

REPORT NUMBER KAR21082-01

**NEW CAR ASSESSMENT PROGRAM
FRONTAL BARRIER IMPACT TEST**

**FORD MOTOR COMPANY
2002 FORD EXPLORER XLT 4WD SUV**

NHTSA NUMBER: FOR002

**PREPARED BY:
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9270 HOLLY ROAD
ADELANTO, CALIFORNIA 92301**



AUGUST 3, 2001

FINAL REPORT

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16. Abstract A 35 mph (56.3 km/h) frontal barrier impact was conducted on a 2002 Ford Explorer XLT 4WD SUV at KARCO Engineering on 7/31/01. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The impact velocity is 56.33 km/h. The ambient temperature at the barrier face at the time of impact is 28.9 degrees Celcius. The vehicle's maximum post test static crush is 392 mm left of the vehicle centerline. The test vehicle is equipped with a 3-point continuous belt system and second generation supplemental airbags in both front outboard seating positions. With respect to FMVSS 208 "Occupant Crash Protection", the occupant injury criteria summary is as follows:																												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 35%;">Measurement Description</th> <th style="width: 15%;">Units</th> <th style="width: 15%;">Threshold</th> <th style="width: 20%;">Driver ATD</th> <th style="width: 15%;">Passenger ATD</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC)</td> <td>N/A</td> <td>1000</td> <td>519.0</td> <td>532.1</td> </tr> <tr> <td>Max. Thorax Accel. (3 msec Clip)</td> <td>G's</td> <td>60</td> <td>47.5</td> <td>41.3</td> </tr> <tr> <td>Left Femur force</td> <td>Newtons</td> <td>10009</td> <td>-5810.3</td> <td>-3809.9</td> </tr> <tr> <td>Right Femur Force</td> <td>Newtons</td> <td>10009</td> <td>-5338.4</td> <td>-3057.4</td> </tr> </tbody> </table>				Measurement Description	Units	Threshold	Driver ATD	Passenger ATD	Head Injury Criteria (HIC)	N/A	1000	519.0	532.1	Max. Thorax Accel. (3 msec Clip)	G's	60	47.5	41.3	Left Femur force	Newtons	10009	-5810.3	-3809.9	Right Femur Force	Newtons	10009	-5338.4	-3057.4
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SECTION 2

PURPOSE, TEST PROCEDURE AND SUMMARY OF TEST FOR002

1.1 PURPOSE

The purpose of this 35 mph (56.3 km/h) frontal barrier impact test is to obtain vehicle crashworthiness, occupant restraint system performance, and lower leg data for frontal barrier impacts. The impact velocity used in this test is in excess of the current FMVSS 208/212/219/301 requirements of 30 mph (48.3 km/h).

1.2 TEST PROCEDURE

This frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards (OCS) New Car Assessment Program (NCAP) Laboratory Indicant Test Procedure, dated October 1996 and the corresponding KARCO Engineering Test Procedure KTP-001, dated October 18, 1996. Data was obtained indicant of FMVSS 208, "Occupant Crash Protection"; FMVSS 212, "Windshield Retention"; FMVSS 219, "Windshield Zone Intrusion (Partial)"; and FMVSS 301 "Fuel System Integrity" performance. Procedures for receiving, inspection testing and reporting of test results are described in the test procedures and are not repeated in this report.

The test was conducted within the specified impact velocity range of 55.5 to 57.1 km/h. at KARCO Engineering on July 31, 2001 at a speed of 56.33 km/h. The test vehicle was instrumented with seven (7) accelerometers to measure longitudinal axis accelerations. The driver and passenger's restraint systems were instrumented with two (2) string potentiometers to monitor shoulder belt pullout. One (1) real-time panning motion picture camera and seventeen (17) high-speed motion picture cameras document the impact event. The pre- and post-test conditions were recorded by one (1) real-time motion picture camera. Camera locations and pertinent camera information is documented in the data sheets. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

The test vehicle contained two (2) part 572E 50th percentile adult male anthropomorphic test devices (ATDs). Both ATDs are instrumented with head, chest, and pelvic tri-axial accelerometers, left and right femur load cells, upper and lower tibia sensors, and foot accelerometers. In addition, chest displacement and upper neck six-axis force and moment sensors were utilized. The ATDs were positioned in the front outboard seating positions according to the dummy placement procedures specified in the Laboratory Indicant Test Procedure. Ninety-one (91) channels of data were recorded with a PC based (TDAS) on-board data acquisition system. The data was digitally sampled at 10,000 samples per second and processed per section IP11 of the Laboratory Indicant Test Procedure.

The Driver ATD (Serial No. 34) and the right-front passenger ATD (Serial No. 35) were calibrated prior to this test. FMVSS 208 "Occupant Crash Protection" injury criteria were not exceeded by either ATD during this frontal barrier impact test.

1.3 SUMMARY OF FRONTAL BARRIER IMPACT TEST

A rigid load cell barrier is impacted by a 2002 Ford Explorer XLT 4WD SUV at a velocity of 56.33 km/h. The test vehicle weight is 2323 kilograms (5121.3 lb.) with two (2) part 572E 50th percentile adult male ATDs. Twenty-four (24) load cell barrier data channels were obtained in conducting the July 31, 2001 NCAP test. The test vehicle is a gasoline vehicle, equipped with a longitudinal, V6 engine and an automatic transmission.

The driver Head Injury Criteria (HIC) is 519.0. The maximum resultant chest deceleration over three (3) milliseconds is 47.5 g's. The left and right femur loads are -5810.3 and -5338.4 Newton's, respectively. Chest deflection for the driver ATD peaked at -40.0 mm. The driver ATD head contacted the airbag and B-pillar on rebound, its contacted the airbag and seat belt, it's abdomen contacted the seat belt, and both knees contacted the knee bolster.

The right front passenger's HIC is 532.1. The maximum resultant chest deceleration over three (3) milliseconds is 41.3 g's. The left and right femur loads are -3809.9 and -3057.4 Newton's respectively. Chest deflection for the passenger ATD peaked at -31.6 mm. The passenger ATD head contacted the airbag and headrest. The chest and abdomen contacted the airbag and seat belt. Both knees contacted the glove box.

Maximum shoulder belt spool out as measured by on-board potentiometers is 246.4 mm for the driver ATD and 233.8 mm for the passenger ATD. Belt loads and elongation were not measured per the request of the manufacturer.

There was 100 percent windshield retention (minimum 50 percent required for passive restraint systems). No intrusion occurred into the protected or unprotected zone of the windshield. No Stoddard solvent leakage occurred after impact but leakage did occur during the rollover.

The test vehicle sustained a maximum static crush of 392 mm located to the left of the vehicle centerline. Both the driver and passenger side doors opened without the aid of tools.

1.4 GENERAL COMMENTS

The 2002 Ford Explorer XLT 4WD SUV passed the requirements of FMVSS 208, FMVSS 212, FMVSS 219 and FMVSS 301-75. Data pertaining to these standards are presented in the data sheets.

The vehicle, occupant, camera and measurement data are presented in Section 2. Appendix A contains the still photograph prints. Appendix B contains the dummy and vehicle response data traces. Appendix C contains Load Cell Barrier information. Appendix D contains the instrumentation data channel assignments. Appendix E contains the dummy calibration data and Appendix F contains the owner's manual instructions for the occupant seating and restraint systems.

SECTION 2
OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
 Test Program: 2002 NHTSA 35 mph NCAP

NHTSA No.: FOR002
 Test Date: 7/31/01

CONVERSION FACTORS USED IN THIS REPORT*

Quantity	Typical Application	Std Units	Metric Unit	Multiply By
Mass	Vehicle Weight	lb	kg	0.4536
Linear Velocity	Impact Velocity	mile/h	km/h	1.609
Length or Distance	Measurements	in	mm	25.4
Volume	Fuel Systems	gal	liter	3.785
Volume	Small Fluids	oz	mL	29.573
Pressure	Tire Pressures	lbf/in ²	kPa	7.0
Volume	Liquid	gal	liter	3.785
Temperature	General Use	°F	°C	$=(t_f - 32)/1.8$
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf/ft	Nm	1.355

* Based on the Recommended Practice in SAE J916, May 85

DATA SHEET NO. 1
CRASH TEST SUMMARY

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
Test Program: 2002 NHTSA 35 mph NCAP

NHTSA No.: FOR002
Test Date: 7/31/01

PRIMARY IMPACT DATA

Measured Parameter	Units	Value
Velocity at Impact	km/h	56.33
Test Weight	kg	2323
Impact Angle	degrees	0
Average Rebound	mm	817
Maximum Static Crush	mm	390

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Driver	Passenger
Front Door Opening	Open	Open
Rear Door Opening	Open	Open
Seat Track Shift (mm)	None	None
Seat Back Failure	None	None

TEST DUMMY INFORMATION

Description	Driver	Passenger
Dummy Type / Serial No.	50% Male Hybrid III / No. 34	50% Male Hybrid III / No. 35
Head Contact	Airbag/ B-Pillar (rebound)	Airbag/Headrest
Chest Contact	Airbag/Seatbelt	Airbag/Seatbelt
Abdomen Contact	Seatbelt	Airbag/Seatbelt
Left Knee Contact	Dashboard	Glove Box
Right Knee Contact	Dashboard	Glove Box

16mm MOVIE COVERAGE

High Speed	17
Real Time	1
Total	18

DATA CHANNELS

Driver ATD Sensors	40
Passenger ATD Sensors	40
Belt Assessment Sensors	6
Vehicle Structure Accelerometers	7
Rigid Barrier Load Cells	24
Total	117

DATA SHEET NO. 2
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
 Test Program: 2002 NHTSA 35 mph NCAP

NHTSA No.: FOR002
 Test Date: 7/31/01

TEST VEHICLE INFORMATION

Make	Ford
Model	Explorer XLT
Body Style	SUV
NHTSA No.	FOR002
VIN	1FMZU73E32ZA65690
Color	Gold
Delivery Date	7/26/01
Odometer Reading (mi.)	26
Dealer	Sunland Ford
Transmission	4-Speed Automatic
Final Drive	Rear/4WD
Number of Cylinders	6
Engine Displacement (L)	4.0
Engine Placement	Longitudinal

TEST VEHICLE OPTIONS

Driver Airbag	Yes
Passenger Airbag	Yes
Power Windows	Yes
Power Steering	Yes
Power Door Locks	Yes
Tilt Wheel	Yes
Air Conditioning	Yes
Power Brakes	Yes
Disc Brakes, Front	Yes
Disc Brakes, Rear	Yes
Anti-lock Brakes	Yes
AM/FM/Cassette	Yes
Anti-Theft System	No
Cruise Control	Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Ford Motor Company	GVWR (kg)	2648
Date of Manufacture	May-01	GAWR Front (kg)	1240
		GAWR Rear (kg)	1508

DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	210	245
Cold Pressure (kPa)	210	245
Recommend Tire Size	P235/70R16SL	P235/70R16SL
Tire Size on Vehicle	P235/70R16SL	P235/70R16SL
Tire Manufacturer	Michelin	Michelin

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Split Bench	Bucket	
Number of Occupants	2	3	2	7
Capacity Wt. (VCW) (kg)				609
Cargo Weight (RCLW) (kg)				132

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

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
 Test Program: 2002 NHTSA 35 mph NCAP

NHTSA No.: FOR002
 Test Date: 7/31/01

TEST VEHICLE WEIGHTS

	Units	As Delivered (UWV)			As Tested (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	528	497		572	613	
Right	kg	537	478		569	569	
Ratio	%	52.2	47.8		49.1	50.9	
Totals	kg	1065	975	2040	1141	1182	2323

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UWV)	kg	2040
Weight of 2 P572 ATD's	kg	152
Rated Cargo/Luggage Weight (RCLW)	kg	136
Calculated Vehicle Target Weight (TVTW)	kg	2328

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	838	832	869	863	1379
As Tested	mm	825	830	845	845	1468

Vehicle Wheel base (mm): 2885

Weight of Ballast secured in cargo area (kg): 65

Vehicle Components Removed: Hub Caps, Spare Tire, Jack, Side trim panels, Carpeting

* Ballast weight does not include cameras, instrumentation, and brake abort system.

FUEL SYSTEM DATA

Fuel System Capacity From Owner's Manual (L): 83.3

Usable Capacity Figure Furnished by COTR (L): N/A

Actual Test Volume with entire fuel System Filled (L): 77.4

Test Fluid Type: Stoddard Solvent ; Specific Gravity: 0.764

Kinematic Viscosity: as per ASTM Standard D484-71 ; Color: Red

Is Vehicle Fuel Pump Electric or Mechanical?: Electric

If electric, does pump operate with ignition switch "ON" & engine "OFF"? Yes

Fuel System Particulars: Passenger side filler door, tank mounted next to frame member.

DATA SHEET NO. 3
POST IMPACT DATA

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
Test Program: 2002 NHTSA 35 mph NCAP

NHTSA No.: FOR002
Test Date: 7/31/01

SPEED TRAP DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	55.51 to 57.12	56.33
Trap No. 1 Entry Distance	mm	< 1524	1524
Trap No. 1 Exit Distance	mm	< 1524	305
Trap No. 2 Velocity (Redundant)	km/h	55.51 to 57.12	56.38
Trap No. 2 Entry Distance	mm	< 1524	1524
Trap No. 2 Exit Distance	mm	< 1524	305

VEHICLE STATIC CRUSH

Measured Parameter	Units	Pre-Test	Post-Test	Difference
Left Side	mm	4614	4343	-271
Center	mm	4840	4450	-390
Right Side	mm	4614	4420	-194

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	826
Center	mm	830
Right Side	mm	844
Average	mm	833

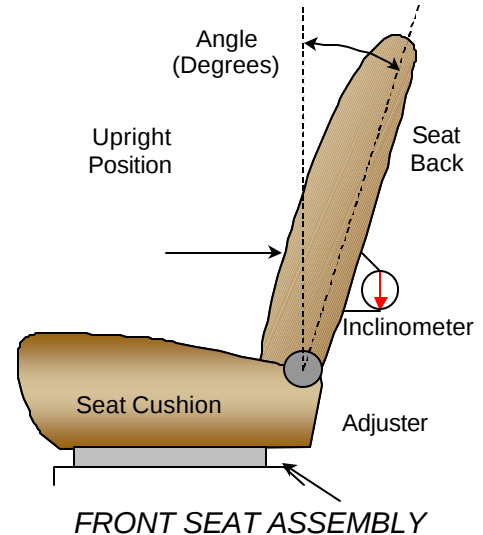
DATA SHEET NO. 4
TEST VEHICLE INFORMATION

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
Test Program: 2002 NHTSA 35 mph NCAP

NHTSA No.: FOR002
Test Date: 7/31/01

NOMINAL DESIGN RIDING POSITION

The driver and passenger seat backs are positioned to the manufacturers designated angle. The procedure is as follows: A special application tool with pointed probes is inserted through the fabric to make contact with the rigid portion of the lower seat frame assembly, approximately 11.5 inches above the pivot point of the seat back. An inclinometer is placed against the flat surface of the tool and the seat back angle is measured directly from the dial face.



Driver seat back angle: 19° with a seated dummy

Passenger seat back angle: 19° with a seated dummy

SEAT FORE/AFT POSITIONS

The driver seat is power adjusted and the passenger seat is manually adjusted. The first or forward most position is counted as number one (1). The fore/aft position is set to the middle position for the driver seat and aft of the middle position for the passenger seat.

Driver seat fore/aft total travel: 252 mm total travel

Driver seat fore/aft position: 126mm aft of forward most

Passenger seat fore/aft total travel: 26 seating positions or detents

Passenger seat fore/aft position: 14th detent from forward most

SEAT BELT UPPER ANCHORAGE

The test vehicle is equipped with adjustable anchorages for both driver and passenger seat positions. There are five (5) positions or detents. Both the driver and the passenger anchorages are placed in the middle position.

DATA SHEET NO. 4...(CONTINUED)
TEST VEHICLE INFORMATION

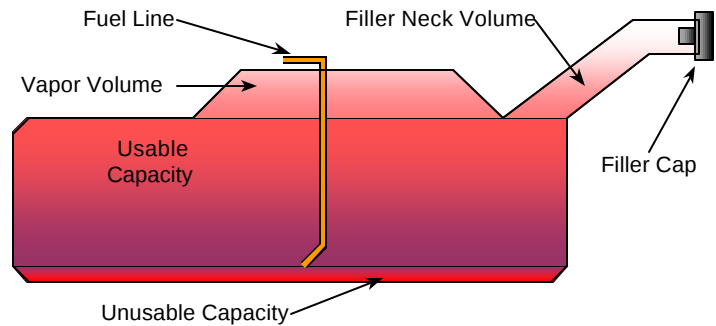
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
 Test Program: 2002 NHTSA 35 mph NCAP

NHTSA No.: FOR002
 Test Date: 7/31/01

FUEL TANK CAPACITY DATA

The "Usable Capacity" of the standard equipment fuel tank is:	<u>83.3</u>	liters
The "Usable Capacity" of any optional equipment fuel tank is:	<u>N/A</u>	liters
"Usable Capacity" used for certification tests FMVSS 301 requirements:	<u>76.6 to 78.3</u>	liters
Actual amount of Stoddard solvent added to vehicle for certification test:	<u>77.4</u>	liters

The test vehicle is equipped with an electric fuel pump. The fuel pump operates for approximately two seconds after the ignition is placed in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the right rear fender. The standard fuel tank occupies the area next to the right frame rail. Fuel lines run inside the right frame rail to the engine compartment.

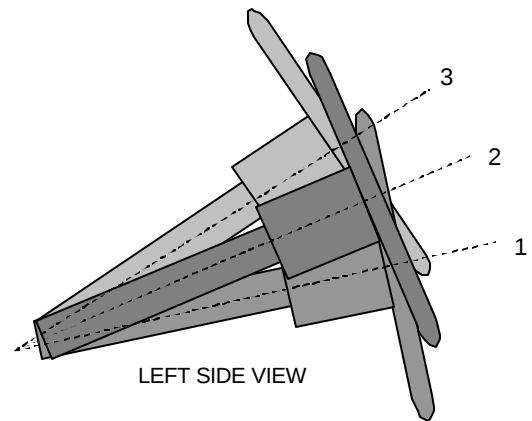


VEHICLE FUEL TANK ASSEMBLY

[VGC1]

STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when moved through its full range of motion. An aluminum plate is placed across the rim of the steering wheel, an inclinometer is placed on the plate and the angle is measured.



STEERING COLUMN ASSEMBLY

Lowermost; position 1:	<u>19°</u>
Geometric center; position 2:	<u>22°</u>
Uppermost position 3:	<u>25°</u>

DATA SHEET NO. 5
DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
Test Program: 2002 NHTSA 35 mph NCAP

NHTSA No.: FOR002
Test Date: 7/31/01

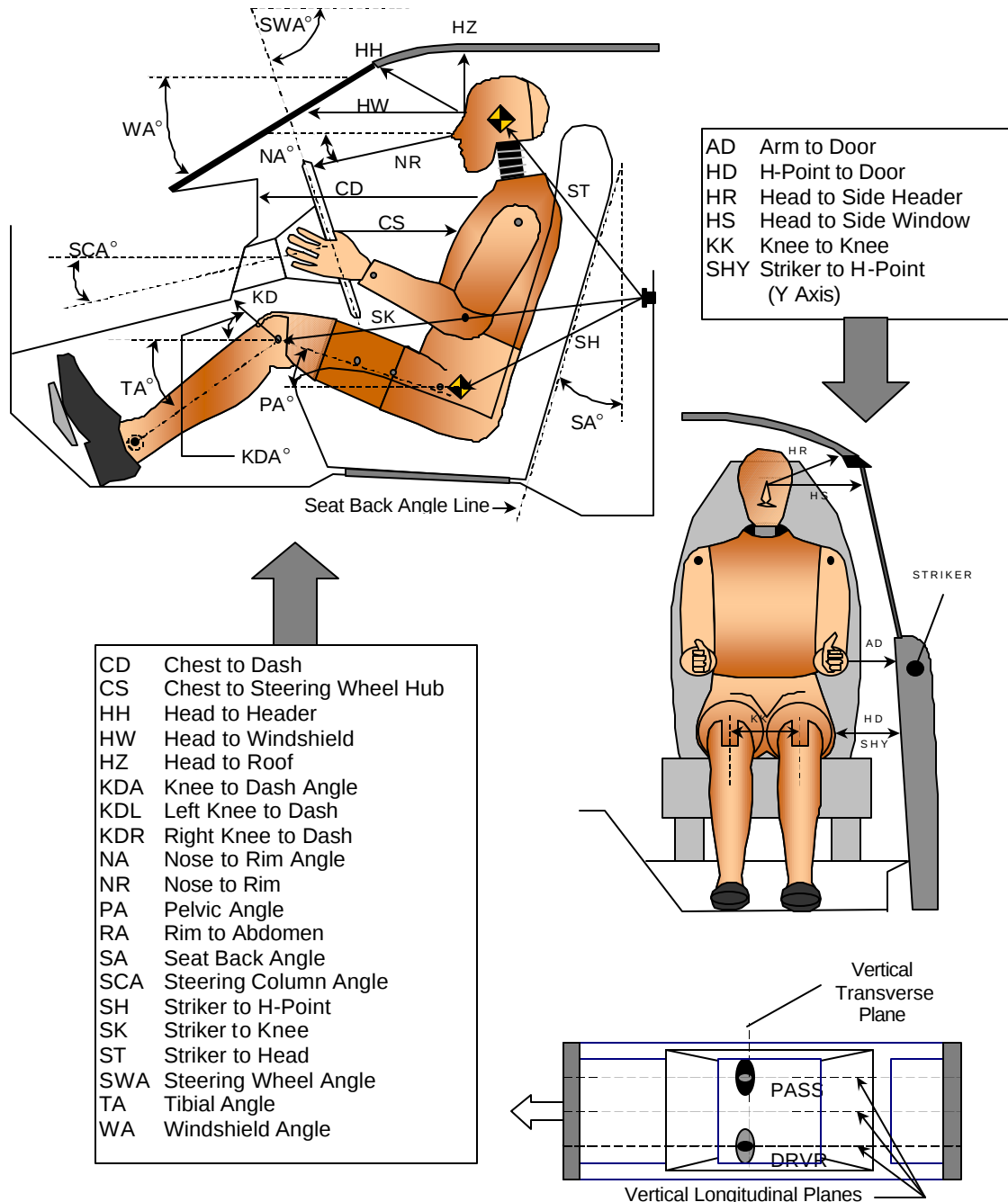
TEST DUMMY POSITION MEASUREMENTS

Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA	Windshield Angle		37		
SWA	Steering Wheel Angle		68		
SCA	Steering Column Angle		22		
SA	Seat Back Angle		19		19
HZ	Head to Roof (Z)	205	90	200	90
HH	Head to Header	385	0	384	0
HW	Head to Windshield	540	0	555	0
HR	Head to Side Header (Y)	260		255	
NR	Nose to Rim	385	14		
CD	Chest to Dash	515		518	
CS	Chest to Steering Hub	300	0		
RA	Rim to Abdomen	175	0		
KDL	Left Knee to Dash	155	25	150	
KDR	Right Knee to Dash	155		155	36
PA	Pelvic Angle		23		23
TA	Tibia Angle		36		34
KK	Knee to Knee (Y)	267		200	
ST	Striker to Head	613	4	611	1
SK	Striker to Knee	640	10	640	10
SH	Striker to H-Point	220	12	224	8
SHY	Striker to H-Point (Y)	195		200	
HS	Head to Side Window	340		340	
HD	H-Point to Door (Y)	140		138	
AD	Arm to Door (Y)	112		40	

DATA SHEET NO. 5...(CONTINUED) **DUMMY POSITIONING IN VEHICLE**

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
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NHTSA No.: FOR002
 Test Date: 7/31/01



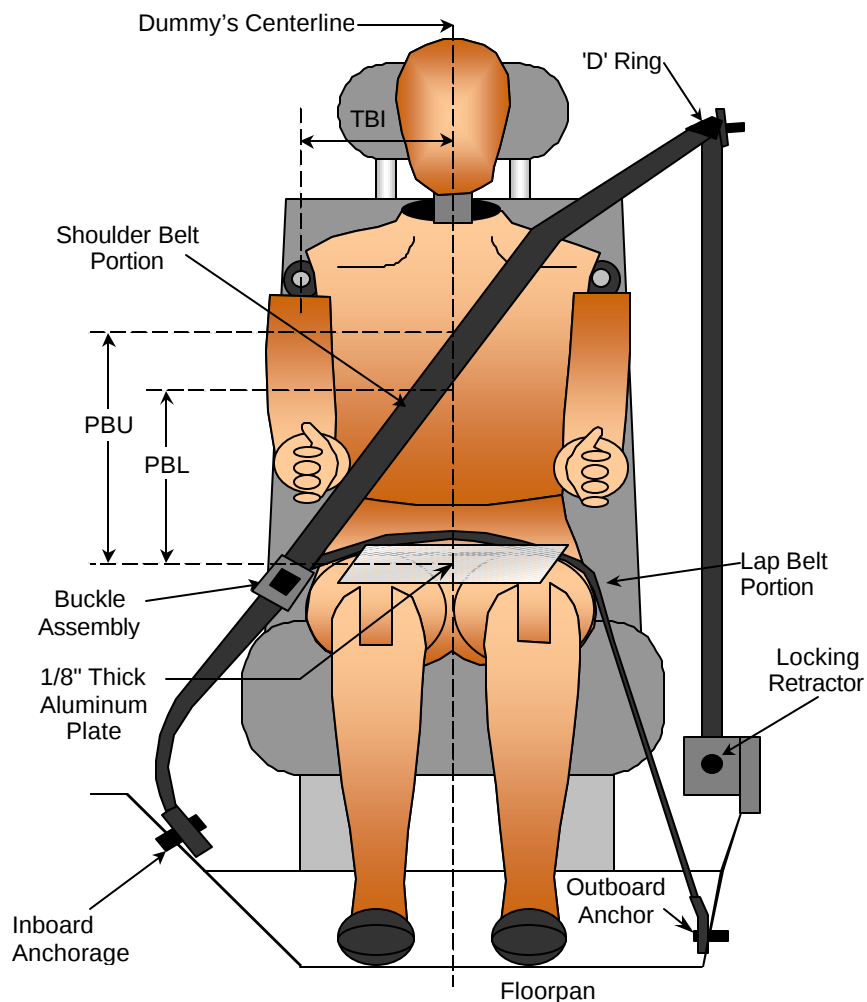
DUMMY MEASUREMENTS FOR FRONT SEAT OCCUPANTS

DATA SHEET NO. 6

SEATBELT POSITIONING DATA

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
 Test Program: 2002 NHTSA 35 mph NCAP

NHTSA No.: FOR002
 Test Date: 7/31/01



SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
TBI - Dummy C/L to Lap/Shoulder Belt Intersect	mm	170	170
PBU - Top surface of reference to belt upper edge	mm	345	310
PBL - Top surface of reference to belt lower edge	mm	270	240
Lap Belt tension	Newton's	10	10
Shoulder Belt tension	N/A	Retractor	Retractor

DATA SHEET NO. 7 - VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

NHTSA No.: FOR002

Test Program: 2002 NHTSA 35mph NCAP

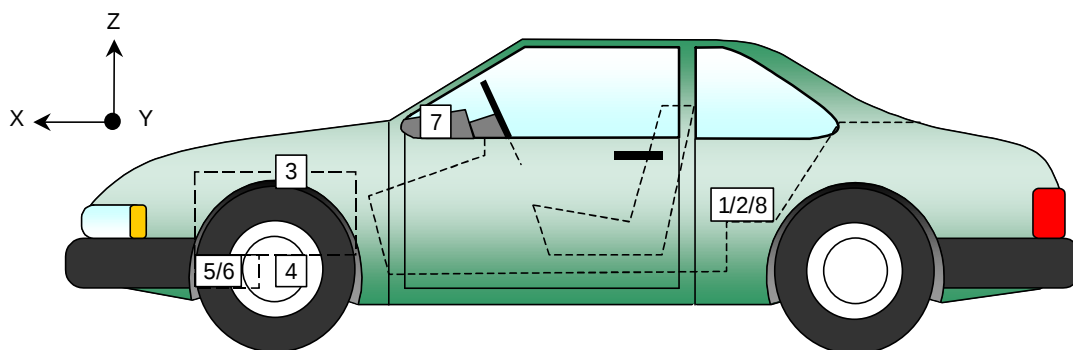
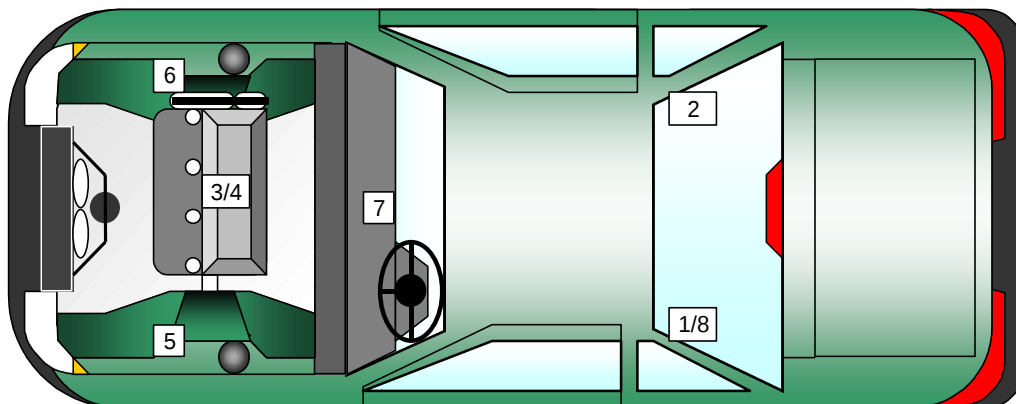
Test Date: 7/31/01

VEHICLE X-AXIS ACCELEROMETER PEAK DATA AND PRE-TEST LOCATIONS

No.	Accelerometer Location	Measurements (mm)			Peak Values				
		X	Y	Z	Units	Max	Time	Min	Time
1	Left Rear X-Member (Pri.)	1770	-475	530	G's	1.7	156.1	-34.6	16.3
2	Right Rear X-Member (Pri.)	2030	-475	520	G's	2.2	155.7	-36.9	18.6
3	Engine Top	3970	225	980	G's	14.6	79.5	-95.7	35.7
4	Engine Bottom	3970	140	315	G's	19.9	48.2	-94.5	35.8
5	Left Brake Caliper	3995	-780	245	G's	19.9	64.5	-99.0	18.2
6	Right Brake Caliper	3995	780	245	G's	59.0	26.3	-86.2	20.5
7	Instrument Panel	0	0	0	G's	0.0	0.0	0.0	0.0
8	Left Rear X-Member (Rednt.)	1715	595	550	G's	2.0	155.7	-35.6	17.3

Reference Points X - From Rear Surface of Vehicle Y - Vehicle Centerline Z - Ground Plane

** Not installed, per manufacturers request.



DATA SHEET NO. 8 - HYBRID III ATD INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

NHTSA No.: FOR002

Test Program: 2002 NHTSA 35mph NCAP

Test Date: 7/31/01

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	22.8	236.5	-58.3	72.0	14.3	233.9	-52.5	78.0
Head CG	Y	G's	5.0	228.5	-12.8	87.7	6.8	47.6	-22.9	86.5
Head CG	Z	G's	32.1	61.9	-28.9	101.1	31.9	62.5	-13.6	97.5
Head CG Resultant	N/A	G's	63.1	71.3			57.0	78.0		

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	3.3	258.0	-44.7	70.9	3.1	168.6	-41.5	62.7
Chest CG	Y	G's	5.8	101.7	-7.2	68.8	6.8	61.1	-3.4	122.4
Chest CG	Z	G's	19.7	64.1	-25.2	97.9	14.7	42.9	-16.4	114.5
Chest CG Resultant	N/A	G's	48.9	70.4			43.1	62.1		

FEMUR PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Femur	Z	Newtons	684.4	35.4	-5810.3	42.2	632.6	36.9	-3809.9	47.7
Right Femur	Z	Newtons	724.8	34.3	-5338.4	48.4	1204.3	33.8	-3057.4	48.2

SEAT BELT SENSOR PEAK VALUES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Lap Belt Force	N/A	Newtons	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shoulder Belt Force	N/A	Newtons	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shoulder Belt Pullout	N/A	MM	246.4	83.1	0.0	4.6	233.8	86.2	0.0	0.0
Shoulder Belt Stretch	N/A	MM/CM	0.000	0.0	0.000	0.0	0.000	0.0	0.000	0.0

* Not installed, per manufacturers request. ** Not used with pre-tensioners.

HEAD INJURY CRITERIA (HIC)

Location	Driver				Passenger			
	HIC	Avg G	T ¹	T ²	HIC	Avg G	T ¹	T ²
Head CG Primary	519.0	46.1	59.0	94.9	532.1	46.6	59.4	95.3

CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Primary	47.5	69.4	72.4	41.3	61.8	64.8

DATA SHEET NO. 8...(continued)

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

NHTSA No.: FOR002

Test Program: 2002 NHTSA 35mph NCAP

Test Date: 7/31/01

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	11.3	110.8	-85.3	45.9	12.7	109.5	-74.2	48.0
Pelvis	Y	G's	7.9	102.9	-13.3	48.8	6.6	59.8	-10.2	93.9
Pelvis	Z	G's	5.4	35.9	-22.5	85.6	5.9	34.0	-20.0	83.5

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	570.2	93.1	-611.6	141.5	536.5	65.6	-608.7	145.1
Neck Force	Y	Newtons	277.0	72.1	-315.5	249.8	433.4	66.9	-222.5	132.8
Neck Force	Z	Newtons	2062.8	66.9	-1009.3	101.3	1487.7	56.8	-787.6	97.9
Neck Moment	X	N•m	24.3	260.3	-19.2	94.6	15.0	95.3	-14.8	66.4
Neck Moment	Y	N•m	48.3	146.1	-42.7	258.3	47.7	143.9	-23.7	225.2
Neck Moment	Z	N•m	11.7	89.9	-7.4	152.2	26.4	88.4	-10.9	156.7

FOOT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Foot Aft	X	G's	40.7	65.8	-135.2	41.4	14.1	64.7	-50.1	38.1
Left Foot Aft	Z	G's	2.1	183.5	-46.5	48.2	32.6	59.8	-87.5	43.1
Left Foot Fore	Z	G's	52.6	53.7	-149.6	39.5	29.9	62.1	-197.3	42.9
Right Foot Aft	X	G's	37.4	55.5	-215.0	39.1	25.6	49.6	-163.8	38.2
Right Foot Aft	Z	G's	12.7	68.1	-103.2	41.7	56.6	47.3	-49.7	36.9
Right Foot Fore	Z	G's	56.0	34.4	-196.2	39.9	44.2	28.7	-142.7	42.1

UPPER AND LOWER TIBIA PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Lower Moment	X	N•m	83.4	68.3	-11.5	86.7	13.7	40.8	-23.5	65.0
Left Lower Moment	Y	N•m	63.8	68.4	-39.5	42.5	65.8	65.4	-69.7	28.3
Left Lower Force	Z	Newtons	95.0	28.8	-2523.7	71.1	263.3	250.8	-5235.6	46.9
Left Upper Moment	X	N•m	42.3	56.9	-25.8	86.3	20.1	76.6	-31.2	64.3
Left Upper Moment	Y	N•m	22.8	118.0	-42.3	37.7	28.1	124.6	-96.4	74.7
Right Lower Moment	X	N•m	27.5	41.1	-55.3	54.5	34.4	80.7	-26.5	46.0
Right Lower Moment	Y	N•m	119.7	58.6	-71.8	39.8	57.9	48.6	-142.6	31.4
Right Lower Force	Z	Newtons	163.1	119.3	-2779.2	48.3	194.9	130.1	-2765.3	46.5
Right Upper Moment	X	N•m	61.5	44.0	-9.7	282.0	16.4	281.4	-61.7	52.6
Right Upper Moment	Y	N•m	71.1	58.5	-26.6	38.0	23.2	117.0	-110.1	33.6

DATA SHEET NO. 8...(continued)Test Vehicle: 2002 Ford Explorer XLT 4WD SUVNHTSA No.: FOR002Test Program: 2002 NHTSA 35mph NCAPTest Date: 7/31/01**CHEST PEAK DISPLACEMENTS**

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	MM	0.2	2.0	-40.0	70.9	0.3	1.0	-31.6	73.7

HEAD REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	23.3	236.6	-57.5	71.2	14.8	234.0	-51.3	77.8
Head CG	Y	G's	5.1	247.3	-13.5	90.4	6.1	40.9	-22.5	87.8
Head CG	Z	G's	34.2	61.3	-30.1	101.1	30.0	57.5	-14.1	99.6
Head CG Resultant	N/A	G's	63.0	71.1			57.5	78.7		

CHEST REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	3.6	144.1	-45.0	71.1	3.3	166.5	-41.4	62.8
Chest CG	Y	G's	6.4	99.8	-6.7	68.9	8.3	61.2	-4.0	122.3
Chest CG	Z	G's	19.6	69.9	-23.8	97.7	14.6	43.0	-15.5	114.6
Chest CG Resultant	N/A	G's	49.0	70.5			43.5	62.0		

REDUNDANT HEAD INJURY CRITERIA (HIC)

Location	Driver				Passenger			
	HIC	Avg G	T ¹	T ²	HIC	Avg G	T ¹	T ²
Head CG Redundant	528.4	46.4	58.2	94.1	537.7	46.8	59.4	95.3

REDUNDANT CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Redundant	47.8	69.3	72.3	41.5	61.8	64.8

DATA SHEET NO. 9
SEATBELT ASSESSMENT TEST DATA

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
 Test Program: 2002 NHTSA 35 mph NCAP

NHTSA No.: FOR002
 Test Date: 7/31/01

SEAT BELT PLACEMENT MEASUREMENTS

Measurement Description	Units	Driver	Passenger
TBI - Dummy C/L to Lap/Shoulder Belt Intersect	mm	170	170
PBU -Top surface of reference to belt upper edge	mm	345	310
PBL - Top surface of reference to belt lower edge	mm	270	240
Lap Belt tension	Newton's	10	10
Shoulder Belt tension	N/A	Retractor	Retractor

BELT LENGTH DATA

Measurement Description	Units	Driver	Passenger
Retractor reel to 'D' ring	mm	710	710
Shoulder belt length as measured on ATD	mm	825	830
Lap belt length as measured on ATD	mm	760	755
Remainder of belt on reel	mm	835	875
Total belt length for continuous webbing systems	mm	3130	3170

SHOULDER BELT SPOOL-OFF DATA

Measurement Description	Units	Driver	Passenger
As determined mechanically	mm	65.0	160.0
As determined electronically	mm	246.4	233.8

BELT STRETCH DATA

Measurement Description	Units	Driver	Passenger
Electronically between shoulder belt load cell and "D" ring	mm/cm	*	*
Mechanically	mm/cm	N/A	N/A

*Not used with shoulder belt pre-tensioner systems.

DATA SHEET NO. 10
SUMMARY OF FMVSS 212 DATA

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
 Test Program: 2002 NHTSA 35 mph NCAP

NHTSA No.: FOR002
 Test Date: 7/31/01

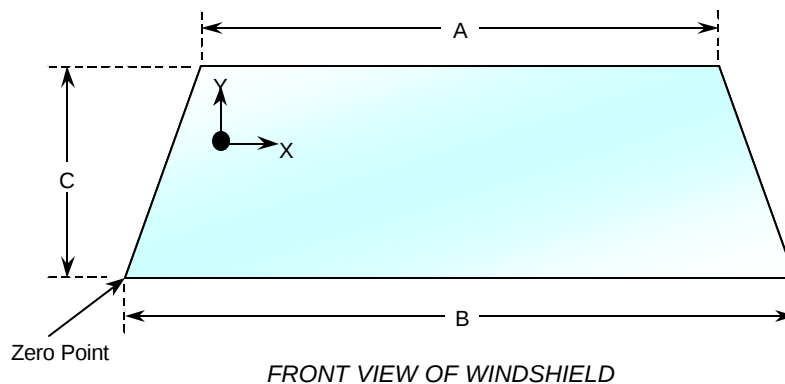
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with a rubber type adhesive. Molding covers the windshield periphery except at the bottom.

The standard requires that the posttest retention measurement be a minimum of 75 percent of the pretest total periphery measurement for vehicles not equipped with occupant passive restraints and 50 percent for each side of the windshield for vehicles that are equipped with occupant passive restraints.

Temperature of windshield molding during test: 21.0 °C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test(mm)	Post-Test (mm)	% of Retention
Left Side	1929	1929	100
Right Side	1929	1929	100
Total	3857	3858	100



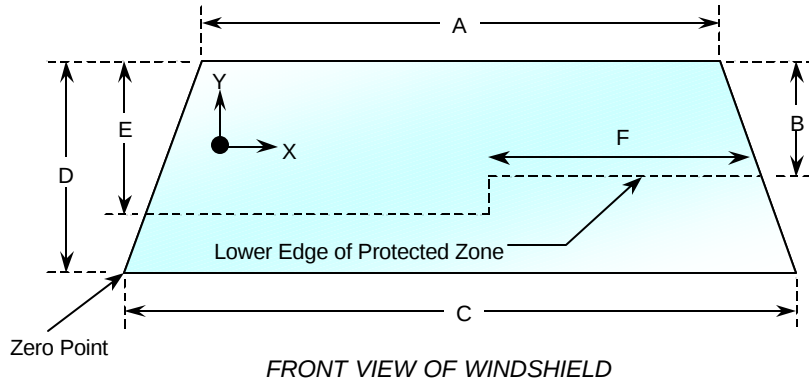
WINDSHIELD DIMENSIONS

Item	Units	Segment Length	Molding Width
A	mm	1326	21
B	mm	1675	21
C	mm	428	21

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

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
 Test Program: 2002 NHTSA 35 mph NCAP

NHTSA No.: FOR002
 Test Date: 7/31/01



**WINDSHIELD AND
PROTECTED ZONE**

Item	Units	Value
A	mm	1326
B	mm	320
C	mm	1675
D	mm	428
E	mm	710
F	mm	527

AREA OF PROTECTED ZONE FAILURES

- A. Provide coordinates of the area that the protected zone was penetrated more than 0.25 in. by a vehicle component other than one that is normally in contact with the windshield.

X	Y
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

- B. Provide coordinates of the area beneath the protected zone that the inner surface of the windshield was penetrated by a vehicle component.

X	Y
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

DATA SHEET NO. 12
FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV NHTSA No.: FOR002
Test Program: 2002 NHTSA 35 mph NCAP Test Date: 7/31/01

Test Time: 11:45 AM Temperature at Time of Impact: 28.9°C

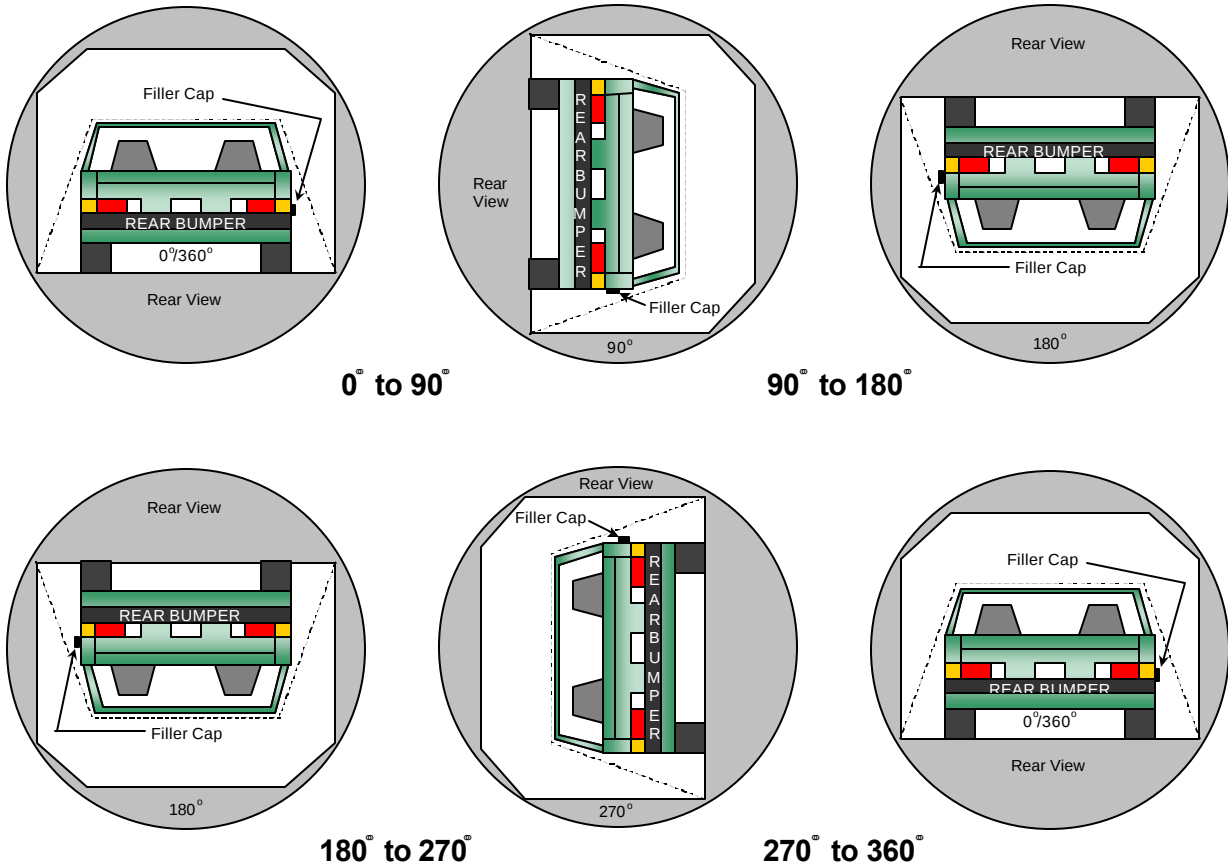
STODDARD SOLVENT SPILLAGE MEASUREMENTS

- A. From impact until vehicle motion ceases: 0.0 oz.
(Maximum Allowable = 1 ounce)
- B. For the 5 minute period after motion ceases: 0.0 oz.
(Maximum Allowable = 5 ounces)
- C. For the following 25 minutes: 0.0 oz.
(Maximum Allowable = 1 oz./minute)
- D. Spillage Location Details: No leakage occurred

DATA SHEET NO. 13
FMVSS 301 STATIC ROLLOVER DATA SHEET

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
 Test Program: 2002 NHTSA 35 mph NCAP

NHTSA No.: FOR002
 Test Date: 7/31/01



1. The specified fixture rollover rate for each 90° of rotation is 60 to 120 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. Solvent leakage occurred during the rollover from 180° to 270°. No leakage was evident during the first minute. 1.3 oz was collected during the second minute. 1.3 oz the third minute, 1.0 oz the fourth minute and 0.4 oz was collected during the fifth minute. The vehicle was kept in this position for an additional 3 minutes, but no further leakage occurred. During the rollover from 270° to 360°, an additional 1.2 oz of Stoddard solvent leaked. The vehicle stopped leaking during the rollover from 270° to 360°. Photographs A-59, A-60, and A-61 detail the solvent spillage location.

Test Phase	Rotation Time (sec.)	Hold Time (sec.)	Spillage (oz.)
0° to 90°	82	300	0.0
90° to 180°	82	300	0.0
180° to 270°	76	480	4.0
270° to 360°	80	480	1.2

DATA SHEET NO. 14
VEHICLE MEASUREMENTS

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
Test Program: 2002 NHTSA 35 mph NCAP

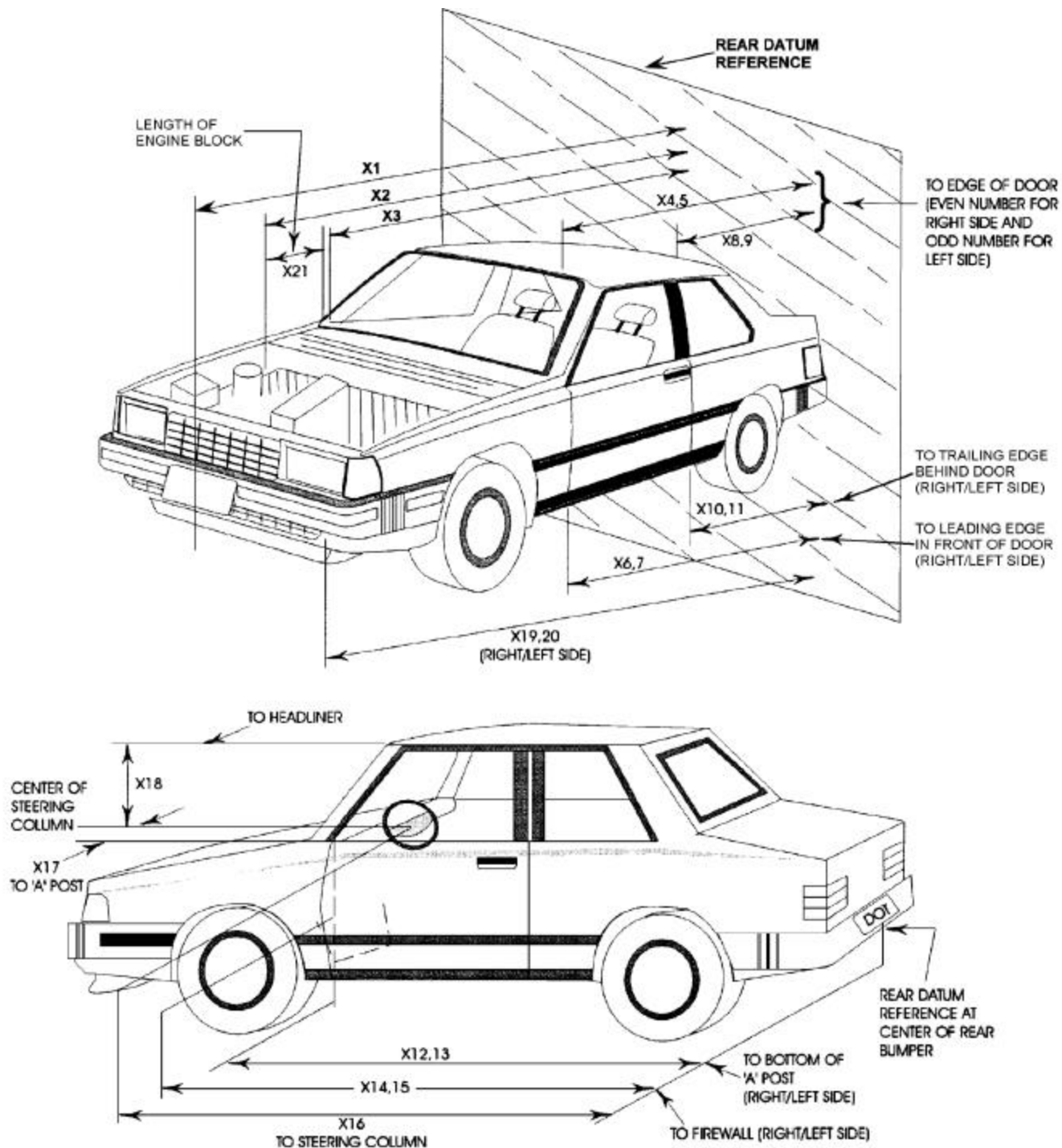
NHTSA No.: FOR002
Test Date: 7/31/01

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
1	Total length of vehicle at centerline	mm	4840	4450	-390
2	RSOV to front of engine	mm	4280	4190	-90
3	RSOV to firewall centerline	mm	3705	3561	-144
4	RSOV to leading edge of right door	mm	3428	3465	37
5	RSOV to leading edge of left door	mm	3424	3437	13
6	RSOV to lower leading edge of right door	mm	3384	3384	0
7	RSOV to lower leading edge of left door	mm	3379	3399	20
8	RSOV to upper trailing edge of right door	mm	2326	2377	51
9	RSOV to upper trailing edge of left door	mm	2325	2359	34
10	RSOV to lower trailing edge of right door	mm	2338	2338	0
11	RSOV to lower trailing edge of left door	mm	2334	2343	9
12	RSOV to bottom of right 'A' pillar	mm	3350	3404	54
13	RSOV to bottom of left 'A' pillar	mm	3350	3398	48
14	RSOV to firewall on right side	mm	3723	3690	-33
15	RSOV to firewall of left side	mm	3710	3620	-90
16	RSOV to steering column	mm	2932	3076	144
17	Center of steering column to left 'A' pillar	mm	370	475	105
18	Center of steering column to headlining	mm	430	360	-70
19	RSOV to right side of front bumper	mm	4614	4420	-194
20	RSOV to left side of front bumper	mm	4614	4343	-271
21	Length of engine block	mm	545	545	0
RD	RSOV to right side of dash panel	mm	3128	3205	77
CD	RSOV to center of dash panel	mm	3158	3094	-64
LD	RSOV to left side of dash panel	mm	3135	3181	46

DATA SHEET NO. 14...(CONTINUED)
VEHICLE MEASUREMENTS

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
 Test Program: 2002 NHTSA 35 mph NCAP

NHTSA No.: FOR002
 Test Date: 7/31/01



DATA SHEET NO. 15
CAMERA LOCATIONS

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
Test Program: 2002 NHTSA 35 mph NCAP

NHTSA No.: FOR002
Test Date: 7/31/01

No.	Camera View	Location (mm)			Angle (Deg.)	Film Plane to Head	Lens (mm)	Speed (fps)
		X	Y	Z				
1	Right Side, Real Time	N/A	N/A	N/A	N/A	N/A	Zoom	24
2	Left Side, No. 1	1960	-8250	880	-3	7899	13	1050
3	Left Side, No. 2	1460	-8250	1460	-1	7916	35	1020
4	Left Side, No. 3	6500	-10580	4640	-16	11476	65	990
5	Left Side, No. 4	1460	-8250	3100	-16	804	19	1000
6	Left Side, No. 5	1460	-8250	2700	-13	8012	19	970
7	Right Side, No. 1	1960	8150	730	0	7812	19	1010
8	Right Side, No. 2	1660	8150	1450	-1	7797	35	1020
9	Right Side, No. 3	7860	8900	2800	-8	10256	80	970
10	Right Side, No. 4	2600	6630	1280	0	6259	24	1030
11	Overhead Overall	250	0	4460	-88	N/A	13	1020
12	Front View, Driver	-530	-380	2590	-41	N/A	12	960
13	Front View, Passenger	-530	380	2590	-46	N/A	13	1100
14	Pit Camera, Engine	1610	0	-1370	87	N/A	4	*
15	Pit Camera, Fuel Tank	4700	0	-1630	44	N/A	4	1080
16	Driver Belt	3100	-280	1440	-8	797	13	870
17	Passenger Belt	3100	280	1440	-8	797	13	870
18	Left Side Extra	1020	-9180	1370	0	8895	50	*

X - Barrier Face Y - Monorail Centerline Z - Ground

DATA SHEET NO. 16 **PHOTOGRAPHIC REFERENCE TARGET LOCATIONS**

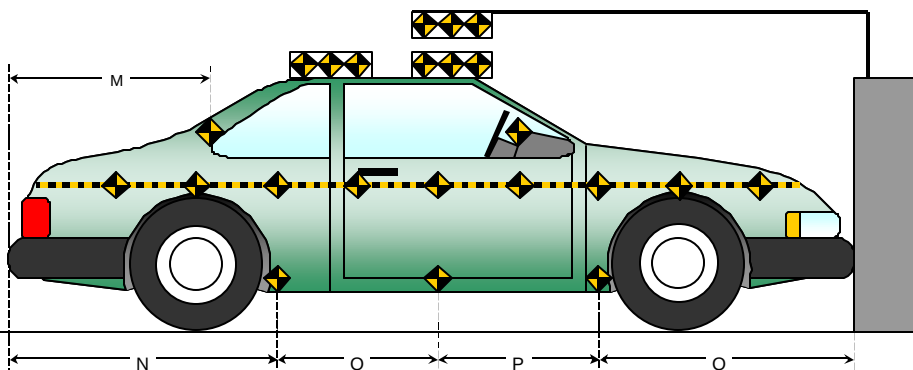
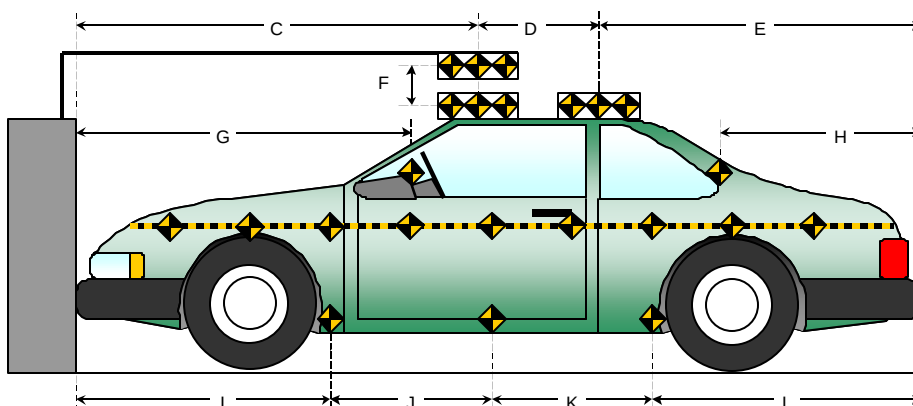
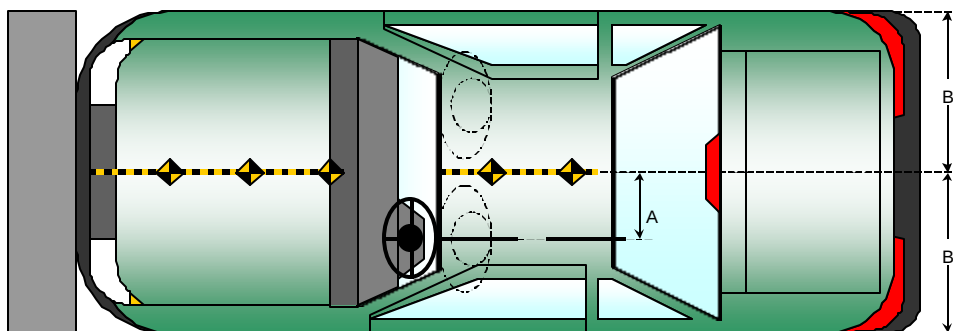
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
 Test Program: 2002 NHTSA 35 mph NCAP

NHTSA No.: FOR002
 Test Date: 7/31/01

All Dimensions

in mm

Item	Value
A	431
B	934
C	1903
D	605
E	2227
F	155
G	N/A
H	1293
I	1326
J	942
K	942
L	1636
M	1291
N	1633
O	945
P	945
Q	1317



DATA SHEET NO. 17
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
 Test Program: 2002 NHTSA 35 mph NCAP

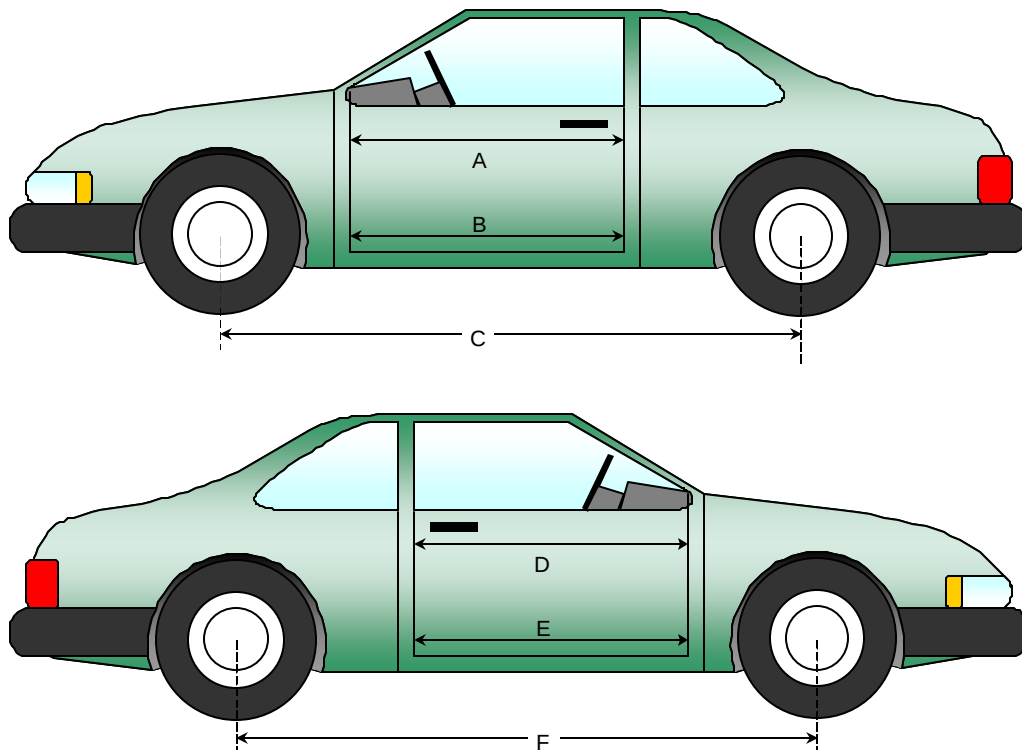
NHTSA No.: FOR002
 Test Date: 7/31/01

DOOR OPENING WIDTH

Item	Description	Units	Pre-Test	Post-Test	Difference
A	Left Side Upper	mm	963	935	-28
B	Left Side Lower	mm	911	904	-7
D	Right Side Upper	mm	962	937	-25
E	Right Side Lower	mm	894	887	-7

WHEELBASE MEASUREMENTS

Item	Description	Units	Pre-Test	Post-Test	Difference
C	Left Side Wheel base	mm	2885	2845	-40
F	Right Side Wheel base	mm	2885	2831	-54



DATA SHEET NO. 17...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

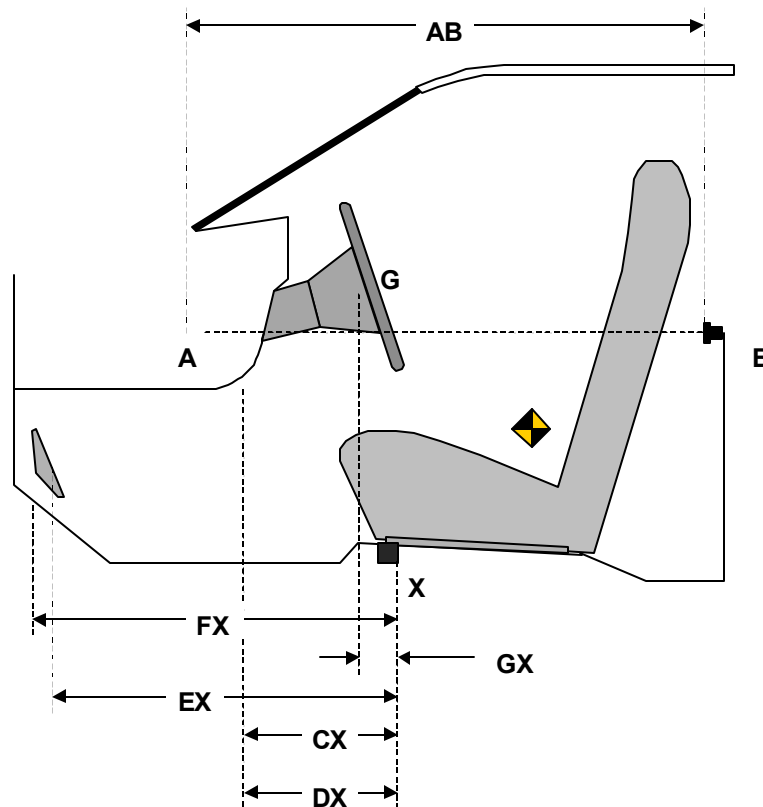
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
 Test Program: 2002 NHTSA 35 mph NCAP

NHTSA No.: FOR002
 Test Date: 7/31/01

DRIVER COMPARTMENT INTRUSION

Item	Description	Units	Pre-Test	Post-Test	Difference
AB	Door Opening (Inside window jam)	mm	963	935	-28
CX	Left Knee Bolster to X	mm	231	244	13
DX	Right Knee Bolster to X	mm	230	245	15
EX	Brake Pedal to X	mm	529	495	-34
FX	Foot Rest to X	mm	580	590	10
GX	Center of Steering Wheel Hub to X	mm	61	46	-15

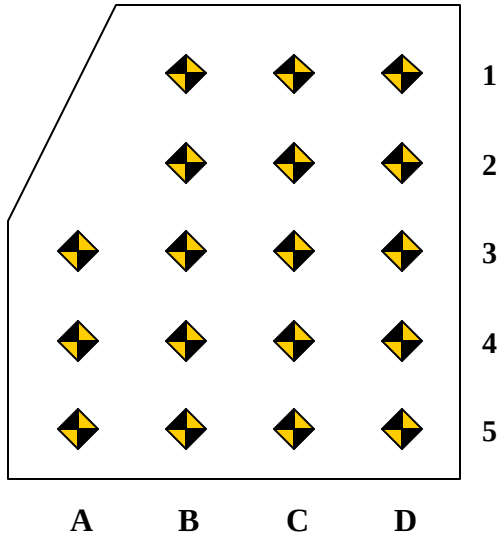
X = Left Front Seat Outboard Anchor Bolt Head



DATA SHEET NO. 17...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
 Test Program: 2002 NHTSA 35 mph NCAP

NHTSA No.: FOR002
 Test Date: 7/31/01



Measurement reference point for X and Z axis is the forward outboard seat mounting bolt.

Columns A through D are evenly spaced.

Rows 1 and 2 are on the toe kick portion of the floor pan. Rows 3, 4 and 5 are located on the most level portion of the floor pan.

Row 3 will be at the intersection of the toe kick and the level sections of the floor pan.

DRIVER FLOOR PAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1		740	741	742		681	675	656		-59	-66	-86
2		645	641	642		608	603	596		-37	-38	-46
3	542	545	541	542	529	513	513	508	-13	-32	-28	-34
4	444	445	441	439	429	413	410	404	-15	-32	-31	-35
5	346	343	341	339	329	310	305	304	-17	-33	-36	-35

DRIVER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1		83	86	89		105	113	125		22	27	36
2		41	43	42		76	93	97		35	50	55
3	-3	-2	-1	-1	19	26	35	47	22	28	36	48
4	-8	-12	-14	-13	4	5	14	20	12	17	28	33
5	-22	-23	-25	-28	-21	-11	-8	-13	1	12	17	15

DATA SHEET NO. 17...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
 Test Program: 2002 NHTSA 35 mph NCAP

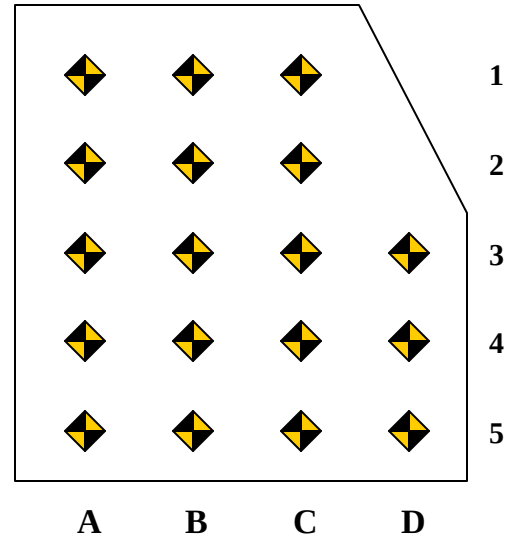
NHTSA No.: FOR002
 Test Date: 7/31/01

Measurement reference point for X and Z axis is the forward outboard seat mounting bolt.

Columns A through D are evenly spaced.

Rows 1 and 2 are on the toe kick portion of the floor pan. Rows 3,4, and 5 are located on the most level portion of the floor pan.

Row 3 will be at the intersection of the toe kick and the level sections of the floor pan.



PASSENGER FLOOR PAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	734	727	722		731	730	728		-3	3	6	
2	630	623	622		640	639	632		10	16	10	
3	530	525	522	529	545	542	535	528	15	17	13	-1
4	434	425	422	426	447	443	435	424	13	18	13	-2
5	329	325	322	321	344	344	335	325	15	19	13	4

PASSENGER FLOOR PAN Z-AXIS

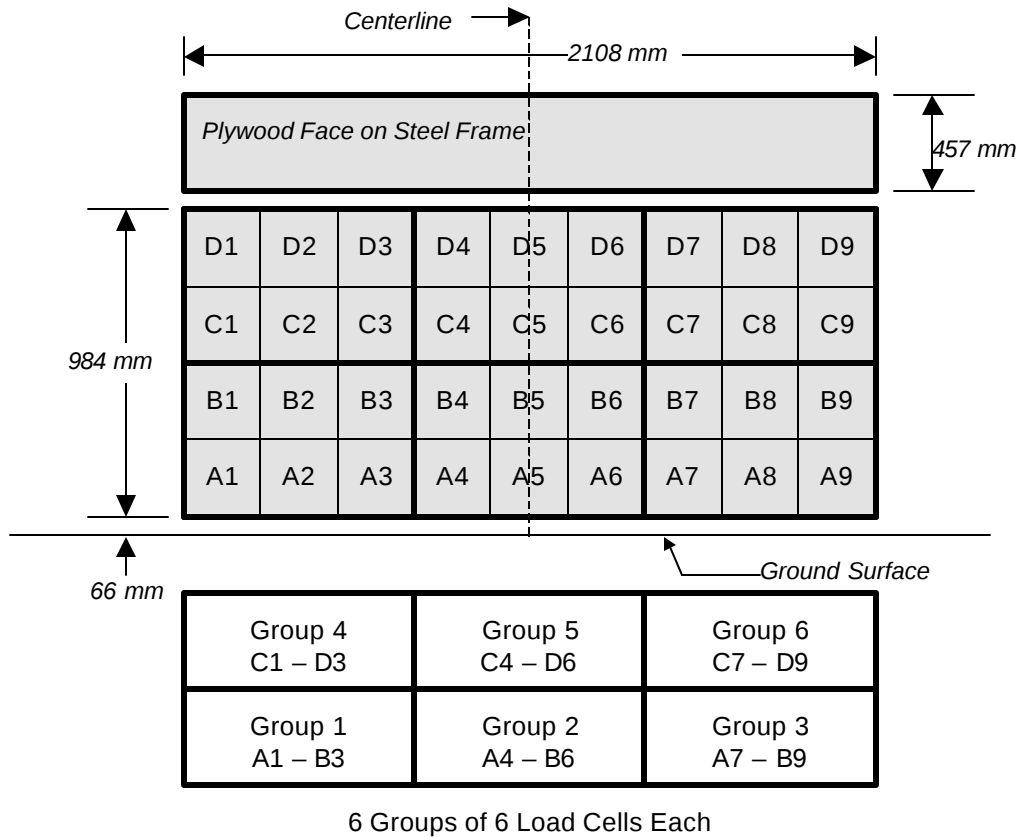
	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	80	79	79		129	97	76		49	18	-3	
2	37	39	37		54	41	33		17	2	-4	
3	-11	-3	-4	-5	-1	-5	-10	-15	10	-2	-6	-10
4	-24	-15	-13	-11	-10	-13	-21	-22	14	2	-8	-11
5	-27	-32	-25	-31	-34	-34	-32	-34	-7	-2	-7	-3

DATA SHEET NO. 18
FIXED BARRIER TYPE

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
 Test Program: 2002 NHTSA 35 mph NCAP

NHTSA No.: FOR002
 Test Date: 7/31/01

36 Load Cell Rigid Barrier (NHTSA Standard)
Load Cell Locations on Fixed Barrier



The Data is presented in Appendix C with the following requirements:

- 1.) Data from 36 individual load cells
- 2.) Sum data from 6 groupings shown above (6 cells/group)
- 3.) Total or sum of all 36 individual load cells
- 4.) Sum of all 36 individual load cells vs. vehicle dynamic crush

DATA SHEET NO. 19
ACCIDENT INVESTIGATION DIVISION DAT A

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
 Test Program: 2002 NHTSA 35 mph NCAP

NHTSA No.: FOR002
 Test Date: 7/31/01

VEHICLE INFORMATION

VIN: 1FMZU73E32ZAG5690
 Vehicle Size Category: SUV

Wheel base (mm): 2885
 Test Weight (kg): 2323

ACCELEROMETER DATA

Accelerometer Location: Left rear floor pan
 Cal. Procedure/Interval: 6 months / drop test
 Integration Algorithm: NHTSA Standard
 Impact Velocity (km/h): 56.33
 Velocity Change (km/h): 62.49

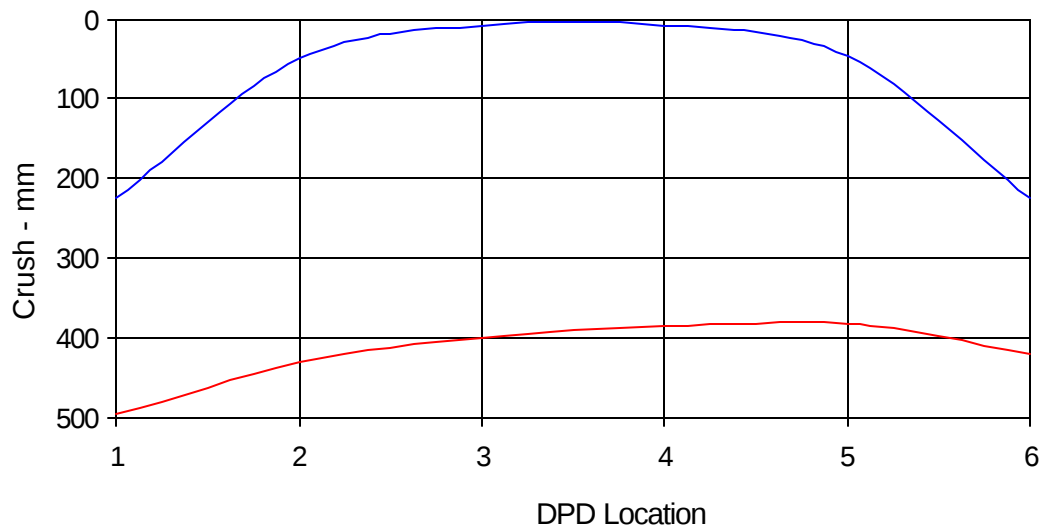
Linearity: Good
 Time of Separation (msec): 69.4

CRUSH PROFILE

Collision Deformation Classification: 12FDEW6
 Damage Region Length (mm): 1653

Midpoint of Damage: Vehicle Centerline
 Impact Mode: Full Frontal

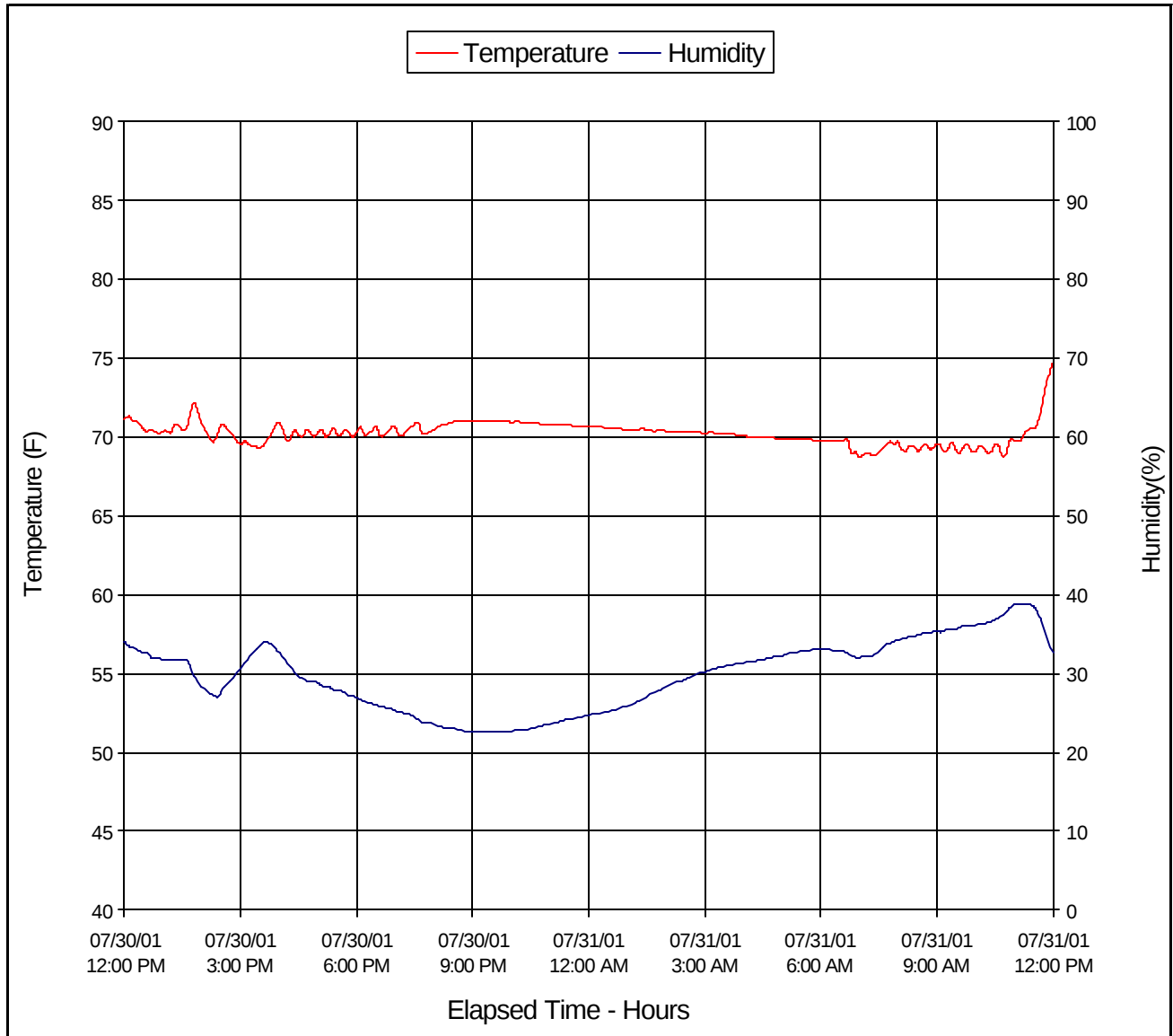
No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	226	497	-271
C2	Crush zone 2 on left side	mm	50	432	-382
C3	Crush zone 3 on left side	mm	8	400	-392
C4	Crush zone 4 on right side	mm	8	387	-379
C5	Crush zone 5 on right side	mm	47	383	-336
C6	Crush zone 6 at right side	mm	226	420	-194



DATA SHEET NO. 20
DUMMY/VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV
Test Program: 2002 NHTSA 35 mph NCAP

NHTSA No.: FOR002
Test Date: 7/31/01



APPENDIX A

PHOTOGRAPHS

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A-7	Pre-test Left Side View	A-7
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A-9	Pre-test Right Side View	A-9
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Figure A-1: Right Front, as Received



Figure A-2: Left Rear, as Received

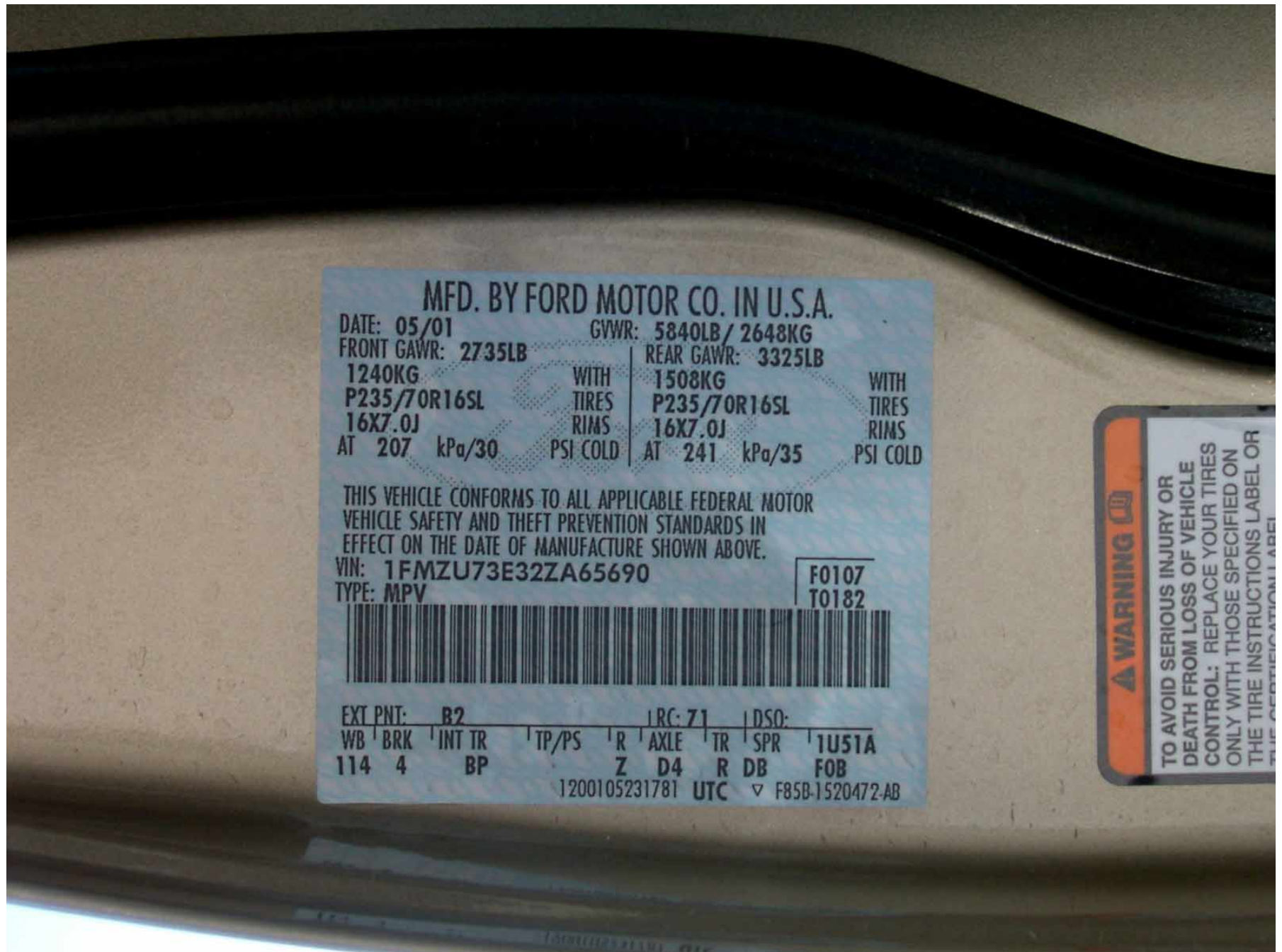


Figure A-3: Vehicle Certification Label

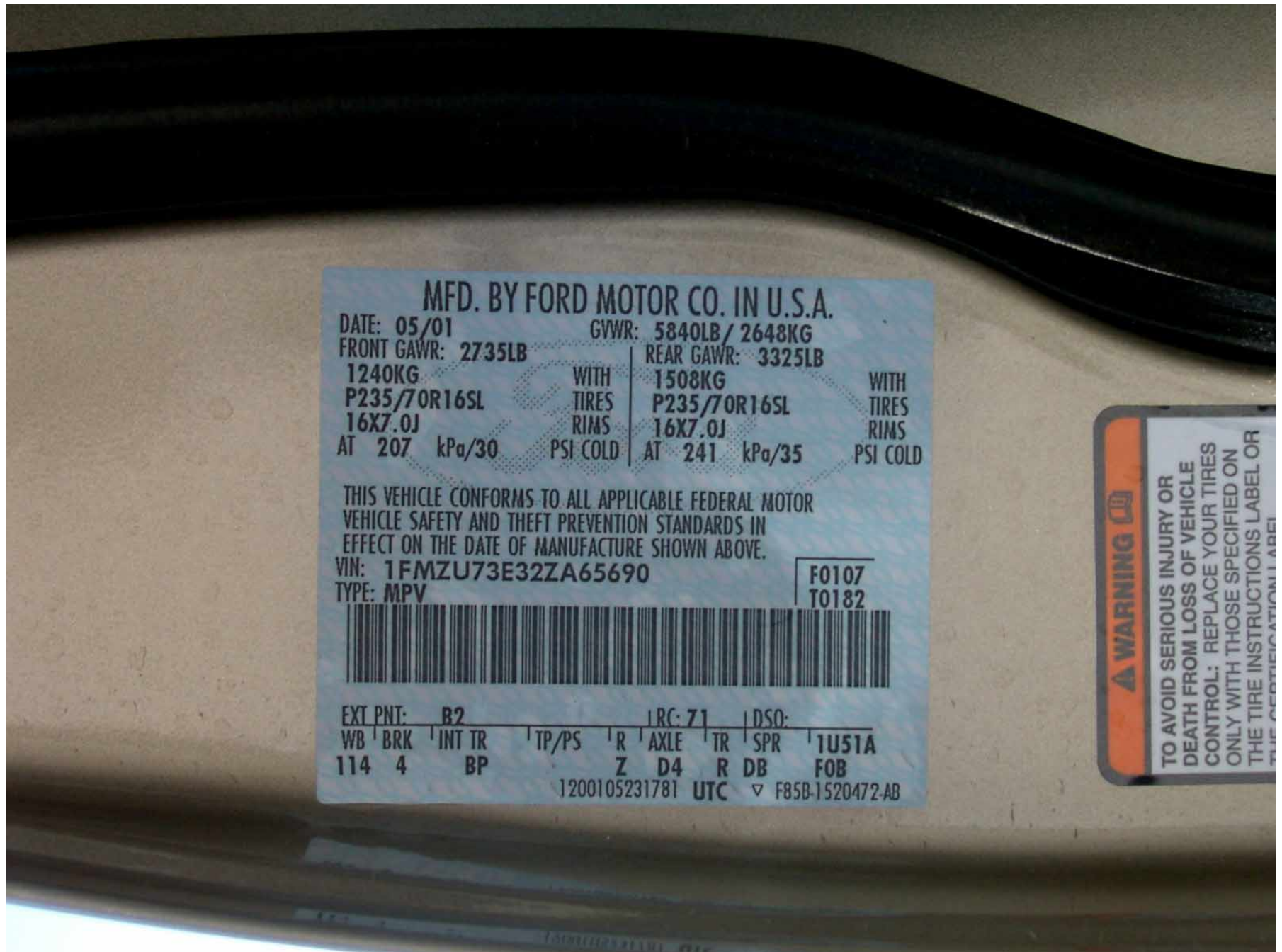


Figure A-4: Vehicle Tire Label



Figure A-5: Front View, Pre-Test

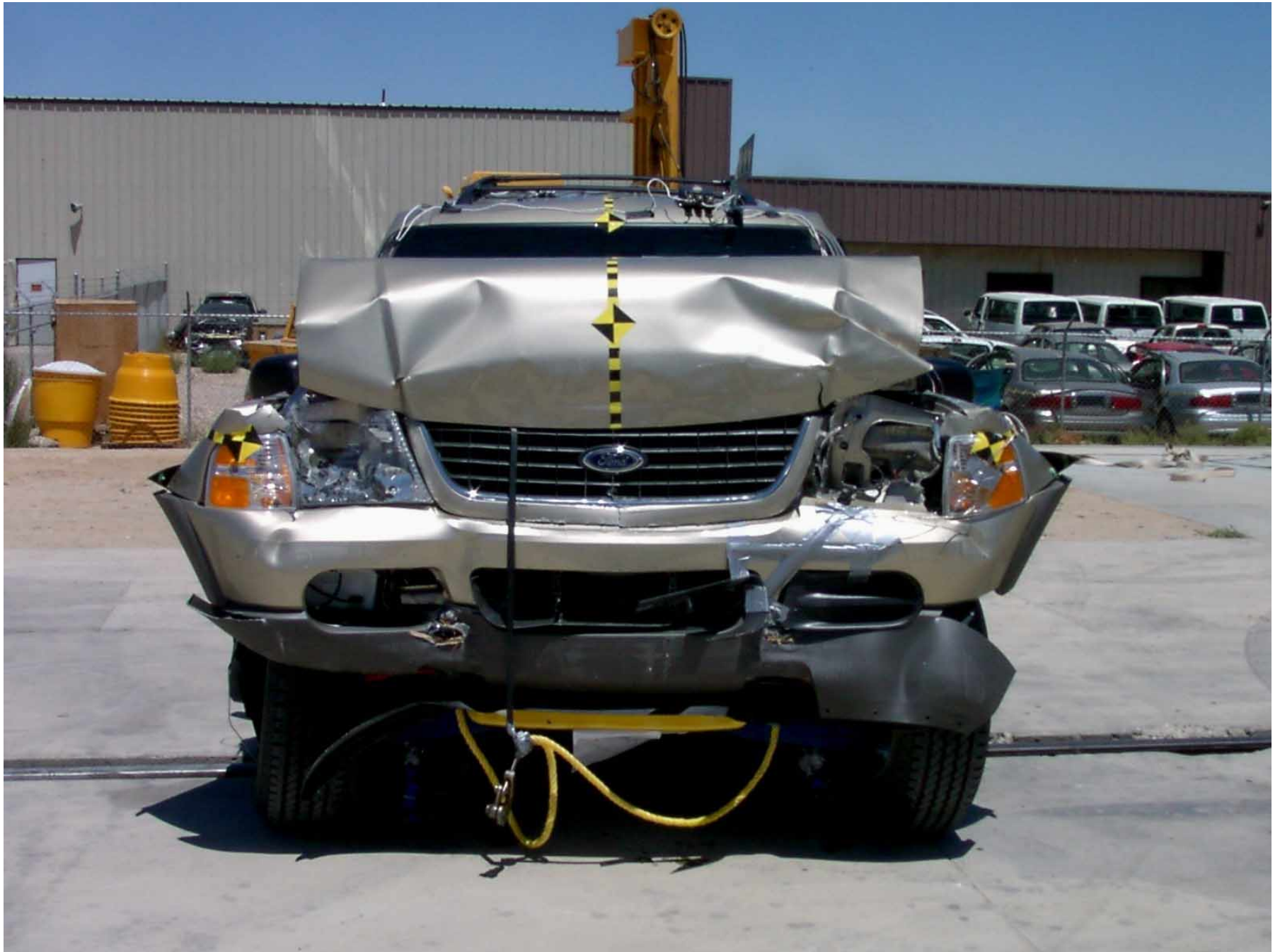


Figure A-6: Front View, Post-Test



Figure A-7: Left Side View, Pre-Test



Figure A-8: Left Side View, Post-Test



Figure A-9: Right Side View, Pre-Test



Figure A-10: Right Side View, Post-Test



Figure A-11: Right Front View, Pre-Test



Figure A-12: Right Front View, Post-Test



Figure A-13: Left Rear View, Pre-Test



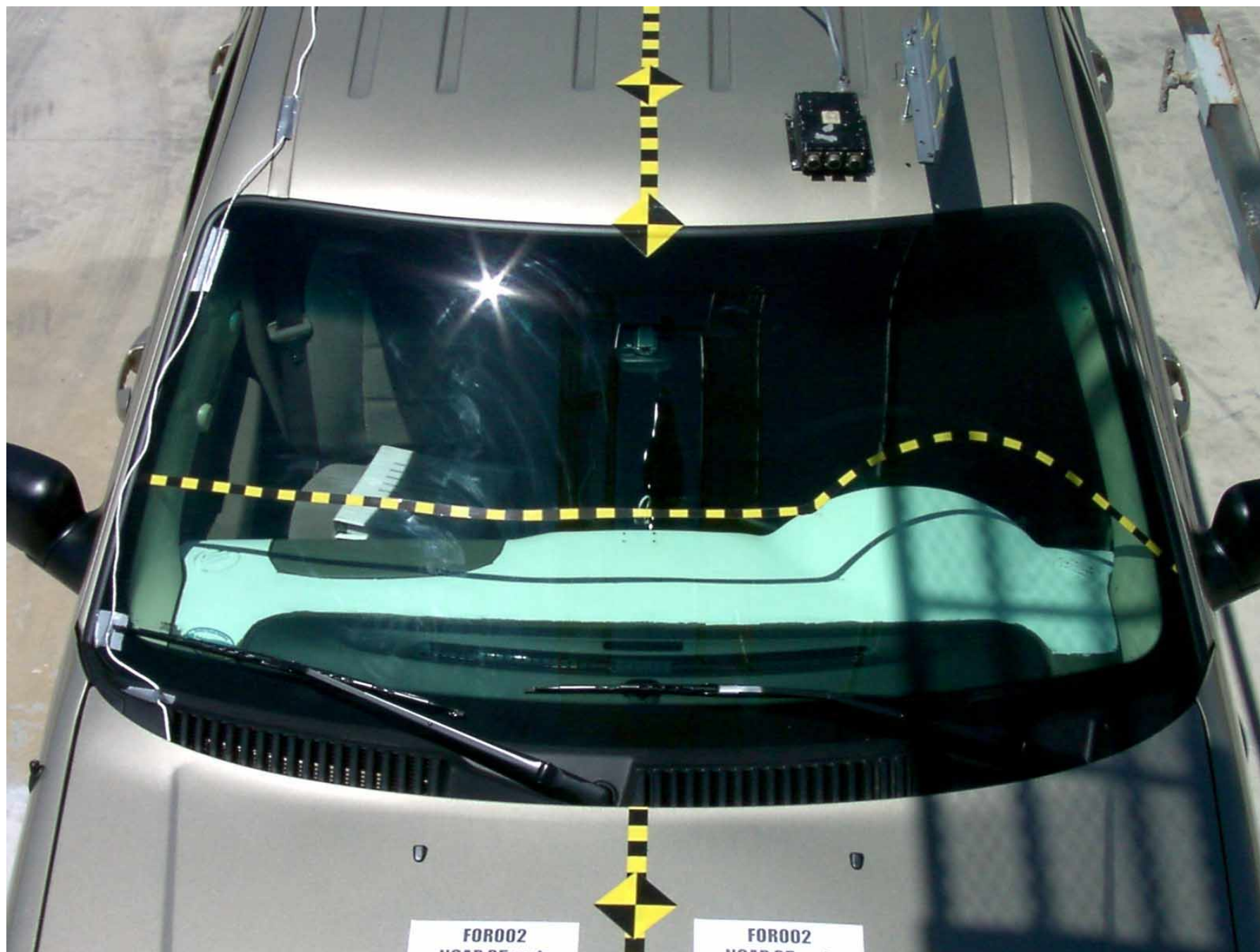


Figure A-15: Windshield, Pre-Test

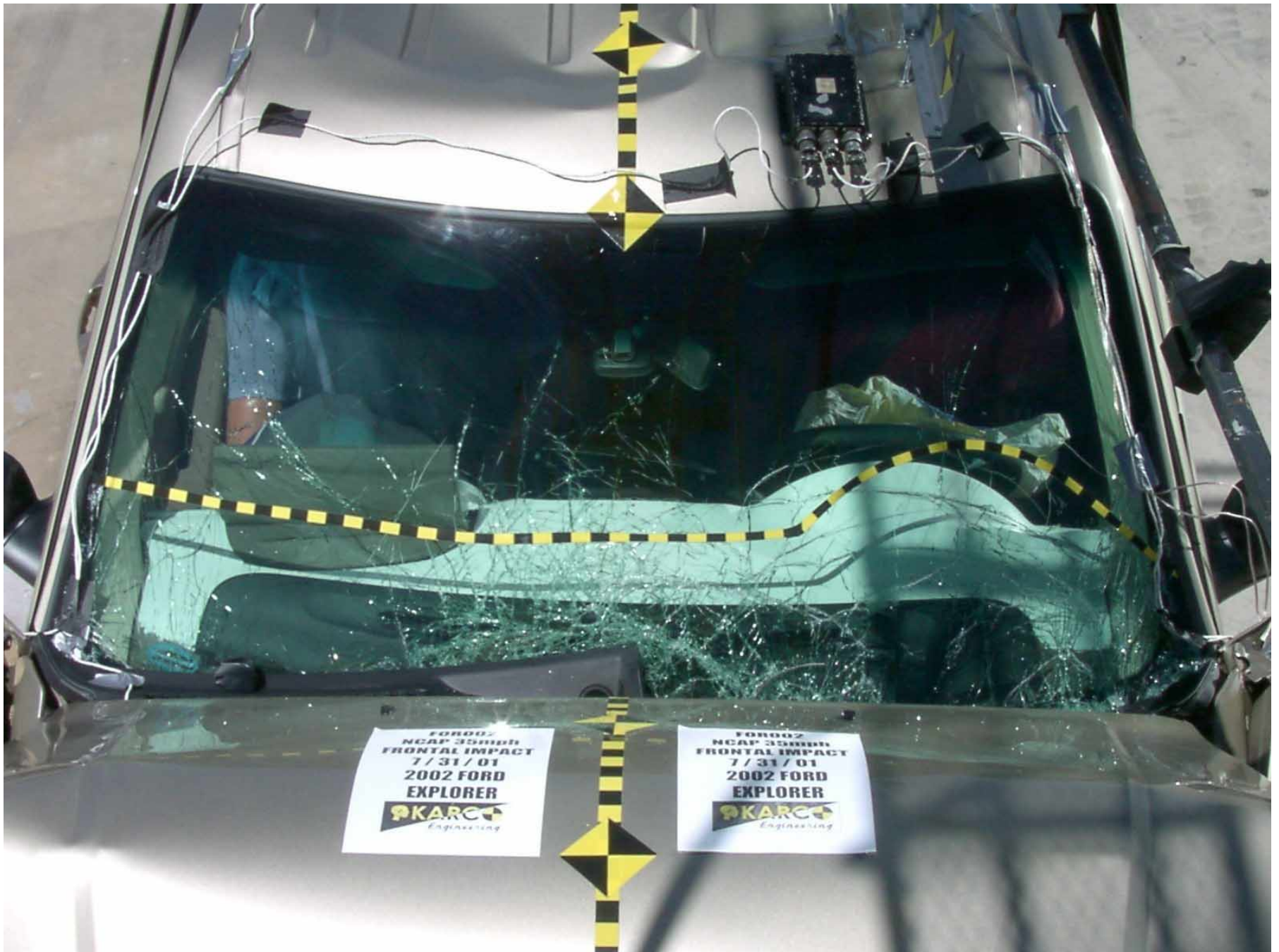


Figure A-16: Windshield, Post-Test



Figure A-17: Engine Compartment, Pre-Test

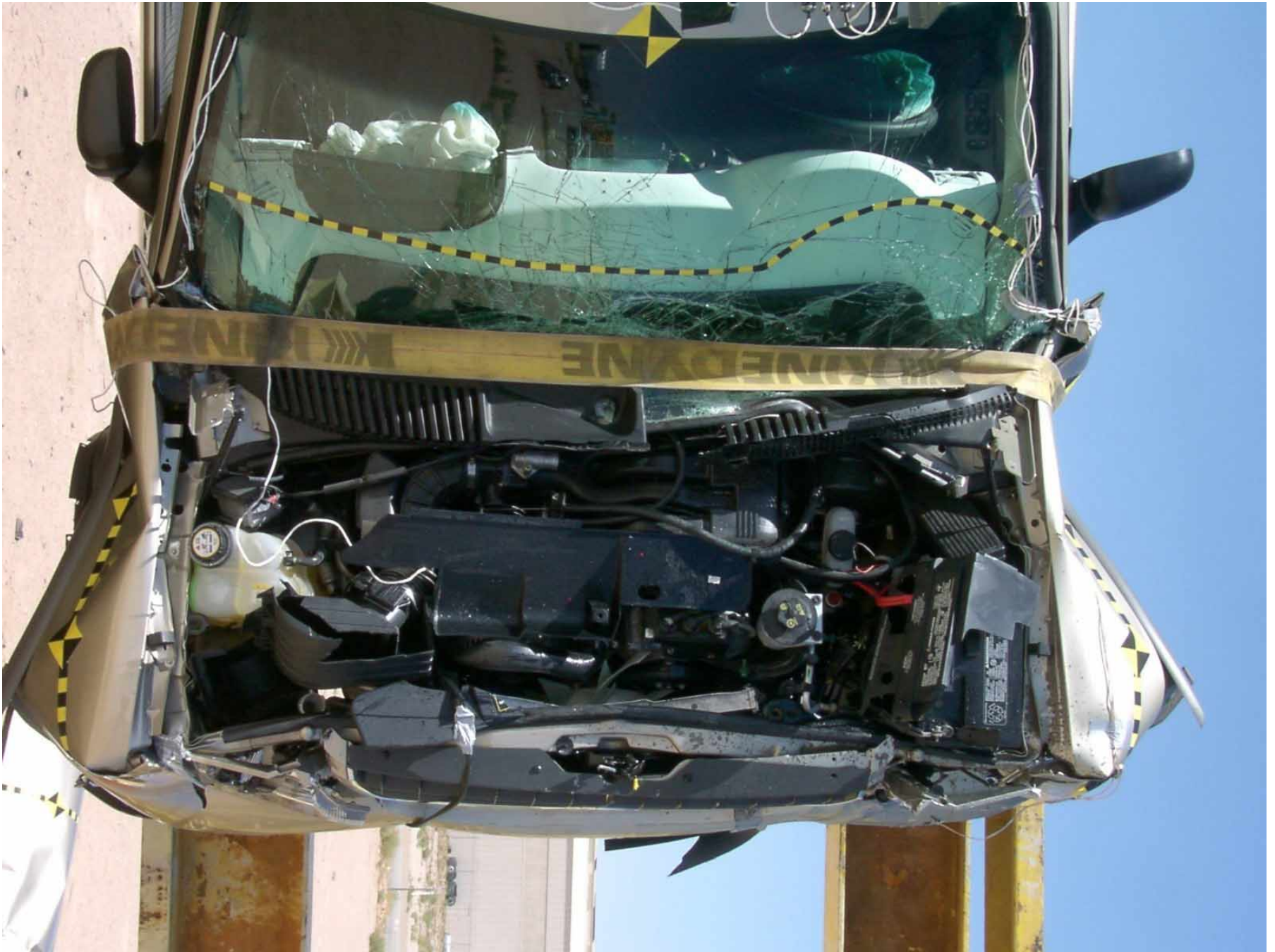


Figure A-18: Engine Compartment, Post-Test



Figure A-19: Fuel Cap, Pre-test



Figure A-20: Fuel Cap, Post-Test

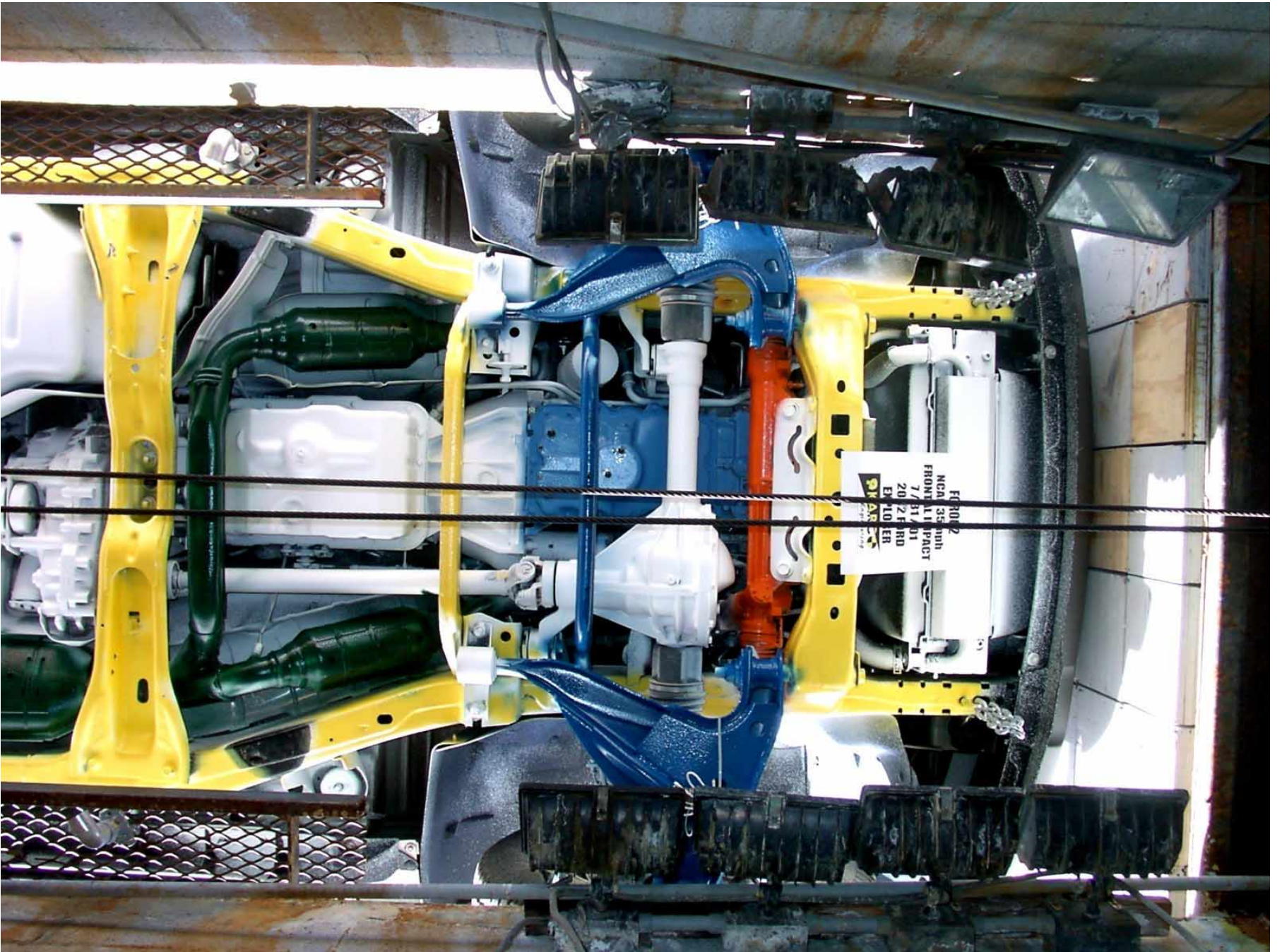


Figure A-21: Front Underside, Pre-Test



FOR002
NCAP 35mph
FRONTAL IMPACT
7 / 31 / 01
2002 FORD
EXPLORER
KARCA

Figure A-22: Front Underside, Post-Test



Figure A-23: Rear Underside, Pre-Test

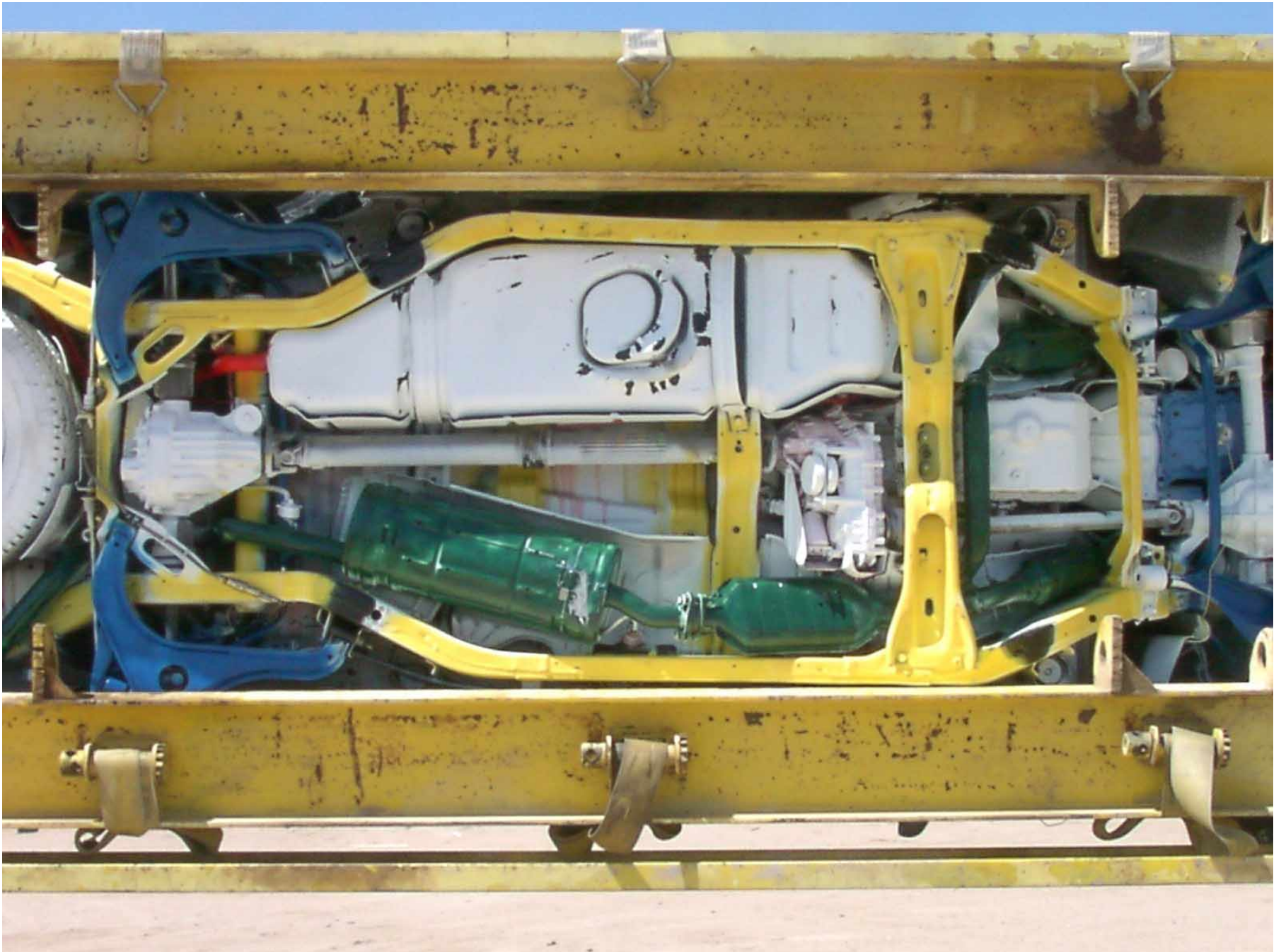


Figure A-24: Rear Underside, Post-Test

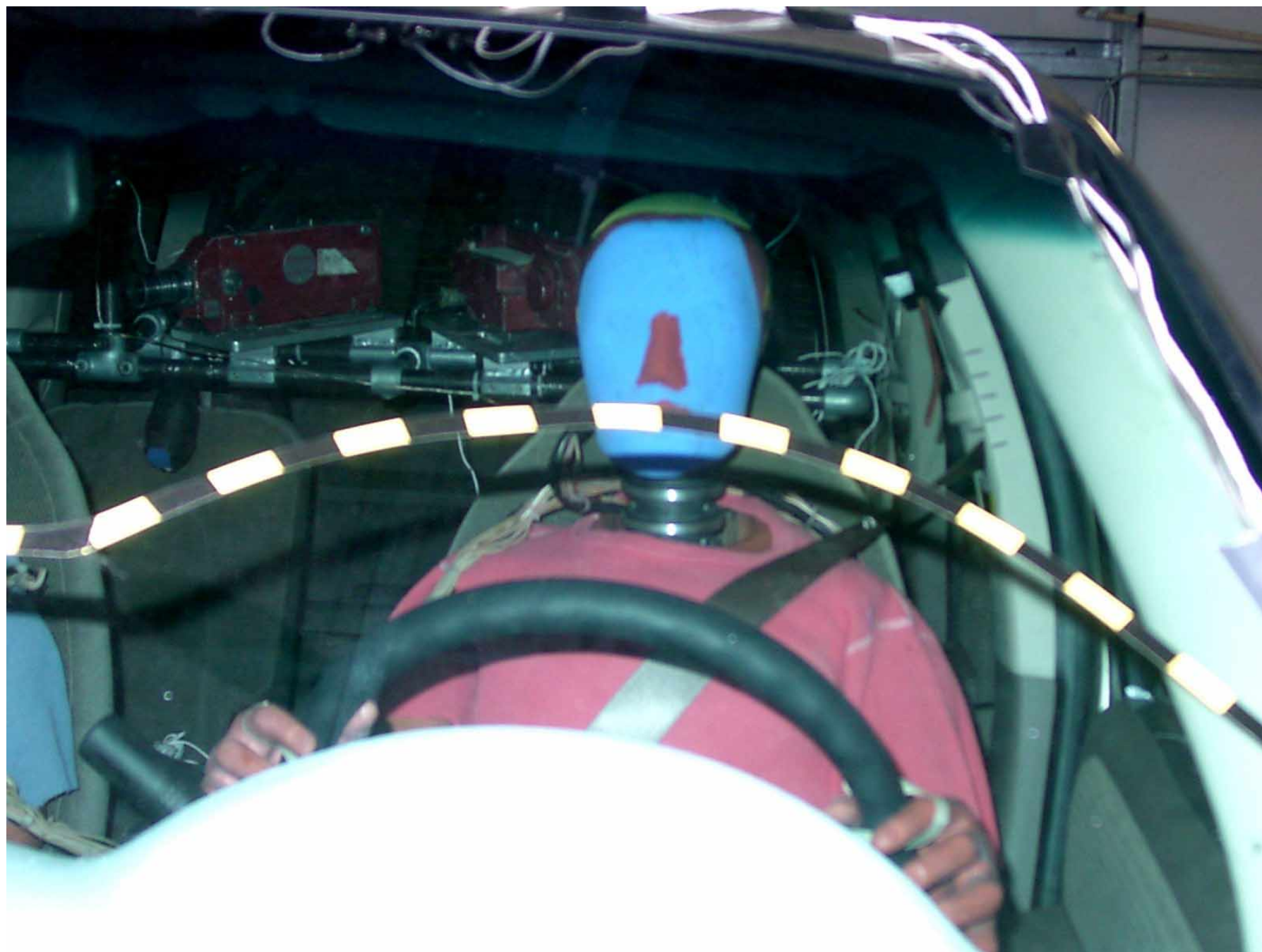


Figure A-25: Driver Dummy Front View, Pre-Test



Figure A-26: Driver Dummy Front View, Post-Test



Figure A-27: Driver Dummy Through Window, Pre-Test



Figure A-28: Driver Dummy Through Window, Post-Test



Figure A-29: Driver Dummy Door Open, Pre-Test



Figure A-30: Driver Dummy Door Open, Post-Test



Figure A-31: Driver Dummy 90° To Vehicle, Pre-Test



Figure A-32: Driver Dummy 90° To Vehicle, Post-Test

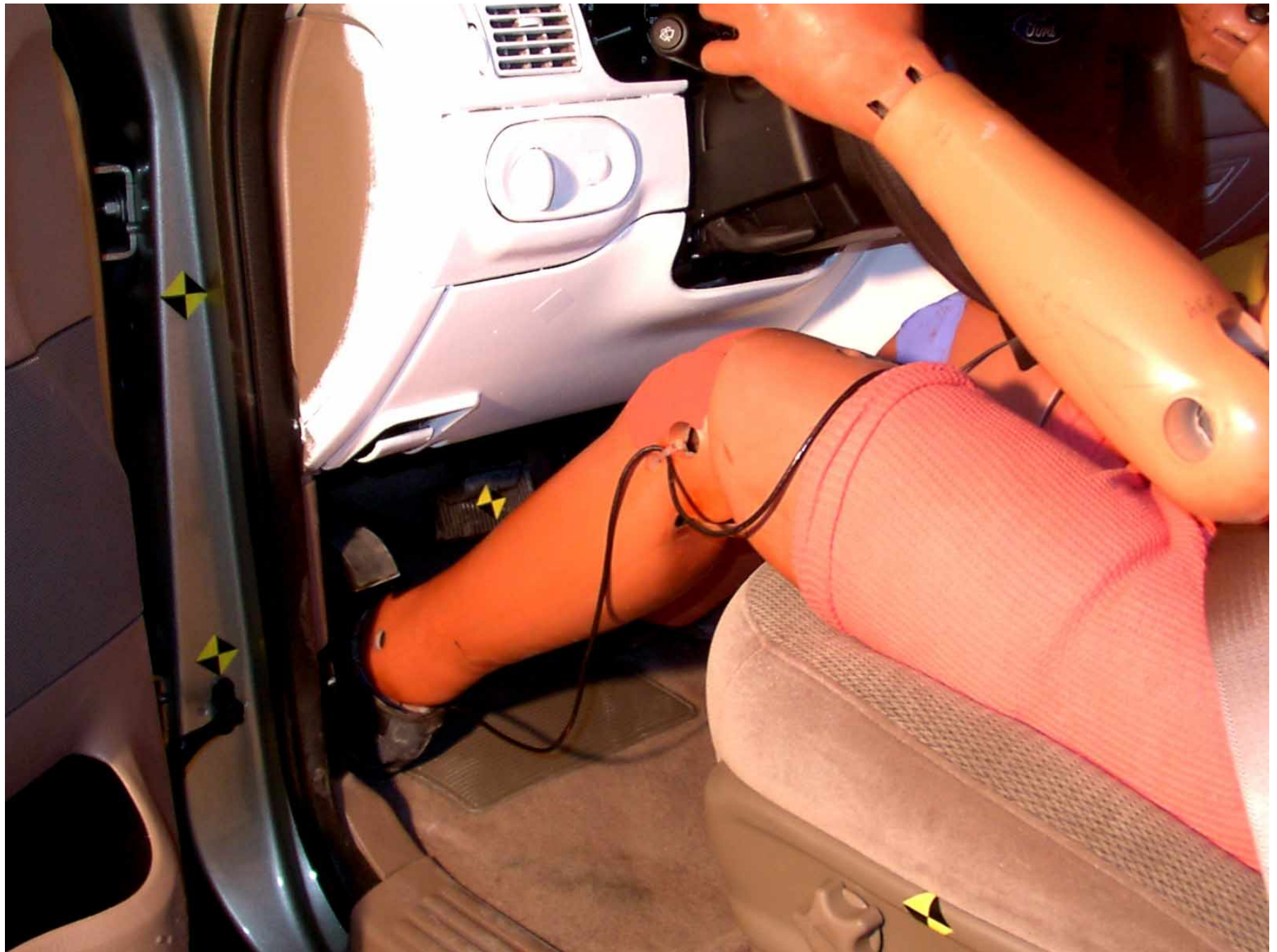


Figure A-33: Driver Dummy Feet, Pre-Test



Figure A-34: Driver Dummy Feet and Knee Contact, Post-Test



Figure A-35: Driver Side Knee Bolster, Pre-Test



Figure A-36: Driver Side Knee Bolster, Post-Test



Figure A-37: Driver Side Floor Pan, Pre-Test



Figure A-38: Driver Side Floor Pan, Post-Test

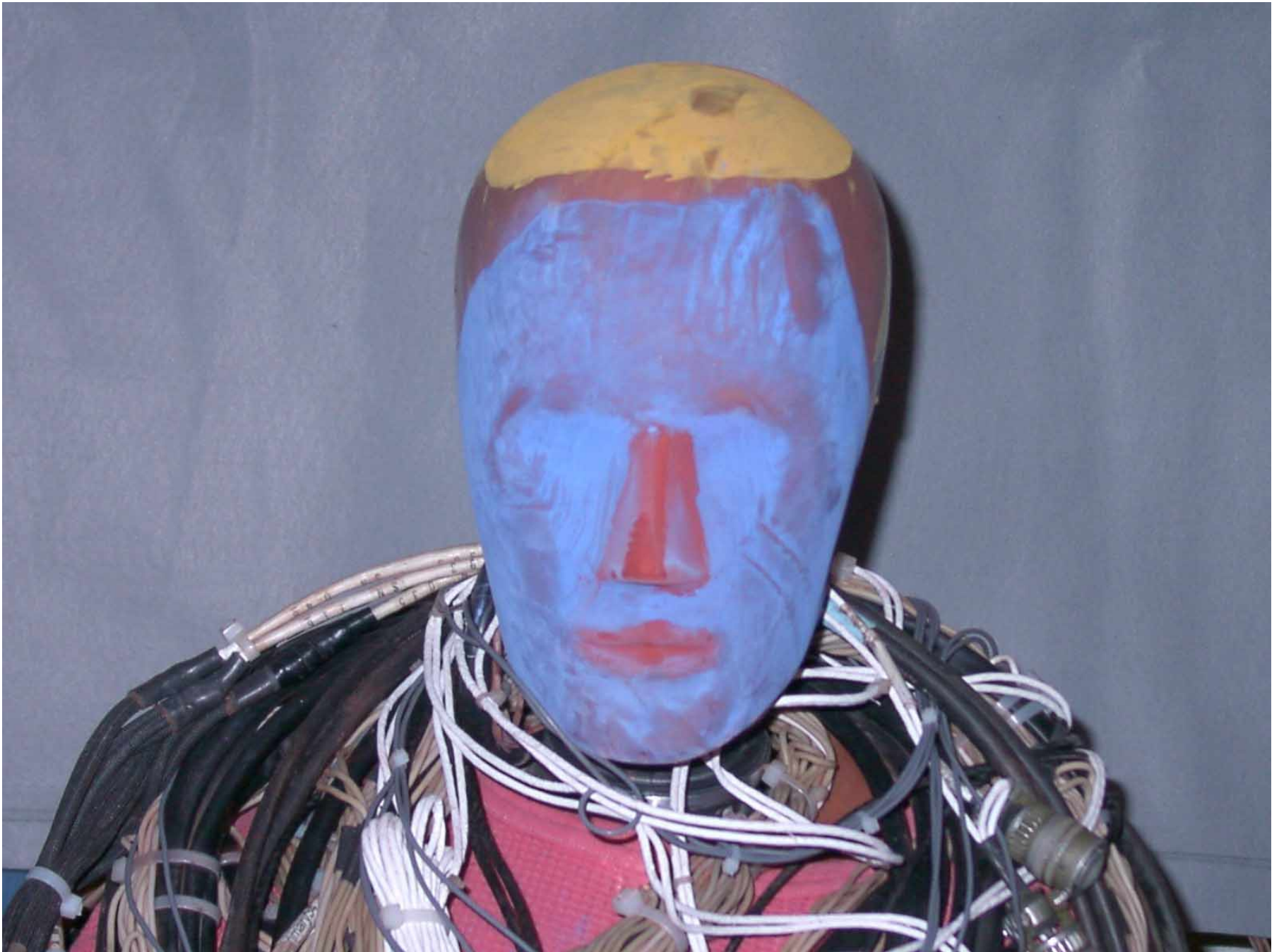


Figure A-39: Driver Dummy Head, Post-Test



Figure A-40: Driver Dummy Contact, Post-Test



Figure A-41: Passenger Dummy Front View, Pre-Test



Figure A-42: Passenger Dummy Front View, Post-Test



Figure A-43: Passenger Dummy Through Window, Pre-Test



Figure A-44: Passenger Dummy Through Window, Post-Test



Figure A-45: Passenger Dummy Door Open, Pre-Test



Figure A-46: Passenger Dummy Door Open, Post-Test



Figure A-47: Passenger Dummy 90° To Vehicle, Pre-Test

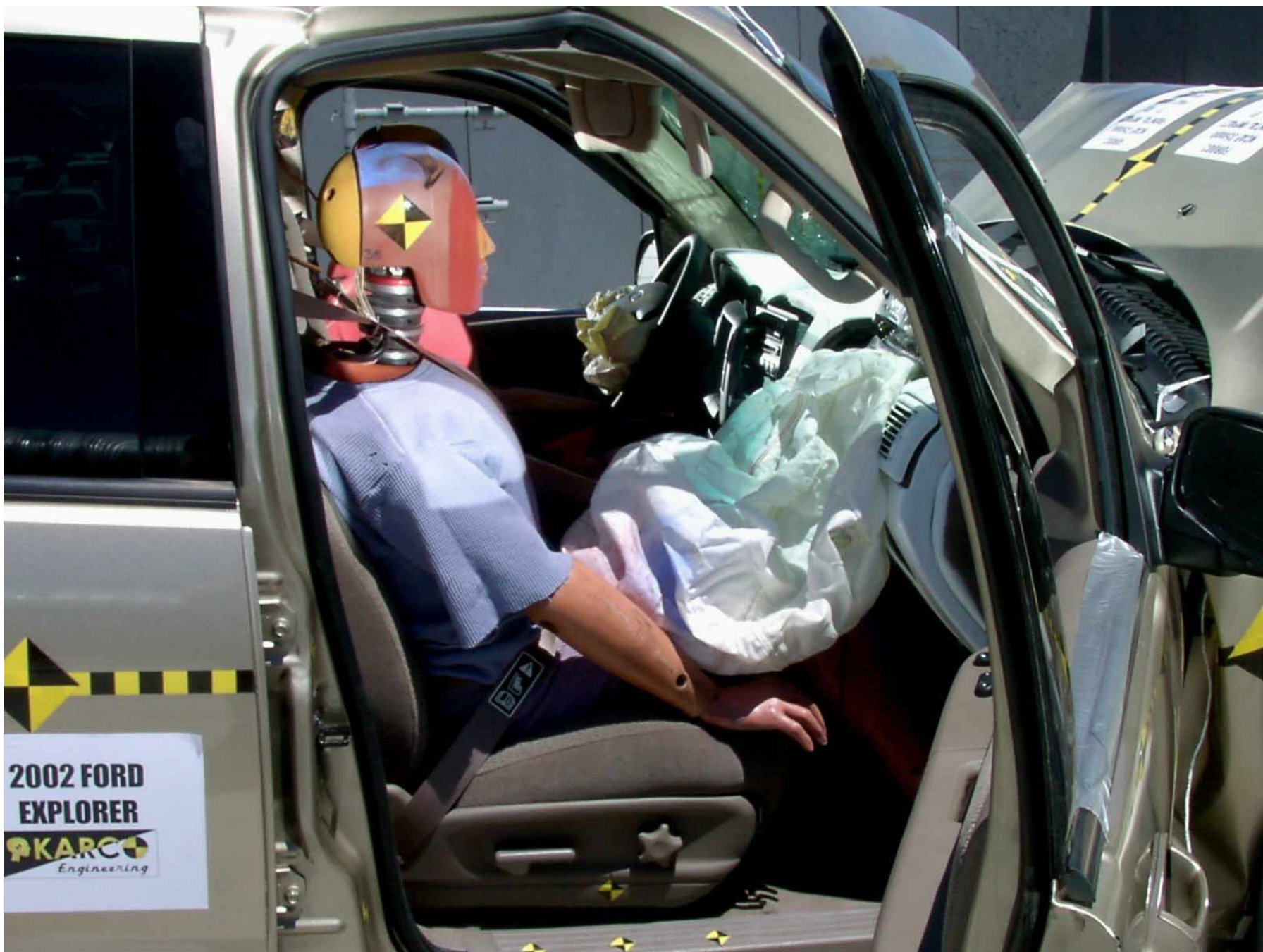


Figure A-48: Passenger Dummy 90° To Vehicle, Post-Test



Figure A-49: Passenger Dummy Feet, Pre-Test



Figure A-50: Passenger Dummy Feet and Knee Contact, Post-Test



Figure A-51: Passenger Side Floor Pan, Pre-Test



Figure A-52: Passenger Side Floor Pan, Post-Test



Figure A-53: Passenger Side Knee Bolster, Pre-Test



Figure A-54: Passenger Side Knee Bolster, Post-Test



Figure A-55: Passenger Dummy Head, Post-Test



Figure A-56: Passenger Dummy Contact, Post-Test



Figure A-57: Vehicle on Rollover Device



Figure A-58: Vehicle During Impact



Figure A-59: Fuel System Spillage Detail



Figure A-60: Fuel System Spillage Detail



Figure A-61: Fuel System Spillage Detail

APPENDIX B

DATA PLOTS

LIST OF DATA PLOTS

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B-7 Driver Head Redundant X	B-7
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B-25 Driver Chest Primary Z	B-25
B-26 Driver Chest Primary Resultant	B-26
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B-33 Driver Chest Displacement X	B-33

