

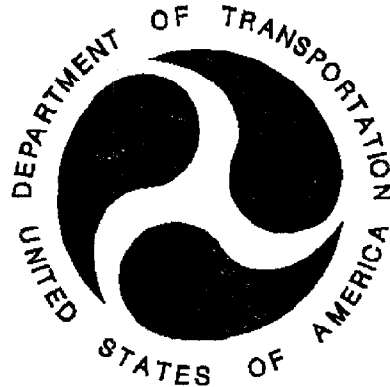
REPORT NO. KAR-98-6

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NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
NEW CAR ASSESSMENT PROGRAM
FRONTAL BARRIER IMPACT TEST

GENERAL MOTORS CORPORATION
1998 ISUZU RODEO SPORT UTILITY VEHICLE
4-DOOR
NHTSA NO. MW5701

PREPARED BY:
KARCO ENGINEERING
9270 HOLLY ROAD
ADELANTO, CALIFORNIA 92301



JANUARY 26, 1998
FINAL REPORT

PREPARED FOR:
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Date of Acceptance

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16. <i>Abstract</i> A 35 mph (56.3 km/h) frontal barrier impact test was conducted on a 1998 Isuzu Rodeo Sport Utility 4-Door at KARCO Engineering on January 15, 1998. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301 and footwell intrusion performance. The impact velocity was 56.60 km/h. The ambient temperature at the barrier face at the time of impact was 17.7°C. The vehicle's maximum post-test static crush was 436 mm, located to the right of the vehicle centerline. The test vehicle was equipped with a 3-point continuous belt system and second generation supplemental airbags at both frontal outboard-seating positions. With respect to FMVSS 208 "Occupant Crash Protection – Injury Criteria" the occupant injury response data summary is as follows: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Injury Criteria</u></th> <th style="text-align: left;"><u>Threshold Value</u></th> <th style="text-align: left;"><u>Driver Dummy</u></th> <th style="text-align: left;"><u>Passenger Dummy</u></th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC)</td> <td>1000</td> <td>676.3</td> <td>631.2</td> </tr> <tr> <td>Chest Resultant Peak 3 msec clip</td> <td>60 G's</td> <td>60.4</td> <td>54.2</td> </tr> <tr> <td>Left Femur Force</td> <td>10009 N</td> <td>-5231.9</td> <td>-7004.0</td> </tr> <tr> <td>Right Femur Force</td> <td>10009 N</td> <td>-4559.7</td> <td>-3586.5</td> </tr> </tbody> </table>				<u>Injury Criteria</u>	<u>Threshold Value</u>	<u>Driver Dummy</u>	<u>Passenger Dummy</u>	Head Injury Criteria (HIC)	1000	676.3	631.2	Chest Resultant Peak 3 msec clip	60 G's	60.4	54.2	Left Femur Force	10009 N	-5231.9	-7004.0	Right Femur Force	10009 N	-4559.7	-3586.5
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SECTION 1

PURPOSE, TEST PROCEDURE AND SUMMARY OF TEST MW5701

1.1 PURPOSE

This 35 mph (56.3 km/h) frontal barrier impact test is part of the FY' 98 New Car Assessment Program (NCAP) frontal barrier crash worthiness evaluation program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract Number DTNH22-97-D-02007. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for frontal barrier impacts at a speed in excess of the current 30 mph (48 km/h) FMVSS 208/212/219/301 requirements.

1.2 TEST PROCEDURE

This 56.3 km/h 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 01 October 1996 and 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 at KARCO Engineering on January 15, 1998, at a speed of 56.60 km/h. The test vehicle was instrumented with nine (9) accelerometers to measure longitudinal axis accelerations. The driver and passenger's restraint systems were instrumented with four (4) seat belt load cells to measure lap and shoulder belt tension. The specified impact velocity range was 55.5 to 57.1 km/h. The frontal barrier impact event was documented by one (1) real-time panning motion picture camera and seventeen (17) high-speed motion picture cameras. 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 were instrumented with head and chest primary and redundant tri-axial accelerometers, pelvic tri-axial accelerometers, left/right femur load cells, left/right lower leg sensors and left/right foot accelerometers. In addition, chest displacement and neck six-axis load and moment sensors were utilized. Seat belt load cells were also placed on the driver and passenger shoulder and lap belts to measure torso and pelvic section loading. The ATDs were positioned in the front outboard seating positions according to the dummy placement procedures specified in the Laboratory Indicant Test Procedure. Ninety-six 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. 35) and the right-front passenger ATD (serial No. 34) were used in two previous frontal impact tests since their last calibration. Injury criteria were not exceeded by either ATD during this NCAP frontal impact test.

1.3 SUMMARY OF FRONTAL BARRIER IMPACT TEST

An immovable barrier was impacted by a 1998 Isuzu Rodeo Sport Utility 4-Door at a velocity of 56.60 km/h. The test weight, with two (2) 50th percentile male ATDs, was 2083 kg.

The driver's Head Injury Criteria (HIC) was 676.3, the maximum chest deceleration over three (3) milliseconds was 60.4 g and the left and right femur loads were -5231.9 and -4559.7 Newtons, respectively. Chest deflection for the driver ATD was -35.5 mm. The driver ATD head contacted the airbag and headrest, its chest and abdomen contacted the airbag, and both knees contacted the lower dash knee bolster, with the right knee contacting the steering column.

The right front passenger's HIC was 631.2, maximum chest deceleration over three (3) milliseconds was 54.2 g and the left and right femur loads were -7004.0 and -3586.5 Newtons respectively. Chest deflection for the passenger ATD was -36.3 mm. The passenger ATD head contacted the airbag and headrest, the chest and abdomen contacted the airbag and both knees contacted the knee bolster.

Seat belt spoolout, measured by on-board pullout potentiometers was 92.4 mm for the driver ATD and 123.2 mm for the passenger ATD. Shoulder belt stretch was 0.51 mm/cm for the driver ATD and 0.50 mm/cm for the passenger ATD.

There was 100 percent windshield retention (minimum 50 percent required for passive restraint systems), no intrusion into the protected or unprotected zone of the windshield, and no Stoddard solvent leakage occurred after impact or during any phase of the rollover.

The test vehicle sustained a maximum static crush of 466 mm to the right of the vehicle centerline. All doors on both the driver side and the passenger side required the aid of tools to open.

1.4 GENERAL COMMENTS

The 1998 Isuzu Rodeo passed the requirements of 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, vehicle and response data traces. Appendix C contains Load Cell Barrier information, which is not applicable to this test. 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 restraint systems.

SECTION 2.

OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

TEST MODE: 56.3 km/h New Car Assessment Program (NCAP) Frontal Barrier Impact

CONVERSION FACTORS USED IN THIS REPORT:

2.2 pounds (lb.)	=	1 kilogram (kg)
1 mile (mi.)	=	1.609 kilometer (km)
1 gallon (gal.)	=	3.785 liters (L)
1 pound/square inch (psi)	=	7000 Pascal (7 kPa)

DATA SHEET NO. 1

CRASH TEST SUMMARY

TEST VEHICLE: 1998 ISUZU RODEO SPORT UTILITY 4-DOOR

NHTSA NO. MW5701

TEST MODE: 56.3 km/h NCAP Frontal Barrier Impact

TEST DATE: January 15, 1998

TIME: 1:08 PM

TEMPERATURE: 17.7° C

TEST WEIGHT: 2083 kg

IMPACT VELOCITY: 56.60 km/h

VEHICLE REBOUND AT CENTER OF EACH WHEEL; REBOUND ANGLE = 0°

Measurements in mm	Left Side	Centerline	Right Side
Vehicle Rebound	1150	1030	1102

VEHICLE STATIC CRUSH

Measurements in mm	Left	Center	Right
Pre-test Measurements	4345	4475	4345
Post-test Measurements	3915	4016	3909
Static Crush	-430	-459	-436

DOOR OPENING AND SEAT TRACK INFORMATION

	Driver	Passenger
Door Opening (Front)	OPENED	OPENED
Door Opening (Rear)	OPENED	OPENED
Seat Track Shift (mm of shift)	NONE	NONE
Seat Back Failure	NONE	NONE

DUMMY INFORMATION

	Driver	Passenger
Dummy Type/No.	50% Male Hybrid III (S/N 35)	50% Male Hybrid III (S/N 34)
Data Channels	44	44
Visible Contact Points		
Head	AIR BAG, HEADREST	AIR BAG, HEADREST
Chest	AIR BAG	AIR BAG
Abdomen	AIR BAG	AIR BAG
Left Knee	KNEE BOLSTER	KNEE BOLSTER
Right Knee	STEERING COLUMN/KNEE BOLSTER	KNEE BOLSTER

DATA SHEET NO. 2

GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE: 1998 ISUZU RODEO SPORT UTILITY 4-DOOR

TEST VEHICLE INFORMATION			
Manufacturer	ISUZU MOTORS LTD.	VIN	4S2CM58W8W4316355
Manufacturing Date	10/97	Delivery Date	1/9/98
Dealer	ONTARIO ISUZU	NHTSA NO.	MW5701
Odometer Reading	000069 MI.	Fuel Type	UNLEADED
Engine Displacement	3.2 LITER	Cylinders	6
Transmission	AUTOMATIC	Final Drive	REAR/FRONT (4WD)
Engine Placement	LONGITUDINAL	Color	SPRUCE GREEN
Tire Press./Max. Cap. Front	203 kPa	Cold Tire Press. Front	203 kPa
Tire Press./Max. Cap. Rear	203 kPa	Cold Tire Press. Rear	203 kPa
Recommend Tire Size	P235/75R15	Type of Spare	FULL SIZE P235/75R15
Tire Size on Vehicle	P235/75R15	Manufacturer	GOODYEAR
GVWR	2200kg	Cargo Capacity	136kg
GAWR Front	1087kg	GAWR Rear	1225kg
Air Conditioning	YES	Power Steering	YES
Power Brakes	YES	AM/FM/Cassette	YES
Disc Brakes (Front)	YES	Disc Brakes (Rear)	YES
Power Windows	YES	Tilt Steering	YES
Anti-lock Brakes (ABS)	YES	Power Seats	NO
Driver Airbag	YES	Passenger Airbag	YES

VEHICLE CAPACITY DATA:

TYPE OF FRONT SEATS Bucket Seats

TOTAL NUMBER OF OCCUPANTS 5 OCCUPANTS x 68 kg. 340 kg

WEIGHT OF VEHICLE AS RECEIVED AT KARCO (with maximum fluids): 1800 kg

Data Sheet No. 2... (Continued)

VEHICLE CAPACITY WEIGHT (kg):

Vehicle Capacity Weight 476 kg
 Occupant Weight 340 kg
 Rated Cargo/Luggage Weight (RCLW) 136 kg

	FRONT	REAR	TOTAL
Right	470	409	879
Left	501	420	921
Total	971	828	1800
Percent of Total	53.9	46.1	100%

CALCULATION OF TEST

TARGET WEIGHT (kg):

Total Delivered Weight 1800 kg
 RCLW 136 kg
 Weight of 2 P572 ATDs 152 kg
 TARGET TEST WEIGHT 2088 kg

TEST WEIGHT OF VEHICLE WITH 2 ATDs AND BALLAST

	FRONT	REAR	TOTAL
Right	517	538	1055
Left	476	551	1027
Total	993	1089	2082
Percent of Total	47.7	52.3	100%

Weight of Ballast secured in cargo area: 113 kg

Includes cameras, instrumentation, brake abort and bags containing lead shot secured in the right and left rear fender wells.

Vehicle Components Removed For Weight Reduction:

Side mirrors, jack, tools, spare tire and paneling.

TEST VEHICLE ATTITUDE (mm)

ATTITUDE	LF	RF	LR	RR
As Delivered	830	830	848	850
As Tested	800	800	800	795

Vehicle Wheelbase: 2705 mm

FUEL SYSTEM DATA:

Fuel System Capacity From Owner's Manual = 79.8 liters

Usable Capacity Figure Furnished by COTR = 79.8 liters

Test Volume Range (92 to 94% of Usable Capacity) = 73.4 to 75.0 liters

ACTUAL TEST VOLUME = 74.9 liters (With entire fuel system filled)

Test Fluid Type = Stoddard Solvent

Specific Gravity = 0.764

Kinematic Viscosity = as per ASTM Standard D484-71

Color = Red

Type of Fuel Pump = Electric X Mechanical

Does electric pump operate with ignition switch "ON" & engine "OFF"? Yes X No

DETAILS OF FUEL SYSTEM: Key activated with automatic shut off after a few seconds.

DATA SHEET NO. 3**POST IMPACT DATA**TEST VEHICLE: 1998 ISUZU RODEO SPORT UTILITY 4-DOORNHTSA NO. MW5701TEST MODE: 56.3 km/h New Car Assessment Program (NCAP) Frontal Barrier ImpactTEST DATE: January 15, 1998TIME: 1:08 PMTEMPERATURE: 17.7 ° CREQUIRED IMPACT VELOCITY RANGE: 55.51 km/h to 57.11 km/h

BARRIER IMPACT VELOCITY: (speed traps within 5 feet of impact plane)

Trap No. 1 = 56.60 km/hTrap No. 2 = 56.61 km/h

Distance from vehicle to barrier - -

A. entering trap = 1524 mmB. leaving trap = 305 mm

VEHICLE STATIC CRUSH: (for Frontal and Rear Impacts Only)

Vehicle Length	Left	Center	Right
Pre-test Measurements (mm)	4345	4475	4345
Post-test Measurements (mm)	3915	4016	3909
Static Crush (mm)	-430	-459	-436
Average	-442		

VEHICLE REBOUND: (from rigid barrier with rotational movement)

VEHICLE REBOUND AT CENTER OF EACH WHEEL: REBOUND ANGLE = 0°

Measurements in mm	Left Side	Centerline	Right Side
Vehicle Rebound	1150	1030	1102

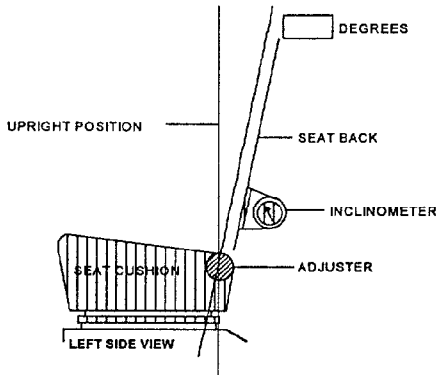
DATA SHEET NO. 4

TEST VEHICLE INFORMATION

TEST VEHICLE: 1998 ISUZU RODEO SPORT UTILITY 4-DOOR

NHTSA NO. MW5701

1. NOMINAL DESIGN RIDING POSITION -



FRONT SEAT ASSEMBLY

For adjustable driver and passenger seat backs. Please describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent if applicable. Indicate, if applicable, how the detents are numbered (Is the first detent "0" or "1"?).

Measurement Instructions: A special application tool with pointed probes was inserted through the fabric to make contact with the rigid portion of the lower seat frame assembly approximately 13 inches above the pivot point of the seat back. The inclinometer was placed against the flat surface of the tool and the seat back angle was measured directly from the dial face. For reference purposes the first detent from the front of the seat was identified as number "1".

Seat back angle for driver's seat = 8°

Measurement Instructions: A special application tool with pointed probes was inserted through the fabric to make contact with the rigid portion of the lower seat frame assembly approximately 13 inches above the pivot point of the seat back. The inclinometer was placed against the flat surface of the tool and the seat back angle was measured directly from the dial face. For reference purposes the first detent from the front of the seat was identified as number "1".

Seat back angle for passenger's seat = 8°

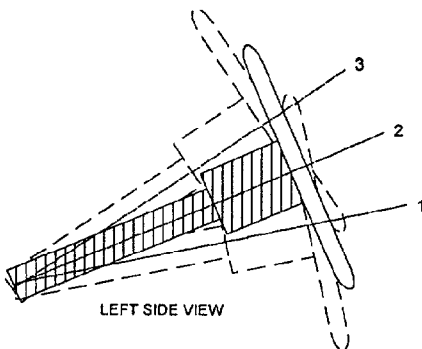
2. SEAT FORE & AFT POSITIONS -

Provide instructions for positioning the driver and front outboard passenger seat(s) in the center of fore and aft travel. For example, provide information to locate the detent in which the seat track is to be locked.

Positioning of the driver's seat: 21 seating positions, set to 11th position, midpoint.

Positioning of the passenger's seat (if applicable): 21 seating positions, set to the 11th position, midpoint

3. STEERING COLUMN ADJUSTMENTS:



STEERING COLUMN ASSEMBLY

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when it is moved through its full range of driving positions. If the tested vehicle has any of these adjustments, does your company use any specific procedures to determine the geometric center.

Operational Instructions:

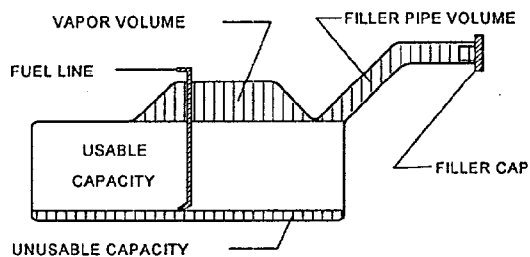
Position No. 1 is at 19°
Position No. 2 is at 26°
Position No. 3 is at 33°

4. SEAT BELT UPPER ANCHORAGE:

Set to mid-position

DATA SHEET NO. 4 (continued)

5. FUEL TANK CAPACITY DATA



5.1 A. "Usable Capacity" of standard equipment fuel tank = 79.8 liters.

B. "Usable Capacity" of optional equipment fuel tank = N/A liters.

C. "Usable Capacity" of vehicle(s) used for certification testing to requirements of FMVSS 301 = 73.4 to 75.0 liters.

VEHICLE FUEL TANK ASSEMBLY

Operational Instructions:

5.2 Amount of Stoddard solvent added to vehicle(s) used for certification test(s) = 74.9 liters

5.3 Is vehicle equipped with electric fuel pump?

Yes X No

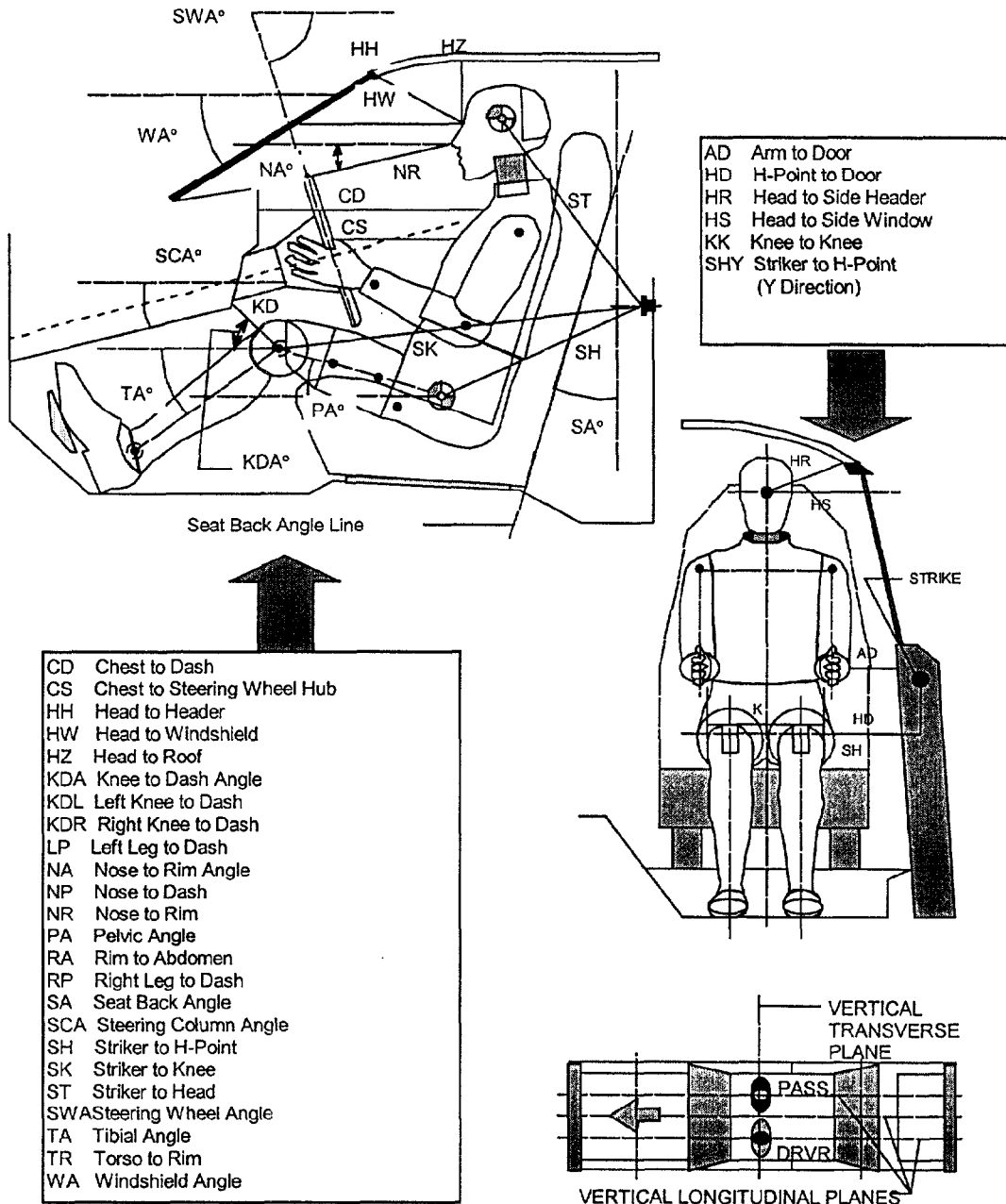
If YES, explain the vehicle operating conditions under which the fuel pump will pump fuel.

Key activated with automatic shut off after a few seconds.

DATA SHEET NO. 5

DUMMY POSITIONING IN VEHICLE

DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS



DATA SHEET NO. 5...(continued)

DUMMY POSITIONING IN VEHICLE

TEST VEHICLE: 1998 ISUZU RODEO SPORT UTILITY 4-DOOR

NHTSA NO. MW5701

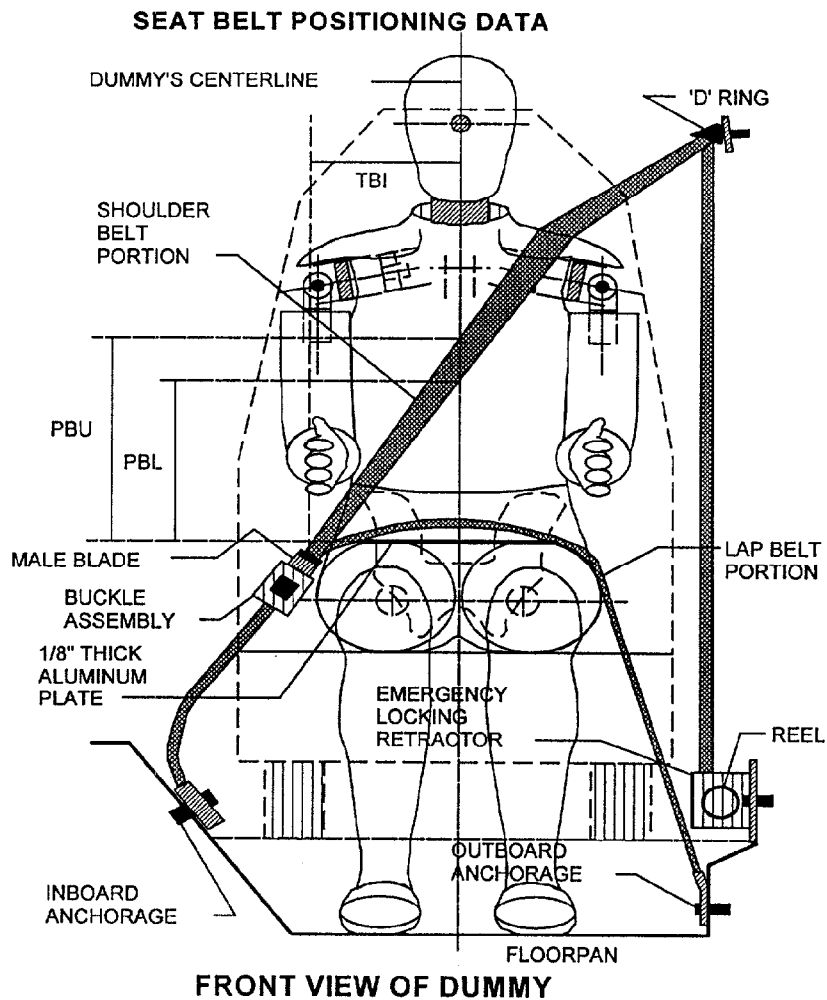
FRONT SEAT MEASUREMENT TABLE

	DRIVER (Serial No. <u>35</u>)		PASS. (Serial No. <u>34</u>)	
	DISTANCE (mm)	ANGLE (°)	DISTANCE (mm)	ANGLE (°)
WA°		36		
SWA°		64		
SCA°		24		
SA°		8		8
HZ	210	90	200	90
HH	352	0	380	0
HW	580	0	580	0
HR	250		260	
NR	390	10		
CD	540		575	
CS	320	0		
RA	185	0		
KDL	175	30	172	
KDR	165		168	28
PA°		23.3		24.7
TA°		42		37
KK	285		268	
ST	585	18	595	14
SH	270	14	300	15
SHY	245		210	
HS	305		285	
HD	175		160	
AD	90		32	

DATA SHEET NO. 6

SEAT BELT POSITIONING DATA

SEATING POSITION	DRIVER	PASSENGER
TCI -- Dummy centerline to shoulder bolt	220	220
PBU--Top surface of aluminum plate to belt upper edge	330	310
PBL--Top surface of aluminum plate to belt lower edge	250	230
Lap Belt tension	10 Newtons	10 Newtons
Shoulder Belt tension	Retractor	Retractor



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

VEHICLE YR/MAKE/MODEL/BODY: 1998 ISUZU RODEO SUV

NHTSA No.: MW5701

TEST PROGRAM: 1998 NHTSA 35 MPH NCAP

TEST DATE: 1/15/98

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.)	1740	-647	453	G's	4.8	132.1	-46.6	46.2
2	Right Rear X-Member (Pri.)	1715	651	450	G's	5.6	131.1	-44.7	46.4
3	Engine Top	3748	-25	1061	G's	50.2	43.9	-130.0	32.6
4	Engine Bottom	3448	30	220	G's	57.1	42.9	-107.5	32.1
5	Left Brake Caliper	3631	-655	276	G's	34.1	36.0	-146.5	12.2
6	Right Brake Caliper	3631	655	276	G's	28.2	49.2	-136.9	11.7
7	Instrument Panel	2964	0	1224	G's	19.1	52.3	-97.3	42.8
8	Left Rear X-Member (Rednt.)	1811	-548	453	G's	4.9	131.2	-46.9	36.1

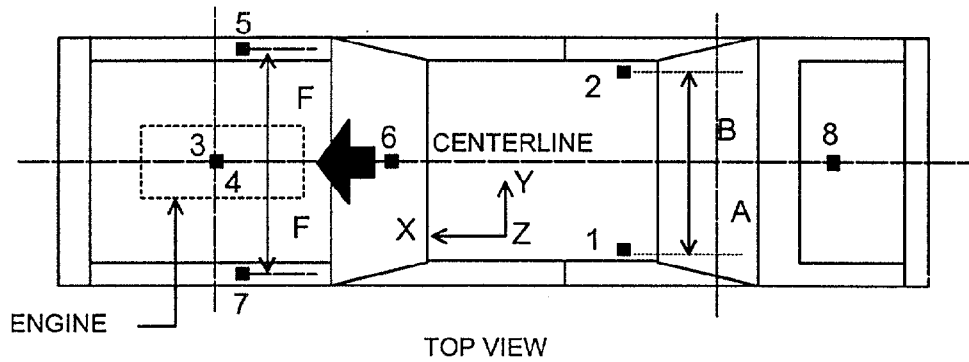
Reference Points

X - From Rear Surface of Vehicle

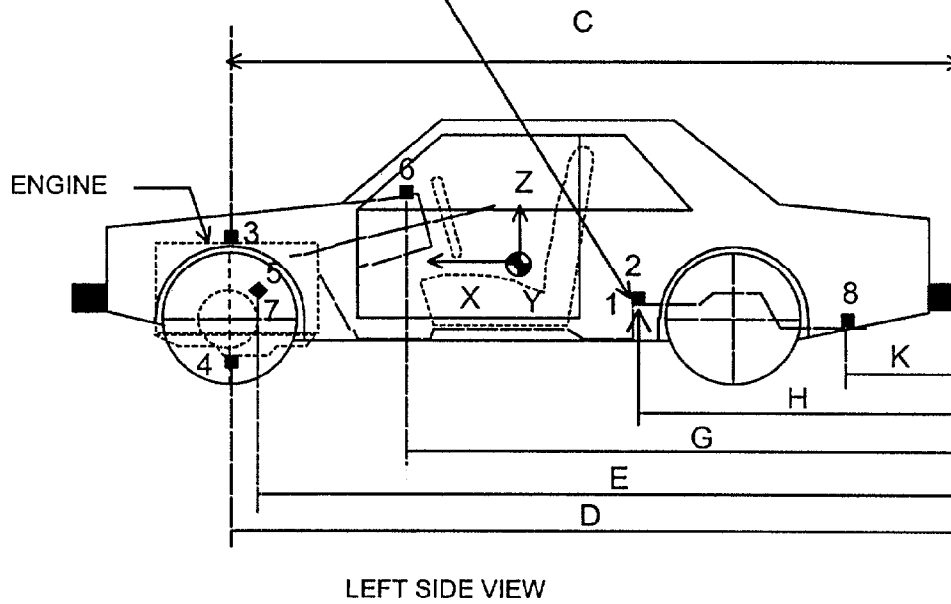
Y - Vehicle Centerline

Z - Ground Plane

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



REAR SEAT CUSHION
ASSY. FRONT ATTACHMENT
BRACKET SUPPORT



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

VEHICLE YR/MAKE/MODEL/BODY: 1998 ISUZU RODEO SUV

NHTSA No.: MW5701

TEST PROGRAM: 1998 NHTSA 35 MPH NCAP

TEST DATE: 1/15/98

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	18.9	202.5	-57.8	65.7	62.0	222.1	-60.9	76.9
Head CG	Y	G's	16.6	78.9	-2.8	50.0	13.5	87.1	-17.8	220.5
Head CG	Z	G's	39.1	49.4	-10.9	88.8	29.3	61.7	-8.2	238.7
Head CG Resultant	N/A	G's	59.1	65.8			67.9	222.3		

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	3.9	158.1	-64.9	73.2	5.3	235.0	-55.0	61.7
Chest CG	Y	G's	3.7	86.1	-9.1	52.1	4.0	61.8	-6.8	79.9
Chest CG	Z	G's	12.9	90.5	-23.8	47.6	8.1	95.0	-16.2	51.2
Chest CG Resultant	N/A	G's	65.2	73.2			55.6	61.7		

FEMUR PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Femur	Z	Newtons	471.0	41.4	-5231.9	44.1	819.7	42.0	-7004.0	50.2
Right Femur	Z	Newtons	1446.8	38.5	-4559.7	42.9	386.7	38.7	-3586.5	55.1

SEAT BELT PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Lap Belt	N/A	Newtons	1477.5	34.5	-19.0	3.0	1477.5	34.5	-19.0	3.0
Shoulder Belt	N/A	Newtons	1477.5	34.5	-19.0	3.0	1477.5	34.5	-19.0	3.0

HEAD INJURY CRITERIA (HIC)

Location	Driver				Passenger			
	HIC	Avg G's	T ¹	T ²	HIC	Avg G's	T ¹	T ²
Head CG Primary	676.3	40.5	58.2	94.1	631.2	45.6	47.8	83.7

CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Primary	60.4	72.1	75.1	54.2	60.5	63.5

DATA SHEET NO. 8...(continued)

VEHICLE YR/MAKE/MODEL/BODY: 1998 ISUZU RODEO SUV

NHTSA No.: MW5701

TEST PROGRAM: 1998 NHTSA 35 MPH NCAP

TEST DATE: 1/15/98

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	5.6	119.2	-107.3	45.2	5.7	102.6	-89.0	49.2
Pelvis	Y	G's	10.9	81.2	-16.1	42.6	8.5	40.6	-13.7	79.9
Pelvis	Z	G's	4.2	39.1	-20.0	71.2	5.7	226.2	-30.2	59.4

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	516.4	129.3	-609.3	65.0	590.4	116.8	-315.1	63.4
Neck Force	Y	Newtons	170.9	48.1	-350.0	81.8	325.9	226.8	-410.2	129.4
Neck Force	Z	Newtons	2536.3	55.1	-964.2	256.7	1597.8	71.6	-1425.3	225.9
Neck Moment	X	Joules	21.7	105.6	-10.5	79.3	30.7	58.5	-9.5	242.3
Neck Moment	Y	Joules	44.7	126.4	-34.7	252.4	40.2	130.6	-67.2	236.1
Neck Moment	Z	Joules	15.1	99.3	-8.5	141.5	14.6	241.7	-8.2	124.7

FOOT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Foot Aft	X	G's	0.0	0.0	0.0	0.0	339.2	40.7	-64.8	50.1
Left Foot Aft	Z	G's	43.1	50.6	-94.0	38.1	39.0	57.7	-109.7	45.0
Left Foot Fore	Z	G's	20.9	285.7	-134.0	38.1	81.5	54.0	-217.2	41.4
Right Foot Aft	X	G's	204.6	38.0	-122.2	50.5	98.7	43.2	-30.2	60.0
Right Foot Aft	Z	G's	29.3	50.2	-221.1	37.3	8.4	61.4	-84.2	42.8
Right Foot Fore	Z	G's	130.8	44.6	-318.9	36.3	18.3	60.0	-119.0	41.9

UPPER AND LOWER TIBIA PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Lower Force	X	Newtons	111.8	43.6	-720.8	50.8	990.7	66.4	-1873.1	41.1
Left Lower Force	Z	Newtons	224.0	231.3	-1023.7	38.2	1223.1	44.6	-3407.0	40.3
Left Lower Moment	Y	Joules	26.5	42.3	-30.5	72.0	172.4	41.2	-168.6	61.2
Left Upper Moment	X	Joules	43.9	64.4	-57.2	38.1	45.1	54.5	-79.7	42.1
Left Upper Moment	Y	Joules	92.0	54.7	-91.6	43.2	222.1	41.0	-142.2	66.2
Right Lower Force	X	Newtons	64.0	142.8	-1581.0	38.1	776.4	48.8	-633.9	36.3
Right Lower Force	Z	Newtons	189.0	231.2	-3054.1	43.7	119.7	138.8	-1072.1	79.9
Right Lower Moment	Y	Joules	190.1	38.0	-308.7	54.0	50.3	36.6	-66.0	66.3
Right Upper Moment	X	Joules	54.9	54.3	-28.0	38.3	85.7	55.4	-21.4	156.9
Right Upper Moment	Y	Joules	54.1	37.9	-14.9	51.3	75.1	36.2	-67.1	48.7

DATA SHEET NO. 8...(continued)

VEHICLE YR/MAKE/MODEL/BODY: 1998 ISUZU RODEO SUV

NHTSA No.: MW5701

TEST PROGRAM: 1998 NHTSA 35 MPH NCAP

TEST DATE: 1/15/98

CHEST PEAK DISPLACEMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	MM	0.2	18.4	-35.5	56.0	0.3	20.7	-36.3	72.0

HEAD REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	21.1	202.0	-58.7	65.8	63.3	222.0	-61.3	76.1
Head CG	Y	G's	14.7	77.4	-3.1	168.9	7.7	51.6	-5.0	233.0
Head CG	Z	G's	37.1	49.5	-14.9	80.5	31.2	52.6	-5.4	239.4
Head CG Resultant	N/A	G's	60.0	65.8			69.6	222.3		

CHEST REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	4.7	158.0	-69.0	73.1	5.3	235.0	-56.4	61.6
Chest CG	Y	G's	4.2	90.8	-8.2	52.0	4.7	60.4	-5.5	105.0
Chest CG	Z	G's	12.7	90.4	-20.5	51.2	6.5	95.3	-15.7	42.9
Chest CG Resultant	N/A	G's	69.5	73.2			56.9	61.6		

REDUNDANT HEAD INJURY CRITERIA (HIC)

Location	Driver				Passenger			
	HIC	Avg G's	T ¹	T ²	HIC	Avg G's	T ¹	T ²
Head CG Redundant	673.8	40.3	60.0	95.9	612.1	45.3	47.8	83.5

REDUNDANT CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Redundant	64.3	72.1	75.1	54.7	60.3	63.3

DATA SHEET NO. 9

SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

TEST VEHICLE: 1998 ISUZU RODEO SPORT UTILITY 4-DOOR NHTSA NO. MW5701

BELT LENGTH DATA (mm)	DRIVER	PASSENGER
Total belt length for continuous webbing systems.	3010	3010
Retractor reel to 'D' ring	690	690
Shoulder belt length as measured on Part 572 Dummy	890	900
Lap belt length as measured on Part 572 Dummy	880	870
Remainder of belt on reel	550	550

SHOULDER BELT SPOOL-OFF DATA (mm)	DRIVER	PASSENGER
As determined mechanically	80	100
As determined electronically	92.4	123.2

BELT STRETCH DATA (mm/cm)	DRIVER	PASSENGER
Measured electronically between shoulder belt load cell and the "D" ring	0.51	0.50
Measured mechanically	5	10

DATA SHEET NO. 10

SUMMARY OF FMVSS 212 DATA

TEST VEHICLE: 1998 ISUZU RODEO SPORT UTILITY 4-DOOR

NHTSA NO. MW5701

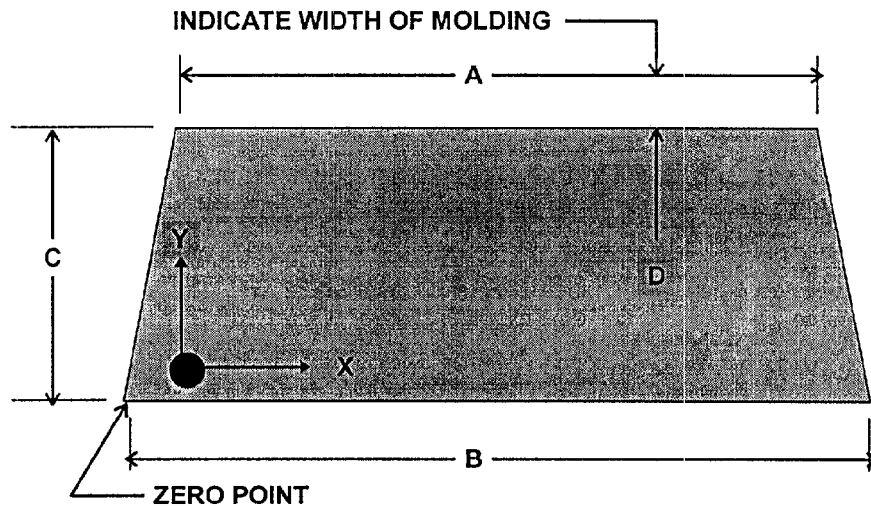
Details of windshield mounting (method of retention, type of trim, etc.):

Windshield glass is secured to the vehicle frame with a rubber type adhesive, with rubber molding along the top and sides with rubber and plastic molding along the bottom.

The standard requires that the post test 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 which are equipped with occupant passive restraints.

WINDSHIELD PERIPHERY MEASUREMENTS (mm)			
	PRETEST	POST TEST	PERCENT RETENTION
Right Side	2055	2055	100%
Left Side	2055	2055	100%
Total	4110	4110	100%

Indicate area of retention failure.



FRONT VIEW OF WINDSHIELD

Width of molding = Top 10 mm , Sides 10 mm, Bottom 18 mm.

Temperature of windshield molding during test = 21.1 °C

DATA SHEET NO. 11

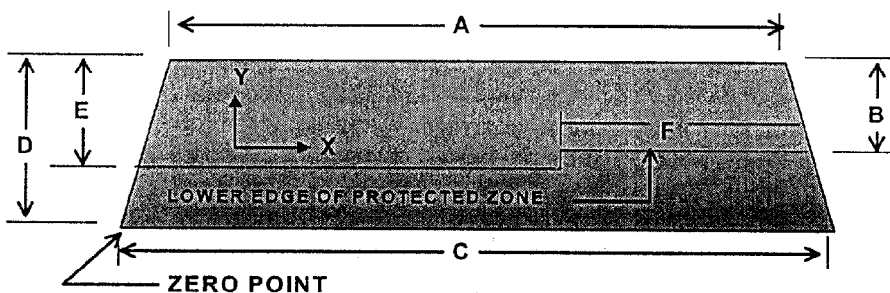
WINDSHIELD ZONE INTRUSION FMVSS 219 (PARTIAL) DATA

TEST VEHICLE: 1998 ISUZU RODEO SPORT UTILITY 4-DOOR

NHTSA NO. MW5701

SKETCH OF FRONT VIEW OF WINDSHIELD:

Provide all dimensions necessary to reproduce the protected area.



	DIMENSION mm
A	1210
B	550
C	1440
D	730
E	270
F	510

FRONT VIEW OF WINDSHIELD

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 which 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 template 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: 1998 ISUZU RODEO SPORT UTILITY 4-DOOR

NHTSA NO. MW5701

TEST MODE: 56.3 km/h New Car Assessment Program (NCAP) Frontal Barrier Impact

TEST DATE: Janury 15, 1998 TIME: 1:08 PM TEMPERATURE 17.7 C

STODDARD SOLVENT SPILLAGE MEASUREMENT:

- A. From impact until vehicle motion ceases - -
Actual = 0.0 oz. (Maximum Allowable = 1 ounce)
- B. For 5 minute period after vehicle motion ceases - -
Actual = 0.0 oz. (Maximum Allowable = 5 ounces)
- C. For next 25 minutes - -
Actual = 0.0 oz. (Maximum Allowable = 1 oz./minute)
- D. Provide Spillage Details: No solvent spillage occurred

DATA SHEET NO. 13

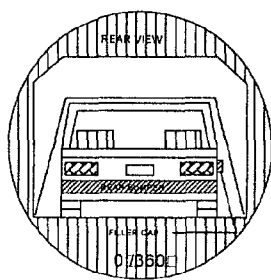
FMVSS 301 STATIC ROLLOVER DATA SHEET

TEST VEHICLE: 1998 ISUZU RODEO SPORT UTILITY 4-DOOR

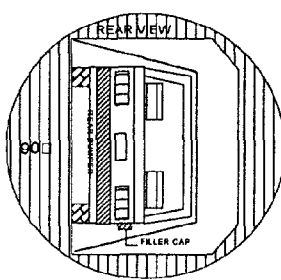
NHTSA NO. MW5701

TEST MODE: 56.3 km/h New Car Assessment Program (NCAP) Frontal Barrier Impact

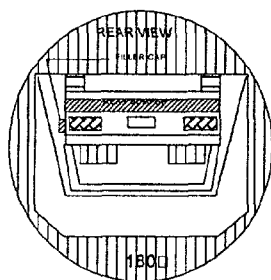
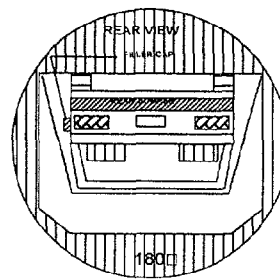
TEST DATE: January 15, 1998 TIME: 1:08 PM TEMPERATURE: 17.7C



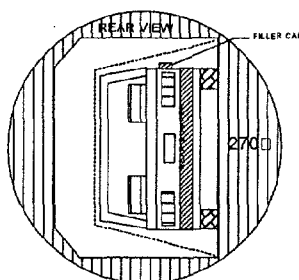
0° TO 90°



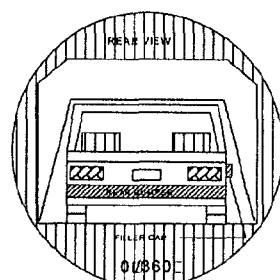
90° TO 180°



180° TO 270°



270° TO 0°



1. The specified fixture rollover rate for each 90° of rotation = 1 to 3 minutes.

2. The position hold time at each position = 5 minutes (minimum)

TEST PHASE	ROTATION TIME (sec.)	POSITION HOLD TIME (sec)	STODDARD SPILLAGE (oz.)
0° TO 90°	81	300	0
90° TO 180°	81	300	0
180° TO 270°	80	300	0
270° TO 360°	80	300	0

3. Provide Details of Stoddard Solvent Spillage Locations--

No solvent leakage occurred during rollover tests.

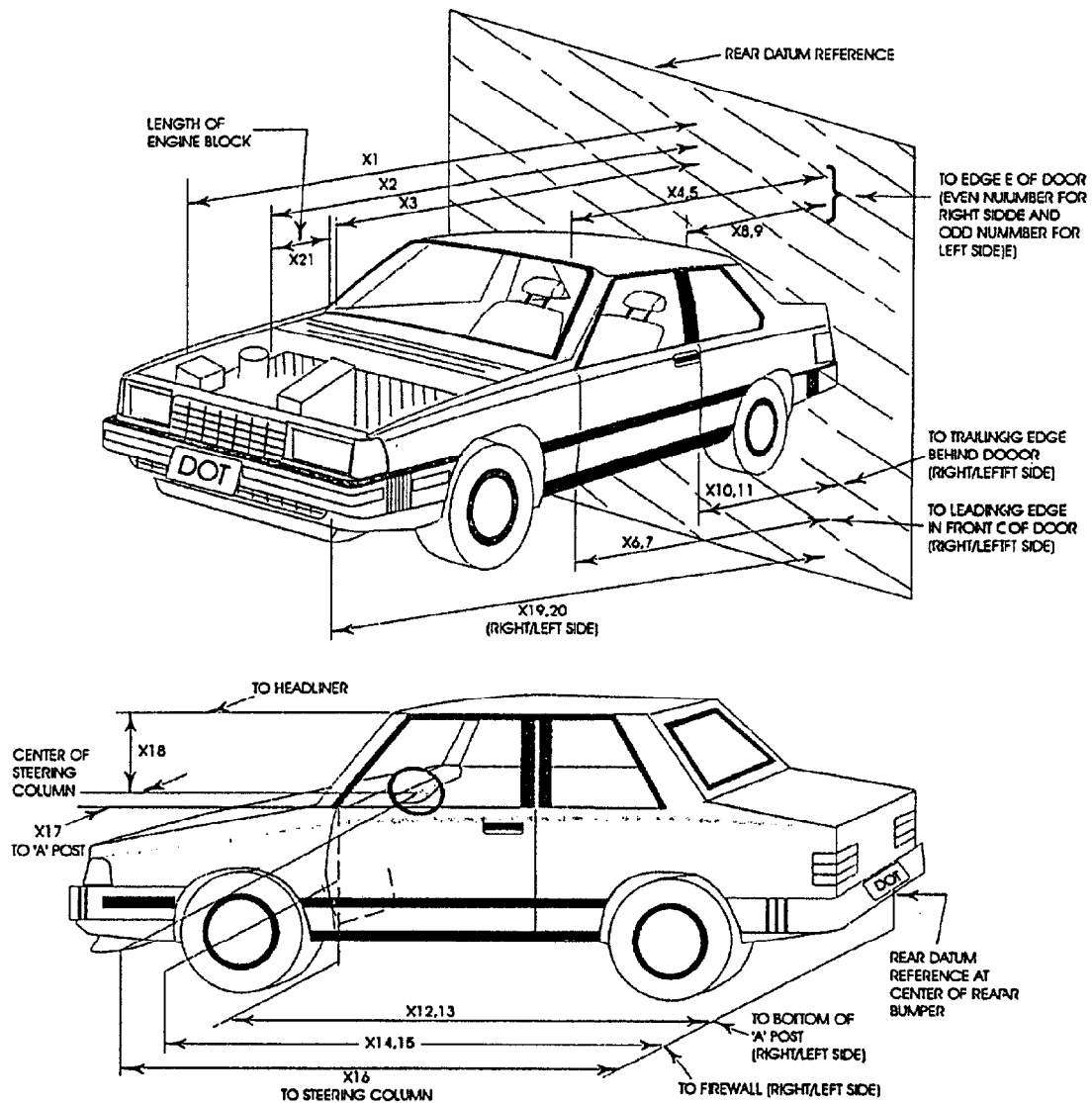
DATA SHEET NO. 14

VEHICLE MEASUREMENTS

TEST VEHICLE: 1998 ISUZU RODEO SPORT UTILITY 4-DOOR

NHTSA NO. MW5701

NO.	MEASUREMENT DESCRIPTION	DIMENSIONS IN MM		
		PRE-TEST	POST-TEST	DIFFERENCE
1	Total length of vehicle at centerline	4475	4016	-459
2	Rear surface of vehicle (RSOV) to front of engine	3959	3769	-190
3	RSOV to firewall centerline	3394	3286	-108
4	RSOV to leading edge of right door	3151	3172	+21
5	RSOV to leading edge of left door	3131	3169	+38
6	RSOV to lower leading edge of right door	3149	3171	+22
7	RSOV to lower leading edge of left door	3145	3143	-2
8	RSOV to upper trailing edge of right door	2052	2068	+16
9	RSOV to upper trailing edge of left door	2044	2052	+8
10	RSOV to lower trailing edge of right door	2053	2048	-5
11	RSOV to lower trailing edge of left door	2042	2047	+5
12	RSOV to bottom of right 'A' pillar	3170	3189	+19
13	RSOV to bottom of left 'A' pillar	3156	3171	+15
14	RSOV to firewall on right side	3457	3414	-43
15	RSOV to firewall of left side	3418	3416	-2
16	RSOV to steering column	2677	2702	+25
17	Center of steering column to left 'A' pillar	376	391	+15
18	Center of steering column to headlining	449	432	-17
19	RSOV to right side of front bumper	4345	3909	-436
20	RSOV to left side of front bumper	4345	3915	-430
21	Length of engine block	400	400	0
22	RSOV to right side of dash panel	2974	3008	+34
23	RSOV to center of dash panel	2890	2900	+10
24	RSOV to left side of dash panel	29118	2940	+22



DATA SHEET NO. 15

CAMERA LOCATIONS

TEST VEHICLE: 1998 ISUZU RODEO SPORT UTILITY 4-DOOR

NHTSA NO. MW5701

CAMERA NO.	VIEW	CAMERA POSITIONS (mm) *			ANGLE (Deg.)	FILM PLANE TO HEAD TARGET (mm)	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Right Side View-Real Time	2083	8331	914	0	1651	Zoom	24
2A	Left Side View No. 1	1321	-8382	864	1	7925	13	300
2B	Left Side View No. 2	1499	-9855	1270	0	9931	25	960
3	Left Side View No. 3	787	-10,084	1372	1	2438	50	980
4	Left Side View No. 4	3023	2794	2032	16	2159	19	1010
5	Left Side View No. 5	1905	-8306	2515	15	8077	25	1030
6	Left Side View No. 6	1880	-8382	1092	9	7849	25	1010
7	Right Side View No. 1	1295	10,160	1168	0	9322	13	1070
8	Right Side View No. 2	889	10,592	1270	1	9957	50	1200
9	Right Side View No. 3	6832	11,633	1321	9	10,363	80	960
10	Right Side View No. 4	2946	10,922	1245	0	10,546	50	1160
11	Overhead Windshield	914	0	5715	0	N/A	13	1200
12	Front View No. 1 Driver	-356	356	2540	42	2845	19	1100
13	Front View No. 2 Passenger	-356	508	2540	41	2845	19	900
14	Pit Camera Engine View	864	0	-1600	0	N/A	13	880
15	Pit Camera Fuel Tank View	4953	0	1499	40	N/A	19	730
16	Driver Side Onboard	3353	305	1499	13	914	13	450
17	Passenger Side Onboard	3353	305	1499	11	914	13	510

* X - film plane to barrier face Y - film plane to monorail centerline Z - film plane to ground

DATA SHEET NO. 16

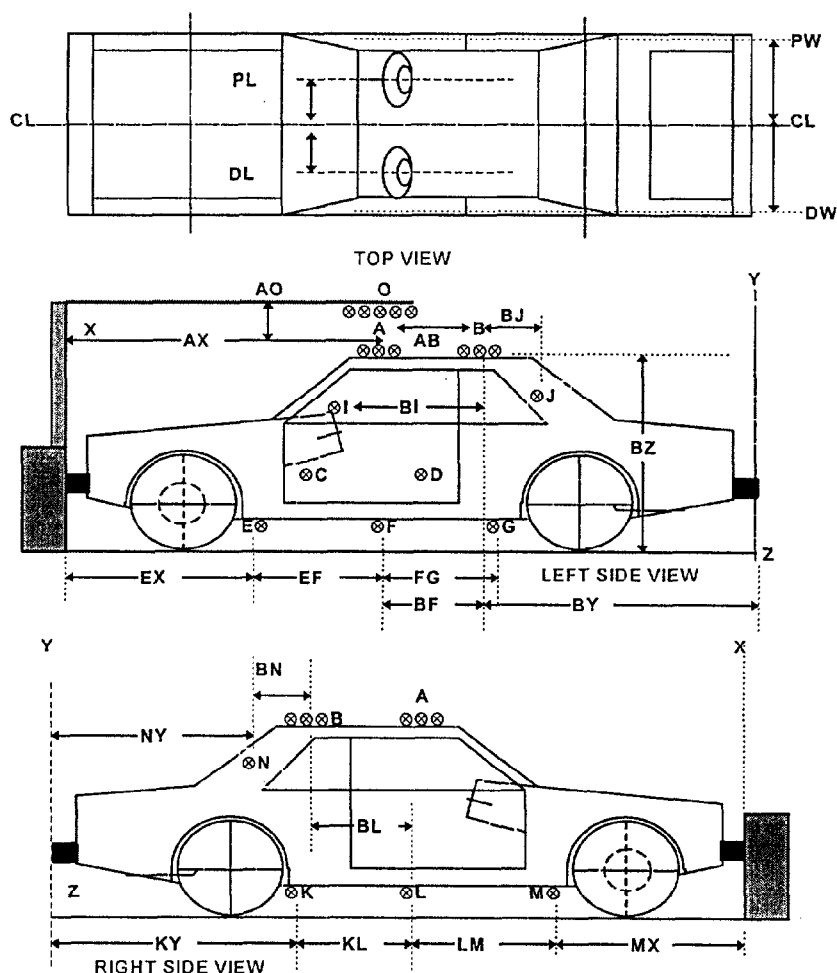
REFERENCE PHOTOGRAPH TARGETS

TEST VEHICLE: 1998 ISUZU RODEO SPORT UTILITY 4-DOOR

NHTSA NO. MW5701

ITEM	DESCRIPTION	VALUE	ITEM	DESCRIPTION	VALUE
AX	TARGET A TO BARRIER	2135	NY	TARGET N TO REAR BUMPER	1170
AB	TARGET A TO TARGET B	610	BN	TARGET B TO TARGET N	500
AO	VERTICAL DISTANCE A TO O	152	KY	TARGET K TO REAR BUMPER	1560
BJ	TARGET B TO TARGET J	500	KL	TARGET K TO TARGET L	810
BI	TARGET B TO STEERING COLUMN	115	BL	TARGET B TO TARGET L	600
BZ	TARGET B TO GROUND LEVEL	1650	LM	TARGET L TO TARGET M	810
EX	TARGET E TO BARRIER	140	MX	TARGET M TO BARRIER	1360
EF	TARGET E TO TARGET F	810	CL/PL	VEHICLE CENTERLINE TO PASSENGER	380
FG	TARGET F TO TARGET G	810	CL/PW	VEHICLE CENTERLINE TO RIGHT SILL	760
BF	TARGET B TO TARGET F	600	CL/DL	VEHICLE CENTERLINE TO DRIVER	380
BY	TARGET B TO REAR BUMPER	1710	CL/DW	VEHICLE CENTERLINE TO LEFT SILL	760

Distances in mm



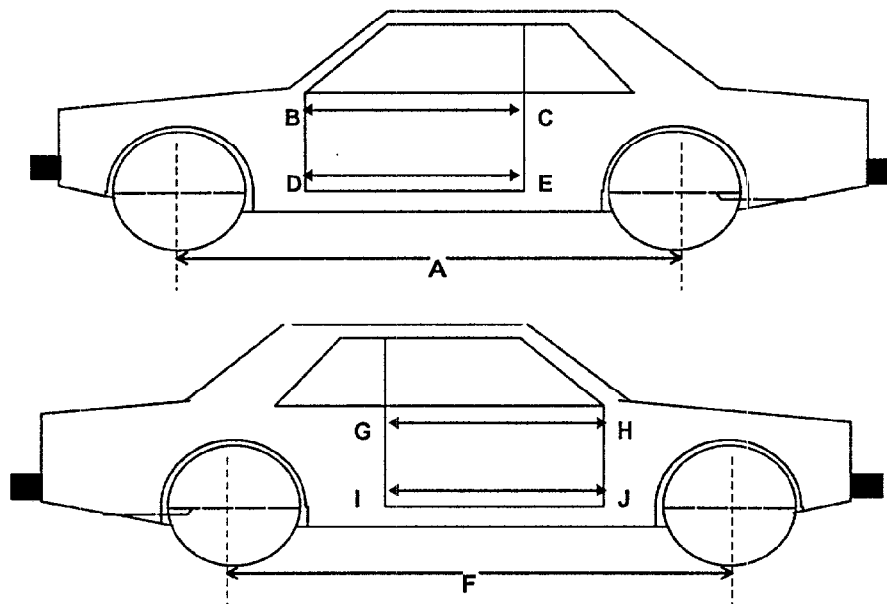
DATA SHEET NO. 17

VEHICLE INTRUSION MEASUREMENTS

TEST VEHICLE: 1998 ISUZU RODEO SPORT UTILITY 4-DOOR

NHTSA NO. MW5701

DOOR OPENING WIDTH



UNITS (mm)	LEFT SIDE		RIGHT SIDE	
MEASUREMENT	BC	DE	GH	IJ
PRE-TEST	1087	1103	1099	1096
POST-TEST	1117	1096	1104	1123
DIFFERENCE	+30	-7	+5	+27

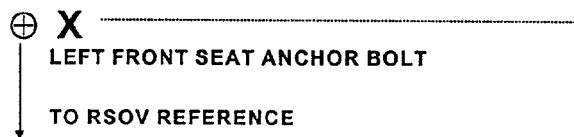
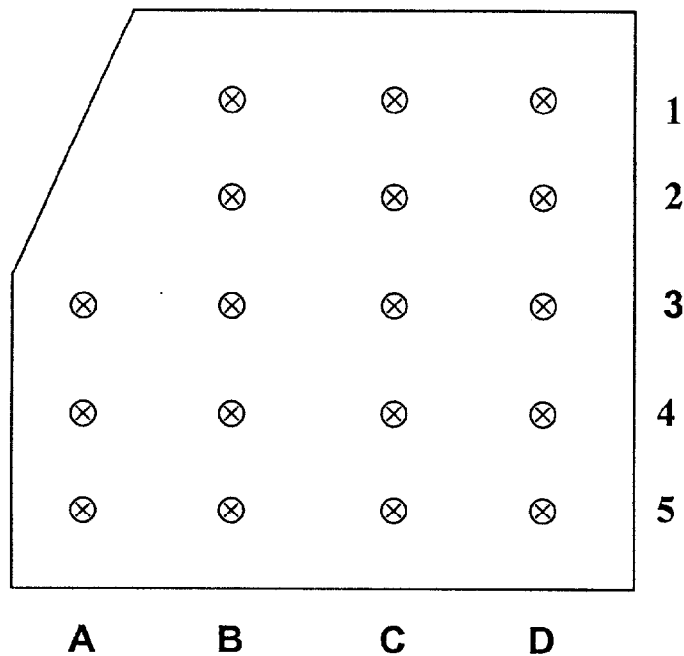
VEHICLE WHEELBASE CHANGE

UNITS (mm)	A = LEFT SIDE WHEELBASE	F = RIGHT SIDE WHEELBASE
PRE-TEST	2705	2705
POST-TEST	2550	2598
DIFFERENCE	-155	-107

Data Sheet No. 17(Continued)

FLOOR PAN INTRUSION (Distances in mm)

TARGET COLUMN	A		B		C		D	
TARGET ROW	PRE-TEST	POST-TEST	PRE-TEST	POST-TEST	PRE-TEST	POST-TEST	PRE-TEST	POST-TEST
1	N/A	N/A	730	670	730	675	730	645
2	N/A	N/A	584	580	584	580	584	585
3	438	440	438	440	438	436	438	436
4	292	290	292	290	292	288	292	288
5	146	140	146	140	146	140	146	140
REF. POINT	RSOV TO ANCHOR BOLT (PRE-TEST)		2616		RSOV TO ANCHOR BOLT (POST-TEST)		2609	

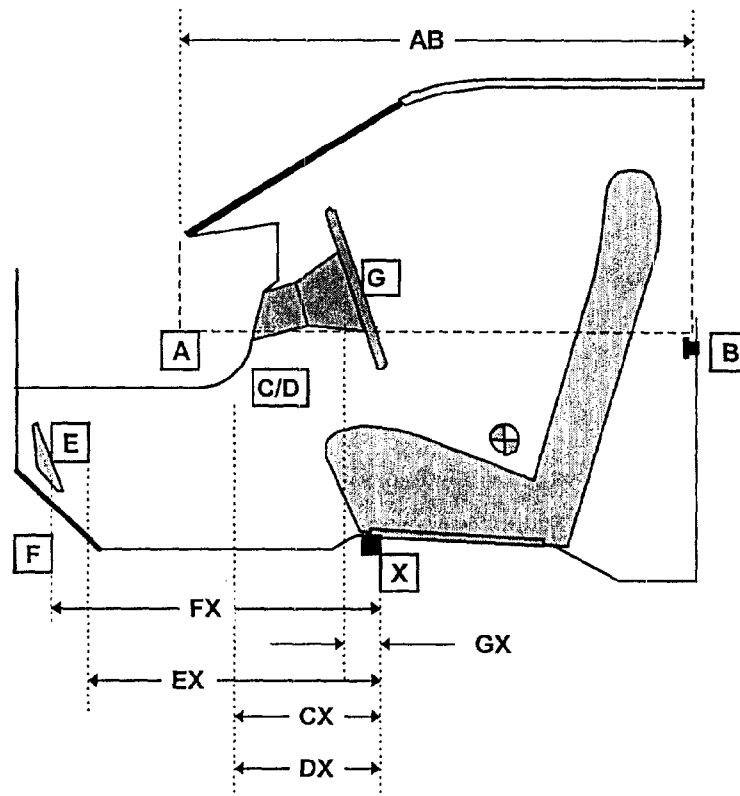


DRIVER SIDE FLOOR PLAN

DRIVER COMPARTMENT INTRUSION (Distances in mm)

REF.	DESCRIPTION	PRE-TEST	POST-TEST
AB	DOOR OPENING (INSIDE WINDOW JAM)	1063	1026
CX	LOWER LEFT KNEE BOLSTER TO X	370	368
DX	LOWER RIGHT KNEE BOLSTER TO X	380	344
EX	BRAKE PEDAL TO X	545	366
FX	FOOT REST TO X	600	575
GX	STEERING COLUMN HUB (CENTER) TO X	45	20

X = LEFT FRONT SEAT ANCHOR BOLT



DRIVER COMPARTMENT

DATA SHEET NO. 18

OFFSET BARRIER ORIENTATION

TEST VEHICLE: 1998 ISUZU RODEO SPORT UTILITY 4-DOOR

NHTSA NO. MW5701

A = VEHICLE WIDTH MEASURED AT WIDEST POINT N/A mm

B = 40% OFFSET FROM LEFT EDGE OF VEHICLE N/A mm

ACTUAL OFFSET DURING TEST N/A mm = N/A %

(NO OFFSET REQUIRED FOR THIS TEST)

DATA SHEET NO. 19

ACCIDENT INVESTIGATION DIVISION DATA

TEST VEHICLE: 1998 ISUZU RODEO SPORT UTILITY 4-DOOR

NHTSA NO. MW5701

VIN: 4S2CM58W8W4316355

TEST DATE: 1/15/98

WHEELBASE: 2705 mm

TEST WEIGHT: 2083 kg

VEHICLE SIZE CATEGORY: 4-DOOR SUV

ACCELEROMETER DATA:

LOCATION: Left and right rear floor pans

CALIBRATION PROCEDURE: 6 months/ drop test

LINEARITY: Good

INTEGRATION ALGORITHM: NHTSA Standard

VEHICLE IMPACT SPEED: 56.60 km/h

TIME OF SEPARATION: 71.53 msec

VELOCITY CHANGE: 63.00 km/h

COLLISION DEFORMATION CLASSIFICATION (CDC) CODE: F (frontal)

IMPACT MODE: Full Frontal

CRUSH DEPTH DIMENSIONS:

C1 = 416 mm

C2 = 446 mm

C3 = 462 mm

C4 = 466 mm

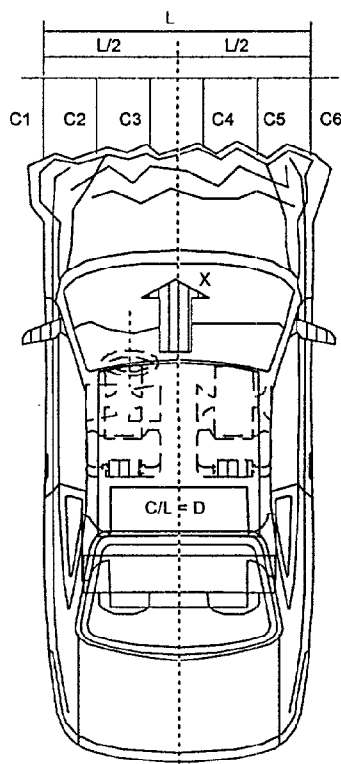
C5 = 459 mm

C6 = 438 mm

MIDPOINT OF DAMAGE: D = vehicle centerline 750 MM

LENGTH OF DAMAGE REGION:

L = 1500 mm



DATA SHEET NO. 20

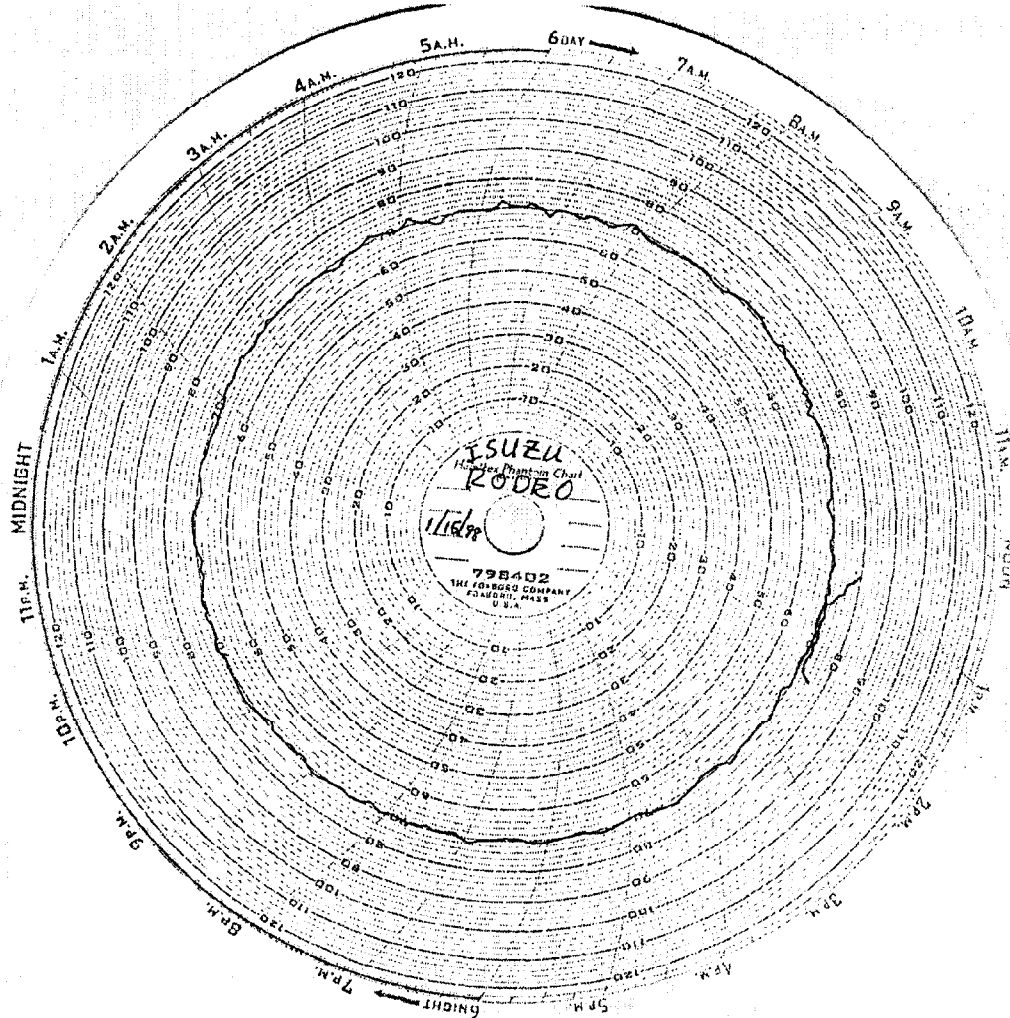
DUMMY/VEHICLE TEMPERATURE STABILIZATION

TEST VEHICLE: 1998 ISUZU RODEO SPORT UTILITY 4-DOOR

NHTSA NO. MW5701

VIN: 4S2CM58W8W4316355

TEST DATE: 1/15/98



APPENDIX A
PHOTOGRAPHS

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FIGURE A-1. RIGHT FRONT AS RECEIVED



FIGURE A-2. LEFT REAR AS RECEIVED

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FIGURE A-3. VEHICLE CERTIFICATION LABEL



FIGURE A-4. VEHICLE TIRE PLACARD



FIGURE A-5. PRETEST FRONT VIEW

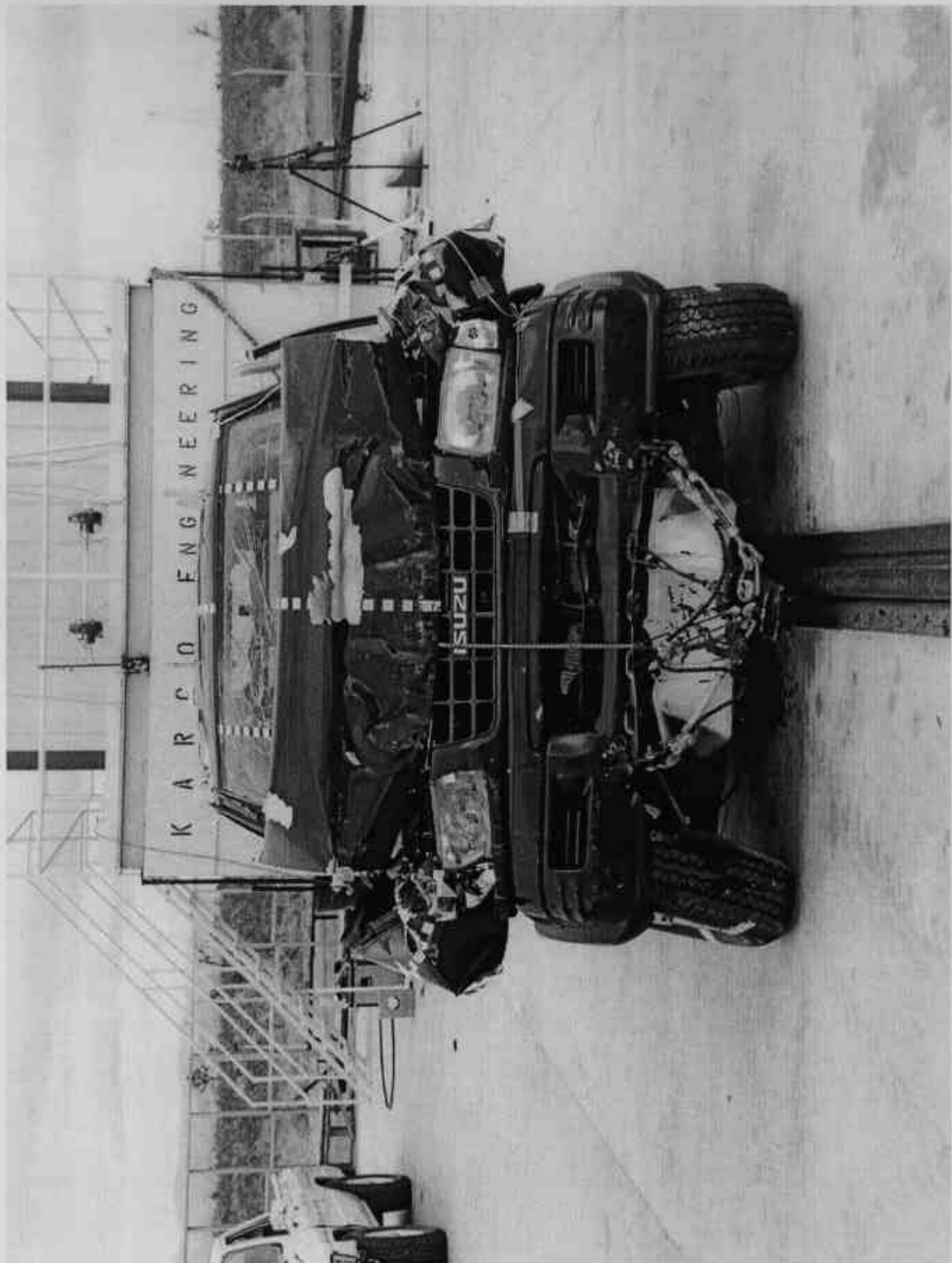


FIGURE A-6. POST TEST FRONT VIEW

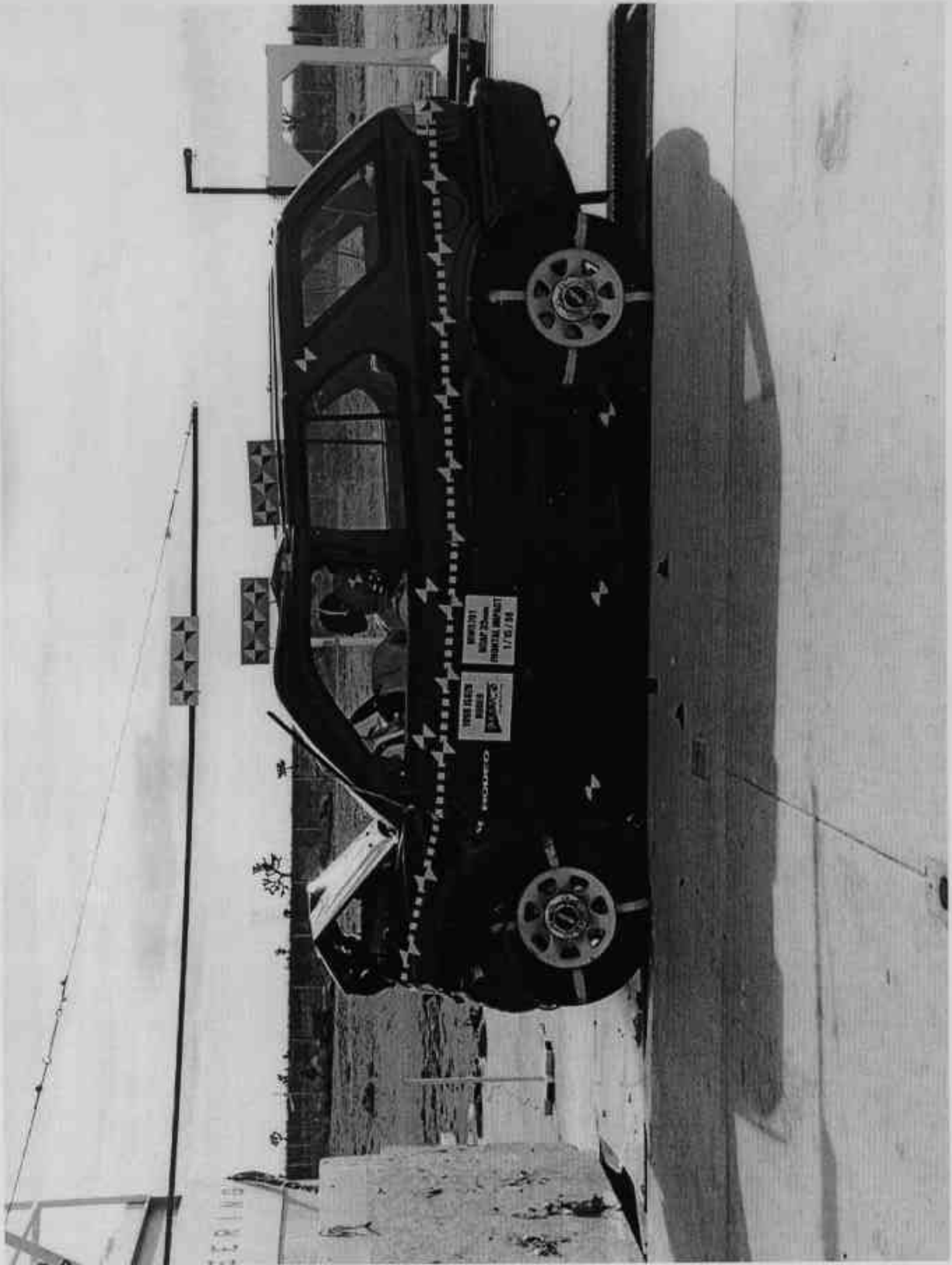


FIGURE A-8. POST TEST LEFT SIDE VIEW

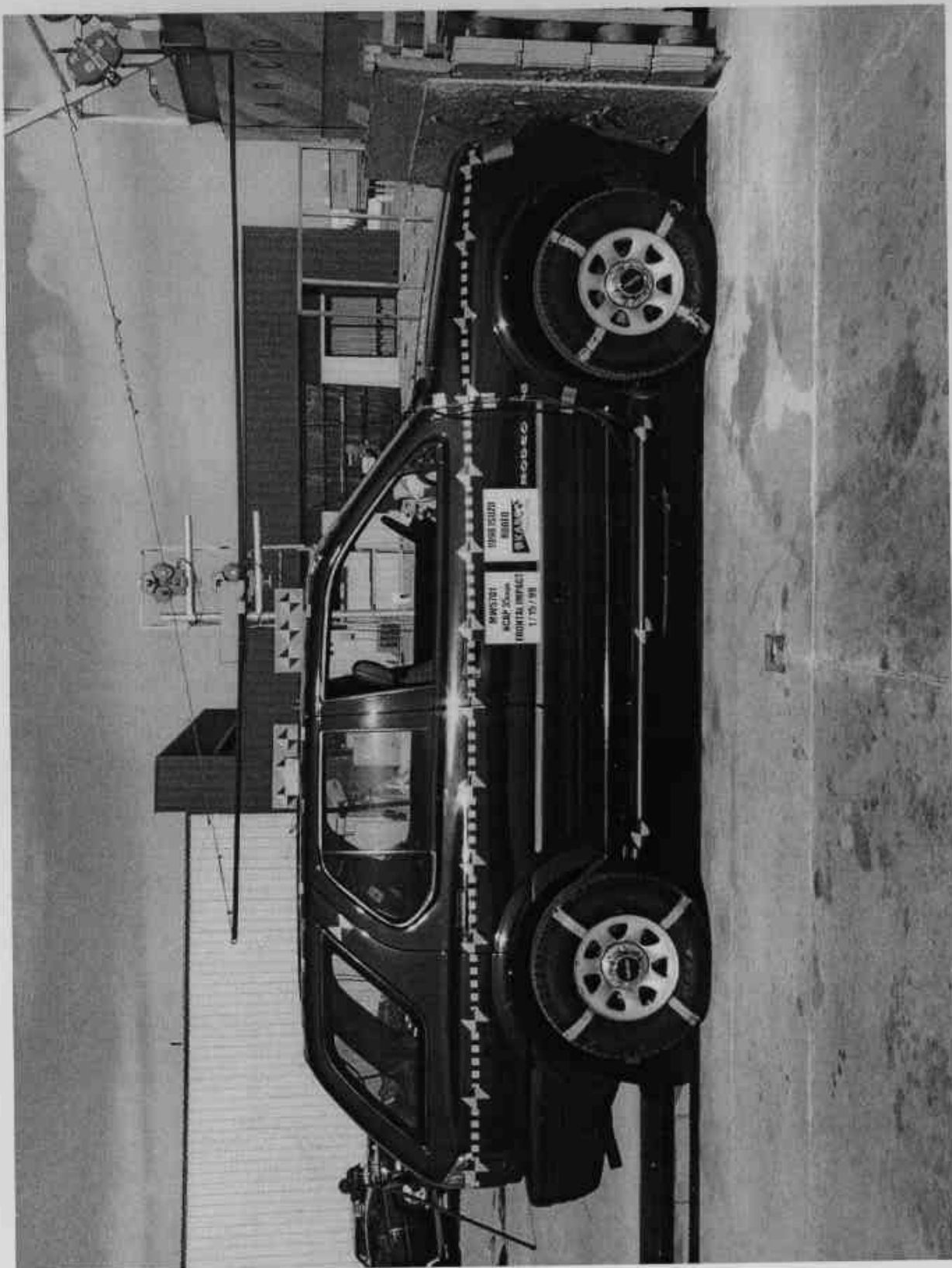


FIGURE A-9. PRETEST RIGHT SIDE VIEW

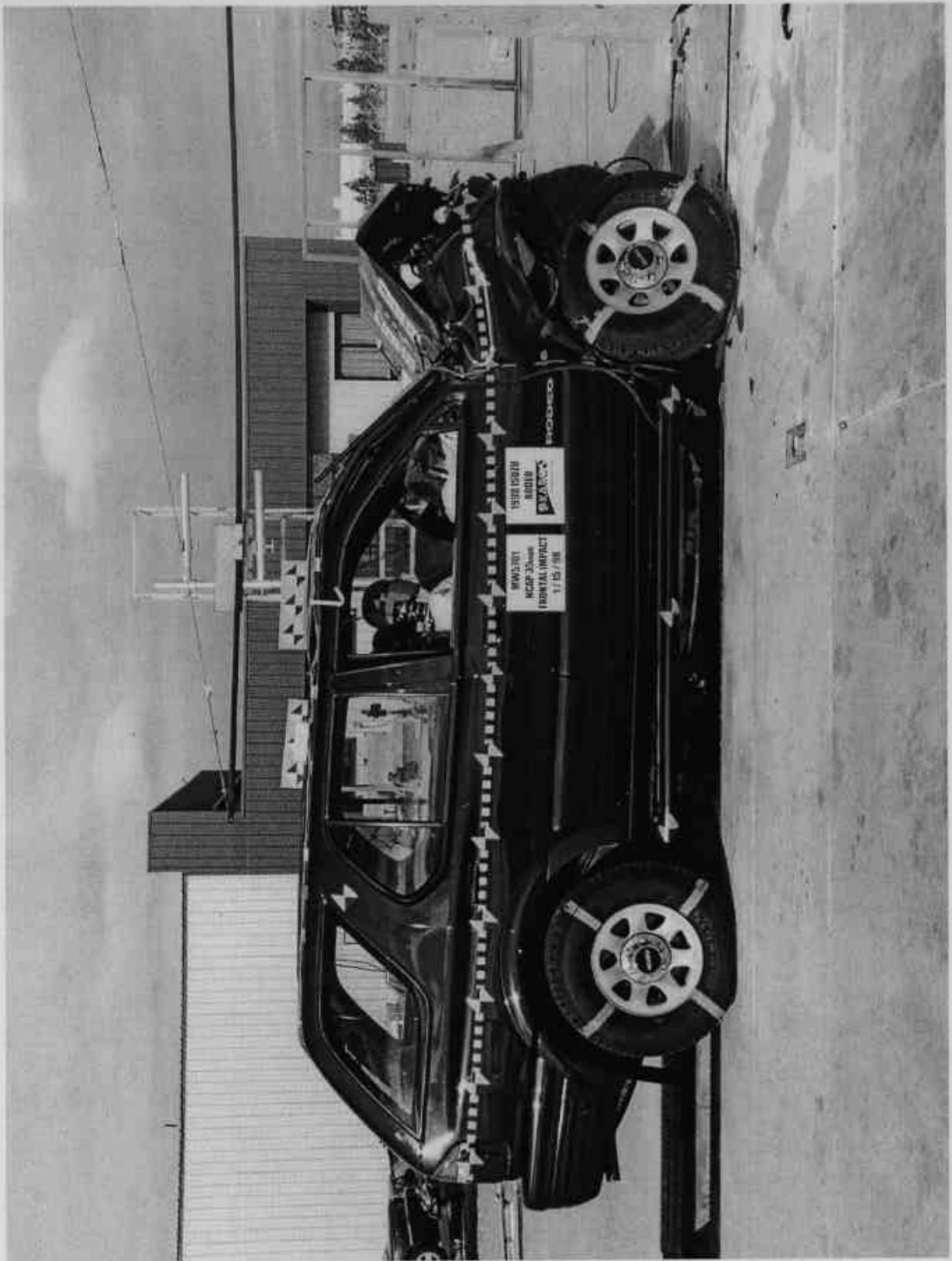


FIGURE A-10. POST TEST RIGHT SIDE VIEW

A-10

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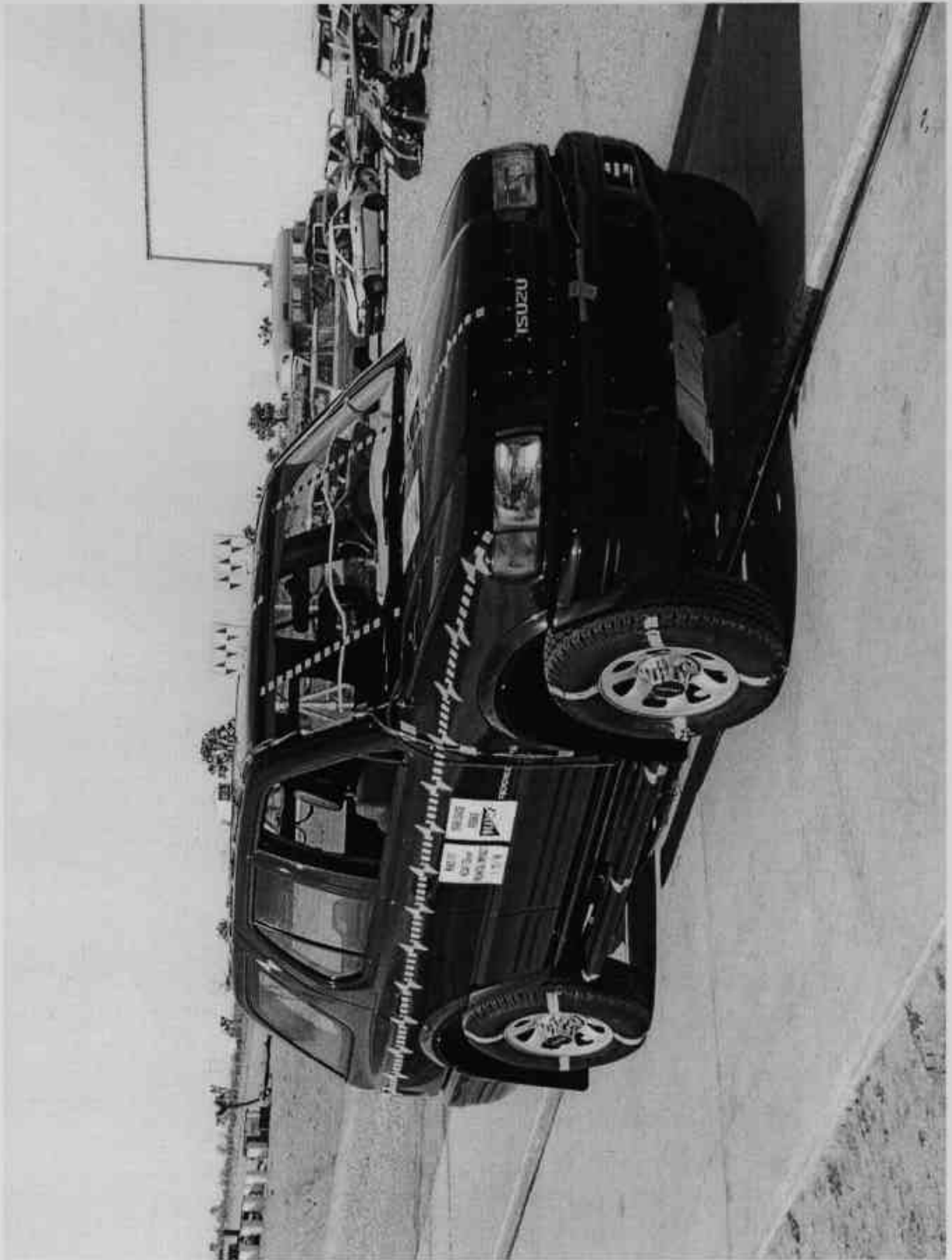


