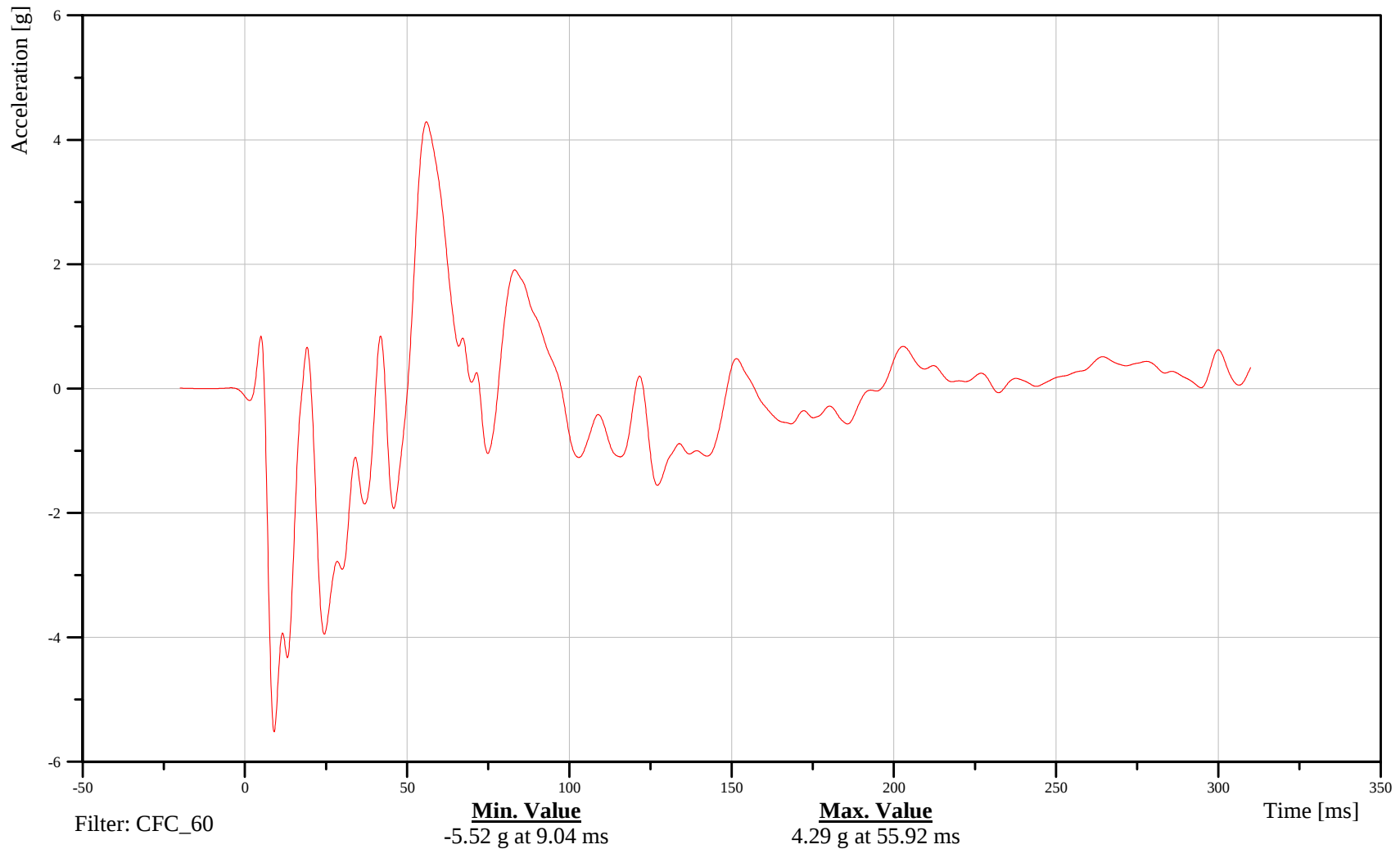
Time: 11:34

RIGHT SIDE SILL AT FRONT SEAT X-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

16SILBFR0000ACXD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-82

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Case: 060602/2006

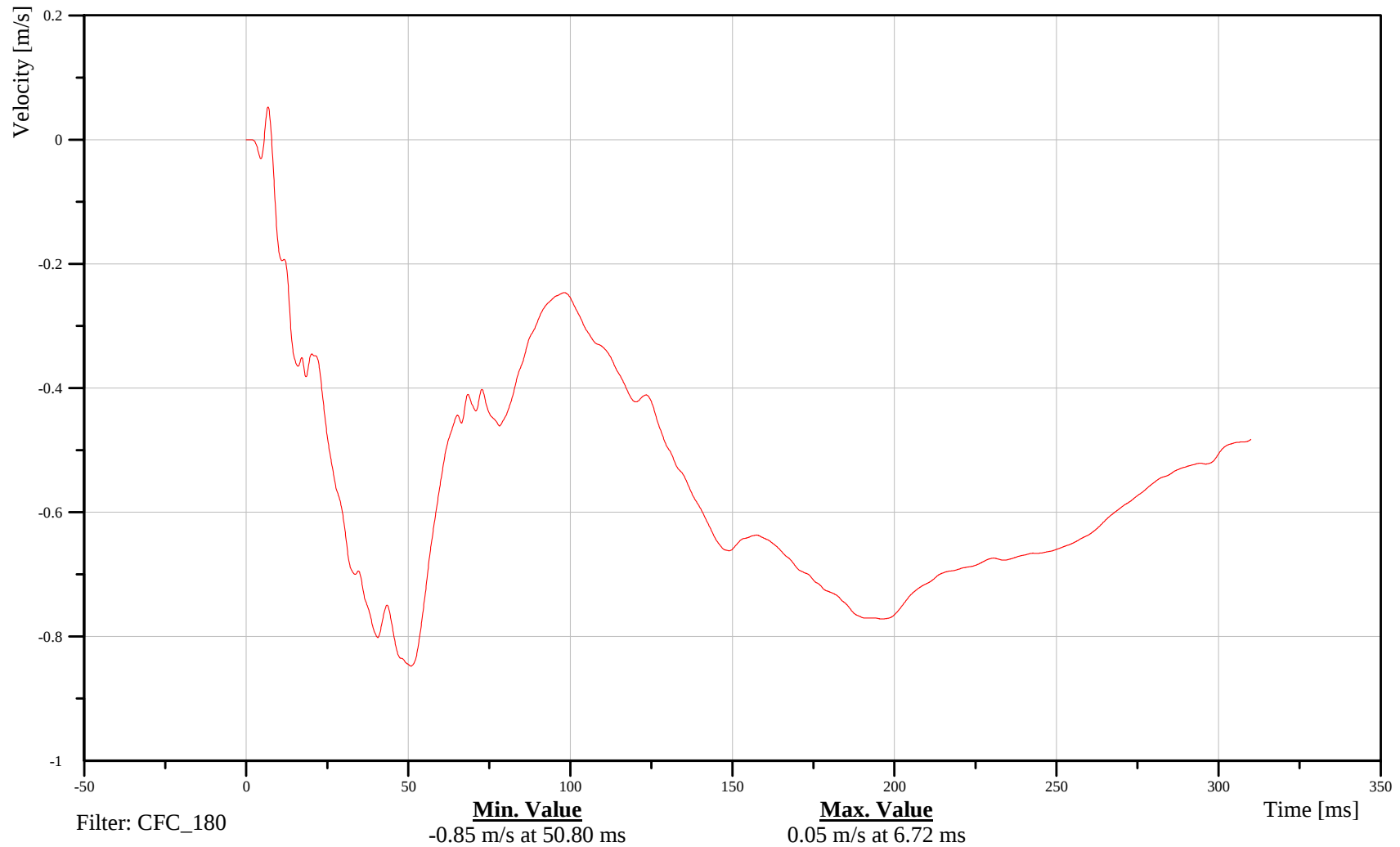
Time: 11:34

RIGHT SIDE SILL AT FRONT SEAT X-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

16SILBFR0000VEXC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-83

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

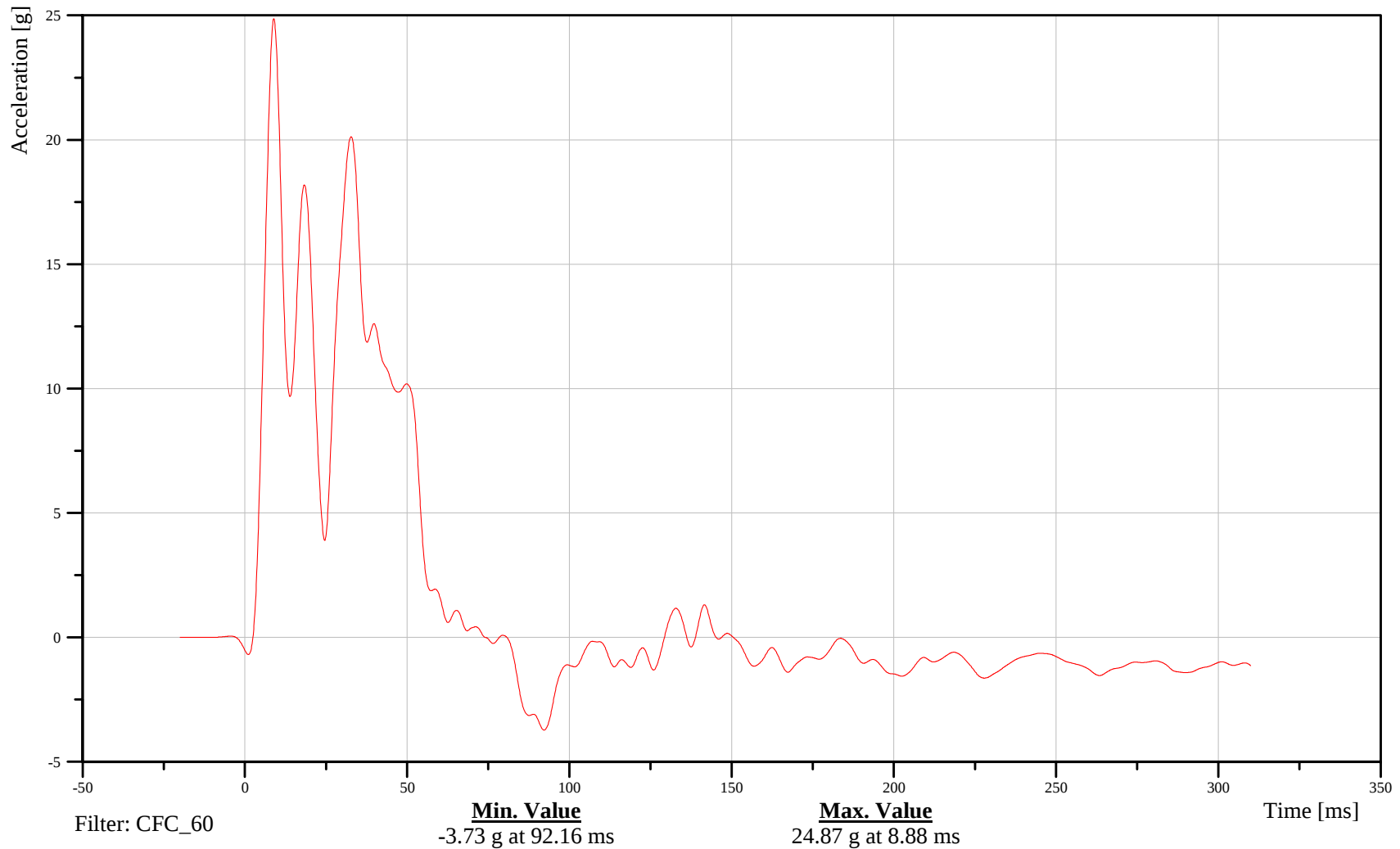
Time: 11:34

RIGHT SIDE SILL AT FRONT SEAT Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

16SILBFR0000ACYD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-84

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

06/02/2006

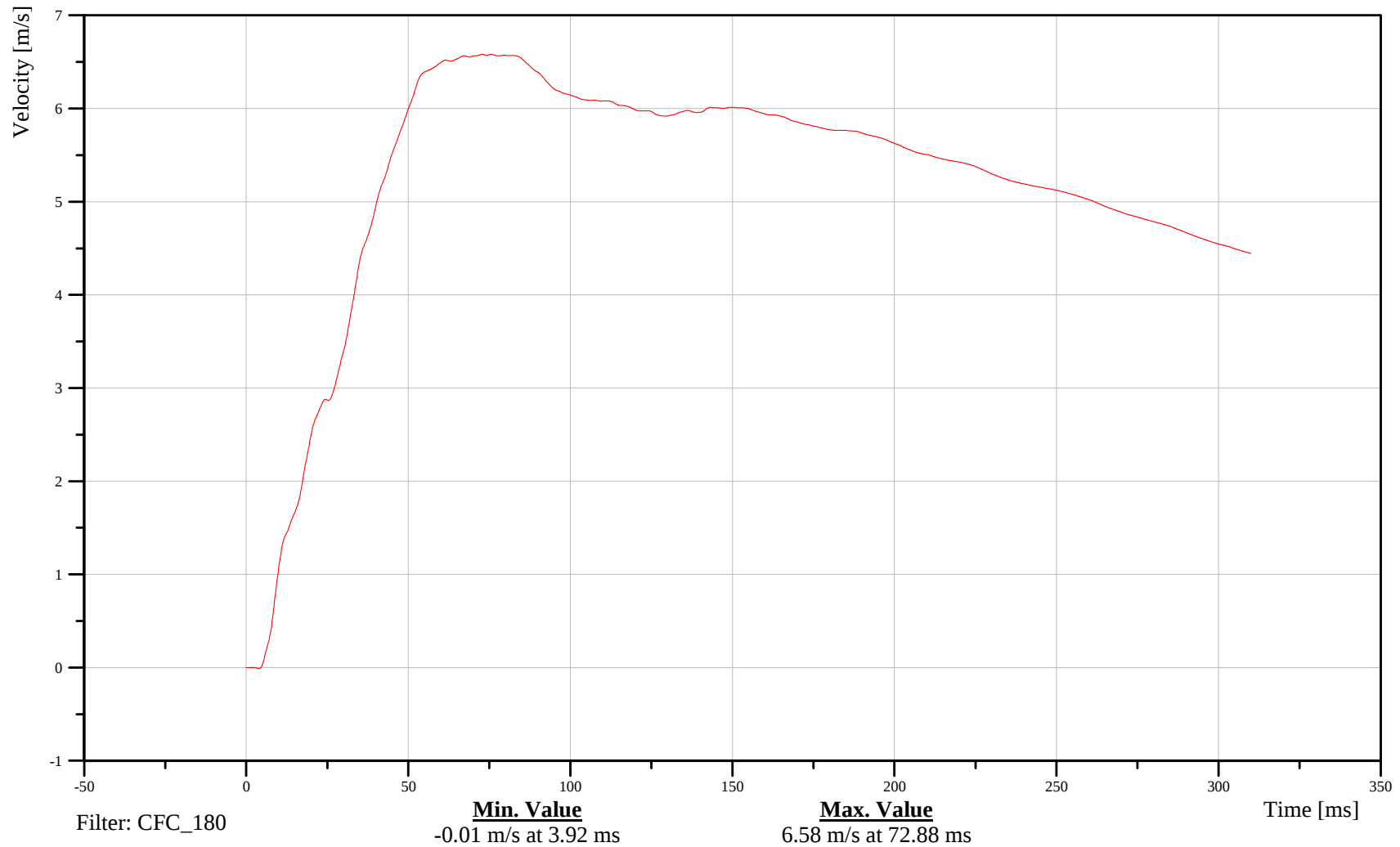
Time: 11:34

RIGHT SIDE SILL AT FRONT SEAT Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

16SILBFR0000VEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-85

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

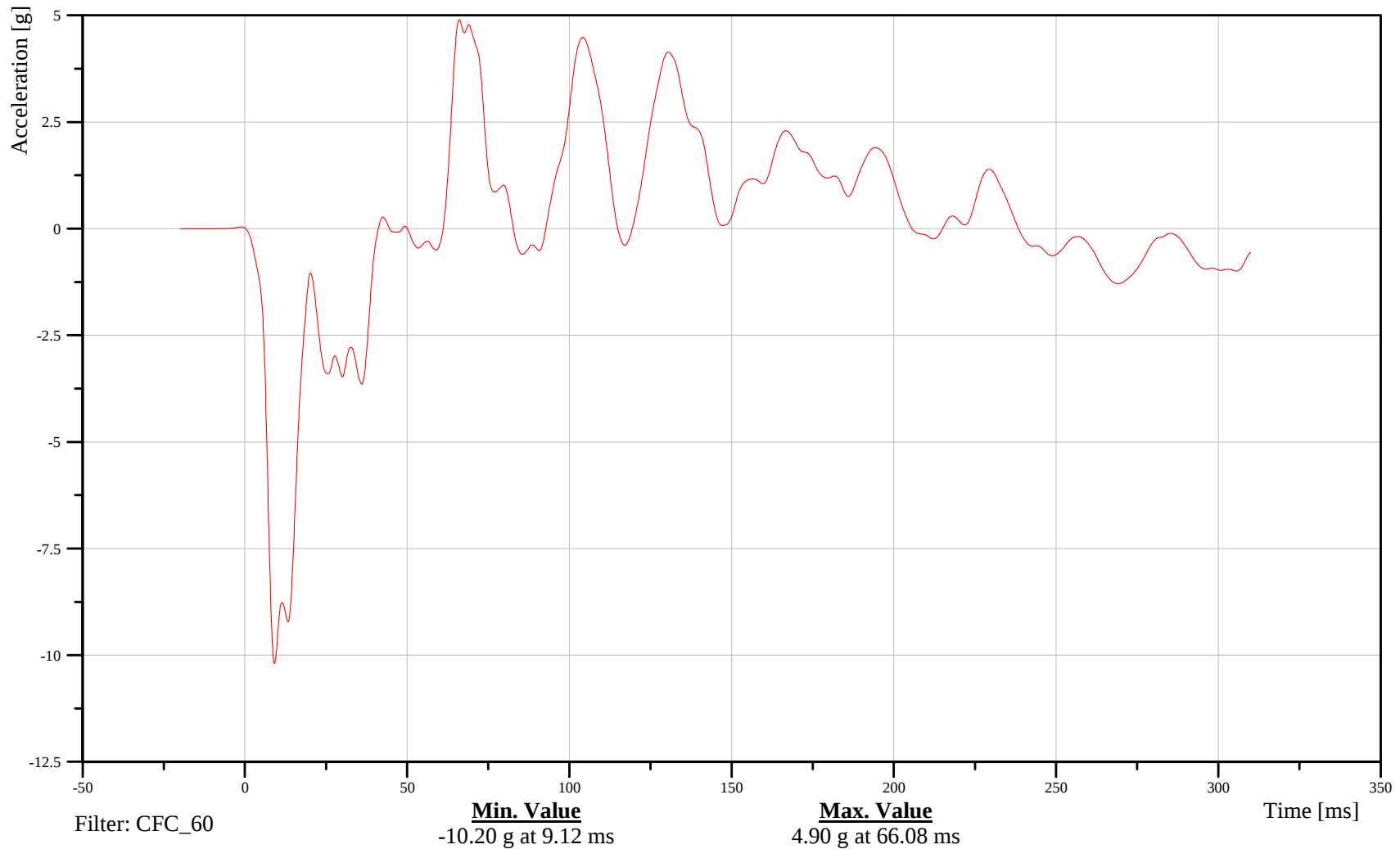
Time: 11:34

RIGHT SIDE SILL AT FRONT SEAT Z-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

16SILBFR0000ACZD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-86

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

Test: 06/02/2006

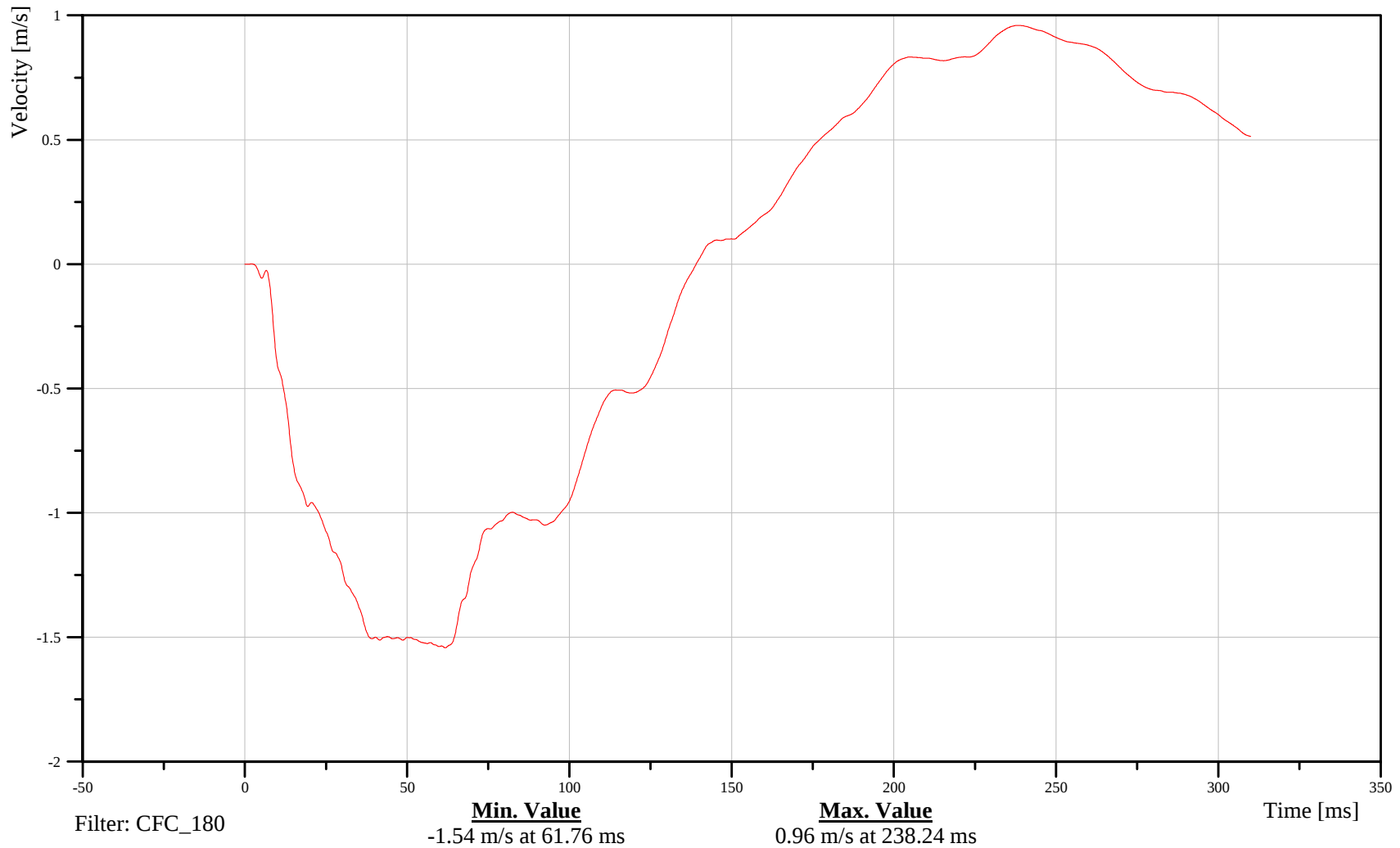
Time: 11:34

RIGHT SIDE SILL AT FRONT SEAT Z-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

16SILBFR0000VEZC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-87

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

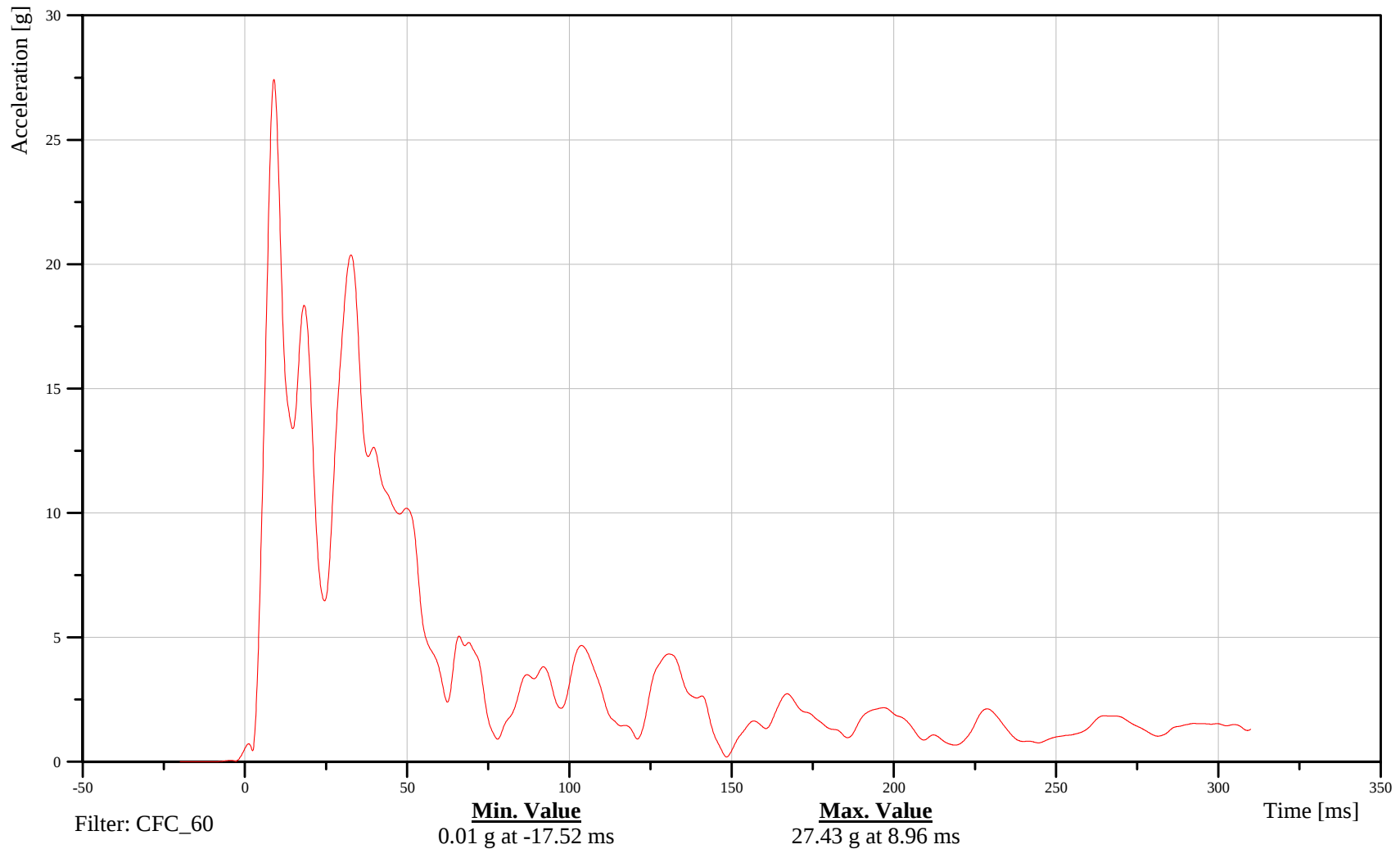
Case: 06/02/2006
Time: 11:34

RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION

Customer: NHTSA
Test Number: C60507

16SILBFR0000ACRD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-88

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Case: 06/02/2006

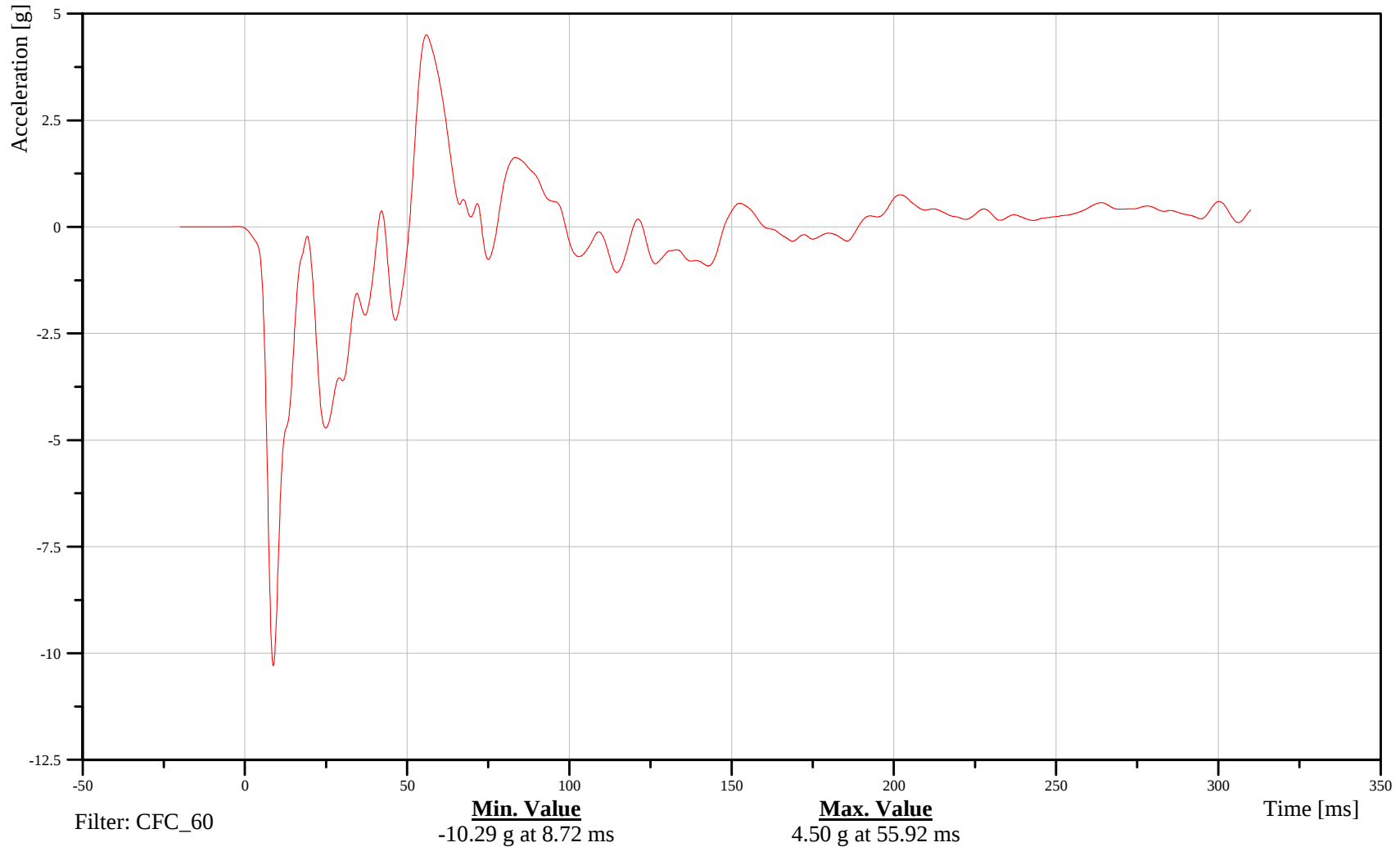
Time: 11:34

RIGHT SIDE SILL AT REAR SEAT X-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

16SILBRE0000ACXD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-89

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

Date: 06/02/2006

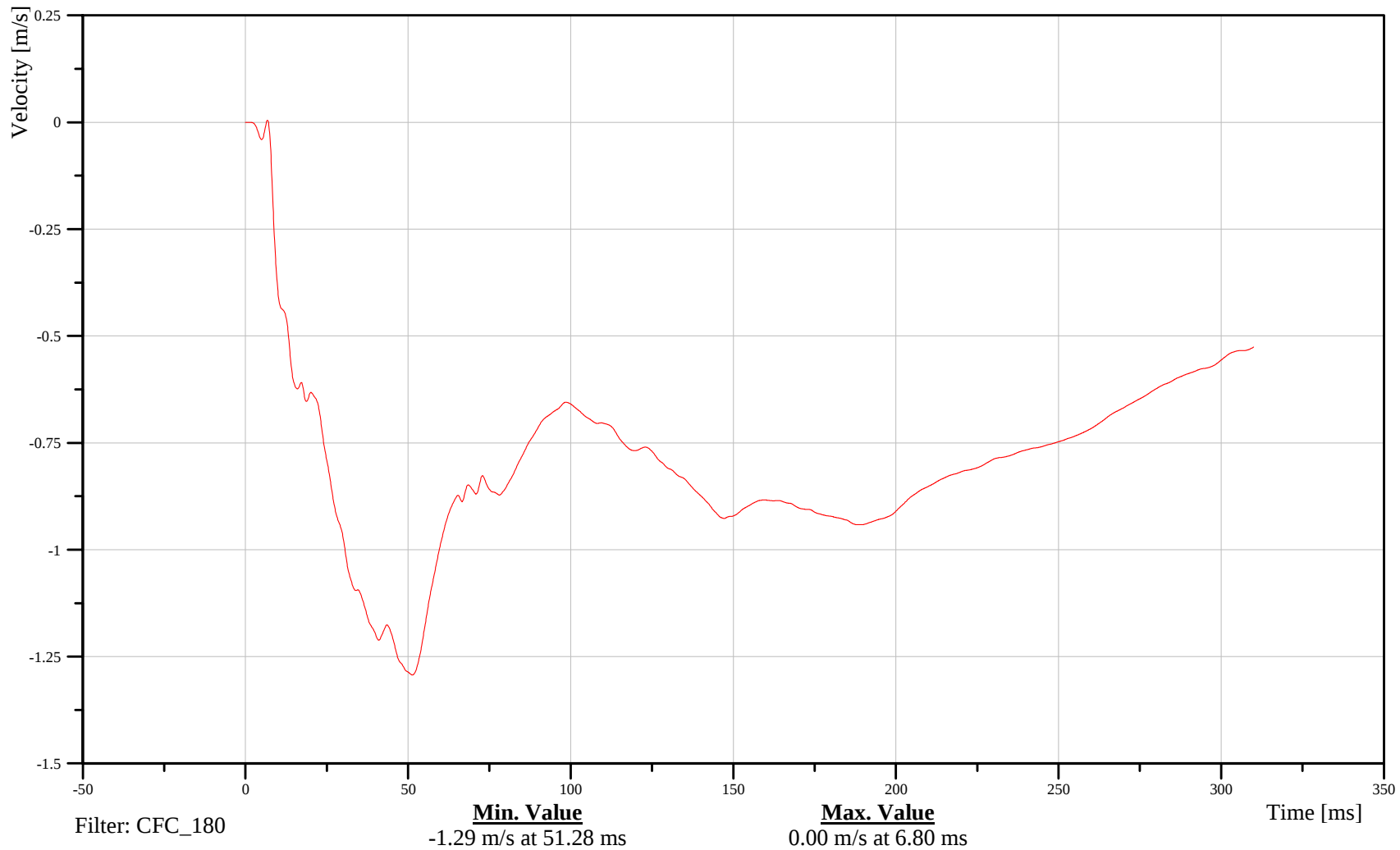
Time: 11:34

RIGHT SIDE SILL AT REAR SEAT X-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

16SILBRE0000VEXC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-90

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

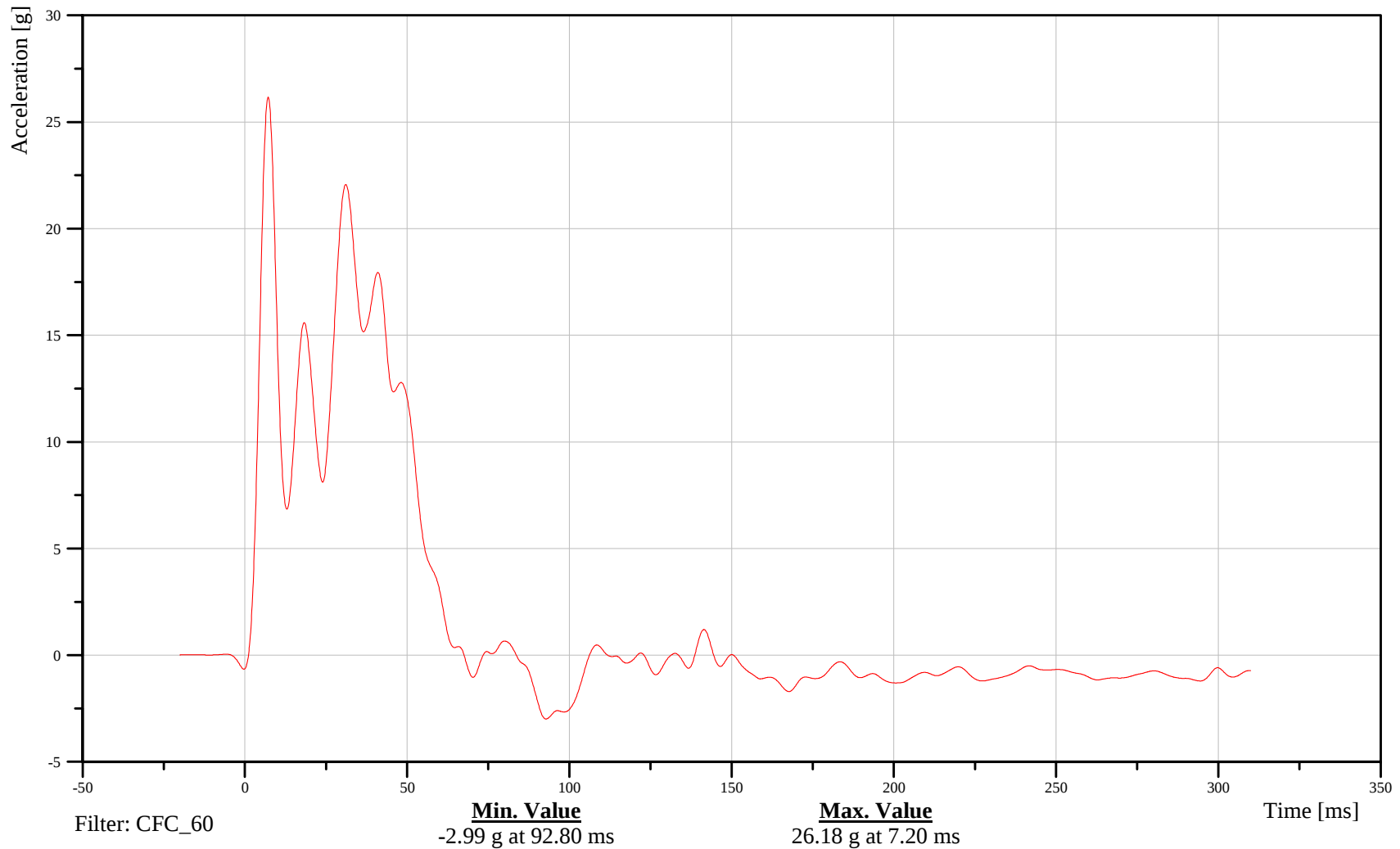
Case: 06/02/2006
Time: 11:34

RIGHT SIDE SILL AT REAR SEAT Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

16SILBRE0000ACYD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-91

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

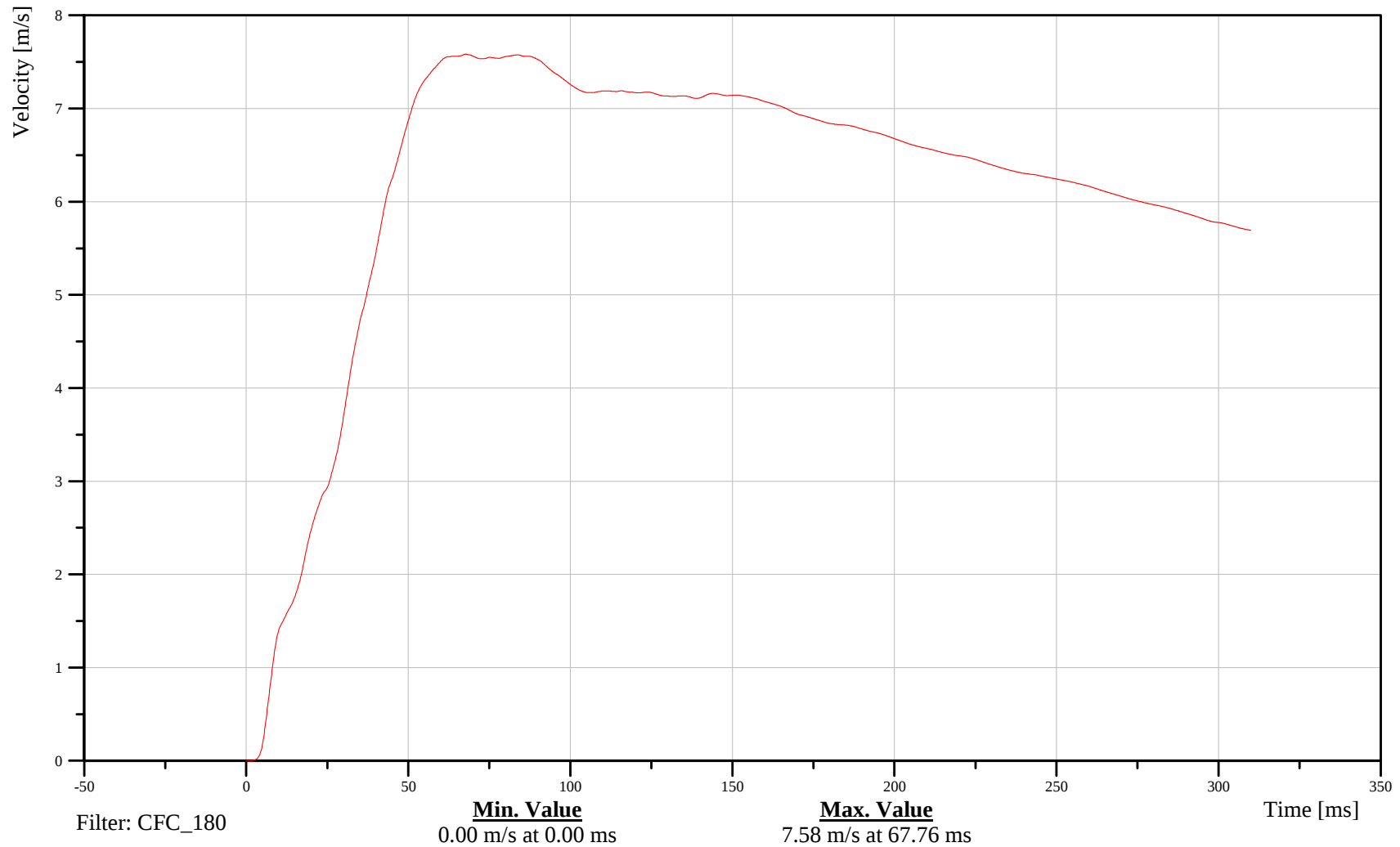
Time: 11:34
Date: 06/02/2006

RIGHT SIDE SILL AT REAR SEAT Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

16SILBRE0000VEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-92

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

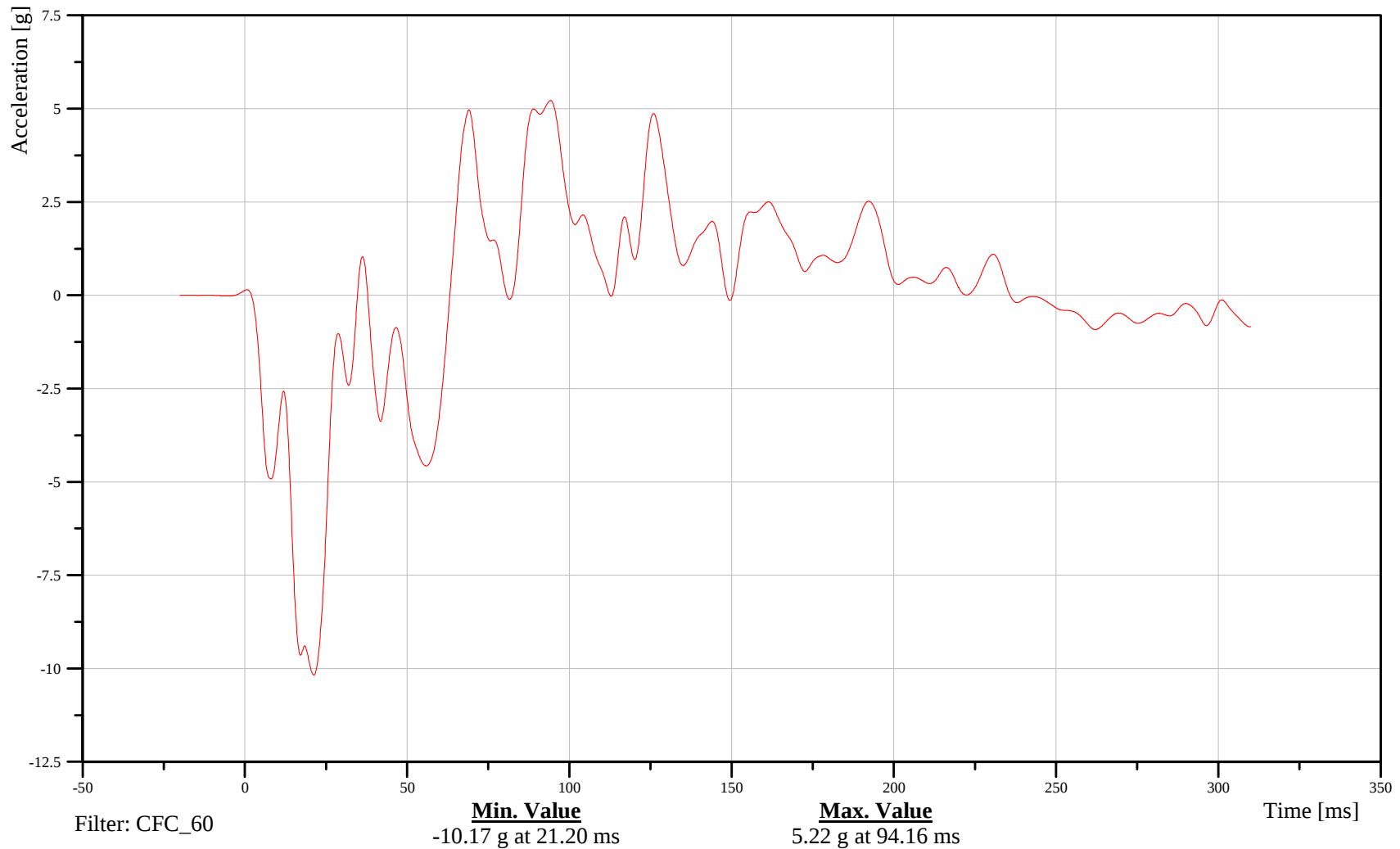
06/02/2006
Time: 11:34

RIGHT SIDE SILL AT REAR SEAT Z-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

16SILBRE0000ACZD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-93

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

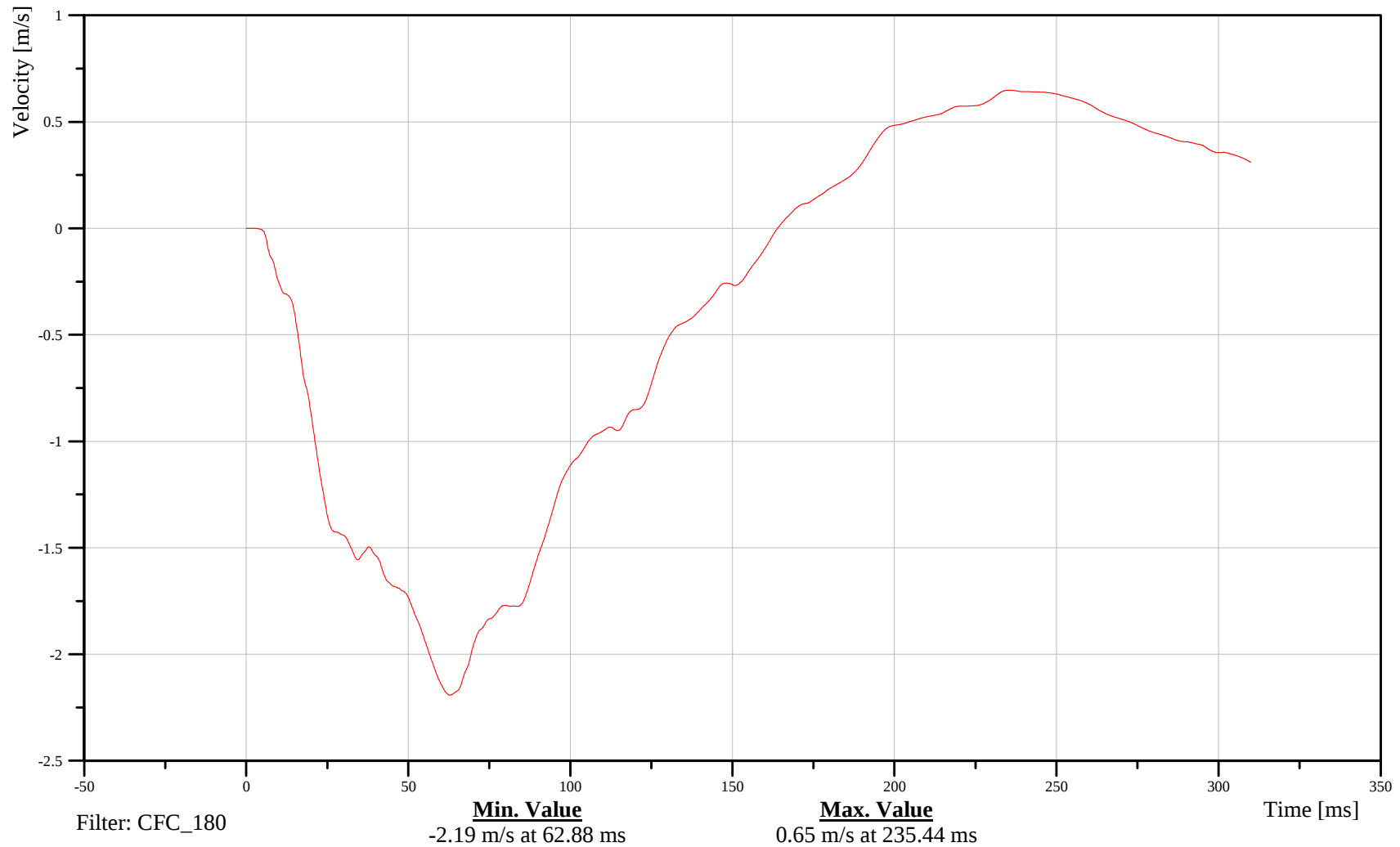
Case: 06/02/2006
Time: 11:34

RIGHT SIDE SILL AT REAR SEAT Z-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

