

**Vehicle Research and Test Center
Moving Deformable Barrier into
2005 Volkswagen Jetta at 52.8 km/h
TRC Inc. Test Number: 050805**

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Section 1.0

Purpose and Test Procedure

Purpose

This 48/24 km/h (32.9 mph) 90° side impact test was conducted for the National Highway Traffic Safety Administration (NHTSA) and Vehicle Research and Test Center (VRTC) by Transportation Research Center Inc. (TRC Inc.).

The purpose of this test was to evaluate side impact protection in a moving deformable barrier impact test. The subject vehicle was a 2005 Volkswagen Jetta 4-door.

Test Procedure

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

A 2005 Volkswagen Jetta 4-door was impacted on the driver's side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the monorail at a velocity of 52.8 km/h (32.8 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 August 5, 2005. Pre-test and post-test photographs of the test vehicle, the moving deformable barrier (MDB), and the side impact dummies (SID-IIs) are included in Appendix A.

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

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

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

The 199 data channels were digitally sampled and recorded at 12,500 samples per second and processed per SAE J211 March 1995.

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

The side impact test summary data are presented in Section 2.0. The summary of FMVSS 214 data are presented in Section 3.0. The occupant, camera, vehicle, and barrier measurements are presented in Section 4.0. Appendix A contains the still photographic prints. Appendix B contains the dummy and vehicle data plots. Appendix C contains the dummy verification data. Appendix D contains test equipment and instrumentation calibration information. Appendix E contains a copy of the INSIA Report on Structural Measurements.

Section 2.0

Moving Deformable Barrier Side Impact Test Summary

Test Results Summary

This moving deformable barrier side impact test was conducted by TRC Inc. on August 5, 2005.

The test vehicle, a 2005 Volkswagen Jetta 4-door, was equipped with a 2.5-liter transverse engine, automatic transmission, power steering, power brakes, dual stage front airbags, and side curtain airbags, and side front torso airbags. The vehicle's test weight was 1661.2 kg. The moving deformable barrier's impact speed was 52.8 km/h. The moving deformable barrier impacted 5 mm to the right of the target point (354 mm rearward of front axle).

Injury Criteria Data Summary		
	Driver	Left Rear Passenger
HIC (15 ms)	24	85
HIC (36 ms)	49	103
Lower Spine Acceleration (g)	30	52
Pelvic Force Summation (N)	2,639	3,026

Data Acquisition Explanations

The vehicle's left lower B-post Y-axis acceleration data channel, 14BPILLO0000ACYA, exceeded full-scale at approximately 37 milliseconds and recorded no useful data after that.

The vehicle's left middle B-post Y-axis acceleration data channel, 14BPILMI0000ACYA, recorded questionable data throughout the test.

The vehicle's left lower A-post Y-axis acceleration data channel, 11APILLO0000ACYA, exceeded full-scale at approximately 5 milliseconds and recorded no useful data after that.

The vehicle's left front door centerline Y-axis acceleration data channel, 11DOOR000001ACYA, exceeded full-scale at approximately 39 milliseconds and recorded no useful data after that.

Table 1 Crash Test Summary

Test mode:	Moving deformable barrier side impact			
Test date:	08/05/05			
Test time:	11:43			
Ambient temperature:	21° C			
Vehicle year/make/ model/body style:	2005/Volkswagen/Jetta/4-door			
Vehicle test weight:	1661.2 kg			
Impact angle ¹ :	270°			
Impact velocity ² :	52.8 km/h			
Maximum vehicle static crush:	169 mm			
Maximum barrier static crush:	153 mm			
Number of data channels:	199			
Number of cameras:	High-speed	10	Real-time	1
<u>Dummies:</u>	<u>Driver #056</u>		<u>Passenger #020</u>	
Type:	SID-IIs		SID-IIs	
Location:	Left front		Left rear	
Restraint:	3-pt. seat belt, side curtain airbag, torso airbag		3-pt. seat belt, side curtain airbag	
<u>Seat track position for test:</u>				
Driver:	Full forward			
Passenger:	Fixed			
<u>Seat back position for test:</u>				
Driver:	5.4° measured at head restraint			
Passenger:	Fixed			
<u>Head restraint position for test:</u>				
Driver:	Full down			
Passenger:	Full down			
<u>Steering column position:</u>	24°; middle of geometric range of travel			

¹ With respect to tow track centerline.

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

Table 2 General Test and Vehicle Parameter Data

Vehicle year/make/ model/body style:	2005/Volkswagen/Jetta/4-door		
VIN:	3VWPF71K15M613963		
Model year:	2005		
Body style:	4-door		
Color:	Gray		
Engine data:			
Cylinders:	5		
Displacement	2.5 liters		
Cylinder placement:	Straight		
Engine placement:	Transverse		
Transmission data:	<u>6</u> speed,	<u> </u> manual,	<u>X</u> automatic, <u>X</u> overdrive
Final drive:	<u>X</u> FWD,	<u> </u> RWD,	<u> </u> 4WD
Date vehicle received:	7/29/2005		
Odometer reading:	127		
Dealer's name and address:	Vehicle supplied by VRTC		

Accessories:

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

Certification data from vehicle's label:

Vehicle manufactured by:	Volkswagen De Mexico S.A.
Date of manufacture:	03/05
VIN:	3VWPF71K15M613963
GVWR:	4343 lbs.
GAWR: Front:	2337 lbs.
Rear:	2116 lbs.

Table 2 General Test and Vehicle Parameter Data, Continued

Tires on vehicle (mfr., line, size): Michelin, Energy, P195/65R15

Tire pressure with maximum capacity vehicle load:

Front:	51 psi	(350 kPa)
Rear:	51 psi	(350 kPa)

Spare tire (mfr., line, size): Michelin, Energy, P195/65R15

Type of seats:

Front	Bucket
Rear	Bench

Maximum width: 1987 mm

Wheelbase: 2578 mm

Location of “Recommended Tire Pressure” label:

The label was located on driver B-pillar.

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

Recommended tire size: P195/65R15

Recommended cold tire pressure:

Front:	33 psi	(230 kPa)
Rear:	33 psi	(230 kPa)

Vehicle Capacity Data:

Number of Occupants (Designated seating capacity):

Front	2
Rear	3
Total	5

Vehicle capacity weight: 441 kg

Rated cargo/luggage weight¹ 101 kg

Test vehicle attitude:

Delivered attitude:	LF	675 mm;	RF	674 mm;	LR	687 mm;	RR	690 mm
Fully loaded attitude:	LF	657 mm;	RF	665 mm;	LR	630 mm;	RR	640 mm
Pre-test attitude:	LF	665 mm;	RF	665 mm;	LR	650 mm;	RR	650 mm
Post-test attitude:	LF	683 mm;	RF	654 mm;	LR	648 mm;	RR	630 mm

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

Table 2 General Test and Vehicle Parameter Data, Continued

Test vehicle attitude:

	Left Sill Pitch	Right Sill Pitch	Front Bumper L-R Roll	Rear Bumper L-R Roll
As Delivered:	-1.0°	-1.1°	0.1°	0.6°
As Tested:	-1.0°	-1.0°	0.4°	0.4°
Fully Loaded:	-0.6°	-0.7°	0.6°	0.8°

Negative Pitch Angle = Vehicle front down

Negative Roll Angle = Driver side down

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

Right front	428.0 kg	Right rear	292.0 kg
Left front	442.0 kg	Left rear	292.0 kg
Total front weight	870.0 kg	(59.8 % of total vehicle weight)	
Total rear weight	584.0 kg	(40.2 % of total vehicle weight)	
Total delivered weight	1454.0 kg		

Calculation of test vehicle's target test weight:

Total Delivered Weight (UDW) =	1454.0 kg
Rated Cargo/Luggage Weight (RCLW) =	101.0 kg
Weight of 2 SID-IIs Dummies @ 57 kg each =	114.0 kg
Target test weight =	1669.0 kg

Weight of test vehicle with required dummies and equipment:

Right front	461.2 kg	Right rear	358.8 kg
Left front	471.0 kg	Left rear	370.2 kg
Total front weight	932.2 kg	(56.1% of total vehicle weight)	
Total rear weight	729.0 kg	(43.9% of total vehicle weight)	
Total test weight	1661.2 kg	(7.8 kg under target test weight)	

Table 2 General Test and Vehicle Parameter Data, Continued

Weight of ballast secured in vehicle: None

Components removed to meet target test weight: (3) headrests, plastic engine cover, deck lid
& hinges

Location of Vehicle's CG: 1131 mm rearward of front wheel centerline

Fuel System Data:

Usable fuel system capacity 55.0 liters (from owner's manual)

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

Table 3 Post-Impact Data

Test number: 050805
Test date: 08/05/05
Test time: 11:43
Test type: Moving deformable barrier left side impact
Impact angle: 270°
Ambient temperature
at impact area: 21° C
Required impact velocity range: 52.1 to 53.8 km/h

MDB impact velocity:

Primary: 52.8 km/h
Secondary: 52.9 km/h
Distance from vehicle to barrier:
Entering velocity trap: 661 mm
Exiting velocity trap: 51 mm

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

Wheelbase = 2578 millimeters
Intended impact point is 349 millimeters rearward of front axle centerline
(which is 940 millimeters forward of the wheelbase midpoint)
Actual Impact Point is 354 millimeters rearward of front axle centerline

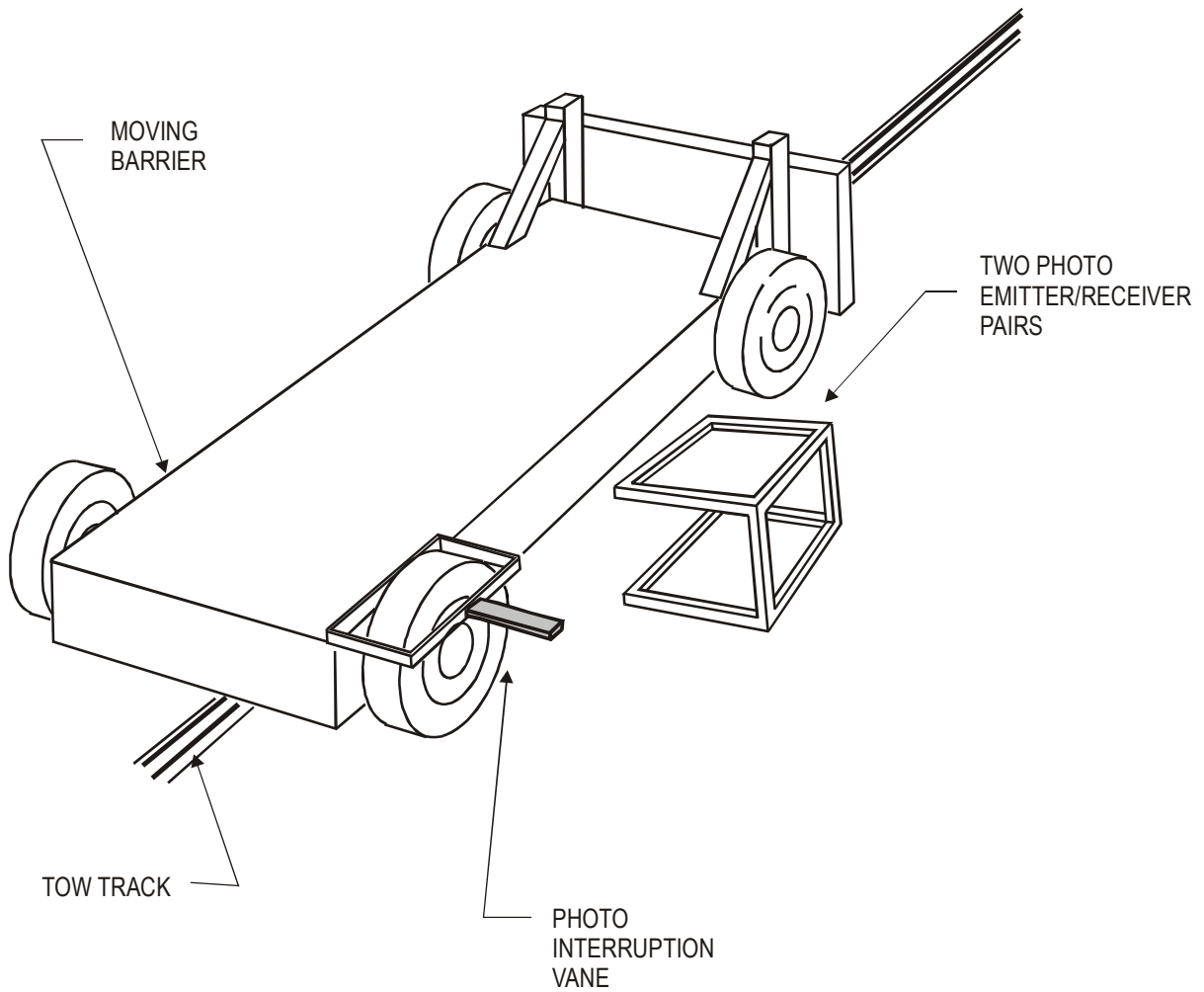
Impact Point:

Actual Impact Point is 5 mm right of nominal impact ref. line (Lateral)
Actual Impact Point is 3 mm down from nominal impact point (Vertical)

Maximum Exterior Static Crush:

1. Level 1 (275 mm above ground) = 77 mm
2. Level 2 (485 mm above ground) = 169 mm
3. Level 3 (635 mm above ground) = 162 mm
4. Level 4 (910 mm above ground) = 93 mm
5. Level 5 (1460 mm above ground) = 0 mm
Maximum Post-Test Intrusion = 169 mm

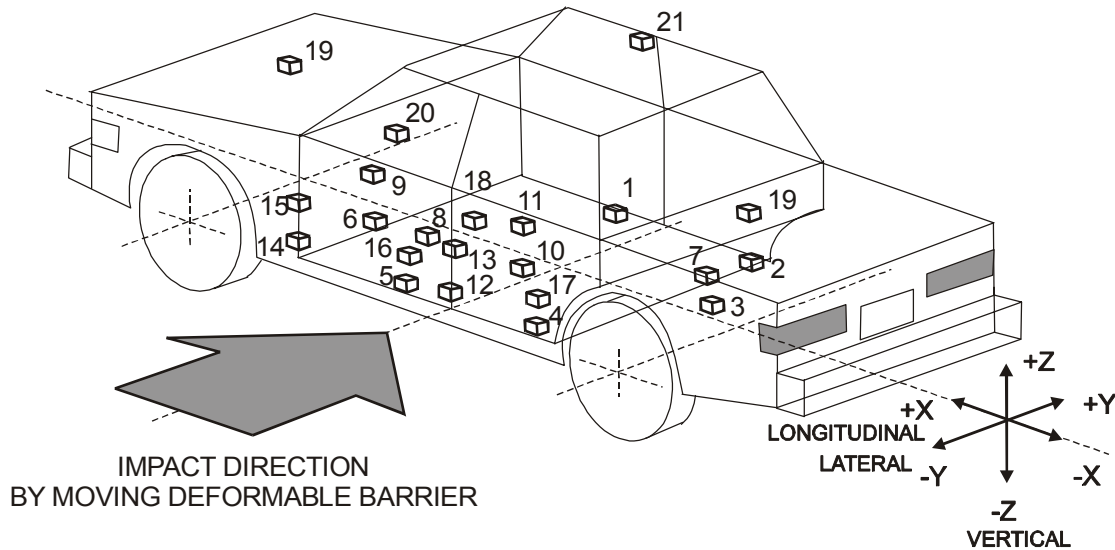
Figure 1 Impact Velocity Measurement System



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

The vanes have 610-millimeter spacing.

Figure 2 Vehicle Accelerometer and String Potentiometer Placement



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

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

Table 4 Test Vehicle Accelerometer Data Summary

Accel. No.	Location		Positive Direction		Negative Direction	
			Max. (g)	Time (ms)	Max. (g)	Time (ms)
1	Right Side Sill at Front Seat	X	3.4	50.1	-5.9	10.6
		Y	17.0	39.9	-2.2	121.9
		Z	4.2	62.8	-5.7	38.2
2	Right Side Sill At Rear Seat	X	4.4	50.6	-3.9	10.3
		Y	18.8	41.4	-2.8	84.8
		Z	2.7	67.3	-5.3	18.8
3	Rear Floorpan Above Axle	X	1.5	53.0	-7.7	18.2
		Y	22.5	26.3	-3.0	82.6
		Z	5.6	20.8	-6.0	16.5
4	Left Side Sill at Rear Seat	Y	100.6	4.6	-15.1	11.1
5	Left Side Sill at Front Seat	Y	56.6	5.7	-28.5	17.7
6	Left Front Door Centerline ¹	Y	----	----	----	----
7	Right Rear Occupant Compartment	Y	21.9	42.6	-2.6	86.1
8	Left Front Door Mid-Rear	Y	110.5	6.6	-100.0	11.9
9	Left Front Door Upper Centerline	Y	77.1	6.4	-47.7	22.6
10	Left Rear Door Mid-Rear	Y	112.3	4.9	-47.6	29.8
11	Left Rear Door Upper Centerline	Y	205.2	7.4	-65.1	31.7
12	Left Lower B-Pillar ¹	Y	----	----	----	----
13	Left Middle B-Pillar ¹	Y	----	----	----	----
14	Left Lower A-Pillar ¹	Y	----	----	----	----
15	Left Middle A-Pillar	Y	36.3	4.5	-12.6	7.8
16	Left Front Seat Track	Y	72.9	14.5	-15.6	18.9
17	Left Rear Seat Track	Y	23.5	23.9	-6.4	52.7
18	Vehicle Center of Gravity	X	5.6	23.8	-9.5	13.8
		Y	86.3	20.6	-70.3	24.9
		Z	25.6	24.2	-20.1	19.4
	Resultant		87.6	20.4		

¹ See Data Acquisition Explanations.

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

Accel. No.	Location		Positive Direction		Negative Direction	
			Max. (g)	Time (ms)	Max. (g)	Time (ms)
19	Top of Engine	X	14.1	76.1	-9.9	42.4
		Y	17.4	42.1	-4.9	102.0
20	Firewall	X	25.1	32.0	-31.1	27.3
		Y	14.0	13.9	-1.7	238.8
21	Right Roof Rail	X	5.0	55.7	-7.1	15.5
		Y	19.6	8.4	-1.9	245.8

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

Table 5 Moving Deformable Barrier (MDB) Summary

MDB Face Manufacturer And Serial Number:

Cellbond, EH337

Position Of Impactor (MDB) On Monorail:

Crabbed 27° to the left

MDB Specifications:

Overall Width of Framework Carriage = 1251 mm

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

Wheelbase of Framework Carriage = 2591 mm

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

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

MDB Weight:

Left Front = 502.2 kg Left Rear = 183.8 kg

Right Front = 267.0 kg Right Rear = 414.6 kg

Total Front = 769.2 kg Total Rear = 598.4 kg

Total MDB Weight = 1367.6 kg

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

Impact Speed = 52.8 km/h

Maximum Static Crush of Honeycomb Impact Face:

1. Row A at Center of Bumper Level = 153 millimeters

2. Row B at Top of Bumper Level = 95 millimeters

3. Row C at Mid Level = 99 millimeters

4. Row D at Top of Stack Level = 123 millimeters

Instrumentation:

Number of MDB Data Channels = 5

Section 3.0

Summary of FMVSS 214 Data

Table 6 Dummy Injury Criteria Data

Driver Dummy S/N 056

Location		Positive Direction Max. Time (ms)		Negative Direction Max. Time (ms)	
Head Acceleration (g)					
Longitudinal	X	5.2	231.6	-8.9	52.1
Lateral	Y	16.2	65.6	-4.3	228.6
Vertical	Z	16.8	50.2	-0.8	282.4
Resultant		20.3	50.2		
HIC (36 ms)		49			
Upper Neck Force (N)					
X-Axis Shear		266.9	78.9	-23.8	229.1
Y-Axis Shear		278.9	71.8	-29.5	207.4
Z-Axis Axial		536.8	50.2	-50.4	282.4
Upper Neck Moment (N-m)					
About X-Axis		10.2	39.8	-12.4	65.9
About Y-Axis		17.1	87.2	-10.2	20.1
About Z-Axis		18.0	85.3	-9.2	278.2
Shoulder Acceleration (g)					
Longitudinal	X	145.8	14.2	-58.0	13.7
Lateral	Y	218.6	13.5	-83.3	17.7
Vertical	Z	45.7	15.8	-107.1	16.6
Resultant		224.3	13.5		
Shoulder Force (N)					
Longitudinal	X	289.4	17.8	-42.9	269.1
Lateral	Y	517.3	37.2	-96.2	15.1
Vertical	Z	2250.3	12.6	-174.3	40.2
Shoulder Displacement (mm)					
Lateral	Y	9.0	39.8		
Upper Spine Acceleration (g)					
Longitudinal	X	2.1	103.2	-10.2	30.0
Lateral	Y	28.0	38.2	-7.7	16.3
Vertical	Z	7.4	22.6	-4.6	52.2
Resultant		28.2	38.2		

Table 6 Dummy Injury Criteria Data, Cont'd.

Driver Dummy S/N 056

Location		Positive Direction Max. Time (ms)		Negative Direction Max. Time (ms)	
Spine Rib 1 Acceleration (g)					
Longitudinal	X	3.8	54.2	-11.4	23.3
Lateral	Y	29.6	38.3	-3.9	16.2
Vertical	Z	9.5	19.5	-6.0	46.9
Resultant		29.9	38.5		
Spine Rib 2 Acceleration (g)					
Longitudinal	X	3.6	54.4	-11.4	23.4
Lateral	Y	29.6	38.6	-3.1	71.5
Vertical	Z	9.3	19.5	-6.3	47.6
Resultant		30.0	38.6		
Spine Rib 3 Acceleration (g)					
Longitudinal	X	3.9	58.4	-11.1	23.4
Lateral	Y	29.4	38.6	-4.7	74.4
Vertical	Z	9.2	19.5	-6.4	46.9
Resultant		29.6	38.7		
Lower Spine Acceleration (g)					
Longitudinal	X	4.0	58.5	-11.9	23.4
Lateral	Y	30.3	38.9	-6.5	74.7
Vertical	Z	9.7	19.5	-6.4	48.2
Resultant		30.5	38.9		
Spine Rib 5 Acceleration (g)					
Longitudinal	X	3.7	58.7	-12.1	20.1
Lateral	Y	31.4	39.4	-6.9	74.6
Vertical	Z	9.7	19.5	-6.7	47.0
Resultant		32.0	28.7		
Lumbar Moment (N-m)					
Longitudinal	X	41.3	46.6	-3.8	250.6
Lateral	Y	12.6	136.6	-8.5	21.4
Vertical	Z	14.0	37.6	-13.6	70.5

Table 6 Dummy Injury Criteria Data, Cont'd.

Driver Dummy S/N 056

Location		Positive Direction Max. Time (ms)		Negative Direction Max. Time (ms)	
Thorax Rib 1 Acceleration (g)					
Longitudinal	X	21.5	31.4	-22.3	23.2
Lateral	Y	31.1	24.1	-10.4	13.5
Vertical	Z	20.5	29.2	-9.2	19.9
Resultant		39.5	24.2		
Thorax Rib 1 Displacement (mm)					
Lateral	Y	7.8	36.4		
Thorax Rib 2 Acceleration (g)					
Longitudinal	X	19.0	33.0	-19.4	41.9
Lateral	Y	47.5	22.8	-6.9	13.6
Vertical	Z	24.3	30.2	-5.2	50.1
Resultant		47.8	22.9		
Thorax Rib 2 Displacement (mm)					
Lateral	Y	10.8	46.0		
Thorax Rib 3 Acceleration (g)					
Longitudinal	X	12.9	32.7	-35.0	16.9
Lateral	Y	71.9	22.2	-7.9	13.4
Vertical	Z	16.8	27.3	-11.7	23.0
Resultant		72.3	22.2		
Thorax Rib 3 Displacement (mm)					
Lateral	Y	12.2	40.8		
Abdomen Rib 1 Acceleration (g)					
Longitudinal	X	32.9	23.6	-49.1	20.0
Lateral	Y	107.4	21.8	-48.5	18.6
Vertical	Z	22.7	23.7	-9.2	56.3
Resultant		107.4	21.8		
Abdomen Rib 1 Displacement (mm)					
Lateral	Y	14.0	42.7		

Table 6 Dummy Injury Criteria Data, Cont'd.

Driver Dummy S/N 056

Location	Positive Direction Max. Time (ms)		Negative Direction Max. Time (ms)	
Abdomen Rib 2 Acceleration (g)				
Longitudinal X	14.9	24.3	-22.9	29.1
Lateral Y	78.0	23.4	-22.7	19.4
Vertical Z	13.9	18.7	-32.6	29.9
Resultant	79.5	23.5		
Abdomen Rib 2 Displacement (mm)				
Lateral Y	18.2	55.8		
Pelvis Acceleration (g)				
Longitudinal X	3.9	45.7	-8.7	29.7
Lateral Y	30.2	40.2	-3.6	86.7
Vertical Z	6.1	23.9	-6.3	51.4
Resultant	30.2	40.3		
Left Acetabulum Force (N)				
Lateral Y	1851.8	27.1	-29.6	112.5
Left Illiac Wing Force (N)				
Lateral Y	1013.1	39.8	-0.9	-9.8
Pelvis Force Summation (N)				
Lateral Y	2638.6	38.8		
Left Femur Force (N)				
X-Axis	77.6	129.3	-137.1	46.2
Y-Axis	94.1	86.4	-607.8	45.0
Z-Axis	623.0	33.0	-75.2	88.7
Left Femur Moment (N-m)				
About Longitudinal	28.7	40.1	-15.6	78.8
About Lateral	11.7	126.6	-28.7	51.2
About Vertical	16.6	44.1	-15.5	70.7

Table 6 Dummy Injury Criteria Data, Cont'd.

Driver Dummy S/N 056

Location	Positive Direction		Negative Direction	
	Max.	Time (ms)	Max.	Time (ms)
Right Femur Force (N)				
X-Axis	98.8	50.6	-106.8	40.8
Y-Axis	133.7	21.8	-456.1	49.5
Z-Axis	420.0	41.5	-40.5	15.2
Right Femur Moment (N-m)				
About Longitudinal	26.1	74.1	-56.8	47.9
About Lateral	15.8	87.3	-14.4	51.8
About Vertical	10.8	104.6	-54.0	50.4

Positive Direction:

Longitudinal: Forward

Lateral: Rightward

Vertical: Downward

Negative Direction:

Longitudinal: Rearward

Lateral: Leftward

Vertical: Upward

Table 6 Dummy Injury Criteria Data, Cont'd.

Left Rear Passenger Dummy S/N 020

Location		Positive Direction Max. Time (ms)		Negative Direction Max. Time (ms)	
Head Acceleration (g)					
Longitudinal	X	6.6	38.4	-23.2	64.4
Lateral	Y	30.0	62.0	-5.5	256.6
Vertical	Z	12.0	81.6	-14.3	47.4
Resultant		37.7	62.0		
HIC (36 ms)		103			
Upper Neck Force (N)					
X-Axis Shear		319.8	64.3	-108.0	47.6
Y-Axis Shear		195.9	61.8	-96.0	309.6
Z-Axis Axial		294.3	200.8	-633.1	78.0
Upper Neck Moment (N-m)					
About X-Axis		42.9	53.0	-19.9	85.8
About Y-Axis		8.3	117.2	-39.7	64.4
About Z-Axis		15.7	80.5	-7.9	292.2
Shoulder Acceleration (g)					
Longitudinal	X	54.5	85.8	-65.1	85.4
Lateral	Y	76.2	85.4	-111.4	40.6
Vertical	Z	181.7	27.4	-179.3	84.1
Resultant		183.1	27.4		
Shoulder Force (N)					
Longitudinal	X	155.3	88.7	-220.2	62.2
Lateral	Y	252.8	73.3	-1256.3	43.6
Vertical	Z	238.1	88.1	-673.1	40.3
Shoulder Displacement (mm)					
Lateral	Y	40.4	51.2		
Upper Spine Acceleration (g)					
Longitudinal	X	6.0	169.1	-11.0	83.6
Lateral	Y	48.8	49.0	-5.0	84.2
Vertical	Z	8.2	83.9	-6.2	38.2
Resultant		48.8	49.0		

Table 6 Dummy Injury Criteria Data, Cont'd.

Left Rear Passenger Dummy S/N 020

Location		Positive Direction Max. Time (ms)		Negative Direction Max. Time (ms)	
Spine Rib 1 Acceleration (g)					
Longitudinal	X	8.1	168.3	-11.0	56.6
Lateral	Y	46.8	46.3	-4.0	84.3
Vertical	Z	14.1	78.3	-16.3	35.3
Resultant		47.5	46.2		
Spine Rib 2 Acceleration (g)					
Longitudinal	X	7.1	166.5	-8.7	73.2
Lateral	Y	48.3	46.5	-5.1	72.6
Vertical ¹	Z	14.0	78.3	-16.5	35.3
Resultant ¹		49.3	46.4		
Spine Rib 3 Acceleration (g)					
Longitudinal	X	6.6	165.8	-9.0	75.8
Lateral	Y	49.1	46.6	-6.3	72.4
Vertical	Z	13.9	78.4	-16.6	35.2
Resultant		50.2	46.6		
Lower Spine Acceleration (g)					
Longitudinal	X	6.9	157.4	-10.7	49.6
Lateral	Y	50.4	46.8	-8.0	74.0
Vertical	Z	13.6	78.2	-16.2	35.3
Resultant		52.0	46.8		
Spine Rib 5 Acceleration (g)					
Longitudinal	X	7.5	157.0	-12.0	47.4
Lateral	Y	52.7	46.9	-8.9	77.0
Vertical	Z	13.5	78.2	-16.1	35.3
Resultant		54.7	46.8		
Lumbar Moment (N-m)					
Longitudinal	X	73.6	42.1	-27.4	231.6
Lateral	Y	31.1	49.3	-26.7	159.7
Vertical	Z	16.1	41.9	-5.7	180.1

Table 6 Dummy Injury Criteria Data, Cont'd.

Left Rear Passenger Dummy S/N 020

Location		Positive Direction Max. Time (ms)		Negative Direction Max. Time (ms)	
Thorax Rib 1 Acceleration (g)					
Longitudinal	X	25.7	63.4	-25.8	45.7
Lateral	Y	118.1	41.5	-41.7	49.8
Vertical	Z	46.8	51.6	-78.6	49.5
Resultant		118.3	41.5		
Thorax Rib 1 Displacement (mm)					
Lateral	Y	40.7	50.6		
Thorax Rib 2 Acceleration (g)					
Longitudinal	X	22.5	61.3	-26.6	31.0
Lateral	Y	85.9	41.8	-46.5	34.1
Vertical	Z	68.9	33.1	-45.2	29.4
Resultant		94.1	29.0		
Thorax Rib 2 Displacement (mm)					
Lateral	Y	45.0	50.4		
Thorax Rib 3 Acceleration (g)					
Longitudinal	X	26.7	58.3	-33.4	29.0
Lateral	Y	141.3	29.2	-80.4	32.5
Vertical	Z	47.9	35.1	-39.2	29.9
Resultant		149.7	29.2		
Thorax Rib 3 Displacement (mm)					
Lateral	Y	48.8	49.8		
Abdomen Rib 1 Acceleration (g)					
Longitudinal	X	12.6	60.2	-44.8	29.8
Lateral	Y	193.1	29.8	-56.0	32.5
Vertical ¹	Z	42.6	38.5	-22.6	43.9
Resultant ¹		198.3	29.8		
Abdomen Rib 1 Displacement (mm)					
Lateral	Y	43.1	49.4		

Table 6 Dummy Injury Criteria Data, Cont'd.

Left Rear Passenger Dummy S/N 020

Location	Positive Direction Max. Time (ms)		Negative Direction Max. Time (ms)	
Abdomen Rib 2 Acceleration (g)				
Longitudinal X	11.8	66.8	-46.0	32.2
Lateral Y	82.1	42.0	-15.4	73.0
Vertical Z	28.0	40.4	-33.4	32.4
Resultant	84.5	42.0		
Abdomen Rib 2 Displacement (mm)				
Lateral Y	26.4	48.9		
Pelvis Acceleration (g)				
Longitudinal X	13.0	55.8	-15.2	53.7
Lateral Y	54.2	32.3	-7.1	56.1
Vertical Z	10.2	53.9	-11.8	37.7
Resultant	54.5	32.3		
Left Acetabulum Force (N)				
Lateral Y	2902.6	32.9	-0.3	-5.3
Left Illiac Wing Force (N)				
Lateral Y	559.9	45.2	-126.2	57.8
Pelvis Force Summation (N)				
Lateral Y	3025.7	35.9		
Left Femur Force (N)				
X-Axis	236.5	53.8	-337.0	48.3
Y-Axis	302.8	33.2	-809.9	53.5
Z-Axis	772.6	45.1	-708.9	53.4
Left Femur Moment (N-m)				
About Longitudinal	126.1	53.4	-59.9	33.8
About Lateral	36.0	56.9	-6.6	48.1
About Vertical	48.3	52.7	-23.9	34.7

Table 6 Dummy Injury Criteria Data, Cont'd.

Left Rear Passenger Dummy S/N 020

Location	Positive Direction		Negative Direction	
	Max.	Time (ms)	Max.	Time (ms)
Right Femur Force (N)				
X-Axis	166.8	53.5	-351.9	55.6
Y-Axis	101.0	87.0	-1354.7	48.1
Z-Axis	1018.8	55.9	-192.6	31.0
Right Femur Moment (N-m)				
About Longitudinal	141.8	54.4	-13.0	73.8
About Lateral	21.5	167.8	-58.9	40.3
About Vertical	50.8	35.0	-7.3	288.0

Positive Direction:

Longitudinal: Forward

Lateral: Rightward

Vertical: Downward

Negative Direction:

Longitudinal: Rearward

Lateral: Leftward

Vertical: Upward

Table 7 Post-Impact Dummy/Vehicle Data

Visible Dummy Contact Points:

	<u>Driver</u>	<u>Passenger</u>
Head	Side curtain airbag, Head restraint	Side curtain airbag, side header
Shoulder	Side torso airbag	Door panel
Abdomen	None	None
Left knee	Door panel	Door panel
Right knee	None	None

Door opening:

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

Seat movement:

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

Glazing damage: Impacted side windows broken.

Other notable impact effects: None

Section 4.0

Occupant, Vehicle, Camera, and Barrier Information

Table 8 Vehicle Structural Measurements^{1,2}

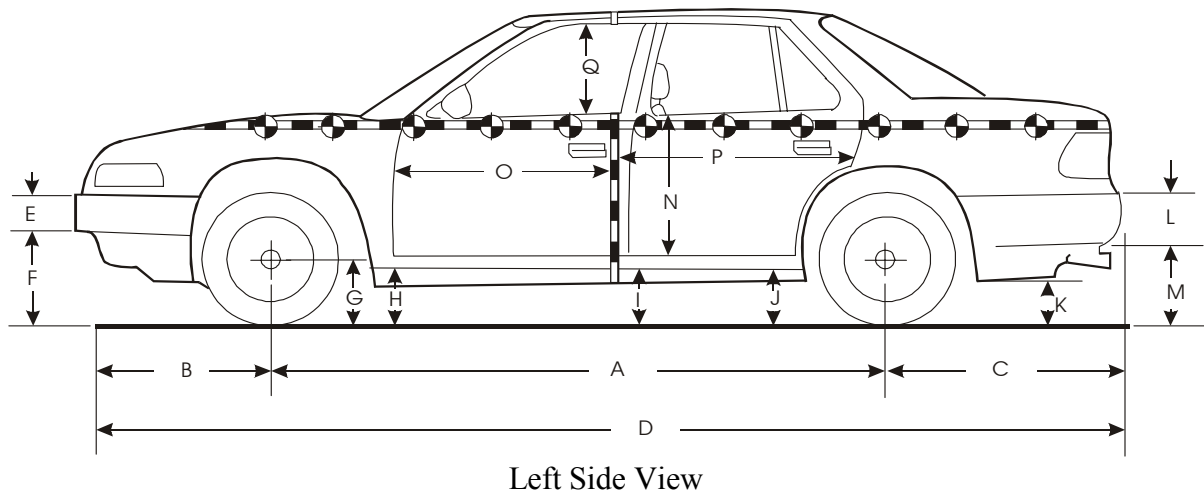
	Elements	Pre-Test
1	Total Length	4544
2	Total Width	1288
3	Bumper Top Height	519
4	Bumper Bottom Height	388
5	Longitudinal Member Top Height	540
6	Longitudinal Member Bottom Height	345
7	Distance Between Longitudinal Members	1100
7'	Longitudinal Member Width	120
8	Engine Top Height	888
9	Engine Bottom Height	150
10	Engine and Gearbox Width	865
11	Front Bumper - Engine Distance	375
12	Front Shock Absorber Fixing Height	865
13	Bonnet Leading Edge Height	706
14	Front Shock Absorber Fixing Width	1115
15	Front Bumper - Front Axle Distance	881
16	Front Axle - A Pillar Distance	462
17	A Pillar - B Pillar Distance	1043
18	B Pillar - Rear Axle Distance	1068
19	B Pillar - C Pillar Distance	942
20	Roof Sill Bottom Height	1296
21	Roof Sill Top Height	1335
22	Floor Sill Bottom Height	295
23	Floor Sill Top Height	333

All distance measurements are in millimeters.

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

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

Figure 3 Pre-Test And Post-Test Measurement Points



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

Code	Measurement Description	Pre-Test	Post-Test	Change
A	Wheelbase	2578	2569	9
B	Front Axle to Front Surface of Vehicle	881	870	11
C	Rear Axle to Rear Surface of Vehicle	1085	1088	-3
D	Total Length at Centerline	4544	4544	0
E	Front Bumper Thickness	260	260	0
F	Front Bumper Bottom to Ground	279	289	-10
G	Sill Height at Front Wheel Well	300	300	0
H	Sill Height at Front Door Leading Edge	210	240	-30
I	Sill Height at "B" Pillar	227	256	-29
J1	Sill Height at Rear Wheel Well	175	190	-15
J2	Pinch Weld Height at Rear Wheel Well	250	258	-8
K	Sill Height Aft of Rear Wheel Well	207	228	-21
L	Rear Bumper Thickness	220	220	0
M	Rear Bumper Bottom to Ground	380	398	-18
N	Sill Height to Window Bottom Sill	700	661	39
O	Front Door Leading Edge to Impact CL	777	759	18
P	Rear Door Trailing Edge to Impact CL	1296	1283	13
Q	Front Window Opening	390	398	-8
R	Right Side Length	4410	4410	0
S	Left Side Length	4415	4408	7
T	Vehicle Width at "B" Post	1315	1220	95

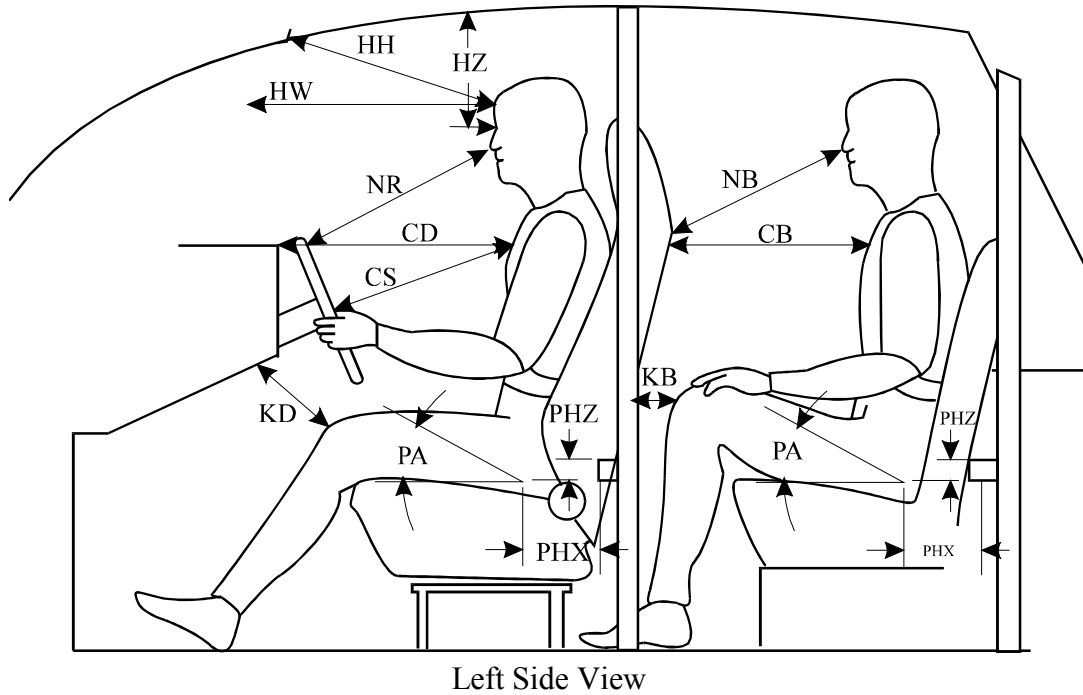
D = Length at centerline
T = Width at B-pillar

E&L = Bumper Thickness
J1 = To Pinch Weld

R = Right Side Length
J2 = To Sill

S = Left Side Length

Figure 4 SID-IIs Longitudinal Clearance Dimensions

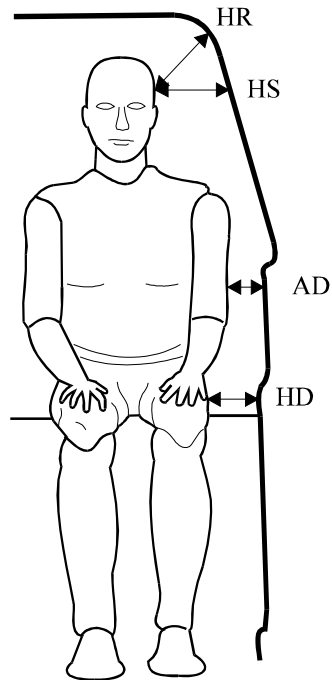


Note: All measurements were recorded using TRC Inc.'s FARO Arm with a tolerance of ± 0.1 mm.

Measurement	Driver SID-IIs # 056	Left Rear Pass. SID-IIs # 020
HH	227	N/A
HW	552	N/A
HZ	207	N/A
NR/NB	203	812
CD/CB	582	795
CS	150	N/A
KDL(KDA°)/KBL(KBA°)	61/(22.1°)	400/(3.9°)
KDR(KDA°)/KBR(KBA°)	61/(14.6°)	398/(4.1°)
PA°	20.6°	18.9°
PHX	331	170
PHZ	181	221

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.

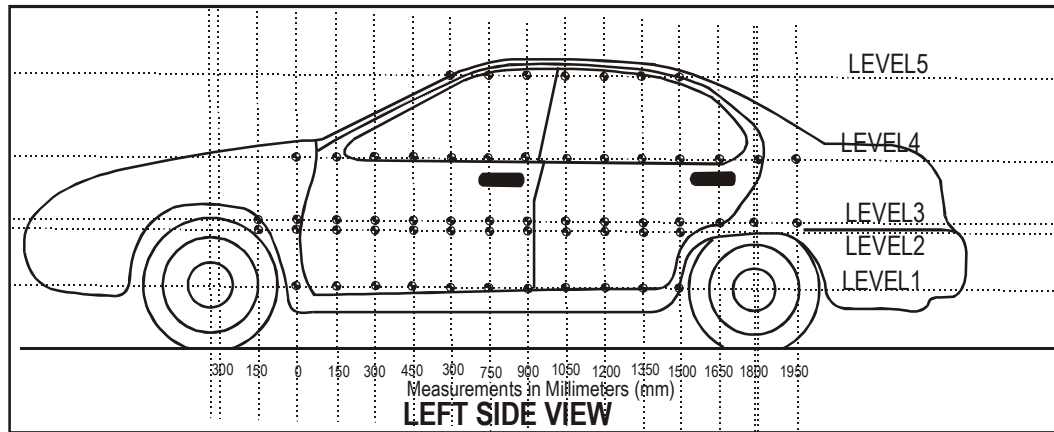
Figure 5 SID-IIs Lateral Clearance Dimensions



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

Measurement	Driver SID-IIs # 056	Left Rear Pass. SID-IIs # 020
HR	246	216
HS	367	320
AD	174	37
HD	176	172

Figure 6 Vehicle Side Measurements



Level 5 - Window Top

Level 4 - Window Sill

Level 3 - Mid-Door

Level 2 - Occupant H-Point

Level 1 - Axle Centerline Height or Sill Top Height

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

Measurements along the vertical 750 mm line shown above:

Level 5 @ Window Top	=	<u>1460</u>	mm
Level 4 @ Window Sill	=	<u>910</u>	mm
Level 3 @ Mid Door	=	<u>635</u>	mm
Level 2 @ Occupant H-Point	=	<u>485</u>	mm
Level 1 @ Axle Centerline Height (or Sill Top Height)	=	<u>275</u>	mm

Table 9 Vehicle Exterior Crush Profiles - All Levels

Location	Height		(mm) From Impact Point													
			-1200	-1050	-900	-750	-600	-450	-300	-150	0	150	300	450	600	750
Level 1 Side Sill	275	Pre	---	---	---	---	---	---	---	---	---	838	838	839	838	841
		Post	---	---	---	---	---	---	---	---	---	834	820	809	784	786
		Crush	---	---	---	---	---	---	---	---	---	4	18	30	54	55
Level 2 H-Point	485	Pre	---	---	---	833	---	---	---	---	873	865	866	866	866	866
		Post	---	---	---	835	---	---	---	---	862	762	710	703	702	708
		Crush	---	---	---	-2	---	---	---	---	11	103	156	163	164	158
Level 3 Mid-Door	635	Pre	---	---	---	803	865	---	---	878	868	868	871	872	873	874
		Post	---	---	---	804	864	---	---	883	864	792	743	740	732	726
		Crush	---	---	---	-1	1	---	---	-5	4	76	128	132	141	148
Level 4 Window Sill	910	Pre	---	---	---	---	718	750	774	792	803	810	817	822	826	830
		Post	---	---	---	---	716	749	774	796	810	794	783	773	760	752
		Crush	---	---	---	---	2	1	0	-4	-7	16	34	49	66	78
Level 5 Window Top	1460	Pre	---	---	---	---	---	---	---	---	---	---	---	---	---	590
		Post	---	---	---	---	---	---	---	---	---	---	---	---	---	592
		Crush	---	---	---	---	---	---	---	---	---	---	---	---	---	-2

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

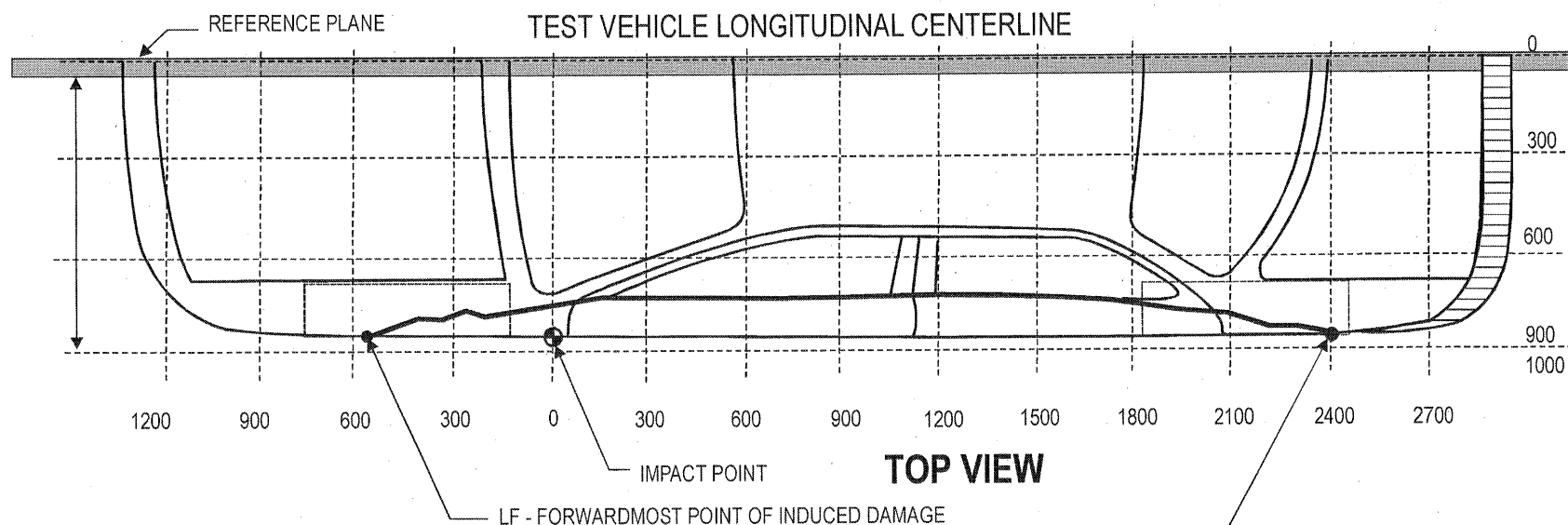
Table 9 Vehicle Exterior Crush Profiles - All Levels, Cont'd.

Location	Height		(mm) From Impact Point												
			900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700
Level 1 Side Sill	275	Pre	840	839	838	837	836	834	832	---	---	---	---	---	---
		Post	776	762	770	781	786	786	791	---	---	---	---	---	---
		Crush	64	77	68	56	50	48	41	---	---	---	---	---	---
Level 2 H-Point	485	Pre	864	862	860	857	854	850	855	---	---	---	---	---	---
		Post	699	693	699	694	698	700	772	---	---	---	---	---	---
		Crush	165	169	161	163	156	150	83	---	---	---	---	---	---
Level 3 Mid-Door	635	Pre	873	873	871	868	865	861	858	864	---	---	---	832	801
		Post	723	727	729	728	721	699	765	820	---	---	---	887	858
		Crush	150	146	142	140	144	162	93	44	---	---	---	-55	-57
Level 4 Window Sill	910	Pre	832	833	832	830	827	824	820	816	810	804	796	785	771
		Post	761	763	759	750	743	731	749	804	829	822	830	831	826
		Crush	71	70	73	80	84	93	71	12	-19	-18	-34	-46	-55
Level 5 Window Top	1460	Pre	594	592	590	585	579	572	562	546	---	---	---	---	---
		Post	599	599	599	595	593	589	583	571	---	---	---	---	---
		Crush	-5	-7	-9	-10	-14	-17	-21	-25	---	---	---	---	---

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

Figure 7 Vehicle Damage Profile Distances

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



MEASUREMENT CONVENTIONS:

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

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

DPD Measurements	Post-Test (mm)	Pre-Test (mm)	Static Crush (mm)
6: LF = 0 mm (Level 2)	873	862	11
5: 450 mm (Level 2)	886	703	163
4: 750 mm (Level 2)	866	708	158
3: 1050 mm (Level 2)	862	693	169
2: 1500 mm (Level 2)	854	698	156
1: LR = 1950 mm (Level 3)	864	820	44

Full length of induced damage was 1950 mm.

Figure 8 Exterior Static Crush For Impactor Face

(Grid as looking at MDB from front)

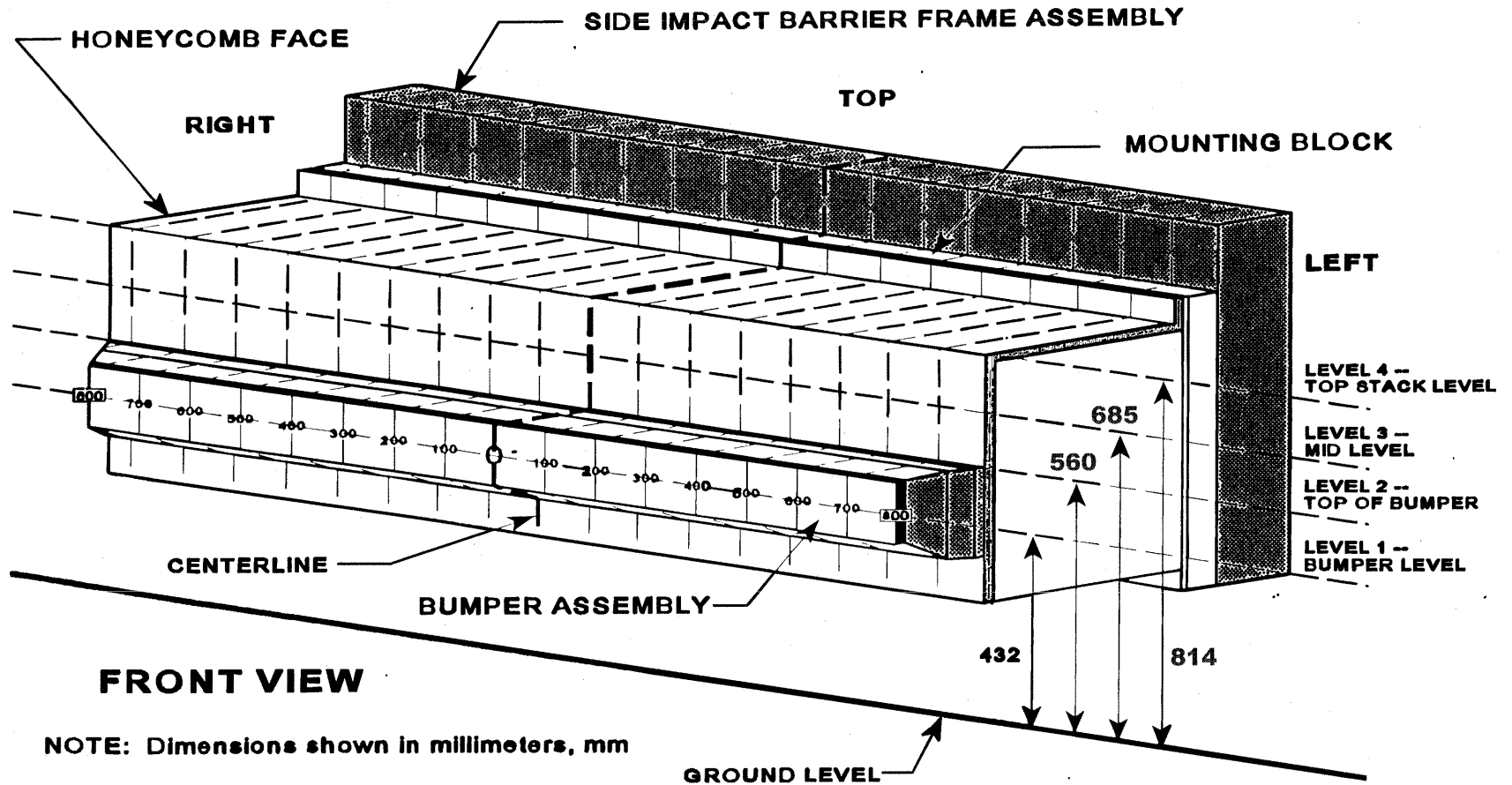


Table 10 Exterior Static Crush For Impactor Face

		Distance Right of Center (mm)									Distance Left of Center (mm)							
Location	Height At CL	800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800
Top Stack Level - Level D	814	-23	-6	-5	-9	-22	-55	-63	-57	-38	-20	-23	-27	-35	-44	-58	-77	-123
Mid Level Level C	685	-22	-3	-5	-6	-9	-19	-34	-27	-18	-12	-13	-17	-24	-31	-41	-58	-99
Top Bumper Level-Level B	560	-78	-72	-66	-67	-66	-63	-60	-63	-62	-62	-64	-66	-67	-69	-71	-84	-95
Mid Bumper Level - Level A	432	-114	-101	-95	-92	-92	-93	-93	-93	-93	-94	-95	-97	-98	-100	-107	-124	-153

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

Table 11 Deformable Barrier Face Profiles

Deformable Barrier Face Profile

Level D - Top Stack

Pre-Test

Index	Xmm	Ymm	Zmm
1	-384	802	-48
2	-383	703	-48
3	-384	603	-48
4	-383	502	-48
5	-384	403	-49
6	-384	302	-48
7	-384	202	-49
8	-384	103	-49
9	-384	3	-49
10	-384	-98	-49
11	-384	-197	-49
12	-384	-298	-49
13	-384	-399	-50
14	-384	-498	-49
15	-384	-597	-48
16	-383	-697	-49
17	-384	-798	-49

Post-Test

Index	Xmm	Ymm	Zmm
1	-361	766	-91
2	-377	668	-90
3	-379	569	-90
4	-375	468	-89
5	-363	369	-90
6	-329	274	-93
7	-322	175	-90
8	-327	74	-91
9	-346	-25	-83
10	-364	-123	-77
11	-361	-222	-76
12	-357	-322	-70
13	-350	-422	-63
14	-339	-521	-58
15	-327	-620	-52
16	-307	-718	-49
17	-262	-808	-51

Difference

Index	Xmm	Ymm	Zmm
1	-23	36	43
2	-6	35	42
3	-5	35	42
4	-9	34	42
5	-22	34	41
6	-55	29	45
7	-63	27	41
8	-57	29	42
9	-38	28	34
10	-20	25	28
11	-23	25	27
12	-27	24	21
13	-35	24	14
14	-44	23	9
15	-58	22	4
16	-77	21	0
17	-123	9	2

Table 11 Deformable Barrier Face Profiles, Cont'd.

Deformable Barrier Face Profile Cont'd.

Level C - Mid Level

Pre-Test

Index	Xmm	Ymm	Zmm
18	-384	802	-177
19	-383	702	-177
20	-384	603	-177
21	-384	503	-177
22	-384	403	-177
23	-384	302	-178
24	-384	202	-178
25	-384	103	-178
26	-384	2	-177
27	-385	-98	-176
28	-384	-198	-178
29	-384	-299	-178
30	-384	-399	-178
31	-383	-498	-177
32	-383	-598	-177
33	-383	-698	-178
34	-384	-799	-177

Post-Test

Index	Xmm	Ymm	Zmm
18	-362	765	-218
19	-380	667	-219
20	-379	567	-218
21	-378	467	-217
22	-375	367	-217
23	-365	267	-216
24	-351	169	-215
25	-357	71	-212
26	-367	-29	-207
27	-373	-129	-203
28	-371	-230	-199
29	-367	-330	-195
30	-360	-430	-189
31	-353	-529	-185
32	-342	-629	-180
33	-325	-727	-175
34	-285	-818	-175

Difference

Index	Xmm	Ymm	Zmm
18	-22	37	41
19	-3	35	41
20	-5	35	41
21	-6	35	40
22	-9	36	40
23	-19	35	39
24	-34	33	37
25	-27	32	34
26	-18	31	30
27	-12	32	27
28	-13	32	21
29	-17	31	17
30	-24	31	11
31	-31	31	7
32	-41	31	2
33	-58	29	-3
34	-99	19	-2

Table 11 Deformable Barrier Face Profiles, Cont'd.

Deformable Barrier Face Profile Cont'd.

Level B - Top of Bumper

Pre-Test

Index	Xmm	Ymm	Zmm
35	-384	803	-303
36	-384	702	-301
37	-384	602	-303
38	-384	503	-304
39	-384	403	-304
40	-384	303	-305
41	-384	202	-306
42	-384	103	-304
43	-384	2	-304
44	-384	-98	-305
45	-384	-198	-304
46	-384	-298	-304
47	-384	-398	-304
48	-384	-498	-304
49	-384	-597	-304
50	-384	-698	-303
51	-384	-797	-304

Post-Test

Index	Xmm	Ymm	Zmm
35	-306	765	-321
36	-312	666	-327
37	-317	567	-326
38	-317	466	-323
39	-318	366	-321
40	-321	265	-324
41	-324	166	-323
42	-321	66	-319
43	-322	-34	-316
44	-322	-134	-313
45	-321	-232	-308
46	-318	-334	-304
47	-317	-431	-300
48	-316	-533	-297
49	-313	-633	-295
50	-300	-733	-289
51	-289	-832	-283

Difference

Index	Xmm	Ymm	Zmm
35	-78	38	18
36	-72	36	26
37	-66	36	23
38	-67	37	19
39	-66	37	17
40	-63	37	20
41	-60	36	17
42	-63	37	15
43	-62	36	12
44	-62	37	8
45	-64	34	4
46	-66	35	0
47	-67	34	-4
48	-69	35	-7
49	-71	36	-10
50	-84	34	-14
51	-95	34	-22

Table 11 Deformable Barrier Face Profiles, Cont'd.

Deformable Barrier Face Profile Cont'd.

Level A - Mid Bumper

Pre-Test

Index	Xmm	Ymm	Zmm
52	-471	802	-427
53	-485	707	-428
54	-485	607	-428
55	-486	506	-428
56	-485	407	-429
57	-486	308	-430
58	-486	206	-430
59	-486	106	-430
60	-486	6	-430
61	-486	-95	-430
62	-486	-195	-430
63	-486	-295	-430
64	-485	-395	-431
65	-486	-495	-431
66	-486	-596	-432
67	-485	-695	-431
68	-473	-793	-431

Post-Test

Index	Xmm	Ymm	Zmm
52	-356	758	-440
53	-384	667	-442
54	-390	568	-441
55	-393	467	-439
56	-393	367	-437
57	-393	267	-434
58	-393	167	-433
59	-393	67	-431
60	-393	-34	-428
61	-392	-135	-426
62	-391	-235	-424
63	-389	-335	-421
64	-388	-434	-419
65	-386	-534	-416
66	-379	-635	-413
67	-361	-733	-409
68	-320	-823	-407

Difference

Index	Xmm	Ymm	Zmm
52	-114	44	13
53	-101	40	14
54	-95	39	13
55	-92	39	11
56	-92	40	8
57	-93	41	5
58	-93	39	3
59	-93	40	1
60	-93	40	-2
61	-94	40	-4
62	-95	40	-7
63	-97	40	-9
64	-98	39	-13
65	-100	40	-16
66	-107	40	-19
67	-124	37	-22
68	-153	30	-24

Figure 9 Deformable Barrier Face Profiles

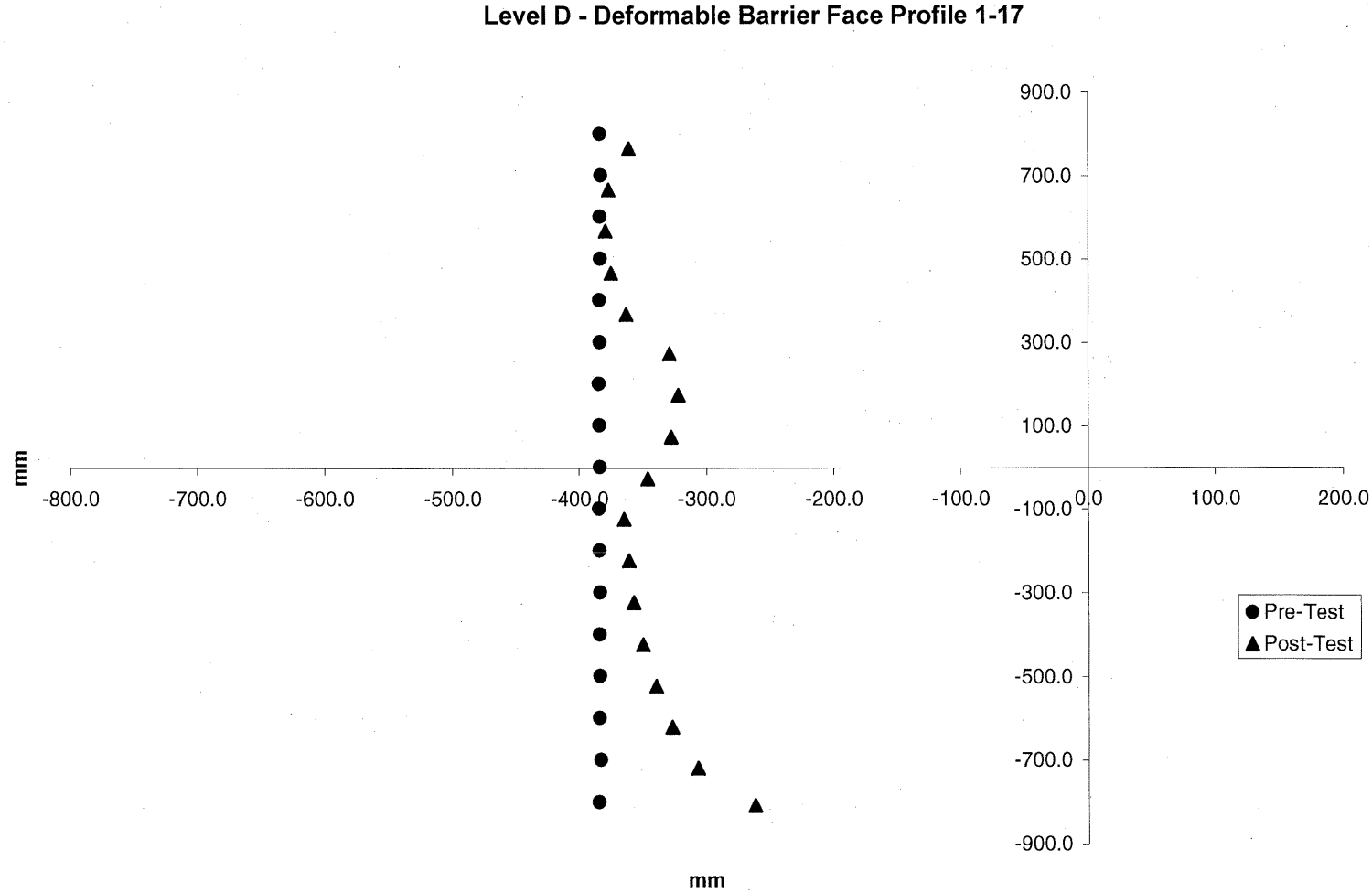


Figure 9 Deformable Barrier Face Profiles, Cont'd.

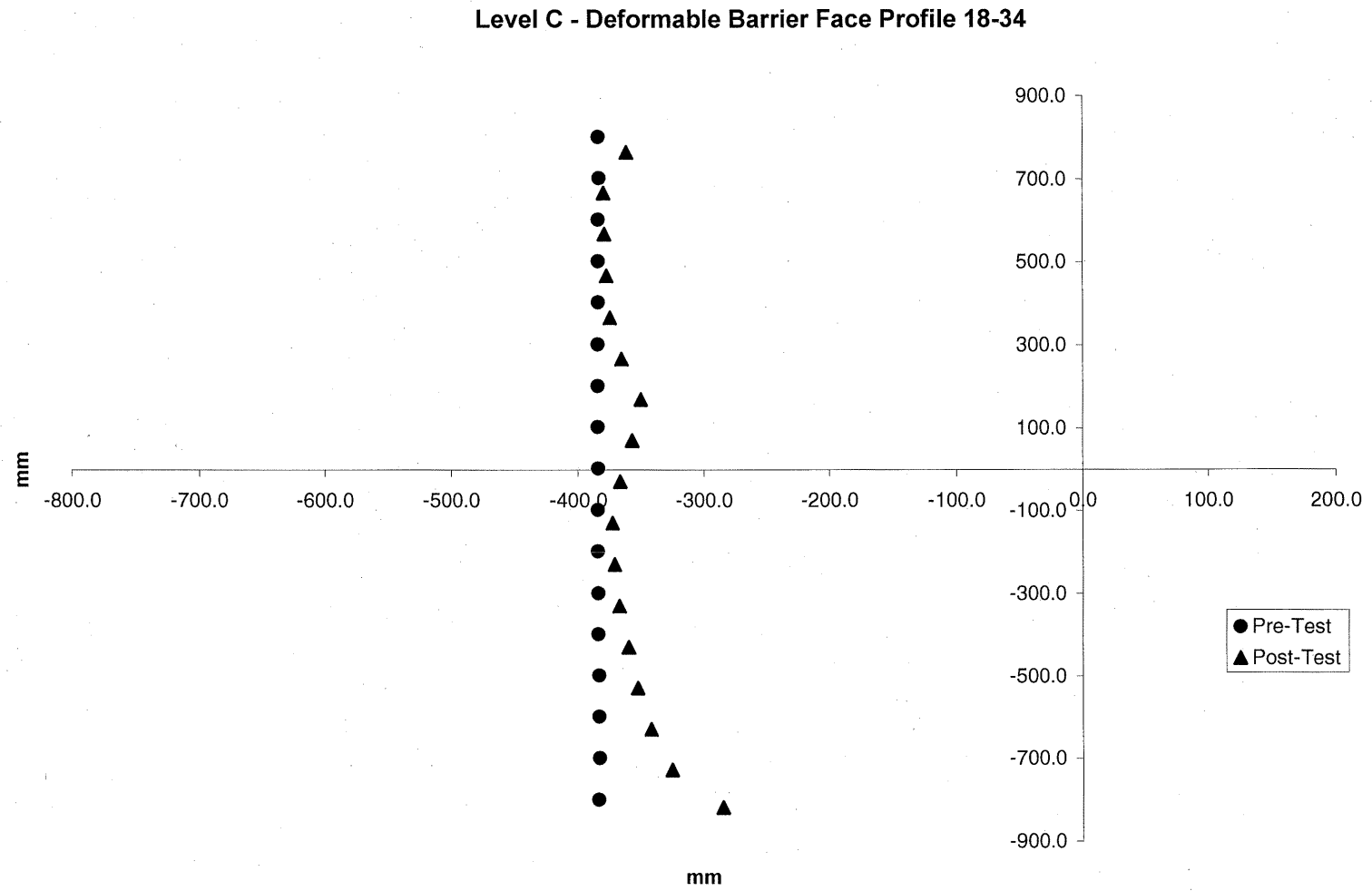


Figure 9 Deformable Barrier Face Profiles, Cont'd.

Level B - Deformable Barrier Face Profile 35-51

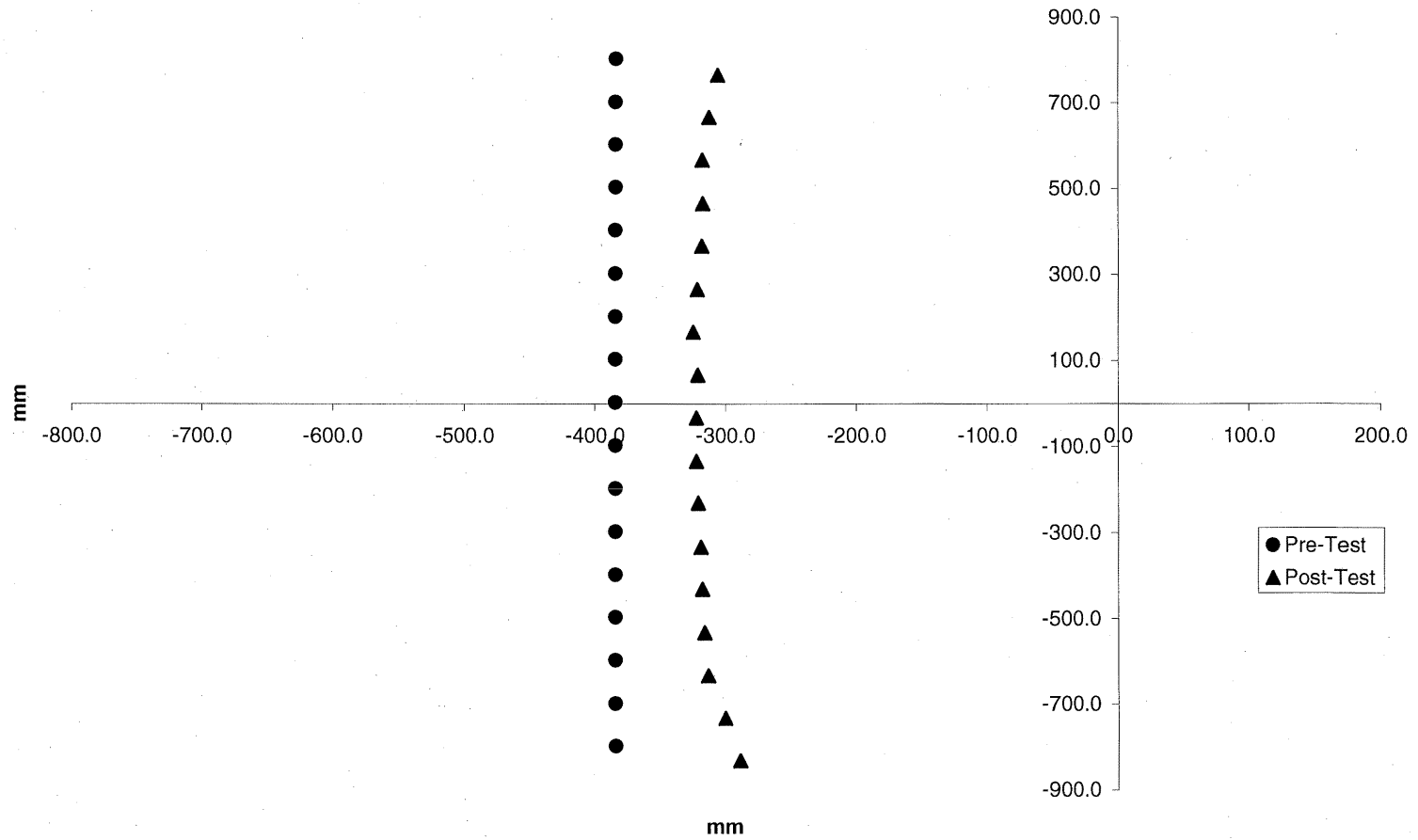


Figure 9 Deformable Barrier Face Profiles, Cont'd.

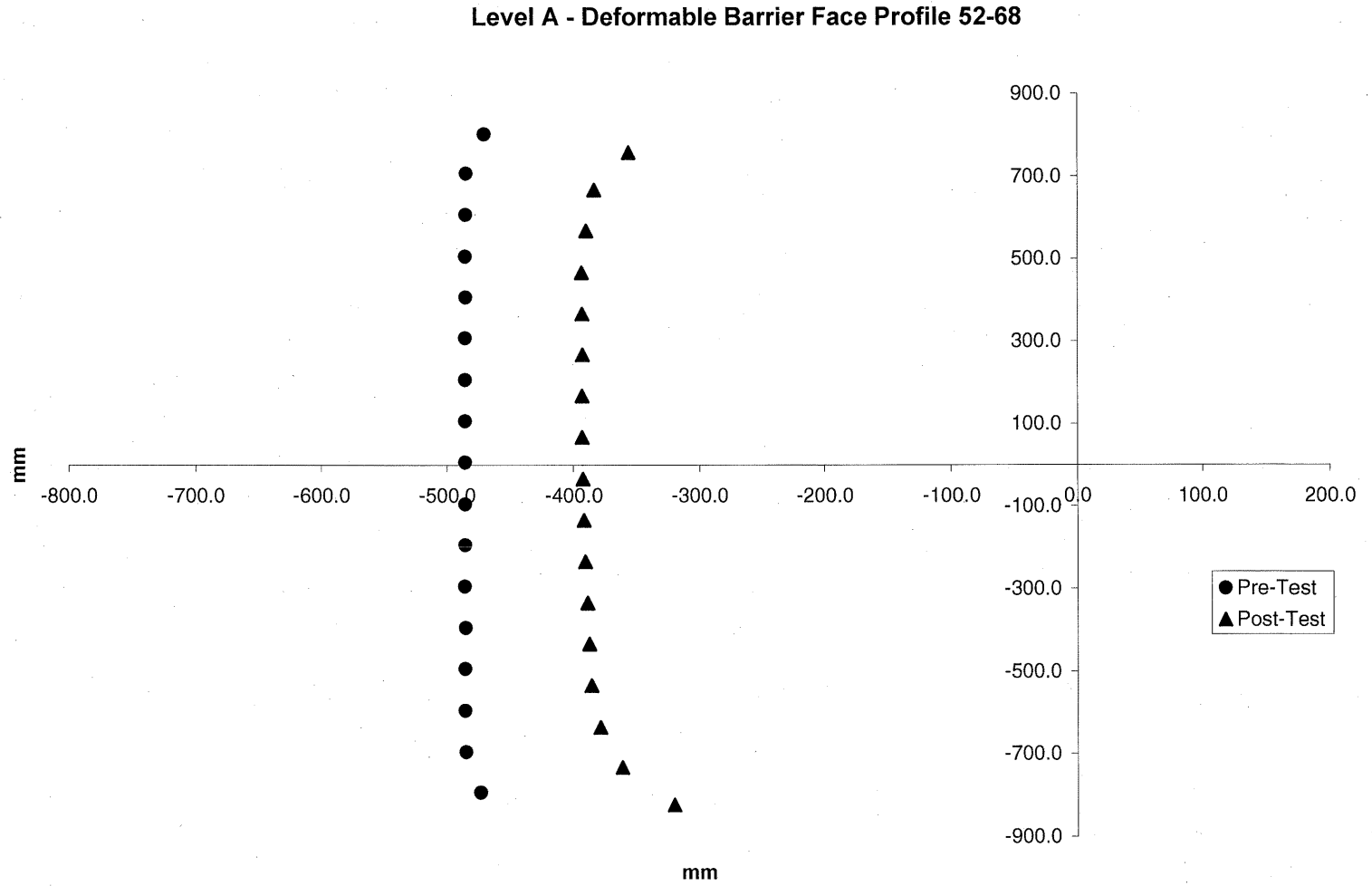
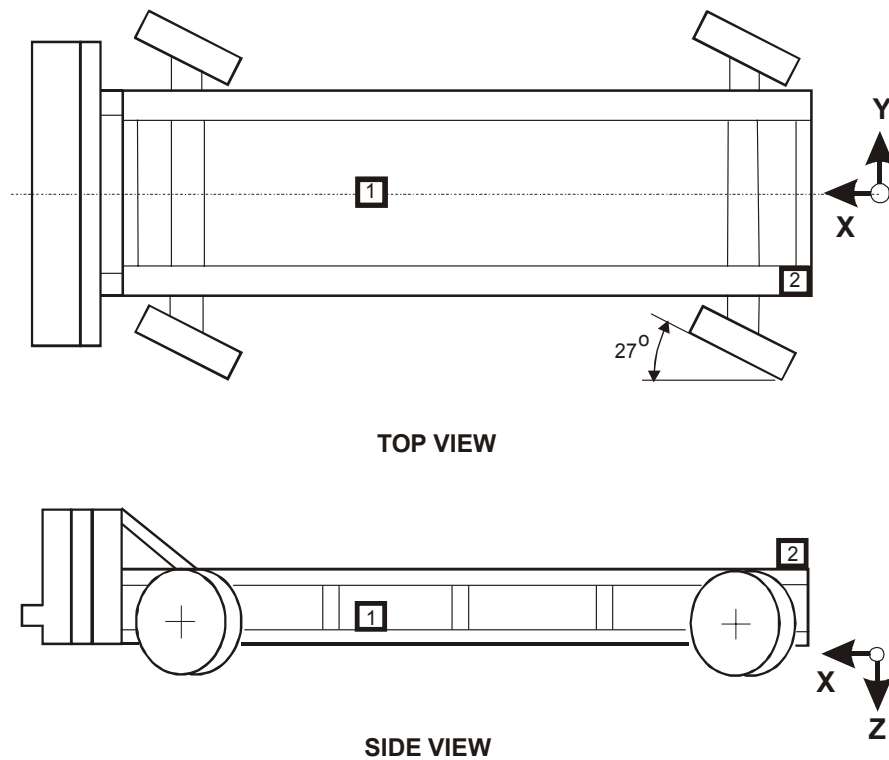


Figure 10 MDB Accelerometer Locations and Data Summary



Accel. No.	Location	Coordinates (millimeters)			Positive Direction		Negative Direction	
		X*	Y*	Z*	Max. (g)	Time (ms)	Max. (g)	Time (ms)
1	MDB Center of Gravity	1853	0	-519				
	Longitudinal X				1.4	92.2	-22.6	40.6
	Lateral Y				3.4	55.6	-7.9	28.1
	Vertical Z				8.3	15.0	-8.0	25.2
	Resultant R				23.2	40.5		
2	Rear Frame Member	411	-738	-628				
	Longitudinal X				1.4	169.6	-22.0	39.5
	Lateral Y				3.5	22.6	-2.9	54.8

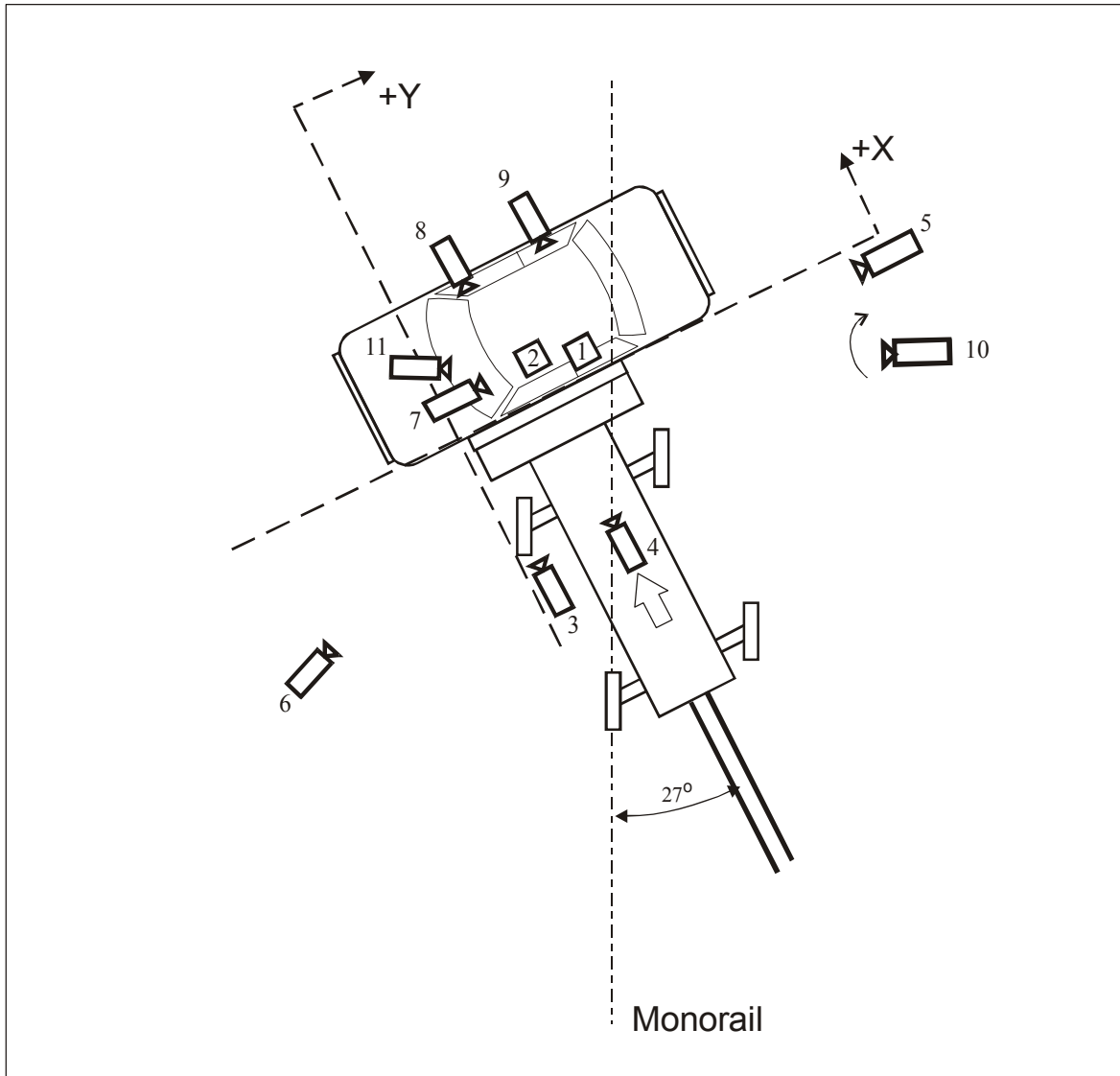
*Reference: X = Rear Bumper (+ Forward)

Y = Vehicle Centerline (+ To Right)

Z = Ground Level (+ Down)

All measurements accurate to within ± 3 mm.

Figure 11 Camera Positions



Impact
Area

Table 12 Camera Information

Camera Number	Location	Location, mm			Angle (deg.)	Lens (mm)	Speed (fps)
		X	Y	Z			
1	Overhead wide	250	2150	-5750	-77.5	12.5	1000
2	Overhead tight	370	1800	-5750	-85.5	50	1000
3	Onboard MDB left side	-1750	-40	-720	-0.5	13	1000
4	Onboard MDB center	-2480	830	-1353	-5.2	17	1000
5	Right wide	0	8220	-860	7.0	13	1000
6	Left quarter wide	-2400	-5850	-1030	1.9	25	1000
7	Onboard vehicle front	500	-1490	-1120	0.5	25	1000
8	Onboard side front door	1520	0	-1140	8.9	12.5	1000
9	Onboard side rear door	1520	920	-1210	10.7	12.5	1000
10	Real-time Panning-Video	N/A	N/A	N/A	N/A	Zoom	24
11	Onboard vehicle driver hip	780	-1290	-1580	28.3	50	1000

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

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

+Z: Downward from ground level

Appendix A

Photographs



Figure A-1 Pre-Test Front View



Figure A-2 Post-Test Front View



Figure A-3 Pre-Test Left Front View



Figure A-4 Post-Test Left Front View



Figure A-5 Pre-Test Left Side View



Figure A-6 Post-Test Left Side View



Figure A-7 Pre-Test Left Rear View



Figure A-8 Post-Test Left Rear View



Figure A-9 Pre-Test Rear View



Figure A-10 Post-Test Rear View



Figure A-11 Pre-Test Right Rear View



Figure A-12 Post-Test Right Rear View

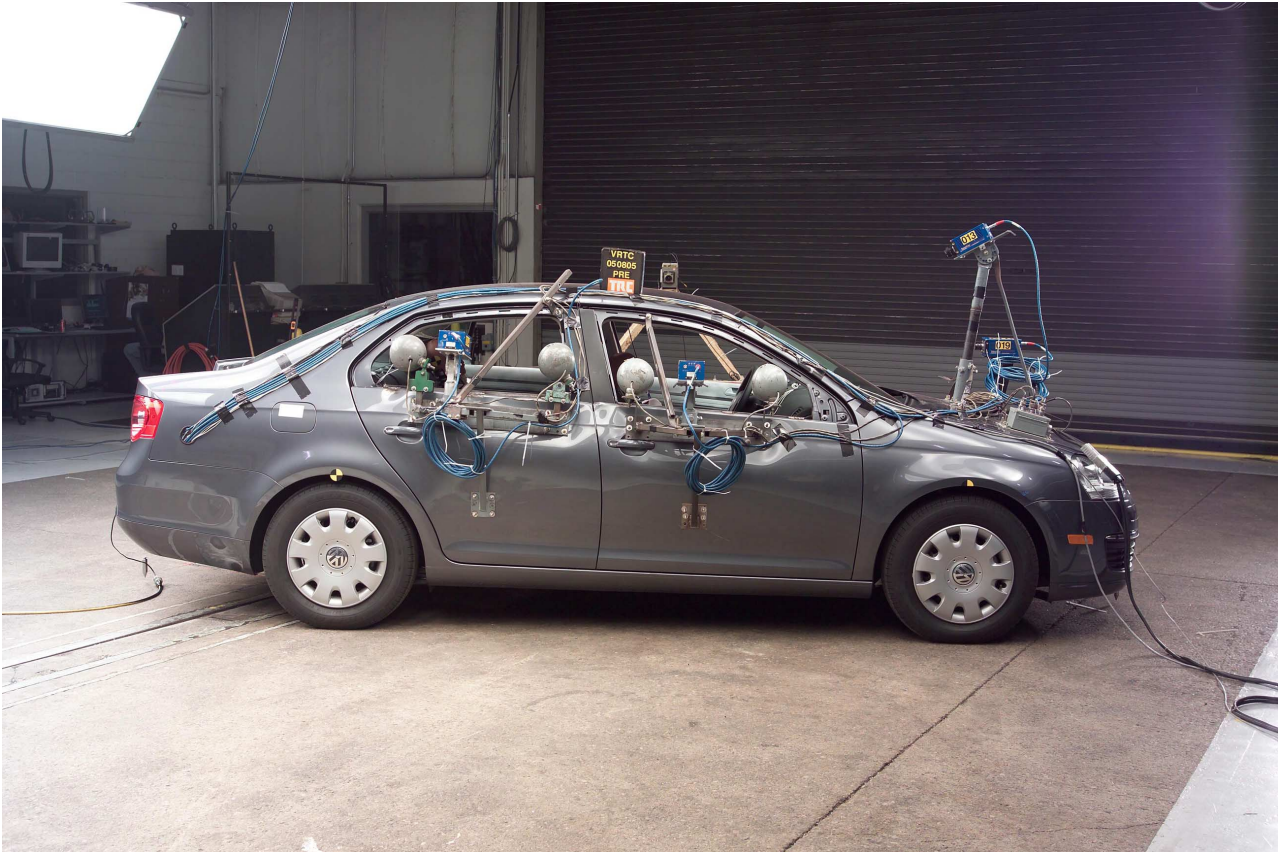


Figure A-13 Pre-Test Right Side View



Figure A-14 Post-Test Right Side View



Figure A-15 Pre-Test Right Front View



Figure A-16 Post-Test Right Front View

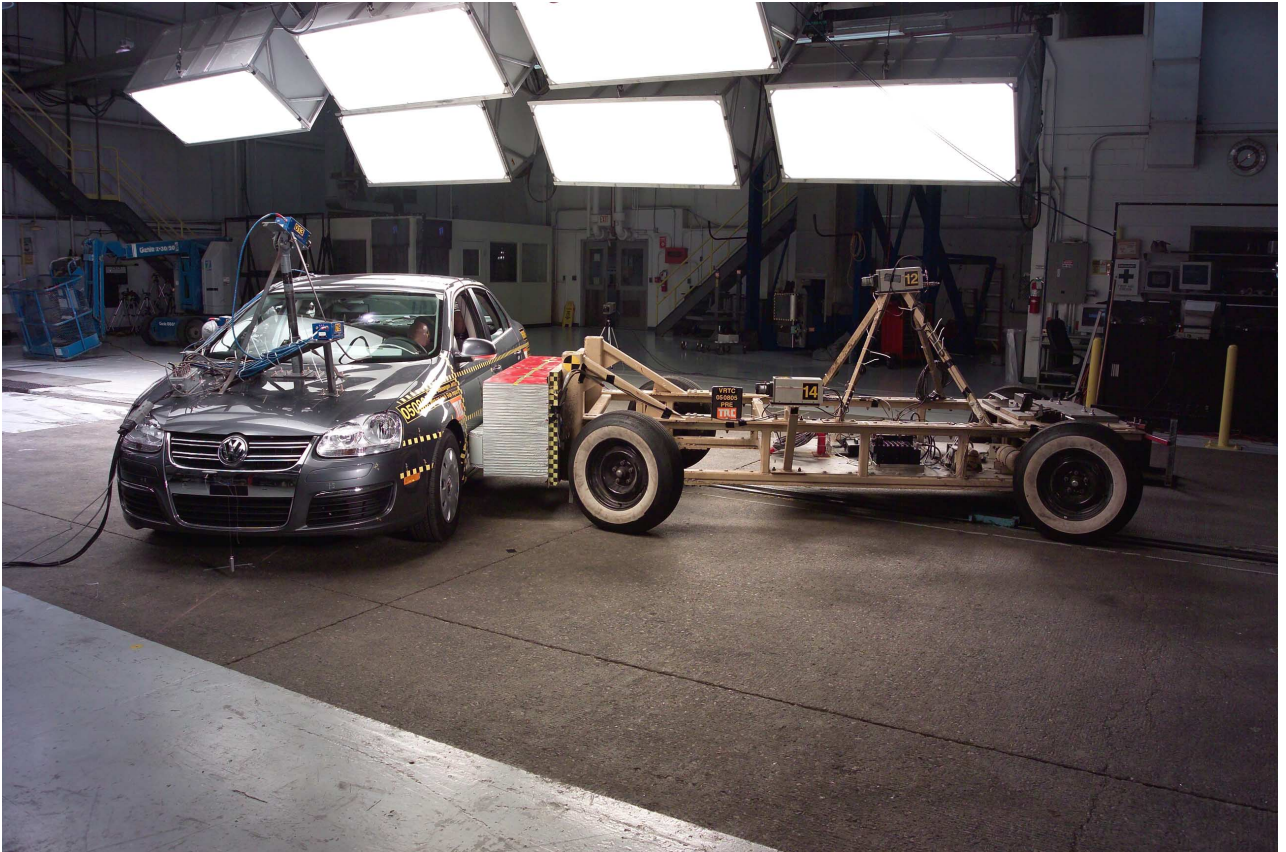


Figure A-17 Pre-Test Front View with MDB in Position

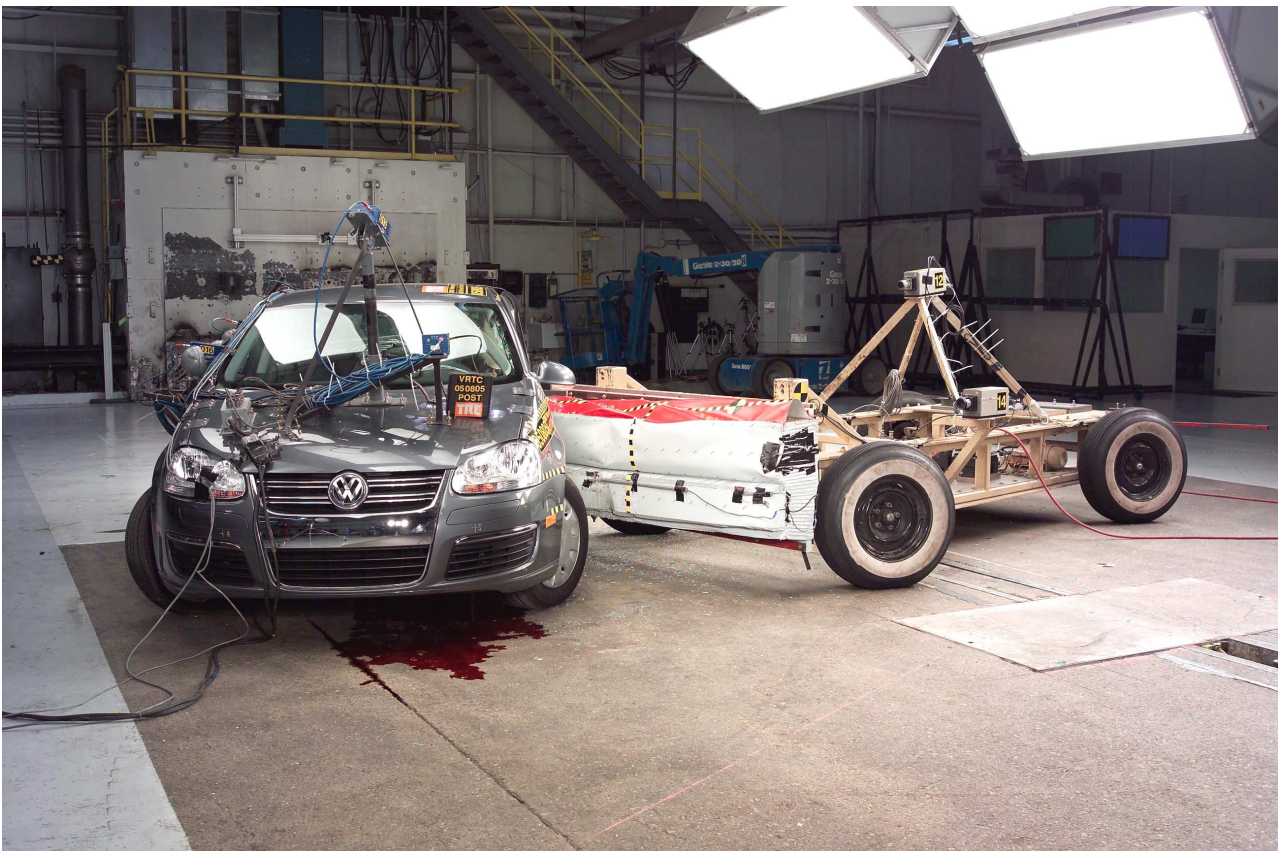


Figure A-18 Post-Test Front View with MDB in Position

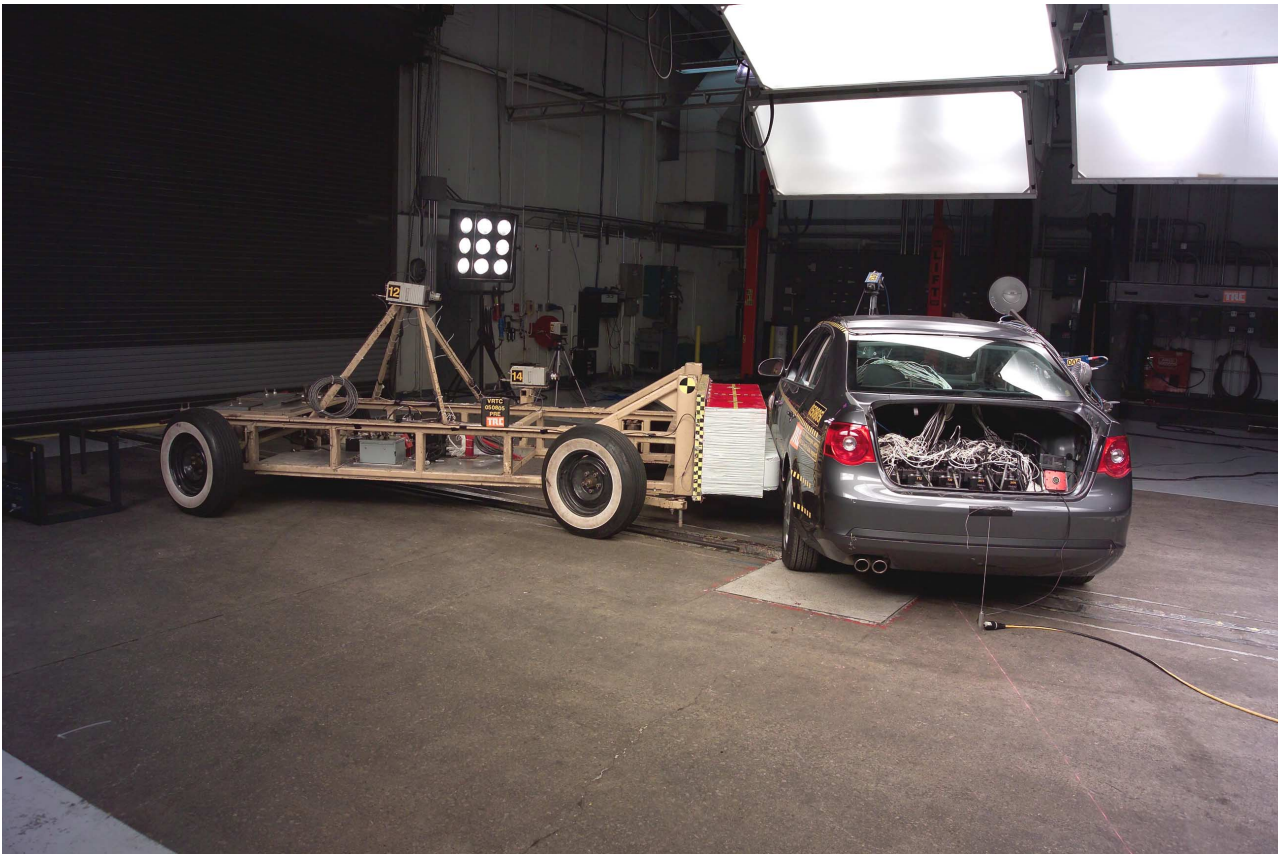


Figure A-19 Pre-Test Rear View with MDB in Position

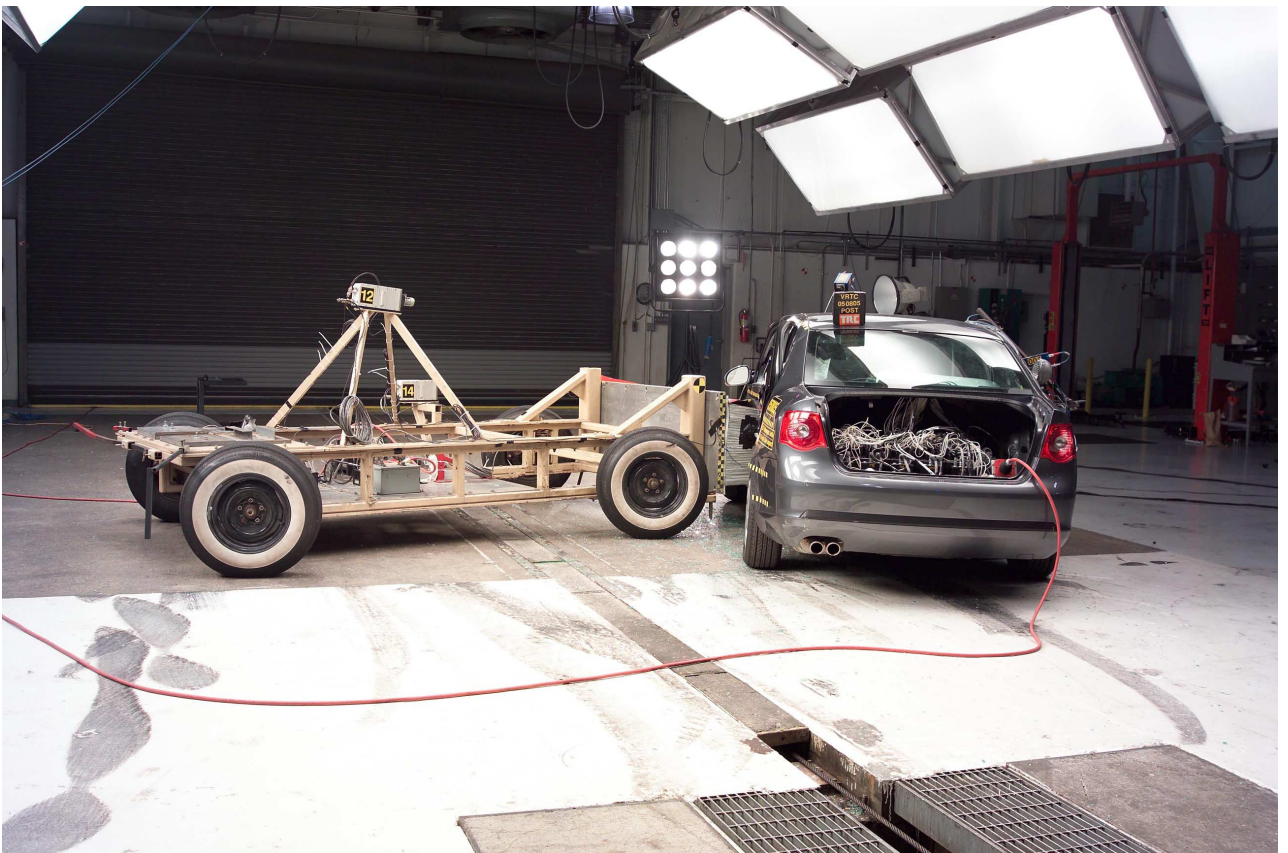


Figure A-20 Post-Test Rear View with MDB in Position

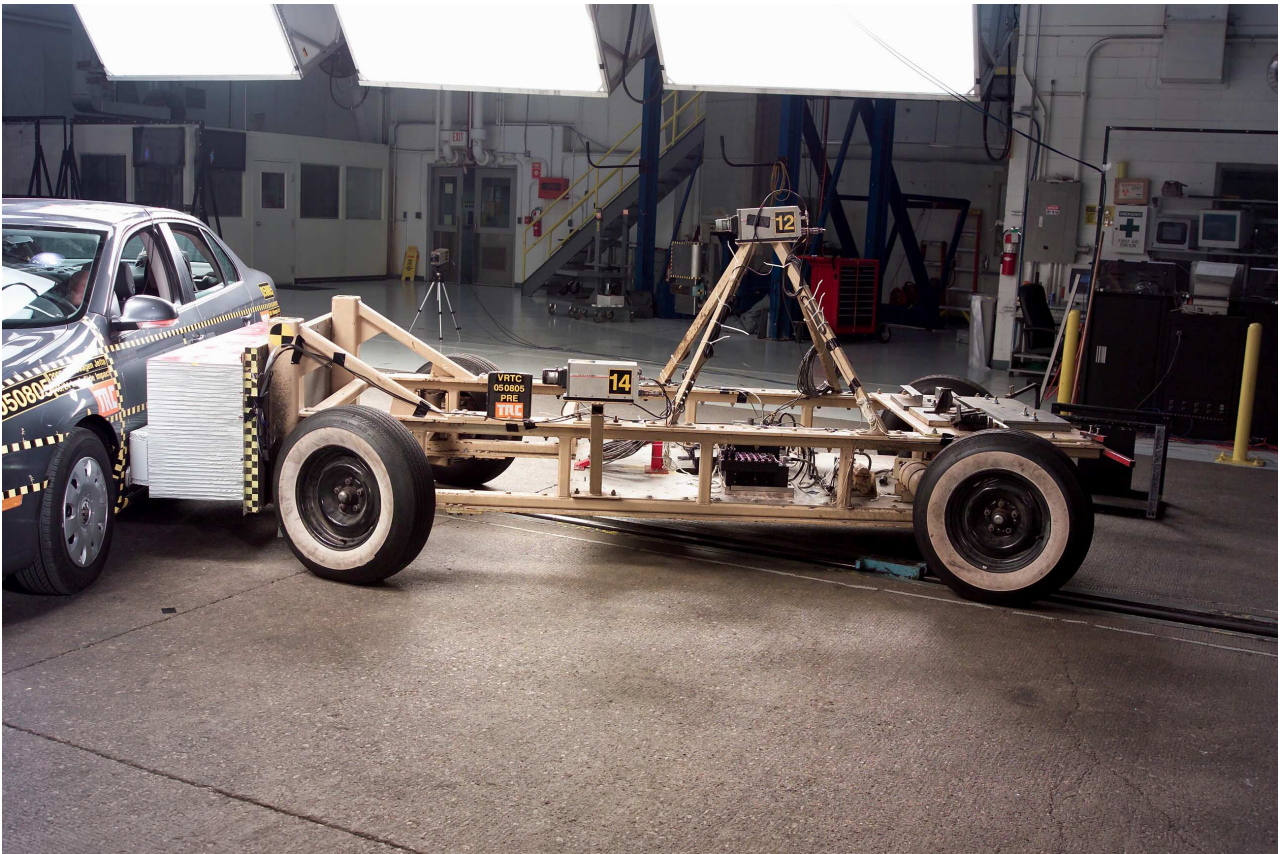


Figure A-21 Pre-Test Left Side View of MDB with Impactor Face in Position

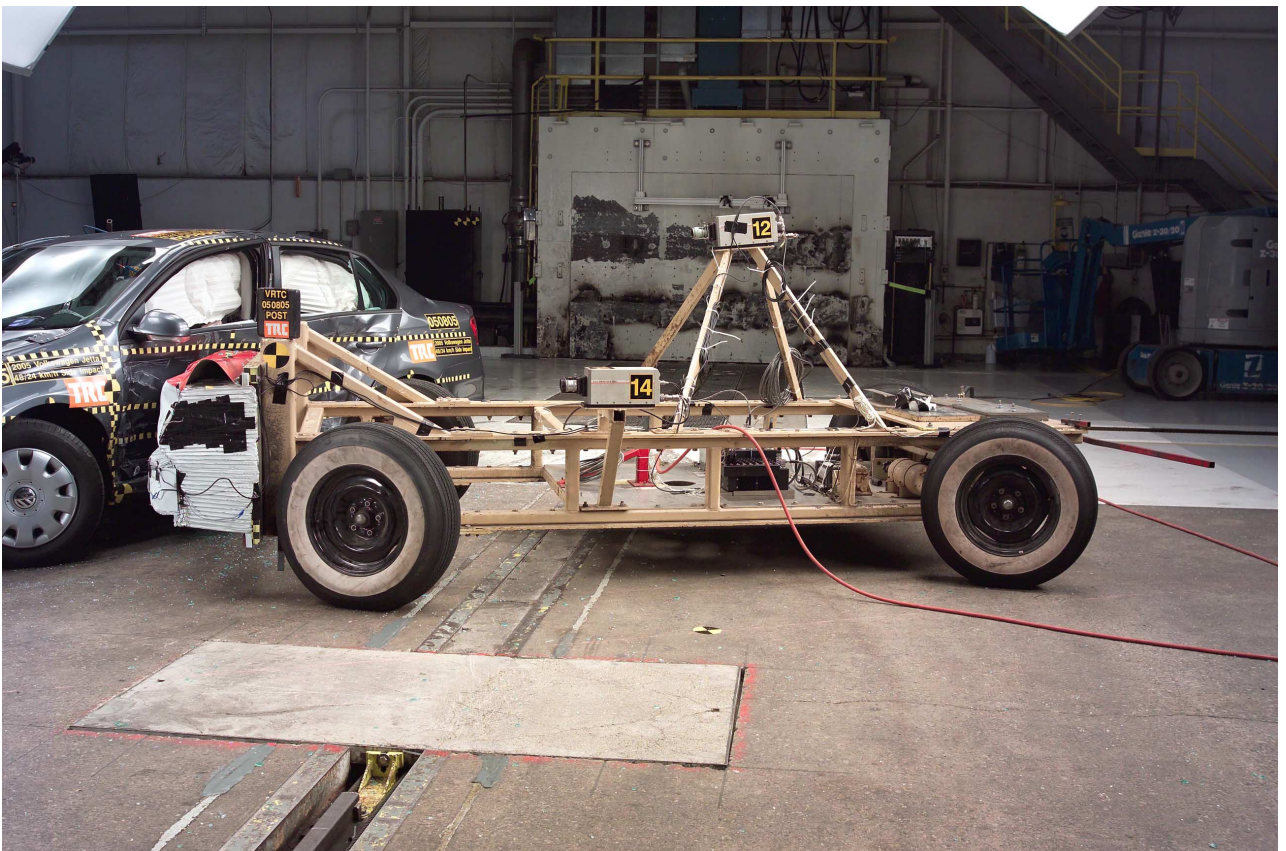


Figure A-22 Post-Test Left Side View of MDB with Impactor Face in Position



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

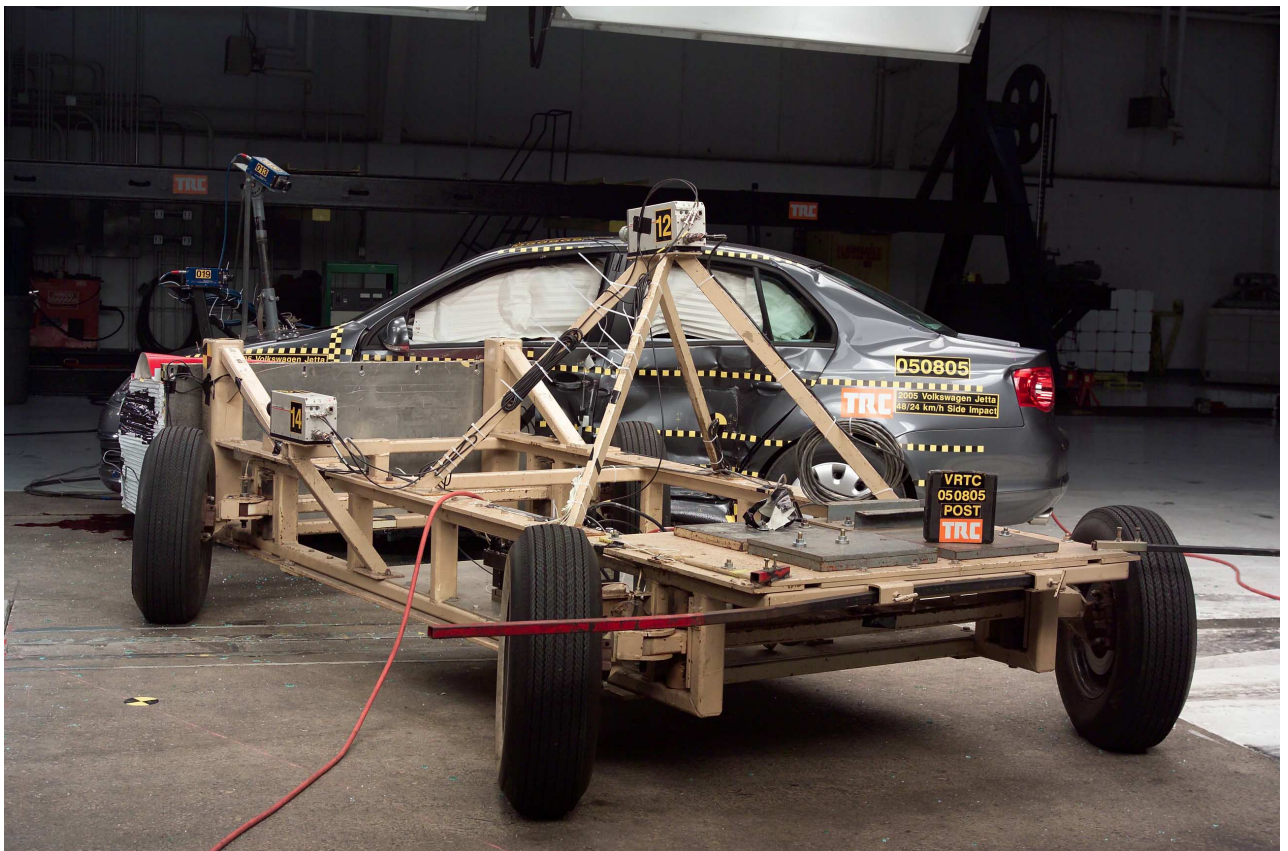


Figure A-24 Post-Test Rear View of MDB with Impactor Face in Position

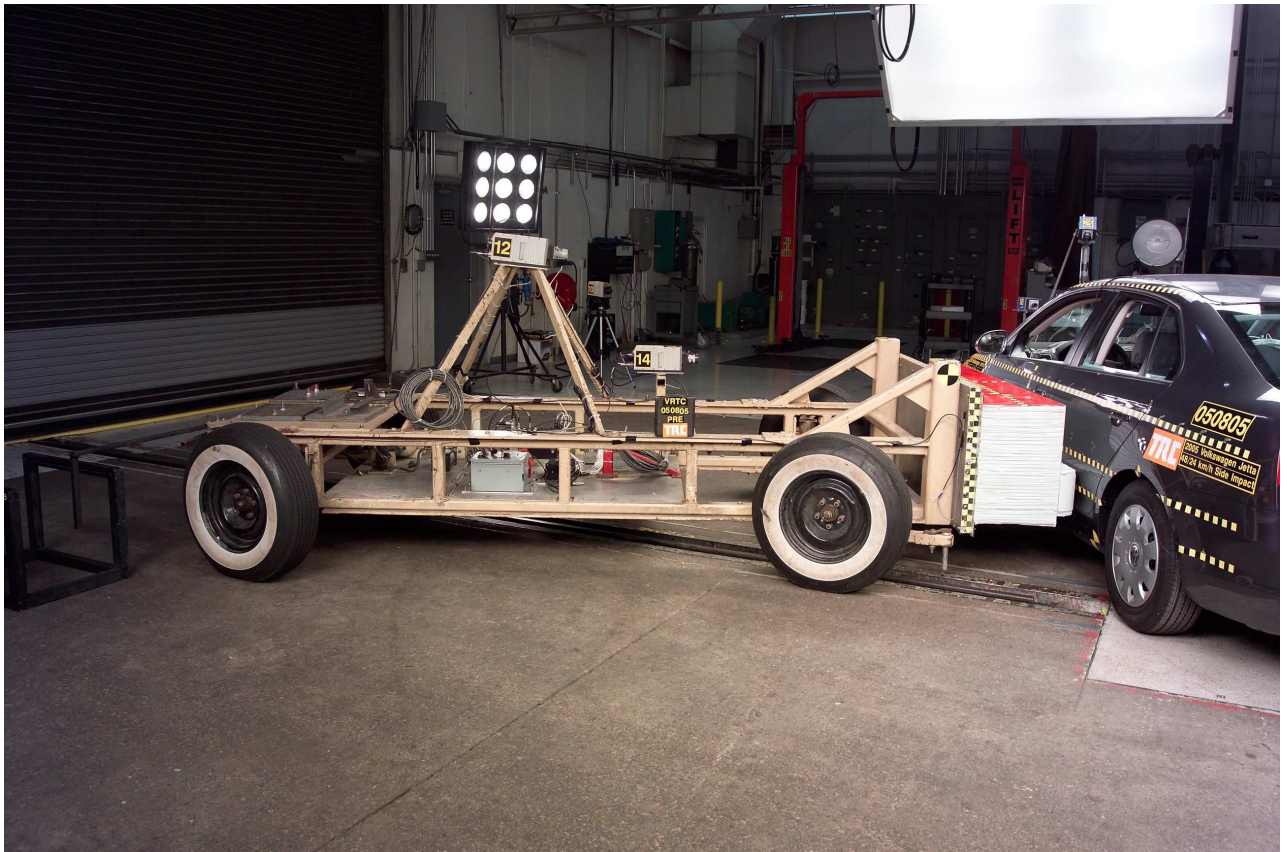


Figure A-25 Pre-Test Left Rear View of MDB with Impactor Face in Position

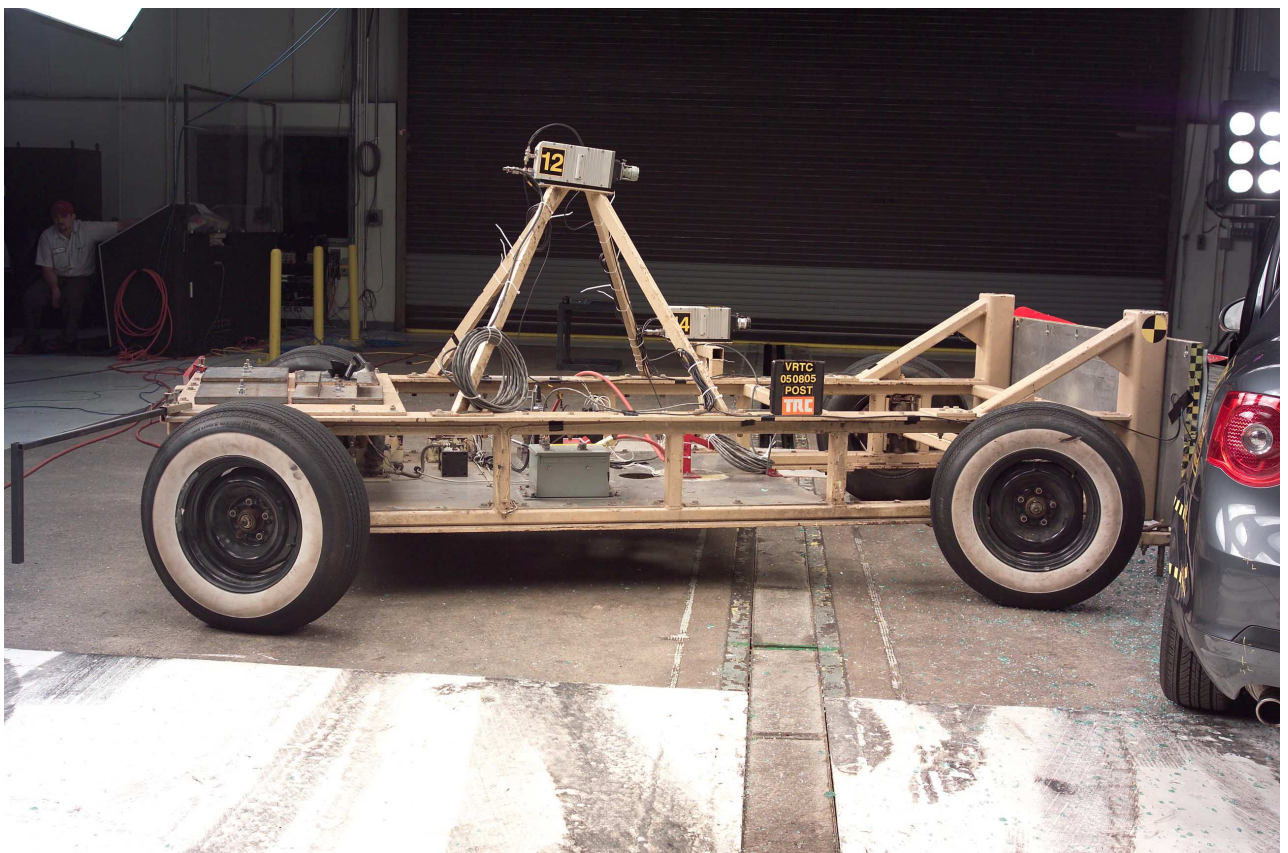


Figure A-26 Post-Test Left Rear View of MDB with Impactor Face in Position



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



Figure A-28 Post-Test Overhead View of MDB Aligned with Vehicle



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



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

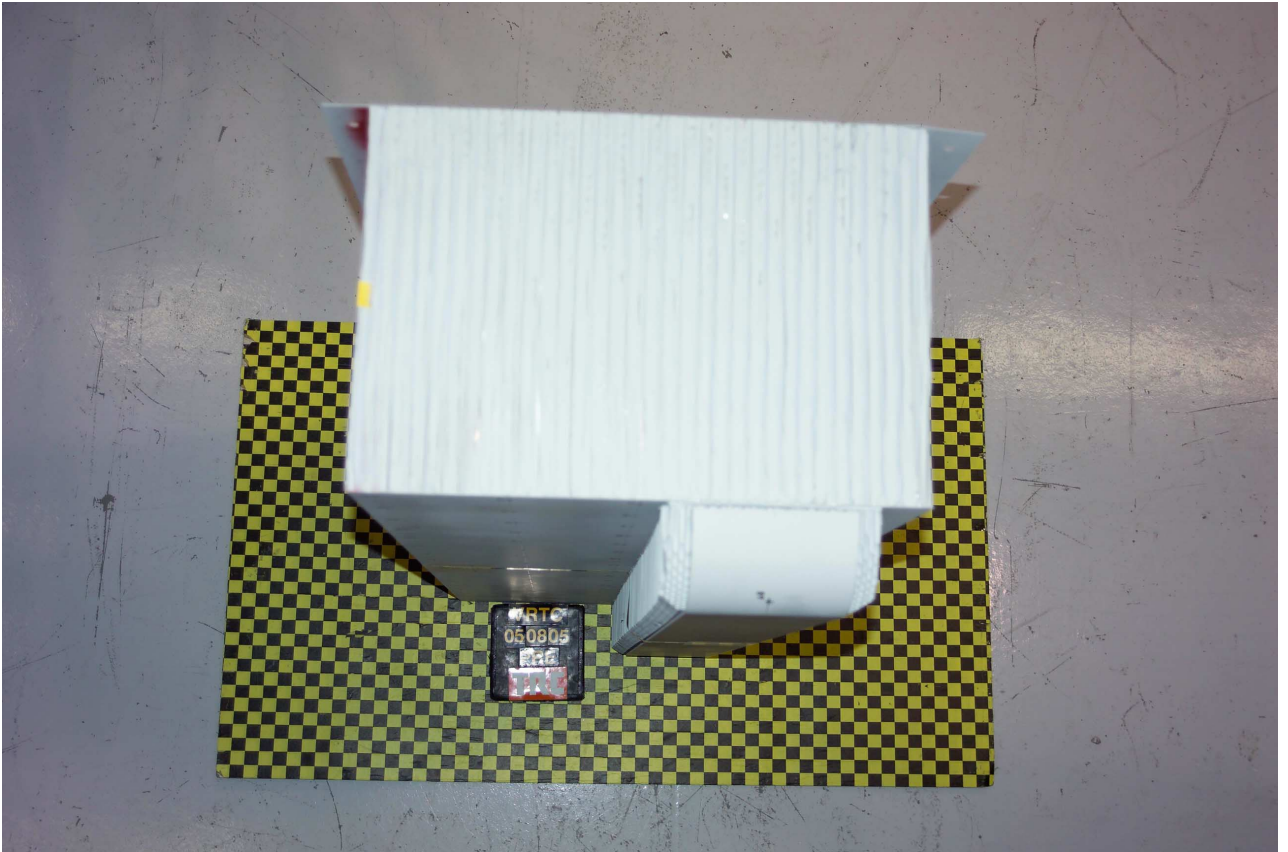


Figure A-31 Pre-Test Left Side View of Impactor Face

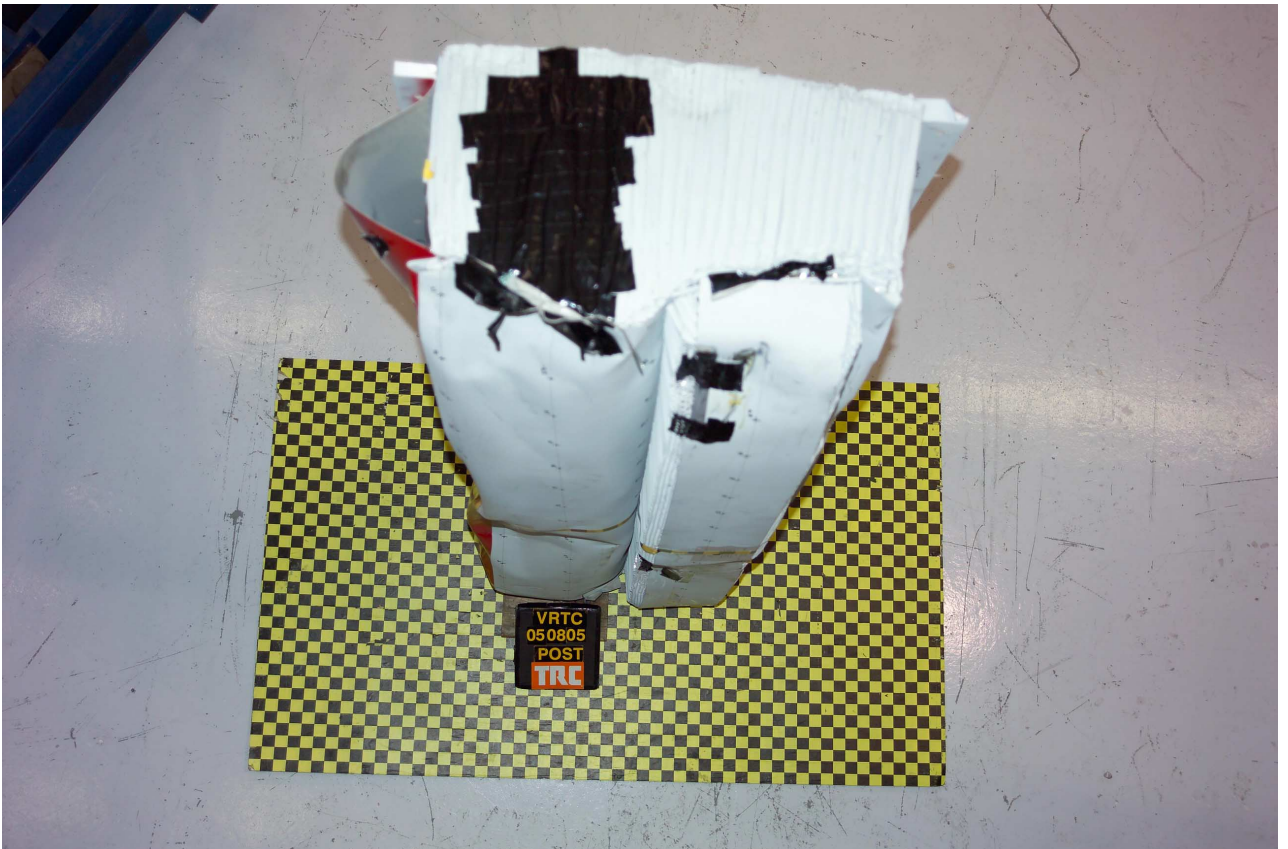


Figure A-32 Post-Test Left Side View of Impactor Face

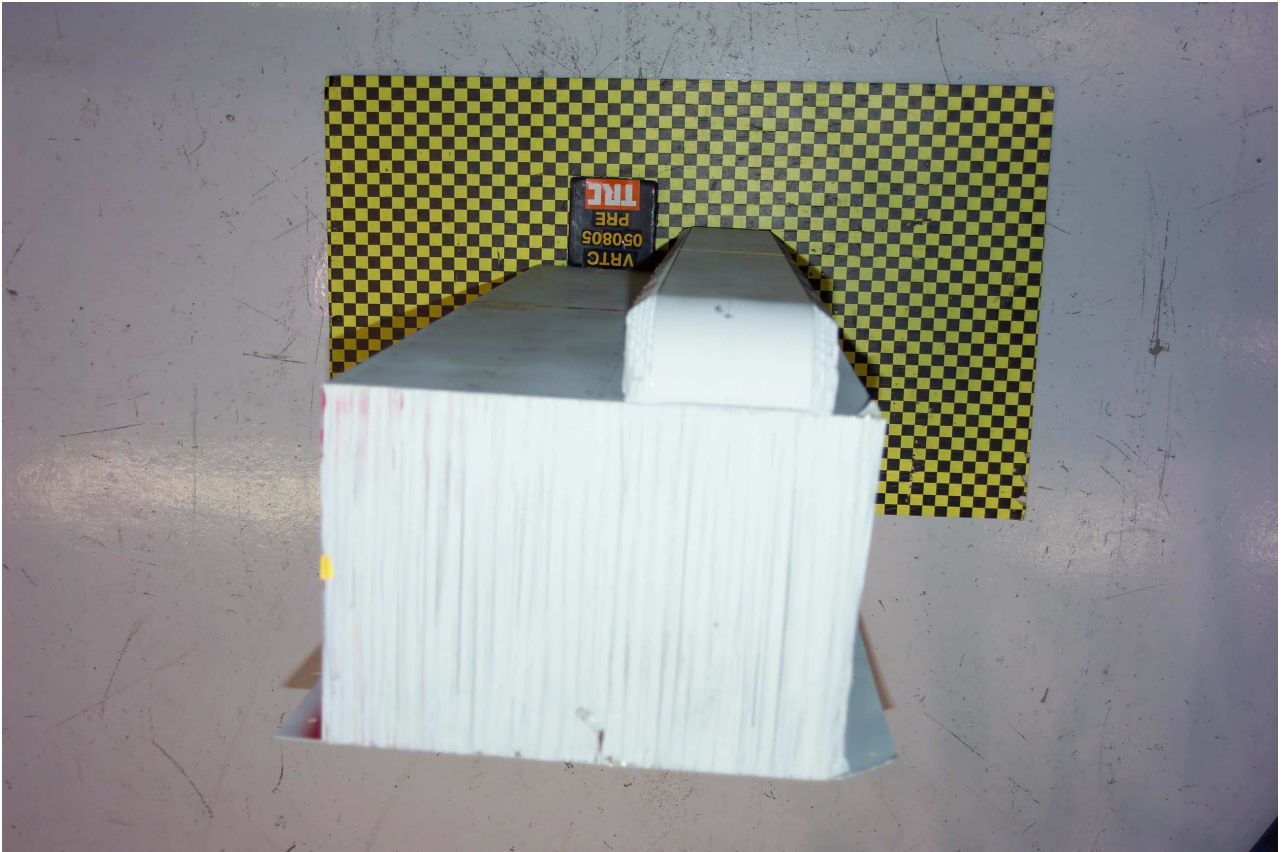


Figure A-33 Pre-Test Right Side View of Impactor Face



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

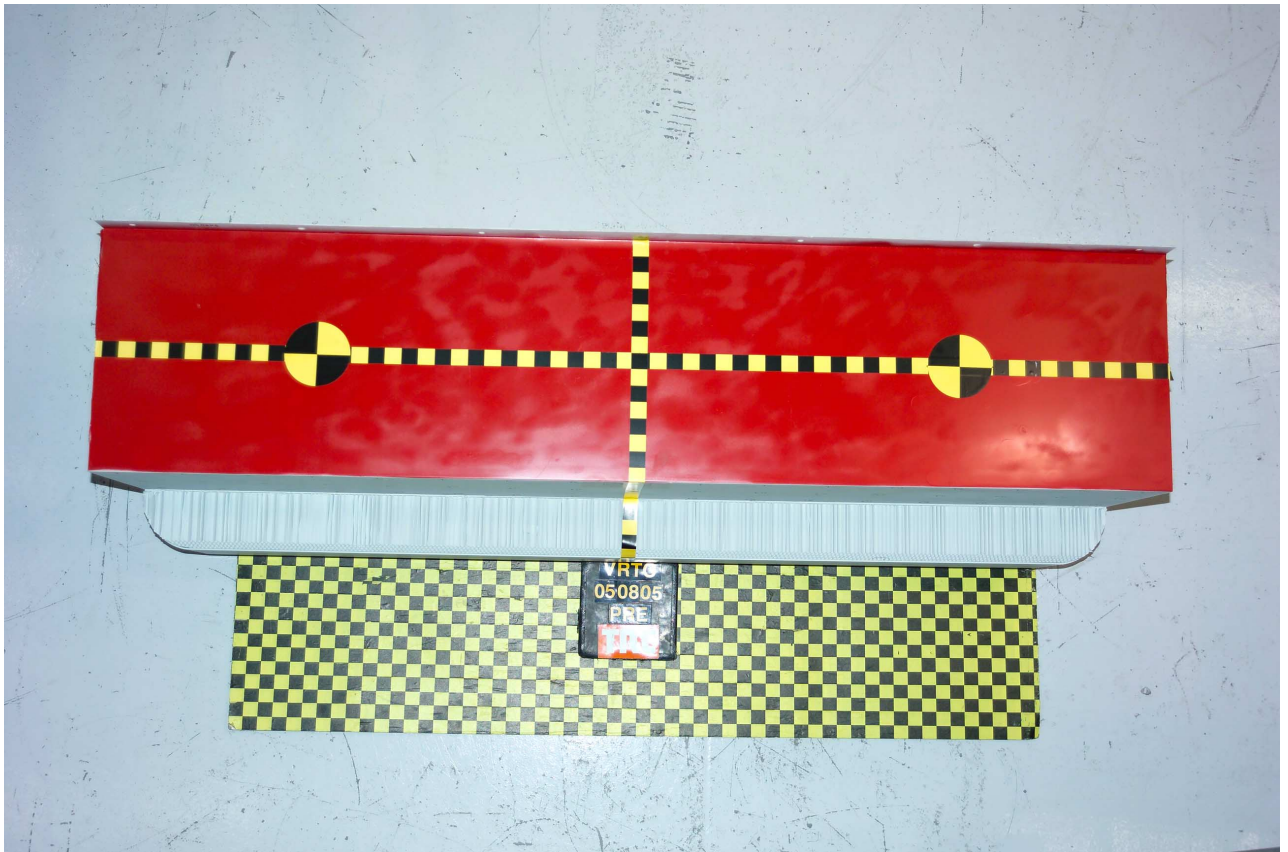


Figure A-35 Pre-Test Top View of Impactor Face

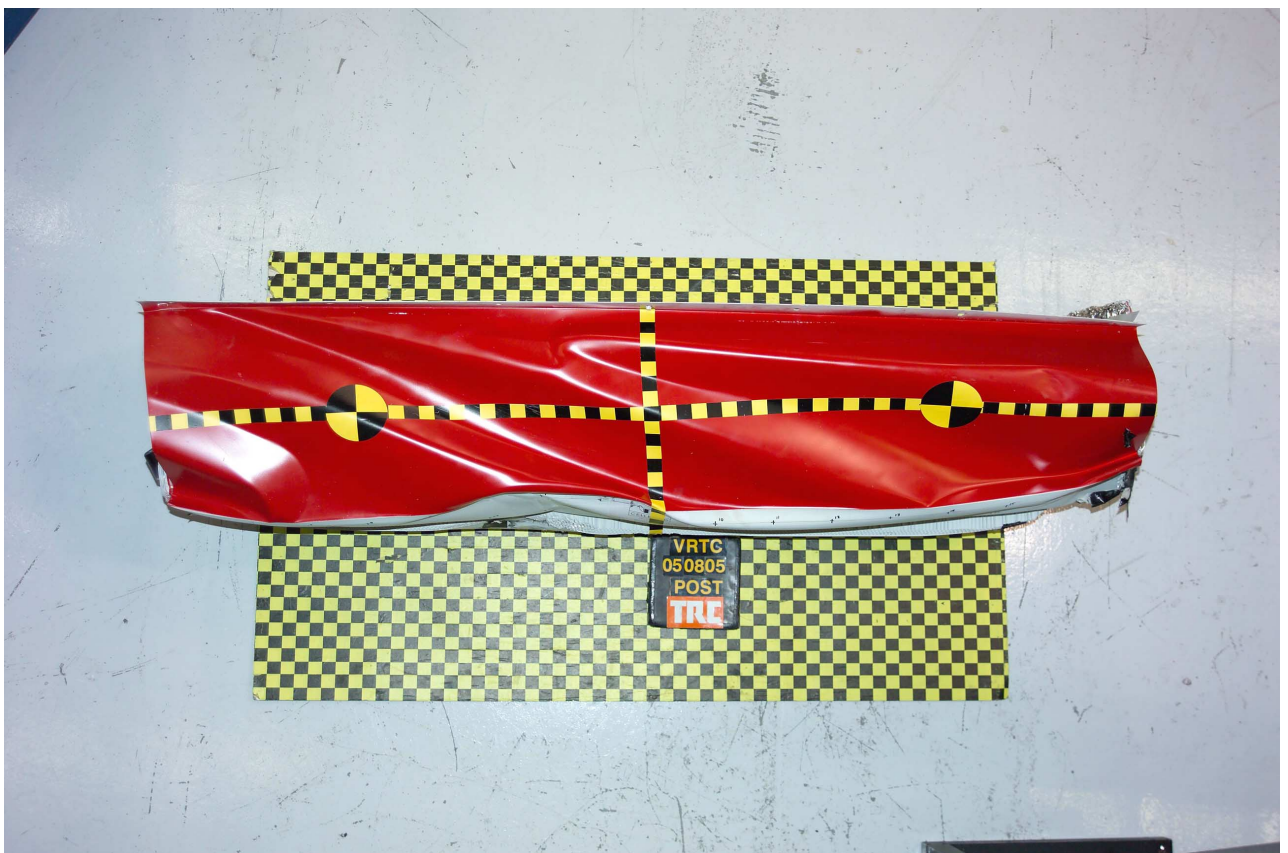


Figure A-36 Post-Test Top View of Impactor Face

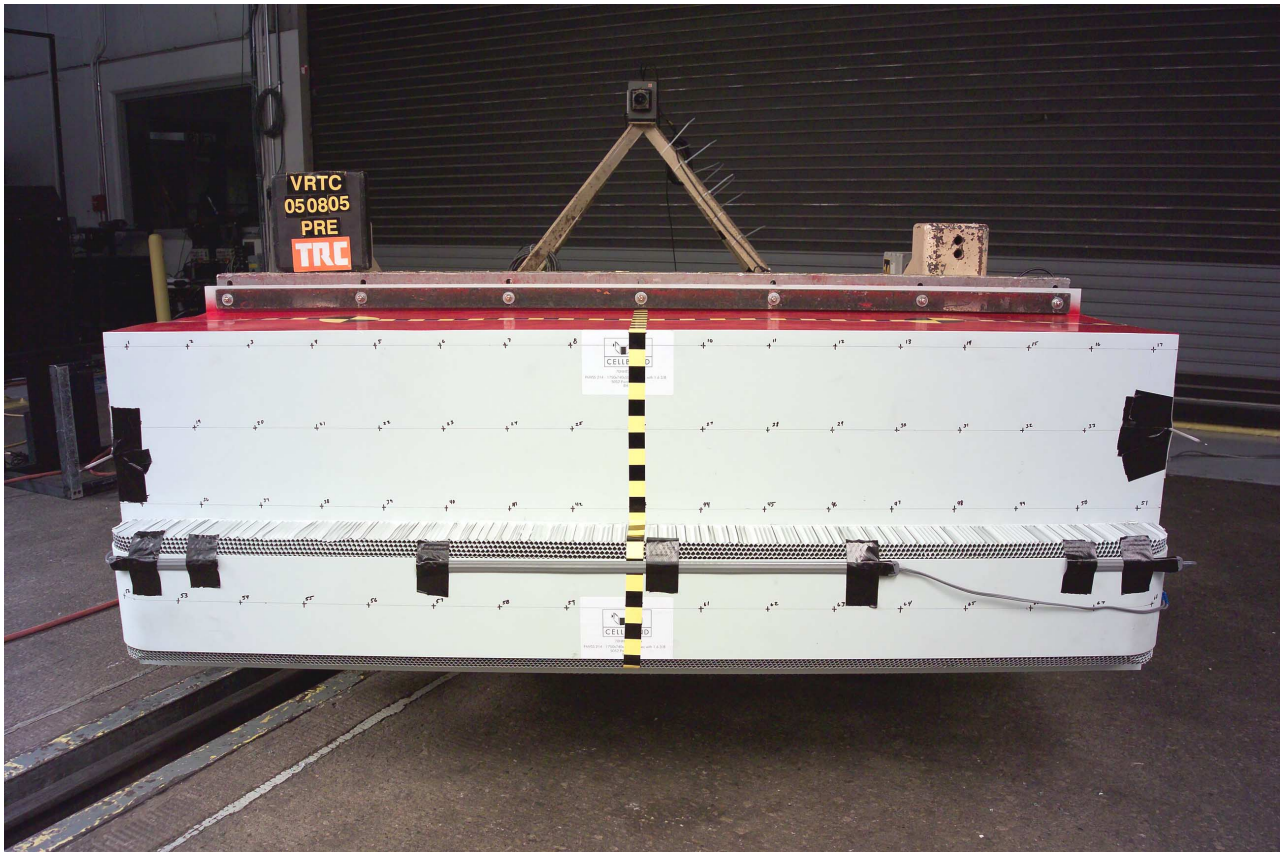


Figure A-37 Pre-Test View of MDB Showing Contact Switches in Place



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



Figure A-39 Pre-Test Primary Impact Point View



Figure A-40 Post-Test Primary Impact Point View



Figure A-41 Pre-Test Secondary Impact Point View



Figure A-42 Post-Test Secondary Impact Point View



Figure A-43 Pre-Test Fuel Filler Cap View



Figure A-44 Post-Test Fuel Filler Cap View



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



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

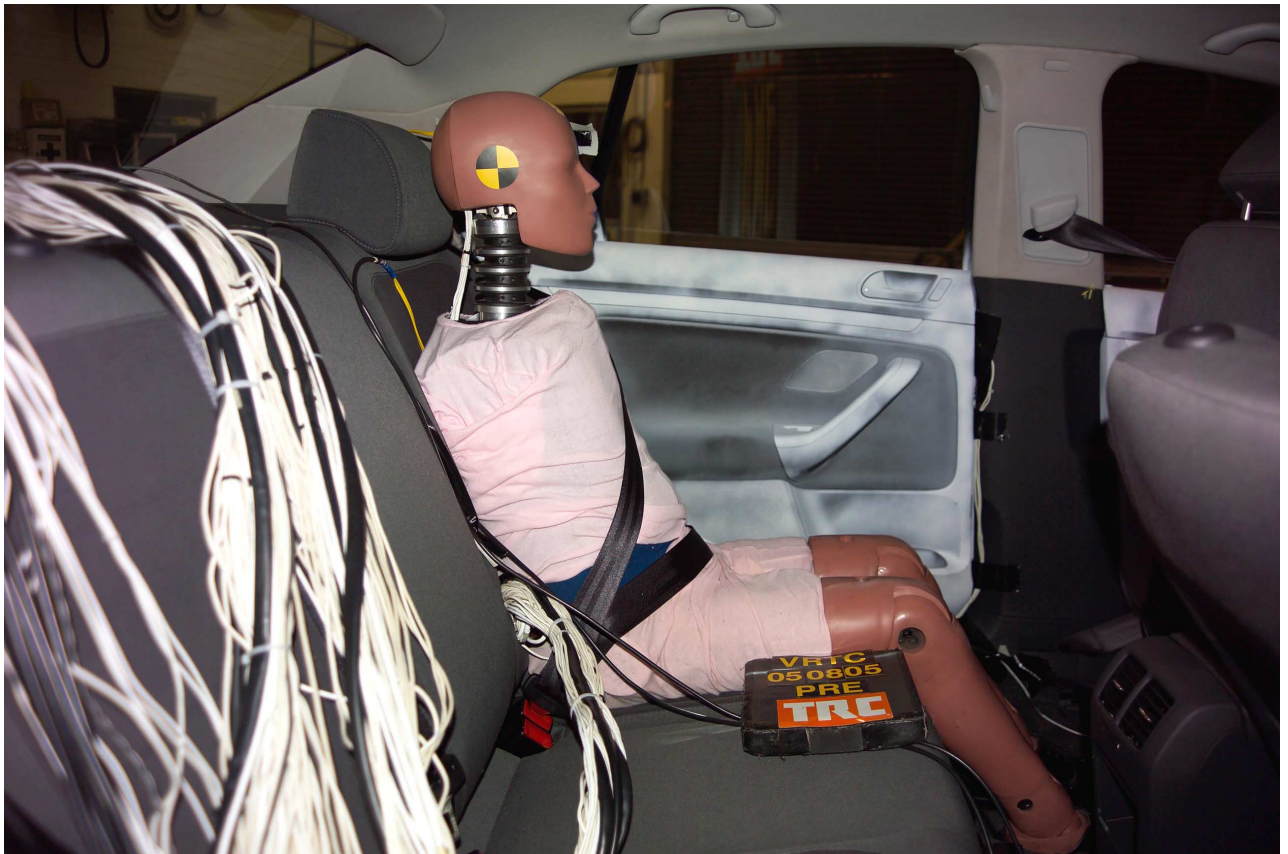


Figure A-47 Pre-Test Right Occupant Compartment View of Rear SID-IIs



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



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



Figure A-50 Post-Test Left View of Front SID-II's View



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

Intentionally Left Blank



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



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



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



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



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

Intentionally Left Blank

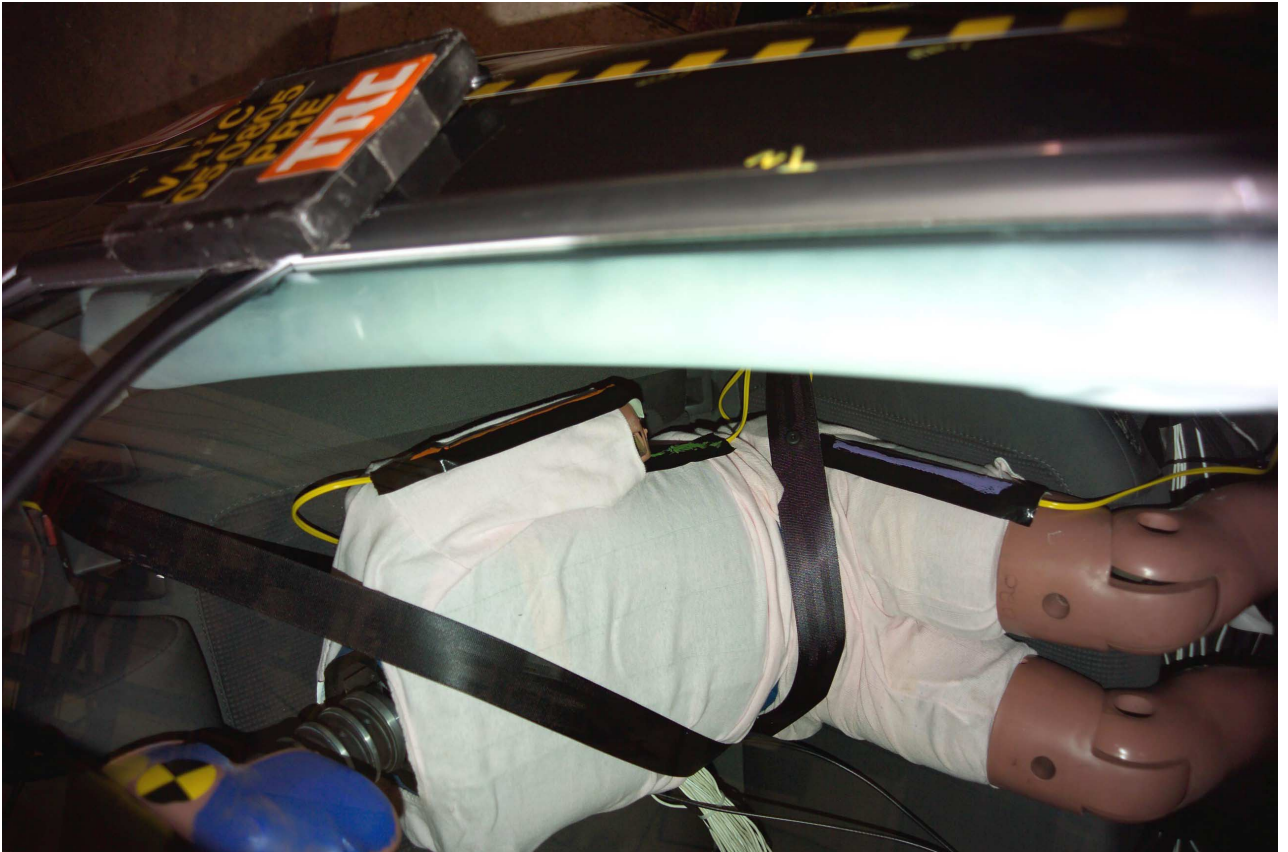


Figure A-57 Pre-Test Left View of Rear SID-II and Door Clearance



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



Figure A-59 Pre-Test Interior of Front Door



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



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



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



Figure A-63 Post-Test Front SID-IIs Contact - View 3

Intentionally Left Blank



Figure A-64 Pre-Test Interior of Rear Door



Figure A-65 Post-Test Interior of Rear Door Showing SID-II's Impact Locations



Figure A-66 Post-Test Rear SID-II Contact - View 1



Figure A-67 Post-Test Rear SID-II Contact - View 2



Figure A-68 Post-Test Rear SID-IIs Contact - View 3

Intentionally Left Blank



Figure A-69 Pre-Test Barrier Face Front View

Intentionally Left Blank



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



Figure A-71 Post-Test Barrier Face Left Side View



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



Figure A-73 Post-Test Barrier Face Right Side View

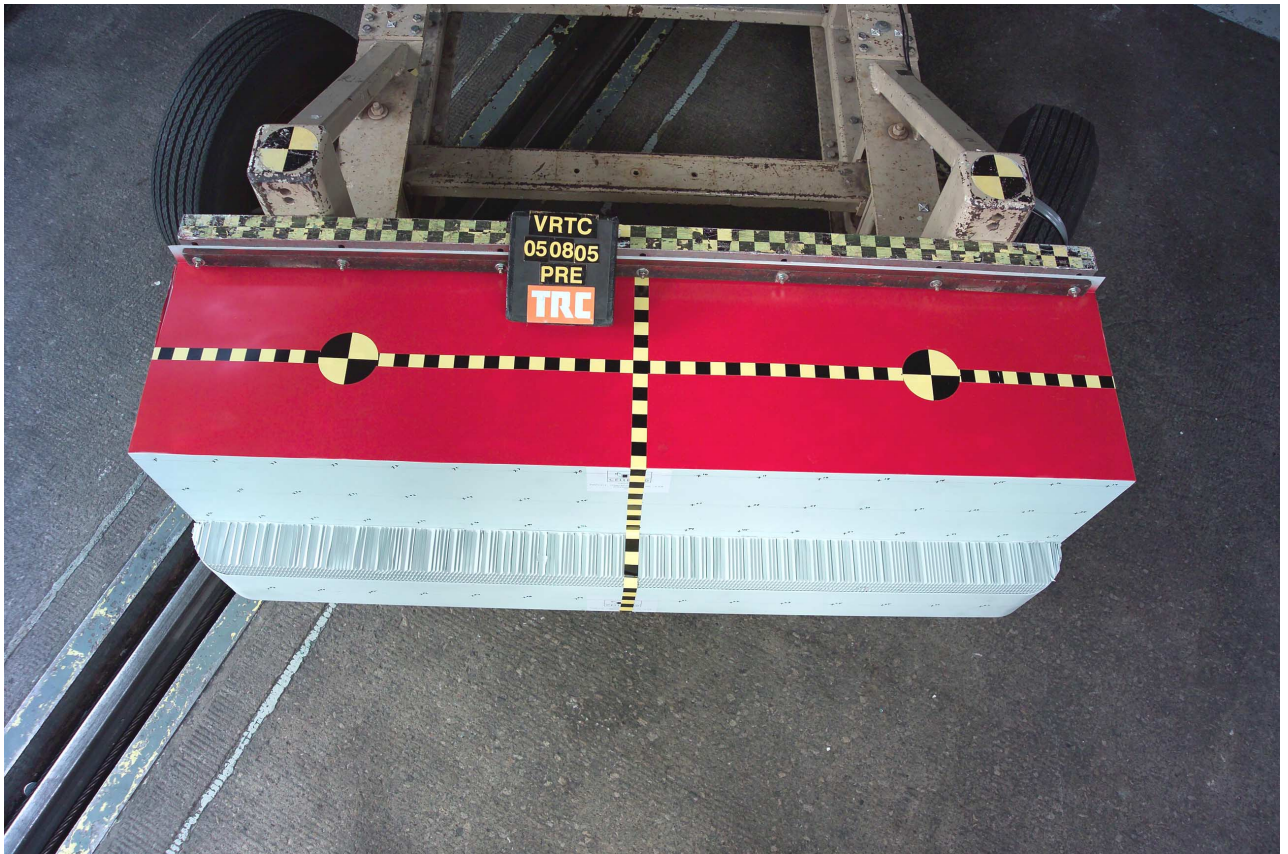


Figure A-74 Pre-Test Barrier Face Overhead View



Figure A-75 Post-Test Barrier Face Overhead View

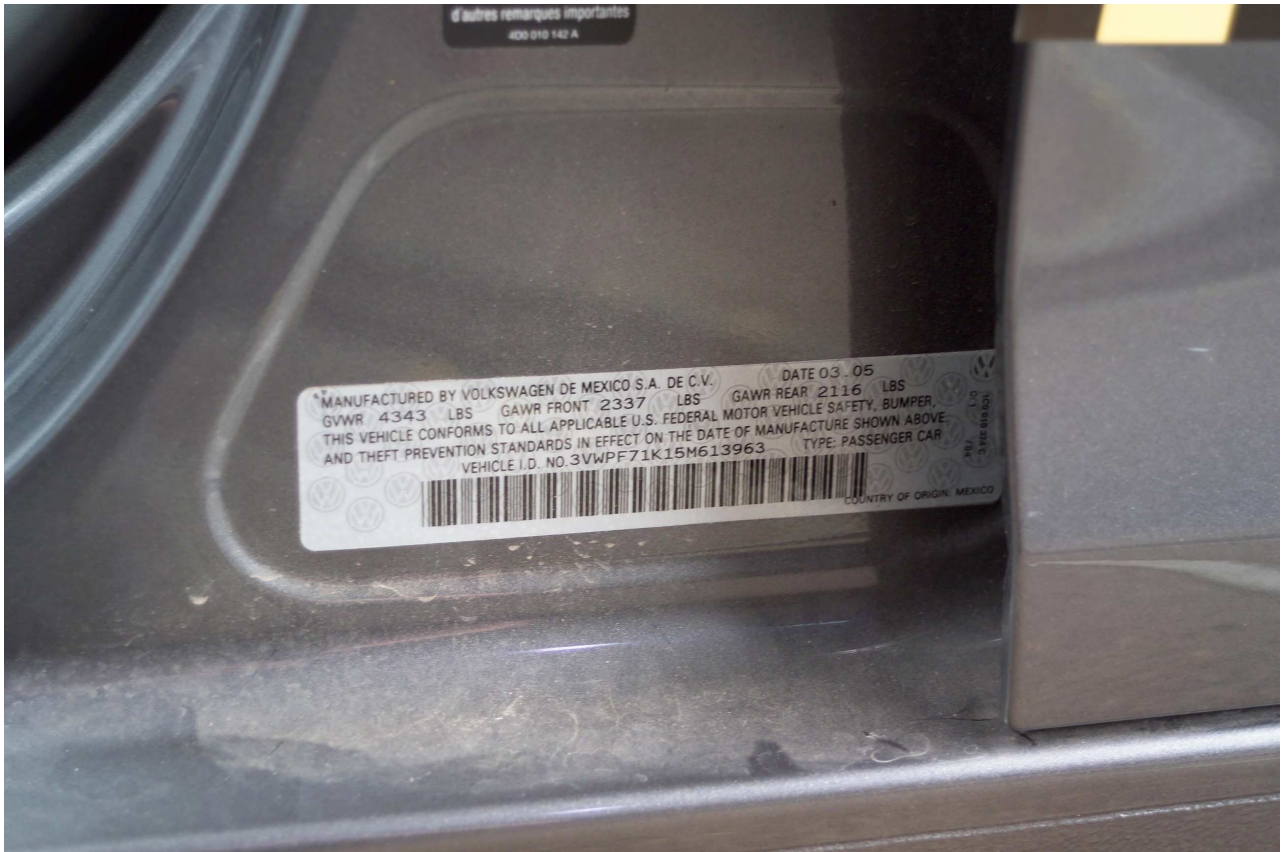


Figure A-76 Vehicle Certification Label View



Figure A-77 Vehicle Tire Load Label View

Appendix B

Data Plots



MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

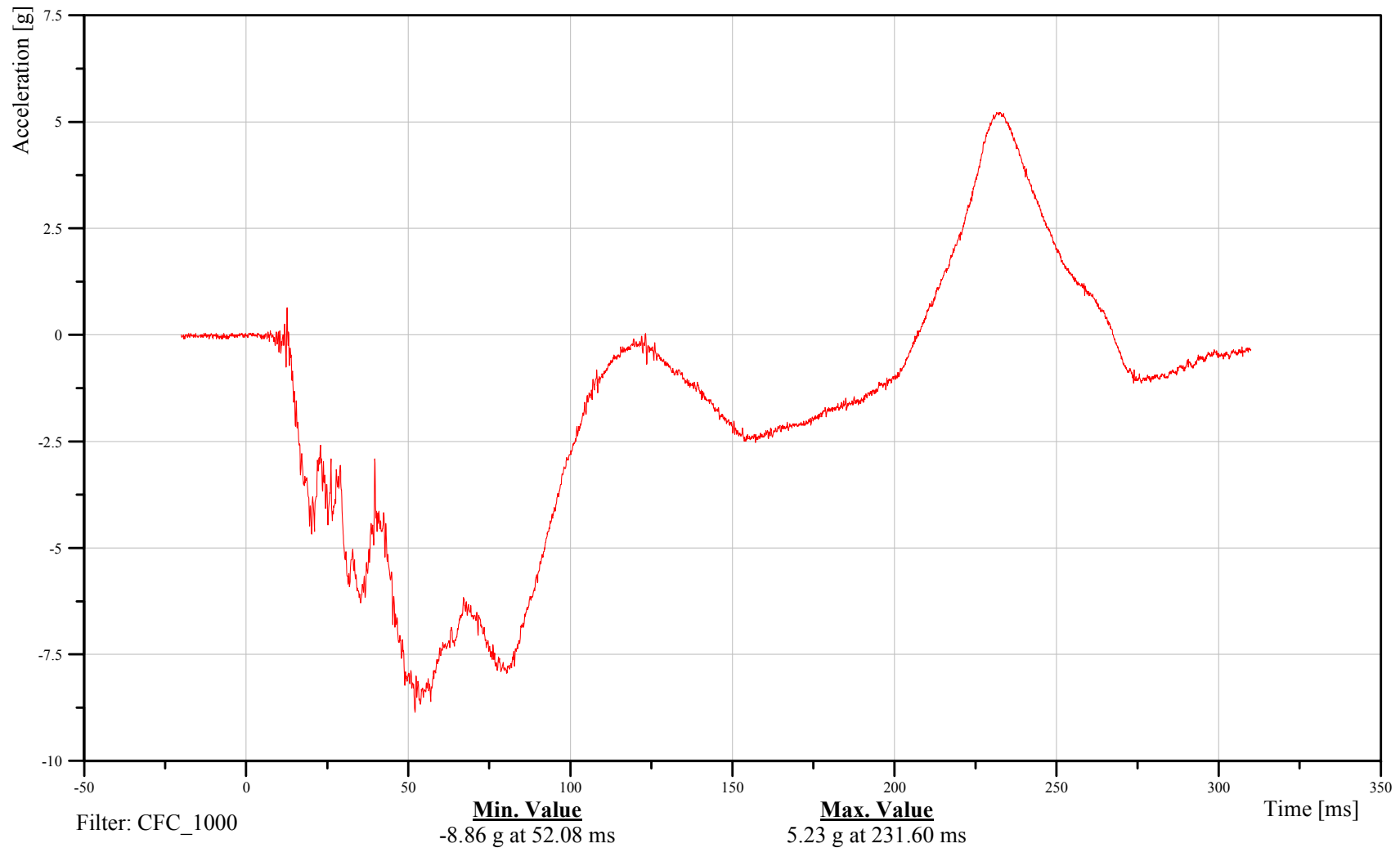
Head Accel X

Customer: VRTC

11HEADCG00S2ACXA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

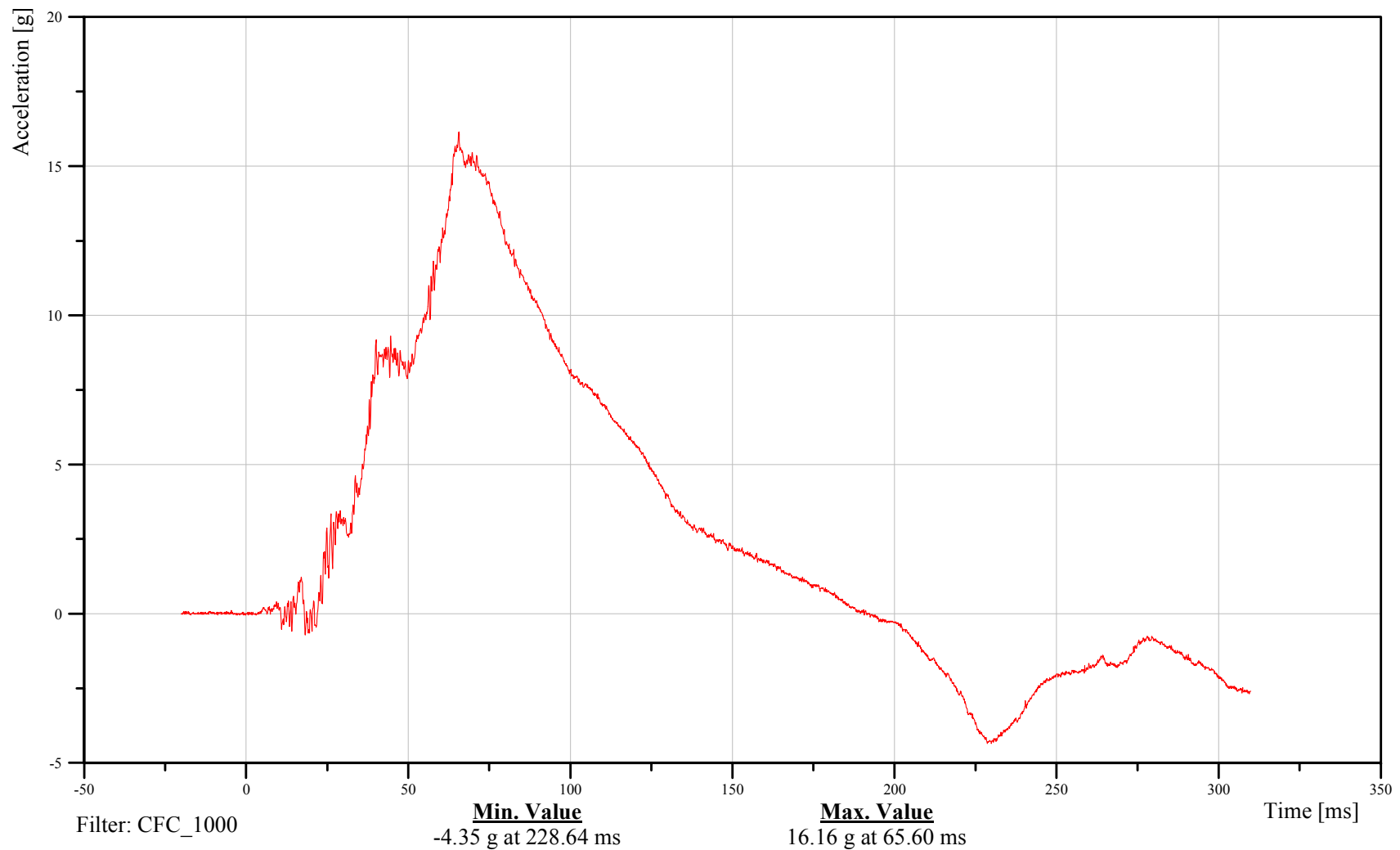
Head Accel Y

Customer: VRTC

11HEADCG00S2ACYA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Head Accel Z