FIGURE A-11. PRETEST RIGHT FRONT VIEW

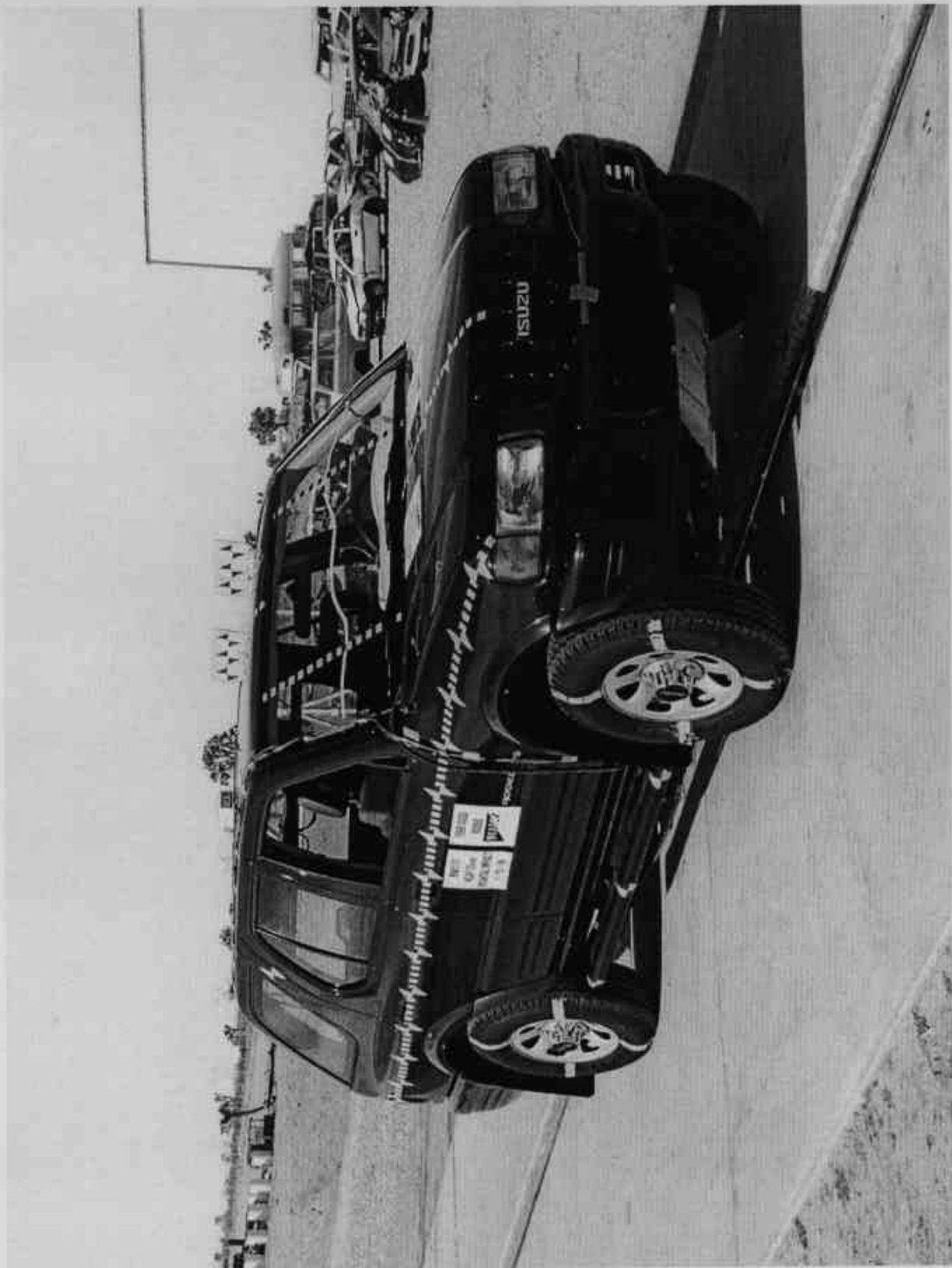


FIGURE A-11. PRETEST RIGHT FRONT VIEW



FIGURE A-12. POST TEST RIGHT FRONT VIEW



FIGURE A-13. PRETEST LEFT REAR VIEW



FIGURE A-14. POST TEST LEFT REAR VIEW

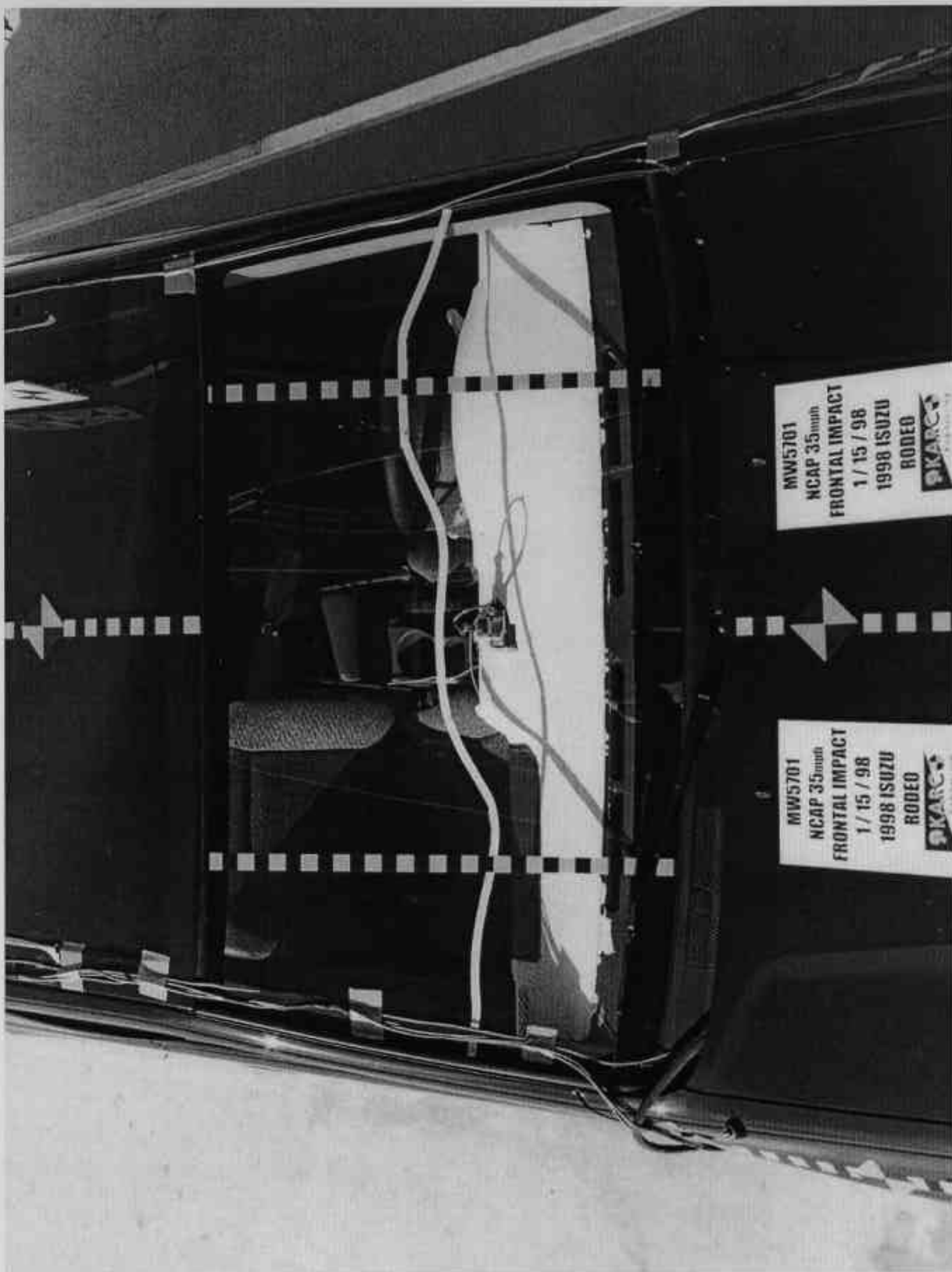


FIGURE A-15. PRETEST WINDSHIELD



FIGURE A-16. POST TEST WINDSHIELD

A-16

KAR-98-R98050-06

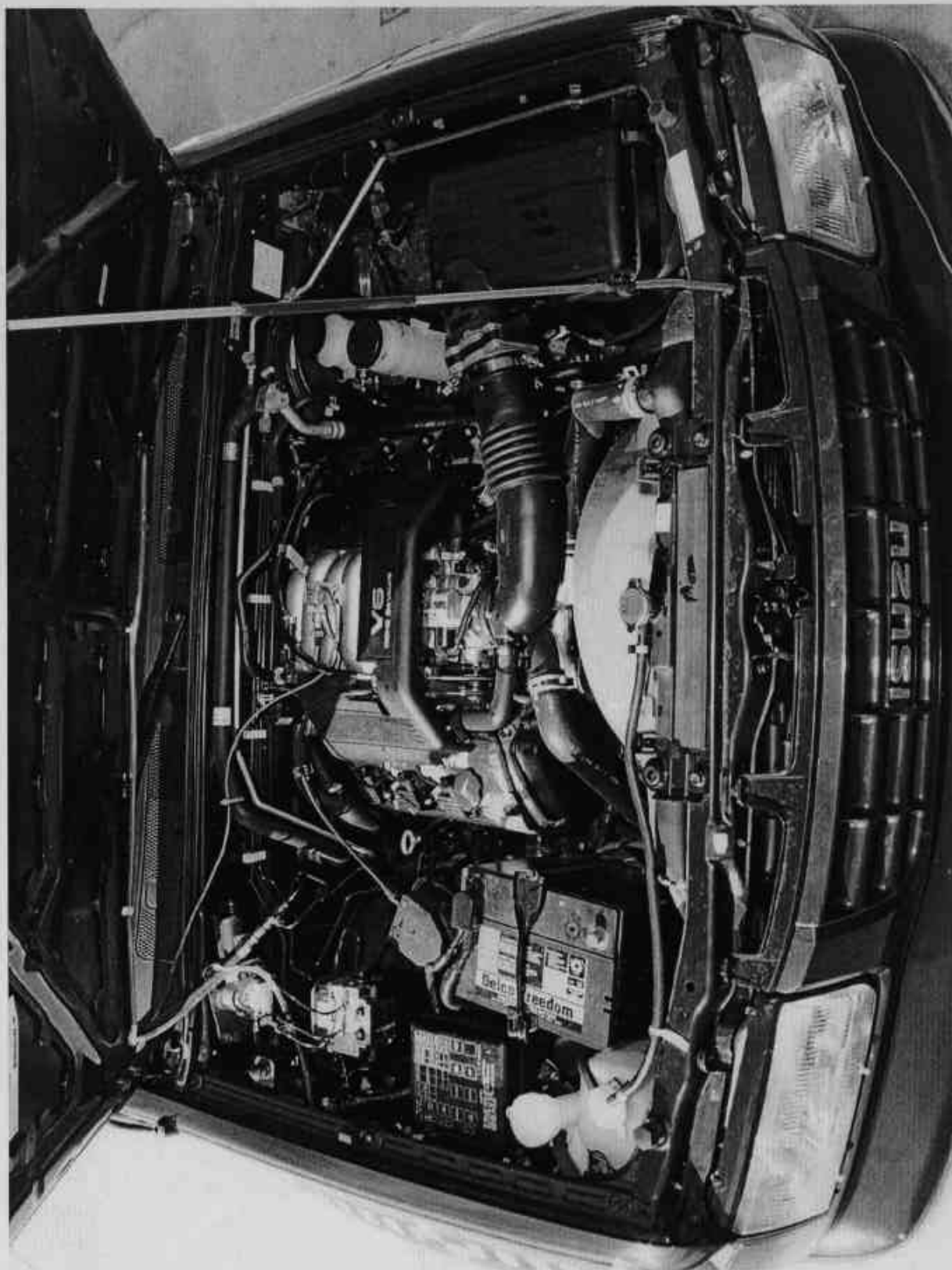


FIGURE A-17. PRETEST ENGINE COMPARTMENT

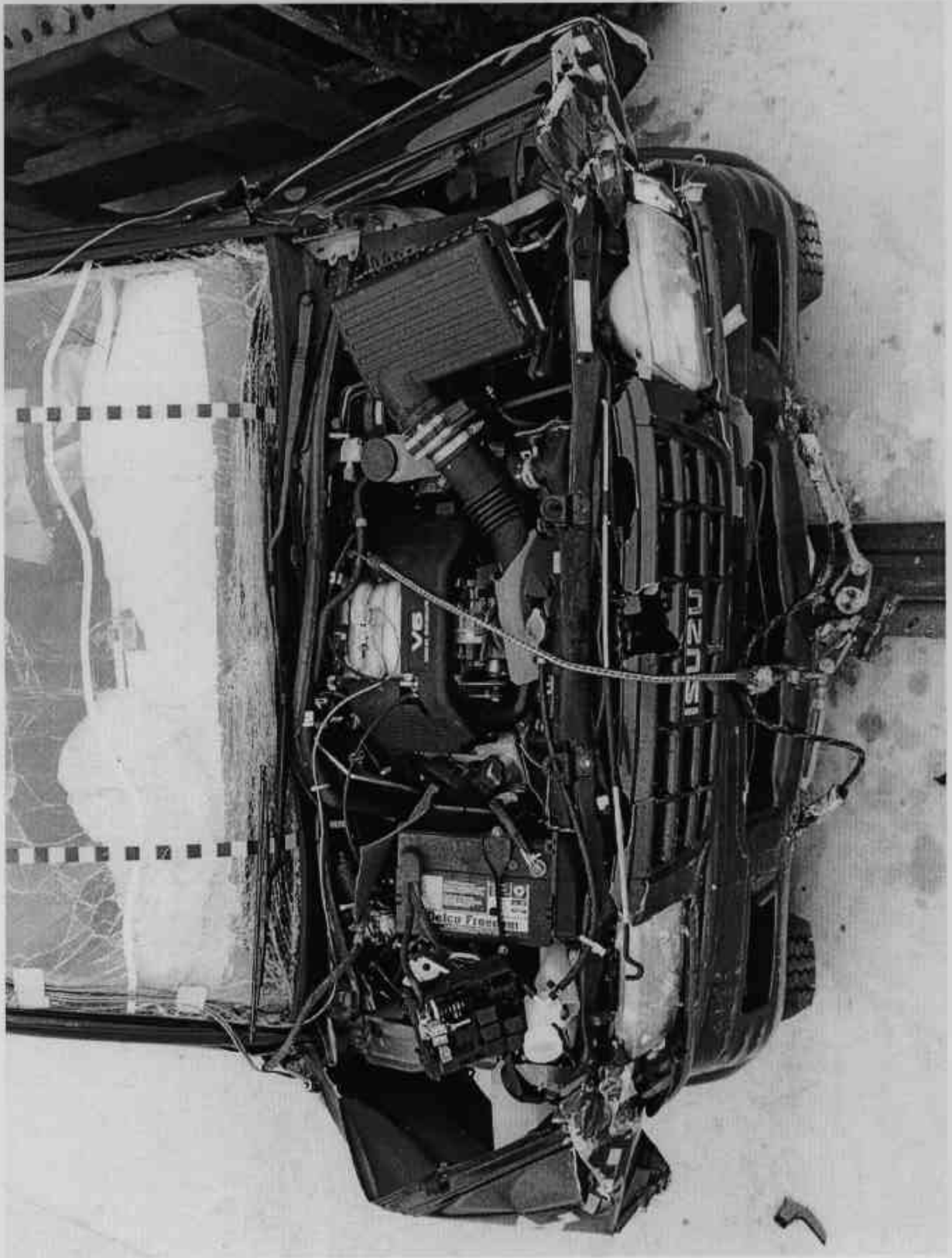


FIGURE A-18. POST TEST ENGINE COMPARTMENT

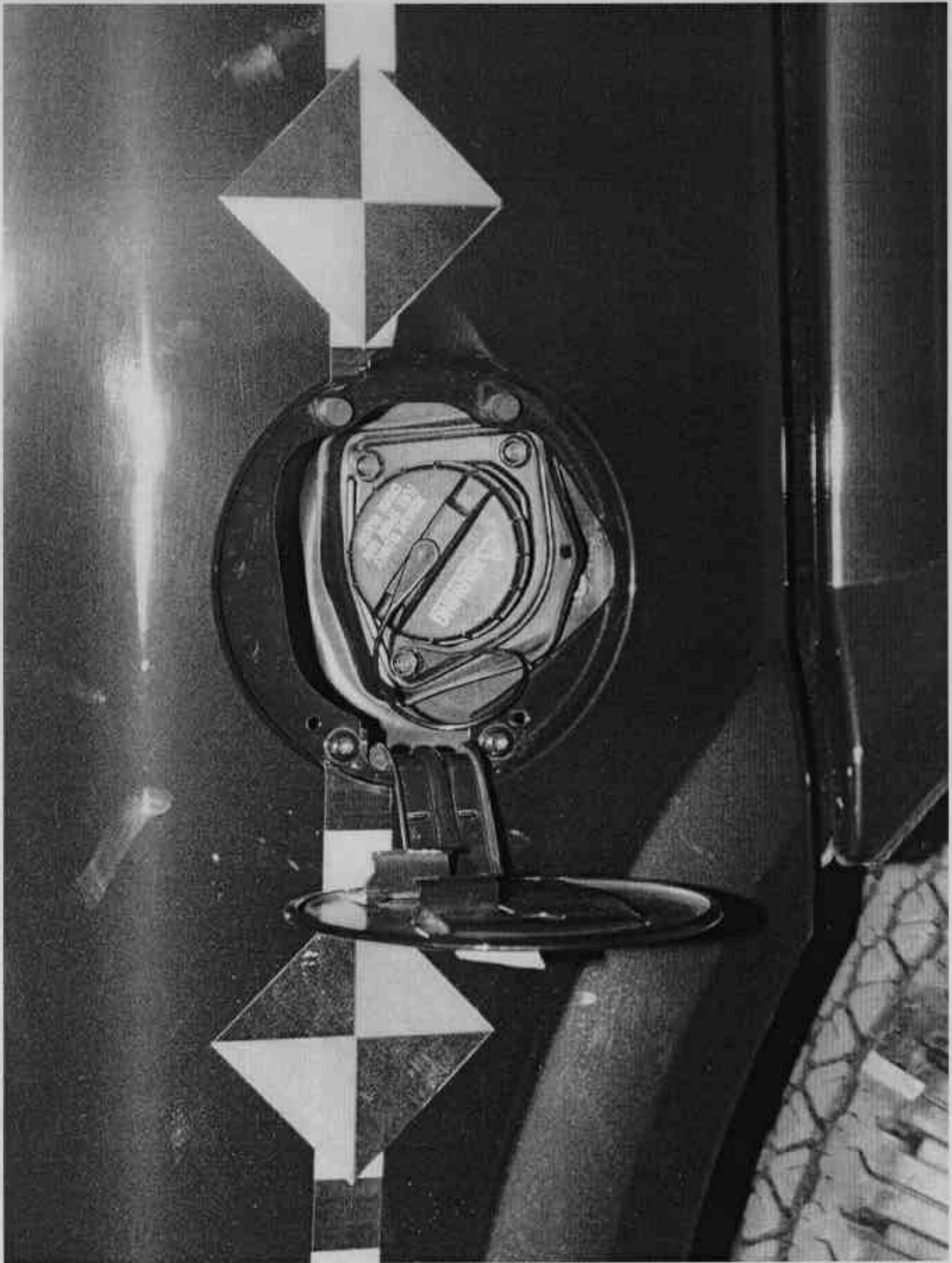


FIGURE A-19. PRETEST FUEL CAP

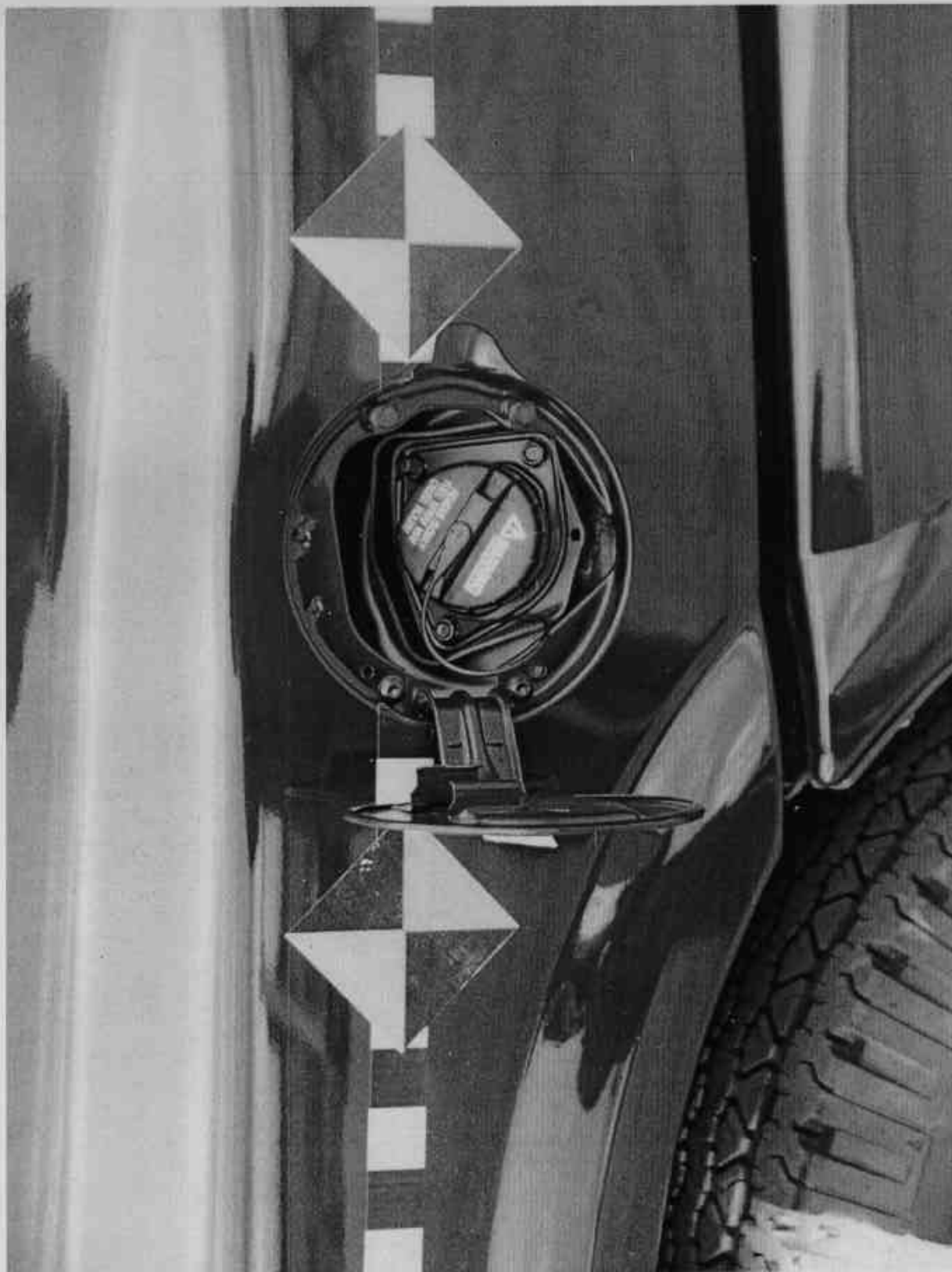


FIGURE A-20. POST TEST FUEL CAP

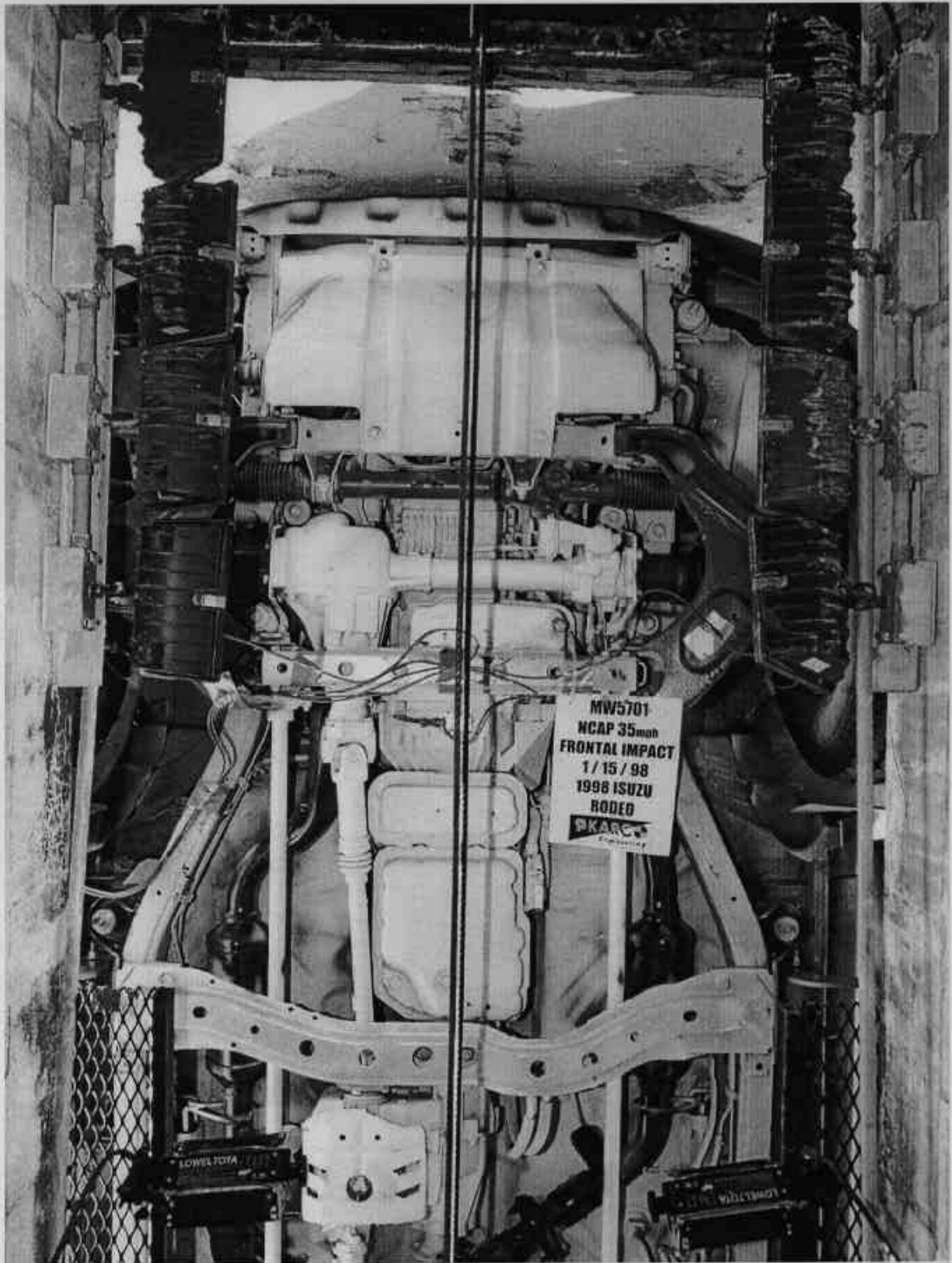


FIGURE A-21. PRETEST FRONT UNDERSIDE

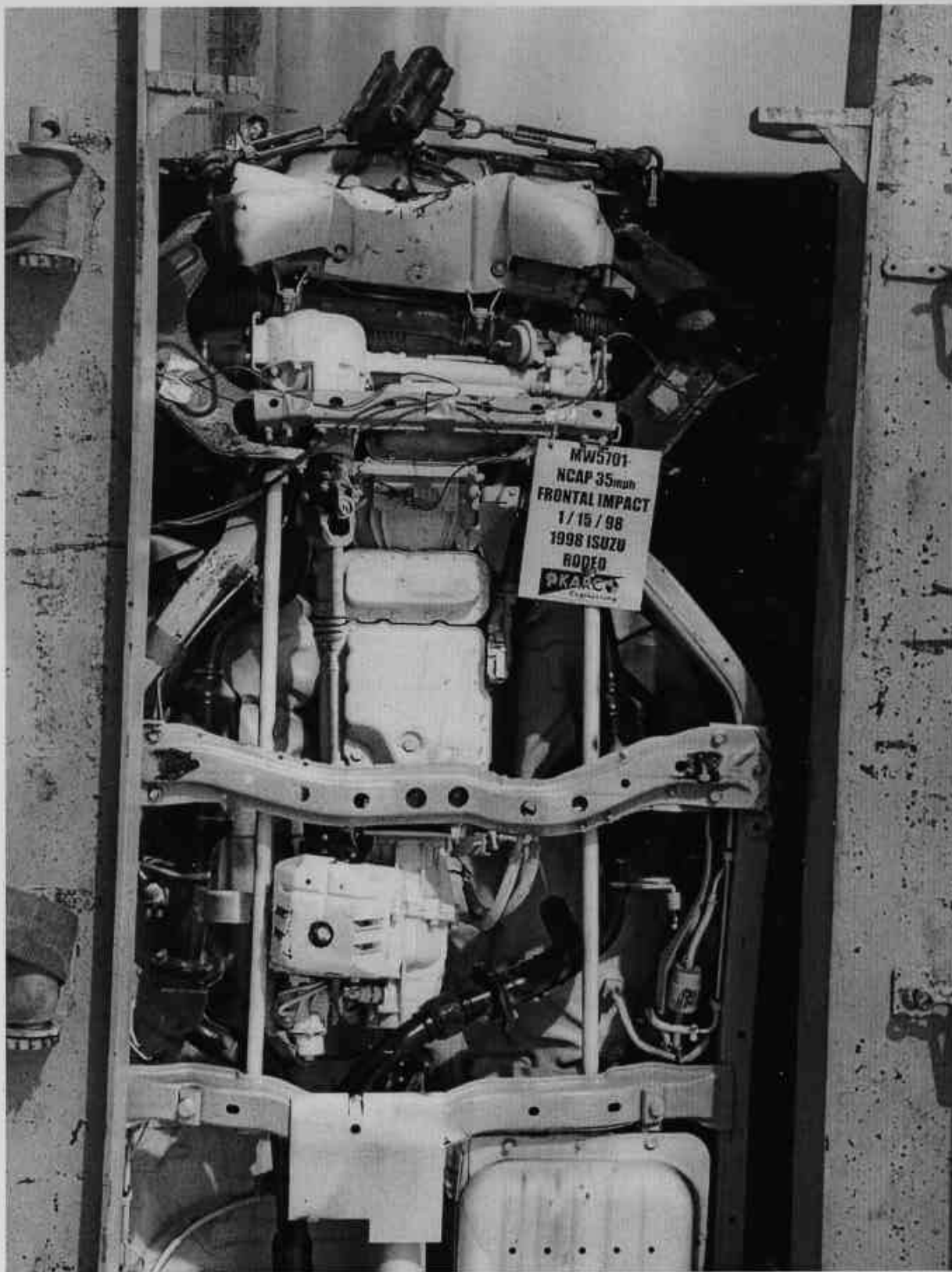


FIGURE A-22. POST TEST FRONT UNDERSIDE

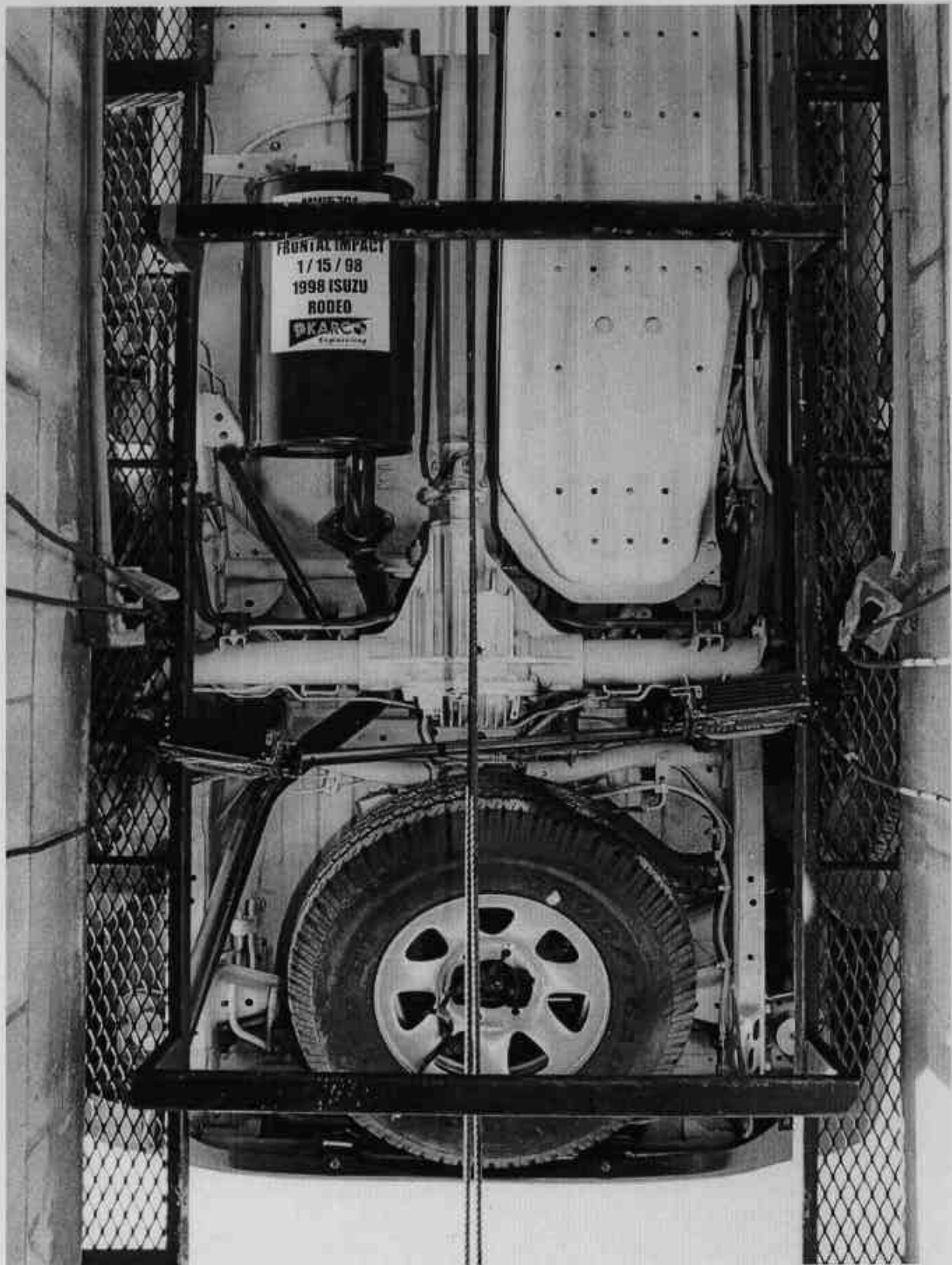


FIGURE A-23. PRETEST REAR UNDERSIDE

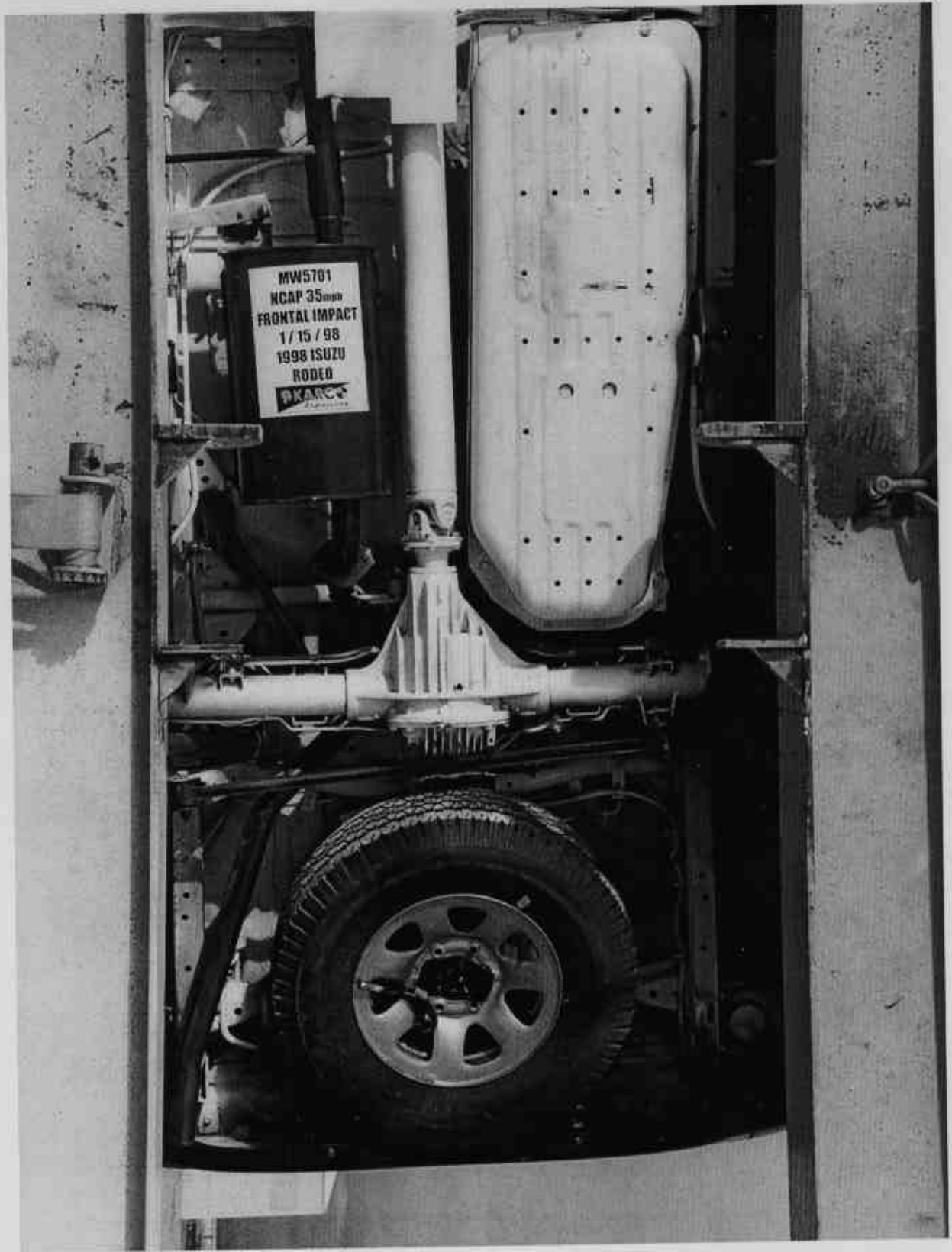


FIGURE A-24. POST TEST REAR UNDERSIDE



FIGURE A-25. PRETEST DRIVER FLOOR PAN



FIGURE A-26. POST TEST DRIVER FLOOR PAN

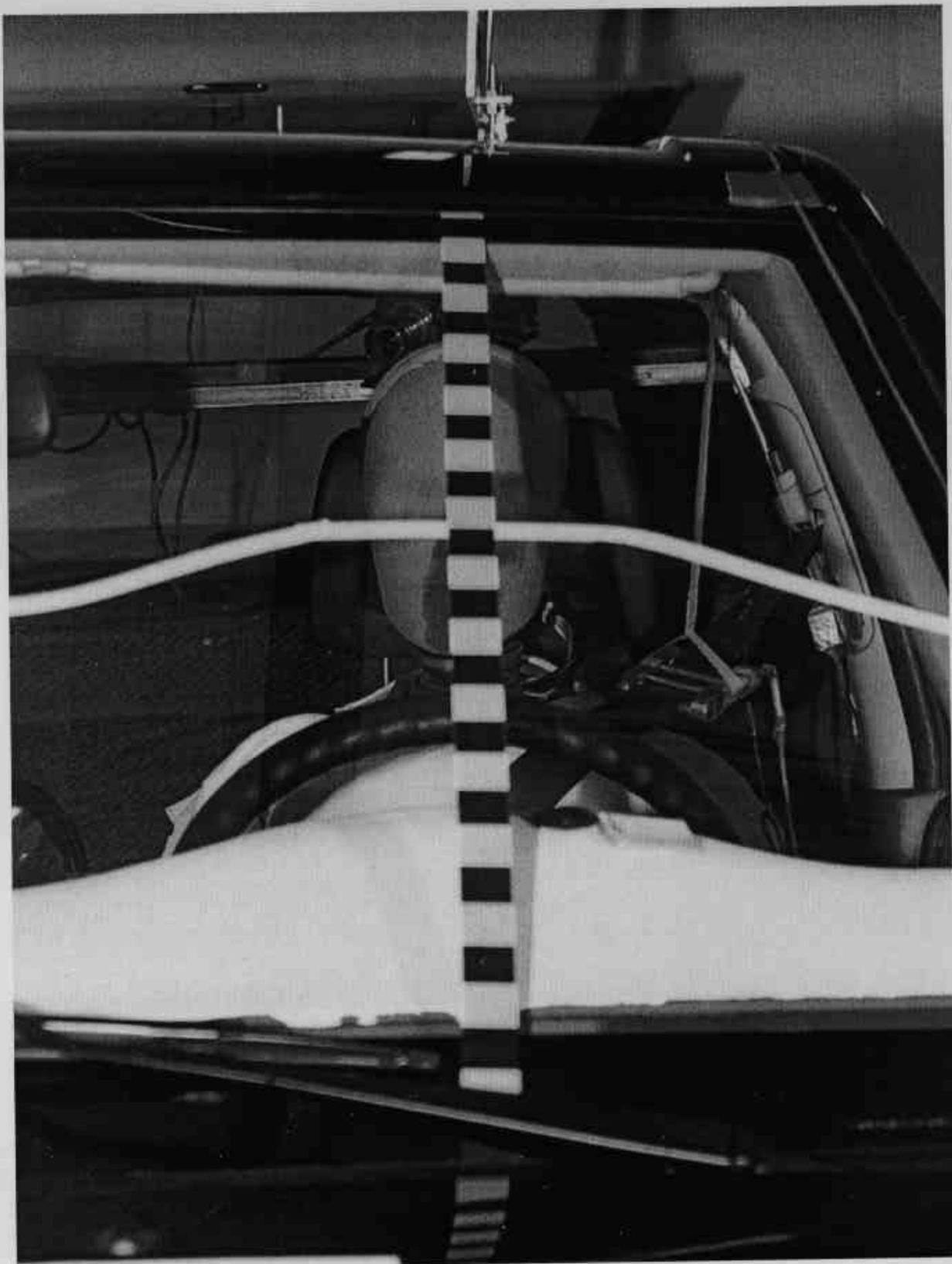


FIGURE A-27. PRETEST DRIVER DUMMY (FRONT VIEW)



FIGURE A-28. POST TEST DRIVER DUMMY (FRONT VIEW)

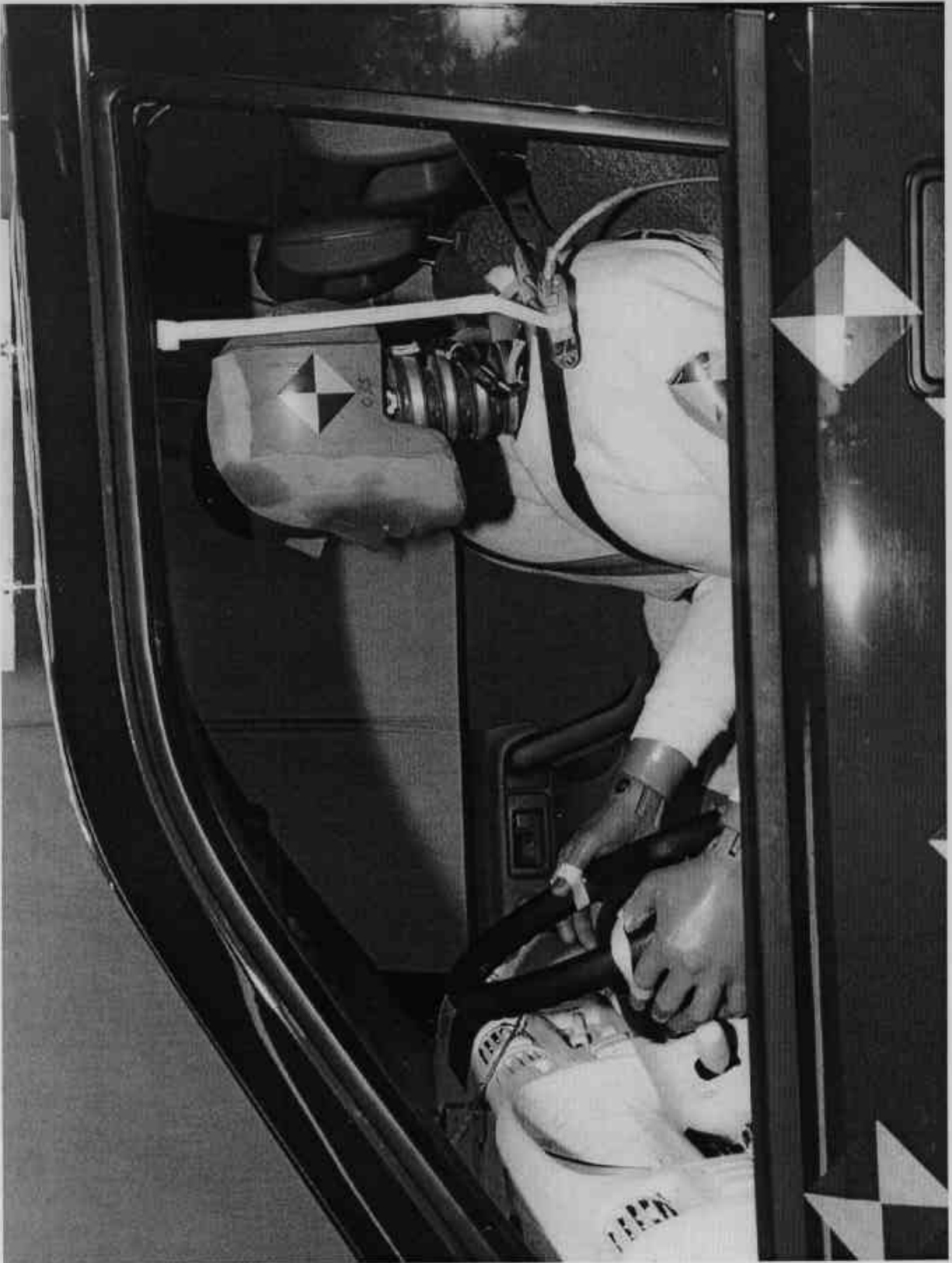


FIGURE A-29. PRETEST DRIVER DUMMY (THRU WINDOW)



FIGURE A-30. POST TEST DRIVER DUMMY (THRU WINDOW)



FIGURE A-31. PRETEST DRIVER DUMMY (DOOR OPEN)



FIGURE A-32. POST TEST DRIVER DUMMY (DOOR OPEN)



FIGURE A-33. PRE TEST DRIVER DUMMY (90° TO VEHICLE)



FIGURE A-34. POST TEST DRIVER DUMMY (90° TO VEHICLE)

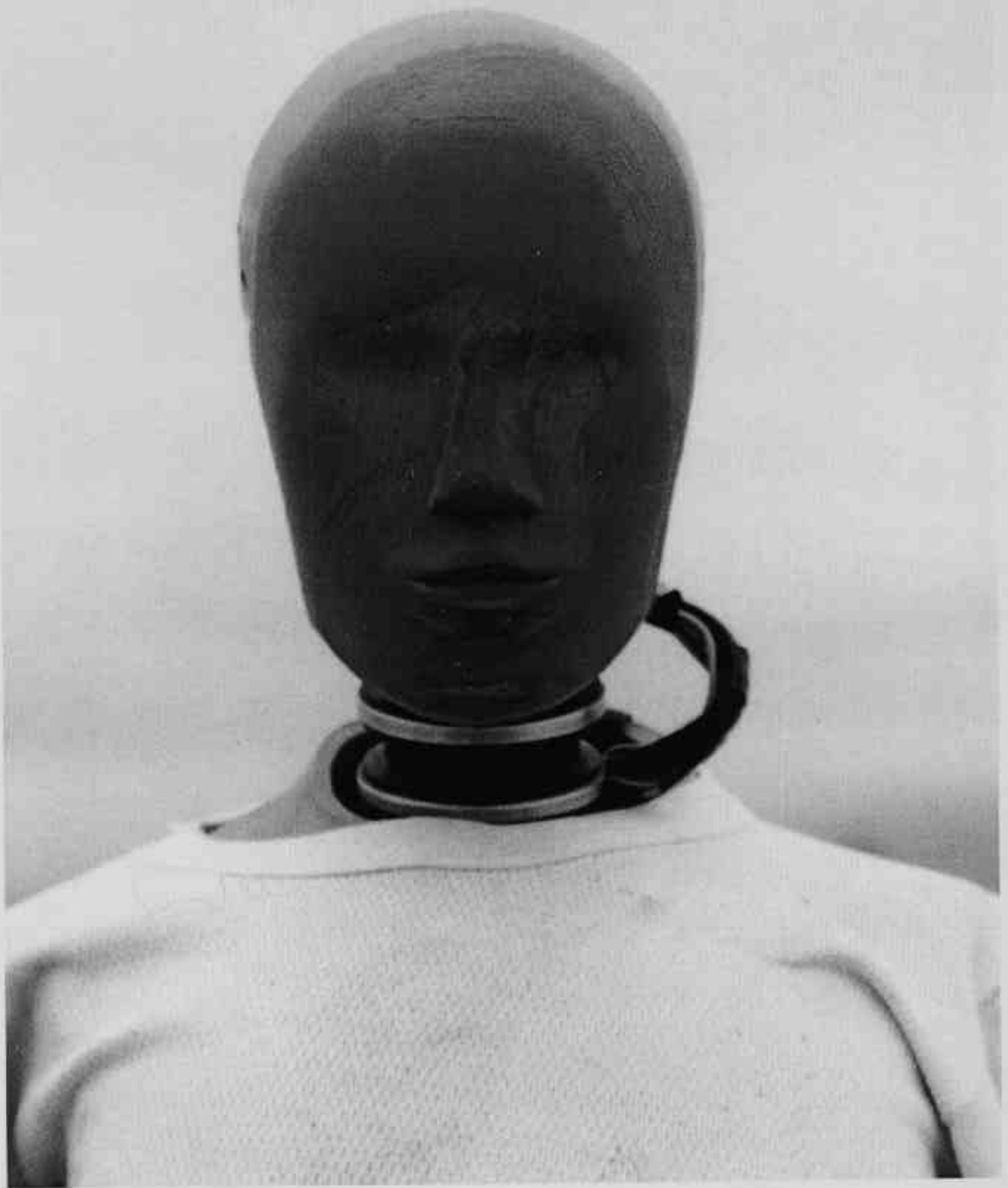


FIGURE A-35. POST TEST DRIVER DUMMY HEAD



FIGURE A-36. POST TEST DRIVER DUMMY CONTACT POINT

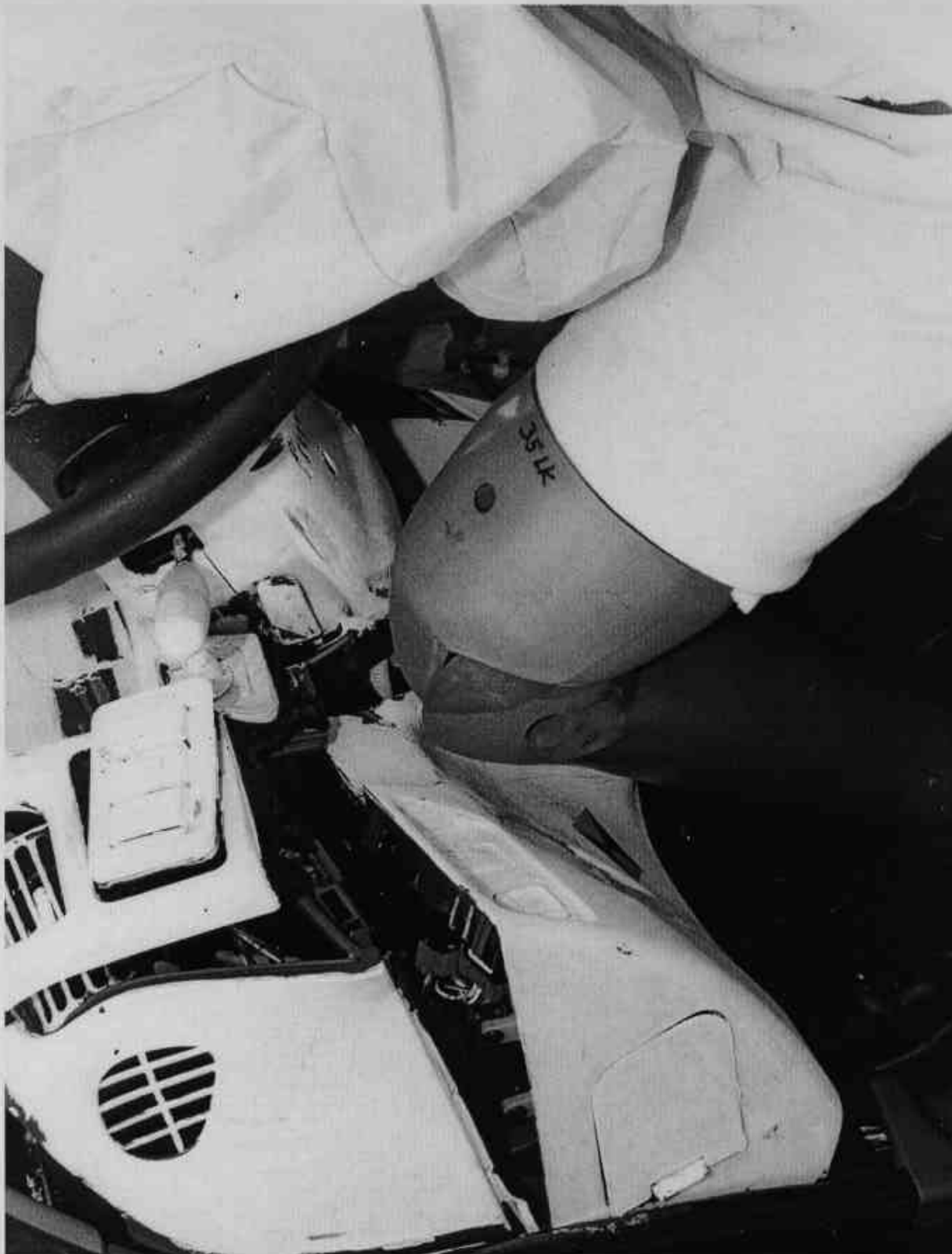


FIGURE A-37. POST TEST DRIVER DUMMY CONTACT POINT

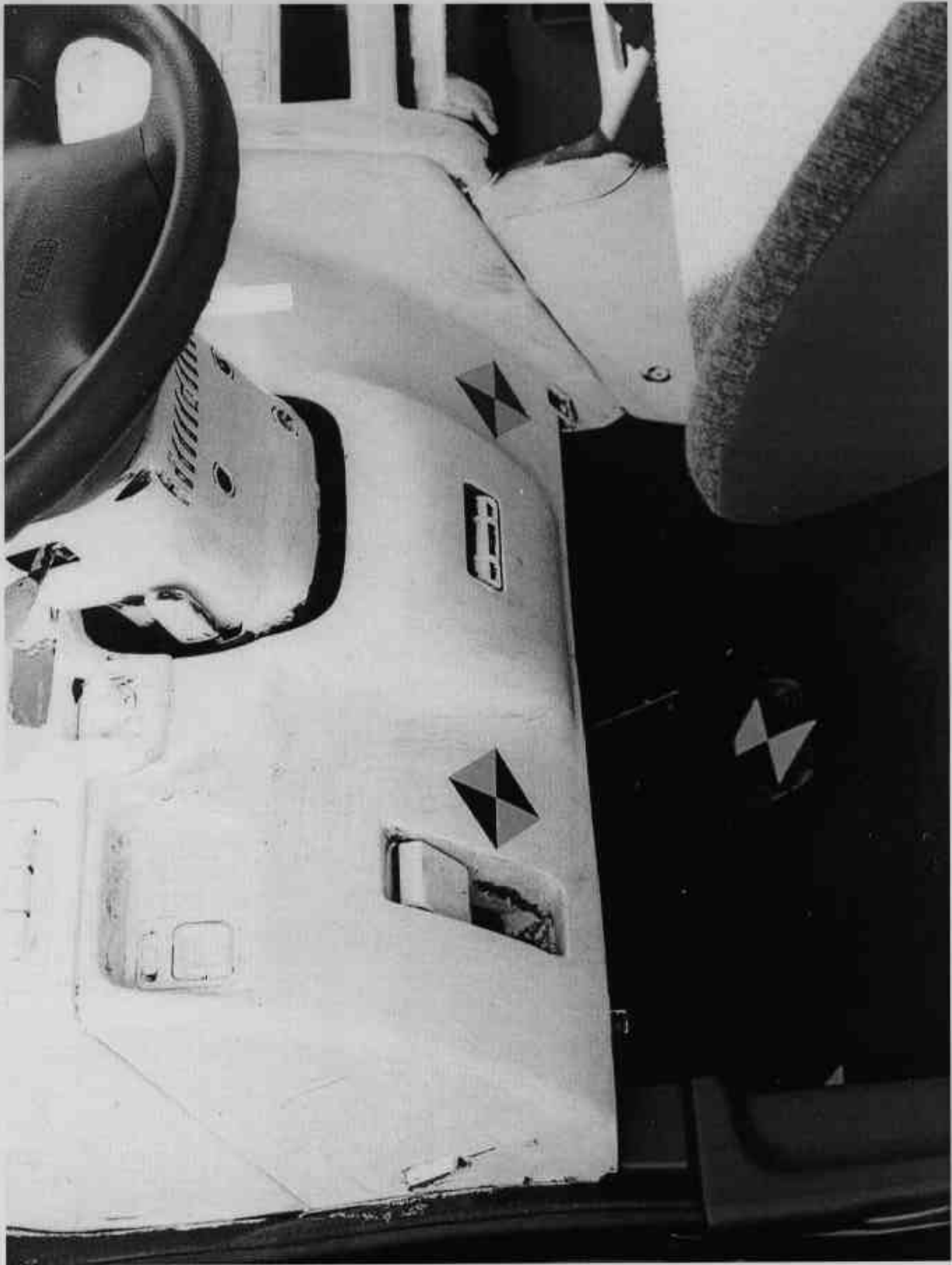


FIGURE A-38. PRETEST DRIVER SIDE KNEE BOLSTER

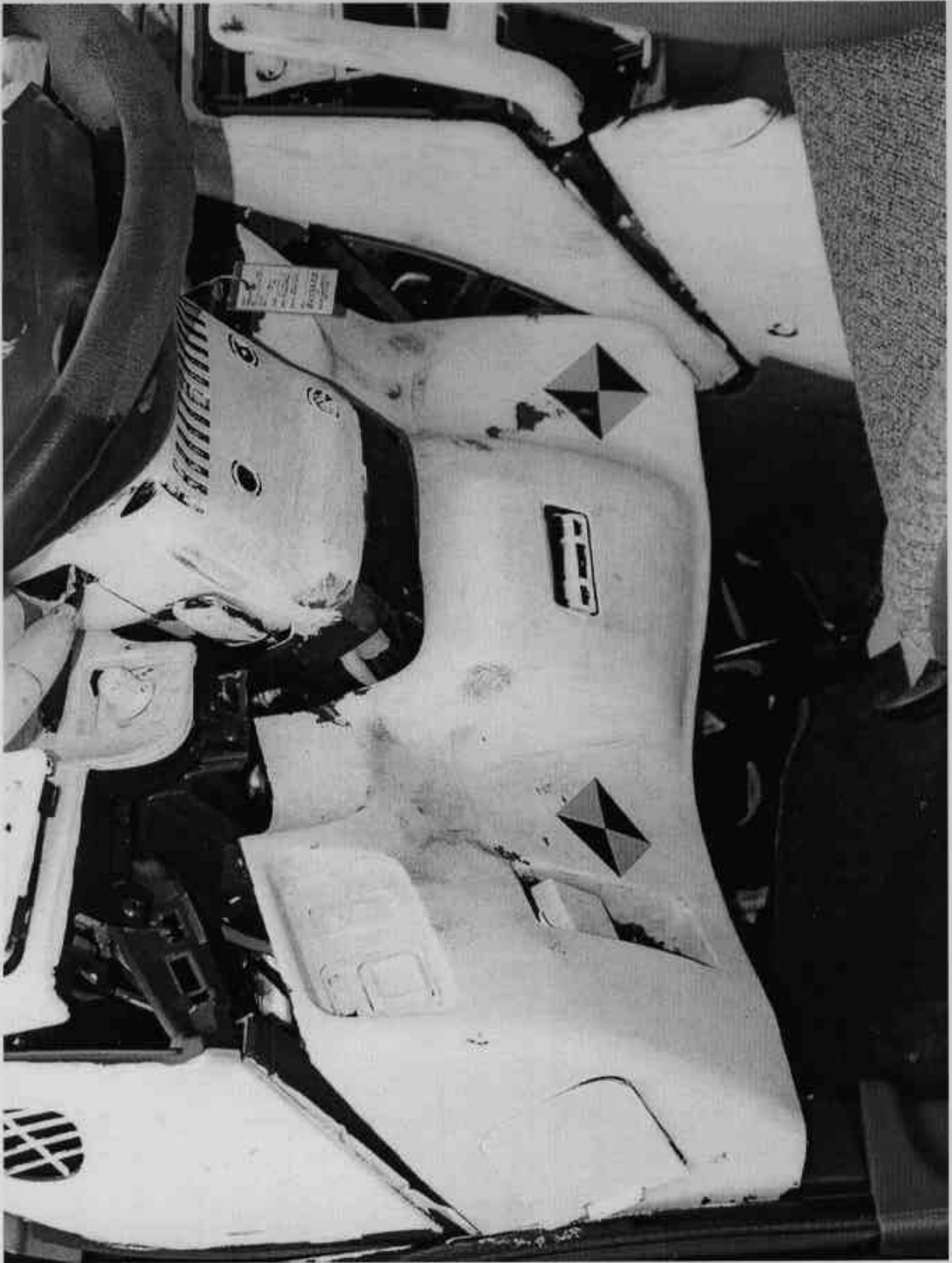


FIGURE A-39. POST TEST DRIVER KNEE BOLSTER

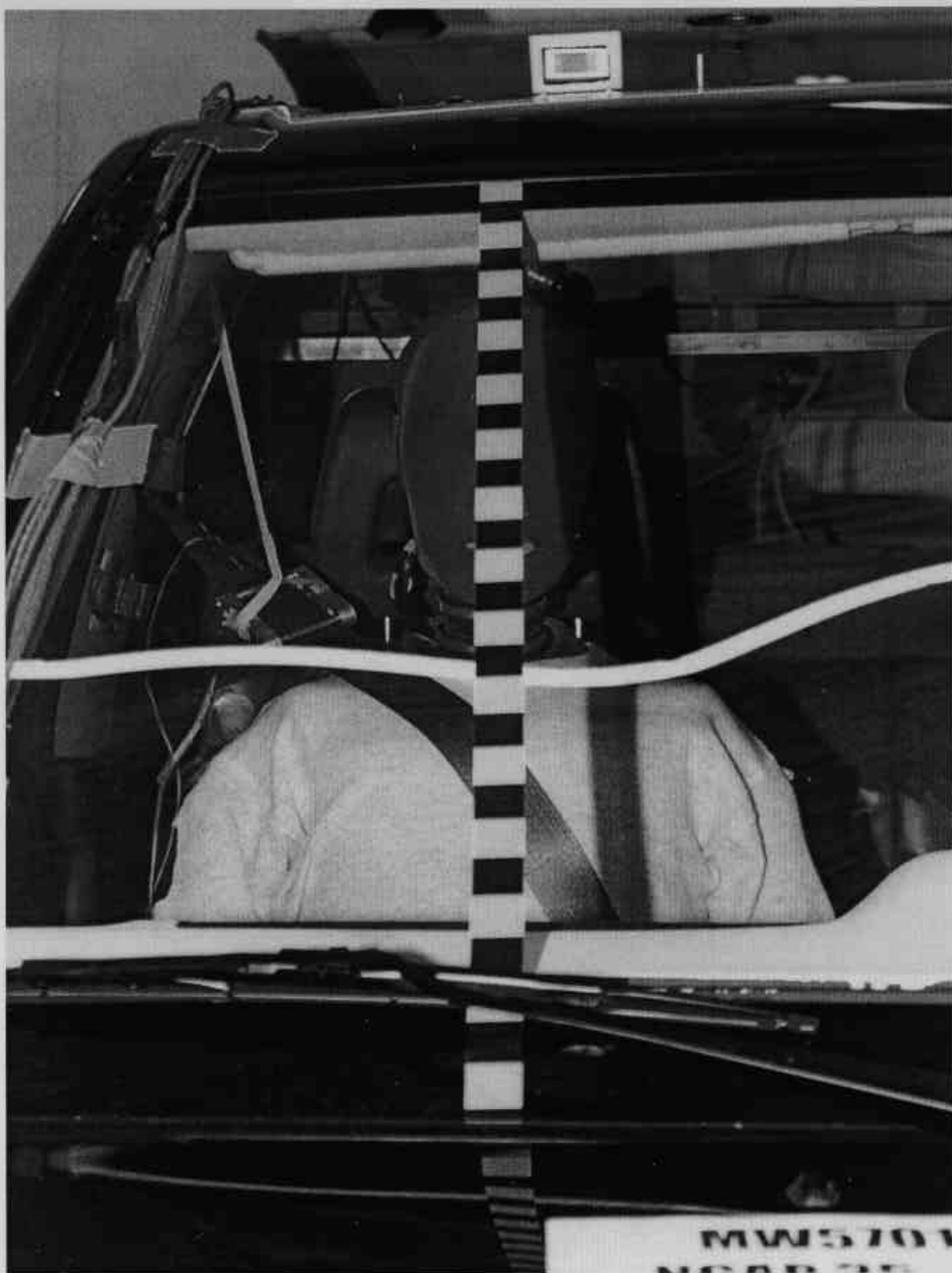


FIGURE A-40. PRETEST PASSENGER DUMMY (FRONT VIEW)



FIGURE A-41. POST TEST PASSENGER DUMMY (FRONT VIEW)



FIGURE A-42. PRETEST PASSENGER DUMMY (THRU WINDOW)



FIGURE A-43. POST TEST PASSENGER DUMMY (THRU WINDOW)



FIGURE A-44. PRETEST PASSENGER DUMMY (DOOR OPEN)



FIGURE A-45. POST TEST PASSENGER DUMMY (DOOR OPEN)



FIGURE A-46. PRETEST PASSENGER DUMMY (90° TO VEHICLE)

**Photograph Not
Available**

FIGURE A-47. POST TEST PASSENGER DUMMY (90° TO VEHICLE)



FIGURE A-48. POST TEST PASSENGER DUMMY HEAD

A-48

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FIGURE A-49. POST TEST PASSENGER DUMMY CONTACT POINT

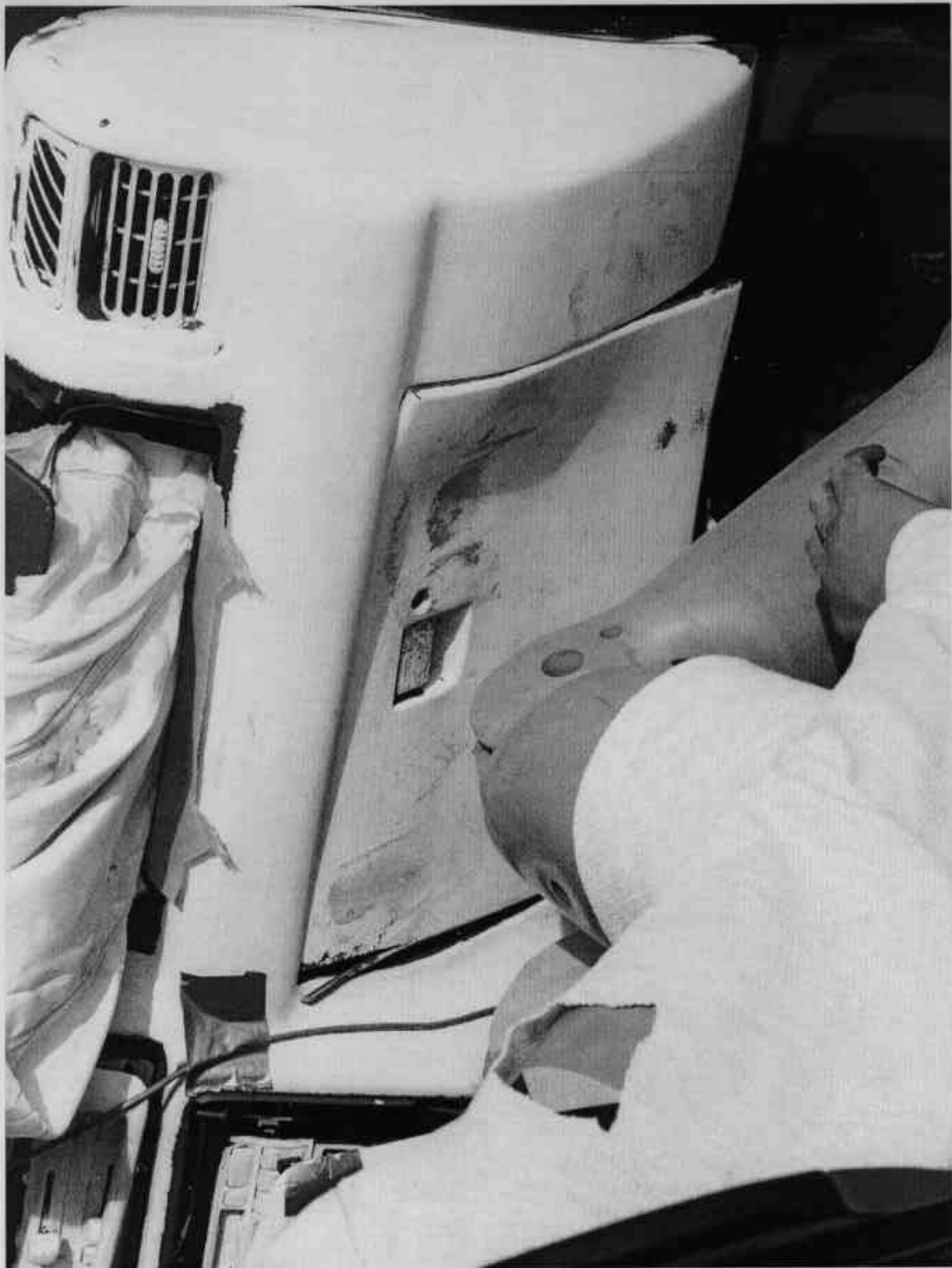


FIGURE A-50. POST TEST PASSENGER DUMMY CONTACT POINT

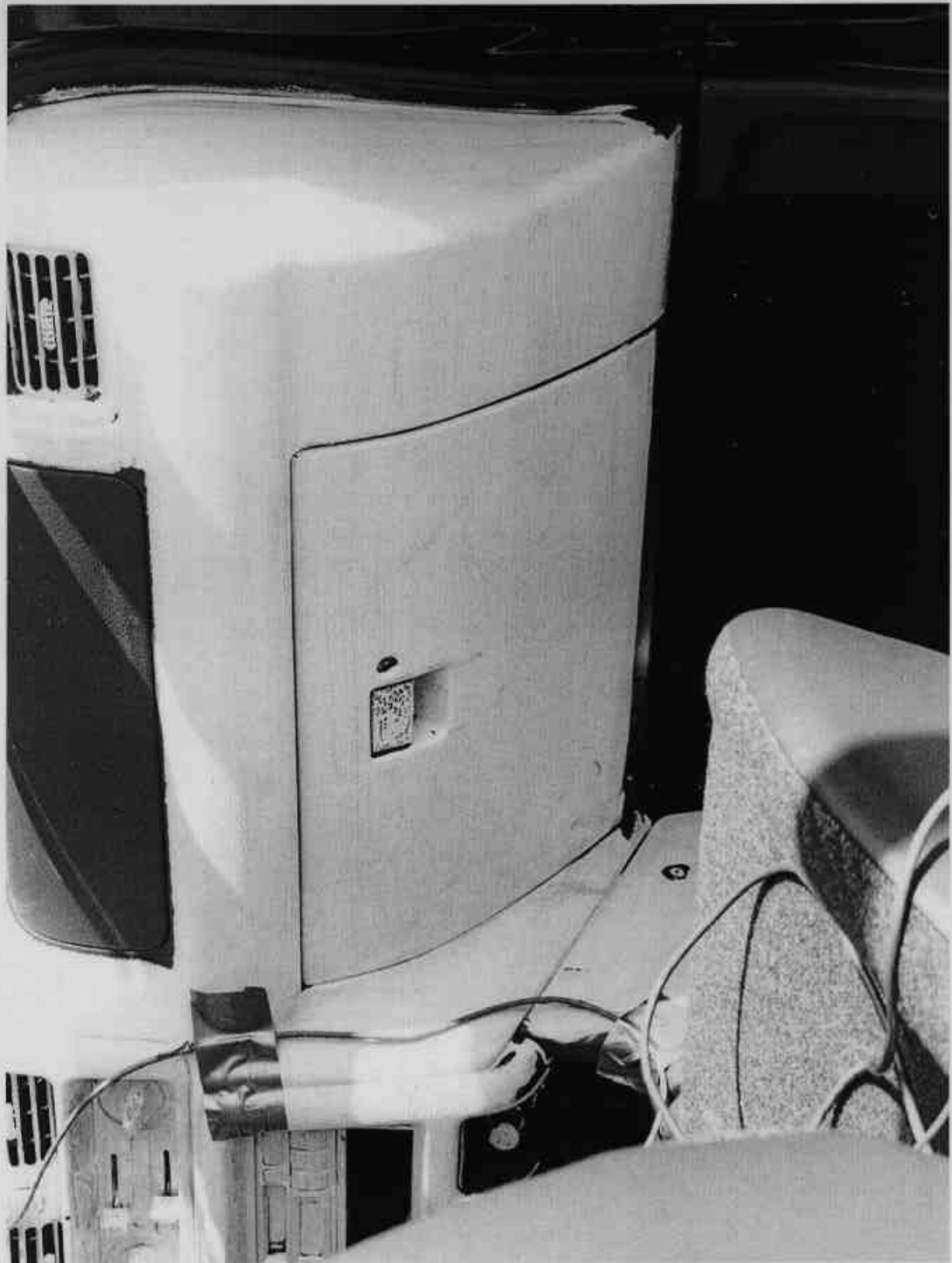


FIGURE A-51. PRETEST PASSENGER SIDE KNEE BOLSTER

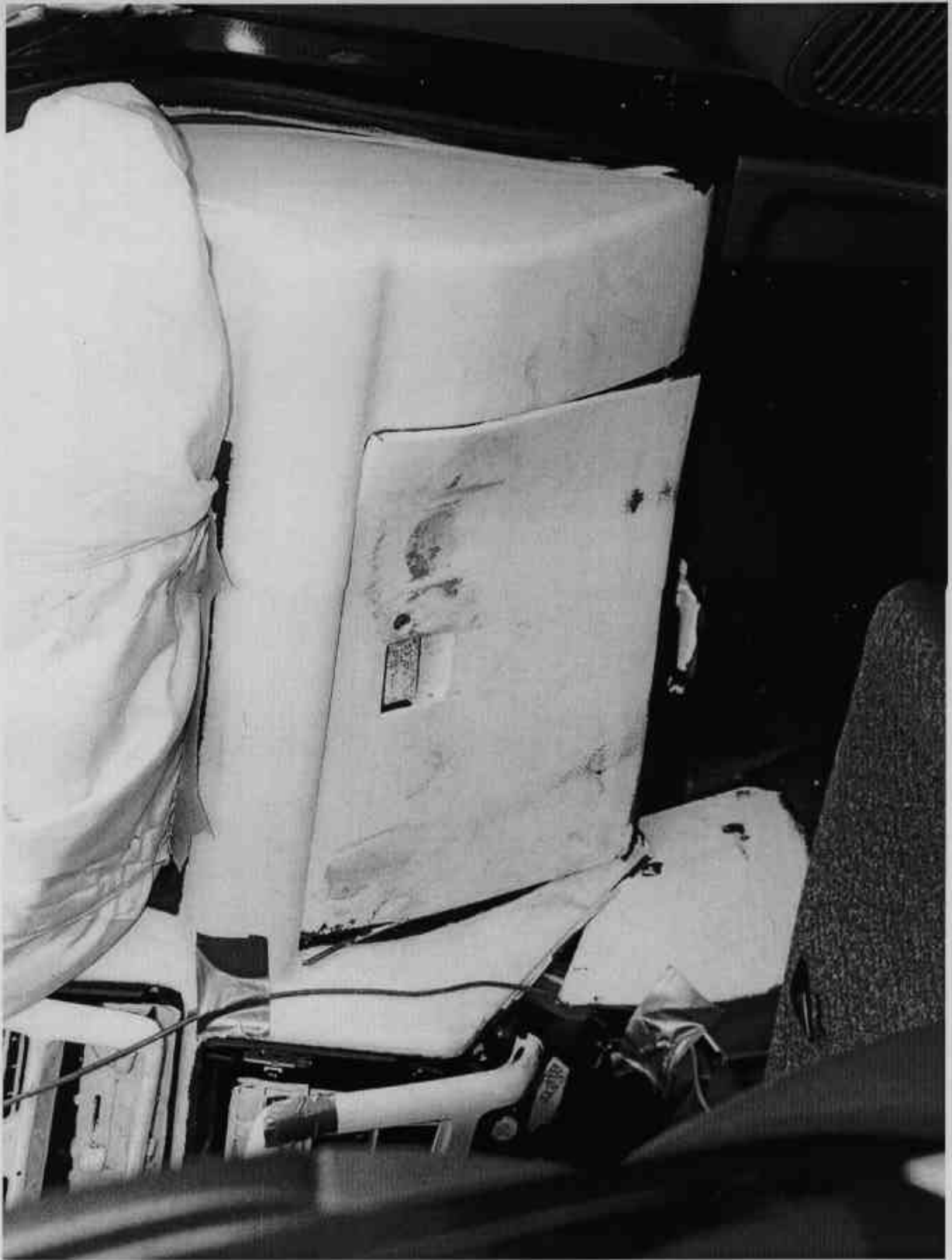


FIGURE A-52. POST TEST PASSENGER SIDE KNEE BOLSTER

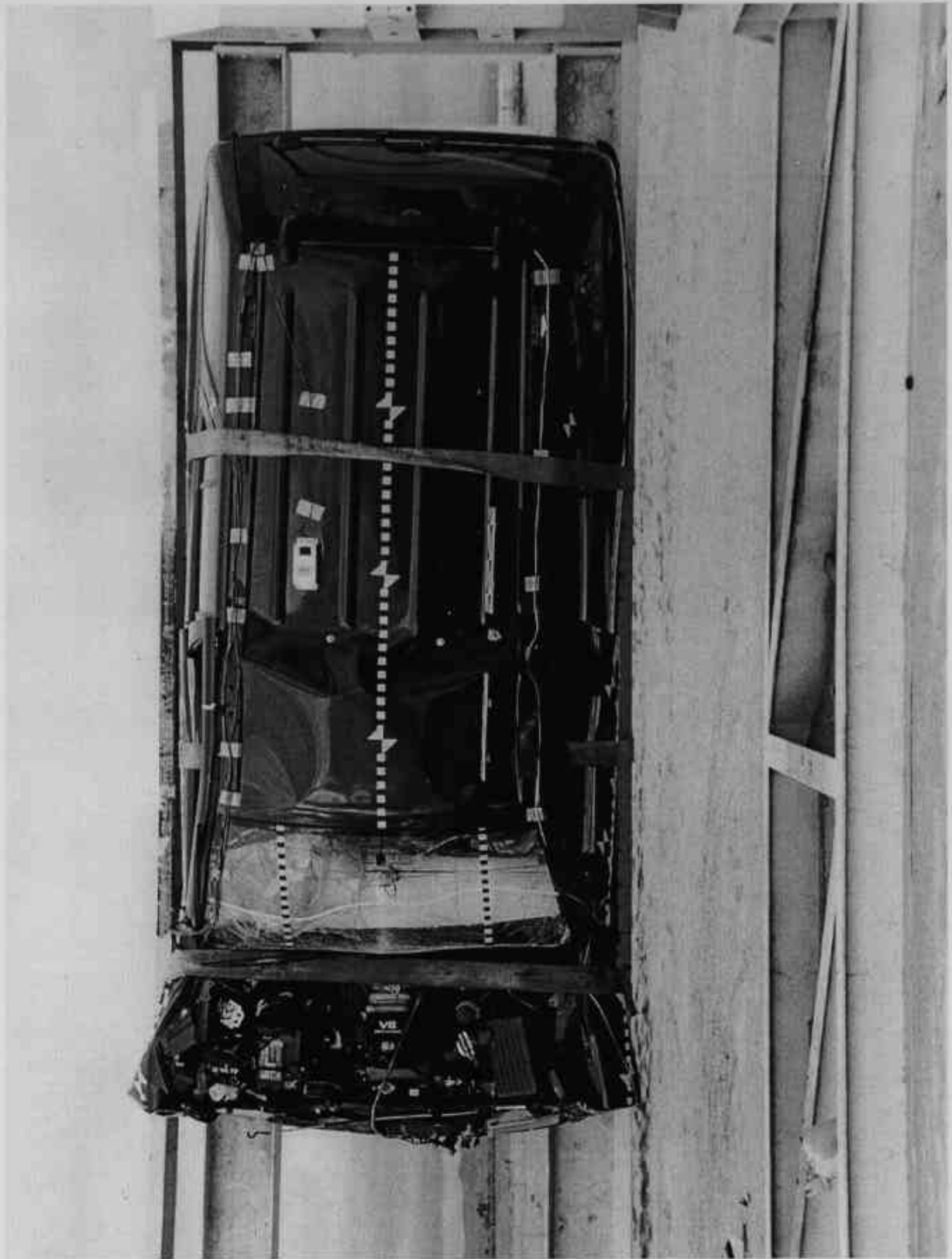


FIGURE A-53. VEHICLE ON ROLLOVER

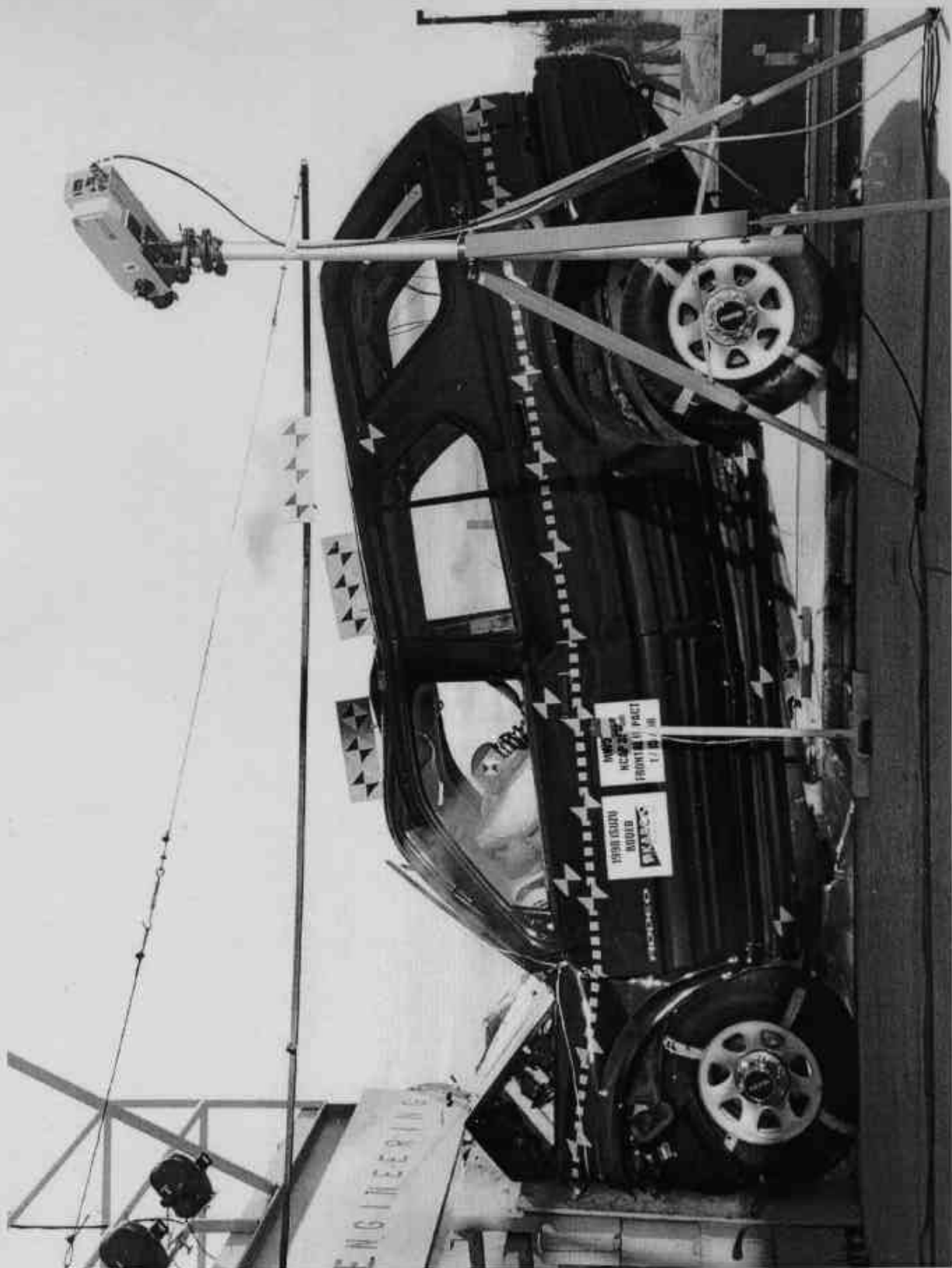


FIGURE A-54. VEHICLE DURING IMPACT

APPENDIX B
DUMMY, VEHICLE AND RESPONSE DATA TRACES

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LIST OF DATA PLOTS...(Continued)

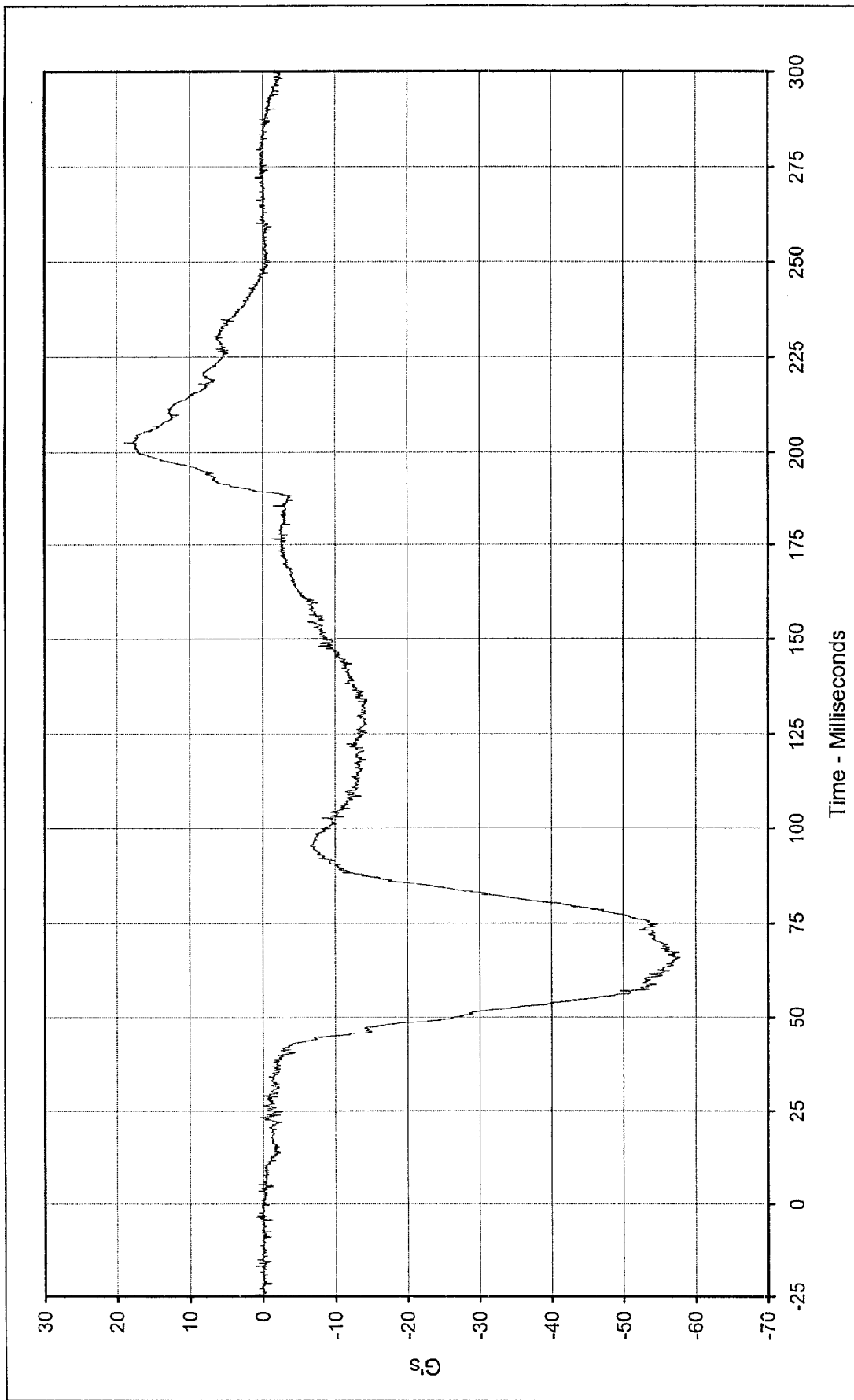
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B-116	Passenger Right Foot Aft X	B-116
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B-128	Vehicle Right Rear Primary Displacement	B-128
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B-131	Vehicle Engine Top Displacement	B-131
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B-133	Vehicle Engine Bottom Velocity X	B-133
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B-139	Vehicle Right Brake Caliper Velocity X	B-139
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LIST OF DATA PLOTS...(Continued)

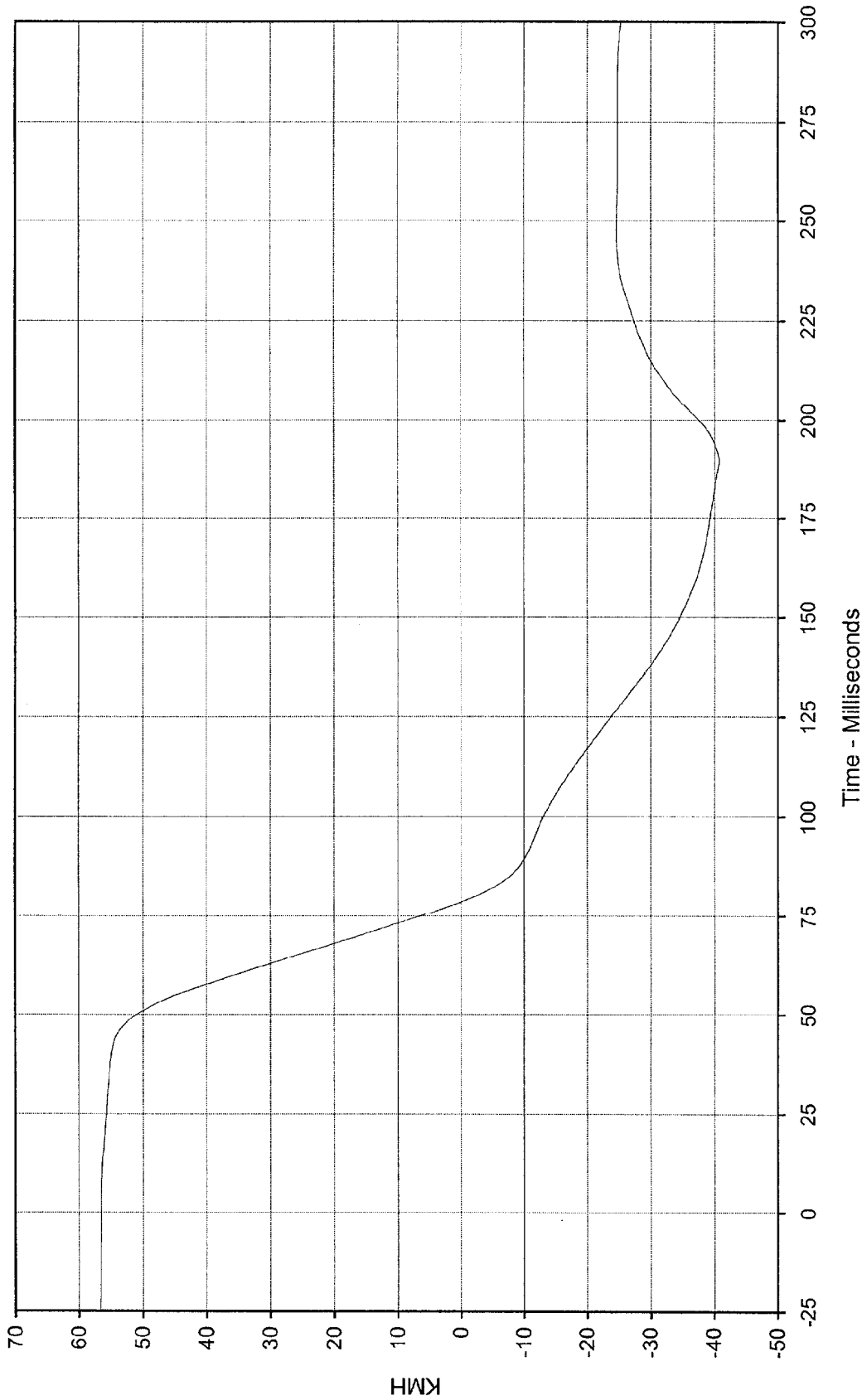
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B-145	Vehicle Left Rear Redundant Velocity X	B-145
B-146	Vehicle Left Rear Redundant Displacement	B-146



Curve Description: Driver Head Primary X
 Maximum Value: 18.9 at 202.5 Milliseconds
 Minimum Value: -57.8 at 65.7 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/15/98
 Curve Number: FIL-001

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Driver Head Primary X Velocity

Maximum Value: 56.5 at 0.0 Milliseconds

Minimum Value: -40.8 at 189.6 Milliseconds

SAE Filter Class: 180

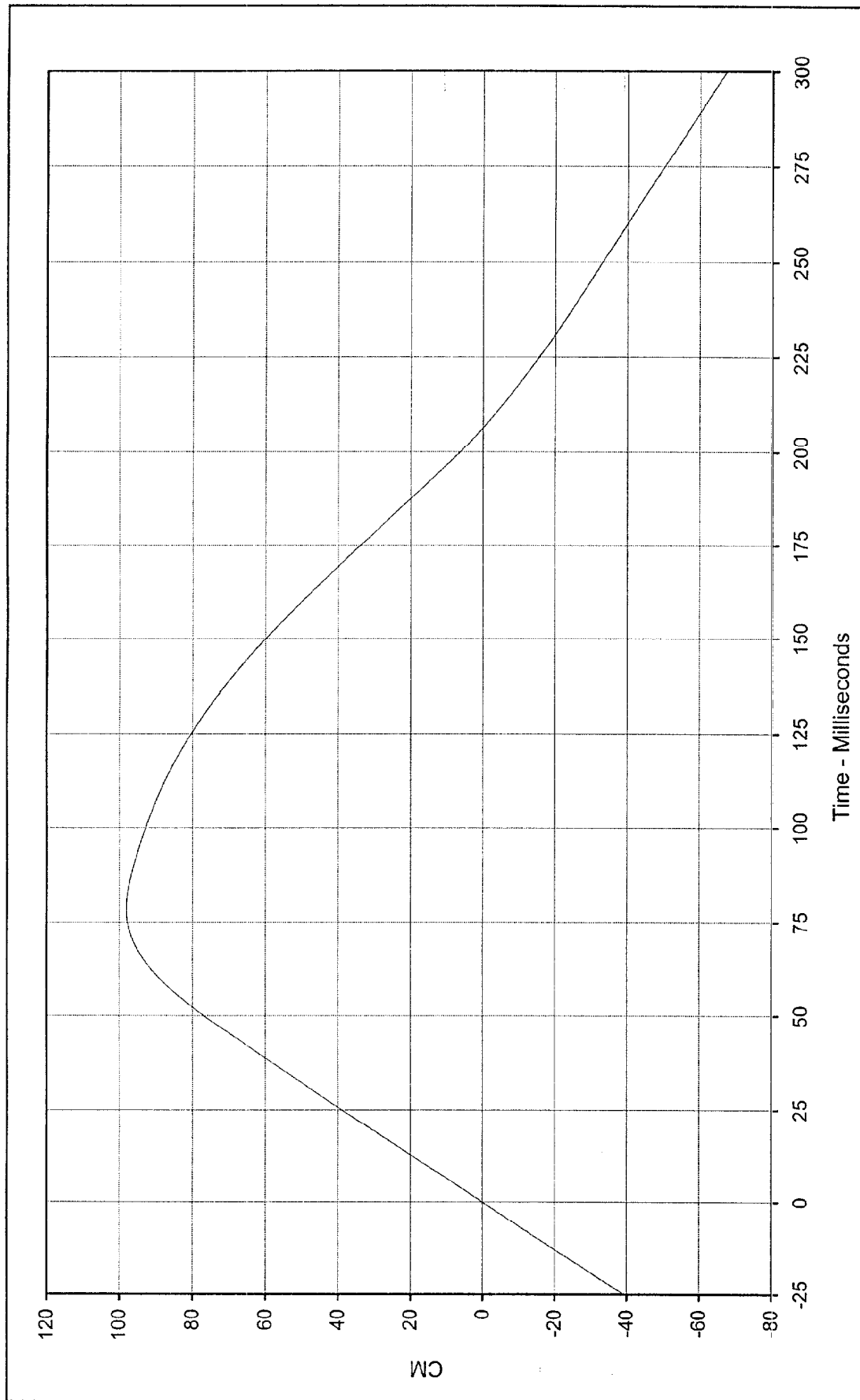
Date of Test: 1/15/98

Curve Number: IN1-001

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV

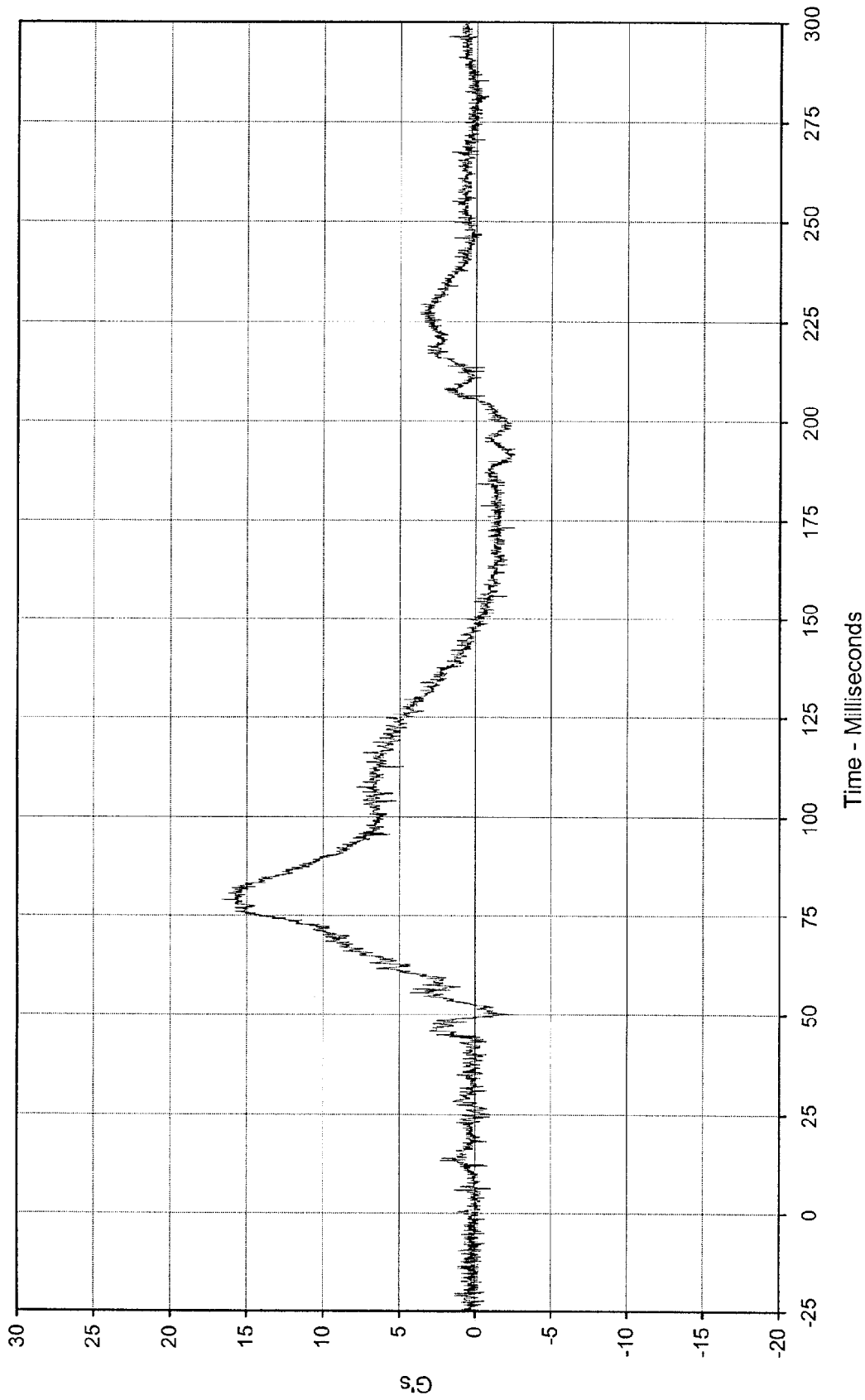




Curve Description: Driver Head Primary X Displ. Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
Maximum Value: 98.1 at 78.6 Milliseconds Test Vehicle: 1998 Isuzu Rodeo SUV
Minimum Value: -67.3 at 299.9 Milliseconds

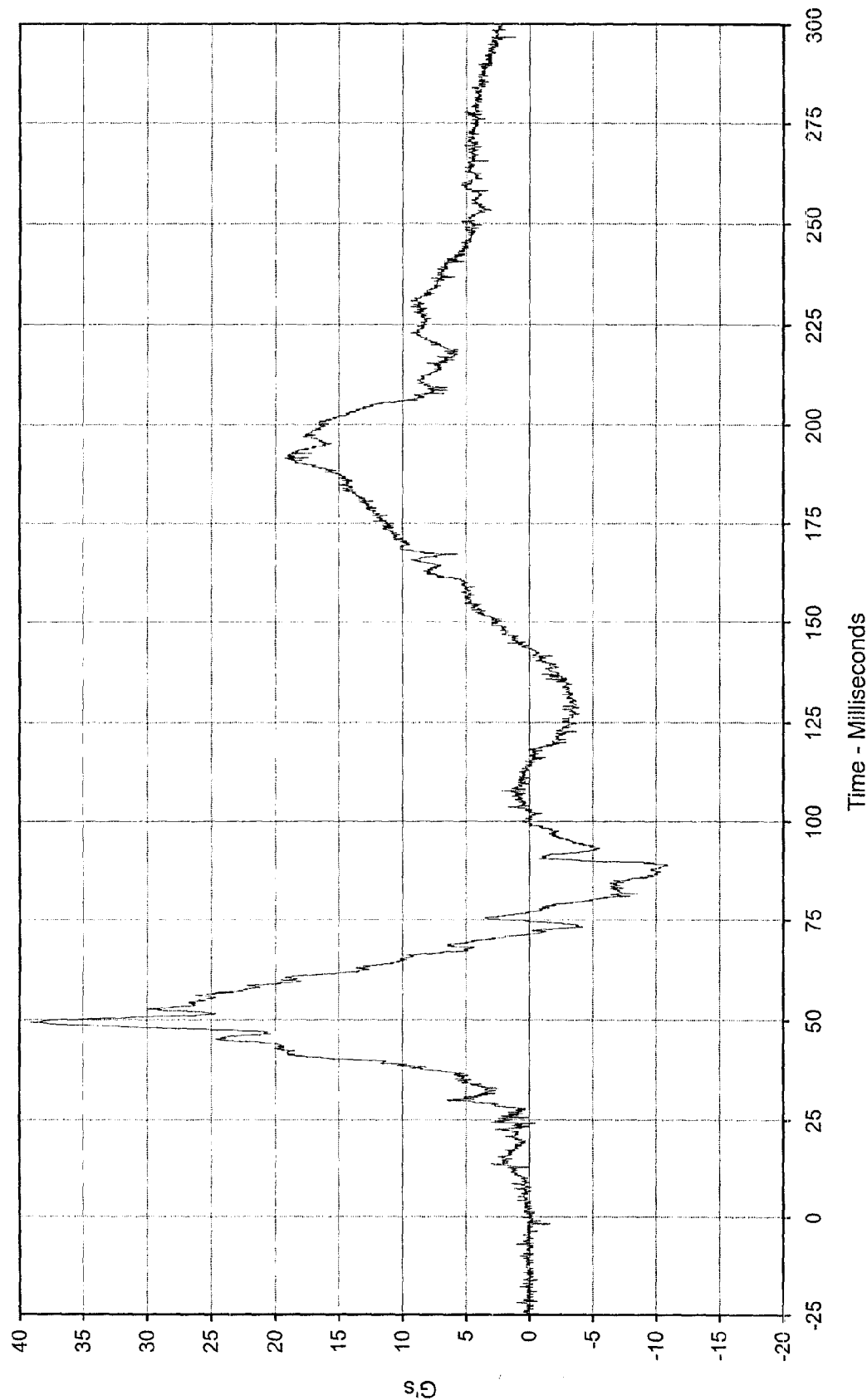


SAE Filter Class: 180
Date of Test: 1/15/98
Curve Number: IN2-001



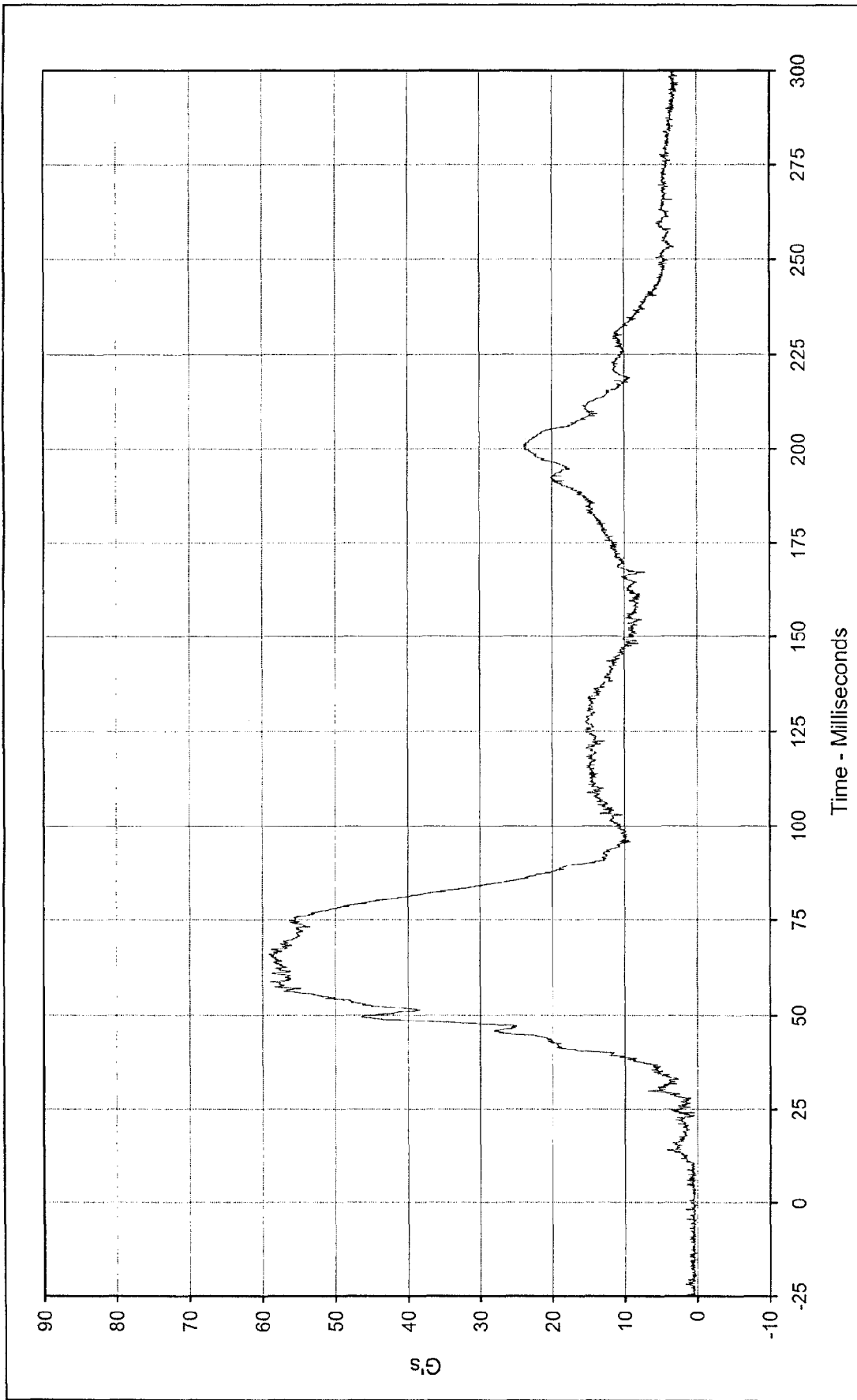
Curve Description:	Driver Head Primary Y	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	16.6 at 78.9 Milliseconds	Test Vehicle:	1998 Isuzu Rodeo SUV	
Minimum Value:	-2.8 at 50.0 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	1/15/98			
Curve Number:	FIL-002			