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B-48 Driver Left Lower Tibia Force Z	B-48
B-49 Driver Right Lower Tibia Moment X	B-49
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B-52 Driver Left Foot Aft X	B-52
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B-60 Driver Shoulder Belt Pullout	B-60
B-61 Driver Shoulder Belt Elongation	B-61

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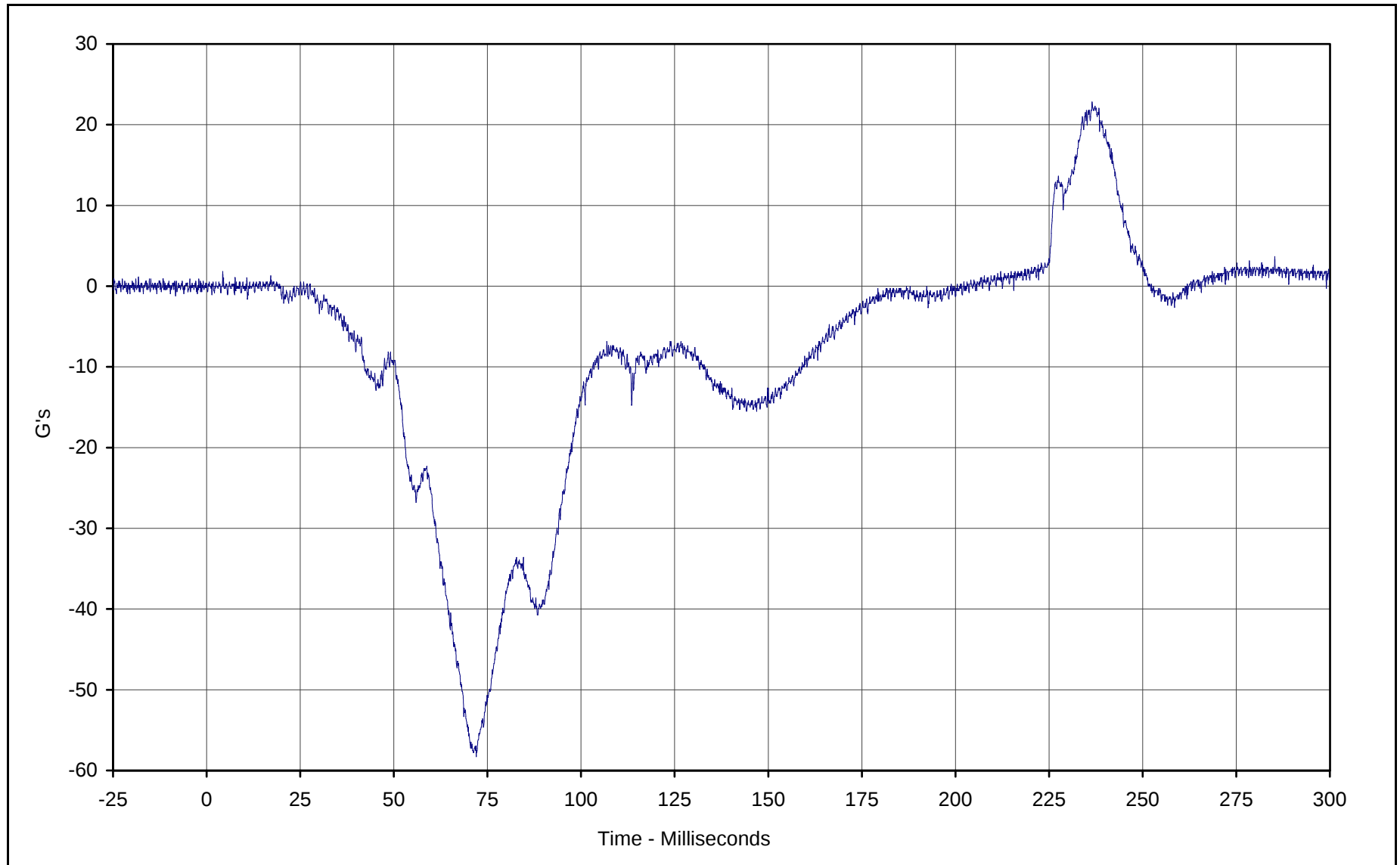
Data Plot	Page
B-62	Passenger Head Primary X
B-63	Passenger Head Primary X Velocity
B-64	Passenger Head Primary X Displacement
B-65	Passenger Head Primary Y
B-66	Passenger Head Primary Z
B-67	Passenger Head Resultant Primary
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B-69	Passenger Head Redundant X Velocity
B-70	Passenger Head Redundant X Displacement
B-71	Passenger Head Redundant Y
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B-73	Passenger Head Resultant Redundant
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LIST OF DATA PLOTS...(Continued)

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B-96	Passenger Pelvis X Velocity
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B-99	Passenger Pelvis Z
B-100	Passenger Pelvis Resultant
B-101	Passenger Left Femur Force
B-102	Passenger Right Femur Force
B-103	Passenger Left Upper Tibia Moment X
B-104	Passenger Left Upper Tibia Moment Y
B-105	Passenger Right Upper Tibia Moment X
B-106	Passenger Right Upper Tibia Moment Y
B-107	Passenger Left Lower Tibia Moment X
B-108	Passenger Left Lower Tibia Moment Y
B-109	Passenger Left Lower Tibia Force Z
B-110	Passenger Right Lower Tibia Moment X
B-111	Passenger Right Lower Tibia Moment Y
B-112	Passenger Right Lower Tibia Force Z
B-113	Passenger Left Foot Aft X
B-114	Passenger Left Foot Aft Z
B-115	Passenger Left Foot Fore Z
B-116	Passenger Right Foot Aft X
B-117	Passenger Right Foot Aft Z
B-118	Passenger Right Foot Fore Z
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B-120	Passenger Shoulder Belt Force
B-121	Passenger Shoulder Belt Pullout
B-122	Passenger Shoulder Belt Elongation

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B-146	Vehicle Left Rear Redundant Displacement	B-146

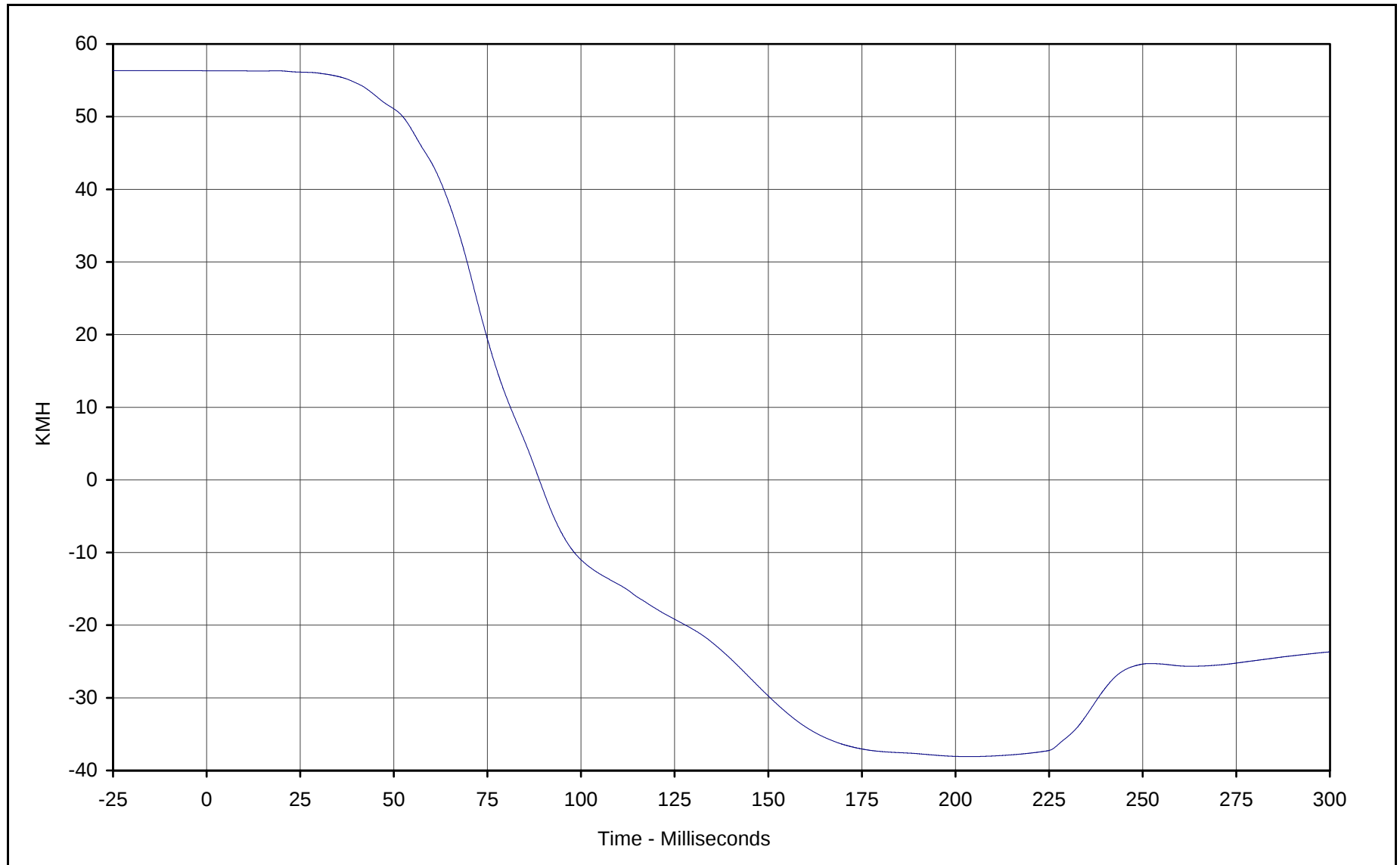


Curve Description: Driver Head Primary X
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Minimum Value: -58.3 at 72.0 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: FIL-001

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



B-2



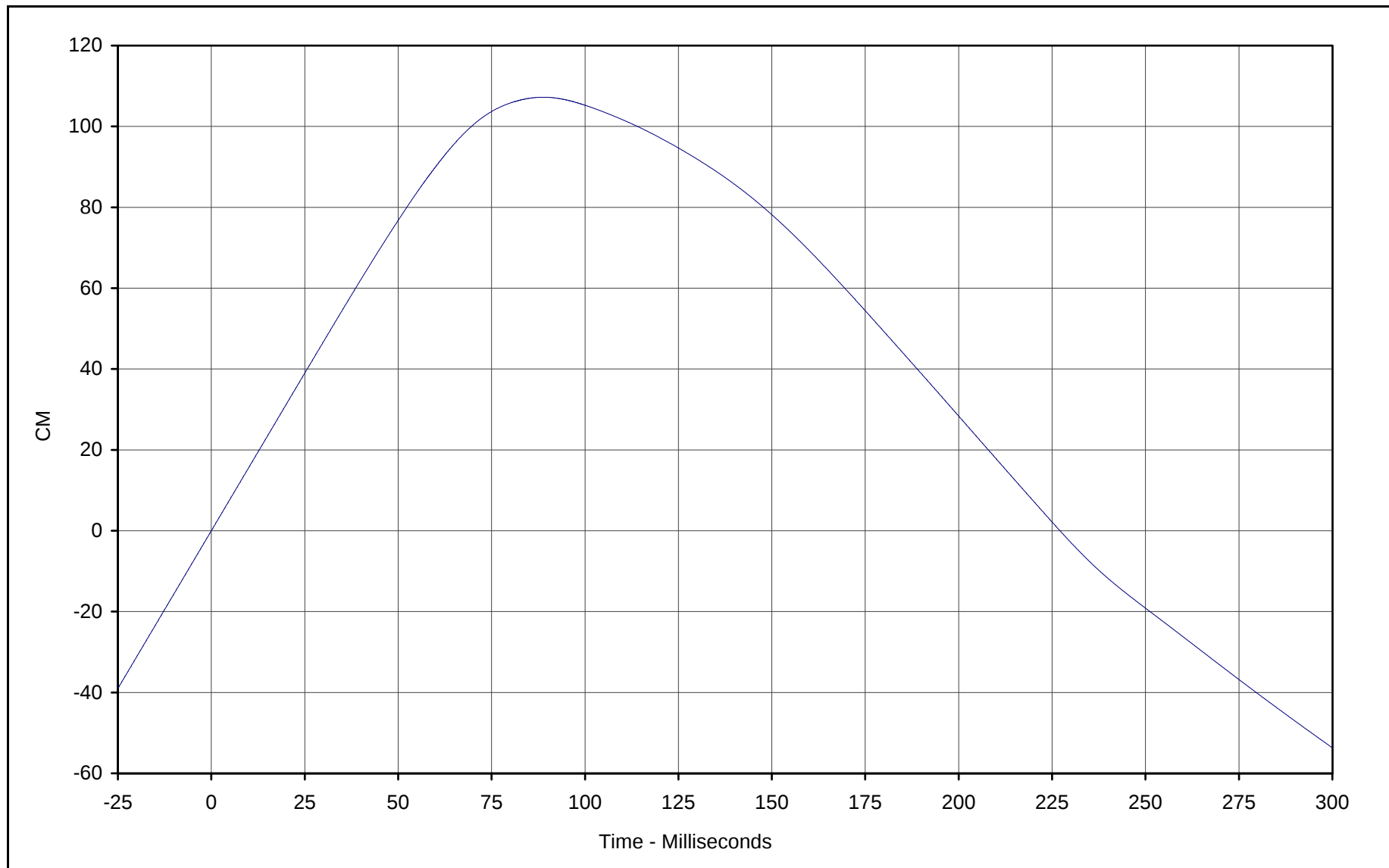
Curve Description: Driver Head Primary X Velocity
Maximum Value: 56.3 at 0.0 Milliseconds
Minimum Value: -38.1 at 203.7 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN1-001

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



KAR21082-01

B-3

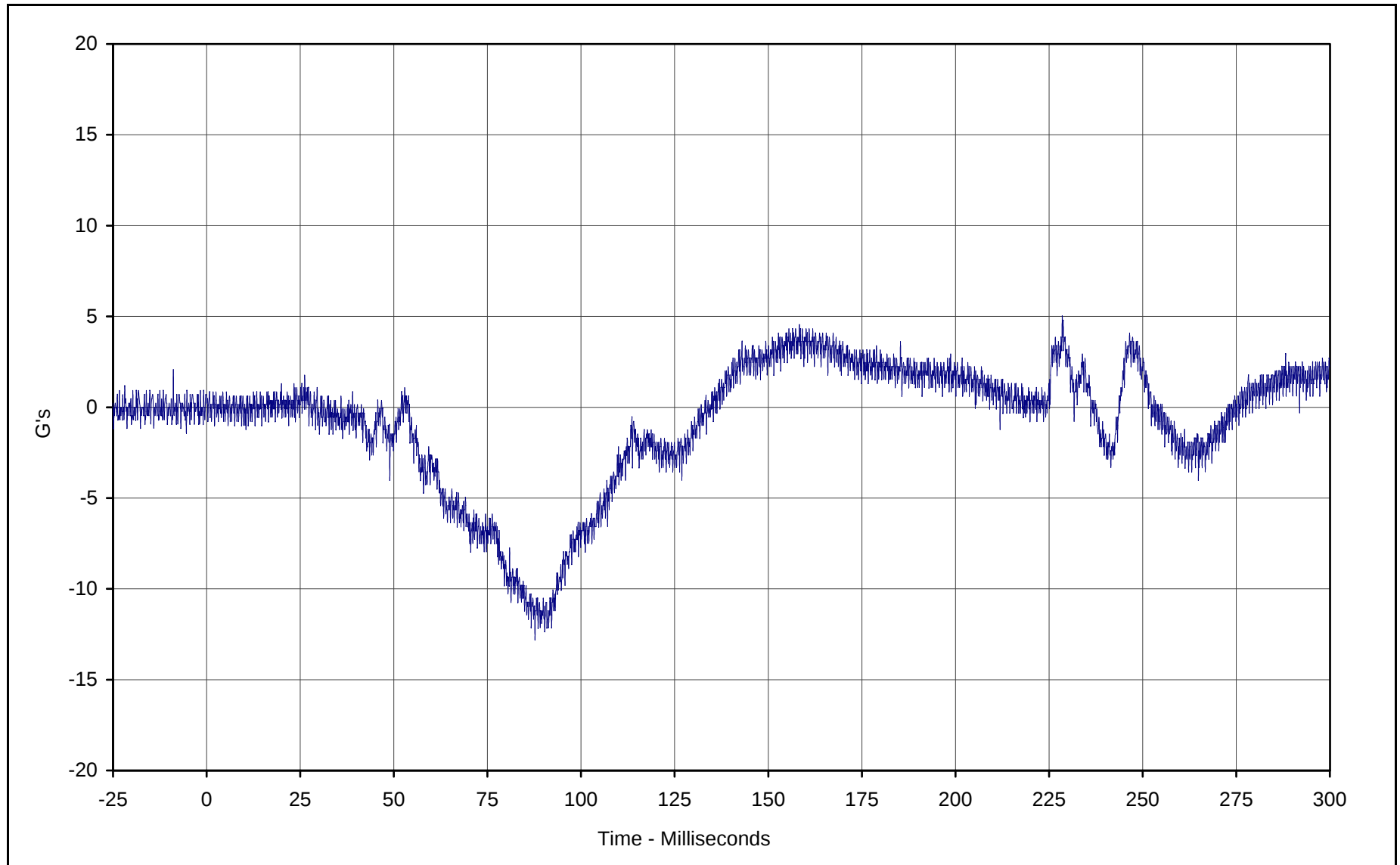


Curve Description: Driver Head Primary X Displ.
Maximum Value: 107.2 at 88.9 Milliseconds
Minimum Value: -53.6 at 299.9 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN2-001

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



KAR21082-01

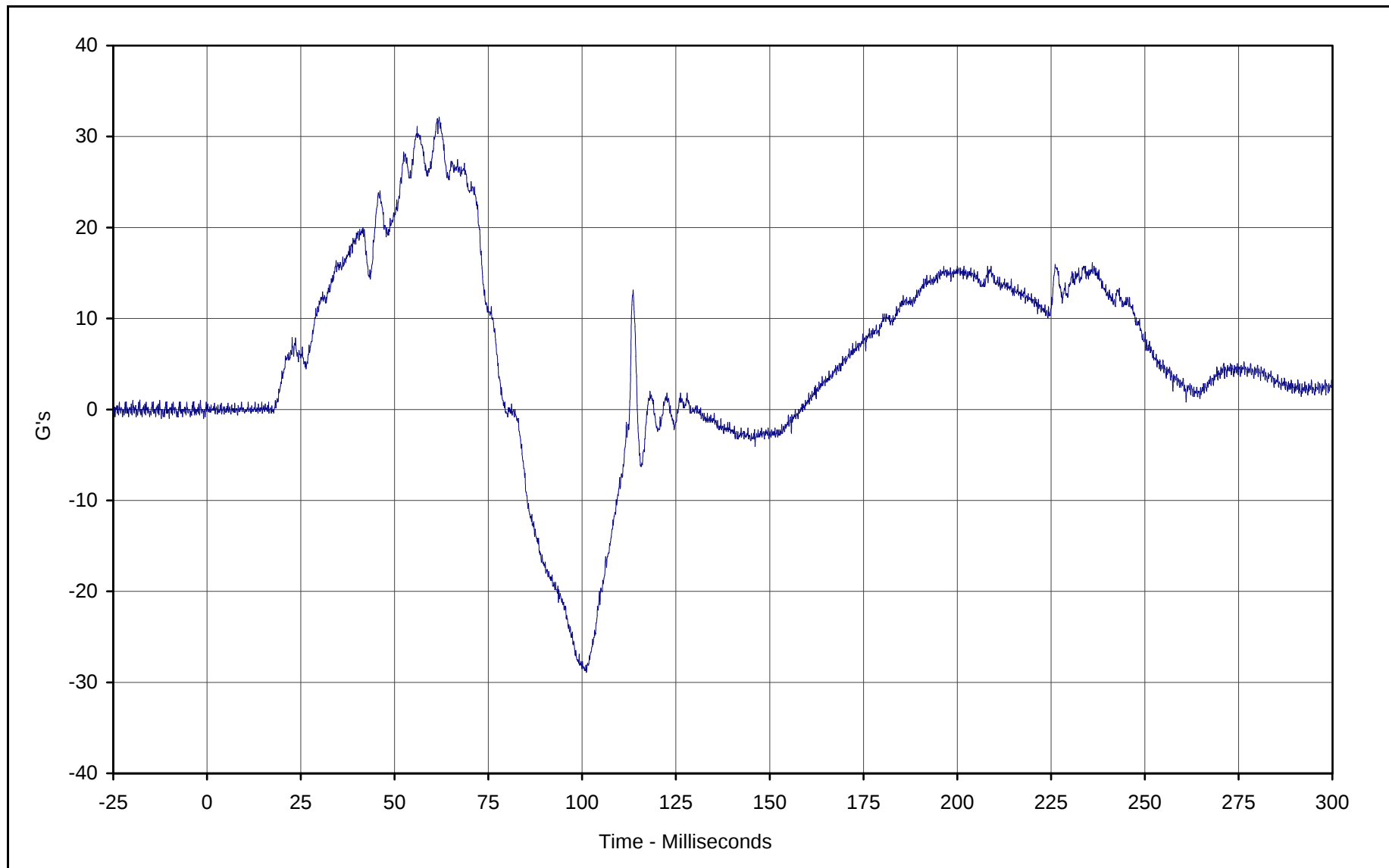


Curve Description: Driver Head Primary Y
Maximum Value: 5.0 at 228.5 Milliseconds
Minimum Value: -12.8 at 87.7 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: FIL-002

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



B-5

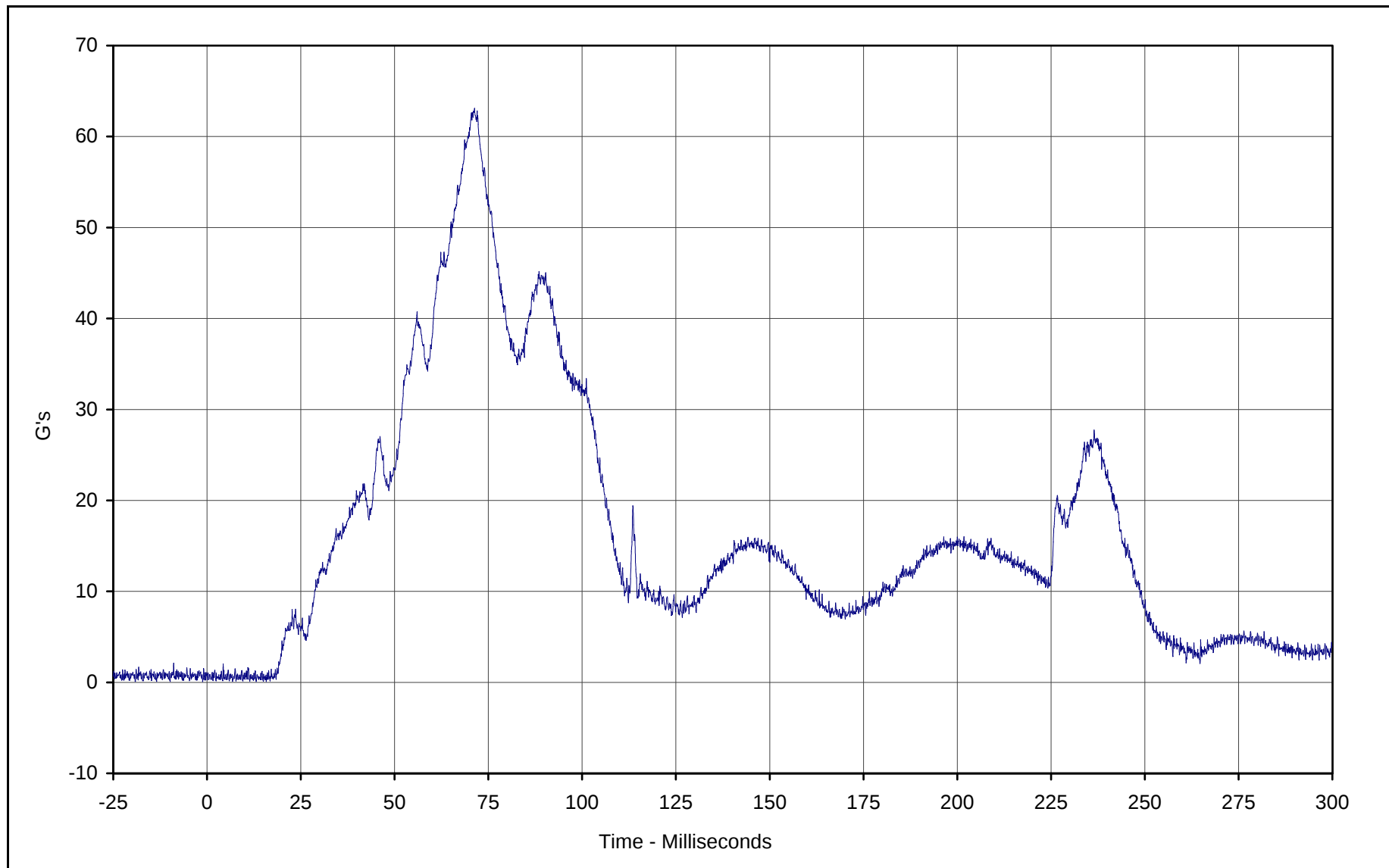


Curve Description: Driver Head Primary Z
Maximum Value: 32.1 at 61.9 Milliseconds
Minimum Value: -28.9 at 101.1 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: FIL-003

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



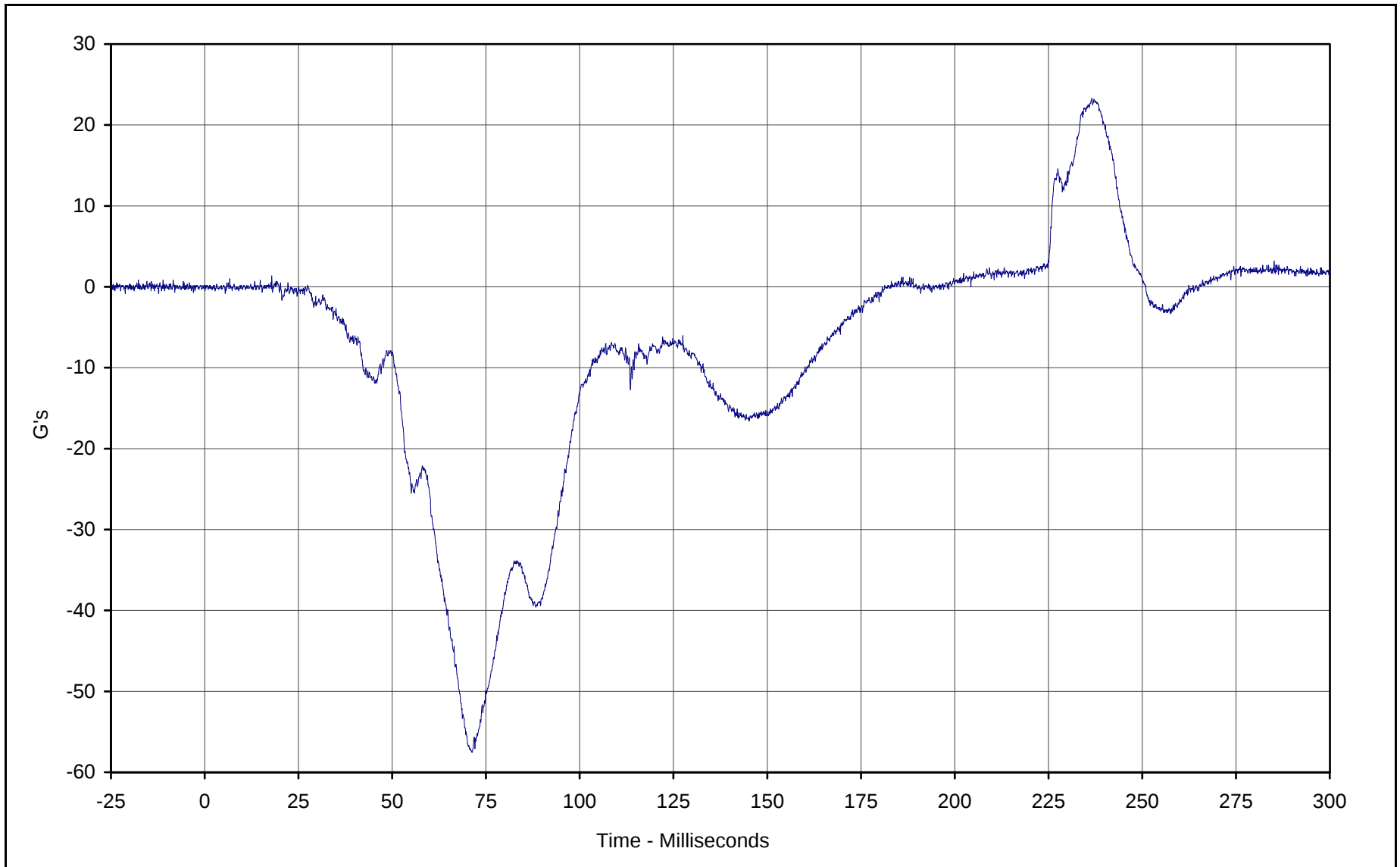
KAR21082-01



Curve Description: Driver Head Resultant Primary
Maximum Value: 63.1 at 71.3 Milliseconds
Minimum Value: 0.1 at 13.1 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: RES-001

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



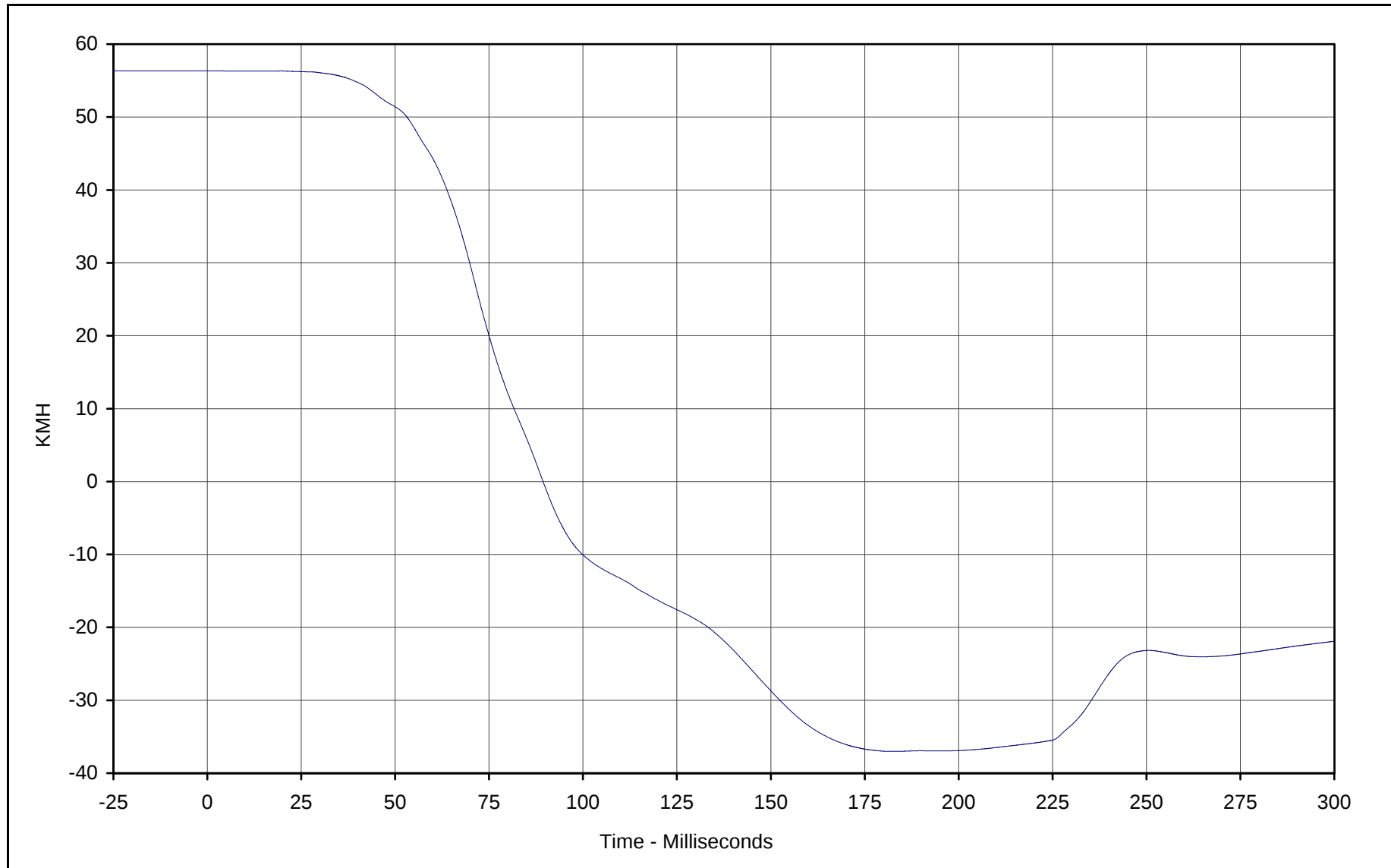


Curve Description: Driver Head Redundant X
Maximum Value: 23.3 at 236.6 Milliseconds
Minimum Value: -57.5 at 71.2 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: FIL-004

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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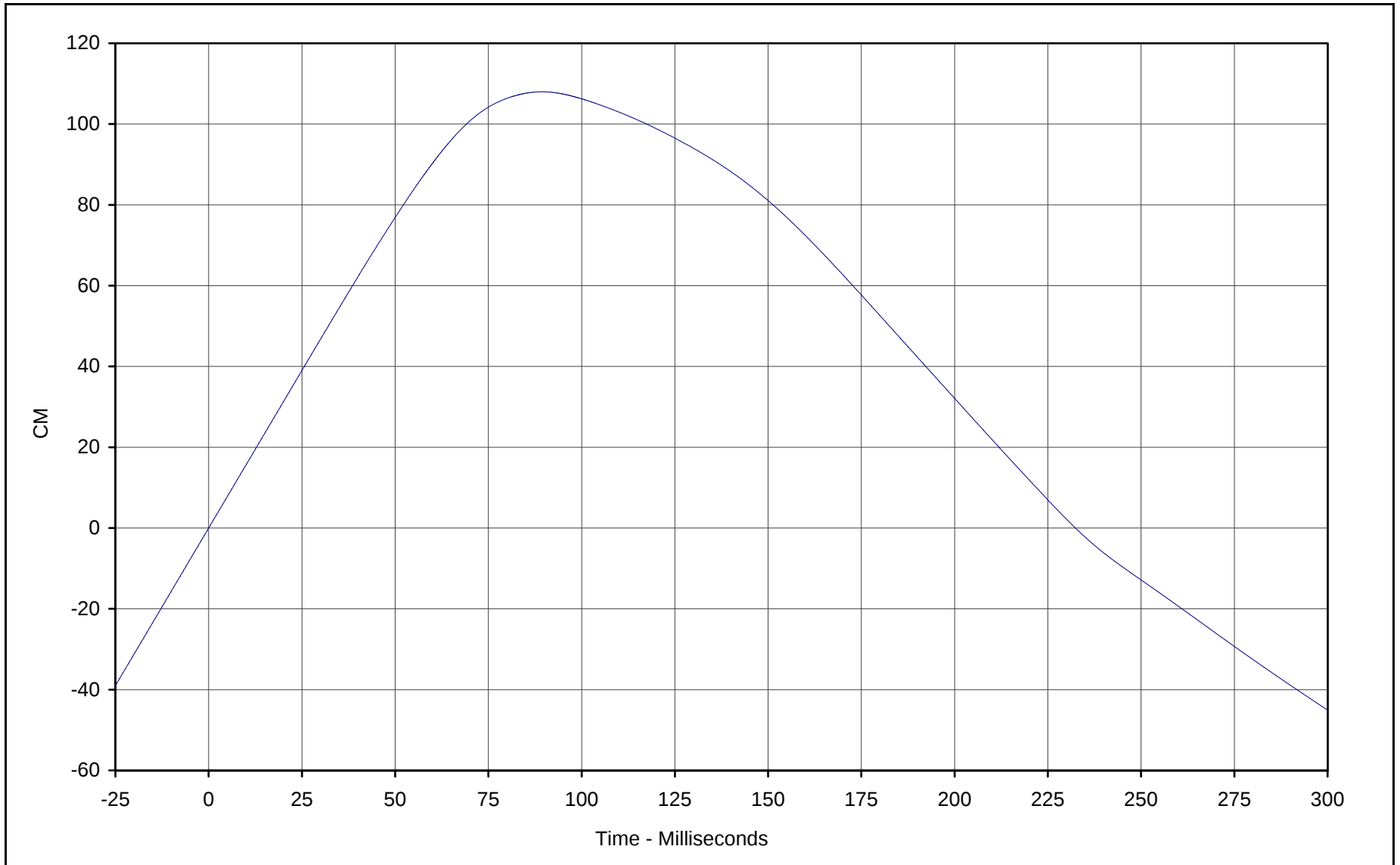


Curve Description: Driver Head Redundant X Velocity
Maximum Value: 56.3 at 0.0 Milliseconds
Minimum Value: -37.0 at 182.4 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN1-004

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



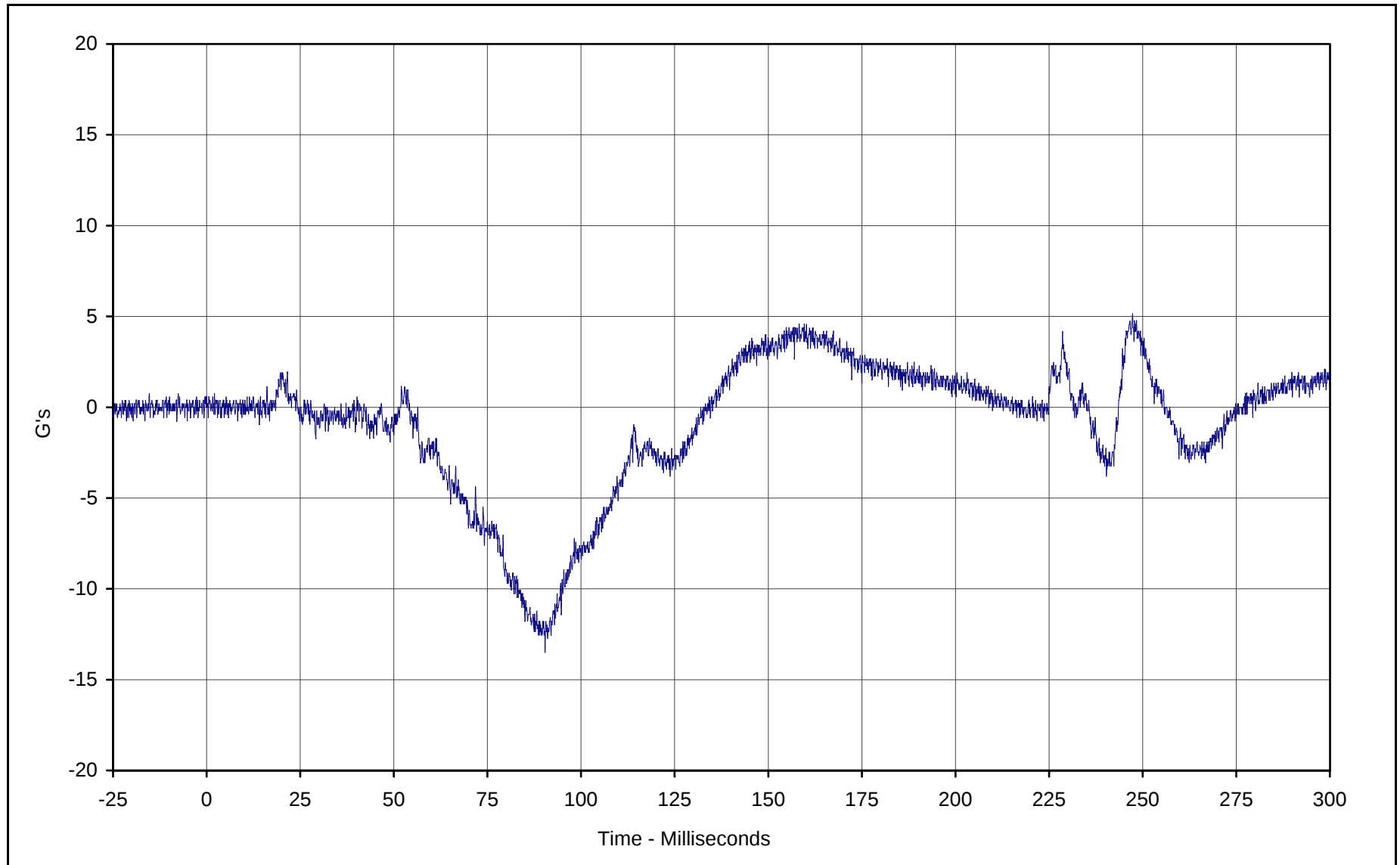
KAR21082-01



Curve Description: Driver Head Redundant X Displ.
Maximum Value: 108.0 at 89.4 Milliseconds
Minimum Value: -45.0 at 299.9 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN2-004

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

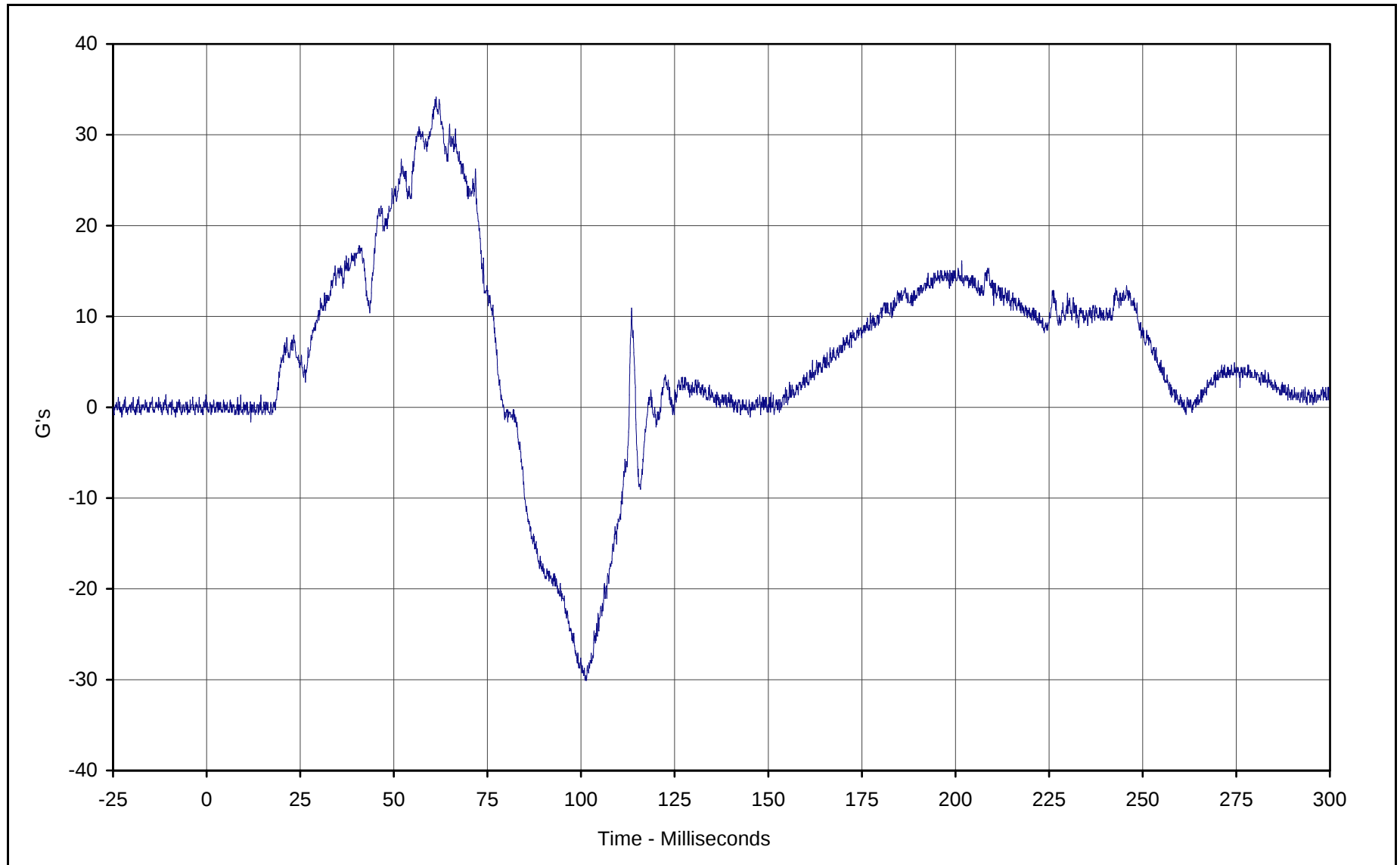




Curve Description: Driver Head Redundant Y
Maximum Value: 5.1 at 247.3 Milliseconds
Minimum Value: -13.5 at 90.4 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: FIL-005

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

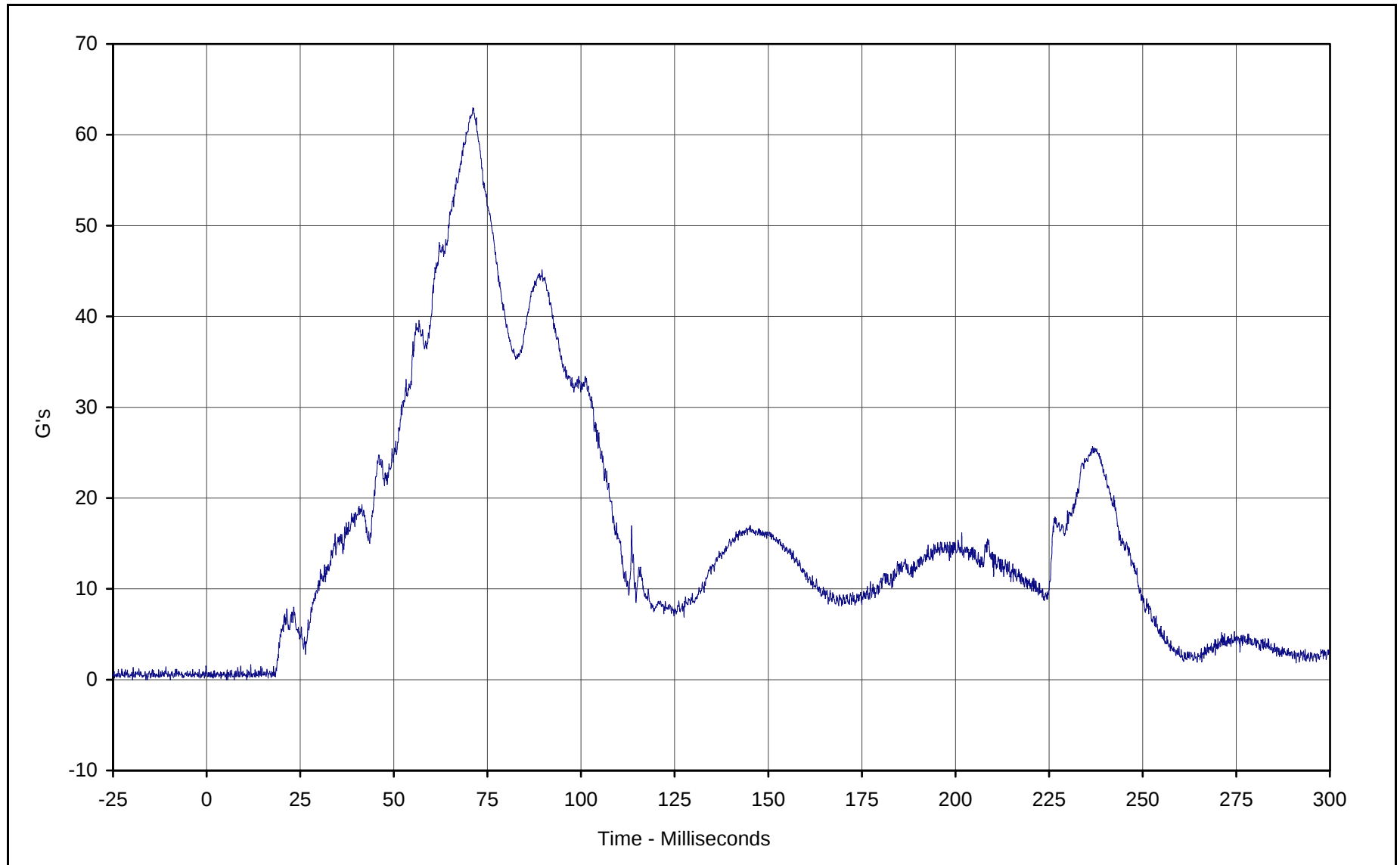




Curve Description: Driver Head Redundant Z
Maximum Value: 34.2 at 61.3 Milliseconds
Minimum Value: -30.1 at 101.1 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: FIL-006

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

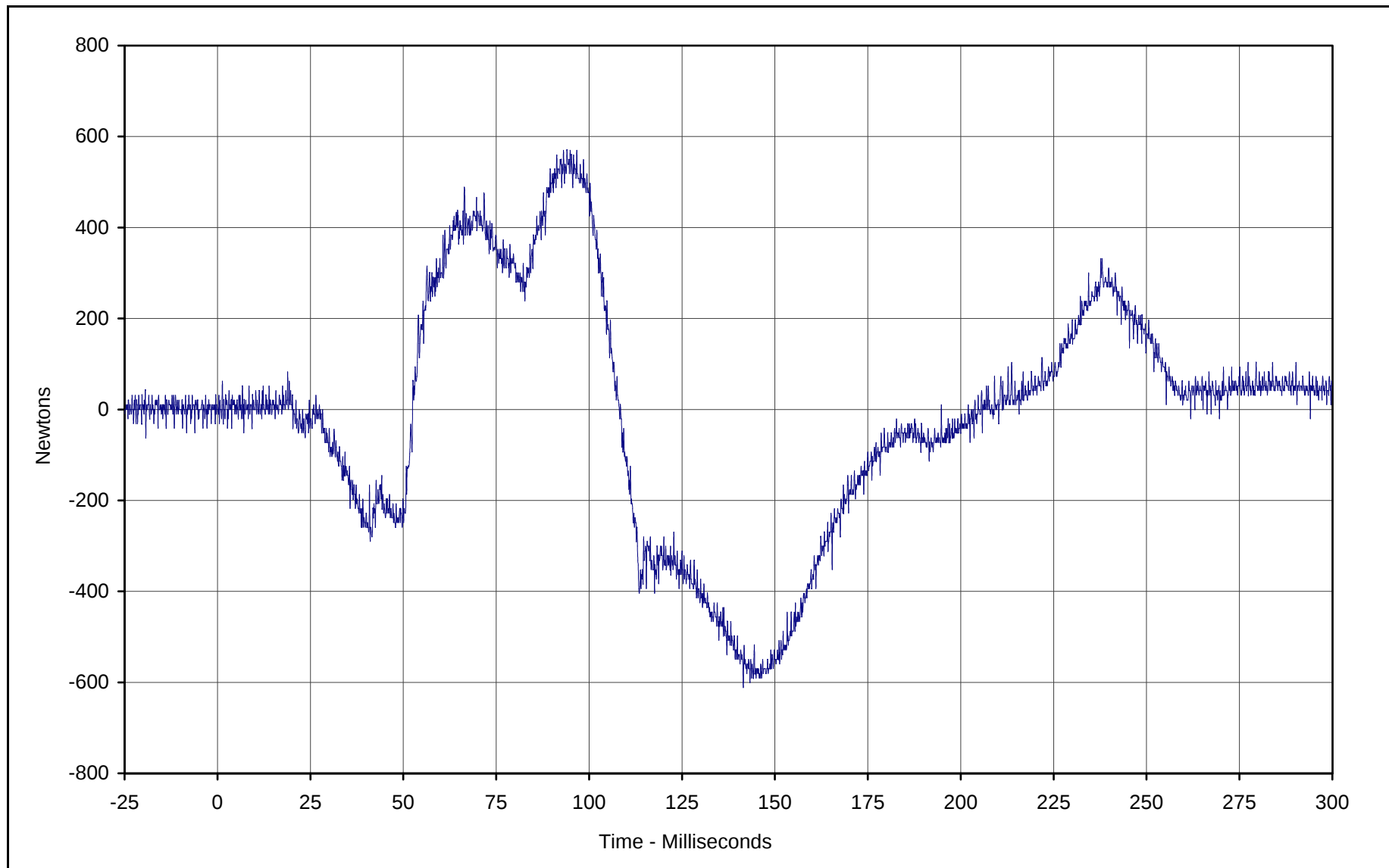




Curve Description: Driver Head Resultant Redundant
Maximum Value: 63.0 at 71.1 Milliseconds
Minimum Value: 0.0 at 5.3 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: RES-004

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

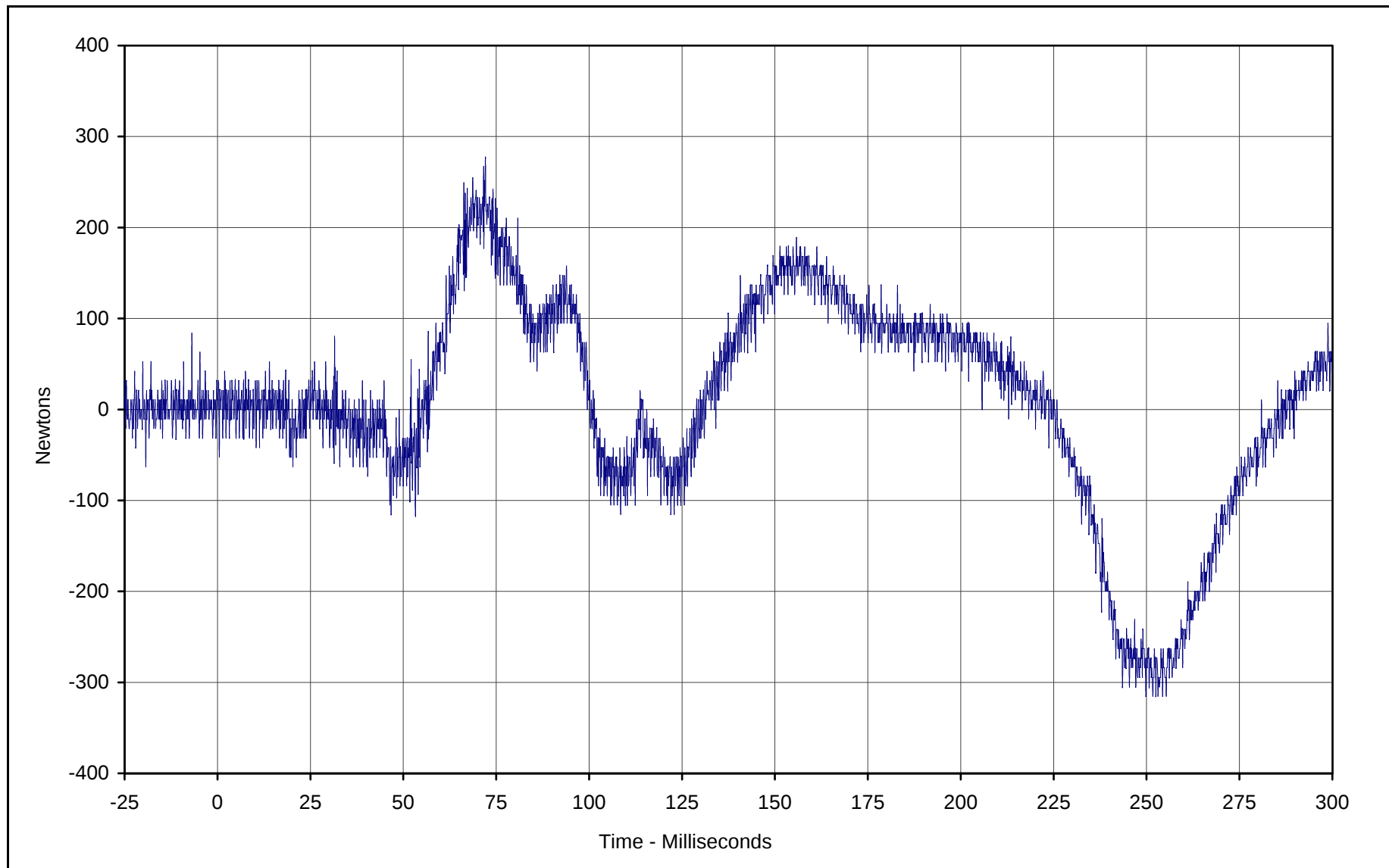




Curve Description: Driver Neck Force X
Maximum Value: 570.2 at 93.1 Milliseconds
Minimum Value: -611.6 at 141.5 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: FIL-007

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

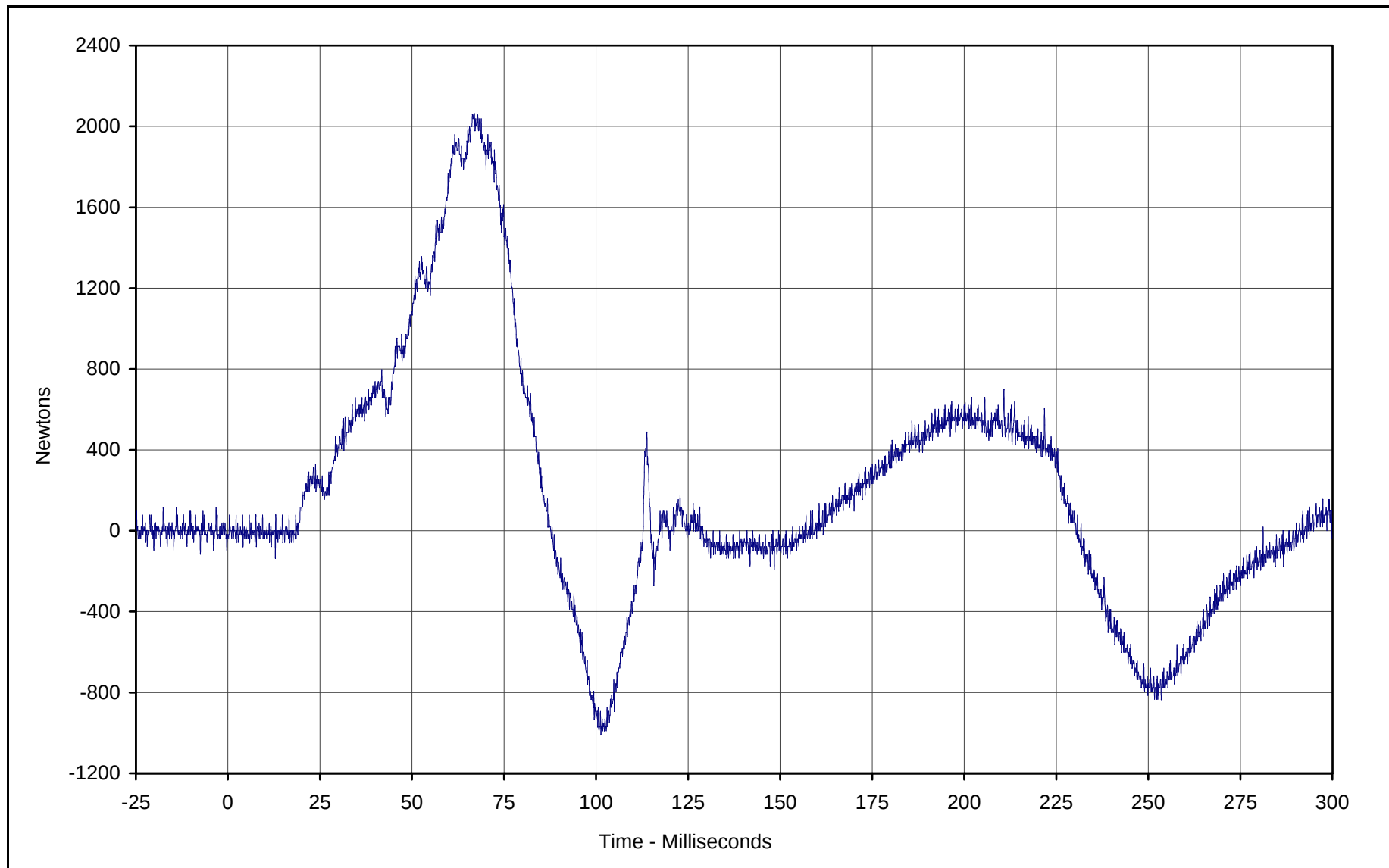




Curve Description: Driver Neck Force Y
Maximum Value: 277.0 at 72.1 Milliseconds
Minimum Value: -315.5 at 249.8 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: FIL-008

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

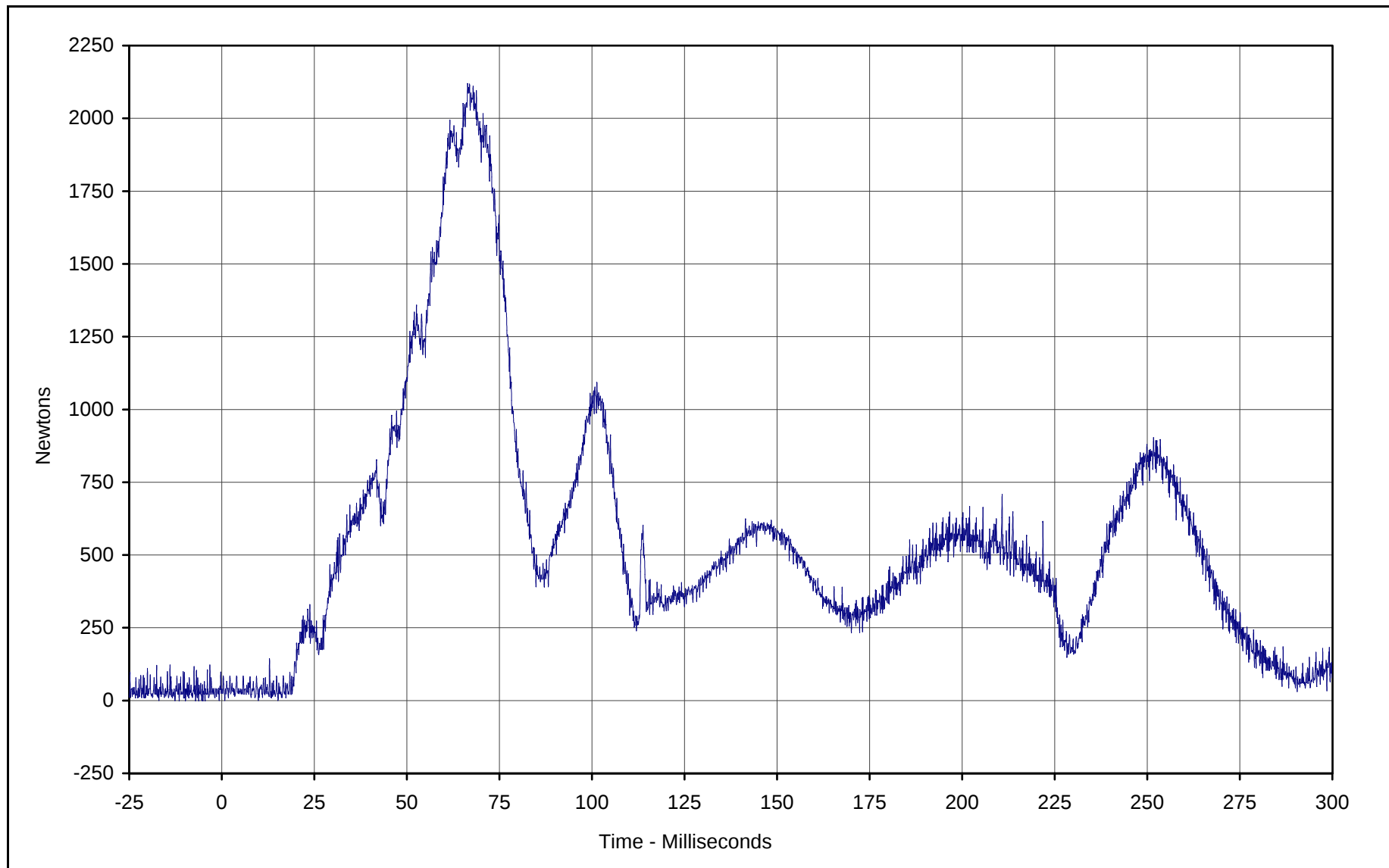




Curve Description: Driver Neck Force Z
Maximum Value: 2062.8 at 66.9 Milliseconds
Minimum Value: -1009.3 at 101.3 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: FIL-009

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

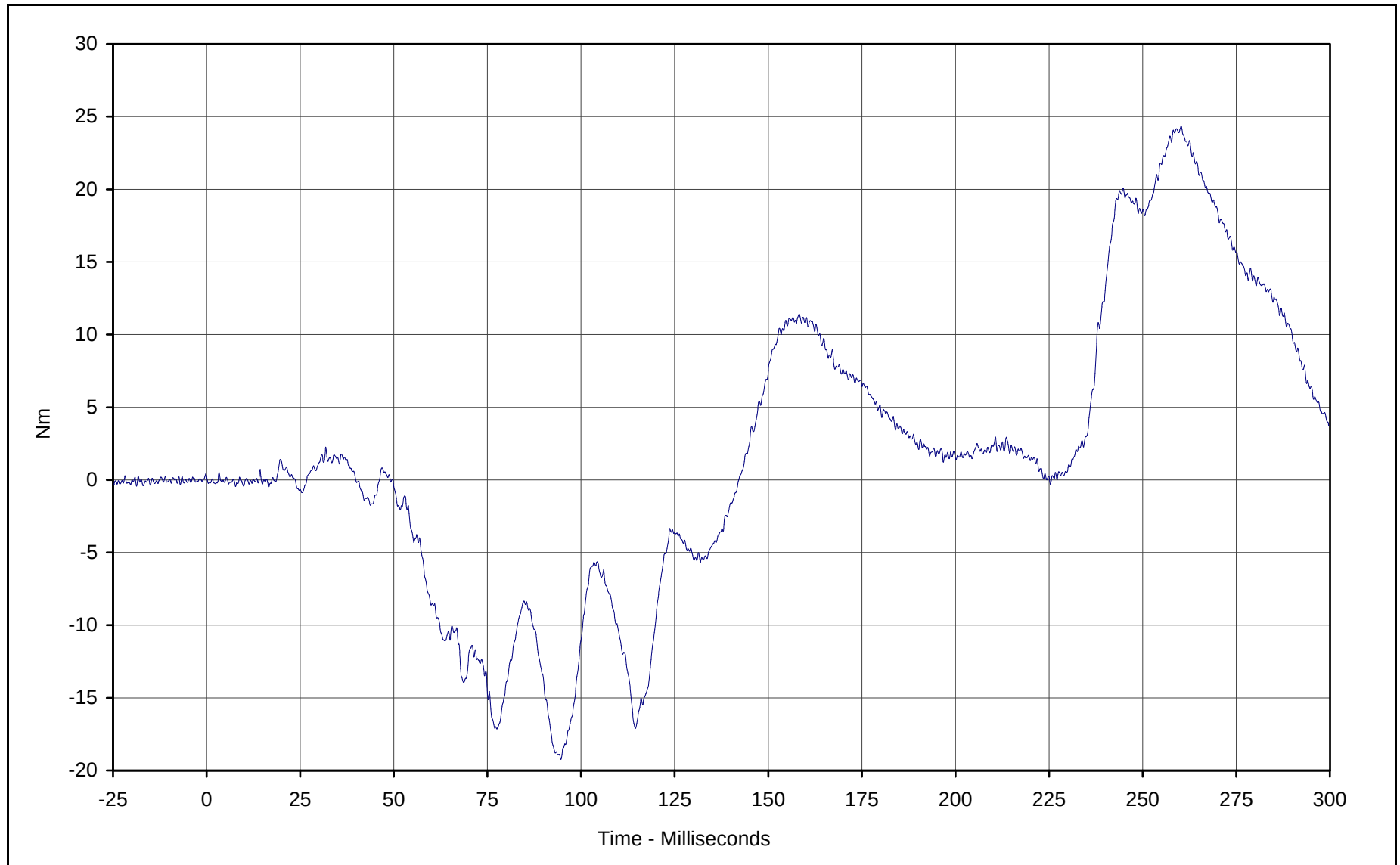




Curve Description: Driver Neck Force Resultant
Maximum Value: 2118.6 at 66.4 Milliseconds
Minimum Value: 0.0 at 0.8 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: RES-007

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

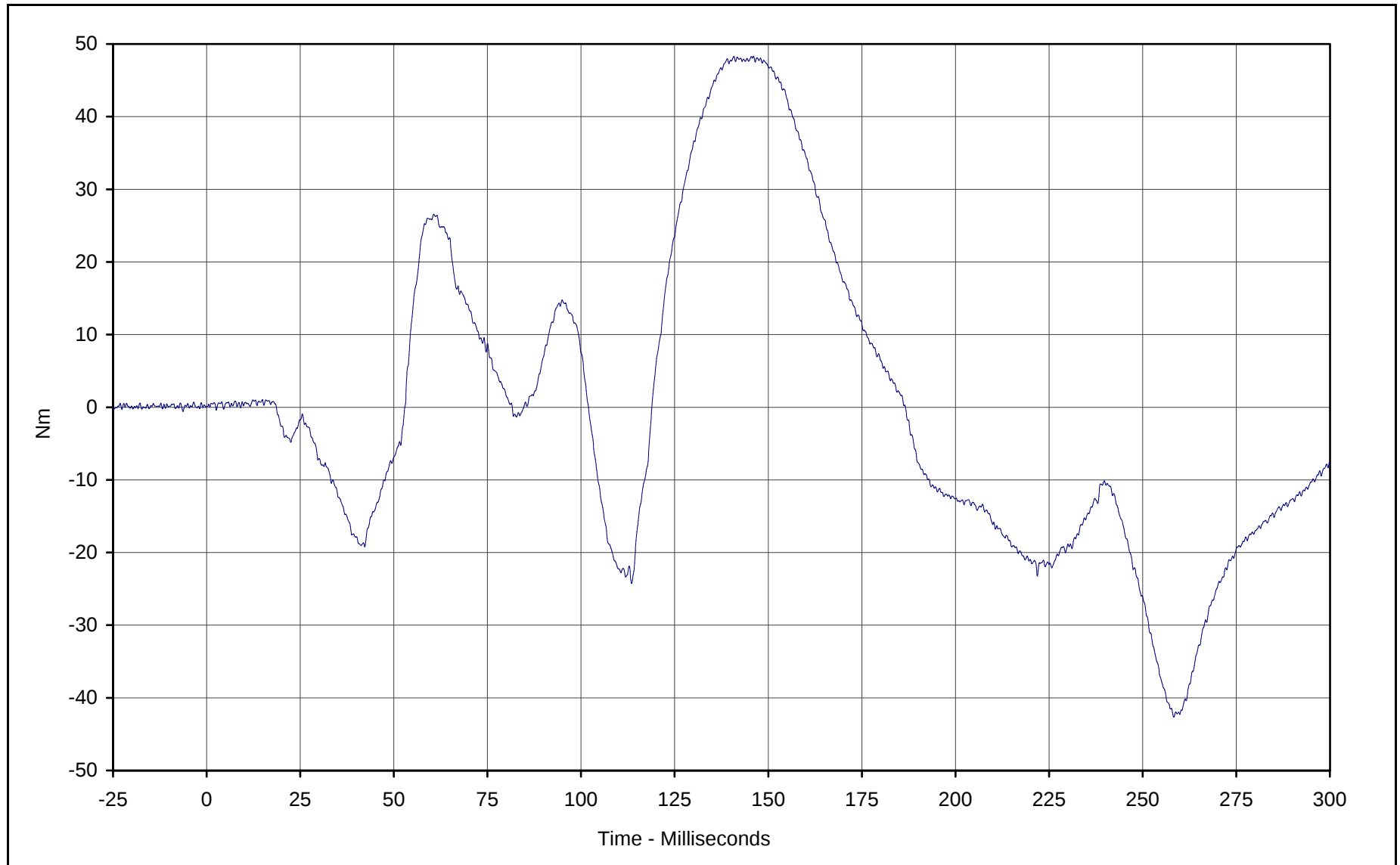




Curve Description: Driver Neck Moment X
Maximum Value: 24.3 at 260.3 Milliseconds
Minimum Value: -19.2 at 94.6 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: FIL-010

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

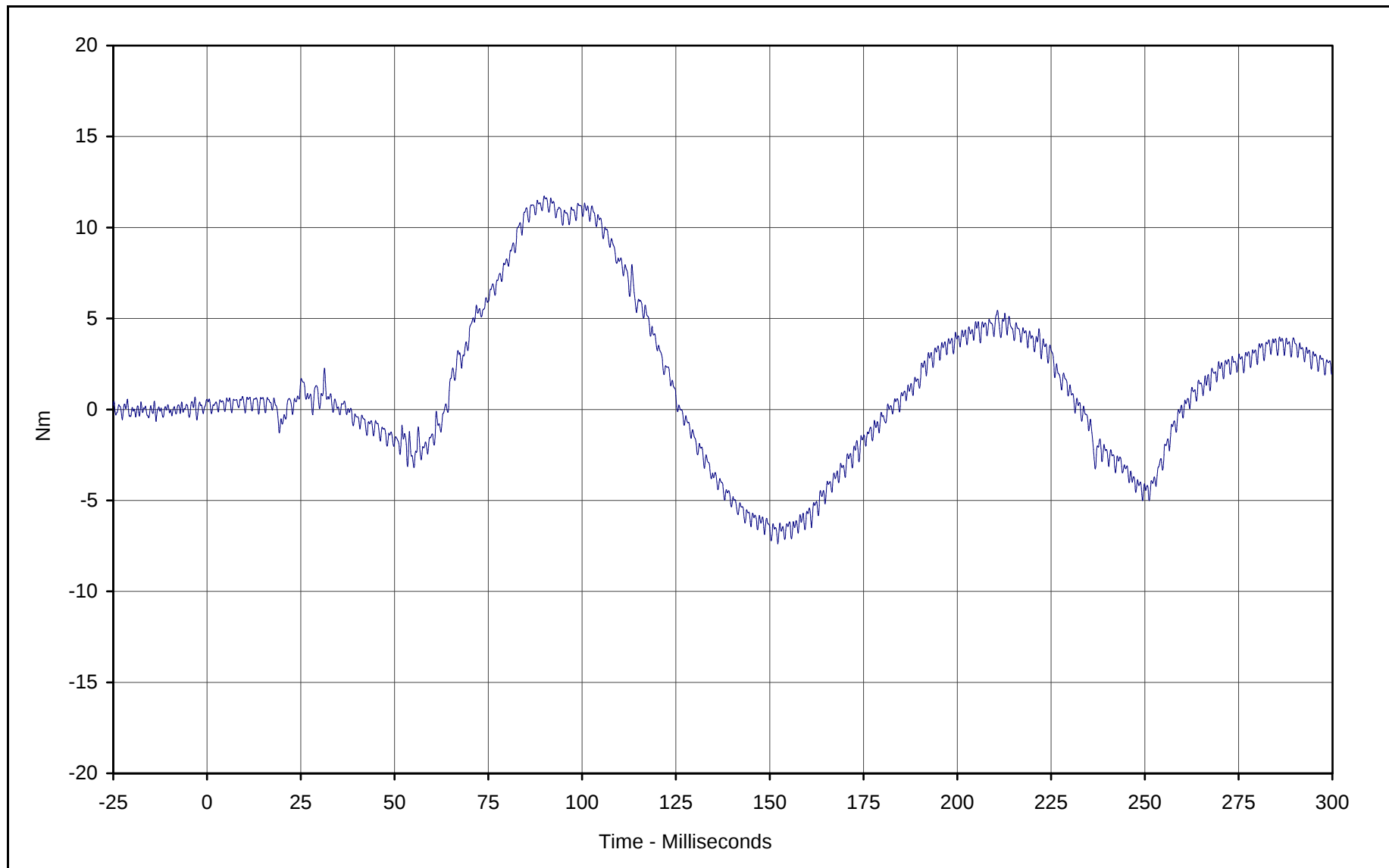




Curve Description: Driver Neck Moment Y
Maximum Value: 48.3 at 146.1 Milliseconds
Minimum Value: -42.7 at 258.3 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: FIL-011

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

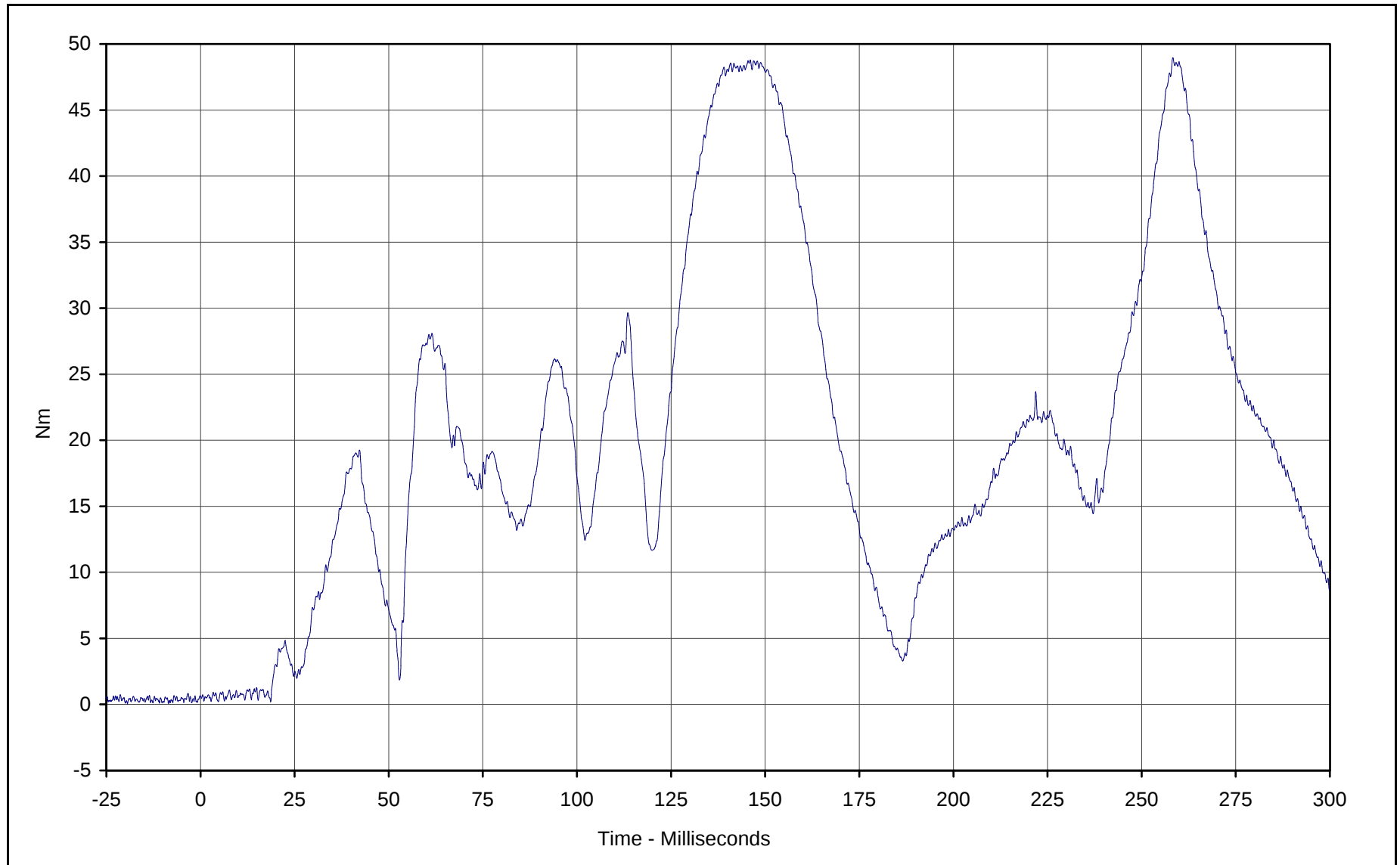




Curve Description: Driver Neck Moment Z
Maximum Value: 11.7 at 89.9 Milliseconds
Minimum Value: -7.4 at 152.2 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: FIL-012

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



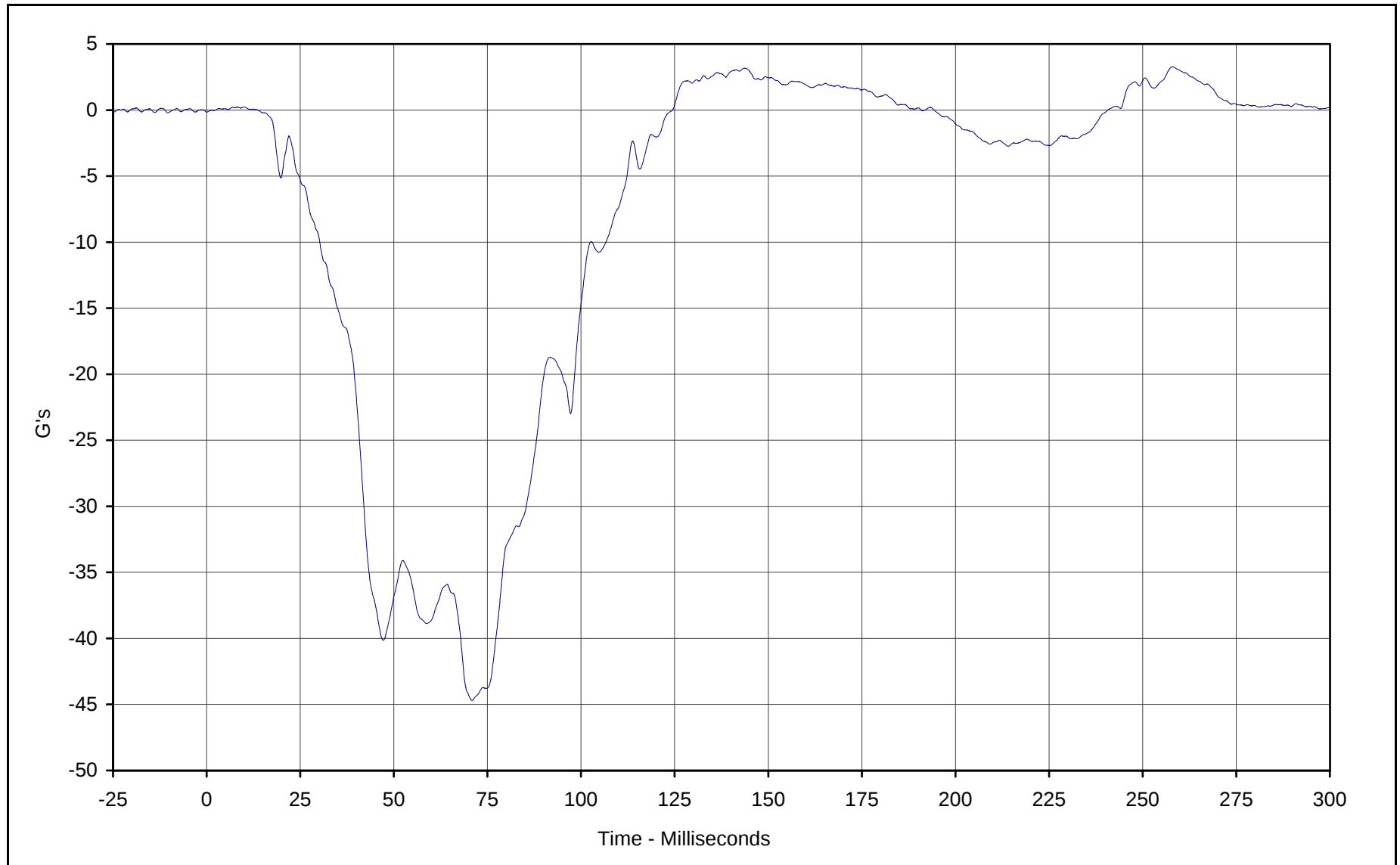


Curve Description: Driver Neck Moment Resultant
Maximum Value: 49.0 at 258.3 Milliseconds
Minimum Value: 0.2 at 18.6 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: RES-010

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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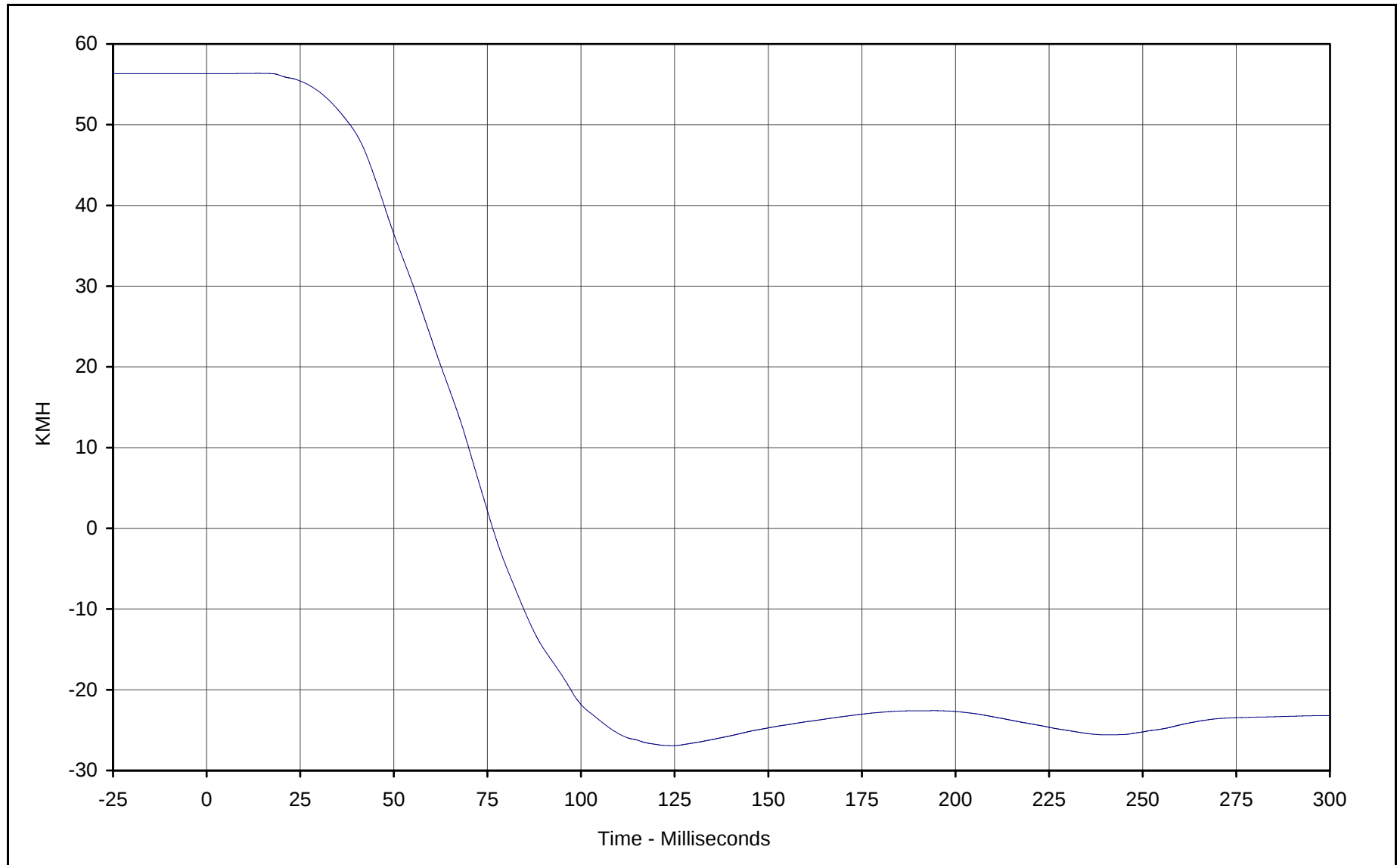
Curve Description: Driver Chest Primary X
Maximum Value: 3.3 at 258.0 Milliseconds
Minimum Value: -44.7 at 70.9 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-013

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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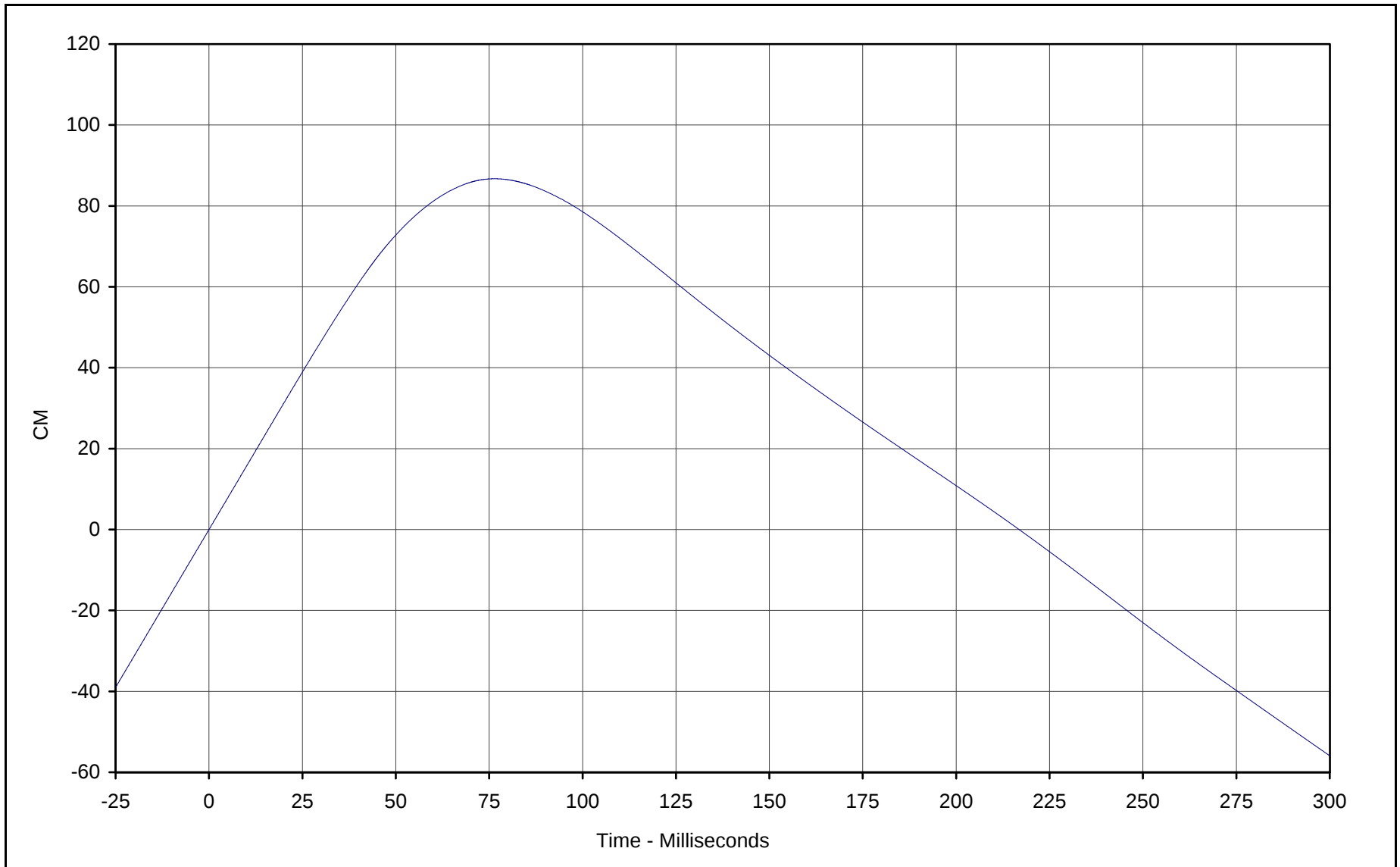
Curve Description: Driver Chest Primary X Velocity
Maximum Value: 56.4 at 13.6 Milliseconds
Minimum Value: -26.9 at 124.4 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN1-013

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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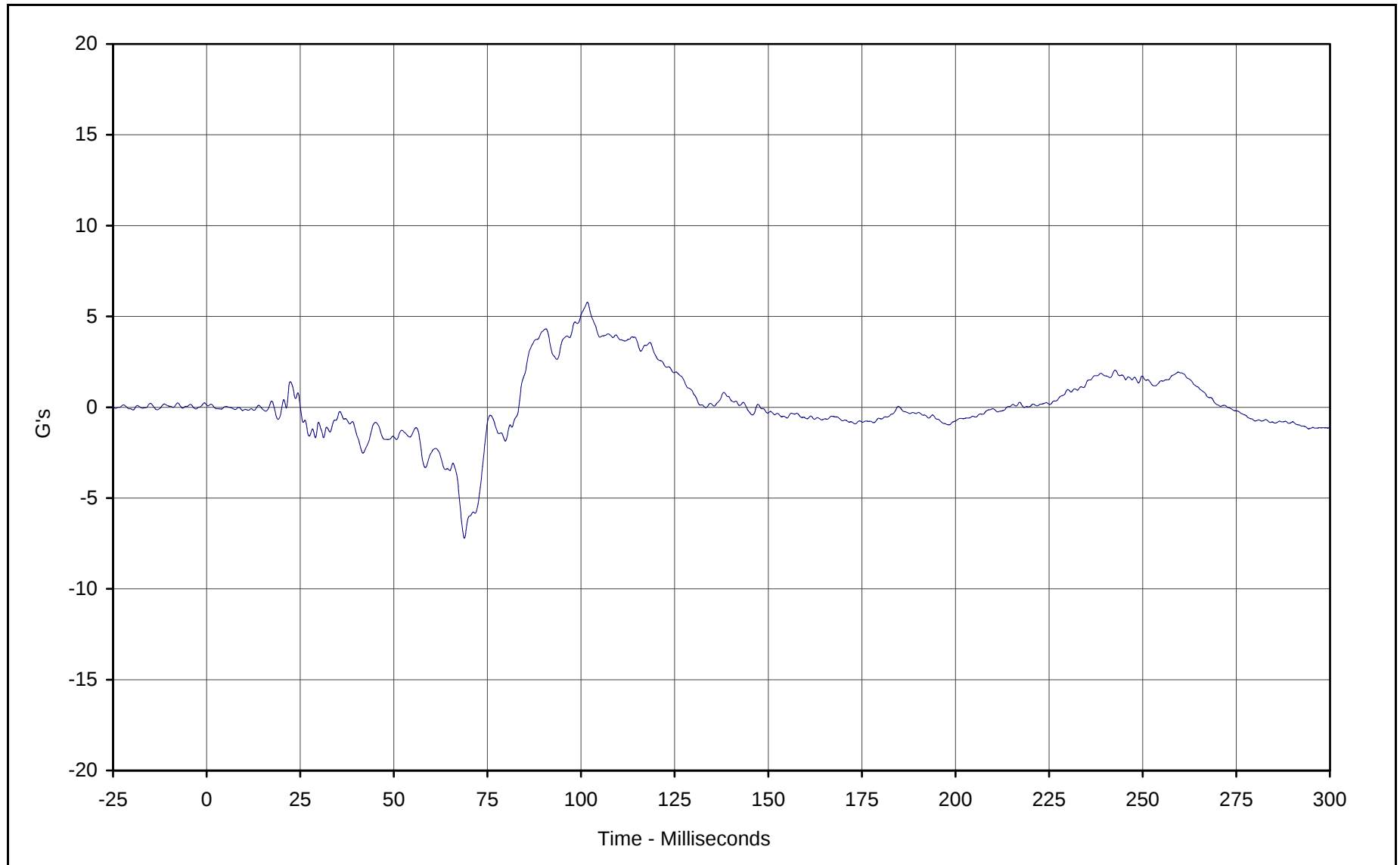


Curve Description: Driver Chest Primary X Displ.
Maximum Value: 86.7 at 76.4 Milliseconds
Minimum Value: -55.9 at 299.9 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN2-013

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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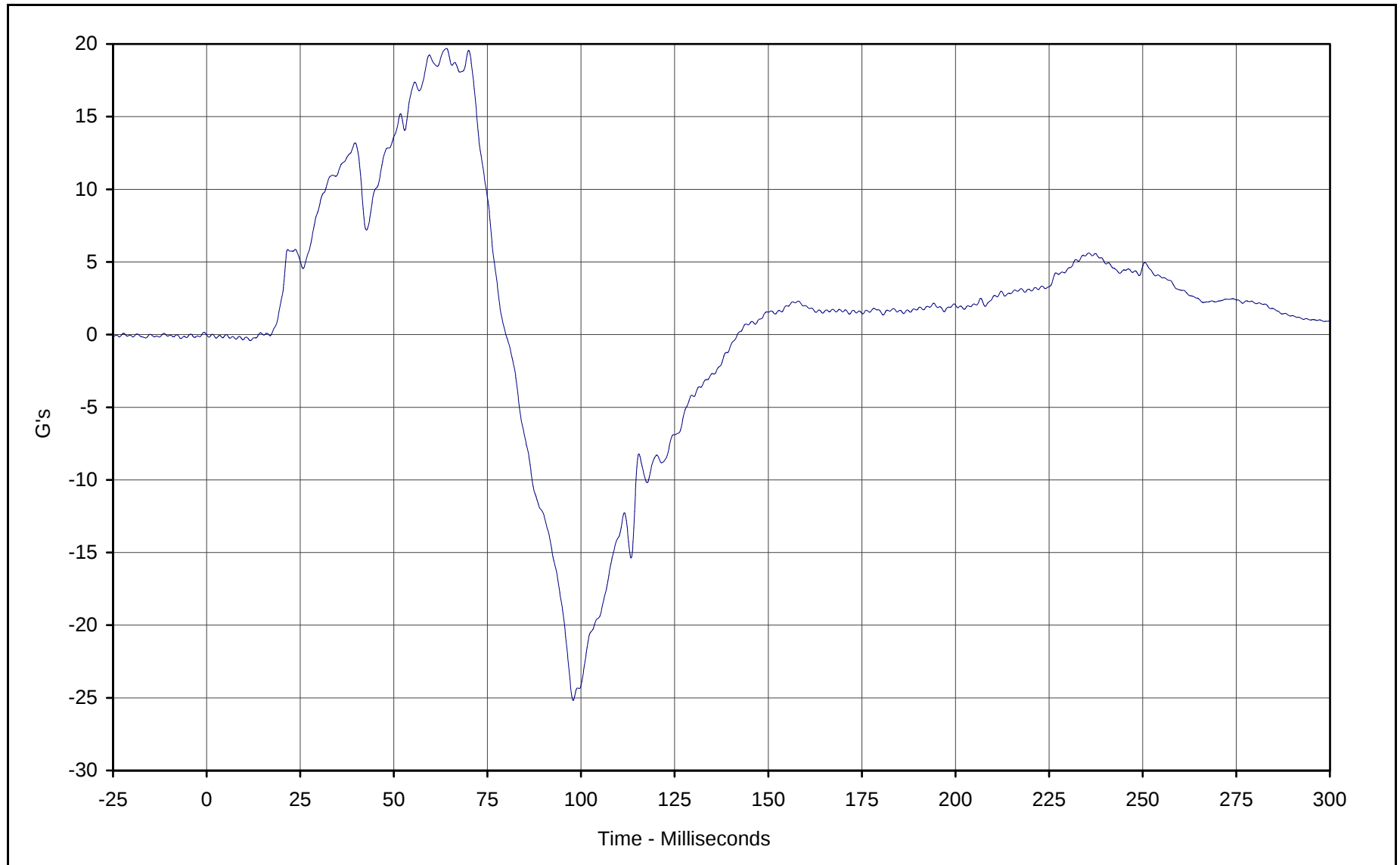


Curve Description: Driver Chest Primary Y
Maximum Value: 5.8 at 101.7 Milliseconds
Minimum Value: -7.2 at 68.8 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-014

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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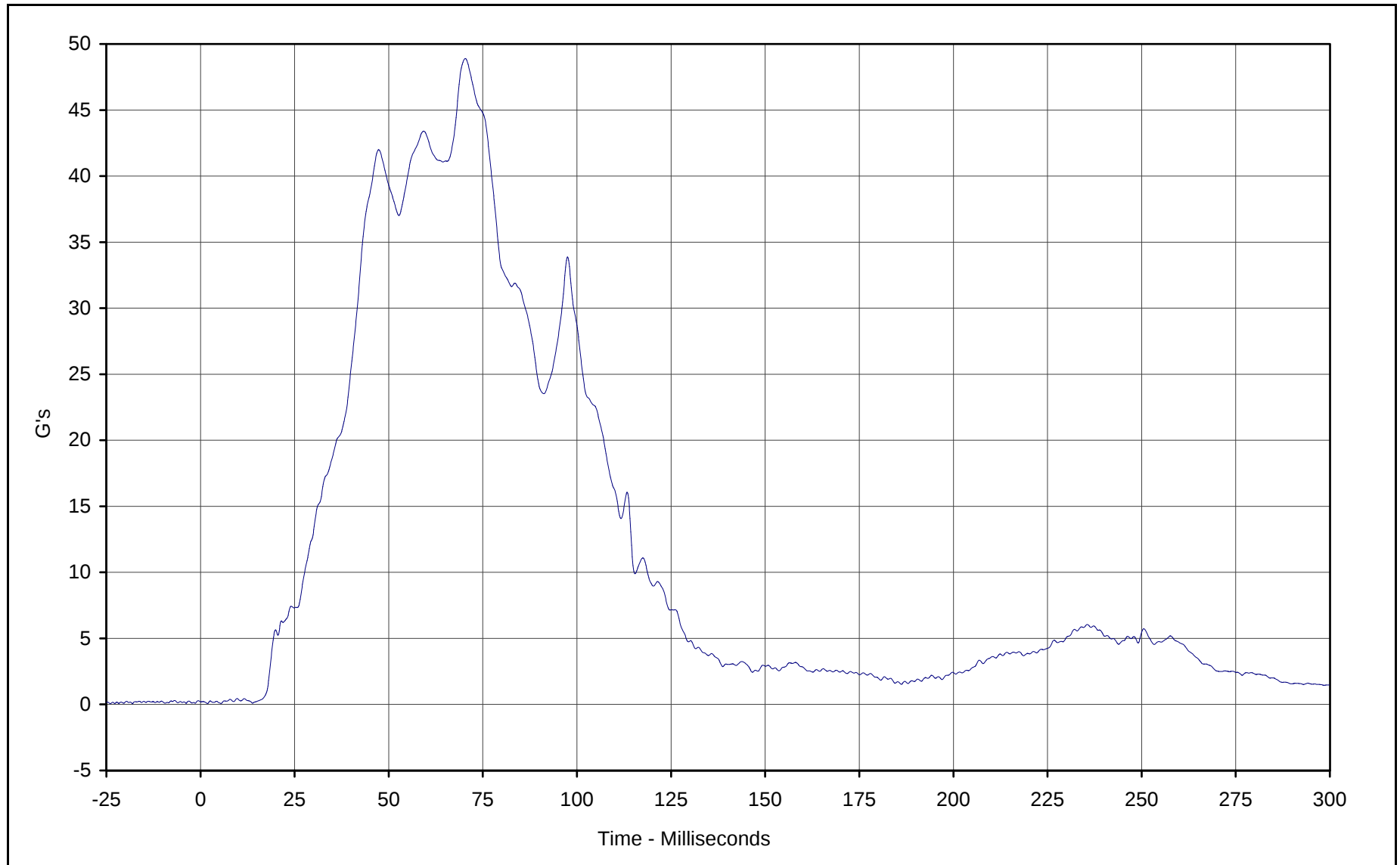


Curve Description: Driver Chest Primary Z
Maximum Value: 19.7 at 64.1 Milliseconds
Minimum Value: -25.2 at 97.9 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-015

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



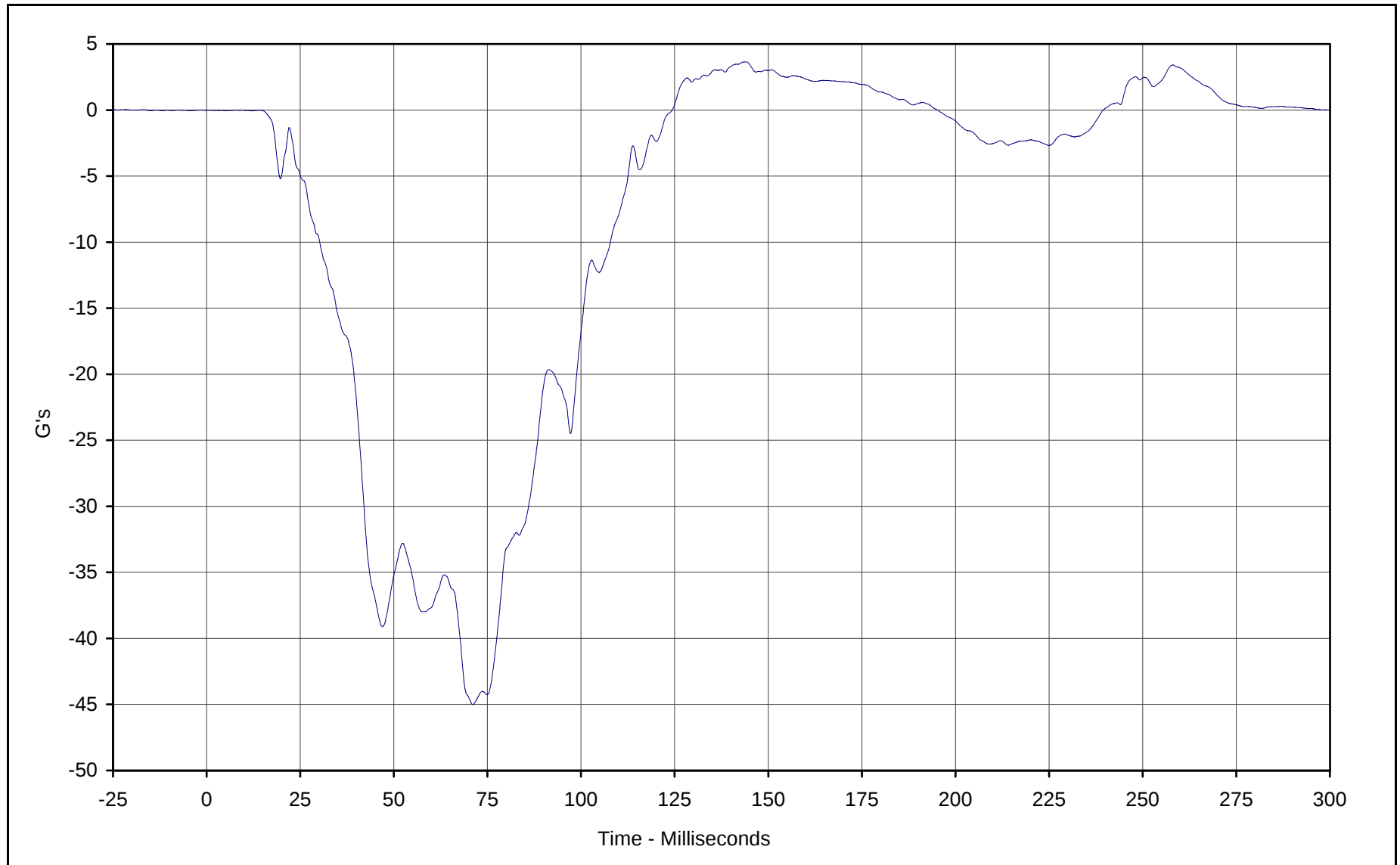
KAR21082-01



Curve Description: Driver Chest Resultant Primary
Maximum Value: 48.9 at 70.4 Milliseconds
Minimum Value: 0.1 at 1.9 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: RES-013

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



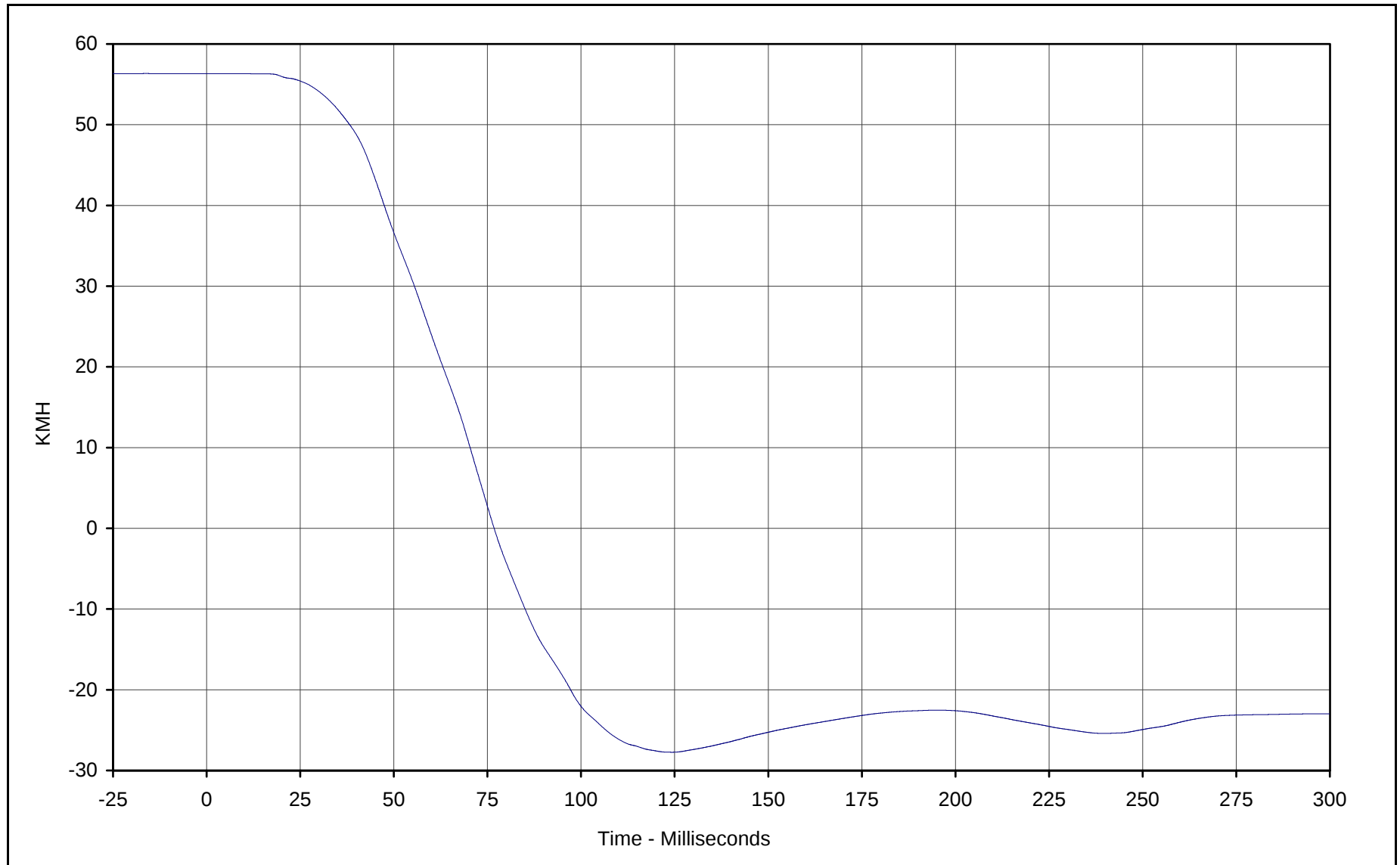


Curve Description: Driver Chest Redundant X
Maximum Value: 3.6 at 144.1 Milliseconds
Minimum Value: -45.0 at 71.1 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-016

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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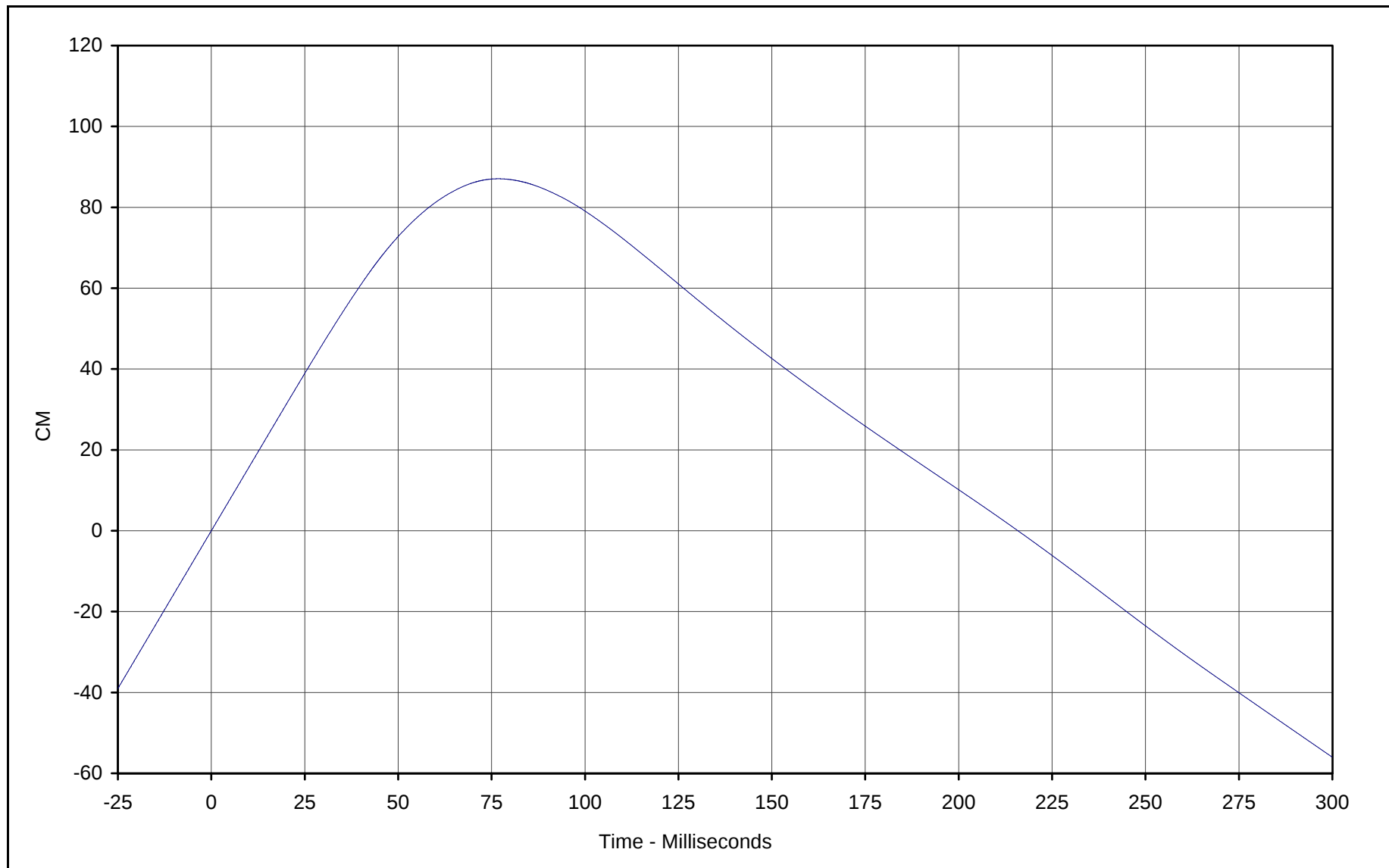


Curve Description: Driver Chest Redundant X Velocity
Maximum Value: 56.3 at 0.0 Milliseconds
Minimum Value: -27.7 at 124.4 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN1-016

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



KAR21082-01

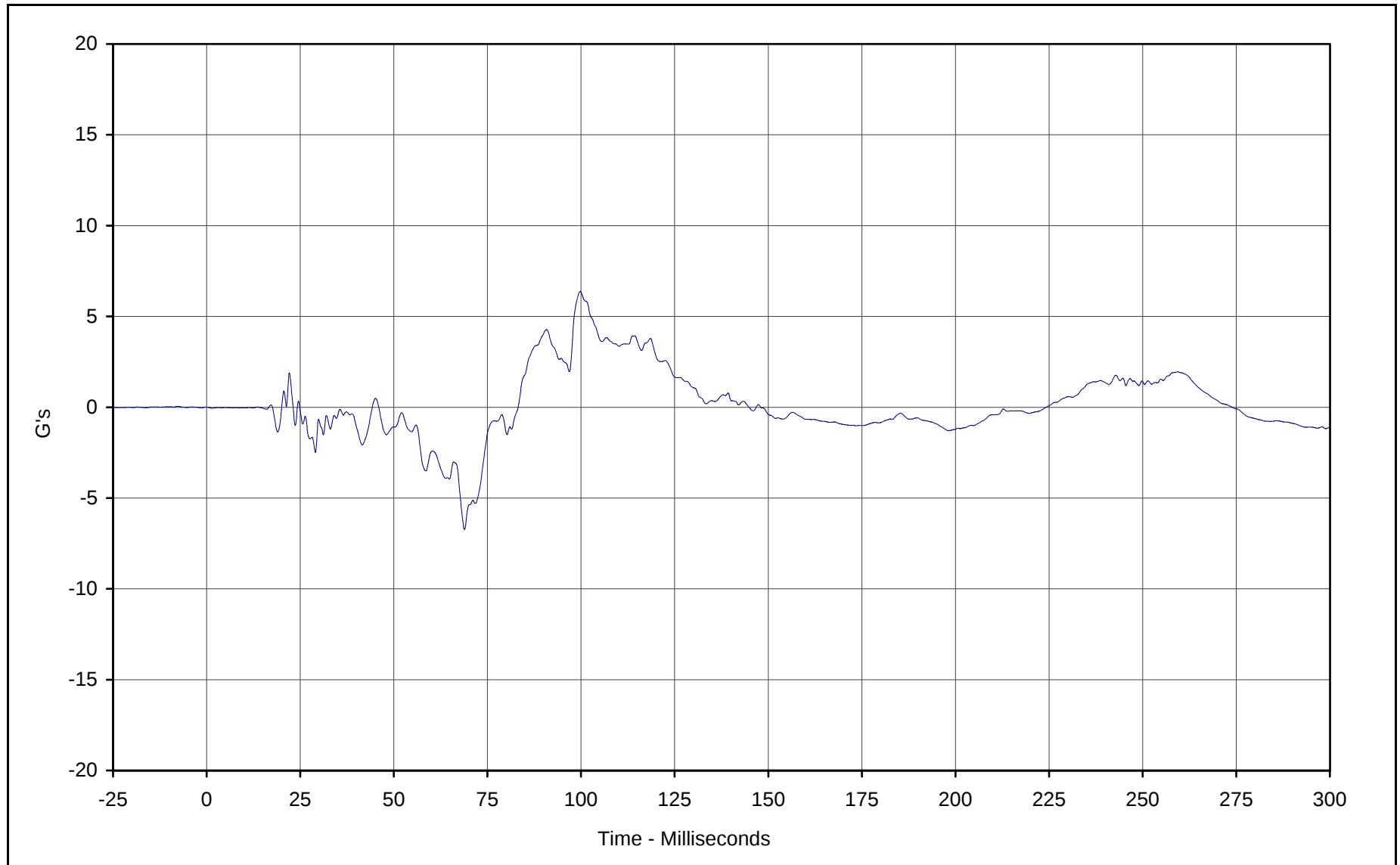


Curve Description: Driver Chest Redundant X Displ.
Maximum Value: 87.1 at 76.8 Milliseconds
Minimum Value: -56.0 at 299.9 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN2-016

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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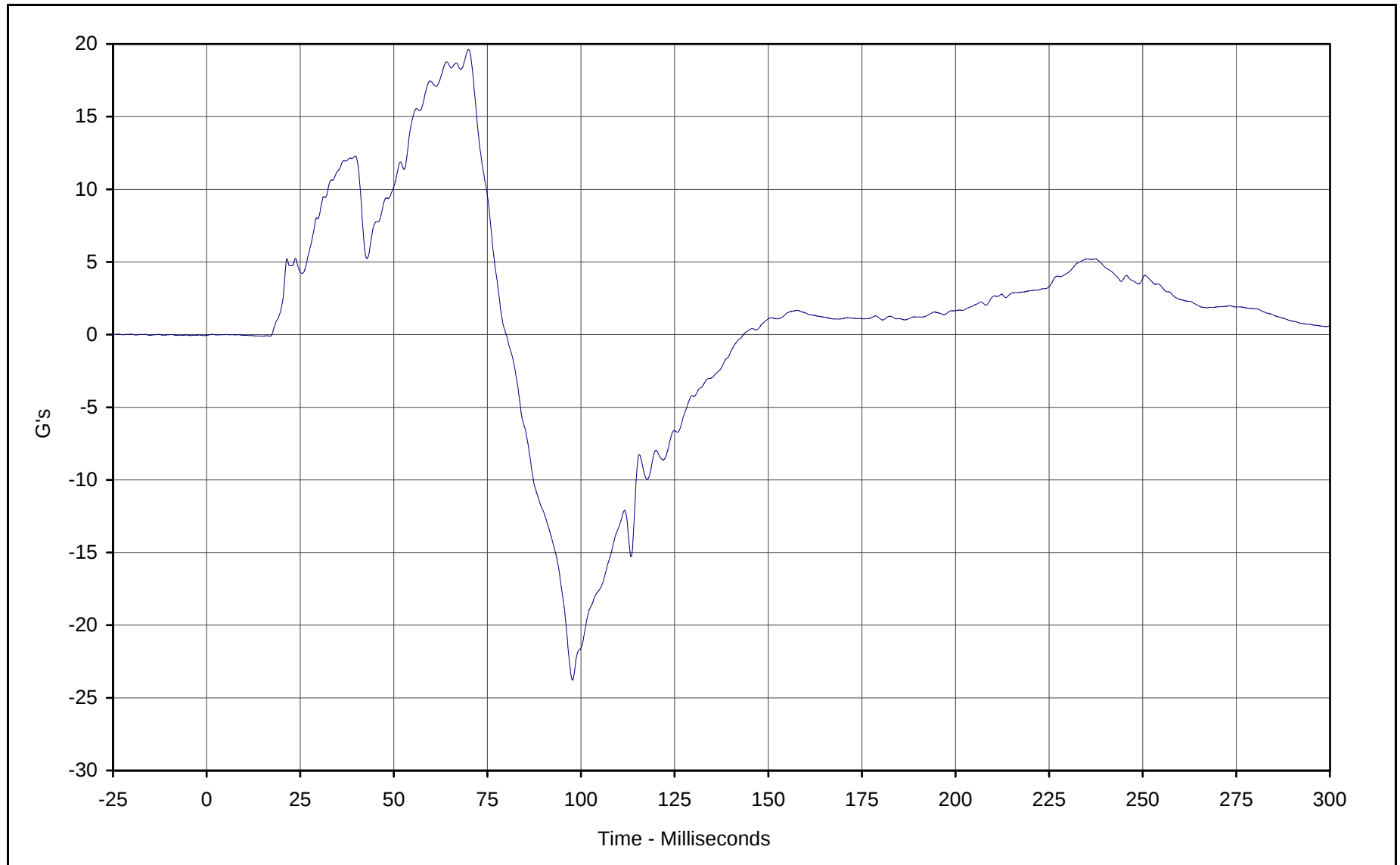


Curve Description: Driver Chest Redundant Y
Maximum Value: 6.4 at 99.8 Milliseconds
Minimum Value: -6.7 at 68.9 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-017

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



KAR21082-01

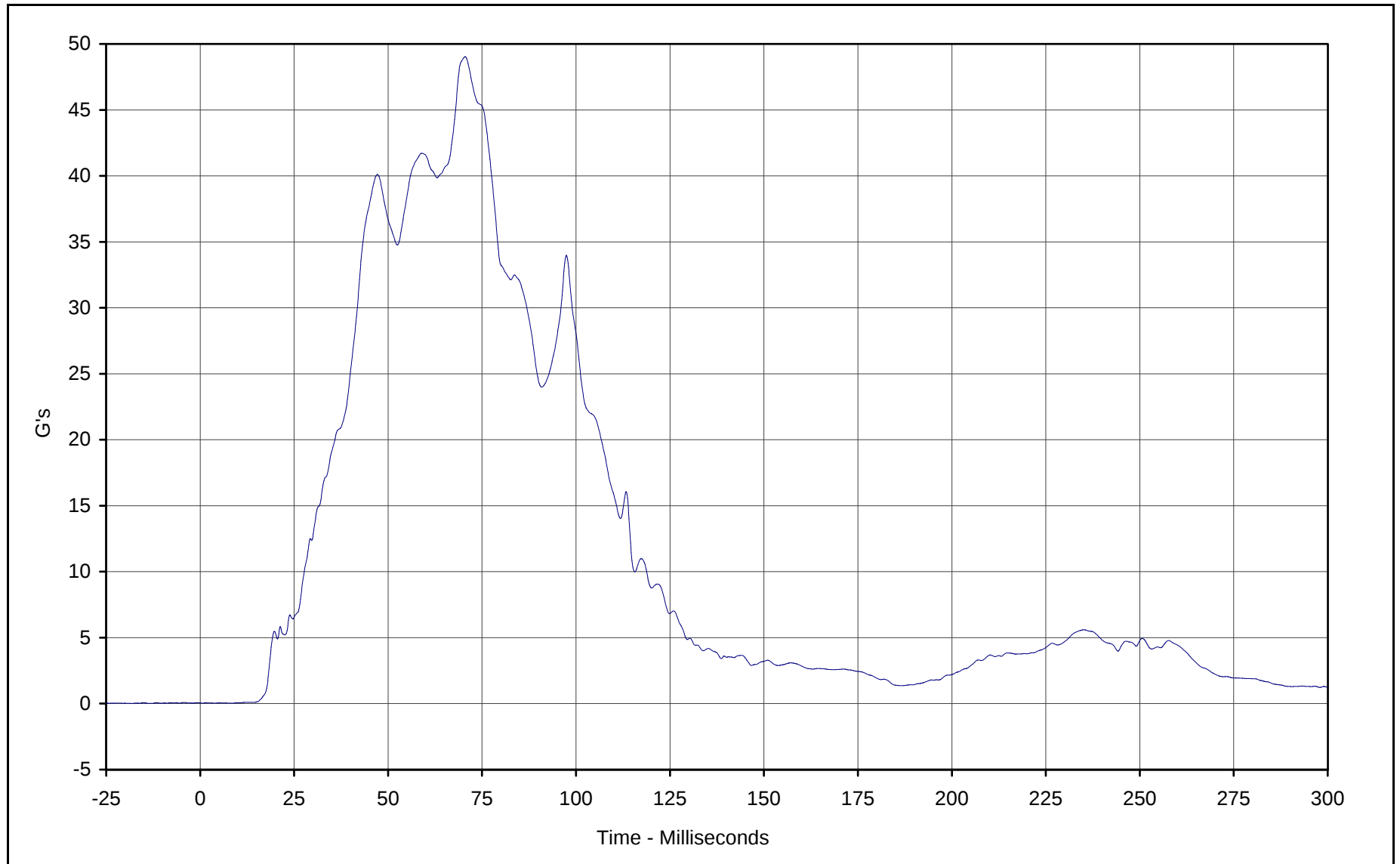


Curve Description: Driver Chest Redundant Z
Maximum Value: 19.6 at 69.9 Milliseconds
Minimum Value: -23.8 at 97.7 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-018