16SILBRE0000VEZC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-94

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Case: 06/02/2006

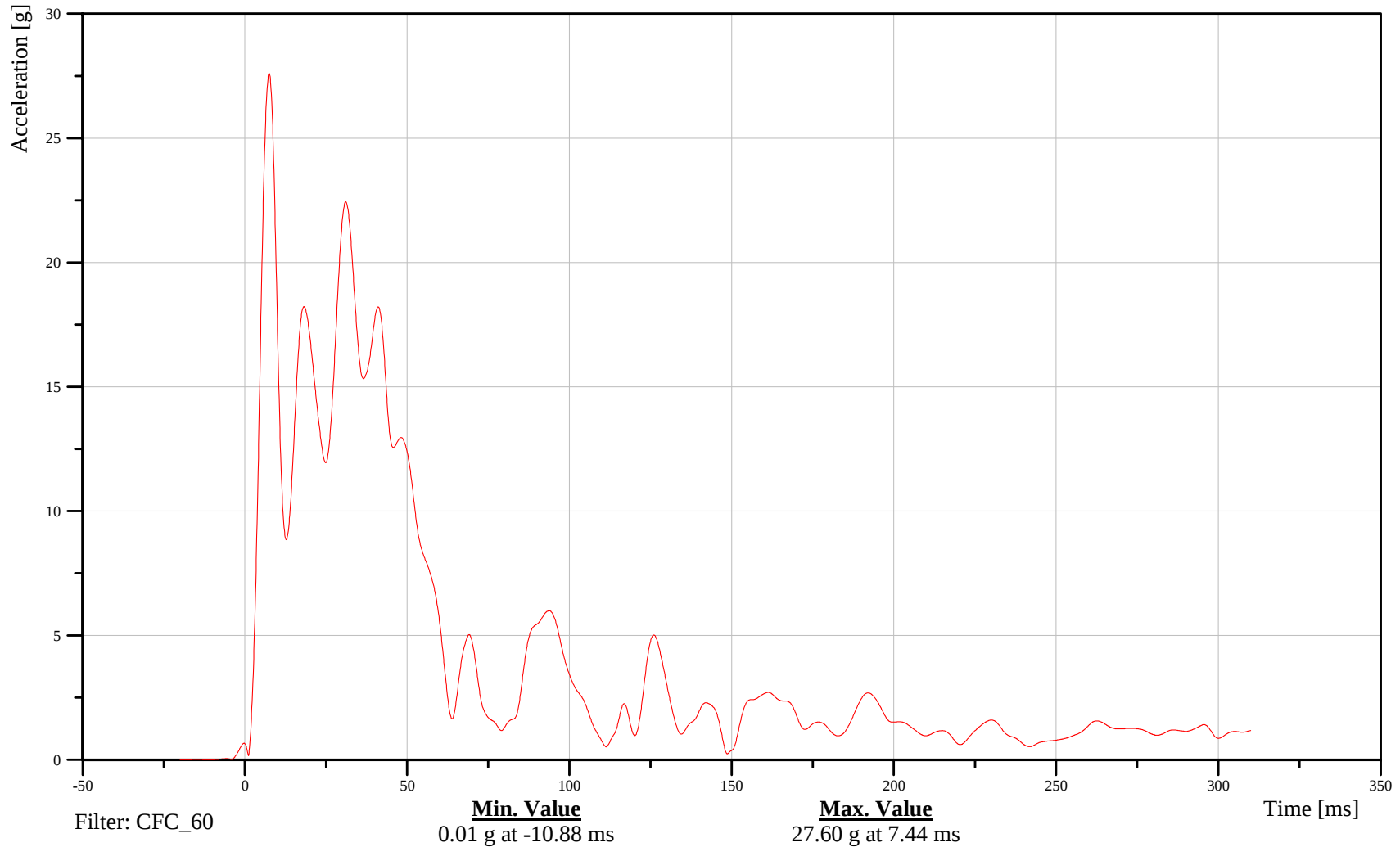
Time: 11:34

RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION

Customer: NHTSA
Test Number: C60507

16SILBRE0000ACRD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-95

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

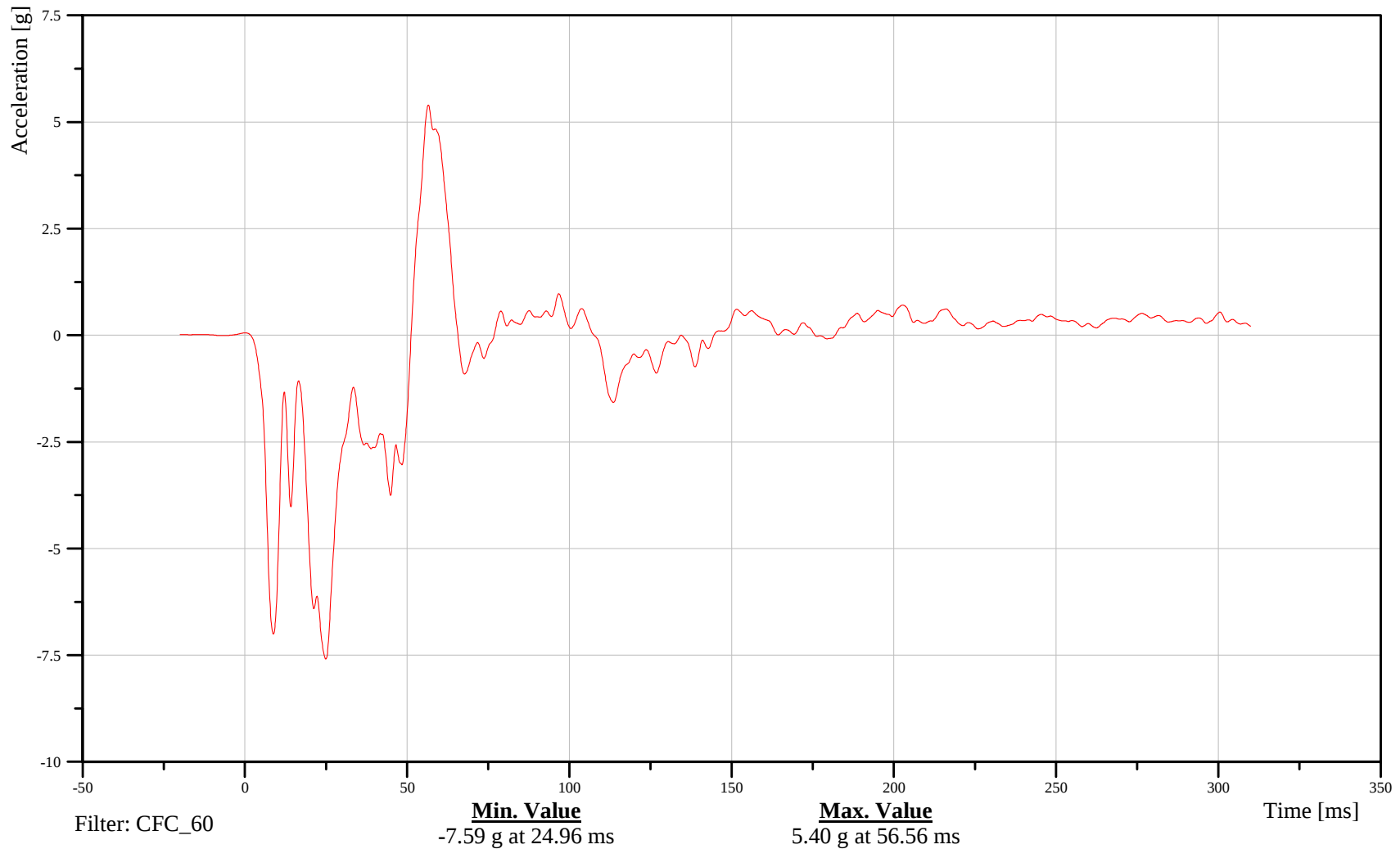
Case: 06/02/2006
Time: 11:34

REAR FLOORPAN ABOVE AXLE X-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

18FORA000000ACXD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-96

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

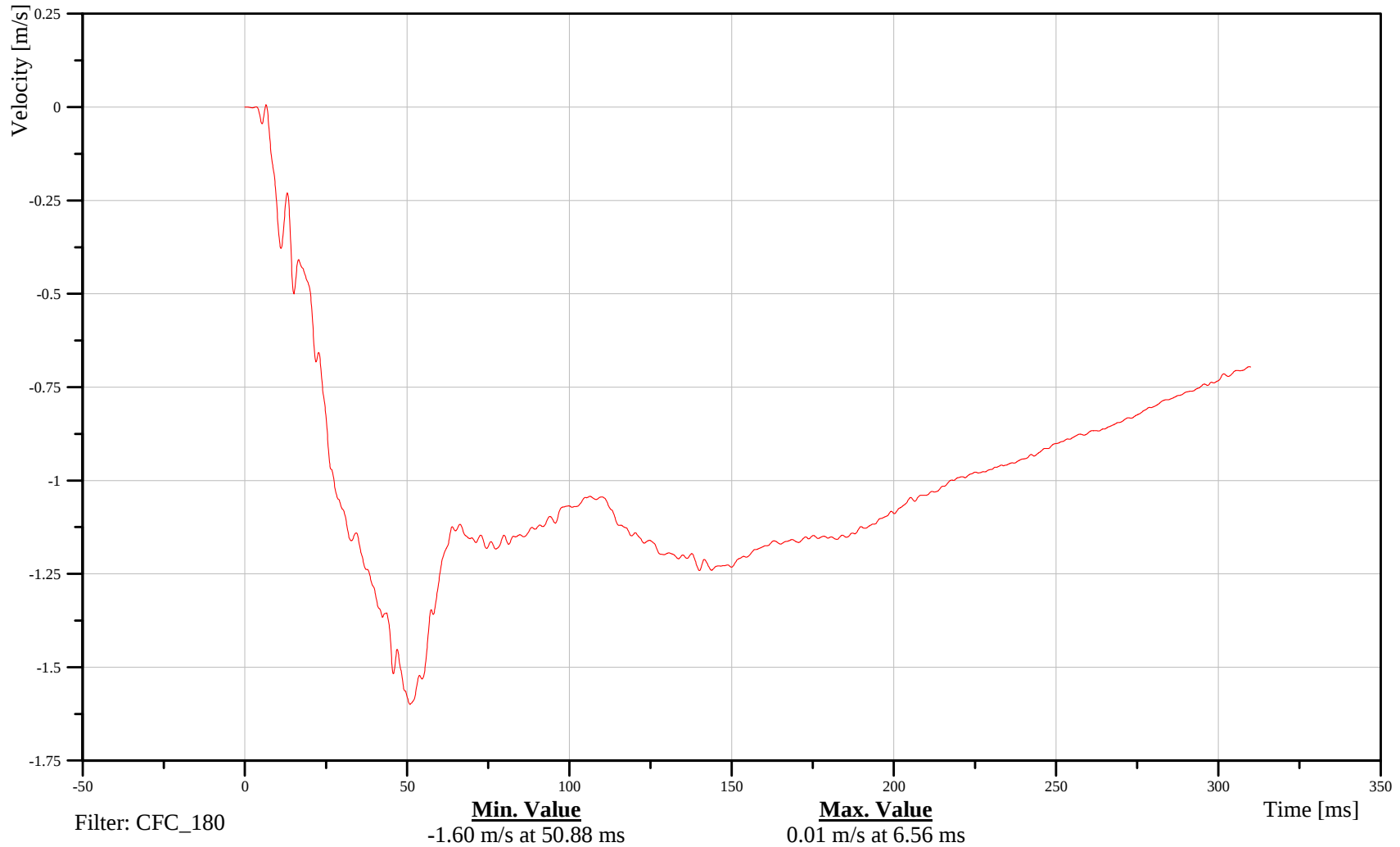
Case: 06/02/2006
Time: 11:34

REAR FLOORPAN ABOVE AXLE X-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

18FORA000000VEXC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-97

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

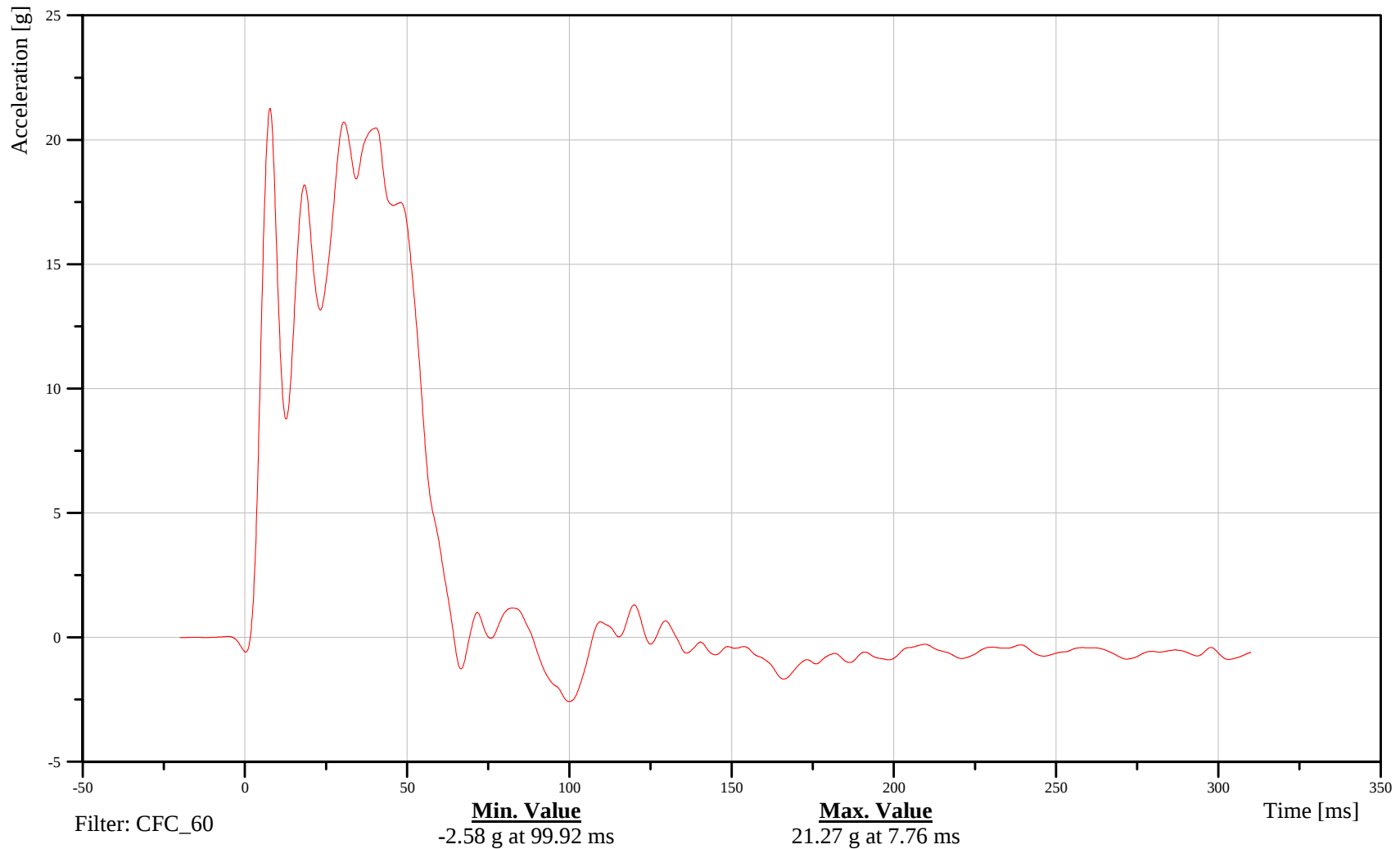
Case: 060602/2006
Time: 11:34

REAR FLOORPAN ABOVE AXLE Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

18FORA000000ACYD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-98

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

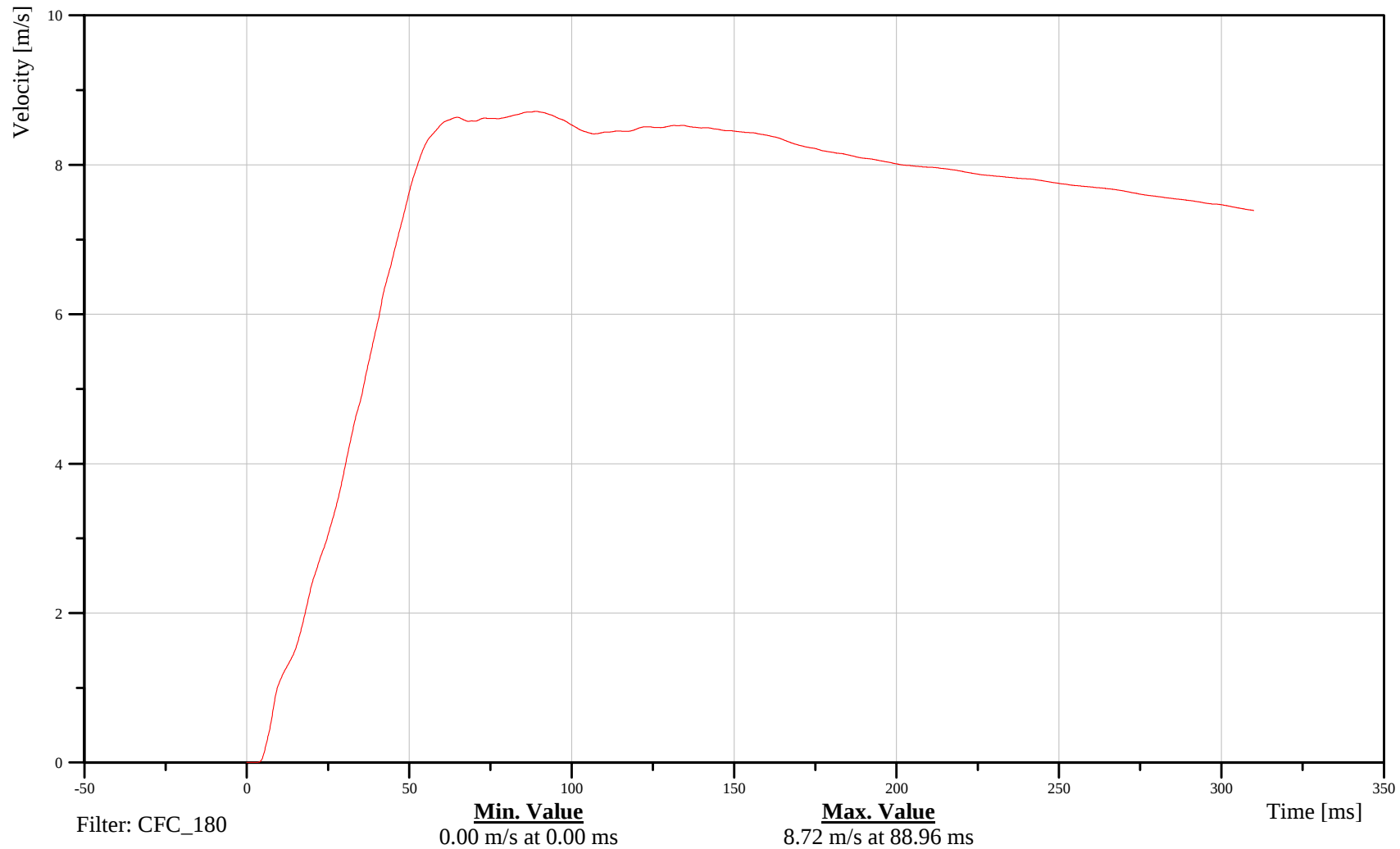
Time: 11:34

REAR FLOORPAN ABOVE AXLE Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

18FORA000000VEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-99

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

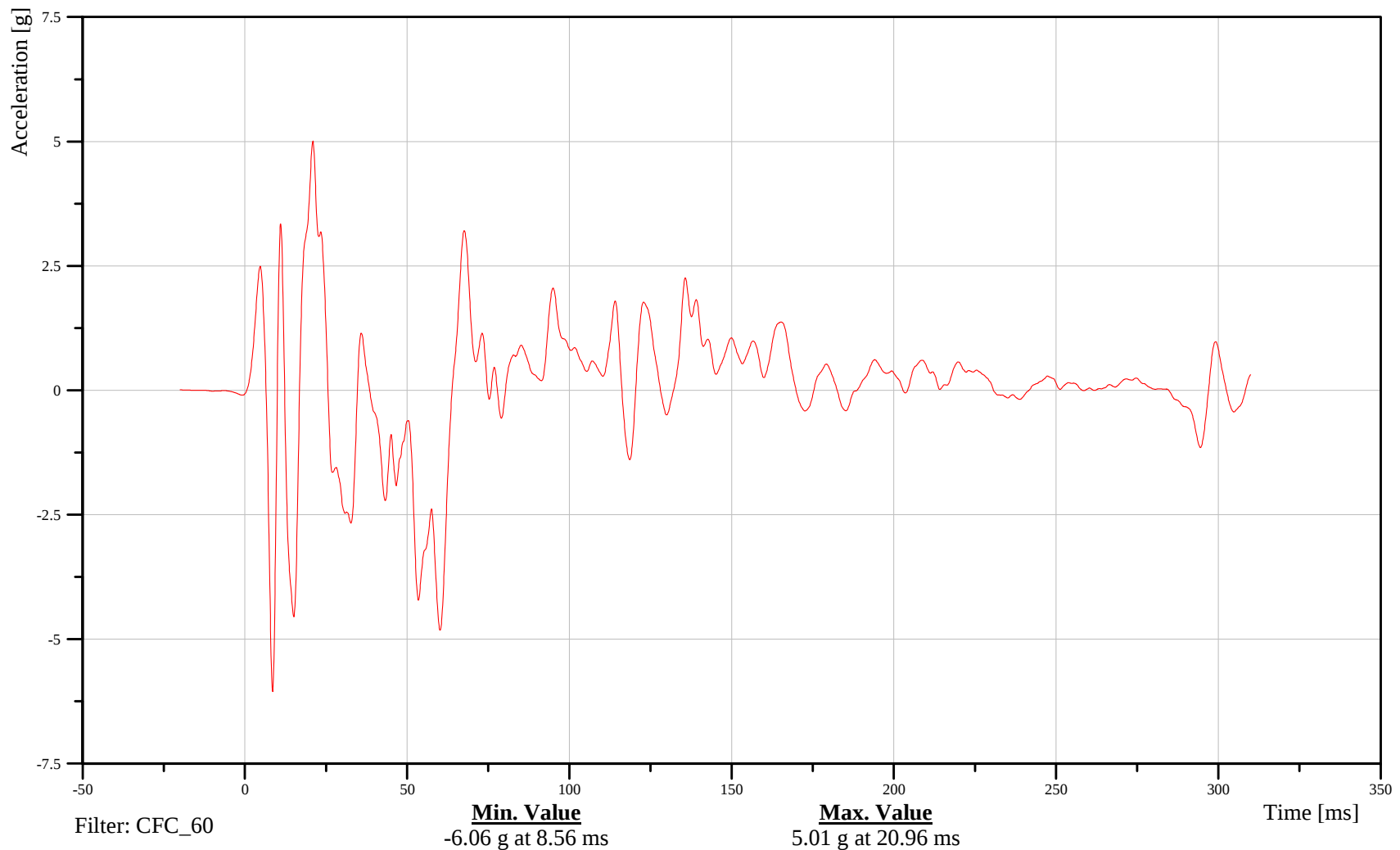
Time: 11:34

REAR FLOORPAN ABOVE AXLE Z-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

18FORA000000ACZD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-100

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

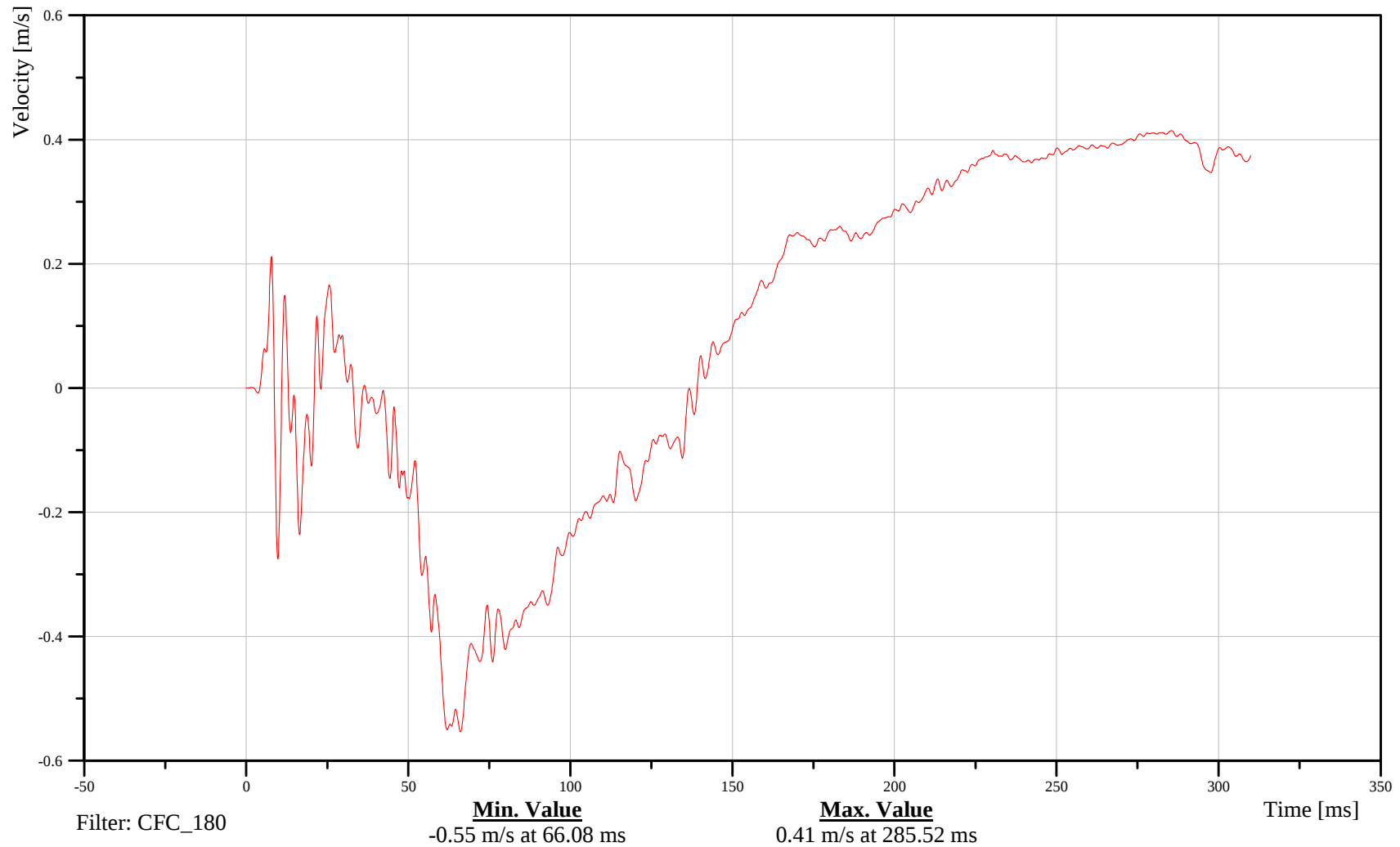
Case: 06/02/2006
Time: 11:34

REAR FLOORPAN ABOVE AXLE Z-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

18FORA000000VEZC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-101

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

Case: 06/02/2006

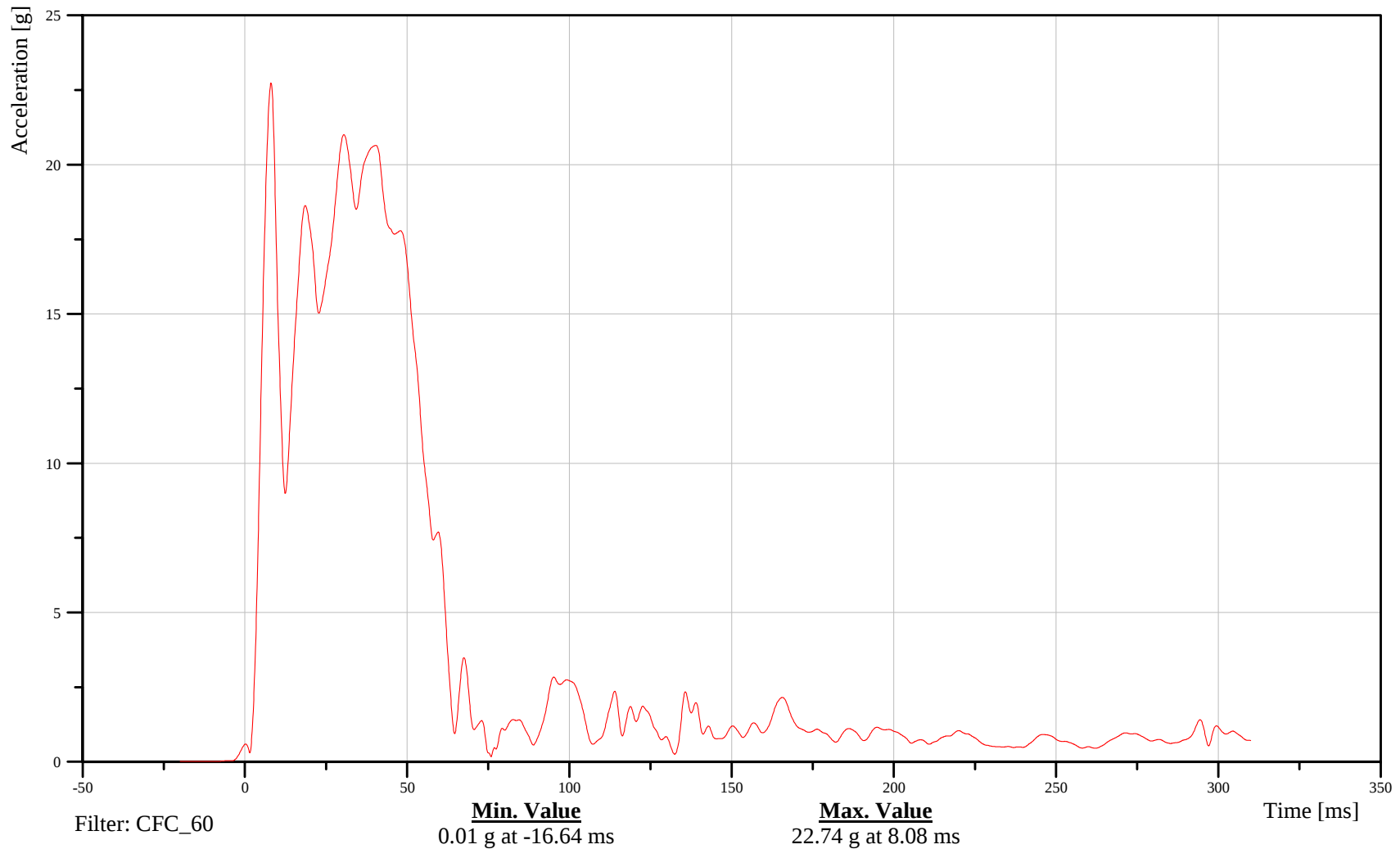
Time: 11:34

REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION

Customer: NHTSA
Test Number: C60507

18FORA000000ACRD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-102

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

Case: 06/02/2006

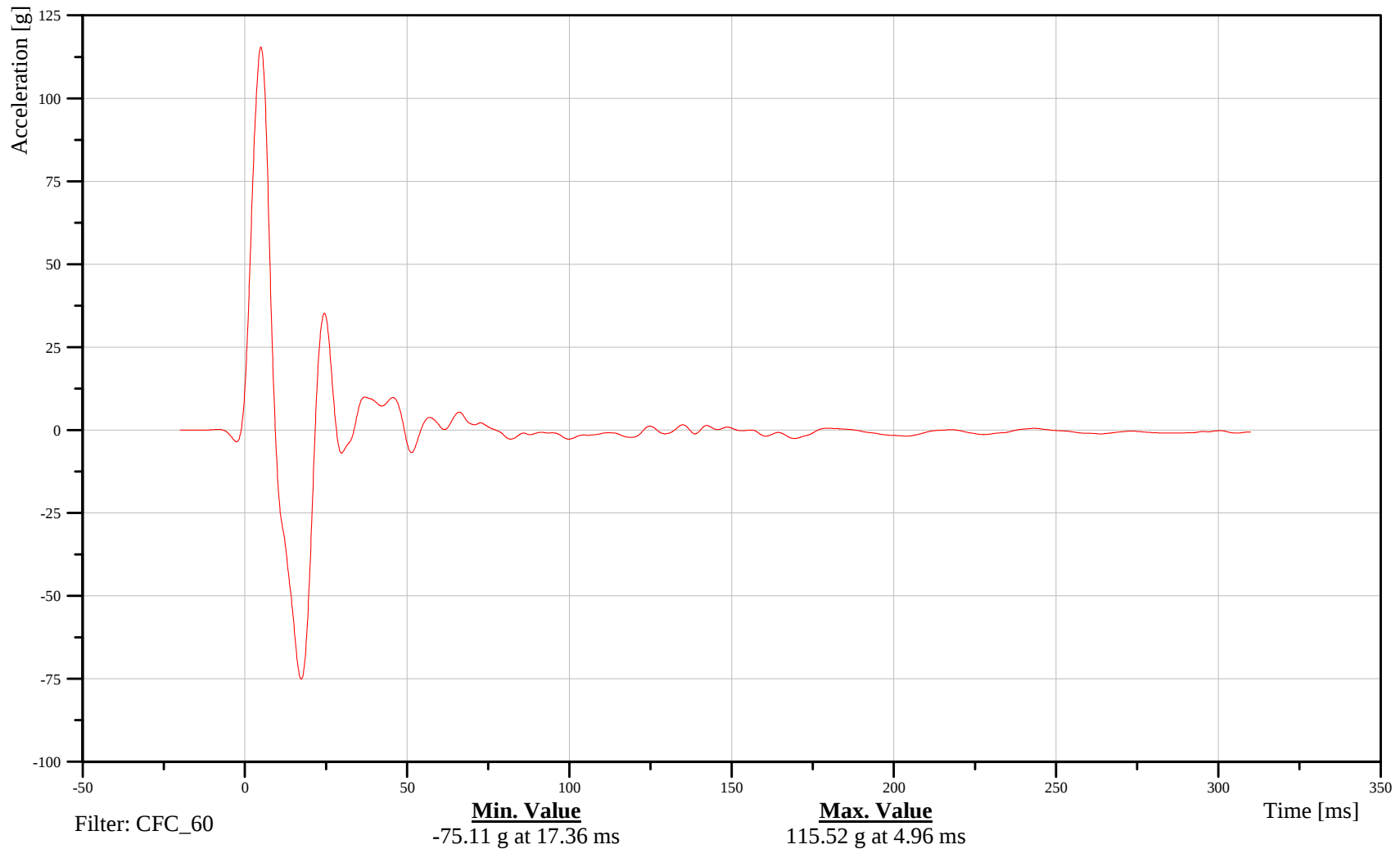
Time: 11:34

LEFT SIDE SILL AT FRONT SEAT Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

14SILBFR0000ACYD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-103

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

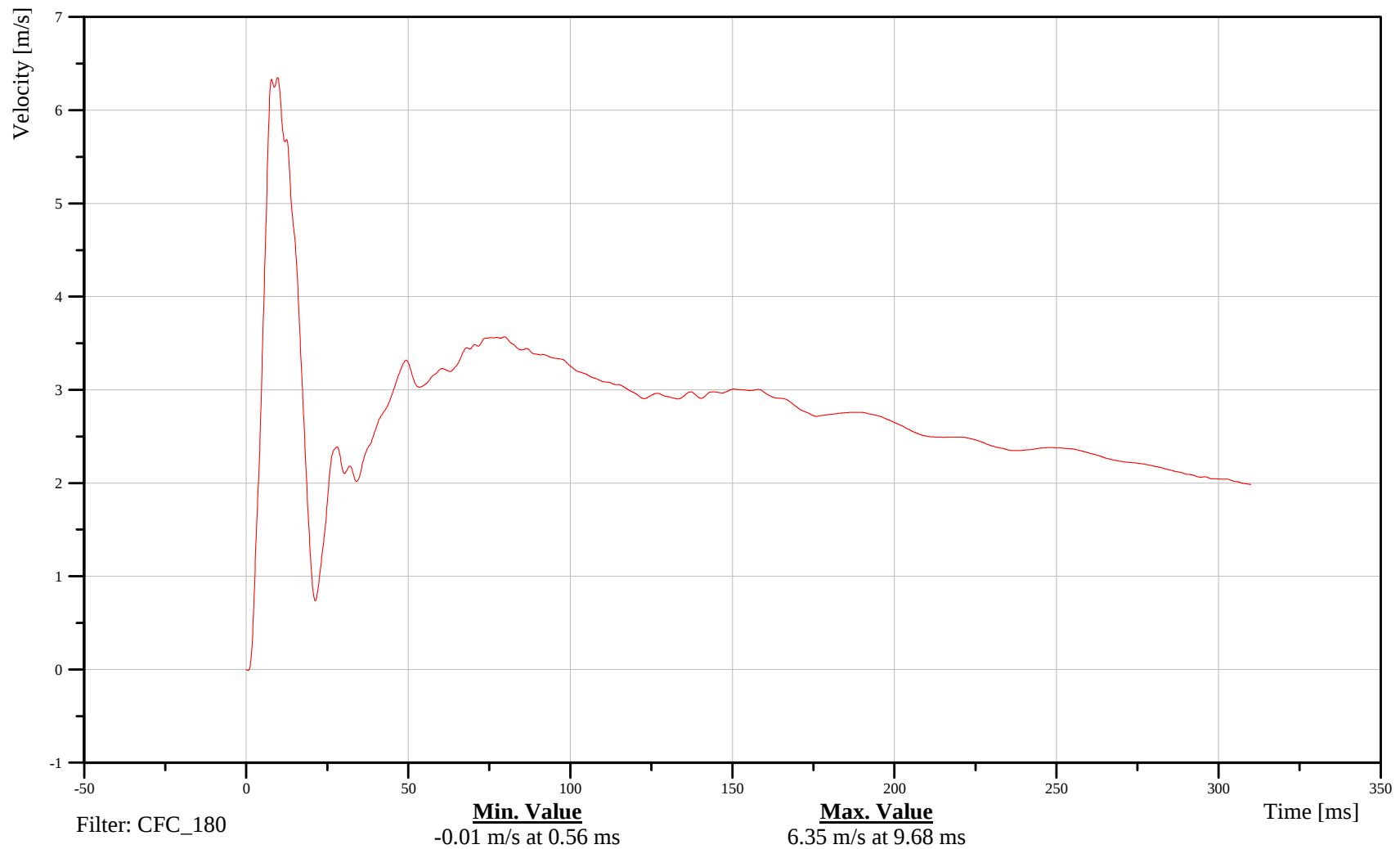
06/02/2006
Time: 11:34

LEFT SIDE SILL AT FRONT SEAT Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