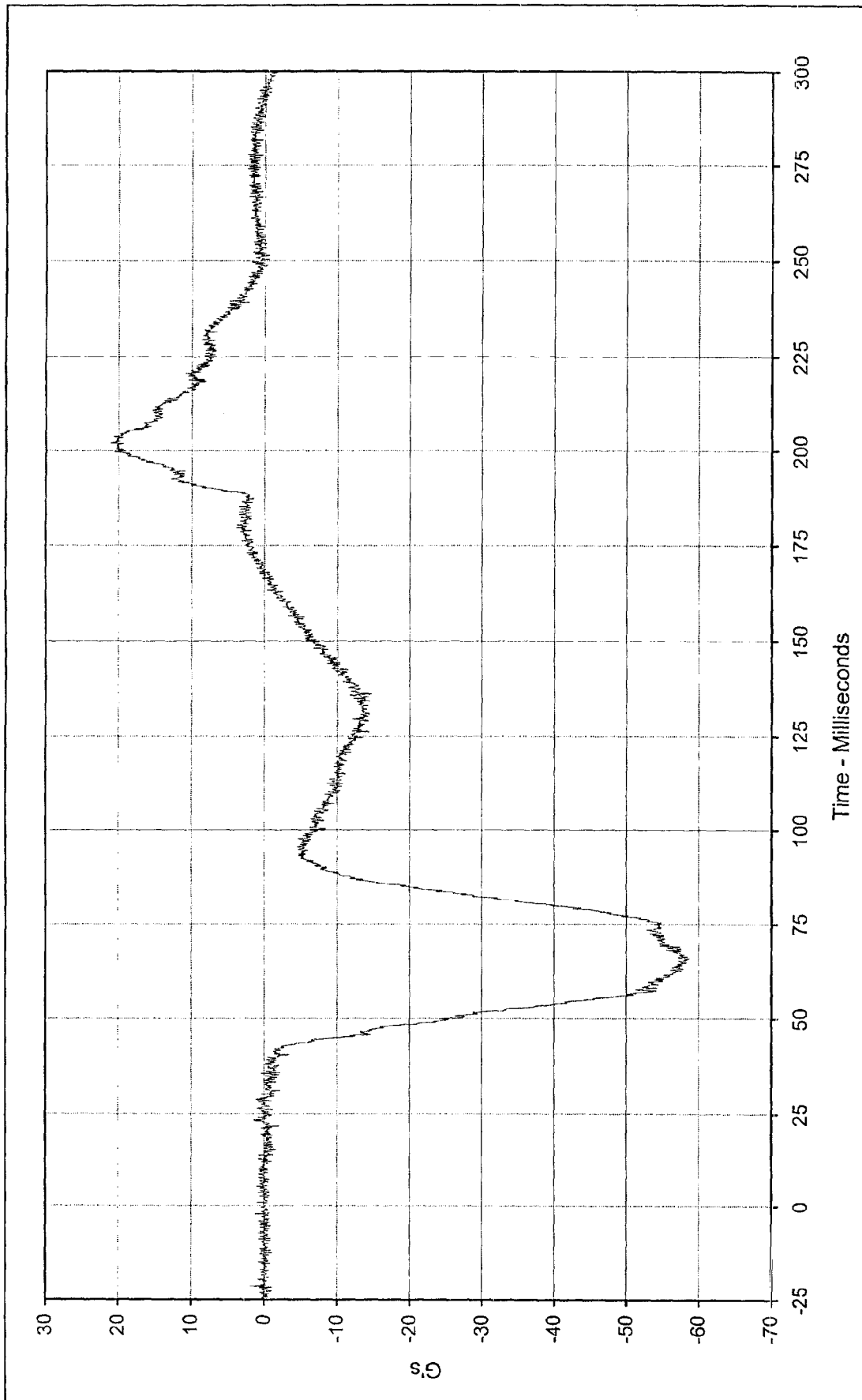
Curve Description:	Driver Head Primary Z		Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	39.1	at 49.4	Test Vehicle:	1998 Isuzu Rodeo SUV	
Minimum Value:	-10.9	at 88.8			
SAE Filter Class:	1000				
Date of Test:	1/15/98				
Curve Number:	FIL-003				





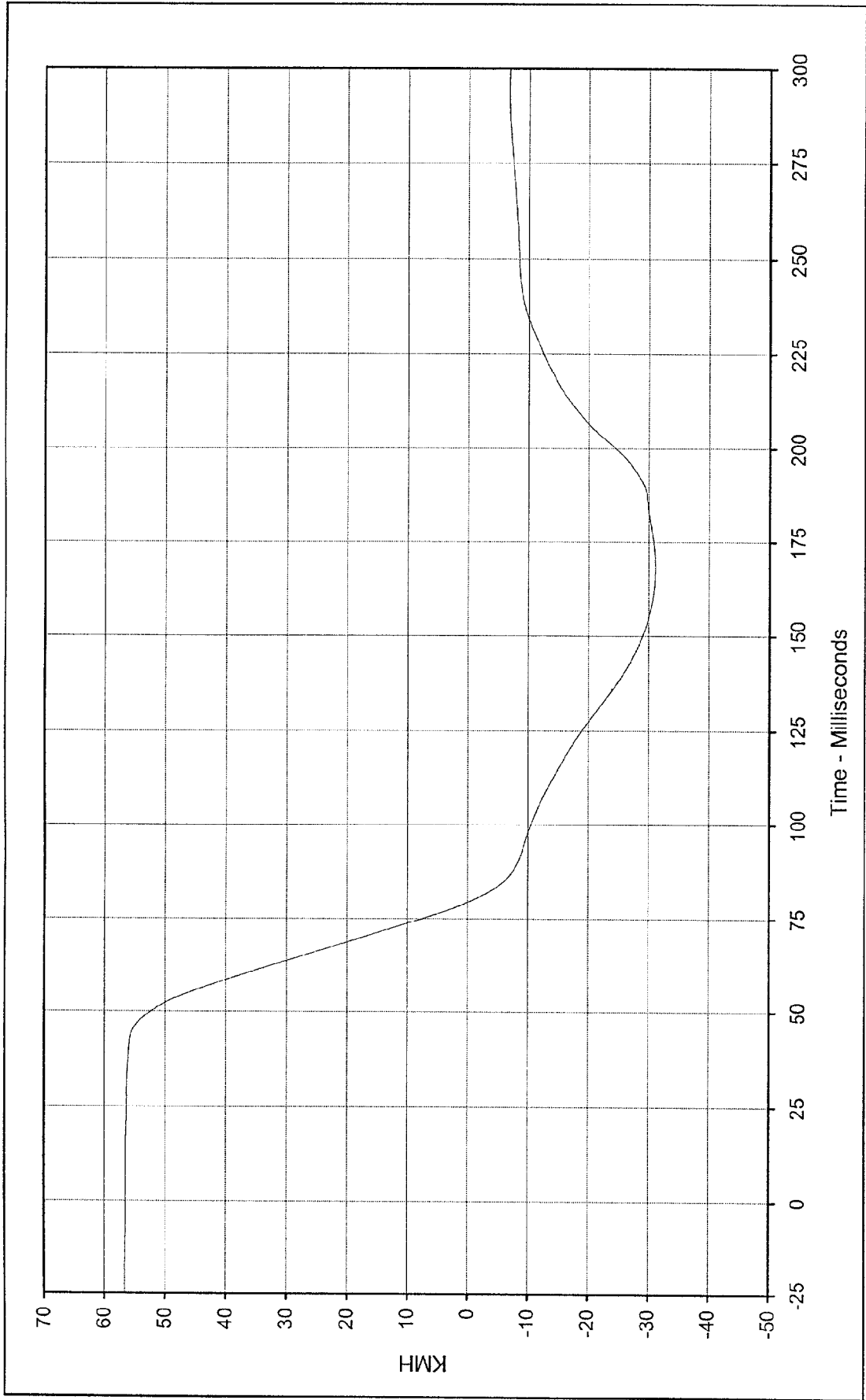
Curve Description:	Driver Head Resultant Primary	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	59.1 at 65.8 Milliseconds	Test Vehicle:	1998 Isuzu Rodeo SUV	
Minimum Value:	0.2 at 2.5 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	1/15/98			
Curve Number:	RES-001			





Curve Description:	Driver Head Redundant X	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	21.1 at 202.0 Milliseconds	Test Vehicle:	1998 Isuzu Rodeo SUV	
Minimum Value:	-58.7 at 65.8 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	1/15/98			
Curve Number:	FIL-004			

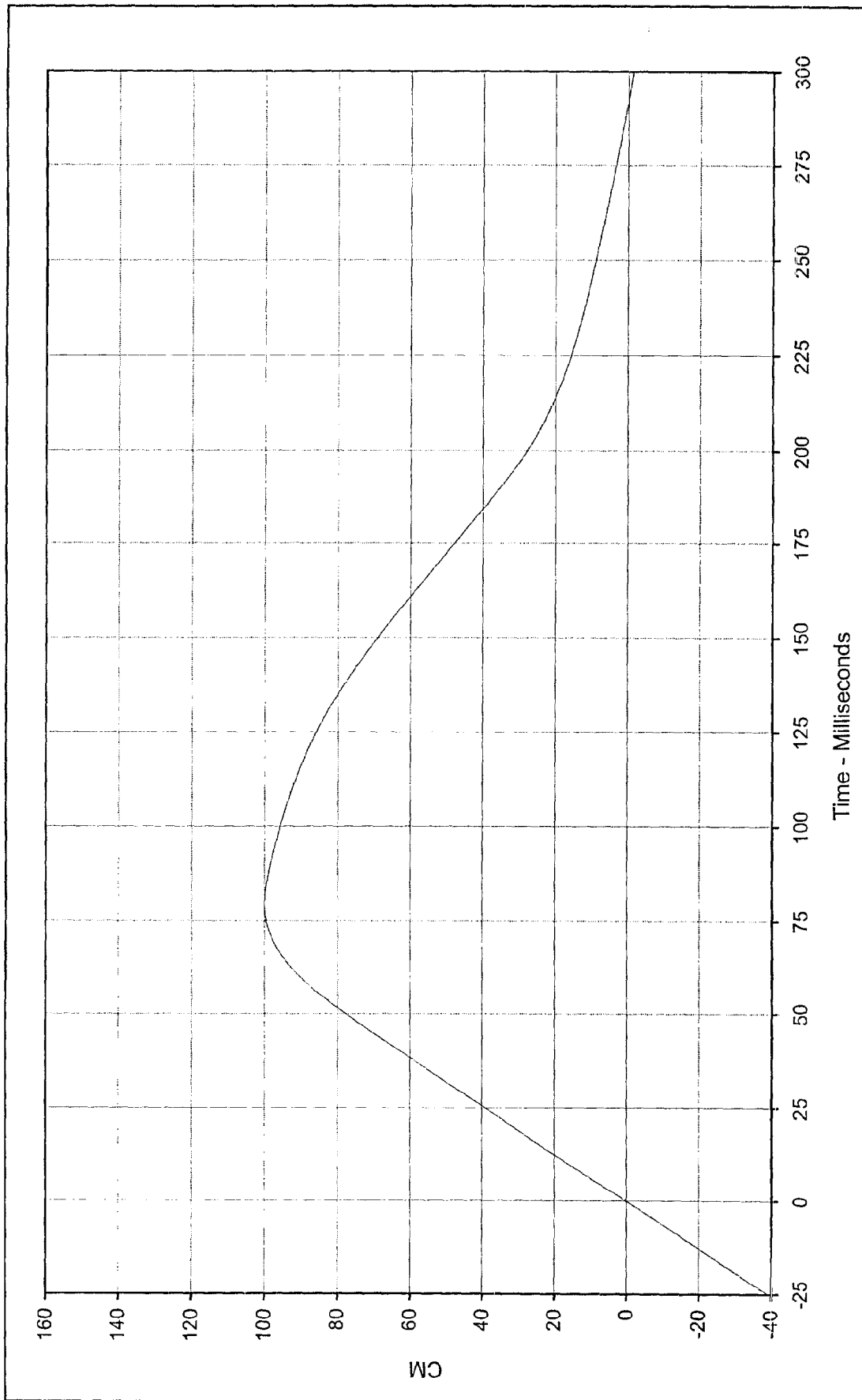




Curve Description: Driver Head Redundant X Velocity
Maximum Value: 56.5 at 10.1 Milliseconds
Minimum Value: -31.1 at 168.1 Milliseconds
SAE Filter Class: 180
Date of Test: 1/15/98
Curve Number: IN1-004

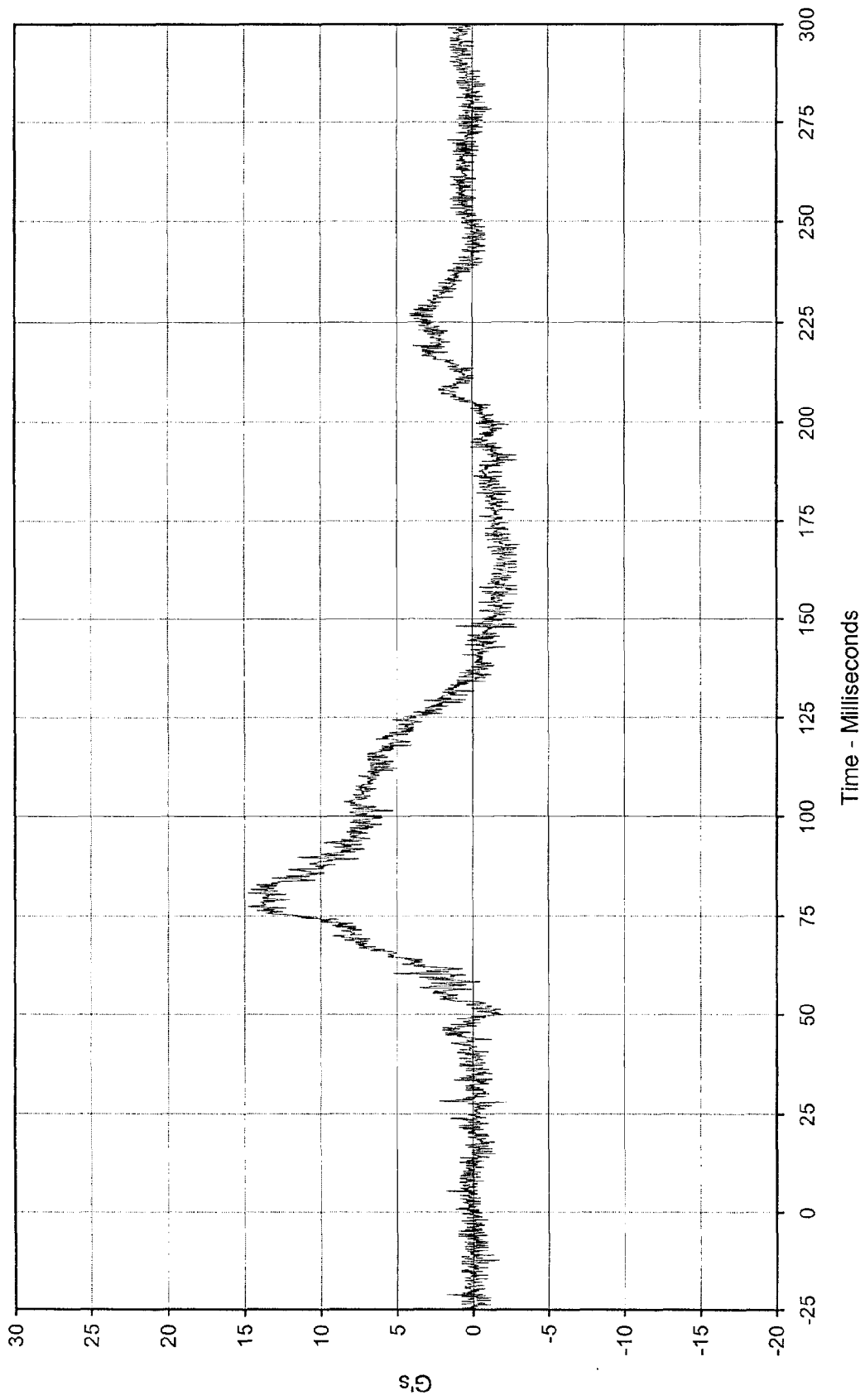
Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description:	Driver Head Redundant X Displ.	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	100.0	at	79.3	Milliseconds
Minimum Value:	-1.4	at	299.9	Milliseconds
SAE Filter Class:	180	Test Vehicle:	1998 Isuzu Rodeo SUV	
Date of Test:	1/15/98			
Curve Number:	IN2-004			





Curve Description: Driver Head Redundant Y Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Maximum Value: 14.7 at 77.4 Milliseconds Test Vehicle: 1998 Isuzu Rodeo SUV

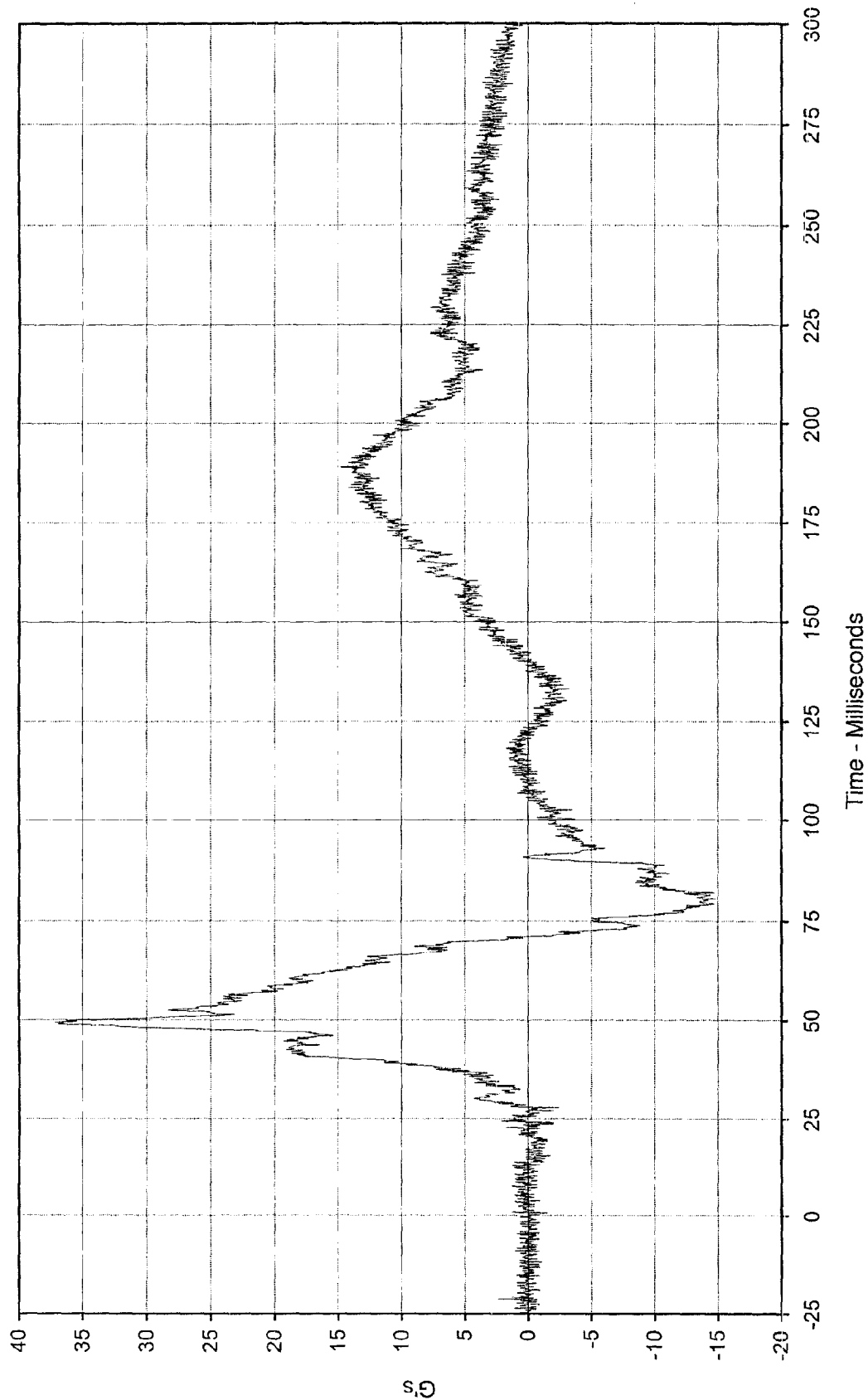
Minimum Value: -3.1 at 168.9 Milliseconds

SAE Filter Class: 1000

Date of Test: 1/15/98

Curve Number: FIL-005

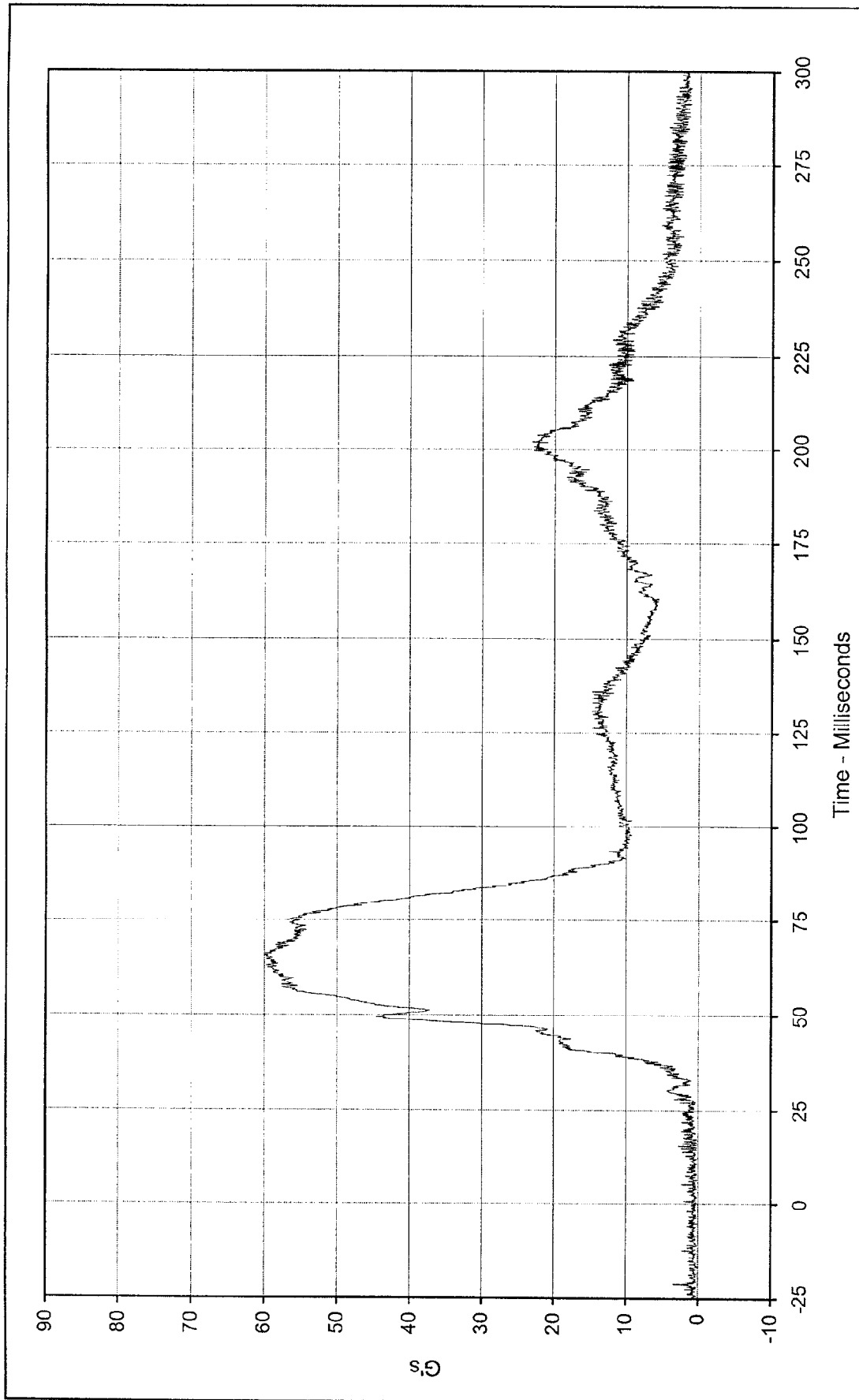




Curve Description: Driver Head Redundant Z
 Maximum Value: 37.1 at 49.5 Milliseconds
 Minimum Value: -14.9 at 80.5 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/15/98
 Curve Number: FIL-006

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV

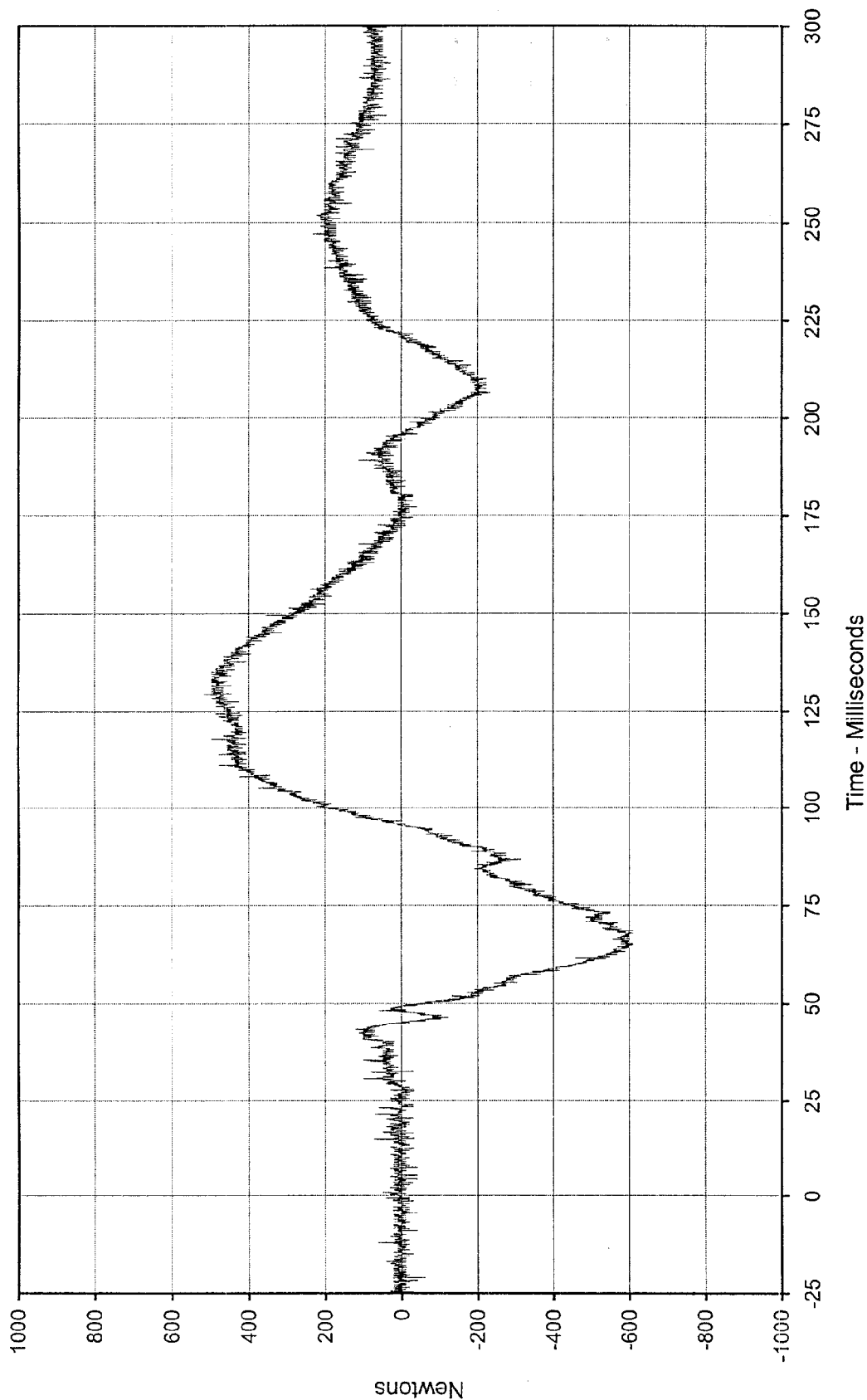




Curve Description: Driver Head Resultant Redundant
 Maximum Value: 60.0 at 65.8 Milliseconds
 Minimum Value: 0.1 at 6.5 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/15/98
 Curve Number: RES-004

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Driver Neck Force X

Maximum Value: 516.4 at 129.3 Milliseconds

Minimum Value: -609.3 at 65.0 Milliseconds

SAE Filter Class: 1000

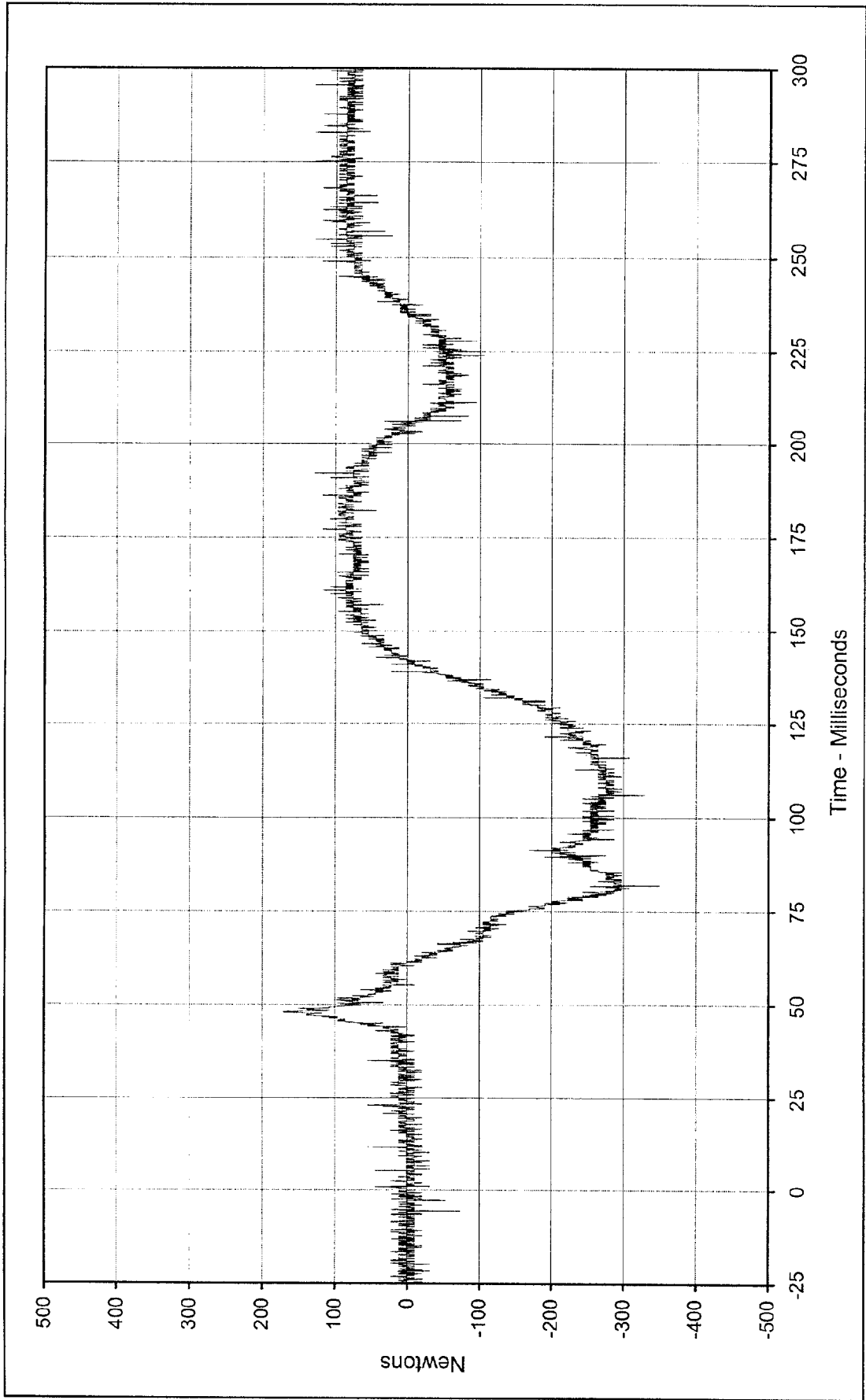
Date of Test: 1/15/98

Curve Number: FIL-007

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Maximum Value: 170.9 at 48.1 Milliseconds

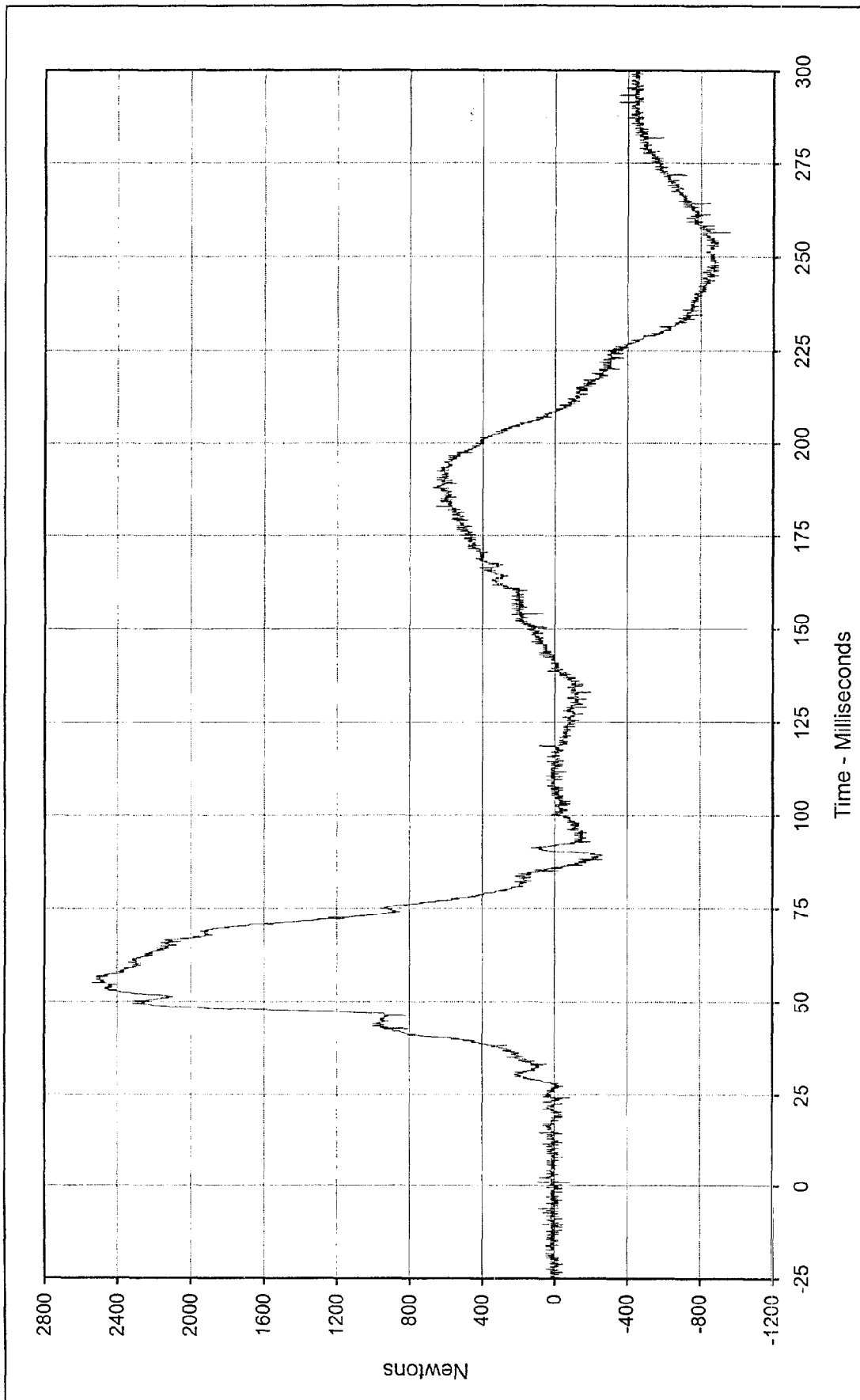
Minimum Value: -350.0 at 81.8 Milliseconds

SAE Filter Class: 1000

Date of Test: 1/15/98

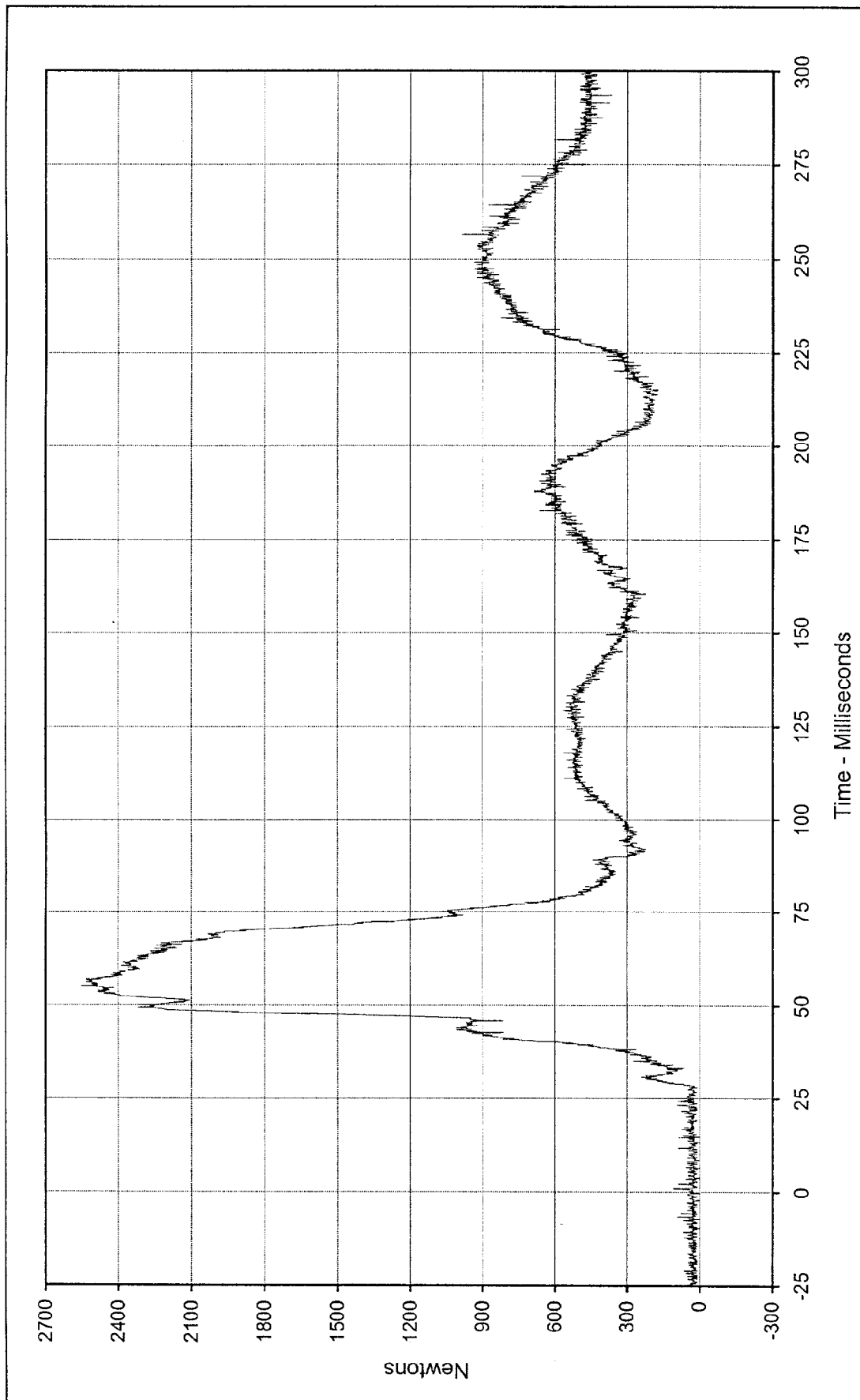
Curve Number: FIL-008





Curve Description: Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Maximum Value: 2536.3 at 55.1 Milliseconds
 Minimum Value: -964.2 at 256.7 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/15/98
 Curve Number: FIL-009

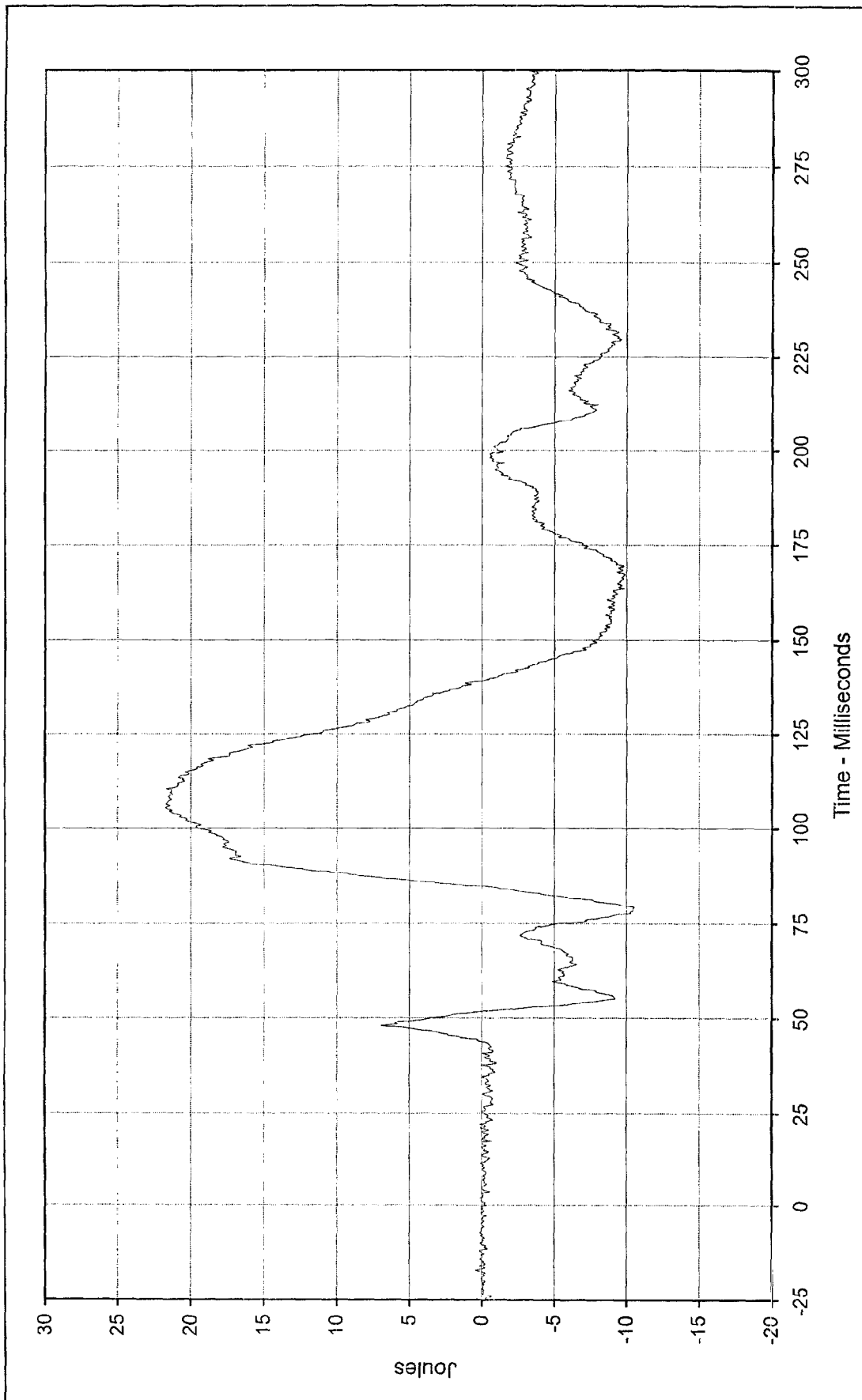




Curve Description: Driver Neck Force Resultant
 Maximum Value: 2551.3 at 55.1 Milliseconds
 Minimum Value: 2.0 at 3.8 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/15/98
 Curve Number: RES-007

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Driver Neck Moment X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Maximum Value: 21.7 at 105.6 Milliseconds

Minimum Value: -10.5 at 79.3 Milliseconds

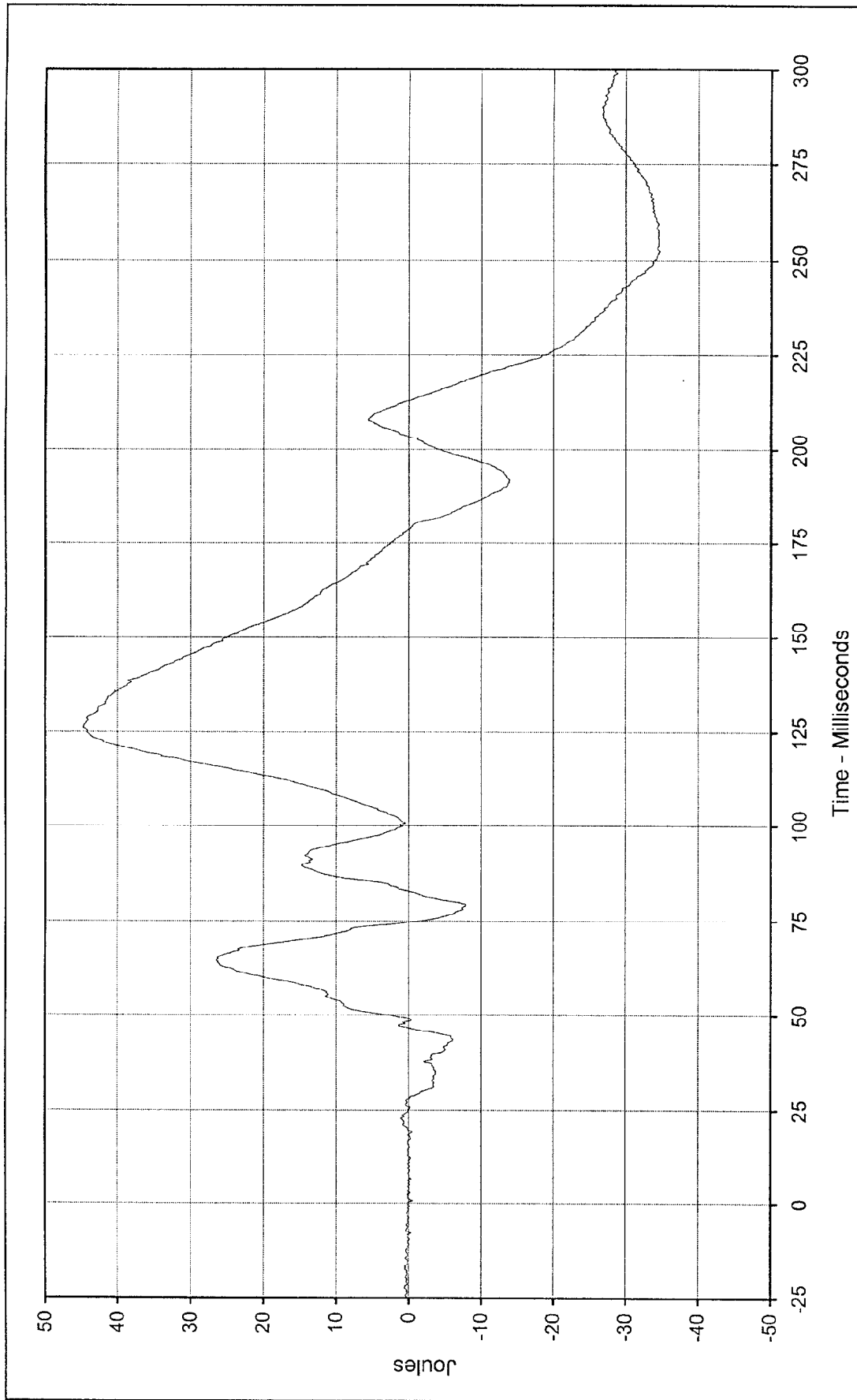
SAE Filter Class: 600

Date of Test: 1/15/98

Curve Number: FIL-010

Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Maximum Value: 44.7 at 126.4 Milliseconds Test Vehicle: 1998 Isuzu Rodeo SUV

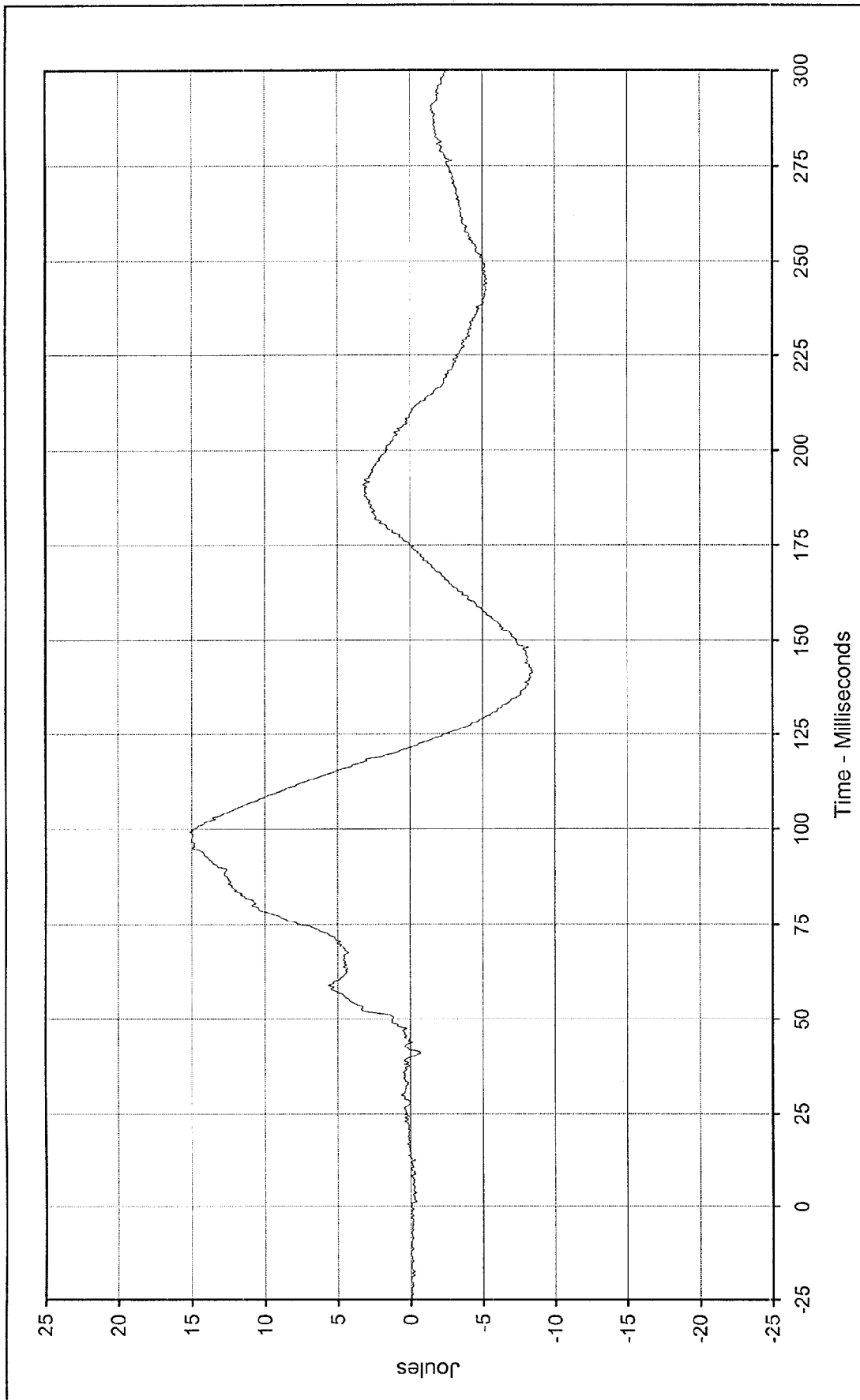
Minimum Value: -34.7 at 252.4 Milliseconds

SAE Filter Class: 600

Date of Test: 1/15/98

Curve Number: FIL-011





Curve Description: Driver Neck Moment Z Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Maximum Value: 15.1 at 99.3 Milliseconds

Minimum Value: -8.5 at 141.5 Milliseconds

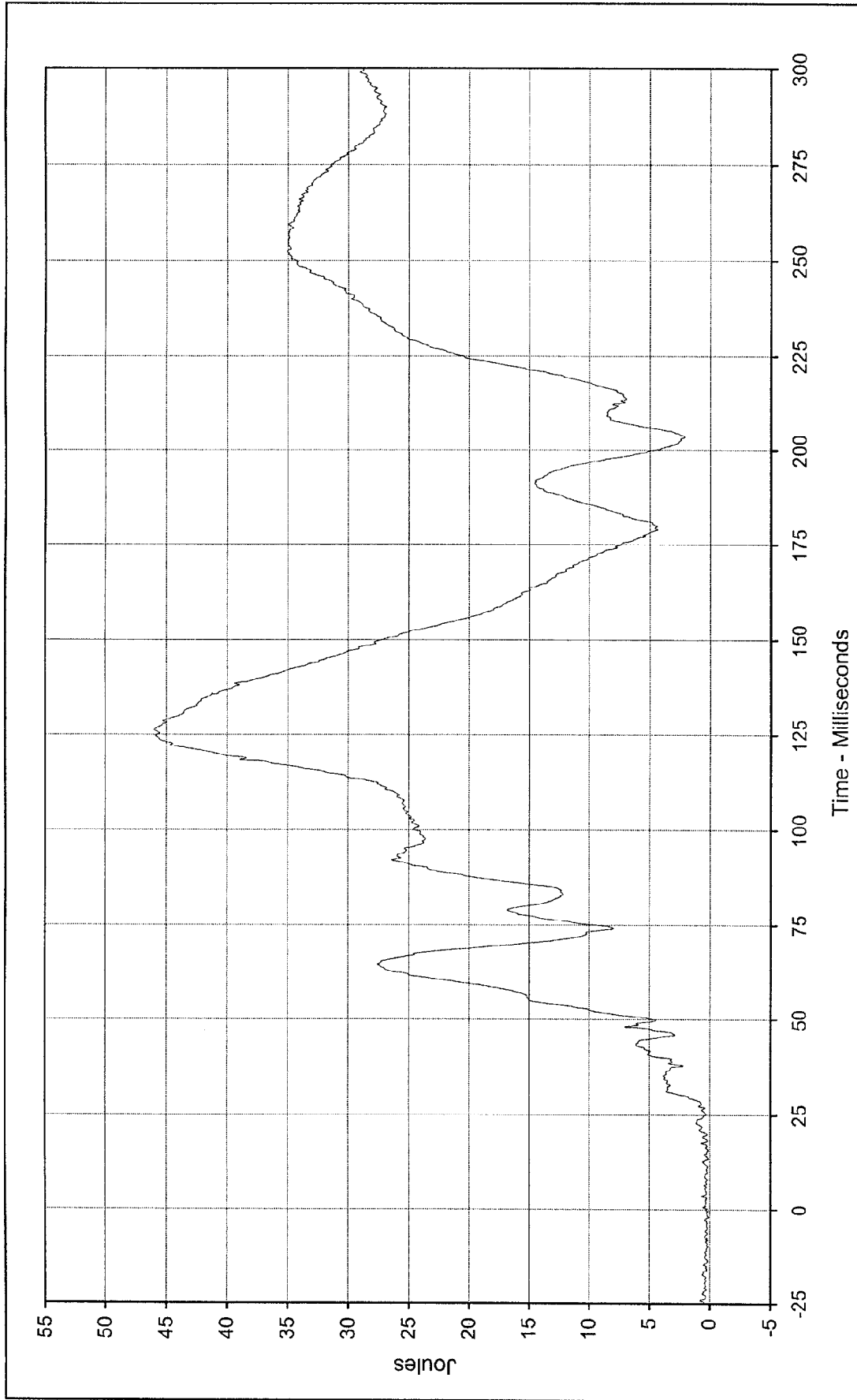
SAE Filter Class: 600

Date of Test: 1/15/98

Curve Number: FIL-012

Test Vehicle: 1998 Isuzu Rodeo SUV

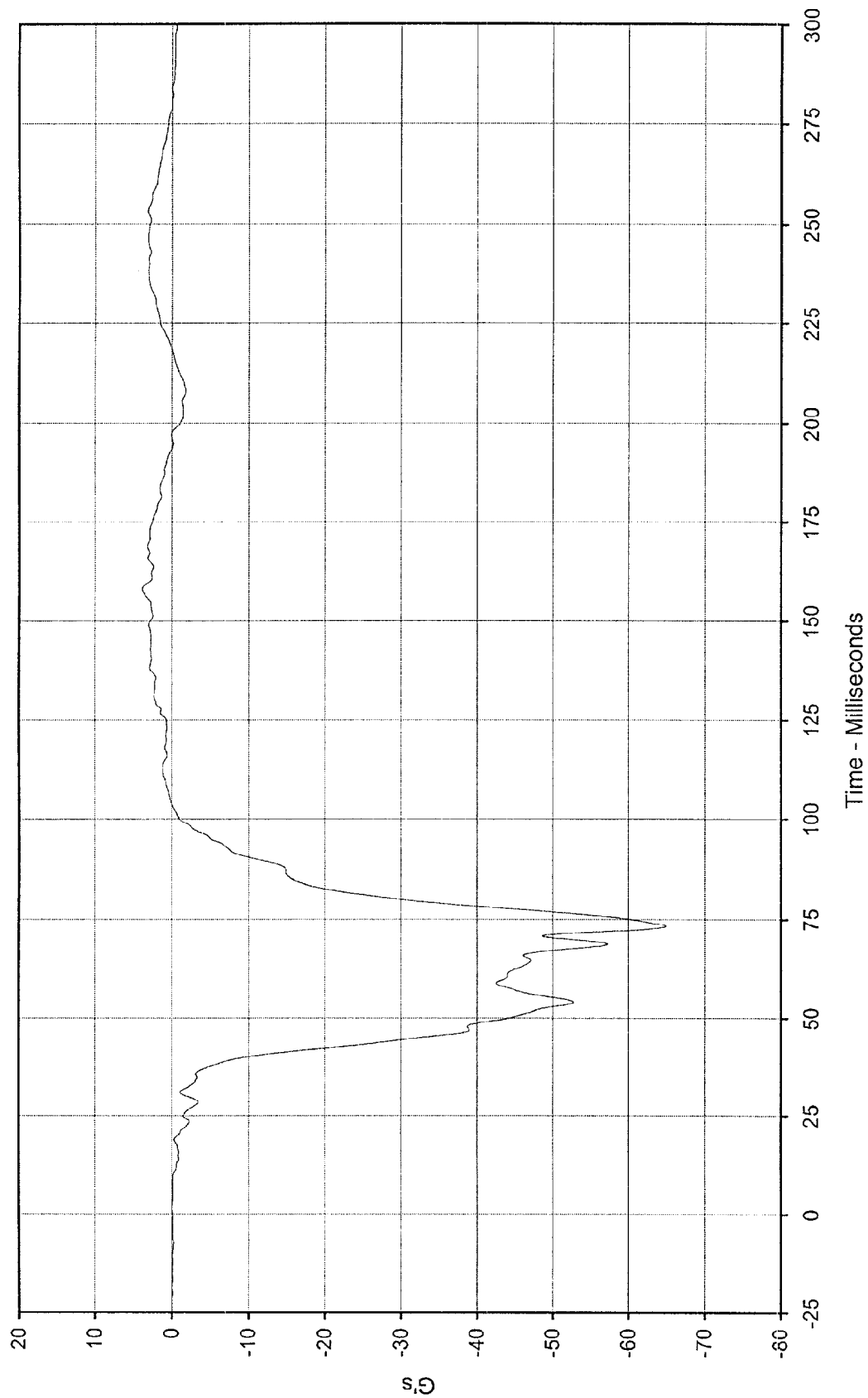




Curve Description: Driver Neck Moment Resultant
 Maximum Value: 46.1 at 126.3 Milliseconds
 Minimum Value: 0.1 at 13.5 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/15/98
 Curve Number: RES-010

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV

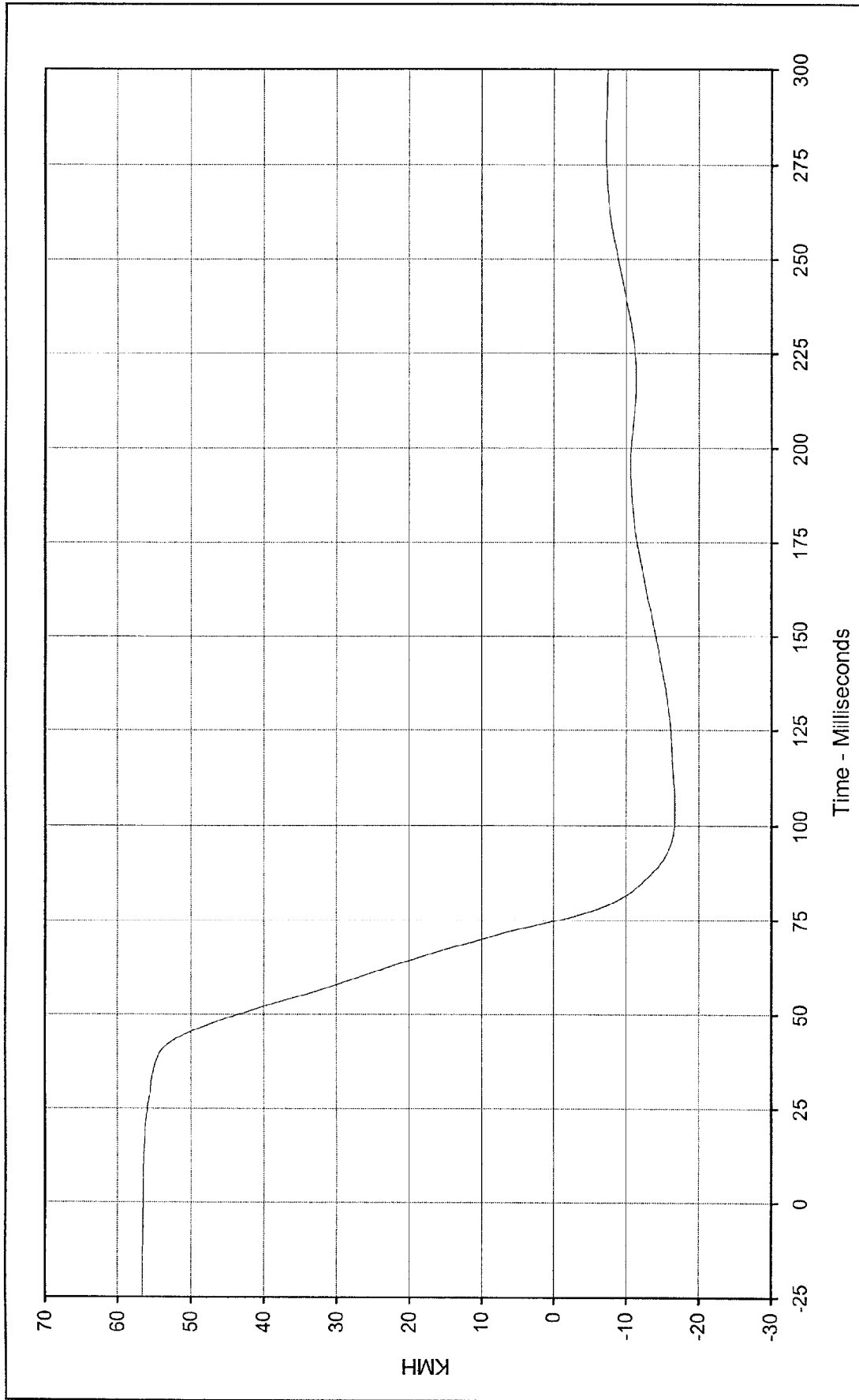




Curve Description: Driver Chest Primary X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
Maximum Value: 3.9 at 158.1 Milliseconds Test Vehicle: 1998 Isuzu Rodeo SUV
Minimum Value: -64.9 at 73.2 Milliseconds



SAE Filter Class: 180
Date of Test: 1/15/98
Curve Number: FIL-013



Curve Description: Driver Chest Primary X Velocity Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Maximum Value: 56.5 at 0.0 Milliseconds Test Vehicle: 1998 Isuzu Rodeo SUV

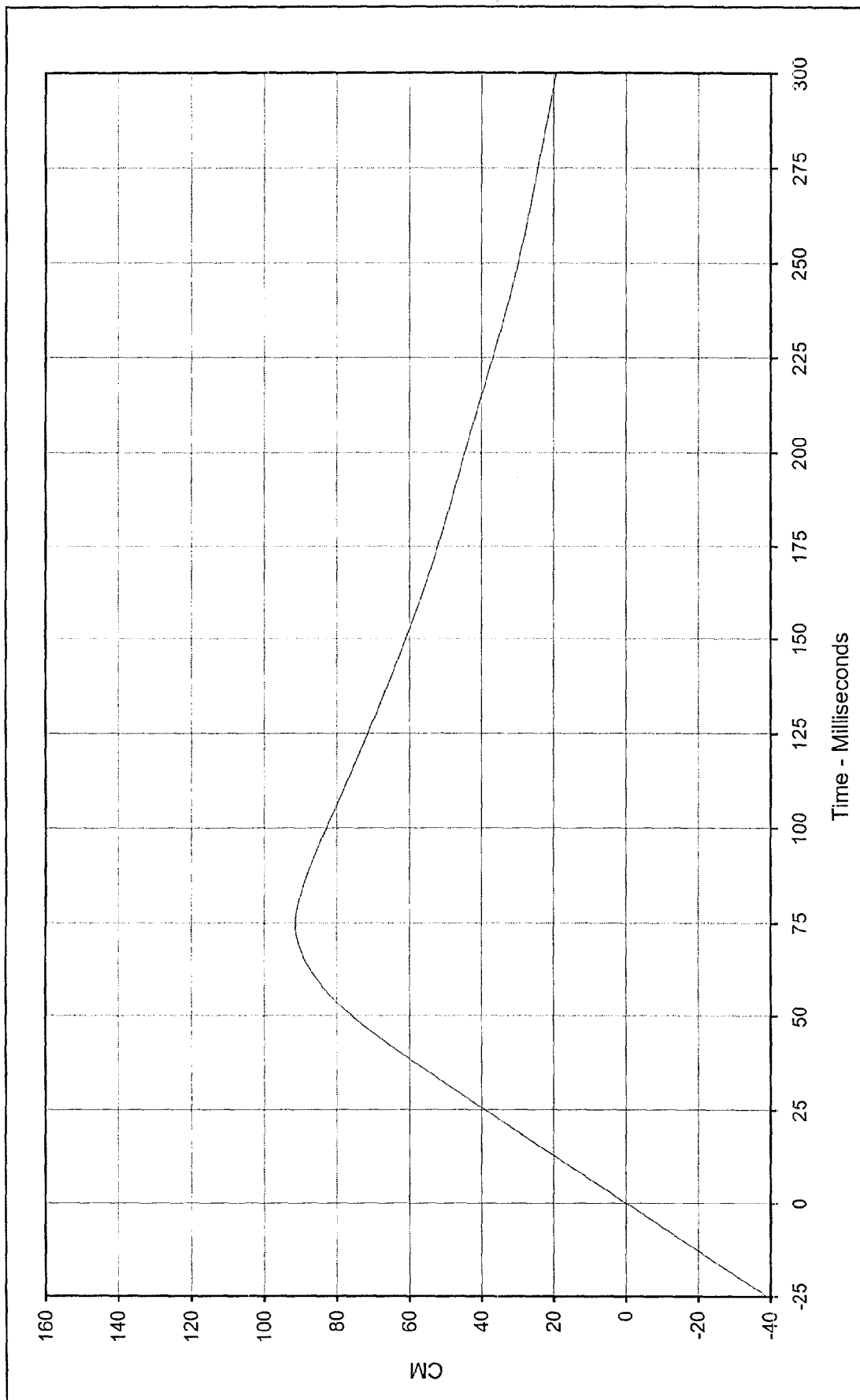
Minimum Value: -16.7 at 103.8 Milliseconds

SAE Filter Class: 180

Date of Test: 1/15/98

Curve Number: IN1-013



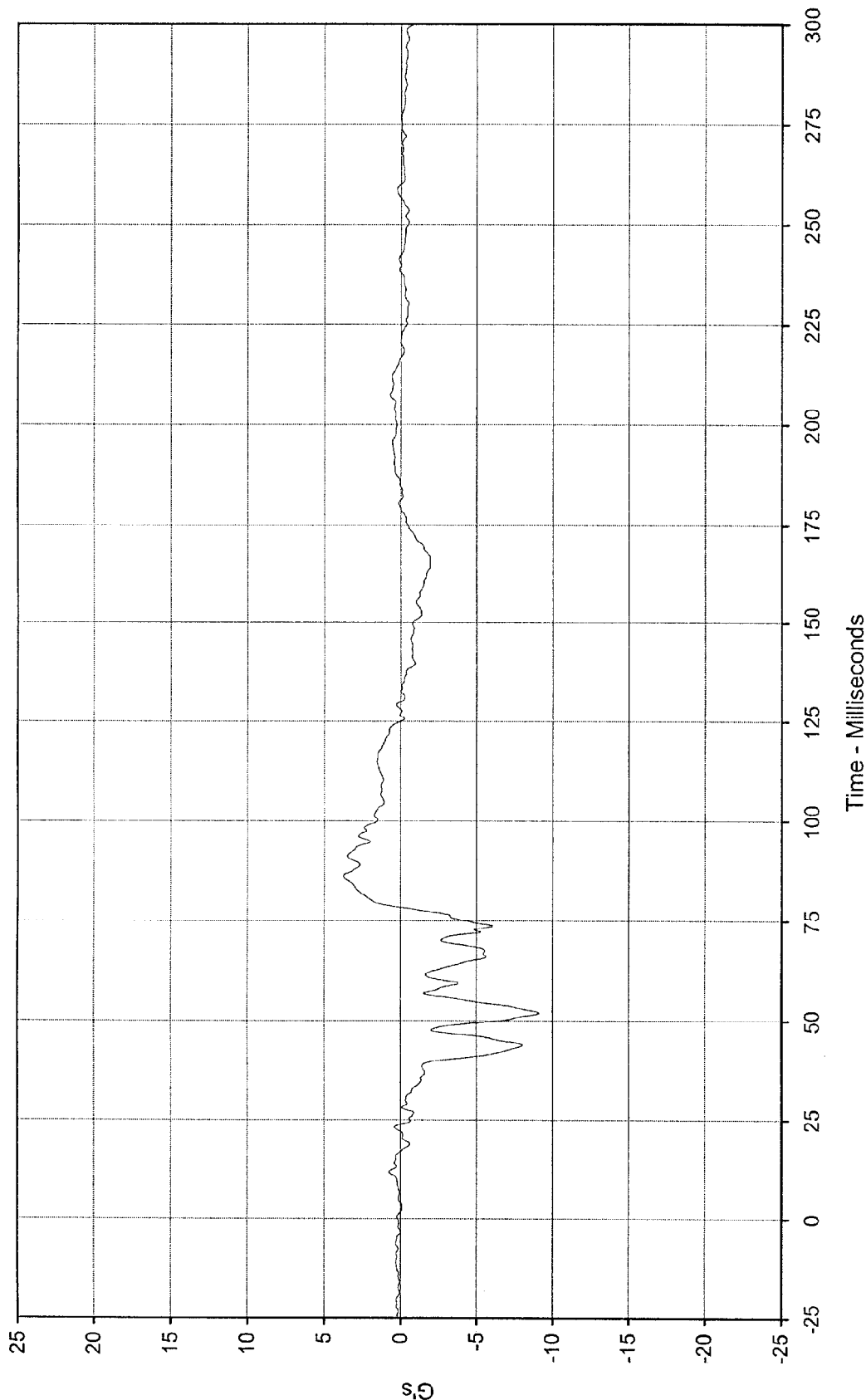


Curve Description: Driver Chest Primary X Displ.
 Maximum Value: 91.4 at 74.8 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180
 Date of Test: 1/15/98
 Curve Number: IN2-013

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Driver Chest Primary Y

Maximum Value: 3.7 at 86.1 Milliseconds

Minimum Value: -9.1 at 52.1 Milliseconds

SAE Filter Class: 180

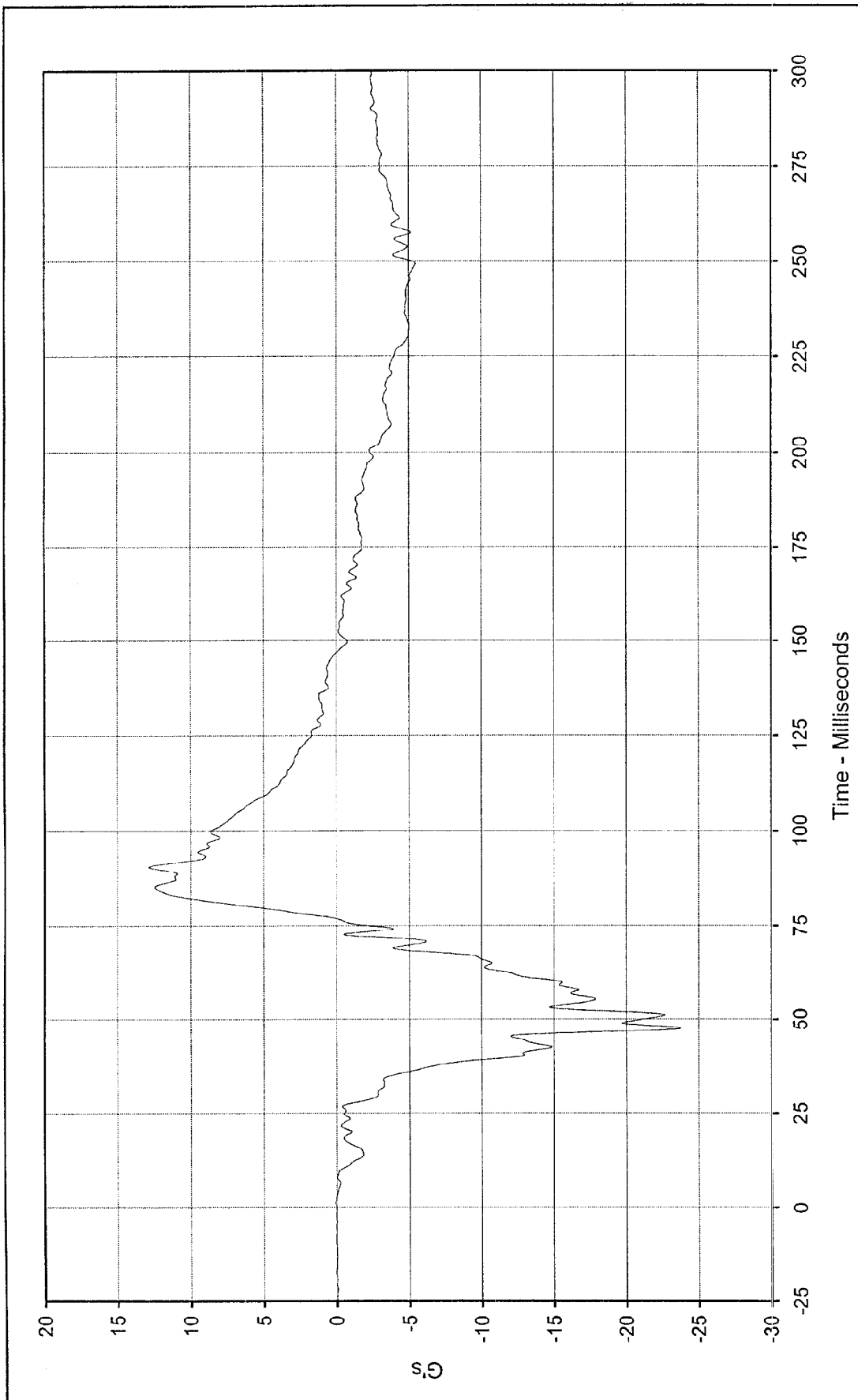
Date of Test: 1/15/98

Curve Number: FIL-014

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV

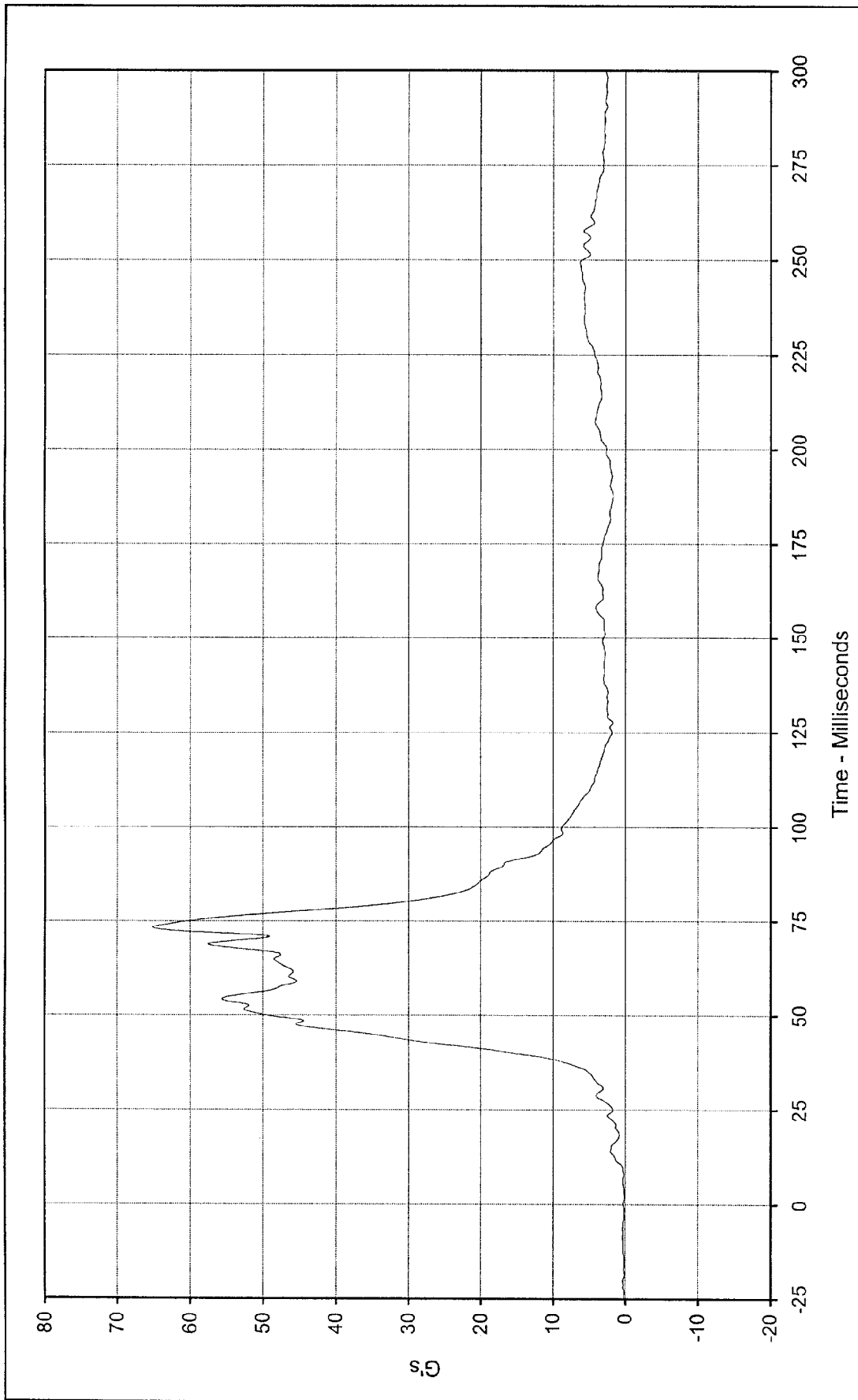




Curve Description: Driver Chest Primary Z
 Maximum Value: 12.9 at 90.5 Milliseconds
 Minimum Value: -23.8 at 12.9 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/15/98
 Curve Number: FIL-015

Testing Program: 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Driver Chest Resultant Primary Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Maximum Value: 65.2 at 73.2 Milliseconds Test Vehicle: 1998 Isuzu Rodeo SUV

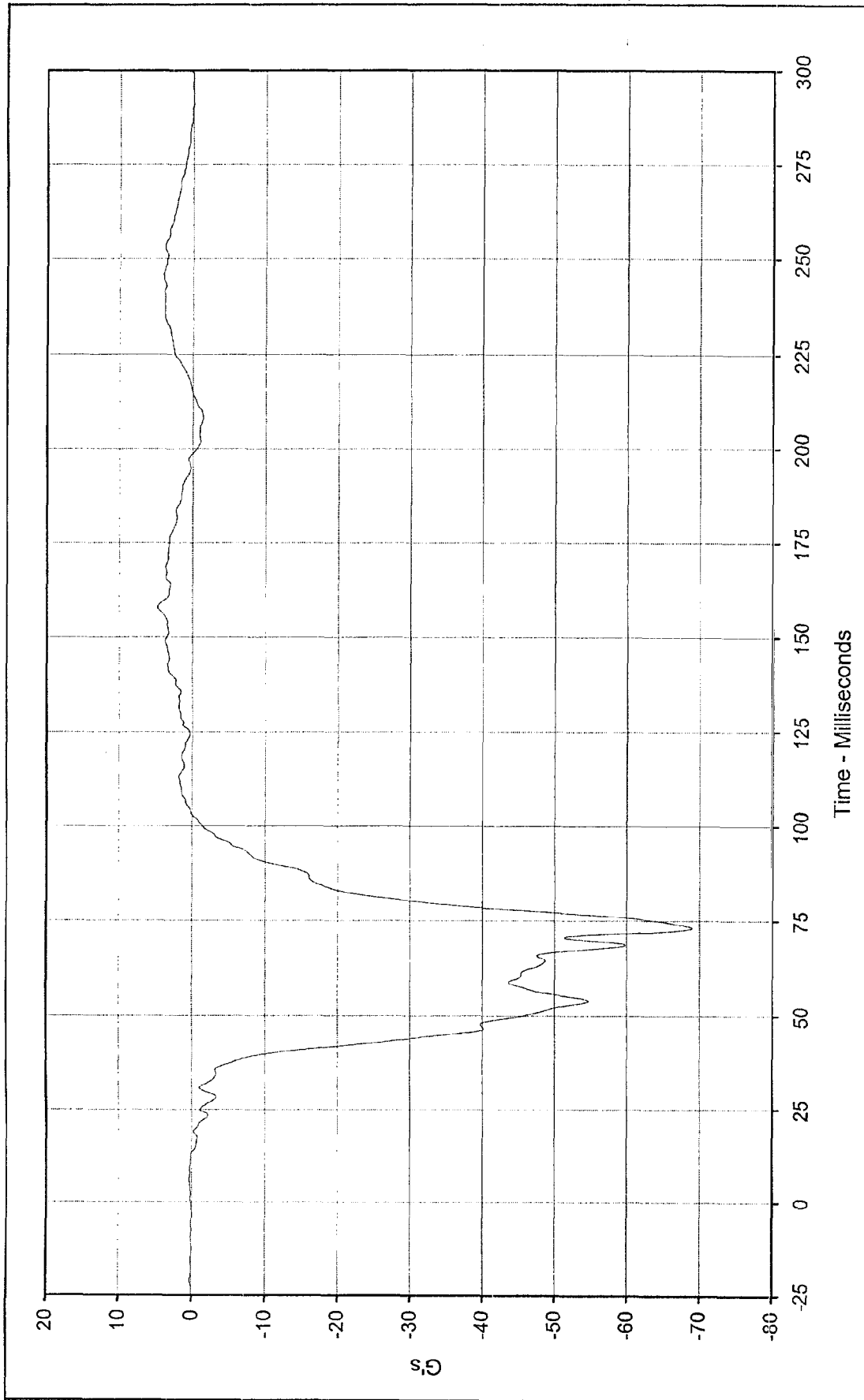
Minimum Value: 0.1 at 2.0 Milliseconds

SAE Filter Class: 180

Date of Test: 1/15/98

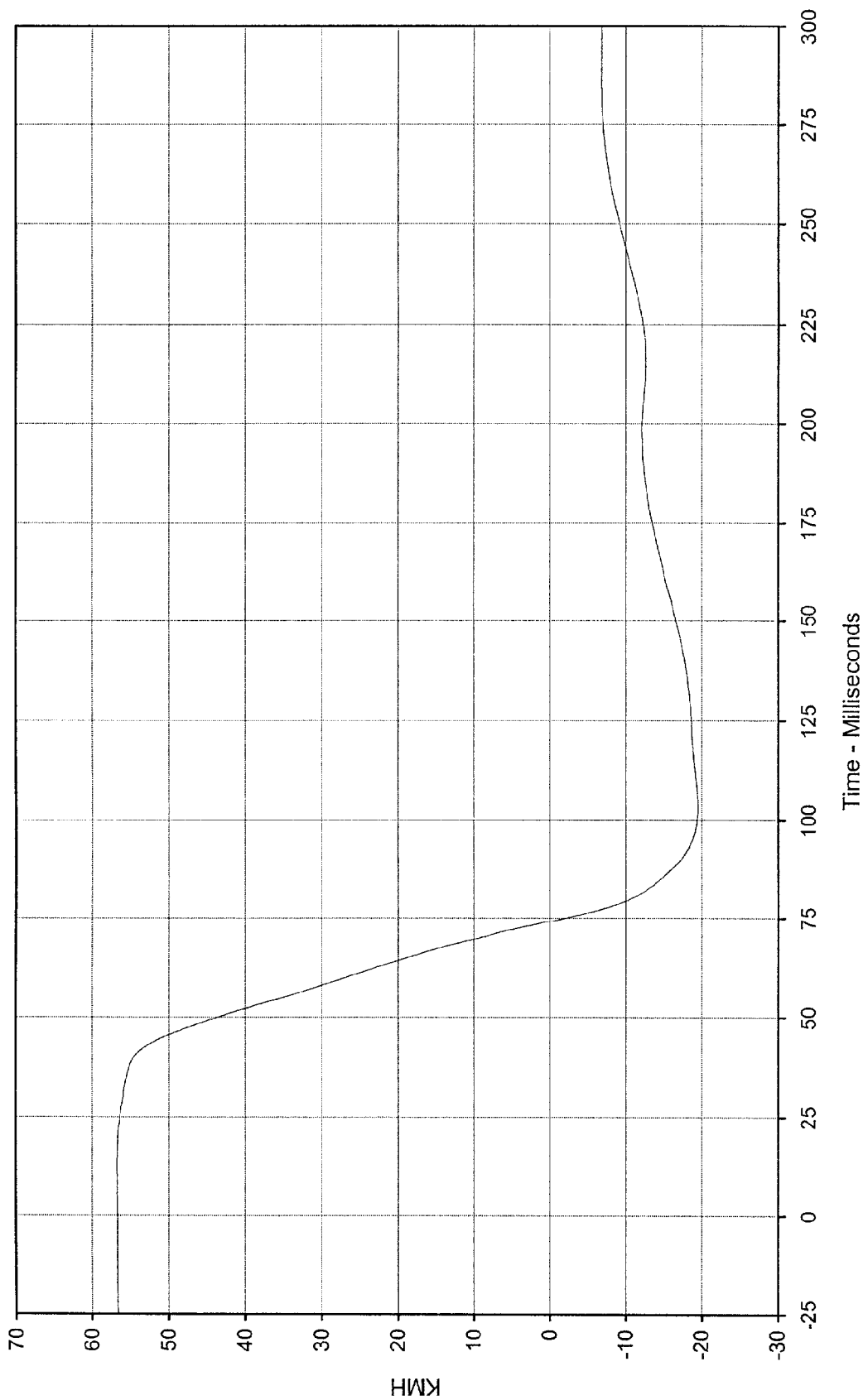
Curve Number: RES-013





Curve Description: Driver Chest Redundant X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
Maximum Value: 4.7 at 158.0 Milliseconds Test Vehicle: 1998 Isuzu Rodeo SUV
Minimum Value: -69.0 at 73.1 Milliseconds
SAE Filter Class: 180
Date of Test: 1/15/98
Curve Number: FIL-016





Curve Description: Driver Chest Redundant X Velocity

Maximum Value: 56.8 at 13.2 Milliseconds

Minimum Value: -19.5 at 103.2 Milliseconds

SAE Filter Class: 180

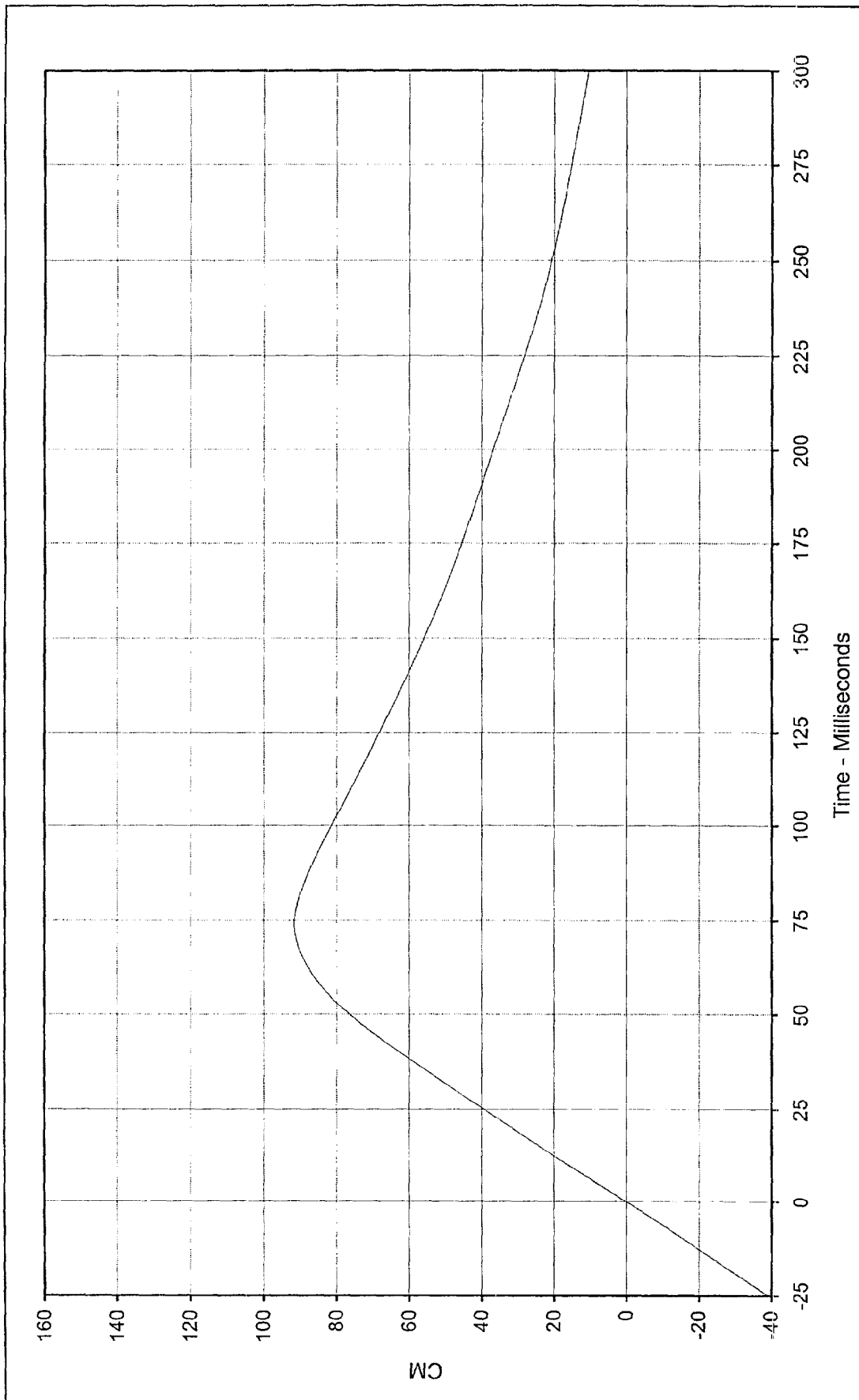
Date of Test: 1/15/98

Curve Number: IN1-016

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Driver Chest Redundant X Displ.