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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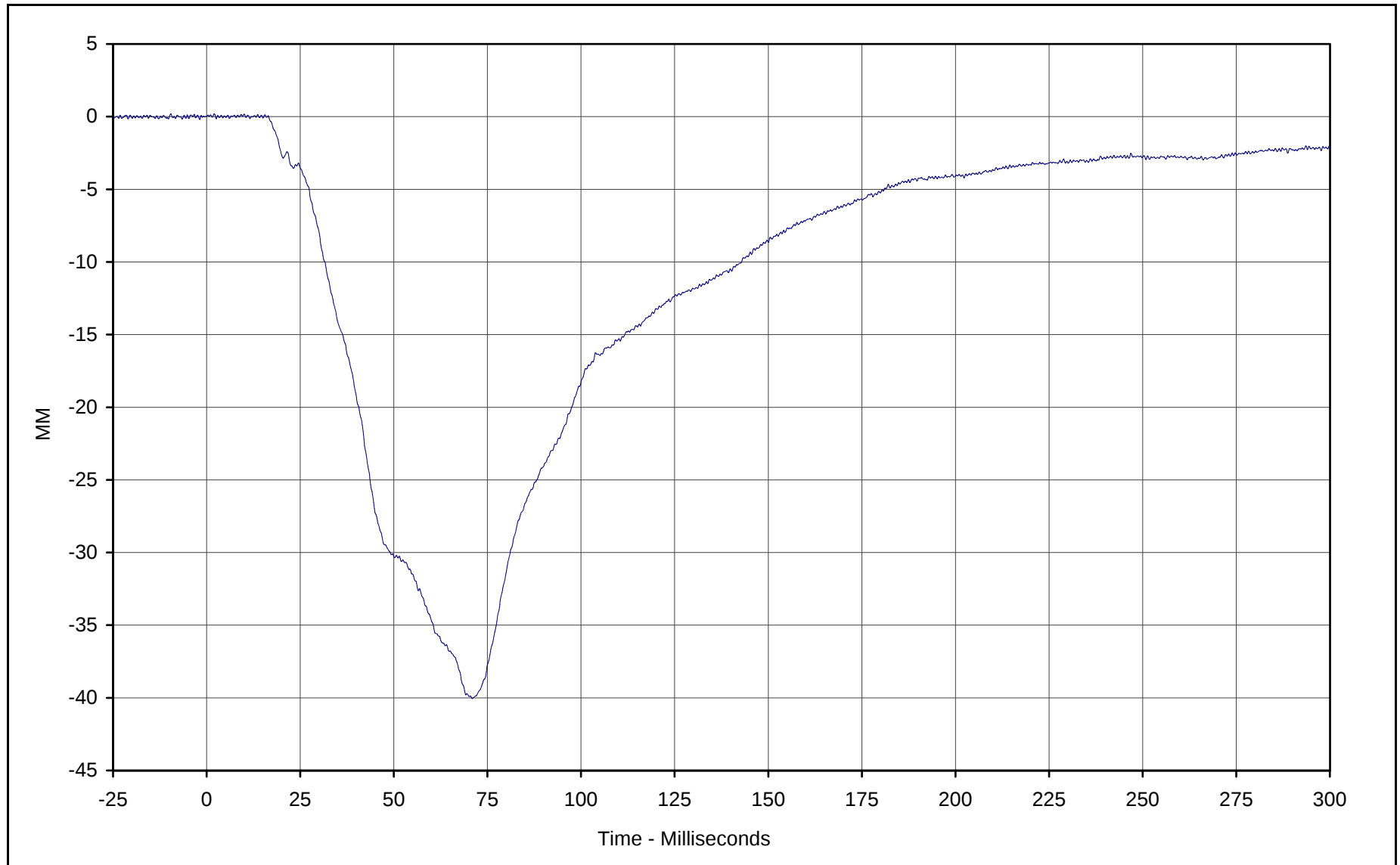
Curve Description: Driver Chest Resultant Redundant
Maximum Value: 49.0 at 70.5 Milliseconds
Minimum Value: 0.0 at 8.0 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: RES-016

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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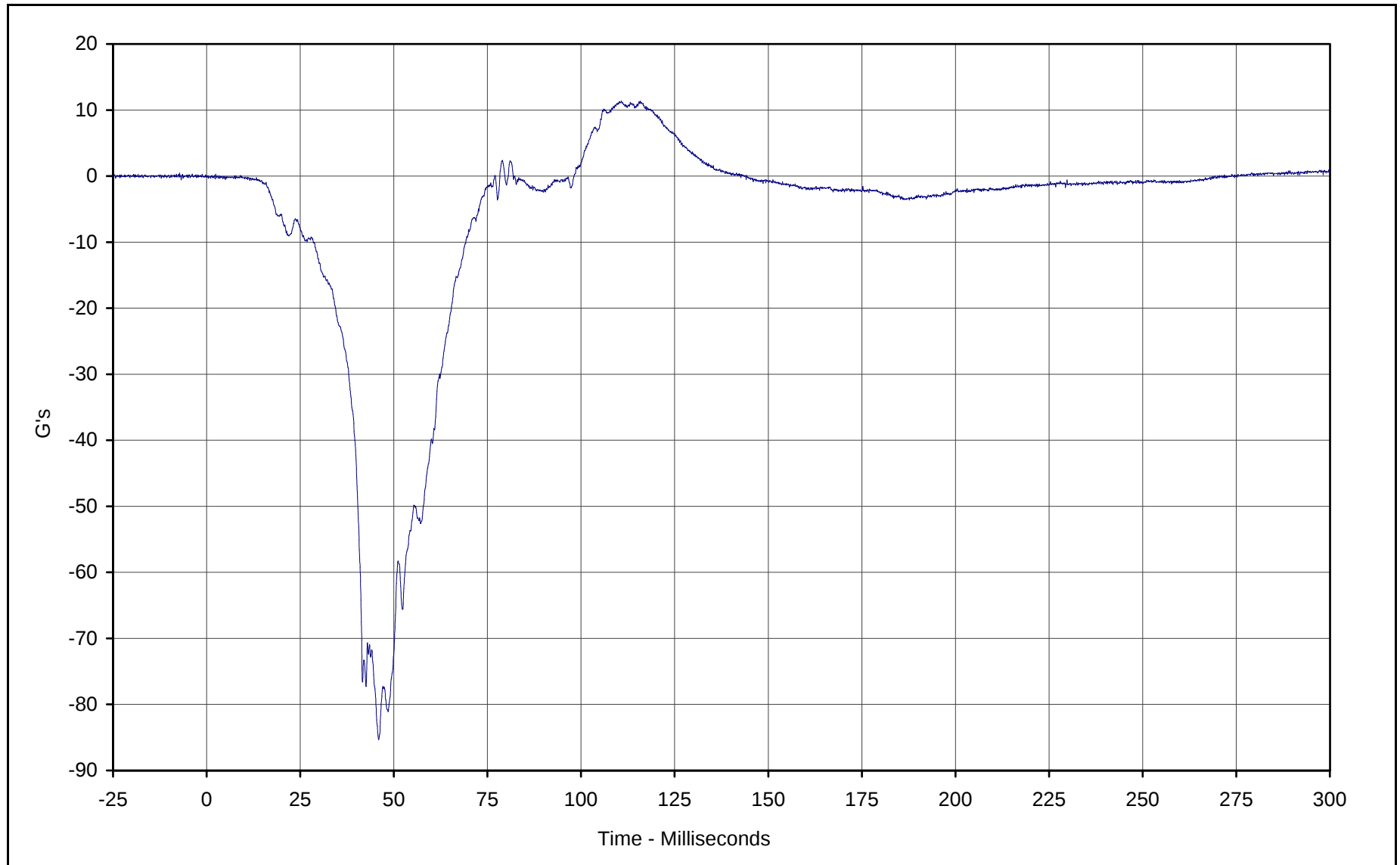


Curve Description: Driver Chest Displacement X
Maximum Value: 0.2 at 2.0 Milliseconds
Minimum Value: -40.0 at 70.9 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: FIL-019

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Driver Pelvis X

Maximum Value: 11.3 at 110.8 Milliseconds

Minimum Value: -85.3 at 45.9 Milliseconds

SAE Filter Class: 1000

Date of Test: 7/31/01

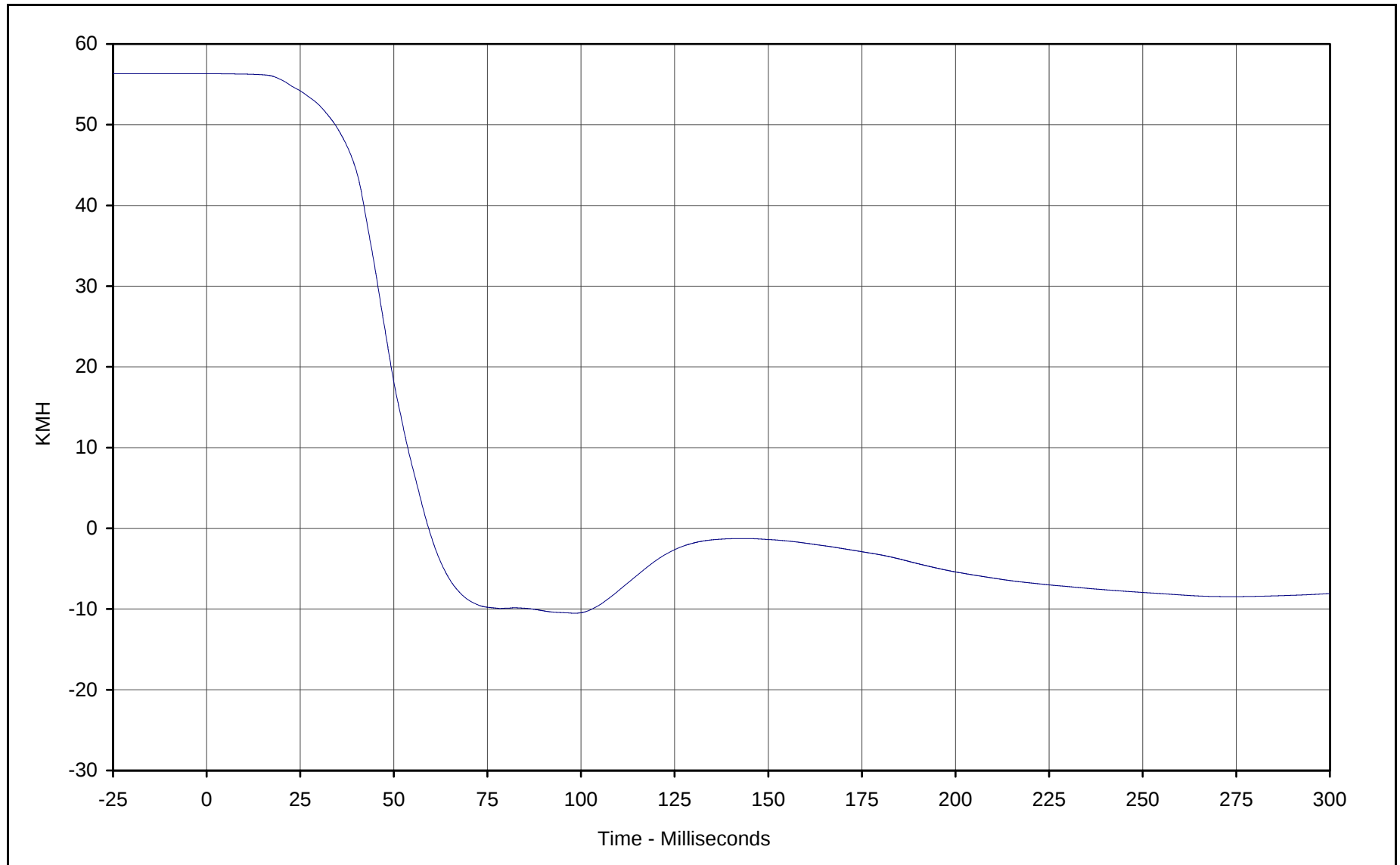
Curve Number: FIL-020

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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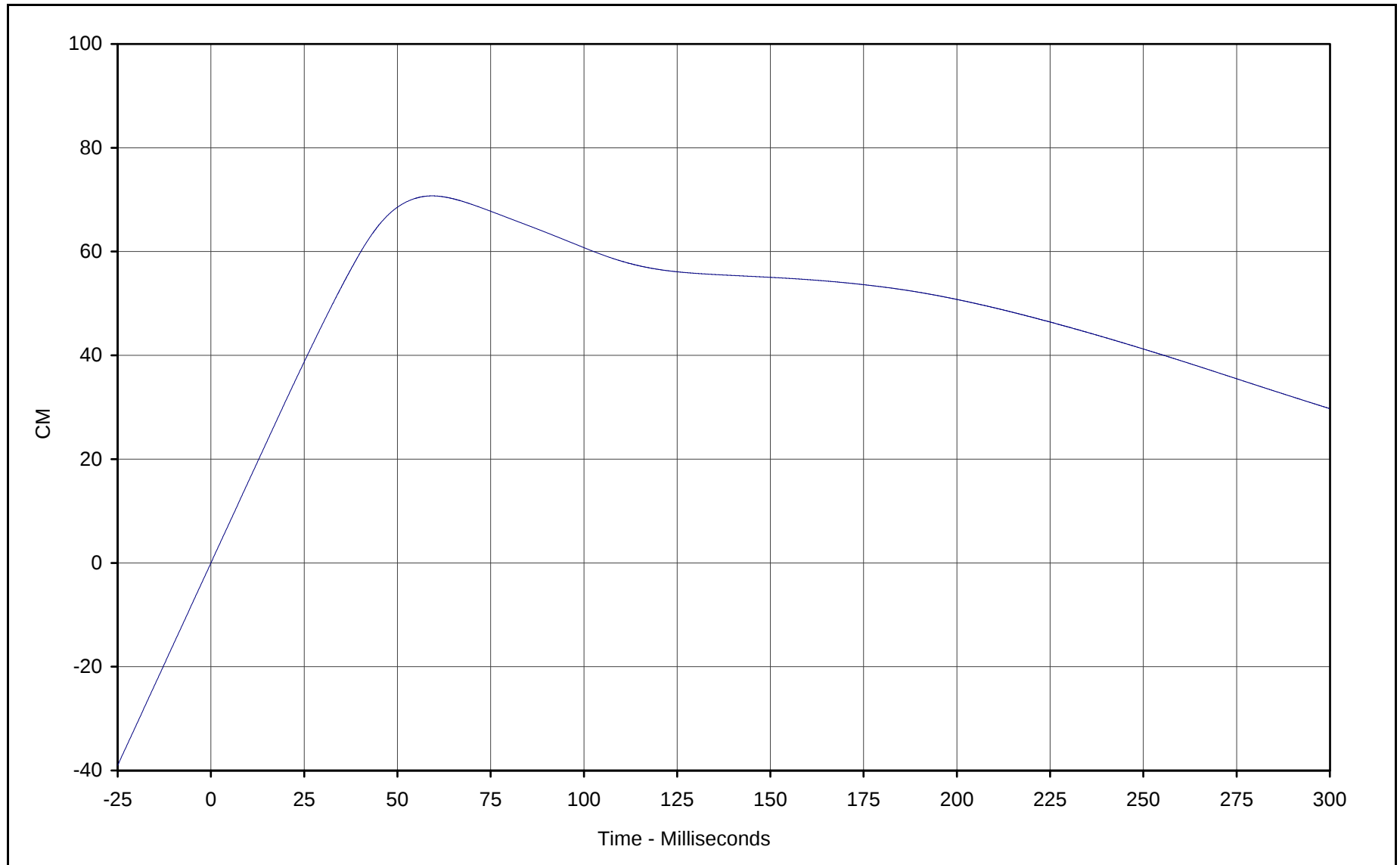


Curve Description: Driver Pelvis X Velocity
Maximum Value: 56.3 at 0.0 Milliseconds
Minimum Value: -10.5 at 98.3 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN1-020

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



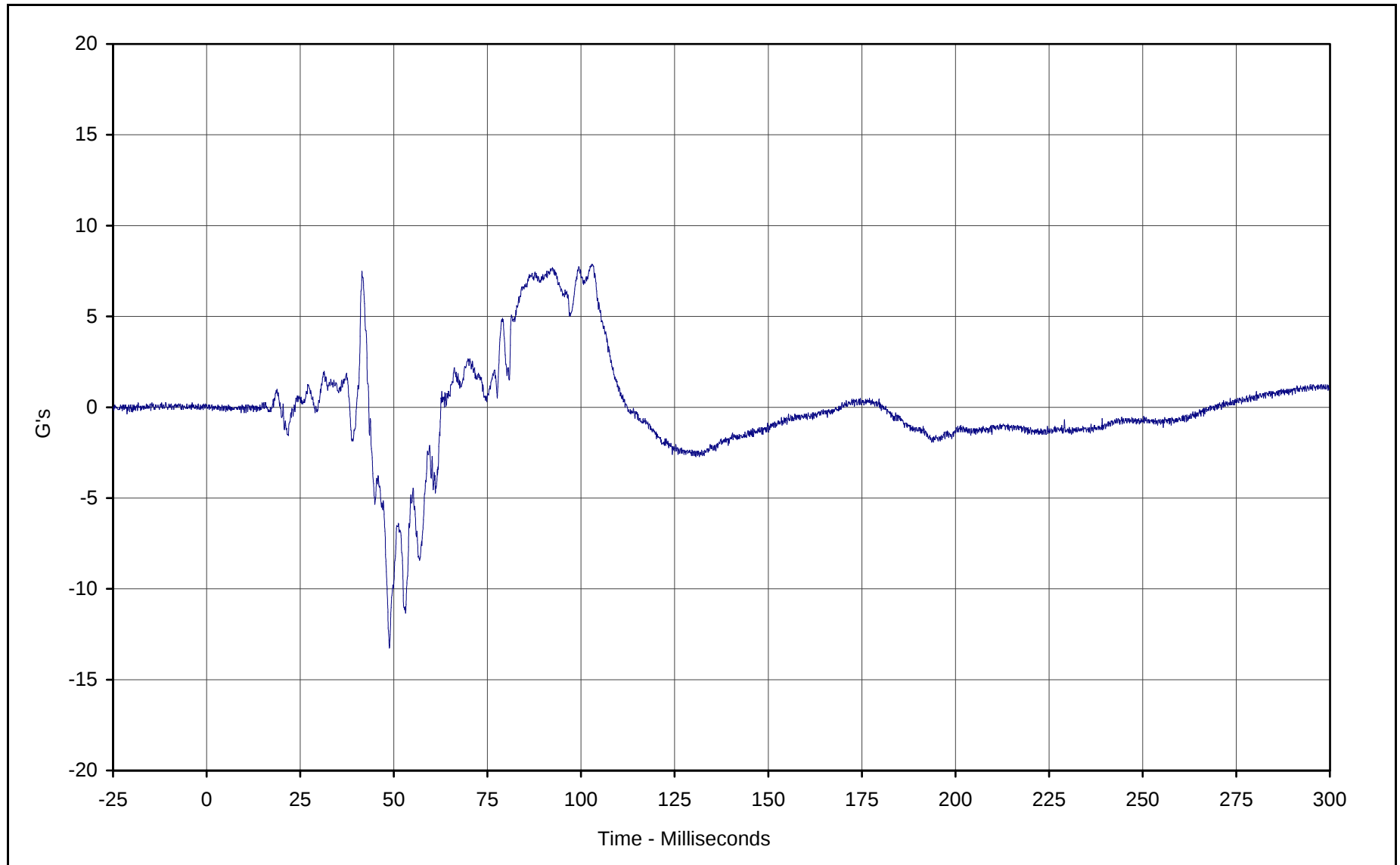
KAR21082-01



Curve Description: Driver Pelvis X Displ.
Maximum Value: 70.7 at 59.3 Milliseconds
Minimum Value: 0.0 at 0.0 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN2-020

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

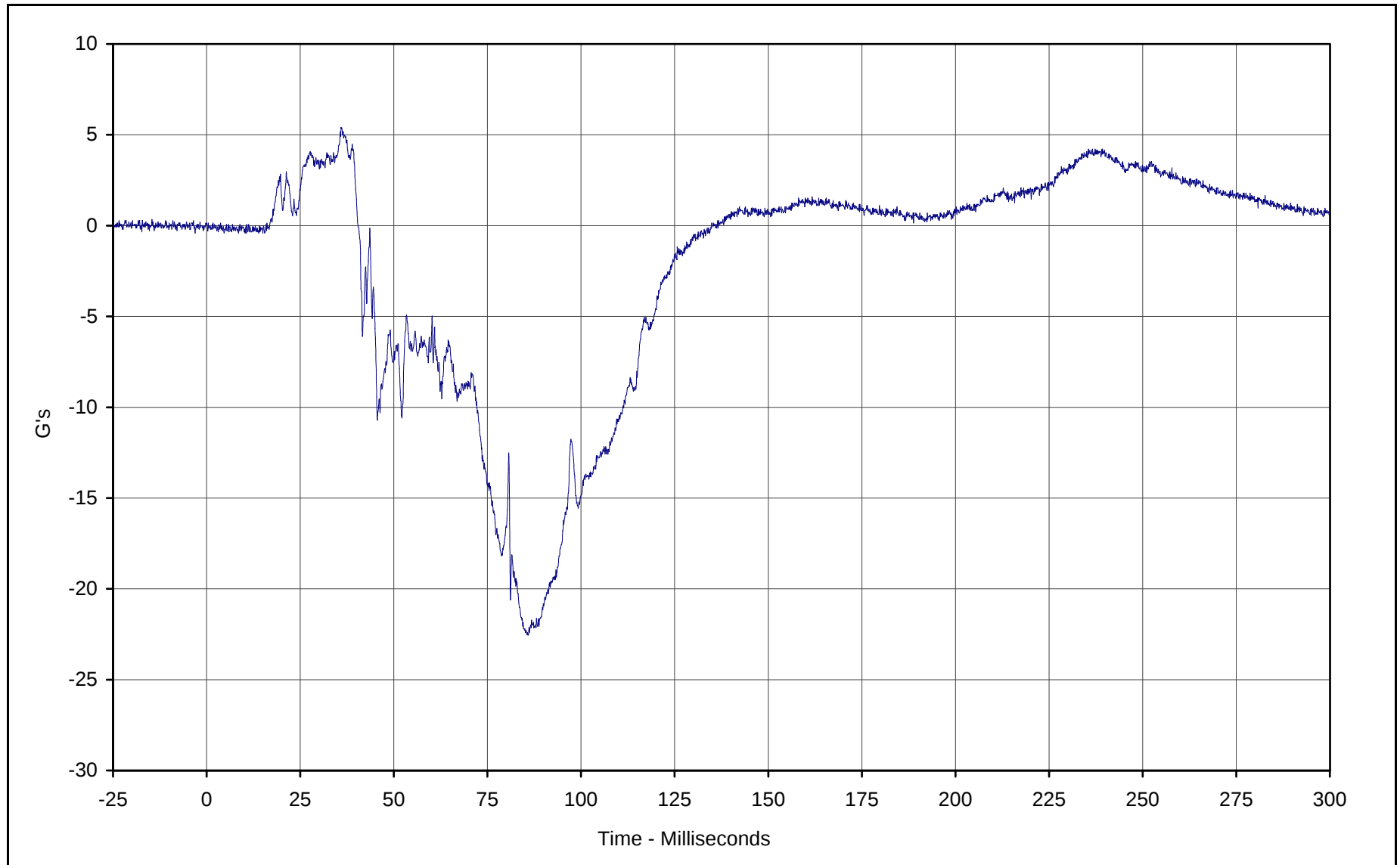




Curve Description: Driver Pelvis Y
Maximum Value: 7.9 at 102.9 Milliseconds
Minimum Value: -13.3 at 48.8 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: FIL-021

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

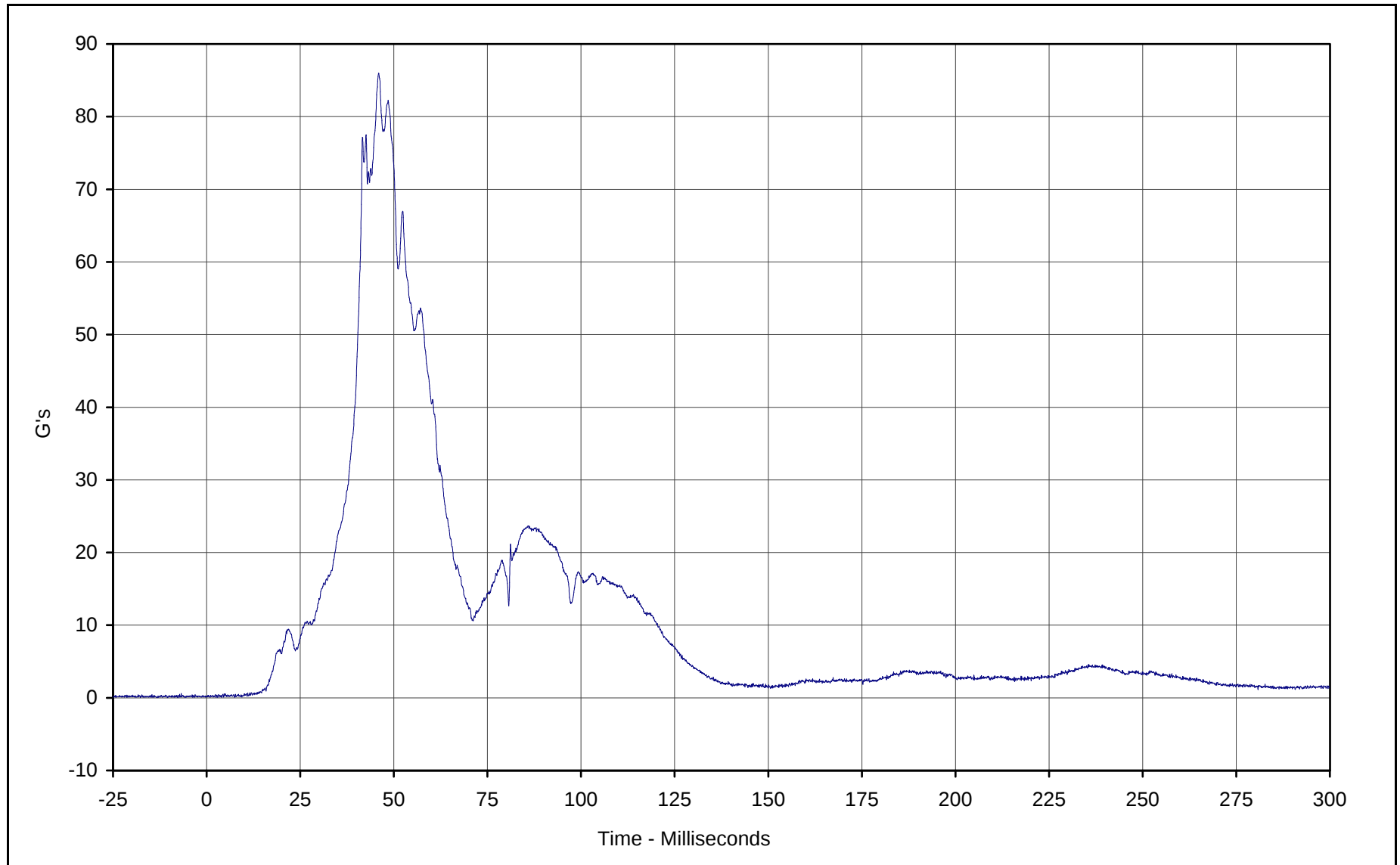




Curve Description: Driver Pelvis Z
Maximum Value: 5.4 at 35.9 Milliseconds
Minimum Value: -22.5 at 85.6 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: FIL-022

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



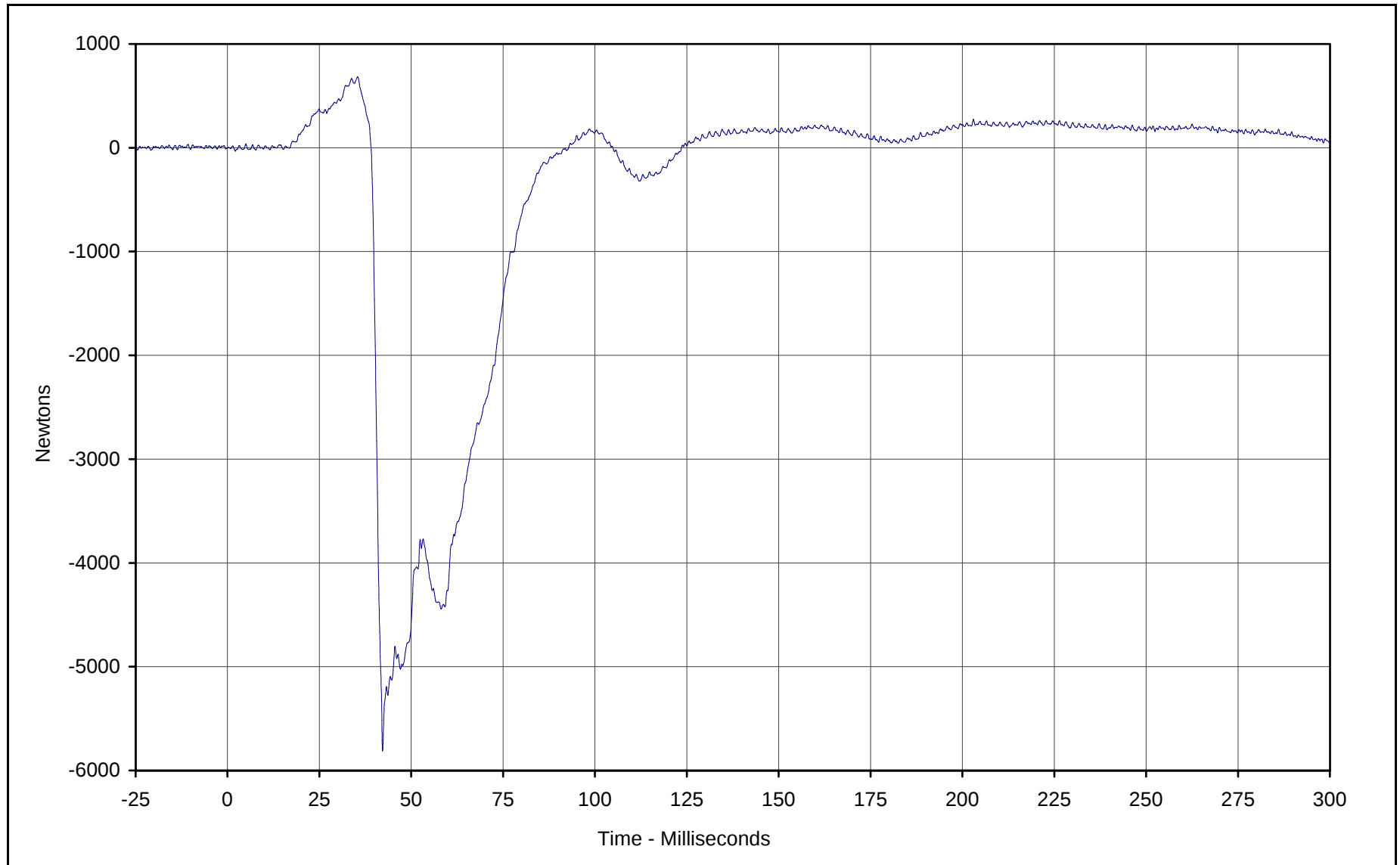


Curve Description: Driver Pelvis Resultant
Maximum Value: 86.0 at 45.9 Milliseconds
Minimum Value: 0.1 at 0.9 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: RES-020

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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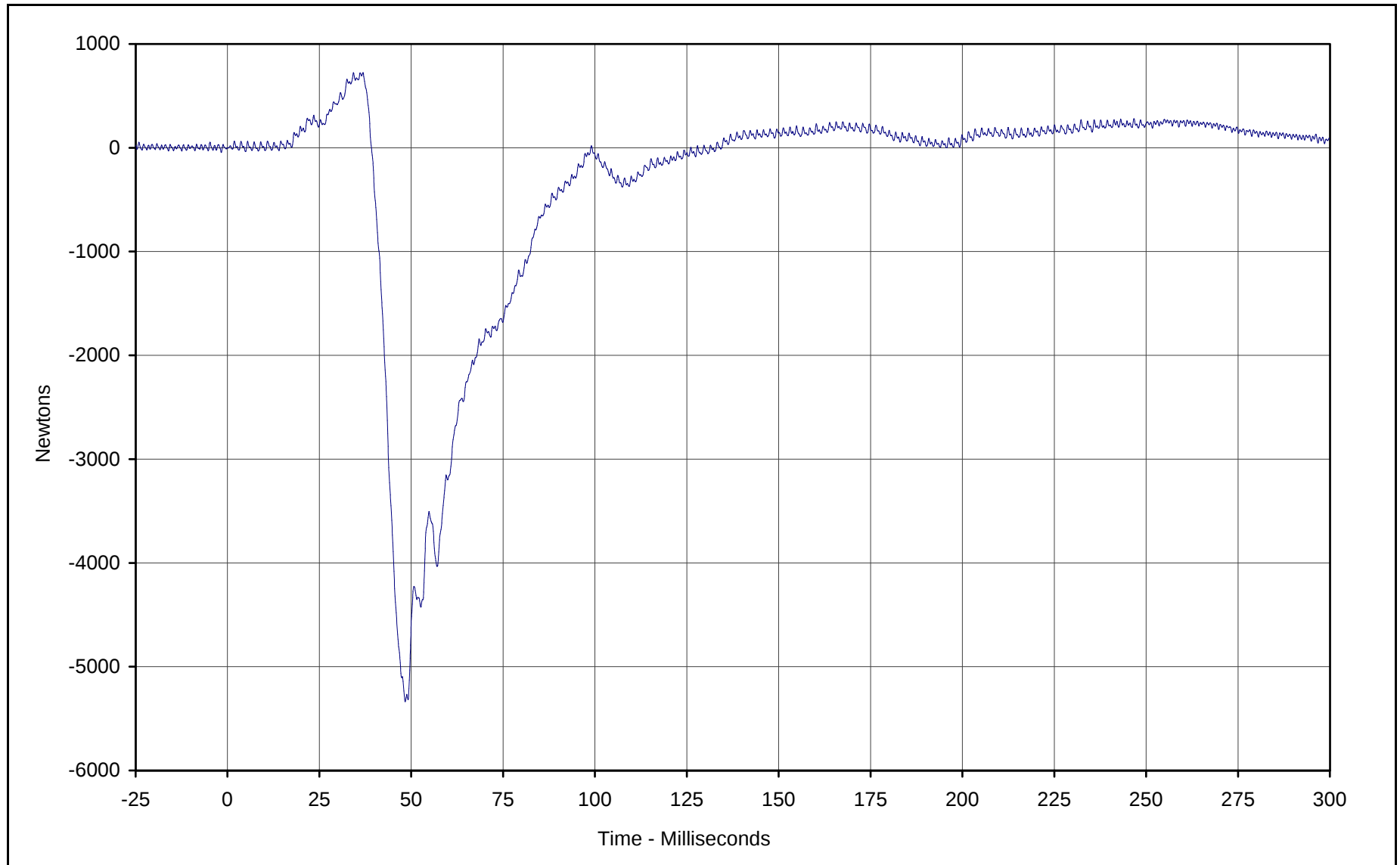
Curve Description: Driver Left Femur Force
Maximum Value: 684.4 at 35.4 Milliseconds
Minimum Value: -5810.3 at 42.2 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: FIL-023

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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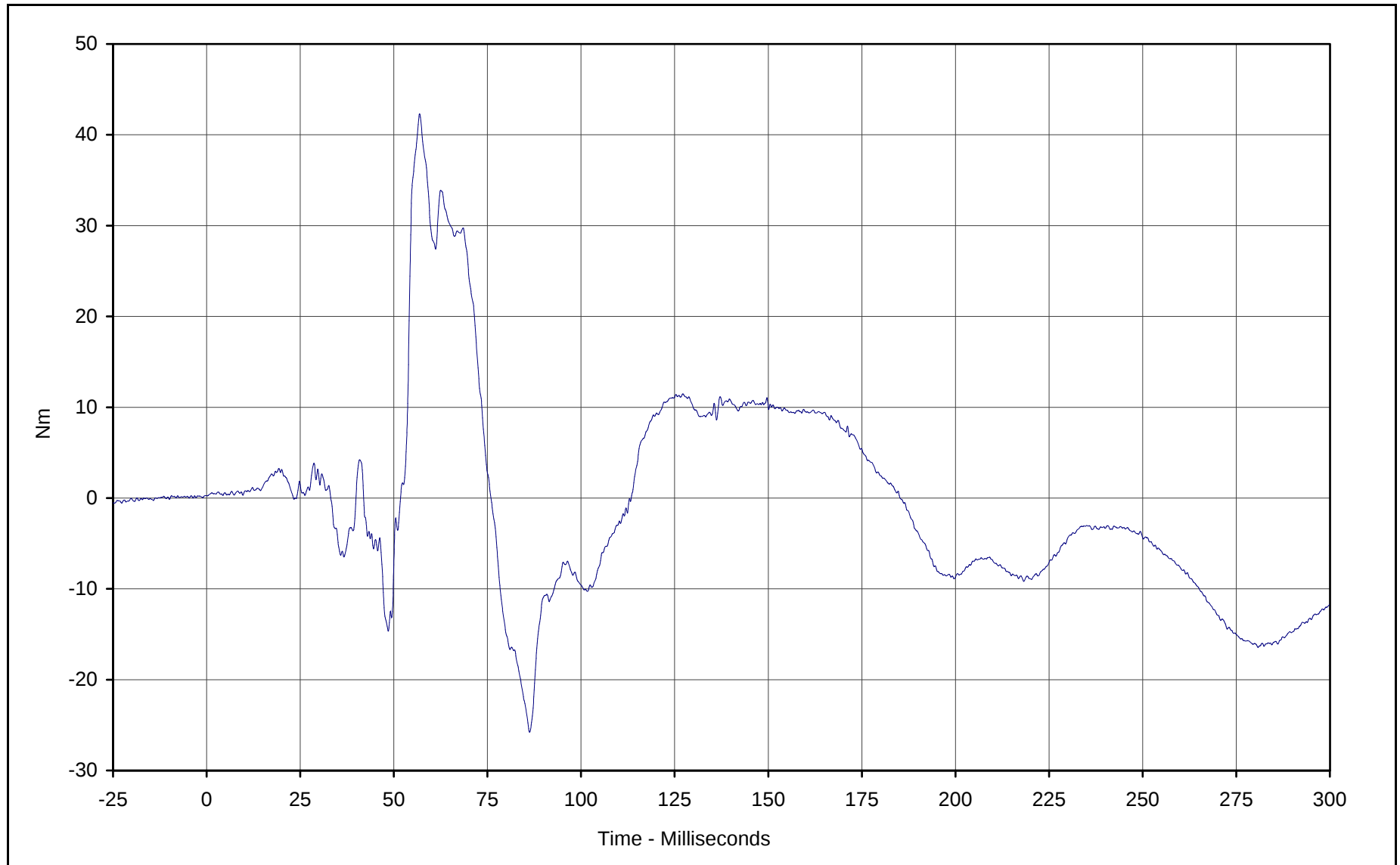
Curve Description: Driver Right Femur Force
Maximum Value: 724.8 at 34.3 Milliseconds
Minimum Value: -5338.4 at 48.4 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: FIL-024

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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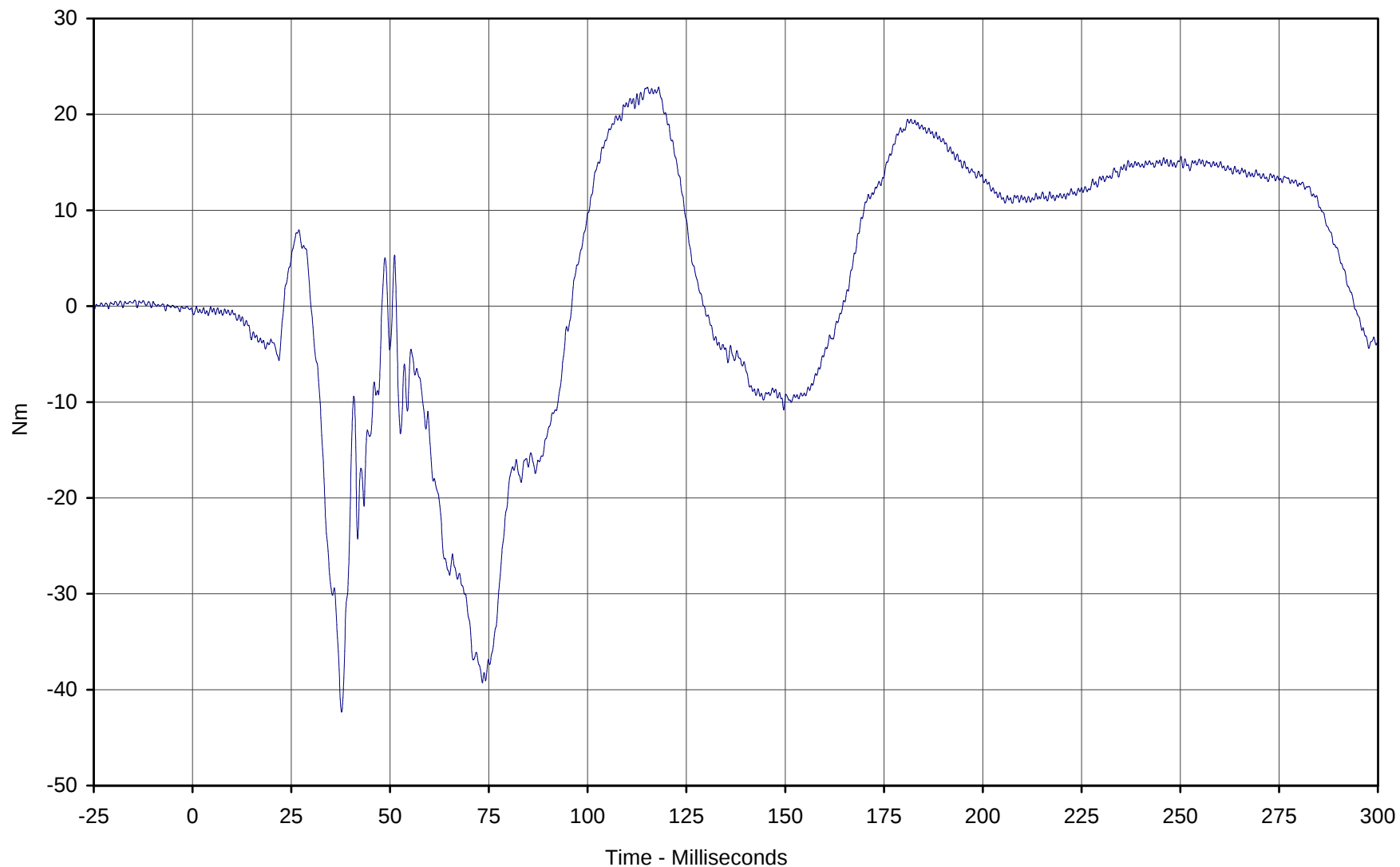
Curve Description: Driver Left Upper Tibia Moment X
Maximum Value: 42.3 at 56.9 Milliseconds
Minimum Value: -25.8 at 86.3 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: FIL-025

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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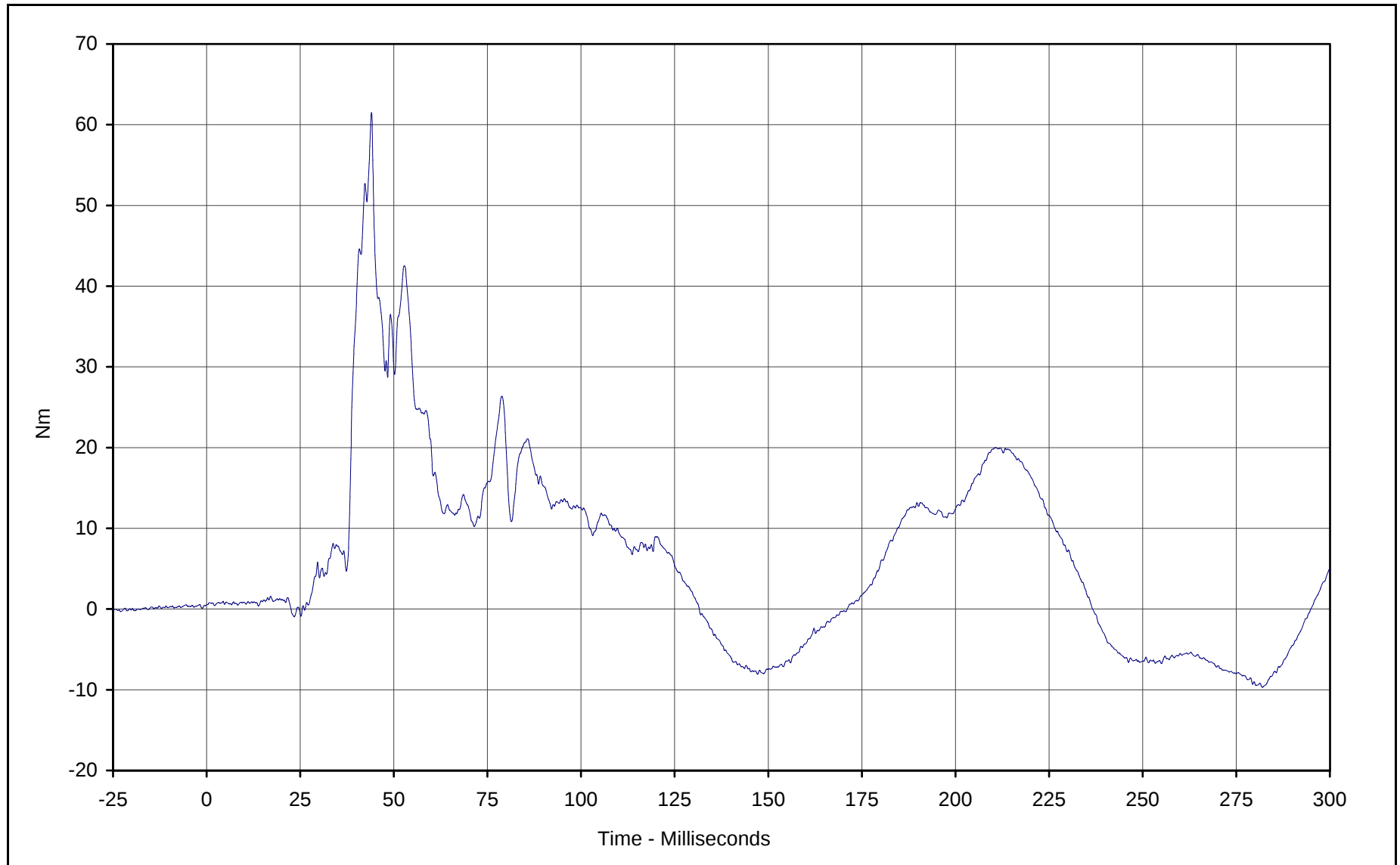


Curve Description: Driver Left Upper Tibia Moment Y
Maximum Value: 22.8 at 118.0 Milliseconds
Minimum Value: -42.3 at 37.7 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: FIL-026

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



KAR21082-01

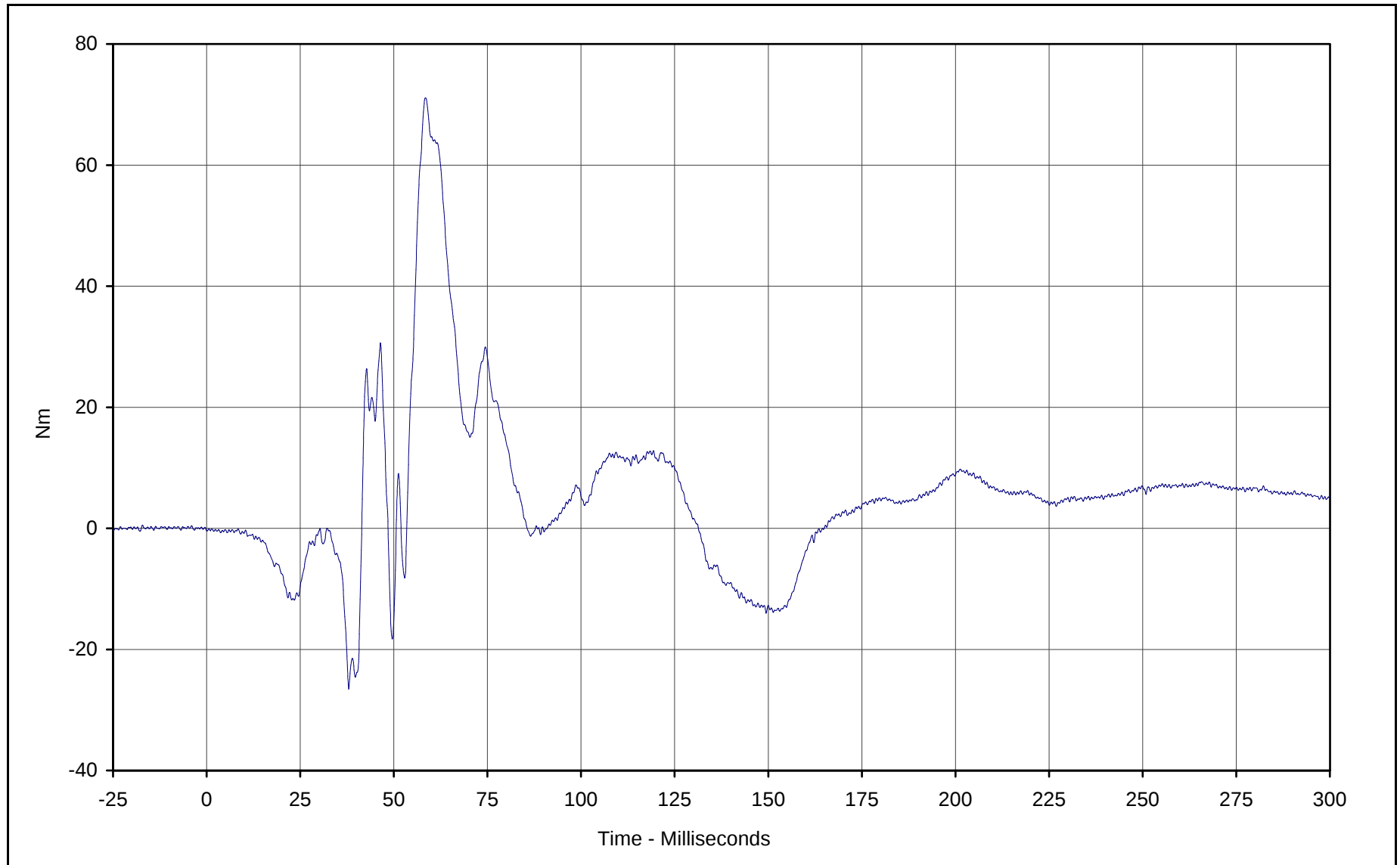


Curve Description: Driver Right Upper Tibia Moment X
Maximum Value: 61.5 at 44.0 Milliseconds
Minimum Value: -9.7 at 282.0 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: FIL-027

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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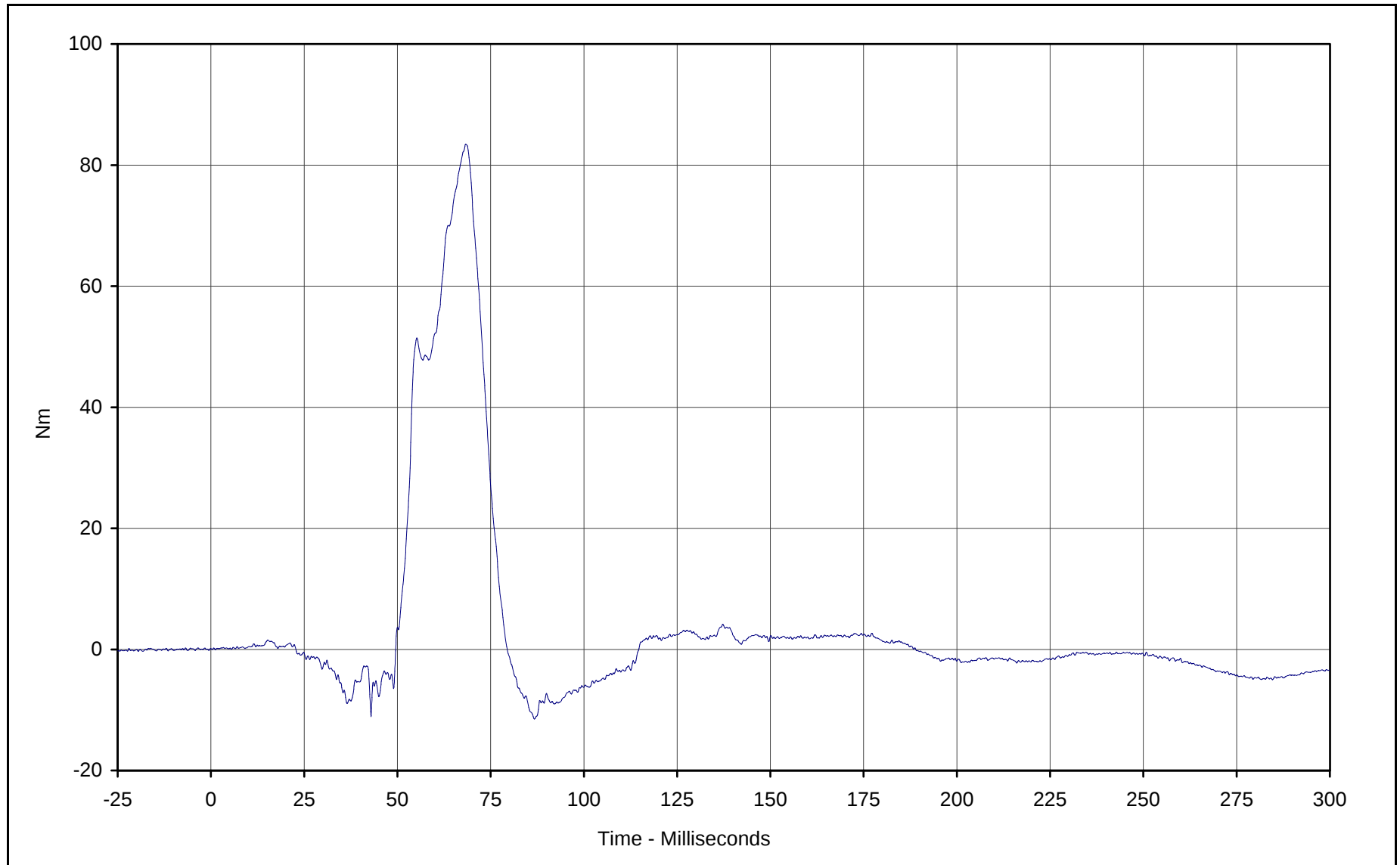


Curve Description: Driver Right Upper Tibia Moment Y
Maximum Value: 71.1 at 58.5 Milliseconds
Minimum Value: -26.6 at 38.0 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: FIL-028

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



KAR21082-01

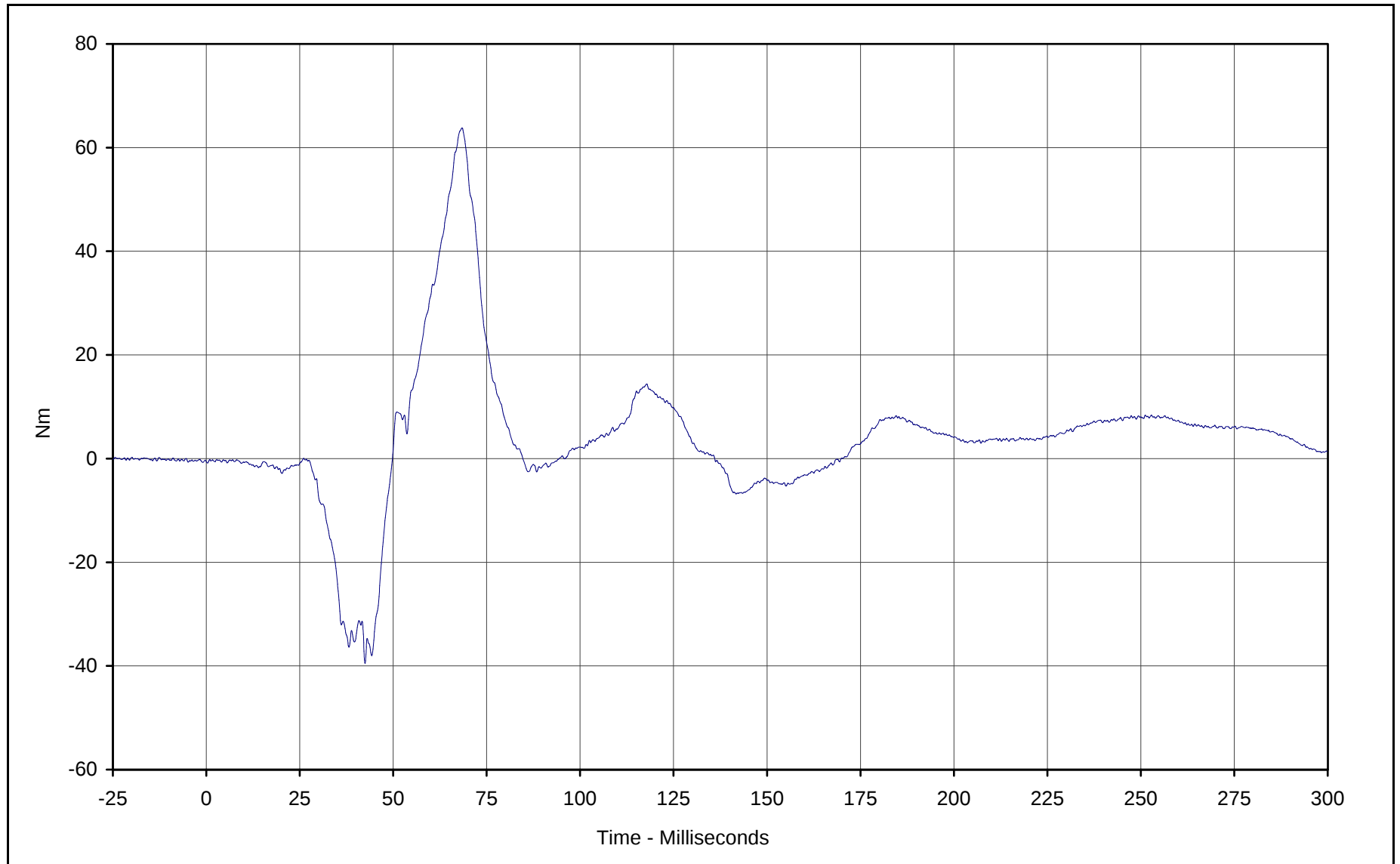


Curve Description: Driver Left Lower Tibia Moment X
Maximum Value: 83.4 at 68.3 Milliseconds
Minimum Value: -11.5 at 86.7 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: FIL-029

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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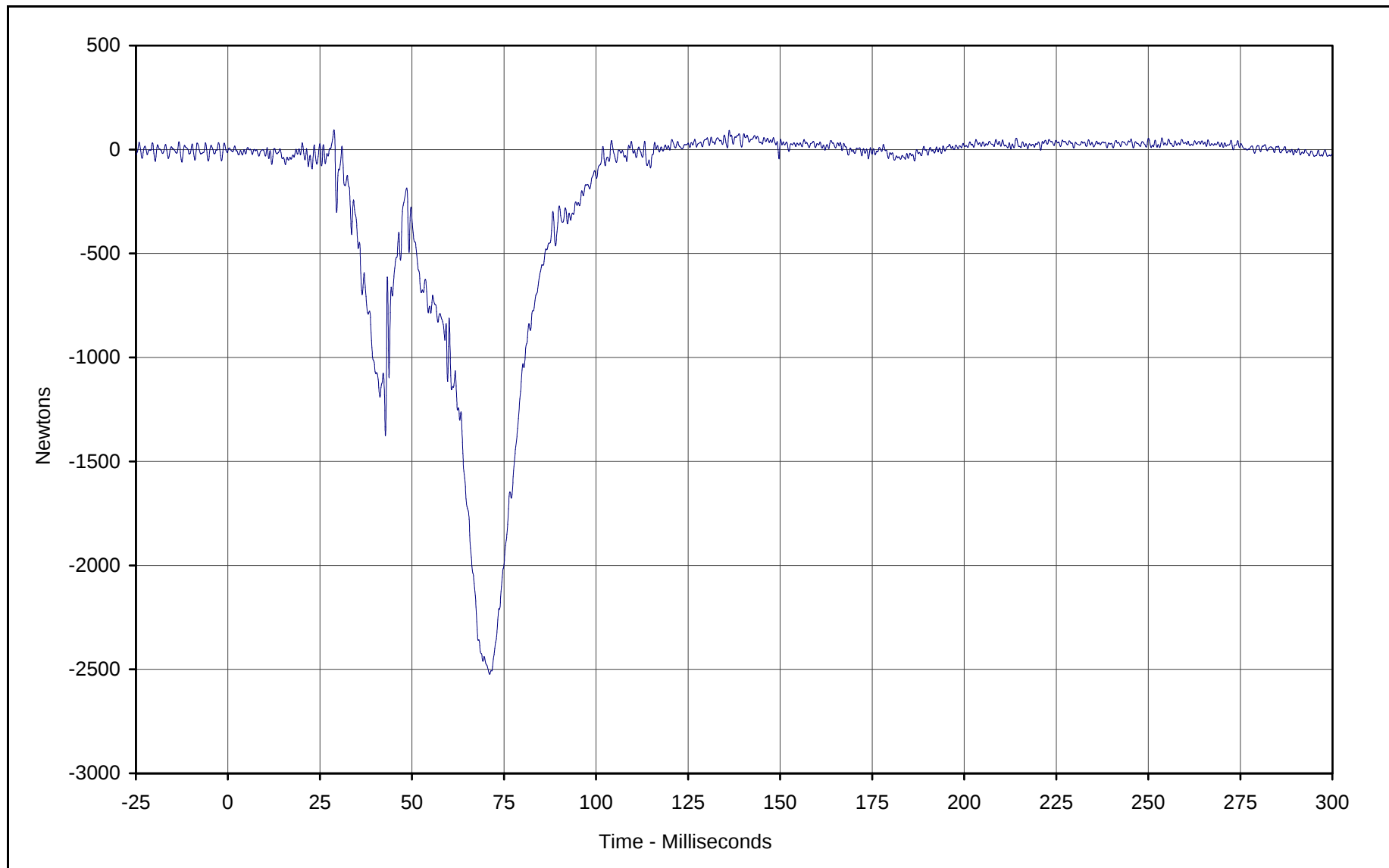


Curve Description: Driver Left Lower Tibia Moment Y
Maximum Value: 63.8 at 68.4 Milliseconds
Minimum Value: -39.5 at 42.5 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: FIL-030

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



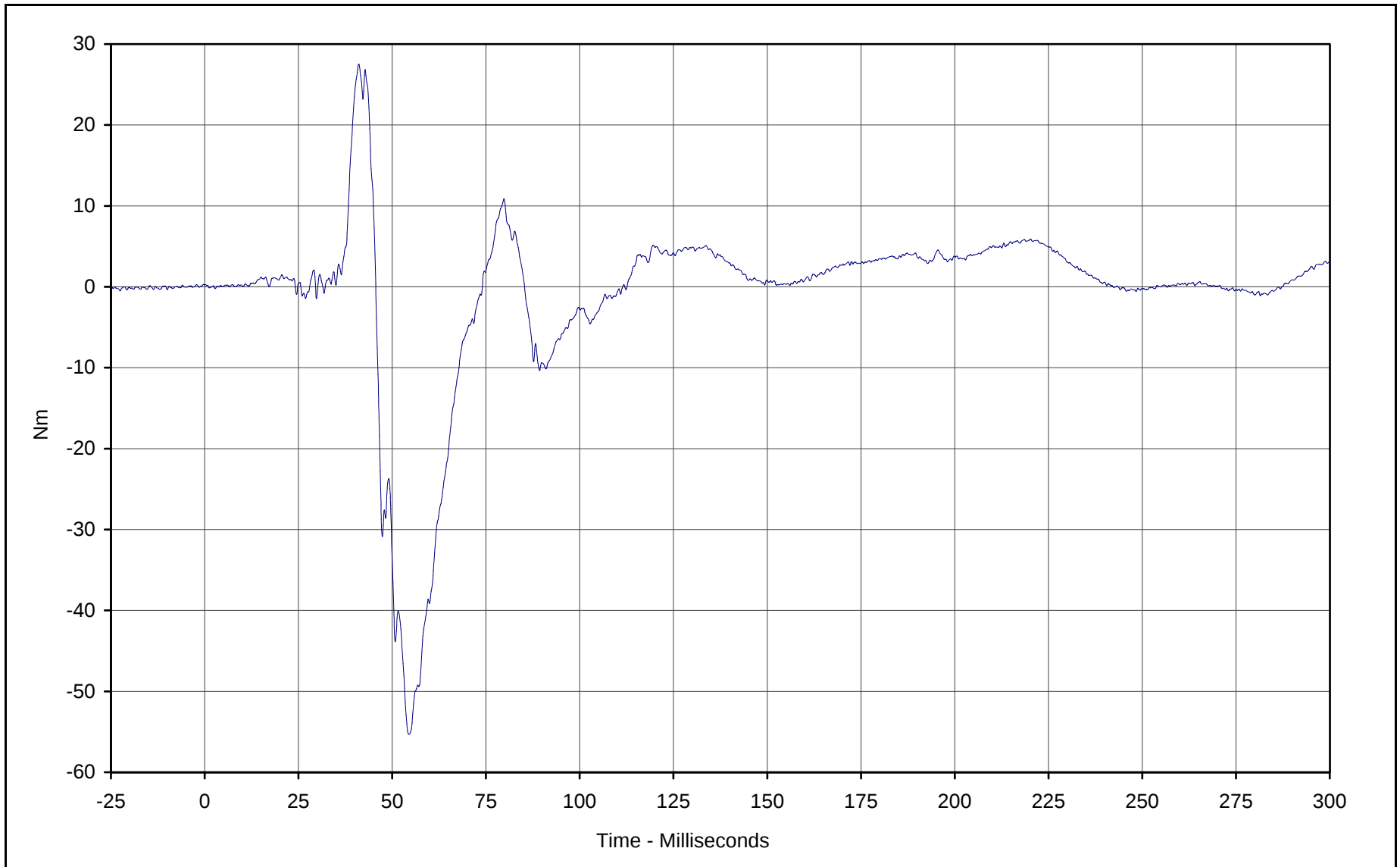
KAR21082-01



Curve Description: Driver Left Lower Tibia Force Z
Maximum Value: 95.0 at 28.8 Milliseconds
Minimum Value: -2523.7 at 71.1 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: FIL-031

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



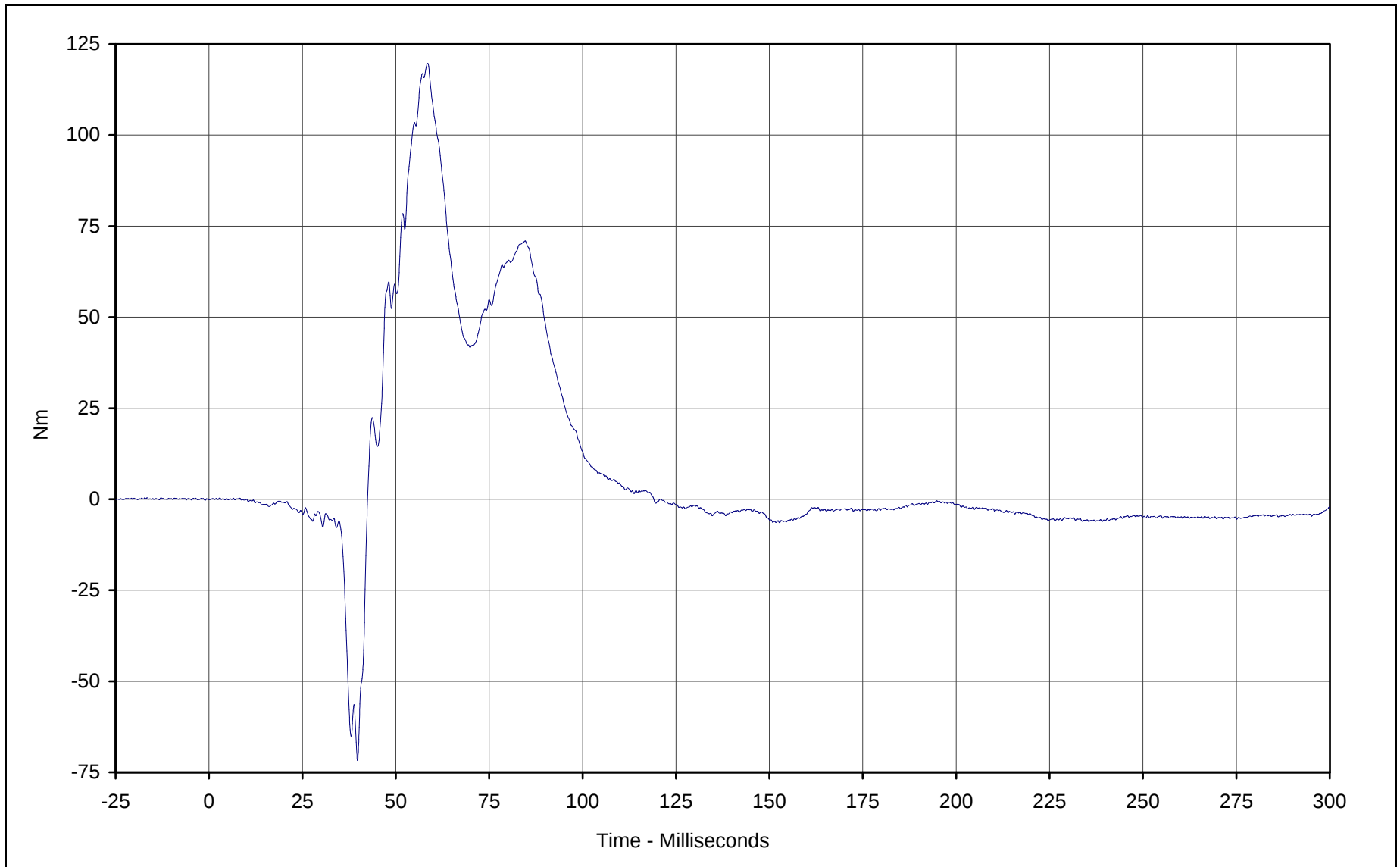


Curve Description: Driver Right Lower Tibia Moment X
Maximum Value: 27.5 at 41.1 Milliseconds
Minimum Value: -55.3 at 54.5 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: FIL-032

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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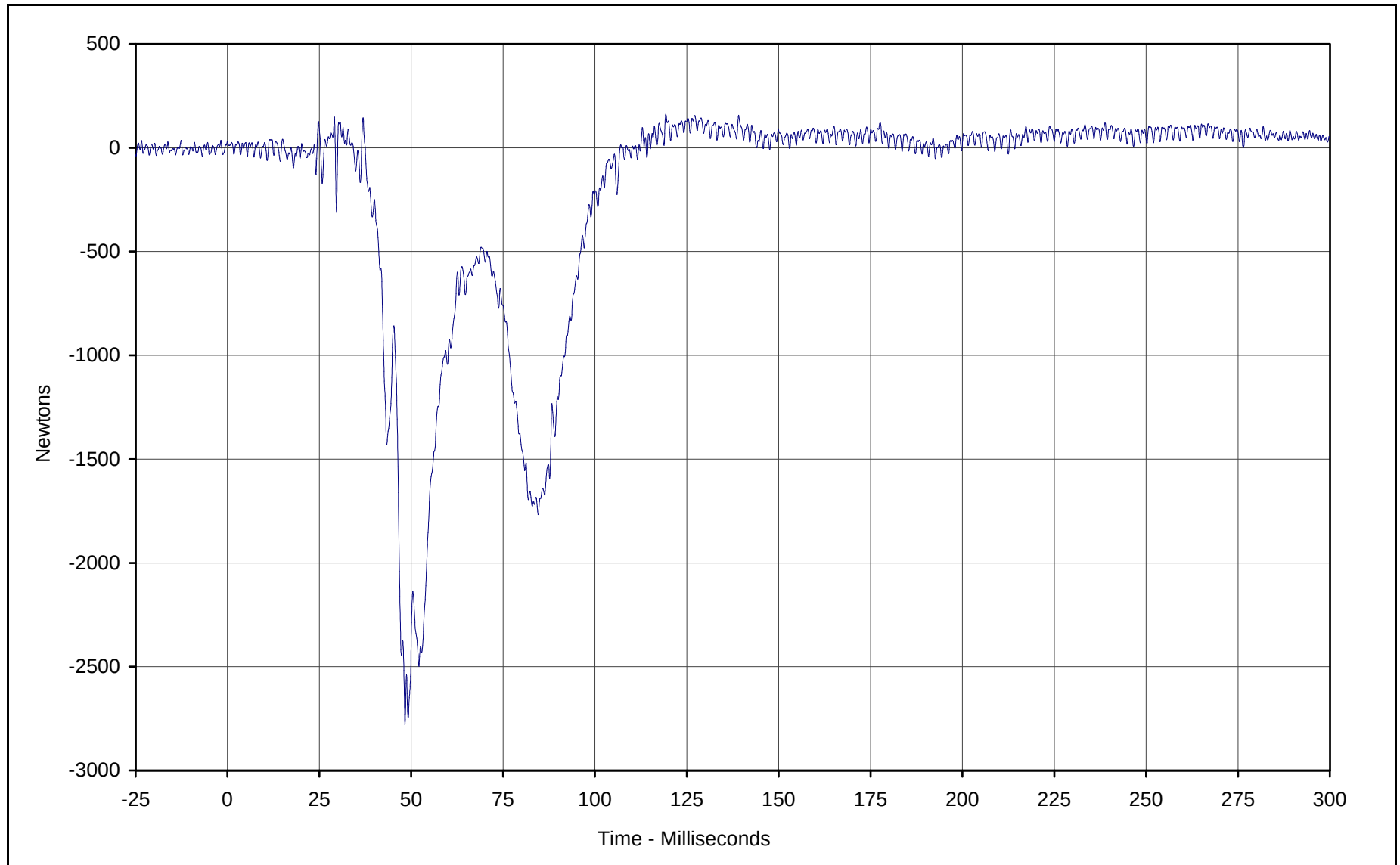


Curve Description: Driver Right Lower Tibia Moment Y
Maximum Value: 119.7 at 58.6 Milliseconds
Minimum Value: -71.8 at 39.8 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: FIL-033

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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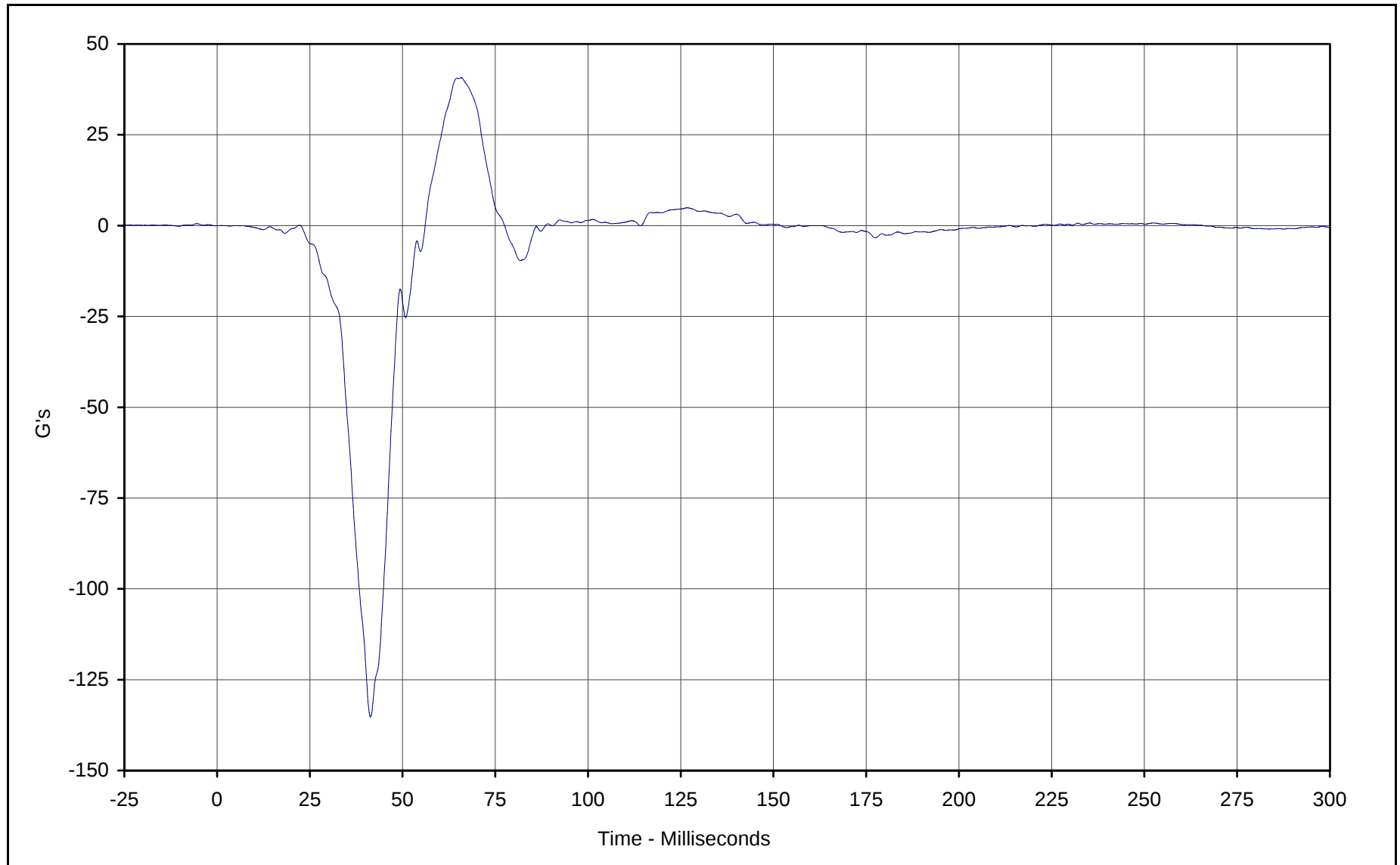


Curve Description: Driver Right Lower Tibia Force Z
Maximum Value: 163.1 at 119.3 Milliseconds
Minimum Value: -2779.2 at 48.3 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: FIL-034

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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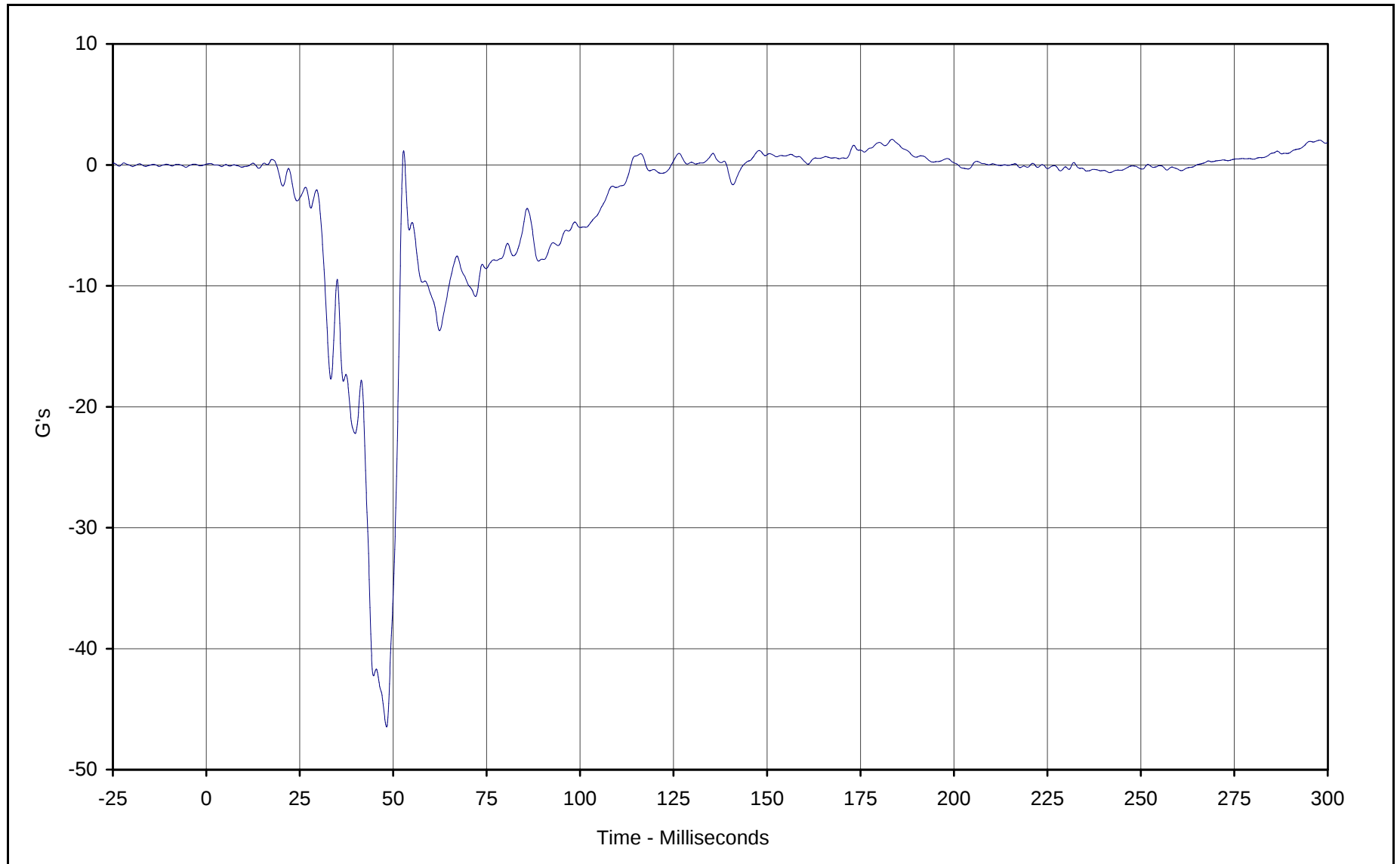
Curve Description: Driver Left Foot Aft X
Maximum Value: 40.7 at 65.8 Milliseconds
Minimum Value: -135.2 at 41.4 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-035

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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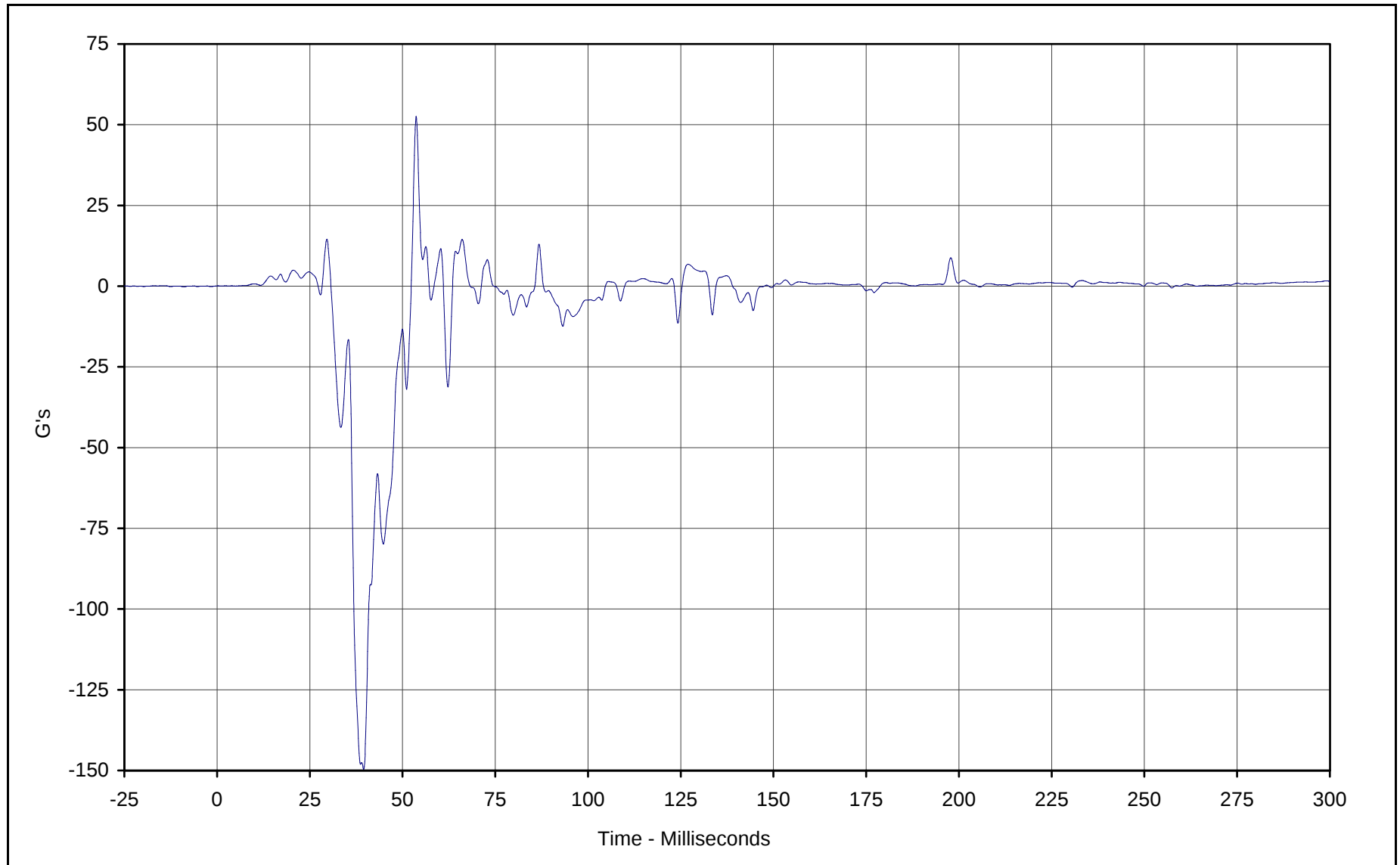
Curve Description: Driver Left Foot Aft Z
Maximum Value: 2.1 at 183.5 Milliseconds
Minimum Value: -46.5 at 48.2 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-036

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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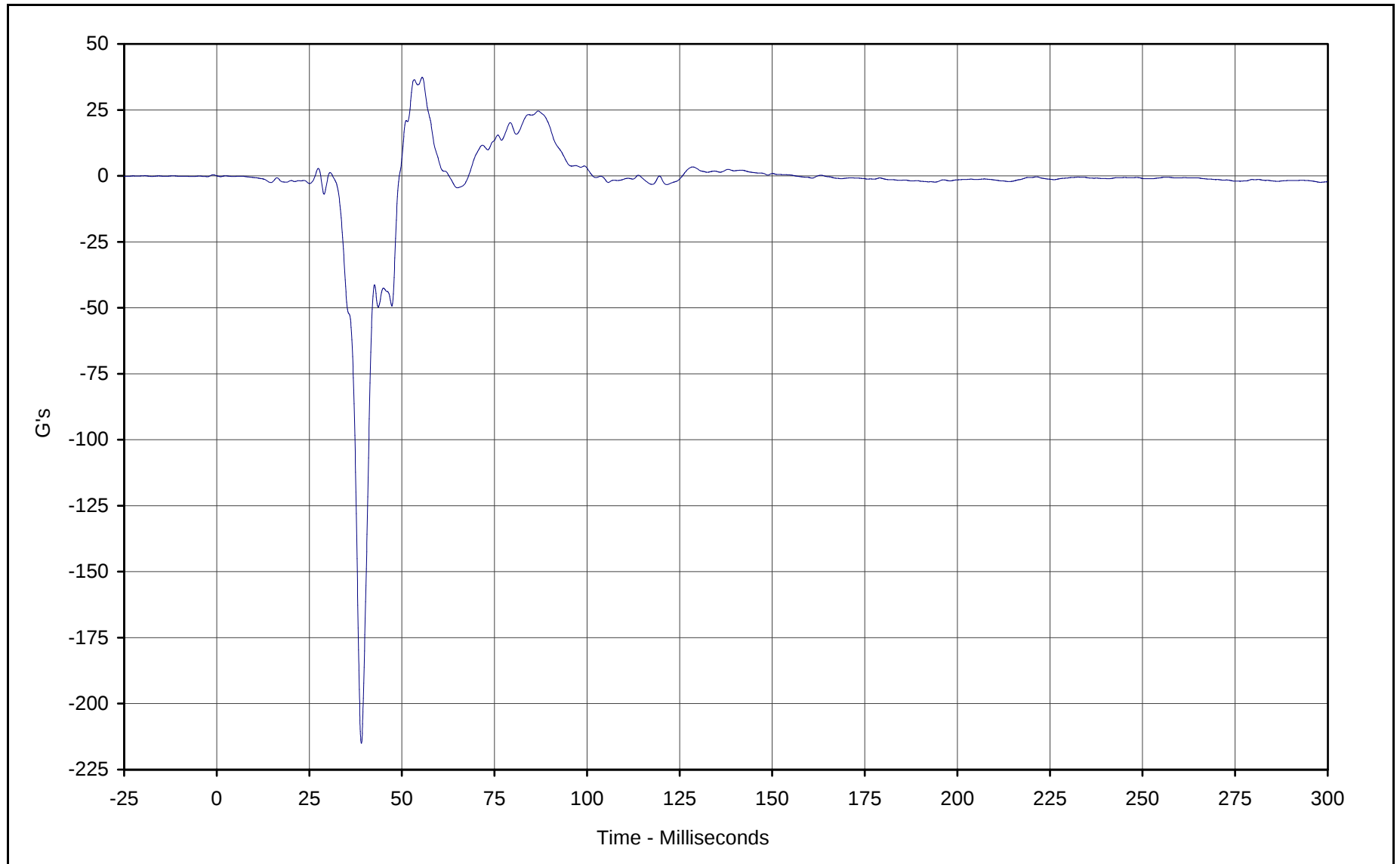
Curve Description: Driver Left Foot Fore Z
Maximum Value: 52.6 at 53.7 Milliseconds
Minimum Value: -149.6 at 39.5 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-037

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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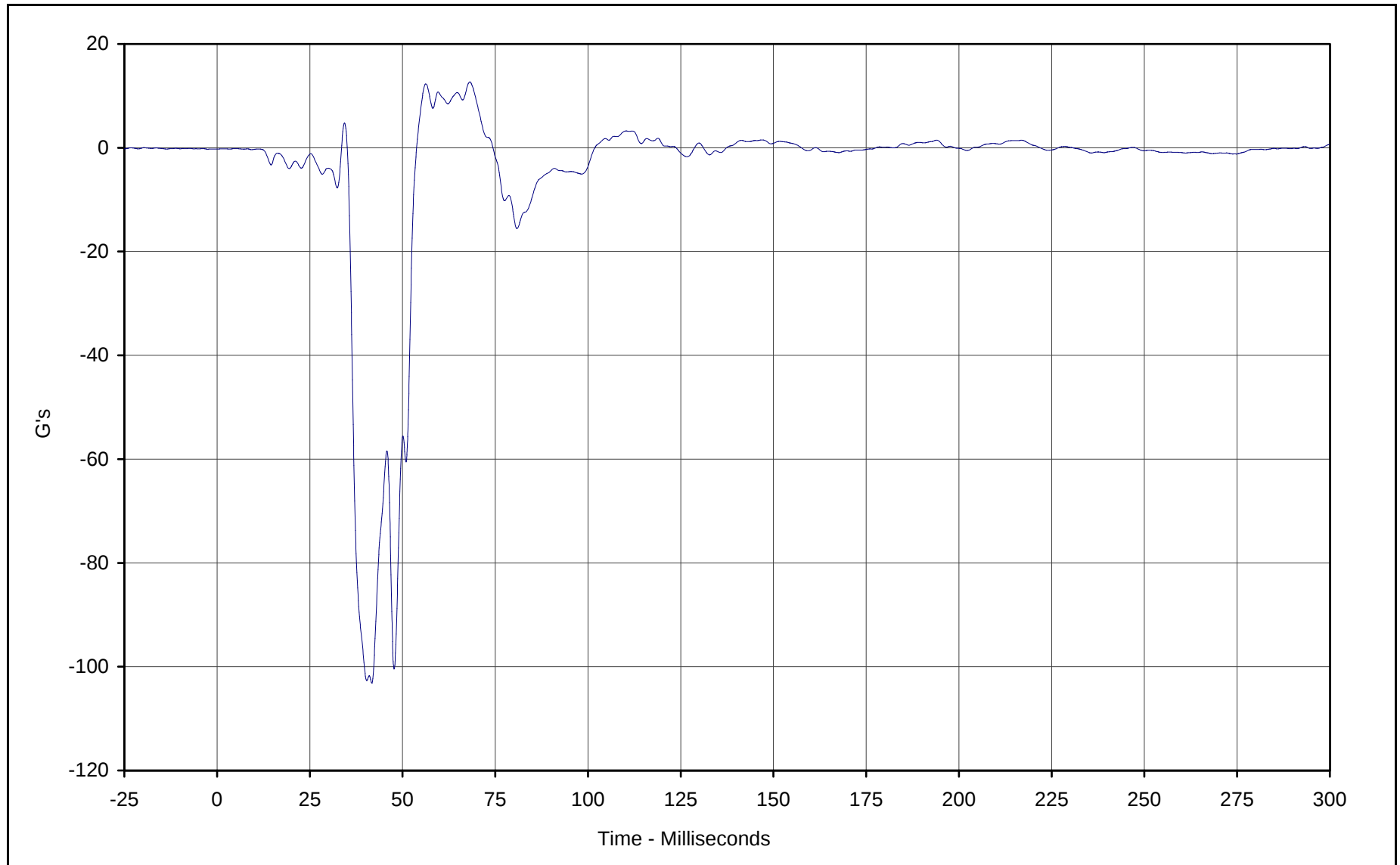


Curve Description: Driver Right Foot Aft X
Maximum Value: 37.4 at 55.5 Milliseconds
Minimum Value: -215.0 at 39.1 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-038

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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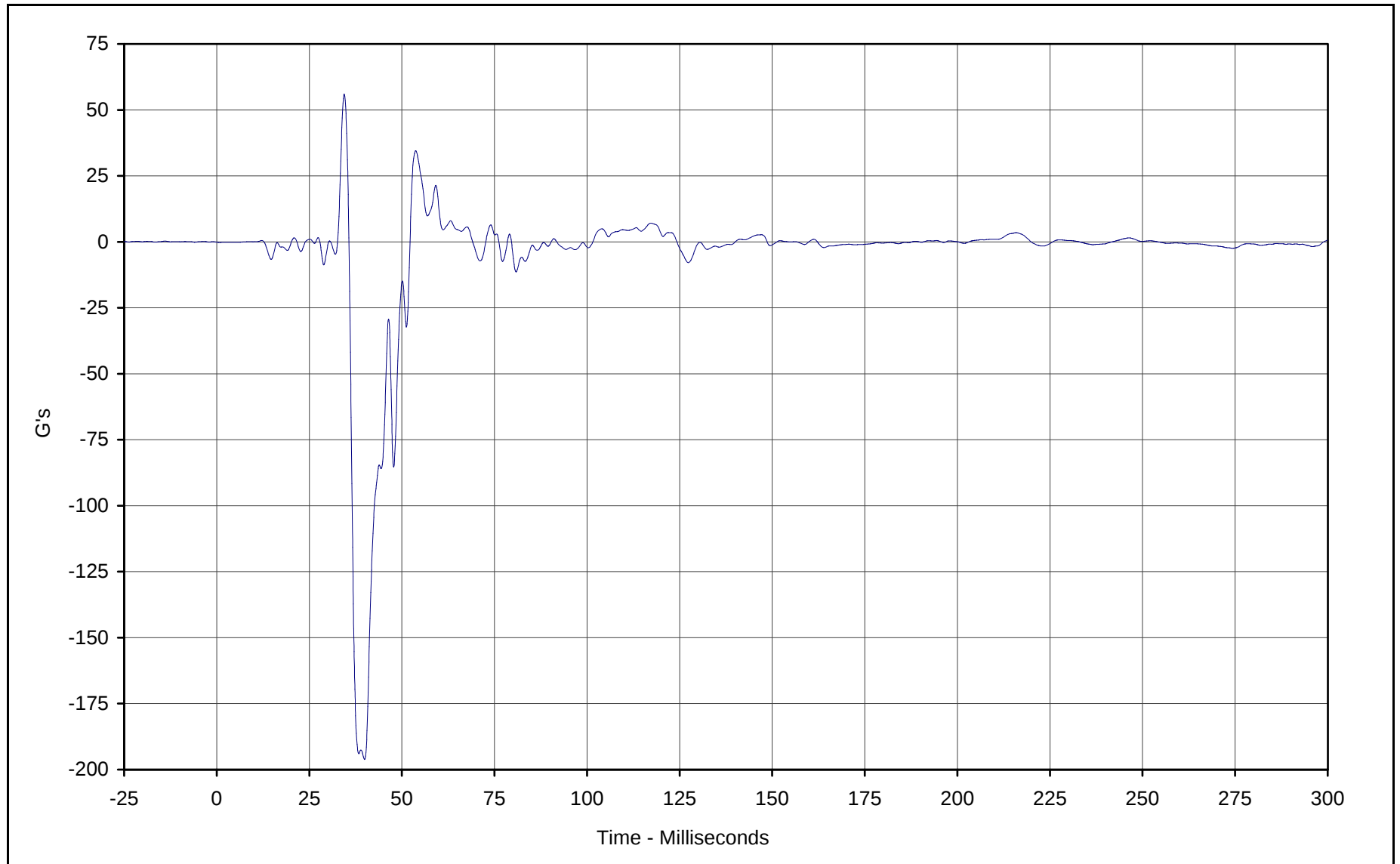


Curve Description: Driver Right Foot Aft Z
Maximum Value: 12.7 at 68.1 Milliseconds
Minimum Value: -103.2 at 41.7 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-039

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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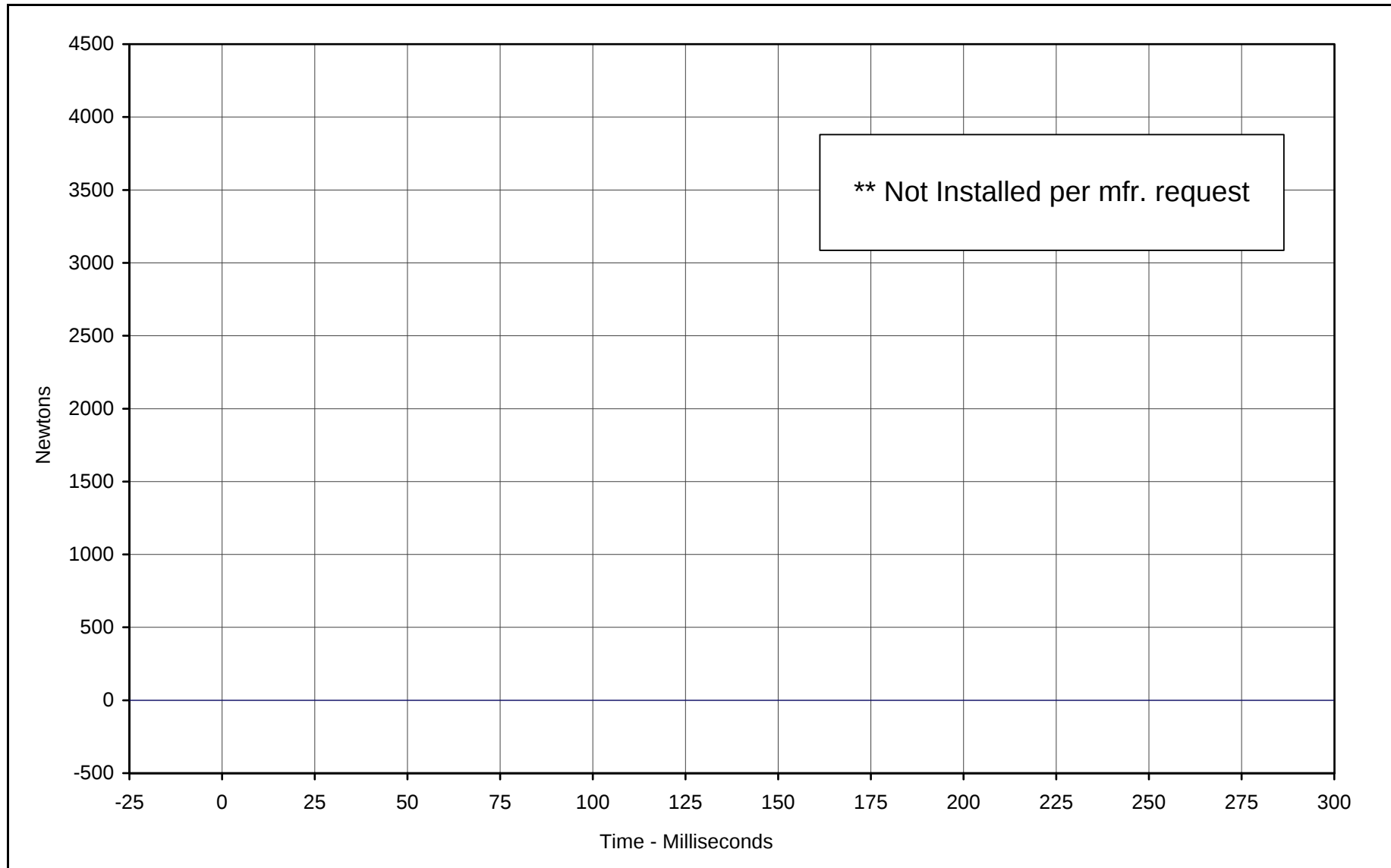
Curve Description: Driver Right Foot Fore Z
Maximum Value: 56.0 at 34.4 Milliseconds
Minimum Value: -196.2 at 39.9 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-040

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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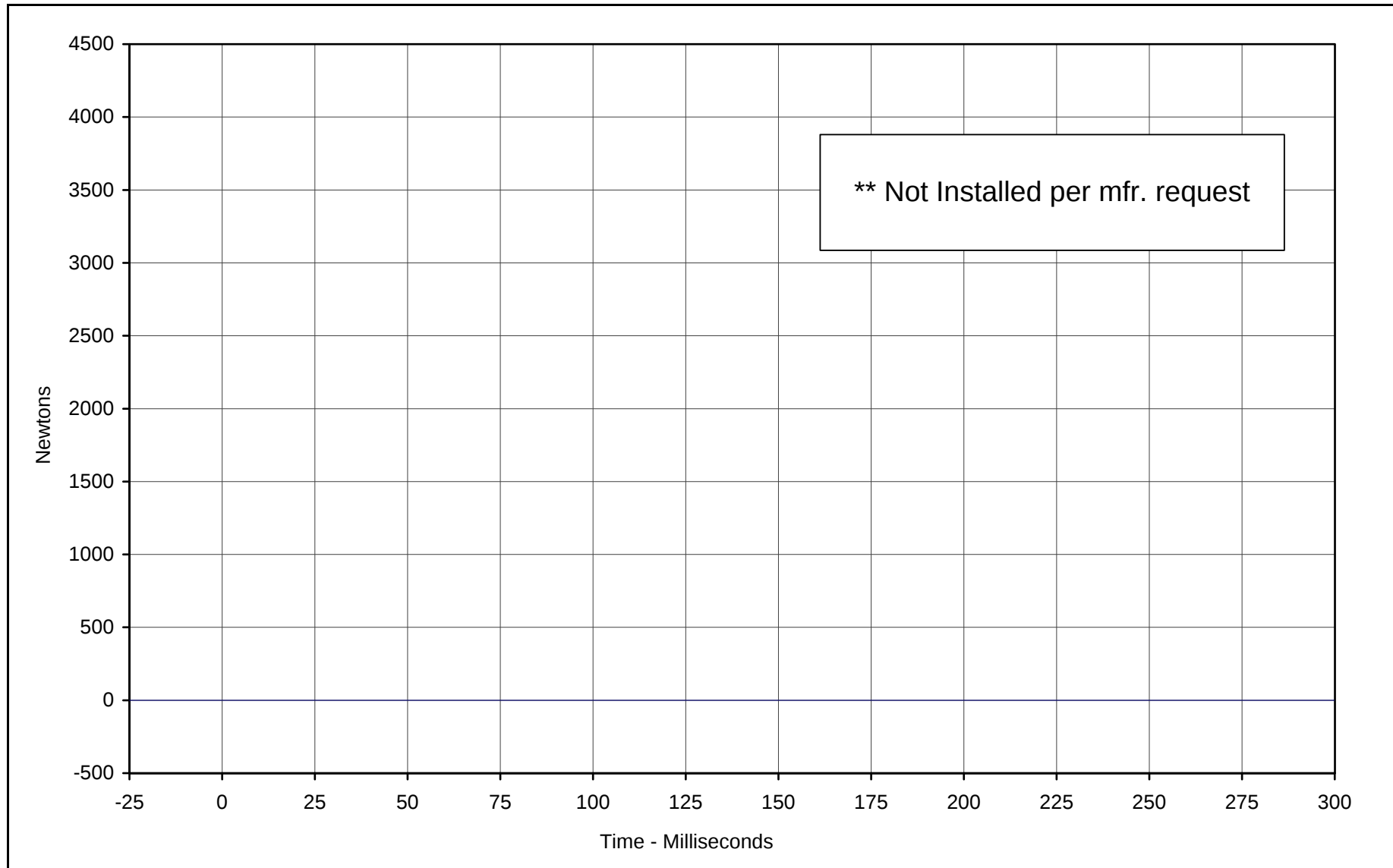
Curve Description: Driver Lap Belt Force **
Maximum Value: 0.0 at 0.0 Milliseconds
Minimum Value: 0.0 at 0.0 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-041

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

** Not installed per mfr. Request



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Curve Description: Driver Shoulder Belt Force **

Maximum Value: 0.0 at 0.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 60

Date of Test: 7/31/01

Curve Number: FIL-042

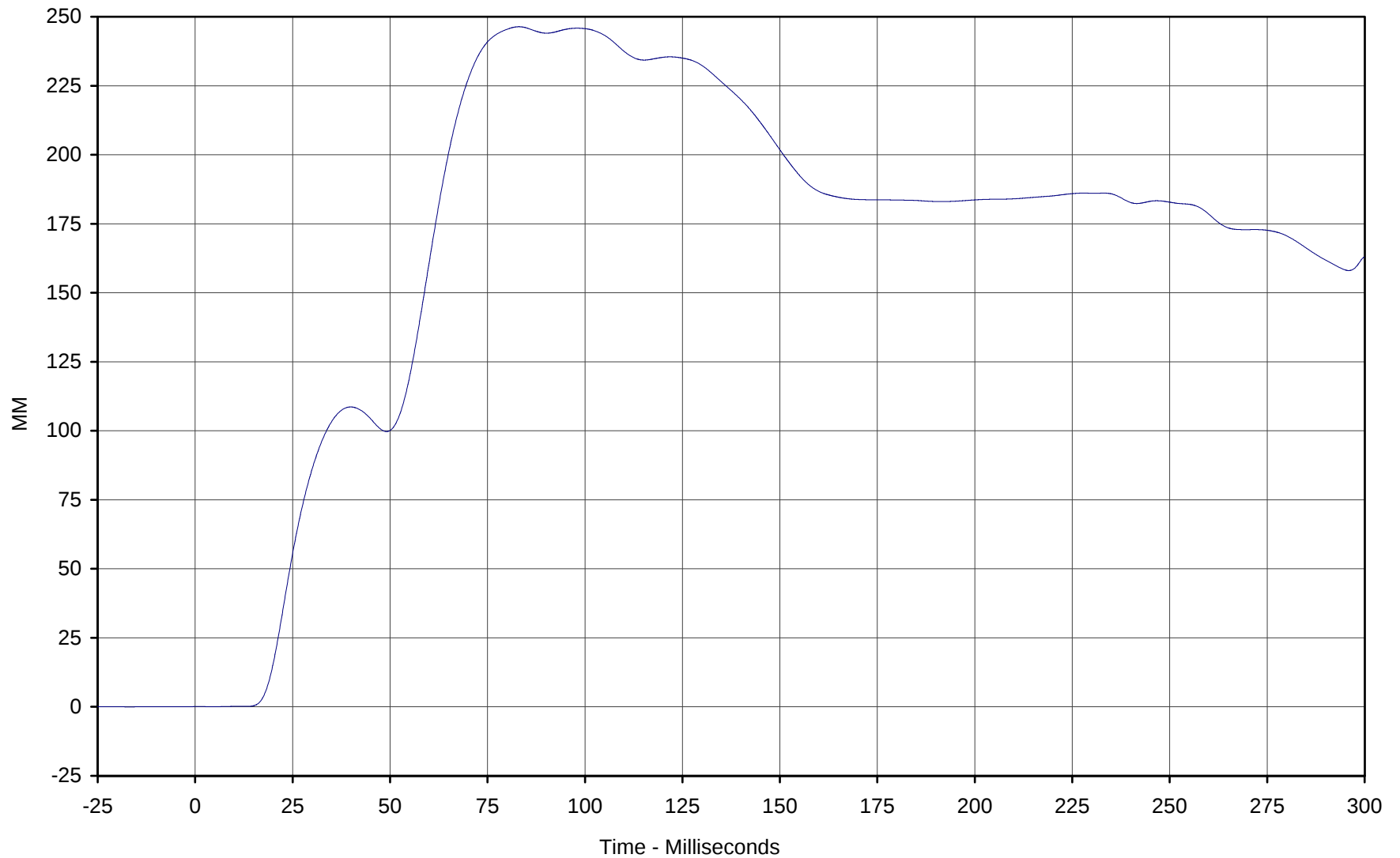
Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

** Not installed per mfr. Request



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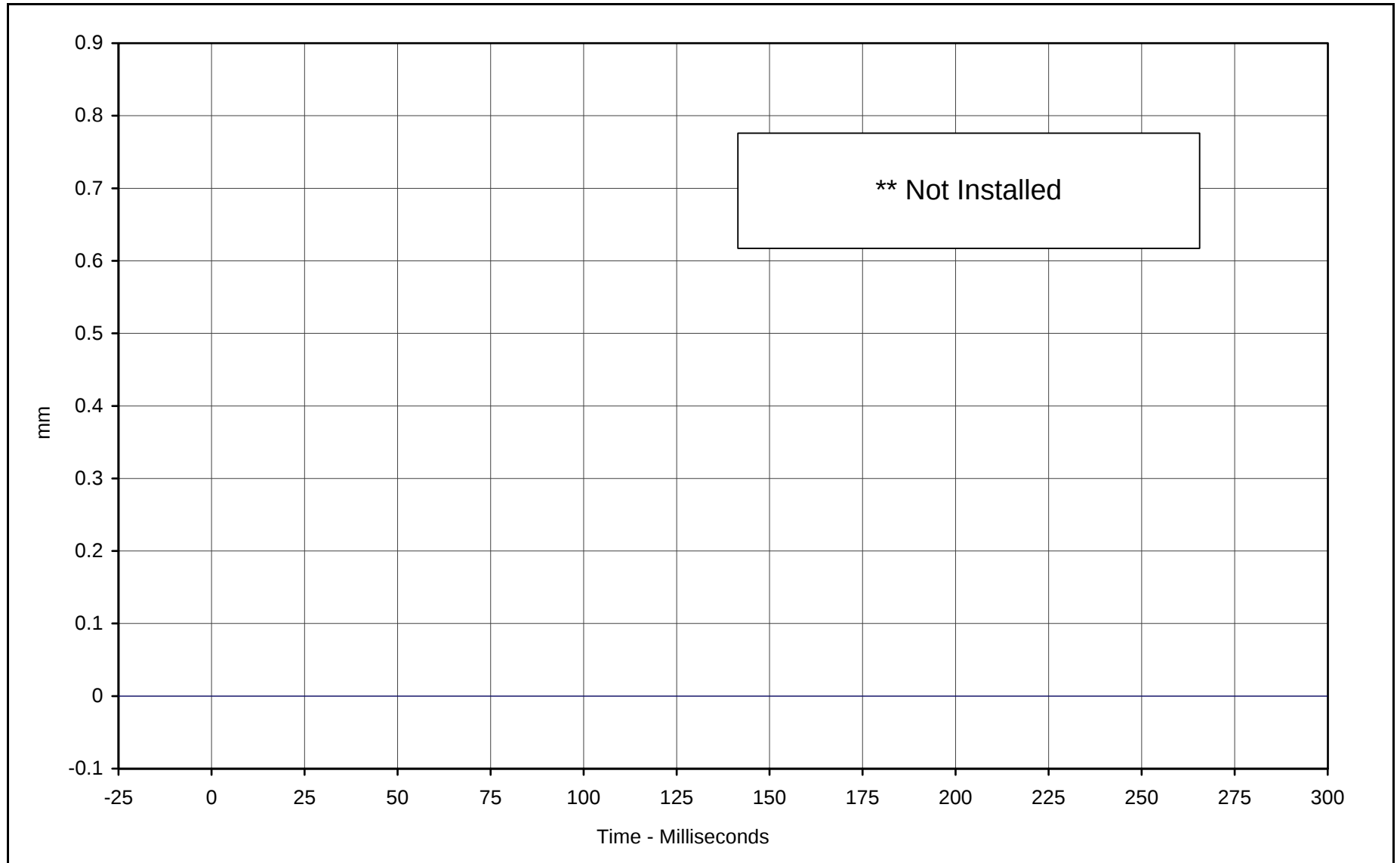


Curve Description: Driver Shoulder Belt Pullout
Maximum Value: 246.4 at 83.1 Milliseconds
Minimum Value: 0.0 at 4.6 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-043

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Driver Shoulder Belt Elongation **

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Maximum Value: 0.0 at 0.0 Milliseconds

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 600

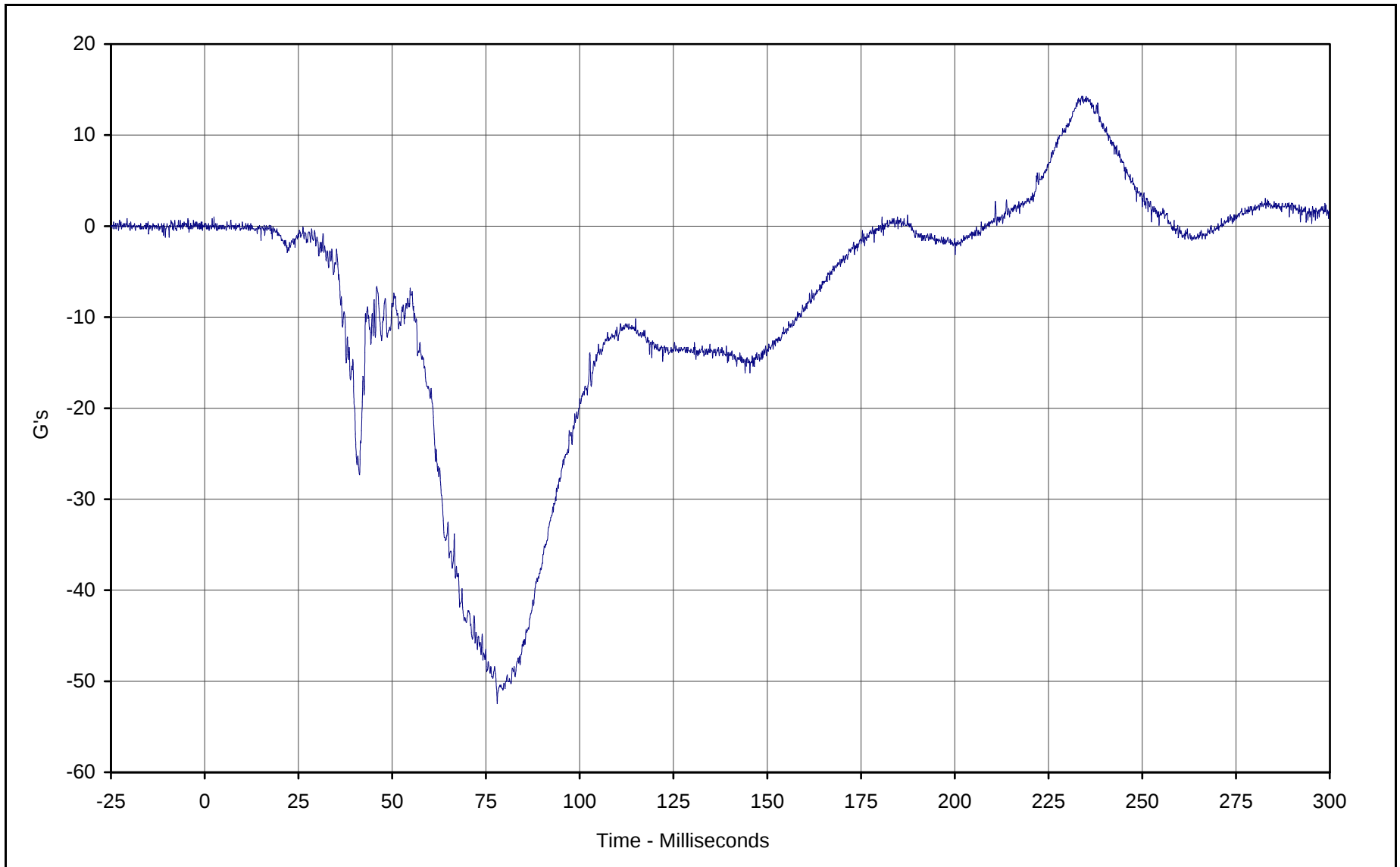
Date of Test: 7/31/01

Curve Number: FIL-044

** Not installed



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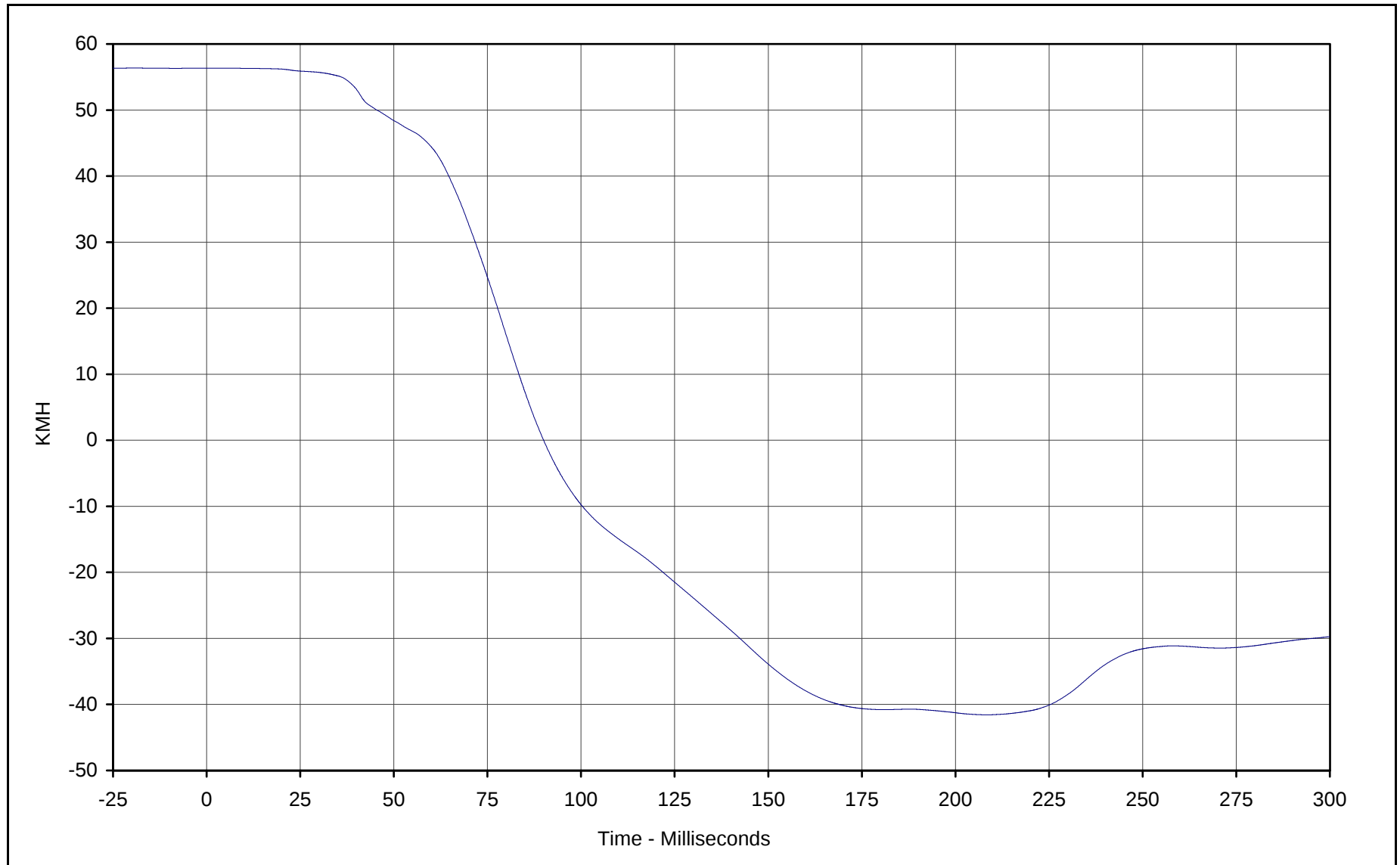
Curve Description: Passenger Head Primary X
Maximum Value: 14.3 at 233.9 Milliseconds
Minimum Value: -52.5 at 78.0 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: FIL-045

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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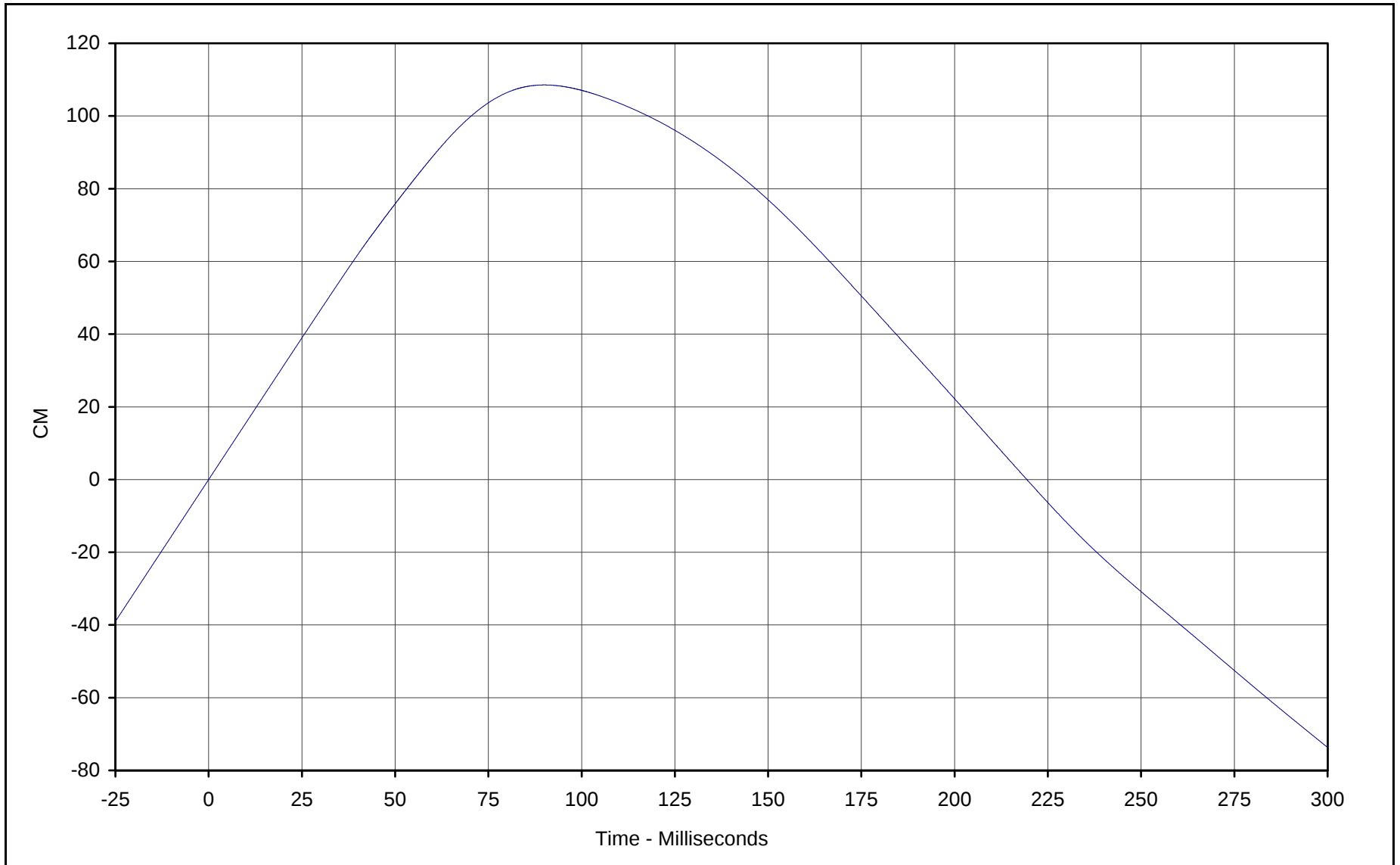
Curve Description: Passenger Head Primary X Velocity
Maximum Value: 56.3 at 0.0 Milliseconds
Minimum Value: -41.6 at 208.3 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN1-045