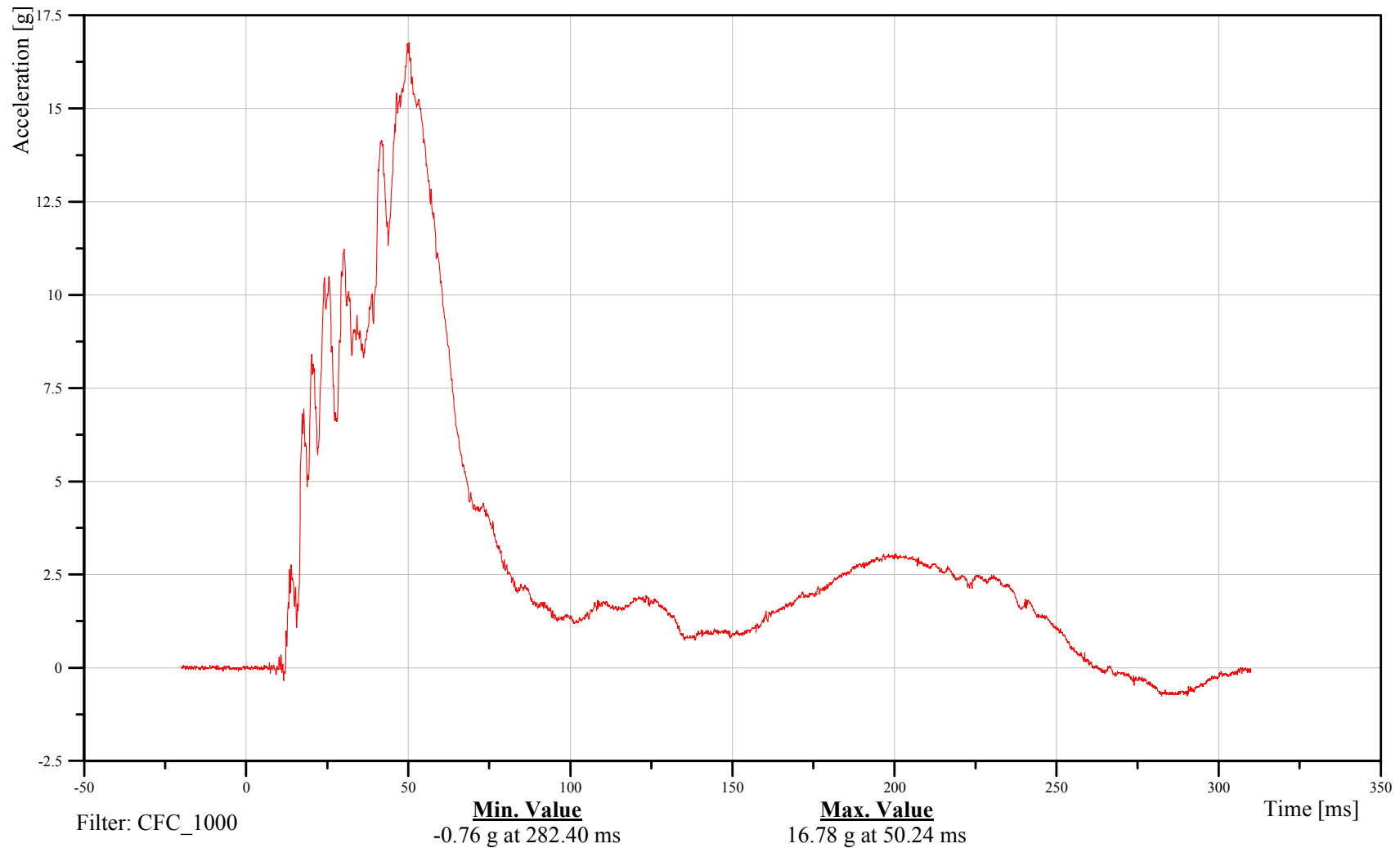
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11HEADCG00S2ACZA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

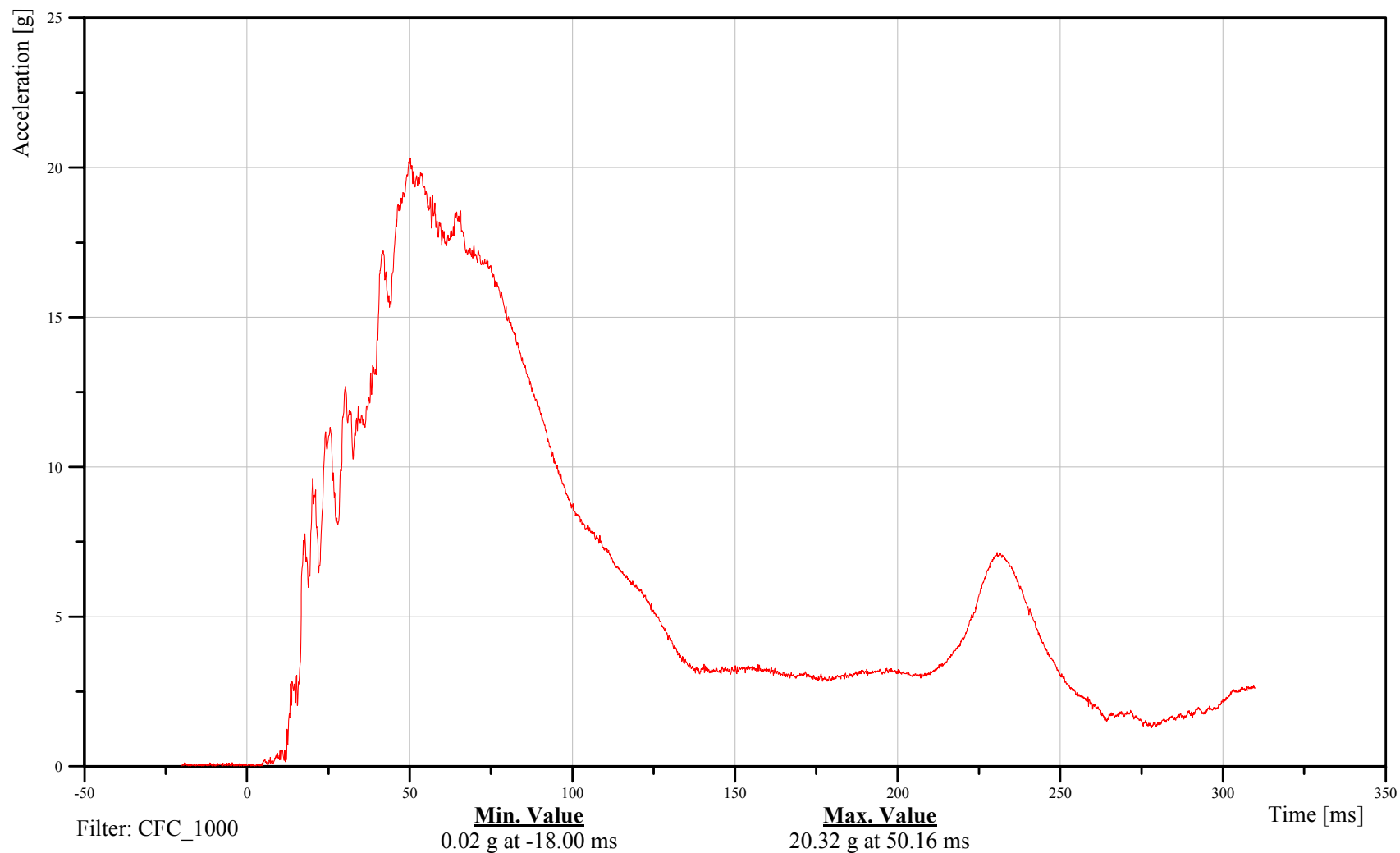
Head Accel Resultant

Customer: VRTC

11HEADCG00S2ACRA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

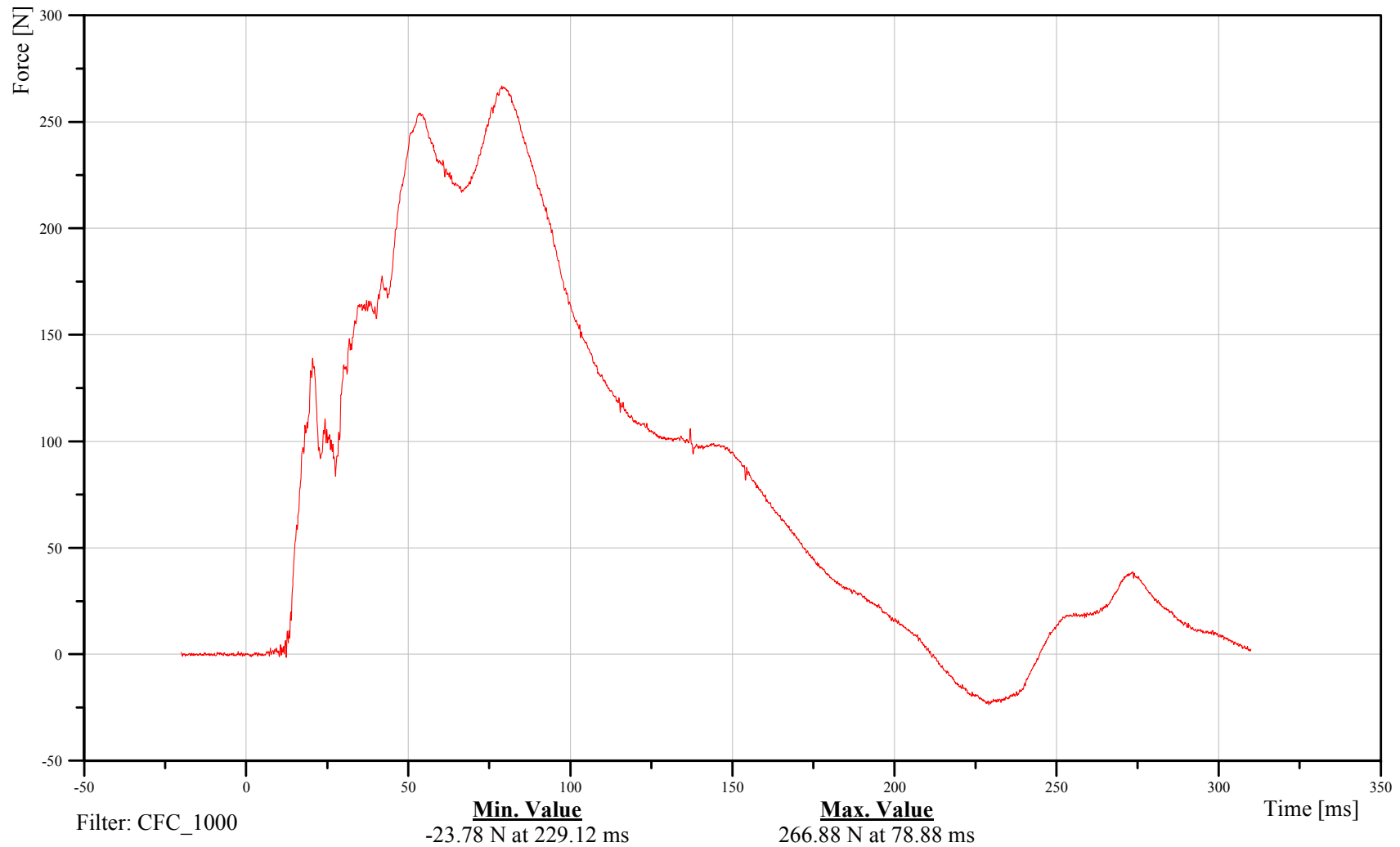
Neck Force X

Customer: VRTC

11NECKUP00S2FOXA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

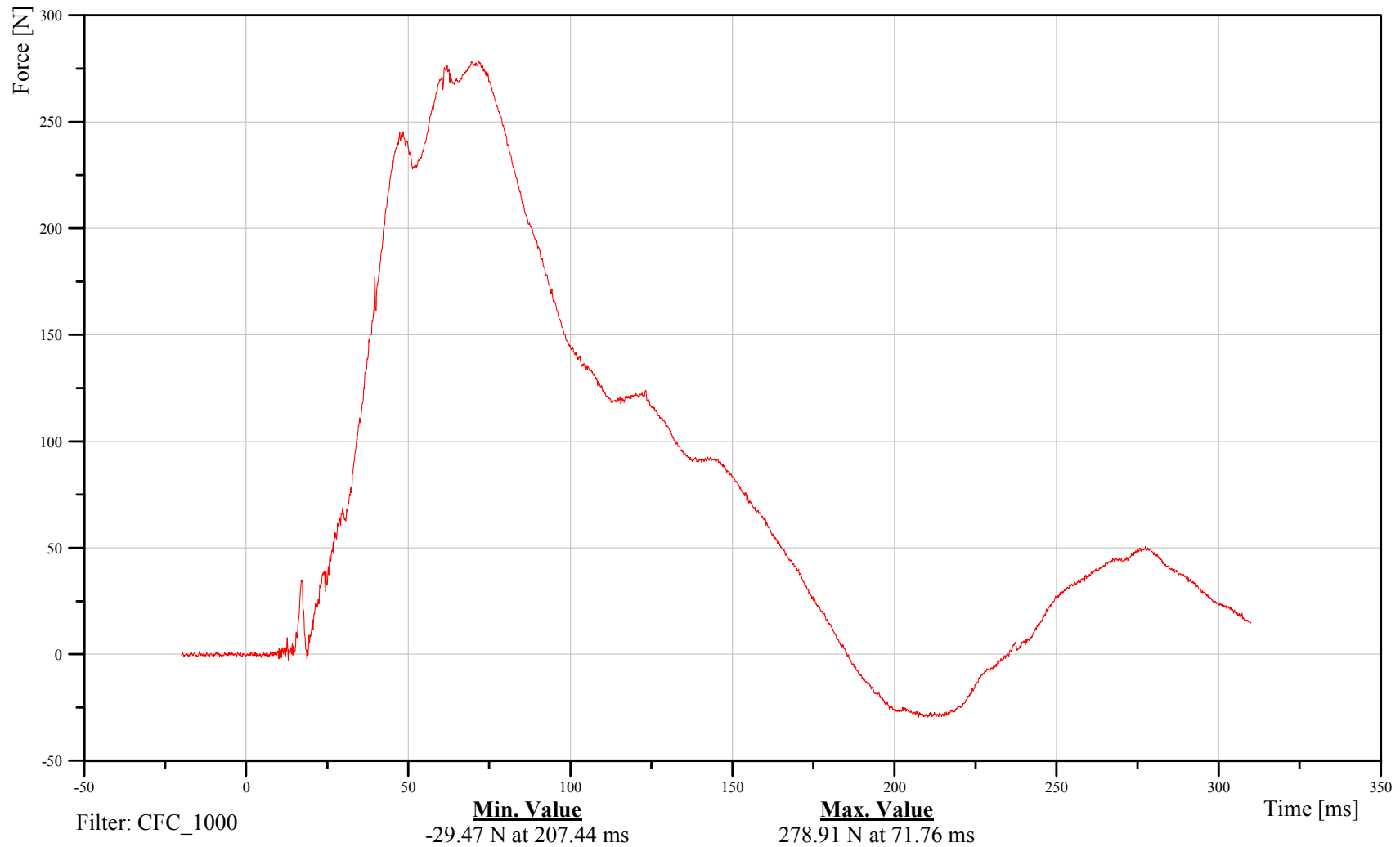
Neck Force Y

Customer: VRTC

11NECKUP00S2FOYA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

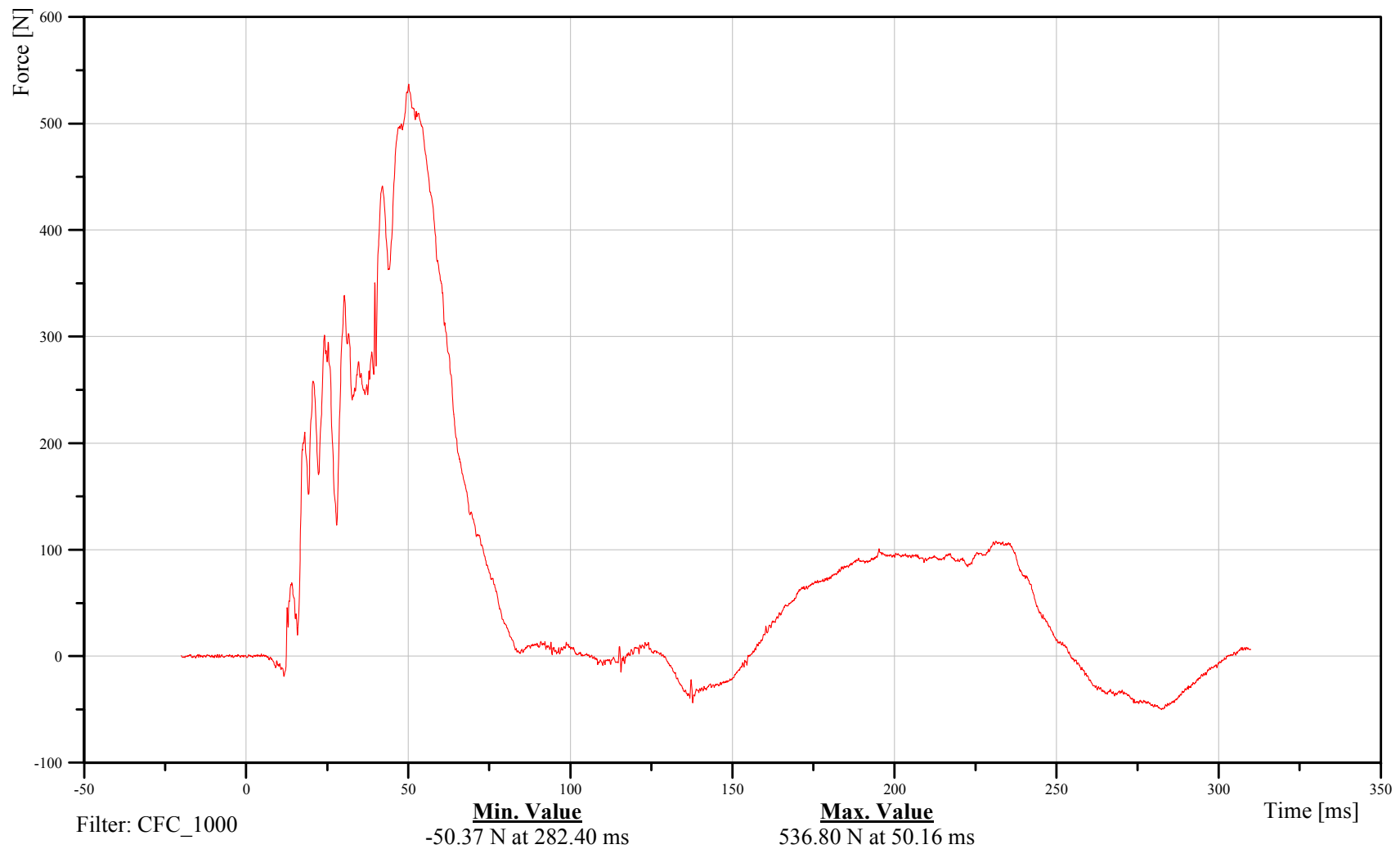
Neck Force Z

Customer: VRTC

11NECKUP00S2FOZA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

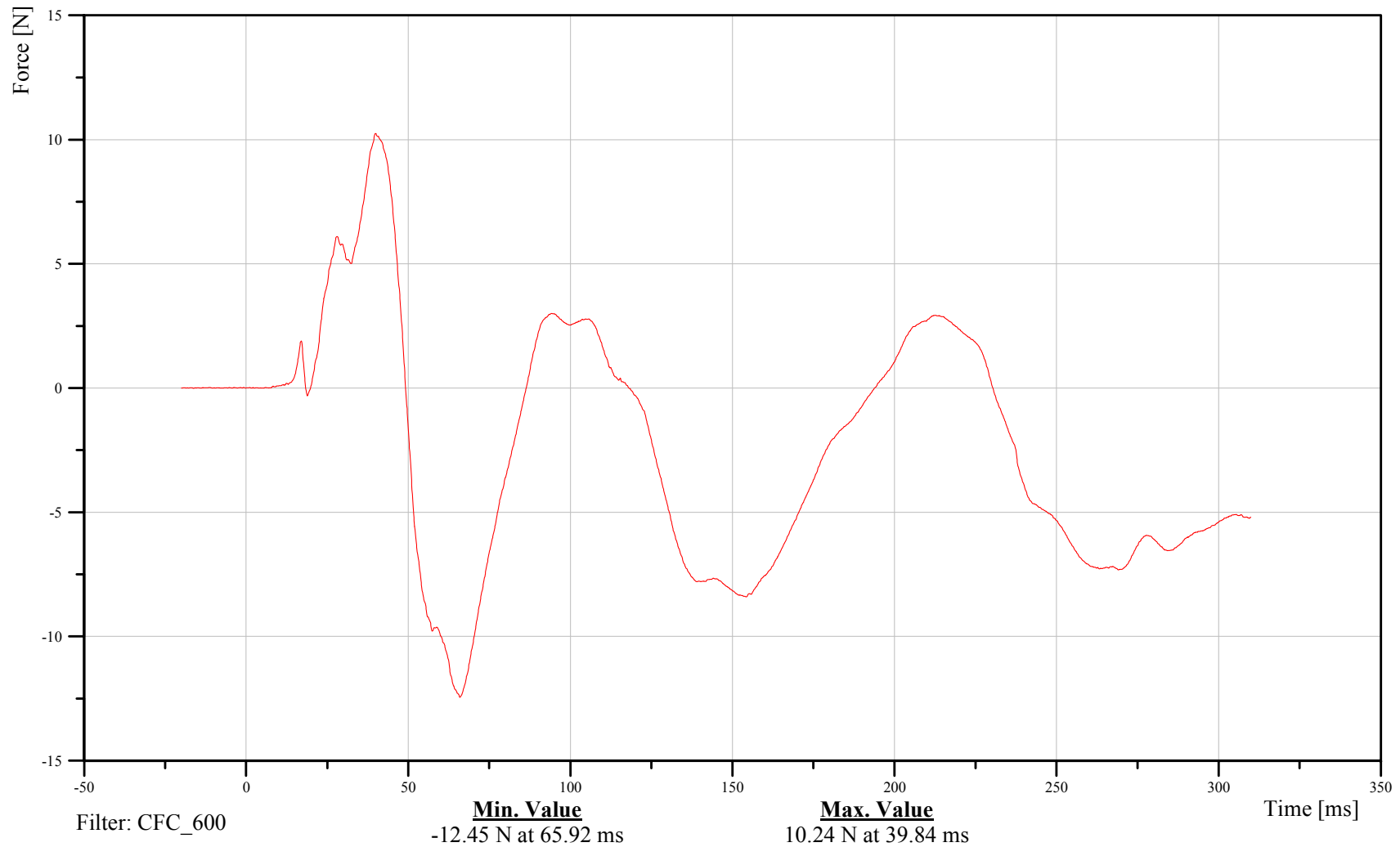
Neck Moment X

Customer: VRTC

11NECKUP00S2MOXB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Neck Moment Y

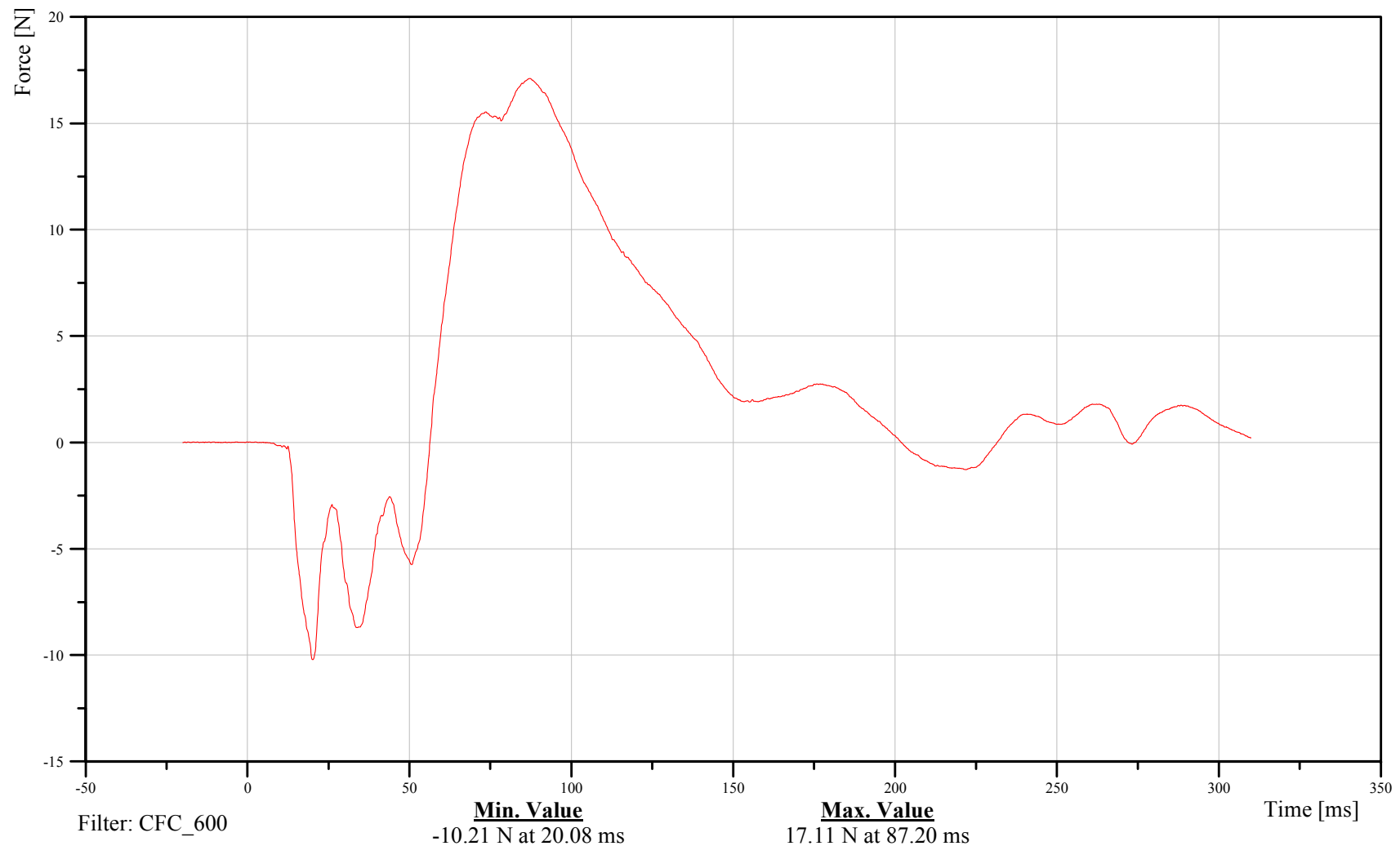
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11NECKUP00S2MOYB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

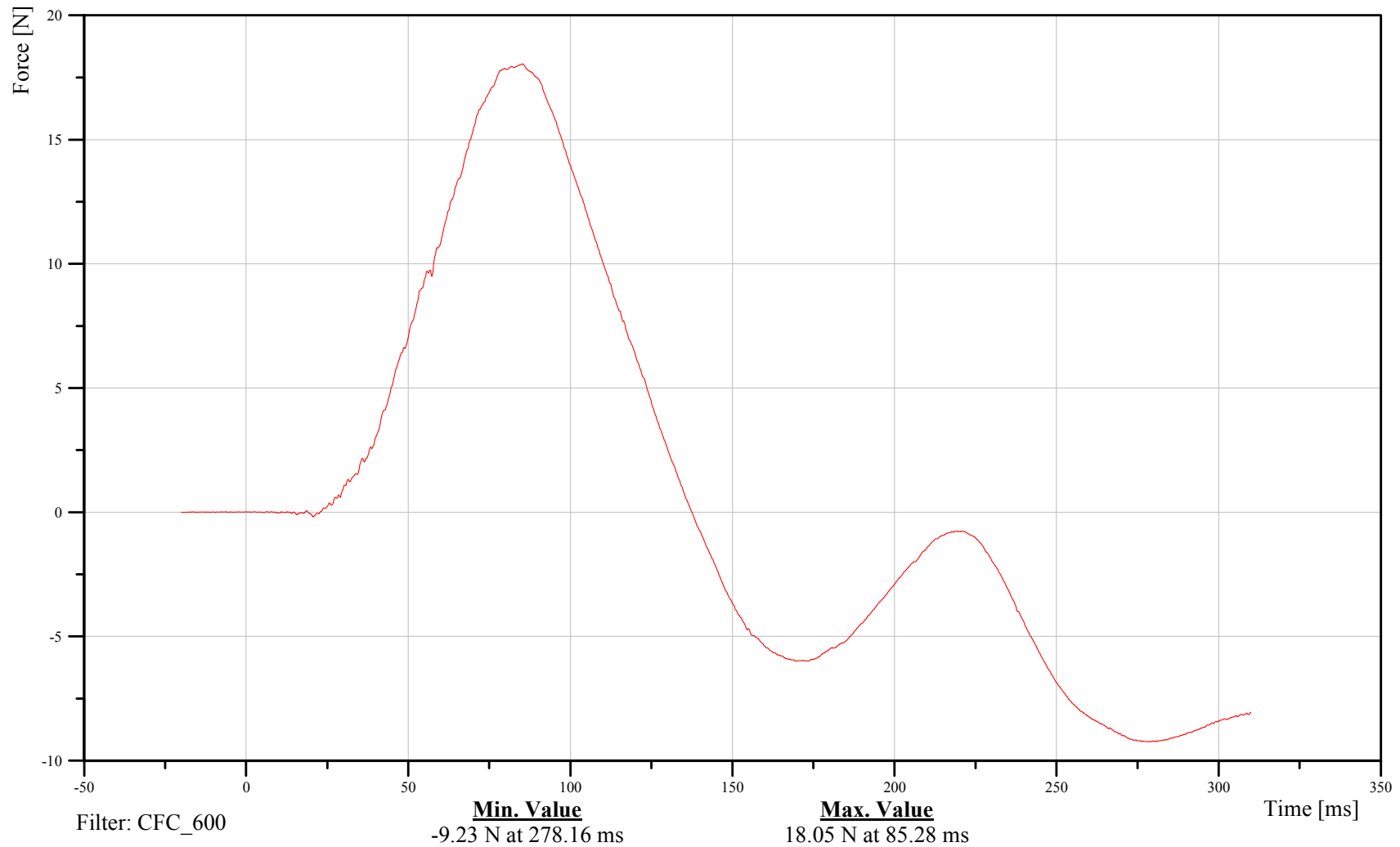
Neck Moment Z

Customer: VRTC

11NECKUP00S2MOZB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Shoulder Accel X

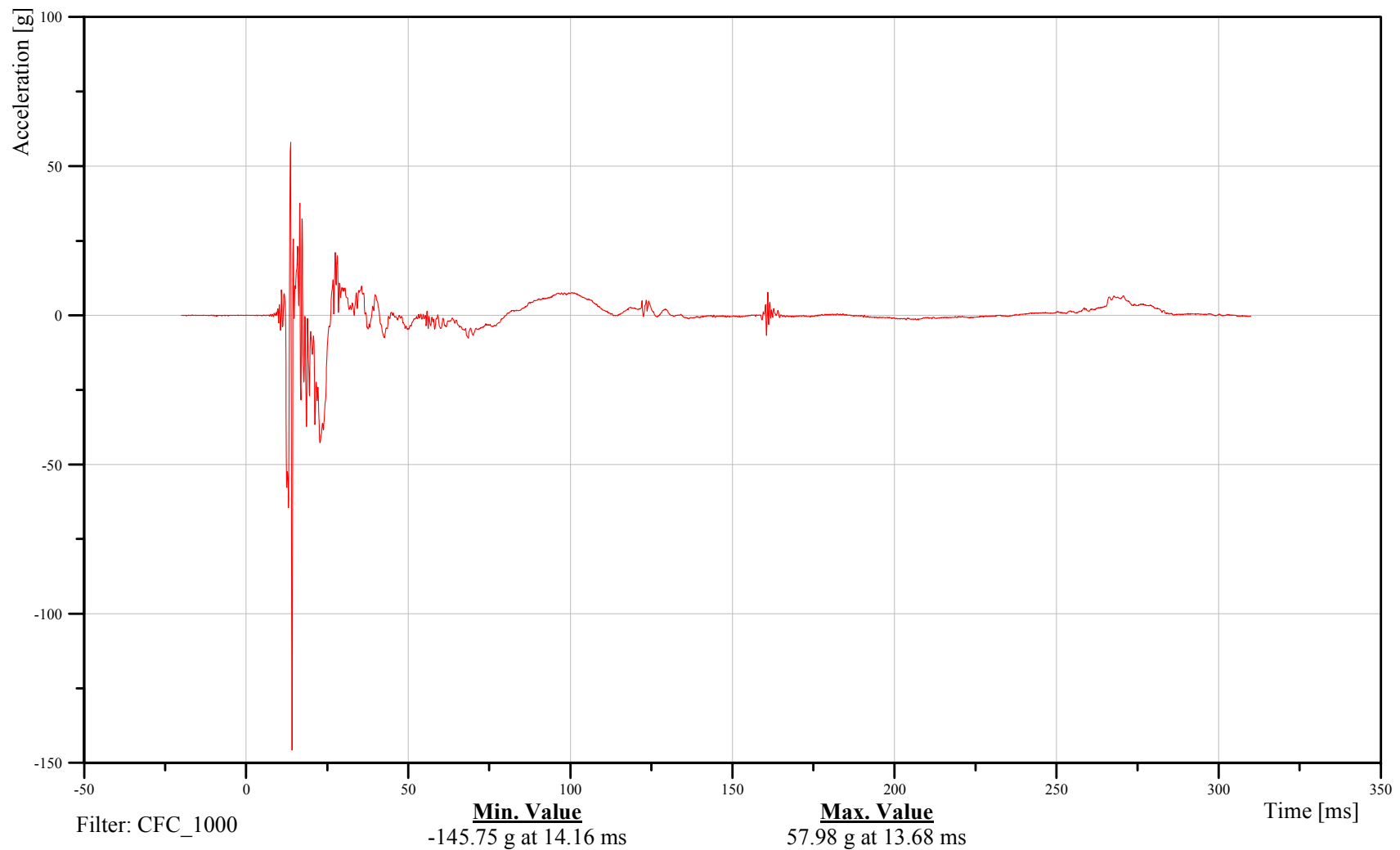
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11SHLDLE00S2ACXA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Shoulder Accel Y

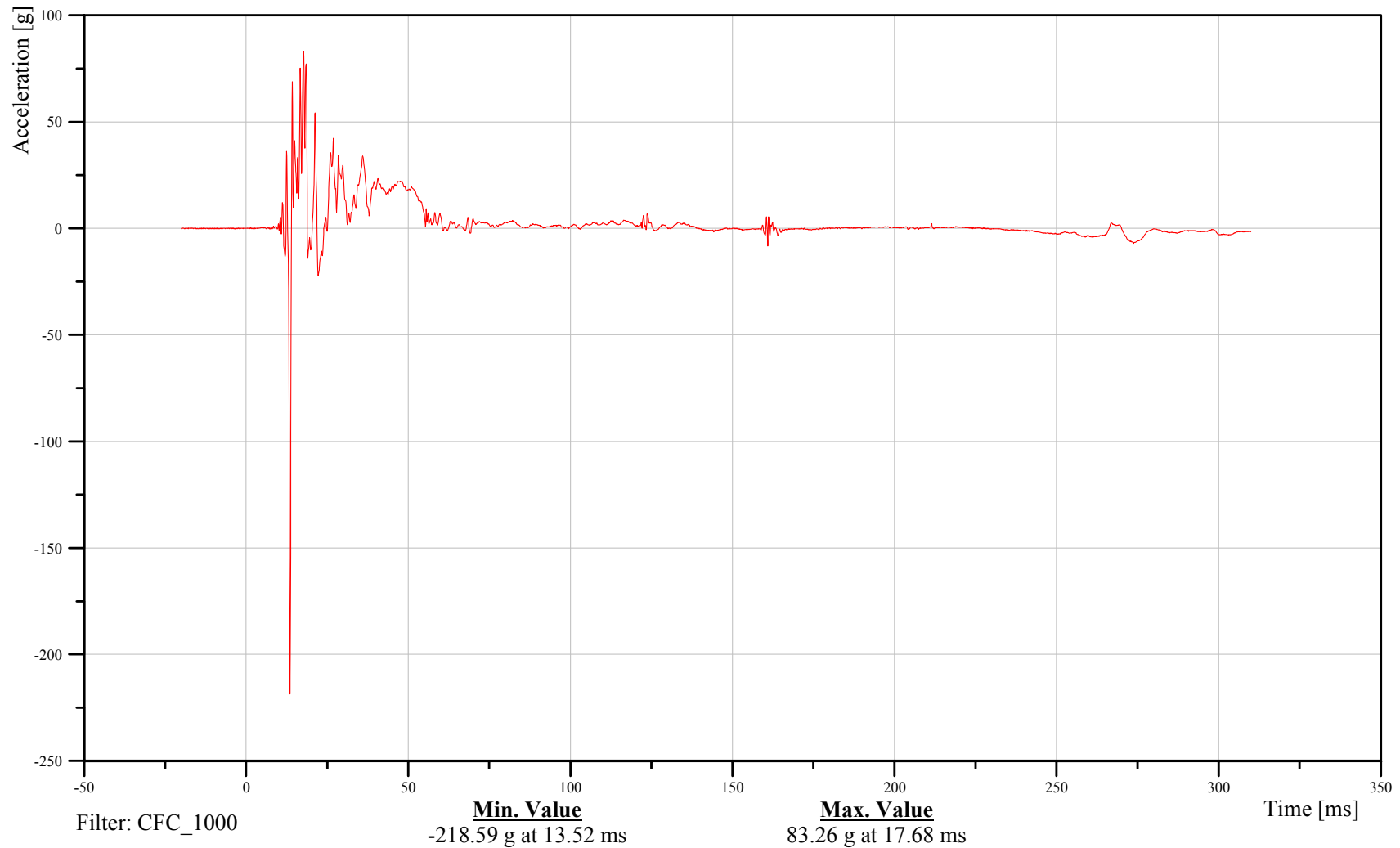
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11SHLDLE00S2ACYA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Shoulder Accel Z

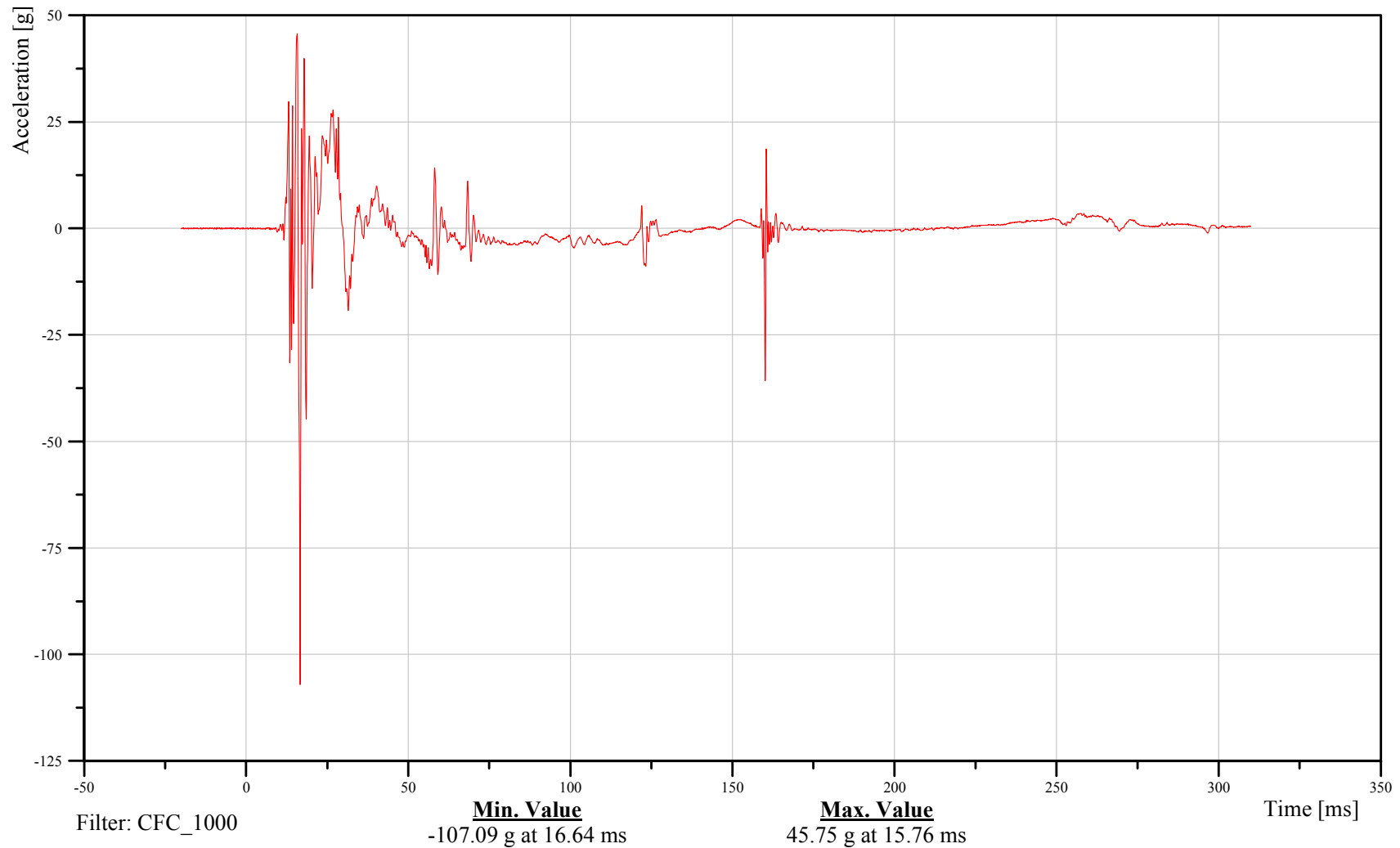
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11SHLDLE00S2ACZA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

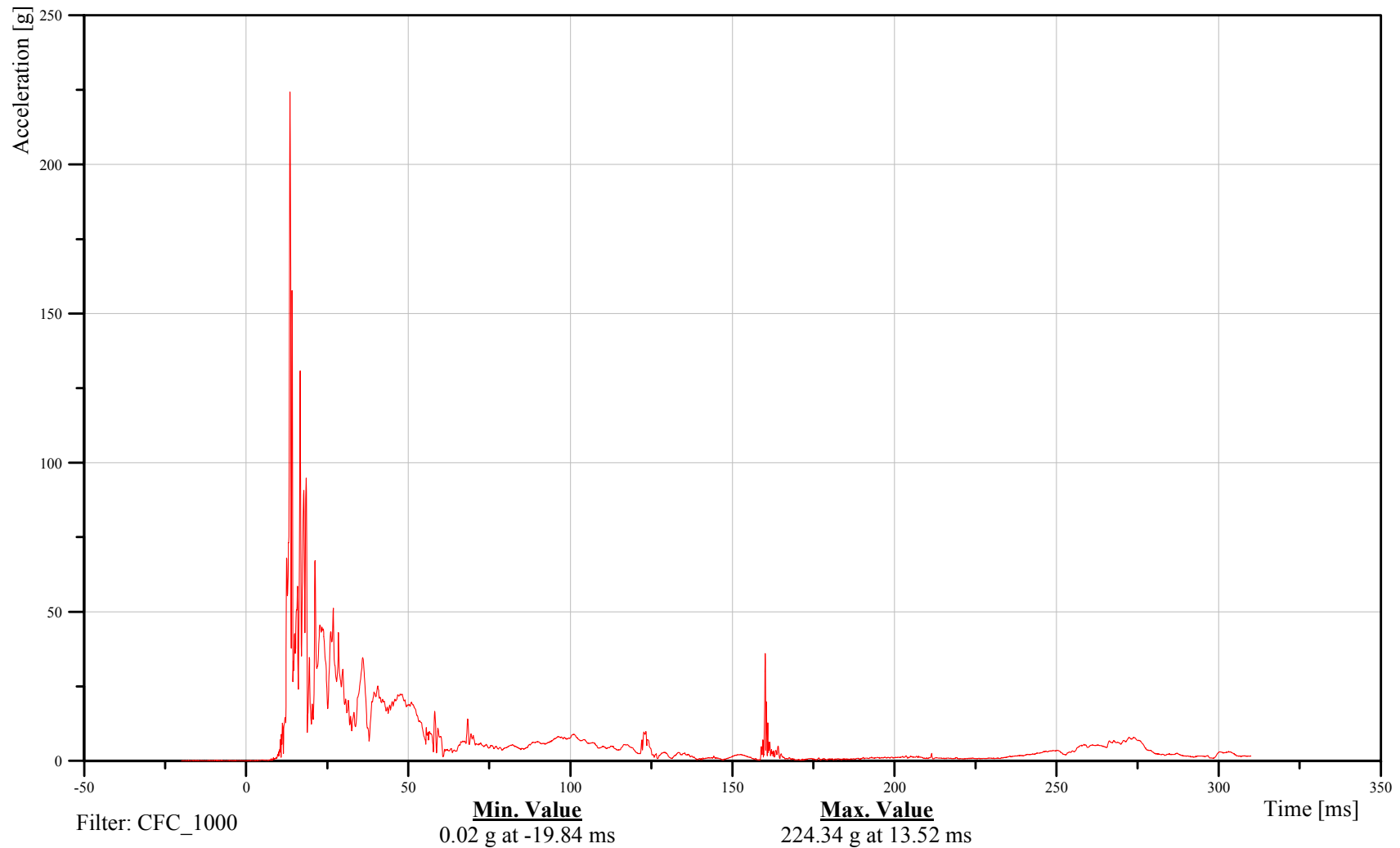
Shoulder Accel Resultant

Customer: VRTC

11SHLDLE00S2ACRA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Shoulder Force X

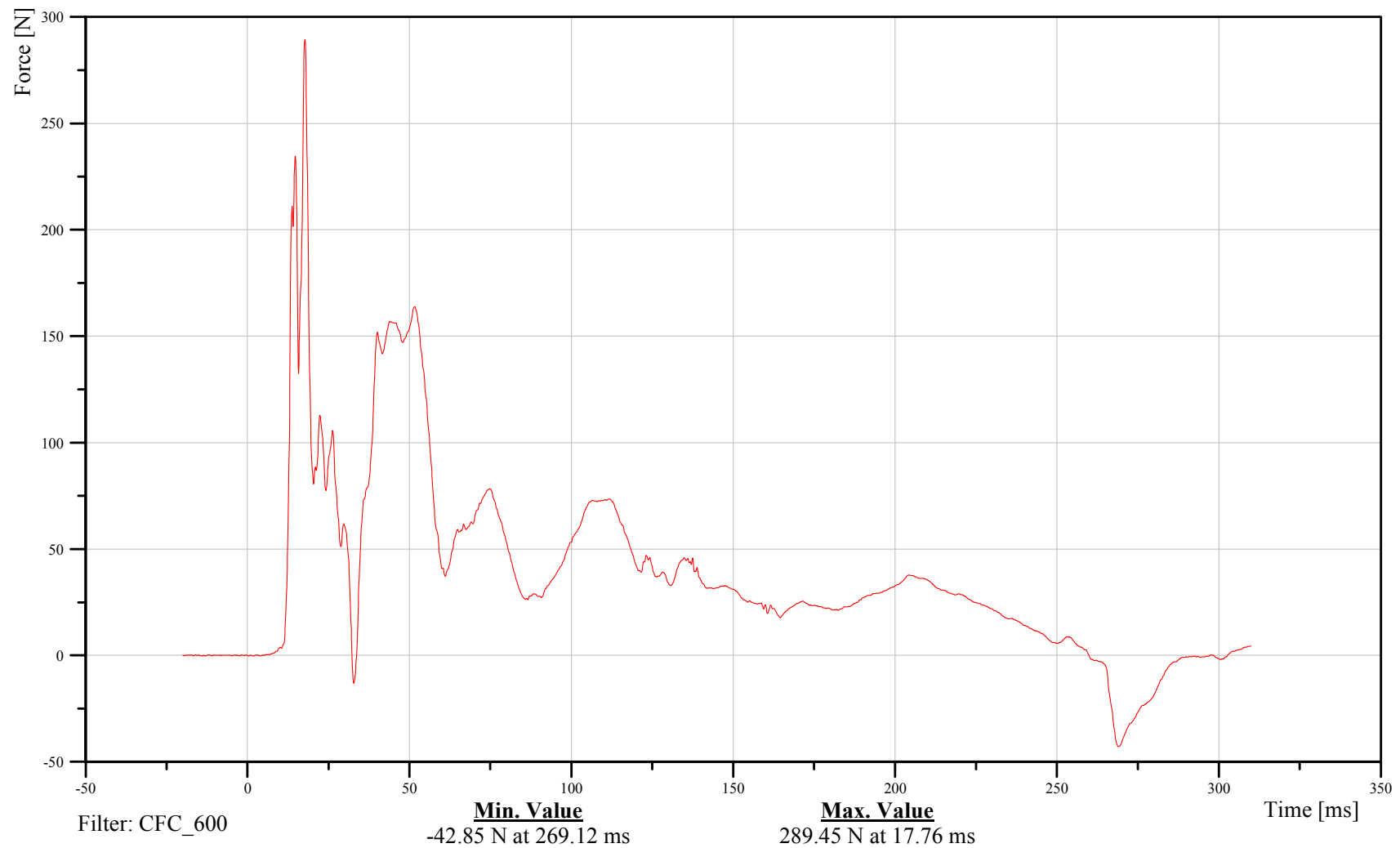
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11SHLDLE00S2FOXB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Shoulder Force Y

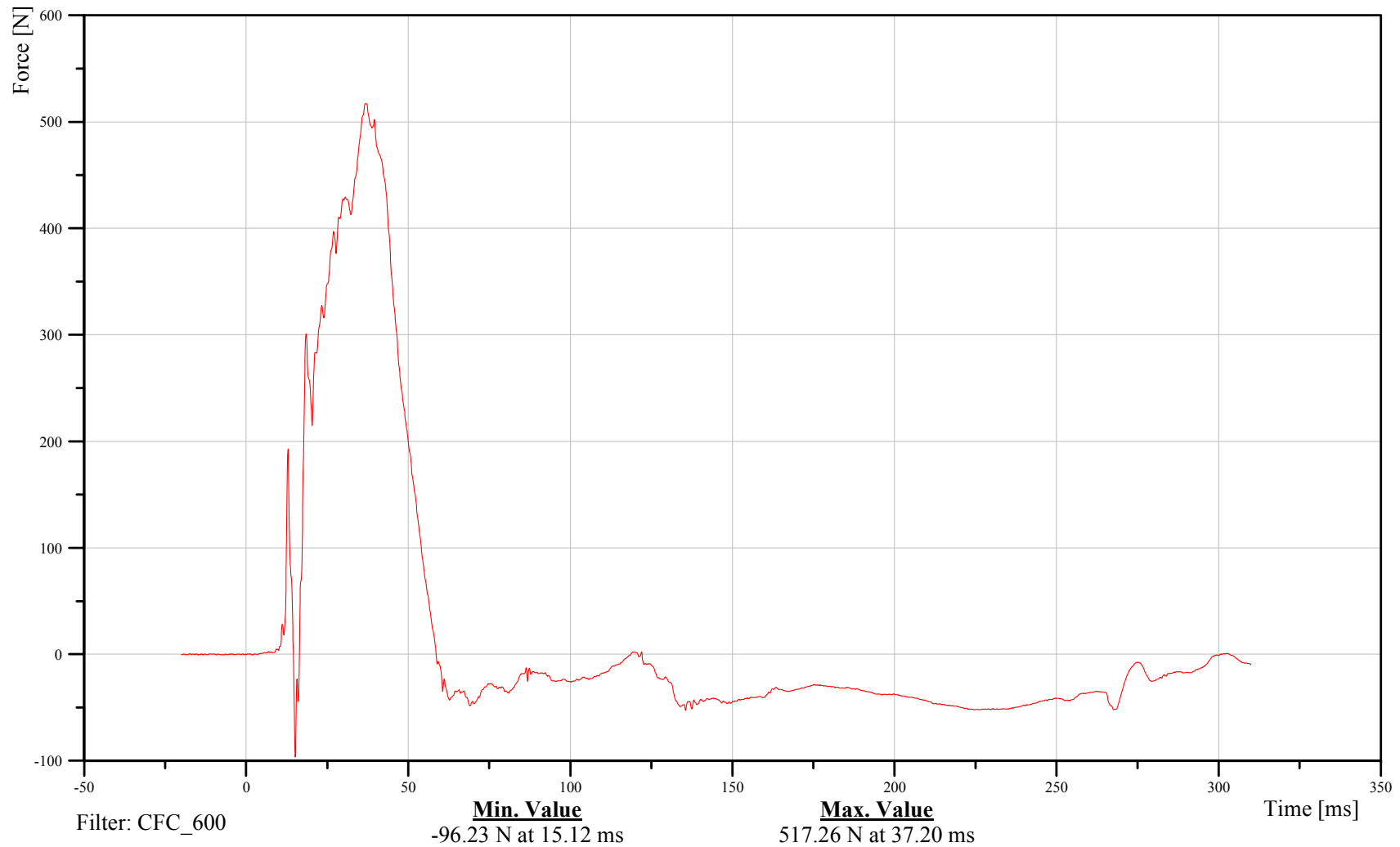
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11SHLDLE00S2FOYB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

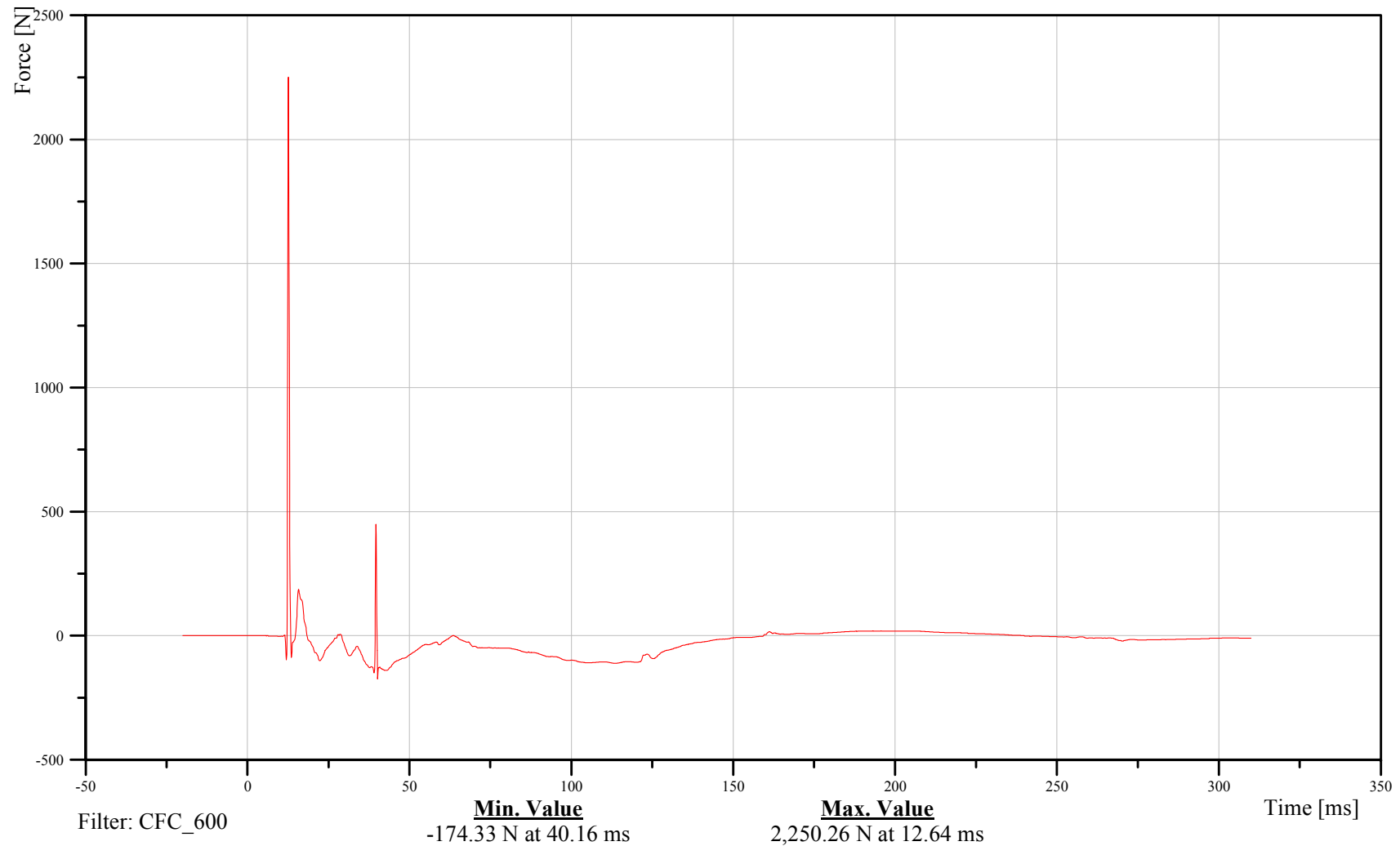
Shoulder Force Z

Customer: VRTC

11SHLDLE00S2FOZB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

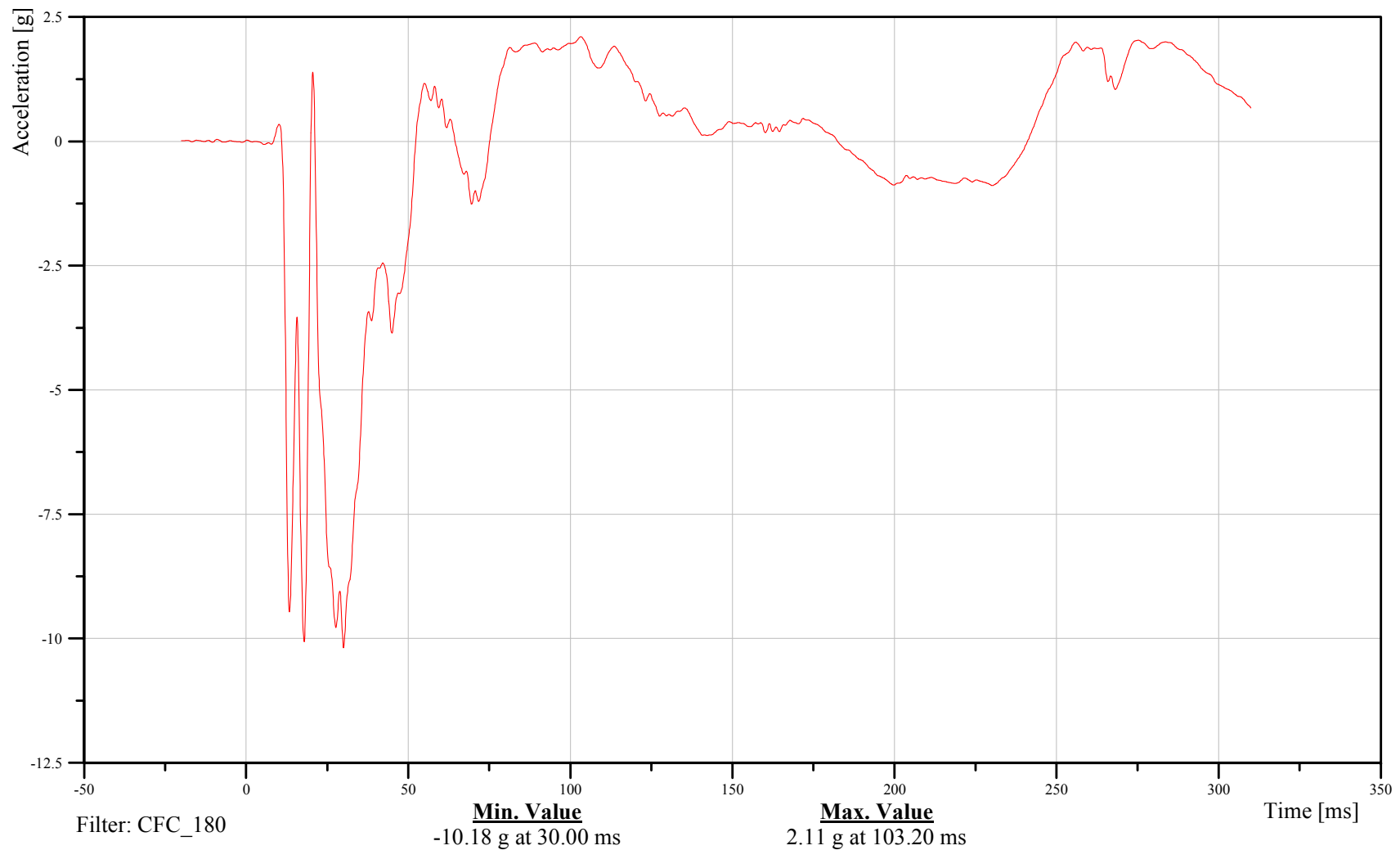
Upper Spine Accel X

Customer: VRTC

11SPIN0100S2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

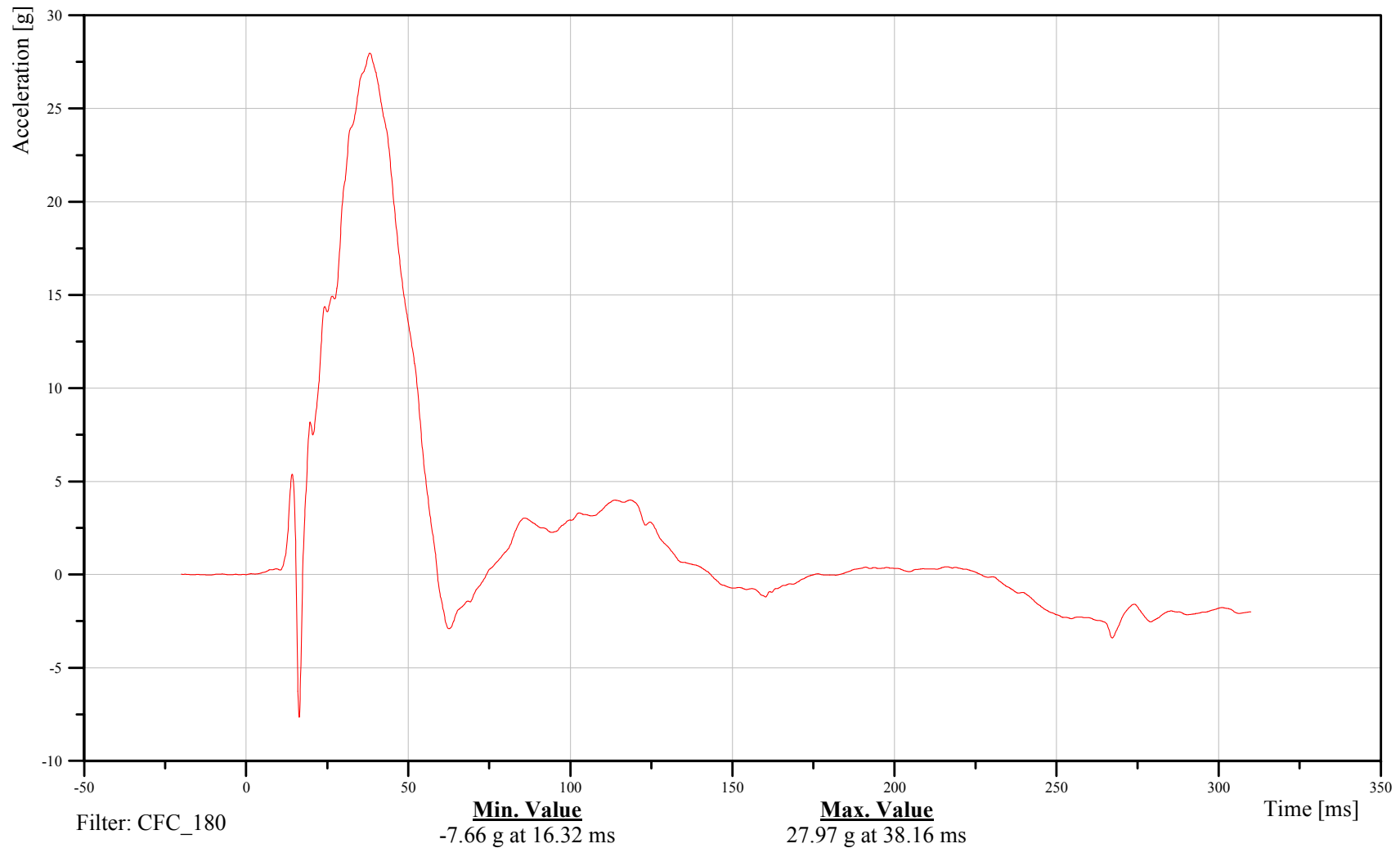
Upper Spine Accel Y

Customer: VRTC

11SPIN0100S2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

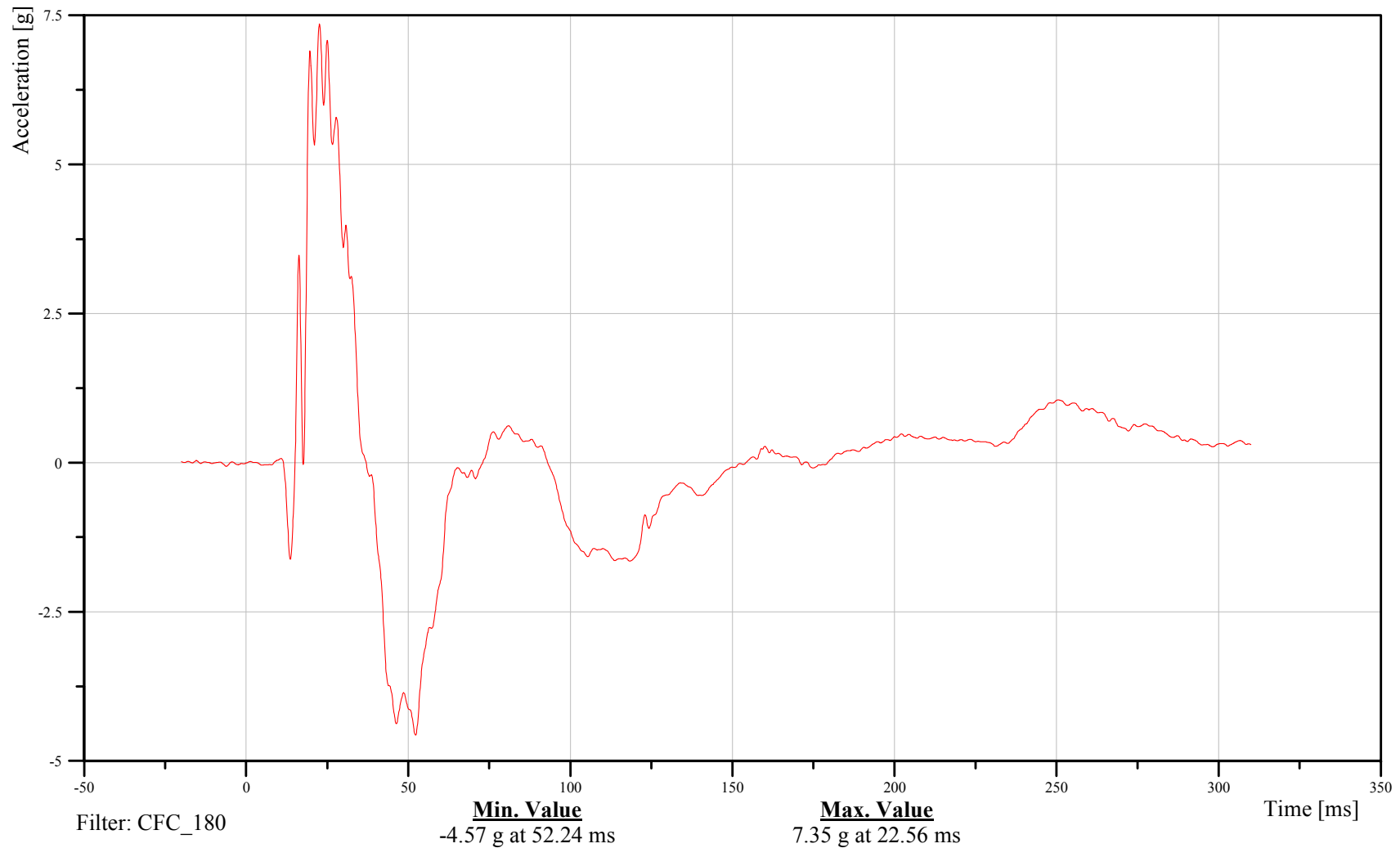
Upper Spine Accel Z

Customer: VRTC

11SPIN0100S2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

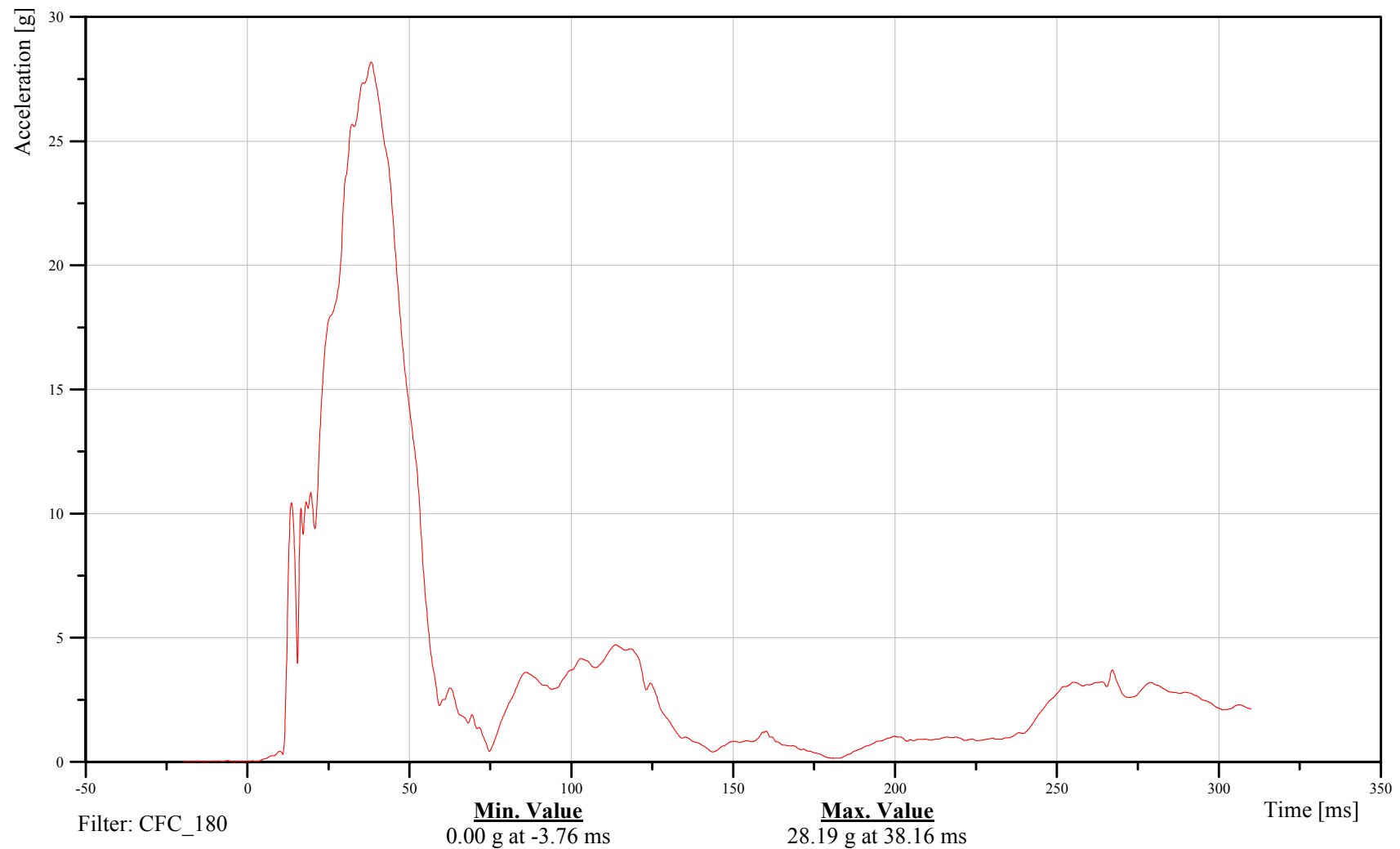
Upper Spine Resultant

Customer: VRTC

11SPIN0100S2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 1 Accel X

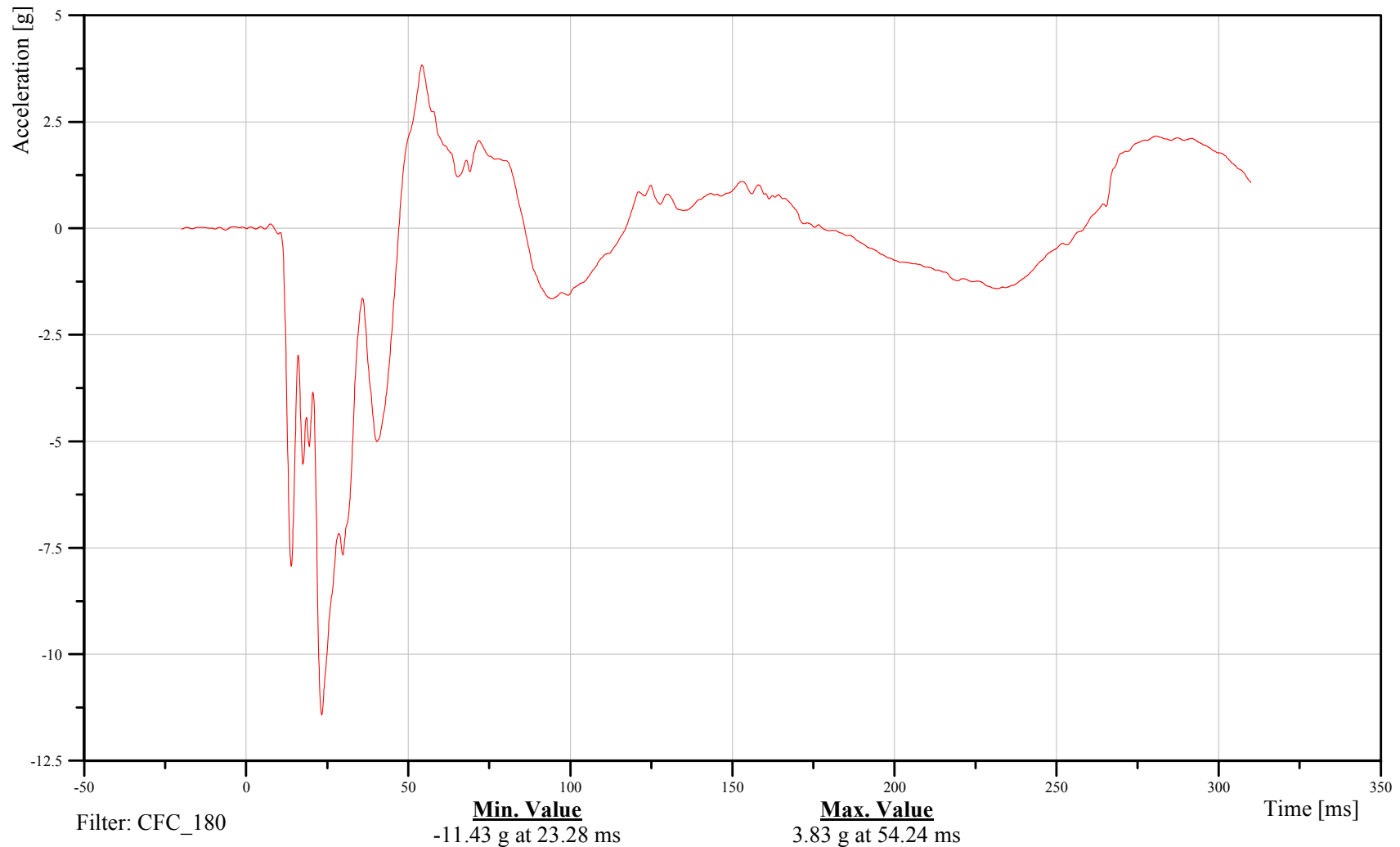
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11THSP01RIS2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 1 Accel Y

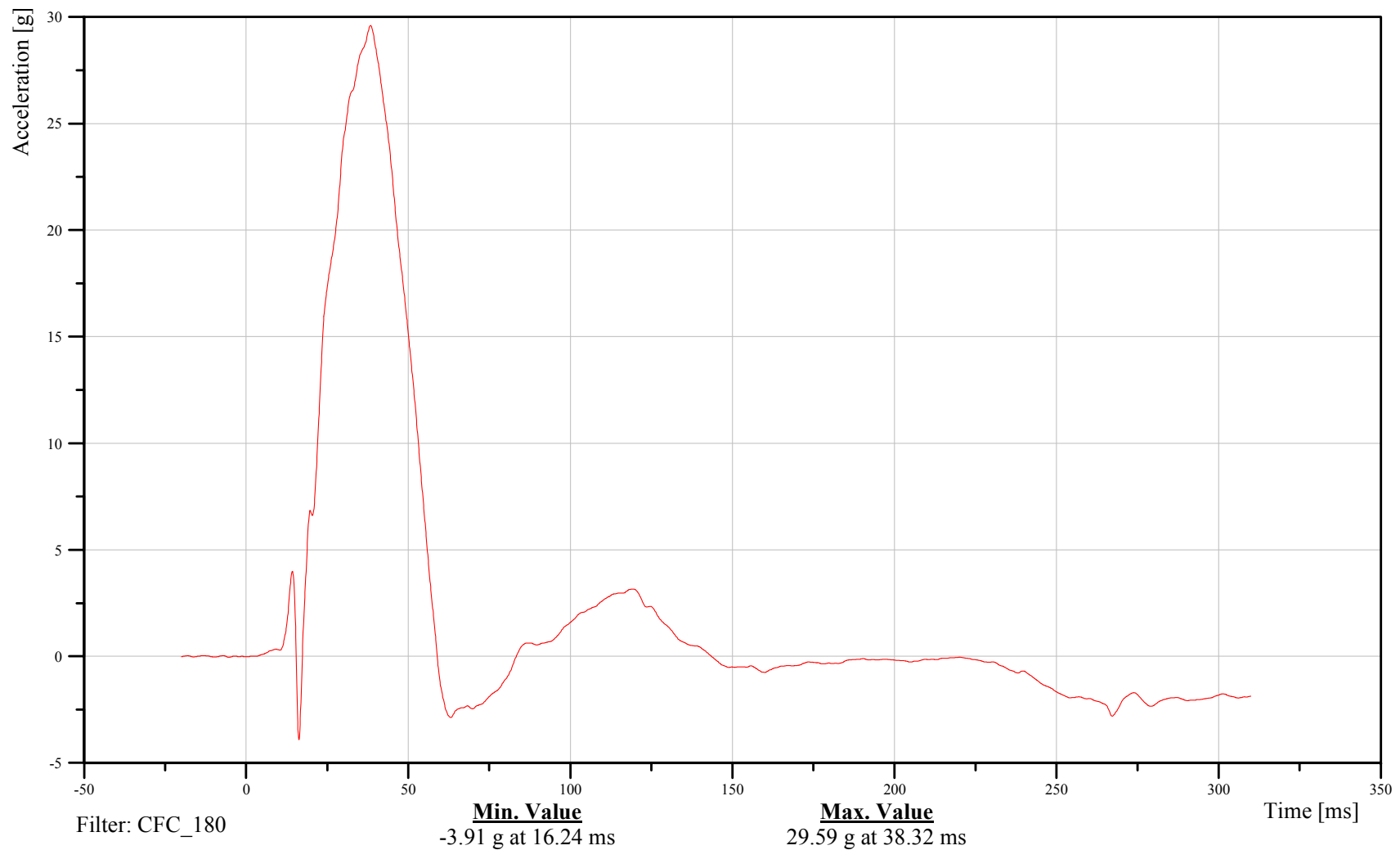
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11THSP01RIS2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 1 Accel Z

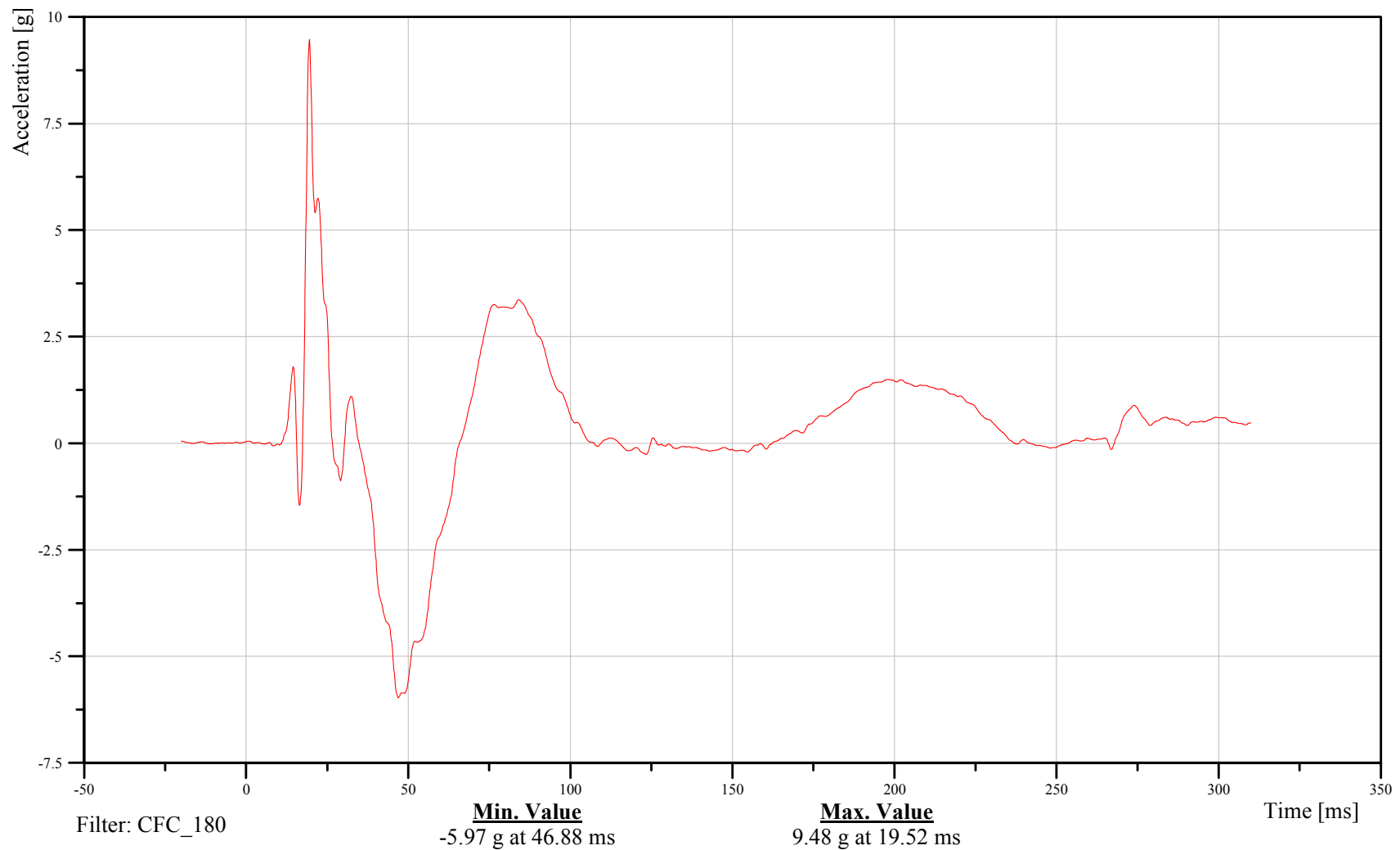
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11THSP01RIS2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

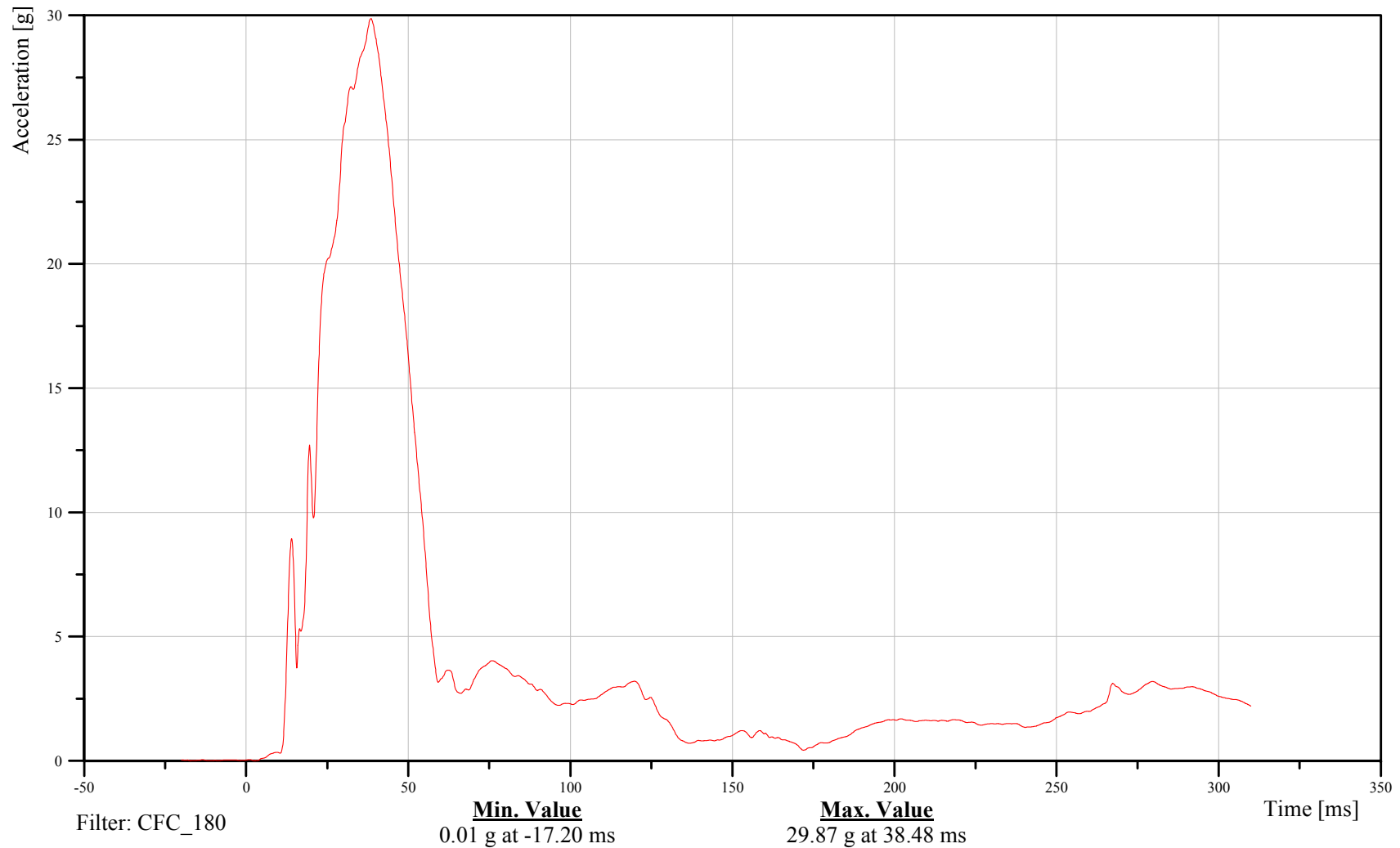
Spine Rib 1 Accel Resultant

Customer: VRTC

11THSP01RIS2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 2 Accel X

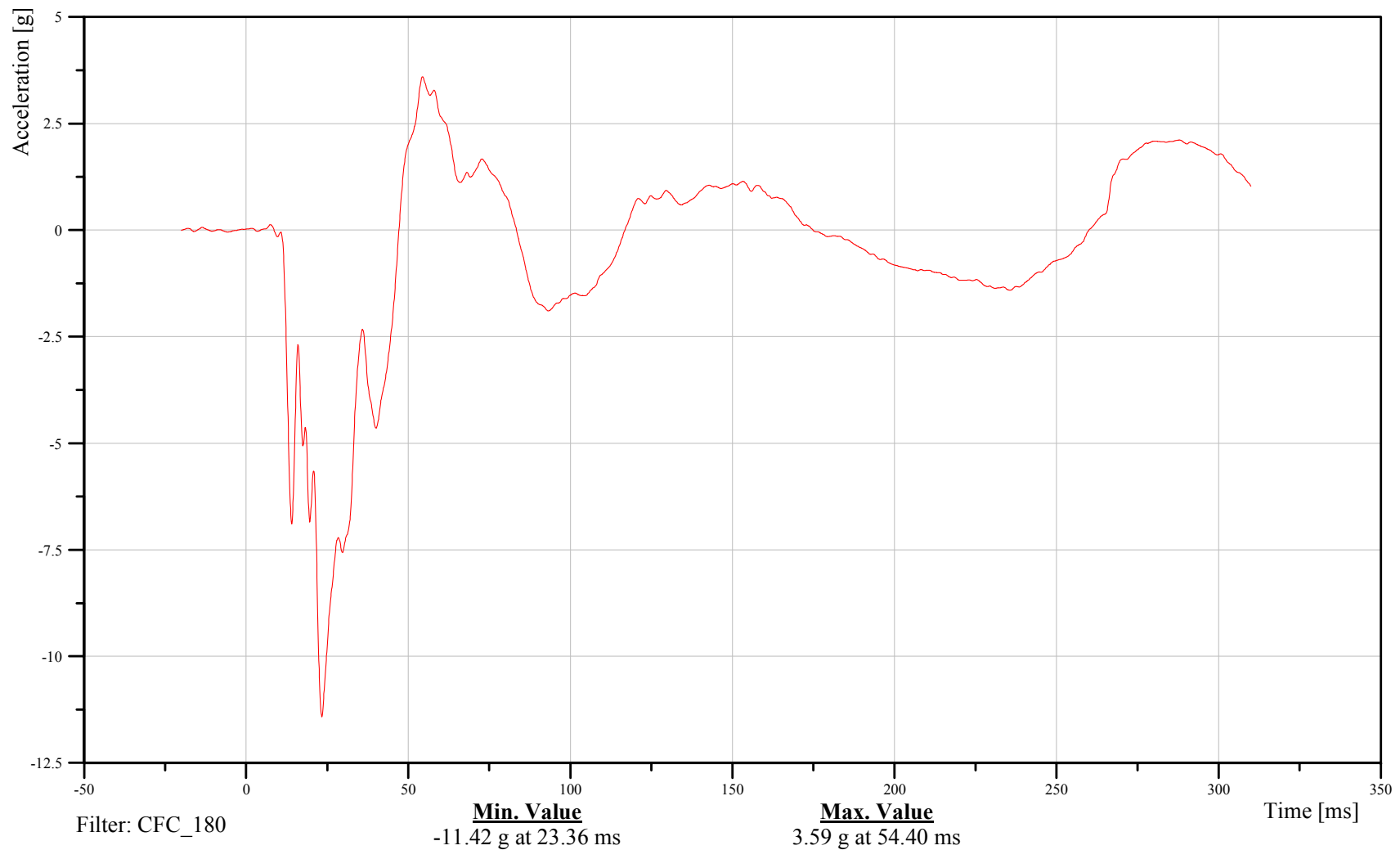
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11THSP02RIS2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 2 Accel Y

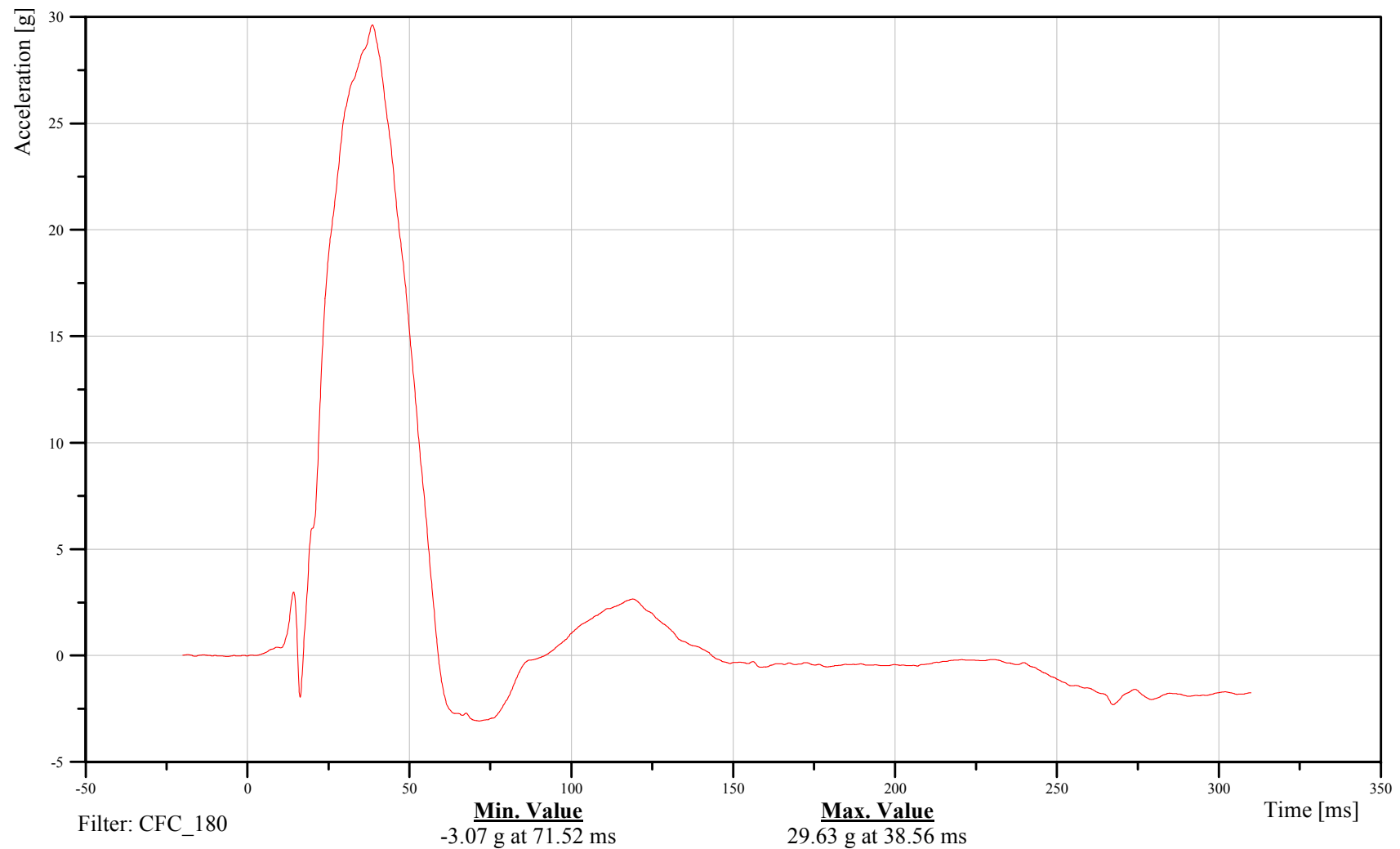
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11THSP02RIS2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 2 Accel Z

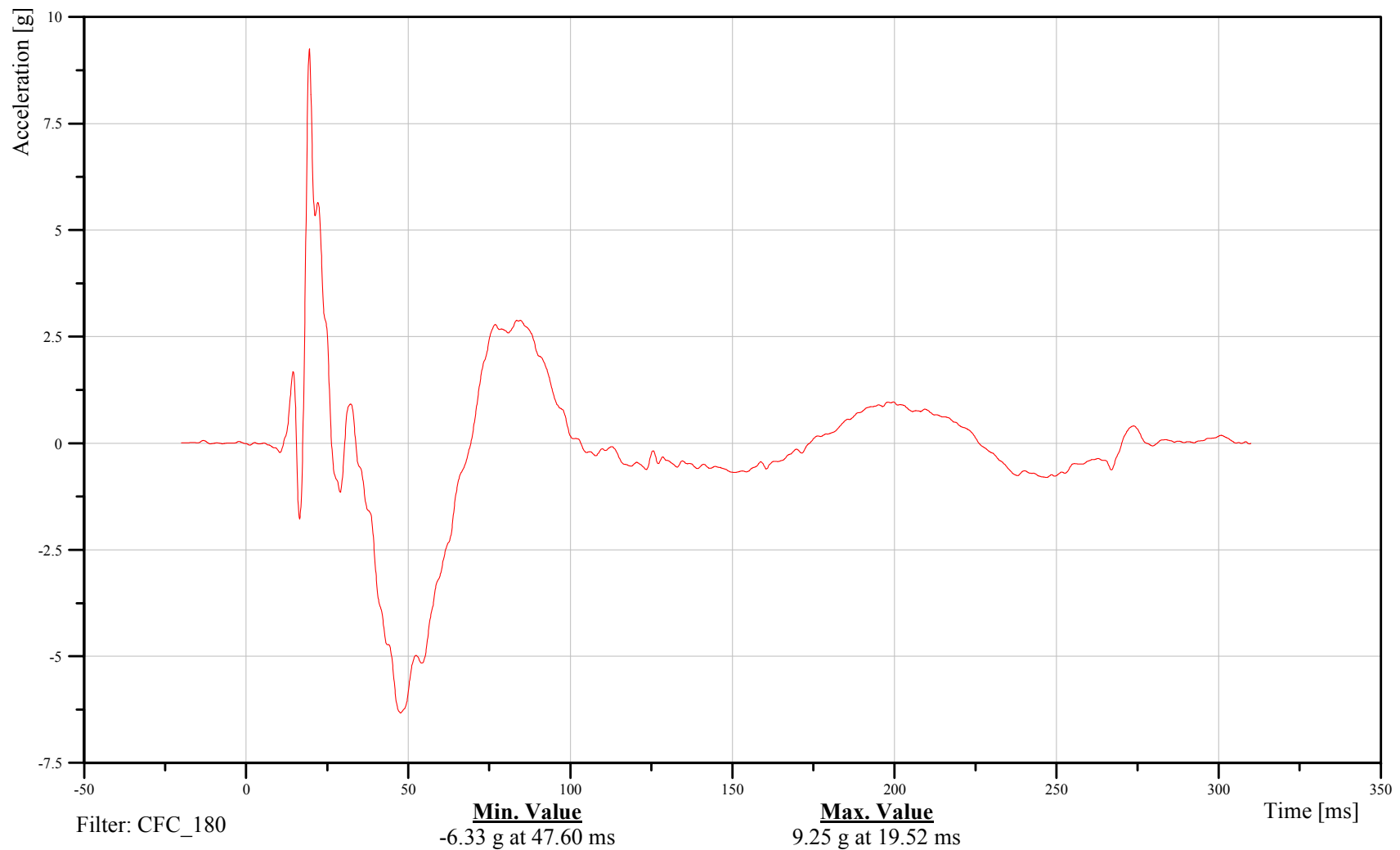
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11THSP02RIS2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

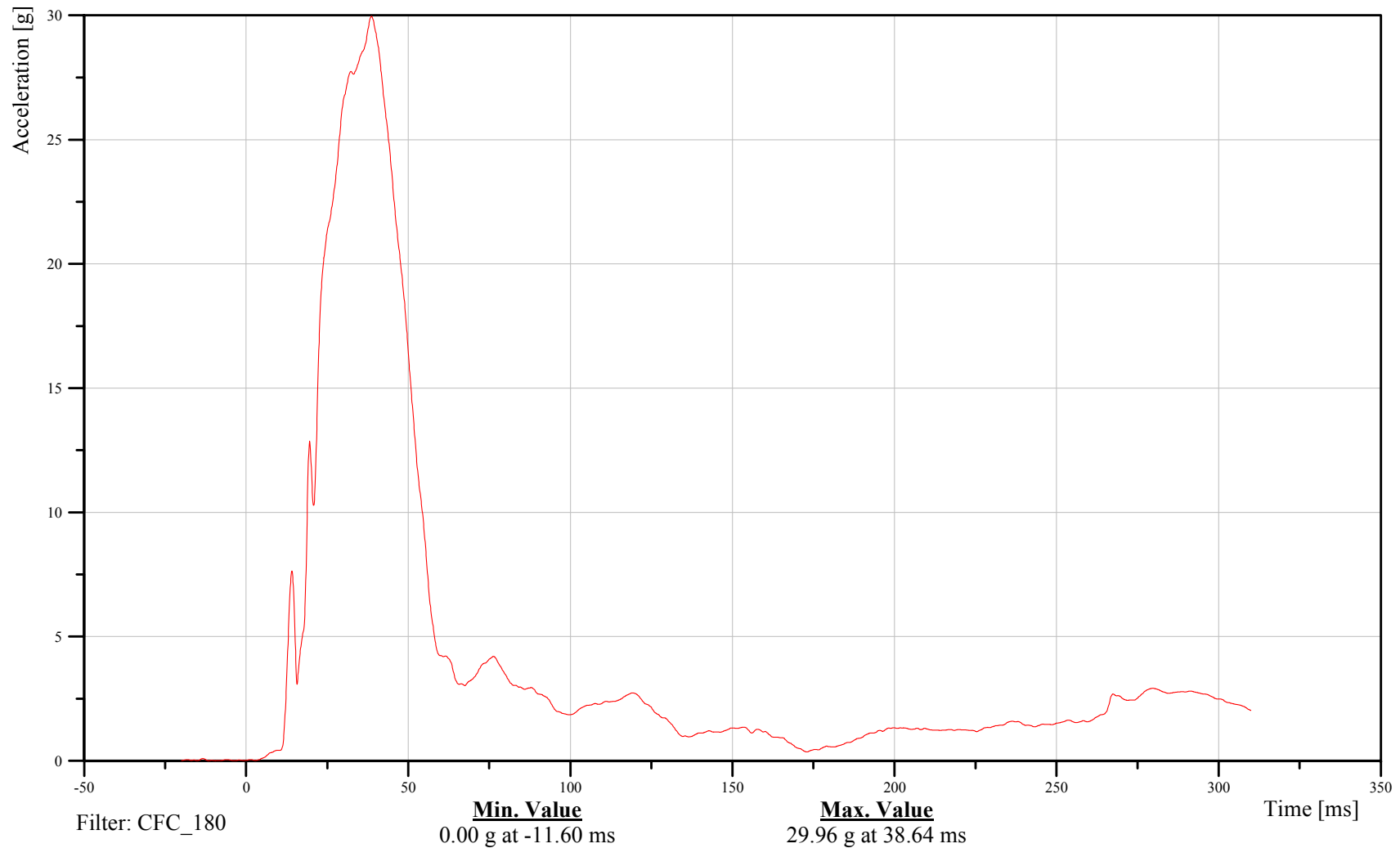
Spine Rib 2 Accel Resultant

Customer: VRTC

11THSP02RIS2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 3 Accel X

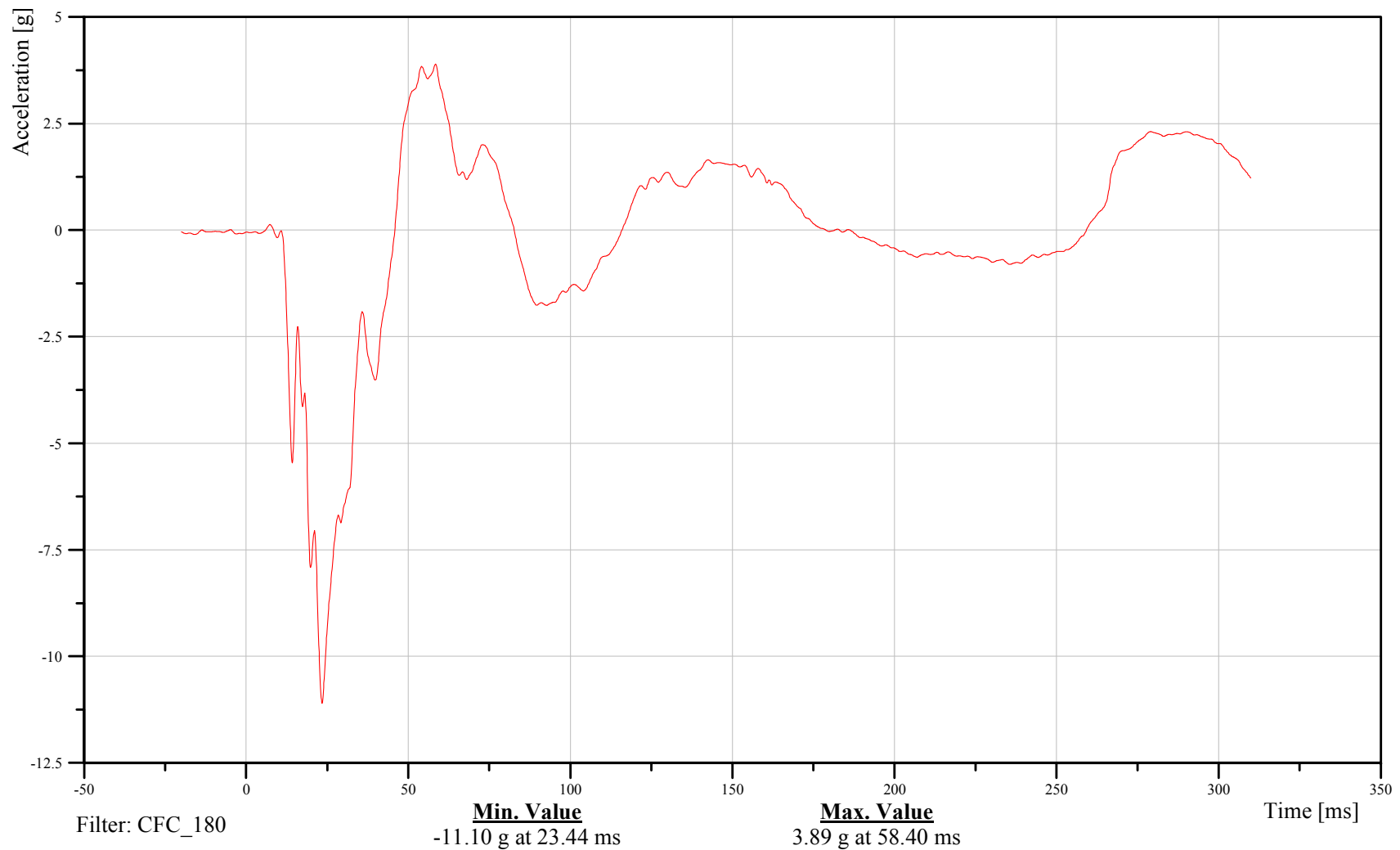
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11THSP03RIS2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 3 Accel Y

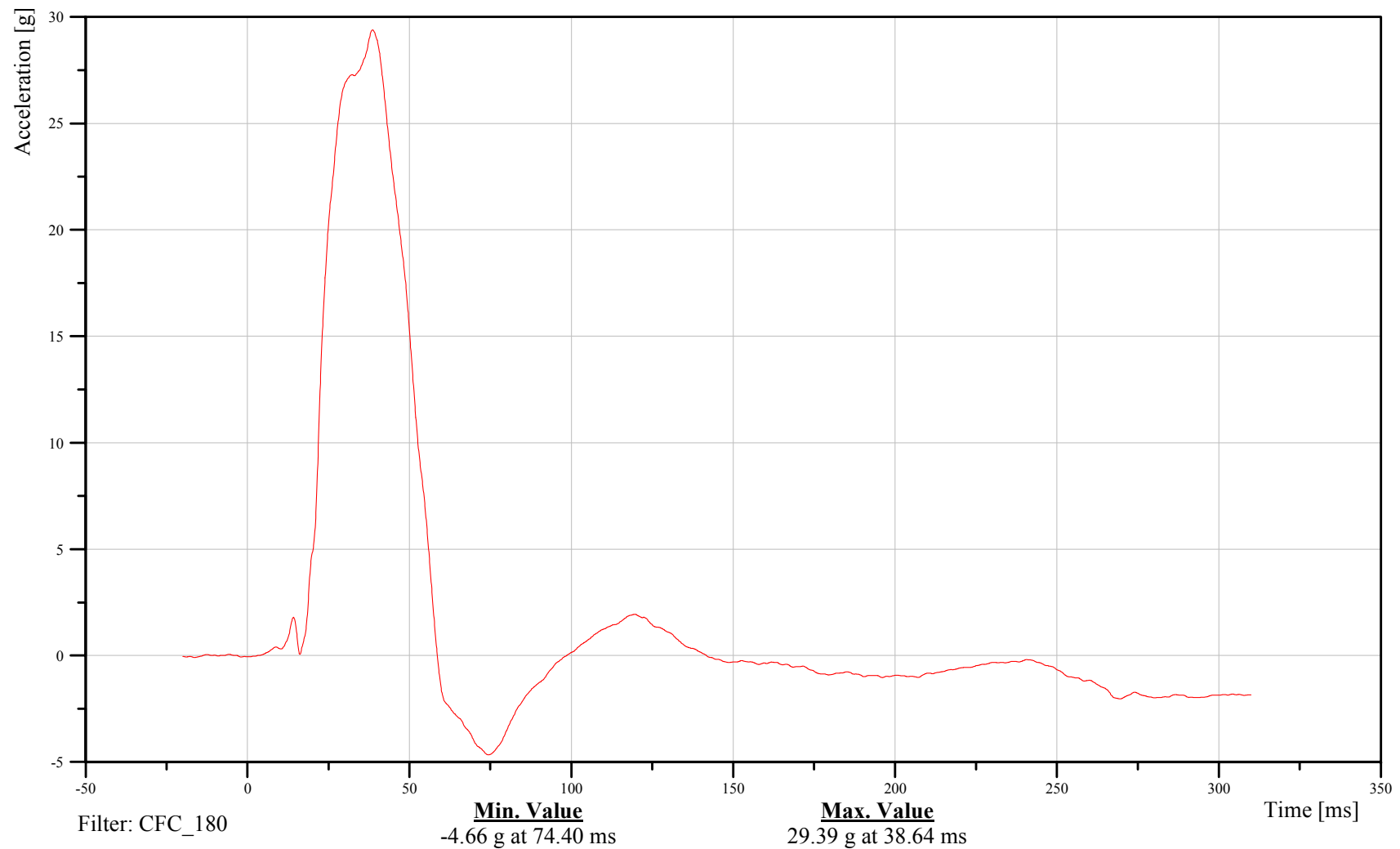
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11THSP03RIS2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 3 Accel Z

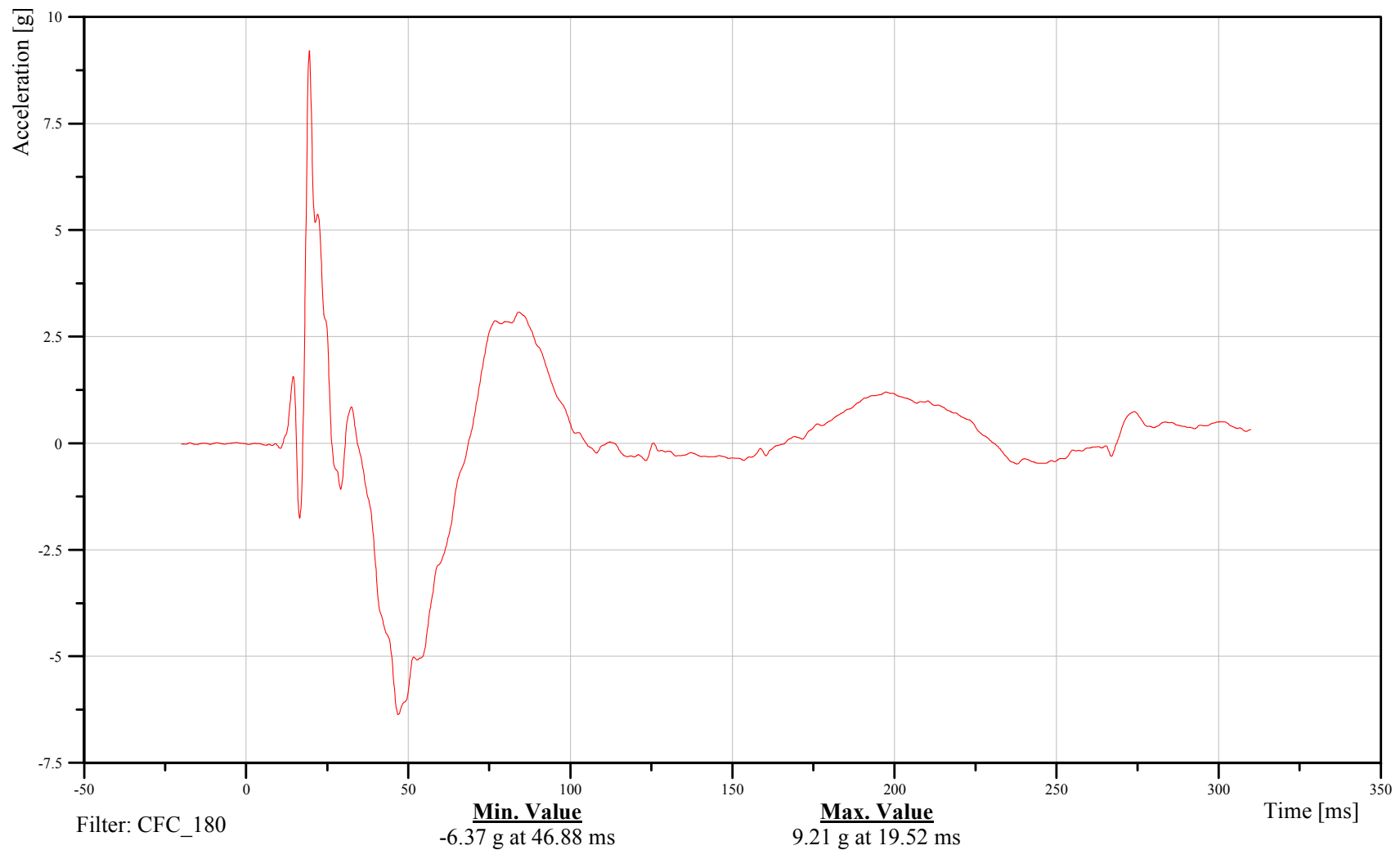
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11THSP03RIS2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 3 Accel Resultant

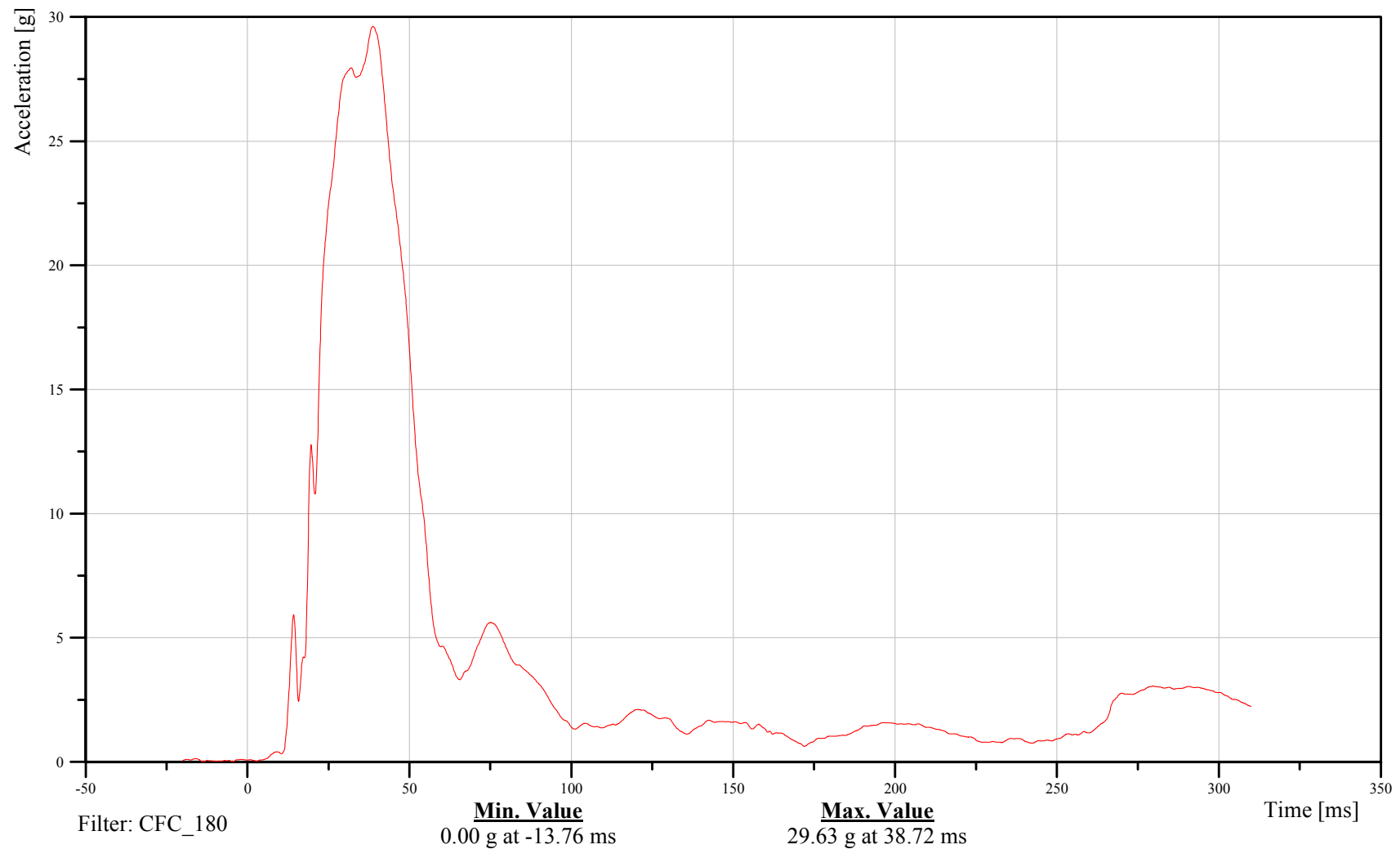
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11THSP03RIS2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

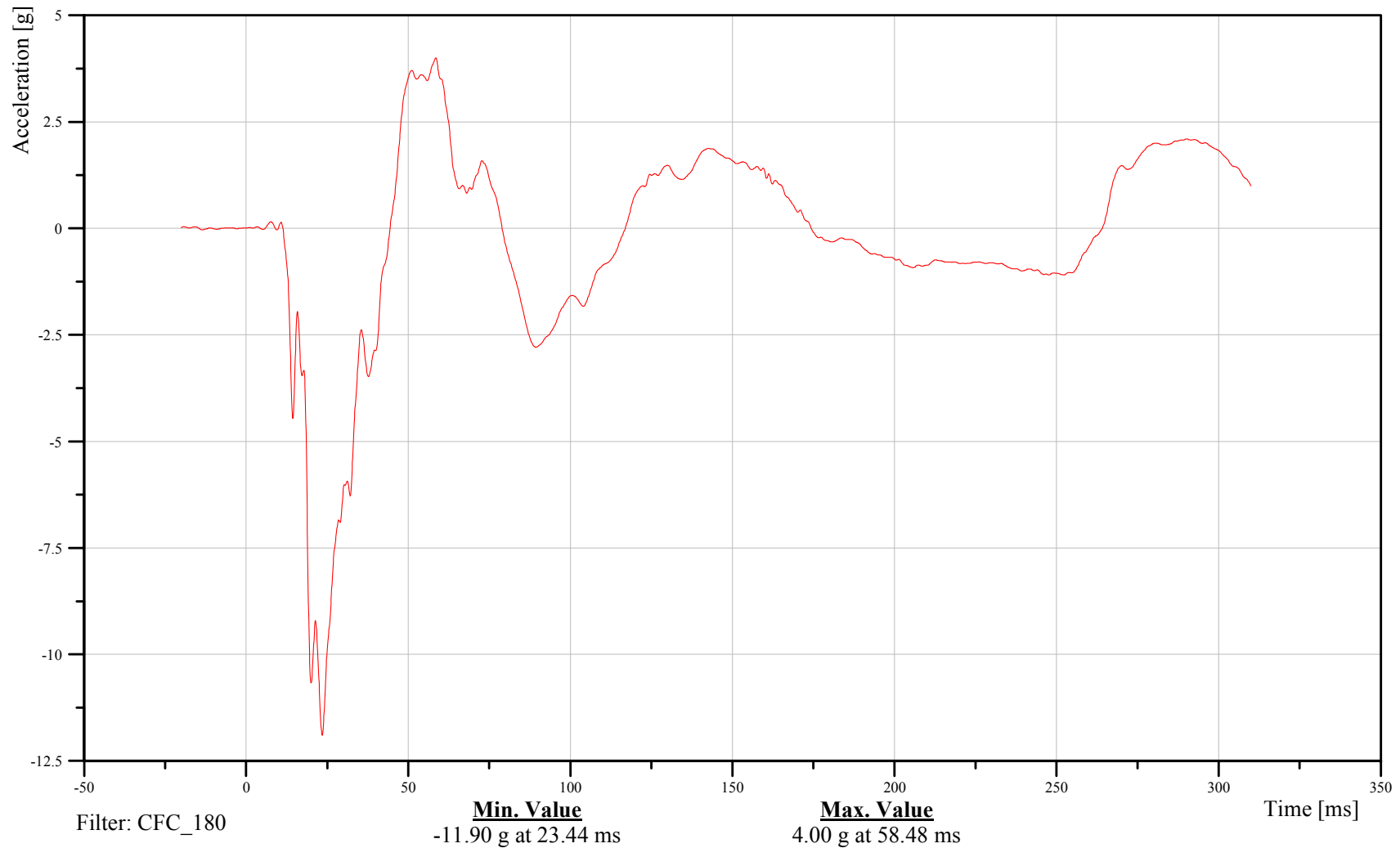
Lower Spine Accel X

Customer: VRTC

11SPIN1200S2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

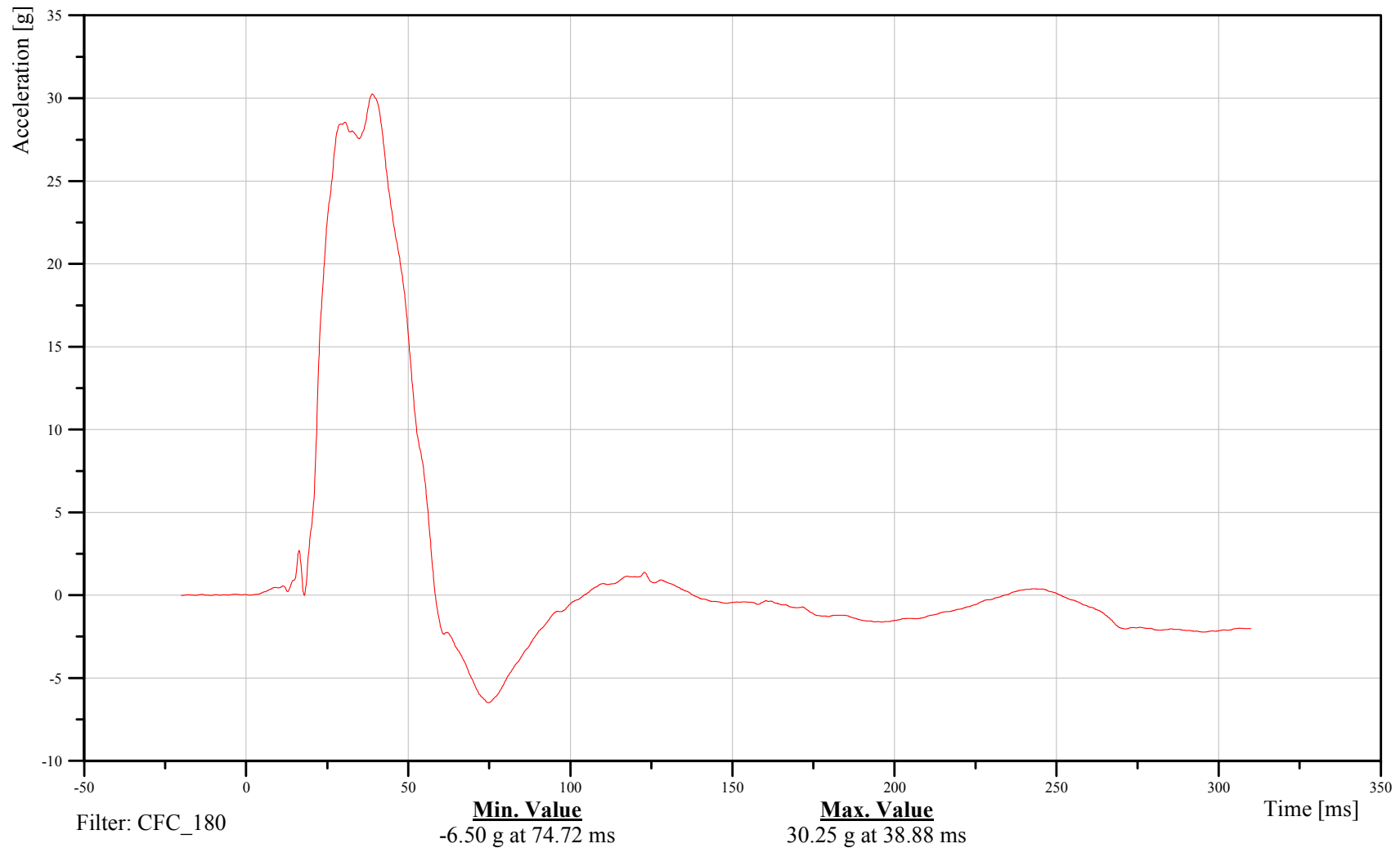
Lower Spine Accel Y

Customer: VRTC

11SPIN1200S2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

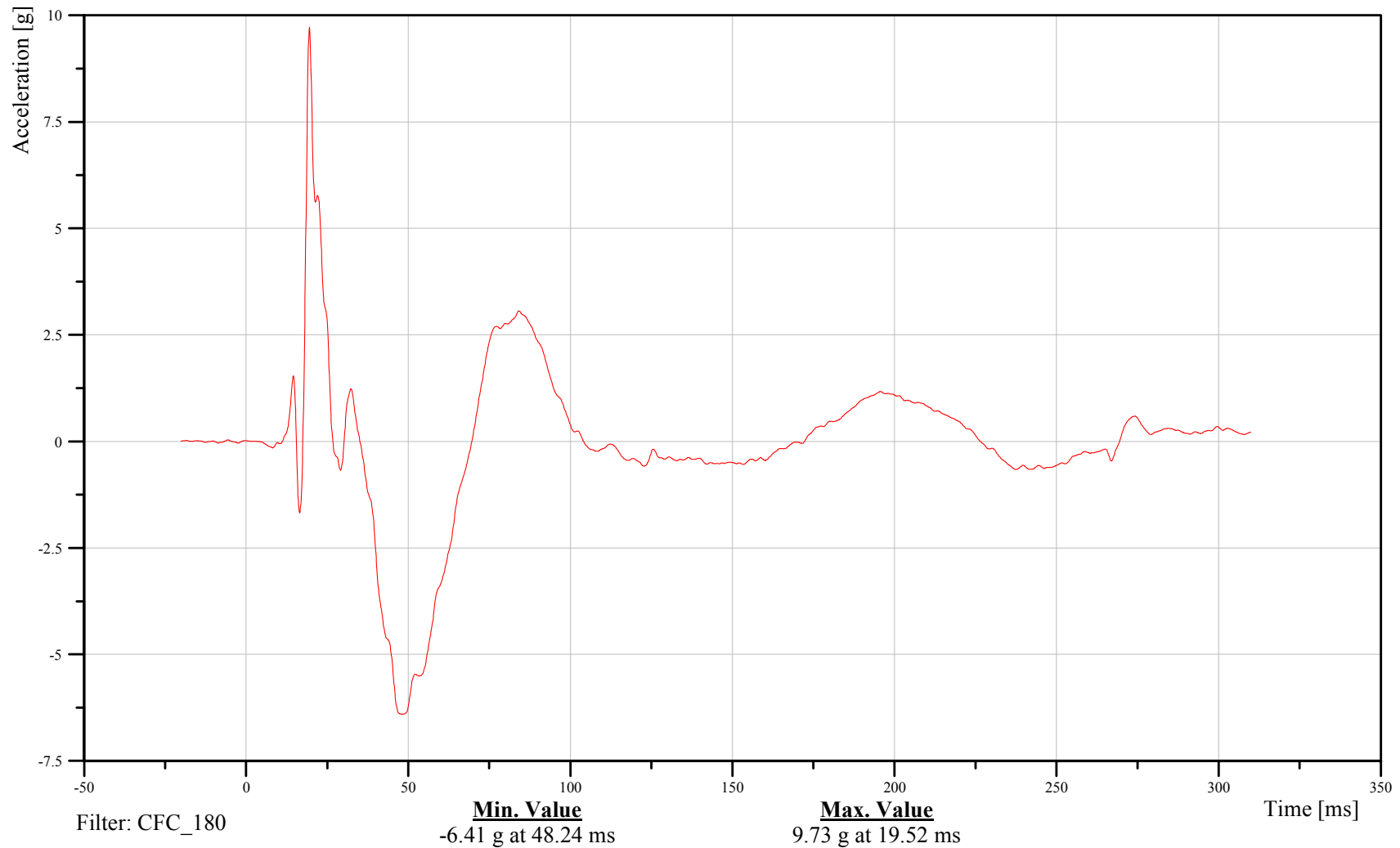
Lower Spine Accel Z

Customer: VRTC

11SPIN1200S2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

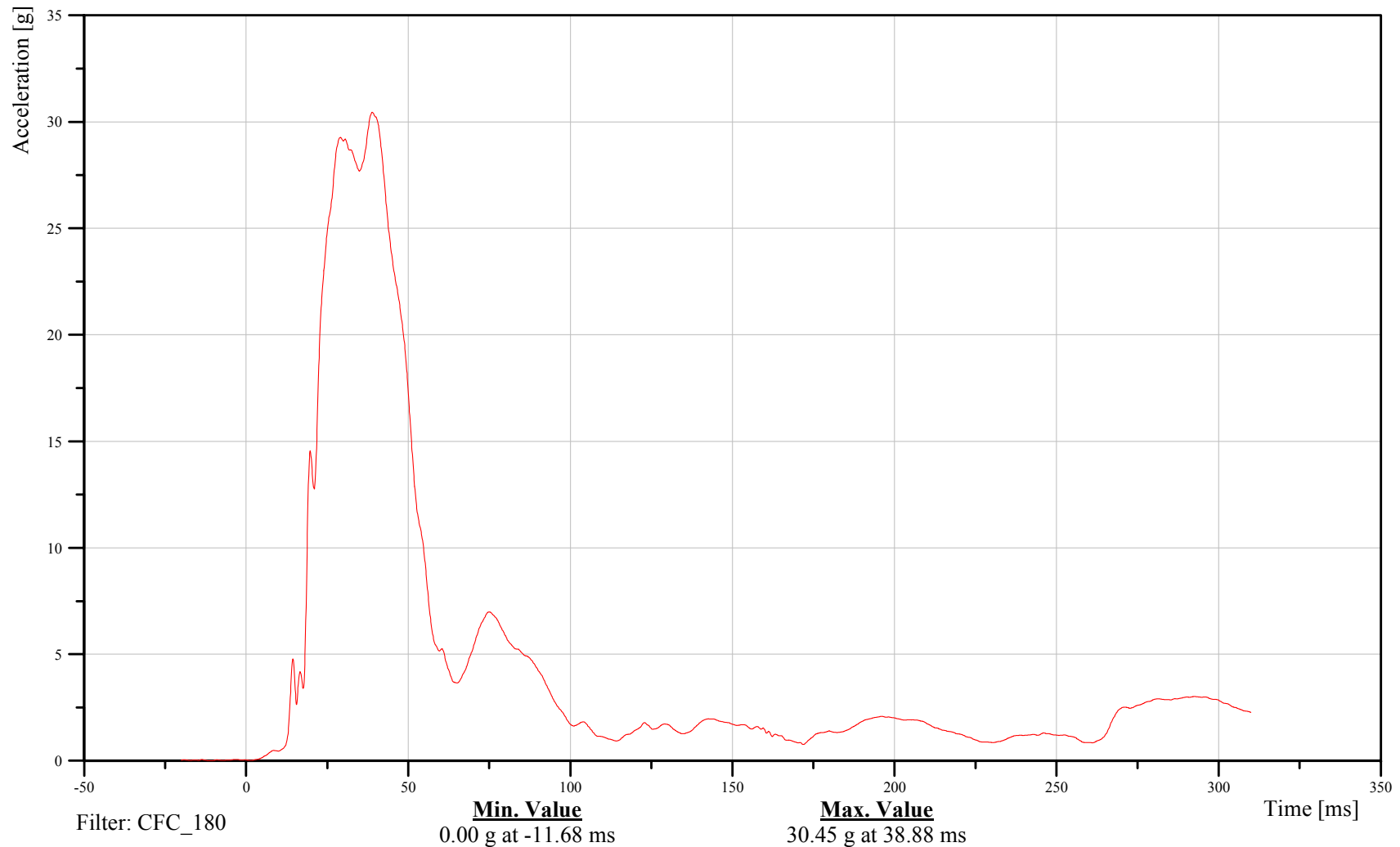
Lower Spine Accel Resultant

Customer: VRTC

11SPIN1200S2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 5 Accel X

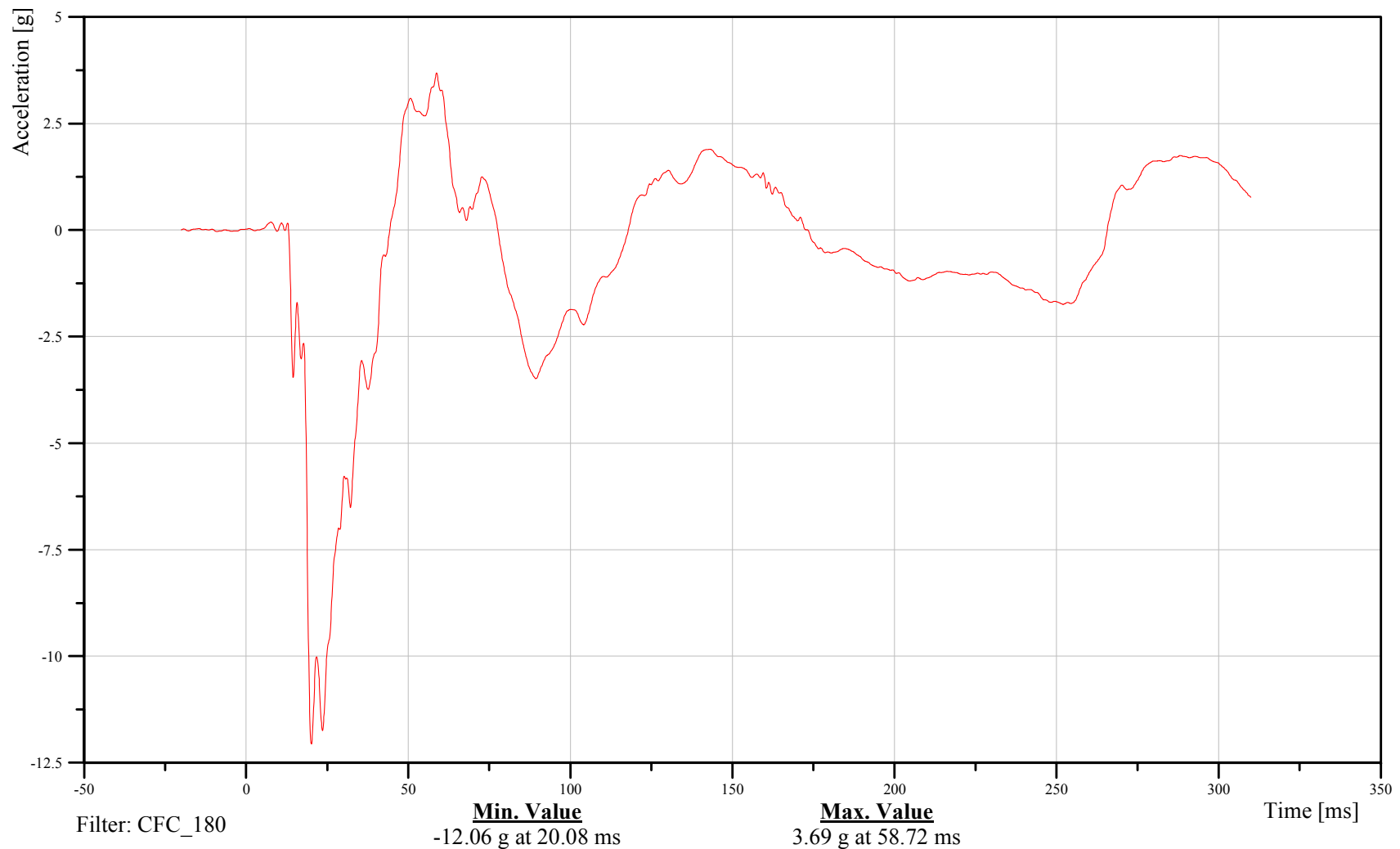
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11ABSP02RIS2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 5 Accel Y

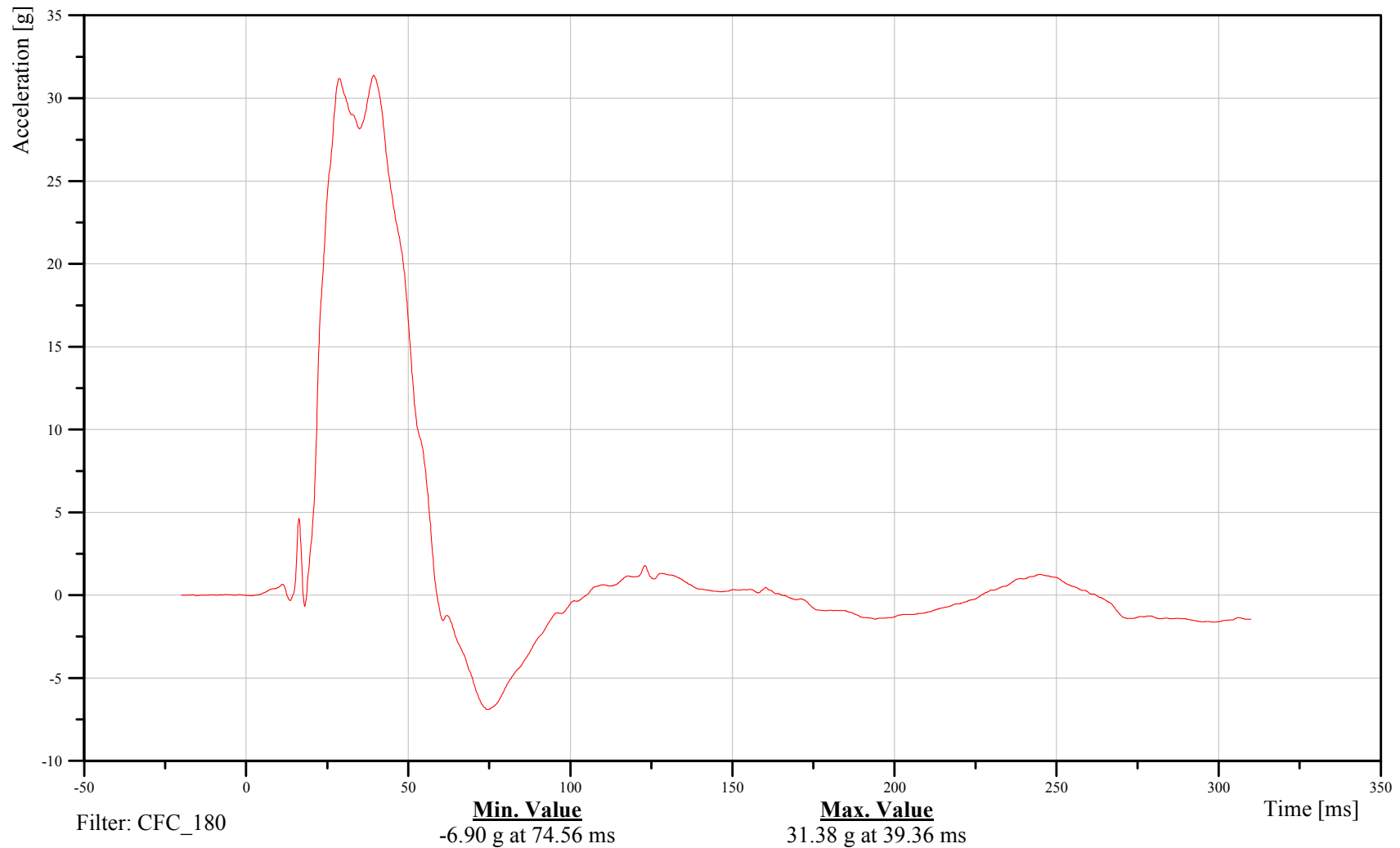
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11ABSP02RIS2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 5 Accel Z

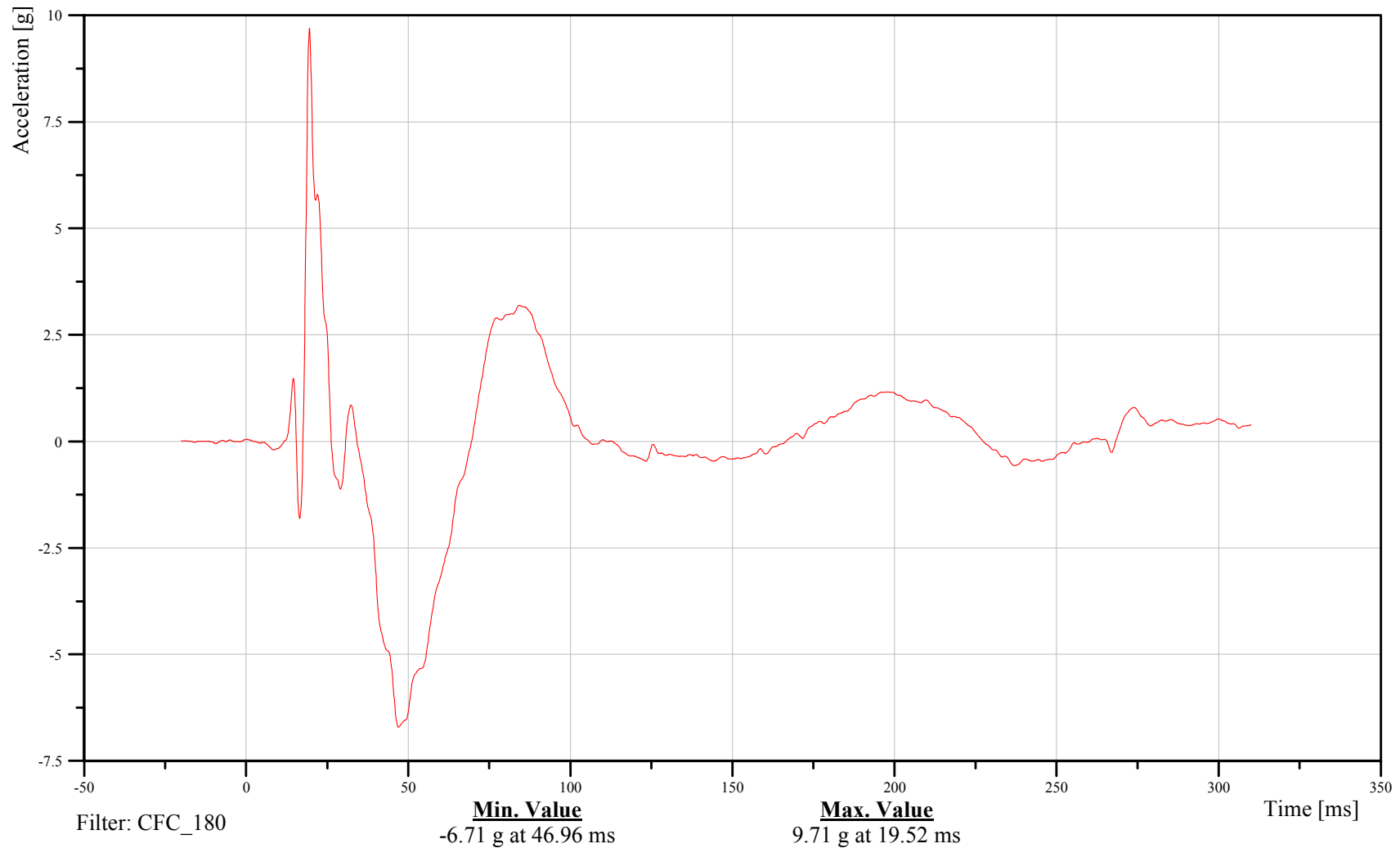
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11ABSP02RIS2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 5 Accel Resultant

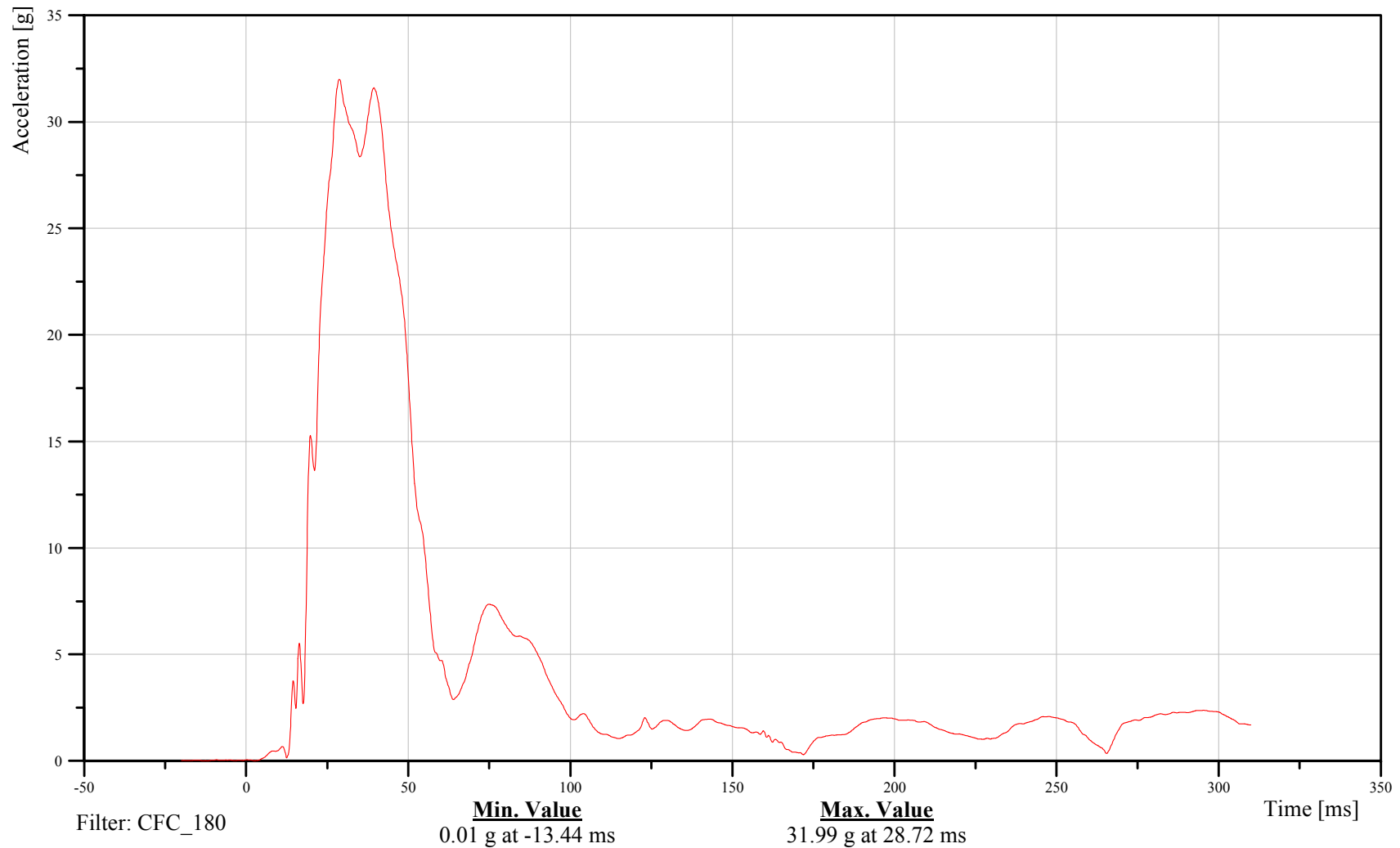
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11ABSP02RIS2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

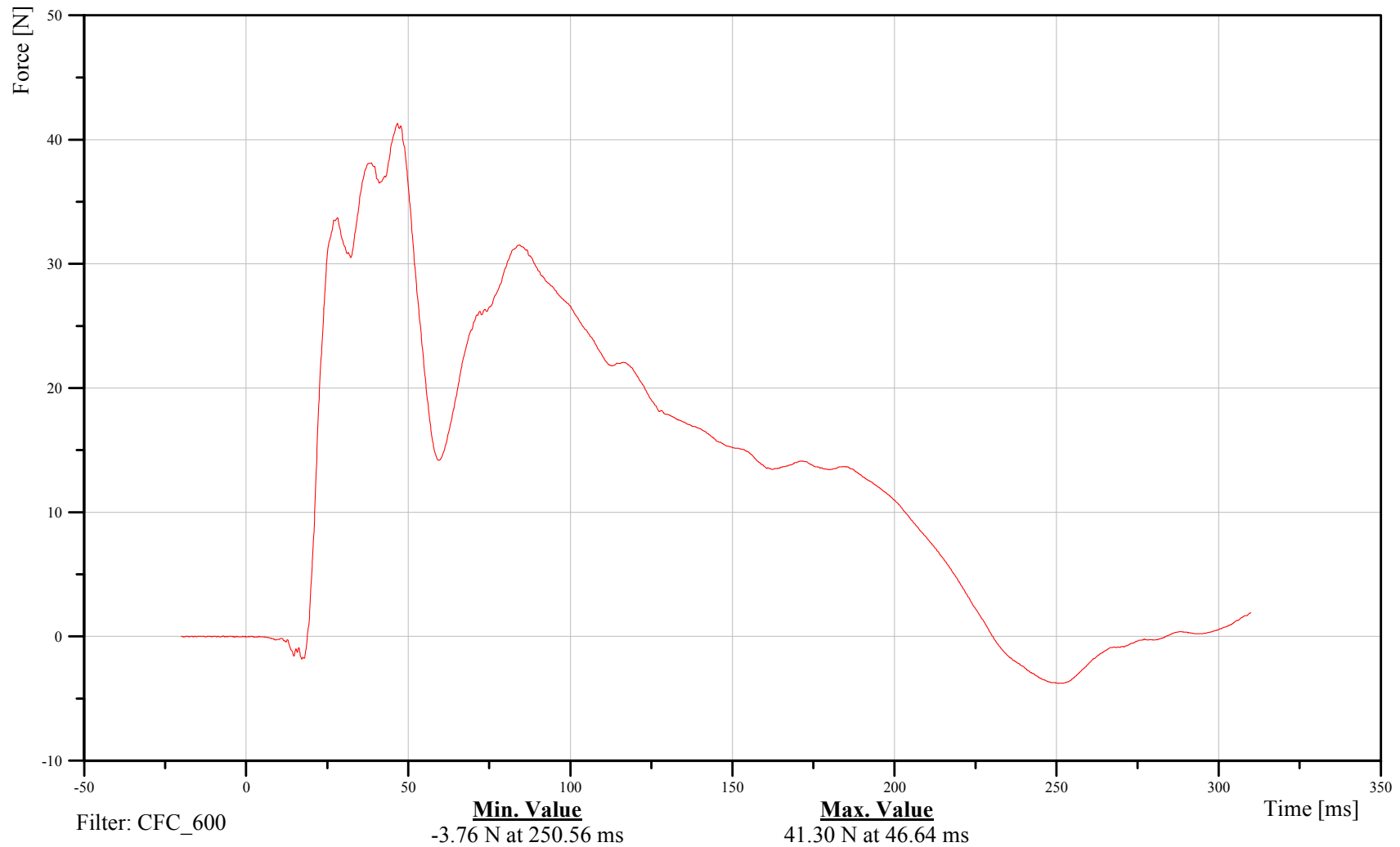
Lumbar Moment X

Customer: VRTC

11LUSP0000S2MOXB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

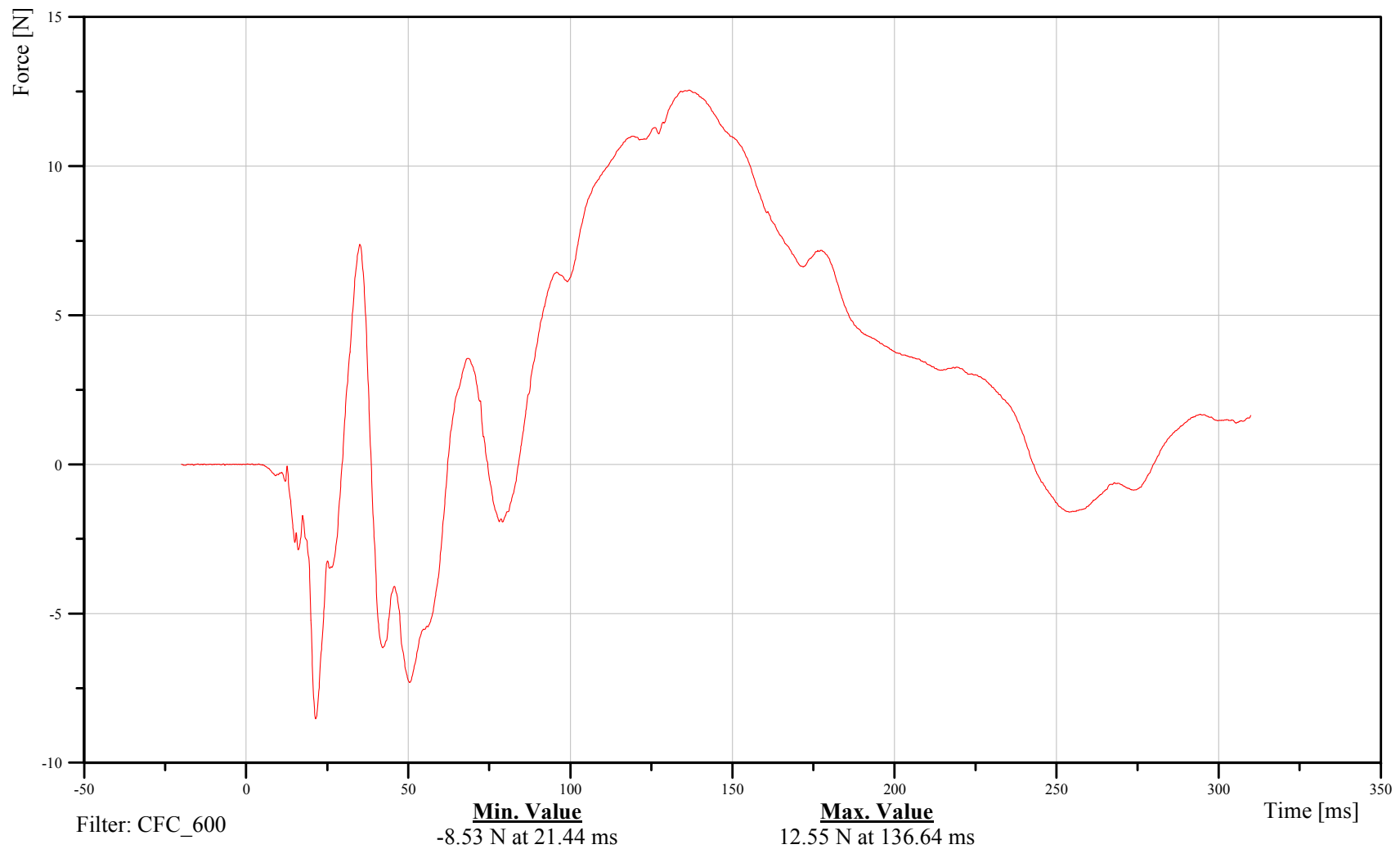
Lumbar Moment Y

Customer: VRTC

11LUSP0000S2MOYB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

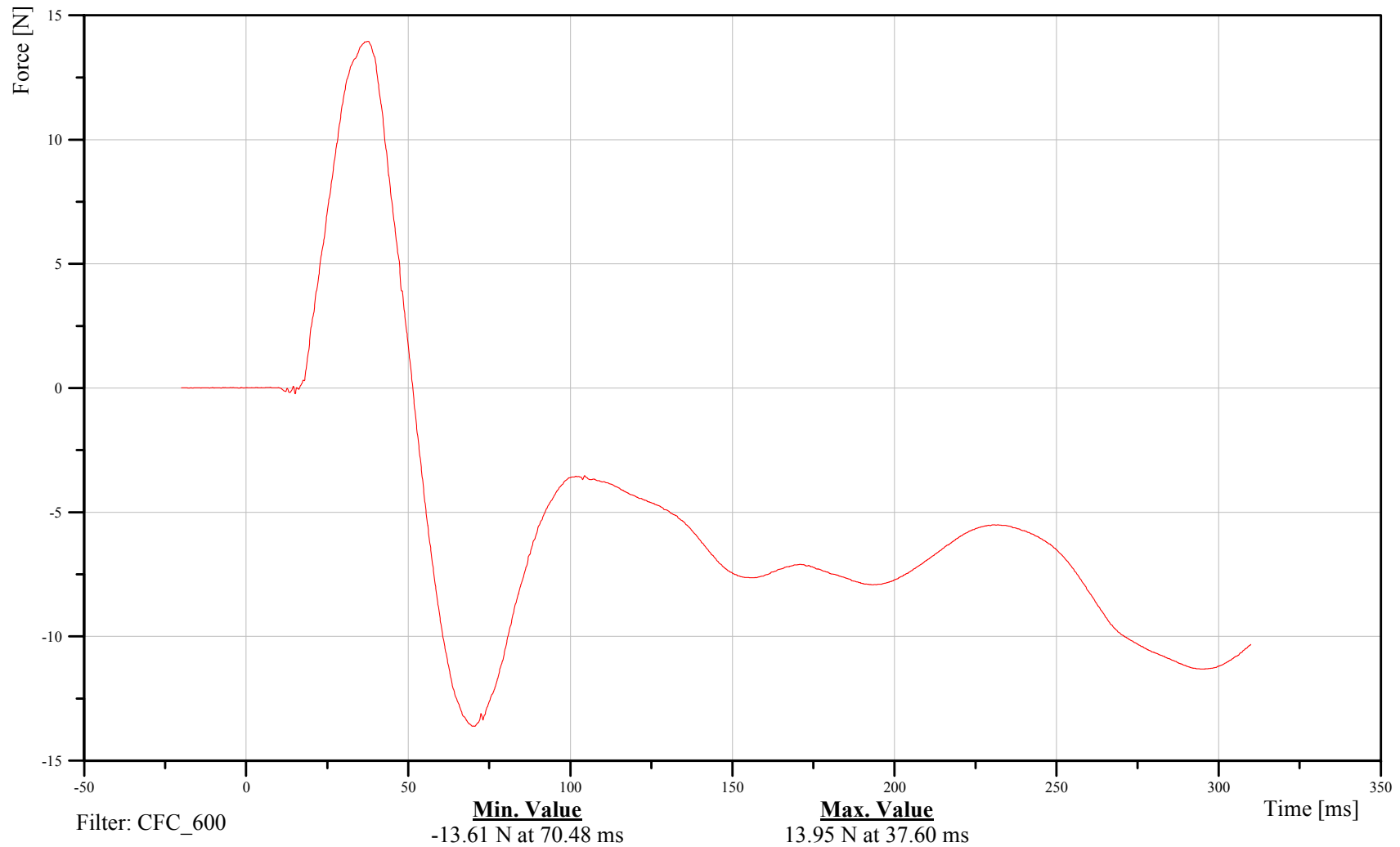
Lumbar Moment Z

Customer: VRTC

11LUSP0000S2MOZB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 1 Accel X

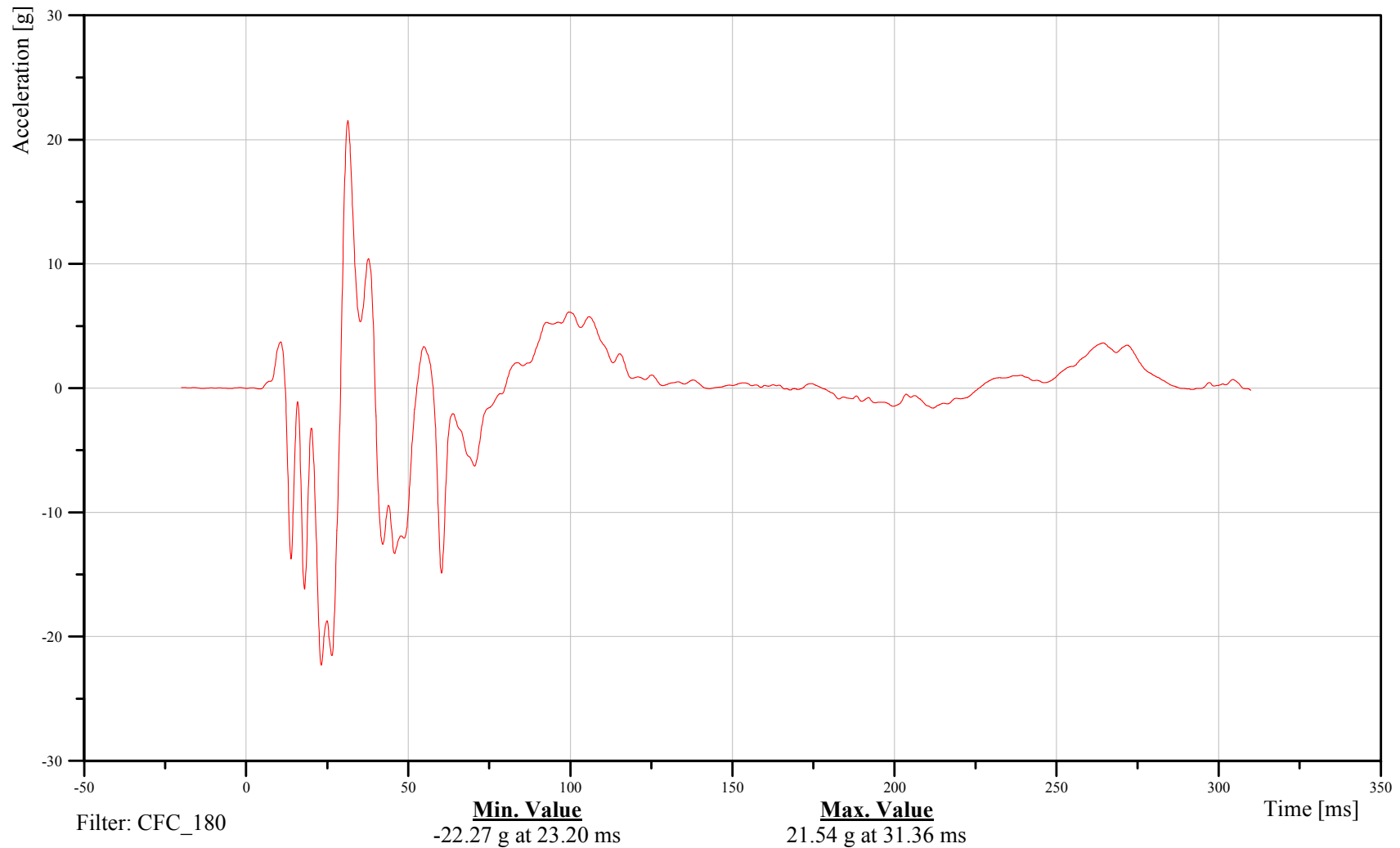
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11TRRI01LES2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 1 Accel Y