Maximum Value: 91.6 at 74.1 Milliseconds

Minimum Value: 0.1 at 0.0 Milliseconds

SAE Filter Class: 180

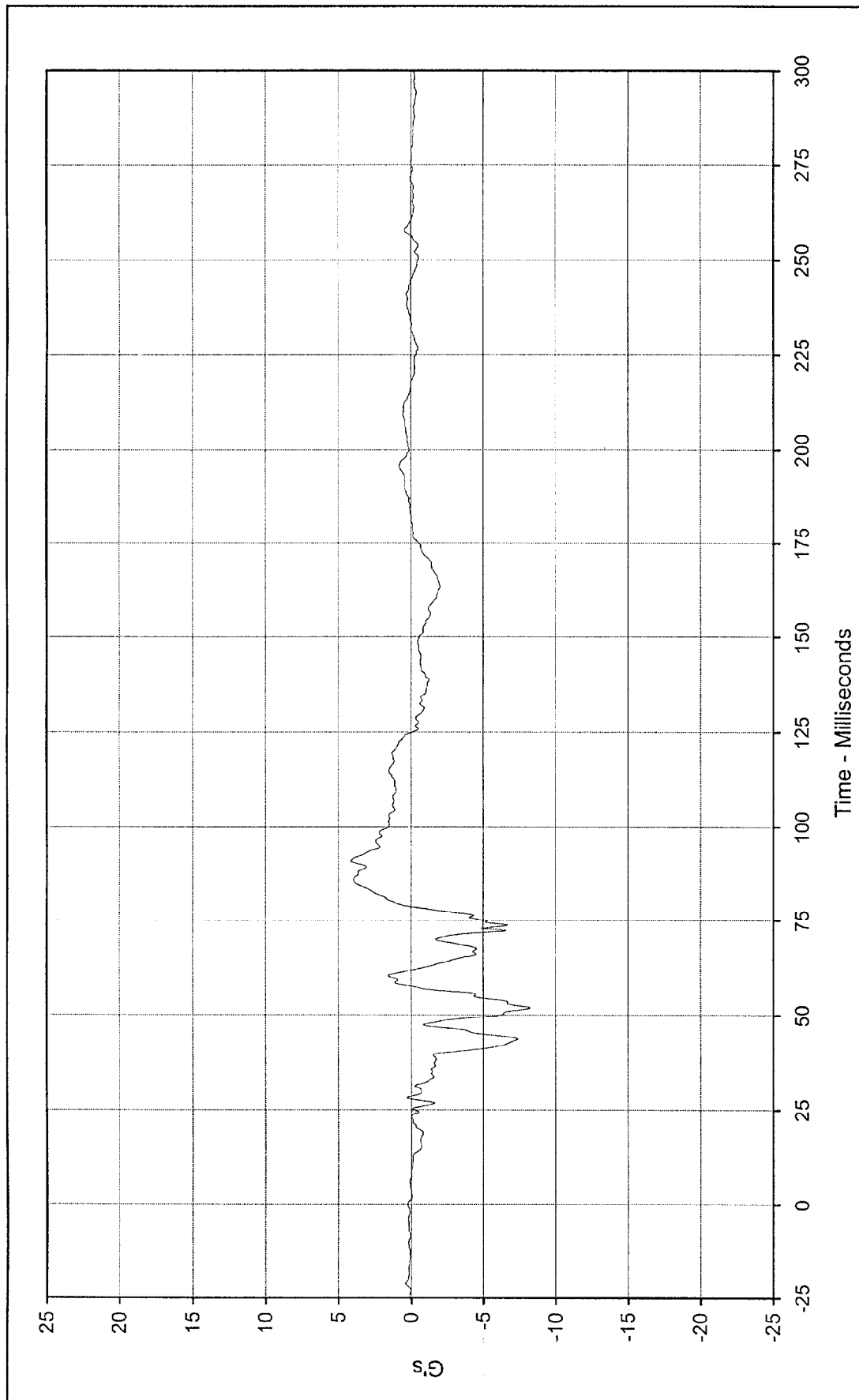
Date of Test: 1/15/98

Curve Number: IN2-016

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV

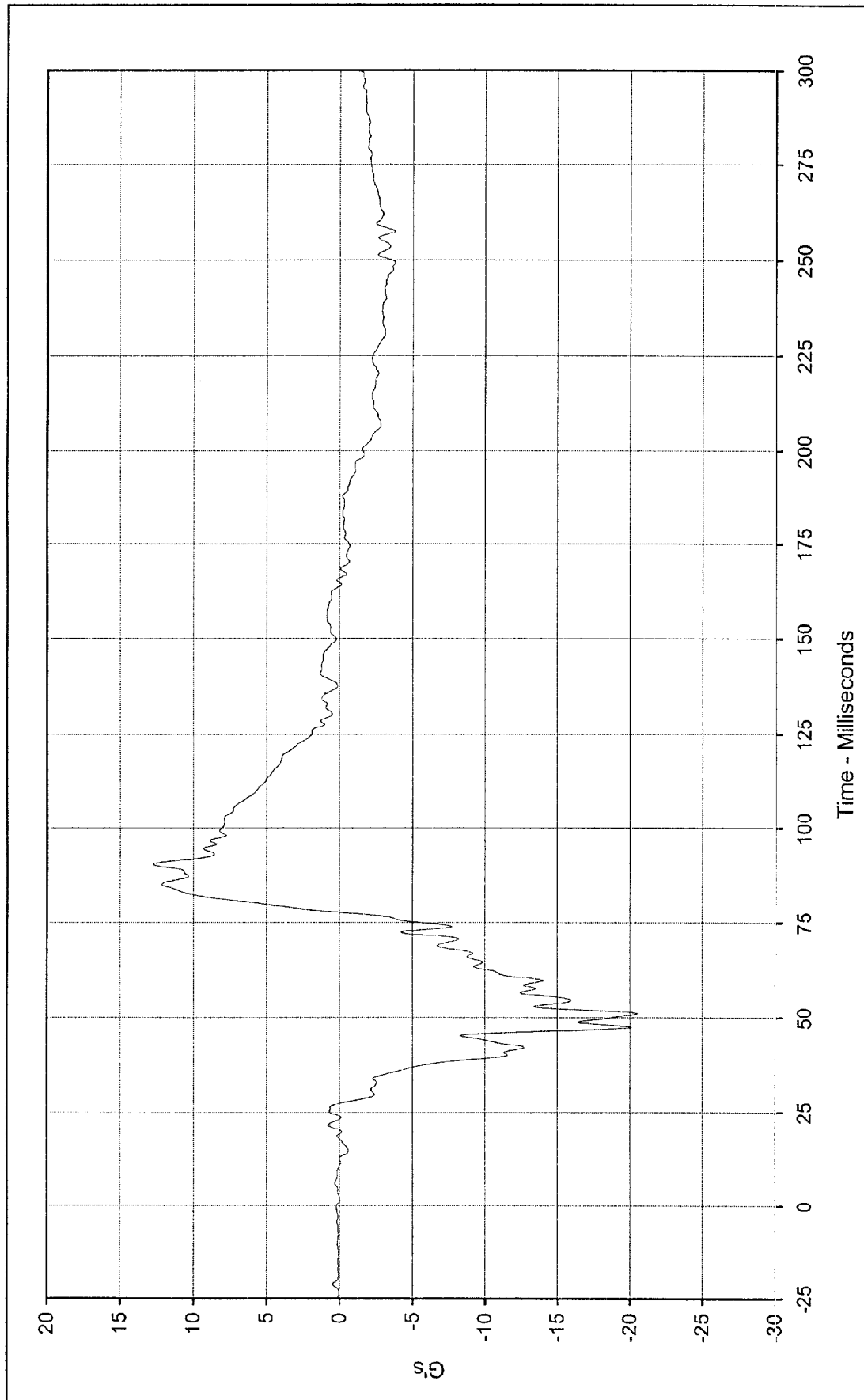




Curve Description: Driver Chest Redundant Y
 Maximum Value: 4.2 at 90.8 Milliseconds
 Minimum Value: -8.2 at 52.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/15/98
 Curve Number: FIL-017

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV



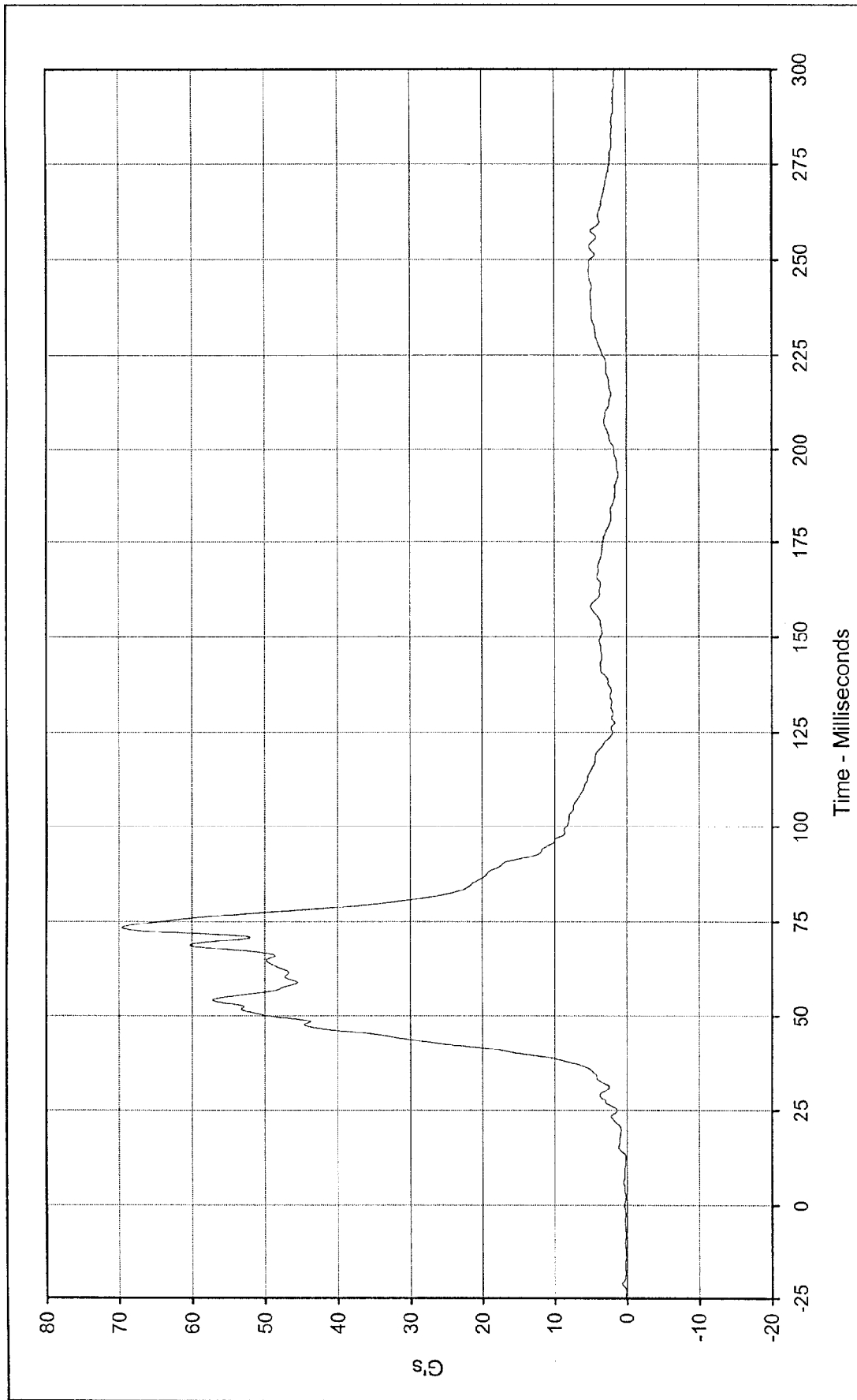


Curve Description: Driver Chest Redundant Z
 Maximum Value: 12.7 at 12.7 Milliseconds
 Minimum Value: -20.5 at 51.2 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/15/98
 Curve Number: FIL-018

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV

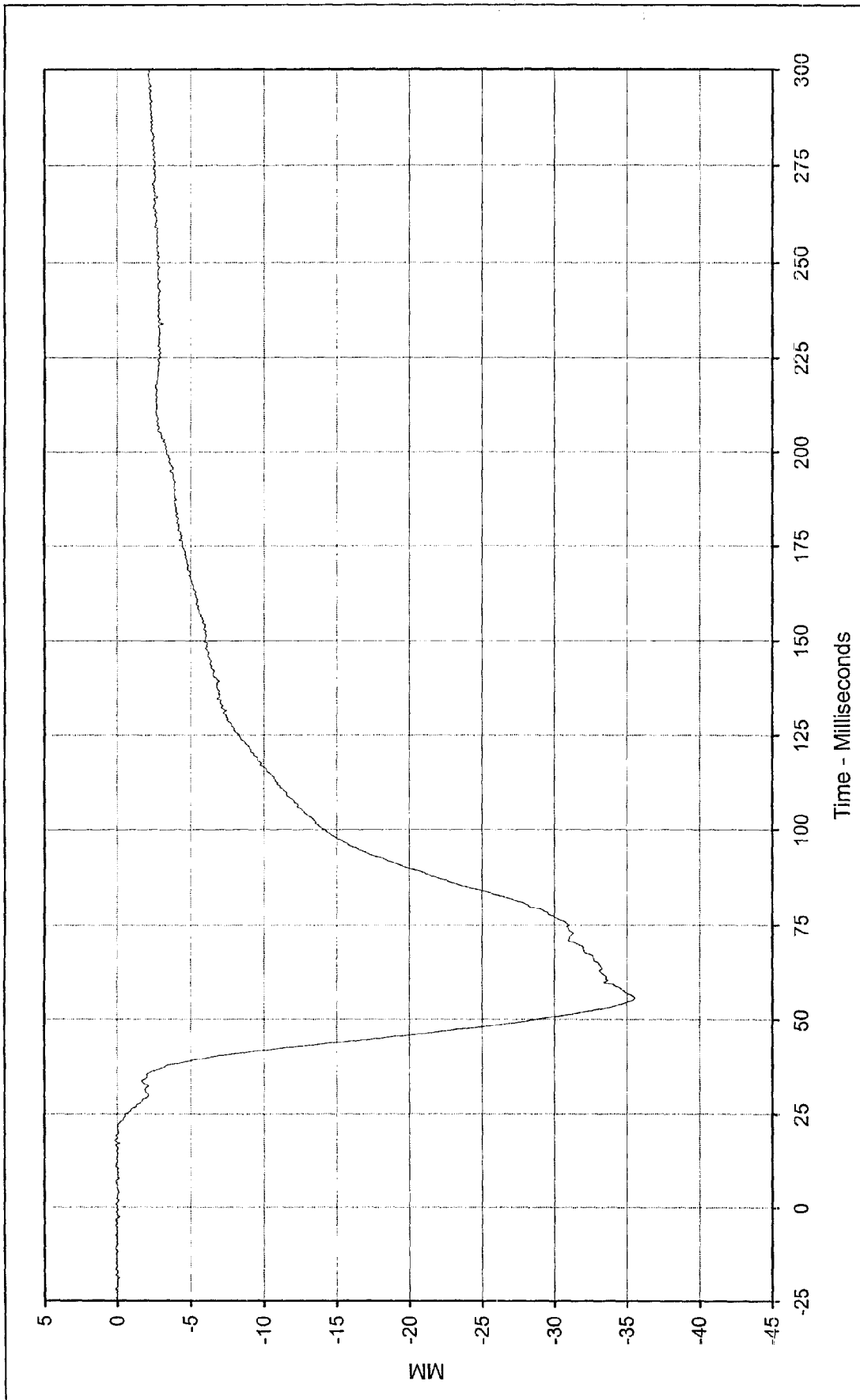




Curve Description: Driver Chest Resultant Redundant
 Maximum Value: 69.5 at 73.2 Milliseconds
 Minimum Value: 0.1 at 2.2 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/15/98
 Curve Number: RES-016

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Driver Chest Displacement X

Maximum Value: 0.2 at 18.4 Milliseconds

Minimum Value: -35.5 at 56.0 Milliseconds

SAE Filter Class: 600

Date of Test: 1/15/98

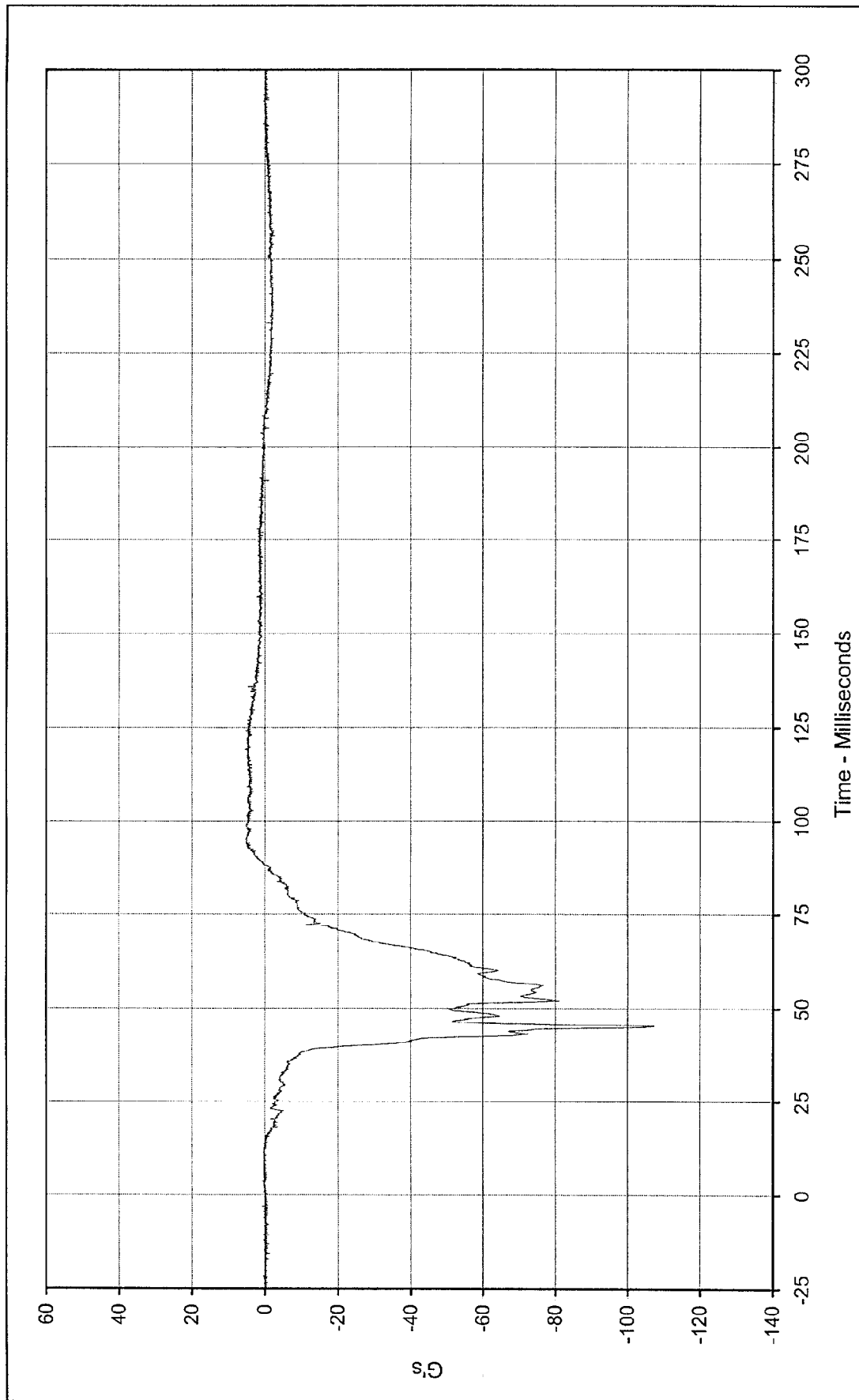
Curve Number: FIL-019

Testing Program: 1998 NHTSA 35 mph NCAP

No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description:

Maximum Value: 5.6 at 119.2 Milliseconds

Minimum Value: -107.3 at 45.2 Milliseconds

SAE Filter Class: 1000

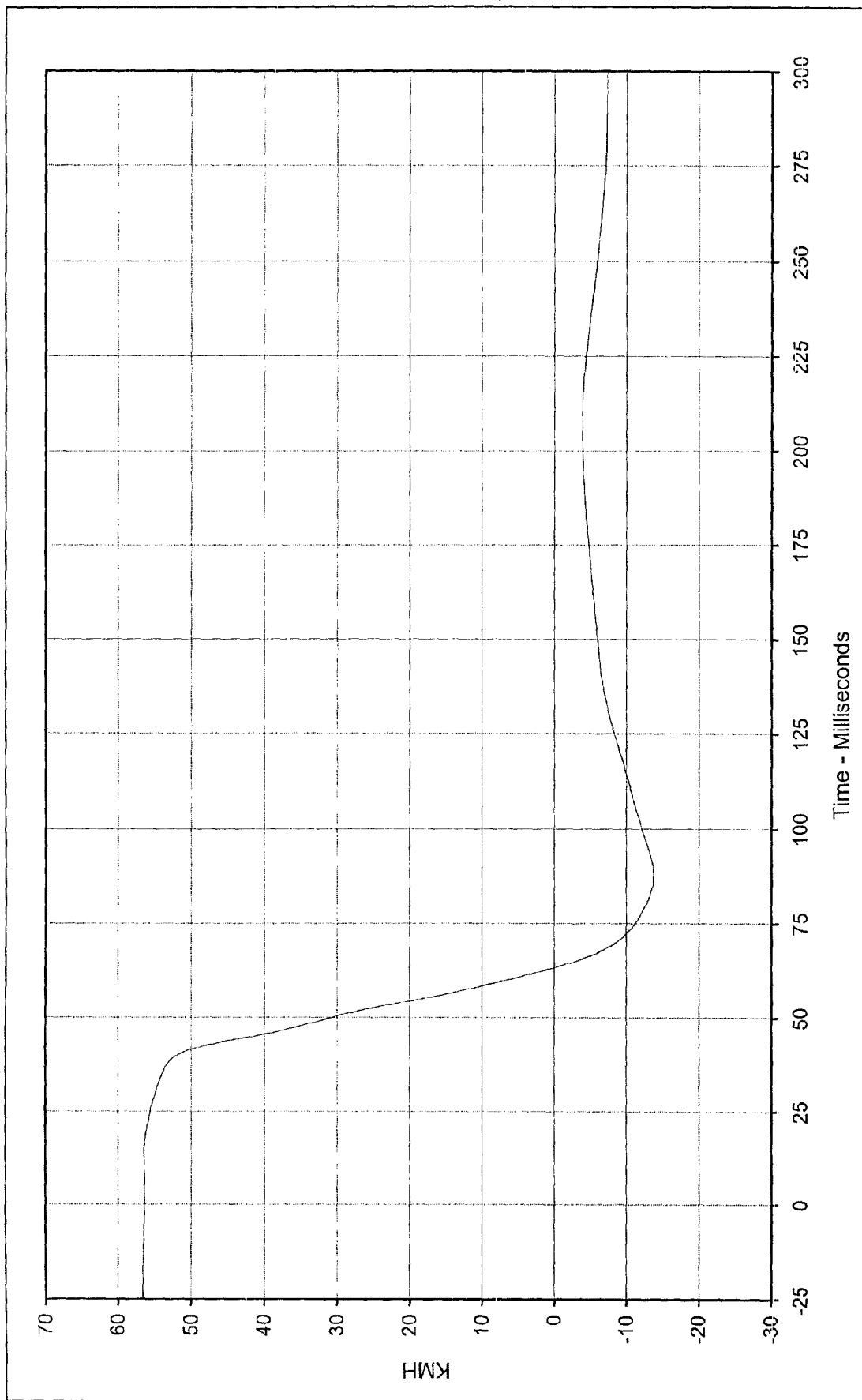
Date of Test: 1/15/98

Curve Number: FIL-020

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Driver Pelvis X Velocity Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Maximum Value: 56.5 at 12.9 Milliseconds Test Vehicle: 1998 Isuzu Rodeo SUV

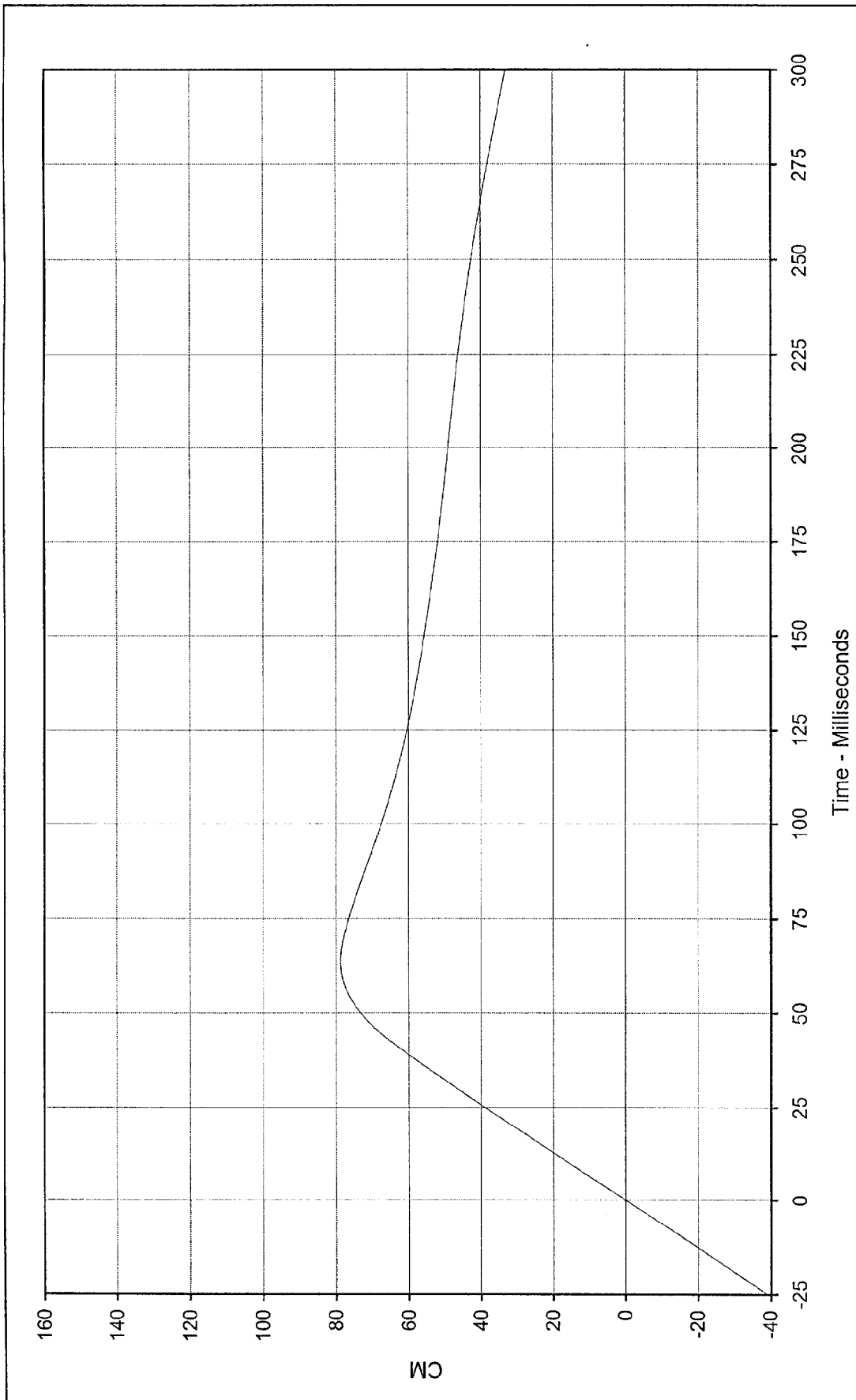
Minimum Value: -13.8 at 88.0 Milliseconds

SAE Filter Class: 180

Date of Test: 1/15/98

Curve Number: IN1-020





Curve Description: Driver Pelvis X Displ. Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Maximum Value: 78.7 at 63.5 Milliseconds Test Vehicle: 1998 Isuzu Rodeo SUV

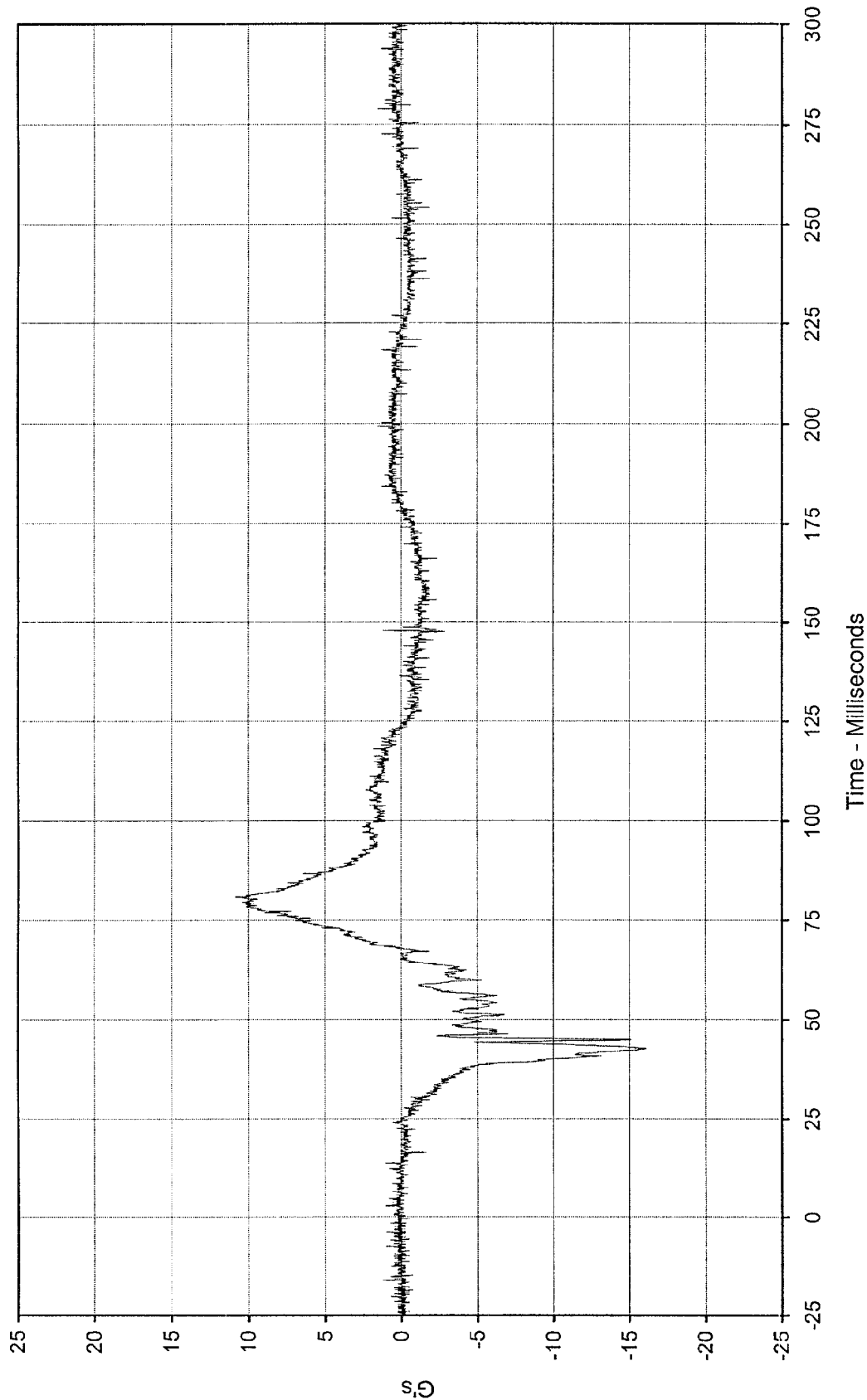
Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 1/15/98

Curve Number: IN2-020





Curve Description: Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Maximum Value: 10.9 at 81.2 Milliseconds

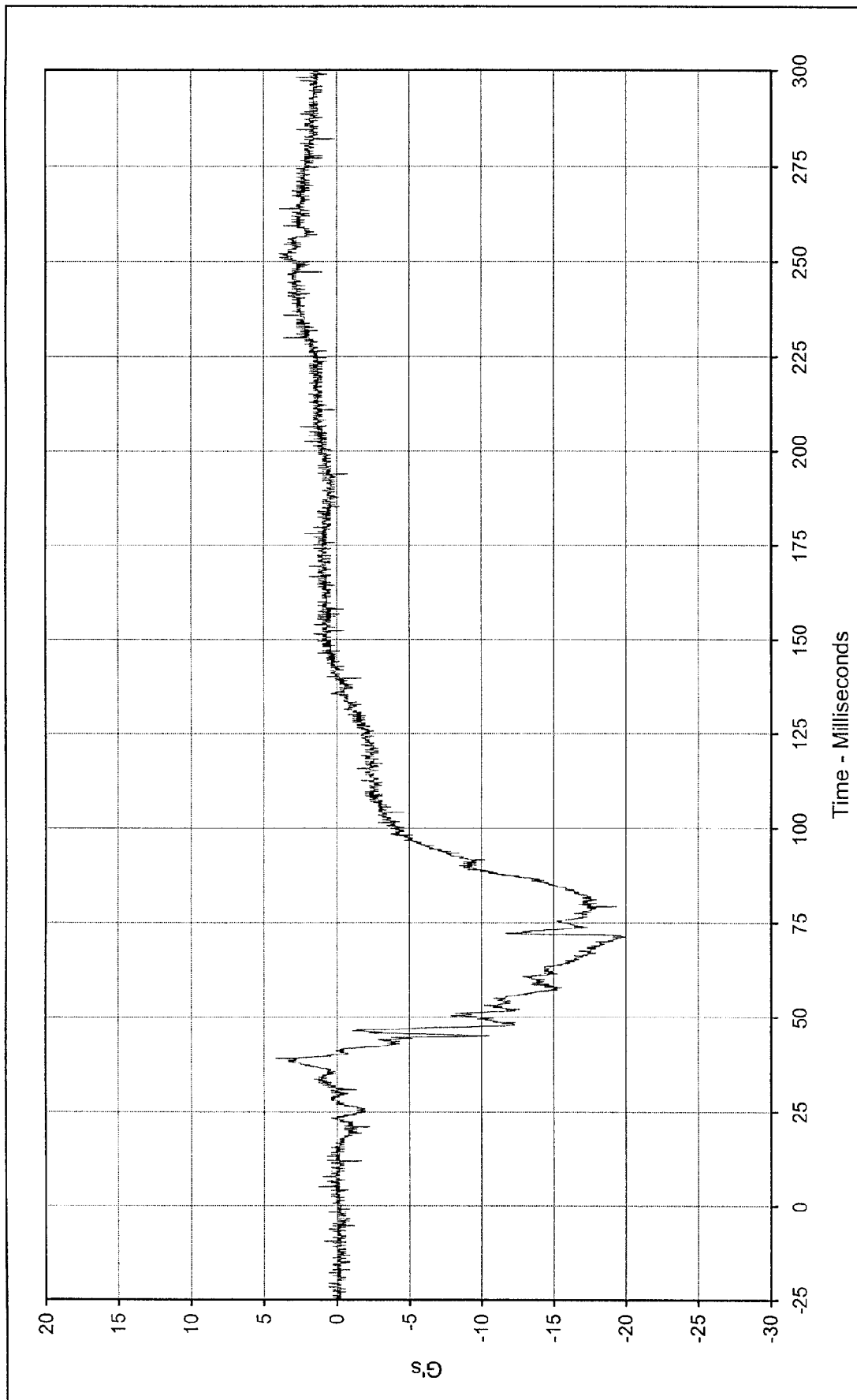
Minimum Value: -16.1 at 42.6 Milliseconds

SAE Filter Class: 1000

Date of Test: 1/15/98

Curve Number: FIL-021

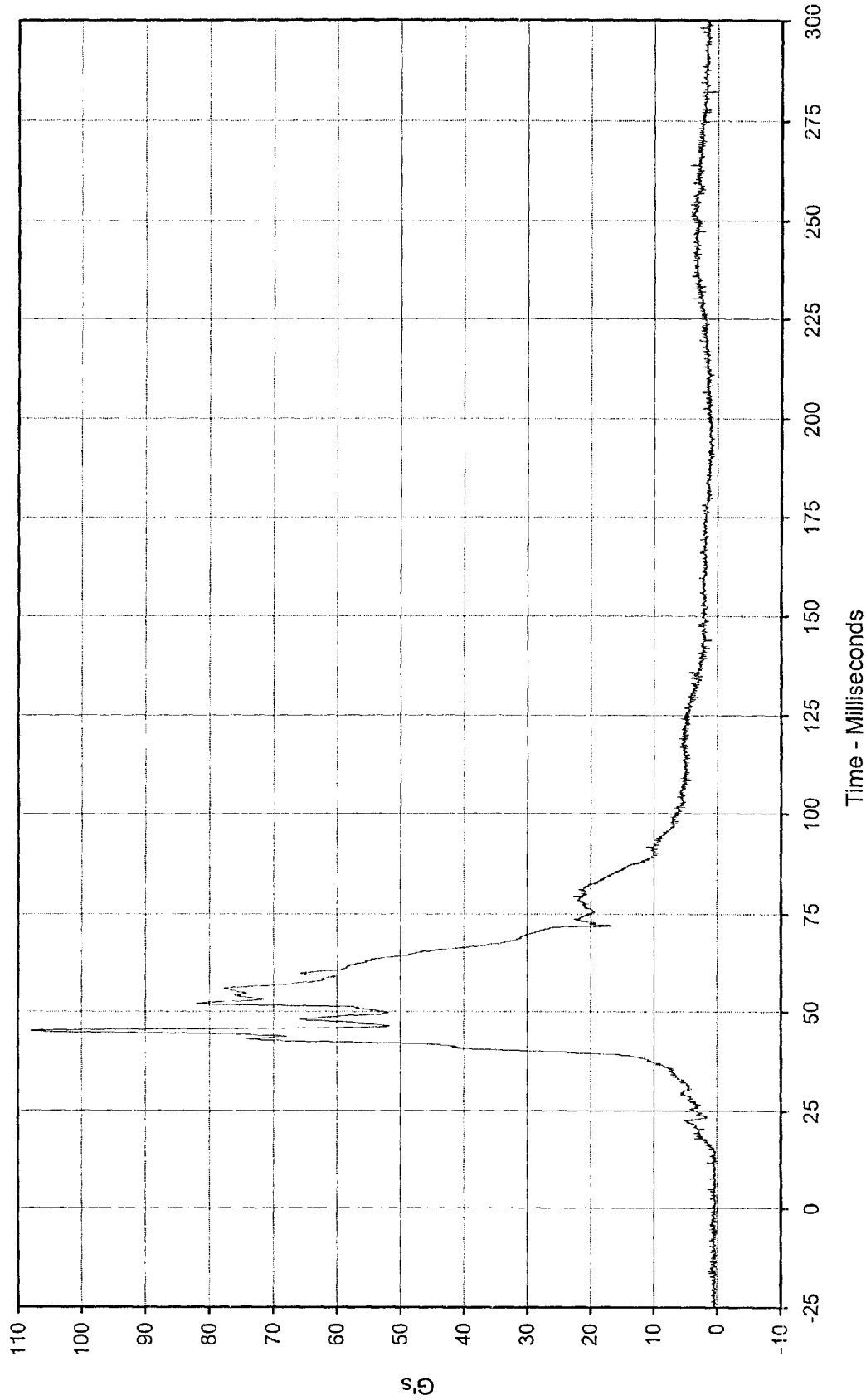




Curve Description: Driver Pelvis Z
 Maximum Value: 4.2 at 39.1 Milliseconds
 Minimum Value: -20.0 at 71.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/15/98
 Curve Number: FIL-022

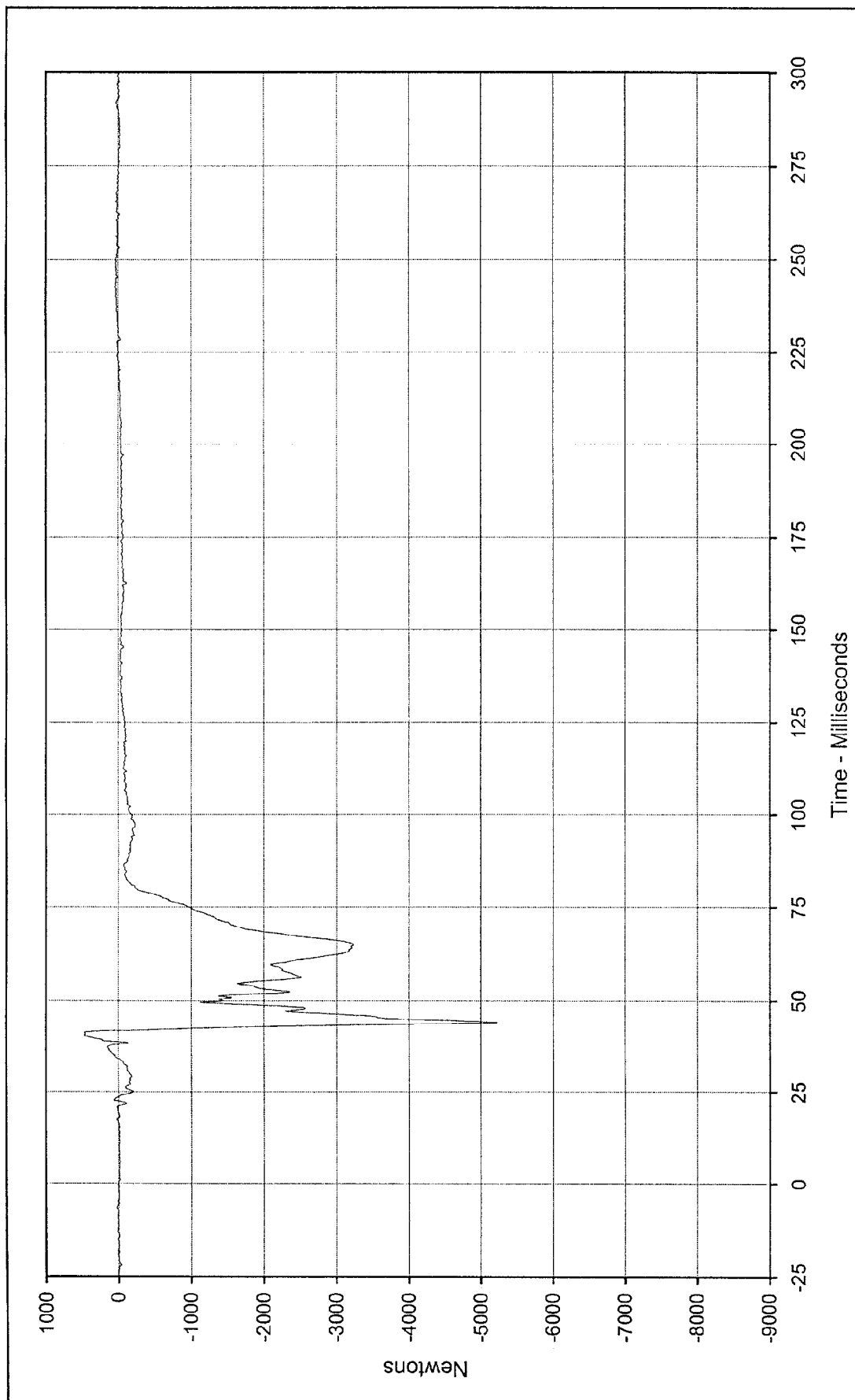
Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description:	Driver Pelvis Resultant	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	108.0 at 45.2 Milliseconds	Test Vehicle:	1998 Isuzu Rodeo SUV	
Minimum Value:	0.1 at 1.3 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	1/15/98			
Curve Number:	RES-020			





Curve Description: Driver Left Femur Force Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Maximum Value: 471.0 at 41.4 Milliseconds Test Vehicle: 1998 Isuzu Rodeo SUV

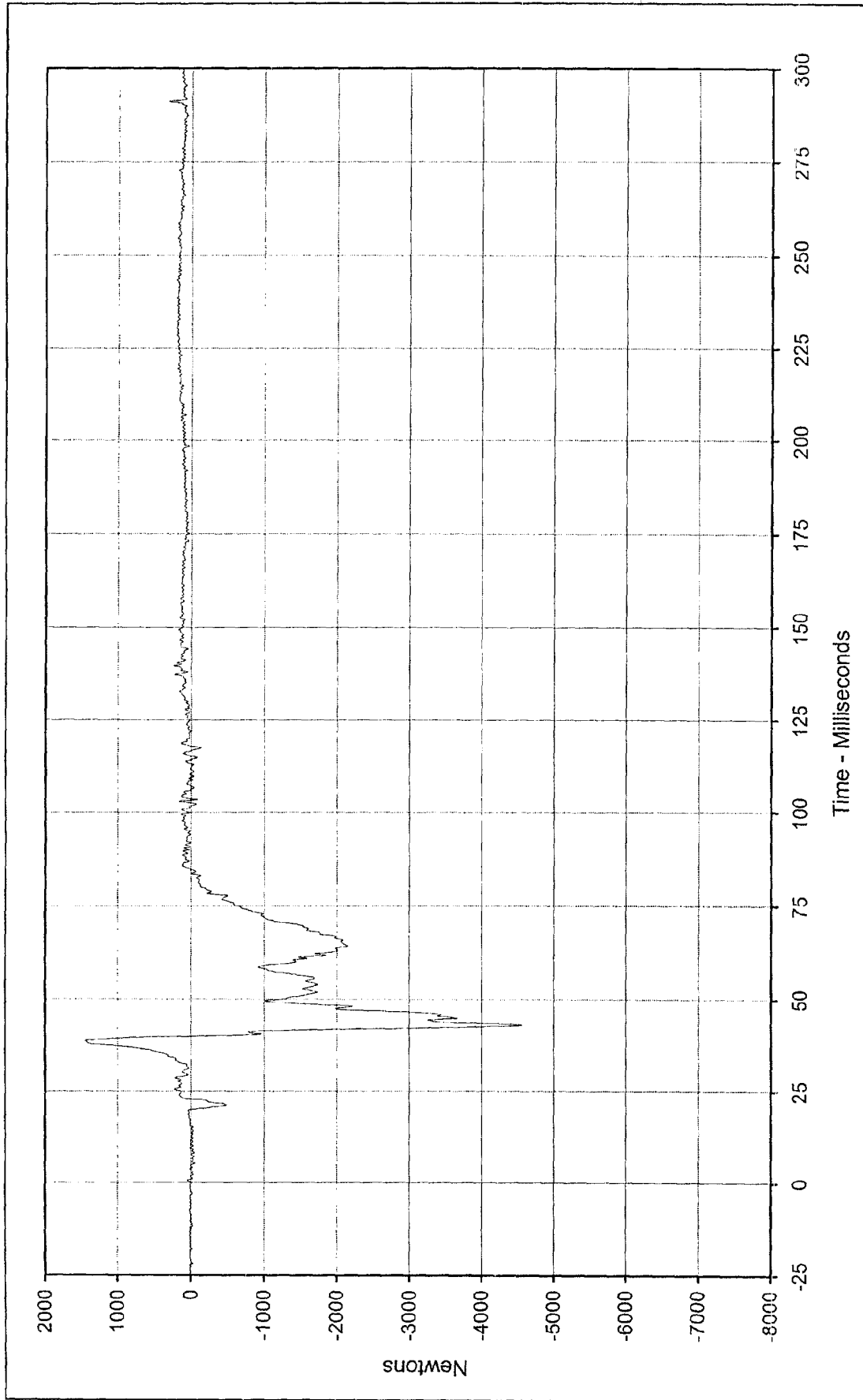
Minimum Value: -5231.9 at 44.1 Milliseconds

SAE Filter Class: 600

Date of Test: 1/15/98

Curve Number: FIL-023





Curve Description: Driver Right Femur Force Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Maximum Value: 1446.8 at 38.5 Milliseconds Test Vehicle: 1998 Isuzu Rodeo SUV

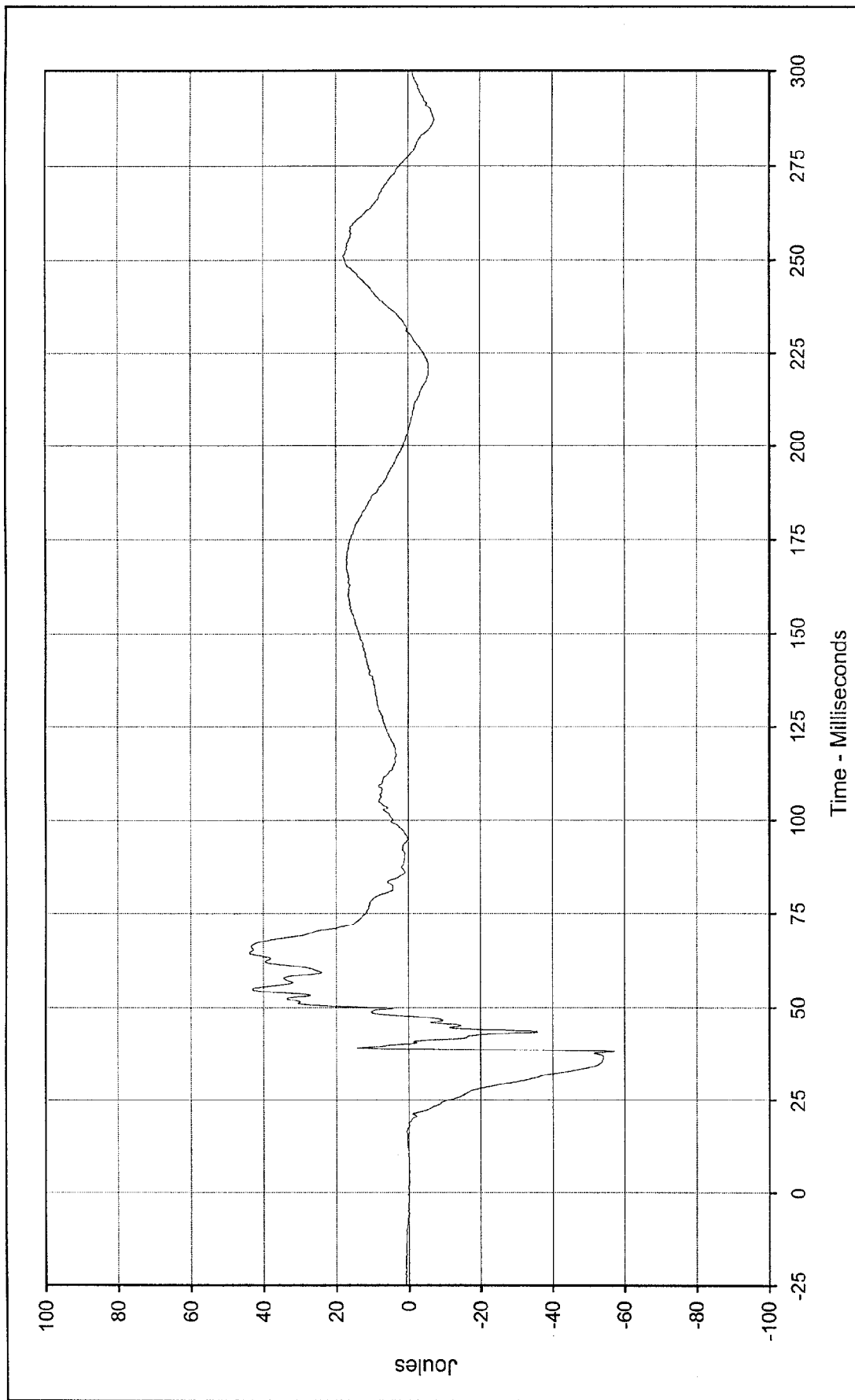
Minimum Value: -4559.7 at 42.9 Milliseconds

SAE Filter Class: 600

Date of Test: 1/15/98

Curve Number: FIL-024





Curve Description: Driver Left Upper Tibia Moment X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Maximum Value: 43.9 at 64.4 Milliseconds Test Vehicle: 1998 Isuzu Rodeo SUV

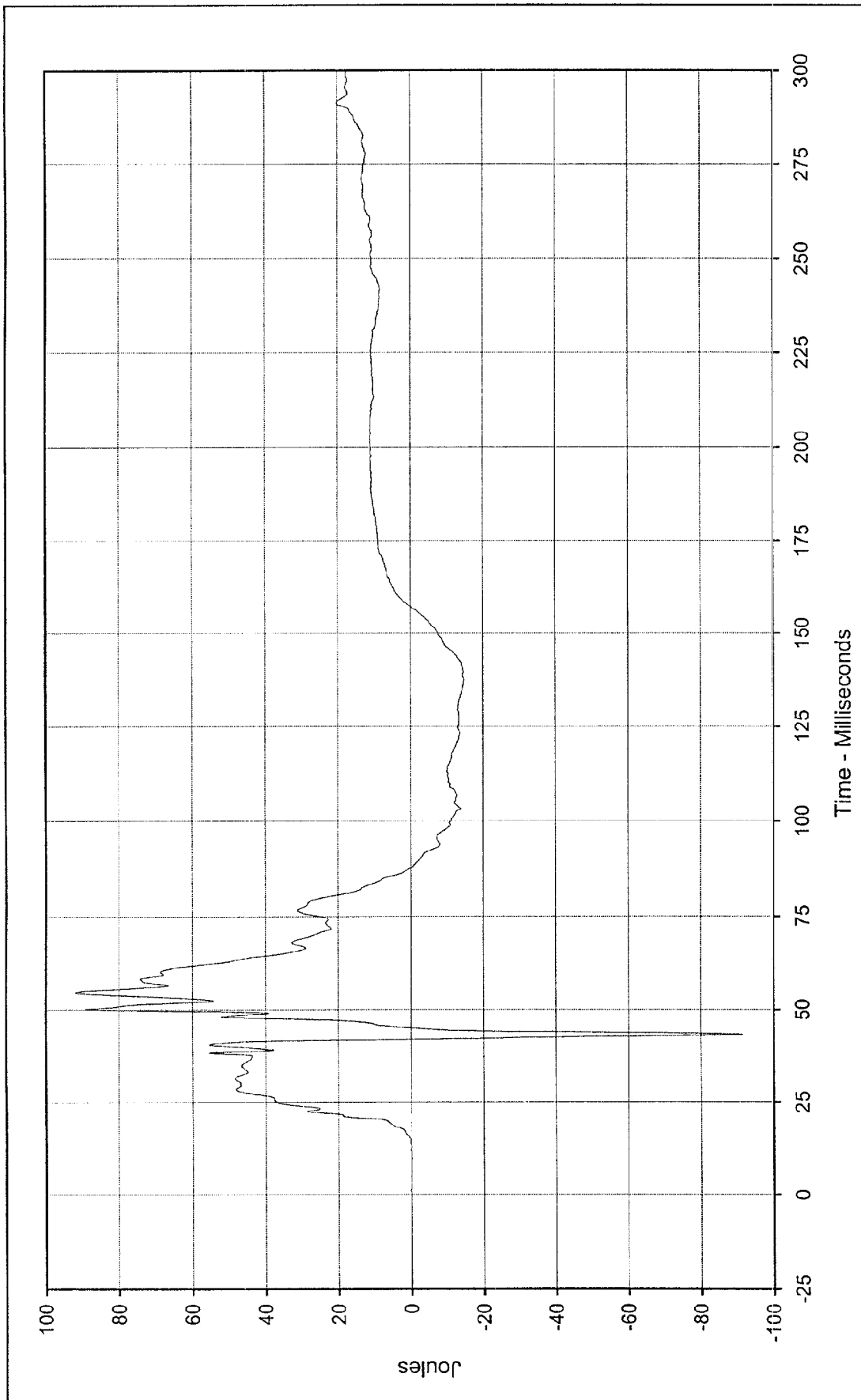
Minimum Value: -57.2 at 38.1 Milliseconds

SAE Filter Class: 600

Date of Test: 1/15/98

Curve Number: FIL-025

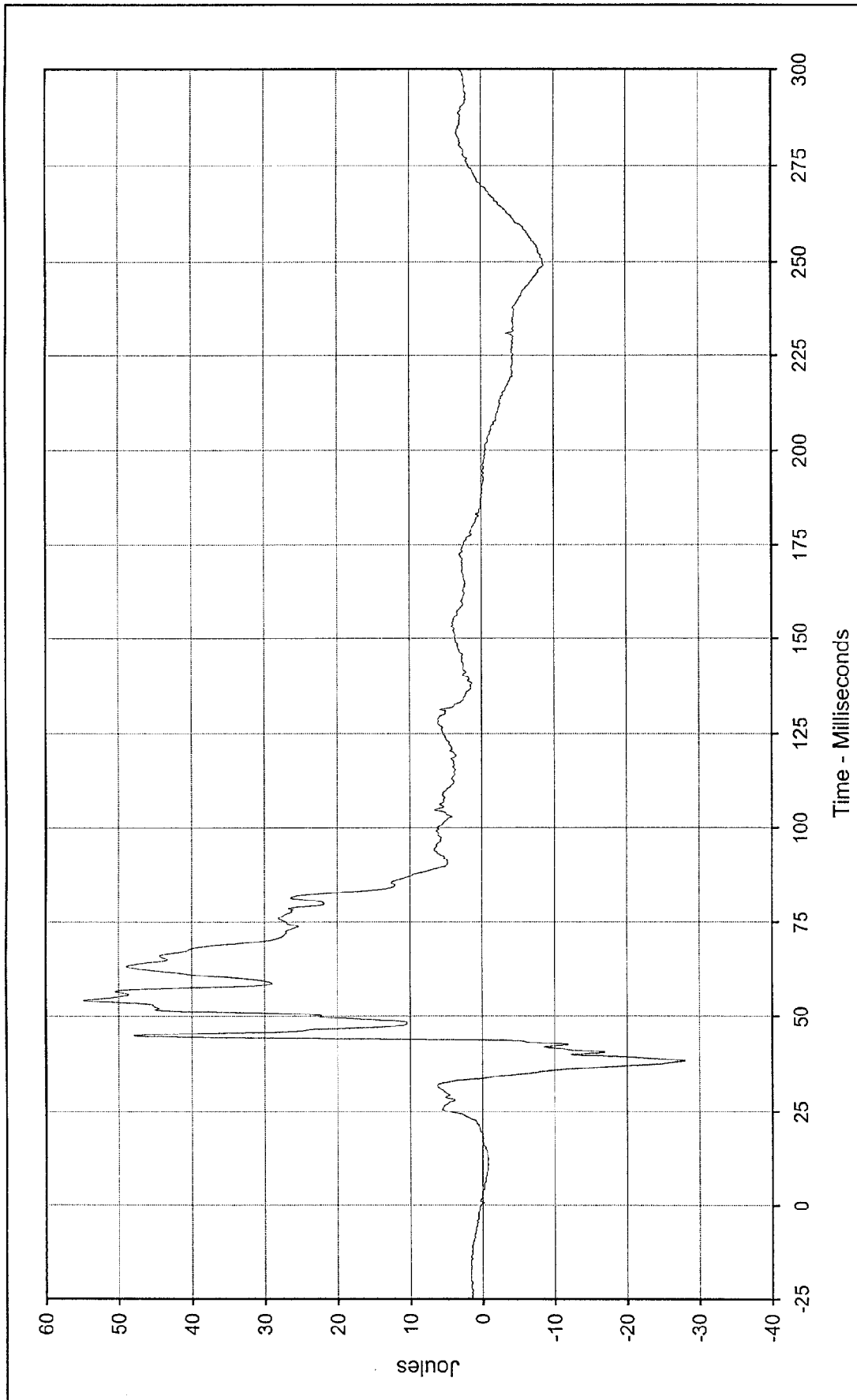




Curve Description: Driver Left Upper Tibia Moment Y
 Maximum Value: 92.0 at 54.7 Milliseconds
 Minimum Value: -91.6 at 43.2 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/15/98
 Curve Number: FIL-026

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Driver Right Upper Tibia Moment X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Maximum Value: 54.9 at 54.3 Milliseconds Test Vehicle: 1998 Isuzu Rodeo SUV

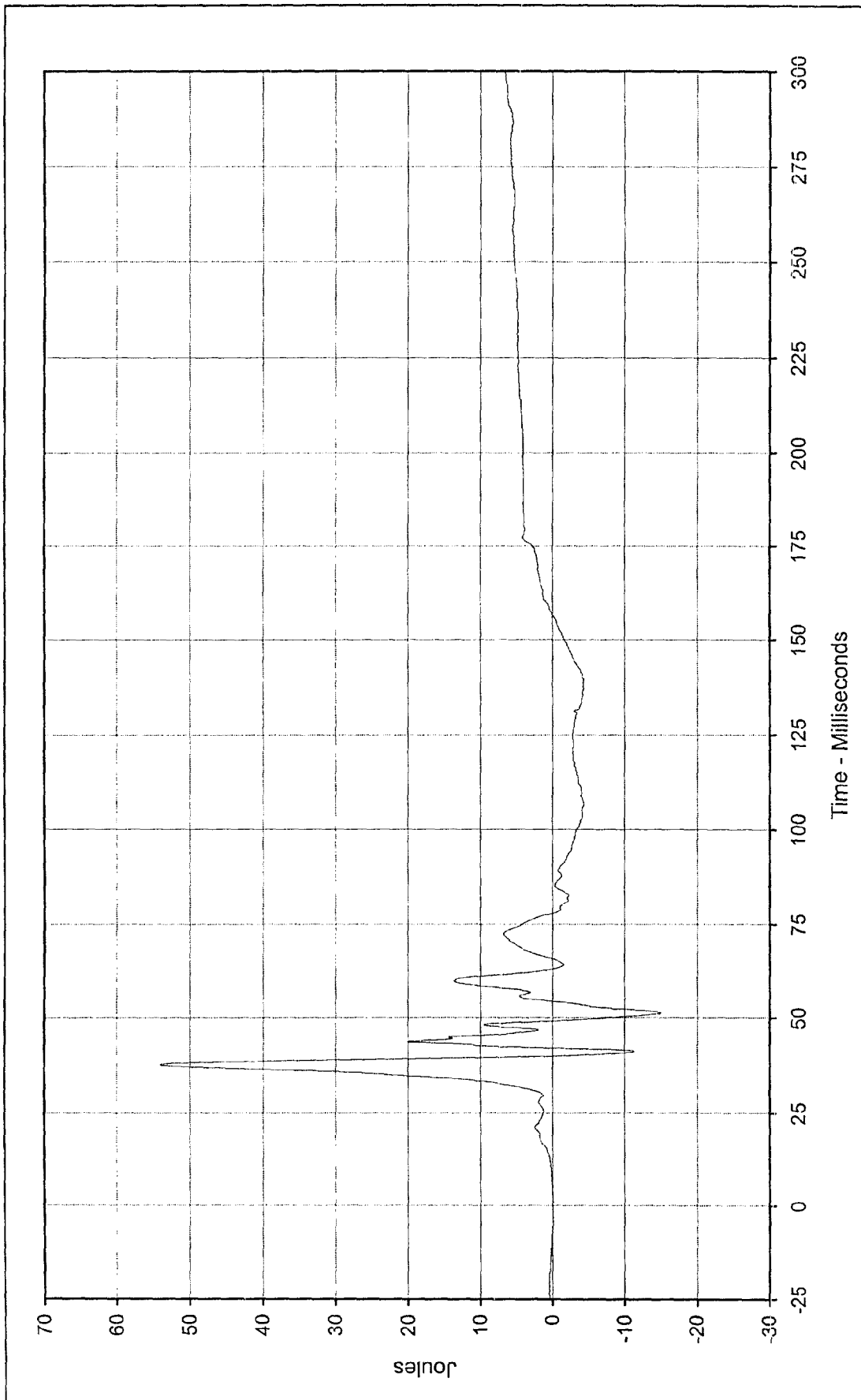
Minimum Value: -28.0 at 38.3 Milliseconds

SAE Filter Class: 600

Date of Test: 1/15/98

Curve Number: FIL-027





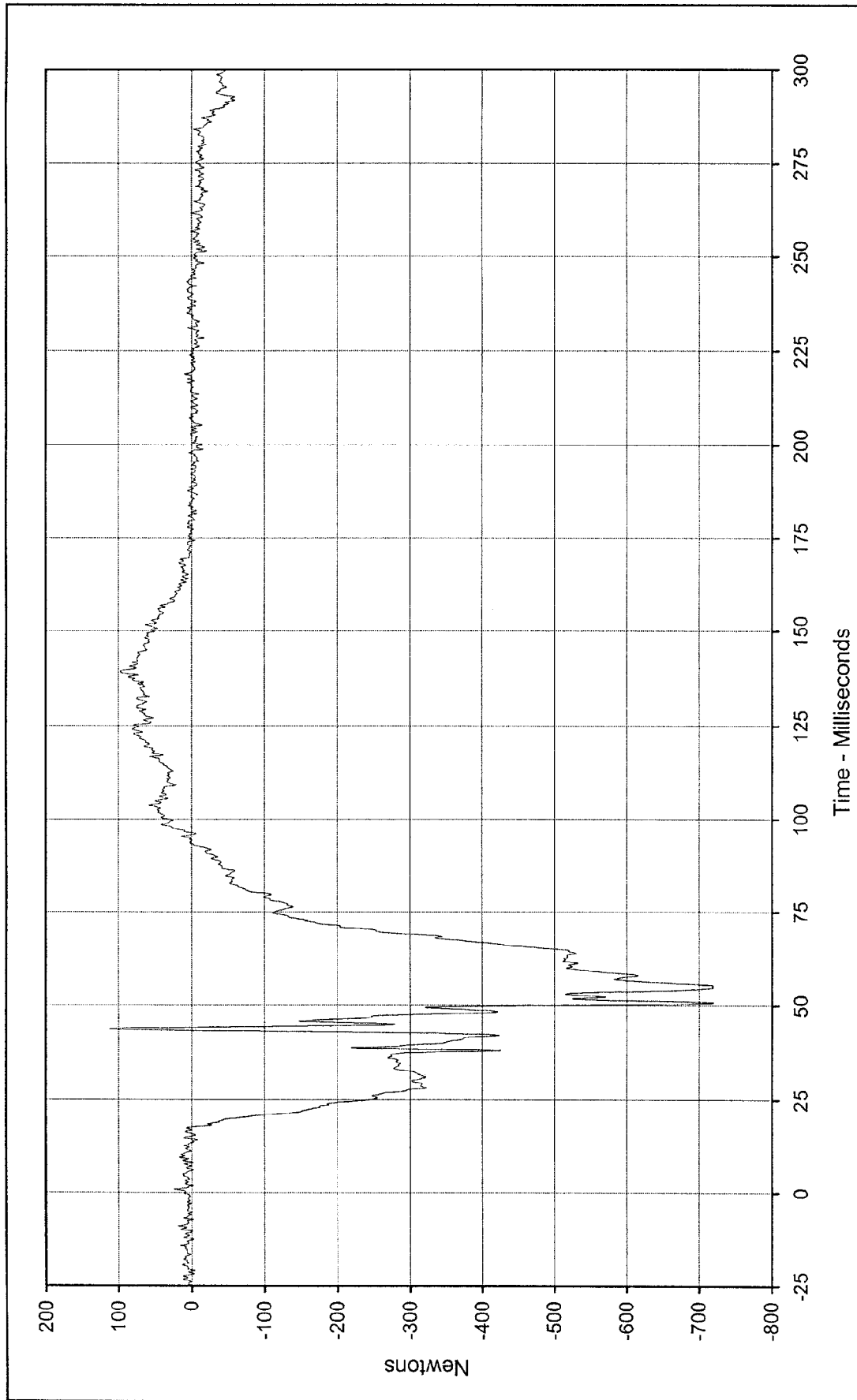
Curve Description: Driver Right Upper Tibia Moment Y

Maximum Value:	54.1	at	37.9	Milliseconds
Minimum Value:	-14.9	at	51.3	Milliseconds
SAE Filter Class:	600			
Date of Test:	1/15/98			
Curve Number:	FIL-028			

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV

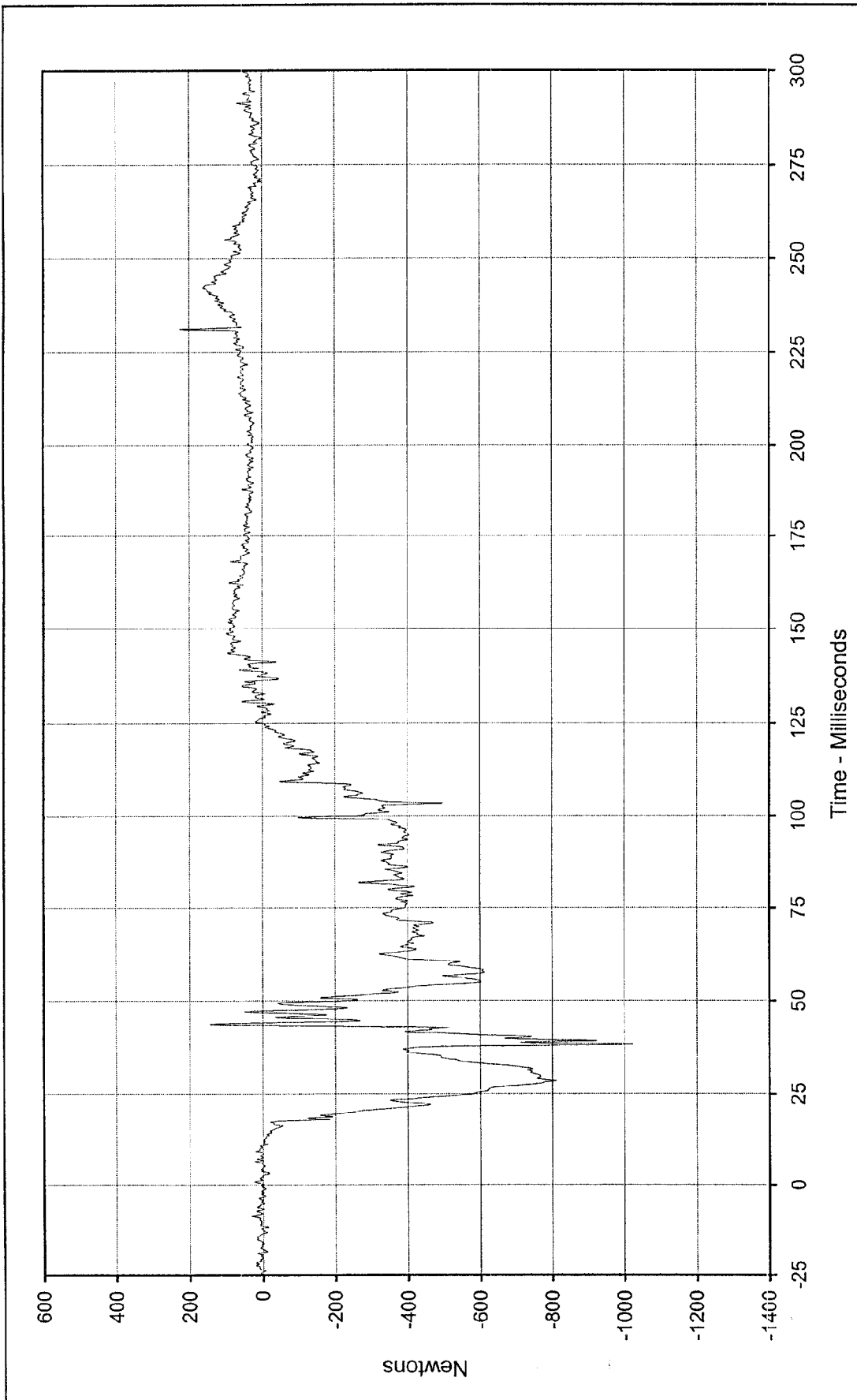




Curve Description: Driver Left Lower Tibia Force X
 Maximum Value: 111.8 at 43.6 Milliseconds
 Minimum Value: -720.8 at 50.8 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/15/98
 Curve Number: FIL-029

Testing Program: 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV

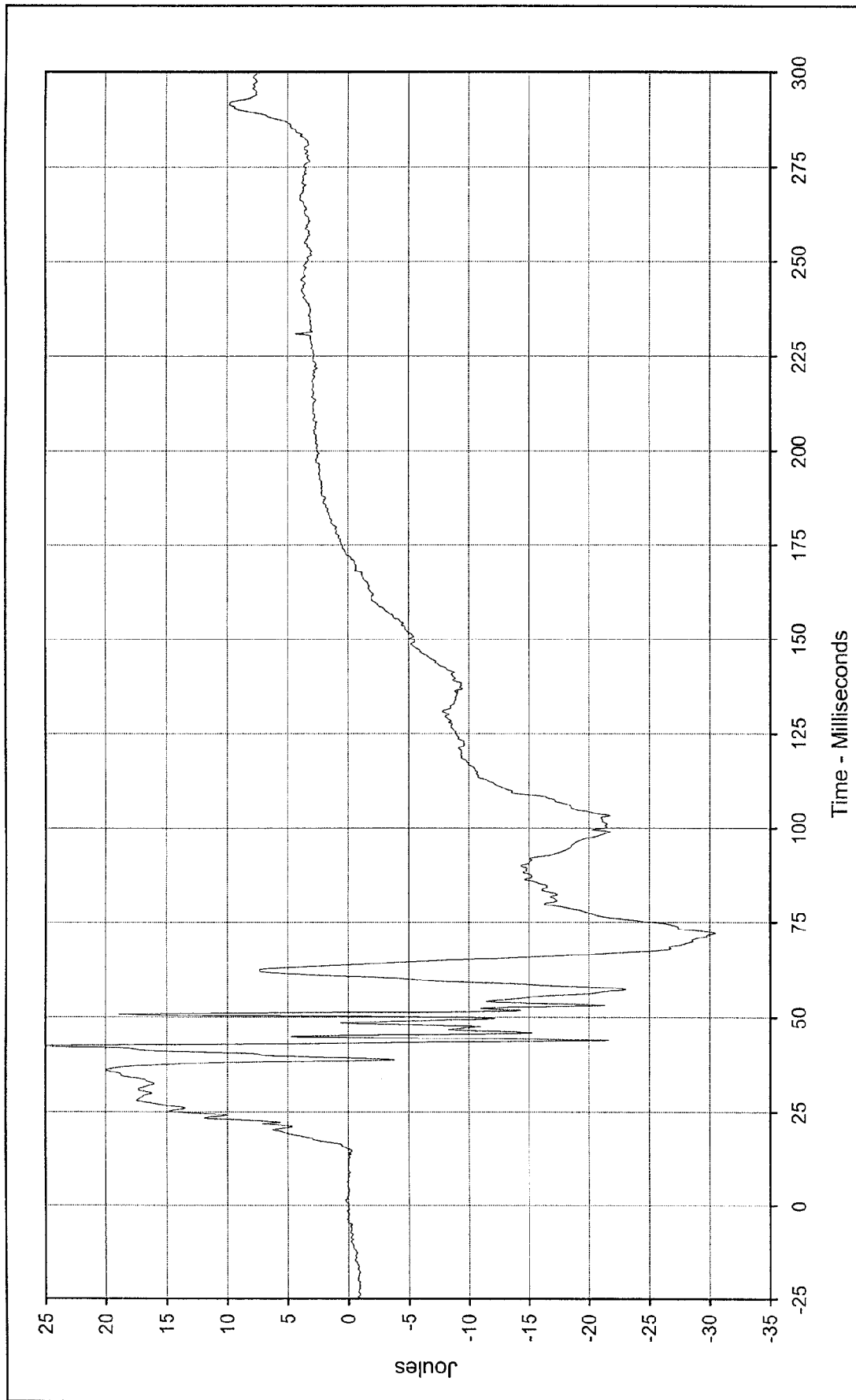




Curve Description: Driver Left Lower Tibia Force Z Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
Maximum Value: 224.0 at 231.3 Milliseconds Test Vehicle: 1998 Isuzu Rodeo SUV
Minimum Value: -1023.7 at 38.2 Milliseconds



SAE Filter Class: 600
Date of Test: 1/15/98
Curve Number: FIL-030



Curve Description: Driver Left Lower Tibia Moment Y Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Maximum Value: 26.5 at 42.3 Milliseconds Test Vehicle: 1998 Isuzu Rodeo SUV

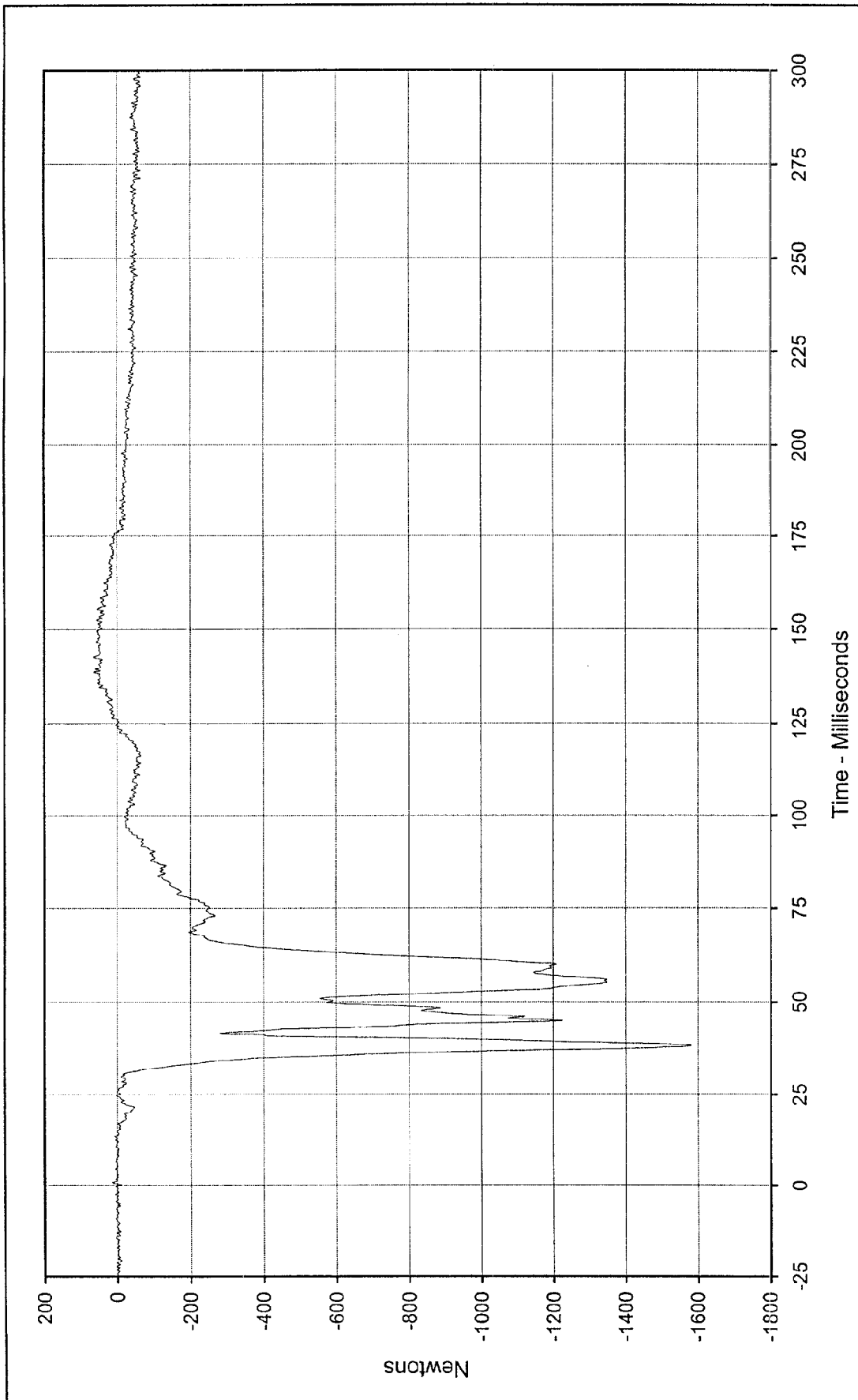
Minimum Value: -30.5 at 72.0 Milliseconds

SAE Filter Class: 600

Date of Test: 1/15/98

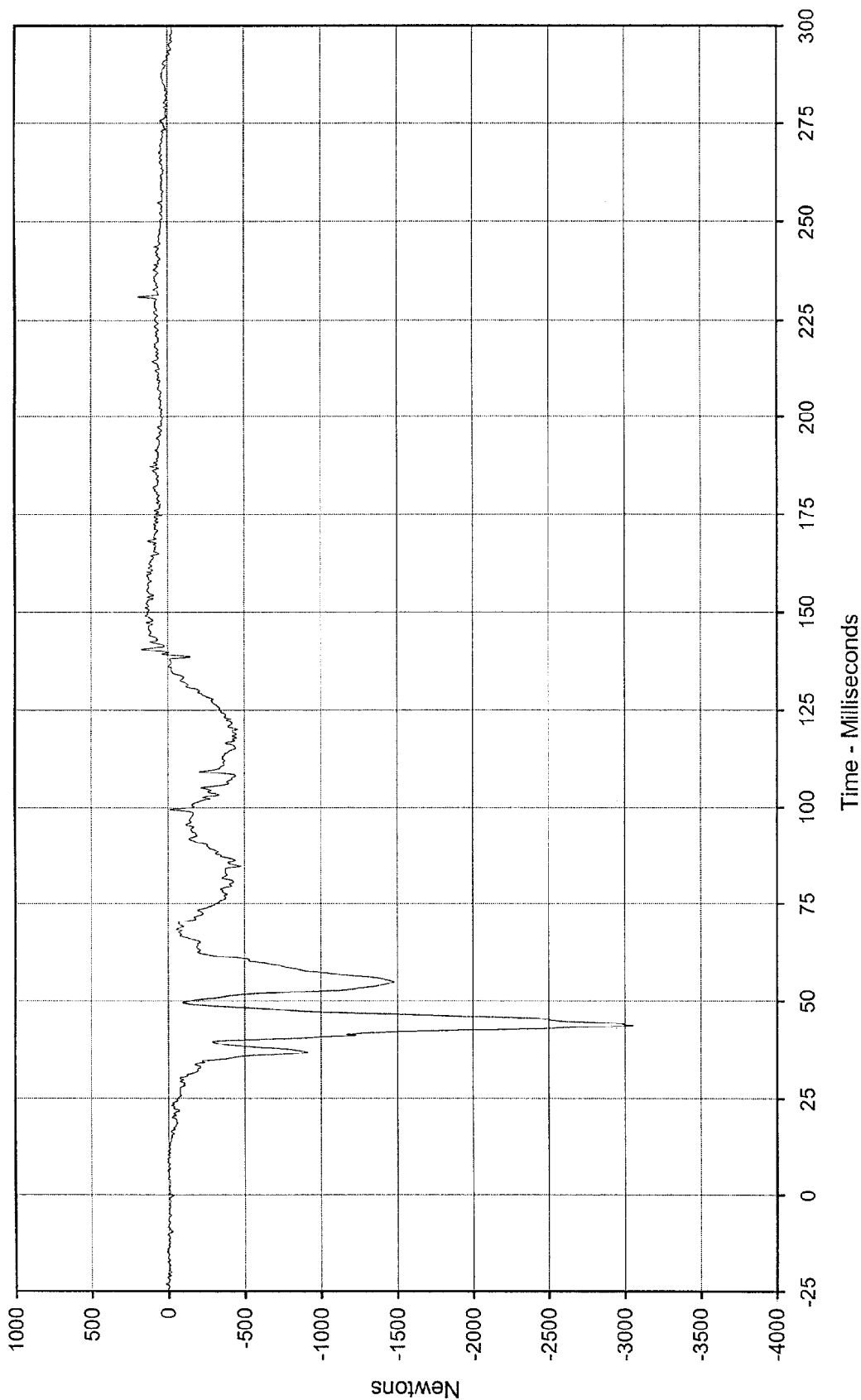
Curve Number: FIL-031





Curve Description:	Driver Right Lower Tibia Force X	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	64.0 at 142.8 Milliseconds	Test Vehicle:	1998 Isuzu Rodeo SUV	
Minimum Value:	-1581.0 at 38.1 Milliseconds			
SAE Filter Class:	600			
Date of Test:	1/15/98			
Curve Number:	FIL-032			





Curve Description: Driver Right Lower Tibia Force Z

Maximum Value: 189.0 at 231.2 Milliseconds

Minimum Value: -3054.1 at 43.7 Milliseconds

SAE Filter Class: 600

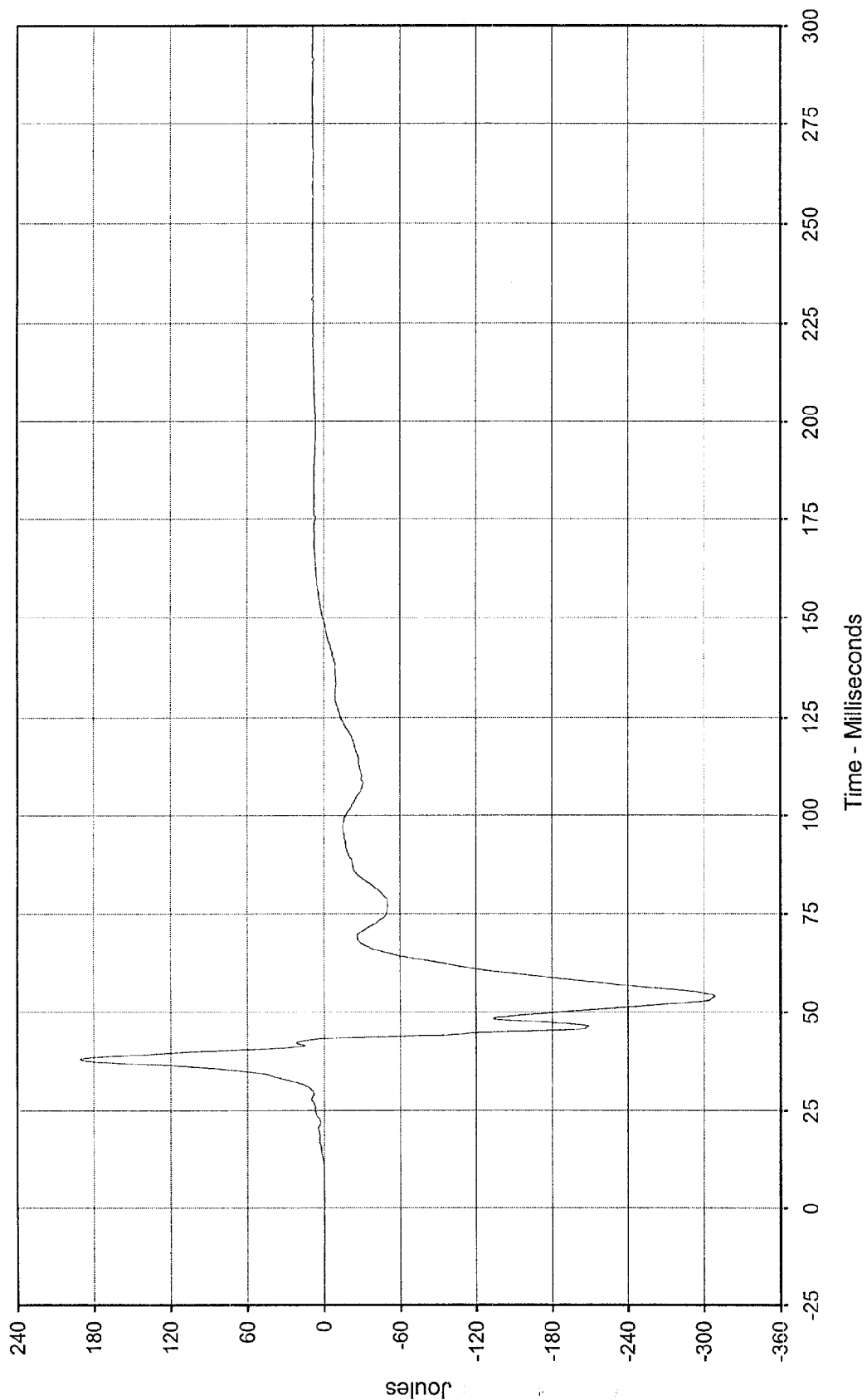
Date of Test: 1/15/98

Curve Number: FIL-033

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV

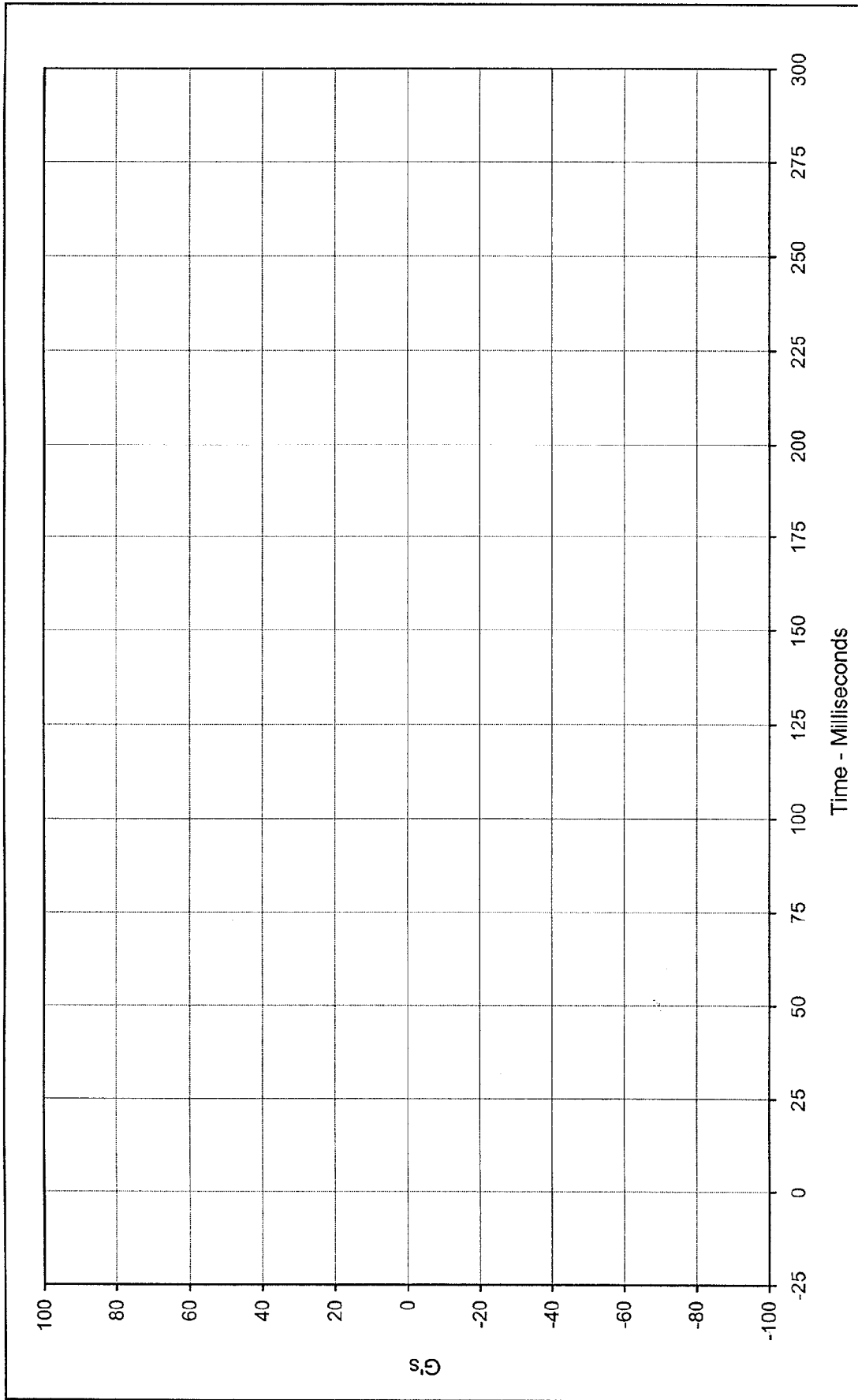




Curve Description: Driver Right Lower Tibia Moment Y Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
Maximum Value: 190.1 at 38.0 Milliseconds Test Vehicle: 1998 Isuzu Rodeo SUV
Minimum Value: -308.7 at 54.0 Milliseconds



SAE Filter Class: 600
Date of Test: 1/15/98
Curve Number: FIL-034



Curve Description: _____ Driver Left Foot Aft X _____ * Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Maximum Value: 0.0 at 0.0 Milliseconds Test Vehicle: 1998 Isuzu Rodeo SUV

Minimum Value: 0.0 at 0.0 Milliseconds

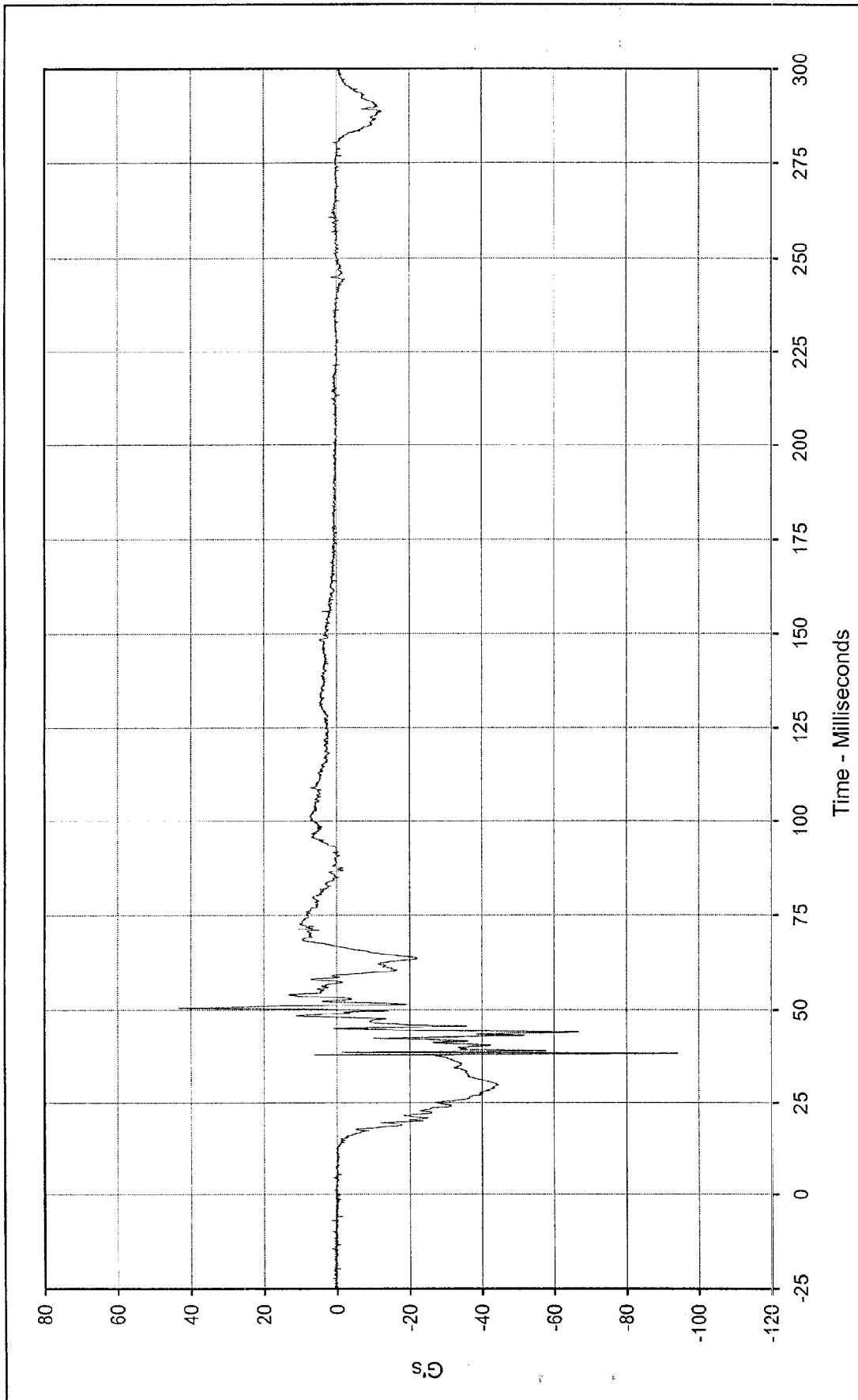
SAE Filter Class: 1000

Date of Test: 1/15/98

Curve Number: FIL-035



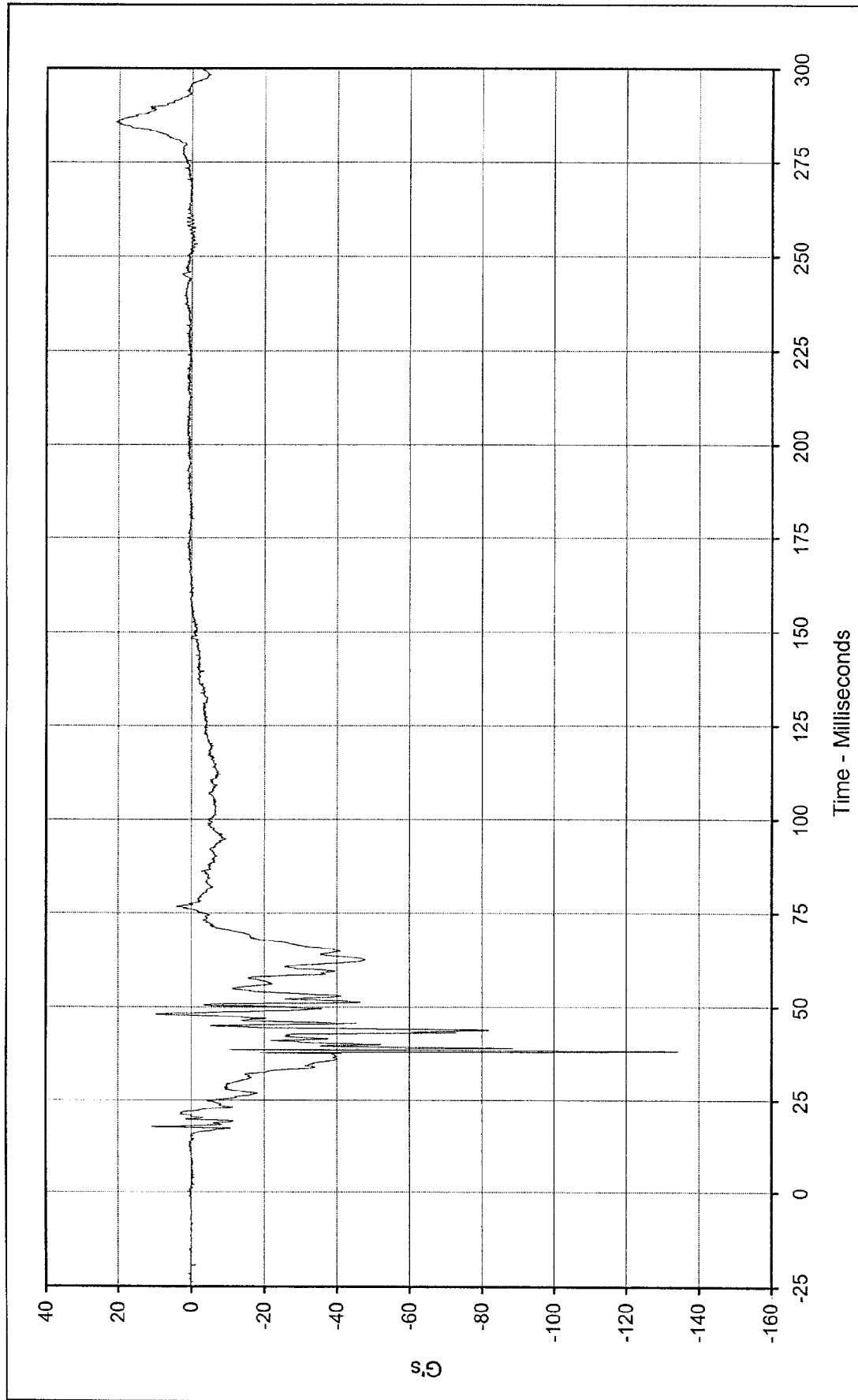
* Channel Failed, No Data



Curve Description: Driver Left Foot Aft Z
 Maximum Value: 43.1 at 50.6 Milliseconds
 Minimum Value: -94.0 at 38.1 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/15/98
 Curve Number: FIL-036

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV

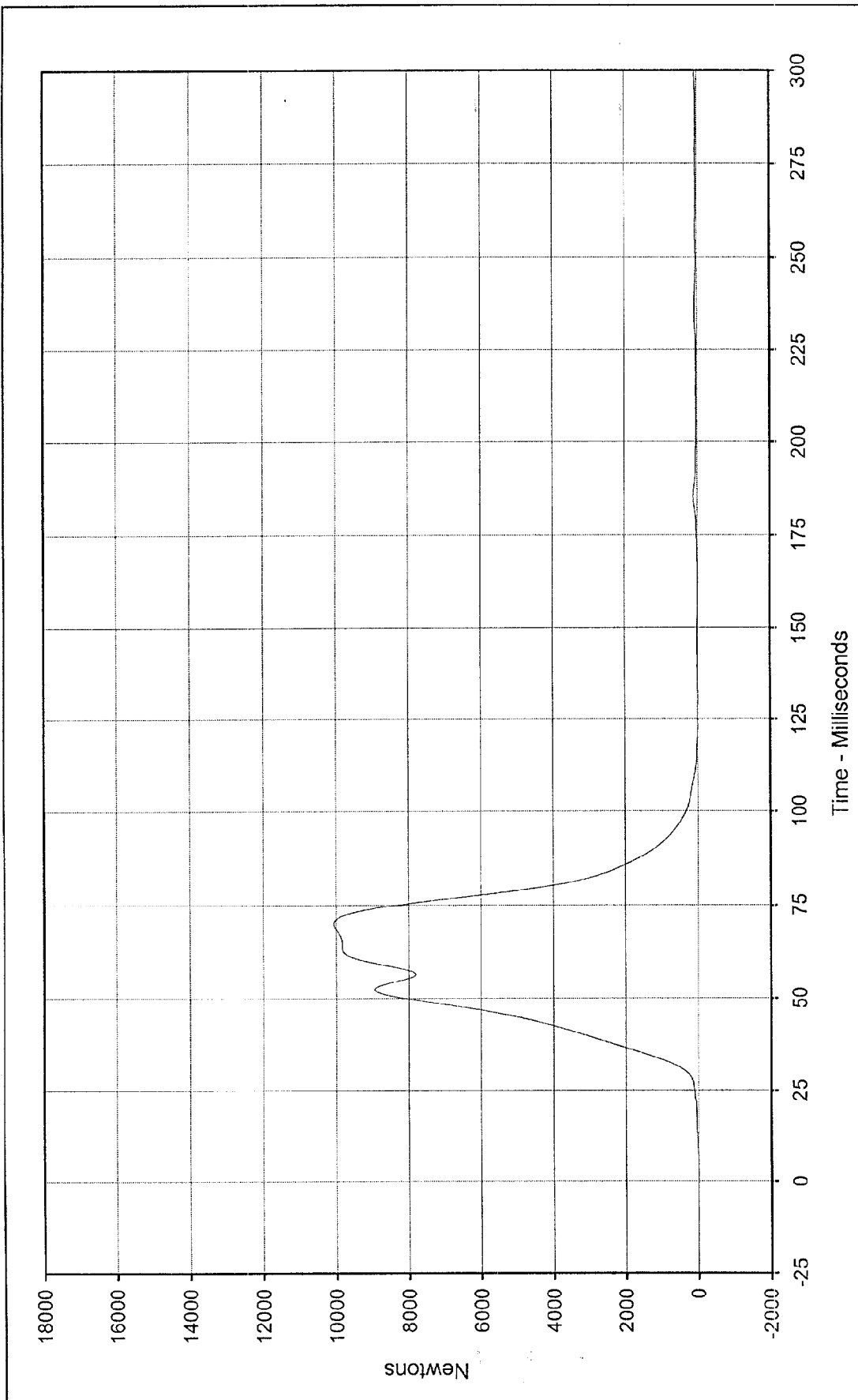




Curve Description: Driver Left Foot Fore Z Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
Maximum Value: 20.9 at 285.7 Milliseconds
Minimum Value: -134.0 at 38.1 Milliseconds

SAE Filter Class: 1000
Date of Test: 1/15/98
Curve Number: FIL-037

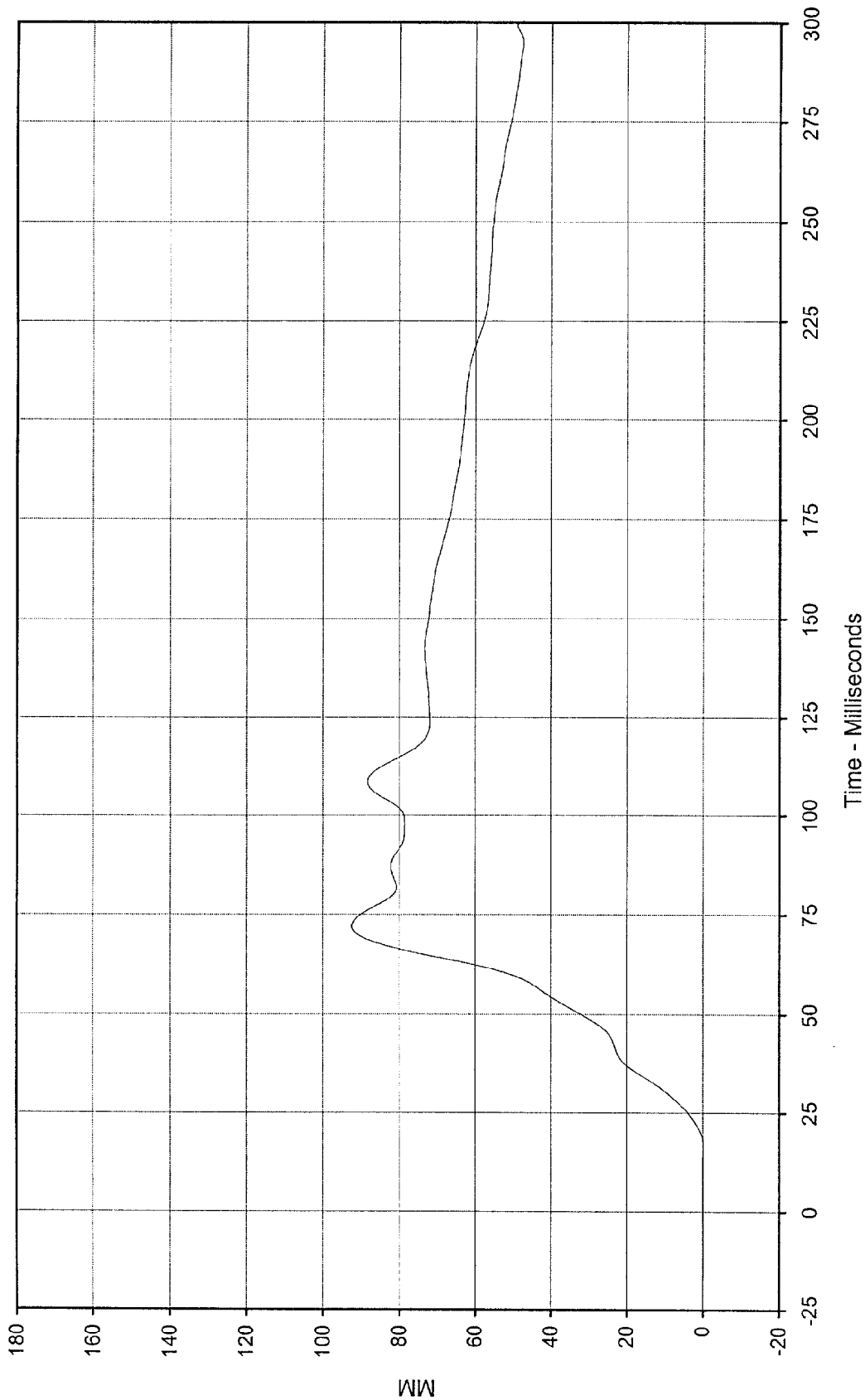




Curve Description: Driver Shoulder Belt Force
 Maximum Value: 10062.3 at 70.1 Milliseconds
 Minimum Value: -19.8 at 164.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/15/98
 Curve Number: FIL-042

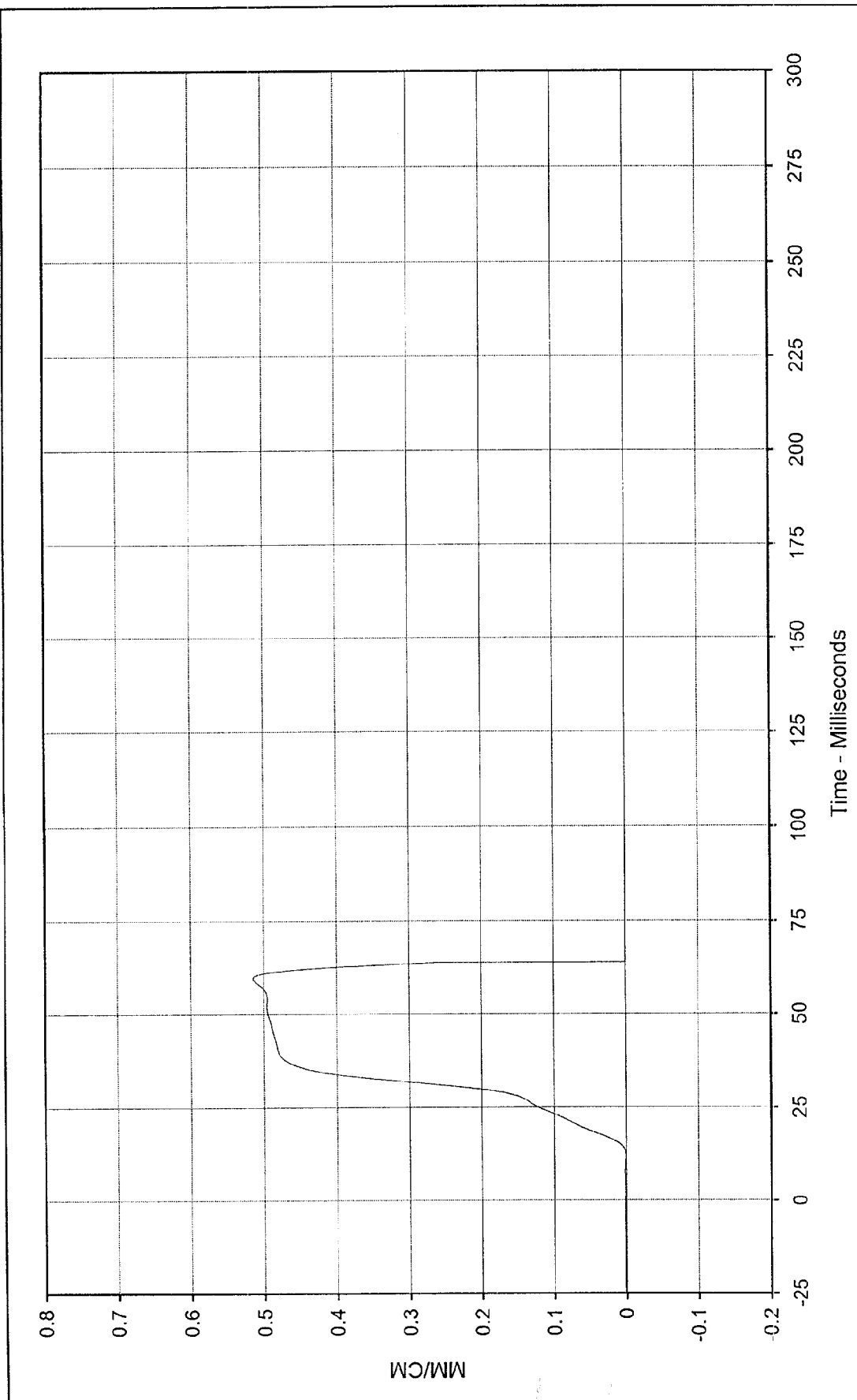
Testing Program: 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description:	Driver Shoulder Belt Pullout	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	92.4	at	72.0	Milliseconds
Minimum Value:	-0.2	at	16.2	Milliseconds
SAE Filter Class:	60	Test Vehicle:	1998 Isuzu Rodeo SUV	
Date of Test:	1/15/98			
Curve Number:	FIL-043			



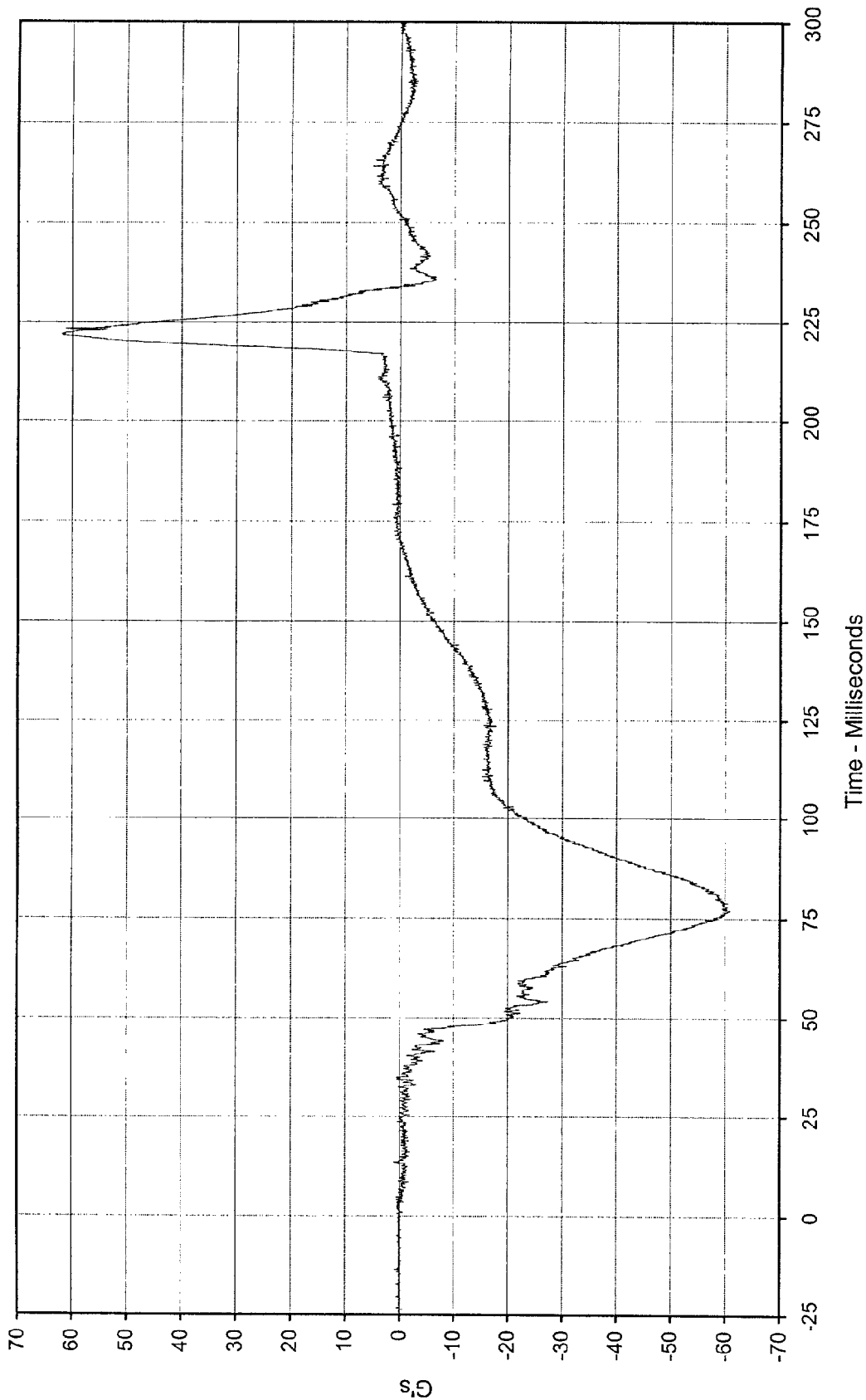


Curve Description: Driver Shoulder Belt Elongation *
 Maximum Value: 0.51 at 59.8 Milliseconds
 Minimum Value: 0.00 at 64.0 Milliseconds



SAE Filter Class: 60
 Date of Test: 1/15/98
 Curve Number: FIL-044

* Channel Failed at 64.0 Msec.