14SILBFR0000VEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-104

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

Date: 06/02/2006

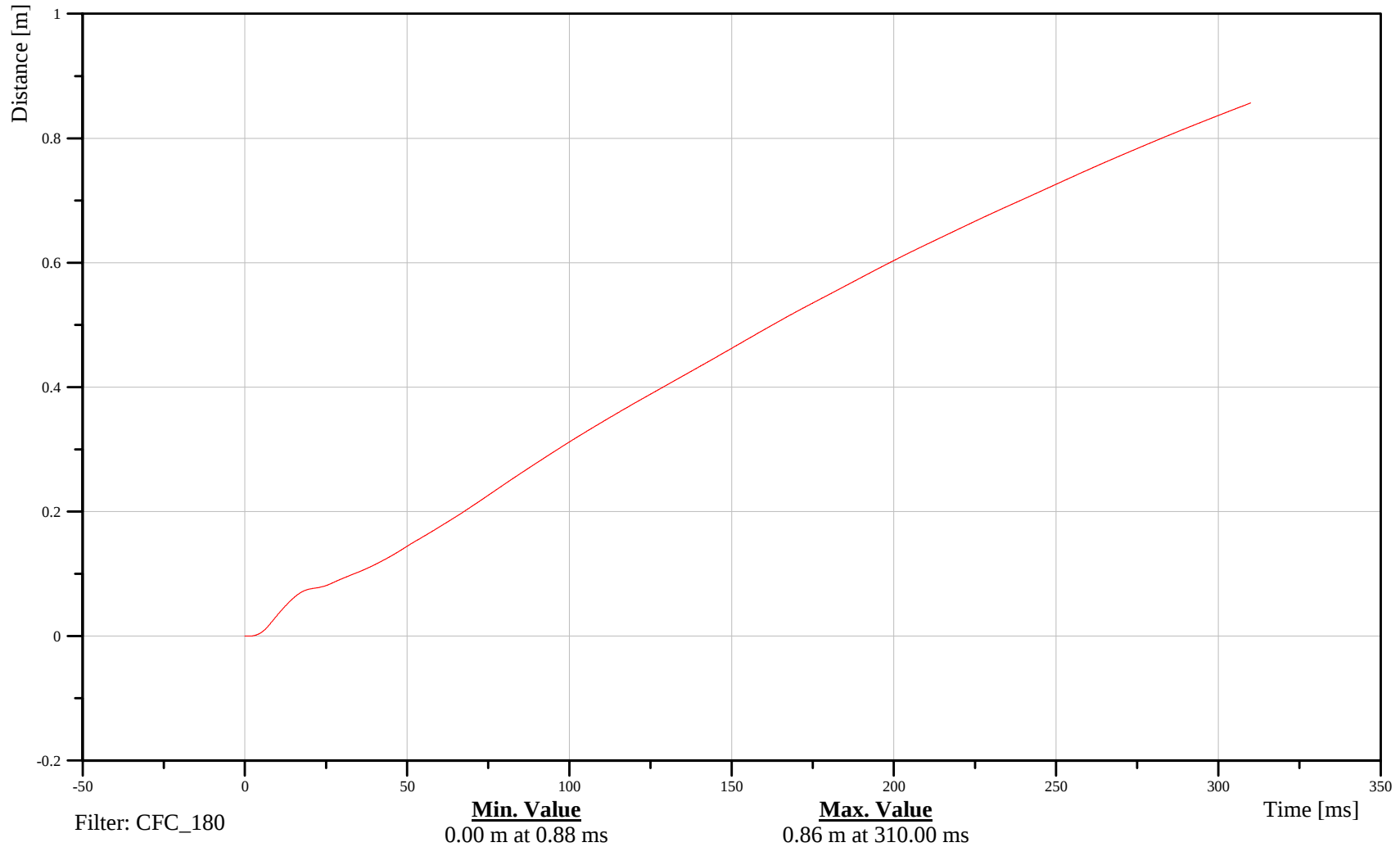
Time: 11:34

LEFT SIDE SILL AT FRONT SEAT Y-AXIS DISPLACEMENT

Customer: NHTSA
Test Number: C60507

14SILBFR0000DCYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-105

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

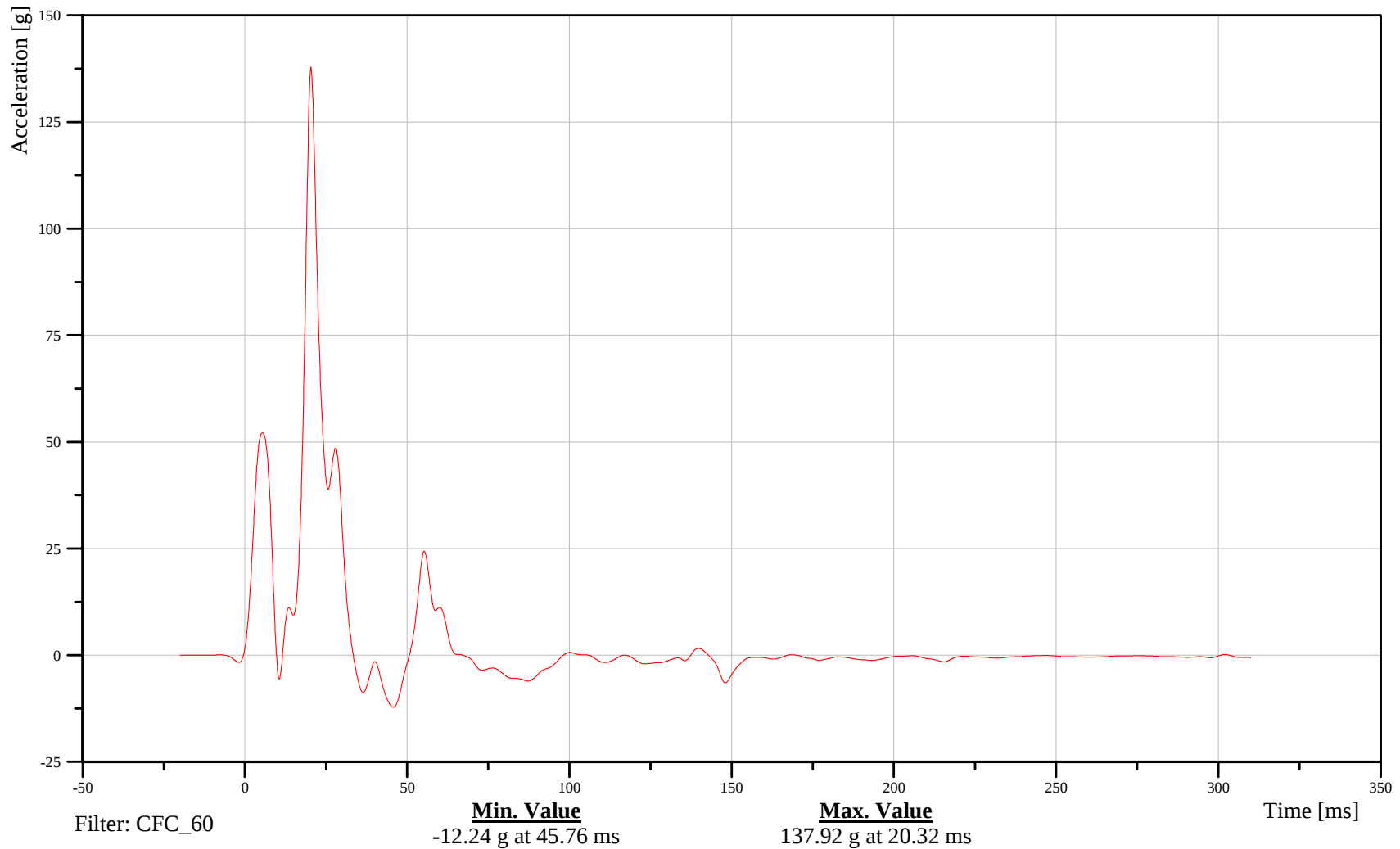
Case: 06/02/2006
Time: 11:34

LEFT SIDE SILL AT REAR SEAT Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

14SILBRE0000ACYD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-106

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

Case: 060602-1

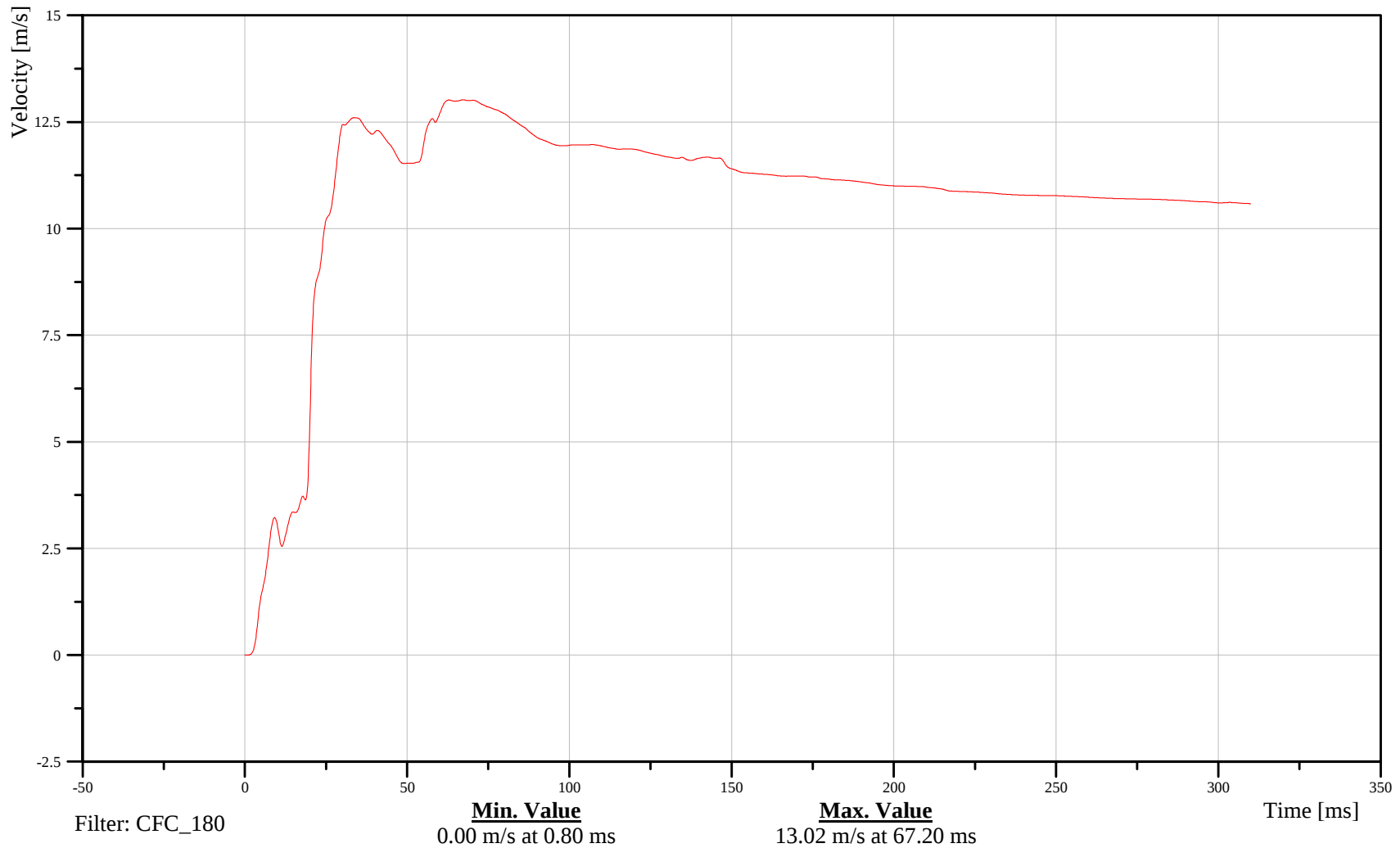
Time: 11:34

LEFT SIDE SILL AT REAR SEAT Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

14SILBRE0000VEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-107

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

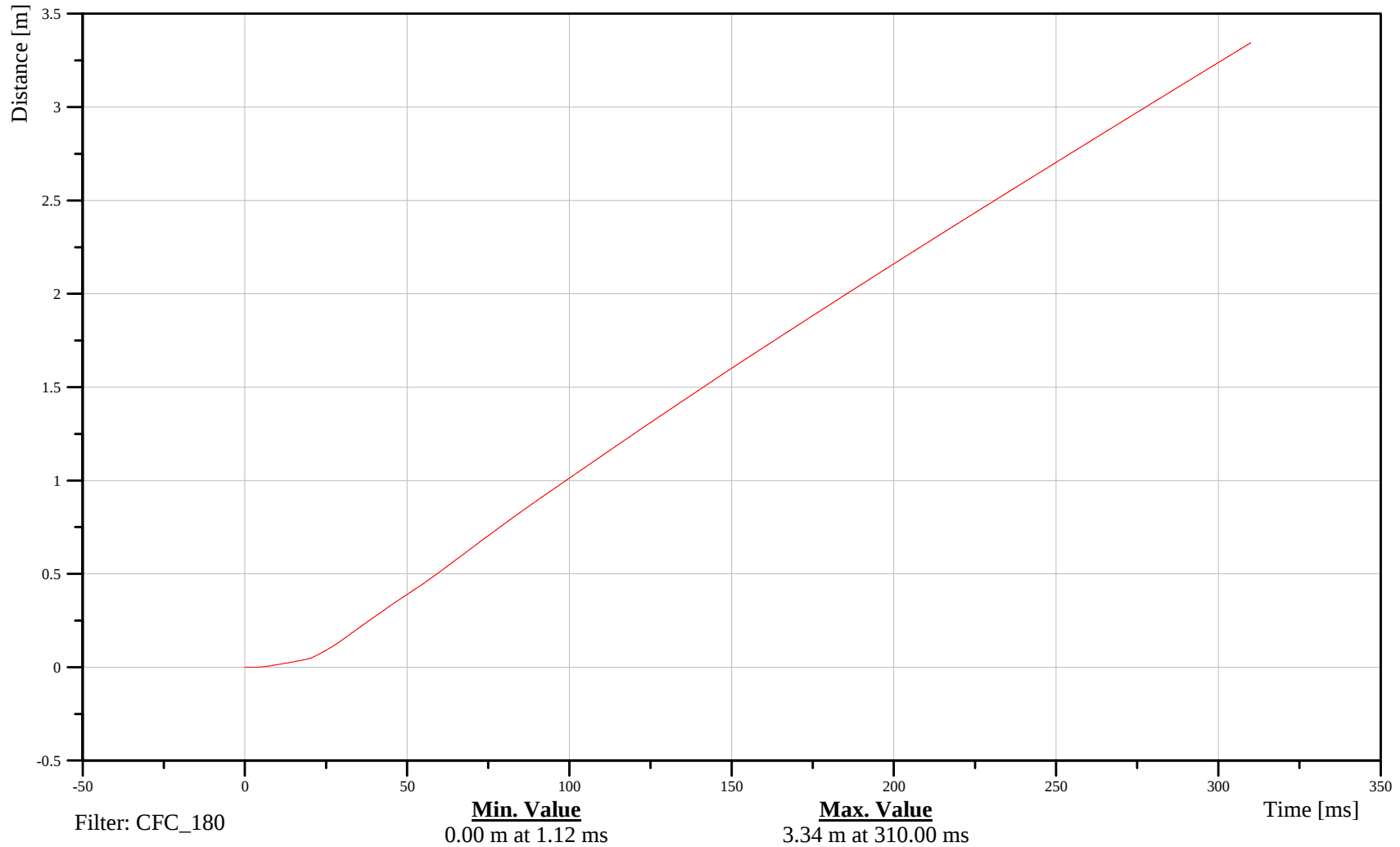
Time: 11:34

LEFT SIDE SILL AT REAR SEAT Y-AXIS DISPLACEMENT

Customer: NHTSA
Test Number: C60507

14SILBRE0000DCYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-108

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 06/02/2006

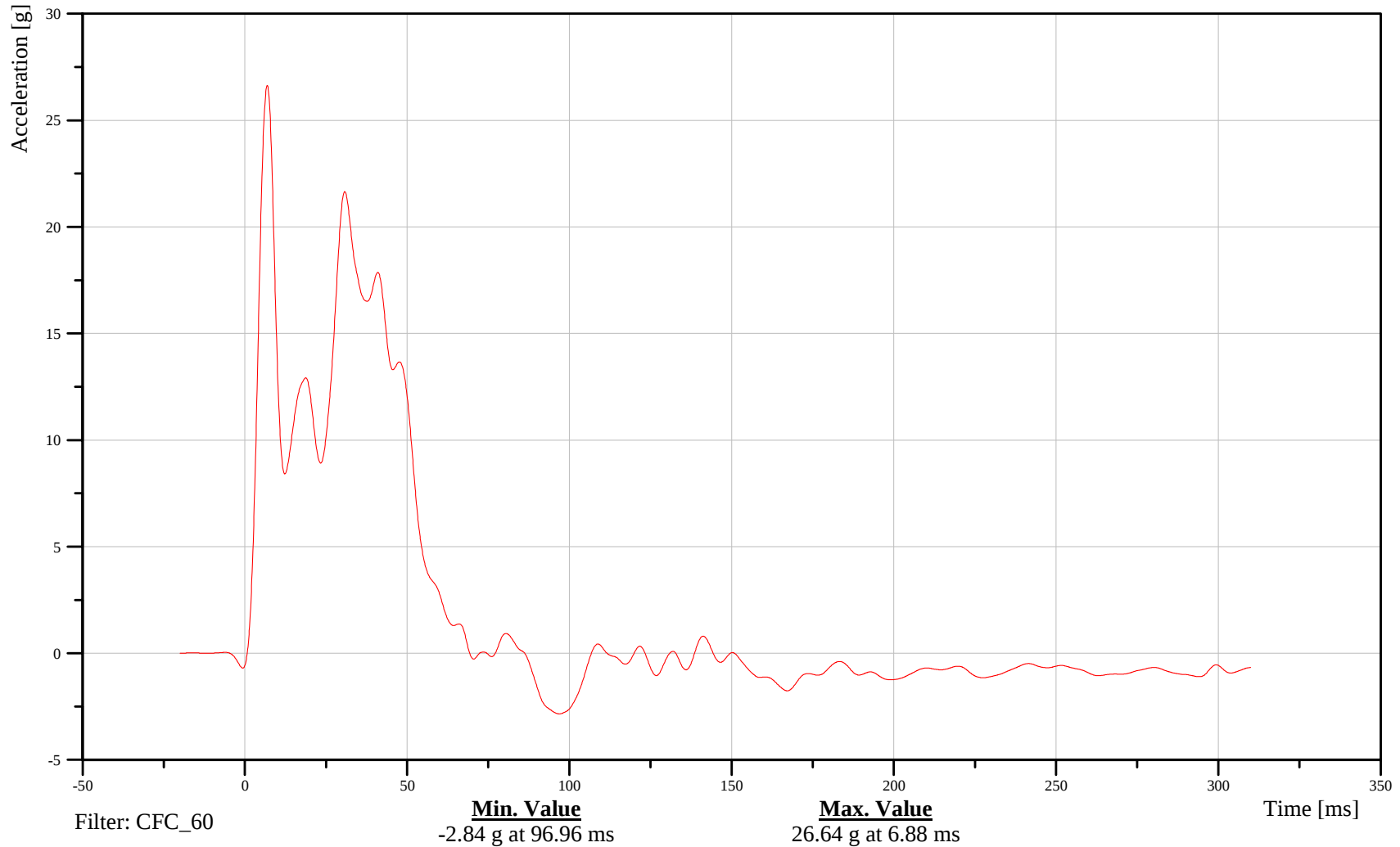
Time: 11:34

RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

16VEHCRE0000ACYD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-109

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Case: 060602-1

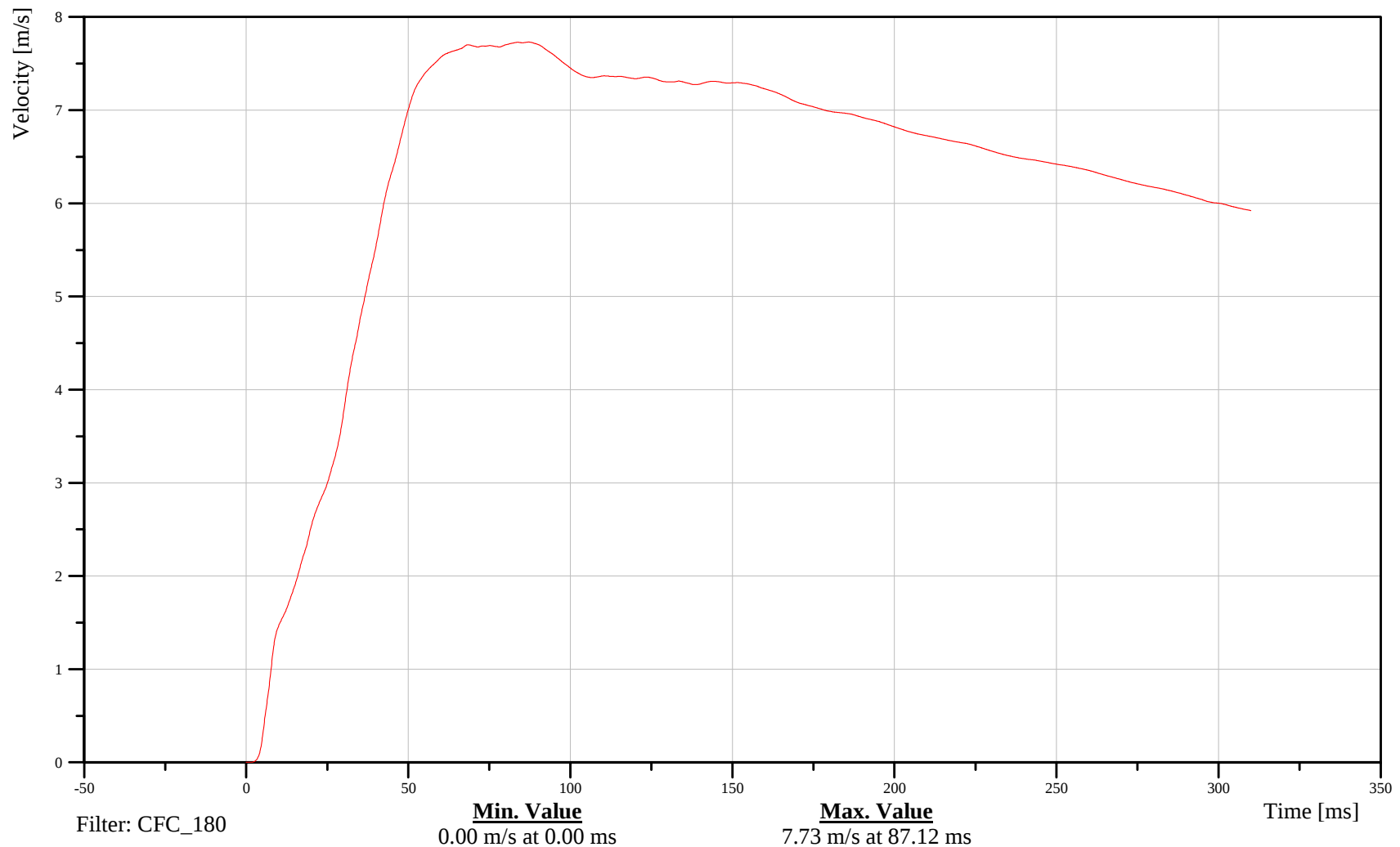
Time: 11:34

RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

16VEHCRE0000VEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-110

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

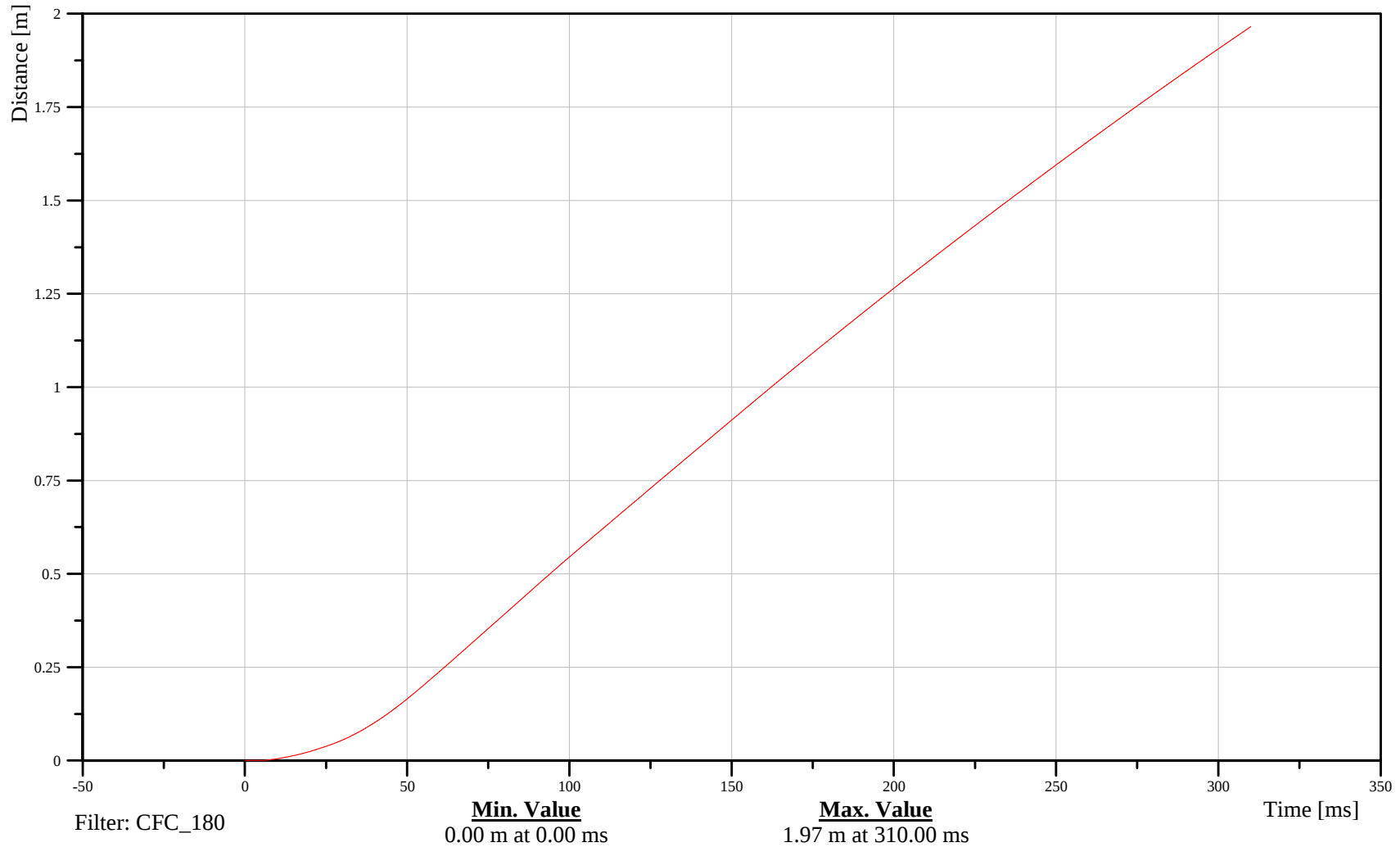
Date: 06/02/2006
Time: 11:34

RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS DISPLACEMENT

Customer: NHTSA
Test Number: C60507

16VEHCRE0000DCYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-111

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

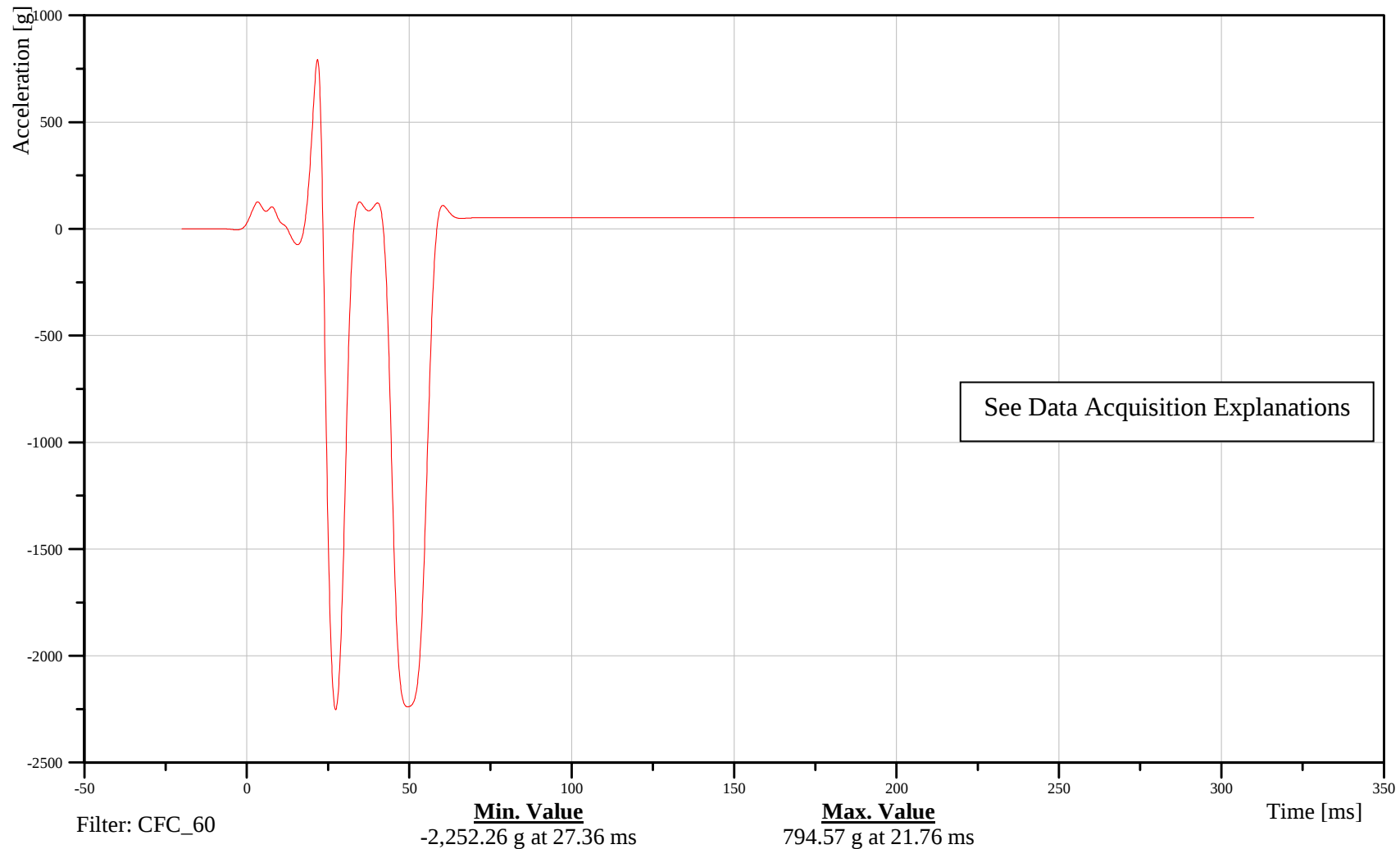
Time: 11:34

LEFT LOWER A-POST Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

11APILO0000ACYD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-112

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

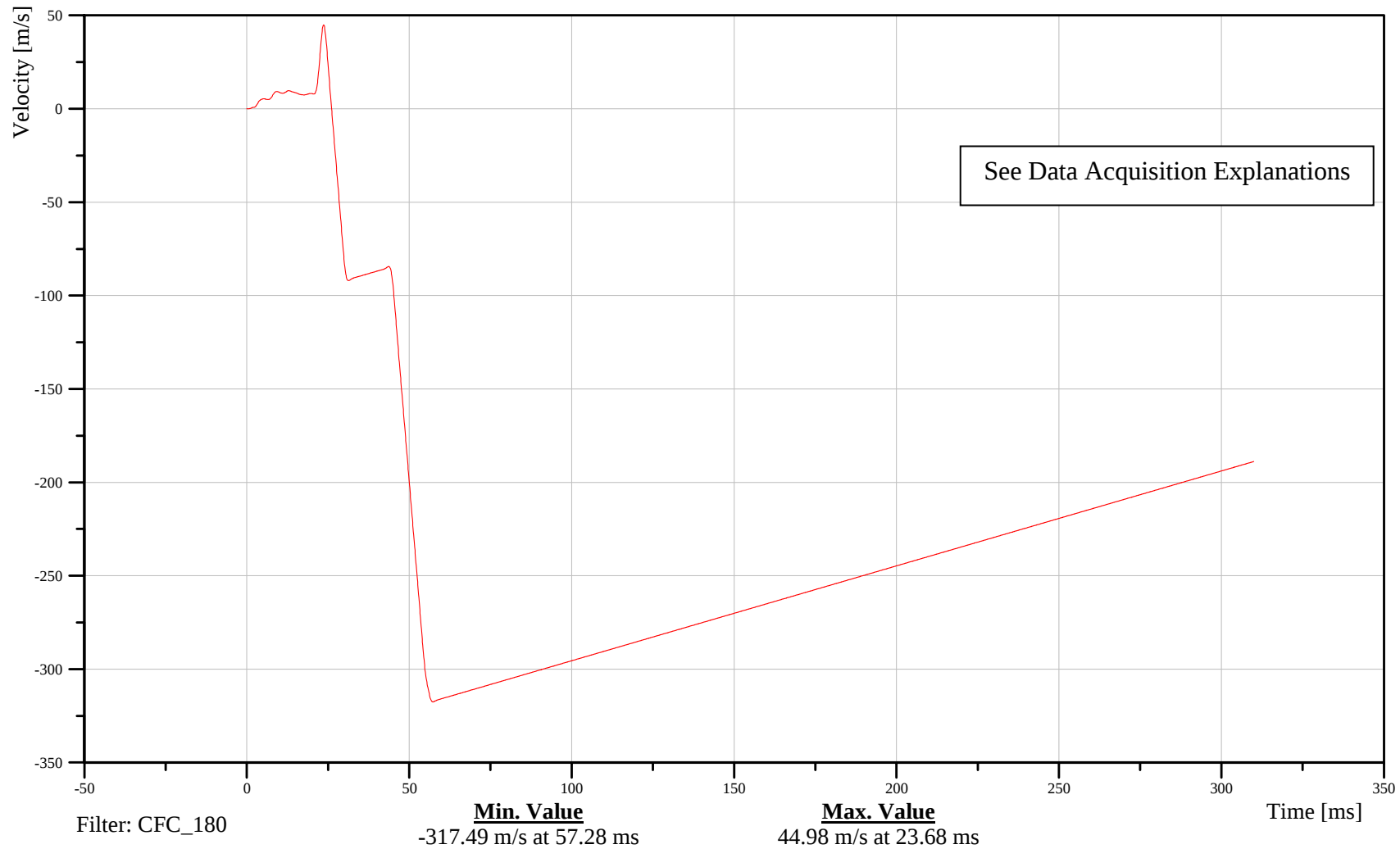
Time: 06/02/2006
Time: 11:34

LEFT LOWER A-POST Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

11APILLO0000VEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-113

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

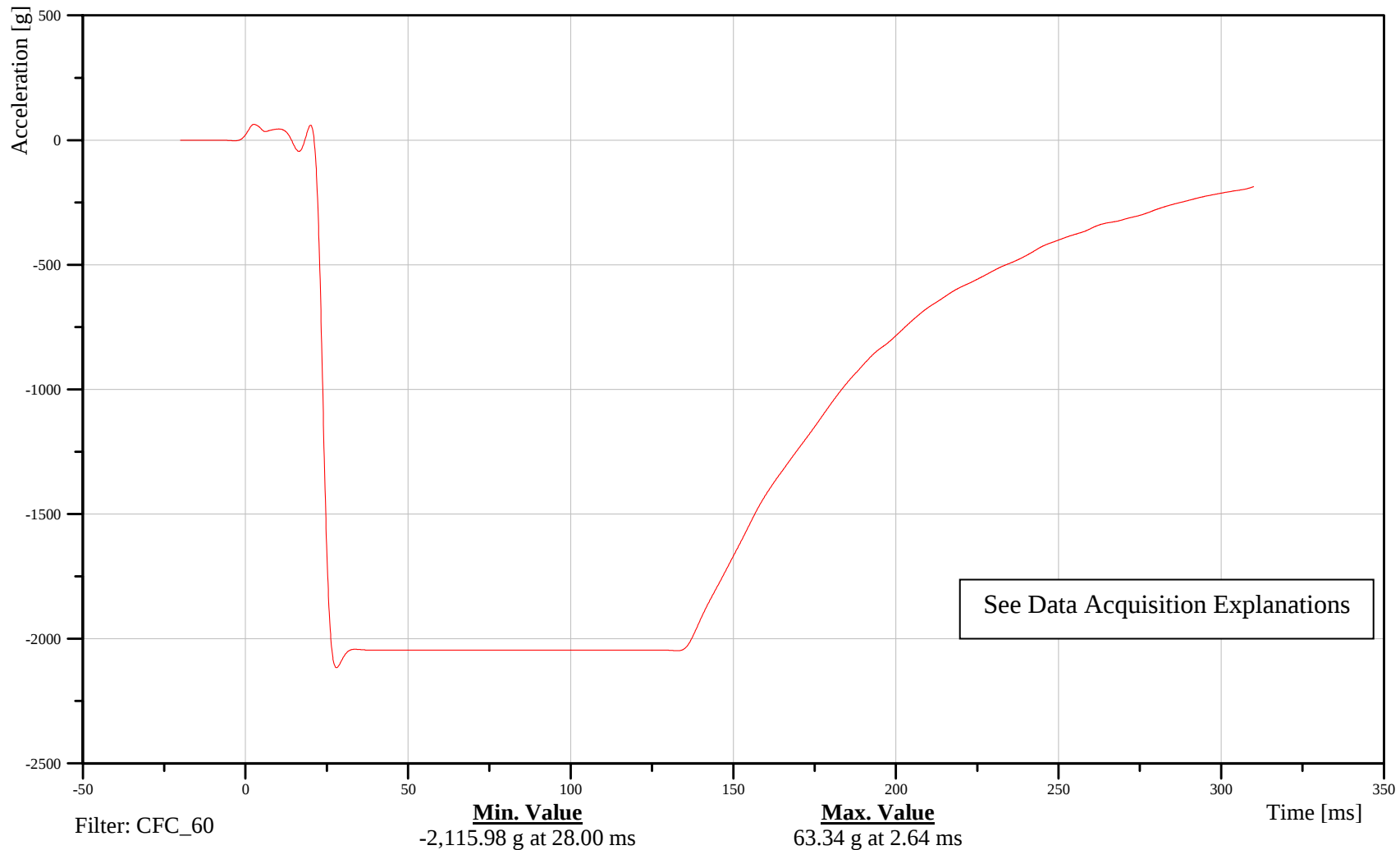
Case: 06/02/2006
Time: 11:34

LEFT MIDDLE A-POST Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

11APILMI0000ACYD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-114

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

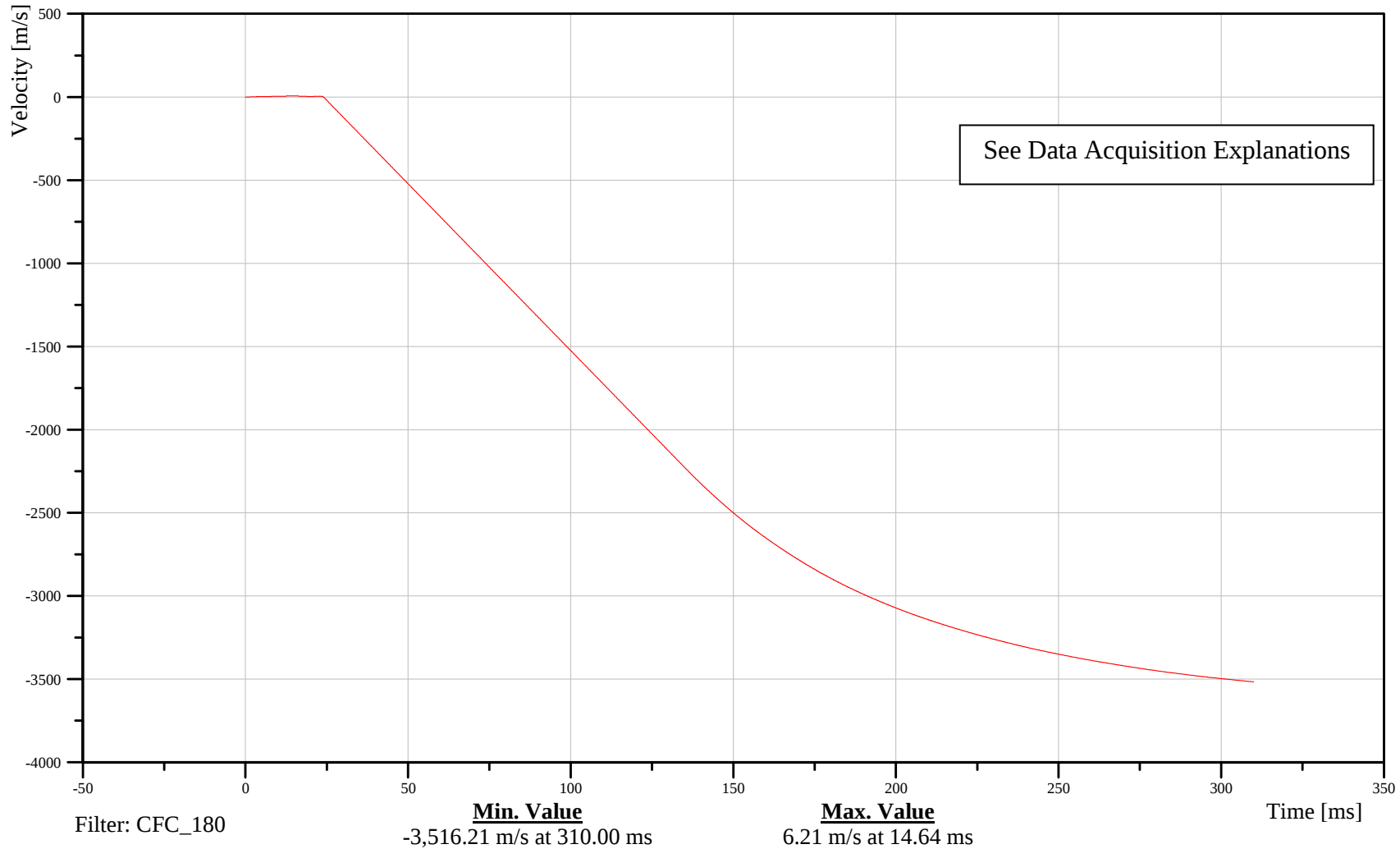
Case: 06/02/2006
Time: 11:34

LEFT MIDDLE A-POST Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

11APILMI0000VEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-115

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

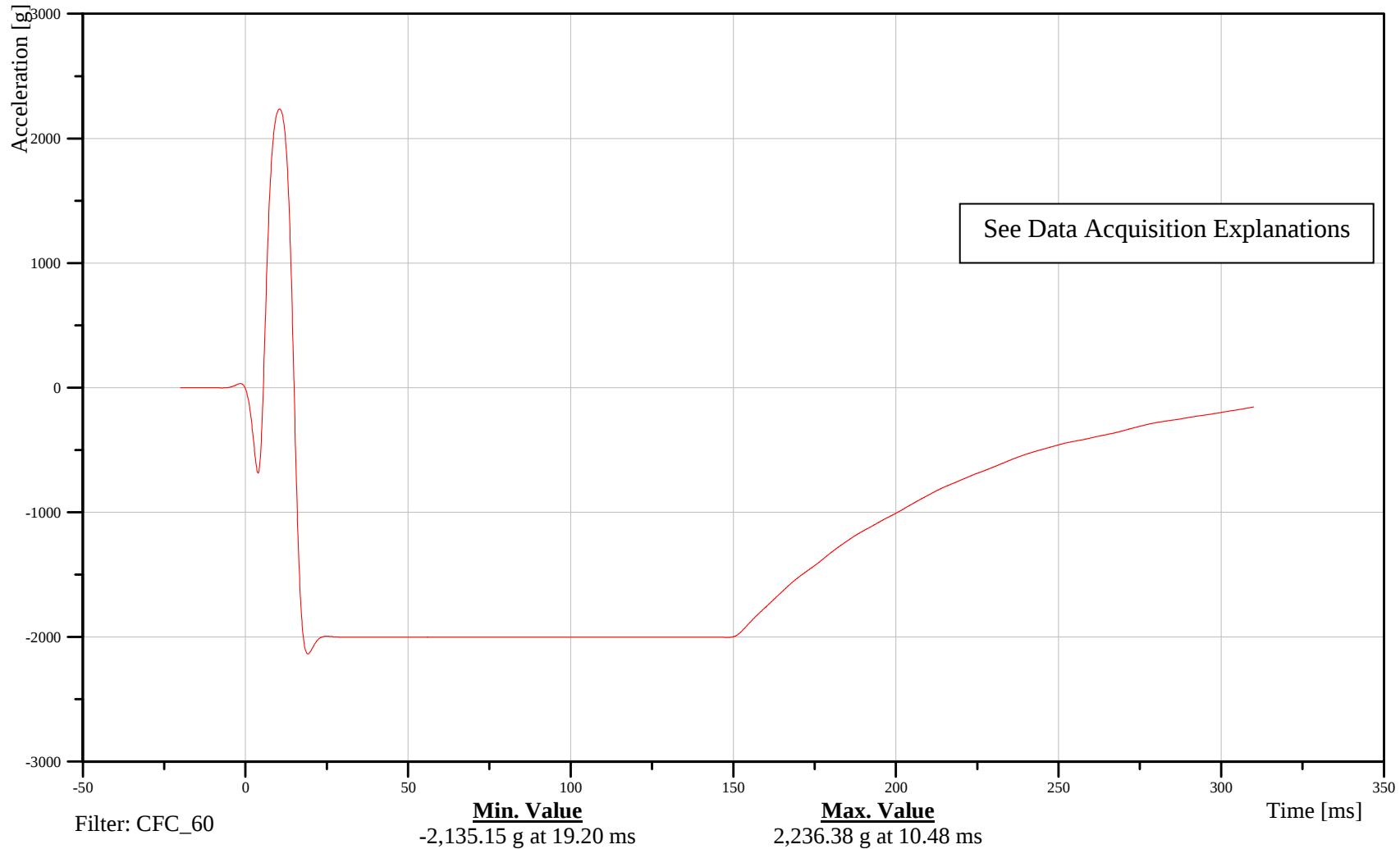
Case: 06/02/2006
Time: 11:34

LEFT LOWER B-POST Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

14BPILLO0000ACYD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-116

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

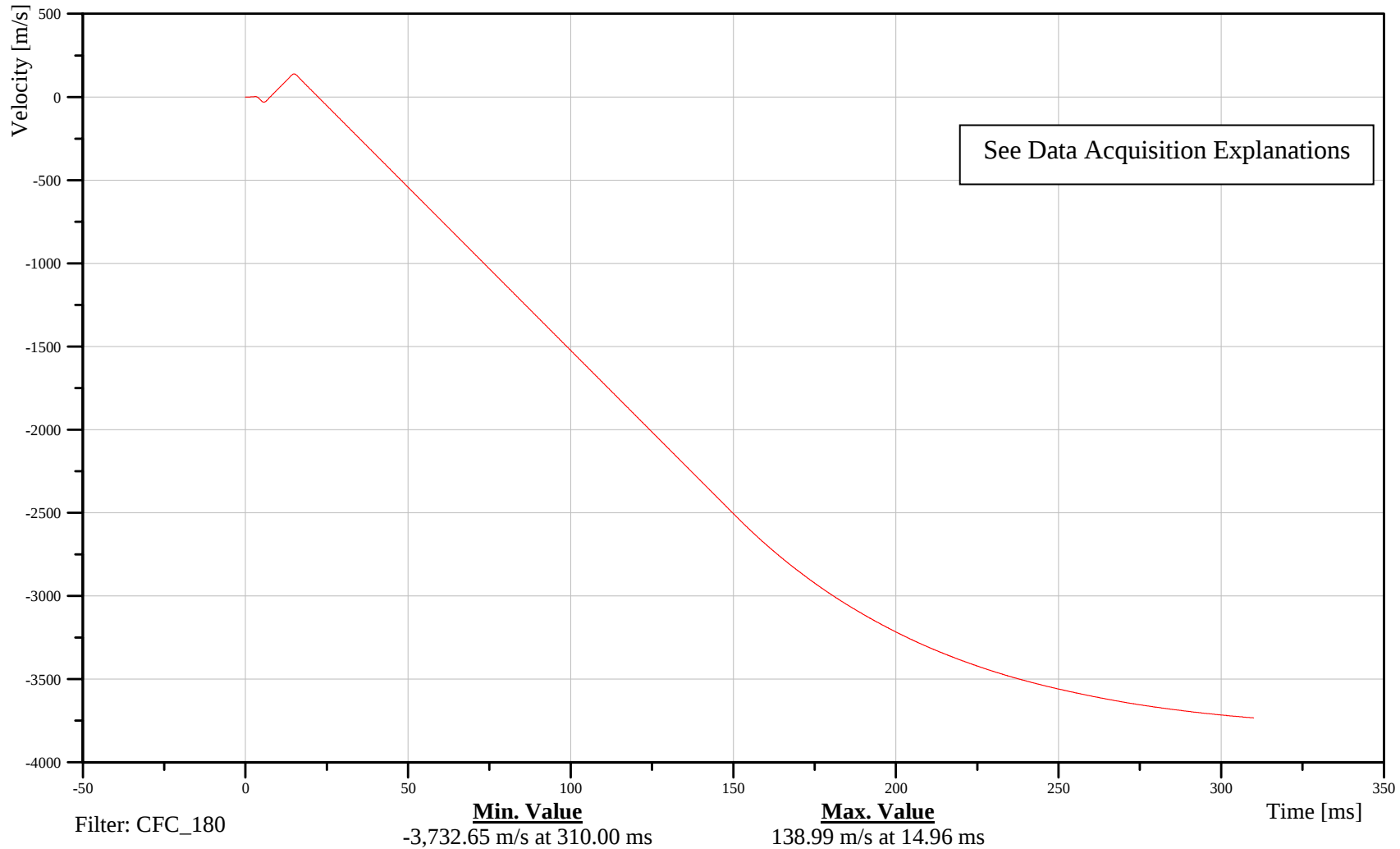
Case: 06/02/2006
Time: 11:34

LEFT LOWER B-POST Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

14BPILLO0000VEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-117

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

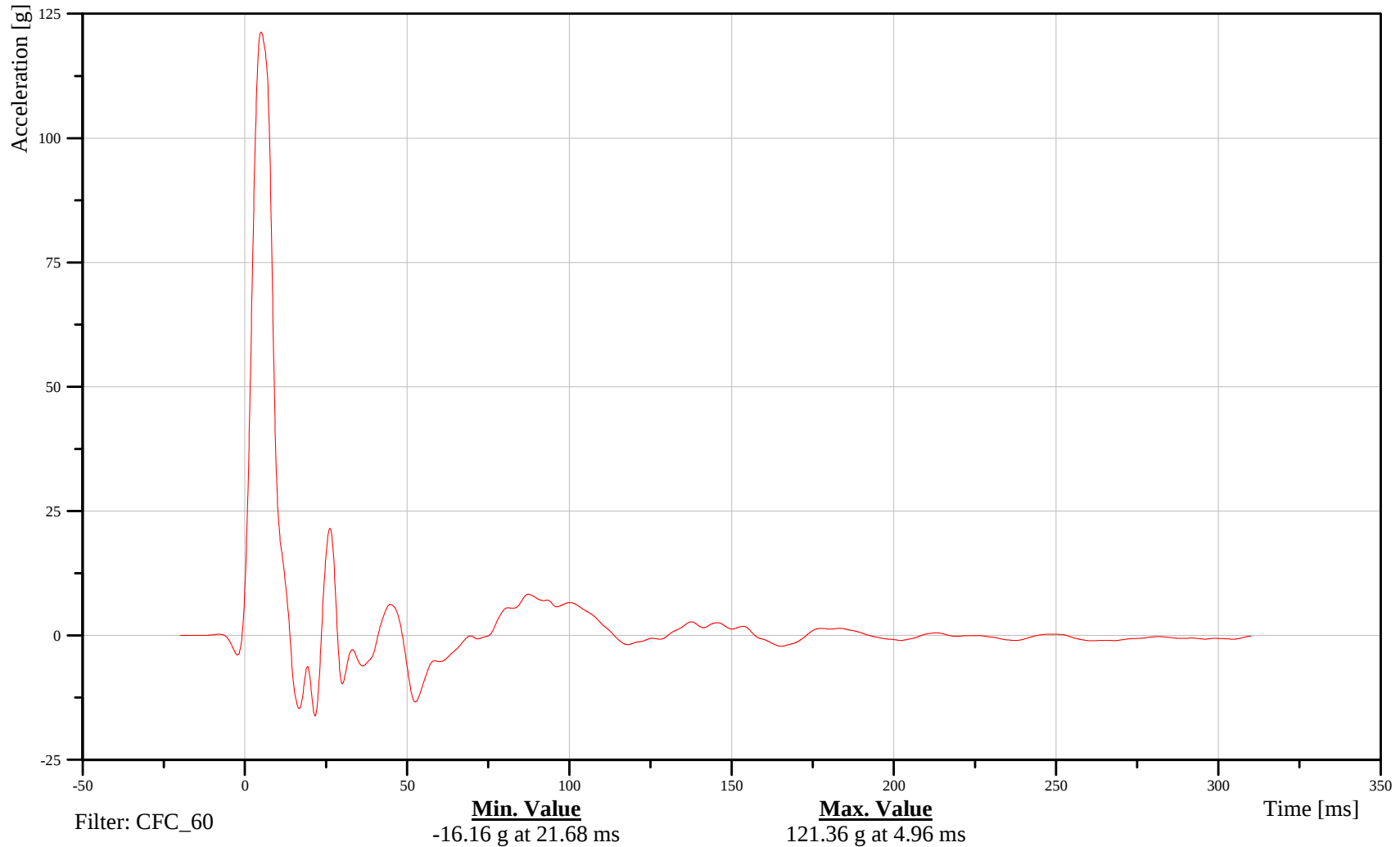
06/02/2006
Time: 11:34

LEFT MIDDLE B-POST Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

14BPILMI0000ACYD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-118

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

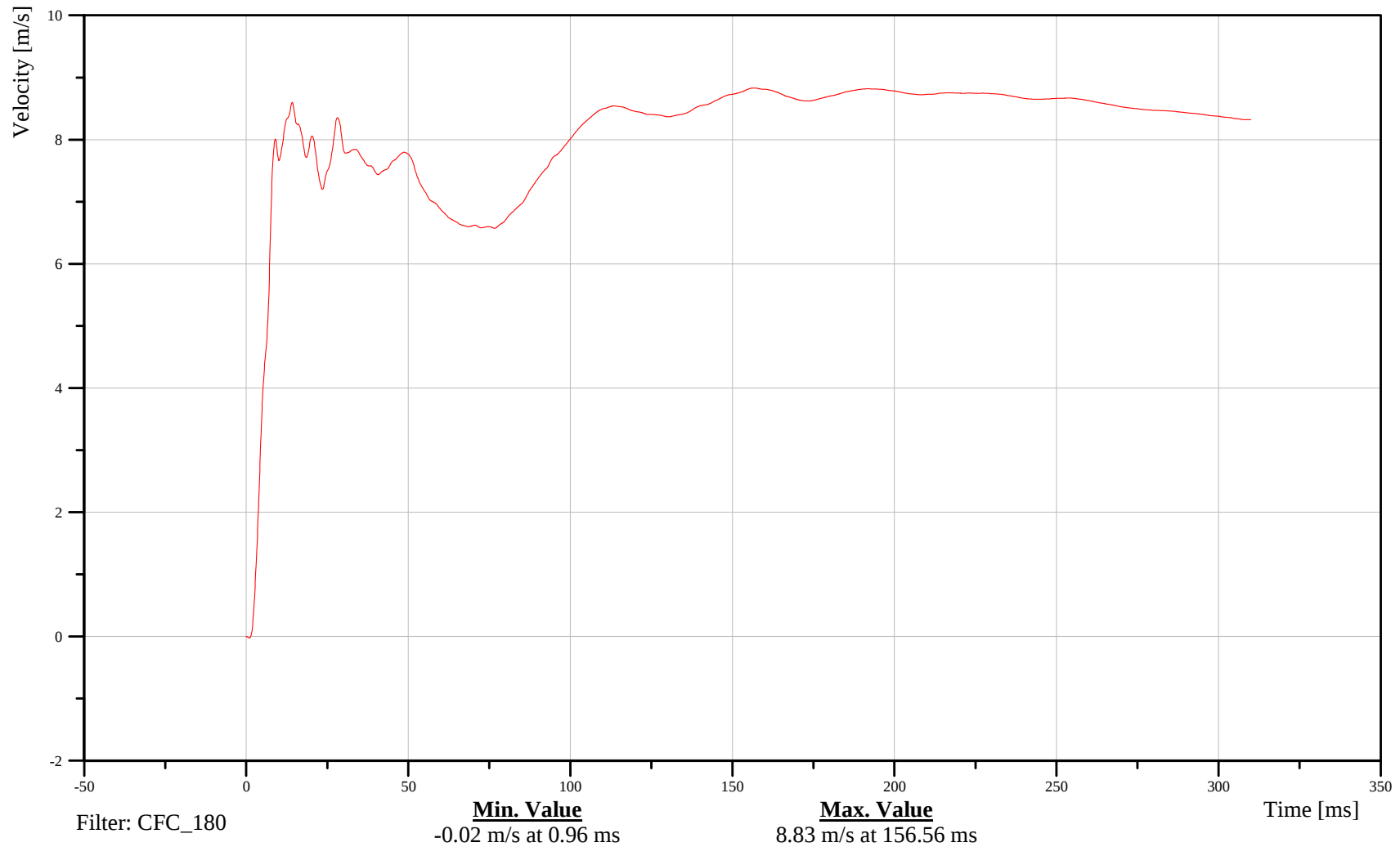
Case: 060602-1
Time: 11:34

LEFT MIDDLE B-POST Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

14BPILMI0000VEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-119

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

06/02/2006

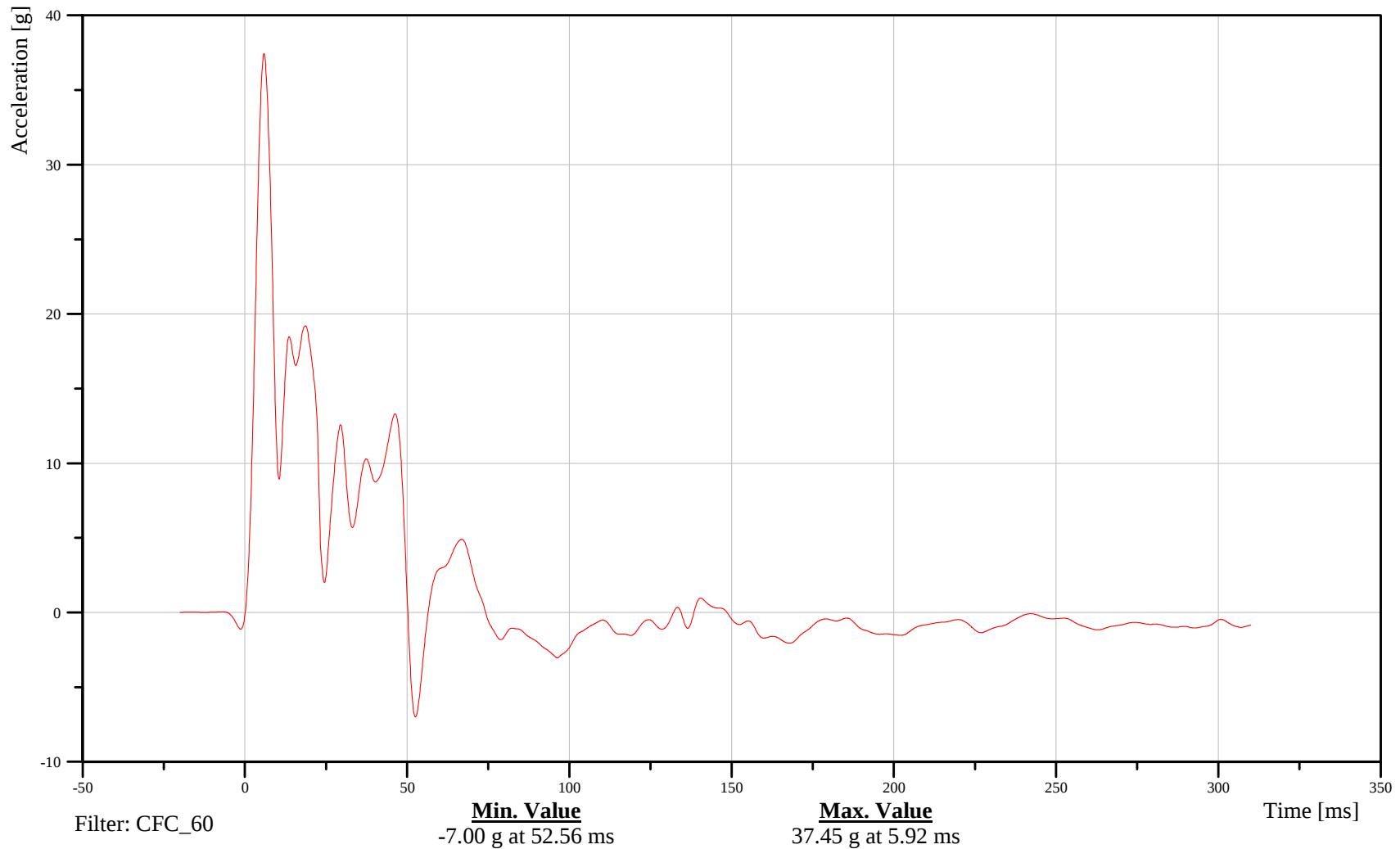
Time: 11:34

LEFT FRONT SEAT TRACK Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

11SETRFR0000ACVD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-120

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

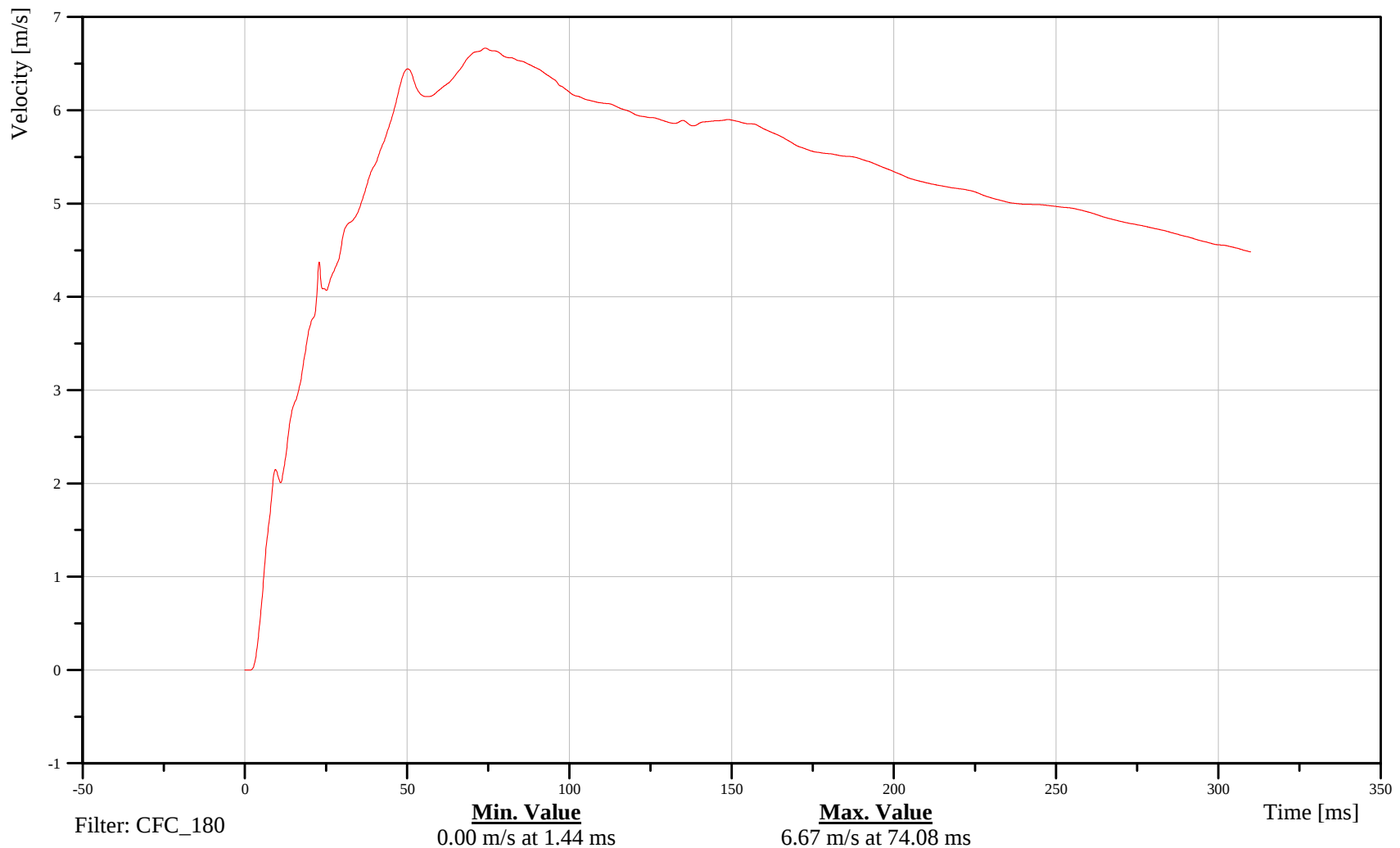
Date: 06/02/2006
Time: 11:34

LEFT FRONT SEAT TRACK Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

11SETRFR0000VEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-121

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

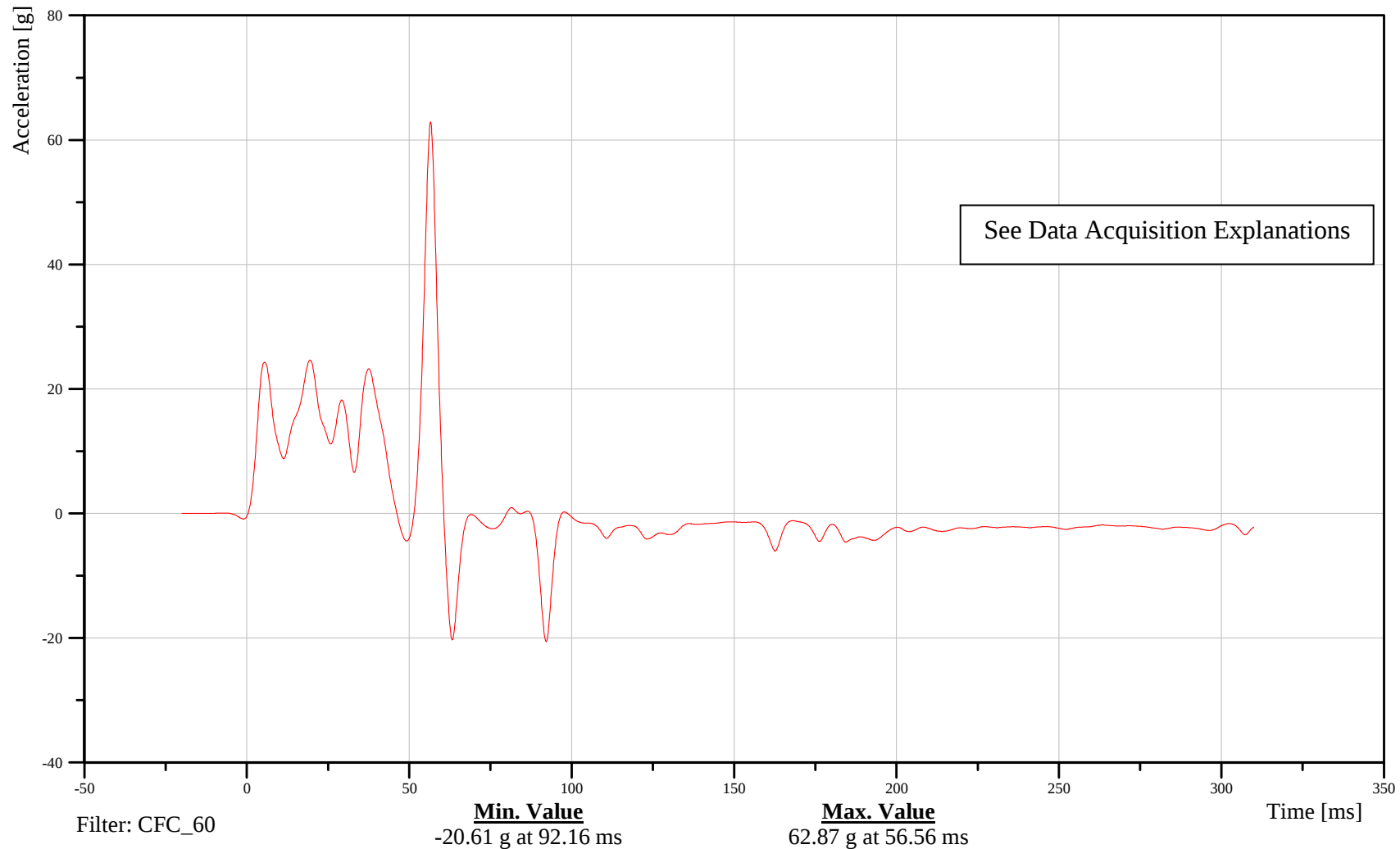
Test: 06/02/2006
Time: 11:34

LEFT REAR SEAT TRACK Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

14SETRLERE00ACYD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-122

060602-1



56/28 kph 90 Degree Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Date: 05/12/2006

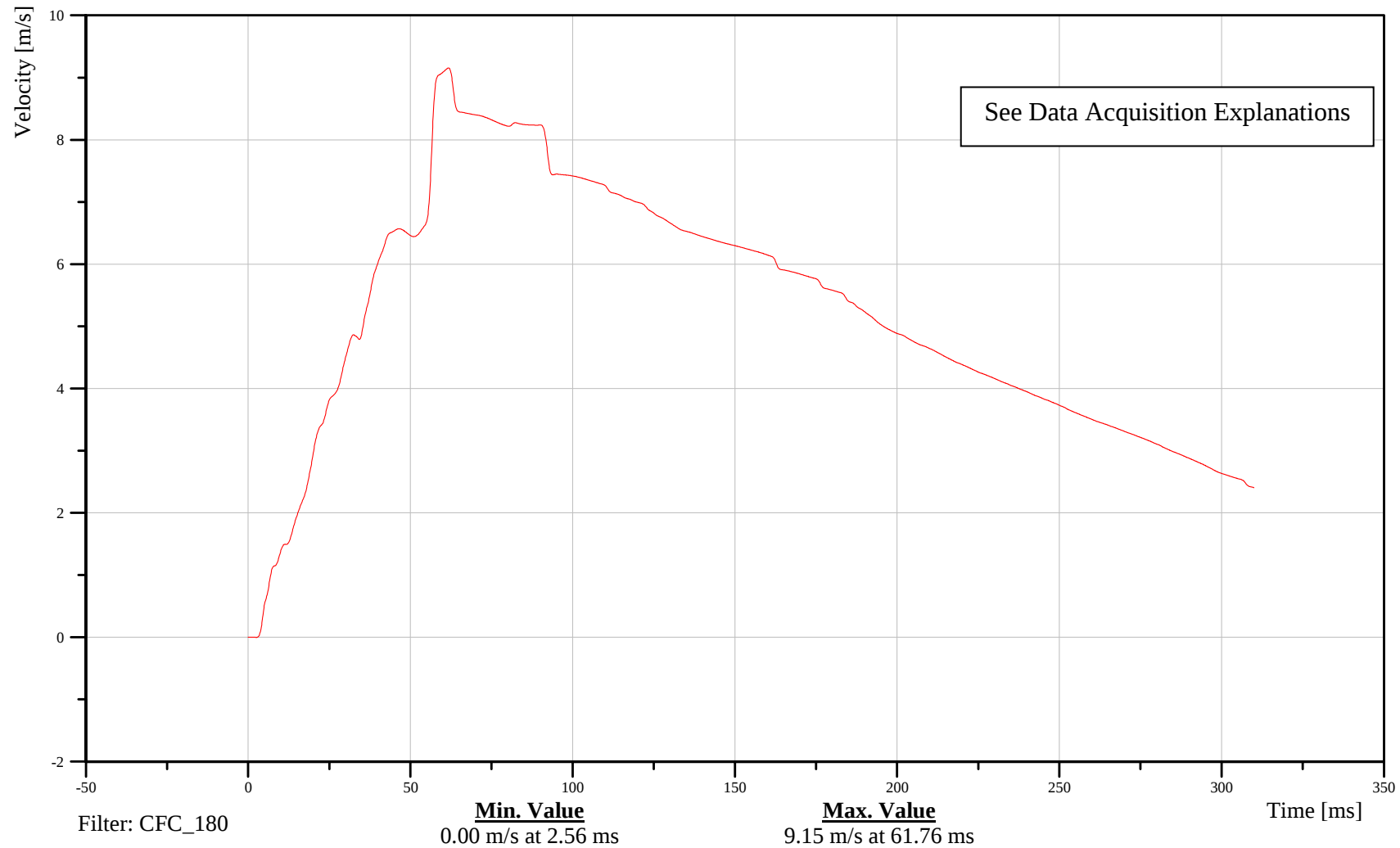
Time: 11:36

LEFT REAR SEAT TRACK Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

14SETRLERE00VEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-123

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

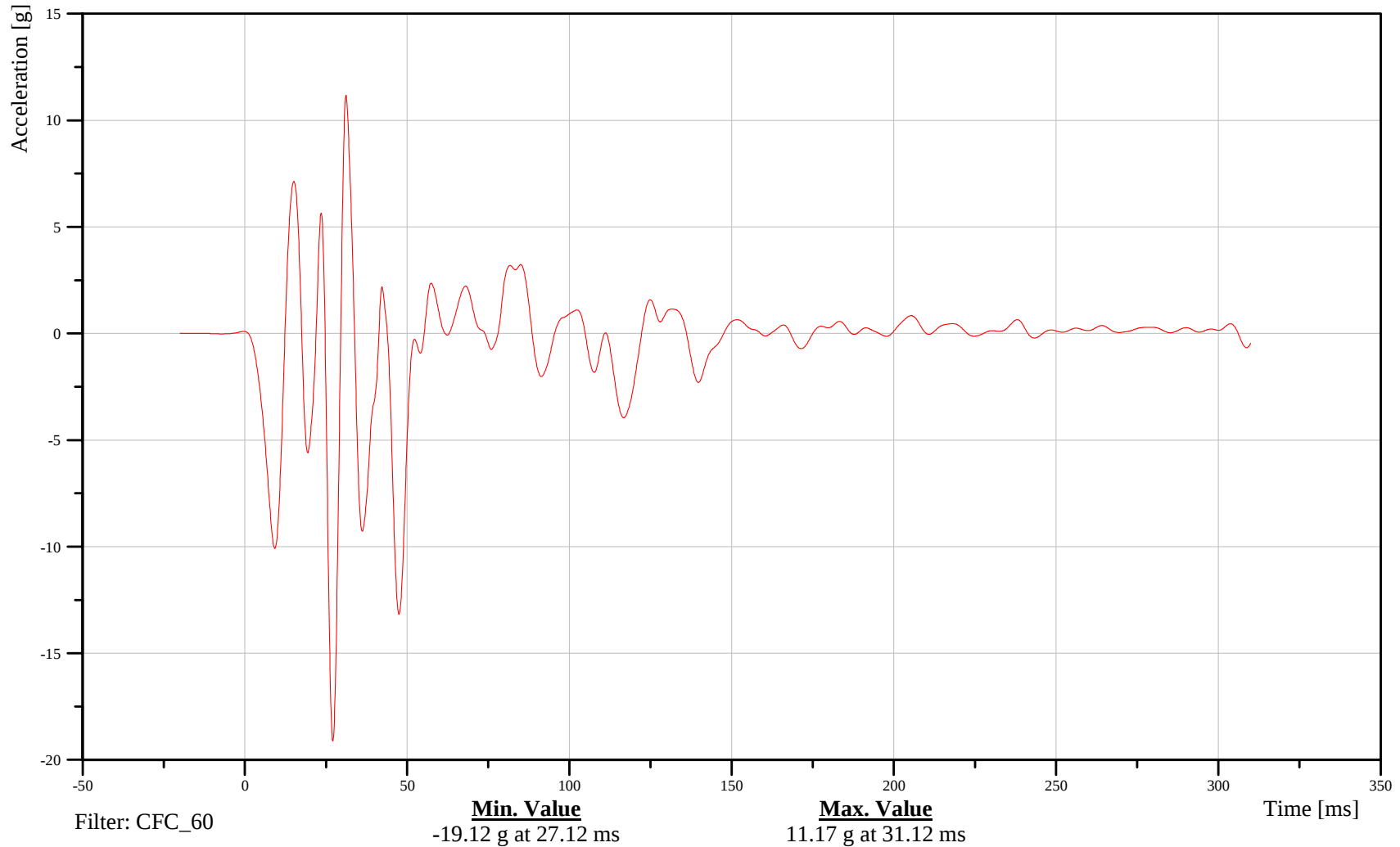
Case: 06/02/2006
Time: 11:34

VEHICLE CENTER OF GRAVITY X-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

10VEHCCG0000ACXD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-124

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

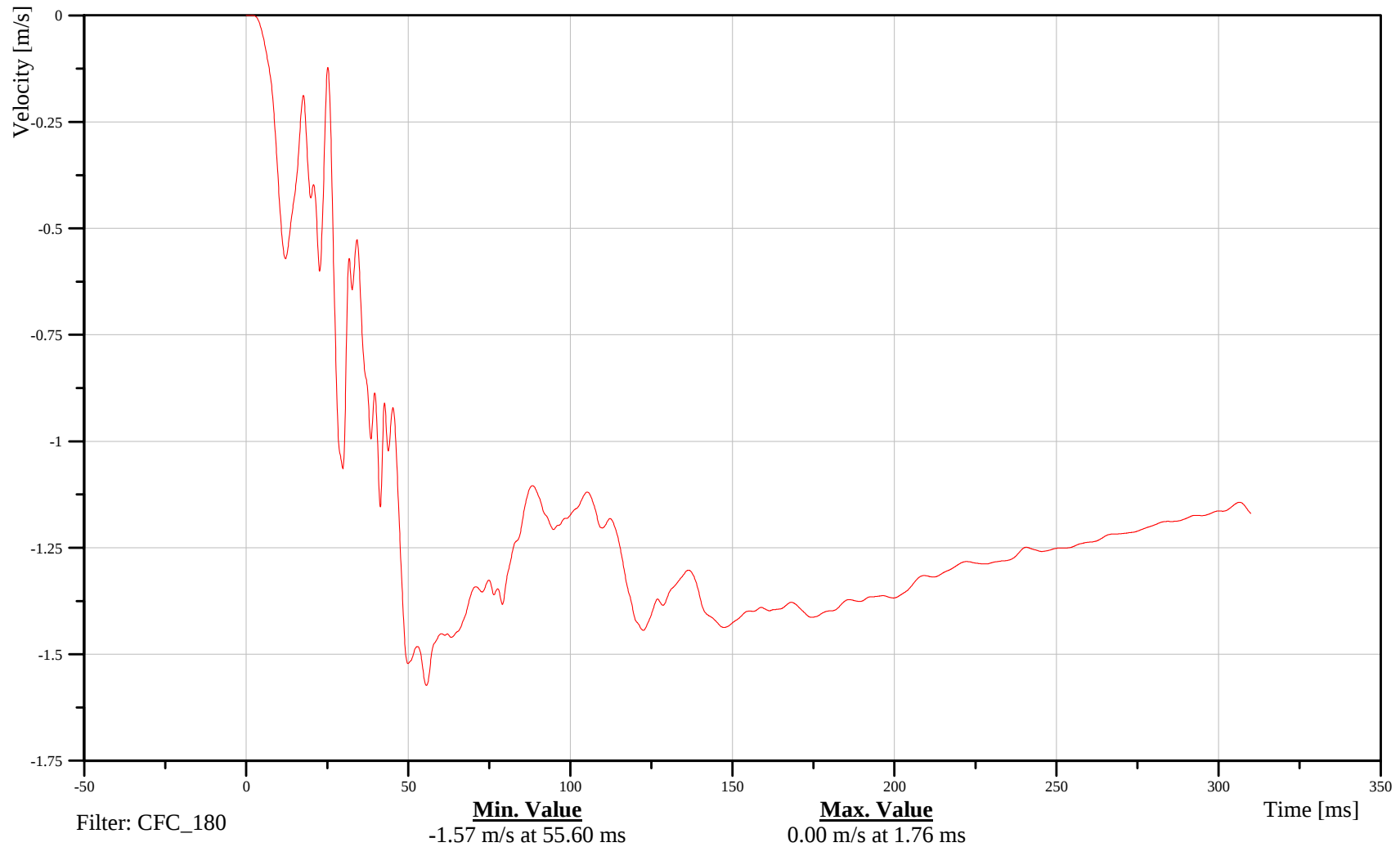
Case: 06/02/2006
Time: 11:34

VEHICLE CENTER OF GRAVITY X-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

10VEHCCG0000VEXC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-125

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

Case: 06/02/2006

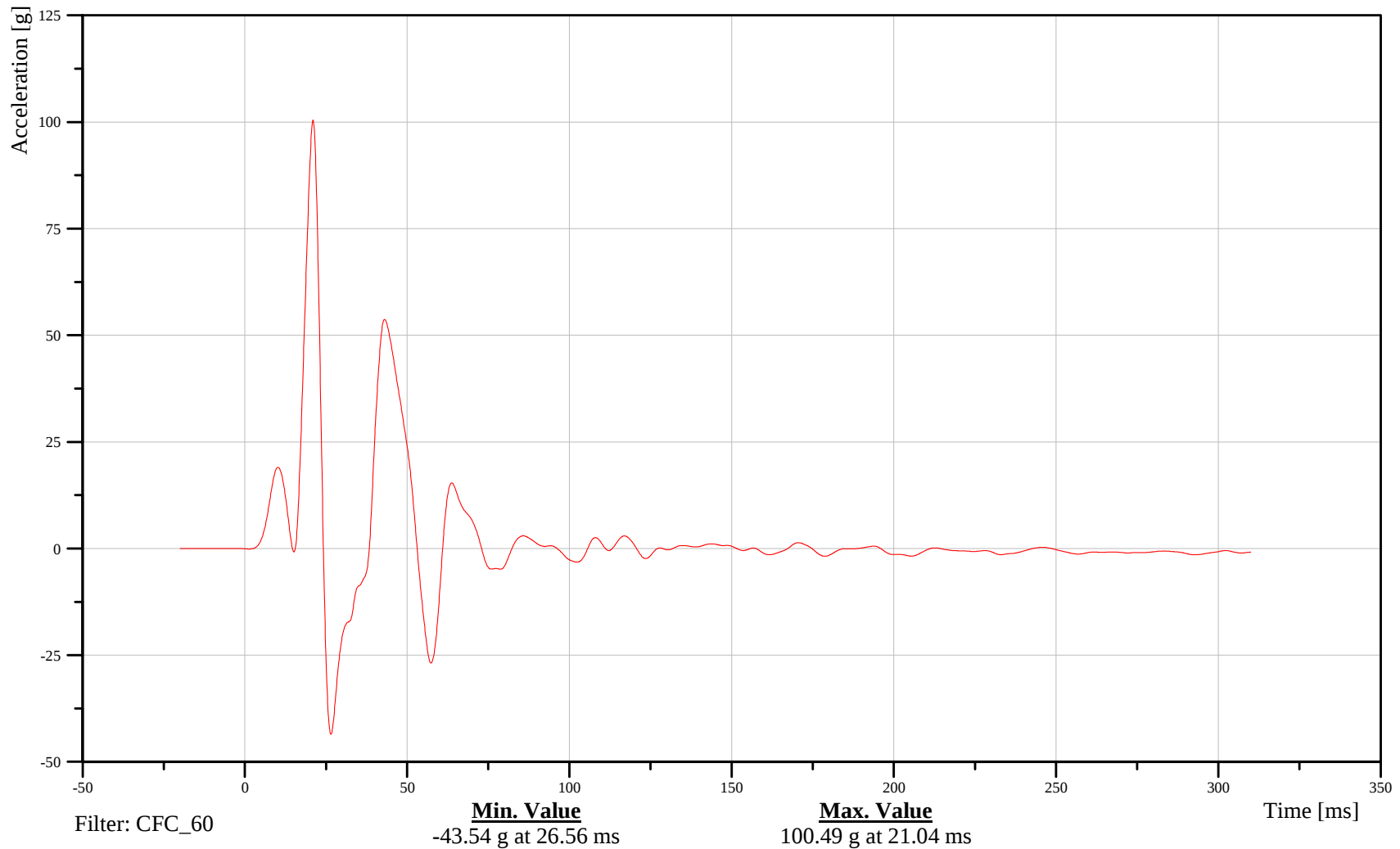
Time: 11:34

VEHICLE CENTER OF GRAVITY Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

10VEHCCG0000ACYD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-126

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

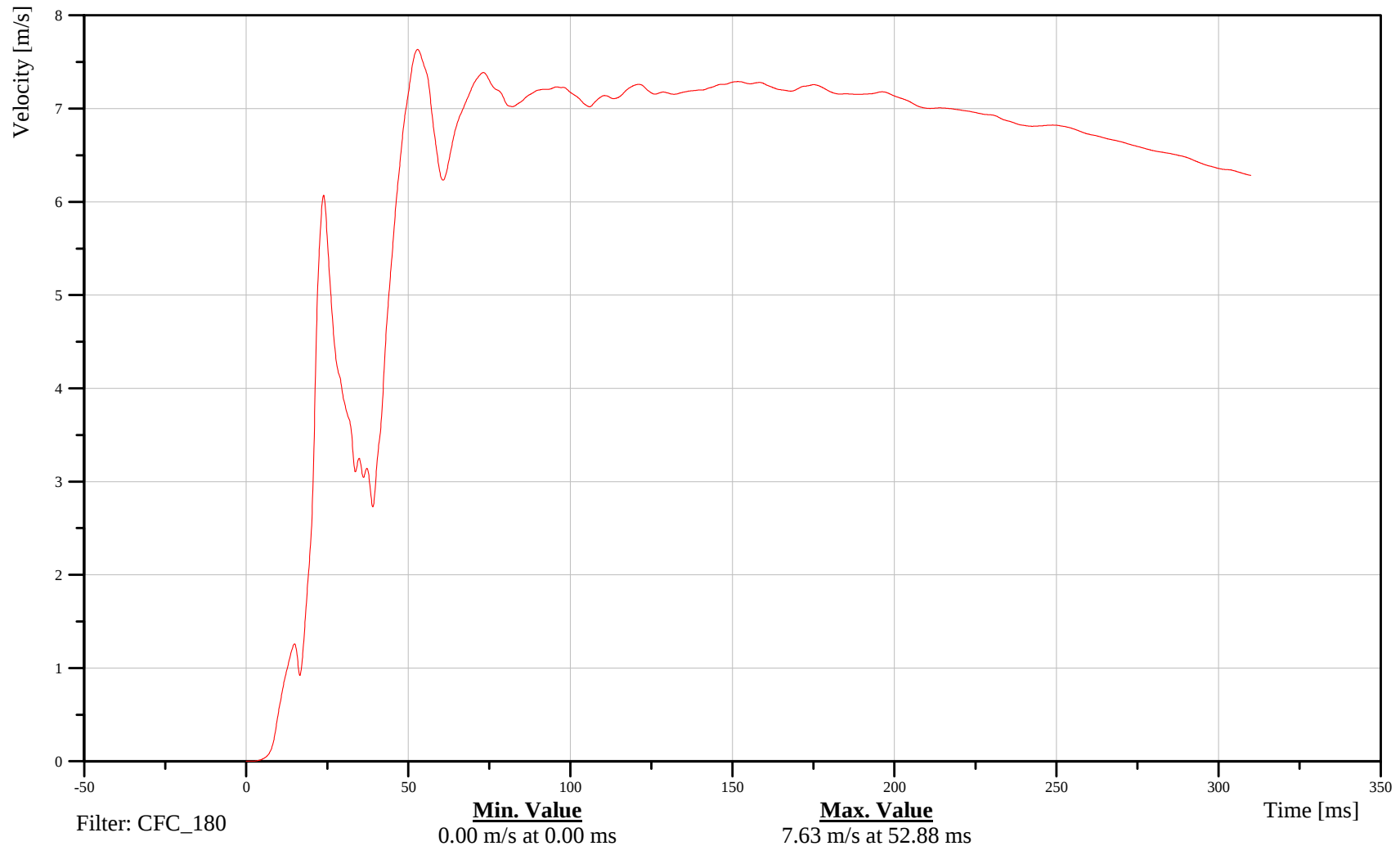
Time: 11:34

VEHICLE CENTER OF GRAVITY Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

10VEHCCG0000VEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-127

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

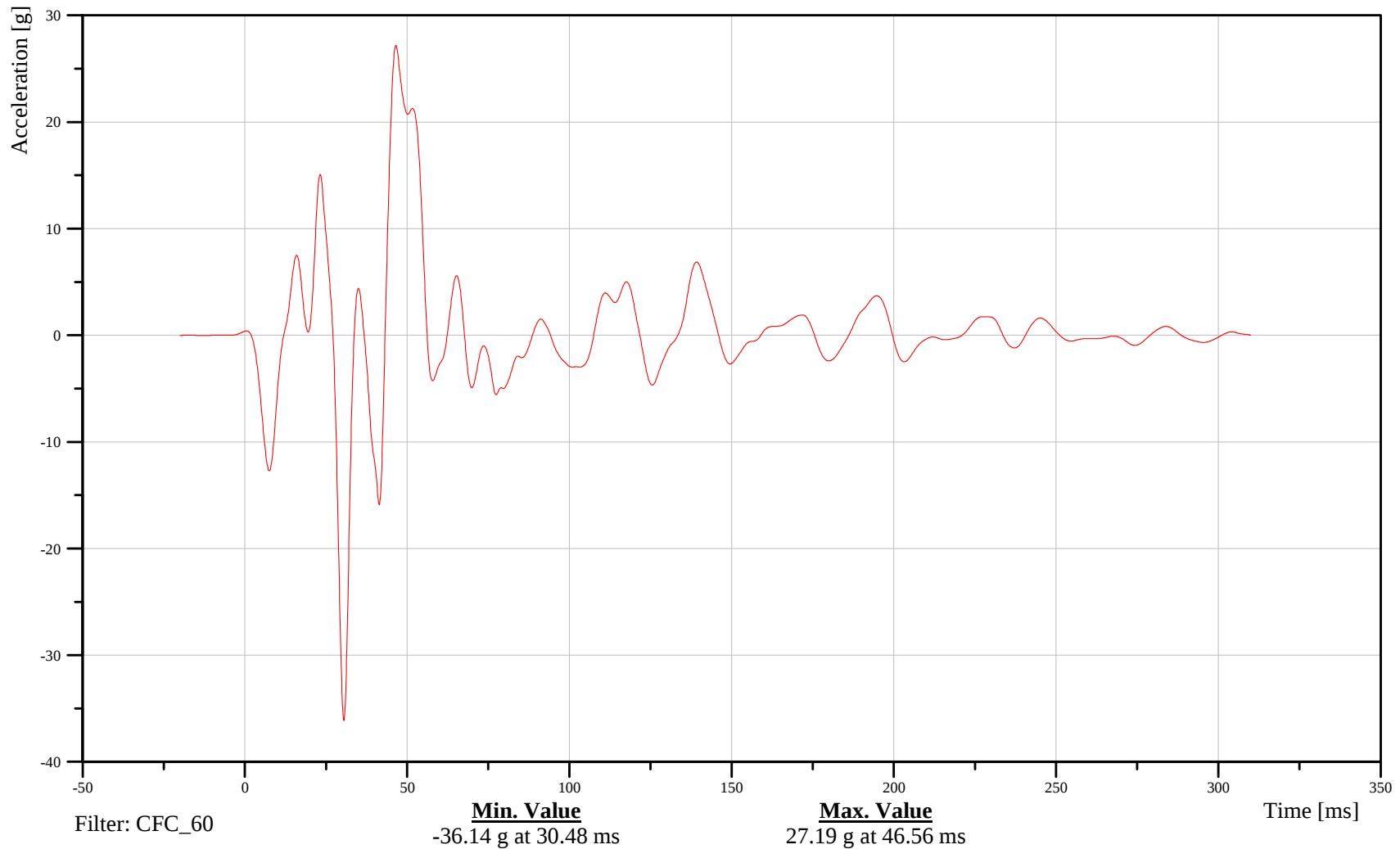
Case: 06/02/2006
Time: 11:34

VEHICLE CENTER OF GRAVITY Z-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

10VEHCCG0000ACZD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-128

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

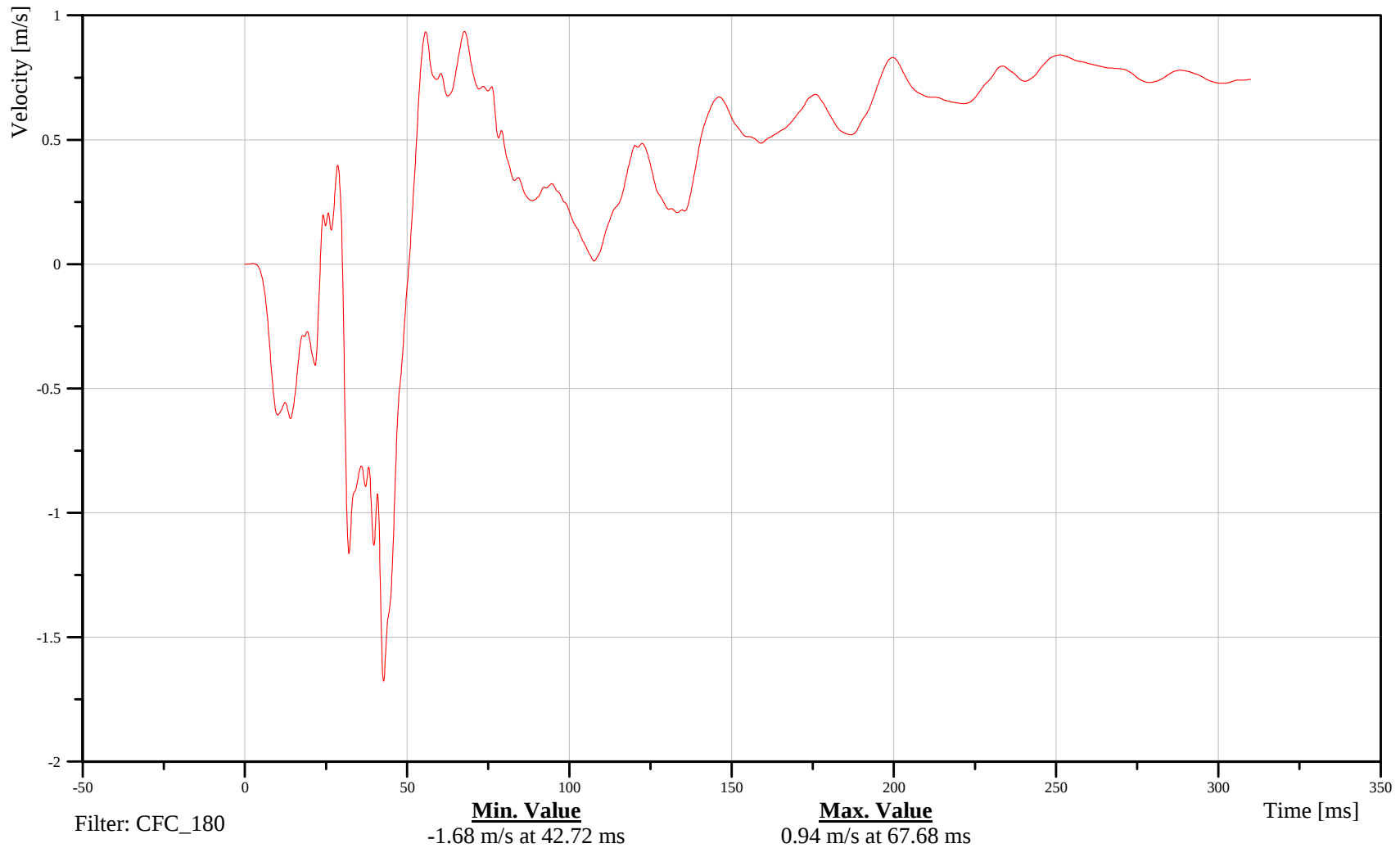
Case: 06/02/2006
Time: 11:34

VEHICLE CENTER OF GRAVITY Z-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