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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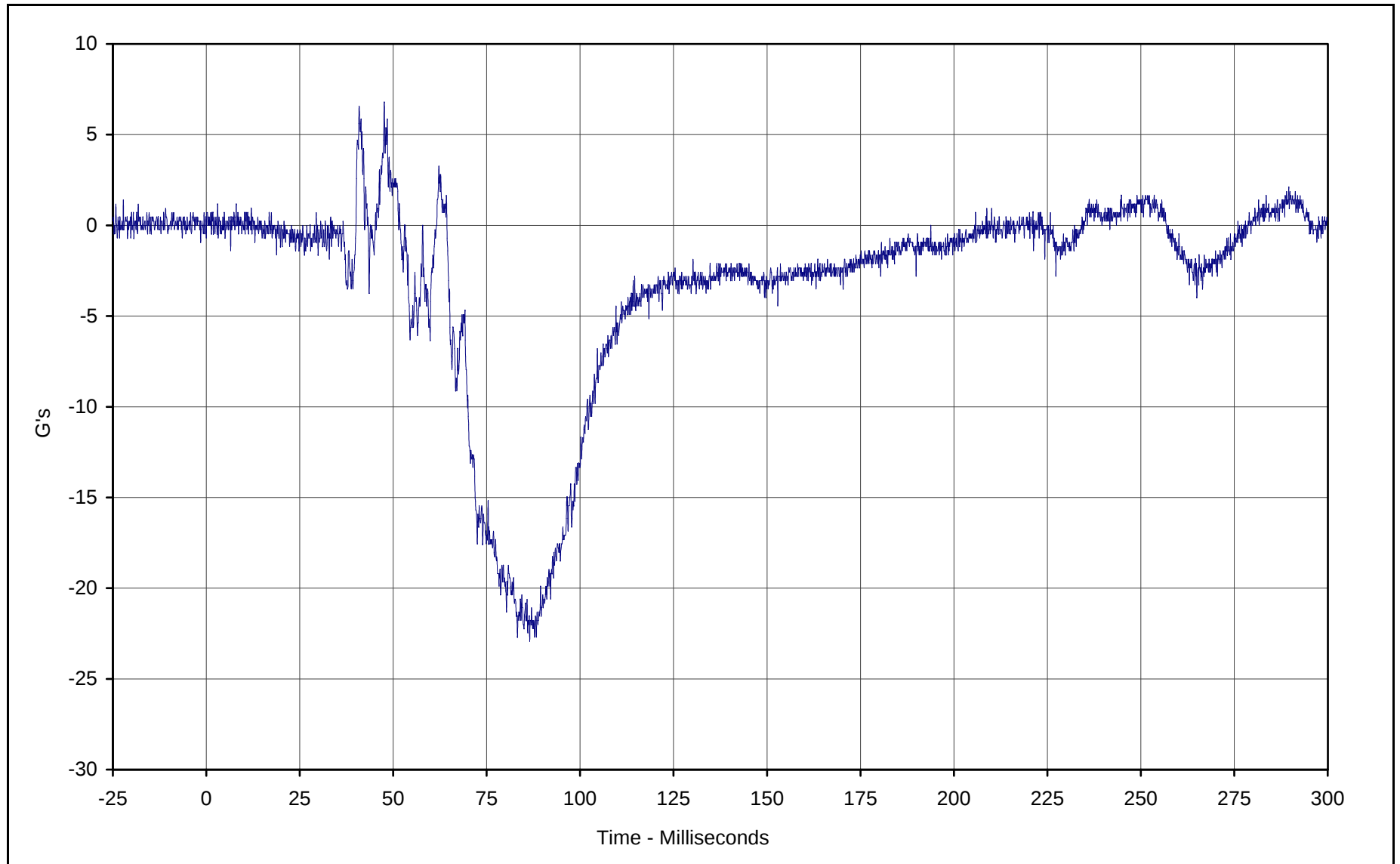
Curve Description: Passenger Head Primary X Displ.
Maximum Value: 108.5 at 90.0 Milliseconds
Minimum Value: -73.6 at 299.9 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN2-045

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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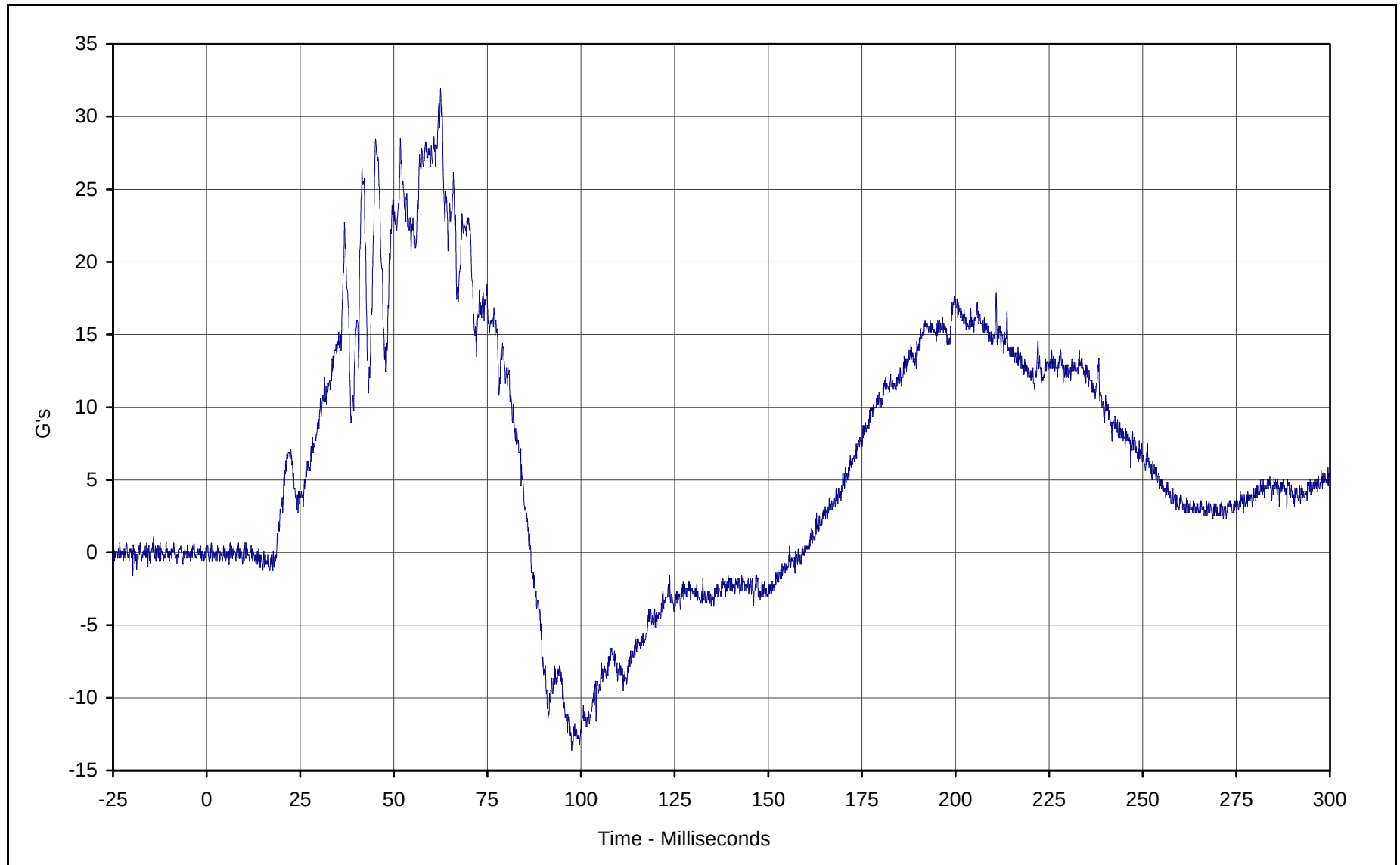
Curve Description: Passenger Head Primary Y
Maximum Value: 6.8 at 47.6 Milliseconds
Minimum Value: -22.9 at 86.5 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: FIL-046

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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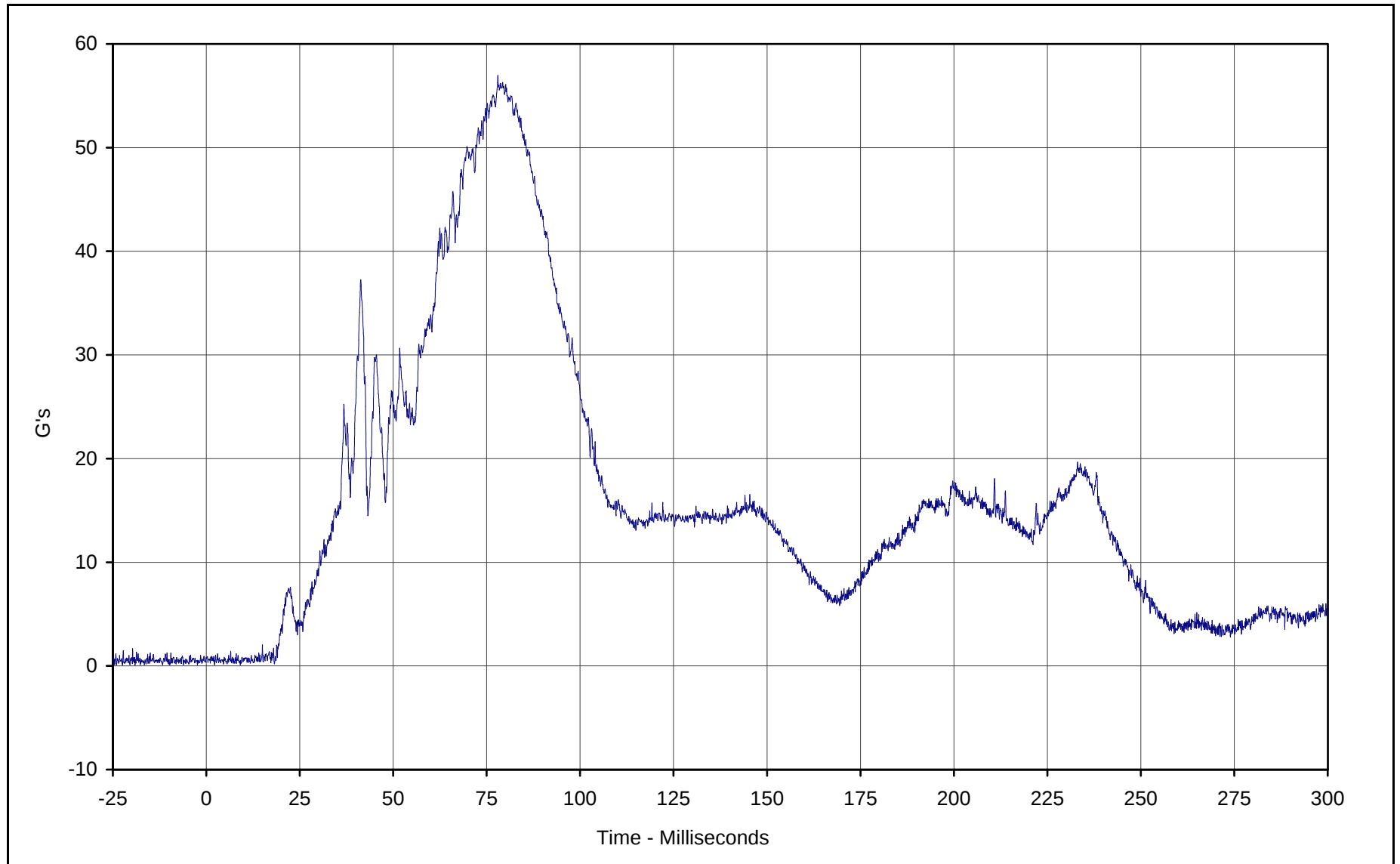
Curve Description: Passenger Head Primary Z
Maximum Value: 31.9 at 62.5 Milliseconds
Minimum Value: -13.6 at 97.5 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: FIL-047

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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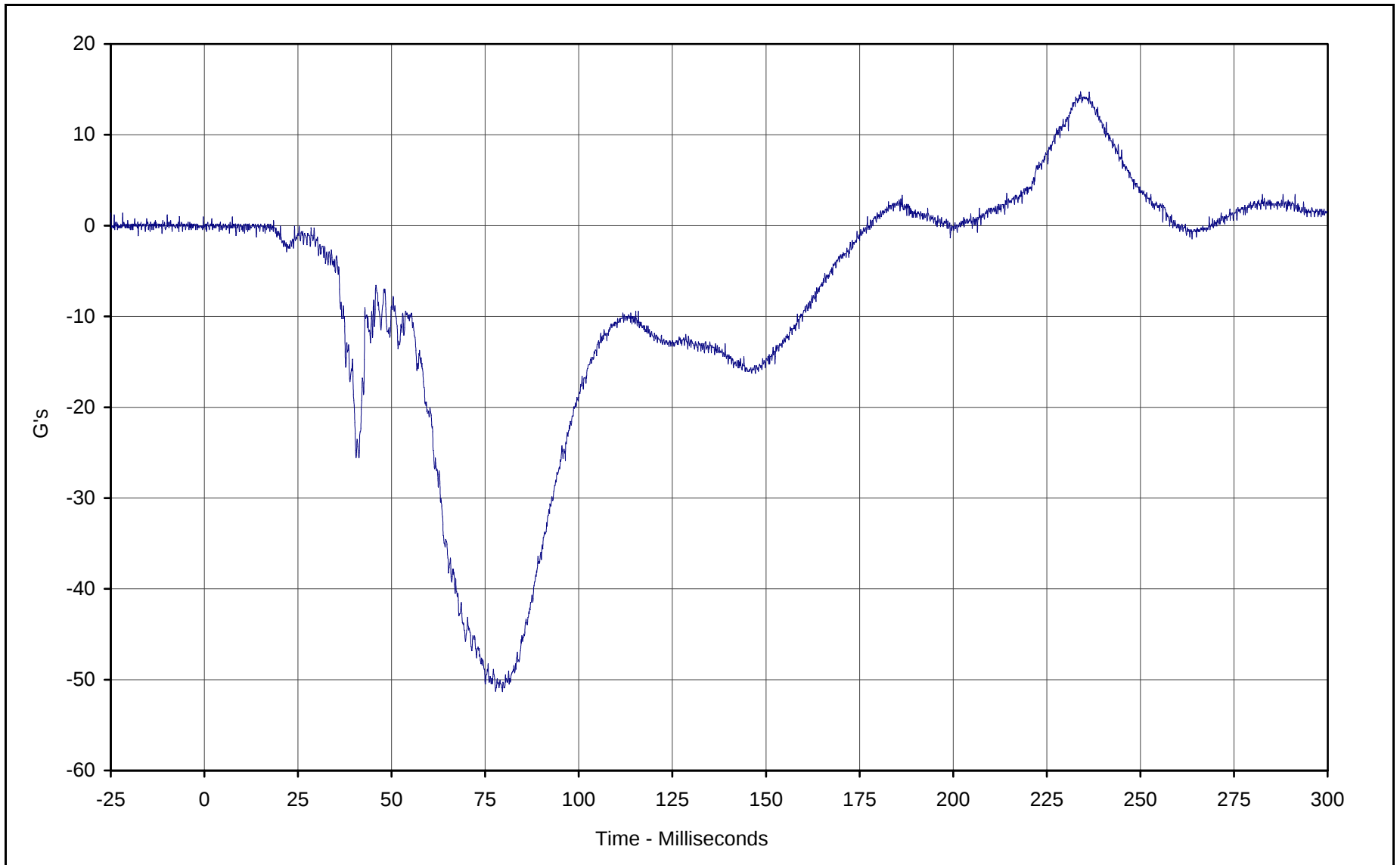
Curve Description: Passenger Head Resultant Primary
Maximum Value: 57.0 at 78.0 Milliseconds
Minimum Value: 0.1 at 2.2 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: RES-045

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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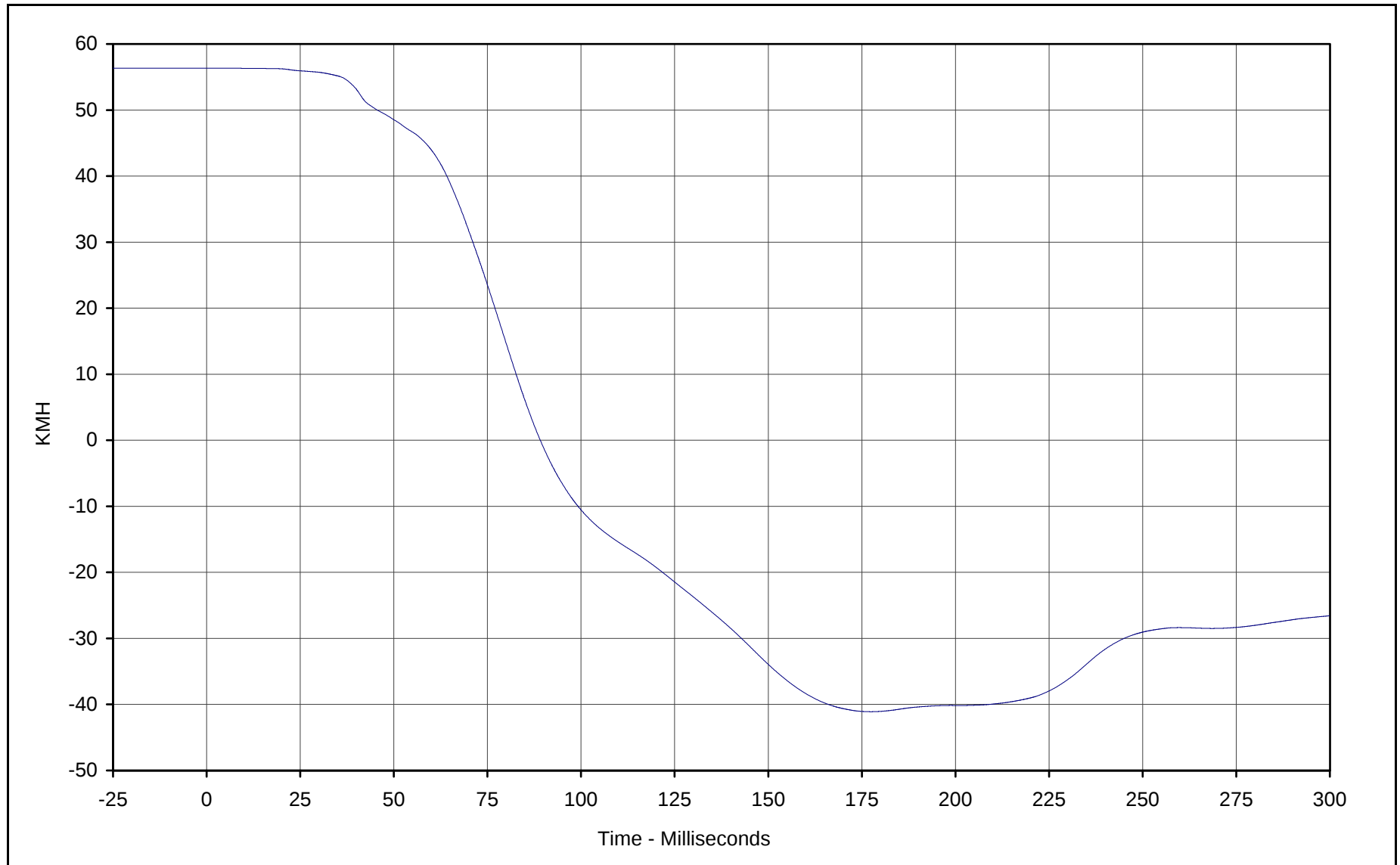


Curve Description: Passenger Head Redundant X
Maximum Value: 14.8 at 234.0 Milliseconds
Minimum Value: -51.3 at 77.8 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: FIL-048

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Passenger Head Redundant X Velocity

Maximum Value: 56.3 at 0.0 Milliseconds

Minimum Value: -41.1 at 177.5 Milliseconds

SAE Filter Class: 180

Date of Test: 7/31/01

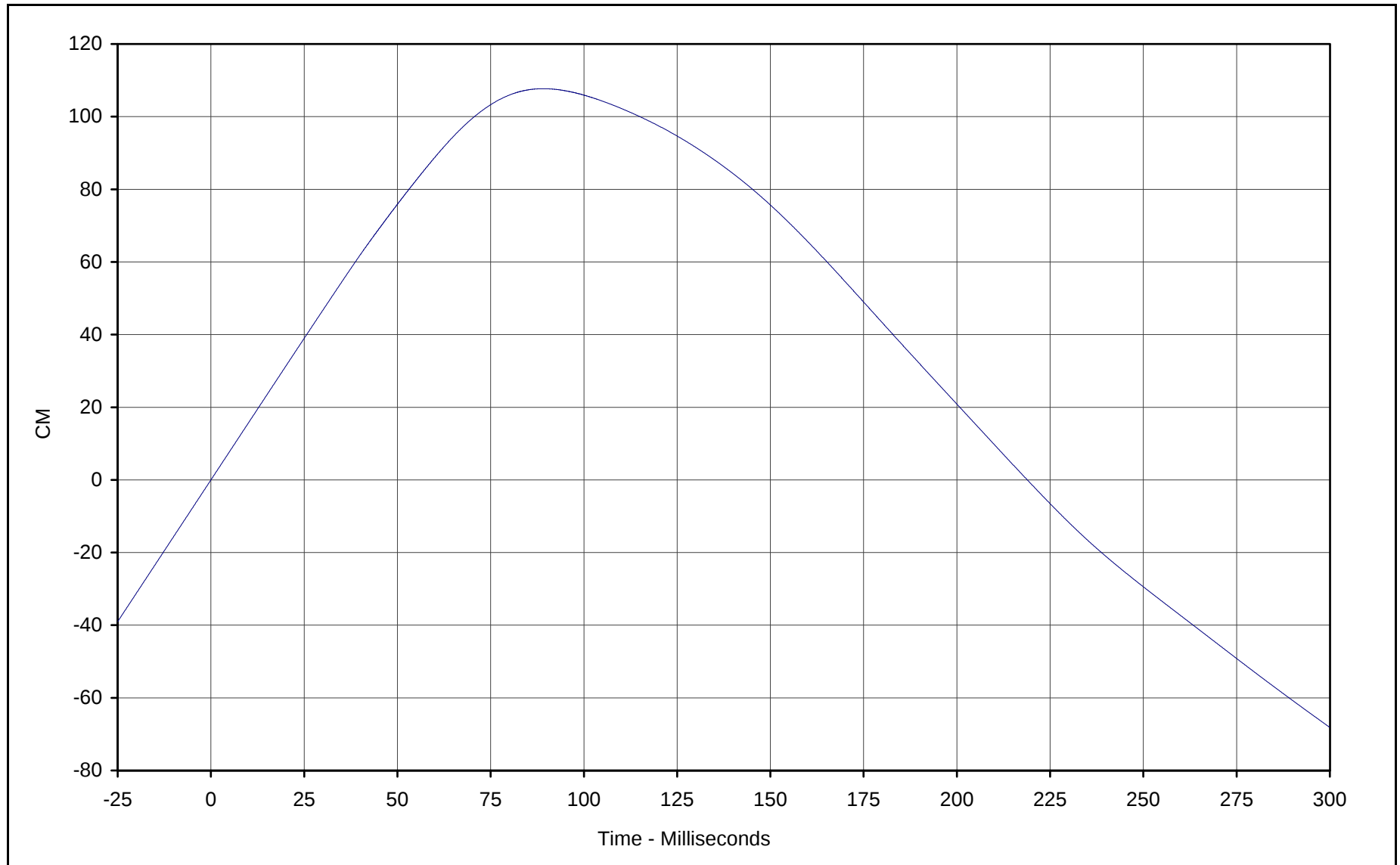
Curve Number: IN1-048

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Passenger Head Redundant X Displ.

Maximum Value: 107.7 at 89.1 Milliseconds

Minimum Value: -68.1 at 299.9 Milliseconds

SAE Filter Class: 180

Date of Test: 7/31/01

Curve Number: IN2-048

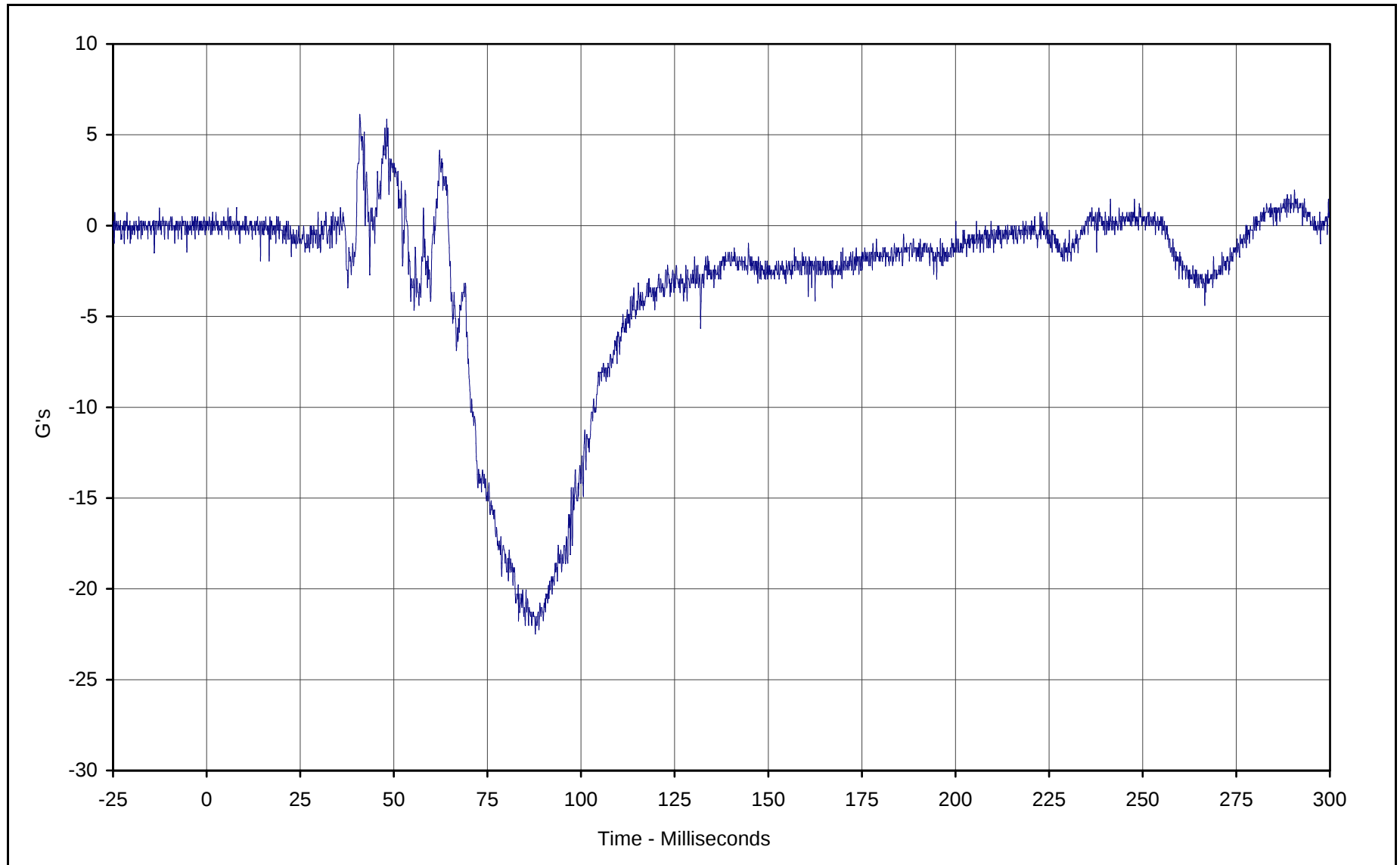
Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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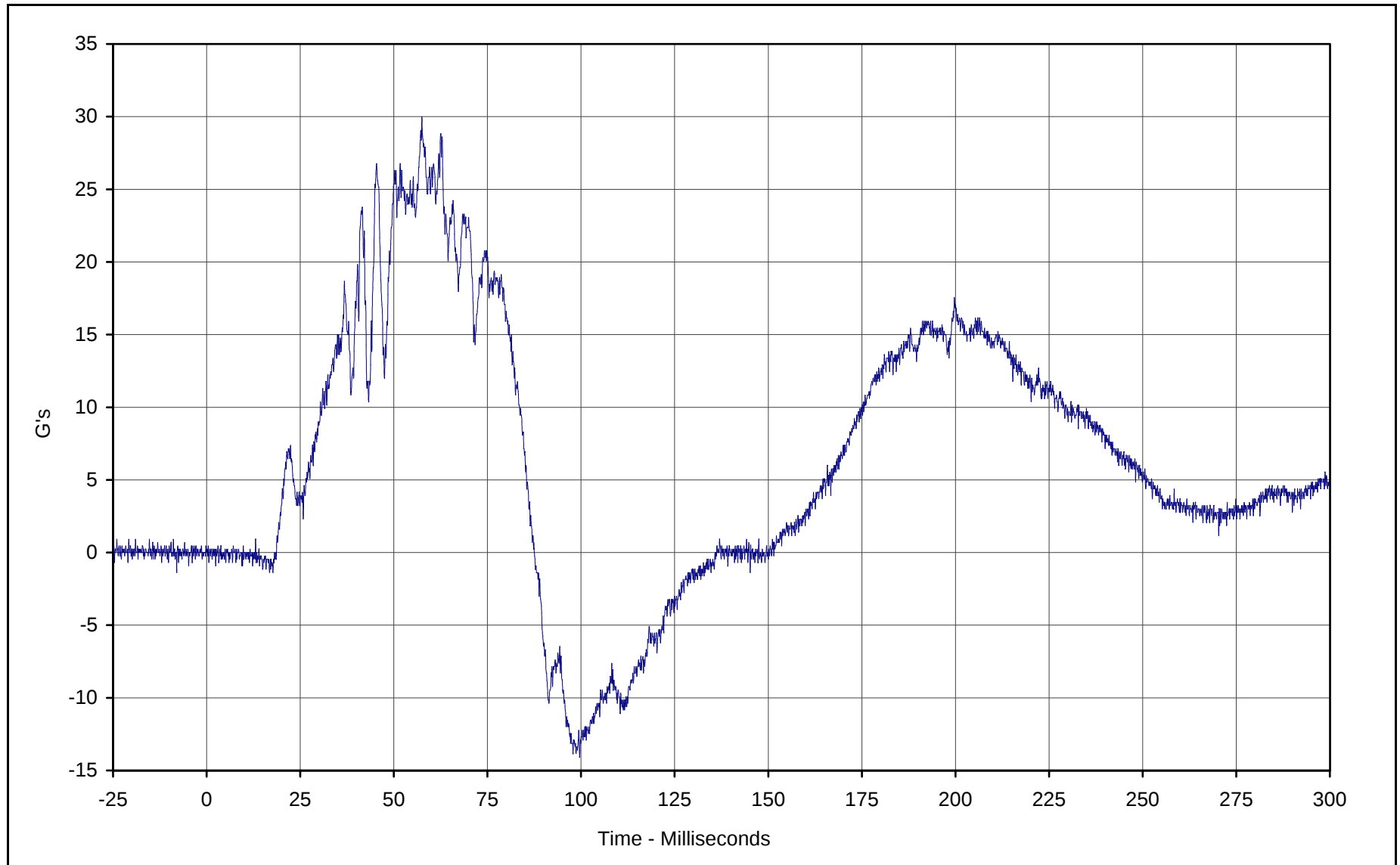
Curve Description: Passenger Head Redundant Y
Maximum Value: 6.1 at 40.9 Milliseconds
Minimum Value: -22.5 at 87.8 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: FIL-049

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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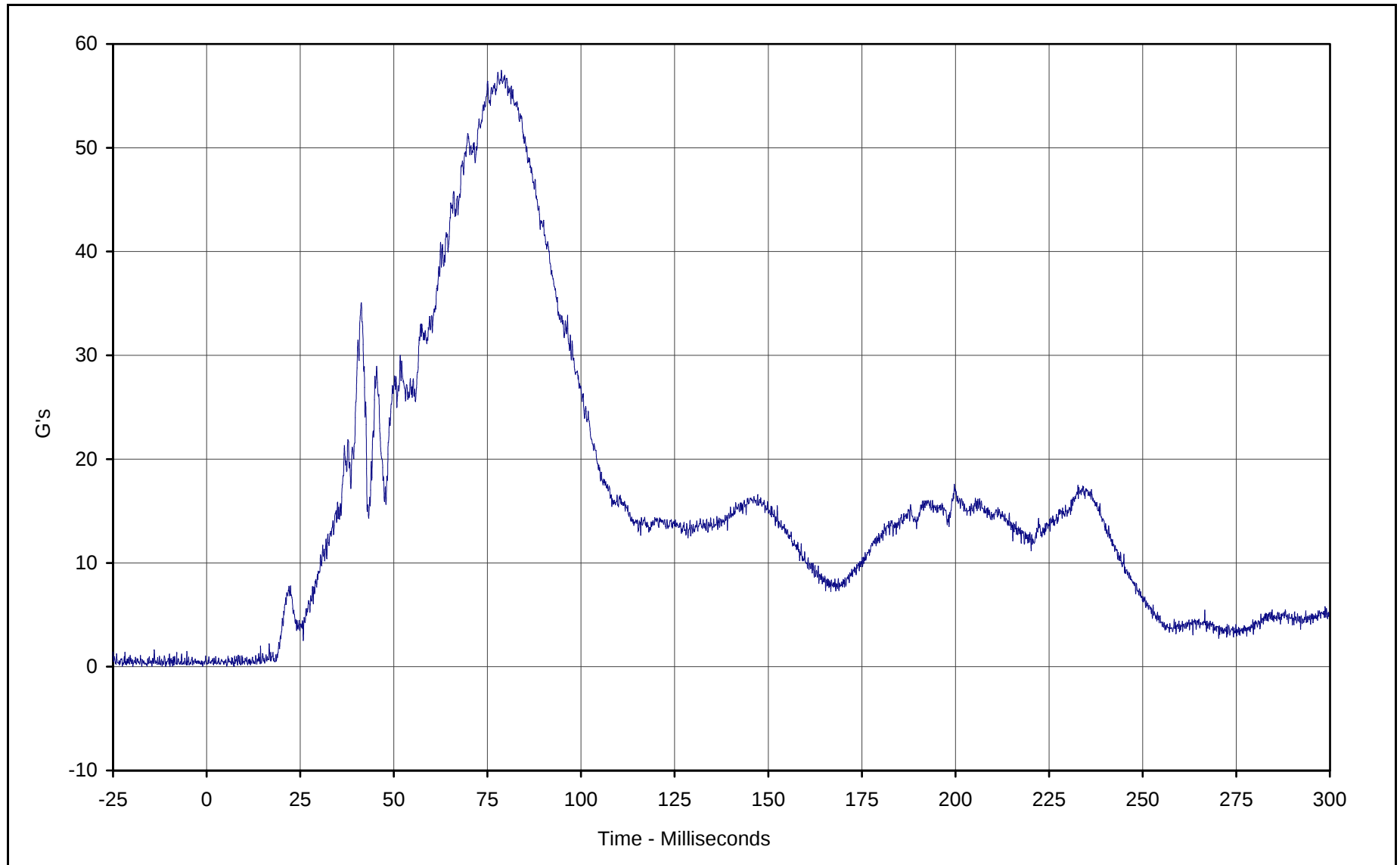
Curve Description: Passenger Head Redundant Z
Maximum Value: 30.0 at 57.5 Milliseconds
Minimum Value: -14.1 at 99.6 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: FIL-050

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Passenger Head Resultant Redundant

Maximum Value: 57.5 at 78.7 Milliseconds

Minimum Value: 0.0 at 5.4 Milliseconds

SAE Filter Class: 1000

Date of Test: 7/31/01

Curve Number: RES-048

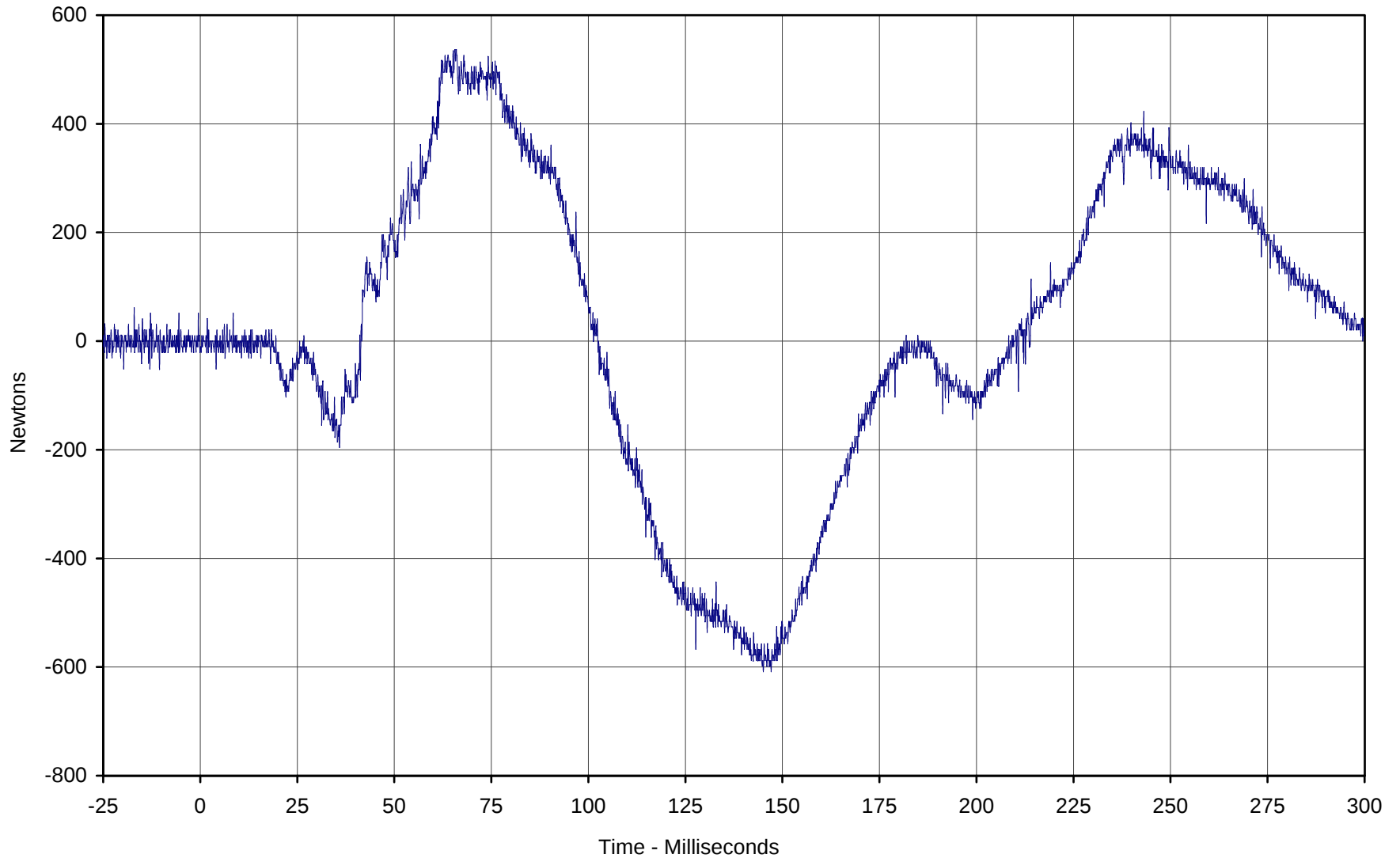
Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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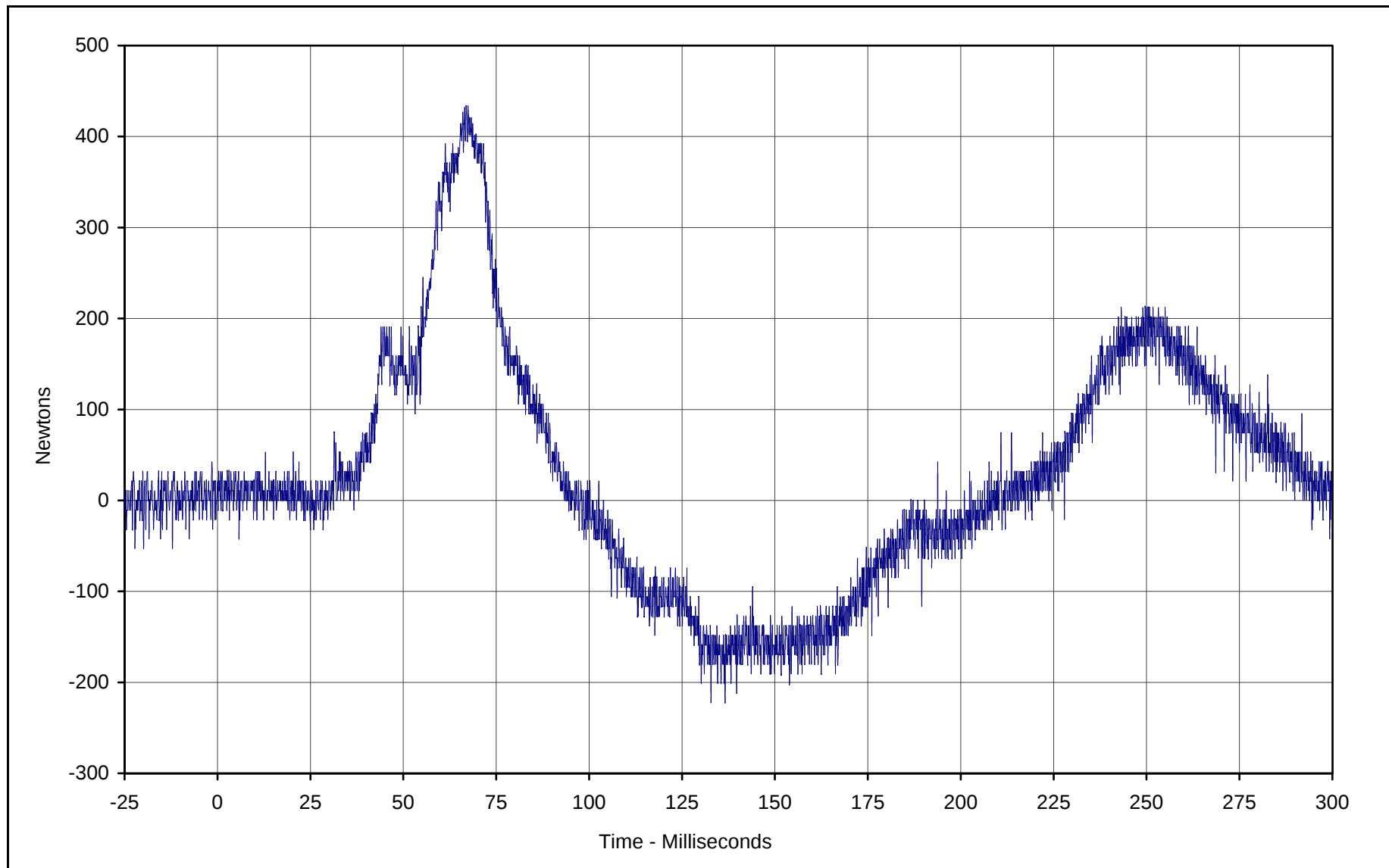
Curve Description: Passenger Neck Force X
Maximum Value: 536.5 at 65.6 Milliseconds
Minimum Value: -608.7 at 145.1 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: FIL-051

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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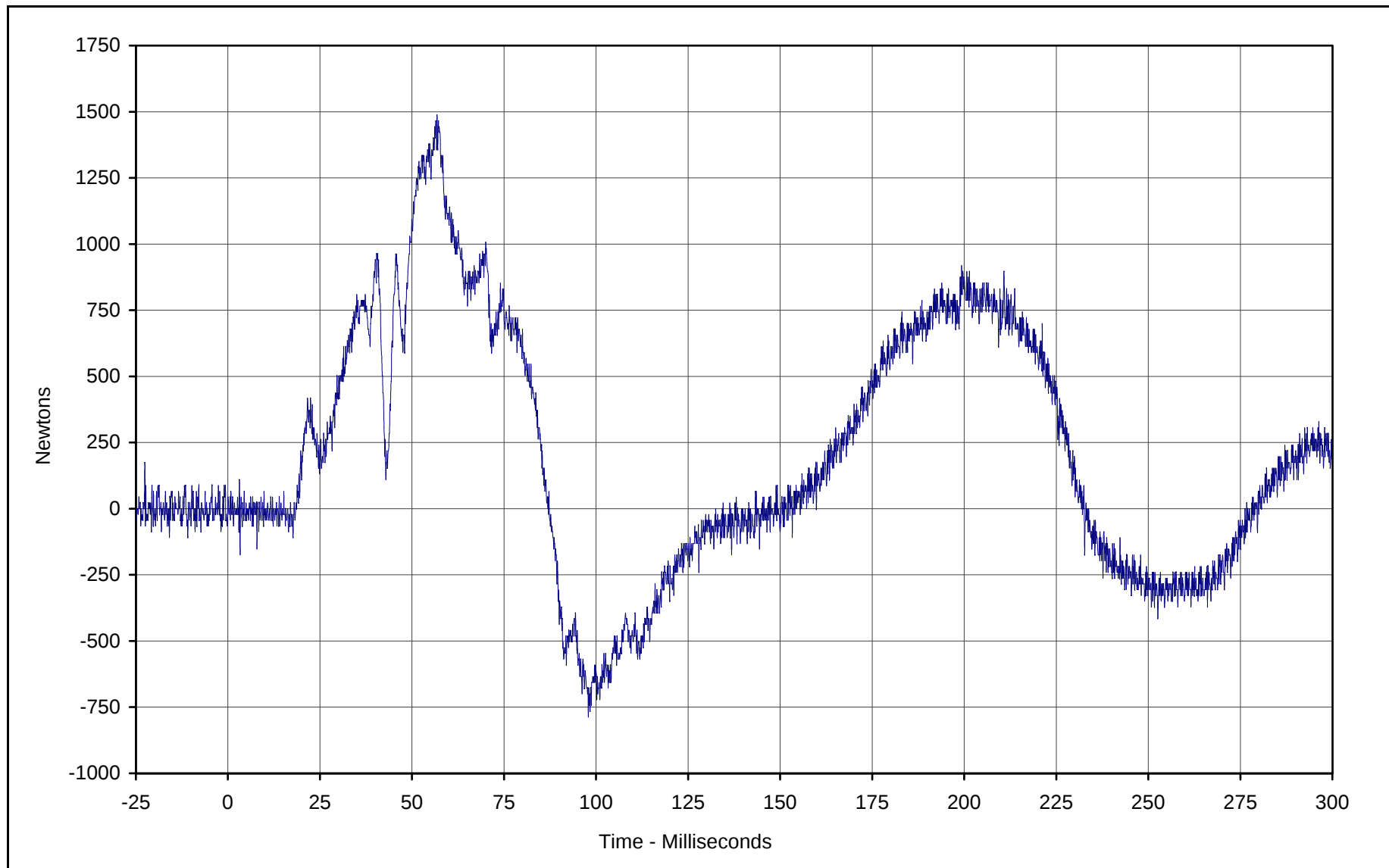


Curve Description: Passenger Neck Force Y
Maximum Value: 433.4 at 66.9 Milliseconds
Minimum Value: -222.5 at 132.8 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: FIL-052

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



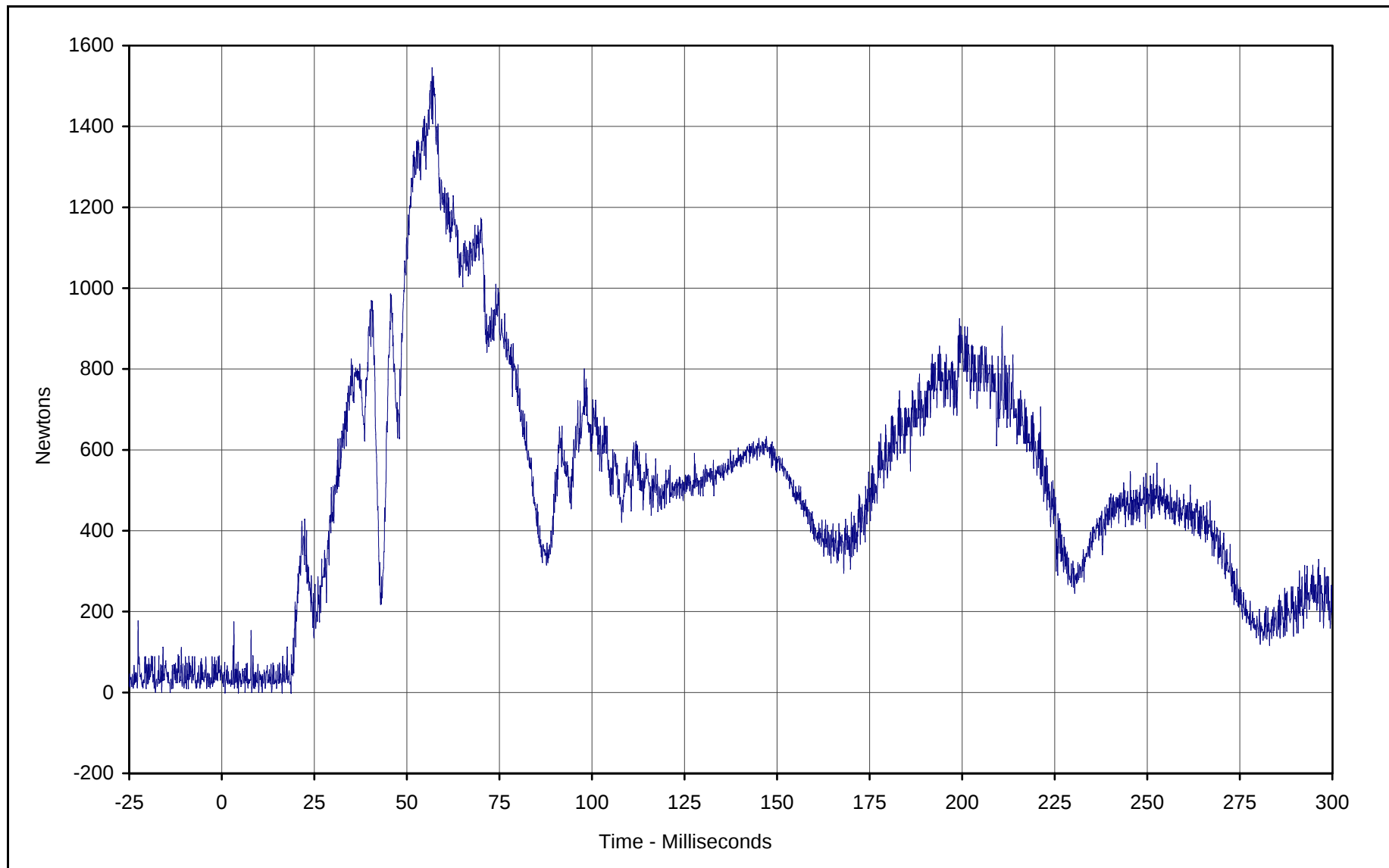
KAR21082-01



Curve Description: Passenger Neck Force Z
Maximum Value: 1487.7 at 56.8 Milliseconds
Minimum Value: -787.6 at 97.9 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: FIL-053

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



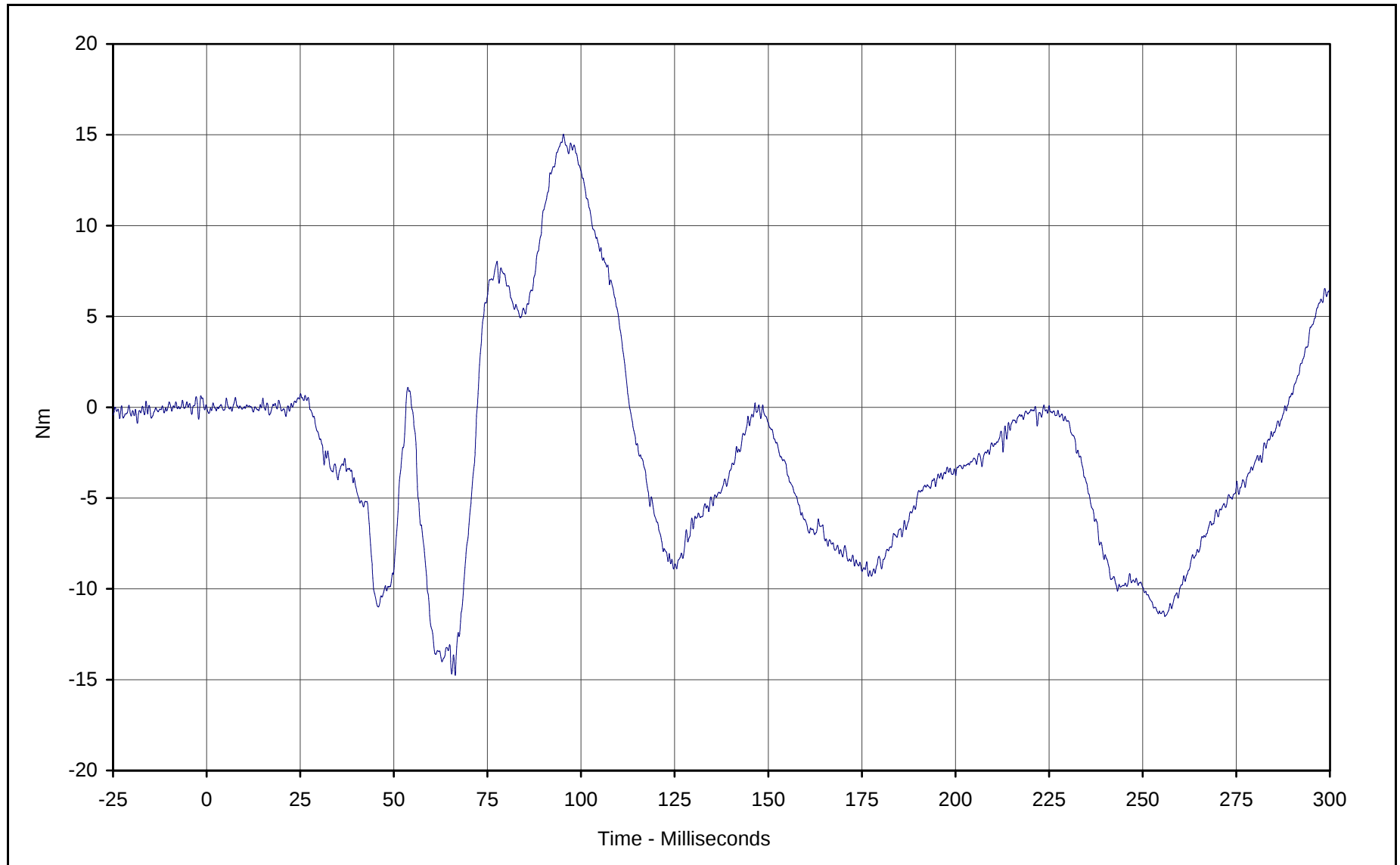


Curve Description: Passenger Neck Force Resultant
Maximum Value: 1544.4 at 56.8 Milliseconds
Minimum Value: 0.0 at 0.9 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: RES-051

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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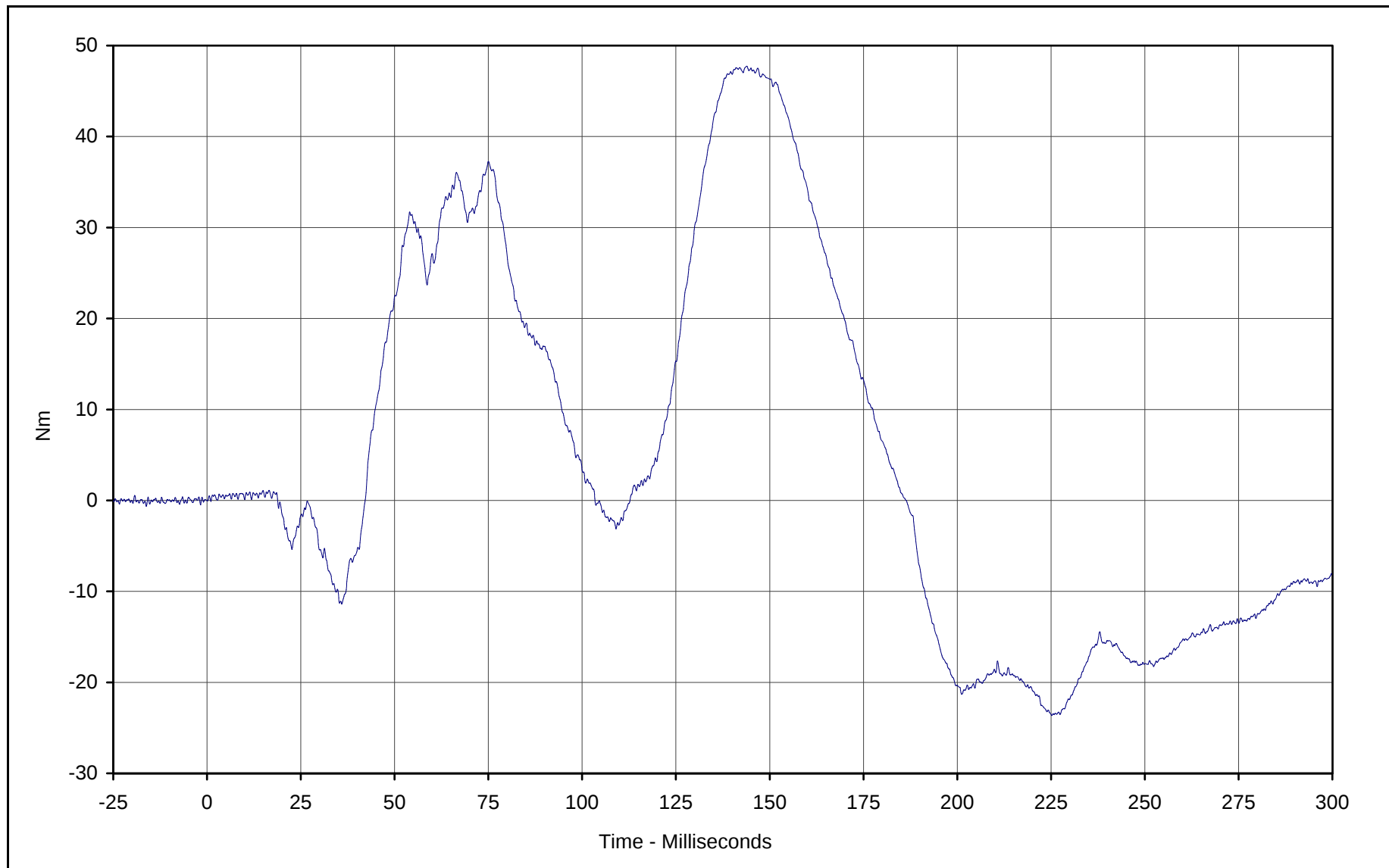


Curve Description: Passenger Neck Moment X
Maximum Value: 15.0 at 95.3 Milliseconds
Minimum Value: -14.8 at 66.4 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: FIL-054

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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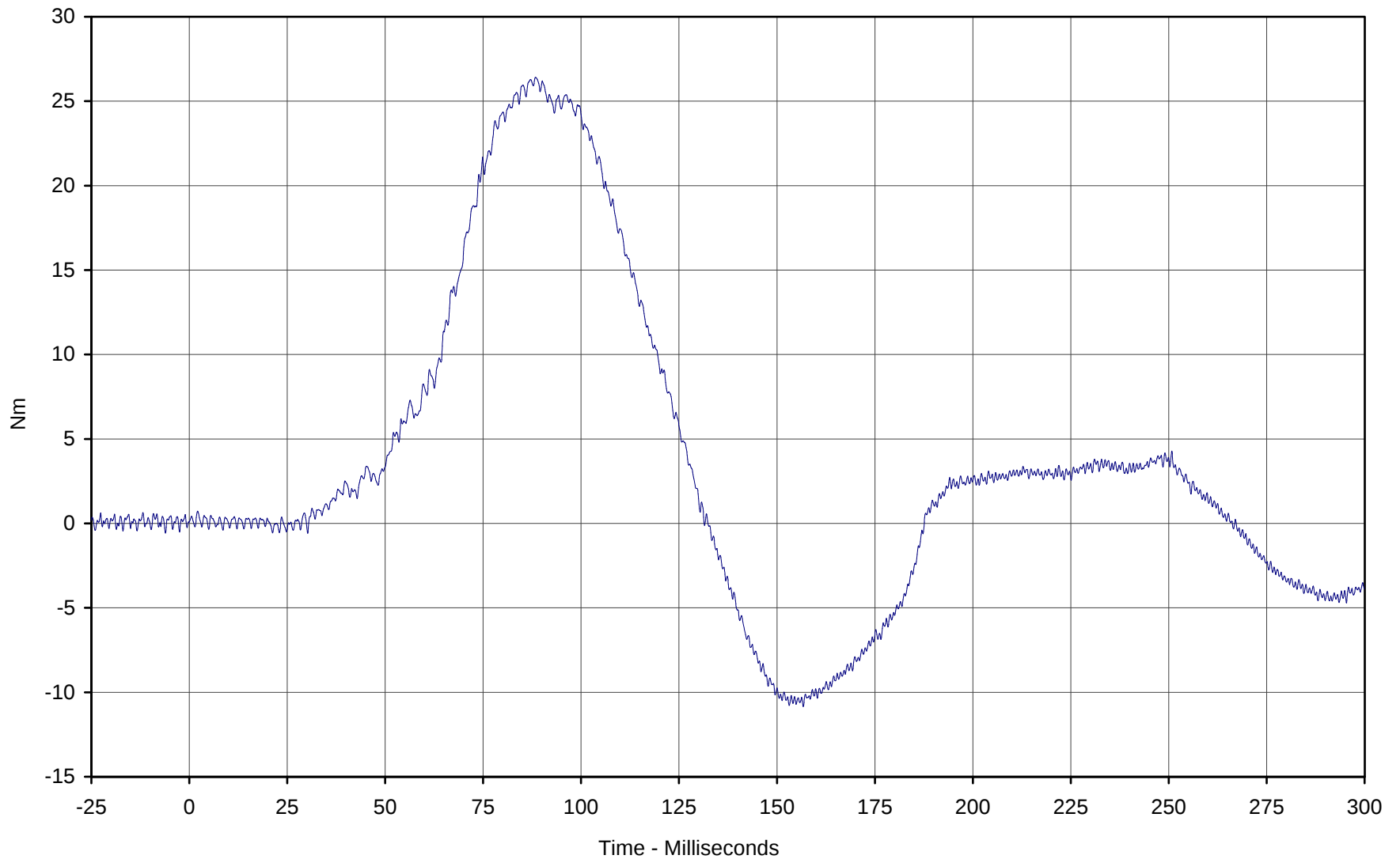


Curve Description: Passenger Neck Moment Y
Maximum Value: 47.7 at 143.9 Milliseconds
Minimum Value: -23.7 at 225.2 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: FIL-055

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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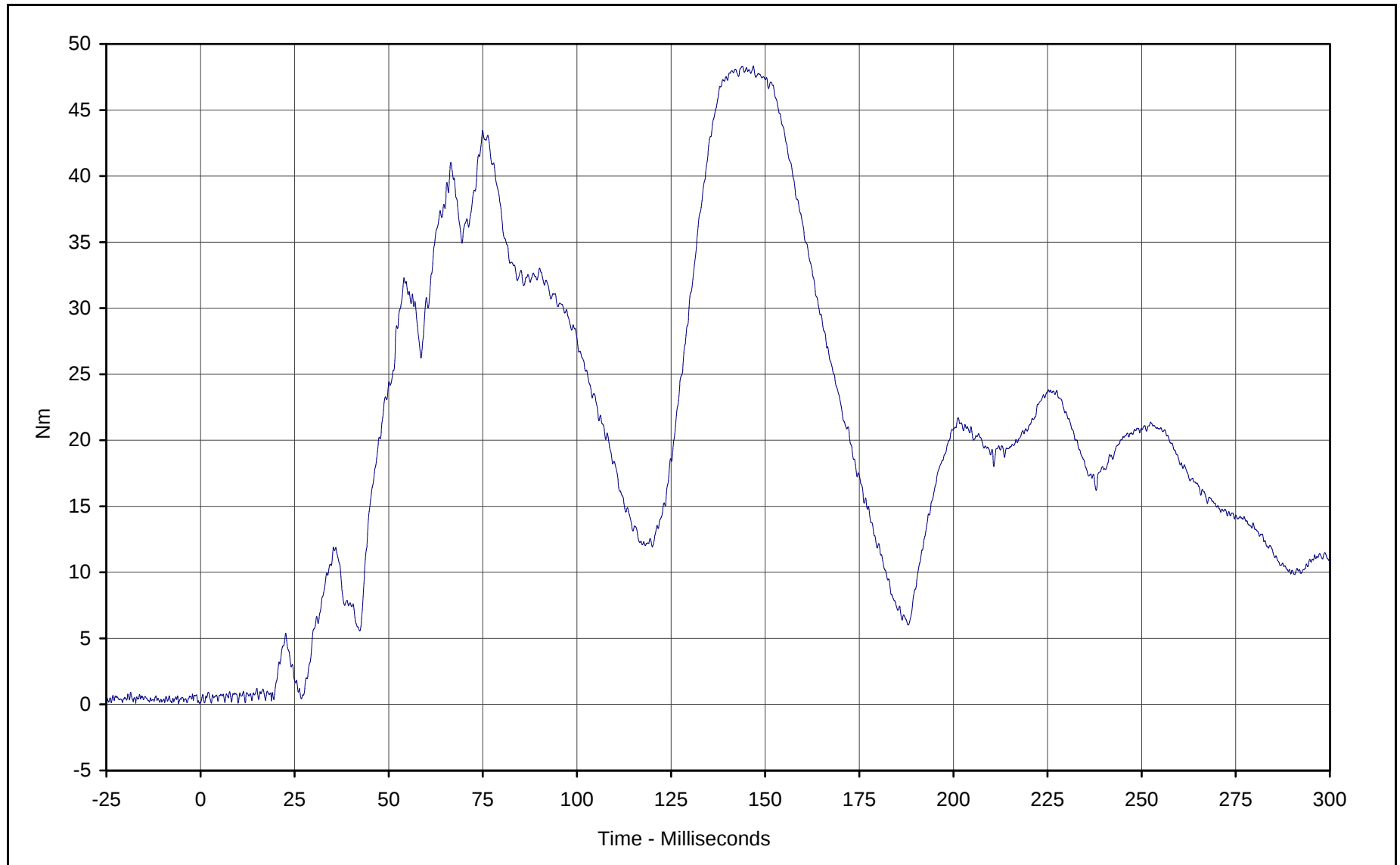


Curve Description: Passenger Neck Moment Z
Maximum Value: 26.4 at 88.4 Milliseconds
Minimum Value: -10.9 at 156.7 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: FIL-056

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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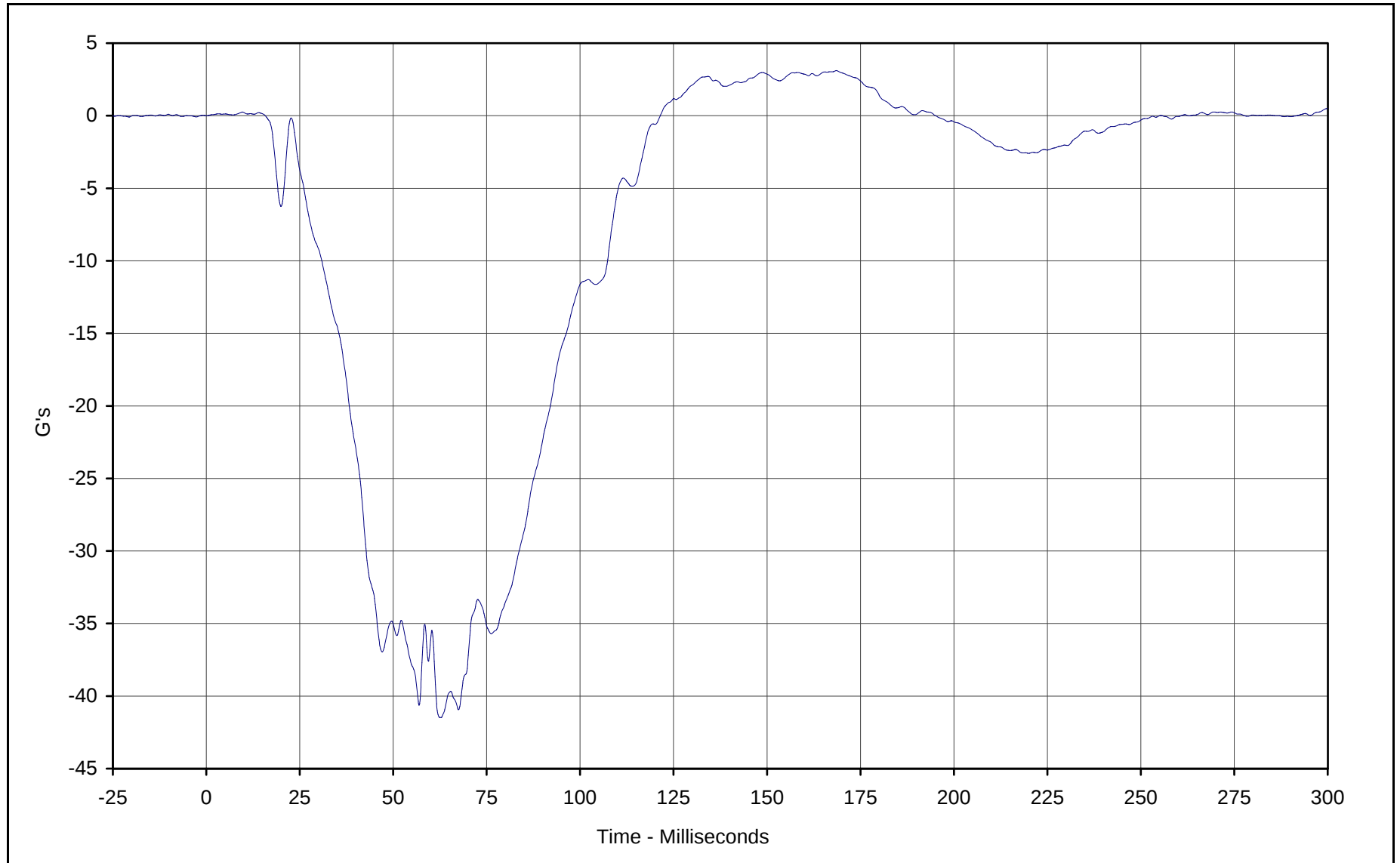


Curve Description: Passenger Neck Moment Resultant
Maximum Value: 48.3 at 146.8 Milliseconds
Minimum Value: 0.1 at 0.0 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: RES-054

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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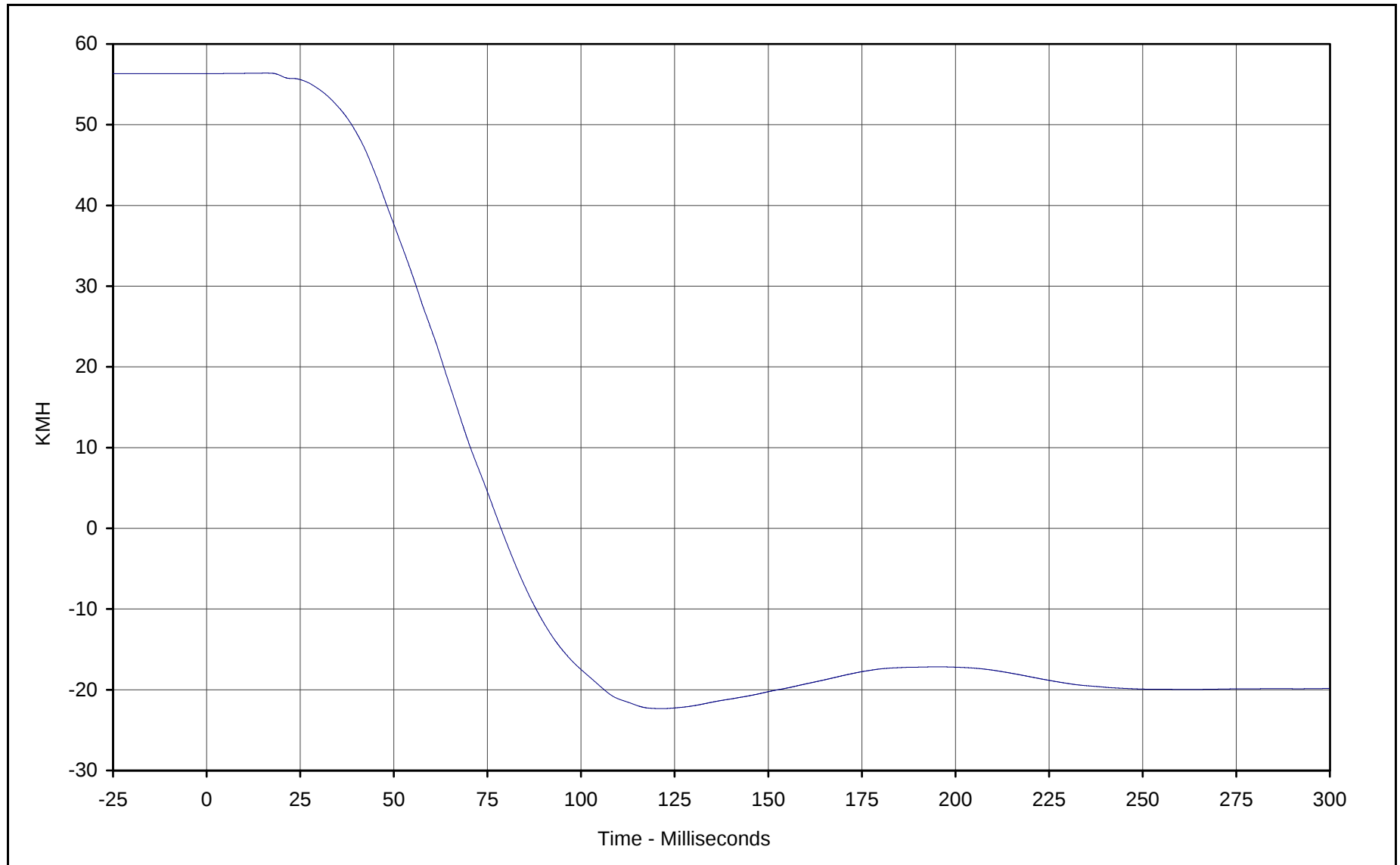
Curve Description: Passenger Chest Primary X
Maximum Value: 3.1 at 168.6 Milliseconds
Minimum Value: -41.5 at 62.7 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-057

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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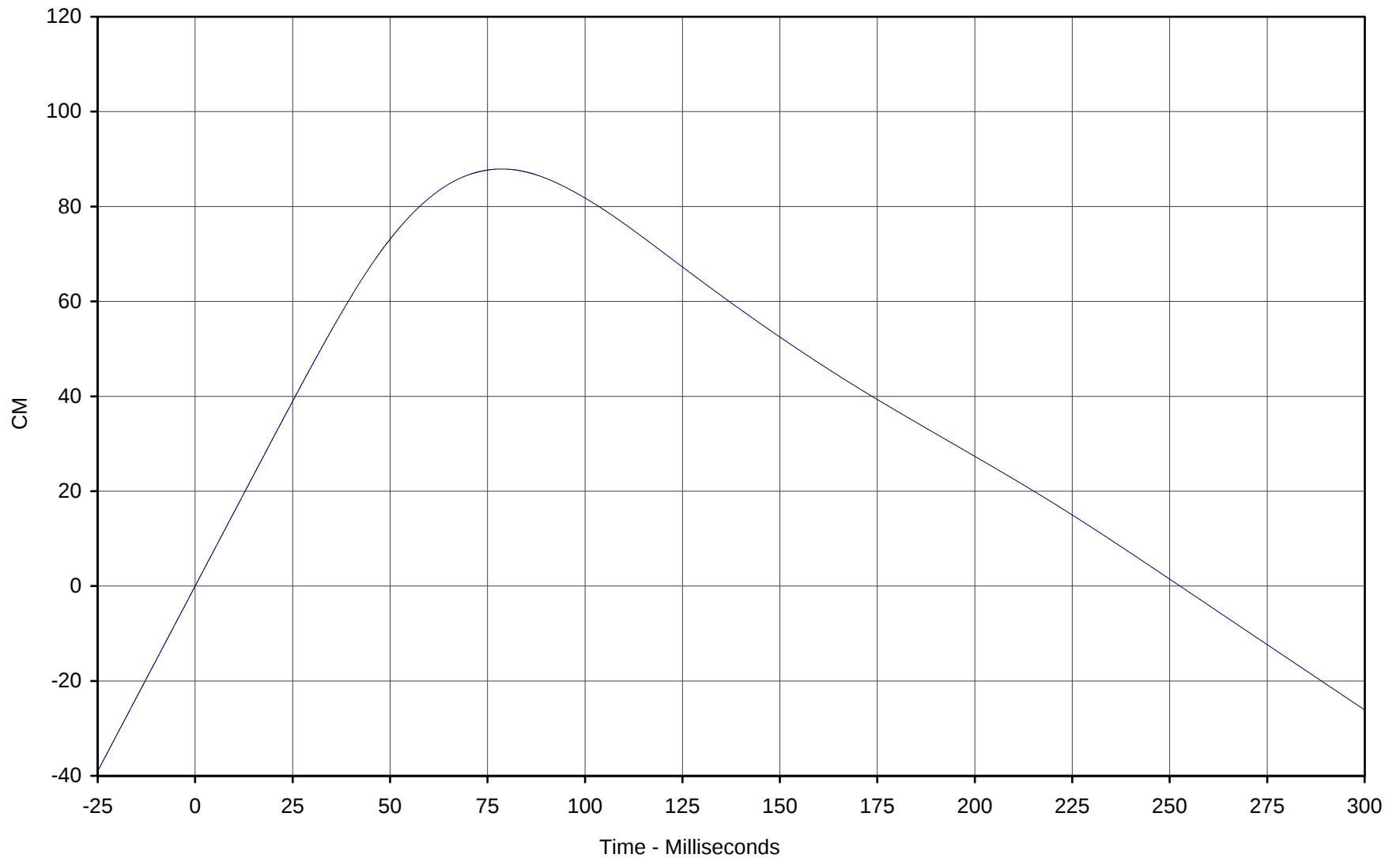
Curve Description: Passenger Chest Primary X Velocity
Maximum Value: 56.4 at 15.8 Milliseconds
Minimum Value: -22.3 at 121.5 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN1-057

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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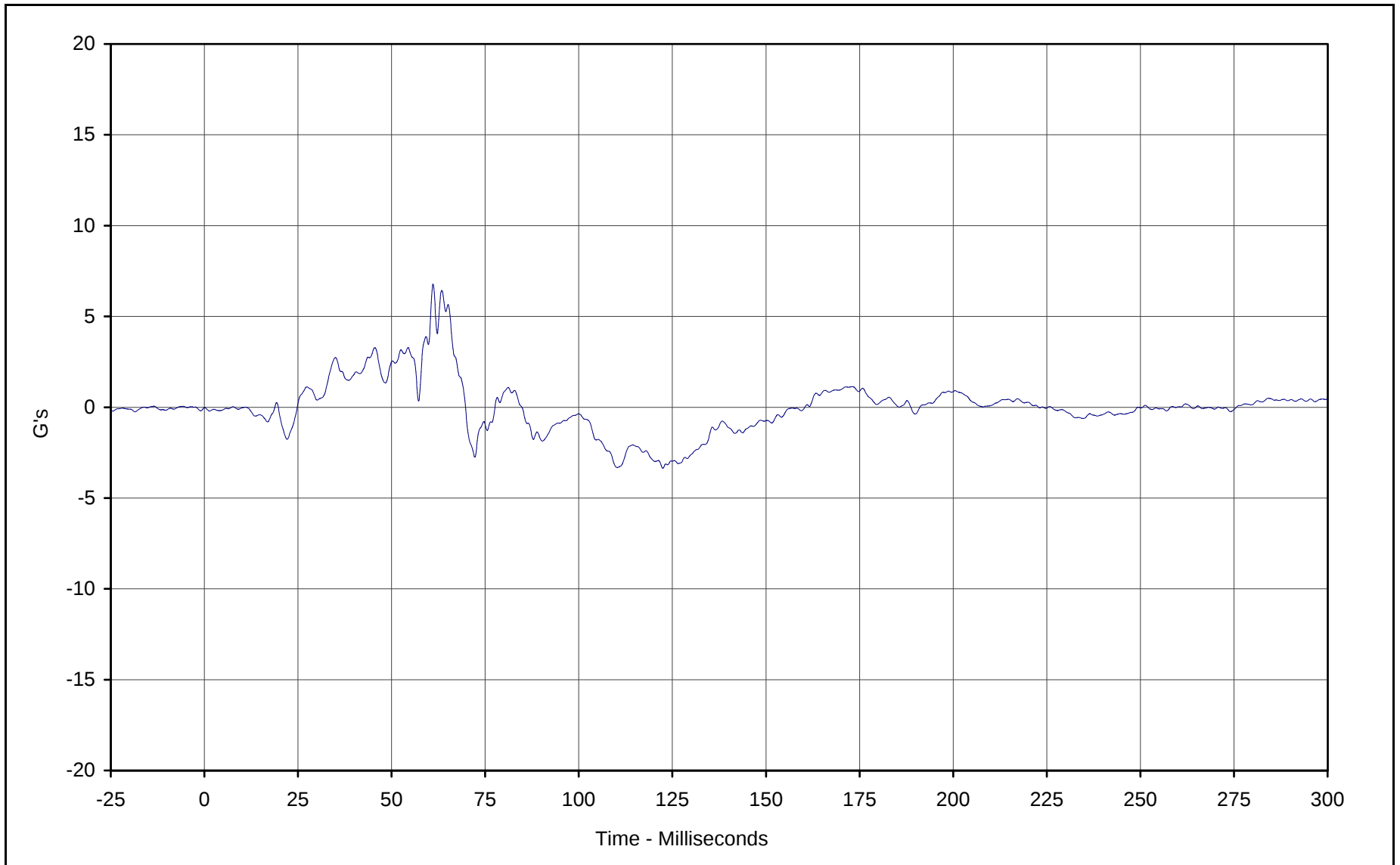
Curve Description: Passenger Chest Primary X Displ.
Maximum Value: 87.9 at 78.6 Milliseconds
Minimum Value: -26.0 at 299.9 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN2-057

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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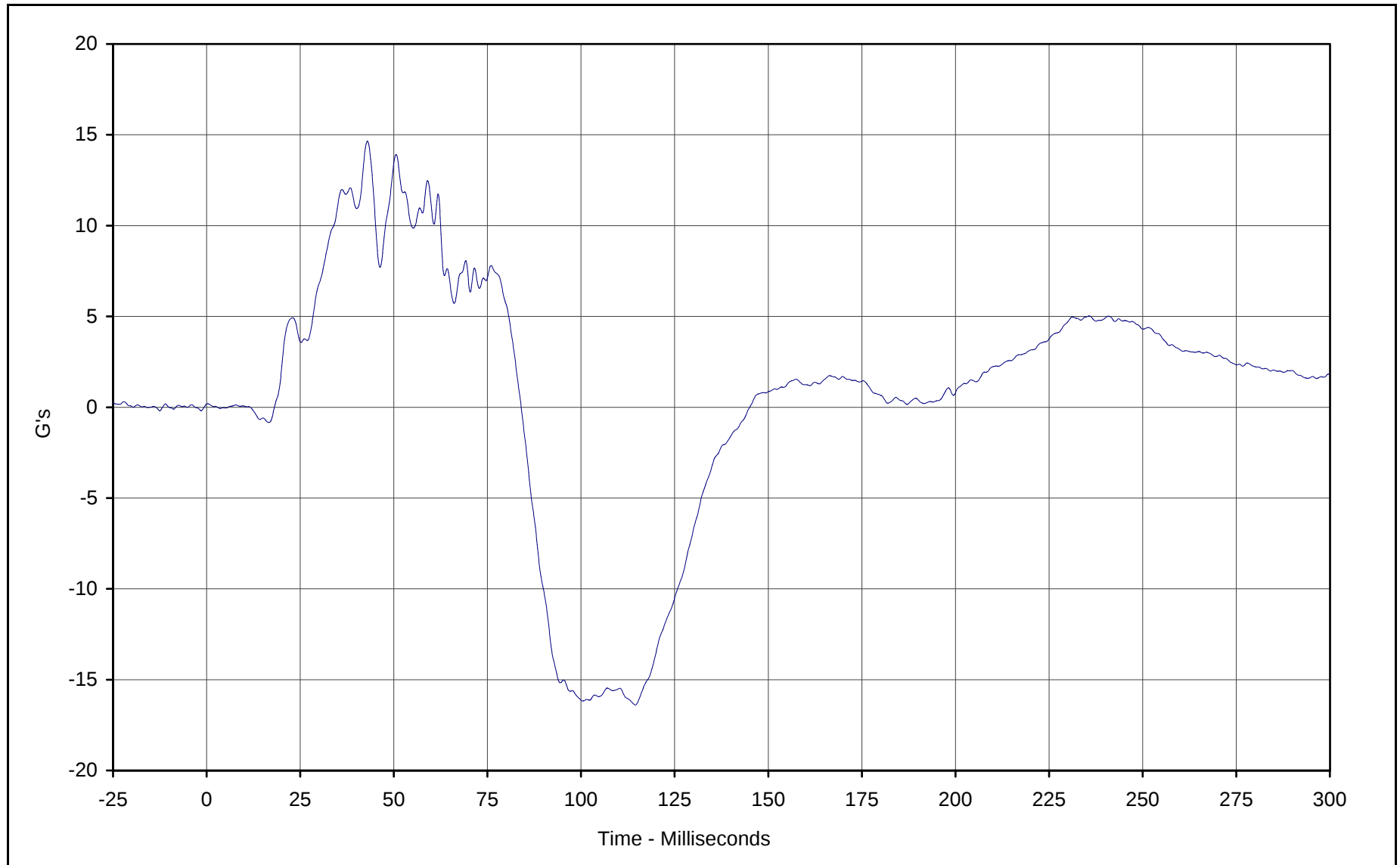


Curve Description: Passenger Chest Primary Y
Maximum Value: 6.8 at 61.1 Milliseconds
Minimum Value: -3.4 at 122.4 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-058

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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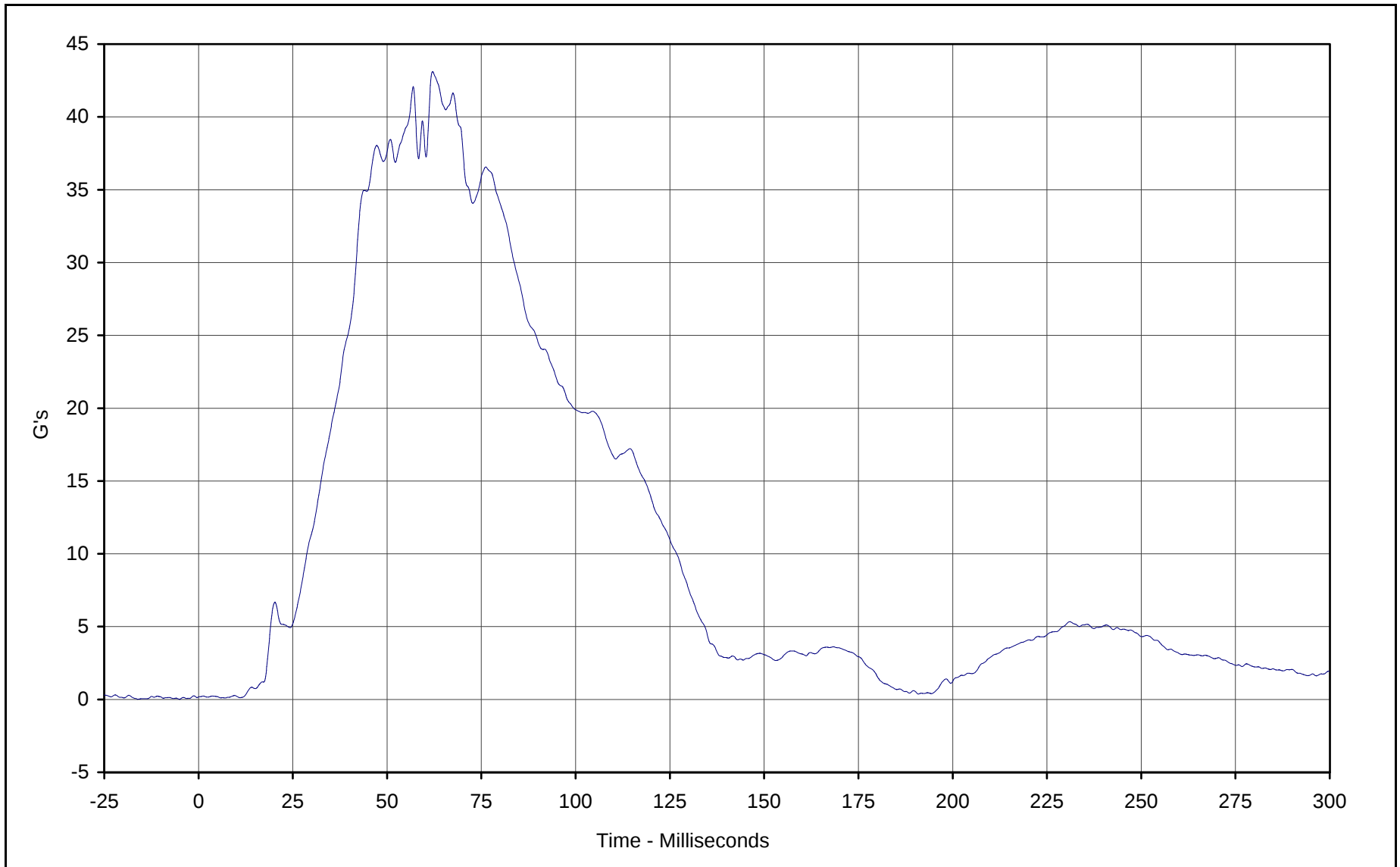


Curve Description: Passenger Chest Primary Z
Maximum Value: 14.7 at 42.9 Milliseconds
Minimum Value: -16.4 at 114.5 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-059

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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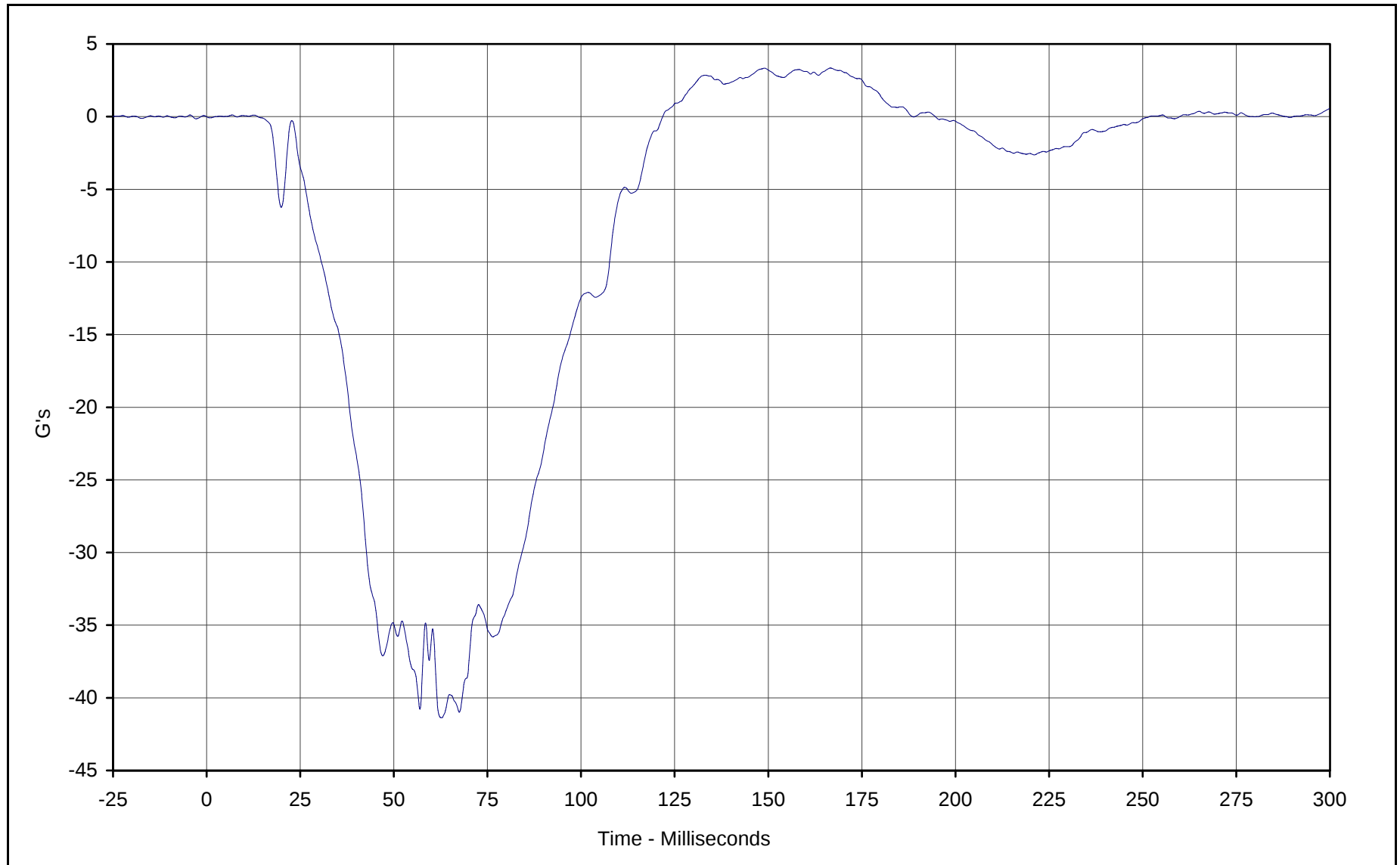
Curve Description: Passenger Chest Resultant Primary
Maximum Value: 43.1 at 62.1 Milliseconds
Minimum Value: 0.1 at 7.0 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: RES-057

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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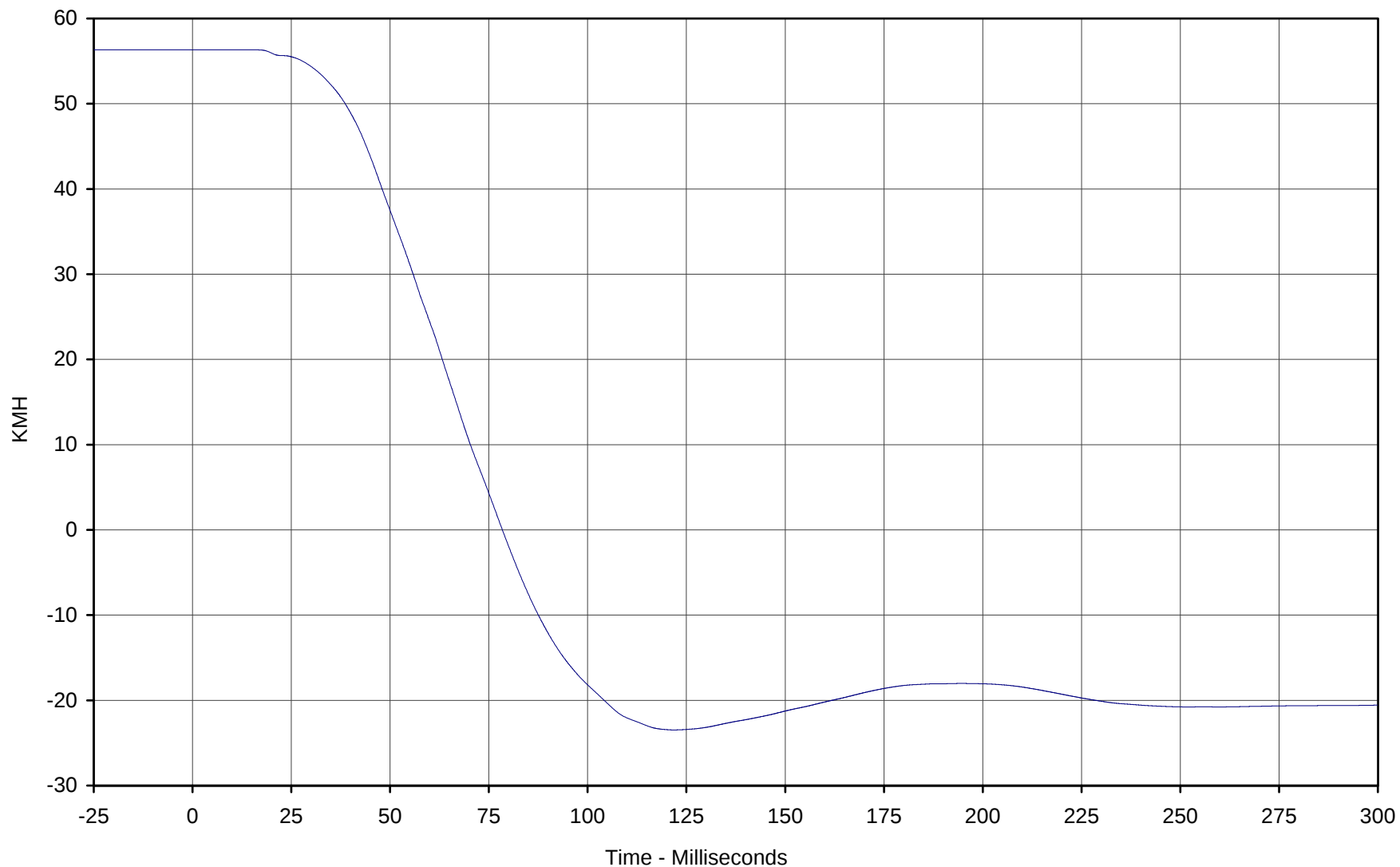
Curve Description: Passenger Chest Redundant X
Maximum Value: 3.3 at 166.5 Milliseconds
Minimum Value: -41.4 at 62.8 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-060

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Passenger Chest Redundant X Velocity

Maximum Value: 56.3 at 13.7 Milliseconds

Minimum Value: -23.5 at 121.8 Milliseconds

SAE Filter Class: 180

Date of Test: 7/31/01

Curve Number: IN1-060

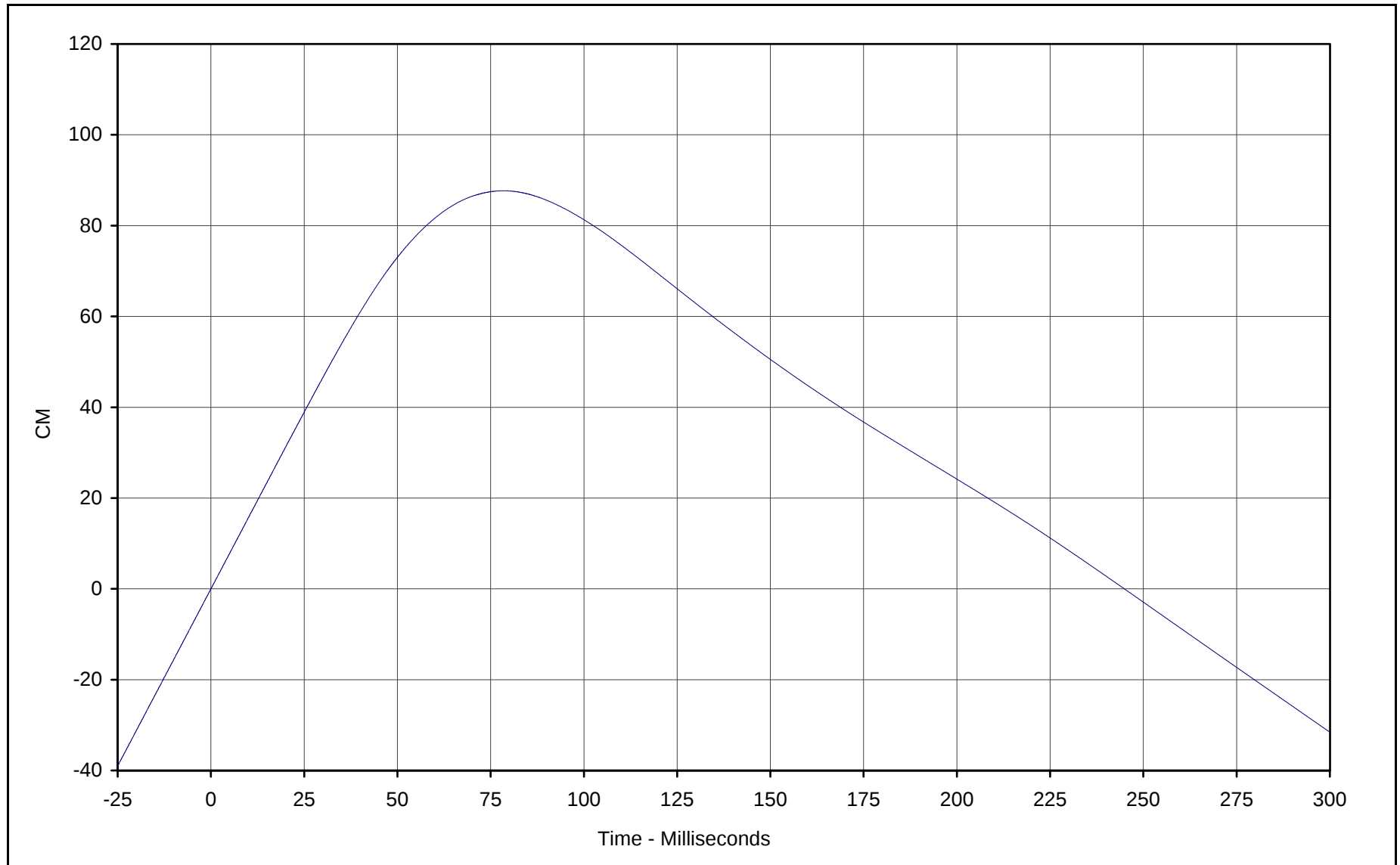
Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Passenger Chest Redundant X Displ.

Maximum Value: 87.7 at 78.4 Milliseconds

Minimum Value: -31.5 at 299.9 Milliseconds

SAE Filter Class: 180

Date of Test: 7/31/01

Curve Number: IN2-060

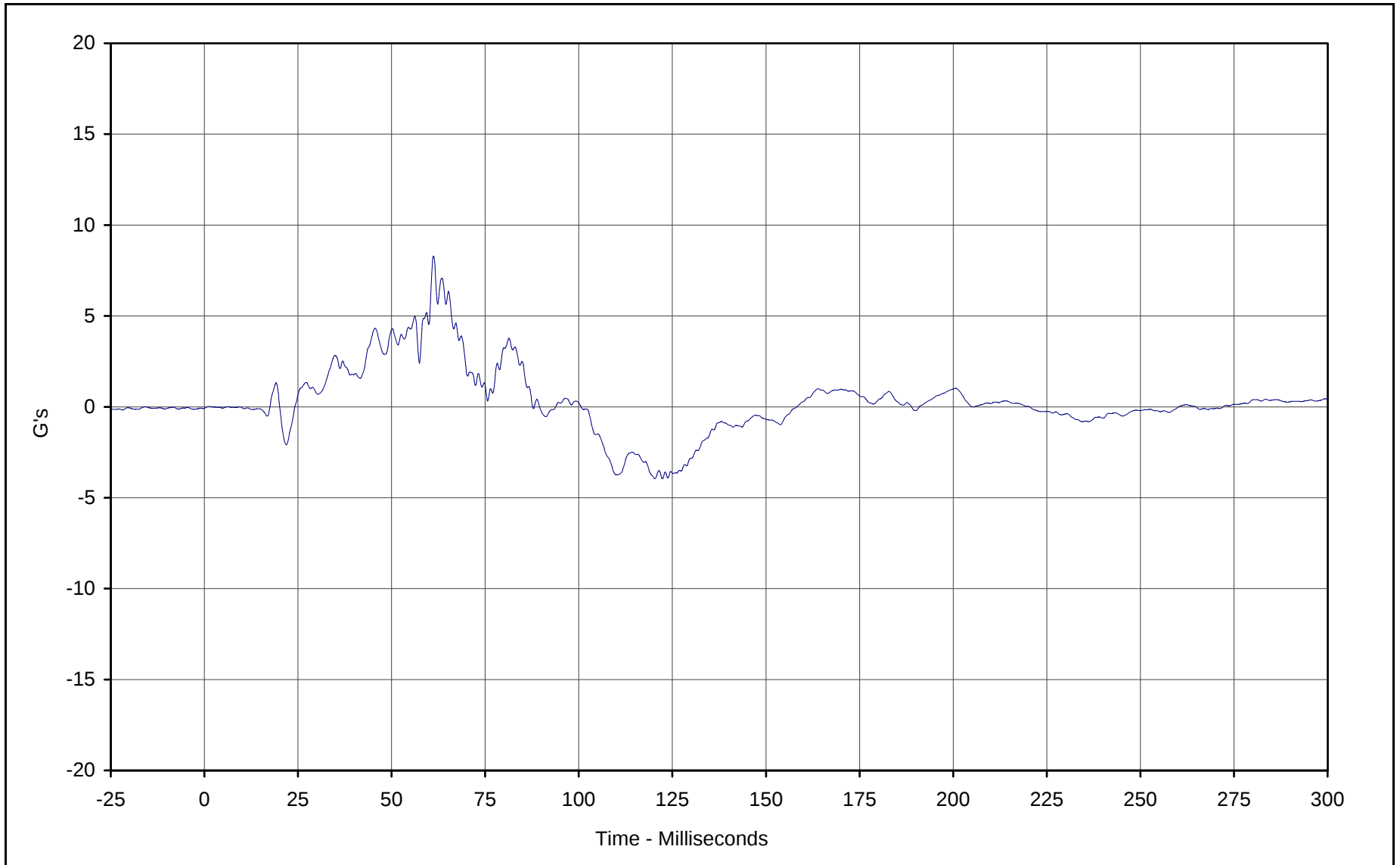
Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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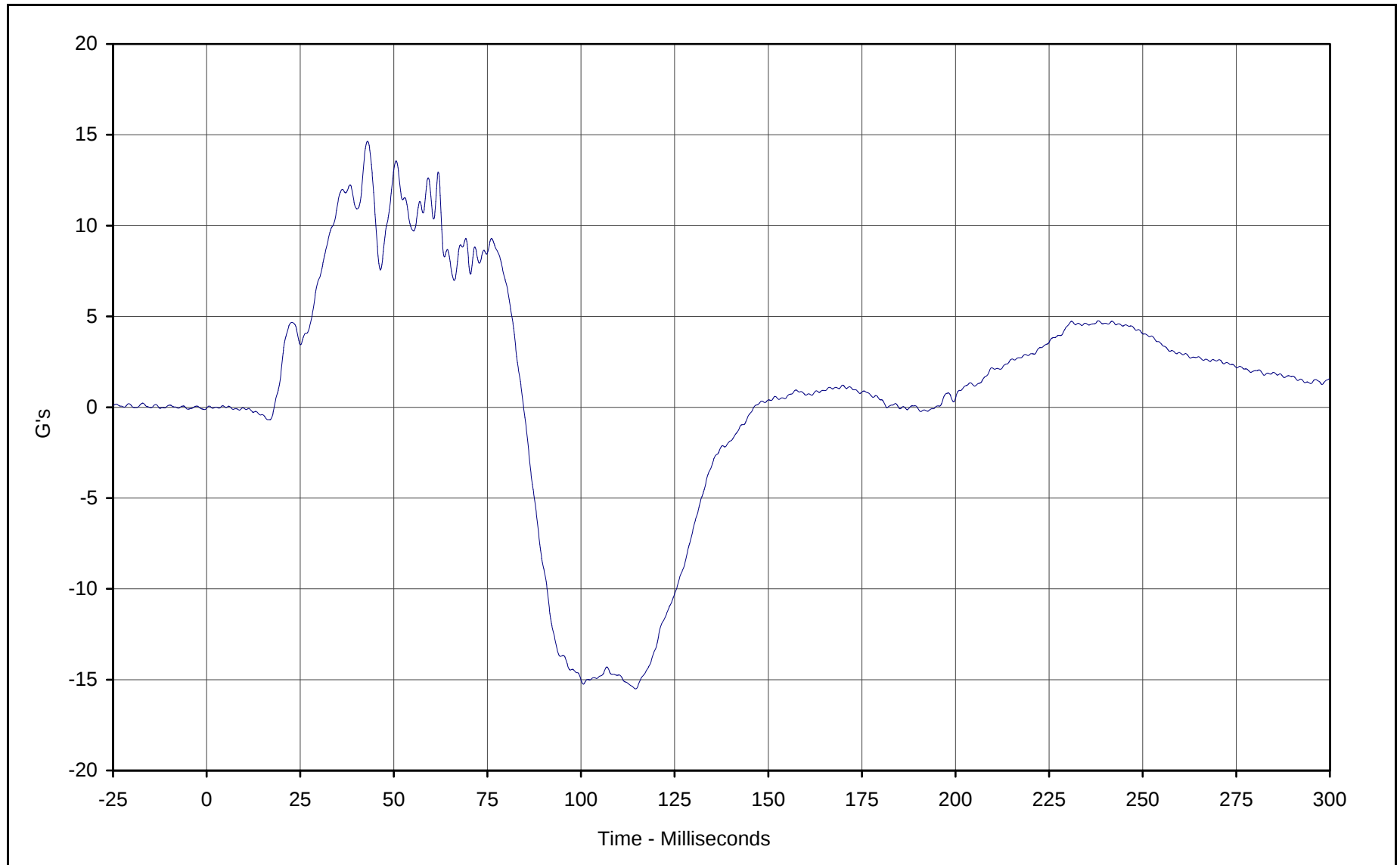
Curve Description: Passenger Chest Redundant Y
Maximum Value: 8.3 at 61.2 Milliseconds
Minimum Value: -4.0 at 122.3 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-061

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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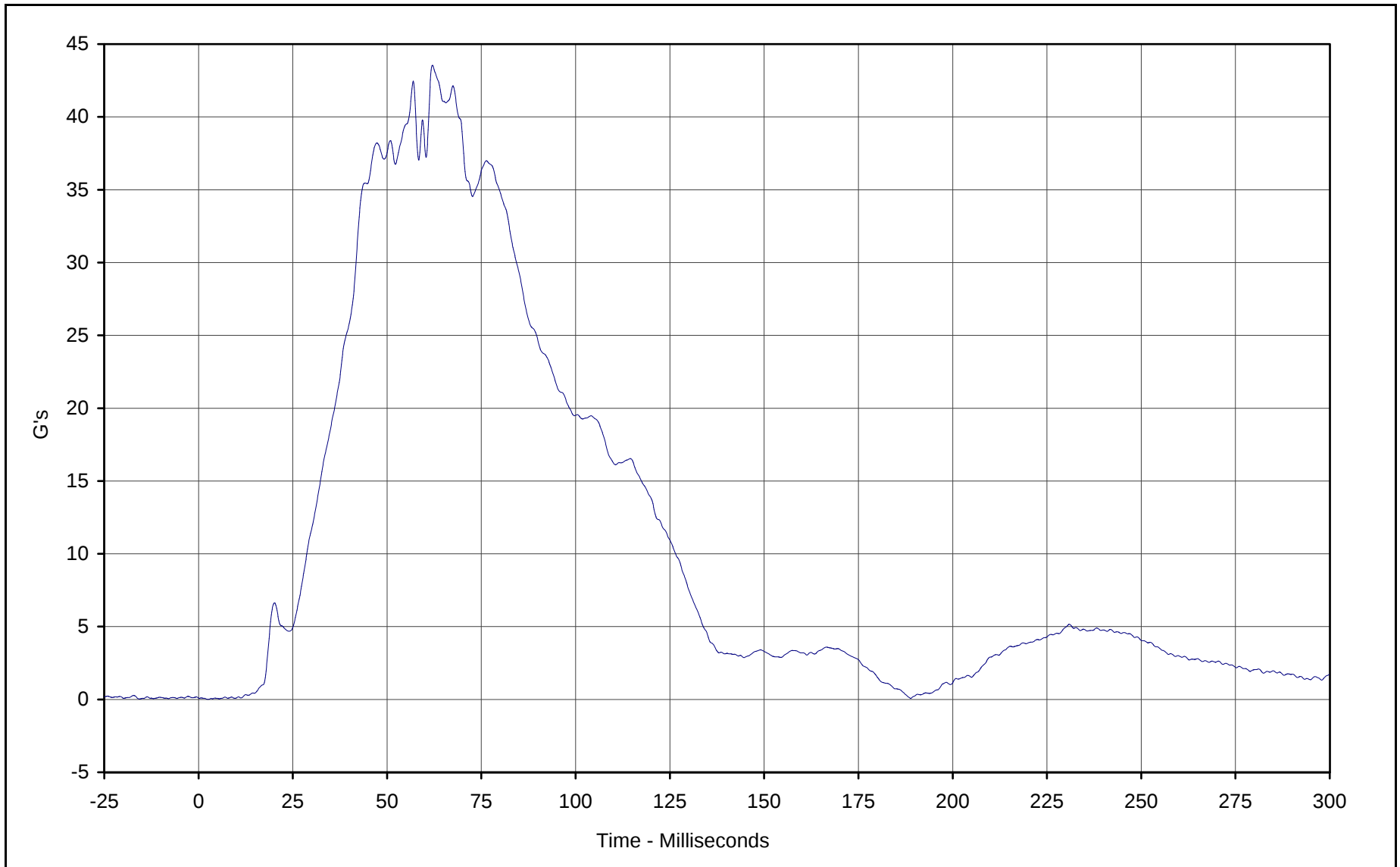
Curve Description: Passenger Chest Redundant Z
Maximum Value: 14.6 at 43.0 Milliseconds
Minimum Value: -15.5 at 114.6 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-062

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Passenger Chest Resultant Redundant

Maximum Value: 43.5 at 62.0 Milliseconds

Minimum Value: 0.0 at 2.3 Milliseconds

SAE Filter Class: 180

Date of Test: 7/31/01

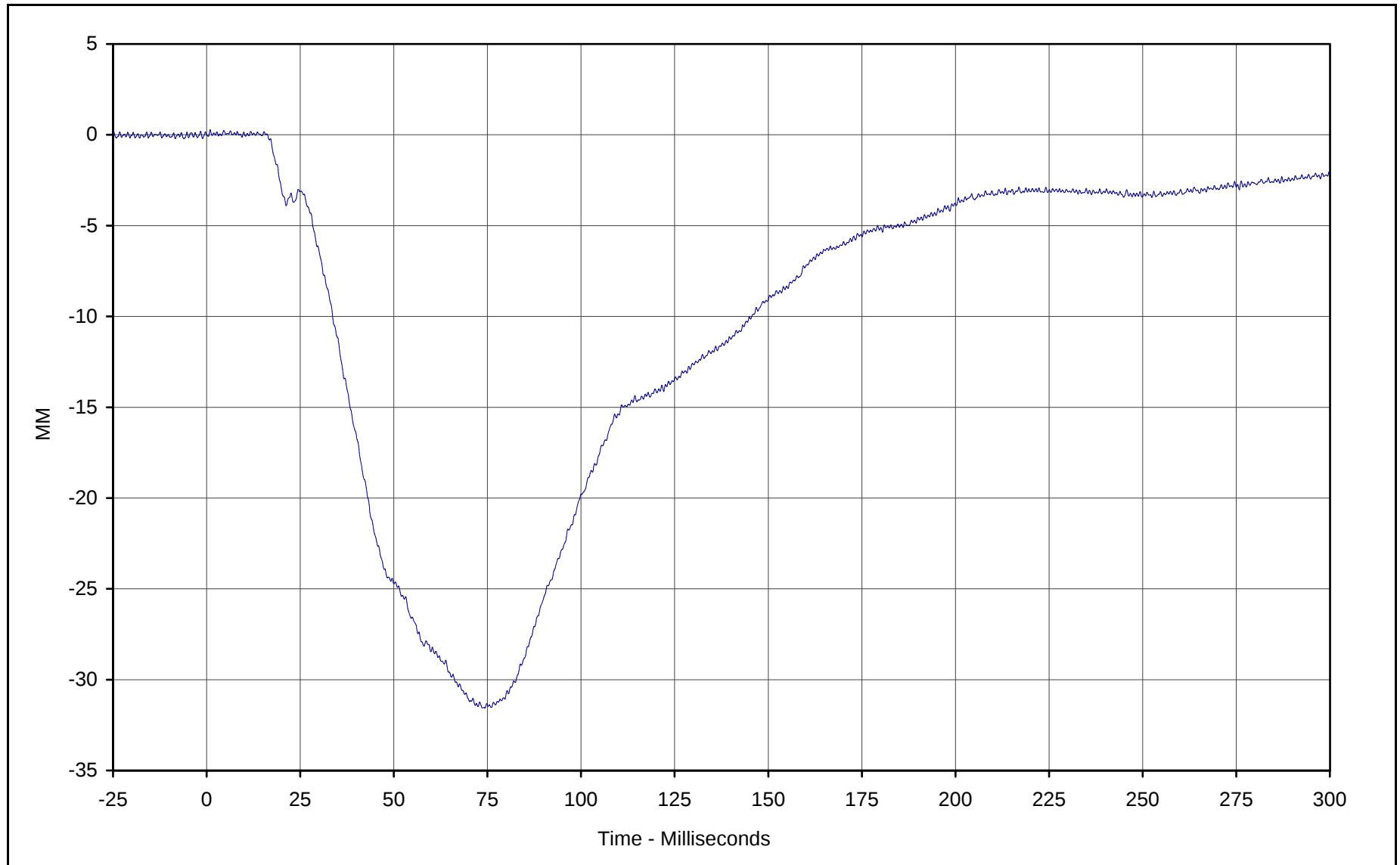
Curve Number: RES-060

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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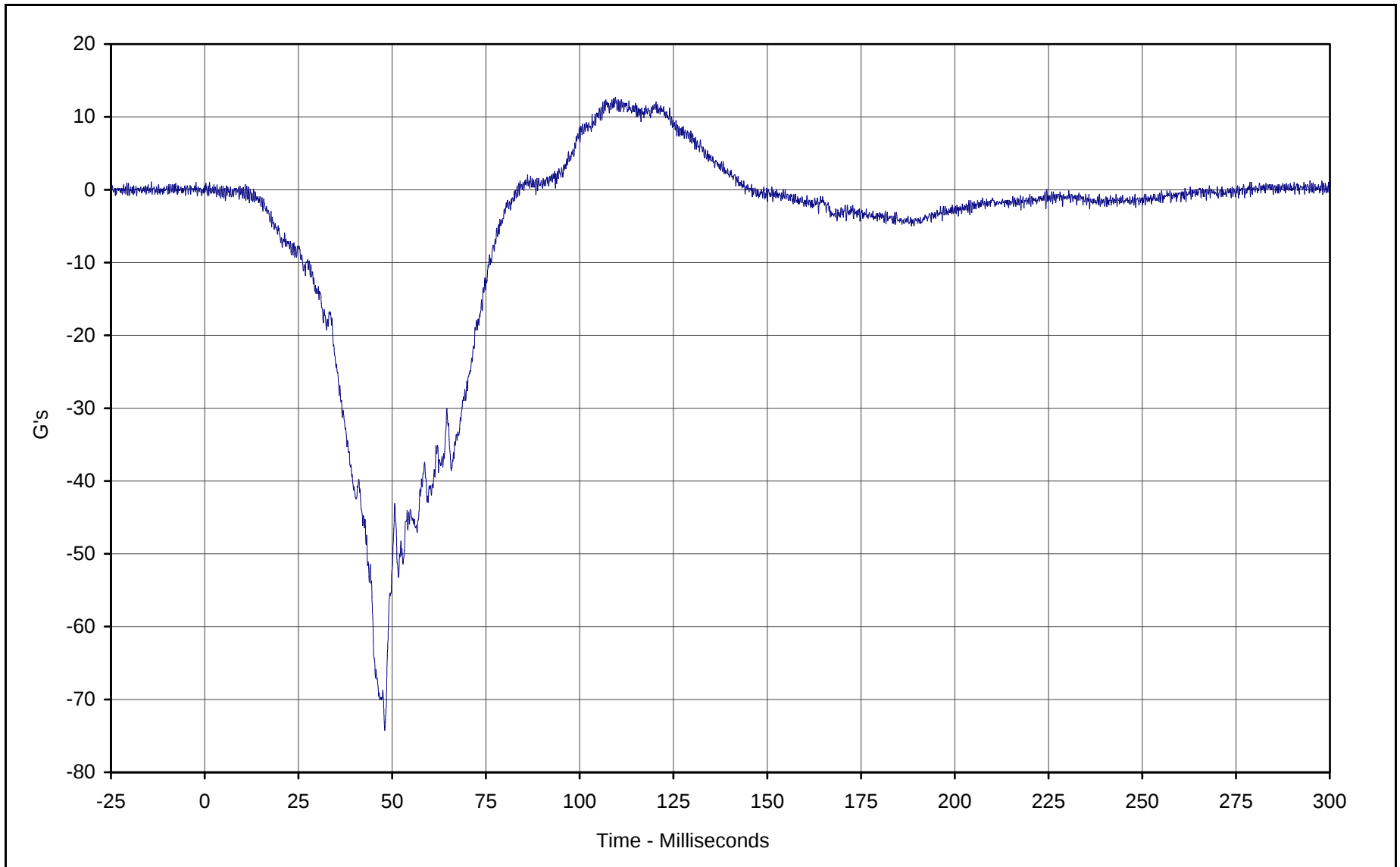


Curve Description: Passenger Chest Displacement X
Maximum Value: 0.3 at 1.0 Milliseconds
Minimum Value: -31.6 at 73.7 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: FIL-063

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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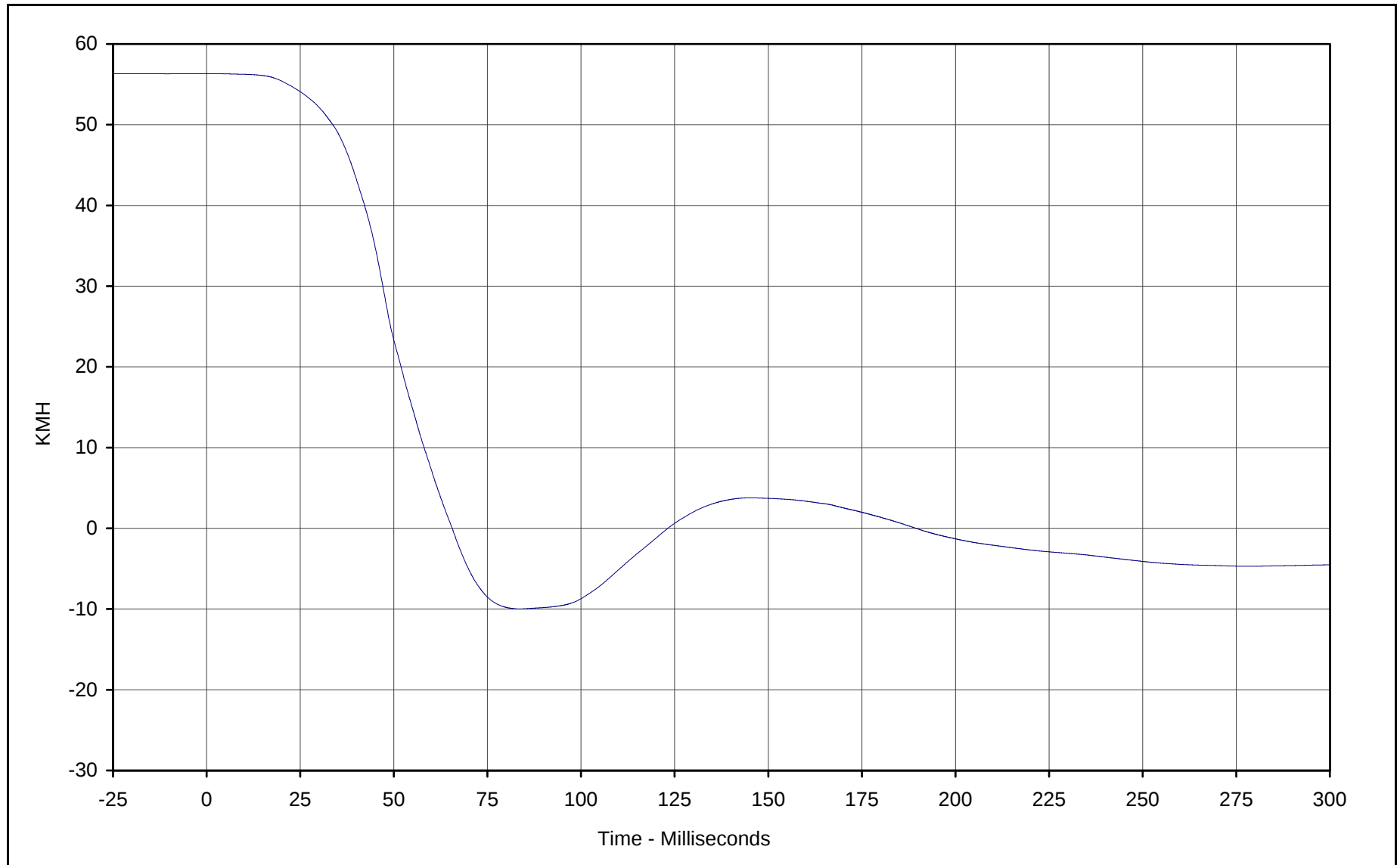
Curve Description: Passenger Pelvis X
Maximum Value: 12.7 at 109.5 Milliseconds
Minimum Value: -74.2 at 48.0 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: FIL-064