Curve Description: Passenger Head Primary X

Maximum Value: 62.0 at 222.1 Milliseconds

Minimum Value: -60.9 at 76.9 Milliseconds

SAE Filter Class: 1000

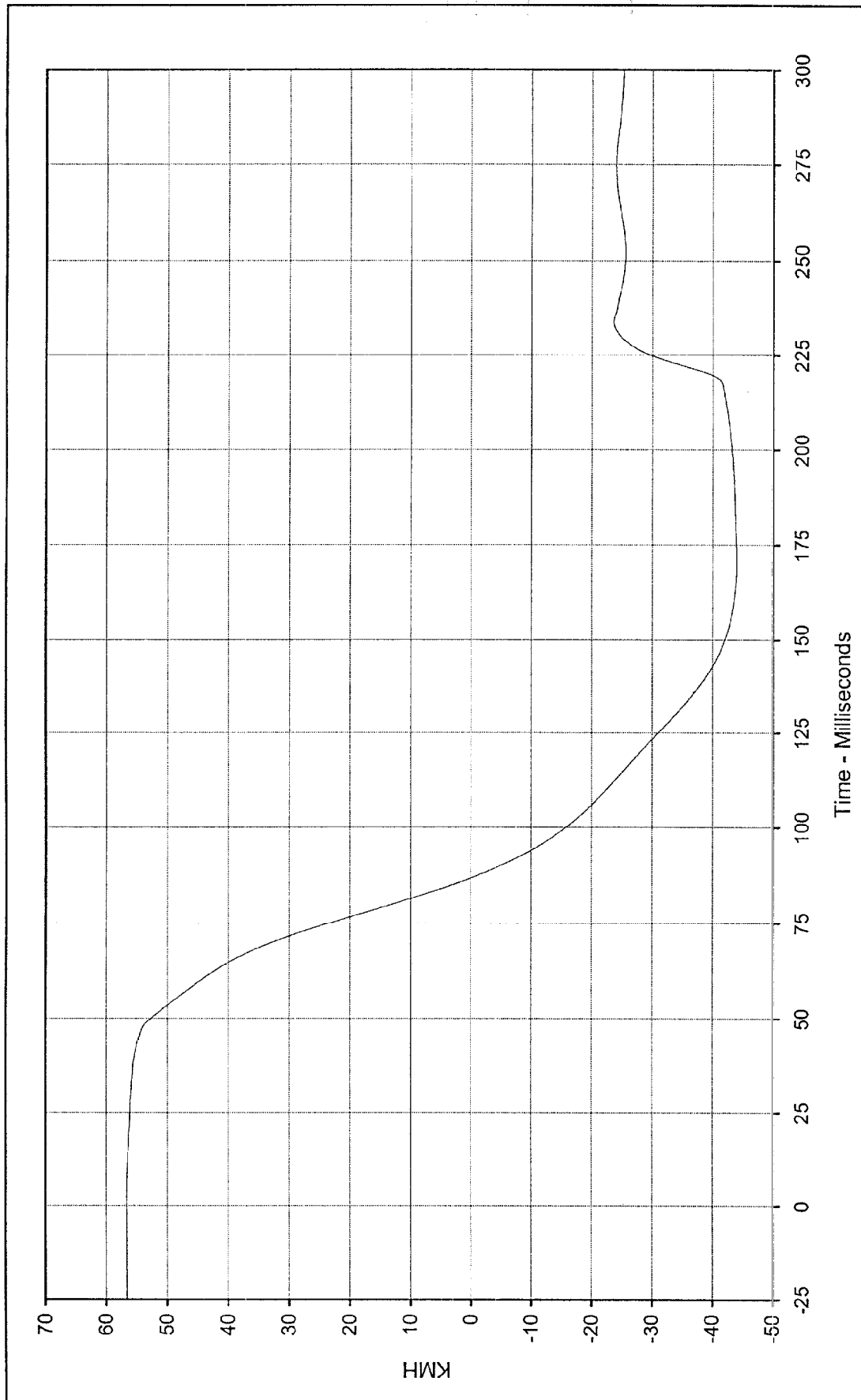
Date of Test: 1/15/98

Curve Number: FIL-045

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Passenger Head Primary X Velocity

Maximum Value: 56.7 at 3.7 Milliseconds

Minimum Value: -44.0 at 170.2 Milliseconds

SAE Filter Class: 180

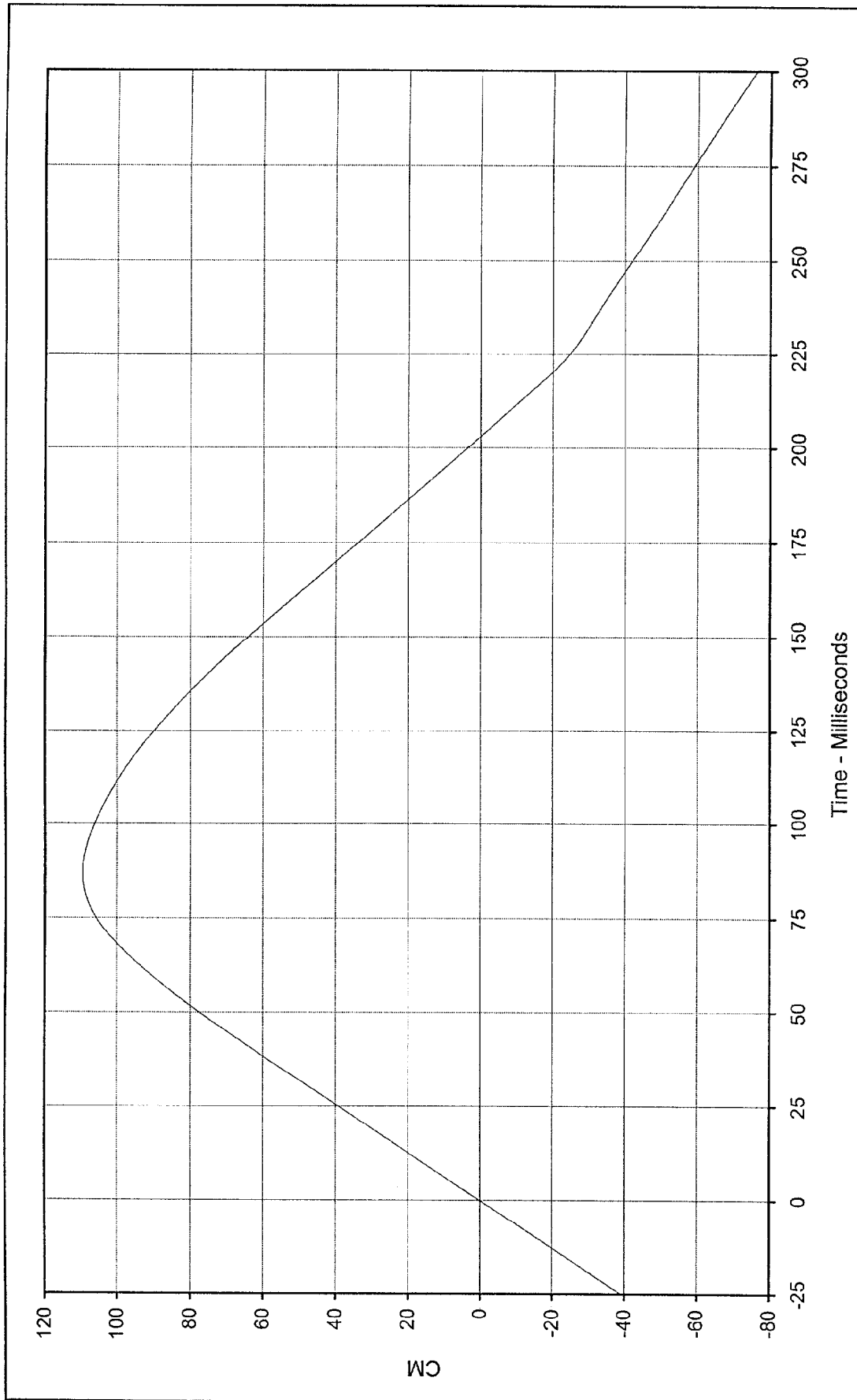
Date of Test: 1/15/98

Curve Number: IN1-045

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Passenger Head Primary X Displ.

Maximum Value: 109.5 at 86.8 Milliseconds

Minimum Value: -76.1 at 299.9 Milliseconds

SAE Filter Class: 180

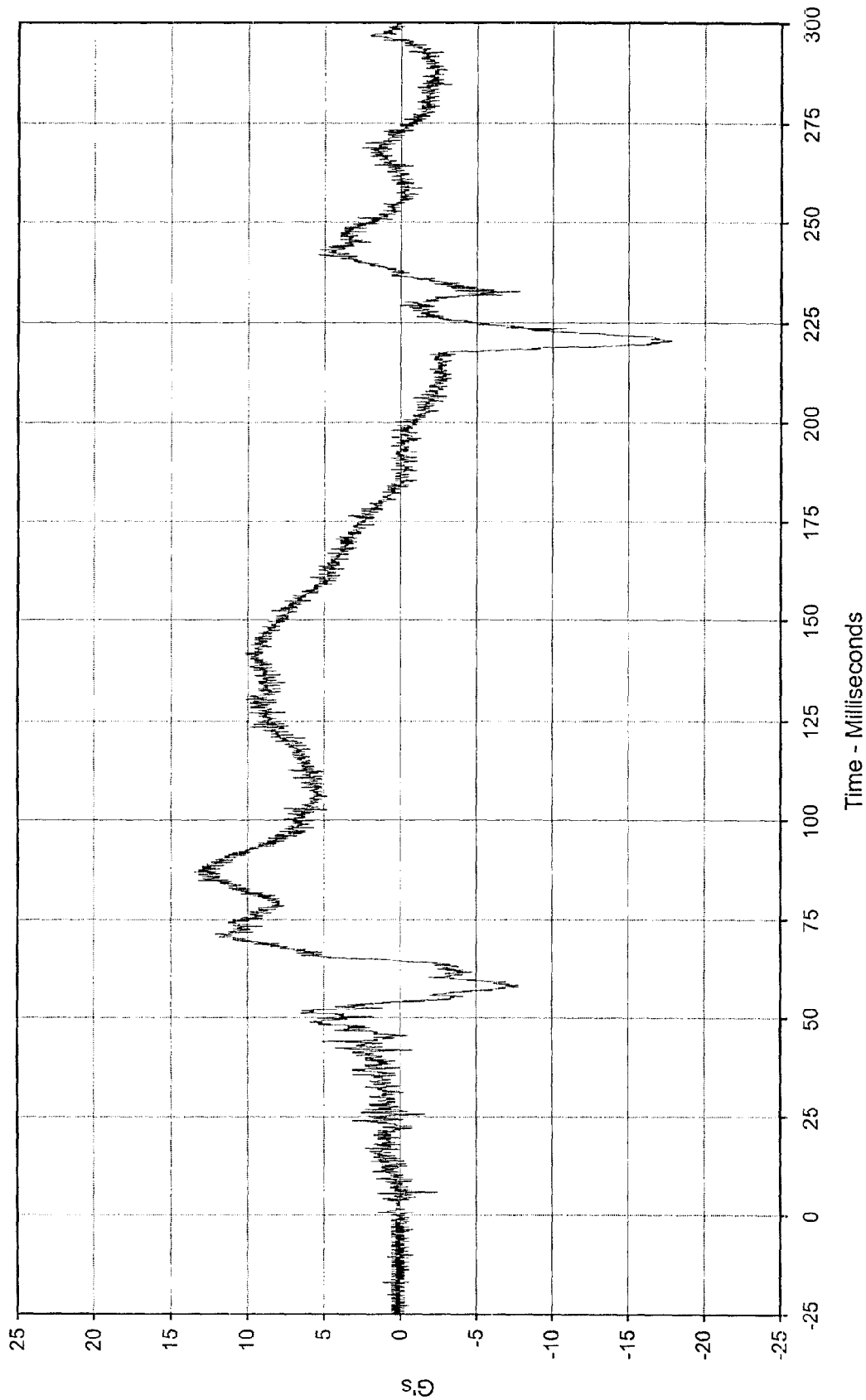
Date of Test: 1/15/98

Curve Number: IN2-045

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Passenger Head Primary Y

Maximum Value: 13.5 at 87.1 Milliseconds

Minimum Value: -17.8 at 220.5 Milliseconds

SAE Filter Class: 1000

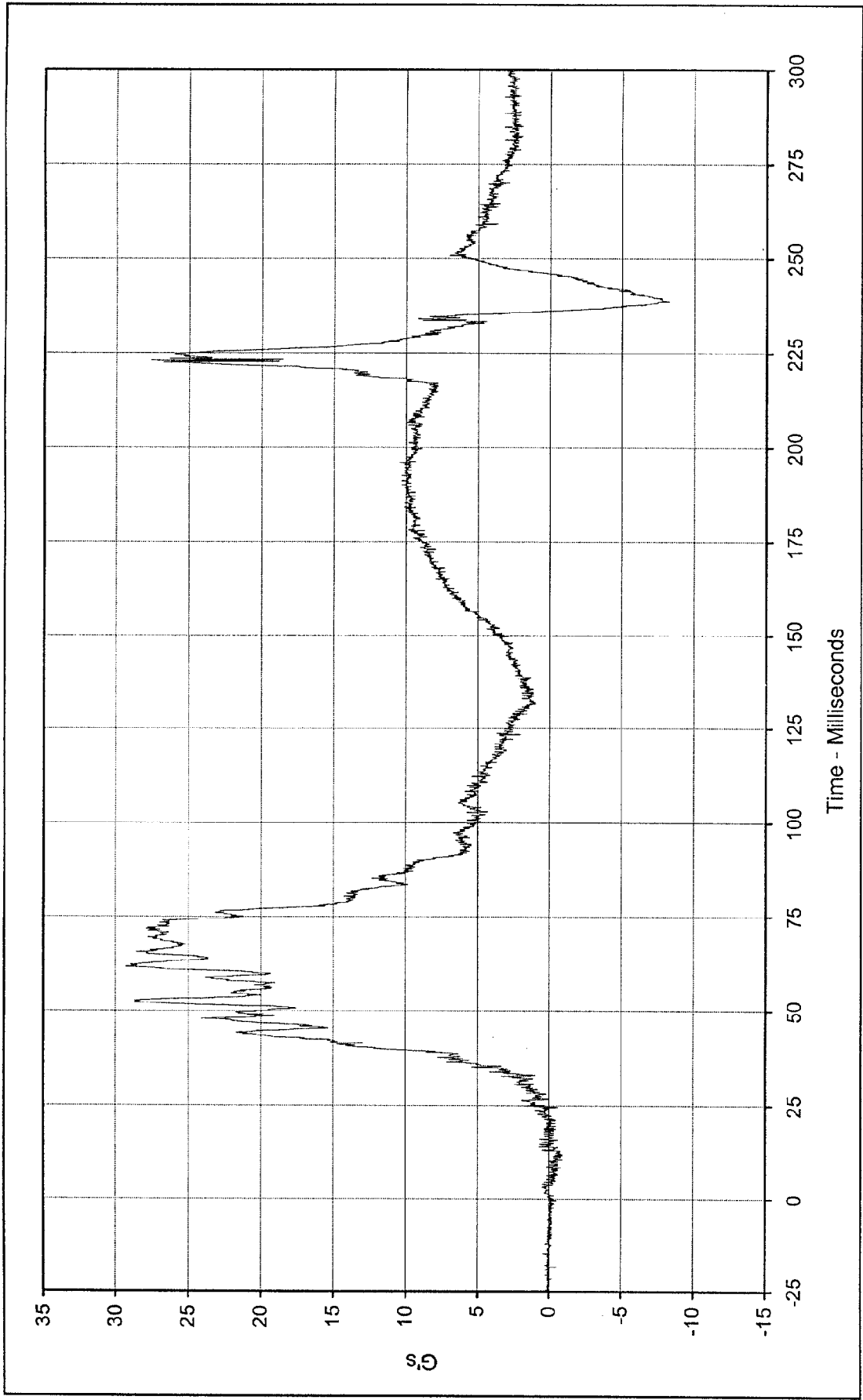
Date of Test: 1/15/98

Curve Number: FIL-046

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

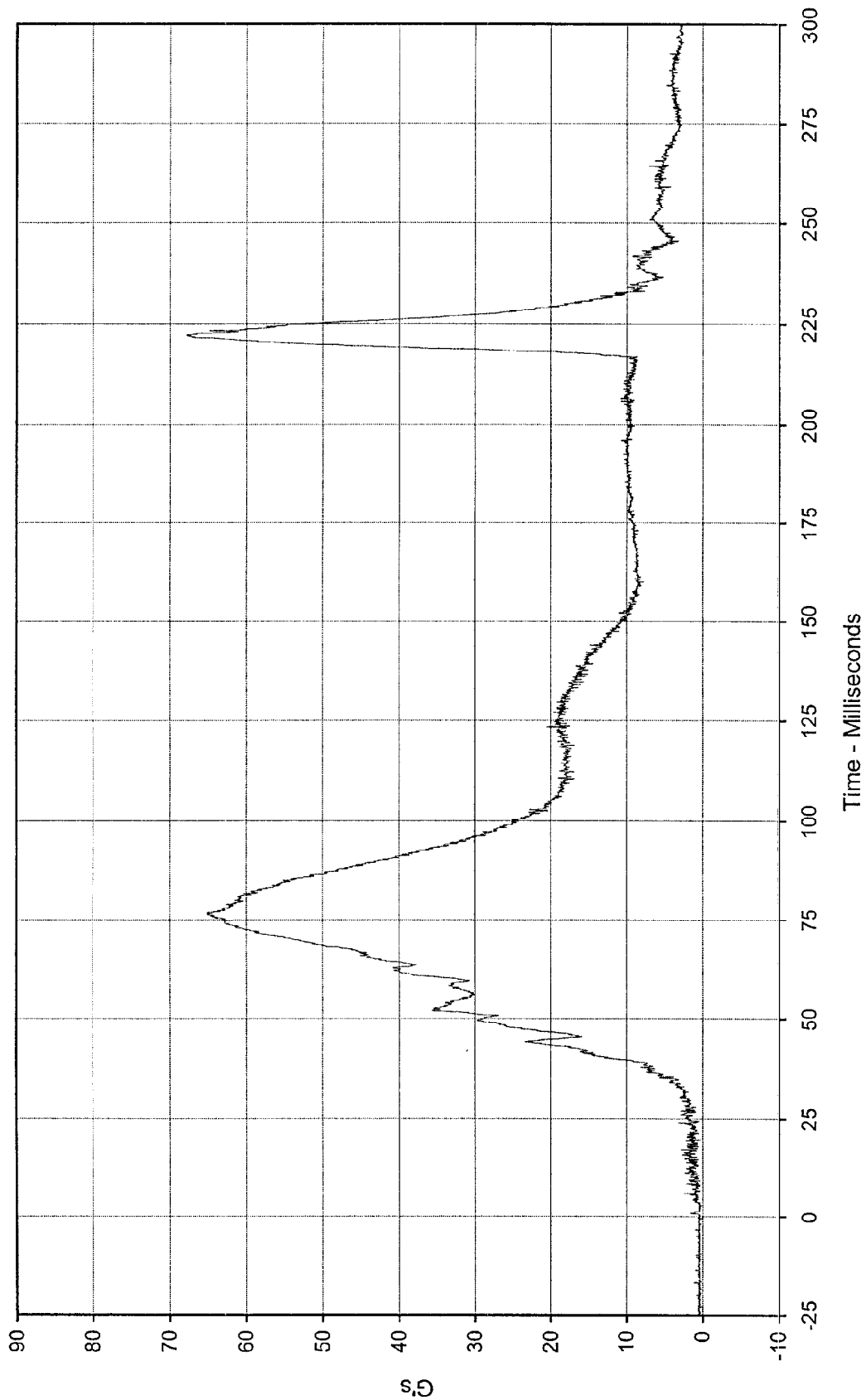
Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description:	Passenger Head Primary Z	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	29.3	at	61.7	Milliseconds
Minimum Value:	-8.2	at	238.7	Milliseconds
SAE Filter Class:	1000			
Date of Test:	1/15/98	Test Vehicle:	1998 Isuzu Rodeo SUV	
Curve Number:	FIL-047			





Curve Description: Passenger Head Resultant Primary

Maximum Value: 67.9 at 222.3 Milliseconds

Minimum Value: 0.2 at 2.7 Milliseconds

SAE Filter Class: 1000

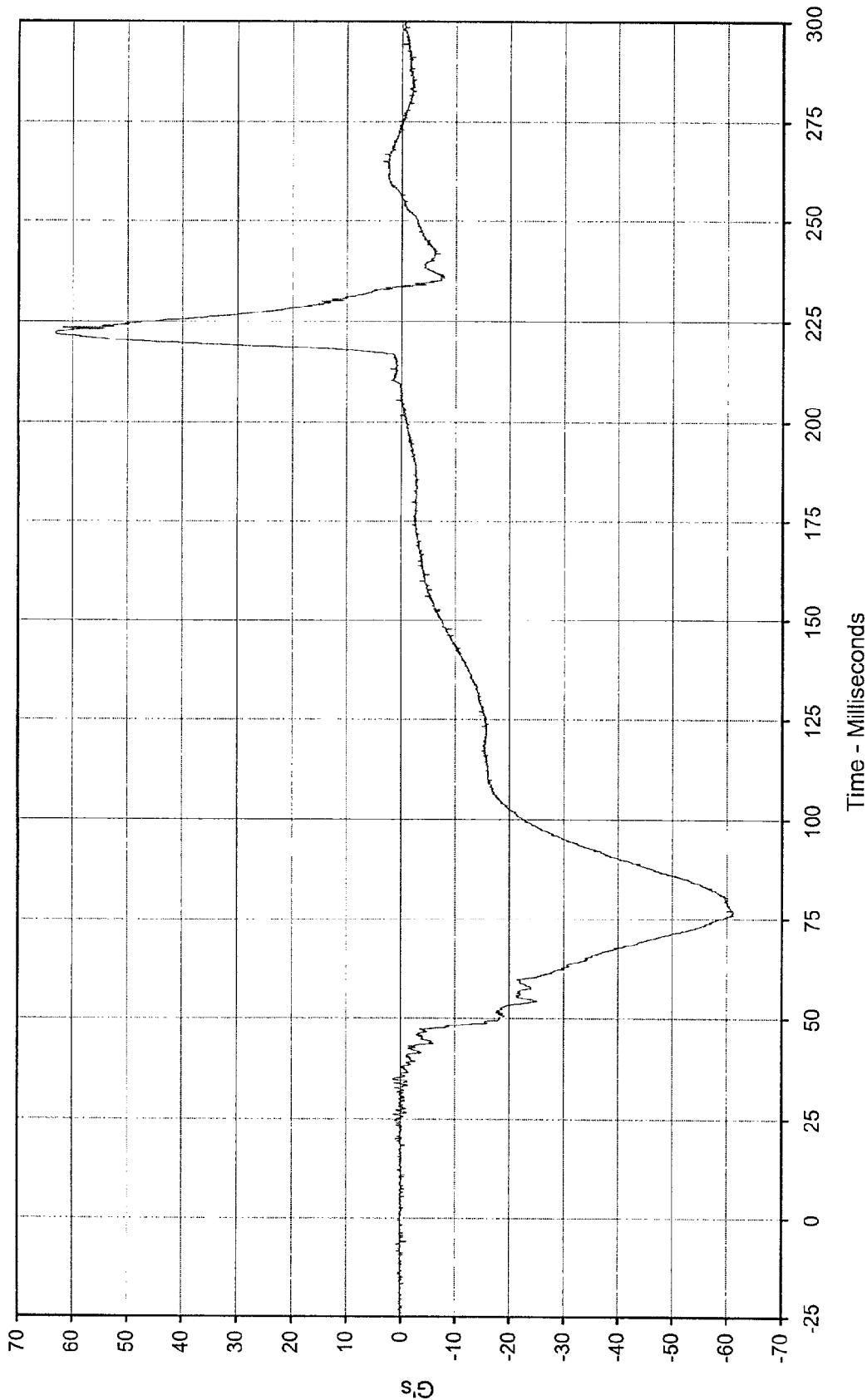
Date of Test: 1/15/98

Curve Number: RES-045

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV





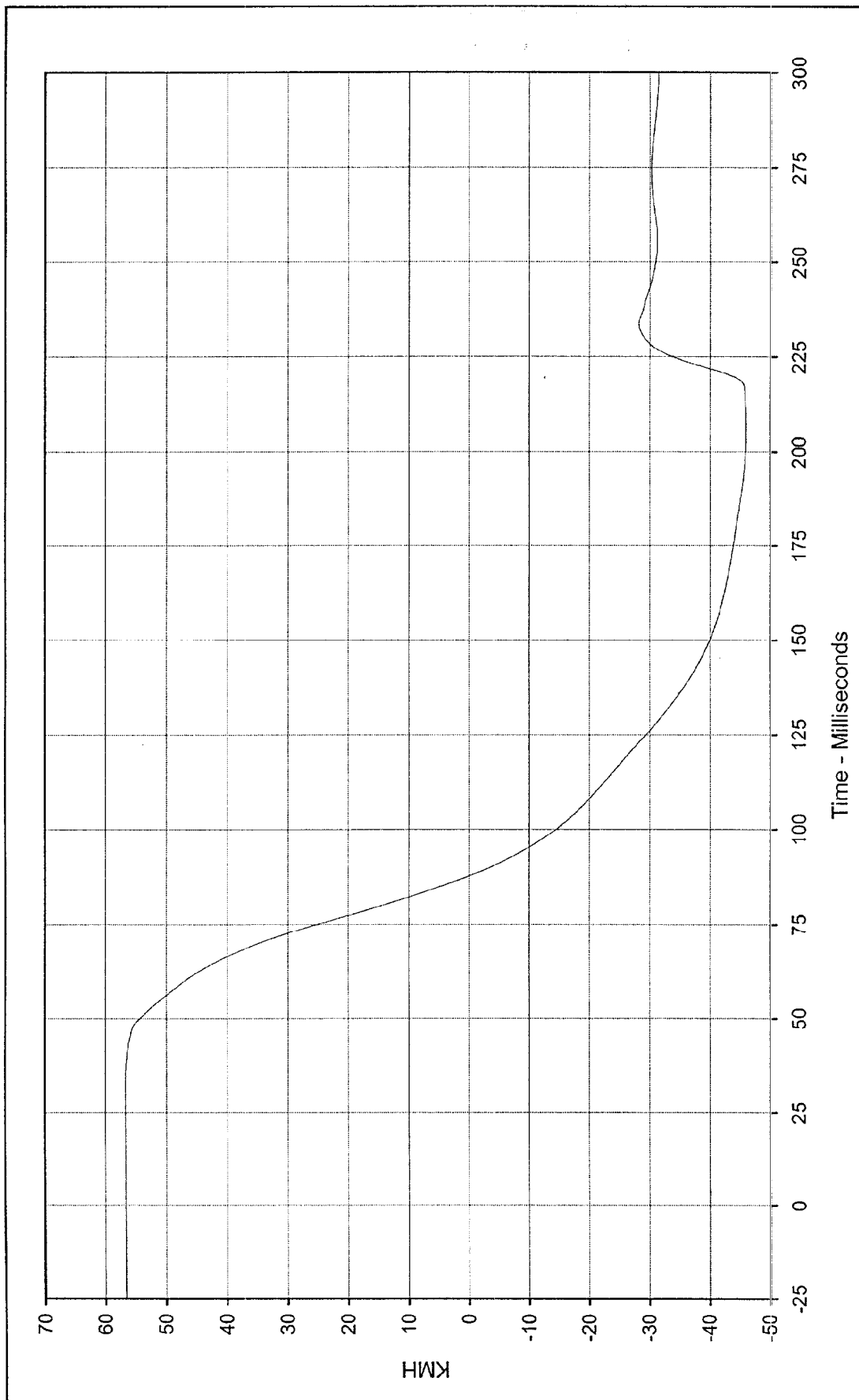
Curve Description: Passenger Head Redundant X

Maximum Value:	63.3	at	222.0	Milliseconds
Minimum Value:	-61.3	at	76.1	Milliseconds
SAE Filter Class:	1000			
Date of Test:	1/15/98			
Curve Number:	FIL-048			

Testing Program 1988 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV

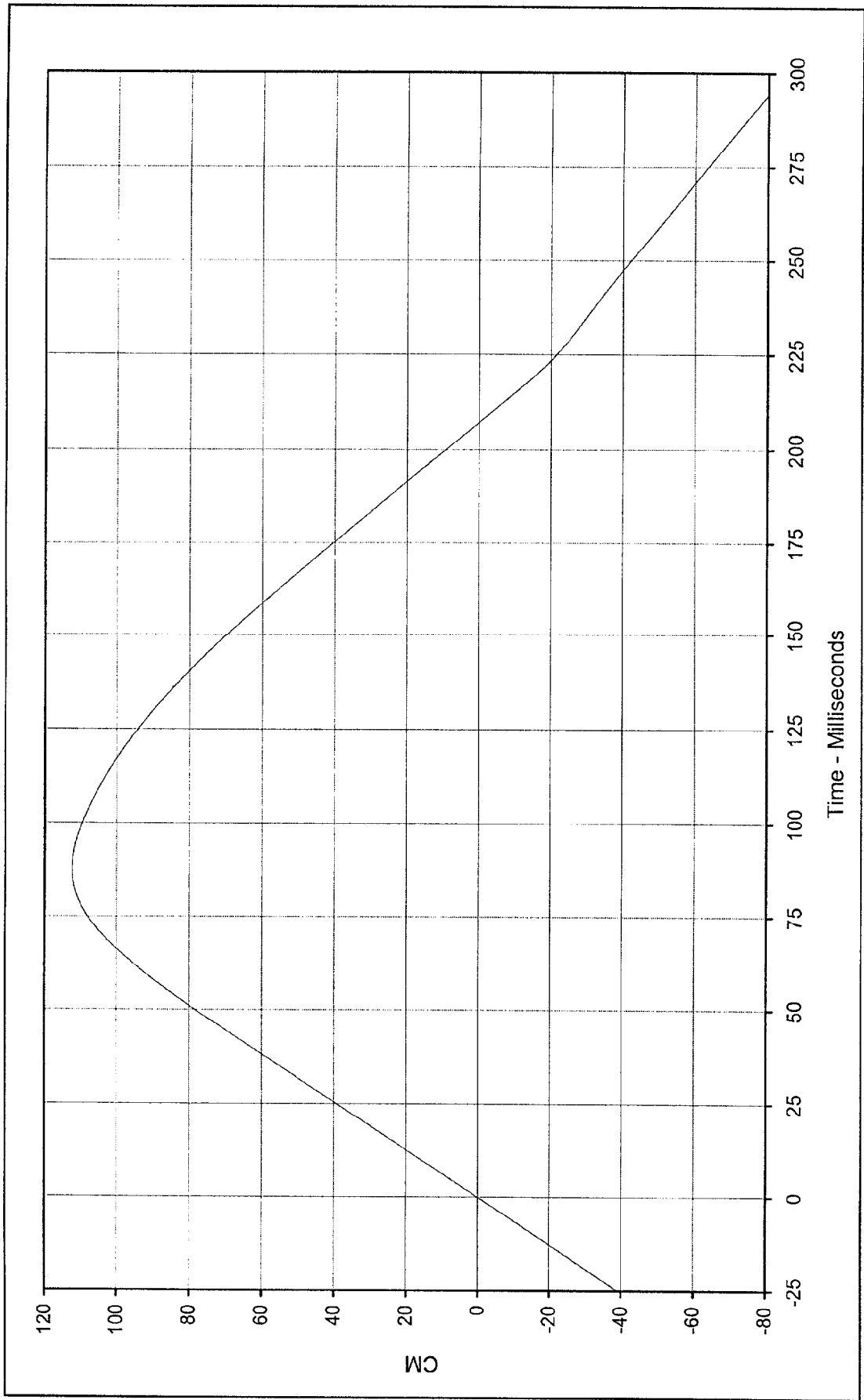




Curve Description: Passenger Head Redundant X Velocity
 Maximum Value: 56.7 at 26.4 Milliseconds
 Minimum Value: -46.0 at 208.1 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/15/98
 Curve Number: IN1-048

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV

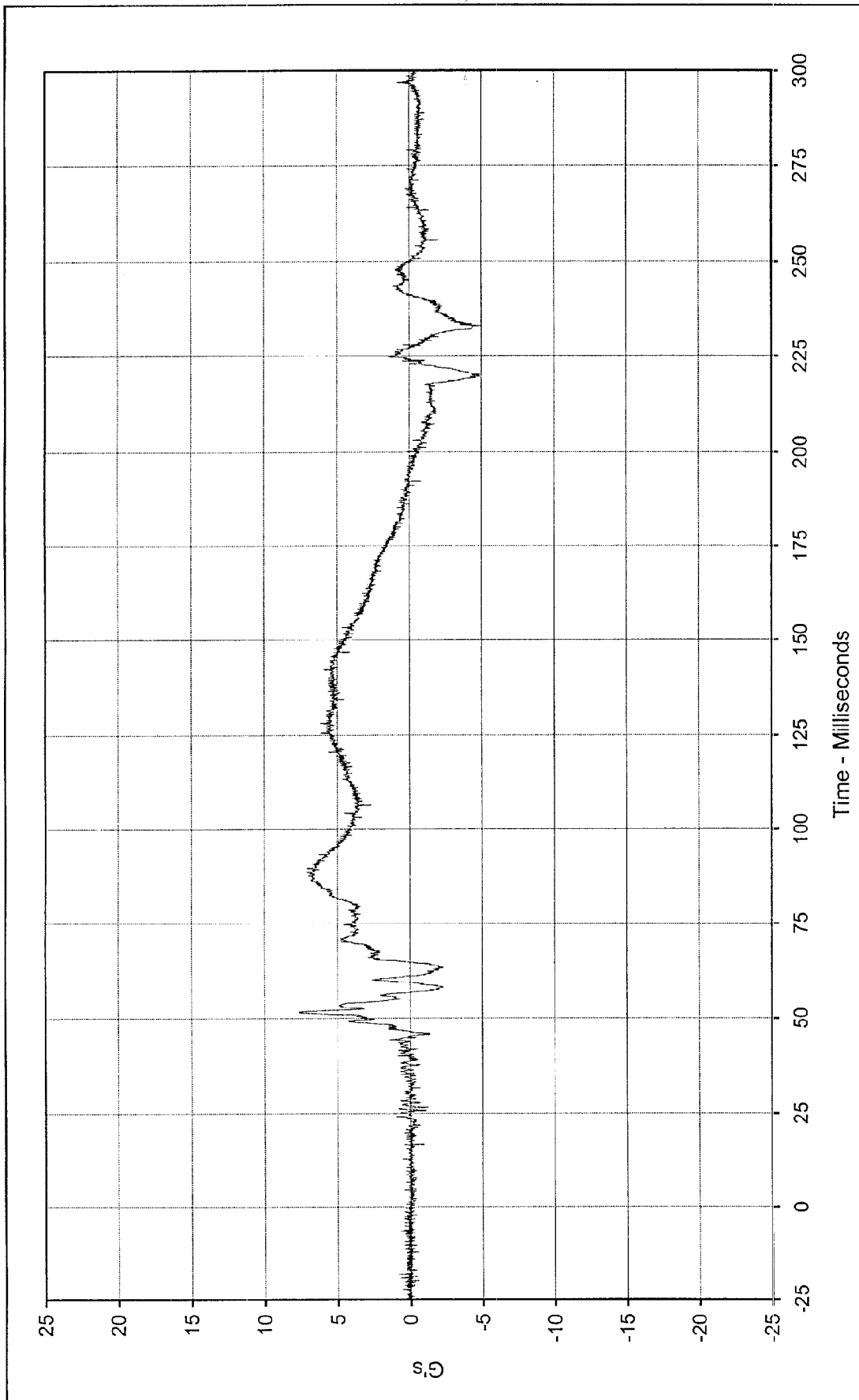




Curve Description: Passenger Head Redundant X Displ.
Maximum Value: 112.3 at 87.7 Milliseconds
Minimum Value: -84.9 at 299.9 Milliseconds
SAE Filter Class: 180
Date of Test: 1/15/98
Curve Number: IN2-048

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
Test Vehicle: 1998 Isuzu Rodeo SUV

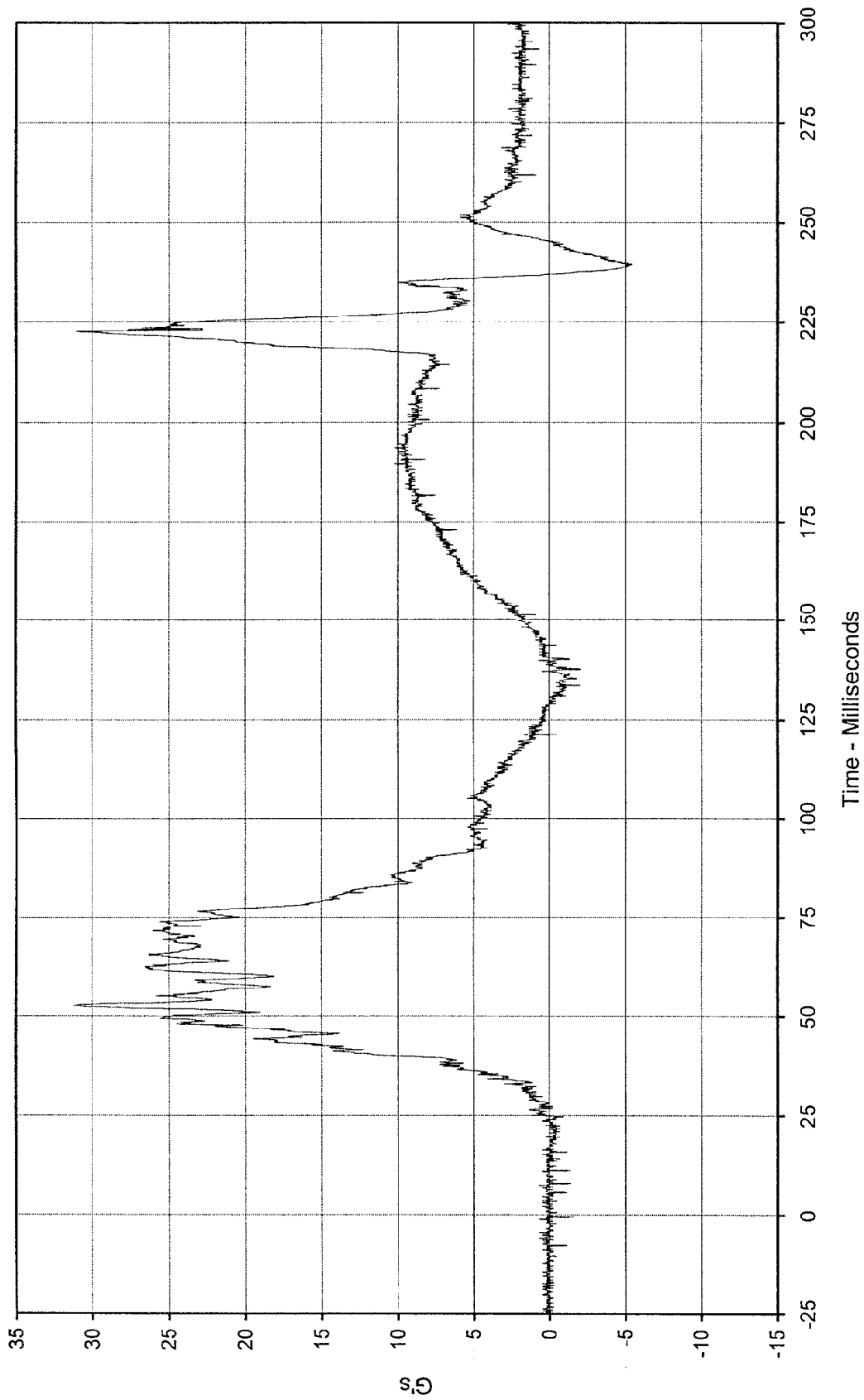




Curve Description: Passenger Head Redundant Y
 Maximum Value: 7.7 at 51.6 Milliseconds
 Minimum Value: -5.0 at 233.0 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/15/98
 Curve Number: FIL-049

Testing Program 1988 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV

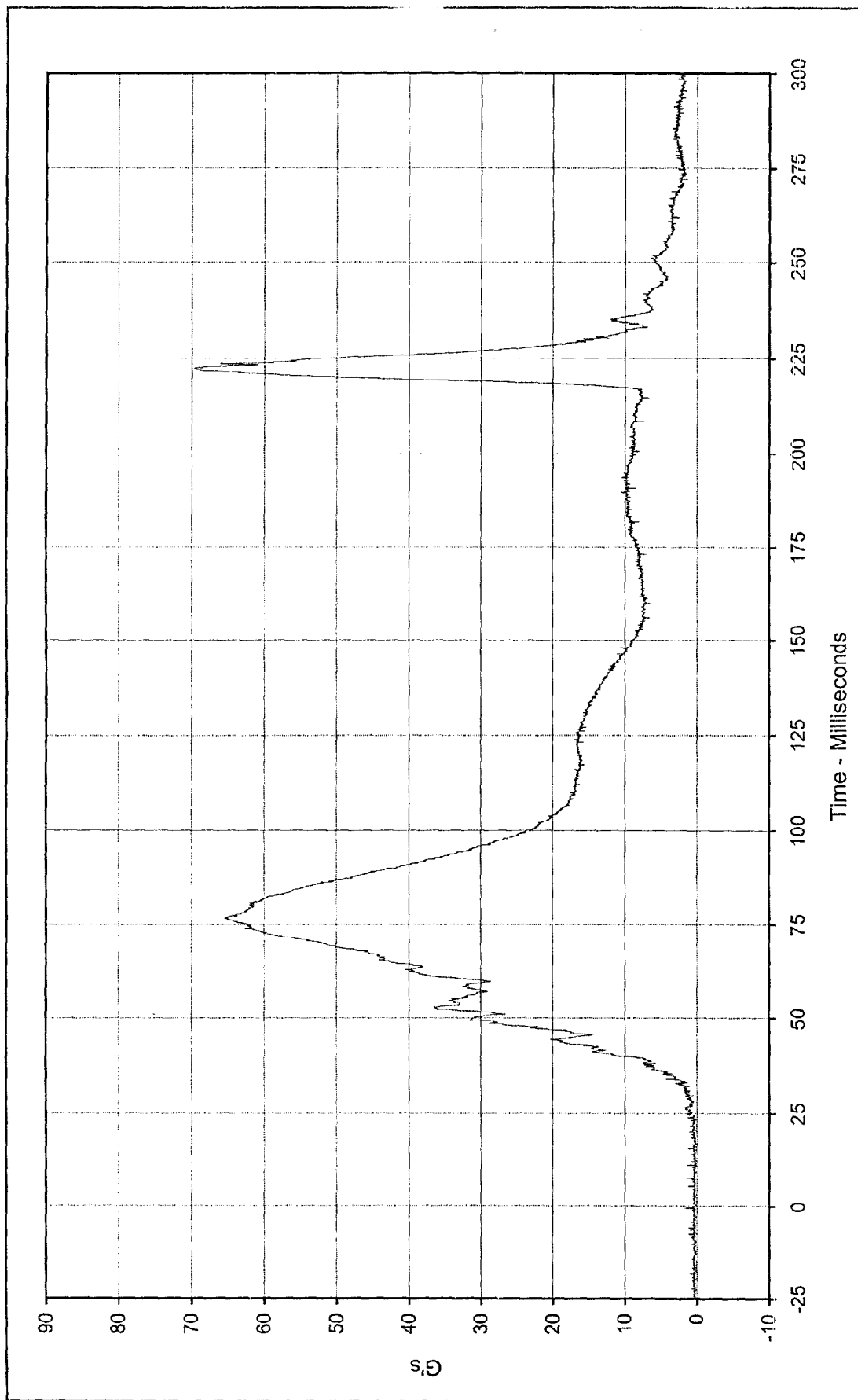




Curve Description:	Passenger Head Redundant Z	Testing Program	1988 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	31.2	at	52.6	Milliseconds
Minimum Value:	-5.4	at	239.4	Milliseconds
SAE Filter Class:	1000	Test Vehicle:	1998 Isuzu Rodeo SUV	
Date of Test:	1/15/98			
Curve Number:	FIL-050			

The logo for OKARCO Engineering. It features the word "OKARCO" in a large, bold, sans-serif font. The letter "O" is stylized to look like a lightbulb with a glowing filament. To the right of "OKARCO", the word "Engineering" is written in a smaller, italicized, sans-serif font. The entire logo is set against a dark, rectangular background.





Curve Description: Passenger Head Resultant Redundant

Maximum Value: 69.6 at 222.3 Milliseconds

Minimum Value: 0.0 at 3.0 Milliseconds

SAE Filter Class: 1000

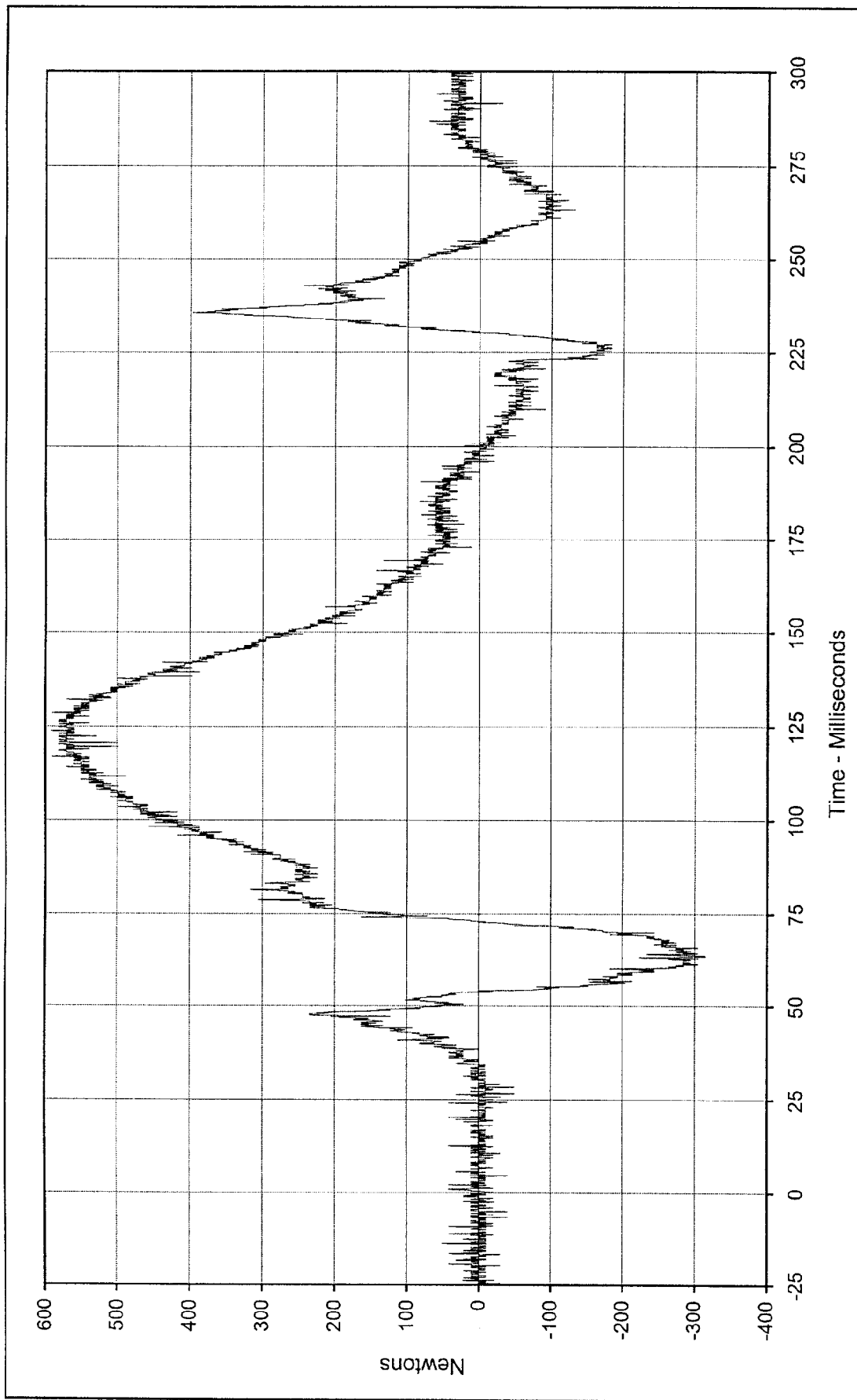
Date of Test: 1/15/98

Curve Number: RES-048

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

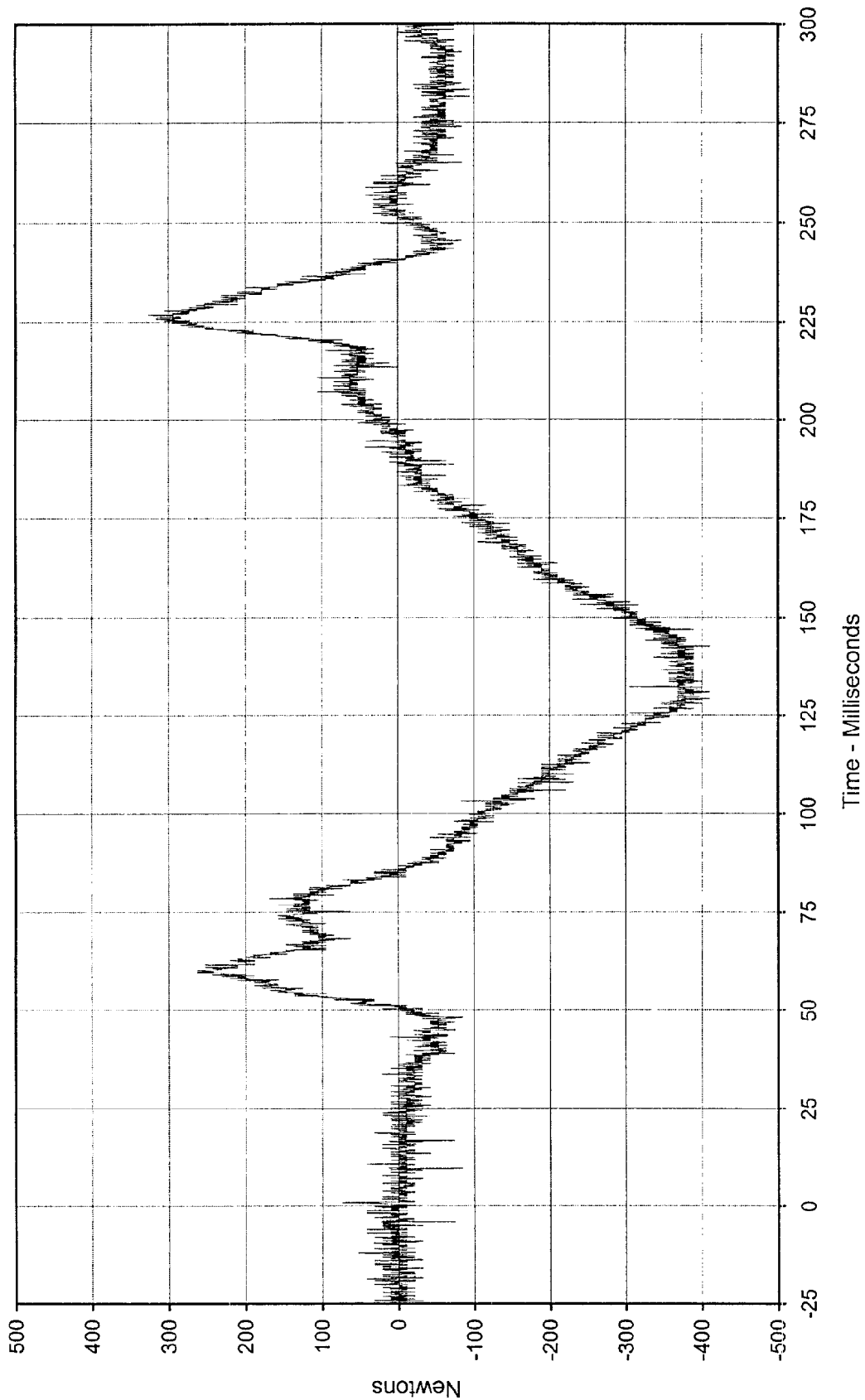
Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description:		Passenger Neck Force X		Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	590.4	at	116.8	Milliseconds	Test Vehicle:	1998 Isuzu Rodeo SUV
Minimum Value:	-315.1	at	63.4	Milliseconds		
SAE Filter Class:	1000					
Date of Test:	1/15/98					
Curve Number:	FIL-051					





Curve Description: Passenger Neck Force Y

Maximum Value: 325.9 at 226.8 Milliseconds

Minimum Value: -410.2 at 129.4 Milliseconds

SAE Filter Class: 1000

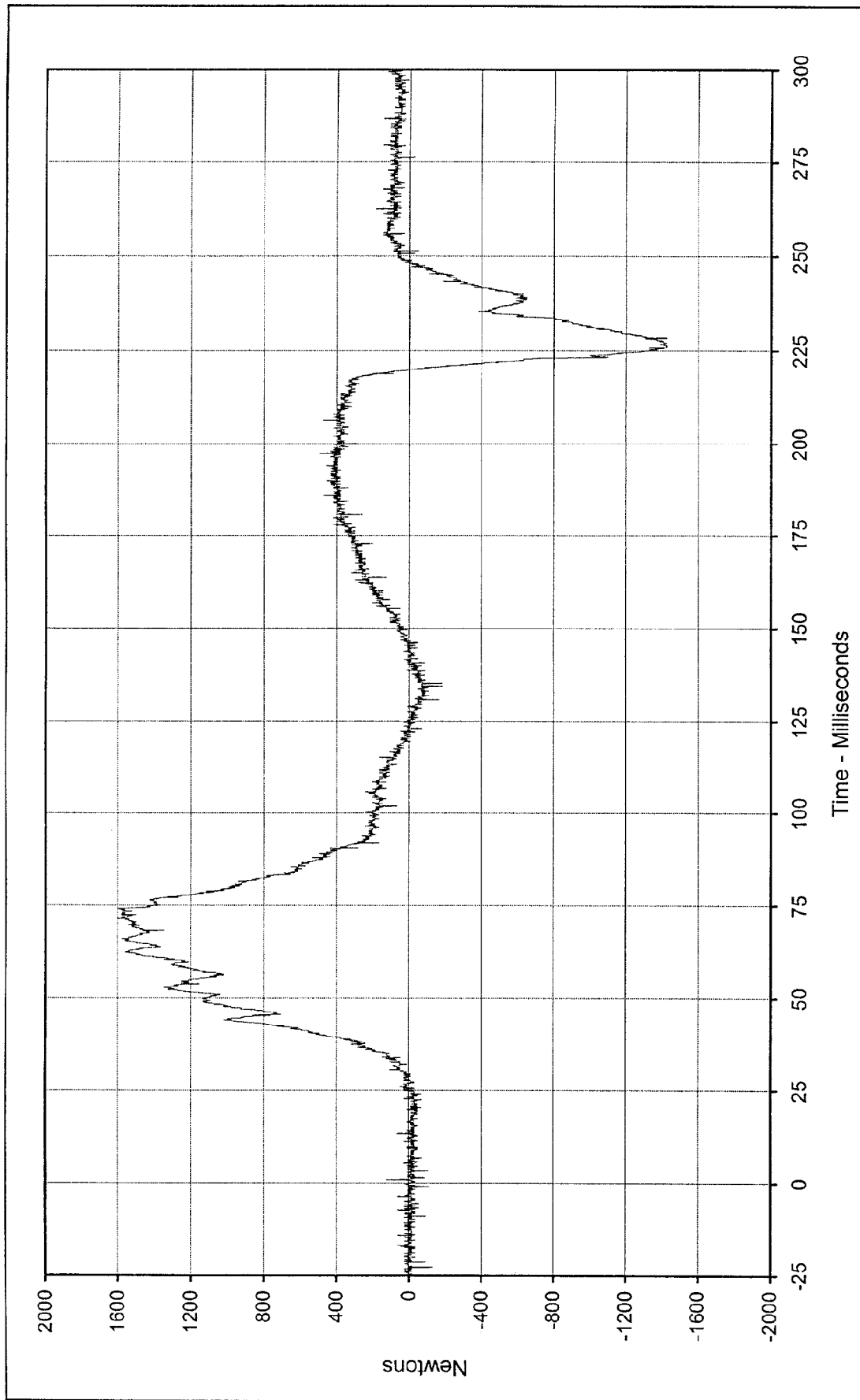
Date of Test: 1/15/98

Curve Number: FIL-052

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

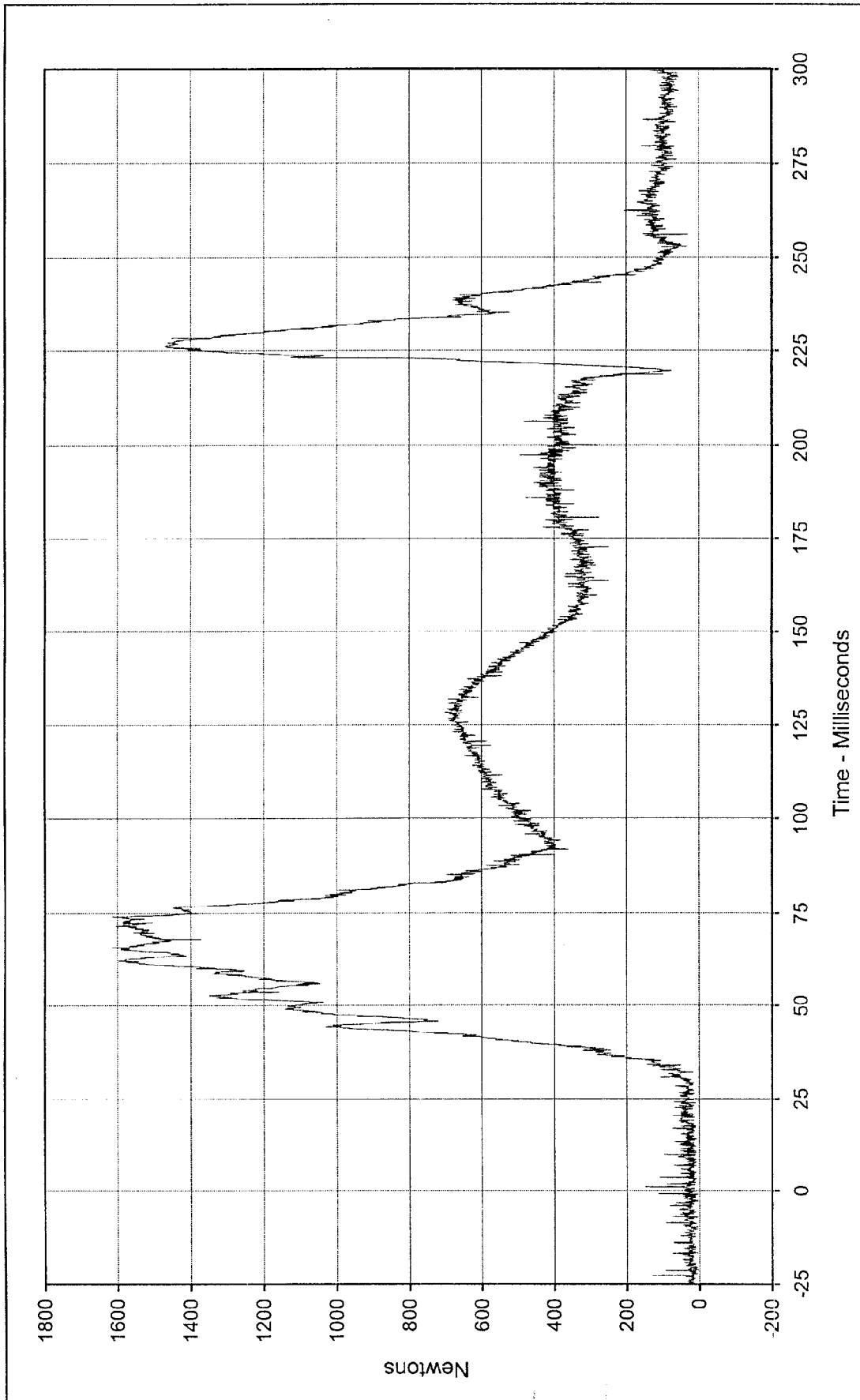
Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description:	Passenger Neck Force Z	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	1597.8	at	71.6	Milliseconds
Minimum Value:	-1425.3	at	225.9	Milliseconds
SAE Filter Class:	1000	Test Vehicle:	1998 Isuzu Rodeo SUV	
Date of Test:	1/15/98			
Curve Number:	FIL-053			



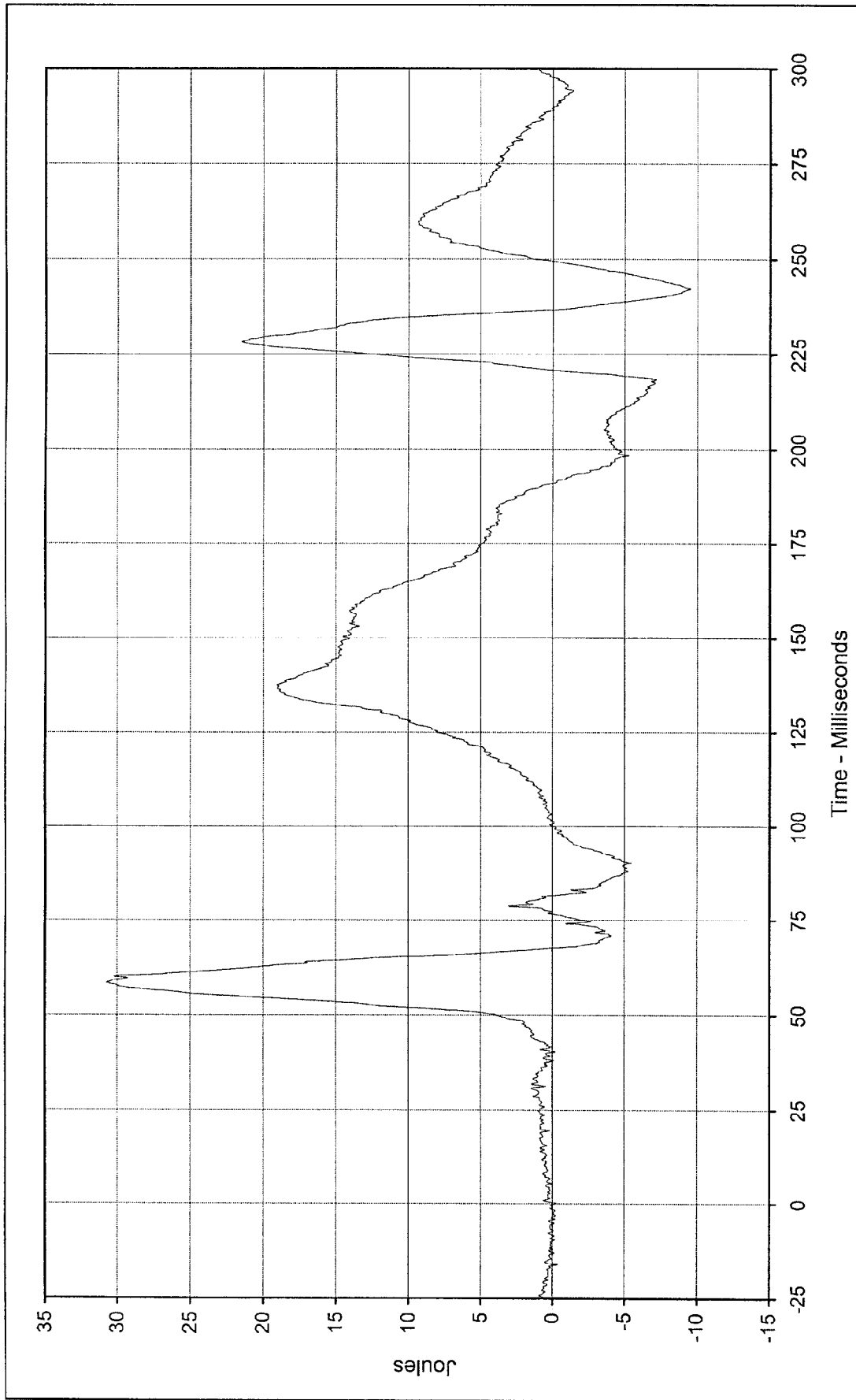


Curve Description: Passenger Neck Force Resultant
 Maximum Value: 1613.8 at 74.1 Milliseconds
 Minimum Value: 8.7 at 14.1 Milliseconds

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV



SAE Filter Class: 1000
 Date of Test: 1/15/98
 Curve Number: RES-051



Curve Description: Passenger Neck Moment X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Maximum Value: 30.7 at 58.5 Milliseconds Test Vehicle: 1998 Isuzu Rodeo SUV

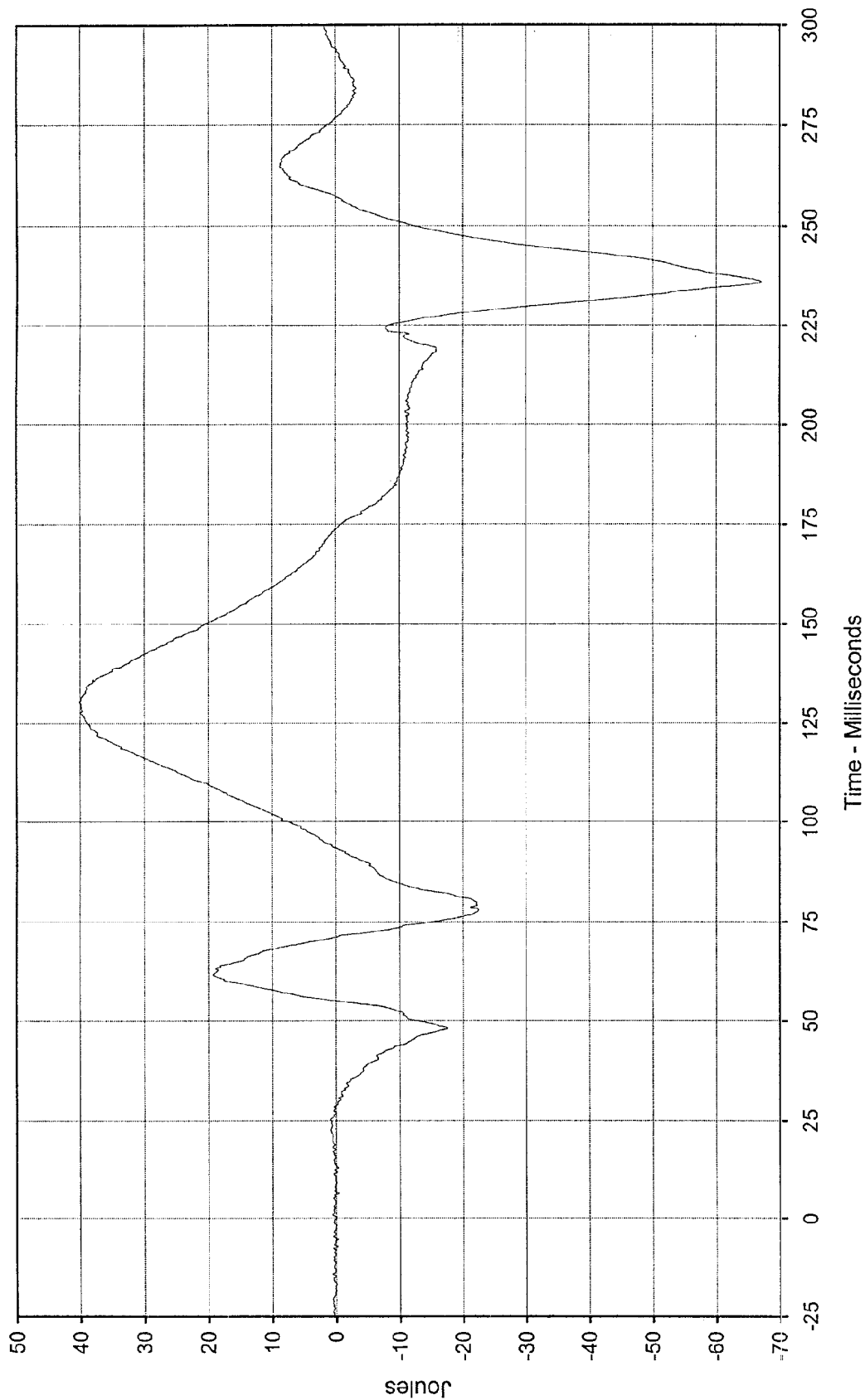
Minimum Value: -9.5 at 242.3 Milliseconds

SAE Filter Class: 600

Date of Test: 1/15/98

Curve Number: FIL-054

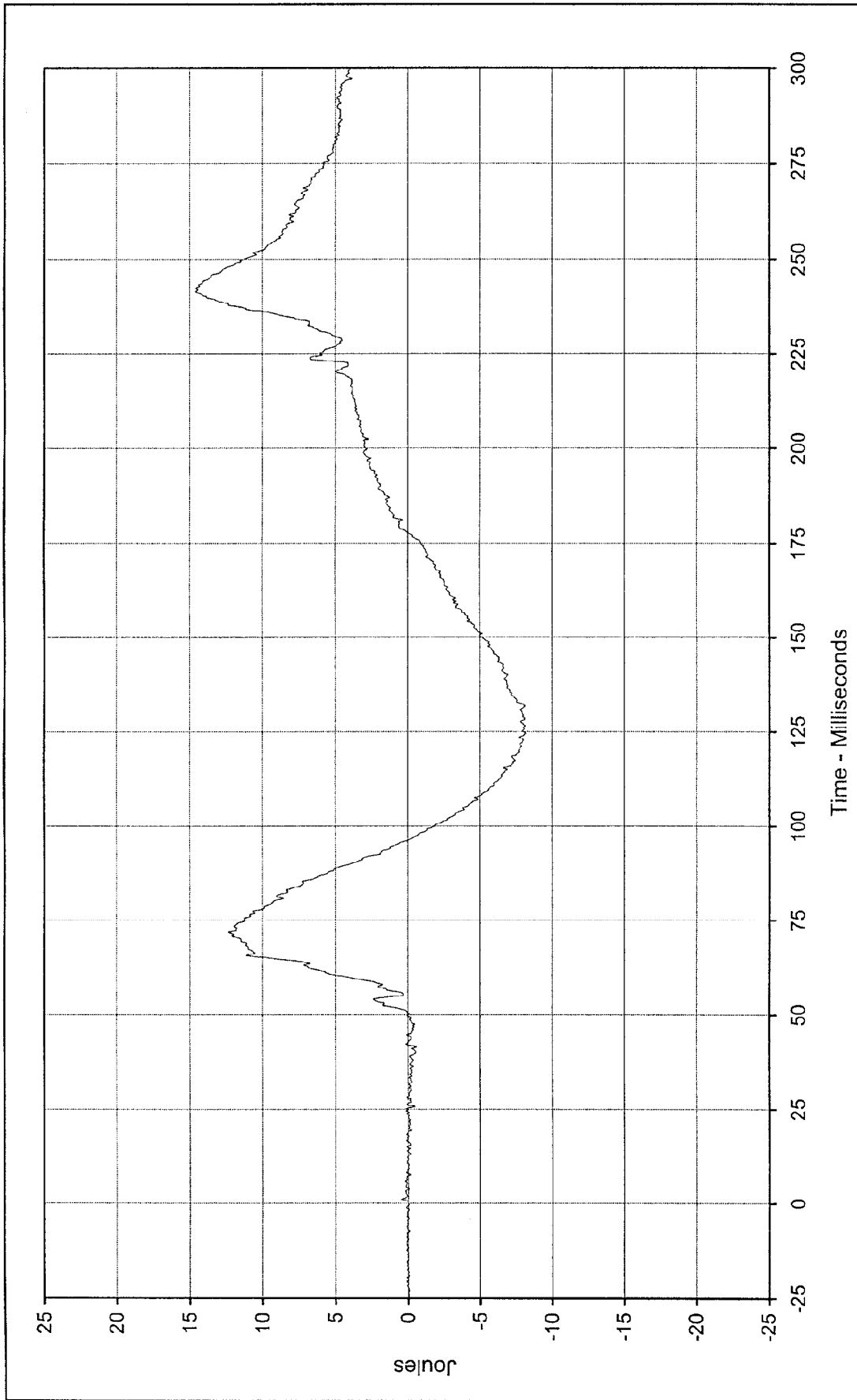




Curve Description: Passenger Neck Moment Y
 Maximum Value: 40.2 at 130.6 Milliseconds
 Minimum Value: -67.2 at 236.1 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/15/98
 Curve Number: FIL-055

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Passenger Neck Moment Z Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Maximum Value: 14.6 at 241.7 Milliseconds

Minimum Value: -8.2 at 124.7 Milliseconds

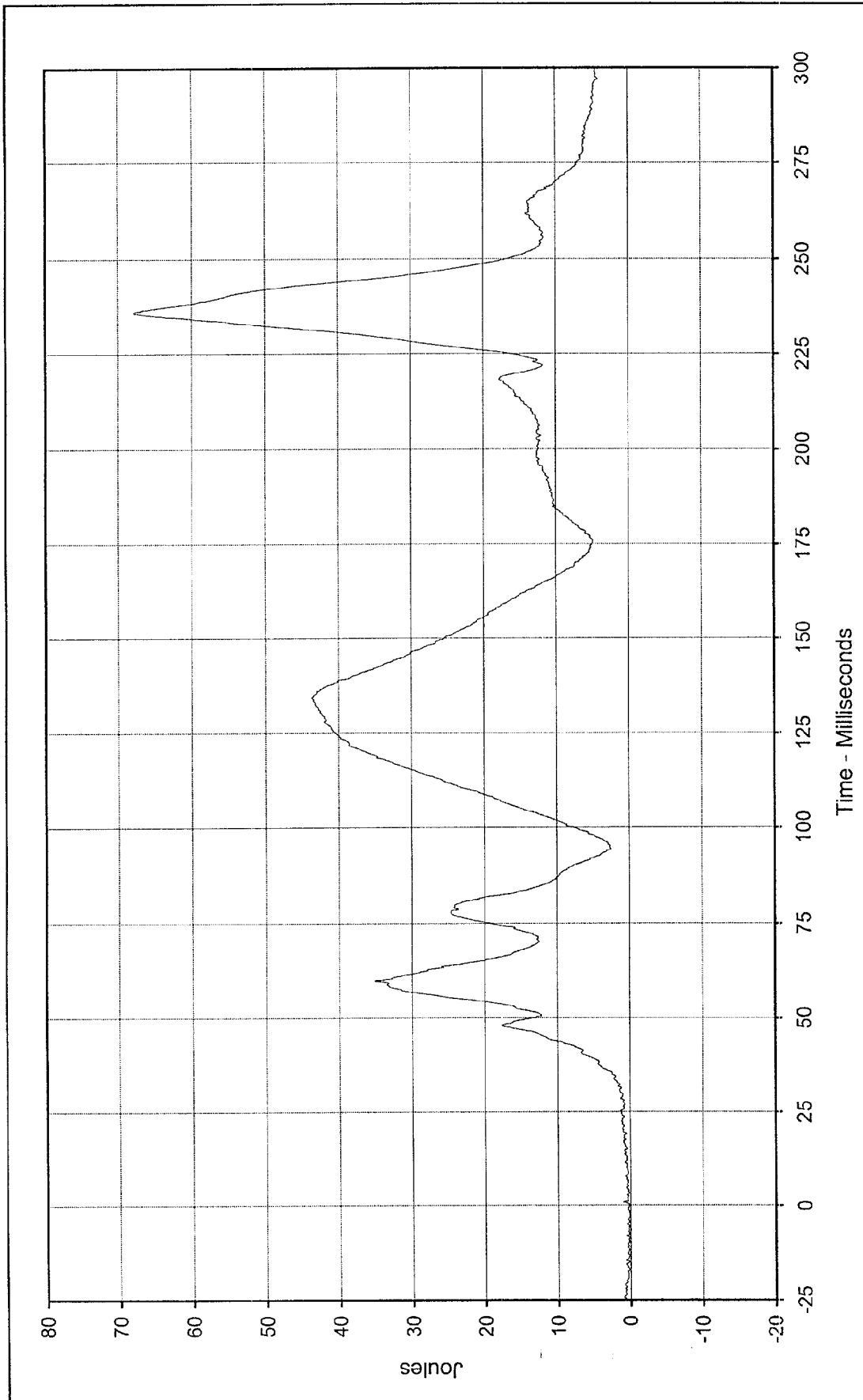
SAE Filter Class: 600

Date of Test: 1/15/98

Curve Number: FIL-056

Test Vehicle: 1998 Isuzu Rodeo SUV

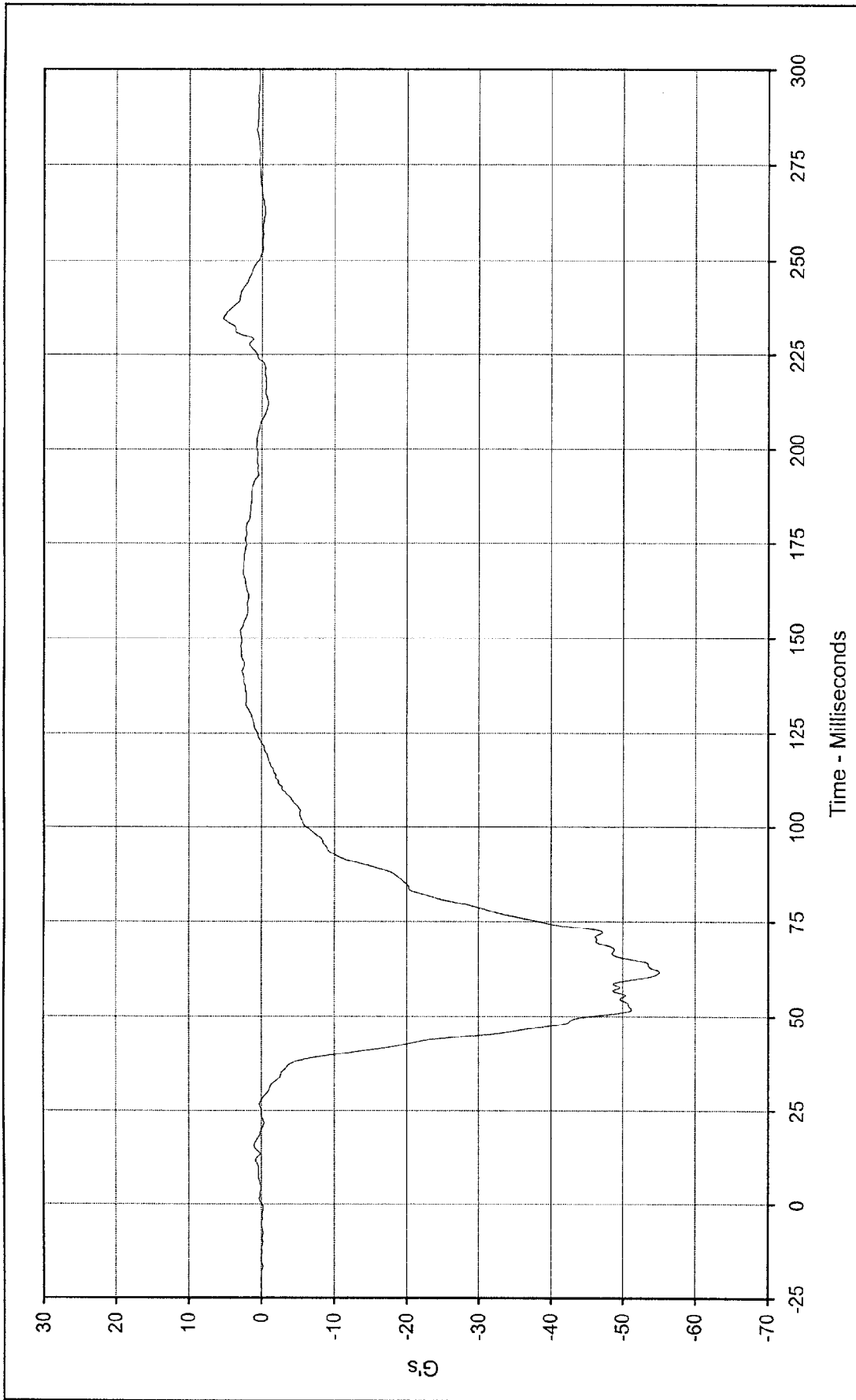




Curve Description: Passenger Neck Moment Resultant
 Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV

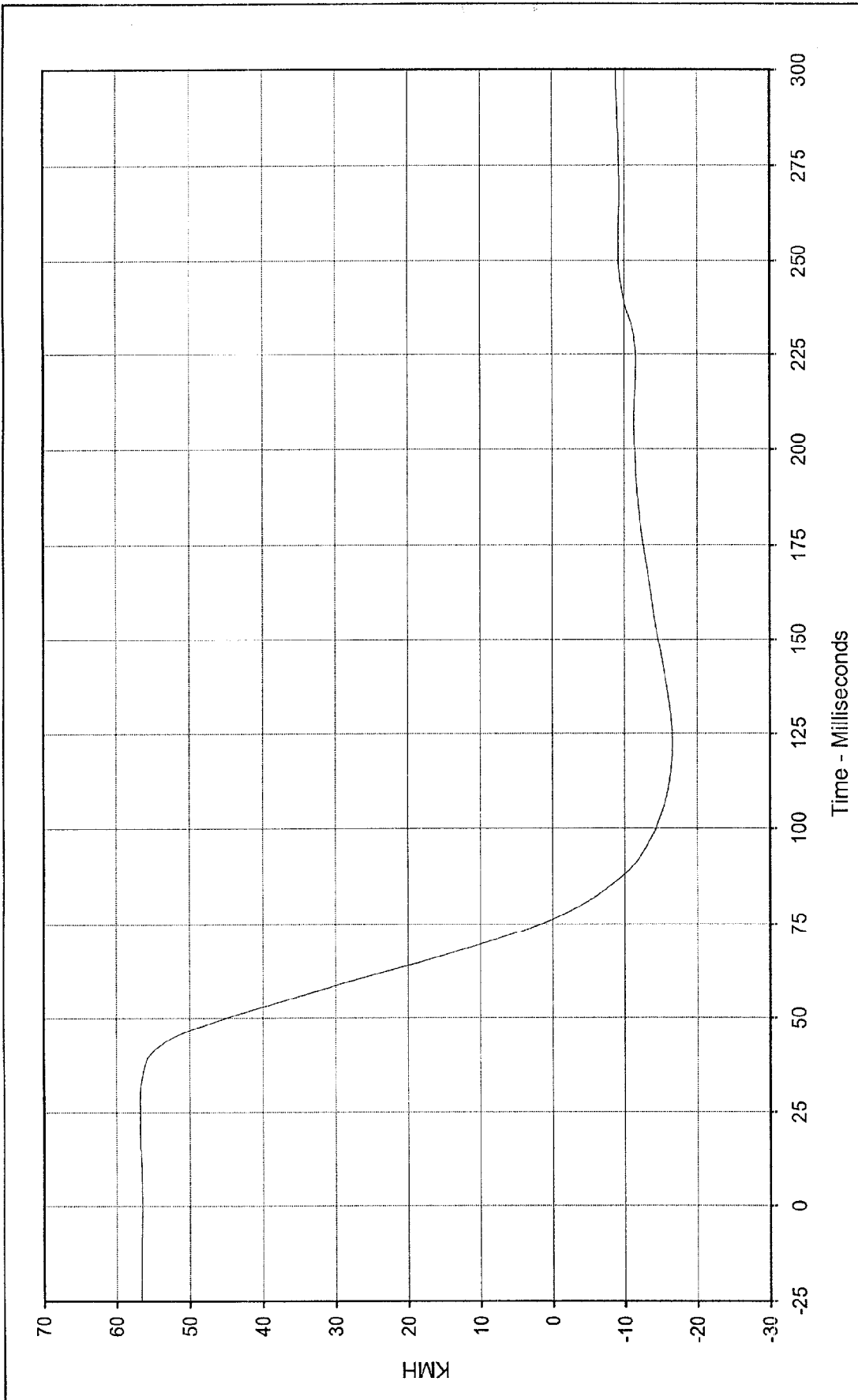
Maximum Value: 67.9 at 236.1 Milliseconds
 Minimum Value: 0.1 at 0.3 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/15/98
 Curve Number: RES-054





Curve Description:	Passenger Chest Primary X	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	5.3 at 235.0 Milliseconds	Test Vehicle:	1998 Isuzu Rodeo SUV	
Minimum Value:	-55.0 at 61.7 Milliseconds			
SAE Filter Class:	180			
Date of Test:	1/15/98			
Curve Number:	FIL-057			

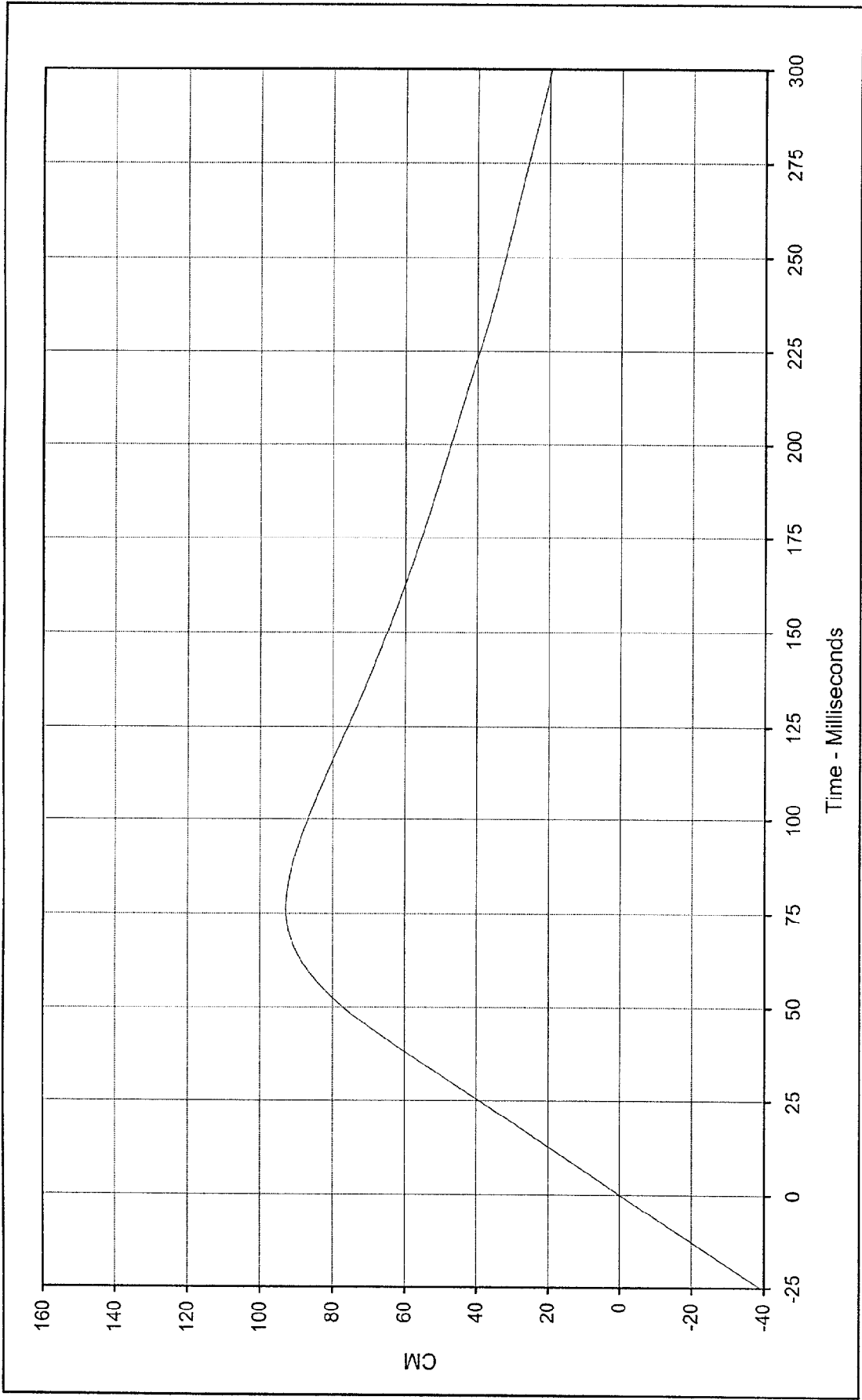




Curve Description:	Passenger Chest Primary X Velocity	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	56.8 at 19.9 Milliseconds	Test Vehicle:	1998 Isuzu Rodeo SUV	
Minimum Value:	-16.6 at 122.3 Milliseconds			

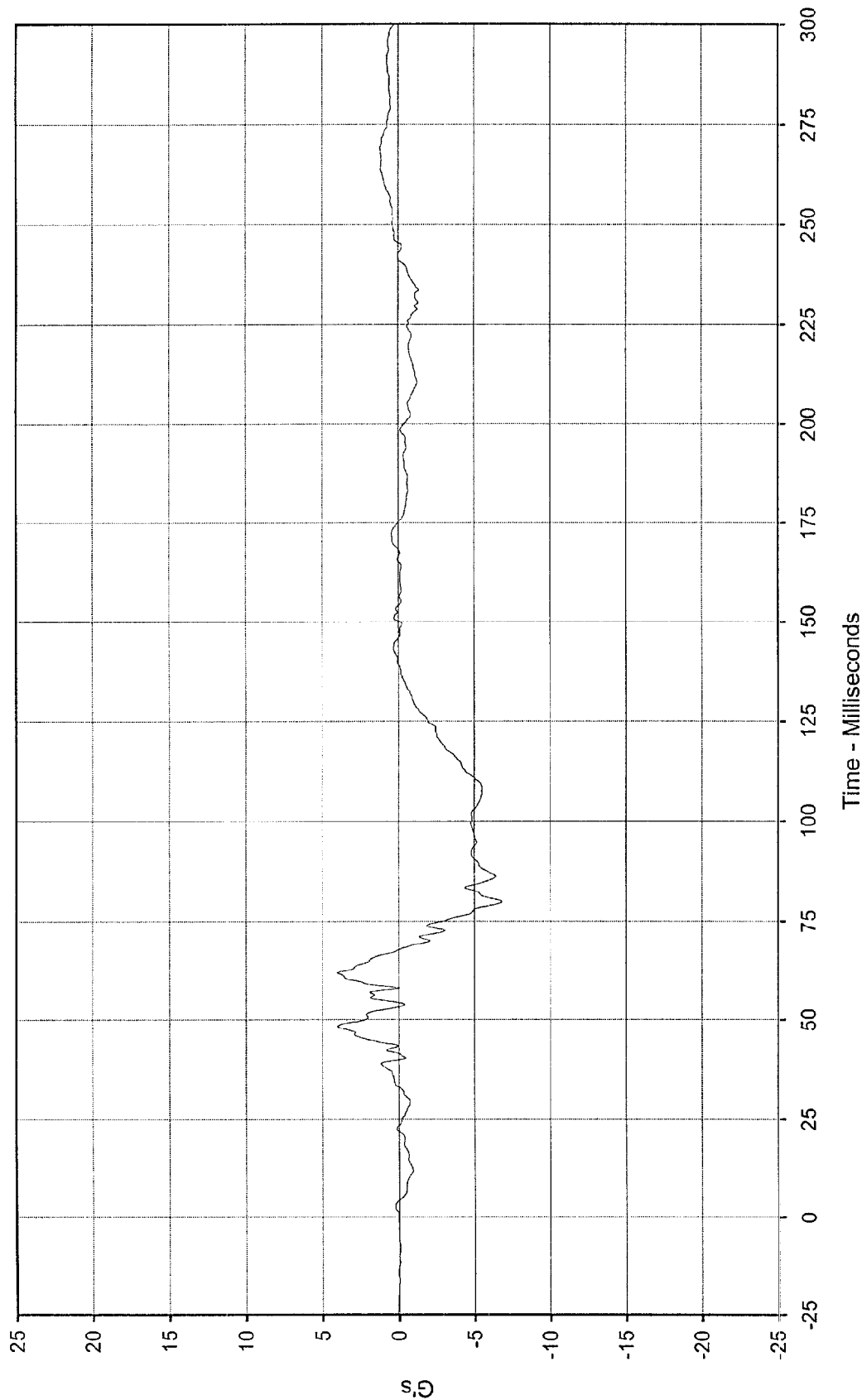


SAE Filter Class:	180
Date of Test:	1/15/98
Curve Number:	IN1-057



Curve Description:	Passenger Chest Primary X Displ.	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	92.8	at	76.2	Milliseconds
Minimum Value:	0.0	at	0.0	Milliseconds
SAE Filter Class:	180	Test Vehicle:	1998 Isuzu Rodeo SUV	
Date of Test:	1/15/98			
Curve Number:	IN2-057			

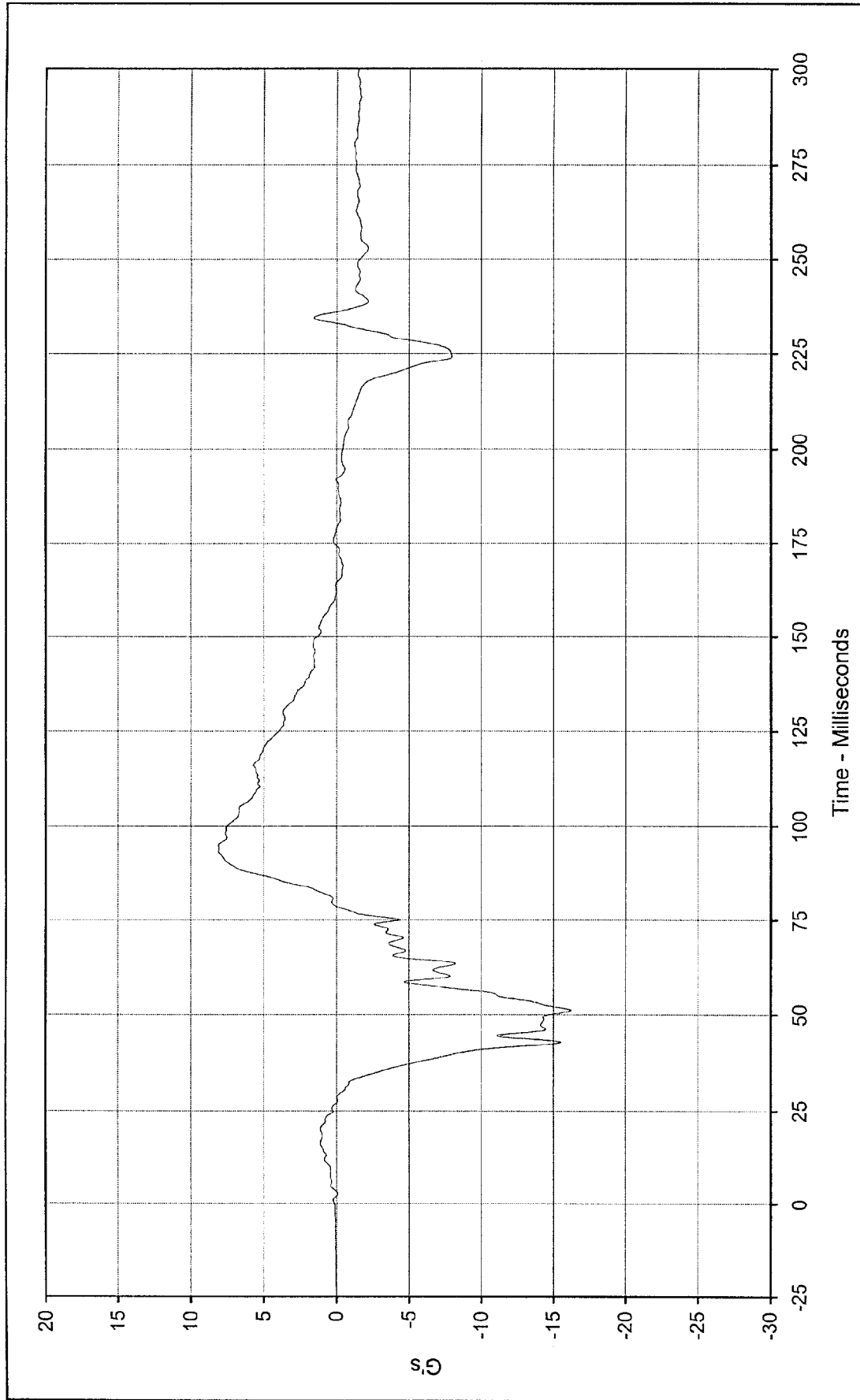




Curve Description: Passenger Chest Primary Y
 Maximum Value: 4.0 at 61.8 Milliseconds
 Minimum Value: -6.8 at 79.9 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/15/98
 Curve Number: FIL-058