10VEHCCG0000VEZC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-129

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

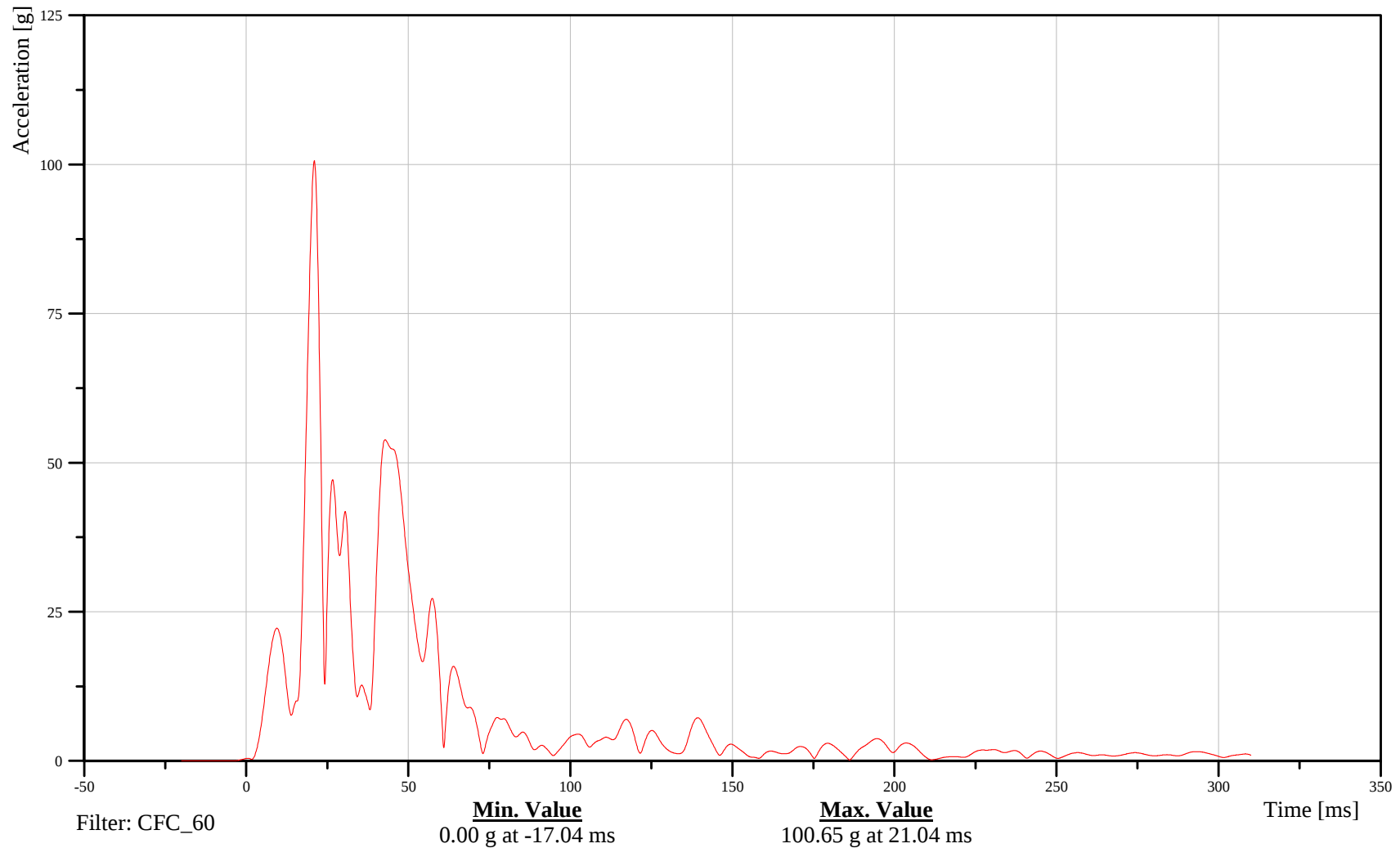
Case: 06/02/2006
Time: 11:34

VEHICLE CENTER OF GRAVITY RESULTANT ACCELERATION

Customer: NHTSA
Test Number: C60507

10VEHCCG0000ACRD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-130

060602-1

MDB Instrumentation Plots



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

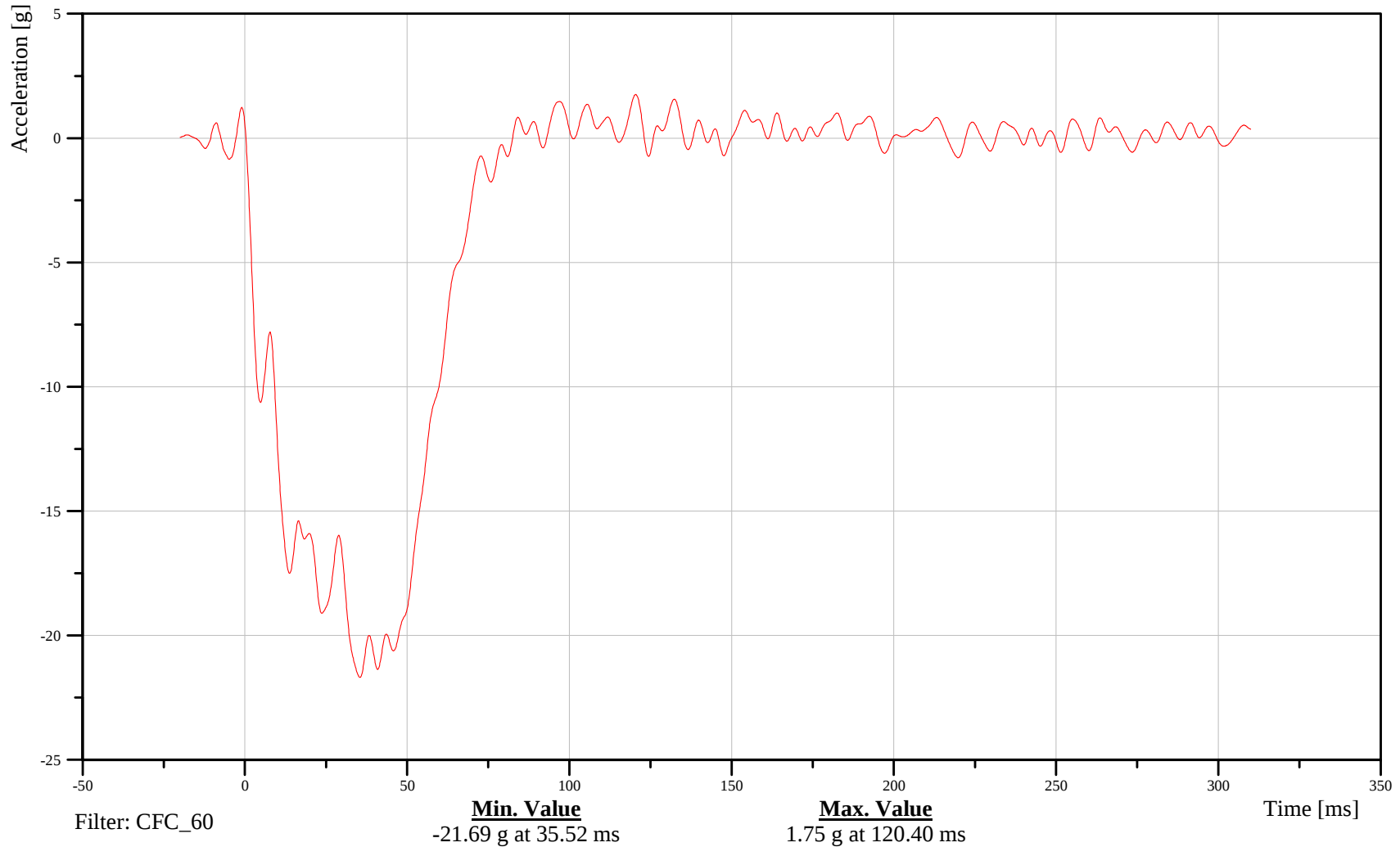
Date: 06/02/2006
Time: 11:34

MDB CENTER OF GRAVITY X-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

M0VEHCCG0000ACXD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-132

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

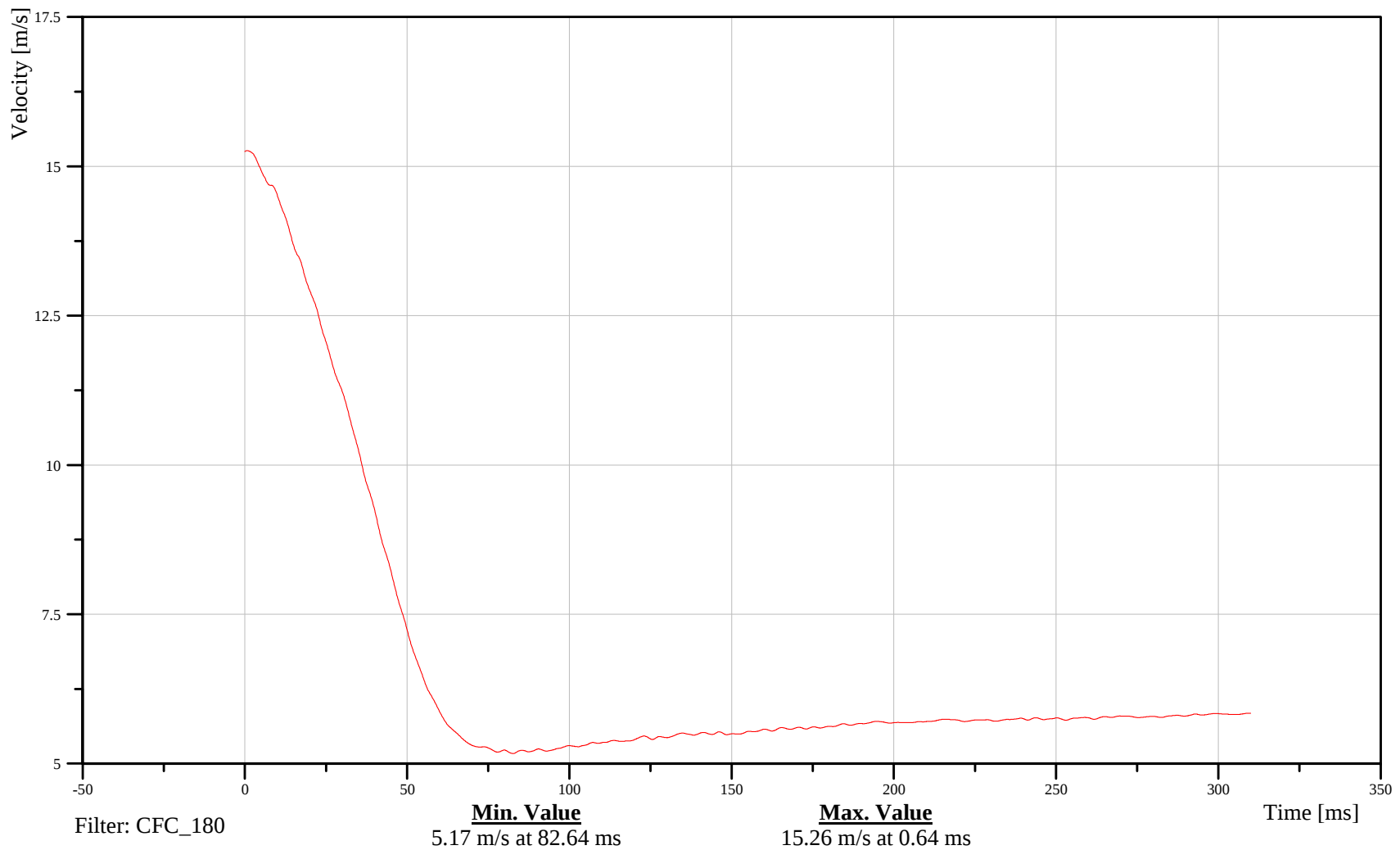
Date: 06/02/2006
Time: 11:34

MDB CENTER OF GRAVITY X-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

M0VEHCCG0000VEXC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-133

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

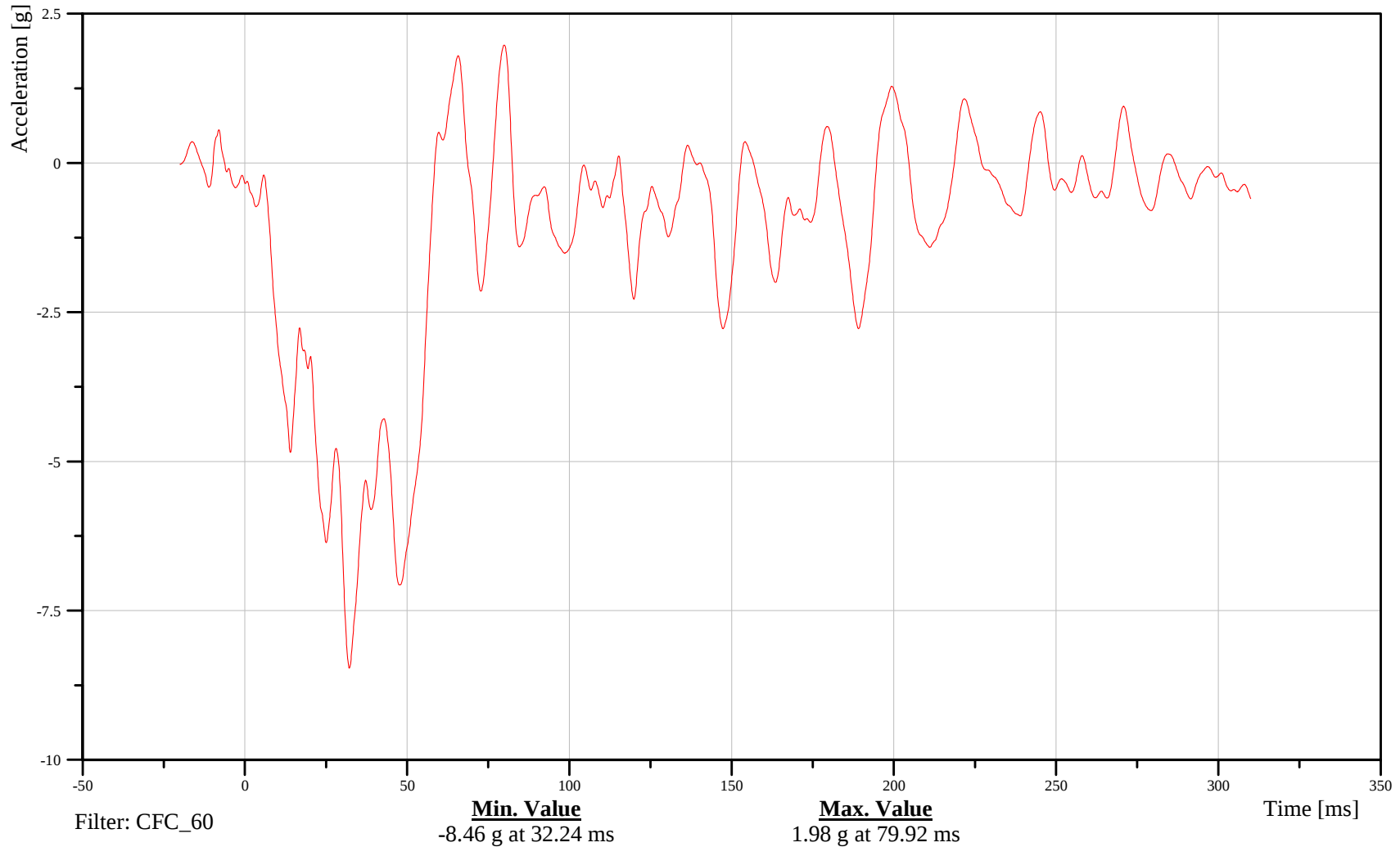
Case: 06/02/2006
Time: 11:34

MDB CENTER OF GRAVITY Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

M0VEHCCG0000ACYD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-134

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

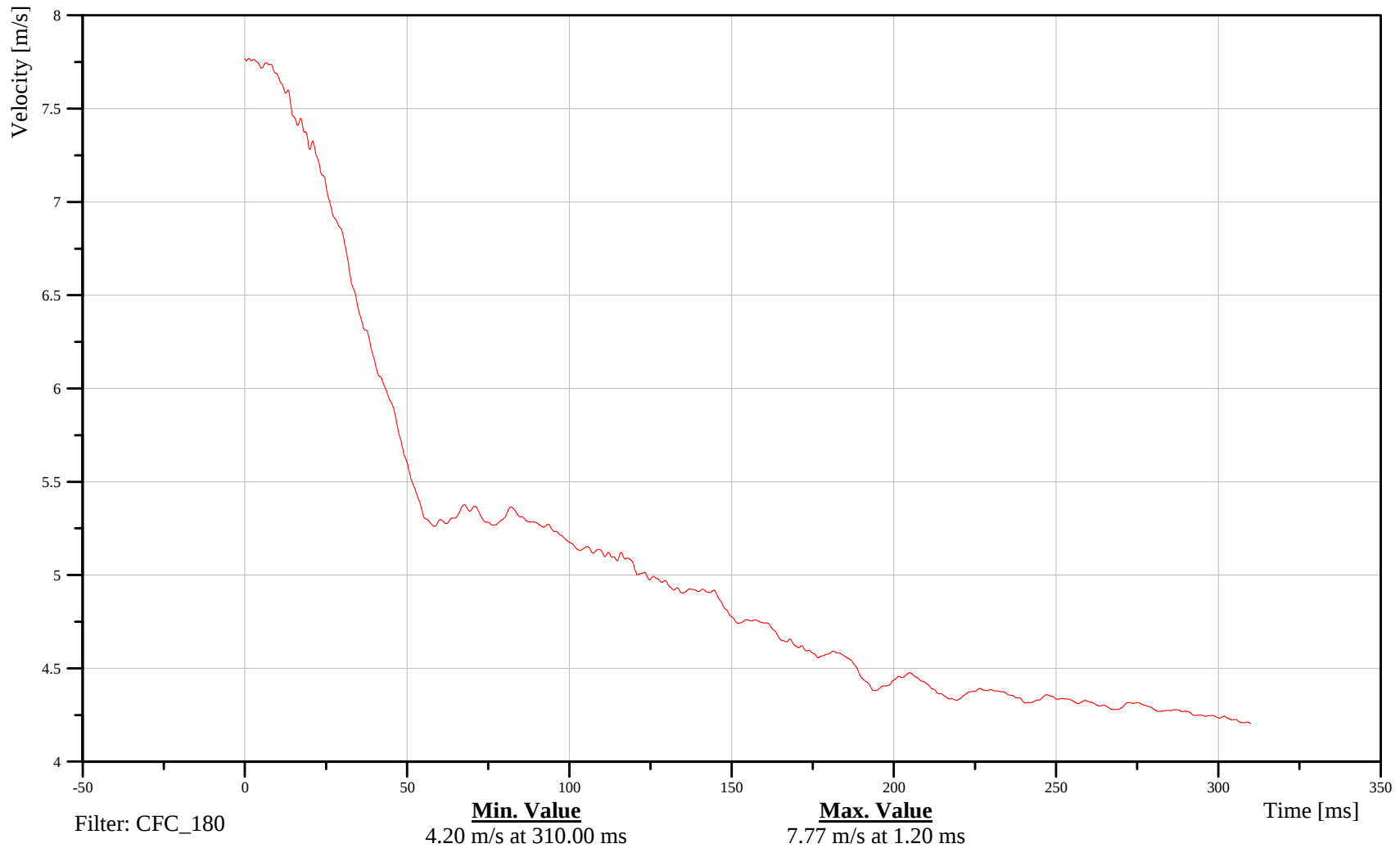
Time: 06/02/2006
Time: 11:34

MDB CENTER OF GRAVITY Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

M0VEHCCG0000VEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-135

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

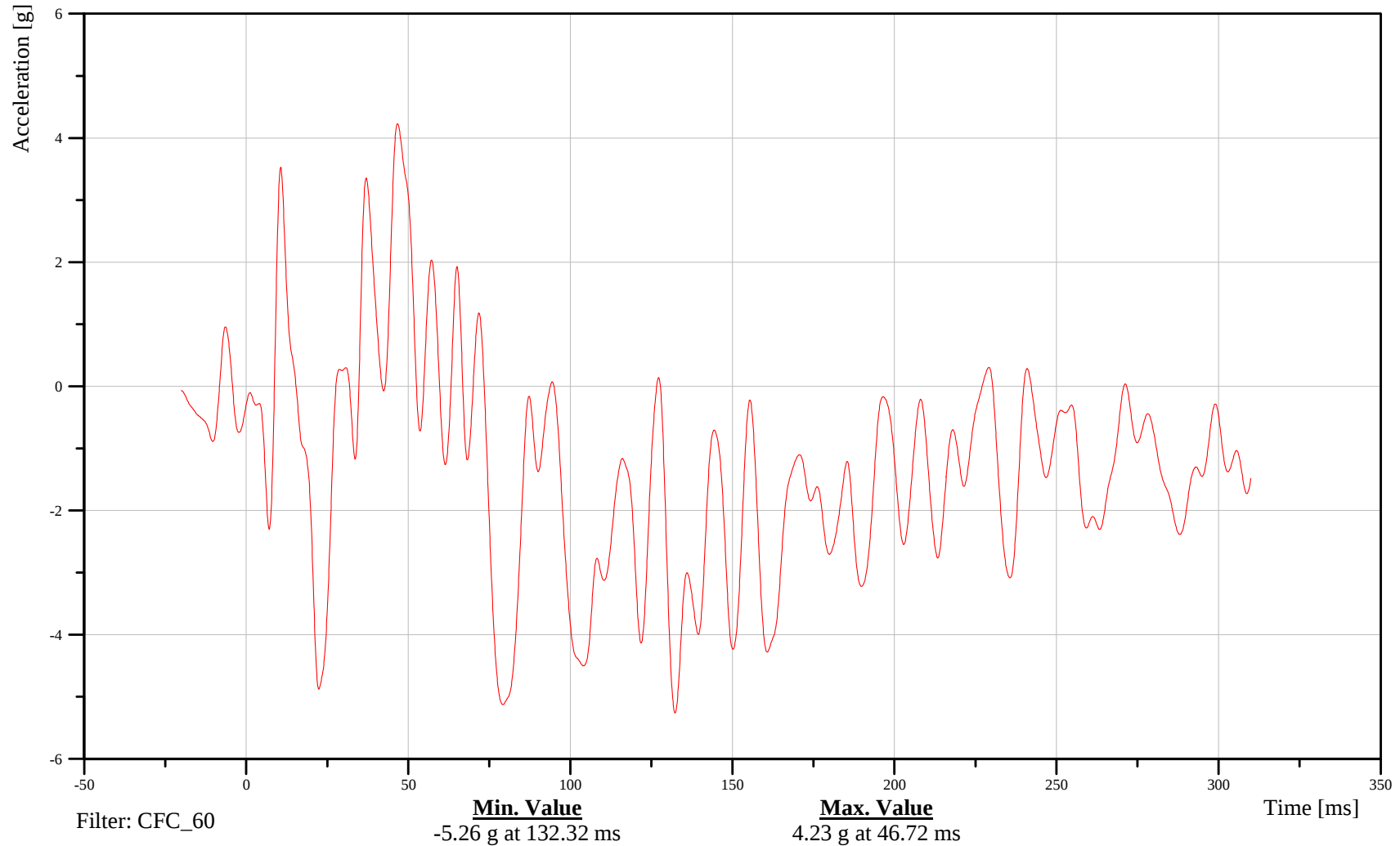
Test: 06/02/2006
Time: 11:34

MDB CENTER OF GRAVITY Z-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

M0VEHCCG0000ACZD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-136

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

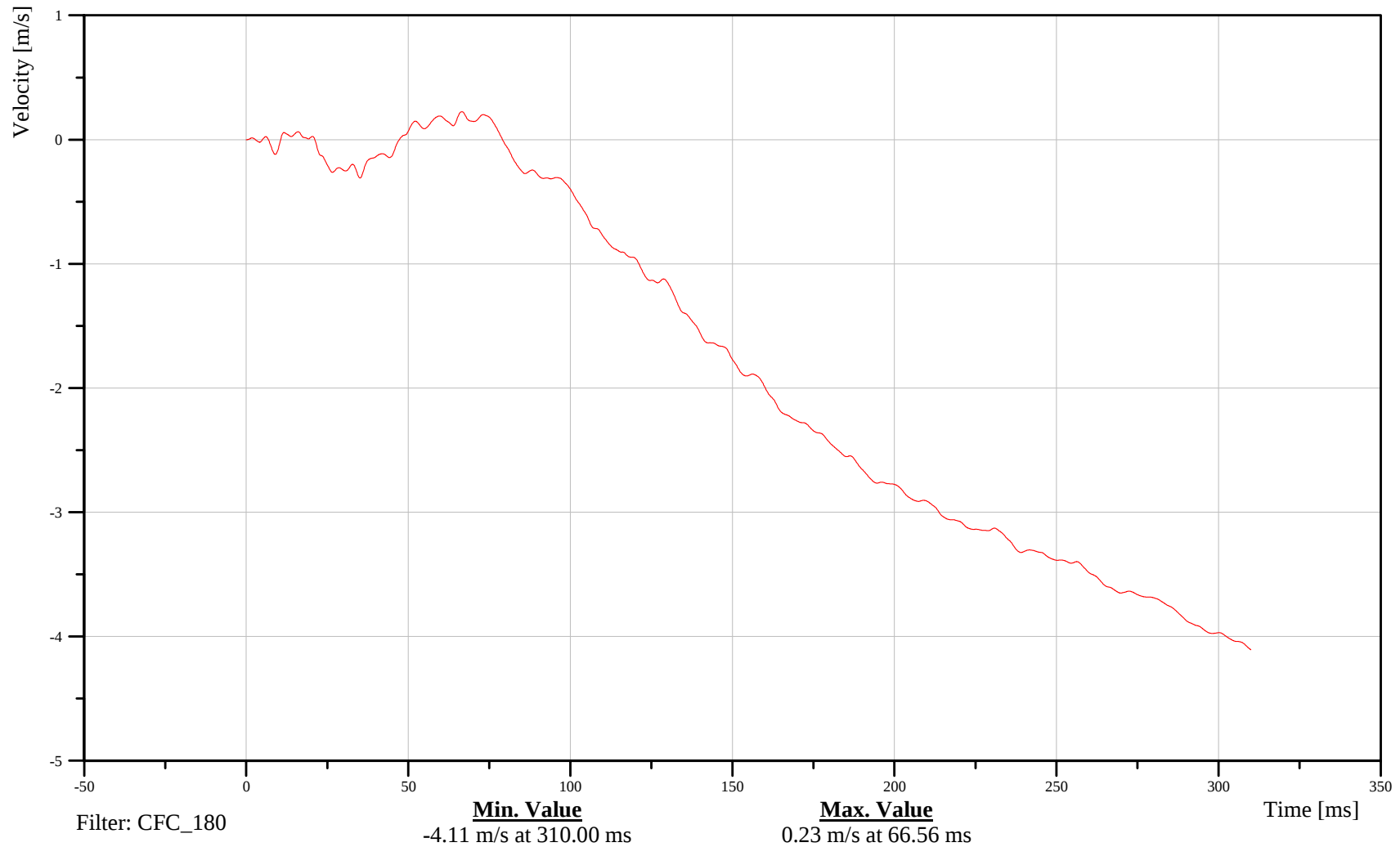
06/02/2006
Time: 11:34

MDB CENTER OF GRAVITY Z-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

M0VEHCCG0000VEZC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-137

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

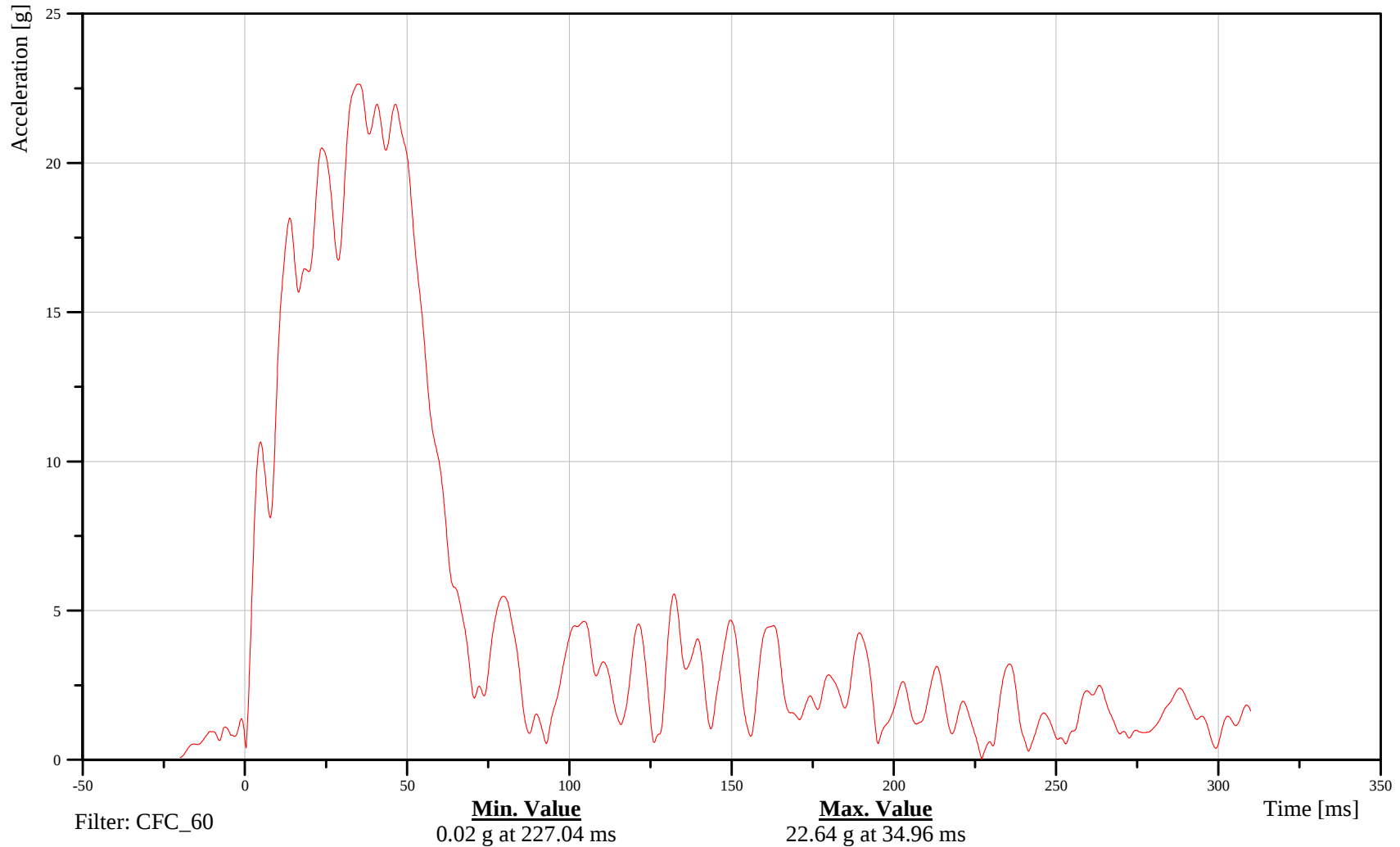
Time: 11:34

MDB CENTER OF GRAVITY RESULTANT ACCELERATION

Customer: NHTSA
Test Number: C60507

M0VEHCCG0000ACRD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-138

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

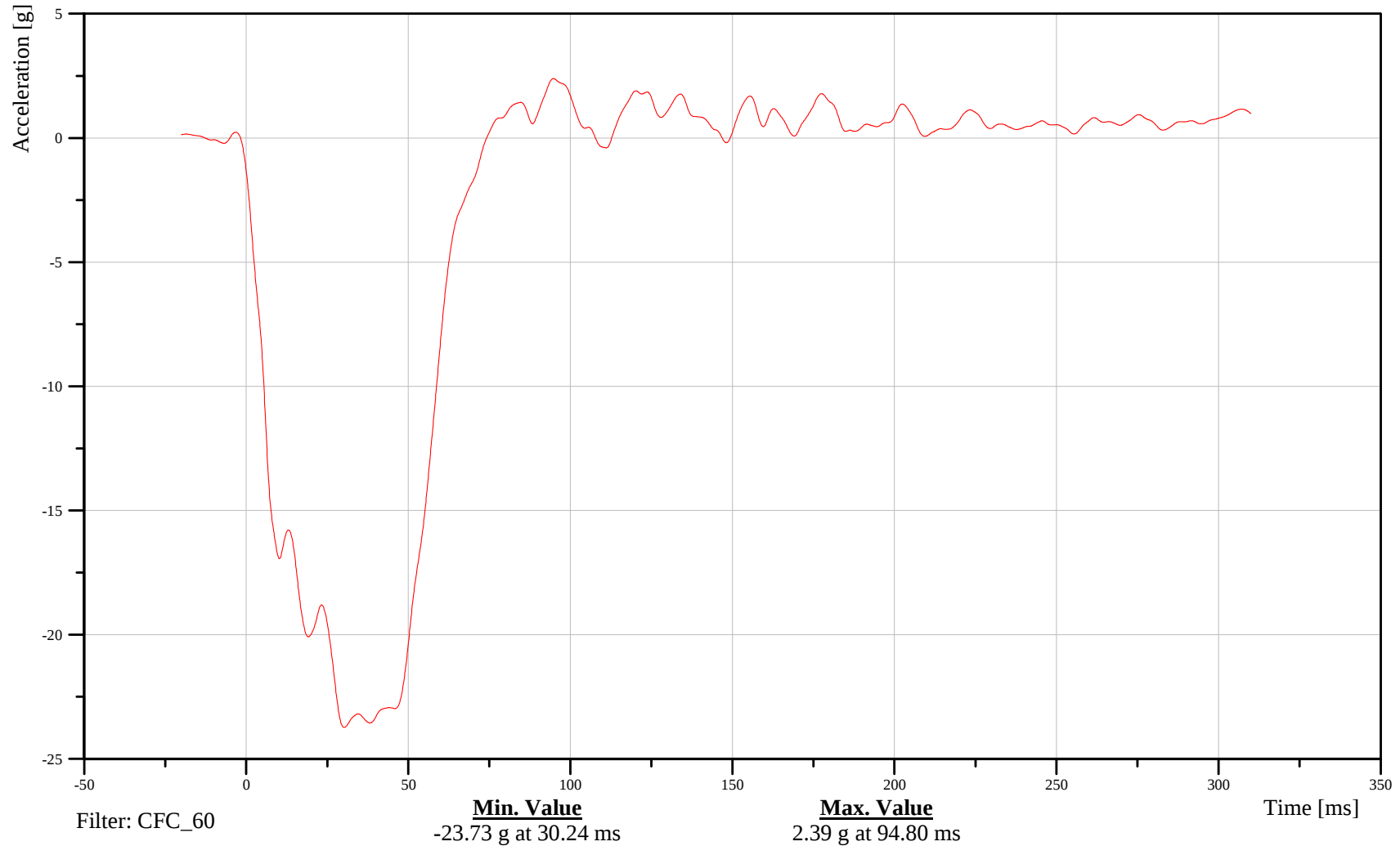
Case: 06/02/2006
Time: 11:34

MDB REAR X-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

M7FRAM000000ACXD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-139

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

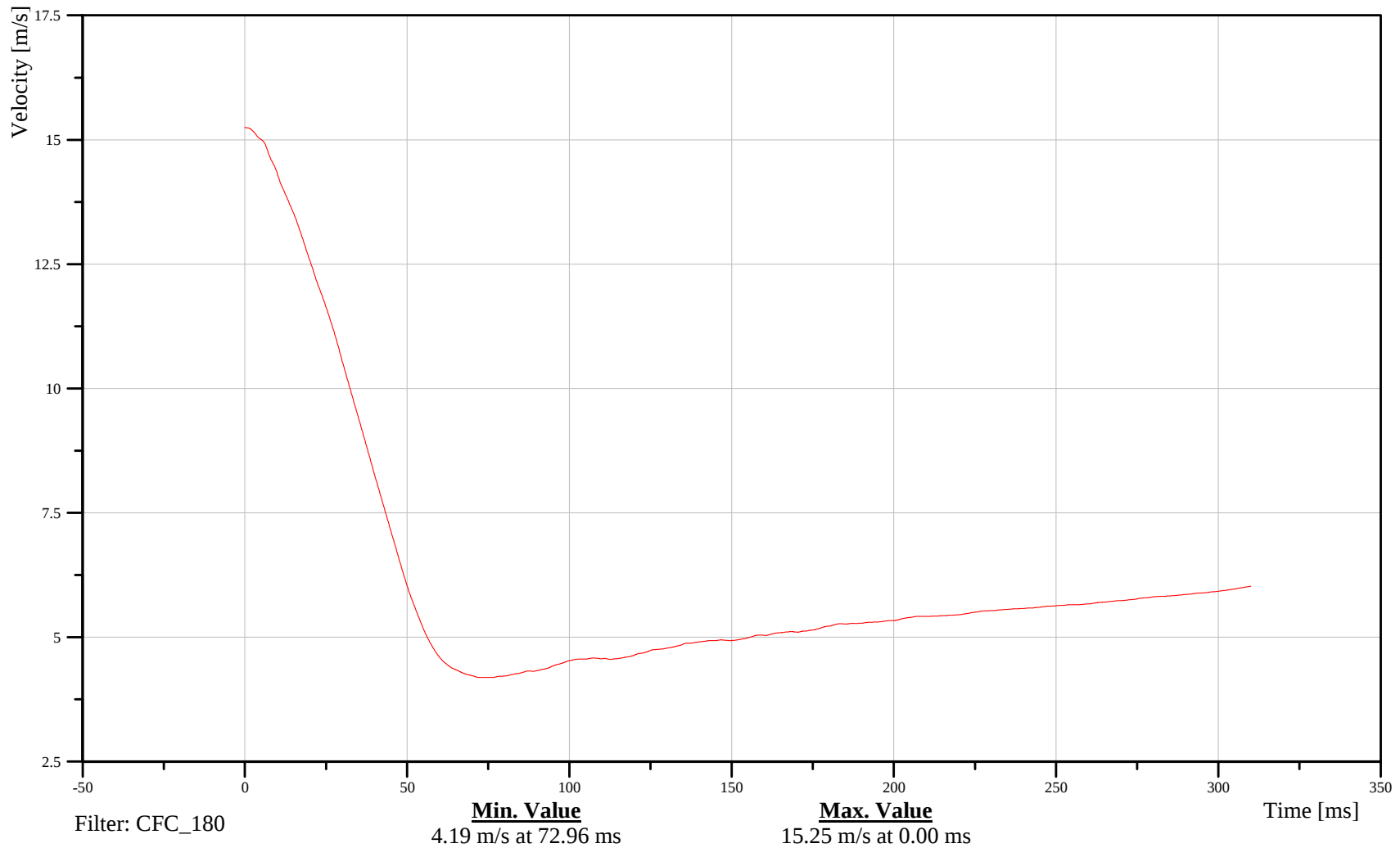
Time: 11:34

MDB REAR X-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

M7FRAM000000VEXC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-140

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

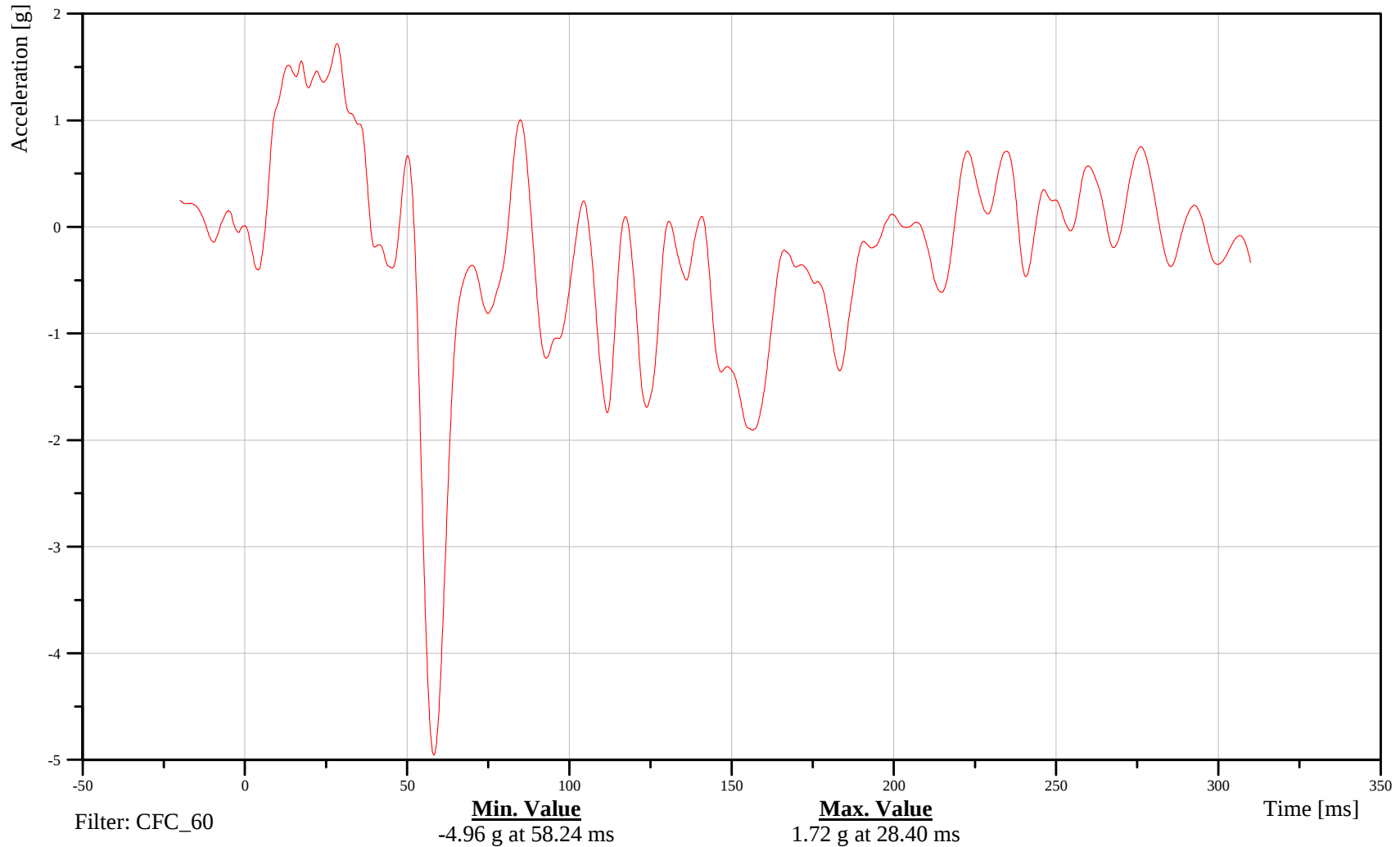
Case: 060602-1
Time: 11:34

MDB REAR Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

M7FRAM000000ACYD

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-141

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

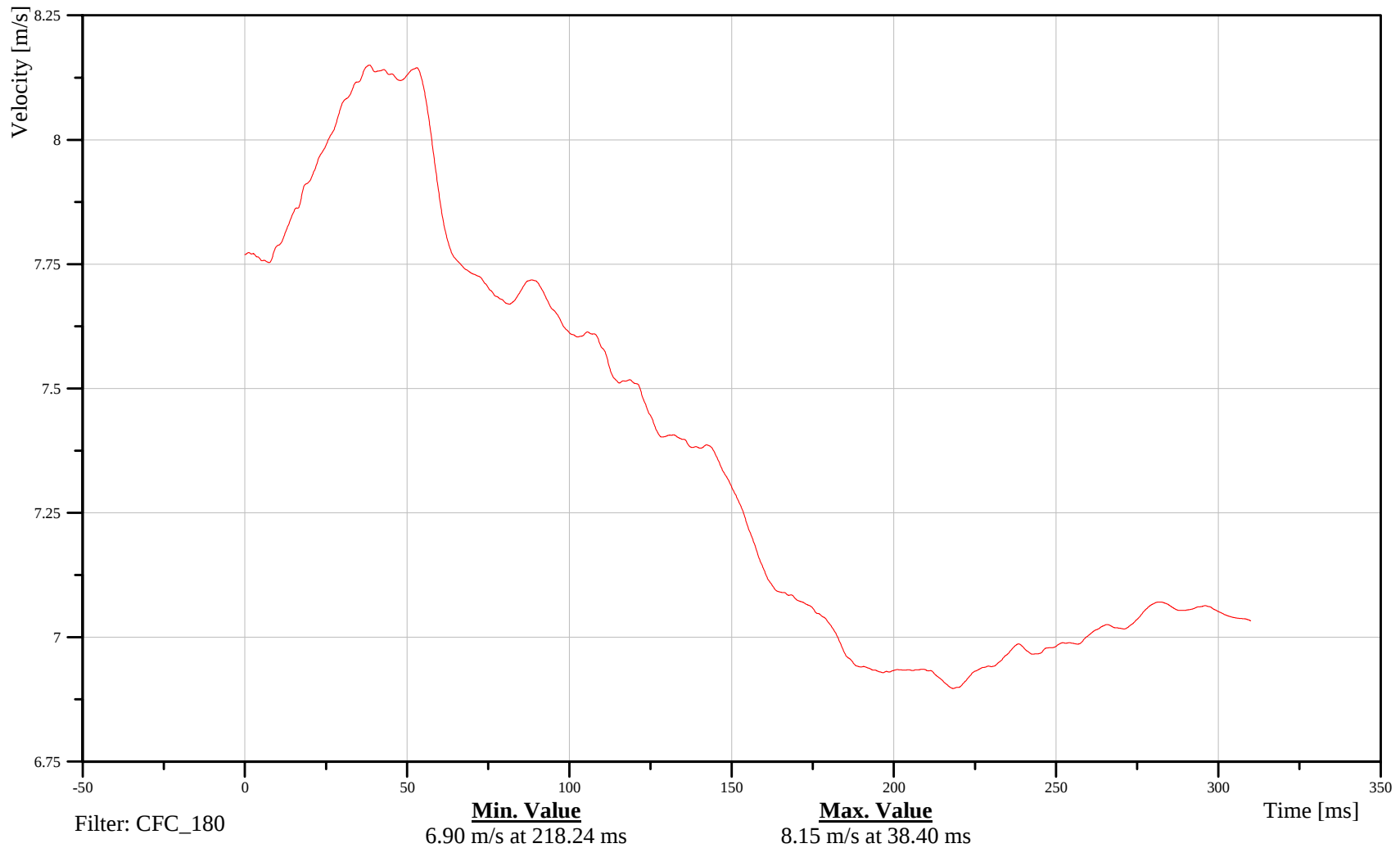
Case: 06/02/2006
Time: 11:34

MDB REAR Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60507

M7FRAM000000VEYC

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-142

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

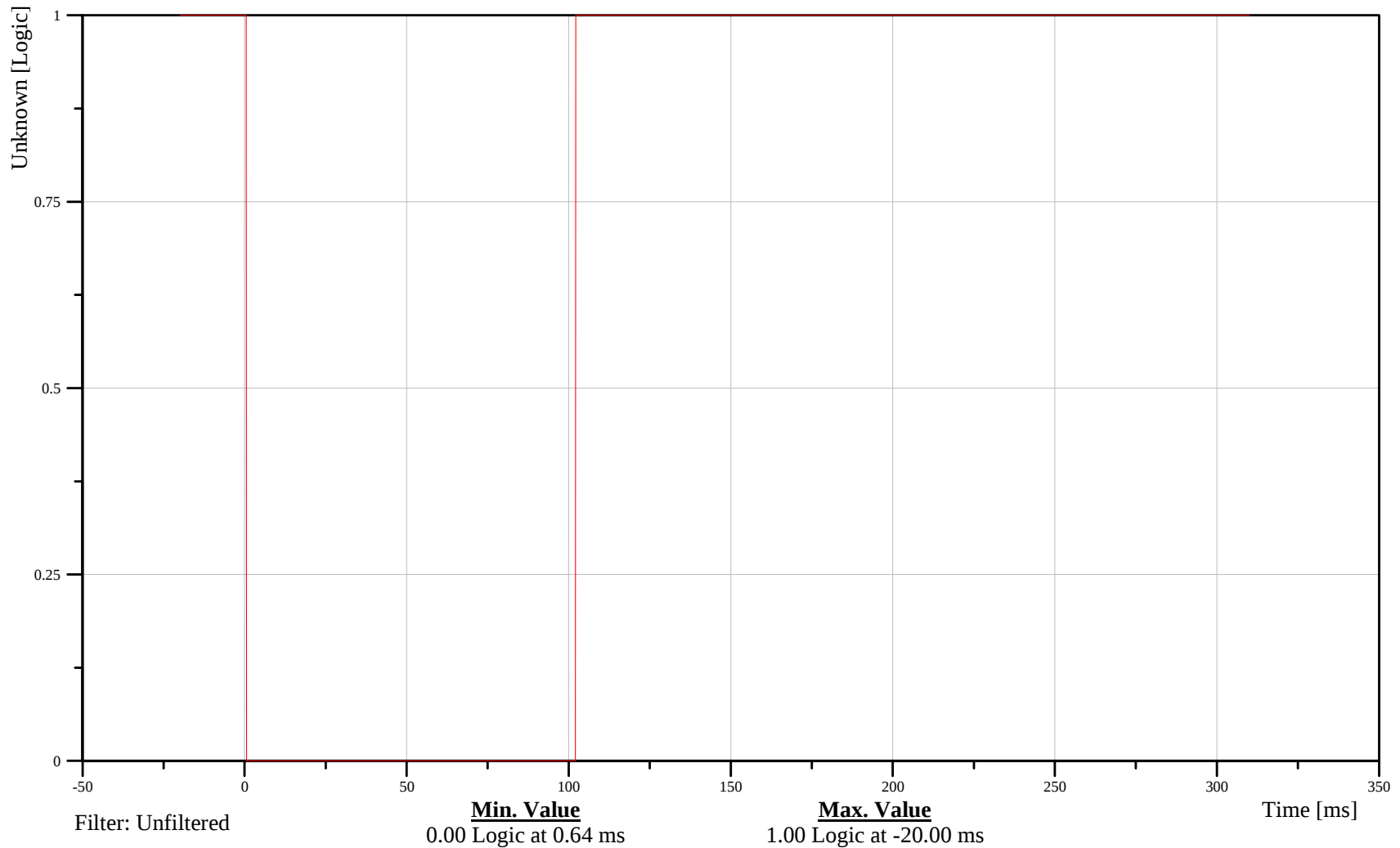
Time: 11:34

MDB RIGHT CONTACT SWITCH

Customer: NHTSA
Test Number: C60507

M3CONT000000VO00

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-143

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

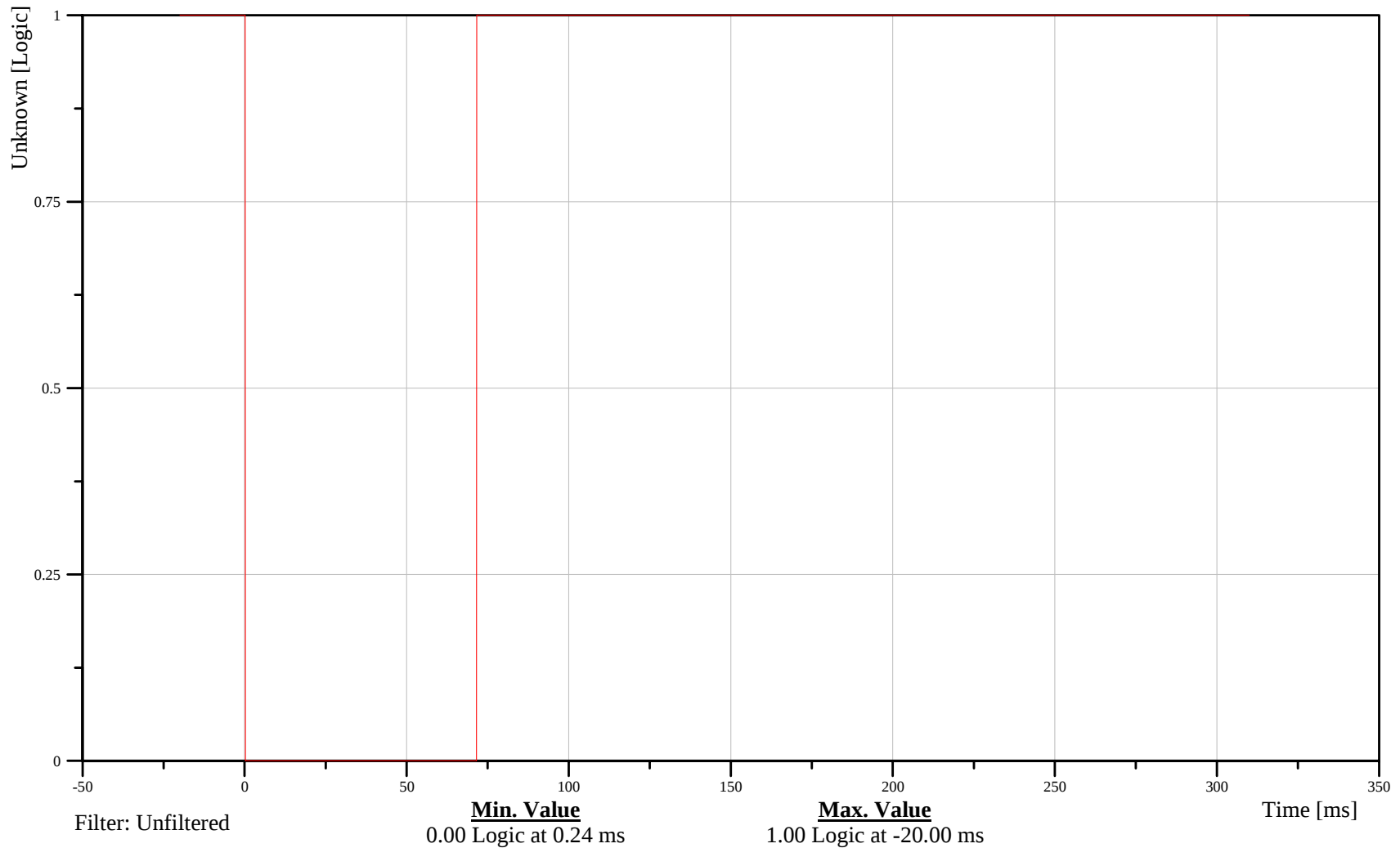
Case: 06/02/2006
Time: 11:34

MDB LEFT CONTACT SWITCH

Customer: NHTSA
Test Number: C60507

M1CONT000000VO00

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-144

060602-1

Driver and Passenger Dummy Instrumentation Plots



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

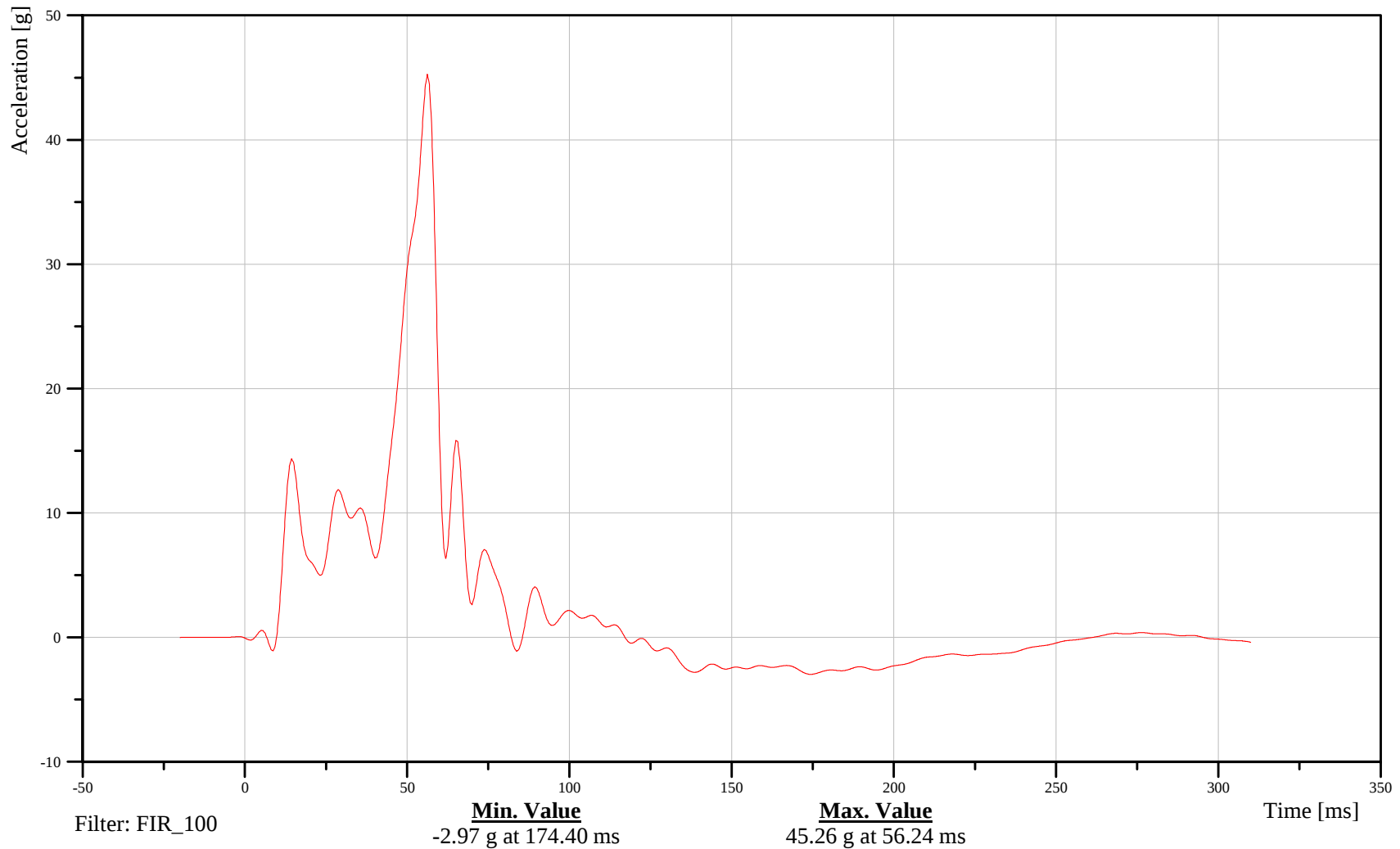
Date: 06/02/2006
Time: 11:34

DRIVER UPPER RIB Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

11RIBSLU00SHACY1

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-146

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

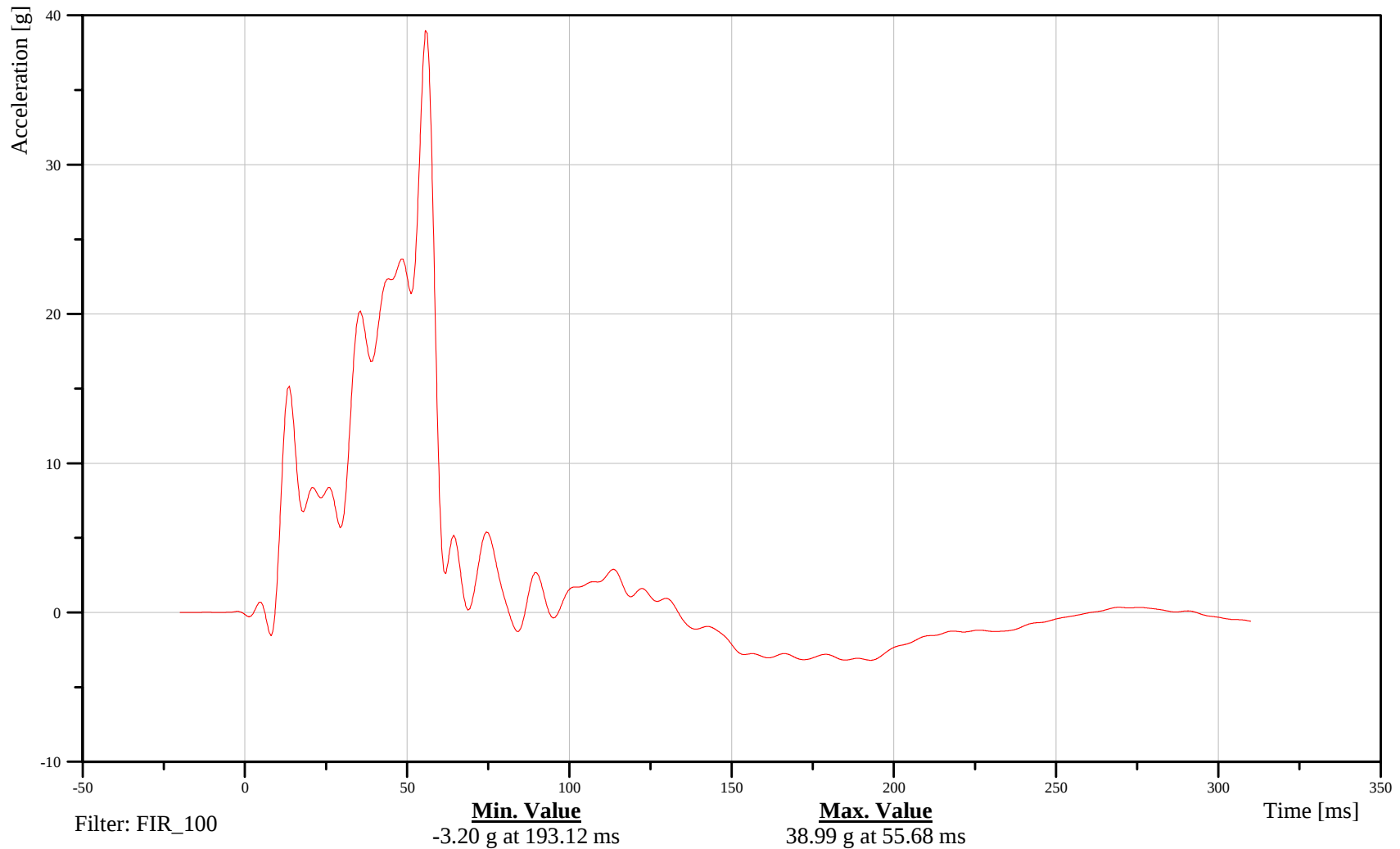
Case: 06/02/2006
Time: 11:34

DRIVER LOWER RIB Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

11RIBSL00SHACY1

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-147

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

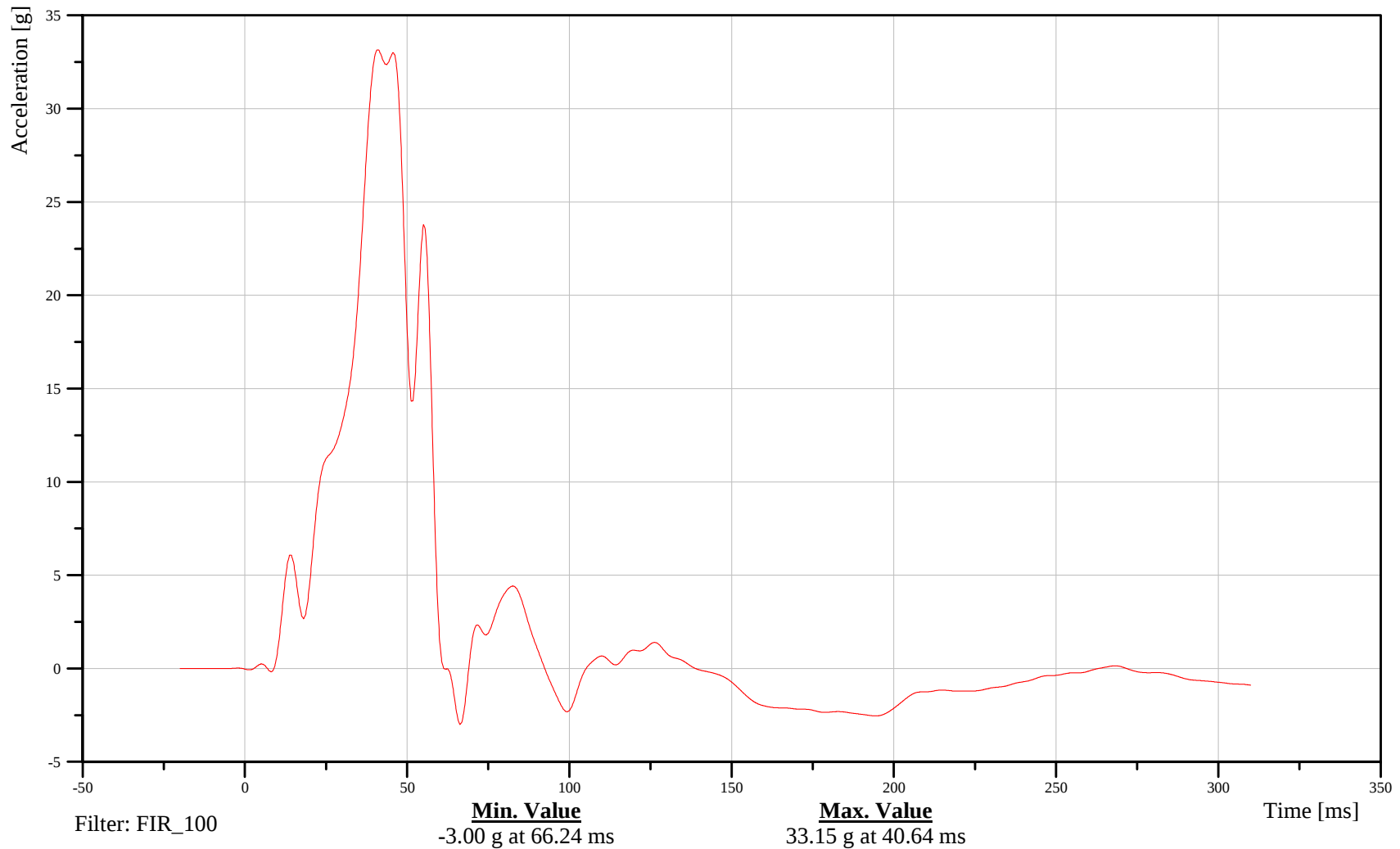
Case: 060602-1
Time: 11:34

DRIVER LOWER SPINE Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

11SPIN1200SHACY1

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-148

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

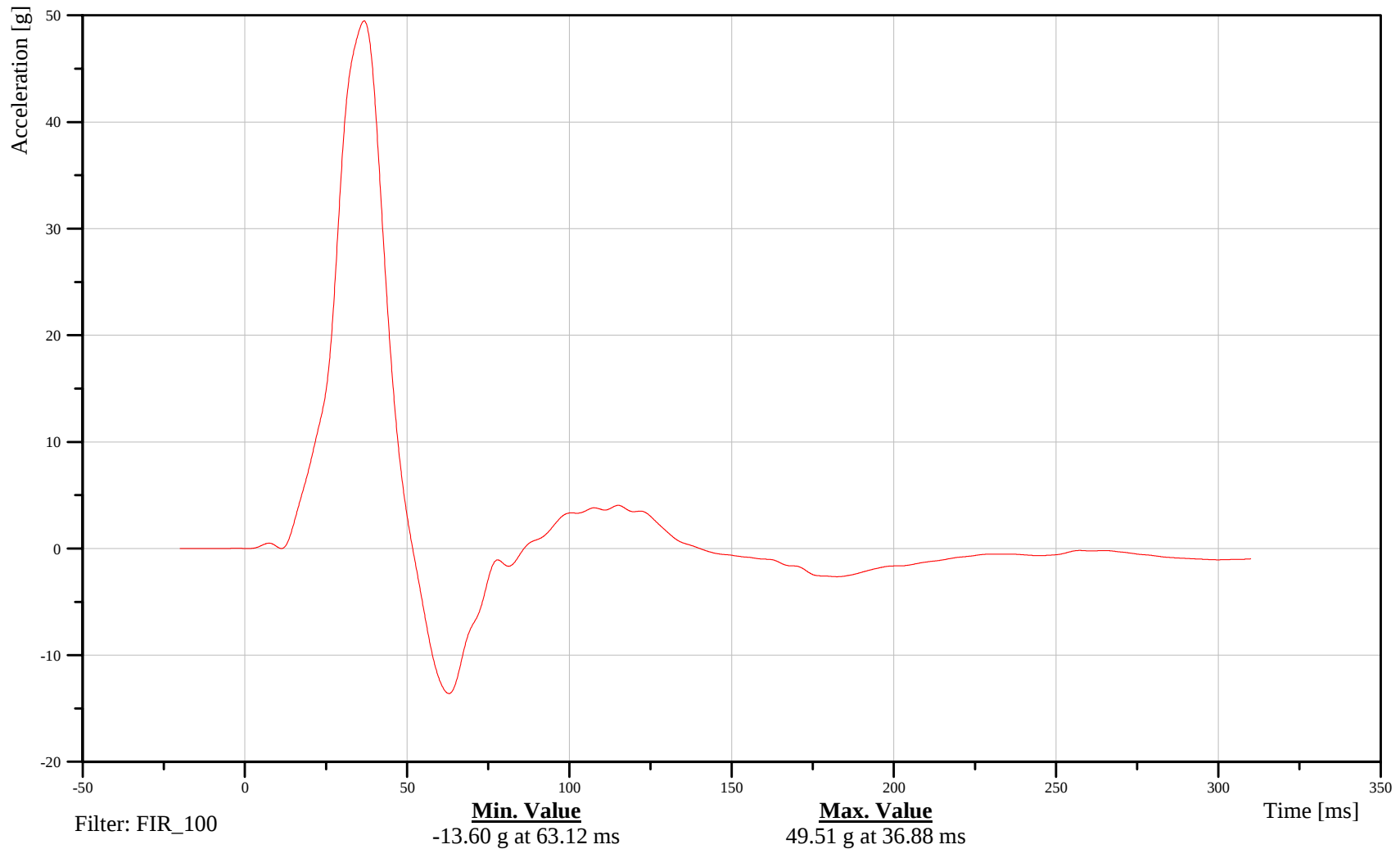
Time: 11:34
Date: 06/02/2006

DRIVER PELVIS Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

11PELVCG00SHACY1

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-149

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

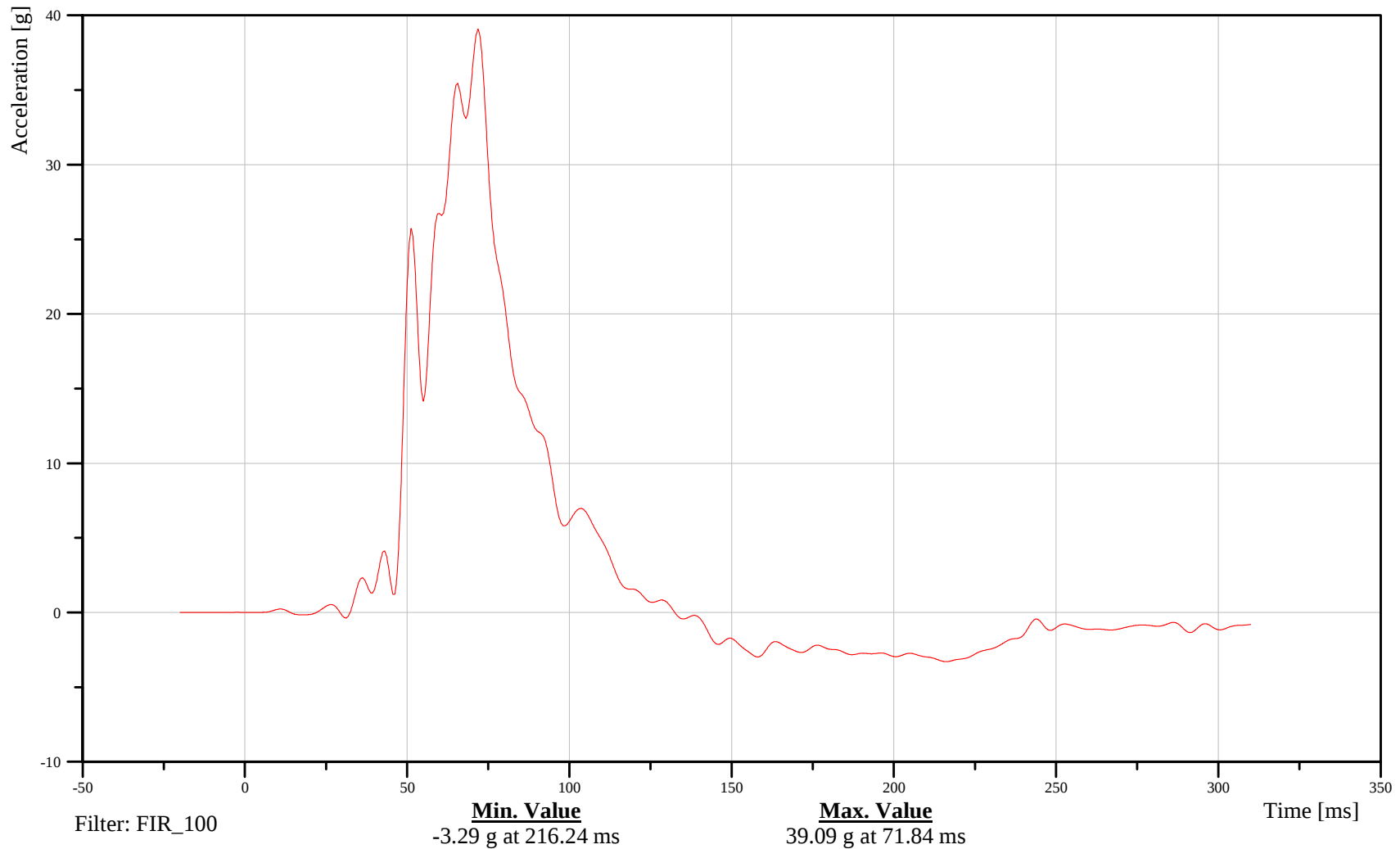
Time: 11:34

LEFT REAR PASSENGER UPPER RIB Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