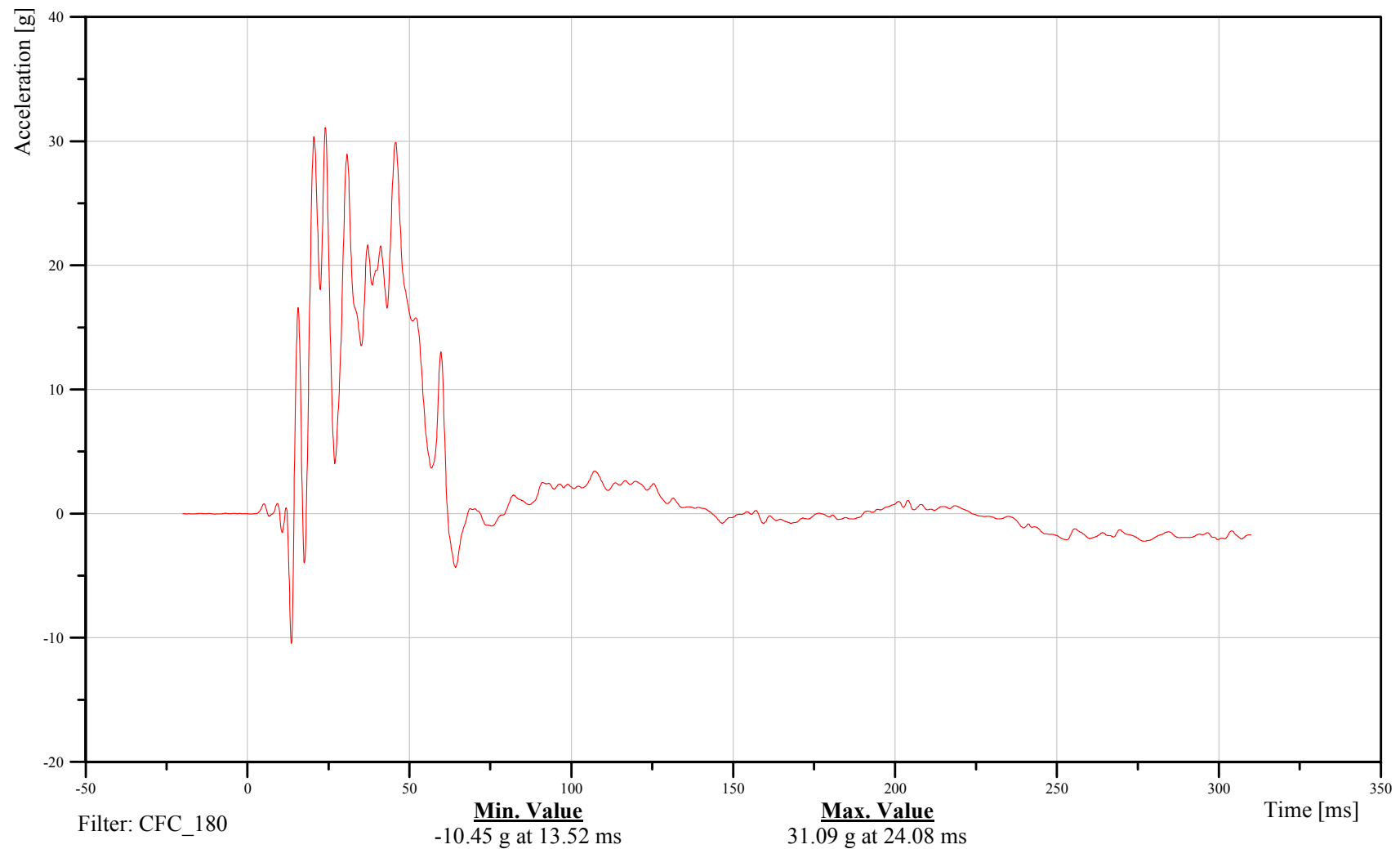
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11TRRI01LES2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 1 Accel Z

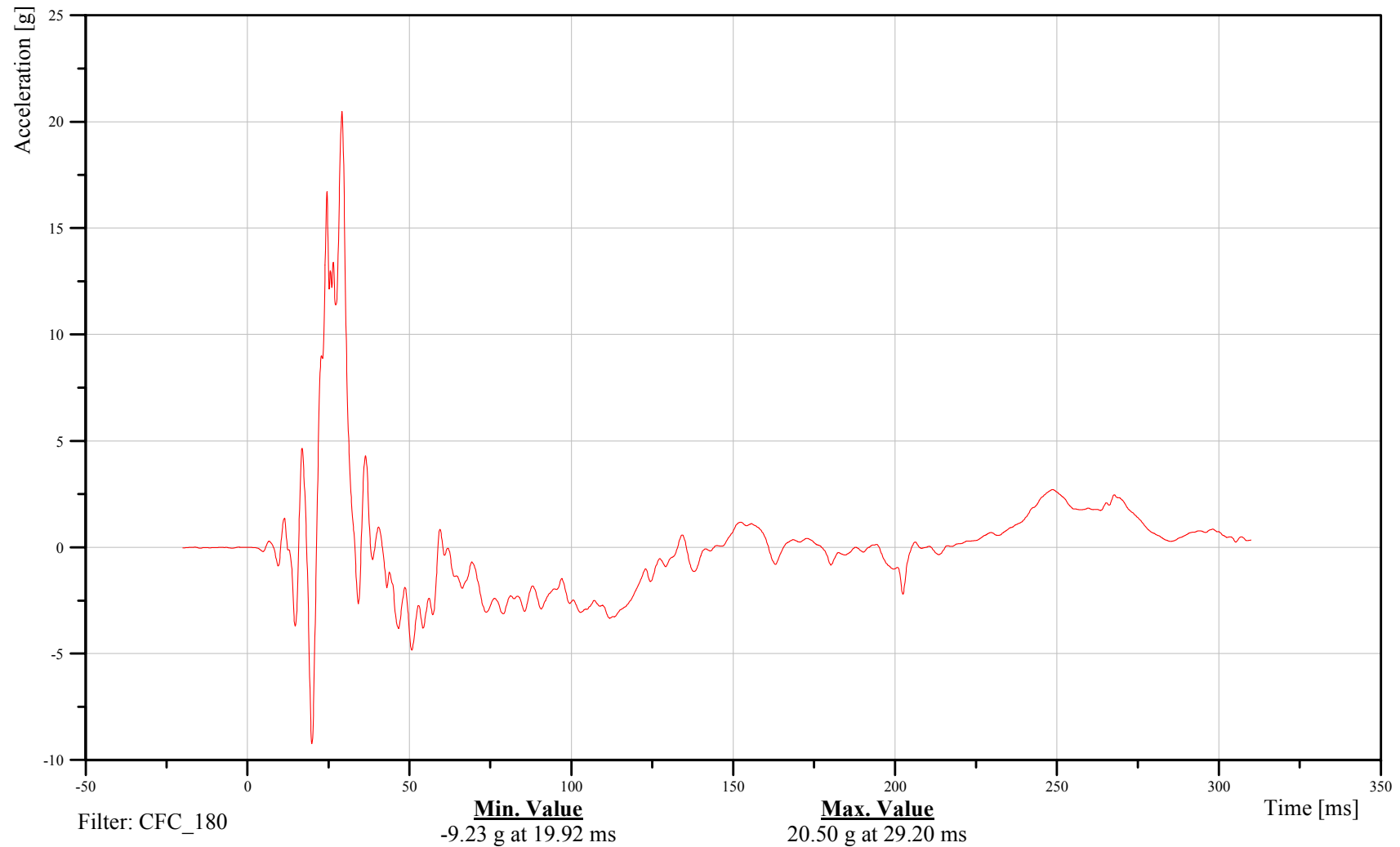
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11TRRI01LES2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 1 Accel Resultant

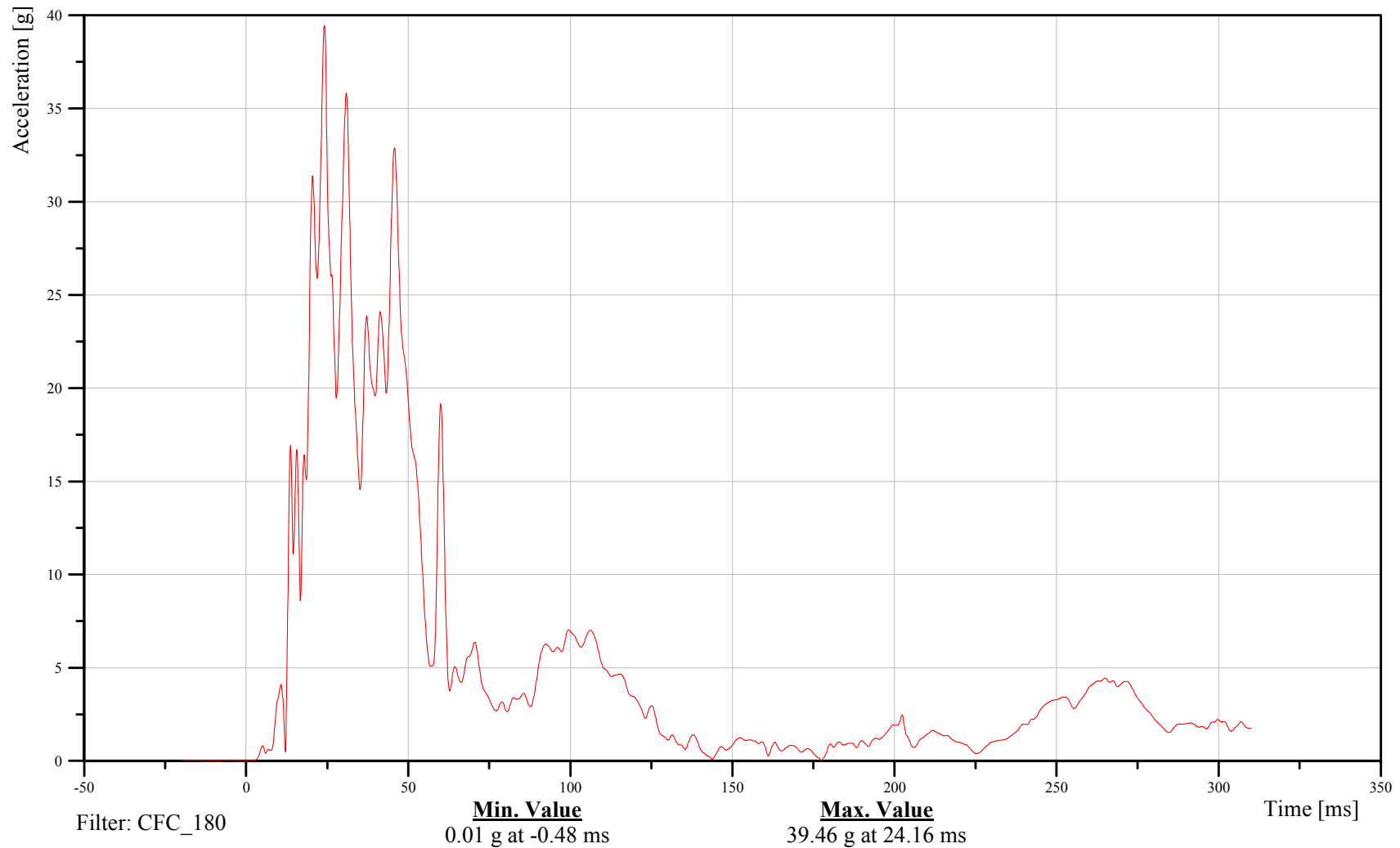
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11TRRI01LES2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 2 Accel X

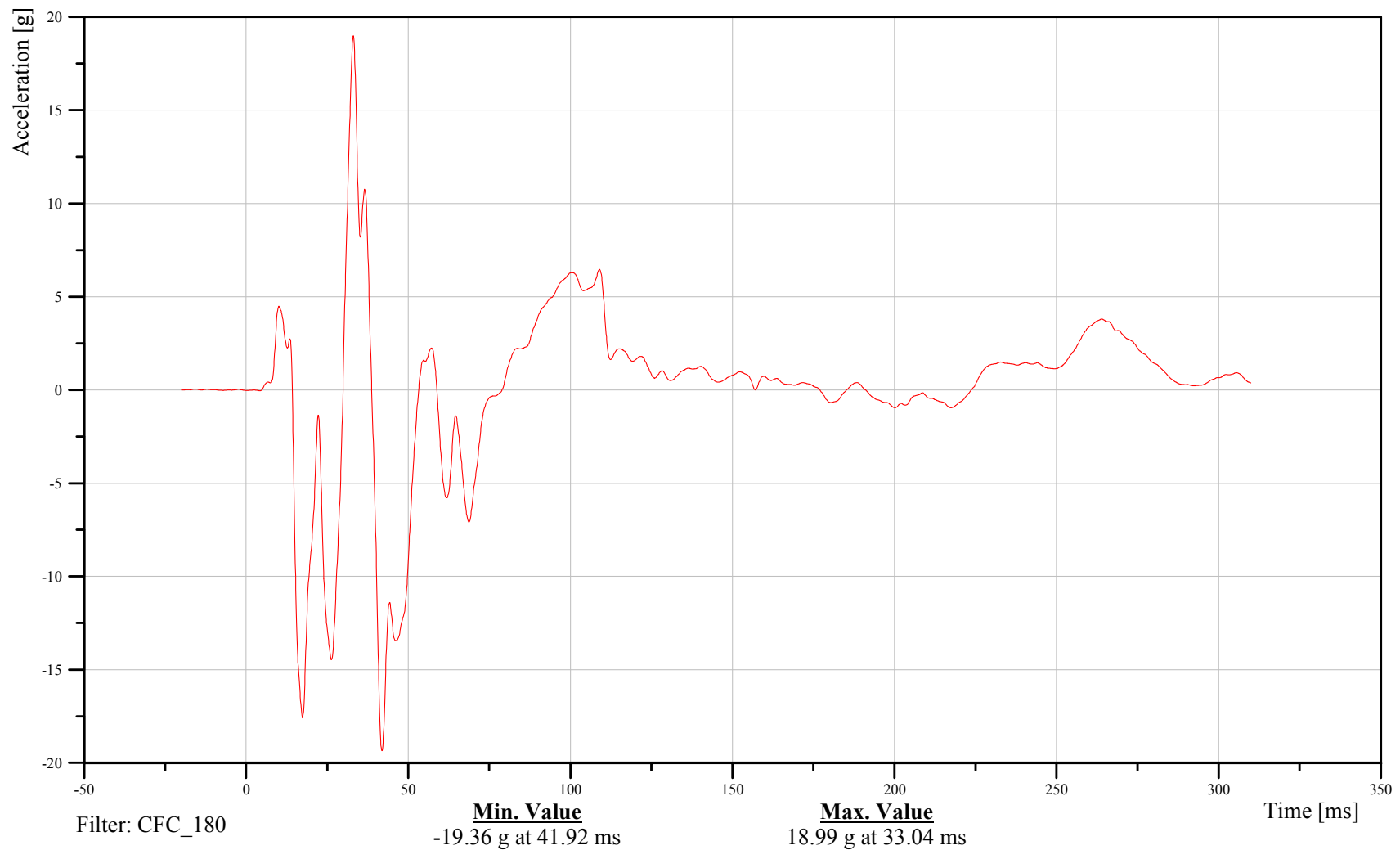
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11TRRI02LES2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 2 Accel Y

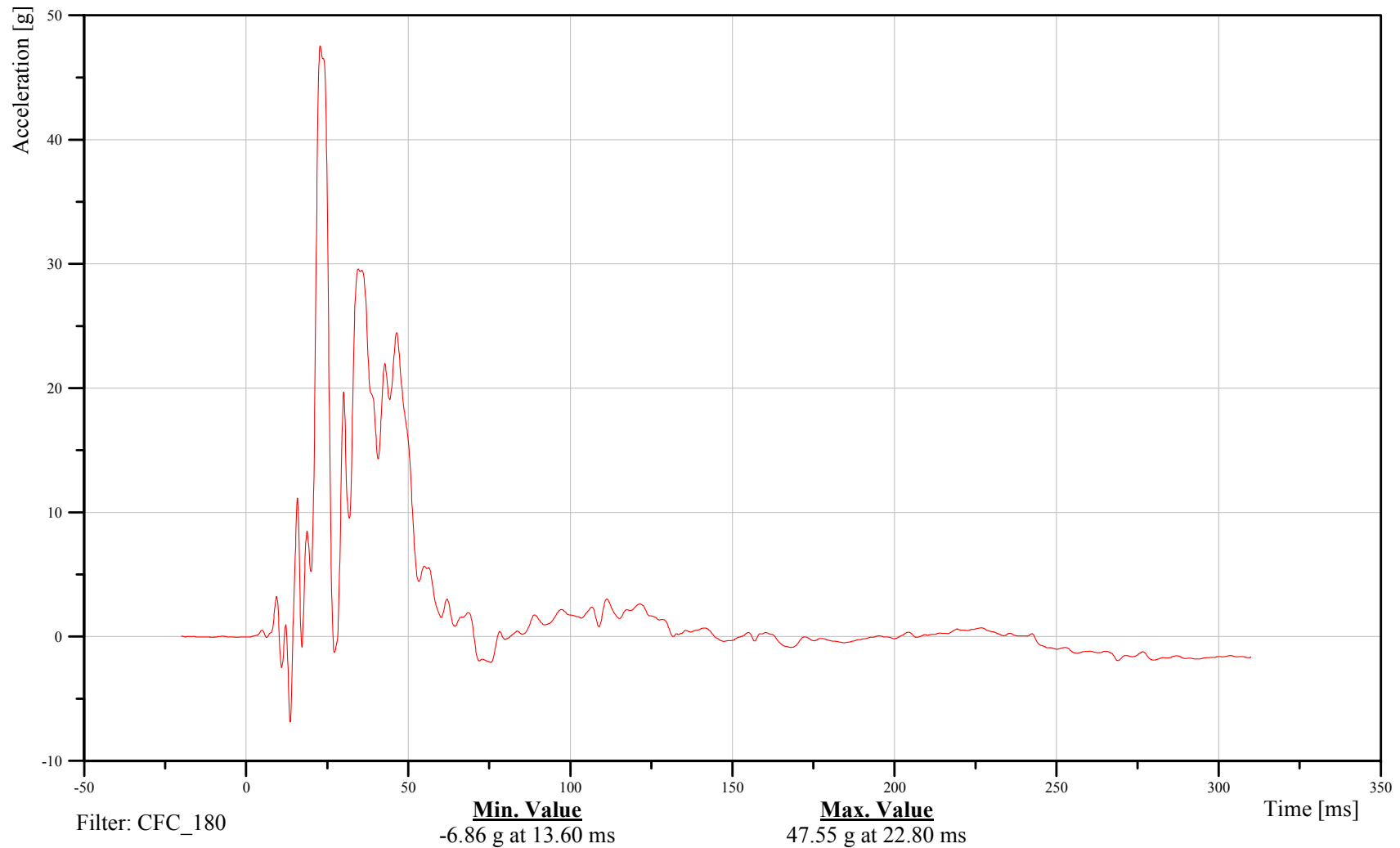
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11TRRI02LES2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 2 Accel Z

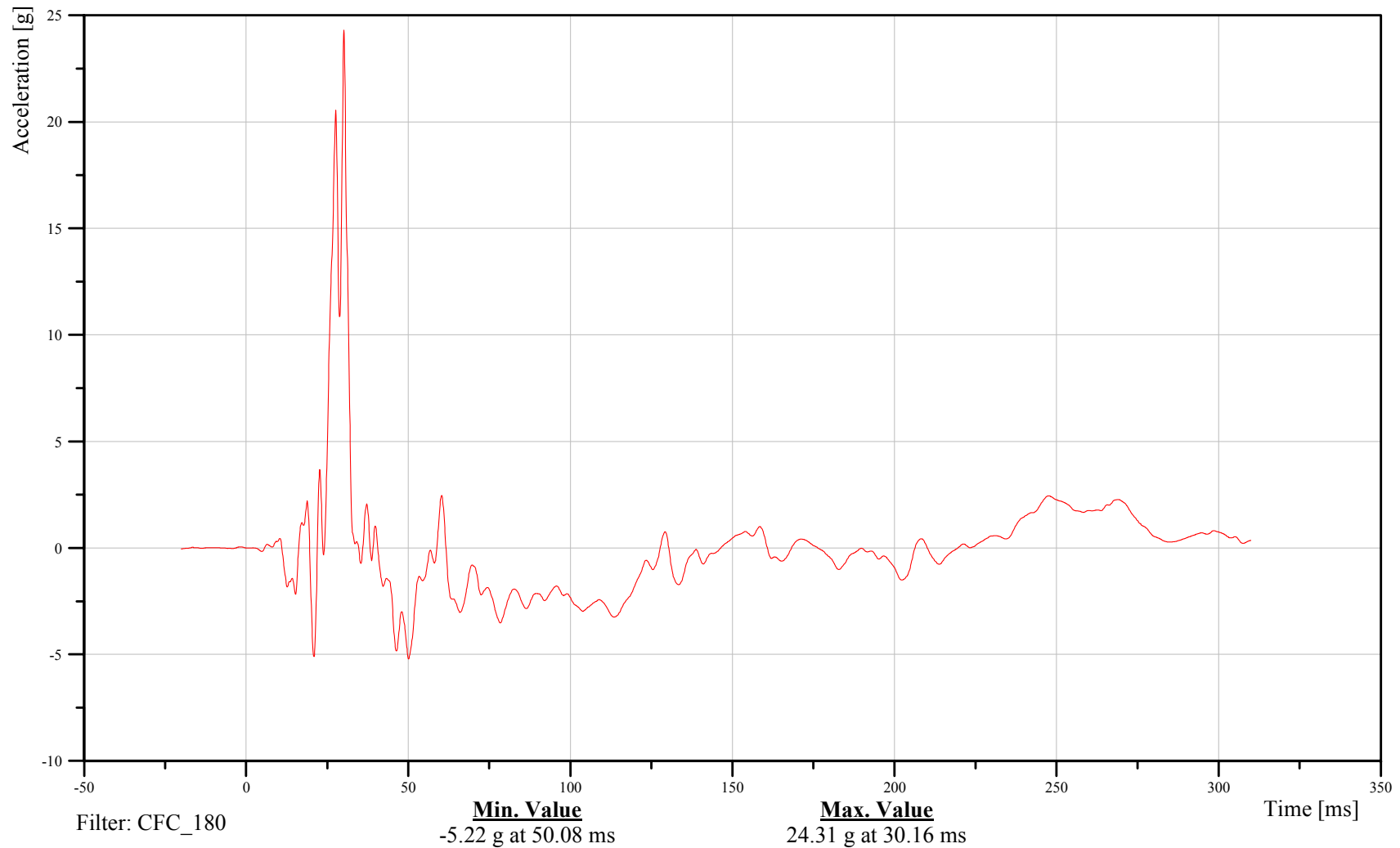
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11TRRI02LES2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 2 Accel Resultant

Date: 08/05/2005

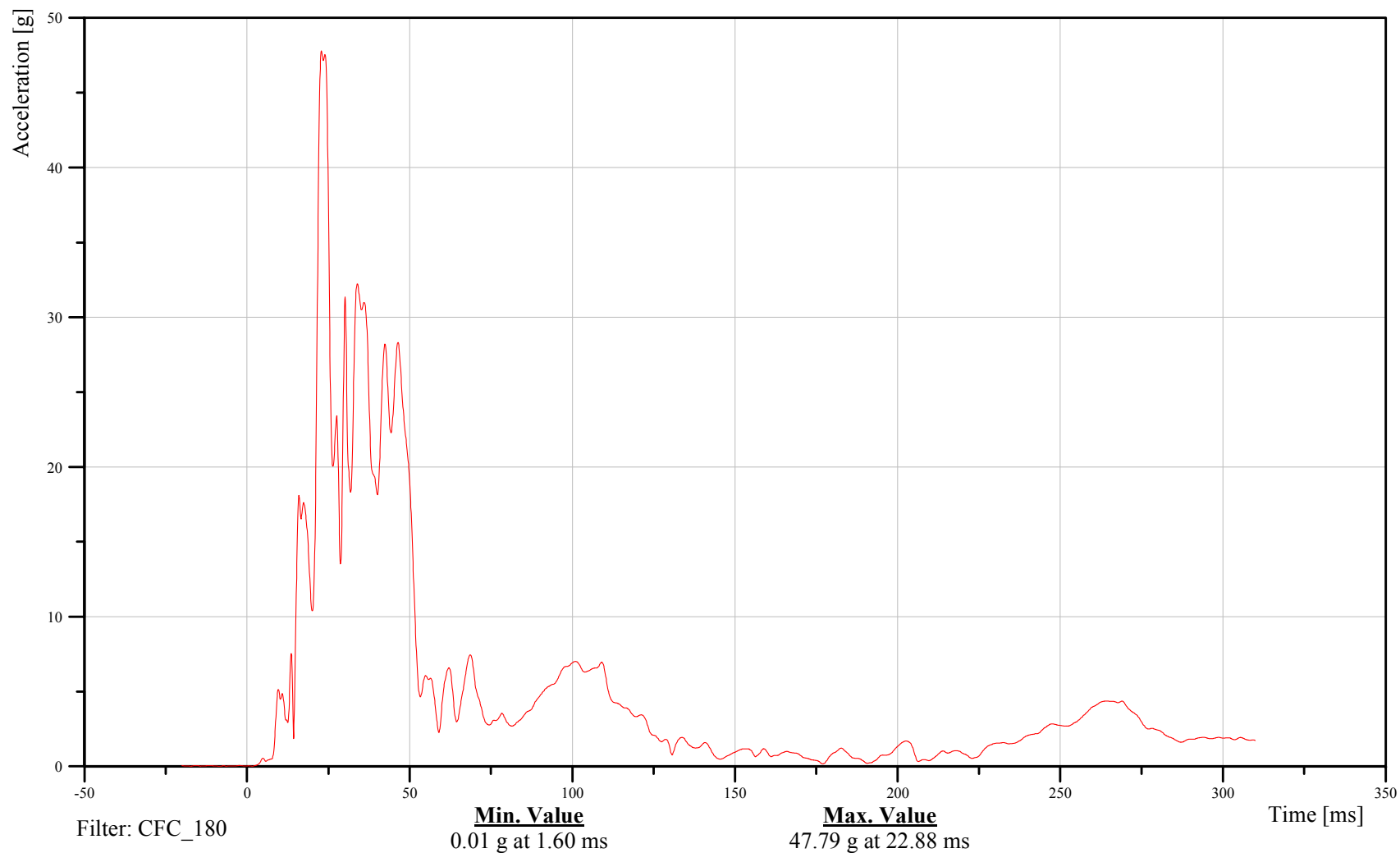
Time: 11:49

Customer: VRTC

11TRRI02LES2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 3 Accel X

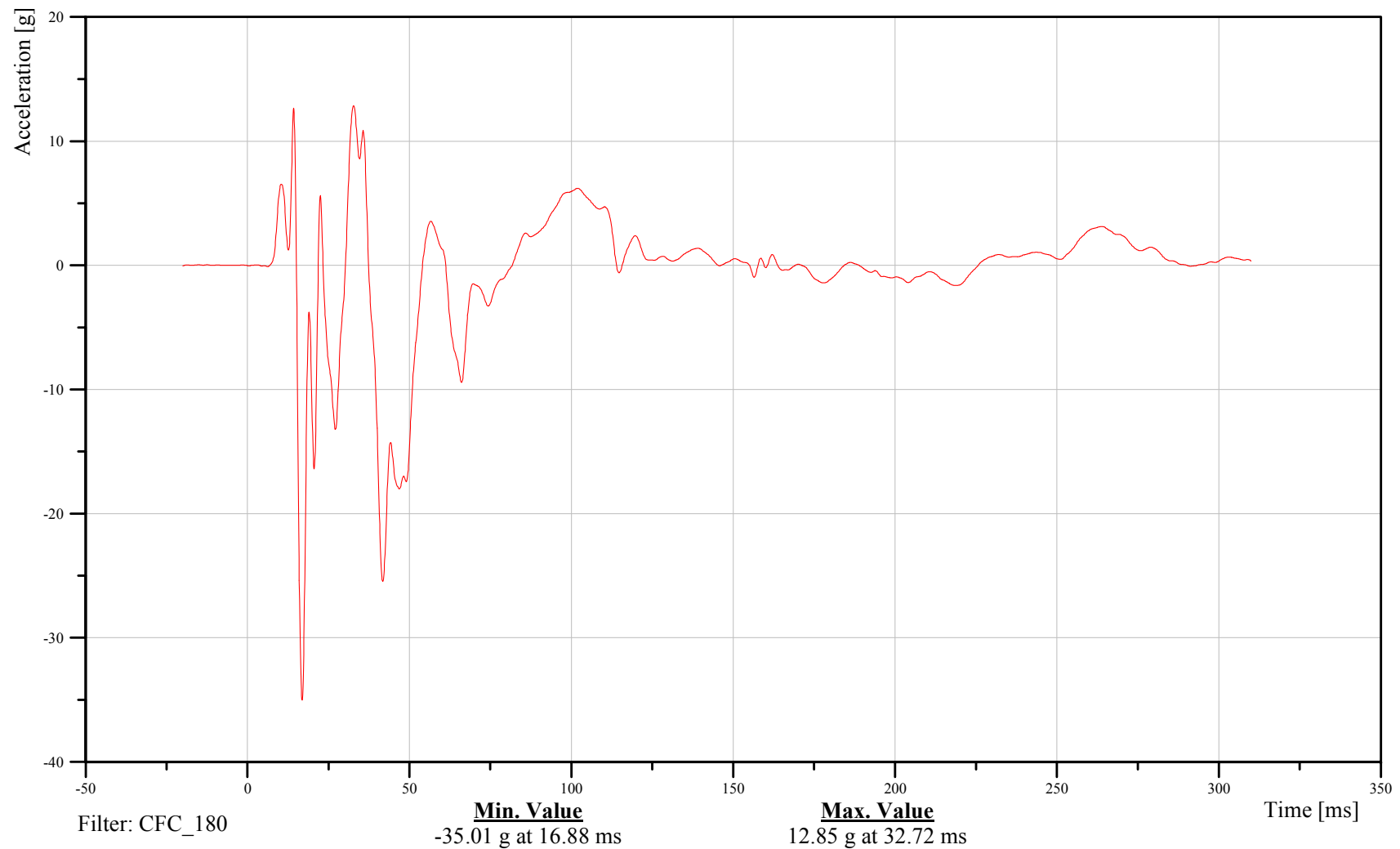
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11TRRI03LES2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 3 Accel Y

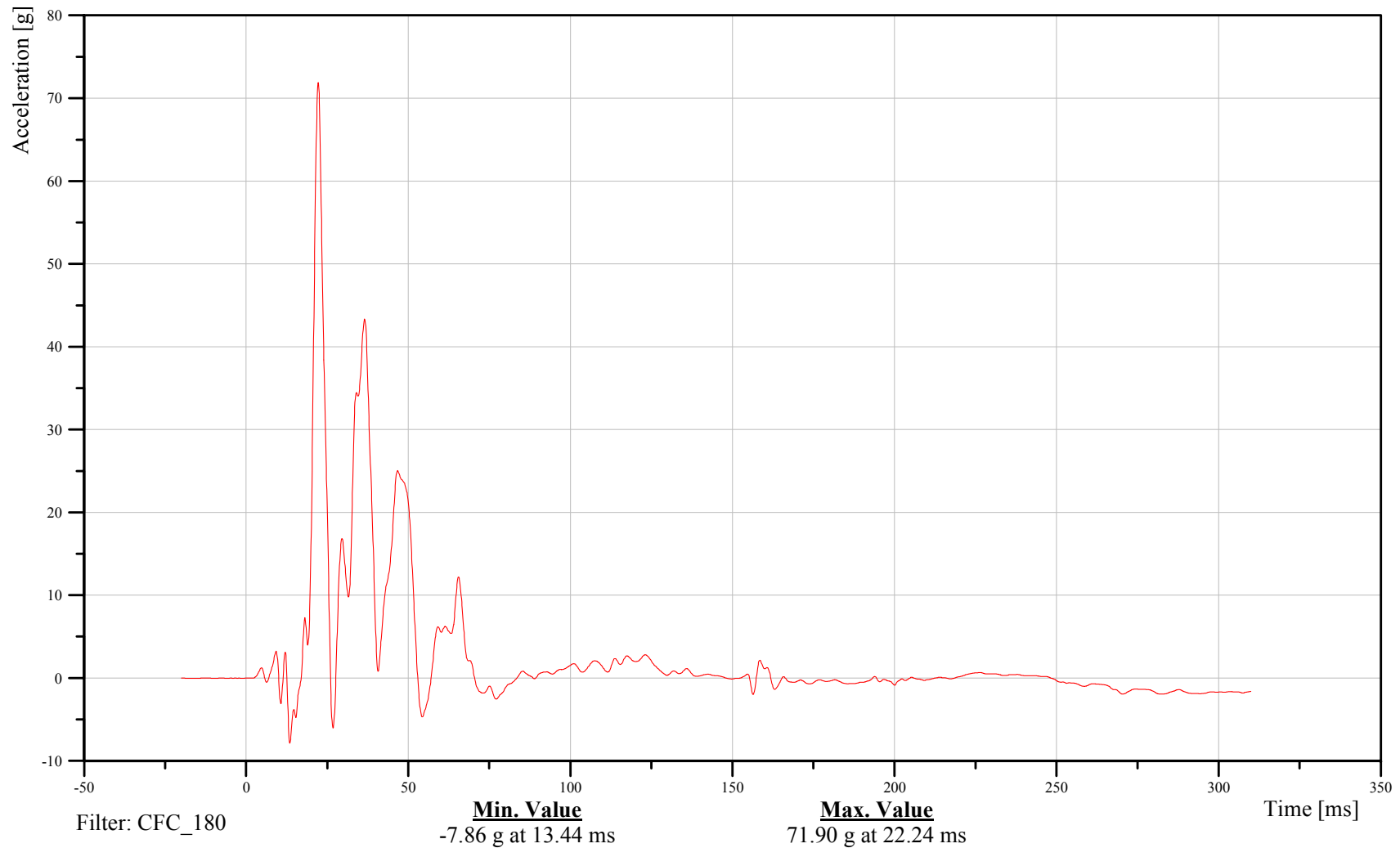
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11TRRI03LES2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 3 Accel Z

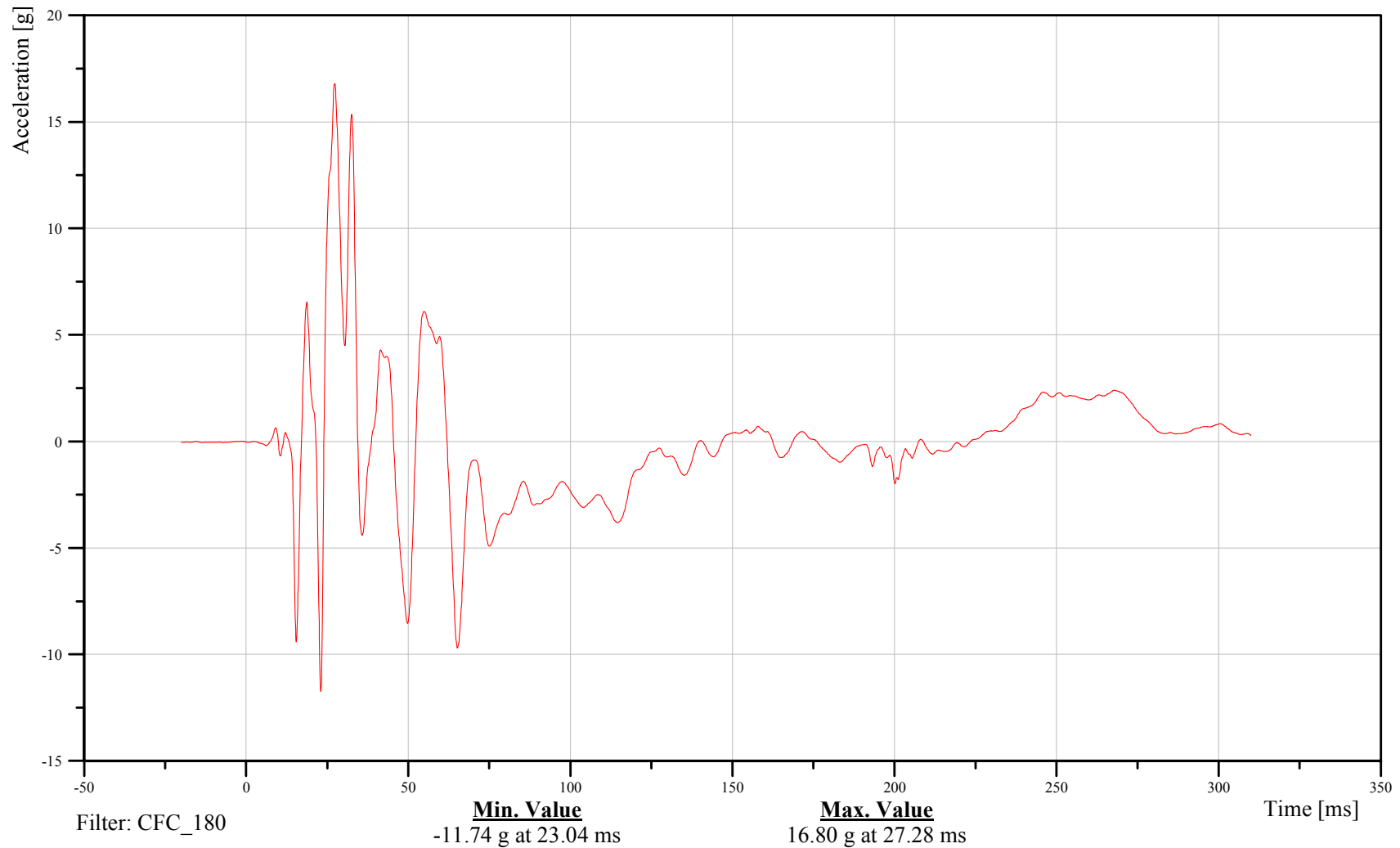
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11TRRI03LES2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 3 Accel Resultant

Date: 08/05/2005

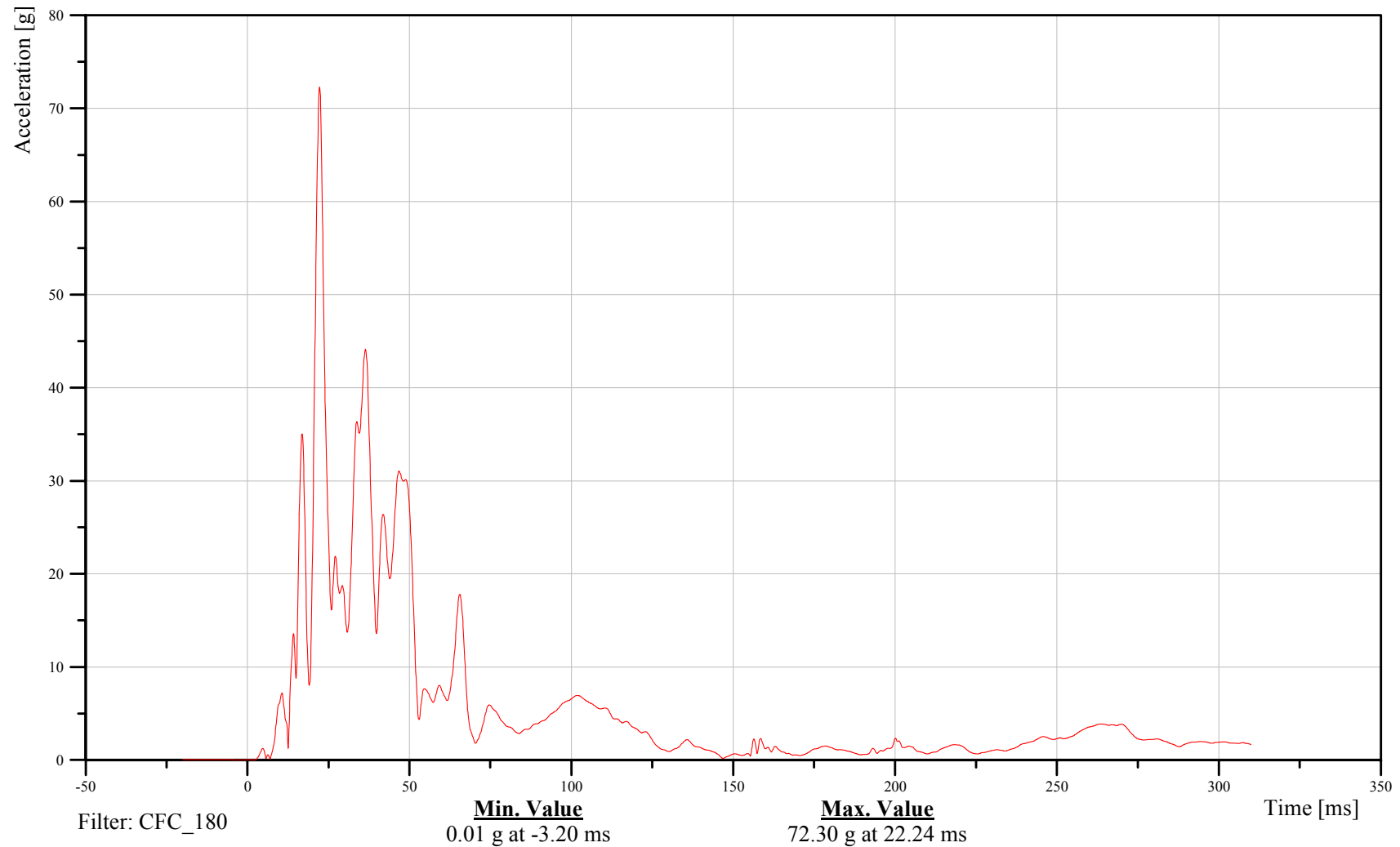
Time: 11:49

Customer: VRTC

11TRRI03LES2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Abdomin Rib 1 Accel X

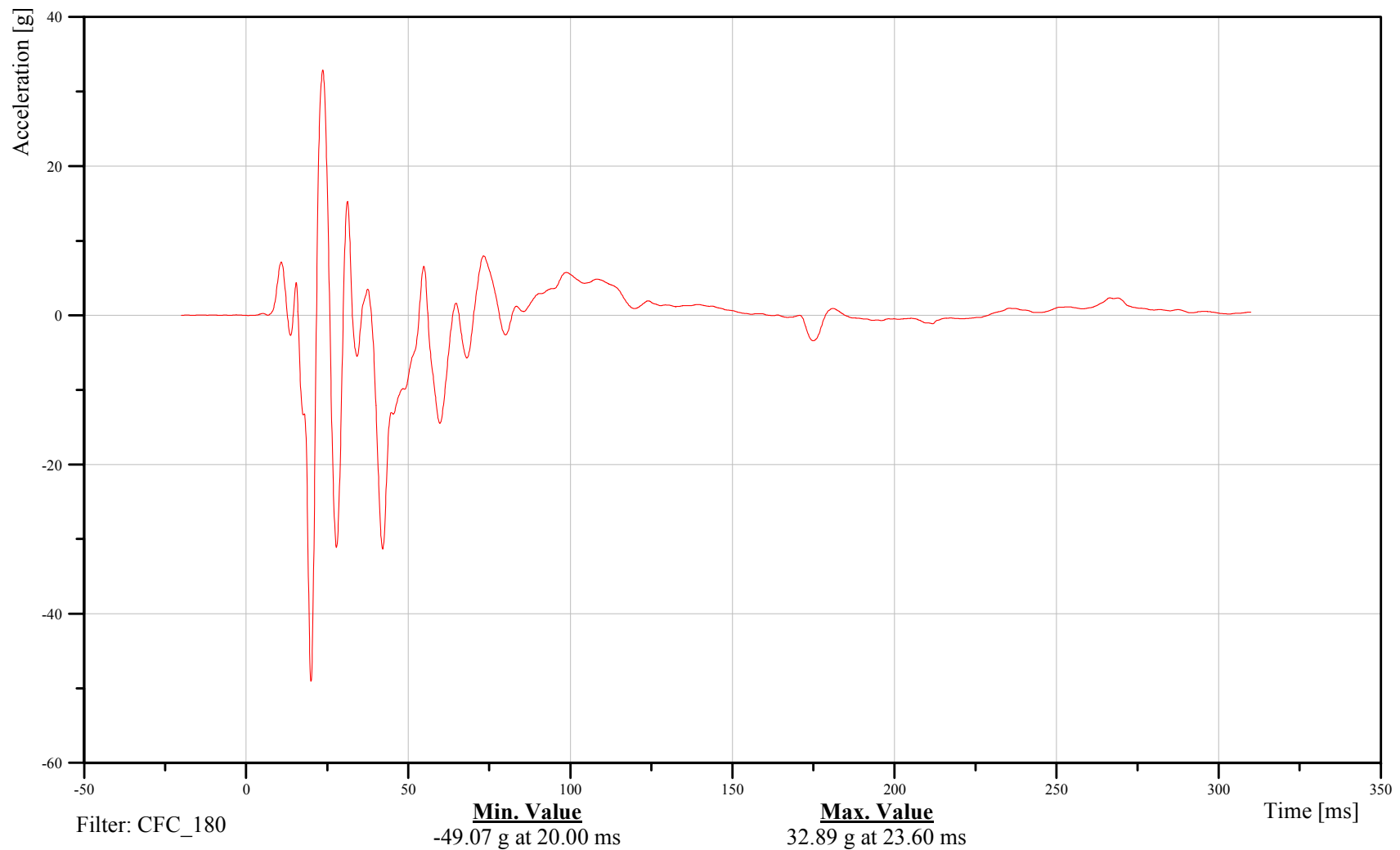
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11ABRI01LES2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Abdomin Rib 1 Accel Y

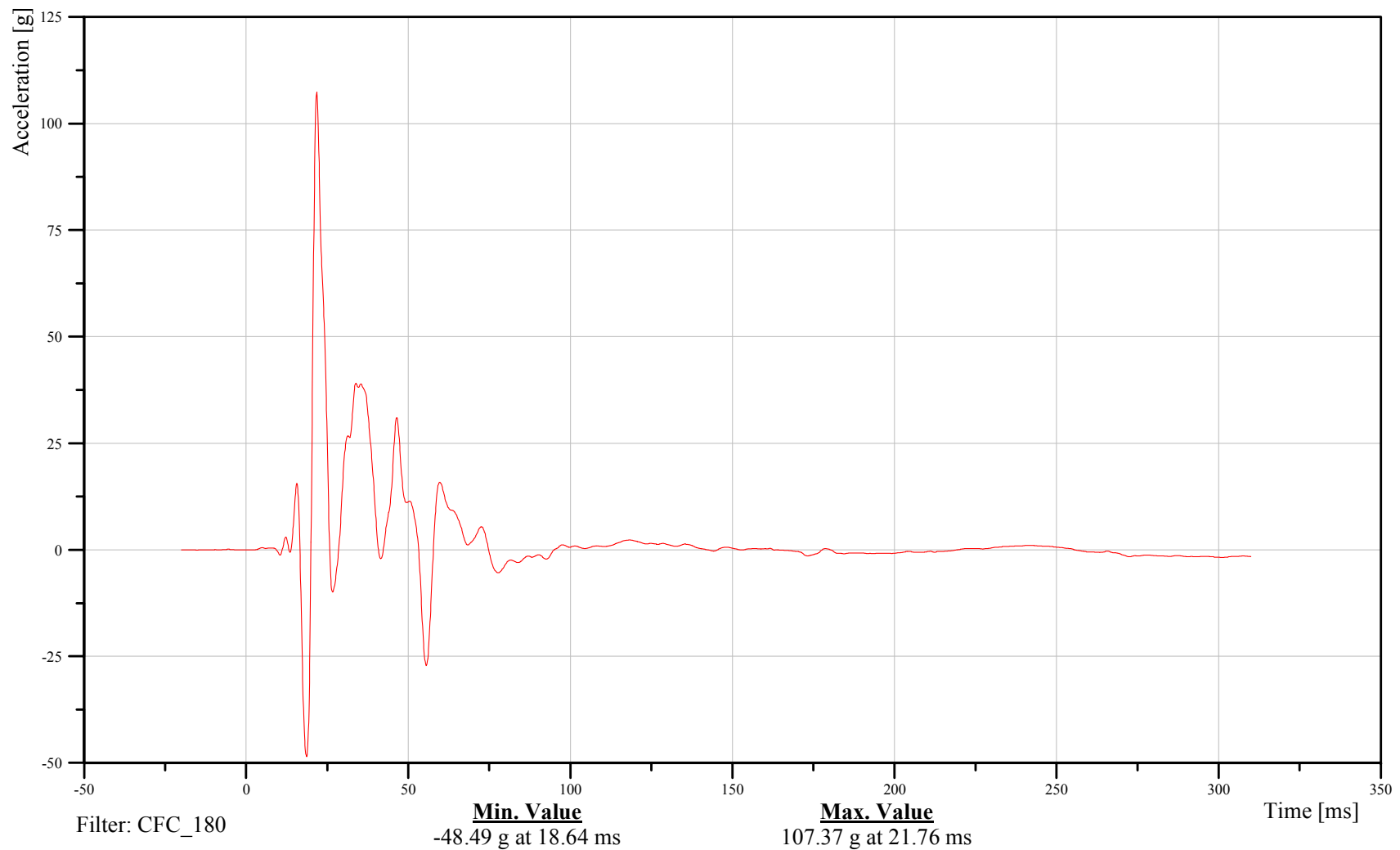
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11ABRI01LES2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Abdomin Rib 1 Accel Z

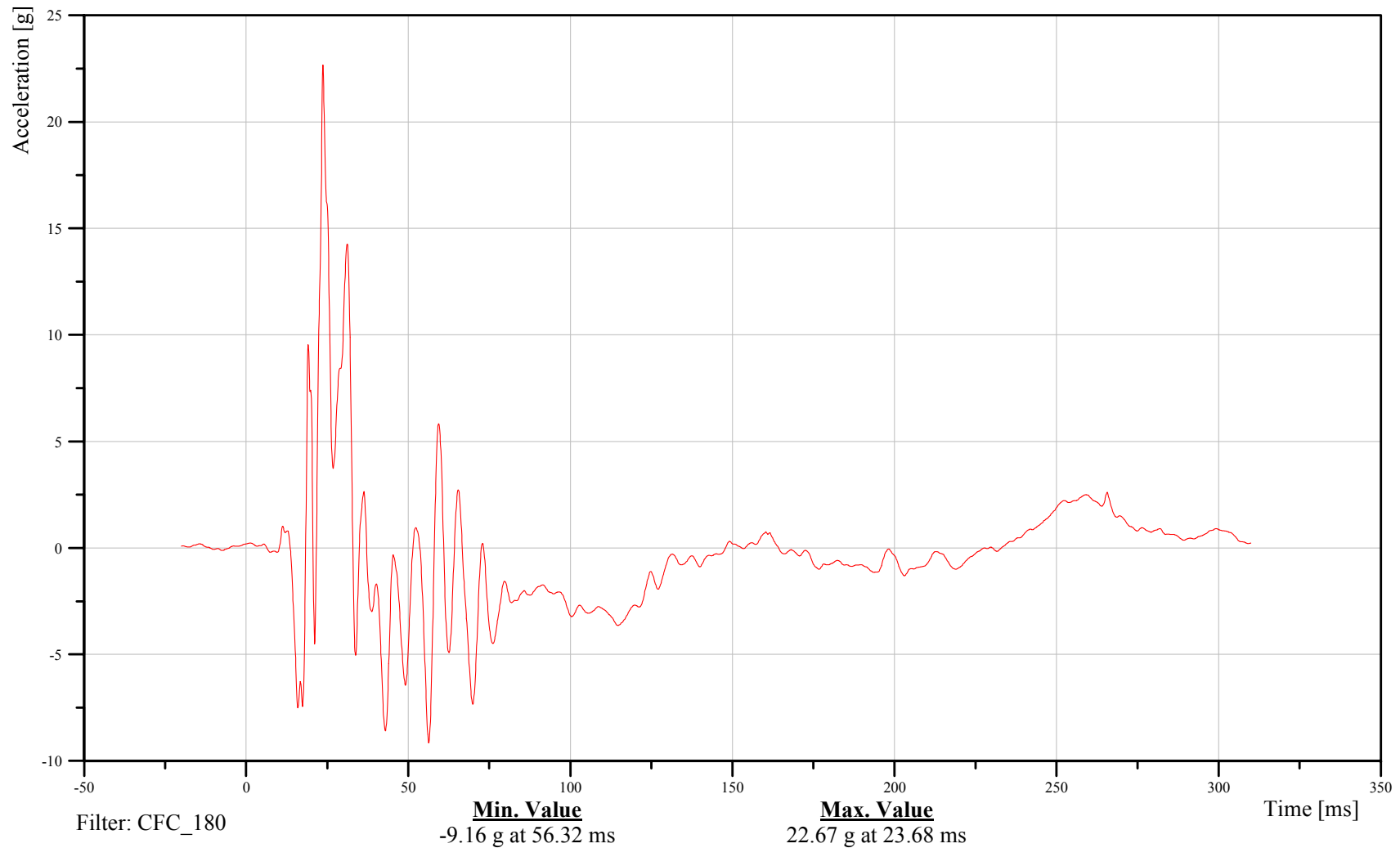
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11ABRI01LES2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Abdomin Rib 1 Accel Resultant

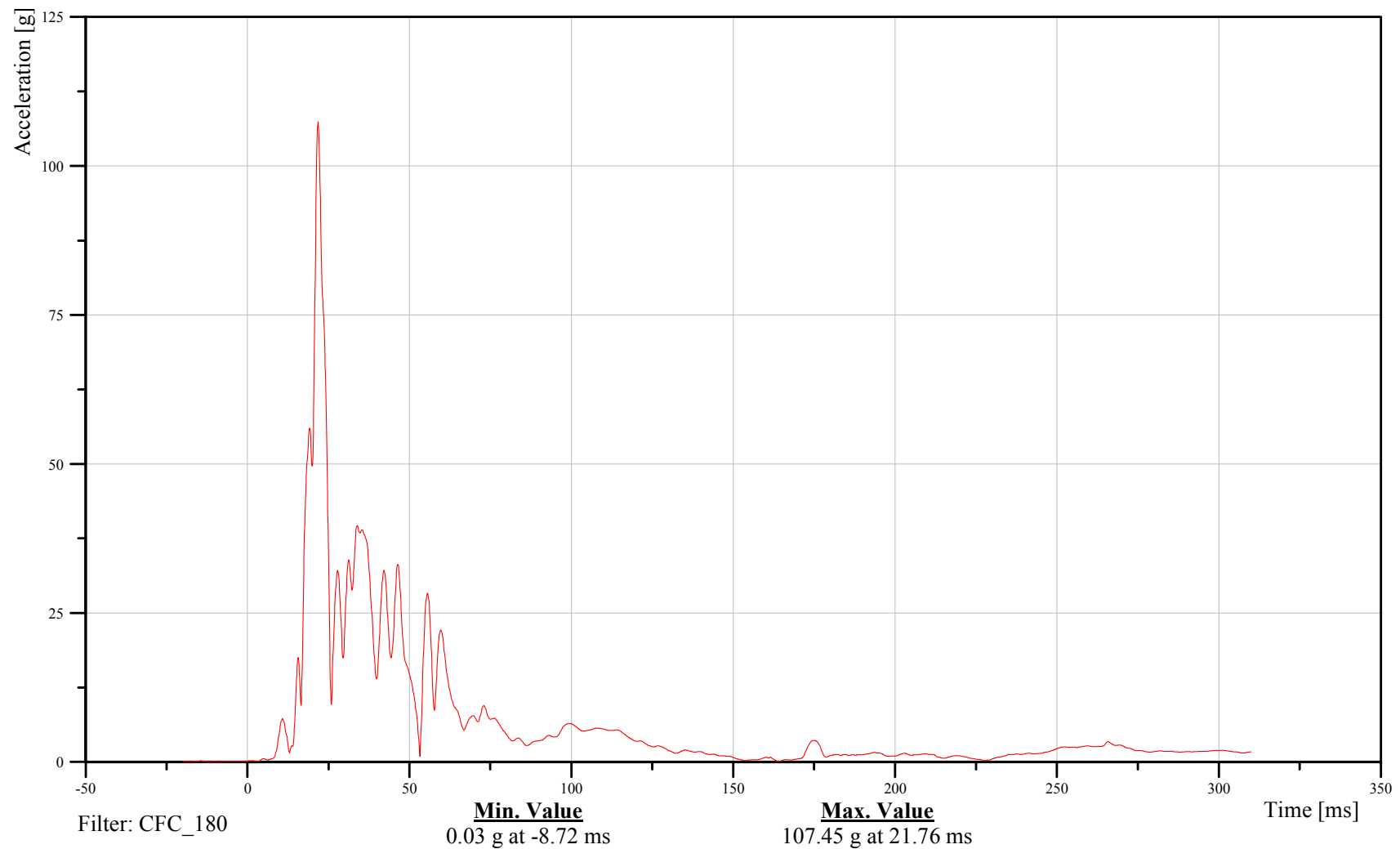
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11ABRI01LES2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Abdomin Rib 2 Accel X

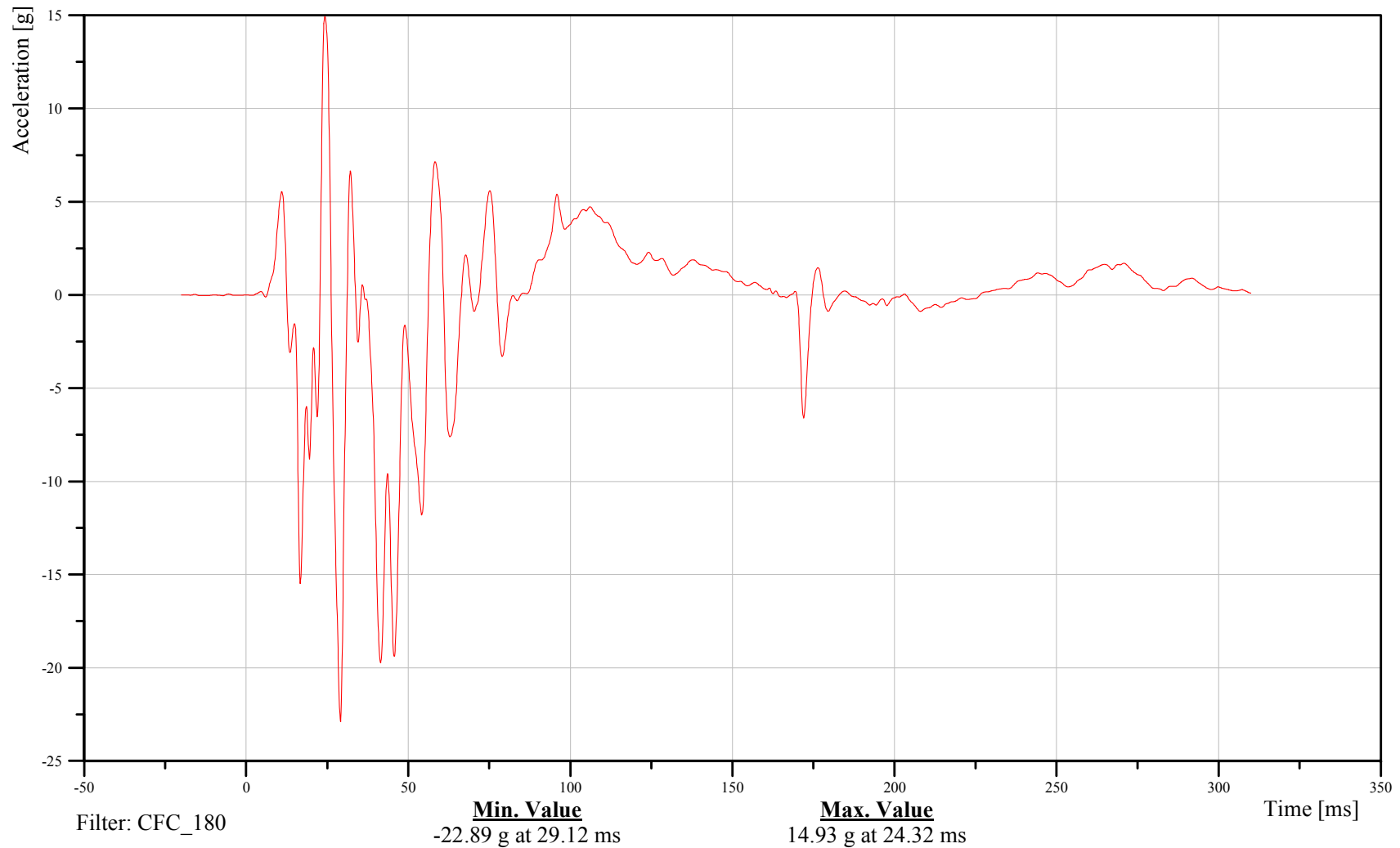
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11ABRI02LES2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Abdomin Rib 2 Accel Y

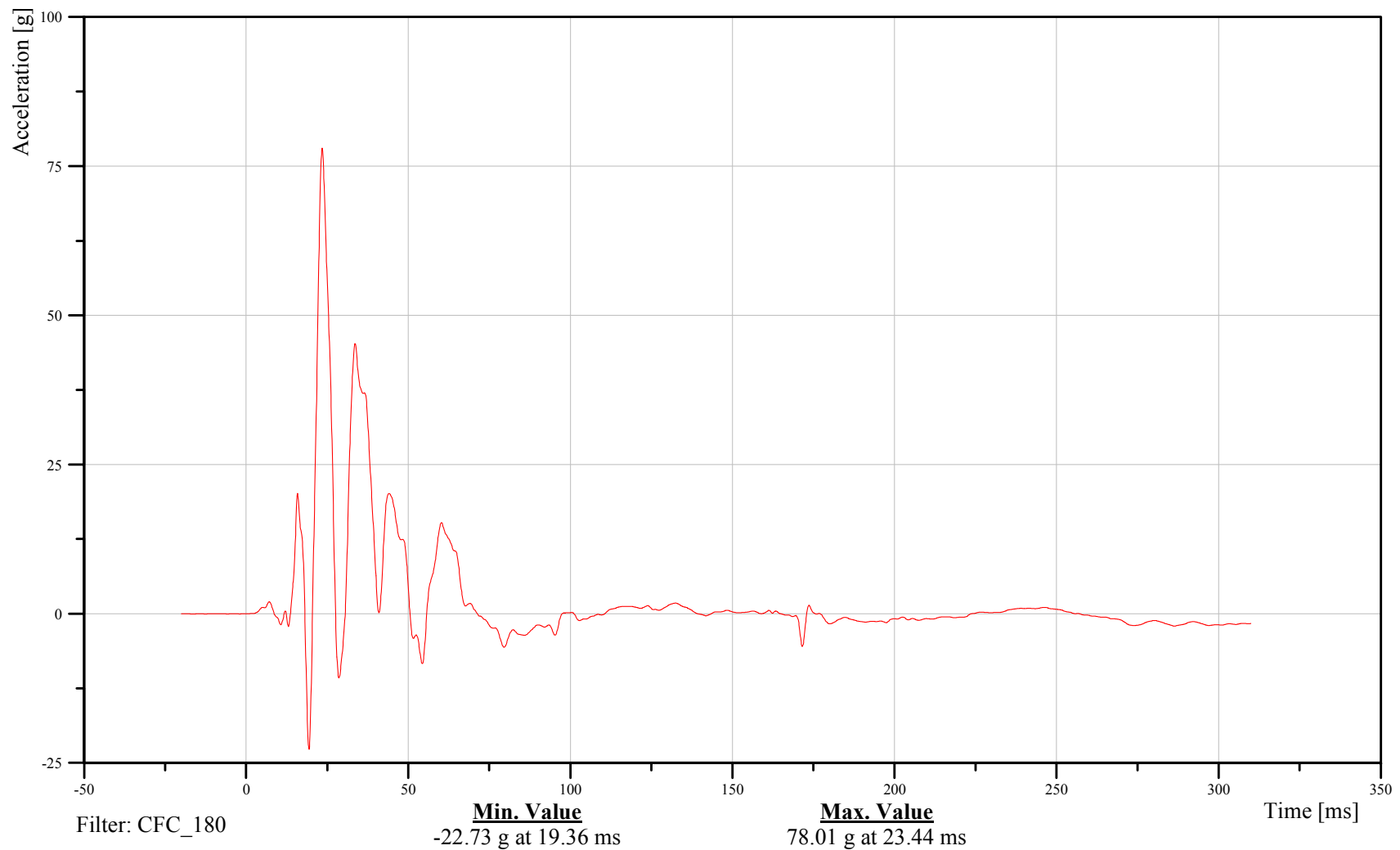
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11ABRI02LES2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

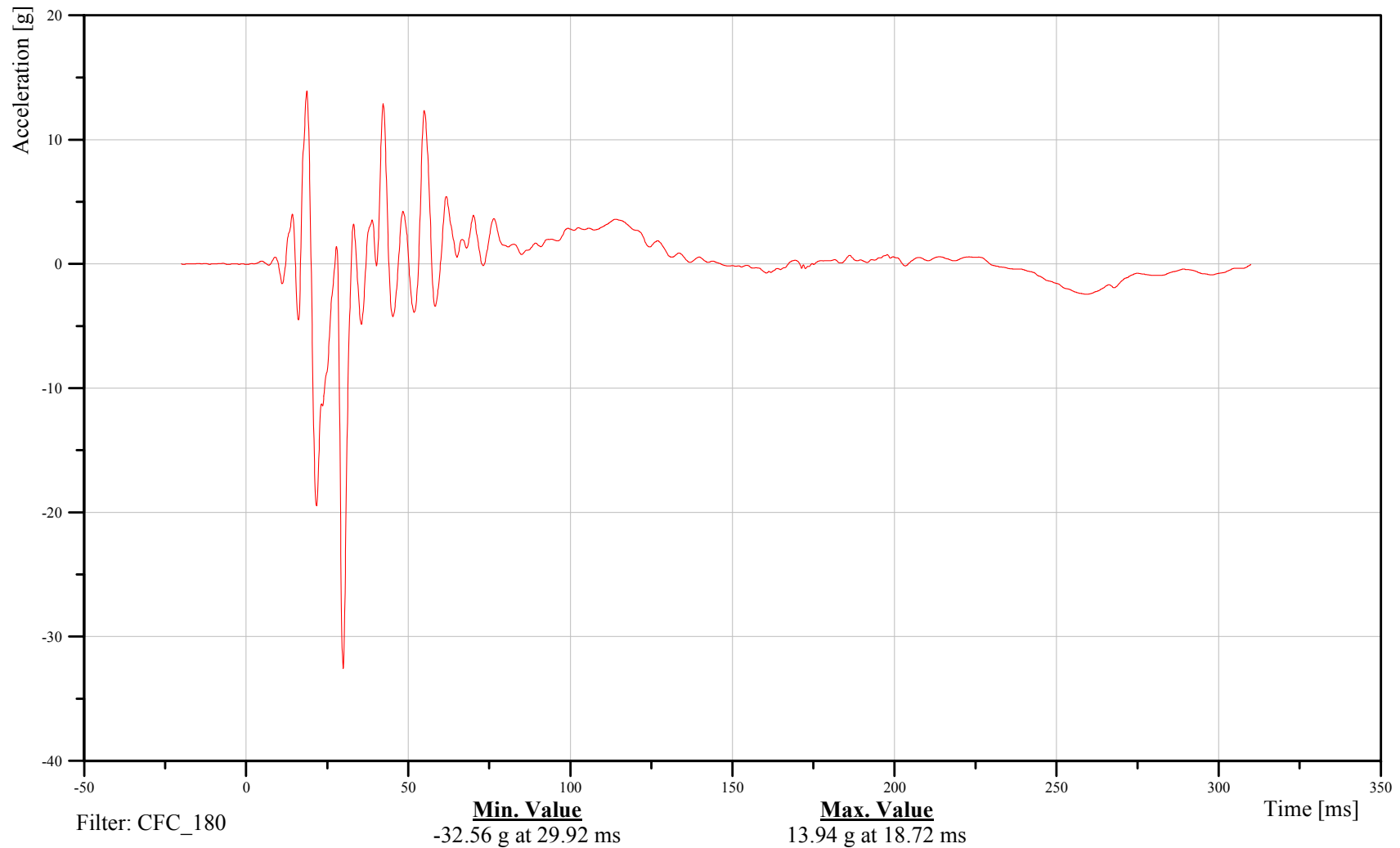
Abdomin Rib 2 Accel Z

Customer: VRTC

11ABRI02LES2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Abdomin Rib 2 Accel Resultant

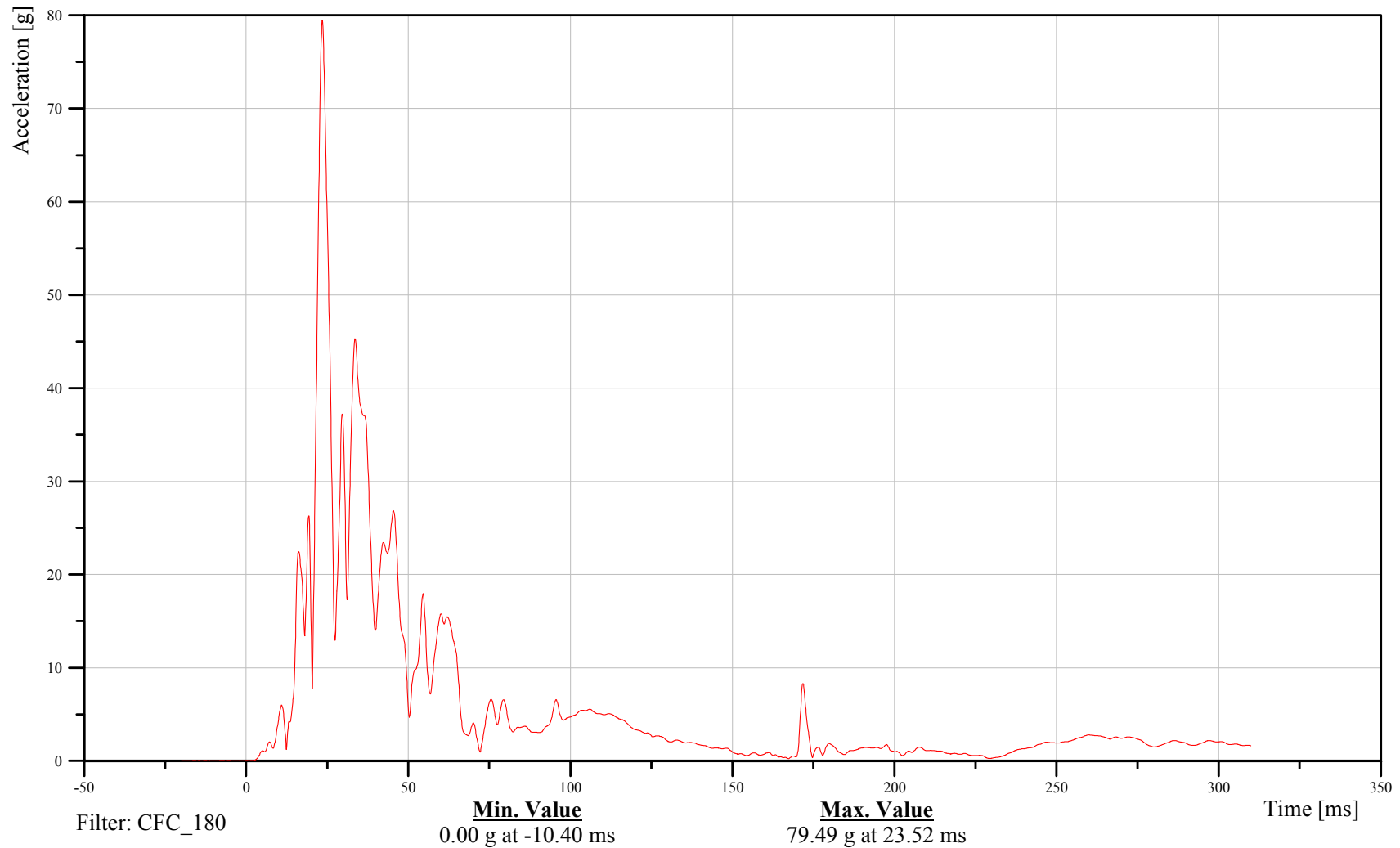
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11ABRI02LES2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

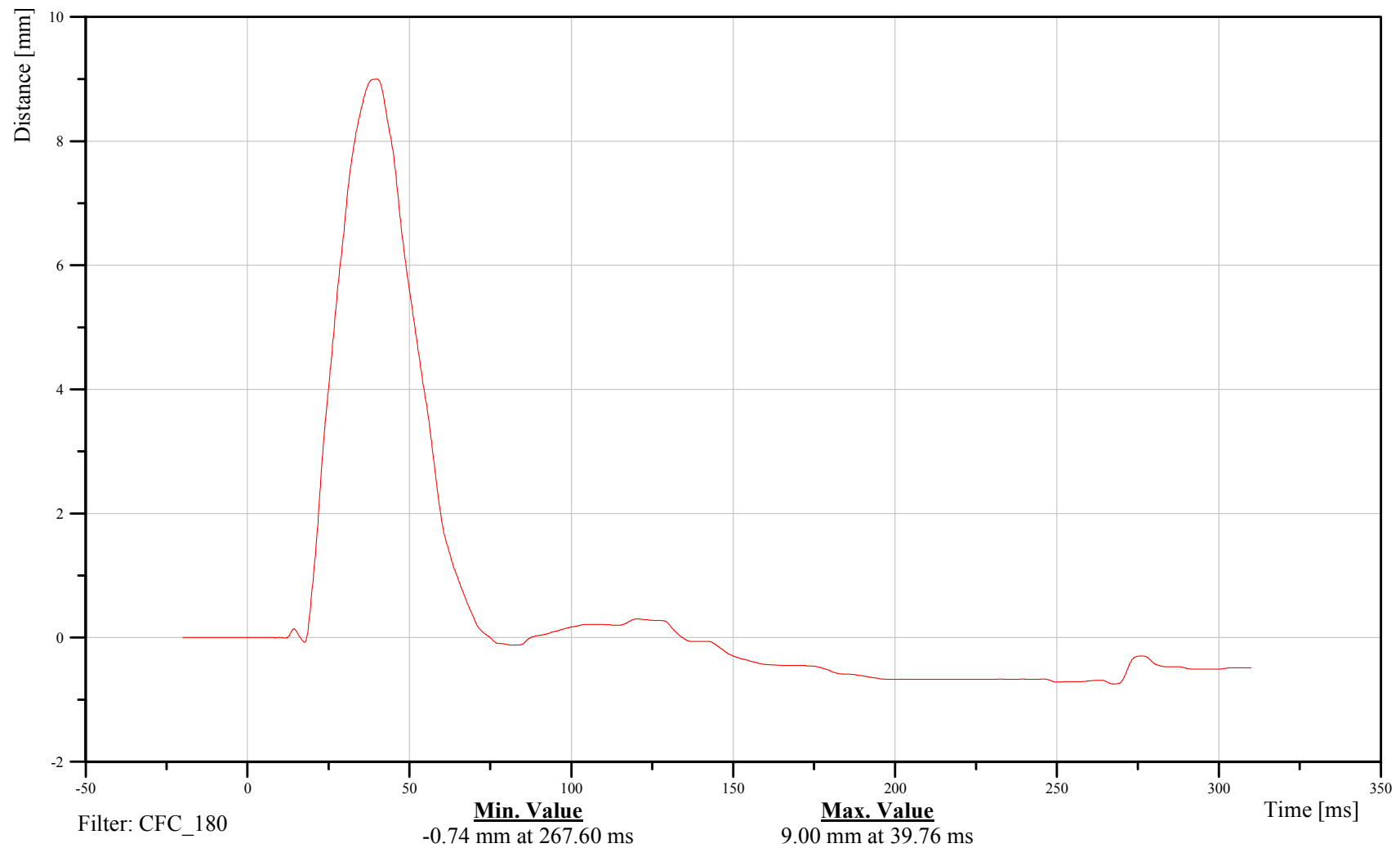
Shoulder Disp. Y

Customer: VRTC

11SHRILE00S2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 1 Disp. Y

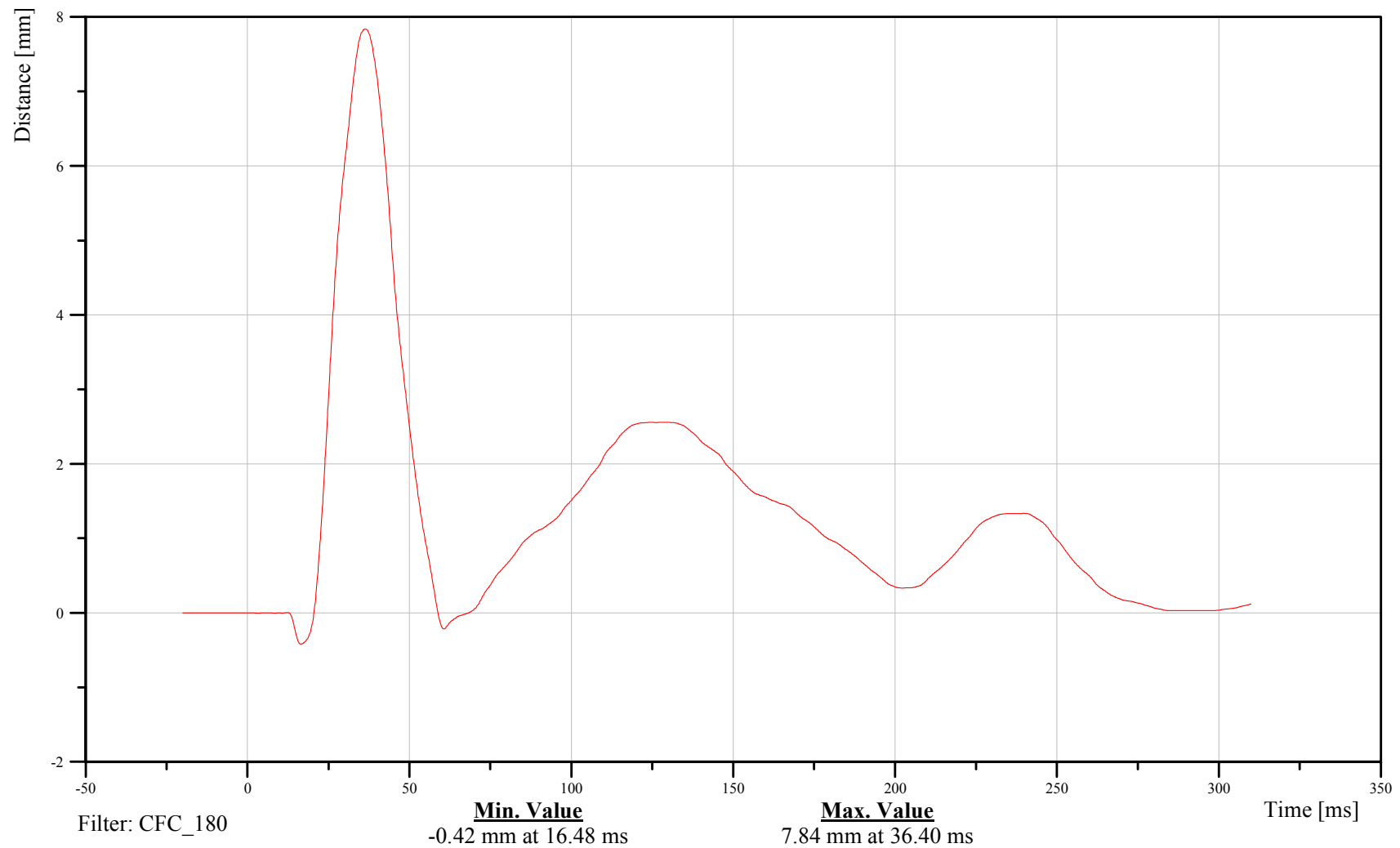
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11TRRI01LES2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 2 Disp. Y

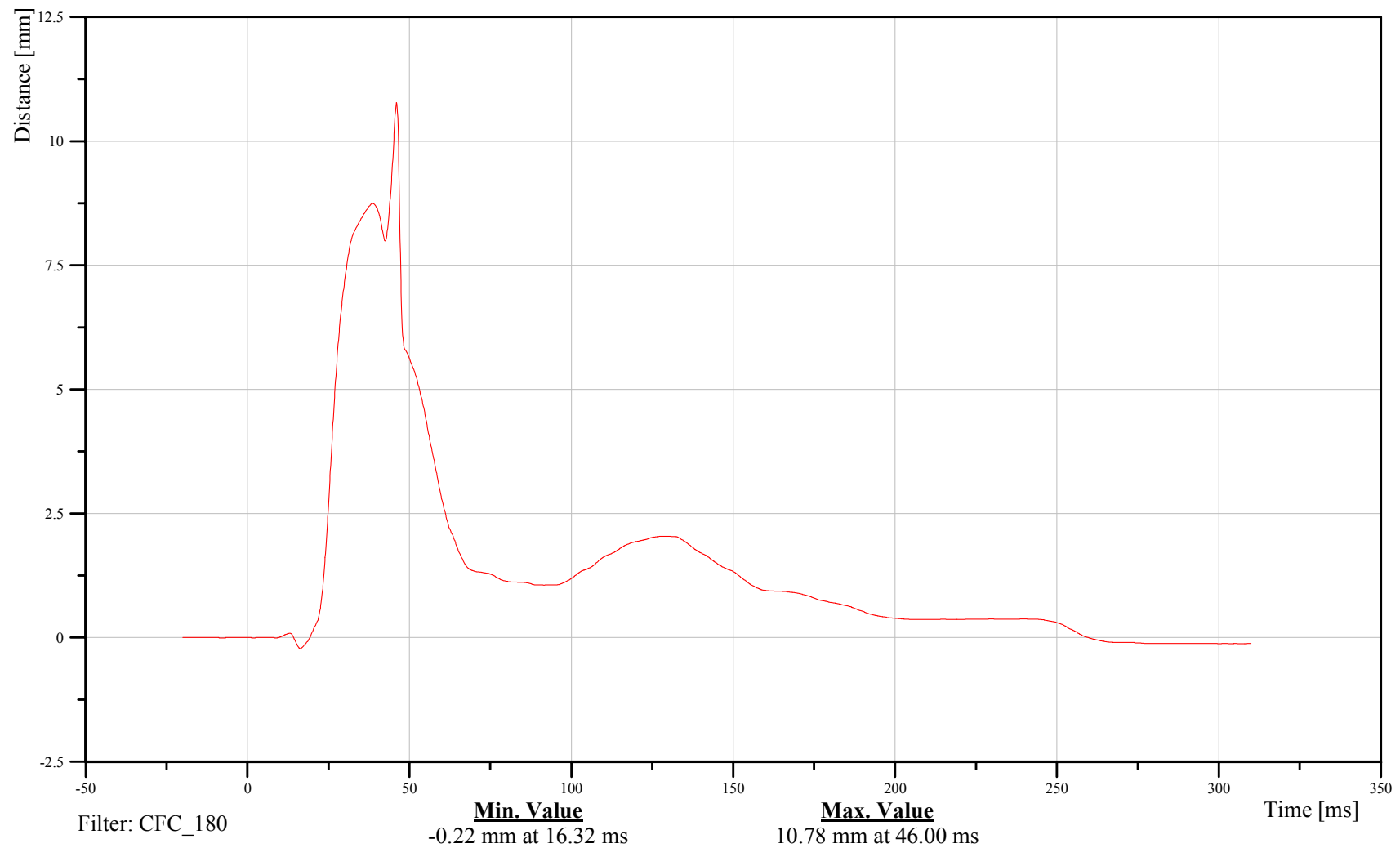
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11TRRI02LES2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 3 Disp. Y

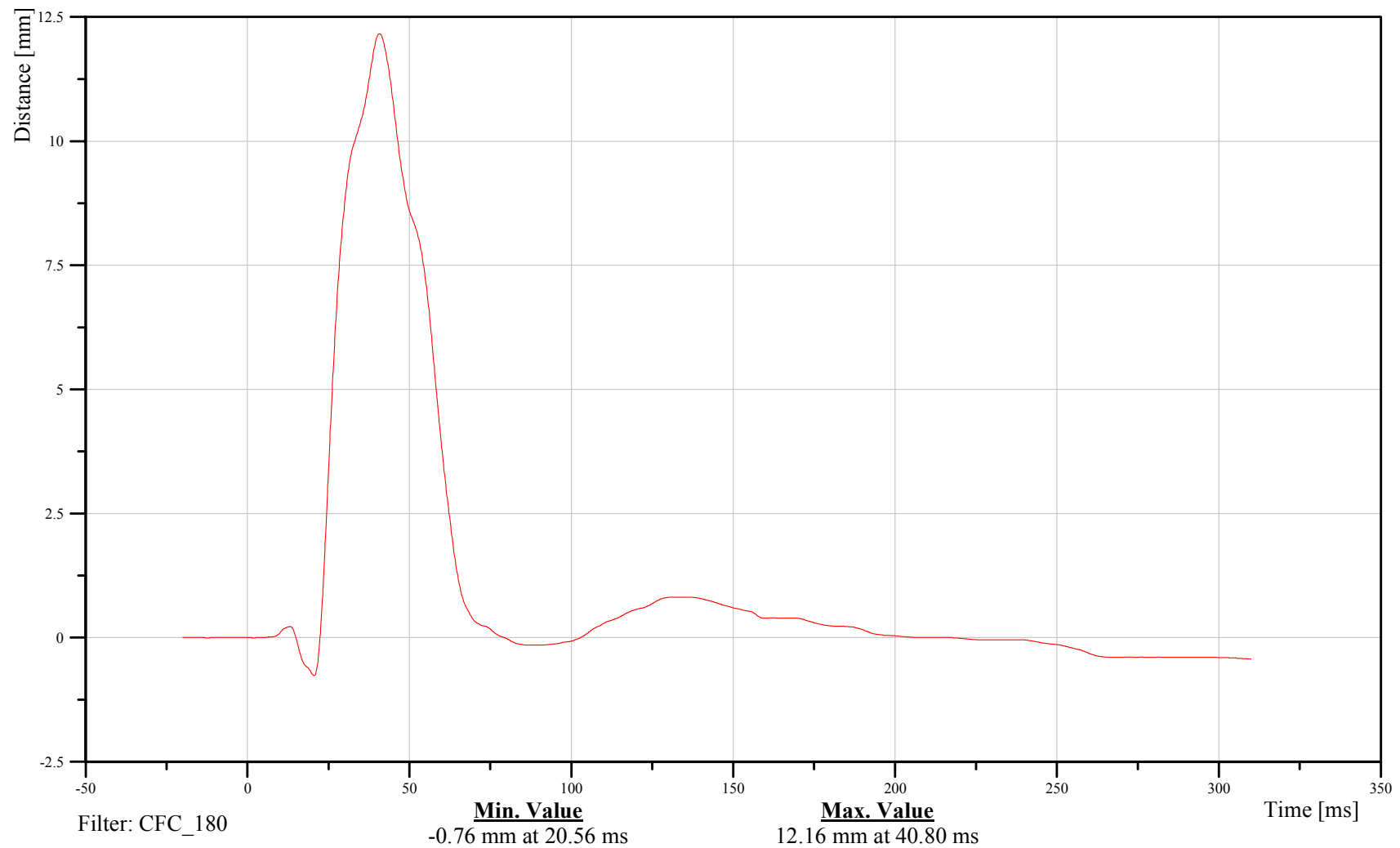
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11TRRI03LES2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

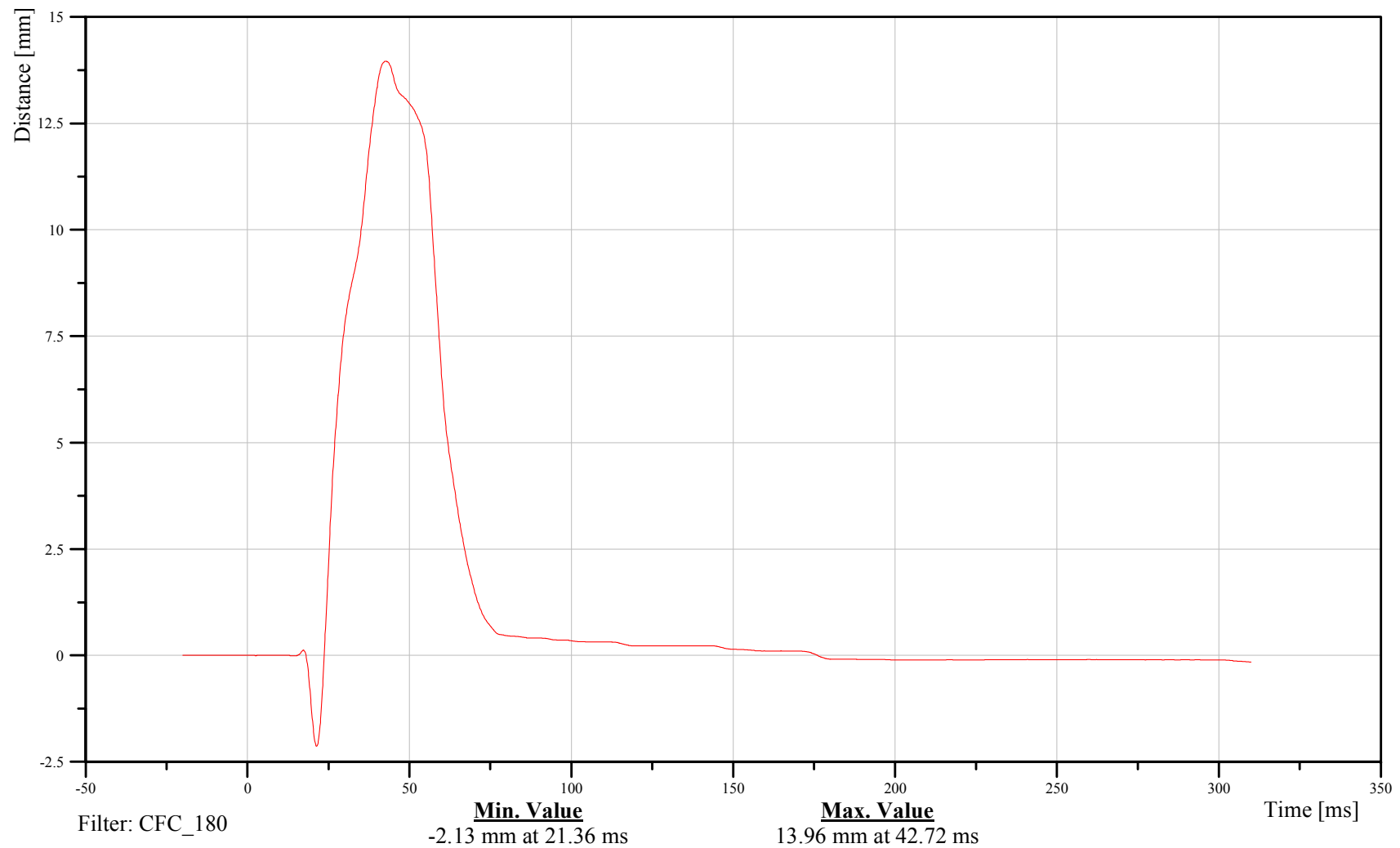
Abdomin Rib 1 Disp. Y

Customer: VRTC

11ABRI01LES2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

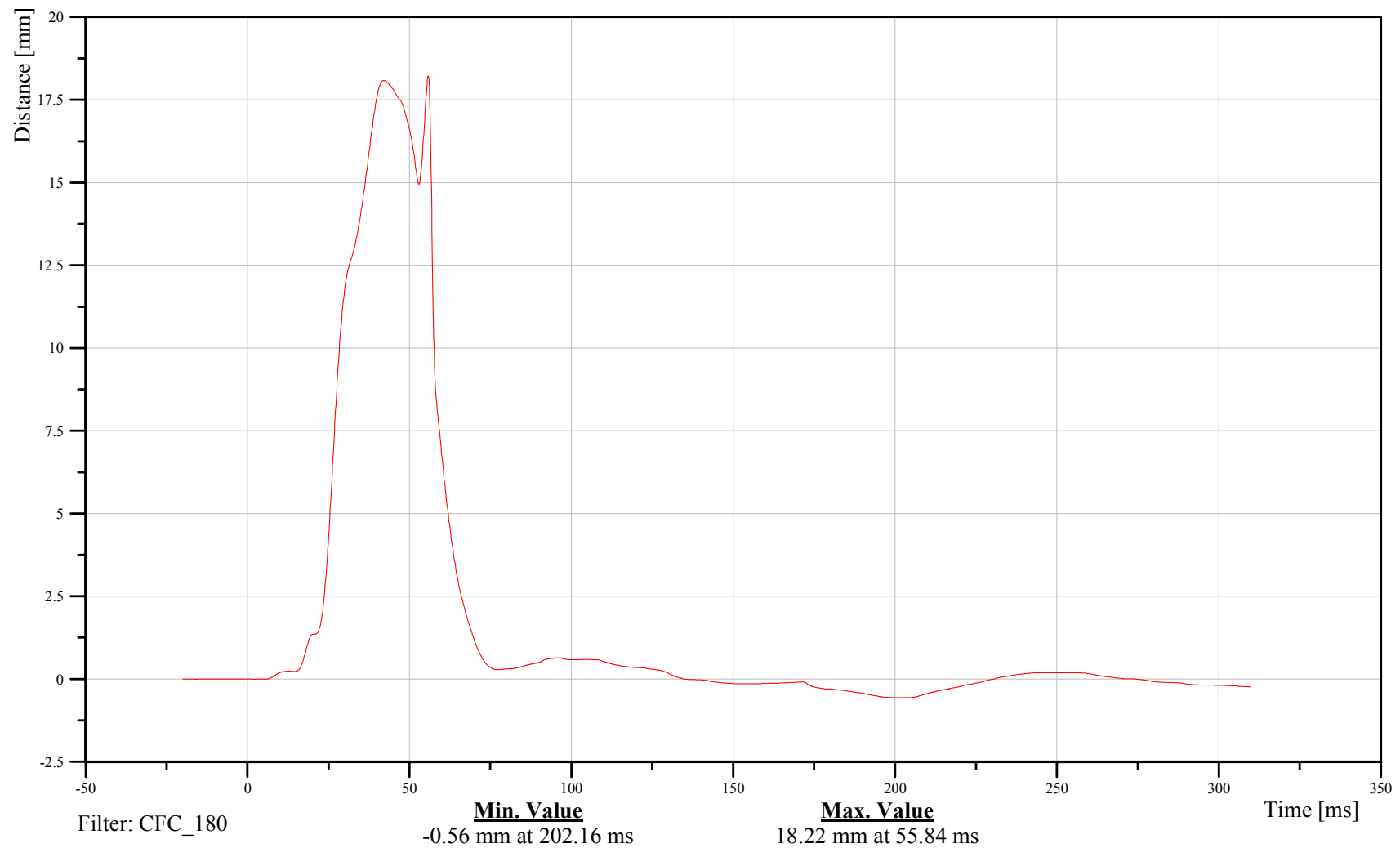
Abdomin Rib 2 Disp. Y

Customer: VRTC

11ABRI02LES2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Pelvis Accel X

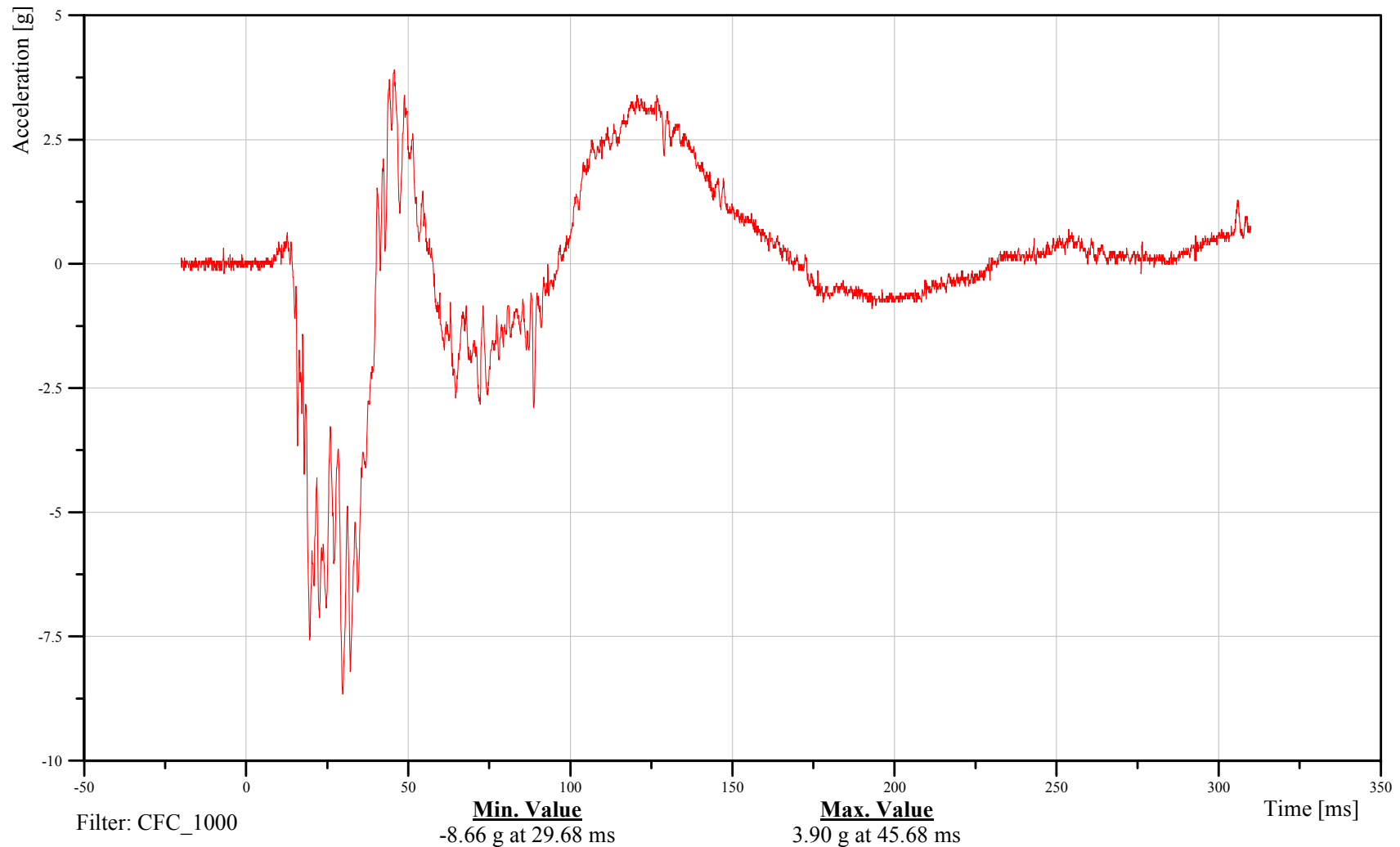
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11PELVCG00S2ACXA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Pelvis Accel Y

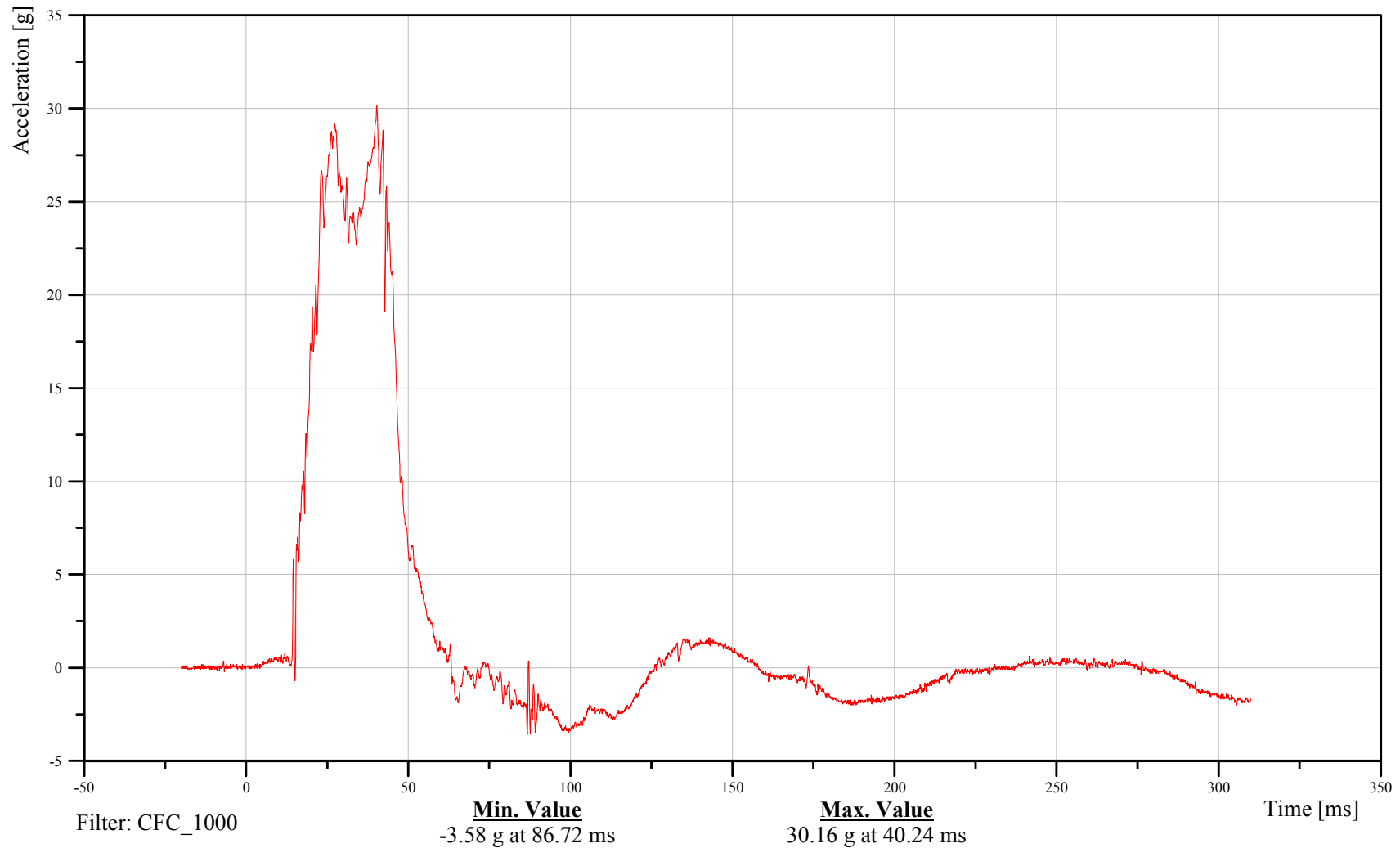
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11PELVCG00S2ACYA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Pelvis Accel Z

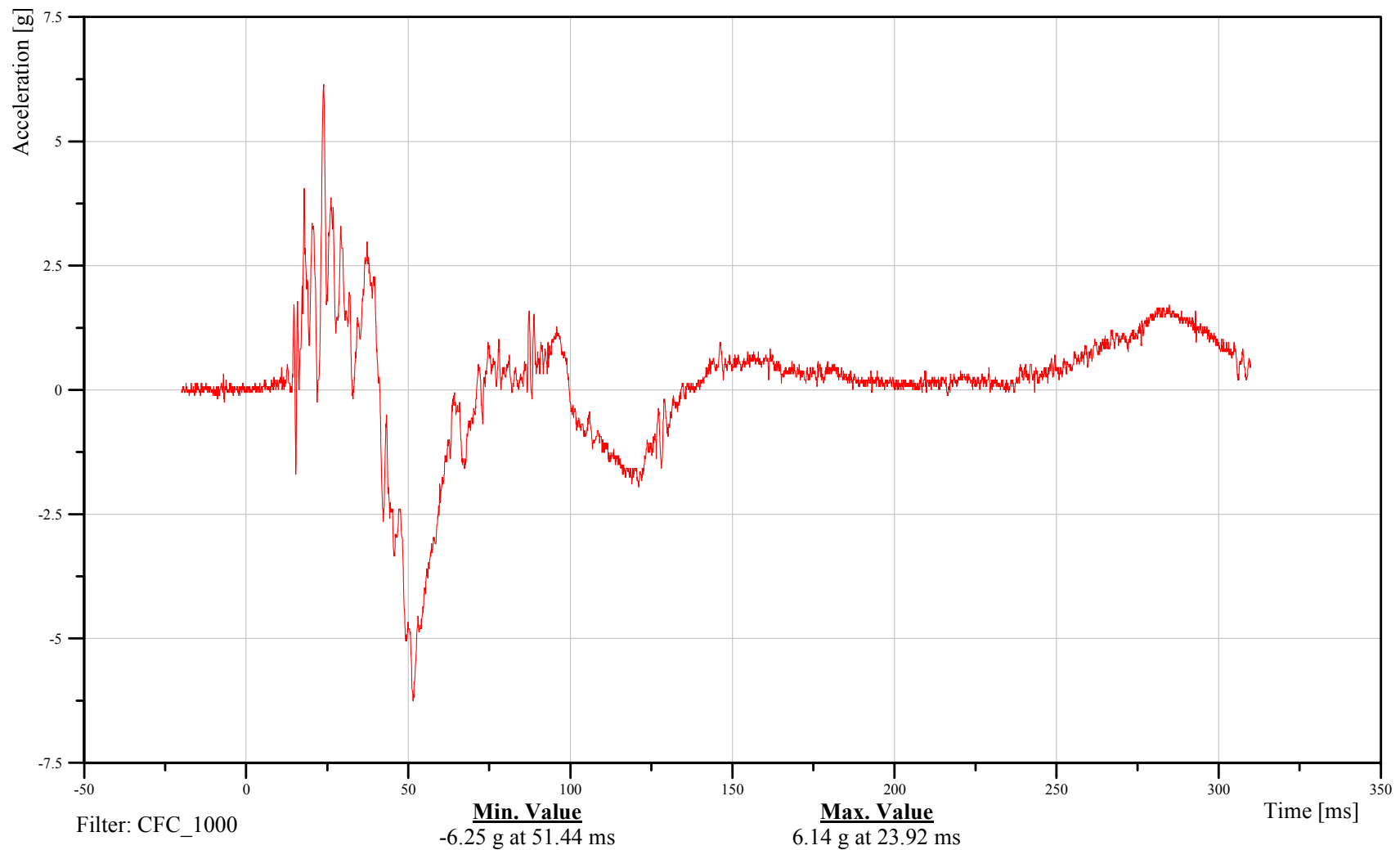
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11PELVCG00S2ACZA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Pelvis Accel Resultant

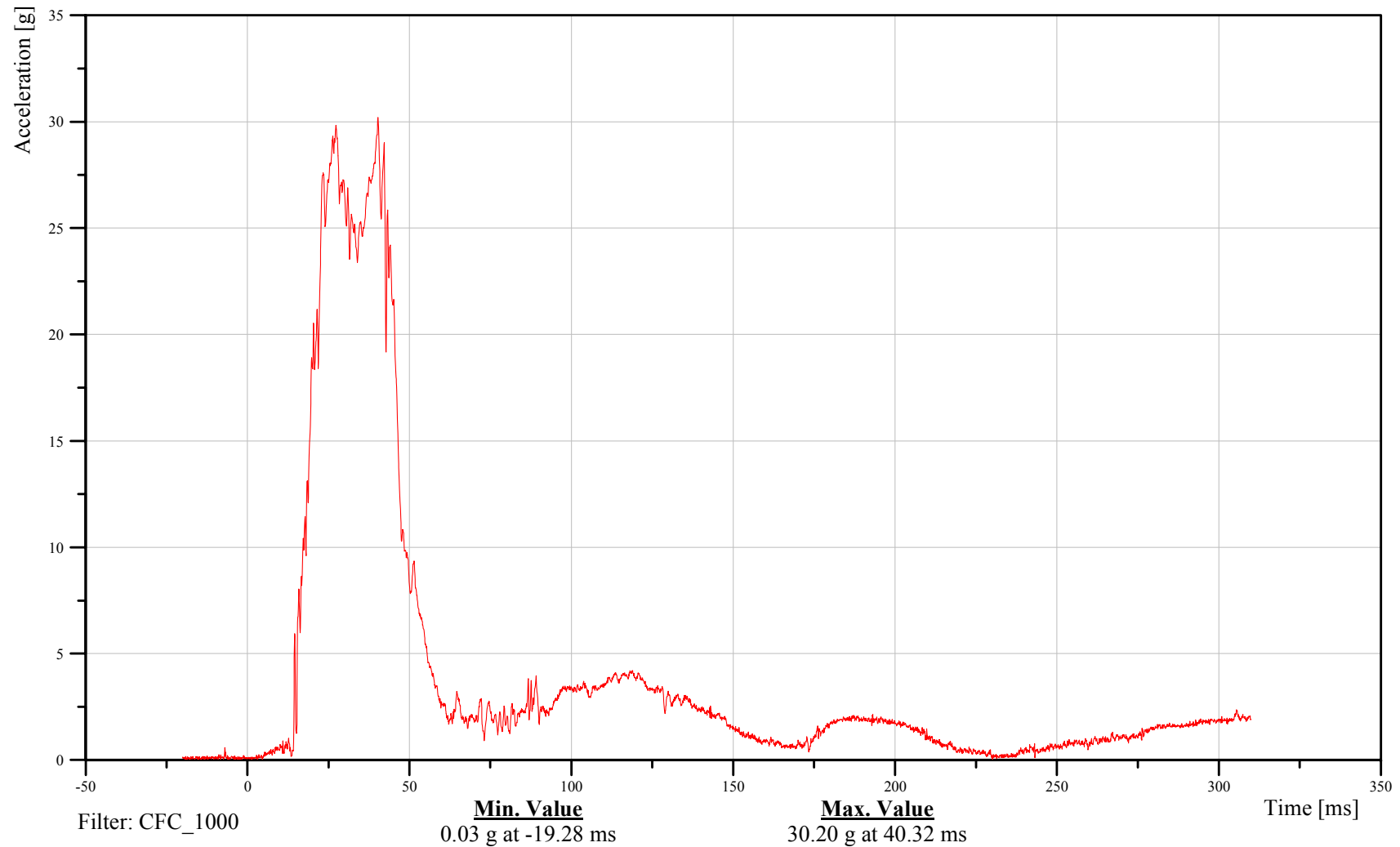
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11PELVCG00S2ACRA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Left Acetabulum Force Y

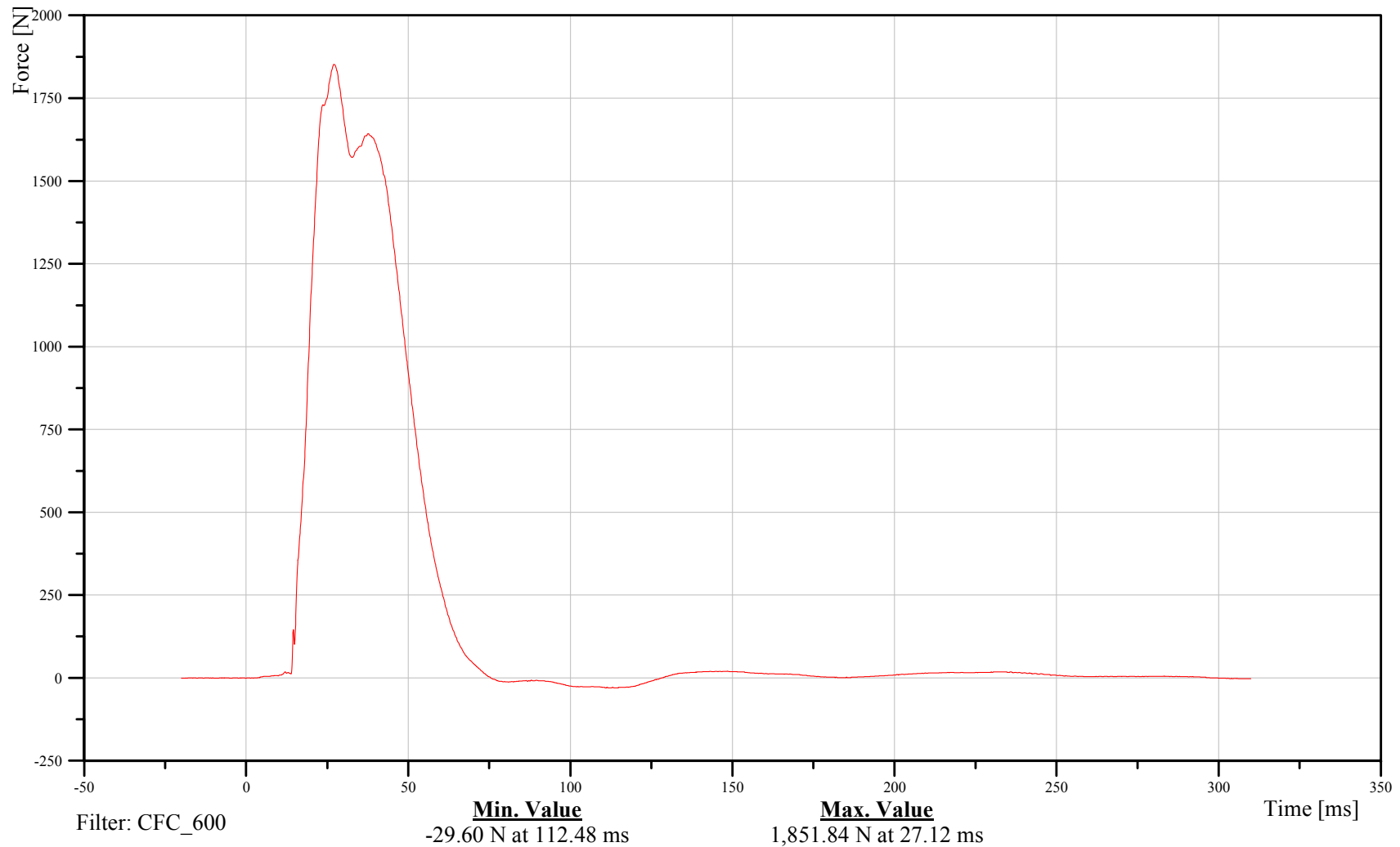
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11ACTBLE00S2FOYB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005

Time: 11:49

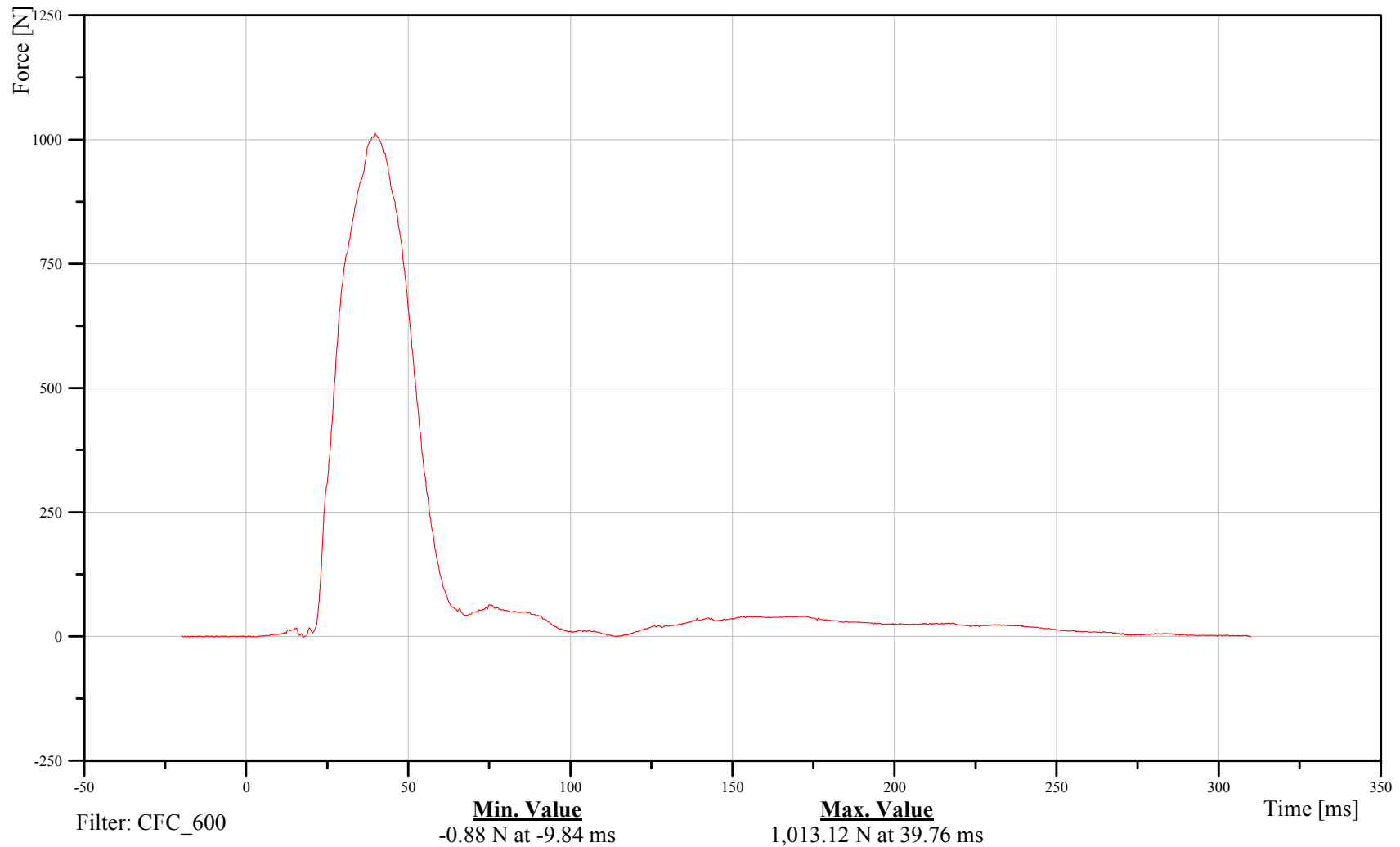
Left Illiac Wing Force Y

Customer: VRTC

11ILACLE00S2FOYB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Left Femur Force X

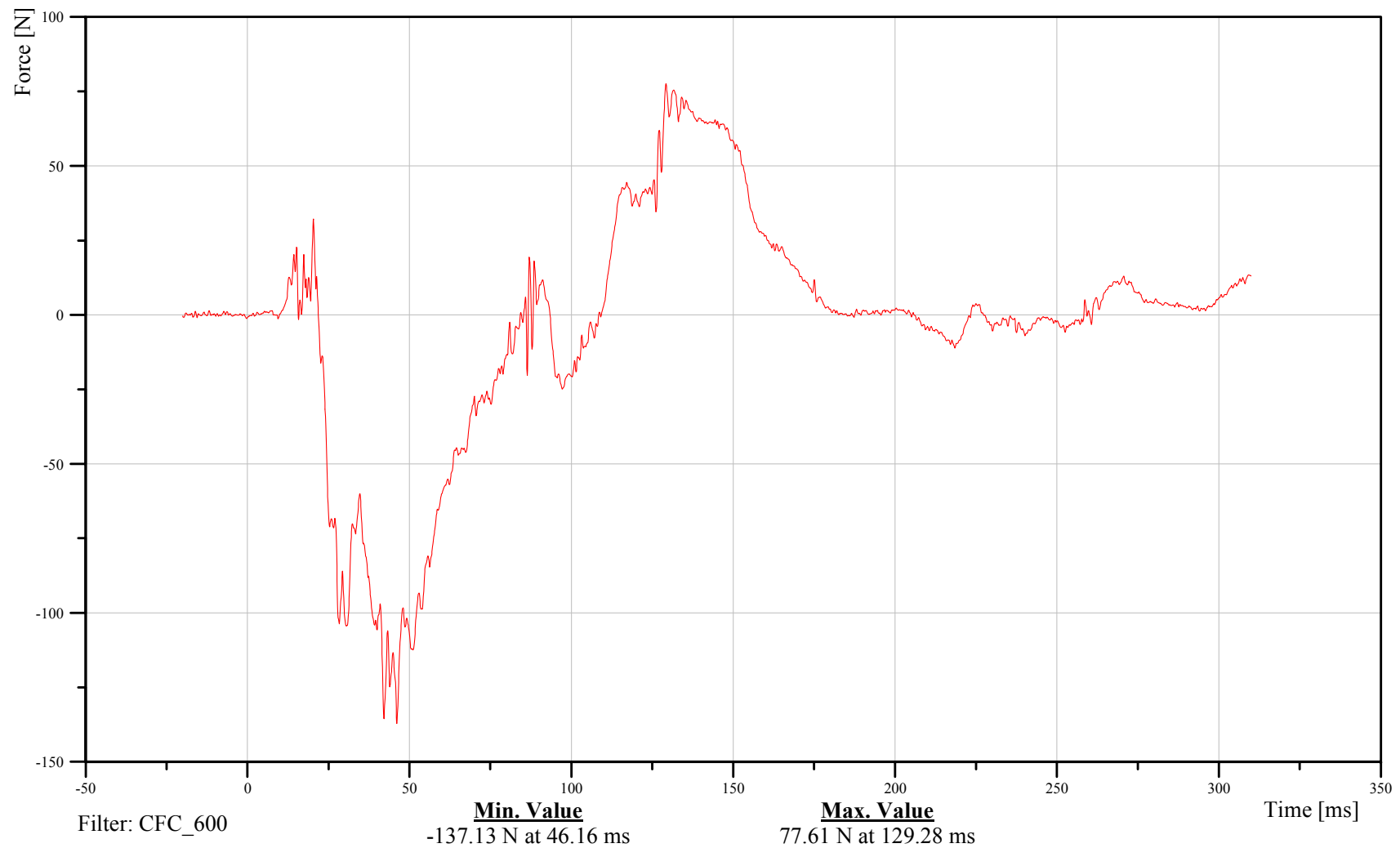
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11FEMRLE00S2FOXB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Left Femur Force Y

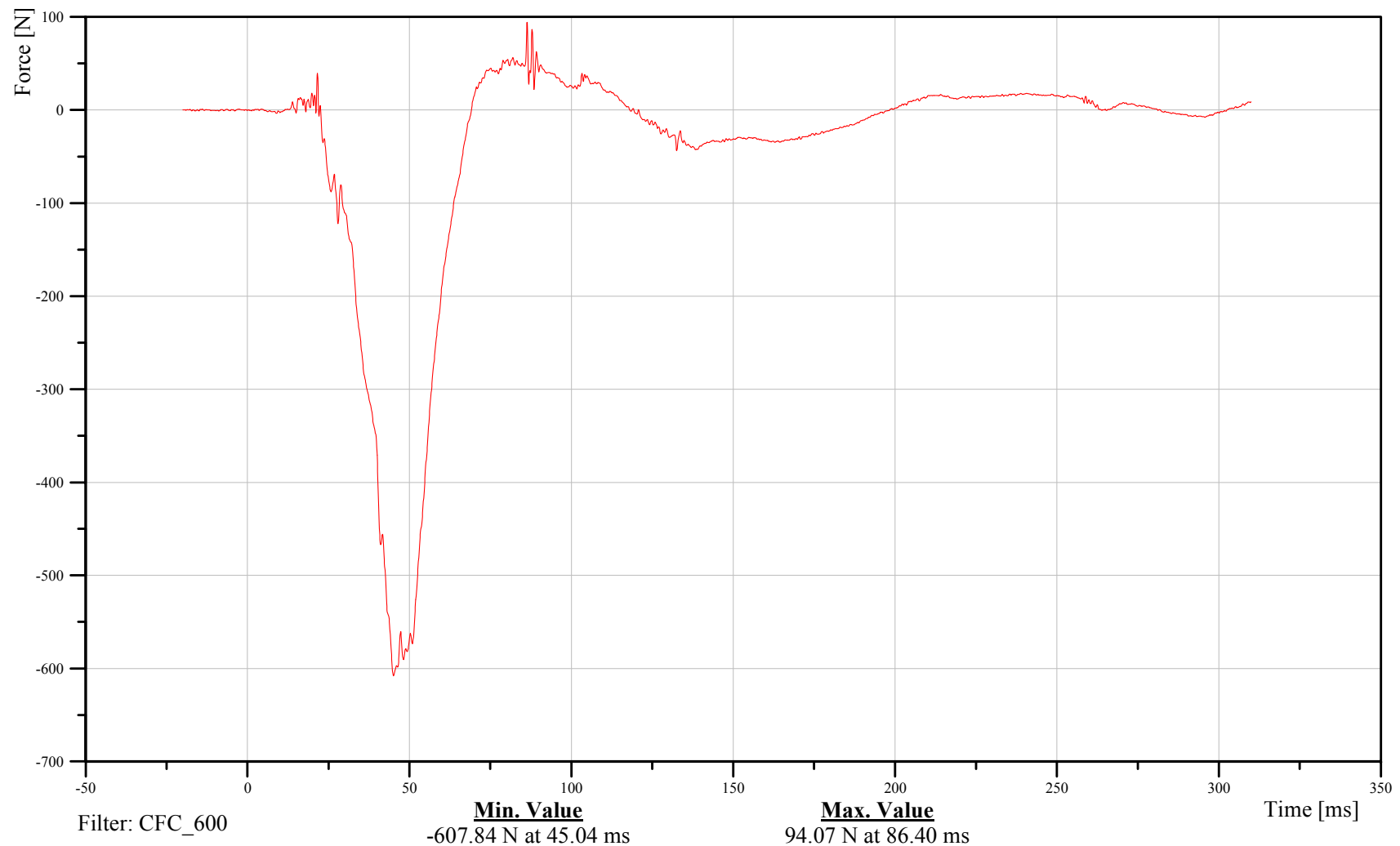
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11FEMRLE00S2FOYB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

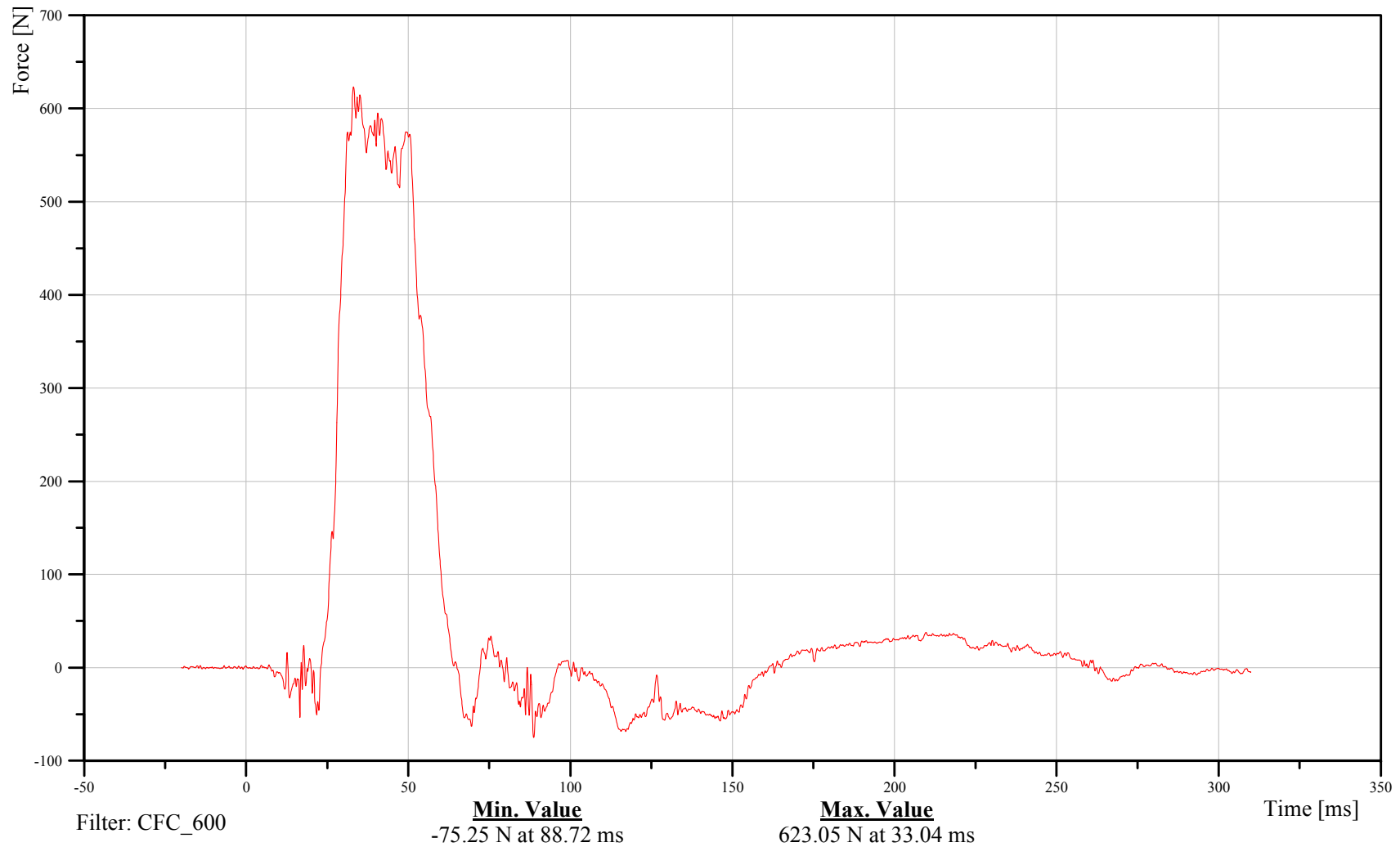
Left Femur Force Z

Customer: VRTC

11FEMRLE00S2FOZB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005

Time: 11:49

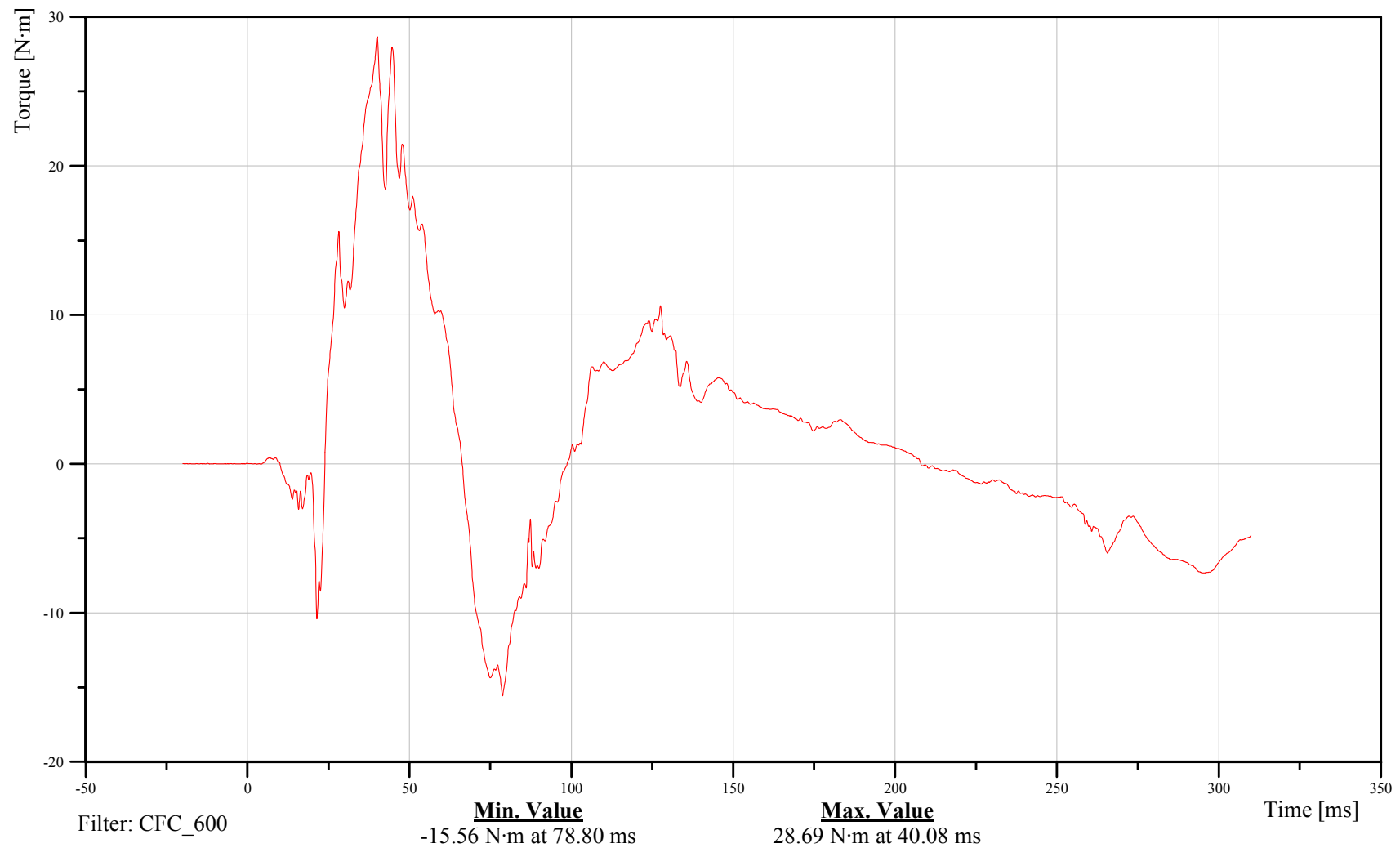
Left Femur Moment X

Customer: VRTC

11FEMRLE00S2MOXB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

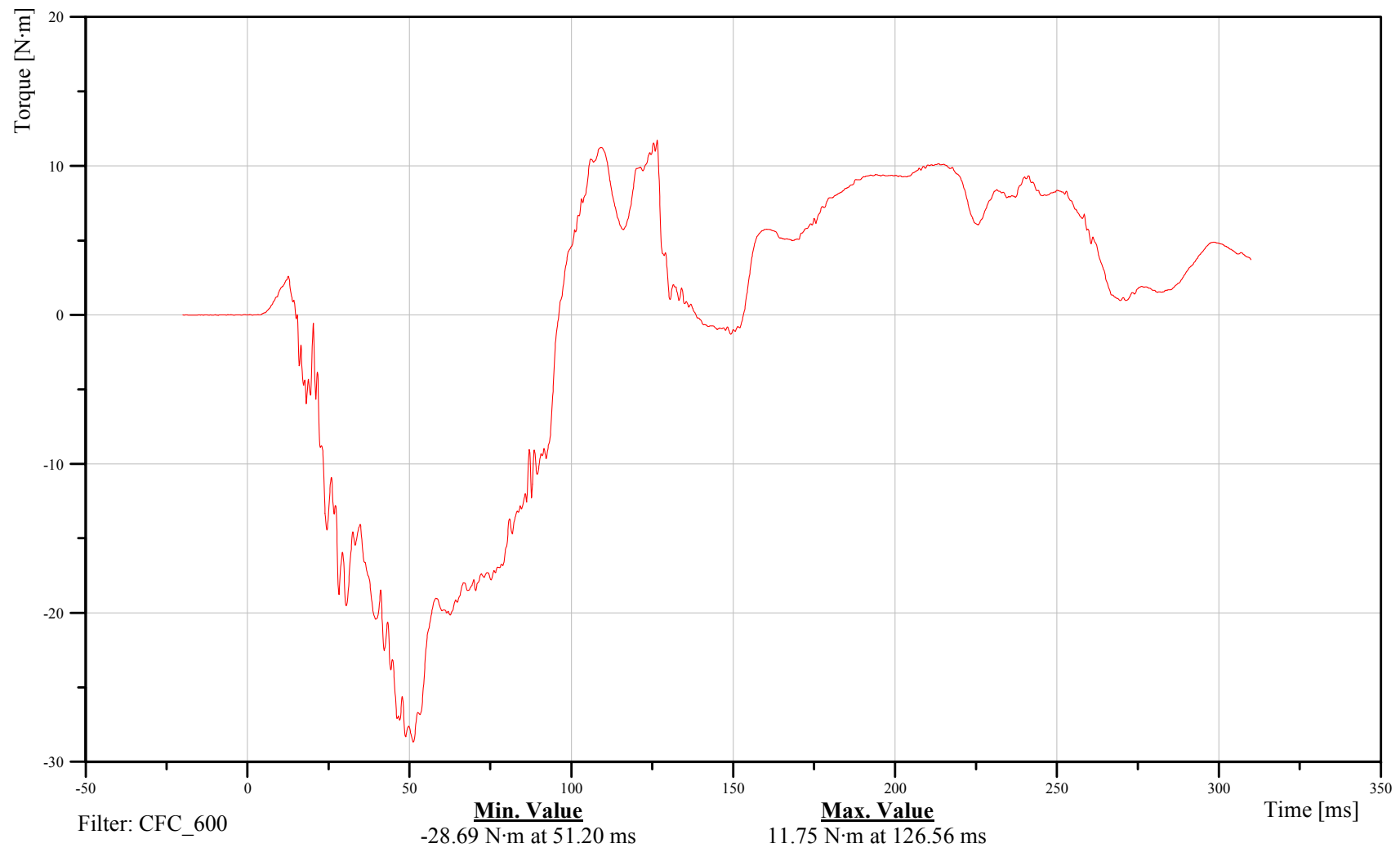
Left Femur Moment Y

Customer: VRTC

11FEMRLE00S2MOYB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Left Femur Moment Z

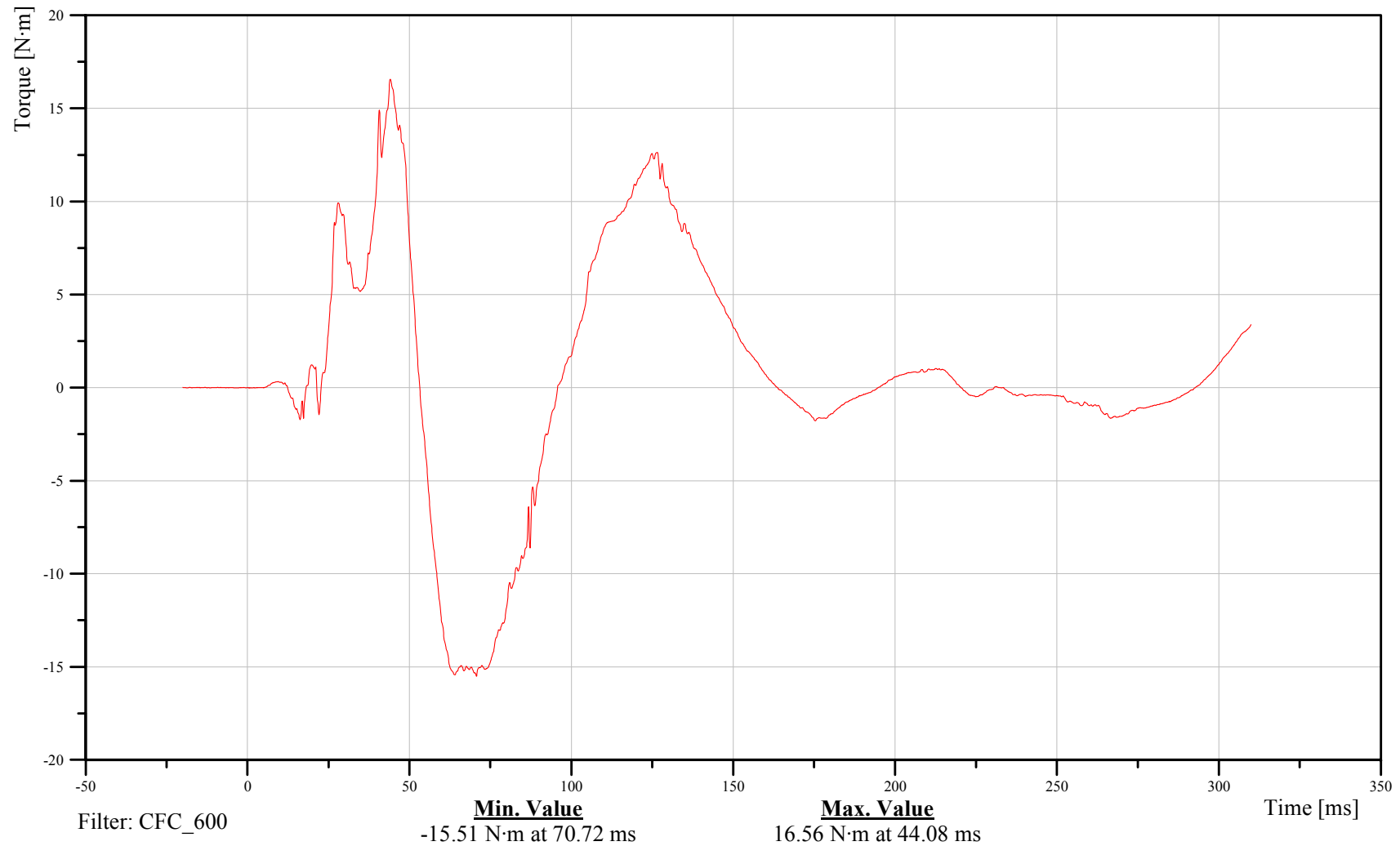
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11FEMRLE00S2MOZB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

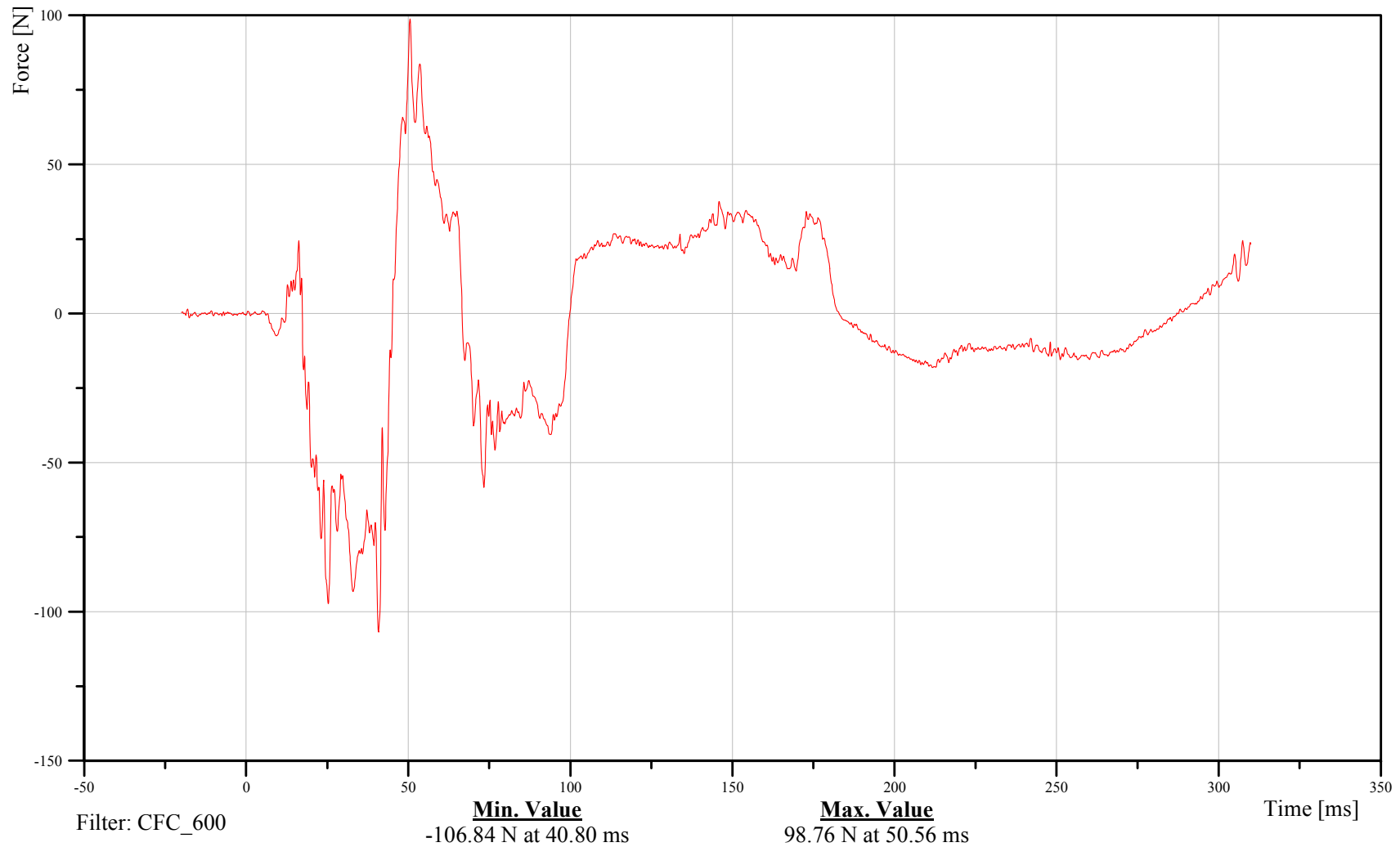
Right Femur Force X

Customer: VRTC

11FEMRRI00S2FOXB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

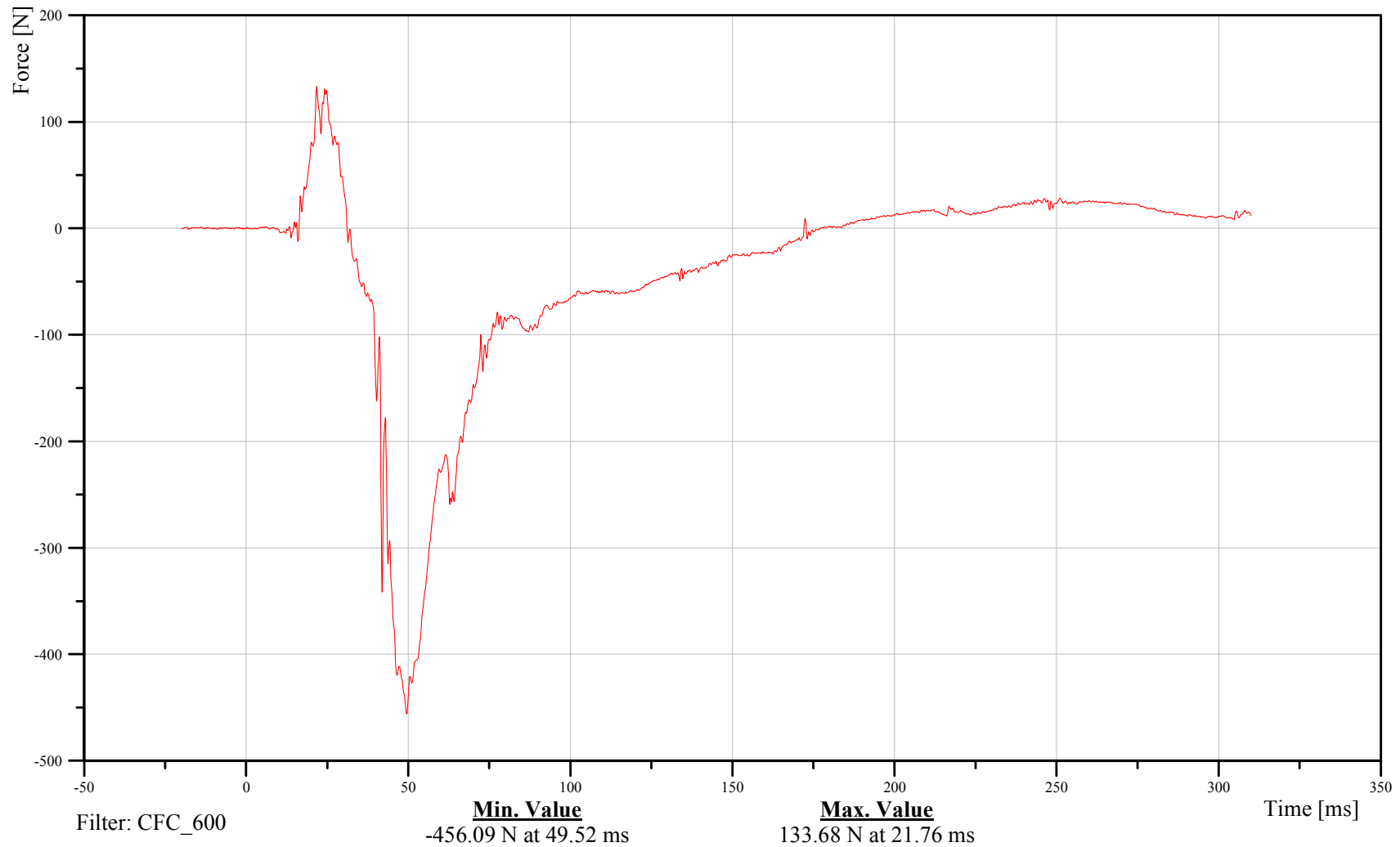
Right Femur Force Y

Customer: VRTC

11FEMRRI00S2FOYB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

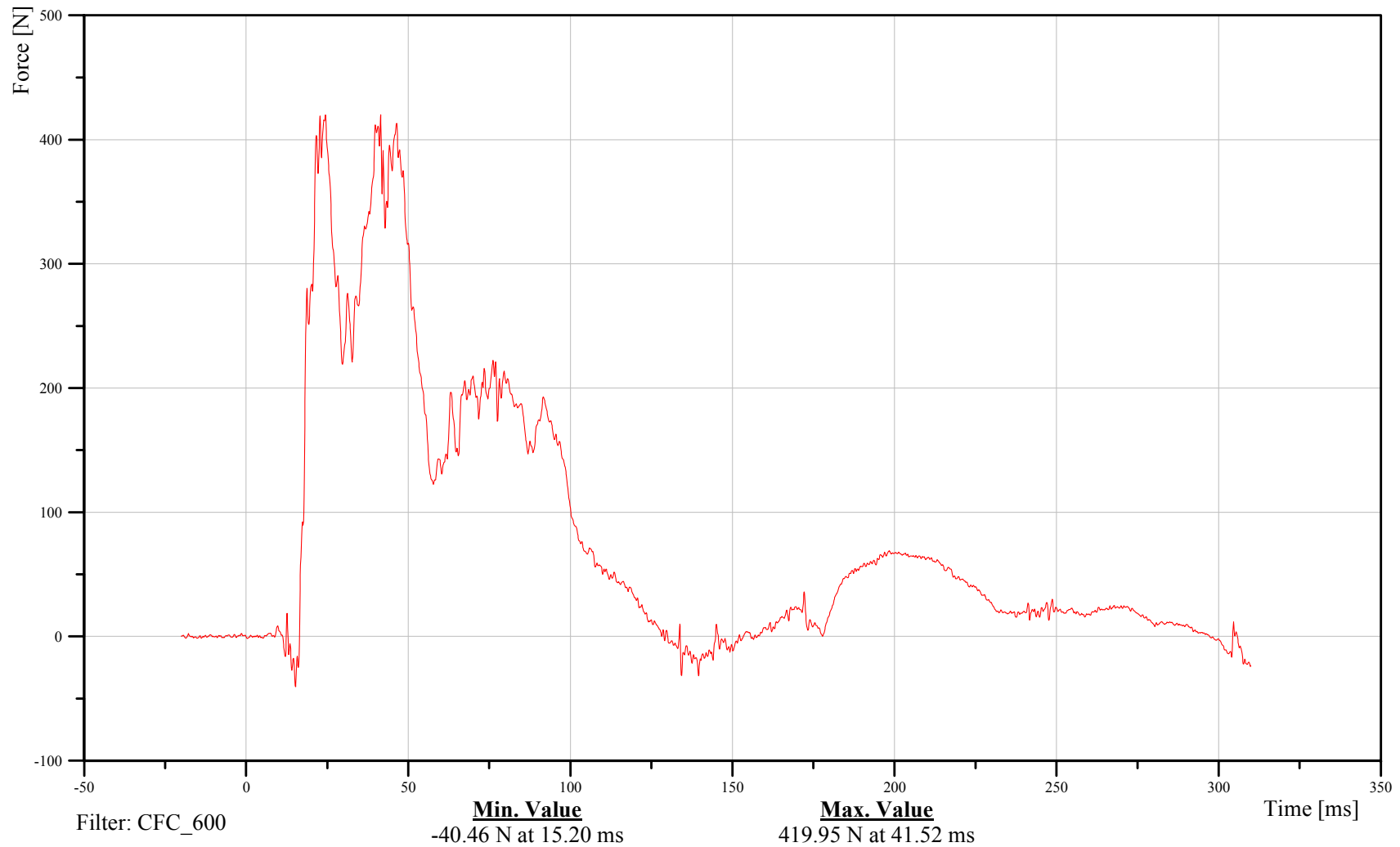
Right Femur Force Z

Customer: VRTC

11FEMRRI00S2FOZB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

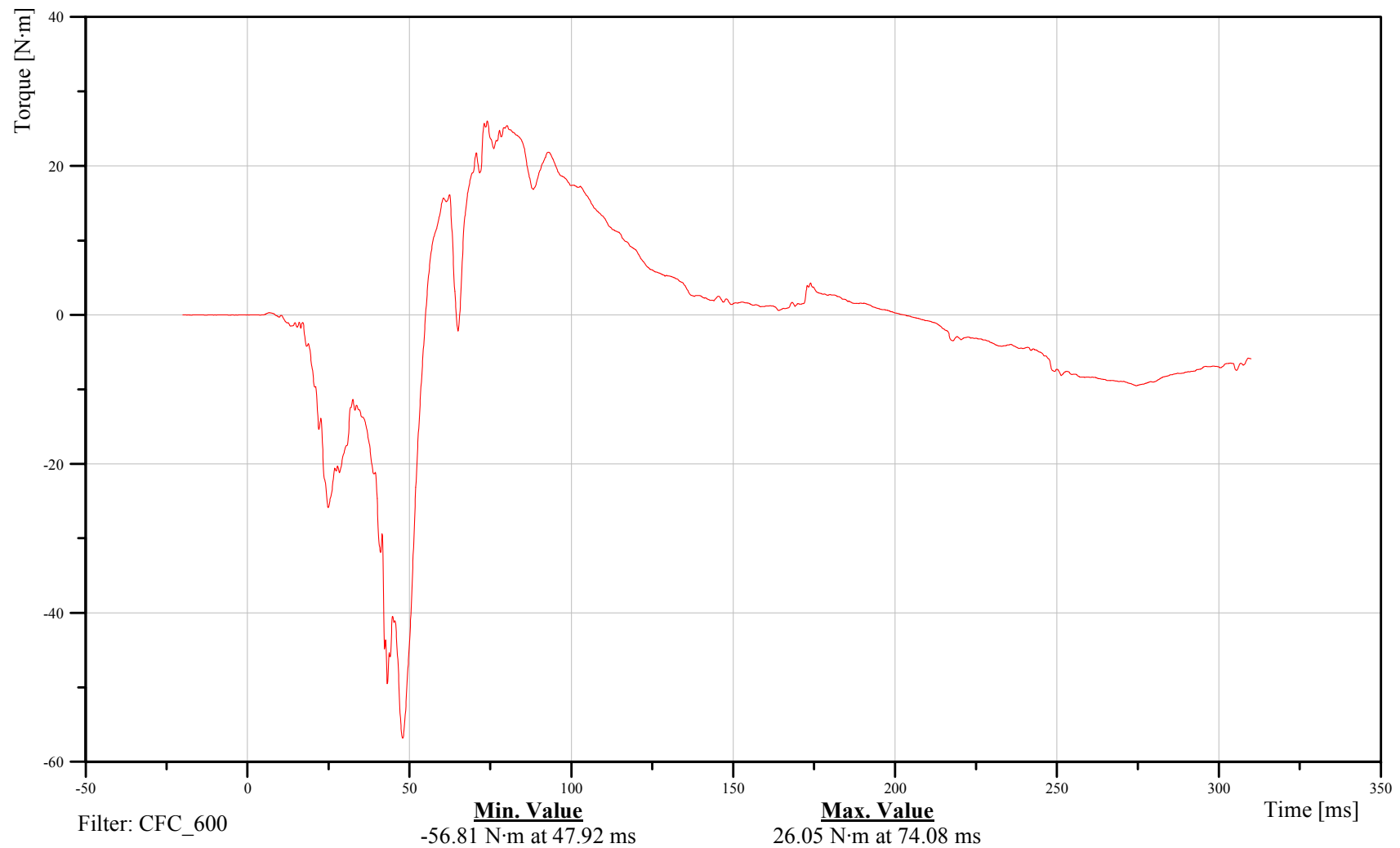
Right Femur Moment X

Customer: VRTC

11FEMRRI00S2MOXB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

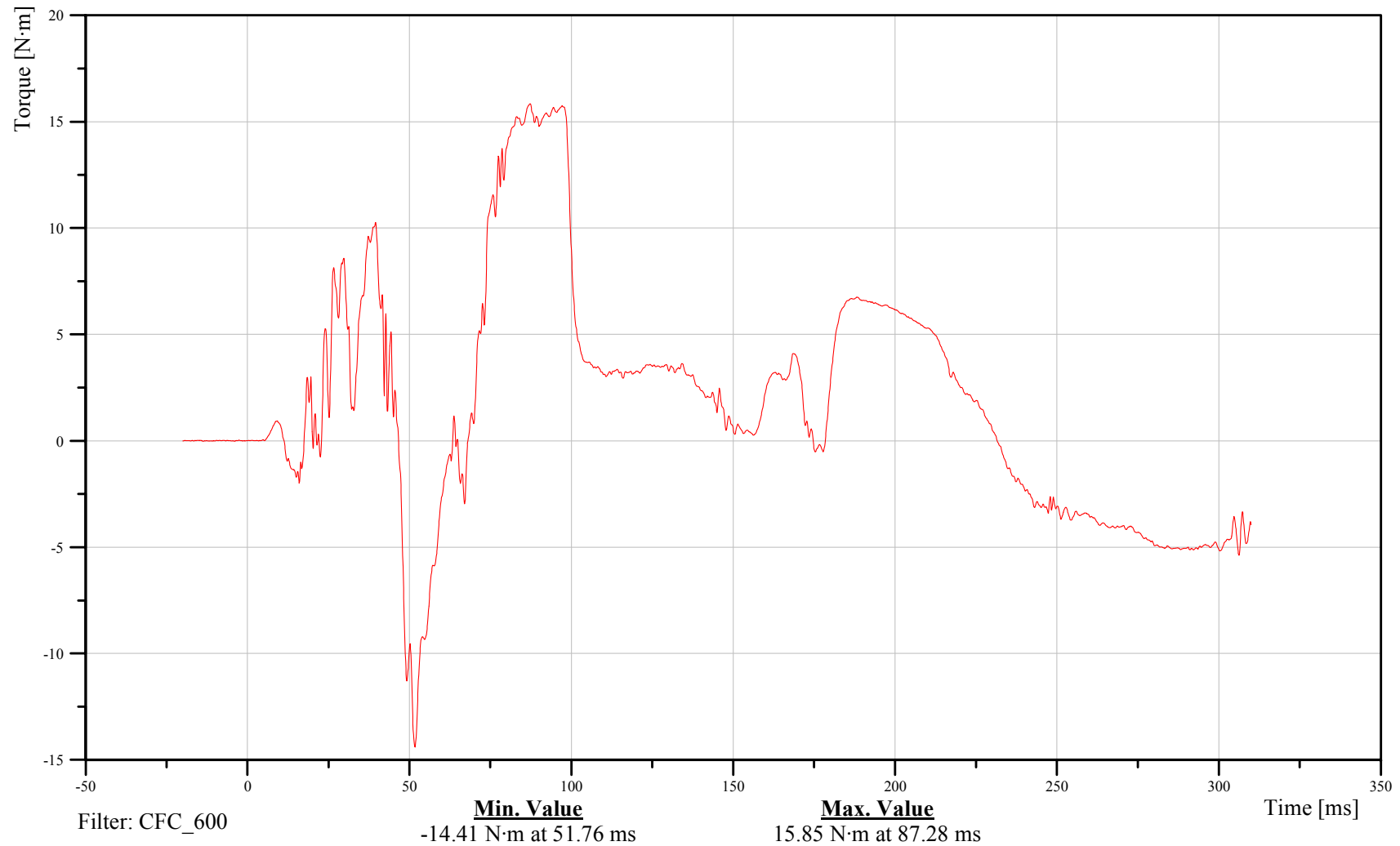
Right Femur Moment Y

Customer: VRTC

11FEMRRI00S2MOYB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

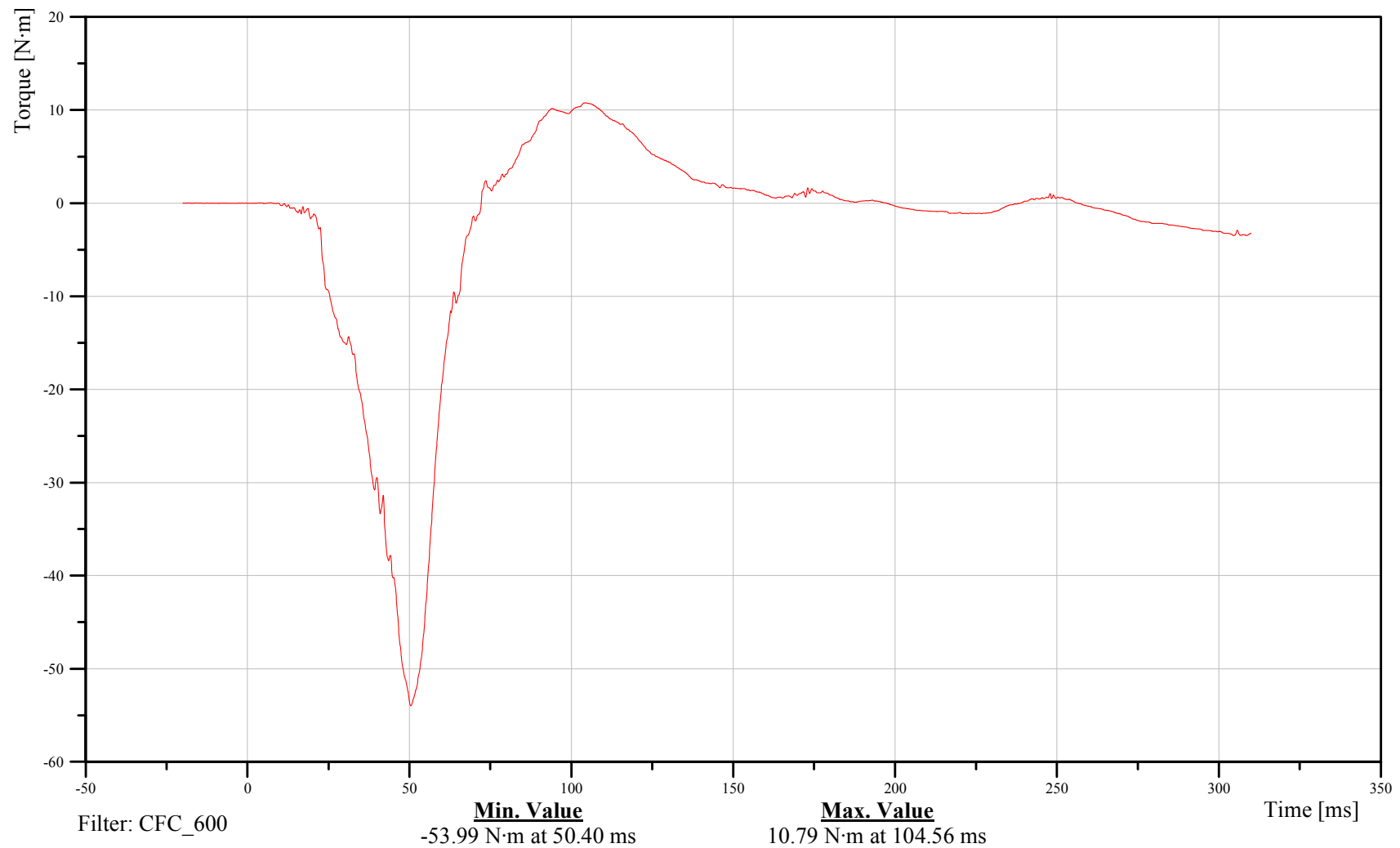
Right Femur Moment Z

Customer: VRTC

11FEMRRI00S2MOZB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Head Accel X