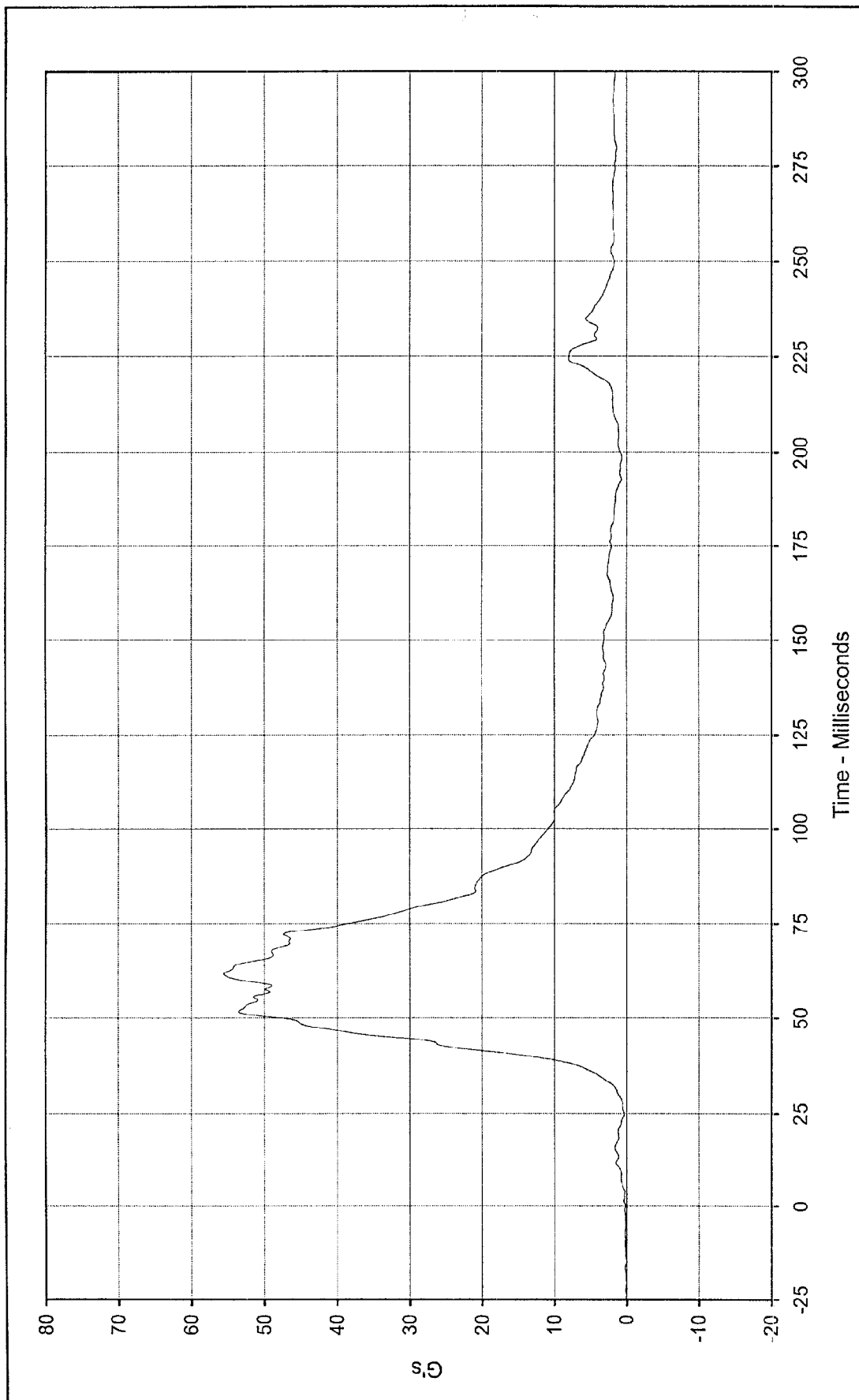
Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description:	Passenger Chest Primary Z		Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	8.1	at 95.0	Test Vehicle:	1998 Isuzu Rodeo SUV	
Minimum Value:	-16.2	at 51.2			
SAE Filter Class:	180				
Date of Test:	1/15/98				
Curve Number:	FIL-059				

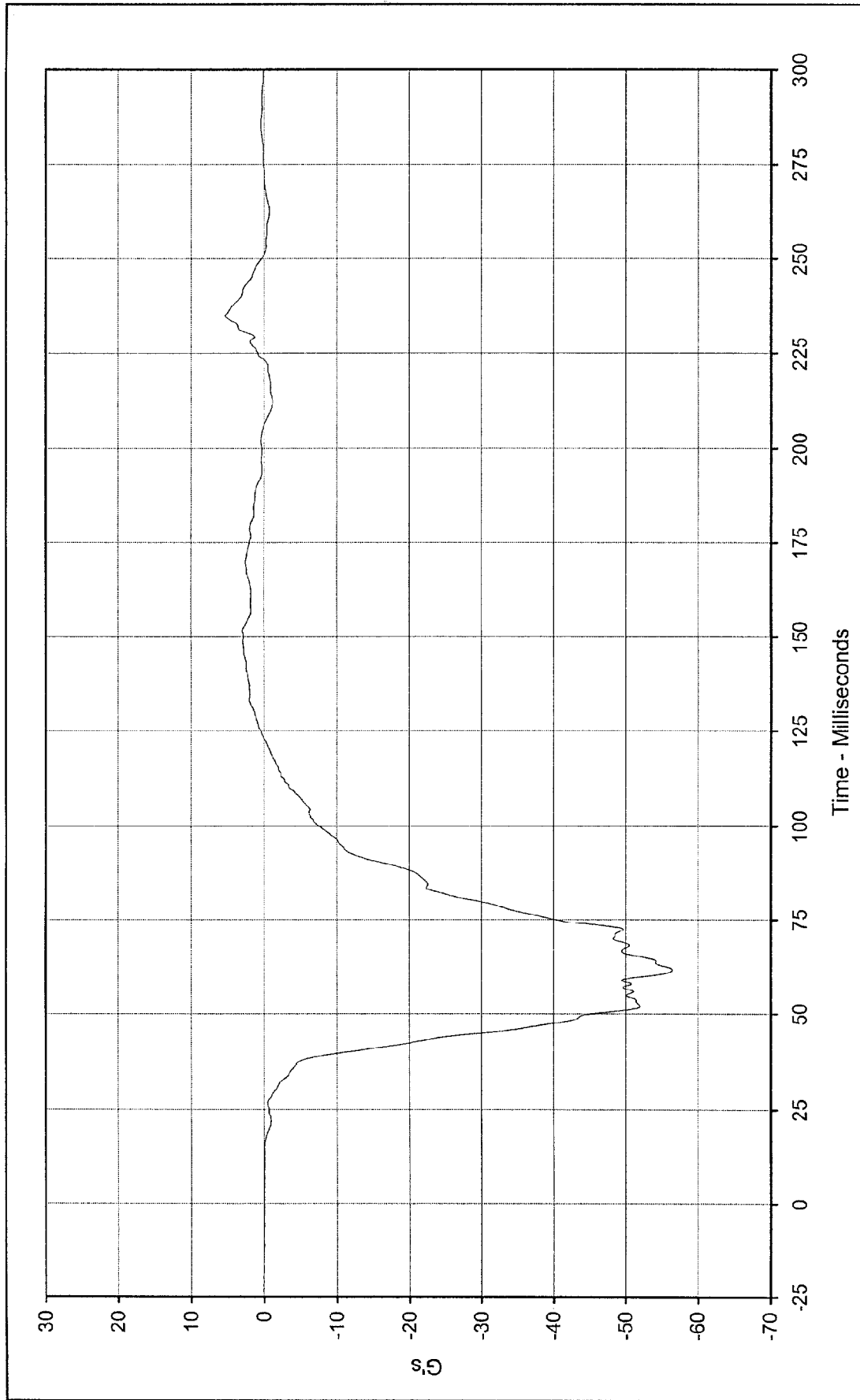




Curve Description: Passenger Chest Resultant Primary
 Maximum Value: 55.6 at 61.7 Milliseconds
 Minimum Value: 0.2 at 0.2 Milliseconds



SAE Filter Class: 180
 Date of Test: 1/15/98
 Curve Number: RES-057

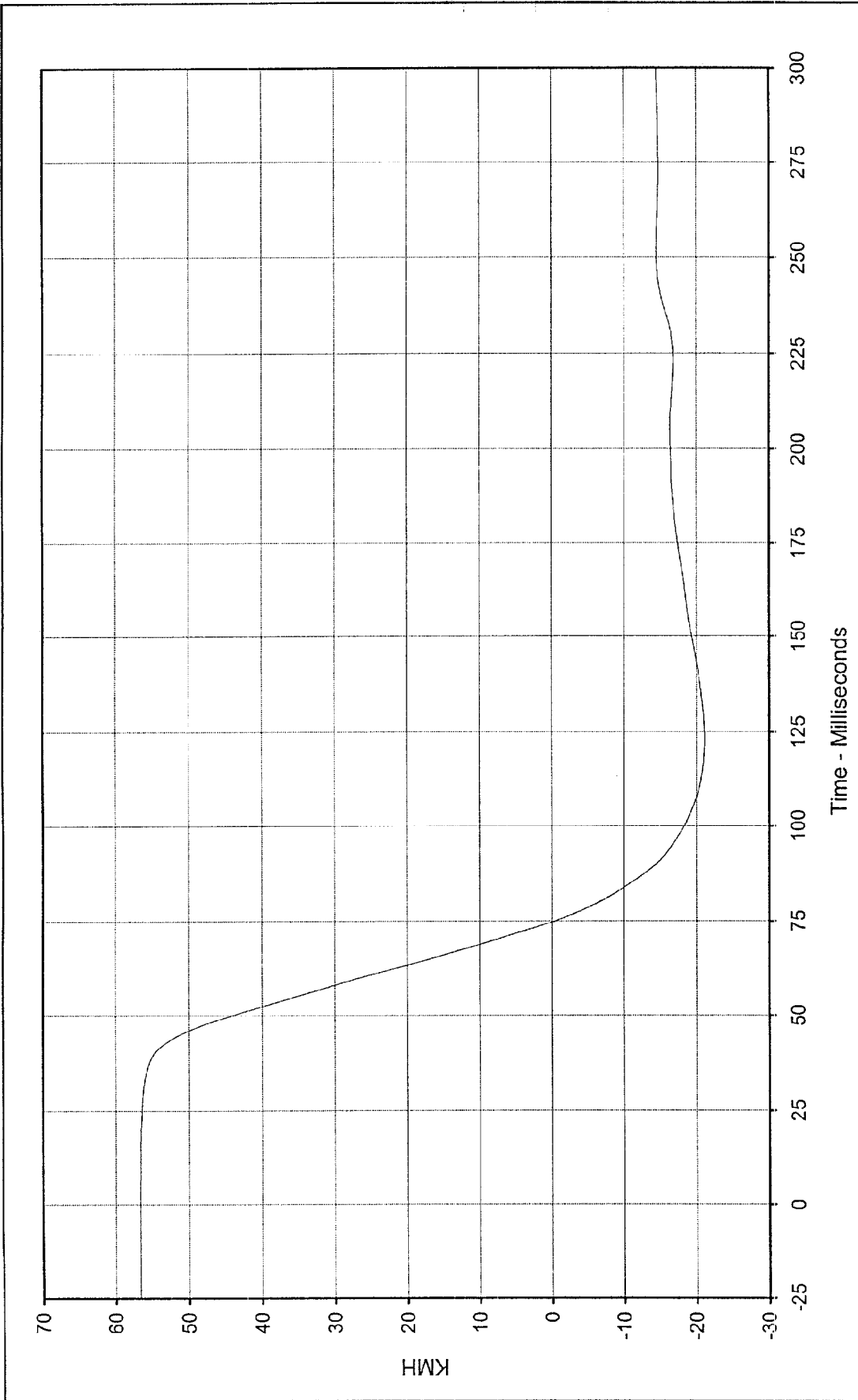


Curve Description: Passenger Chest Redundant X
 Maximum Value: 5.3 at 235.0 Milliseconds
 Minimum Value: -56.4 at 61.6 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/15/98
 Curve Number: FIL-060

Testing Program 1988 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV

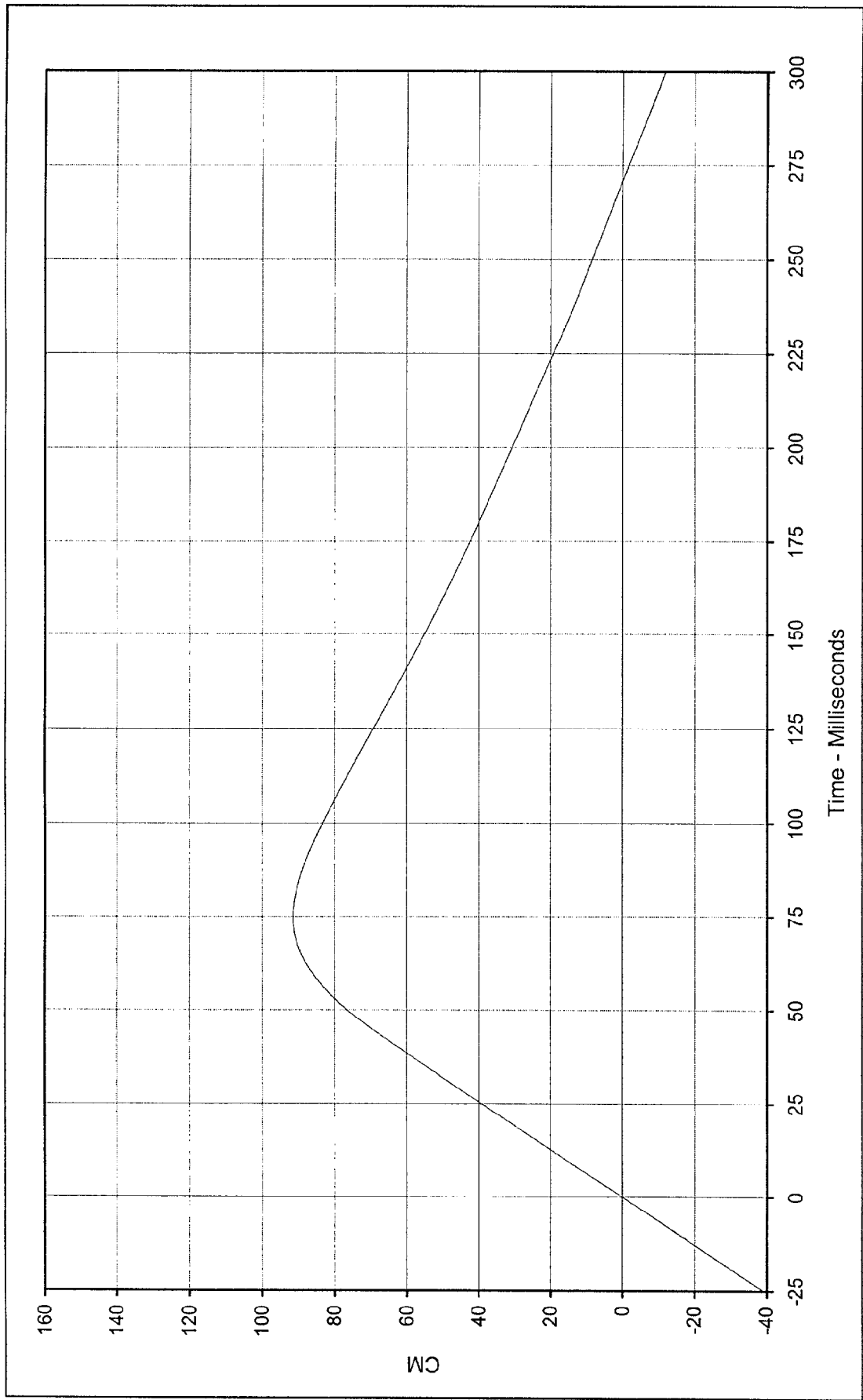




Curve Description: Passenger Chest Redundant X Velocity
 Maximum Value: 56.6 at 0.0 Milliseconds
 Minimum Value: -21.1 at 123.1 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/15/98
 Curve Number: IN1-060

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV

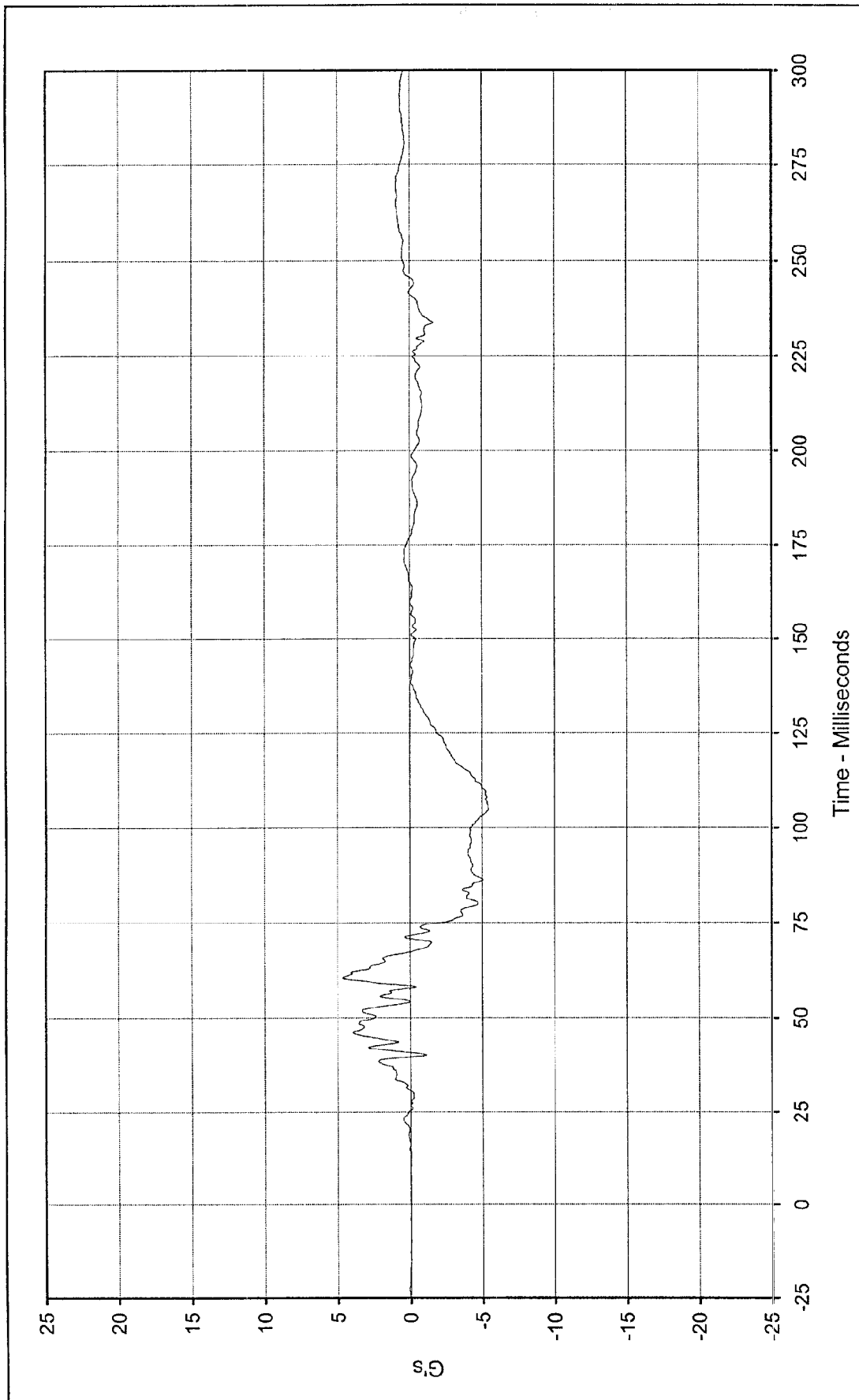




Curve Description: Passenger Chest Redundant X Displ.
Maximum Value: 91.4 at 74.7 Milliseconds
Minimum Value: -11.8 at 299.9 Milliseconds
SAE Filter Class: 180
Date of Test: 1/15/98
Curve Number: IN2-060

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
Test Vehicle: 1998 Isuzu Rodeo SUV

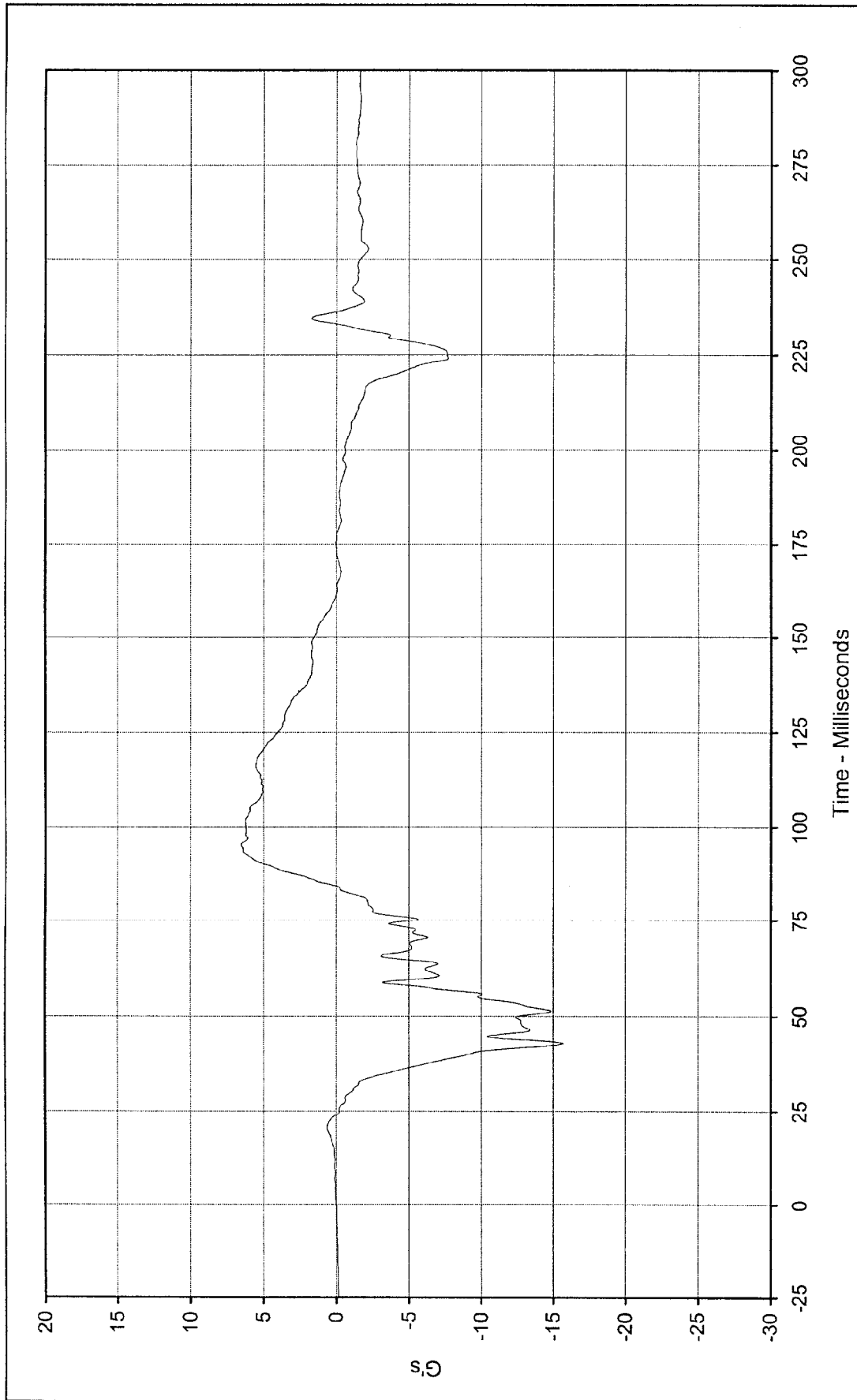




Curve Description: Passenger Chest Redundant Y
 Testing Program 1988 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV

Maximum Value: 4.7 at 60.4 Milliseconds
 Minimum Value: -5.5 at 105.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/15/98
 Curve Number: FIL-061





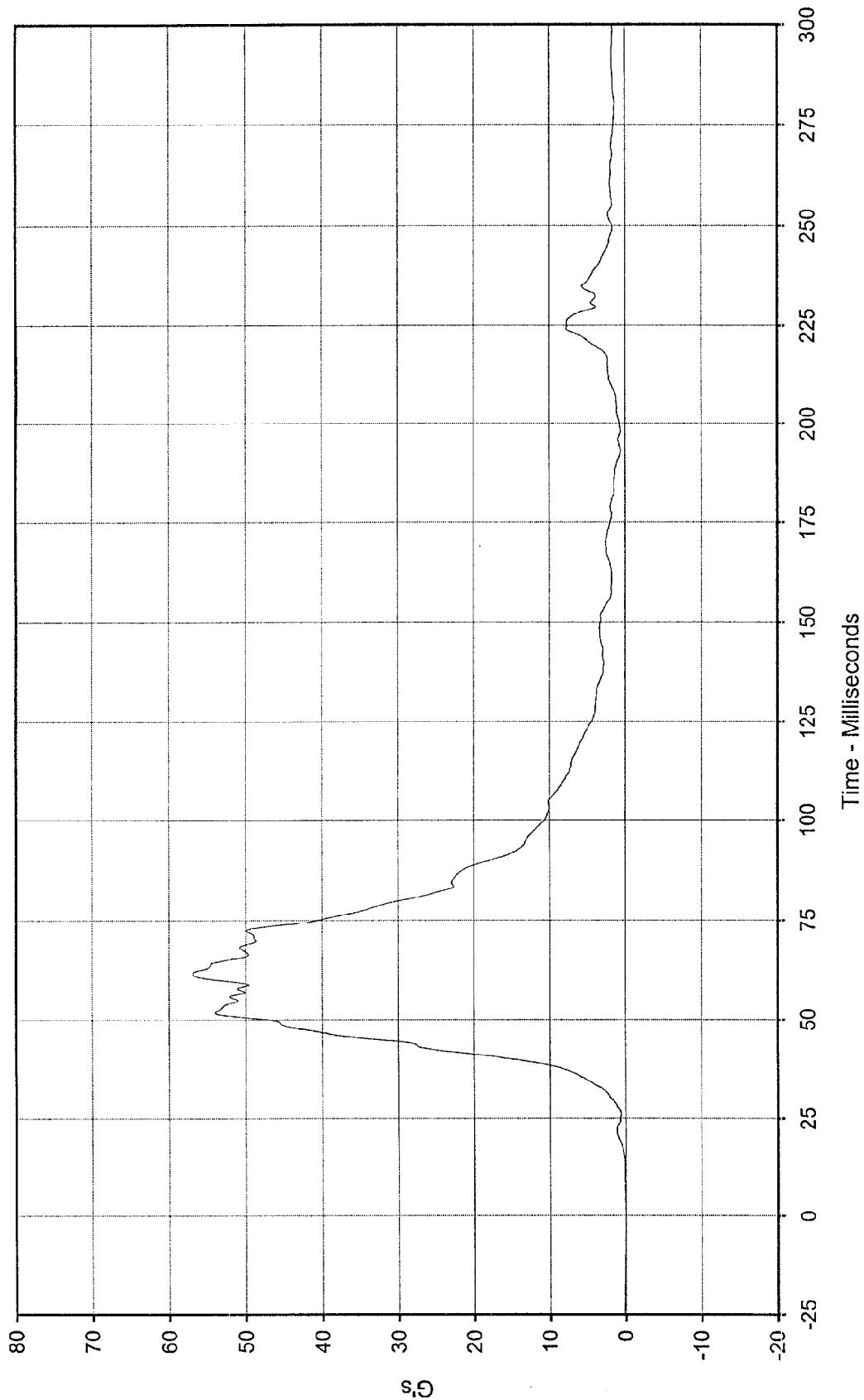
Curve Description: Passenger Chest Redundant Z

Maximum Value:	6.5	at	95.3	Milliseconds
Minimum Value:	-15.7	at	42.9	Milliseconds
SAE Filter Class:	180			
Date of Test:	1/15/98			
Curve Number:	FIL-062			

Testing Program 1988 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV

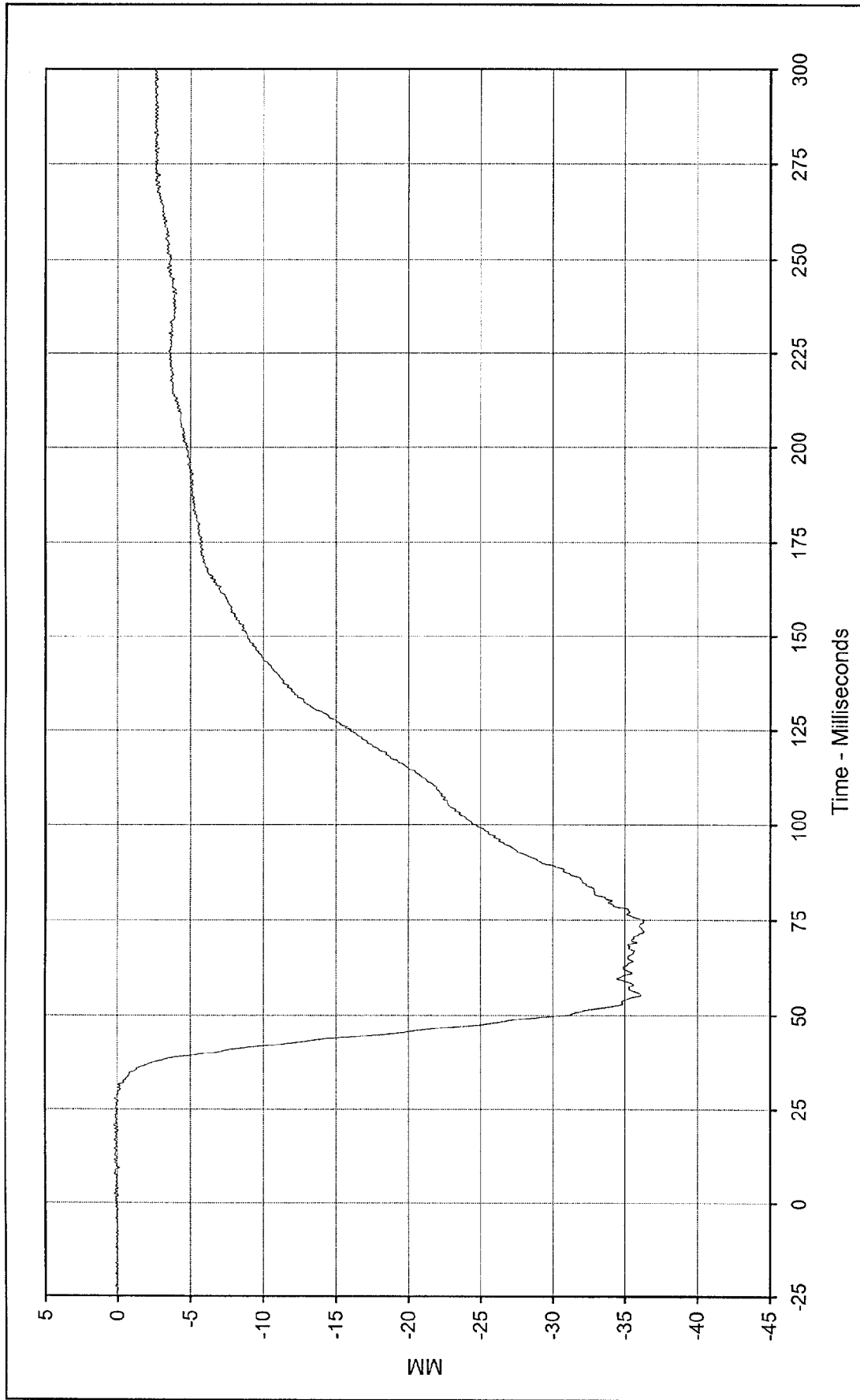




Curve Description: Passenger Chest Resultant Redundant
 Maximum Value: 56.9 at 61.6 Milliseconds
 Minimum Value: 0.0 at 0.6 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/15/98
 Curve Number: RES-060

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Passenger Chest Displacement X

Maximum Value: 0.3 at 20.7 Milliseconds

Minimum Value: -36.3 at 72.0 Milliseconds

SAE Filter Class: 600

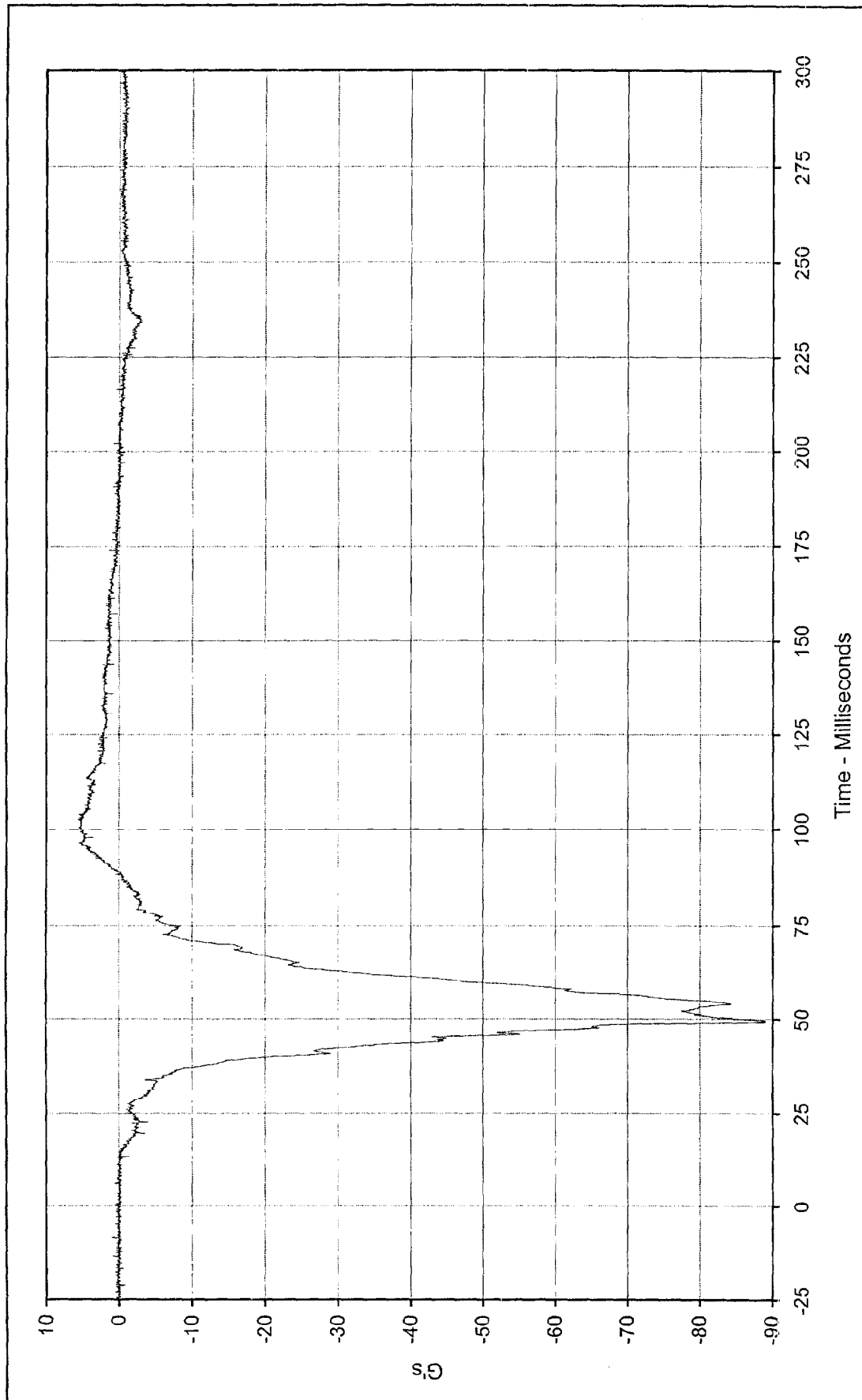
Date of Test: 1/15/98

Curve Number: FIL-063

Testing Program: 1998 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV

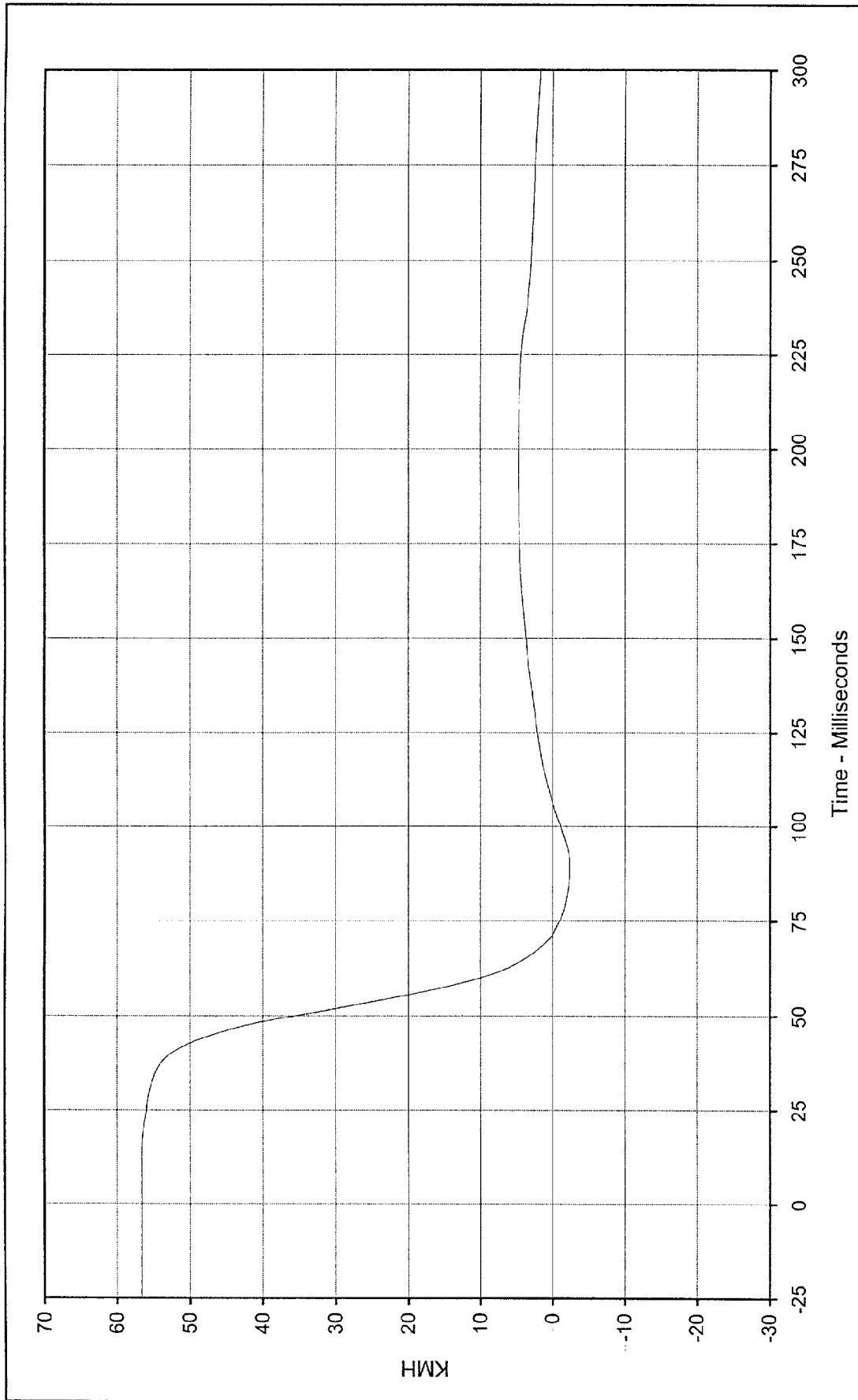




Curve Description:	Passenger Pelvis X		Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	5.7	at 102.6	Test Vehicle:	1998 Isuzu Rodeo SUV	
Minimum Value:	-89.0	at 49.2			
SAE Filter Class:	1000				
Date of Test:	1/15/98				
Curve Number:	FIL-064				

The logo for KARCO Engineering. It features the word "KARCO" in a large, bold, sans-serif font. To the left of the letters "A" and "R" is a circular emblem containing a stylized American flag with stars and stripes. To the right of "KARCO" is the word "Engineering" in a smaller, italicized, sans-serif font. The entire logo is set against a dark background with a diagonal light-colored stripe.





Curve Description: Passenger Pelvis X Velocity

Maximum Value: 56.7 at 0.3 Milliseconds

Minimum Value: -2.4 at 89.1 Milliseconds

SAE Filter Class: 180

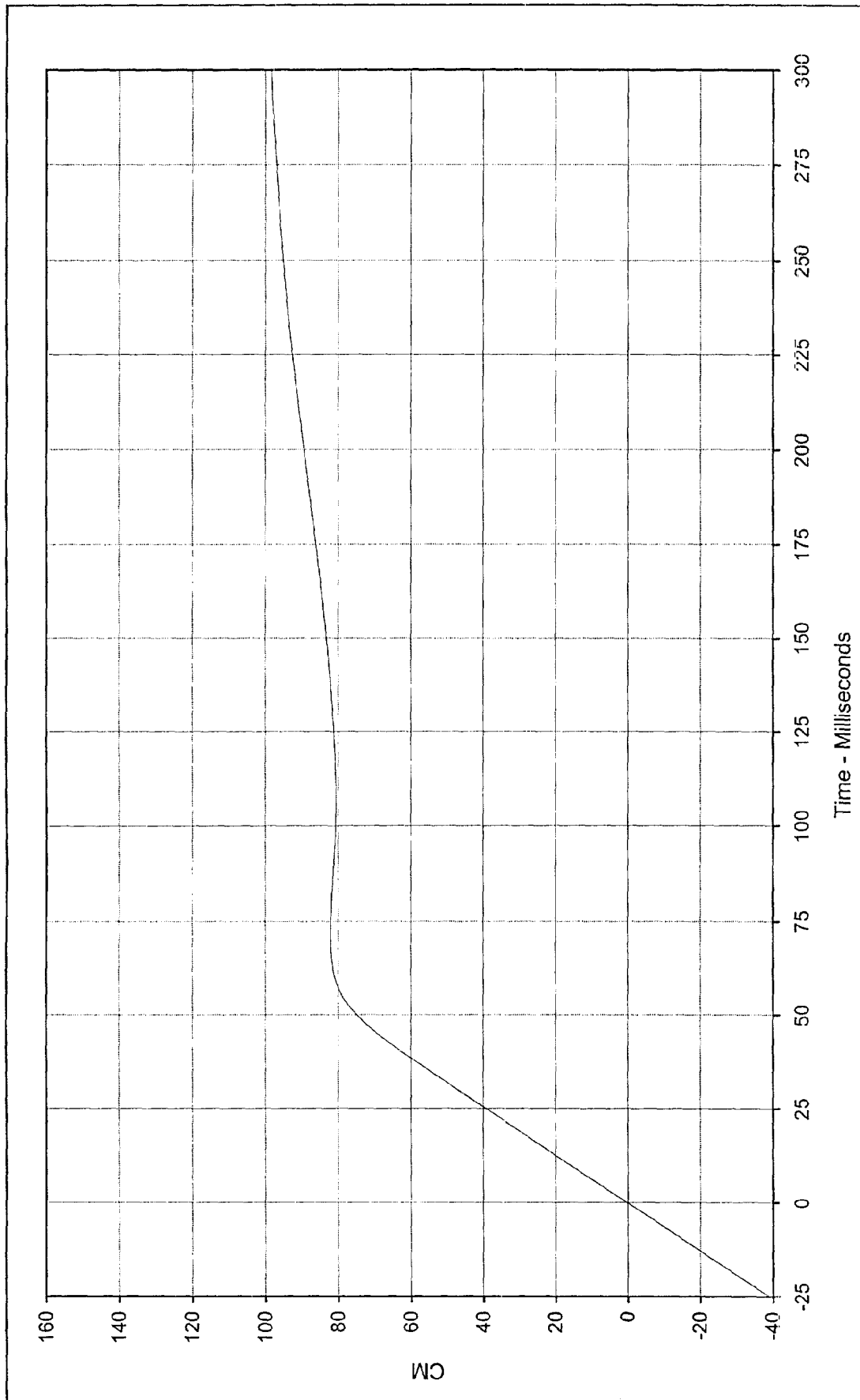
Date of Test: 1/15/98

Curve Number: IN1-064

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV

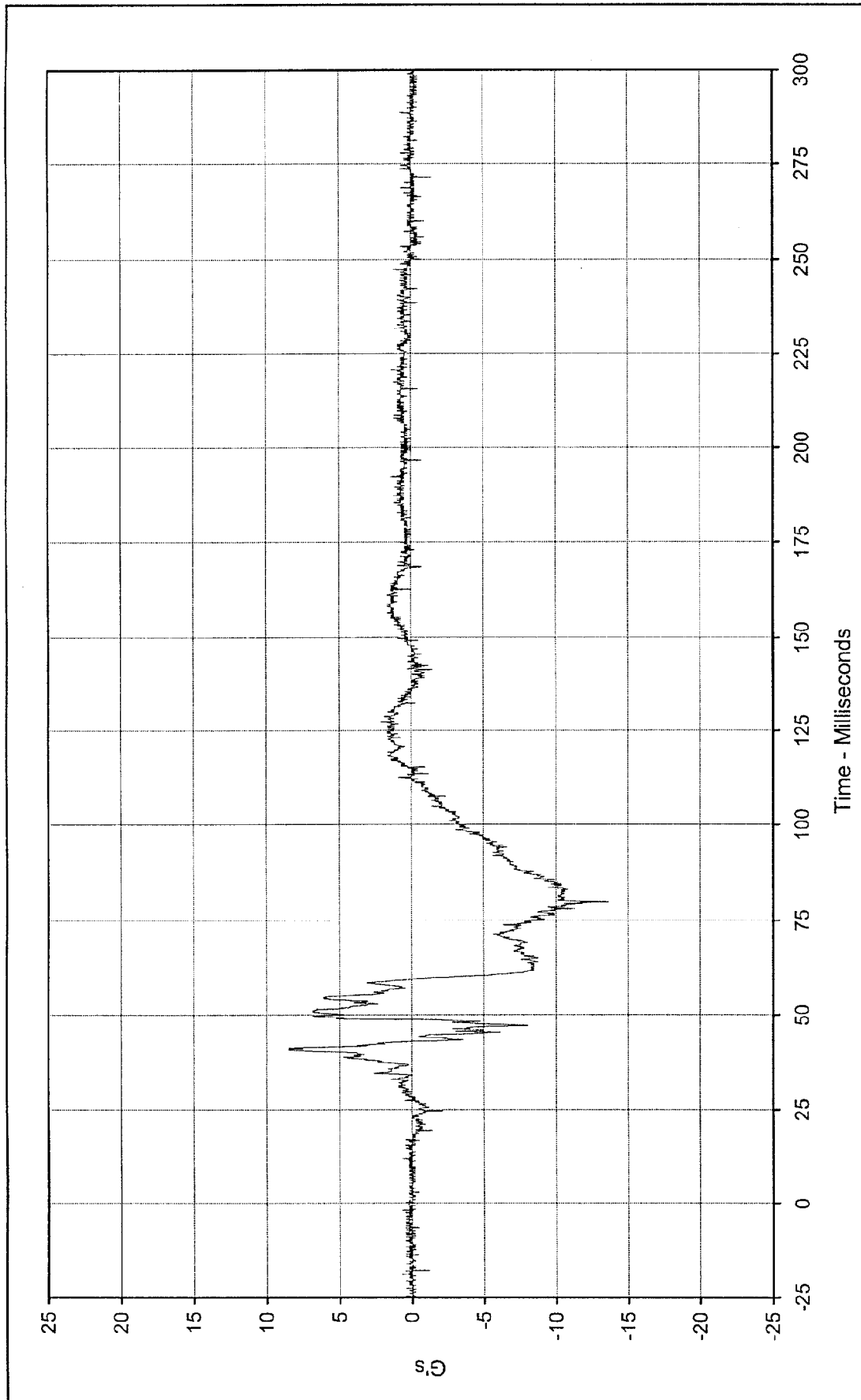




Curve Description: Passenger Pelvis X Displ.
 Maximum Value: 98.4 at 299.9 Milliseconds
 Minimum Value: 0.1 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/15/98
 Curve Number: IN2-064

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Passenger Pelvis Y Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Maximum Value: 8.5 at 40.6 Milliseconds

Minimum Value: -13.7 at 79.9 Milliseconds

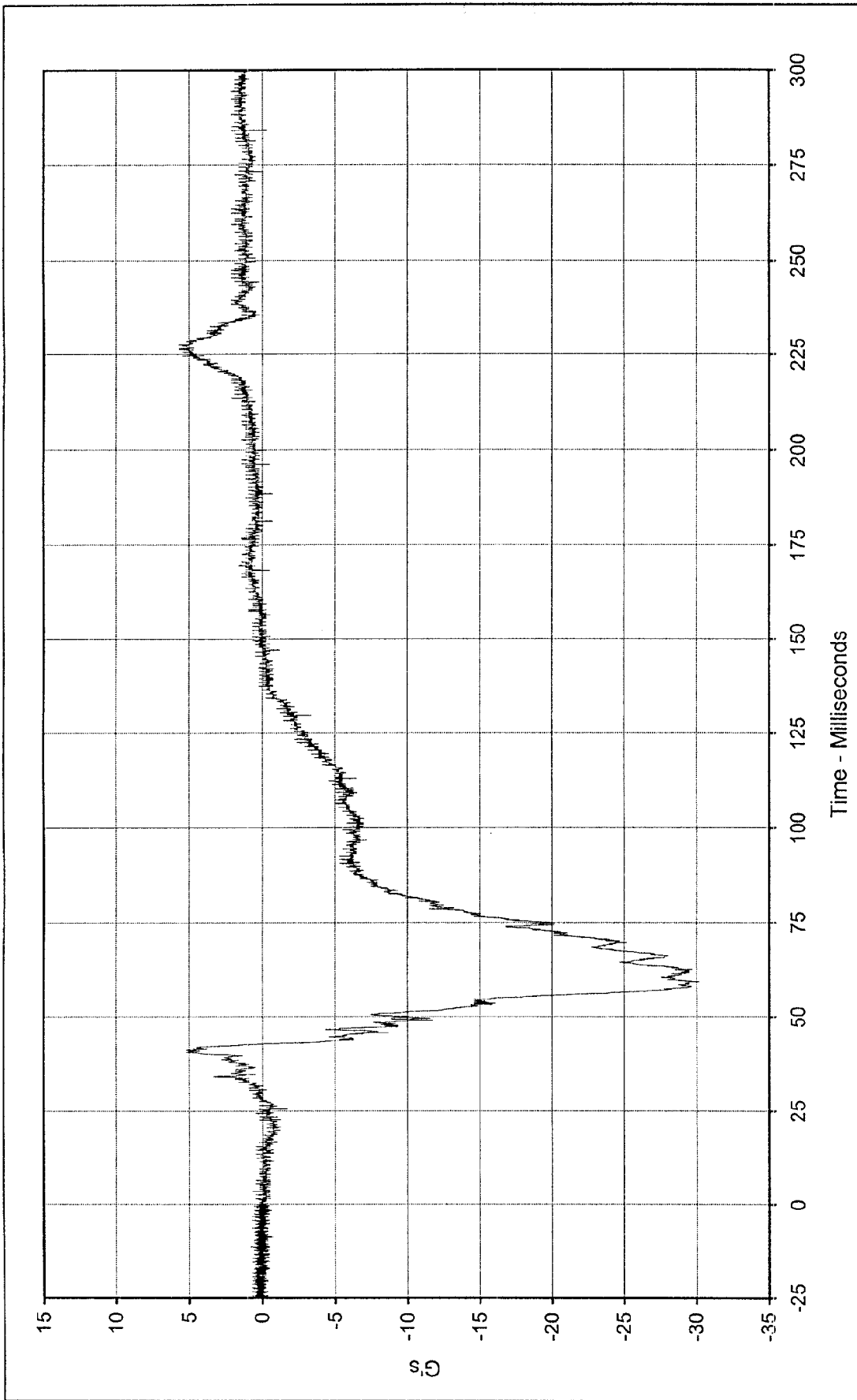
SAE Filter Class: 1000

Date of Test: 1/15/98

Curve Number: FIL-065

Test Vehicle: 1998 Isuzu Rodeo SUV

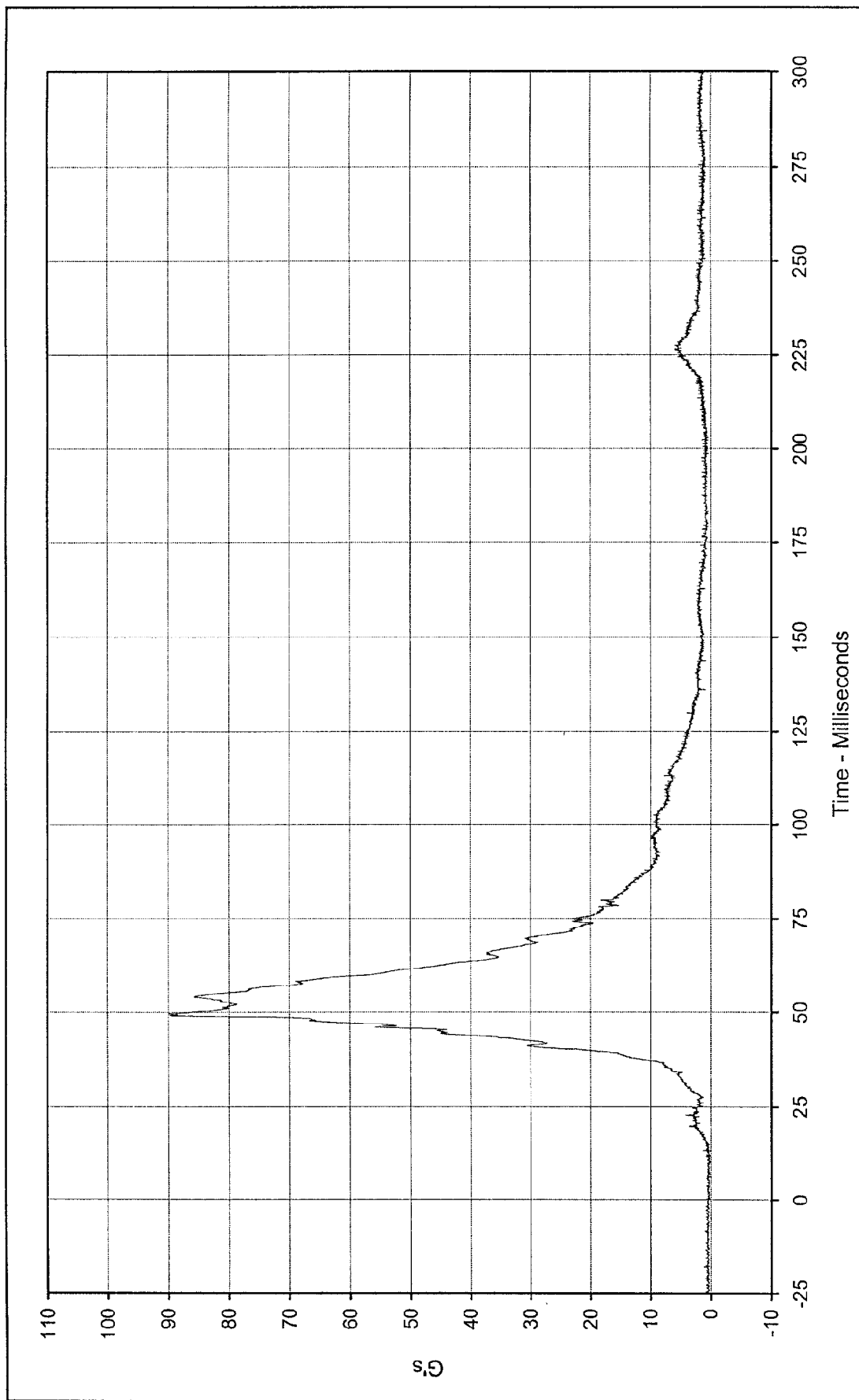




Curve Description: Passenger Pelvis Z Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
Maximum Value: 5.7 at 226.2 Milliseconds
Minimum Value: -30.2 at 59.4 Milliseconds
Test Vehicle: 1998 Isuzu Rodeo SUV

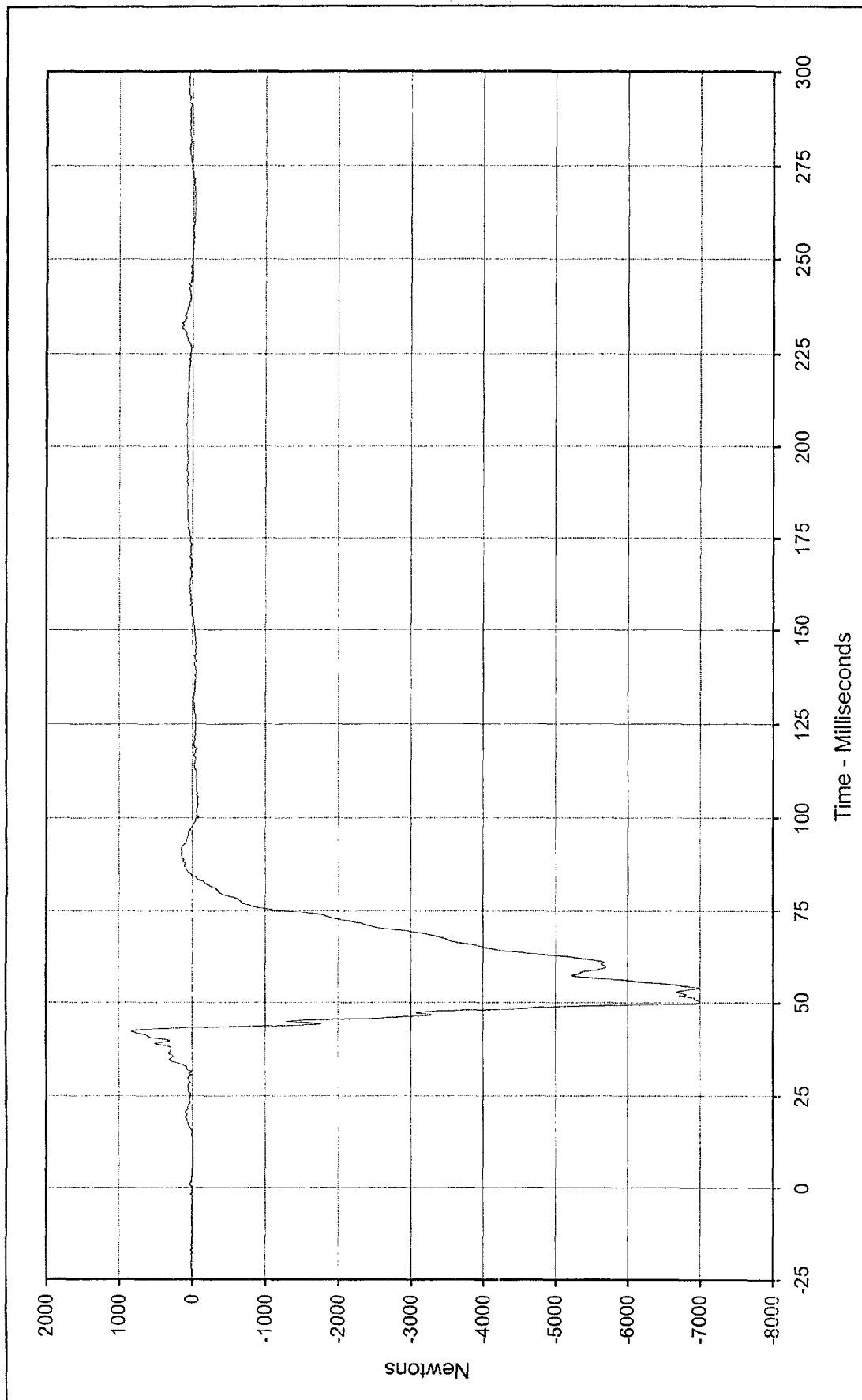
SAE Filter Class: 1000
Date of Test: 1/15/98
Curve Number: FIL-066





Curve Description:	Passenger Pelvis Resultant	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	90.0 at 49.7 Milliseconds	Test Vehicle:	1998 Isuzu Rodeo SUV	
Minimum Value:	0.0 at 3.7 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	1/15/98			
Curve Number:	RES-064			

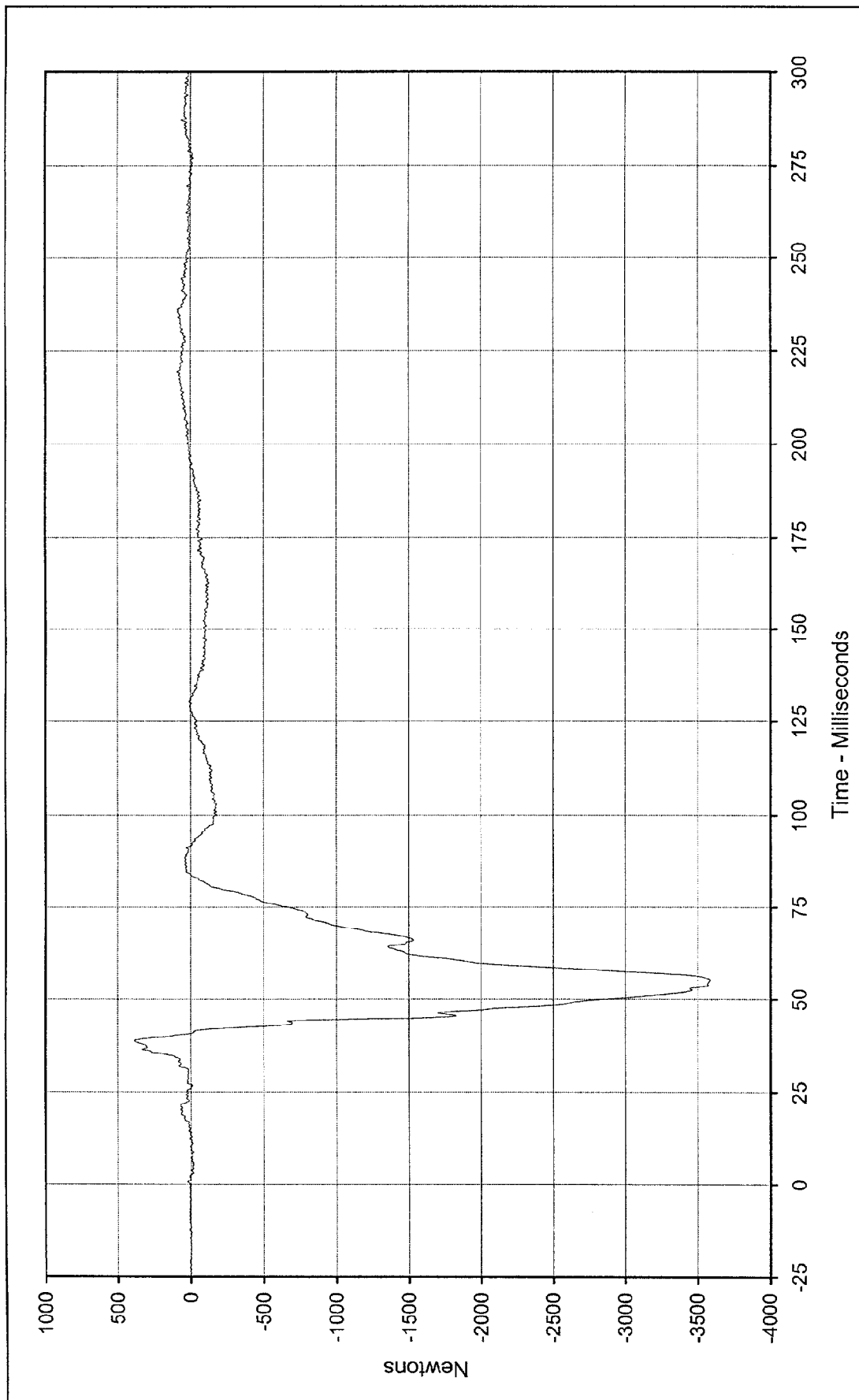




Curve Description: Passenger Left Femur Force
 Maximum Value: 819.7 at 42 Milliseconds
 Minimum Value: -7004.0 at 50.2 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/15/98
 Curve Number: FIL-067

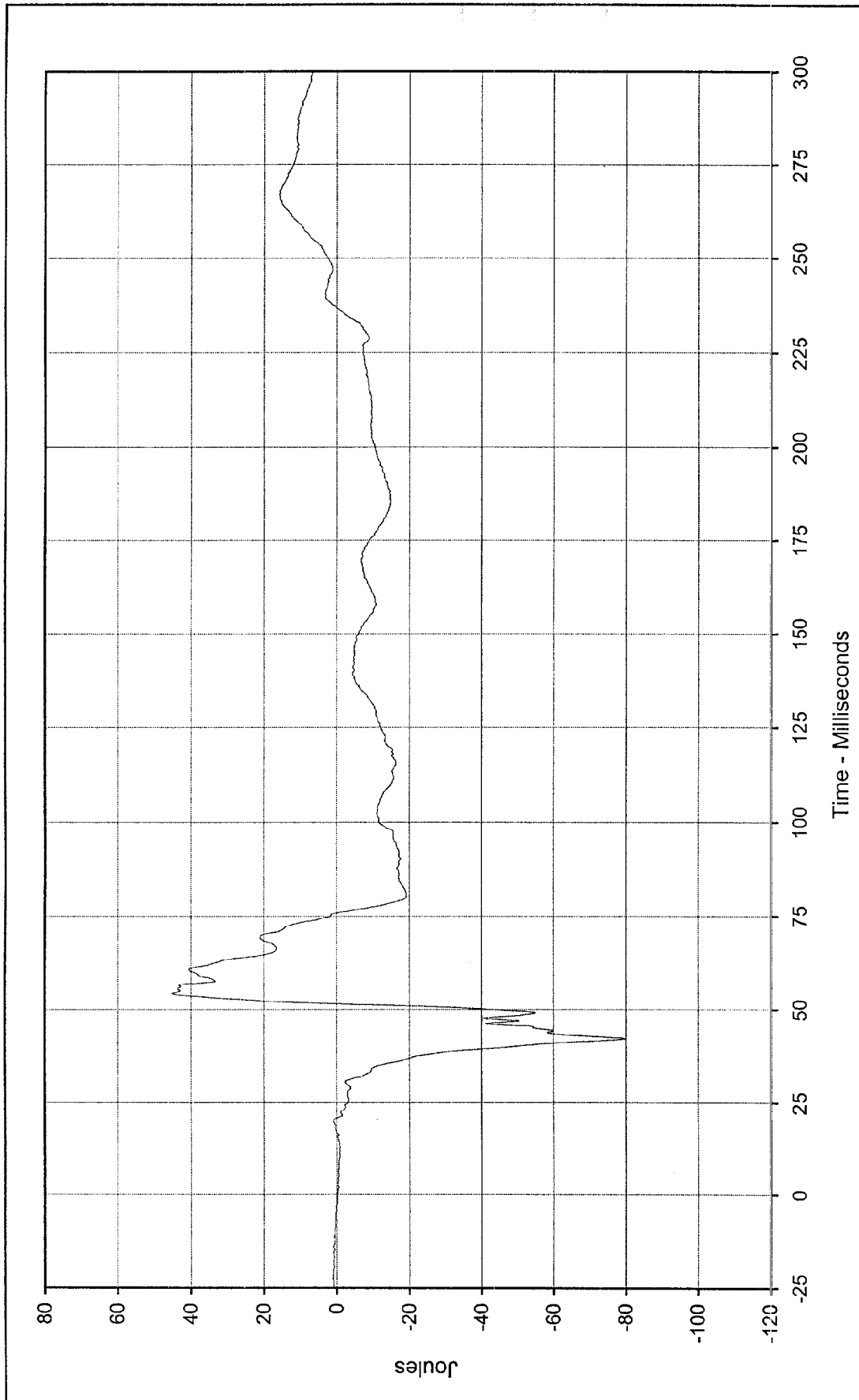
Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description:	Passenger Right Femur Force	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	386.7	at	38.7	Milliseconds
Minimum Value:	-3586.5	at	55.1	Milliseconds
SAE Filter Class:	600	Test Vehicle:	1998 Isuzu Rodeo SUV	
Date of Test:	1/15/98			
Curve Number:	FIL-068			

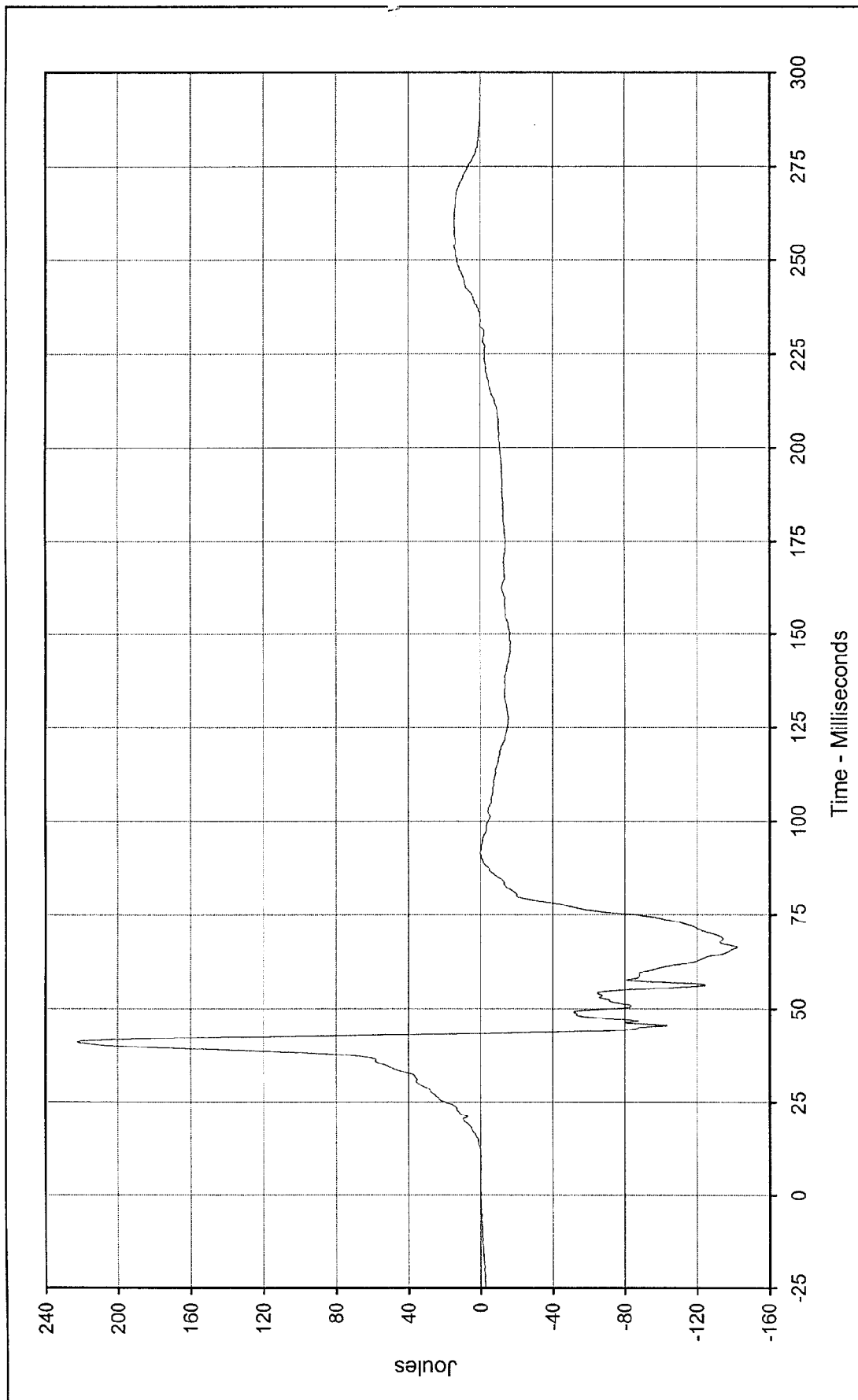




Curve Description: Passenger Left Upper Tibia Moment X
 Maximum Value: 45.1 at 54.5 Milliseconds
 Minimum Value: -79.7 at 42.1 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/15/98
 Curve Number: FIL-069

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV



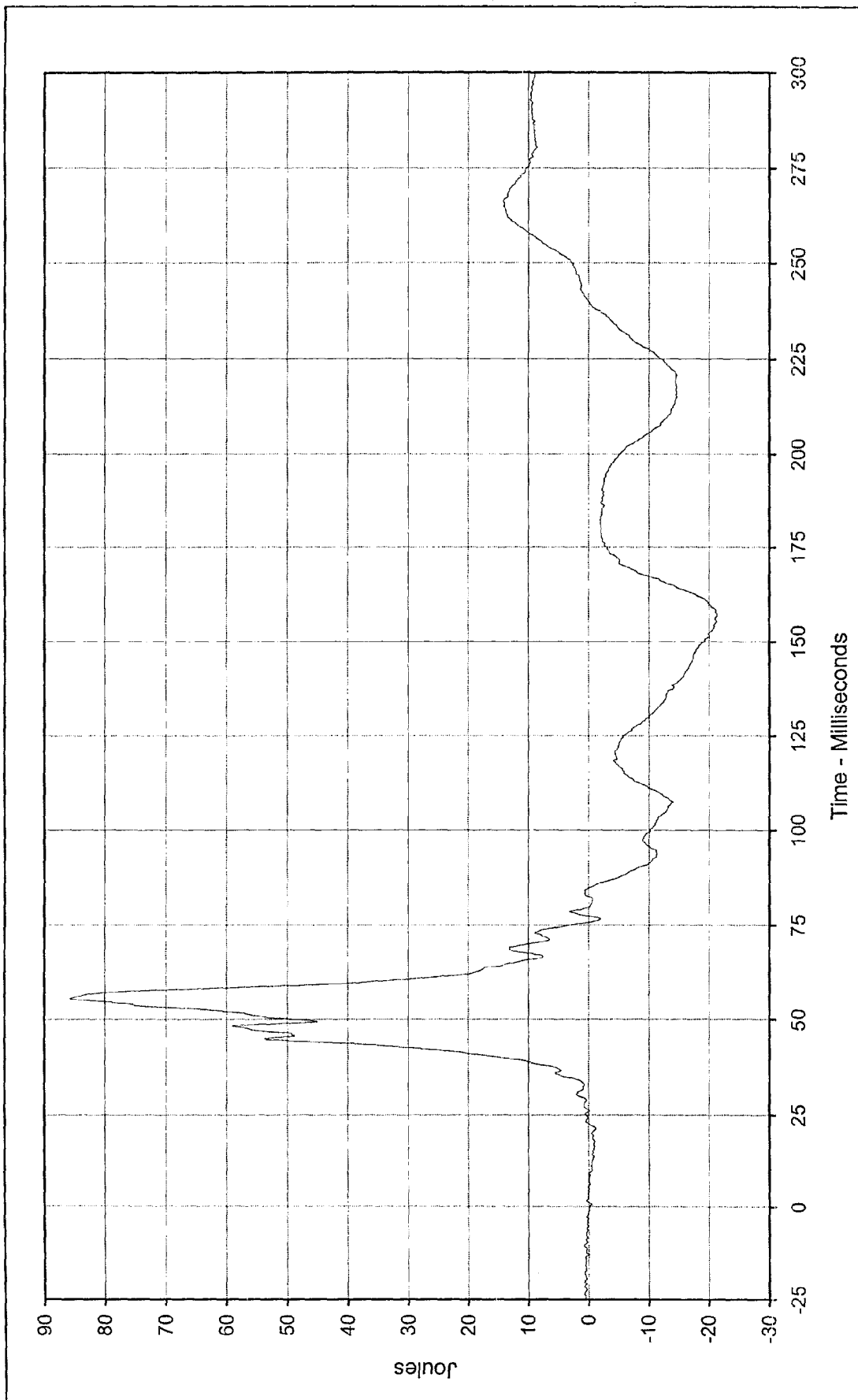


Curve Description: Passenger Left Upper Tibia Moment Y
 Maximum Value: 222.1 at 41.0 Milliseconds
 Minimum Value: -142.2 at 66.2 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/15/98
 Curve Number: FIL-070

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Passenger Right Upper Tibia Moment X

Maximum Value: 85.7 at 55.4 Milliseconds

Minimum Value: -21.4 at 156.9 Milliseconds

SAE Filter Class: 600

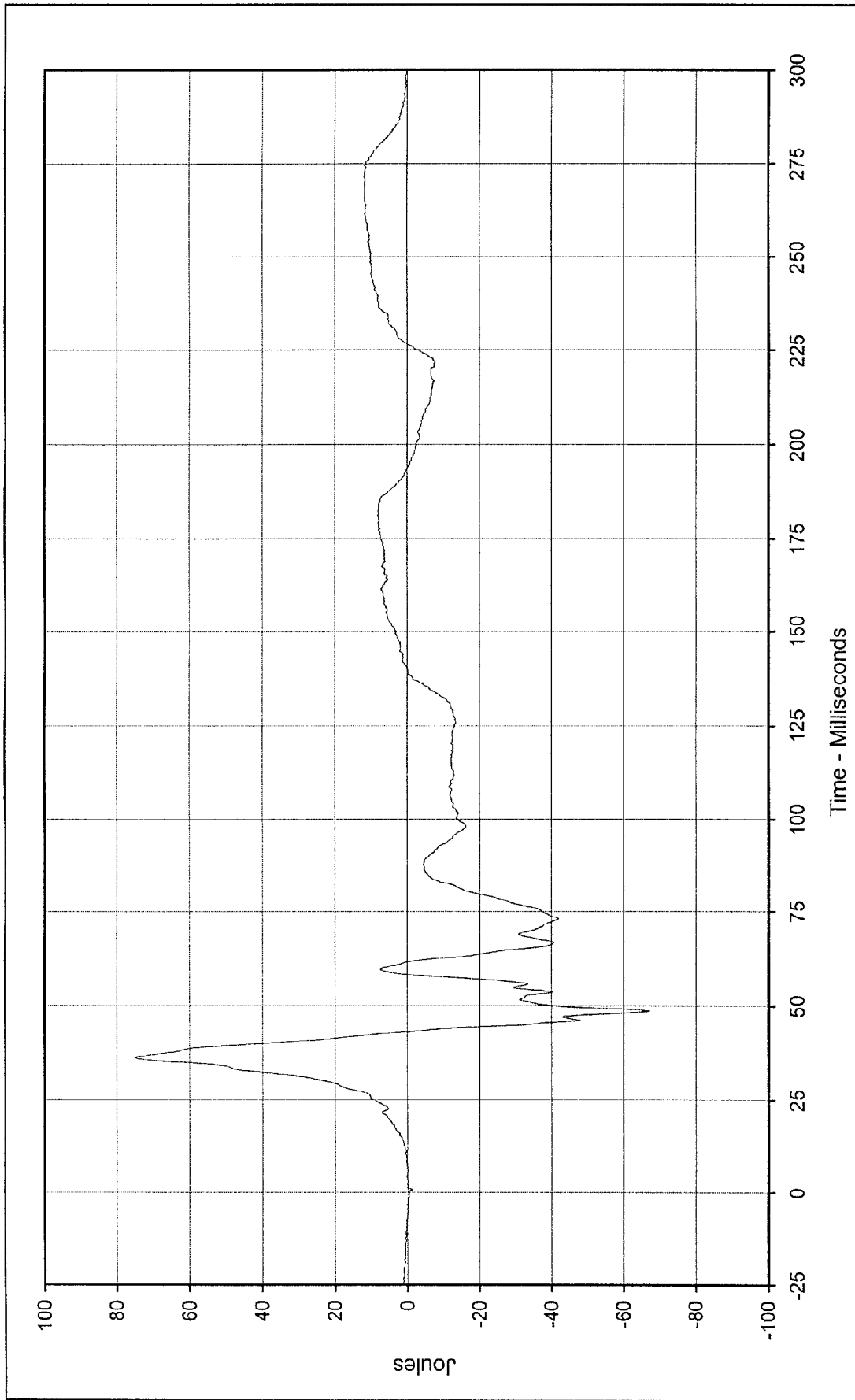
Date of Test: 1/15/98

Curve Number: FIL-071

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

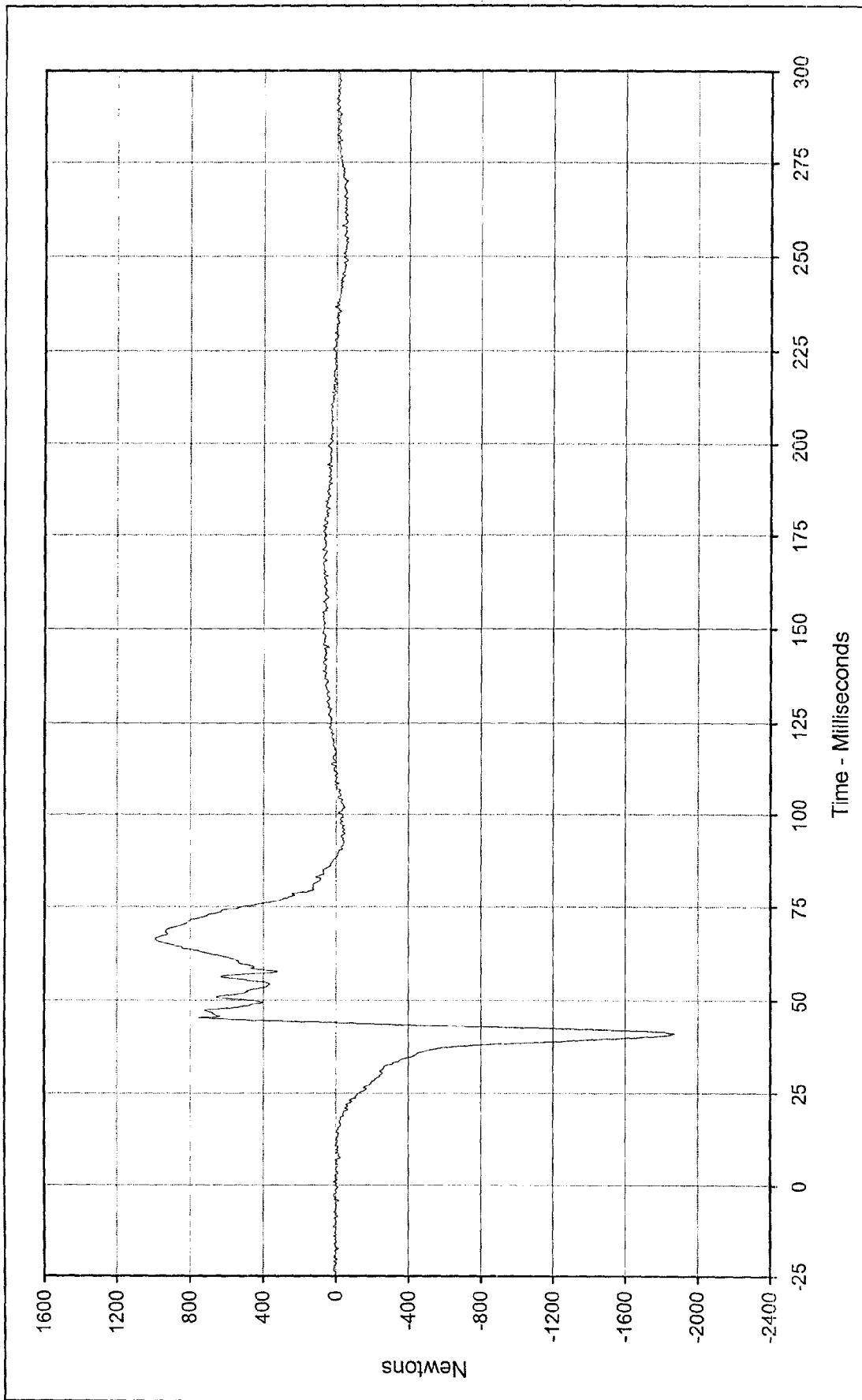
Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Passenger Right Upper Tibia Moment Y		Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	75.1	at	36.2	Milliseconds
Minimum Value:	-67.1	at	48.7	Milliseconds
SAE Filter Class:	600	Test Vehicle:		
Date of Test:	1/15/98	1998 Isuzu Rodeo SUV		
Curve Number:	FIL-072			





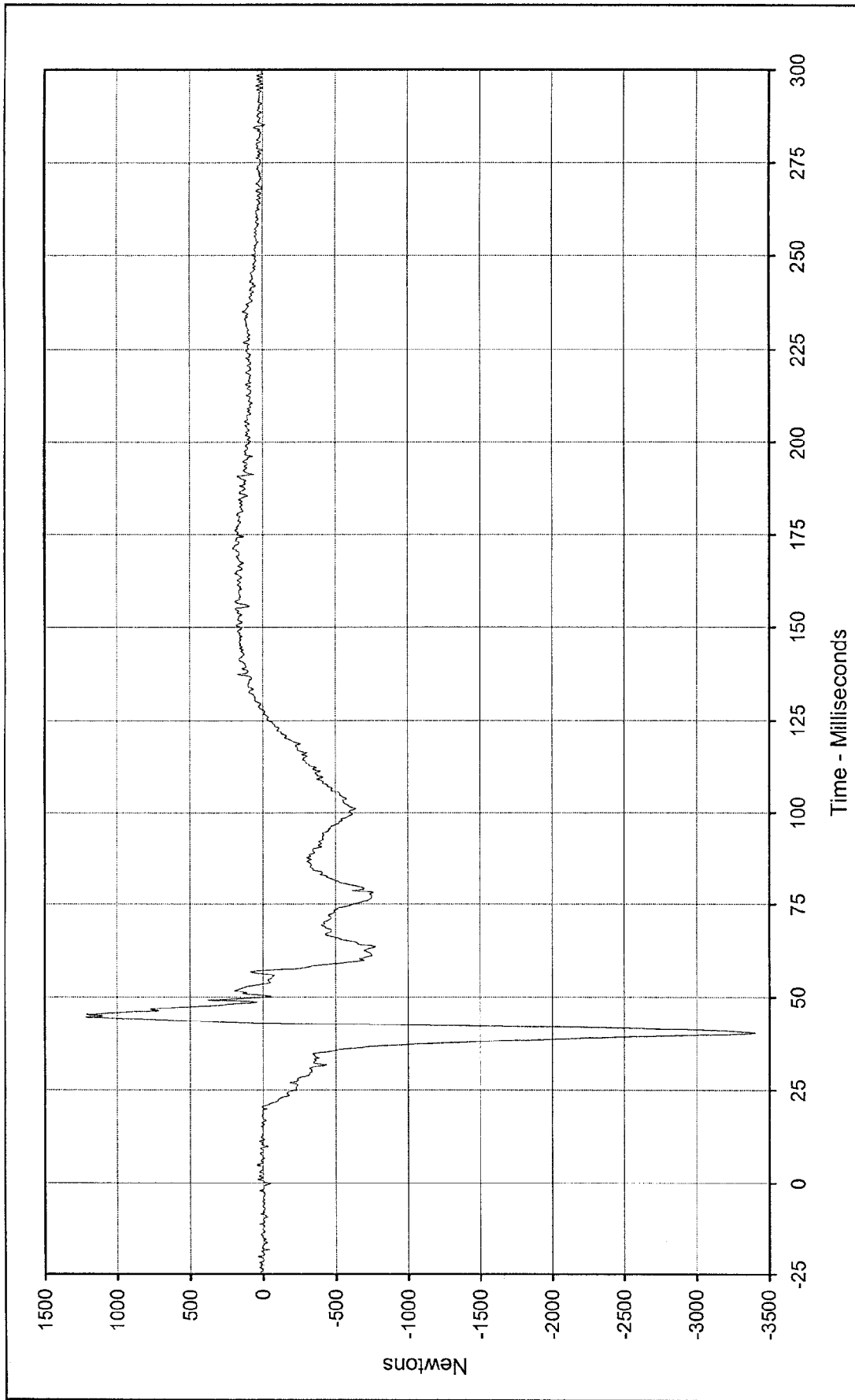
Curve Description: Passenger Left Lower Tibia Force X

Maximum Value:	990.7	at	66.4	Milliseconds
Minimum Value:	-1873.1	at	41.1	Milliseconds
SAE Filter Class:	600			
Date of Test:	1/15/98			
Curve Number:	FIL-073			

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

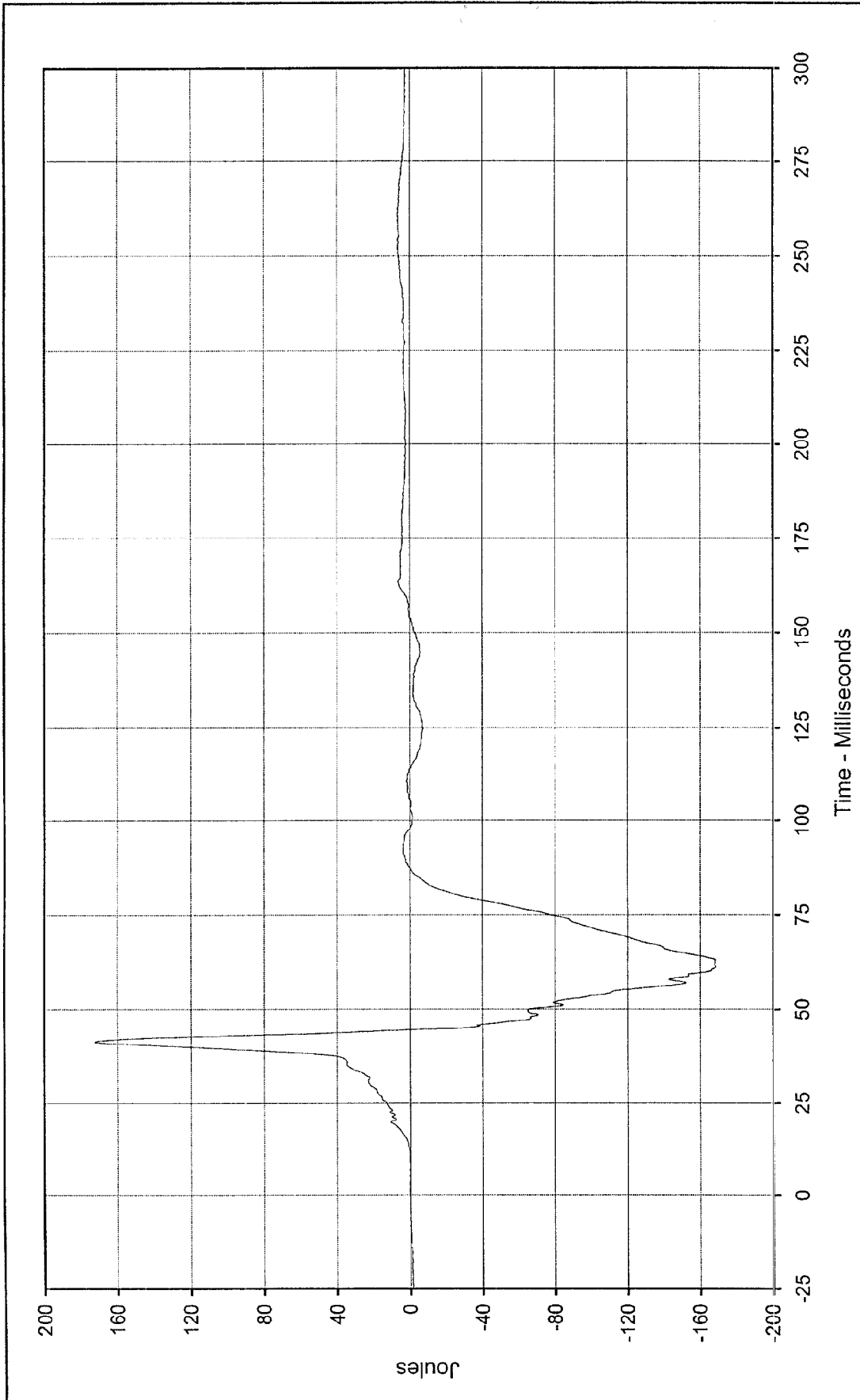
Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description:	Passenger Left Lower Tibia Force Z	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	1223.1 at 44.6 Milliseconds	Test Vehicle:	1998 Isuzu Rodeo SUV	
Minimum Value:	-3407.0 at 40.3 Milliseconds			
SAE Filter Class:	600			
Date of Test:	1/15/98			
Curve Number:	FIL-074			

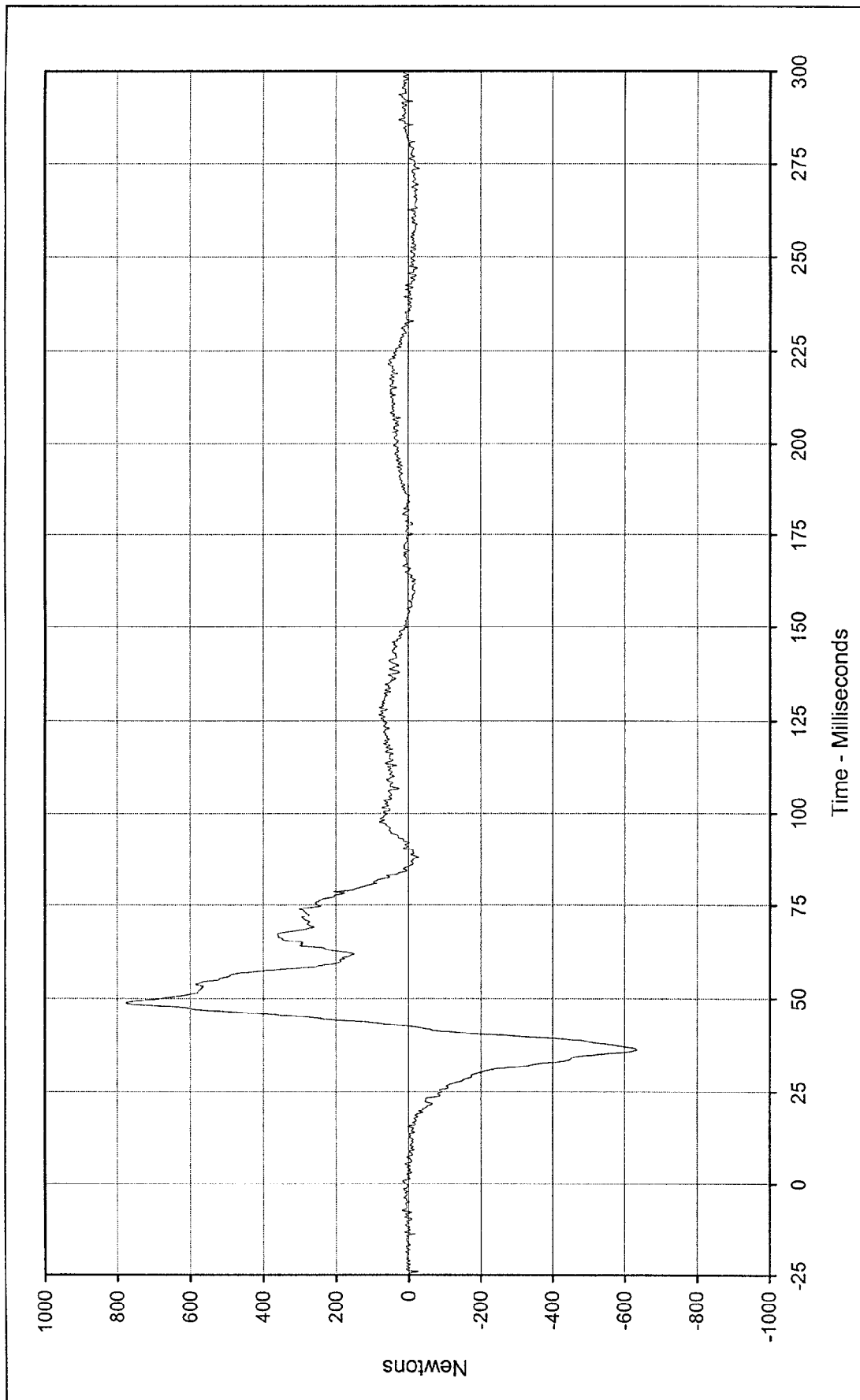




Curve Description: Passenger Left Lower Tibia Moment Y
 Maximum Value: 172.4 at 41.2 Milliseconds
 Minimum Value: -168.6 at 61.2 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/15/98
 Curve Number: FIL-075

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV



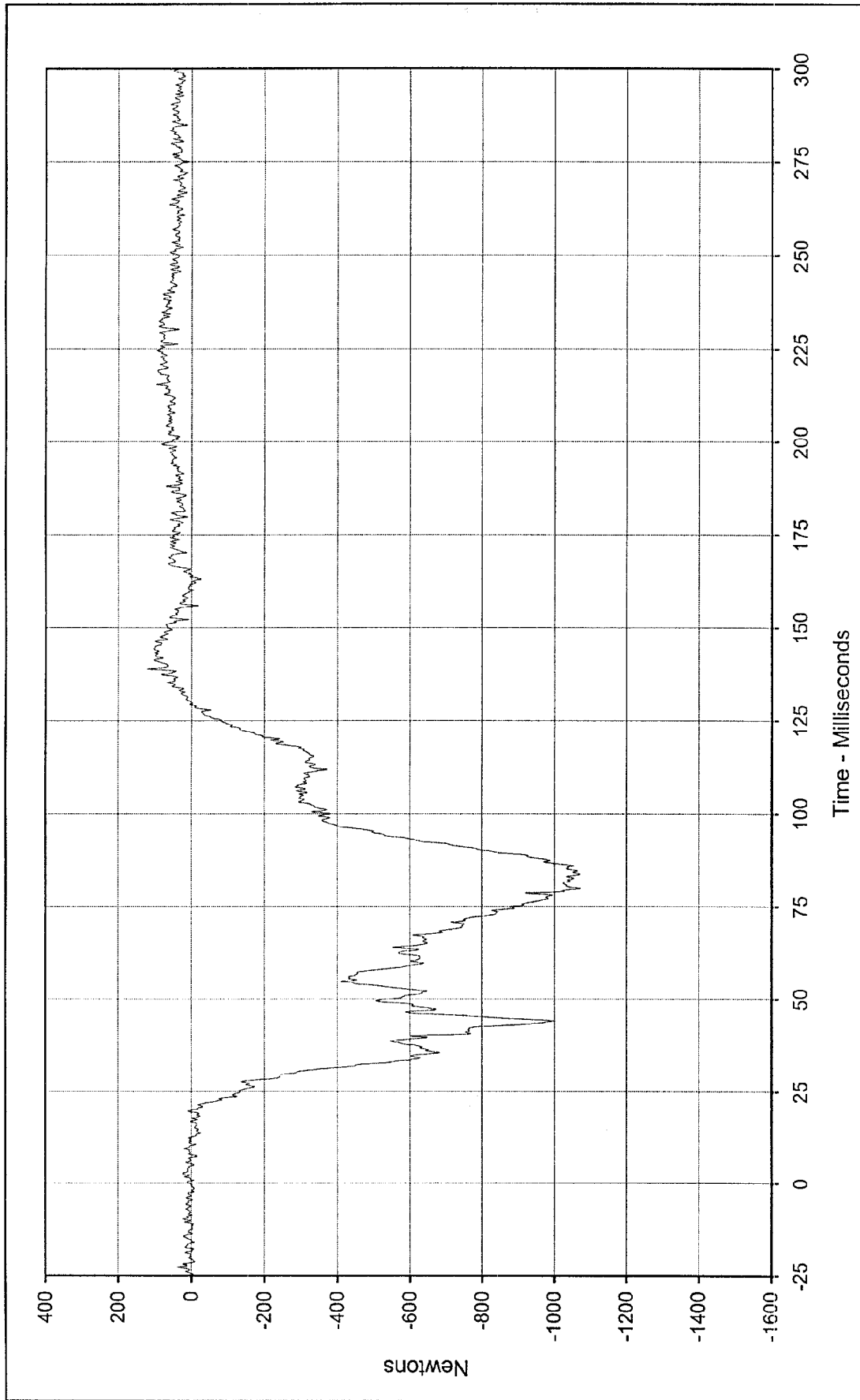


Curve Description: Passenger Right Lower Tibia Force X
Maximum Value: 776.4 at 48.8 Milliseconds
Minimum Value: -633.9 at 36.3 Milliseconds
SAE Filter Class: 600
Date of Test: 1/15/98
Curve Number: FIL-076