14RIBSLU00SHACY1

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-150

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

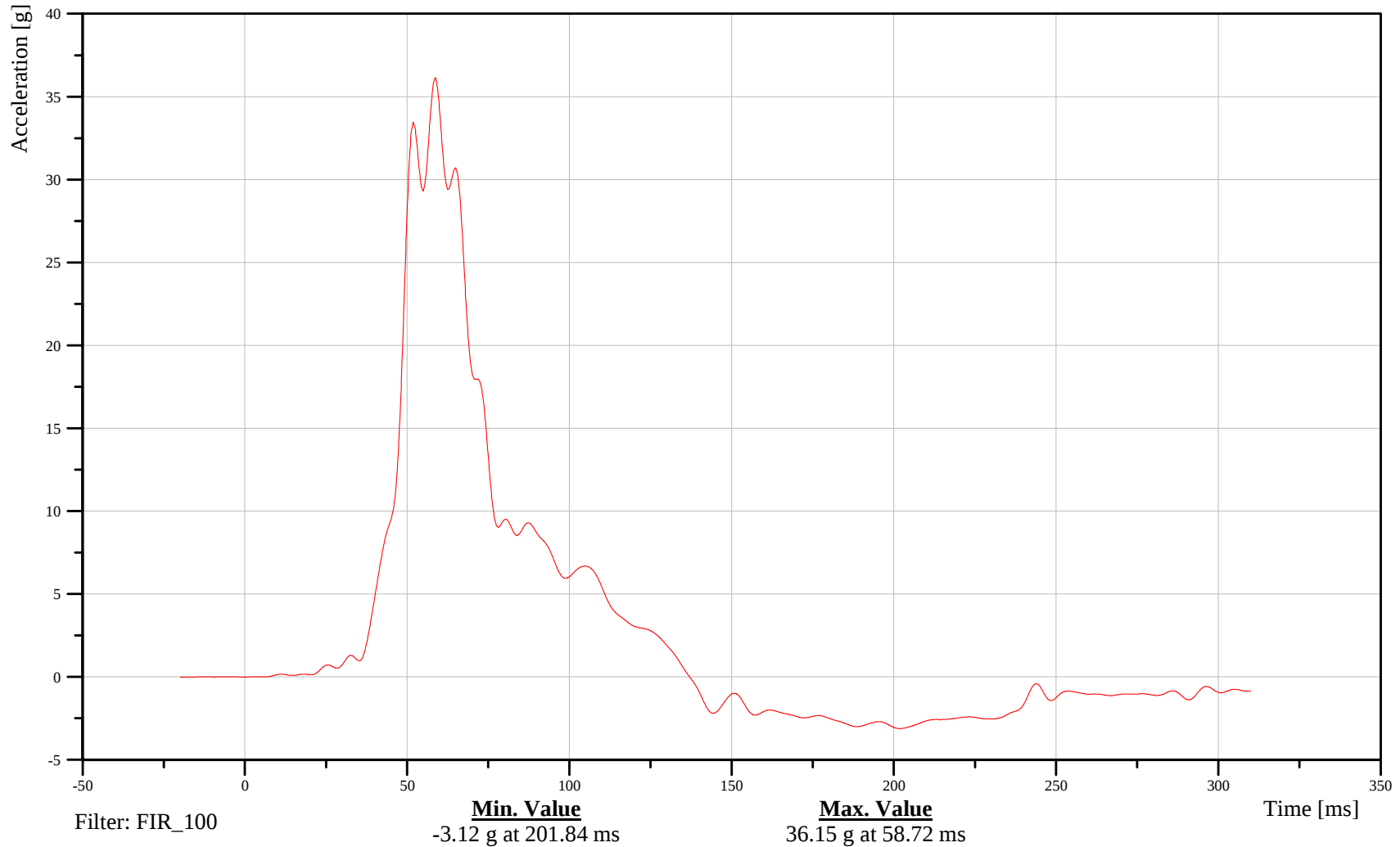
Date: 06/02/2006
Time: 11:34

LEFT REAR PASSENGER LOWER RIB Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

14RIBSL00SHACY1

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-151

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

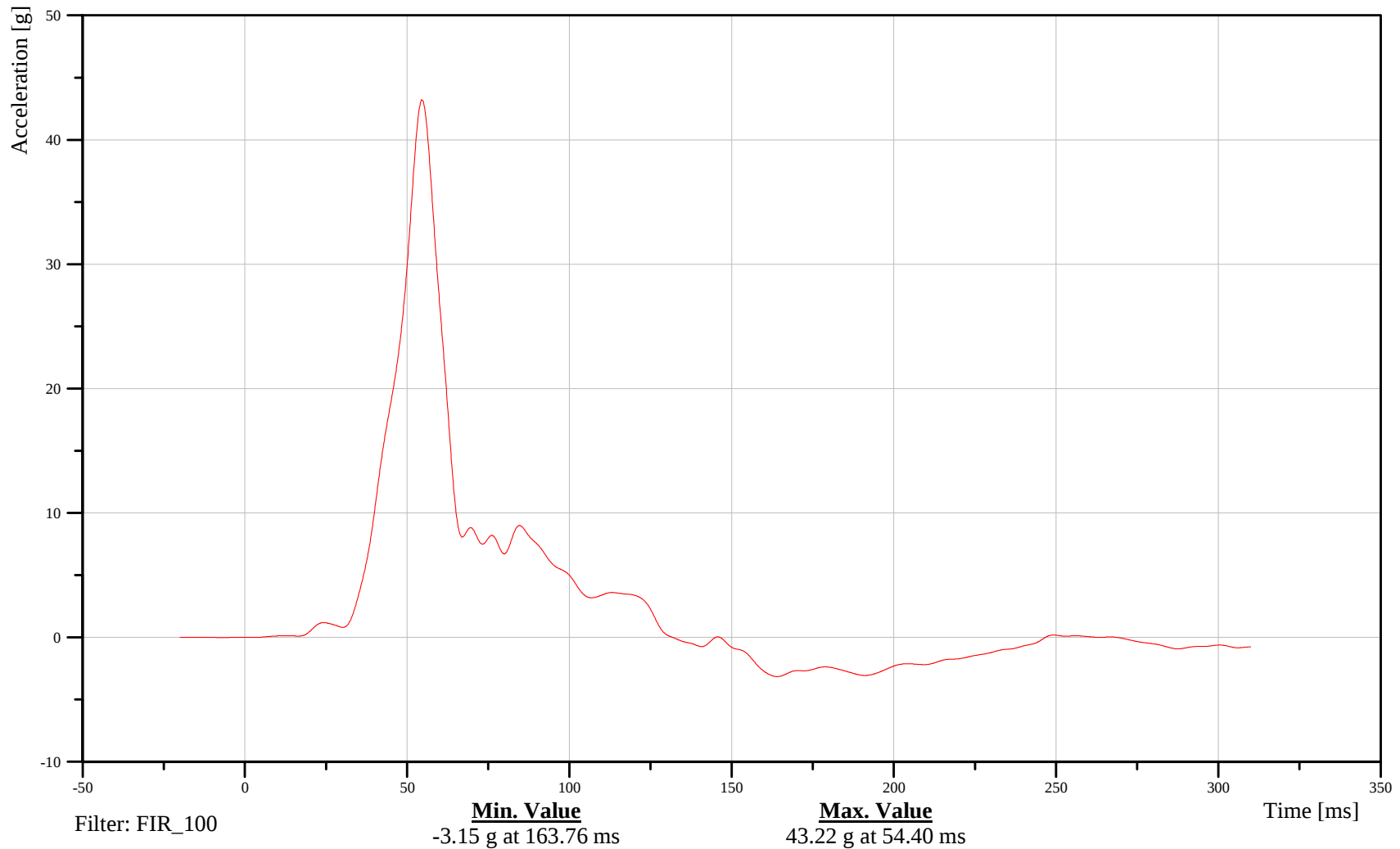
Time: 11:34

LEFT REAR PASSENGER LOWER SPINE Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

14SPIN1200SHACY1

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-152

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Case: 06/02/2006

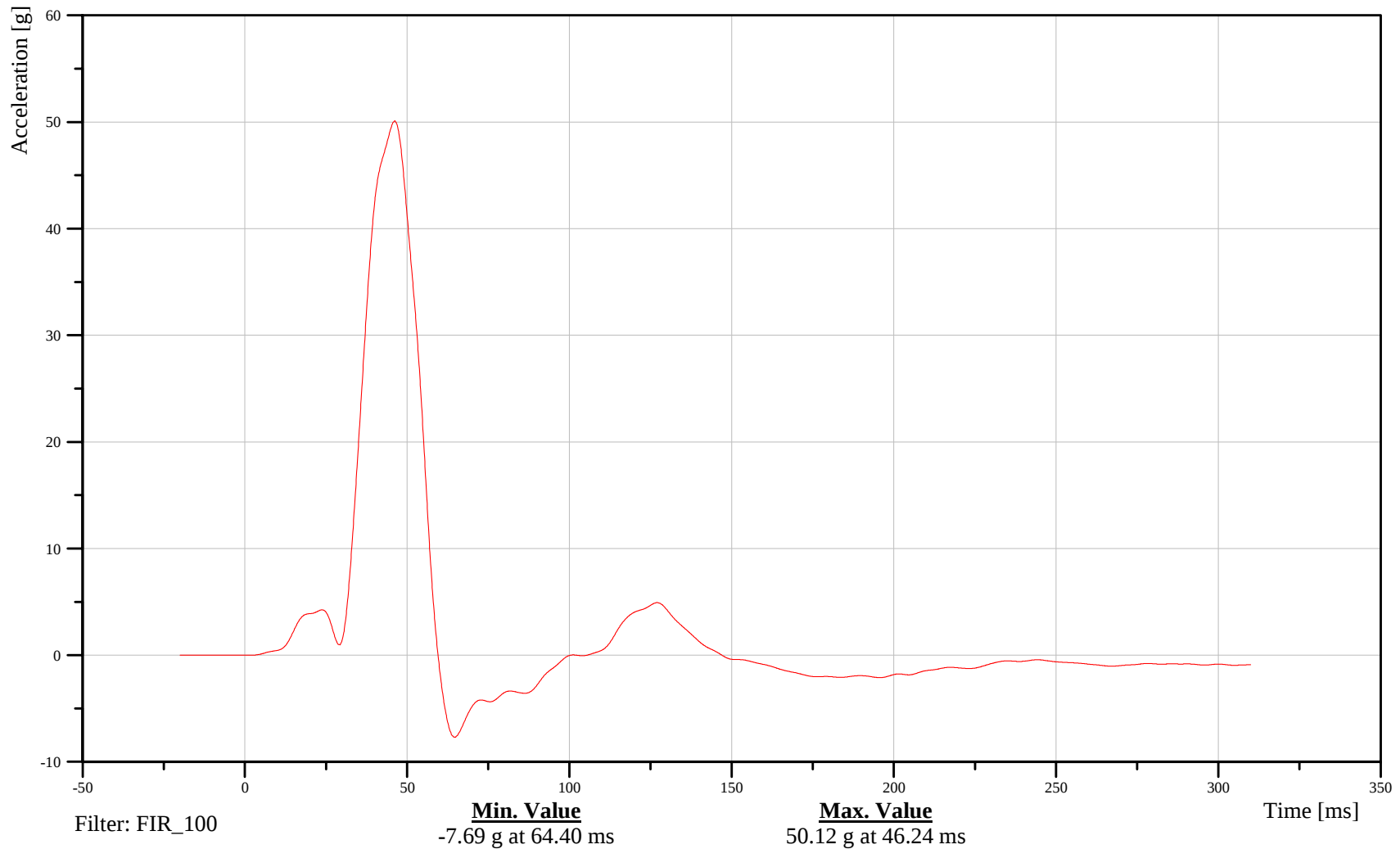
Time: 11:34

LEFT REAR PASSENGER PELVIC Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60507

14PELVCG00SHACY1

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-153

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

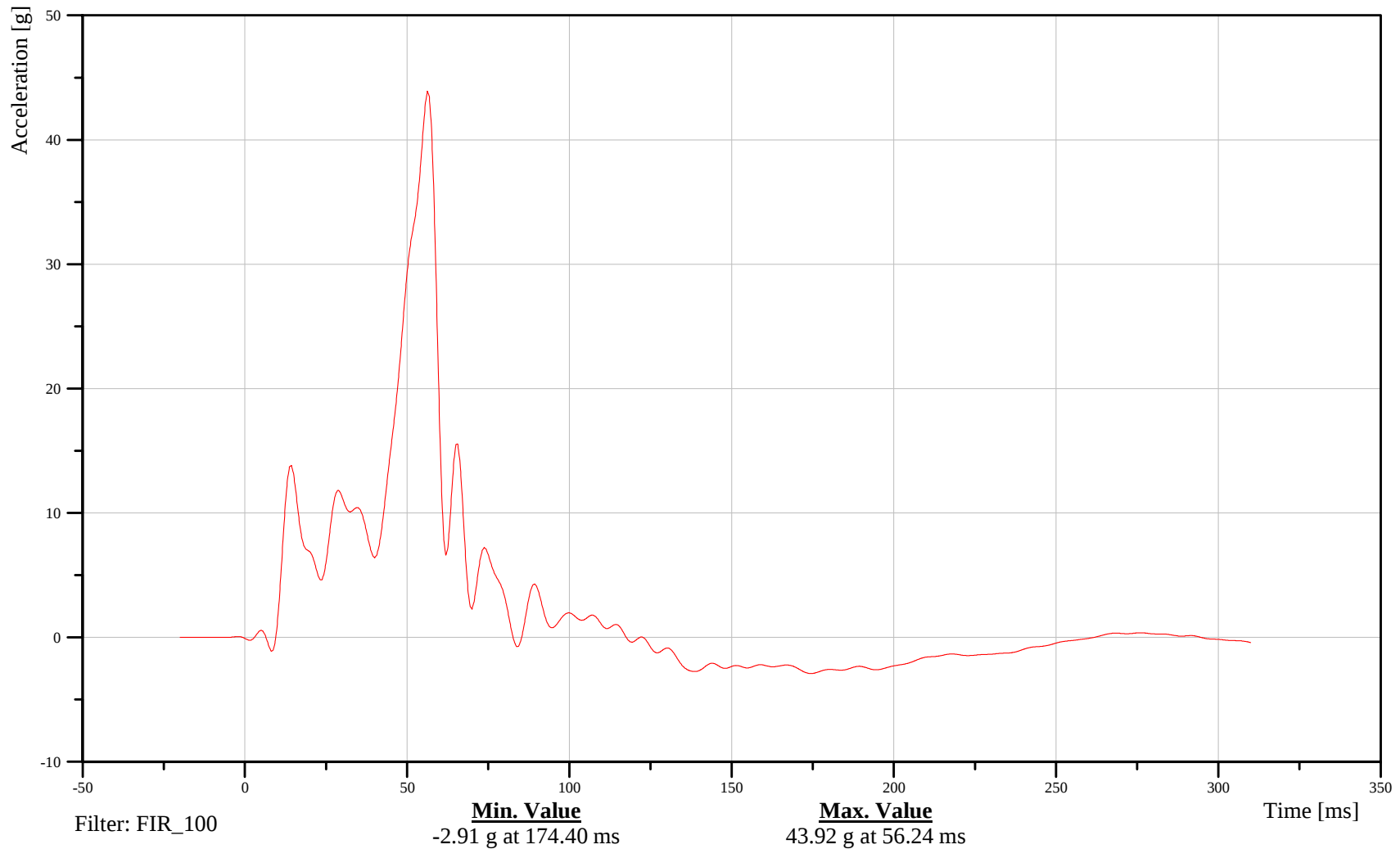
Case: 06/02/2006
Time: 11:34

DRIVER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60507

11RIBSLURESHACY1

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-154

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

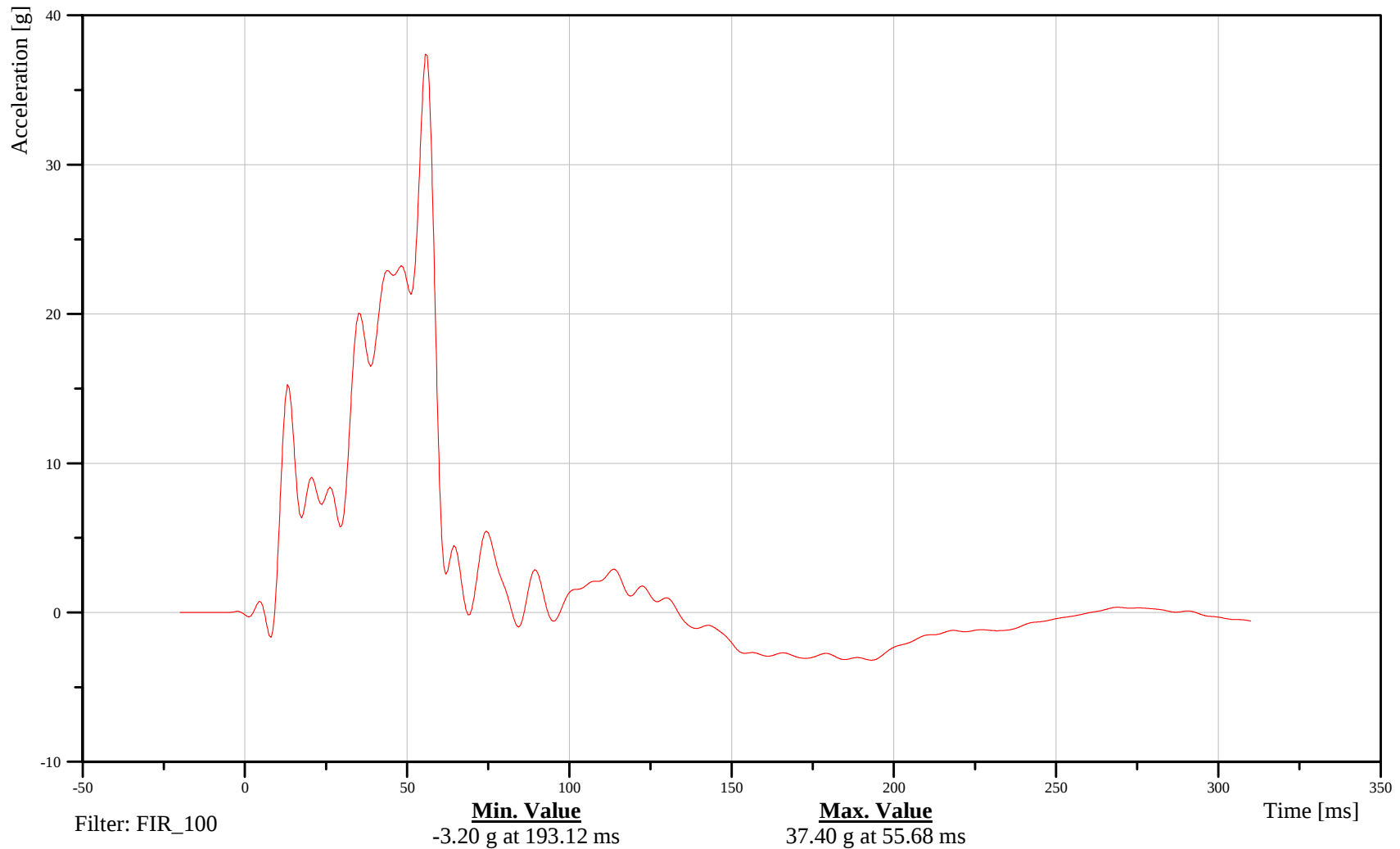
06/02/2006
Time: 11:34

DRIVER LOWER RIB Y-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60507

11RIBSLLRESHACY1

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-155

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

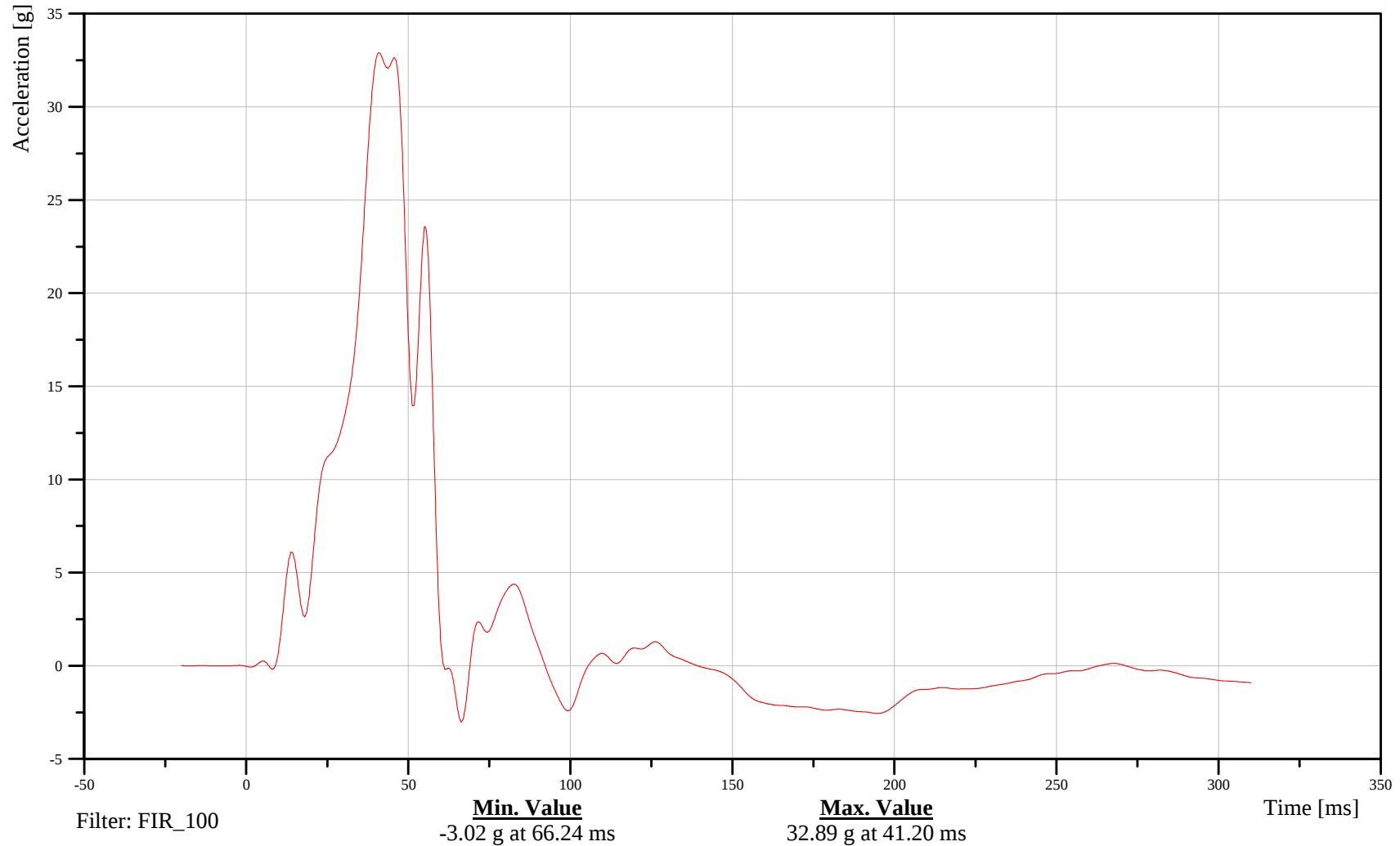
Date: 06/02/2006
Time: 11:34

DRIVER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60507

11SPIN12RDSHACY1

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-156

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

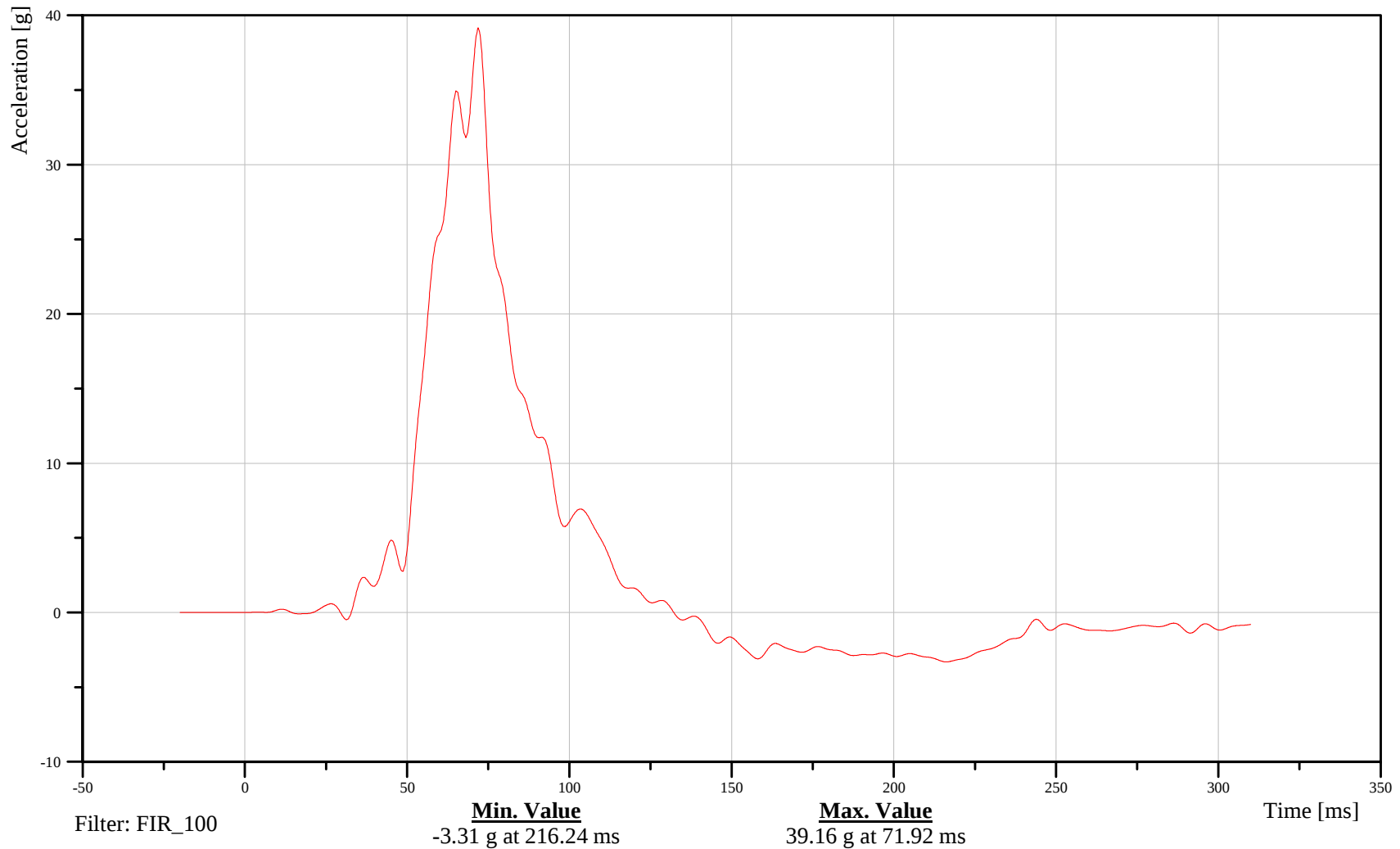
Time: 11:34

LEFT REAR PASSENGER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60507

14RIBSLURESHACY1

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-157

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitara

Case: 06/02/2006

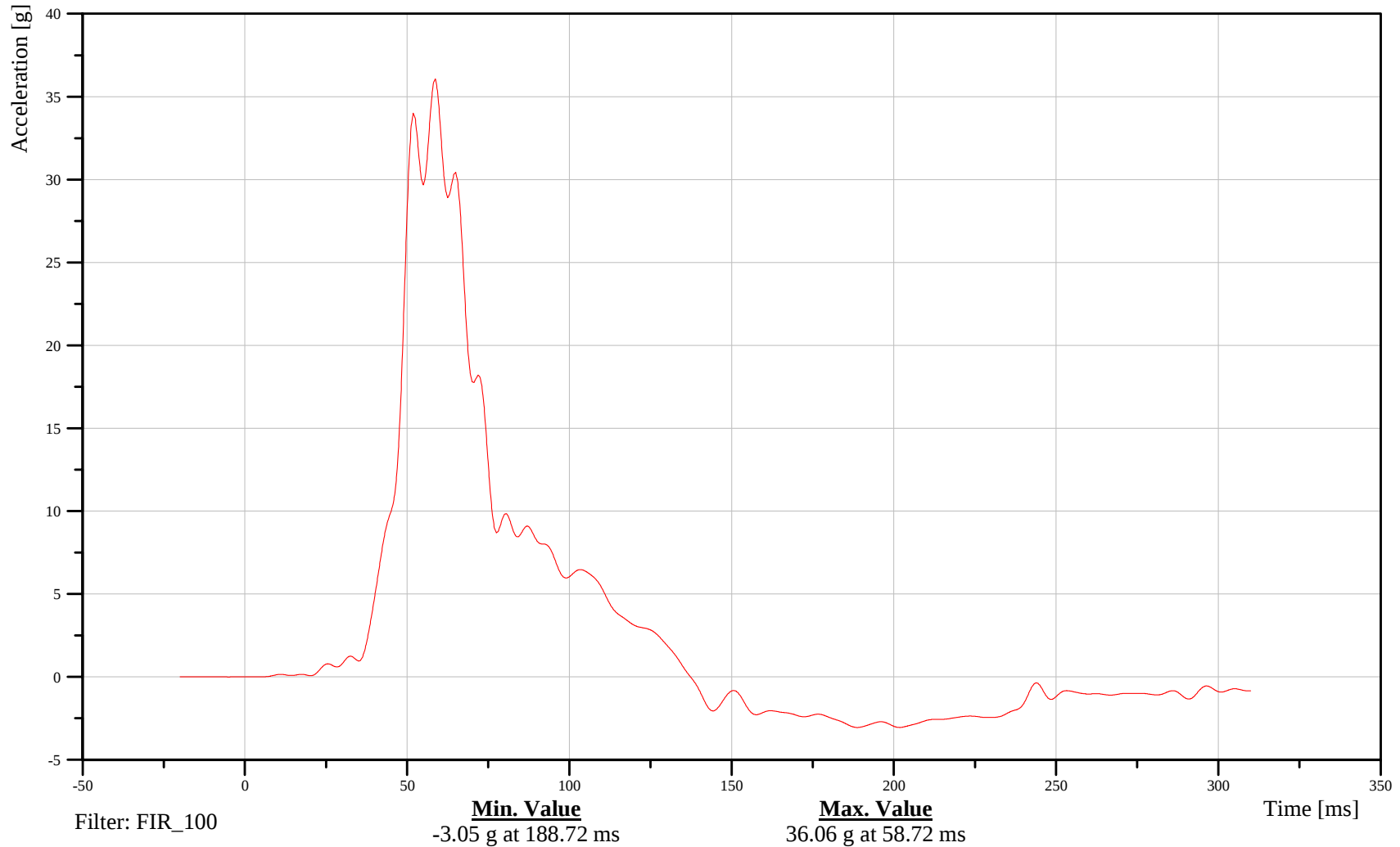
Time: 11:34

LEFT REAR PASSENGER LOWER RIB Y-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60507

14RIBSLLRESHACY1

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-158

060602-1



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Suzuki Grand Vitar

Date: 06/02/2006

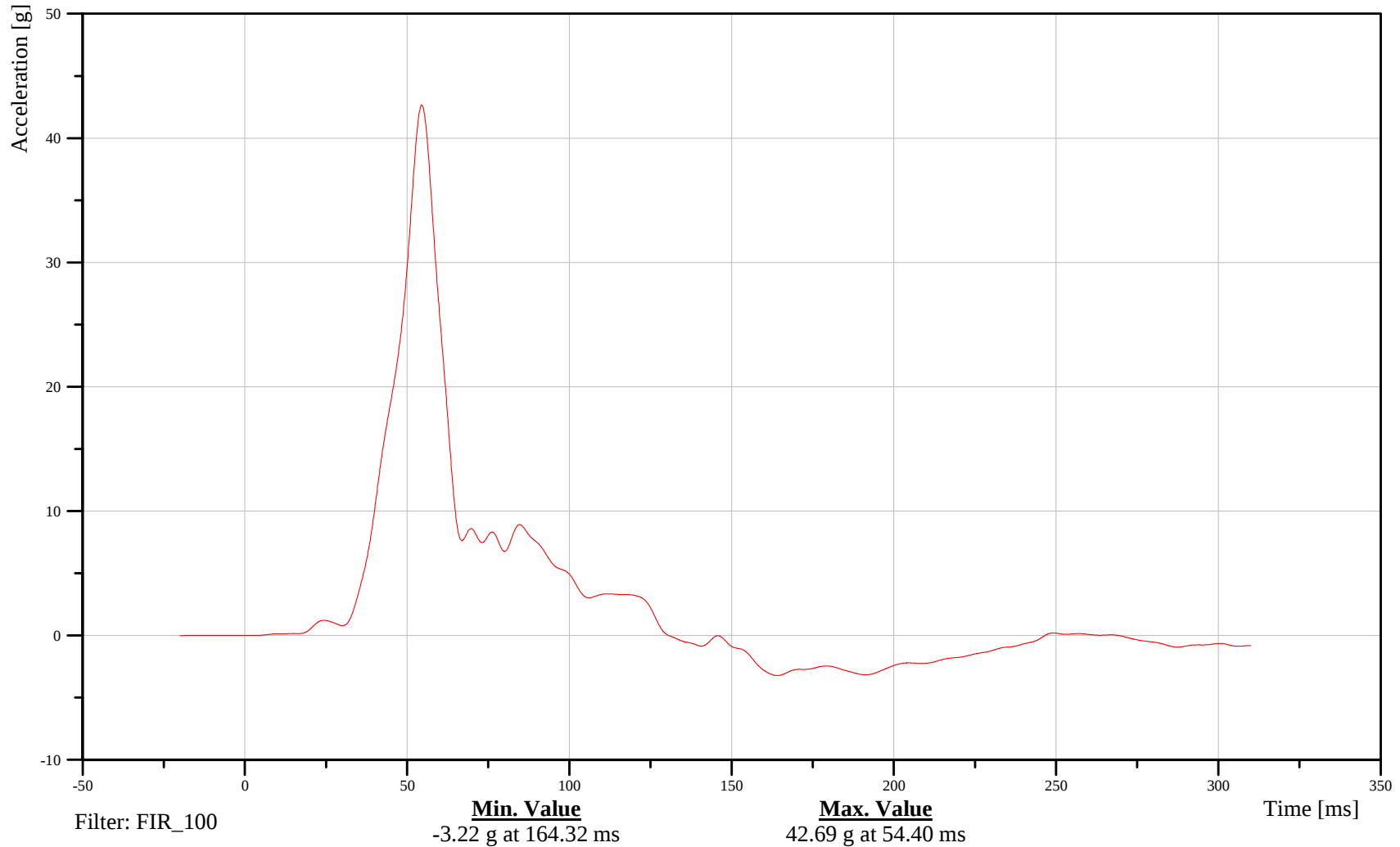
Time: 11:34

LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60507

14SPIN12RDSHACY1

TRC Inc. Test Lab: CTF
Test Number: 060602-1



B-159

060602-1

Appendix C

SID HIII Configuration and Performance Verification Data

Summary
SID HIII Pre-Test and Post-Test Calibration
Configured For Left Side Impact

Date: 03/27/06-06/14/06 TRC Inc. Test Number: S/N059 & S/N066

Laboratory Technician: V. Olivieri & V. Watters

Test Parameter	Specification	SID HIII 059		SID HIII 066	
		Pre-Test	Post-Test	Pre-Test	Post-Test
SH - Seated Height (mm)	889-909	903	901	900	902
RH - Rib Height (mm)	502-520	510	509	507	510
HP - Hip Pivot Height (mm)	99 ref	99.1	99.1	99.1	99.1
KH - Knee Pivot from Back Line (mm)	511-526	520	521	522	524
KV - Knee Pivot to Floor (mm)	490-505	494	494	496	496
HW - Hip Width (mm)	356-391	366	366	368	368
Thorax Impacts					
Temperature (°C)	18.9-25.5	21.1	21.6	21.5	21.5
Relative Humidity (%)	10-70	42	48	32	53
Probe Speed (m/s)	4.27-4.33	4.297	4.293	4.292	4.299
Upper Rib (g's)	37-46	42.1	41.0	44.5	45.0
Lower Rib (g's)	37-46	38.8	37.1	44.9	44.0
Lower Spine (g's)	15-22	19.0	17.3	21.0	21.3
Pelvis Impacts					
Temperature (°C)	18.9-25.5	21.5	21.4	21.1	21.6
Relative Humidity (%)	10-70	42	45	32	54
Probe Speed (m/s)	4.27-4.33	4.295	4.292	4.297	4.30
Pelvis (g's)	40-60	43.3	42.9	48.0	49.9

Calibration Test Results

Pre-Test

SID HIII: 059

Configured for Left Side Impact

External Dimensions:	The dummy passed all external dimension requirements.
Lateral Head Drop Test:	The head passed all lateral drop test requirements.
Lateral Neck Test:	The neck passed all impact test requirements.
Lateral Thorax Impact Test:	The thorax passed all impact test requirements.
Lumbar Flexion Test:	The dummy met the lumbar flexion test requirements.
Abdominal Compression Test:	The abdomen met the compression test requirements.
Pelvis Impact Test:	The lateral pelvis passed all impact test requirements.
Thoracic Shock Absorber Test:	The thoracic shock absorber was tested on March 17, 2006 for a previous calibration series.

Transportation Research Center Inc.

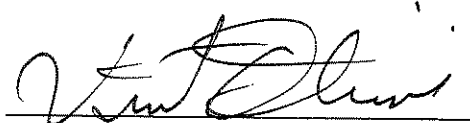
SID/HIII Dummy Pre-Test

External Dimensions

Serial No. 059 Calibration No. 14

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	903 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	510 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Knee Pivot From Backline	KH	510.5 - 525.8 mm	520 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	494 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	366 mm	Yes
Top Rib Width From CVL	RW-1	165.1 - 180.3 mm	176 mm	Yes
Bottom Rib Width From CVL	RW-2	165.1 - 180.3 mm	177 mm	Yes
Difference Between Top & Bottom Rib Width from CVL		<= 2.5 mm	1.0 mm	Yes

Technician



Approved





Transportation Research Center Inc.

Left Lateral Head Drop

SID-HIII Serial No. 059 Certification No. 14-2

Test Date: 04/28/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	27 %	Yes
Peak Head Resultant Acceleration	120 - 150 g	135.9 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	4.3 g	Yes
Is Head Resultant Acceleration Curve Unimodal Within 15% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician



Approved



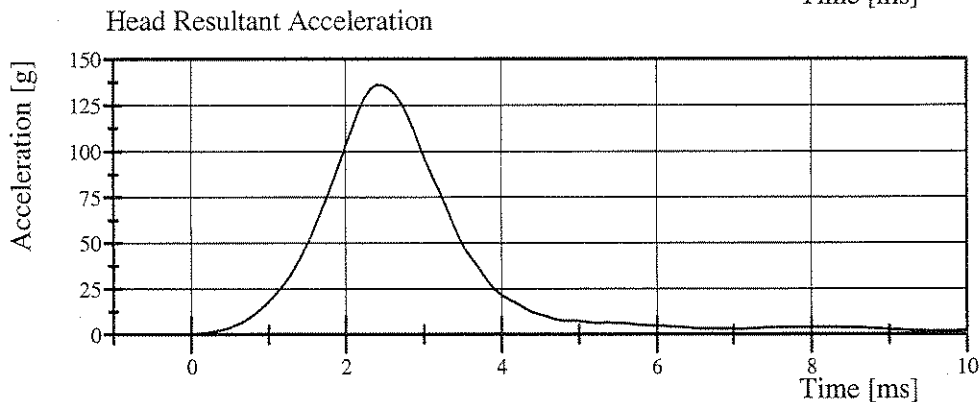
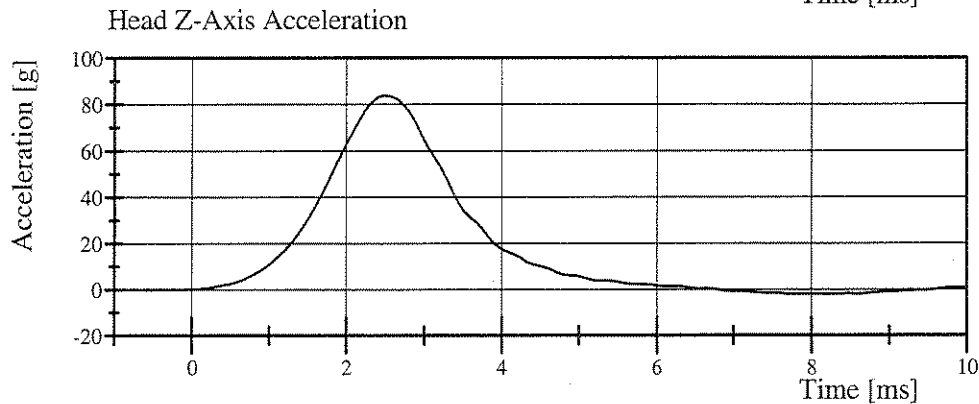
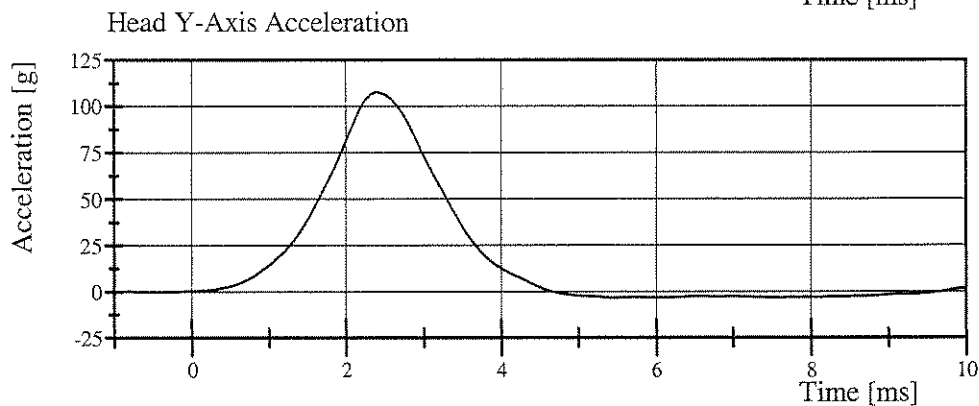
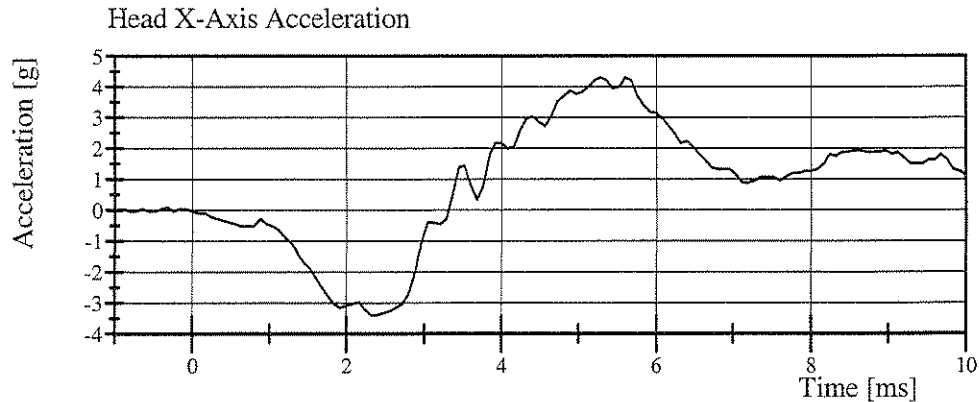


Transportation Research Center Inc.

Left Lateral Head Drop

SID-HIII Serial No. 059 Certification No. 14-2

Test Date: 04/28/2006



Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 059 Certification No. 14-1

Test Date: 04/28/2006

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	26 %	Yes
Pendulum Velocity	(-6.89) - (-7.13) m/s	-7.019 m/s	Yes
Pendulum Integrated Velocity Change at 10 ms	1.96 - 2.55 m/s	2.273 m/s	Yes
Pendulum Integrated Velocity Change at 20 ms	4.12 - 5.10 m/s	4.516 m/s	Yes
Pendulum Integrated Velocity Change at 30 ms	5.73 - 7.01 m/s	6.356 m/s	Yes
Pendulum Integrated Velocity Change at 40 to 70 ms	6.27 - 7.64 m/s	7.262 m/s	Yes
Total Head D-Plane Rotation	(-66) - (-82) °	-69.1 °	Yes
Total Head D-Plane Rotation Time to 0° after Peak Rotation	58 - 67 ms	60.4 ms	Yes
Total Neck Occipital Condyle Moment	73 - 88 N·m	79.7 N·m	Yes
Total Neck Occipital Condyle Moment Time to 0 N·m after Peak Moment	49 - 64 ms	51.6 ms	Yes
Time from Peak Moment to Peak Rotation	2 - 16 ms	6.5 ms	Yes

Test meets specifications.

Comments:

Technician



Approved

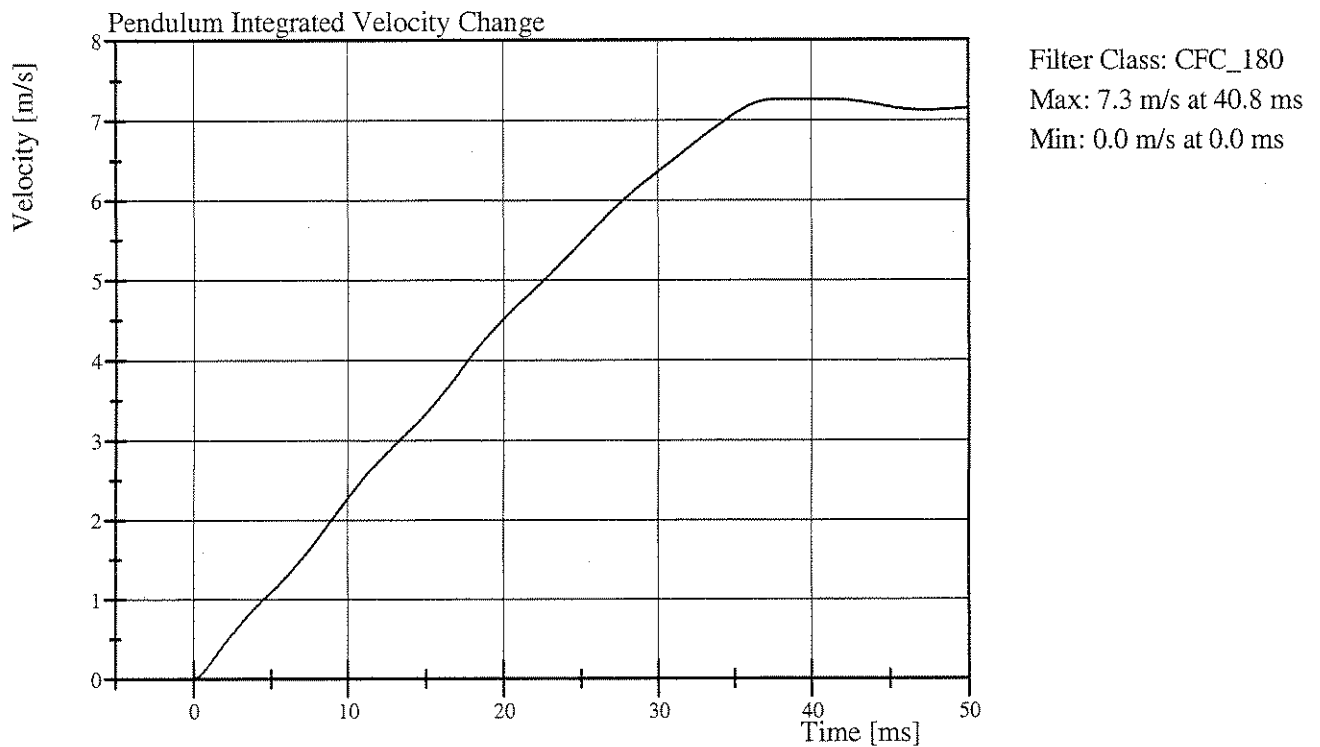
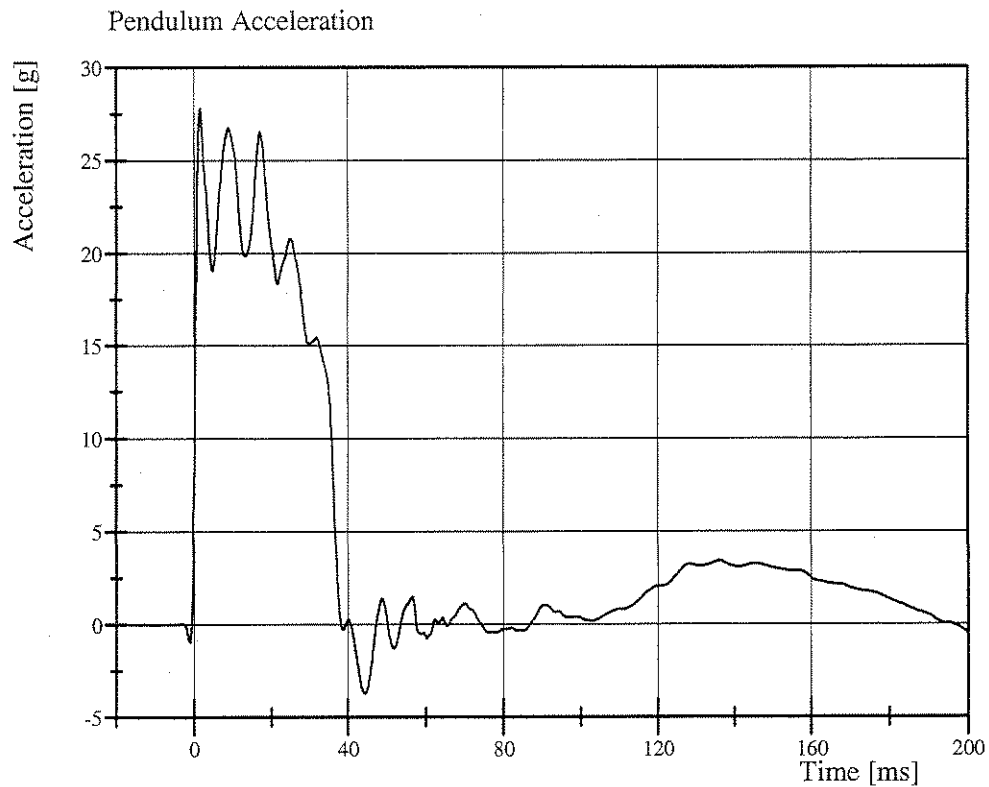


Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 059 Certification No. 14-1

Test Date: 04/28/2006



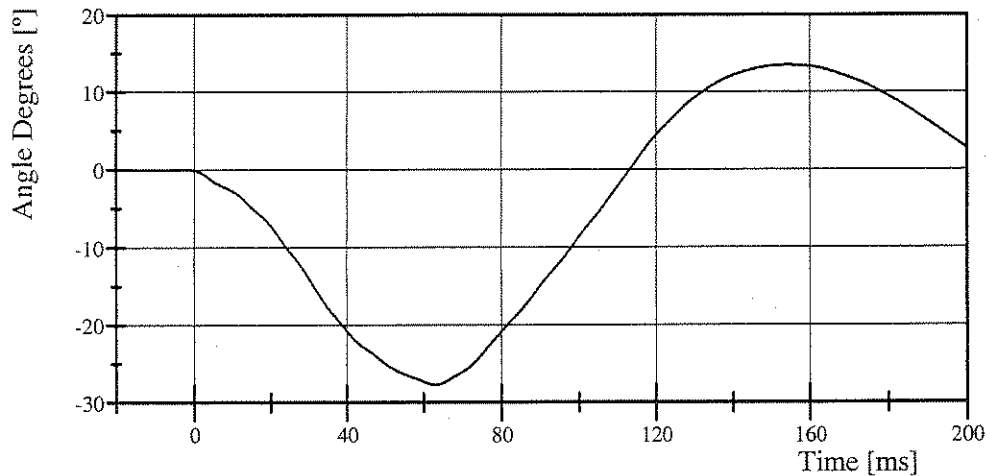
Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 059 Certification No. 14-1

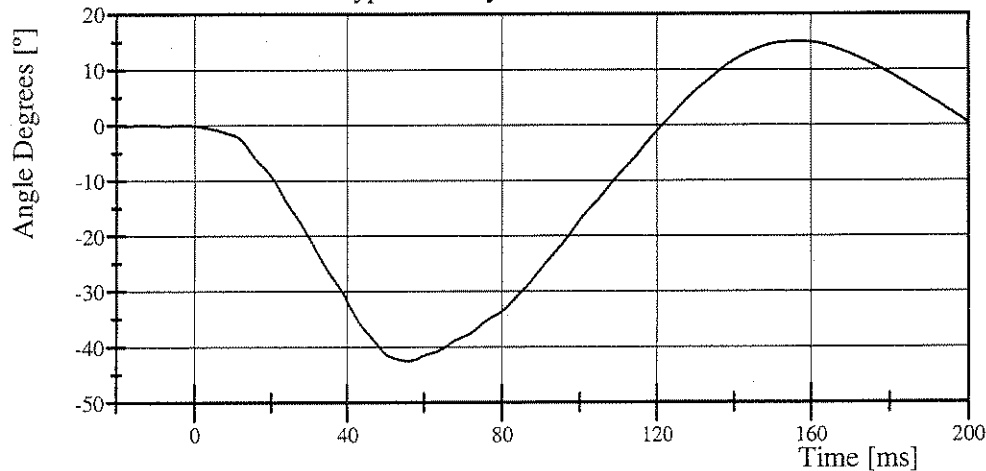
Test Date: 04/28/2006

Pot Rotation at the Base of Neck



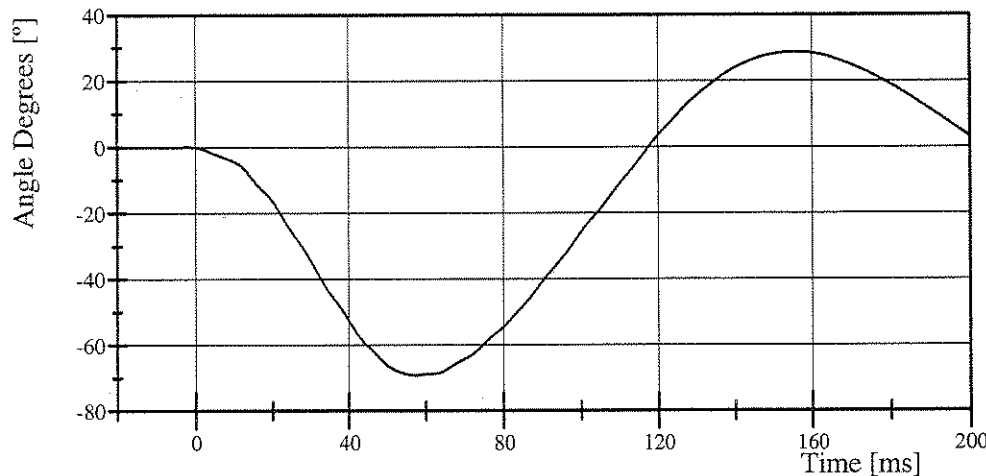
Filter Class: CFC_60
Max: 13.5 ° at 154.4 ms
Min: -27.7 ° at 63.1 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 15.1 ° at 157.3 ms
Min: -42.5 ° at 55.8 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 28.5 ° at 156.2 ms
Min: -69.1 ° at 57.2 ms

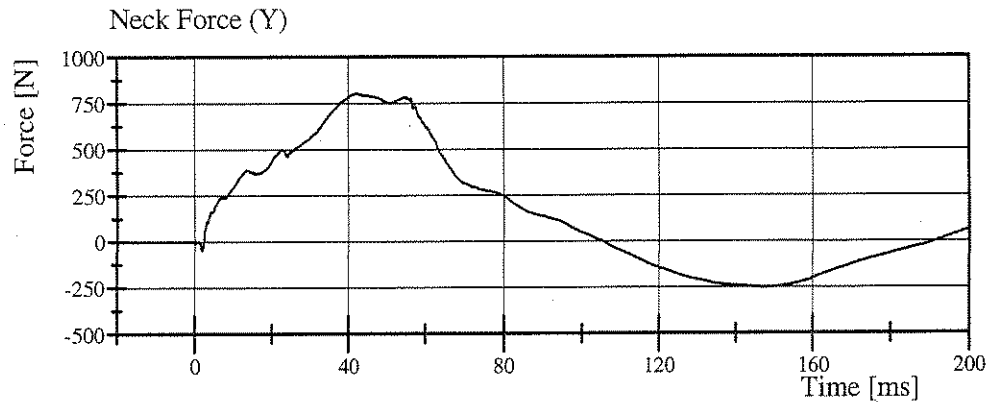


Transportation Research Center Inc.

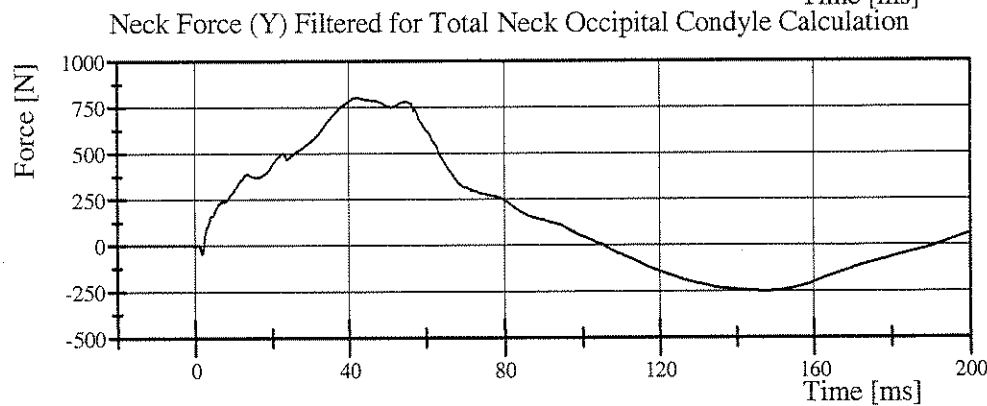
Left Lateral Neck

SID-HIII Serial No. 059 Certification No. 14-1

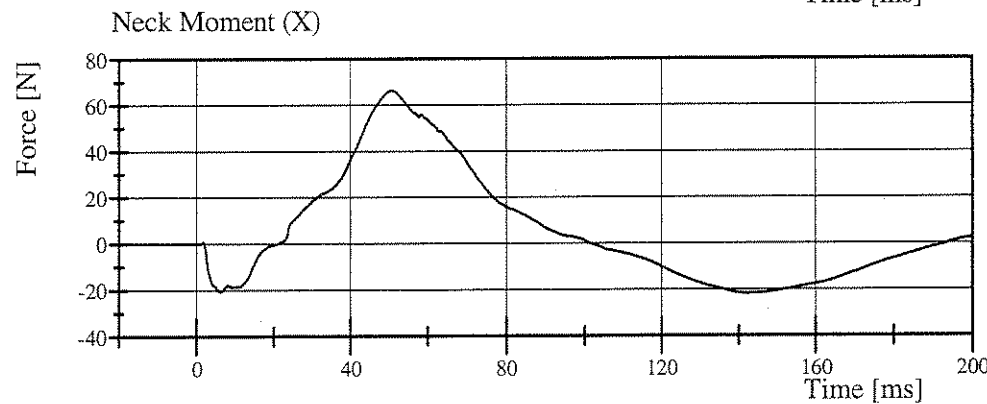
Test Date: 04/28/2006



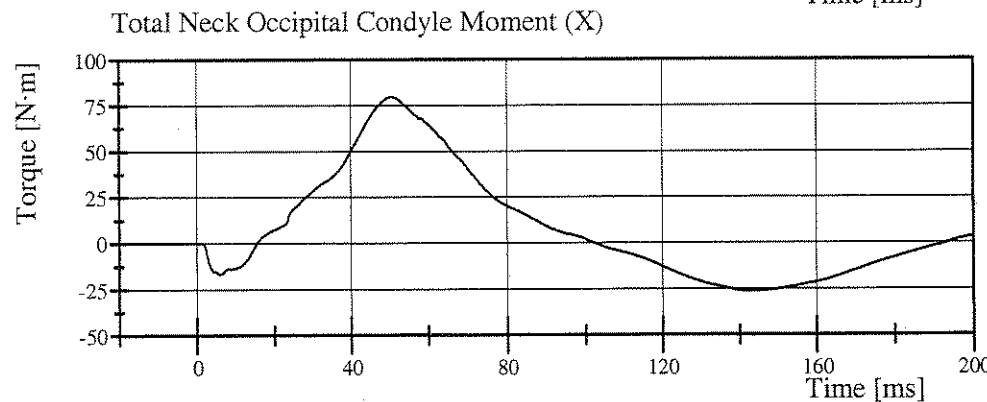
Filter Class: CFC_1000
Max: 803.2 N at 41.9 ms
Min: -252.1 N at 147.1 ms



Filter Class: CFC_600
Max: 802.1 N at 42.4 ms
Min: -251.6 N at 147.2 ms



Filter Class: CFC_600
Max: 66.4 N at 50.8 ms
Min: -21.8 N at 142.4 ms



Filter Class: CFC_600
Max: 79.7 N·m at 50.7 ms
Min: -26.2 N·m at 142.5 ms

Transportation Research Center Inc.

Left Lateral Thorax

SID-HIII Serial No. 059 Certification No. 14-2

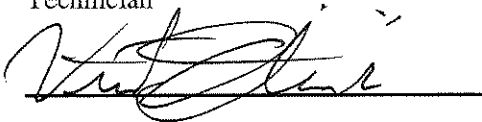
Test Date: 05/01/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	42 %	Yes
Impactor Velocity	4.27 - 4.33 m/s	4.297 m/s	Yes
Upper Rib Lateral Acceleration	37 - 46 g	42.1 g	Yes
Lower Rib Lateral Acceleration	37 - 46 g	38.8 g	Yes
Lower Spine Lateral Acceleration	15 - 22 g	19.0 g	Yes

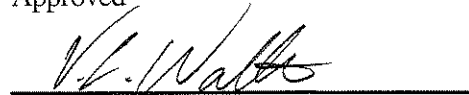
Test meets specifications.

Comments:

Technician



Approved



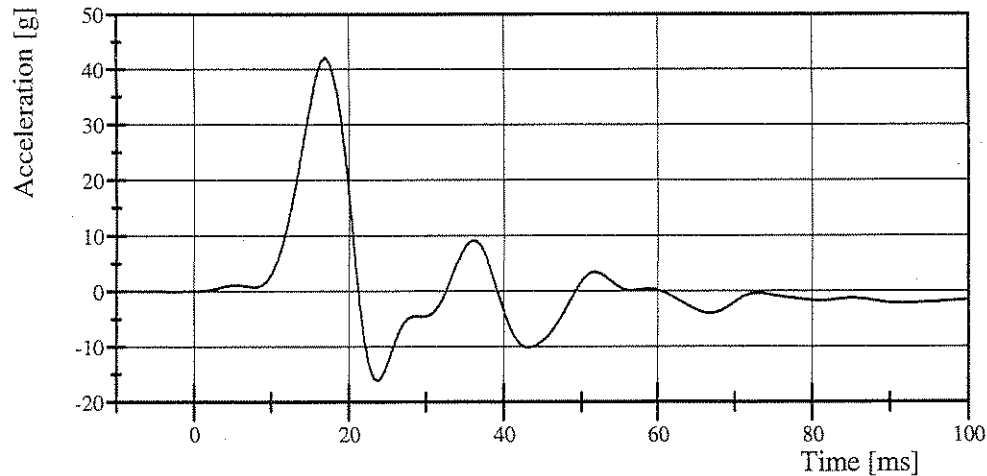
Transportation Research Center Inc.