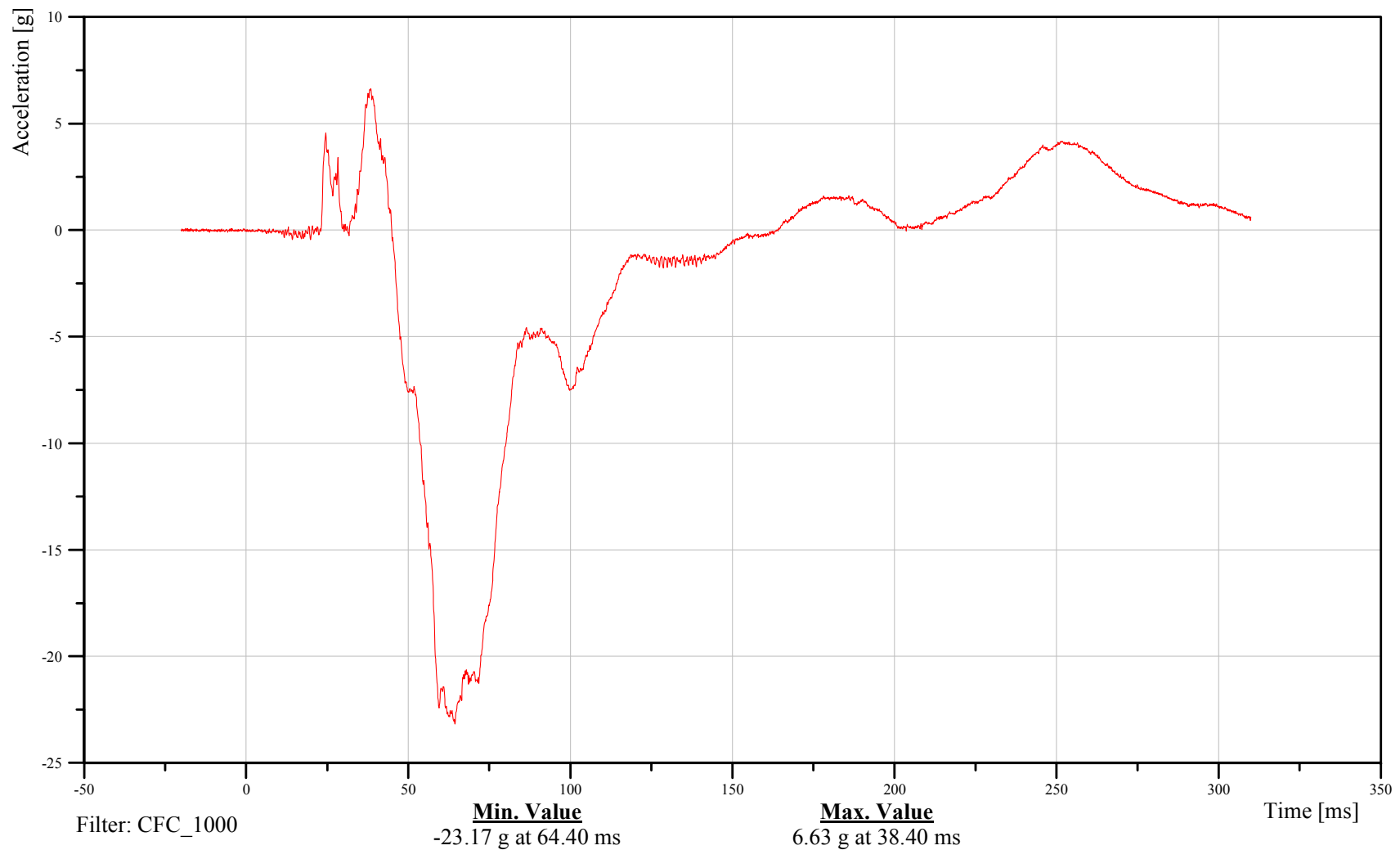
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14HEADCG00S2ACXA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Head Accel Y

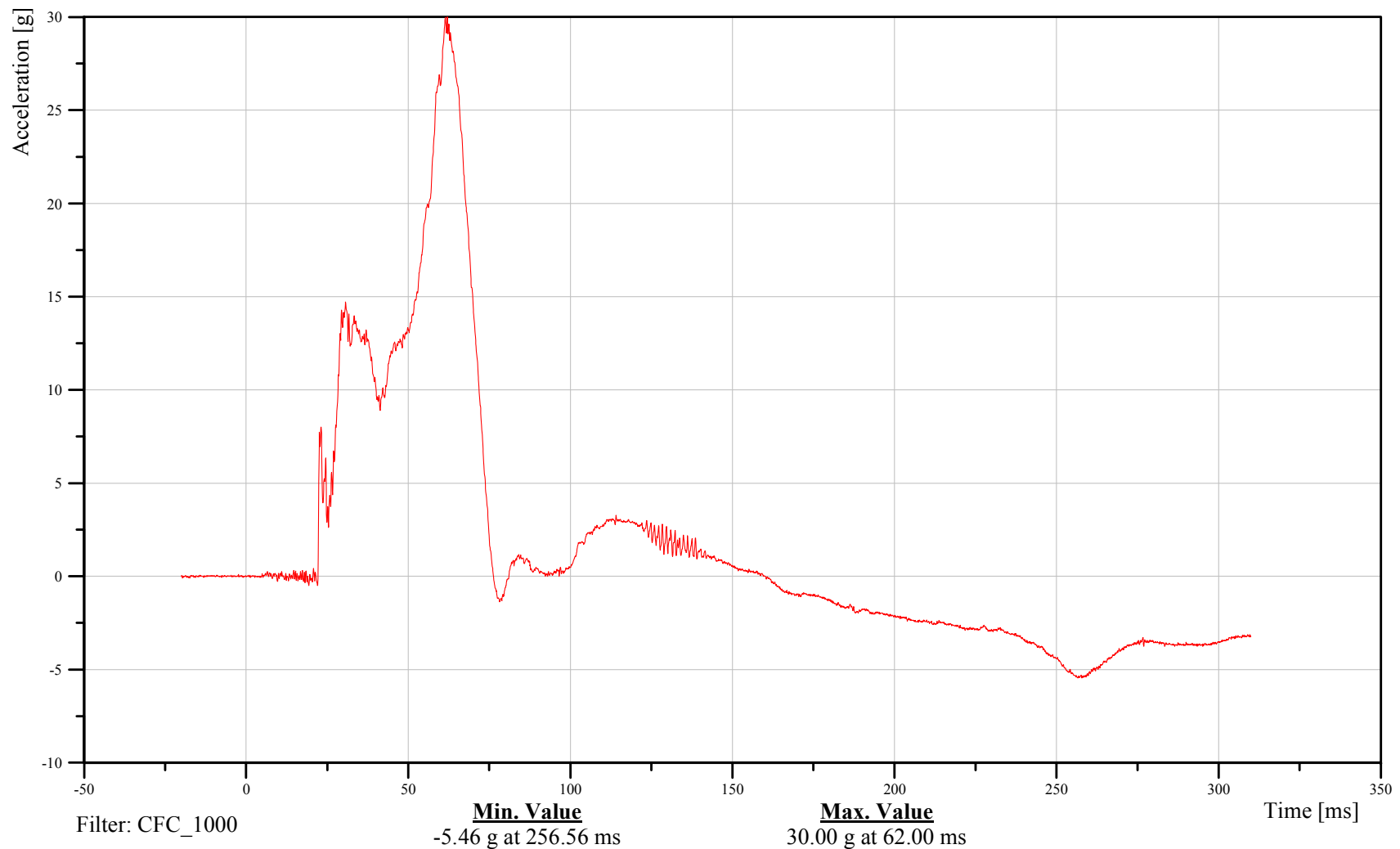
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14HEADCG00S2ACYA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Head Accel Z

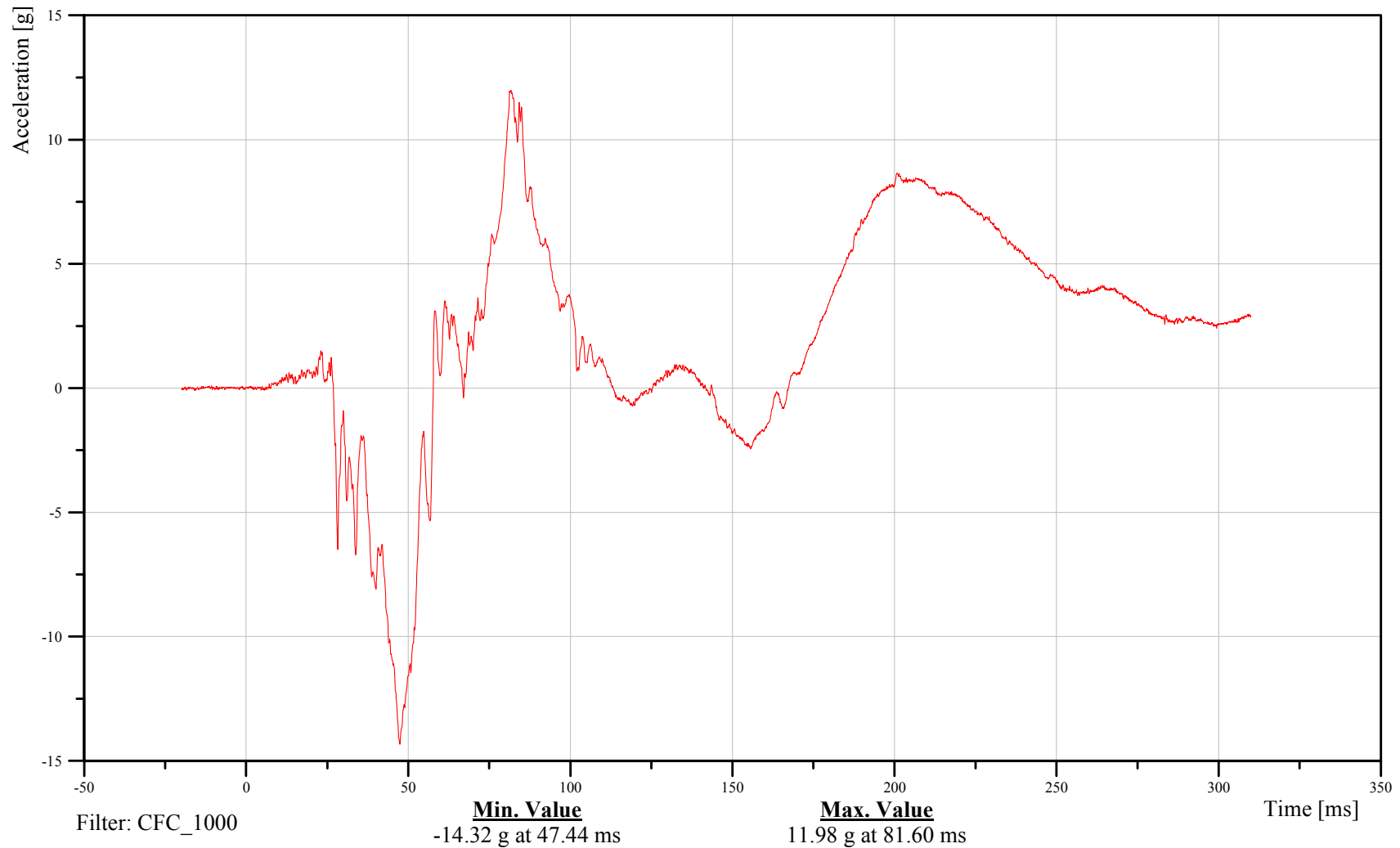
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14HEADCG00S2ACZA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

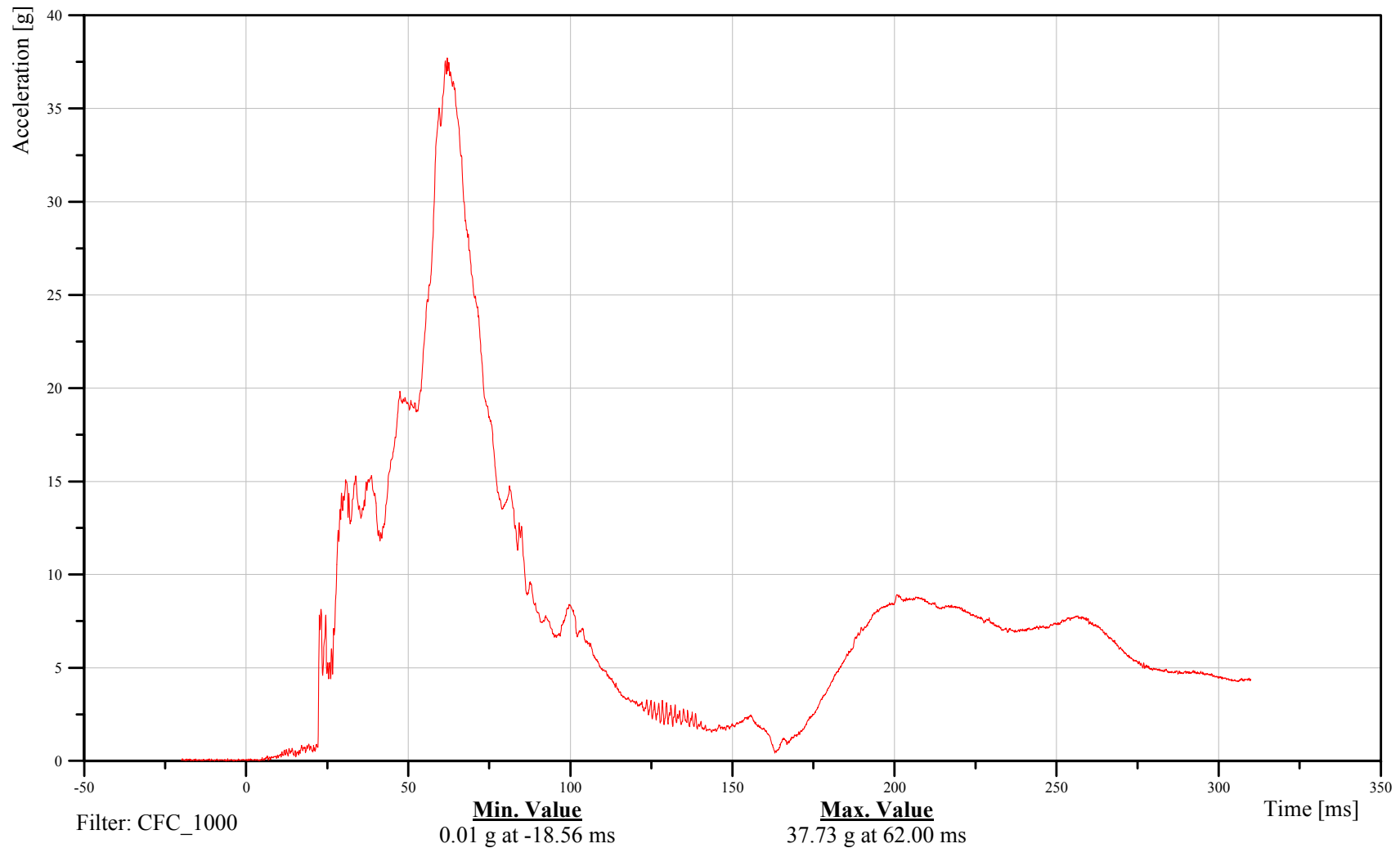
Head Accel Resultant

Customer: VRTC

14HEADCG00S2ACRA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

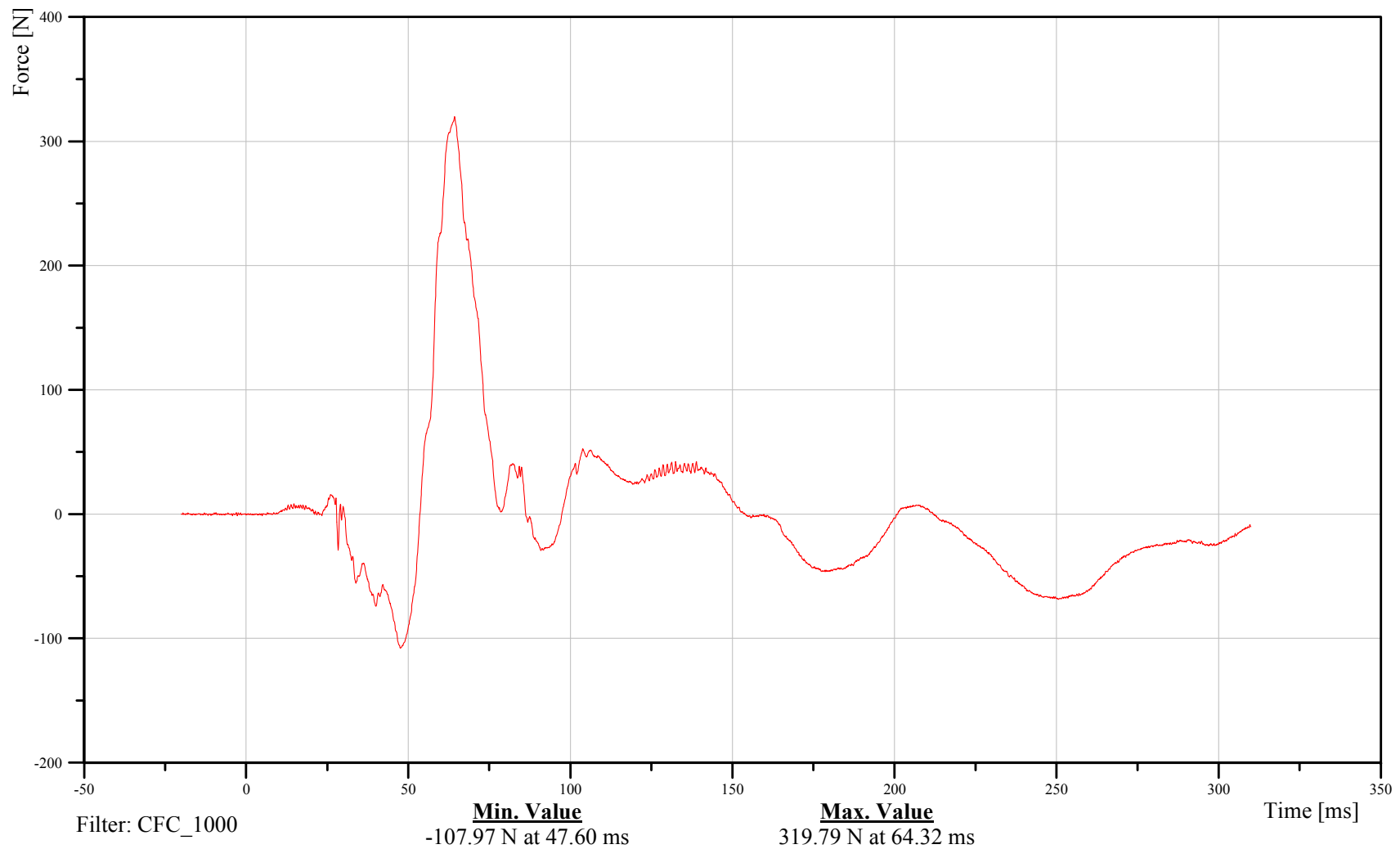
Neck Force X

Customer: VRTC

14NECKUP00S2FOXA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

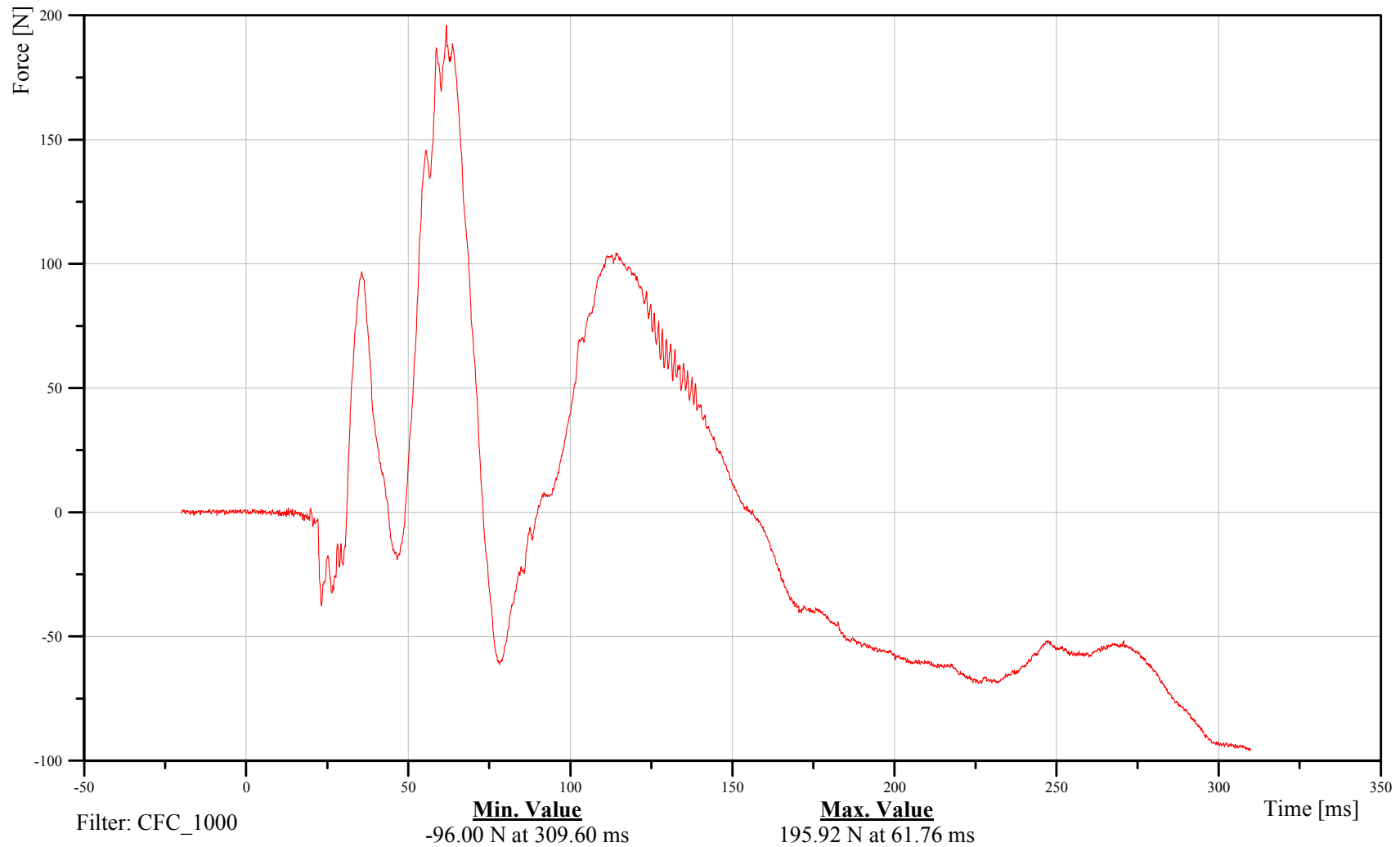
Neck Force Y

Customer: VRTC

14NECKUP00S2FOYA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

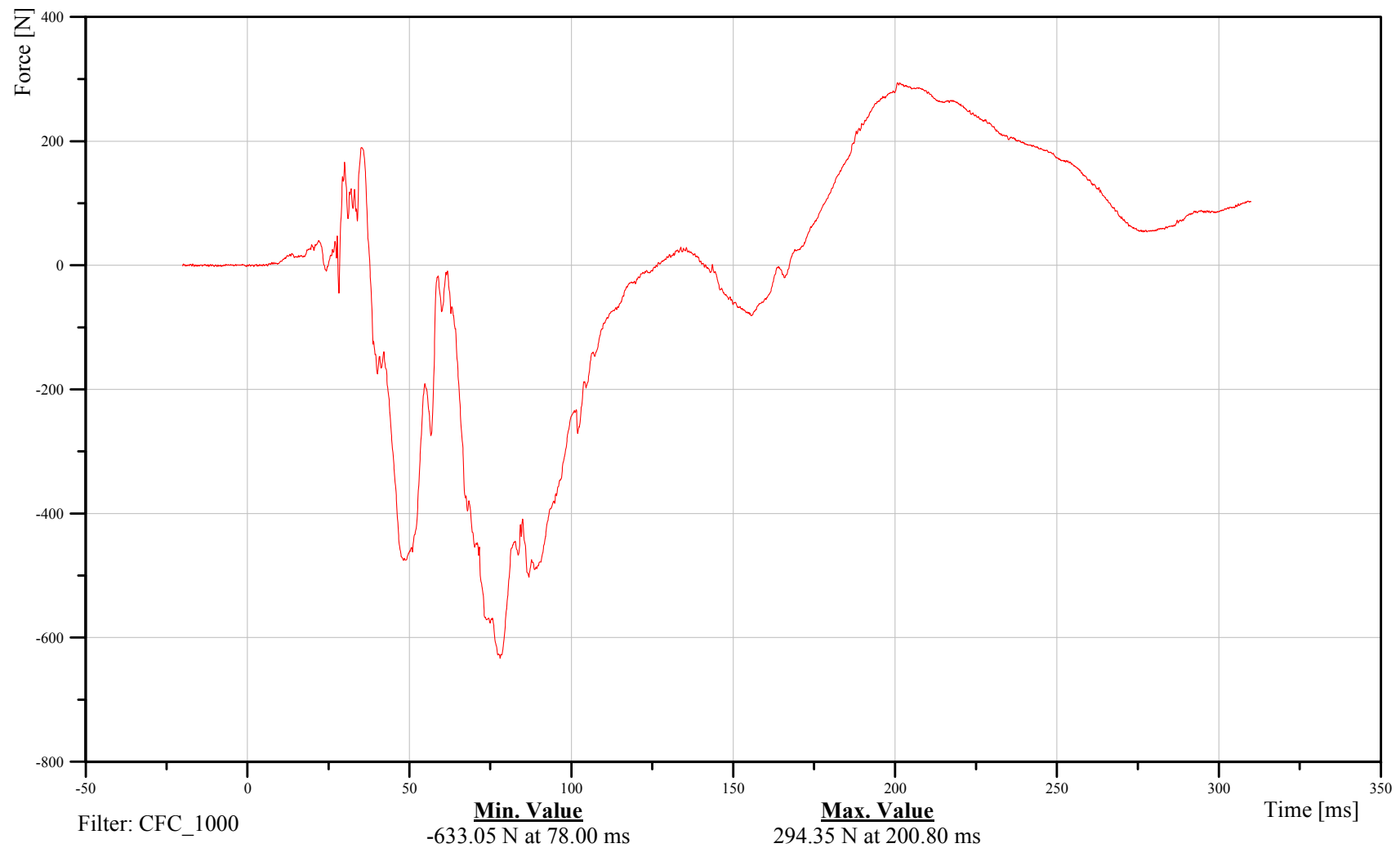
Neck Force Z

Customer: VRTC

14NECKUP00S2FOZA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

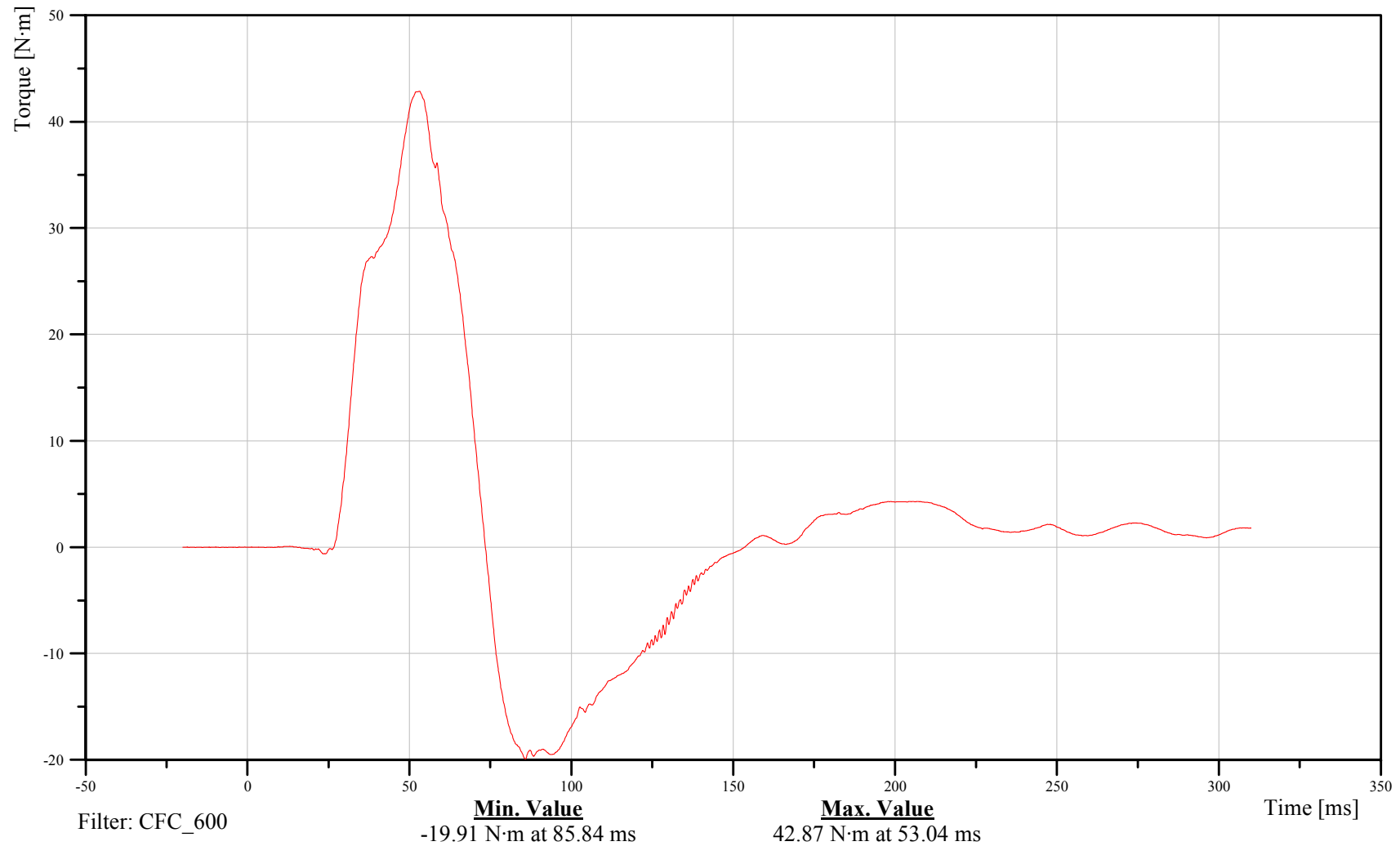
Neck Moment X

Customer: VRTC

14NECKUP00S2MOXB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

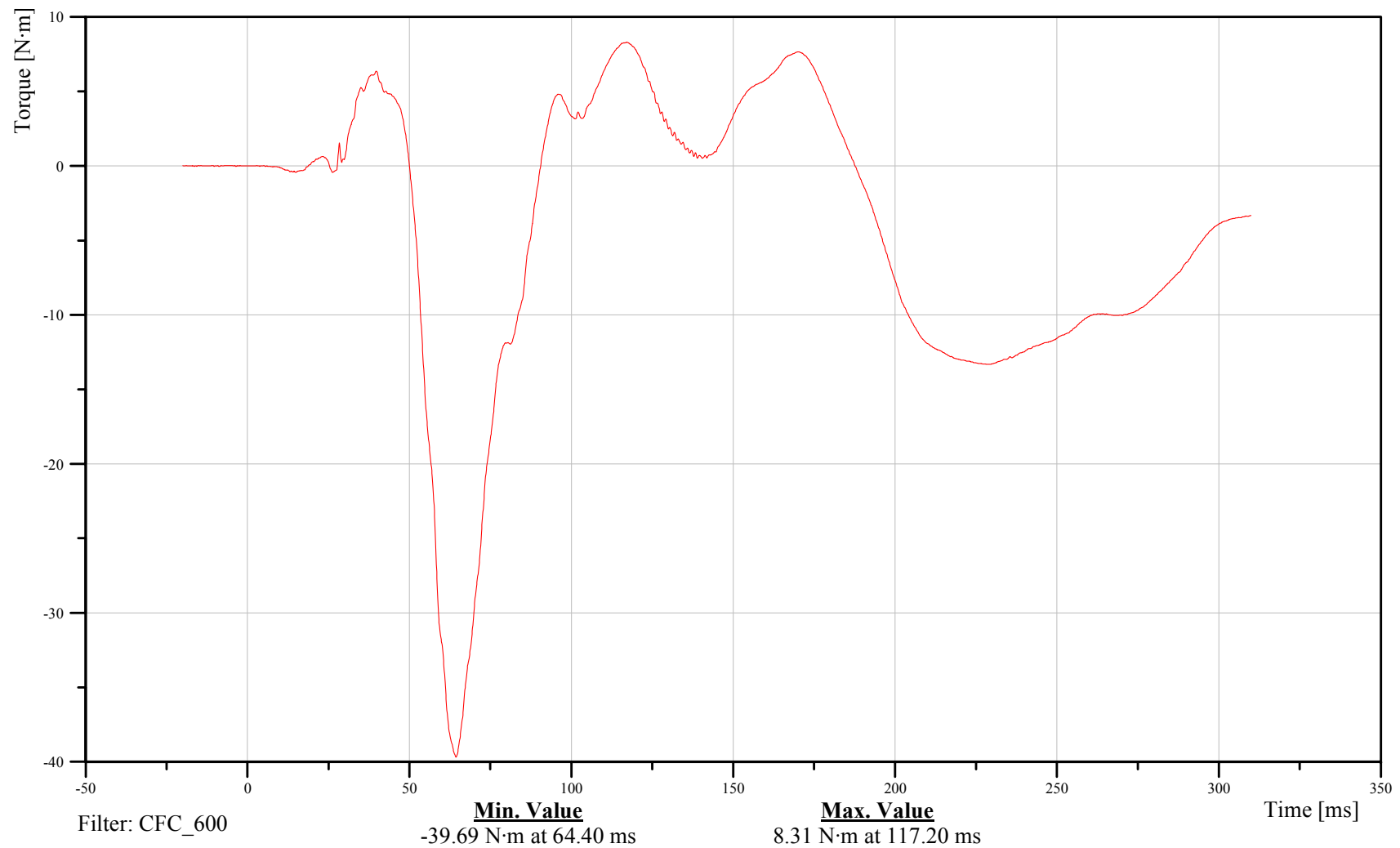
Neck Moment Y

Customer: VRTC

14NECKUP00S2MOYB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

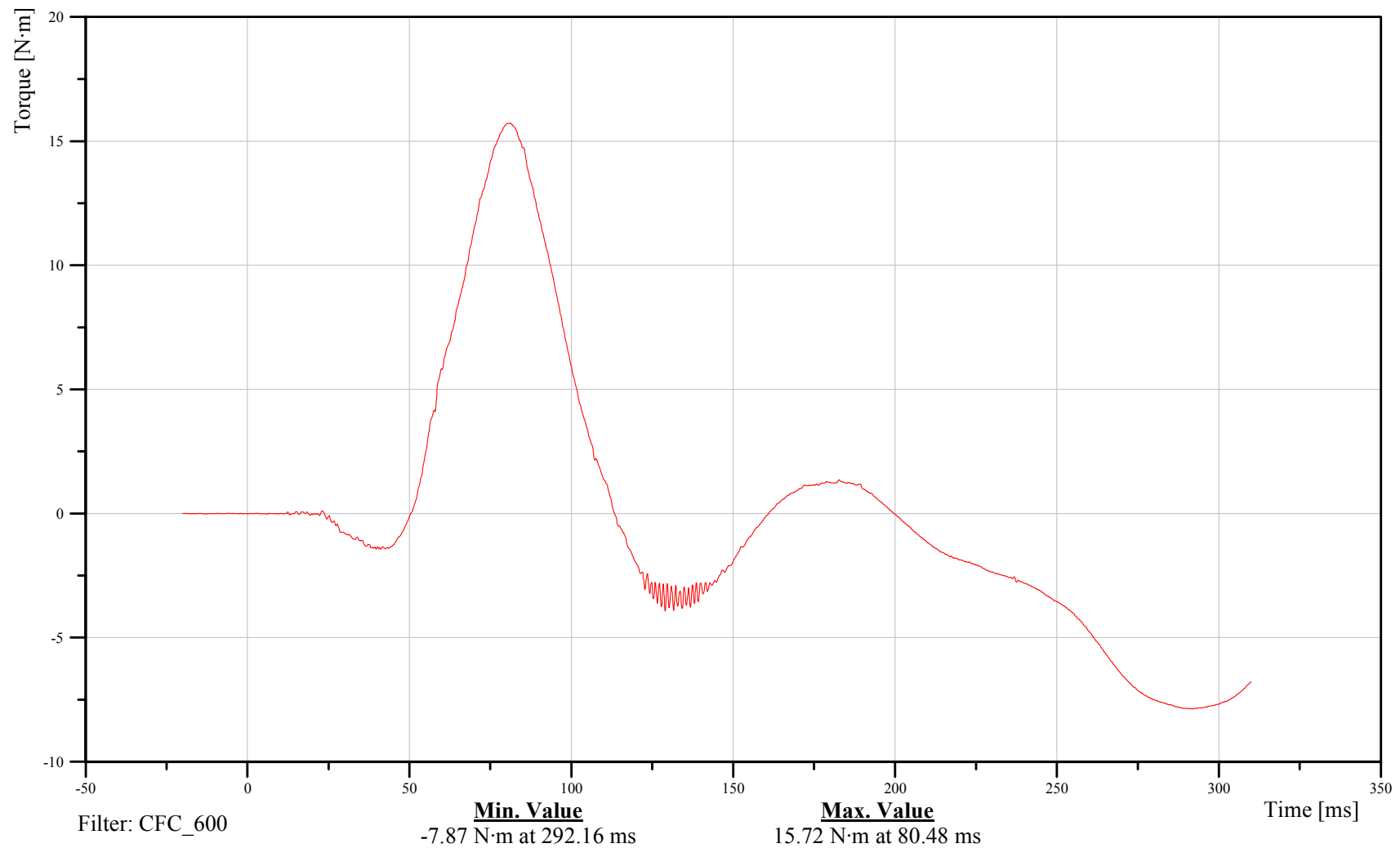
Neck Moment Z

Customer: VRTC

14NECKUP00S2MOZB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Shoulder Accel X

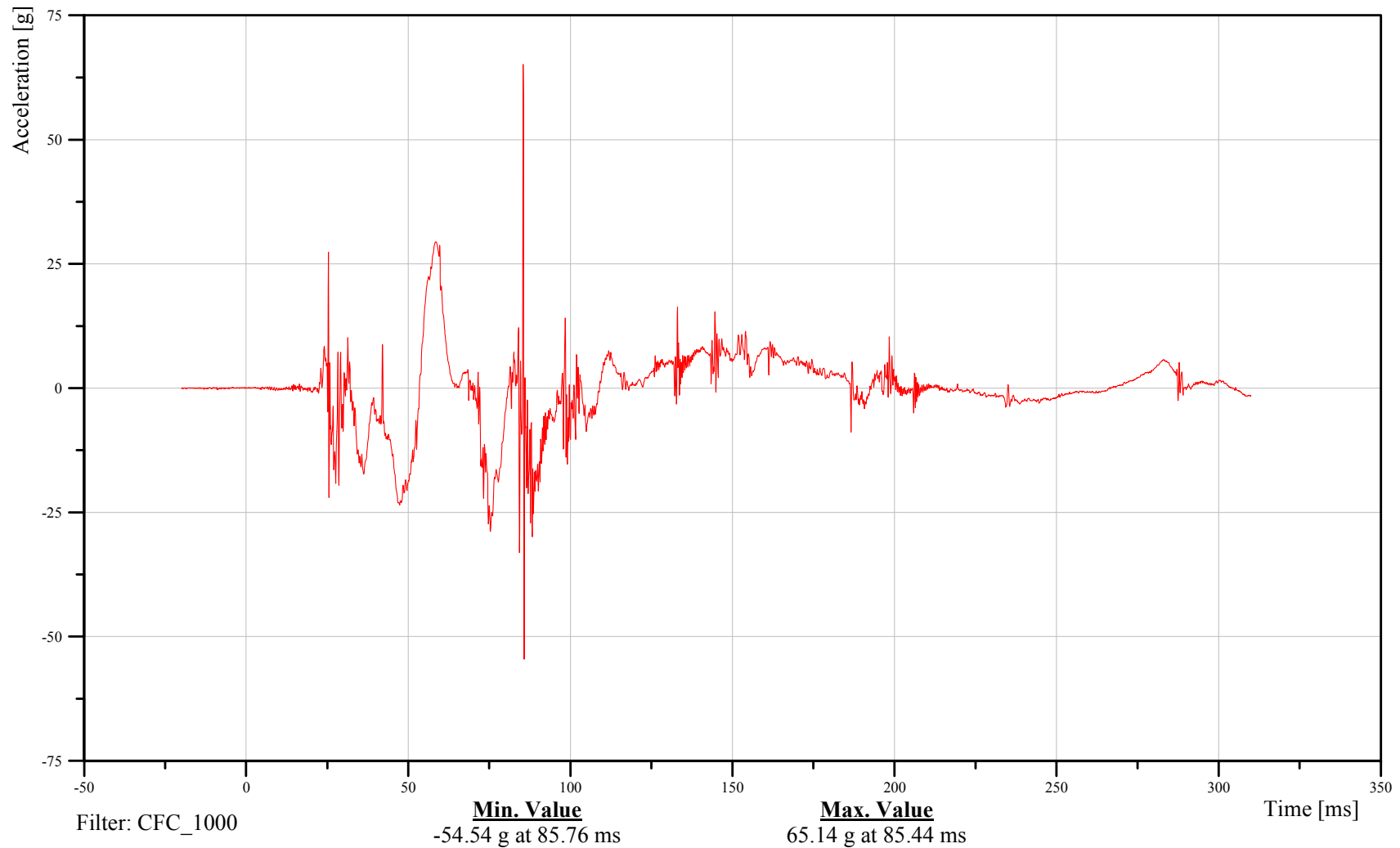
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14SHLDLE00S2ACXA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Shoulder Accel Y

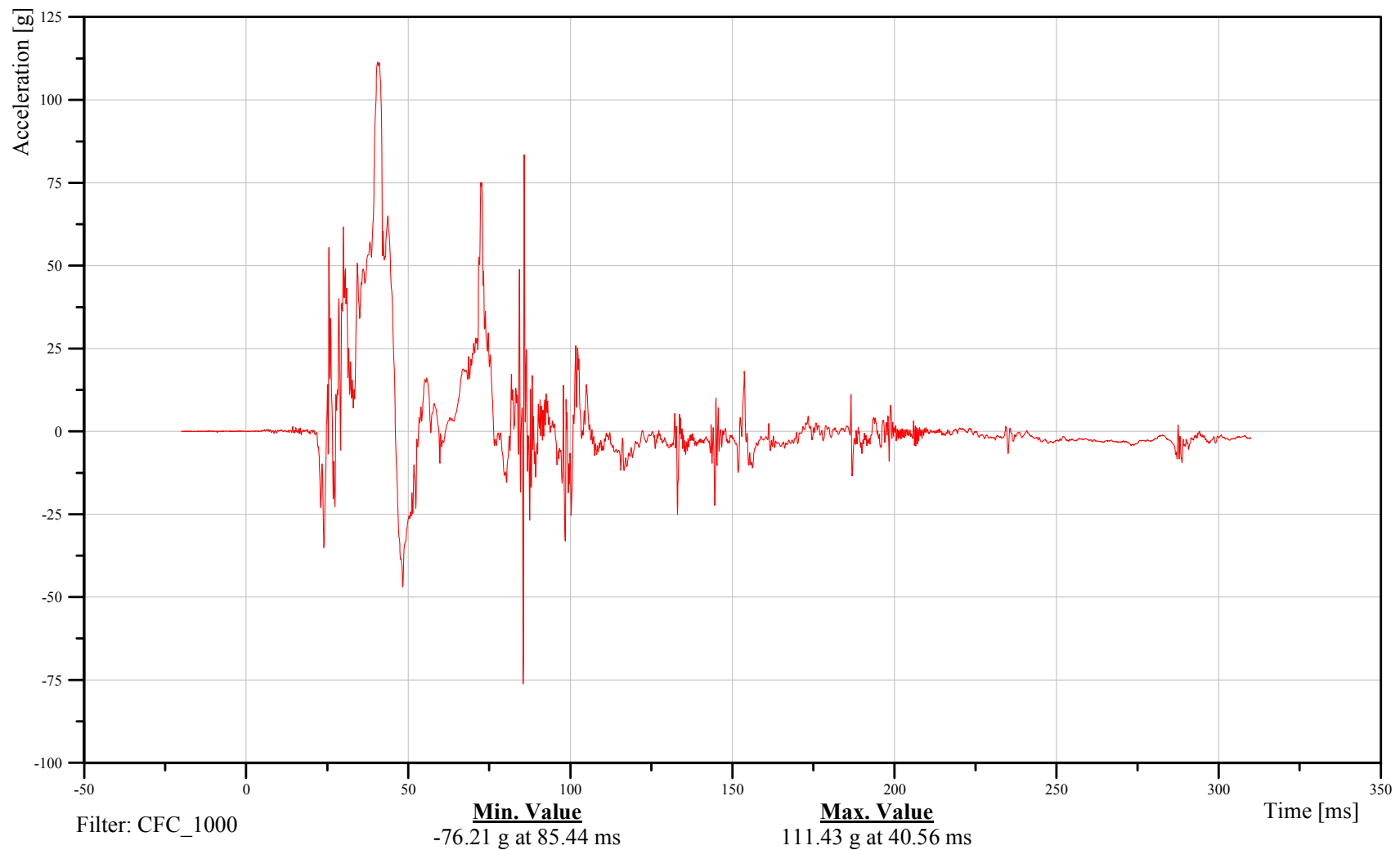
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14SHLDLE00S2ACYA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Shoulder Accel Z

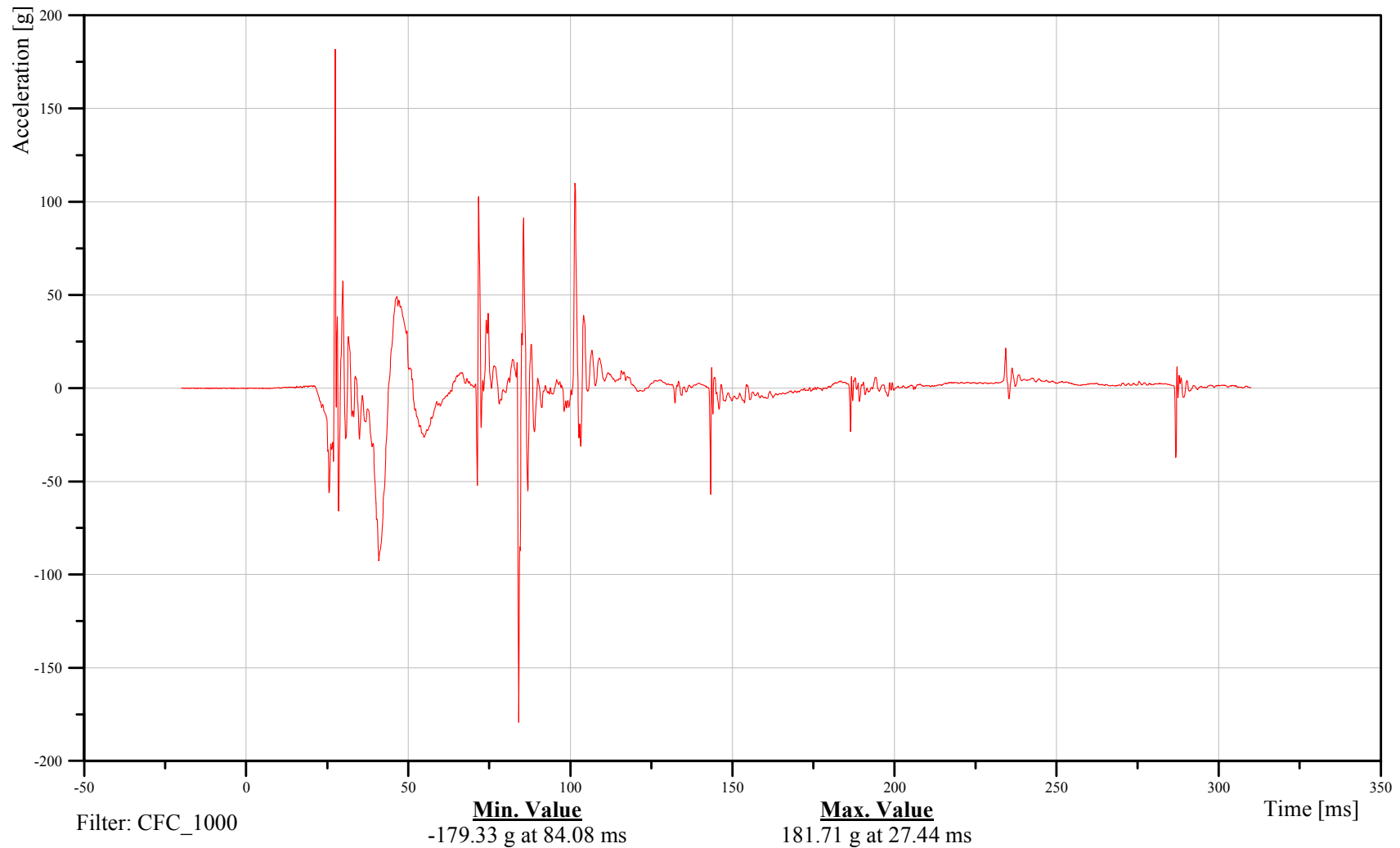
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14SHLDLE00S2ACZA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

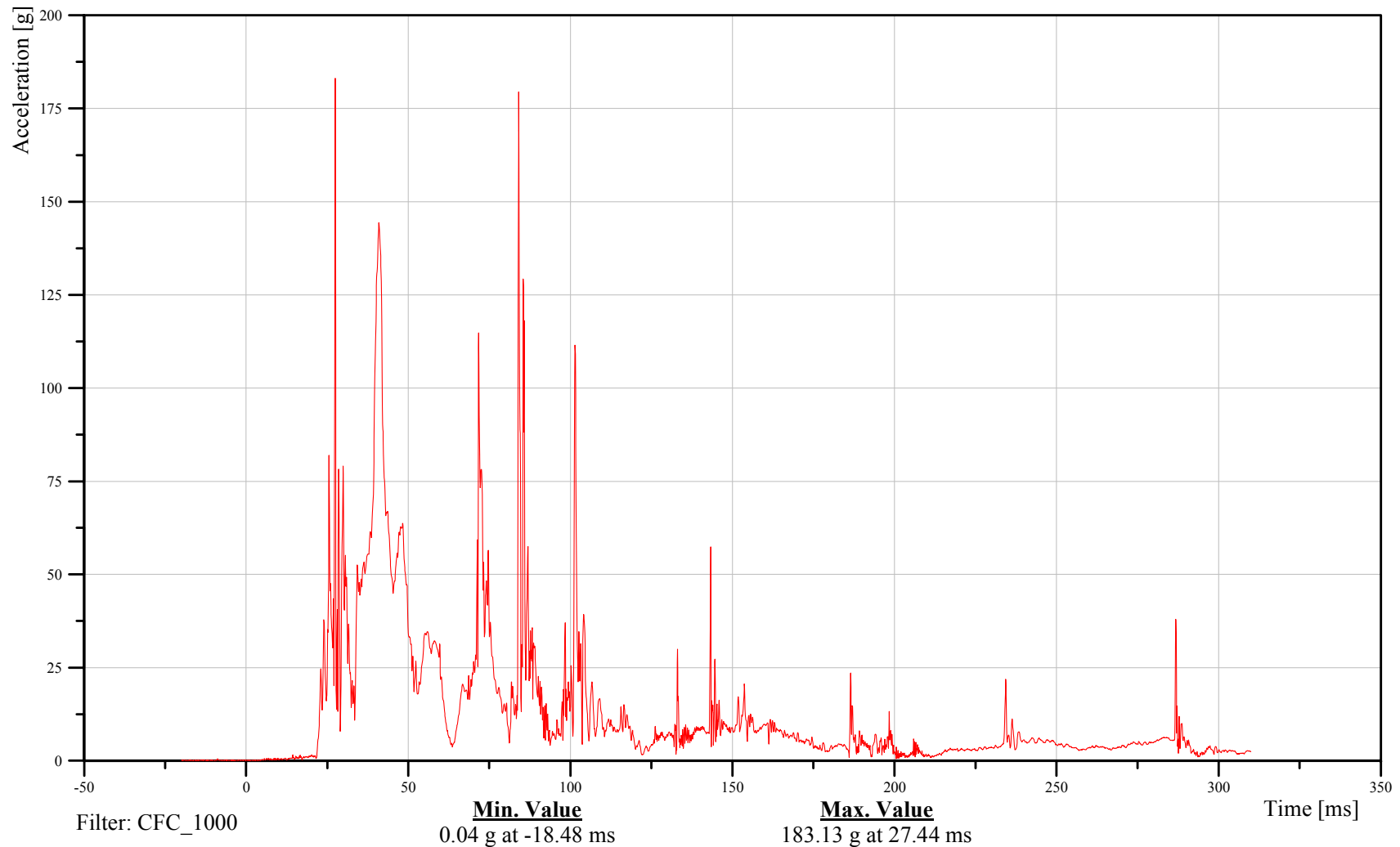
Shoulder Accel Resultant

Customer: VRTC

14SHLDLE00S2ACRA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

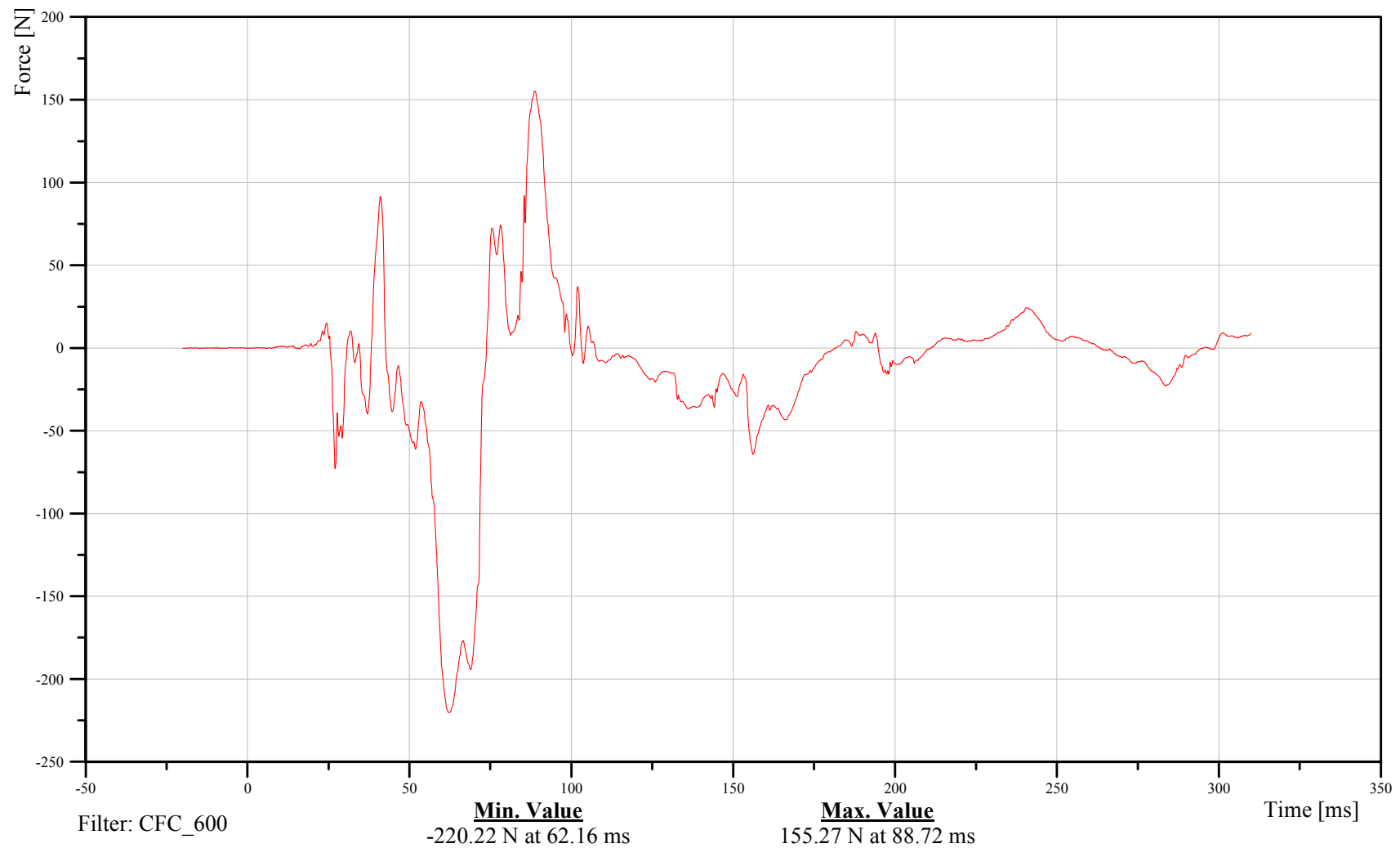
Shoulder Force X

Customer: VRTC

14SHLDLE00S2FOXB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Shoulder Force Y

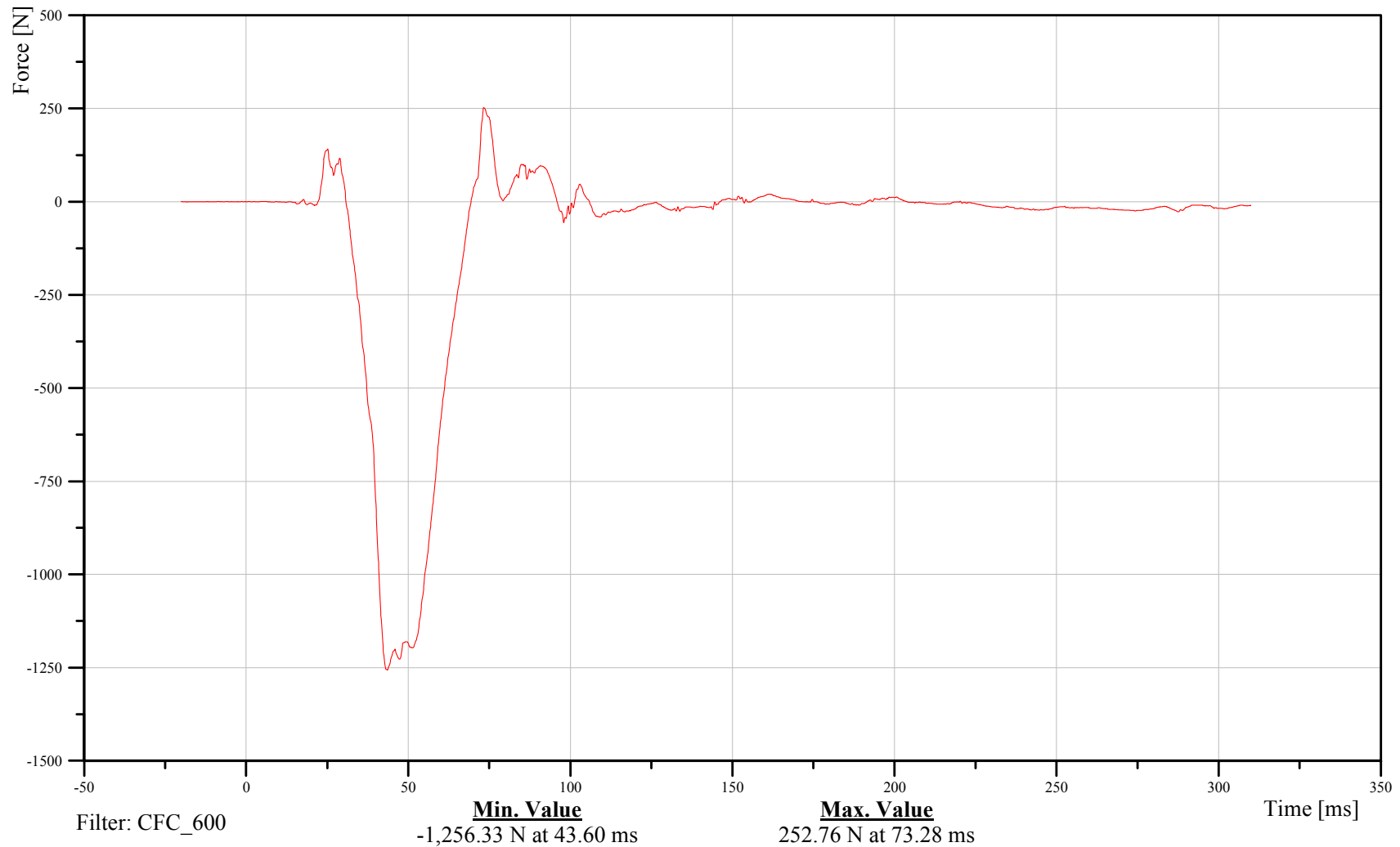
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14SHLDLE00S2FOYB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

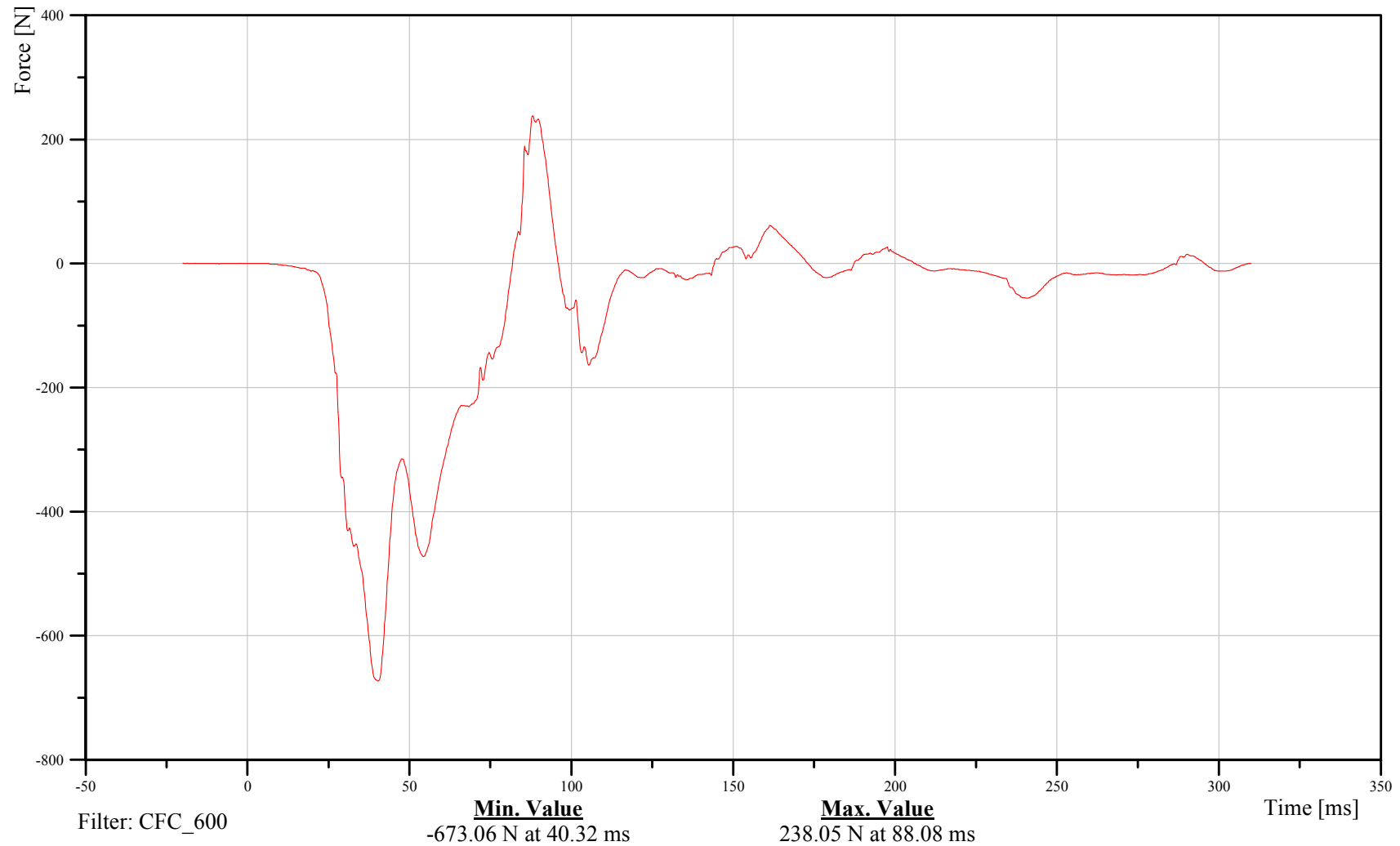
Shoulder Force Z

Customer: VRTC

14SHLDLE00S2FOZB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

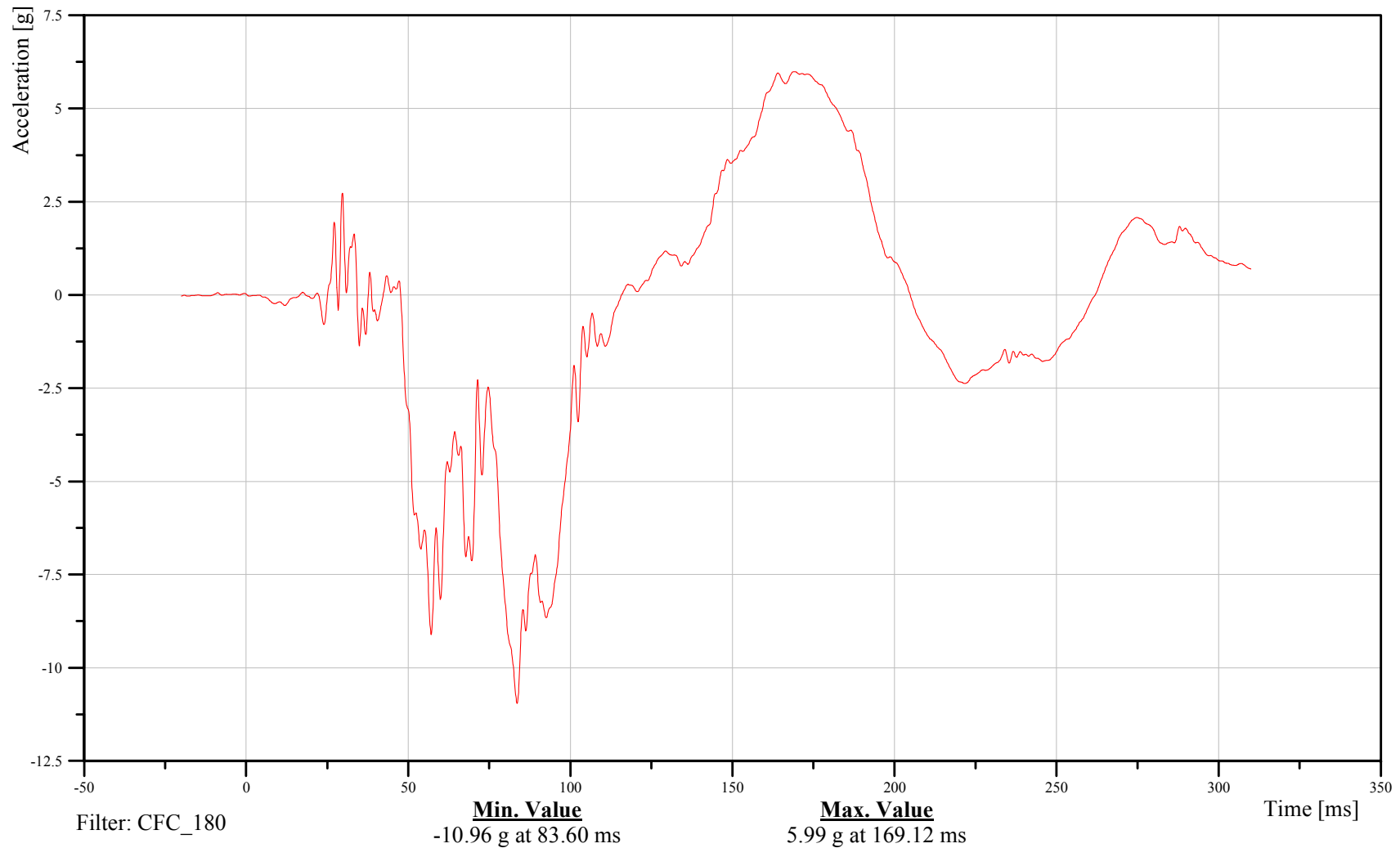
Upper Spine Accel X

Customer: VRTC

14SPIN0100S2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005

Time: 11:49

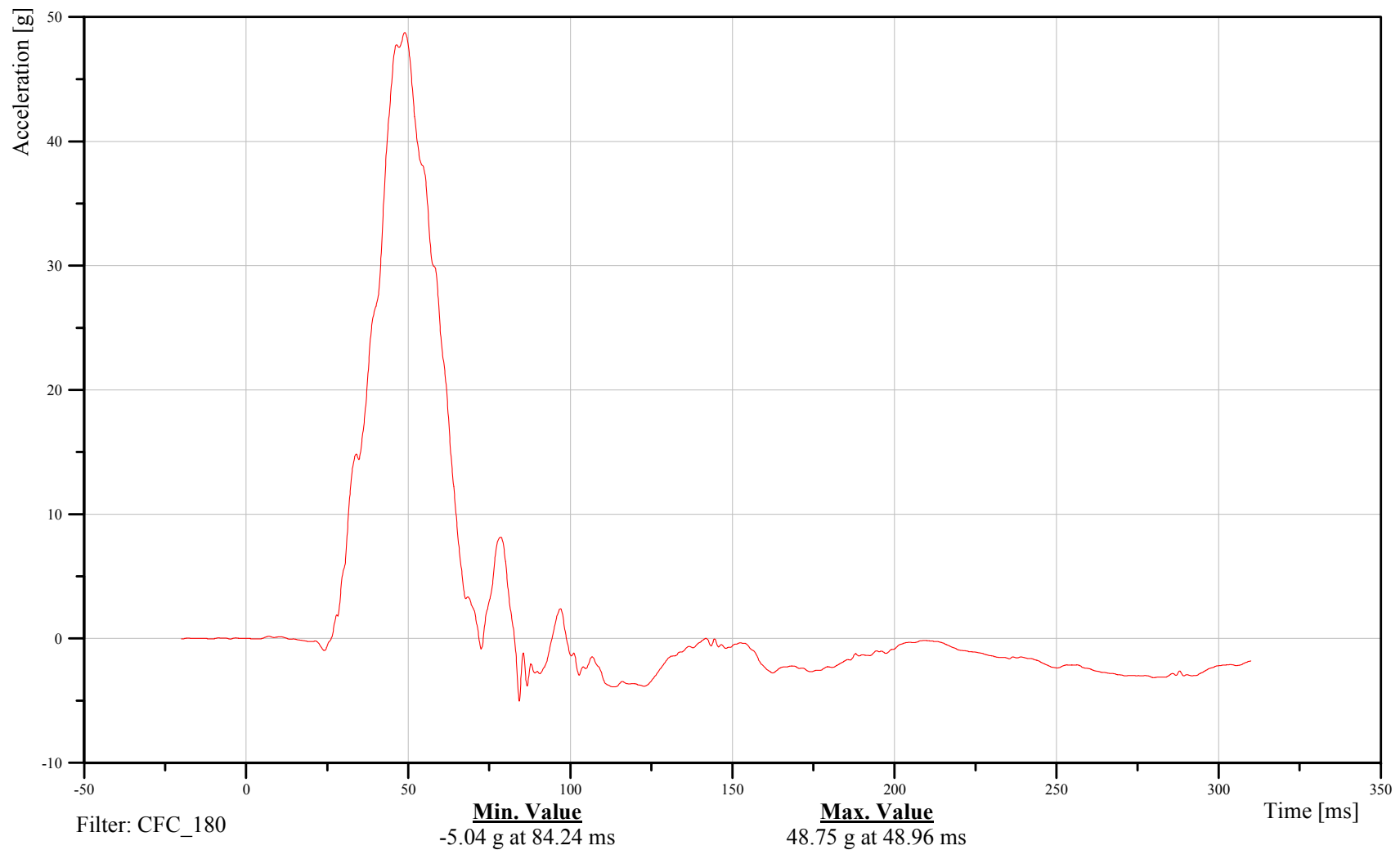
Upper Spine Accel Y

Customer: VRTC

14SPIN0100S2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Upper Spine Accel Z

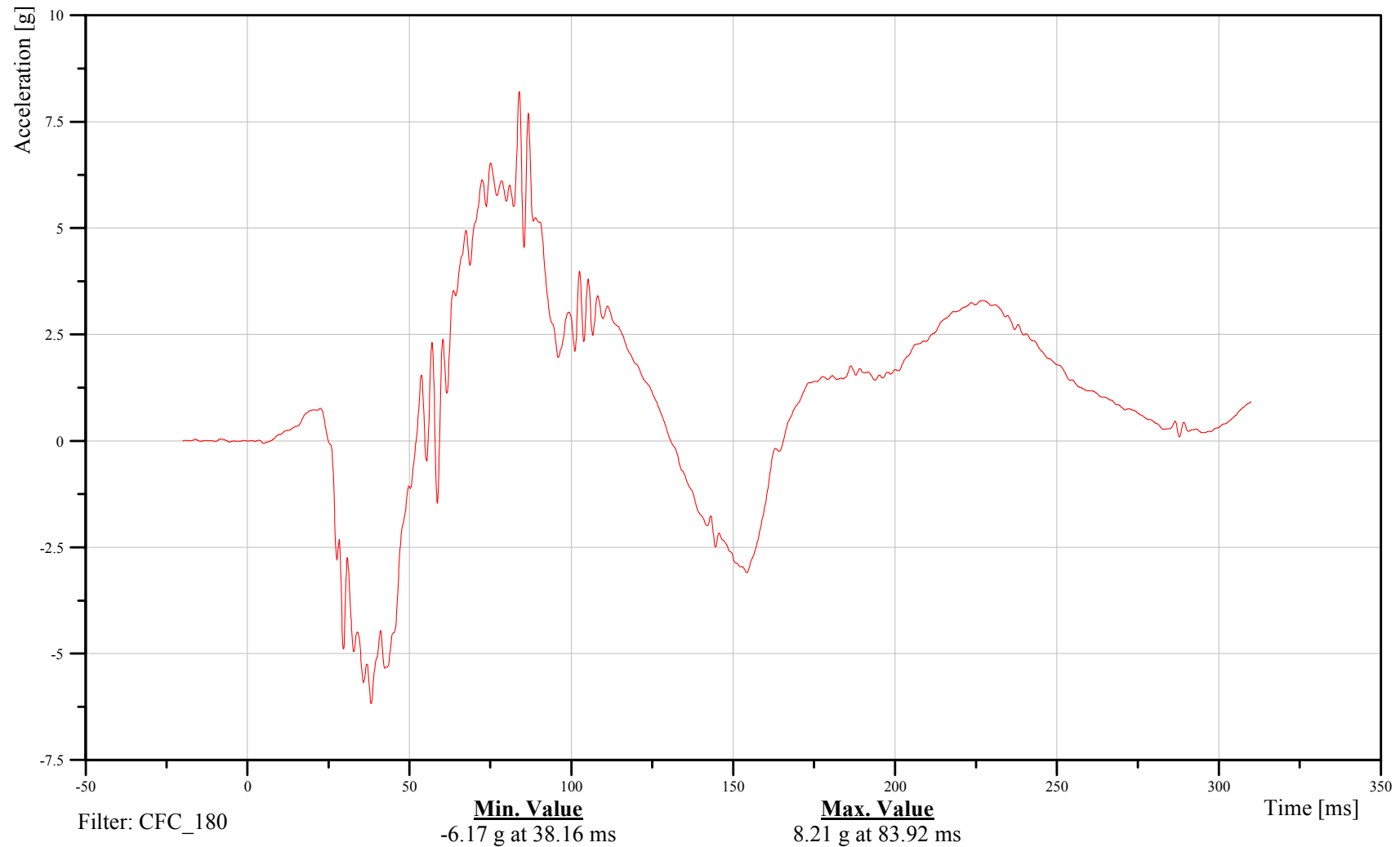
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14SPIN0100S2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

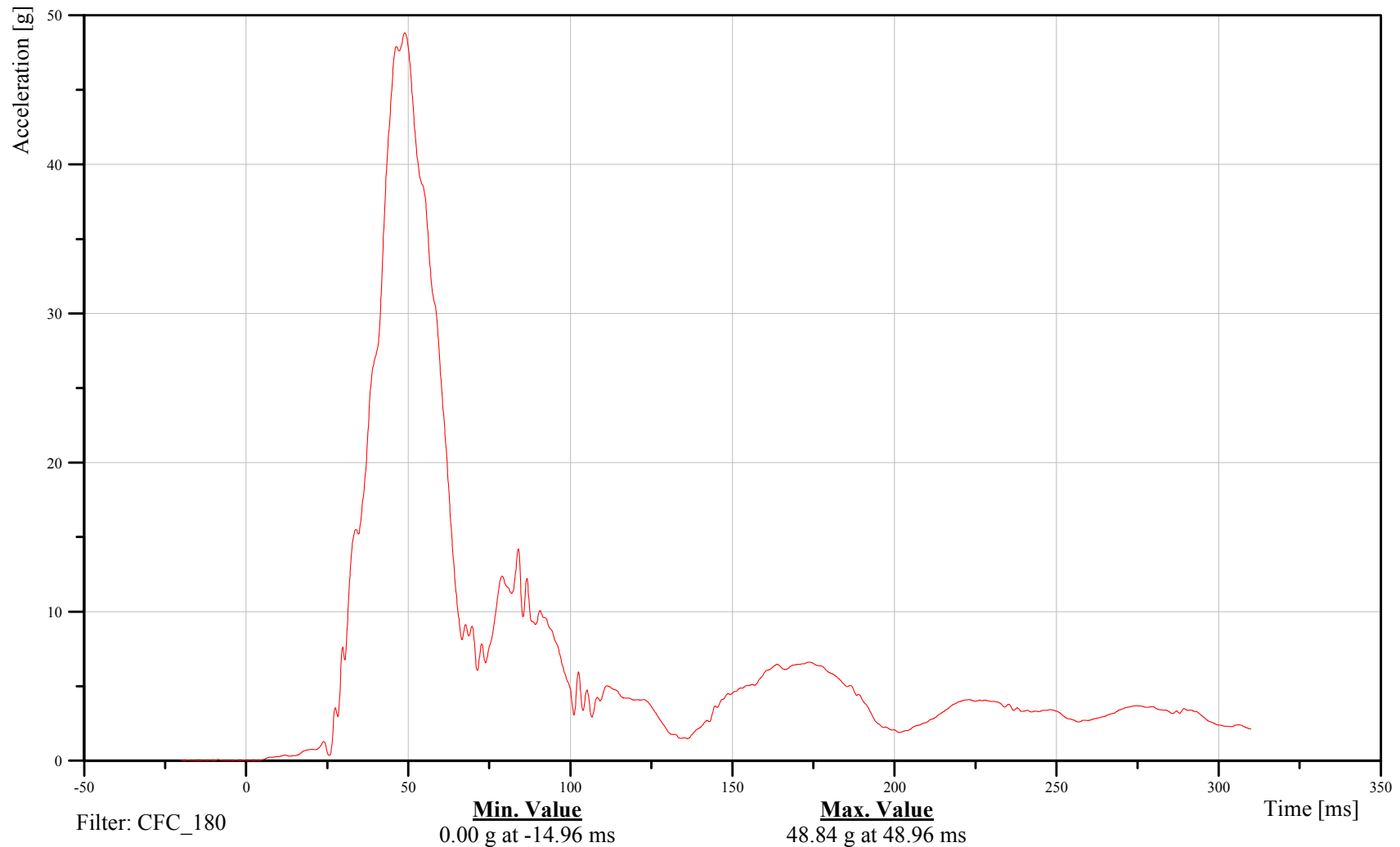
Upper Spine Resultant

Customer: VRTC

14SPIN0100S2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 1 Accel X

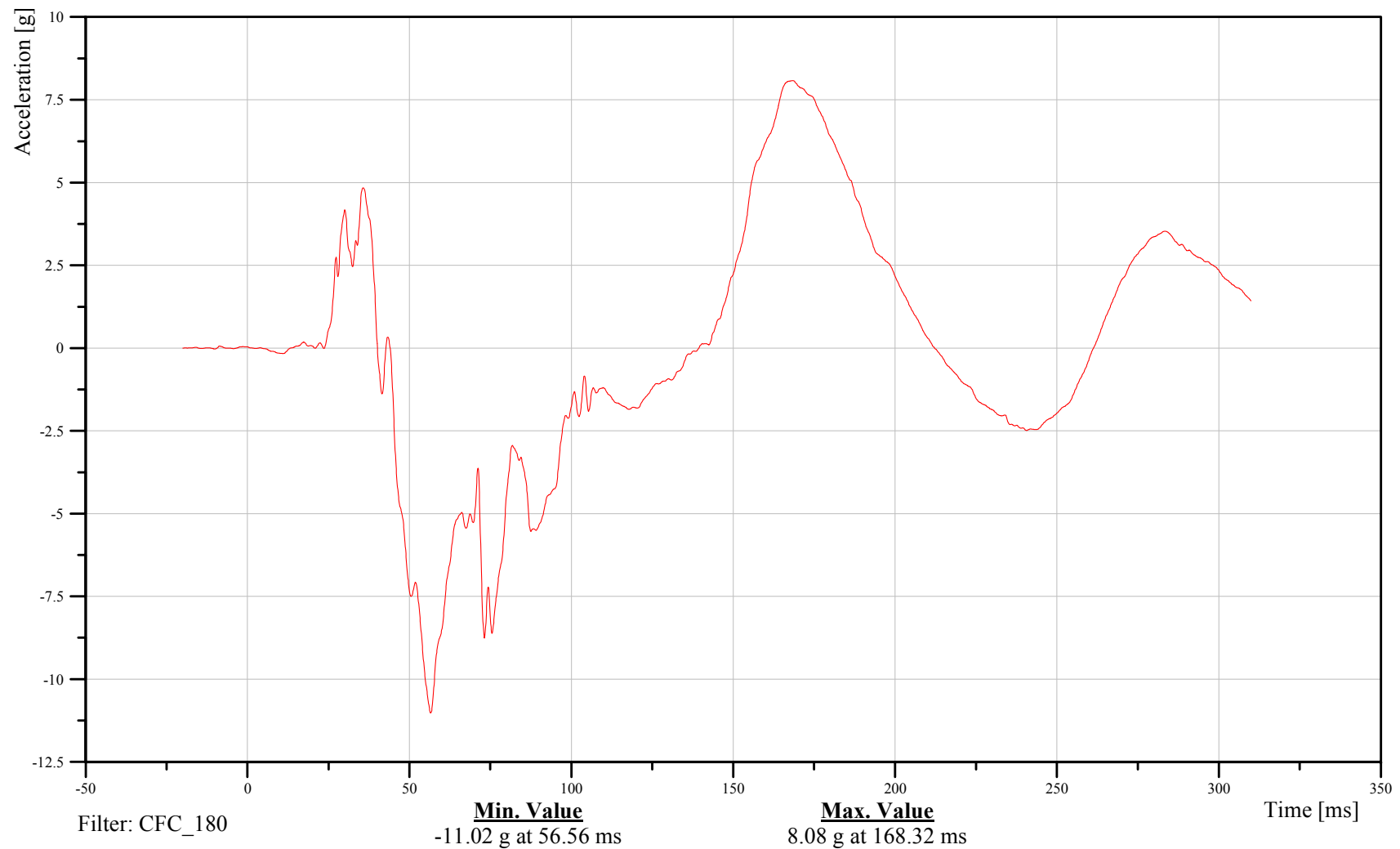
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14THSP01RIS2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 1 Accel Y

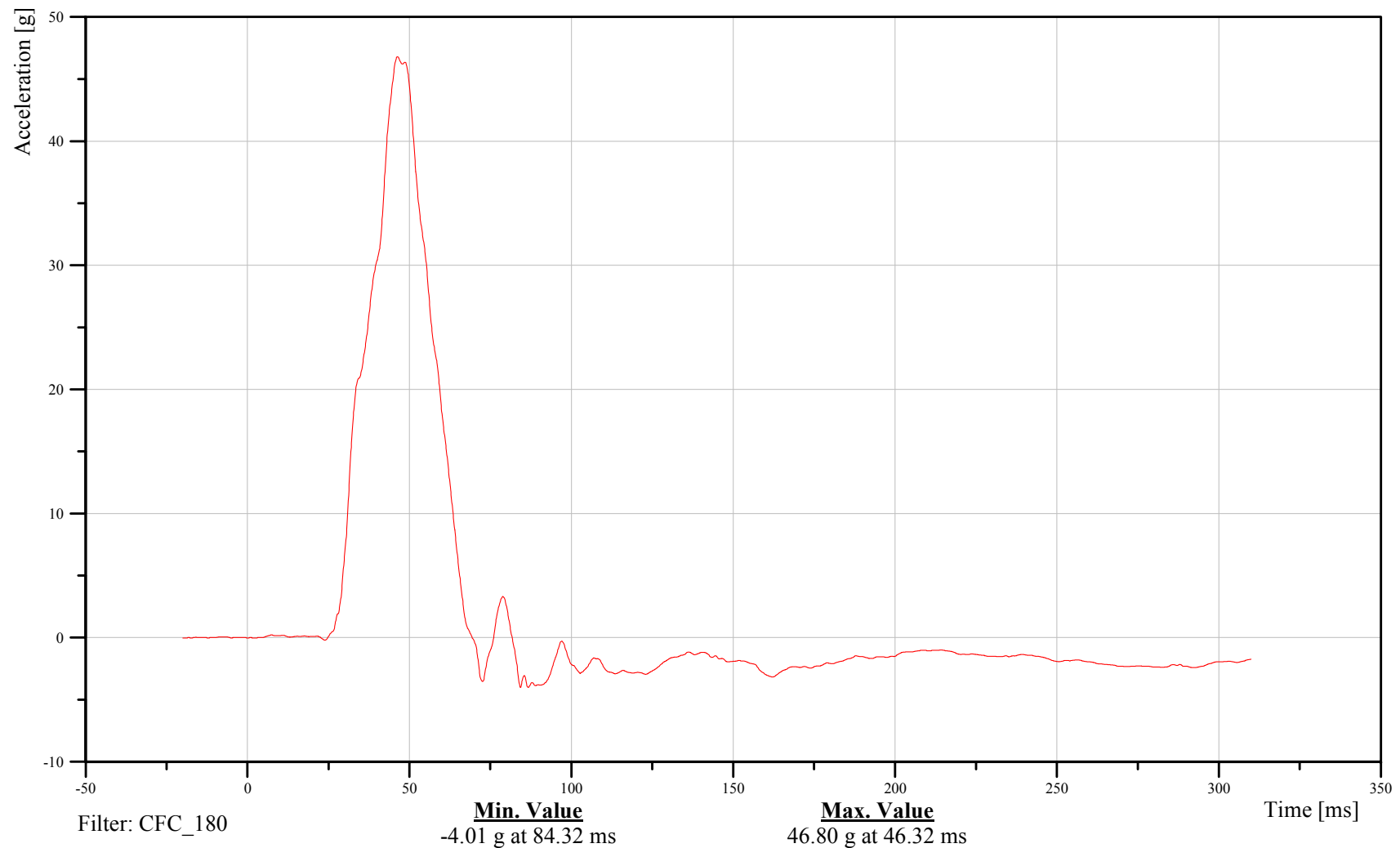
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14THSP01RIS2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 1 Accel Z

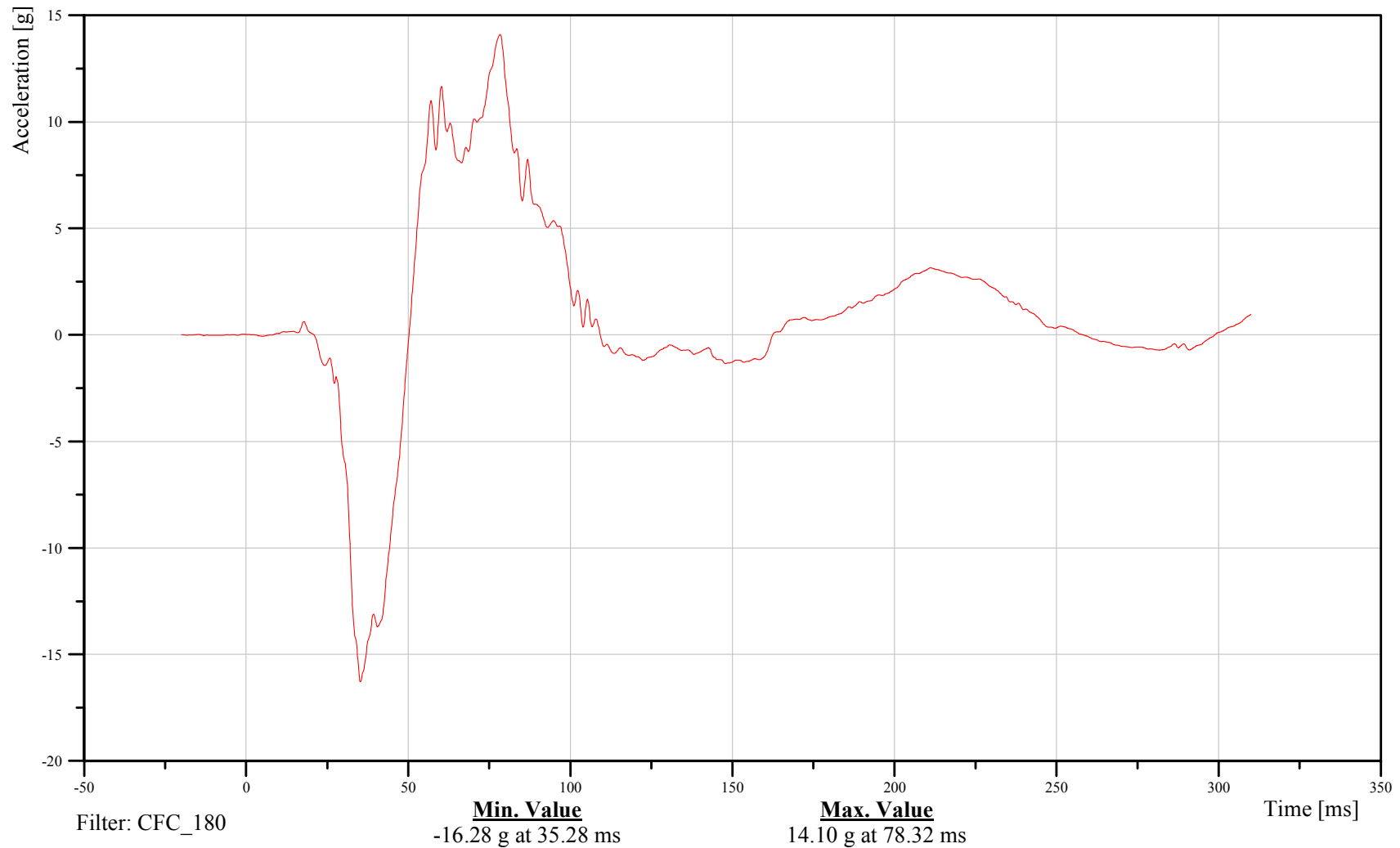
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14THSP01RIS2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

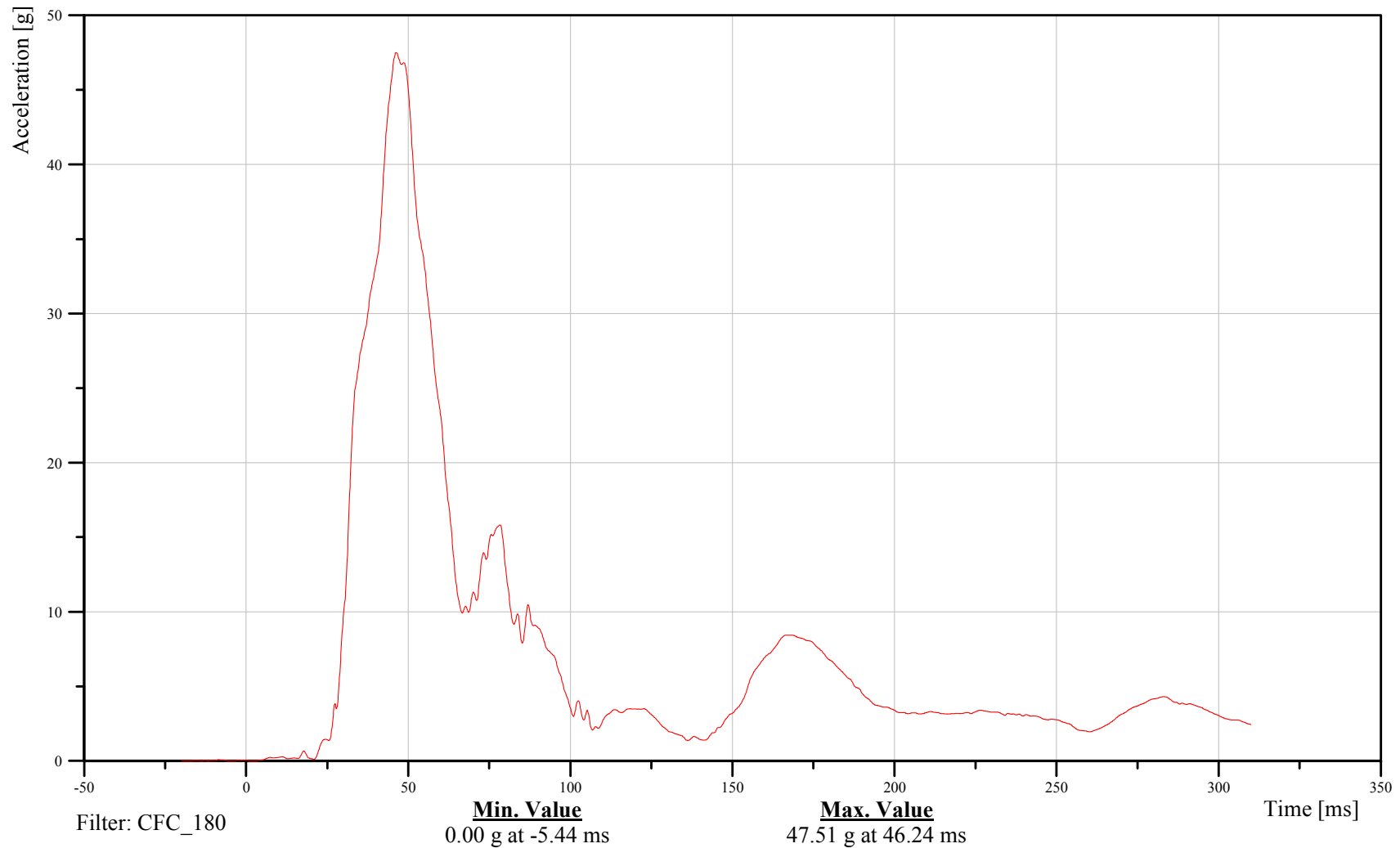
Spine Rib 1 Accel Resultant

Customer: VRTC

14THSP01RIS2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 2 Accel X

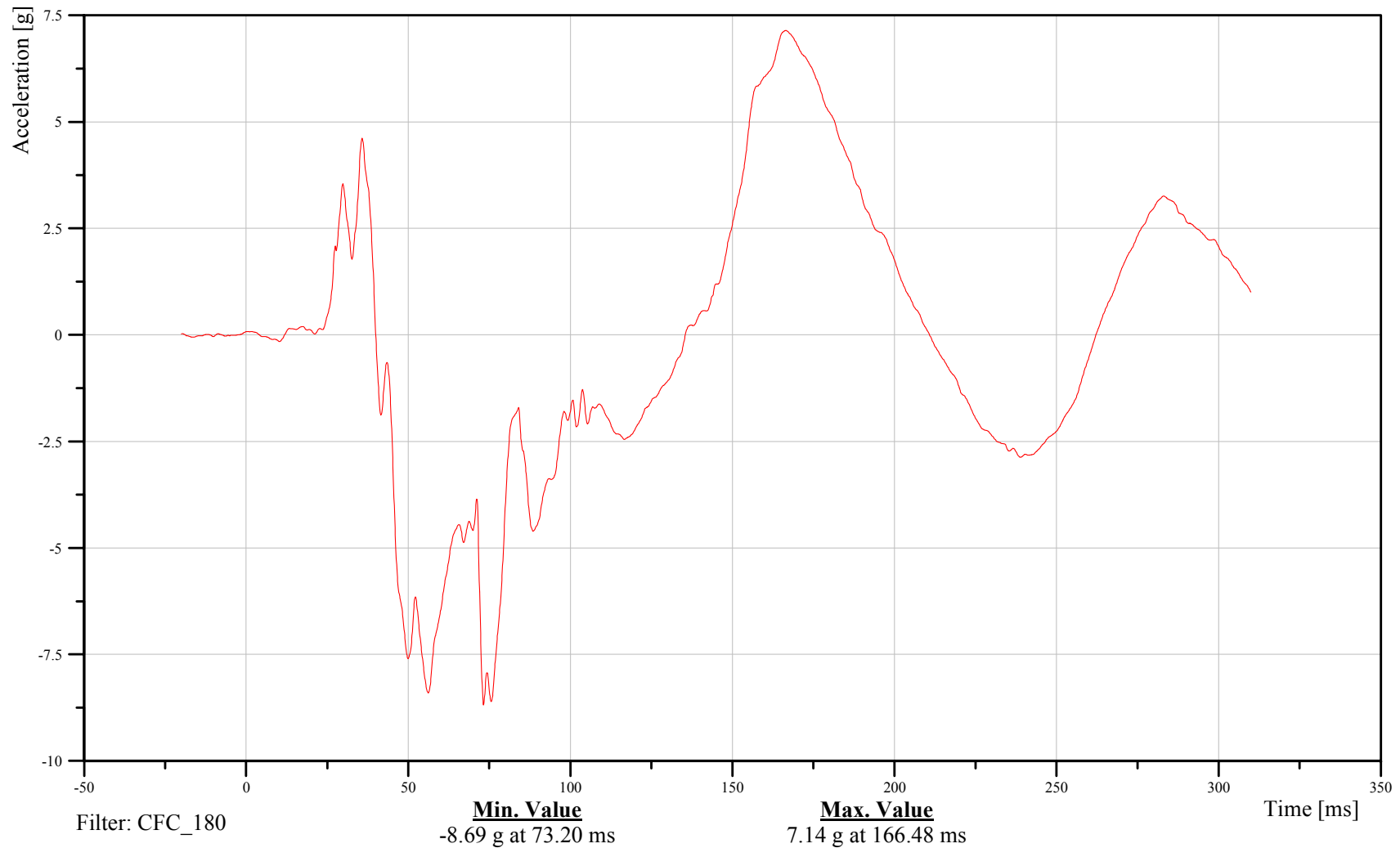
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14THSP02RIS2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 2 Accel Y

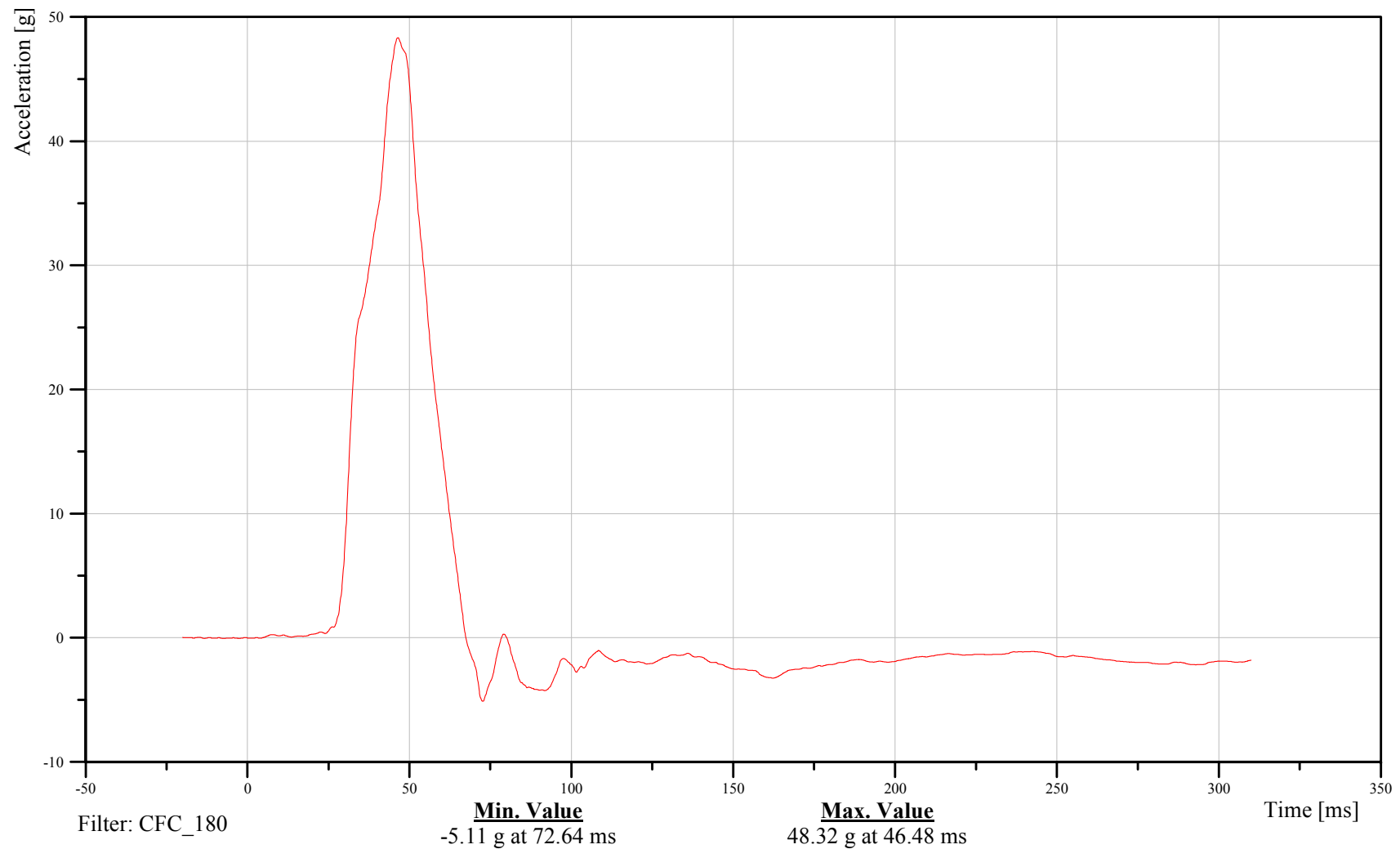
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14THSP02RIS2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 2 Accel Z

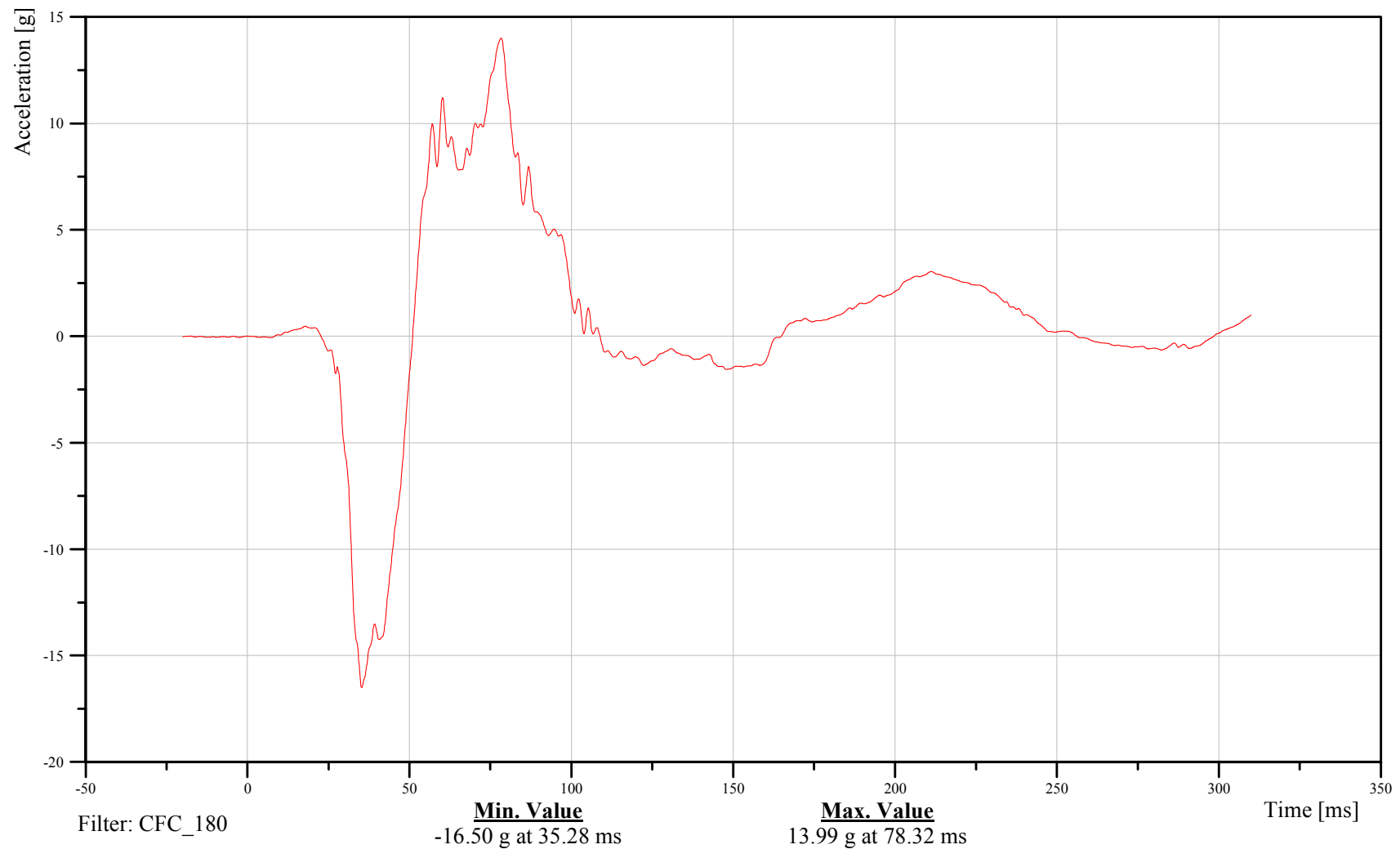
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14THSP02RIS2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

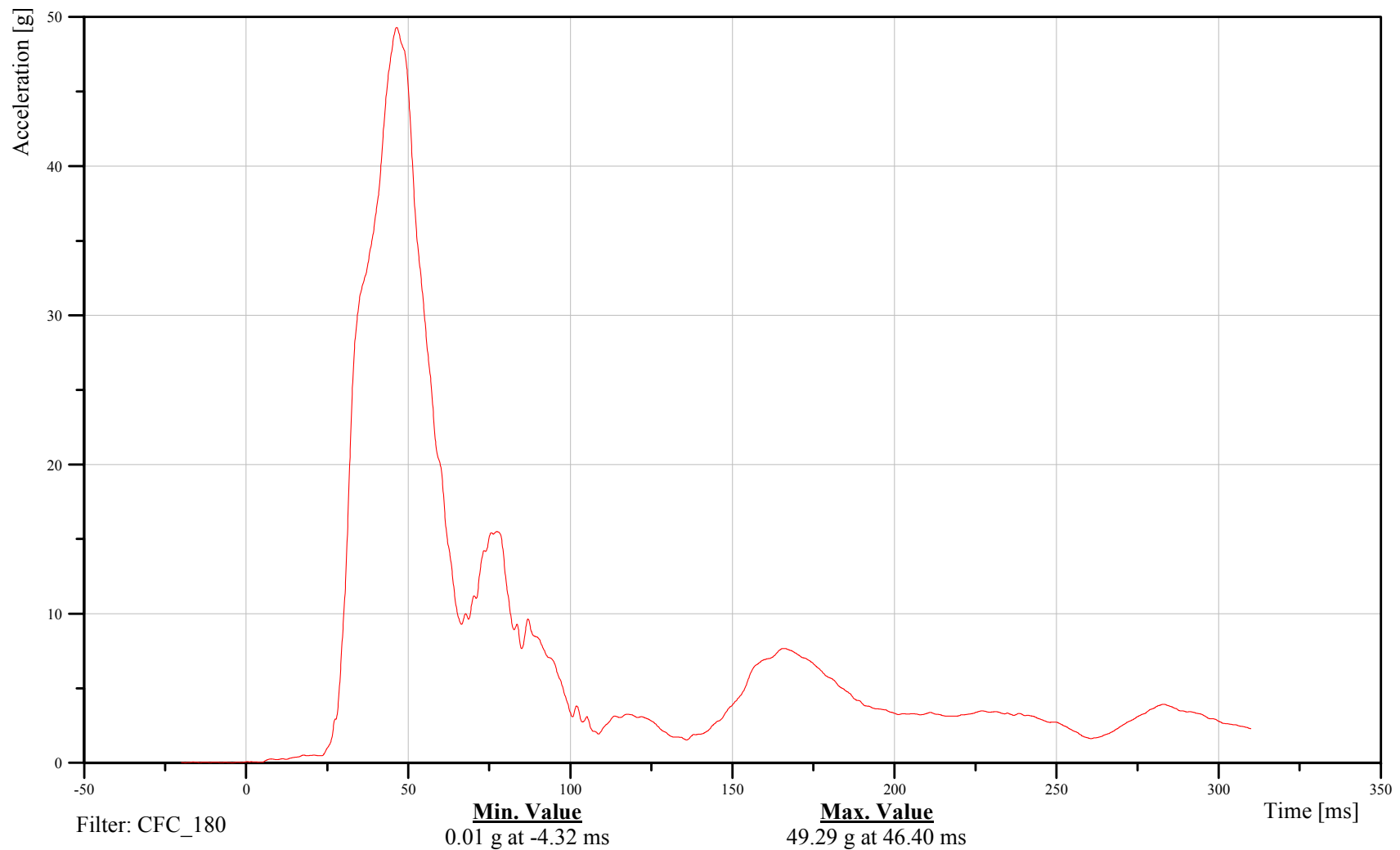
Spine Rib 2 Accel Resultant

Customer: VRTC

14THSP02RIS2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 3 Accel X

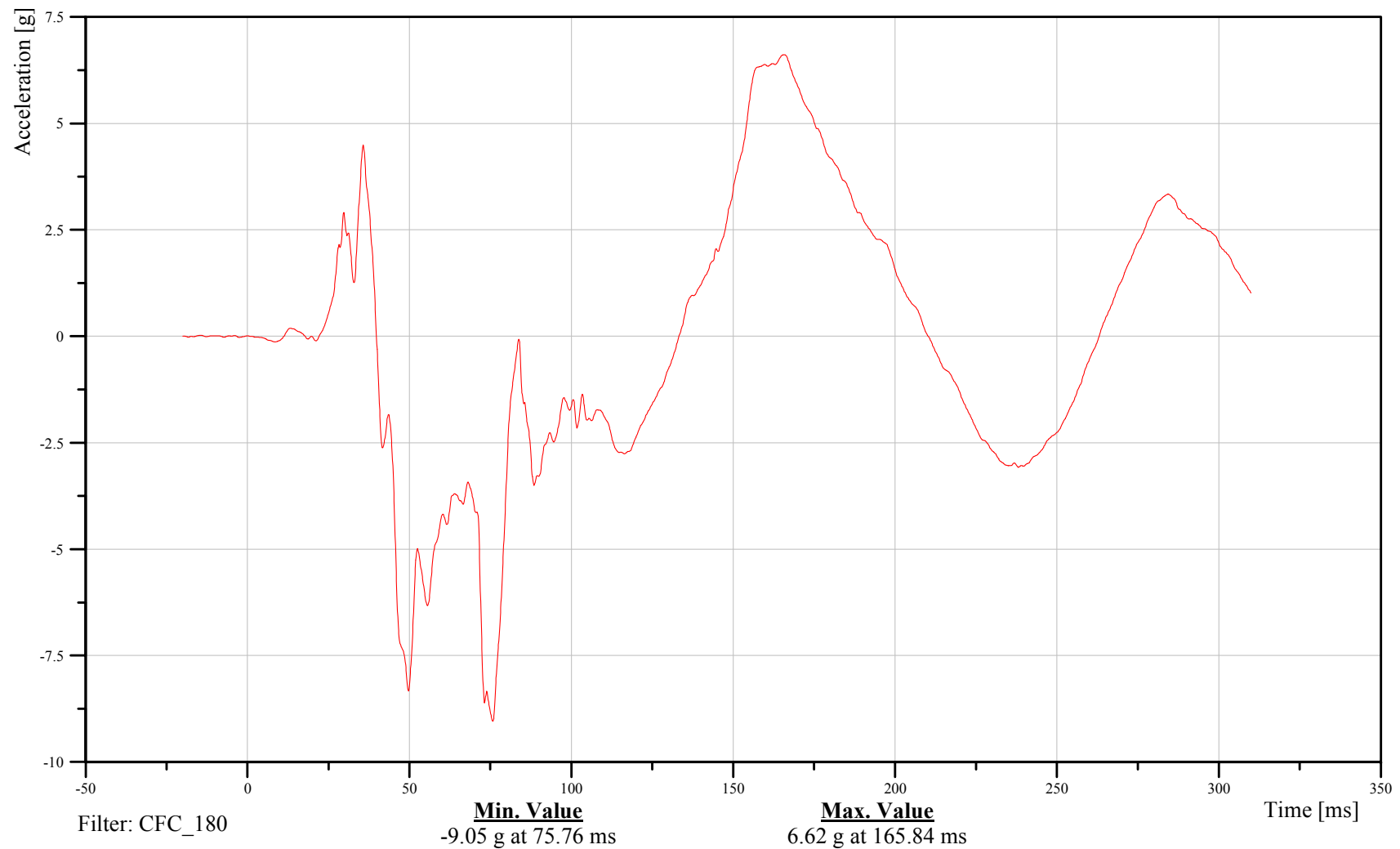
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14THSP03RIS2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 3 Accel Y

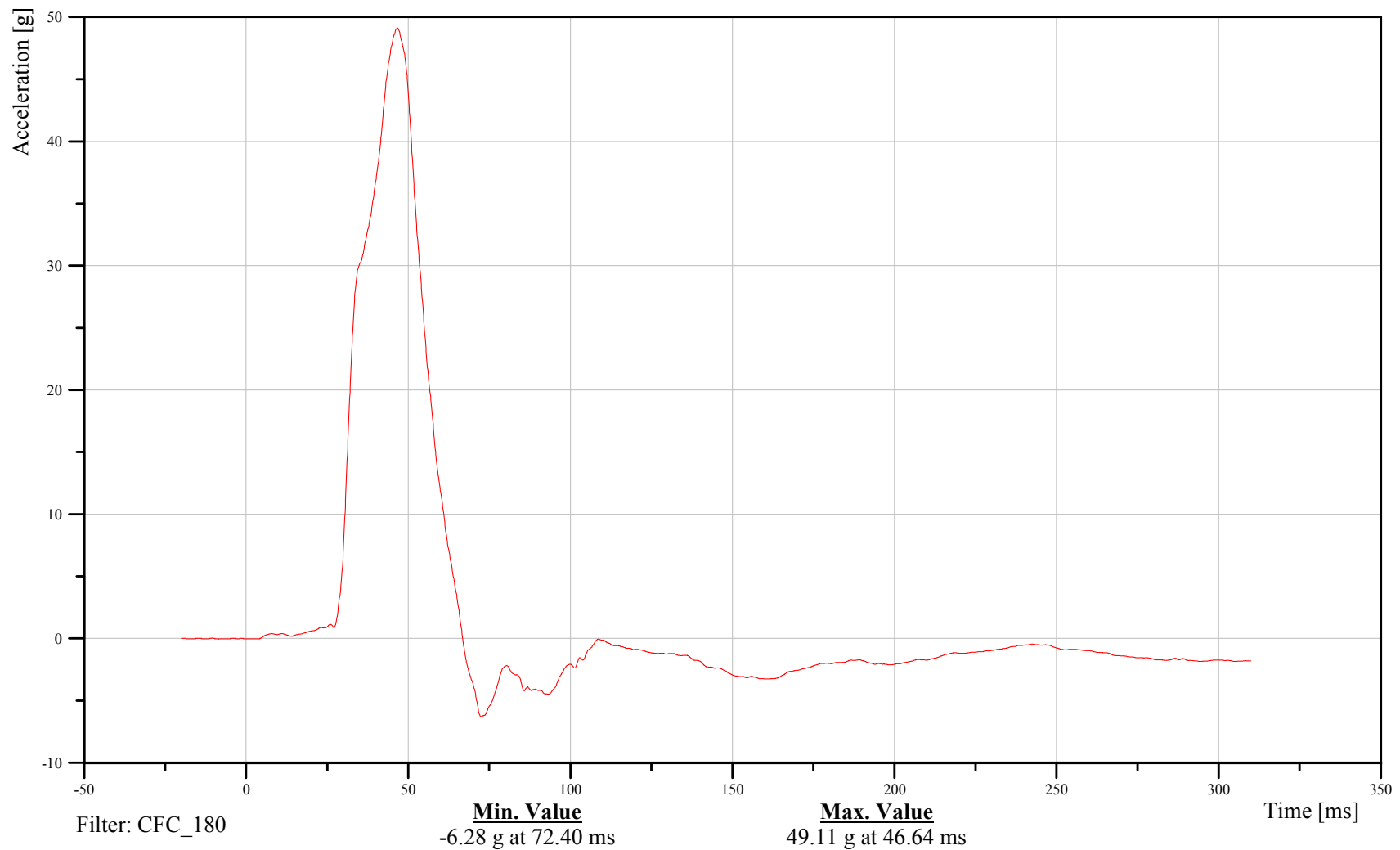
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14THSP03RIS2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 3 Accel Z

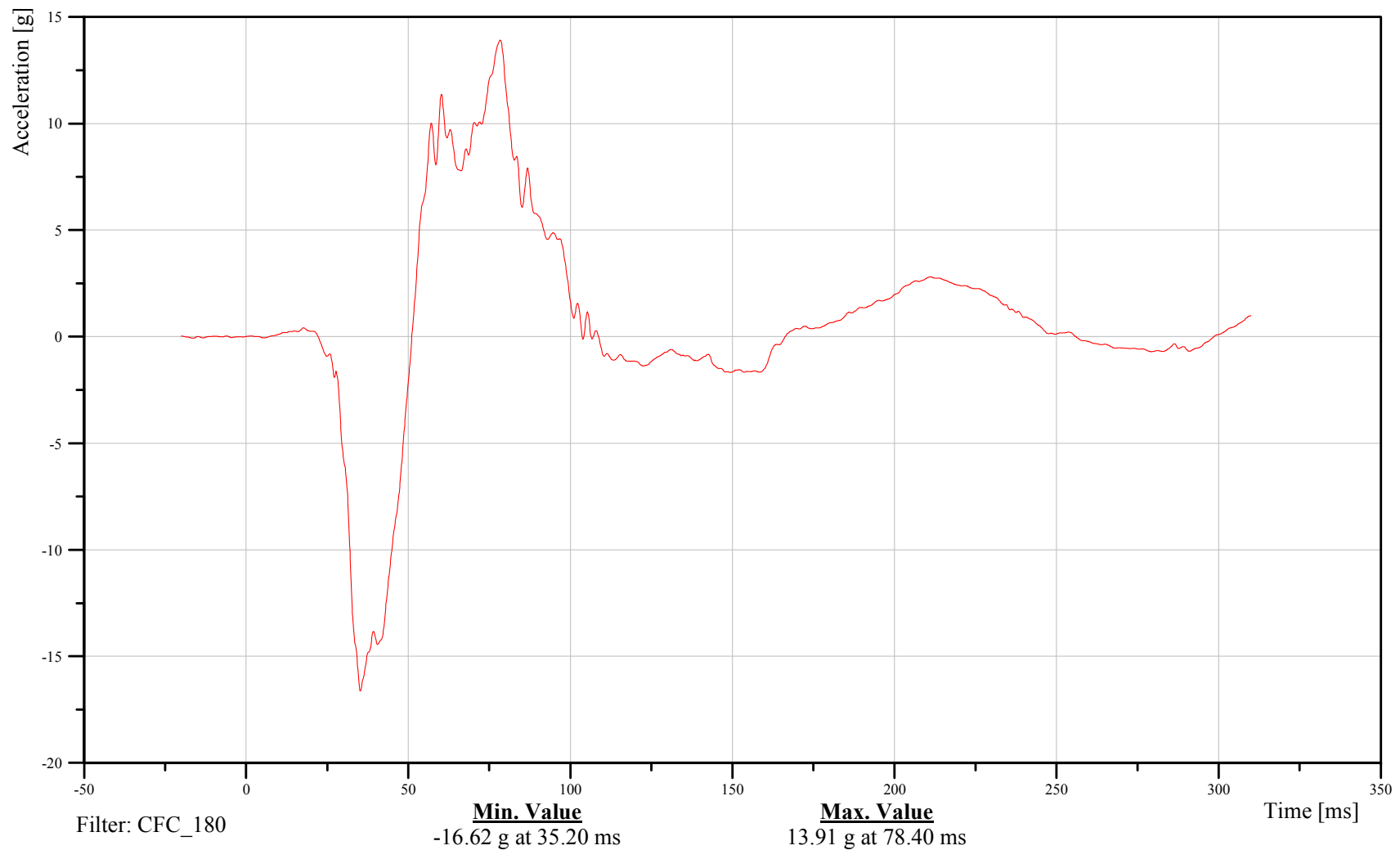
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14THSP03RIS2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 3 Accel Resultant

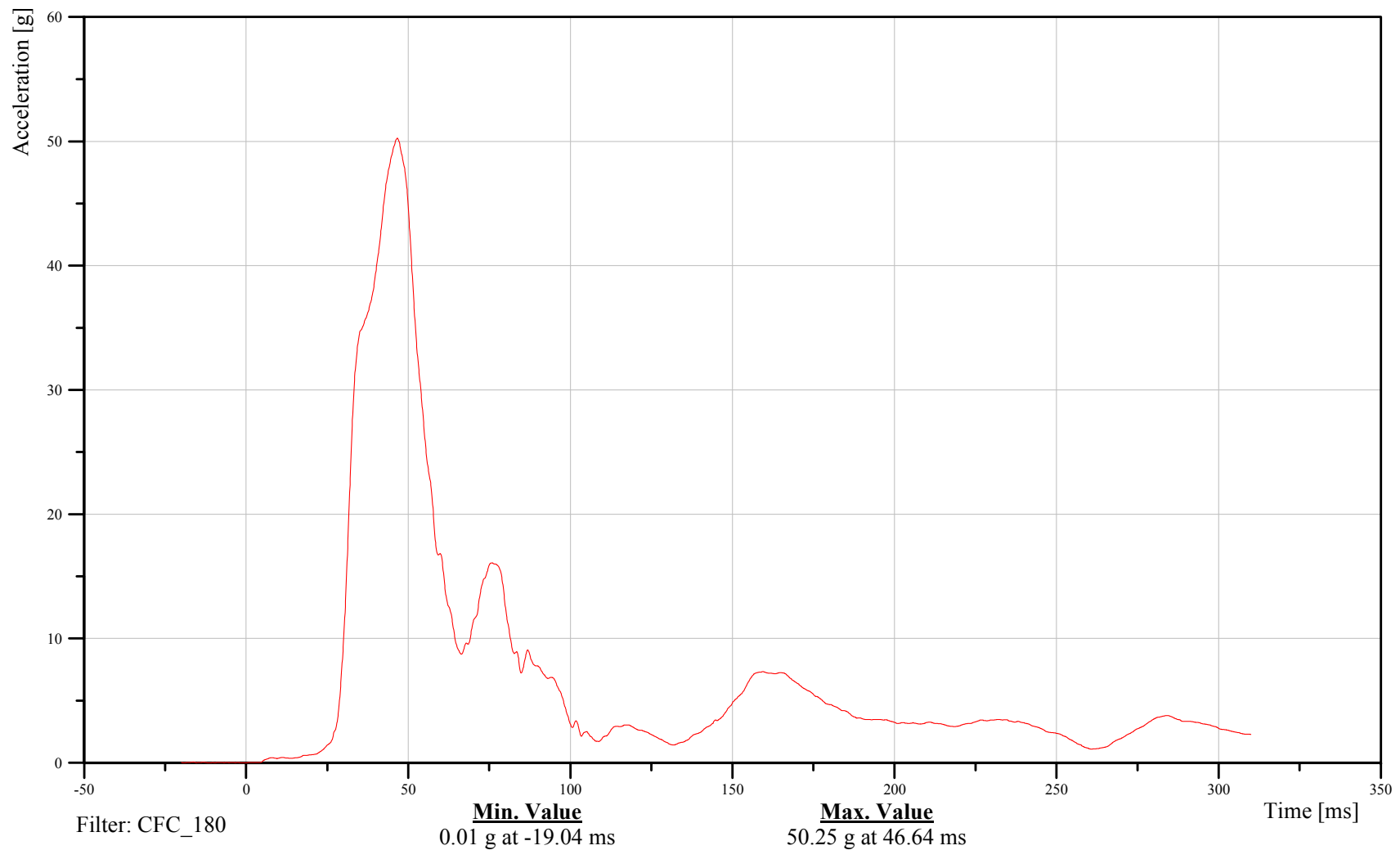
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14THSP03RIS2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

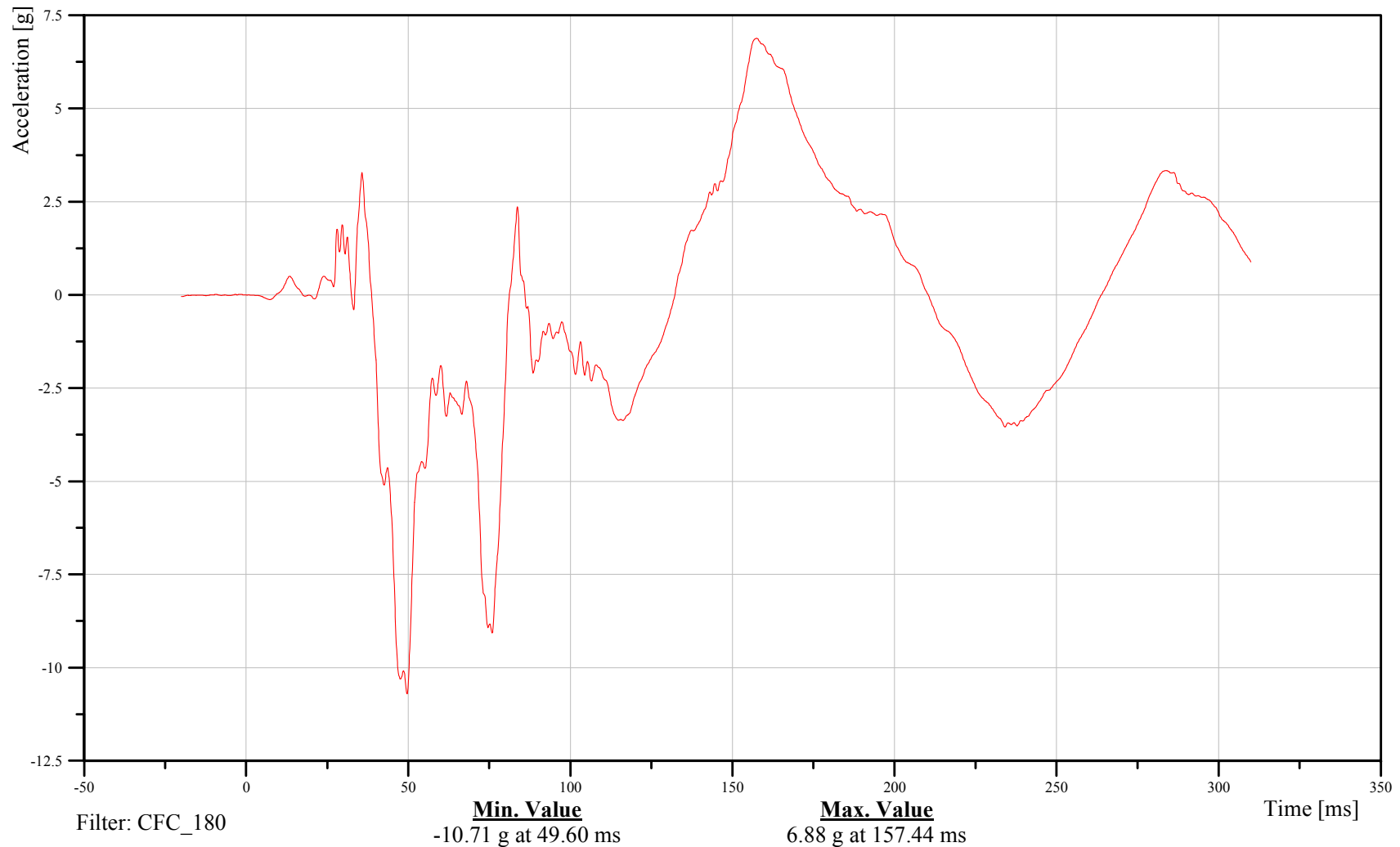
Lower Spine Accel X

Customer: VRTC

14SPIN1200S2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

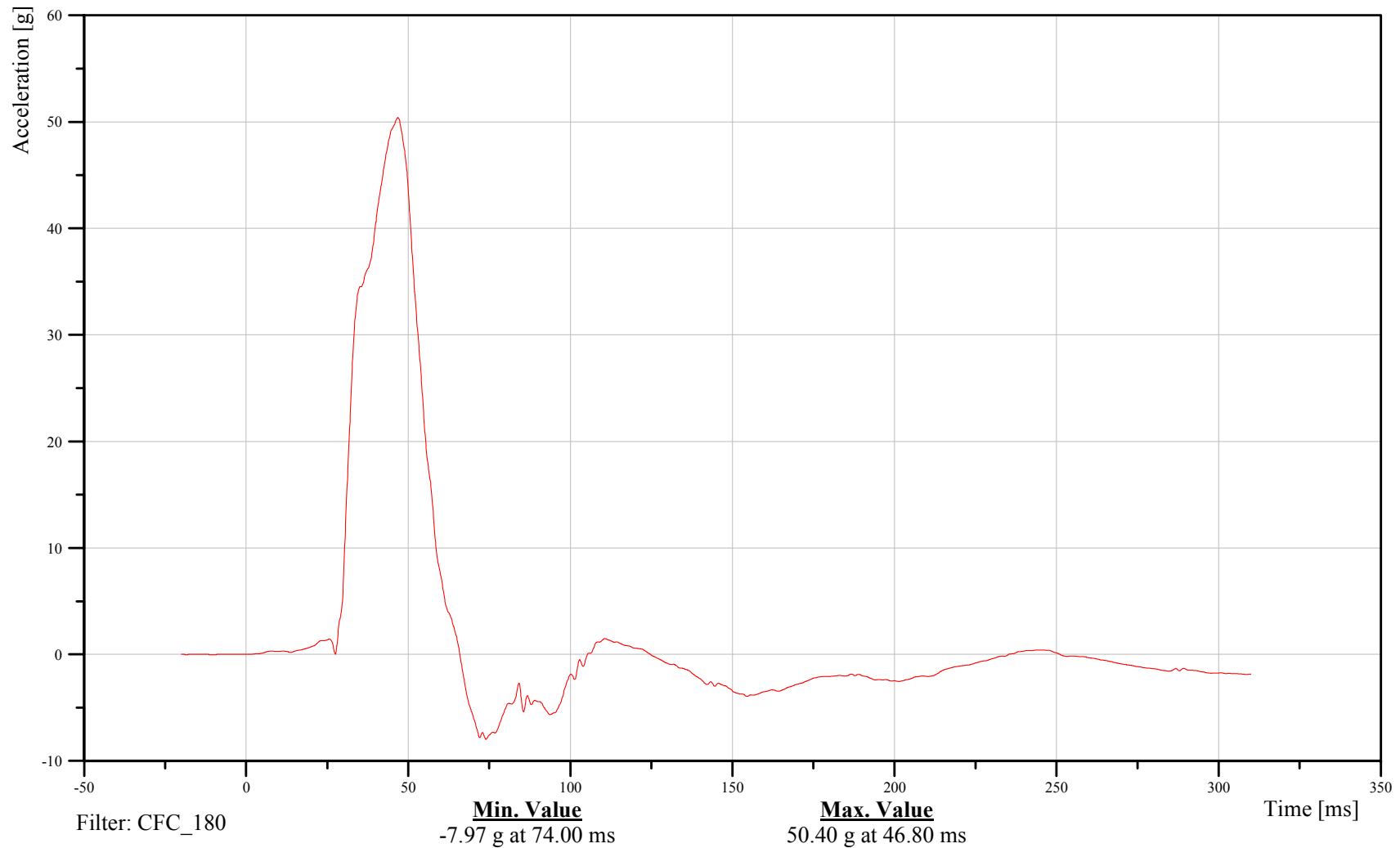
Lower Spine Accel Y

Customer: VRTC

14SPIN1200S2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

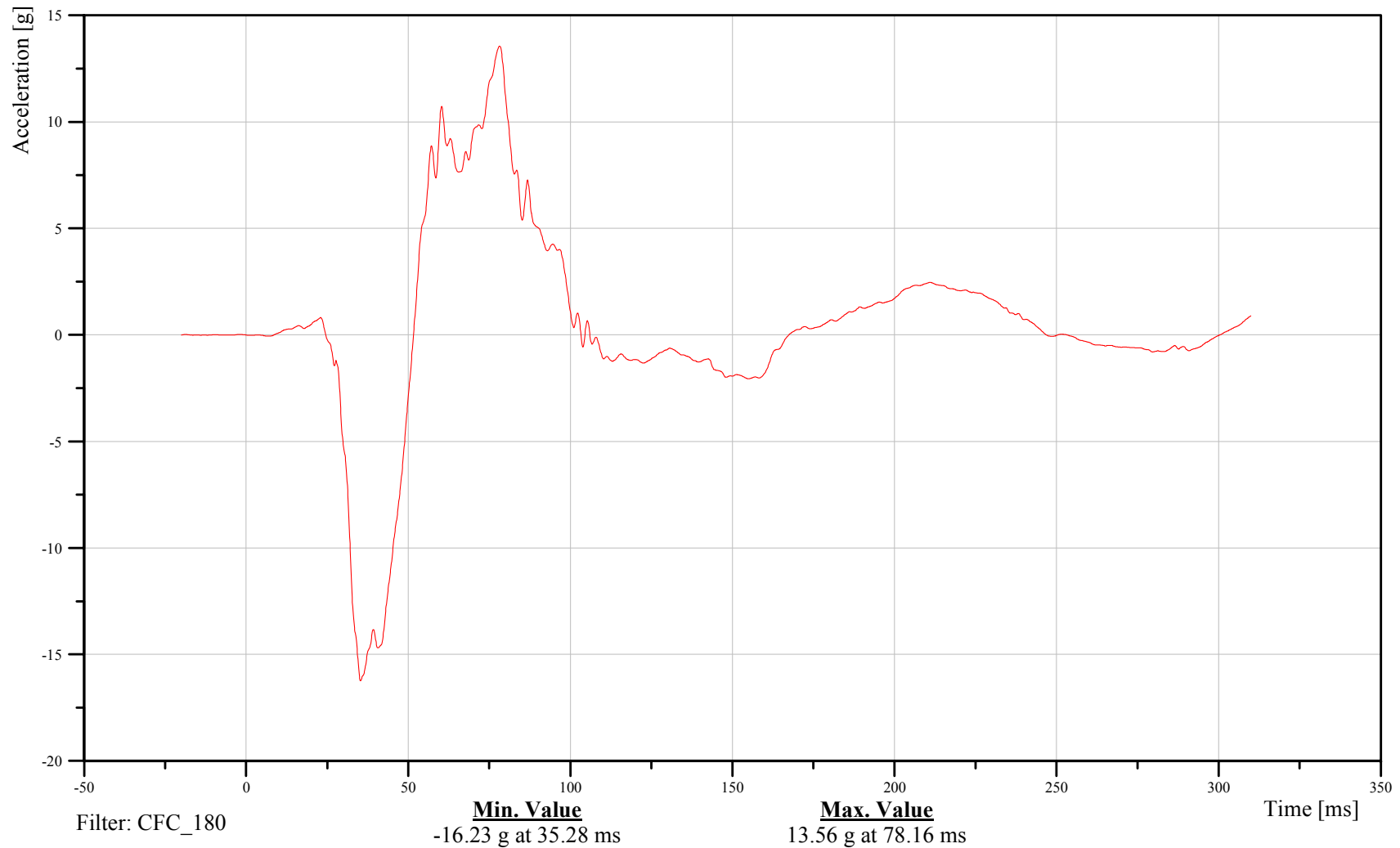
Lower Spine Accel Z

Customer: VRTC

14SPIN1200S2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

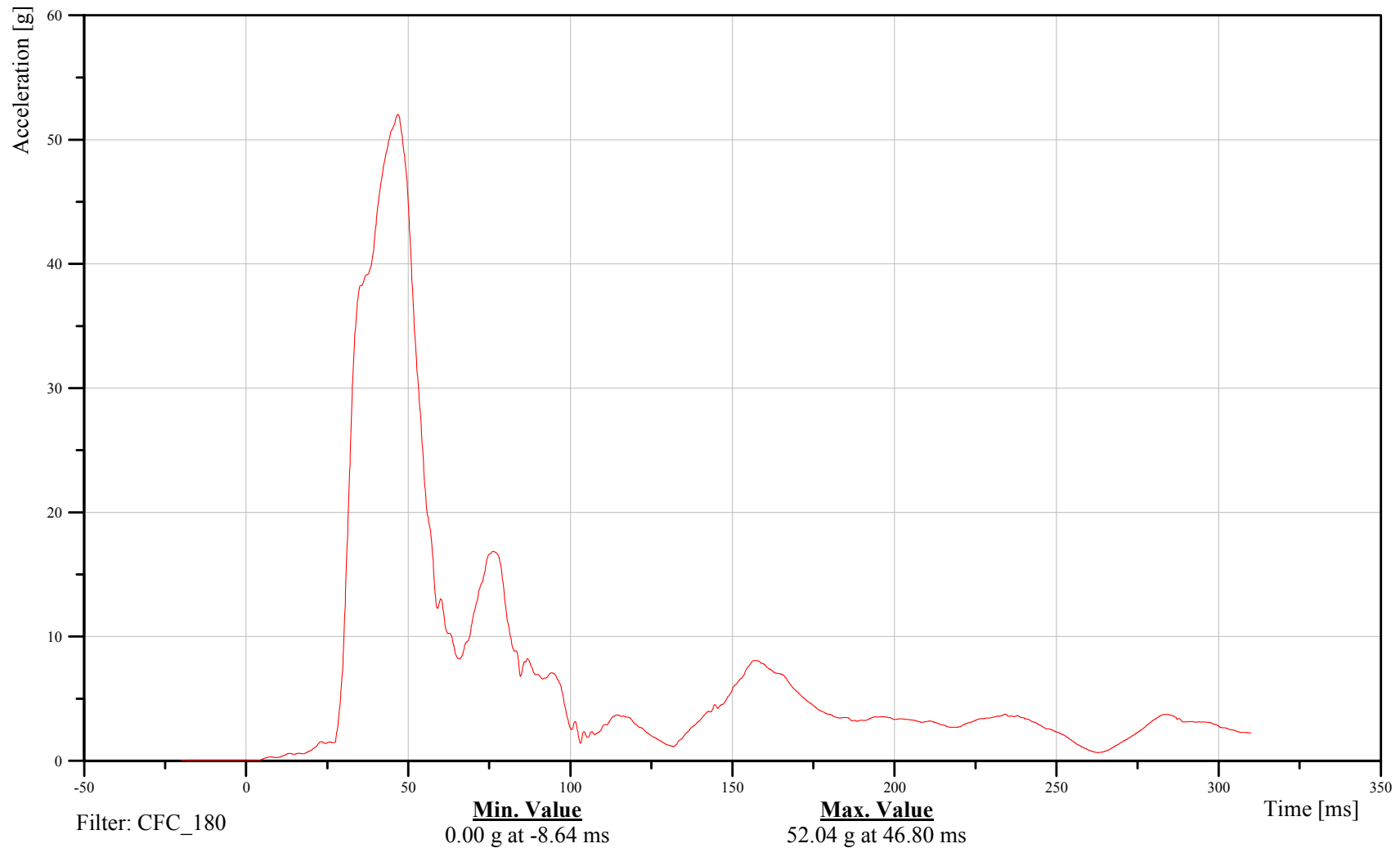
Lower Spine Accel Resultant

Customer: VRTC

14SPIN1200S2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 5 Accel X

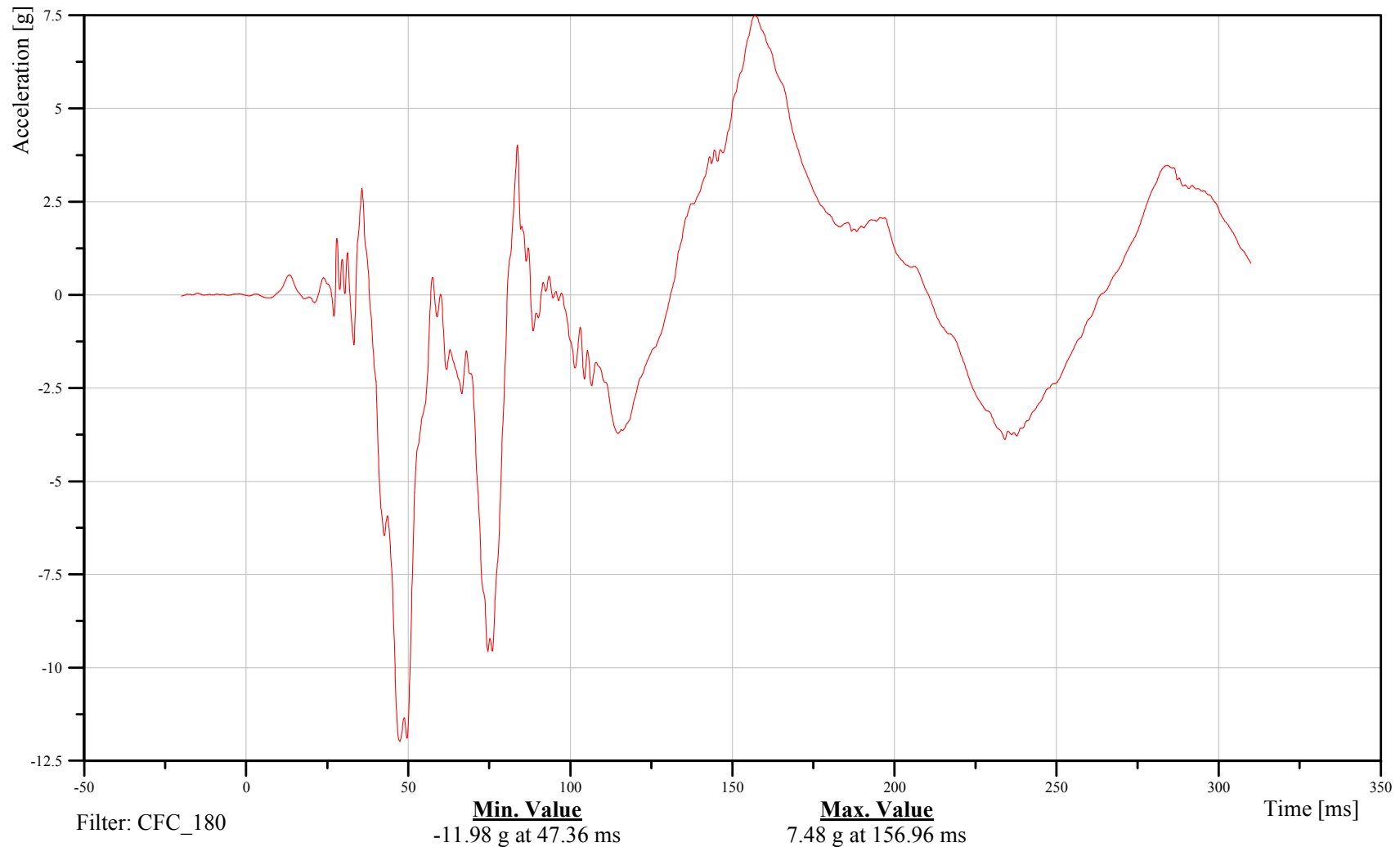
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14ABSP02RIS2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 5 Accel Y

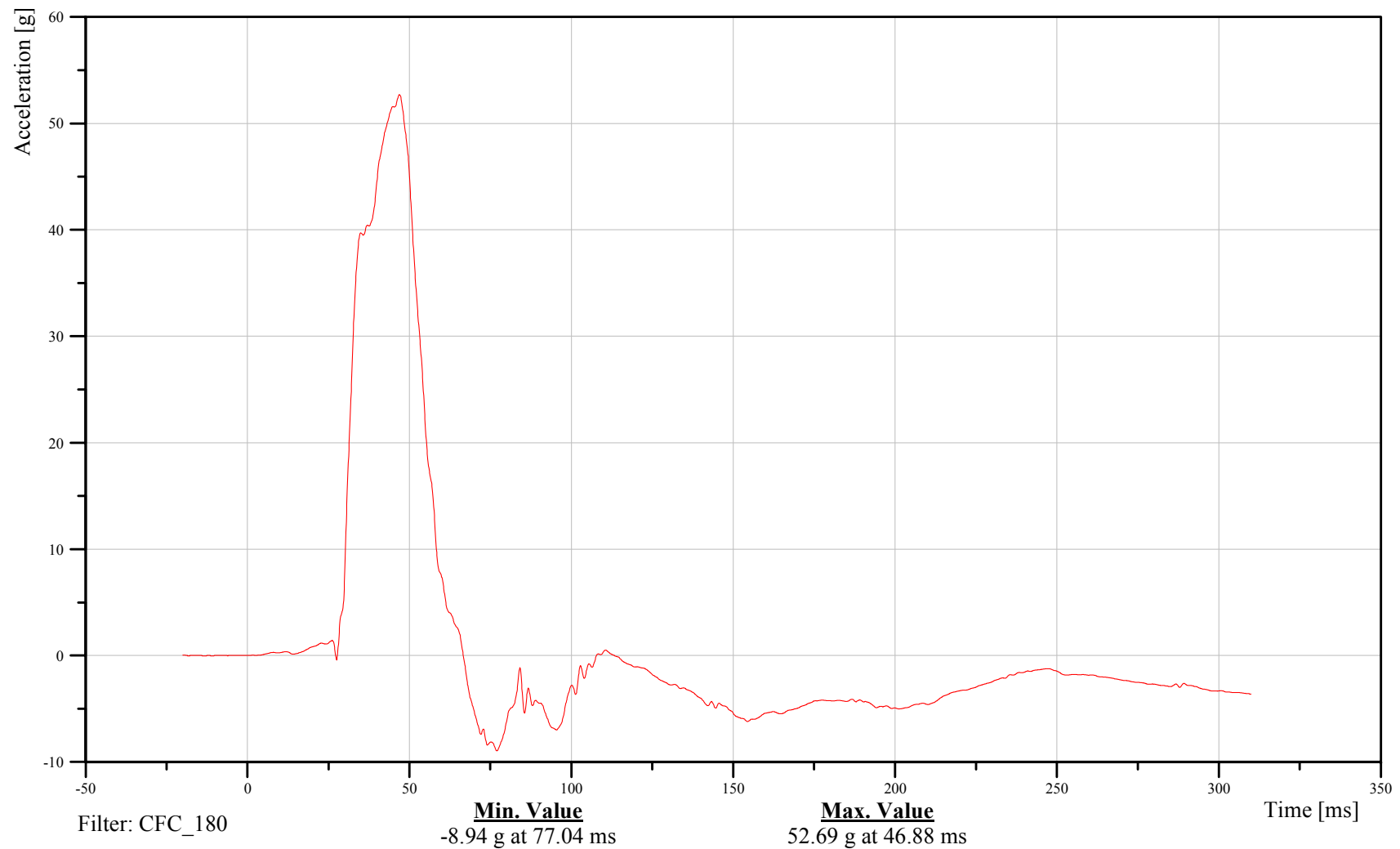
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14ABSP02RIS2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 5 Accel Z

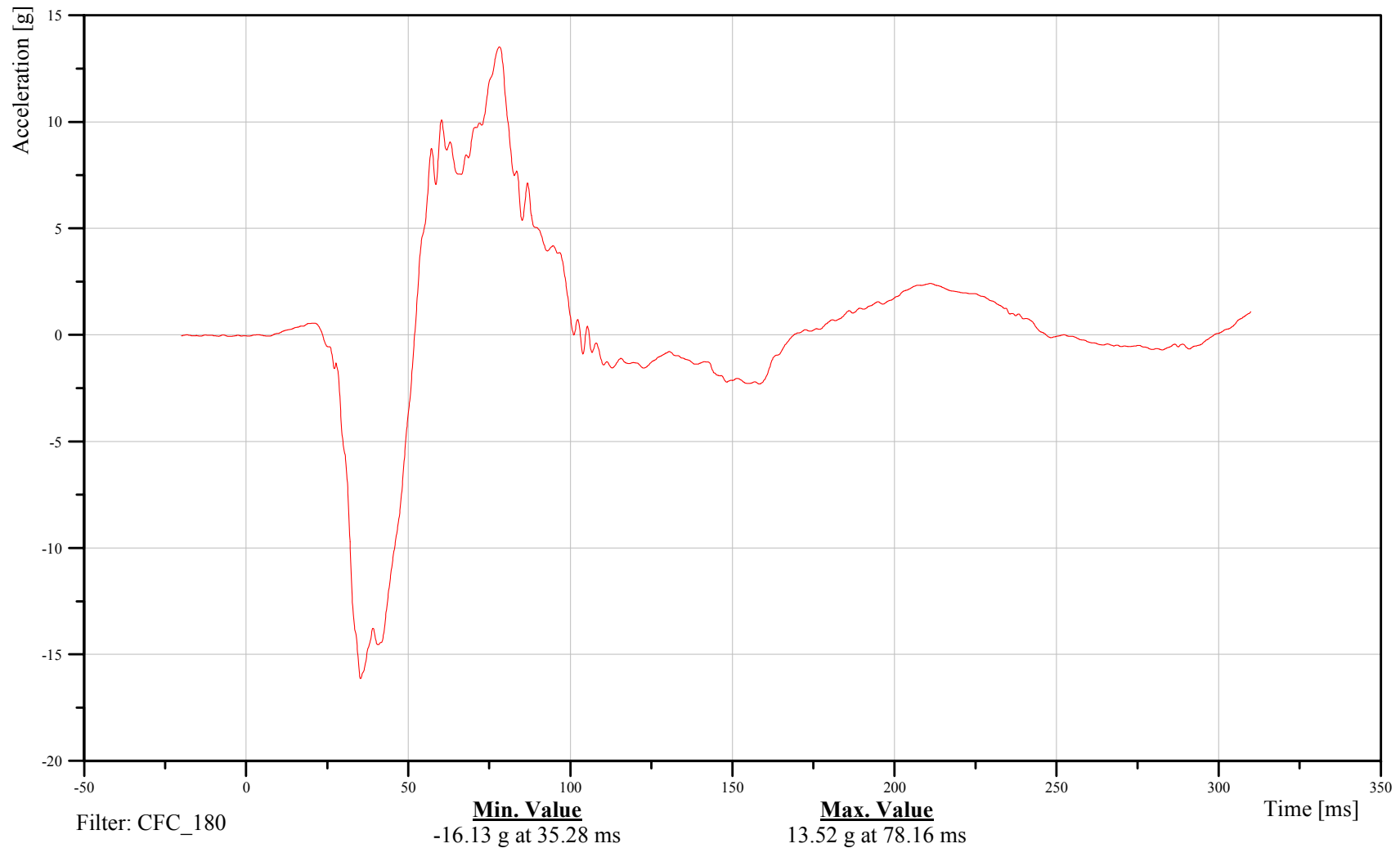
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14ABSP02RIS2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Spine Rib 5 Accel Resultant