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV

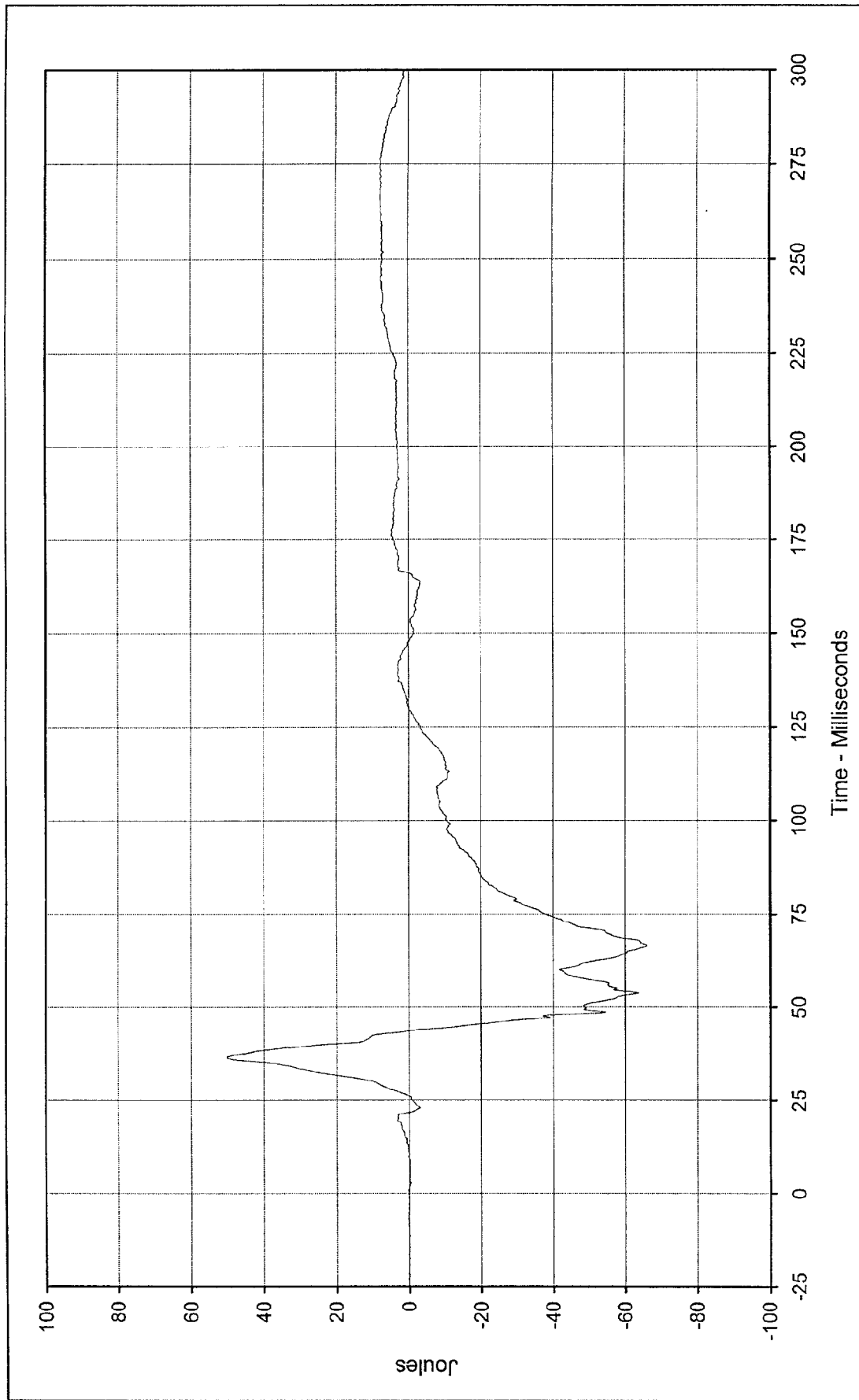




Curve Description: Passenger Right Lower Tibia Force Z
 Maximum Value: 119.7 at 138.8 Milliseconds
 Minimum Value: -1072.1 at 79.9 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/15/98
 Curve Number: FIL-077

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV



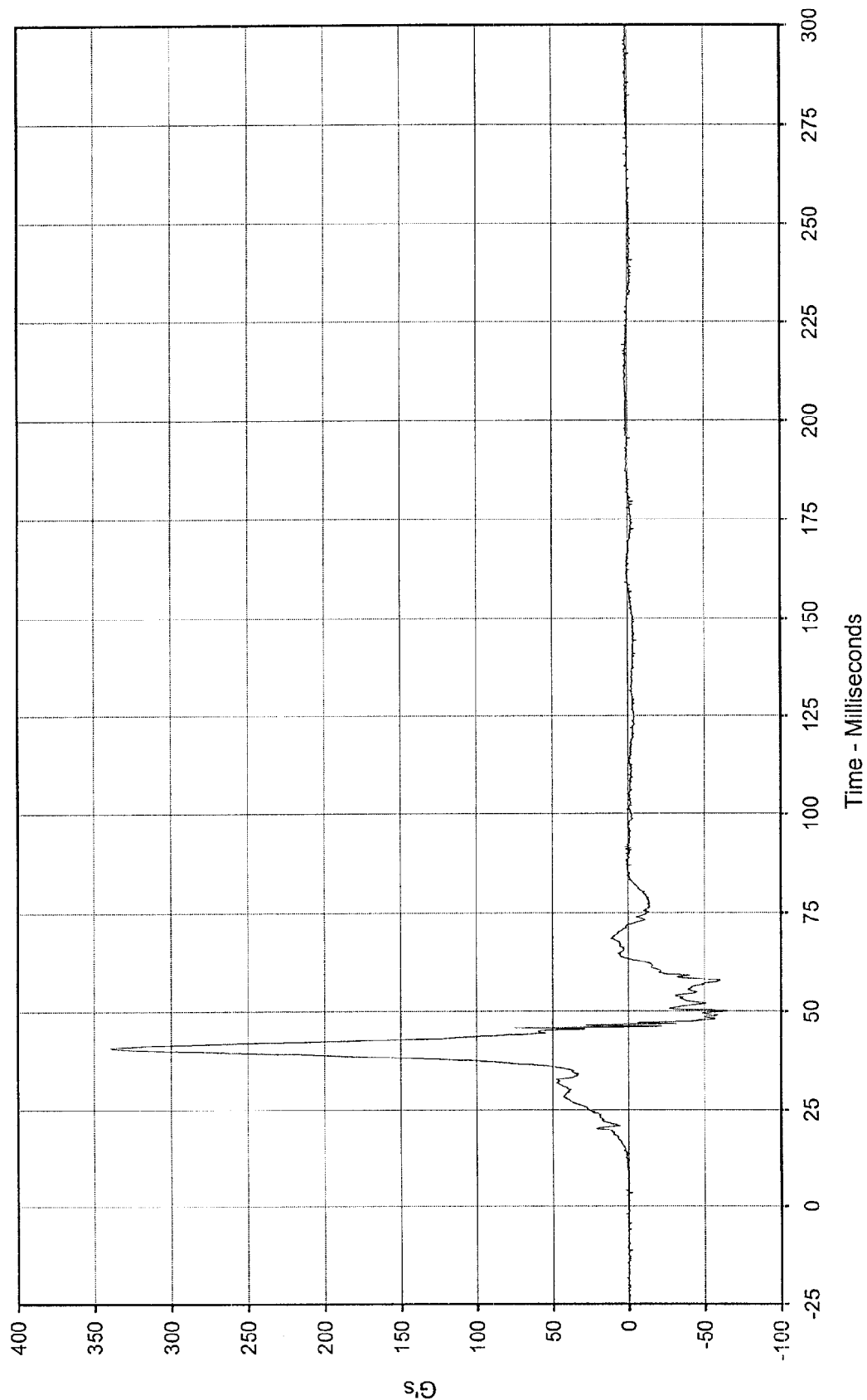


Curve Description: Passenger Right lower Tibia Moment Y
 Maximum Value: 50.3 at 36.6 Milliseconds
 Minimum Value: -66.0 at 66.3 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/15/98
 Curve Number: FIL-078

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV

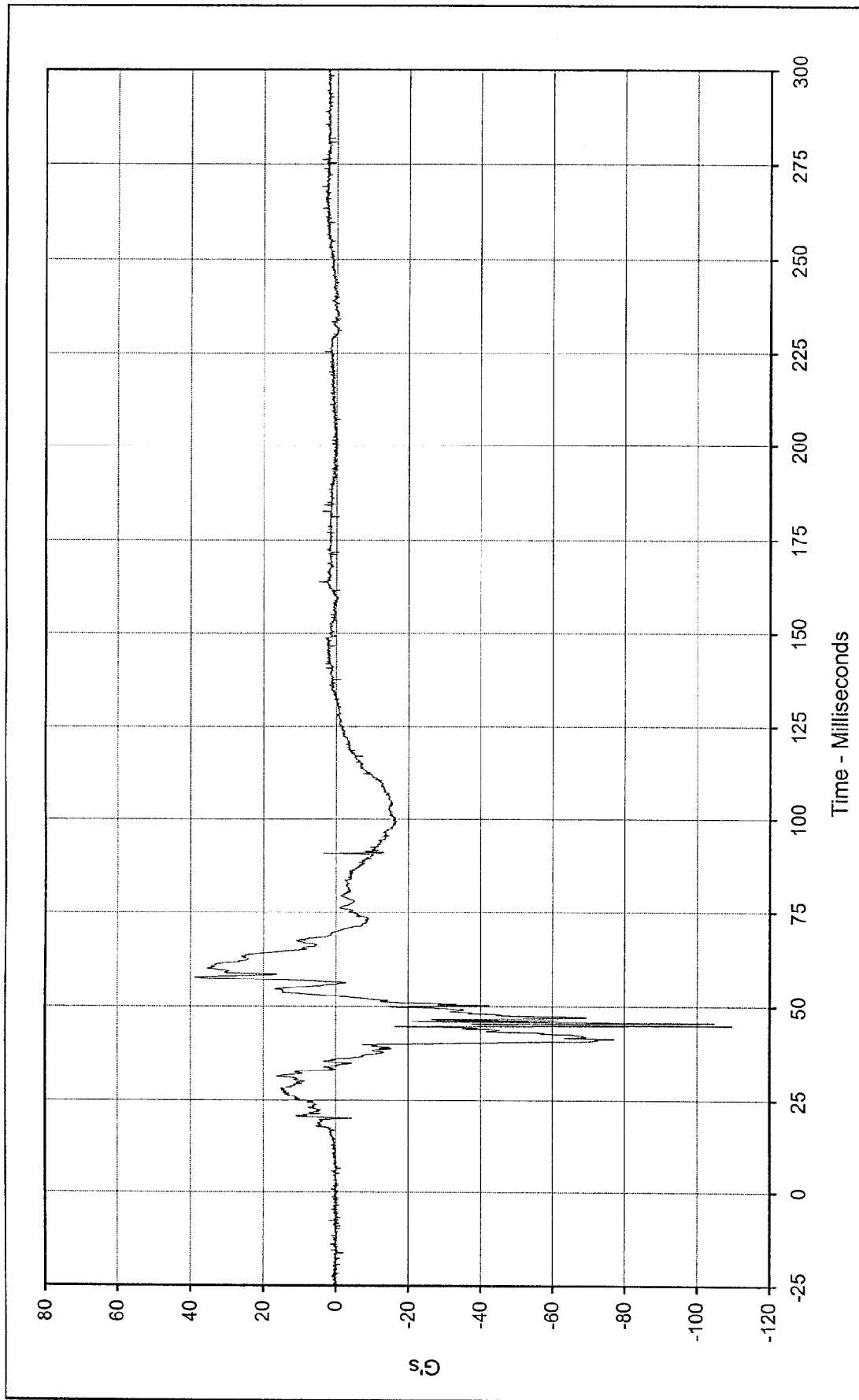




Curve Description: Passenger Left Foot Aft X
 Maximum Value: 339.2 at 40.7 Milliseconds
 Minimum Value: -64.8 at 50.1 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/15/98
 Curve Number: FIL-079

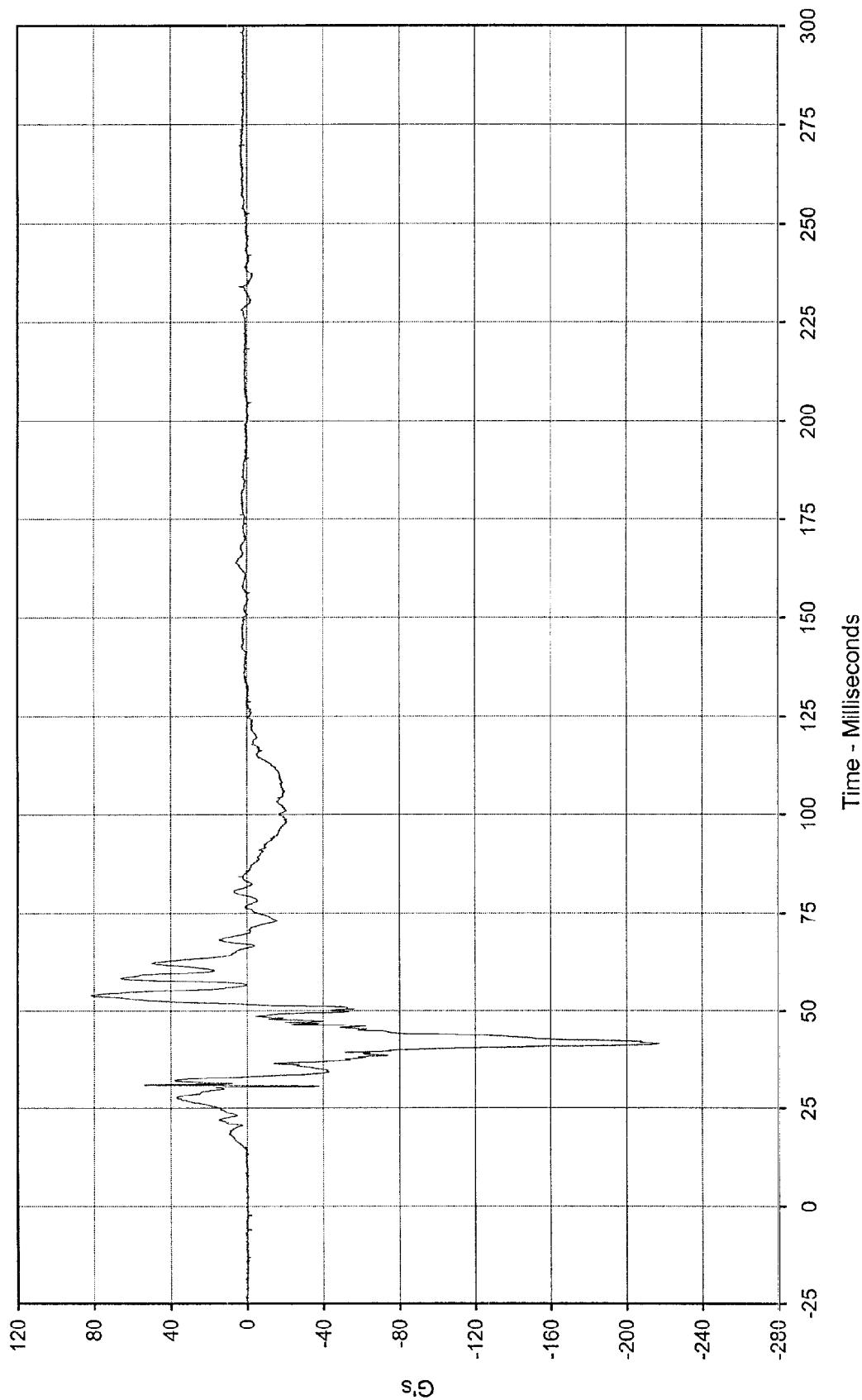
Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description:	Passenger Left Foot Aft Z	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	39.0	at	57.7	Milliseconds
Minimum Value:	-109.7	at	45.0	Milliseconds
SAE Filter Class:	1000	Test Vehicle:	1998 Isuzu Rodeo SUV	
Date of Test:	1/15/98			
Curve Number:	FIL-080			





Curve Description: Passenger Left Foot Fore Z

Maximum Value: 81.5 at 54.0 Milliseconds

Minimum Value: -217.2 at 41.4 Milliseconds

SAE Filter Class: 1000

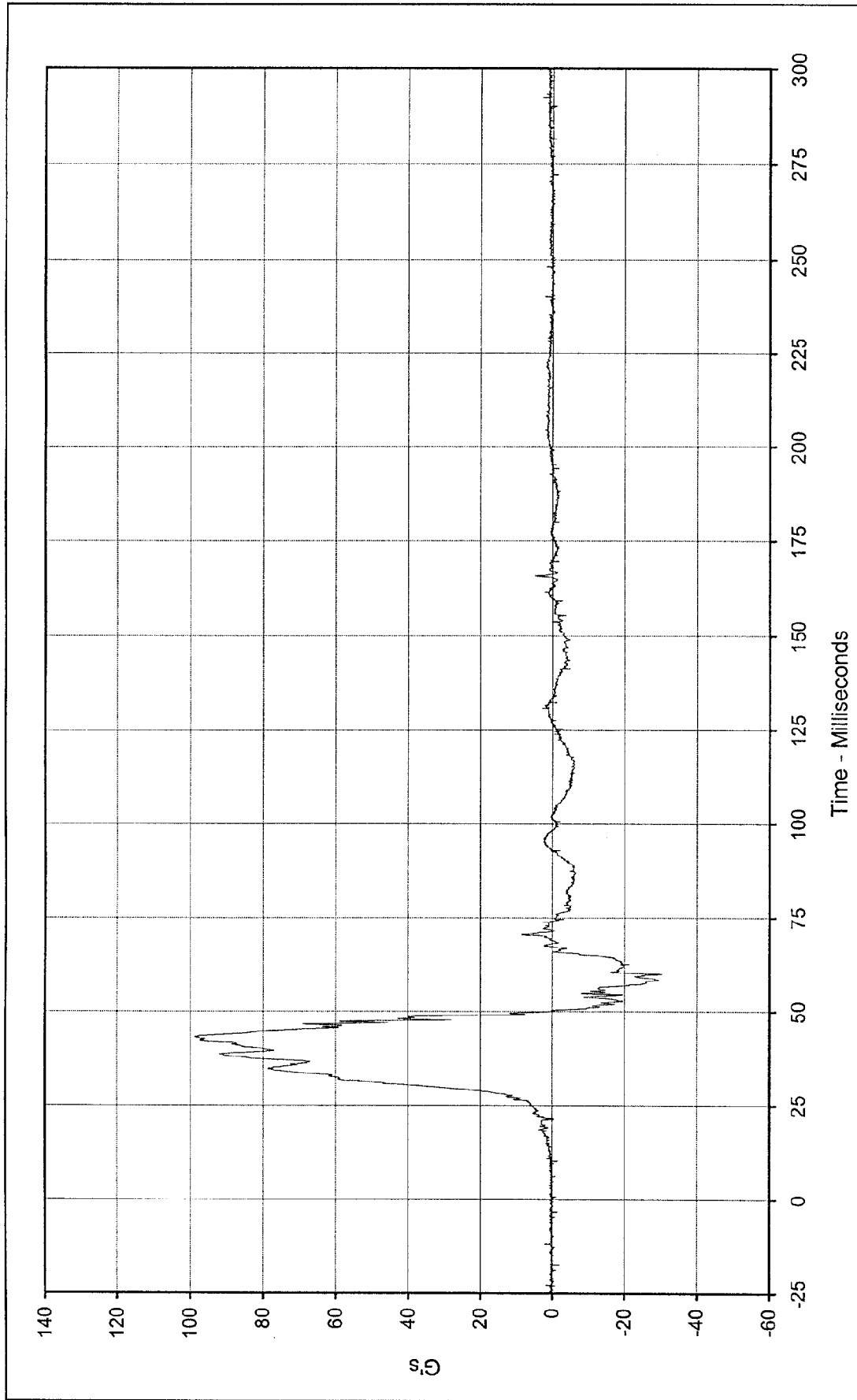
Date of Test: 1/15/98

Curve Number: FIL-081

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Passenger Right Foot Aft X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Maximum Value: 98.7 at 43.2 Milliseconds Test Vehicle: 1998 Isuzu Rodeo SUV

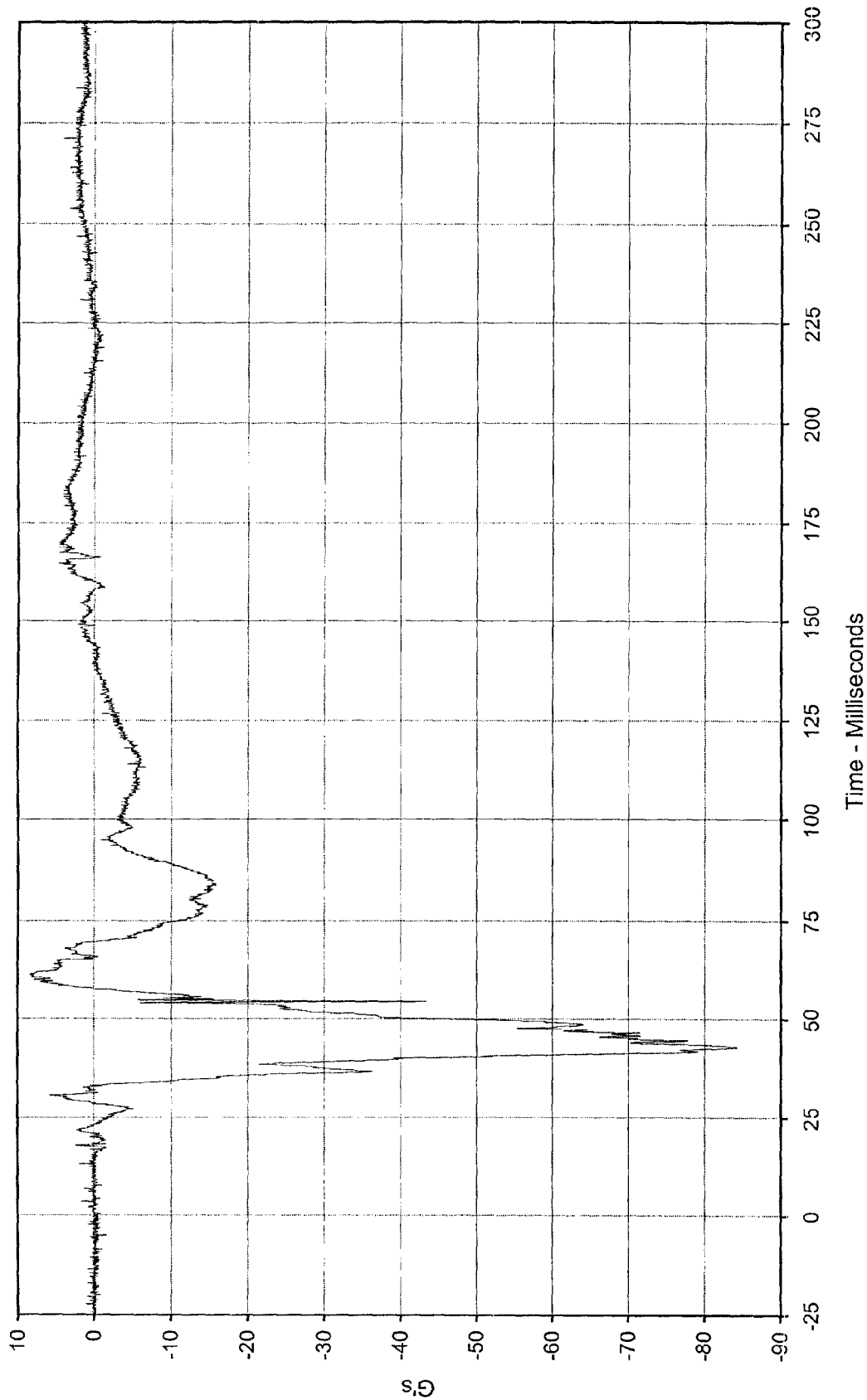
Minimum Value: -30.2 at 60.0 Milliseconds

SAE Filter Class: 1000

Date of Test: 1/15/98

Curve Number: FIL-082





Curve Description: Passenger Right Foot Aft Z

Maximum Value: 8.4 at 61.4 Milliseconds

Minimum Value: -84.2 at 42.8 Milliseconds

SAE Filter Class: 1000

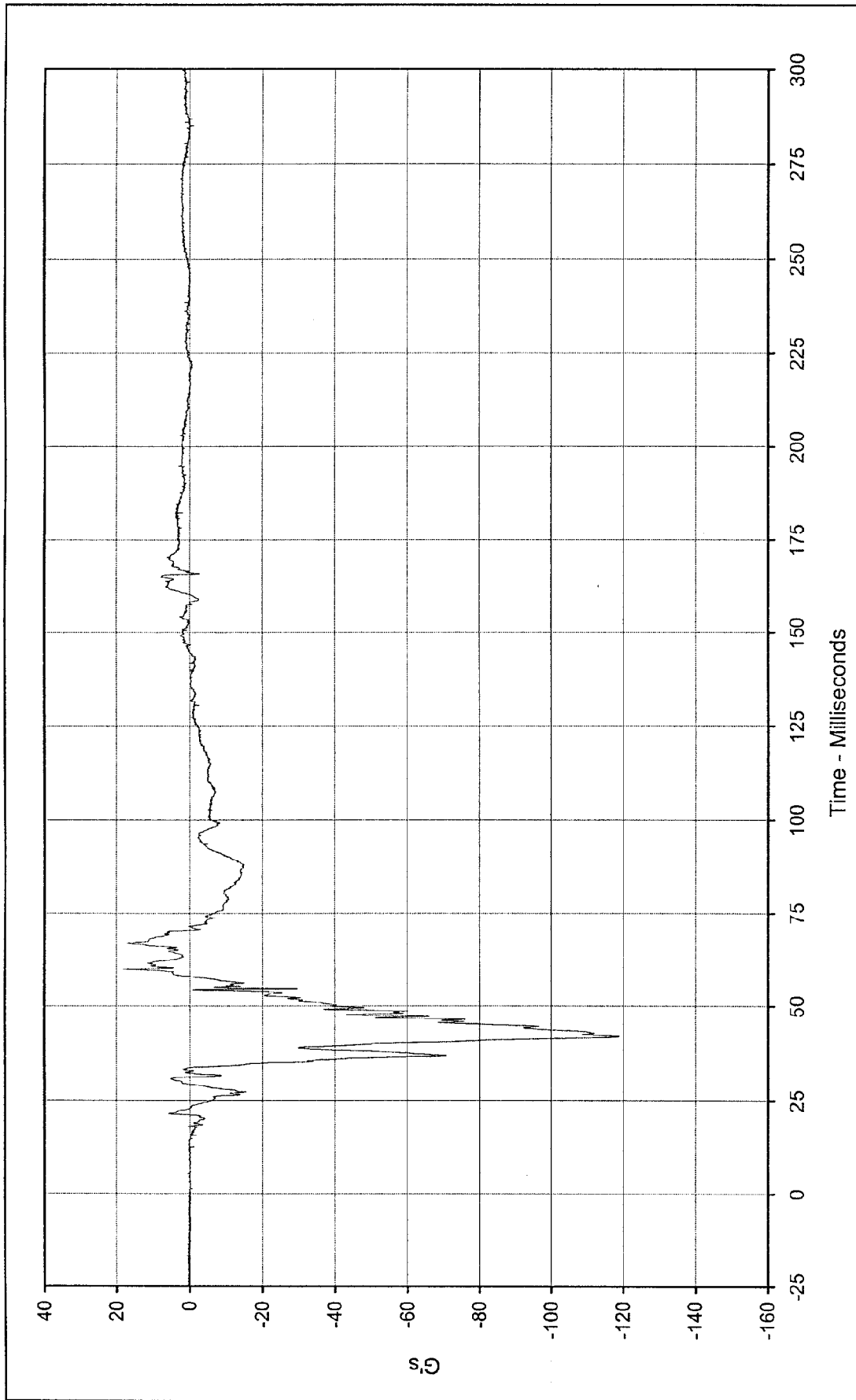
Date of Test: 1/15/98

Curve Number: FIL-083

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

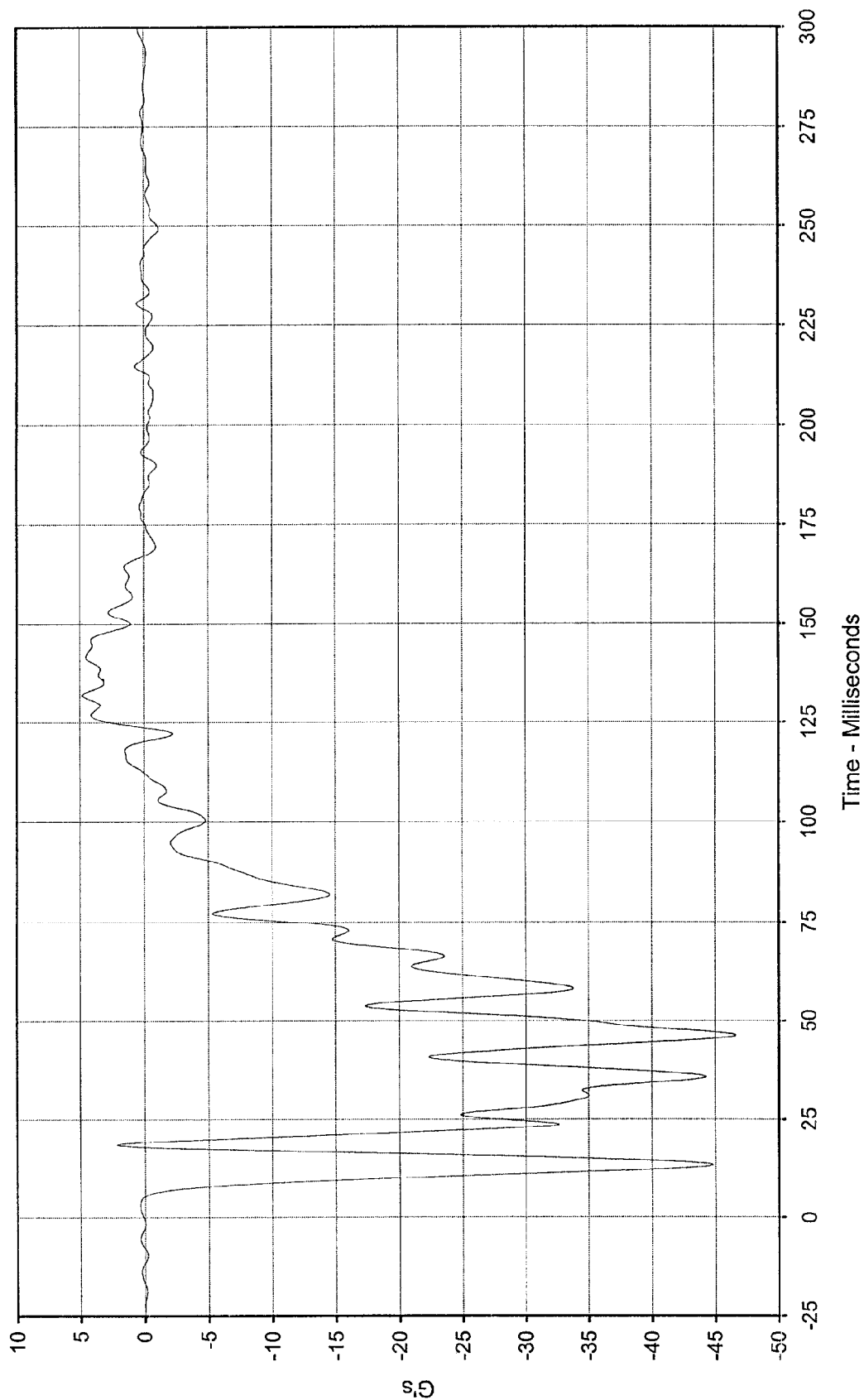
Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description:	Passenger Right Foot Fore Z		Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	18.3	at 60.0 Milliseconds	Test Vehicle:	1998 Isuzu Rodeo SUV	
Minimum Value:	-119.0	at 41.9 Milliseconds			
SAE Filter Class:	1000				
Date of Test:	1/15/98				
Curve Number:	FIL-084				

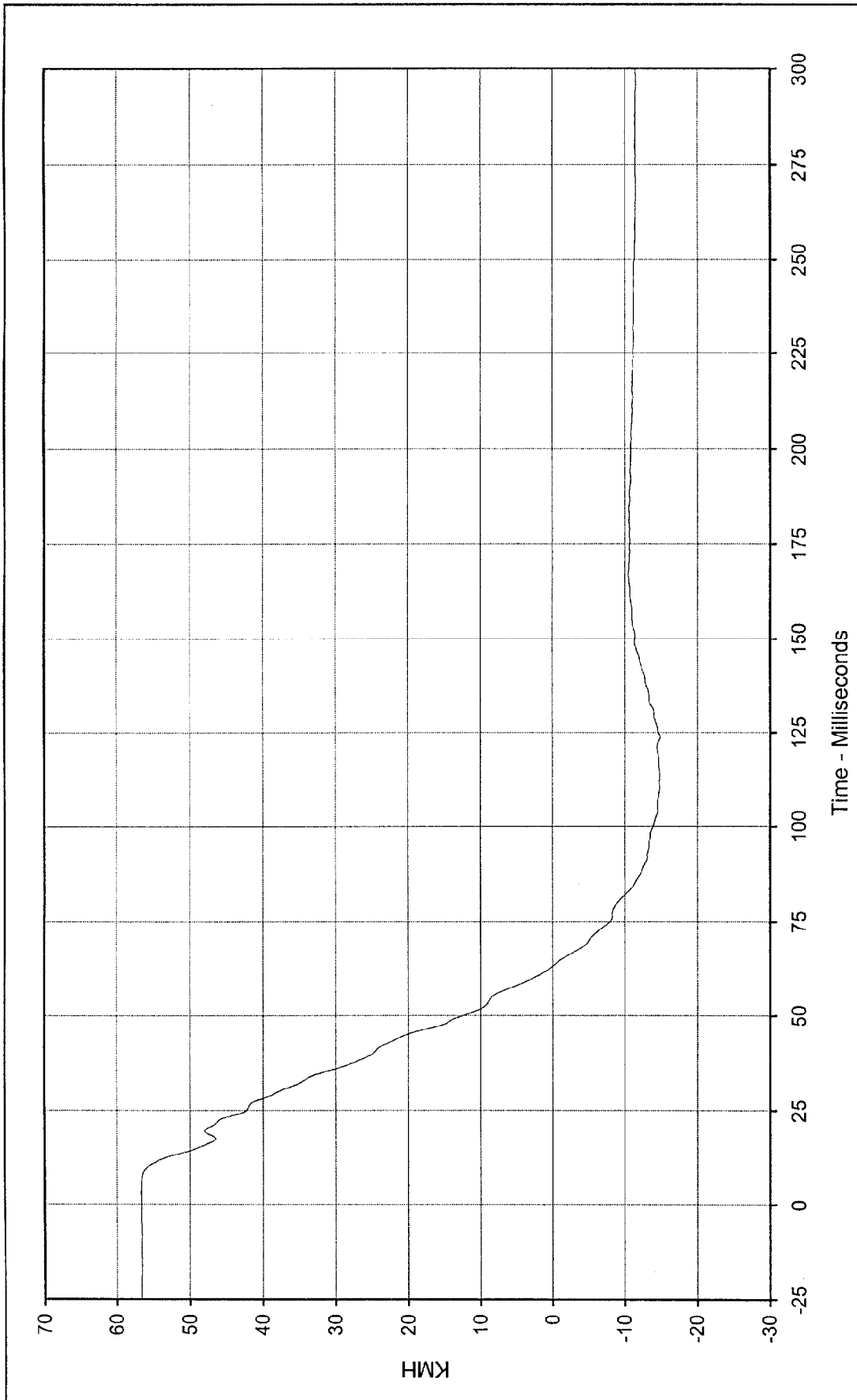




Curve Description: Vehicle Left Rear Primary
 Maximum Value: 4.8 at 132.1 Milliseconds
 Minimum Value: -46.6 at 46.2 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/15/98
 Curve Number: FIL-089

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Vehicle Left Rear Primary Velocity

Maximum Value: 56.7 at 3.1 Milliseconds

Minimum Value: -14.9 at 123.8 Milliseconds

SAE Filter Class: 180

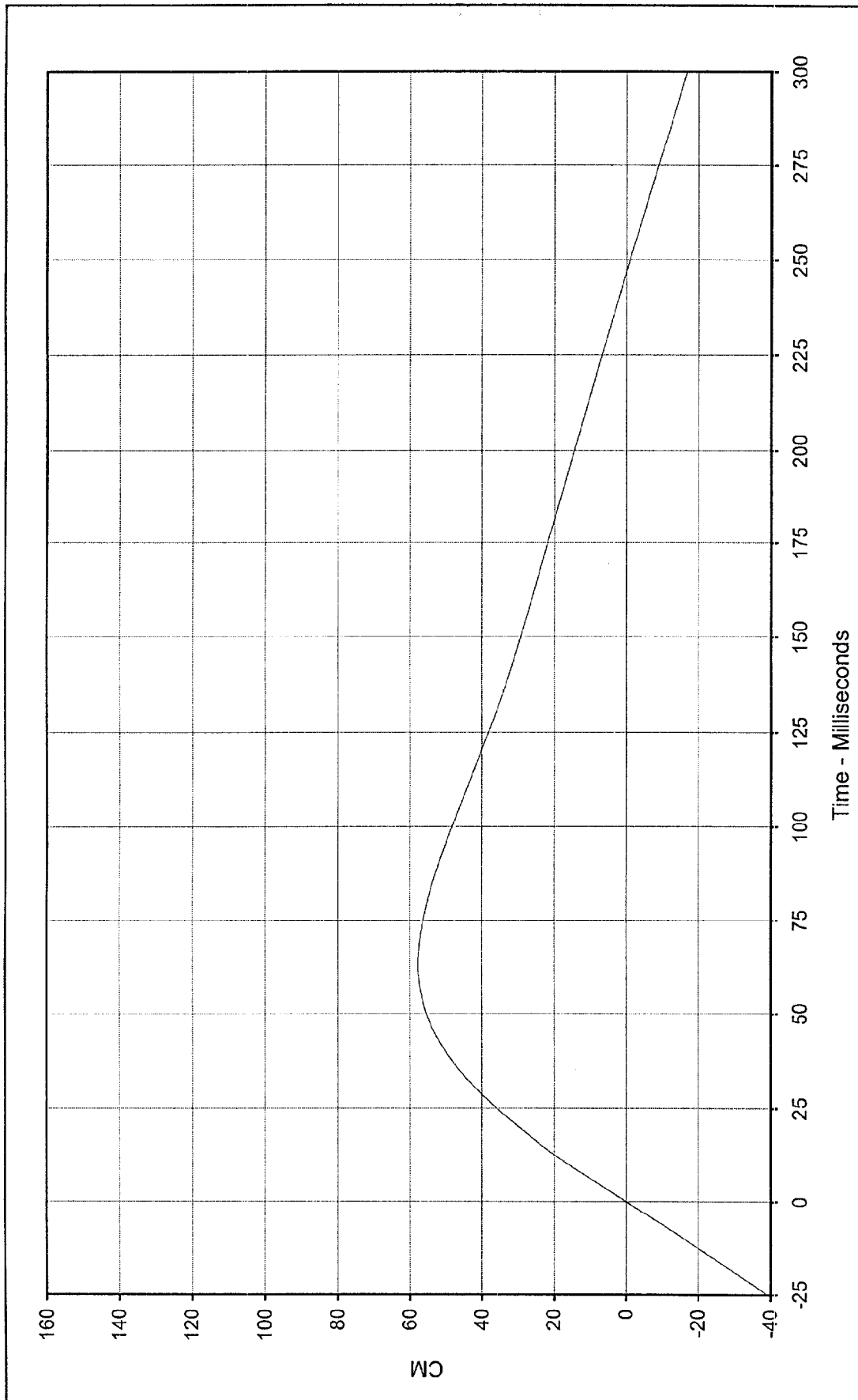
Date of Test: 1/15/98

Curve Number: IN1-089

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

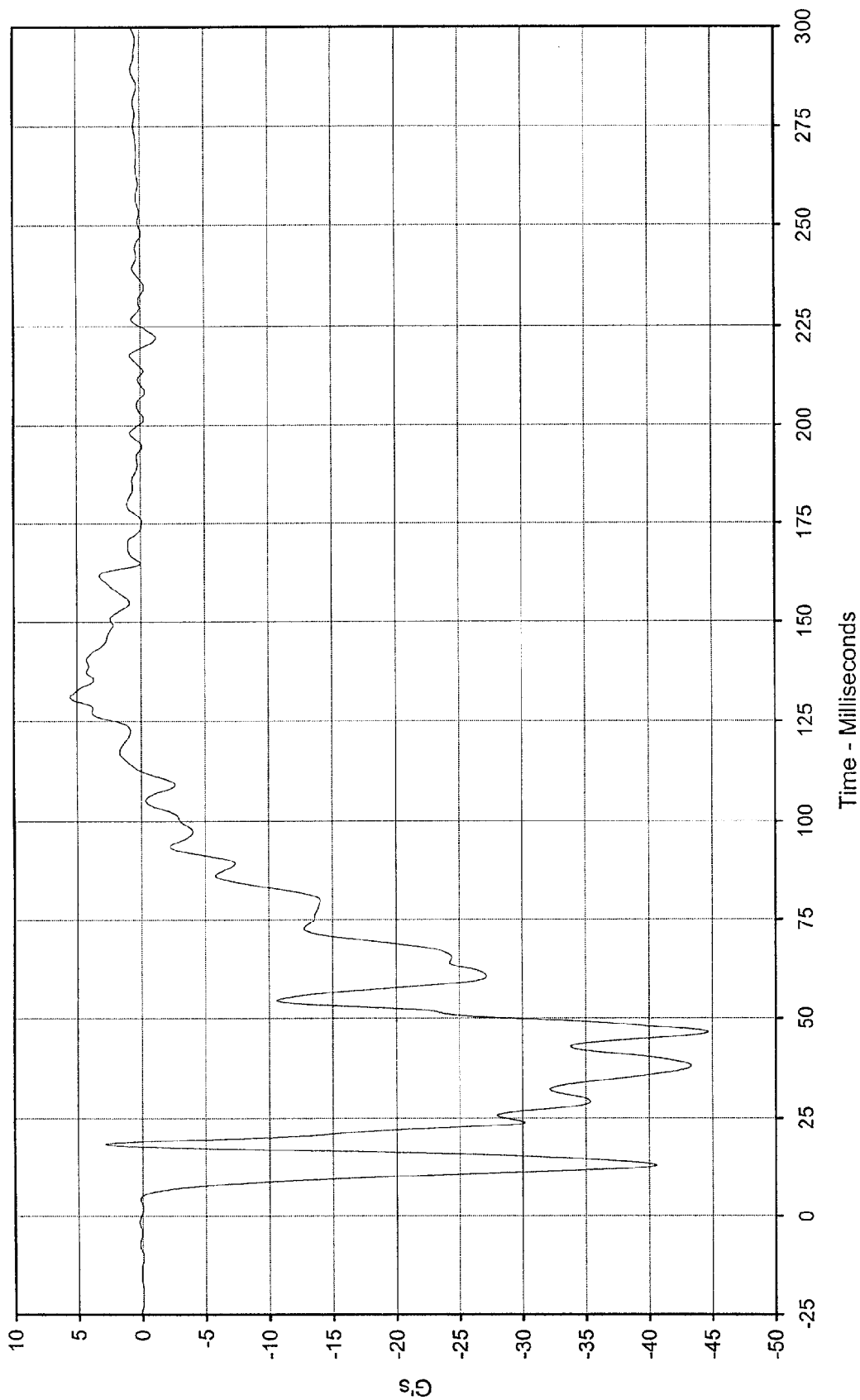
Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Vehicle Left Rear Primary Displ. Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
Maximum Value: 57.7 at 63.1 Milliseconds Test Vehicle: 1998 Isuzu Rodeo SUV
Minimum Value: -16.8 at 299.9 Milliseconds
SAE Filter Class: 180
Date of Test: 1/15/98
Curve Number: IN2-089

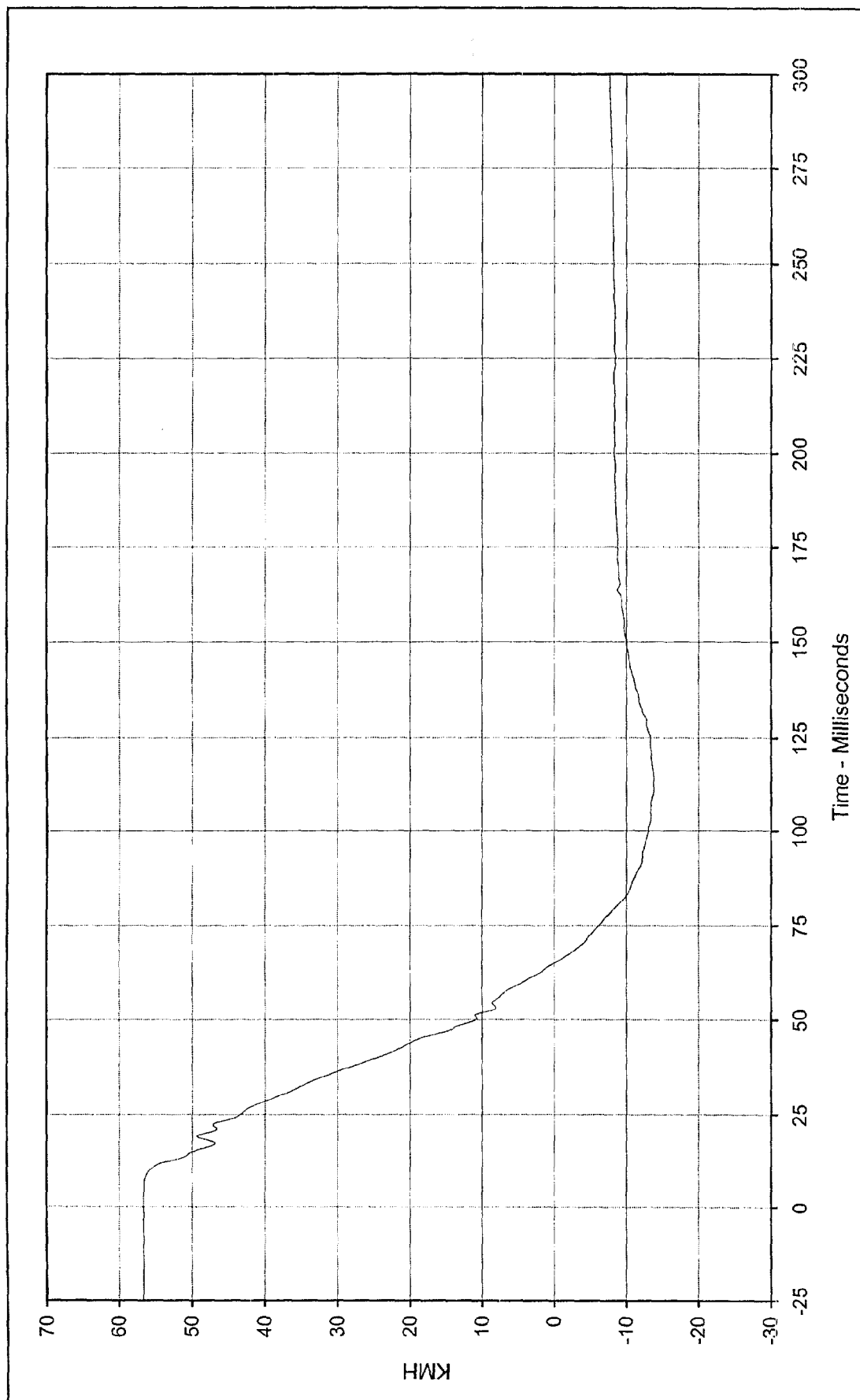




Curve Description: Vehicle Right Rear Primary
 Maximum Value: 5.6 at 131.1 Milliseconds
 Minimum Value: -44.7 at 46.4 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/15/98
 Curve Number: FIL-090

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV

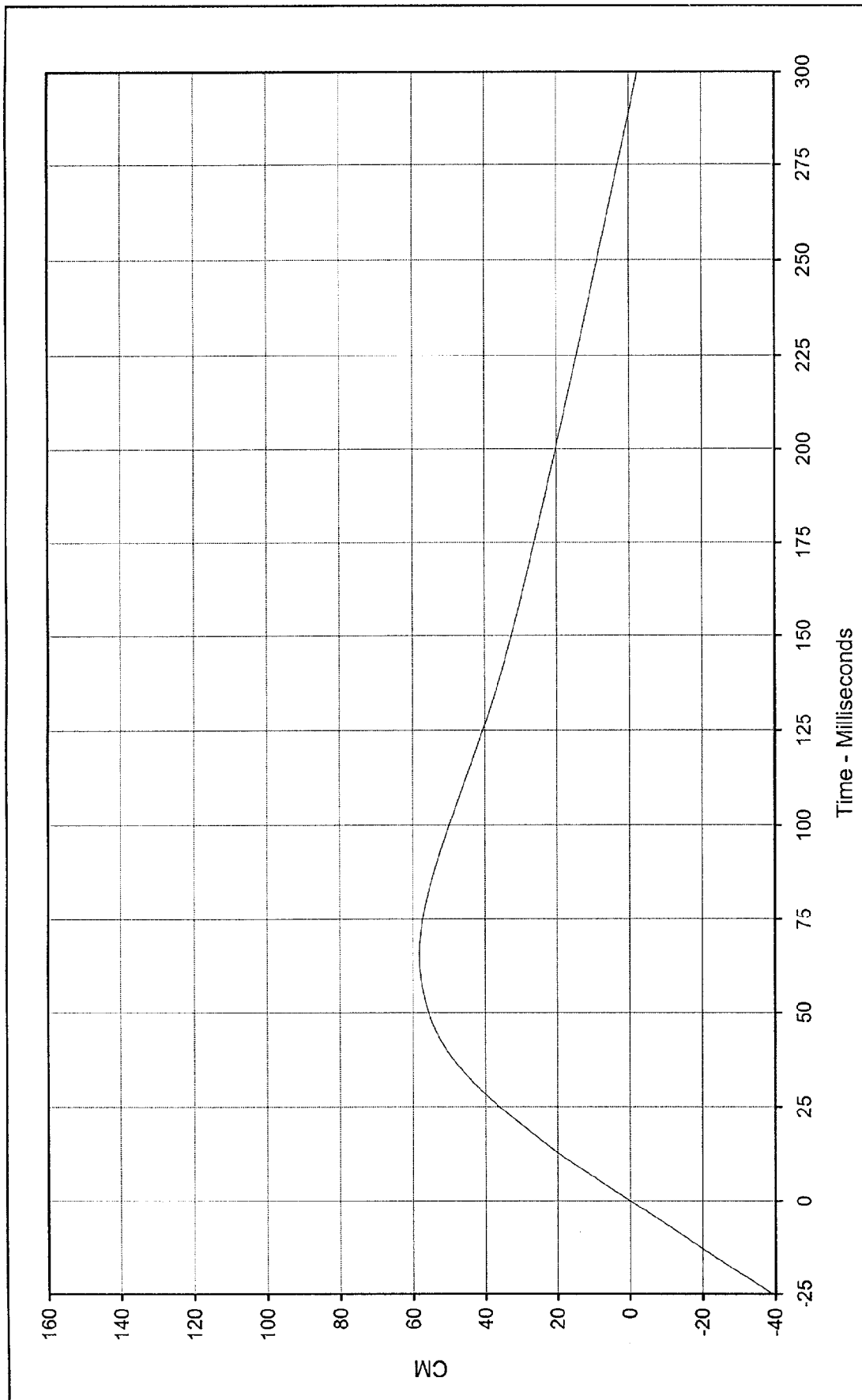




Curve Description: Vehicle Right Rear Primary Velocity
 Maximum Value: 56.7 at 0.3 Milliseconds
 Minimum Value: -13.8 at 111.2 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/15/98
 Curve Number: IN1-090

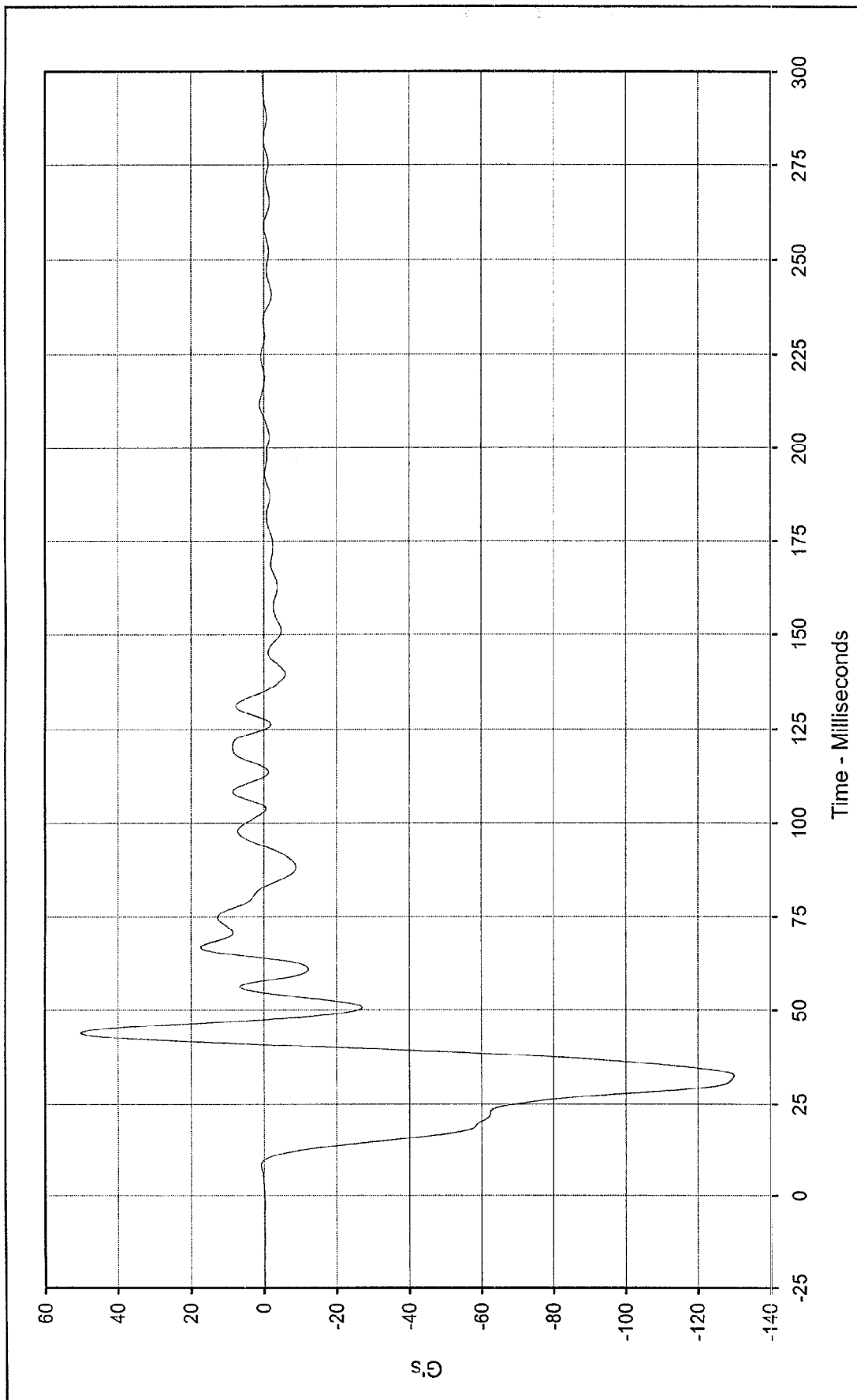
Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description:	Vehicle Right Rear Primary Displ.	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	58.2 at 65.2 Milliseconds	Test Vehicle:	1998 Isuzu Rodeo SUV	
Minimum Value:	-2.4 at 299.9 Milliseconds			
SAE Filter Class:	180			
Date of Test:	1/15/98			
Curve Number:	IN2-090			

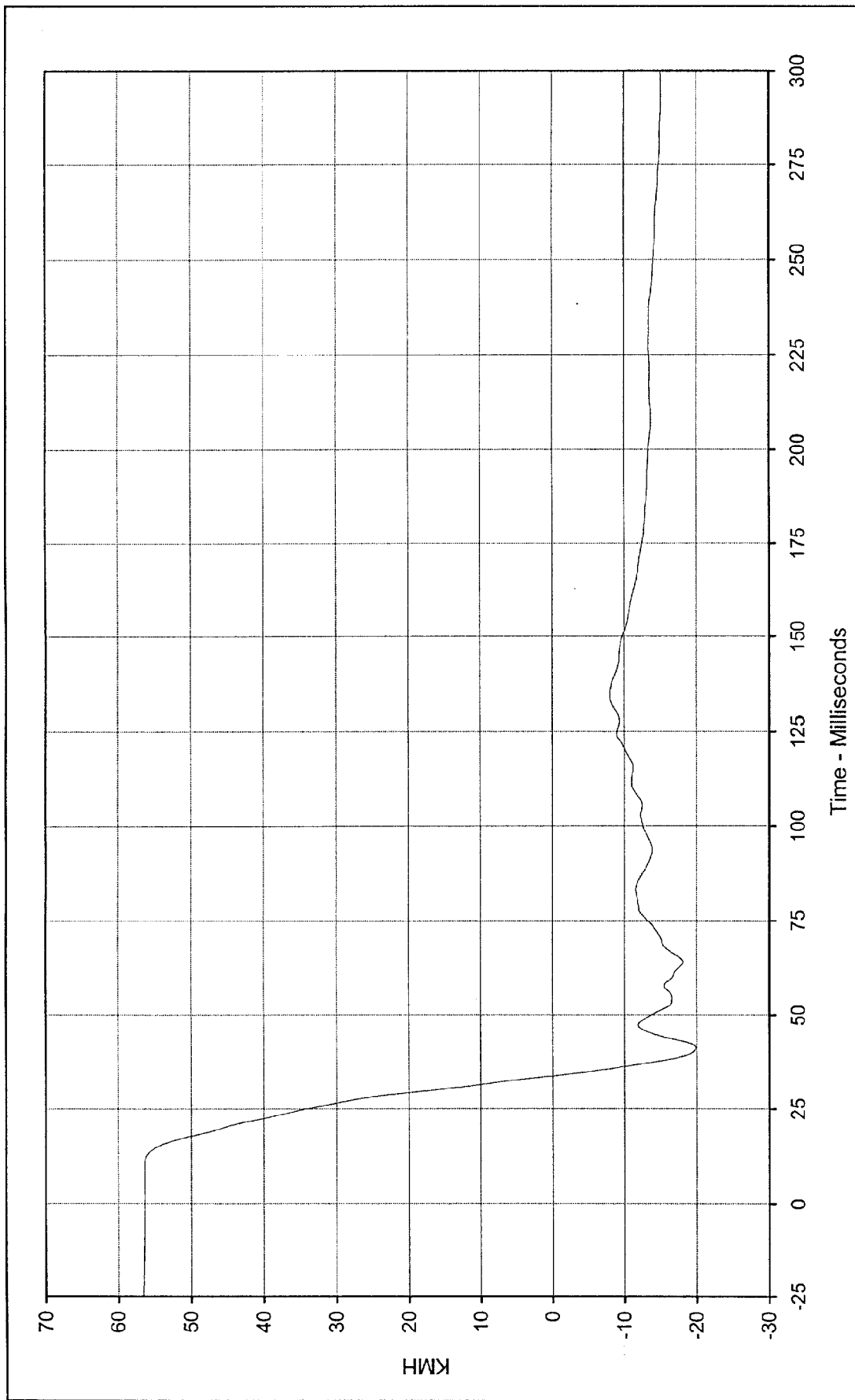




Curve Description: Vehicle Engine Top
 Maximum Value: 50.2 at 43.9 Milliseconds
 Minimum Value: -130.0 at 32.6 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/15/98
 Curve Number: FIL-091

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Vehicle Engine Top Velocity

Maximum Value: 56.4 at 9.7 Milliseconds

Minimum Value: -19.9 at 41.4 Milliseconds

SAE Filter Class: 180

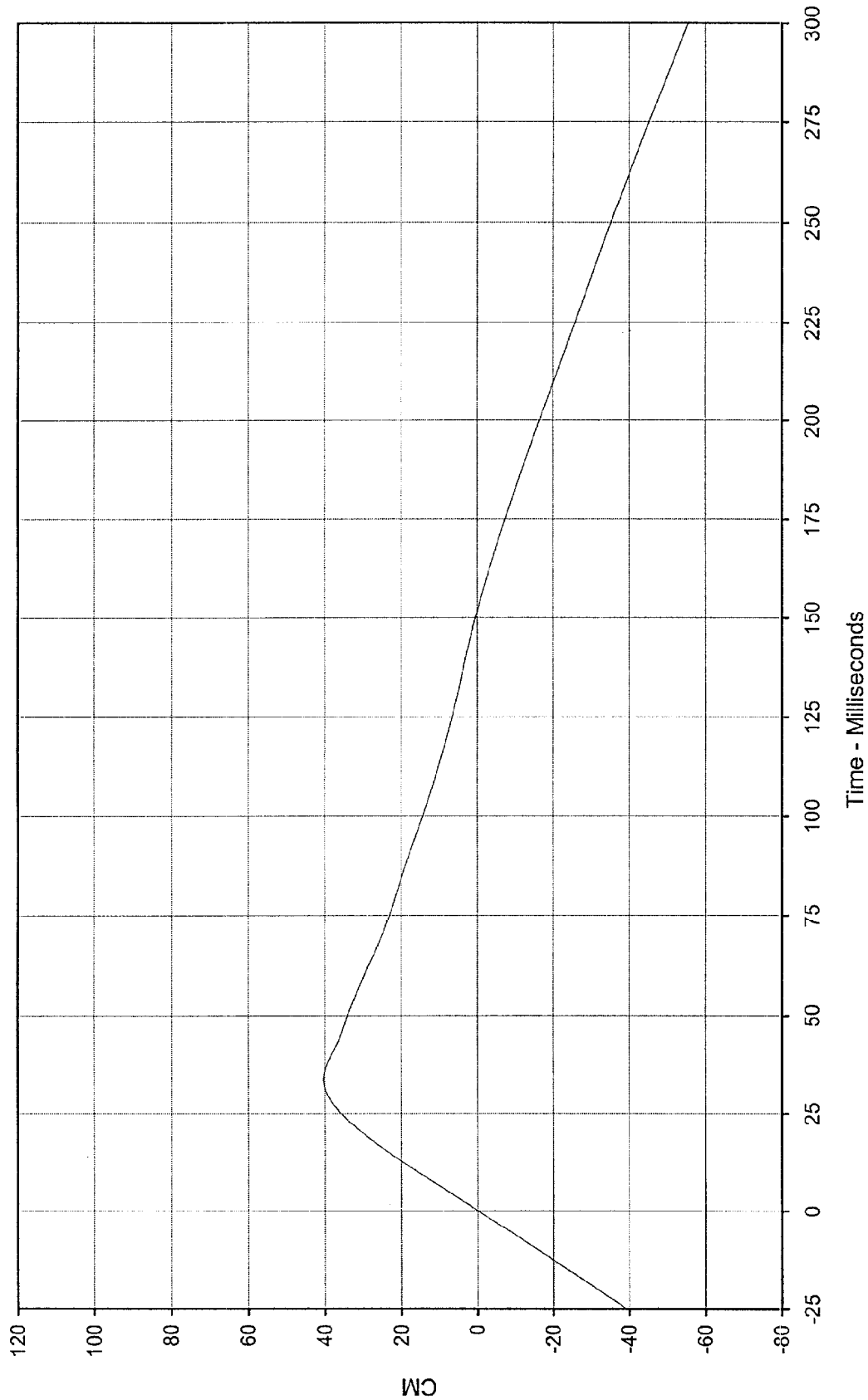
Date of Test: 1/15/98

Curve Number: IN1-091

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Vehicle Engine Top Displ. Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Maximum Value: 40.3 at 33.7 Milliseconds

Minimum Value: -55.5 at 299.9 Milliseconds

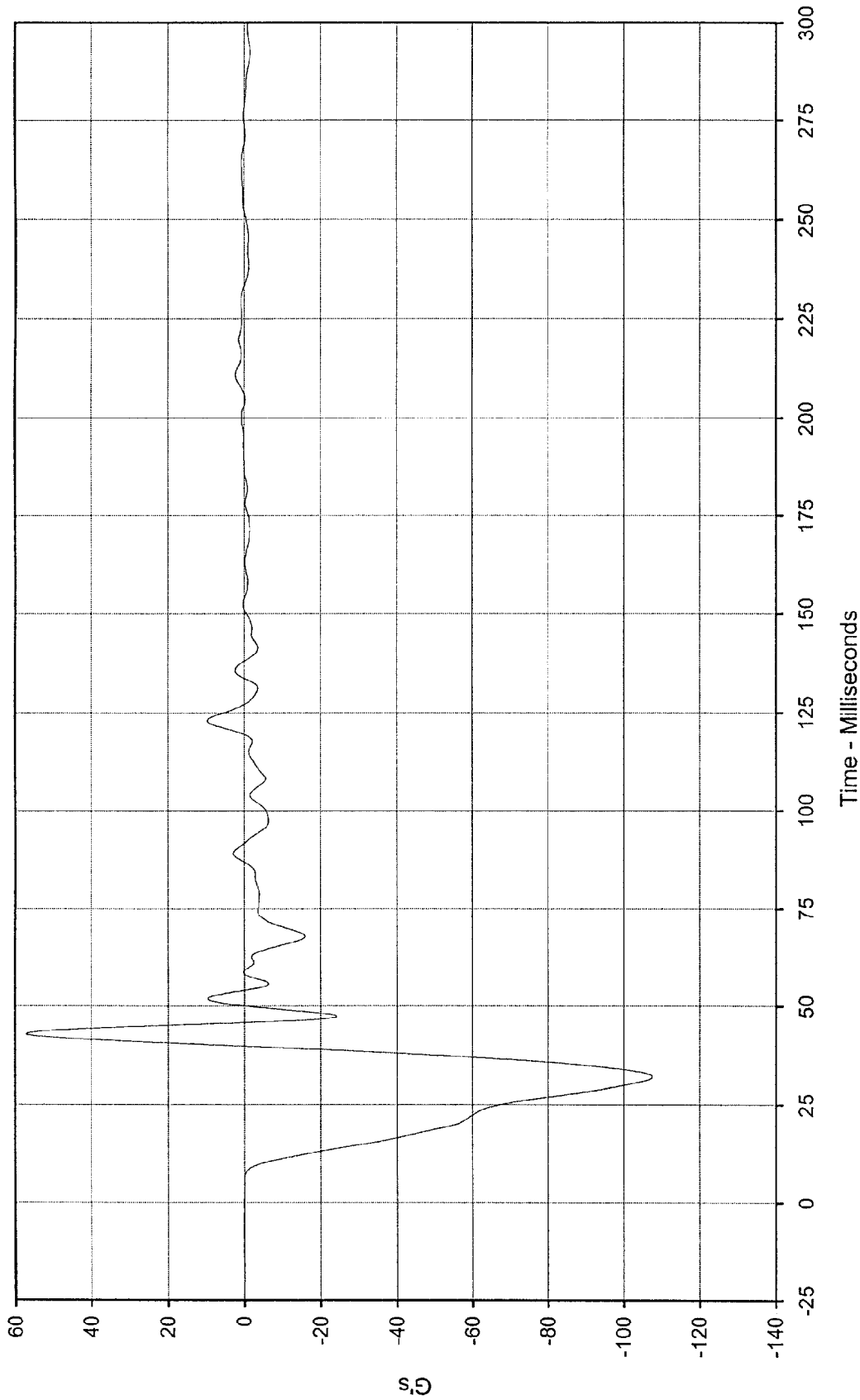
SAE Filter Class: 180

Date of Test: 1/15/98

Curve Number: IN2-091

Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Vehicle Engine Bottom

Maximum Value: 57.1 at 42.9 Milliseconds

Minimum Value: -107.5 at 32.1 Milliseconds

SAE Filter Class: 60

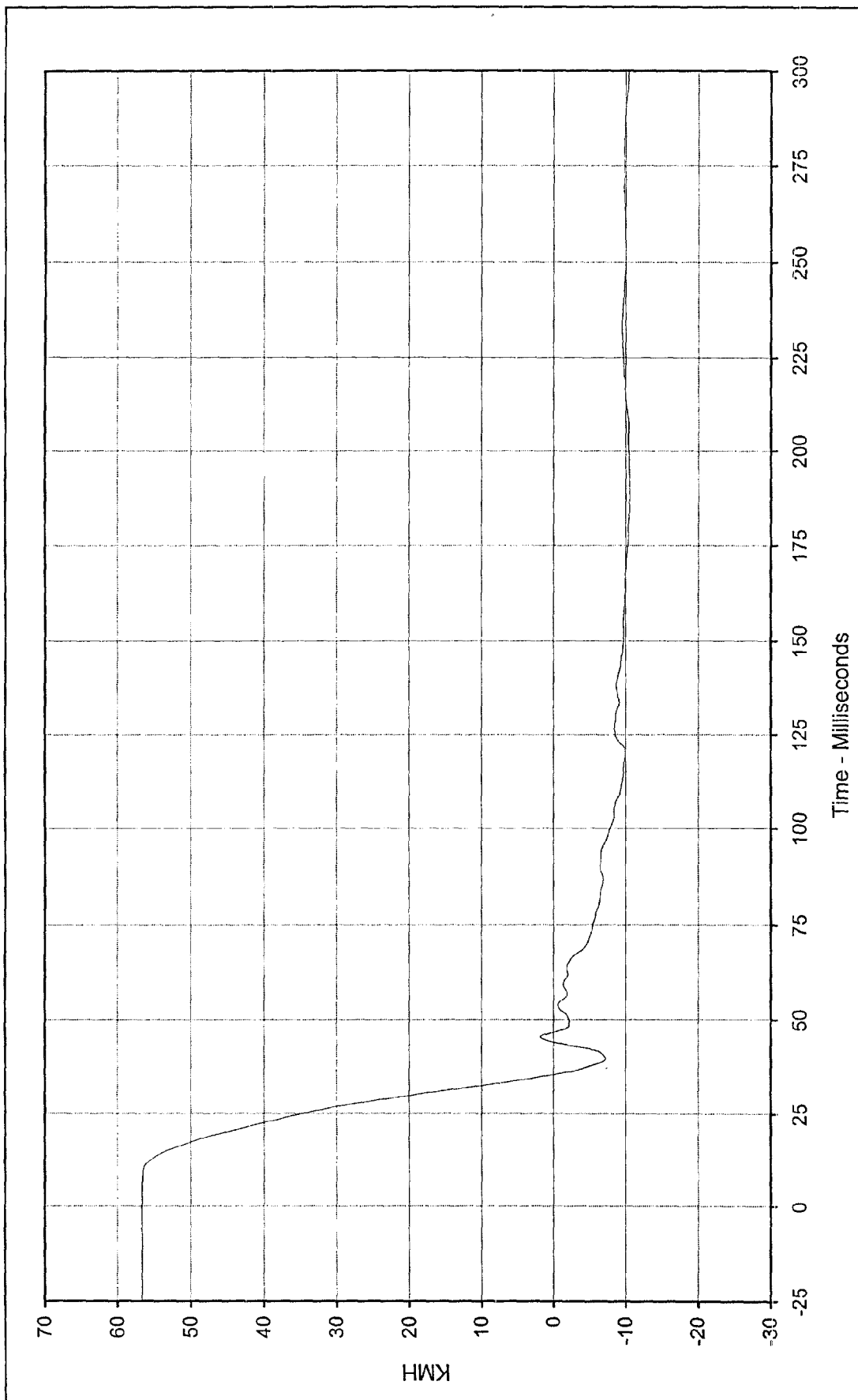
Date of Test: 1/15/98

Curve Number: FIL-092

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

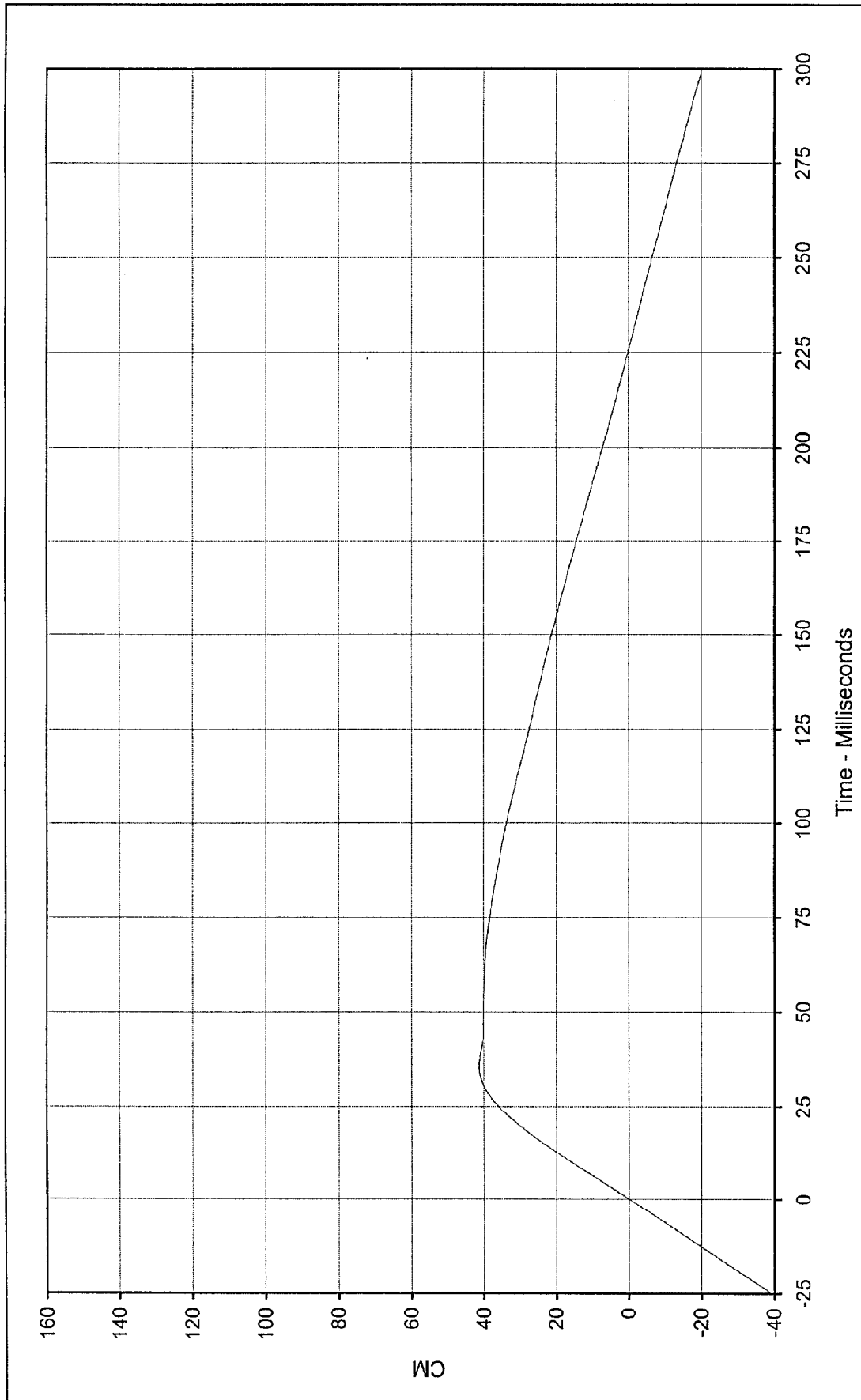
Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description:	Vehicle Engine Bottom Velocity		Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	56.6	at 1.7	Test Vehicle:	1998 Isuzu Rodeo SUV	
Minimum Value:	-10.5	at 185.0			
SAE Filter Class:	180				
Date of Test:	1/15/98				
Curve Number:	IN1-092				

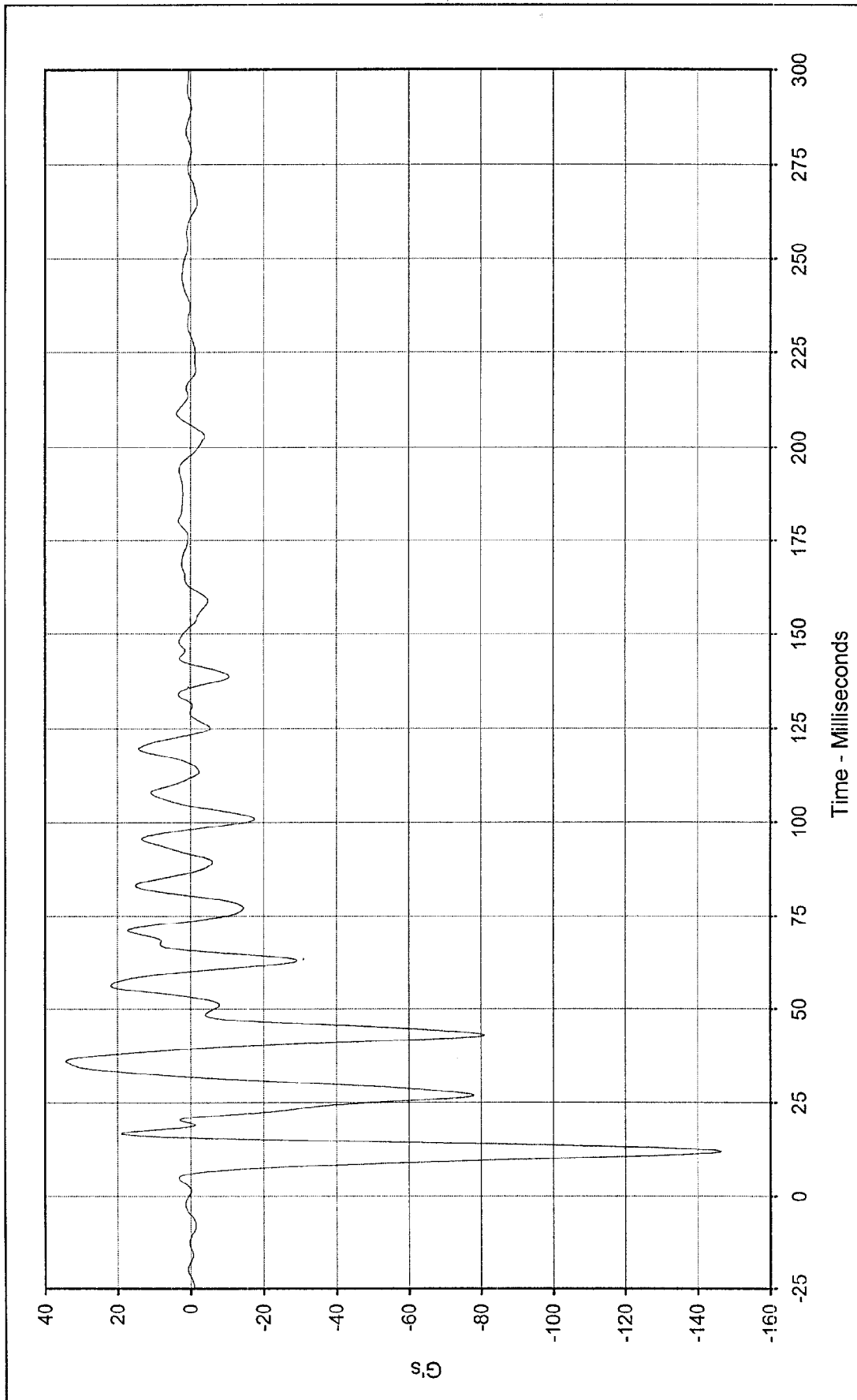




Curve Description: Vehicle Engine Bottom Displ.
 Maximum Value: 41.3 at 35.6 Milliseconds
 Minimum Value: -20.2 at 299.9 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/15/98
 Curve Number: IN2-092

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV

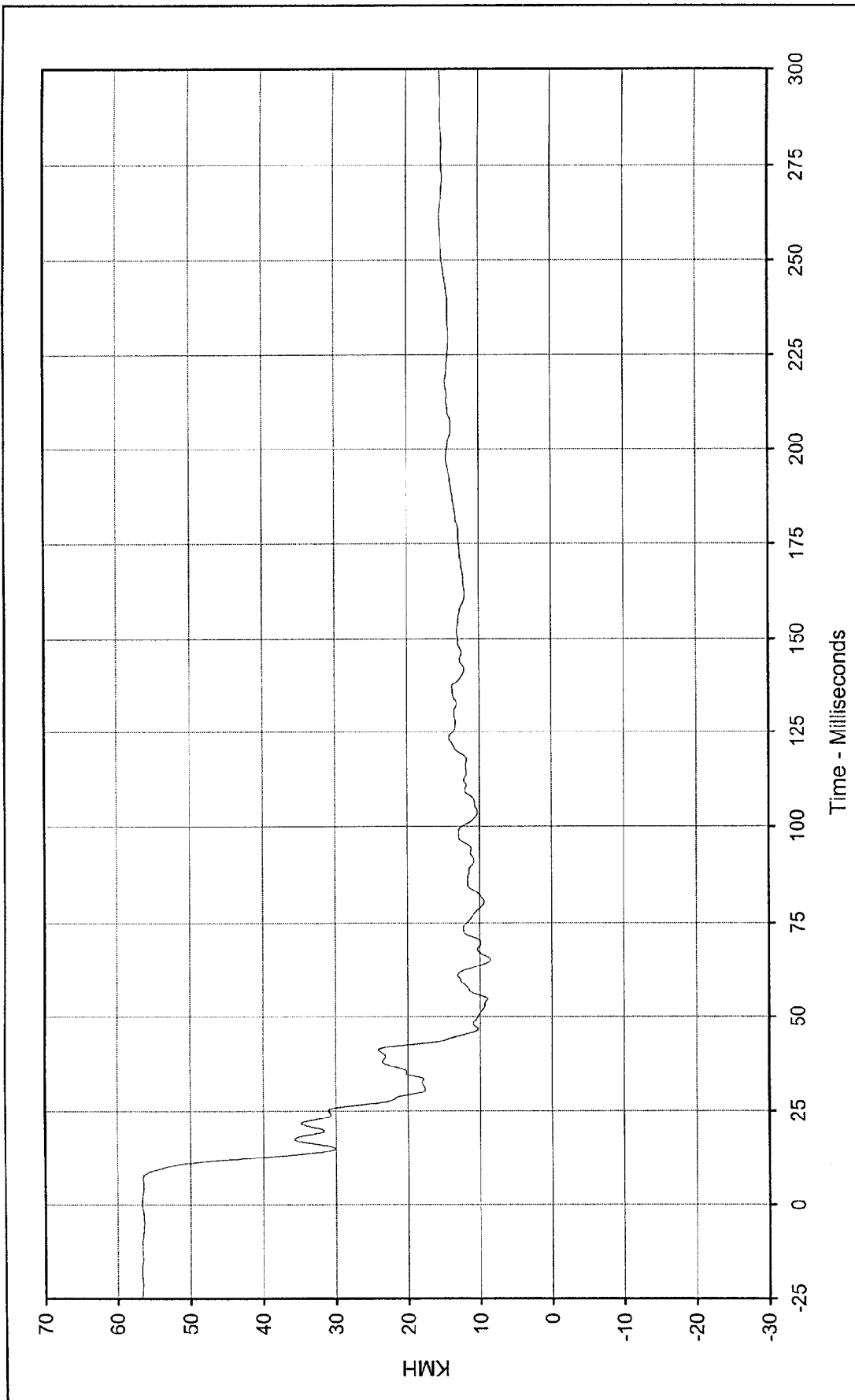




Curve Description: Vehicle Left Brake Caliper
 Maximum Value: 34.1 at 36.0 Milliseconds
 Minimum Value: -146.5 at 12.2 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/15/98
 Curve Number: FIL-093

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV

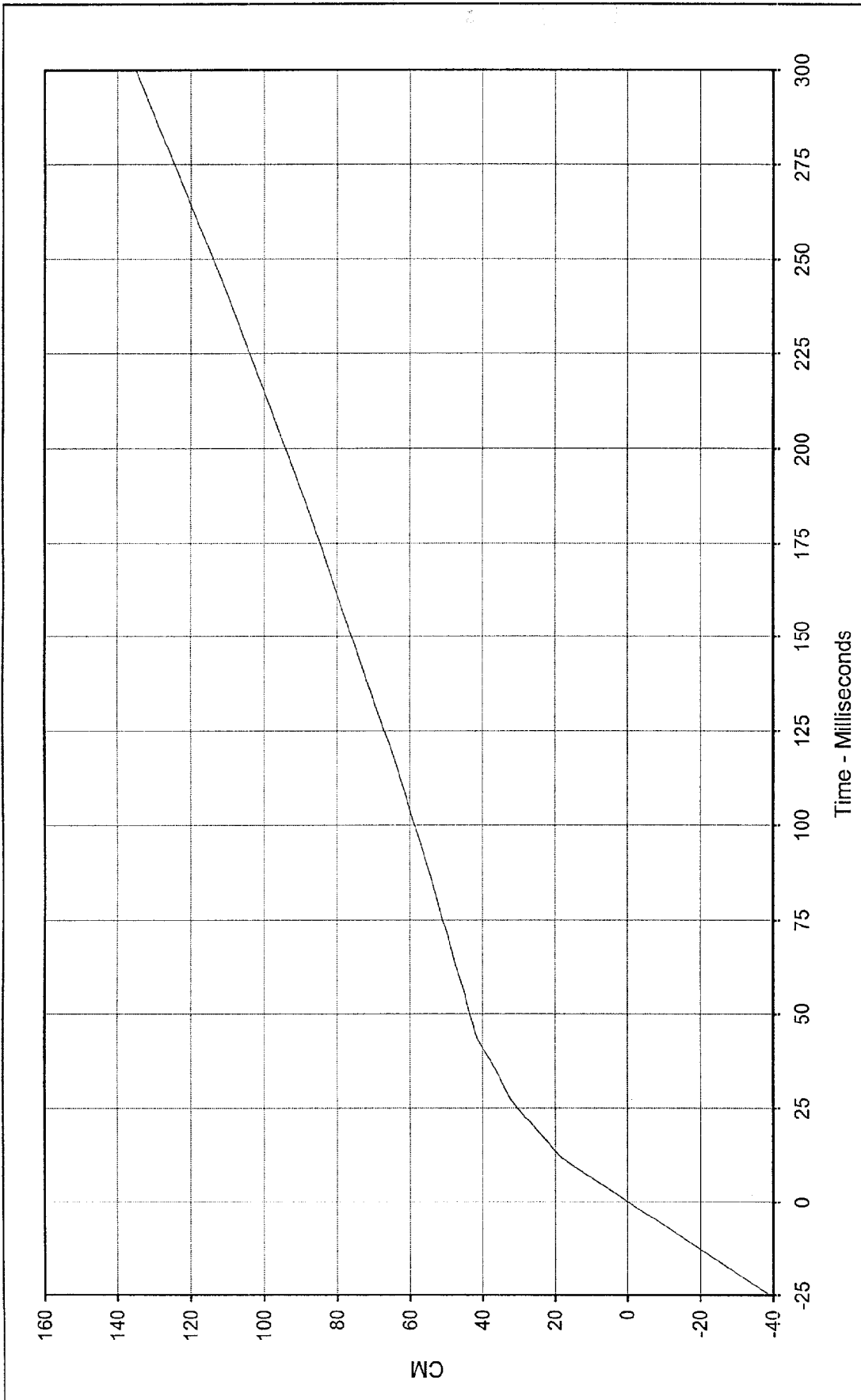




Curve Description: Vehicle Left Brake Caliper Velocity
 Maximum Value: 56.6 at 0.6 Milliseconds
 Minimum Value: 8.5 at 65.1 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/15/98
 Curve Number: IN1-093

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV

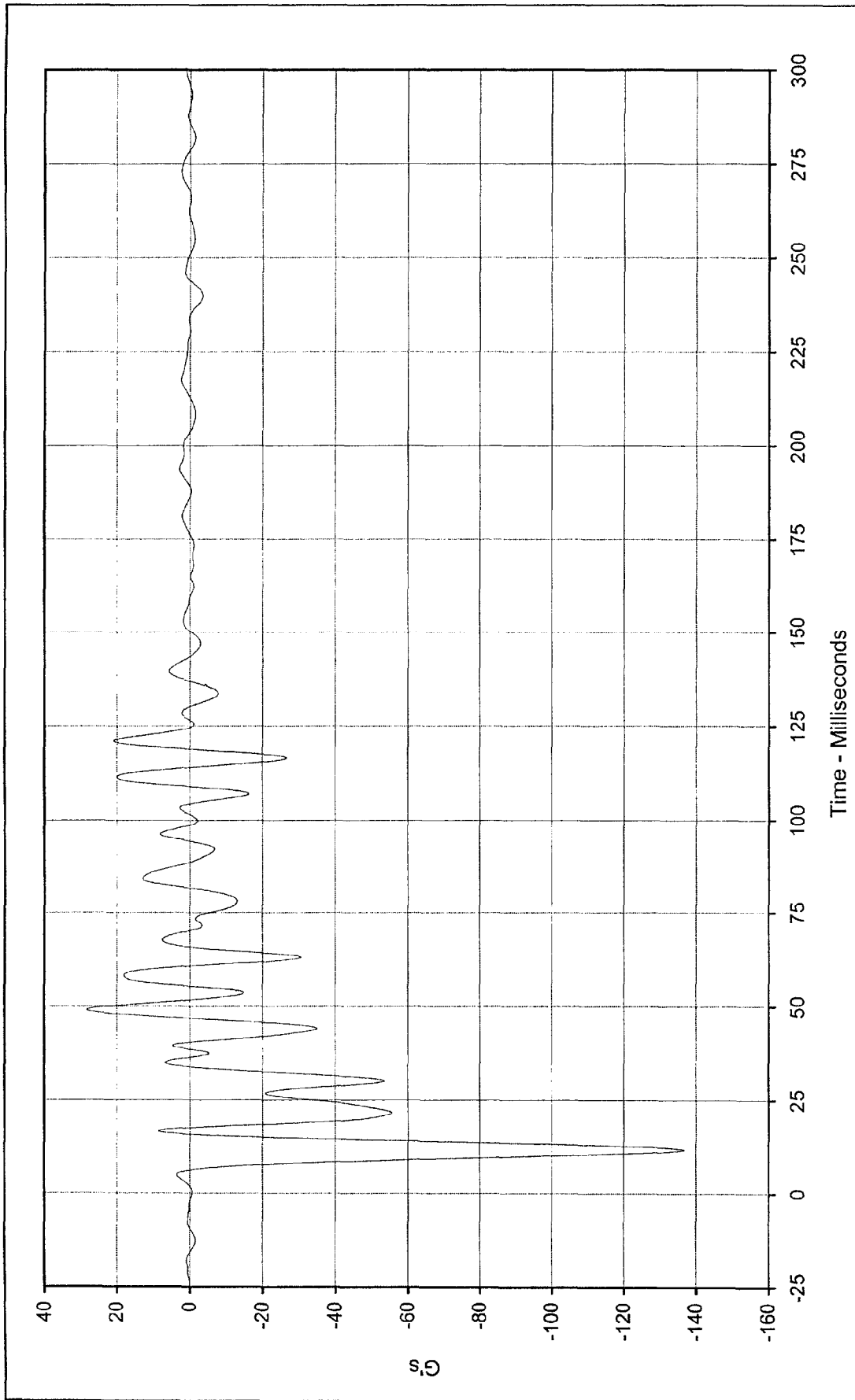




Curve Description:	Vehicle Left Brake Caliper Displ.	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW5701
Maximum Value:	135.0 at 299.9 Milliseconds	Test Vehicle:	1998 Isuzu Rodeo SUV	
Minimum Value:	0.0 at 0.0 Milliseconds			



SAE Filter Class:	180
Date of Test:	1/15/98
Curve Number:	IN2-093



Curve Description: Vehicle Right Brake Caliper Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Maximum Value: 28.2 at 49.2 Milliseconds

Minimum Value: -136.9 at 11.7 Milliseconds

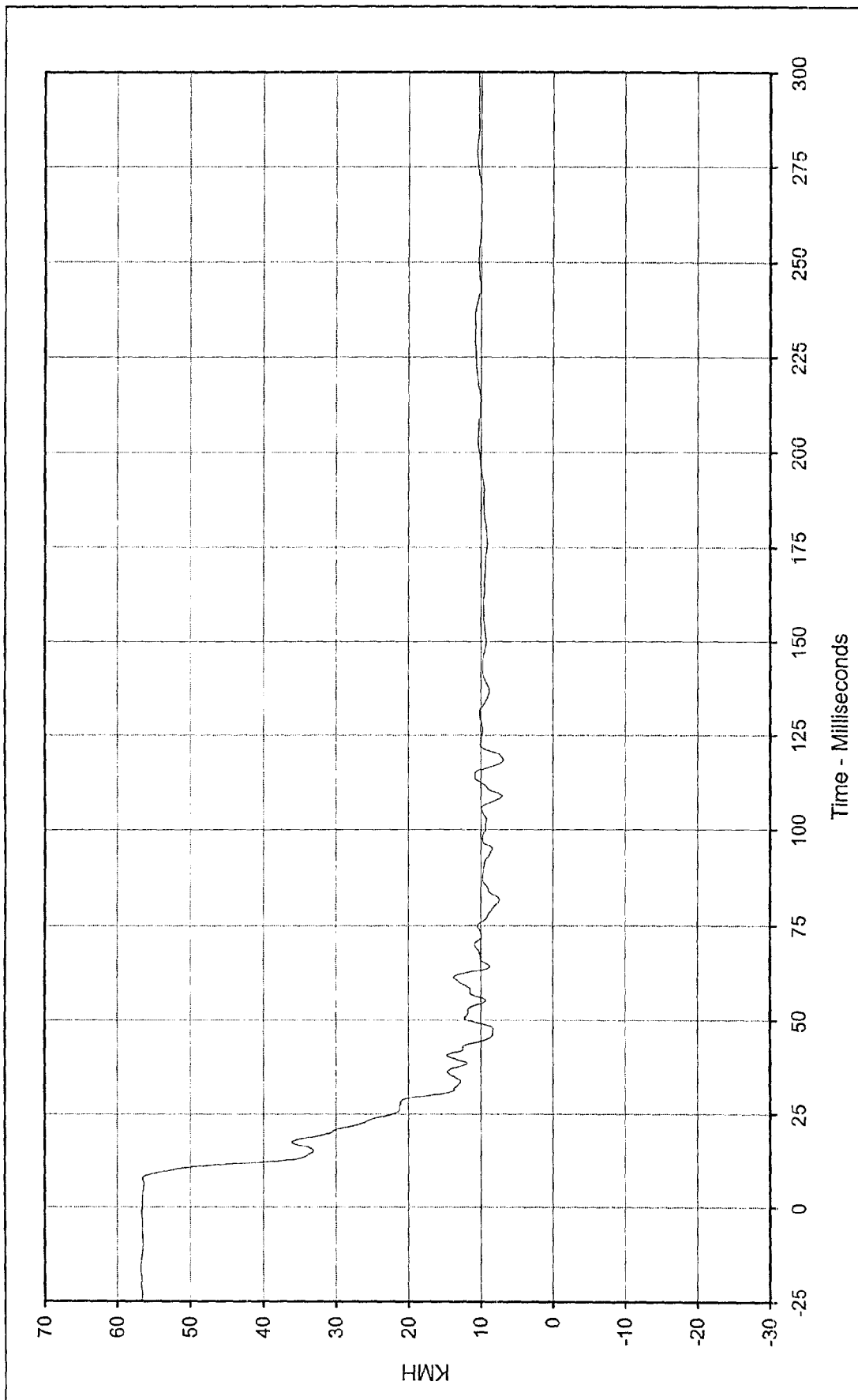
SAE Filter Class: 60

Date of Test: 1/15/98

Curve Number: FIL-094

Test Vehicle: 1998 Isuzu Rodeo SUV

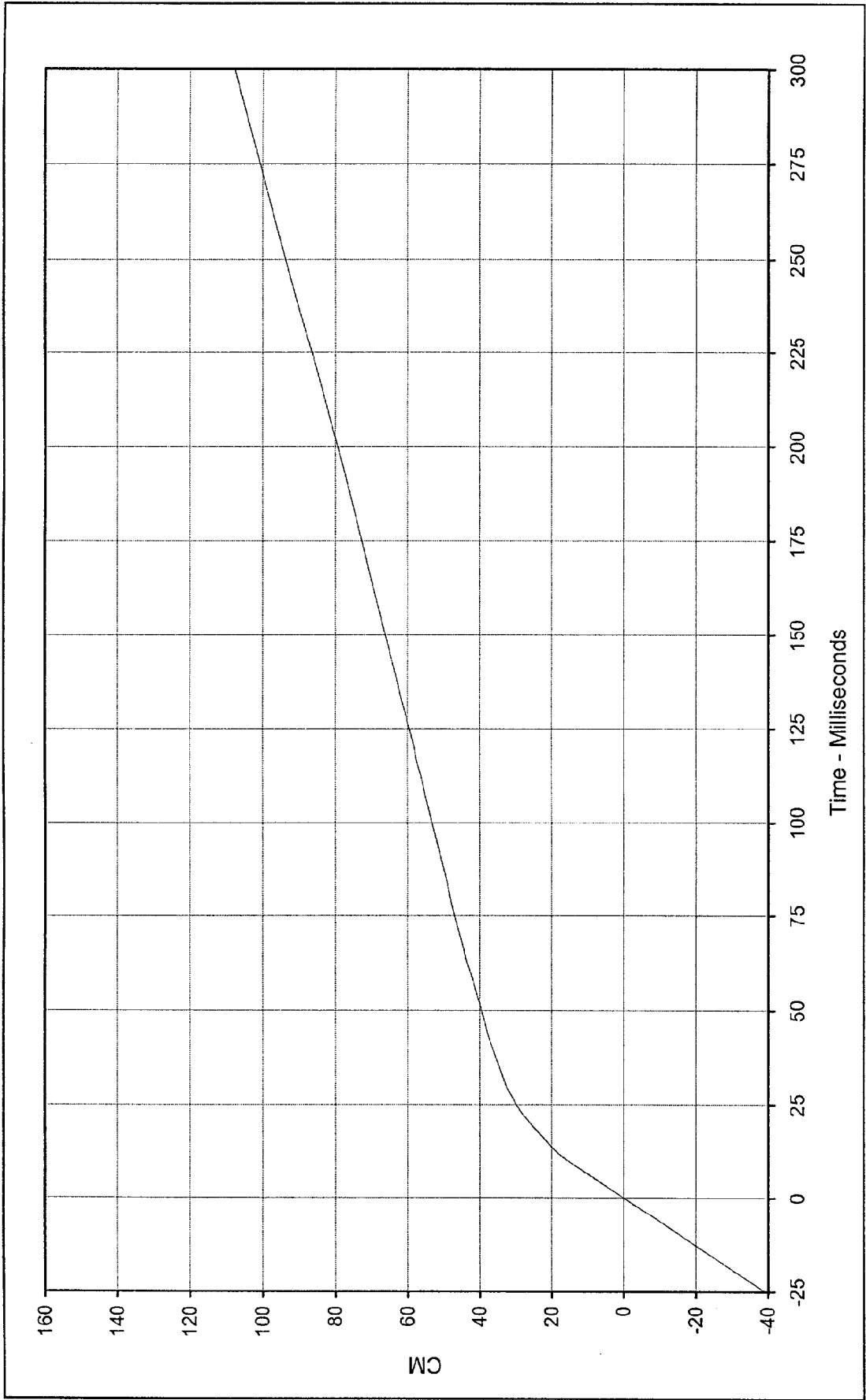




Curve Description: Vehicle Right Brake Caliper Velocity
 Maximum Value: 56.6 at 0.0 Milliseconds
 Minimum Value: 6.9 at 118.5 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/15/98
 Curve Number: IN1-094

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Vehicle Right Brake Caliper Displ.