Left Lateral Thorax

SID-HIII Serial No. 059 Certification No. 14-2

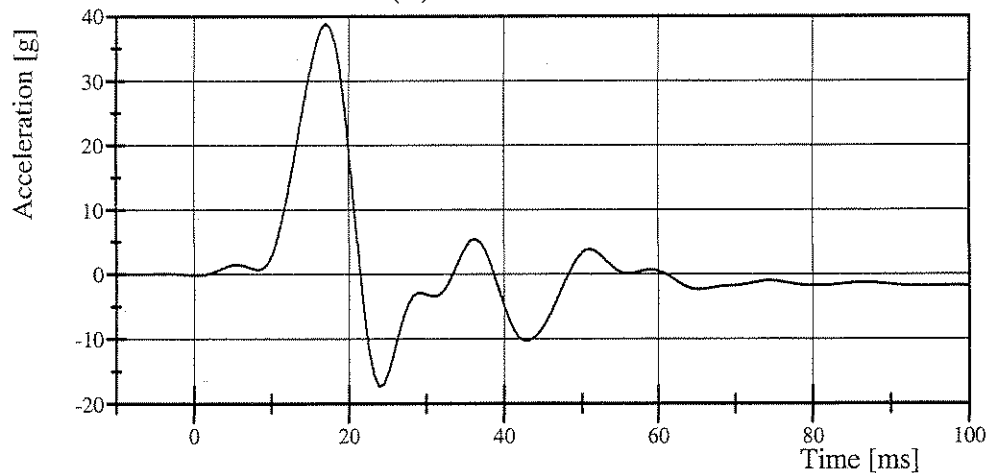
Test Date: 05/01/2006

Upper Rib Acceleration (Y)



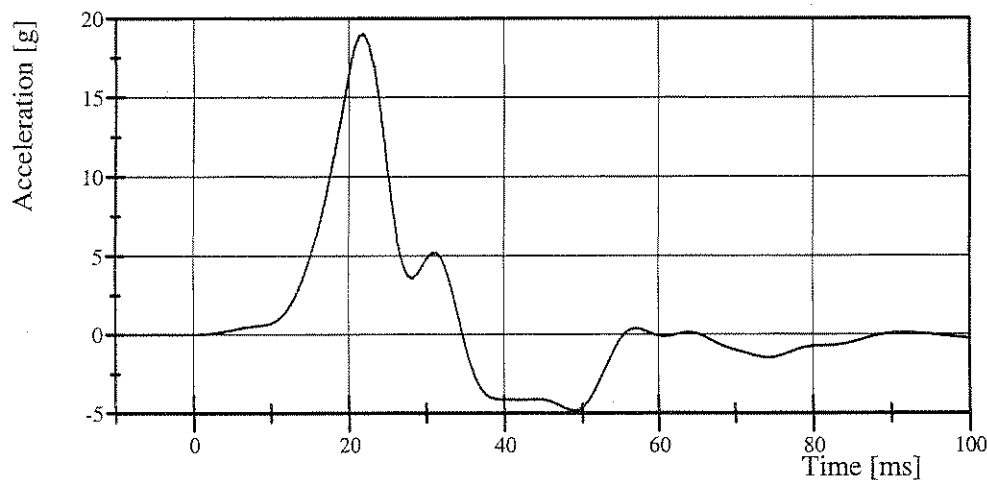
Filter Class: FIR_100
Max: 42.1 g at 17.0 ms
Min: -16.1 g at 23.8 ms

Lower Rib Acceleration (Y)



Filter Class: FIR_100
Max: 38.8 g at 17.0 ms
Min: -17.3 g at 23.9 ms

Lower Spine Acceleration (Y)



Filter Class: FIR_100
Max: 19.0 g at 22.0 ms
Min: -4.8 g at 48.9 ms



Transportation Research Center Inc.

Left Lateral Pelvis

SID-HIII Serial No. 059 Certification No. 14-1

Test Date: 05/01/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	42 %	Yes
Impactor Velocity	4.27 - 4.33 m/s	4.295 m/s	Yes
Pelvis Lateral Acceleration Duration above 20g	3 - 7 ms	6.4 ms	Yes
Pelvis Lateral Acceleration	40 - 60 g	43.3 g	Yes
Is Acceleration Curve Unimodal Above 20g?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician



Approved

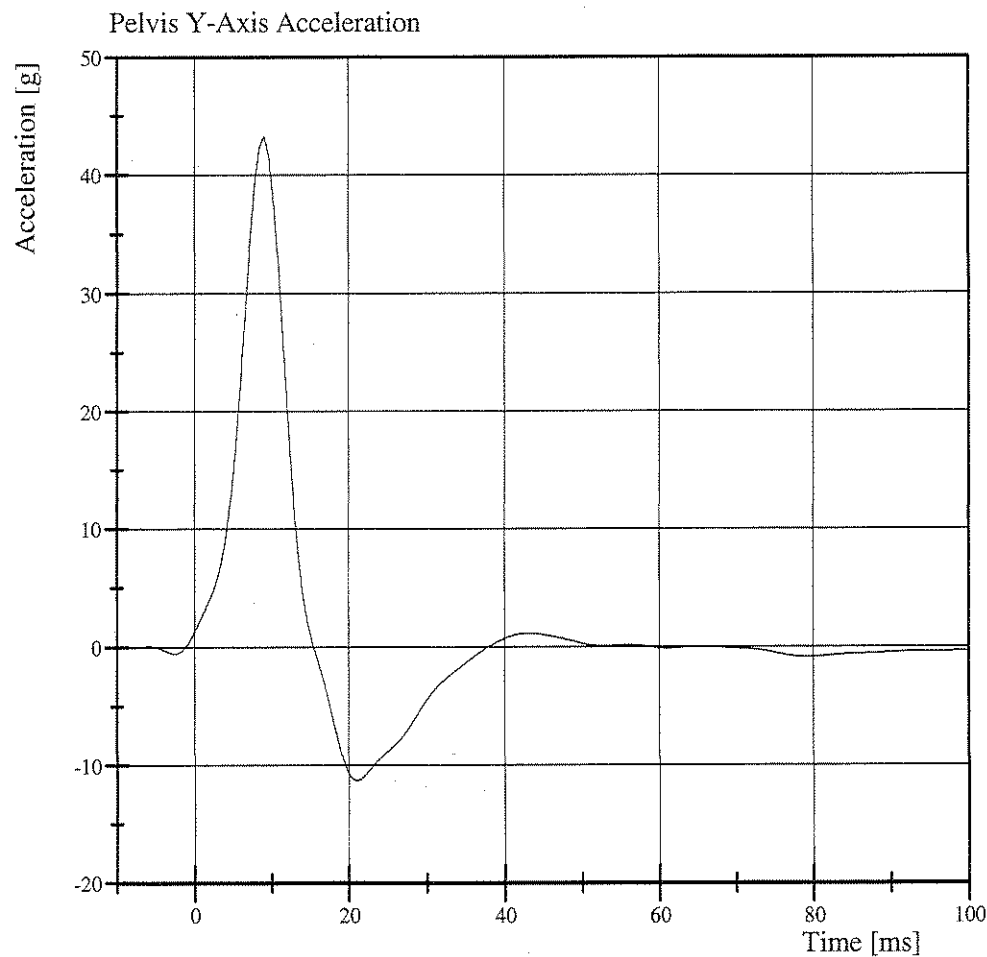


Transportation Research Center Inc.

Left Lateral Pelvis

SID-HIII Serial No. 059 Certification No. 14-1

Test Date: 05/01/2006



Filter Class: FIR_100
Max: 43.3 g at 9.0 ms
Min: -11.3 g at 21.0 ms



TRANSPORTATION RESEARCH CENTER INC.

PART 572B LUMBAR FLEXION TEST

SID HIII

CAL DATE: 28-Apr-06

TRC, INC. TEST NO: 059C14TF1 572M SN 059 TORSO FLEX CAL 14

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6° C	21.3 °C
RELATIVE HUMIDITY	10 – 70 %	25 %
FORCE AT 0 DEG. FLEXION	-27 – 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 – 151 N	146.8 N
FORCE AT 30 DEG OF FLEXION	151 – 205 N	204.6 N
FORCE AT 40 DEG OF FLEXION	205 – 258 N	253.5 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	7.4 °

TEST MEETS SPECIFICATIONS

TECHNICIAN



Transportation Research Center Inc.

Abdomen Compression

SID-HIII Serial No. 059 Certification No. 14-20

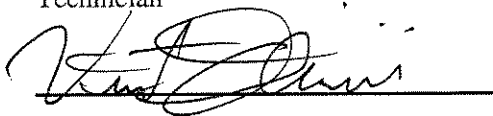
Test Date: 05/01/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	48 %	Yes
Probe Force within Corridor	Yes	Yes	Yes
Probe Velocity	6.35 - 8.89 mm/s	7.825 mm/s	Yes

Test meets specifications.

Comments:

Technician



Approved

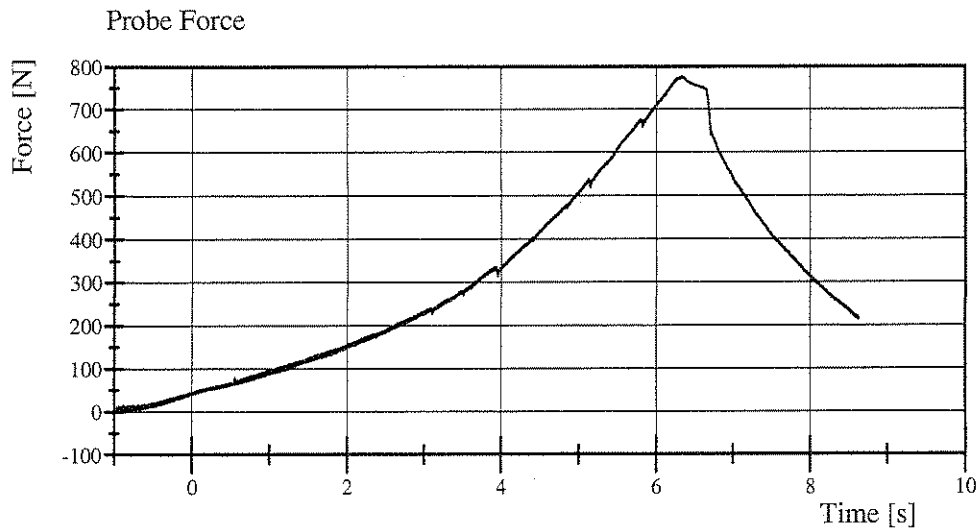


Transportation Research Center Inc.

Abdomen Compression

SID-HIII Serial No. 059 Certification No. 14-20

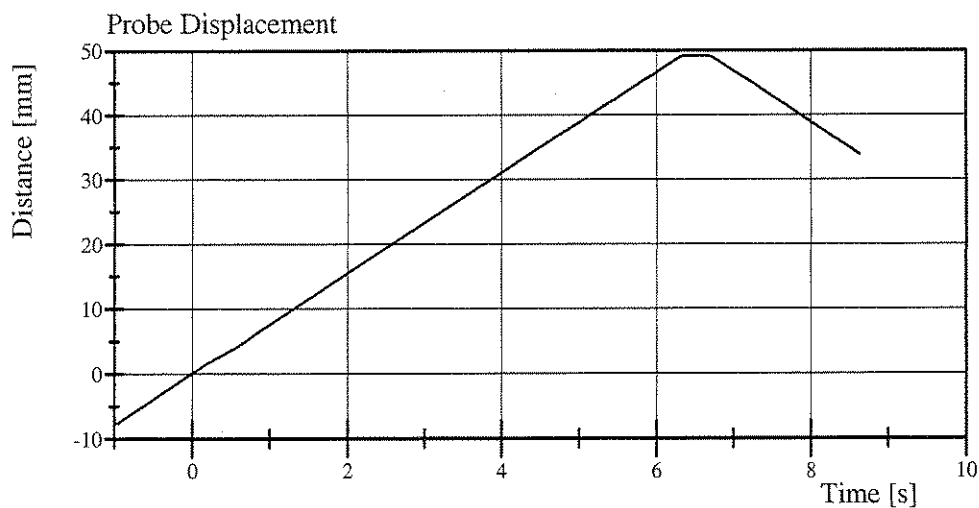
Test Date: 05/01/2006



Filter Class: CFC_600

Max: 775.4 N at 6.3 s

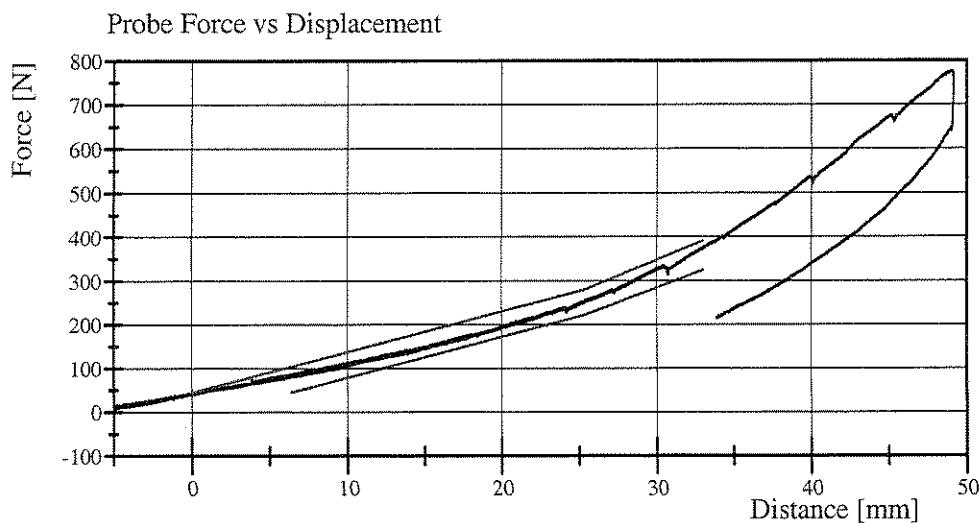
Min: -2.2 N at -0.9 s



Filter Class: CFC_180

Max: 49.2 mm at 6.7 s

Min: -7.6 mm at -1.0 s



Filter Class: CFC_600

Max: 775.4 N at 49.1 mm

Min: -2.2 N at -7.1 mm

Calibration Test Results

Pre-Test

SID HIII: 066

Configured for Left Side Impact

External Dimensions:	The dummy passed all external dimension requirements.
Lateral Head Drop Test:	The head passed all lateral drop test requirements.
Lateral Neck Test:	The neck passed all impact test requirements.
Lateral Thorax Impact Test:	The thorax passed all impact test requirements.
Lumbar Flexion Test:	The dummy met the lumbar flexion test requirements.
Abdominal Compression Test:	The abdomen met the compression test requirements.
Pelvis Impact Test:	The lateral pelvis passed all impact test requirements.
Thoracic Shock Absorber Test:	The thoracic shock absorber passed all test requirements.

Transportation Research Center Inc.
572M SID/HIII Dummy
External Dimensions
Serial No. 066 Calibration No. 20

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	900 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	507 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Knee Pivot From Backline	KH	510.5 - 525.8 mm	522 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	496 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	368 mm	Yes
Top Rib Width From CVL	RW-1	165.1 - 180.3 mm	173 mm	Yes
Bottom Rib Width From CVL	RW-2	165.1 - 180.3 mm	173 mm	Yes
Difference Between Top & Bottom Rib Width from CVL		<= 2.5 mm	0.0 mm	Yes

Technician



Approved





Transportation Research Center Inc.

Left Lateral Head Drop

SID-HIII Serial No. 066 Certification No. 20-1

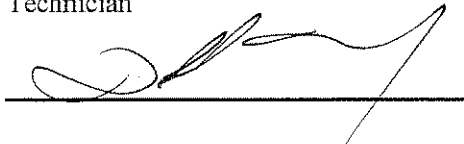
Test Date: 03/27/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	28 %	Yes
Peak Head Resultant Acceleration	120 - 150 g	137.9 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	4.6 g	Yes
Is Head Resultant Acceleration Curve Unimodal Within 15% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician



Approved

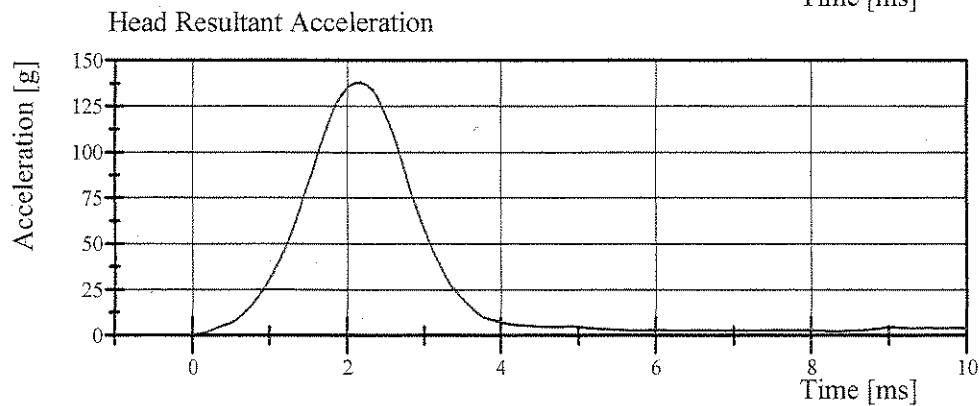
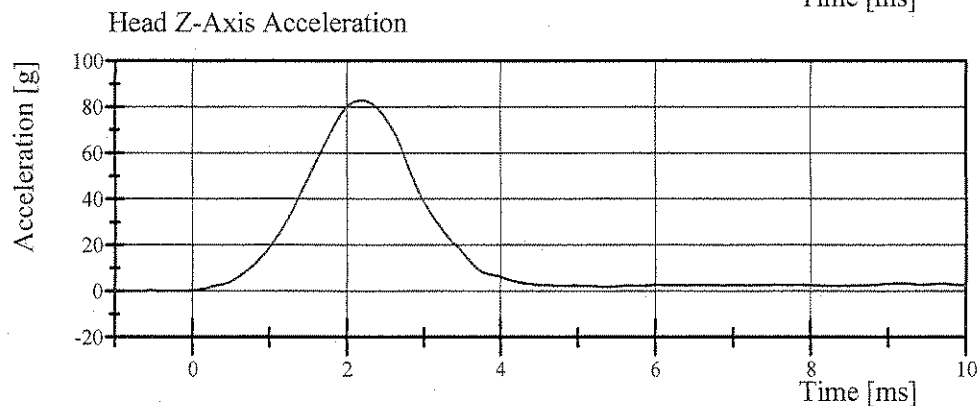
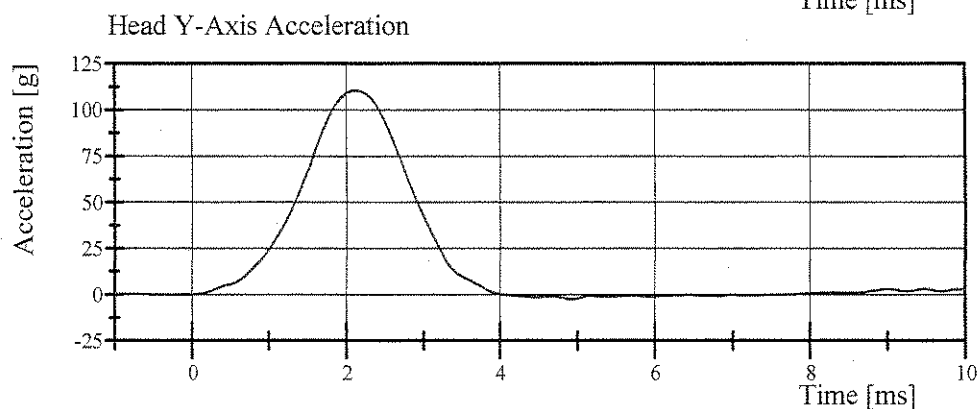
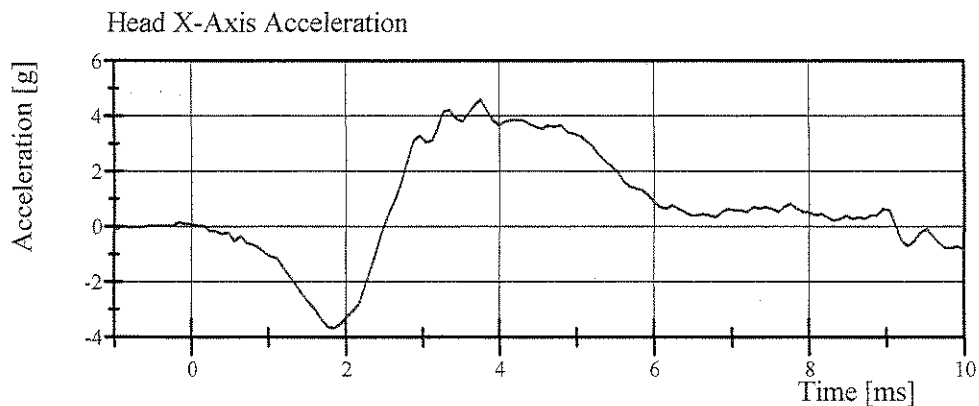


Transportation Research Center Inc.

Left Lateral Head Drop

SID-HIII Serial No. 066 Certification No. 20-1

Test Date: 03/27/2006



Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 066 Certification No. 20-1

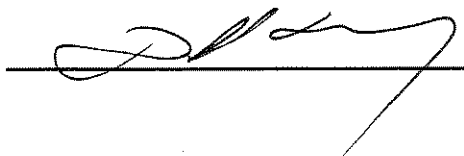
Test Date: 03/27/2006

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	29 %	Yes
Pendulum Velocity	(-6.89) - (-7.13) m/s	-7.027 m/s	Yes
Pendulum Integrated Velocity Change at 10 ms	1.96 - 2.55 m/s	2.332 m/s	Yes
Pendulum Integrated Velocity Change at 20 ms	4.12 - 5.10 m/s	4.673 m/s	Yes
Pendulum Integrated Velocity Change at 30 ms	5.73 - 7.01 m/s	6.621 m/s	Yes
Pendulum Integrated Velocity Change at 40 to 70 ms	6.27 - 7.64 m/s	7.280 m/s	Yes
Total Head D-Plane Rotation	(-66) - (-82) °	-69.2 °	Yes
Total Head D-Plane Rotation Time to 0° after Peak Rotation	58 - 67 ms	59.4 ms	Yes
Total Neck Occipital Condyle Moment	73 - 88 N·m	80.8 N·m	Yes
Total Neck Occipital Condyle Moment Time to 0 N·m after Peak Moment	49 - 64 ms	52.2 ms	Yes
Time from Peak Moment to Peak Rotation	2 - 16 ms	8.2 ms	Yes

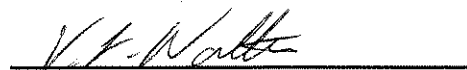
Test meets specifications.

Comments:

Technician



Approved

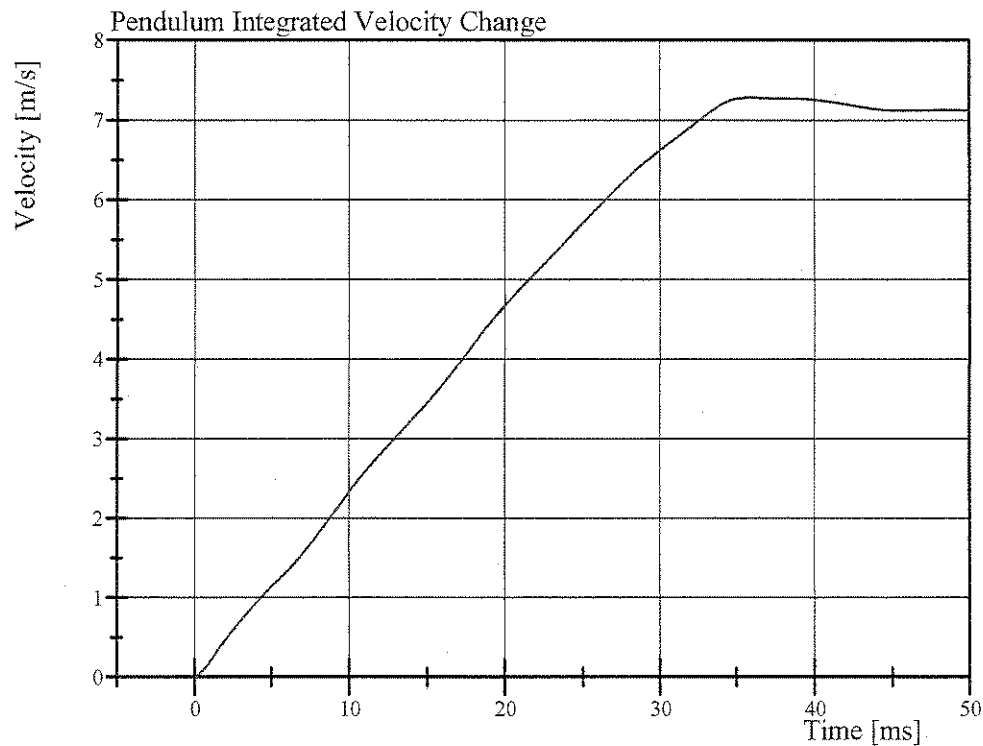
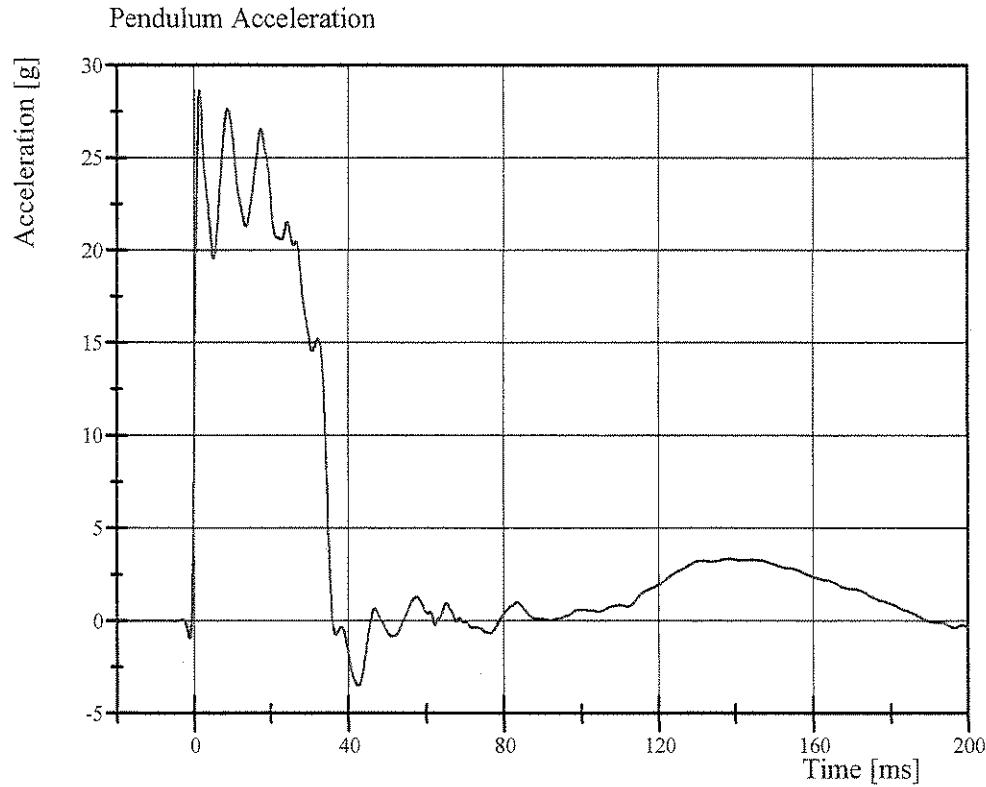


Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 066 Certification No. 20-1

Test Date: 03/27/2006



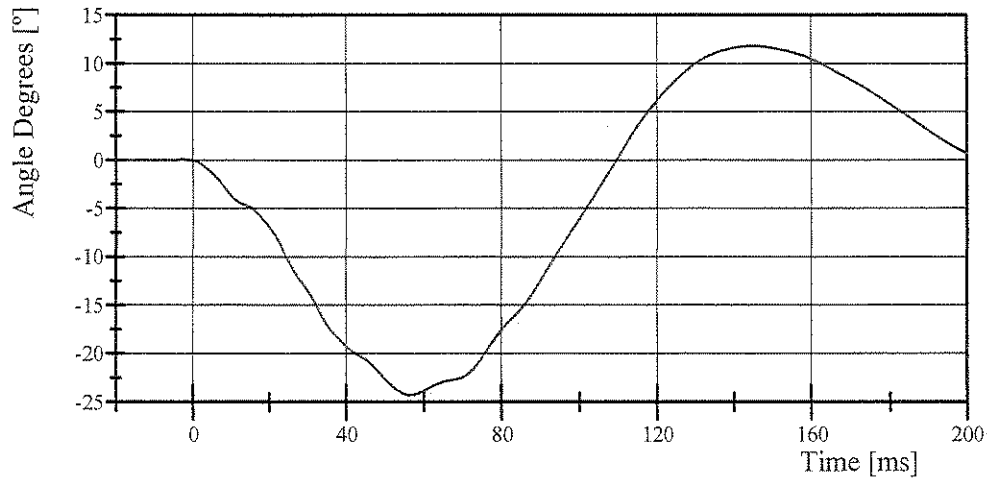
Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 066 Certification No. 20-1

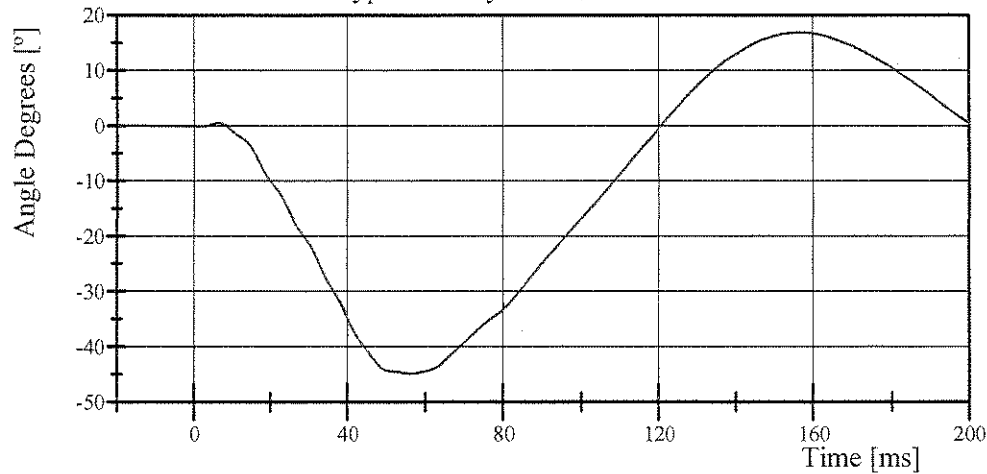
Test Date: 03/27/2006

Pot Rotation at the Base of Neck



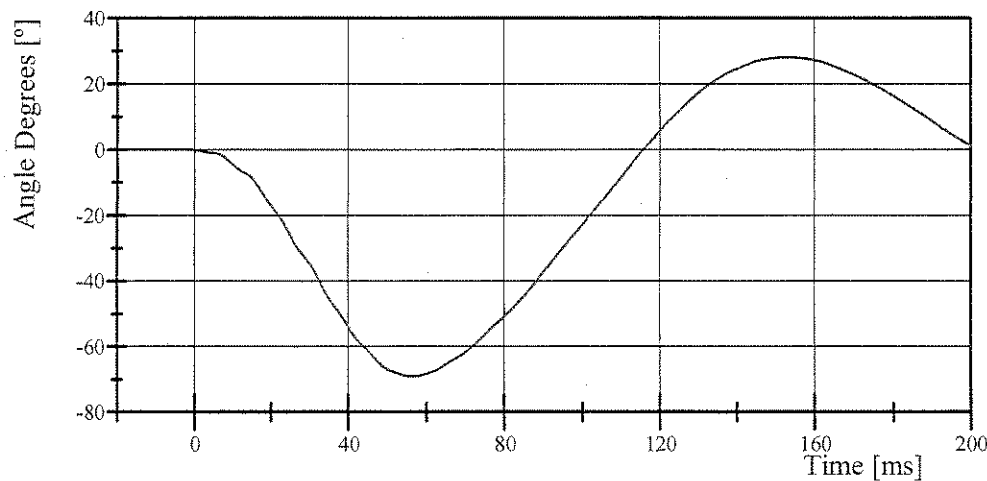
Filter Class: CFC_60
Max: 11.8 ° at 145.0 ms
Min: -24.3 ° at 56.6 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 16.8 ° at 156.3 ms
Min: -44.9 ° at 56.3 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 28.0 ° at 153.2 ms
Min: -69.2 ° at 56.4 ms

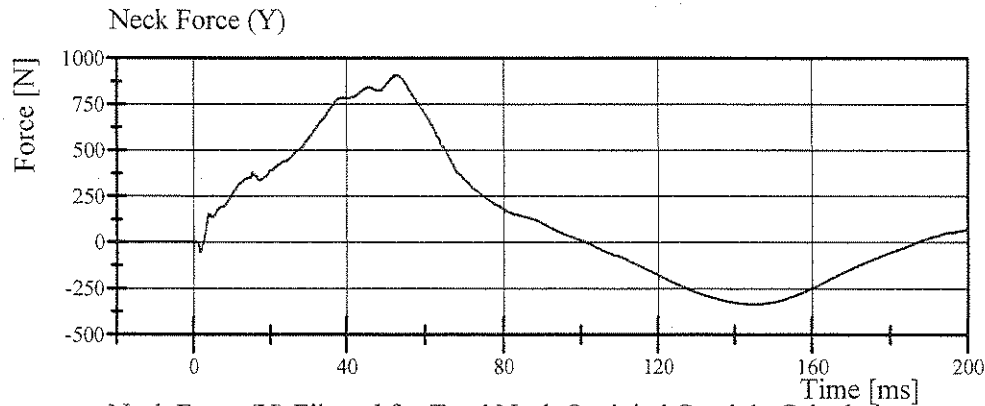


Transportation Research Center Inc.

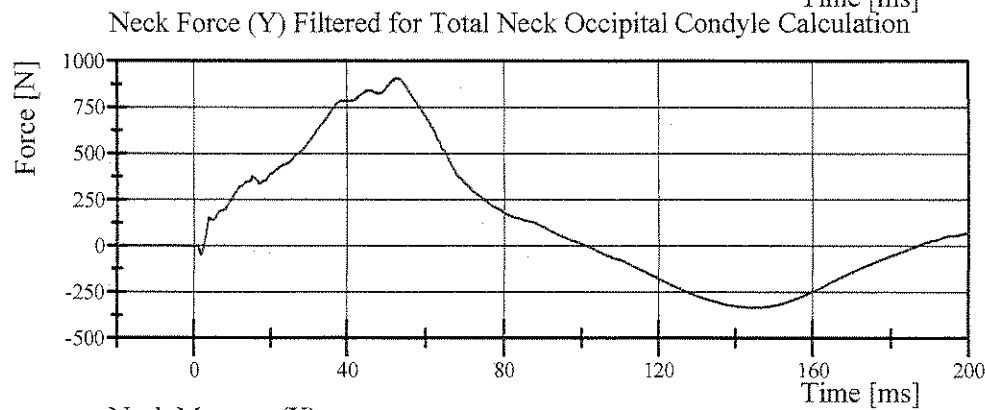
Left Lateral Neck

SID-HIII Serial No. 066 Certification No. 20-1

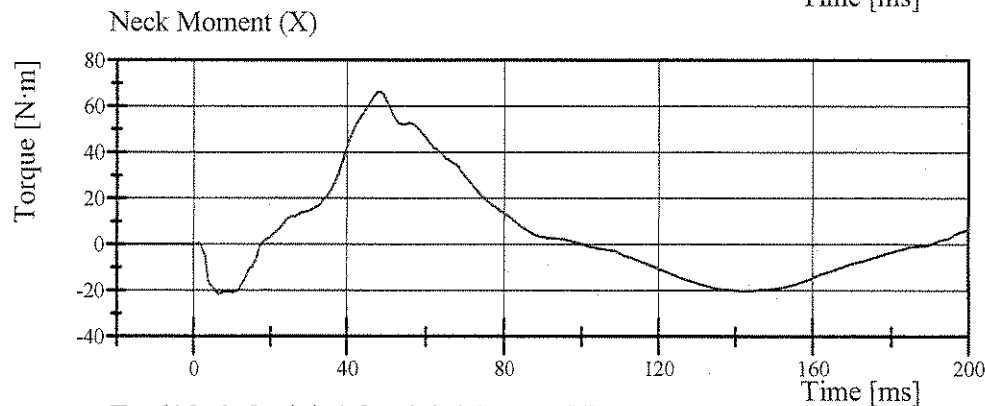
Test Date: 03/27/2006



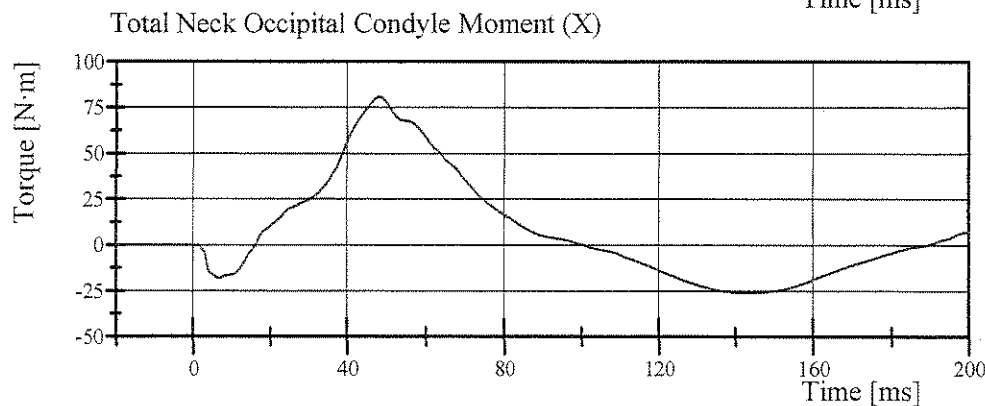
Filter Class: CFC_1000
Max: 907.0 N at 52.8 ms
Min: -335.6 N at 145.0 ms



Filter Class: CFC_600
Max: 906.6 N at 52.9 ms
Min: -335.2 N at 145.1 ms



Filter Class: CFC_600
Max: 66.2 N·m at 48.2 ms
Min: -21.6 N·m at 6.7 ms



Filter Class: CFC_600
Max: 80.8 N·m at 48.2 ms
Min: -26.1 N·m at 143.0 ms



Transportation Research Center Inc.

3.05 m/s Thoracic Shock Absorber Compression

SID-HIII Serial No. 066 Certification No. 19-2

Test Date: 03/18/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	27 %	Yes
Maximum Force at Test Velocity	853 - 1,142 N	929.5 N	Yes
Maximum Displacement at Test Velocity	30.2 - 35.18 mm	33.062 mm	Yes

Test meets specifications.

Comments:

Actual Impactor Velocity (m/s): 3.071

Damper Setting: 7.5

Technician

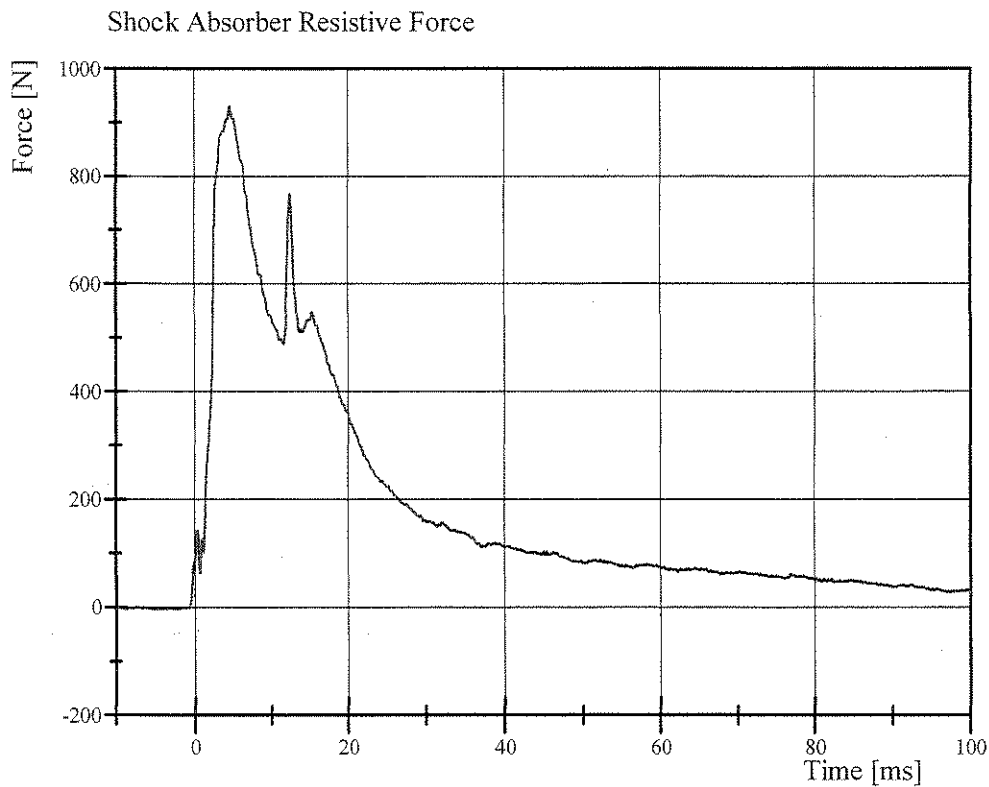


Approved

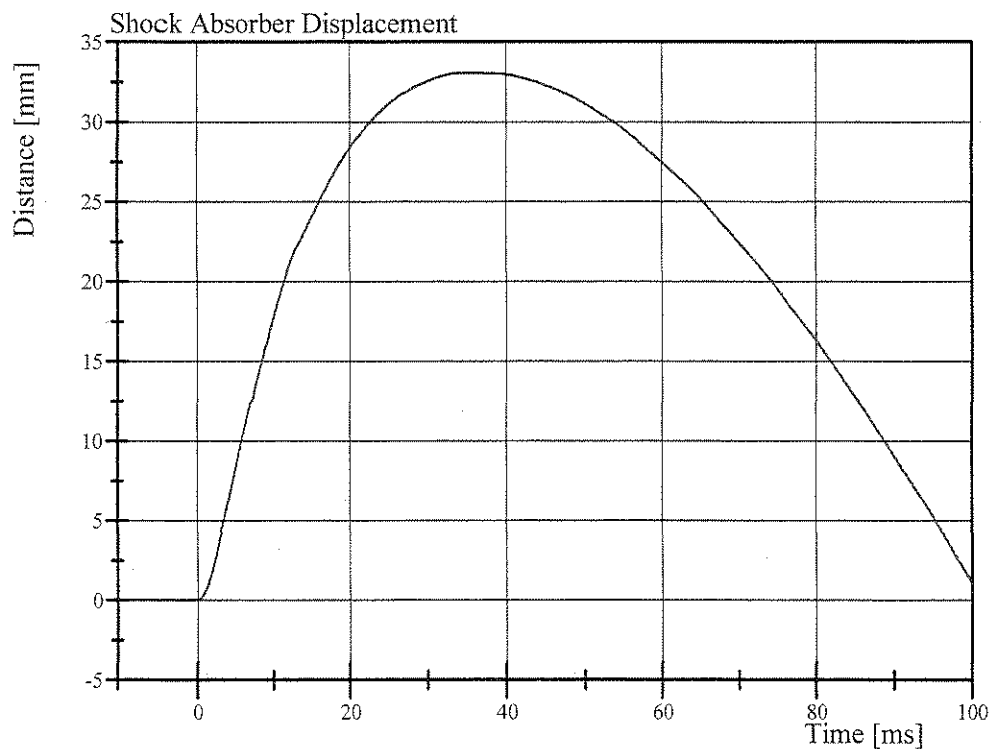


Transportation Research Center Inc.

3.05 m/s Thoracic Shock Absorber Compression
SID-HIII Serial No. 066 Certification No. 19-2
Test Date: 03/18/2006



Filter Class: CFC_1000
Max: 929.5 N at 4.6 ms
Min: -3.9 N at -4.6 ms



Filter Class: CFC_1000
Max: 33.1 mm at 35.0 ms
Min: -0.0 mm at -8.9 ms



Transportation Research Center Inc.

4.27 m/s Thoracic Shock Absorber Compression
SID-HIII Serial No. 066 Certification No. 19-7
Test Date: 03/18/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.0 °C	Yes
Relative Humidity	10 - 70 %	27 %	Yes
Maximum Force at Test Velocity	1,767 - 2,135 N	1,838.9 N	Yes
Maximum Displacement at Test Velocity	31.72 - 37.28 mm	36.307 mm	Yes

Test meets specifications.

Comments:

Actual Impactor Velocity (m/s): 4.303

Damper Setting: 7.5

Technician



Approved

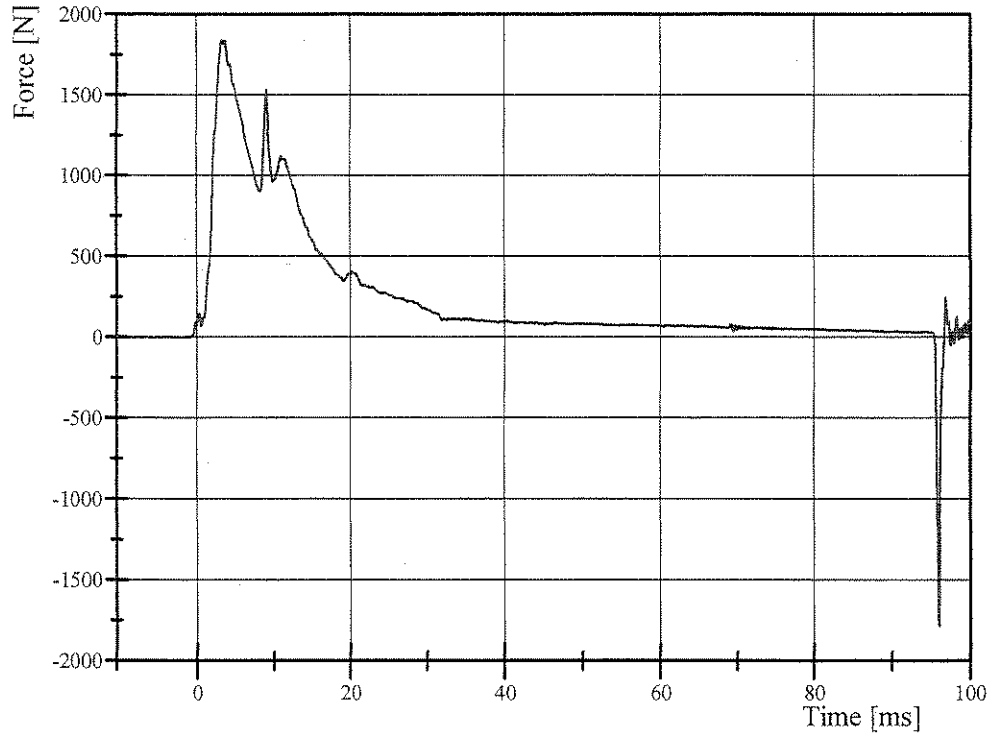




Transportation Research Center Inc.

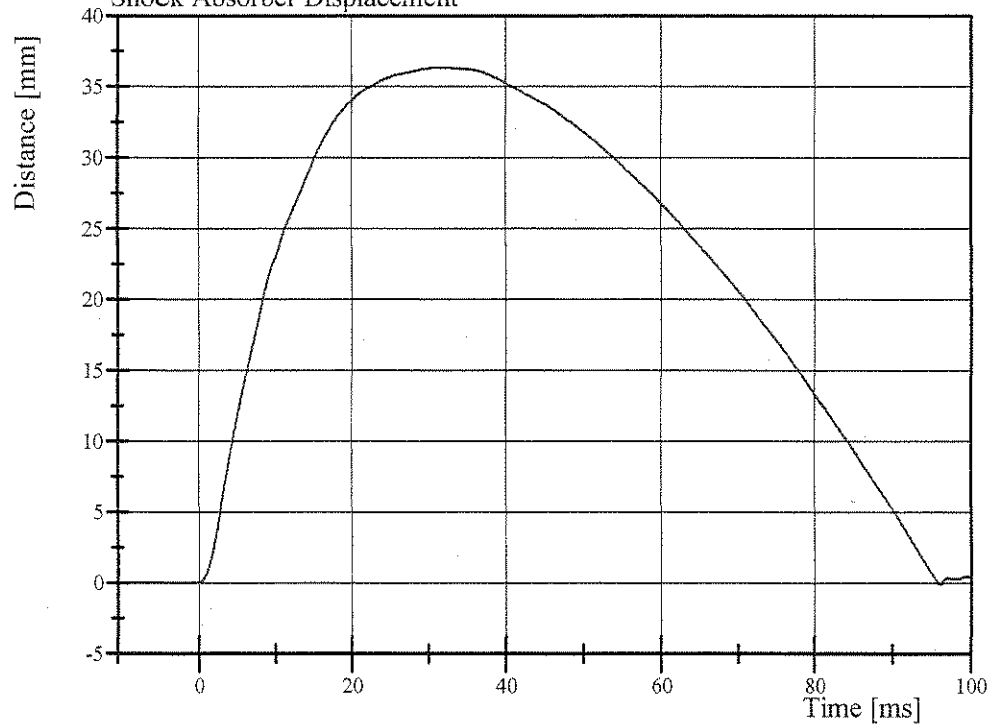
4.27 m/s Thoracic Shock Absorber Compression
SID-HIII Serial No. 066 Certification No. 19-7
Test Date: 03/18/2006

Shock Absorber Resistive Force



Filter Class: CFC_1000
Max: 1,838.9 N at 3.3 ms
Min: -1,784.6 N at 96.0 ms

Shock Absorber Displacement



Filter Class: CFC_1000
Max: 36.3 mm at 30.9 ms
Min: -0.1 mm at 96.0 ms



Transportation Research Center Inc.

6.10 m/s Thoracic Shock Absorber Compression
SID-HIII Serial No. 066 Certification No. 19-11
Test Date: 03/18/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.0 °C	Yes
Relative Humidity	10 - 70 %	27 %	Yes
Maximum Force at Test Velocity	3,766 - 4,464 N	3,915.2 N	Yes
Maximum Displacement at Test Velocity	33.38 - 39.59 mm	38.854 mm	Yes

Test meets specifications.

Comments:

Actual Impactor Velocity (m/s): 6.112

Damper Setting: 7.5

Technician



Approved

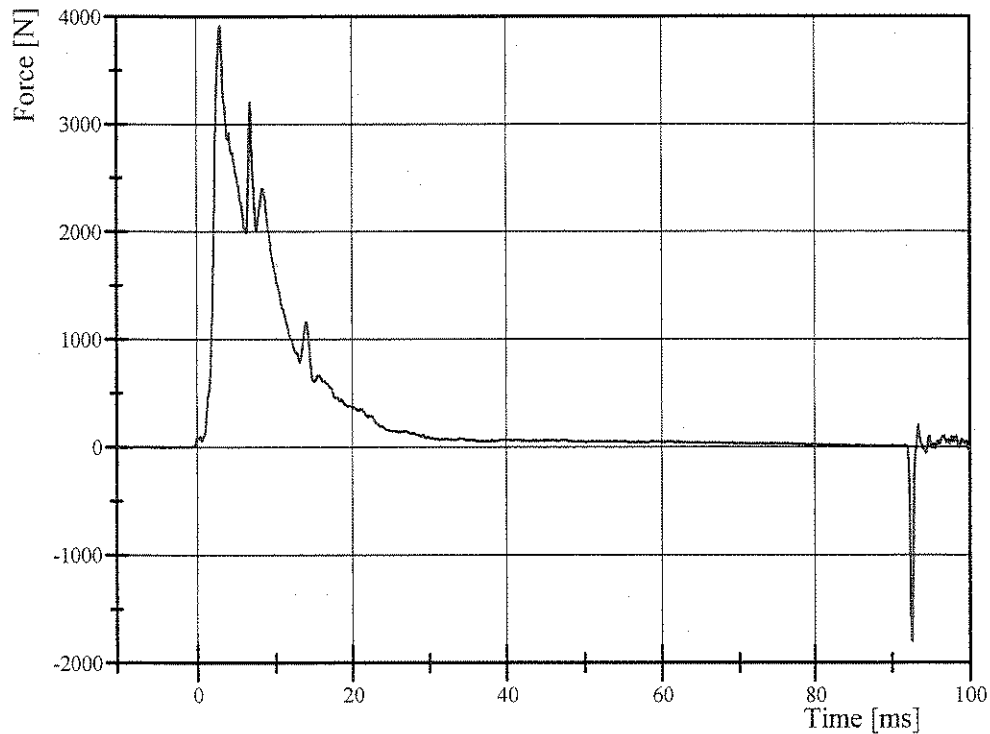




Transportation Research Center Inc.

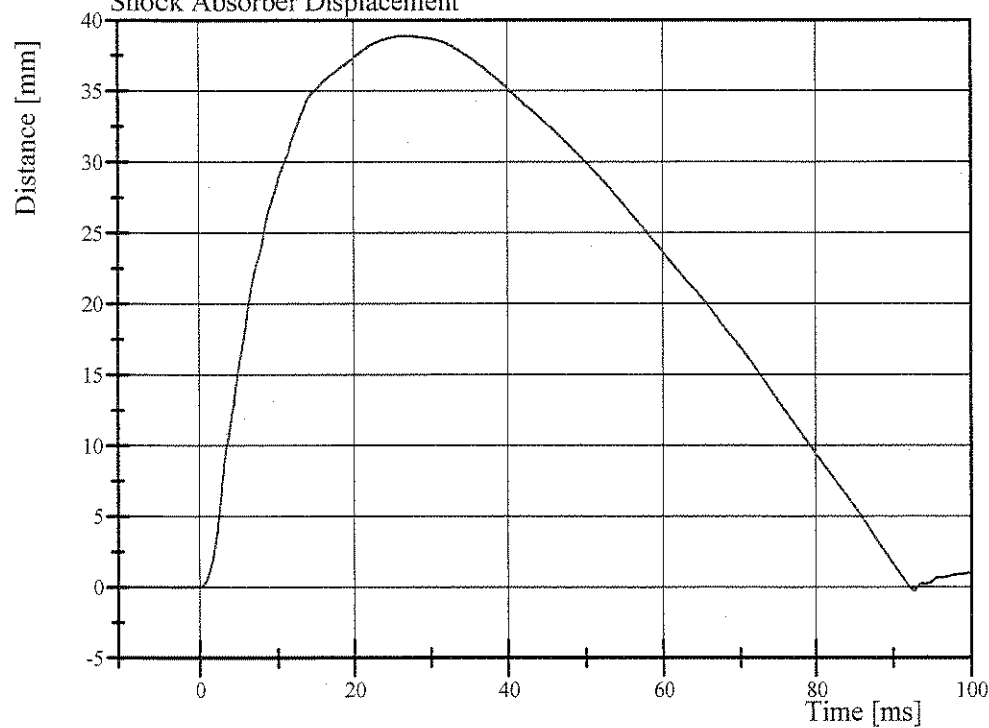
6.10 m/s Thoracic Shock Absorber Compression
SID-HIII Serial No. 066 Certification No. 19-11
Test Date: 03/18/2006

Shock Absorber Resistive Force



Filter Class: CFC_1000
Max: 3,915.2 N at 3.0 ms
Min: -1,801.6 N at 92.6 ms

Shock Absorber Displacement



Filter Class: CFC_1000
Max: 38.9 mm at 26.5 ms
Min: -0.3 mm at 92.7 ms



Transportation Research Center Inc.

Left Lateral Thorax

SID-HIII Serial No. 066 Certification No. 20-1

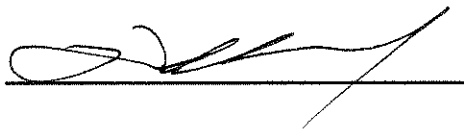
Test Date: 03/28/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	32 %	Yes
Impactor Velocity	4.27 - 4.33 m/s	4.292 m/s	Yes
Upper Rib Lateral Acceleration	37 - 46 g	44.5 g	Yes
Lower Rib Lateral Acceleration	37 - 46 g	44.9 g	Yes
Lower Spine Lateral Acceleration	15 - 22 g	21.0 g	Yes

Test meets specifications.

Comments:

Technician



Approved



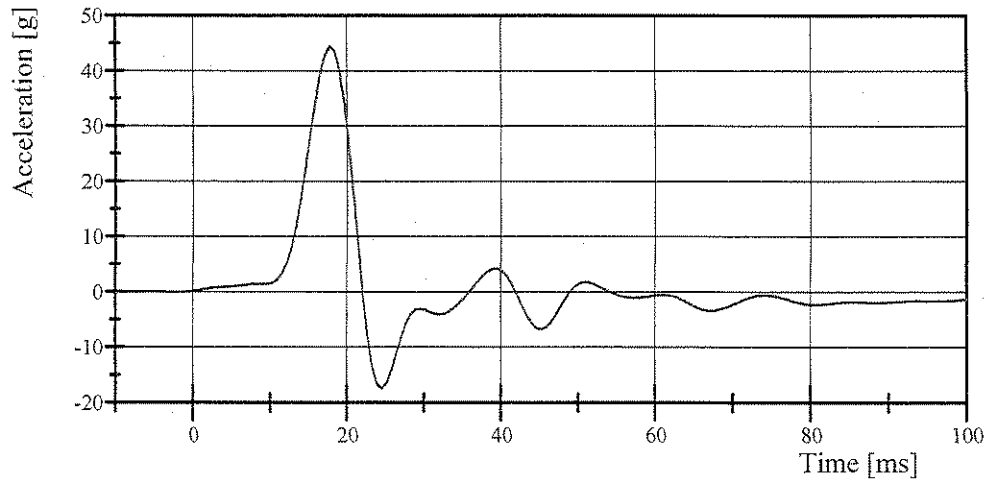
Transportation Research Center Inc.

Left Lateral Thorax

SID-HIII Serial No. 066 Certification No. 20-1

Test Date: 03/28/2006

Upper Rib Acceleration (Y)

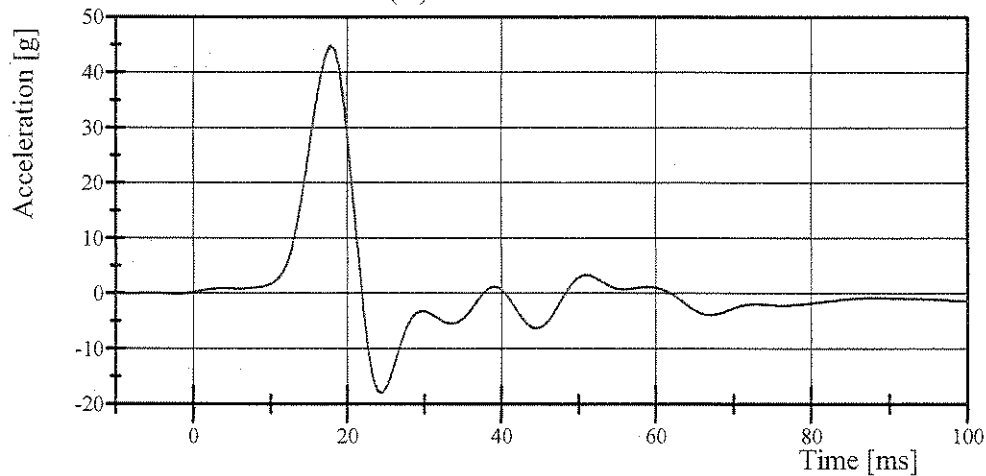


Filter Class: FIR_100

Max: 44.5 g at 17.8 ms

Min: -17.4 g at 24.6 ms

Lower Rib Acceleration (Y)

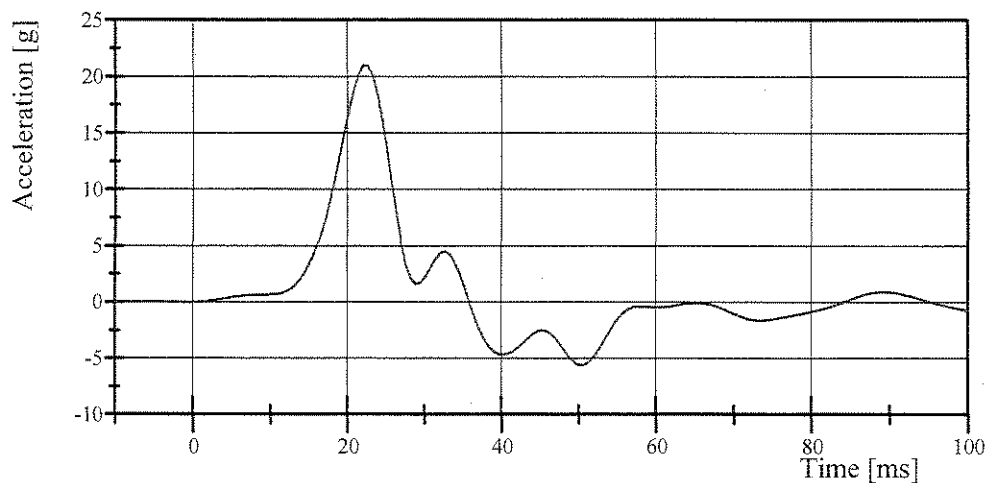


Filter Class: FIR_100

Max: 44.9 g at 17.8 ms

Min: -18.0 g at 24.6 ms

Lower Spine Acceleration (Y)



Filter Class: FIR_100

Max: 21.0 g at 22.2 ms

Min: -5.6 g at 50.2 ms



Transportation Research Center Inc.

Left Lateral Pelvis

SID-HIII Serial No. 066 Certification No. 20-1

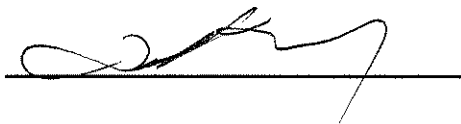
Test Date: 03/28/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	32 %	Yes
Impactor Velocity	4.27 - 4.33 m/s	4.297 m/s	Yes
Pelvis Lateral Acceleration Duration above 20g	3 - 7 ms	6.1 ms	Yes
Pelvis Lateral Acceleration	40 - 60 g	48.0 g	Yes
Is Acceleration Curve Unimodal Above 20g?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician



Approved

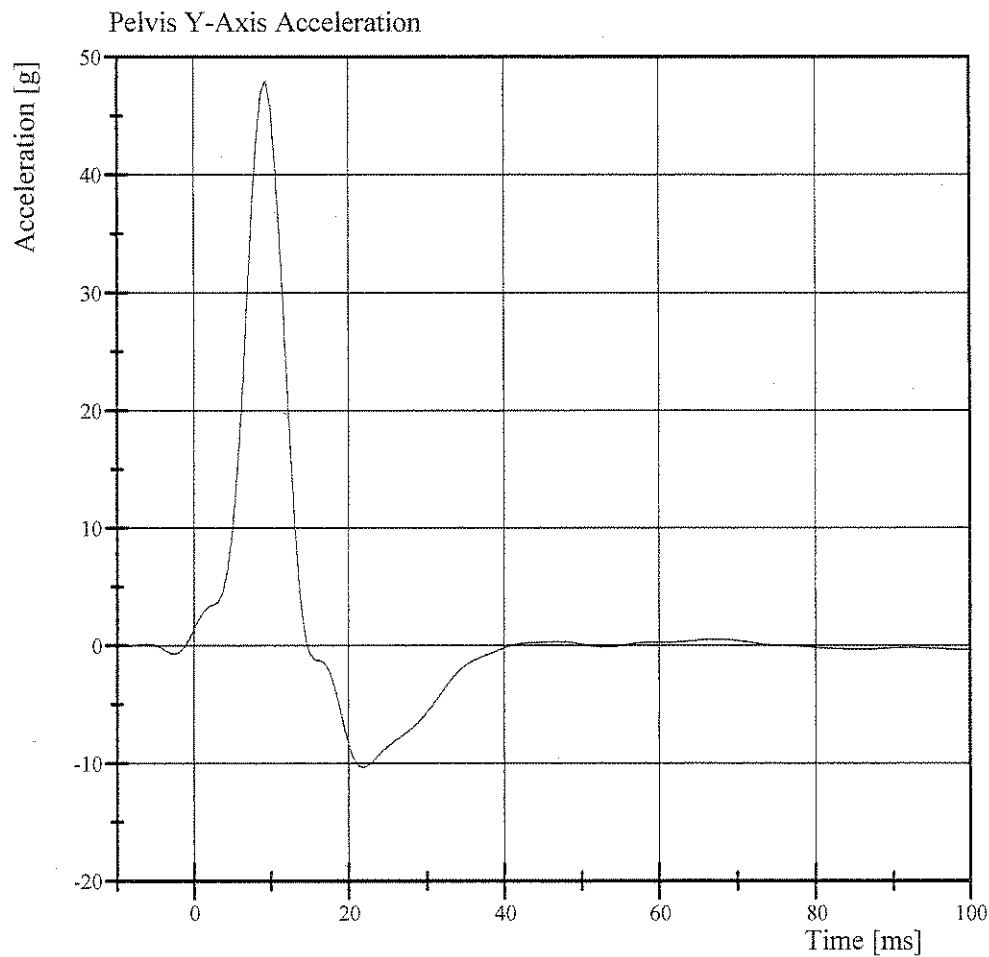


Transportation Research Center Inc.

Left Lateral Pelvis

SID-HIII Serial No. 066 Certification No. 20-1

Test Date: 03/28/2006



Filter Class: FIR_100
Max: 48.0 g at 9.4 ms
Min: -10.4 g at 21.8 ms



Transportation Research Center Inc.

Abdomen Compression

SID-HIII Serial No. 066 Certification No. 20-2

Test Date: 03/27/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	28 %	Yes
Probe Force within Corridor	Yes	Yes	Yes
Probe Velocity	6.35 - 8.89 mm/s	7.809 mm/s	Yes

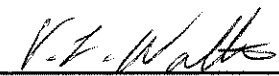
Test meets specifications.