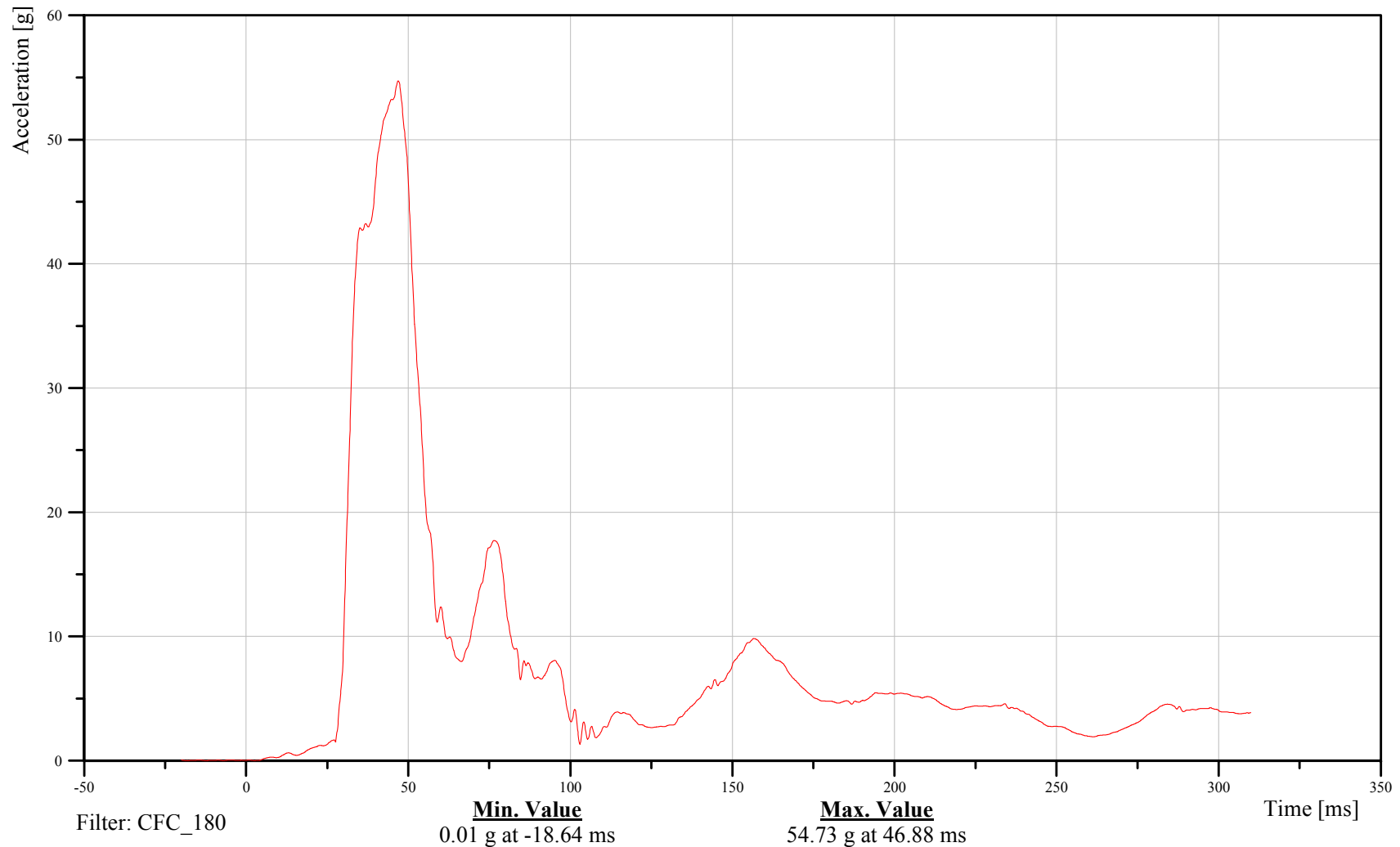
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14ABSP02RIS2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

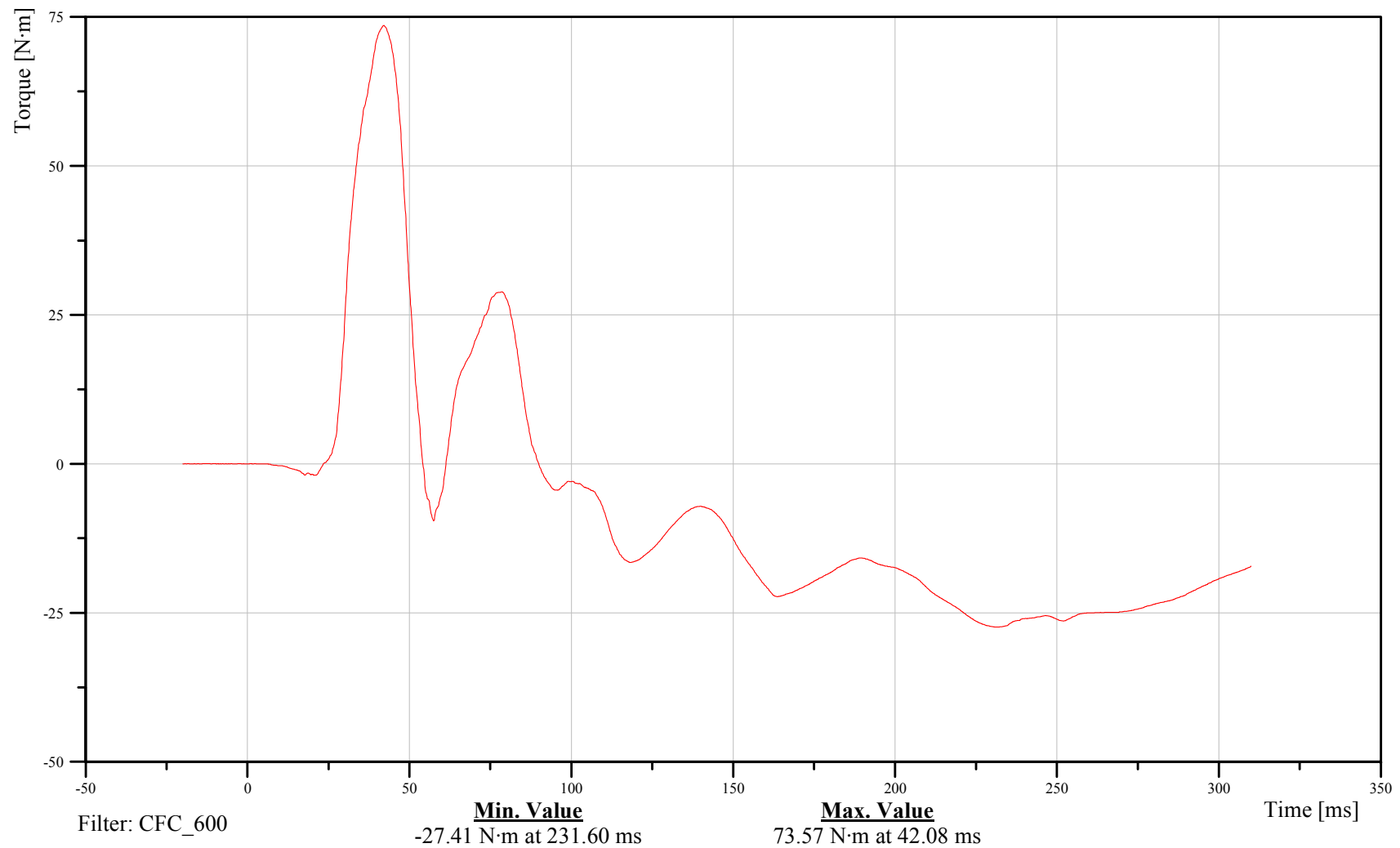
Lumbar Moment X

Customer: VRTC

14LUSP0000S2MOXB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Lumbar Moment Y

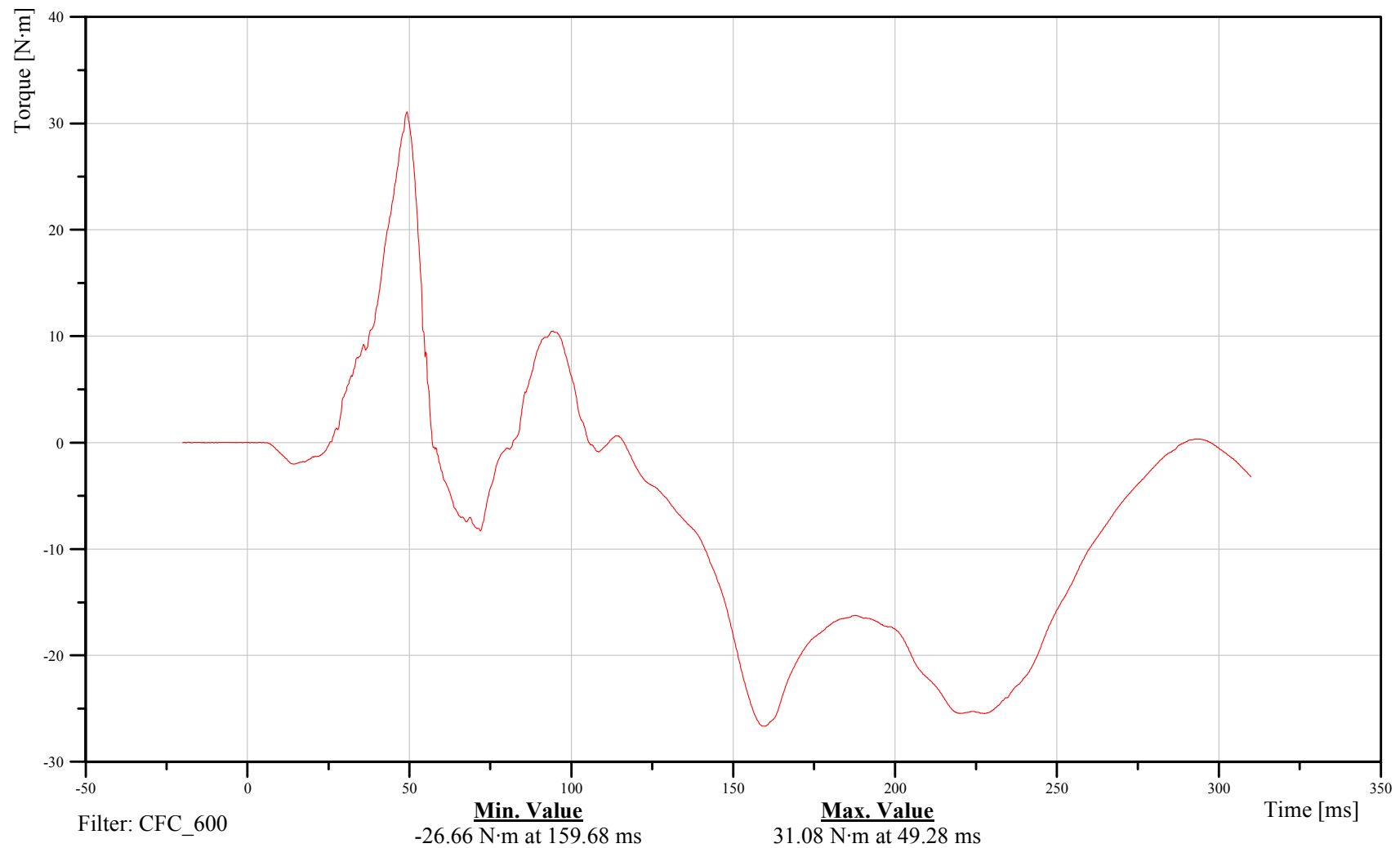
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14LUSP0000S2MOYB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

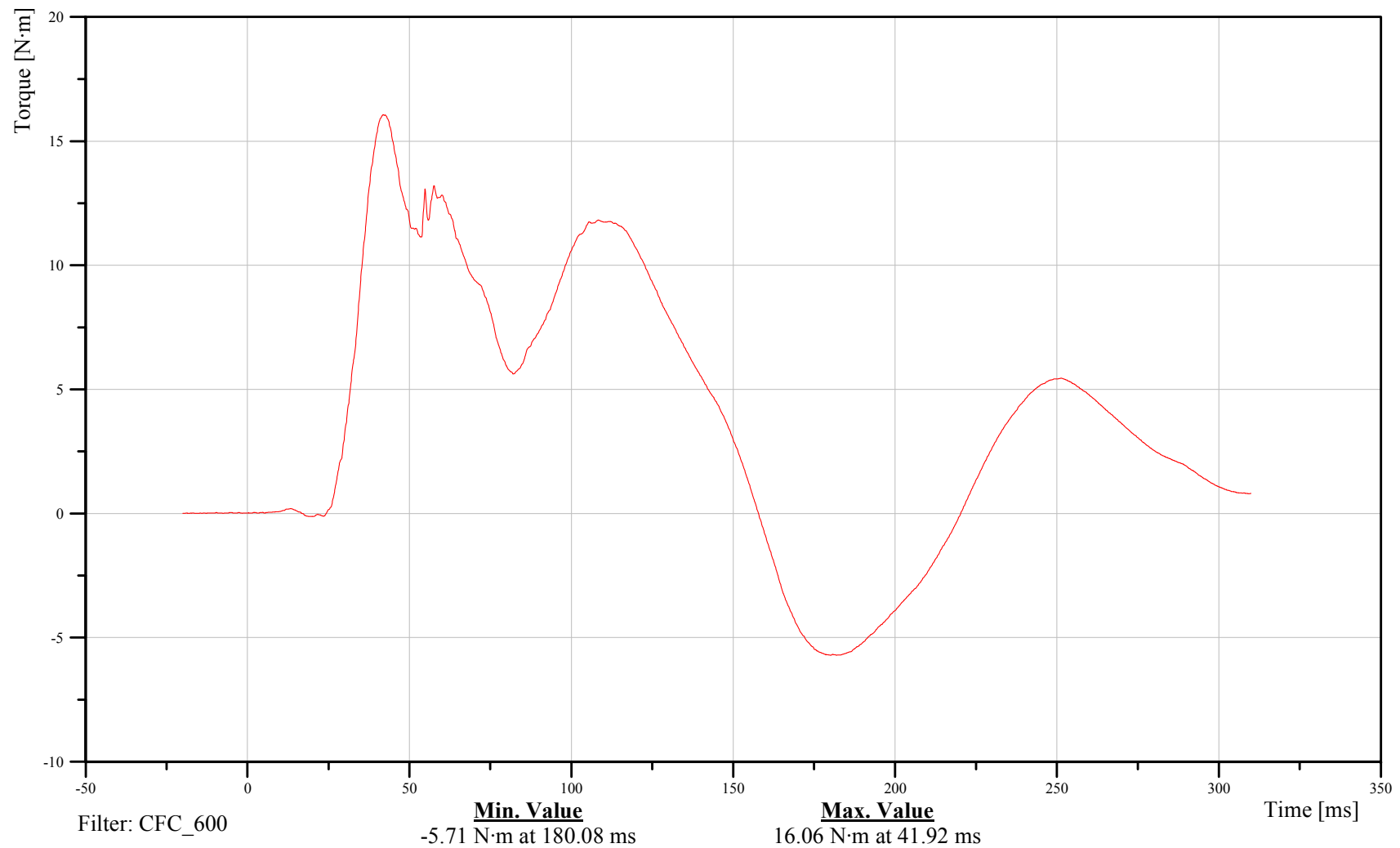
Lumbar Moment Z

Customer: VRTC

14LUSP0000S2MOZB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 1 Accel X

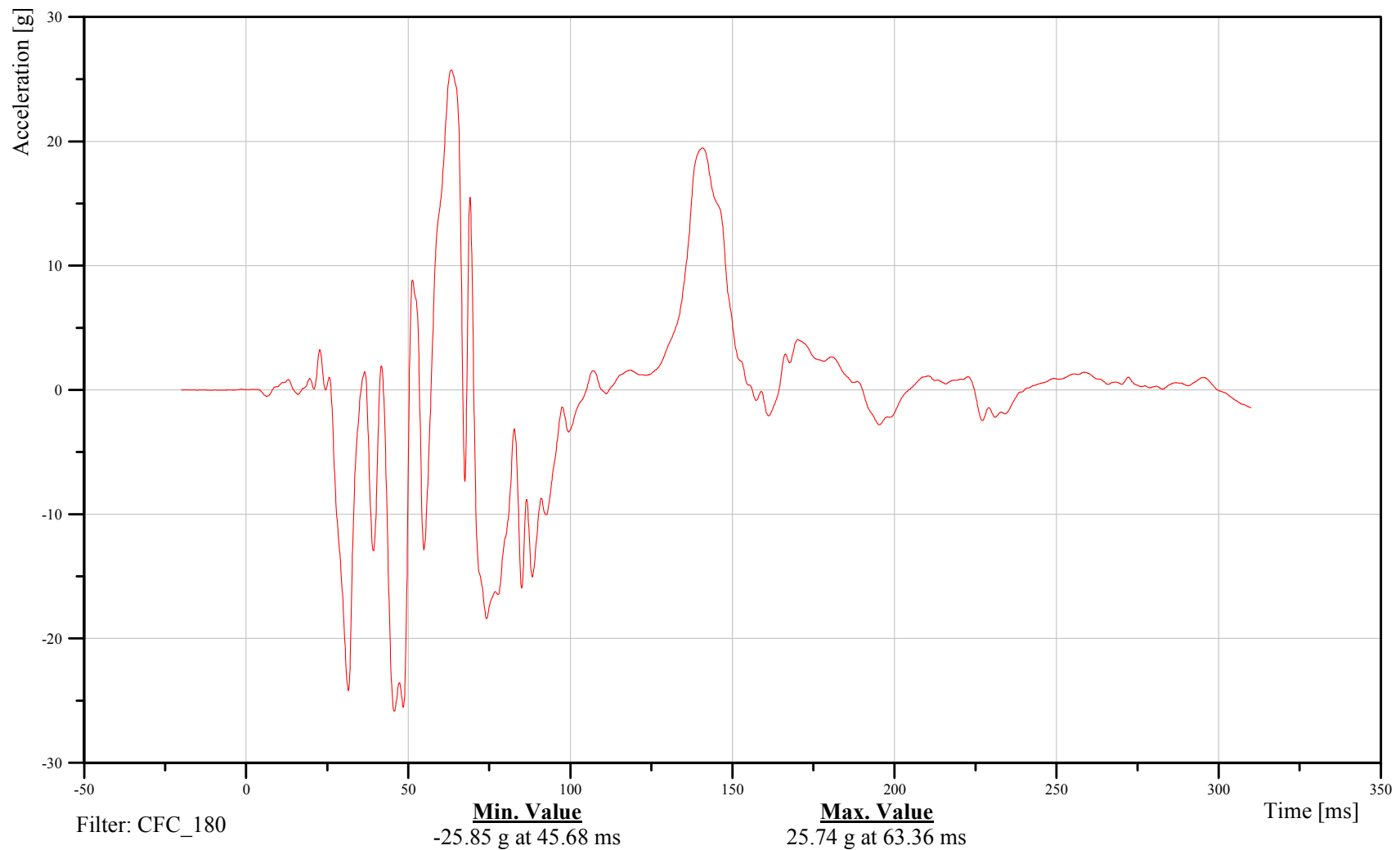
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14TRRI01LES2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 1 Accel Y

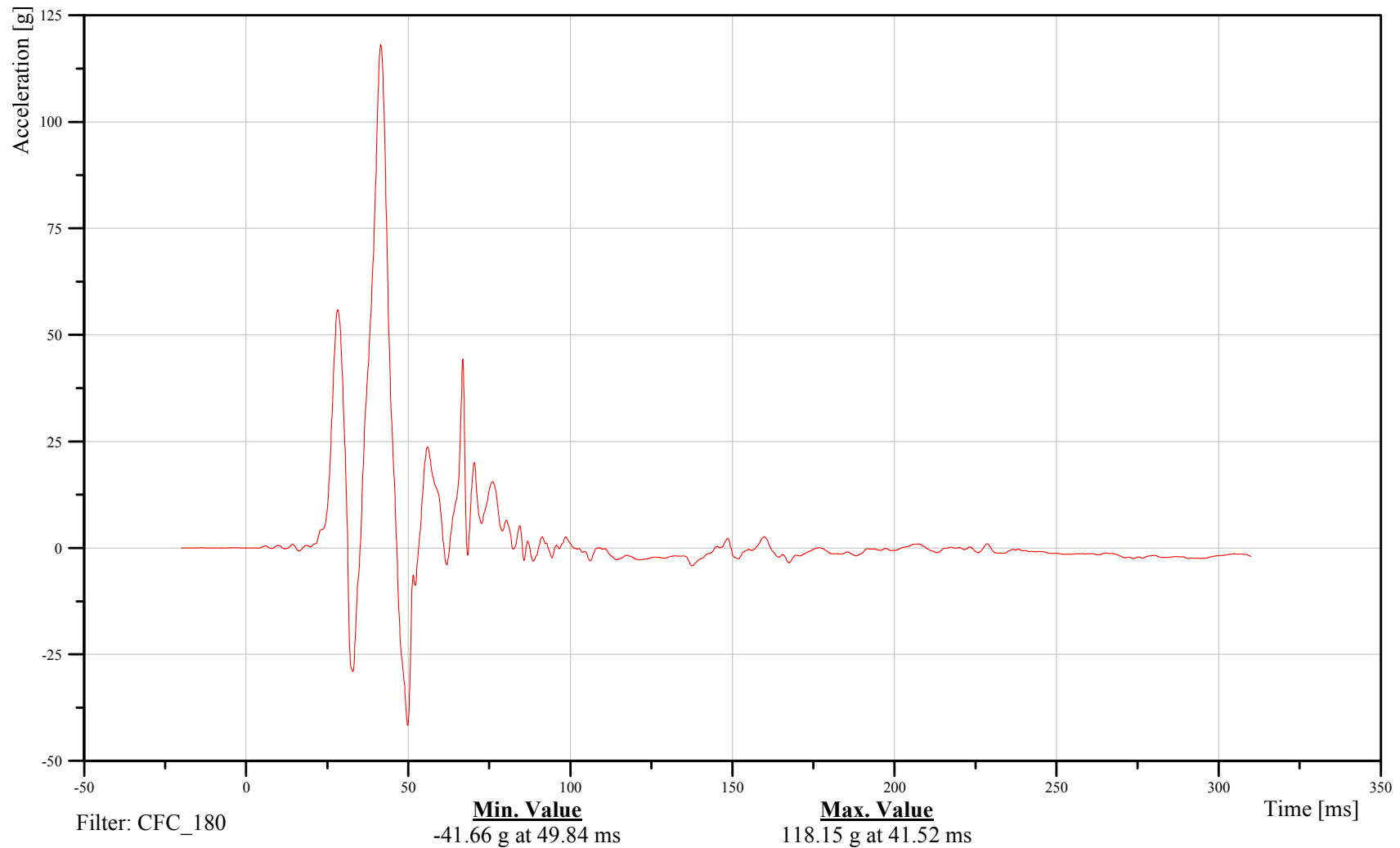
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14TRRI01LES2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 1 Accel Z

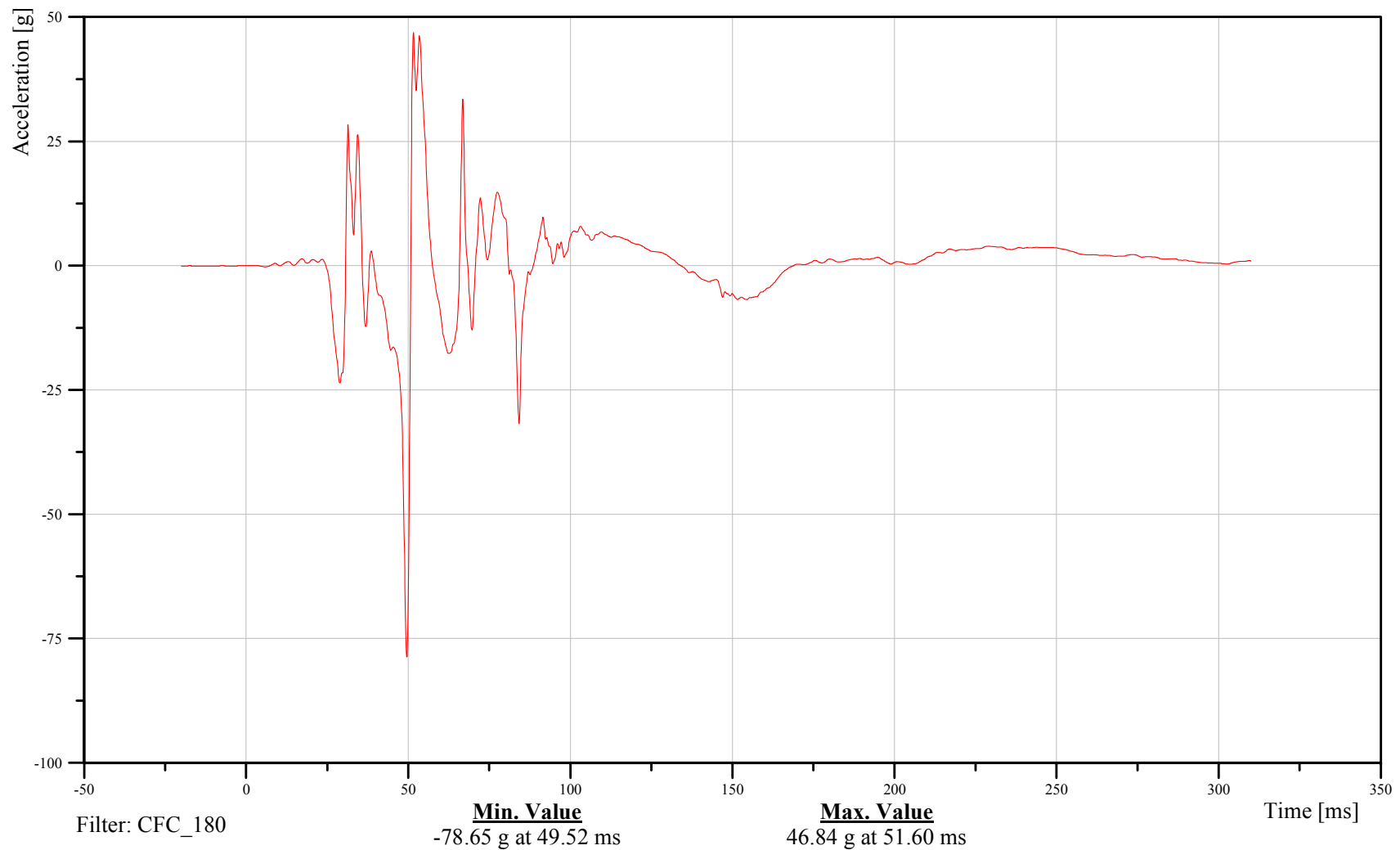
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14TRRI01LES2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 1 Accel Resultant

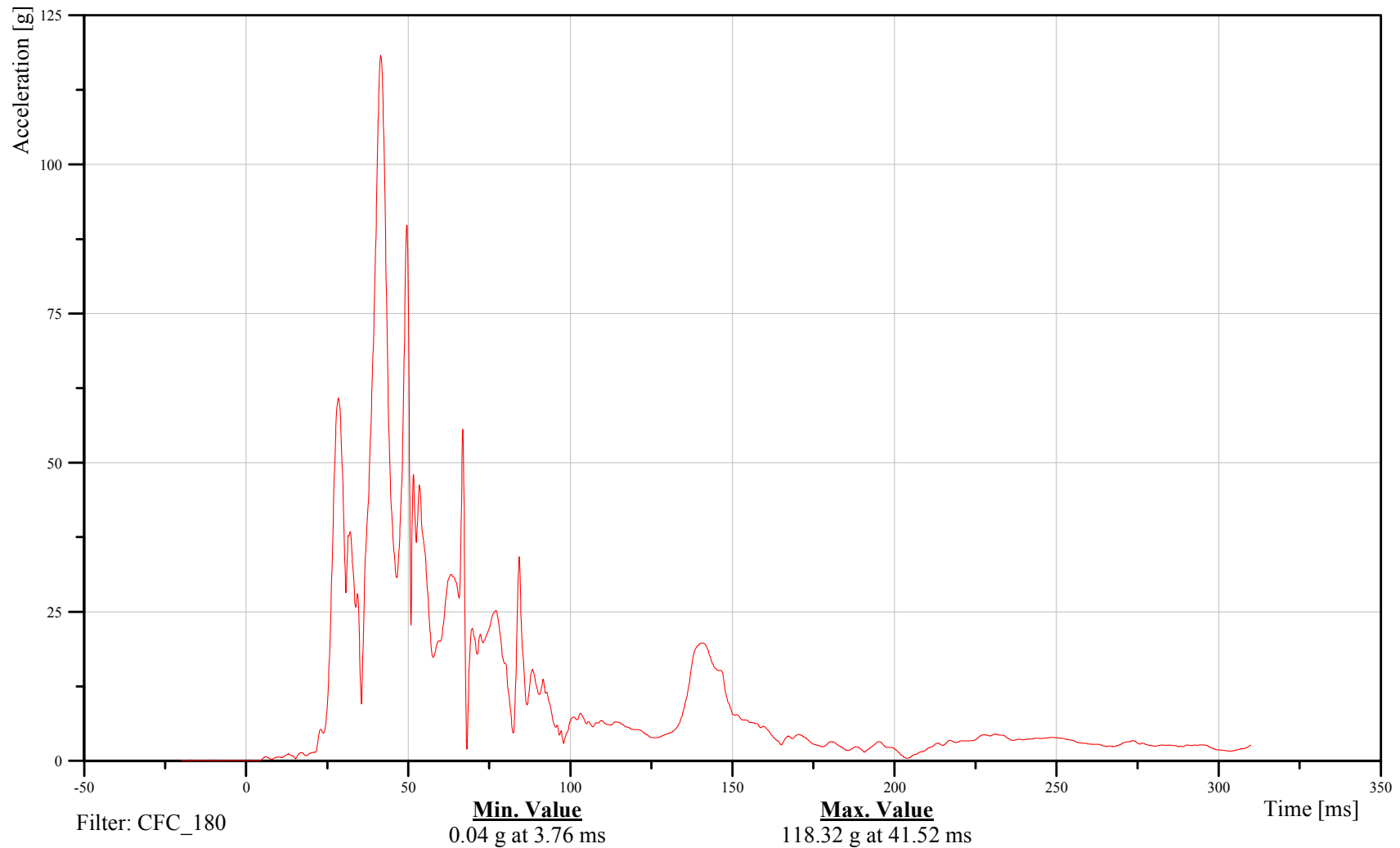
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14TRRI01LES2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 2 Accel X

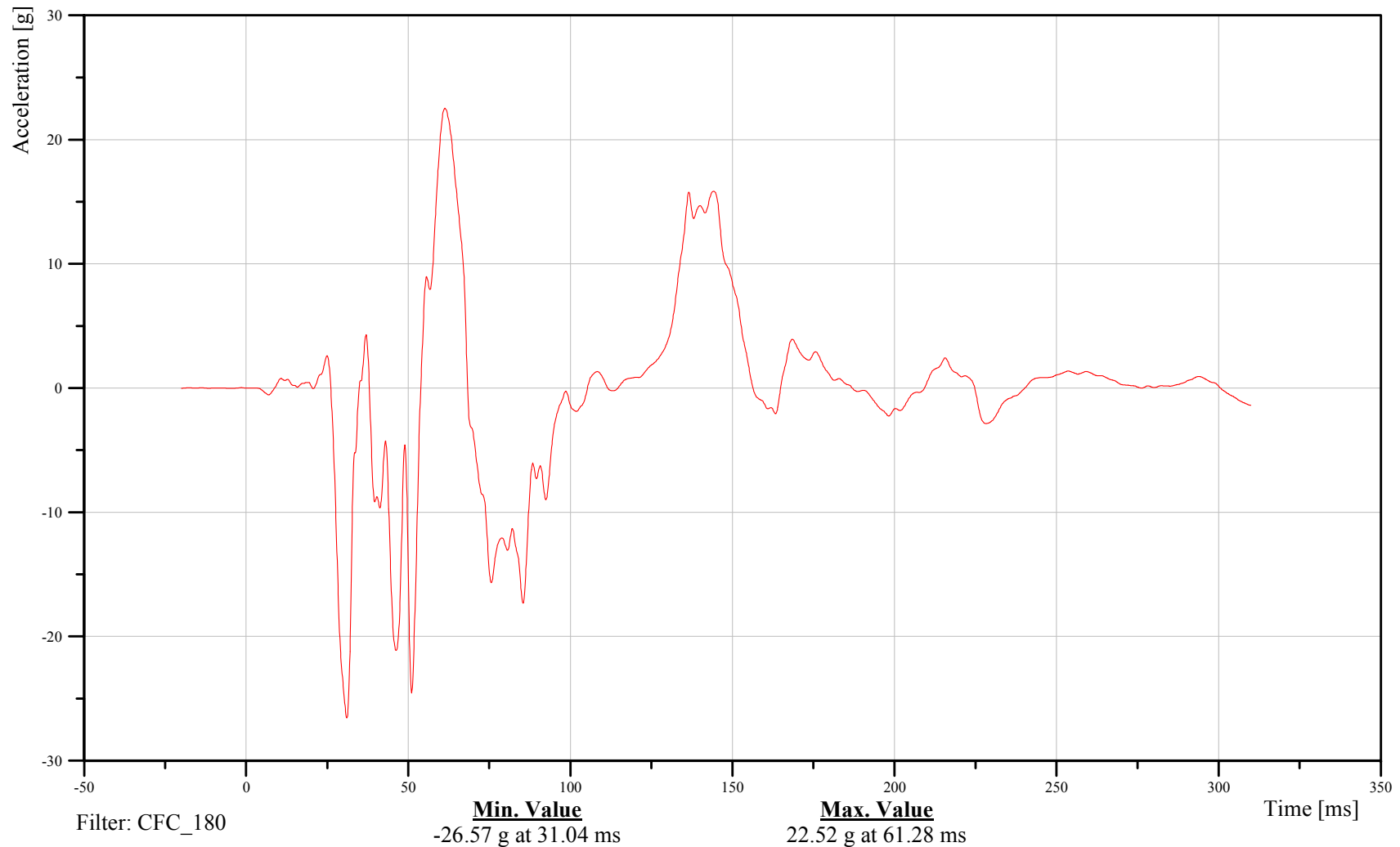
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14TRRI02LES2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 2 Accel Y

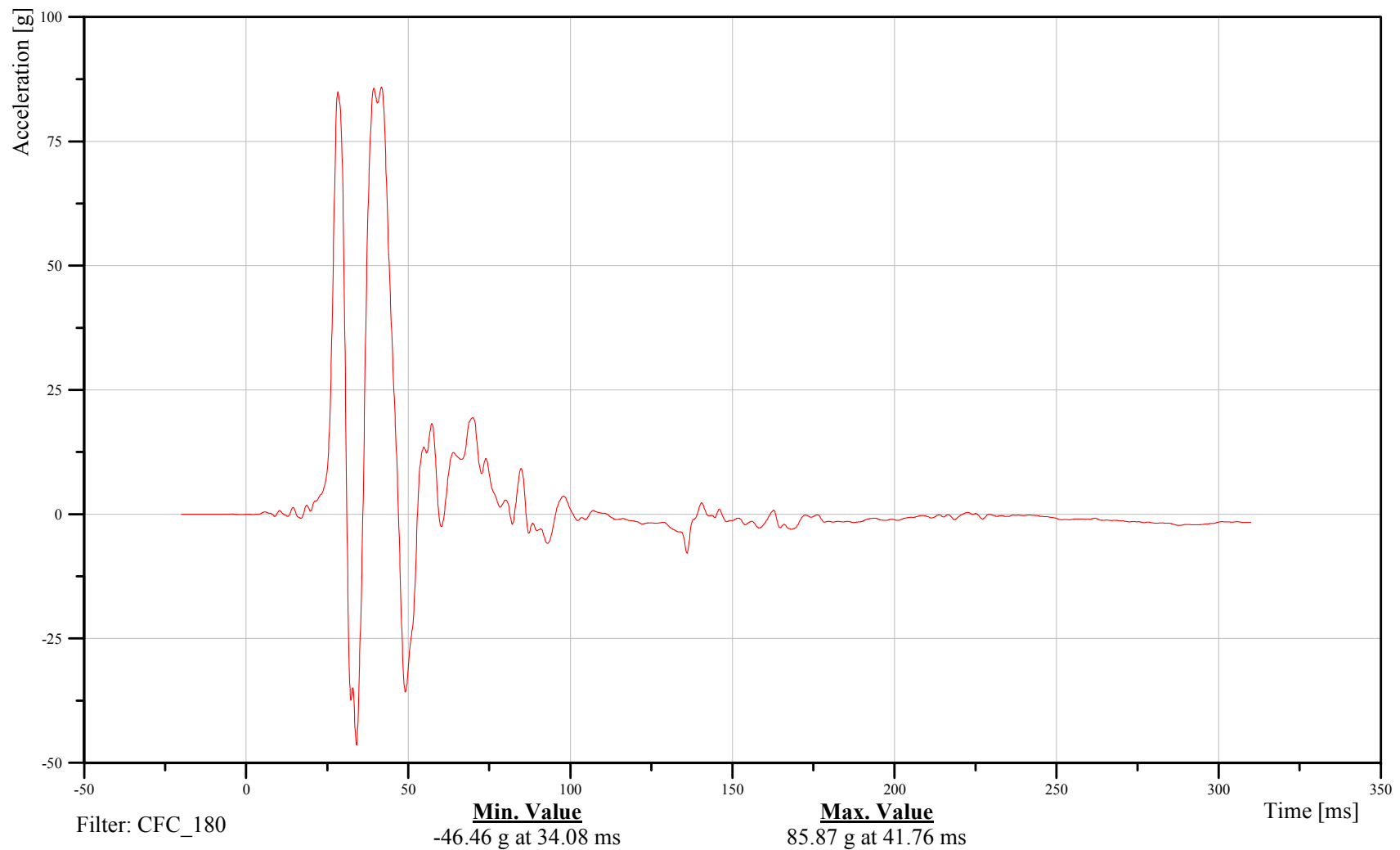
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14TRRI02LES2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 2 Accel Z

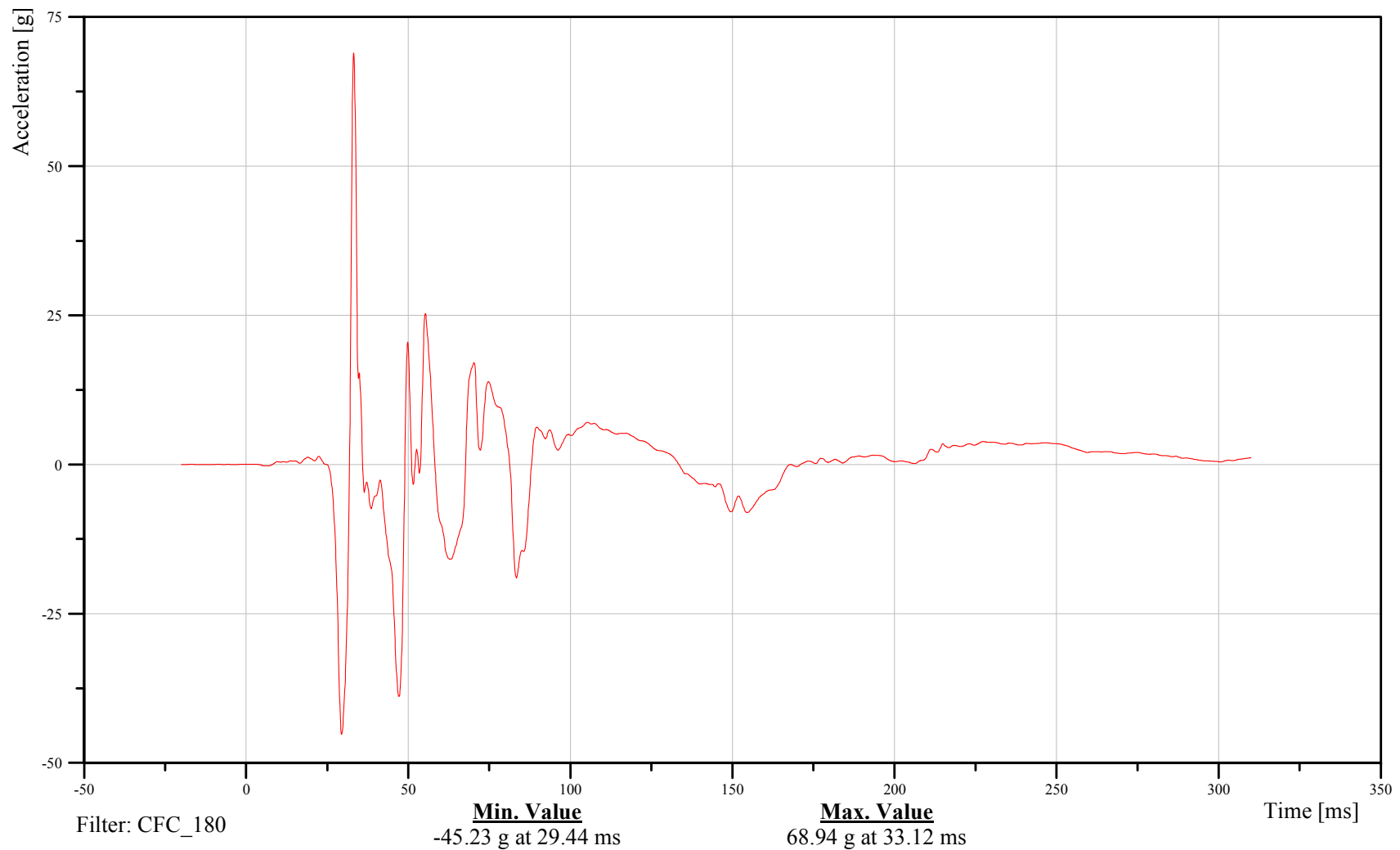
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14TRRI02LES2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 2 Accel Resultant

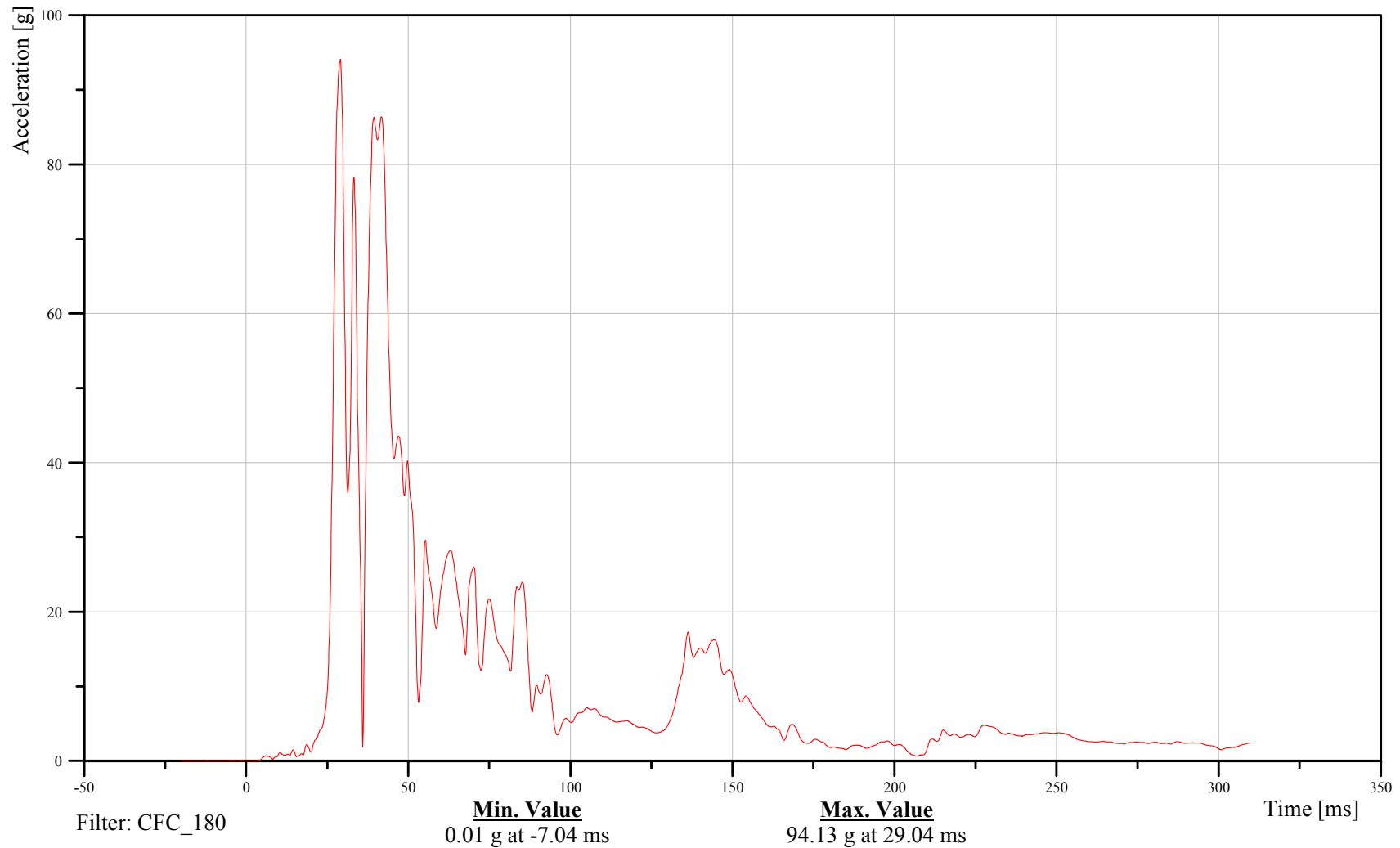
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14TRRI02LES2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 3 Accel X

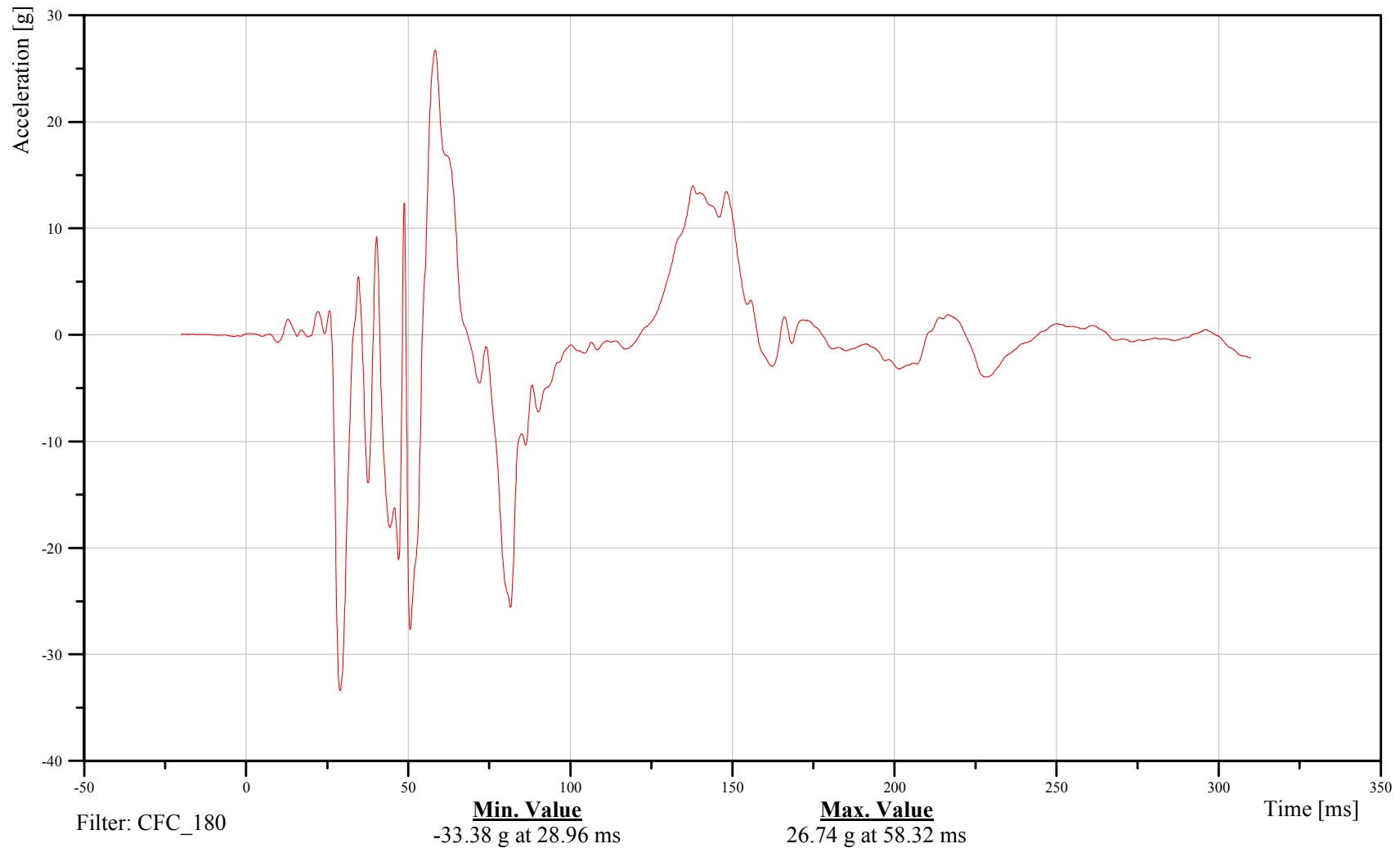
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14TRRI03LES2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 3 Accel Y

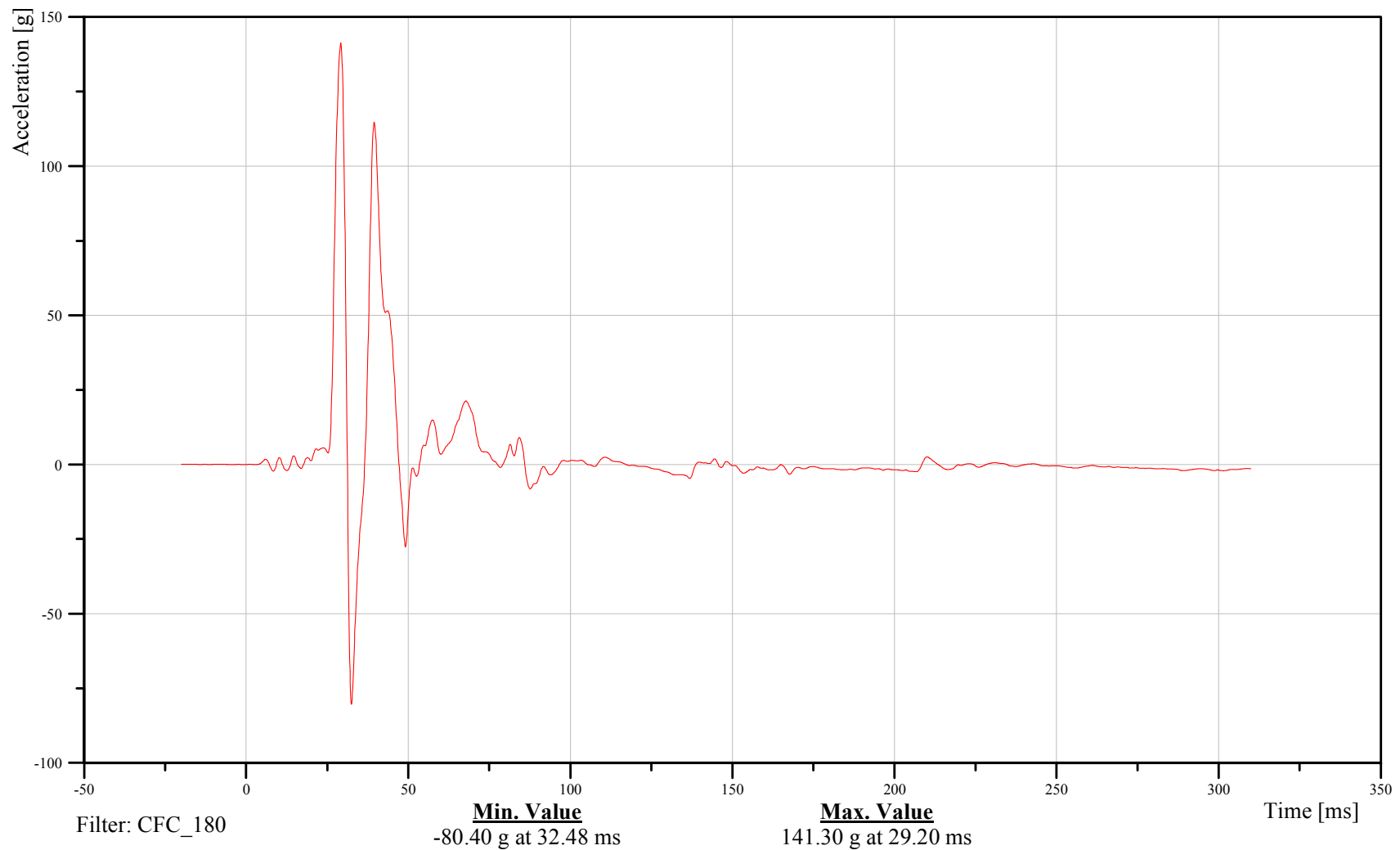
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14TRRI03LES2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 3 Accel Z

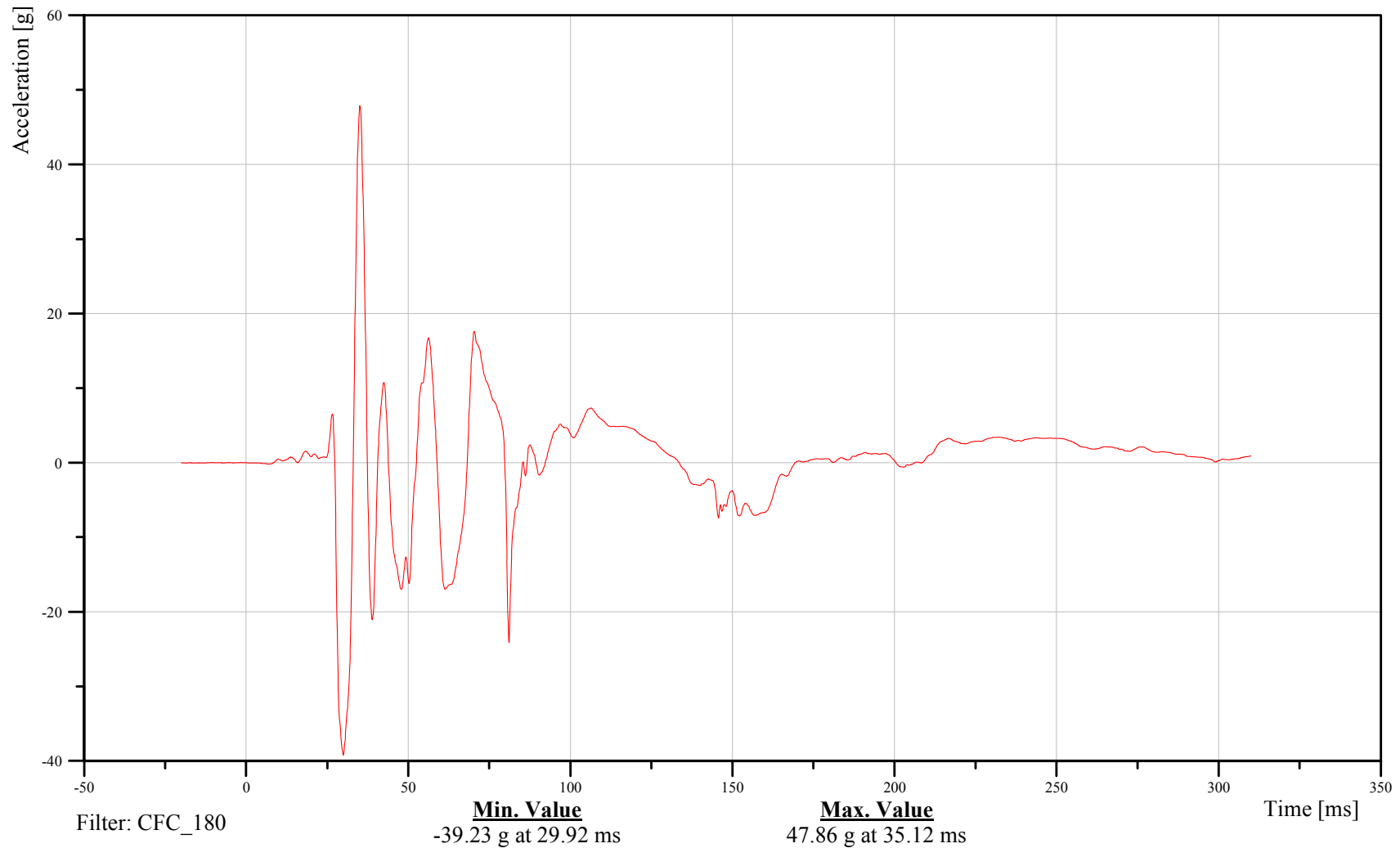
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14TRRI03LES2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 3 Accel Resultant

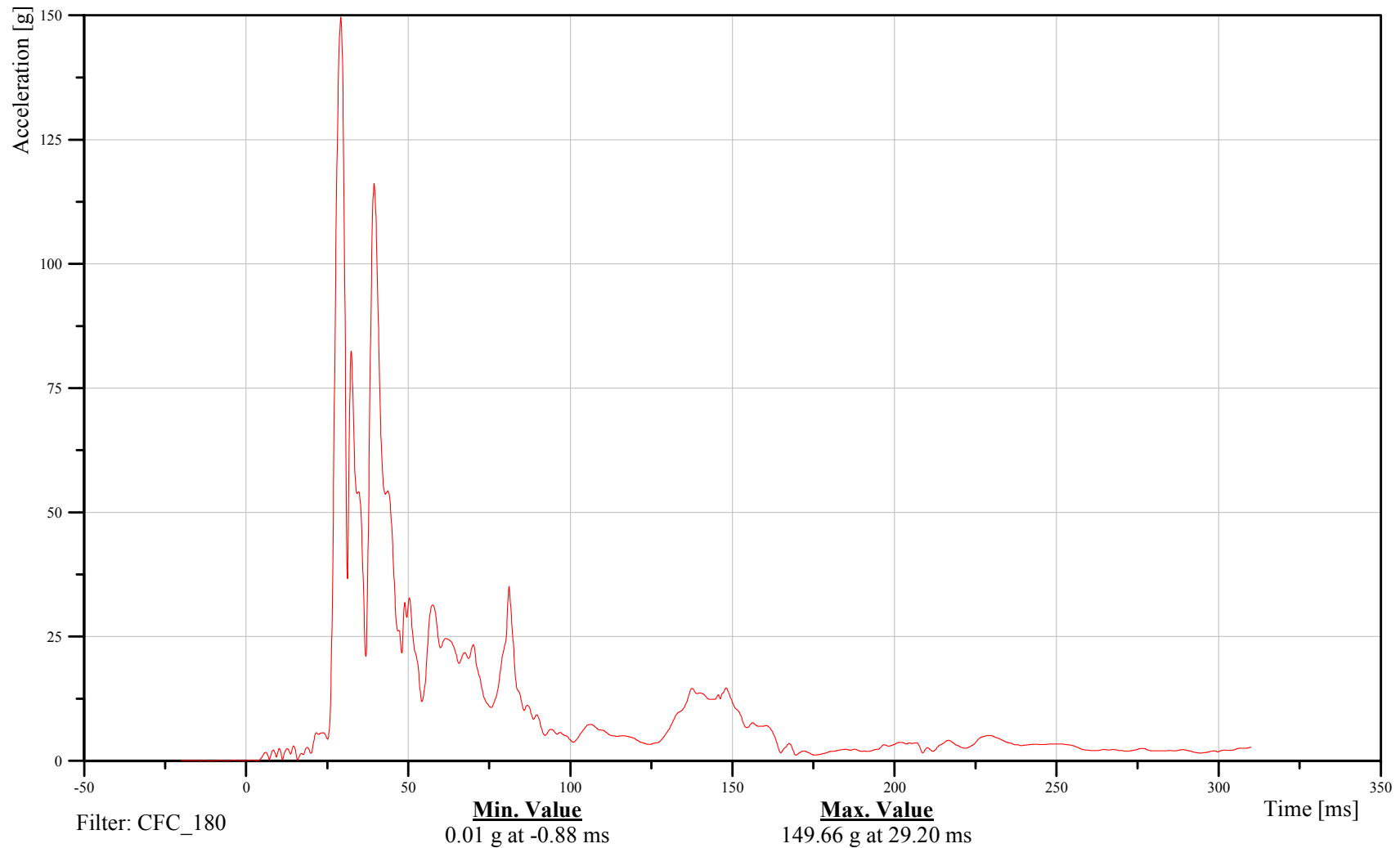
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14TRRI03LES2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Abdomin Rib 1 Accel X

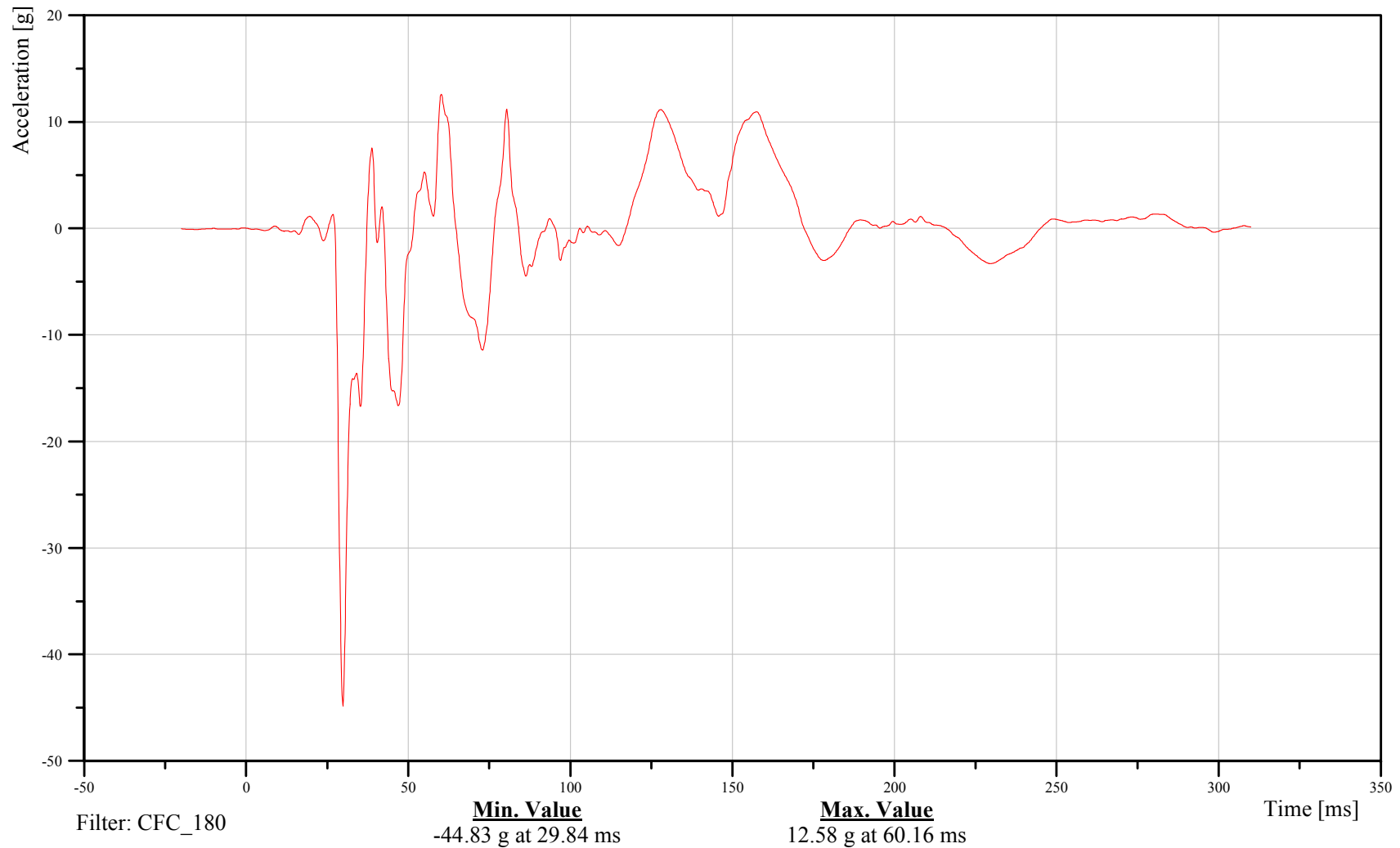
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14ABRI01LES2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Abdomin Rib 1 Accel Y

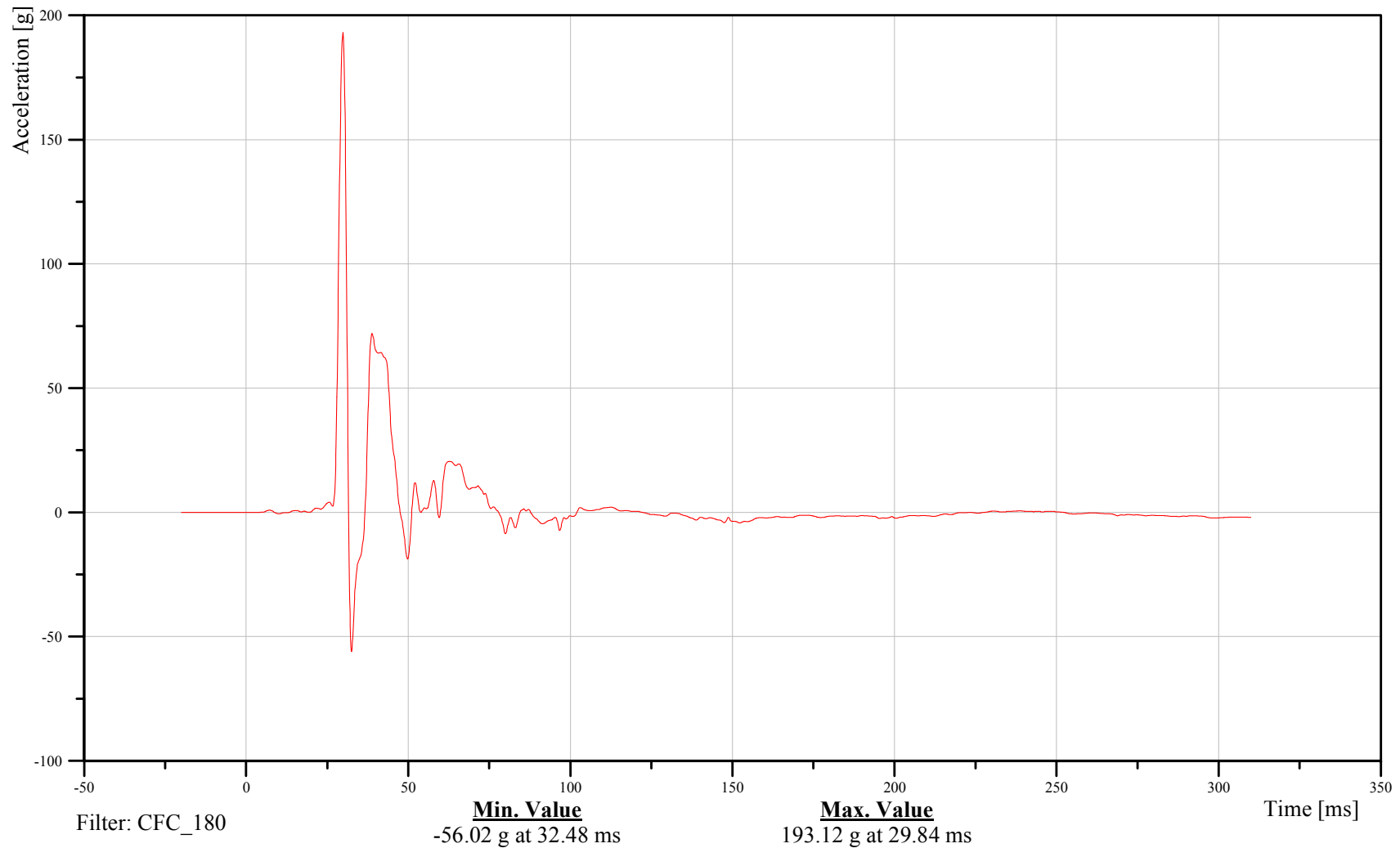
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14ABRI01LES2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

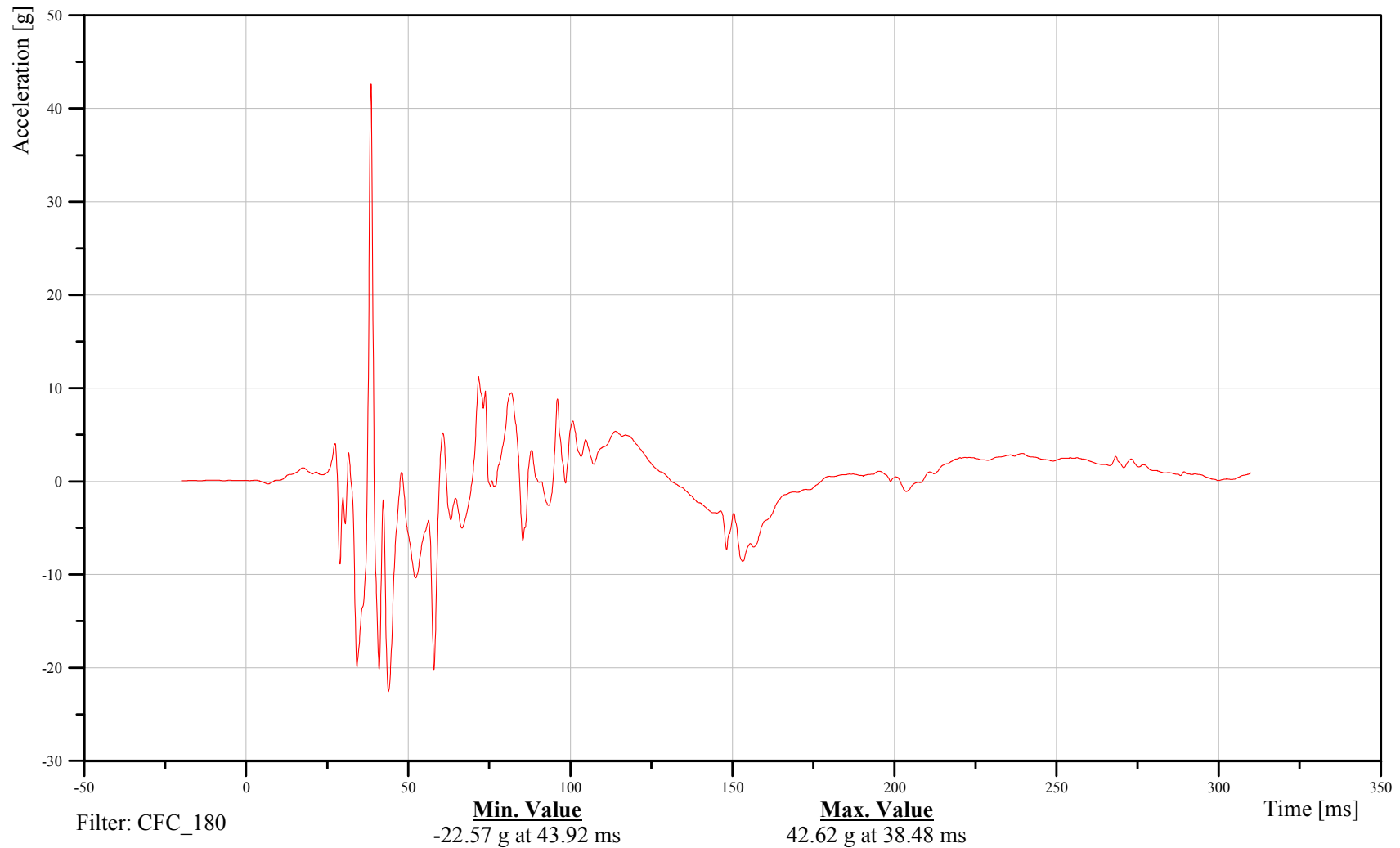
Abdomin Rib 1 Accel Z

Customer: VRTC

14ABRI01LES2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Abdomin Rib 1 Accel Resultant

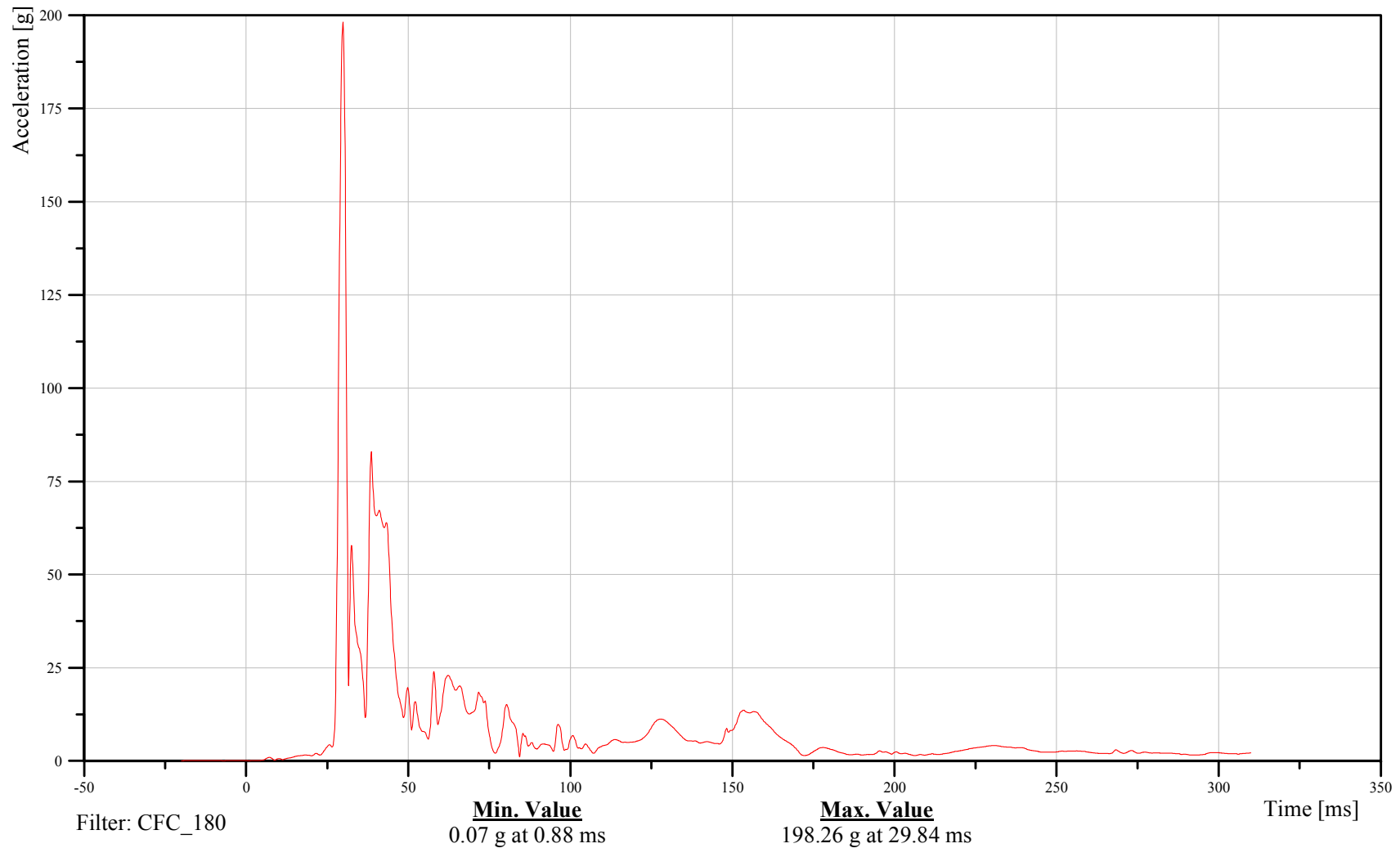
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14ABRI01LES2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Abdomin Rib 2 Accel X

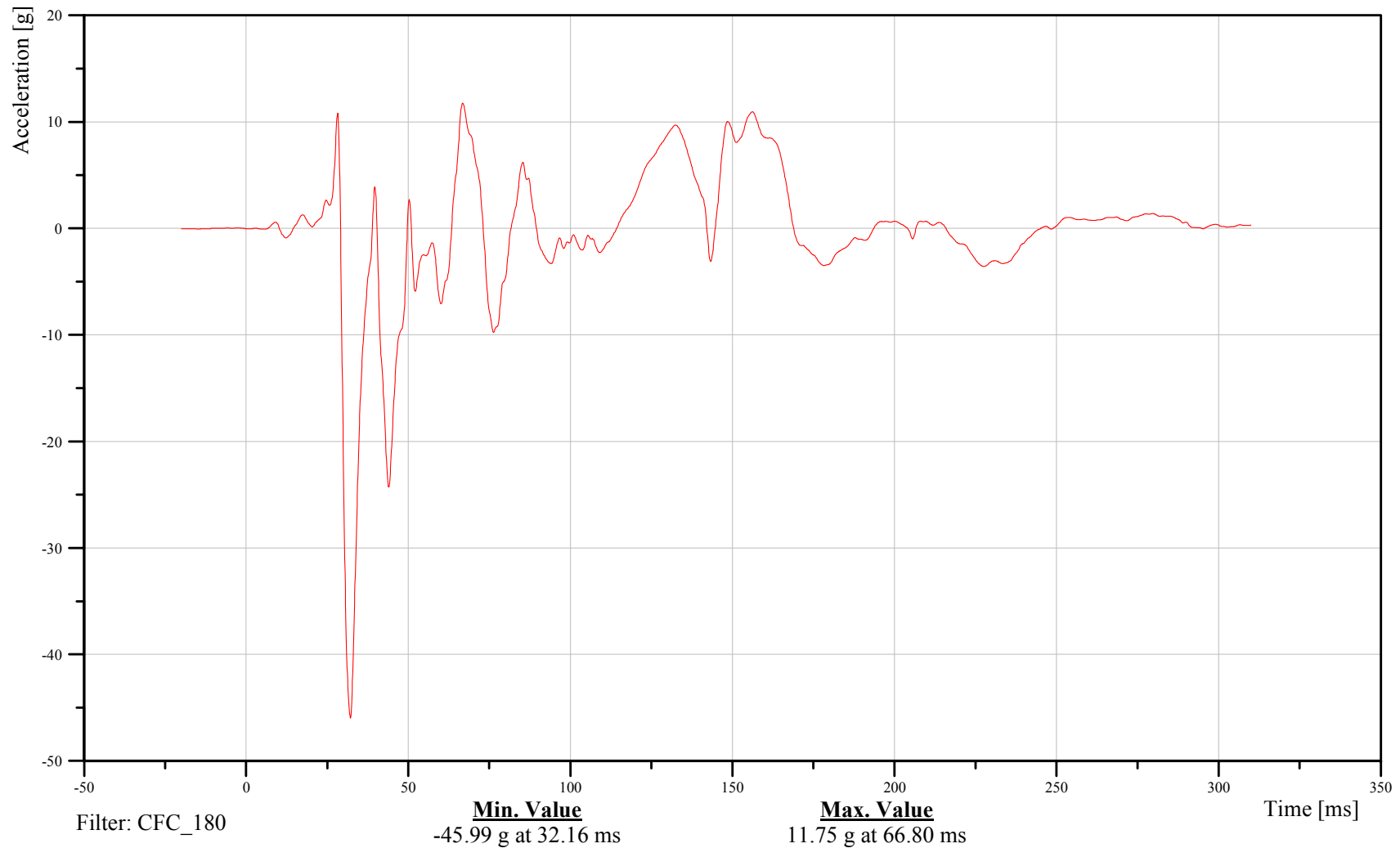
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14ABRI02LES2ACXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Abdomin Rib 2 Accel Y

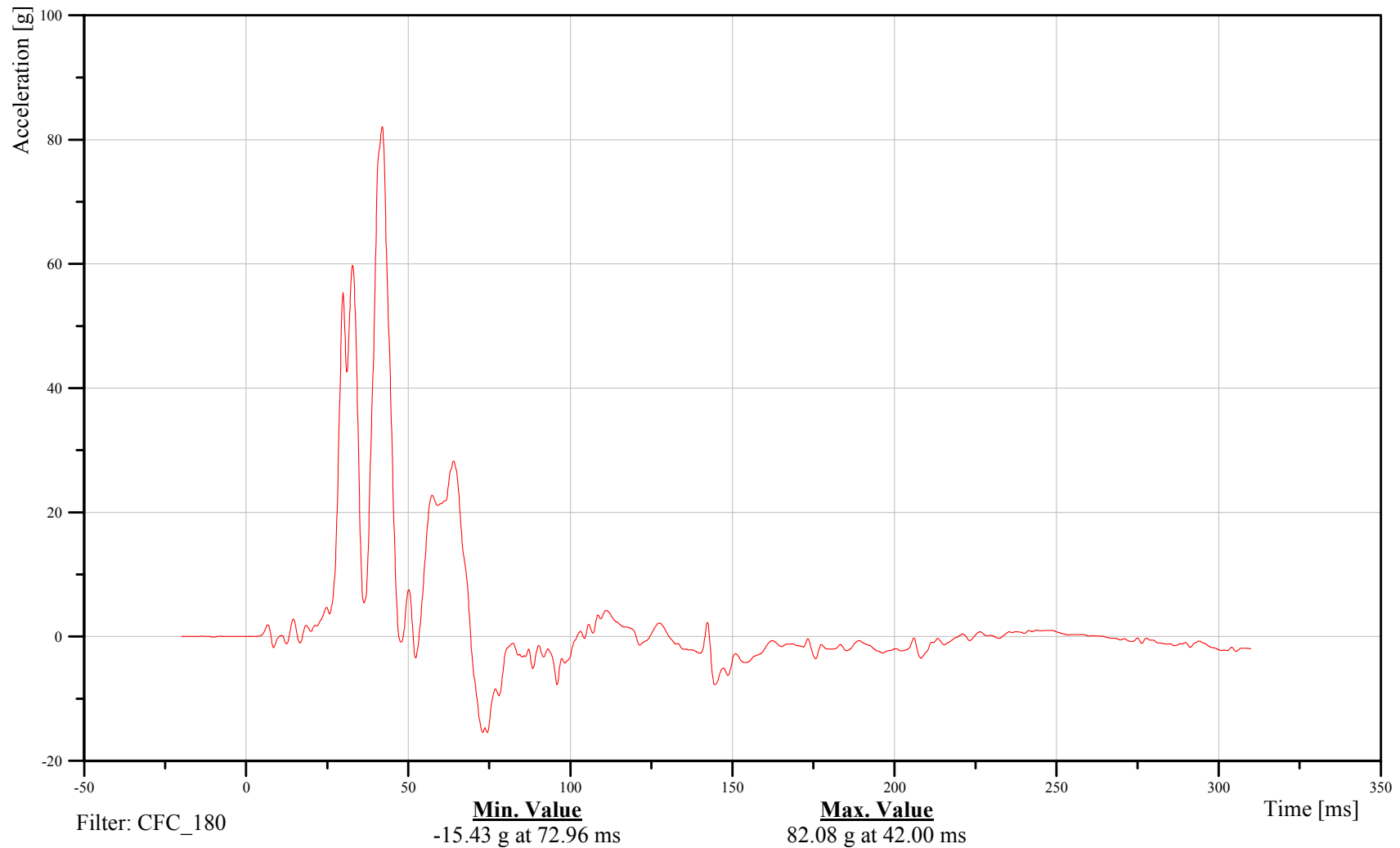
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14ABRI02LES2ACYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Abdomin Rib 2 Accel Z

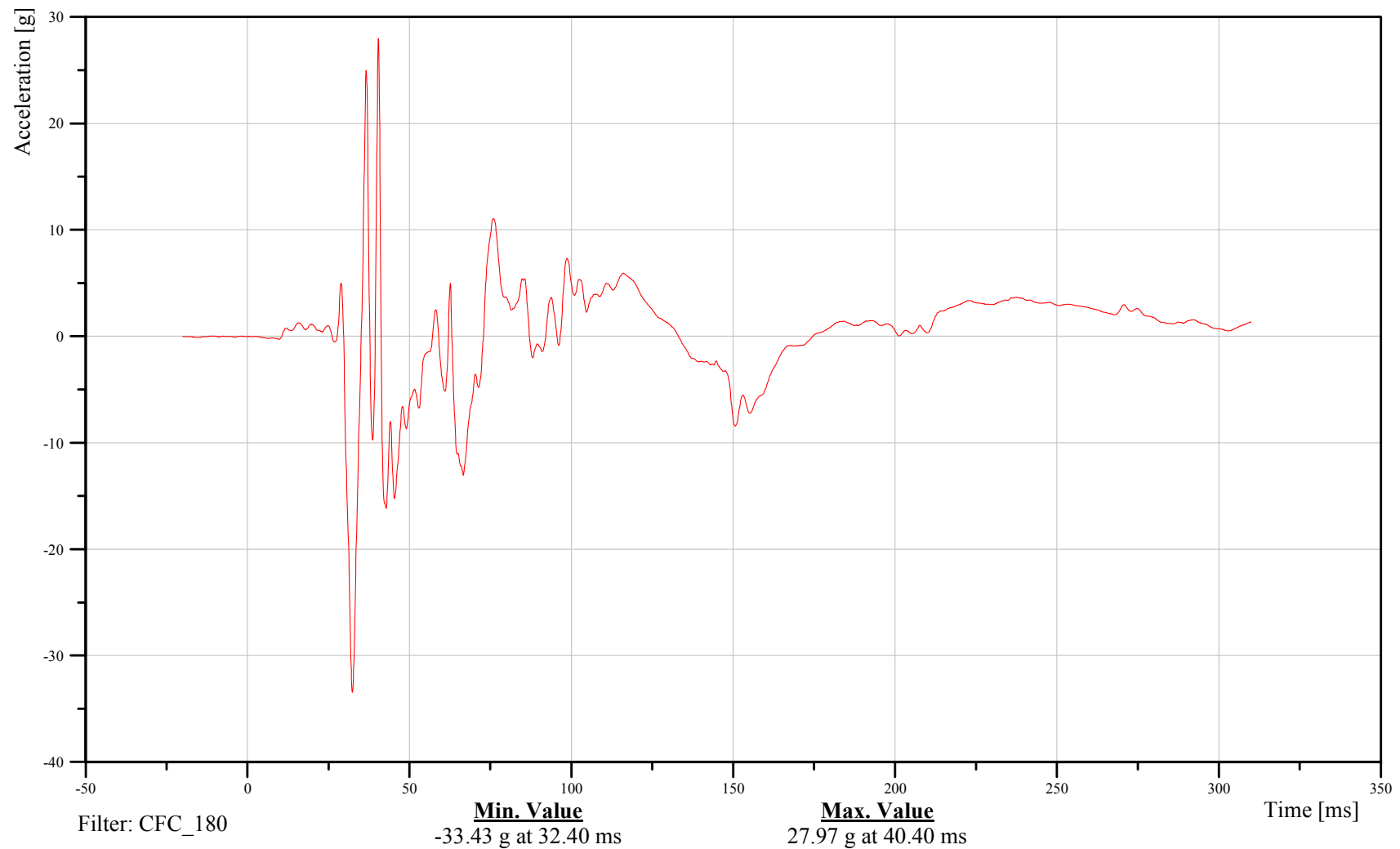
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14ABRI02LES2ACZC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Abdomin Rib 2 Accel Resultant

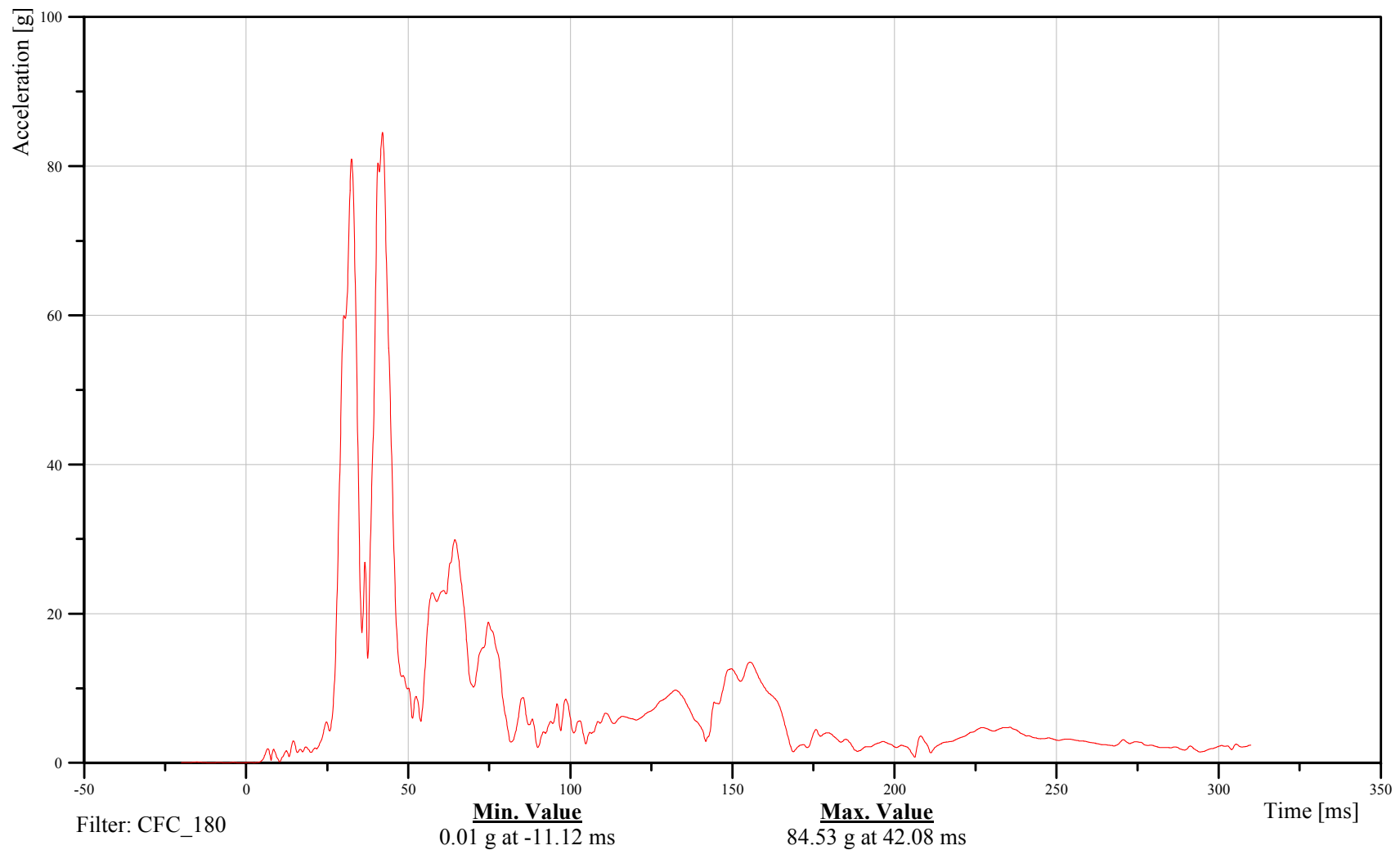
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14ABRI02LES2ACRC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

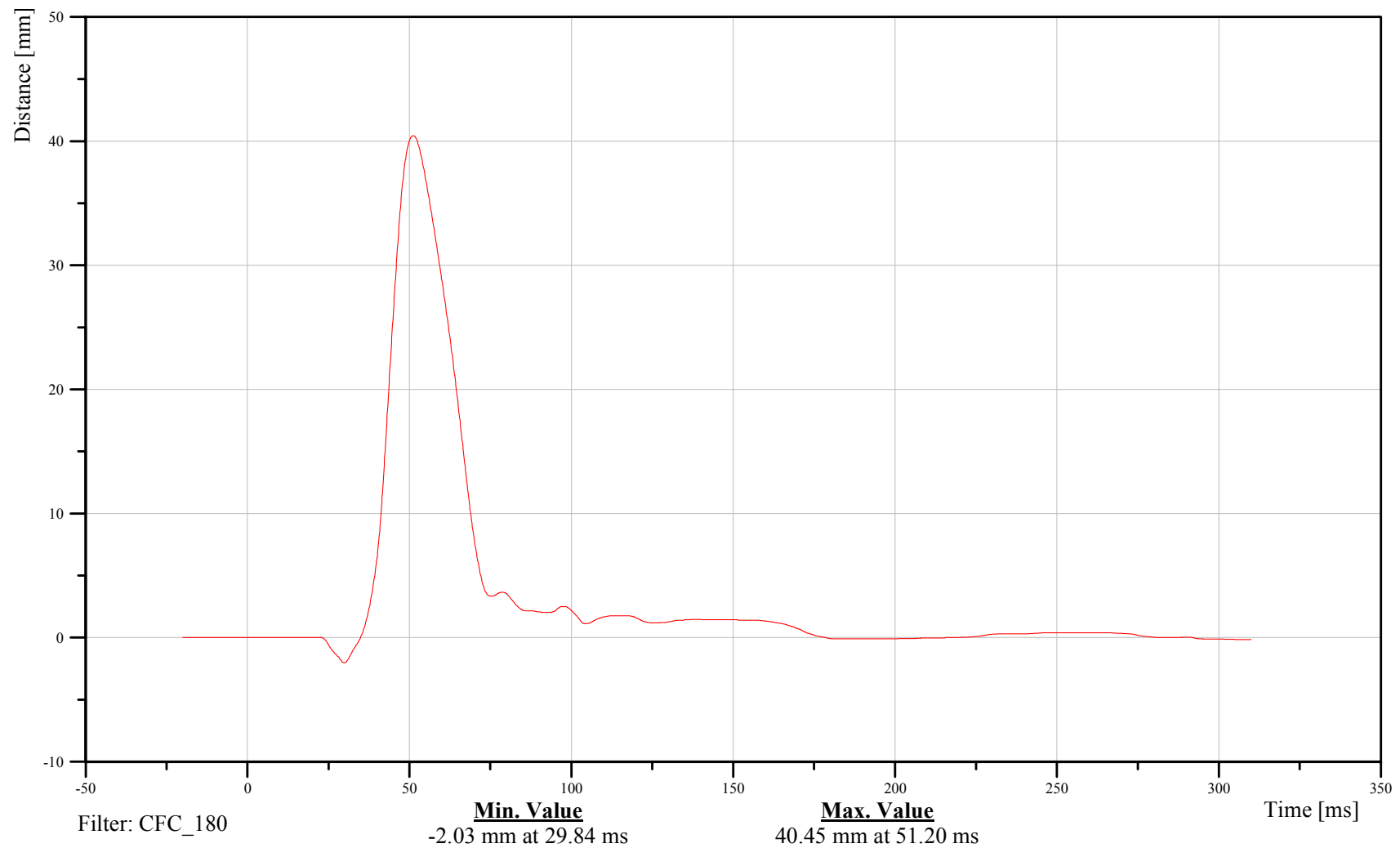
Shoulder Disp. Y

Customer: VRTC

14SHRILE00S2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 1 Disp. Y

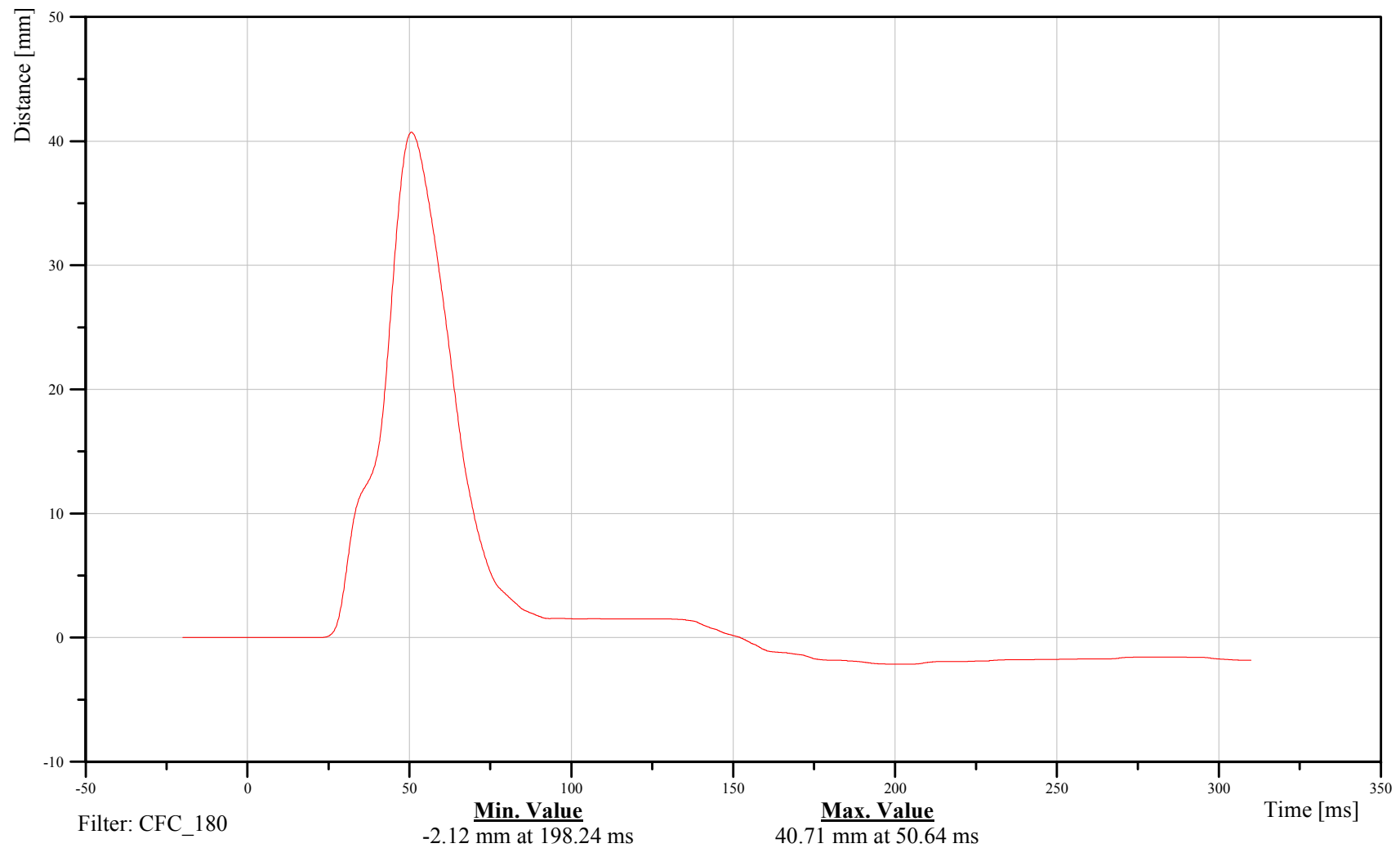
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14TRRI01LES2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 2 Disp. Y

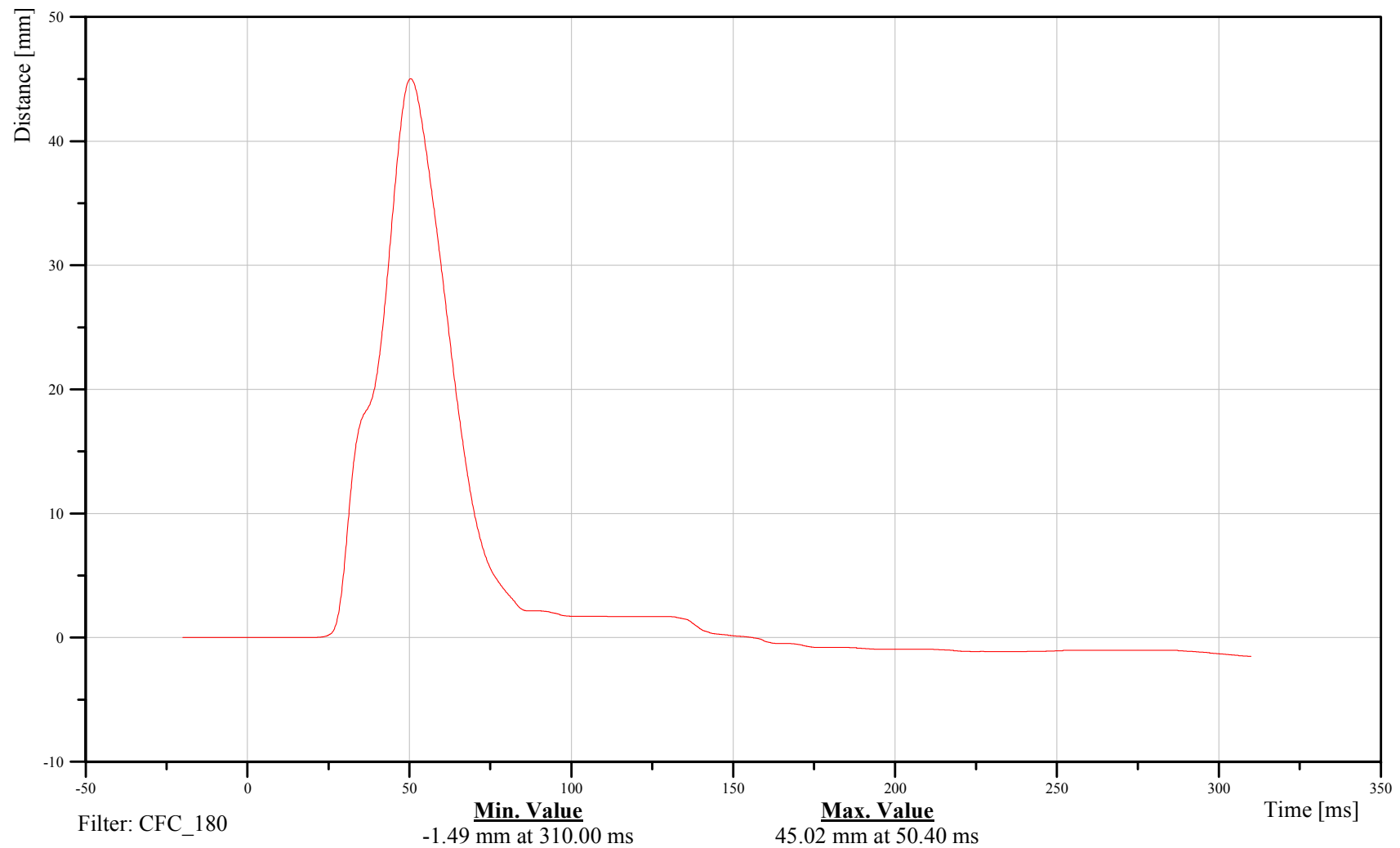
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14TRRI02LES2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Thorax Rib 3 Disp. Y

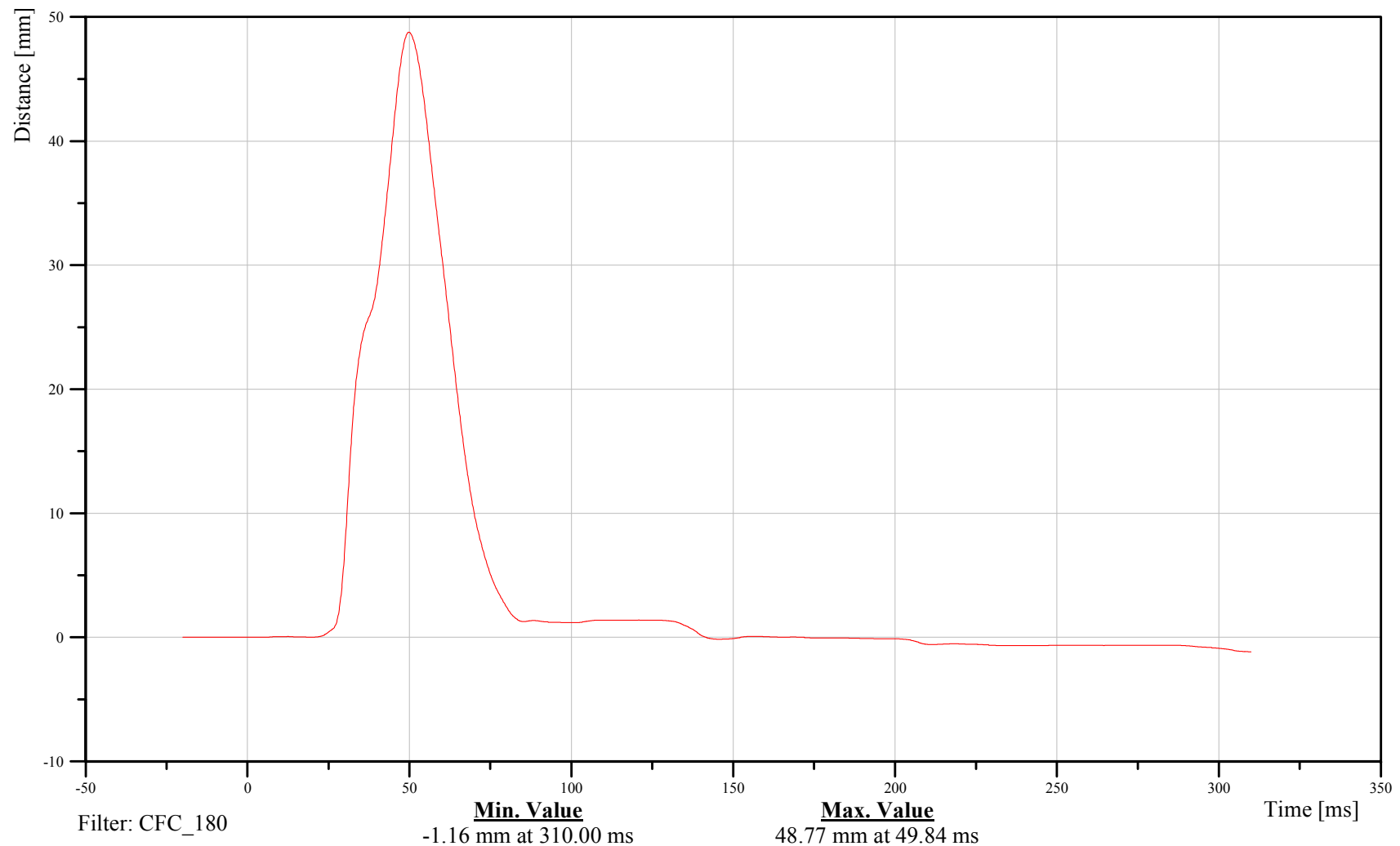
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14TRRI03LES2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005

Time: 11:49

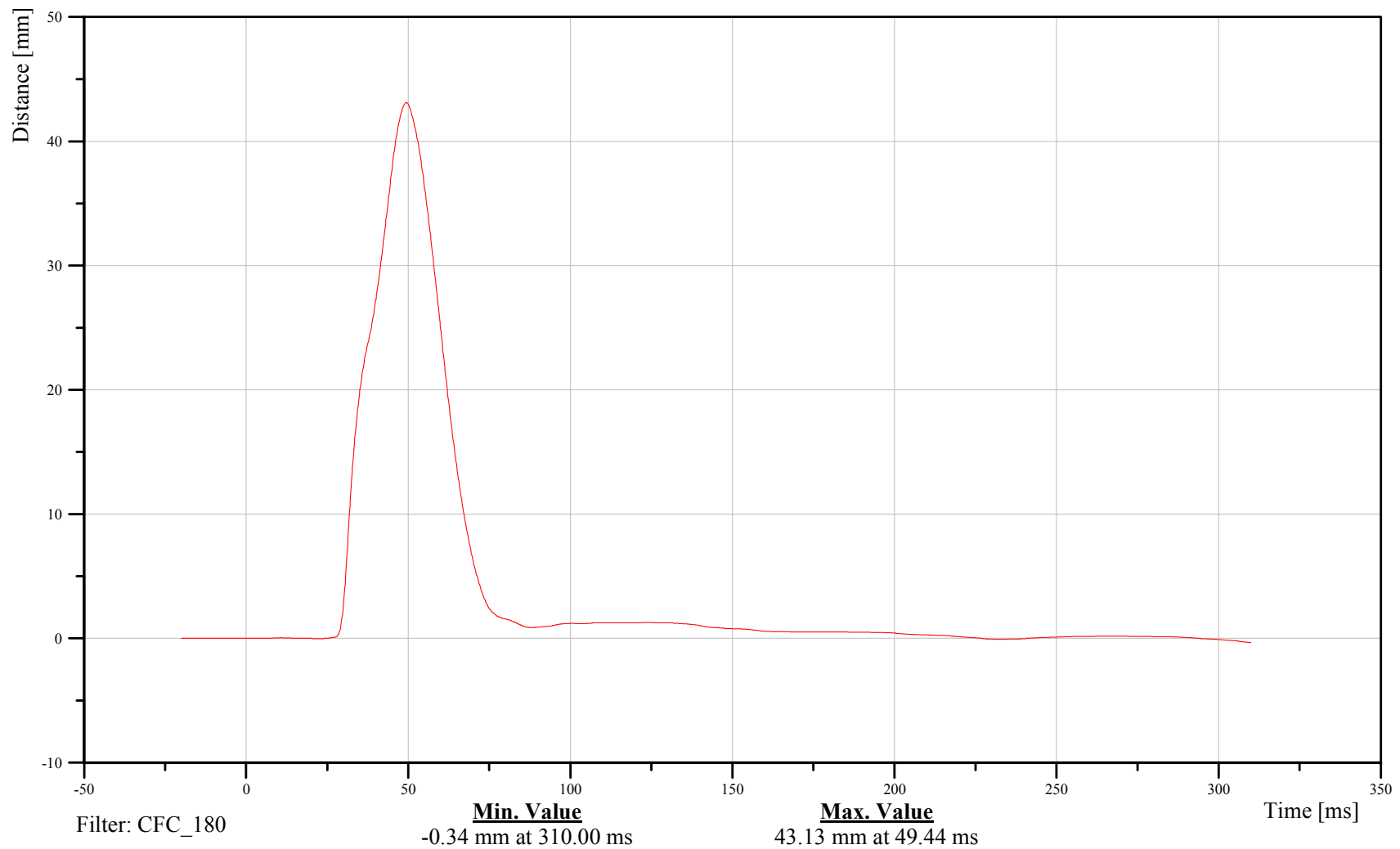
Abdomin Rib 1 Disp. Y

Customer: VRTC

14ABRI01LES2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

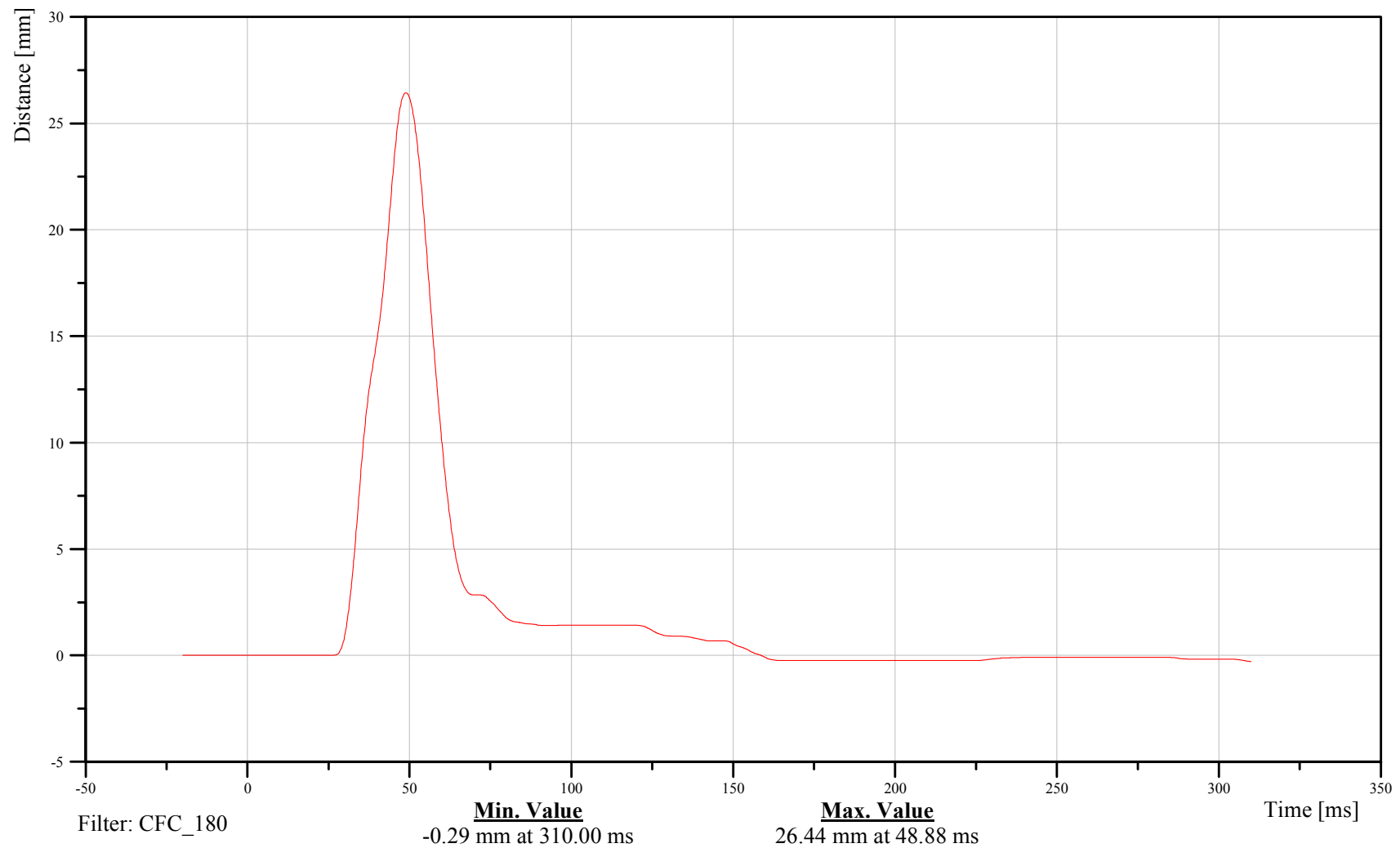
Abdomin Rib 2 Disp. Y

Customer: VRTC

14ABRI02LES2DSYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Pelvis Accel X

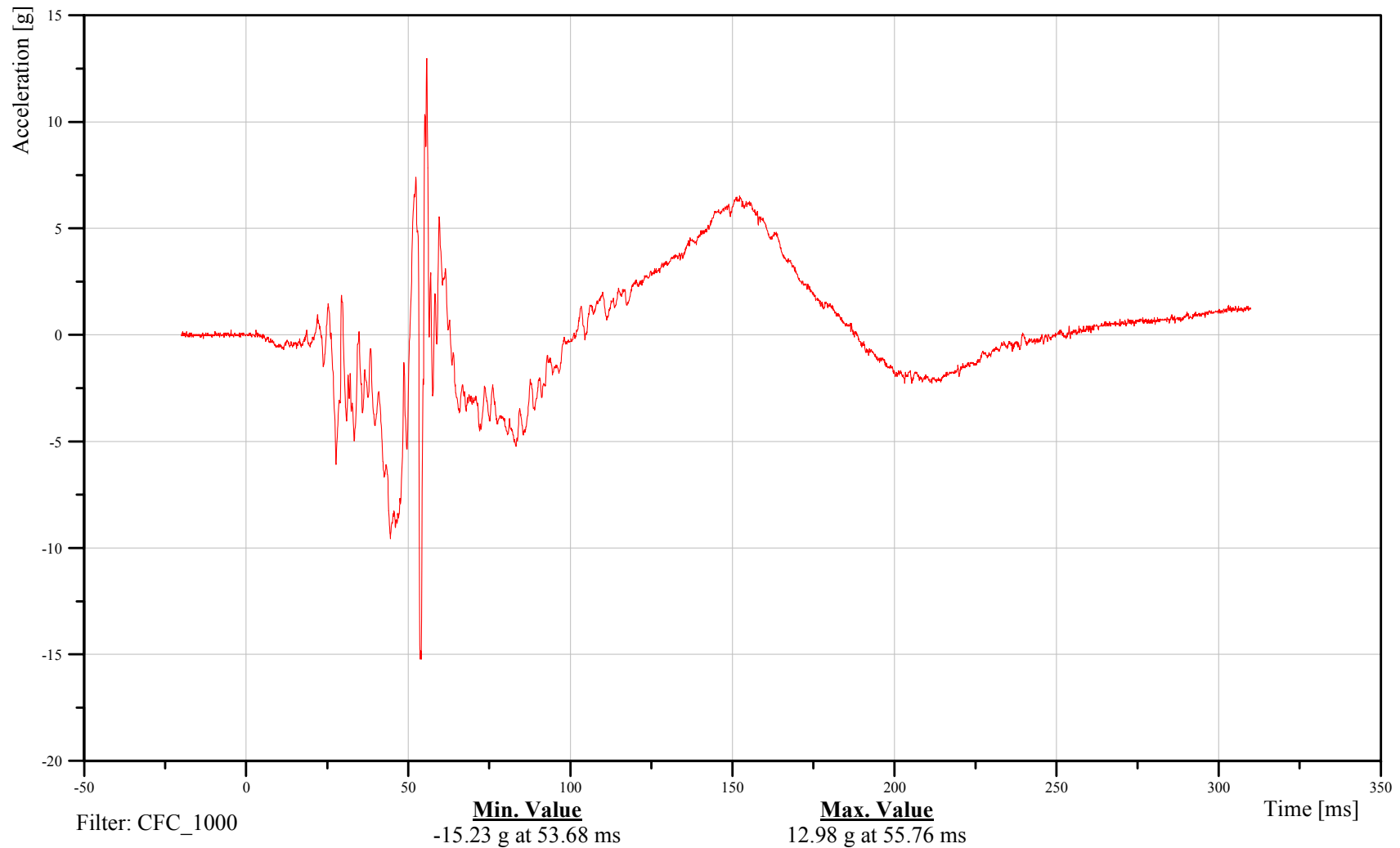
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14PELVCG00S2ACXA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Pelvis Accel Y

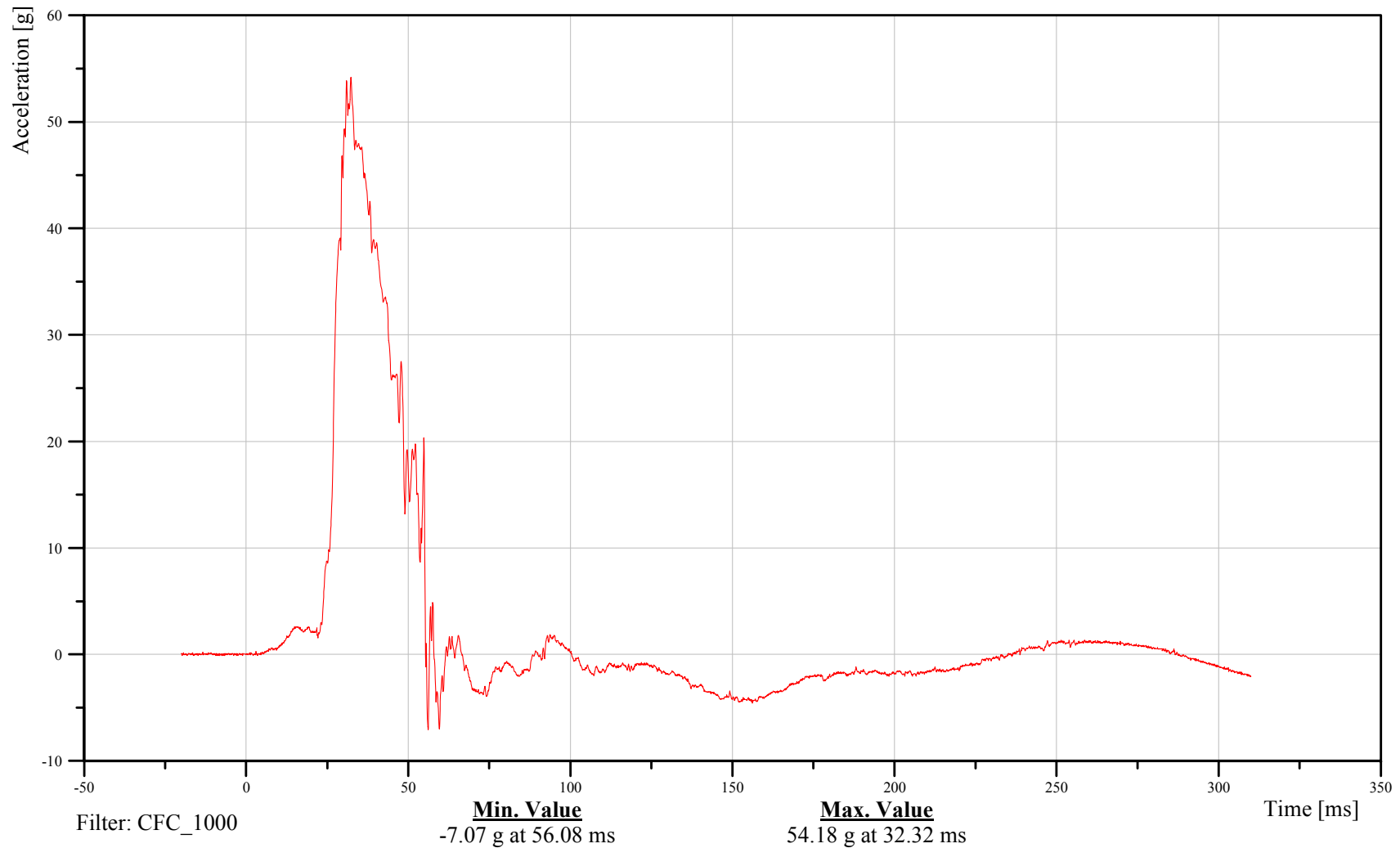
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14PELVCG00S2ACYA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Pelvis Accel Z

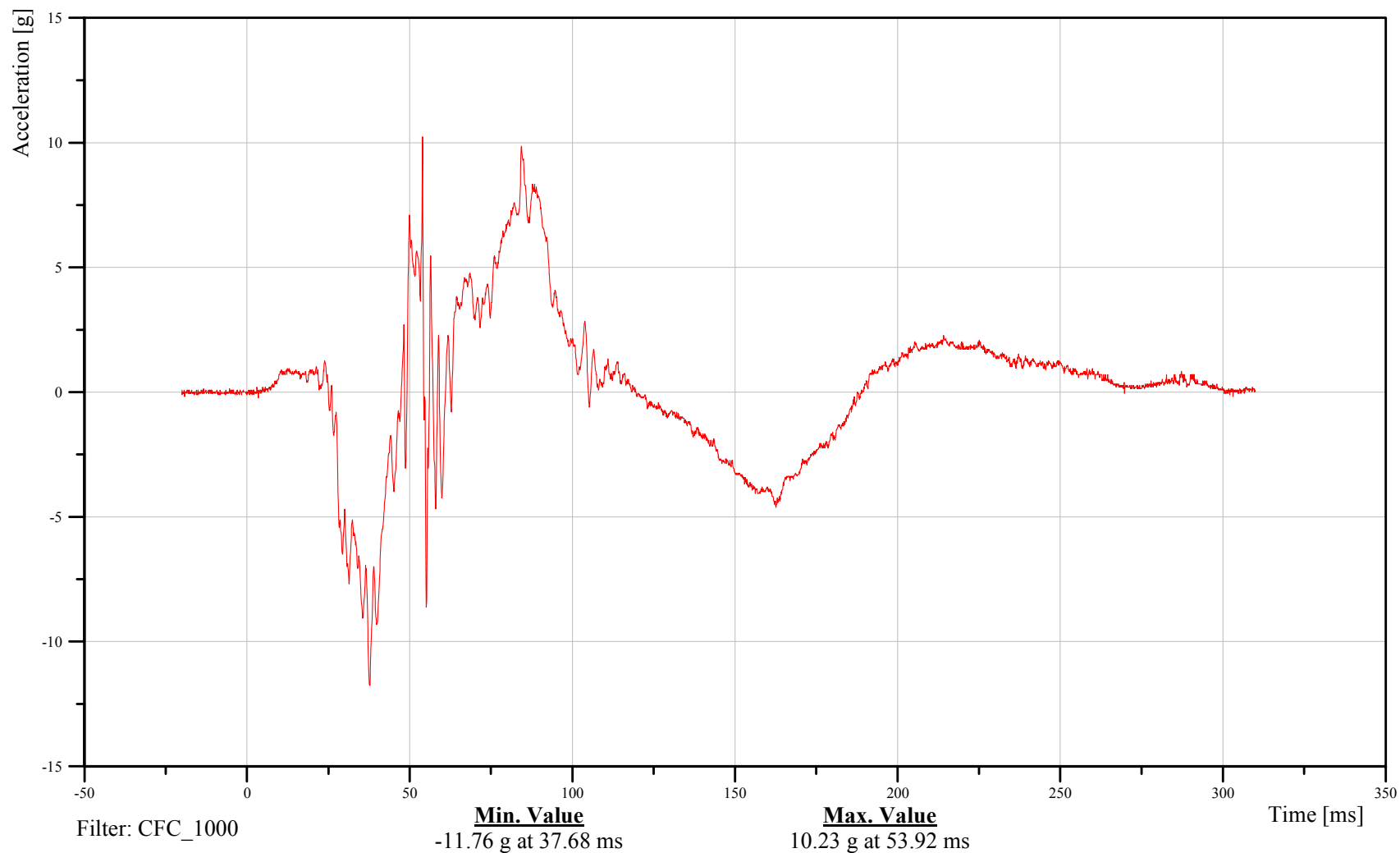
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14PELVCG00S2ACZA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Pelvis Accel Resultant

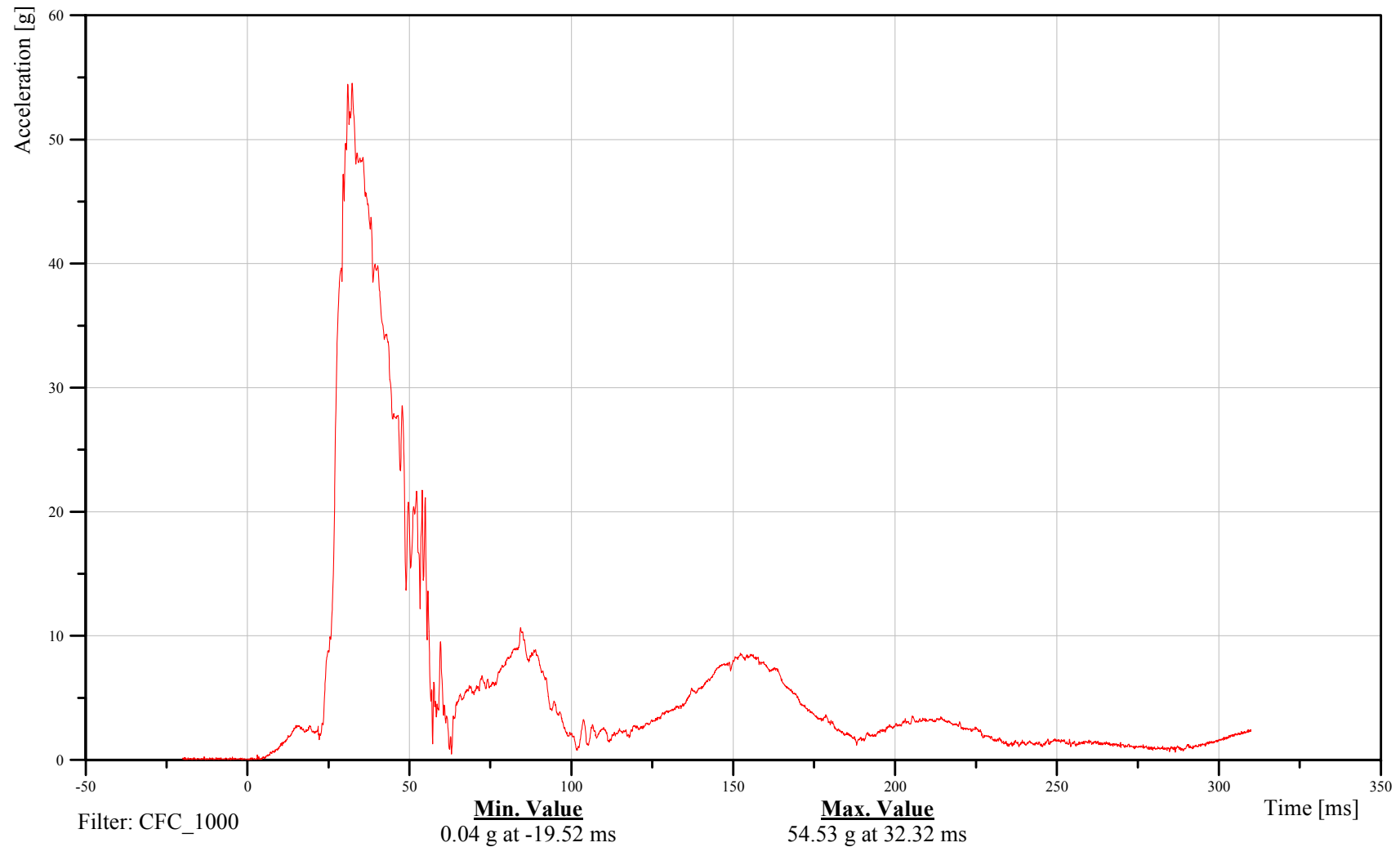
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14PELVCG00S2ACRA

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

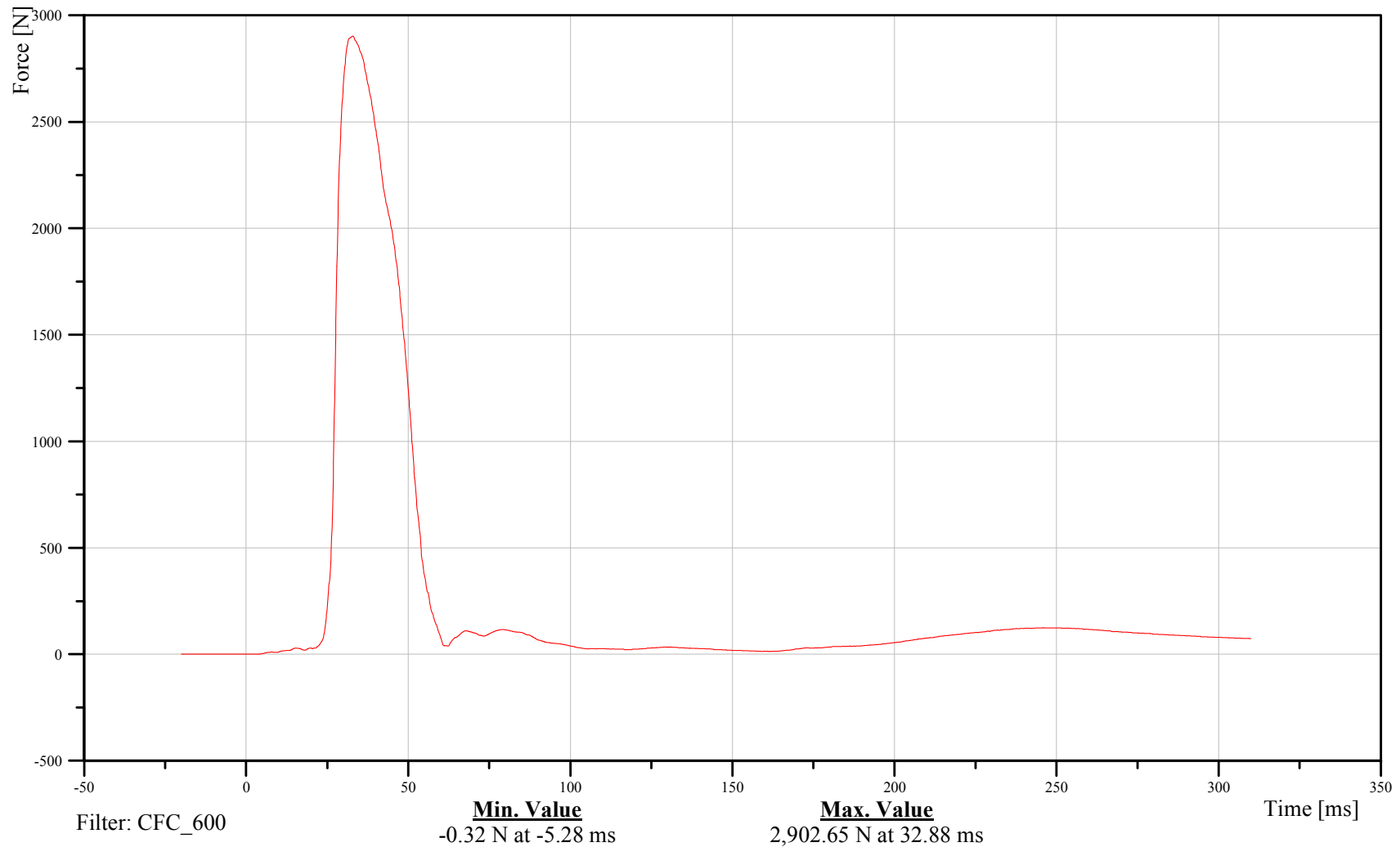
Left Acetabulum Force Y

Customer: VRTC

14ACTBLE00S2FOYB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Left Illiac Wing Force Y

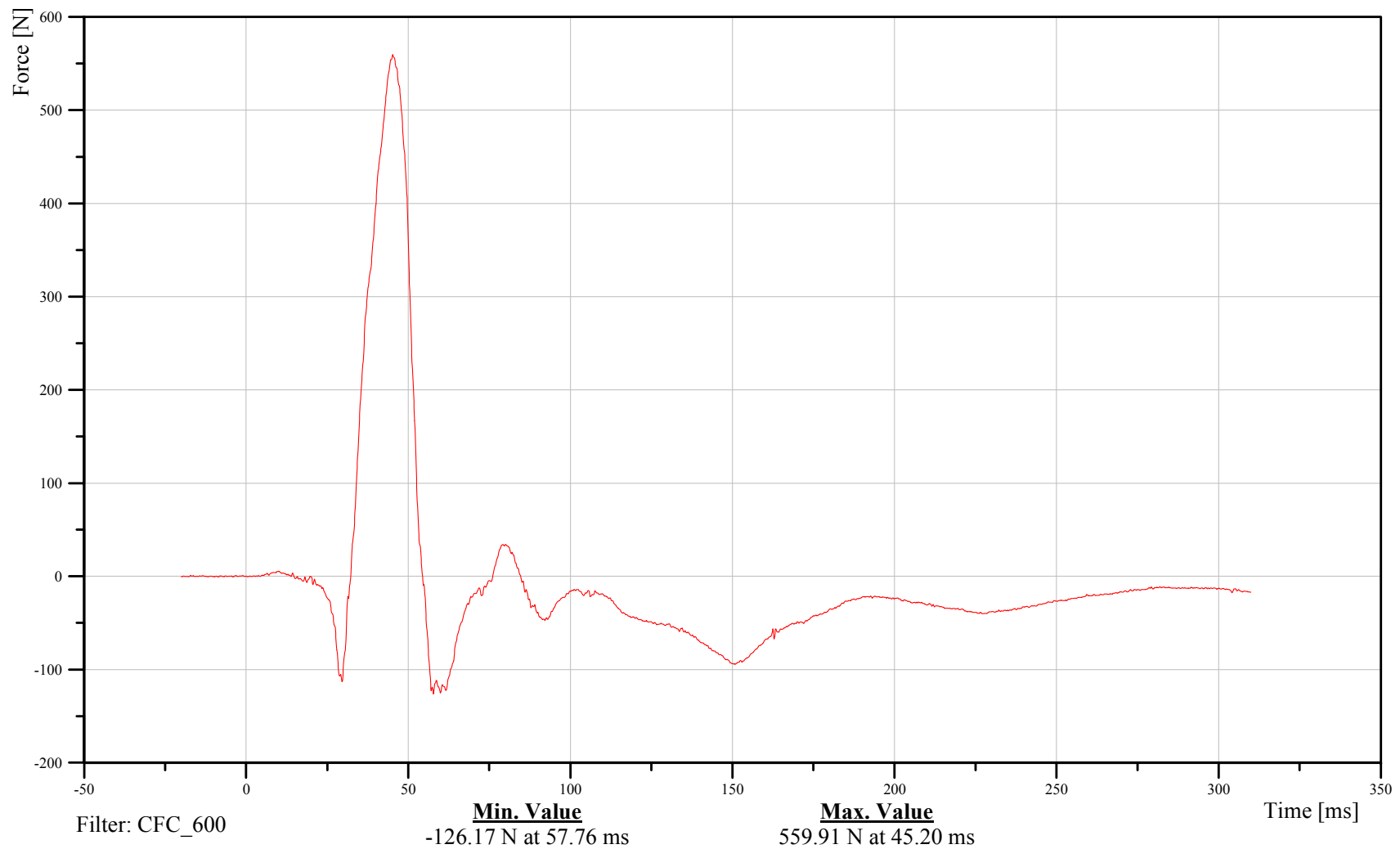
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14ILACLE00S2FOYB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Left Femur Force X

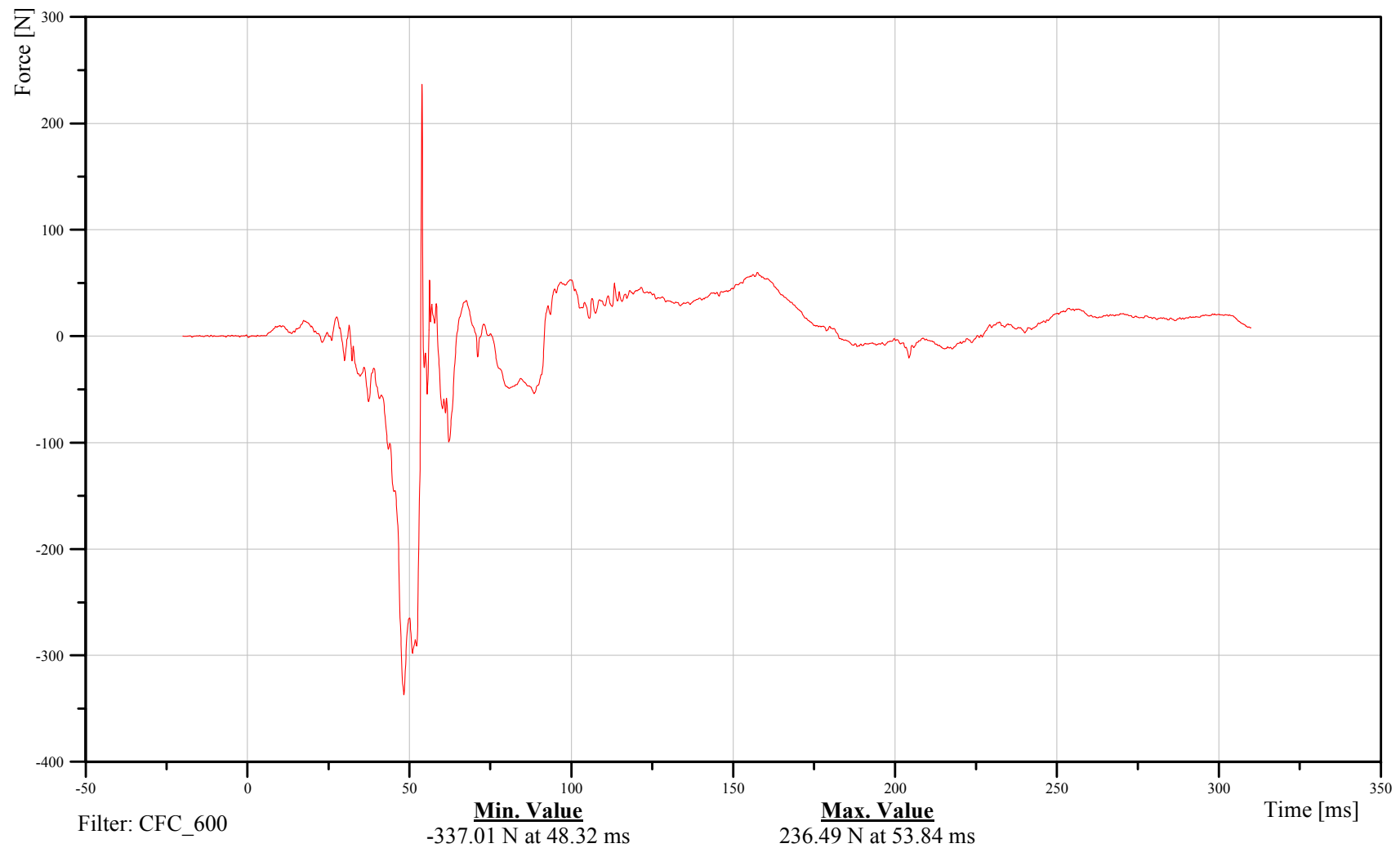
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14FEMRLE00S2FOXB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

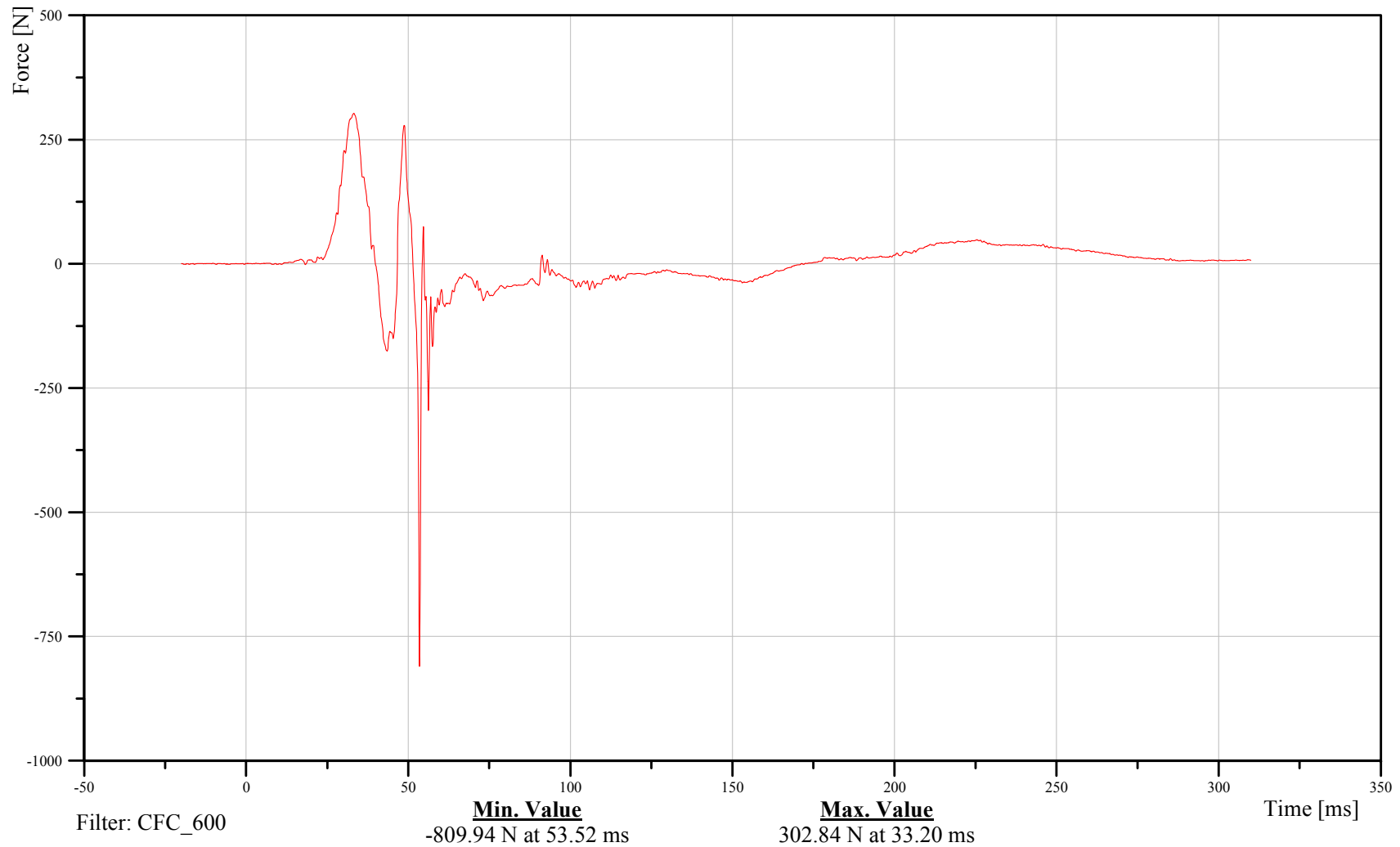
Left Femur Force Y

Customer: VRTC

14FEMRLE00S2FOYB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Left Femur Force Z

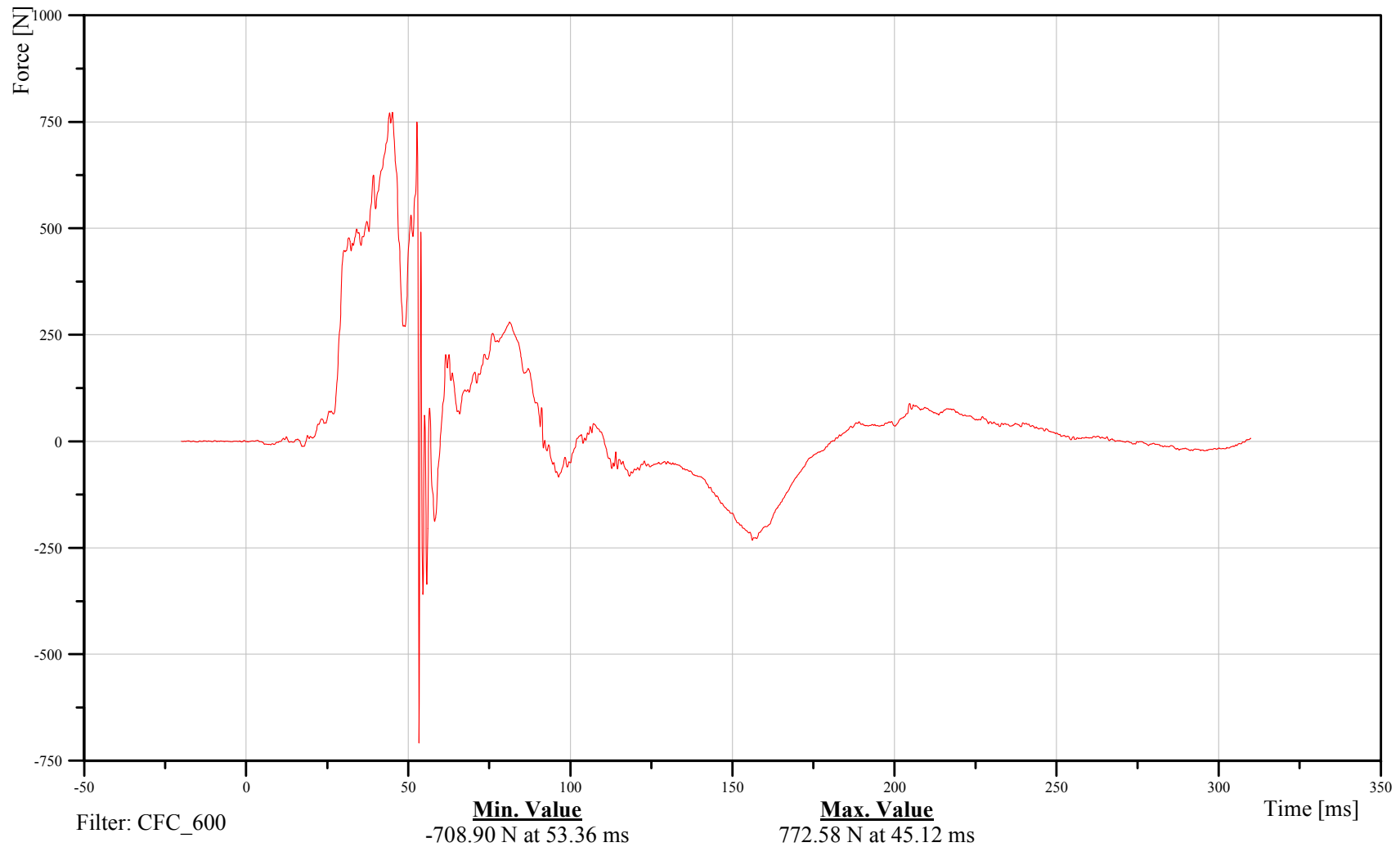
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14FEMRLE00S2FOZB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Left Femur Moment X

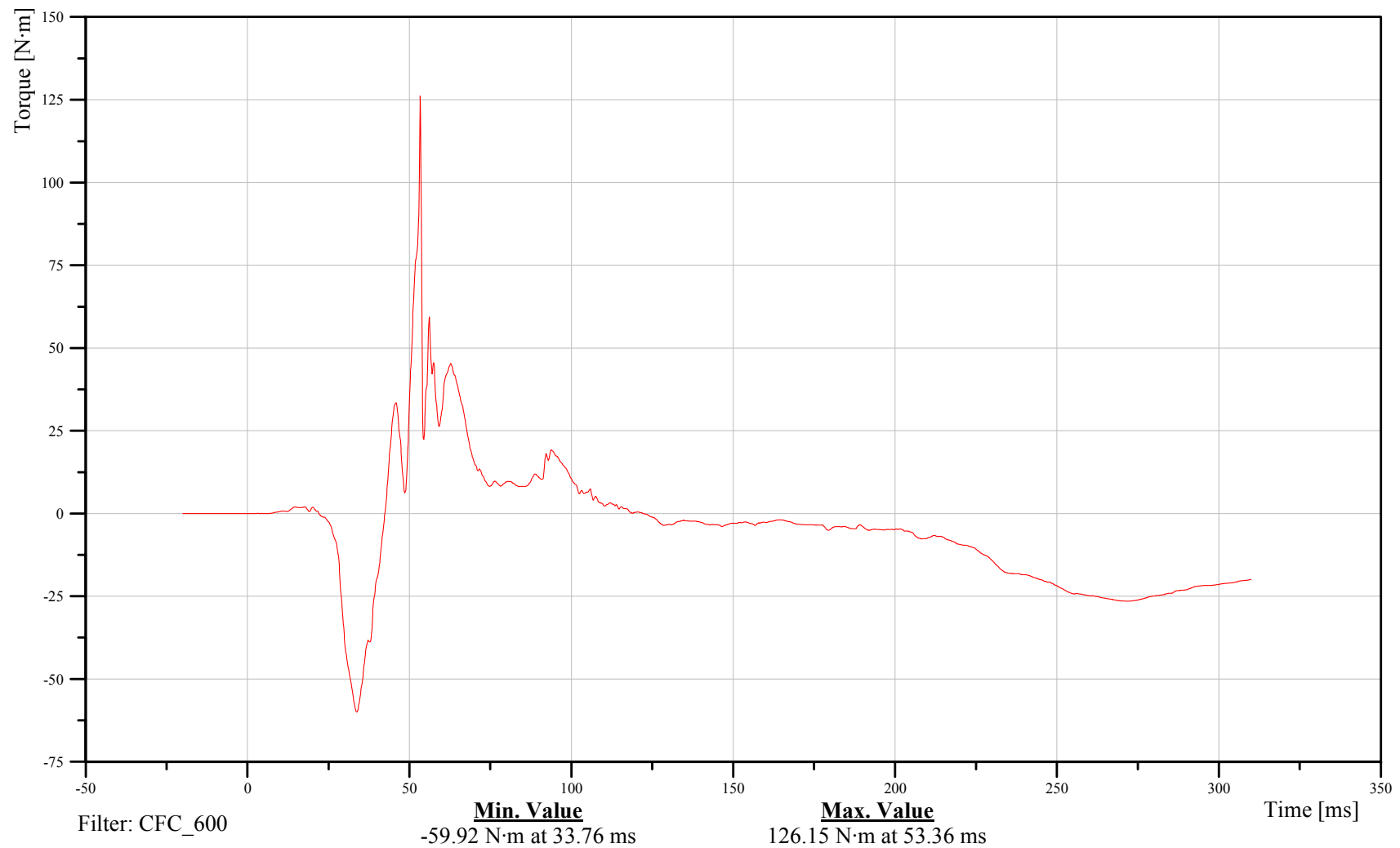
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14FEMRLE00S2MOXB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

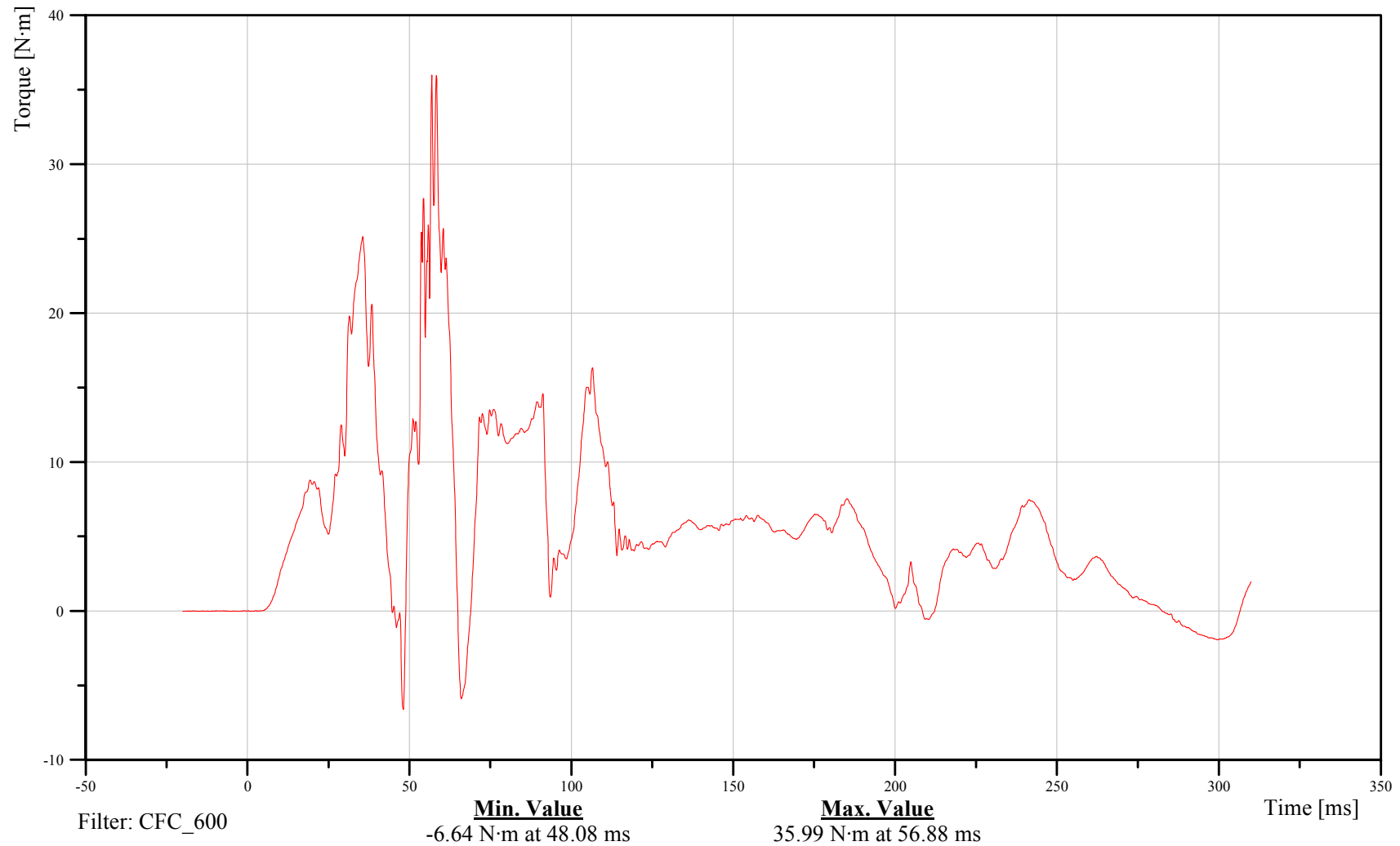
Left Femur Moment Y

Customer: VRTC

14FEMRLE00S2MOYB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Left Femur Moment Z

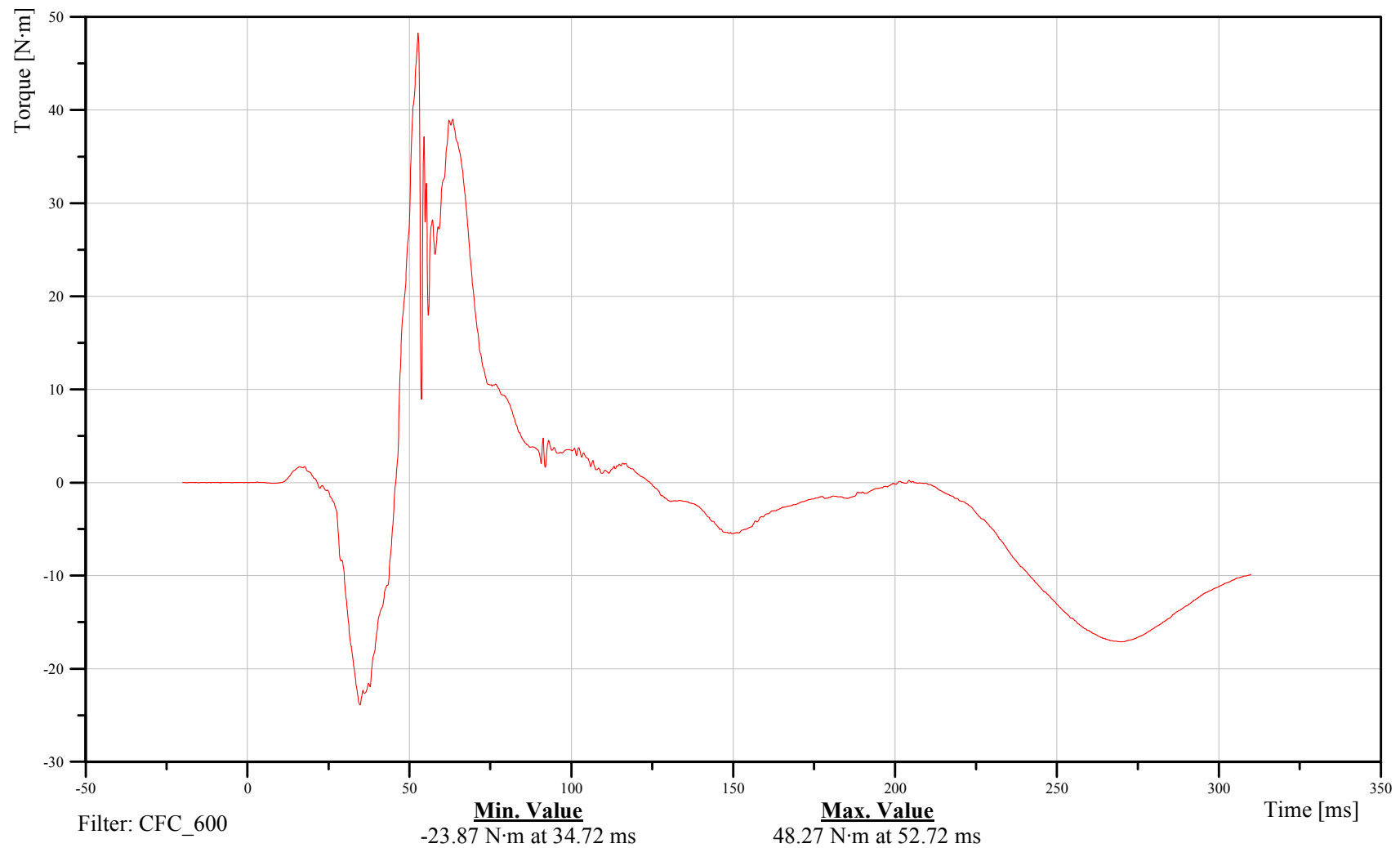
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14FEMRLE00S2MOZB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