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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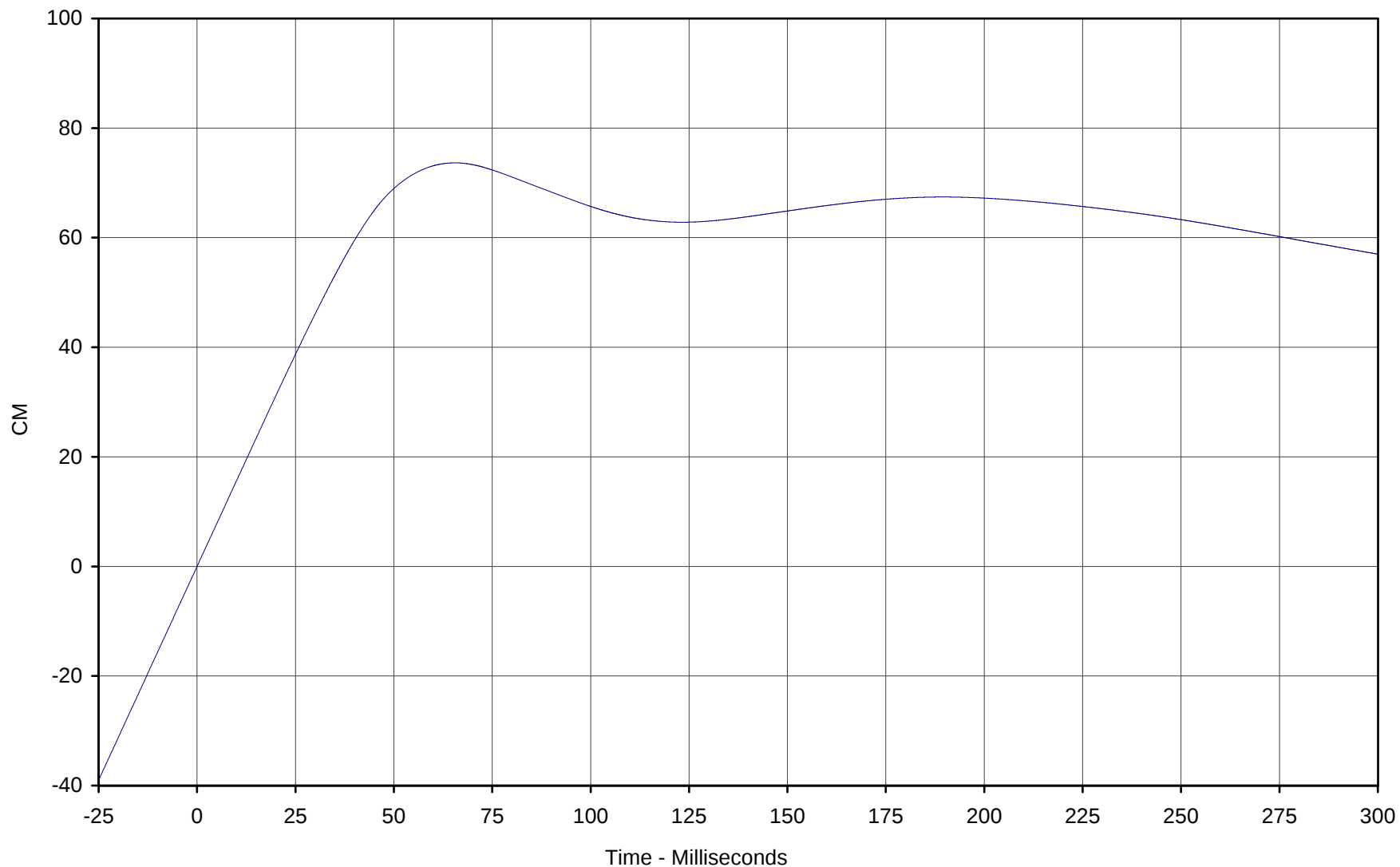
Curve Description: Passenger Pelvis X Velocity
Maximum Value: 56.3 at 1.5 Milliseconds
Minimum Value: -10.0 at 83.6 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN1-064

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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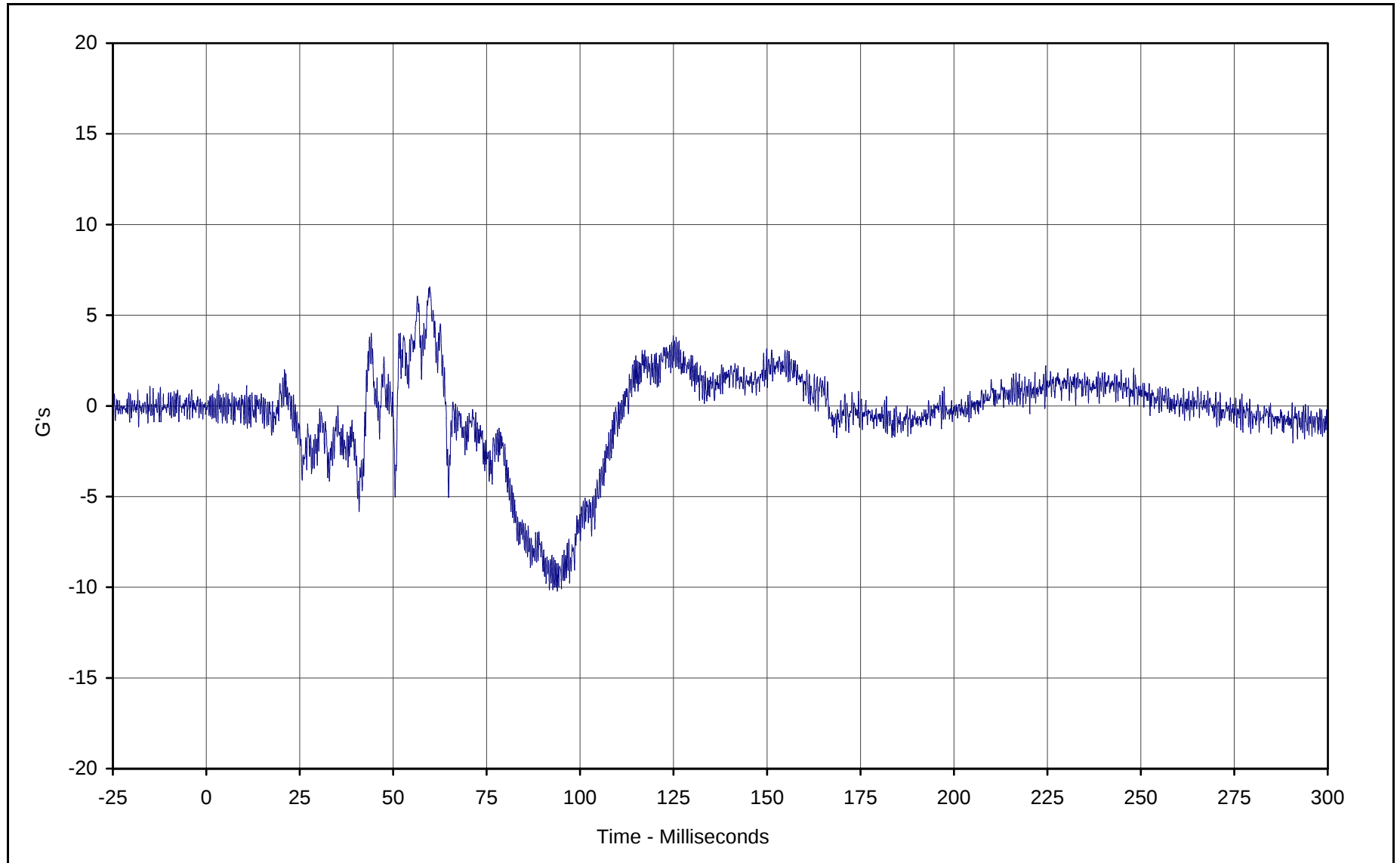
Curve Description: Passenger Pelvis X Displ.
Maximum Value: 73.7 at 65.6 Milliseconds
Minimum Value: 0.0 at 0.0 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN2-064

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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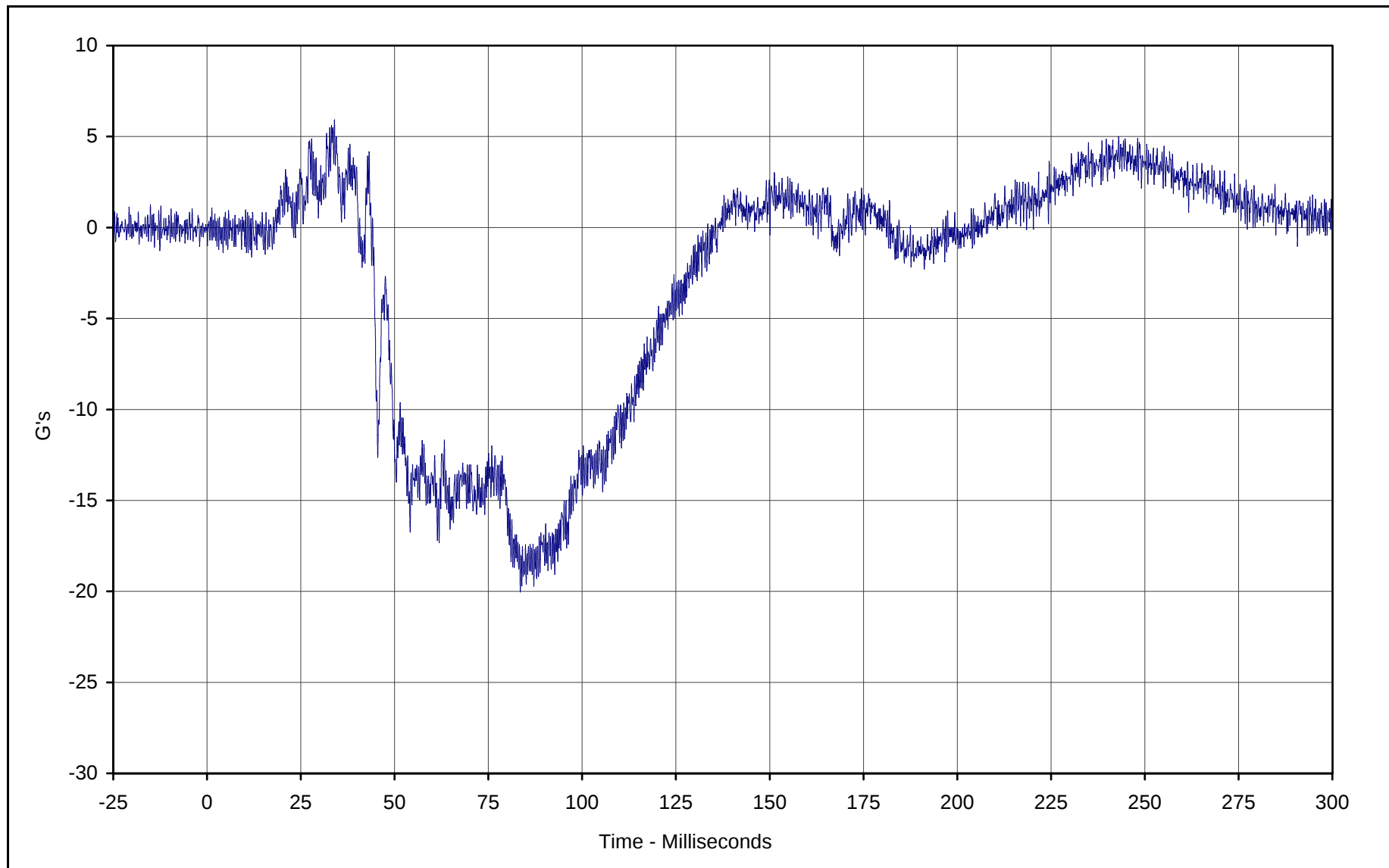
Curve Description: Passenger Pelvis Y
Maximum Value: 6.6 at 59.8 Milliseconds
Minimum Value: -10.2 at 93.9 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: FIL-065

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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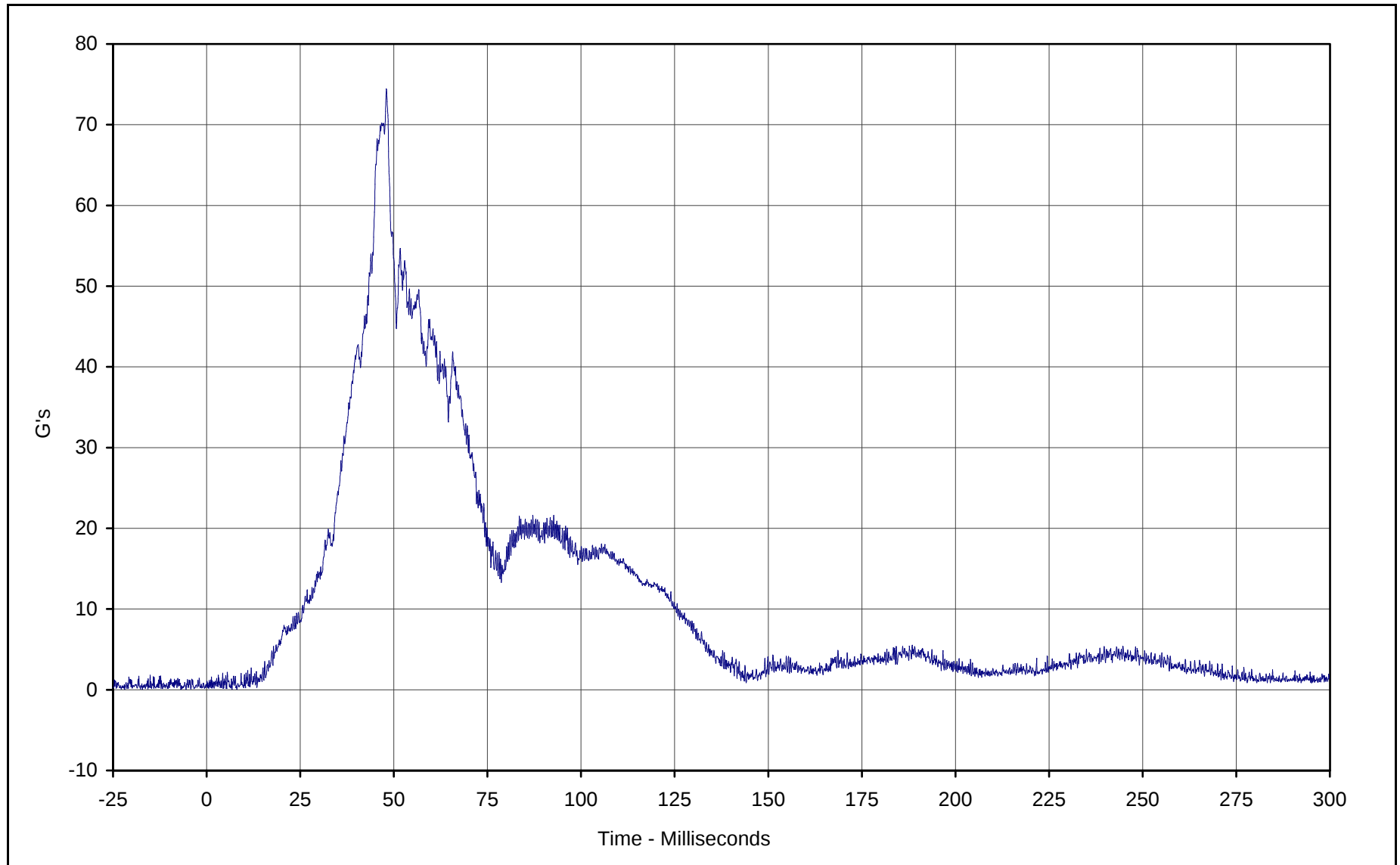
Curve Description: Passenger Pelvis Z
Maximum Value: 5.9 at 34.0 Milliseconds
Minimum Value: -20.0 at 83.5 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: FIL-066

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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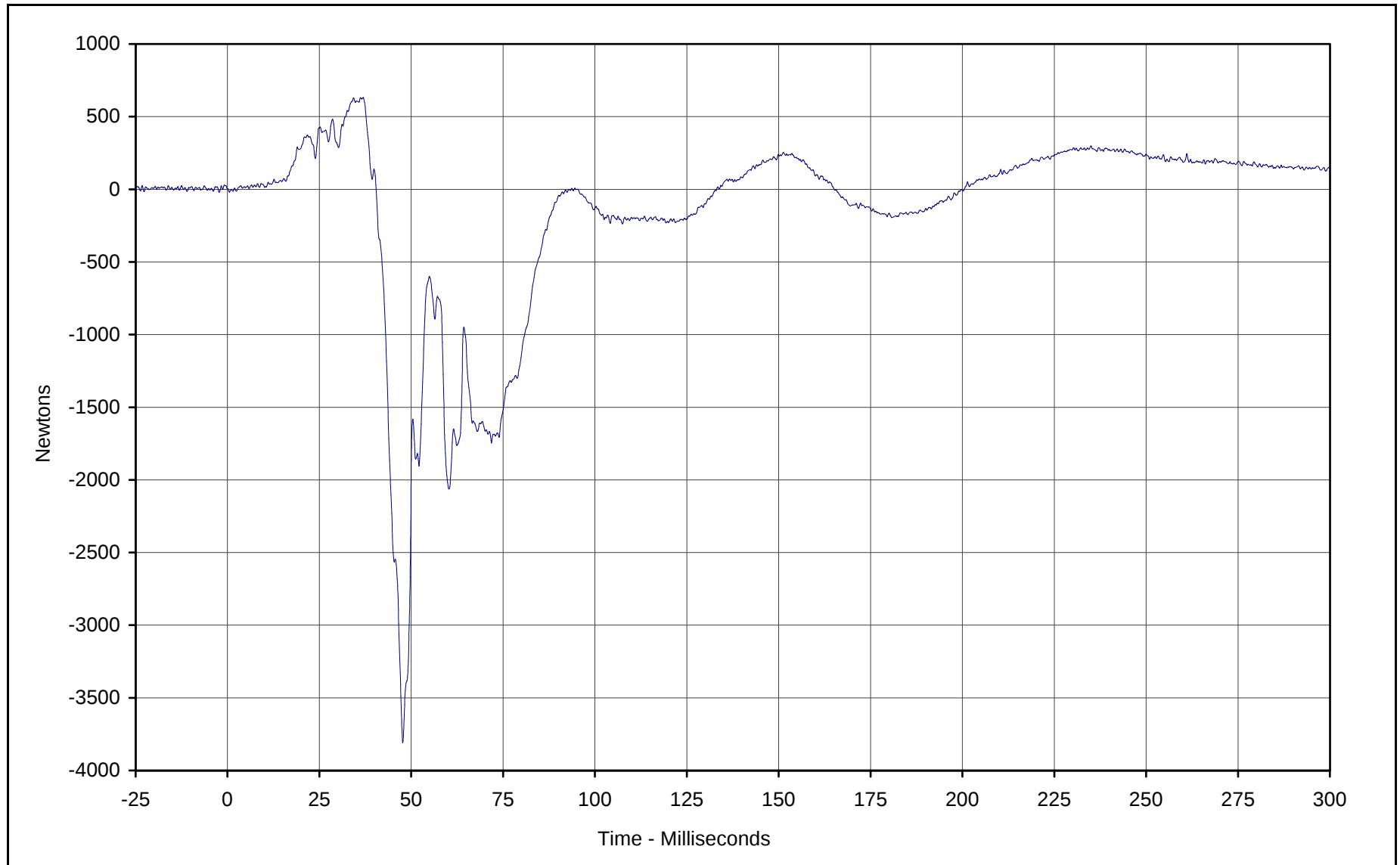
Curve Description: Passenger Pelvis Resultant
Maximum Value: 74.4 at 48.0 Milliseconds
Minimum Value: 0.0 at 6.8 Milliseconds
SAE Filter Class: 1000
Date of Test: 7/31/01
Curve Number: RES-064

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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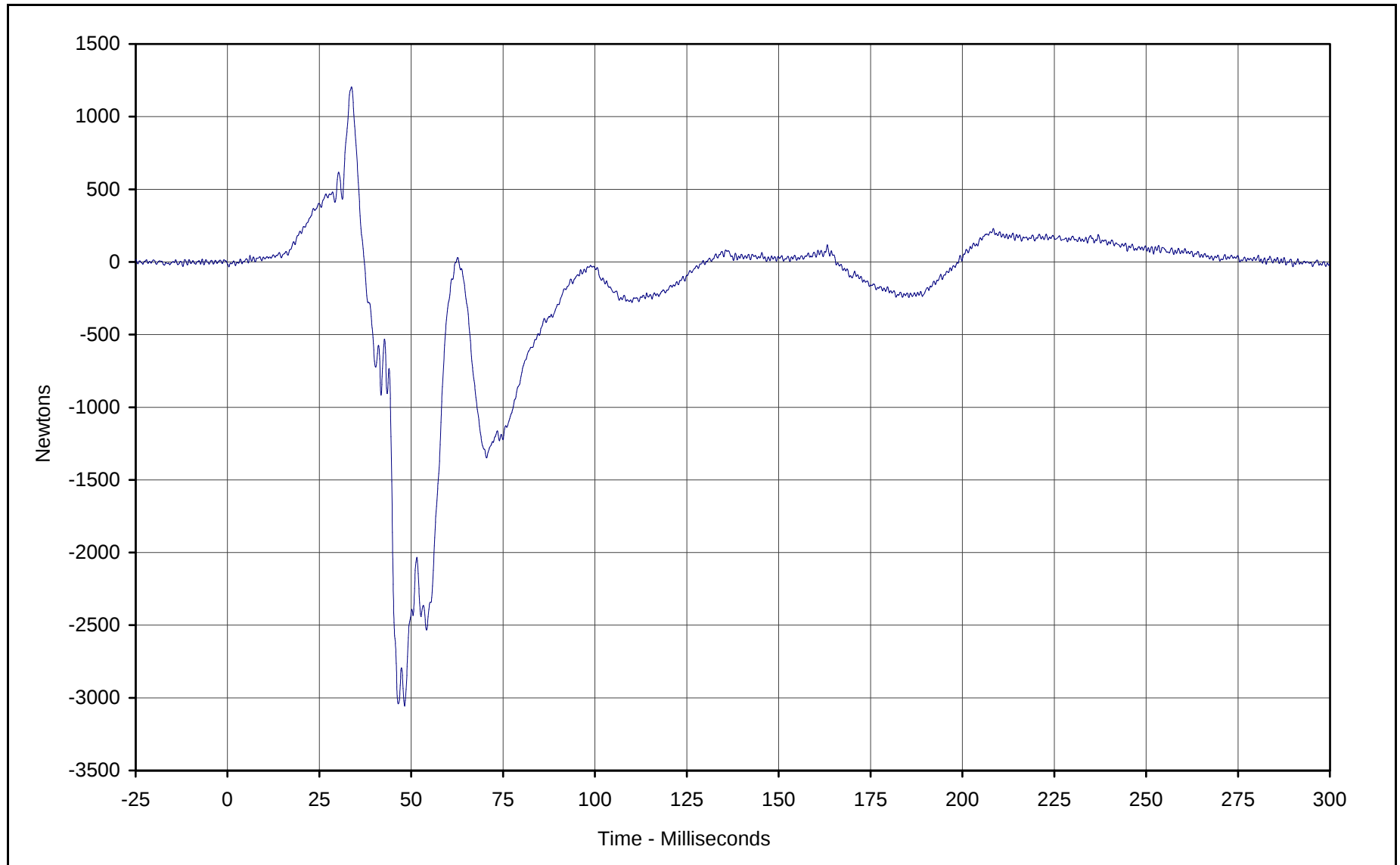


Curve Description: Passenger Left Femur Force
Maximum Value: 632.6 at 36.9 Milliseconds
Minimum Value: -3809.9 at 47.7 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: FIL-067

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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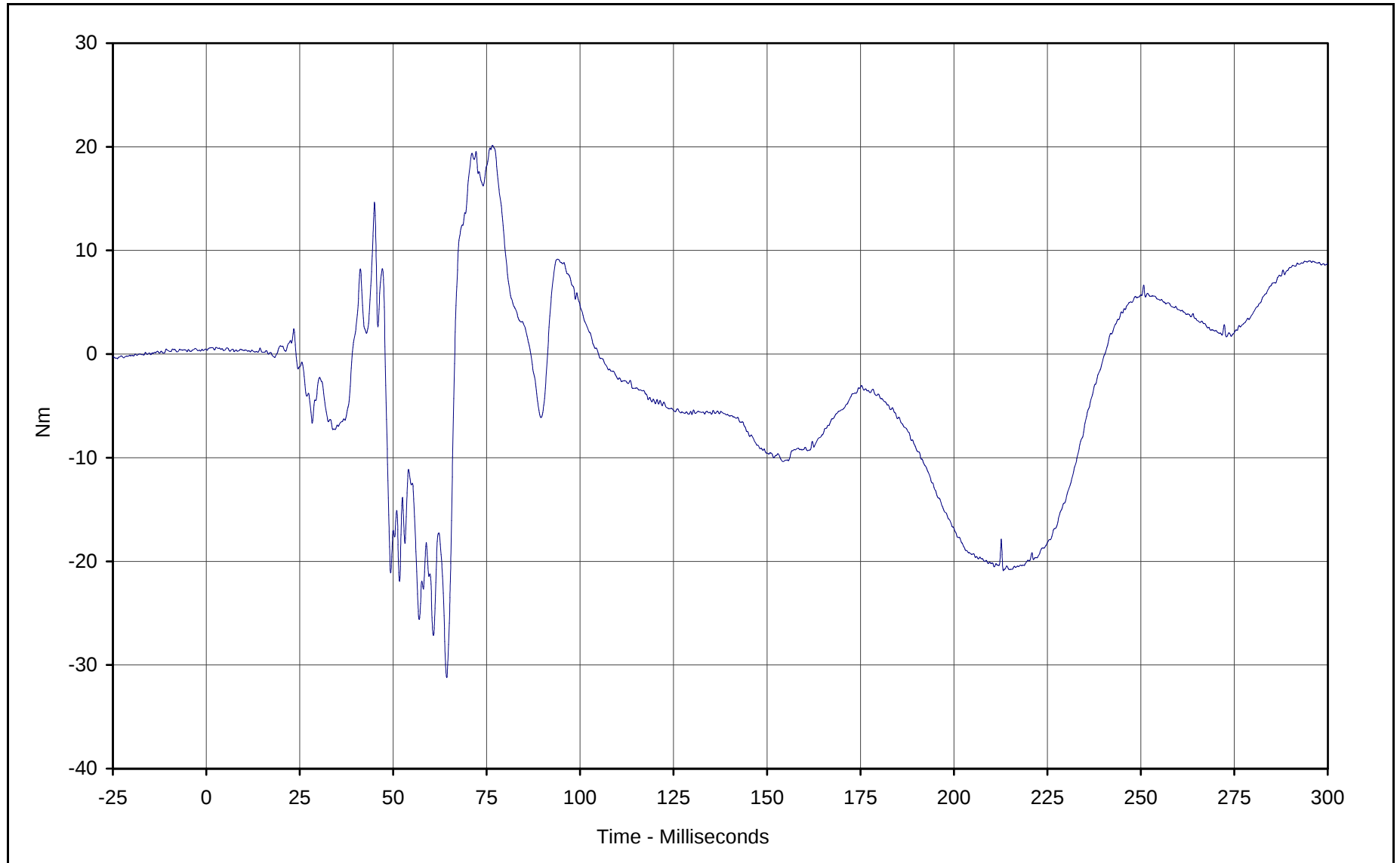


Curve Description: Passenger Right Femur Force
Maximum Value: 1204.3 at 33.8 Milliseconds
Minimum Value: -3057.4 at 48.2 Milliseconds
SAE Filter Class: 600
Date of Test: 7/31/01
Curve Number: FIL-068

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Passenger Left Upper Tibia Moment X

Maximum Value: 20.1 at 76.6 Milliseconds

Minimum Value: -31.2 at 64.3 Milliseconds

SAE Filter Class: 600

Date of Test: 7/31/01

Curve Number: FIL-069

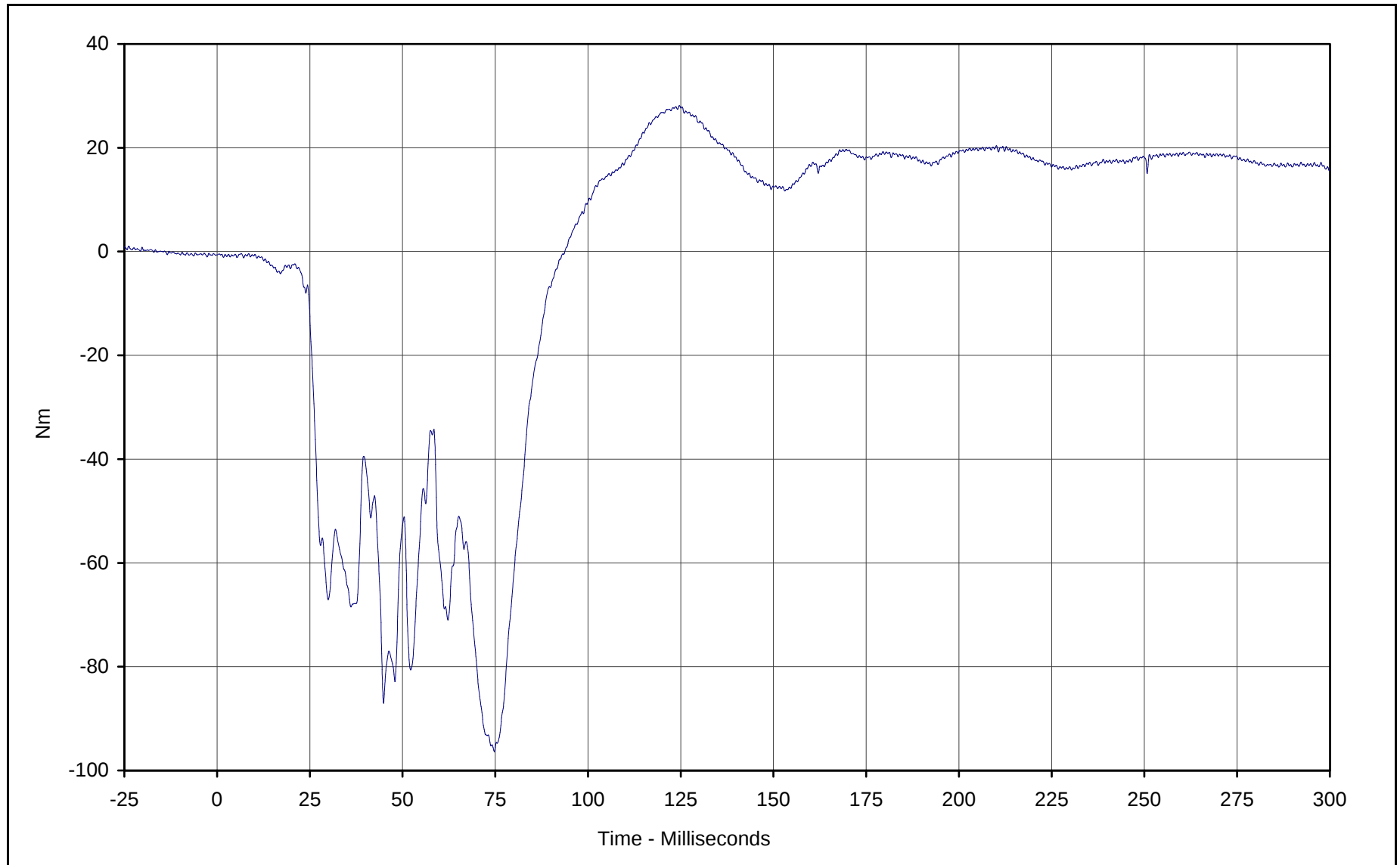
Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Passenger Left Upper Tibia Moment Y

Maximum Value: 28.1 at 124.6 Milliseconds

Minimum Value: -96.4 at 74.7 Milliseconds

SAE Filter Class: 600

Date of Test: 7/31/01

Curve Number: FIL-070

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

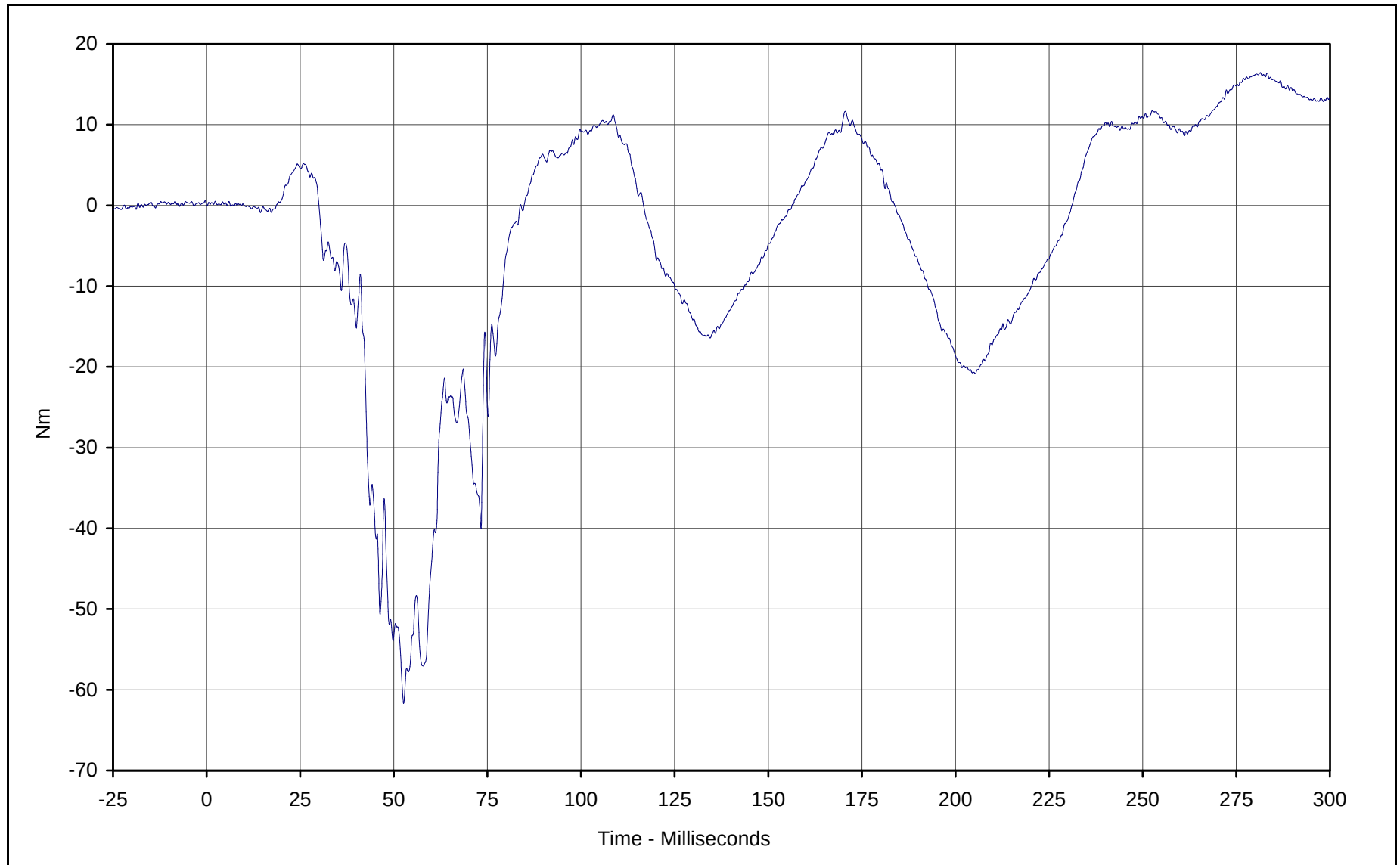
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Passenger Right Upper Tibia Moment X

Maximum Value: 16.4 at 281.4 Milliseconds

Minimum Value: -61.7 at 52.6 Milliseconds

SAE Filter Class: 600

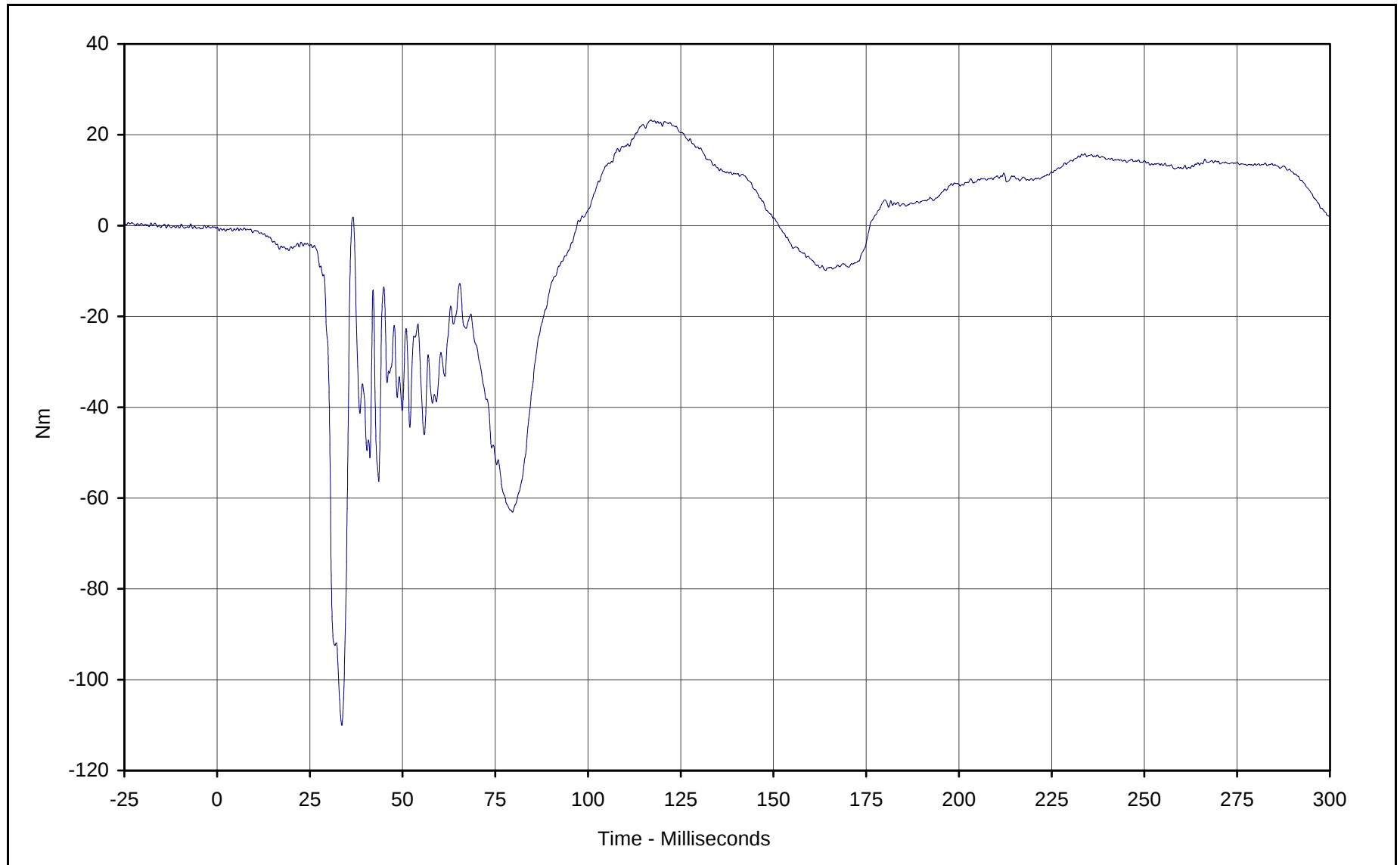
Date of Test: 7/31/01

Curve Number: FIL-071

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV





Curve Description: Passenger Right Upper Tibia Moment Y

Maximum Value: 23.2 at 117.0 Milliseconds

Minimum Value: -110.1 at 33.6 Milliseconds

SAE Filter Class: 600

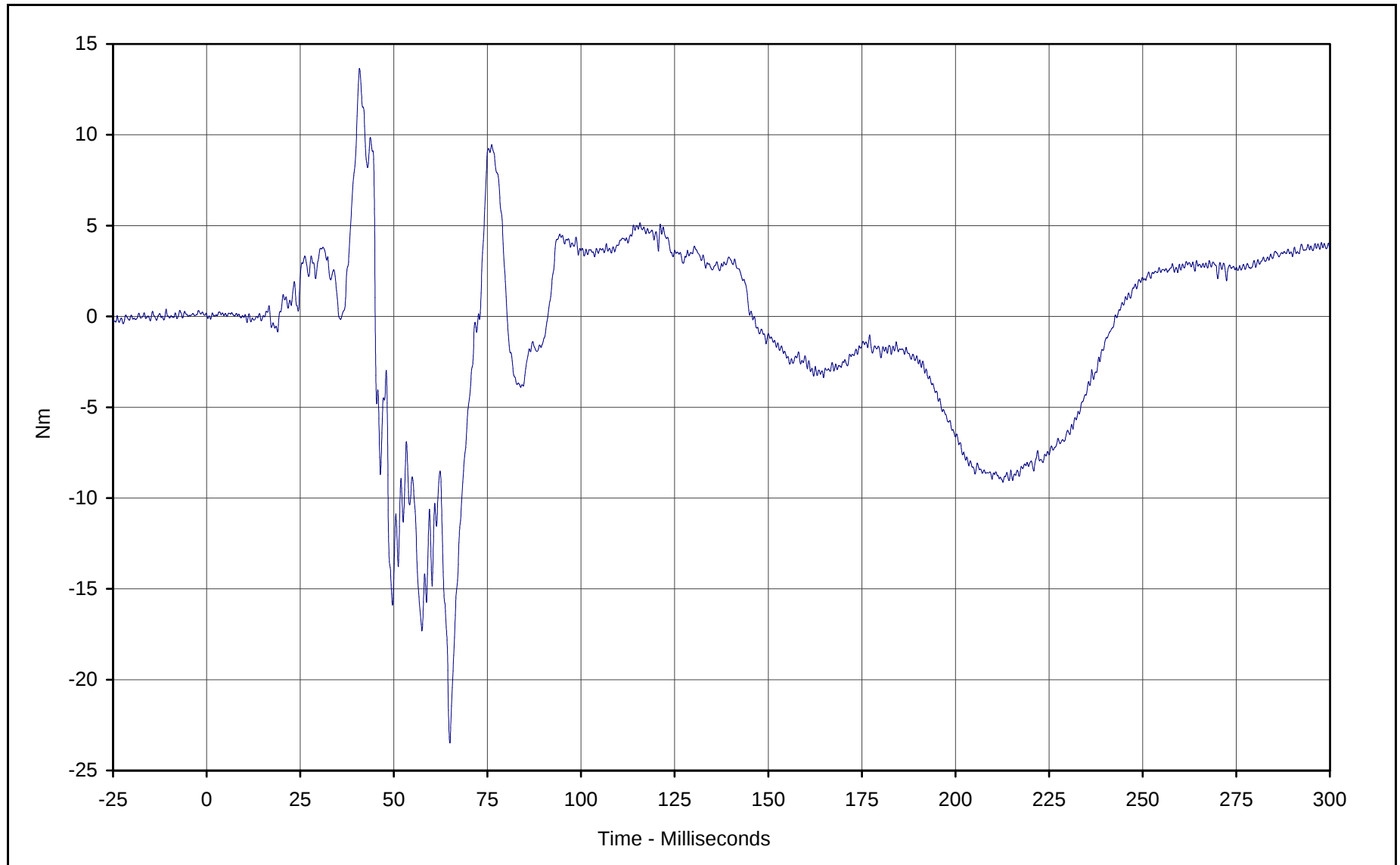
Date of Test: 7/31/01

Curve Number: FIL-072

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV





Curve Description: Passenger Left Lower Tibia Moment X

Maximum Value: 13.7 at 40.8 Milliseconds

Minimum Value: -23.5 at 65.0 Milliseconds

SAE Filter Class: 600

Date of Test: 7/31/01

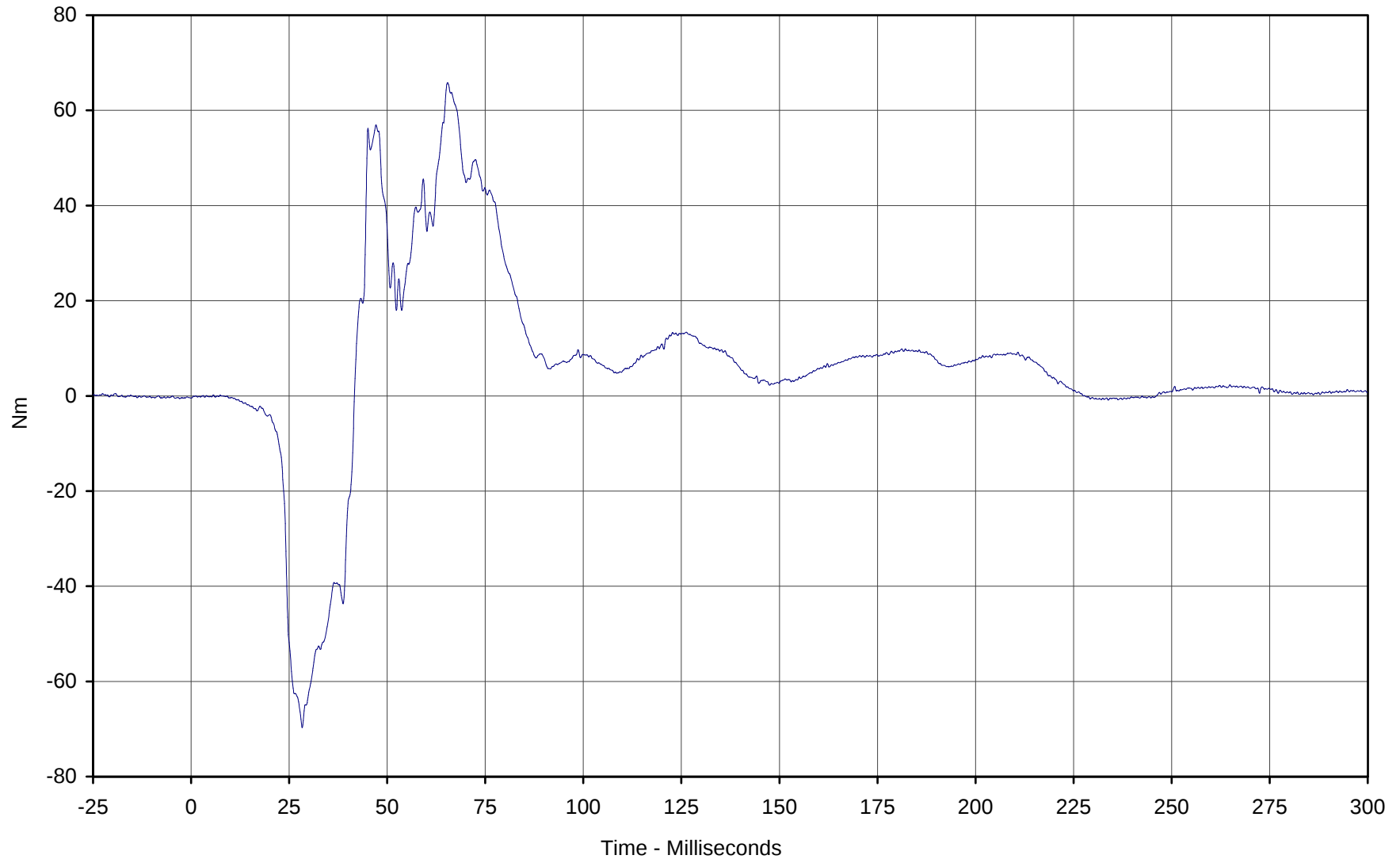
Curve Number: FIL-073

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Passenger Left Lower Tibia Moment Y

Maximum Value: 65.8 at 65.4 Milliseconds

Minimum Value: -69.7 at 28.3 Milliseconds

SAE Filter Class: 600

Date of Test: 7/31/01

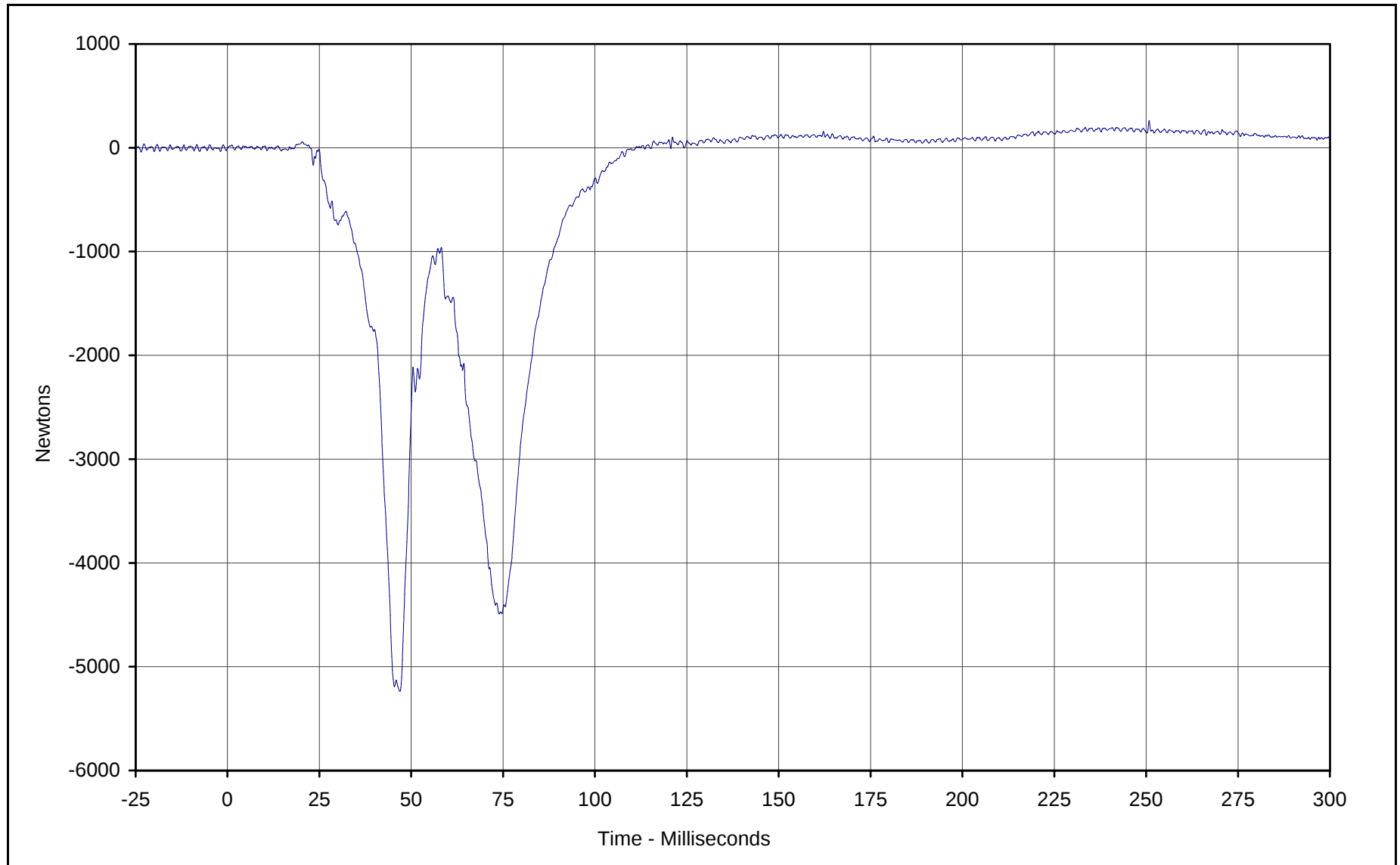
Curve Number: FIL-074

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Passenger Left Lower Tibia Force Z

Maximum Value: 263.3 at 250.8 Milliseconds

Minimum Value: -5235.6 at 46.9 Milliseconds

SAE Filter Class: 600

Date of Test: 7/31/01

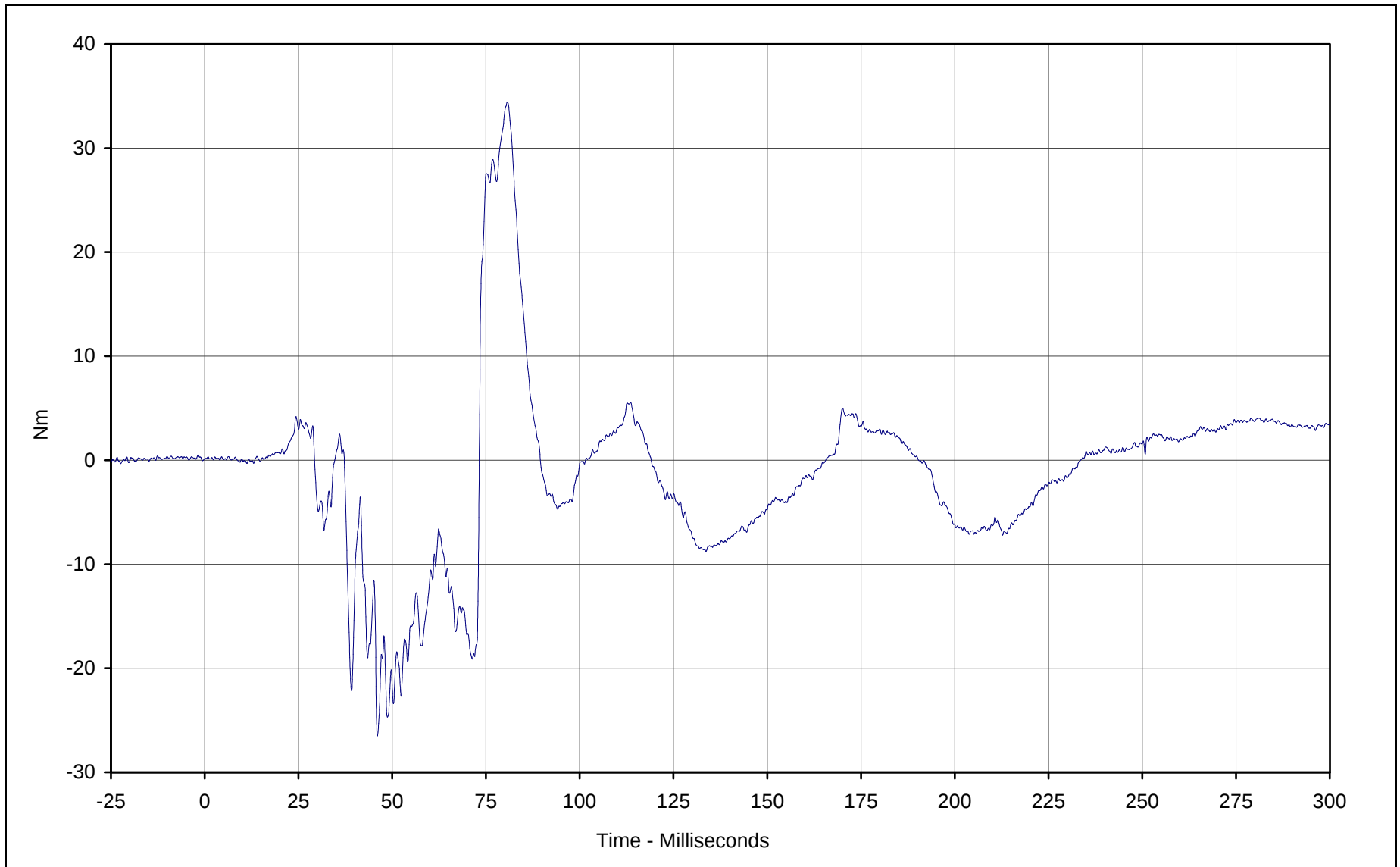
Curve Number: FIL-075

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Passenger Right Lower Tibia Moment X

Maximum Value: 34.4 at 80.7 Milliseconds

Minimum Value: -26.5 at 46.0 Milliseconds

SAE Filter Class: 600

Date of Test: 7/31/01

Curve Number: FIL-076

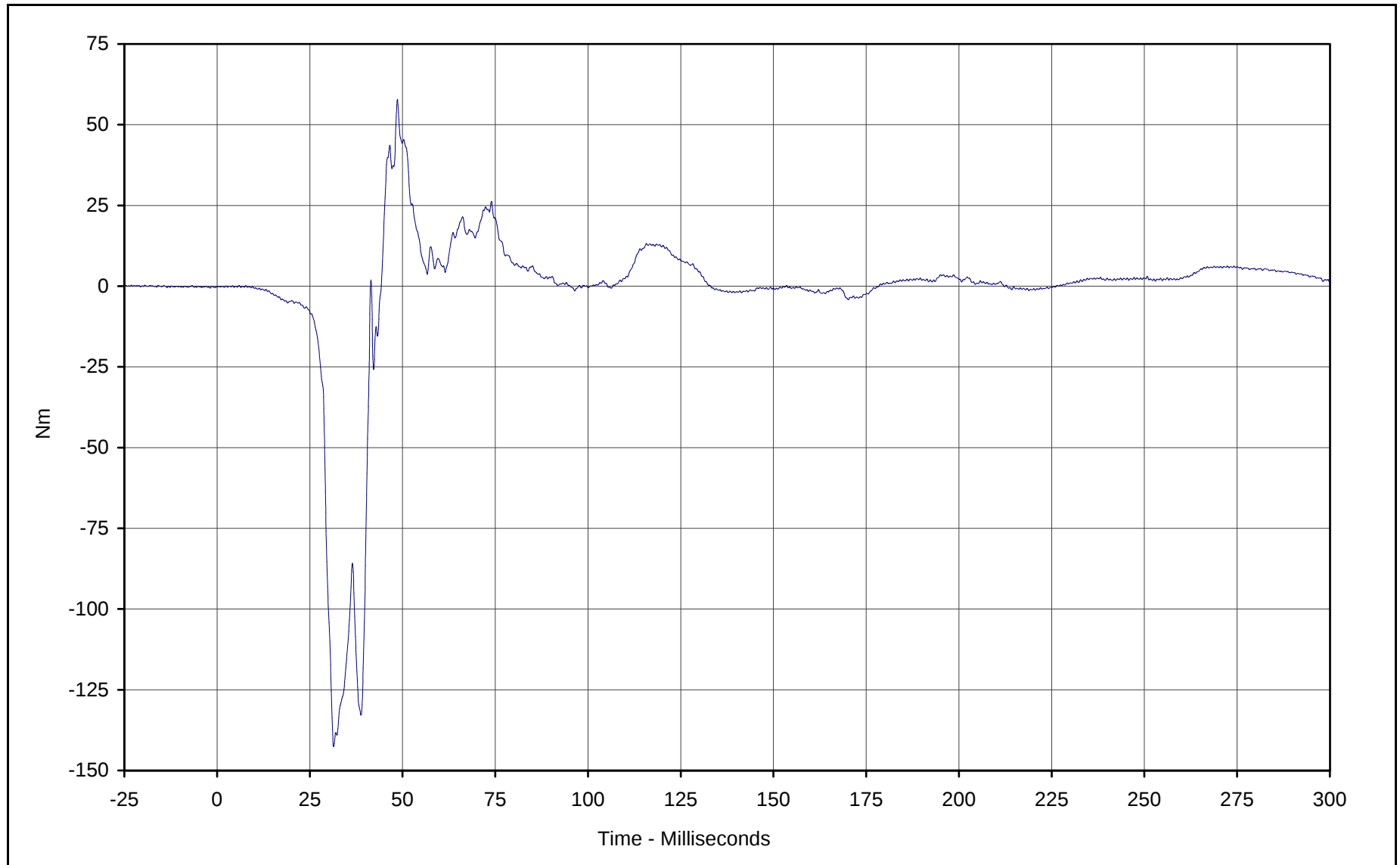
Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Passenger Right Lower Tibia Moment Y

Maximum Value: 57.9 at 48.6 Milliseconds

Minimum Value: -142.6 at 31.4 Milliseconds

SAE Filter Class: 600

Date of Test: 7/31/01

Curve Number: FIL-077

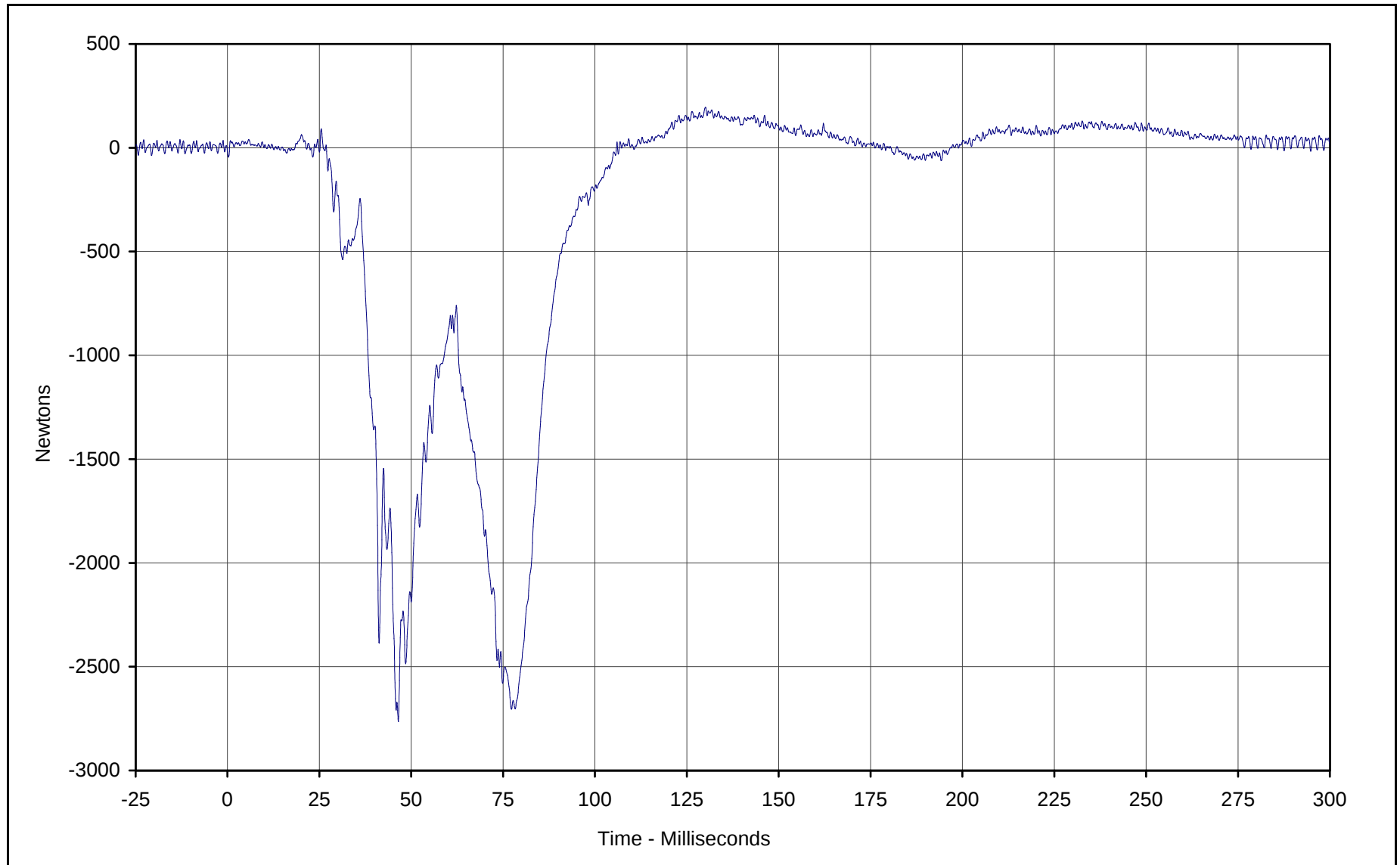
Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Passenger Right lower Tibia Force Z

Maximum Value: 194.9 at 130.1 Milliseconds

Minimum Value: -2765.3 at 46.5 Milliseconds

SAE Filter Class: 600

Date of Test: 7/31/01

Curve Number: FIL-078

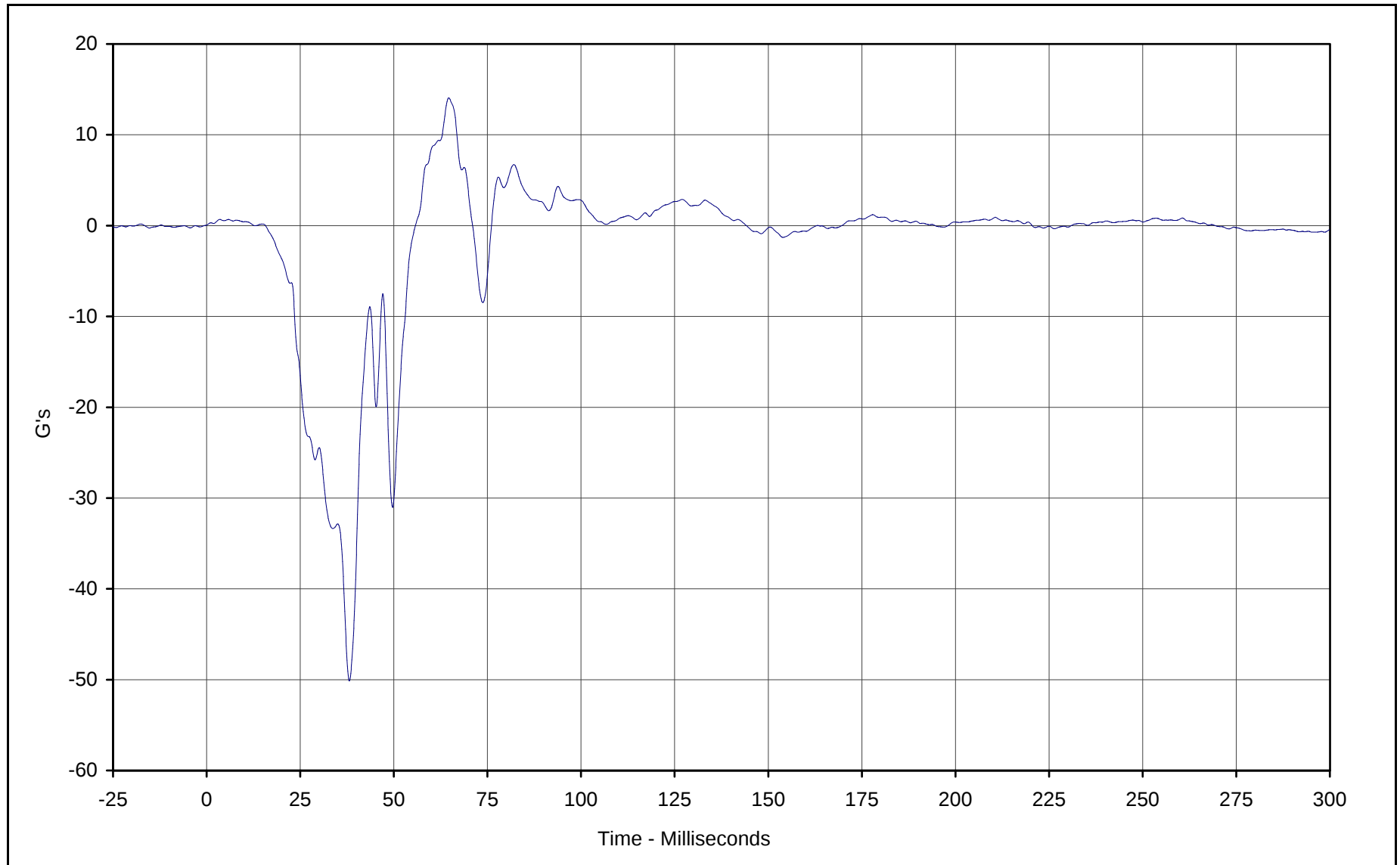
Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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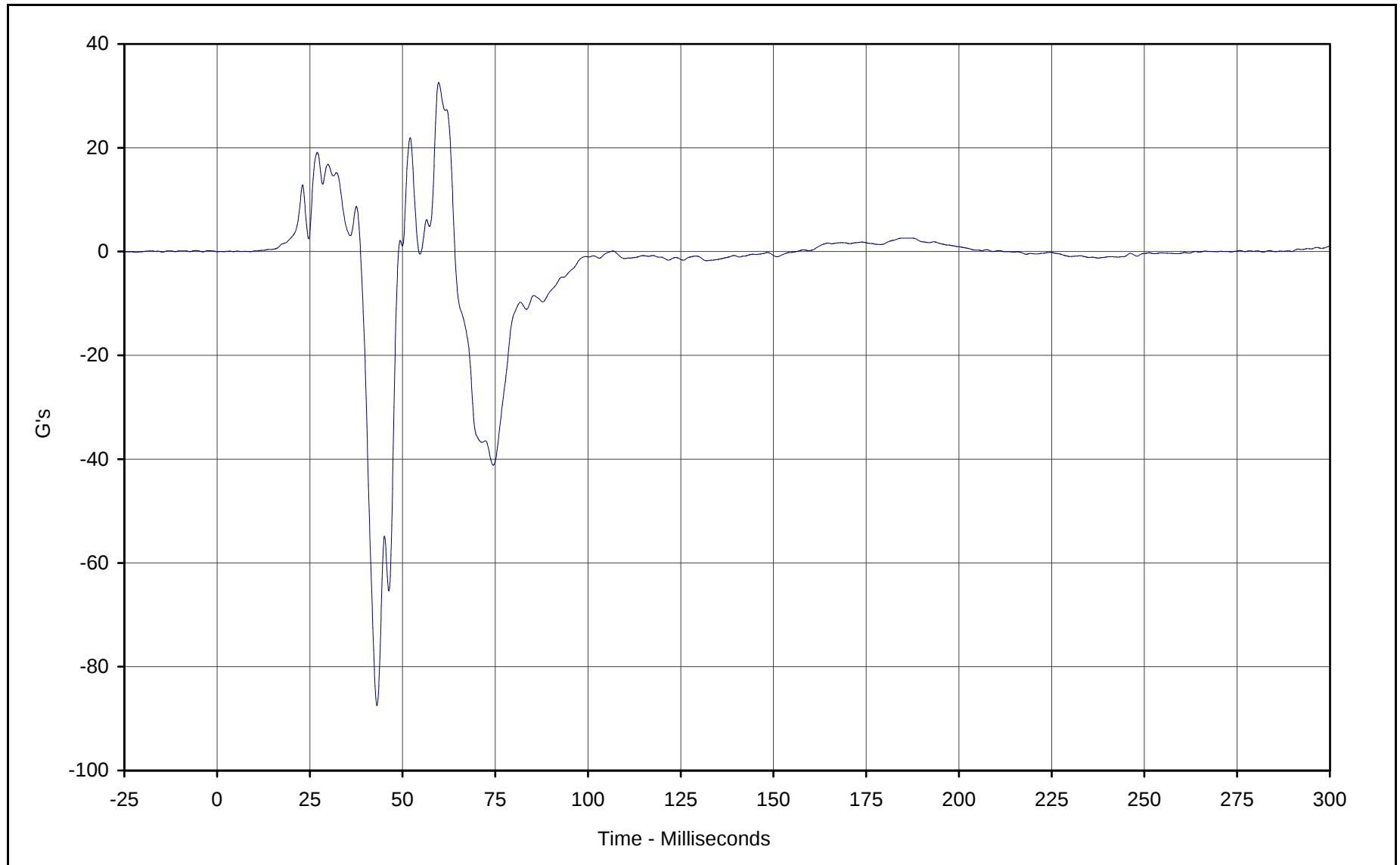
Curve Description: Passenger Left Foot Aft X
Maximum Value: 14.1 at 64.7 Milliseconds
Minimum Value: -50.1 at 38.1 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-079

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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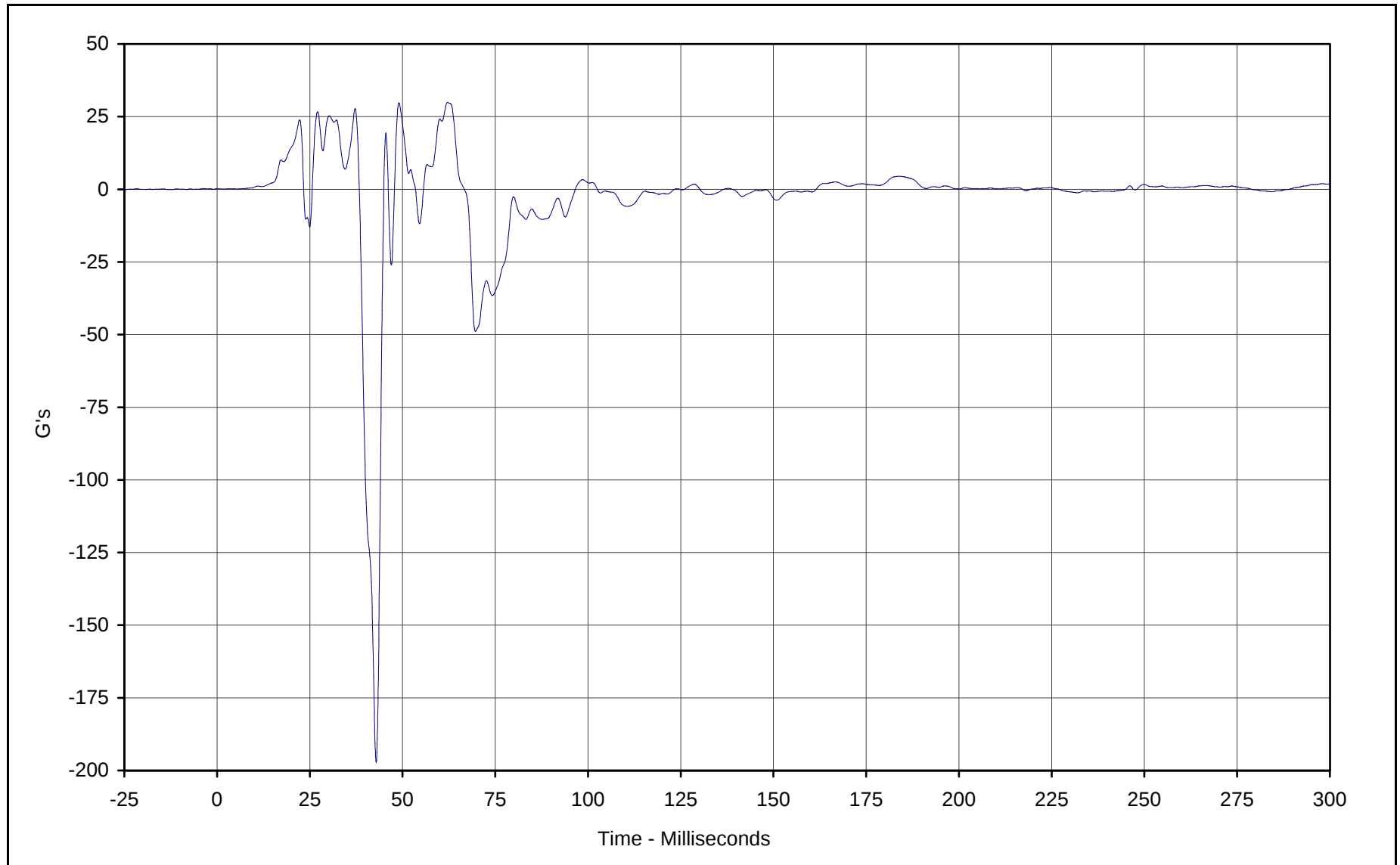
Curve Description: Passenger Left Foot Aft Z
Maximum Value: 32.6 at 59.8 Milliseconds
Minimum Value: -87.5 at 43.1 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-080

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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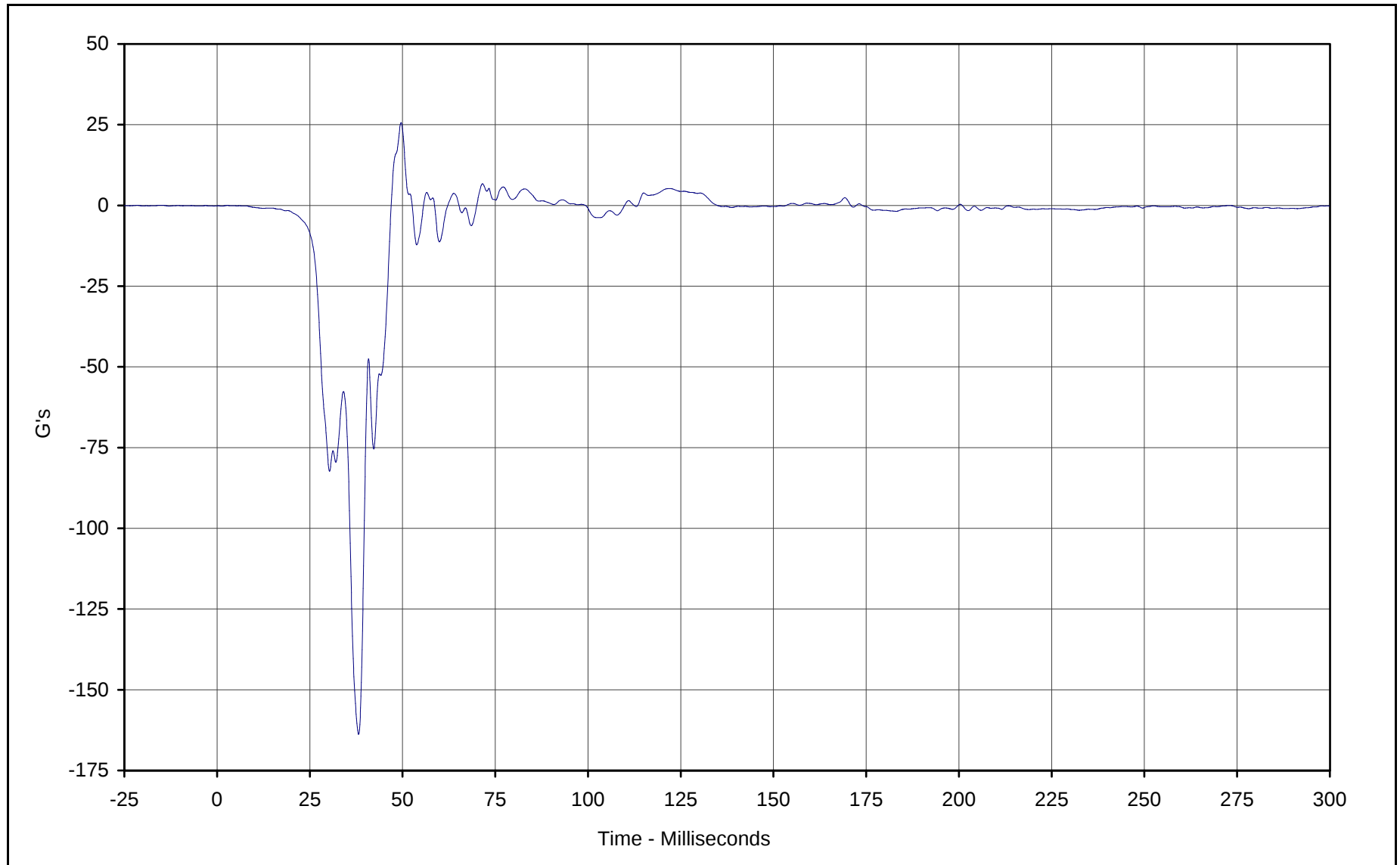
Curve Description: Passenger Left Foot Fore Z
Maximum Value: 29.9 at 62.1 Milliseconds
Minimum Value: -197.3 at 42.9 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-081

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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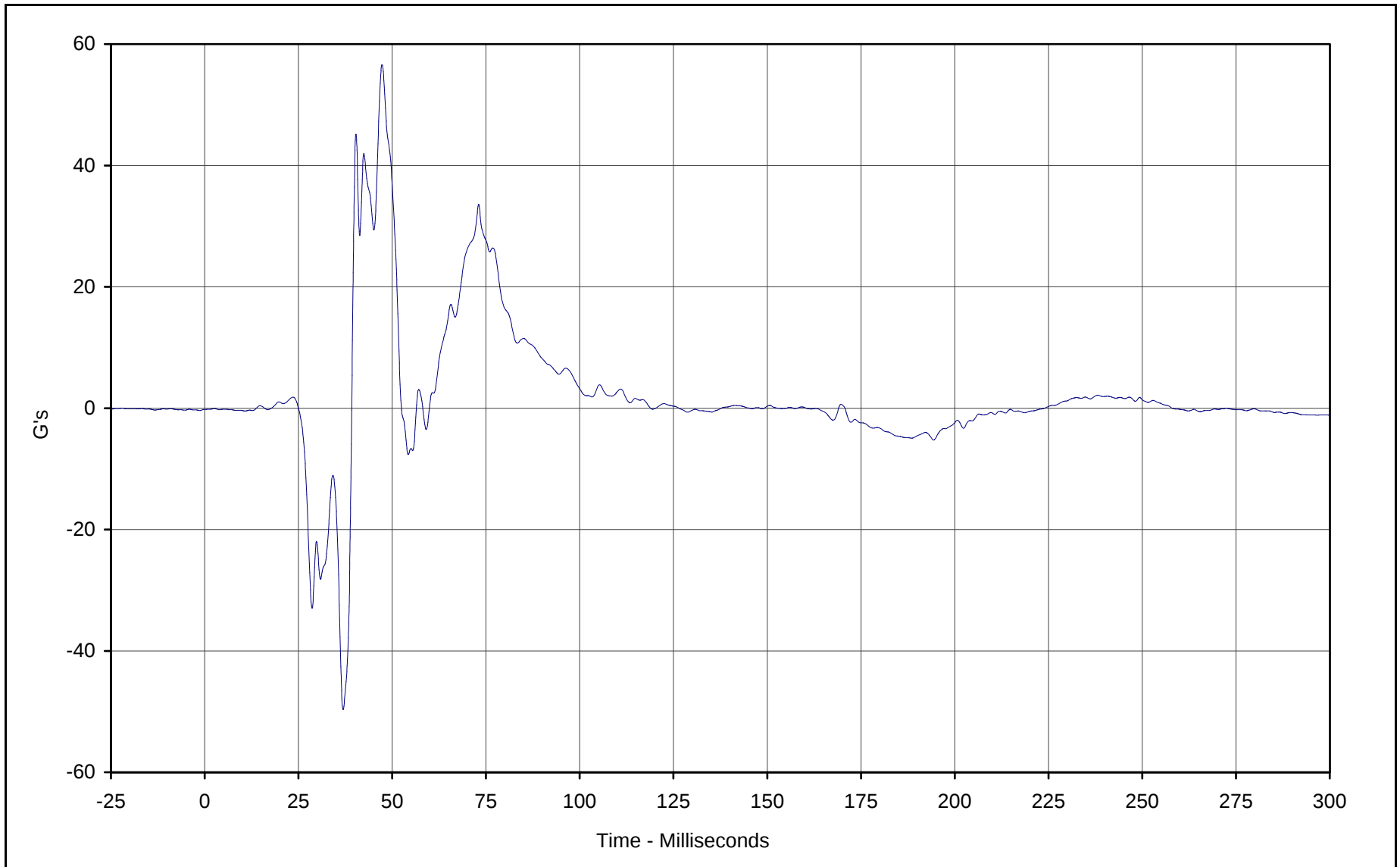
Curve Description: Passenger Right Foot Aft X
Maximum Value: 25.6 at 49.6 Milliseconds
Minimum Value: -163.8 at 38.2 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-082

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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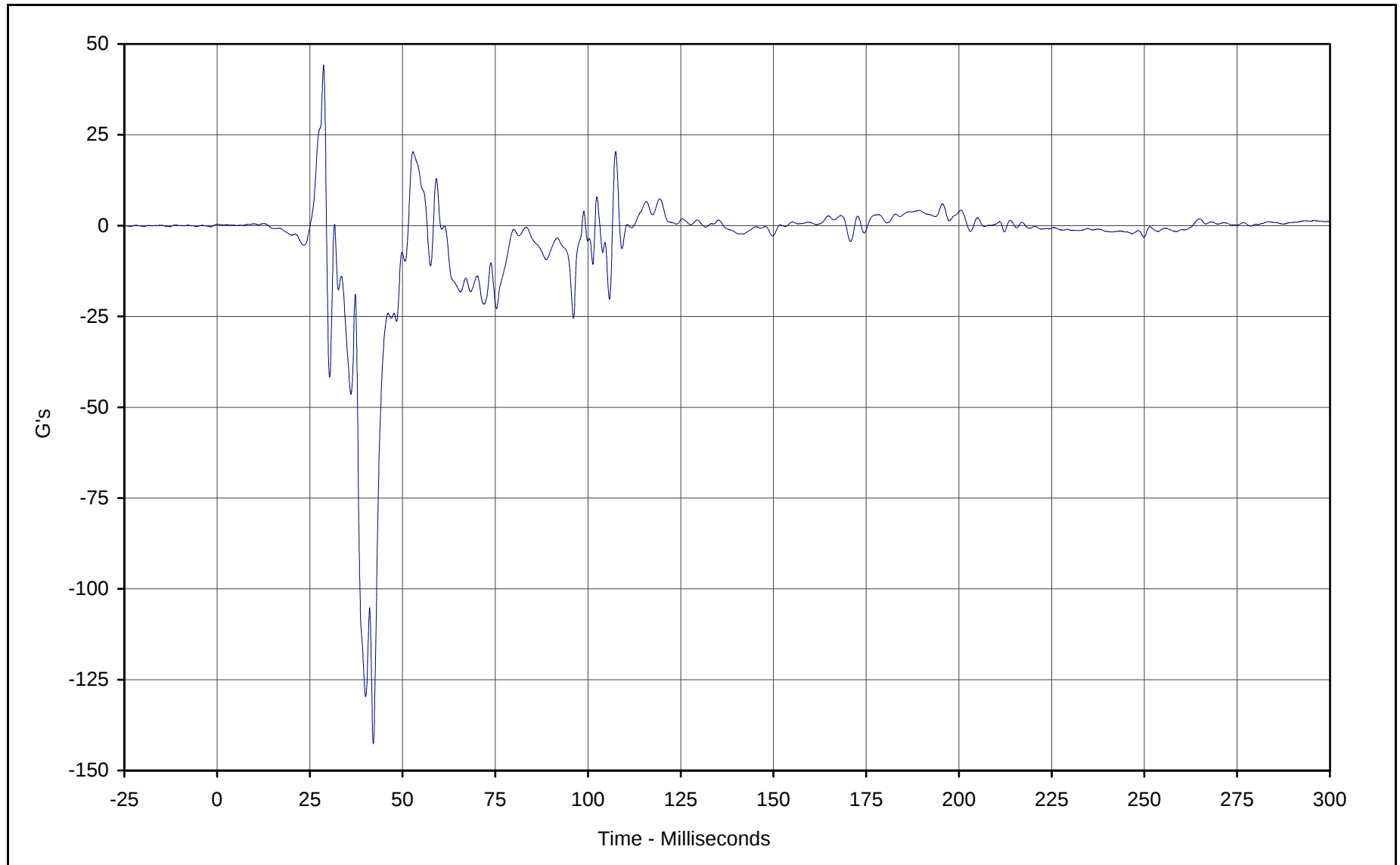
Curve Description: Passenger Right Foot Aft Z
Maximum Value: 56.6 at 47.3 Milliseconds
Minimum Value: -49.7 at 36.9 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-083

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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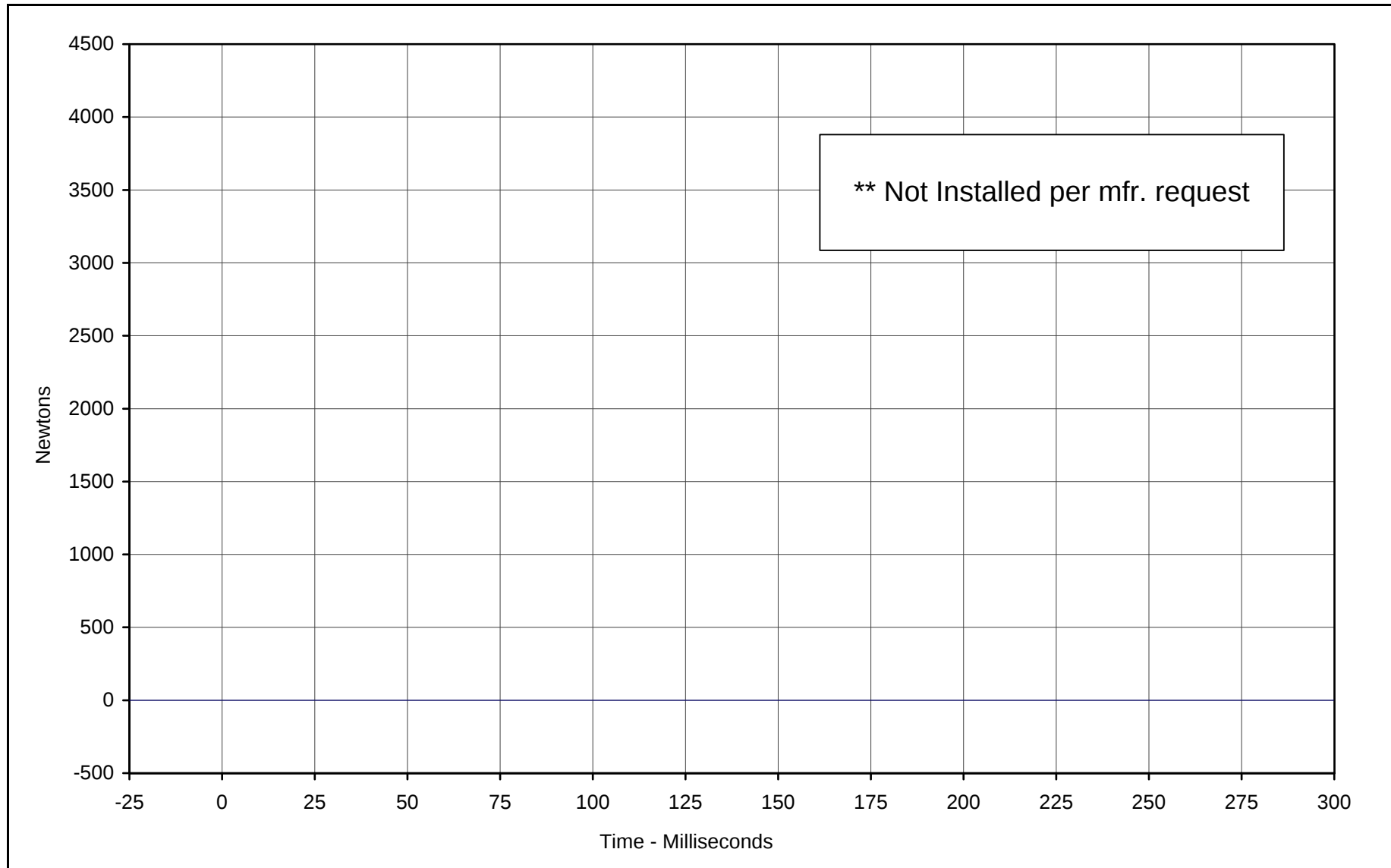


Curve Description: Passenger Right Foot Fore Z
Maximum Value: 44.2 at 28.7 Milliseconds
Minimum Value: -142.7 at 42.1 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: FIL-084

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Passenger Lap Belt Force **

Maximum Value: 0.0 at 0.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 60

Date of Test: 7/31/01

Curve Number: FIL-085

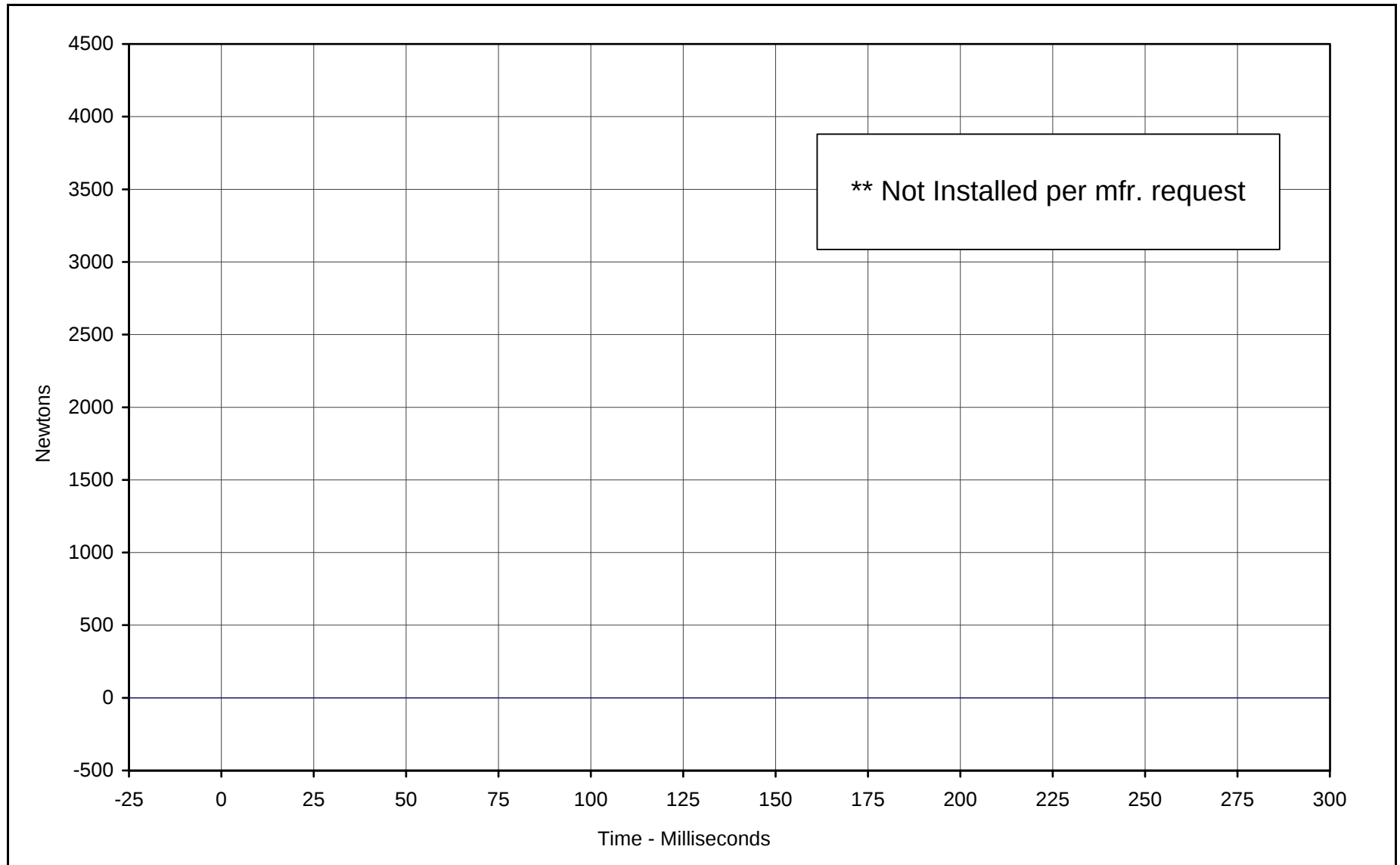
Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

** Not installed per mfr. Request



B-120



Curve Description: Passenger Shoulder Belt Force **

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Maximum Value: 0.0 at 0.0 Milliseconds

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 60

Date of Test: 7/31/01

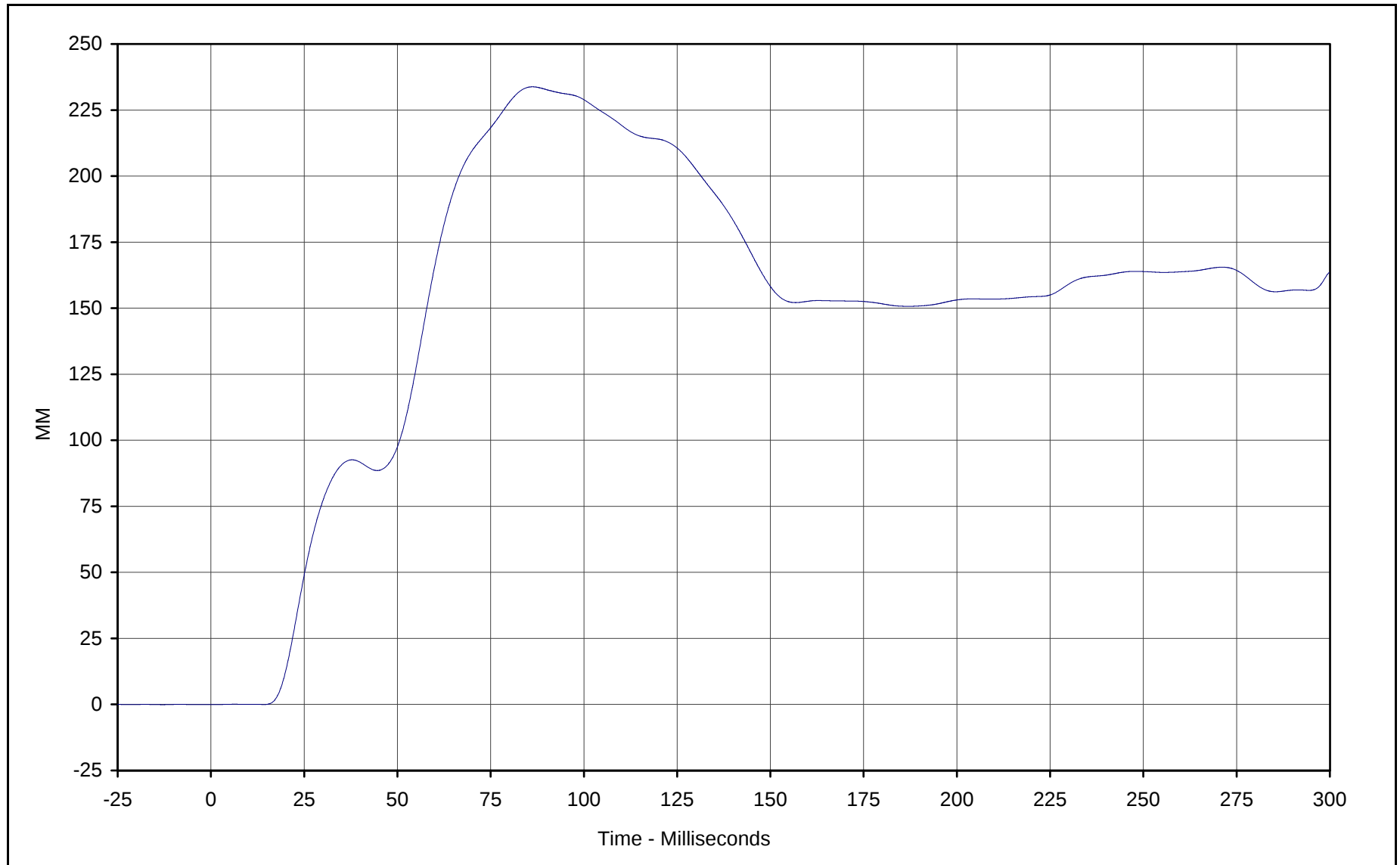
Curve Number: FIL-086

** Not installed per mfr. Request



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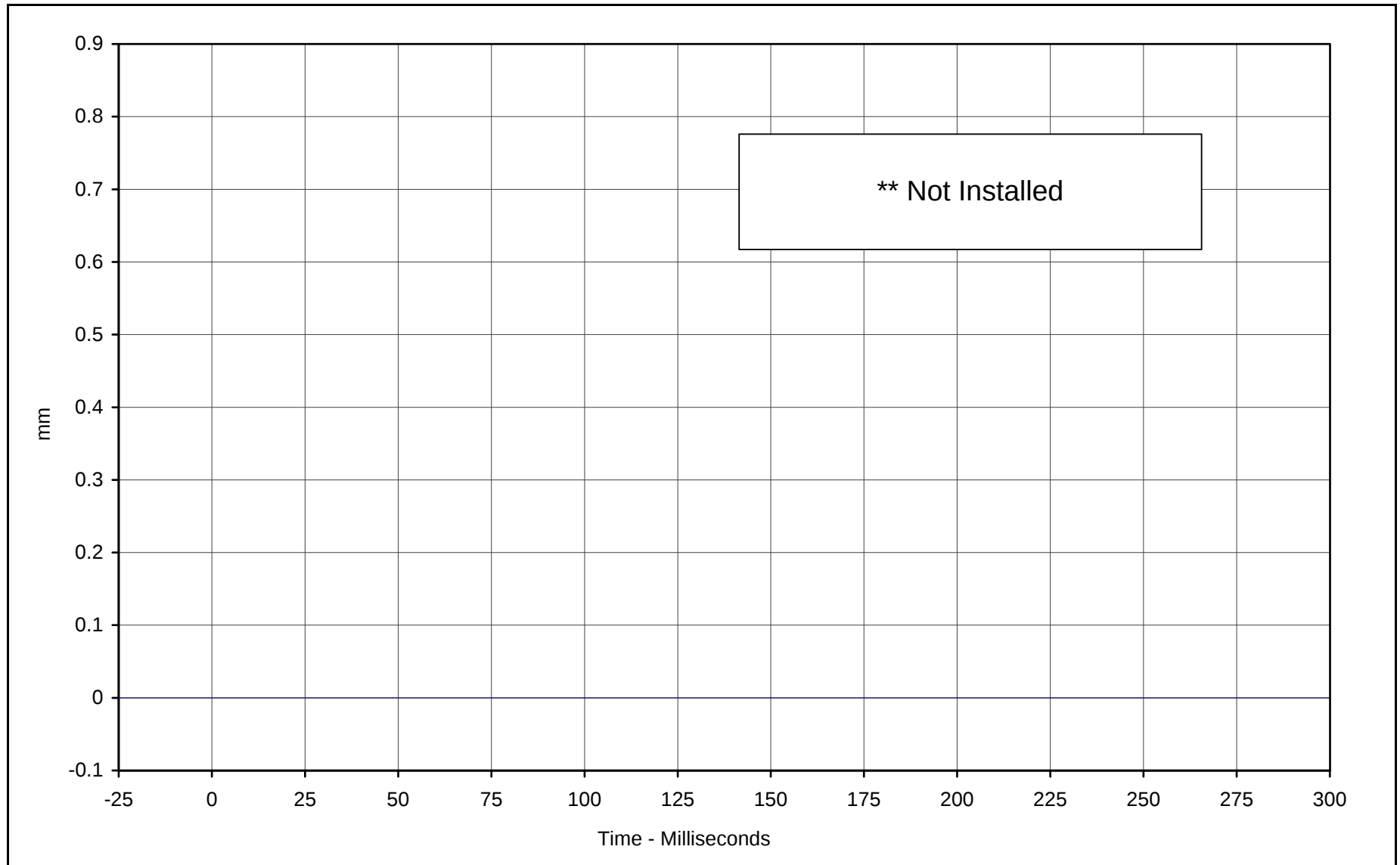
Curve Description: Passenger Shoulder Belt Pullout
Maximum Value: 233.8 at 86.2 Milliseconds
Minimum Value: 0.0 at 0.0 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-087

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Passenger Shoulder Belt Elongation **

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Maximum Value: 0.0 at 0.0 Milliseconds

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 600

Date of Test: 7/31/01

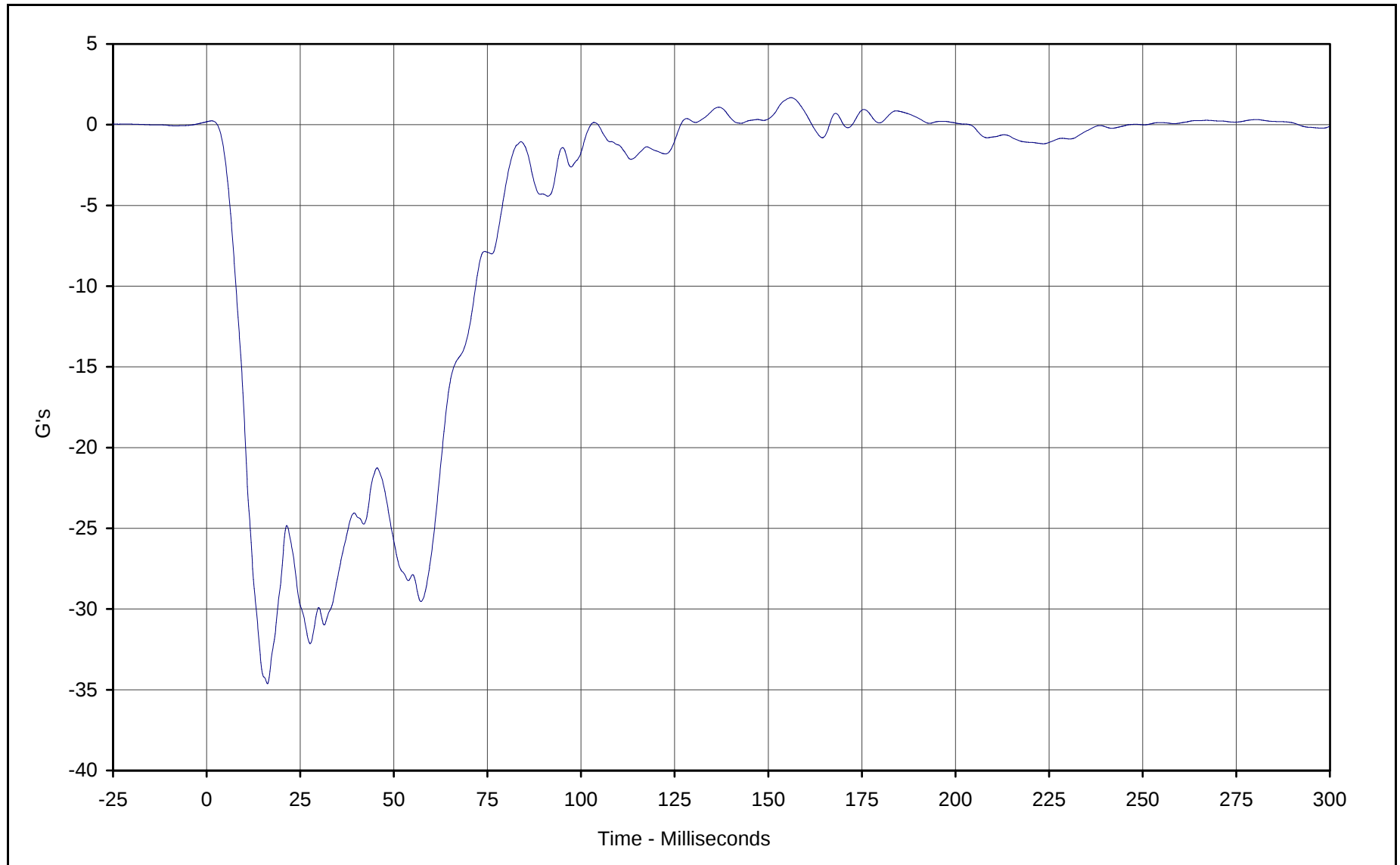
Curve Number: FIL-088

** Not installed



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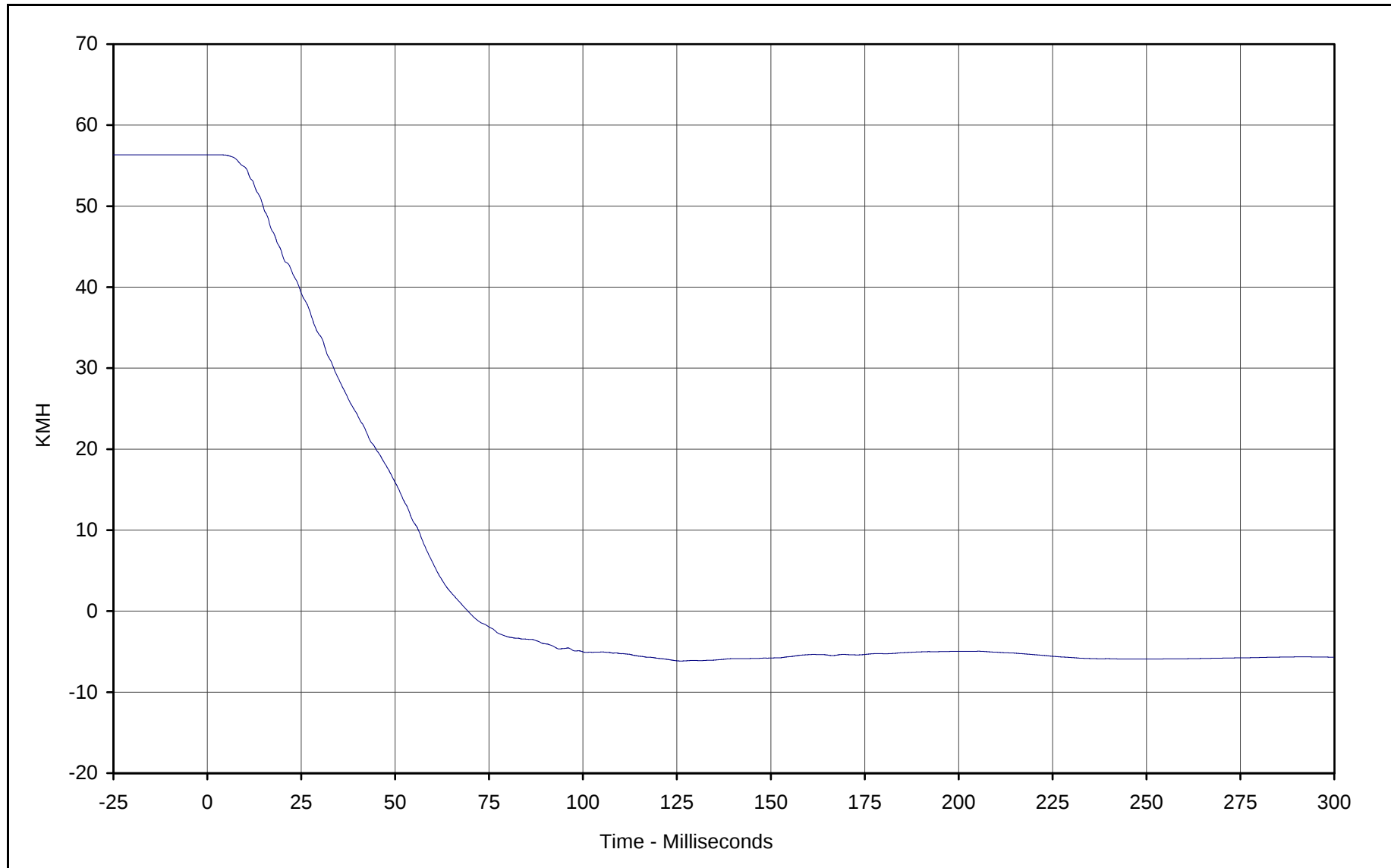
Curve Description: Vehicle Left Rear Primary
Maximum Value: 1.7 at 156.1 Milliseconds
Minimum Value: -34.6 at 16.3 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-089

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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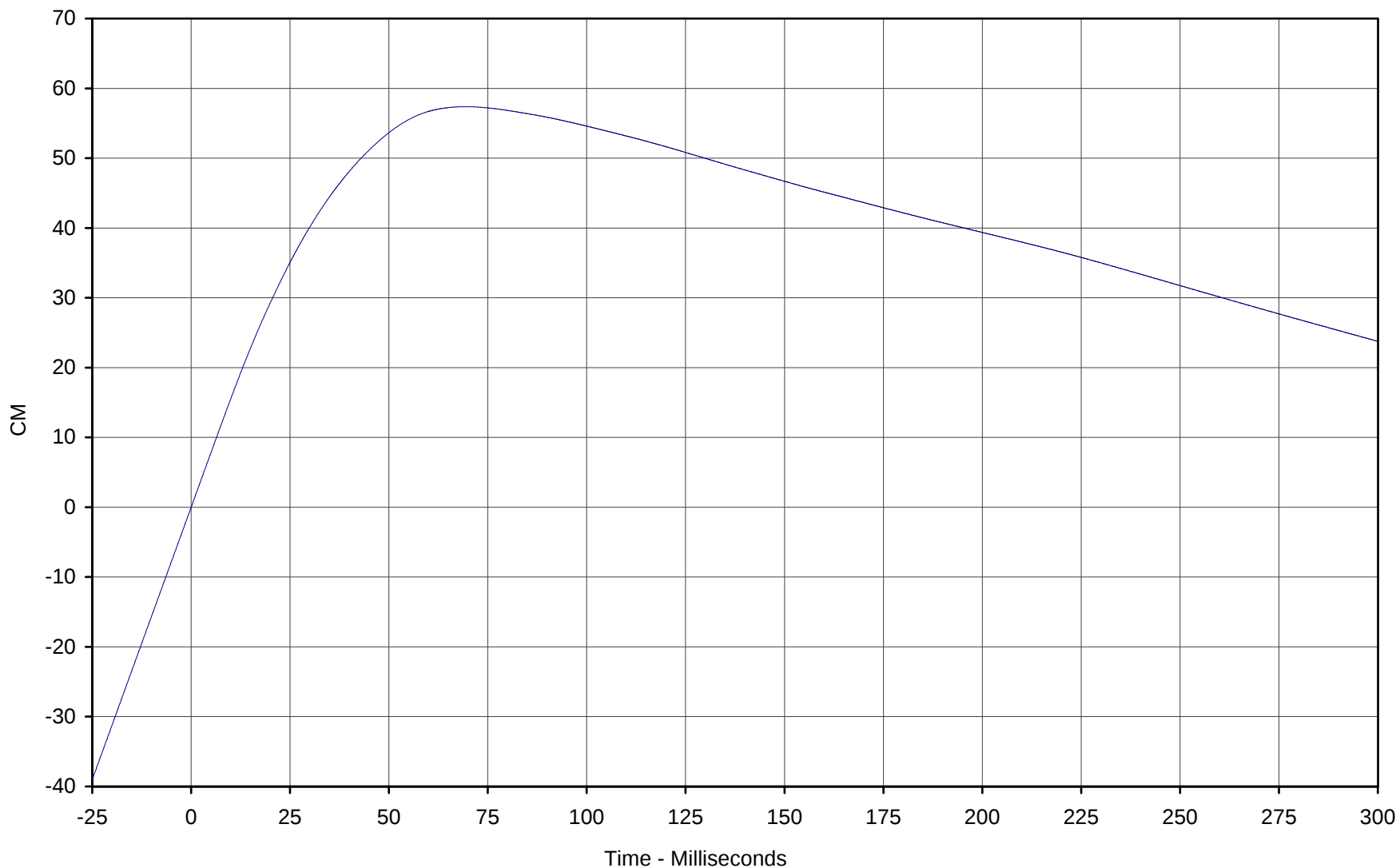
Curve Description: Vehicle Left Rear Primary Velocity
Maximum Value: 56.3 at 0.3 Milliseconds
Minimum Value: -6.2 at 126.0 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN1-089

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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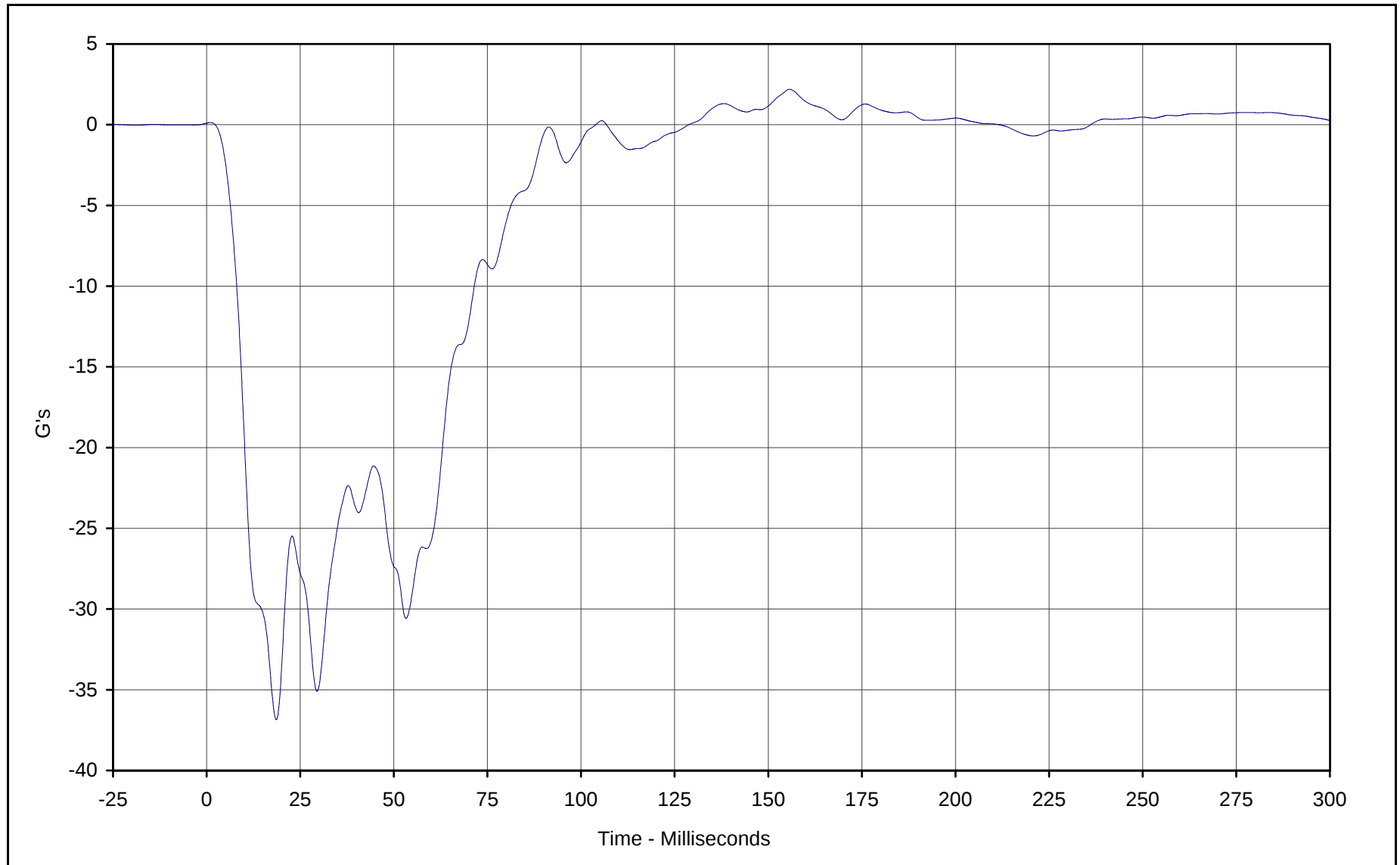


Curve Description: Vehicle Left Rear Primary Displ.
Maximum Value: 57.4 at 69.4 Milliseconds
Minimum Value: 0.0 at 0.0 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN2-089

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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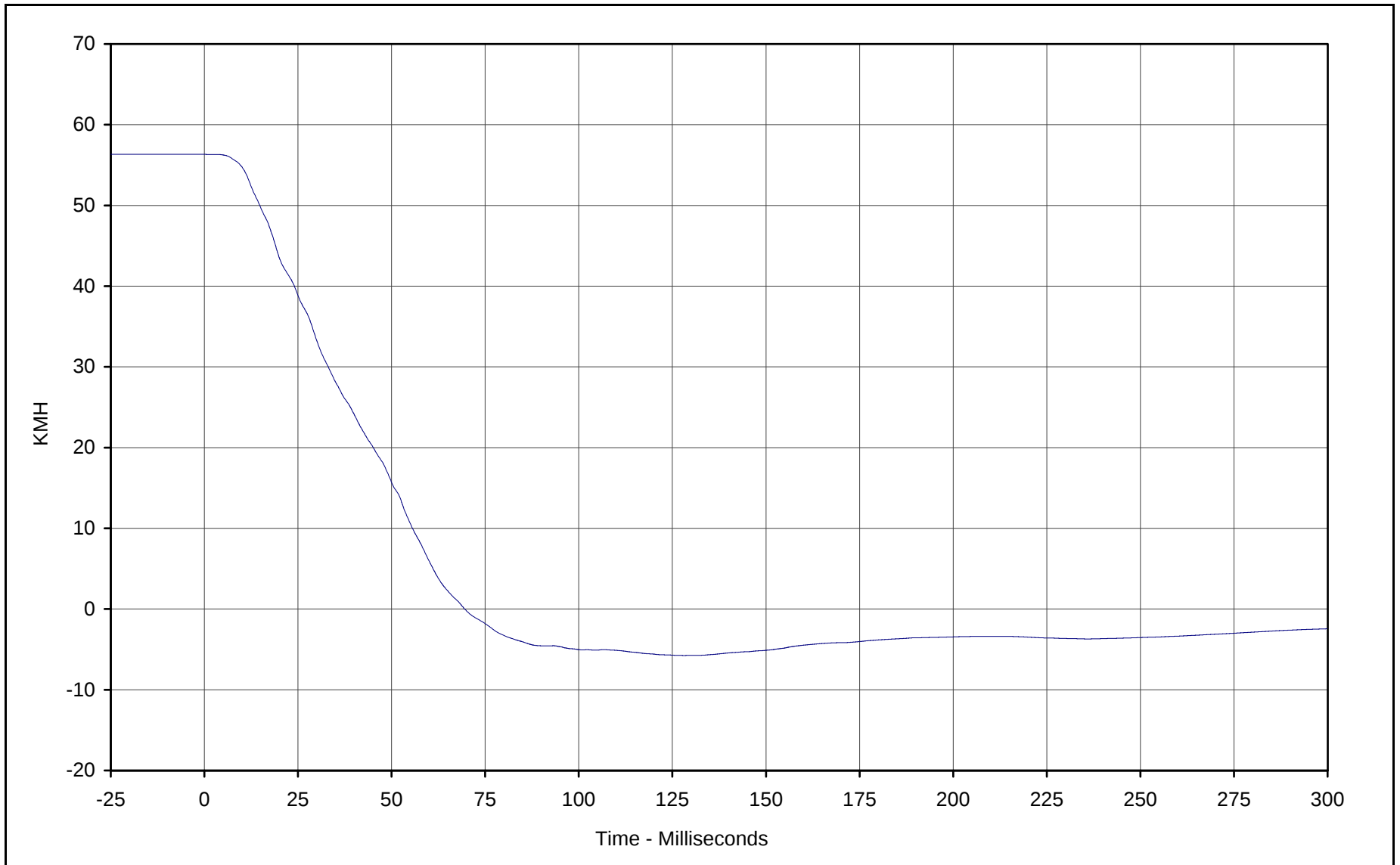


Curve Description: Vehicle Right Rear Primary
Maximum Value: 2.2 at 155.7 Milliseconds
Minimum Value: -36.9 at 18.6 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-090

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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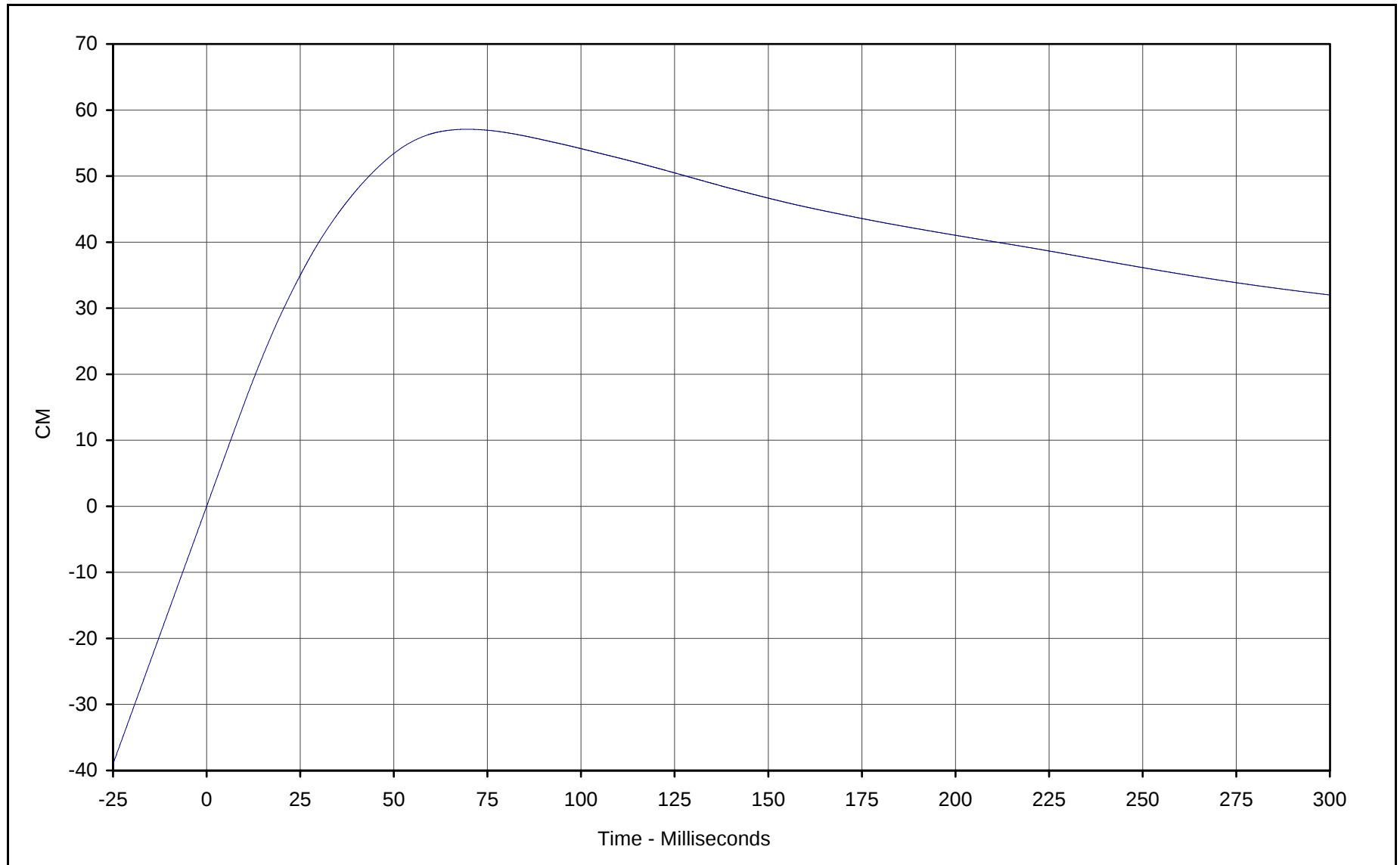
Curve Description: Vehicle Right Rear Primary Velocity
Maximum Value: 56.3 at 0.0 Milliseconds
Minimum Value: -5.8 at 128.1 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN1-090