Comments:

Technician



Approved

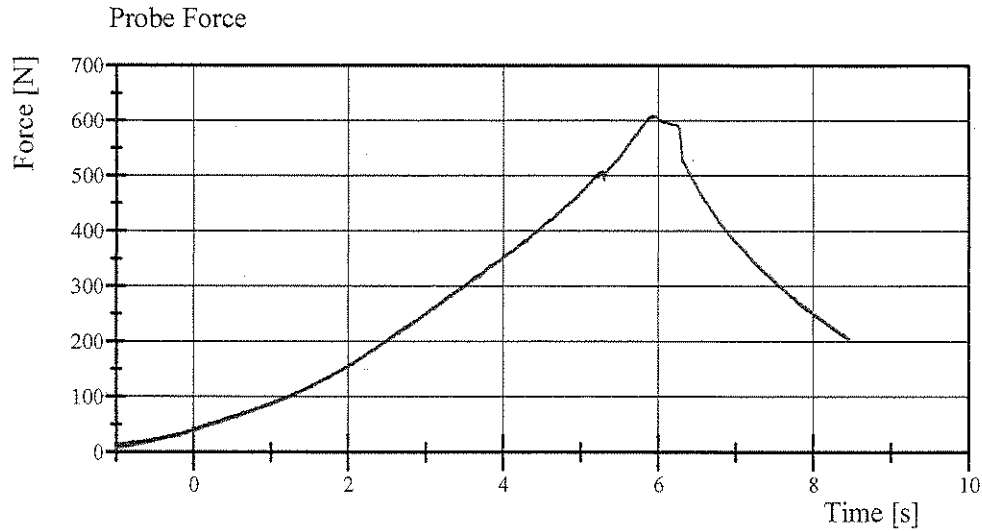

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Transportation Research Center Inc.

Abdomen Compression

SID-HIII Serial No. 066 Certification No. 20-2

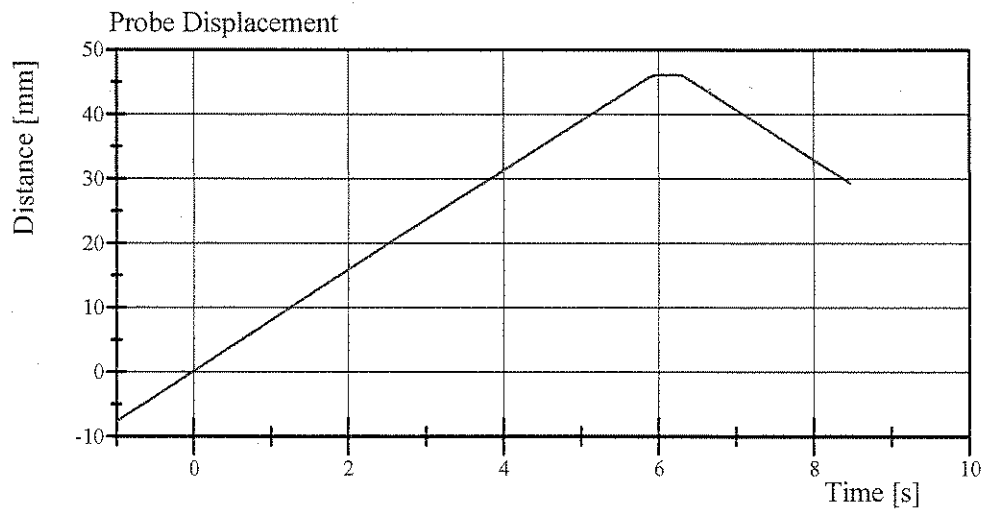
Test Date: 03/27/2006



Filter Class: CFC_600

Max: 608.4 N at 5.9 s

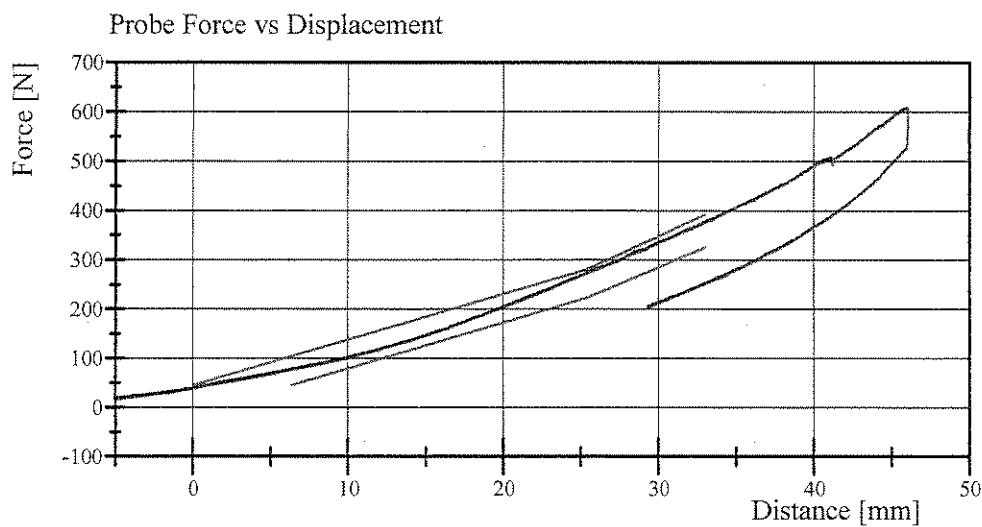
Min: 6.9 N at -1.0 s



Filter Class: CFC_180

Max: 46.1 mm at 6.2 s

Min: -7.7 mm at -1.0 s



Filter Class: CFC_600

Max: 608.4 N at 45.9 mm

Min: -0.7 N at -9.8 mm



TRANSPORTATION RESEARCH CENTER INC.

LUMBAR FLEXION TEST

SID PART 572B

CAL DATE: 27-Mar-06

TRC, INC.

TEST NO: TOFL-01

572B SN 066 TORSO FLEX CAL 20

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6° C	21.3 C
RELATIVE HUMIDITY	10 – 70 %	30 %
FORCE AT 0 DEG. FLEXION	-27 – 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 – 151 N	142.3 N
FORCE AT 30 DEG OF FLEXION	151 – 205 N	195.7 N
FORCE AT 40 DEG OF FLEXION	205 – 258 N	253.5 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	9.3 °

TEST MEETS SPECIFICATIONS

TECHNICIAN



Calibration Test Results

Post-Test

SID HIII: 059

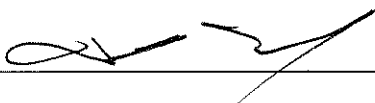
Configured for Left Side Impact

External Dimensions:	The dummy passed all external dimension requirements.
Lateral Head Drop Test:	The head passed all lateral drop test requirements.
Lateral Neck Test:	The neck passed all impact test requirements.
Lateral Thorax Impact Test:	The thorax passed all impact test requirements.
Lumbar Flexion Test:	The dummy met the lumbar flexion test requirements.
Abdominal Compression Test:	The abdomen met the compression test requirements.
Pelvis Impact Test:	The lateral pelvis passed all impact test requirements.
Thoracic Shock Absorber Test:	The thoracic shock absorber was not tested at this time.

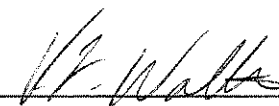
Transportation Research Center Inc.
SID/HIII Dummy Pre-Test
External Dimensions
Serial No. 059 Calibration No. 14

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	901 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	509 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Knee Pivot From Backline	KH	510.5 - 525.8 mm	521 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	494 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	366 mm	Yes
Top Rib Width From C/L	RW-1	165.1 - 180.3 mm	177 mm	Yes
Bottom Rib Width From C/L	RW-2	165.1 - 180.3 mm	177 mm	Yes
Difference Between Top & Bottom Rib Width from C/L		<= 2.5 mm	0.0 mm	Yes

Technician



Approved




Transportation Research Center Inc.

Left Lateral Head Drop

SID-HIII Serial No. 059 Certification No. 15-1

Test Date: 6/6/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	47 %	Yes
Peak Head Resultant Acceleration	120 - 150 g	147.6 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	4.5 g	Yes
Is Head Resultant Acceleration Curve Unimodal Within 15% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician



Approved

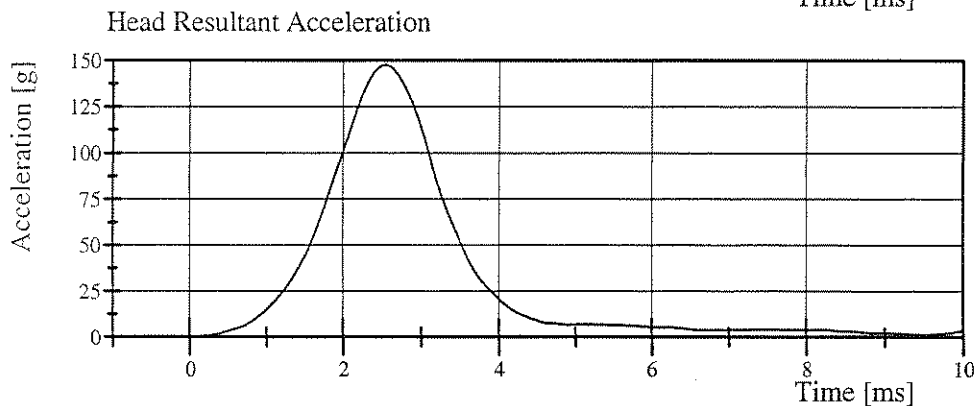
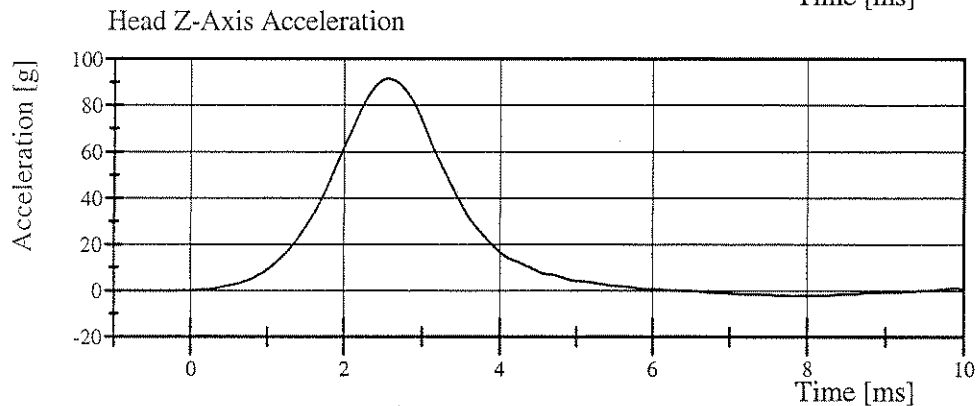
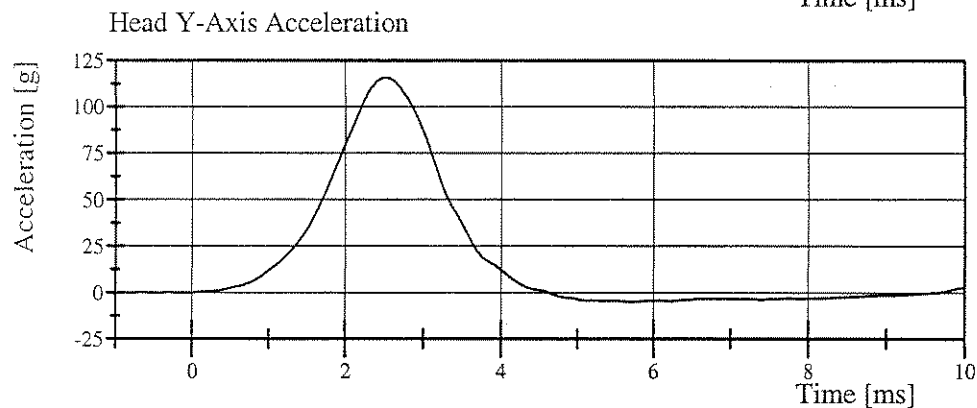
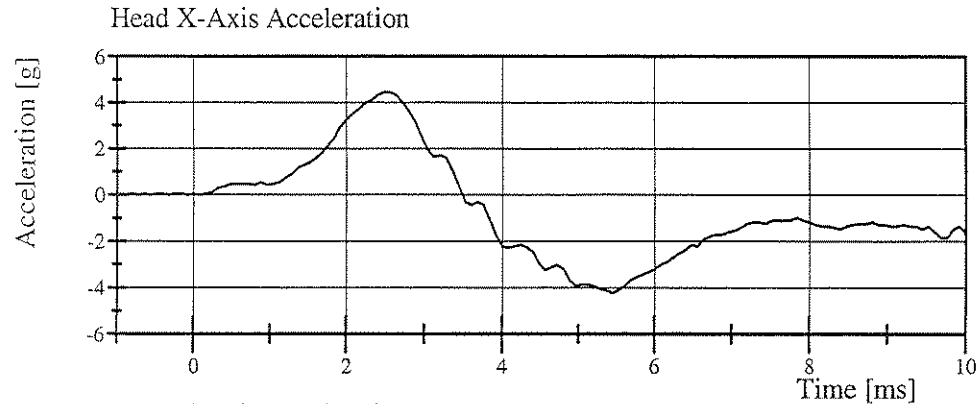


Transportation Research Center Inc.

Left Lateral Head Drop

SID-HIII Serial No. 059 Certification No. 15-1

Test Date: 6/6/2006



Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 059 Certification No. 15-3

Test Date: 06/09/2006

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	54 %	Yes
Pendulum Velocity	(-6.89) - (-7.13) m/s	-7.041 m/s	Yes
Pendulum Integrated Velocity Change at 10 ms	1.96 - 2.55 m/s	2.245 m/s	Yes
Pendulum Integrated Velocity Change at 20 ms	4.12 - 5.10 m/s	4.386 m/s	Yes
Pendulum Integrated Velocity Change at 30 ms	5.73 - 7.01 m/s	6.214 m/s	Yes
Pendulum Integrated Velocity Change at 40 to 70 ms	6.27 - 7.64 m/s	7.270 m/s	Yes
Total Head D-Plane Rotation	(-66) - (-82) °	-75.6 °	Yes
Total Head D-Plane Rotation Time to 0° after Peak Rotation	58 - 67 ms	62.4 ms	Yes
Total Neck Occipital Condyle Moment	73 - 88 N·m	80.6 N·m	Yes
Total Neck Occipital Condyle Moment Time to 0 N·m after Peak Moment	49 - 64 ms	54.1 ms	Yes
Time from Peak Moment to Peak Rotation	2 - 16 ms	6.6 ms	Yes

Test meets specifications.

Comments:

Technician



Approved

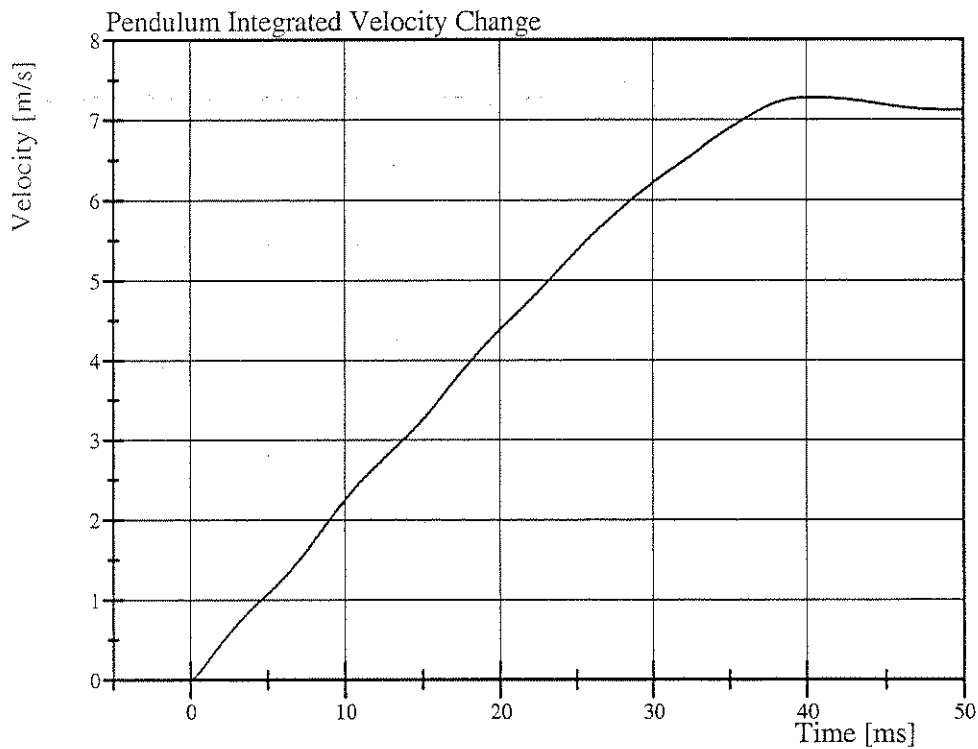
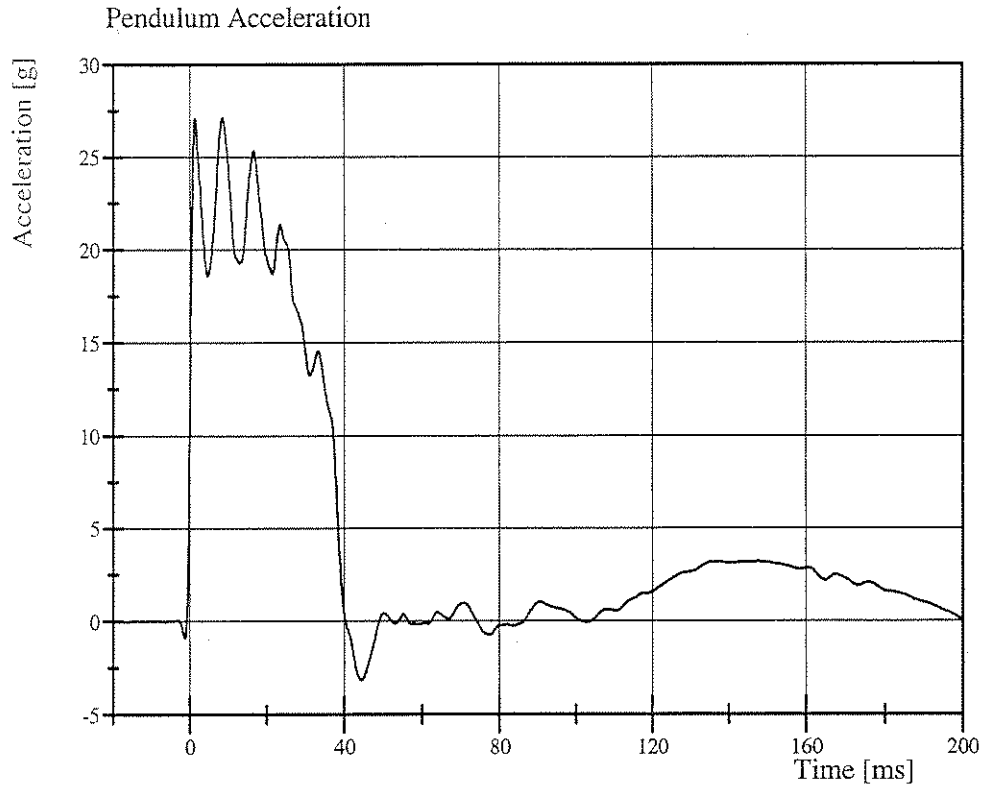


Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 059 Certification No. 15-3

Test Date: 06/09/2006



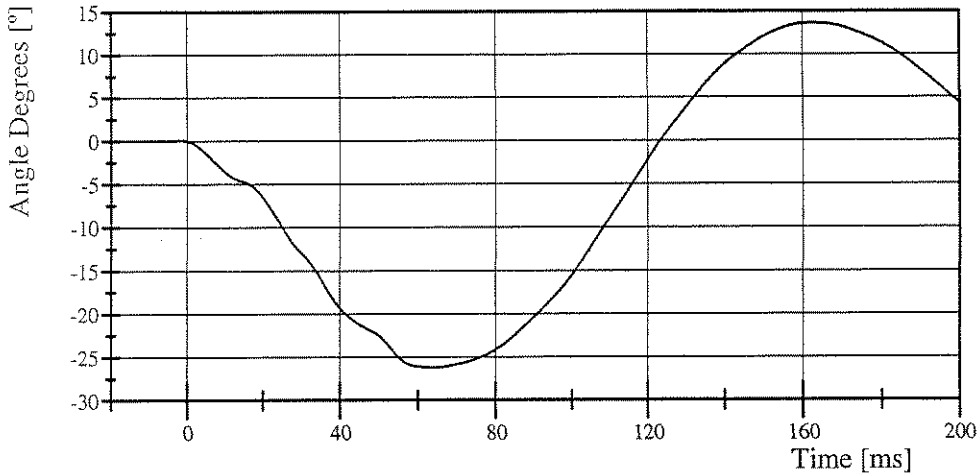
Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 059 Certification No. 15-3

Test Date: 06/09/2006

Pot Rotation at the Base of Neck

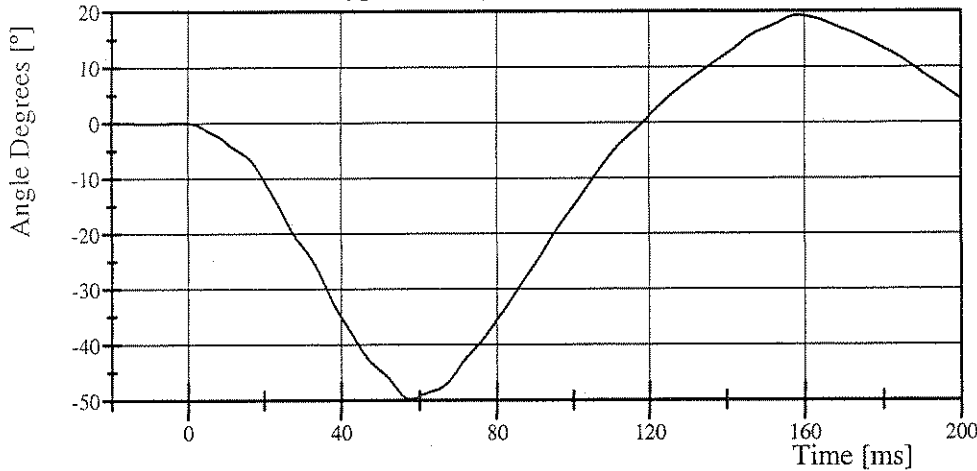


Filter Class: CFC_60

Max: 13.6 ° at 162.2 ms

Min: -26.2 ° at 64.2 ms

Head Rotation at Occypital Condyles

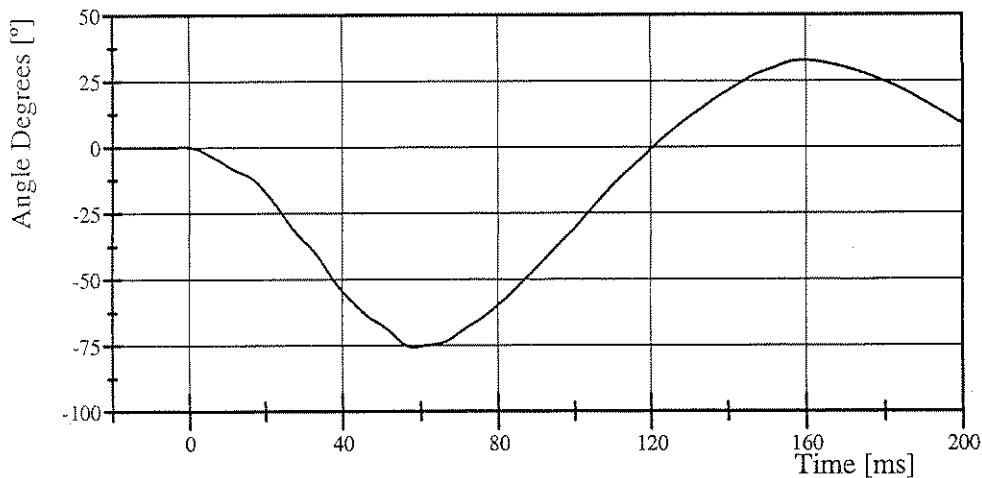


Filter Class: CFC_60

Max: 19.2 ° at 158.5 ms

Min: -49.7 ° at 57.8 ms

Total Head D-Plane Rotation



Filter Class: CFC_60

Max: 32.7 ° at 159.3 ms

Min: -75.6 ° at 58.3 ms

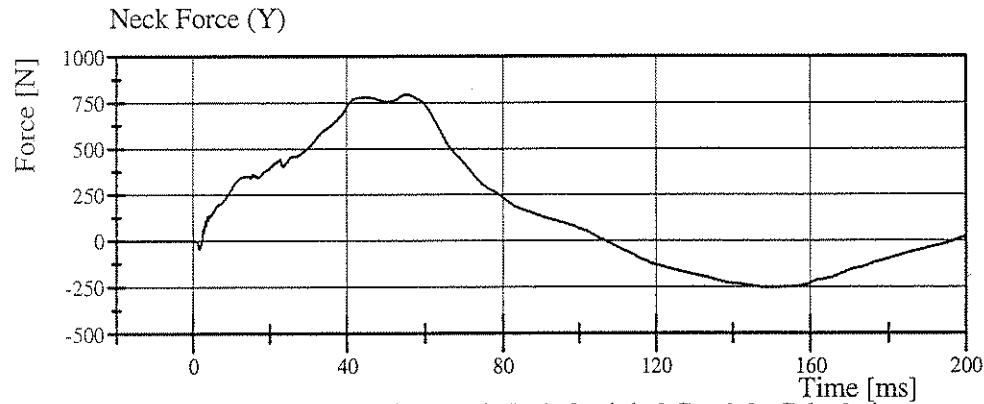


Transportation Research Center Inc.

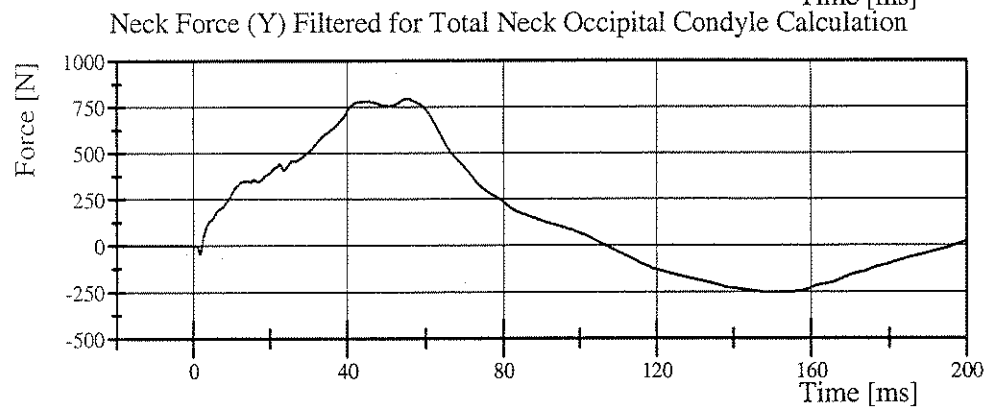
Left Lateral Neck

SID-HIII Serial No. 059 Certification No. 15-3

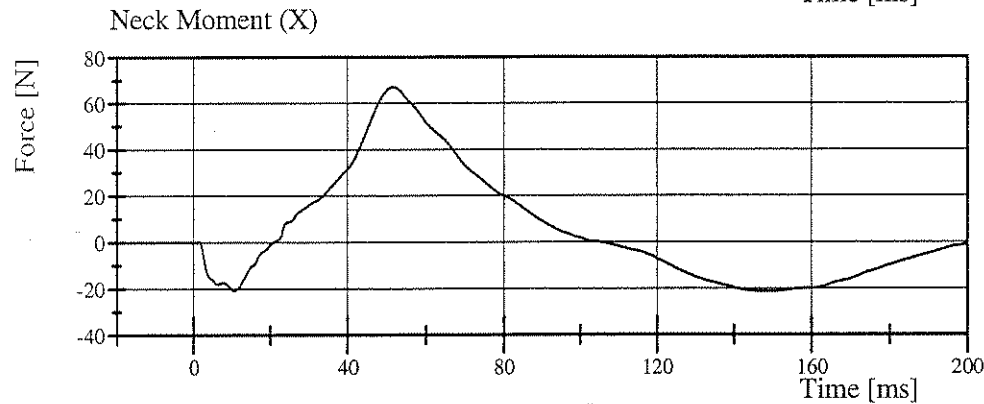
Test Date: 06/09/2006



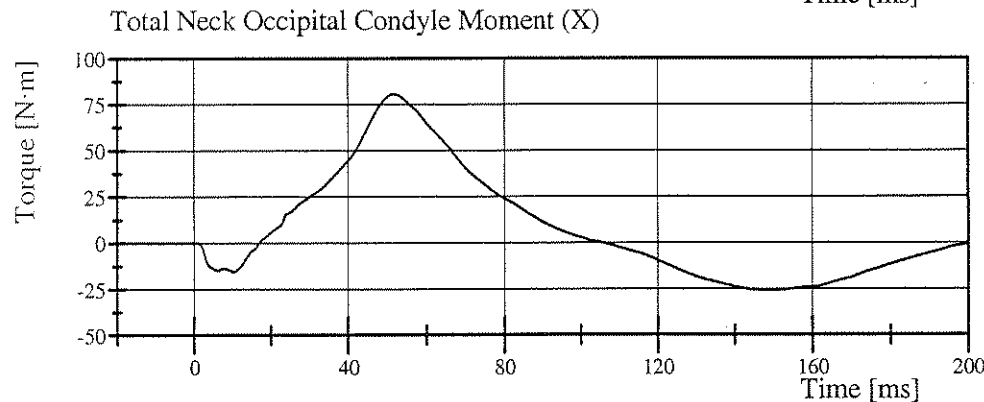
Filter Class: CFC_1000
Max: 793.6 N at 55.0 ms
Min: -253.8 N at 149.0 ms



Filter Class: CFC_600
Max: 793.6 N at 55.7 ms
Min: -253.3 N at 148.9 ms



Filter Class: CFC_600
Max: 67.1 N at 51.6 ms
Min: -21.2 N at 149.9 ms



Filter Class: CFC_600
Max: 80.6 N·m at 51.8 ms
Min: -25.7 N·m at 149.9 ms



TRANSPORTATION RESEARCH CENTER INC.

LUMBAR FLEXION TEST

SID PART 572B

CAL DATE: 09-Jun-06

TRC, INC.

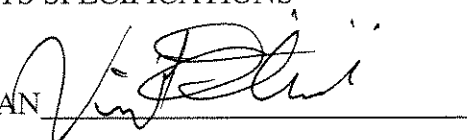
TEST NO: LUFL-01

572B SN 059 TORSO FLEX CAL 15

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6° C	21.5 C
RELATIVE HUMIDITY	10 – 70 %	51 %
FORCE AT 0 DEG. FLEXION	-27 – 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 – 151 N	142.3 N
FORCE AT 30 DEG OF FLEXION	151 – 205 N	177.9 N
FORCE AT 40 DEG OF FLEXION	205 – 258 N	226.9 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	8.7 °

TEST MEETS SPECIFICATIONS

TECHNICIAN



Transportation Research Center Inc.

Abdomen Compression

SID-HIII Serial No. 059 Certification No. 15-5

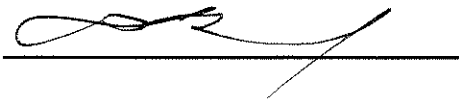
Test Date: 06/10/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Probe Force within Corridor	Yes	Yes	Yes
Probe Velocity	6.35 - 8.89 mm/s	7.804 mm/s	Yes

Test meets specifications.

Comments:

Technician



Approved

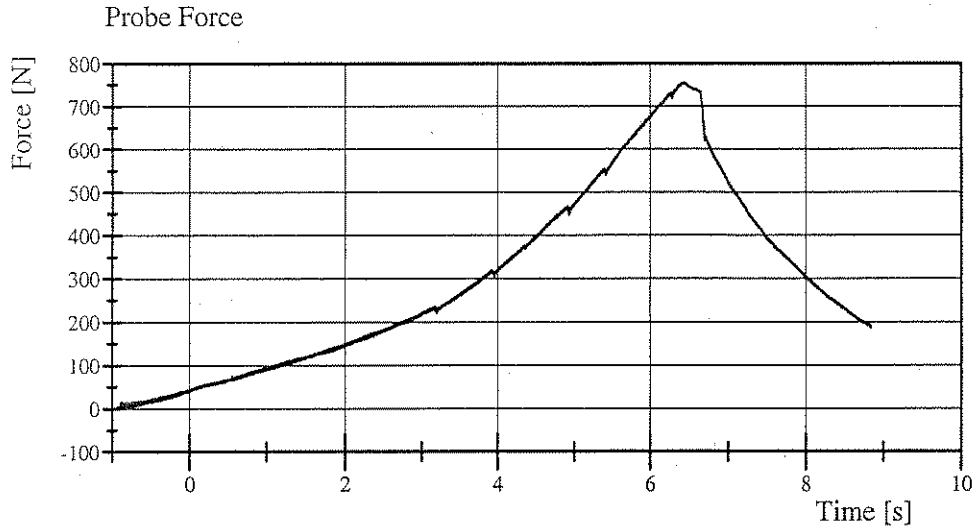


Transportation Research Center Inc.

Abdomen Compression

SID-HIII Serial No. 059 Certification No. 15-5

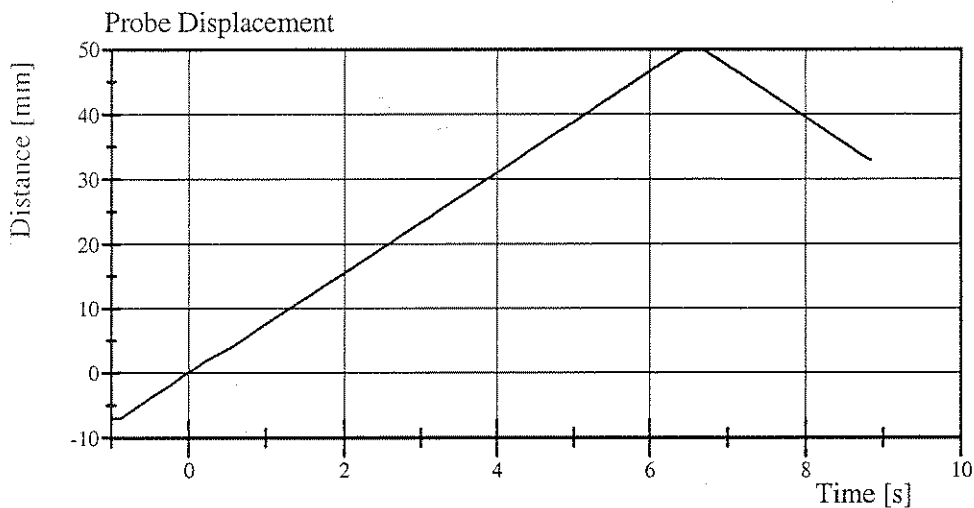
Test Date: 06/10/2006



Filter Class: CFC_600

Max: 754.4 N at 6.4 s

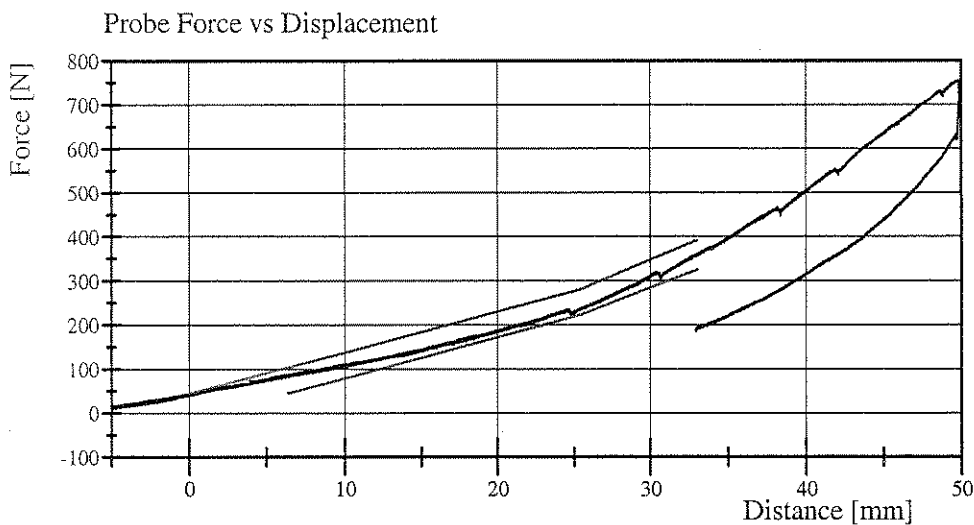
Min: -0.6 N at -0.8 s



Filter Class: CFC_180

Max: 49.9 mm at 6.6 s

Min: -7.0 mm at -1.0 s



Filter Class: CFC_600

Max: 754.4 N at 49.8 mm

Min: -0.6 N at -6.6 mm



Transportation Research Center Inc.

Left Lateral Thorax

SID-HIII Serial No. 059 Certification No. 15-2

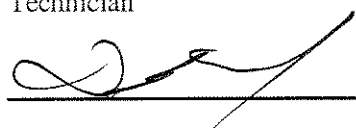
Test Date: 06/12/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	48 %	Yes
Impactor Velocity	4.27 - 4.33 m/s	4.293 m/s	Yes
Upper Rib Lateral Acceleration	37 - 46 g	41.0 g	Yes
Lower Rib Lateral Acceleration	37 - 46 g	37.1 g	Yes
Lower Spine Lateral Acceleration	15 - 22 g	17.3 g	Yes

Test meets specifications.

Comments:

Technician



Approved



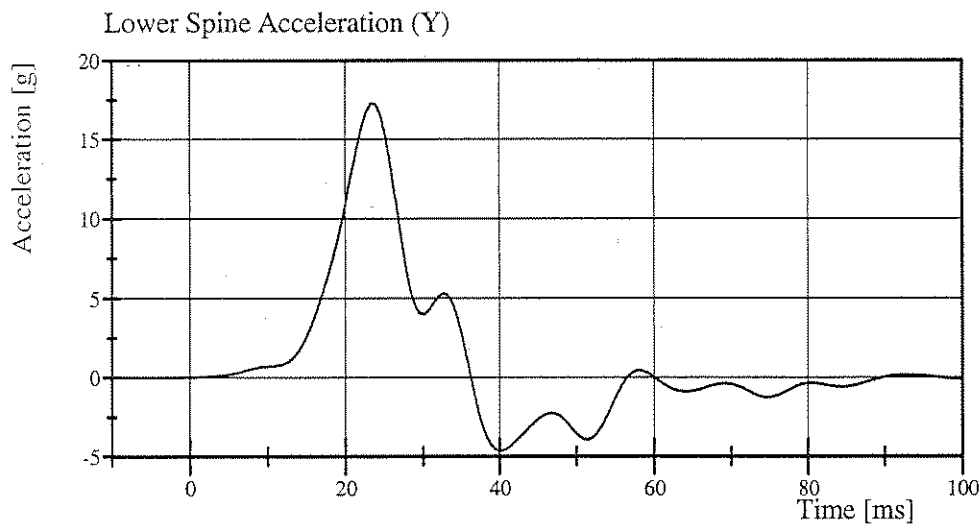
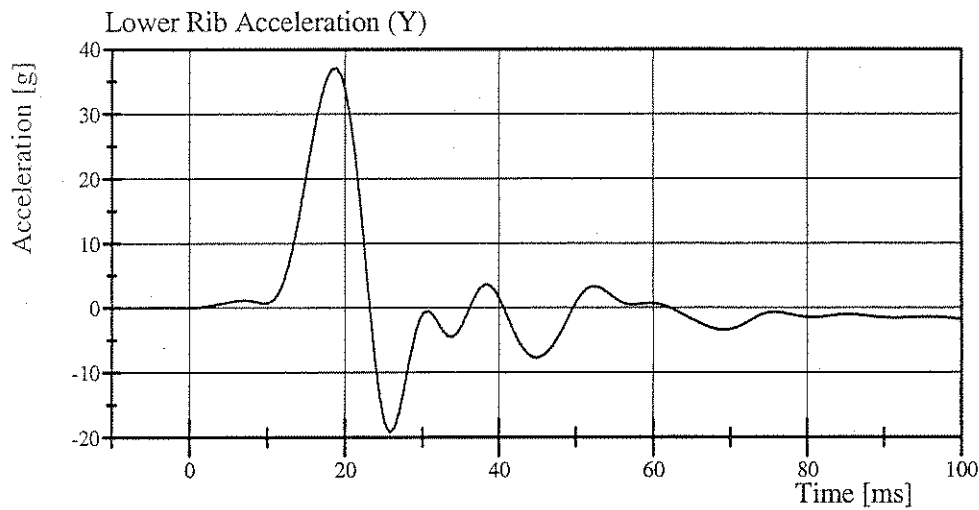
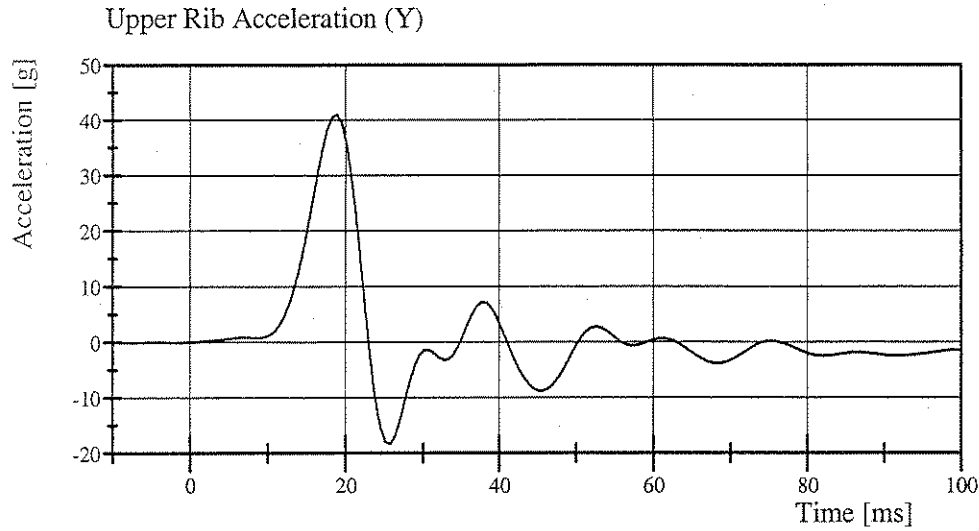


Transportation Research Center Inc.

Left Lateral Thorax

SID-HIII Serial No. 059 Certification No. 15-2

Test Date: 06/12/2006



Transportation Research Center Inc.

Left Lateral Pelvis

SID-HIII Serial No. 059 Certification No. 15-1

Test Date: 06/12/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Impactor Velocity	4.27 - 4.33 m/s	4.292 m/s	Yes
Pelvis Lateral Acceleration Duration above 20g	3 - 7 ms	6.4 ms	Yes
Pelvis Lateral Acceleration	40 - 60 g	42.9 g	Yes
Is Acceleration Curve Unimodal Above 20g?	Yes	Yes	Yes

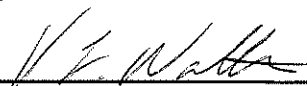
Test meets specifications.

Comments:

Technician



Approved

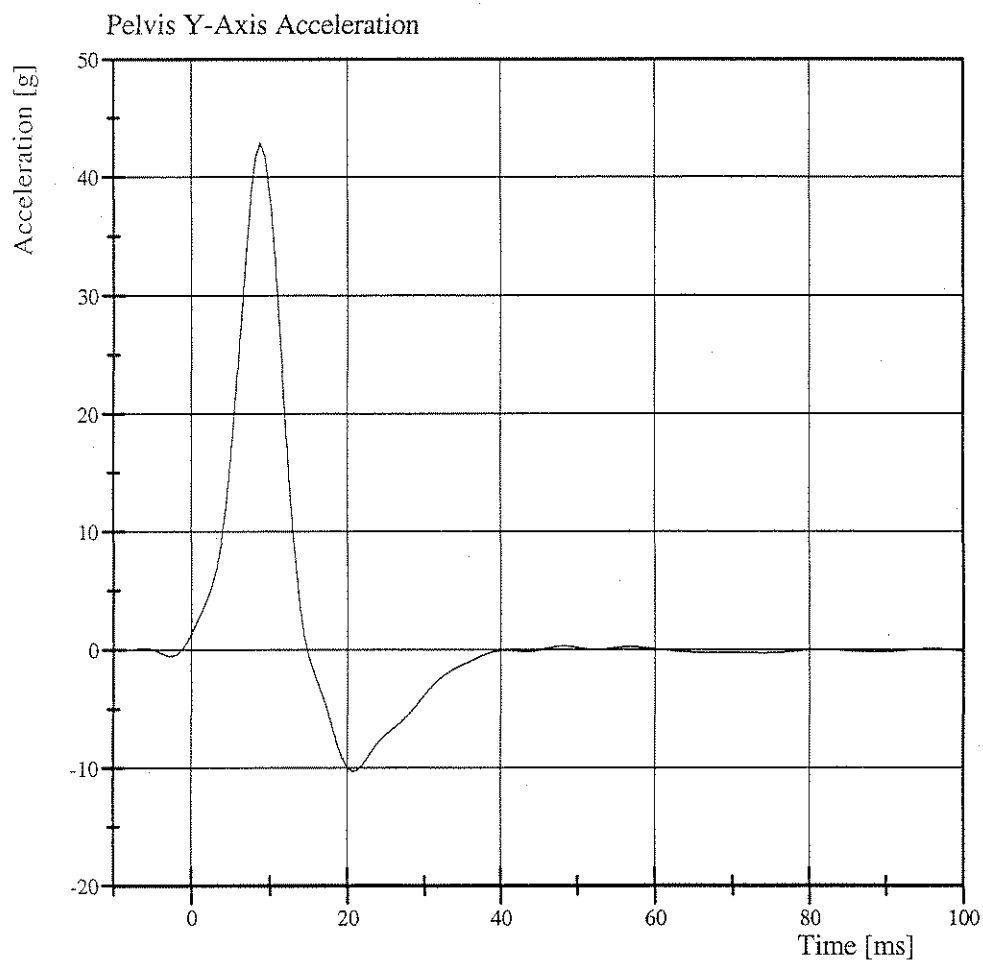

_____

Transportation Research Center Inc.

Left Lateral Pelvis

SID-HIII Serial No. 059 Certification No. 15-1

Test Date: 06/12/2006



Filter Class: FIR_100

Max: 42.9 g at 8.8 ms

Min: -10.3 g at 20.7 ms



Calibration Test Results

Post-Test

SID HIII: 066

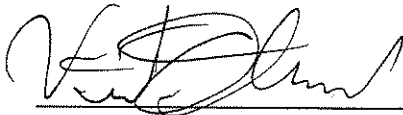
Configured for Left Side Impact

External Dimensions:	The dummy passed all external dimension requirements.
Lateral Head Drop Test:	The head passed all lateral drop test requirements.
Lateral Neck Test:	The neck passed all impact test requirements.
Lateral Thorax Impact Test:	The thorax passed all impact test requirements.
Lumbar Flexion Test:	The dummy met the lumbar flexion test requirements.
Abdominal Compression Test:	The abdomen met the compression test requirements.
Pelvis Impact Test:	The lateral pelvis passed all impact test requirements.
Thoracic Shock Absorber Test:	The thoracic shock absorber was not tested at this time.

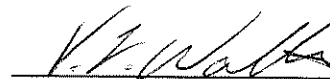
Transportation Research Center Inc.
572M SID/HIII Dummy
External Dimensions
Serial No. 066 Calibration No. 21

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	902 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	510 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Knee Pivot From Backline	KH	510.5 - 525.8 mm	524 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	496 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	368 mm	Yes
Top Rib Width From CVL	RW-1	165.1 - 180.3 mm	173 mm	Yes
Bottom Rib Width From CVL	RW-2	165.1 - 180.3 mm	172 mm	Yes
Difference Between Top & Bottom Rib Width from CVL		<= 2.5 mm	1.0 mm	Yes

Technician



Approved




Transportation Research Center Inc.

Left Lateral Head Drop

SID-HIII Serial No. 066 Certification No. 21-1

Test Date: 6/6/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Peak Head Resultant Acceleration	120 - 150 g	139.6 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	-5.7 g	Yes
Is Head Resultant Acceleration Curve Unimodal Within 15% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician



Approved

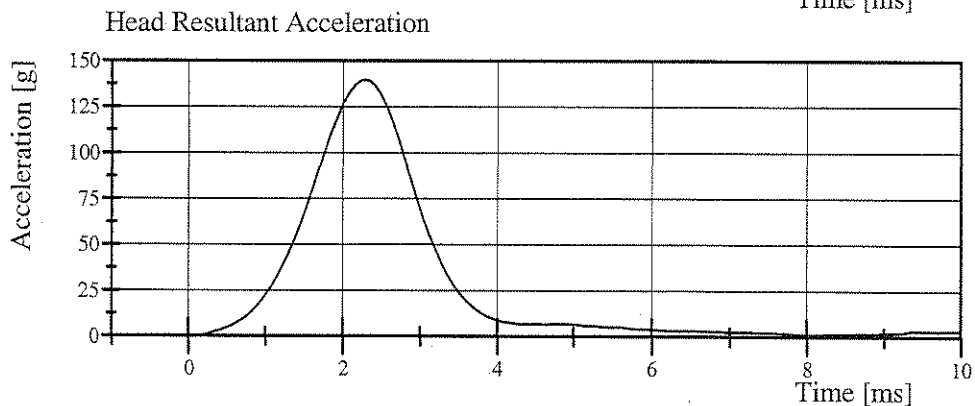
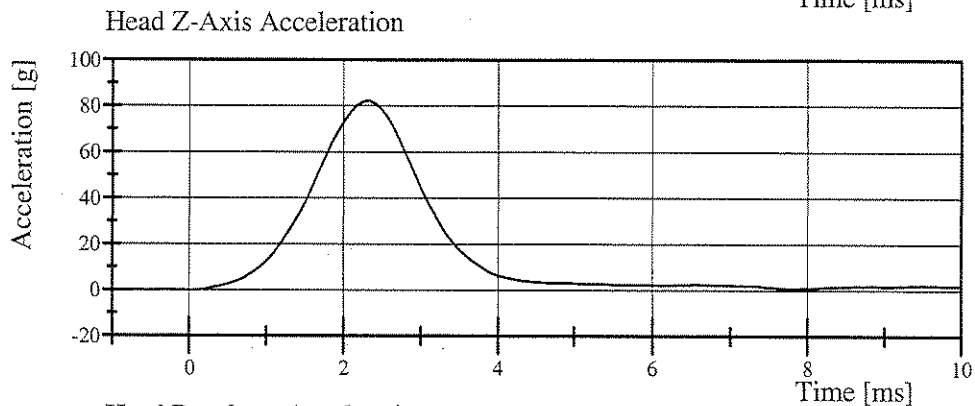
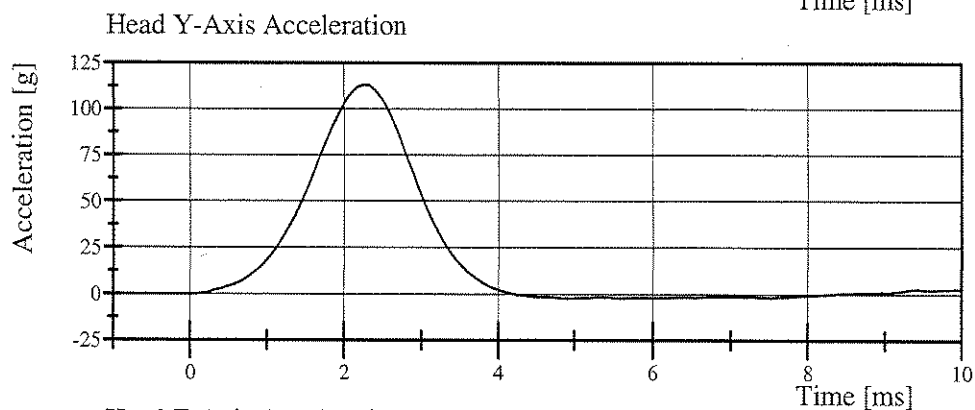
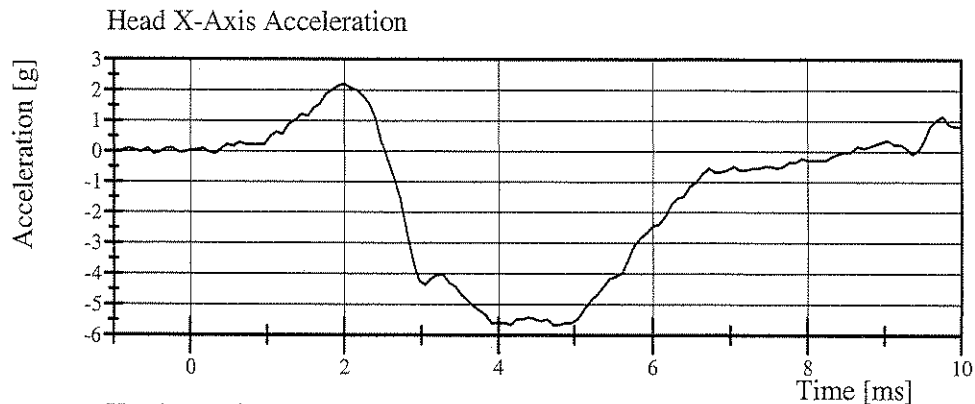


Transportation Research Center Inc.

Left Lateral Head Drop

SID-HIII Serial No. 066 Certification No. 21-1

Test Date: 6/6/2006



Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 066 Certification No. 21-2

Test Date: 6/6/2006

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	42 %	Yes
Pendulum Velocity	(-6.89) - (-7.13) m/s	-7.019 m/s	Yes
Pendulum Integrated Velocity Change at 10 ms	1.96 - 2.55 m/s	2.281 m/s	Yes
Pendulum Integrated Velocity Change at 20 ms	4.12 - 5.10 m/s	4.459 m/s	Yes
Pendulum Integrated Velocity Change at 30 ms	5.73 - 7.01 m/s	6.323 m/s	Yes
Pendulum Integrated Velocity Change at 40 to 70 ms	6.27 - 7.64 m/s	7.259 m/s	Yes
Total Head D-Plane Rotation	(-66) - (-82) °	-71.0 °	Yes
Total Head D-Plane Rotation Time to 0° after Peak Rotation	58 - 67 ms	60.3 ms	Yes
Total Neck Occipital Condyle Moment	73 - 88 N·m	82.5 N·m	Yes
Total Neck Occipital Condyle Moment Time to 0 N·m after Peak Moment	49 - 64 ms	49.0 ms	Yes
Time from Peak Moment to Peak Rotation	2 - 16 ms	6.9 ms	Yes

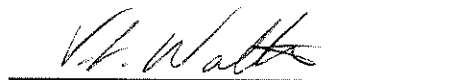
Test meets specifications.

Comments:

Technician



Approved

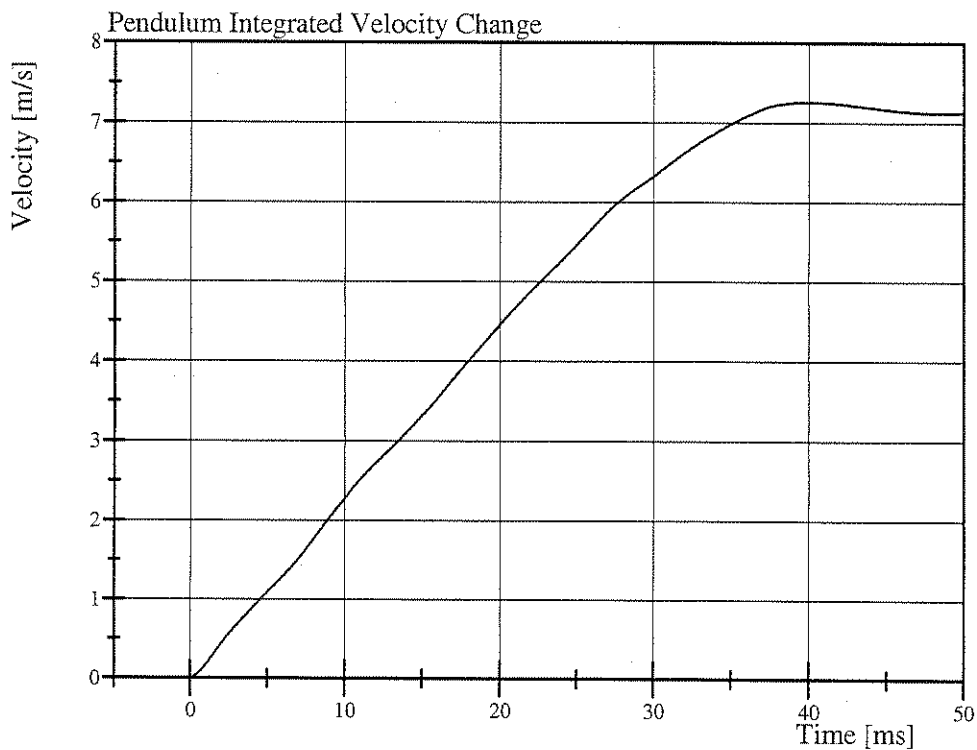
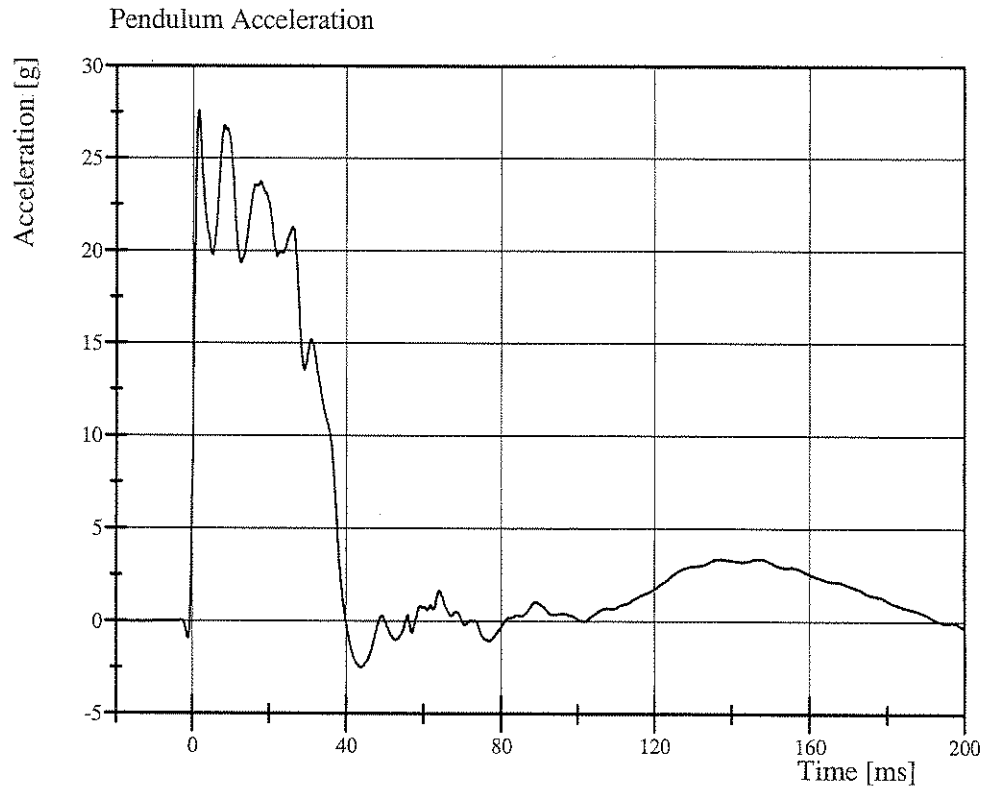


Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 066 Certification No. 21-2

Test Date: 6/6/2006



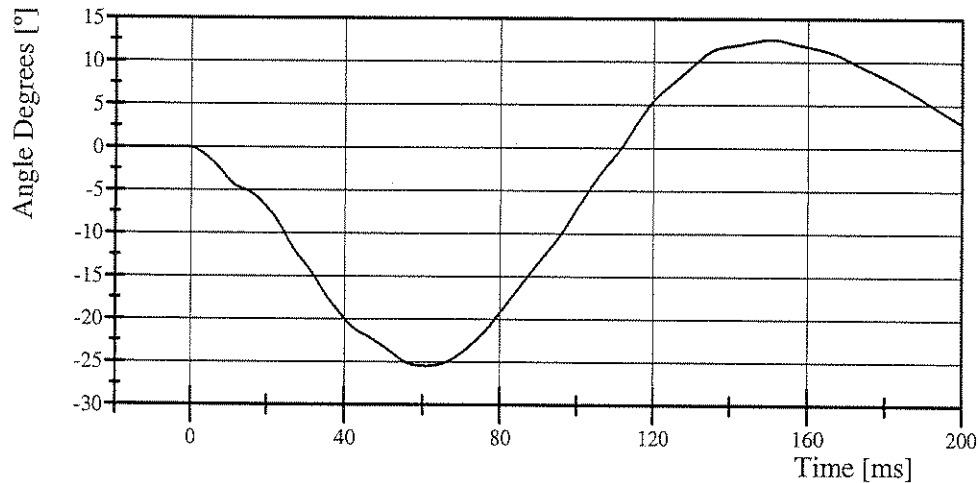
Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 066 Certification No. 21-2

Test Date: 6/6/2006

Pot Rotation at the Base of Neck

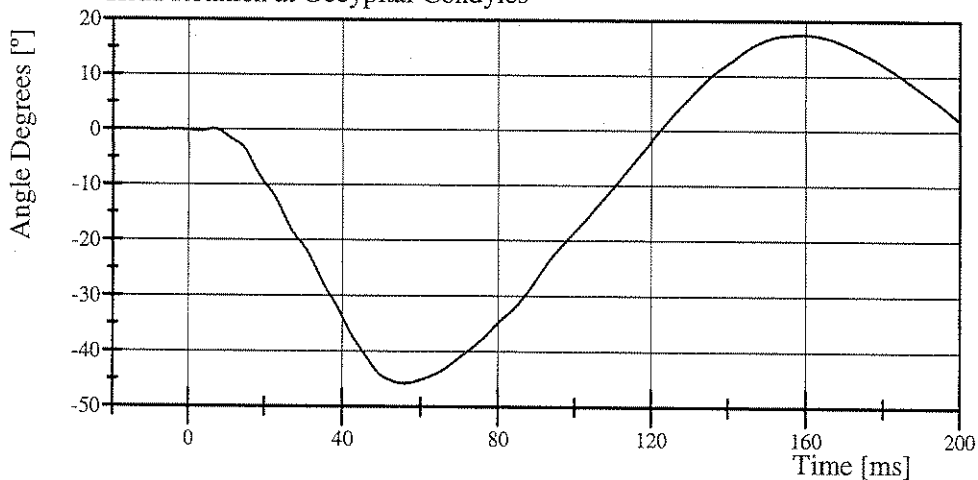


Filter Class: CFC_60

Max: 12.6 ° at 150.6 ms

Min: -25.5 ° at 61.0 ms

Head Rotation at Occypital Condyles

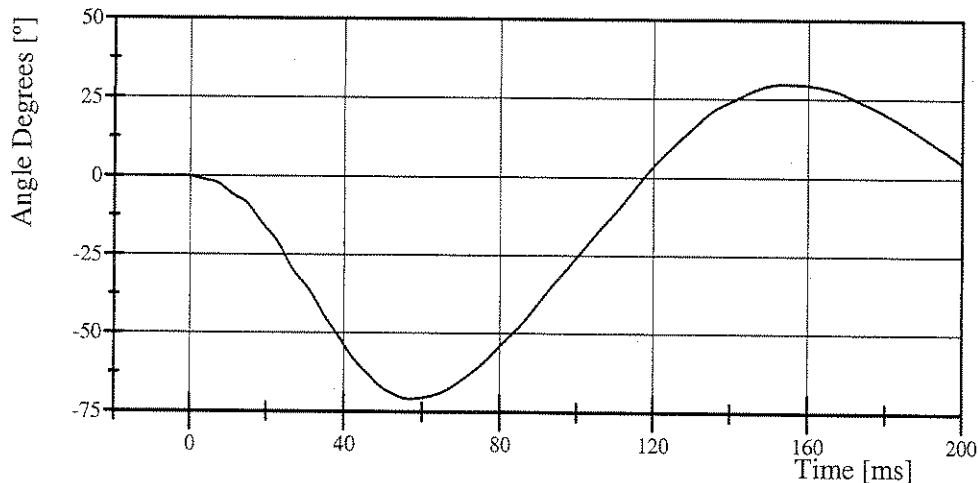


Filter Class: CFC_60

Max: 17.6 ° at 159.4 ms

Min: -45.8 ° at 55.9 ms

Total Head D-Plane Rotation



Filter Class: CFC_60

Max: 29.8 ° at 153.4 ms

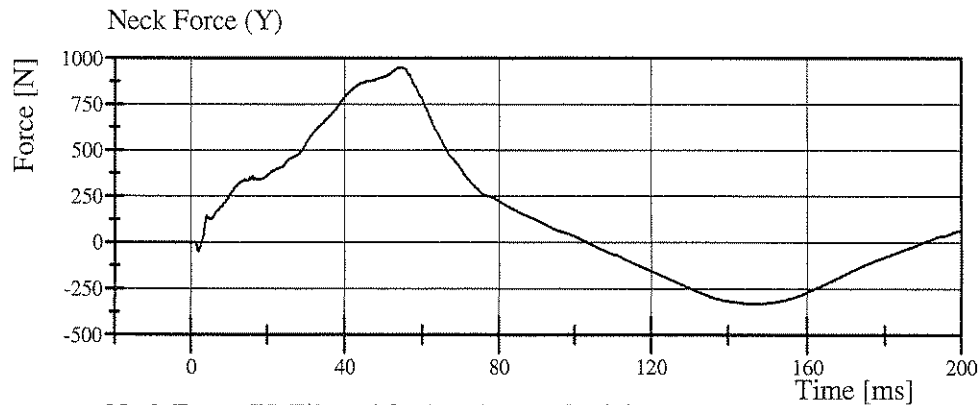
Min: -71.0 ° at 57.3 ms

Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 066 Certification No. 21-2

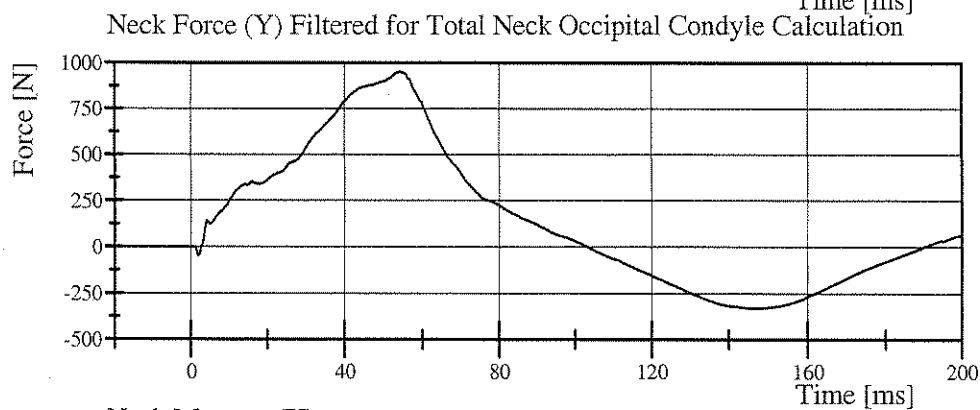
Test Date: 6/6/2006



Filter Class: CFC_1000

Max: 951.1 N at 54.2 ms

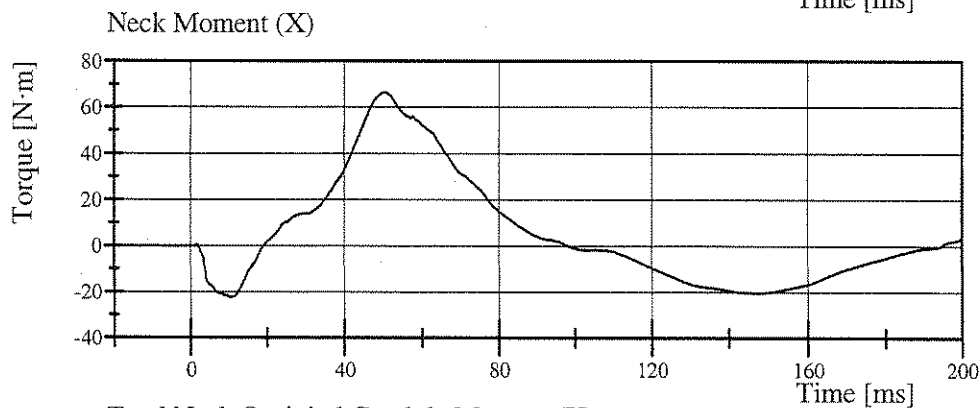
Min: -331.0 N at 145.7 ms



Filter Class: CFC_600

Max: 950.8 N at 54.3 ms

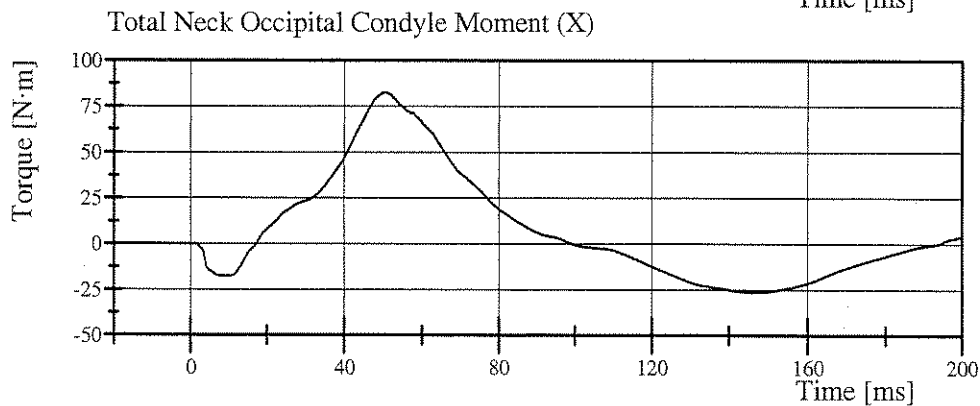
Min: -330.6 N at 145.7 ms



Filter Class: CFC_600

Max: 66.4 N·m at 50.2 ms

Min: -22.3 N·m at 10.3 ms



Filter Class: CFC_600

Max: 82.5 N·m at 50.4 ms

Min: -26.2 N·m at 147.8 ms

TRANSPORTATION RESEARCH CENTER INC.