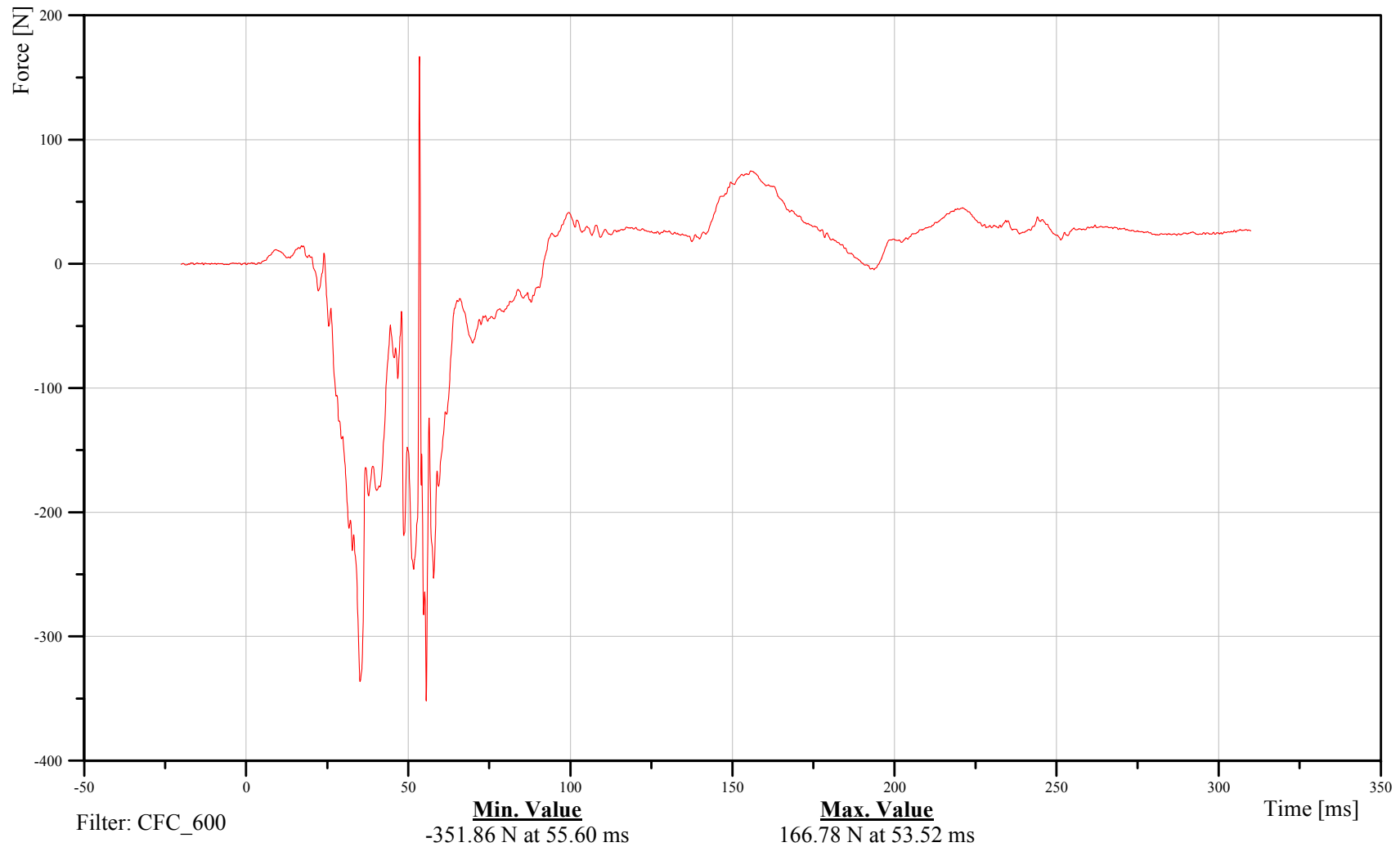
Right Femur Force X

Customer: VRTC

14FEMRRI00S2FOXB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

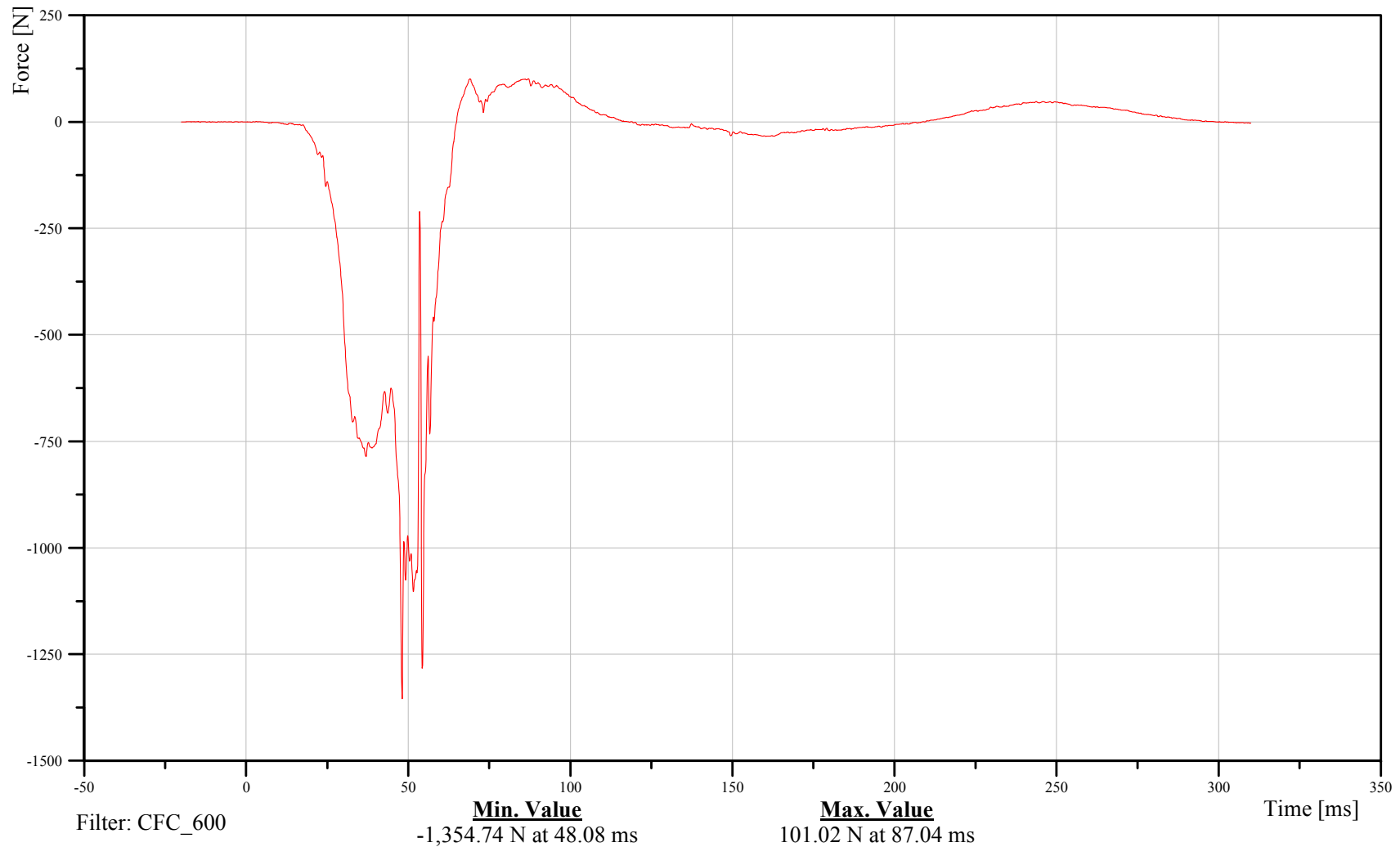
Right Femur Force Y

Customer: VRTC

14FEMRRI00S2FOYB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

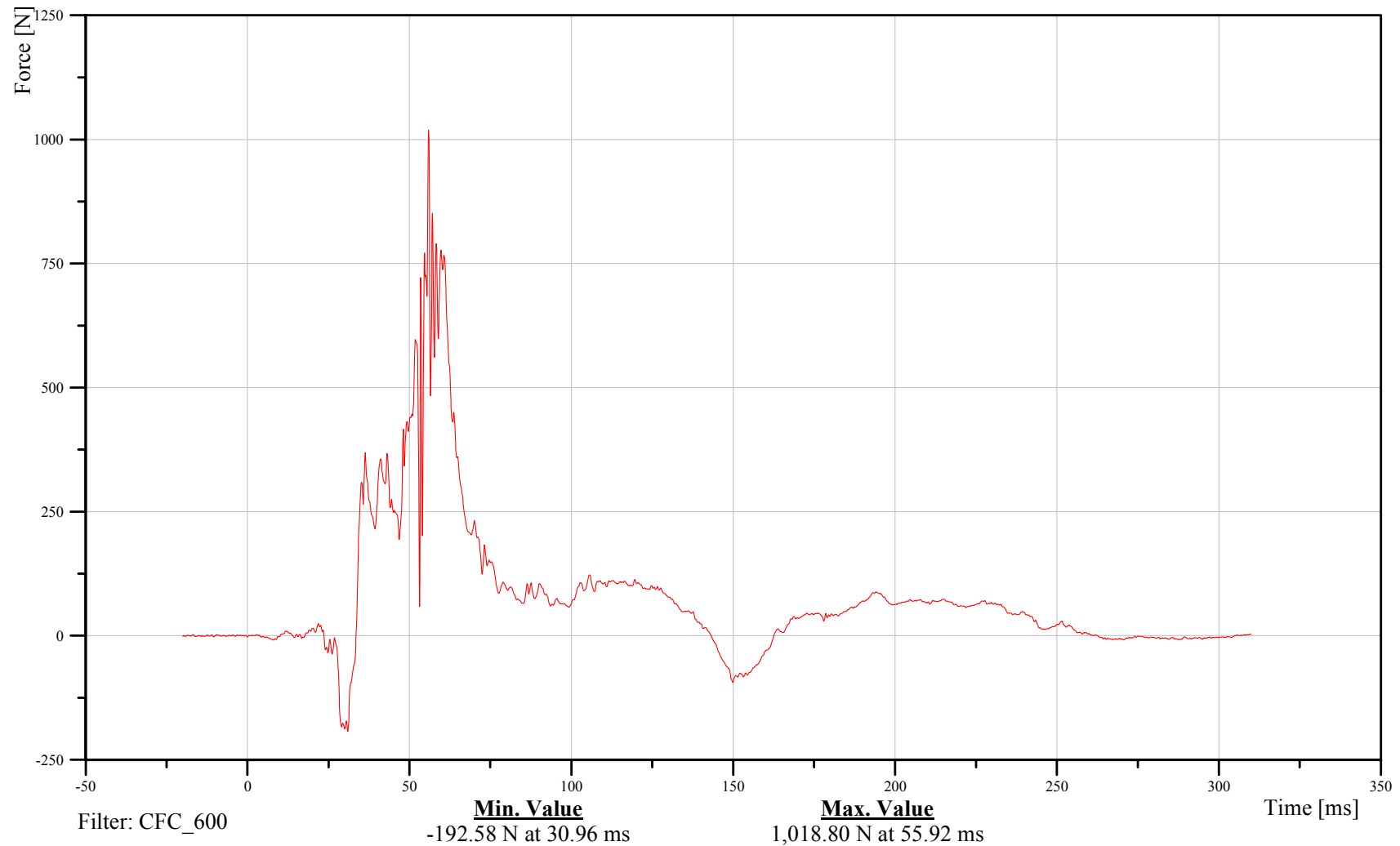
Right Femur Force Z

Customer: VRTC

14FEMRRI00S2FOZB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

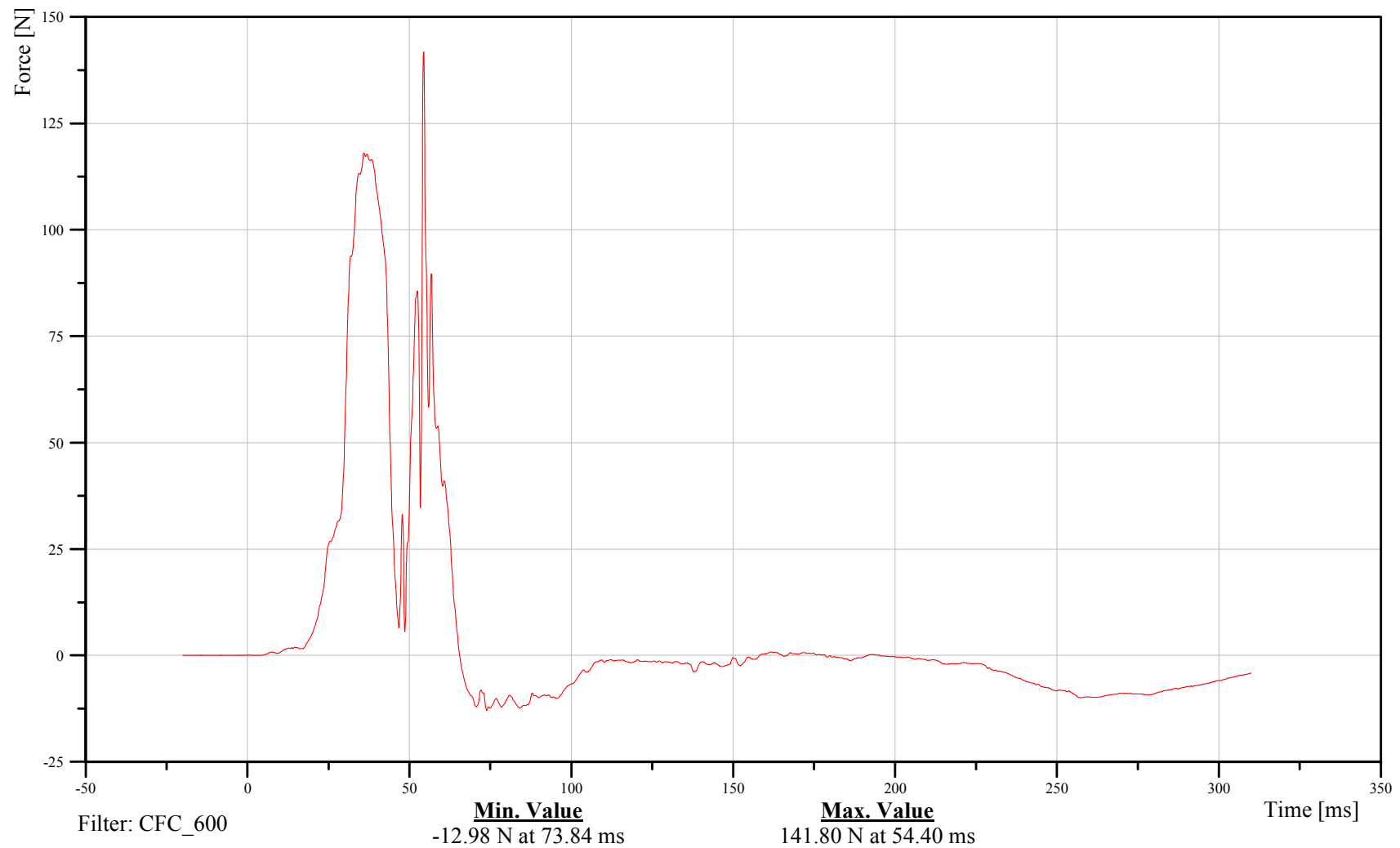
Right Femur Moment X

Customer: VRTC

14FEMRRI00S2MOXB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

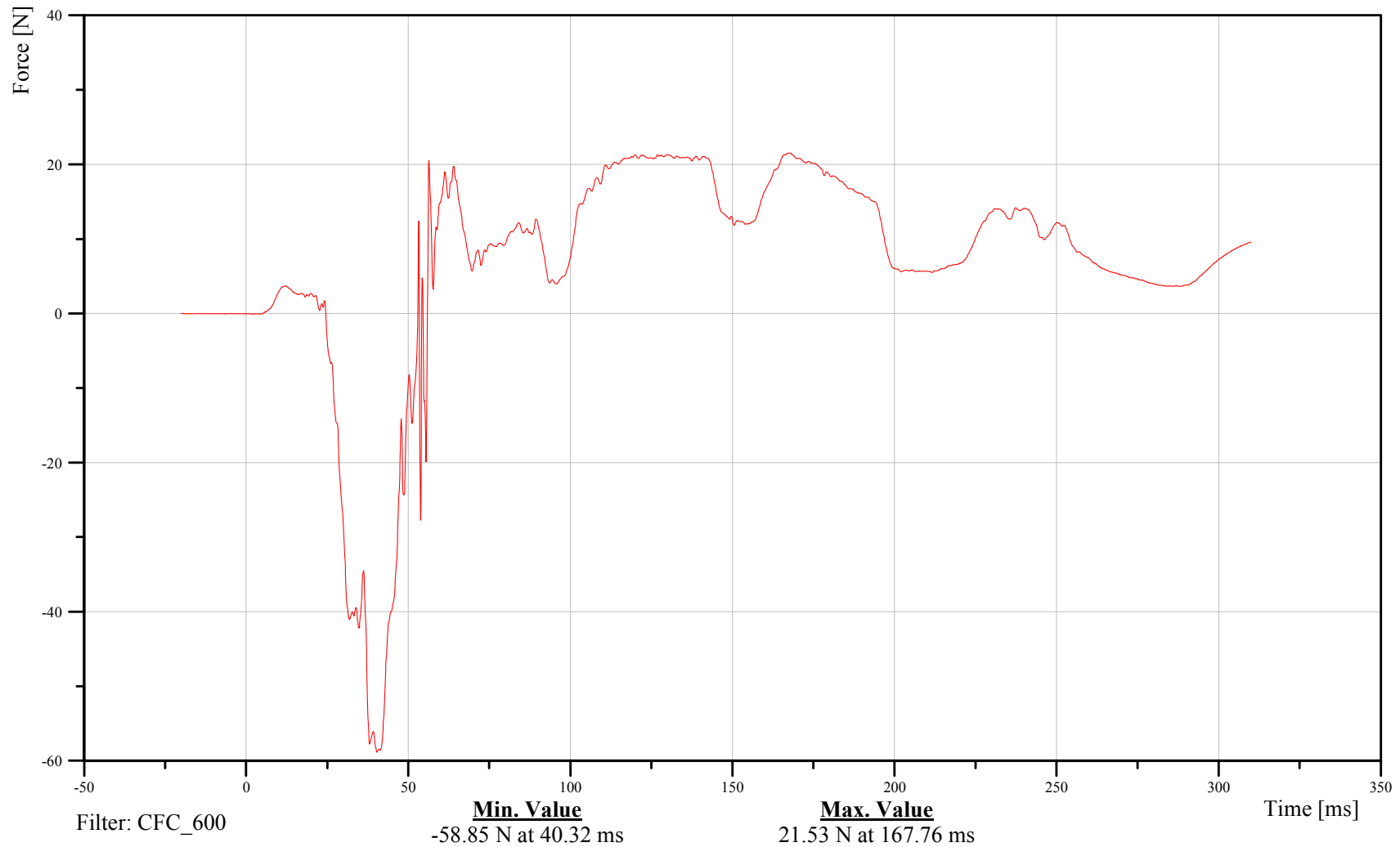
Right Femur Moment Y

Customer: VRTC

14FEMRRI00S2MOYB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

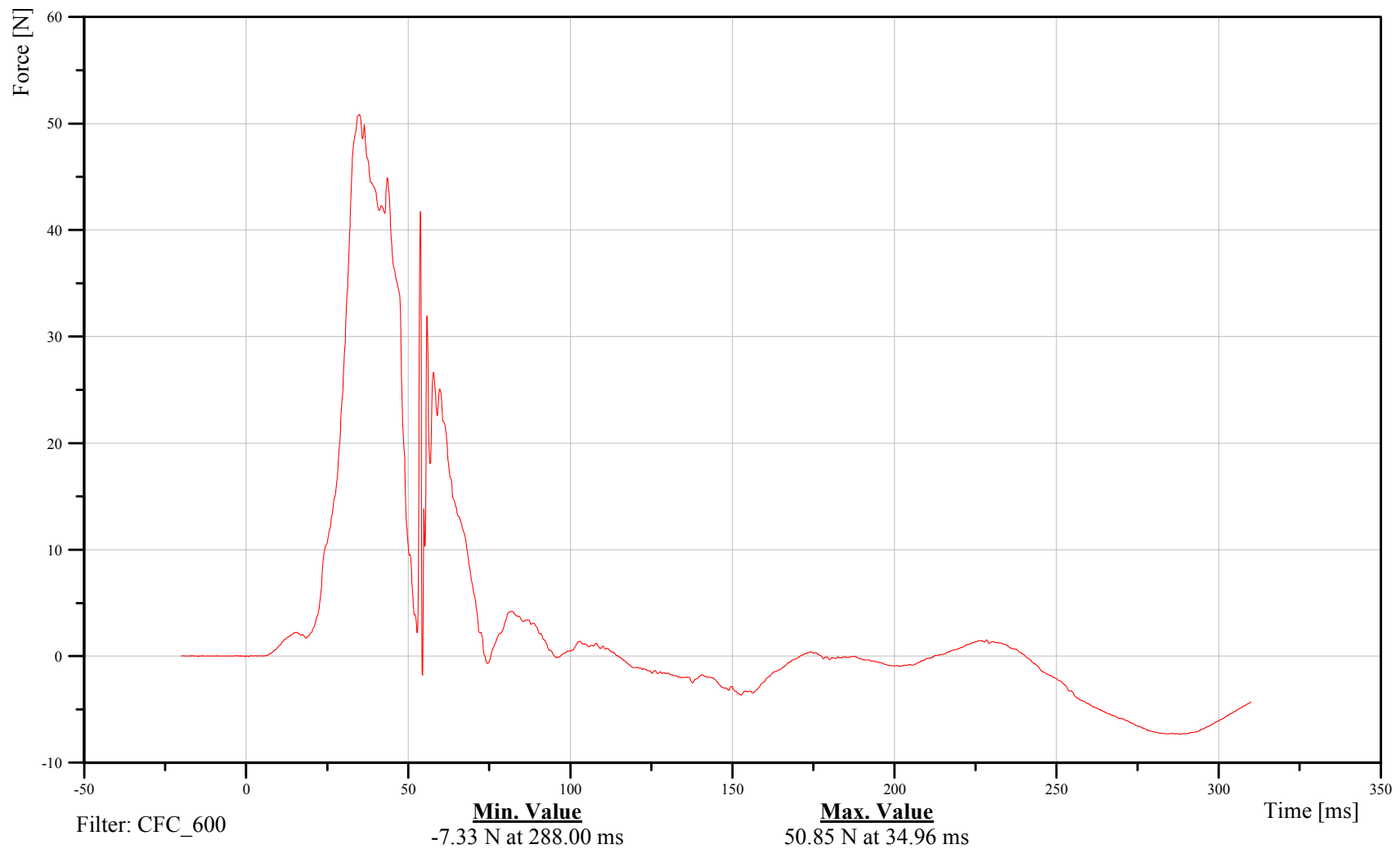
Right Femur Moment Z

Customer: VRTC

14FEMRRI00S2MOZB

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005

Time: 11:49

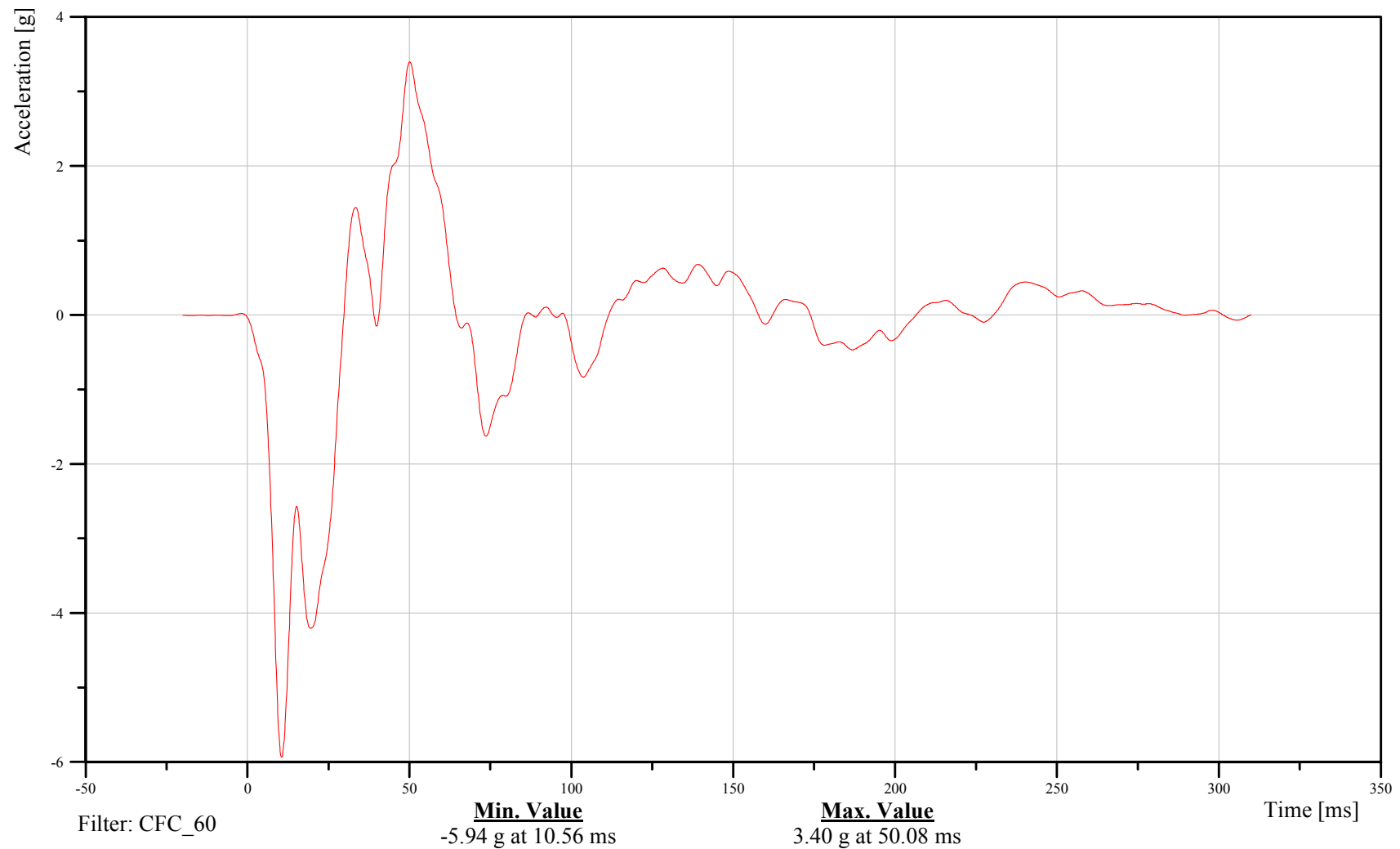
Right Side Sill at Front Seat X-Axis Acceleration

Customer: VRTC

16SILBFR0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005

Time: 11:49

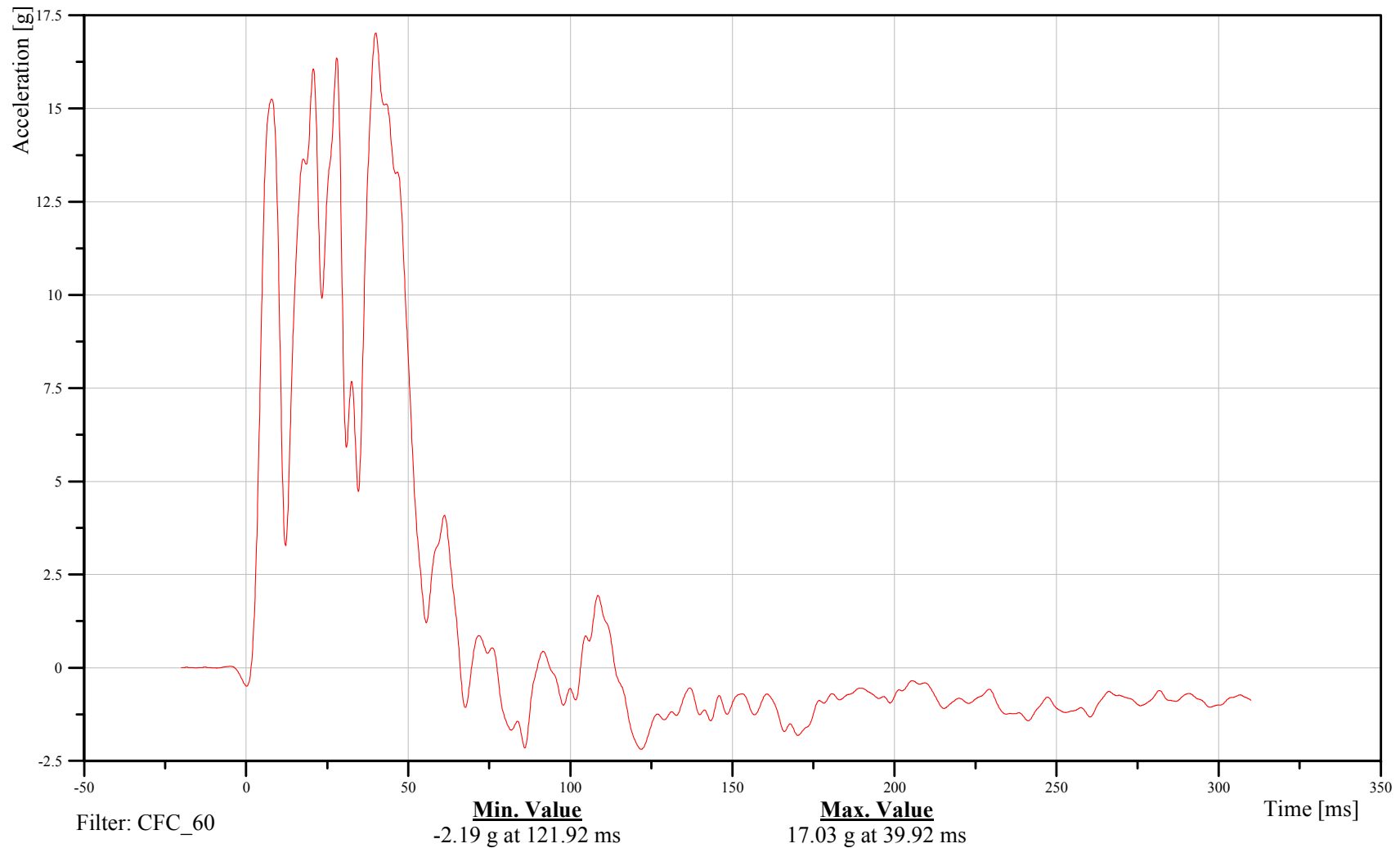
Right Side Sill at Front Seat Y-Axis Acceleration

Customer: VRTC

16SILBFR0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005

Time: 11:49

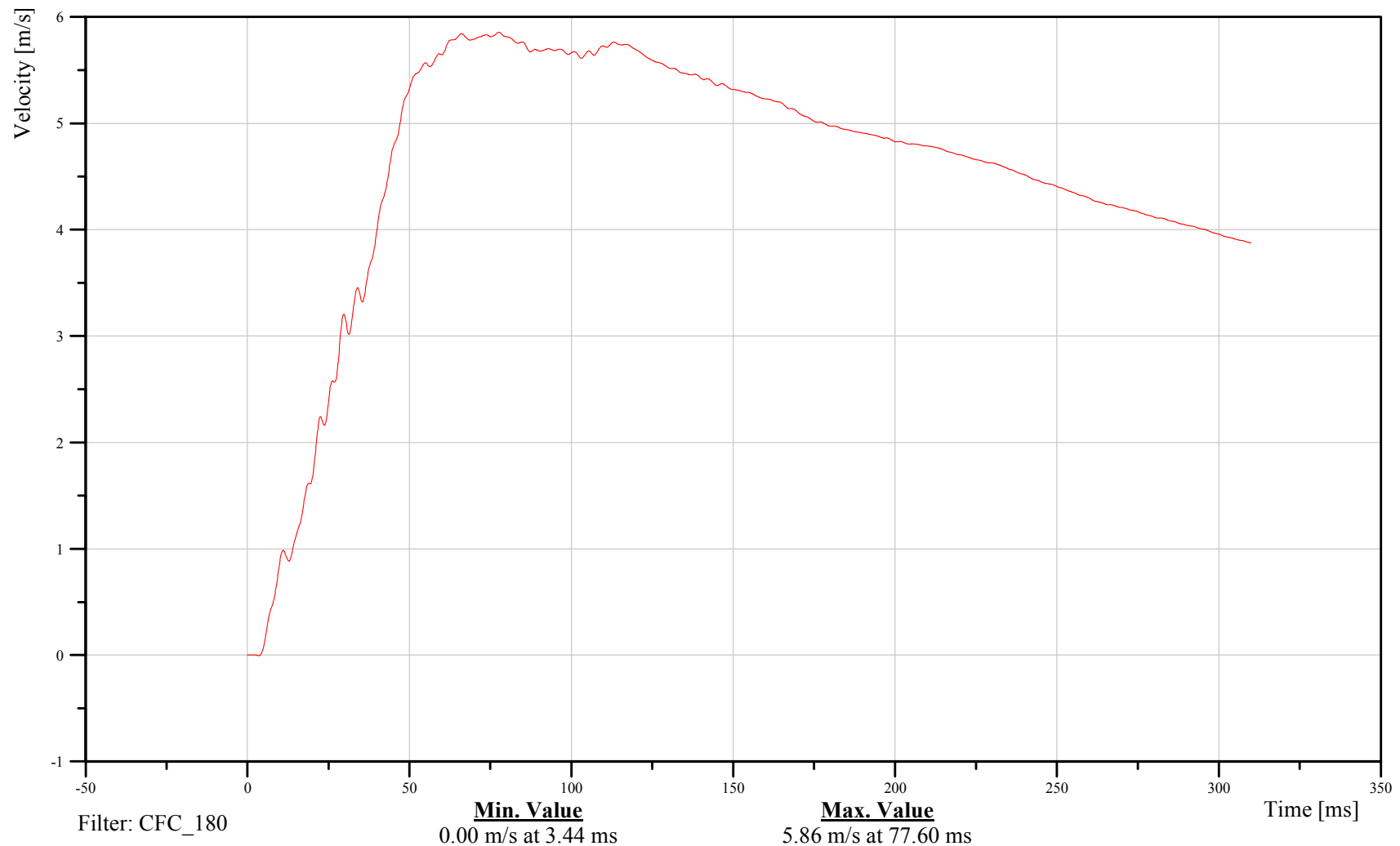
Right Side Sill at Front Seat Y-Axis Velocity

Customer: VRTC

16SILBFR0000VEYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005

Time: 11:49

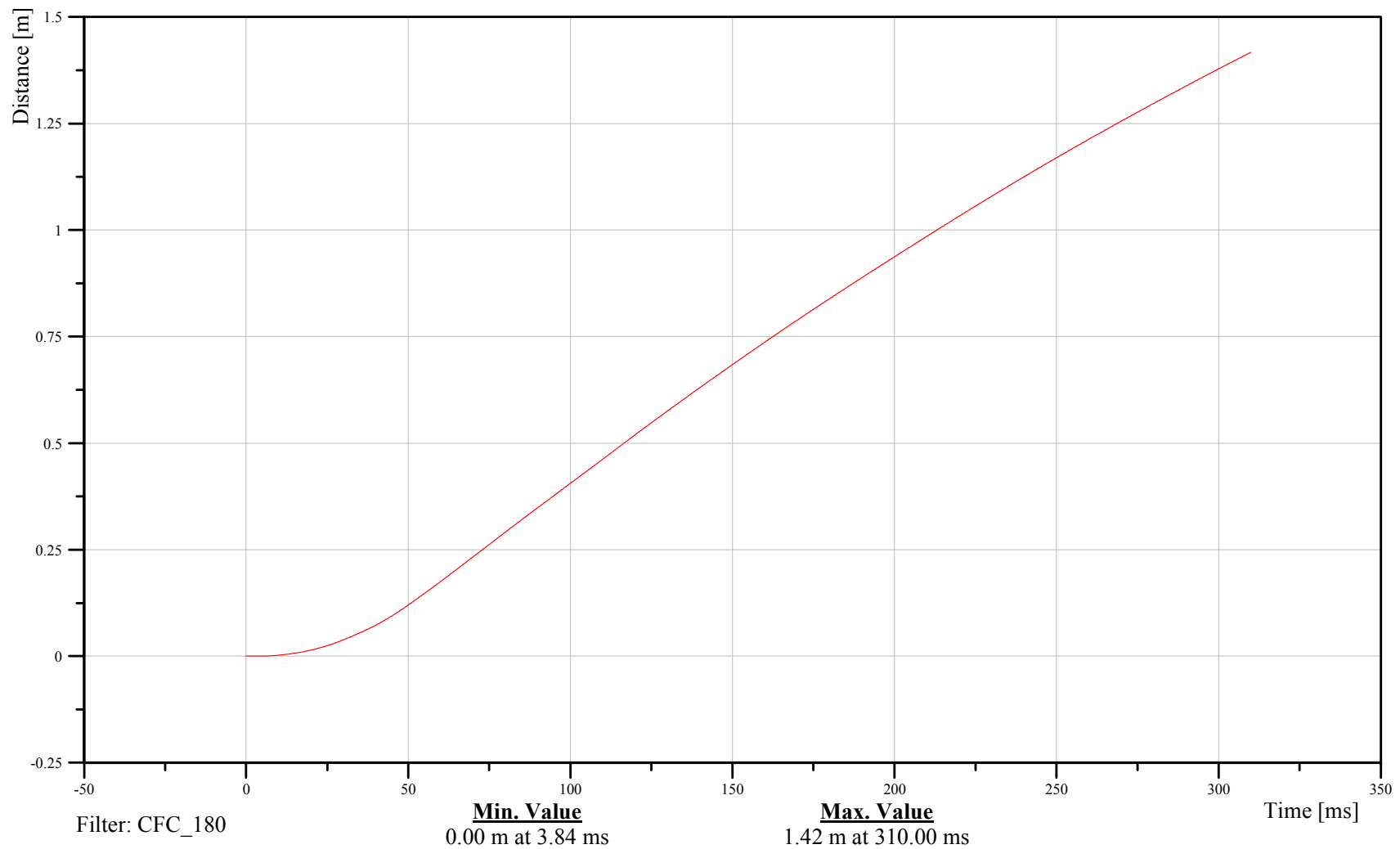
Right Side Sill at Front Seat Y-Axis Displacement

Customer: VRTC

16SILBFR0000DCYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005

Time: 11:49

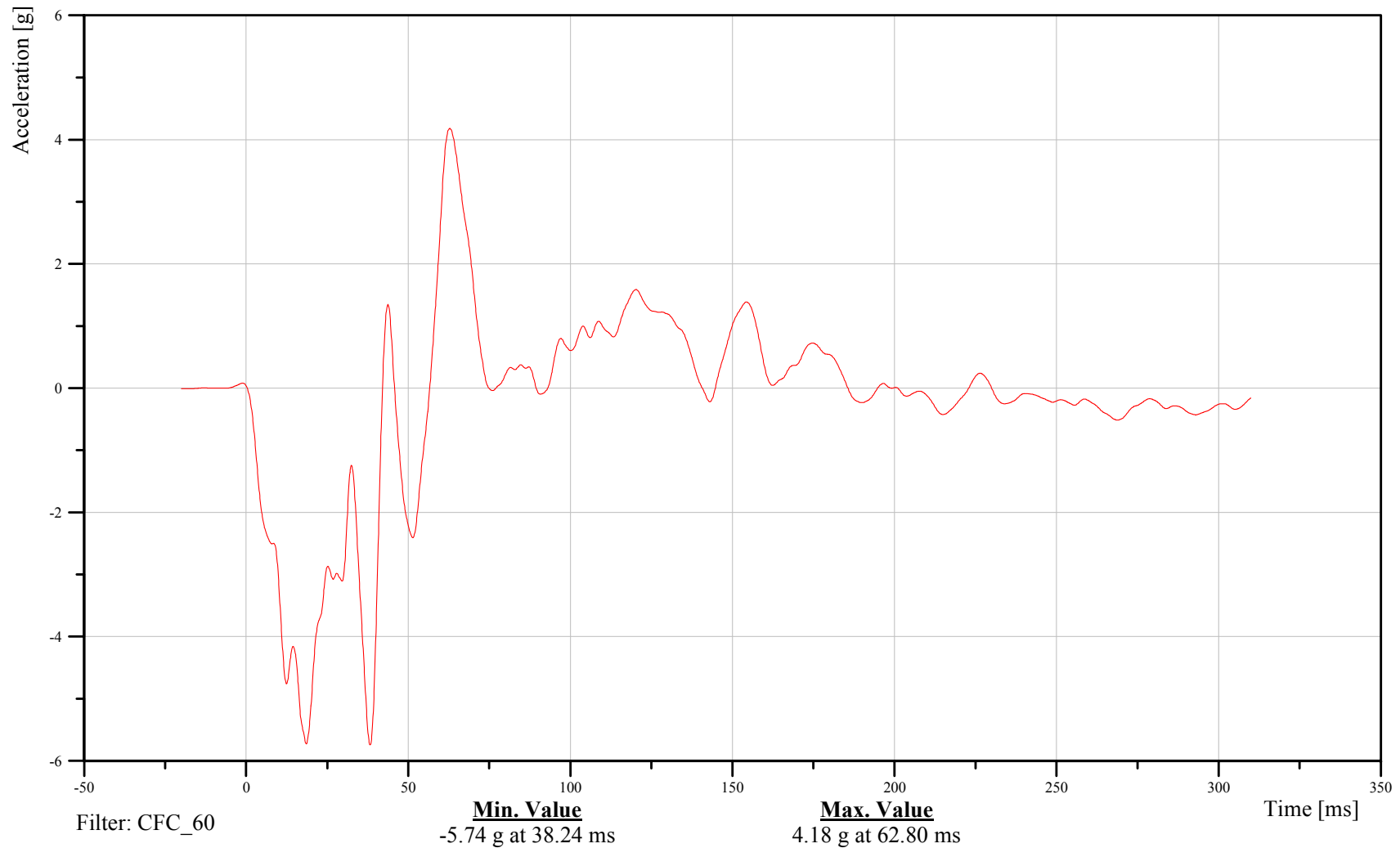
Right Side Sill at Front Seat Z-Axis Acceleration

Customer: VRTC

16SILBFR0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005

Time: 11:49

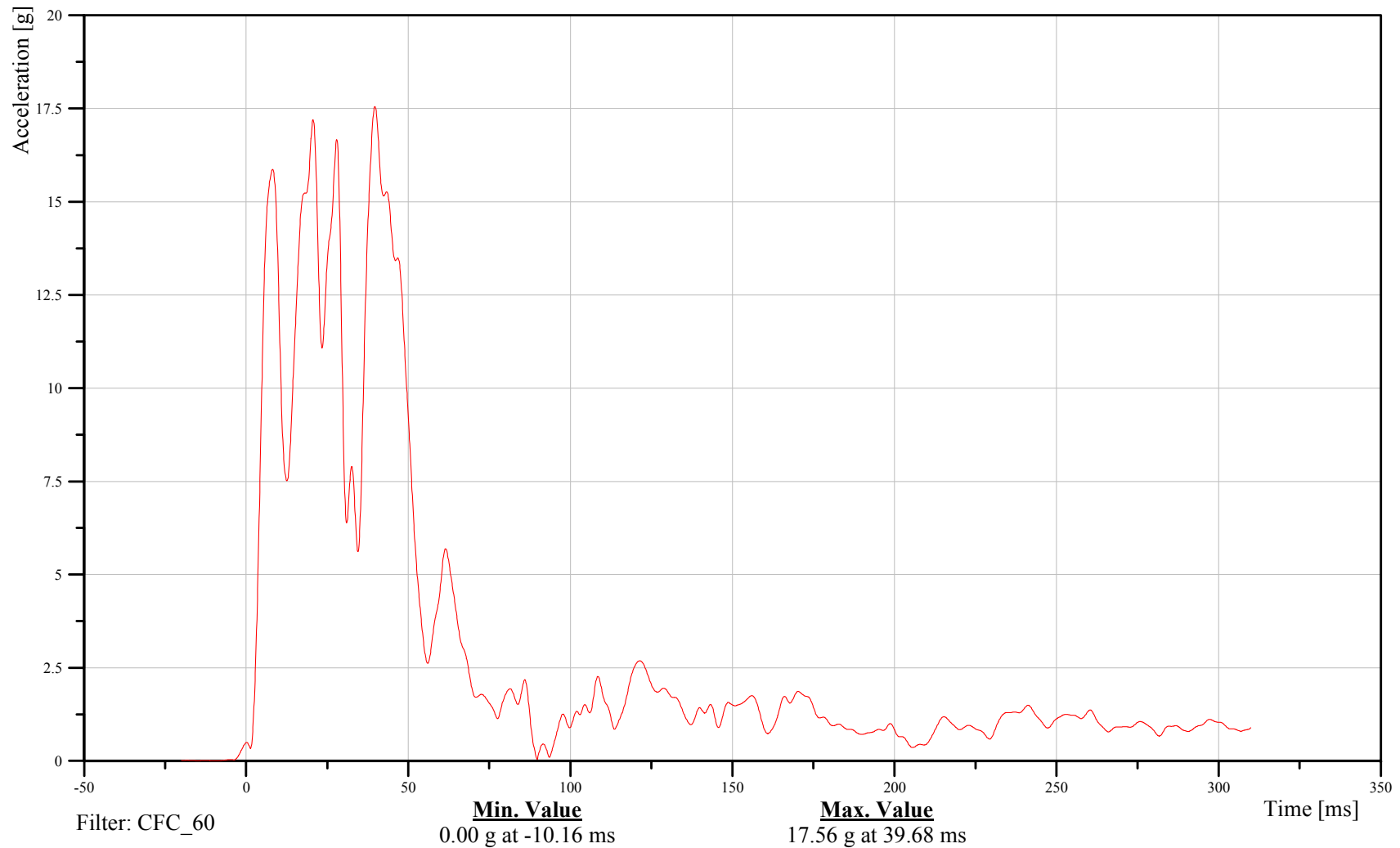
Right Side Sill at Front Seat Resultant Acceleration

Customer: VRTC

16SILBFR0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Right Side Sill at Rear Seat X-Axis Acceleration

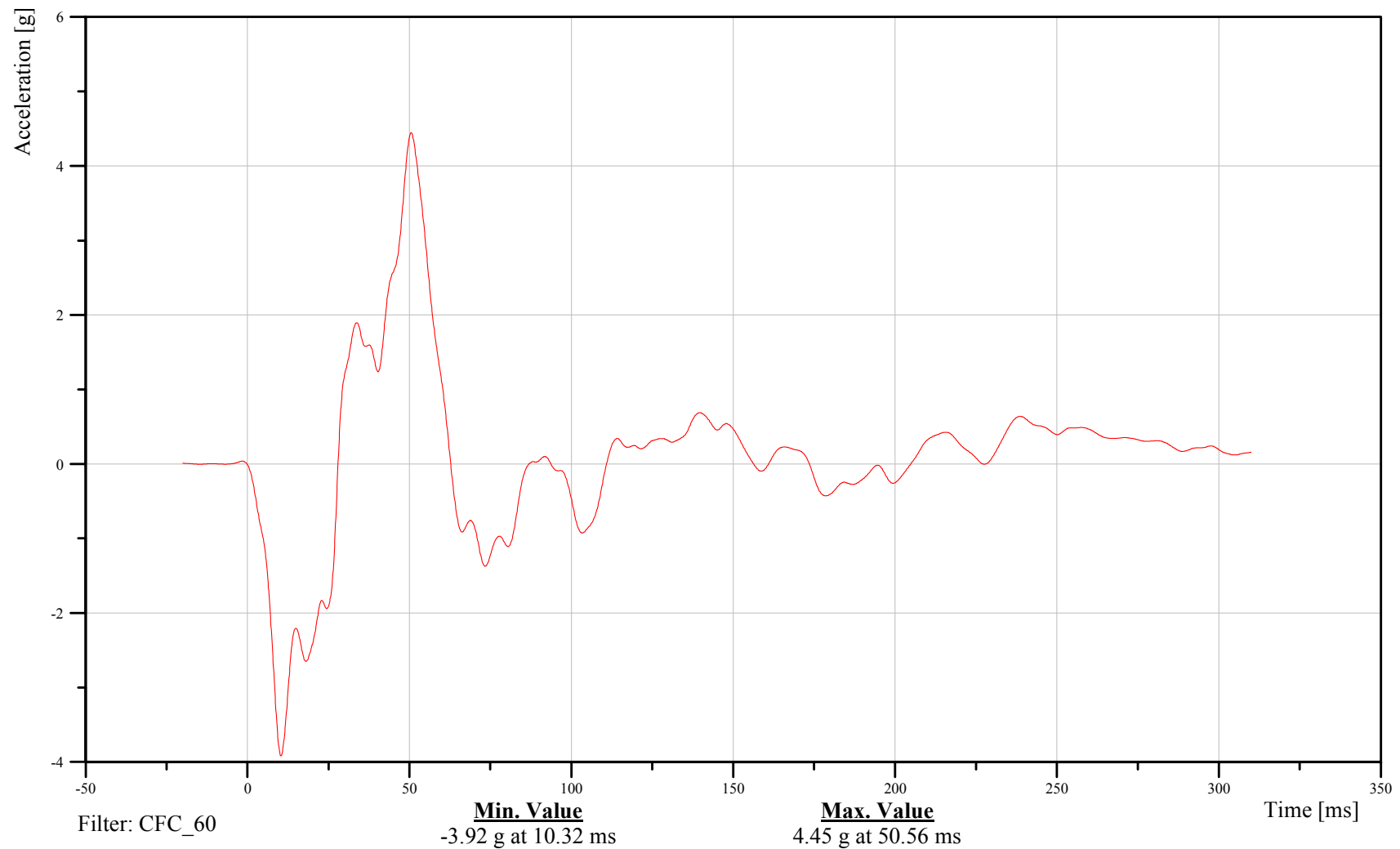
Date: 08/05/2005
Time: 11:49

Customer: VRTC

16SILBRE0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005

Time: 11:49

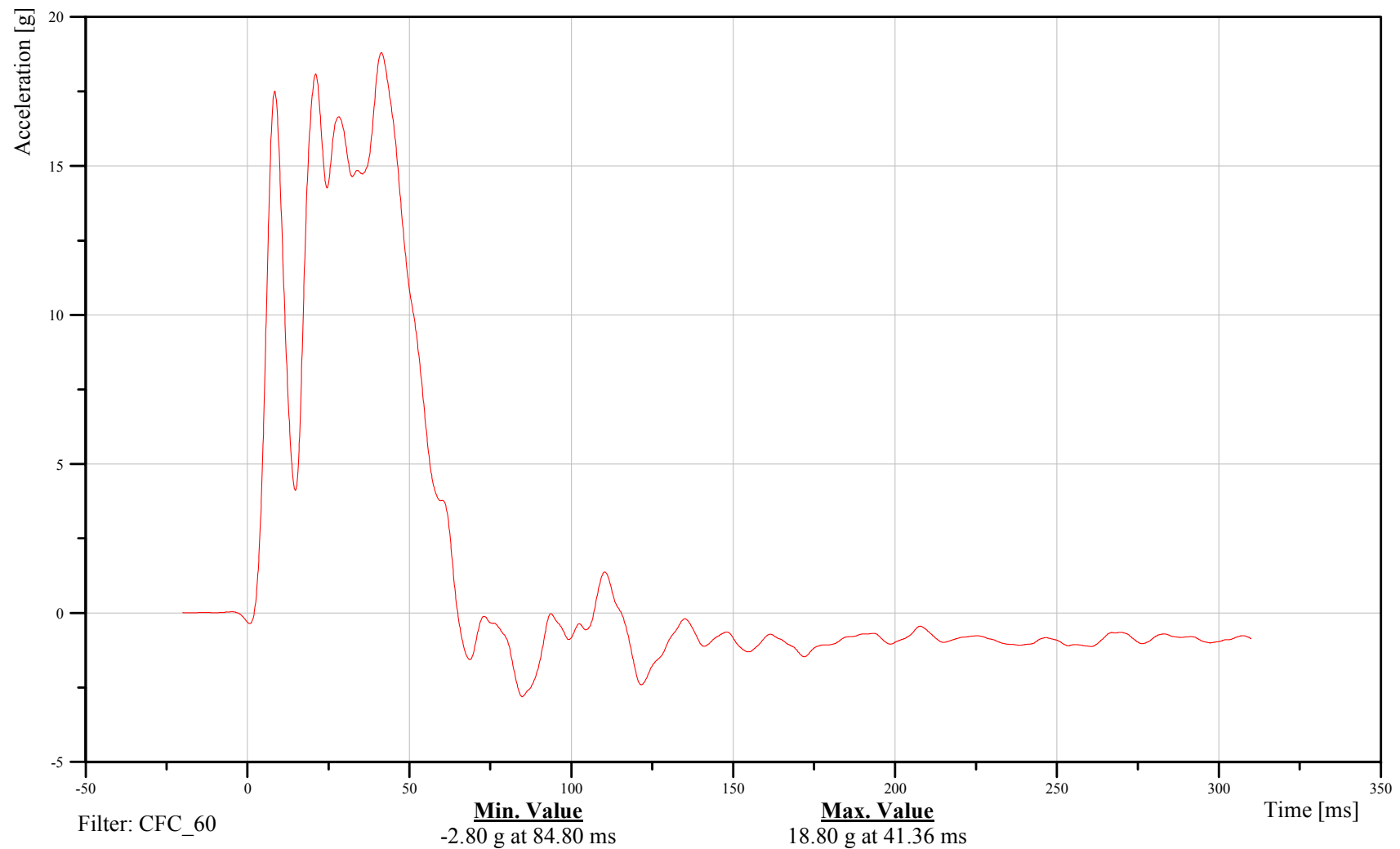
Right Side Sill at Rear Seat Y-Axis Acceleration

Customer: VRTC

16SILBRE0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Right Side Sill at Rear Seat Y-Axis Velocity

Date: 08/05/2005

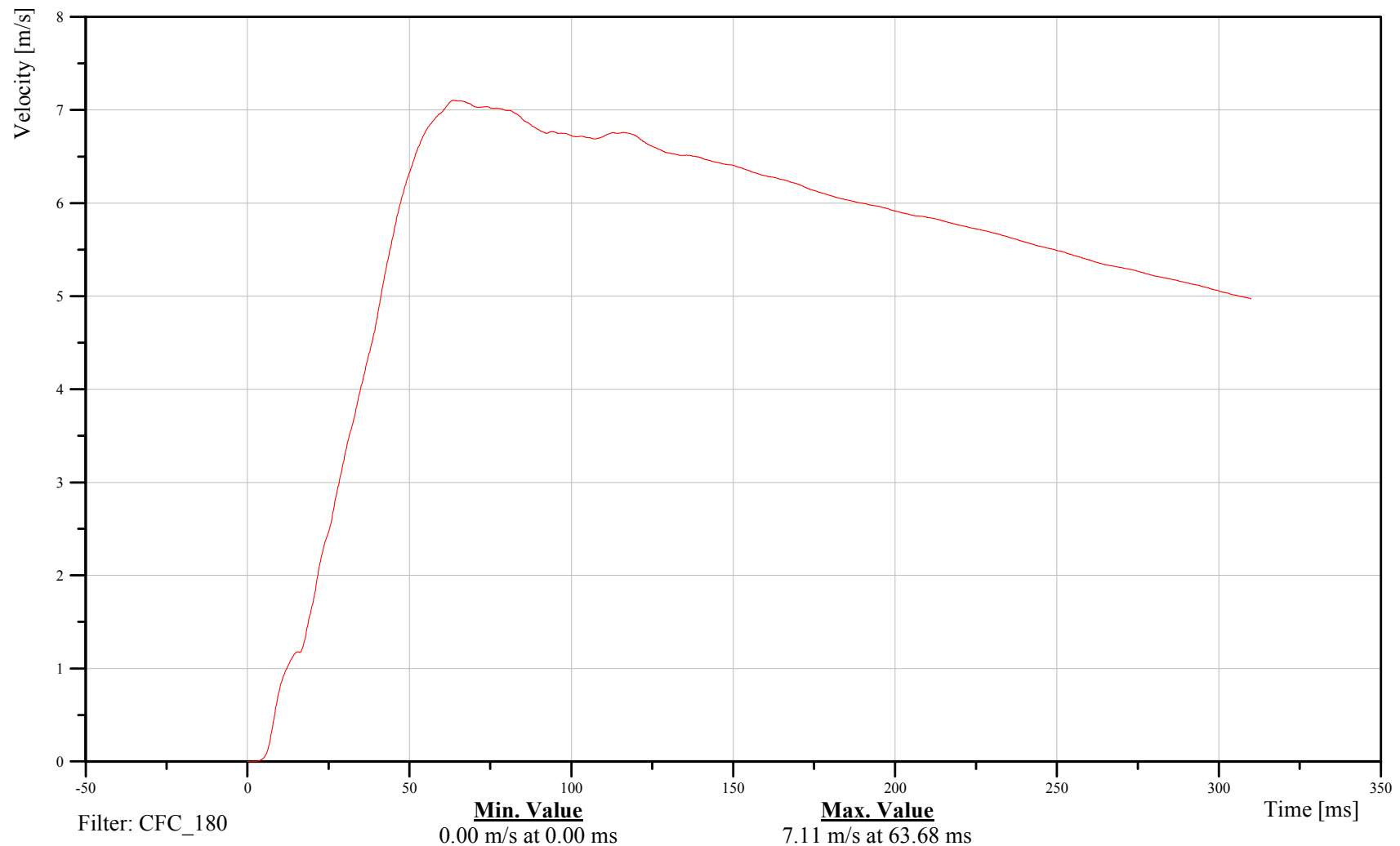
Time: 11:49

Customer: VRTC

16SILBRE0000VEYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Right Side Sill at Rear Seat Y-Axis Displacement

Date: 08/05/2005

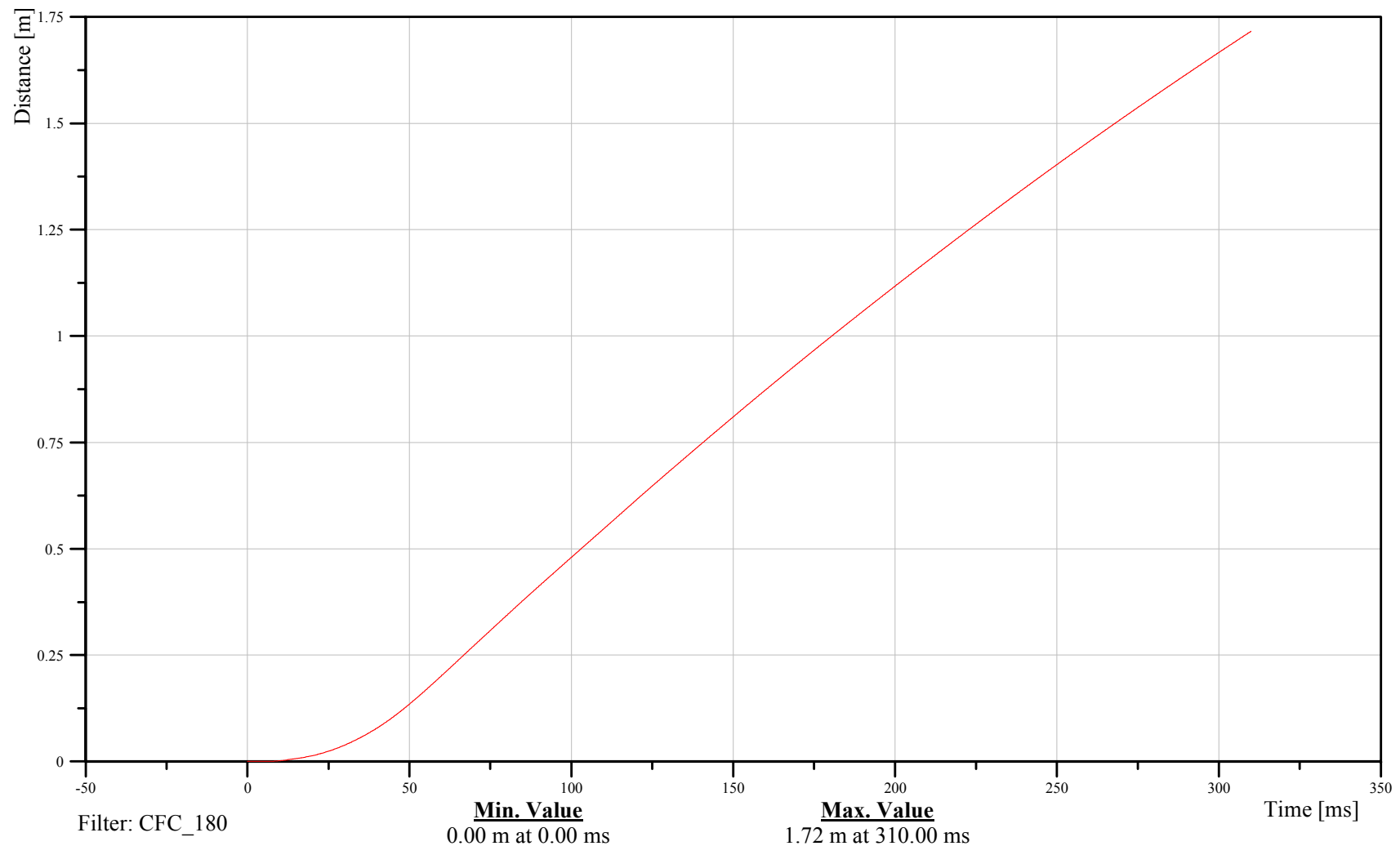
Time: 11:49

Customer: VRTC

16SILBRE0000DCYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Right Side Sill at Rear Seat Z-Axis Acceleration

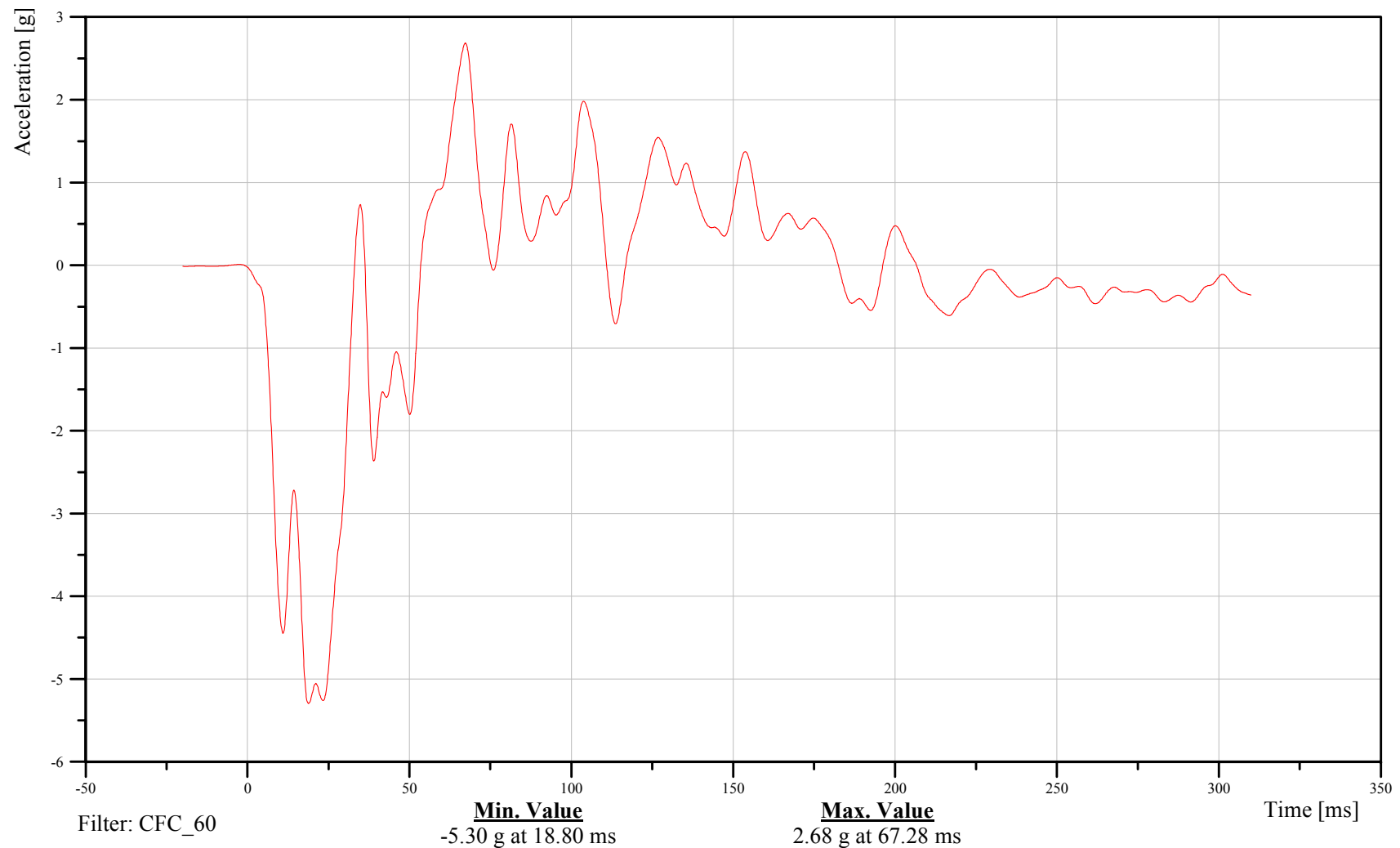
Date: 08/05/2005
Time: 11:49

Customer: VRTC

16SILBRE0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005

Time: 11:49

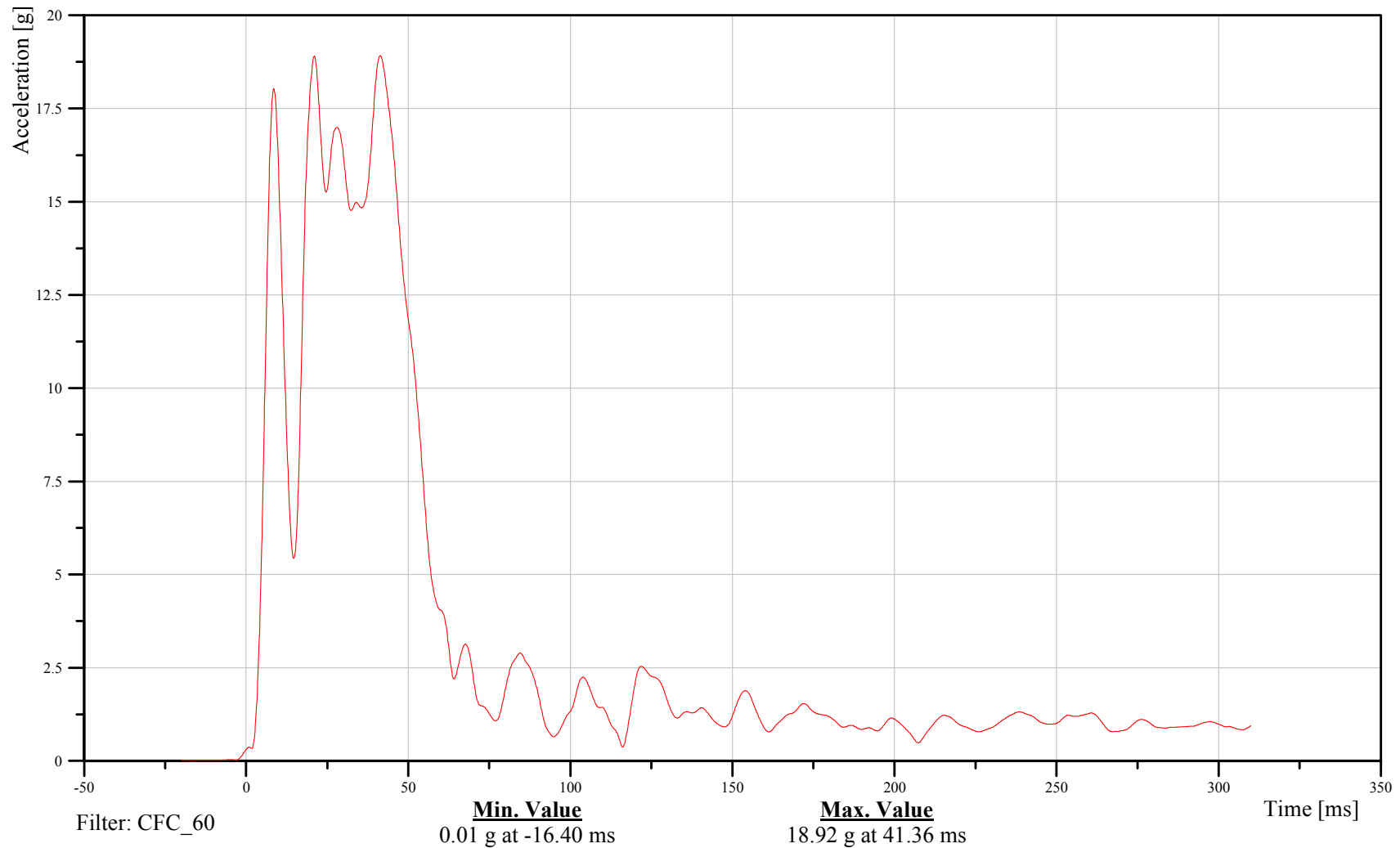
Right Side Sill at Rear Seat Resultant Acceleration

Customer: VRTC

16SILBRE0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

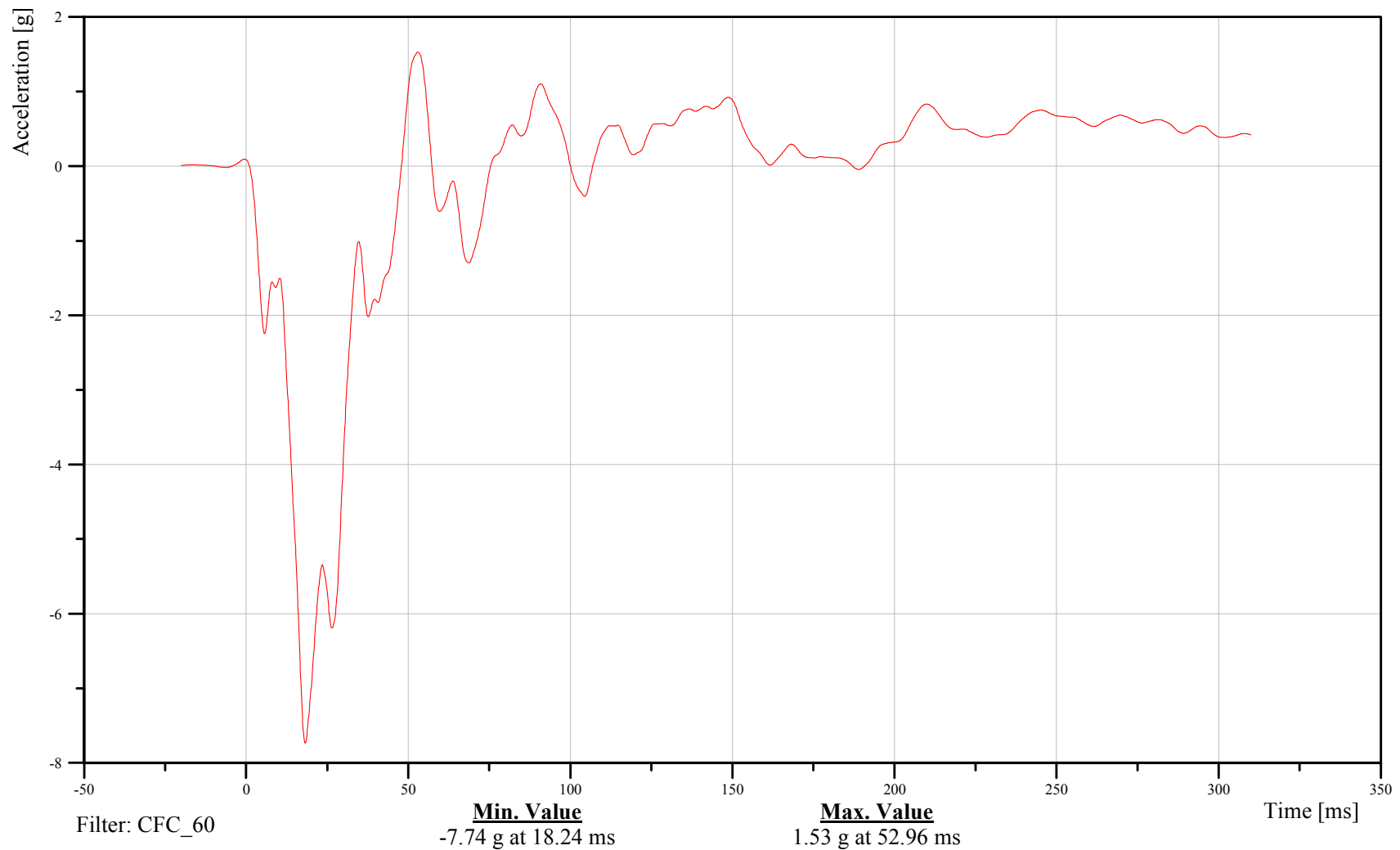
Rear Floorpan Above Axle X-Axis Acceleration

Customer: VRTC

18FORA000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005

Time: 11:49

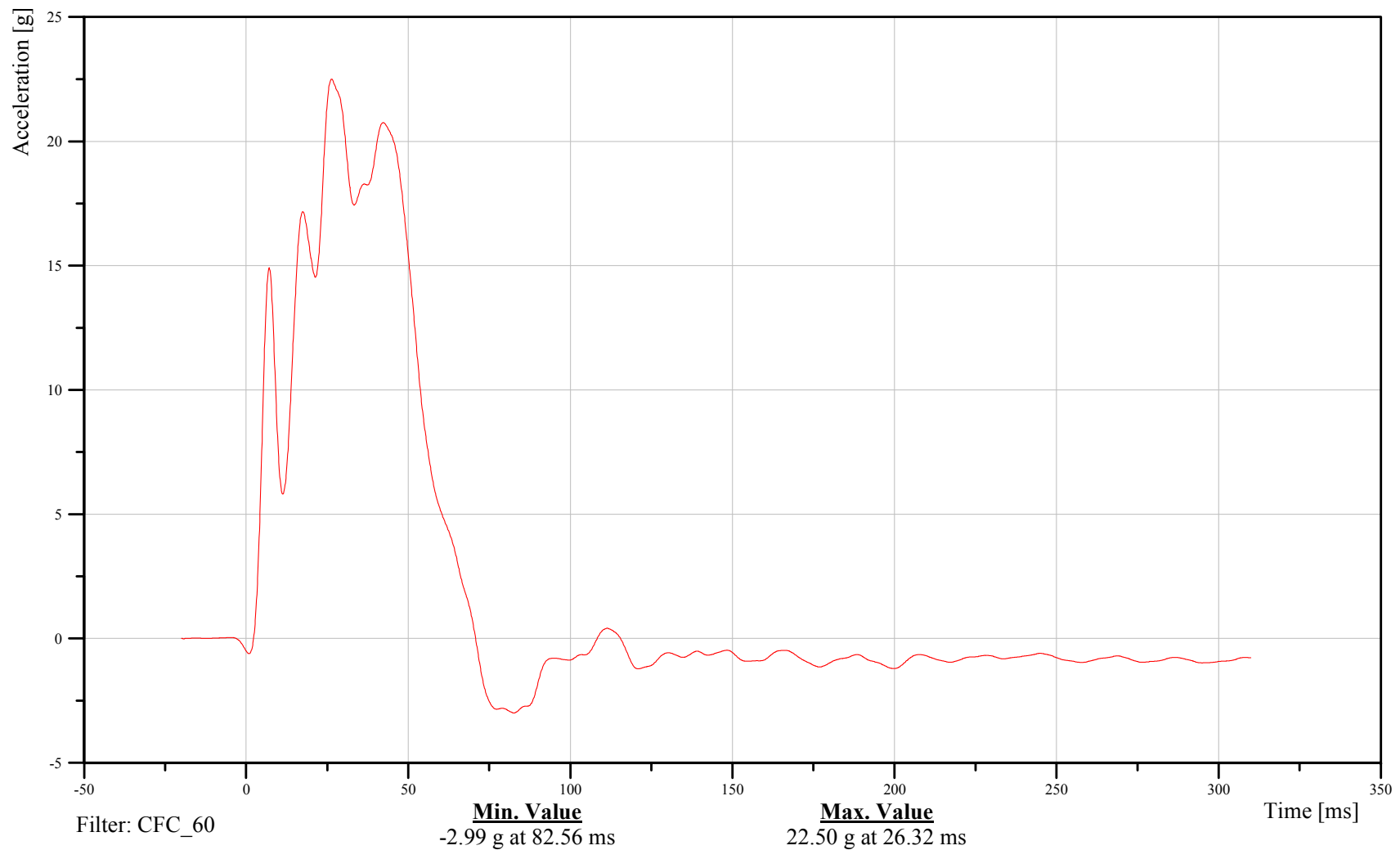
Rear Floorpan Above Axle Y-Axis Acceleration

Customer: VRTC

18FORA000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005

Time: 11:49

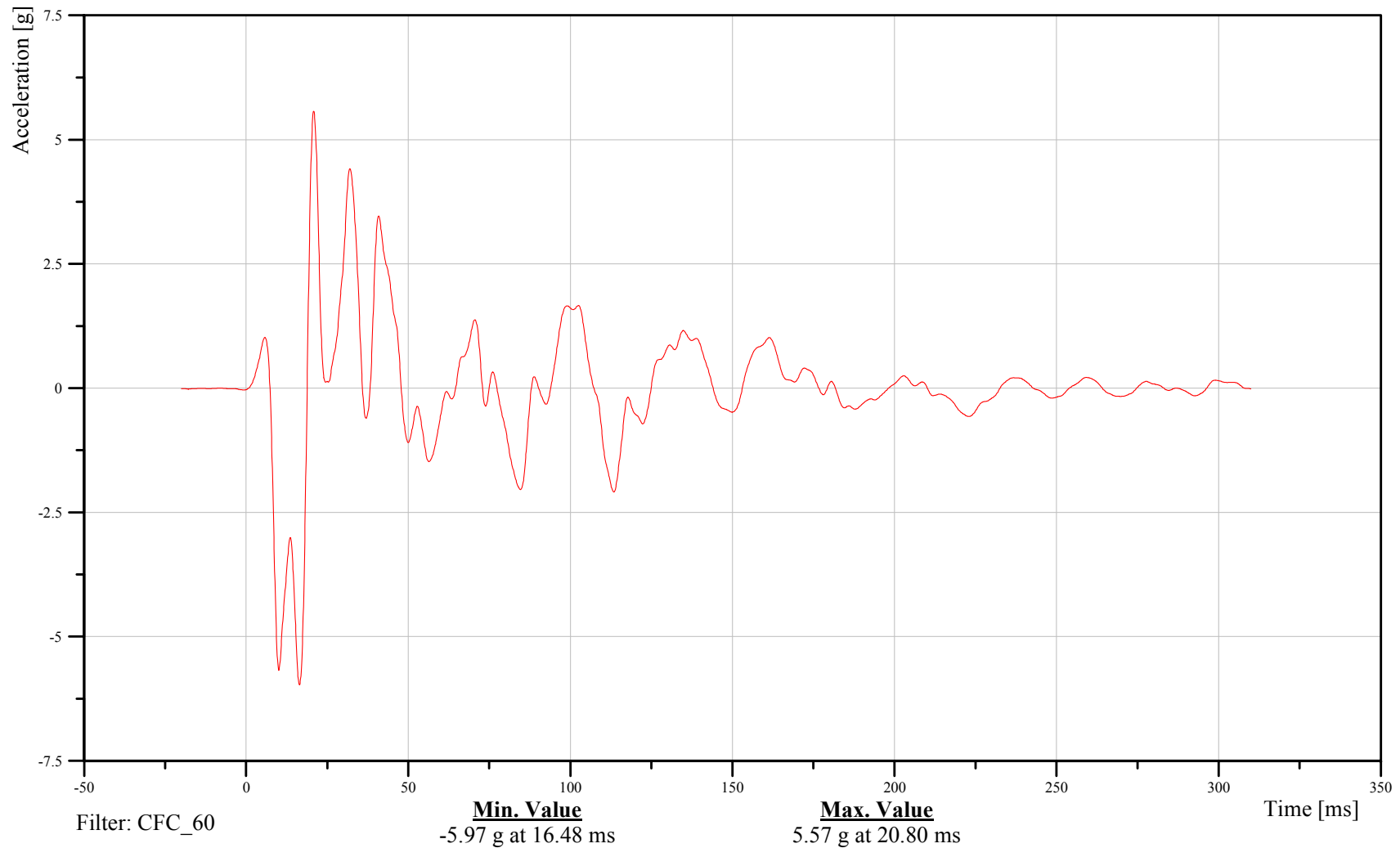
Rear Floorpan Above Axle Z-Axis Acceleration

Customer: VRTC

18FORA000000ACZD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

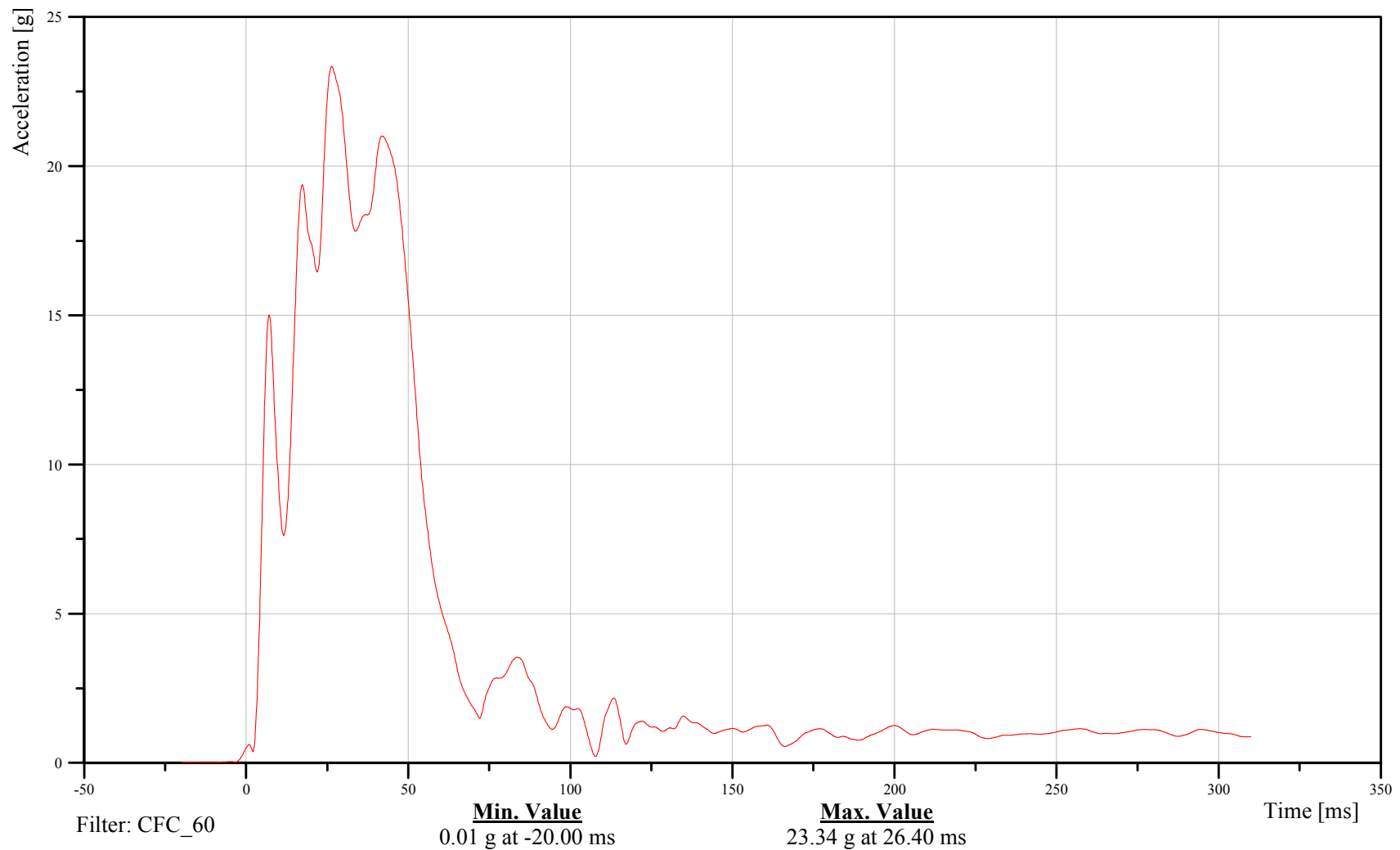
Rear Floorpan Above Axle Resultant Acceleration

Customer: VRTC

18FORA000000ACRD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005

Time: 11:49

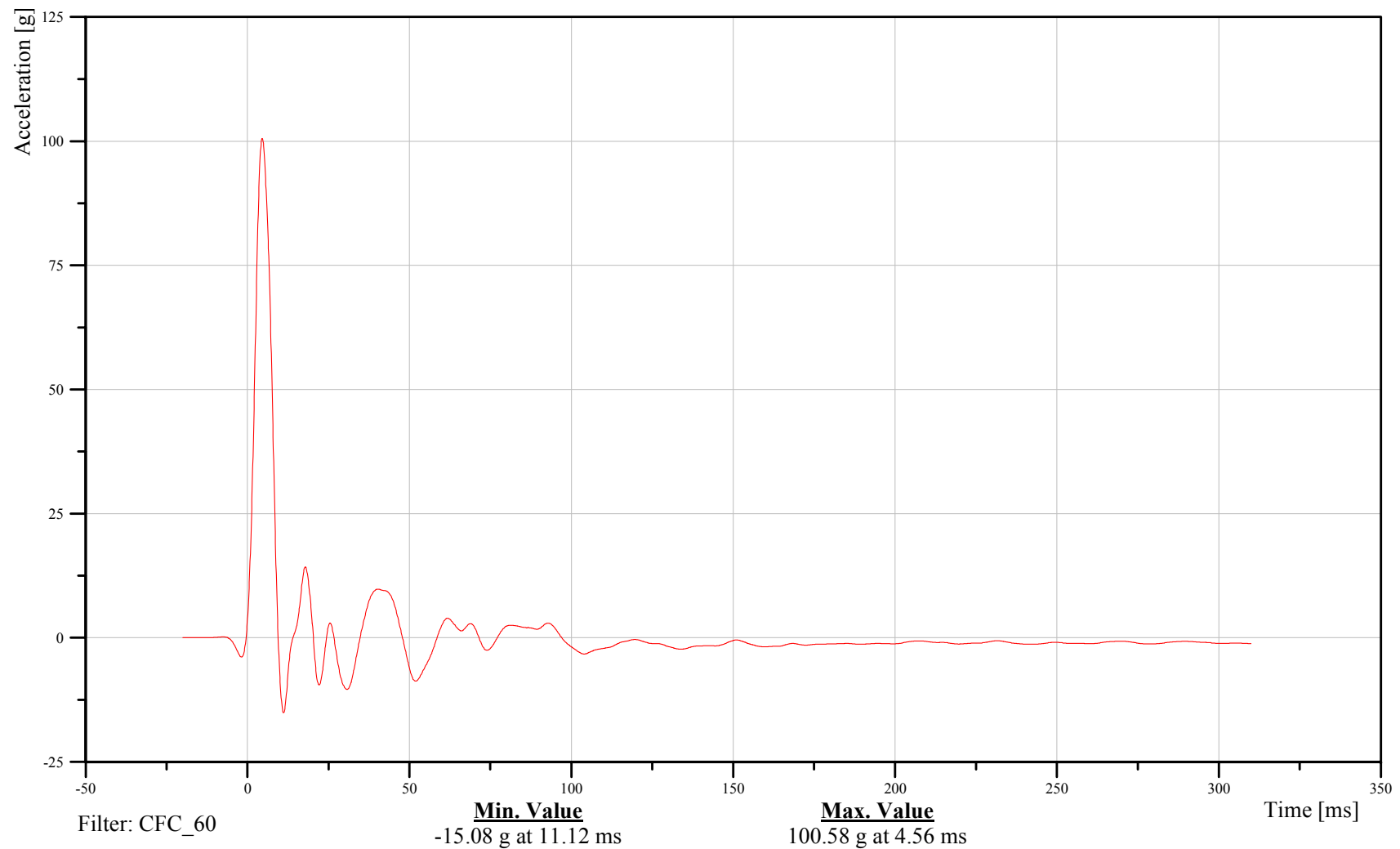
Left Side Sill at Rear Seat Y-Axis Acceleration

Customer: VRTC

14SILBRE0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005

Time: 11:49

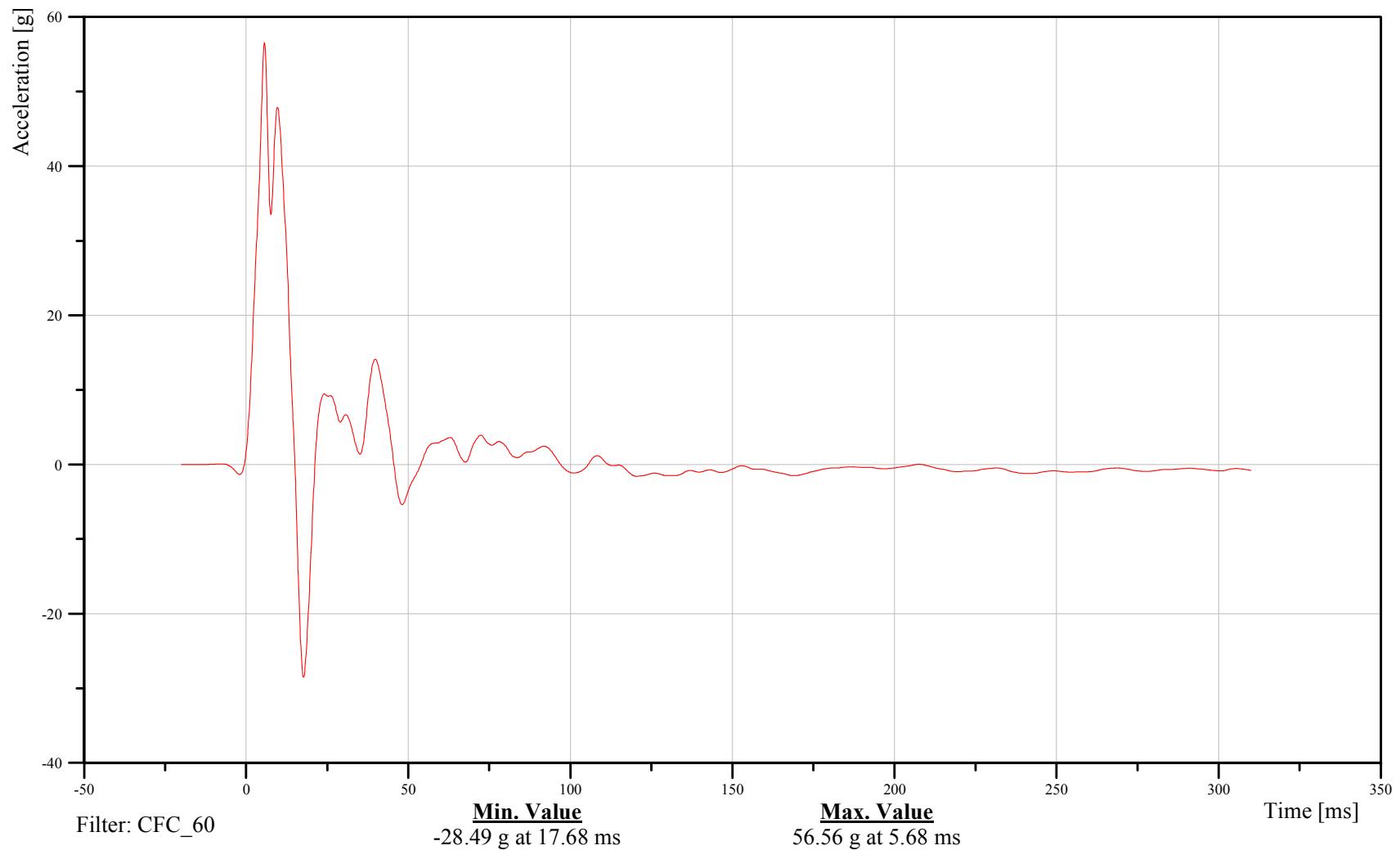
Left Side Sill at Front Seat Y-Axis Acceleration

Customer: VRTC

14SILBFR0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005

Time: 11:49

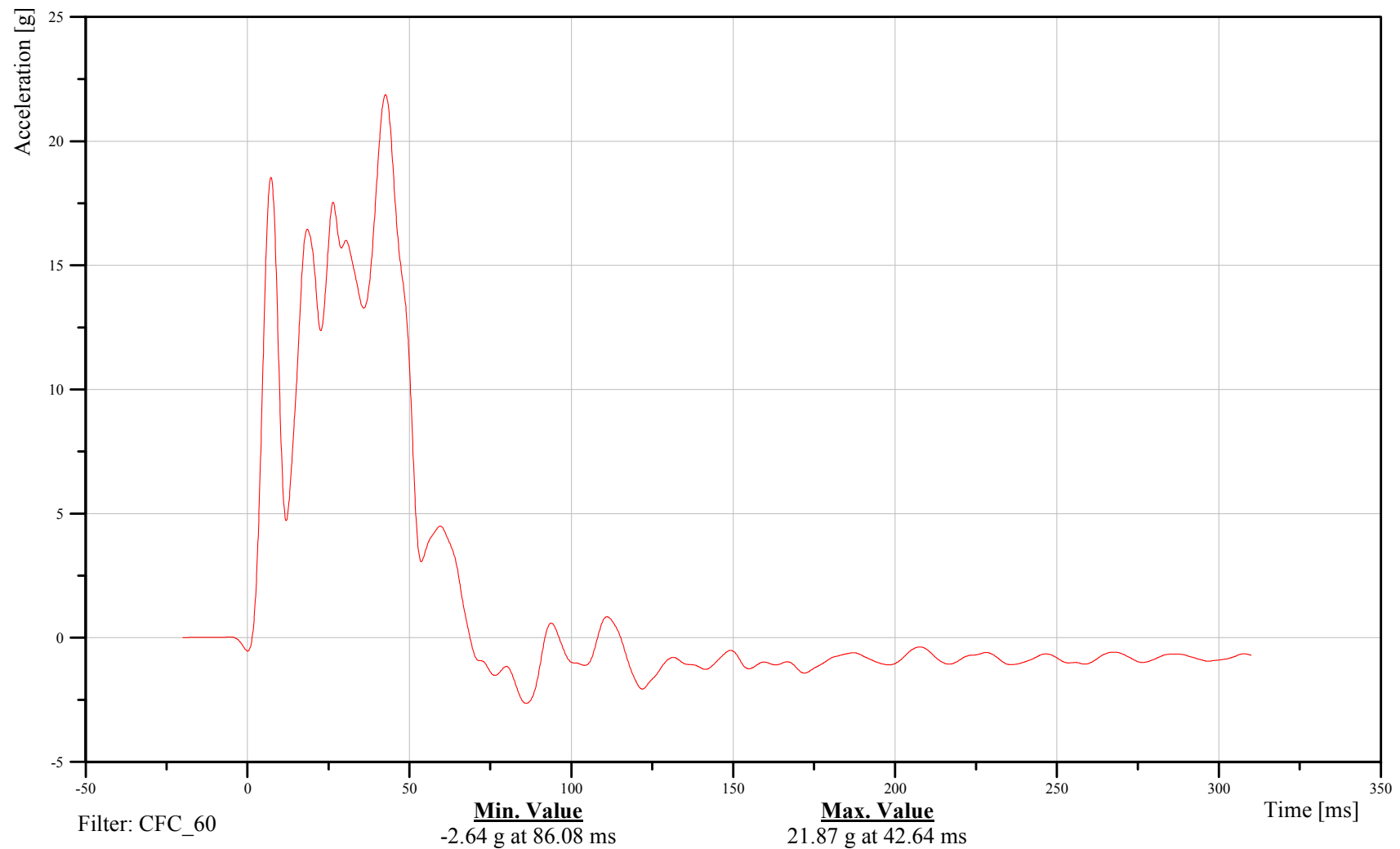
Right Rear Occupant Compartment Y-Axis Acceleration

Customer: VRTC

16VEHCRE0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

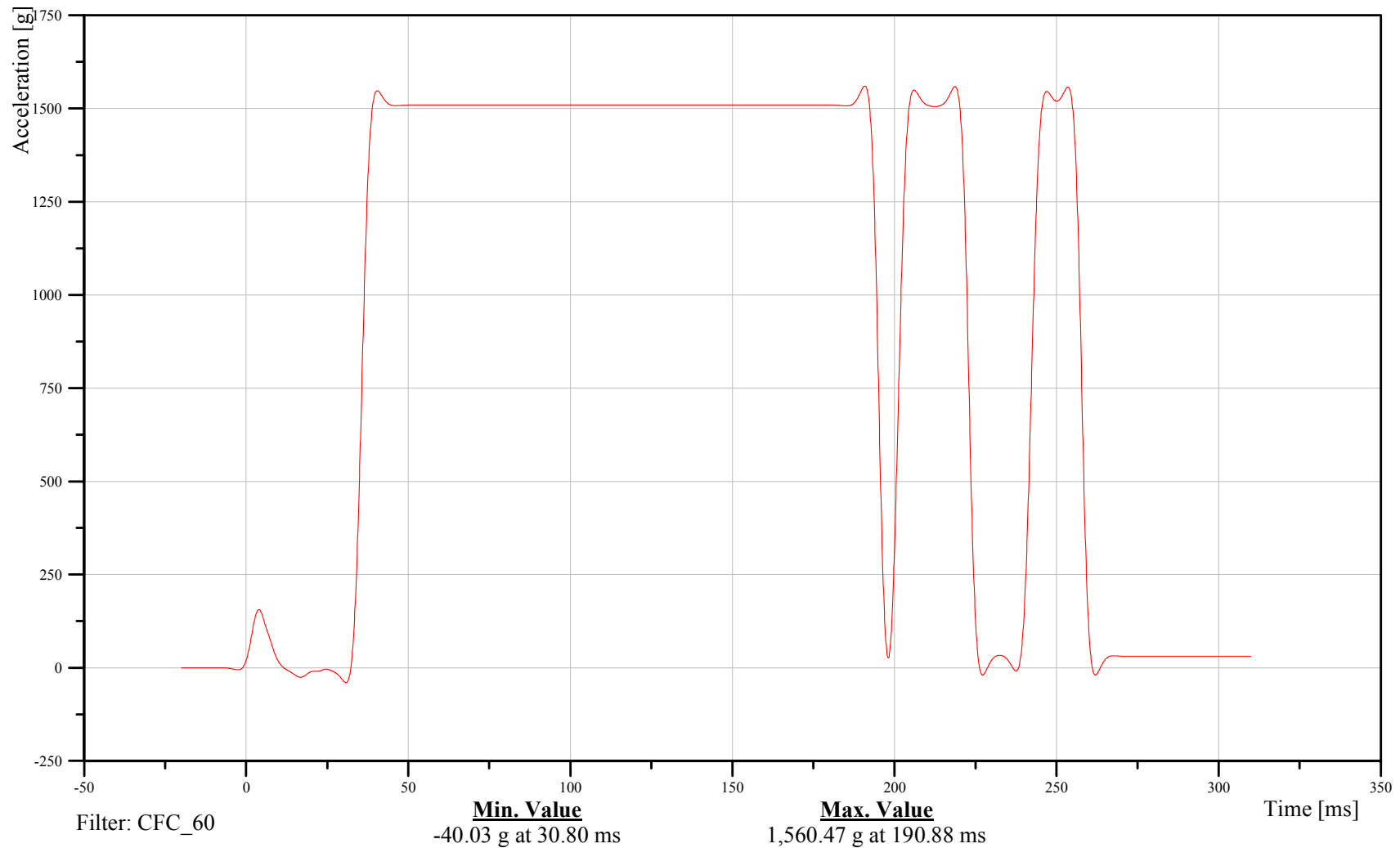
Left Lower B-Post Y-Axis Acceleration

Customer: VRTC

14BPILLO0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

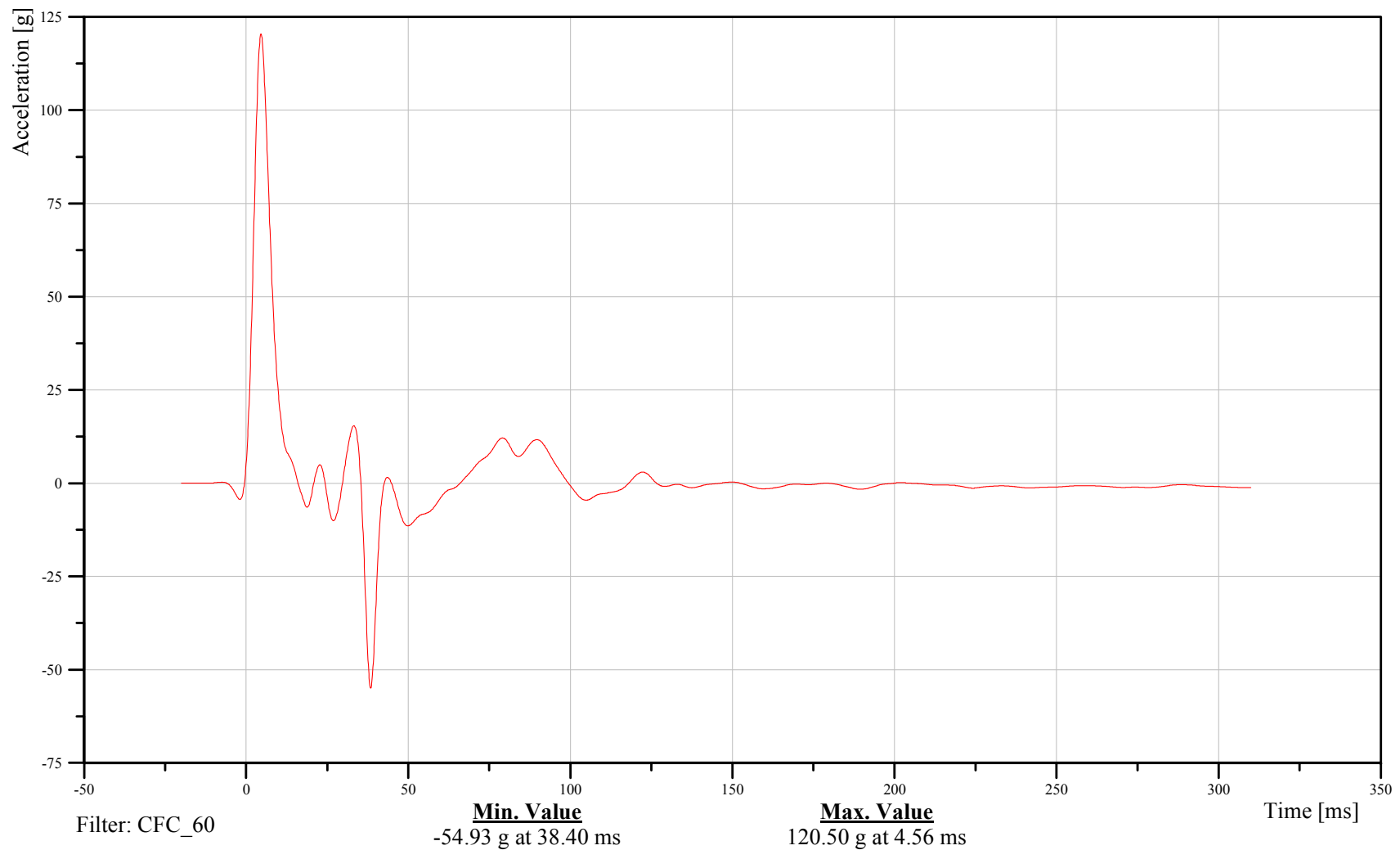
Left Middle B-Post Y-Axis Acceleration

Customer: VRTC

14BPILMI0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

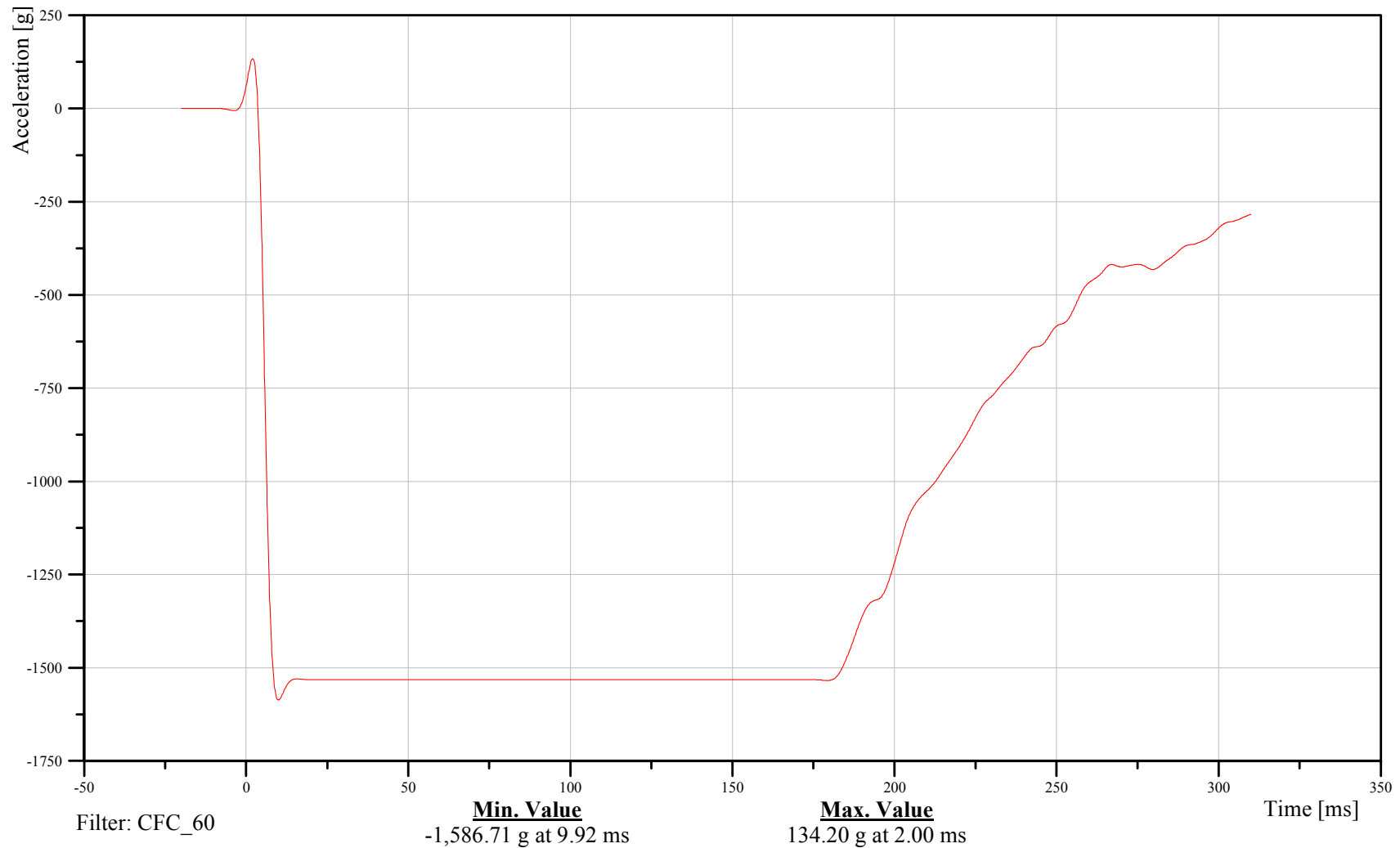
Left Lower A-Post Y-Axis Acceleration

Customer: VRTC

11APILO0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

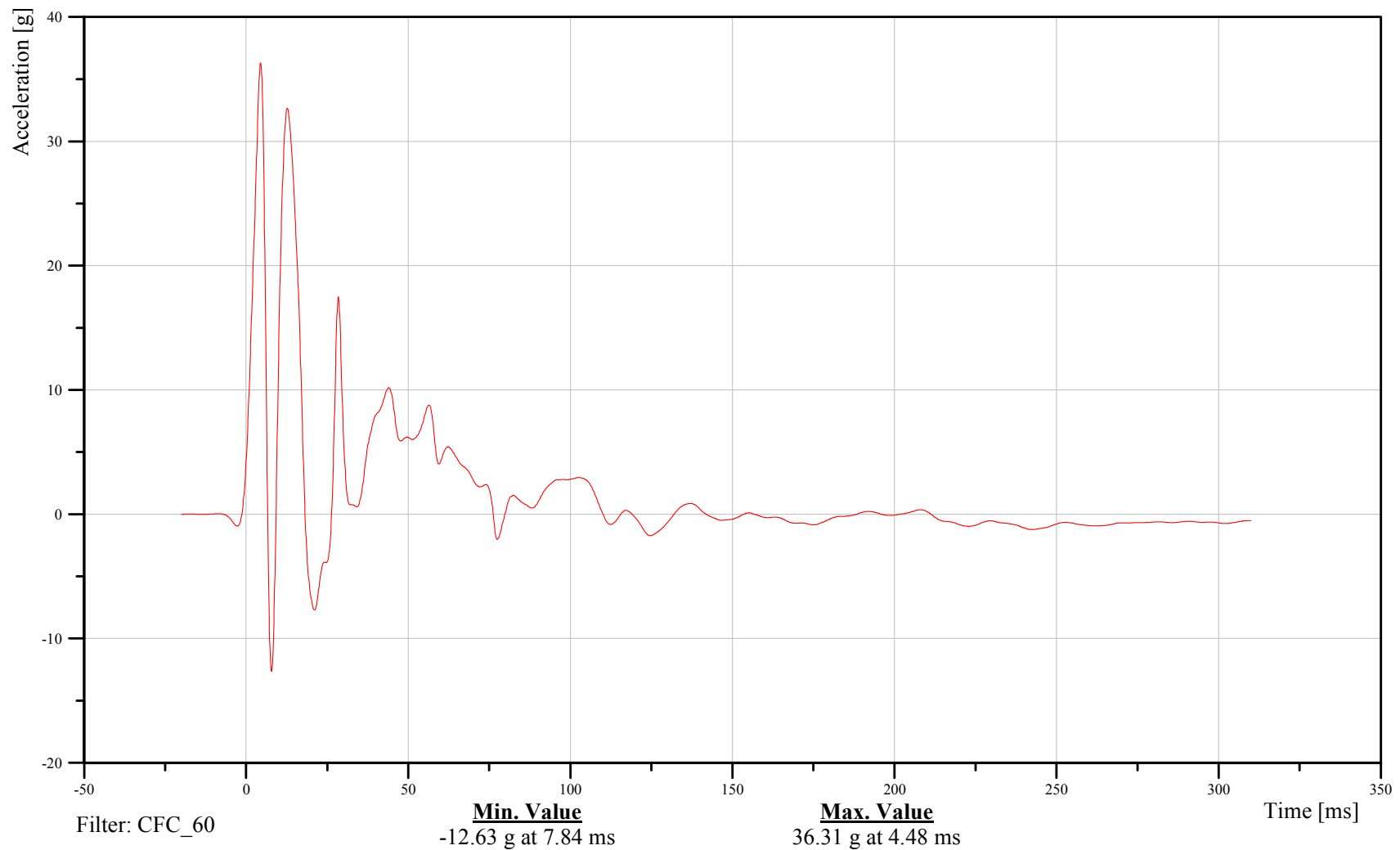
Left Middle A-Post Y-Axis Acceleration

Customer: VRTC

11APILMI0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

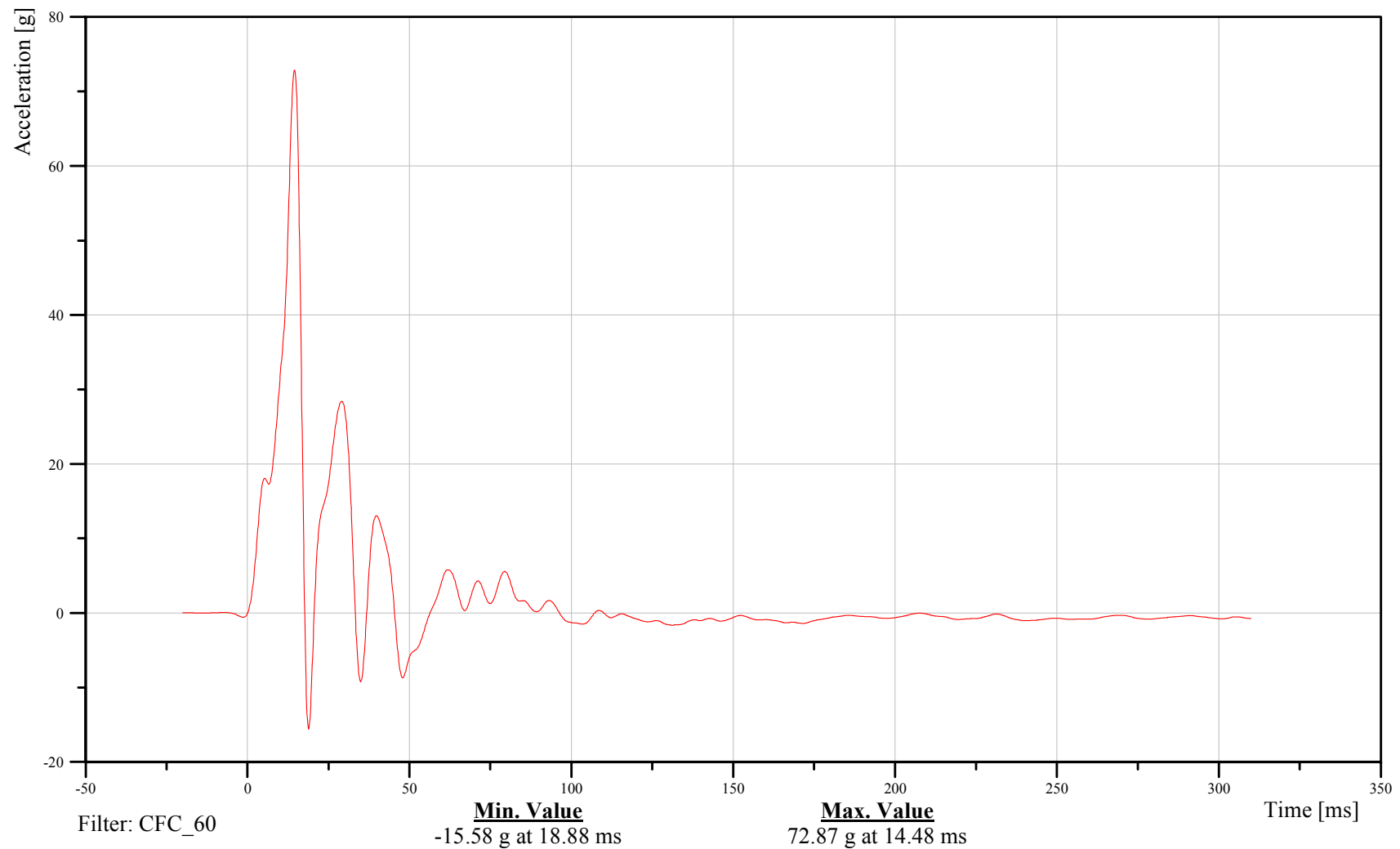
Left Front Seat Track Y-Axis Acceleration

Customer: VRTC

11SETRFR0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

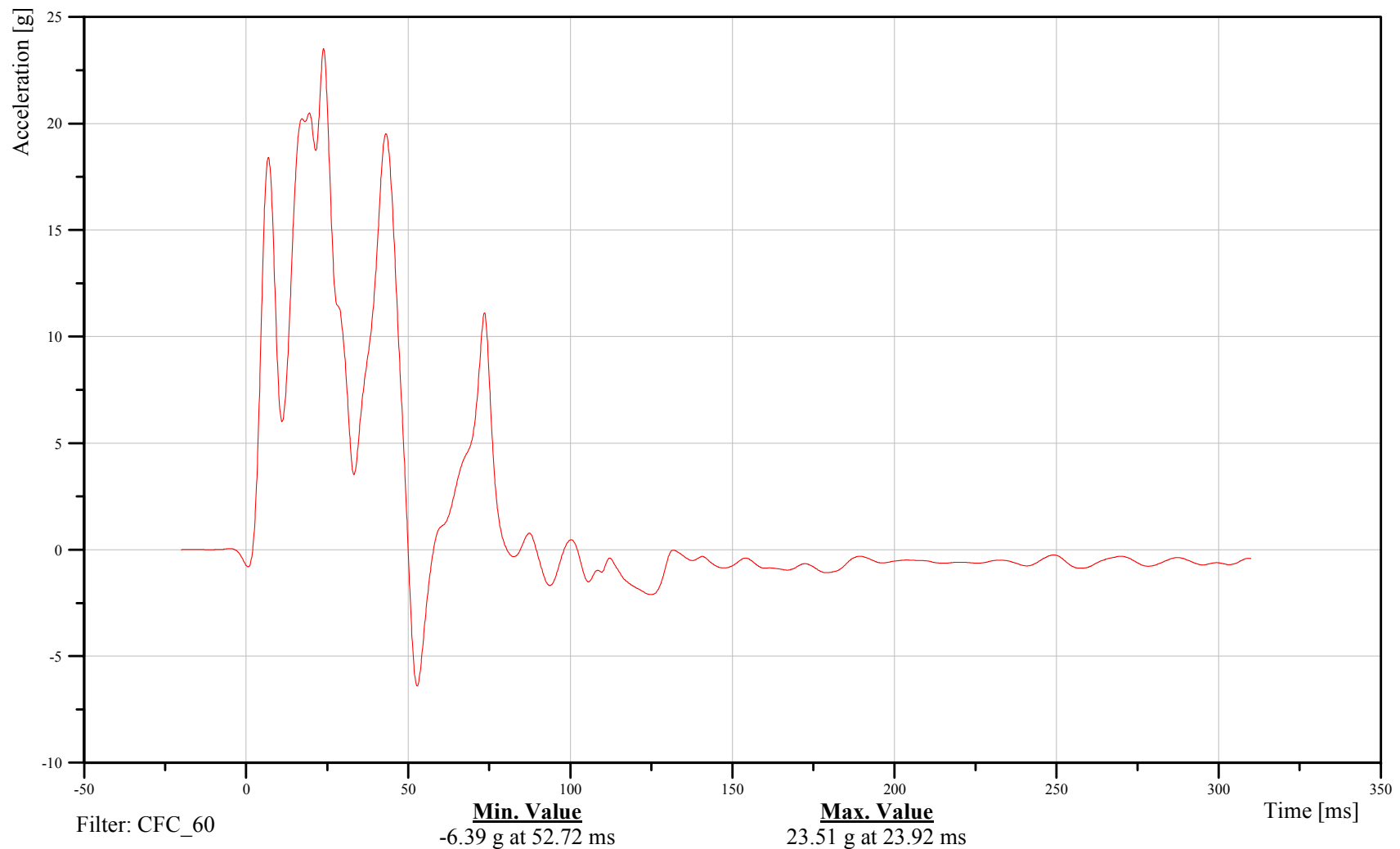
Left Rear Seat Track Y-Axis Acceleration

Customer: VRTC

14SETRLERE00ACYD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Vehicle Center of Gravity X-Axis Acceleration

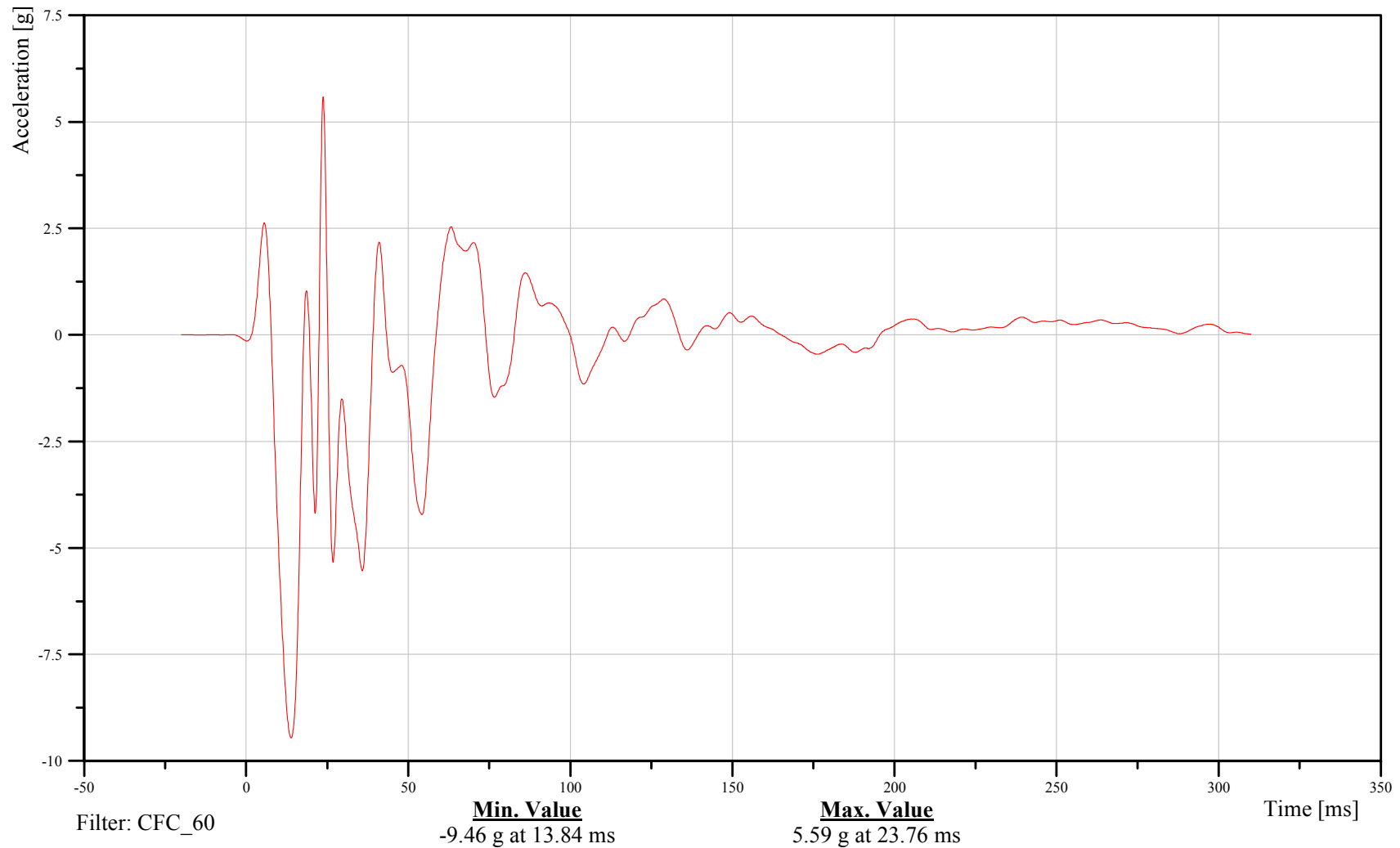
Date: 08/05/2005
Time: 11:49

Customer: VRTC

10VEHCCG0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

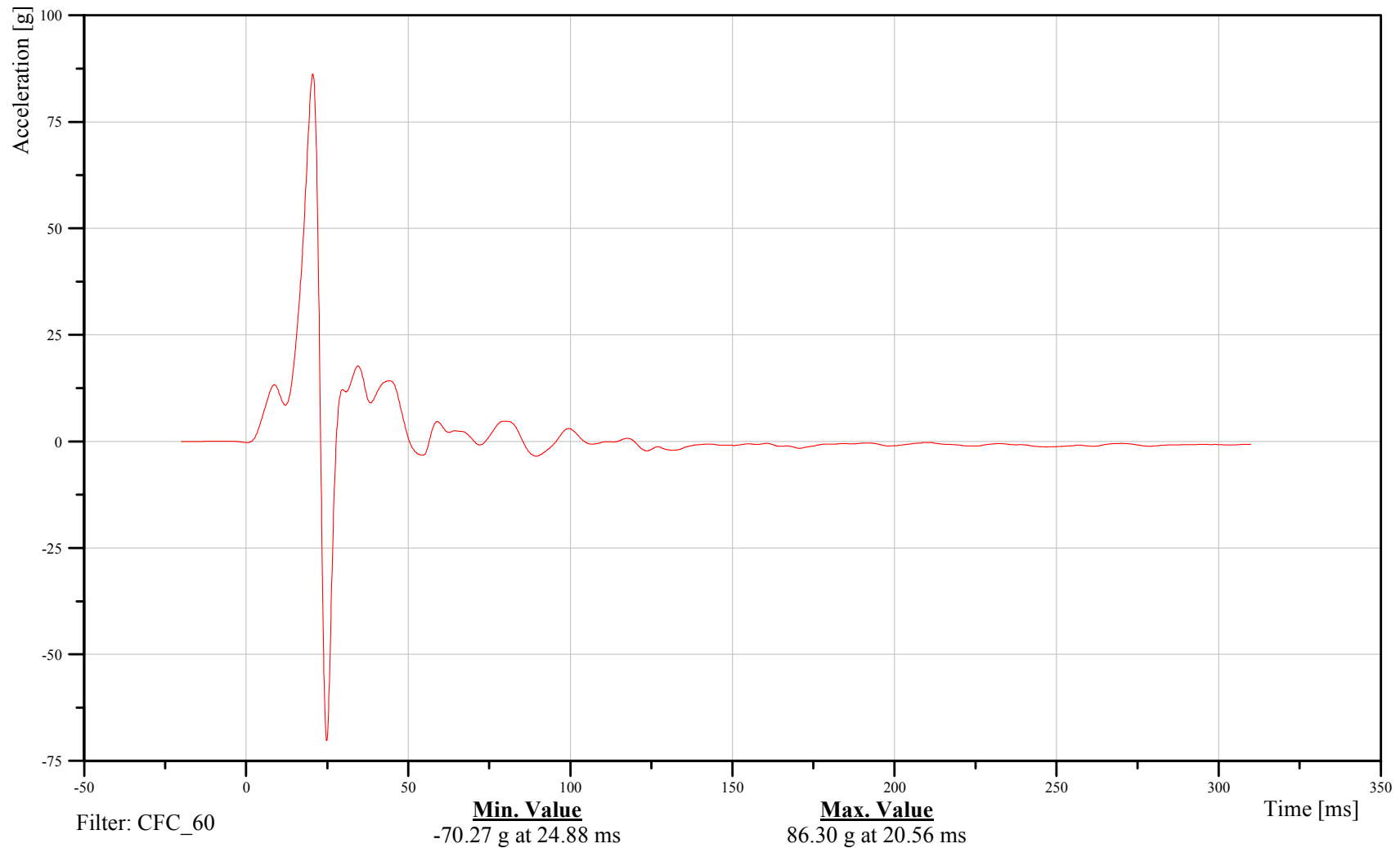
Vehicle Center of Gravity Y-Axis Acceleration

Customer: VRTC

10VEHCCG0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Vehicle Center of Gravity Z-Axis Acceleration

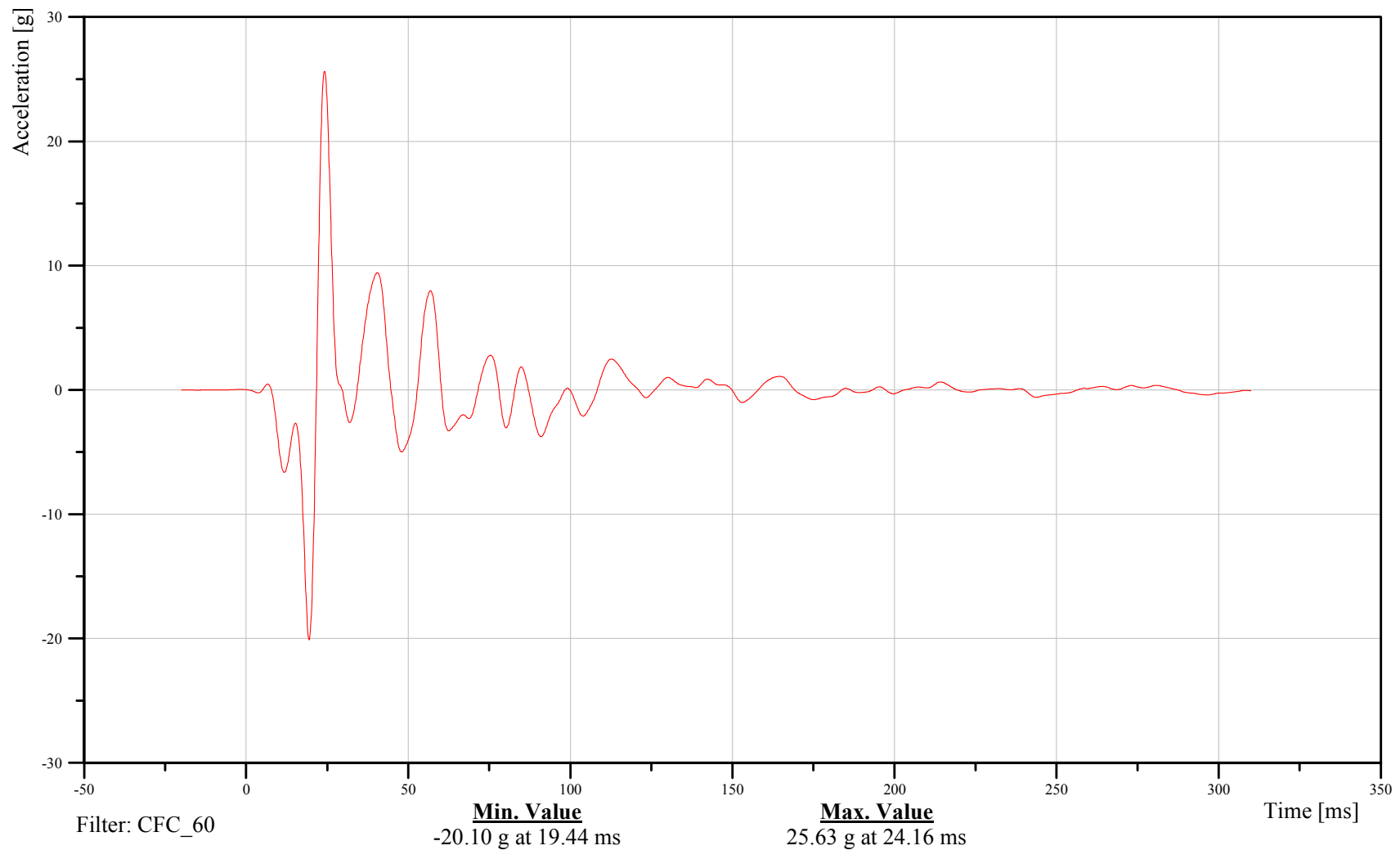
Date: 08/05/2005
Time: 11:49

Customer: VRTC

10VEHCCG0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Vehicle Center of Gravity Resultant Acceleration

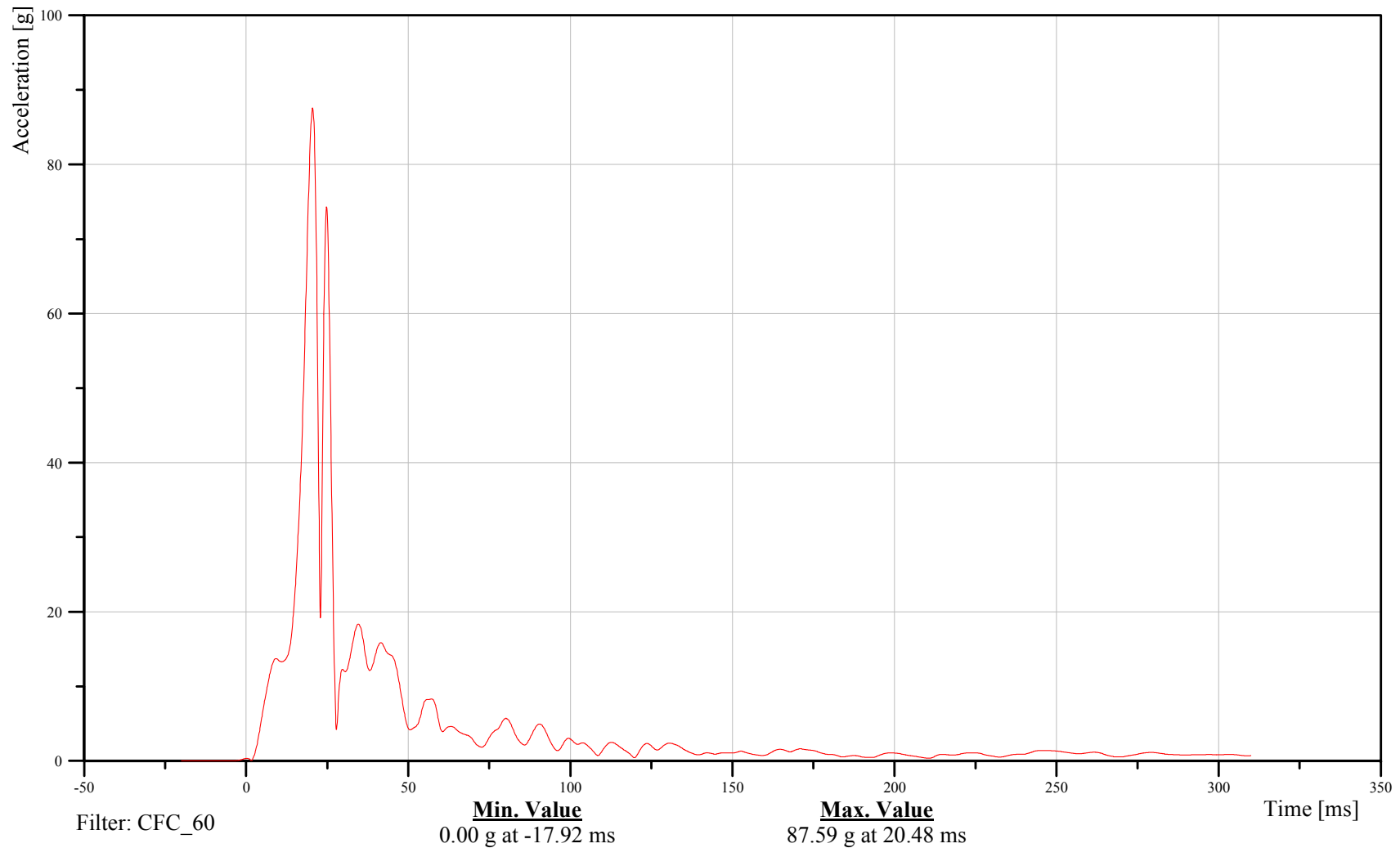
Date: 08/05/2005
Time: 11:49

Customer: VRTC

10VEHCCG0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

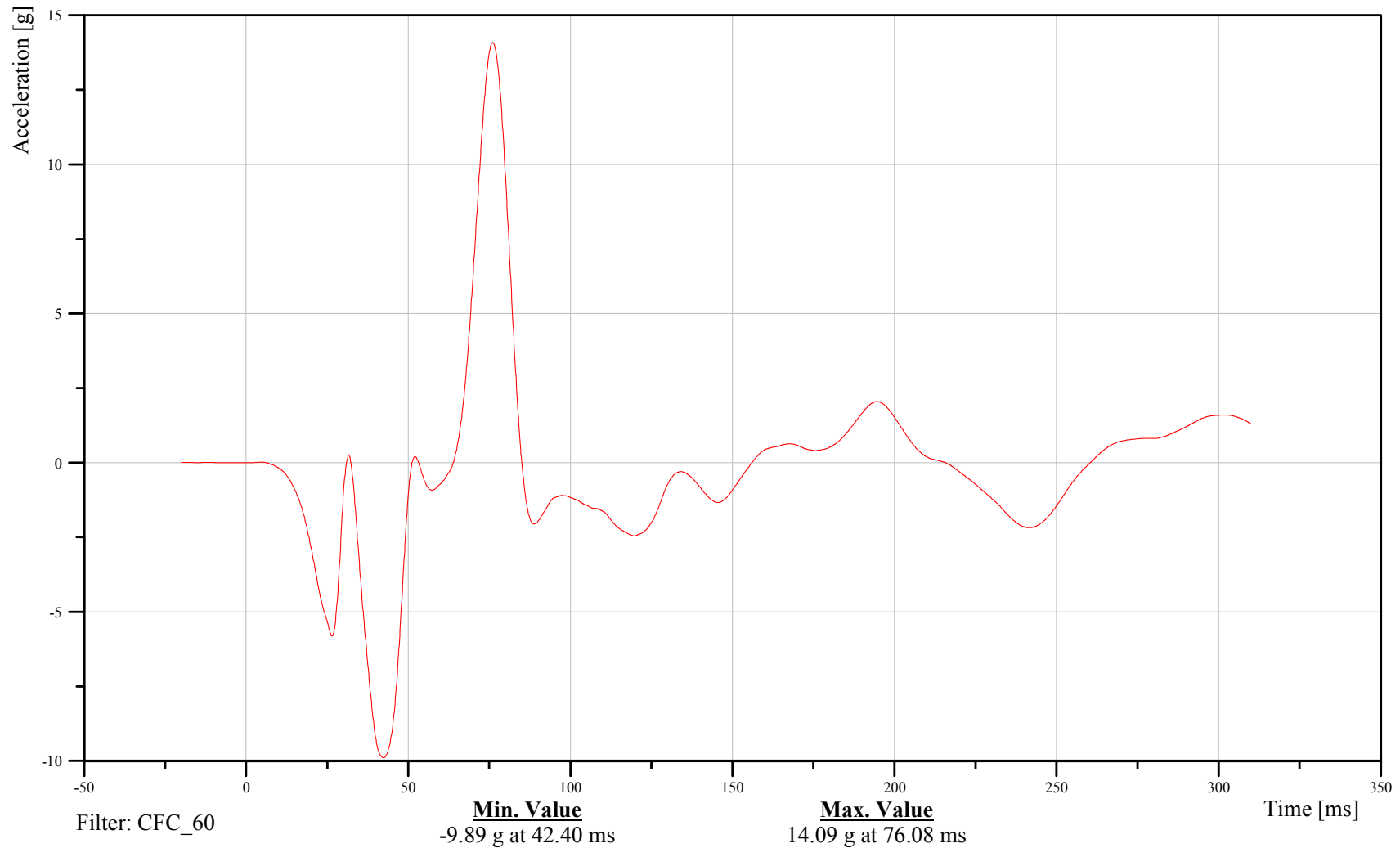
Top of Engine X-Axis Acceleration

Customer: VRTC

12ENGN000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

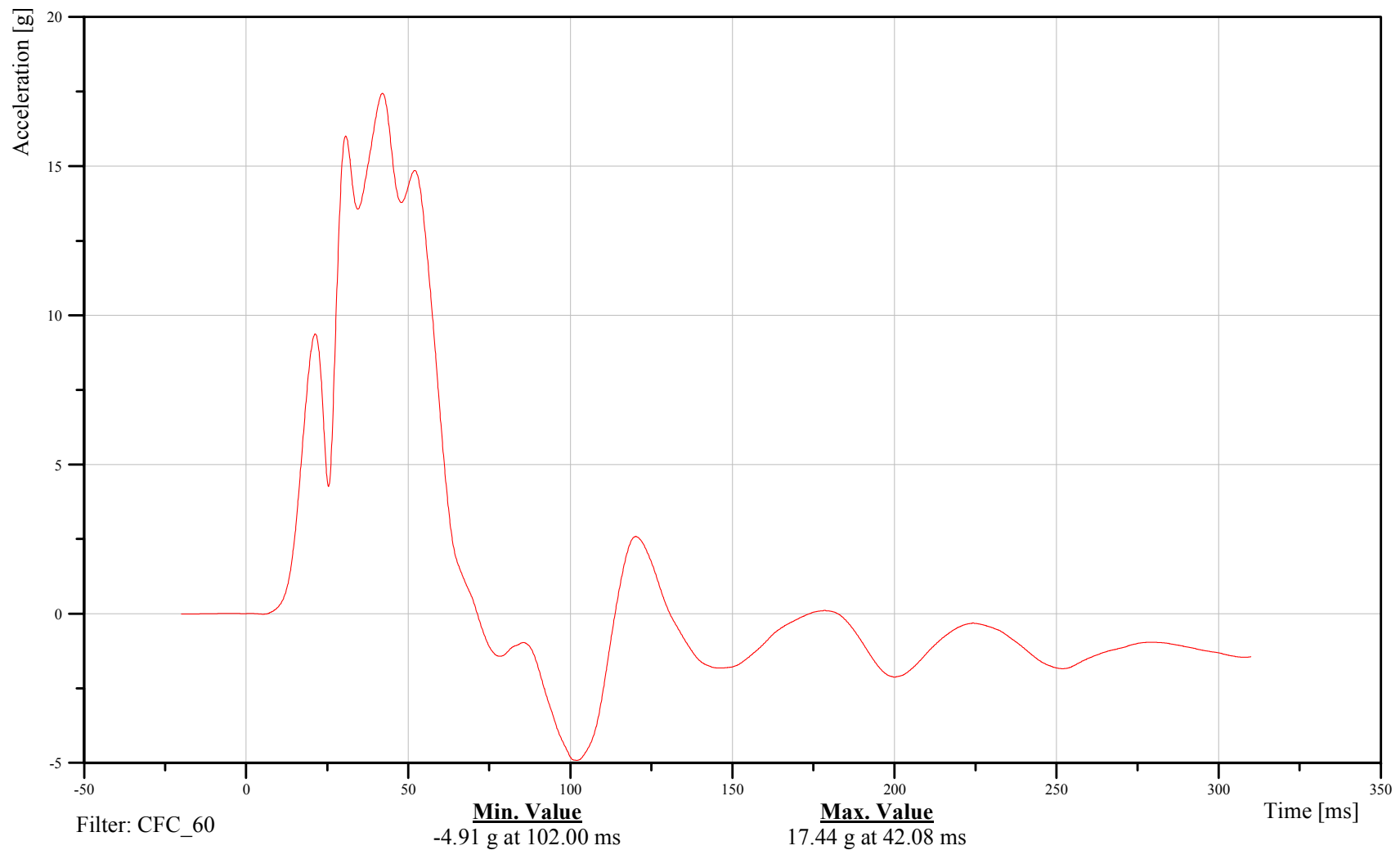
Top of Engine Y-Axis Acceleration

Customer: VRTC

12ENGN000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

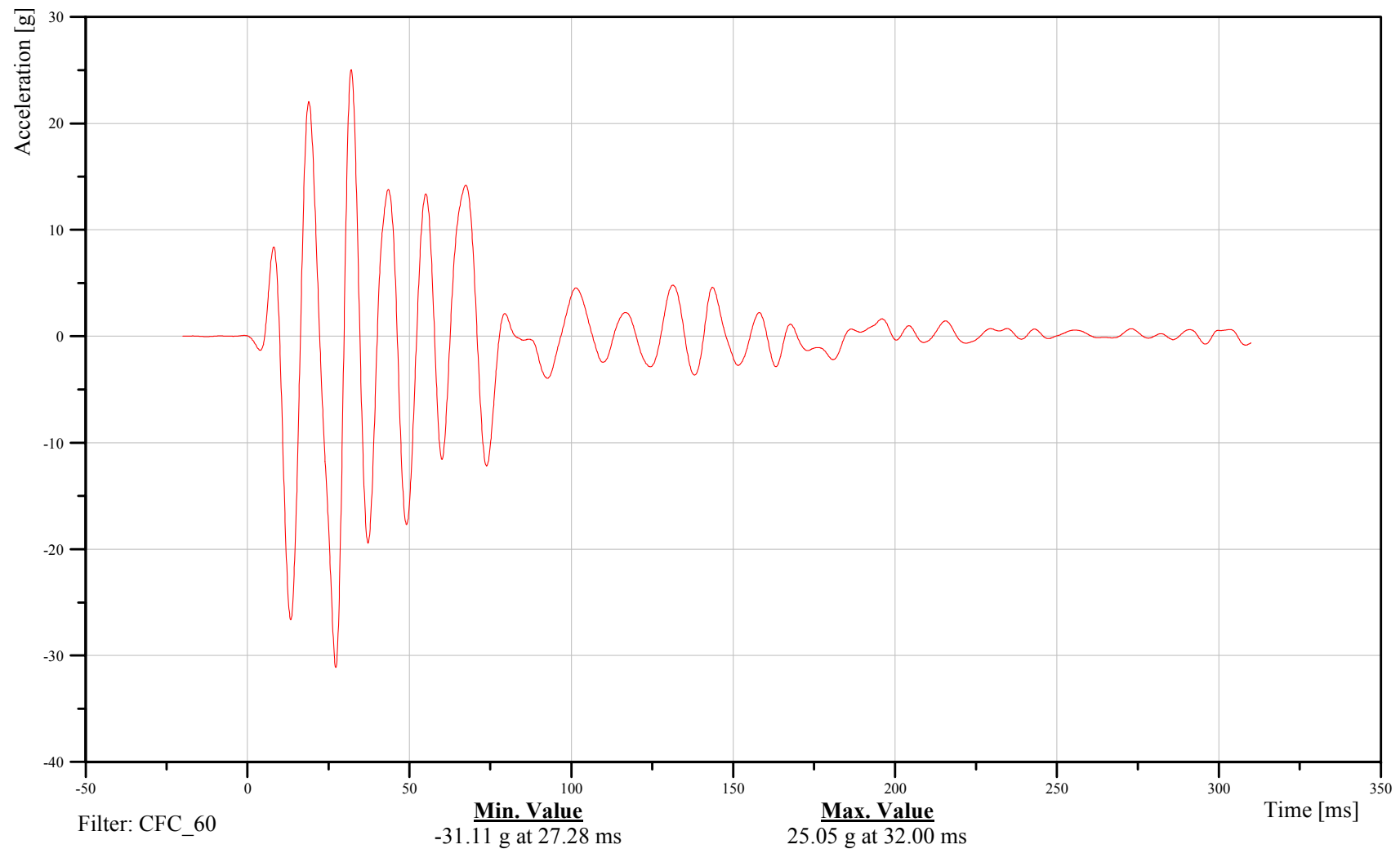
Firewall X-Axis Acceleration

Customer: VRTC

12VEHC000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Firewall Y-Axis Acceleration

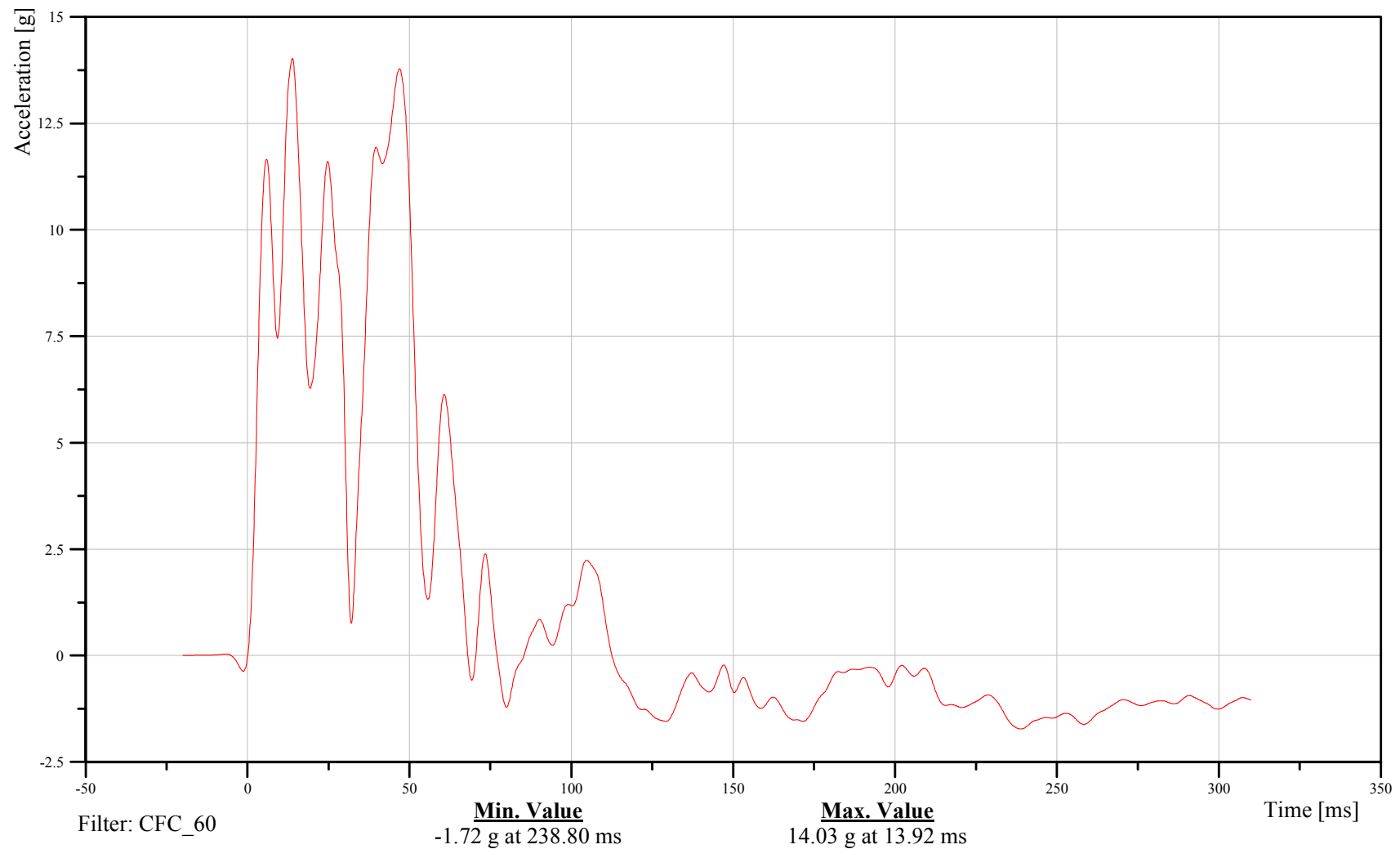
Date: 08/05/2005
Time: 11:49

Customer: VRTC

12VEHC000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

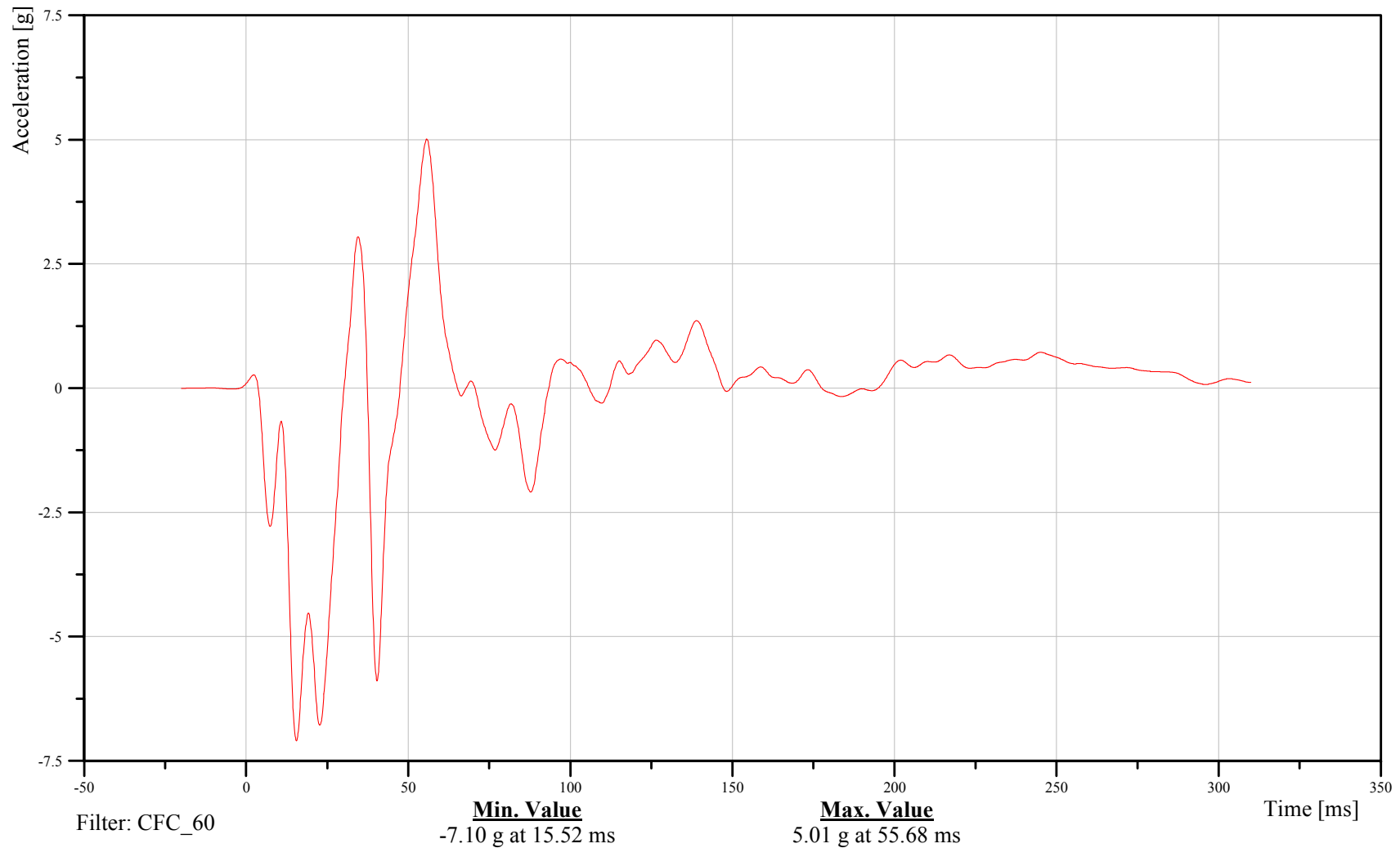
Right Roof Rail X-Axis Acceleration

Customer: VRTC

13ROFR000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

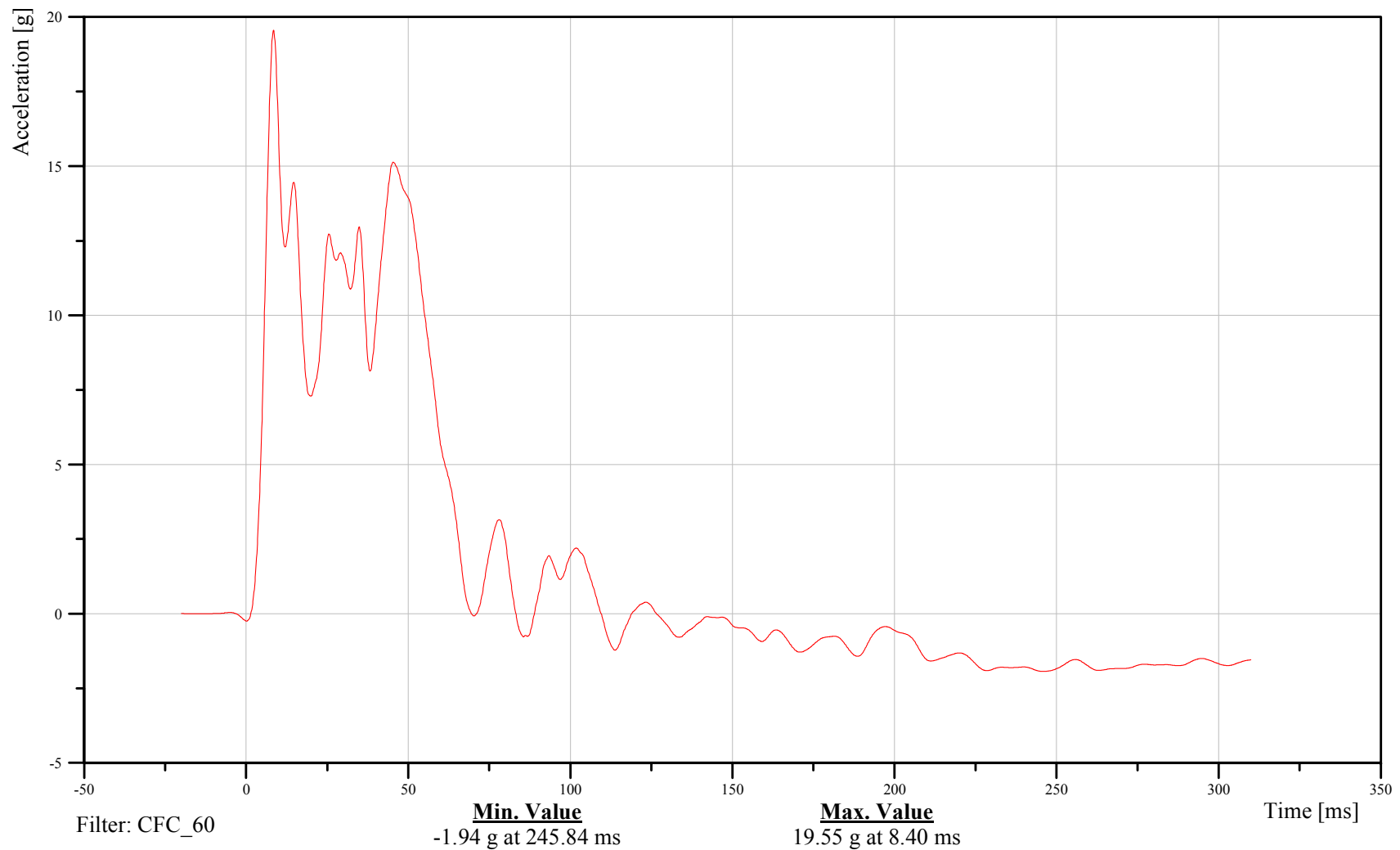
Right Roof Rail Y-Axis Acceleration

Customer: VRTC

13ROFR000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005

Time: 11:49

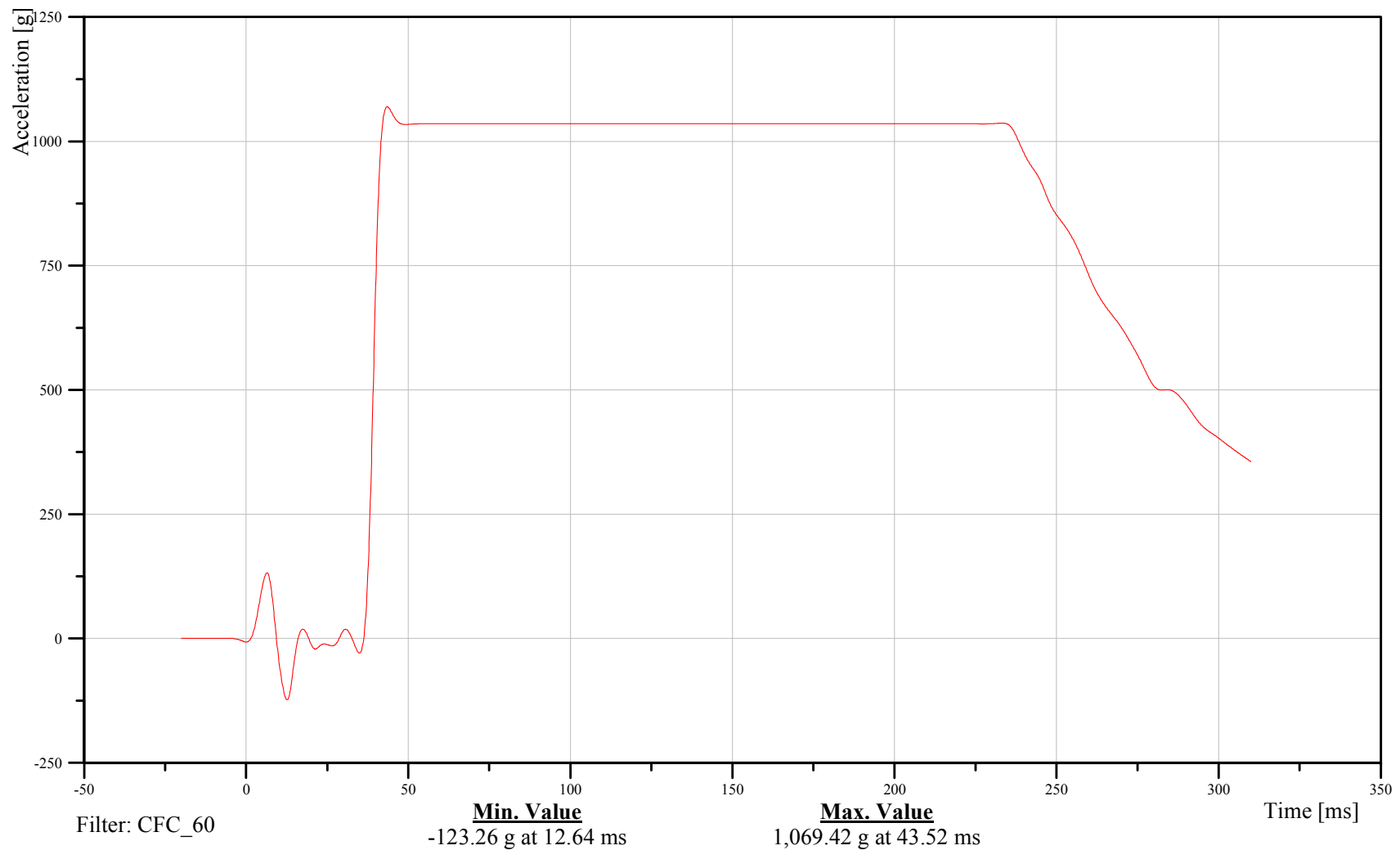
Left Front Door Centerline Y-Axis Acceleration

Customer: VRTC

11DOOR000001ACYD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Left Front Door Mid-Rear Y-Axis Acceleration

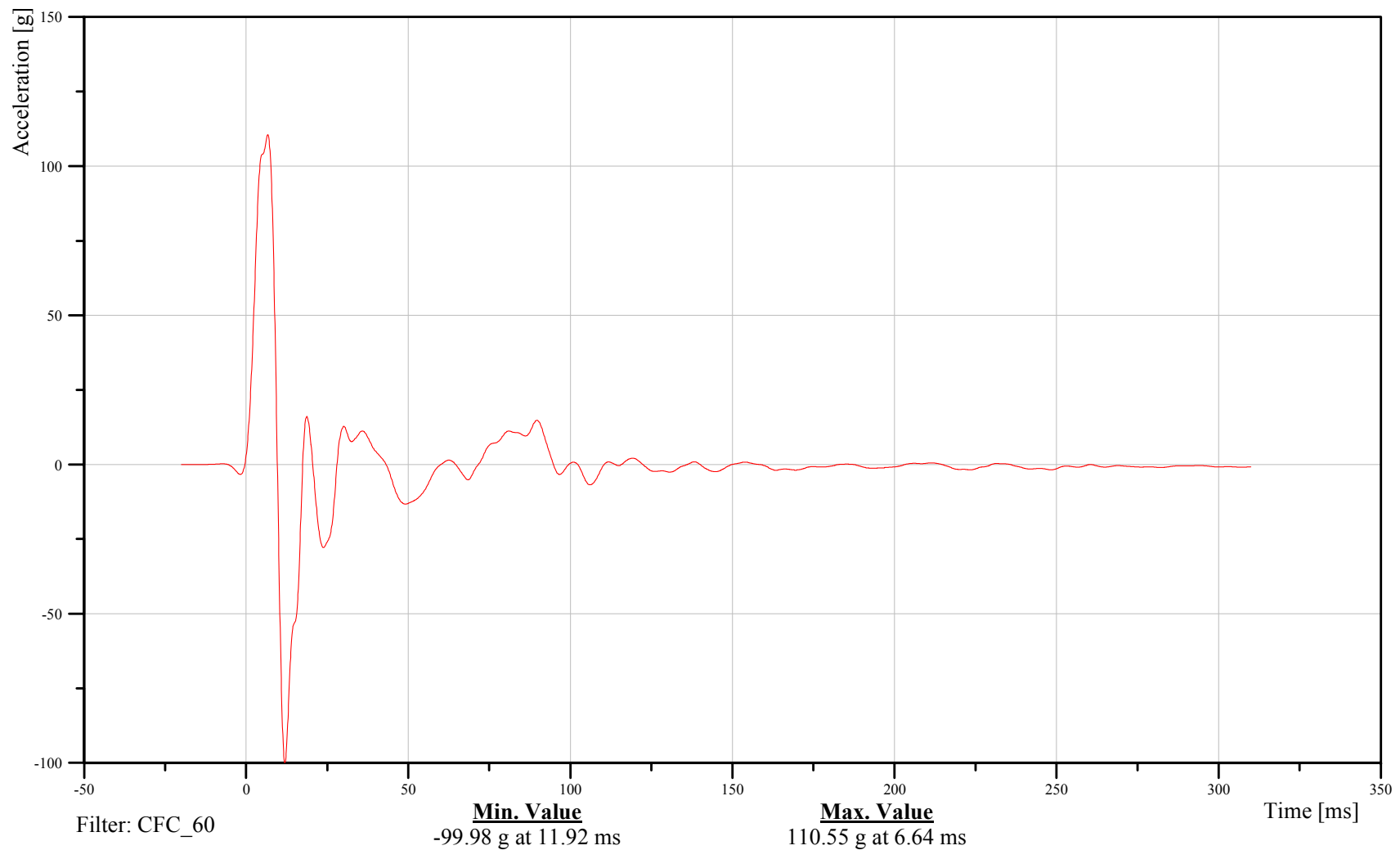
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11DOOR000002ACYD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005