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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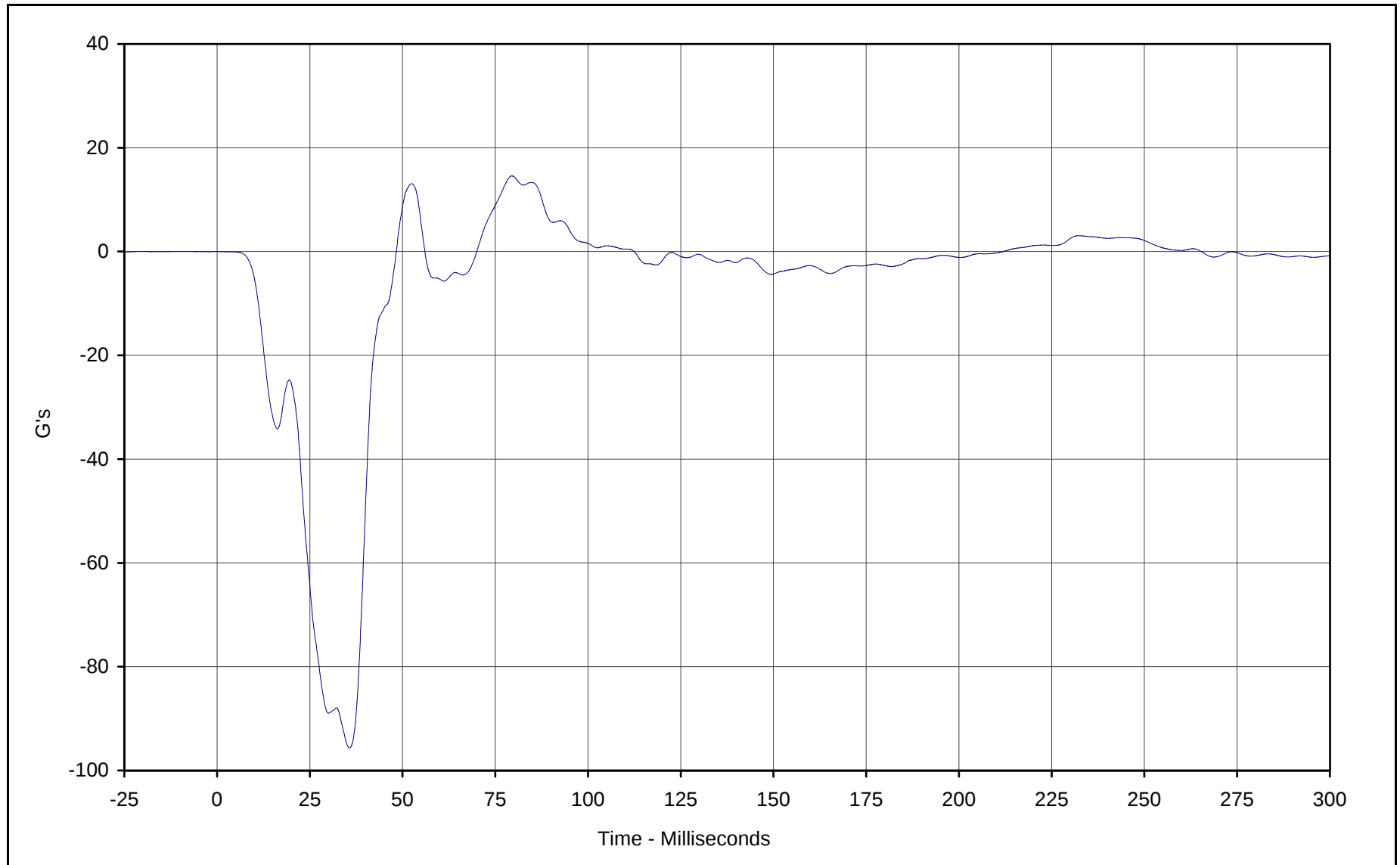
Curve Description: Vehicle Right Rear Primary Displ.
Maximum Value: 57.1 at 69.5 Milliseconds
Minimum Value: 0.0 at 0.0 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN2-090

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Vehicle Engine Top

Maximum Value: 14.6 at 79.5 Milliseconds

Minimum Value: -95.7 at 35.7 Milliseconds

SAE Filter Class: 60

Date of Test: 7/31/01

Curve Number: FIL-091

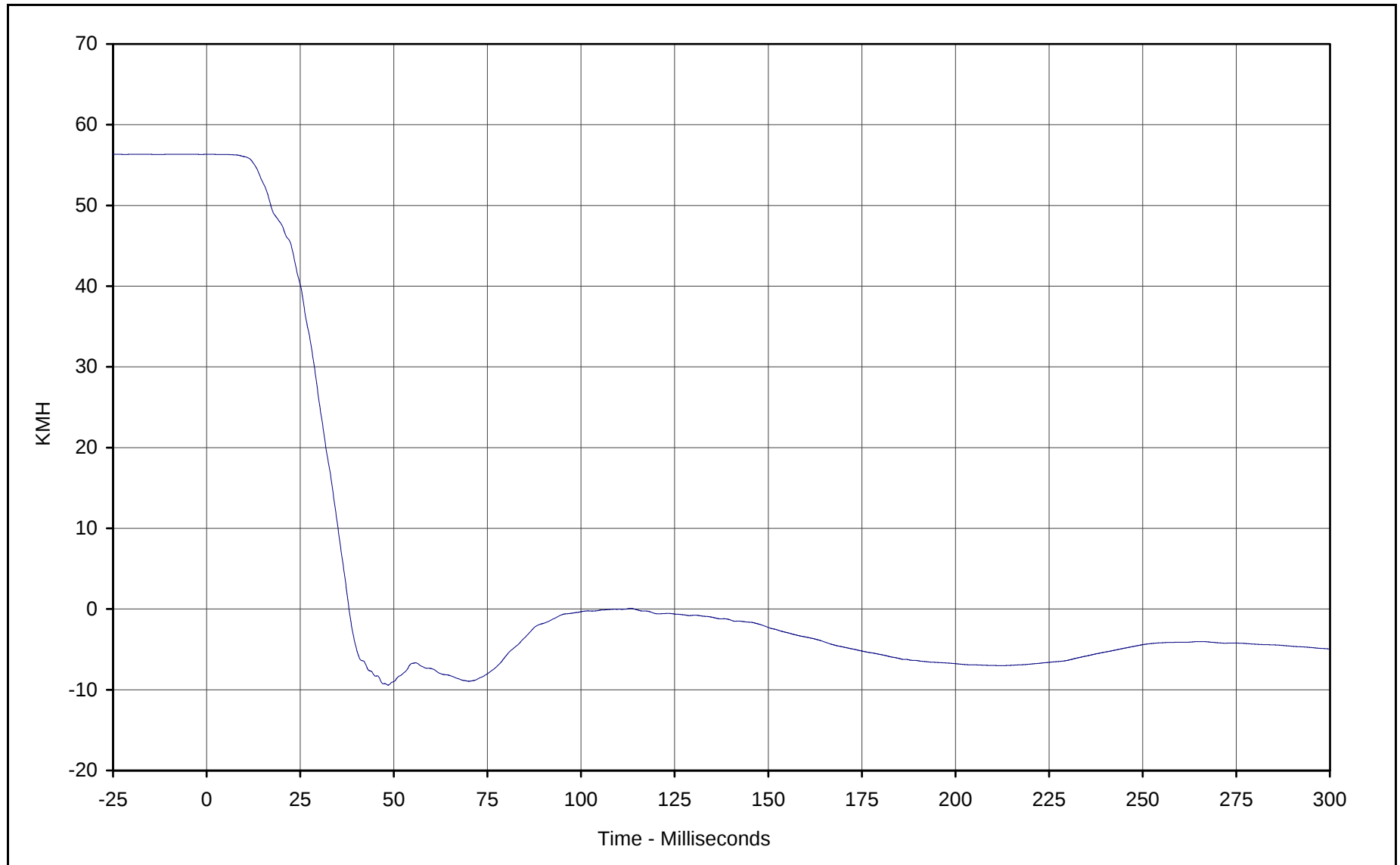
Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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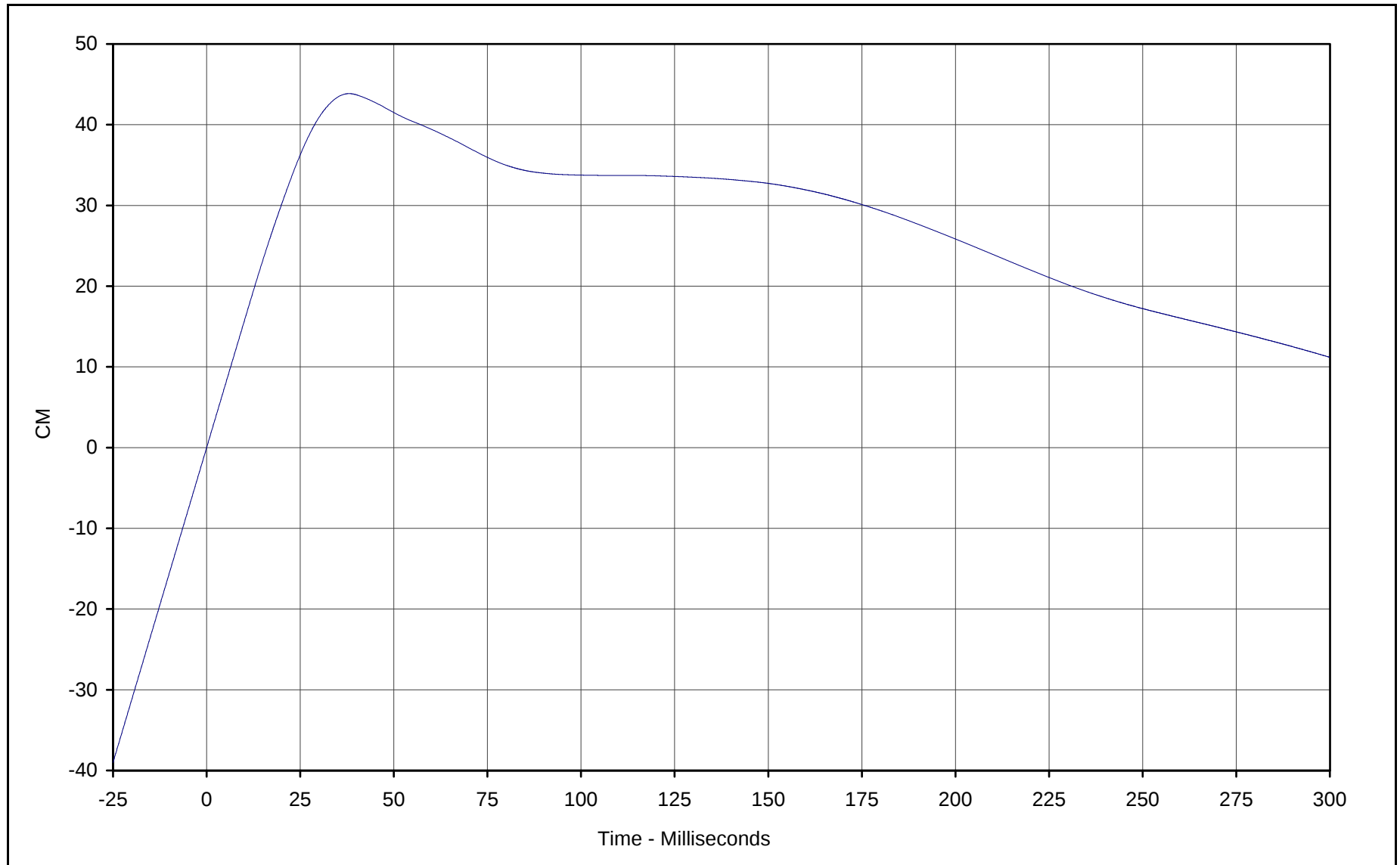
Curve Description: Vehicle Engine Top Velocity
Maximum Value: 56.3 at 0.7 Milliseconds
Minimum Value: -9.4 at 48.5 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN1-091

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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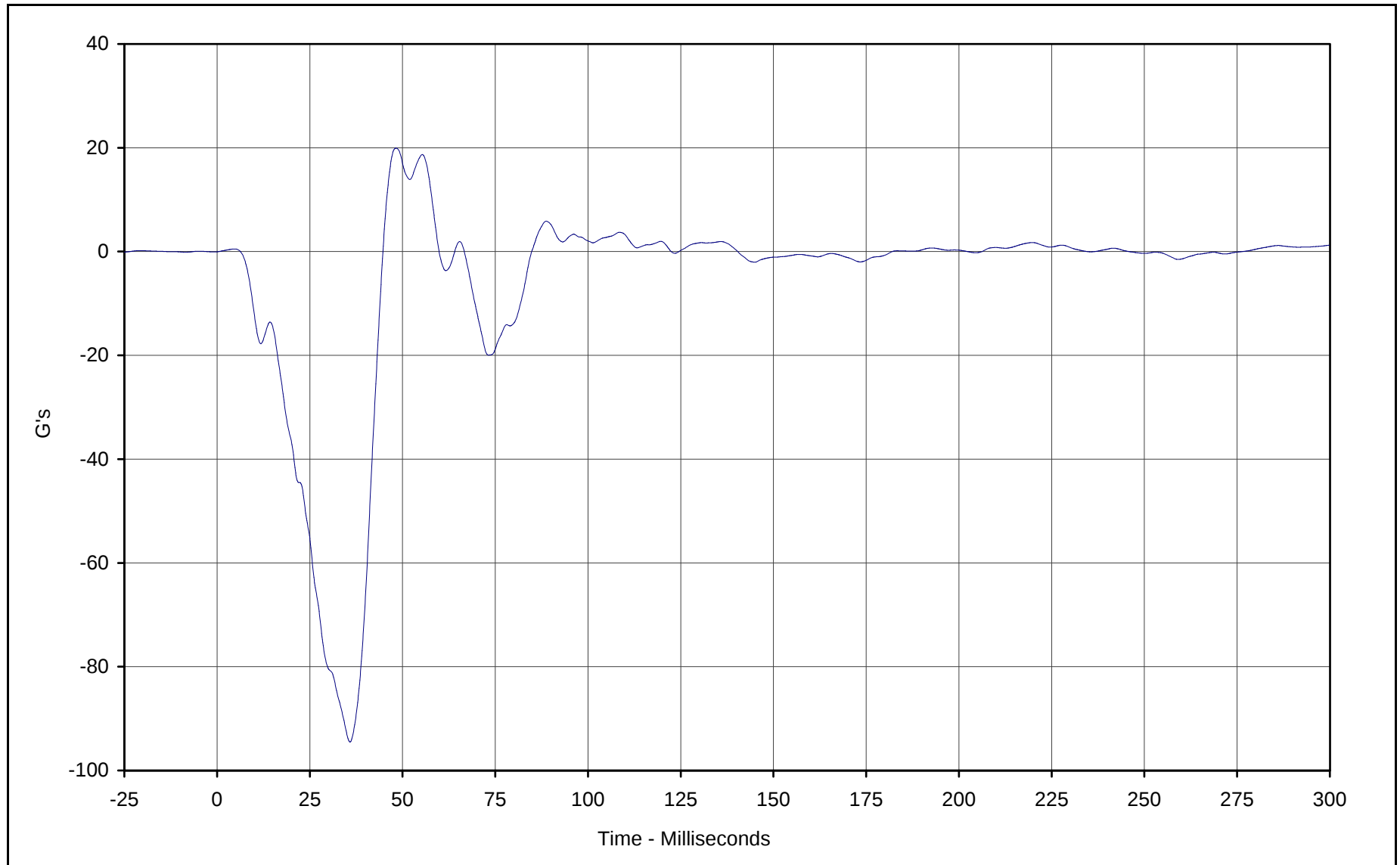
Curve Description: Vehicle Engine Top Displacement
Maximum Value: 43.9 at 38.0 Milliseconds
Minimum Value: 0.0 at 0.0 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN2-091

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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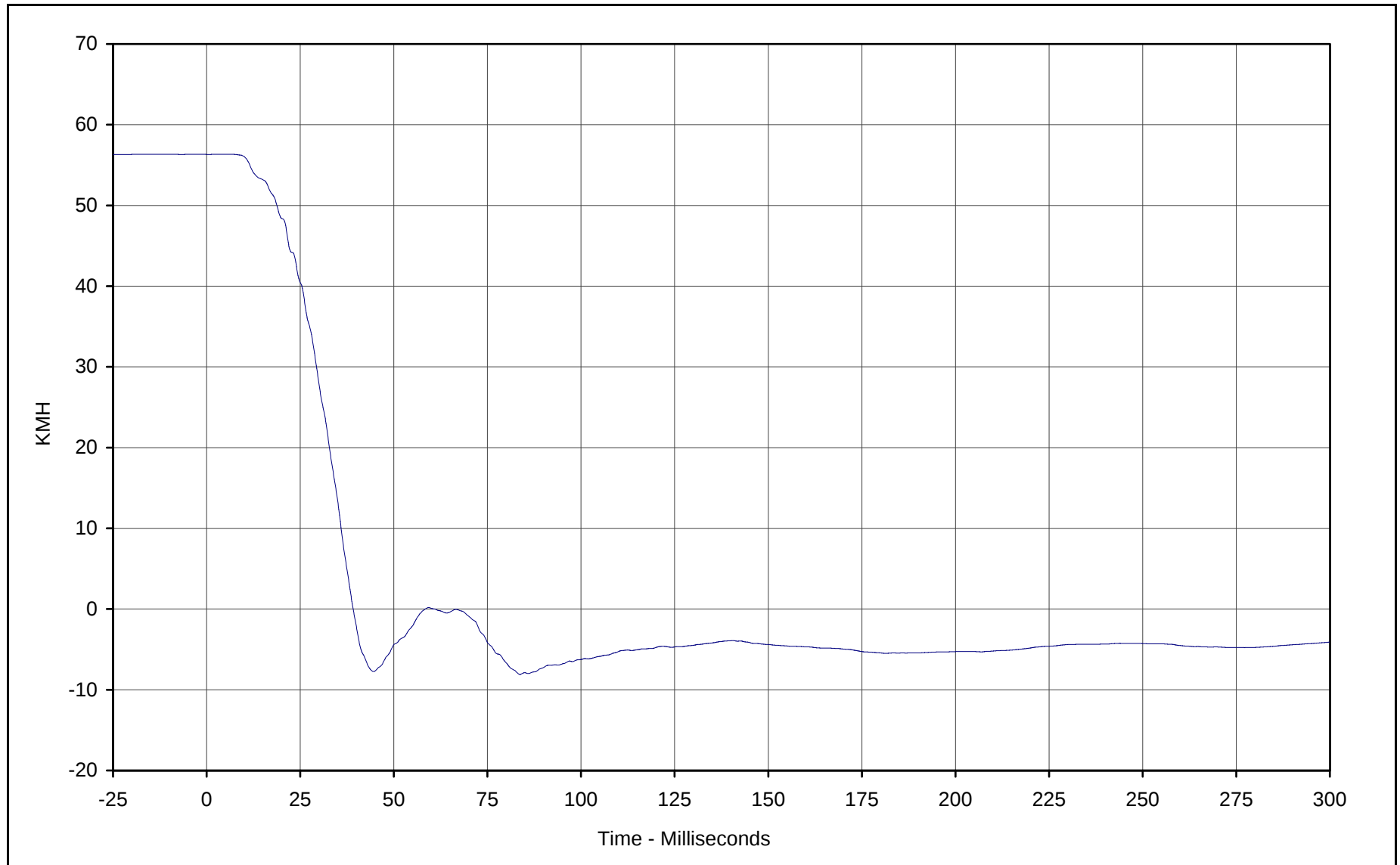
Curve Description: Vehicle Engine Bottom
Maximum Value: 19.9 at 48.2 Milliseconds
Minimum Value: -94.5 at 35.8 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-092

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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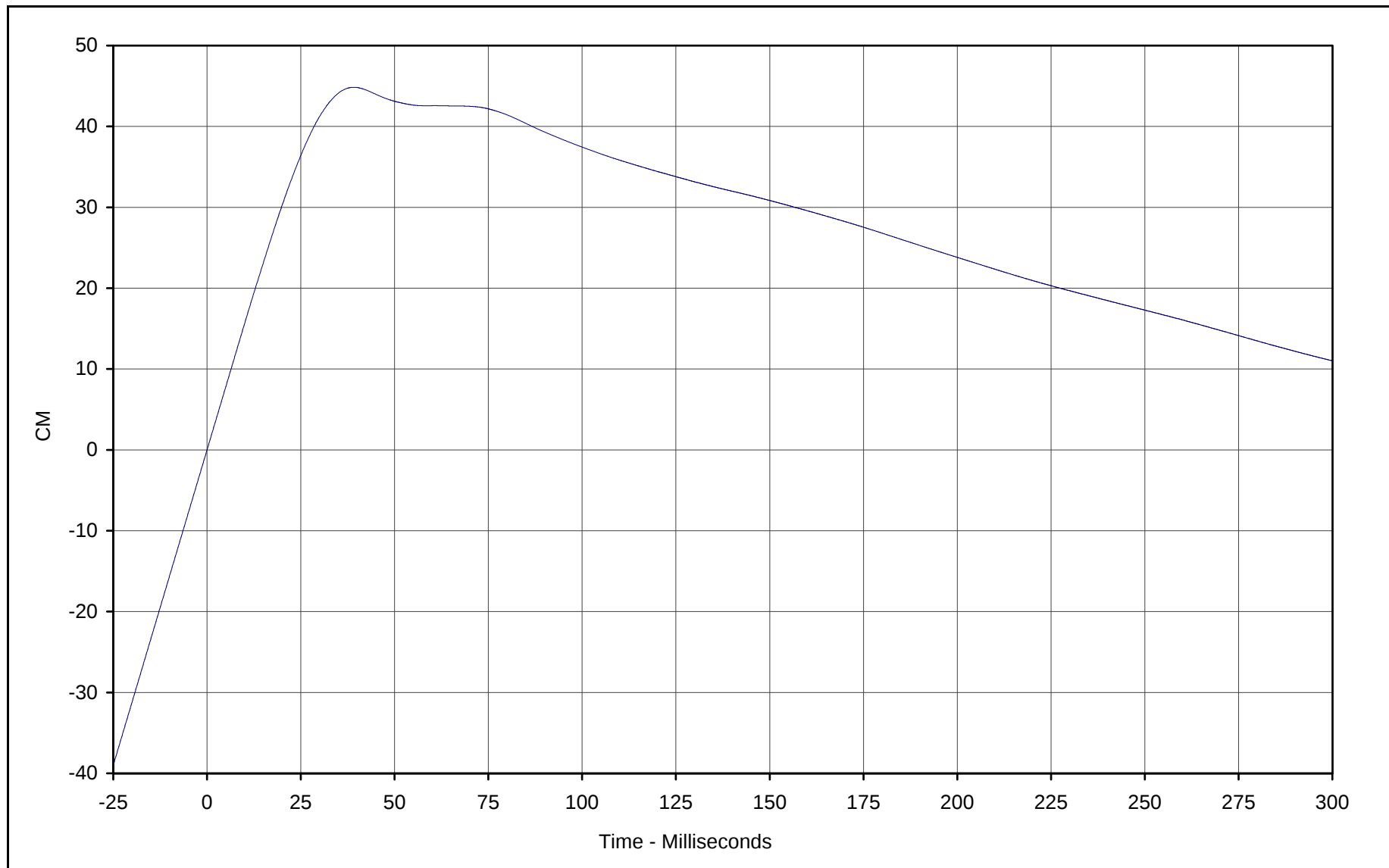
Curve Description: Vehicle Engine Bottom Velocity
Maximum Value: 56.3 at 3.7 Milliseconds
Minimum Value: -8.1 at 83.7 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN1-092

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Vehicle Engine Bottom Displacement

Maximum Value: 44.8 at 39.1 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 7/31/01

Curve Number: IN2-092

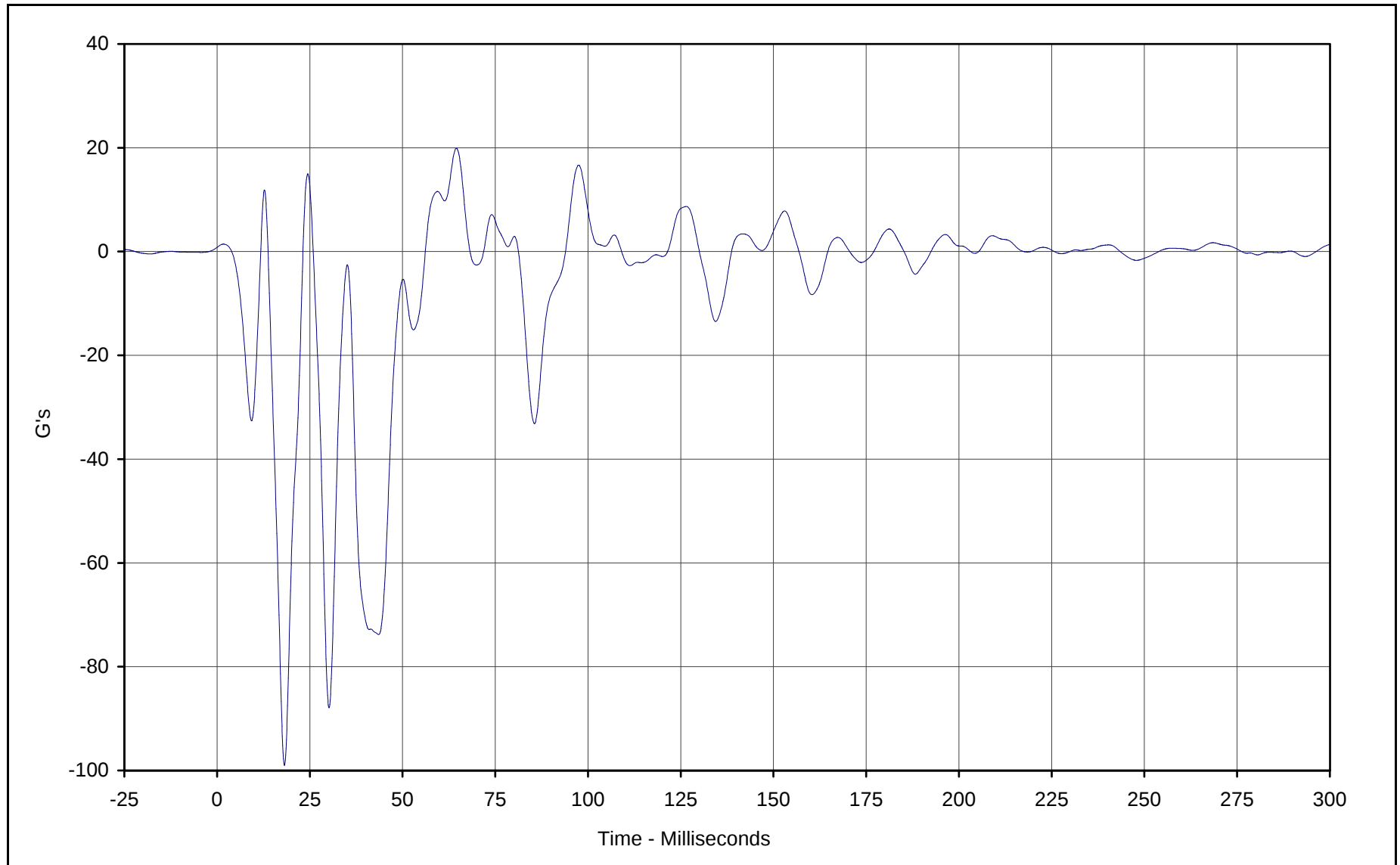
Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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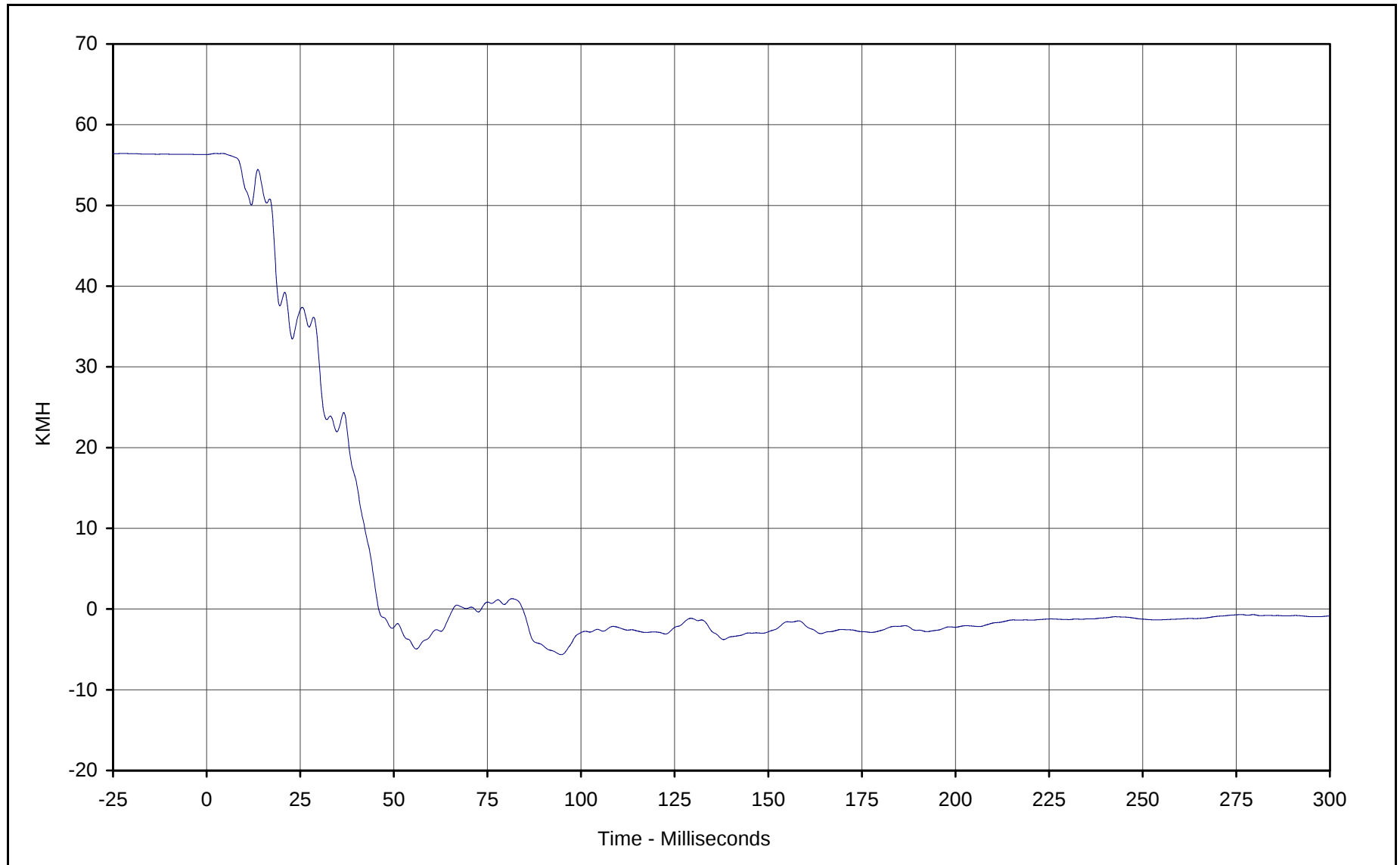


Curve Description: Vehicle Left Brake Caliper
Maximum Value: 19.9 at 64.5 Milliseconds
Minimum Value: -99.0 at 18.2 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-093

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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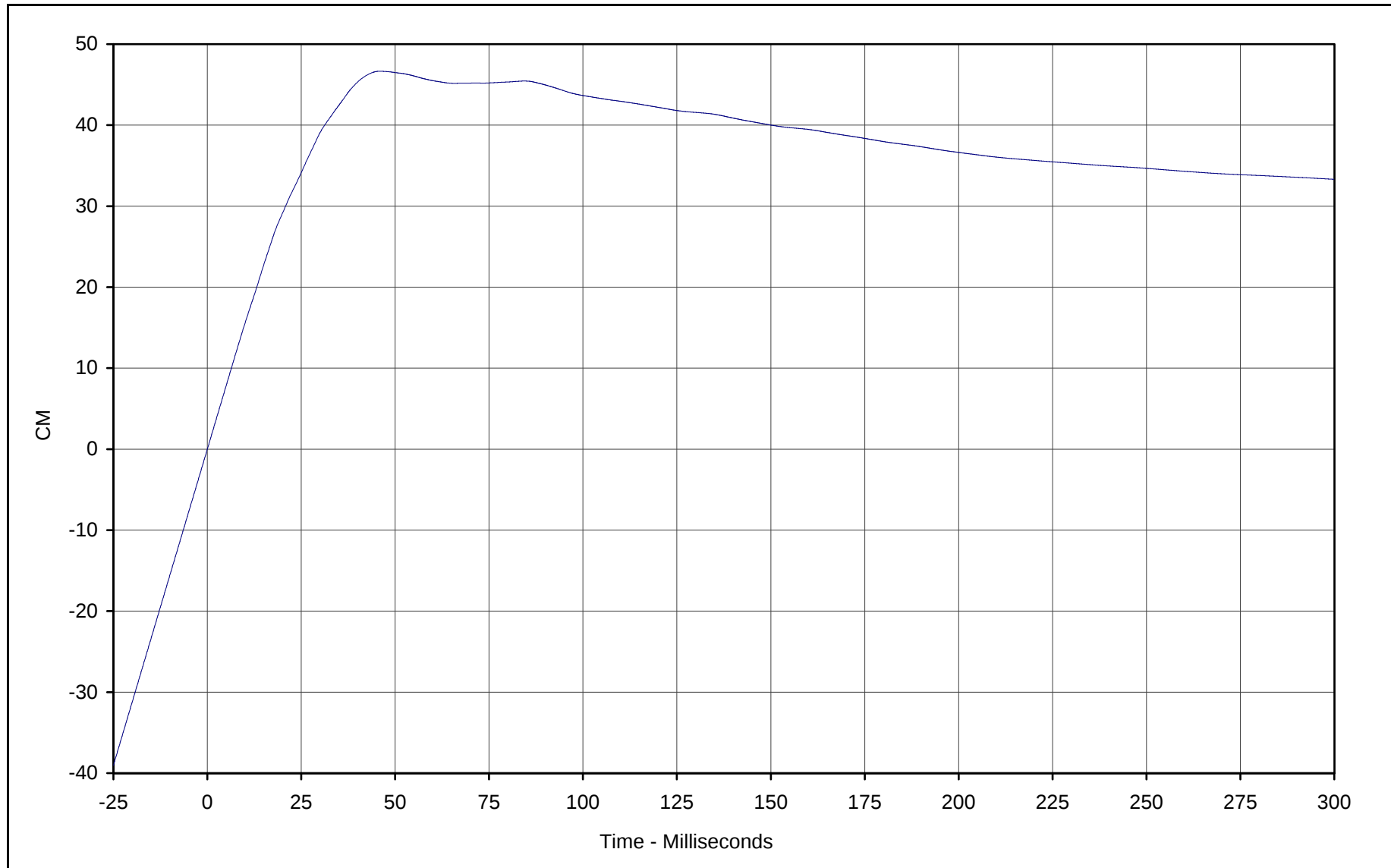


Curve Description: Vehicle Left Brake Caliper Velocity
Maximum Value: 56.4 at 4.3 Milliseconds
Minimum Value: -5.6 at 94.7 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN1-093

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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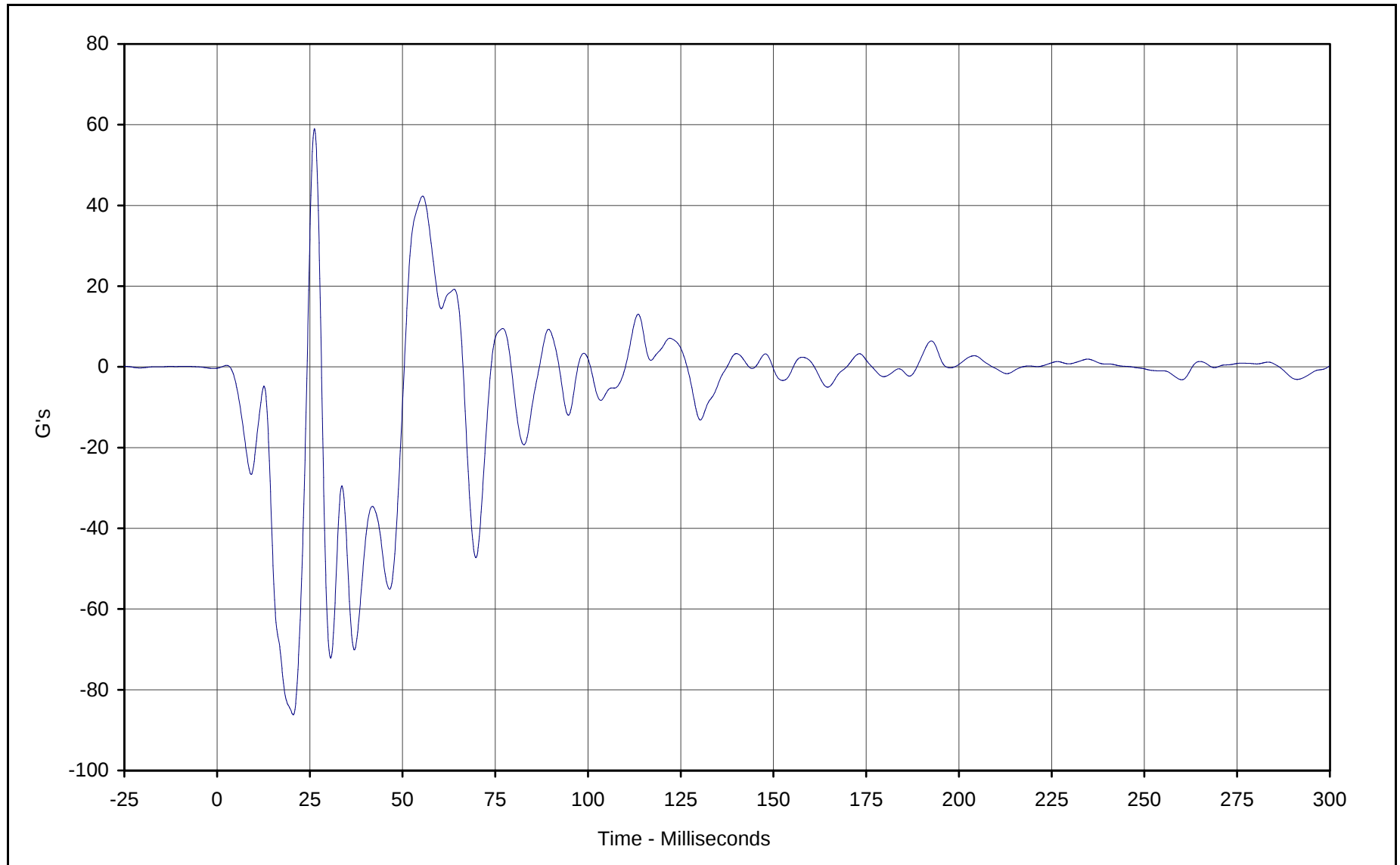
Curve Description: Vehicle Left Brake Caliper Displ.
Maximum Value: 46.7 at 45.9 Milliseconds
Minimum Value: 0.0 at 0.0 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN2-093

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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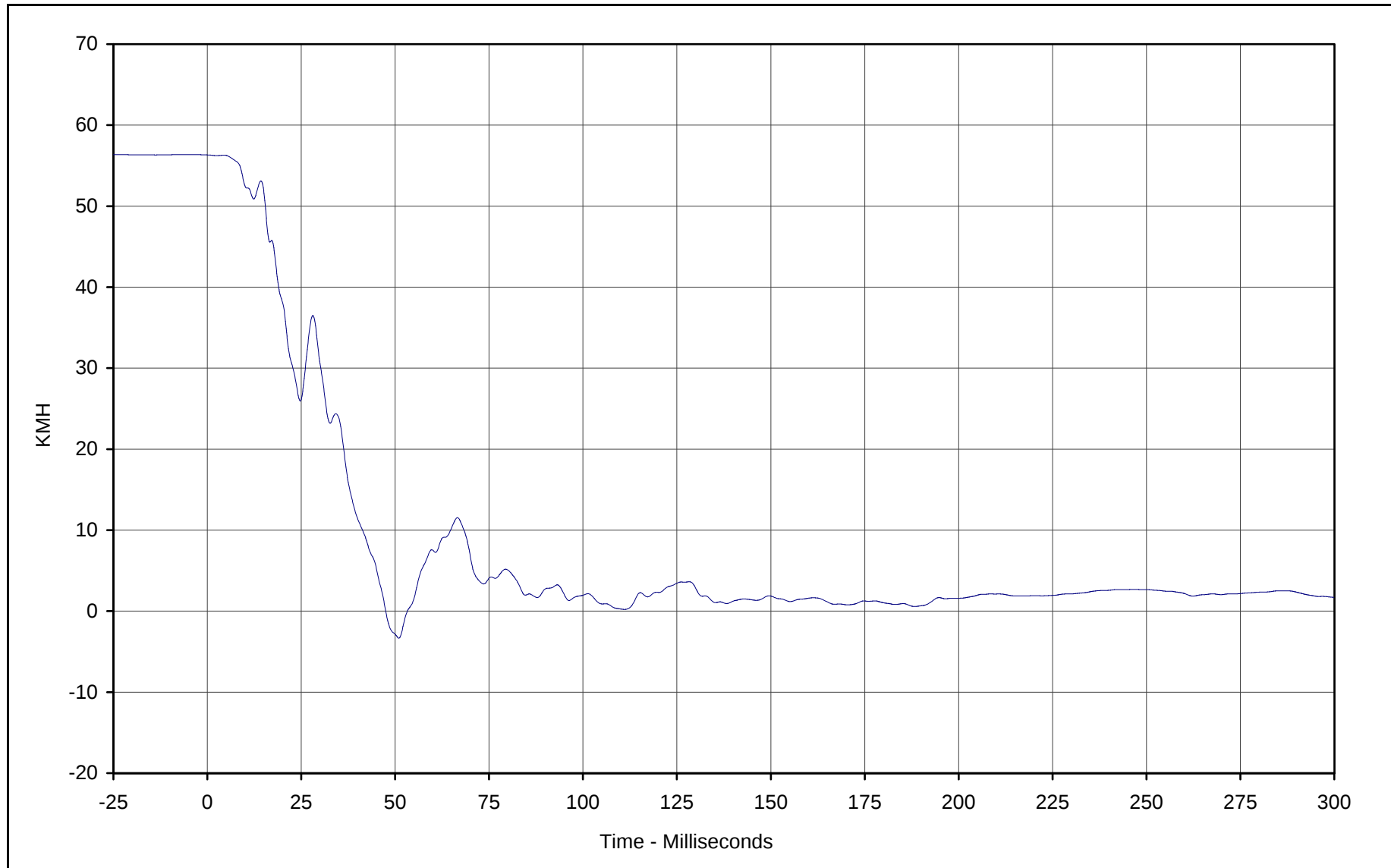
Curve Description: Vehicle Right Brake Caliper
Maximum Value: 59.0 at 26.3 Milliseconds
Minimum Value: -86.2 at 20.5 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-094

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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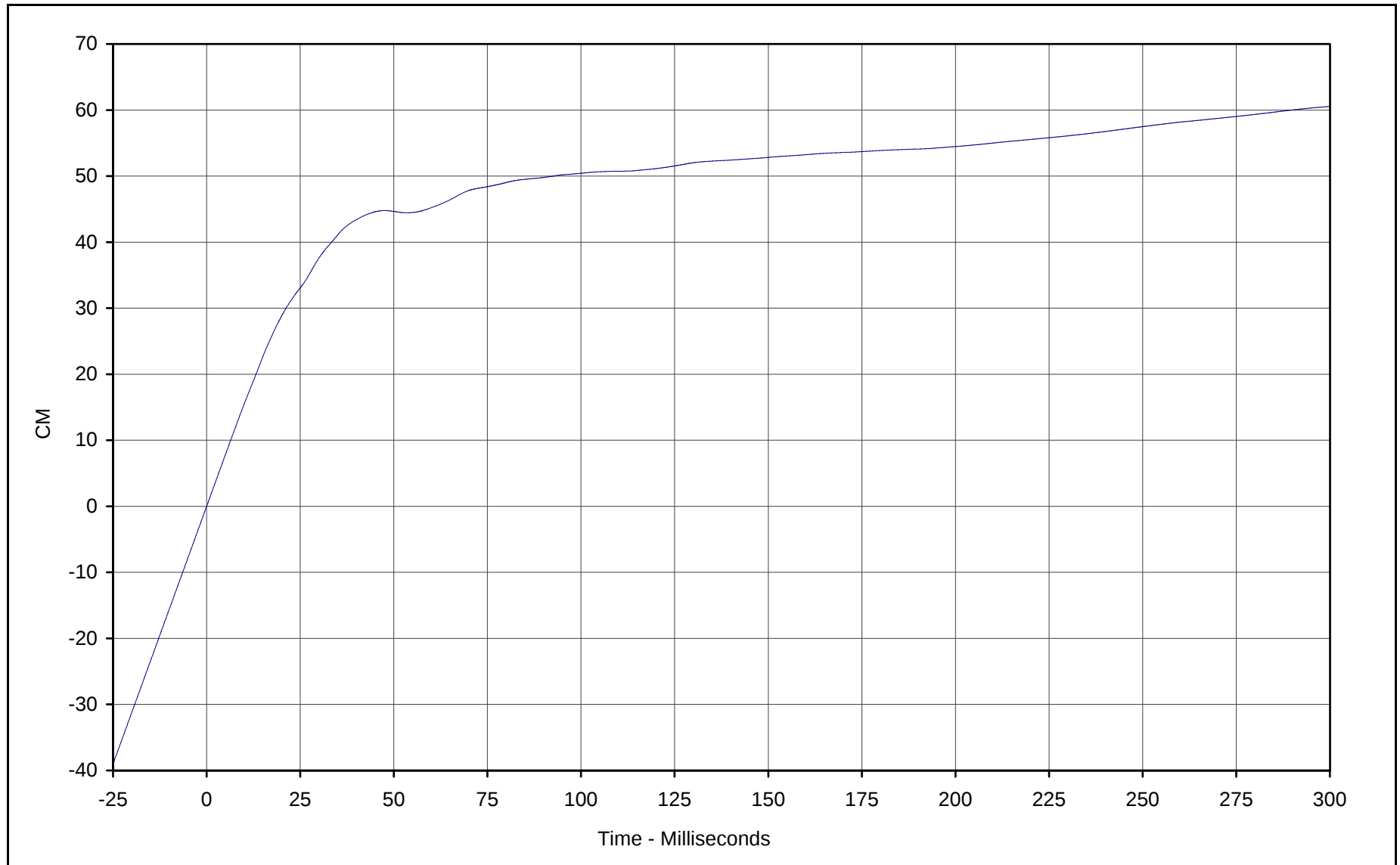
Curve Description: Vehicle Right Brake Caliper Velocity
Maximum Value: 56.3 at 0.0 Milliseconds
Minimum Value: -3.3 at 51.0 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN1-094

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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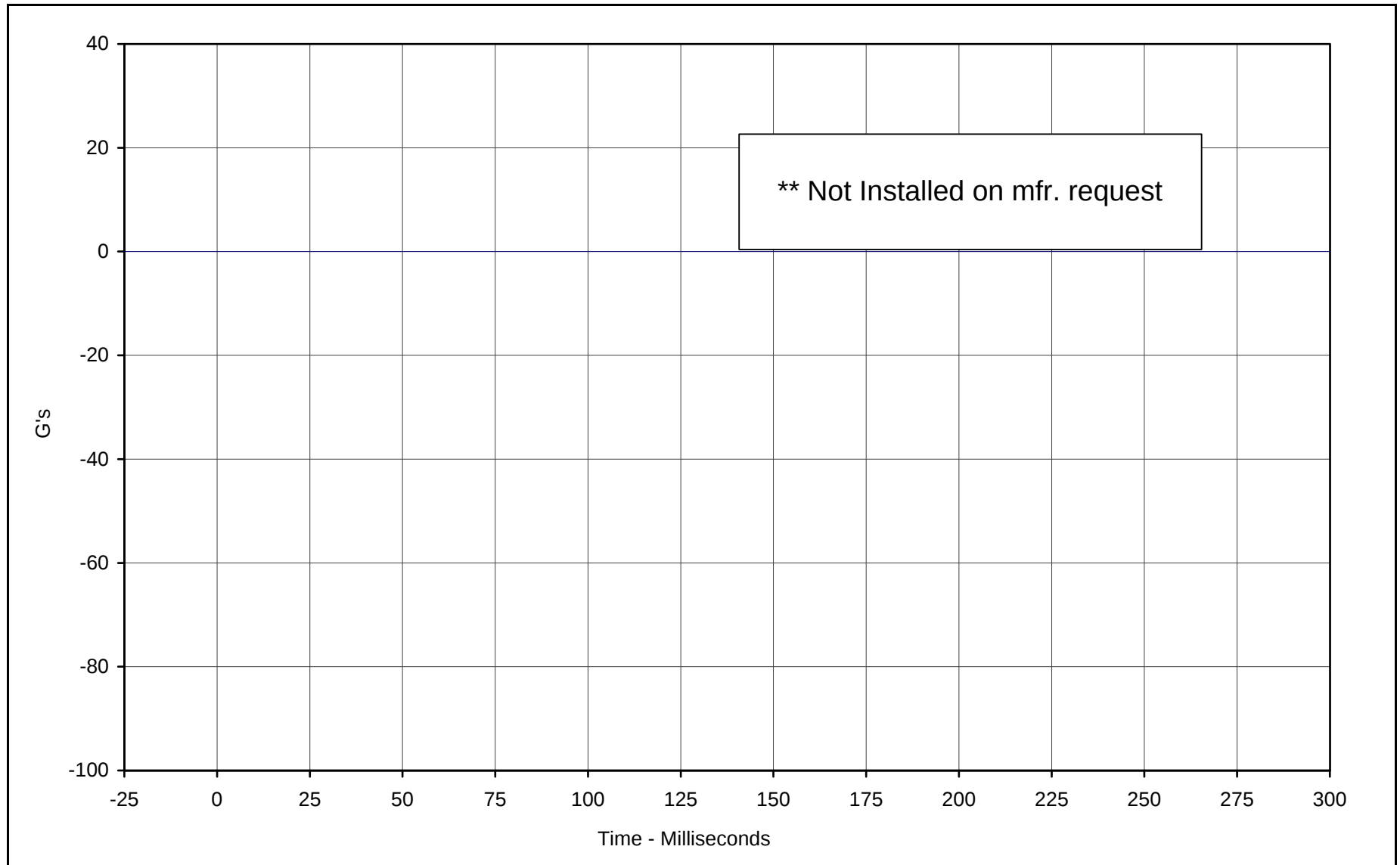
Curve Description: Vehicle Right Brake Caliper Displ.
Maximum Value: 60.5 at 299.9 Milliseconds
Minimum Value: 0.0 at 0.0 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN2-094

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Vehicle Instrument Panel **
Maximum Value: 0.0 at 0.0 Milliseconds
Minimum Value: 0.0 at 0.0 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-095

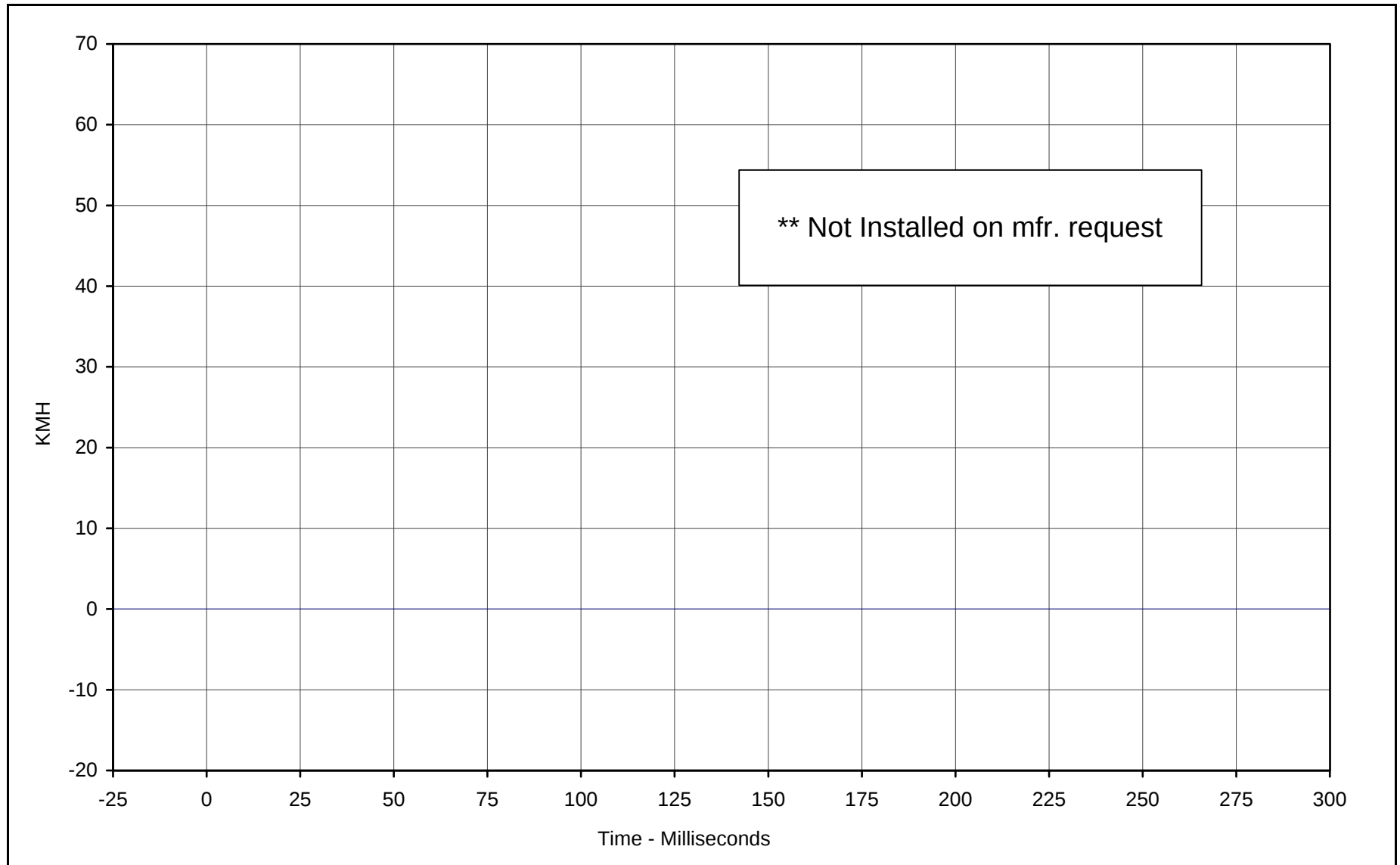
Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

** Not installed on mfr. Request



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B-142



Curve Description: Vehicle Instrument Panel Velocity **

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Maximum Value: 0.0 at 0.0 Milliseconds

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 7/31/01

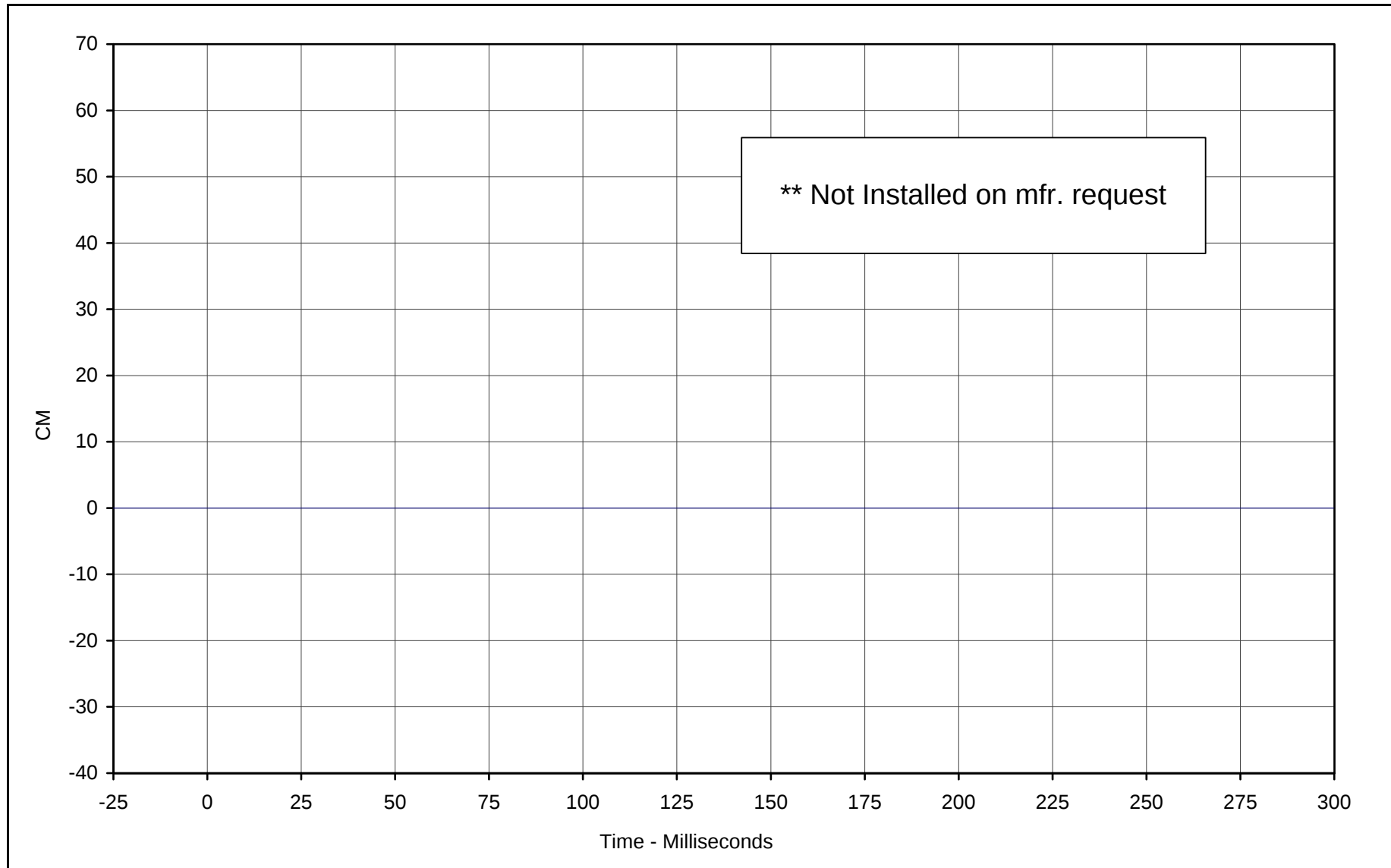
Curve Number: IN1-095

** Not installed on mfr. Request



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B-143



Curve Description: Vehicle Instrument Panel Displacement **

Maximum Value: 0.0 at 0.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 7/31/01

Curve Number: IN2-095

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

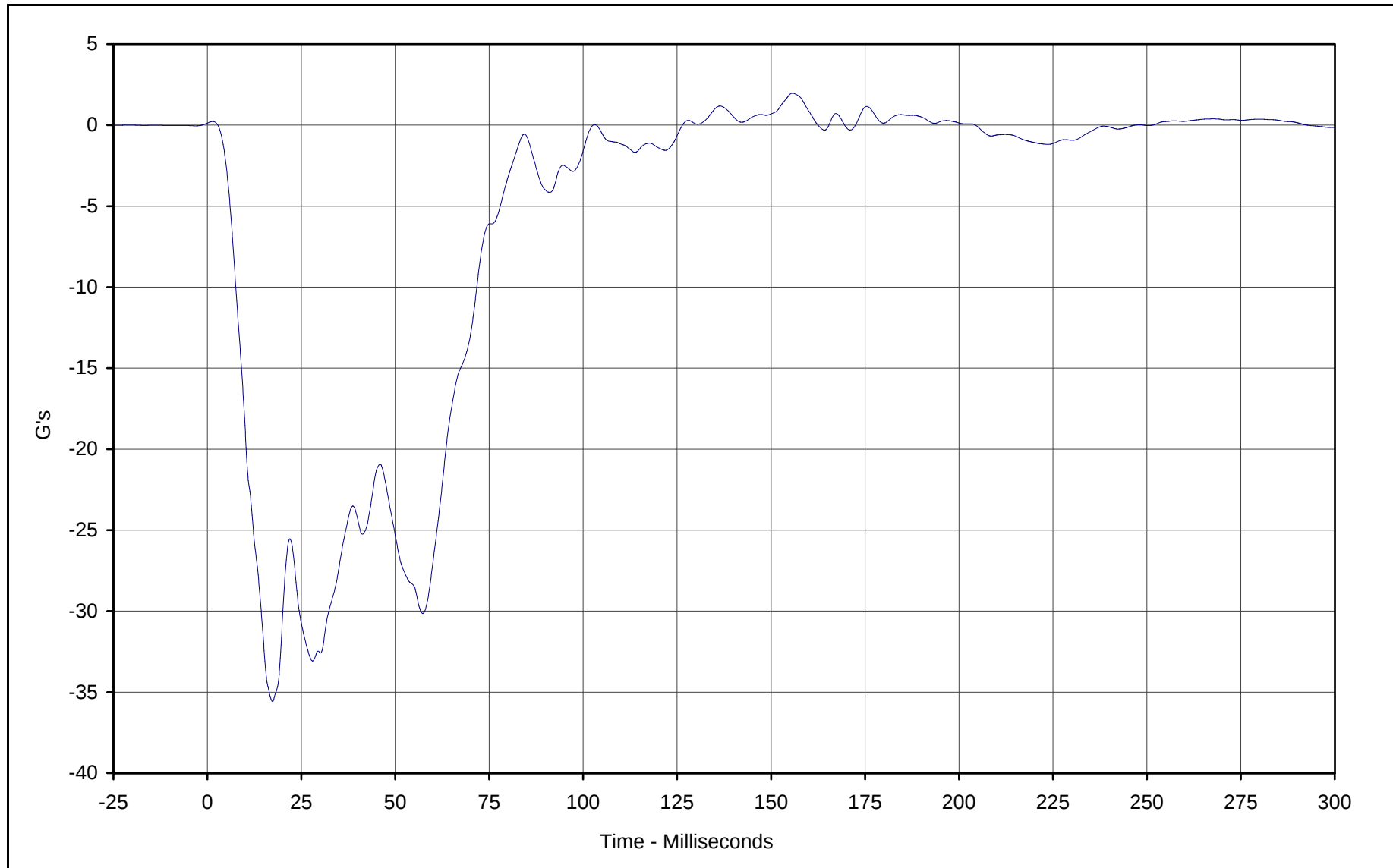
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV

** Not installed on mfr. Request



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B-144



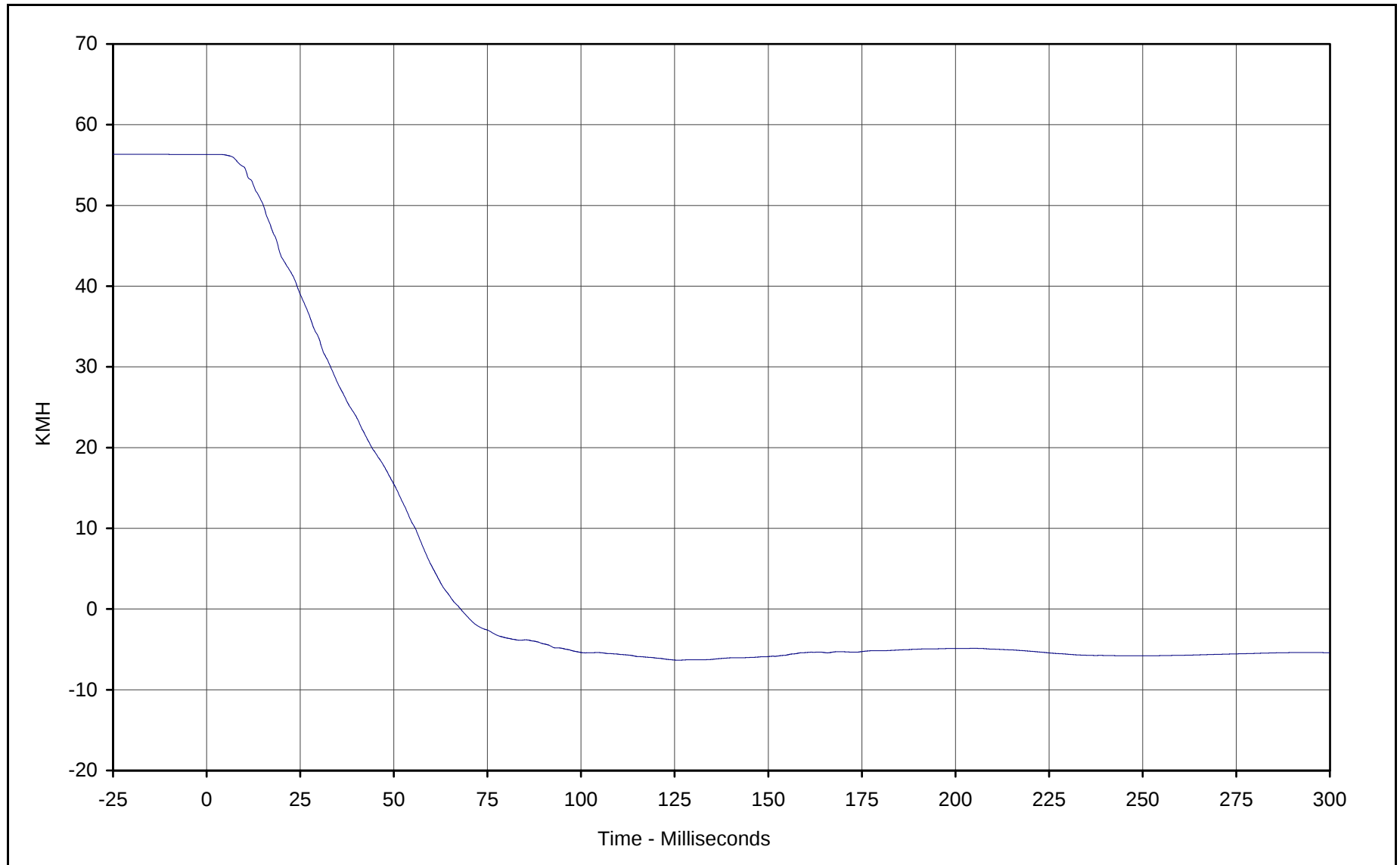
Curve Description: Vehicle Left Rear Redundant
Maximum Value: 2.0 at 155.7 Milliseconds
Minimum Value: -35.6 at 17.3 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-096

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Vehicle Left Rear Redundant Velocity

Maximum Value: 56.3 at 1.4 Milliseconds

Minimum Value: -6.3 at 125.8 Milliseconds

SAE Filter Class: 180

Date of Test: 7/31/01

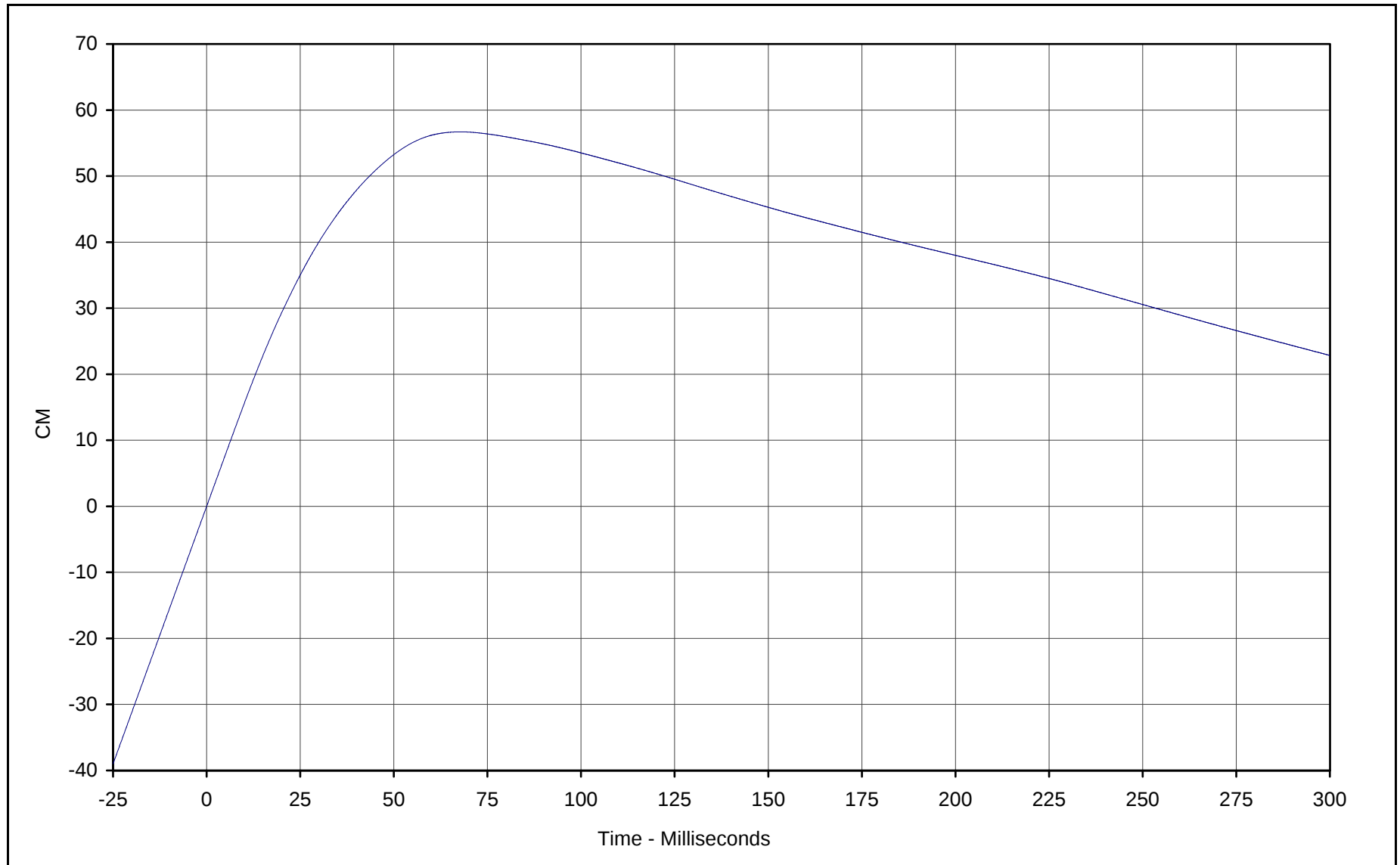
Curve Number: IN1-096

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Vehicle Left Rear Redundant Displ.
Maximum Value: 56.7 at 67.8 Milliseconds
Minimum Value: 0.0 at 0.0 Milliseconds
SAE Filter Class: 180
Date of Test: 7/31/01
Curve Number: IN2-096

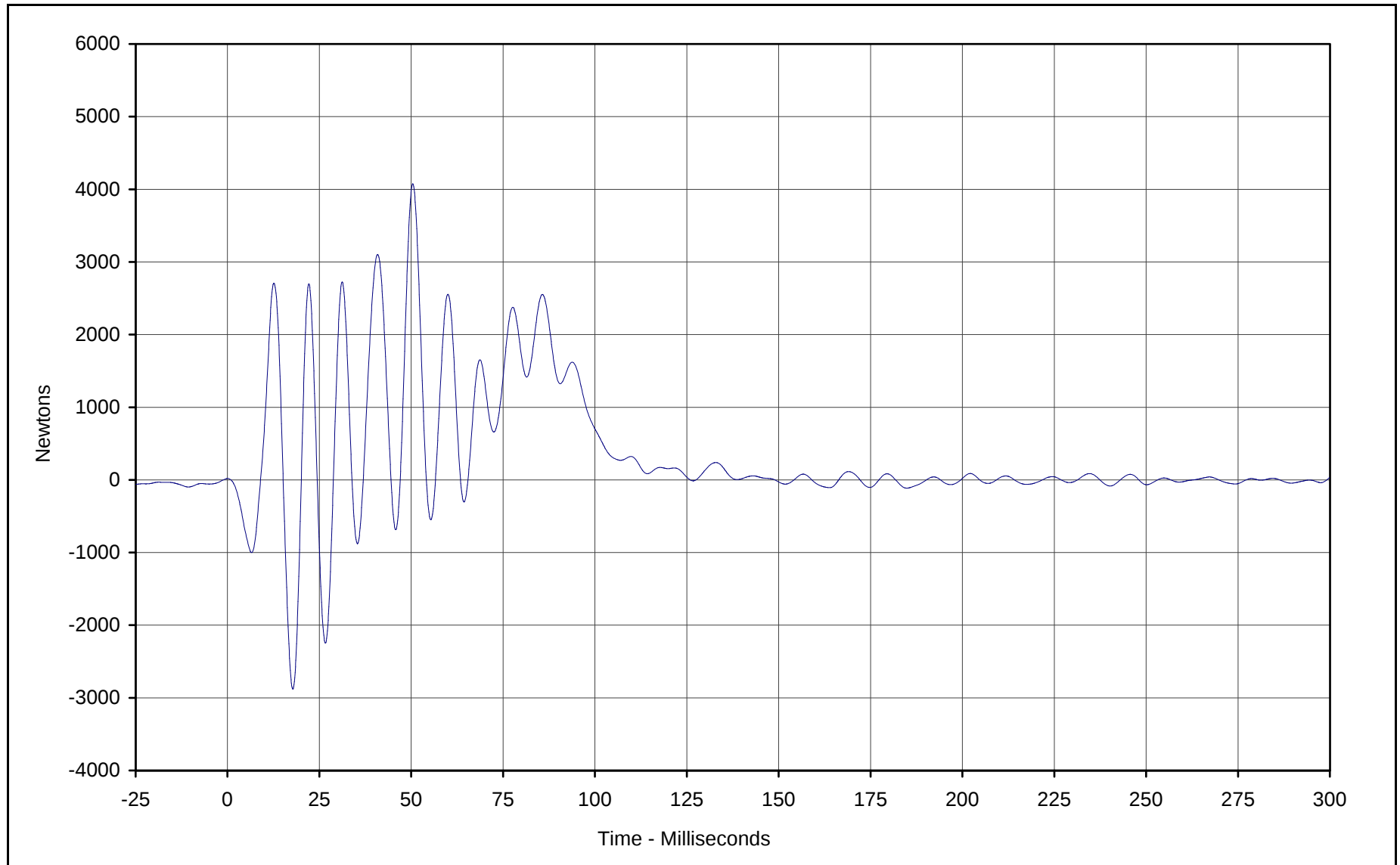
Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



APPENDIX C

LOAD CELL BARRIER DATA PLOTS

C-1



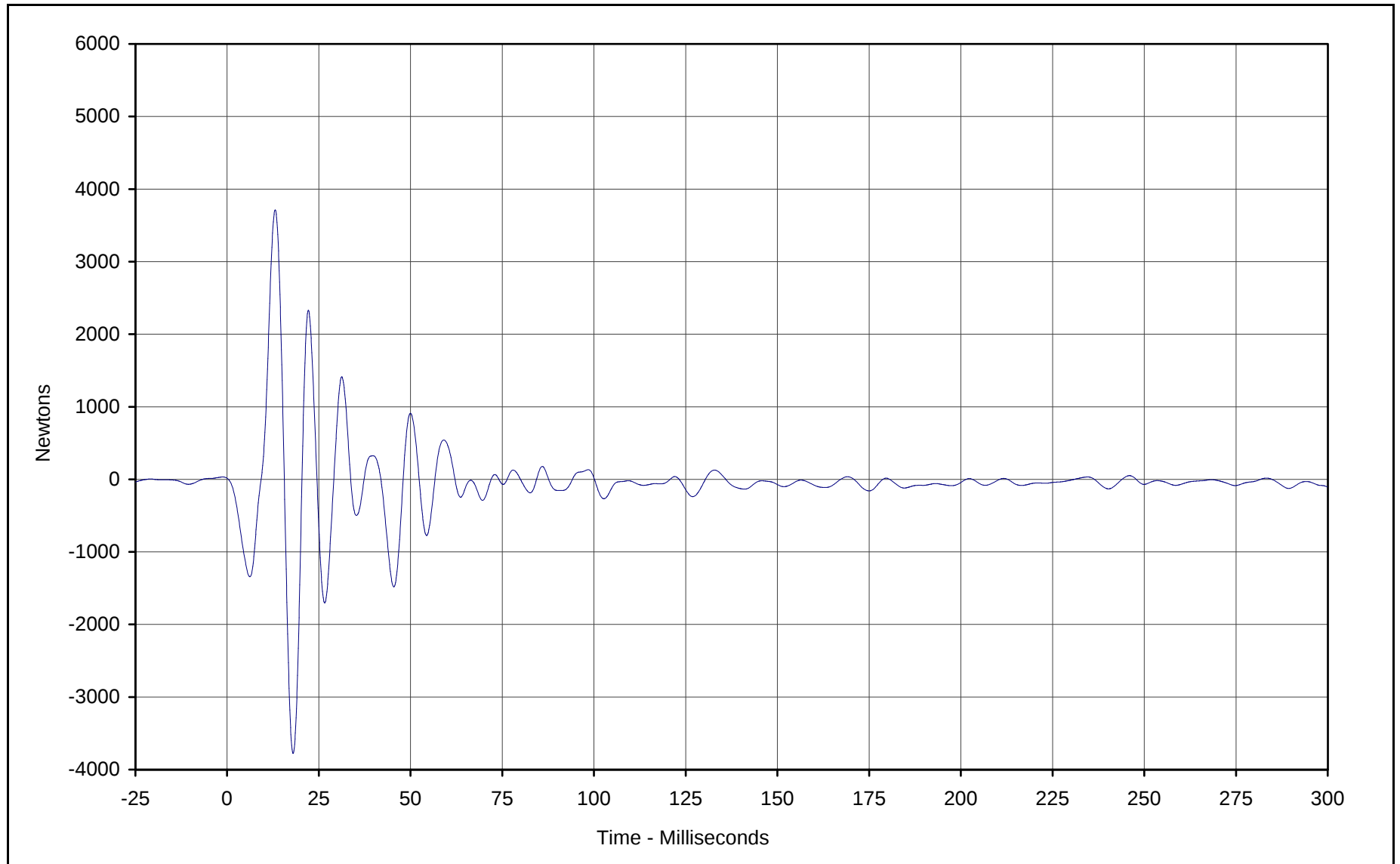
Curve Description: Barrier Force A2
Maximum Value: 4076.9 at 50.4 Milliseconds
Minimum Value: -2880.6 at 17.8 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-099

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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C-2



Curve Description: Barrier Force A3

Maximum Value: 3713.1 at 13.1 Milliseconds

Minimum Value: -3778.9 at 18.0 Milliseconds

SAE Filter Class: 60

Date of Test: 7/31/01

Curve Number: FIL-100

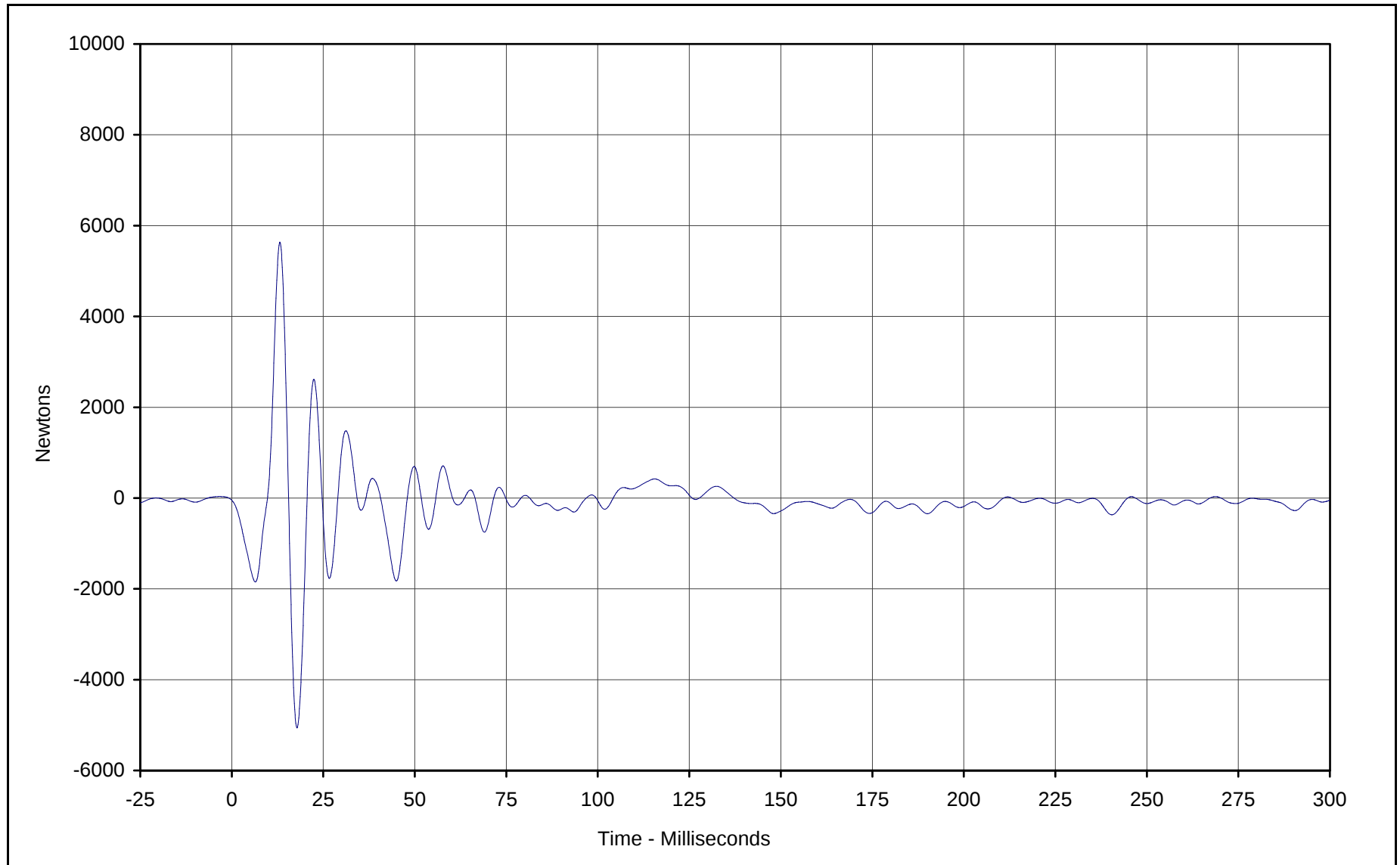
Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



KAR21082-01

C-3



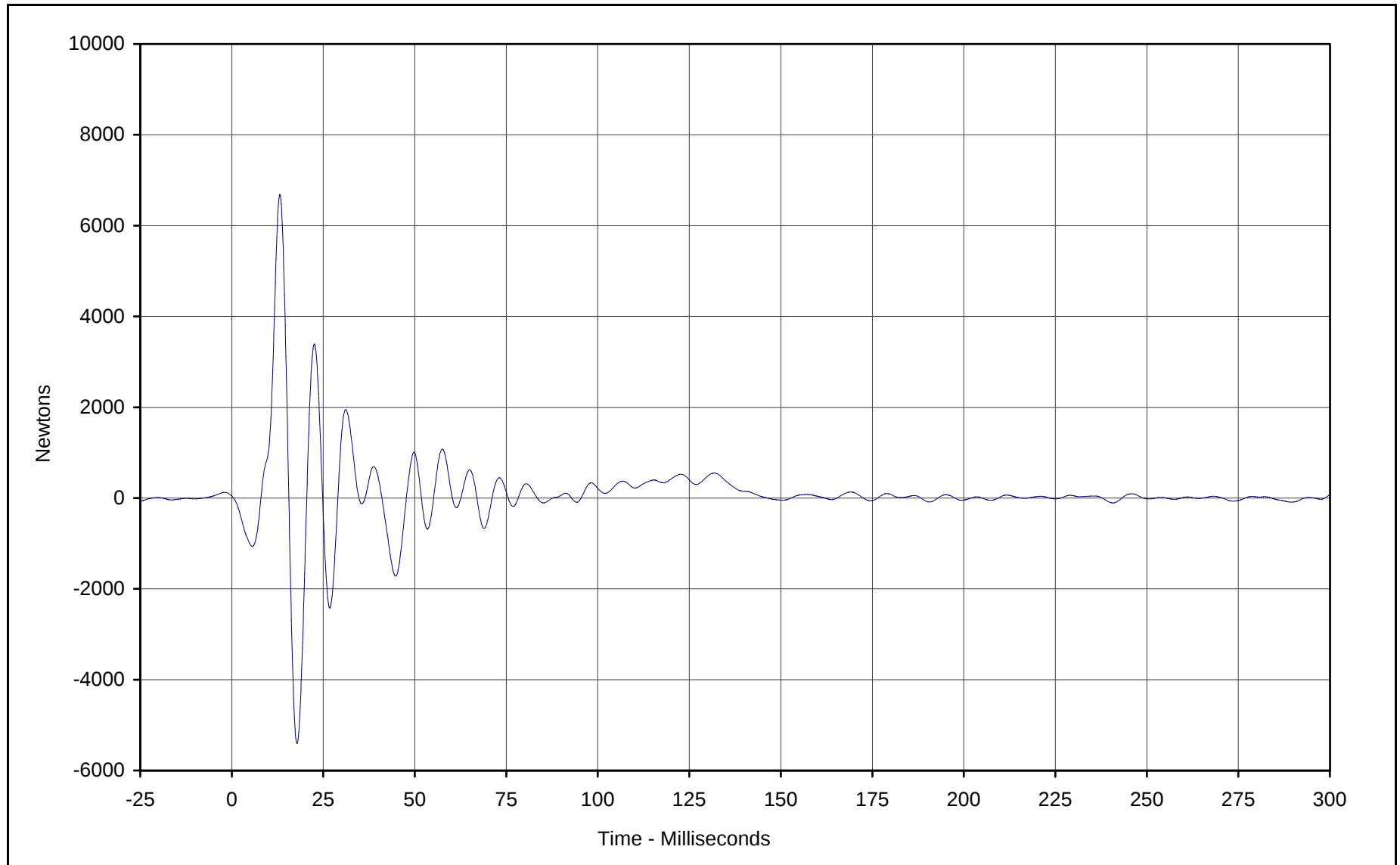
Curve Description: Barrier Force A4
Maximum Value: 5636.2 at 13.1 Milliseconds
Minimum Value: -5061.0 at 17.8 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-101

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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C-4



Curve Description: Barrier Force A5

Maximum Value: 6685.4 at 13.1 Milliseconds

Minimum Value: -5406.3 at 17.8 Milliseconds

SAE Filter Class: 60

Date of Test: 7/31/01

Curve Number: FIL-102

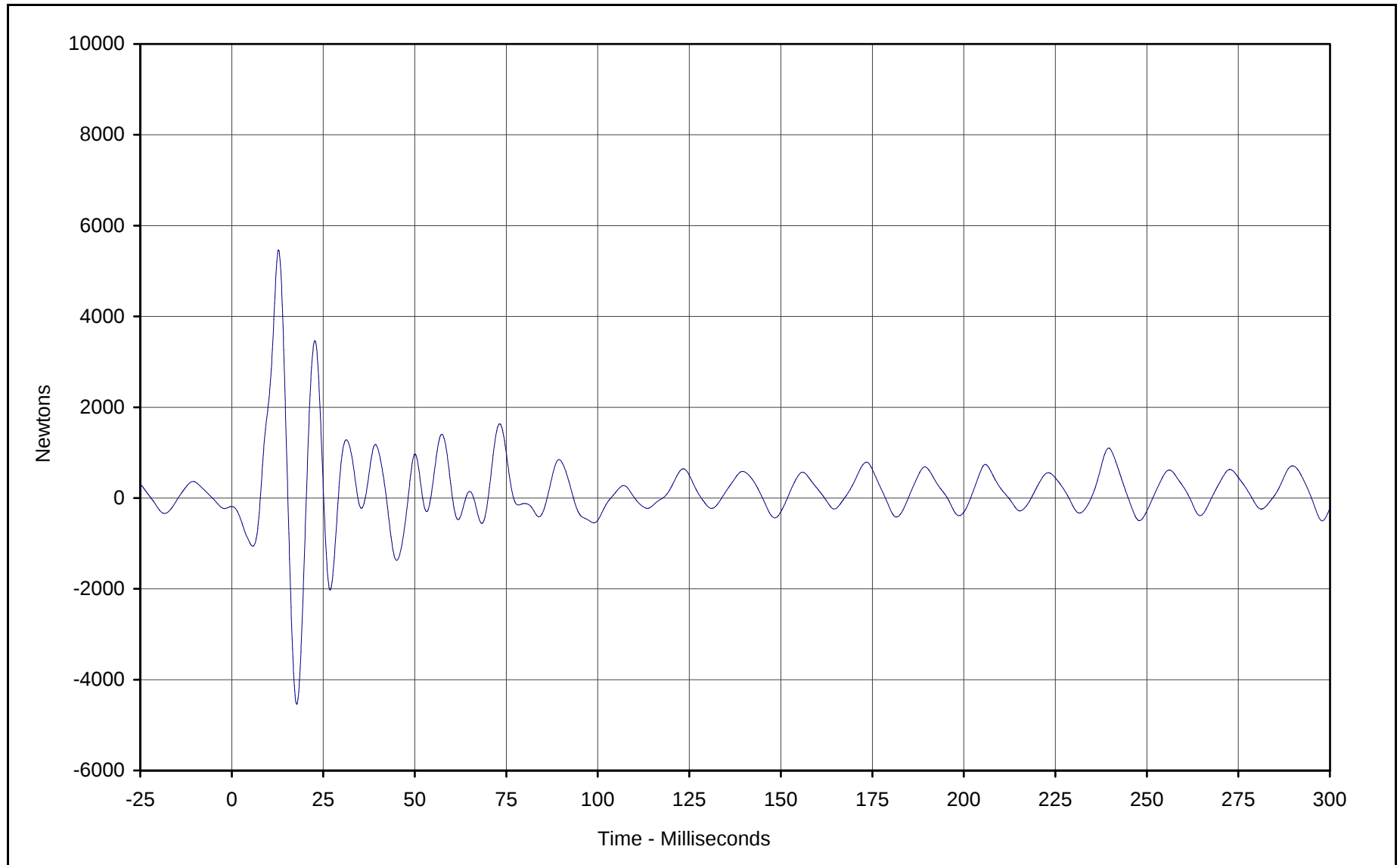
Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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C-5



Curve Description: Barrier Force A6

Maximum Value: 5463.8 at 12.8 Milliseconds

Minimum Value: -4539.6 at 17.7 Milliseconds

SAE Filter Class: 60

Date of Test: 7/31/01

Curve Number: FIL-103

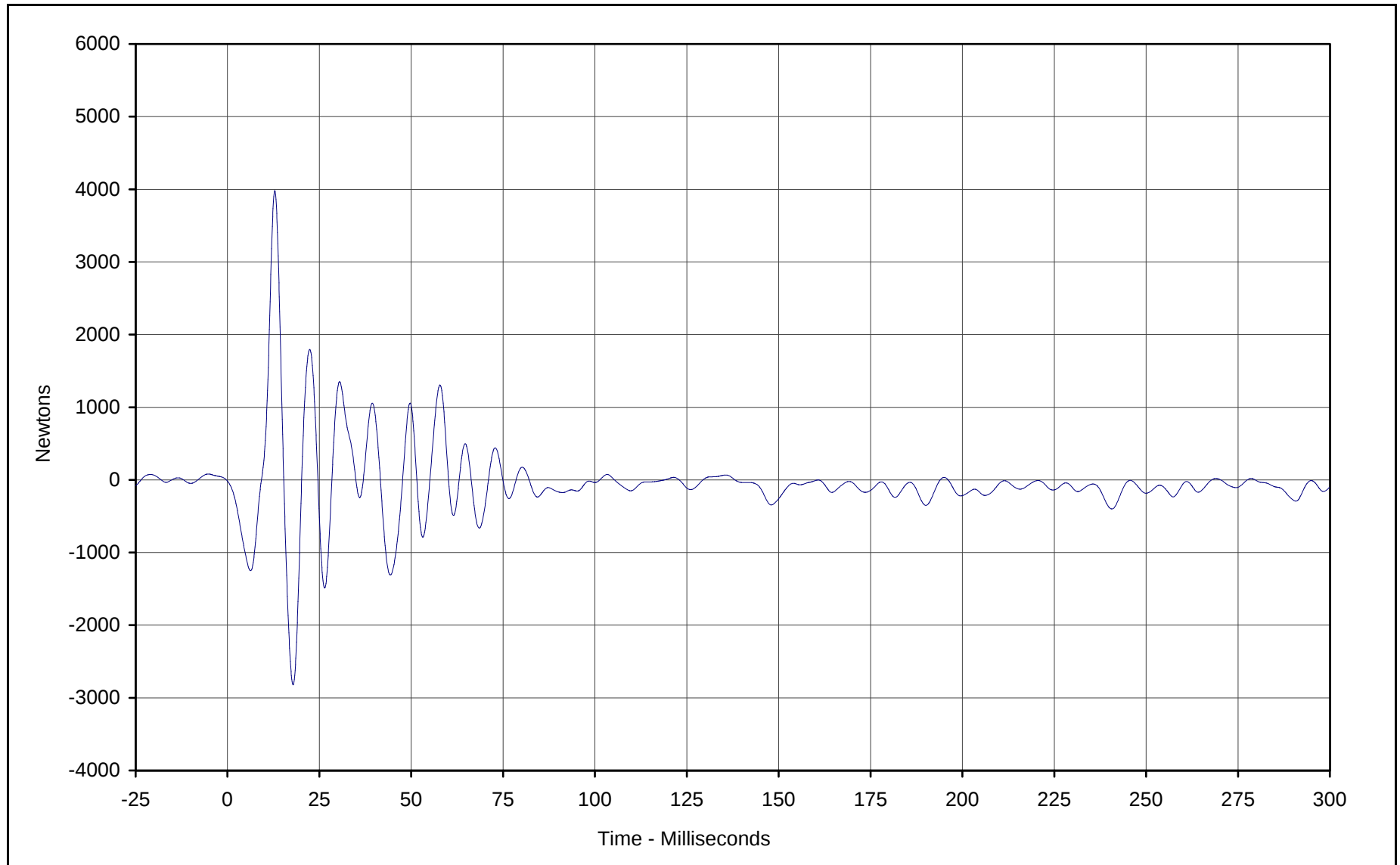
Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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C-6



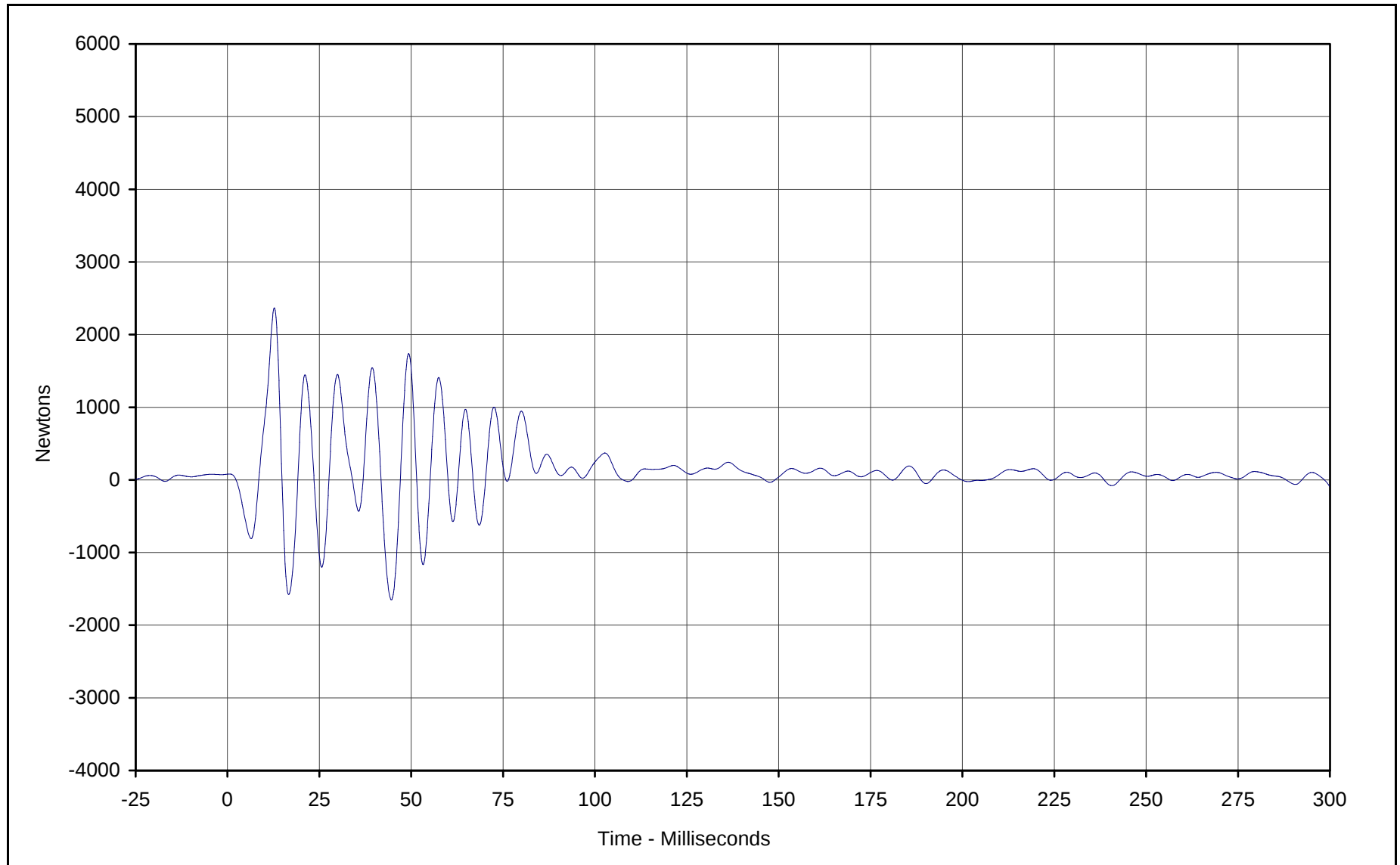
Curve Description: Barrier Force A7
Maximum Value: 3982.9 at 12.9 Milliseconds
Minimum Value: -2820.5 at 17.9 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-104

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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C-7



Curve Description: Barrier Force A8

Maximum Value: 2367.7 at 12.8 Milliseconds

Minimum Value: -1651.8 at 44.6 Milliseconds

SAE Filter Class: 60

Date of Test: 7/31/01

Curve Number: FIL-105

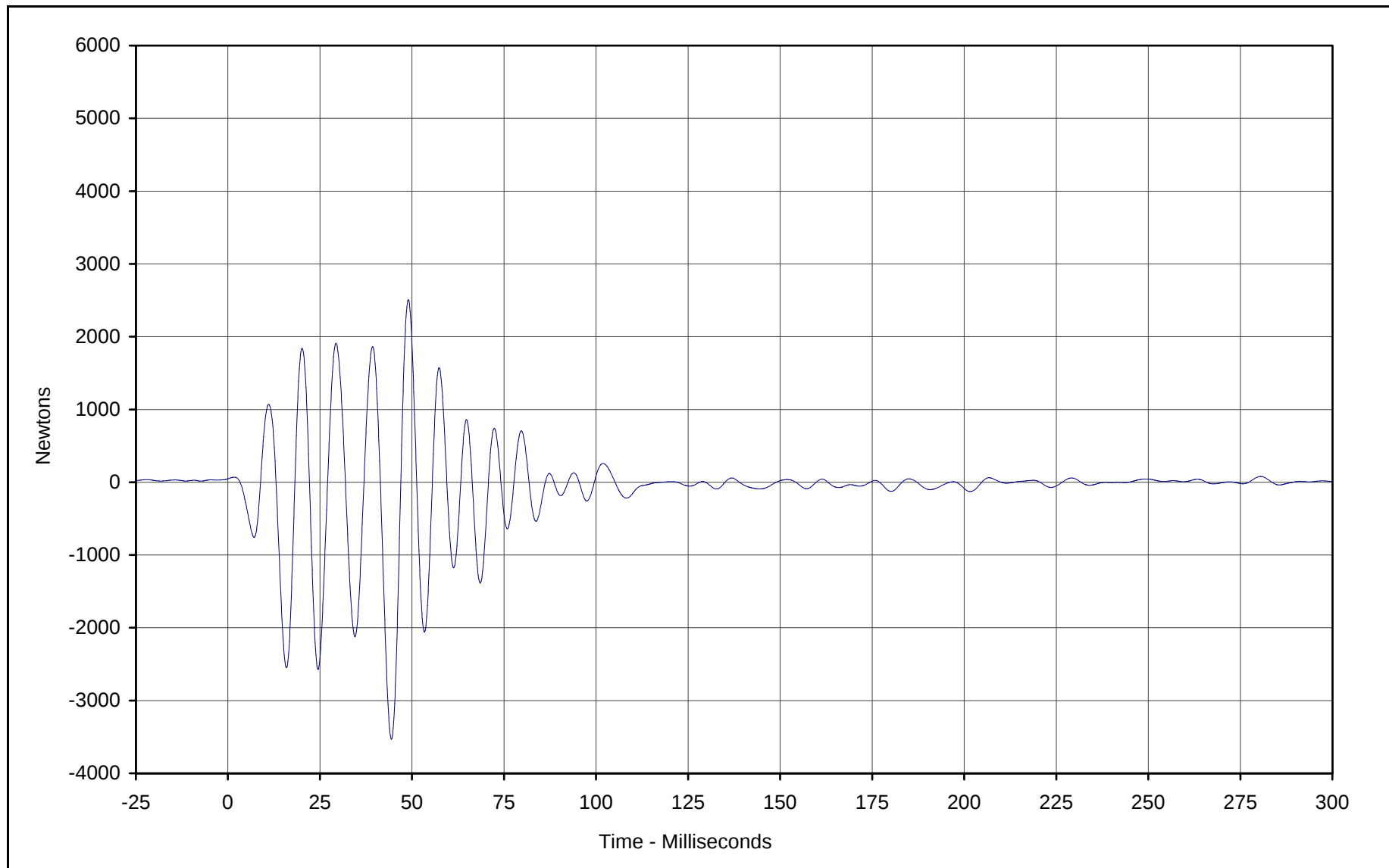
Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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C-8



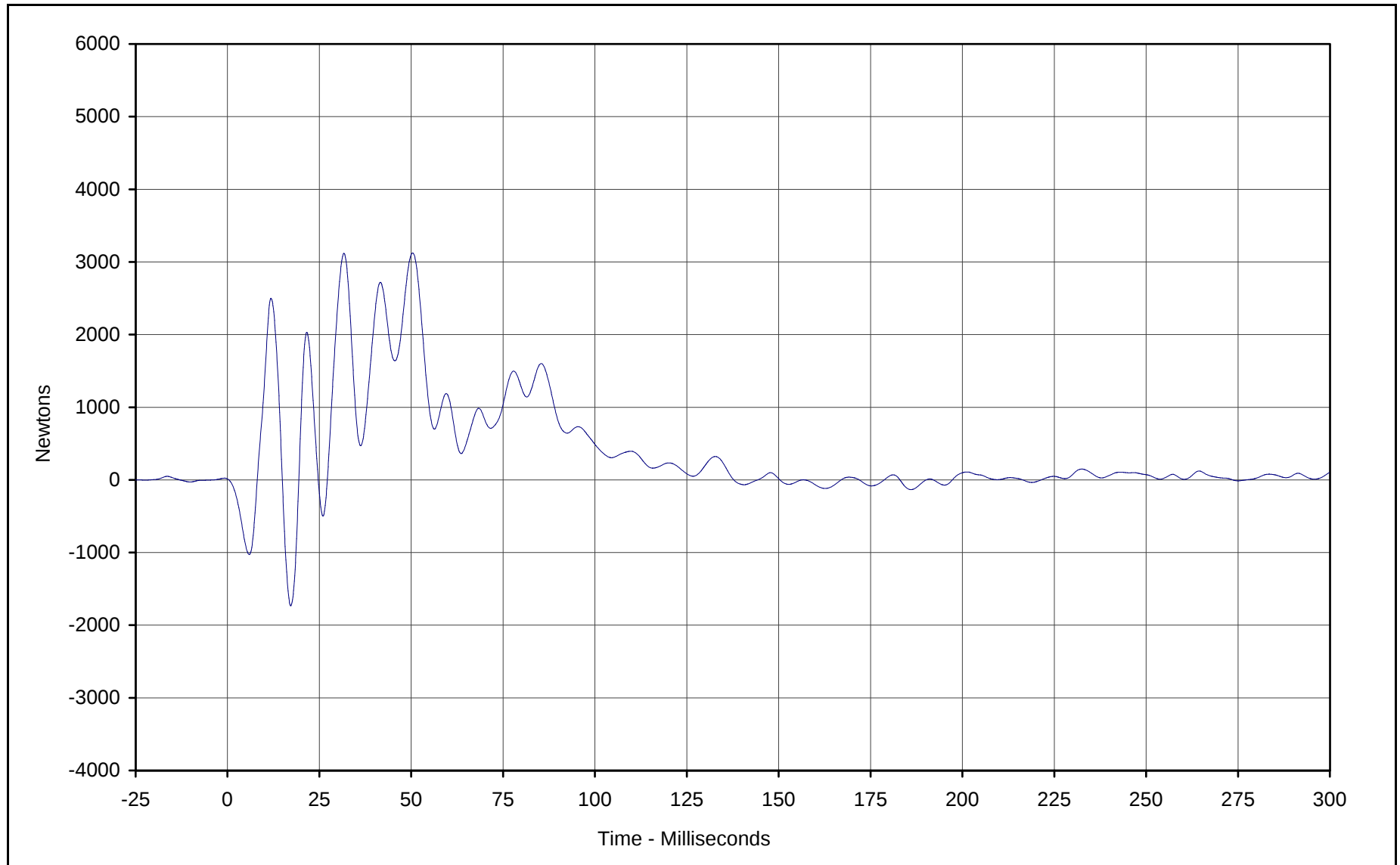
Curve Description: Barrier Force A9
Maximum Value: 2509.8 at 49.0 Milliseconds
Minimum Value: -3533.8 at 44.4 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-106

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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C-9



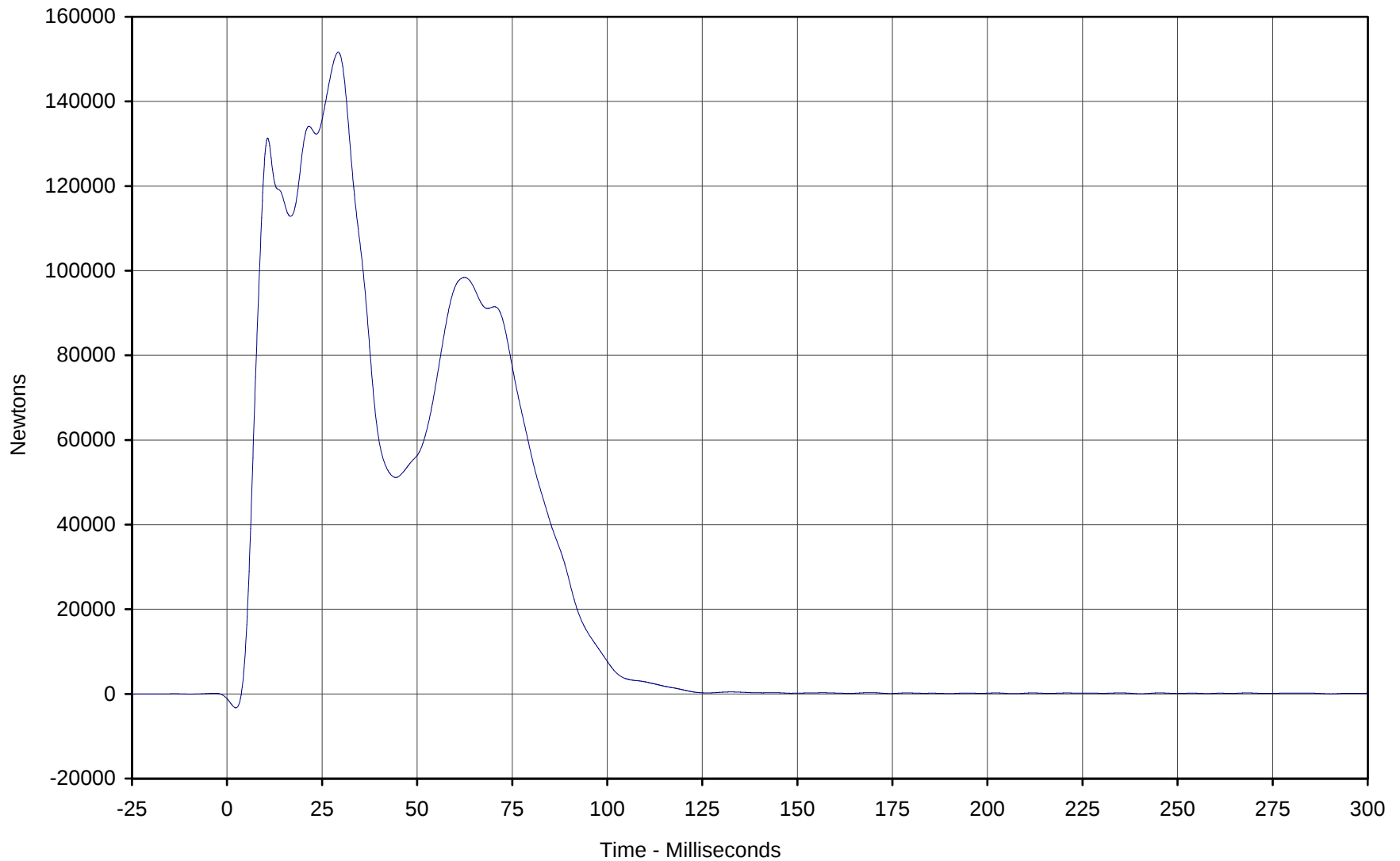
Curve Description: Barrier Force B2
Maximum Value: 3123.2 at 50.4 Milliseconds
Minimum Value: -1733.1 at 17.2 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-108

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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C-10



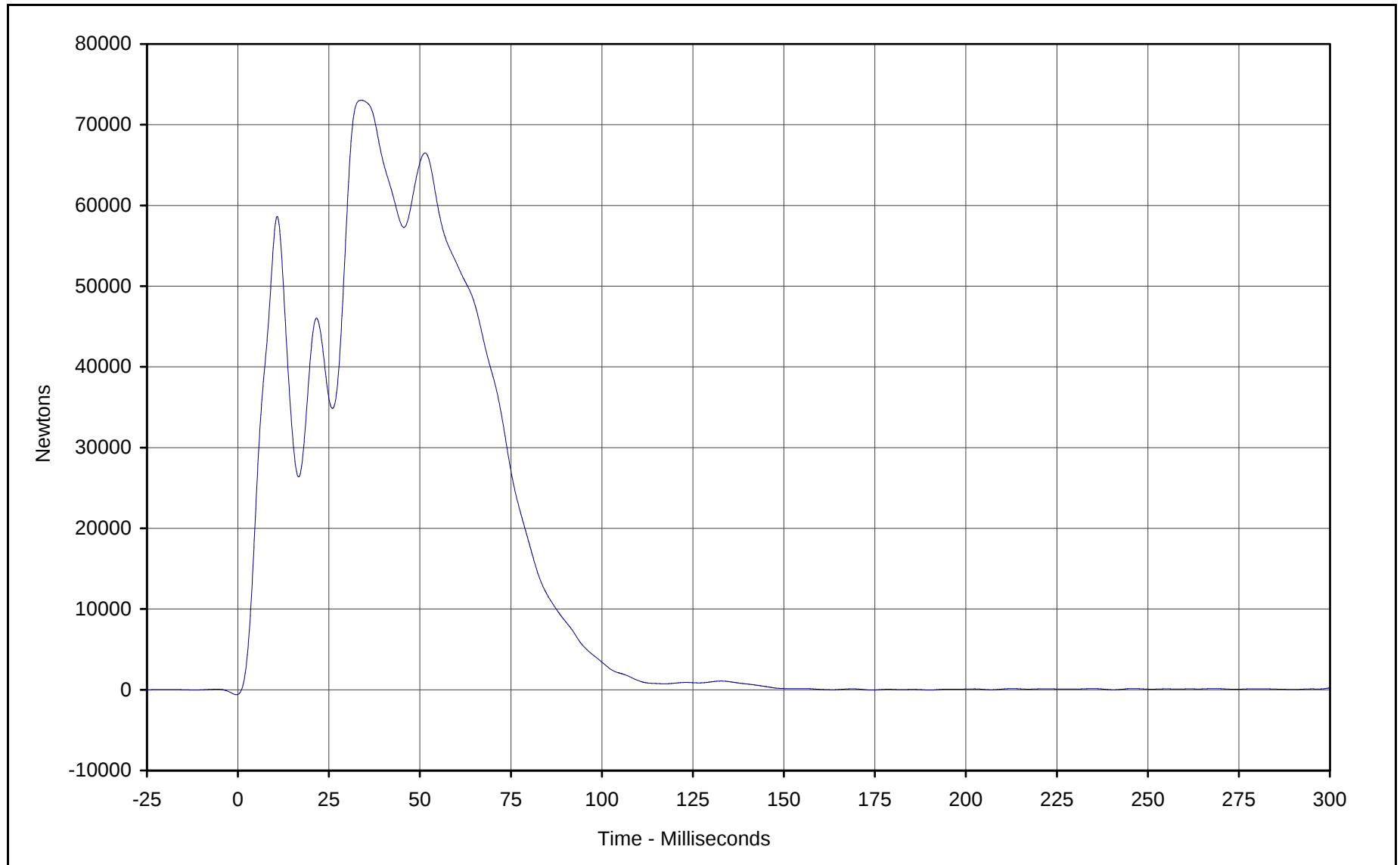
Curve Description: Barrier Force B3
Maximum Value: 151645.4 at 29.2 Milliseconds
Minimum Value: -3293.3 at 2.3 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-109

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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C-11



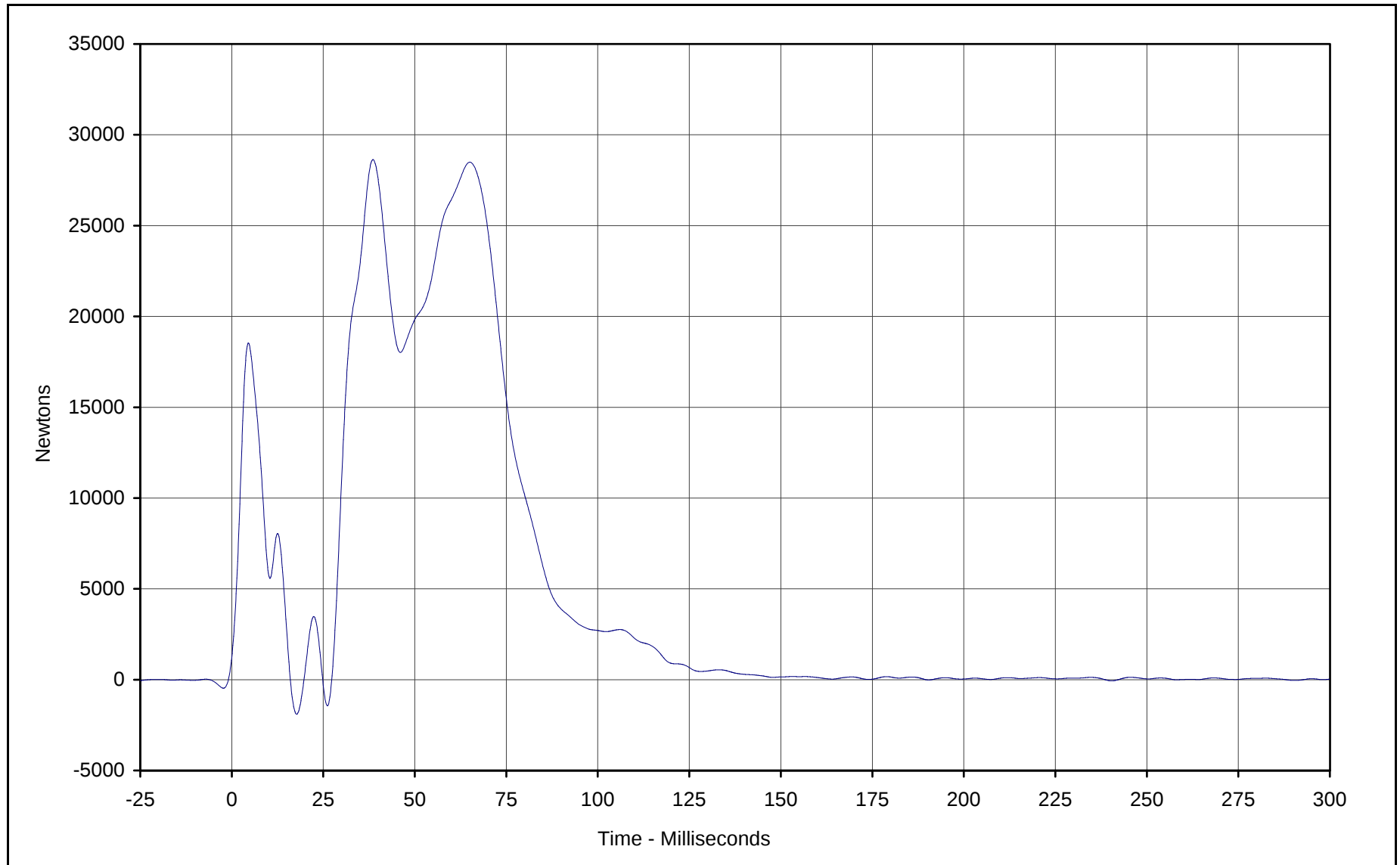
Curve Description: Barrier Force B4
Maximum Value: 73035.2 at 33.9 Milliseconds
Minimum Value: -577.0 at 0.0 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-110

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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C-12



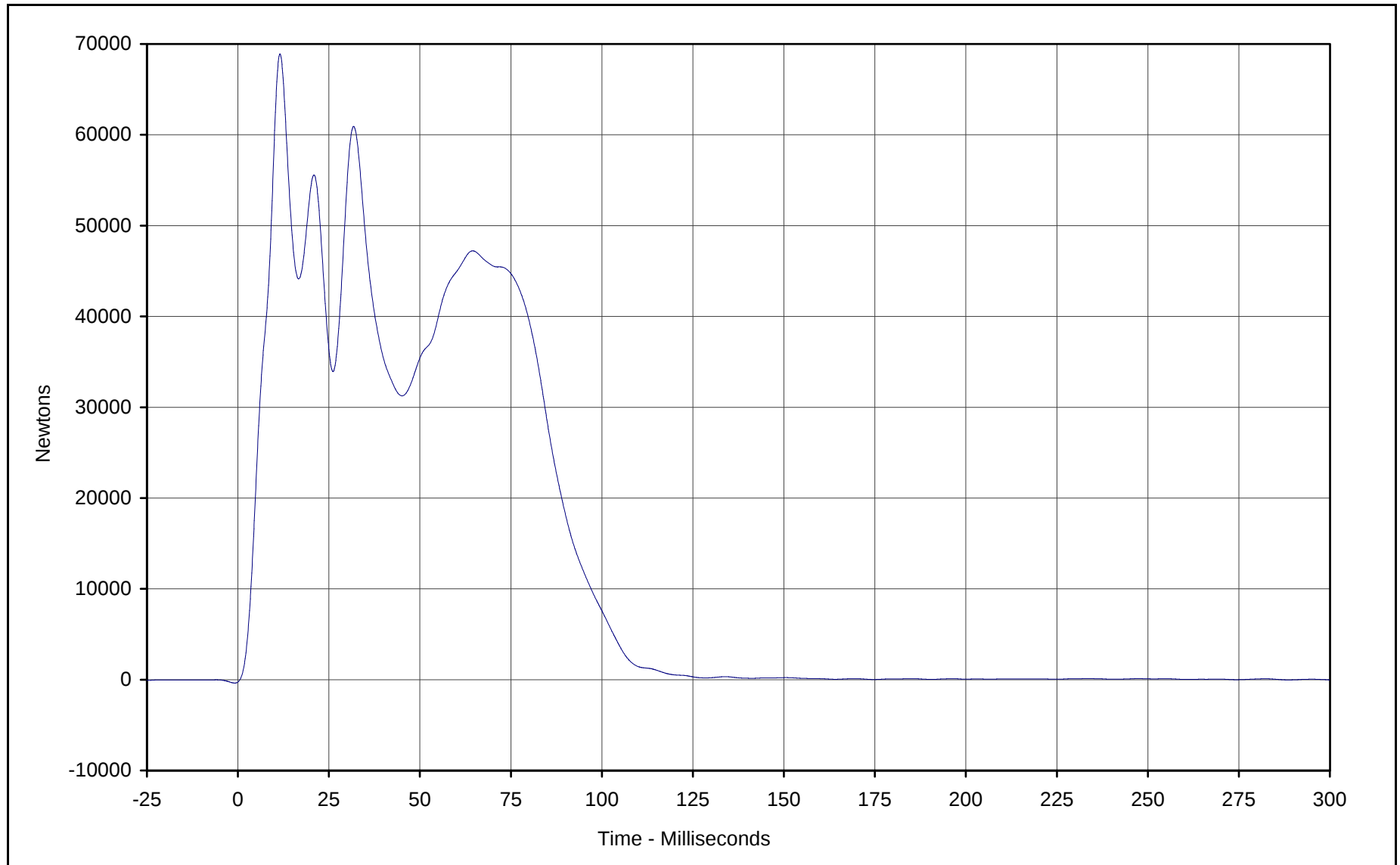
Curve Description: Barrier Force B5
Maximum Value: 28634.5 at 38.6 Milliseconds
Minimum Value: -1905.0 at 17.7 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-111

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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C-13



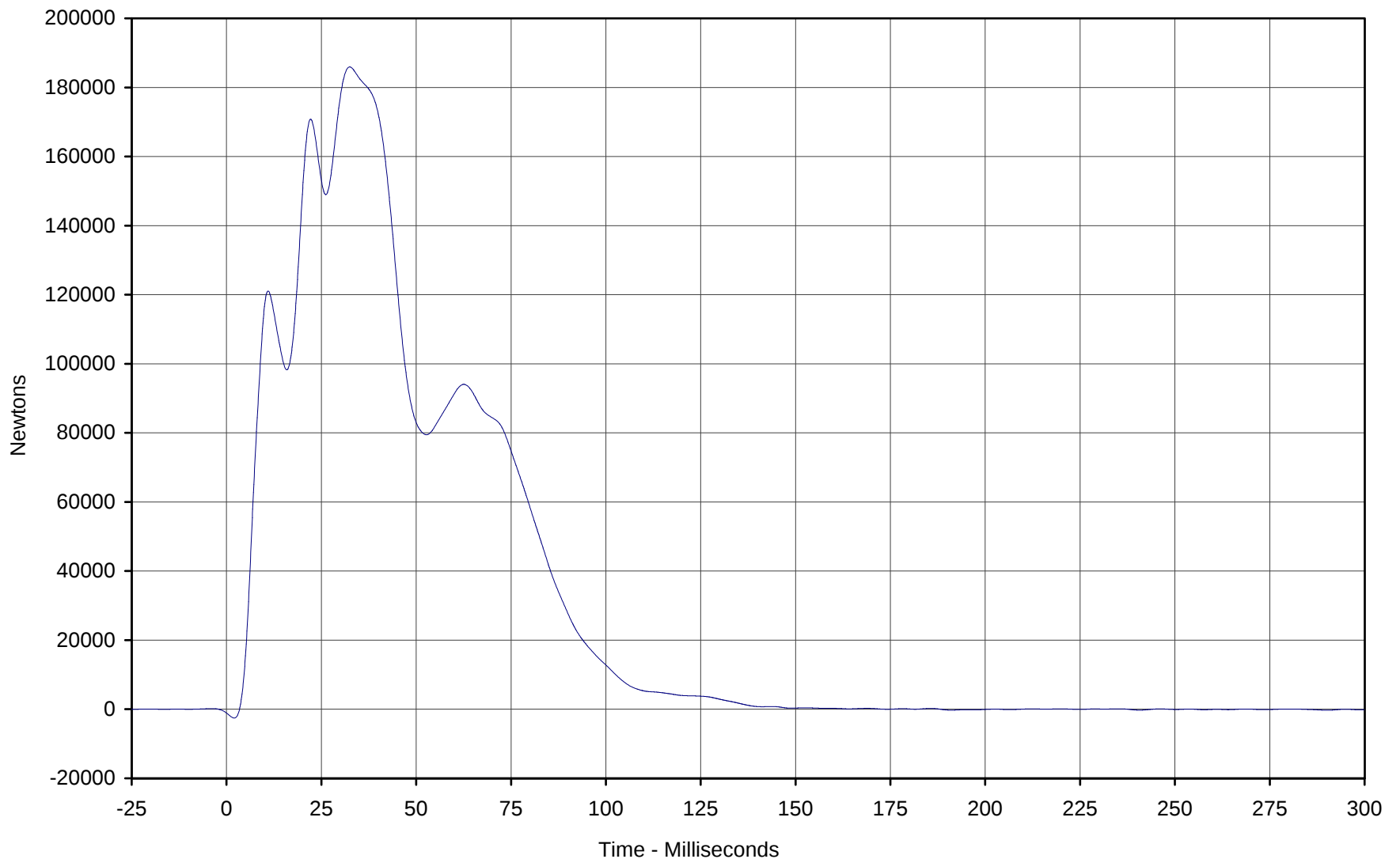
Curve Description: Barrier Force B6
Maximum Value: 68912.8 at 11.6 Milliseconds
Minimum Value: -262.7 at 0.0 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-112

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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C-14



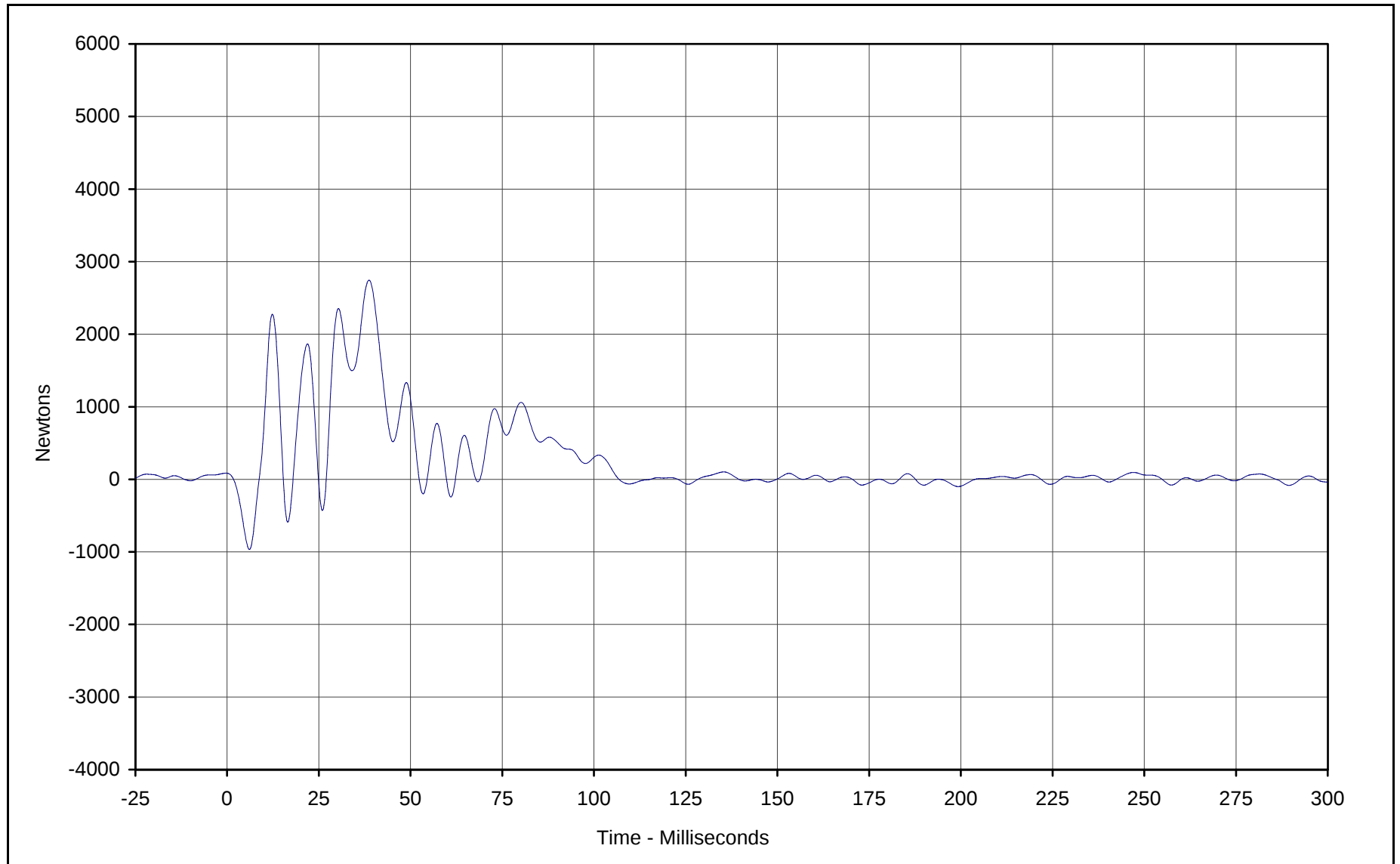
Curve Description: Barrier Force B7
Maximum Value: 185938.3 at 32.5 Milliseconds
Minimum Value: -2554.3 at 2.0 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-113