LUMBAR FLEXION TEST

SID PART 572B

CAL DATE: 08-Jun-06

TRC, INC.

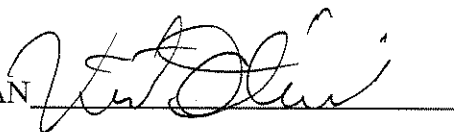
TEST NO: LUFL-01

572B SN 066 TORSO FLEX CAL 21

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6° C	21.4 C
RELATIVE HUMIDITY	10 – 70 %	52 %
FORCE AT 0 DEG. FLEXION	-27 – 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 – 151 N	142.3 N
FORCE AT 30 DEG OF FLEXION	151 – 205 N	195.7 N
FORCE AT 40 DEG OF FLEXION	205 – 258 N	253.5 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	6.4 °

TEST MEETS SPECIFICATIONS

TECHNICIAN



Transportation Research Center Inc.

Abdomen Compression

SID-HIII Serial No. 066 Certification No. 21-2

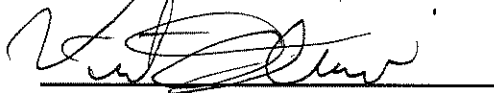
Test Date: 6/6/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Probe Force within Corridor	Yes	Yes	Yes
Probe Velocity	6.35 - 8.89 mm/s	7.823 mm/s	Yes

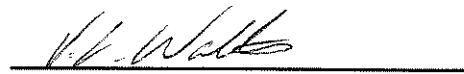
Test meets specifications.

Comments:

Technician



Approved



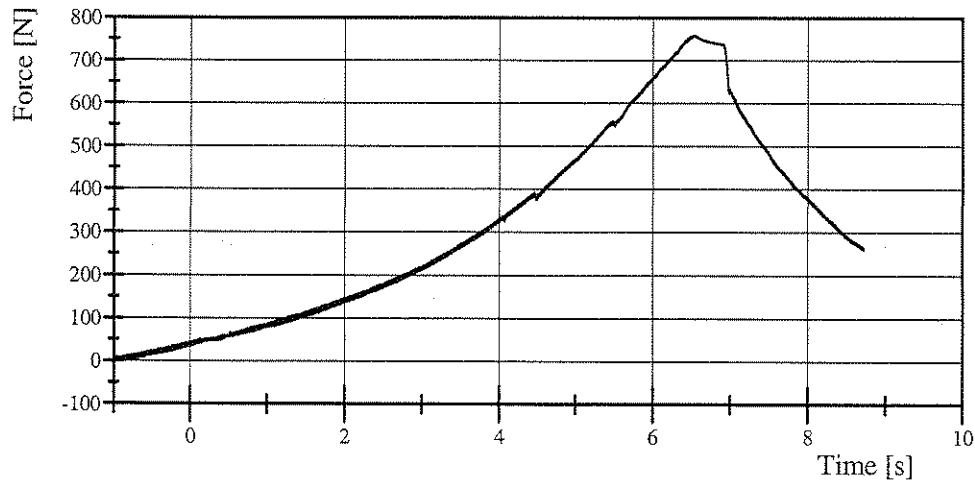
Transportation Research Center Inc.

Abdomen Compression

SID-HIII Serial No. 066 Certification No. 21-2

Test Date: 6/6/2006

Probe Force

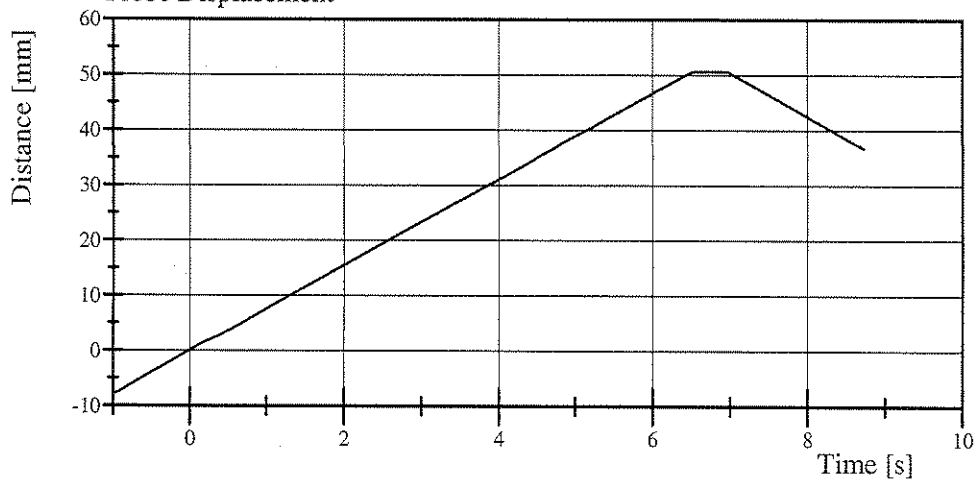


Filter Class: CFC_600

Max: 757.9 N at 6.5 s

Min: -1.8 N at -1.0 s

Probe Displacement

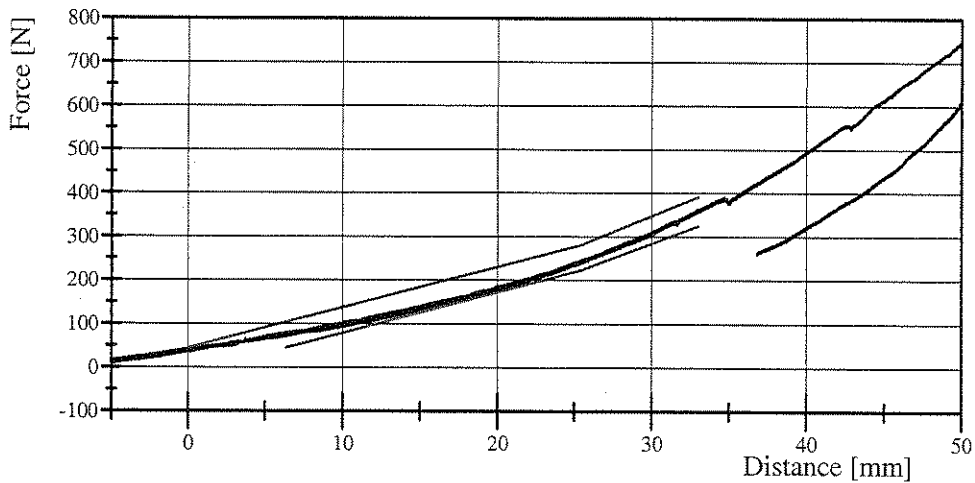


Filter Class: CFC_180

Max: 50.7 mm at 6.9 s

Min: -7.7 mm at -1.0 s

Probe Force vs Displacement



Filter Class: CFC_600

Max: 757.9 N at 50.6 mm

Min: -1.8 N at -7.7 mm

Transportation Research Center Inc.

Left Lateral Thorax

SID-HIII Serial No. 066 Certification No. 21-1

Test Date: 06/09/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	53 %	Yes
Impactor Velocity	4.27 - 4.33 m/s	4.299 m/s	Yes
Upper Rib Lateral Acceleration	37 - 46 g	45.0 g	Yes
Lower Rib Lateral Acceleration	37 - 46 g	44.0 g	Yes
Lower Spine Lateral Acceleration	15 - 22 g	21.3 g	Yes

Test meets specifications.

Comments:

Technician



Approved



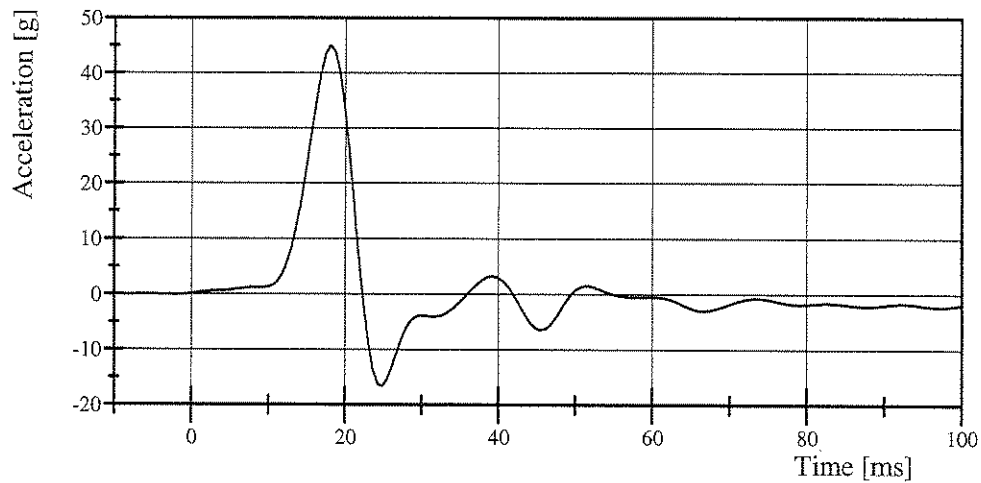
Transportation Research Center Inc.

Left Lateral Thorax

SID-HIII Serial No. 066 Certification No. 21-1

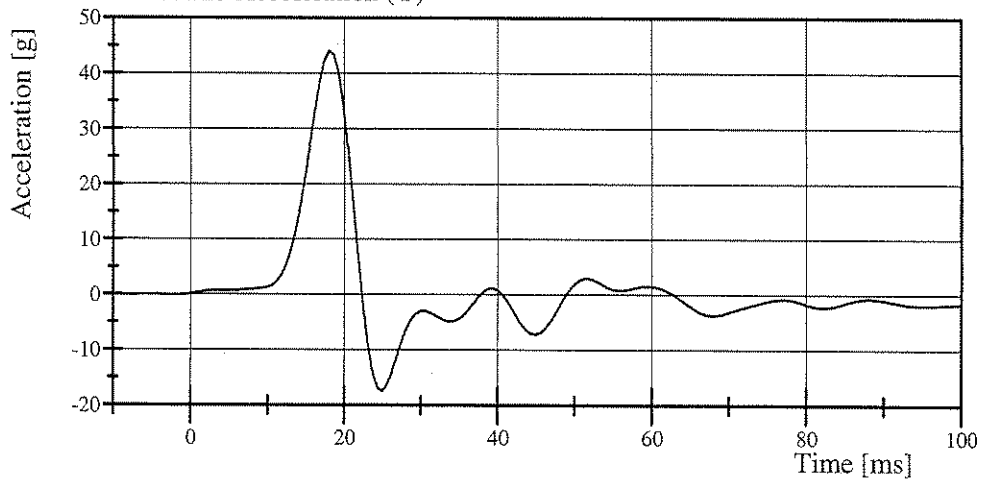
Test Date: 06/09/2006

Upper Rib Acceleration (Y)



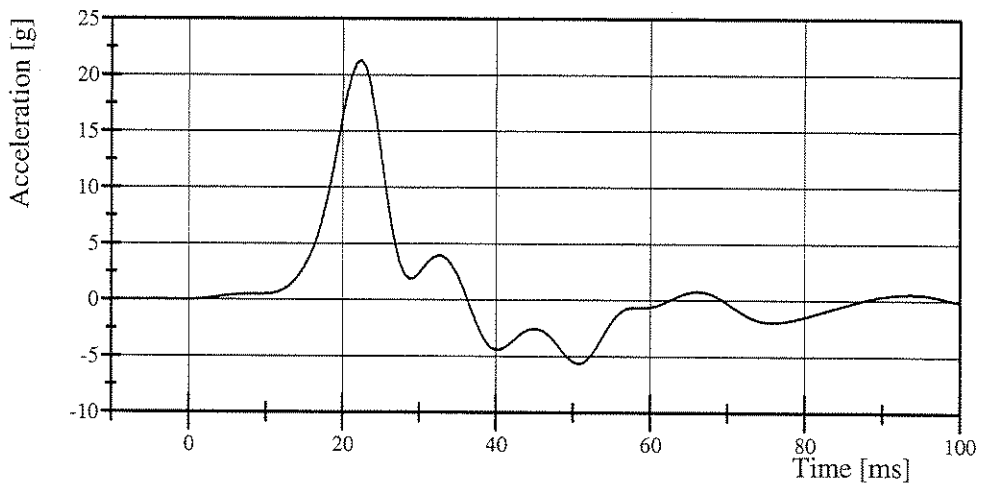
Filter Class: FIR_100
Max: 45.0 g at 18.0 ms
Min: -16.6 g at 24.9 ms

Lower Rib Acceleration (Y)



Filter Class: FIR_100
Max: 44.0 g at 18.1 ms
Min: -17.5 g at 24.9 ms

Lower Spine Acceleration (Y)



Filter Class: FIR_100
Max: 21.3 g at 22.4 ms
Min: -5.6 g at 50.6 ms



Transportation Research Center Inc.

Left Lateral Pelvis

SID-HIII Serial No. 066 Certification No. 21-1

Test Date: 06/09/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	54 %	Yes
Impactor Velocity	4.27 - 4.33 m/s	4.300 m/s	Yes
Pelvis Lateral Acceleration Duration above 20g	3 - 7 ms	6.2 ms	Yes
Pelvis Lateral Acceleration	40 - 60 g	49.9 g	Yes
Is Acceleration Curve Unimodal Above 20g?	Yes	Yes	Yes

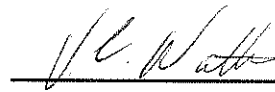
Test meets specifications.

Comments:

Technician



Approved

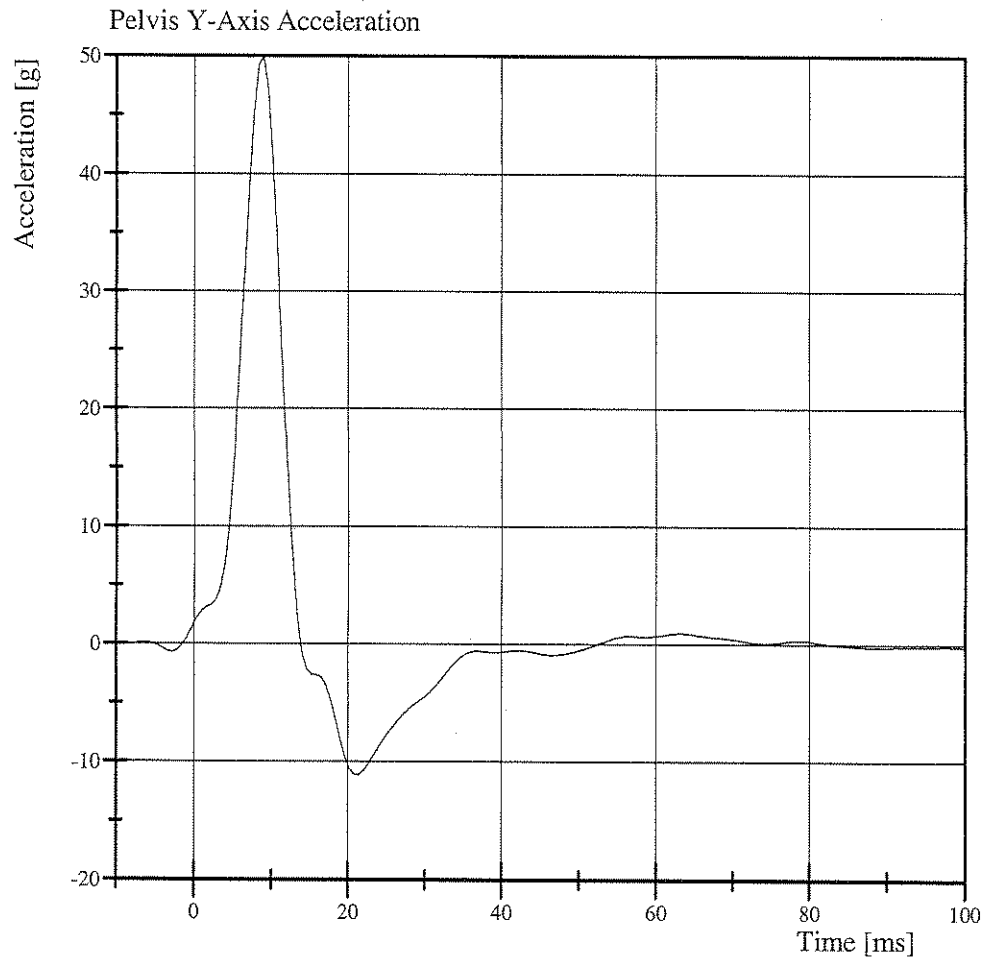


Transportation Research Center Inc.

Left Lateral Pelvis

SID-HIII Serial No. 066 Certification No. 21-1

Test Date: 06/09/2006



Filter Class: FIR_100
Max: 49.9 g at 9.0 ms
Min: -11.1 g at 21.4 ms

Type: SID HIII S/N: 059 Mfr: ASTC Test Date: 06/02/06Proj./Seg. No.: 20020455-3020 Test Eng.: Walter D. Dudek

ITEM	PRE-USE	
HEAD:		
Skull Cap Bolts	X	
Head Skin Condition	X	
Accel. Cable Exit (left or right)	(Left) N/A	(Right)
NECK:		
Rubber Condition and Separation From End Caps	X	
NECK-SID/HIII only:		
Condyle Pin, Set Screws	X	
* Neck Cable Torque (10-14 in-lb) Actual: 12	X	
* Nodding Blocks Condition and Position	X	
THORAX: Left side configuration		
Stacked Shoulder Foams and Bolts	X	
Rib Wrap Condition	X	
Rib Cage Spring and Support Assembly	X	
Rib Cage Bolts	X	
Damper Rear Attachment Ring, Pivot Pins, and Bracket	N/A	
Location and Adjustment of Chest Pot Bracket and Collars	N/A	
Chest Pot Rod End Nuts and Eyebolt	N/A	
Arm Foam Orientation	X	
Thorax/Lumbar Spine Bolts	X	
Adjust rib cage position to full extension	X	
PELVIS:		
Tightness and Alignment of H-Point Tool Insert	X	
* Hips Range of Motion and 1-2g Adjustment (before calibration only)	X	
Upper Femur Bolt Adjustment and Position	X	
Check Spine Kits (Yellow tape = Kits/No tape = No kits)	(With) X	(Without)
LEGS AND FEET:		
Femur Load Cell Bolts (30 ft/lbs)	X	
Breakaway Femur Bolts	X	
Knee Joint Function and Range of Motion	X	
Leg Skin Condition and Position	X	
Ankle Range of Motion	X	
Foot Condition	X	
OTHER:		
Cleanliness	X	
Target Position	X	
Clothes	X	
Shoes	X	
Knee & Ankle One G Joint Adjustments	X	
ATTACH TEMPERATURE LOGGER TO DUMMY	X	

Inspection Completed By: J. Clarridge Date: 06/01/06

Type: SID HIII S/N: 066 Mfr: Denton Test Date: 06/02/06
 Proj./Seg. No.: 20020455-3020 Test Eng.: Walter D. Dudek

ITEM	PRE-USE	
HEAD:		
Skull Cap Bolts	X	
Head Skin Condition	X	
Accel. Cable Exit (left or right)	(Left) N/A	(Right)
NECK:		
Rubber Condition and Separation From End Caps	X	
NECK-SID/HIII only:		
Condyle Pin, Set Screws	X	
* Neck Cable Torque (10-14 in-lb) Actual: 12	X	
* Nodding Blocks Condition and Position	X	
THORAX: Left side configuration		
Stacked Shoulder Foams and Bolts	X	
Rib Wrap Condition	X	
Rib Cage Spring and Support Assembly	X	
Rib Cage Bolts	X	
Damper Rear Attachment Ring, Pivot Pins, and Bracket	N/A	
Location and Adjustment of Chest Pot Bracket and Collars	N/A	
Chest Pot Rod End Nuts and Eyebolt	N/A	
Arm Foam Orientation	X	
Thorax/Lumbar Spine Bolts	X	
Adjust rib cage position to full extension	X	
PELVIS:		
Tightness and Alignment of H-Point Tool Insert	X	
* Hips Range of Motion and 1-2g Adjustment (before calibration only)	X	
Upper Femur Bolt Adjustment and Position	X	
Check Spine Kits (Yellow tape = Kits/No tape = No kits)	(With) X	(Without)
LEGS AND FEET:		
Femur Load Cell Bolts (30 ft/lbs)	X	
Breakaway Femur Bolts	X	
Knee Joint Function and Range of Motion	X	
Leg Skin Condition and Position	X	
Ankle Range of Motion	X	
Foot Condition	X	
OTHER:		
Cleanliness	X	
Target Position	X	
Clothes	X	
Shoes	X	
Knee & Ankle One G Joint Adjustments	X	
ATTACH TEMPERATURE LOGGER TO DUMMY	X	

Inspection Completed By: J. Clarridge Date: 06/01/06

Type: SID HIII S/N: 059 Mfr: ASTC Test Date: 06/02/06
 Proj./Seg. No.: 20020455-3020 Test Eng.: Walter D. Dudek

ITEM	POST-USE
HEAD:	
Head Skin Condition	X
NECK:	
Rubber Condition and Separation From End Caps	X
NECK-SID/HIII only:	
Nodding Blocks Condition and Position	X
Nodding Joint Function (no lateral motion)	X
THORAX: Left side configuration	
Jacket Condition	*
Arm Foam Condition	X
Damper and Chest Pot Movement and Condition	X
Rib Cage Spring and Support Assembly Condition	X
Rib Wrap Condition	X
Abdomen Condition	X
Thorax/Lumbar Spine Bolts	X
Lumbar Spine Condition and Separation From End Caps	X
PELVIS:	
Iliac Crest Bone	X
Flesh Condition	X
Hip Range of Motion	X
LEGS AND FEET:	
Knee Skins and Castings Condition	X
Leg Skin Condition	X
Foot Condition	X
Knee Joint Range of Motion	X
Ankle Range of Motion	X
Temperature Data:	
Download temperature data logger	

NOTES: * Right side of jacket cut at bottom. No other damage.

Inspection Completed By: J. Clarridge

Date: 06/05/06

Type: SID HIII S/N: 066 Mfr: Denton Test Date: 06/02/06
 Proj./Seg. No.: 20020455-3020 Test Eng.: Walter D. Dudek

ITEM	POST-USE
HEAD:	
Head Skin Condition	X
NECK:	
Rubber Condition and Separation From End Caps	*
NECK-SID/HIII only:	
Nodding Blocks Condition and Position	X
Nodding Joint Function (no lateral motion)	X
THORAX: Left side configuration	
Jacket Condition	X
Arm Foam Condition	X
Damper and Chest Pot Movement and Condition	X
Rib Cage Spring and Support Assembly Condition	X
Rib Wrap Condition	X
Abdomen Condition	X
Thorax/Lumbar Spine Bolts	X
Lumbar Spine Condition and Separation From End Caps	X
PELVIS:	
Iliac Crest Bone	X
Flesh Condition	X
Hip Range of Motion	X
LEGS AND FEET:	
Knee Skins and Castings Condition	X
Leg Skin Condition	X
Foot Condition	X
Knee Joint Range of Motion	X
Ankle Range of Motion	X
Temperature Data:	
Download temperature data logger	

NOTES: * Small cut on 2nd rib from top right (neck). No other damage found.

Inspection Completed By: J. Clarridge

Date: 06/05/06

Appendix D

Test Equipment List and Calibration Information

Sign Convention
SAE J211 MAR95

Accelerometers:

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

Potentiometers:

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

Rotation potentiometers:

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

Load cells:

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

Neck load cells:

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

Tibia load cells:

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

Sign Convention (Continued)
SAE J211 MAR95

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

Frequency Response Classes
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 060602-1

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS		Assembly
						Flip	Positive Polarity	
1	Trig D1	10ZERO000000EV00	EVENT		1 Logic	+	Bipolar	
2	P46512	11HEADCG00SHACXA	Head Accel X	1000	g	-	Rearward	1-059 SID/HIII ASTC.001
3	P49052	11HEADCG00SHACYA	Head Accel Y	1000	g	-	Leftward	1-059 SID/HIII ASTC.002
4	P49038	11HEADCG00SHACZA	Head Accel Z	1000	g	-	Upward	1-059 SID/HIII ASTC.003
5	P49048	11HEADCGRDSHACXA	Head Accel X Red	1000	g	-	Rearward	1-059 SID/HIII ASTC.004
6	P49043	11HEADCGRDSHACYA	Head Accel Y Red	1000	g	-	Leftward	1-059 SID/HIII ASTC.005
7	P49039	11HEADCGRDSHACZA	Head Accel Z Red	1000	g	-	Upward	1-059 SID/HIII ASTC.006
8	1716A-1624-FX	11NECKUP00SHFOXA	Neck Force X	8896	N	-	Head forward, chest rearward	1-059 SID/HIII ASTC.007
9	1716A-1624-FY	11NECKUP00SHFOYA	Neck Force Y	8896	N	+	Head leftward, chest rightward	1-059 SID/HIII ASTC.008
10	1716A-1624-FZ	11NECKUP00SHFOZA	Neck Force Z	13344	N	+	Head upward, chest downward	1-059 SID/HIII ASTC.009
11	1716A-1624-MX	11NECKUP00SHMOXA	Neck Moment X	282	N	-	Right ear toward right shoulder	1-059 SID/HIII ASTC.010
12	1716A-1624-MY	11NECKUP00SHMOYA	Neck Moment Y	282	N	+	Chin toward sternum	1-059 SID/HIII ASTC.011
13	1716A-1624-MZ	11NECKUP00SHMOZA	Neck Moment Z	282	N	+	Chin toward left shoulder	1-059 SID/HIII ASTC.012
14	P44972	11RIBSLU00SHACYA	Left Upper Rib Y	800	g	+	Rightward	1-059 SID/HIII ASTC.013
15	P46518	11RIBSLURESHACYA	Left Upper Rid Red Y	800	g	+	Rightward	1-059 SID/HIII ASTC.014
16	P46514	11RIBSLL00SHACYA	Left Lower Rib Y	800	g	+	Rightward	1-059 SID/HIII ASTC.015
17	P44985	11RIBSLLRESHACYA	Left Lower Rib Red Y	800	g	+	Rightward	1-059 SID/HIII ASTC.016
18	P49046	11SPIN1200SHACYA	Lower Spine Y	400	g	-	Leftward	1-059 SID/HIII ASTC.017
19	P49055	11SPIN12RDSHACYA	Lower Spine Red Y	400	g	-	Leftward	1-059 SID/HIII ASTC.018
20	P49047	11PELVCG00SHACYA	Pelvis Accel Y	400	g	-	Leftward	1-059 SID/HIII ASTC.019
21	P45012	14HEADCG00SHACXA	Head Accel X	1000	g	-	Rearward	4-066 SID/HIII ASTC.001
22	P49031	14HEADCG00SHACYA	Head Accel Y	1000	g	-	Leftward	4-066 SID/HIII ASTC.002
23	P49049	14HEADCG00SHACZA	Head Accel Z	1000	g	-	Upward	4-066 SID/HIII ASTC.003
24	P46517	14HEADCGRDSHACXA	Head Accel X Red	1000	g	-	Rearward	4-066 SID/HIII ASTC.004
25	P49042	14HEADCGRDSHACYA	Head Accel Y Red	1000	g	-	Leftward	4-066 SID/HIII ASTC.005
26	P45017	14HEADCGRDSHACZA	Head Accel Z Red	1000	g	-	Upward	4-066 SID/HIII ASTC.006
27	IF-205-289-FX	14NECKUP00SHFOXA	Neck Force X	8896	N	-	Head forward, chest rearward	4-066 SID/HIII ASTC.007
28	IF-205-289-FY	14NECKUP00SHFOYA	Neck Force Y	8896	N	+	Head leftward, chest rightward	4-066 SID/HIII ASTC.008
29	IF-205-289-FZ	14NECKUP00SHFOZA	Neck Force Z	13344	N	+	Head upward, chest downward	4-066 SID/HIII ASTC.009
30	IF-205-289-MX	14NECKUP00SHMOXA	Neck Moment X	282	N·m	-	Right ear toward right shoulder	4-066 SID/HIII ASTC.010
31	IF-205-289-MY	14NECKUP00SHMOYA	Neck Moment Y	282	N·m	+	Chin toward sternum	4-066 SID/HIII ASTC.011
32	IF-205-289-MZ	14NECKUP00SHMOZA	Neck Moment Z	282	N·m	+	Chin toward left shoulder	4-066 SID/HIII ASTC.012
33	P49041	14RIBSLU00SHACYA	Left Upper Rib Y	800	g	+	Rightward	4-066 SID/HIII ASTC.013

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060602-1

Channel Report Test Number 060602-1

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS		Assembly
						Flip	Positive Polarity	
34	P46516	14RIBSLURESHACYA	Left Upper Rid Red Y	800	g	+	Rightward	4-066 SID/HIII ASTC.014
35	P49044	14RIBSLL00SHACYA	Left Lower Rib Y	800	g	+	Rightward	4-066 SID/HIII ASTC.015
36	P46510	14RIBSLLRESHACYA	Left Lower Rib Red Y	800	g	+	Rightward	4-066 SID/HIII ASTC.016
37	P49035	14SPIN1200SHACYA	Lower Spine Y	400	g	-	Leftward	4-066 SID/HIII ASTC.017
38	P49022	14SPIN12RDSHACYA	Lower Spine Red Y	400	g	-	Leftward	4-066 SID/HIII ASTC.018
39	P46509	14PELVCG00SHACYA	Pelvis Accel Y	400	g	-	Leftward	4-066 SID/HIII ASTC.019
40	P50566	16SILBFR0000ACXA	RIGHT SIDE SILL AT FRONT SEAT (X) ACCELERATION VS TIME (#1)	400	g	+	Forward	
41	P50773	16SILBFR0000ACYA	RIGHT SIDE SILL AT FRONT SEAT (Y) ACCELERATION VS TIME (#1)	400	g	-	Leftward	
42	P50302	16SILBFR0000ACZA	RIGHT SIDE SILL AT FRONT SEAT (Z) ACCELERATION VS TIME (#1)	400	g	+	Downward	
43	P49647	16SILBRE0000ACXA	RIGHT SIDE SILL AT REAR SEAT (X) ACCELERATION VS TIME (#2)	400	g	+	Forward	
44	P49994	16SILBRE0000ACYA	RIGHT SIDE SILL AT REAR SEAT (Y) ACCELERATION VS TIME (#2)	400	g	-	Leftward	
45	P45853	16SILBRE0000ACZA	RIGHT SIDE SILL AT REAR SEAT (Z) ACCELERATION VS TIME (#2)	400	g	+	Downward	
46	P49966	18FORA000000ACXA	REAR FLOORPAN ABOVE AXLE (X) ACCELERATION VS TIME (#3)	1000	g	-	Rearward	
47	P50638	18FORA000000ACYA	REAR FLOORPAN ABOVE AXLE (Y) ACCELERATION VS TIME (#3)	1000	g	+	Rightward	
48	P50294	18FORA000000ACZA	REAR FLOORPAN ABOVE AXLE (Z) ACCELERATION VS TIME (#3)	1000	g	-	Upward	
49	P50960	14SILBFR0000ACYA	LEFT SIDE SILL AT FRONT SEAT (Y) ACCELERATION VS TIME (#5)	1500	g	+	Rightward	
50	P50882	14SILBRE0000ACYA	LEFT SIDE SILL AT REAR SEAT (Y) ACCELERATION VS TIME	1500	g	+	Rightward	
51	P50621	16VEHCRE0000ACYA	RIGHT REAR OCCUPANT COMPARTMENT (Y) ACCELERATION VS TIME (#7)	400	g	+	Rightward	
52	P50864	11APILLO0000ACYA	LEFT LOWER A-POST (Y) ACCELERATION VS TIME (#14)	2000	g	-	Leftward	
53	P50979	11APILMI0000ACYA	LEFT MID A-POST (Y) ACCELERATION VS TIME (#15)	2000	g	-	Leftward	
54	P50986	14BPILLO0000ACYA	LEFT LOWER B-POST (Y) ACCELERATION VS TIME (#12)	2000	g	-	Leftward	
55	P50678	14BPILMI0000ACYA	LEFT MID B-POST (Y) ACCELERATION VS TIME (#13)	2000	g	-	Leftward	
56	P49699	11SETRFR0000ACYA	LEFT FRONT SEAT TRACK (Y) ACCELERATION VS TIME (#16)	1500	g	+	Rightward	
57	P50601	14SETRLERE00ACYA	LEFT REAR SEAT TRACK (Y) ACCELERATION VS TIME	1500	g	-	Leftward	
58	P50452	10VEHCCG0000ACXA	VEHICLE CENTER OF GRAVITY (X) ACCELERATION VS TIME (#18)	1000	g	+	Forward	
59	P50308	10VEHCCG0000ACYA	VEHICLE CENTER OF GRAVITY (Y) ACCELERATION VS TIME (#18)	1000	g	-	Leftward	
60	P50885	10VEHCCG0000ACZA	VEHICLE CENTER OF GRAVITY (Z) ACCELERATION VS TIME (#18)	1000	g	-	Upward	

Channel Report Test Number 060602-1

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS	
						Flip	Positive Polarity
1	P50881	M0VEHCCG0000ACXA	MDB CENTER OF GRAVITY (X) ACCELERATION VS TIME (#1)	600	g	+	Forward
2	P50866	M0VEHCCG0000ACYA	MDB CENTER OF GRAVITY (Y) ACCELERATION VS TIME(#1)	600	g	-	Leftward
3	P50859	M0VEHCCG0000ACZA	MDB CENTER OF GRAVITY (Z) ACCELERATION VS TIME(#1)	600	g	-	Upward
4	P50932	M7FRAM000000ACXA	MDB REAR (X) ACCELERATION VS TIME (#2)	600	g	+	Forward
5	P50918	M7FRAM000000ACYA	MDB REAR (Y) ACCELERATION VS TIME (#2)	600	g	+	Rightward
6	Bit.00	M3CONT000000VO00	MDB RIGHT CONTACT SWITCH	1	Logic	+	Bipolar
7	Bit.01	M1CONT000000VO00	MDB LEFT CONTACT SWITCH	1	Logic	+	Bipolar

Command File Test Number 060602-1

Channel	ISO Mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
1	11HEADCG00SHACXA	DRIVER HEAD X-AXIS ACCELERATION	1000	+	yes	1000
2	11HEADCG00SHACYA	DRIVER HEAD Y-AXIS ACCELERATION	1000	+	yes	1000
3	11HEADCG00SHACZA	DRIVER HEAD Z-AXIS ACCELERATION	1000	+	yes	1000
3A	11HEADCG00SHACRA	DRIVER HEAD RESULTANT ACCELERATION	1000			
4	11HEADCGRDSHACXA	DRIVER HEAD REDUNDANT X-AXIS ACCELERATION	1000	+	yes	1000
5	11HEADCGRDSHACYA	DRIVER HEAD REDUNDANT Y-AXIS ACCELERATION	1000	+	yes	1000
6	11HEADCGRDSHACZA	DRIVER HEAD REDUNDANT Z-AXIS ACCELERATION	1000	+	yes	1000
6A	11HEADCGRDSHACRA	DRIVER HEAD REDUNDANT RESULTANT ACCELERATION	1000			
7	11NECKUP00SHFOXA	DRIVER NECK X-AXIS FORCE	1000	+	yes	8896
8	11NECKUP00SHFOYA	DRIVER NECK Y-AXIS FORCE	1000	+	yes	8896
9	11NECKUP00SHFOZA	DRIVER NECK Z-AXIS FORCE	1000	+	yes	13344
10	11NECKUP00SHMOXA	DRIVER NECK MOMENT ABOUT X AXIS	600	+	yes	282
11	11NECKUP00SHMOYA	DRIVER NECK MOMENT ABOUT Y AXIS	600	+	yes	282
12	11NECKUP00SHMOZA	DRIVER NECK MOMENT ABOUT Z AXIS	600	+	yes	282
13	11RIBSLU00SHACYA	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	1000	+	yes	800
13A	11RIBSLU00SHVEYA	DRIVER UPPER RIB (Y) VELOCITY VS TIME	180			
14	11RIBSLL00SHACYA	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	1000	+	yes	800
14A	11RIBSLL00SHVEYA	DRIVER LOWER RIB (Y) VELOCITY VS TIME	180			
15	11SPIN1200SHACYA	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	1000	+	yes	400
15A	11SPIN1200SHVEYA	DRIVER LOWER SPINE (Y) VELOCITY VS TIME	180			
16	11PELVCG00SHACYA	DRIVER PELVIC (Y) ACCELERATION VS TIME	1000	+	yes	400
16A	11PELVCG00SHVEYA	DRIVER PELVIC (Y) VELOCITY VS TIME	180			
17	11RIBSLURESHACYA	DRIVER UPPER RIB (Y) ACCELERATION VS TIME REDUNDANT	1000	+	yes	800
17A	11RIBSLURESHVEYA	DRIVER UPPER RIB (Y) VELOCITY VS TIME REDUNDANT	180			
18	11RIBSLLRESHACYA	DRIVER LOWER RIB (Y) ACCELERATION VS TIME REDUNDANT	1000	+	yes	800
18A	11RIBSLLRESHVEYA	DRIVER LOWER RIB (Y) VELOCITY VS TIME REDUNDANT	180			
19	11SPIN12RDSHACYA	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME REDUNDANT	1000	+	yes	400
19A	11SPIN12RDSHVEYA	DRIVER LOWER SPINE (Y) VELOCITY VS TIME REDUNDANT	180			
20	14HEADCG00SHACXA	LEFT REAR PASSENGER HEAD X-AXIS ACCELERATION	1000	+	yes	1000
21	14HEADCG00SHACYA	LEFT REAR PASSENGER HEAD Y-AXIS ACCELERATION	1000	+	yes	1000
22	14HEADCG00SHACZA	LEFT REAR PASSENGER HEAD Z-AXIS ACCELERATION	1000	+	yes	1000
22A	14HEADCG00SHACRA	LEFT REAR PASSENGER HEAD RESULTANT ACCELERATION	1000			
23	14HEADCGRDSHACXA	LEFT REAR PASSENGER HEAD REDUNDANT X-AXIS ACCELERATION	1000	+	yes	1000
24	14HEADCGRDSHACYA	LEFT REAR PASSENGER HEAD REDUNDANT Y-AXIS ACCELERATION	1000	+	yes	1000
25	14HEADCGRDSHACZA	LEFT REAR PASSENGER HEAD REDUNDANT Z-AXIS ACCELERATION	1000	+	yes	1000
25A	14HEADCGRDSHACRA	LEFT REAR PASSENGER HEAD REDUNDANT RESULTANT ACCELERATION	1000			

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Command File Test Number 060602-1

	Channel	ISO Mnemonic	Channel Title	Filter	Class	Flip	Zero	Full Scale
	26	14NECKUP00SHFOXA	LEFT REAR PASSENGER NECK X-AXIS FORCE	1000	+	yes		8896
	27	14NECKUP00SHFOYA	LEFT REAR PASSENGER NECK Y-AXIS FORCE	1000	+	yes		8896
	28	14NECKUP00SHFOZA	LEFT REAR PASSENGER NECK Z-AXIS FORCE	1000	+	yes		13344
	29	14NECKUP00SHMOXA	LEFT REAR PASSENGER NECK MOMENT ABOUT X AXIS	600	+	yes		282
	30	14NECKUP00SHMOYA	LEFT REAR PASSENGER NECK MOMENT ABOUT Y AXIS	600	+	yes		282
	31	14NECKUP00SHMOZA	LEFT REAR PASSENGER NECK MOMENT ABOUT Z AXIS	600	+	yes		282
	32	14RIBSLU00SHACYA	LEFT REAR PASSENGER UPPER RIB (Y) ACCELERATION VS TIME	1000	+	yes		800
	32A	14RIBSLU00SHVEYA	LEFT REAR PASSENGER UPPER RIB (Y) VELOCITY VS TIME	180				
	33	14RIBSLL00SHACYA	LEFT REAR PASSENGER LOWER RIB (Y) ACCELERATION VS TIME	1000	+	yes		800
	33A	14RIBSLL00SHVEYA	LEFT REAR PASSENGER LOWER RIB (Y) VELOCITY VS TIME	180				
	34	14SPIN1200SHACYA	LEFT REAR PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME	1000	+	yes		400
	34A	14SPIN1200SHVEYA	LEFT REAR PASSENGER LOWER SPINE (Y) VELOCITY VS TIME	180				
	35	14PELVCG00SHACYA	LEFT REAR PASSENGER PELVIC (Y) ACCELERATION VS TIME	1000	+	yes		400
	35A	14PELVCG00SHVEYA	LEFT REAR PASSENGER PELVIC (Y) VELOCITY VS TIME	180				
	36	14RIBSLURESHACYA	LEFT REAR PASSENGER UPPER RIB (Y) ACCELERATION VS TIME REDUNDANT	1000	+	yes		800
	36A	14RIBSLURESHVEYA	LEFT REAR PASSENGER UPPER RIB (Y) VELOCITY VS TIME REDUNDANT	180				
	37	14RIBSLLRESHACYA	LEFT REAR PASSENGER LOWER RIB (Y) ACCELERATION VS TIME REDUNDANT	1000	+	yes		800
	37A	14RIBSLLRESHVEYA	LEFT REAR PASSENGER LOWER RIB (Y) VELOCITY VS TIME REDUNDANT	180				
	38	14SPIN12RDSHACYA	LEFT REAR PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME REDUNDANT	1000	+	yes		400
	38A	14SPIN12RDSHVEYA	LEFT REAR PASSENGER LOWER SPINE (Y) VELOCITY VS TIME REDUNDANT	180				
	39	16SILBFR0000ACXA	RIGHT SIDE SILL AT FRONT SEAT (X) ACCELERATION VS TIME (#1)	60	+	yes		400
	39A	16SILBFR0000VEXA	RIGHT SIDE SILL AT FRONT SEAT (X) VELOCITY VS TIME (#1)	180				
	40	16SILBFR0000ACYA	RIGHT SIDE SILL AT FRONT SEAT (Y) ACCELERATION VS TIME (#1)	60	+	yes		1000
	40A	16SILBFR0000VEYA	RIGHT SIDE SILL AT FRONT SEAT (Y) VELOCITY VS TIME (#1)	180				
	41	16SILBFR0000ACZA	RIGHT SIDE SILL AT FRONT SEAT (Z) ACCELERATION VS TIME (#1)	60	+	yes		400
	41A	16SILBFR0000VEZA	RIGHT SIDE SILL AT FRONT SEAT (Z) VELOCITY VS TIME (#1)	180				
	41B	16SILBFR0000ACRA	RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION VS TIME (#1)	60				
	42	16SILBRE0000ACXA	RIGHT SIDE SILL AT REAR SEAT (X) ACCELERATION VS TIME (#2)	60	+	yes		400
	42A	16SILBRE0000VEXA	RIGHT SIDE SILL AT REAR SEAT (X) VELOCITY VS TIME (#2)	180				
	43	16SILBRE0000ACYA	RIGHT SIDE SILL AT REAR SEAT (Y) ACCELERATION VS TIME (#2)	60	+	yes		1000
	43A	16SILBRE0000VEYA	RIGHT SIDE SILL AT REAR SEAT (Y) VELOCITY VS TIME (#2)	180				
	44	16SILBRE0000ACZA	RIGHT SIDE SILL AT REAR SEAT (Z) ACCELERATION VS TIME (#2)	60	+	yes		400
	44A	16SILBRE0000VEZA	RIGHT SIDE SILL AT REAR SEAT (Z) VELOCITY VS TIME (#2)	180				
	44B	16SILBRE0000ACRA	RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION VS TIME (#2)	60				
	45	18FORA000000ACXA	REAR FLOORPAN ABOVE AXLE (X) ACCELERATION VS TIME (#3)	60	+	yes		1000
	45A	18FORA000000VEXA	REAR FLOORPAN ABOVE AXLE (X) VELOCITY VS TIME (#3)	180				

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060602-1

Command File Test Number 060602-1

Channel	ISO Mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
46	18FORA000000ACYA	REAR FLOORPAN ABOVE AXLE (Y) ACCELERATION VS TIME (#3)	60	+	yes	1000
46A	18FORA000000VEYA	REAR FLOORPAN ABOVE AXLE (Y) VELOCITY VS TIME (#3)	180			
47	18FORA000000ACZA	REAR FLOORPAN ABOVE AXLE (Z) ACCELERATION VS TIME (#3)	60	+	yes	1000
47A	18FORA000000VEZA	REAR FLOORPAN ABOVE AXLE (Z) VELOCITY VS TIME (#3)	180			
47B	18FORA000000ACRA	REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION VS TIME (#3)	60			
48	14SILBFR0000ACYA	LEFT SIDE SILL AT FRONT SEAT (Y) ACCELERATION VS TIME (#5)	60	+	yes	1500
48A	14SILBFR0000VEYA	LEFT SIDE SILL AT FRONT SEAT (Y) VELOCITY VS TIME (#5)	180			
48B	14SILBFR0000DCYA	LEFT SIDE SILL AT FRONT SEAT (Y) DISPLACEMENT VS TIME (#5)	180			
49	14SILBRE0000ACYA	LEFT SIDE SILL AT REAR SEAT (Y) ACCELERATION VS TIME	60	+	yes	1500
49A	14SILBRE0000VEYA	LEFT SIDE SILL AT REAR SEAT (Y) VELOCITY VS TIME	180			
49B	14SILBRE0000DCYA	LEFT SIDE SILL AT REAR SEAT (Y) DISPLACEMENT VS TIME	180			
50	16VEHCRE0000ACYA	RIGHT REAR OCCUPANT COMPARTMENT (Y) ACCELERATION VS TIME (#7)	60	+	yes	400
50A	16VEHCRE0000VEYA	RIGHT REAR OCCUPANT COMPARTMENT (Y) VELOCITY VS TIME (#7)	180			
50B	16VEHCRE0000DCYA	RIGHT REAR OCCUPANT COMPARTMENT (Y) DISPLACEMENT VS TIME (#7)	180			
51	11APILLO0000ACYA	LEFT LOWER A-POST (Y) ACCELERATION VS TIME (#14)	60	+	yes	2000
51A	11APILLO0000VEYA	LEFT LOWER A-POST (Y) VELOCITY VS TIME (#14)	180			
52	11APILMI0000ACYA	LEFT MID A-POST (Y) ACCELERATION VS TIME (#15)	60	+	yes	2000
52A	11APILMI0000VEYA	LEFT MID A-POST (Y) VELOCITY VS TIME (#15)	180			
53	14BPILLO0000ACYA	LEFT LOWER B-POST (Y) ACCELERATION VS TIME (#12)	60	+	yes	2000
53A	14BPILLO0000VEYA	LEFT LOWER B-POST (Y) VELOCITY VS TIME (#12)	180			
54	14BPILMI0000ACYA	LEFT MID B-POST (Y) ACCELERATION VS TIME (#13)	60	+	yes	2000
54A	14BPILMI0000VEYA	LEFT MID B-POST (Y) VELOCITY VS TIME (#13)	180			
55	11SETRFR0000ACYA	LEFT FRONT SEAT TRACK (Y) ACCELERATION VS TIME (#16)	60	+	yes	1500
55A	11SETRFR0000VEYA	LEFT FRONT SEAT TRACK (Y) VELOCITY VS TIME (#16)	180			
56	14SETRLERE00ACYA	LEFT REAR SEAT TRACK (Y) ACCELERATION VS TIME	60	+	yes	1500
56A	14SETRLERE00VEYA	LEFT REAR SEAT TRACK (Y) VELOCITY VS TIME	180			
57	10VEHCCG0000ACXA	VEHICLE CENTER OF GRAVITY (X) ACCELERATION VS TIME (#18)	60	+	yes	1000
57A	10VEHCCG0000VEXA	VEHICLE CENTER OF GRAVITY (X) VELOCITY VS TIME (#18)	180			
58	10VEHCCG0000ACYA	VEHICLE CENTER OF GRAVITY (Y) ACCELERATION VS TIME (#18)	60	+	yes	1000
58A	10VEHCCG0000VEYA	VEHICLE CENTER OF GRAVITY (Y) VELOCITY VS TIME (#18)	180			
59	10VEHCCG0000ACZA	VEHICLE CENTER OF GRAVITY (Z) ACCELERATION VS TIME (#18)	60	+	yes	1000
59A	10VEHCCG0000VEZA	VEHICLE CENTER OF GRAVITY (Z) VELOCITY VS TIME (#18)	180			
59B	10VEHCCG0000ACRA	VEHICLE CENTER OF GRAVITY RESULTANT ACCELERATION VS TIME (#18)	60			
60	M0VEHCCG0000ACXA	MDB CENTER OF GRAVITY (X) ACCELERATION VS TIME (#1)	60	+	yes	600
60A	M0VEHCCG0000VEXA	MDB CENTER OF GRAVITY (X) VELOCITY VS TIME (#1)	180			
61	M0VEHCCG0000ACYA	MDB CENTER OF GRAVITY (Y) ACCELERATION VS TIME (#1)	60	+	yes	600

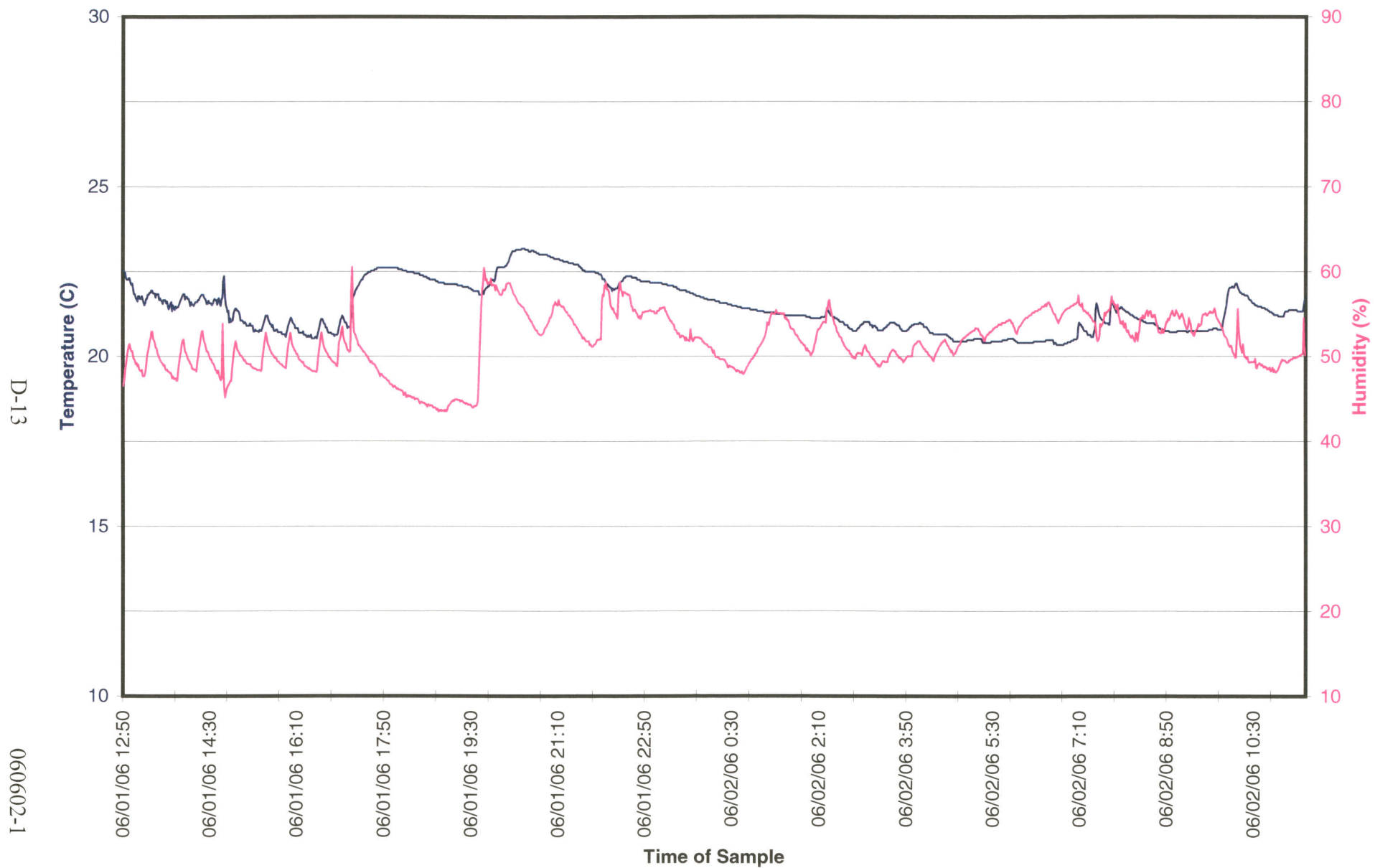
D-11

060602-1

Command File Test Number 060602-1

Channel	ISO Mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
61A	M0VEHCCG0000VEYA	MDB CENTER OF GRAVITY (Y) VELOCITY VS TIME(#1)	180			
62	M0VEHCCG0000ACZA	MDB CENTER OF GRAVITY (Z) ACCELERATION VS TIME(#1)	60	+	yes	600
62A	M0VEHCCG0000VEZA	MDB CENTER OF GRAVITY (Z) VELOCITY VS TIME(#1)	180			
62B	M0VEHCCG0000ACRA	MDB CENTER OF GRAVITY RESULTANT ACCELERATION VS TIME(#1)	60			
63	M7FRAM000000ACXA	MDB REAR (X) ACCELERATION VS TIME (#2)	60	+	yes	600
63A	M7FRAM000000VEXA	MDB REAR (X) VELOCITY VS TIME (#2)	180			
64	M7FRAM000000ACYA	MDB REAR (Y) ACCELERATION VS TIME (#2)	60	+	yes	600
64A	M7FRAM000000VEYA	MDB REAR (Y) VELOCITY VS TIME (#2)	180			
65	M3CONT000000VO00	MDB RIGHT CONTACT SWITCH	1000	+	no	1
66	M1CONT000000VO00	MDB LEFT CONTACT SWITCH	1000	+	no	1

56/28 KPH 90 DEG. SIDE IMPACT (MDB) INTO LEFT SIDE OF 2006 SUZUKI GRAND VITARA/
C60507





SIDE IMPACTOR BARRIER CERTIFICATION

Date: March 27, 2006
To: Honda R & D America
21001 State Route 739
Raymond, OH 43067-9705

PURCHASE ORDER INFORMATION

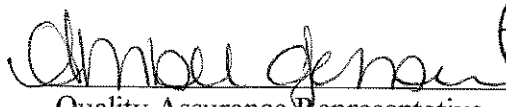
Customer P.O. Number: HOA-519431
Work Order Number: 145658
Plascore Part Number: 18723
Quantity: 01 piece

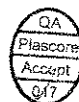
CORE INFORMATION

Core Type: PCGA-5.2-1/4-P-3003-T
Cell Size: 0.250 inch
Density: 5.2 pcf

Unit Number: 030A0306

This is to certify that the aluminum honeycomb core supplied, under the unit number provided, meets the crush requirements of 232 - 250 psi per DWG# DSL-1285.


Quality Assurance Representative
Amber Jensen



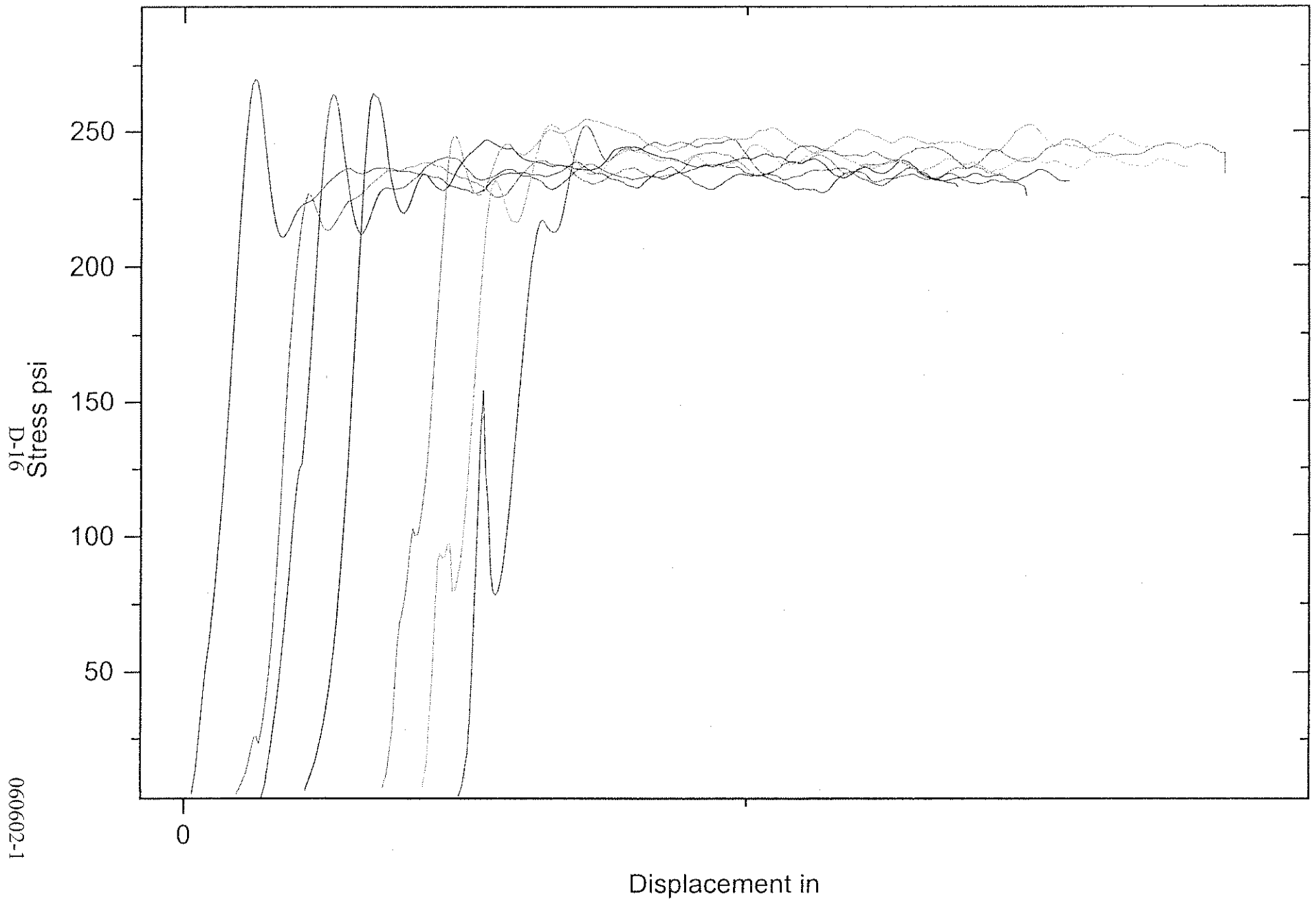


Crush Data
232 - 250 psi per DWG # DSL-1285

Block Number: 030A0306

<u>Specimen Number</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>
1	234.06	232.62	233.68
2	234.64	238.41	236.13
3	234.59	232.62	232.45
4	240.11	237.40	232.93
5	246.86	246.61	246.39
6	240.45	237.38	238.85
7	240.49	240.93	243.33

Block ID: BLOCK# 030A0306 Sample ID: IN339214





SIDE IMPACTOR BARRIER CERTIFICATION

Date: March 27, 2006
To: Honda R & D America
21001 State Route 739
Raymond, OH 43067-9705

PURCHASE ORDER INFORMATION

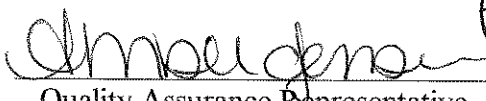
Customer P.O. Number: HOA-519431
Work Order Number: 145658
Plascore Part Number: 18723
Quantity: 01 piece

CORE INFORMATION

Core Type: PAMG-3/8-1.6-001-P-5052
Cell Size: 0.375 inch
Density: 1.6 pcf

Unit Number: 118B0306

This is to certify that the aluminum honeycomb core supplied, under the unit number provided, meets the crush requirements of 45 psi +/- 2.5 psi per DWG# DSL-1285.


Quality Assurance Representative
Amber Jensen





Crush Data
45 psi +/- 2.5 psi per DWG # DSL-1285

Block Number: 118B0306

<u>Specimen Number</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>
1	45.14	45.13	45.69
2	45.00	45.22	45.36
3	45.71	44.38	43.90
4	46.51	45.72	46.05
5	47.60	46.95	46.56
6	46.67	46.66	46.53
7	46.33	46.46	46.34

BLOCK # 118B0306

BLOCK # 118B0306 Sample ID: IN237053

D-19
Stress psi

060602-1