Time: 11:49

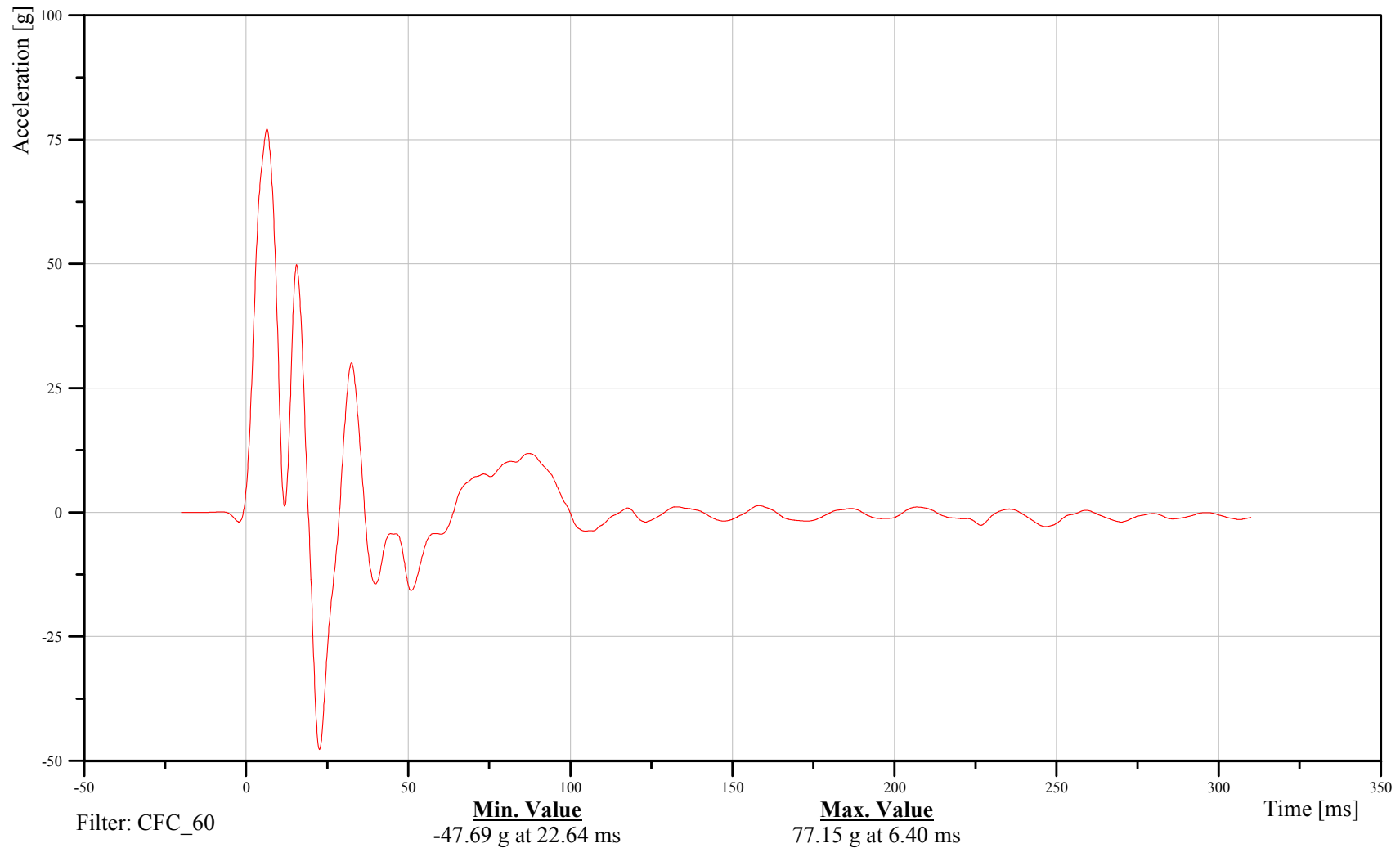
Left Front Door Upper Centerline Y-Axis Acceleration

Customer: VRTC

11DOOR000003ACYD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

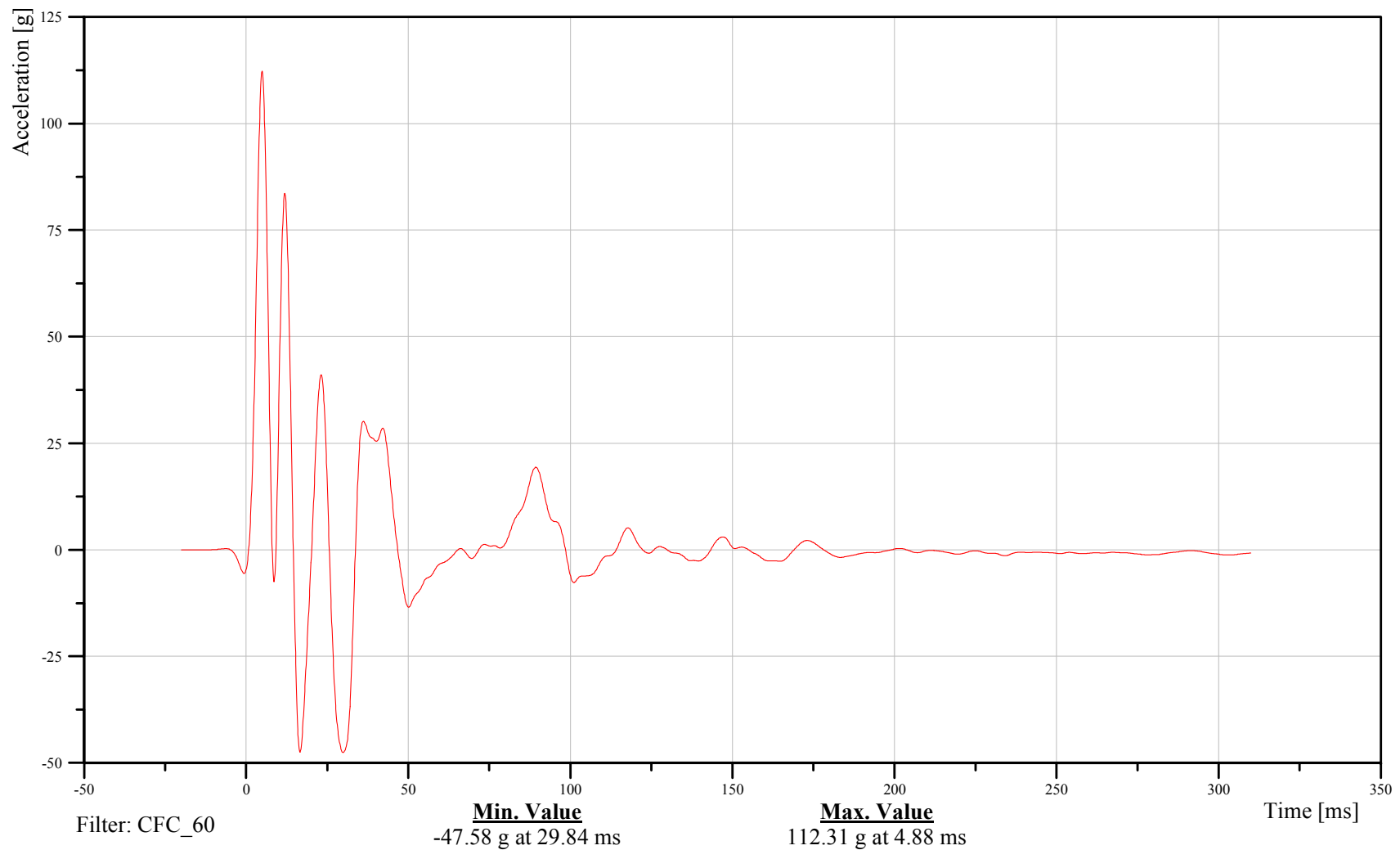
Left Rear Door Mid-Rear Y-Axis Acceleration

Customer: VRTC

14DOOR000001ACYD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005

Time: 11:49

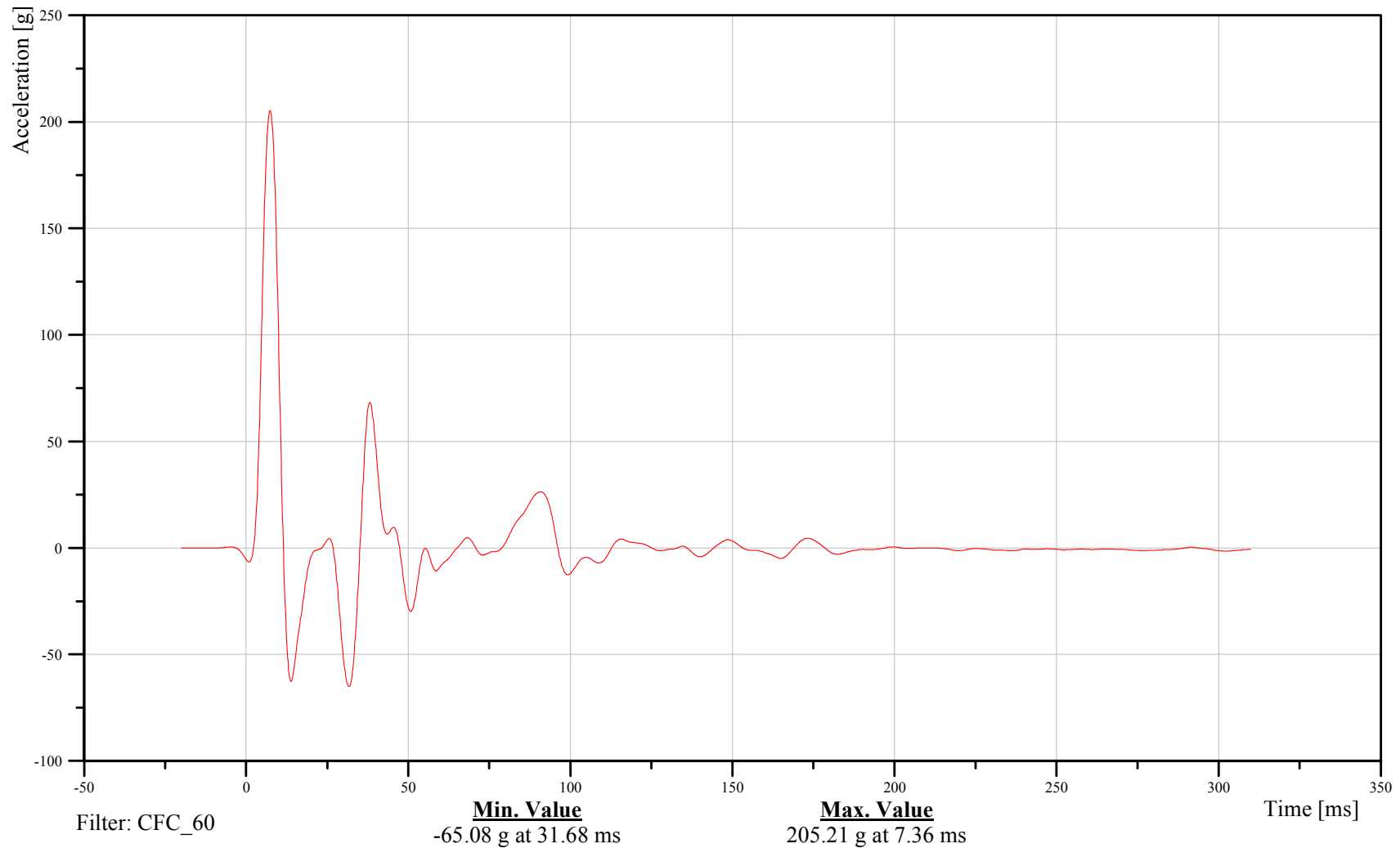
Left Rear Door Upper Centerline Y-Axis Acceleration

Customer: VRTC

14DOOR000002ACYD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Side Torso Airbag Fire

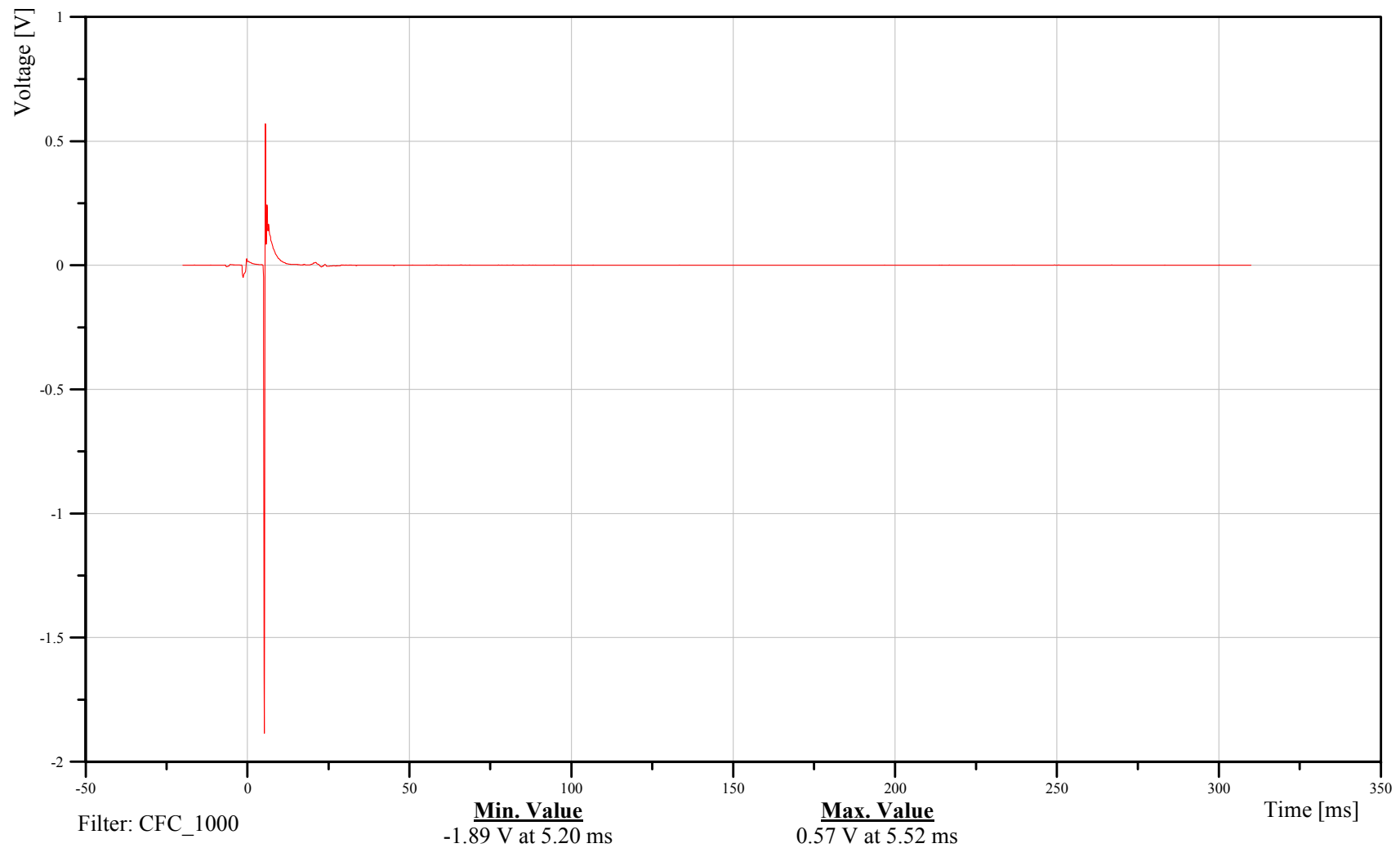
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11SENS000001VO0A

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Side Curtain Airbag Fire

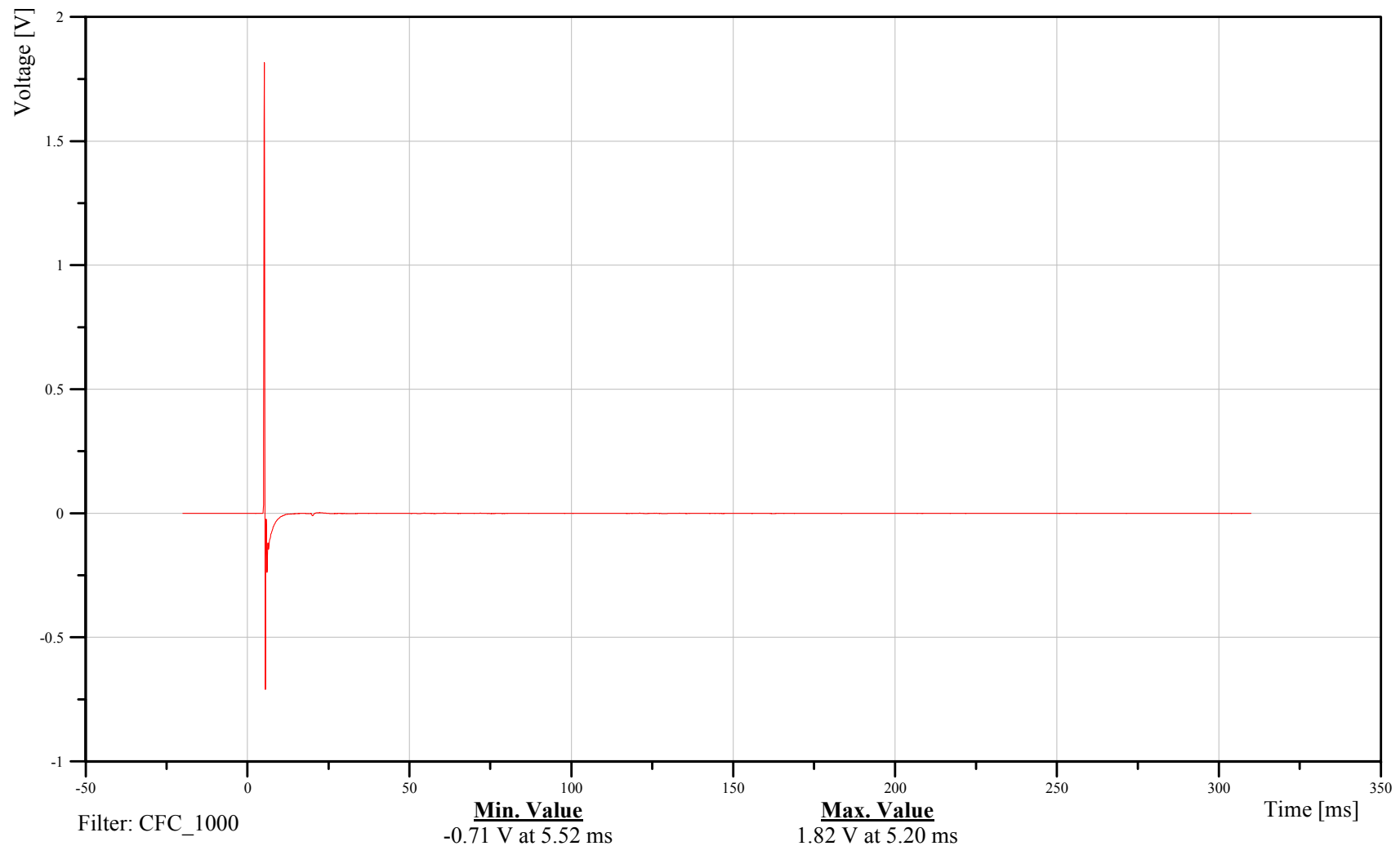
Date: 08/05/2005
Time: 11:49

Customer: VRTC

11SENS000002VO0A

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Non-Struck Side Torso Airbag Fire (disable bag)

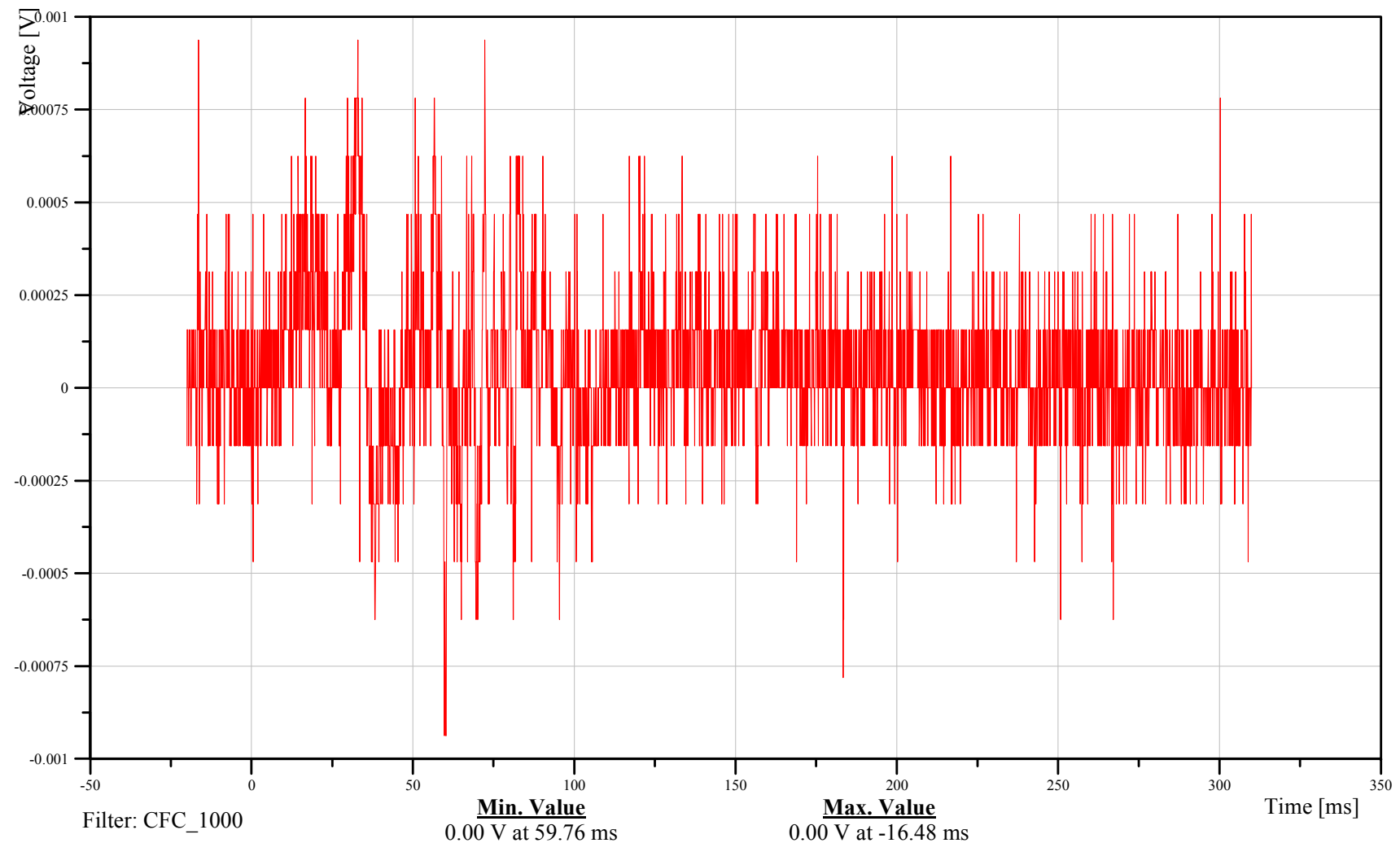
Date: 08/05/2005
Time: 11:49

Customer: VRTC

13SENS000001VO0A

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Non-Struck Side Curtain Airbag Fire (disable bag)

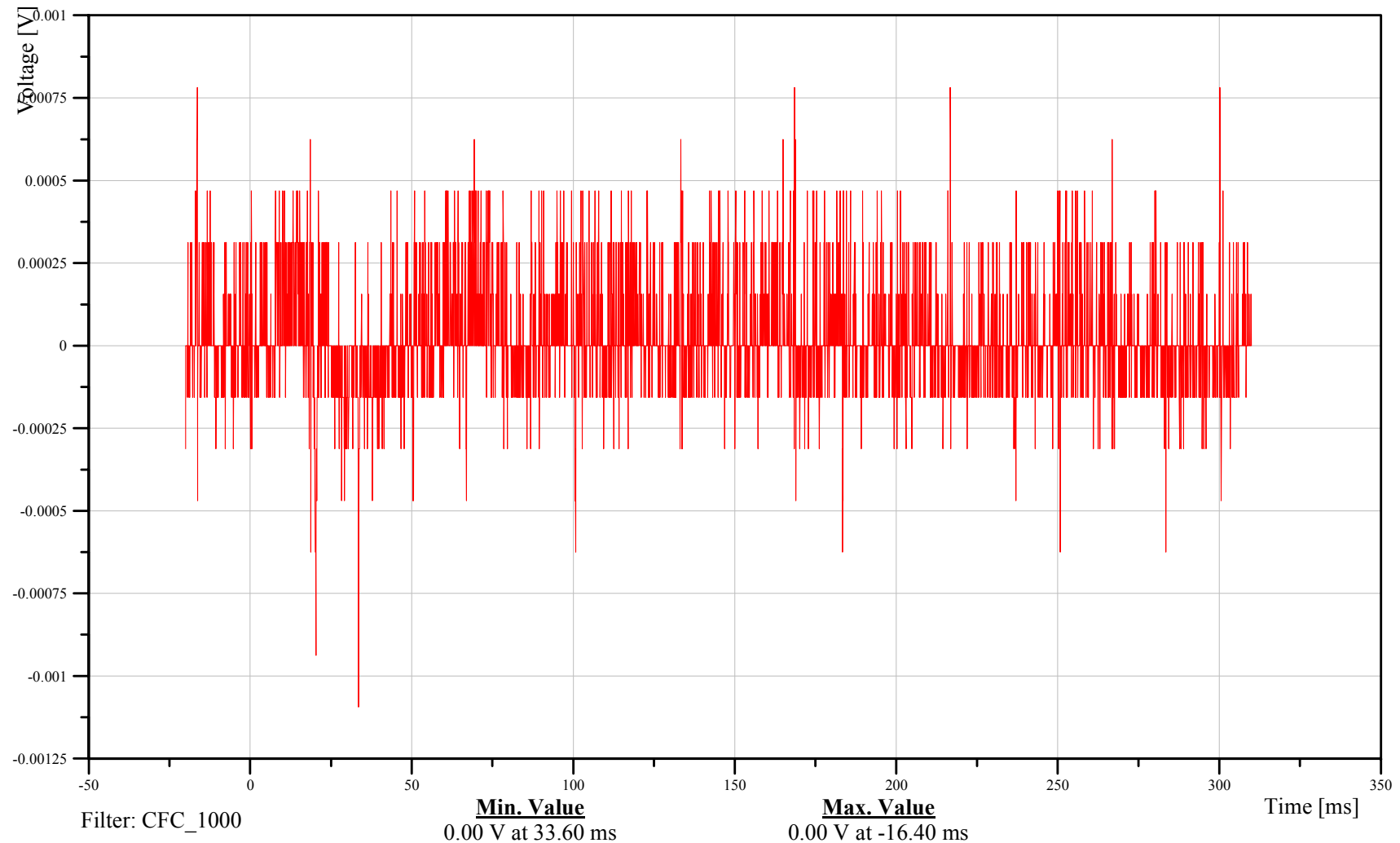
Date: 08/05/2005
Time: 11:49

Customer: VRTC

13SENS000002VO0A

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

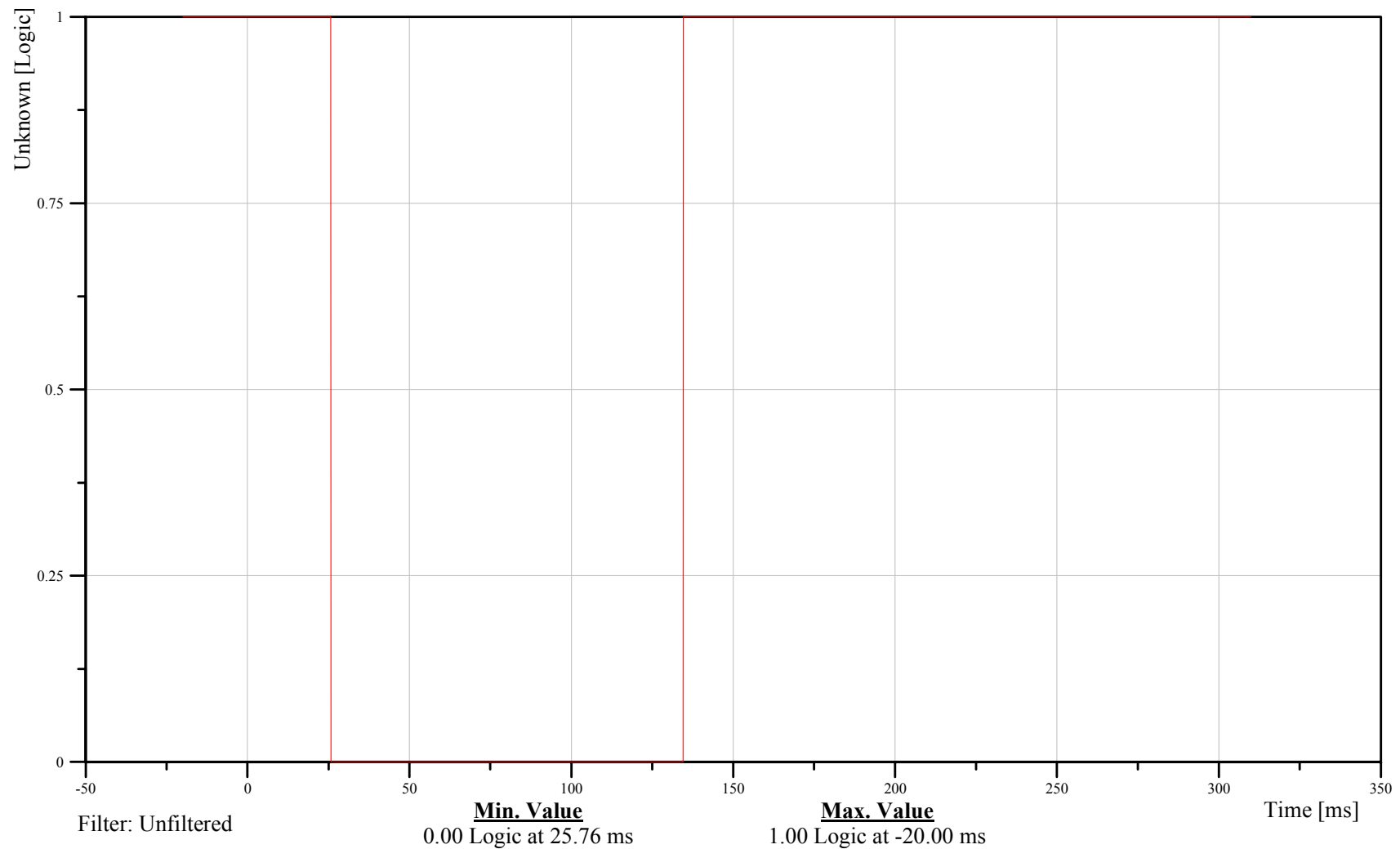
Dummy Head contact

Customer: VRTC

11CONT000001EV00

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

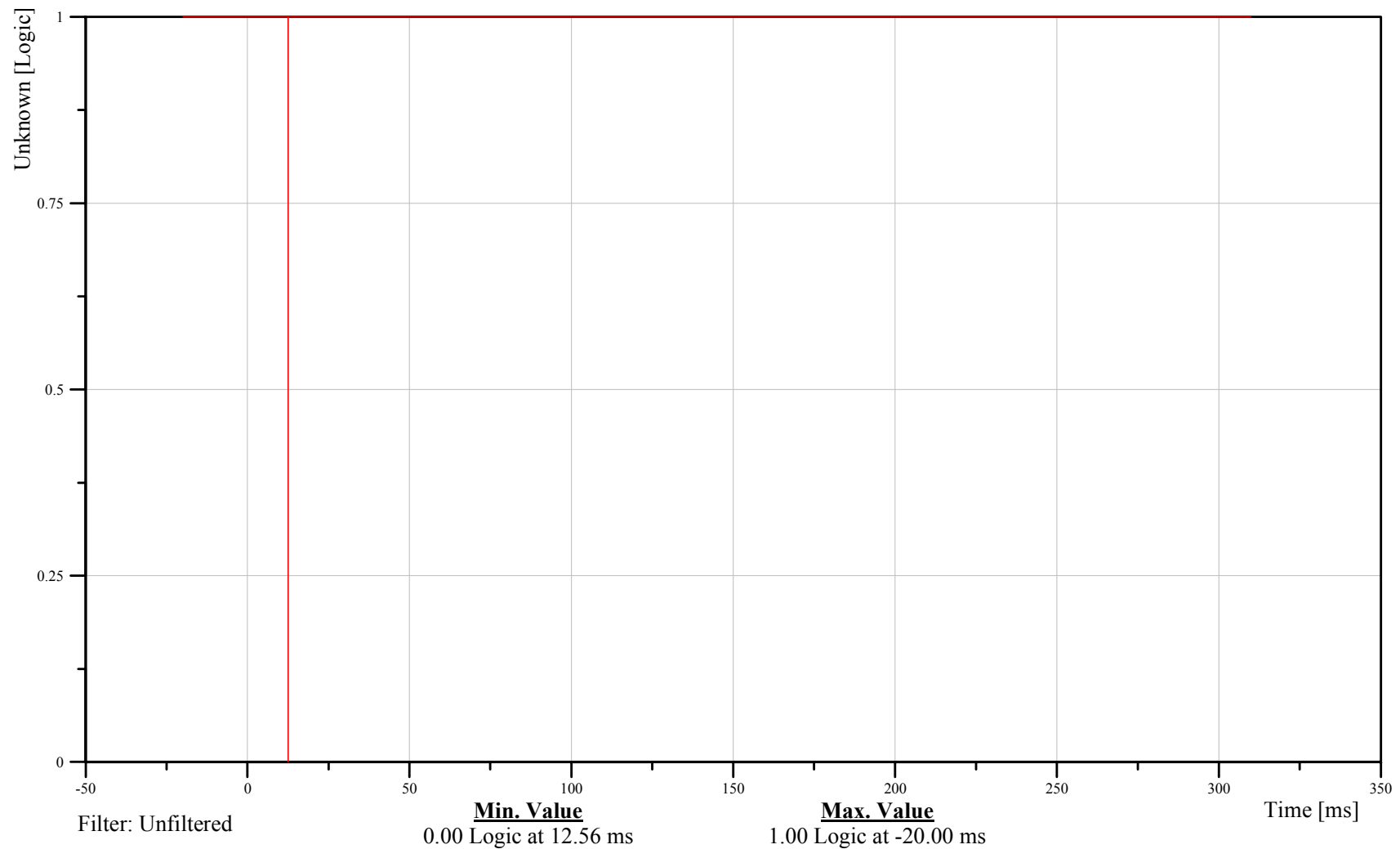
Dummy Shoulder contact

Customer: VRTC

11CONT000002EV00

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

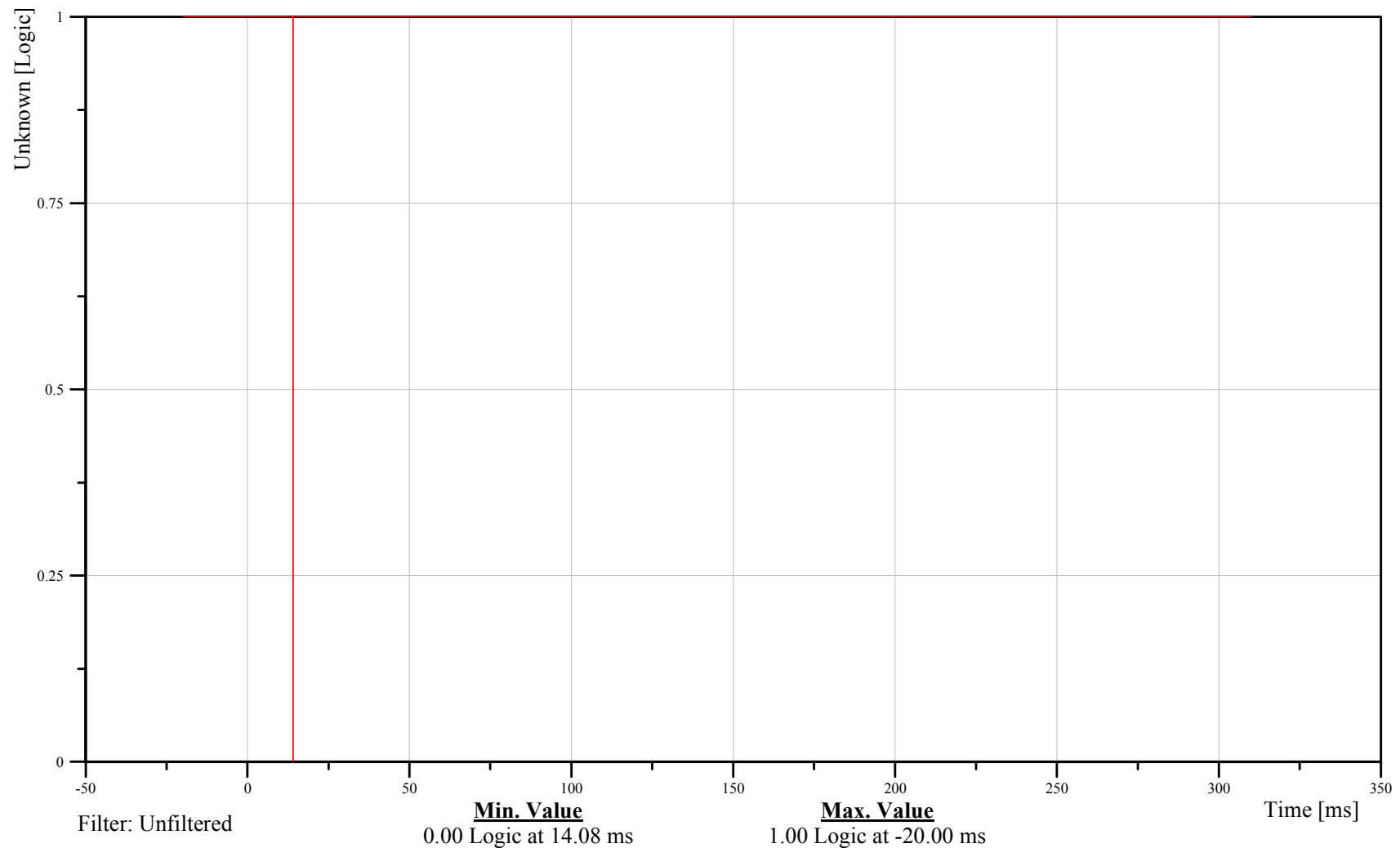
Dummy Torso contact

Customer: VRTC

11CONT000003EV00

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

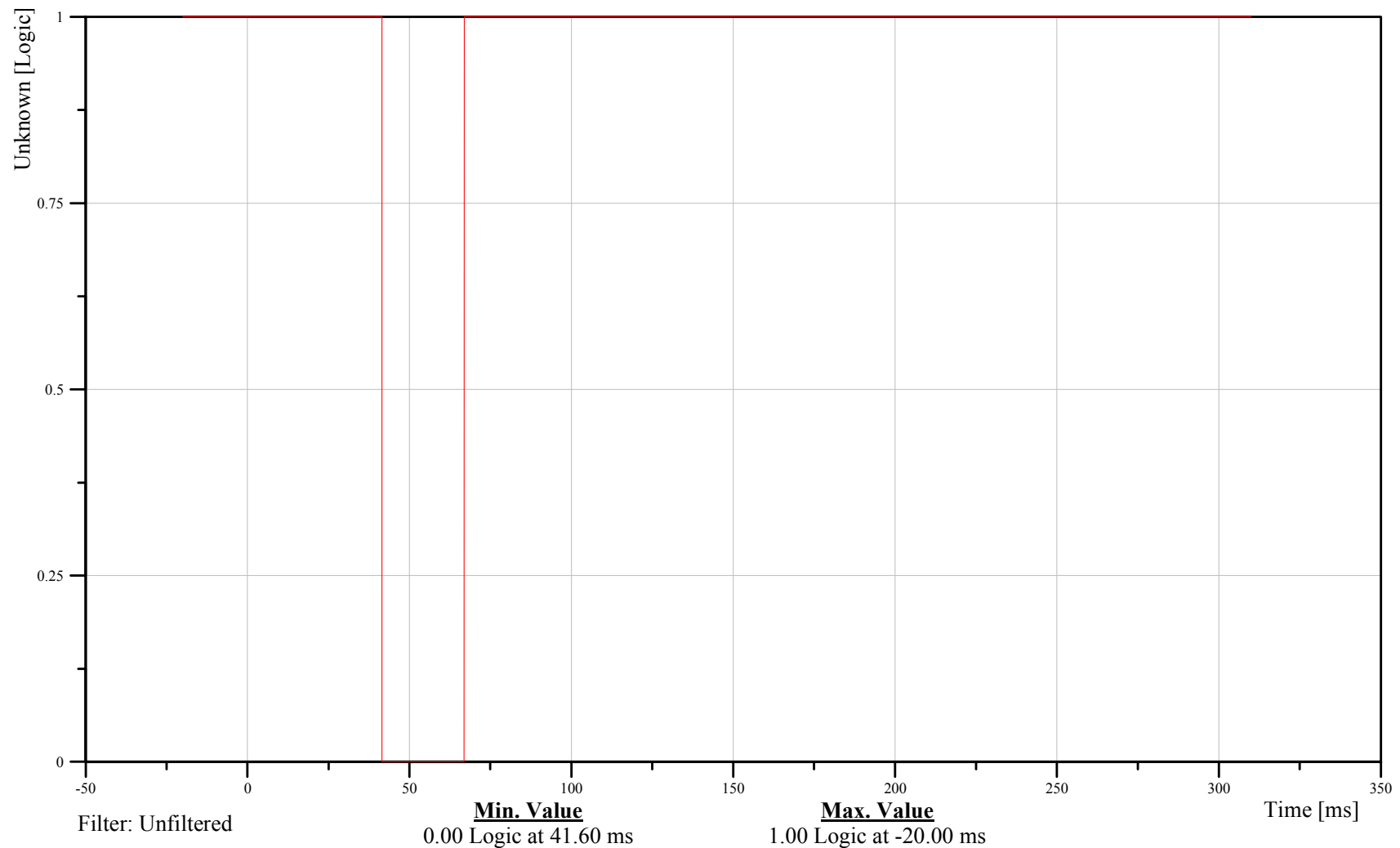
Dummy Leg contact

Customer: VRTC

11CONT000004EV00

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Dummy Head contact

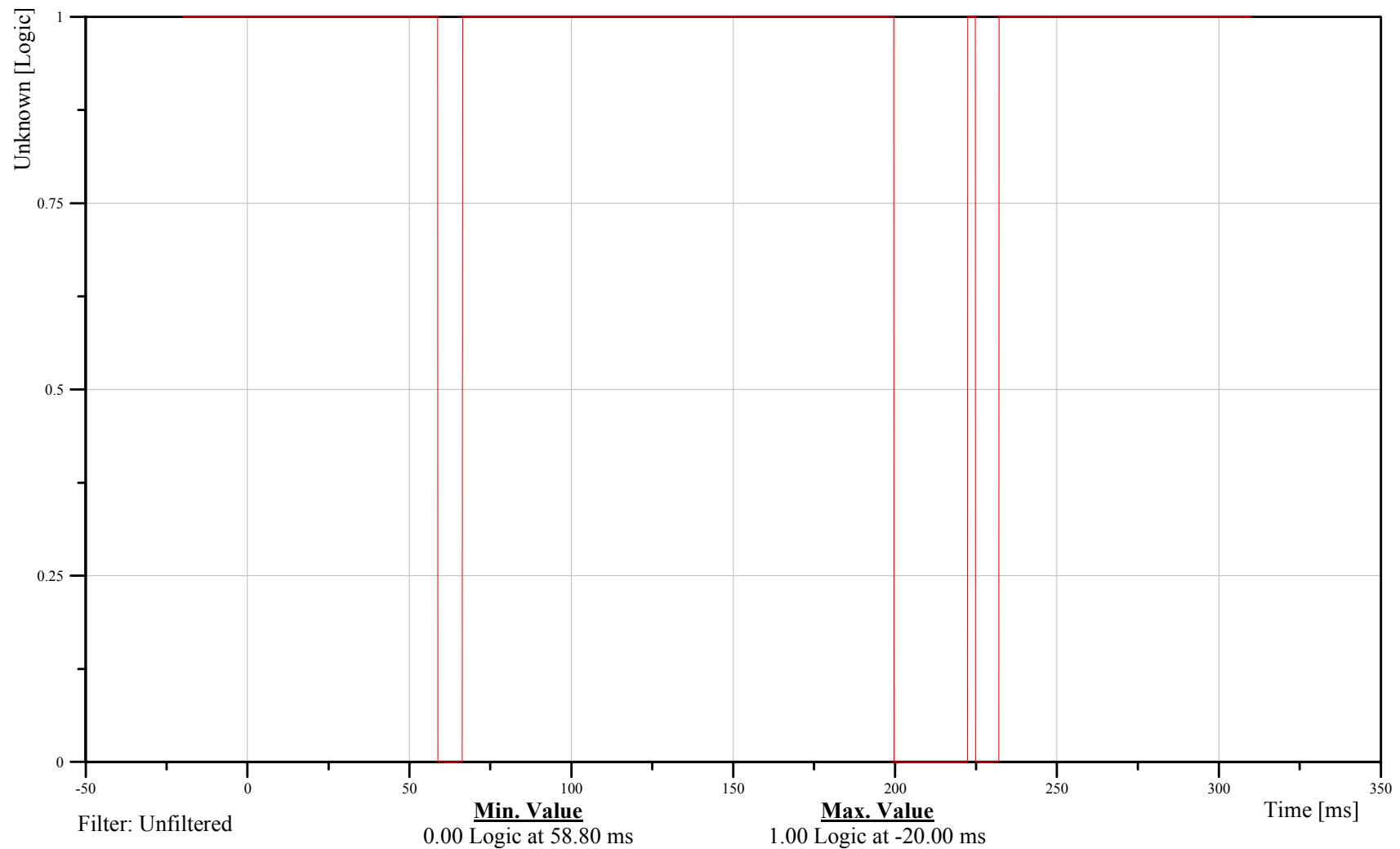
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14CONT000001EV00

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

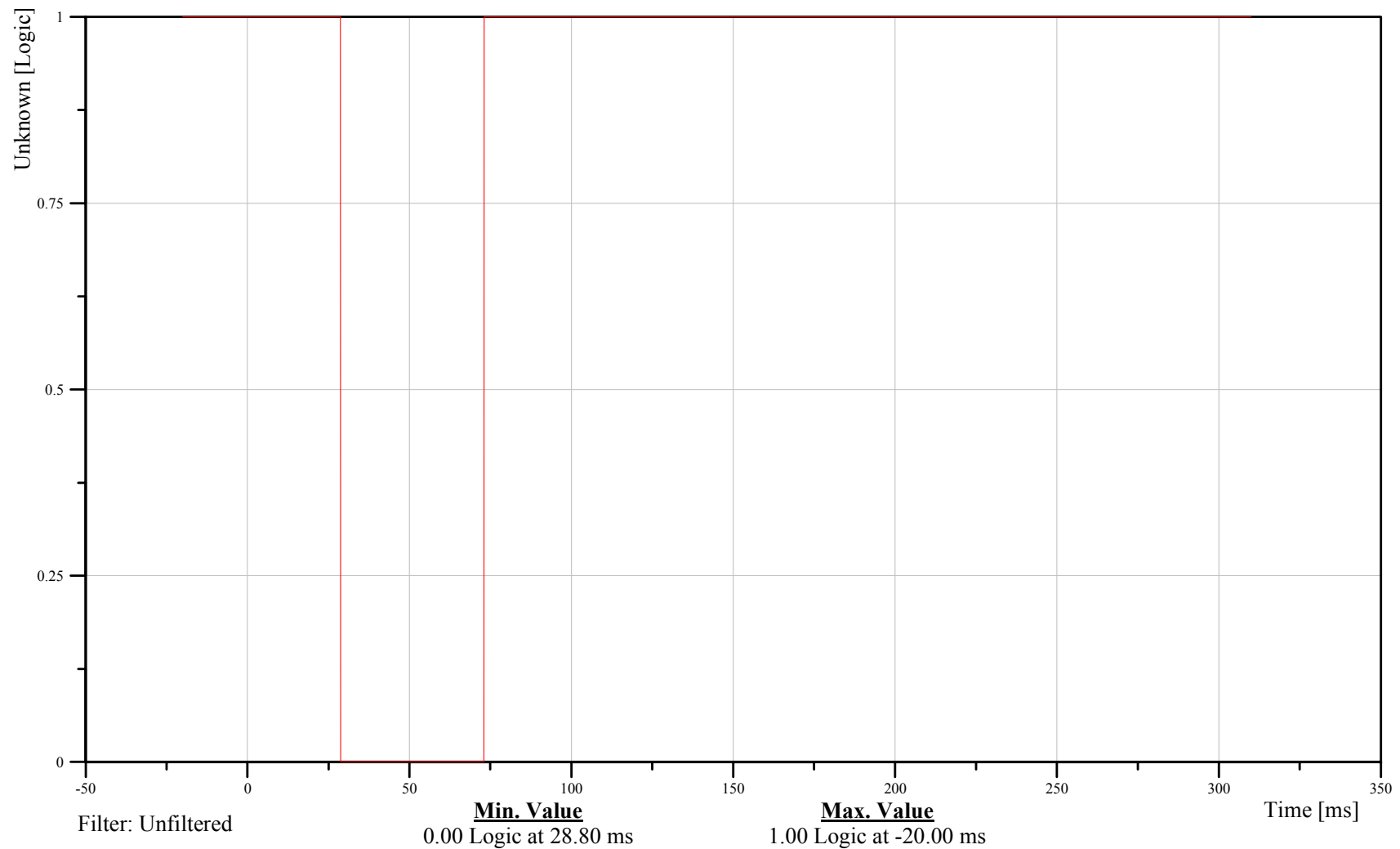
Dummy Shoulder contact

Customer: VRTC

14CONT000002EV00

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Dummy Torso contact

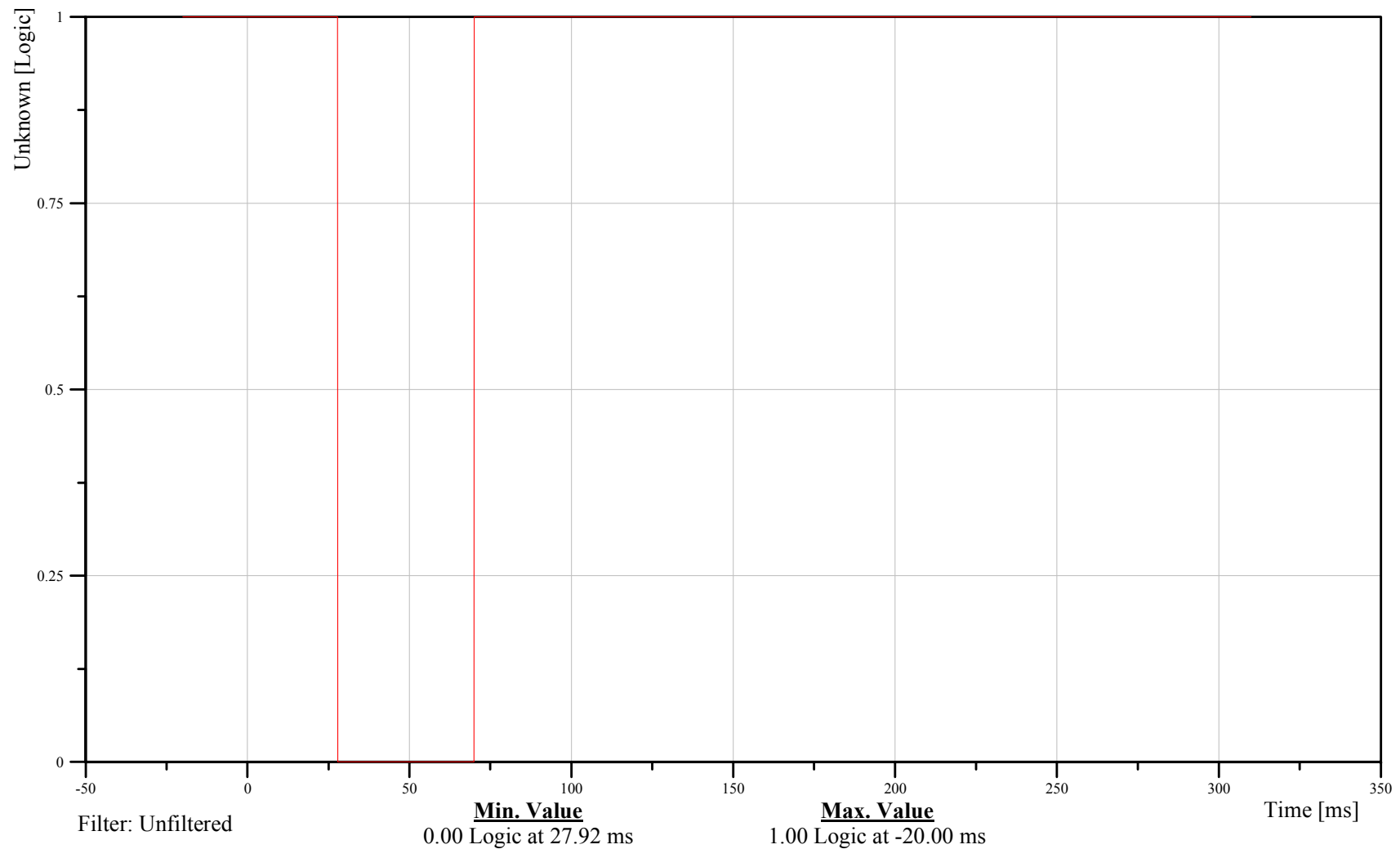
Date: 08/05/2005
Time: 11:49

Customer: VRTC

14CONT000003EV00

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

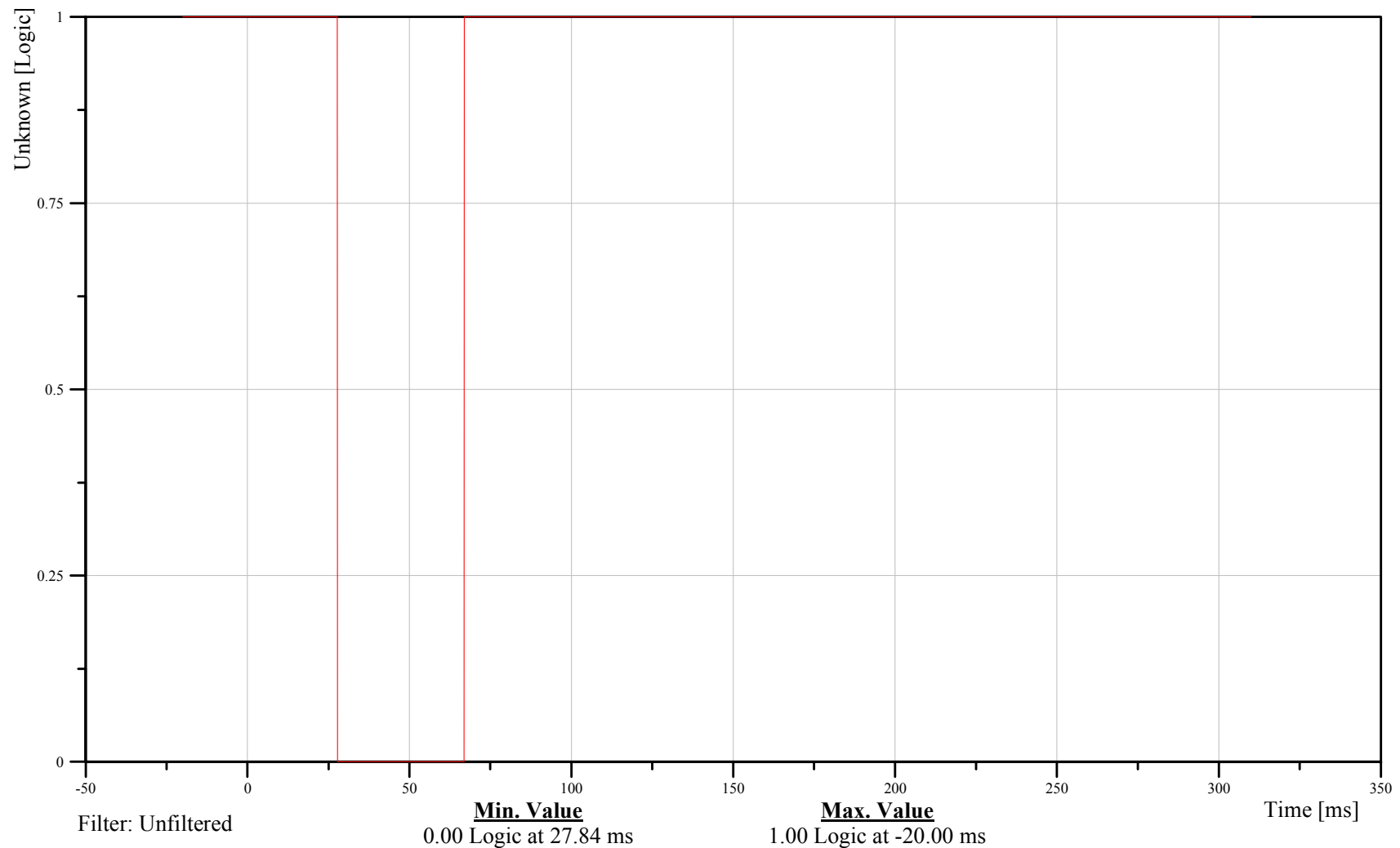
Dummy Leg contact

Customer: VRTC

14CONT000004EV00

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

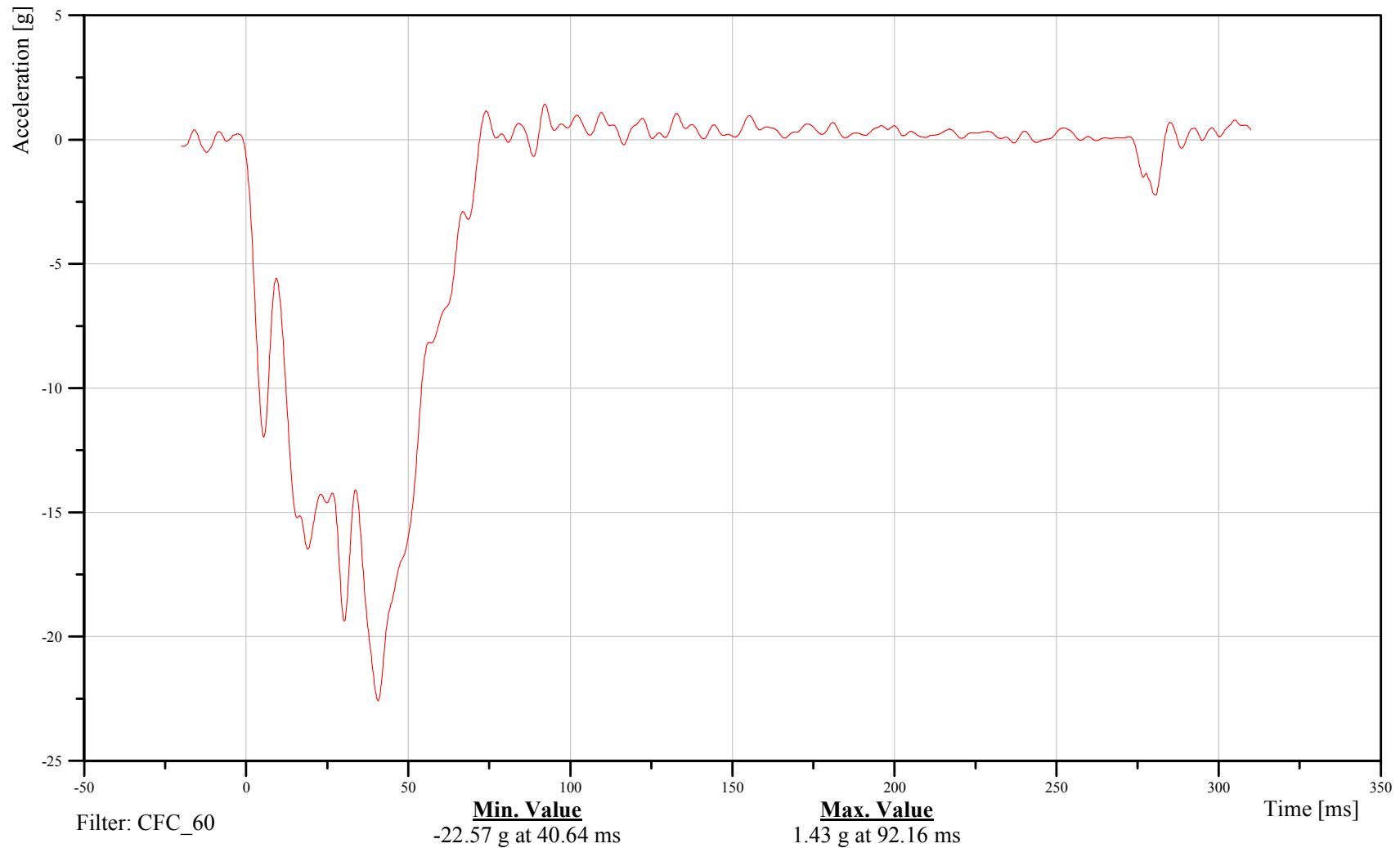
MDB Center of Gravity X-Axis Acceleration

Customer: VRTC

M0VEHCCG0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

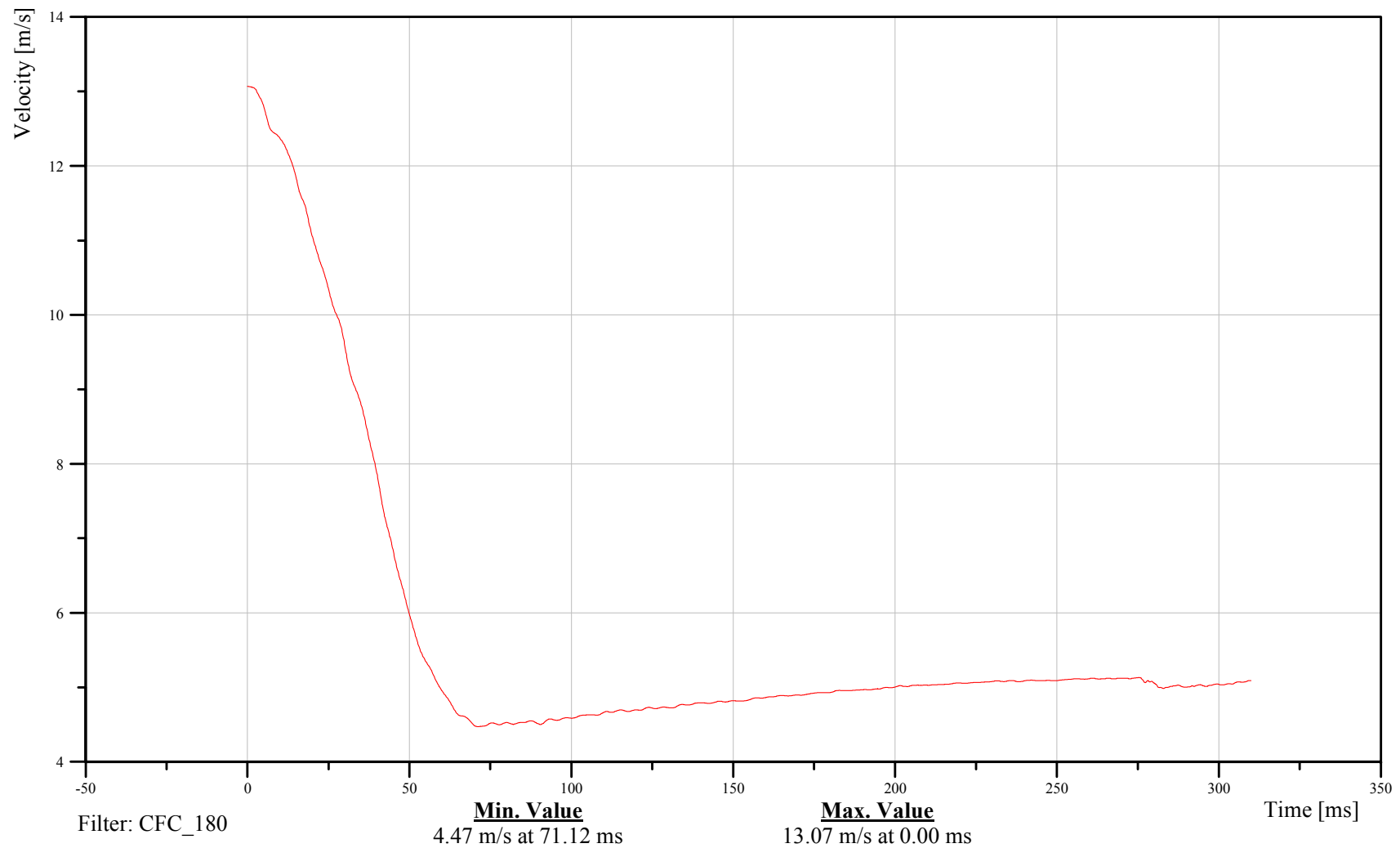
MDB Center of Gravity X-Axis Velocity

Customer: VRTC

M0VEHCCG0000VEXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

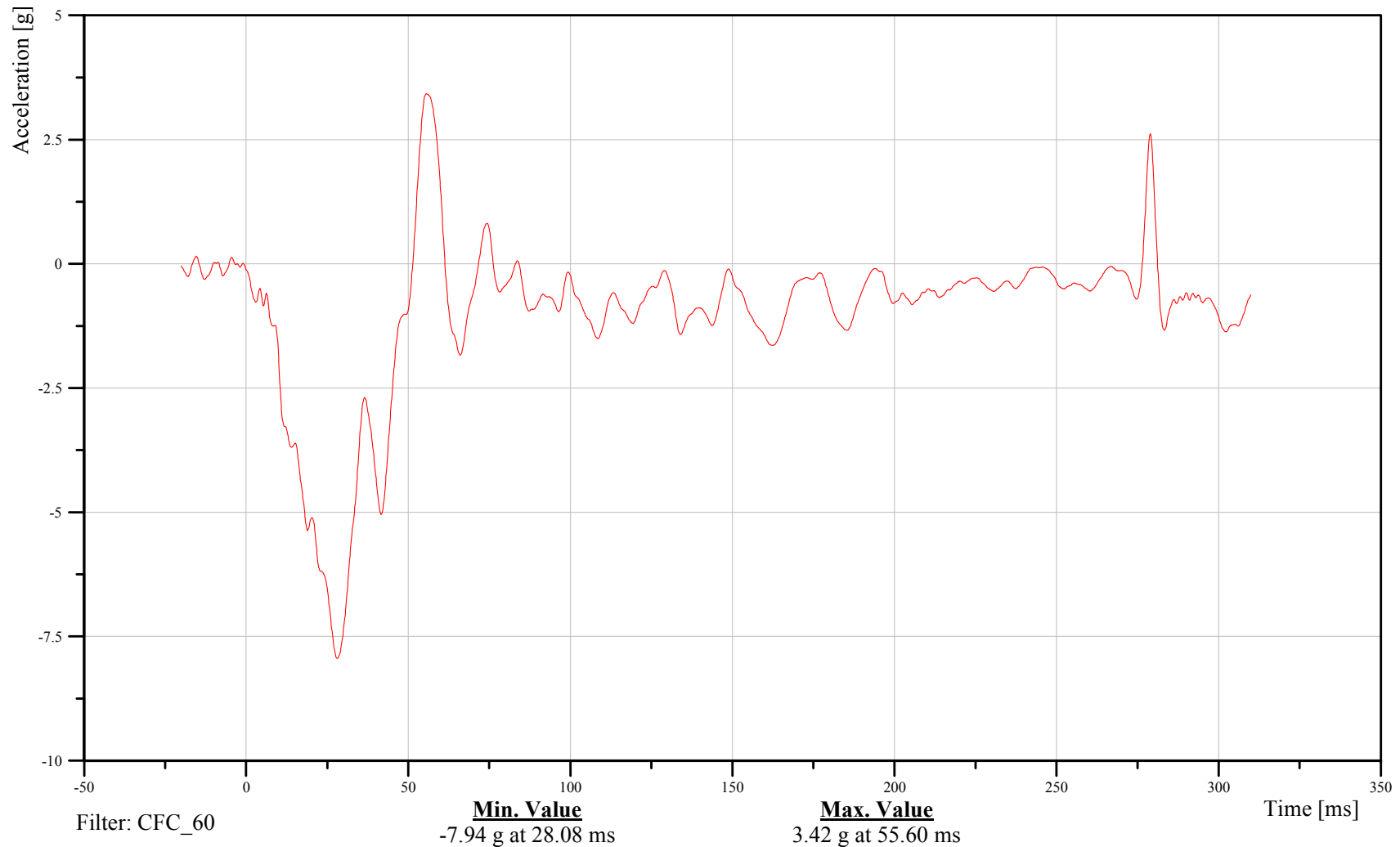
MDB Center of Gravity Y-Axis Acceleration

Customer: VRTC

M0VEHCCG0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

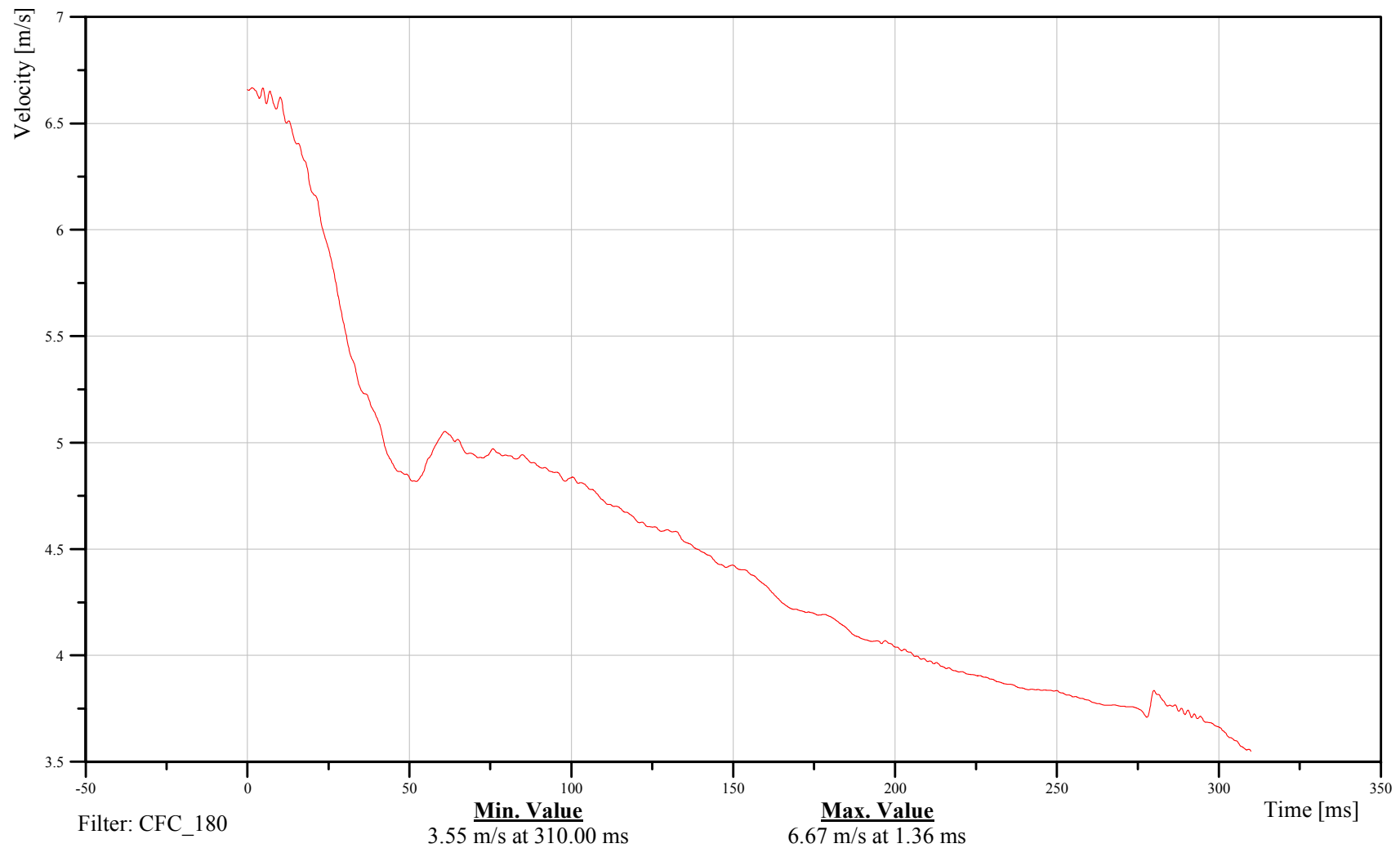
MDB Center of Gravity Y-Axis Velocity

Customer: VRTC

M0VEHCCG0000VEYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

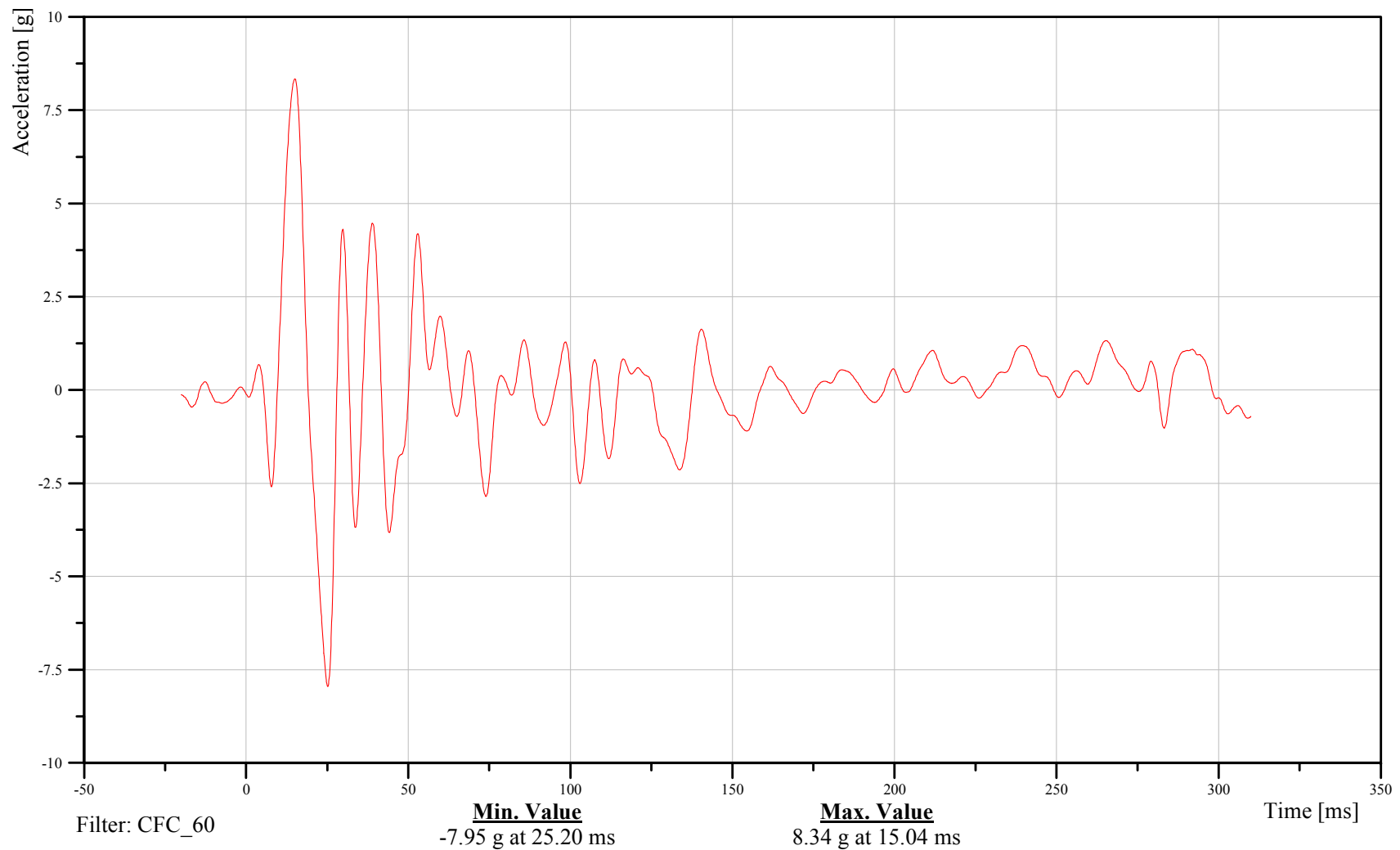
MDB Center of Gravity Z-Axis Acceleration

Customer: VRTC

M0VEHCCG0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

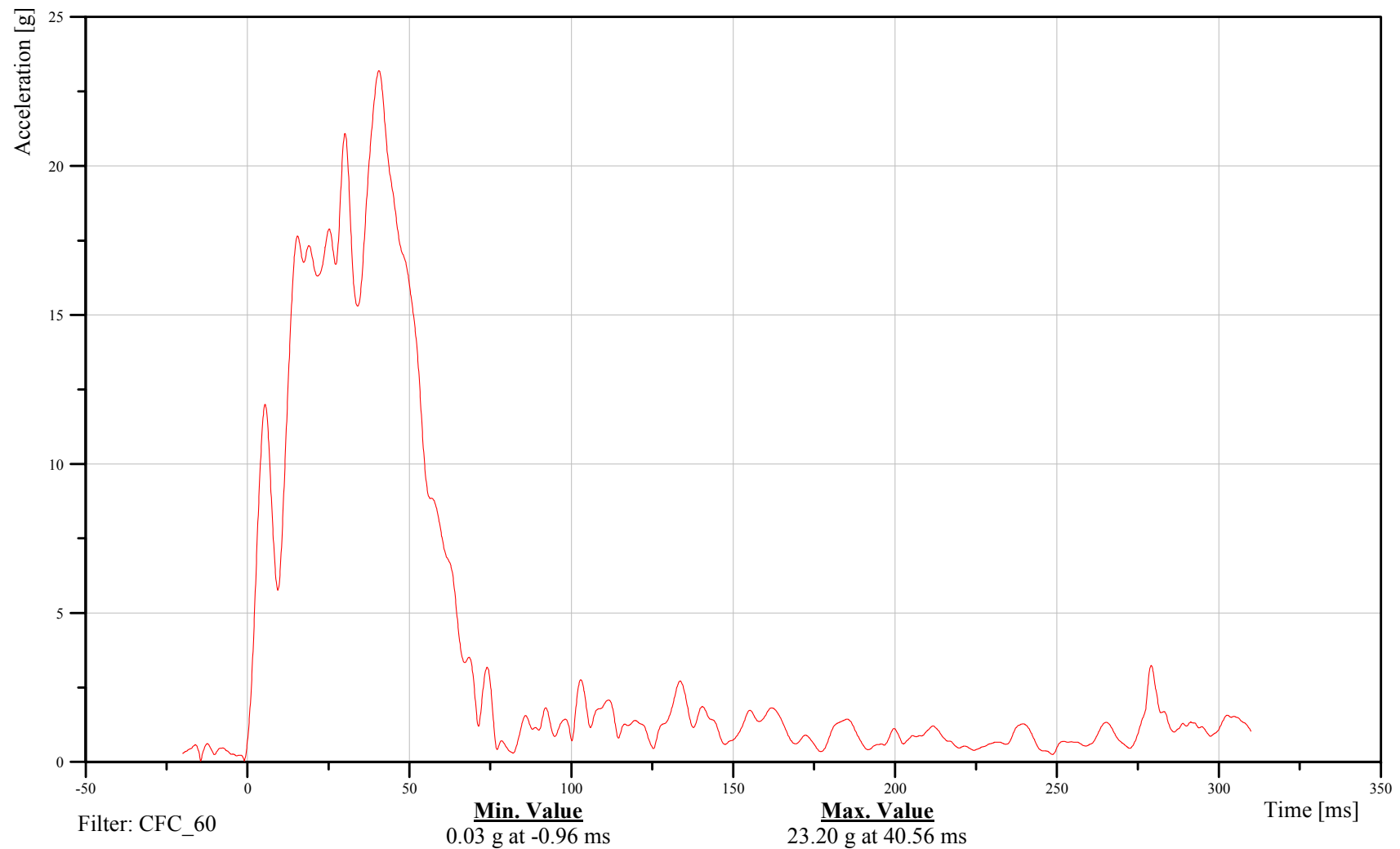
MDB Center of Gravity Resultant Acceleration

Customer: VRTC

M0VEHCCG0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

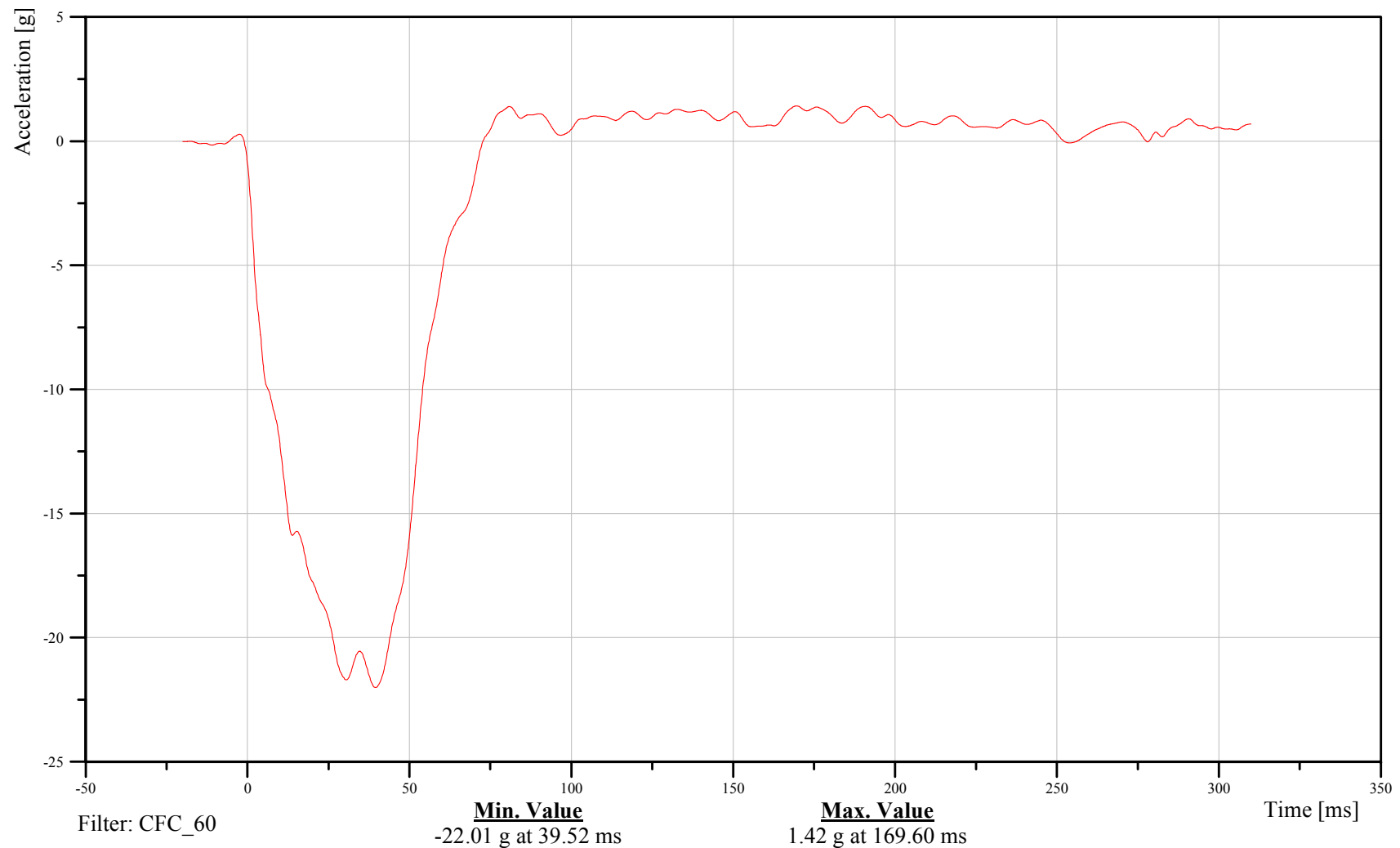
MDB Left Rear X-Axis Acceleration

Customer: VRTC

M7FRAM000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005

Time: 11:49

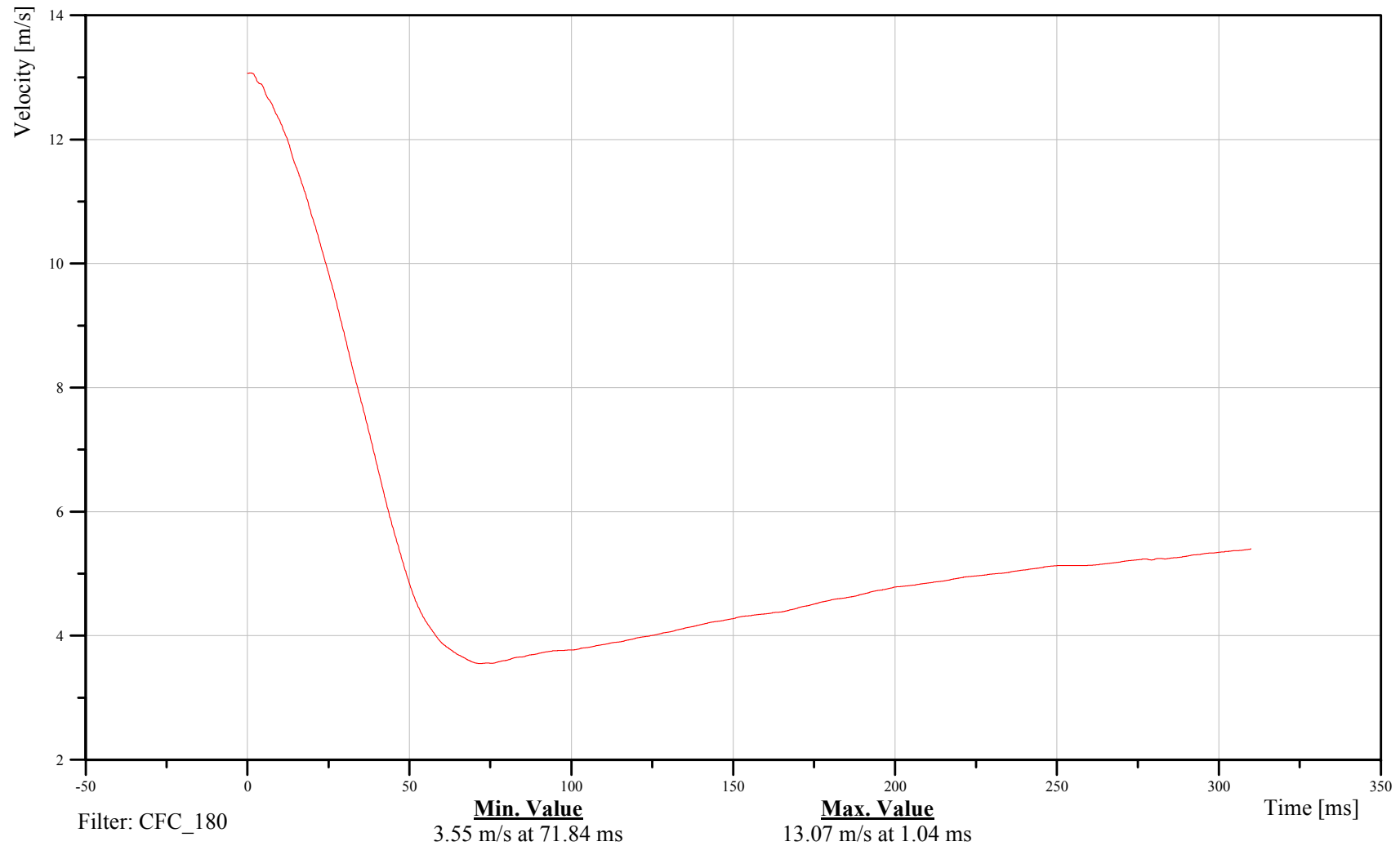
MDB Left Rear X-Axis Velocity

Customer: VRTC

M7FRAM000000VEXC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

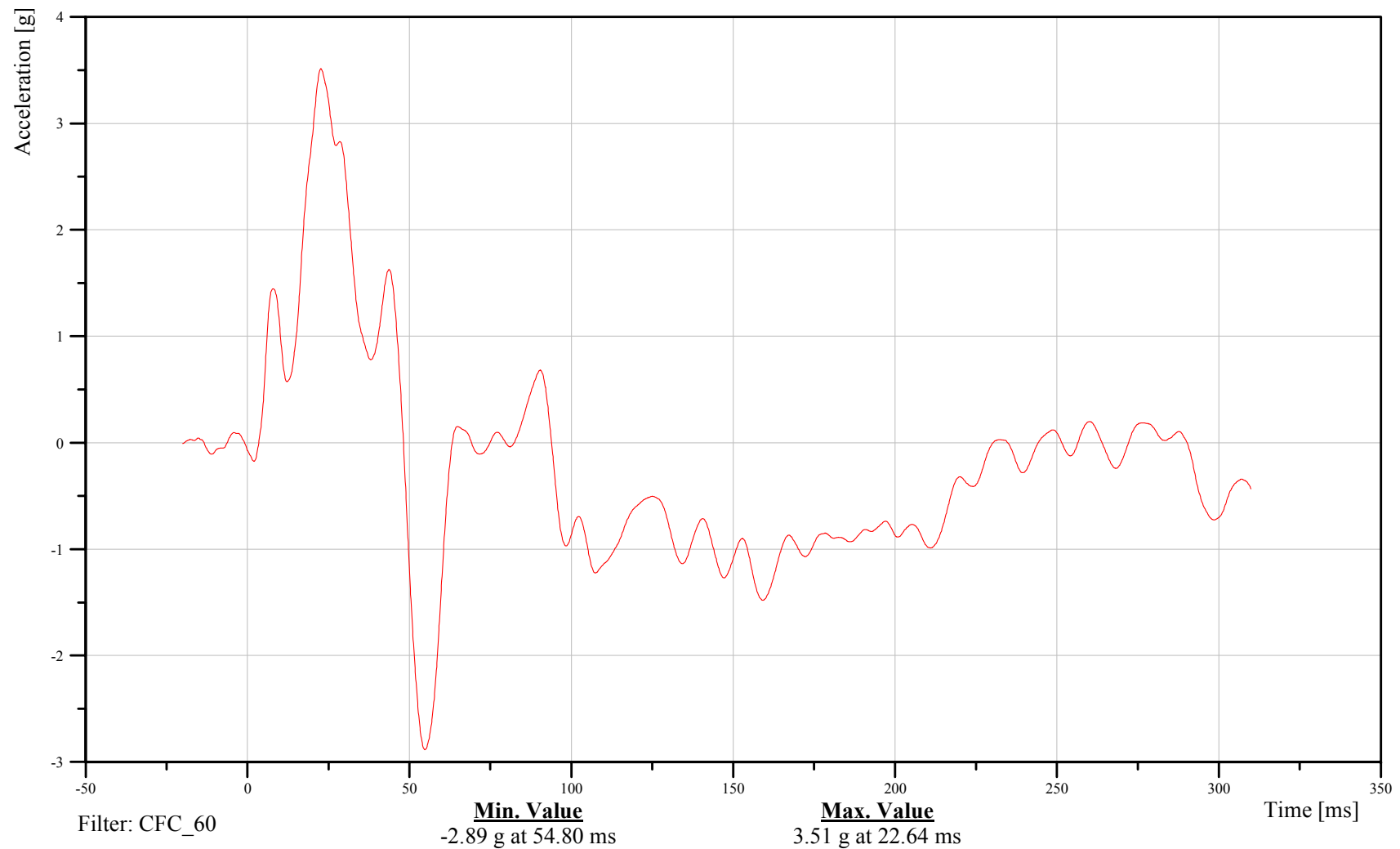
MDB Left Rear Y-Axis Acceleration

Customer: VRTC

M7FRAM000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

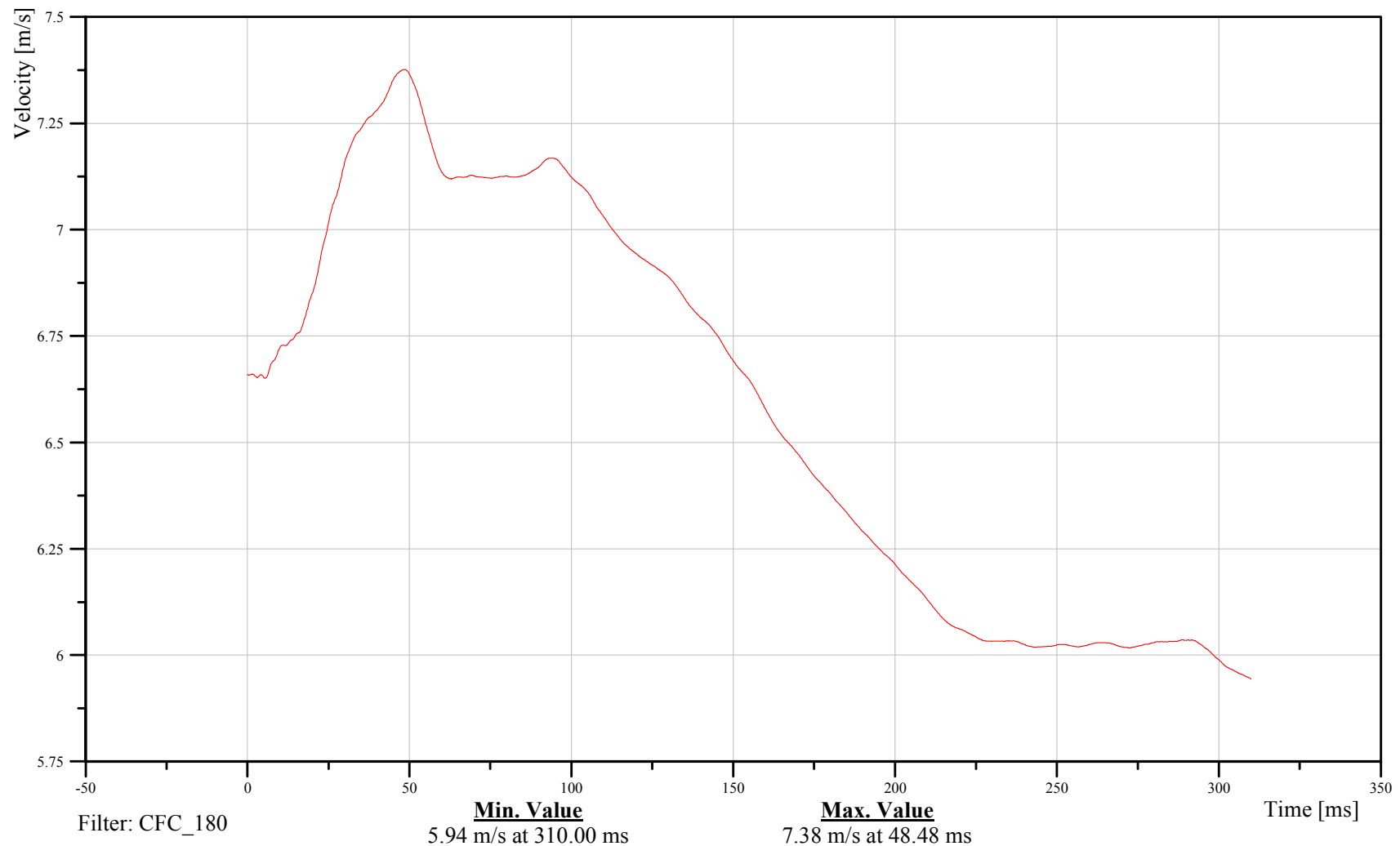
MDB Left Rear Y-Axis Velocity

Customer: VRTC

M7FRAM000000VEYC

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

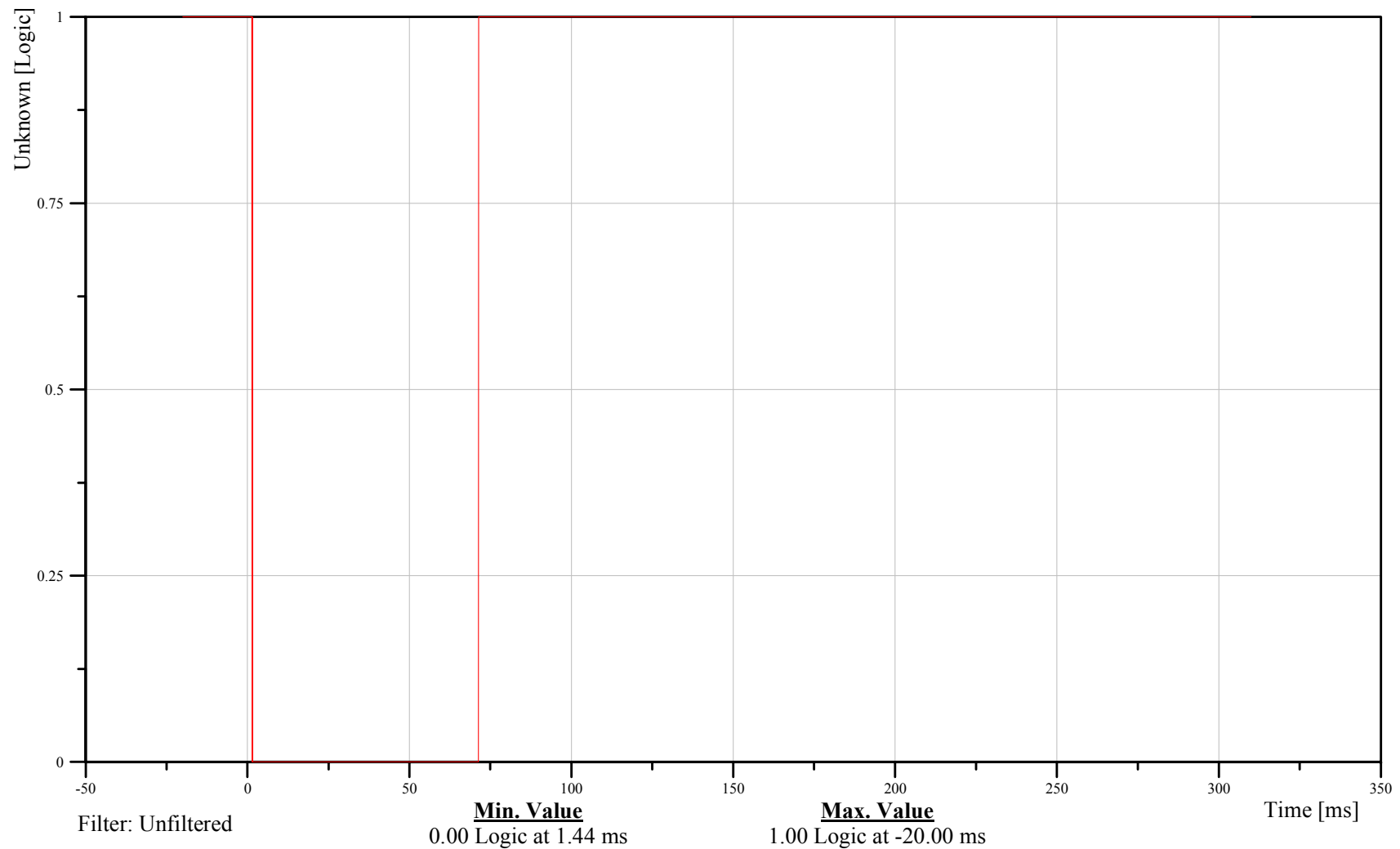
MDB Right Side Contact Switch

Customer: VRTC

M3CONT000000EV00

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

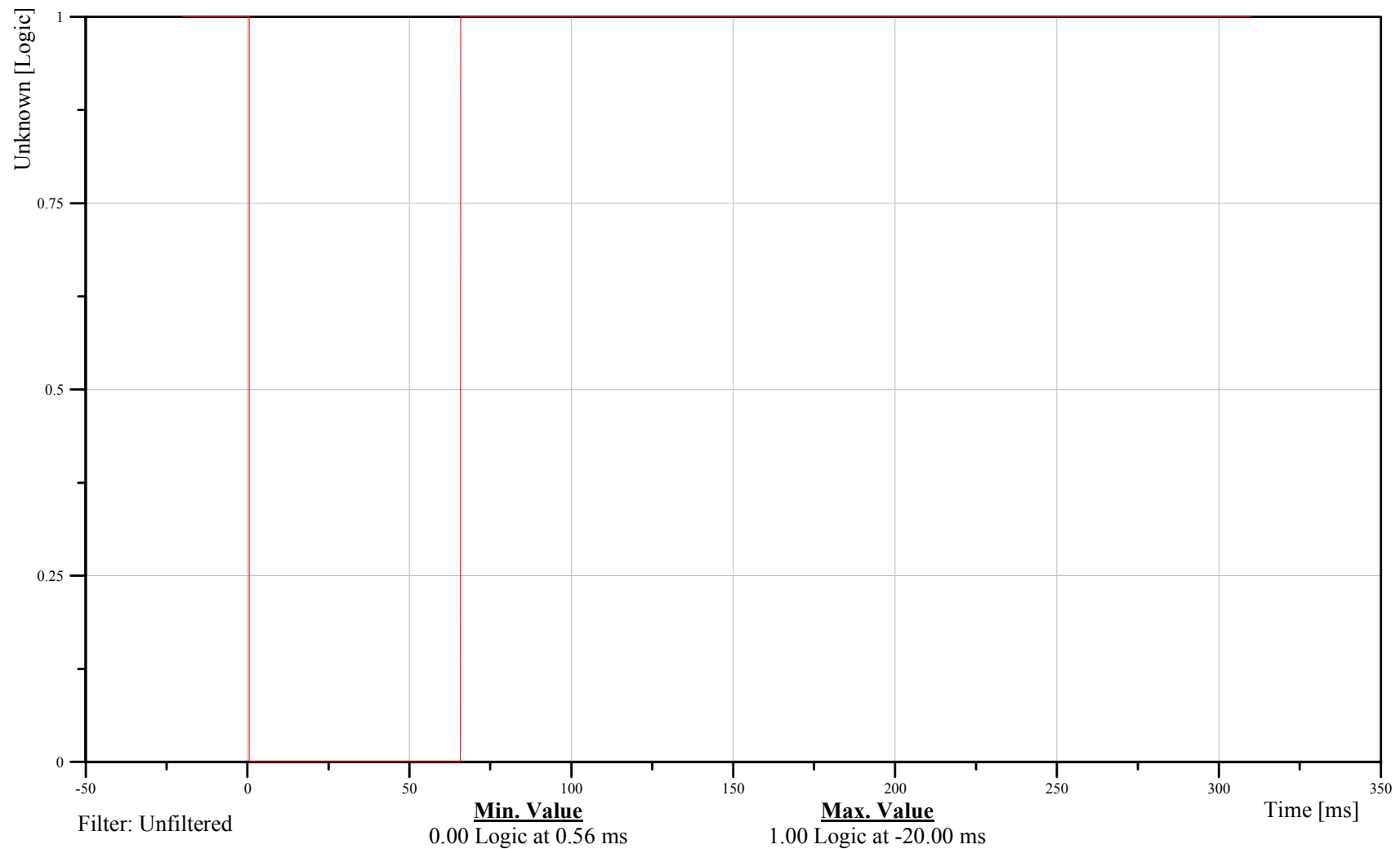
MDB Left Side Contact Switch

Customer: VRTC

M1CONT000000EV00

TRC Inc. Test Lab: CTF

Test Number: 050805





MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Head Injury Criterion (HIC)

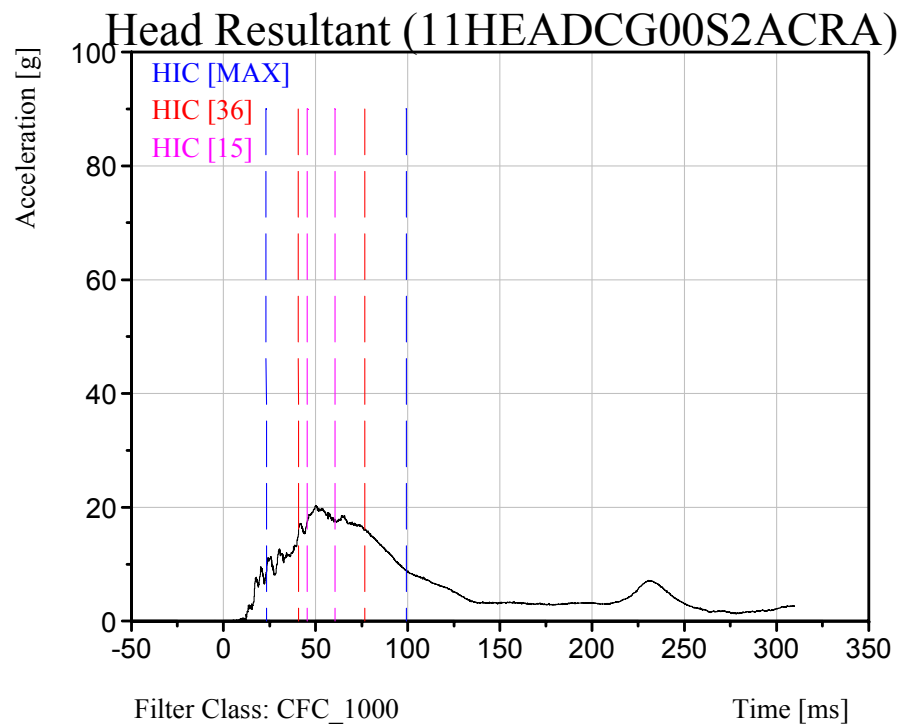
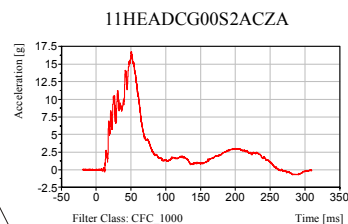
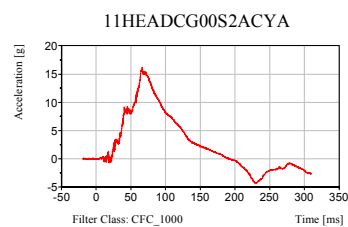
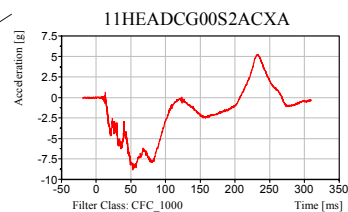
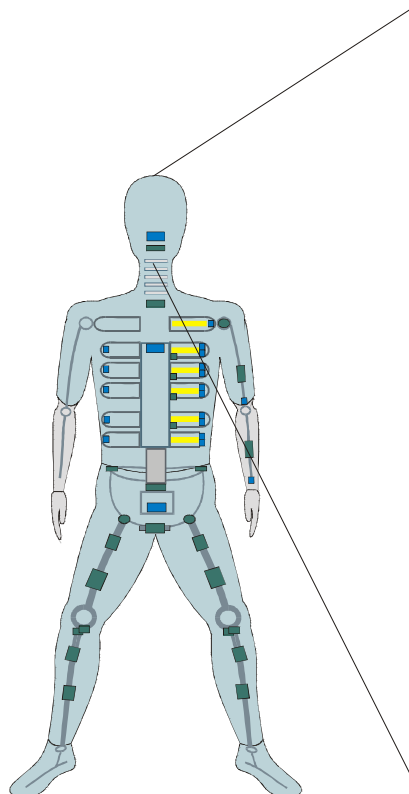
Date: 08/05/2005

Time: 11:49

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 050805



Dummy:SID IIs
Seating Position:
Driver

	<u>T1</u> (Begin)	<u>T2</u> (End)	<u>Avg. g T1 to T2</u>
HIC [Max.] = 63.70	23.28 ms	99.20 ms	14.77 g
HIC [36] = 48.61	40.64 ms	76.64 ms	17.87 g
HIC [15] = 23.56	45.60 ms	60.64 ms	18.96 g

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



MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005
Time: 11:49

Pelvis(LE) Summation

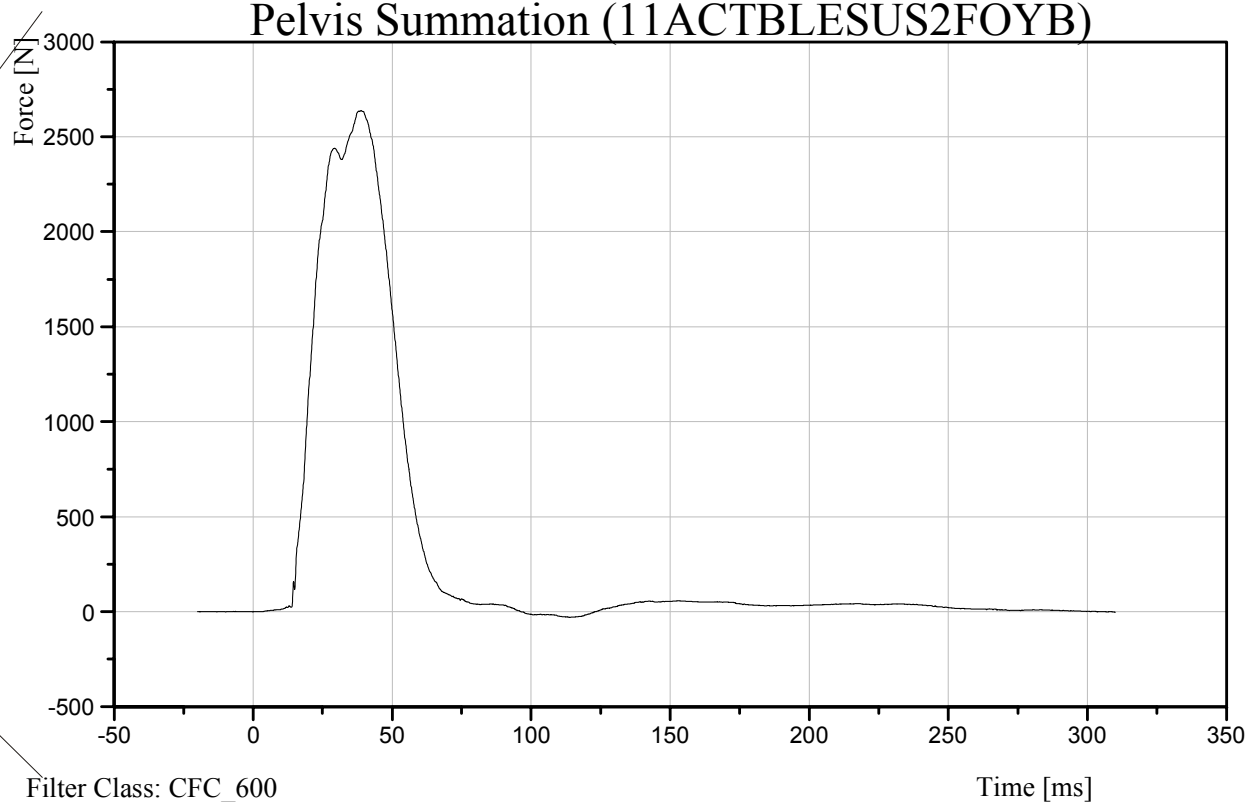
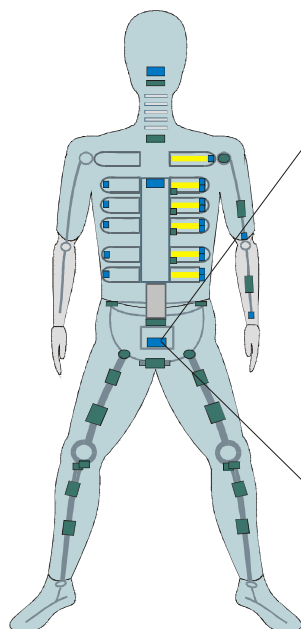
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 050805

Test Orientation = Side

Pelvis Summation (11ACTBLESUS2FOYB)



Dummy:SID IIs
Seating Position:
Driver

[Max.] 2,638.63 N at 38.80 ms
[Min.] -29.45 N at 113.92 ms

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



MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Head Injury Criterion (HIC)

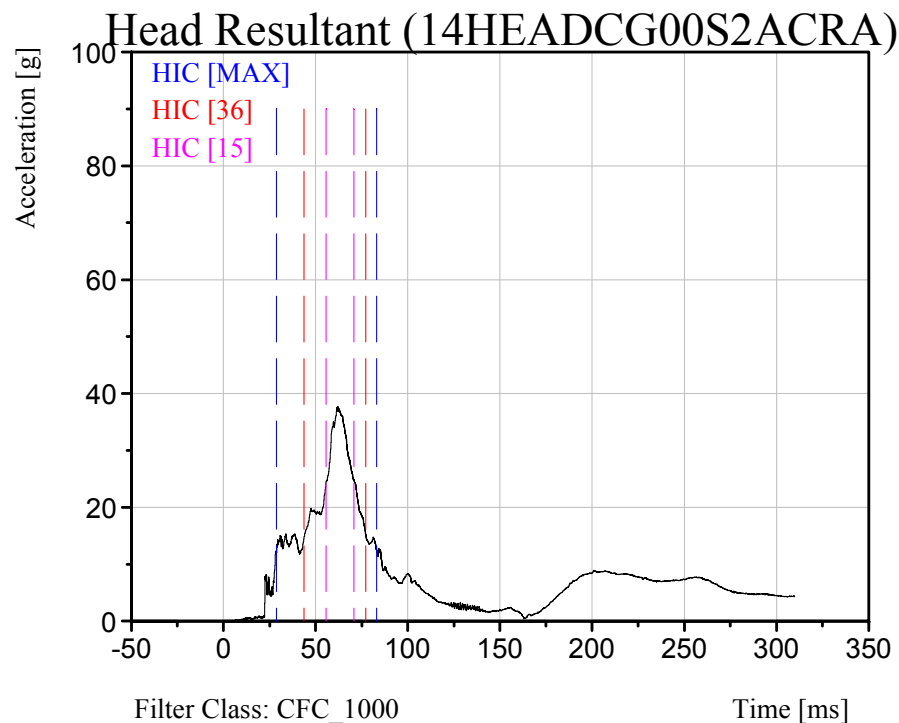
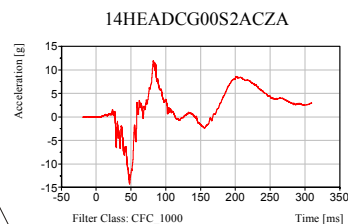
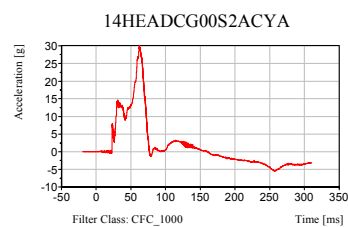
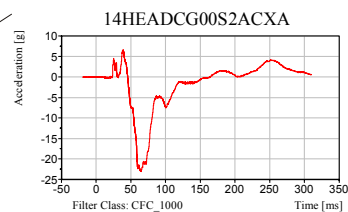
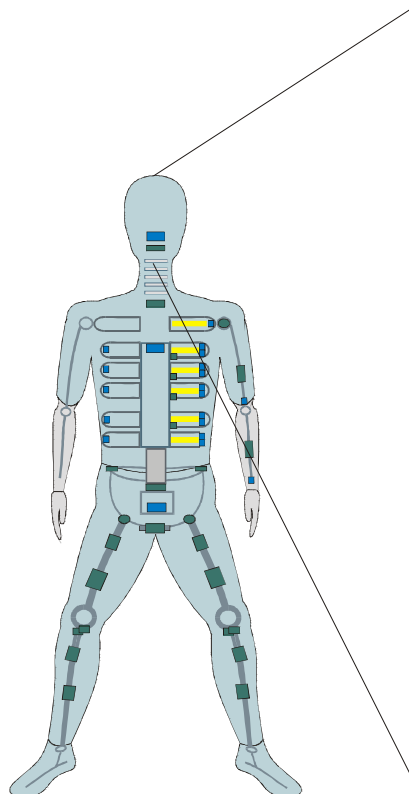
Date: 08/05/2005

Time: 11:49

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 050805



Dummy:SID IIs
Seating Position:
Left Rear Passenger

	<u>T1</u> (Begin)	<u>T2</u> (End)	<u>Avg. g T1 to T2</u>
HIC [Max.] = 105.21	28.80 ms	83.20 ms	20.62 g
HIC [36] = 103.42	43.76 ms	77.28 ms	24.85 g
HIC [15] = 85.31	55.84 ms	70.88 ms	31.69 g

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



MDB into Left Side of 2005 Volkswagen Jetta at 52.9 kph

Date: 08/05/2005

Time: 11:49

Pelvis(LE) Summation

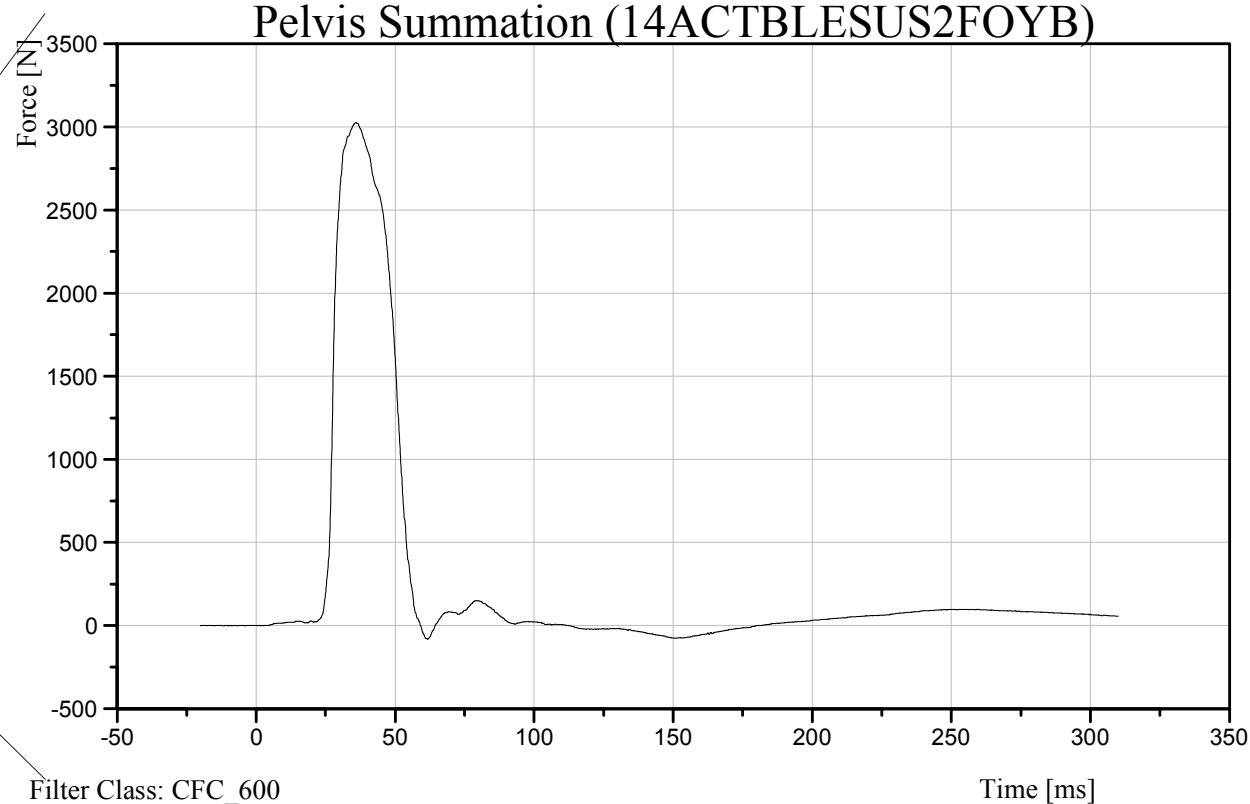
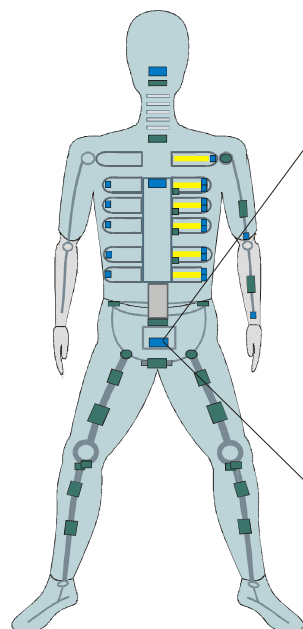
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 050805

Test Orientation = Side

Pelvis Summation (14ACTBLE00S2FOYB)



Dummy:SID IIs
Seating Position:
Left Rear Passenger

[Max.] 3,025.68 N at 35.92 ms

[Min.] -82.22 N at 61.60 ms

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

Appendix C

Dummy Configuration and Performance Verification Data

Pre-Test Dummy Configuration and Performance Verification Data

Driver Dummy S/N: 056

Tested per draft procedures and specifications provided by VRTC

Transportation Research Center Inc.

Left Head Drop Test

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

Test Date 08/02/2005

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

Test does not meet specifications.

Comments:

Technician



Approved



08.08.2005 13:16:12 230

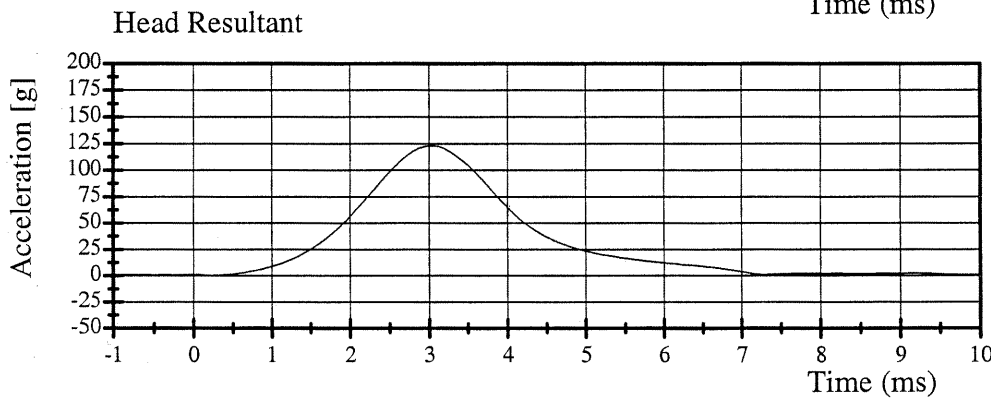
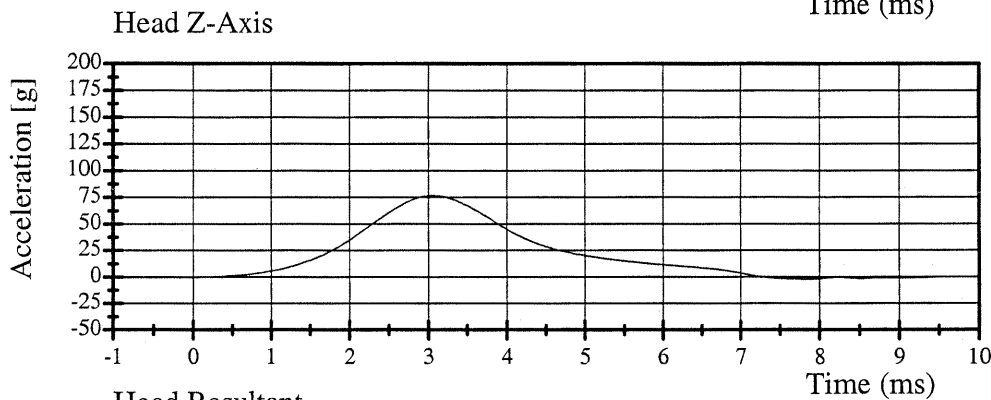
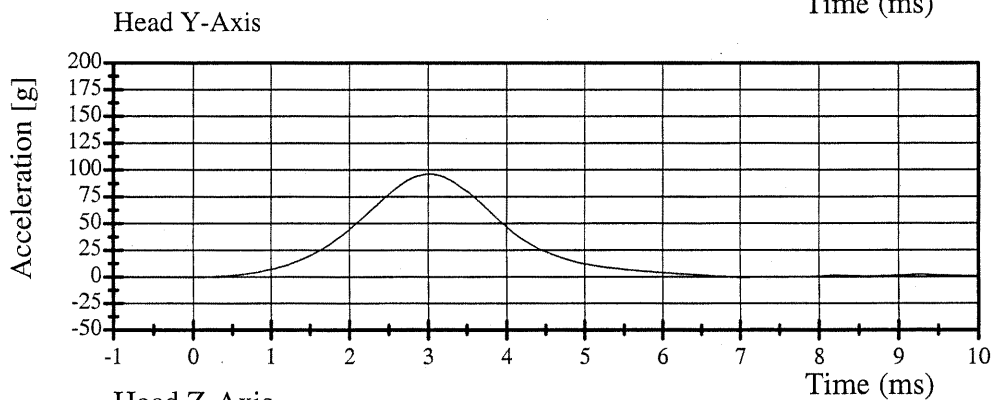
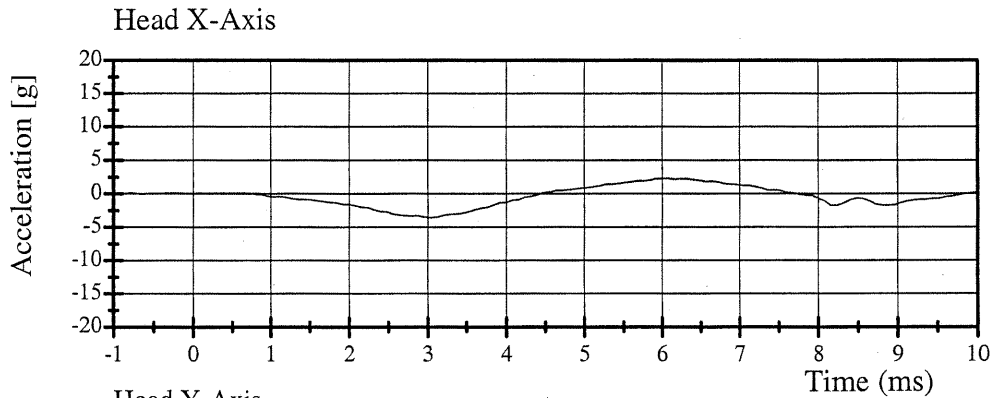


Transportation Research Center Inc.

Head Drop Test

SID-II's Serial No. 056 Calibration No. 02 - 1

Test Date 08/02/2005



08.08.2005 13:16:13 230



Transportation Research Center Inc.

Left Lateral Neck Test

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

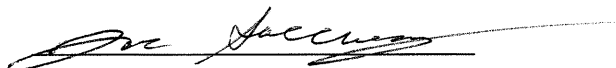
Test Date 08/02/2005

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

Test meets specifications.

Comments:

Technician



Approved



08.08.2005 13:22:08 674



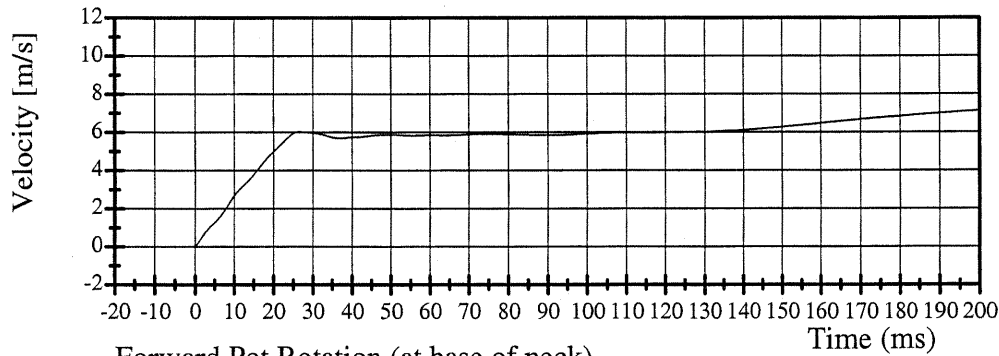
Transportation Research Center Inc.

Left Lateral Neck Test

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

Test Date 08/02/2005

Integrated Pendulum Velocity

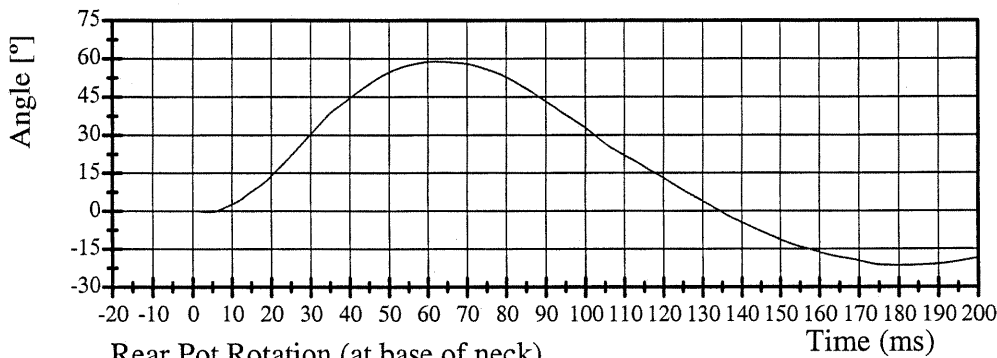


Filter Class: 180

Max: 7.3 m/s at 227.9 ms

Min: -0.0 m/s at -0.7 ms

Forward Pot Rotation (at base of neck)

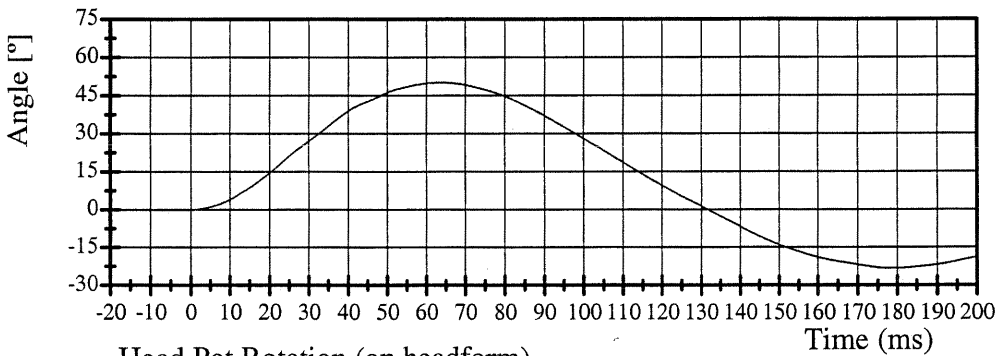


Filter Class: 60

Max: 58.8 ° at 61.9 ms

Min: -21.4 ° at 181.8 ms

Rear Pot Rotation (at base of neck)

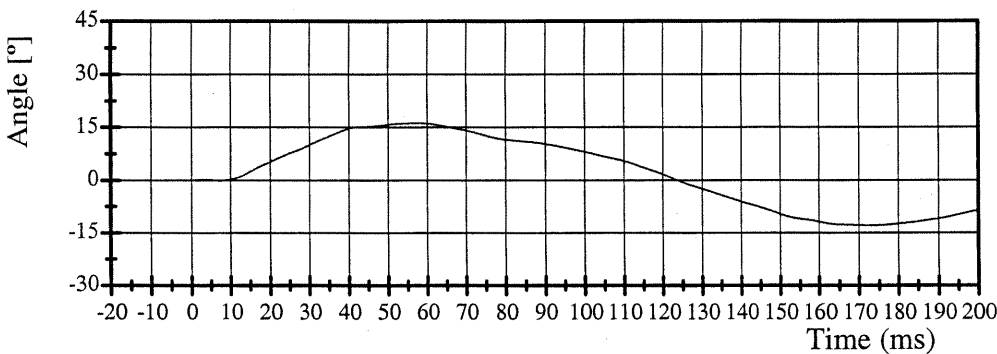


Filter Class: 60

Max: 50.1 ° at 63.9 ms

Min: -23.2 ° at 178.4 ms

Head Pot Rotation (on headform)



Filter Class: 60

Max: 16.3 ° at 57.4 ms

Min: -12.9 ° at 172.9 ms

08.08.2005 13:19:01 674



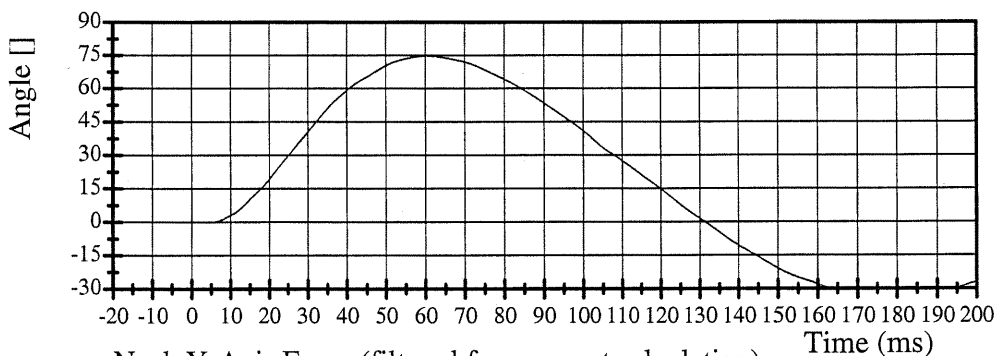
Transportation Research Center Inc.

Left Lateral Neck Test

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

Test Date 08/02/2005

D-Plane Rotation (forward pot + head pot)

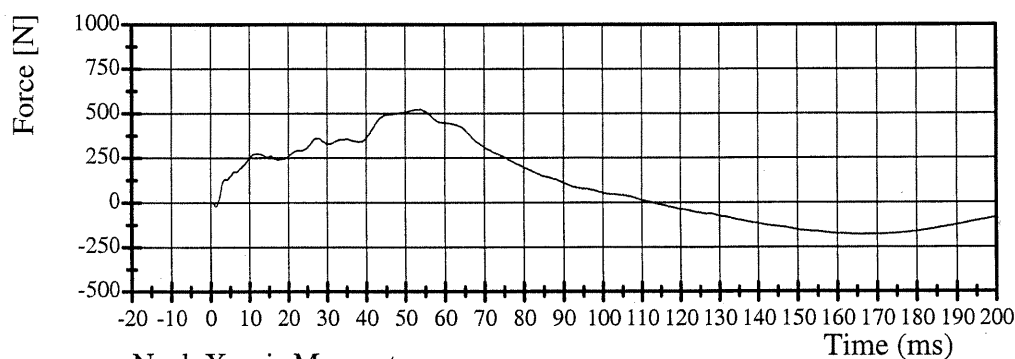


Filter Class: CFC 60

Max: 74.8 ° at 60.4 ms

Min: -34.1 ° at 176.1 ms

Neck Y-Axis Force (filtered for moment calculation)

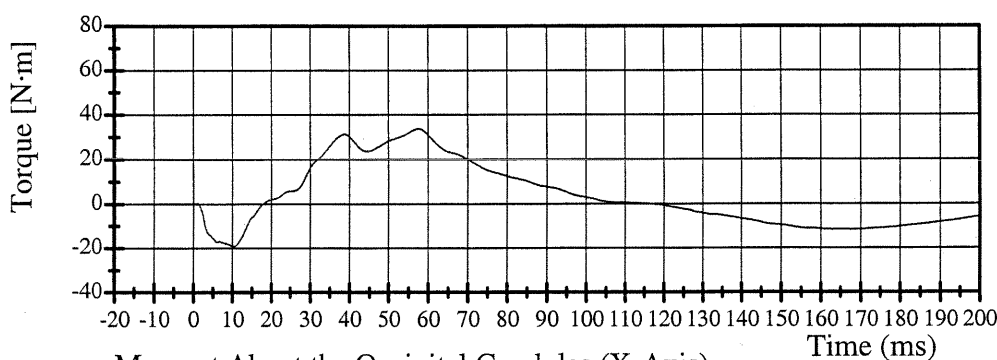


Filter Class: CFC 600

Max: 522 N at 53.8 ms

Min: -179 N at 166.2 ms

Neck X-axis Moment

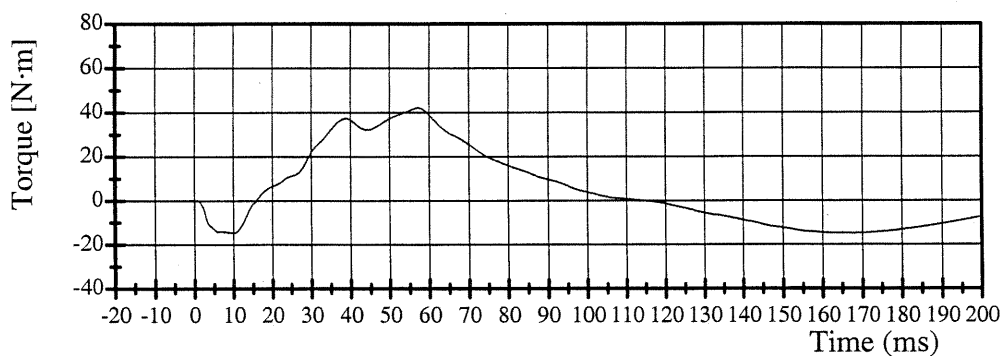


Filter Class: CFC 600

Max: 33.8 N·m at 57.4 ms

Min: -19.1 N·m at 10.3 ms

Moment About the Occipital Condyles (X-Axis)



Filter Class: 600

Max: 42.1 N·m at 57.2 ms

Min: -14.8 N·m at 167.9 ms

Transportation Research Center Inc.

Left Shoulder Test

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

Test Date 08/02/2005

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

Test meets specifications.

Comments:

Technician



Approved



08.08.2005 13:25:06 568

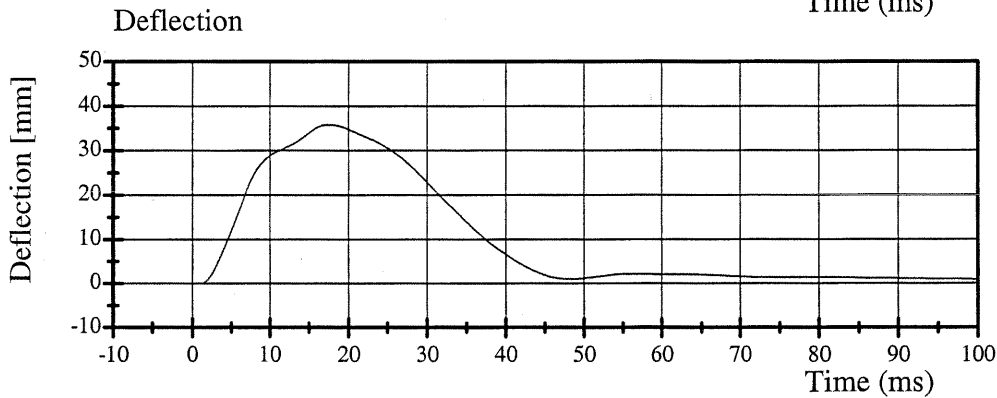
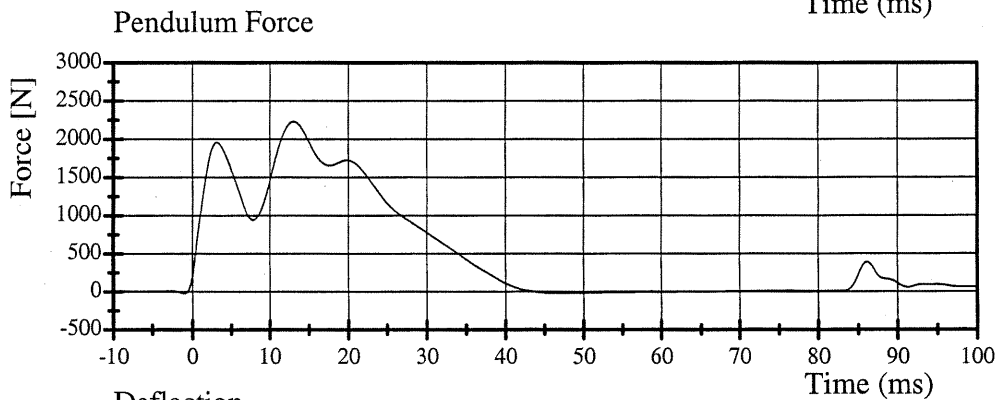
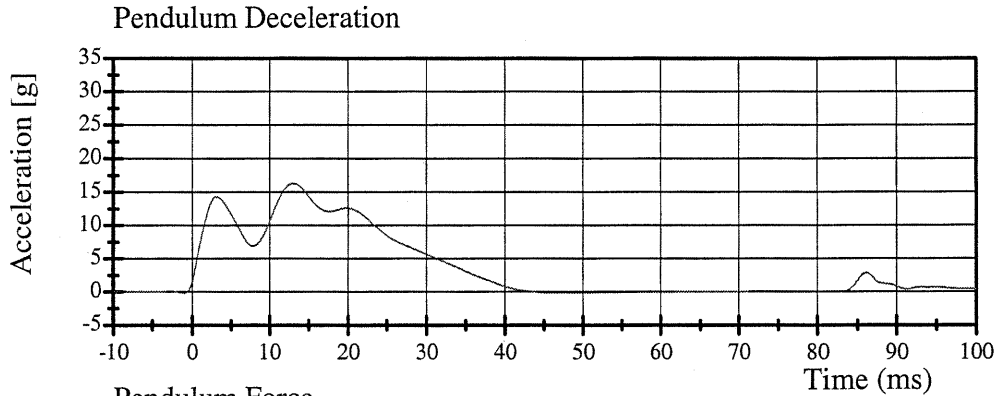


Transportation Research Center Inc.

Left Shoulder Test

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

Test Date 08/02/2005



08.08.2005 13:25:06 568



Transportation Research Center Inc.

Left Thorax With Arm Test

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

Test Date 08/02/2005

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

Test does not meet specifications.

Comments:

Technician



Approved



08.08.2005 13:31:29 405



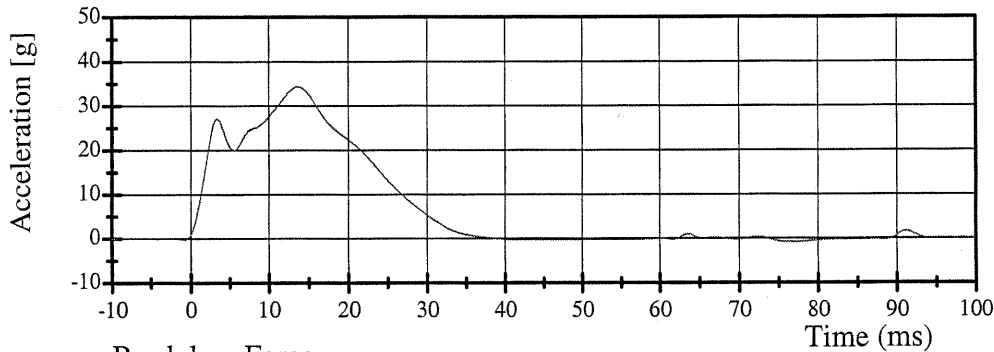
Transportation Research Center Inc.

Left Thorax With Arm Test

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

Test Date 08/02/2005

Pendulum Deceleration

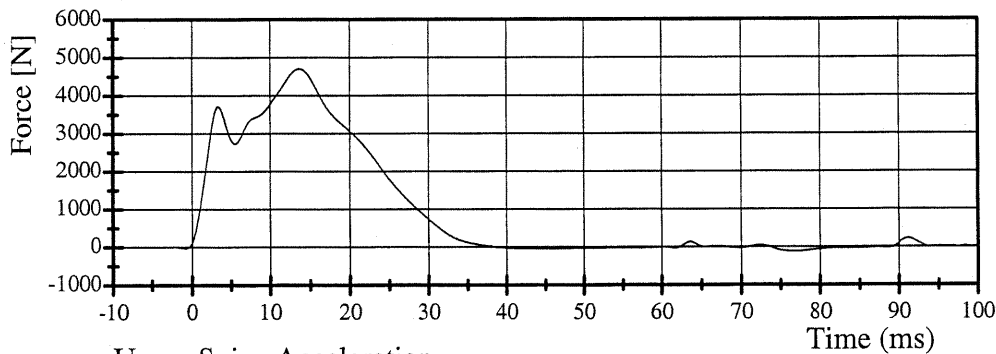


Filter Class: CFC 180

Max: 34.4 g at 13.7 ms

Min: -0.8 g at 77.0 ms

Pendulum Force

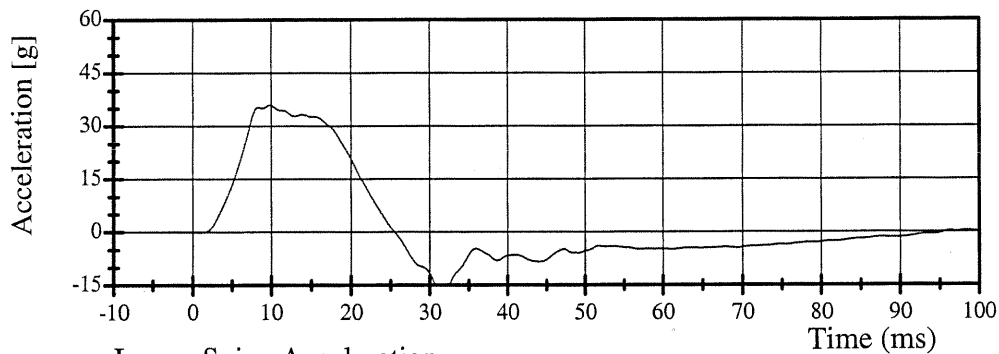


Filter Class: CFC 180

Max: 4708 N at 13.7 ms

Min: -115 N at 77.0 ms

Upper Spine Acceleration

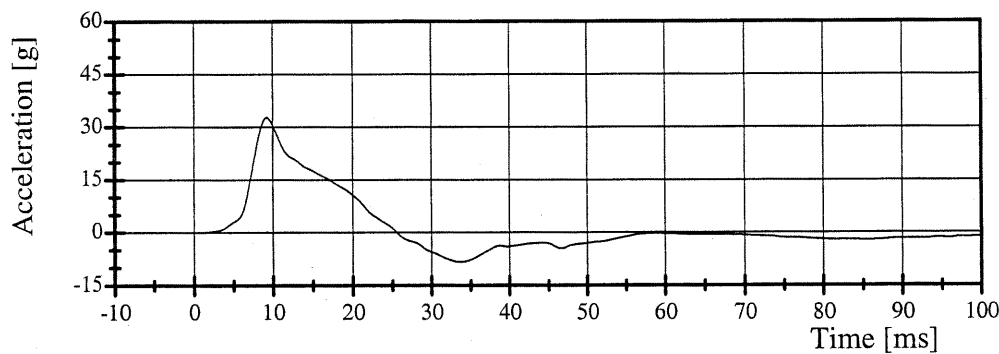


Filter Class: CFC 180

Max: 36.0 g at 9.8 ms

Min: -19.0 g at 31.6 ms

Lower Spine Acceleration



Filter Class: CFC 180

Max: 32.8 g at 9.3 ms

Min: -8.4 g at 33.6 ms

08.08.2005 13:31:30 405

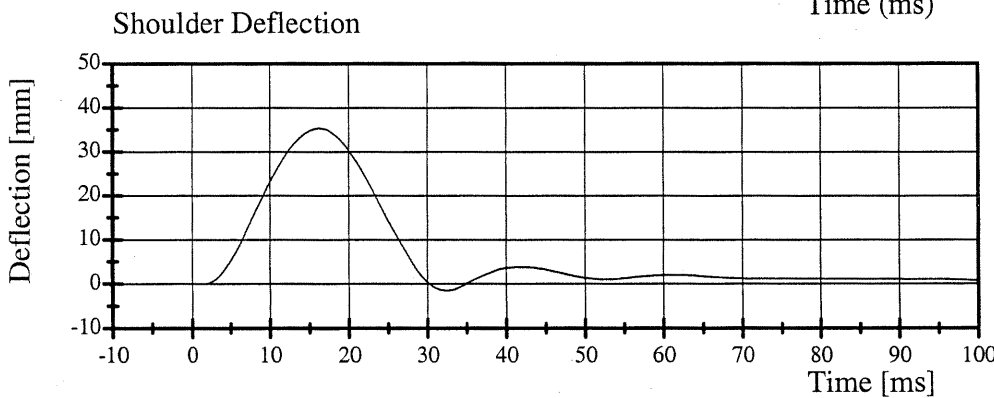
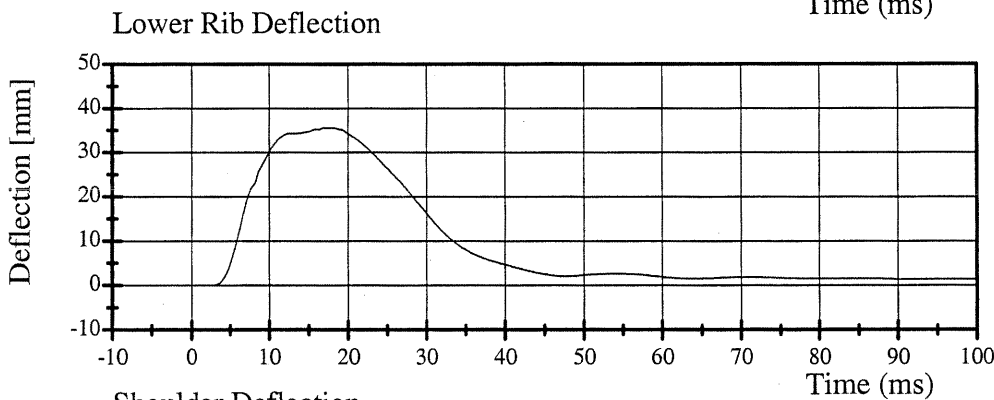
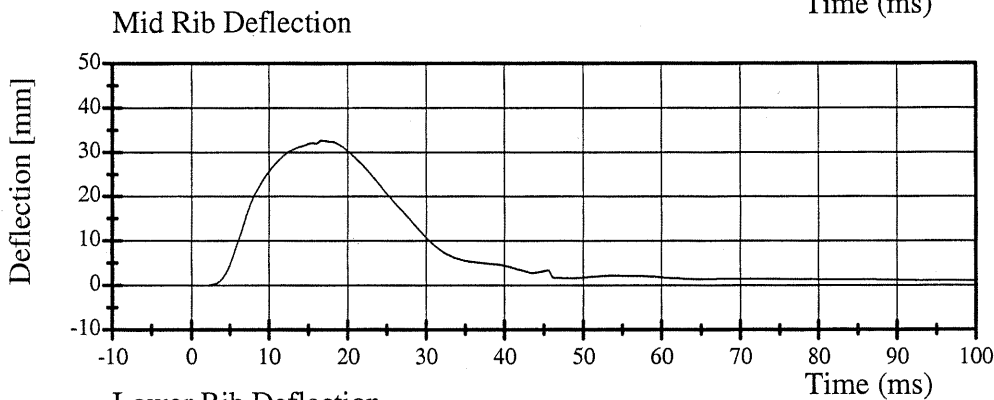
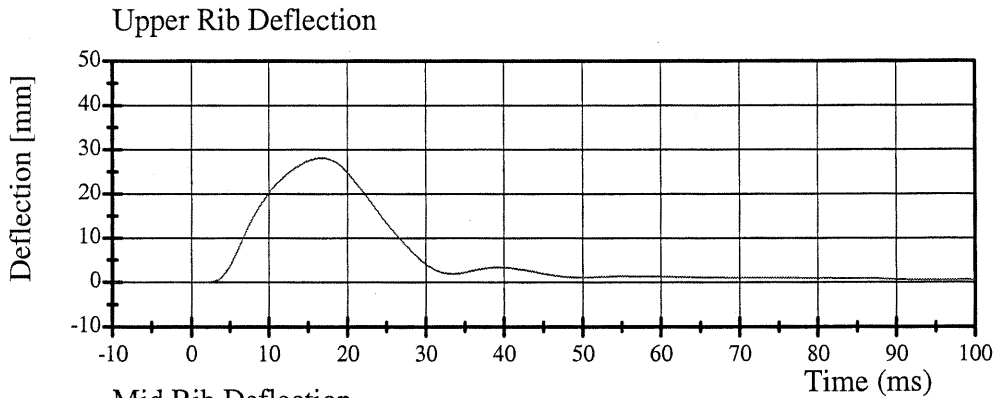


Transportation Research Center Inc.

Left Thorax With Arm Test

SID-II's Serial No. 056 Calibration No. 02 - 1

Test Date 08/02/2005



08.08.2005 13:31:30 405



Transportation Research Center Inc.

Left Thorax Without Arm Test

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

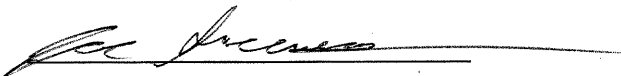
Test Date 08/01/2005

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

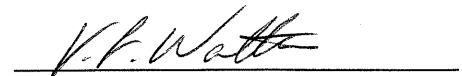
Test does not meet specifications.

Comments:

Technician



Approved



08.08.2005 13:42:29 567



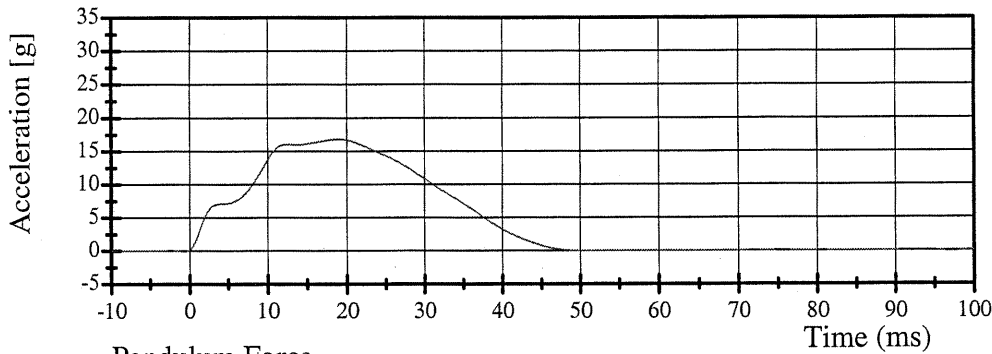
Transportation Research Center Inc.

Left Thorax Without Arm Test

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

Test Date 08/01/2005

Pendulum Deceleration

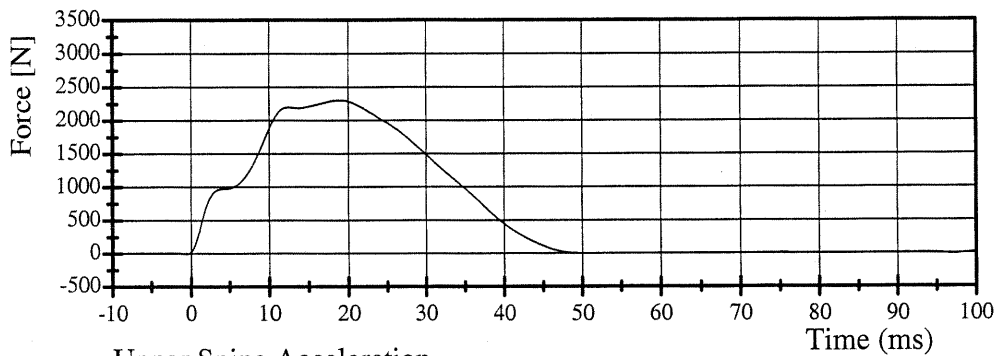


Filter Class: CFC 180

Max: 16.8 g at 19.0 ms

Min: -0.3 g at 115.4 ms

Pendulum Force

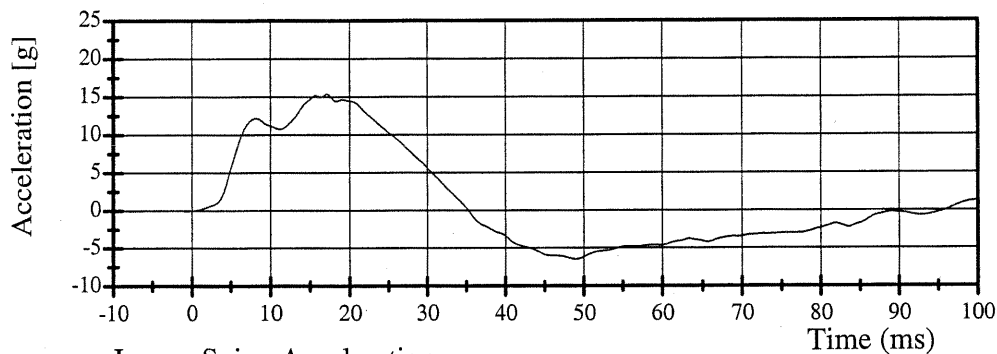


Filter Class: CFC 180

Max: 2304 N at 19.0 ms

Min: -35 N at 115.4 ms

Upper Spine Acceleration

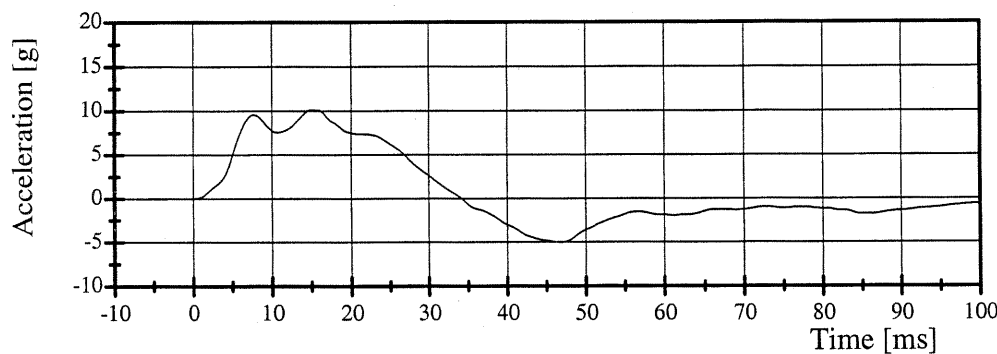


Filter Class: CFC 180

Max: 15.4 g at 17.2 ms

Min: -6.4 g at 49.0 ms

Lower Spine Acceleration



Filter Class: CFC 180

Max: 10.1 g at 15.0 ms

Min: -5.0 g at 46.8 ms

08.08.2005 13:42:30 567



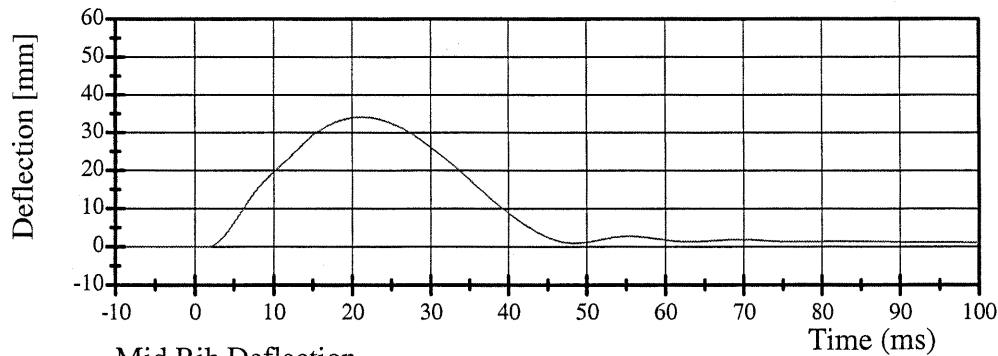
Transportation Research Center Inc.

Left Thorax Without Arm Test

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

Test Date 08/01/2005

Upper Rib Deflection

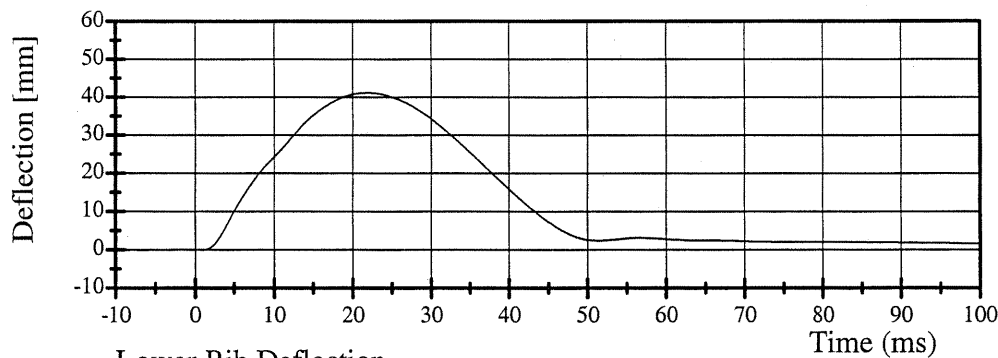


Filter Class: CFC 600

Max: 34.2 mm at 21.3 ms

Min: -0.0 mm at 1.4 ms

Mid Rib Deflection

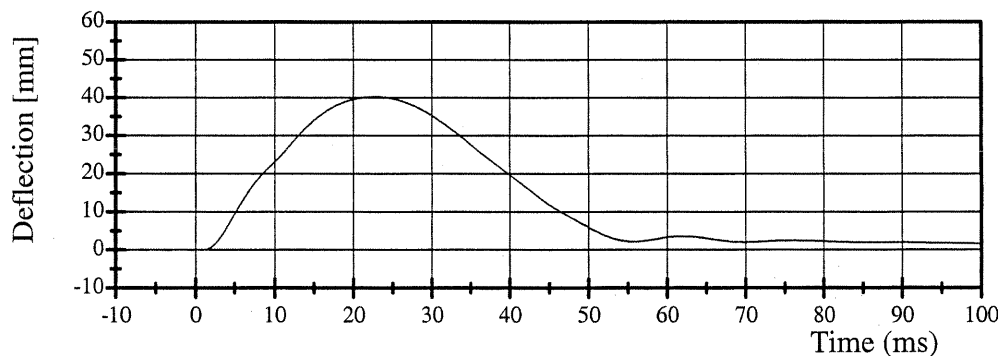


Filter Class: CFC 600

Max: 41.2 mm at 22.1 ms

Min: -0.0 mm at 1.0 ms

Lower Rib Deflection



Filter Class: CFC 600

Max: 40.2 mm at 23.0 ms

Min: -0.0 mm at 0.9 ms

Transportation Research Center Inc.