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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C-15



Curve Description: Barrier Force B8

Maximum Value: 2744.5 at 38.7 Milliseconds

Minimum Value: -967.6 at 6.1 Milliseconds

SAE Filter Class: 60

Date of Test: 7/31/01

Curve Number: FIL-114

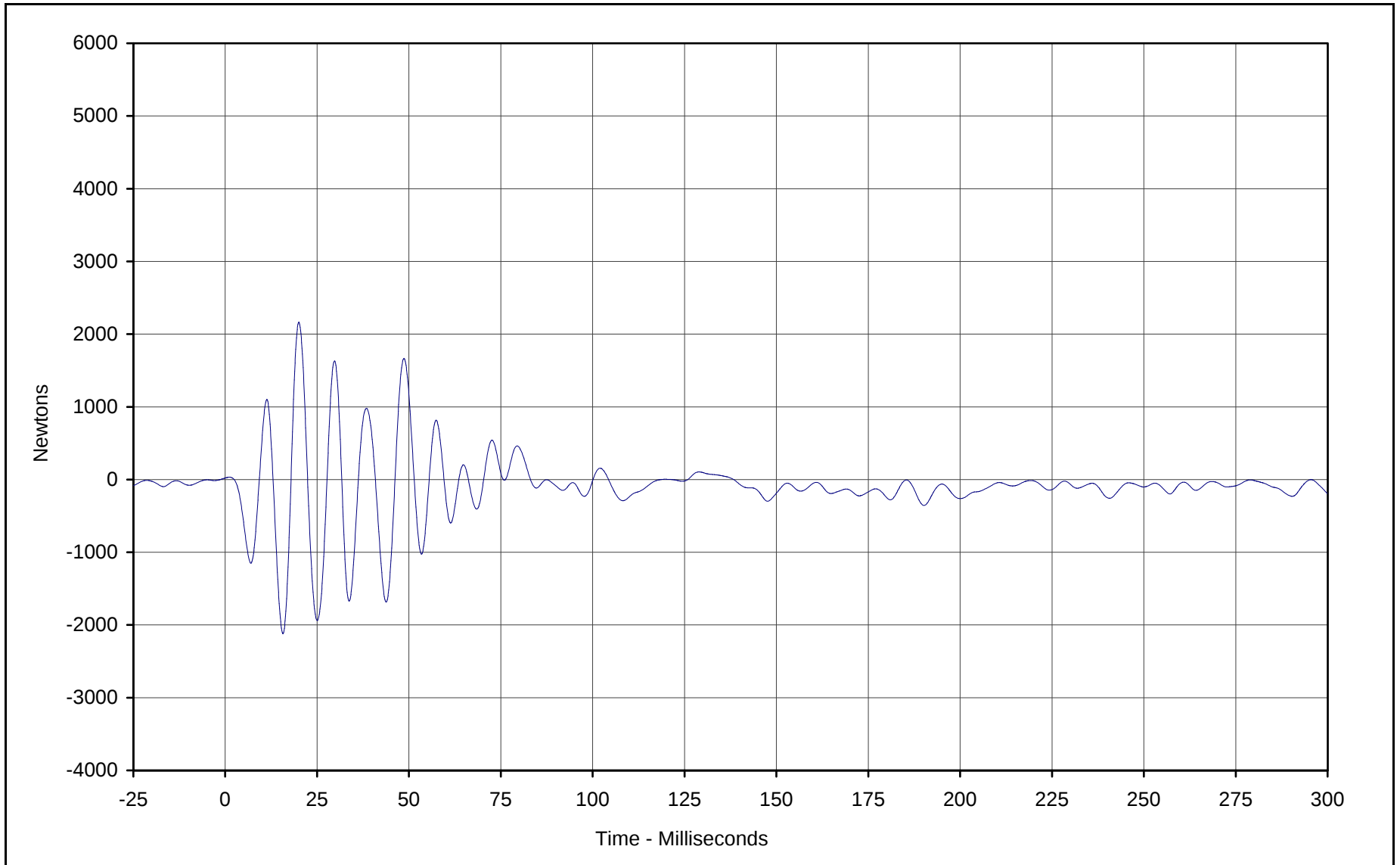
Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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C-16



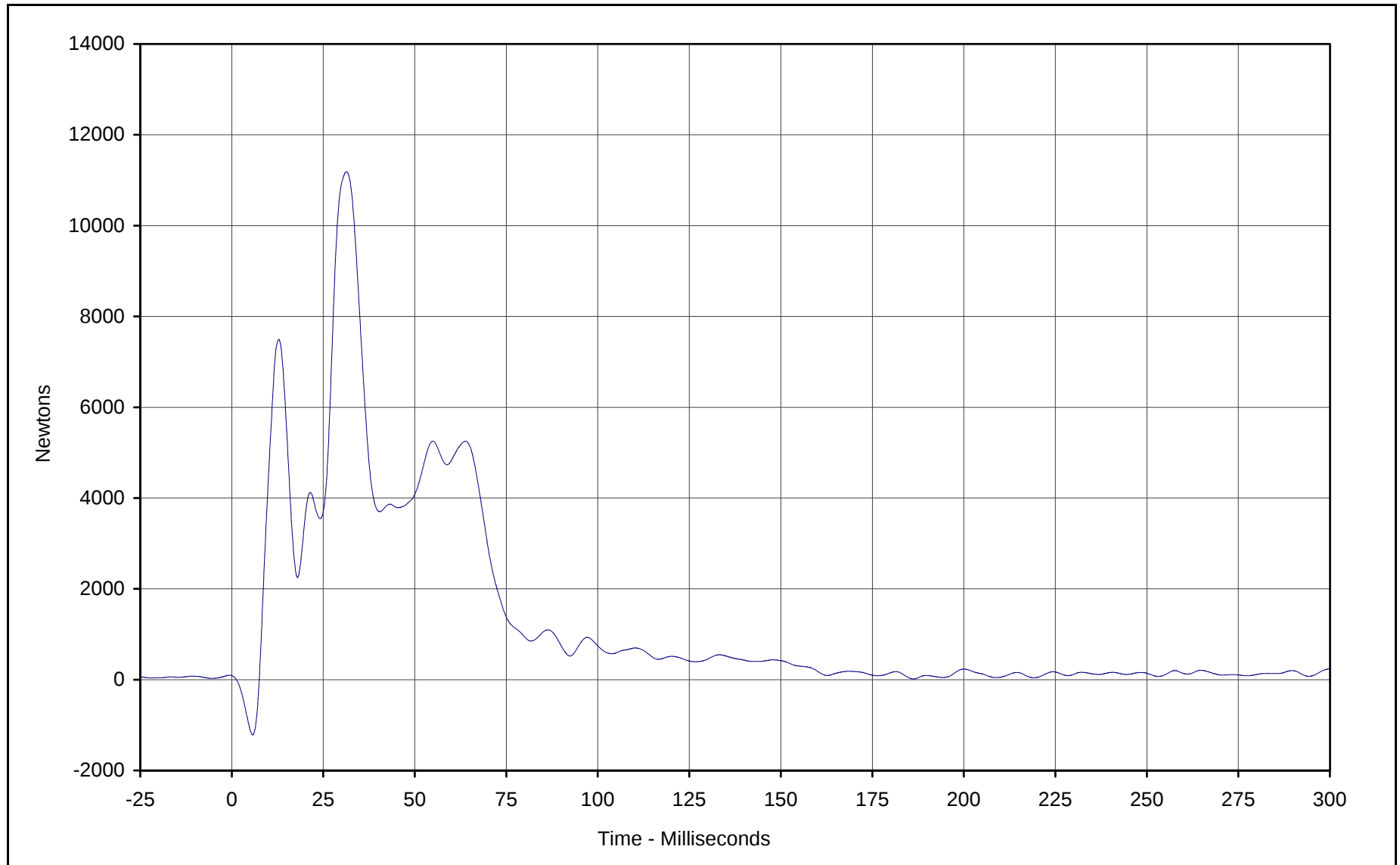
Curve Description: Barrier Force B9
Maximum Value: 2165.6 at 20.0 Milliseconds
Minimum Value: -2120.6 at 15.7 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-115

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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C-17



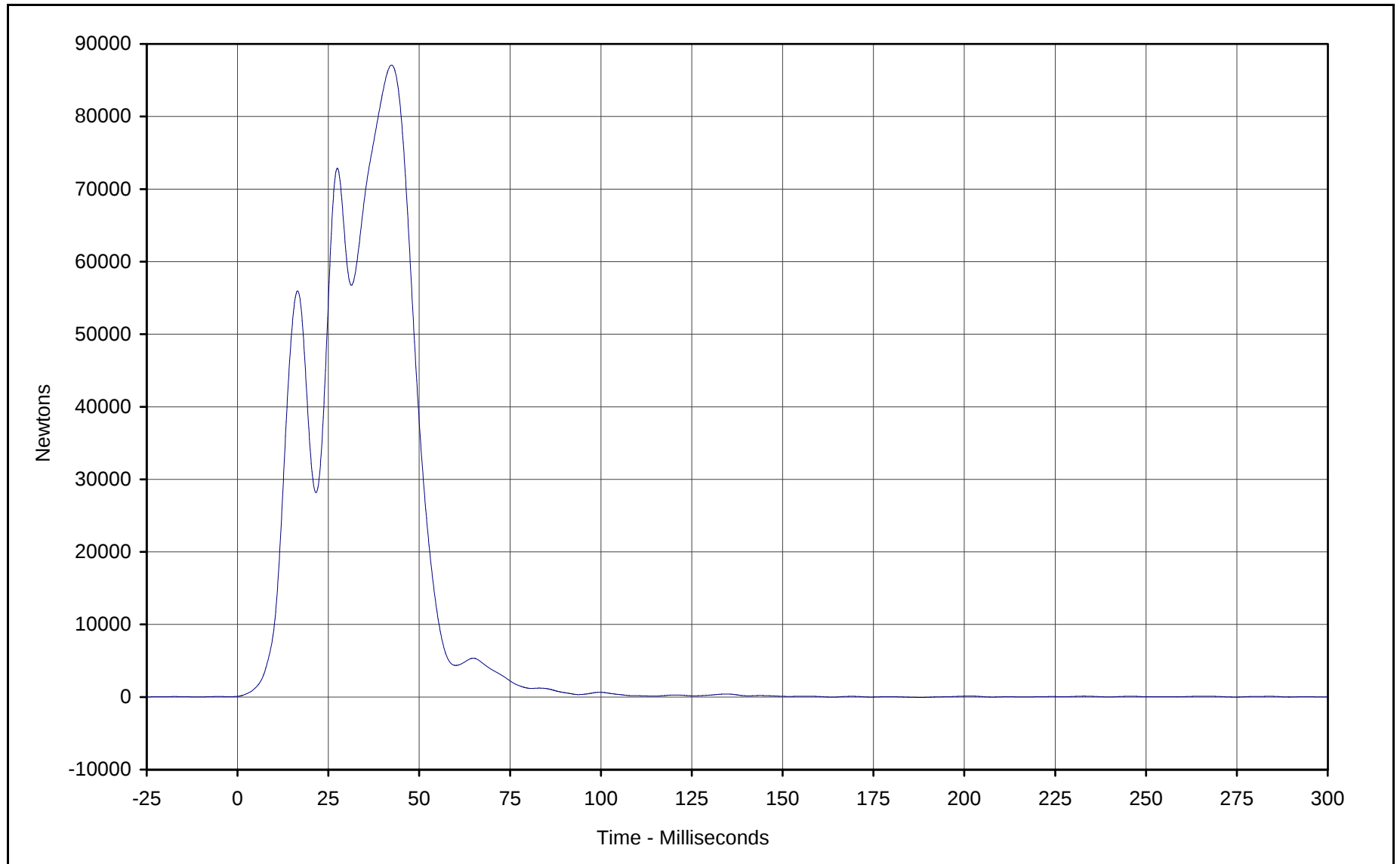
Curve Description: Barrier Force C2
Maximum Value: 11185.1 at 31.3 Milliseconds
Minimum Value: -1214.7 at 5.7 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-117

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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C-18



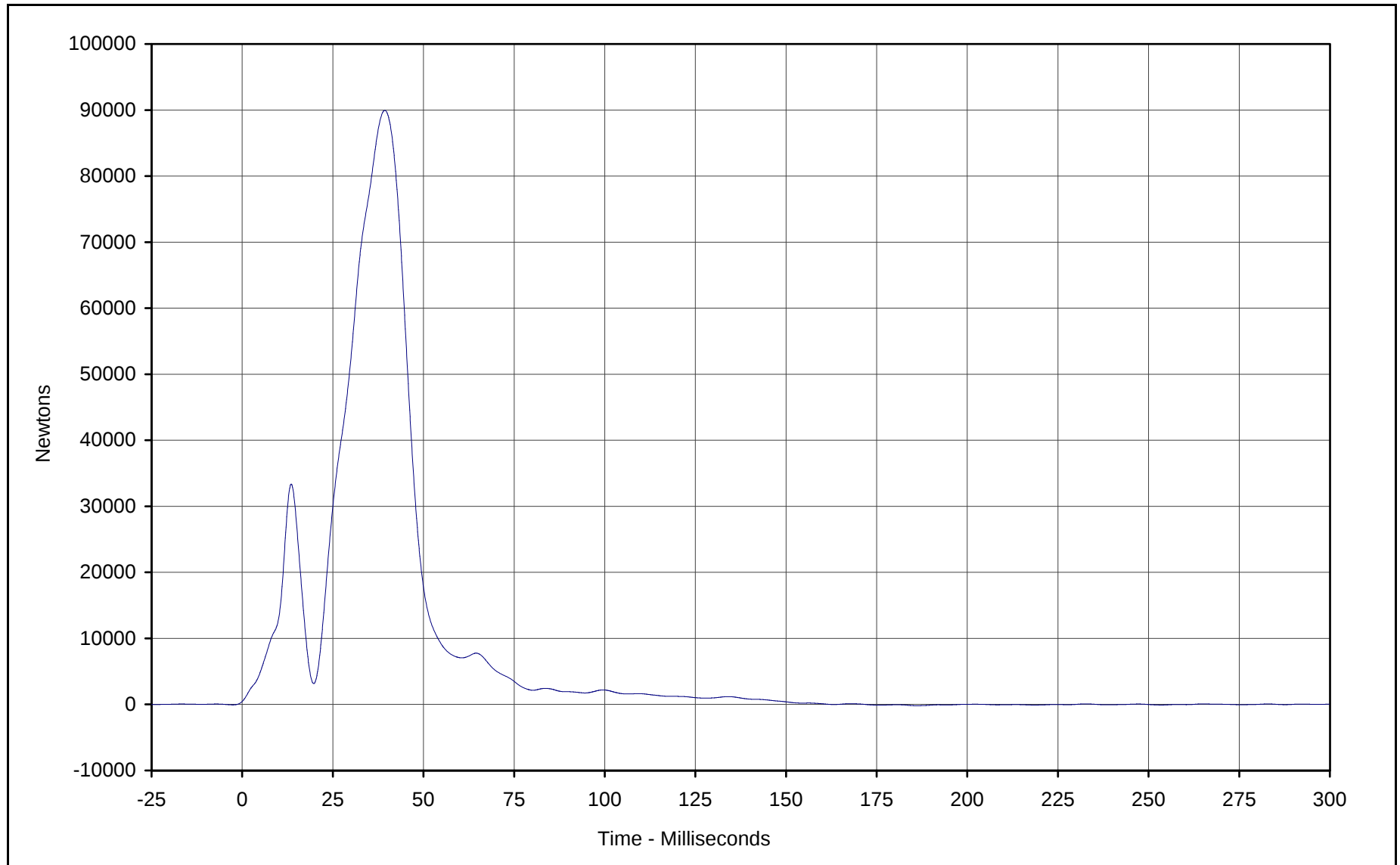
Curve Description: Barrier Force C3
Maximum Value: 87088.9 at 42.4 Milliseconds
Minimum Value: -59.7 at 188.2 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-118

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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C-19



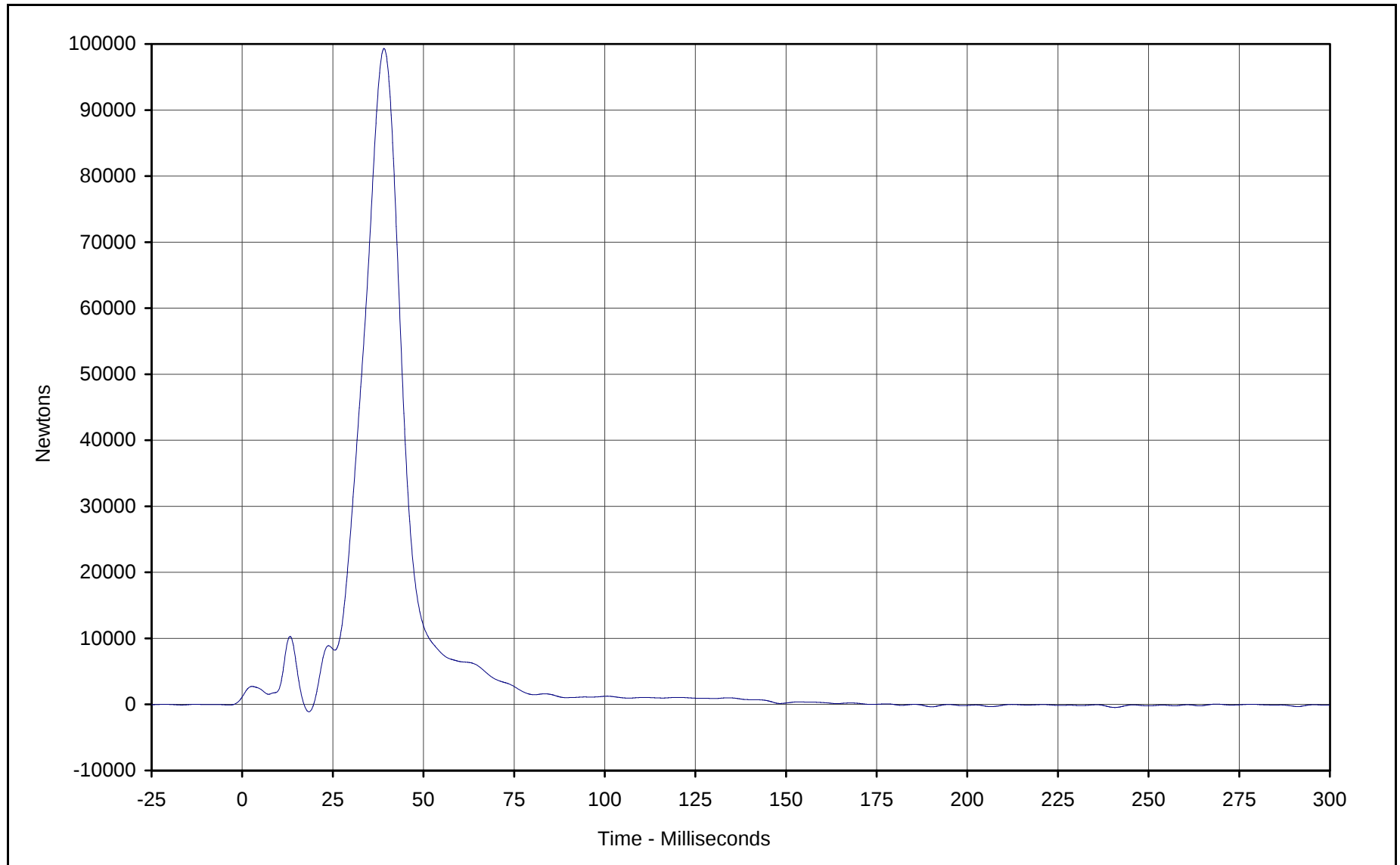
Curve Description: Barrier Force C4
Maximum Value: 89948.5 at 39.3 Milliseconds
Minimum Value: -197.7 at 186.1 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-119

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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C-20



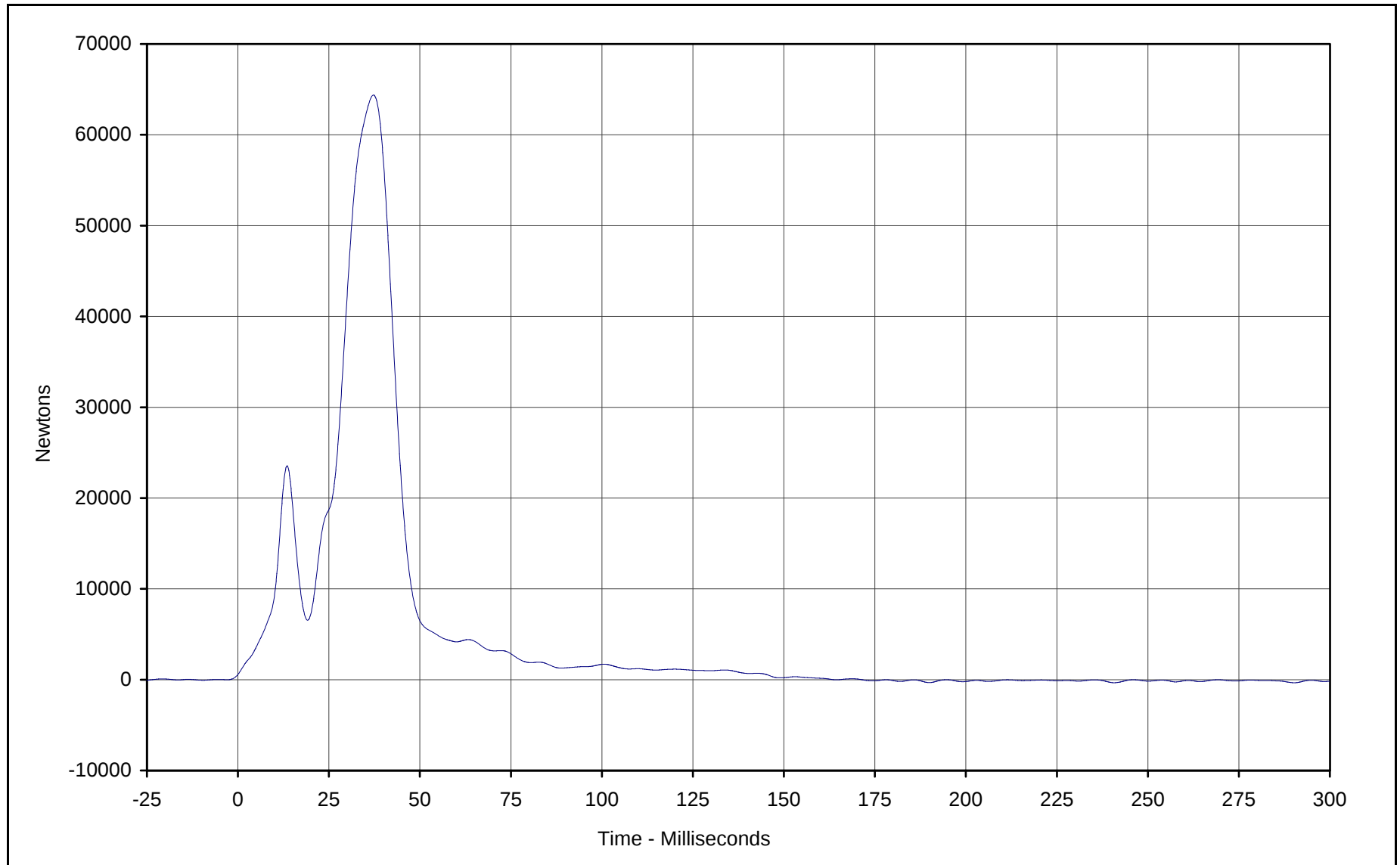
Curve Description: Barrier Force C5
Maximum Value: 99317.5 at 39.1 Milliseconds
Minimum Value: -1108.2 at 18.4 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-120

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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C-21



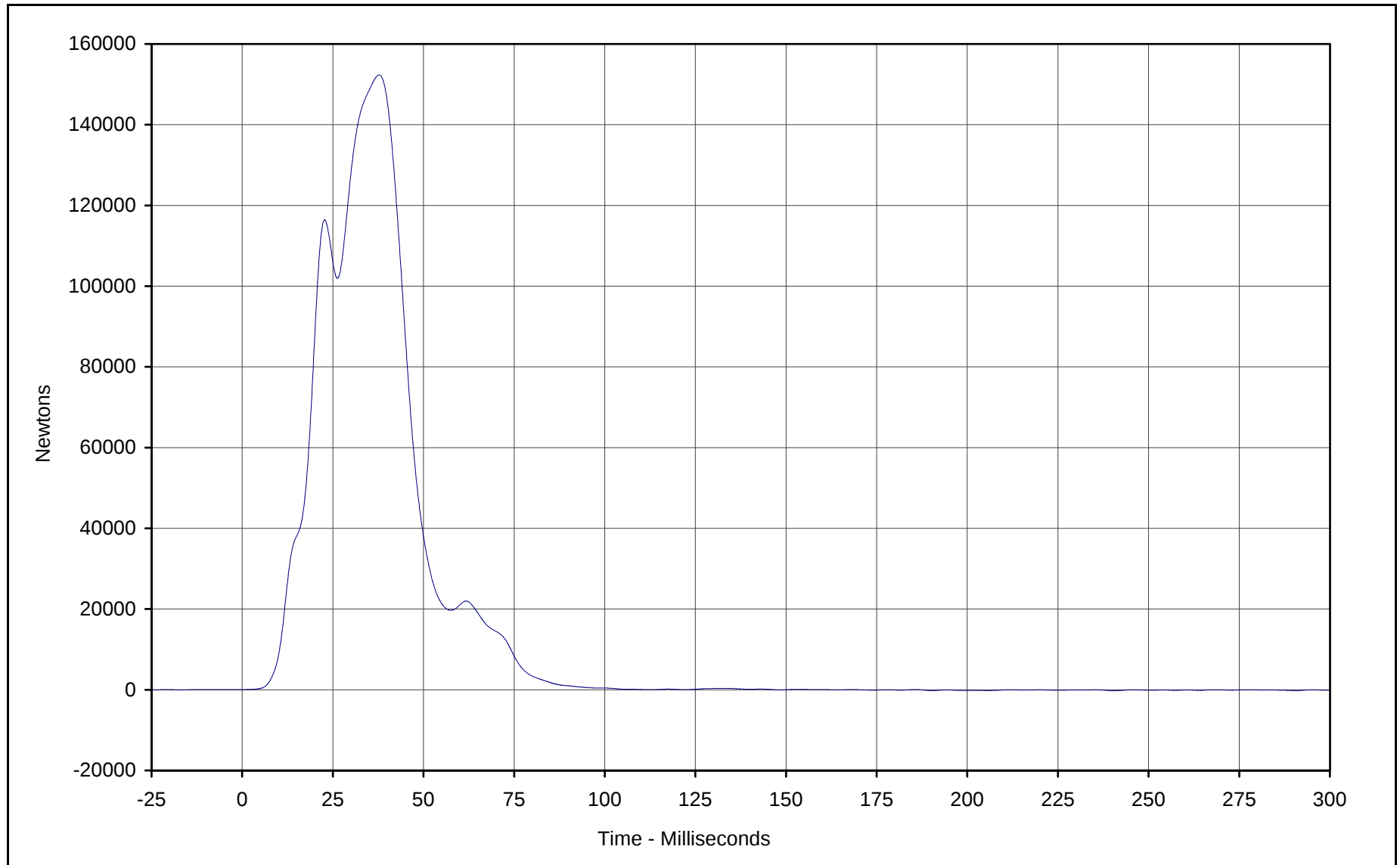
Curve Description: Barrier Force C6
Maximum Value: 64380.3 at 37.2 Milliseconds
Minimum Value: -337.7 at 290.2 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-121

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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C-22



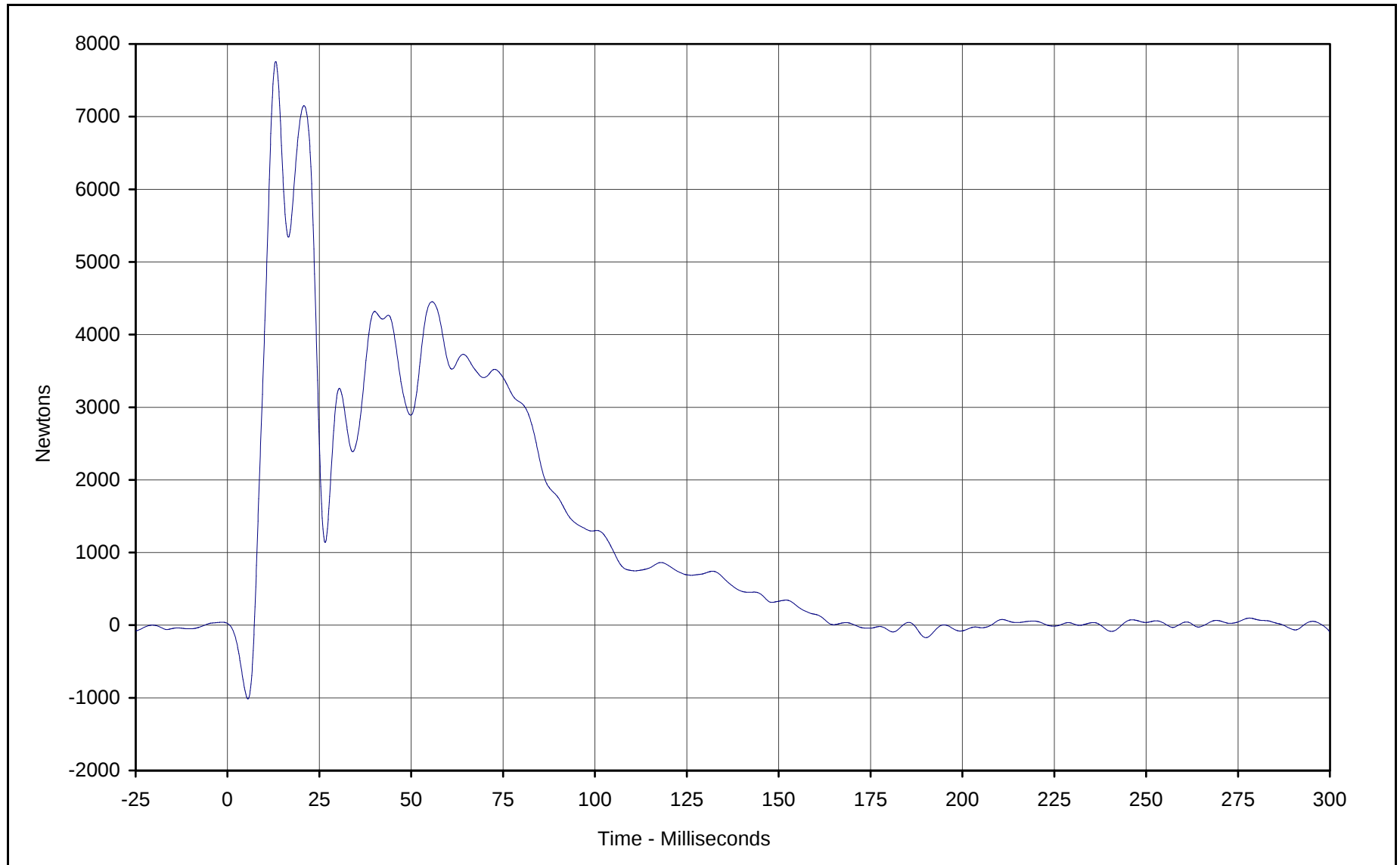
Curve Description: Barrier Force C7
Maximum Value: 152375.1 at 37.8 Milliseconds
Minimum Value: -242.0 at 240.5 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-122

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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C-23



Curve Description: Barrier Force C8

Maximum Value: 7759.8 at 13.1 Milliseconds

Minimum Value: -1014.7 at 5.6 Milliseconds

SAE Filter Class: 60

Date of Test: 7/31/01

Curve Number: FIL-123

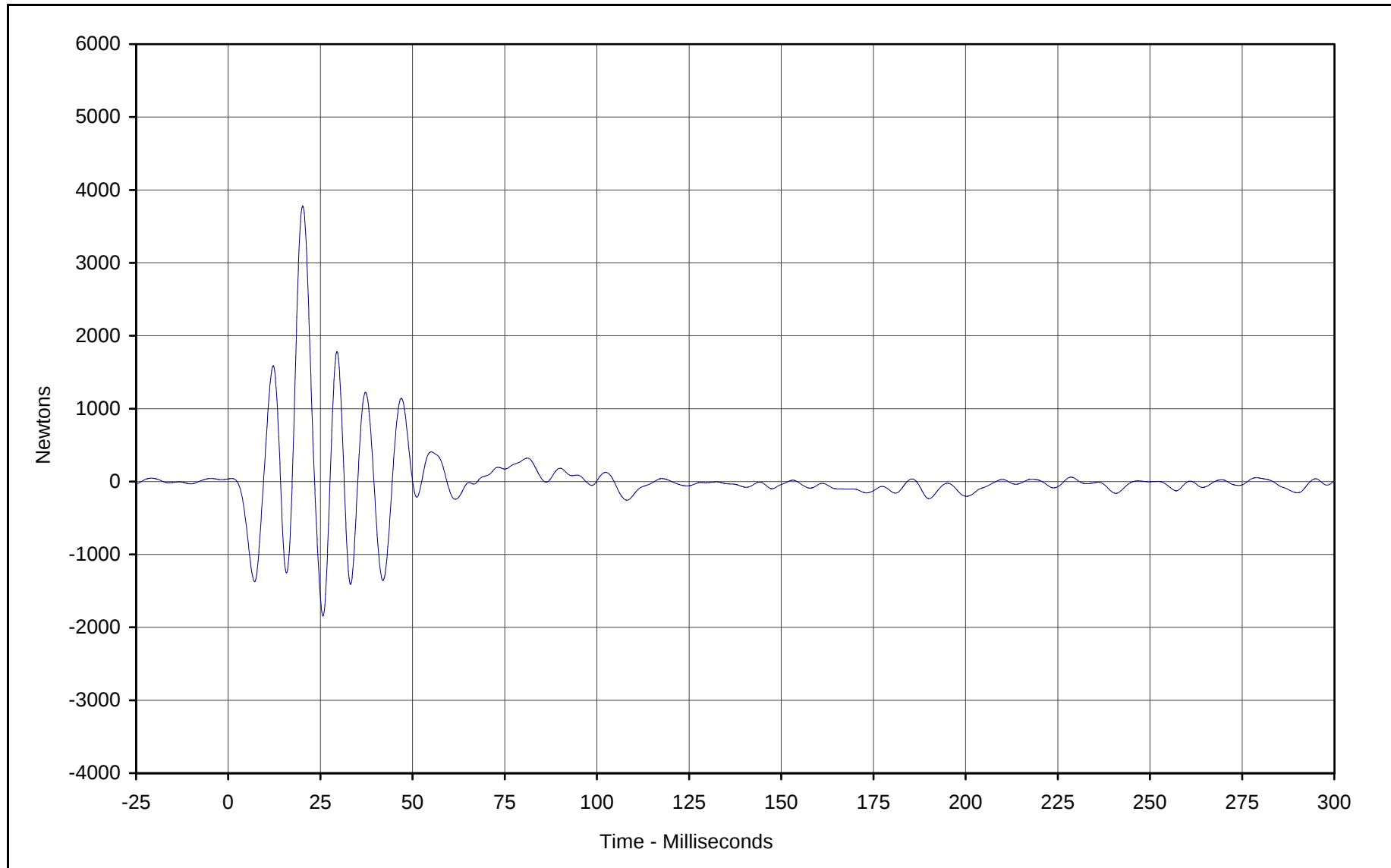
Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



KAR21082-01

C-24



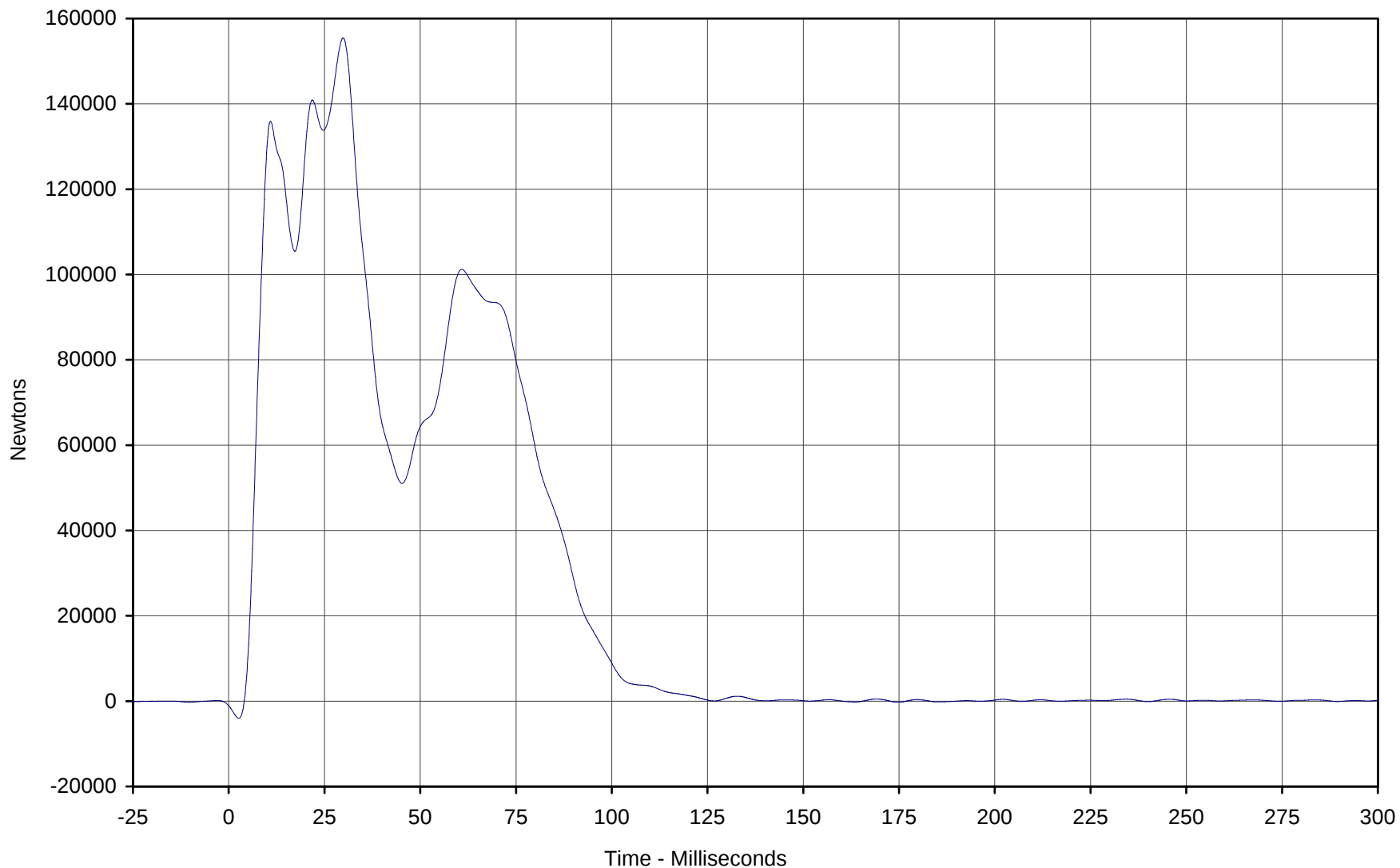
Curve Description: Barrier Force C9
Maximum Value: 3783.1 at 20.2 Milliseconds
Minimum Value: -1845.2 at 25.7 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: FIL-124

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



KAR21082-01

C-25

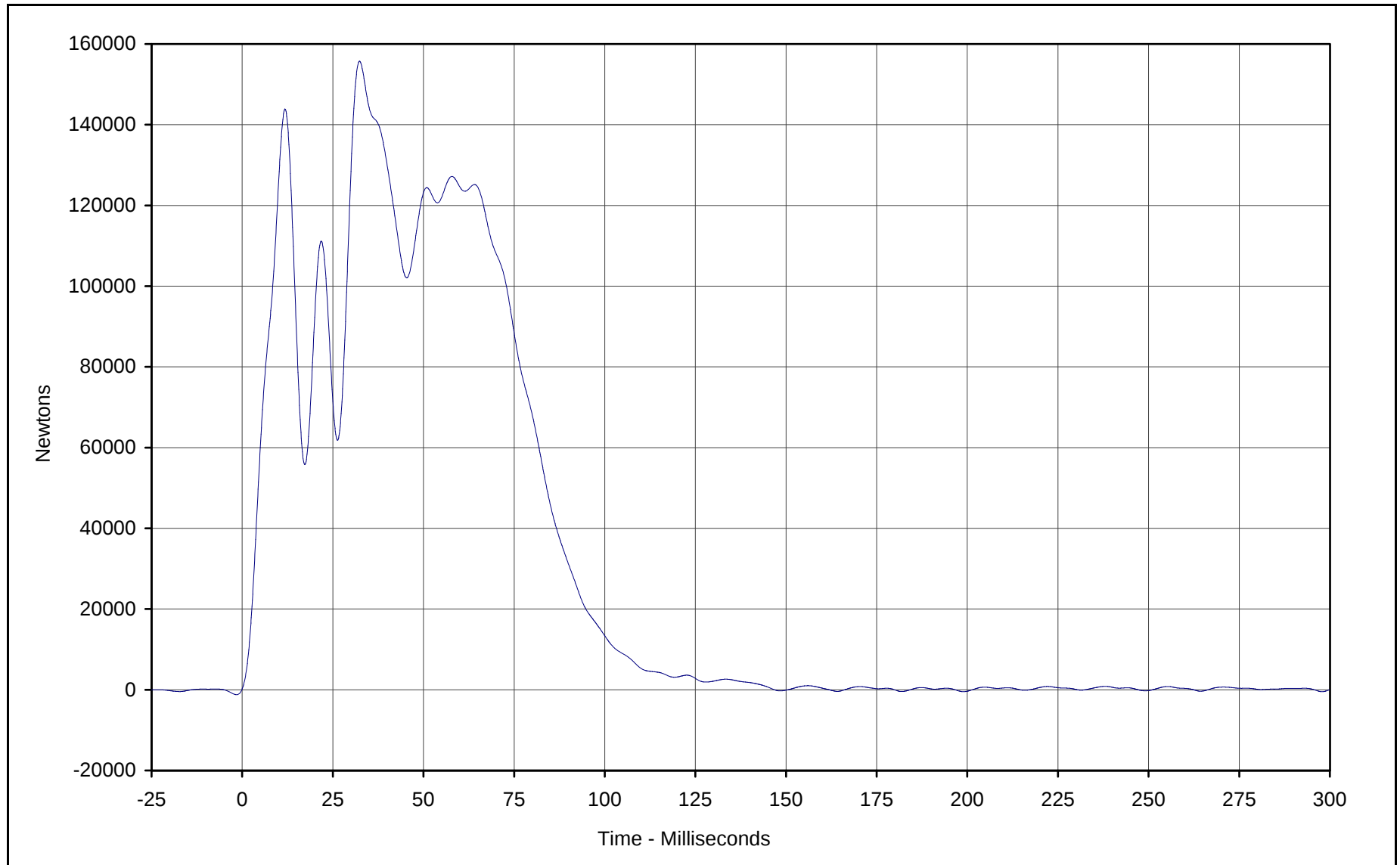


Curve Description: Barrier Force Sum Group 1
Maximum Value: 155452.1 at 29.9 Milliseconds
Minimum Value: -4021.6 at 2.6 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: SUM-001

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



KAR21082-01

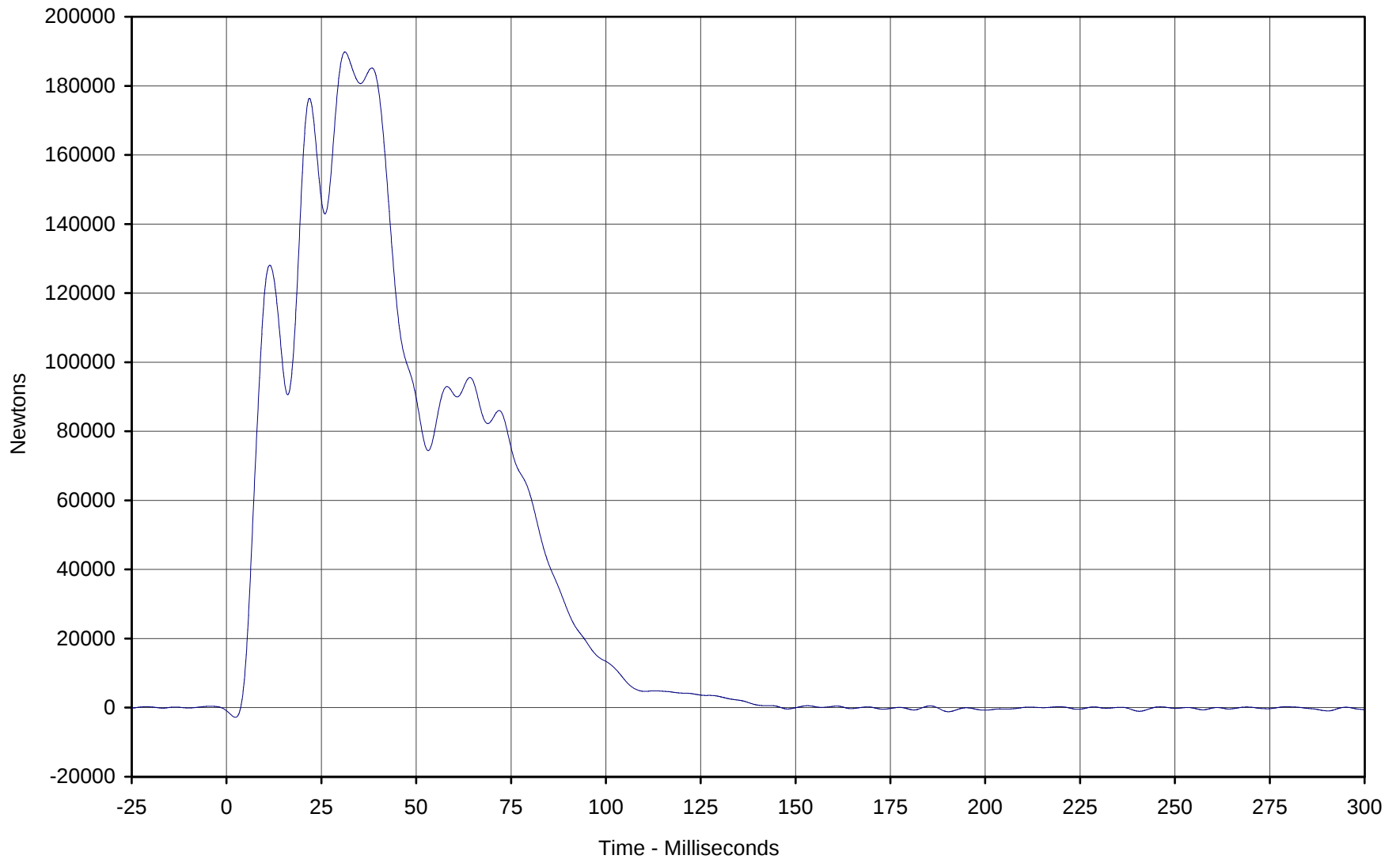


Curve Description: Barrier Force Sum Group 2
Maximum Value: 155729.2 at 32.4 Milliseconds
Minimum Value: -487.3 at 297.8 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: SUM-002

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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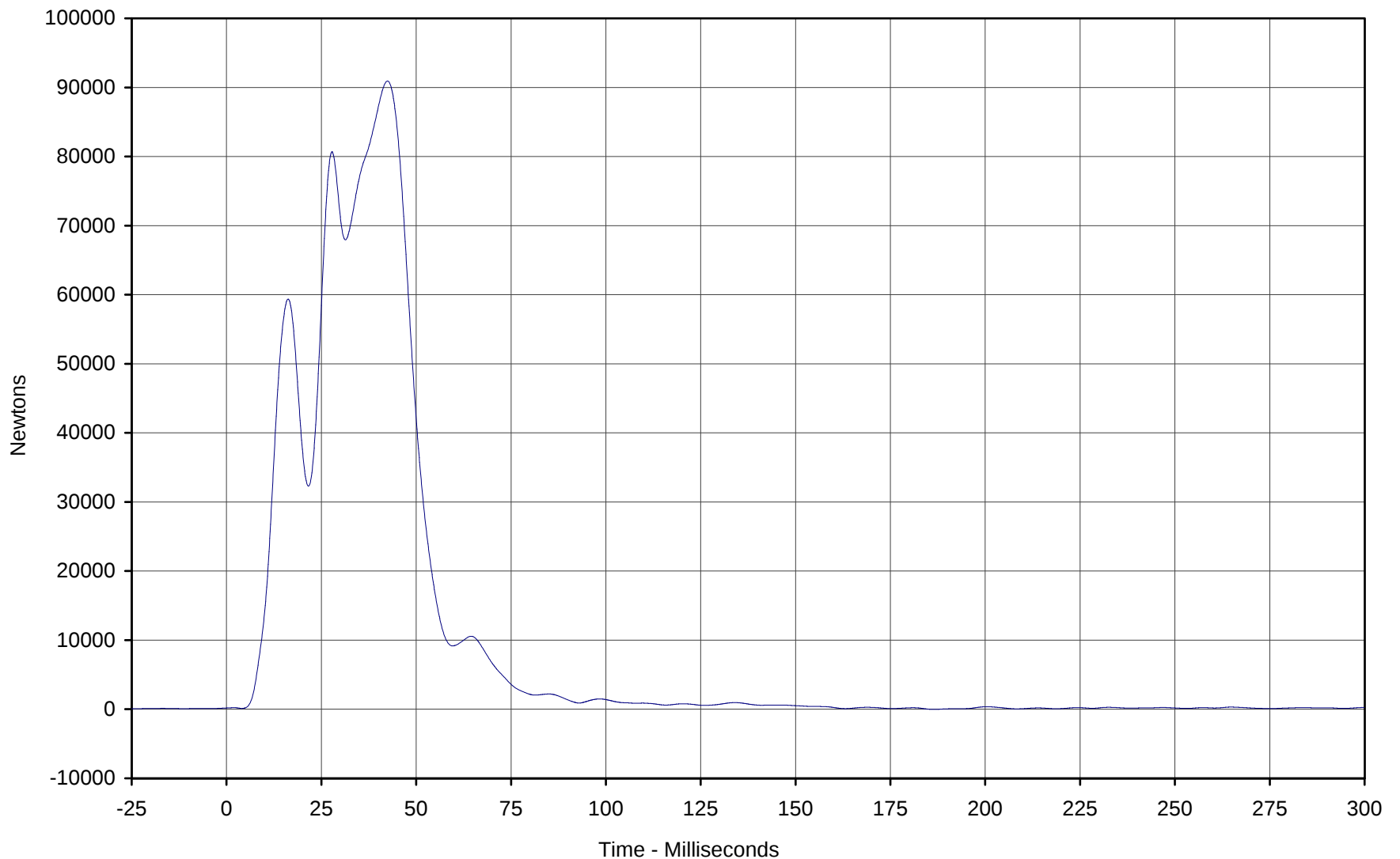
Curve Description: Barrier Force Sum Group 3
Maximum Value: 189808.8 at 31.2 Milliseconds
Minimum Value: -2809.1 at 2.3 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: SUM-003

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



KAR21082-01

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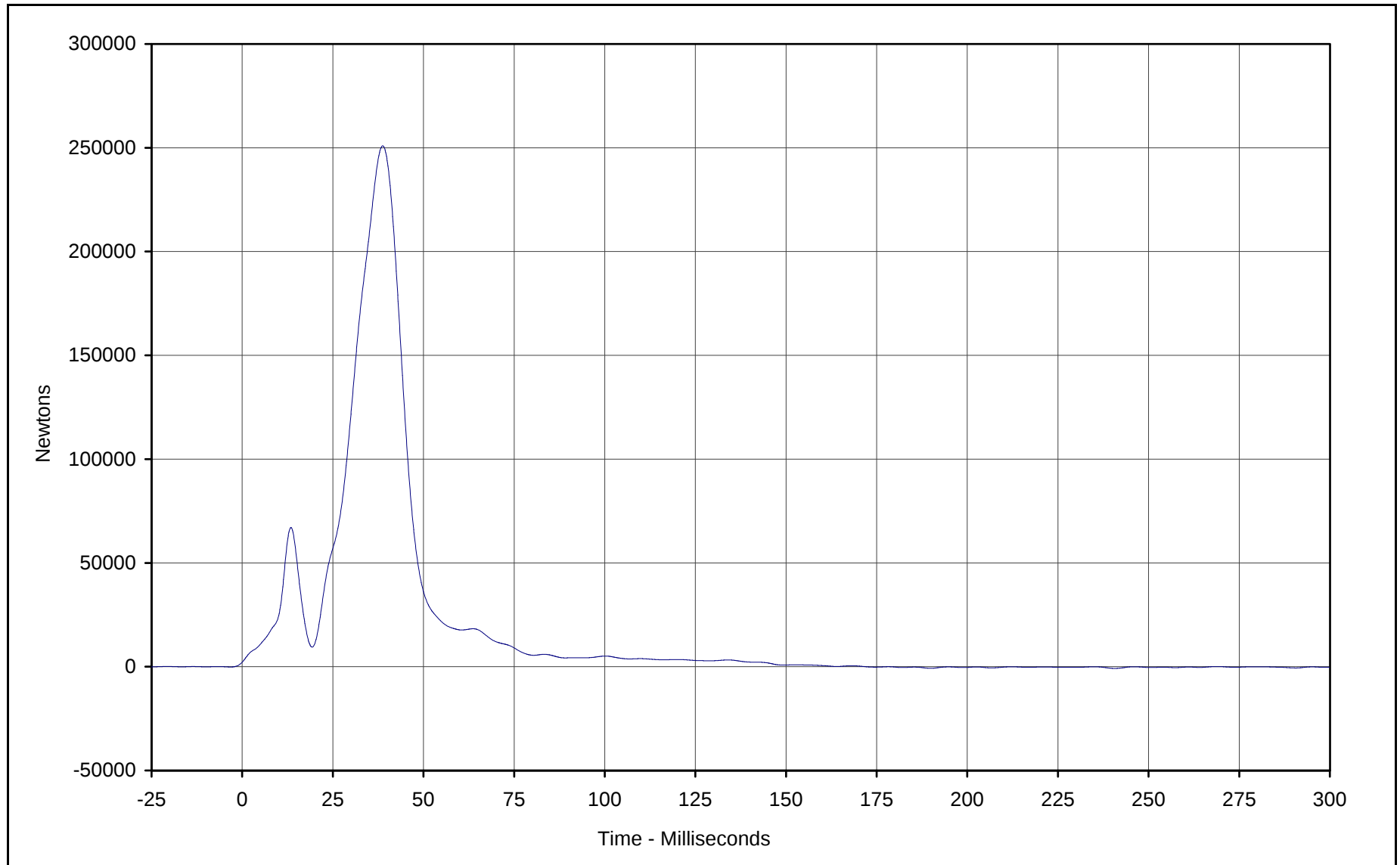


Curve Description: Barrier Force Sum Group 4
Maximum Value: 90928.7 at 42.4 Milliseconds
Minimum Value: -29.2 at 186.6 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: SUM-004

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



KAR21082-01

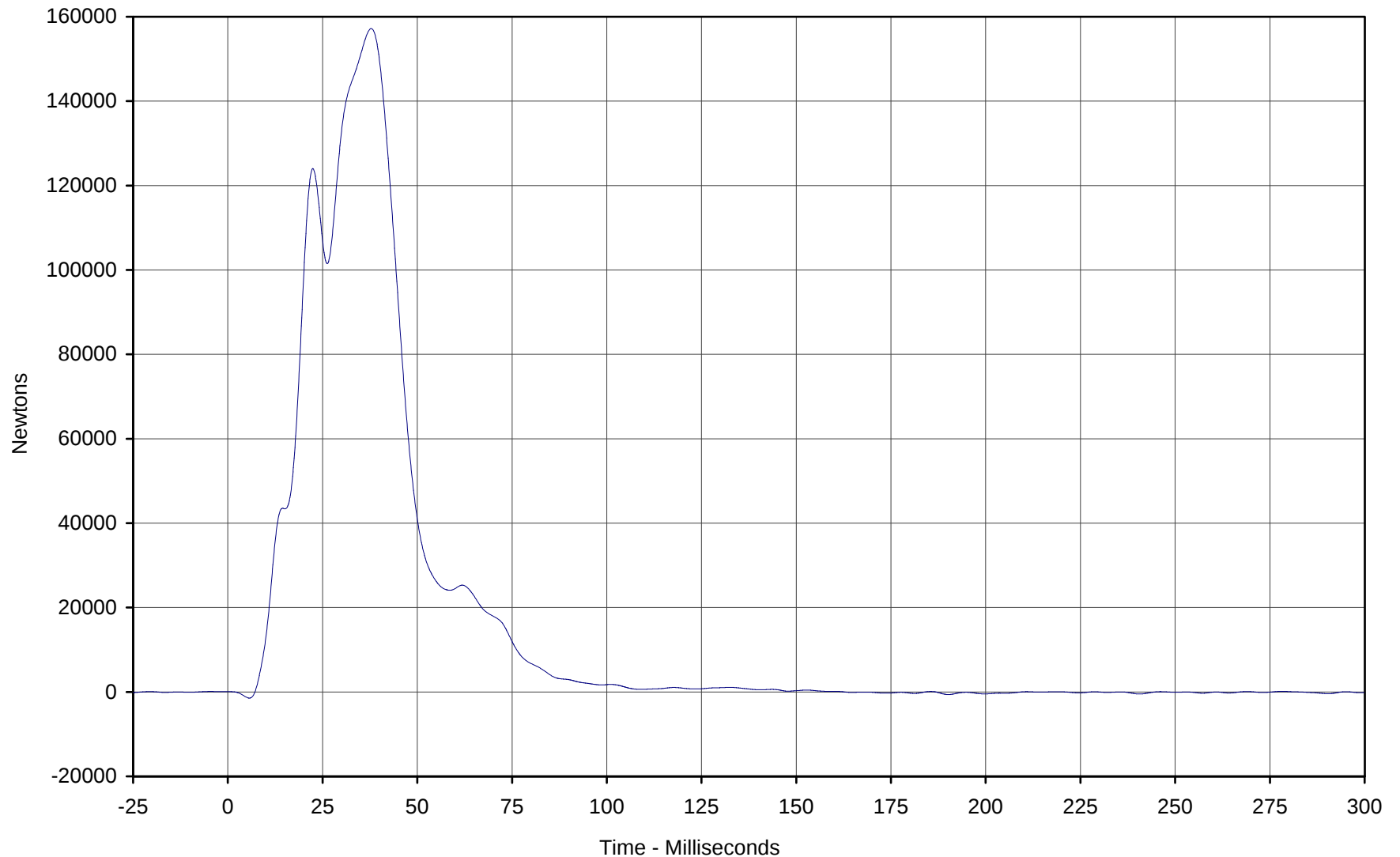


Curve Description: Barrier Force Sum Group 5
Maximum Value: 250961.0 at 38.8 Milliseconds
Minimum Value: -836.3 at 240.7 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: SUM-005

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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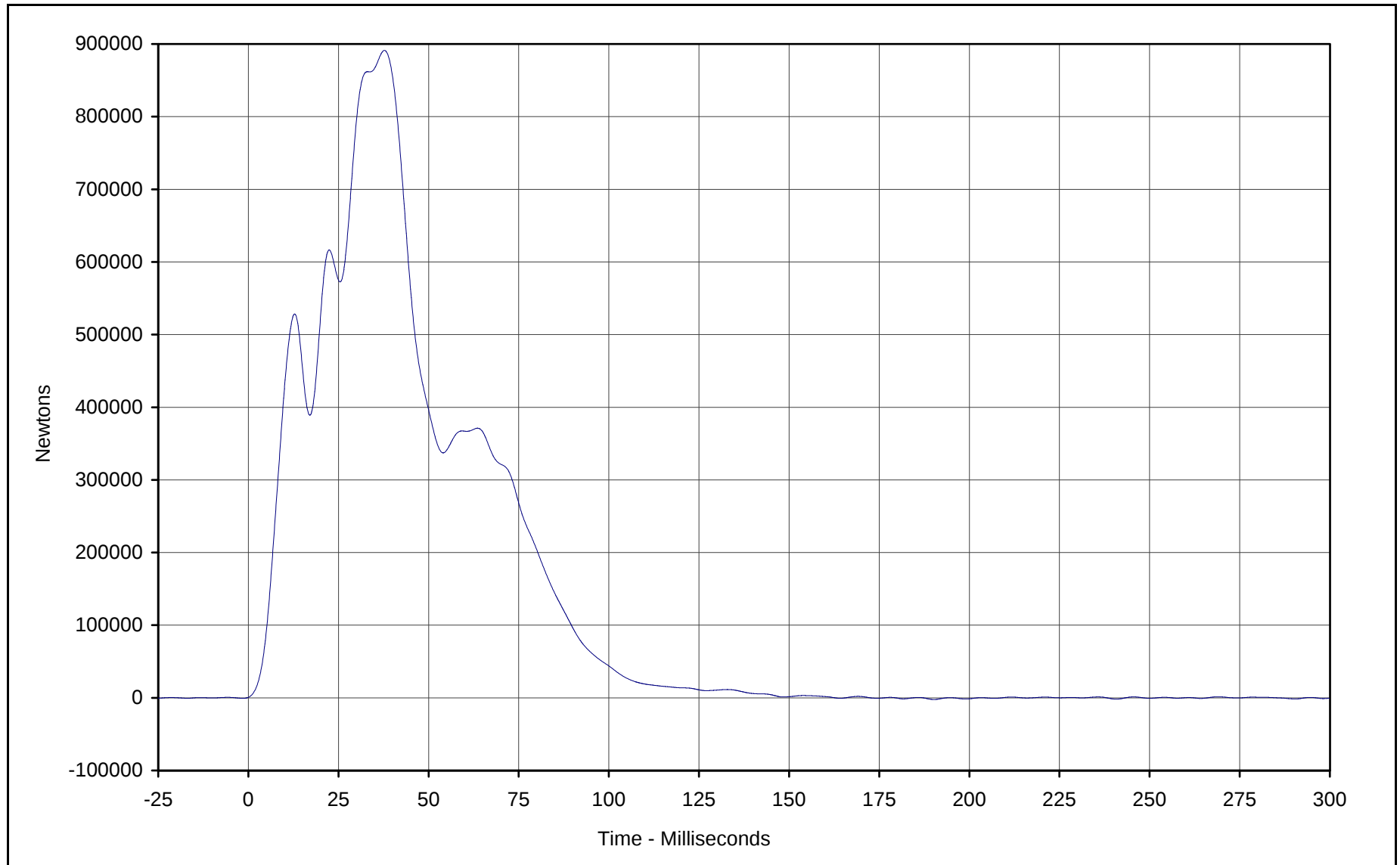
Curve Description: Barrier Force Sum Group 6
Maximum Value: 157202.2 at 37.8 Milliseconds
Minimum Value: -1461.1 at 5.7 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: SUM-006

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



KAR21082-01

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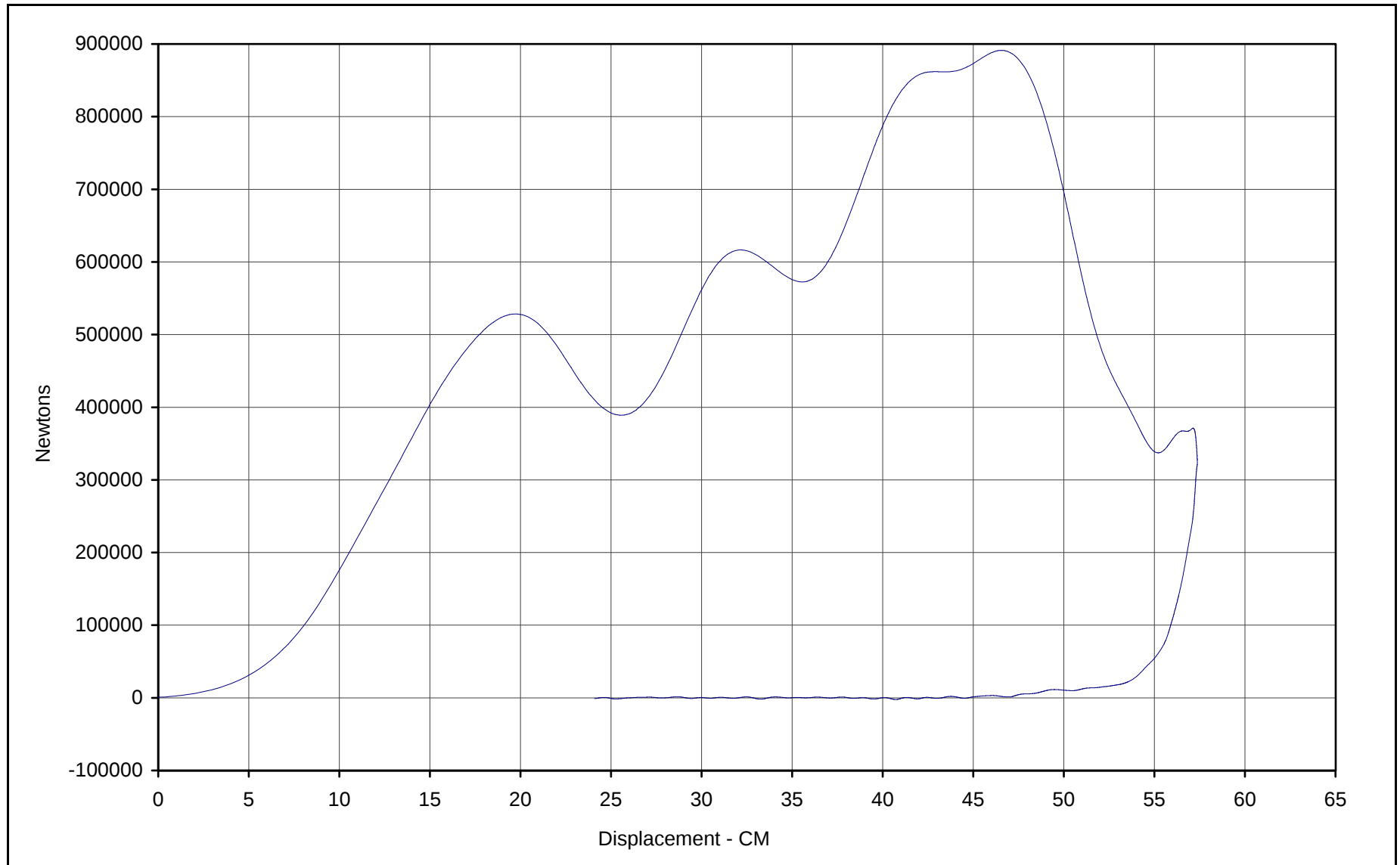
Curve Description: Barrier Force Sum Total
Maximum Value: 891157.0 at 37.8 Milliseconds
Minimum Value: -2344.4 at 190.2 Milliseconds
SAE Filter Class: 60
Date of Test: 7/31/01
Curve Number: SUM-007

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002
Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



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Curve Description: Sum Force Total vs. Dynamic Crush

Maximum Displ.: 57.4 at 69.4 Milliseconds

Maximum Force: 891,157 at 37.8 Milliseconds

Measured Energy: 264,130 joules

Date of Test: 7/31/01

Curve Number: XVY-001

Test Program: 2002 NHTSA 35mph NCAP No.: FOR002

Test Vehicle: 2002 Ford Explorer XLT 4WD SUV



KAR21082-01

BARRIER LOAD CELL SUMMARY DATATest Vehicle: 2002 Ford Explorer XLT 4WD SUVNHTSA No.: FOR002Test Program: 2002 NHTSA 35mph NCAPTest Date: 7/31/01**BARRIER LOAD CELL PEAK FORCES**

Location	Units	Max	Time	Min	Time
Barrier Force A2	Newtons	4076.9	50.4	-2880.6	17.8
Barrier Force A3	Newtons	3713.1	13.1	-3778.9	18.0
Barrier Force A4	Newtons	5636.2	13.1	-5061.0	17.8
Barrier Force A5	Newtons	6685.4	13.1	-5406.3	17.8
Barrier Force A6	Newtons	5463.8	12.8	-4539.6	17.7
Barrier Force A7	Newtons	3982.9	12.9	-2820.5	17.9
Barrier Force A8	Newtons	2367.7	12.8	-1651.8	44.6
Barrier Force A9	Newtons	2509.8	49.0	-3533.8	44.4
Barrier Force B2	Newtons	3123.2	50.4	-1733.1	17.2
Barrier Force B3	Newtons	151645.4	29.2	-3293.3	2.3
Barrier Force B4	Newtons	73035.2	33.9	-577.0	0.0
Barrier Force B5	Newtons	28634.5	38.6	-1905.0	17.7
Barrier Force B6	Newtons	68912.8	11.6	-262.7	0.0
Barrier Force B7	Newtons	185938.3	32.5	-2554.3	2.0
Barrier Force B8	Newtons	2744.5	38.7	-967.6	6.1
Barrier Force B9	Newtons	2165.6	20.0	-2120.6	15.7
Barrier Force C2	Newtons	11185.1	31.3	-1214.7	5.7
Barrier Force C3	Newtons	87088.9	42.4	-59.7	188.2
Barrier Force C4	Newtons	89948.5	39.3	-197.7	186.1
Barrier Force C5	Newtons	99317.5	39.1	-1108.2	18.4
Barrier Force C6	Newtons	64380.3	37.2	-337.7	290.2
Barrier Force C7	Newtons	152375.1	37.8	-242.0	240.5
Barrier Force C8	Newtons	7759.8	13.1	-1014.7	5.6
Barrier Force C9	Newtons	3783.1	20.2	-1845.2	25.7
Barrier Force Sum Group 1	Newtons	155452.1	29.9	-4021.6	2.6
Barrier Force Sum Group 2	Newtons	155729.2	32.4	-487.3	297.8
Barrier Force Sum Group 3	Newtons	189808.8	31.2	-2809.1	2.3
Barrier Force Sum Group 4	Newtons	90928.7	42.4	-29.2	186.6
Barrier Force Sum Group 5	Newtons	250961.0	38.8	-836.3	240.7
Barrier Force Sum Group 6	Newtons	157202.2	37.8	-1461.1	5.7
Barrier Force Sum Total	Newtons	891157.0	37.8	-2344.4	190.2

Barrier Load cells A1,B1,C1, and D1 through D9 (12 locations) were not recorded.

APPENDIX D

INSTRUMENTATION DATA CHANNEL ASSIGNMENTS

2002 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D. Serial Number 34
7/31/01
2002 Ford Explorer XLT 4WD SUV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
1	HEAD, PRIMARY	X	GPAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
2	HEAD, PRIMARY	Y	GPAC002	Accel., 1/2 bridge	Endevco	7264-2000	G
3	HEAD, PRIMARY	Z	GPAC003	Accel., 1/2 bridge	Endevco	7264-2000	G
4	HEAD, REDUNDANT	X	GPAC032	Accel., 1/2 bridge	Endevco	7264-2000	G
5	HEAD, REDUNDANT	Y	GPAC021	Accel., 1/2 bridge	Endevco	7264-2000	G
6	HEAD, REDUNDANT	Z	GPAC026	Accel., 1/2 bridge	Endevco	7264-2000	G
7	NECK FORCE	X	GPUN01FX	Load cell, six axis neck	R. A. Denton	1716A	N
8	NECK FORCE	Y	GPUN01FY	Load cell, six axis neck	R. A. Denton	1716A	N
9	NECK FORCE	Z	GPUN01FZ	Load cell, six axis neck	R. A. Denton	1716A	N
10	NECK MOMENT	X	GPUN01MX	Load cell, six axis neck	R. A. Denton	1716A	Nm
11	NECK MOMENT	Y	GPUN01MY	Load cell, six axis neck	R. A. Denton	1716A	Nm
12	NECK MOMENT	Z	GPUN01MZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
13	CHEST , PRIMARY	X	GPAC005	Accel., 1/2 bridge	Endevco	7264-2000	G
14	CHEST , PRIMARY	Y	GPAC011	Accel., 1/2 bridge	Endevco	7264-2000	G
15	CHEST , PRIMARY	Z	GPAC010	Accel., 1/2 bridge	Endevco	7264-2000	G
16	CHEST , REDUNDANT	X	GPAC034	Accel., 1/2 bridge	Endevco	7264-2000	G
17	CHEST , REDUNDANT	Y	GPAC023	Accel., 1/2 bridge	Endevco	7264-2000	G
18	CHEST , REDUNDANT	Z	GPAC020	Accel., 1/2 bridge	Endevco	7264-2000	G
19	CHEST DISPLACEMENT	X	GPCP002	Rotary Pot Chest	Servo	14CBI	MM
20	PELVIS, PRIMARY	X	GPAC025	Accel., 1/2 bridge	Endevco	7264-2000	G
21	PELVIS, PRIMARY	Y	GPAC022	Accel., 1/2 bridge	Endevco	7264-2000	G
22	PELVIS, PRIMARY	Z	GPAC019	Accel., 1/2 bridge	Endevco	7264-2000	G
23	LEFT FEMUR FORCE	Z	KEFF003	Load cell, Femur	R.A. Denton	2121	N
24	RIGHT FEMUR FORCE	Z	KEFF004	Load cell, Femur	R.A. Denton	2121	N

2002 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D. Serial Number 34
7/31/01
2002 Ford Explorer XLT 4WD SUV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
25	UP. TIBIA LEFT MOM.	X	GPOT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
26	UP. TIBIA LEFT MOM.	Y	GPOT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
27	UP. TIBIA RIGHT MOM.	X	GPOT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
28	UP. TIBIA RIGHT MOM.	Y	GPOT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
29	LWR. TIBIA LEFT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
30	LWR. TIBIA LEFT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
31	LWR. TIBIA LEFT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
32	LWR. TIBIA RIGHT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
33	LWR. TIBIA RIGHT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
34	LWR. TIBIA RIGHT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
35	FOOT LEFT	X	KEIC002X	Accel., Foot Triax	I.C. Sensor	3031-500	G
36	FOOT LEFT	Y	KEIC002Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
37	FOOT LEFT	Z	KEIC002Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
38	FOOT RIGHT	X	KEIC001X	Accel., Foot Triax	I.C. Sensor	3031-500	G
39	FOOT RIGHT	Y	KEIC001Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
40	FOOT RIGHT	Z	KEIC001Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
41	LAP BELT FORCE	X	KELC003	Load cell, Seat belt	Lebow	3371	N
42	SHOULDER BELT FORCE	X	KELC004	Load cell, Seat belt	Lebow	3371	N
43	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	MM
44	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

2002 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Passenger A.T.D. Serial Number 35
7/31/01
2002 Ford Explorer XLT 4WD SUV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
45	HEAD, PRIMARY	X	KEAC039	Accel., 1/2 bridge	Endevco	7264-2000	G
46	HEAD, PRIMARY	Y	KEAC038	Accel., 1/2 bridge	Endevco	7264-2000	G
47	HEAD, PRIMARY	Z	KEAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
48	HEAD, REDUNDANT	X	KEAC031	Accel., 1/2 bridge	Endevco	7264-2000	G
49	HEAD, REDUNDANT	Y	KEAC032	Accel., 1/2 bridge	Endevco	7264-2000	G
50	HEAD, REDUNDANT	Z	KEAC026	Accel., 1/2 bridge	Endevco	7264-2000	G
51	NECK FORCE	X	GPUN02FX	Load cell, six axis neck	R. A. Denton	1716A	N
52	NECK FORCE	Y	GPUN02FY	Load cell, six axis neck	R. A. Denton	1716A	N
53	NECK FORCE	Z	GPUN02FZ	Load cell, six axis neck	R. A. Denton	1716A	N
54	NECK MOMENT	X	GPUN02MX	Load cell, six axis neck	R. A. Denton	1716A	Nm
55	NECK MOMENT	Y	GPUN02MY	Load cell, six axis neck	R. A. Denton	1716A	Nm
56	NECK MOMENT	Z	GPUN02MZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
57	CHEST , PRIMARY	X	GPAC031	Accel., 1/2 bridge	Endevco	7264-2000	G
58	CHEST , PRIMARY	Y	GPAC024	Accel., 1/2 bridge	Endevco	7264-2000	G
59	CHEST , PRIMARY	Z	GPAC029	Accel., 1/2 bridge	Endevco	7264-2000	G
60	CHEST , REDUNDANT	X	KEAC023	Accel., 1/2 bridge	Endevco	7264-200	G
61	CHEST , REDUNDANT	Y	KEAC022	Accel., 1/2 bridge	Endevco	7264-200	G
62	CHEST , REDUNDANT	Z	KEAC024	Accel., 1/2 bridge	Endevco	7264-200	G
63	CHEST DISPLACEMENT	X	GPCP001	Rotary Pot Chest	Servo	14CBI	MM
64	PELVIS, PRIMARY	X	KEAC019	Accel., 1/2 bridge	Endevco	7264-200	G
65	PELVIS, PRIMARY	Y	KEAC020	Accel., 1/2 bridge	Endevco	7264-200	G
66	PELVIS, PRIMARY	Z	KEAC021	Accel., 1/2 bridge	Endevco	7264-200	G
67	LEFT FEMUR FORCE	Z	KEFF001	Load cell, Femur	R.A. Denton	2121	N
68	RIGHT FEMUR FORCE	Z	KEFF002	Load cell, Femur	R.A. Denton	2121	N

2002 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Passenger A.T.D. Serial Number 35
7/31/01
2002 Ford Explorer XLT 4WD SUV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
69	UP. TIBIA LEFT MOM.	X	GPOT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
70	UP. TIBIA LEFT MOM.	Y	GPOT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
71	UP. TIBIA RIGHT MOM.	X	GPOT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
72	UP. TIBIA RIGHT MOM.	Y	GPOT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
73	LWR. TIBIA LEFT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
74	LWR. TIBIA LEFT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
75	LWR. TIBIA LEFT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
76	LWR. TIBIA RIGHT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
77	LWR. TIBIA RIGHT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
78	LWR. TIBIA RIGHT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
79	FOOT LEFT	X	KEIC003X	Accel., Foot Triax	I.C. Sensor	3031-500	G
80	FOOT LEFT	Y	KEIC003Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
81	FOOT LEFT	Z	KEIC003Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
82	FOOT RIGHT	X	KEIC004X	Accel., Foot Triax	I.C. Sensor	3031-500	G
83	FOOT RIGHT	Y	KEIC004Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
84	FOOT RIGHT	Z	KEIC004Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
85	LAP BELT FORCE	X	KELC001	Load cell, Seat belt	Lebow	3371	N
86	SHOULDER BELT FORCE	X	KELC002	Load cell, Seat belt	Lebow	3371	N
87	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	CM
88	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

2002 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Vehicle Accelerometers and Reference Channel
7/31/01
2002 Ford Explorer XLT 4WD SUV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
89	Left Rear Primary	X	KEVA010	Accel., Vehicle block	I.C. Sensor	3031-200	G
90	Right Rear Primary	Y	KEVA006	Accel., Vehicle block	I.C. Sensor	3031-200	G
91	Engine Top	X	KEVA001	Accel., Vehicle block	I.C. Sensor	3031-500	G
92	Engine Bottom	Y	KEVA008	Accel., Vehicle block	I.C. Sensor	3031-500	G
93	Left Brake Caliper	X	KEVA004	Accel., Vehicle block	I.C. Sensor	3031-500	G
94	Right Brake Caliper	Y	KEVA009	Accel., Vehicle block	I.C. Sensor	3031-500	G
95	Instrument Panel	X	KEVA003	Accel., Vehicle block	I.C. Sensor	3031-500	G
96	Left Rear Redundant	Y	KEVA011	Accel., Vehicle block	I.C. Sensor	3031-200	G
97	Zero Reference	N/A	N/A	N/A	N/A	N/A	N/A

2002 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Rigid Load Cell Barrier
7/31/01
2002 Ford Explorer XLT 4WD SUV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
98	BARRIER FORCE A1	X	BARRIER	Not Used	N/A	N/A	N/A
99	BARRIER FORCE A2	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
100	BARRIER FORCE A3	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
101	BARRIER FORCE A4	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
102	BARRIER FORCE A5	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
103	BARRIER FORCE A6	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
104	BARRIER FORCE A7	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
105	BARRIER FORCE A8	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
106	BARRIER FORCE A9	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
107	BARRIER FORCE B1	X	BARRIER	Not Used	N/A	N/A	N/A
108	BARRIER FORCE B2	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
109	BARRIER FORCE B3	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
110	BARRIER FORCE B4	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
111	BARRIER FORCE B5	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
112	BARRIER FORCE B6	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
113	BARRIER FORCE B7	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
114	BARRIER FORCE B8	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
115	BARRIER FORCE B9	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N

**2002 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Rigid Load Cell Barrier
7/31/01
2002 Ford Explorer XLT 4WD SUV**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
116	BARRIER FORCE C1	X	BARRIER	Not Used	N/A	N/A	N/A
117	BARRIER FORCE C2	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
118	BARRIER FORCE C3	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
119	BARRIER FORCE C4	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
120	BARRIER FORCE C5	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
121	BARRIER FORCE C6	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
122	BARRIER FORCE C7	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
123	BARRIER FORCE C8	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
124	BARRIER FORCE C9	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
125	BARRIER FORCE D1	X	BARRIER	Not Used	N/A	N/A	N/A
126	BARRIER FORCE D2	X	BARRIER	Not Used	N/A	N/A	N/A
127	BARRIER FORCE D3	X	BARRIER	Not Used	N/A	N/A	N/A
128	BARRIER FORCE D4	X	BARRIER	Not Used	N/A	N/A	N/A
129	BARRIER FORCE D5	X	BARRIER	Not Used	N/A	N/A	N/A
130	BARRIER FORCE D6	X	BARRIER	Not Used	N/A	N/A	N/A
131	BARRIER FORCE D7	X	BARRIER	Not Used	N/A	N/A	N/A
132	BARRIER FORCE D8	X	BARRIER	Not Used	N/A	N/A	N/A
133	BARRIER FORCE D9	X	BARRIER	Not Used	N/A	N/A	N/A

APPENDIX E

DUMMY CALIBRATION DATA



Hybrid III Calibration Data Sheet

Hybrid III 50th Percentile Male

Knee Impact Test

ATD Serial No.: 034

Location: Left Knee

Test I.D.: LK05A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.12	Pass
Peak Probe Force	N	4715 to 5782	5626	Pass
Overall Test Results			Pass	

ATD Serial No.: 034

Location: Right Knee

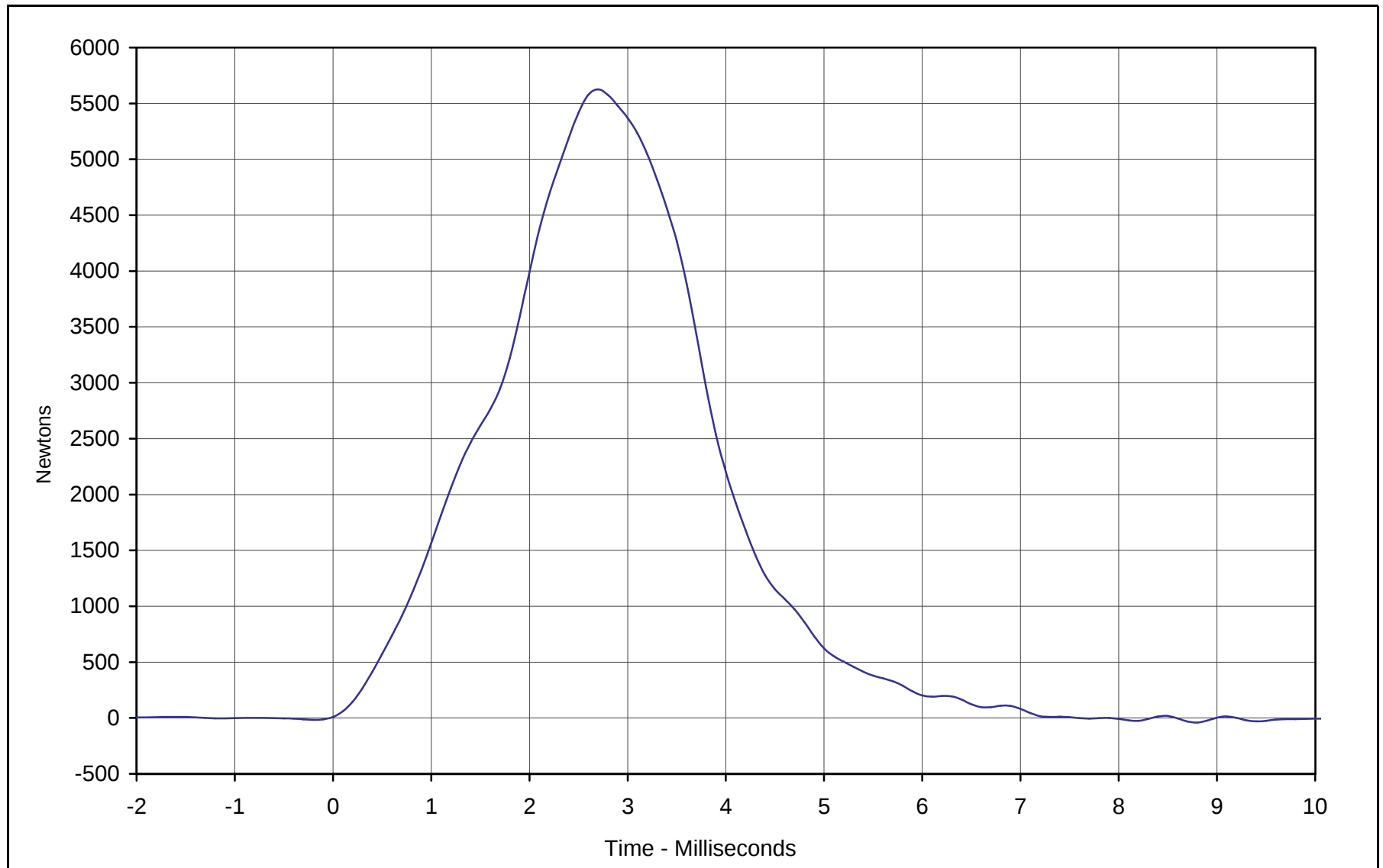
Test I.D.: RK05A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	N	4715 to 5782	5589	Pass
Overall Test Results			Pass	

Laboratory Technician

July 24, 2001

Test Date



Curve Description: Probe Force

Maximum Value: 5626.2 at 2.7 Milliseconds

Minimum Value: -16.4 at -0.2 Milliseconds

SAE Filter Class: 600

Date of Test: 7/24/01

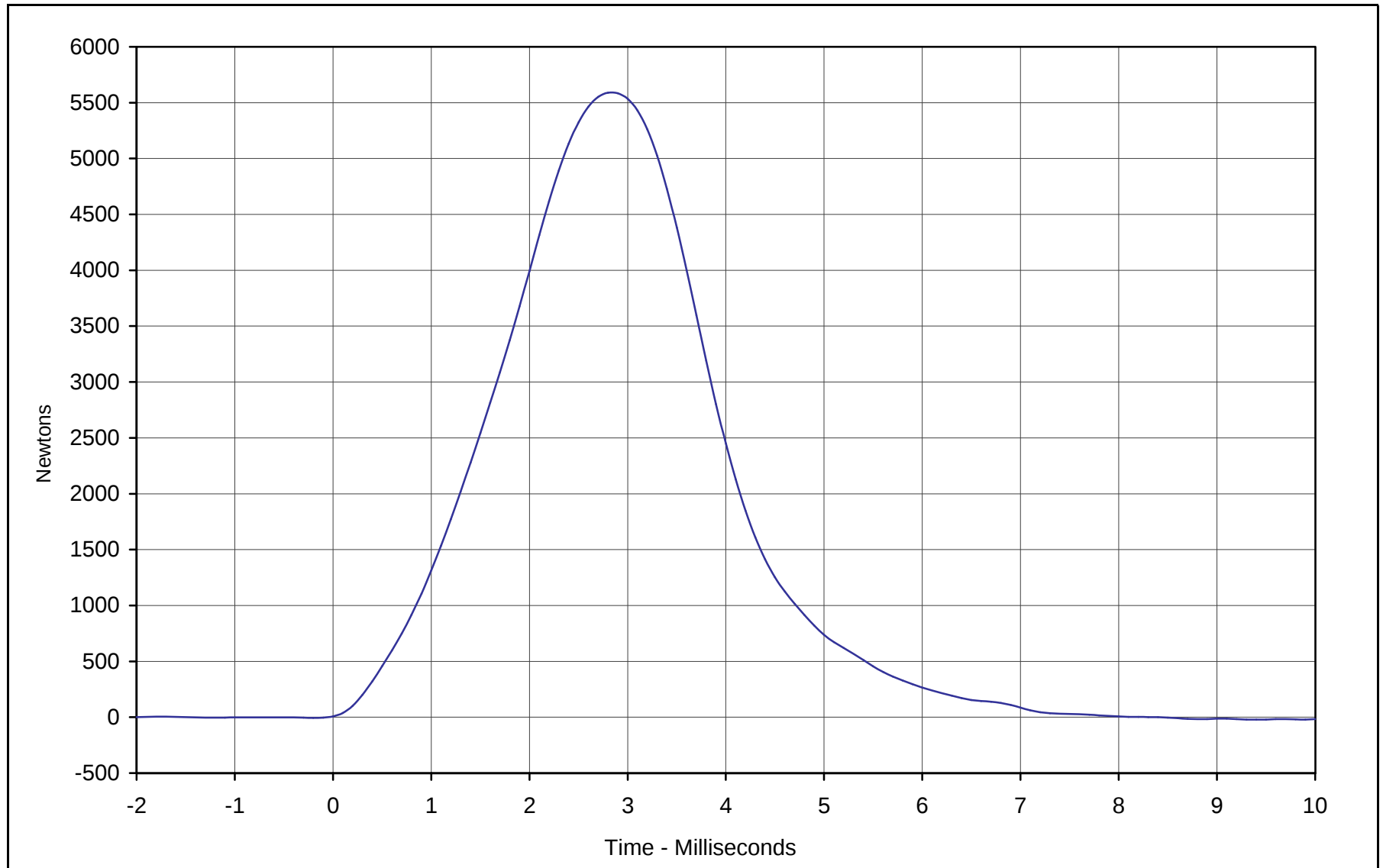
ATD Serial No.: 034

Test Program: Hybrid III Knee Impact Test

Test Information: Location: Left Knee Test I.D.: LK05A



E-3



Curve Description: Probe Force
Maximum Value: 5589.2 at 2.8 Milliseconds
Minimum Value: -4.8 at -0.2 Milliseconds
SAE Filter Class: 600
Date of Test: 7/24/01
ATD Serial No.: 034

Test Program: Hybrid III Knee Impact Test
Test Information: Location: Right Knee Test I.D.: RK05A



KAR21082-01



Hybrid III Calibration Data Sheet

Hybrid III 50th Percentile Male

Knee Slider Test

ATD Serial No.: 034

Location: Left Knee

Test I.D.: LS07A

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity at T=0		m/sec	2.70 to 2.80	2.73	Pass
Impact Force at:	10 mm	kN	1.26 to 1.72	1.47	Pass
	18 mm	kN	2.27 to 3.096	2.96	Pass
Overall Test Results					Pass

ATD Serial No.: 034

Location: Right Knee

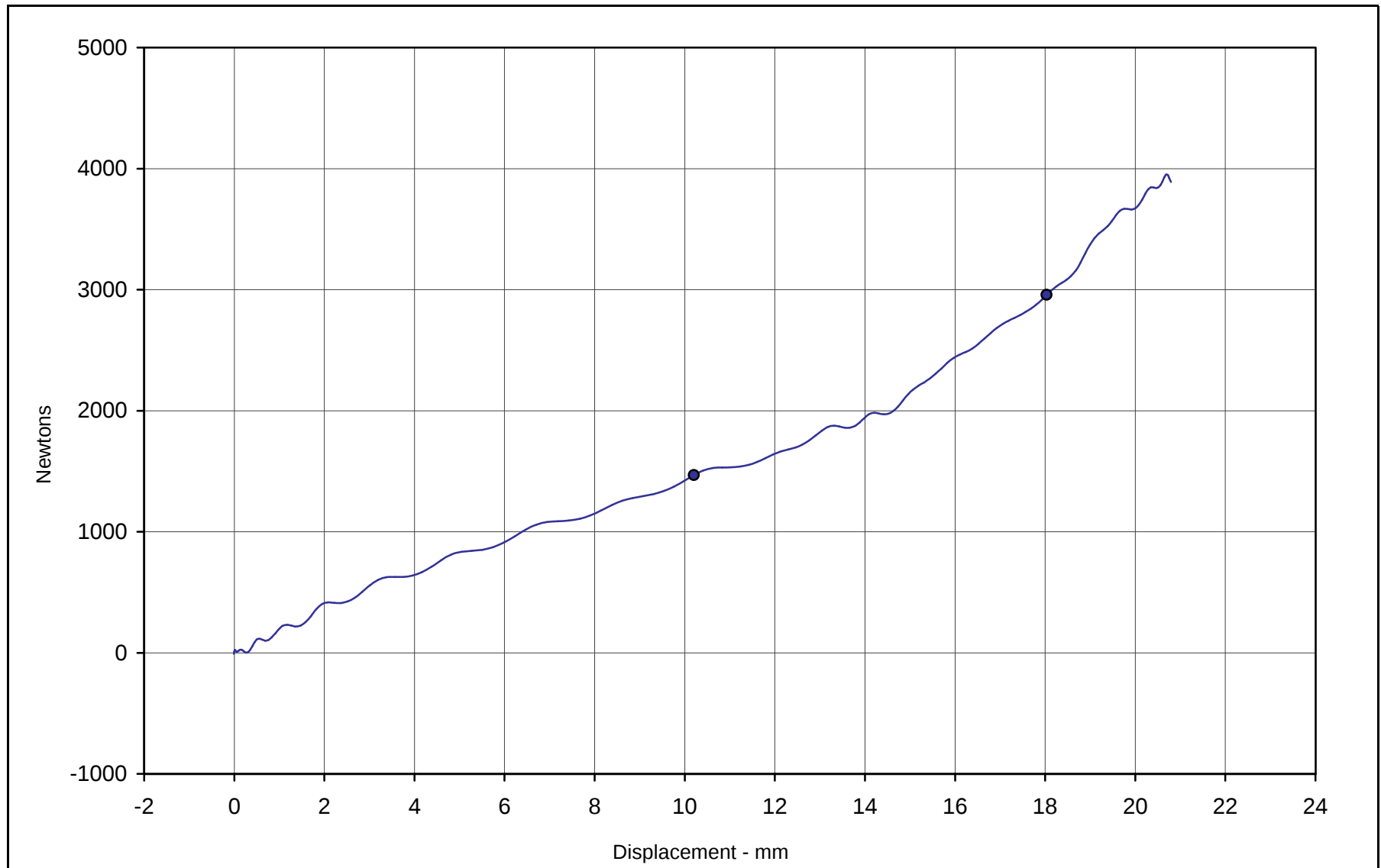
Test I.D.: KN001

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity at T=0		m/sec	2.70 to 2.80	2.78	Pass
Impact Force at:	10 mm	kN	1.26 to 1.72	1.62	Pass
	18 mm	kN	2.27 to 3.096	2.81	Pass
Overall Test Results					Pass

Laboratory Technician

July 26, 2001

Test Date



Curve Description: Femur Force vs. Knee Displacement

Femur Force: 1468 at 10.0 mm

Femur Force: 2959 at 18.0 mm

SAE Filter Class: 600

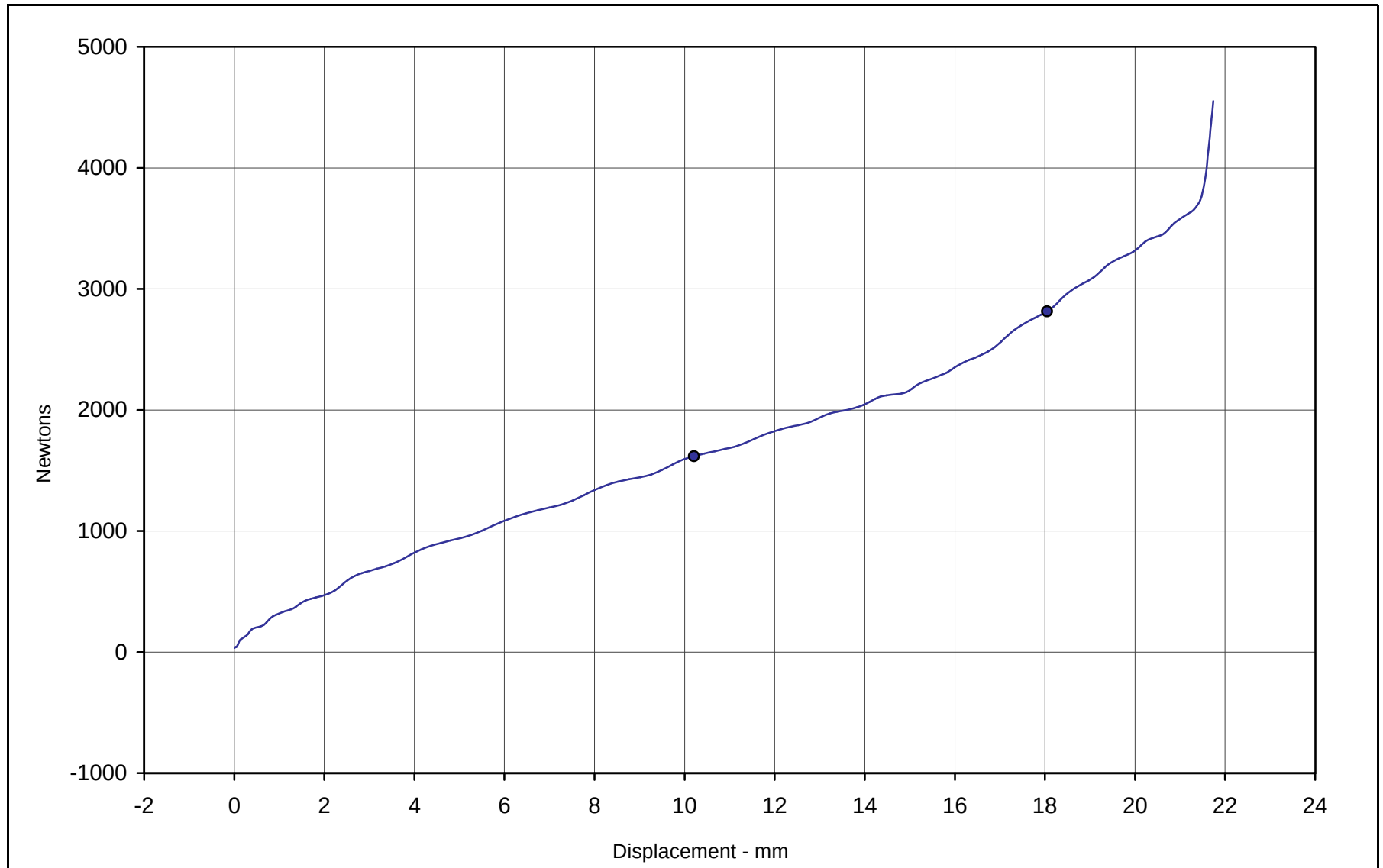
Date of Test: 7/26/01

ATD Serial No.: 034

Test Program: Hybrid III Knee Shear Test

Test Information: Location: Left Knee Test I.D.: LS07A





Curve Description: Femur Force vs. Knee Displacement

Femur Force: 1618 at 10.0 mm

Femur Force: 2814 at 18.0 mm

SAE Filter Class: 600

Date of Test: 7/26/01

ATD Serial No.: 034

Test Program: Hybrid III Knee Shear Test

Test Information: Location: Right Knee Test I.D.: KN001





Hybrid III Calibration Data Sheet

50TH Percentile Male

Head Drop Calibration

ATD Serial No.: 034

Part Serial No.: N/A

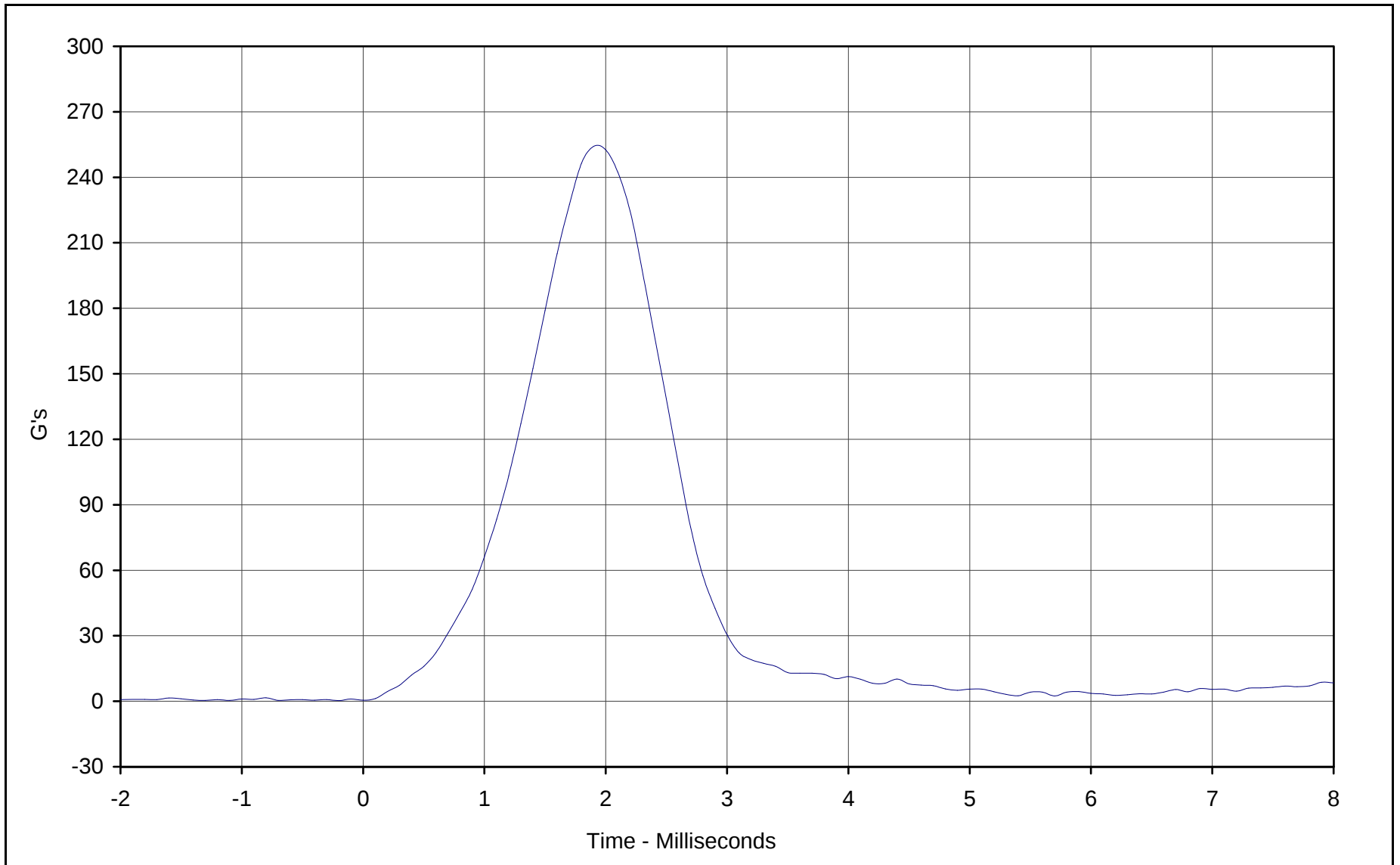
Test I.D.: HD07A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	254.2	Pass
Peak Lateral Acceleration	G's	≤15.0	5.0	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

Laboratory Technician

July 25, 2001
Test Date

E-8



Curve Description: Head Resultant Acceleration

Maximum Value:	<u>254.2</u>	at	<u>1.9</u>	Milliseconds
Minimum Value:	<u>0.3</u>	at	<u>-0.2</u>	Milliseconds
SAE Filter Class:	<u>1000</u>			
Date of Test:	<u>7/25/01</u>			
ATD Serial No.:	<u>034</u>			

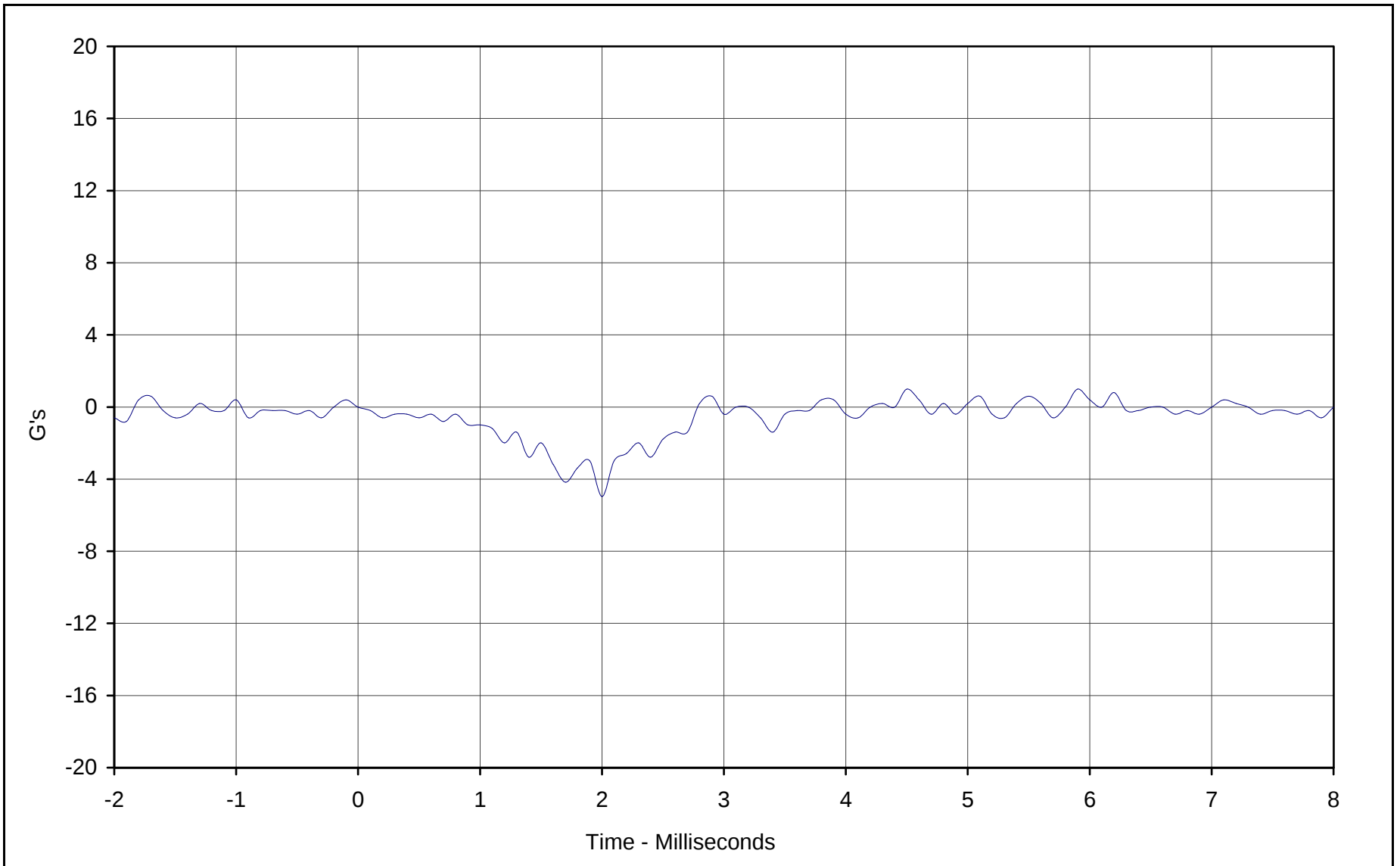
Testing Program: Hybrid III Head Drop Calibration (Male)

Test Information: S/N of Part: N/A Test I.D.: HD07A



KAR21082-01

E-9



Curve Description: Head Acceleration Y Axis

Maximum Value: 1.0 at 4.5 Milliseconds

Minimum Value: -5.0 at 2.0 Milliseconds

SAE Filter Class: 1000

Date of Test: 7/25/01

ATD Serial No.: 034

Testing Program: Hybrid III Head Drop Calibration (Male)

Test Information: S/N of Part: N/A Test I.D.: HD07A



KAR21082-01



Hybrid III Calibration Data Sheet

50TH Percentile Male

Thorax Impact Test

ATD Serial No.: 034

Part Serial No.: N/A

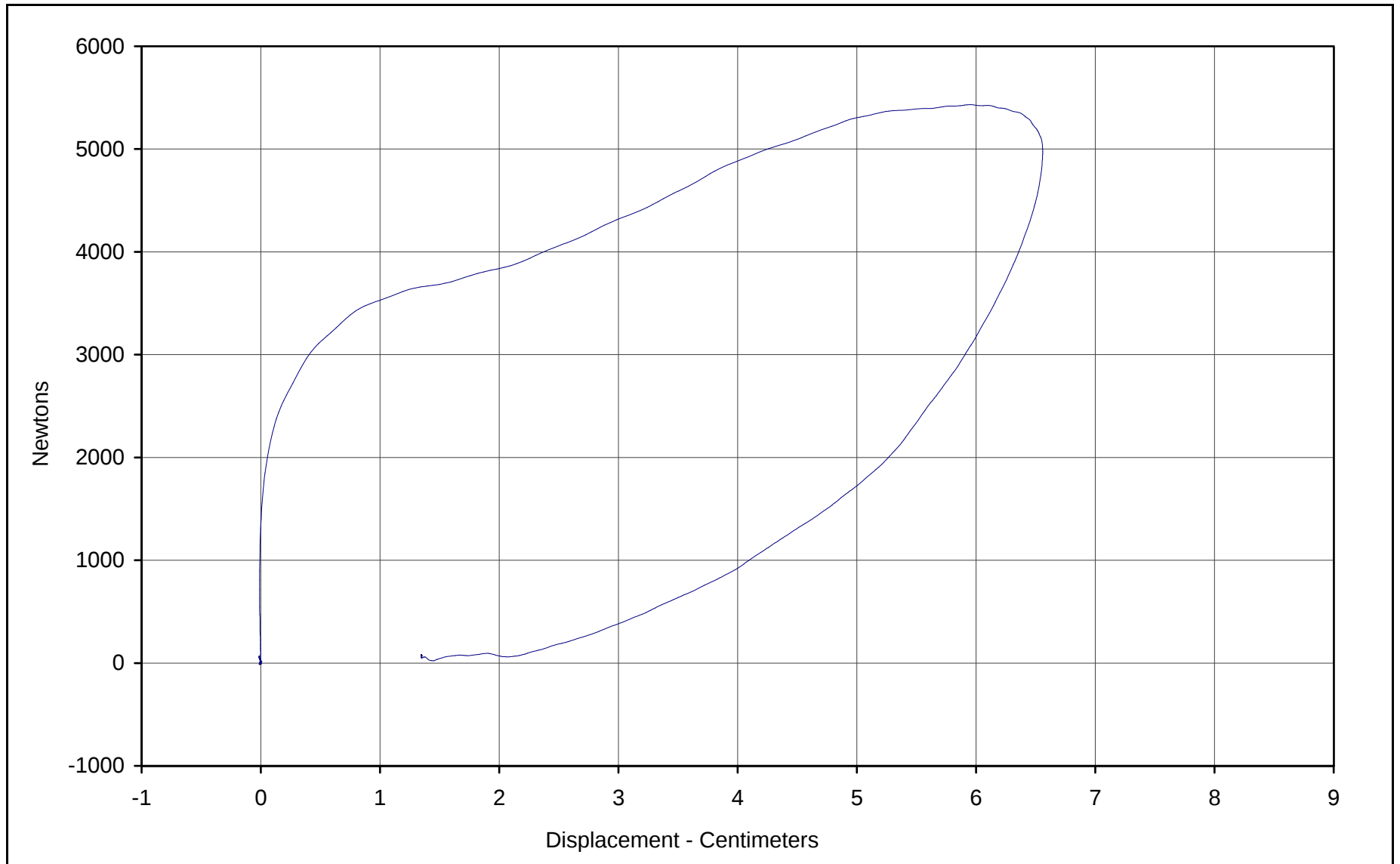
Test I.D.: CH07A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.70	Pass
Peak Probe Force	Newtons	5159 to 5893	5431	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.56	Pass
Internal Hysteresis	%	69 to 85	76.5	Pass
Overall Test Results				Pass

Laboratory Technician

July 26, 2001
Test Date

E-11



Curve Description: Probe Force vs. Chest Displacement

Testing Program: Hybrid III Thorax Impact Test

Probe Force: 5431.5 Newtons

Test Information: S/N of Part: N/A Test I.D.: CH07A

Chest Displ.: 6.56 Centimeters

SAE Filter Class: 180

Date of Test: 7/26/01

ATD Serial No.: 034



KAR21082-01



Hybrid III Calibration Data Sheet

50TH Percentile Male

Neck Flexion Test

ATD Serial No.: 034

Part Serial No.: N/A

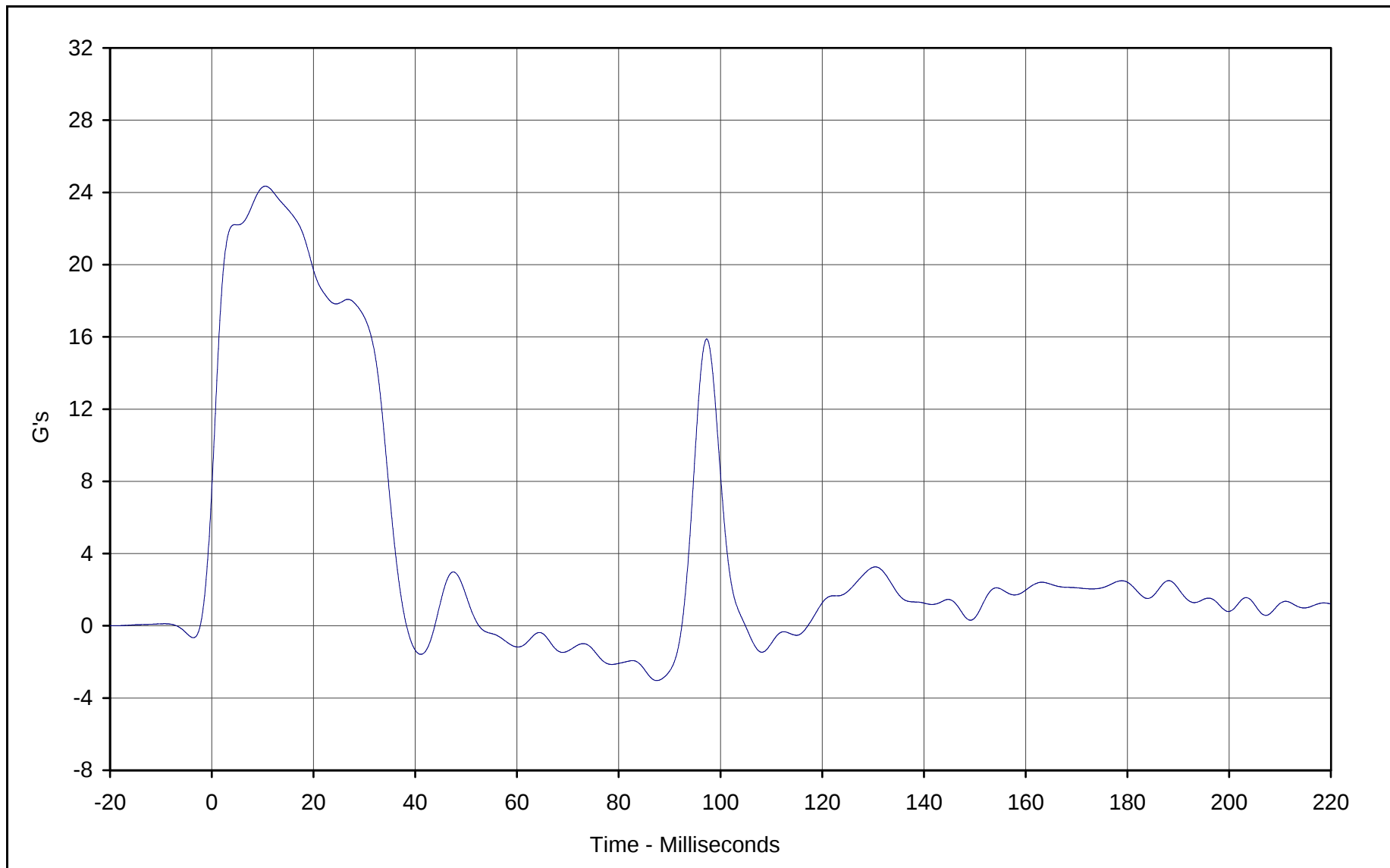
Test I.D.: NF07A

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.89	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	24.3	Pass
	20 Msec.	G's	17.6 to 22.6	19.7	Pass
	30 Msec.	G's	12.5 to 18.5	17.1	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	17.1	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	35.8	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	67.3	Pass
	Time	Msec.	57.0 to 64.0	63.5	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	122.7	Pass
Moment About Occipital Condyle	Maximum	N•m	84.1 to 108.5	91.0	Pass
	Time	Msec.	47.0 to 58.0	56.0	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	98.7	Pass
Overall Test Results					Pass

Laboratory Technician

July 25, 2001

Test Date



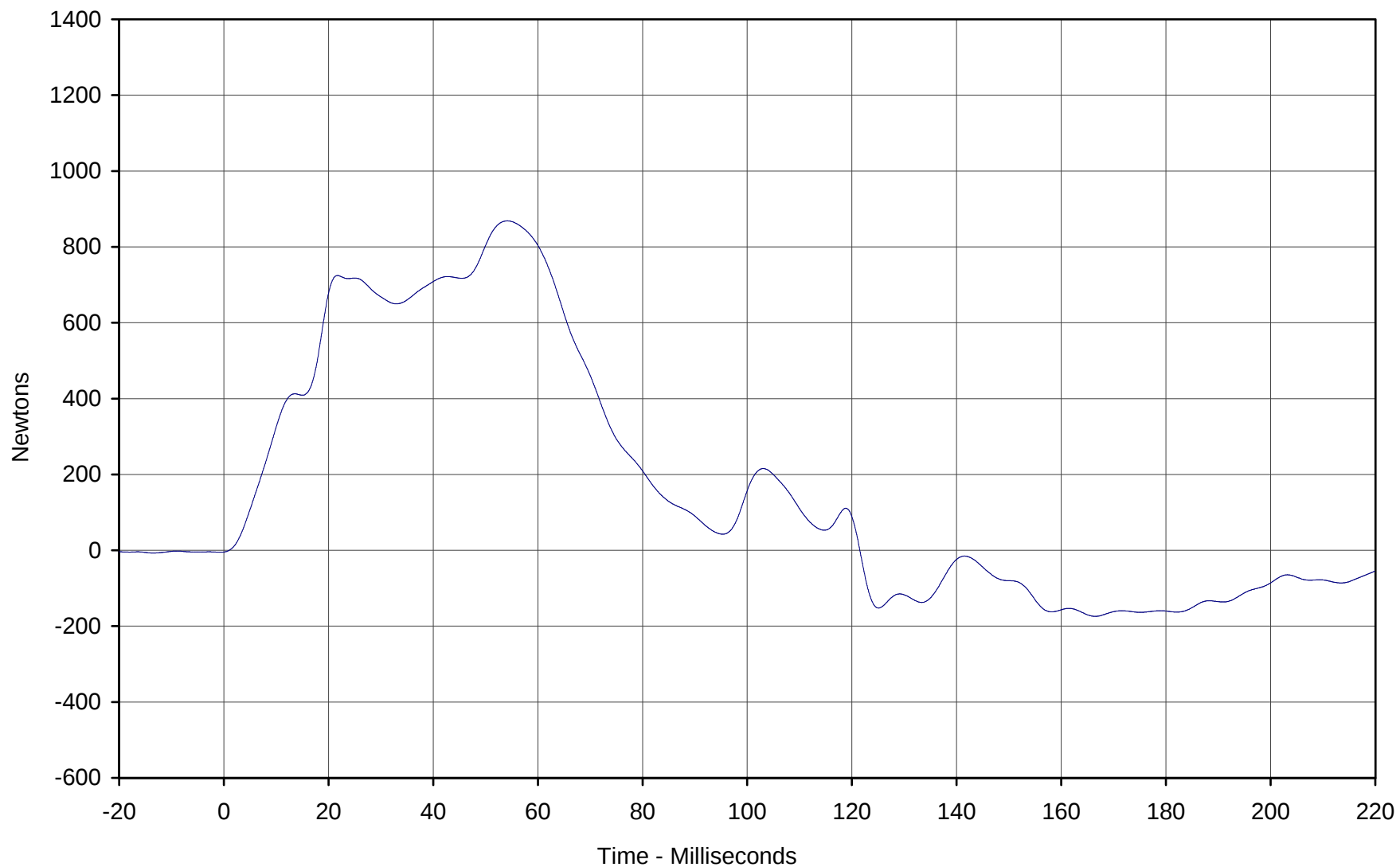
Curve Description: Pendulum Deceleration

Maximum Value:	<u>24.3</u>	at	<u>10.5</u>	Milliseconds
Minimum Value:	<u>-3.0</u>	at	<u>87.5</u>	Milliseconds
SAE Filter Class:	<u>60</u>			
Date of Test:	<u>7/25/01</u>			
ATD Serial No.:	<u>034</u>			

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NF07A





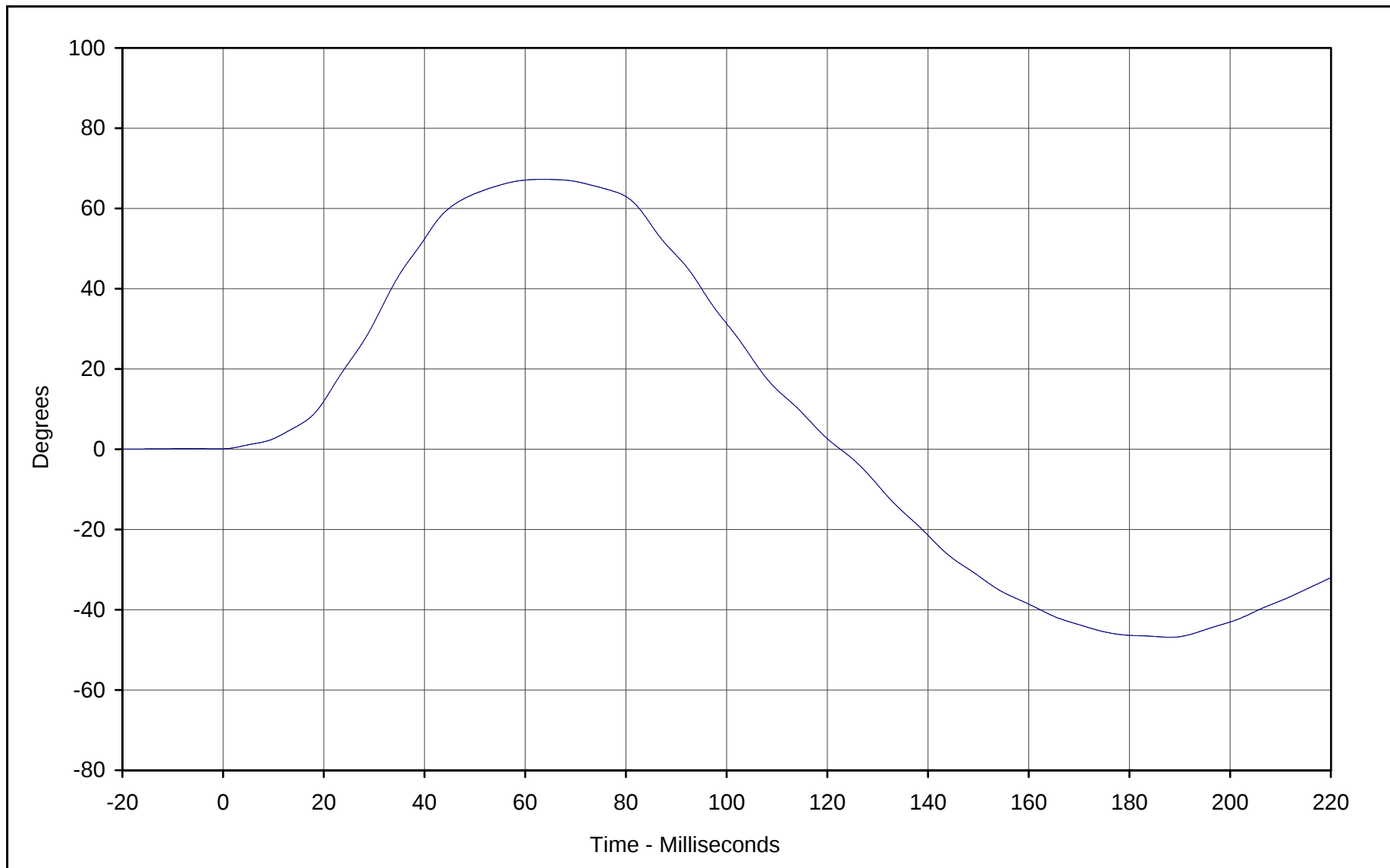
Curve Description: Neck Force X

Maximum Value:	868.5	at	54.2	Milliseconds
Minimum Value:	-174.3	at	166.5	Milliseconds
SAE Filter Class:	60			
Date of Test:	7/25/01			
ATD Serial No.:	034			

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NF07A





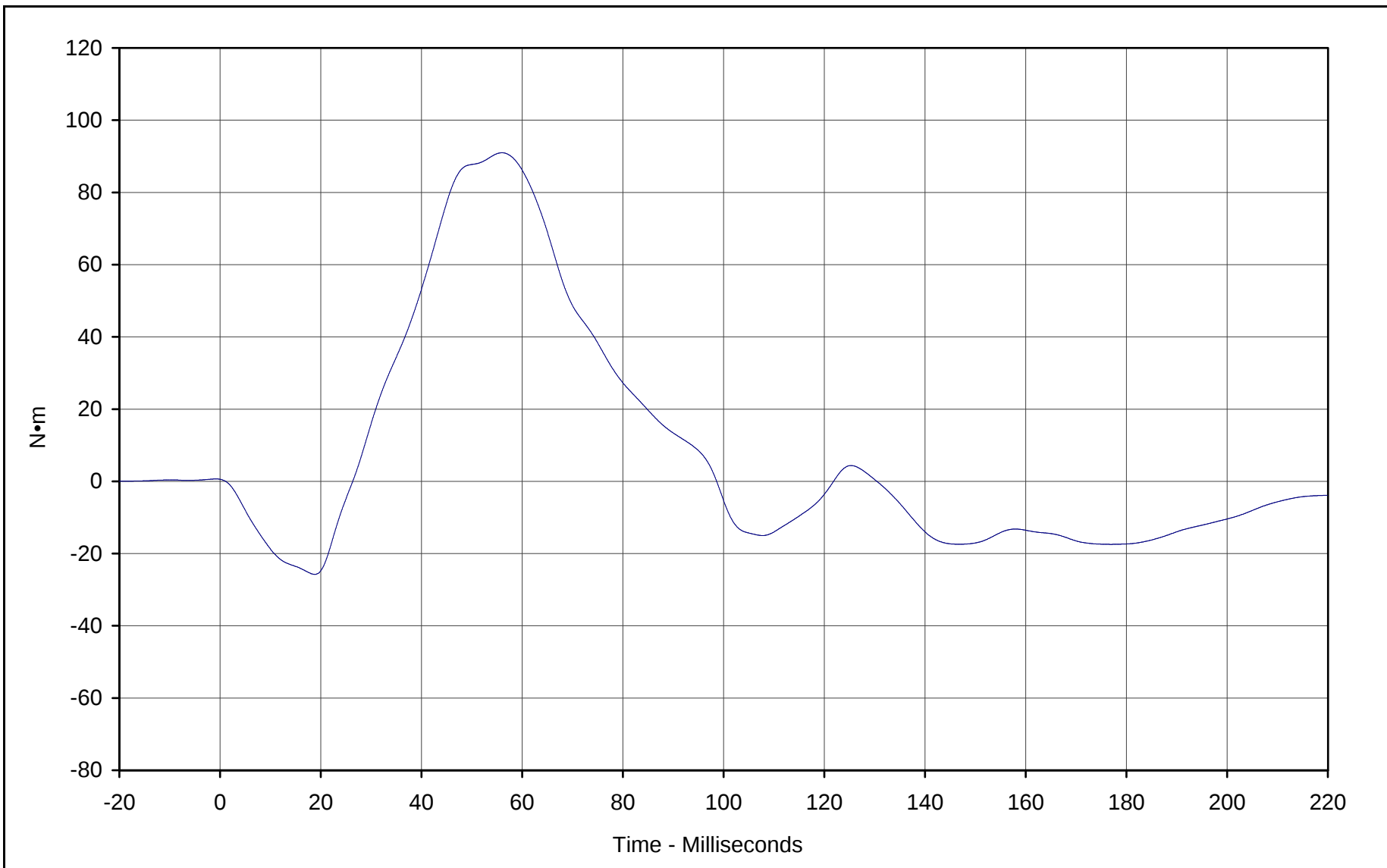
Curve Description: "D" Plane Rotation

Maximum Value:	67.3	at	63.5	Milliseconds
Minimum Value:	-46.9	at	188.1	Milliseconds
SAE Filter Class:	60			
Date of Test:	7/25/01			
ATD Serial No.:	034			

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NF07A





Curve Description: Moment About Occipital Condyles

Maximum Value: 91.0 at 56.0 Milliseconds

Minimum Value: -25.8 at 18.8 Milliseconds

SAE Filter Class: 60

Date of Test: 7/25/01

ATD Serial No.: 034

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NF07A





Hybrid III Calibration Data Sheet

50TH Percentile Male

Neck Extension Test

ATD Serial No.: 034

Part Serial No.: N/A

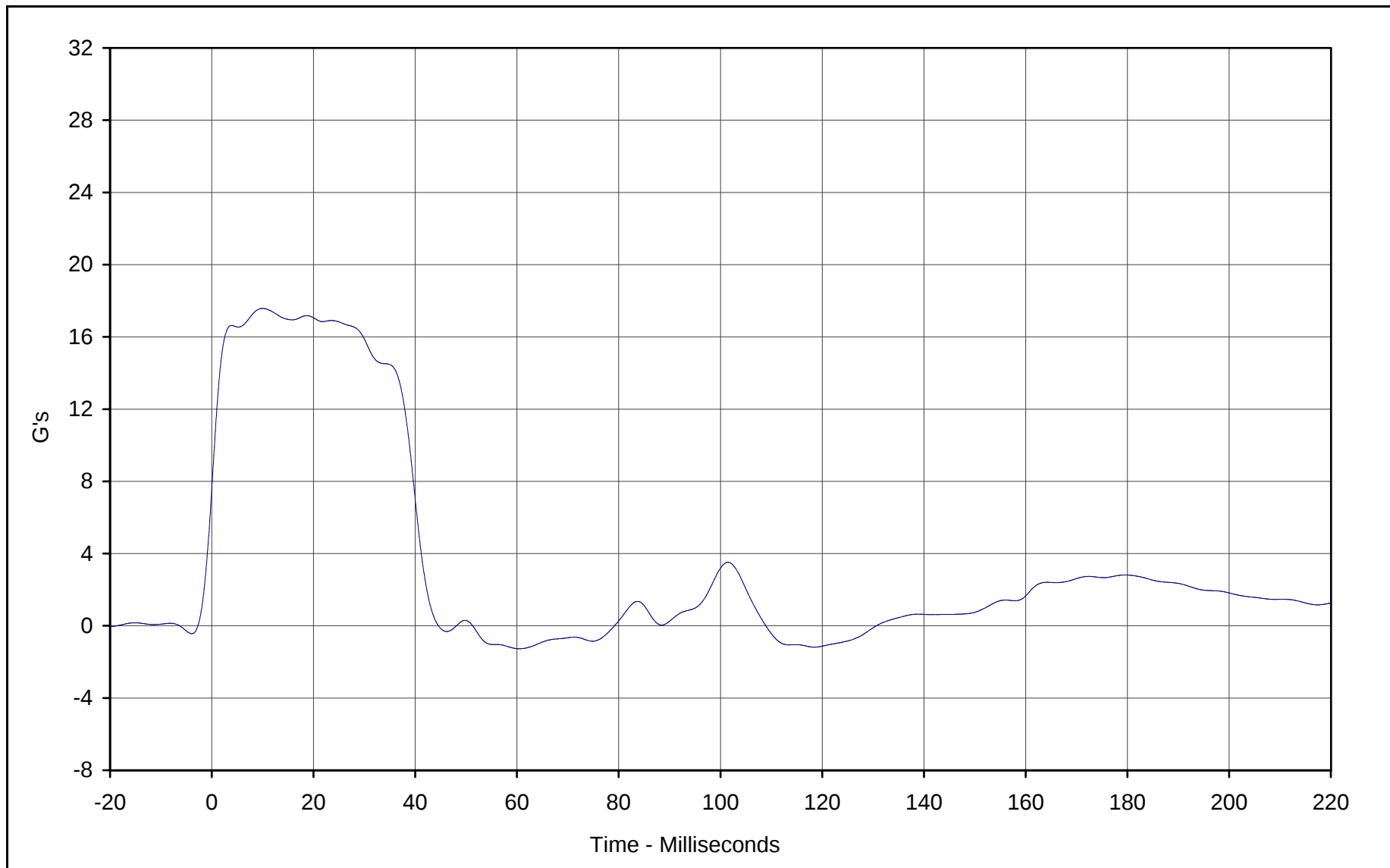
Test I.D.: NE07A

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.10	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.6	Pass
	20 Msec.	G's	14.0 to 19.0	17.1	Pass
	30 Msec.	G's	11.0 to 16.0	15.9	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.9	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	40.8	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	100.1	Pass
	Time	Msec.	72.0 to 82.0	80.9	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	154.5	Pass
Moment About Occipital Condyle	Maximum	N•m	-52.9 to- 79.9	-75.7	Pass
	Time	Msec.	65.0 to 79.0	69.8	Pass
Negative Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	141.4	Pass
Overall Test Results					Pass

Laboratory Technician

July 25, 2001

Test Date



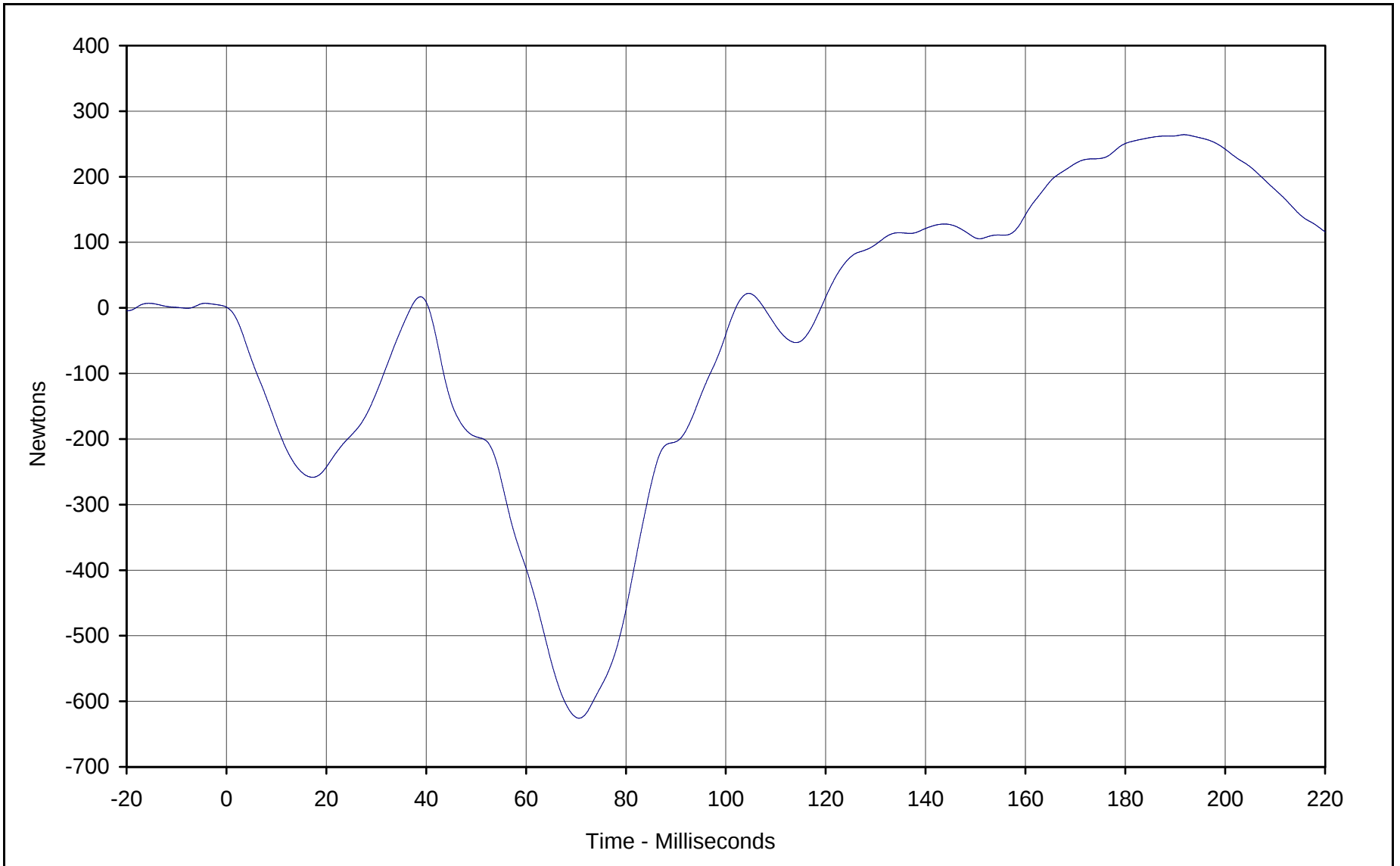
Curve Description: Pendulum Deceleration

Maximum Value:	<u>17.6</u>	at	<u>10.0</u>	Milliseconds
Minimum Value:	<u>-1.3</u>	at	<u>60.5</u>	Milliseconds
SAE Filter Class:	<u>60</u>			
Date of Test:	<u>7/25/01</u>			
ATD Serial No.:	<u>034</u>			

Testing Program: Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NE07A





Curve Description: Neck Force X

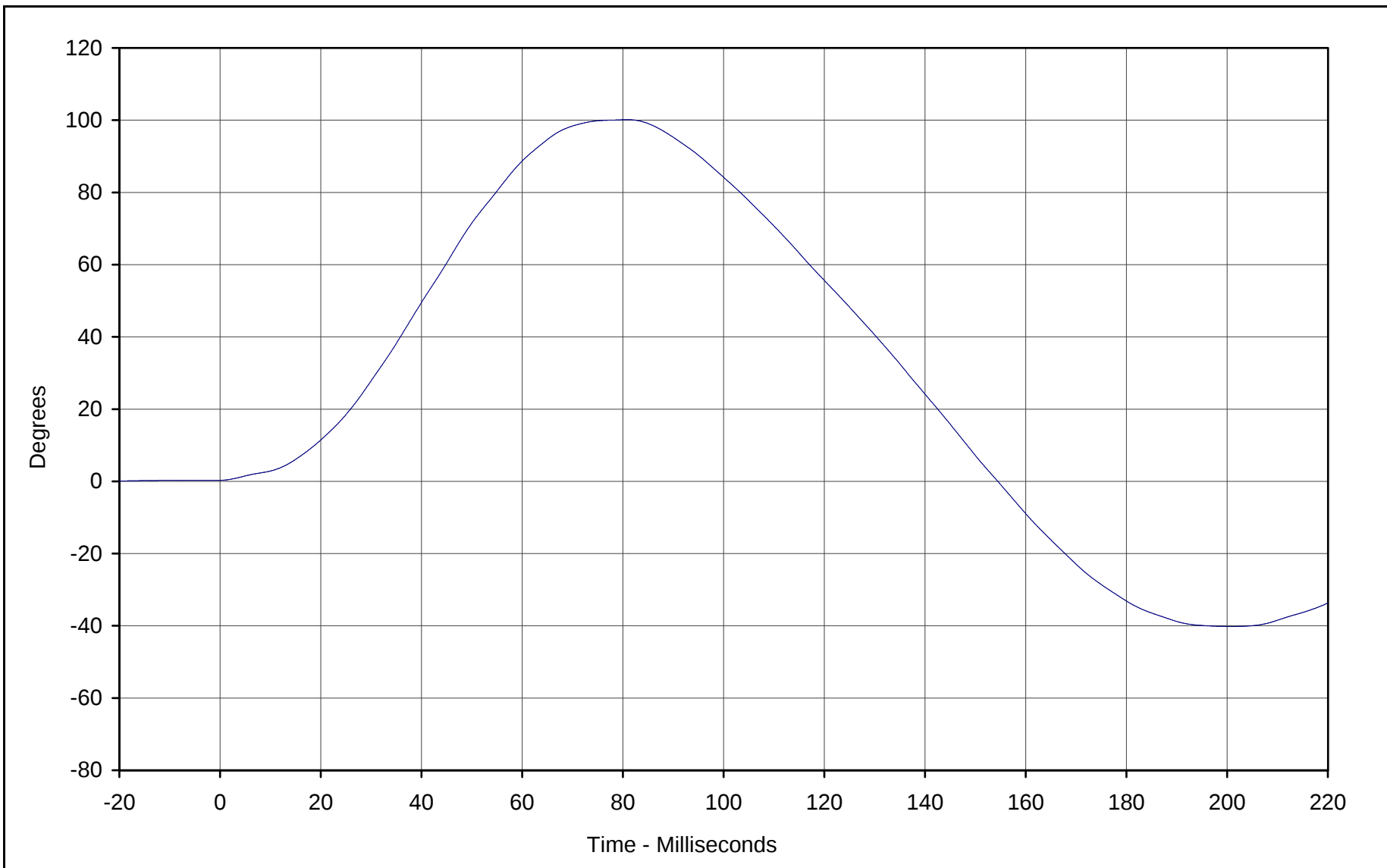
Maximum Value:	264.1	at	191.8	Milliseconds
Minimum Value:	-625.7	at	70.6	Milliseconds
SAE Filter Class:	60			
Date of Test:	7/25/01			
ATD Serial No.:	034			

Testing Program: Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NE07A



E-20



Curve Description: "D" Plane Rotation

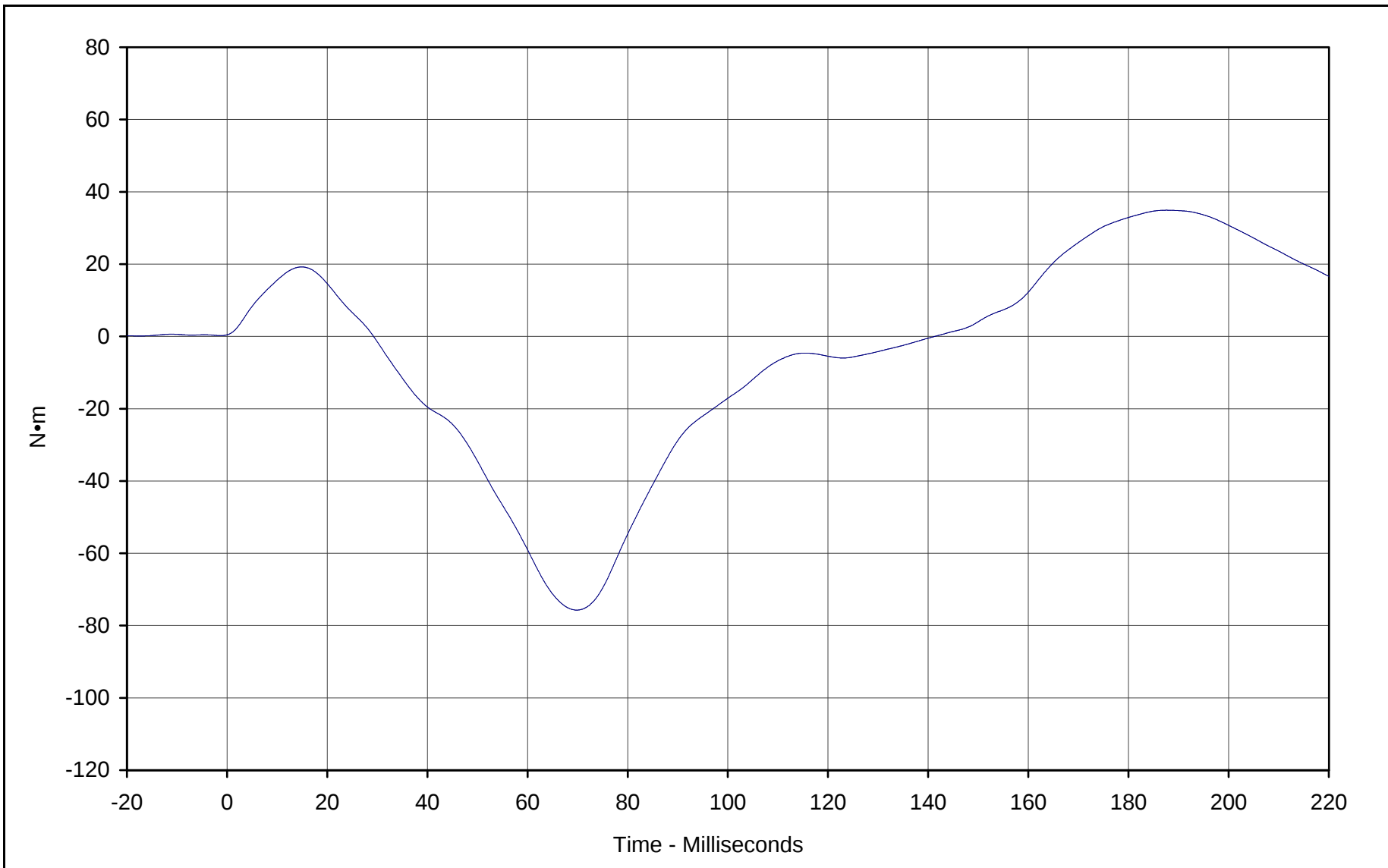
Maximum Value:	100.1	at	80.9	Milliseconds
Minimum Value:	-40.2	at	201.1	Milliseconds
SAE Filter Class:	60			
Date of Test:	7/25/01			
ATD Serial No.:	034			

Testing Program:	Hybrid III Neck Extension Test (Male)
Test Information:	S/N of Part: N/A Test I.D.: NE07A



KAR21082-01

E-21



Curve Description: Moment About Occipital Condyles

Maximum Value: 34.9 at 187.6 Milliseconds

Minimum Value: -75.7 at 69.8 Milliseconds

SAE Filter Class: 60

Date of Test: 7/25/01

ATD Serial No.: 034

Testing Program: Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NE07A



KAR21082-01



Hybrid III Calibration Data Sheet

50TH Percentile Male

External Measurements

ATD Serial No.: 034

Part Serial No.: N/A

Test I.D.: N/A

External Measurement Data				
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory temperature	°C	20.4 to 22.1	20.9	Pass
Laboratory relative humidity	%	10 to 70	43	Pass
A - Total sitting height	mm	879 to 889	885	Pass
B - Shoulder pivot height	mm	505 to 521	505	Pass
C - "H" point height	mm	84 to 89	87	Pass
D - "H" point from seat back	mm	135 to 140	135	Pass
E - Shoulder pivot from back	mm	84 to 94	92	Pass
F - Thigh clearance	mm	140 to 155	150	Pass
G - Elbow back to wrist pivot	mm	290 to 305	300	Pass
H - Skull cap to back line	mm	41 to 46	43	Pass
I - Shoulder to elbow length	mm	330 to 345	342	Pass
J - Elbow rest height	mm	190 to 211	204	Pass
K - Buttock to knee length	mm	579 to 604	585	Pass
L - Popliteal length	mm	429 to 455	434	Pass
M - Knee pivot height	mm	485 to 500	492	Pass
N - Buttock popliteal length	mm	452 to 477	470	Pass
O - Chest depth	mm	213 to 229	215	Pass
P - Foot length	mm	251 to 267	260	Pass
V - Shoulder breadth	mm	422 to 437	431	Pass
W - Foot breadth	mm	91 to 107	102	Pass
Y - Chest circumference	mm	970 to 1001	986	Pass
Z - Waist circumference	mm	836 to 866	850	Pass
AA - Location for chest circumference	mm	429 to 434	433	Pass
BB - Location for waist circumference	mm	226 to 231	229	Pass
Overall Test Results				Pass

Laboratory Technician

July 26, 2001

Test Date



Hybrid III Calibration Data Sheet

Hybrid III 50th Percentile Male

Knee Impact Test

ATD Serial No.: 035

Location: Left Knee

Test I.D.: LK05B

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	N	4715 to 5782	5684	Pass
Overall Test Results			Pass	

ATD Serial No.: 035

Location: Right Knee

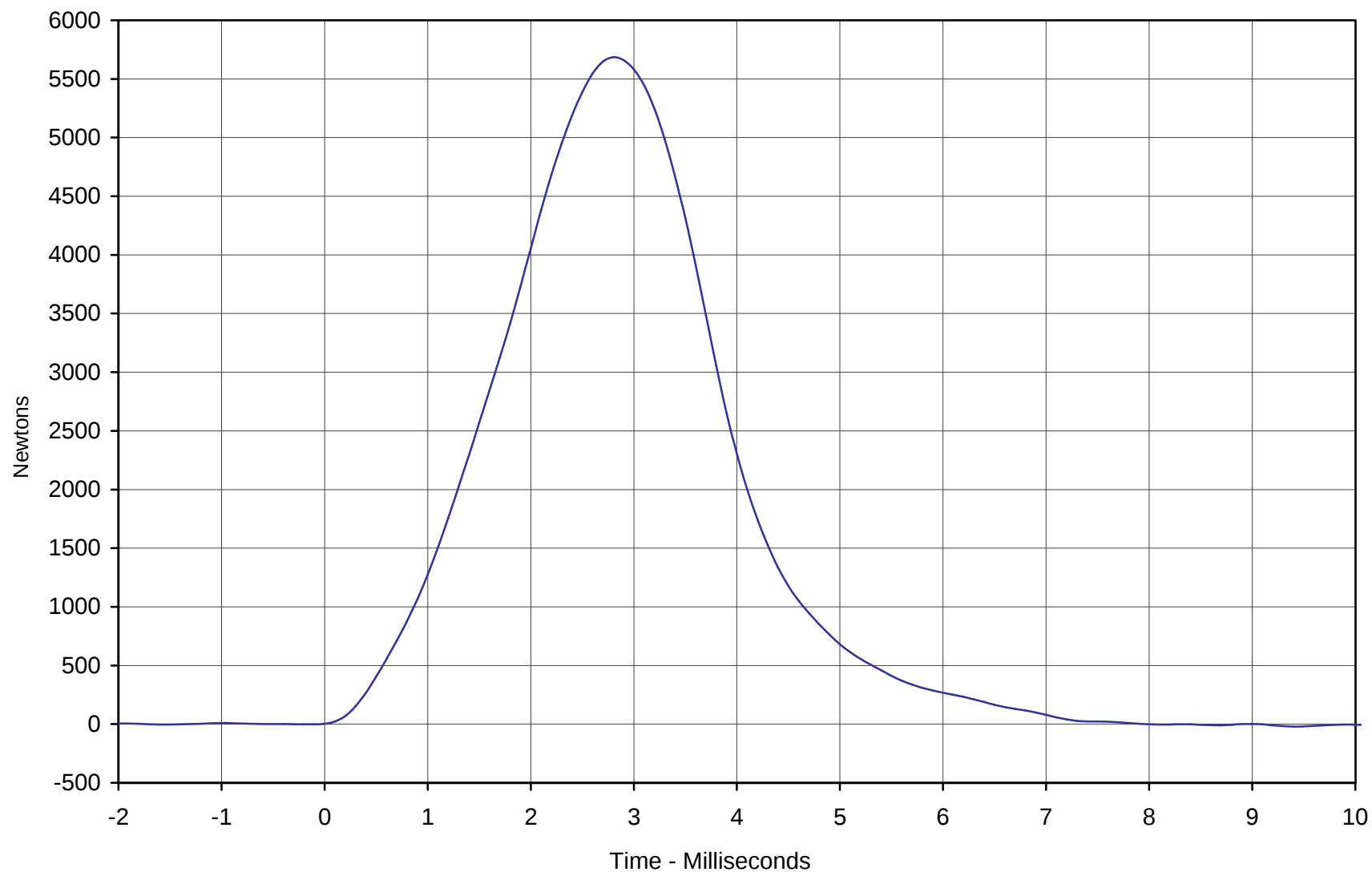
Test I.D.: RK05B

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.11	Pass
Peak Probe Force	N	4715 to 5782	5261	Pass
Overall Test Results			Pass	

Laboratory Technician

July 24, 2001

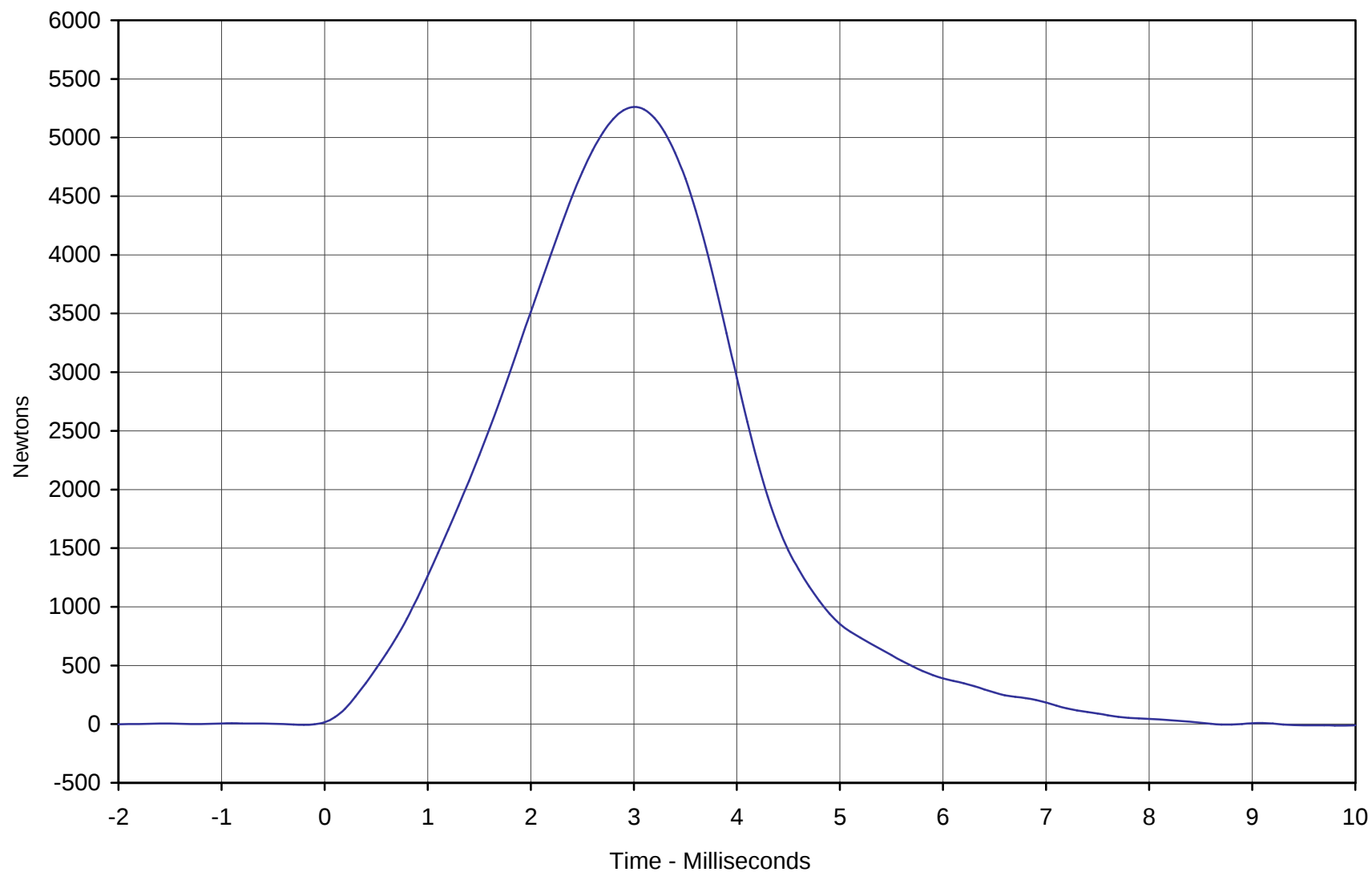
Test Date



Curve Description: Probe Force
Maximum Value: 5684.3 at 2.8 Milliseconds
Minimum Value: -3.4 at -1.5 Milliseconds
SAE Filter Class: 600
Date of Test: 7/24/01
ATD Serial No.: 035

Test Program: Hybrid III Knee Impact Test
Test Information: Location: Left Knee Test I.D.: LK05B





Curve Description: Probe Force
Maximum Value: 5261.1 at 3.0 Milliseconds
Minimum Value: -5.0 at -0.2 Milliseconds
SAE Filter Class: 600
Date of Test: 7/24/01
ATD Serial No.: 035

Test Program: Hybrid III Knee Impact Test
Test Information: Location: Right Knee Test I.D.: RK05B





Hybrid III Calibration Data Sheet

50TH Percentile Male

Head Drop Calibration

ATD Serial No.: 035

Part Serial No.: N/A

Test I.D.: HD05A

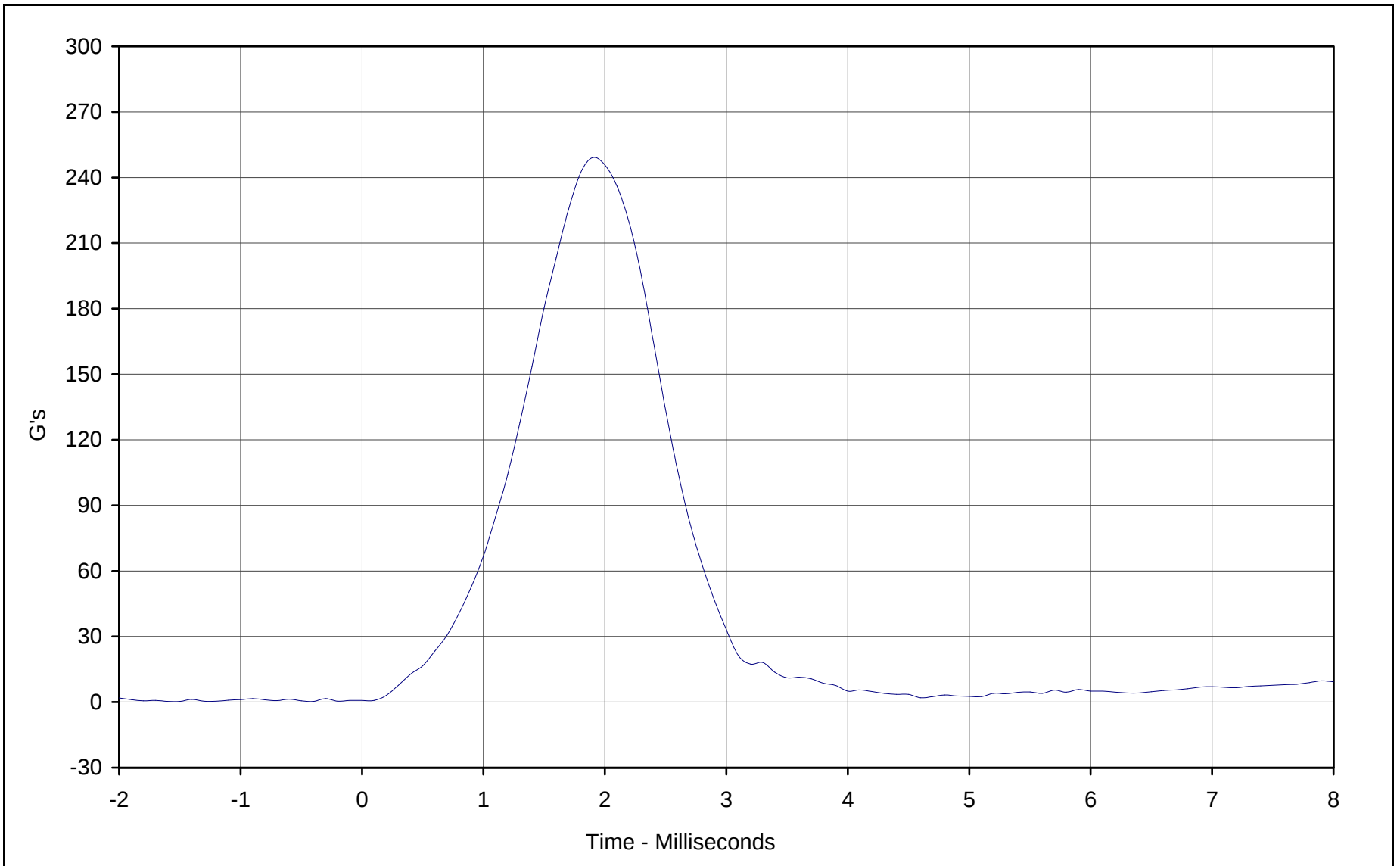
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	249.1	Pass
Peak Lateral Acceleration	G's	≤15.0	6.8	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

Laboratory Technician

July 25, 2001

Test Date

E-27



Curve Description: Head Resultant Acceleration

Maximum Value:	<u>249.1</u>	at	<u>1.9</u>	Milliseconds
Minimum Value:	<u>0.3</u>	at	<u>-1.5</u>	Milliseconds
SAE Filter Class:	<u>1000</u>			
Date of Test:	<u>7/25/01</u>			
ATD Serial No.:	<u>035</u>			

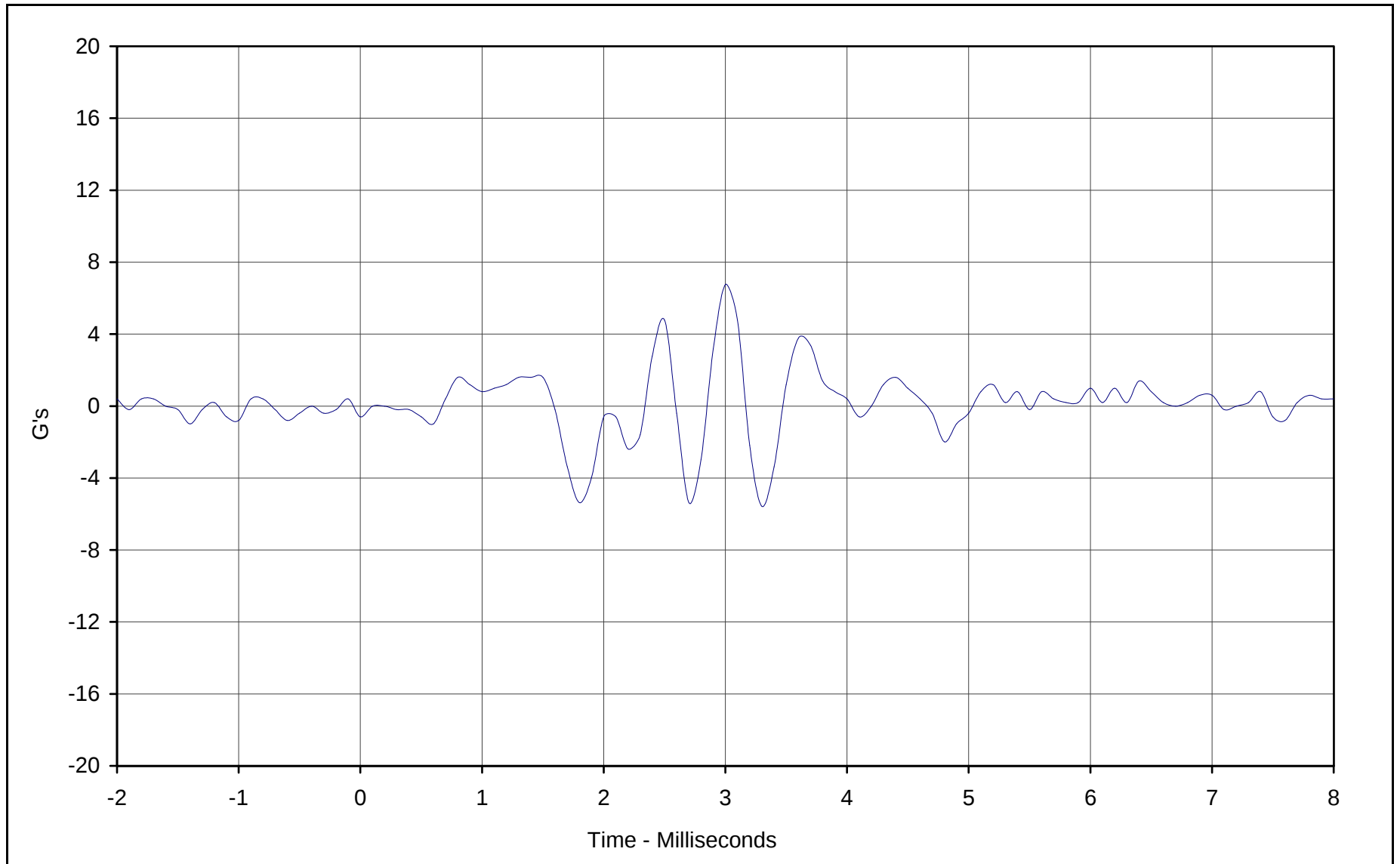
Testing Program: Hybrid III Head Drop Calibration (Male)

Test Information: S/N of Part: N/A Test I.D.: HD05A



KAR21082-01

E-28



Curve Description: Head Acceleration Y Axis

Maximum Value: 6.8 at 3.0 Milliseconds

Minimum Value: -5.6 at 3.3 Milliseconds

SAE Filter Class: 1000

Date of Test: 7/25/01

ATD Serial No.: 035

Testing Program: Hybrid III Head Drop Calibration (Male)

Test Information: S/N of Part: N/A Test I.D.: HD05A



KAR21082-01



Hybrid III Calibration Data Sheet

50TH Percentile Male

Thorax Impact Test

ATD Serial No.: 035

Part Serial No.: N/A

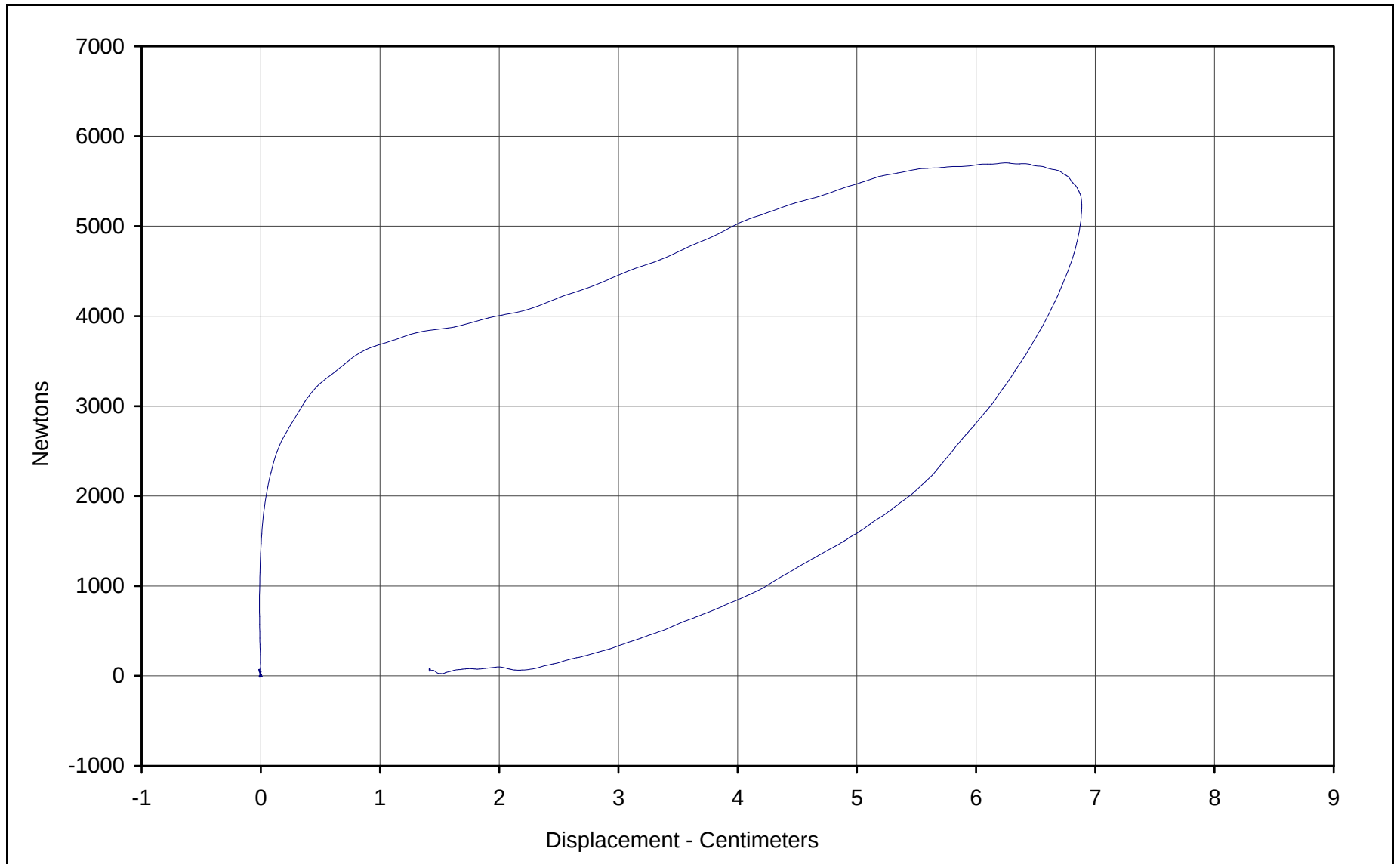
Test I.D.: CH07A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.64	Pass
Peak Probe Force	Newtons	5159 to 5893	5703	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.89	Pass
Internal Hysteresis	%	69 to 85	76.9	Pass
Overall Test Results				Pass

Laboratory Technician

July 26, 2001

Test Date



Curve Description: Probe Force vs. Chest Displacement

Probe Force: 5703.0 Newtons

Chest Displ.: 6.89 Centimeters

SAE Filter Class: 180

Date of Test: 7/26/01

ATD Serial No.: 035

Testing Program: Hybrid III Thorax Impact Test

Test Information: S/N of Part: N/A Test I.D.: CH07A





Hybrid III Calibration Data Sheet

50TH Percentile Male

Neck Flexion Test

ATD Serial No.: 035

Part Serial No.: N/A

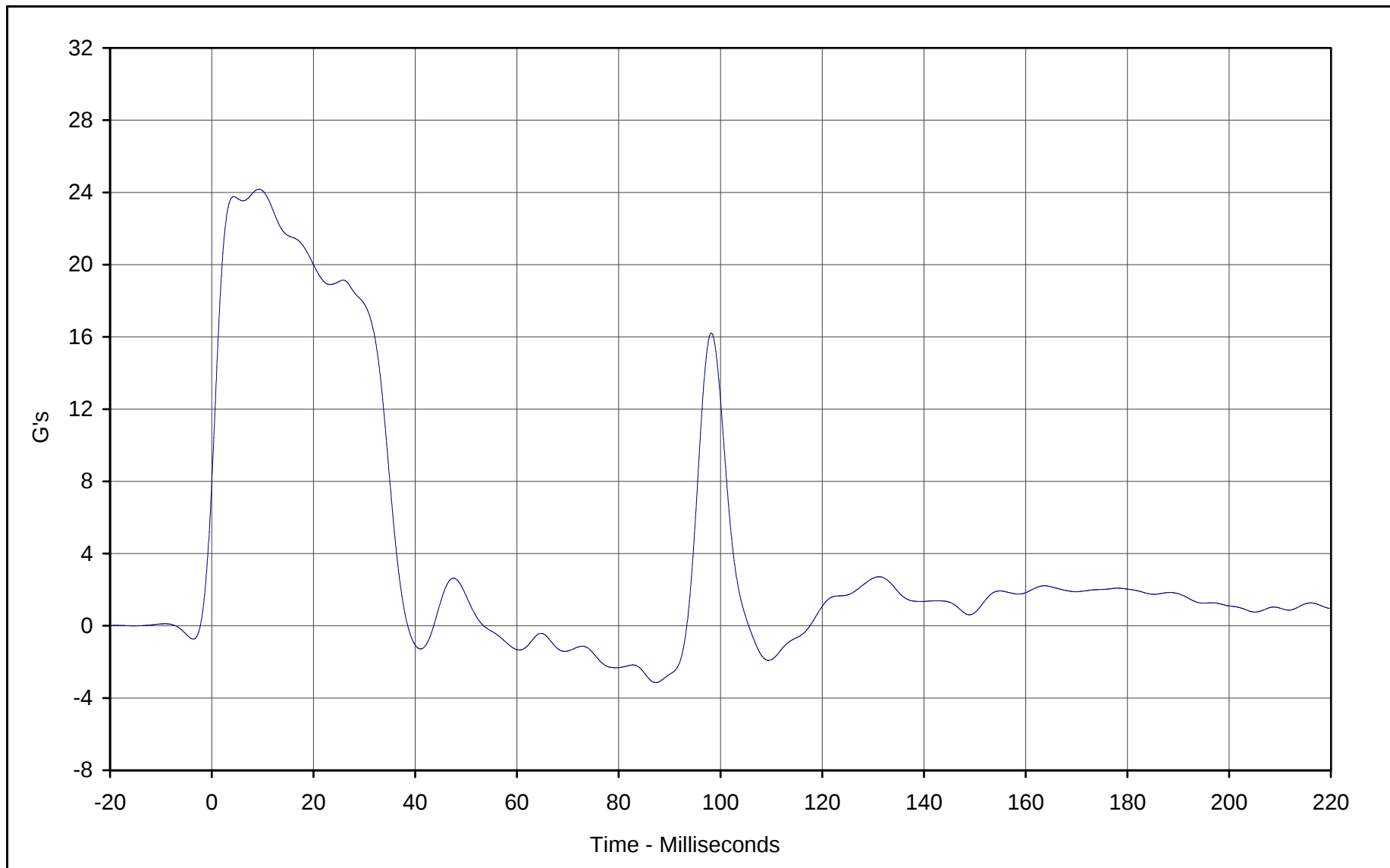
Test I.D.: NF07B

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.89	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	24.1	Pass
	20 Msec.	G's	17.6 to 22.6	20.0	Pass
	30 Msec.	G's	12.5 to 18.5	17.8	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	17.8	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	36.0	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	71.8	Pass
	Time	Msec.	57.0 to 64.0	63.8	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	117.7	Pass
Moment About Occipital Condyle	Maximum	N·m	84.1 to 108.5	87.9	Pass
	Time	Msec.	47.0 to 58.0	55.0	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	101.2	Pass
Overall Test Results					Pass

Laboratory Technician

July 25, 2001

Test Date



Curve Description: Pendulum Deceleration

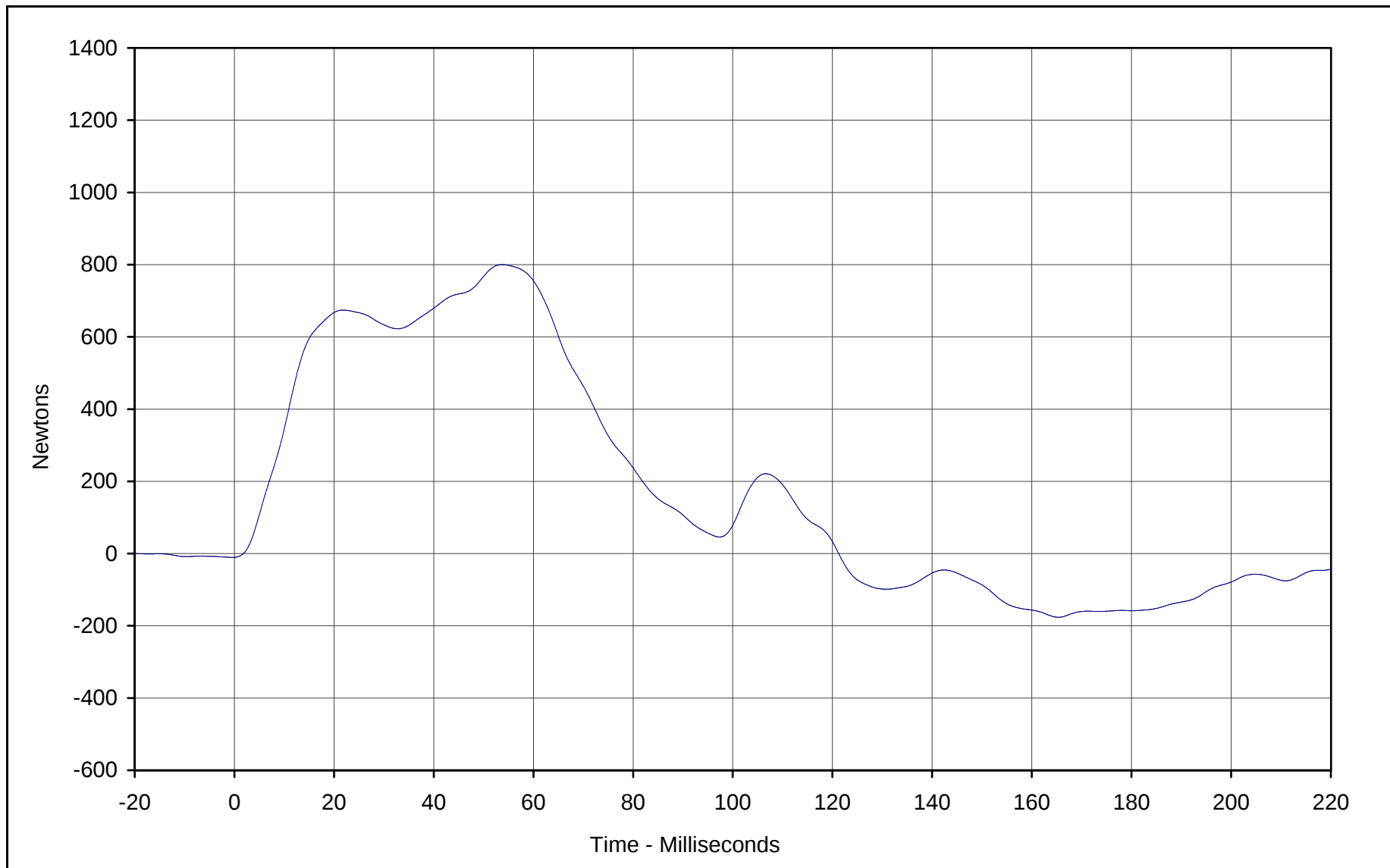
Maximum Value:	<u>24.2</u>	at	<u>9.3</u>	Milliseconds
Minimum Value:	<u>-3.1</u>	at	<u>87.3</u>	Milliseconds
SAE Filter Class:	<u>60</u>			
Date of Test:	<u>7/25/01</u>			
ATD Serial No.:	<u>035</u>			

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NF07B



E-33



Curve Description: Neck Force X

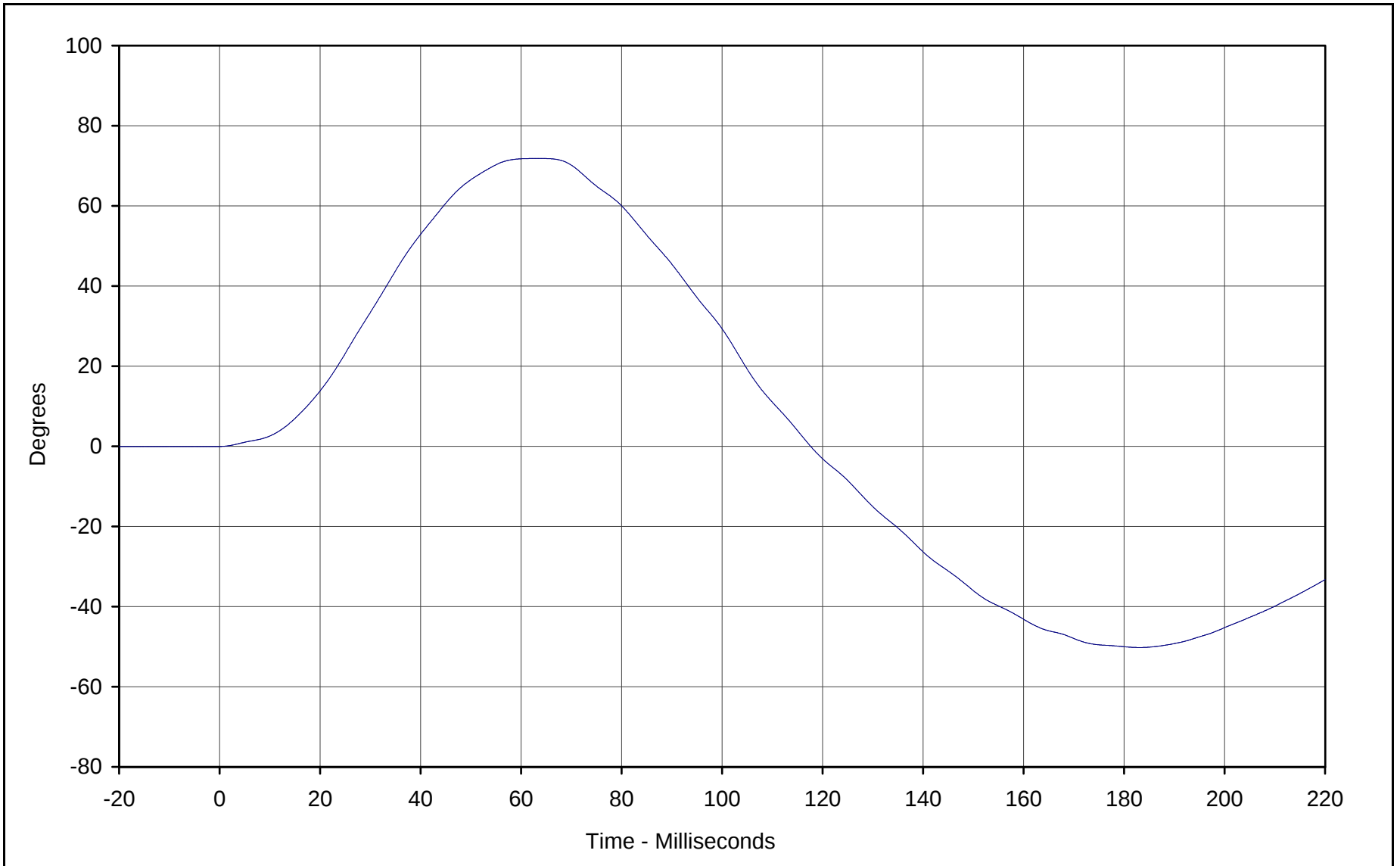
Maximum Value:	800.1	at	53.7	Milliseconds
Minimum Value:	-176.5	at	165.3	Milliseconds
SAE Filter Class:	60			
Date of Test:	7/25/01			
ATD Serial No.:	035			

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NF07B



KAR21082-01



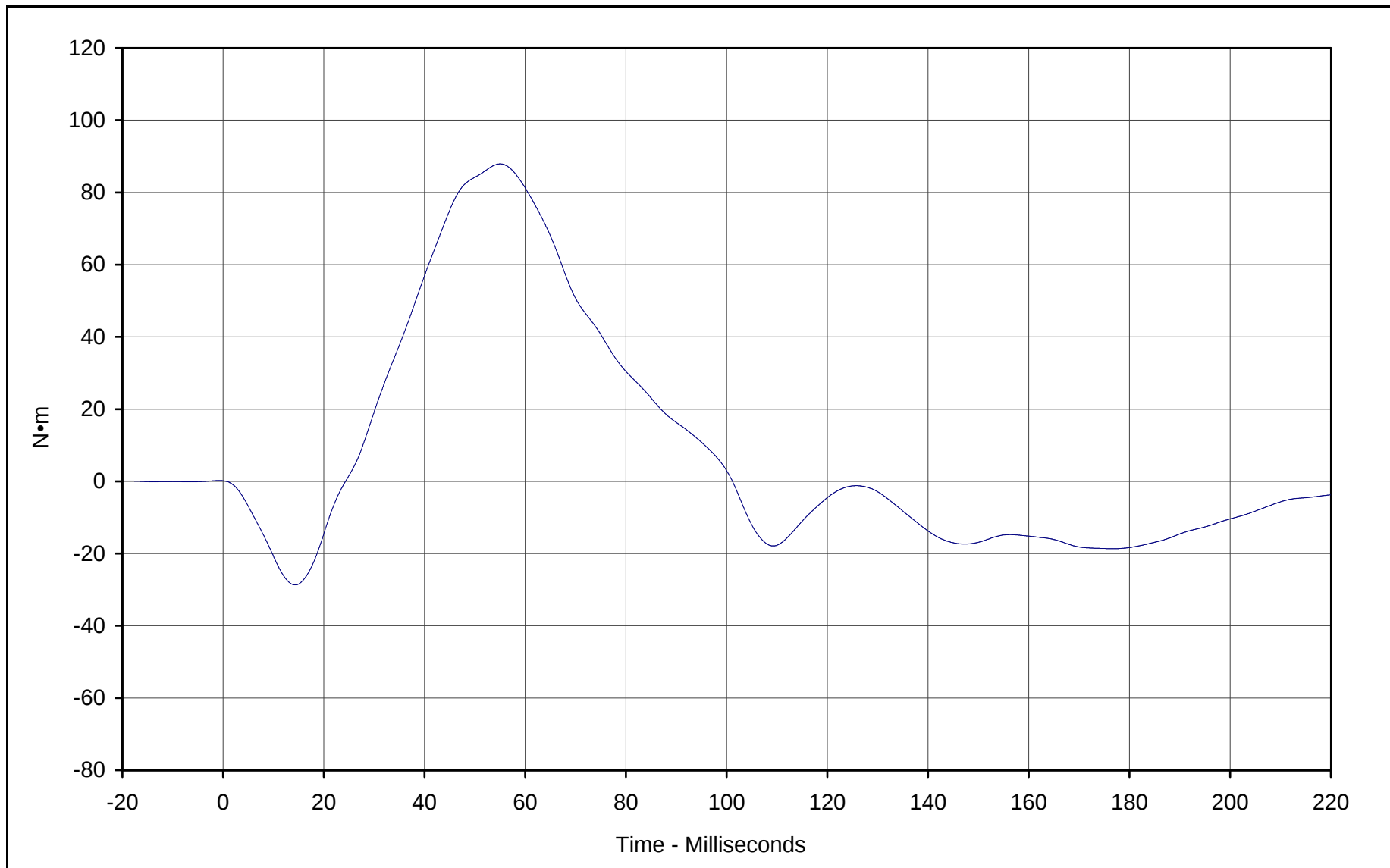
Curve Description: "D" Plane Rotation

Maximum Value:	71.8	at	63.8	Milliseconds
Minimum Value:	-50.2	at	183.1	Milliseconds
SAE Filter Class:	60			
Date of Test:	7/25/01			
ATD Serial No.:	035			

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NF07B





Curve Description: Moment About Occipital Condyles

Maximum Value: 87.9 at 55.0 Milliseconds

Minimum Value: -28.7 at 14.3 Milliseconds

SAE Filter Class: 60

Date of Test: 7/25/01

ATD Serial No.: 035

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NF07B





Hybrid III Calibration Data Sheet

50TH Percentile Male

Neck Extension Test

ATD Serial No.: 035

Part Serial No.: N/A

Test I.D.: NE07B

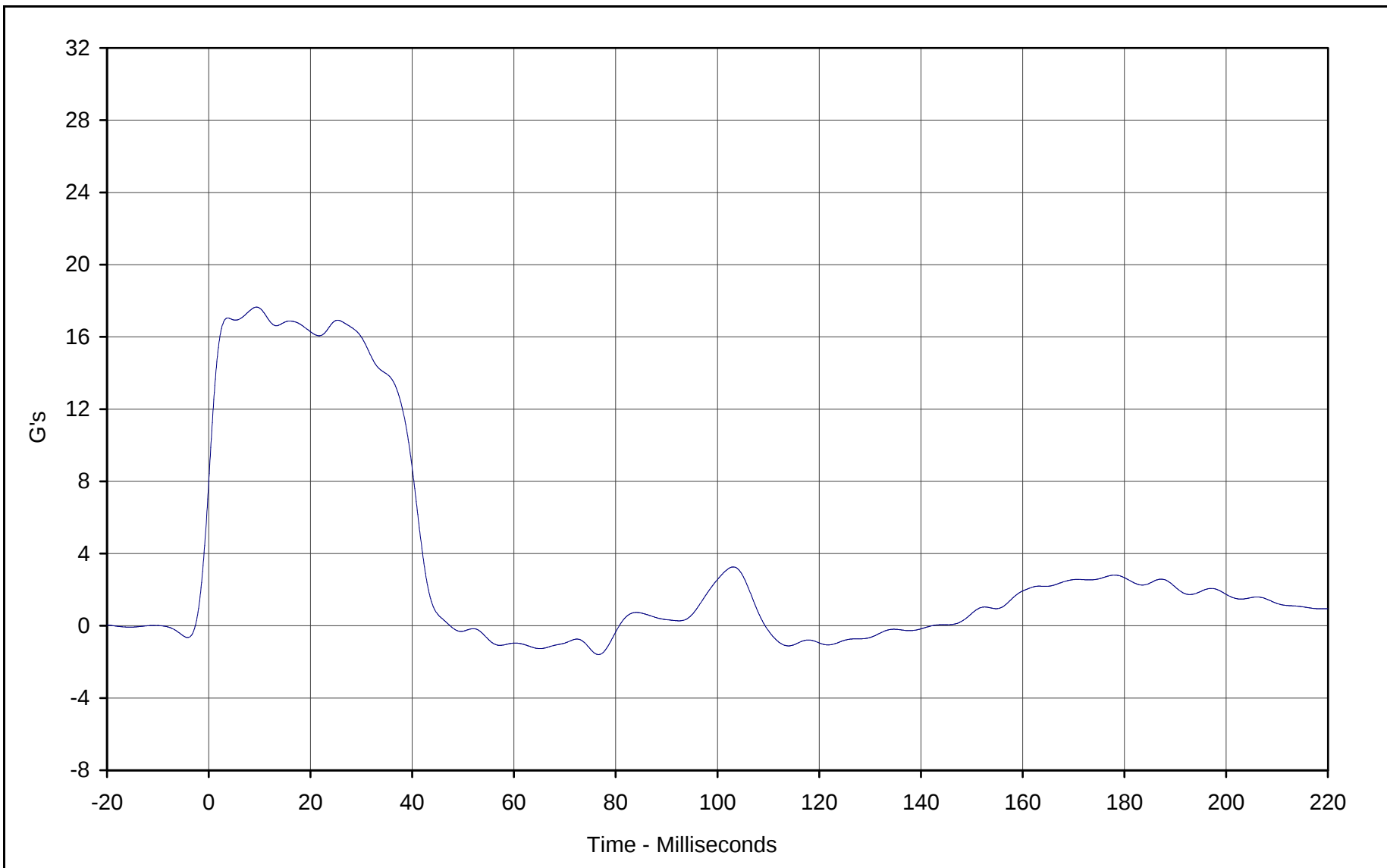
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.10	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.6	Pass
	20 Msec.	G's	14.0 to 19.0	16.3	Pass
	30 Msec.	G's	11.0 to 16.0	16.0	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	16.0	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	41.6	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	98.7	Pass
	Time	Msec.	72.0 to 82.0	76.7	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	156.4	Pass
Moment About Occipital Condyle	Maximum	N•m	-52.9 to- 79.9	-69.0	Pass
	Time	Msec.	65.0 to 79.0	68.4	Pass
Negative Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	141.0	Pass
Overall Test Results					Pass

Laboratory Technician

July 25, 2001

Test Date

E-37

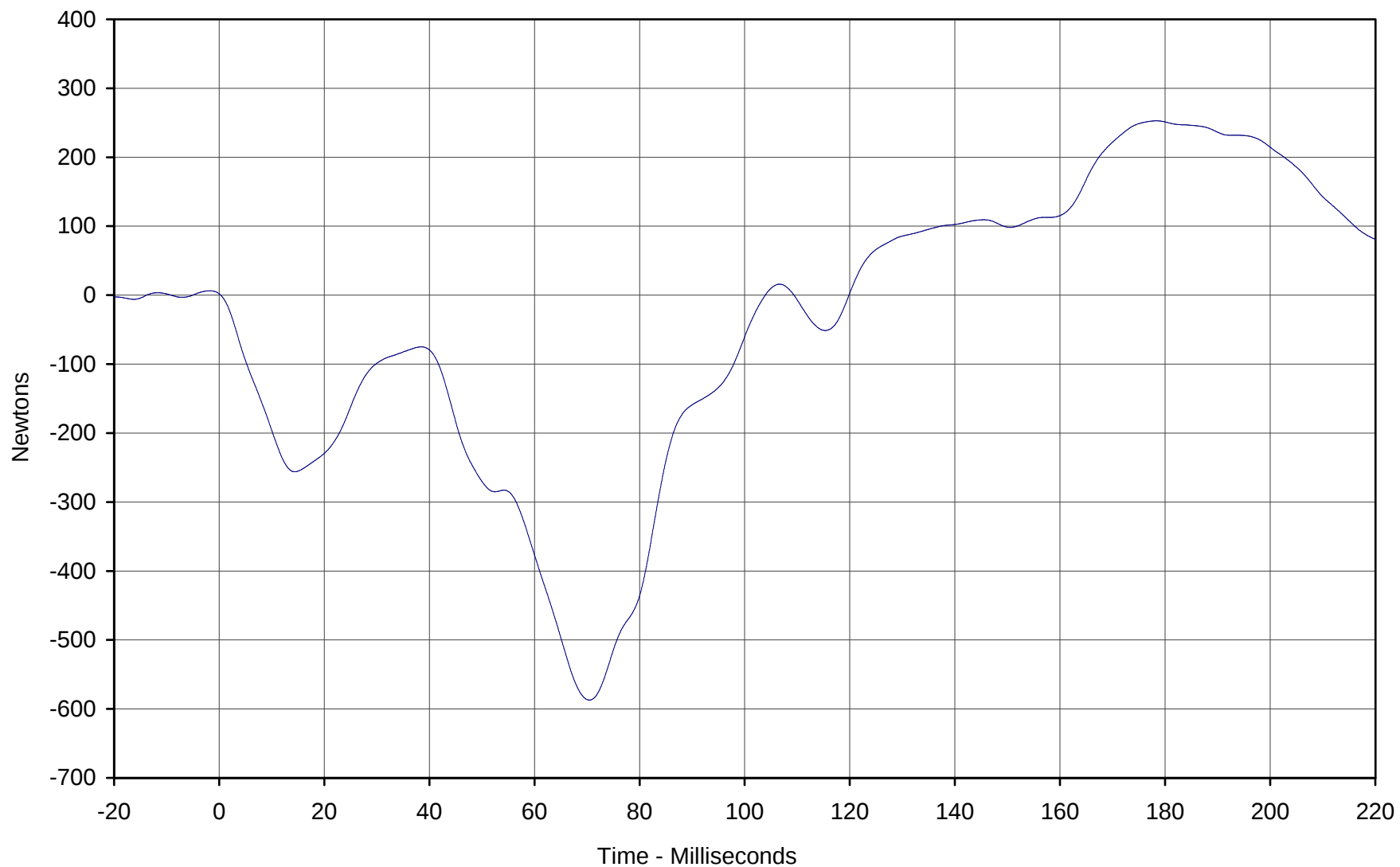


Curve Description:	Pendulum Deceleration		
Maximum Value:	17.6	at	9.4 Milliseconds
Minimum Value:	-1.6	at	76.6 Milliseconds
SAE Filter Class:	60		
Date of Test:	7/25/01		
ATD Serial No.:	035		

Testing Program:	Hybrid III Neck Extension Test (Male)
Test Information:	S/N of Part: N/A Test I.D.: NE07B



KAR21082-01



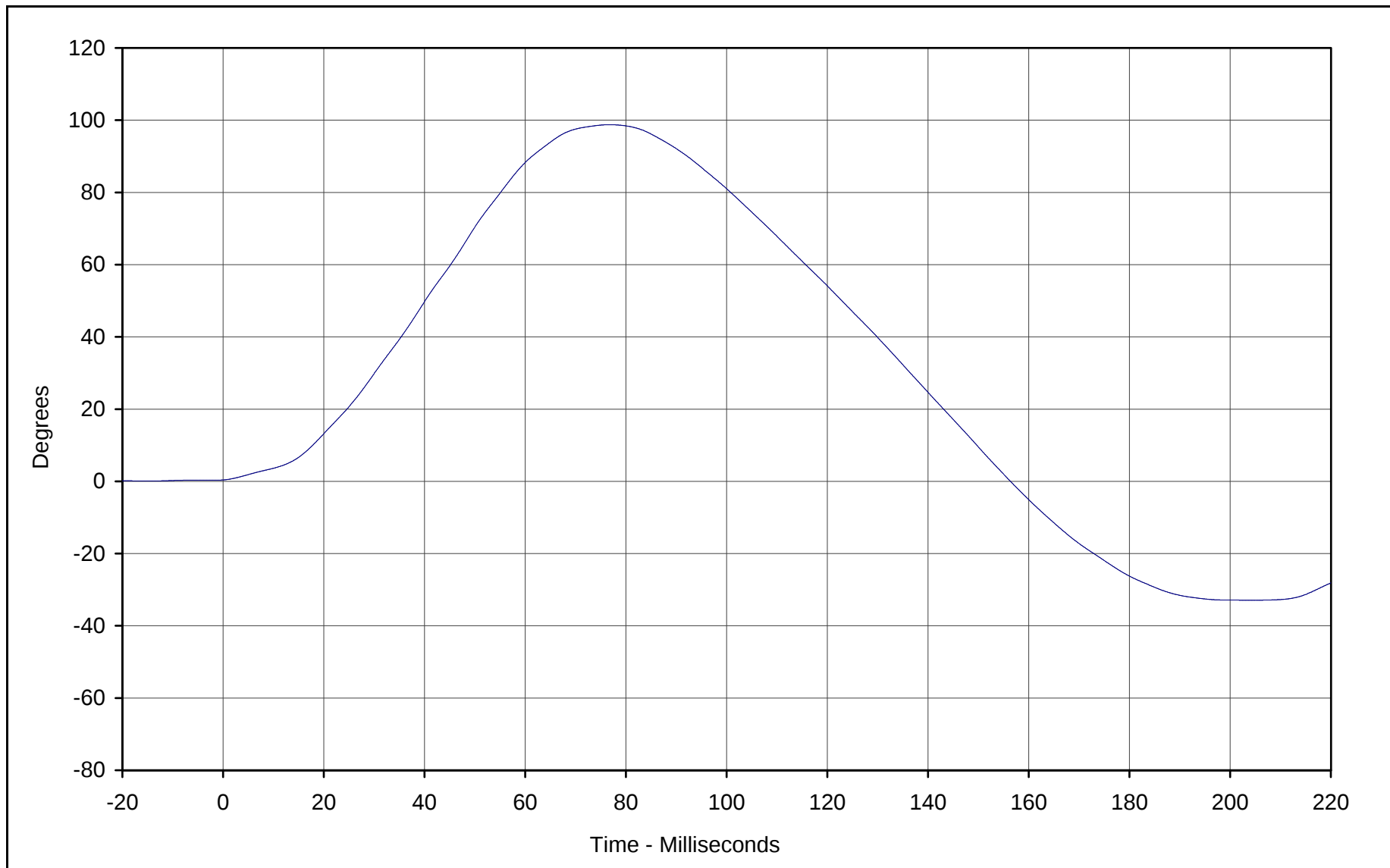
Curve Description: Neck Force X

Maximum Value:	252.8	at	178.4	Milliseconds
Minimum Value:	-587.2	at	70.5	Milliseconds
SAE Filter Class:	60			
Date of Test:	7/25/01			
ATD Serial No.:	035			

Testing Program: Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NE07B





Curve Description: "D" Plane Rotation

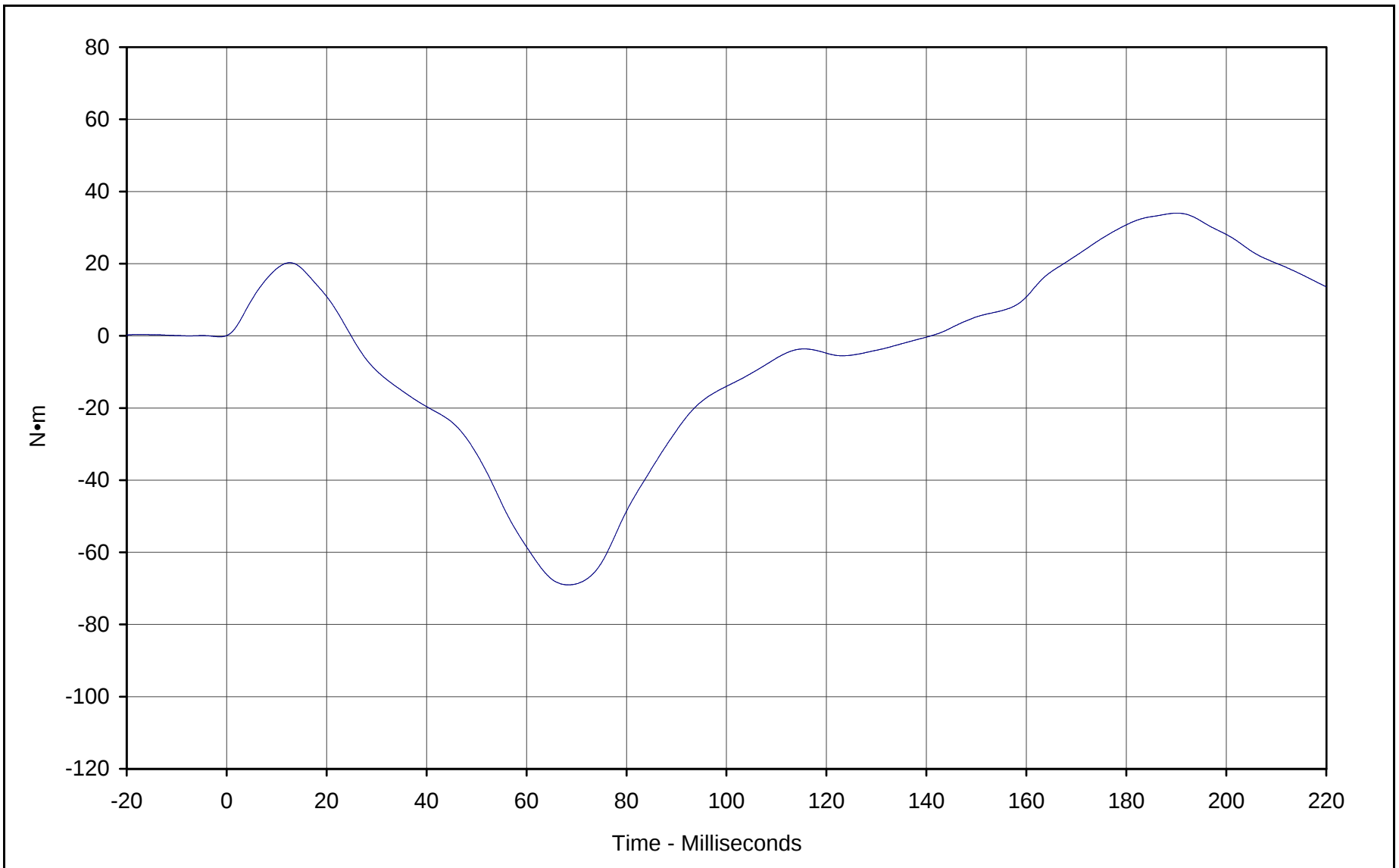
Maximum Value:	98.7	at	76.7	Milliseconds
Minimum Value:	-32.9	at	204.5	Milliseconds
SAE Filter Class:	60			
Date of Test:	7/25/01			
ATD Serial No.:	035			

Testing Program: Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NE07B



E-40



Curve Description: Moment About Occipital Condyles

Maximum Value: 34.0 at 190.1 Milliseconds

Minimum Value: -69.0 at 68.4 Milliseconds

SAE Filter Class: 60

Date of Test: 7/25/01

ATD Serial No.: 035

Testing Program: Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: N/A Test I.D.: NE07B



KAR21082-01



Hybrid III Calibration Data Sheet

50TH Percentile Male

External Measurements

ATD Serial No.: 035

Part Serial No.: N/A

Test I.D.: N/A

External Measurement Data				
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory temperature	°C	20.4 to 22.1	20.9	Pass
Laboratory relative humidity	%	10 to 70	43	Pass
A - Total sitting height	mm	879 to 889	885	Pass
B - Shoulder pivot height	mm	505 to 521	510	Pass
C - "H" point height	mm	84 to 89	88	Pass
D - "H" point from seat back	mm	135 to 140	135	Pass
E - Shoulder pivot from back	mm	84 to 94	92	Pass
F - Thigh clearance	mm	140 to 155	145	Pass
G - Elbow back to wrist pivot	mm	290 to 305	295	Pass
H - Skull cap to back line	mm	41 to 46	45	Pass
I - Shoulder to elbow length	mm	330 to 345	342	Pass
J - Elbow rest height	mm	190 to 211	205	Pass
K - Buttock to knee length	mm	579 to 604	585	Pass
L - Popliteal length	mm	429 to 455	435	Pass
M - Knee pivot height	mm	485 to 500	490	Pass
N - Buttock popliteal length	mm	452 to 477	475	Pass
O - Chest depth	mm	213 to 229	220	Pass
P - Foot length	mm	251 to 267	265	Pass
V - Shoulder breadth	mm	422 to 437	425	Pass
W - Foot breadth	mm	91 to 107	100	Pass
Y - Chest circumference	mm	970 to 1001	985	Pass
Z - Waist circumference	mm	836 to 866	860	Pass
AA - Location for chest circumference	mm	429 to 434	430	Pass
BB - Location for waist circumference	mm	226 to 231	230	Pass
Overall Test Results				Pass

Laboratory Technician

July 26, 2001

Test Date

APPENDIX F

VEHICLE OWNER'S MANUAL

SEATING AND RESTRAINT INSTRUCTIONS

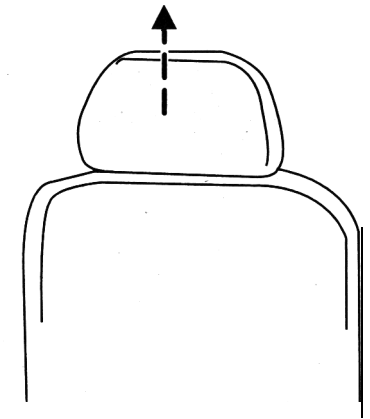
Seating and safety restraints

SEATING

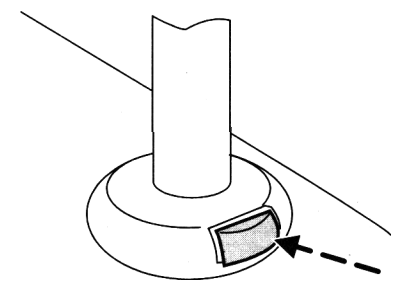
Adjustable head restraints (if equipped)

Your vehicle's seats may be equipped with head restraints which are vertically adjustable. The purpose of these head restraints is to help limit head motion in the event of a rear collision. To properly adjust your head restraints, lift the head restraint so that it is located directly behind your head or as close to that position as possible. Refer to the following to raise and lower the head restraints.

The head restraints can be moved up and down.



Push control to lower head restraint.



Seating and safety restraints

Adjusting the front manual seat

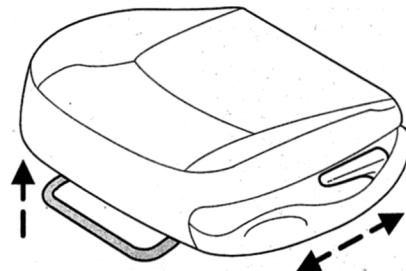
⚠ Never adjust the driver's seat or seatback when the vehicle is moving.

⚠ Do not pile cargo higher than the seatbacks to reduce the risk of injuring people in a collision or sudden stop.

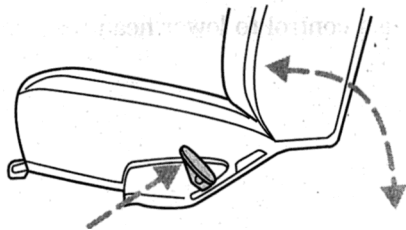
⚠ Always drive and ride with your seatback upright and the lap belt snug and low across the hips.

⚠ Reclining the seatback can reduce the effectiveness of the seat's safety belt in the event of a collision.

Lift handle to move seat forward or backward.



Pull lever up to adjust seatback.



Seating and safety restraints

Adjusting the front power seat (if equipped)

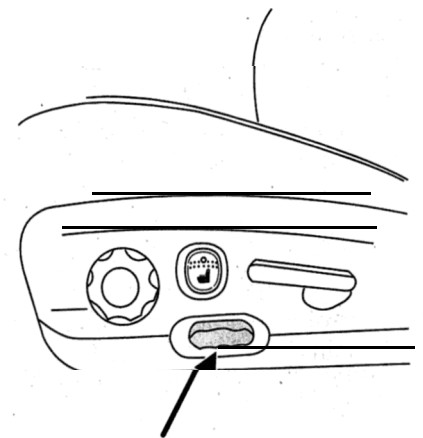
⚠ Never adjust the driver's seat or seatback when the vehicle is moving.

⚠ Do not pile cargo higher than the seatbacks to avoid injuring people in a collision or sudden stop.

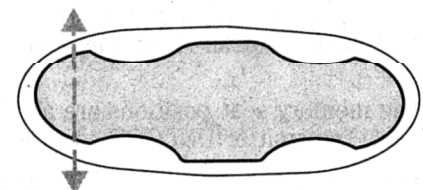
⚠ Always drive and ride with your seatback upright and the lap belt snug and low across the hips.

⚠ Reclining the seatback can reduce the effectiveness of the seat's safety belt in the event of a collision.

The control is located on the outboard side of the seat cushion.

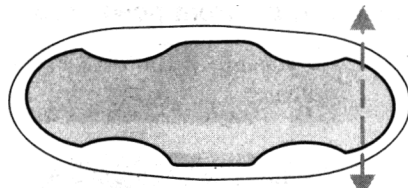


Press front to raise or lower the front portion of the seat cushion.

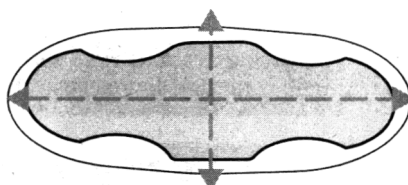


Seating and safety restraints

Press rear to raise or lower the rear portion of the seat cushion.



Press the control to move the seat forward, backward, up or down.



Memory seats (if equipped)

This system allows automatic positioning of the driver seat to three programmable positions.

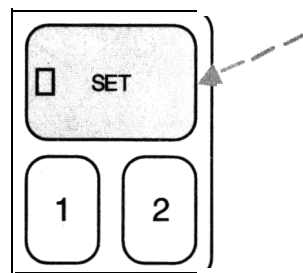
The memory seat control is located on the driver door.

- To program position one, move the driver seat to the desired position using the seat controls. Press the SET control. The SET control indicator light will briefly illuminate. While the light is illuminated, press control 1.
- To program position two, repeat the previous procedure using control 2.
- To program position three, repeat the previous procedure but press controls 1 and 2 simultaneously.

A position can only be set or recalled when the transmission gearshift is in Park or Neutral. A memory seat position may be programmed at any time.

The memory seat positions are also recalled when you press your remote entry transmitter UNLOCK control.

To program the memory seat to remote entry transmitter, refer to *Remote entry system* in the *Controls and features* chapter.

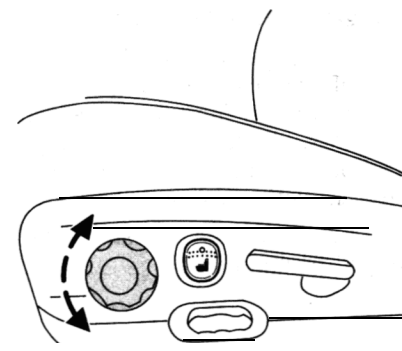


Seating and safety restraints

Using the manual lumbar support

Turn the lumbar support control toward the front of vehicle to move the lumbar support forward for more direct support.

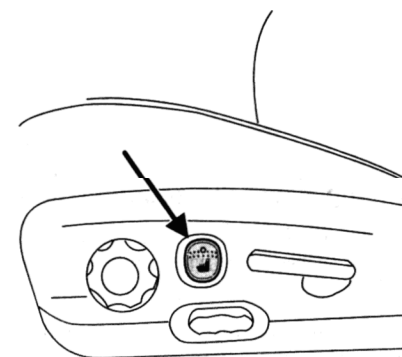
Turn the lumbar support control toward the rear of vehicle to move the lumbar support back for less direct support.



Heated seats (if equipped)

To operate the heated seats:

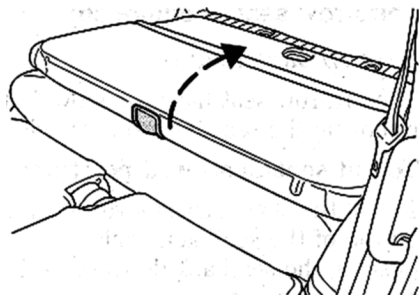
- Push control located on the seat to activate.
- Push again to deactivate.



The heated seat icon in the dual electronic automatic temperature control (DEATC) will illuminate when activated.

Seating and safety restraints

2. Pull the seat release lever located on top of the seatback while lifting the seatback into the upright position.
3. The seatback will latch into place.



The third row seat is equipped with combination lap and shoulder belts in both seating positions. For information on the proper operation of the safety restraints, refer to *Safety Restraints* in this chapter.

SAFETY RESTRAINTS

Safety restraints precautions

- ⚠ Always drive and ride with your seatback upright and the lap belt snug and low across the hips.
- ⚠ To reduce the risk of injury, make sure children sit where they can be properly restrained.
- ⚠ Never let a passenger hold a child on his or her lap while the vehicle is moving. The passenger cannot protect the child from injury in a collision.
- ⚠ All occupants of the vehicle, including the driver, should always properly wear their safety belts, even when an air bag SRS is provided.

Seating and safety restraints

⚠ It is extremely dangerous to ride in a cargo area, inside or outside of a vehicle. In a collision, people riding in these areas are more likely to be seriously injured or killed. Do not allow people to ride in any area of your vehicle that is not equipped with seats and safety belts. Be sure everyone in your vehicle is in a seat and using a safety belt properly.

⚠ In a rollover crash, an unbelted person is significantly more likely to die than a person wearing a safety belt.

⚠ Each seating position in your vehicle has a specific safety belt assembly which is made up of one buckle and one tongue that are designed to be used as a pair. 1) Use the shoulder belt on the outside shoulder only. Never wear the shoulder belt under the arm. 2) Never swing the safety belt around your neck over the inside shoulder. 3) Never use a single belt for more than one person.

⚠ Always transport children 12 years old and under in the back seat and always properly use appropriate child restraints.

Energy management feature

The front outboard and rear safety restraints in the vehicle are combination lap and shoulder belts. The front passenger and rear seat safety belts have two types of locking modes.

- This vehicle has a seat belt system with an energy management feature at the front outboard seating positions to help further reduce the risk of injury in the event of a head-on collision.
- This seat belt system has a retractor assembly that is designed to pay out in a controlled manner. This feature is designed to help reduce the belt force acting on the occupant's chest.

⚠ After any vehicle collision, the seat belt system at all passenger seating positions must be checked by a qualified technician to verify that the "automatic locking retractor" feature for child seats is still functioning properly. In addition, all seat belts should be checked for proper function.

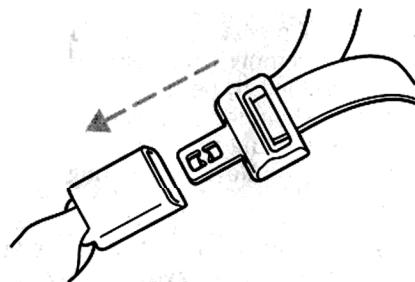
Seating and safety restraints

! **BELT AND RETRACTOR ASSEMBLY MUST BE REPLACED** if the seat belt assembly "automatic locking retractor" feature or any other seat belt function is not operating properly when checked according to the procedures in Workshop Manual.

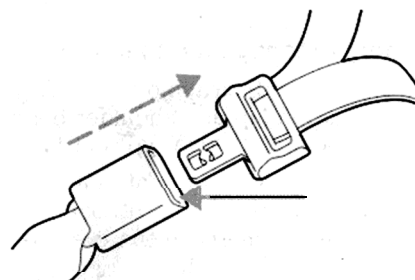
! **Failure to replace the belt and retractor assembly could increase the risk of injury in collisions.**

Combination lap and shoulder belts

1. Insert the belt tongue into the proper buckle (the buckle closest to the direction the tongue is coming from) until you hear a snap and feel it latch. Make sure the tongue is securely fastened in the buckle.



2. To unfasten, push the release button and remove the tongue from the buckle.



Seating and safety restraints

The front and rear outboard safety restraints in the vehicle are combination lap and shoulder belts. The front passenger and rear seat outboard safety belts have two types of locking modes described below:

Vehicle sensitive mode

The vehicle sensitive mode is the normal retractor mode, allowing free shoulder belt length adjustment to your movements and locking in response to vehicle movement. For example, if the driver brakes suddenly or turns a corner sharply, or the vehicle receives an impact of approximately 8 km/h (5 mph) or more, the combination safety belts will lock to help reduce forward movement of the driver and passengers.

Automatic locking mode

In this mode, the shoulder belt is automatically pre-locked. The belt will still retract to remove any slack in the shoulder belt.

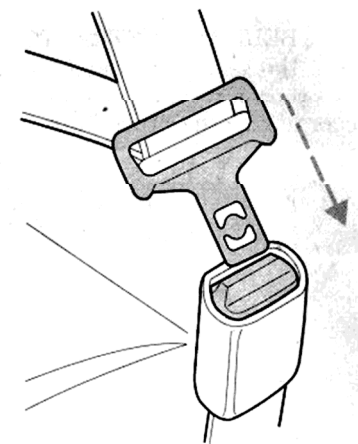
The automatic locking mode is not available on the driver safety belt.

When to use the automatic locking mode

- Any time a child safety seat is installed in a passenger front or outboard rear seating position (if equipped). Children 12 years old and under should be properly restrained in the rear seat whenever possible. Refer to *Safety Restraints for Children* or *Safety Seats for Children* later in this chapter.

How to use the automatic locking mode

- Buckle the combination lap and shoulder belt.



Seating and safety restraints

- Grasp the shoulder portion and pull downward until the entire belt is extracted.



- Allow the belt to retract. As the belt retracts, you will hear a clicking sound. This indicates the safety belt is now in the automatic locking mode.

How to disengage the automatic locking mode

Disconnect the combination lap/shoulder belt and allow it to retract completely to disengage the automatic locking mode and activate the vehicle sensitive (emergency) locking mode.

! After any vehicle collision, the front passenger and rear outboard seat belt systems must be checked by a qualified technician to verify that the "automatic locking retractor" feature for child seats is still functioning properly. In addition, all seat belts should be checked for proper function.

! BELT AND RETRACTOR ASSEMBLY MUST BE REPLACED if the seat belt assembly "automatic locking retractor" feature or any other seat belt function is not operating properly when checked according to the procedures in Workshop Manual.

! Failure to replace the belt and retractor assembly could increase the risk of injury in collisions.

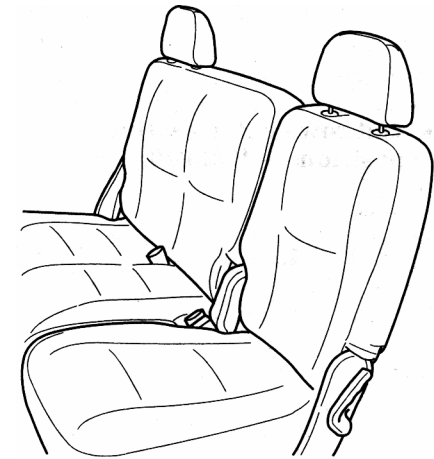
Seating and safety restraints

Lap belts

Adjusting the lap belt

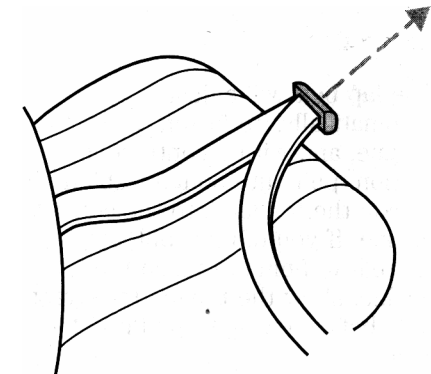
! The lap belt should fit snugly and as low as possible around the hips, not across the waist.

- 2nd row center seating position — 60/40



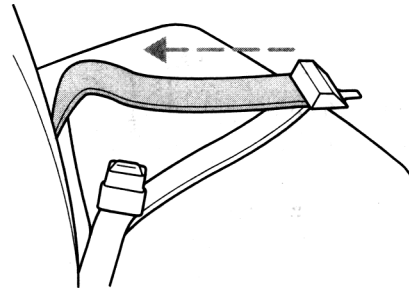
The lap belt does not adjust automatically.

Insert the tongue into the correct buckle (the buckle closest to the direction the tongue is coming from). To lengthen the belt, turn the tongue at a right angle to the belt and pull across your lap until it reaches the buckle. To tighten the belt, pull the loose end of the belt through the tongue until it fits snugly across the hips.

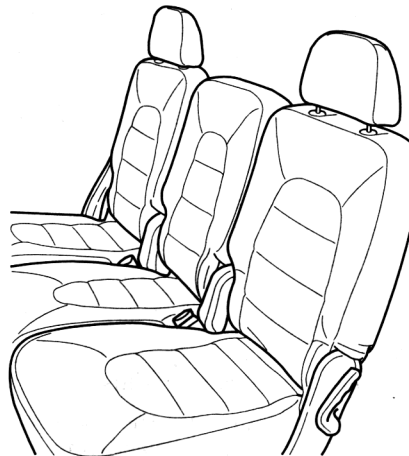


Seating and safety restraints

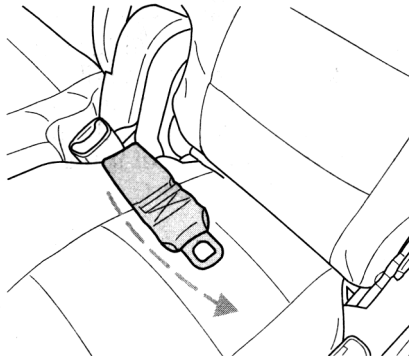
Shorten and fasten the belt when not in use.



- **2nd row center seating position — 40/20/40**



The lap belt will adjust automatically. To fasten, grasp the tongue, and with a continuous motion, pull out enough webbing to buckle the tongue into the correct buckle. If you did not pull out enough webbing to reach the buckle, allow the tongue to retract fully before trying to pull it out again.



Seating and safety restraints

Safety belt pretensioner

Your vehicle is equipped with safety belt pretensioners at the driver and front passenger seating positions.

The safety belt pretensioners are designed to activate only when the safety belts are fastened during certain frontal or near-frontal collisions with sufficient longitudinal deceleration. A safety belt pretensioner is a device which tightens the webbing of the lap and shoulder belts in such a way that they fit more snugly against the body.

The driver and front outboard passenger safety belt system (including retractors, buckles and height adjusters) must be replaced if the vehicle is involved in a collision that results in the activation of the safety belt pretensioners. Refer to the *Safety belt maintenance* section in this chapter.



Failure to replace the safety belt assembly under the above conditions could result in severe personal injuries in the event of a collision.

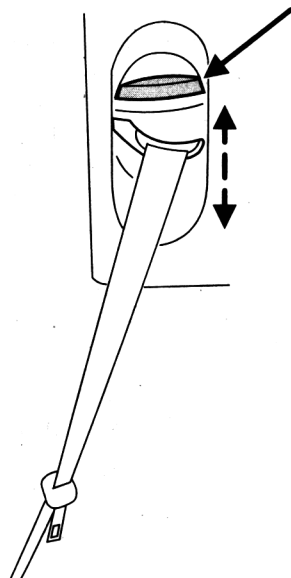
Seating and safety restraints

Safety belt height adjustment

Your vehicle has safety belt height adjustments for the front and rear outboard seating positions. Adjust the height of the shoulder belt so the belt rests across the middle of your shoulder.

To lower the shoulder belt height, squeeze the button and slide the height adjuster down. To raise the height of the shoulder belt, slide the height adjuster up. Pull down on the height adjuster to make sure it is locked in place.

 Position the shoulder belt height adjusters so that the belt rests across the middle of your shoulder. Failure to adjust the safety belt properly could reduce the effectiveness of the seat belt and increase the risk of injury in a collision.

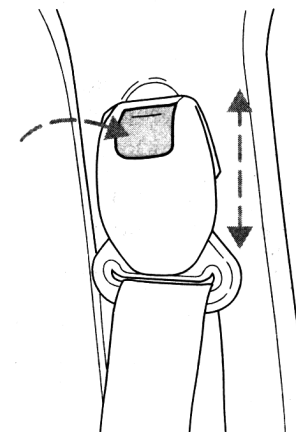


Seating and safety restraints

front seat belt height adjustment

Your vehicle has seat belt height adjustments for the driver and front passenger. Adjust the height of the shoulder belt so the belt rests across the middle of your shoulder. The seat belt must not lie across the neck.

To lower the shoulder belt height, push the button and slide the height adjuster down. To raise the height of the shoulder belt, slide the height adjuster up. Pull down on the height adjuster to make sure it is locked in place.



Safety belt extension assembly

If the safety belt is too short when fully extended, there is a 20 cm (8 inch) safety belt extension assembly that can be added (part number 611C22). This assembly can be obtained from your dealer at no cost.

Use only extensions manufactured by the same supplier as the safety belt. Manufacturer identification is located at the end of the webbing on the label. Also, use the safety belt extension only if the safety belt is too short for you when fully extended. Do not use extensions to change the fit of the shoulder belt across the torso.

Safety belt warning light and indicator chime

The seat belt warning light illuminates in the instrument cluster and a chime sounds to remind the occupants to fasten their safety belts.

Seating and safety restraints

 Do not sit on top of a buckled safety belt to avoid the Belt Minder chime. Sitting on the safety belt will increase the risk of injury in an accident. To disable (one-time) or deactivate the Belt Minder feature please follow the directions stated below.

One time disable

Any time the safety belt is buckled and then unbuckled during an ignition ON cycle, Belt Minder will be disabled for that ignition cycle only.

Deactivating/activating the belt minder feature

Read steps 1 - 9 thoroughly before proceeding with the deactivation/activation programming procedure.

The Belt Minder feature can be deactivated/activated by performing the following procedure:

Before following the procedure, make sure that:

- the parking brake is set
- the gearshift is in P (Park) (automatic transmission) or the neutral position (manual transmission).
- the ignition switch is in the OFF position
- all vehicle doors are closed
- the driver's safety belt is unbuckled
- the parklamps/headlamps are in OFF position (If vehicle is equipped with Autolamps, the Autolamps feature MUST be turned off.)

 To reduce the risk of injury, do not deactivate/activate the Belt Minder feature while driving the vehicle.

1. Turn the ignition switch to the RUN (or ON) position. (DO NOT START THE ENGINE)
2. Wait until the safety belt warning light turns off. (Approximately 1-2 minutes)
 - Steps 3-5 must be completed within 60 seconds or the procedure will have to be repeated.

Seating and safety restraints

3. Buckle then unbuckle the safety belt three times, ending with the safety belt unbuckled. This can be done before or during Belt Minder warning activation.
4. Turn on the parklamps/headlamps, turn off the parklamps/headlamps.
5. Buckle then unbuckle the safety belt three times, ending with the safety belt unbuckled.
 - After step 5 the safety-belt warning light will be, turned on for three seconds.
6. Within seven seconds of the safety belt warning light turning off, buckle then unbuckle the safety belt.
 - This will disable Belt Minder if it is currently enabled, or enable Belt Minder if it is currently disabled.
7. Confirmation of disabling Belt Minder is provided by flashing the safety belt warning light four times per second for three seconds.
8. Confirmation of enabling Belt Minder is provided by flashing the safety belt warning light four times per second for three seconds, followed by three seconds with the safety belt warning light off, then followed by flashing the safety belt warning light four times per second for three seconds again.
9. After receiving confirmation, the deactivation/activation procedure is complete.

Safety belt maintenance

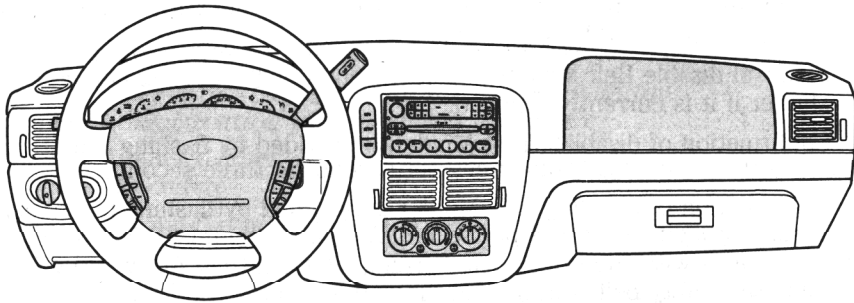
Inspect the safety belt systems periodically to make sure they work properly and are not damaged. Inspect the safety belts to make sure there are no nicks, tears or cuts. Replace if necessary. All safety belt assemblies, including retractors, buckles, front seat belt buckle assemblies, buckle support assemblies (slide bar-if equipped), shoulder belt height adjusters (if equipped), shoulder belt guide on seatback (if equipped), child safety seat tether bracket assemblies (if equipped), LATCH child seat tether anchors and lower anchors (if equipped), and attaching hardware, should be inspected after a collision. Ford recommends that all safety belt assemblies used in vehicles involved in a collision be replaced. However, if the collision was minor and a qualified technician finds that the belts do not show damage and continue to operate properly, they do not need to be replaced. Safety belt assemblies not in use during a collision should also be inspected and replaced if either damage or improper operation is noted.

Seating and safety restraints

 Failure to inspect and if necessary replace the safety belt assembly under the above conditions could result in severe personal injuries in the event of a collision.

Refer to *Cleaning and maintaining the safety' belts* in the Cleaning chapter.

AIR BAG SUPPLEMENTAL RESTRAINT SYSTEM (SRS)



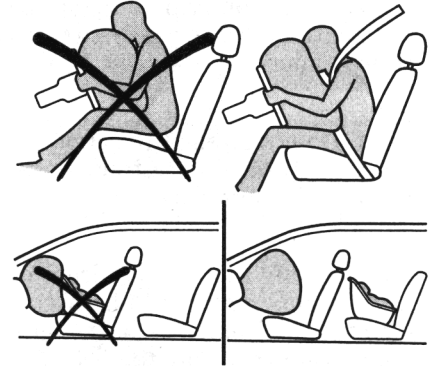
Your vehicle is equipped with a crash sensing and diagnostic module which records information about the air bag and sensor systems. In the event of a collision this module may save information related to the collision including information about the air bag system and impact severity. This information will assist Ford in the servicing of your vehicle and may help Ford better understand real world collisions and further improve the safety of future vehicles.

Seating and safety restraints

Important supplemental restraint system (SRS) precautions

The supplemental restraint system is designed to work with the safety belt to help protect the driver and right front passenger from certain upper body injuries.

Air bags DO NOT inflate slowly or gently and the risk of injury from a deploying air bag is greatest close to the trim covering the air bag module.



 All occupants of the vehicle, including the driver, should always properly wear their safety belts, even when an air bag SRS is provided.

 Always transport children 12 years old and under in the back seat and always properly use appropriate child restraints.

 National Highway Traffic Safety Administration (NHTSA) recommends a minimum distance of at least 25 cm (10 inches) between an occupant's chest and the driver air bag module.

 Never place your arm over the air bag module as a deploying air bag can result in serious arm fractures or other injuries.

Steps you can take to properly position yourself away from the air bag:

- Move your seat to the rear as far as you can while still reaching the pedals comfortably.
- Recline the seat slightly (one or two degrees) from the upright position.

Seating and safety restraints

 Do not put anything on or over the air bag module. Placing objects on or over the air bag inflation area may cause those objects to be propelled by the air bag into your face and torso causing serious injury.

 Do not attempt to service, repair, or modify the air bag supplemental restraint systems or its fuses. Se your Ford or Lincoln Mercury dealer.

 Modifications to the front end of the vehicle, including frame, bumper, front end body structure and non-Ford tow hooks may effect the performance of the air bag sensors increasing the risk of injury. Do not modify the front end of the vehicle.

 Additional equipment may affect the performance of the air bag sensors increasing the risk of injury. Please refer to the Body Builders Layout Book for instructions about the appropriate installation of additional equipment.

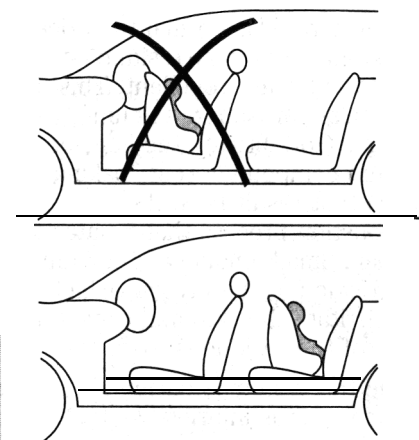
Seating and safety restraints

Children and air bags

For additional important safety information, read all information on safety restraints in this guide.

Children must always be properly restrained. Accident statistics suggest that children are safer when properly restrained in the rear seating positions than in the front seating position. Failure to follow these instructions may increase the risk of injury in a collision.

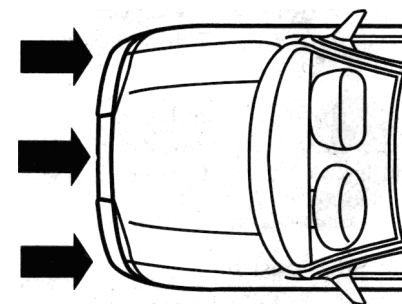
 Air bags can kill or injure a child in a child seat. **NEVER** place a rear-facing child seat in front of an active air bag. If you must use a forward-facing child seat in the front seat, move the seat all the way back.



How does the air bag supplemental restraint system work?

The air bag SRS is designed to activate when the vehicle sustains longitudinal deceleration sufficient to cause the sensors to close an electrical circuit that initiates air bag inflation.

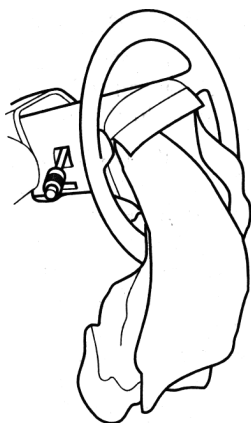
The fact that the air bags did not inflate in a collision does not mean that something is wrong with the system. Rather, it means the forces were not of the type sufficient to cause activation. Front air bags are designed to inflate in frontal and near-frontal collisions, not rollover, side-impact, or rear-impacts unless the collision causes sufficient longitudinal deceleration.



Seating and safety restraints

The air bags inflate and deflate rapidly upon activation. After air bag deployment, it is normal to notice a smoke-like, powdery residue or smell the burnt propellant. This may consist of cornstarch, talcum powder (to lubricate the bag) or sodium compounds (e.g., baking soda) that result from the combustion process that inflates the air bag. Small amounts of sodium hydroxide may be present which may irritate the skin and eyes, but none of the residue is toxic.

While the system is designed to help reduce serious injuries, contact with a deploying air bag may also cause abrasions, swelling or temporary hearing loss. Because air bags must inflate rapidly and with considerable force, there is the risk of death or serious injuries such as fractures, facial and eye injuries or internal injuries, particularly to occupants who are not properly restrained or are otherwise out of position at the time of air bag deployment. Thus, it is extremely important that occupants be properly restrained as far away from the air bag module as possible while maintaining vehicle control.



 Several air bag system components get hot after inflation. Do not touch them after inflation.

 If the air bag has deployed, **the air bag will not function again and must be replaced immediately.** If the air bag is not replaced, the unrepaired area will increase the risk of injury in a collision.

The SRS consists of:

- driver and passenger air bag modules (which include the inflators and air bags).
- side air curtains (if equipped). Refer to Side air curtain *system* later in this chapter.
- one or more impact and safing sensors.

Seating and safety restraints

- a readiness light and tone.
- diagnostic module.
- and the electrical wiring which connects the components.

The diagnostic module monitors its own internal circuits and the supplemental air bag electrical system warning (including the impact sensors), the system wiring, the air bag system readiness light, the air bag back up power and the air bag ignitors.

Determining 'if the system is operational'

The SRS uses a readiness light in the instrument cluster or a tone to indicate the condition of the system. Refer to *Air bag readiness* section in the *Instrument cluster* chapter. Routine maintenance of the air bag is not required.

A difficulty with the system is indicated by one or more of the following:

- The readiness light will either flash or stay lit.
- The readiness light will not illuminate immediately after ignition is turned on.
- A series of five beeps will be heard. The tone pattern will repeat periodically until the problem and/or light are repaired.



If any of these things happen, even intermittently, have the SRS serviced at your dealership or by a qualified technician immediately. Unless serviced, the system may not function properly in the event of a collision.

Side air curtain system (if equipped)

 Do not attempt to service, repair, or modify the air bag supplemental restraint system, its fuses or the seat cover on a seat containing an air bag. See your Ford or Lincoln Mercury dealer.

 All occupants of the vehicle including the driver should always wear their safety belts even when an air bag SRS is provided.

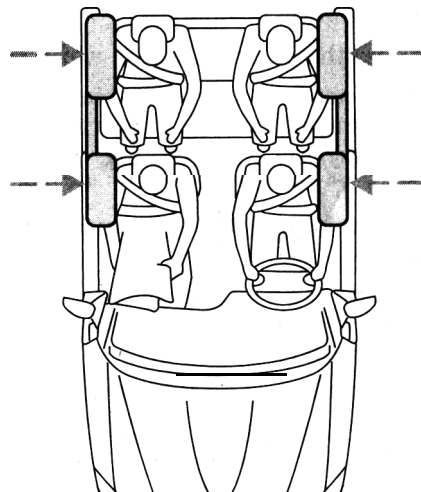
 To reduce risk of injury, do not obstruct or place objects in the deployment path of the inflatable curtain.

Seating and safety restraints

How does the side air curtain system work?

The side air curtain system consists of the following:

- An inflatable nylon curtain with a gas generator concealed behind the headliner and above the doors.
- The headliner will flex to open above the side doors to allow air curtain deployment.
- The same warning light, electronic control and diagnostic unit as used for the front air curtains.
- Four crash sensors, two located at the base of the “B” pillars (above the front seats) and two at the base of the “C” pillars (above the 2nd row seats).



Side air curtains, in combination with seat belts, can help reduce the risk of severe injuries in the event of a significant side impact collision.

The side air curtains are mounted to the sheet metal above the first and second row seats. In certain lateral collisions, the air curtain on the side affected by the collision will be inflated, even if the respective seat is not occupied. The air curtain was designed to inflate between the side window area and occupant to further enhance the head protection provided to occupants in side impact collisions.

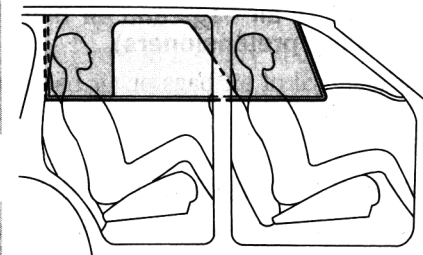
The air curtain SRS is designed to activate when the vehicle sustains lateral deceleration sufficient to cause the sensors to close an electrical circuit that initiates air curtain inflation.

The fact that the air curtains did not inflate in a collision does not mean that something is wrong with the system. Rather, it means the forces were not of the type sufficient to cause activation. Side air curtains are designed to inflate in side-impact collisions, not roll-over, rear-impact, frontal or near-frontal collisions, unless the collision causes sufficient lateral deceleration.

Seating and safety restraints

! Several air bag system components get hot after inflation. Do not touch them after inflation.

! If the side air curtain has deployed, the air curtain will not function again. The side air curtain system (including the A, B and C pillar trim) must be inspected and serviced by a qualified technician in accordance with the vehicle service manual. If the air curtain is not replaced, the unrepaired area will increase the risk of injury in a collision.



Determining if the system is operational

The SRS uses a readiness light in the instrument cluster or a tone to indicate the condition of the system. Refer to the *Air bag readiness* section in the *Instrumentation* chapter. Routine maintenance of the air bag is not required.

A difficulty with the system is indicated by one or more of the following:

- The readiness light (same light as for front air bag system) will either flash or stay lit.
- The readiness light will not illuminate immediately after ignition is turned on.
- A series of five beeps will be heard. The tone pattern will repeat periodically until the problem and light are repaired.

If any of these things happen, even intermittently, have the SRS serviced at your dealership or by a qualified technician immediately. Unless serviced, the system may not function properly in the event of a collision.

Seating and safety restraints

Disposal of air bags and air bag equipped vehicles (including pretensioners)

For disposal of air bags or air bag equipped vehicles, see your local dealership or qualified technician. Air bags MUST BE disposed of by qualified personnel.

SAFETY RESTRAINTS FOR CHILDREN

See the following sections for directions on how to properly use safety restraints for children. *Also see Air Bag Supplemental Restraint System (SRS)* in this chapter for special instructions about using air bags.

Important child restraint precautions

You are required by law to use safety restraints for children in the U.S. and Canada. If small children ride in your vehicle (generally children who are four years old or younger and who weigh 18 kg [40 lbs] or less), you must put them in safety seats made especially for children. Check your local and state or provincial laws for specific requirements regarding the safety of children in your vehicle.

 **Never let a passenger hold a child on his or her lap while the vehicle is moving. The passenger cannot protect the child from injury in a collision.**

Always follow the instructions and warnings that come with any infant or child restraint you might use.

When possible, always place children under age 12 in the rear seat of your vehicle. Accident statistics suggest that children are safer when properly restrained in the rear seating positions than in the front seating position.

Seating and safety restraints

Children and safety belts

If the child is the proper size, restrain the child in a safety seat.

Children who are too large for child safety seats (as specified by your child safety seat manufacturer) should always wear safety belts.

Follow all the important safety restraint and air bag precautions that apply to adult passengers in your vehicle.

If the shoulder belt portion of a combination lap and shoulder belt can be positioned so it does not cross or rest in front of the child's face or neck, the child should wear the lap and shoulder belt. Moving the child closer to the center of the vehicle may help provide a good shoulder belt fit.

 **Do not leave children, unreliable adults, or pets unattended in your vehicle.**

To improve the fit of lap and shoulder belts on children who have outgrown child safety seats, Ford recommends use of a belt-positioning booster seat that is labelled as conforming to all applicable Federal motor vehicle safety standards. Belt-positioning booster seats raise the child and provide a shorter, firmer seating cushion that encourages safer seating posture and better fit of lap and shoulder belts on the child.

A belt-positioning booster seat should be used if the shoulder belt rests in front of the child's face or neck, or if the lap belt does not fit snugly on both thighs, or if the thighs are too short to let the child sit all the way back on the seat cushion when the lower legs hang over the edge of the seat cushion. You may wish to discuss the special needs of your child with your pediatrician.

SAFETY SEATS FOR CHILDREN



Seating and safety restraints

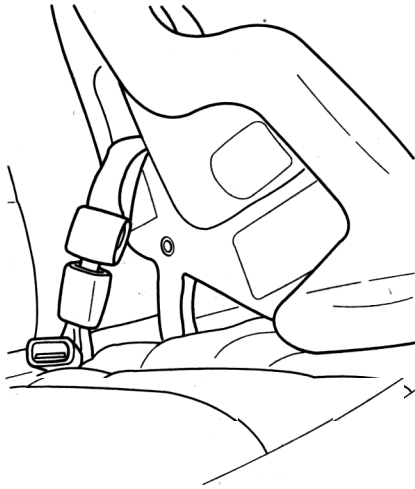
Child and infant or child safety seats

Use a safety seat that is recommended for the size and weight of the child. Carefully follow all of the manufacturer's instructions with the safety seat you put in your vehicle. If you do not install and use the safety seat properly, the child may be injured in a sudden stop or collision.

When installing a child safety seat:

- Review and follow the information presented in the *Air Bag Supplemental Restraint System (SRS)* section in this chapter.
- Use the correct safety belt buckle for that seating position (the buckle closest to the direction the tongue is coming from).
- Insert the belt tongue into the proper buckle until you hear a snap and feel it latch. Make sure the tongue is securely fastened in the buckle.
- Keep the buckle release button pointing up and away from the safety seat, with the tongue between the child seat and the release button, to prevent accidental unbuckling.
- Place seat back in upright position.
- Put the safety belt in the automatic locking mode. Refer to *Automatic locking mode* (passenger side front and outboard rear seating positions) (if equipped) section in this chapter.

Ford recommends the use of a child safety seat having a top tether strap. Install the child safety seat in a seating position which is capable of providing a tether anchorage. For more information on top tether straps, refer to *Attaching child safety seats with tether straps* in this chapter.



Seating and safety restraints

! Carefully follow all of the manufacturer's instructions included with the safety seat you put in your vehicle. If you do not install and use the safety seat properly, the child may be injured in a sudden stop or collision.

Installing child safety seats in combination lap and shoulder belt seating positions

! Air bags can kill or injure a child in a child seat. **NEVER** place a rear-facing child seat in front of an active air bag. If you must use a forward-facing child seat in the front seat, move the seat all the way back.

1. Position the child safety seat in a seat with a combination lap and shoulder belt.



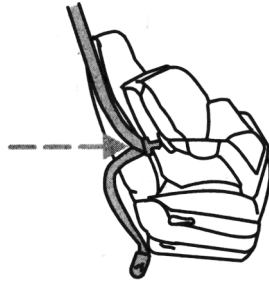
! Children 12 and under should be properly restrained in the rear seat whenever possible.

2. Pull down on the shoulder belt and then grasp the shoulder belt and lap belt together.



Seating and safety restraints

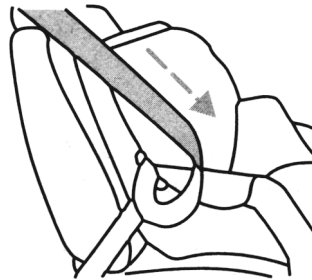
3. While holding the shoulder and lap belt portions together, route the tongue through the child seat according to the child seat manufacturer's instructions. Be sure the belt webbing is not twisted.



4. Insert the belt tongue into the proper buckle (the buckle closest to the direction the tongue is coming from) for that seating position until you hear a snap and feel the latch engage. Make sure the tongue is latched securely by pulling on it.



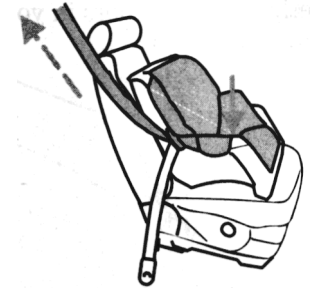
5. To put the retractor in the automatic locking mode, grasp the shoulder portion of the belt and pull downward until all of the belt is extracted and a click is heard.



6. Allow the belt to retract. The belt will click as it retracts to indicate it is in the automatic locking mode.

Seating and safety restraints

7. Pull the lap belt portion across the child seat toward the buckle and pull up on the shoulder belt while pushing down with your knee on the child seat.



8. Allow the safety belt to retract to remove any slack in the belt.

9. Before placing the child in the seat, forcibly tilt the seat forward and back to make sure the seat is securely held in place.



10. Try to pull the belt out of the retractor to make sure the retractor is in the automatic locking mode (you should not be able to pull more belt out). If the retractor is not locked, unbuckle the belt and repeat steps two through nine.

Check to make sure the child seat is properly secured before each use.

Attaching child safety seats with tether straps

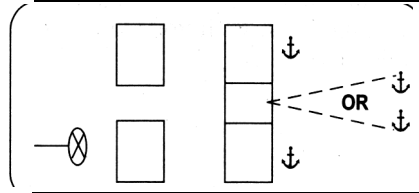
Most new forward-facing child safety seats include a tether strap which goes over the back of the seat and hooks to an anchoring point. Tether straps are available as an accessory for many older safety seats. Contact the manufacturer of your child seat for information about ordering a tether strap.

The rear seats of your vehicle are equipped with built-in tether strap anchors located behind the seats as shown below.

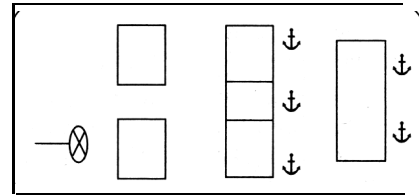
Seating and safety restraints

The tether strap anchors in your vehicle are in the following positions (shown from top view):

- 5 passenger vehicle



- 7 passenger vehicle



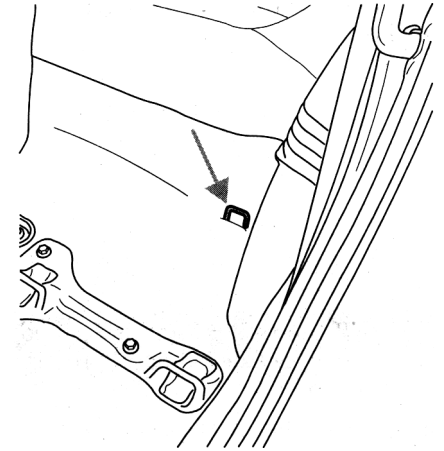
! Attach the tether strap only to the appropriate tether anchor as shown. The tether strap may not work properly if attached somewhere other than the correct tether anchor.

1. Position the child safety seat on the rear seat cushion.
2. Route the tether strap under the head restraint and between the head restraint posts.
3. Locate the correct anchor for the selected rear seating position.

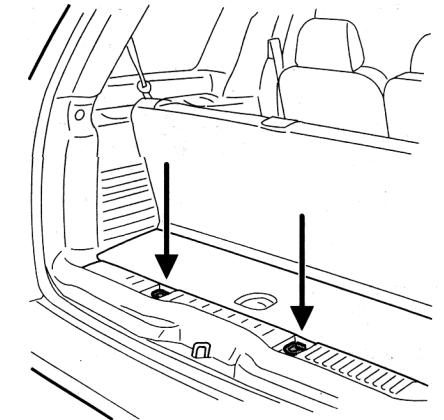
When placing a child safety seat in the 2nd row center seating position of the 5 passenger vehicle, the tether straps may be attached to either of the tether anchors located at the rear of the cargo area.

Seating and safety restraints

- Behind 2nd row seat

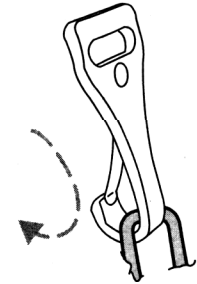


- At the rear of the cargo area



Seating and safety restraints

4. Clip the tether strap to the anchor.



If the tether strap is clipped incorrectly, the child safety seat may not be retained properly in the event of a collision.

5. Refer to the *Installing child safety seats in combination lap and shoulder belt seating positions* section of this chapter for further instructions to secure the child safety seat.
6. Tighten the child safety seat tether strap according to the manufacturer's instructions.



If the safety seat is not anchored properly, the risk of a child being injured in a collision greatly increases.