Left Abdomen Test

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

Test Date 08/01/2005

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

Test does not meet specifications.

Comments:

Technician



Approved



08.08.2005 13:48:58 592



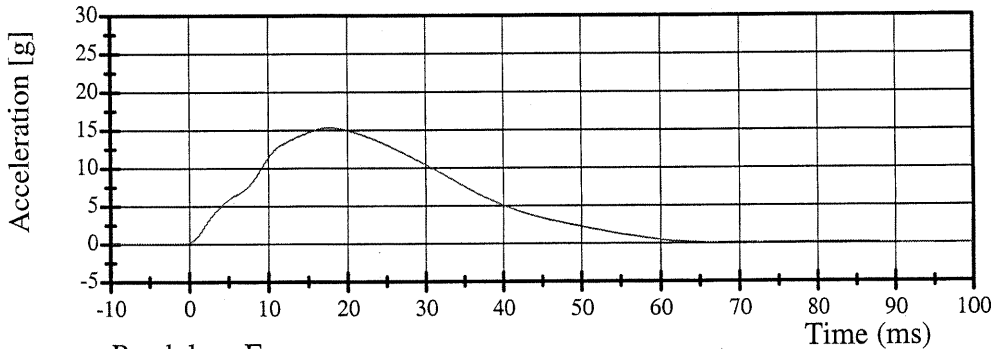
Transportation Research Center Inc.

Left Abdomen Test

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

Test Date 08/01/2005

Pendulum Deceleration

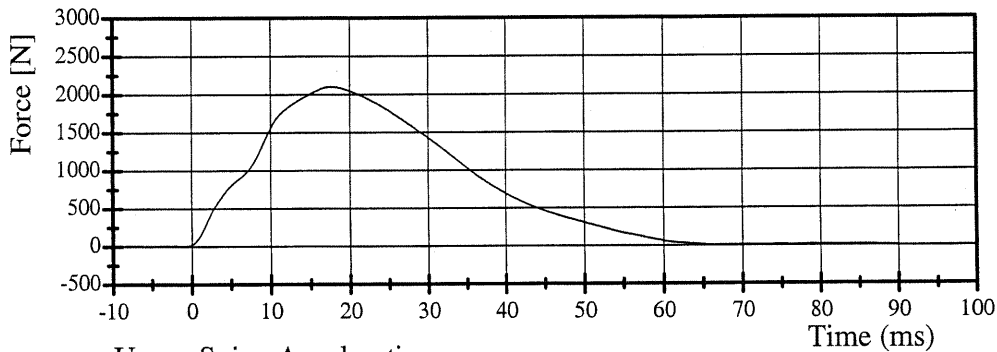


Filter Class: CFC 180

Max: 15.4 g at 17.7 ms

Min: -0.3 g at 138.8 ms

Pendulum Force

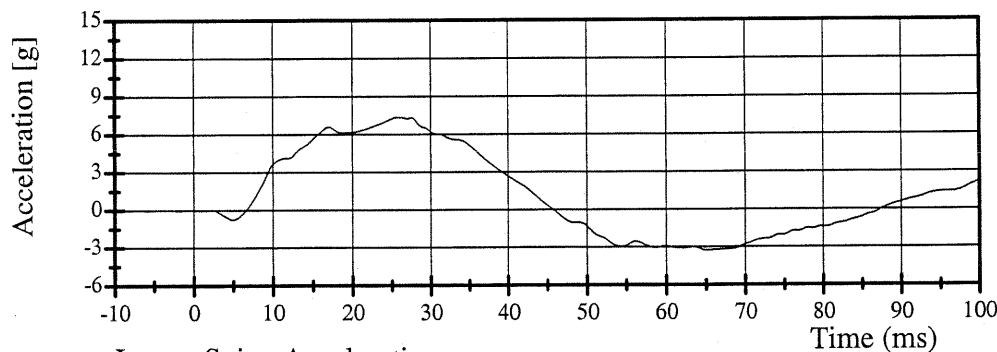


Filter Class: CFC 180

Max: 2104 N at 17.7 ms

Min: -35 N at 138.8 ms

Upper Spine Acceleration

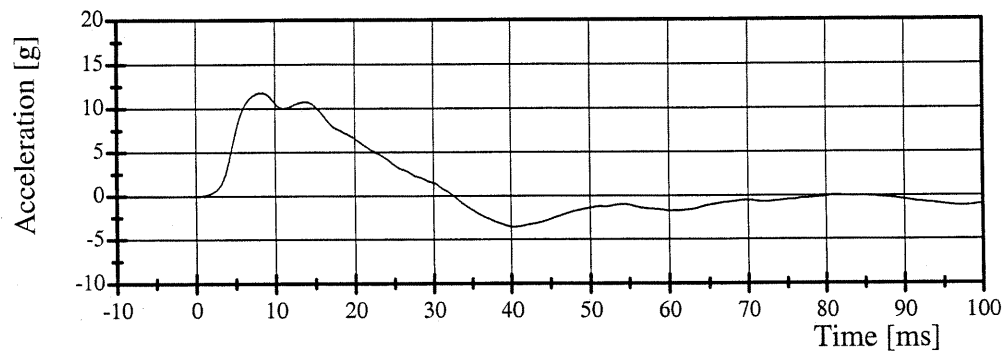


Filter Class: CFC 180

Max: 7.4 g at 26.0 ms

Min: -3.3 g at 65.0 ms

Lower Spine Acceleration



Filter Class: CFC 180

Max: 11.8 g at 8.2 ms

Min: -3.6 g at 40.4 ms

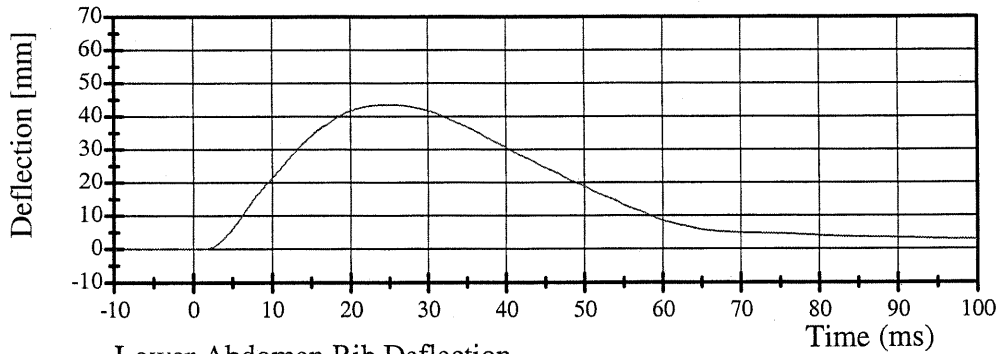
Transportation Research Center Inc.

Left Abdomen Test

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

Test Date 08/01/2005

Upper Abdomen Rib Deflection

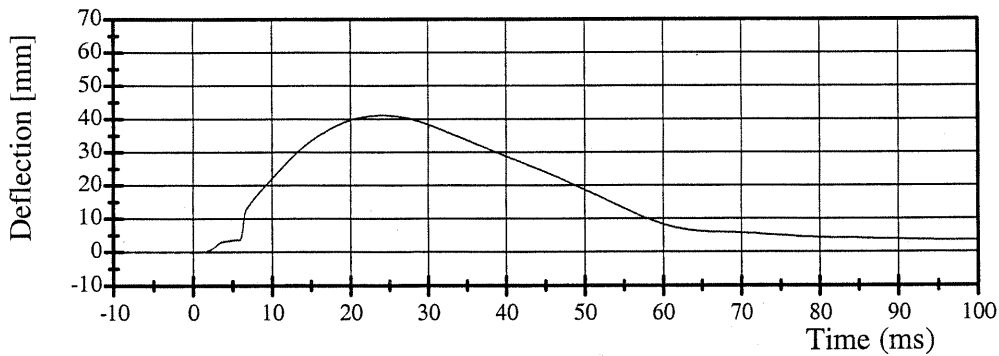


Filter Class: CFC 600

Max: 43.5 mm at 24.9 ms

Min: -0.0 mm at -45.4 ms

Lower Abdomen Rib Deflection



Filter Class: CFC 600

Max: 41.1 mm at 24.1 ms

Min: -0.0 mm at -37.0 ms

Transportation Research Center Inc.

Left Pelvis Test

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

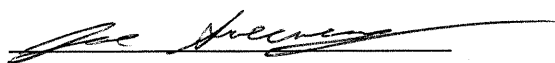
Test Date 08/02/2005

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

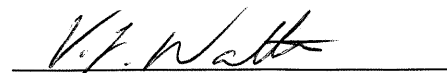
Test meets specifications.

Comments:

Technician



Approved



08.08.2005 14:56:49 418



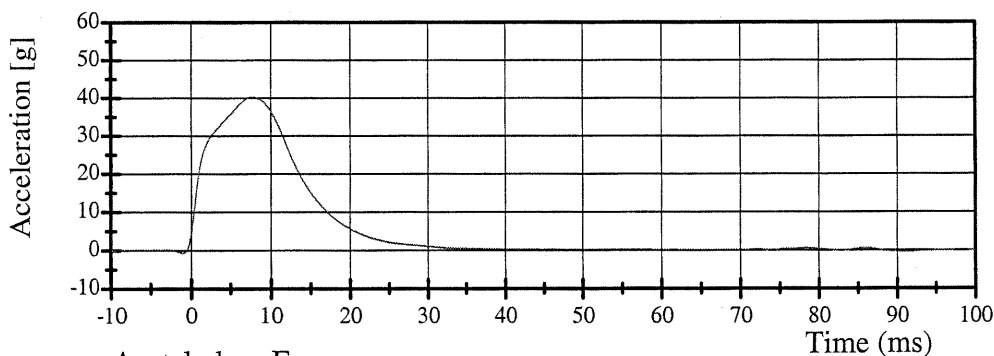
Transportation Research Center Inc.

Left Pelvis Test

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

Test Date 08/02/2005

Pendulum Deceleration

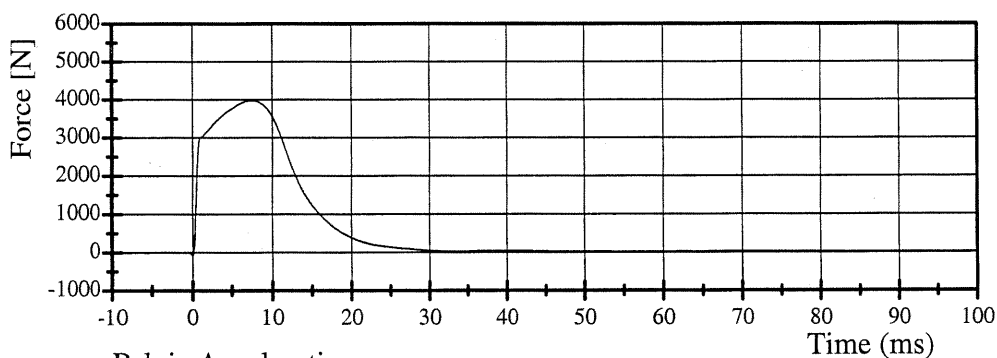


Filter Class: CFC 180

Max: 40.3 g at 7.8 ms

Min: -0.7 g at -1.0 ms

Acetabulum Force

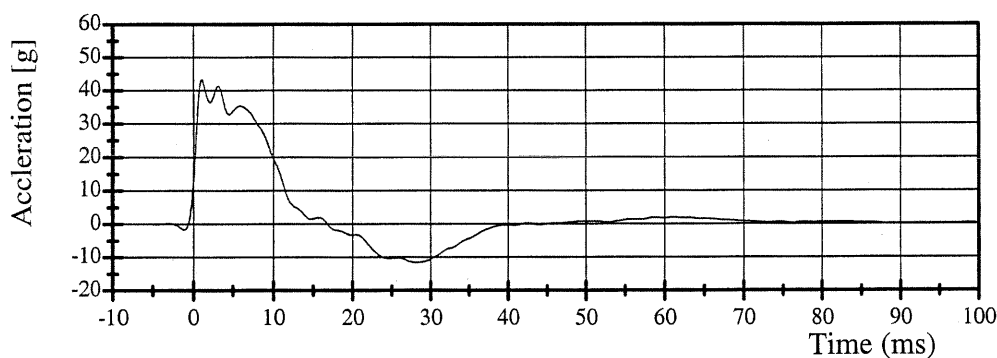


Filter Class: CFC 600

Max: 3987 N at 7.6 ms

Min: -64 N at 0.0 ms

Pelvis Acceleration



Filter Class: CFC 180

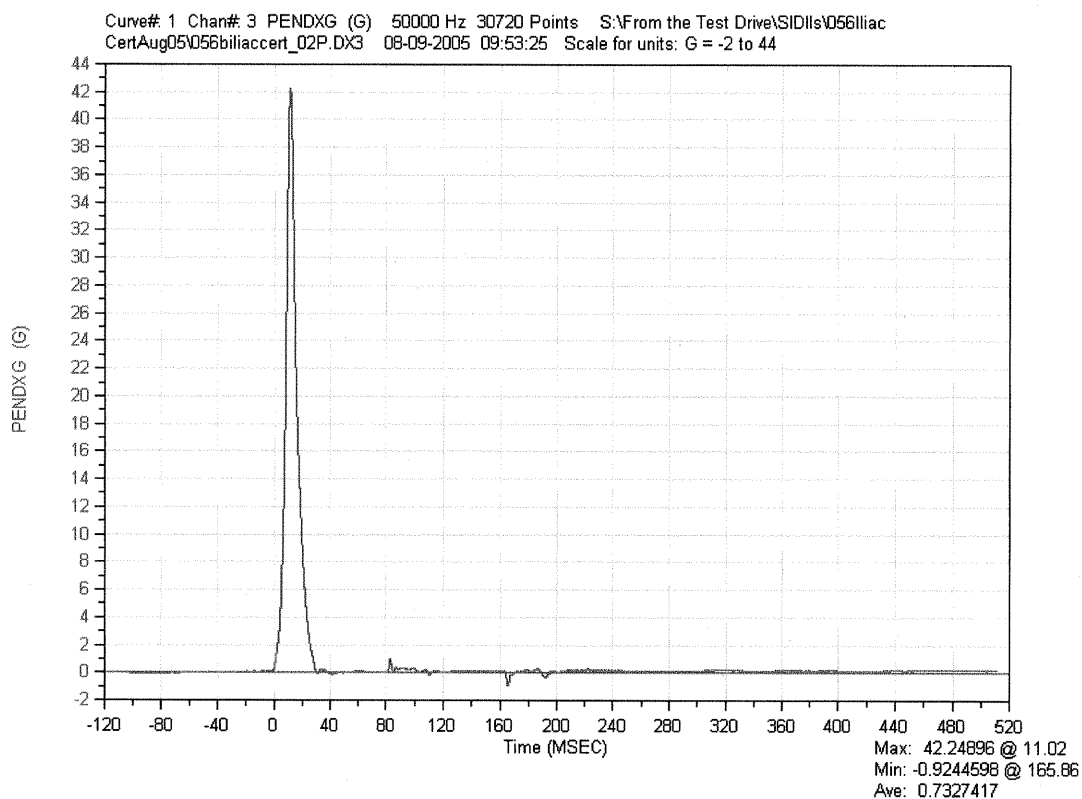
Max: 43.3 g at 1.0 ms

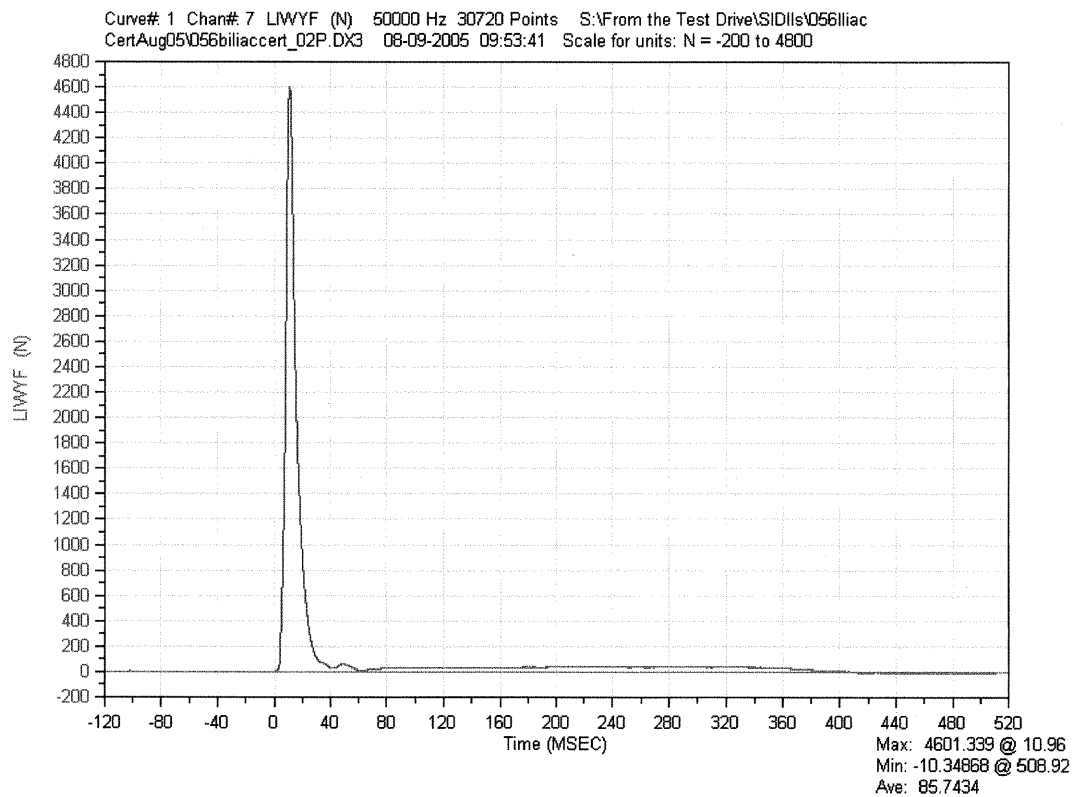
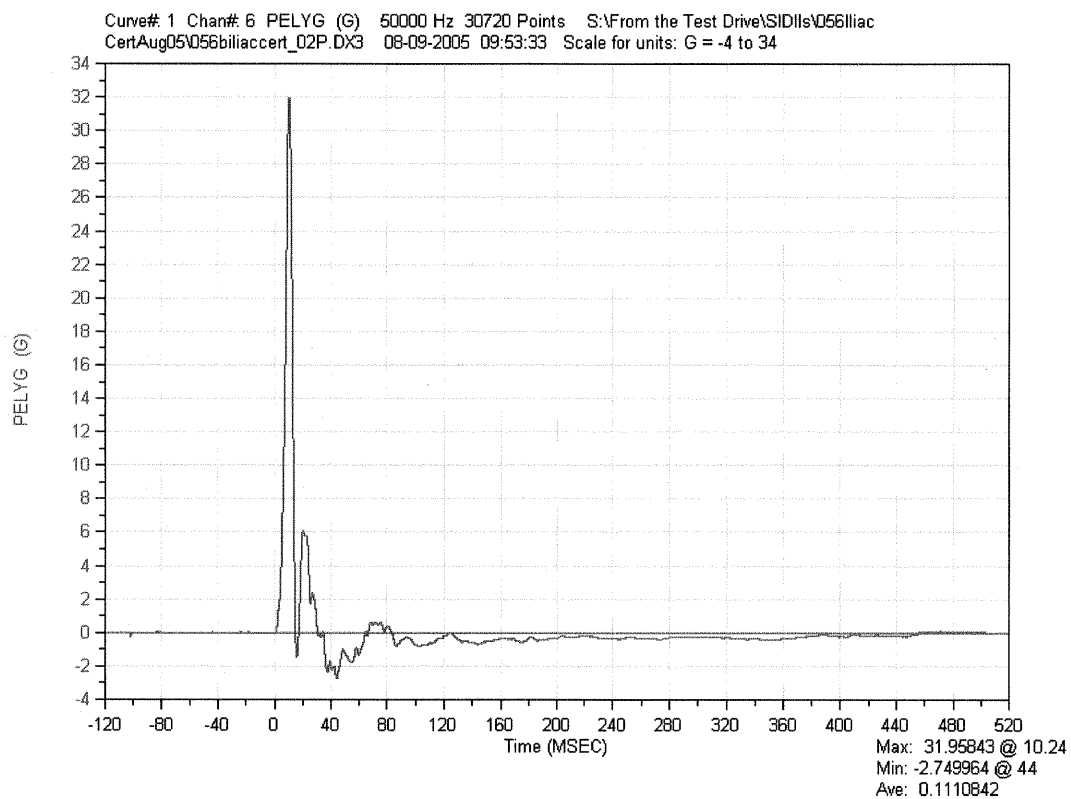
Min: -11.5 g at 28.2 ms

Test Parameter/Specification

Test Number	056biliaccert_02
Dummy S/N	056
Test Performer	VRTC
Date of Calibration	8/2/2005
Temperature (20.6 - 22.2 °C)	21.1
Relative Humidity (10 - 70 %)	47
Probe Velocity (4.2 - 4.4 m/s)	4.379
Maximum Probe Acceleration (41 - 47 g)	42.249
Maximum Pelvis Y Acceleration (32 - 40 g)	31.958
Maximum Iliac Force (4841 - 5491 N)	4601.339

Test Results

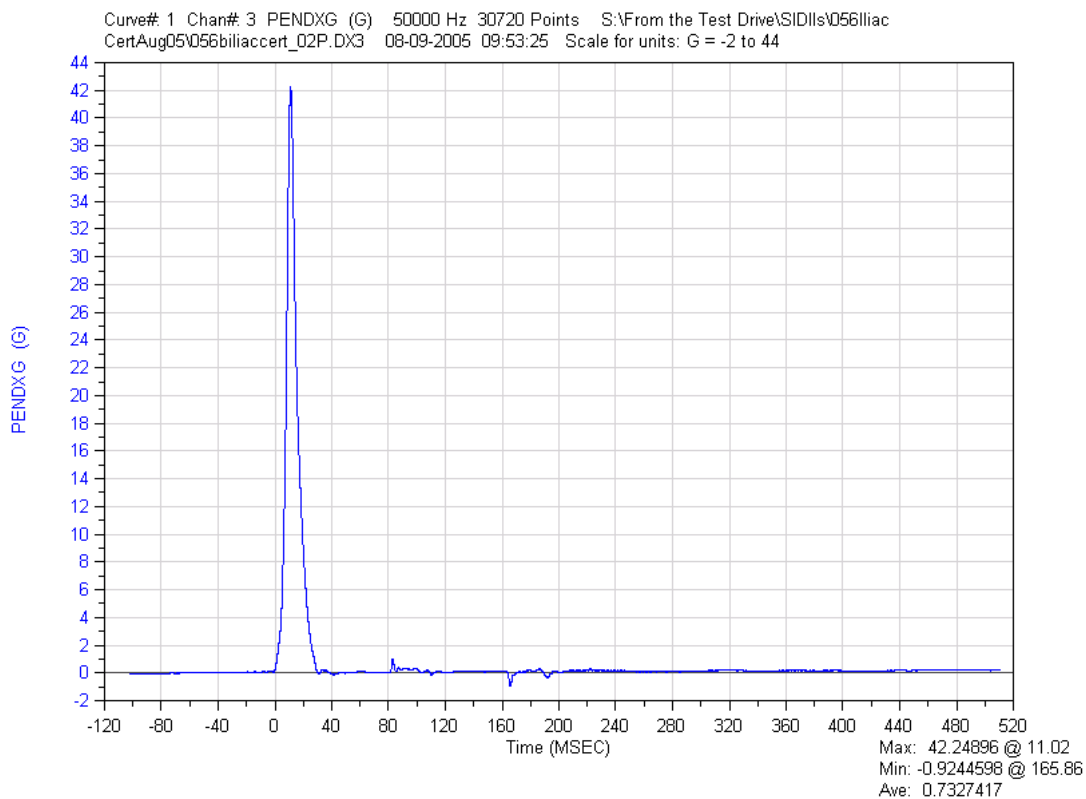


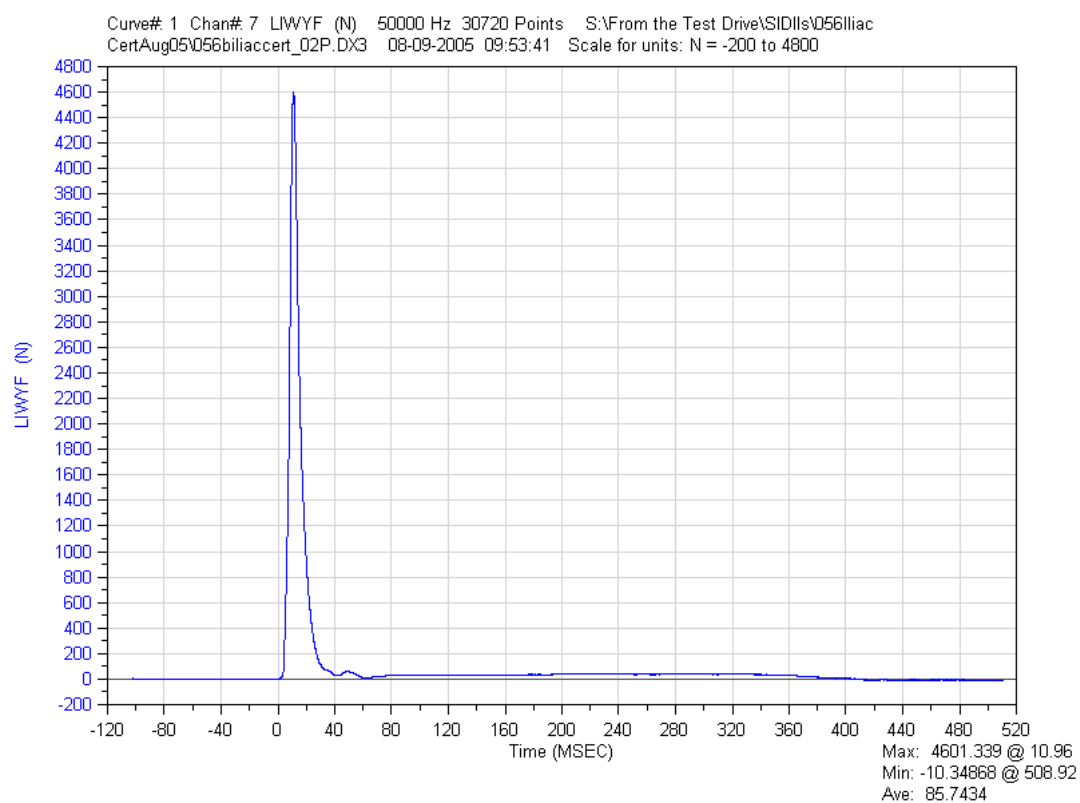
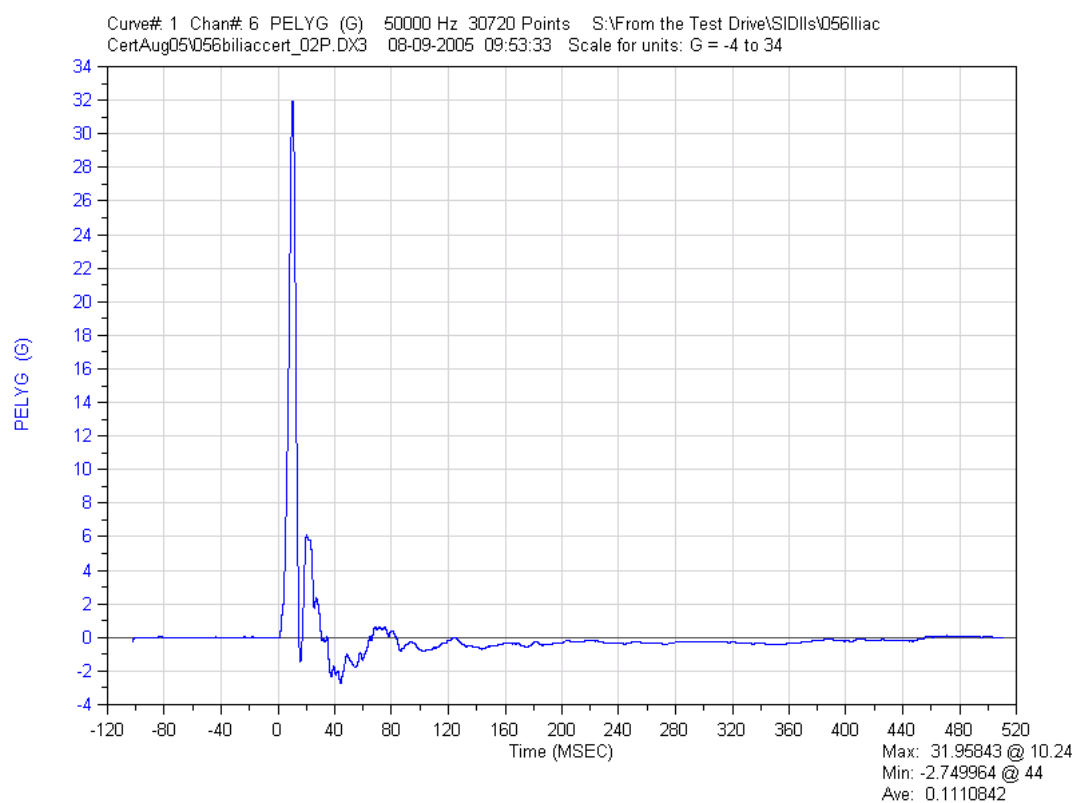


Test Parameter/Specification

Test Number	056biliaccert_02
Dummy S/N	056
Test Performer	VRTC
Date of Calibration	8/2/2005
Temperature (20.6 - 22.2 °C)	21.1
Relative Humidity (10 - 70 %)	47
Probe Velocity (4.2 - 4.4 m/s)	4.379
Maximum Probe Acceleration (41 - 47 g)	42.249
Maximum Pelvis Y Acceleration (32 - 40 g)	31.958
Maximum Iliac Force (4841 - 5491 N)	4601.339

Test Results





Pre-Test Dummy Configuration and Performance Verification Data

Passenger Dummy S/N: 020

Tested per draft procedures and specifications provided by VRTC

Transportation Research Center Inc.

Left Head Drop Test

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

Test Date 08/02/2005

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

Test meets specifications.

Comments:

Technician



Approved



08.11.2005 10:34:29 231

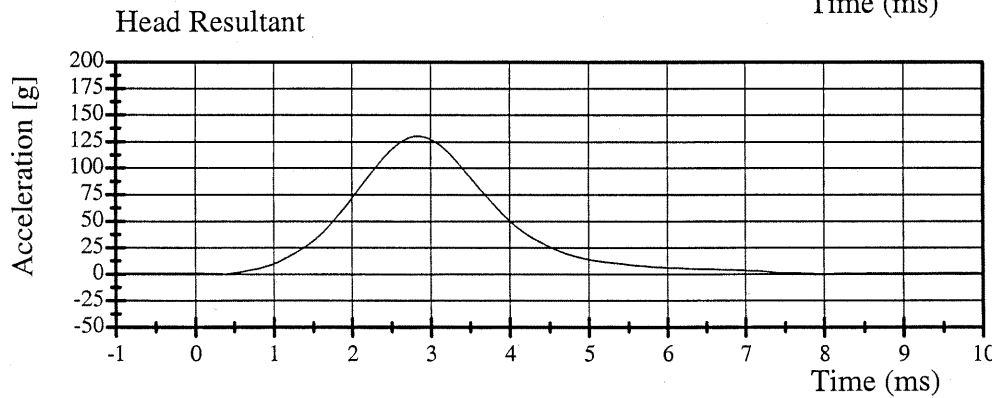
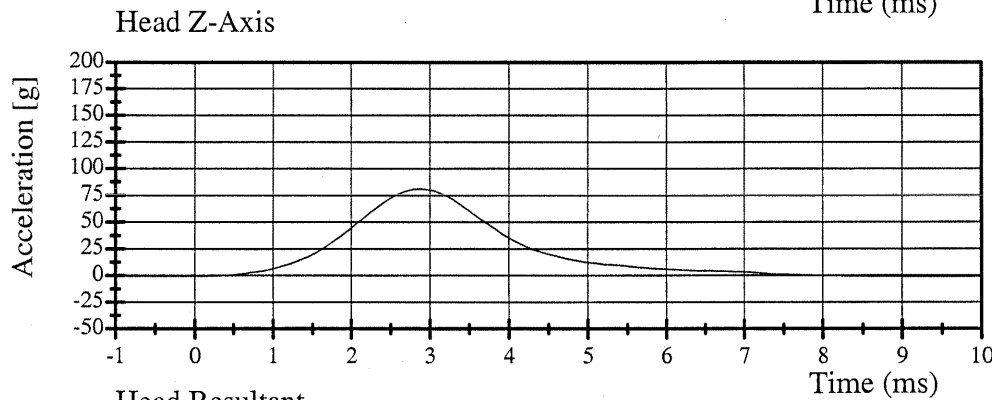
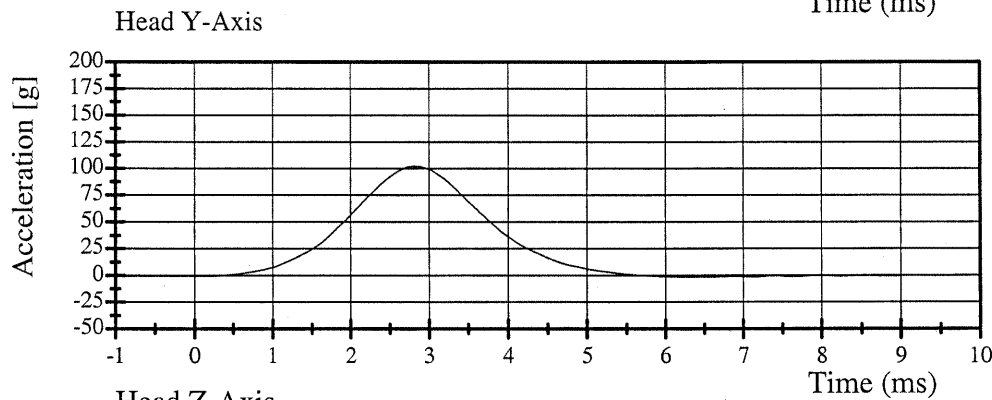
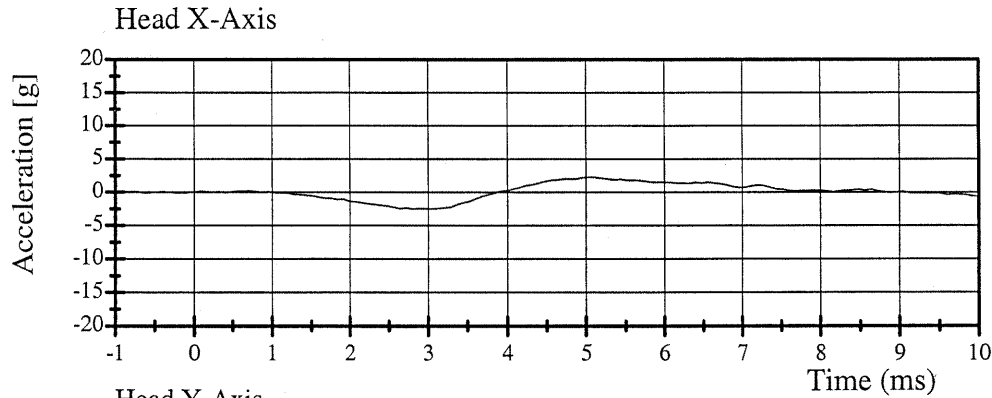


Transportation Research Center Inc.

Head Drop Test

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

Test Date 08/02/2005



08.11.2005 10:34:30 231



Transportation Research Center Inc.

Left Lateral Neck Test

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

Test Date 08/01/2005

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

Test does not meet specifications.

Comments:

Technician



Approved



08.11.2005 10:37:46 669

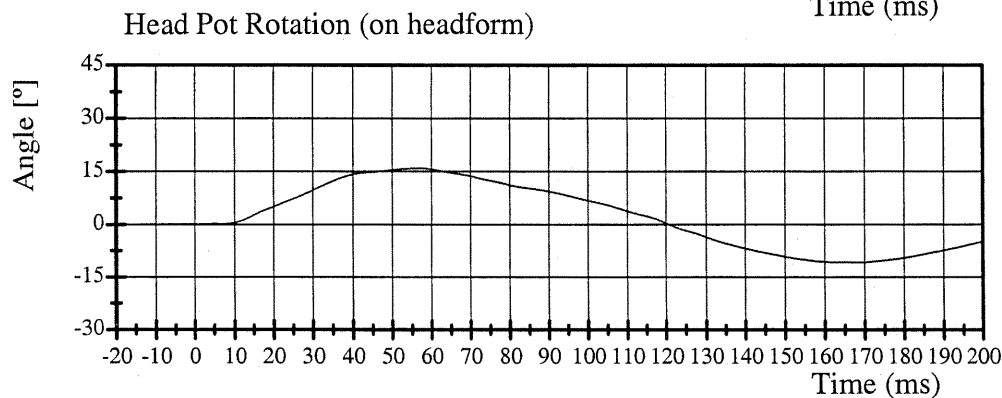
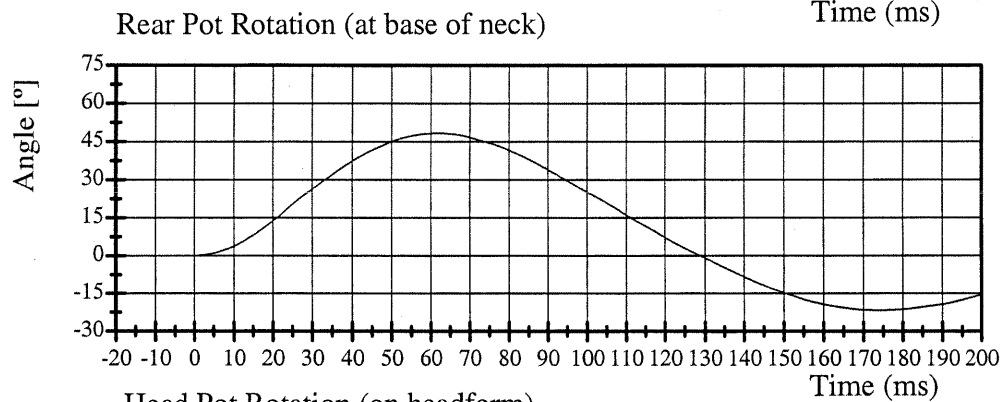
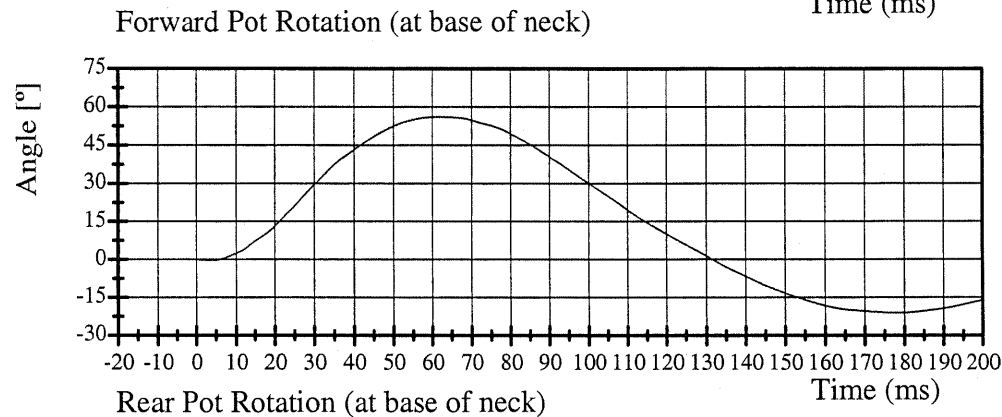
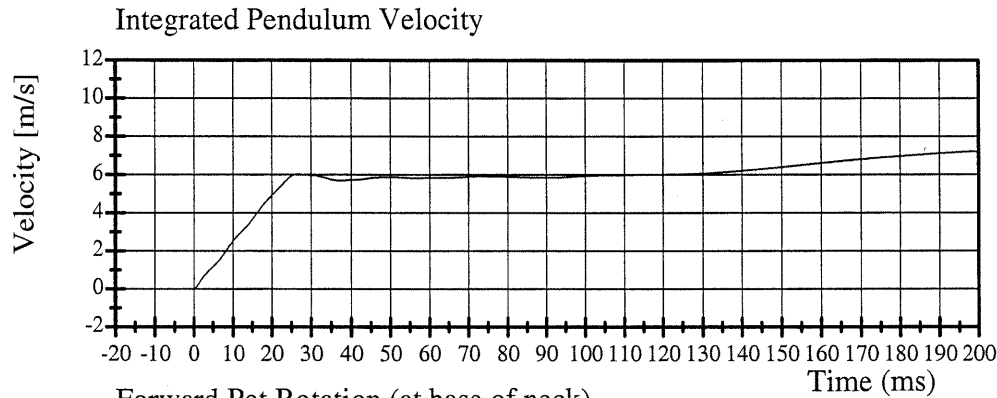


Transportation Research Center Inc.

Left Lateral Neck Test

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

Test Date 08/01/2005



08.11.2005 10:37:47 669



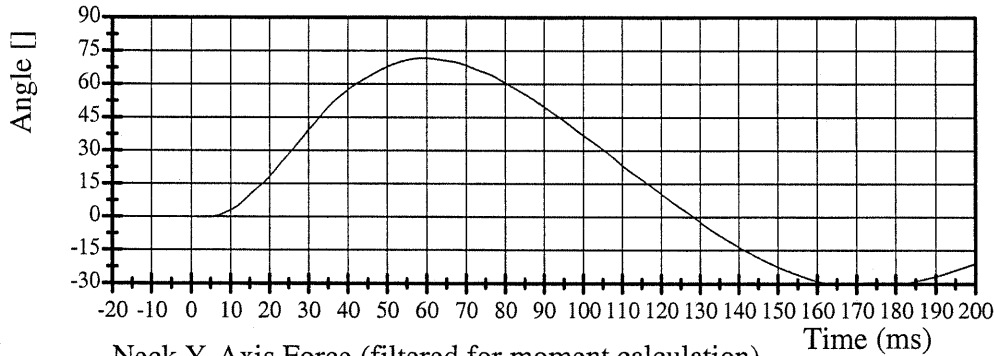
Transportation Research Center Inc.

Left Lateral Neck Test

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

Test Date 08/01/2005

D-Plane Rotation (forward pot + head pot)

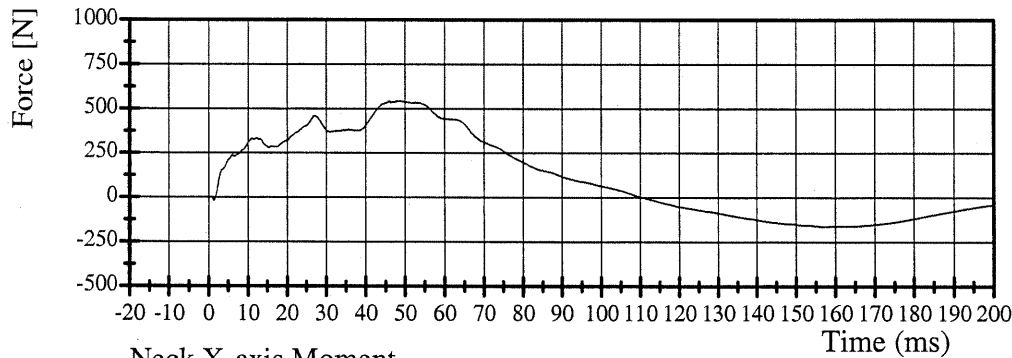


Filter Class: CFC 60

Max: 71.8 ° at 59.2 ms

Min: -31.2 ° at 173.3 ms

Neck Y-Axis Force (filtered for moment calculation)

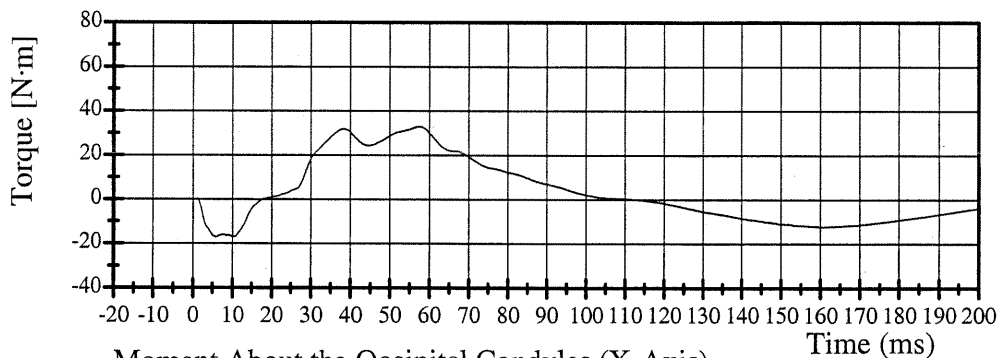


Filter Class: CFC 600

Max: 543 N at 48.1 ms

Min: -164 N at 157.4 ms

Neck X-axis Moment

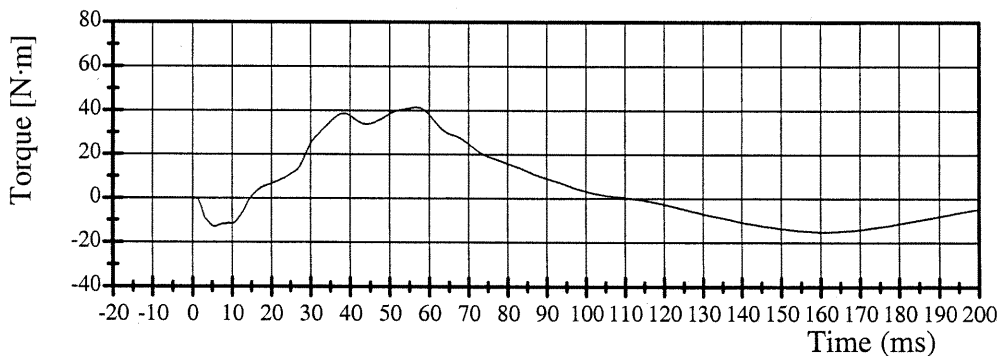


Filter Class: CFC 600

Max: 32.9 N·m at 57.3 ms

Min: -17.1 N·m at 5.8 ms

Moment About the Occipital Condyles (X-Axis)



Filter Class: 600

Max: 41.5 N·m at 57.0 ms

Min: -15.1 N·m at 161.4 ms

08.11.2005 10:37:48 669



Transportation Research Center Inc.

Left Shoulder Test

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

Test Date 08/02/2005

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

Test meets specifications.

Comments:

Technician



Approved



08.02.2005 14:39:47 645



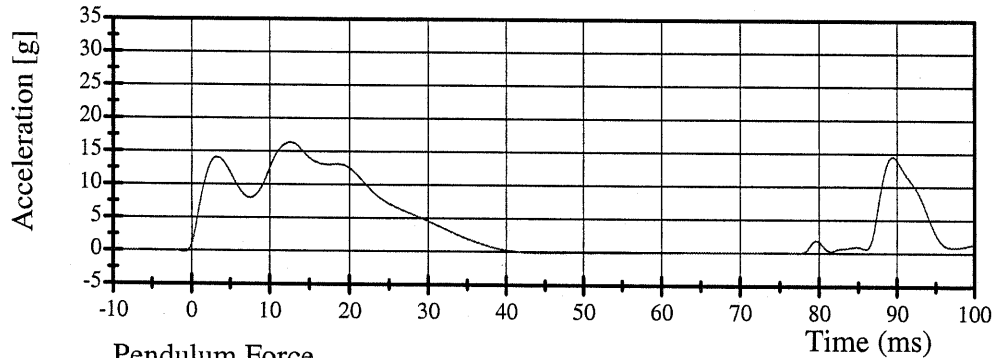
Transportation Research Center Inc.

Left Shoulder Test

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

Test Date 08/02/2005

Pendulum Deceleration

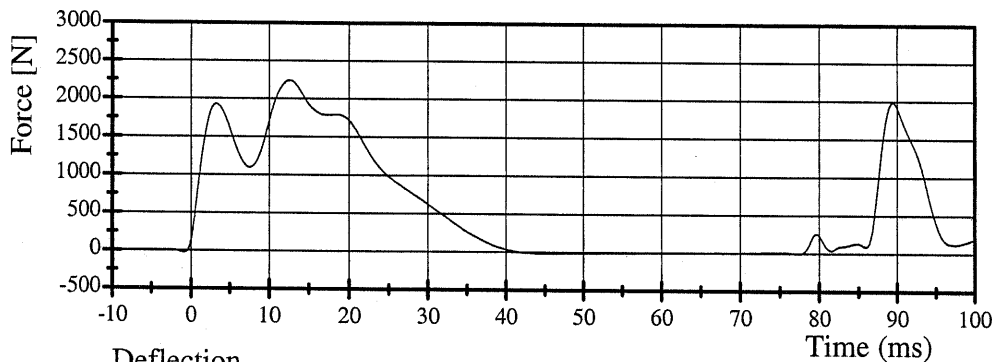


Filter Class: CFC 180

Max: 16.5 g at 12.5 ms

Min: -0.5 g at 121.8 ms

Pendulum Force

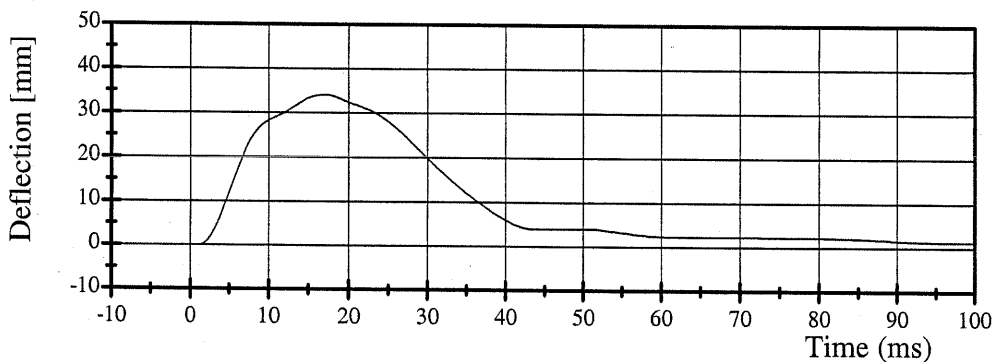


Filter Class: CFC 180

Max: 2242 N at 12.6 ms

Min: -41 N at 121.8 ms

Deflection



Filter Class: CFC 600

Max: 34.0 mm at 17.0 ms

Min: -0.0 mm at 1.1 ms

08.02.2005 14:39:48 645



Transportation Research Center Inc.

Left Thorax With Arm Test

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

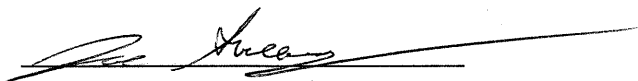
Test Date 08/02/2005

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

Test does not meet specifications.

Comments:

Technician



Approved



08.11.2005 14:13:21 392



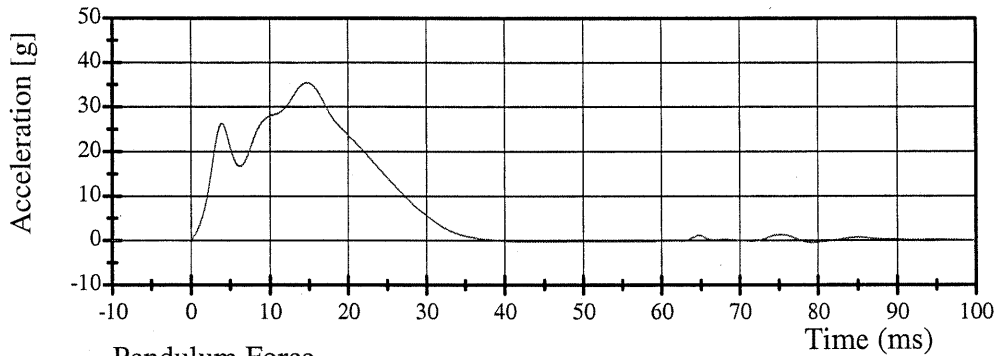
Transportation Research Center Inc.

Left Thorax With Arm Test

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

Test Date 08/02/2005

Pendulum Deceleration

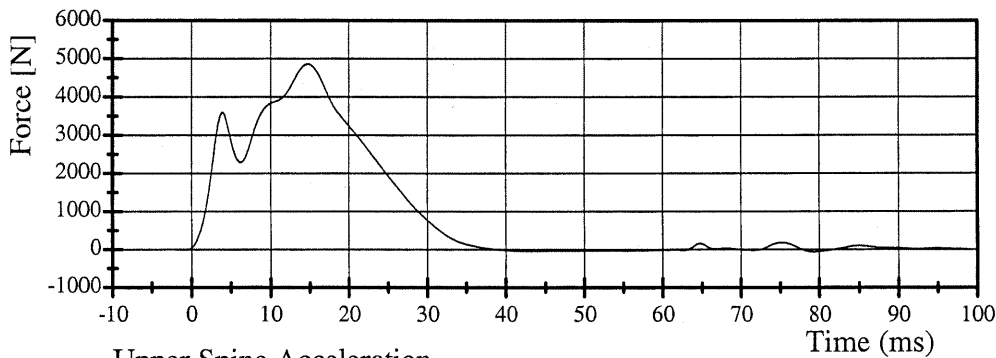


Filter Class: CFC 180

Max: 35.5 g at 14.7 ms

Min: -0.5 g at 79.2 ms

Pendulum Force

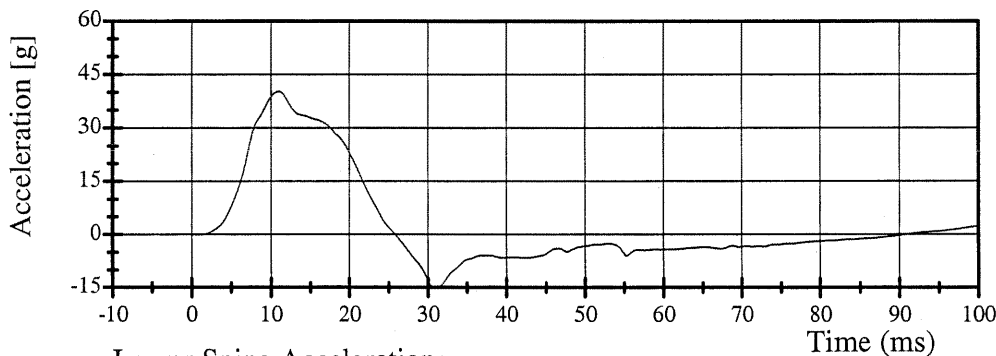


Filter Class: CFC 180

Max: 4859 N at 14.7 ms

Min: -62 N at 79.2 ms

Upper Spine Acceleration

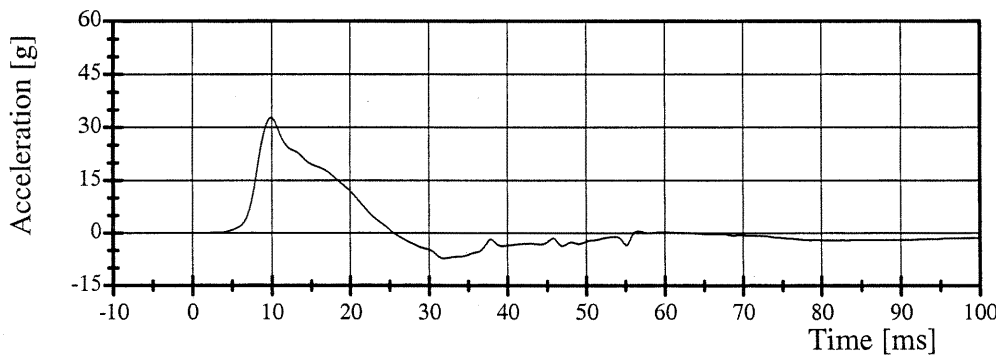


Filter Class: CFC 180

Max: 40.2 g at 11.0 ms

Min: -15.4 g at 31.0 ms

Lower Spine Acceleration



Filter Class: CFC 180

Max: 32.8 g at 9.9 ms

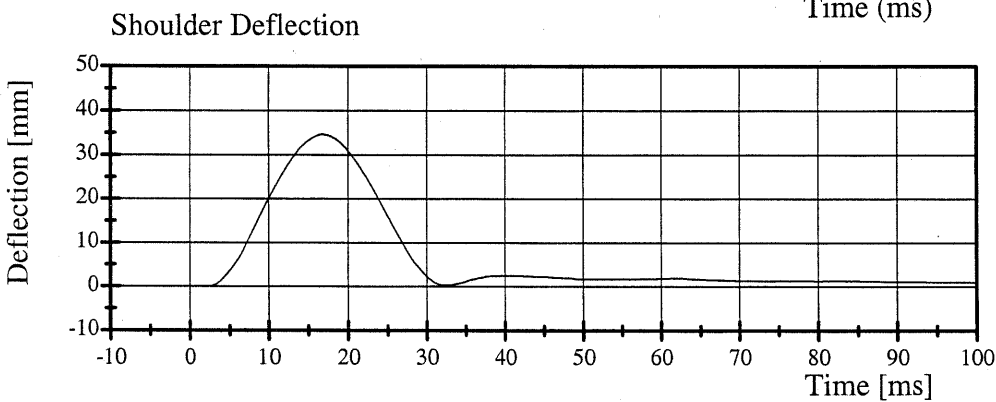
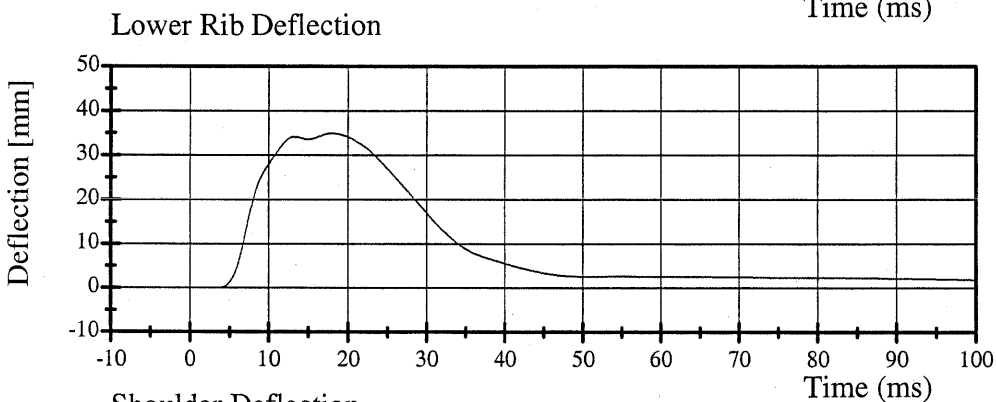
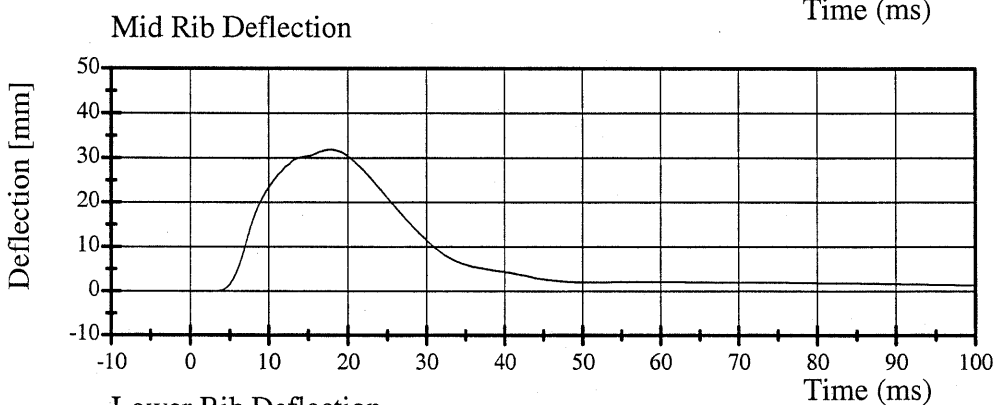
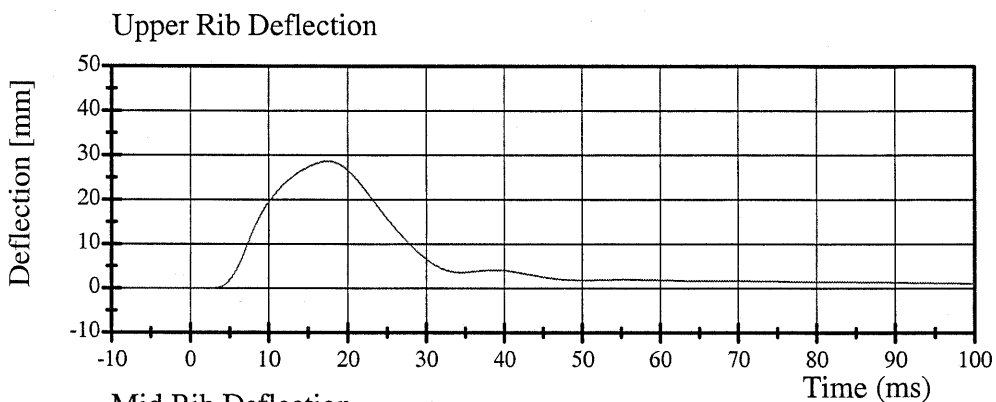
Min: -7.3 g at 31.9 ms

Transportation Research Center Inc.

Left Thorax With Arm Test

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

Test Date 08/02/2005



08.11.2005 14:13:23 392



Transportation Research Center Inc.

Left Thorax Without Arm Test

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

Test Date 08/03/2005

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

Test meets specifications.

Comments:

Technician



Approved



08.11.2005 14:14:39 594



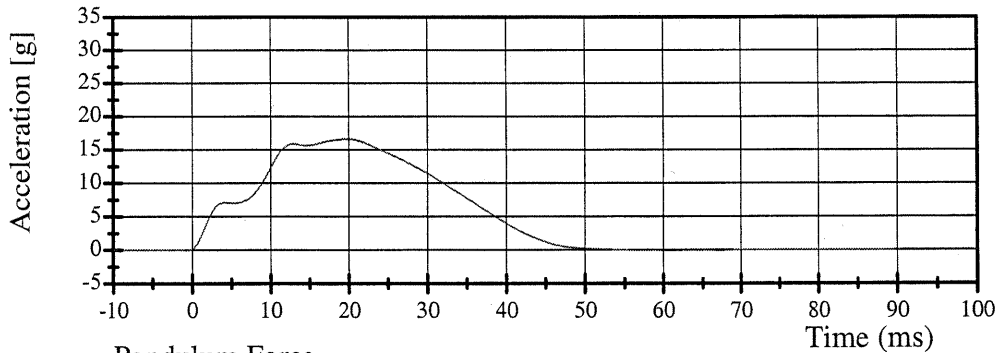
Transportation Research Center Inc.

Left Thorax Without Arm Test

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

Test Date 08/03/2005

Pendulum Deceleration

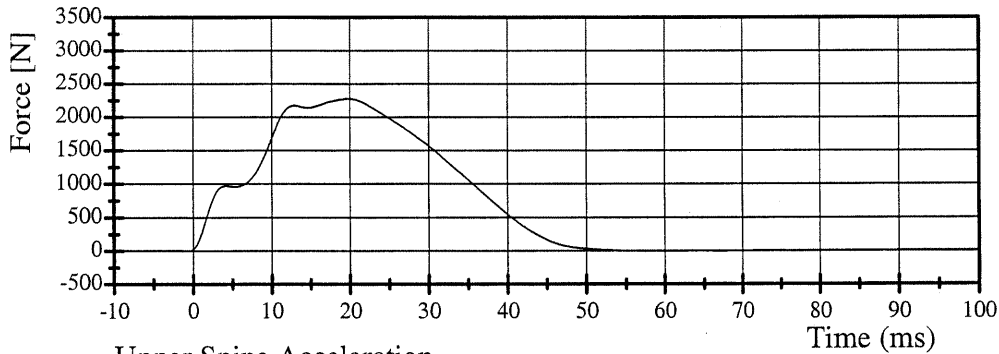


Filter Class: CFC 180

Max: 16.6 g at 19.8 ms

Min: -0.0 g at -47.4 ms

Pendulum Force

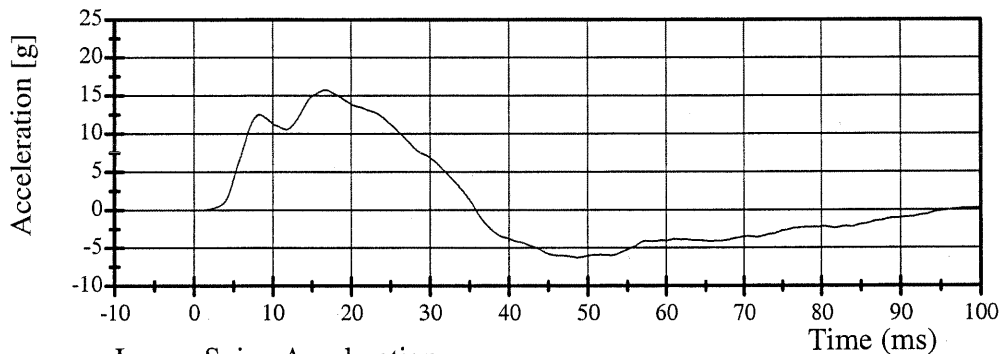


Filter Class: CFC 180

Max: 2276 N at 19.8 ms

Min: -6 N at -47.4 ms

Upper Spine Acceleration

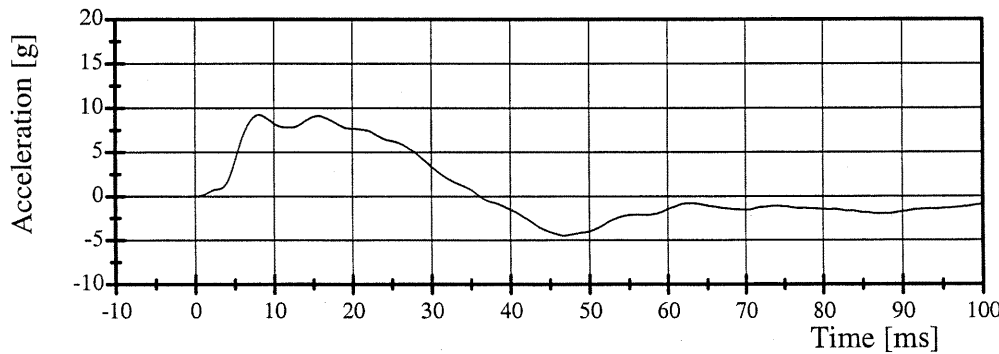


Filter Class: CFC 180

Max: 15.7 g at 16.6 ms

Min: -6.3 g at 48.6 ms

Lower Spine Acceleration



Filter Class: CFC 180

Max: 9.2 g at 8.2 ms

Min: -4.5 g at 46.8 ms

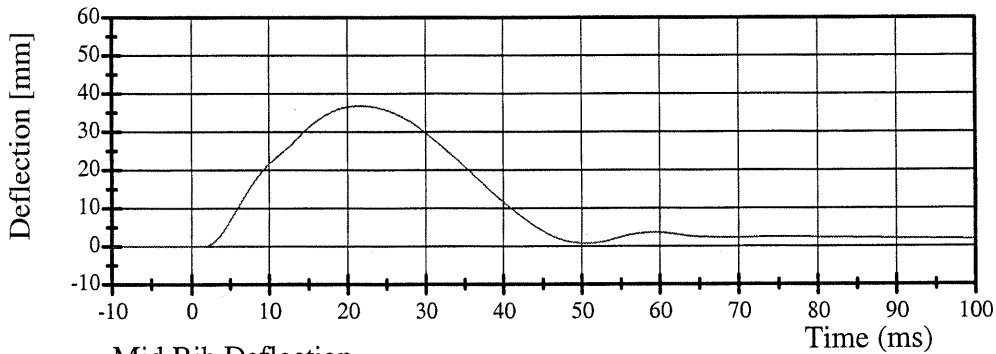
Transportation Research Center Inc.

Left Thorax Without Arm Test

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

Test Date 08/03/2005

Upper Rib Deflection

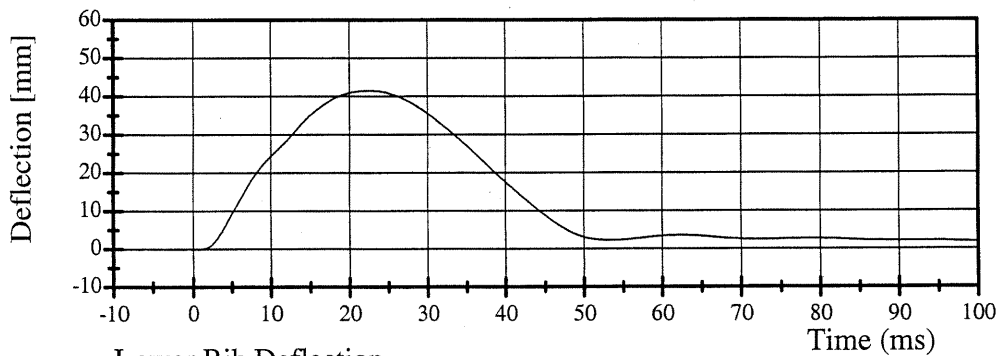


Filter Class: CFC 600

Max: 36.8 mm at 21.7 ms

Min: -0.0 mm at -9.3 ms

Mid Rib Deflection

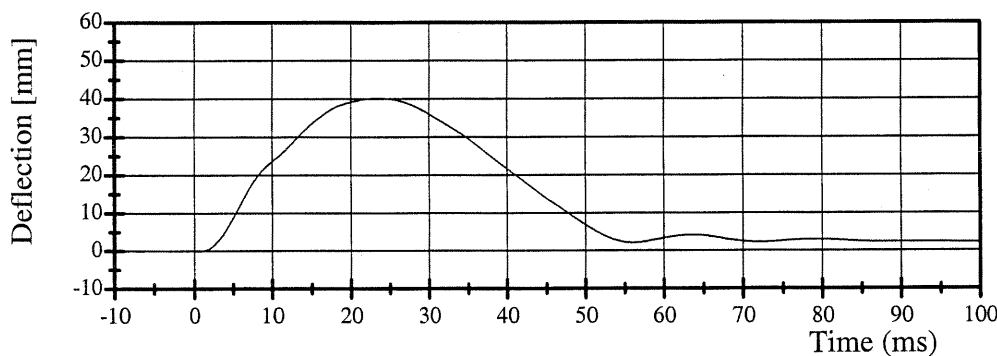


Filter Class: CFC 600

Max: 41.5 mm at 22.5 ms

Min: -0.0 mm at -24.7 ms

Lower Rib Deflection



Filter Class: CFC 600

Max: 40.1 mm at 23.4 ms

Min: -0.0 mm at -9.3 ms

Transportation Research Center Inc.

Left Abdomen Test

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

Test Date 08/03/2005

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

Test does not meet specifications.

Comments:

Technician



Approved



08.11.2005 14:16:51 633



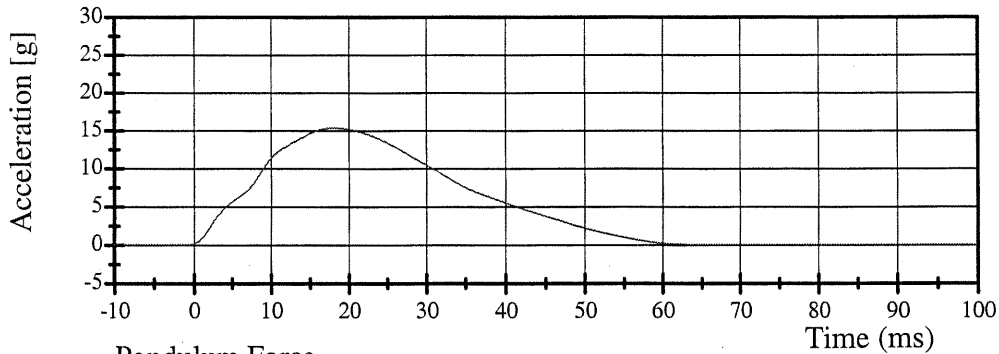
Transportation Research Center Inc.

Left Abdomen Test

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

Test Date 08/03/2005

Pendulum Deceleration

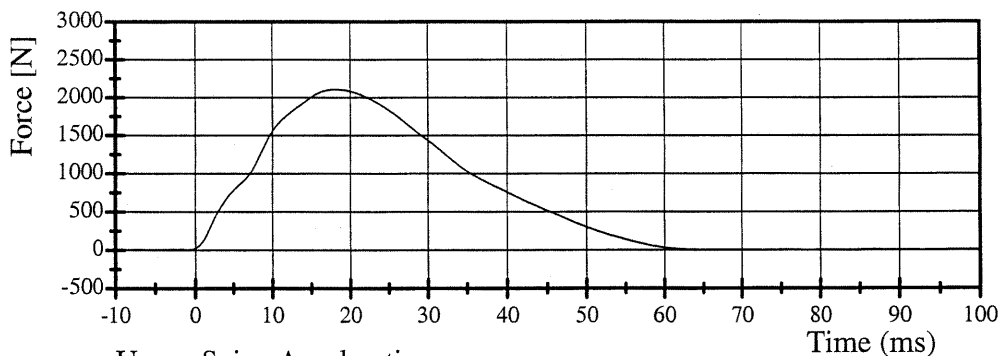


Filter Class: CFC 180

Max: 15.4 g at 18.0 ms

Min: -0.7 g at 120.9 ms

Pendulum Force

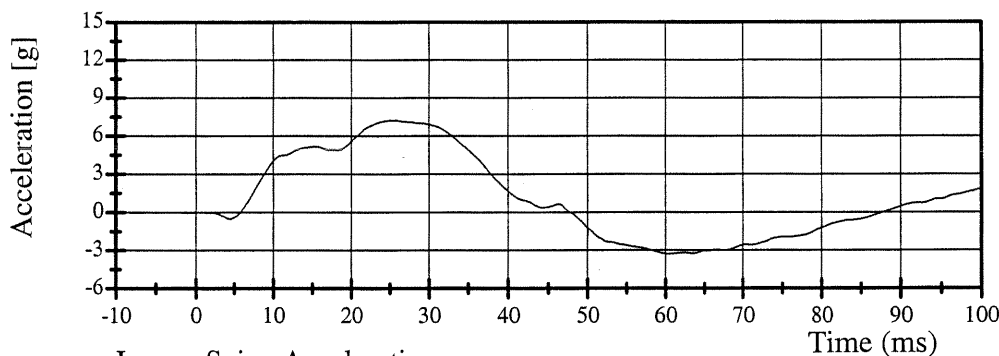


Filter Class: CFC 180

Max: 2110 N at 18.0 ms

Min: -99 N at 120.9 ms

Upper Spine Acceleration

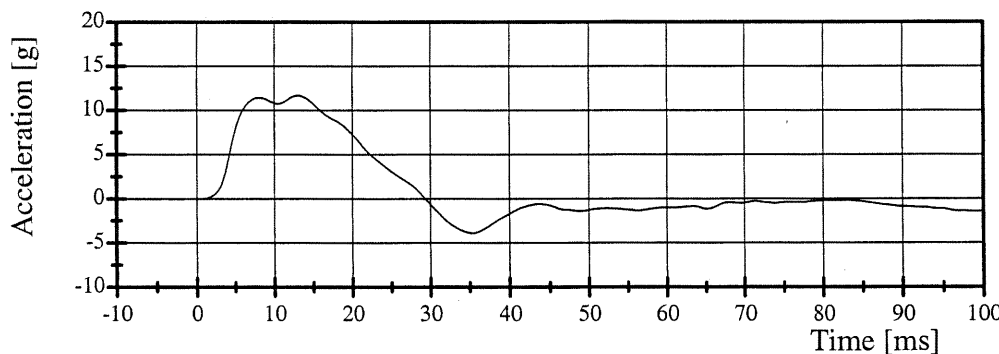


Filter Class: CFC 180

Max: 7.2 g at 25.4 ms

Min: -3.3 g at 60.2 ms

Lower Spine Acceleration



Filter Class: CFC 180

Max: 11.7 g at 13.0 ms

Min: -3.9 g at 35.4 ms

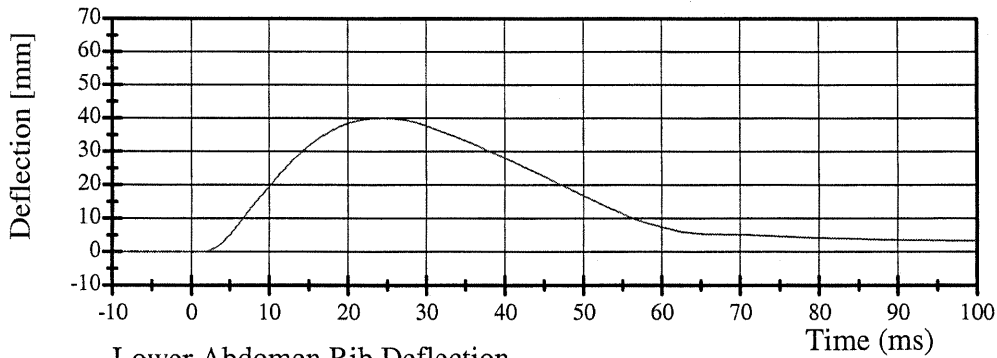
Transportation Research Center Inc.

Left Abdomen Test

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

Test Date 08/03/2005

Upper Abdomen Rib Deflection

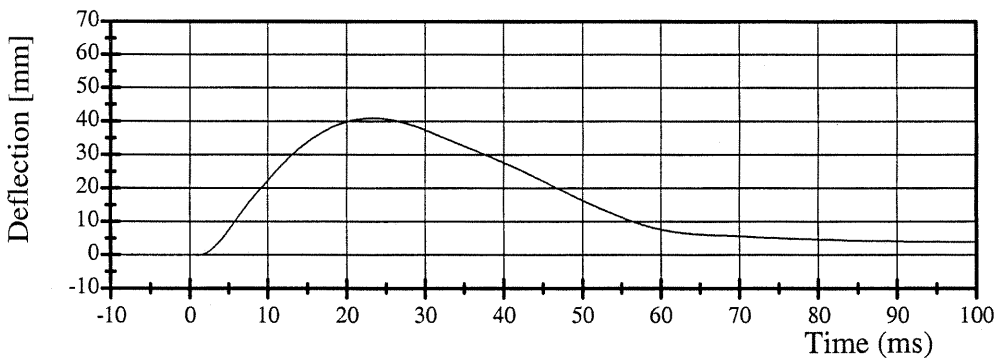


Filter Class: CFC 600

Max: 39.9 mm at 24.3 ms

Min: -0.0 mm at -40.6 ms

Lower Abdomen Rib Deflection



Filter Class: CFC 600

Max: 40.9 mm at 23.4 ms

Min: -0.0 mm at 1.0 ms

08.11.2005 14:16:53 633



Transportation Research Center Inc.

Left Pelvis Test

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

Test Date 08/03/2005

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

Test meets specifications.

Comments:

Technician



Approved



08.11.2005 14:23:38 425



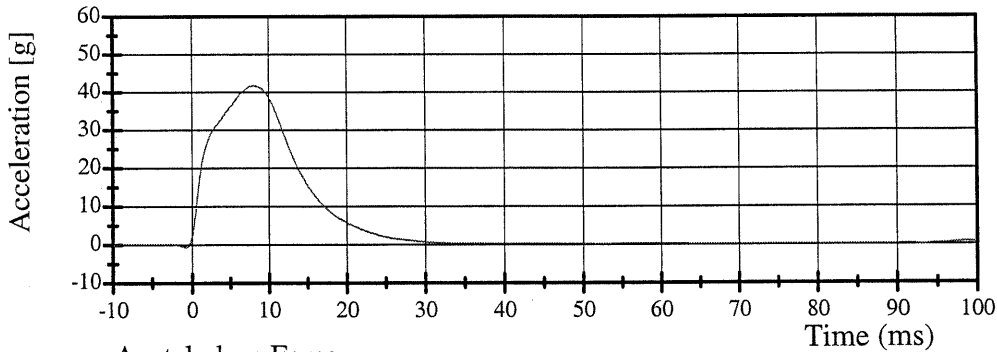
Transportation Research Center Inc.

Left Pelvis Test

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

Test Date 08/03/2005

Pendulum Deceleration

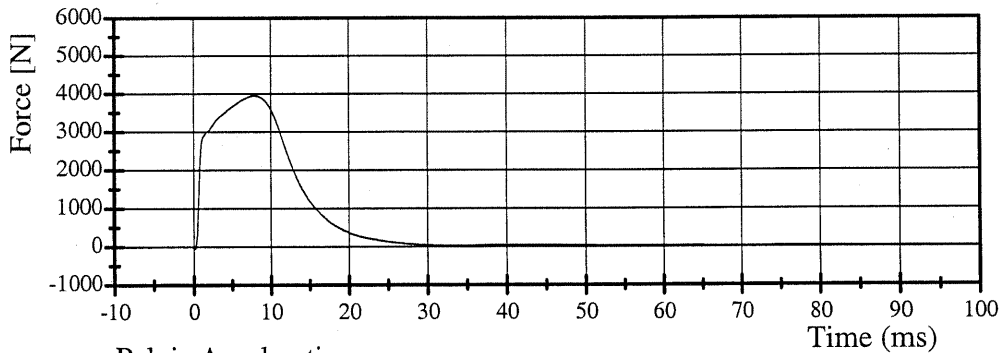


Filter Class: CFC 180

Max: 41.7 g at 8.0 ms

Min: -0.6 g at -0.8 ms

Acetabulum Force

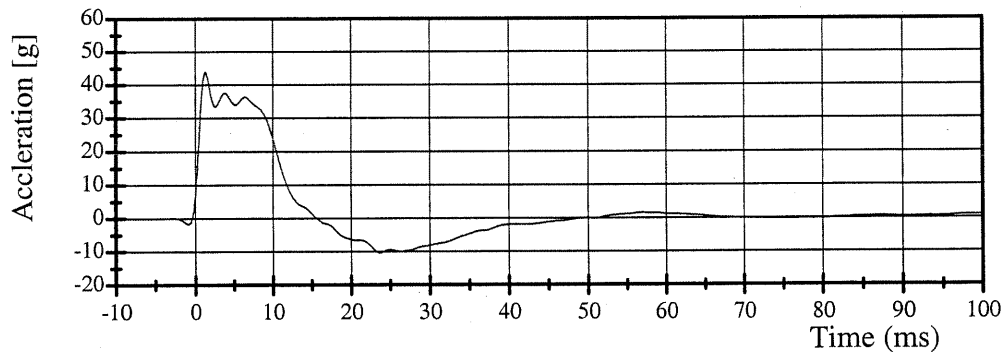


Filter Class: CFC 600

Max: 3951 N at 7.8 ms

Min: -54 N at 0.2 ms

Pelvis Acceleration



Filter Class: CFC 180

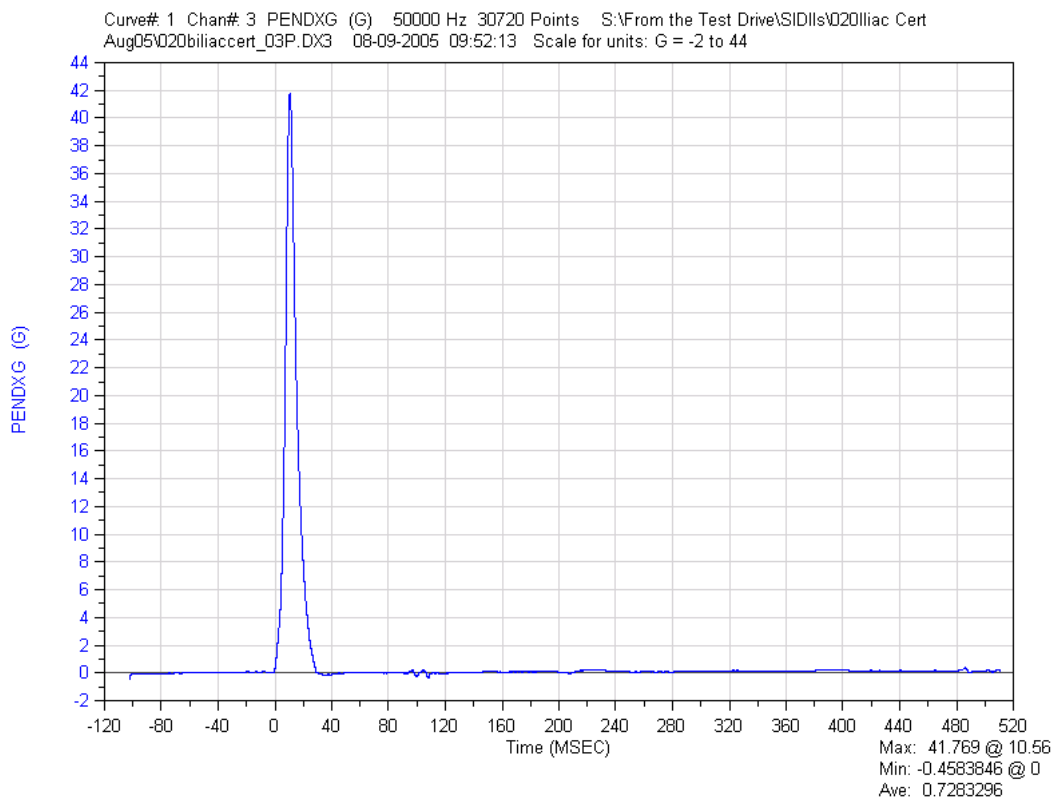
Max: 43.9 g at 1.3 ms

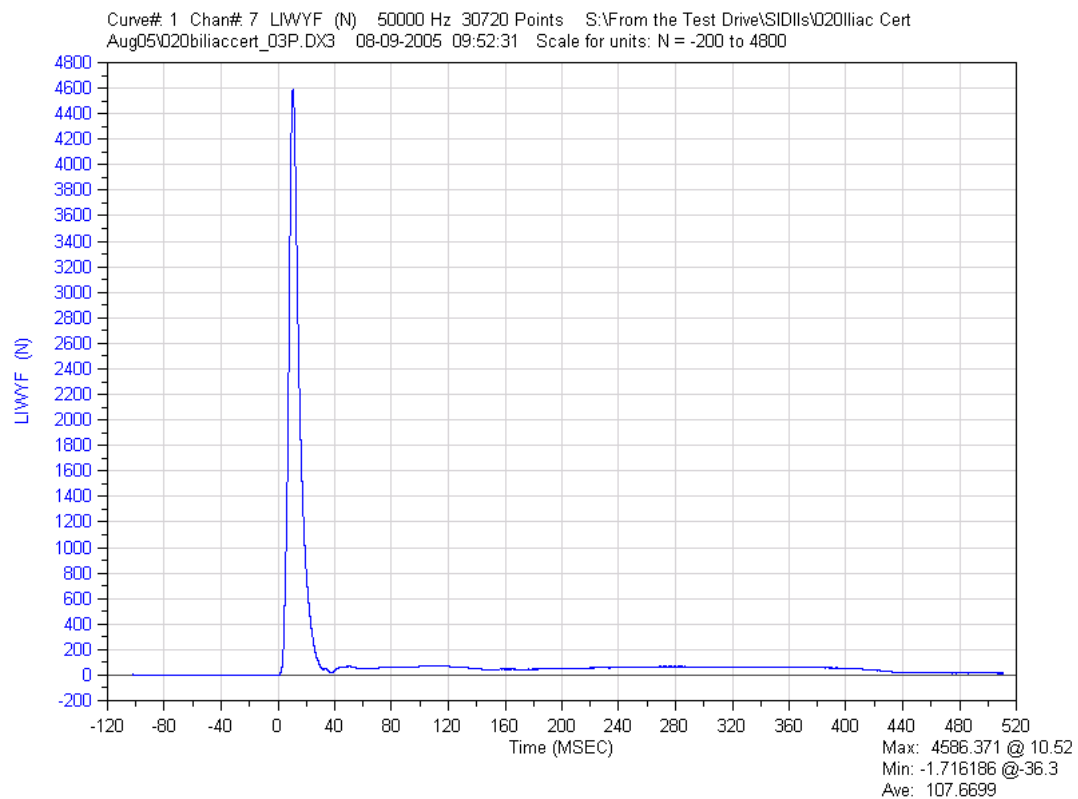
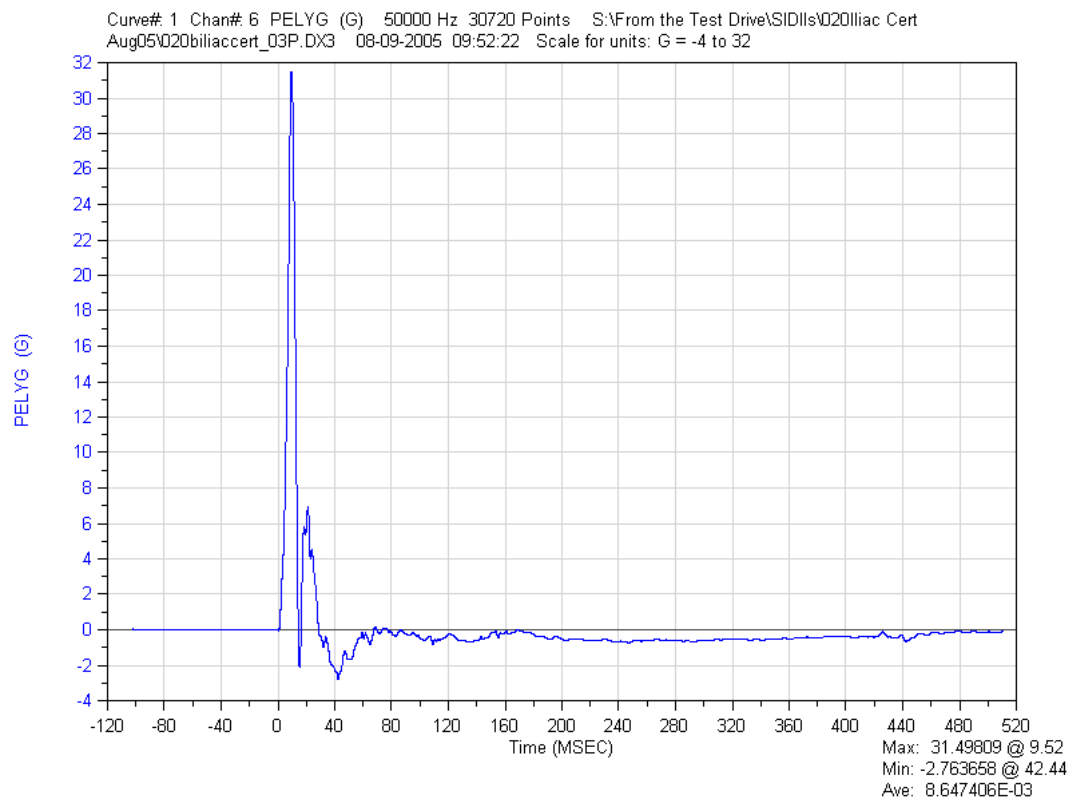
Min: -10.3 g at 23.7 ms

Test Parameter/Specification

Test Number	020biliaccert_03
Dummy S/N	020
Test Performer	VRTC
Date of Calibration	8/4/2005
Temperature (20.6 - 22.2 °C)	20.6
Relative Humidity (10 - 70 %)	50
Probe Velocity (4.2 - 4.4 m/s)	4.364
Maximum Probe Acceleration (41 - 47 g)	41.769
Maximum Pelvis Y Acceleration (32 - 40 g)	31.498
Maximum Iliac Force (4841 - 5491 N)	4586.371

Test Results





Appendix D

Miscellaneous Test Information

Sign Convention
SAE J211 MAR95

Accelerometers:

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

Potentiometers:

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

Rotation potentiometers:

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

Load cells:

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

Neck load cells:

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

Tibia load cells:

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

Sign Convention, Continued
SAE J211 MAR95

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

Frequency Response Classes
Used for 050805 Test

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

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

Channel Report Test Number 050805

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	Assembly
1	Trig D1	10ZERO000000EV00	EVENT		1 Logic	
2	03F03E29-N04	11HEADCG00S2ACXA	Head Accel X	1000	g	1-056 SIDIIs FTSS.001
3	01G18-F08	11HEADCG00S2ACYA	Head Accel Y	1000	g	1-056 SIDIIs FTSS.002
4	03E03E18-F21	11HEADCG00S2ACZA	Head Accel Z	1000	g	1-056 SIDIIs FTSS.003
5	IF-205-283-FX	11NECKUP00S2FOXA	Neck Force X	8896	N	1-056 SIDIIs FTSS.004
6	IF-205-283-FY	11NECKUP00S2FOYA	Neck Force Y	8896	N	1-056 SIDIIs FTSS.005
7	IF-205-283-FZ	11NECKUP00S2FOZA	Neck Force Z	13344	N	1-056 SIDIIs FTSS.006
8	IF-205-283-MX	11NECKUP00S2MOXA	Neck Moment X	282	N	1-056 SIDIIs FTSS.007
9	IF-205-283-MY	11NECKUP00S2MOYA	Neck Moment Y	282	N	1-056 SIDIIs FTSS.008
10	IF-205-283-MZ	11NECKUP00S2MOZA	Neck Moment Z	282	N	1-056 SIDIIs FTSS.009
11	03E03E20-N05	11SHLDLE00S2ACXA	Shoulder Accel X	2000	g	1-056 SIDIIs FTSS.016
12	03D03D16-F13	11SHLDLE00S2ACYA	Shoulder Accel Y	2000	g	1-056 SIDIIs FTSS.017
13	02I02I05-F07	11SHLDLE00S2ACZA	Shoulder Accel Z	2000	g	1-056 SIDIIs FTSS.018
14	3167-142-FX	11SHLDLE00S2FOXA	Shoulder Force X	4448	N	1-056 SIDIIs FTSS.013
15	3167-142-FY	11SHLDLE00S2FOYA	Shoulder Force Y	4448	N	1-056 SIDIIs FTSS.014
16	3167-142-FZ	11SHLDLE00S2FOZA	Shoulder Force Z	4448	N	1-056 SIDIIs FTSS.015
17	180-3860-056SHLD	11SHRILE00S2DSYA	Shoulder Disp. Y	75	mm	1-056 SIDIIs FTSS.019
18	P17846	11SPIN0100S2ACXA	Upper Spine Accel X	2000	g	1-056 SIDIIs FTSS.010
19	00L13-F71	11SPIN0100S2ACYA	Upper Spine Accel Y	2000	g	1-056 SIDIIs FTSS.011
20	02I02I05-F14	11SPIN0100S2ACZA	Upper Spine Accel Z	2000	g	1-056 SIDIIs FTSS.012
21	03F03E29-N21	11THSP01RIS2ACXA	Spine Rib 1 Accel X	2000	g	1-056 SIDIIs FTSS.020
22	04J04I01-R04	11THSP01RIS2ACYA	Spine Rib 1 Accel Y	2000	g	1-056 SIDIIs FTSS.021
23	04J04I20-Z05	11THSP01RIS2ACZA	Spine Rib 1 Accel Z	2000	g	1-056 SIDIIs FTSS.022
24	03D03D16-F18	11THSP02RIS2ACXA	Spine Rib 2 Accel X	2000	g	1-056 SIDIIs FTSS.023
25	01G18-F15	11THSP02RIS2ACYA	Spine Rib 2 Accel Y	2000	g	1-056 SIDIIs FTSS.024
26	01G18-F12	11THSP02RIS2ACZA	Spine Rib 2 Accel Z	2000	g	1-056 SIDIIs FTSS.025
27	04J04I20-Z14	11THSP03RIS2ACXA	Spine Rib 3 Accel X	2000	g	1-056 SIDIIs FTSS.026
28	03D03D09-N10	11THSP03RIS2ACYA	Spine Rib 3 Accel Y	2000	g	1-056 SIDIIs FTSS.027
29	03F03F09-N17	11THSP03RIS2ACZA	Spine Rib 3 Accel Z	2000	g	1-056 SIDIIs FTSS.028
30	04J04I01-R18	11SPIN1200S2ACXA	Lower Spine Accel X	2000	g	1-056 SIDIIs FTSS.029
31	03E03D30-N04	11SPIN1200S2ACYA	Lower Spine Accel Y	2000	g	1-056 SIDIIs FTSS.030
32	04J04I01-R10	11SPIN1200S2ACZA	Lower Spine Accel Z	2000	g	1-056 SIDIIs FTSS.031
33	04J04I08-F25	11ABSP02RIS2ACXA	Spine Rib 5 Accel X	2000	g	1-056 SIDIIs FTSS.032
34	00L13-F04	11ABSP02RIS2ACYA	Spine Rib 5 Accel Y	2000	g	1-056 SIDIIs FTSS.033
35	04J04I20-Z08	11ABSP02RIS2ACZA	Spine Rib 5 Accel Z	2000	g	1-056 SIDIIs FTSS.034
36	IF-414-101-MX	11LUSP0000S2MOXA	Lumbar Moment X	451	N	1-056 SIDIIs FTSS.058
37	IF-414-101-MY	11LUSP0000S2MOYA	Lumbar Moment Y	451	N	1-056 SIDIIs FTSS.059
38	IF-414-101-MZ	11LUSP0000S2MOZA	Lumbar Moment Z	226	N	1-056 SIDIIs FTSS.060
39	02I02I10-N22	11TRRI01LES2ACXA	Thorax Rib 1 Accel X	2000	g	1-056 SIDIIs FTSS.035
40	99H12-F11	11TRRI01LES2ACYA	Thorax Rib 1 Accel Y	2000	g	1-056 SIDIIs FTSS.036
41	03E03E20-N04	11TRRI01LES2ACZA	Thorax Rib 1 Accel Z	2000	g	1-056 SIDIIs FTSS.037

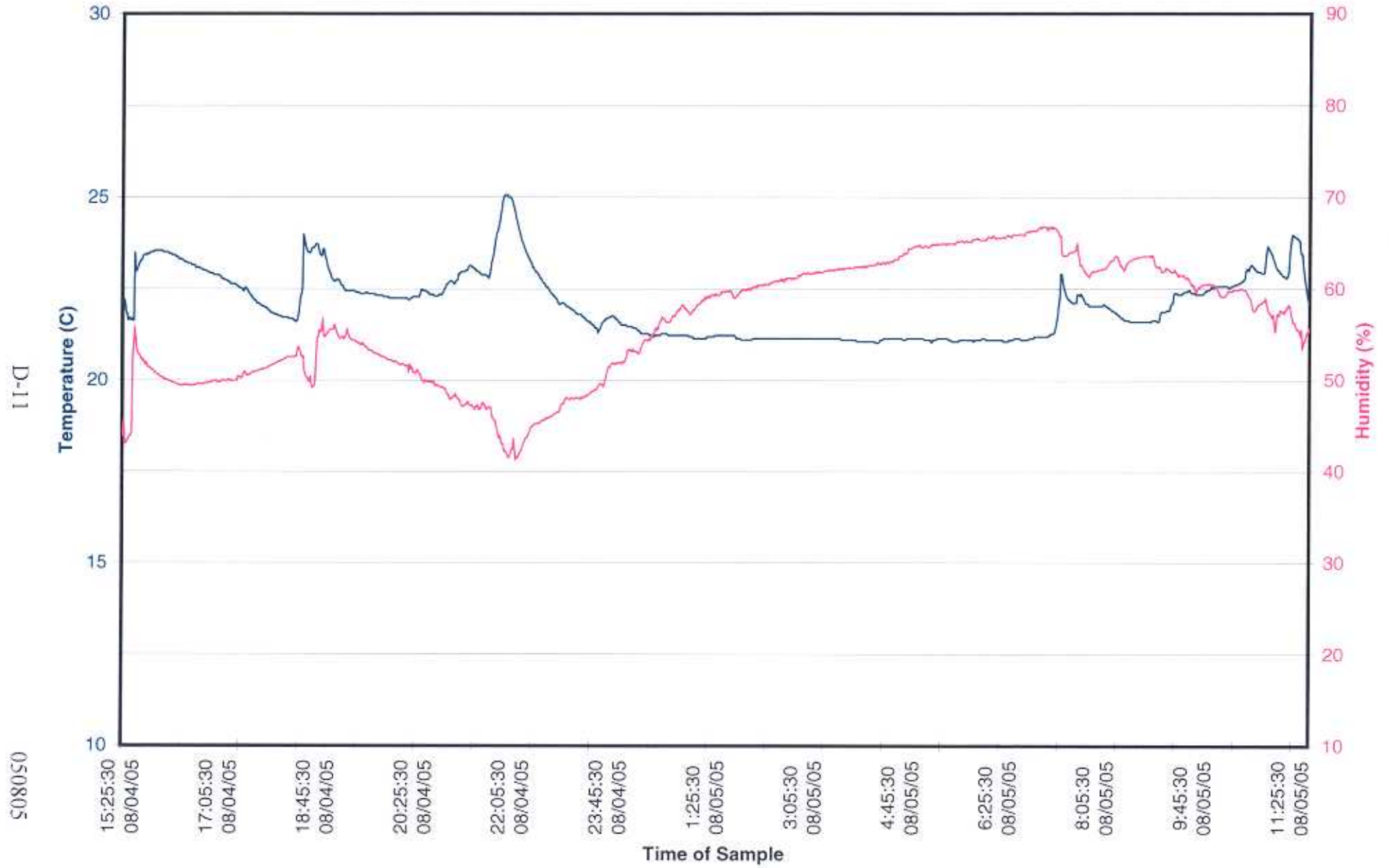
42 02A16-A07	11TRRI02LES2ACXA	Thorax Rib 2 Accel X	2000 g	1-056 SIDIIIs FTSS.038
43 02I02I05-F23	11TRRI02LES2ACYA	Thorax Rib 2 Accel Y	2000 g	1-056 SIDIIIs FTSS.039
44 02A16-A10	11TRRI02LES2ACZA	Thorax Rib 2 Accel Z	2000 g	1-056 SIDIIIs FTSS.040
45 04J04I07-Z16	11TRRI03LES2ACXA	Thorax Rib 3 Accel X	2000 g	1-056 SIDIIIs FTSS.041
46 04J04I01-R06	11TRRI03LES2ACYA	Thorax Rib 3 Accel Y	2000 g	1-056 SIDIIIs FTSS.042
47 04J04I01-R13	11TRRI03LES2ACZA	Thorax Rib 3 Accel Z	2000 g	1-056 SIDIIIs FTSS.043
48 03D03D16-F04	11ABRI01LES2ACXA	Abdomen Rib 1 Accel X	2000 g	1-056 SIDIIIs FTSS.044
49 03D03D09-N07	11ABRI01LES2ACYA	Abdomen Rib 1 Accel Y	2000 g	1-056 SIDIIIs FTSS.045
50 04J04I20-Z23	11ABRI01LES2ACZA	Abdomen Rib 1 Accel Z	2000 g	1-056 SIDIIIs FTSS.046
51 99H12-F20	11ABRI02LES2ACXA	Abdomen Rib 2 Accel X	2000 g	1-056 SIDIIIs FTSS.047
52 99H12-F24	11ABRI02LES2ACYA	Abdomen Rib 2 Accel Y	2000 g	1-056 SIDIIIs FTSS.048
53 03E03E21-M19	11ABRI02LES2ACZA	Abdomen Rib 2 Accel Z	2000 g	1-056 SIDIIIs FTSS.049
54 180-3860-056RIB1	11TRRI01LES2DSYA	Thorax Rib 1 Disp. Y	75 mm	1-056 SIDIIIs FTSS.050
55 180-3860-056RIB2	11TRRI02LES2DSYA	Thorax Rib 2 Disp. Y	75 mm	1-056 SIDIIIs FTSS.051
56 180-3860-056RIB3	11TRRI03LES2DSYA	Thorax Rib 3 Disp. Y	75 mm	1-056 SIDIIIs FTSS.052
57 180-3860-056RIB4	11ABRI01LES2DSYA	Abdomen Rib 1 Disp. Y	75 mm	1-056 SIDIIIs FTSS.053
58 180-3860-056RIB5	11ABRI02LES2DSYA	Abdomen Rib 2 Disp. Y	75 mm	1-056 SIDIIIs FTSS.054
59 01G25-N14	11PELVCG00S2ACXA	Pelvis Accel X	2000 g	1-056 SIDIIIs FTSS.061
60 01G25-N05	11PELVCG00S2ACYA	Pelvis Accel Y	2000 g	1-056 SIDIIIs FTSS.062
61 03E03E18-F05	11PELVCG00S2ACZA	Pelvis Accel Z	2000 g	1-056 SIDIIIs FTSS.063
62 IF-520-102-FY	11ACTBLE00S2FOYA	Left Acetabulum Force Y	8896 N	1-056 SIDIIIs FTSS.064
63 IF-507-101-FY	11ILACLE00S2FOYA	Left Iliac Wing Force Y	13344 N	1-056 SIDIIIs FTSS.065
64 IF-625-111-FX	11FEMRRI00S2FOXA	Right Femur Force X	13344 N	1-056 SIDIIIs FTSS.072
65 IF-625-111-FY	11FEMRRI00S2FOYA	Right Femur Force Y	13344 N	1-056 SIDIIIs FTSS.073
66 IF-625-111-FZ	11FEMRRI00S2FOZA	Right Femur Force Z	13344 N	1-056 SIDIIIs FTSS.074
67 IF-625-111-MX	11FEMRRI00S2MOXA	Right Femur Moment X	339 N-m	1-056 SIDIIIs FTSS.075
68 IF-625-111-MY	11FEMRRI00S2MOYA	Right Femur Moment Y	339 N-m	1-056 SIDIIIs FTSS.076
69 IF-625-111-MZ	11FEMRRI00S2MOZA	Right Femur Moment Z	339 N-m	1-056 SIDIIIs FTSS.077
70 IF-625-110-FX	11FEMRLE00S2FOXA	Left Femur Force X	13344 N	1-056 SIDIIIs FTSS.066
71 IF-625-110-FY	11FEMRLE00S2FOYA	Left Femur Force Y	13344 N	1-056 SIDIIIs FTSS.067
72 IF-625-110-FZ	11FEMRLE00S2FOZA	Left Femur Force Z	22240 N	1-056 SIDIIIs FTSS.068
73 IF-625-110-MX	11FEMRLE00S2MOXA	Left Femur Moment X	339 N-m	1-056 SIDIIIs FTSS.069
74 IF-625-110-MY	11FEMRLE00S2MOYA	Left Femur Moment Y	339 N-m	1-056 SIDIIIs FTSS.070
75 IF-625-110-MZ	11FEMRLE00S2MOZA	Left Femur Moment Z	339 N-m	1-056 SIDIIIs FTSS.071
76 02I02I24-N07	14HEADCG00S2ACXA	Head Accel X	1000 g	4-020 SIDIIIs FTSS.001
77 04J04I20-Z24	14HEADCG00S2ACYA	Head Accel Y	1000 g	4-020 SIDIIIs FTSS.002
78 04J04I08-F24	14HEADCG00S2ACZA	Head Accel Z	1000 g	4-020 SIDIIIs FTSS.003
79 IF-205-286-FX	14NECKUP00S2FOXA	Neck Force X	8896 N	4-020 SIDIIIs FTSS.004
80 IF-205-286-FY	14NECKUP00S2FOYA	Neck Force Y	8896 N	4-020 SIDIIIs FTSS.005
81 IF-205-286-FZ	14NECKUP00S2FOZA	Neck Force Z	13344 N	4-020 SIDIIIs FTSS.006
82 IF-205-286-MX	14NECKUP00S2MOXA	Neck Moment X	282 N-m	4-020 SIDIIIs FTSS.007
83 IF-205-286-MY	14NECKUP00S2MOYA	Neck Moment Y	282 N-m	4-020 SIDIIIs FTSS.008
84 IF-205-286-MZ	14NECKUP00S2MOZA	Neck Moment Z	282 N-m	4-020 SIDIIIs FTSS.009

85	01G18-F05	14SHLDLE00S2ACXA	Shoulder Accel X	2000 g	4-020 SIDIIIs FTSS.016
86	04J04I20-Z06	14SHLDLE00S2ACYA	Shoulder Accel Y	2000 g	4-020 SIDIIIs FTSS.017
87	03E03E18-F18	14SHLDLE00S2ACZA	Shoulder Accel Z	2000 g	4-020 SIDIIIs FTSS.018
88	IF-344-110-FX	14SHLDLE00S2FOXA	Shoulder Force X	4448 N	4-020 SIDIIIs FTSS.013
89	IF-344-110-FY	14SHLDLE00S2FOYA	Shoulder Force Y	4448 N	4-020 SIDIIIs FTSS.014
90	IF-344-110-FZ	14SHLDLE00S2FOZA	Shoulder Force Z	4448 N	4-020 SIDIIIs FTSS.015
91	3860-020SHD	14SHRILE00S2DSYA	Shoulder Disp. Y	75 mm	4-020 SIDIIIs FTSS.019
92	03E03E18-F09	14SPIN0100S2ACXA	Upper Spine Accel X	2000 g	4-020 SIDIIIs FTSS.010
93	04J04I01-R24	14SPIN0100S2ACYA	Upper Spine Accel Y	2000 g	4-020 SIDIIIs FTSS.011
94	02I02I05-F04	14SPIN0100S2ACZA	Upper Spine Accel Z	2000 g	4-020 SIDIIIs FTSS.012
95	04J04I07-Z15	14THSP01RIS2ACXA	Spine Rib 1 Accel X	2000 g	4-020 SIDIIIs FTSS.020
96	04J04I20-A17	14THSP01RIS2ACYA	Spine Rib 1 Accel Y	2000 g	4-020 SIDIIIs FTSS.021
97	03F03E29-N17	14THSP01RIS2ACZA	Spine Rib 1 Accel Z	2000 g	4-020 SIDIIIs FTSS.022
98	03F03F09-N03	14THSP02RIS2ACXA	Spine Rib 2 Accel X	2000 g	4-020 SIDIIIs FTSS.023
99	03E03E20-N14	14THSP02RIS2ACYA	Spine Rib 2 Accel Y	2000 g	4-020 SIDIIIs FTSS.024
100	03E03E20-N12	14THSP02RIS2ACZA	Spine Rib 2 Accel Z	2000 g	4-020 SIDIIIs FTSS.025
101	01H02-N07	14THSP03RIS2ACXA	Spine Rib 3 Accel X	2000 g	4-020 SIDIIIs FTSS.026
102	00L20-A14	14THSP03RIS2ACYA	Spine Rib 3 Accel Y	2000 g	4-020 SIDIIIs FTSS.027
103	03F03E29-N10	14THSP03RIS2ACZA	Spine Rib 3 Accel Z	2000 g	4-020 SIDIIIs FTSS.028
104	01J02-F22	14SPIN1200S2ACXA	Lower Spine Accel X	750 g	4-020 SIDIIIs FTSS.029
105	B02A09-F04	14SPIN1200S2ACYA	Lower Spine Accel Y	750 g	4-020 SIDIIIs FTSS.030
106	01G25-N16	14SPIN1200S2ACZA	Lower Spine Accel Z	750 g	4-020 SIDIIIs FTSS.031
107	01G18-F13	14ABSP02RIS2ACXA	Spine Rib 5 Accel X	2000 g	4-020 SIDIIIs FTSS.032
108	00L13-F37	14ABSP02RIS2ACYA	Spine Rib 5 Accel Y	2000 g	4-020 SIDIIIs FTSS.033
109	01J02-F07	14ABSP02RIS2ACZA	Spine Rib 5 Accel Z	2000 g	4-020 SIDIIIs FTSS.034
110	IF-414-107-MX	14LUSP0000S2MOXA	Lumbar Moment X	451 N·m	4-020 SIDIIIs FTSS.058
111	IF-414-107-MY	14LUSP0000S2MOYA	Lumbar Moment Y	451 N·m	4-020 SIDIIIs FTSS.059
112	IF-414-107-MZ	14LUSP0000S2MOZA	Lumbar Moment Z	226 N·m	4-020 SIDIIIs FTSS.060
113	02I02I05-F24	14TRRI01LES2ACXA	Thorax Rib 1 Accel X	2000 g	4-020 SIDIIIs FTSS.035
114	04J04I01-R11	14TRRI01LES2ACYA	Thorax Rib 1 Accel Y	2000 g	4-020 SIDIIIs FTSS.036
115	98H10-F03	14TRRI01LES2ACZA	Thorax Rib 1 Accel Z	2000 g	4-020 SIDIIIs FTSS.037
116	03E03E21-M09	14TRRI02LES2ACXA	Thorax Rib 2 Accel X	2000 g	4-020 SIDIIIs FTSS.038
117	01G18-F03	14TRRI02LES2ACYA	Thorax Rib 2 Accel Y	2000 g	4-020 SIDIIIs FTSS.039
118	03E03E20-N13	14TRRI02LES2ACZA	Thorax Rib 2 Accel Z	2000 g	4-020 SIDIIIs FTSS.040
119	04J04I01-R09	14TRRI03LES2ACXA	Thorax Rib 3 Accel X	2000 g	4-020 SIDIIIs FTSS.041
120	98H13-F11	14TRRI03LES2ACYA	Thorax Rib 3 Accel Y	2000 g	4-020 SIDIIIs FTSS.042
121	03D03D09-N02	14TRRI03LES2ACZA	Thorax Rib 3 Accel Z	2000 g	4-020 SIDIIIs FTSS.043
122	02A16-A15	14ABRI01LES2ACXA	Abdomen Rib 1 Accel X	2000 g	4-020 SIDIIIs FTSS.044
123	99H12-F26	14ABRI01LES2ACYA	Abdomen Rib 1 Accel Y	2000 g	4-020 SIDIIIs FTSS.045
124	02I02I05-F22	14ABRI01LES2ACZA	Abdomen Rib 1 Accel Z	2000 g	4-020 SIDIIIs FTSS.046
125	04J04I10-H10	14ABRI02LES2ACXA	Abdomen Rib 2 Accel X	2000 g	4-020 SIDIIIs FTSS.047
126	04J04I20-Z18	14ABRI02LES2ACYA	Abdomen Rib 2 Accel Y	2000 g	4-020 SIDIIIs FTSS.048
127	02I02I05-F09	14ABRI02LES2ACZA	Abdomen Rib 2 Accel Z	2000 g	4-020 SIDIIIs FTSS.049

128	3861-020RB1	14TRRI01LES2DSYA	Thorax Rib 1 Disp. Y	75 mm	4-020 SIDIIIs FTSS.050
129	3861-020RB2	14TRRI02LES2DSYA	Thorax Rib 2 Disp. Y	75 mm	4-020 SIDIIIs FTSS.051
130	3861-020RB3	14TRRI03LES2DSYA	Thorax Rib 3 Disp. Y	75 mm	4-020 SIDIIIs FTSS.052
131	3861-020RB4	14ABRI01LES2DSYA	Abdomen Rib 1 Disp. Y	75 mm	4-020 SIDIIIs FTSS.053
132	3861-020RB5	14ABRI02LES2DSYA	Abdomen Rib 2 Disp. Y	75 mm	4-020 SIDIIIs FTSS.054
133	01J02-F16	14PELVCG00S2ACXA	Pelvis Accel X	2000 g	4-020 SIDIIIs FTSS.061
134	03E03E18-F03	14PELVCG00S2ACYA	Pelvis Accel Y	2000 g	4-020 SIDIIIs FTSS.062
135	03F03E29-N13	14PELVCG00S2ACZA	Pelvis Accel Z	2000 g	4-020 SIDIIIs FTSS.063
136	IF-520-115-FY	14ACTBLE00S2FOYA	Left Acetabulum Force Y	8896 N	4-020 SIDIIIs FTSS.064
137	IF-507-112-FY	14ILACLE00S2FOYA	Left Iliac Wing Force Y	13344 N	4-020 SIDIIIs FTSS.065
138	IF-625-142-FX	14FEMRRI00S2FOXA	Right Femur Force X	13344 N	4-020 SIDIIIs FTSS.072
139	IF-625-142-FY	14FEMRRI00S2FOYA	Right Femur Force Y	13344 N	4-020 SIDIIIs FTSS.073
140	IF-625-142-FZ	14FEMRRI00S2FOZA	Right Femur Force Z	22240 N	4-020 SIDIIIs FTSS.074
141	IF-625-142-MX	14FEMRRI00S2MOXA	Right Femur Moment X	339 N	4-020 SIDIIIs FTSS.075
142	IF-625-142-MY	14FEMRRI00S2MOYA	Right Femur Moment Y	339 N	4-020 SIDIIIs FTSS.076
143	IF-625-142-MZ	14FEMRRI00S2MOZA	Right Femur Moment Z	339 N	4-020 SIDIIIs FTSS.077
144	IF-625-107-FX	14FEMRLE00S2FOXA	Left Femur Force X	13344 N	4-020 SIDIIIs FTSS.066
145	IF-625-107-FY	14FEMRLE00S2FOYA	Left Femur Force Y	13344 N	4-020 SIDIIIs FTSS.067
146	IF-625-107-FZ	14FEMRLE00S2FOZA	Left Femur Force Z	22240 N	4-020 SIDIIIs FTSS.068
147	IF-625-107-MX	14FEMRLE00S2MOXA	Left Femur Moment X	339 N.m	4-020 SIDIIIs FTSS.069
148	IF-625-107-MY	14FEMRLE00S2MOYA	Left Femur Moment Y	339 N.m	4-020 SIDIIIs FTSS.070
149	IF-625-107-MZ	14FEMRLE00S2MOZA	Left Femur Moment Z	339 N.m	4-020 SIDIIIs FTSS.071
150	P47314	16SILBFR0000ACXA	Right Side Sill at Front Seat X-axis Acceleration	400 g	
151	P47495	16SILBFR0000ACYA	Right Side Sill at Front Seat Y-axis Acceleration	1000 g	
152	P46486	16SILBFR0000ACZA	Right Side Sill at Front Seat Z-axis Acceleration	400 g	
153	P47496	16SILBRE0000ACXA	Right Side Sill at Rear Seat X-axis Acceleration	400 g	
154	P47324	16SILBRE0000ACYA	Right Side Sill at Rear Seat Y-axis Acceleration	1000 g	
155	P47505	16SILBRE0000ACZA	Right Side Sill at Rear Seat Z-axis Acceleration	400 g	
156	P34836	18FORA000000ACXA	Rear Floorpan Above Axle X-axis Acceleration	1000 g	
157	P41059	18FORA000000ACYA	Rear Floorpan Above Axle Y-axis Acceleration	1000 g	
158	P28974	18FORA000000ACZA	Rear Floorpan Above Axle Z-axis Acceleration	1000 g	
159	P46064	14SILBRE0000ACYA	Left Side Sill at Rear Seat Y-axis Acceleration	1000 g	
160	P46481	14SILBFR0000ACYA	Left Side Sill at Front Seat Y-axis Acceleration	1000 g	
161	P33592	16VEHCRE0000ACYA	Right Rear Occupant Compartment Y-axis Accel	1500 g	
162	P46501	14BPILLO0000ACYA	Left Lower B-Post Y-axis Accel	1500 g	
163	P40424	14BPILMI0000ACYA	Left Middle B-Post Y-axis Accel	1500 g	
164	P45769	11APILLO0000ACYA	Left Lower A-Post Y-axis Accel	1500 g	
165	P46068	11APILMI0000ACYA	Left Middle A-Post Y-axis Accel	1500 g	
166	P46025	11SETRFR0000ACYA	Left Front Seat Track Y-axis Acceleration	1500 g	
167	P42068	14SETRLERE00ACYA	Left Rear Seat Track Y-axis Acceleration	1500 g	
168	P46473	10VEHCCG0000ACXA	Vehicle Center of Gravity X-axis Acceleration	1000 g	
169	P46483	10VEHCCG0000ACYA	Vehicle Center of Gravity Y-axis Acceleration	1000 g	
170	P47527	10VEHCCG0000ACZA	Vehicle Center of Gravity Z-axis Acceleration	1000 g	

171 P47509	12ENGN000000ACXA	Top of Engine X-axis Acceleration	1000 g
172 P46503	12ENGN000000ACYA	Top of Engine Y-axis Acceleration	1000 g
173 P35041	12VEHC000000ACXA	Firewall X-axis Acceleration	1000 g
174 P46006	12VEHC000000ACYA	Firewall Y-axis Acceleration	1000 g
175 P46485	13ROFR000000ACXA	Right Roof Rail X-axis Acceleration	1000 g
176 P46497	13ROFR000000ACYA	Right Roof Rail Y-axis Acceleration	1000 g
177 P47492	11DOOR000001ACYA	Left Front Door centerline 430 mm above ground Y-axis accel (NHTSA #6)	1000 g
178 P46479	11DOOR000002ACYA	Left Front Door mid-rear 430 mm above ground Y-axis accel (NHTSA #8)	1000 g
179 P34297	11DOOR000003ACYA	Left Front Door upper centerline 685 mm above ground Y-axis accel (NHTSA #9)	1000 g
180 P41189	14DOOR000001ACYA	Left Rear Door mid-rear 685 mm above ground Y-axis accel (NHTSA #10)	1000 g
181 P41746	14DOOR000002ACYA	Left Rear Door upper centerline 685 mm above ground Y-axis accel (NHTSA #11)	1000 g
182 ABFire1	11SENS000001VO0A	Side torso Airbag fire	5 V
183 ABFire2	11SENS000002VO0A	Side curtain airbag fire	5 V
184 ABFire3	13SENS000001VO0A	Non-struck Side torso Airbag fire (disable bag)	5 V
185 ABFire4	13SENS000002VO0A	Non-struck Side curtain airbag fire (disable bag)	5 V
186 P45689	M0VEHCCG00000ACXA	MDB Center of Gravity X-axis Acceleration	600 g
187 P45702	M0VEHCCG00000ACYA	MDB Center of Gravity Y-axis Acceleration	600 g
188 P46001	M0VEHCCG00000ACZA	MDB Center of Gravity Z-axis Acceleration	600 g
189 P39845	M7FRAM000000ACXA	MDB Left Rear X-axis Acceleration (on left frame over axle)	600 g
190 P39982	M7FRAM000000ACYA	MDB Left Rear Y-axis Acceleration (on left frame over axle)	600 g
191 Bit.00	M3CONT000000EV00	MDB Right Side Contact Switch	1 Logic
192 Bit.01	M1CONT000000EV00	MDB Left Side Contact Switch	1 Logic
193 Bit.00	11CONT000001EV00	Driver Dummy head contact	1 Logic
194 Bit.01	11CONT000002EV00	Driver Dummy shoulder contact	1 Logic
195 Bit.02	11CONT000003EV00	Driver Dummy torso contact	1 Logic
196 Bit.03	11CONT000004EV00	Driver Dummy leg contact	1 Logic
197 Bit.04	14CONT000001EV00	LR Pass Dummy head contact	1 Logic
198 Bit.05	14CONT000002EV00	LR Pass Dummy shoulder contact	1 Logic
199 Bit.06	14CONT000003EV00	LR Pass Dummy torso contact	1 Logic
200 Bit.07	14CONT000004EV00	LR Pass Dummy leg contact	1 Logic

LEFT SIDE IMPACT OF 2005 VW JETTA / 050805





CERTIFICATE OF CONFORMITY

Certificate No. 19982
Serial No. EH 337

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

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

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sales@cellbond.com
website
www.cellbond.com

	Test Results	GR No.	Blk No.
1	27012-19	P144787A00	N/A
2	26938-45	P131911-01	N/A

Declaration.

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

Additional Information...

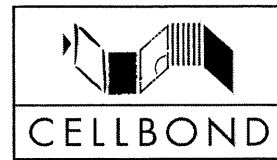
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5 Stukeley Business Centre
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PE29 6EF

Cellbond Offices
United Kingdom
Germany
United States of America



050805
ISO9001:2000



NHTSA DEFORMABLE SIDE IMPACT BARRIER
ALUMINIUM HONEYCOMB CERTIFICATION
STATIC TEST RESULTS

MAIN BLOCK
Core: 1.6 3/8 5052

Required Crush Strength
42.5 PSI to 47.5 PSI

Test No: 27012-19

GR No: P144787A00
Block No: N/A

	Crush Strength (PSI)			RESULT
	0.25 to 0.38 inch	0.38 to 0.52 inch	0.52 to 0.65 inch	
Sample* 1	44.455	44.653	44.637	PASS
Sample 2	43.608	43.010	43.916	PASS
Sample 3	44.265	44.296	45.028	PASS
Sample 4	43.270	43.687	44.283	PASS
Sample 5	45.614	46.000	45.768	PASS
Sample 6	45.001	44.565	44.663	PASS
Sample 7	45.019	45.990	45.295	PASS
Sample 8	43.732	44.167	44.142	PASS

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

*Sample size and location as per R94.

RESULT: PASSED

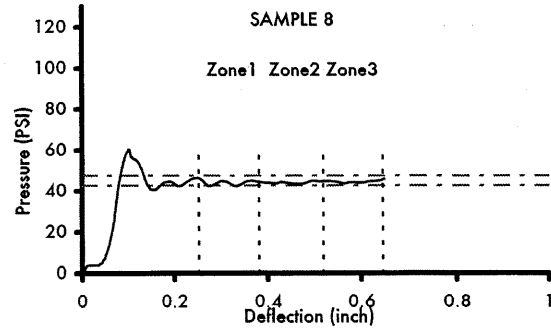
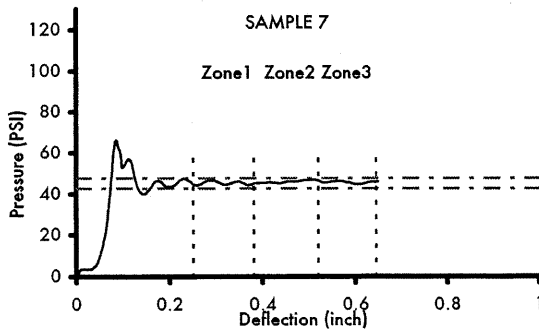
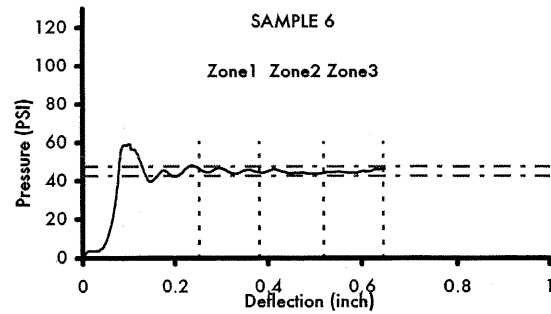
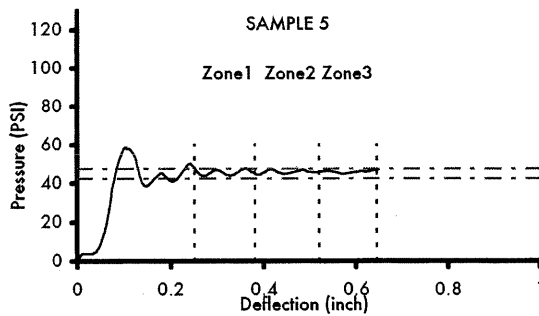
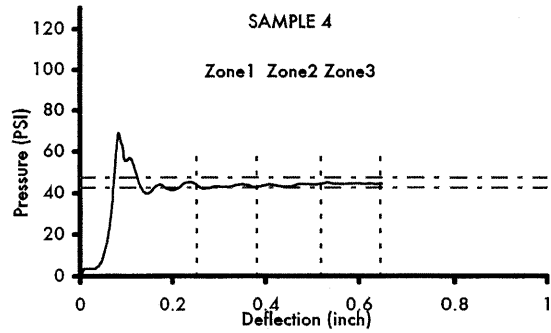
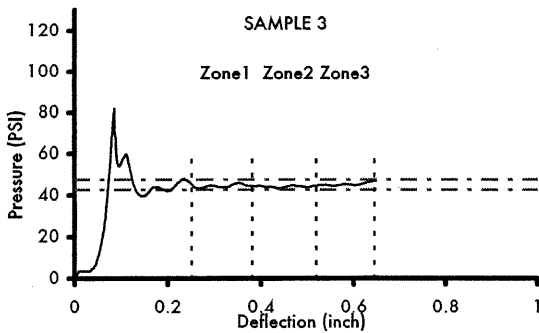
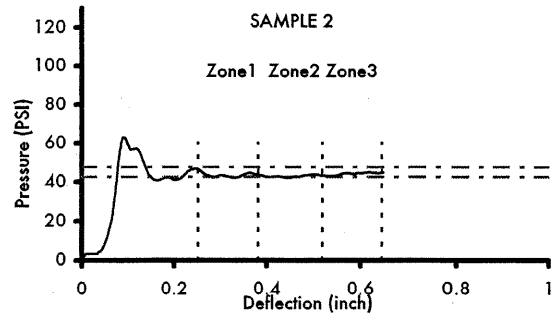
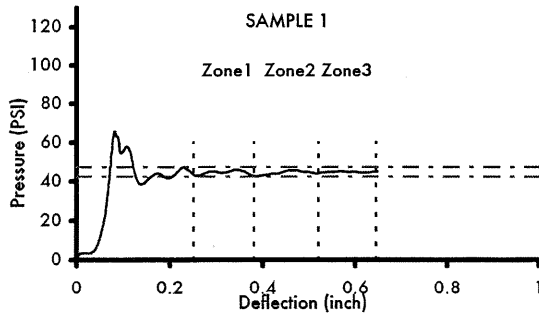
NHTSA DEFORMABLE SIDE IMPACT BARRIER
MAIN BLOCK

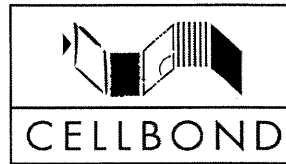
Honeycomb Type: 1.6 3/8 5052
Higher Acceptable Crush Strength Limit: 47.5 PSI
Lower Acceptable Crush Strength Limit: 42.5 PSI

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

Test No: 27012-19

GR No: P144787A00





NHTSA DEFORMABLE SIDE IMPACT BARRIER
ALUMINIUM HONEYCOMB CERTIFICATION
STATIC TEST RESULTS

BUMPER

Core: 5.2 1/4 3003

Required Crush Strength
230 PSI to 260 PSI

Test No: 26938-45

GR No: P131911-01

Block No: N/A

	Crush Strength (PSI)			RESULT
	0.25 to 0.38	0.38 to 0.52	0.52 to 0.65	
Sample* 1	253.65	250.73	249.94	PASS
Sample 2	254.15	257.02	254.84	PASS
Sample 3	258.36	258.90	257.66	PASS
Sample 4	256.46	253.19	255.54	PASS
Sample 5	258.77	255.99	253.10	PASS
Sample 6	253.66	256.18	252.31	PASS
Sample 7	254.32	255.06	251.31	PASS
Sample 8	255.55	253.47	253.21	PASS

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

*Sample size and location as per R94.

RESULT: PASSED

NHTSA DEFORMABLE SIDE IMPACT BARRIER BUMPER

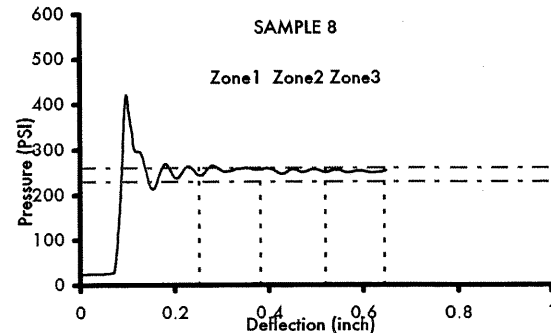
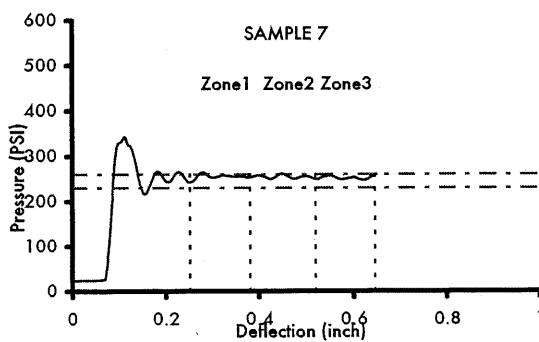
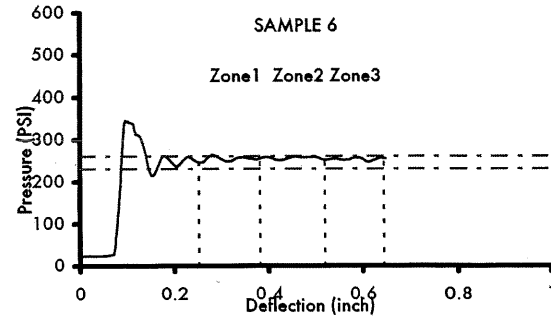
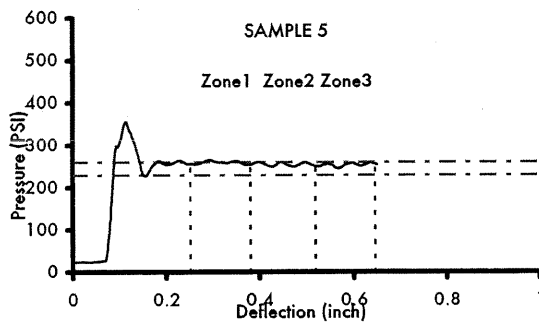
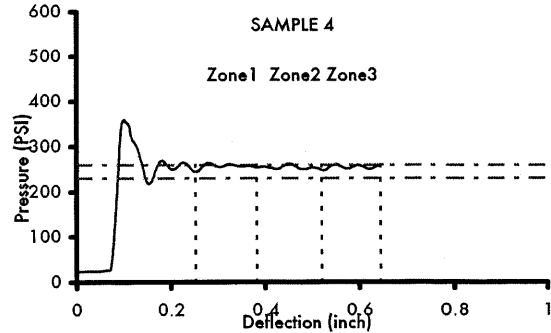
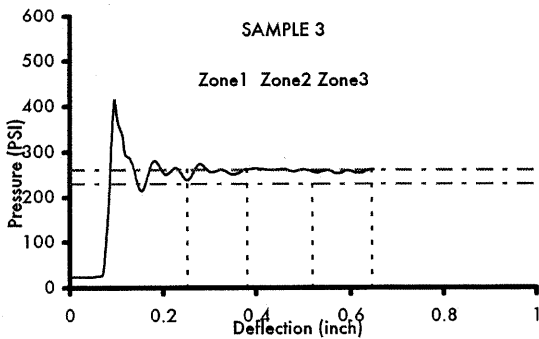
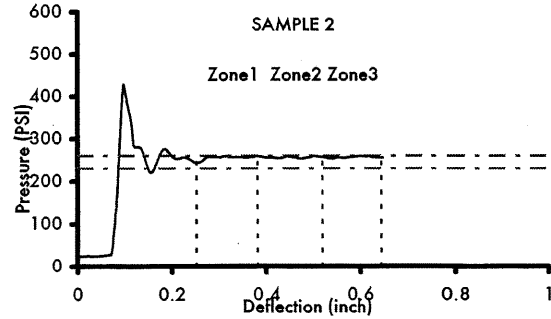
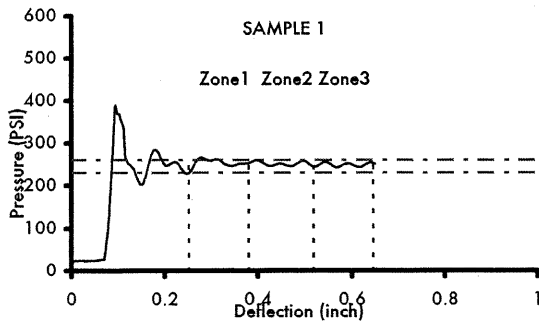
Honeycomb Type: 5.2 1/4 3003
Higher Acceptable Crush Strength Limit: 260 PSI
Lower Acceptable Crush Strength Limit: 230 PSI

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

Test No: 26938-45

GR No: P131911-01

Block No: N/A



Appendix E

INSIA Report on Structural Measurements



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

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28031 – MADRID – (SPAIN)**

March, 1999

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

1.- METHODOLOGY.

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

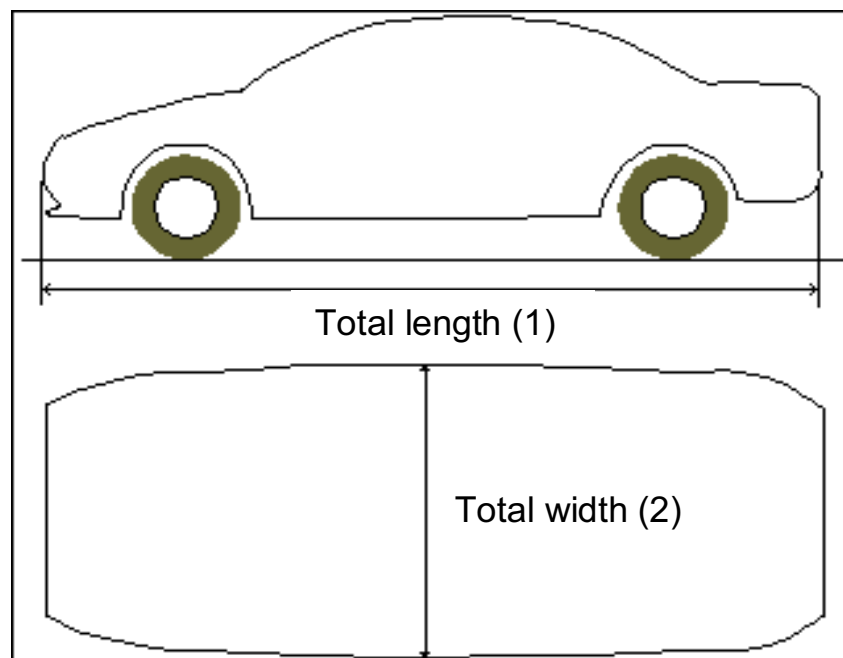


Figure 1.- Definition of the main resistant elements. General dimensions.

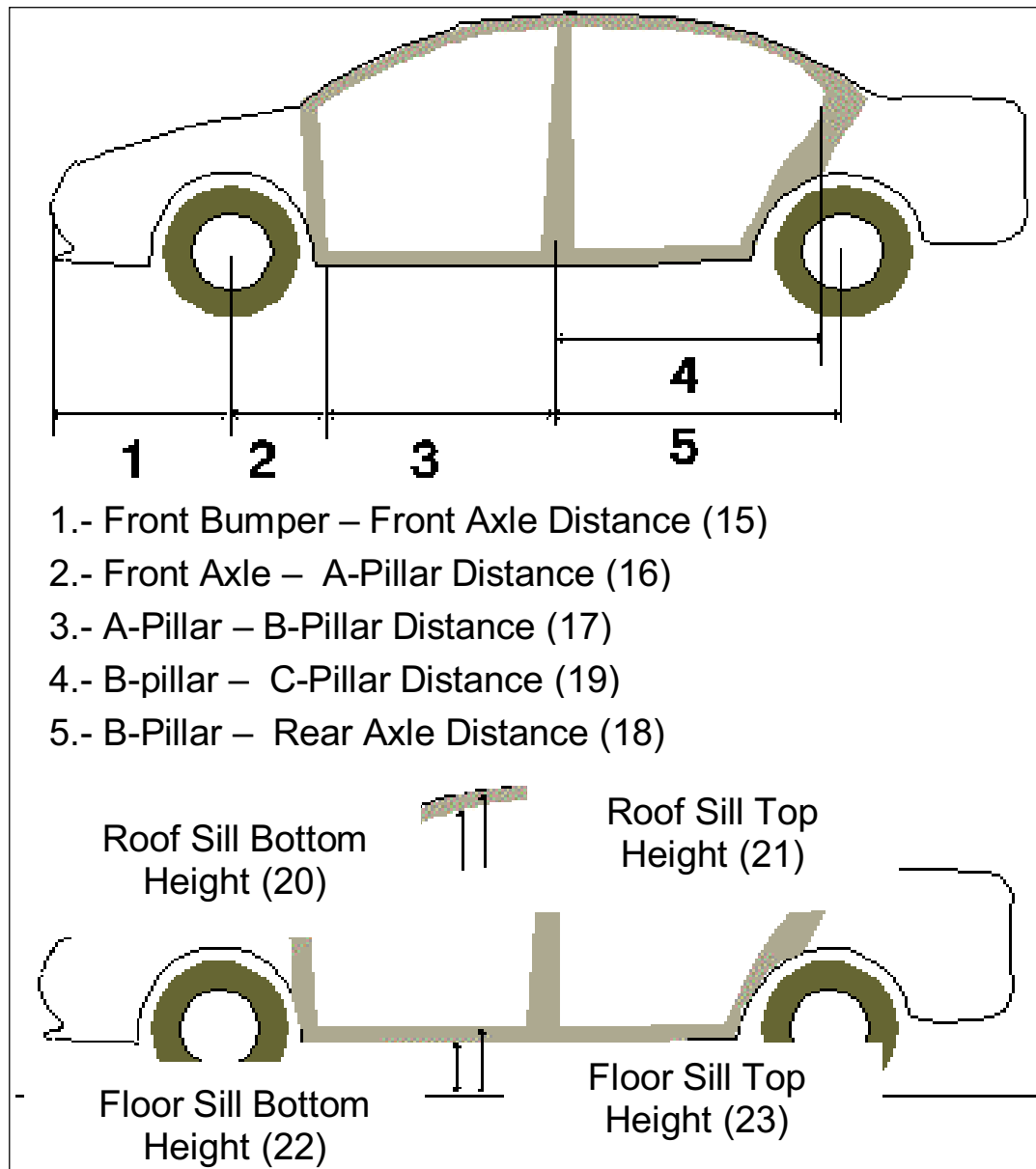


Figure 2.- Definition of the main resistant elements. Side elements.

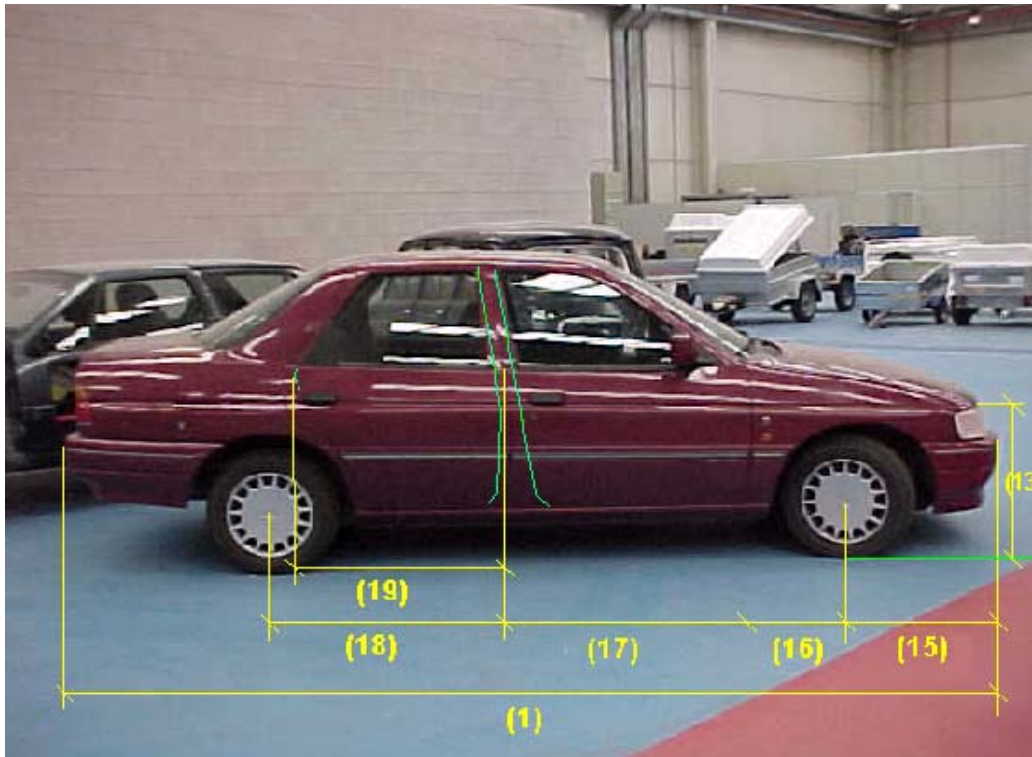


Figure 3.-
Measurements of
the side resistant
elements (outer).

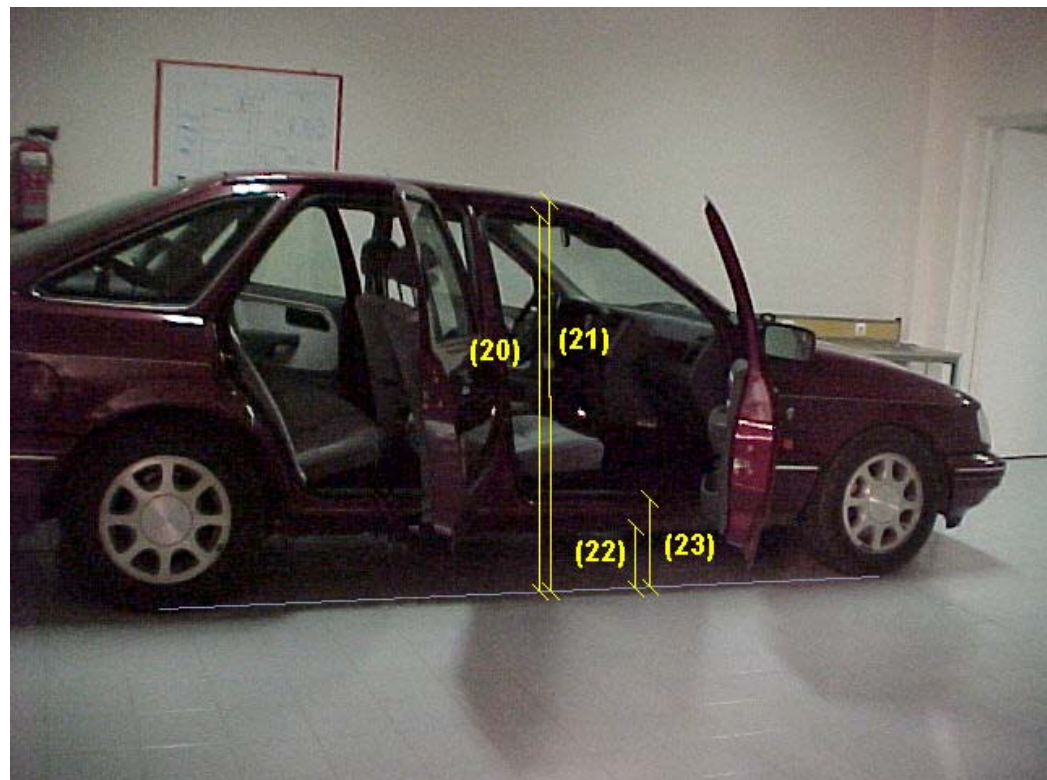


Figure 4.- Measurements
of the side resistant
elements (inner).

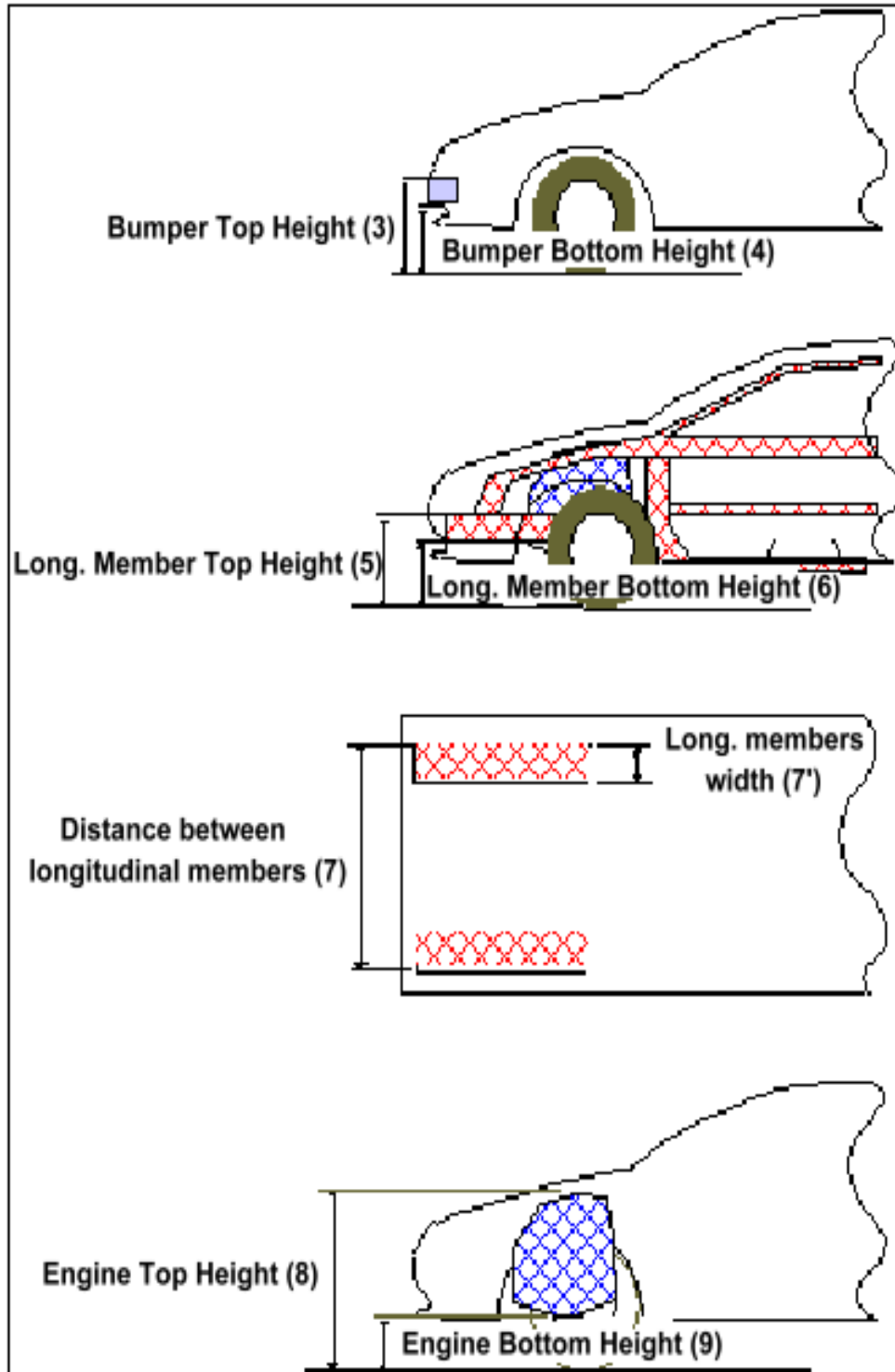


Figure 5.- Definition of the main resistant elements. Front elements.

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

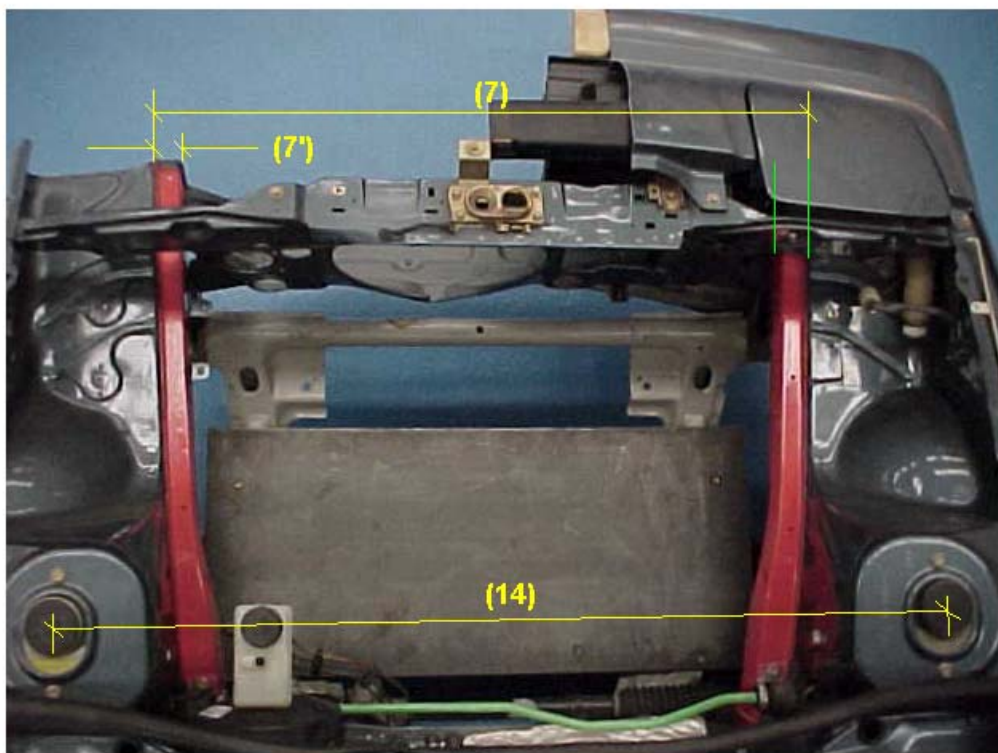
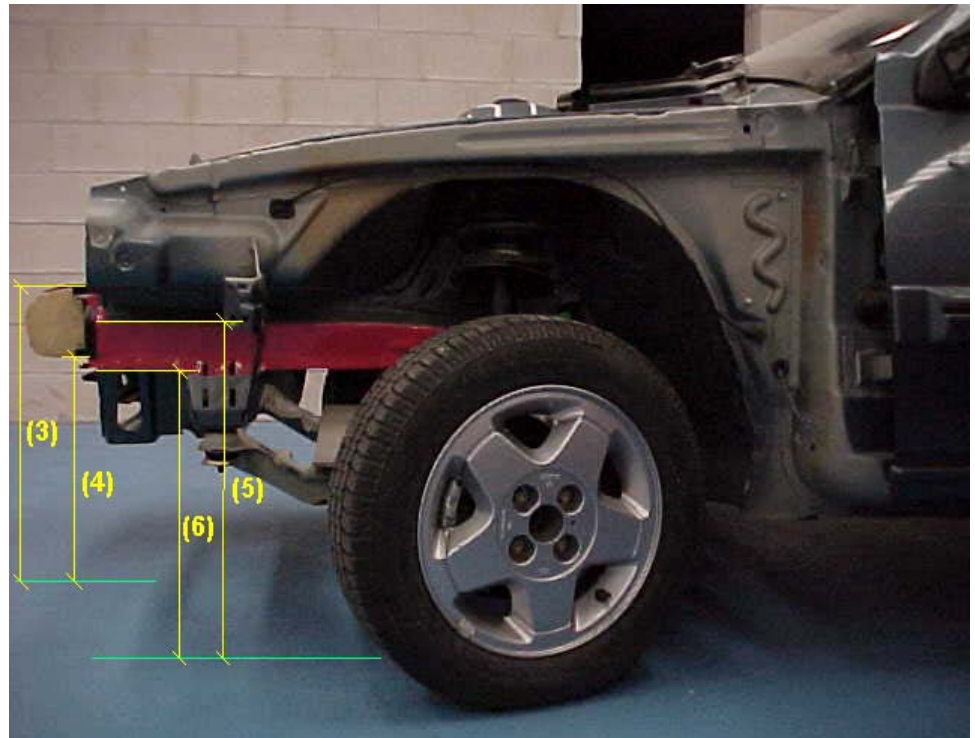


Figure 7.-
Measurements
of the main
resistant
elements. Front
elements 2.

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

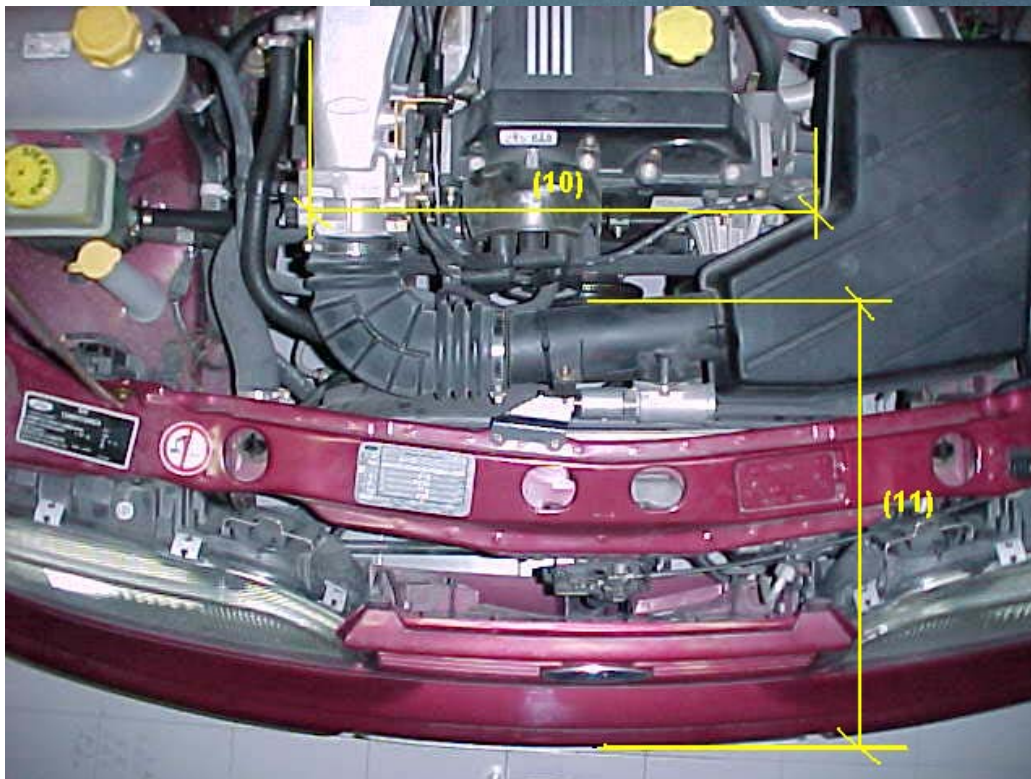
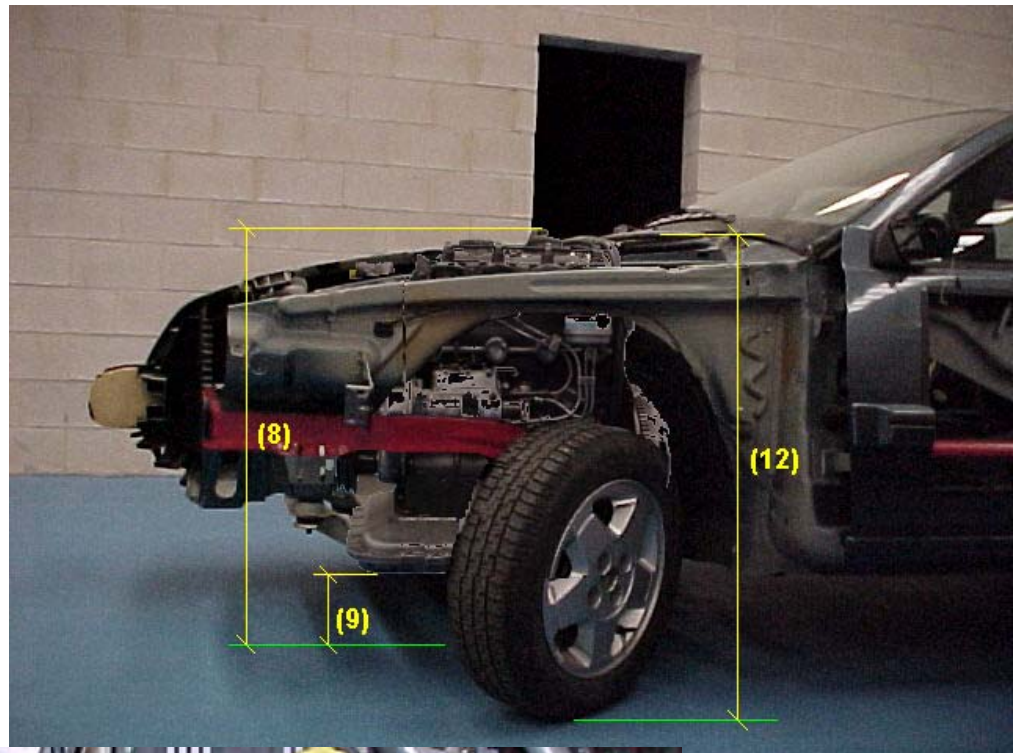


Figure 9.-
Definition of
the main
resistant
elements. Front
elements
(Longitudinal
engine).



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

FRONT ELEMENTS

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

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

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



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

SIDE ELEMENTS

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

NOTE

- N/A: dimension not available.