Maximum Value: 107.8 at 299.9 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

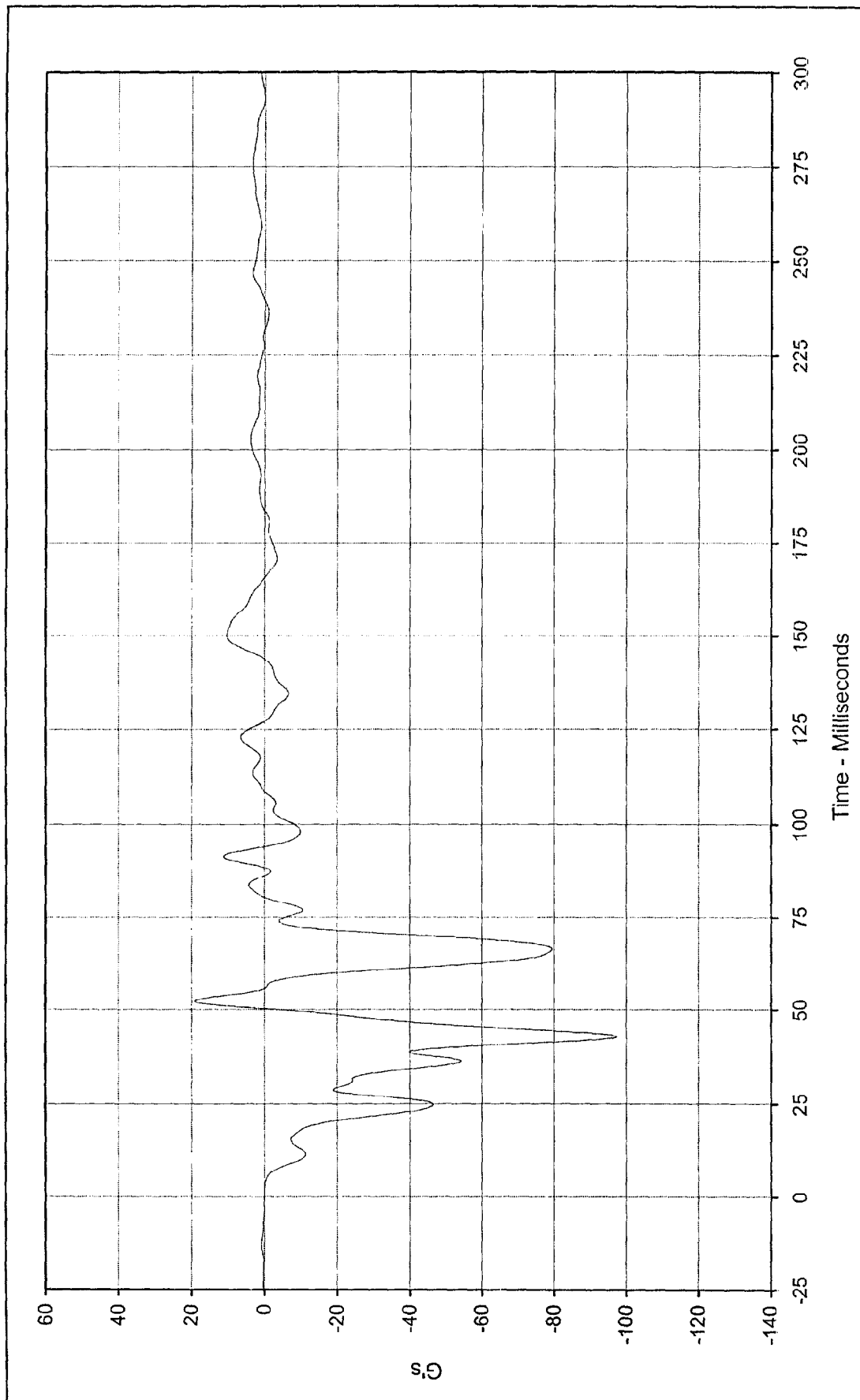
Date of Test: 1/15/98

Curve Number: IN2-094

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV

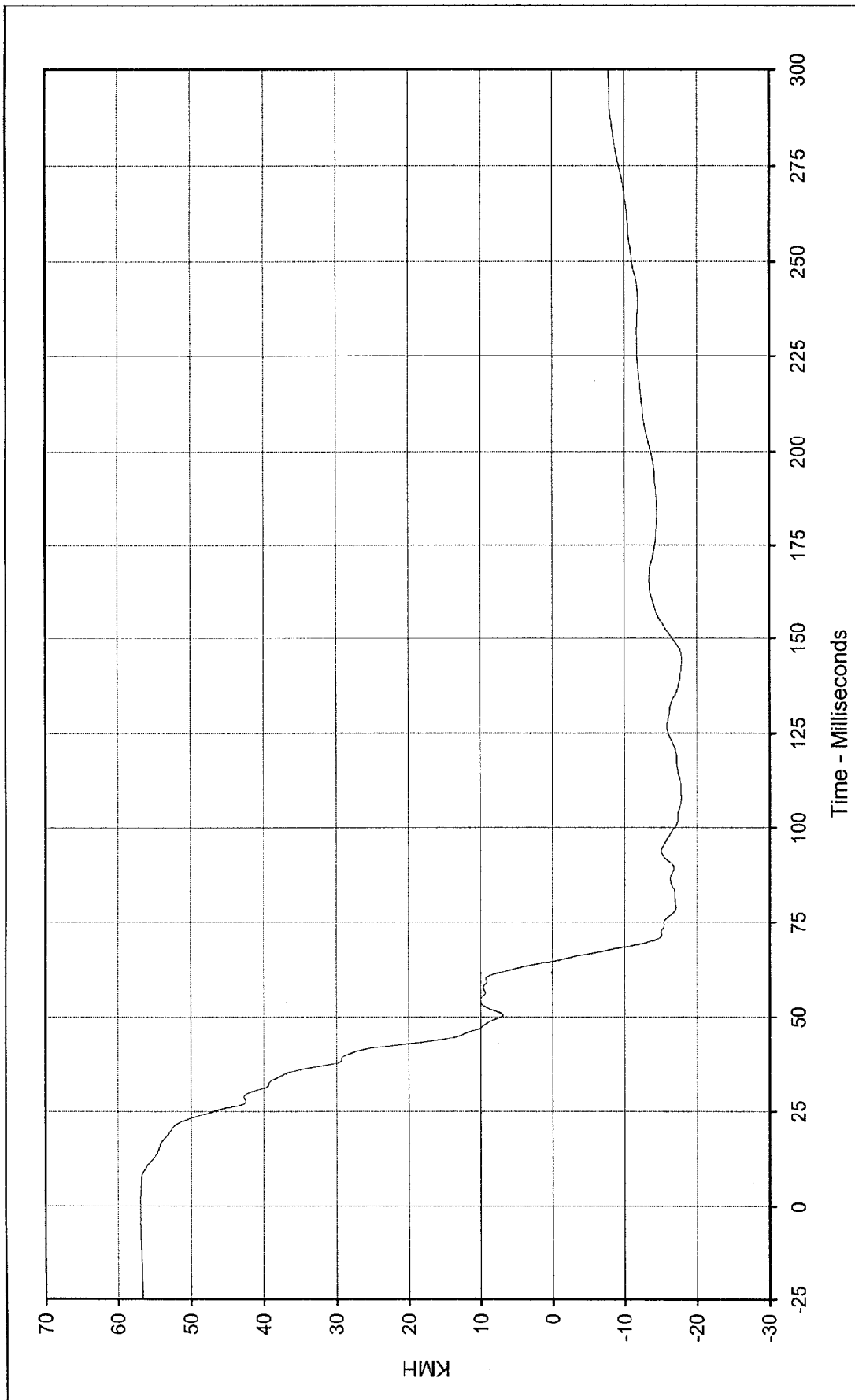




Curve Description: _____ Vehicle Instrument Panel _____
 Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV

Maximum Value: 19.1 at 52.3 Milliseconds
 Minimum Value: -97.3 at 42.8 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/15/98
 Curve Number: FIL-095





Curve Description: Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Maximum Value: 56.9 at 0.9 Milliseconds

Minimum Value: -17.9 at 144.3 Milliseconds

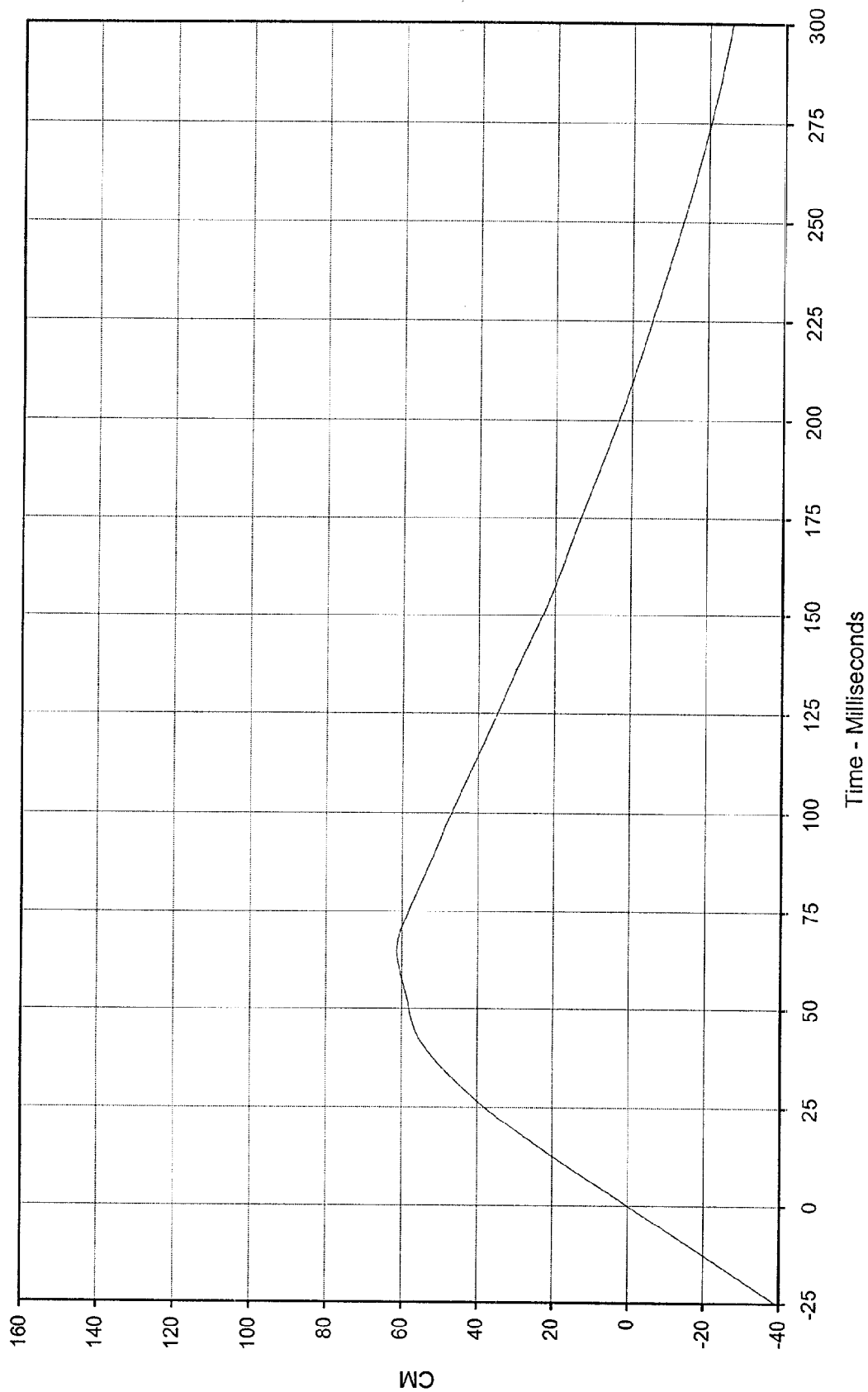
SAE Filter Class: 180

Date of Test: 1/15/98

Curve Number: IN1-095

Test Vehicle: 1998 Isuzu Rodeo SUV

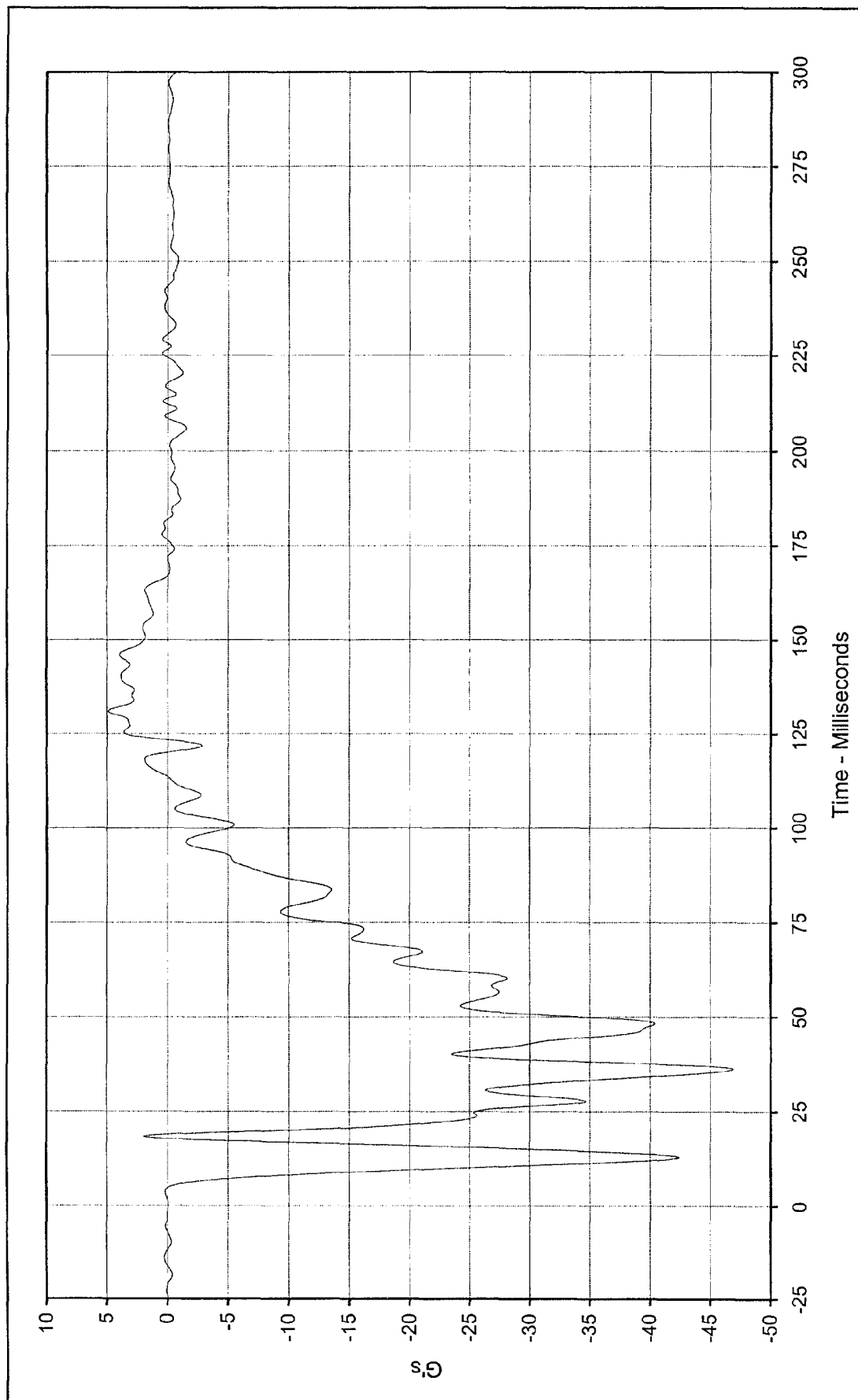




Curve Description: Vehicle Instrument Panel Displ.
Maximum Value: 61.3 at 64.7 Milliseconds
Minimum Value: -26.1 at 299.9 Milliseconds
SAE Filter Class: 180
Date of Test: 1/15/98
Curve Number: IN2-095

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Vehicle Left Rear Redundant

Maximum Value: 4.9 at 131.2 Milliseconds

Minimum Value: -46.9 at 36.1 Milliseconds

SAE Filter Class: 60

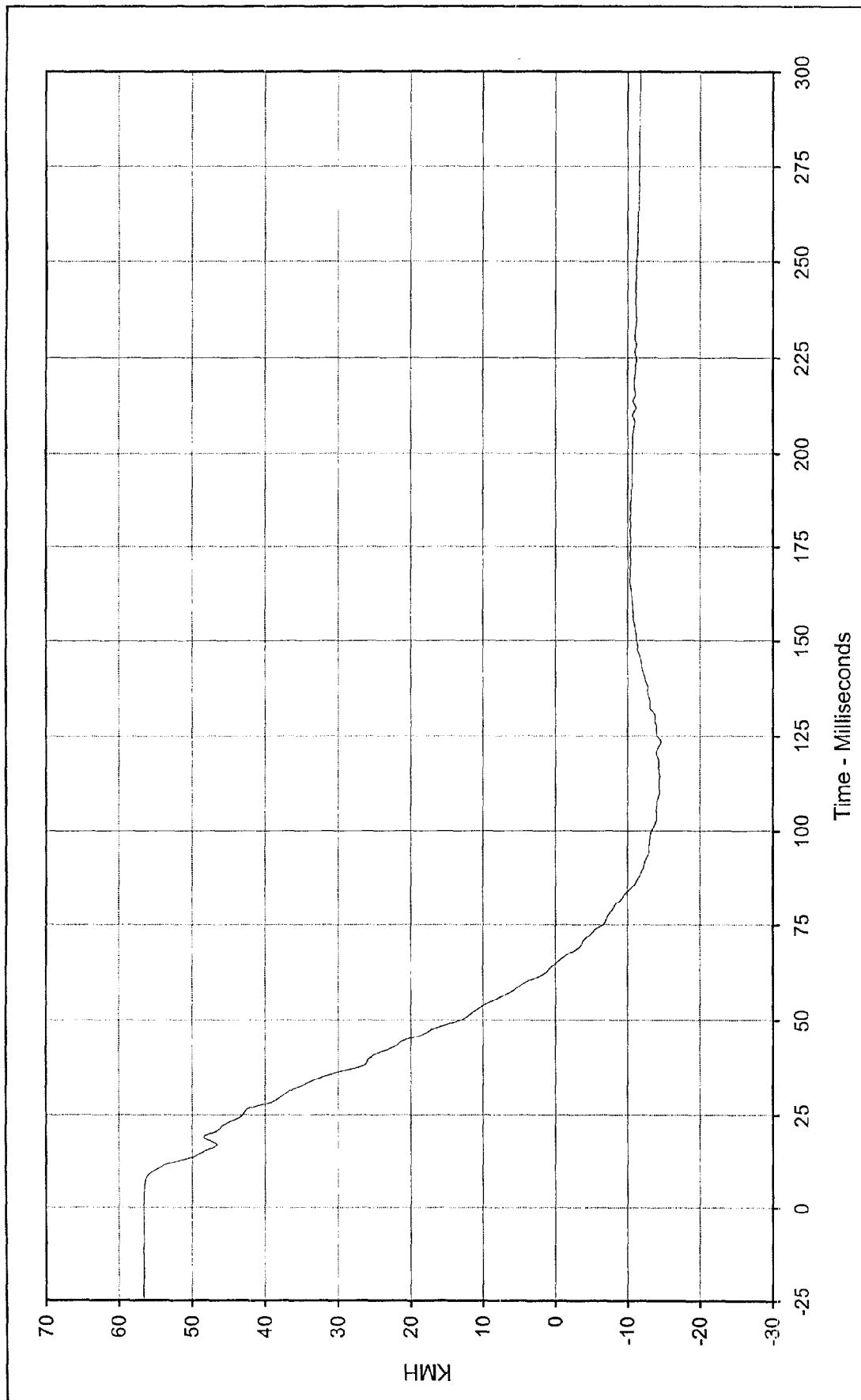
Date of Test: 1/15/98

Curve Number: FIL-096

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV

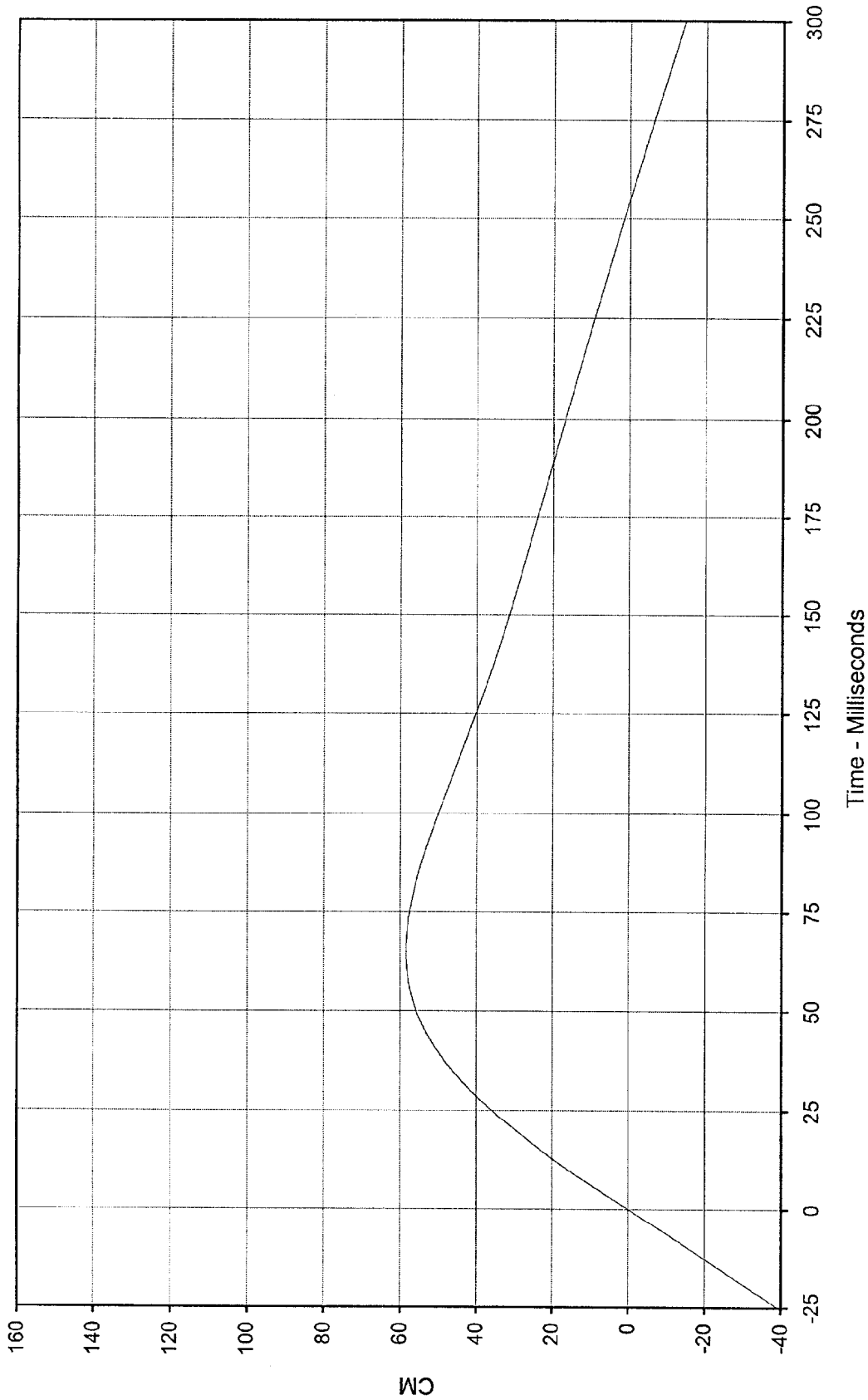




Curve Description: Vehicle Left Rear Redundant Velocity
 Maximum Value: 56.6 at 0.2 Milliseconds
 Minimum Value: -14.6 at 123.5 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/15/98
 Curve Number: IN1-096

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701
 Test Vehicle: 1998 Isuzu Rodeo SUV





Curve Description: Vehicle Left Rear Redundant Displ.

Maximum Value:	58.4	at	64.9	Milliseconds
Minimum Value:	-14.4	at	299.9	Milliseconds
SAE Filter Class:	180			
Date of Test:	1/15/98			
Curve Number:	IN2-096			

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5701

Test Vehicle: 1998 Isuzu Rodeo SUV



APPENDIX C

LOAD CELL BARRIER INFORMATION (NOT APPLICABLE FOR THIS TEST)

APPENDIX D
INSTRUMENTATION DATA CHANNEL ASSIGNMENTS

**Ncap Test With Hybrid III Male 50th Percentile ATD
Instrumentation Data Channel Assignments**

Driver A.T.D Serial Number 35

Test Date: 1/15/98

Vehicle: 1998 Isuzu Rodeo 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	N.m
11	NECK MOMENT	Y	GPUN01MY	Load cell, six axis neck	R. A. Denton	1716A	N.m
12	NECK MOMENT	Z	GPUN01MZ	Load cell, six axis neck	R. A. Denton	1716A	N.m
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	GPRP001	Potentiometer, Rotary	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	KEFF001	Load cell, Femur	R.A. Denton	2121	N
24	RIGHT FEMUR FORCE	Z	GPLC001	Load cell, Femur	G.S.E.	2430	N

Ncap Test With Hybrid III Male 50th Percentile ATD

Instrumentation Data Channel Assignments

Driver A.T.D Serial Number 35

Test Date: 1/15/98

Vehicle: 1998 Isuzu Rodeo SUV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
25	UP. TIBIA LEFT MOM.	X	GPUT01MX	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
26	UP. TIBIA LEFT MOM.	Y	GPUT01MY	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
27	UP. TIBIA RIGHT MOM.	X	GPUT02MX	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
28	UP. TIBIA RIGHT MOM.	Y	GPUT02MY	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
29	LWR. TIBIA LEFT FORCE	Y	GPLT01FY	3 ch., lower tibia gage	R. A. Denton	1584	N
30	LWR. TIBIA LEFT FORCE	Z	GPLT01FZ	3 ch., lower tibia gage	R. A. Denton	1584	N
31	LWR. TIBIA LEFT MOM.	X	GPLT01MX	3 ch., lower tibia gage	R. A. Denton	1584	N.m
32	LWR. TIBIA RIGHT FORCE	Y	GPLT02FY	3 ch., lower tibia gage	R. A. Denton	1584	N
33	LWR. TIBIA RIGHT FORCE	Z	GPLT02FZ	3 ch., lower tibia gage	R. A. Denton	1584	N
34	LWR. TIBIA RIGHT MOM.	X	GPLT02MX	3 ch., lower tibia gage	R. A. Denton	1584	N.m
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	KELC001	Load cell, Seat belt	Lebow	3371	N
42	SHOULDER BELT FORCE	X	KELC002	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

Ncap Test With Hybrid III Male 50th Percentile ATD

Instrumentation Data Channel Assignments

Passenger A.T.D Serial Number 34

Test Date: 1/15/98

Vehicle: 1998 Isuzu Rodeo 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	N.m
55	NECK MOMENT	Y	GPUN02MY	Load cell, six axis neck	R. A. Denton	1716A	N.m
56	NECK MOMENT	Z	GPUN02MZ	Load cell, six axis neck	R. A. Denton	1716A	N.m
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	GPAP002	Potentiometer, Rotary	Servo	14CBI	MM
64	PELVIS, PRIMARY	X	GPAC009	Accel., 1/2 bridge	Endevco	7264-2000	G
65	PELVIS, PRIMARY	Y	GPAC017	Accel., 1/2 bridge	Endevco	7264-2000	G
66	PELVIS, PRIMARY	Z	GPAC018	Accel., 1/2 bridge	Endevco	7264-2000	G
67	LEFT FEMUR FORCE	Z	KEFF003	Load cell, Femur	R.A. Denton	2121	N
68	RIGHT FEMUR FORCE	Z	KEFF002	Load cell, Femur	R.A. Denton	2121	N

Ncap Test With Hybrid III Male 50th Percentile ATD

Instrumentation Data Channel Assignments

Passenger A.T.D Serial Number 34

Test Date: 1/15/98

Vehicle: 1998 Isuzu Rodeo SUV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
69	UP. TIBIA LEFT MOM.	X	GPUT03MX	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
70	UP. TIBIA LEFT MOM.	Y	GPUT03MY	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
71	UP. TIBIA RIGHT MOM.	X	GPUT04MX	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
72	UP. TIBIA RIGHT MOM.	Y	GPUT04MY	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
73	LWR. TIBIA LEFT FORCE	Y	GPLT03FY	3 ch., lower tibia gage	R. A. Denton	1584	N
74	LWR. TIBIA LEFT FORCE	Z	GPLT03FZ	3 ch., lower tibia gage	R. A. Denton	1584	N
75	LWR. TIBIA LEFT MOM.	X	GPLT03MX	3 ch., lower tibia gage	R. A. Denton	1584	N.m
76	LWR. TIBIA RIGHT FORCE	Y	GPLT04FY	3 ch., lower tibia gage	R. A. Denton	1584	N
77	LWR. TIBIA RIGHT FORCE	Z	GPLT04FZ	3 ch., lower tibia gage	R. A. Denton	1584	N
78	LWR. TIBIA RIGHT MOM.	X	GPLT04MX	3 ch., lower tibia gage	R. A. Denton	1584	N.m
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	KELC003	Load cell, Seat belt	Lebow	3371	N
86	SHOULDER BELT FORCE	X	KELC004	Load cell, Seat belt	Lebow	3371	N
87	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	MM
88	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

**Ncap Test With Hybrid III Male 50th Percentile ATD
Instrumentation Data Channel Assignments**

Vehicle Accelerometers

Test Date: 1/15/98

Vehicle: 1998 Isuzu Rodeo SUV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
89	LEFT REAR PRIMARY	X	KEVA005	Accel., Vehicle block	I.C. Sensor	3031-500	G
90	RIGHT REAR PRIMARY	X	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	X	KEVA002	Accel., Vehicle block	I.C. Sensor	3031-500	G
93	LEFT BRAKE CALIPER	X	KEVA010	Accel., Vehicle block	I.C. Sensor	3031-500	G
94	RIGHT BRAKE CALIPER	X	KEVA004	Accel., Vehicle block	I.C. Sensor	3031-500	G
95	INSTUMENT PANEL	X	KEVA007	Accel., Vehicle block	I.C. Sensor	3031-200	G
96	LEFT REAR REDUNDANT	X	KEVA011	Accel., Vehicle block	I.C. Sensor	3031-200	G

APPENDIX E
DUMMY CALIBRATION DATA



Hybrid III Calibration Data Sheet

50TH Percentile Male

Left Knee Impact Test

ATD Serial No.: 034

Part Serial No.: N/A

Test I.D.: H3K12

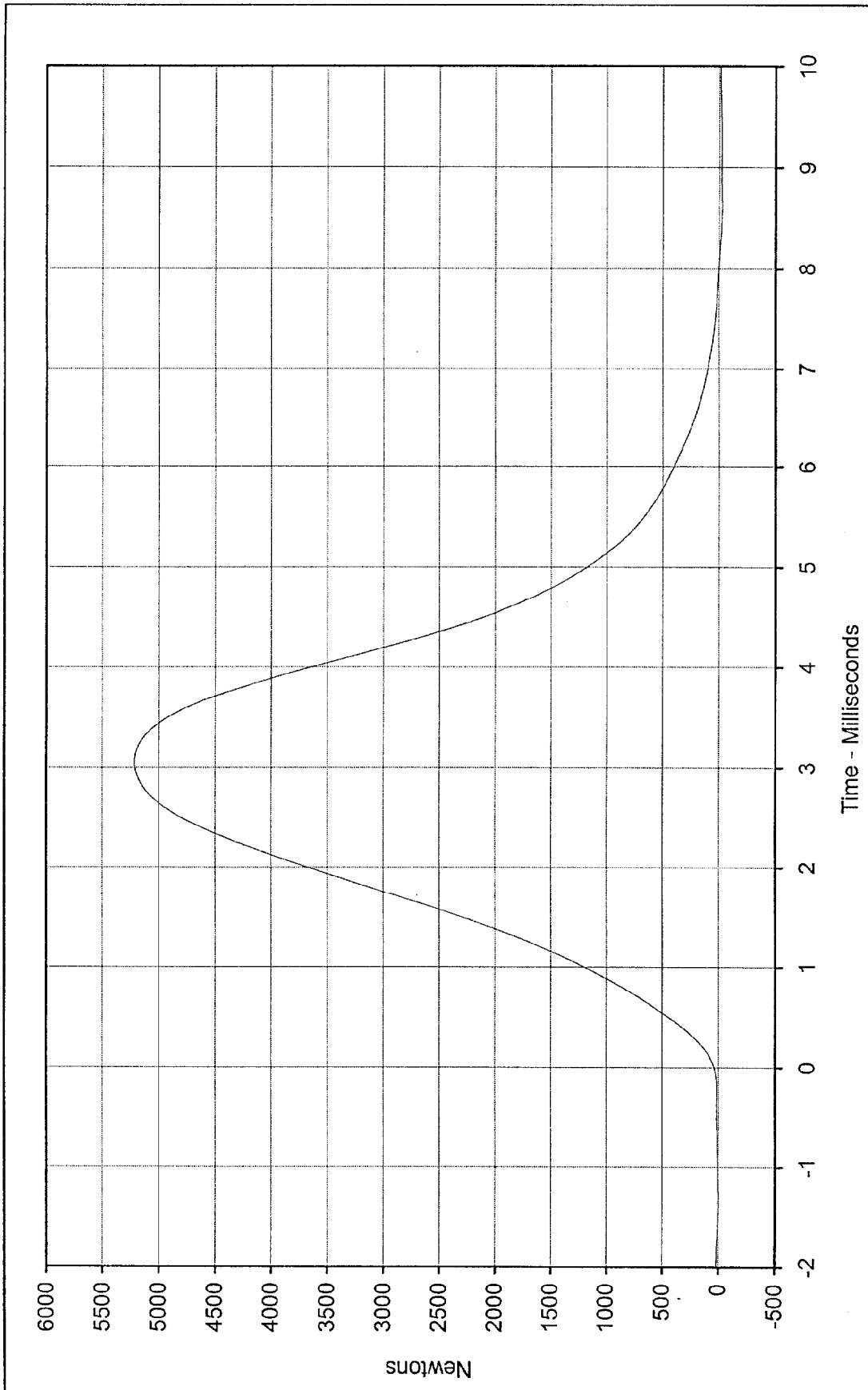
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	2.073 to 2.134	2.129	Pass
Peak Probe Force	Newtons	4715 to 5782	5212.6	Pass
Overall Test Results				Pass

N 208
Laboratory Technician

Zakir Hussain
Approved By

December 15, 1997
Test Date

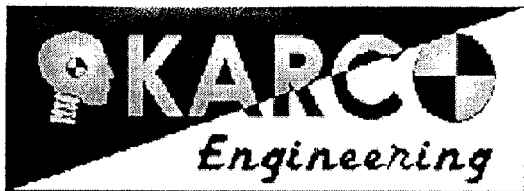
12/15/97
Date



Testing Program: Hybrid III Left Knee Impact Test
 Test Information: Part S/N: N/A Test I.D.: H3K12



Curve Description:		Probe Force	
Maximum Value:	5212.6	at	3.1
Minimum Value:	-1.2	at	-1.4
SAE Filter Class:	600		
Date of Test:	12/15/97		
ATD Serial No.:	034		



Hybrid III Calibration Data Sheet

50TH Percentile Male

Right Knee Impact Test

ATD Serial No.: 034

Part Serial No.: N/A

Test I.D.: H3K09

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	20.6	Pass
Laboratory Relative Humidity	%	10 to 70	33	Pass
Probe Velocity	m/s	2.073 to 2.134	2.122	Pass
Peak Probe Force	Newtons	4715 to 5782	5626.9	Pass
Overall Test Results				Pass

N 2 Oilp
Laboratory Technician

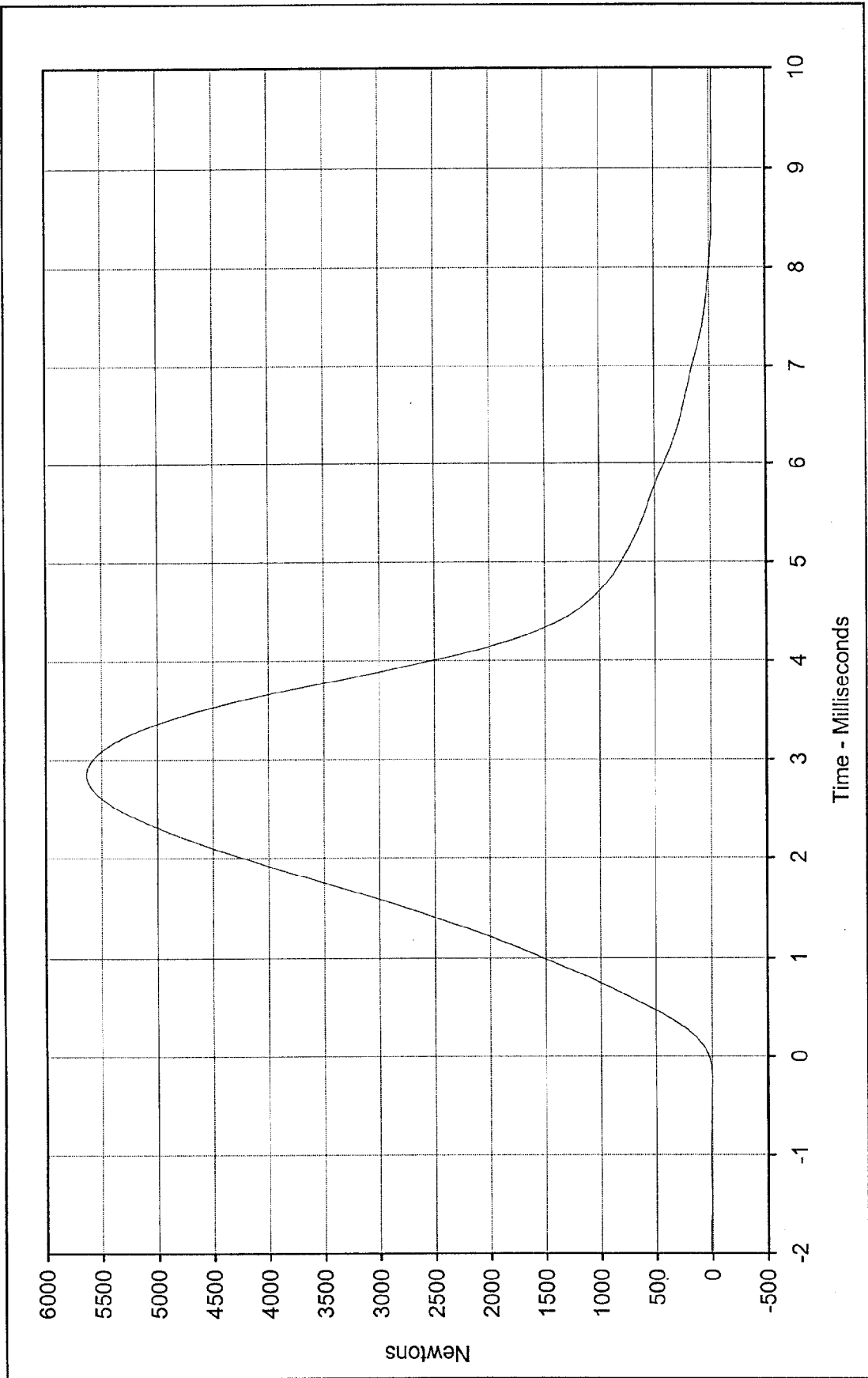
J W Rubens
Approved By

December 15, 1997

Test Date

12/15/97

Date



Curve Description:	Probe Force	Testing Program:	Hybrid III Right Knee Impact Test
Maximum Value:	5626.9 at 2.9 Milliseconds	Test Information:	Part S/N: N/A Test I.D.: H3K09
Minimum Value:	0.6 at 8.0 Milliseconds		
SAE Filter Class:	600		
Date of Test:	12/15/97		
ATD Serial No.:	034		





Hybrid III Calibration Data Sheet

50TH Percentile Male

Head Drop Calibration

ATD Serial No.: 34

Part Serial No.: N/A

Test I.D.: HD100

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	40	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	267.6	Pass
Peak Lateral Acceleration	G's	≤15.0	3.3	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

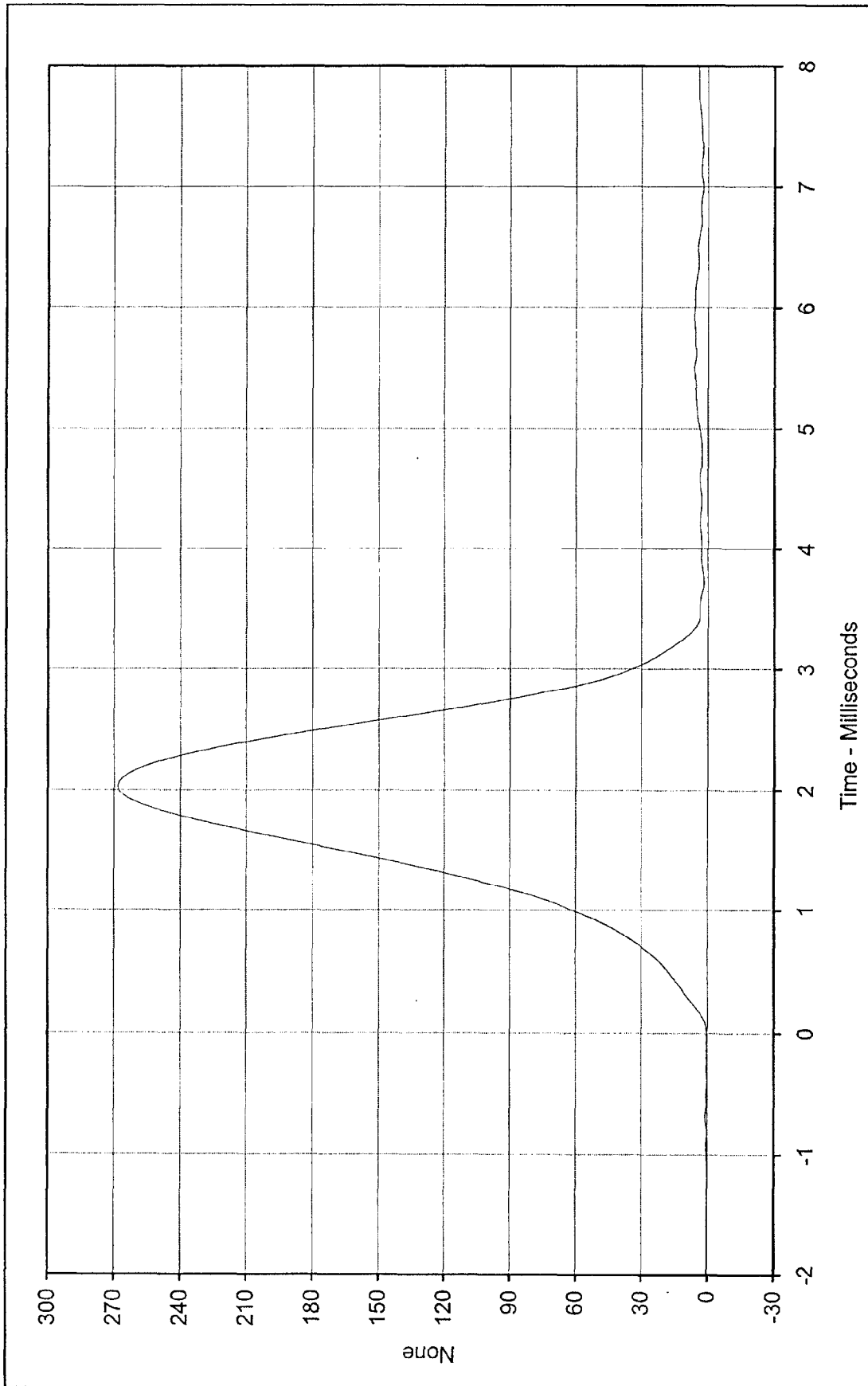
N. 2000
Laboratory Technician

J. A. Hansen
Approved By

December 15, 1997

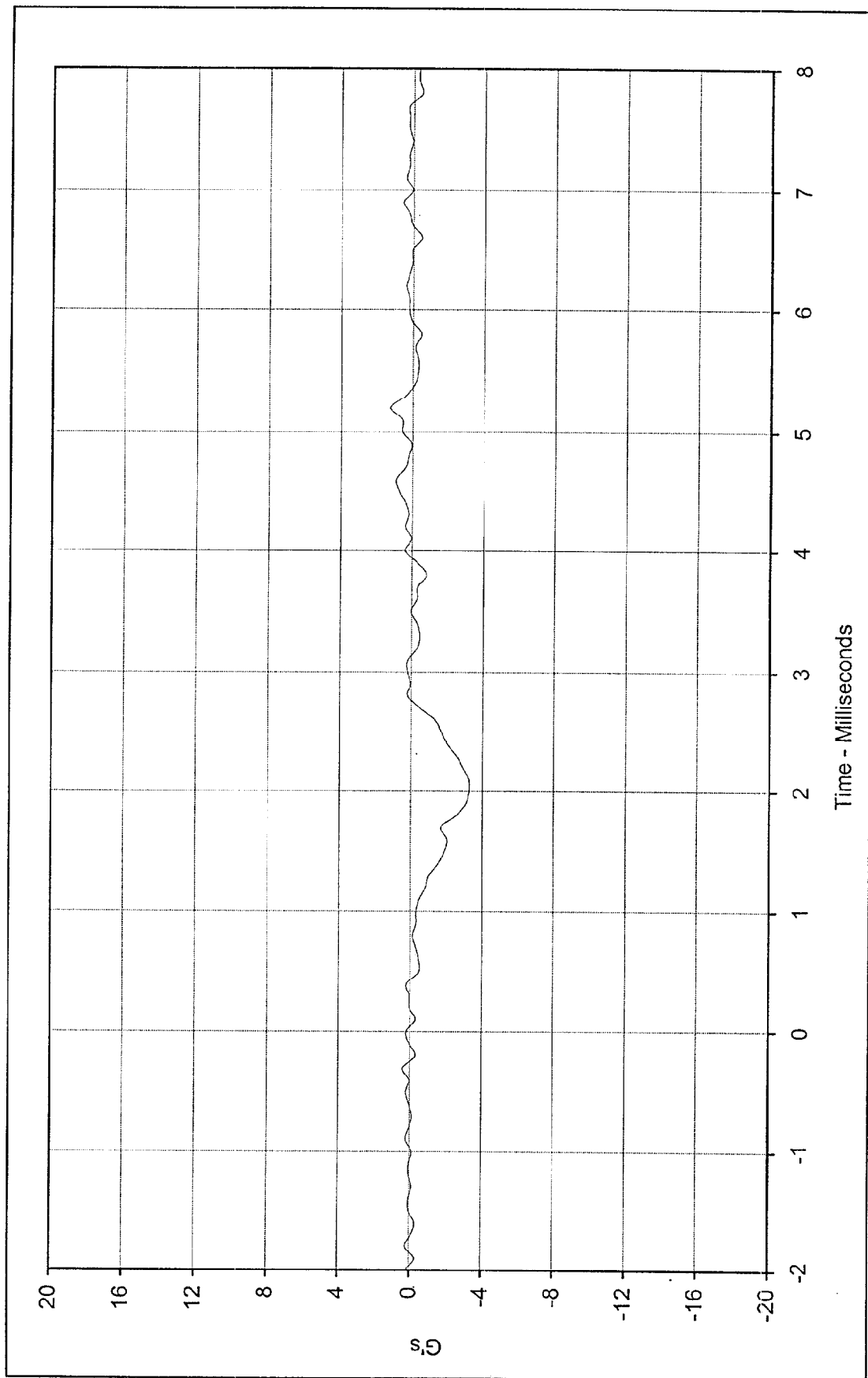
Test Date

12/15/97
Date



Curve Description: Head Resultant Acceleration
 Maximum Value: 267.6 at 2.0 Milliseconds
 Minimum Value: 0.1 at -1.4 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/15/97
 ATD Serial No.: 34





Curve Description:	Head Acceleration Y Axis	Testing Program	Hybrid III Head Drop Calibration (Male)
Maximum Value:	1.3 at 5.2 Milliseconds	Test Information:	S/N of Part: N/A Test I.D.: HD100
Minimum Value:	-3.3 at 2.0 Milliseconds		
SAE Filter Class:	1000		
Date of Test:	12/15/97		
ATD Serial No.:	34		





Hybrid III Calibration Data Sheet

50TH Percentile Male

Thorax Impact Test

ATD Serial No.: 034

Part Serial No.: n/a

Test I.D.: CH101

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	39	Pass
Probe Velocity	m/s	6.58 to 6.82	6.71	Pass
Peak Probe Force	Newtons	5159 to 5893	5601	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.57	Pass
Internal Hysteresis	%	69 to 85	77.9	Pass
Overall Test Results				Pass

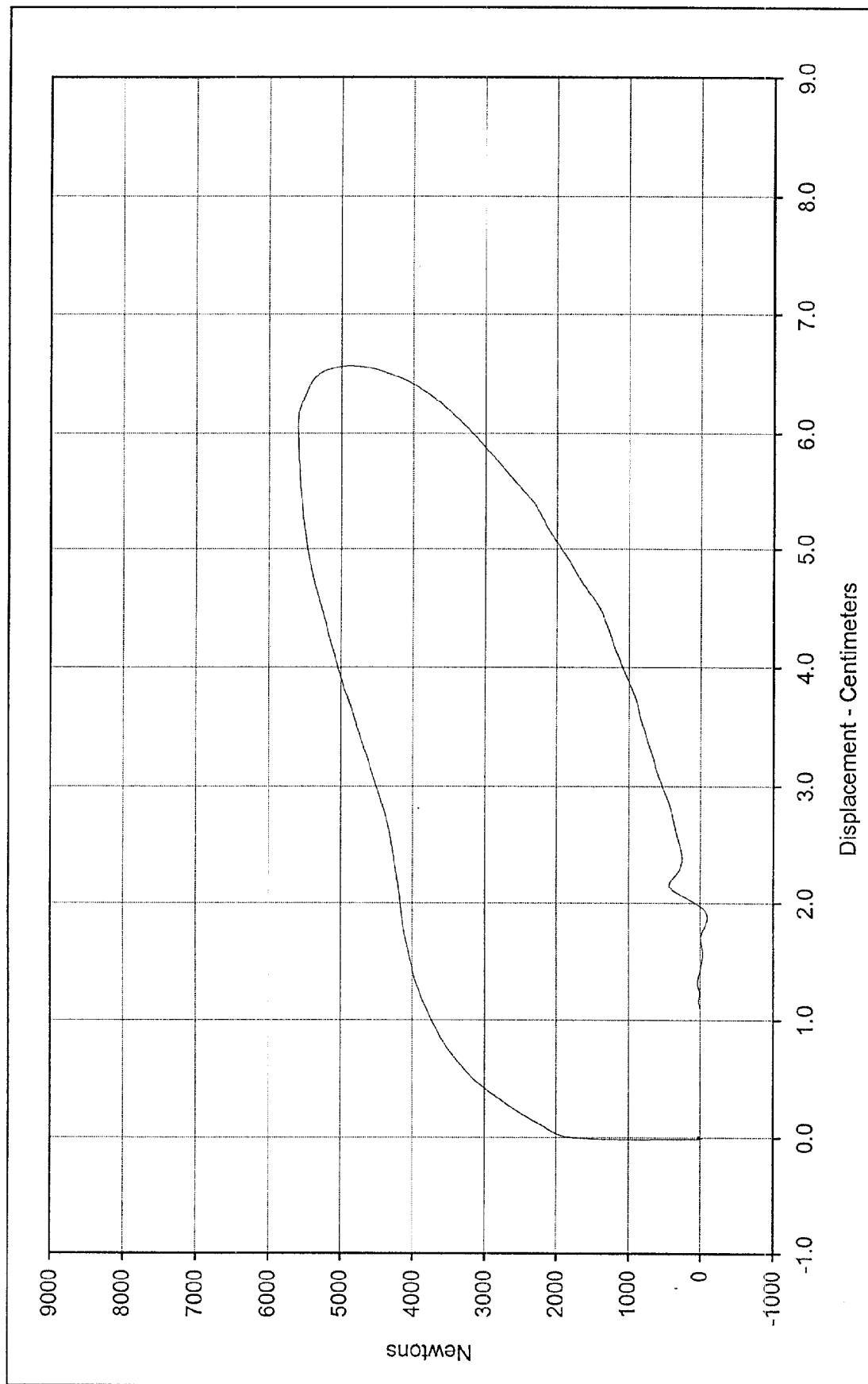
Laboratory Technician

Approved By

December 5, 1997

Test Date

Date



Curve Description:	Probe Force vs. Chest Displacement	Testing Program	Hybrid III Thorax Impact Test
Probe Force:	5501.2 Newtons	Test Information:	S/N of Part: n/a Test I.D.: CH101
Chest Displ.:	6.57 Centimeters		
SAE Filter Class:	180		
Date of Test:	12/5/97		
ATD Serial No.:	034		





Hybrid III Calibration Data Sheet

50TH Percentile Male

Neck Flexion Test

ATD Serial No.: 34Part Serial No.: n/aTest I.D.: NF100

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	36	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.92	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.8	Pass
	20 Msec.	G's	17.6 to 22.6	19.9	Pass
	30 Msec.	G's	12.5 to 18.5	16.5	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	16.5	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	35.0	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	74.2	Pass
	Time	Msec.	57.0 to 64.0	61.2	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	120.5	Pass
Moment About Occipital Condyle	Maximum	N • m	84.1 to 108.5	94.3	Pass
	Time	Msec.	47.0 to 58.0	50.9	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	106.2	Pass
Overall Test Results				Pass	

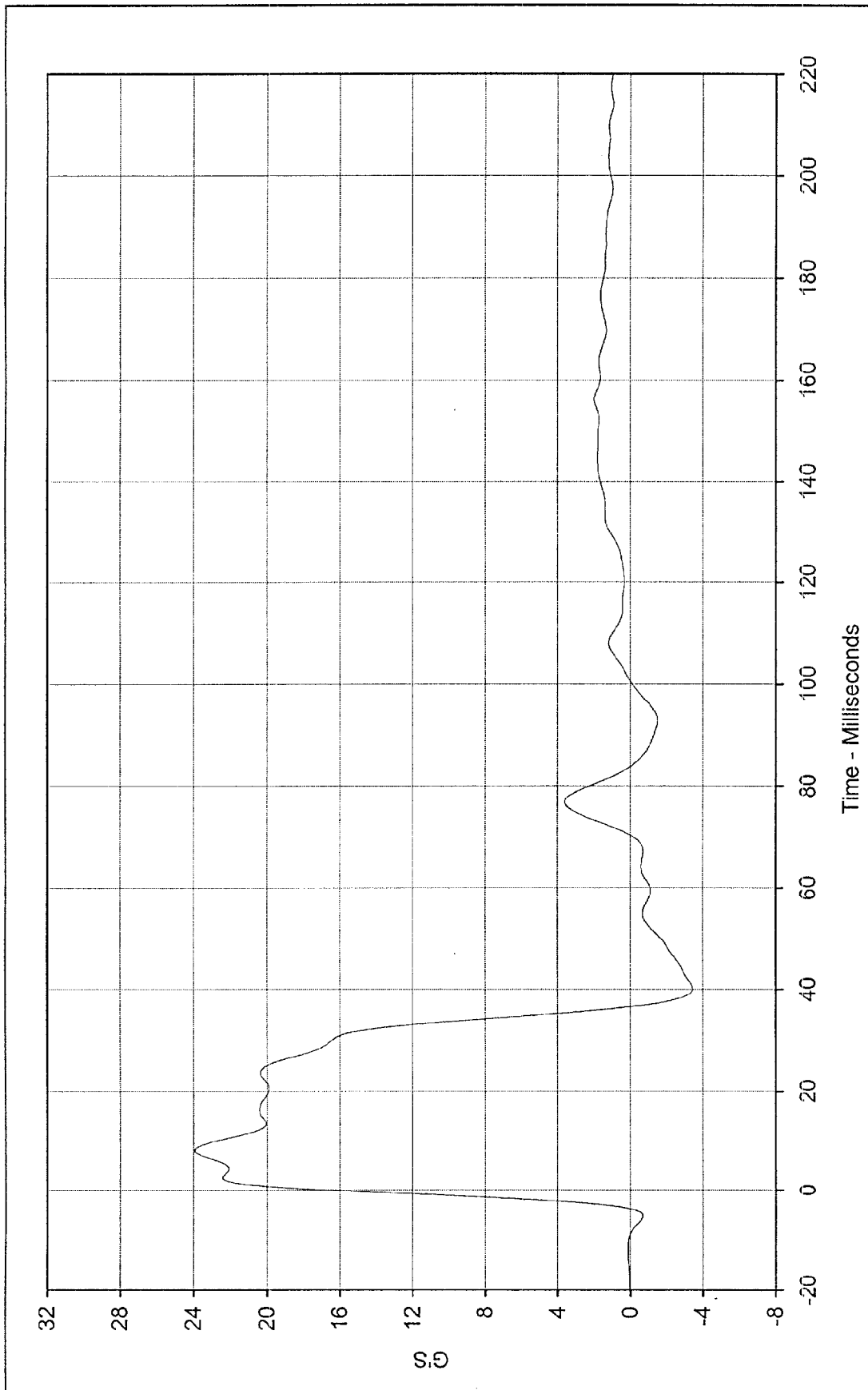
Laboratory Technician

Approved By

December 14, 1997

Test Date

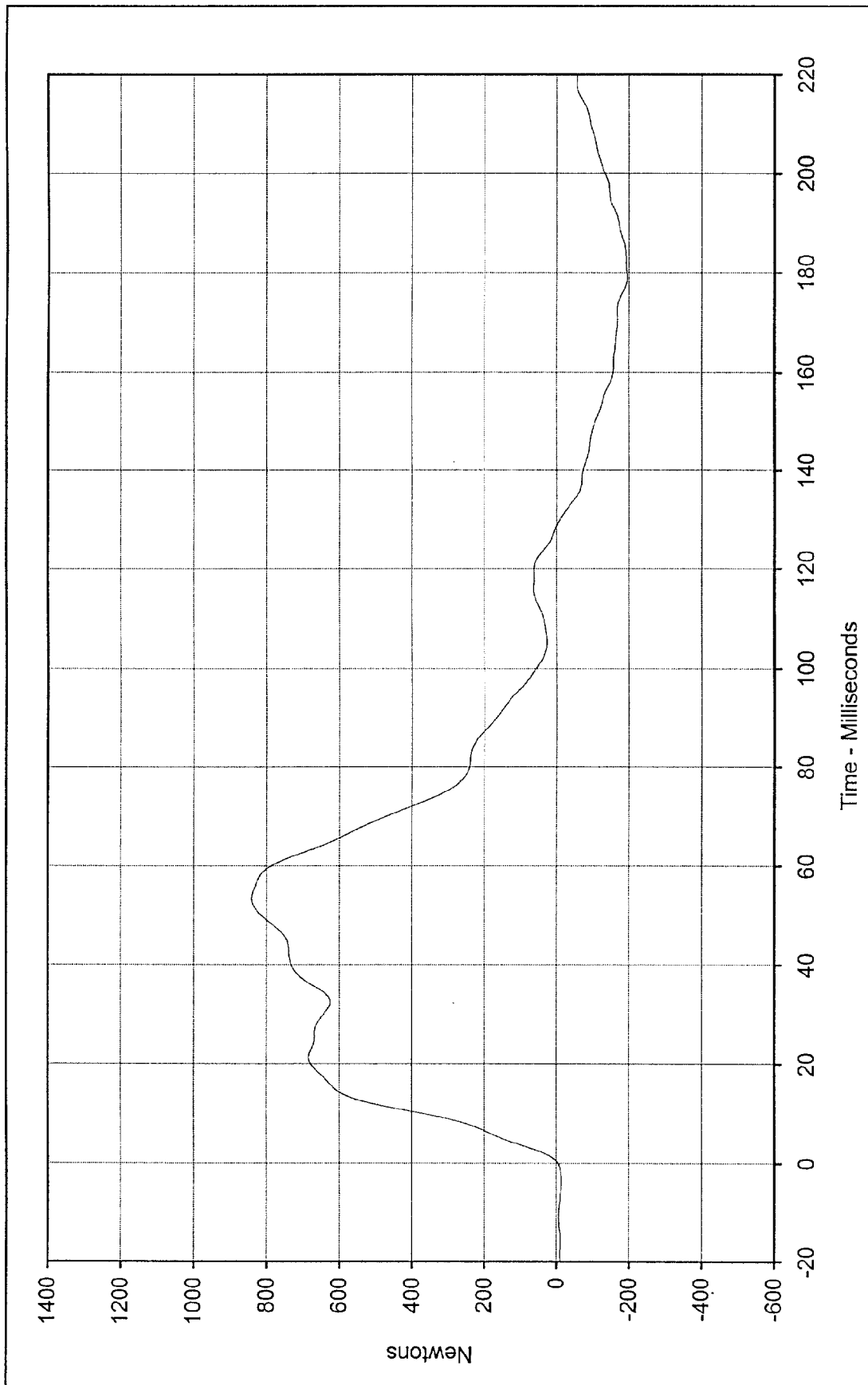
Date



Curve Description: Hybrid III Neck Flexion Test (Male)
 Testing Program: SN of Part: n/a Test I.D.: NF100

Pendulum Deceleration
 Maximum Value: 23.9 at 8.0 Milliseconds
 Minimum Value: -3.4 at 40.1 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/97
 ATD Serial No.: 34

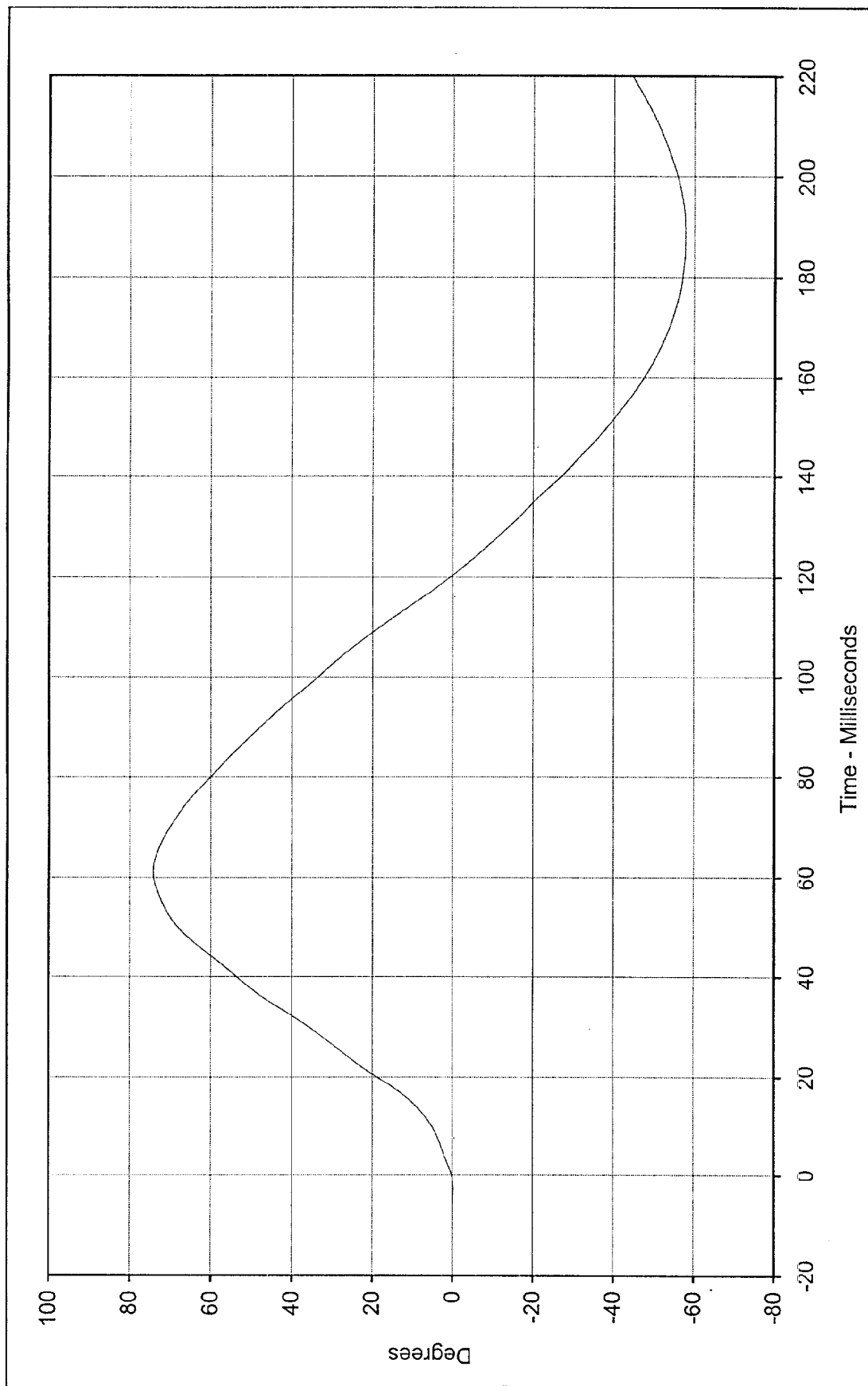




Testing Program: Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NF100

Curve Description: Neck Force X
 Maximum Value: 840.8 at 53.3 Milliseconds
 Minimum Value: -194.7 at 179.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/97
 ATD Serial No.: 34





Curve Description: Testing Program Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NF100

"D" Plane Rotation

Maximum Value: 74.2 at 61.2 Milliseconds

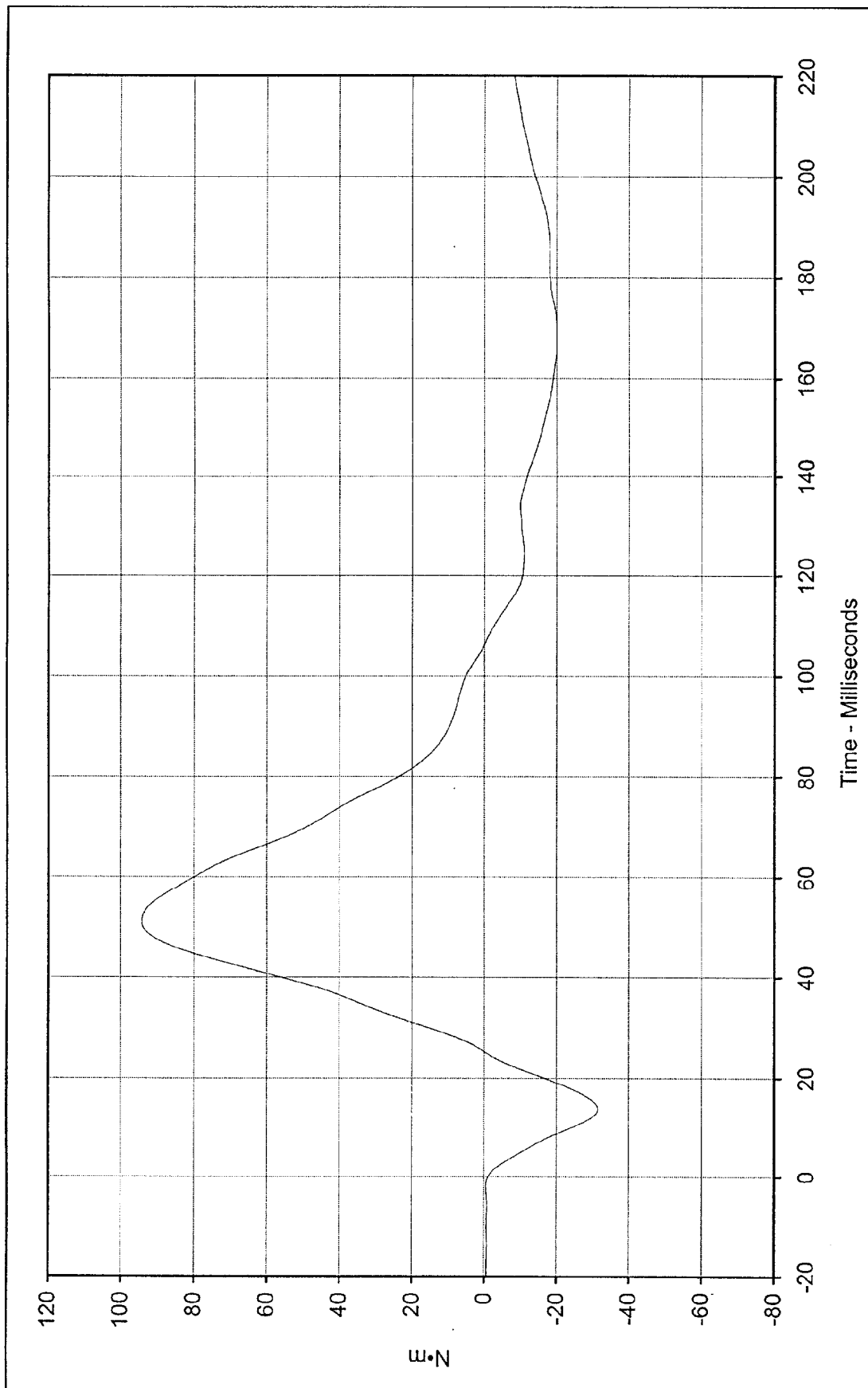
Minimum Value: -57.8 at 186.7 Milliseconds

SAE Filter Class: 60

Date of Test: 12/14/97

ATD Serial No.: 34





Curve Description: Moment About Occipital Condyles

Maximum Value: 94.3 at 50.9 Milliseconds

Minimum Value: -31.5 at 13.7 Milliseconds

SAE Filter Class: 60

Date of Test: 12/14/97

ATD Serial No.: 34

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NF100





Hybrid III Calibration Data Sheet

50TH Percentile Male

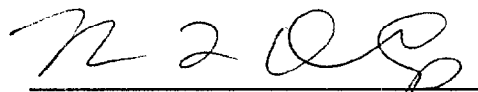
Neck Extension Test

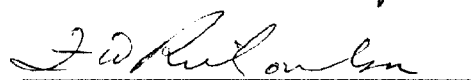
ATD Serial No.: 34

Part Serial No.: n/a

Test I.D.: NE101

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	36	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.06	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	18.0	Pass
	20 Msec.	G's	14.0 to 19.0	16.2	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	43.2	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	100.3	Pass
	Time	Msec.	72.0 to 82.0	77.8	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	162.5	Pass
Moment About Occipital Condyle	Maximum	N • m	-52.9 to- 79.9	-76.0	Pass
	Time	Msec.	65.0 to 79.0	73.2	Pass
Negative Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	147.1	Pass
Overall Test Results				Pass	


Laboratory Technician

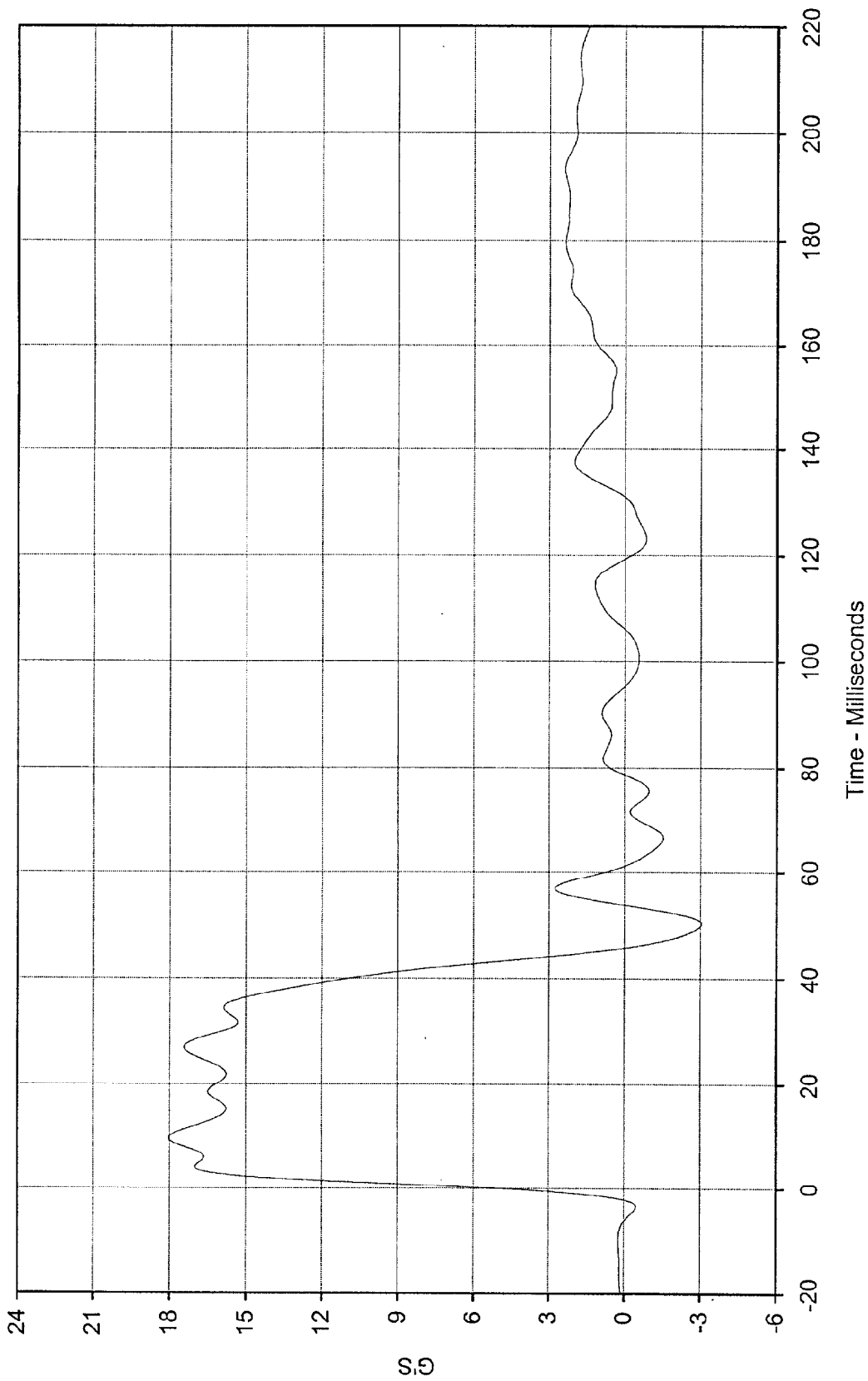

Approved By

December 14, 1997

Test Date

12/17/97

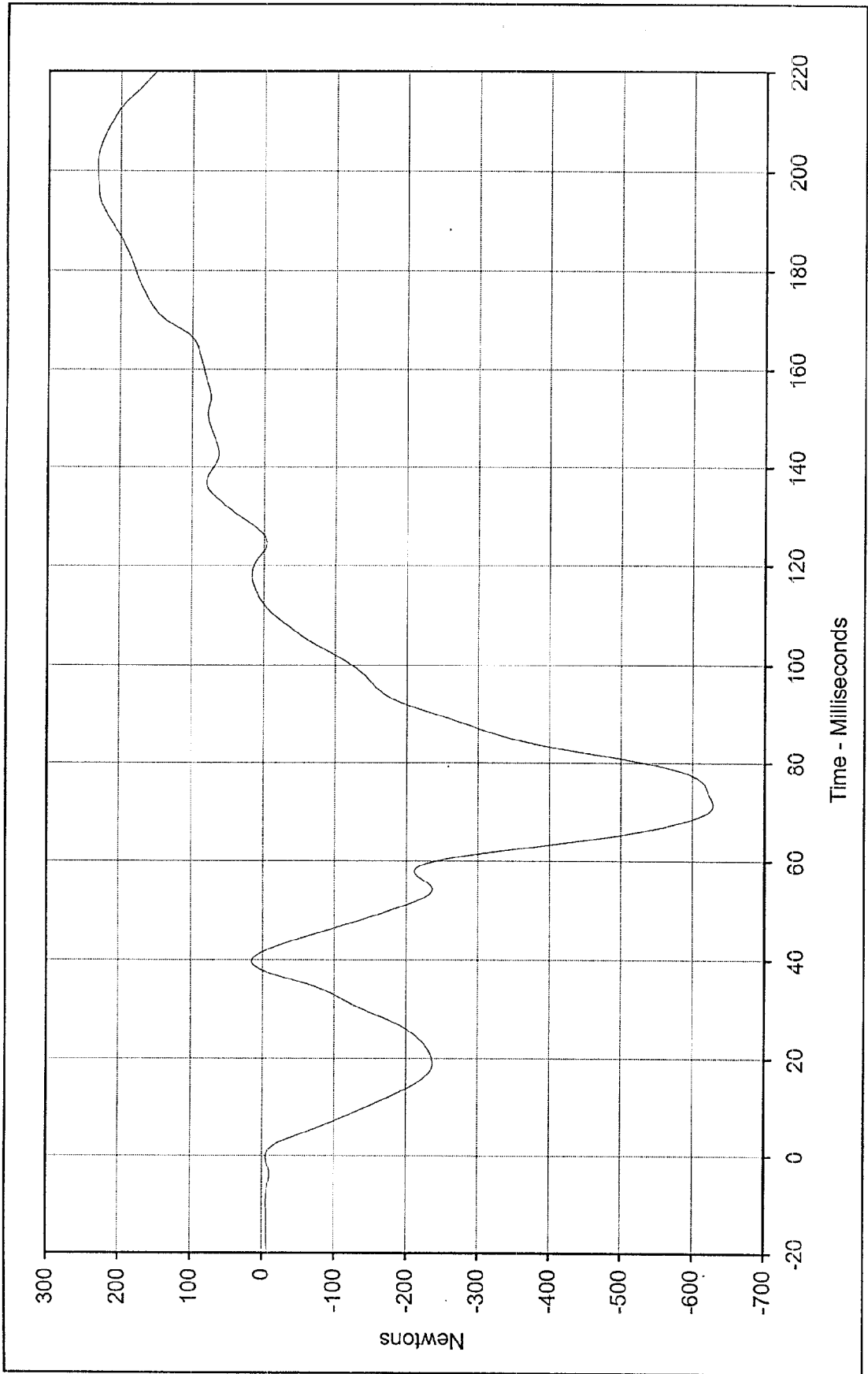
Date



Curve Description:	Pendulum Deceleration	Testing Program	Hybrid III Neck Extension Test (Male)
Maximum Value:	18.0 at 9.8 Milliseconds	Test Information:	S/N of Part: n/a Test I.D.: NE101
Minimum Value:	-3.0 at 50.2 Milliseconds		



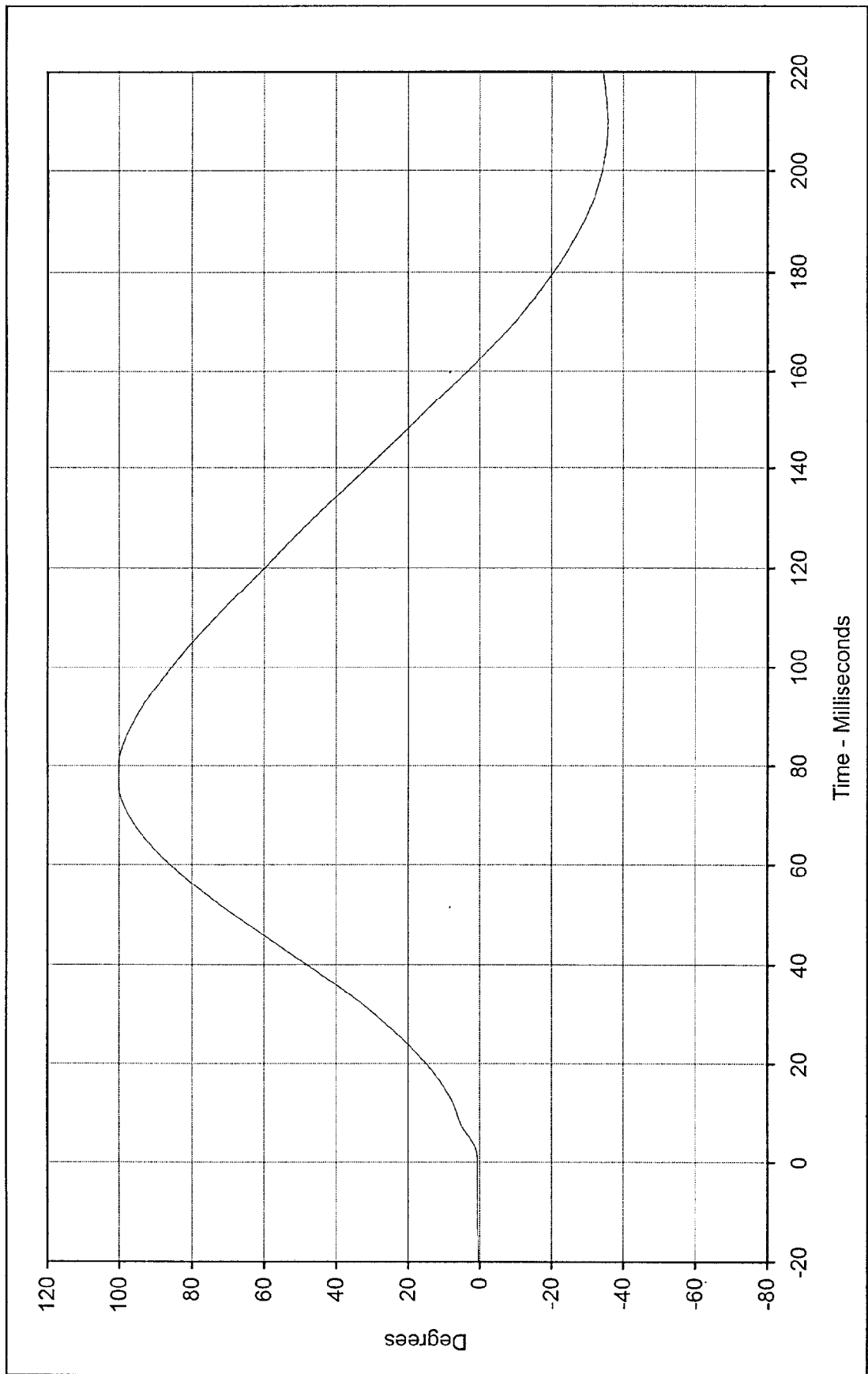
SAE Filter Class:	60
Date of Test:	12/14/97
ATD Serial No.:	34



Testing Program Hybrid III Neck Extension Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NE101

Curve Description: Neck Force X
 Maximum Value: 231.8 at 201.0 Milliseconds
 Minimum Value: -628.8 at 71.2 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/97
 ATD Serial No.: 34





Curve Description: Testing Program Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NE101

"D" Plane Rotation

Maximum Value: 100.3 at 77.8 Milliseconds

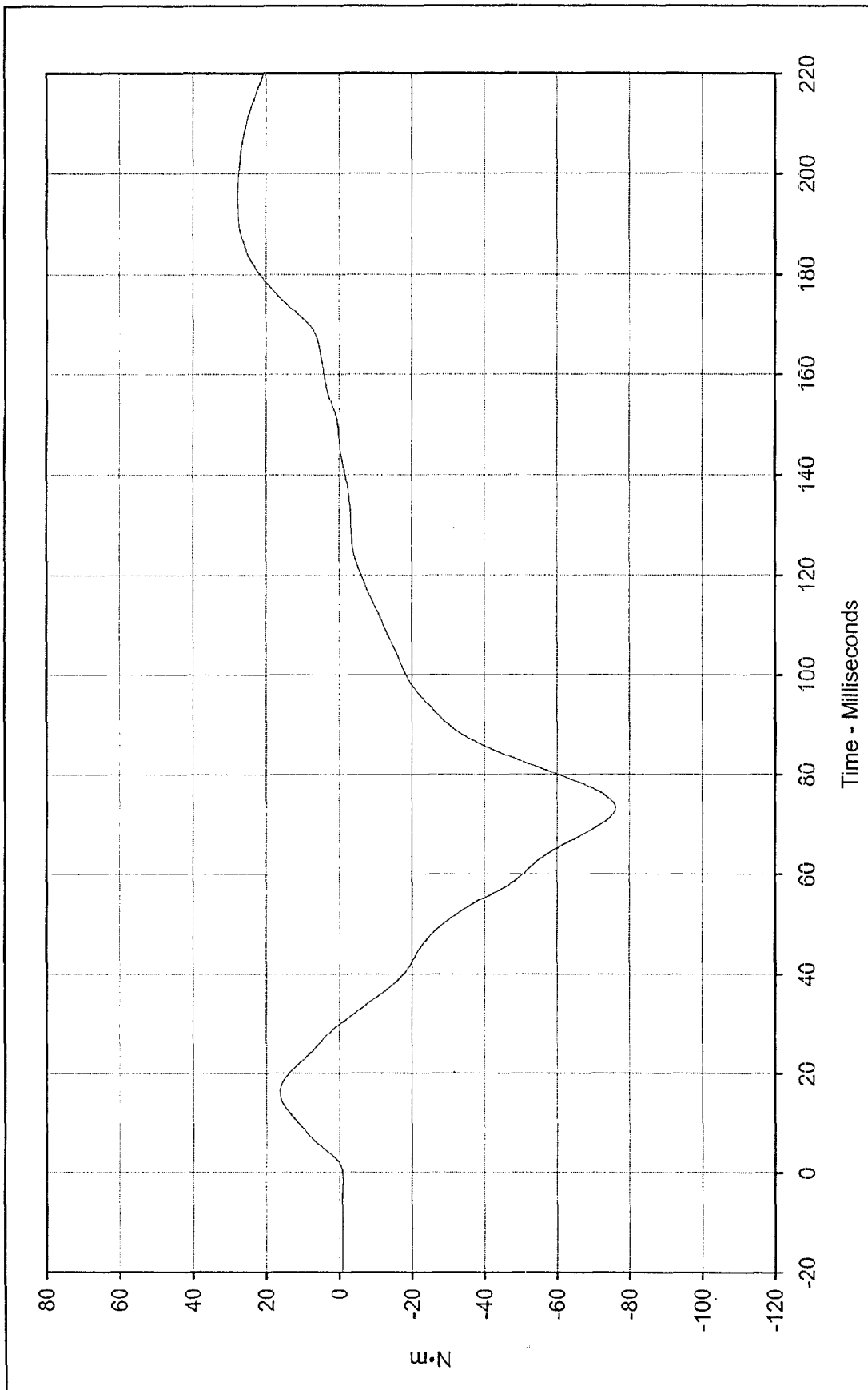
Minimum Value: -35.6 at 209.0 Milliseconds

SAE Filter Class: 60

Date of Test: 12/14/97

ATD Serial No.: 34





Curve Description: Moment About Occipital Condyles Testing Program Hybrid III Neck Extension Test (Male)

Maximum Value: 27.8 at 195.7 Milliseconds Test Information: S/N of Part: n/a Test I.D.: NE101

Minimum Value: -76.0 at 73.2 Milliseconds

SAE Filter Class: 60

Date of Test: 12/14/97

ATD Serial No.: 34





Hybrid III Calibration Data Sheet

50TH Percentile Male

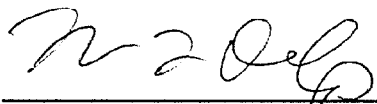
External Measurements

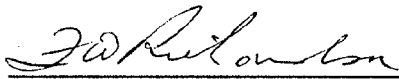
ATD Serial No.: 034

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	43.0	Pass
A - Total sitting height	mm	878.8 to 889.0	880.0	Pass
B - Shoulder pivot height	mm	505.5 to 520.7	510.0	Pass
C - "H" point height	mm	83.8 to 88.9	87.0	Pass
D - "H" point from seat back	mm	134.6 to 139.7	138.1	Pass
E - Shoulder pivot from back	mm	83.8 to 94.0	85.0	Pass
F - Thigh clearance	mm	139.7 to 154.9	151.0	Pass
G - Elbow back to wrist pivot	mm	289.6 to 304.8	300.0	Pass
H - Skull cap to back line	mm	40.6 to 45.7	43.0	Pass
I - Shoulder to elbow length	mm	330.2 to 345.4	341.0	Pass
J - Elbow rest height	mm	190.5 to 210.8	209.0	Pass
K - Buttock to knee length	mm	579.1 to 604.5	590.0	Pass
L - Popliteal length	mm	429.3 to 454.7	430.0	Pass
M - Knee pivot height	mm	485.1 to 500.4	490.7	Pass
N - Buttock popliteal length	mm	452.1 to 477.5	467.0	Pass
O - Chest depth	mm	213.4 to 228.6	216.0	Pass
P - Foot length	mm	251.5 to 266.7	260.0	Pass
V - Shoulder breadth	mm	421.6 to 436.9	435.0	Pass
W - Foot breadth	mm	91.4 to 106.7	99.0	Pass
Y - Chest circumference	mm	970.3 to 1000.8	1000.0	Pass
Z - Waist circumference	mm	835.7 to 866.1	860.0	Pass
AA - Location for chest circumference	mm	429.3 to 434.3	431.0	Pass
BB - Location for waist circumference	mm	226.1 to 231.1	230.0	Pass
Overall Test Results				Pass


Laboratory Technician

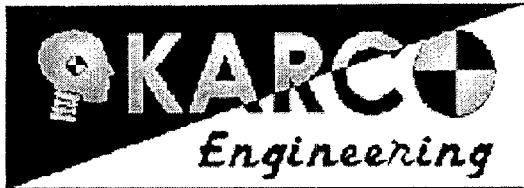

Approved By

December 16, 1997

Test Date

12/16/97

Date



Hybrid III Calibration Data Sheet

50TH Percentile Male

Left Knee Impact Test

ATD Serial No.: 035

Part Serial No.: N/A

Test I.D.: H3K11

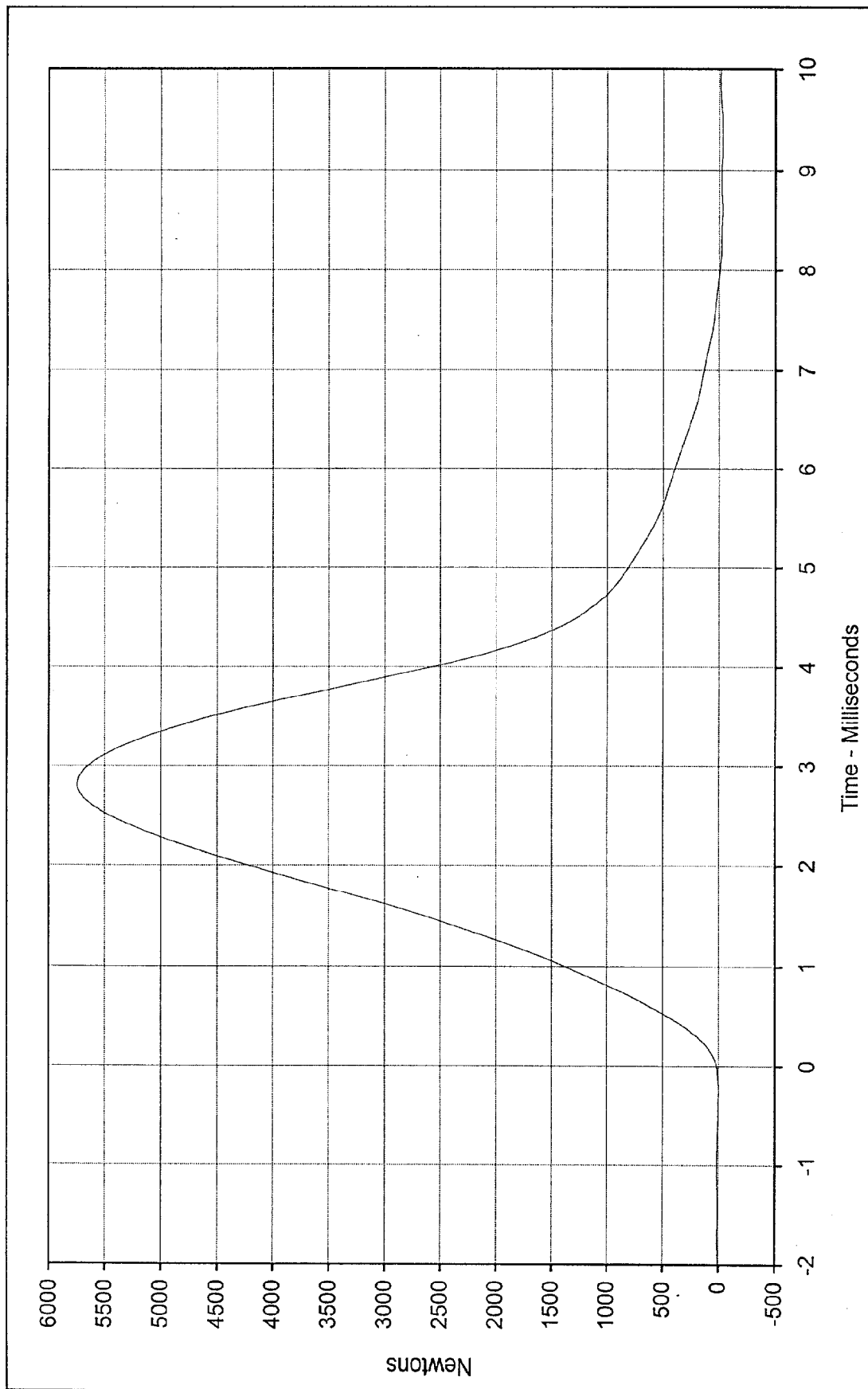
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	2.073 to 2.134	2.120	Pass
Peak Probe Force	Newtons	4715 to 5782	5743.7	Pass
Overall Test Results				Pass

N. Zolp
Laboratory Technician

December 15, 1997
Test Date

J. W. R. L. O. S. A.
Approved By

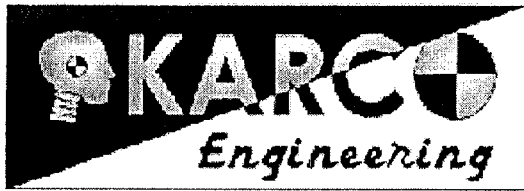
12/15/97
Date



Testing Program: Hybrid III Left Knee Impact Test
 Test Information: Part S/N: N/A Test I.D.: H3K11

Curve Description: Probe Force
 Maximum Value: 5743.7 at 2.8 Milliseconds
 Minimum Value: -7.3 at 8.0 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/15/97
 ATD Serial No.: 035





Hybrid III Calibration Data Sheet

50TH Percentile Male

Right Knee Impact Test

ATD Serial No.: 035

Part Serial No.: N/A

Test I.D.: H3K12

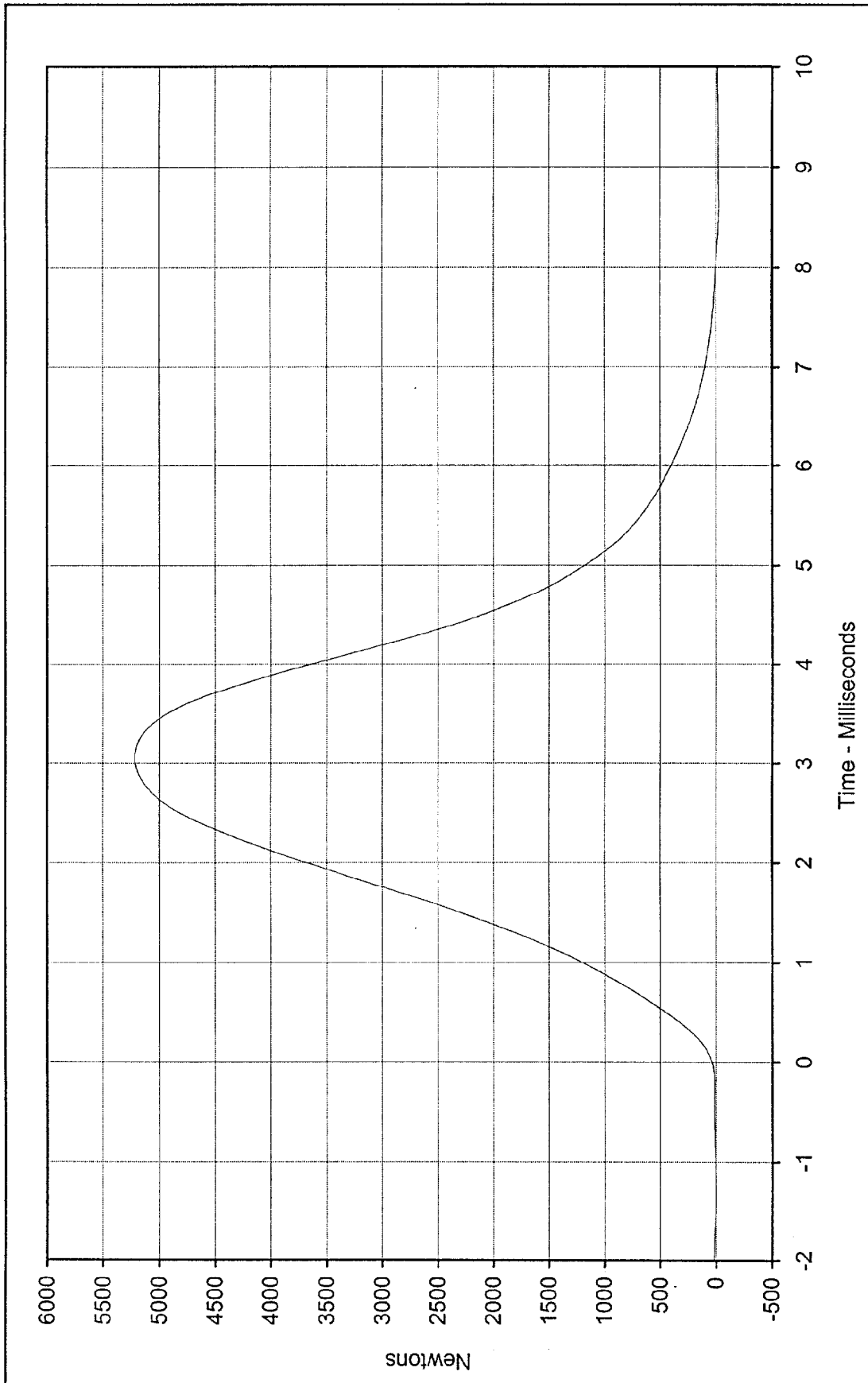
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	2.073 to 2.134	2.122	Pass
Peak Probe Force	Newtons	4715 to 5782	5212.6	Pass
Overall Test Results				Pass

N2029
Laboratory Technician

J. Whitlow
Approved By

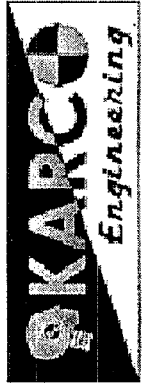
December 15, 1997
Test Date

12/15/97
Date



Testing Program: Hybrid III Right Knee Impact Test
 Test Information: Part S/N: N/A Test I.D.: H3K12

Curve Description: Probe Force
 Maximum Value: 5212.6 at 3.1 Milliseconds
 Minimum Value: -1.2 at -1.4 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/15/97
 ATD Serial No.: 035





Hybrid III Calibration Data Sheet

50TH Percentile Male

Head Drop Calibration

ATD Serial No.: 35

Part Serial No.: N/A

Test I.D.: HD101

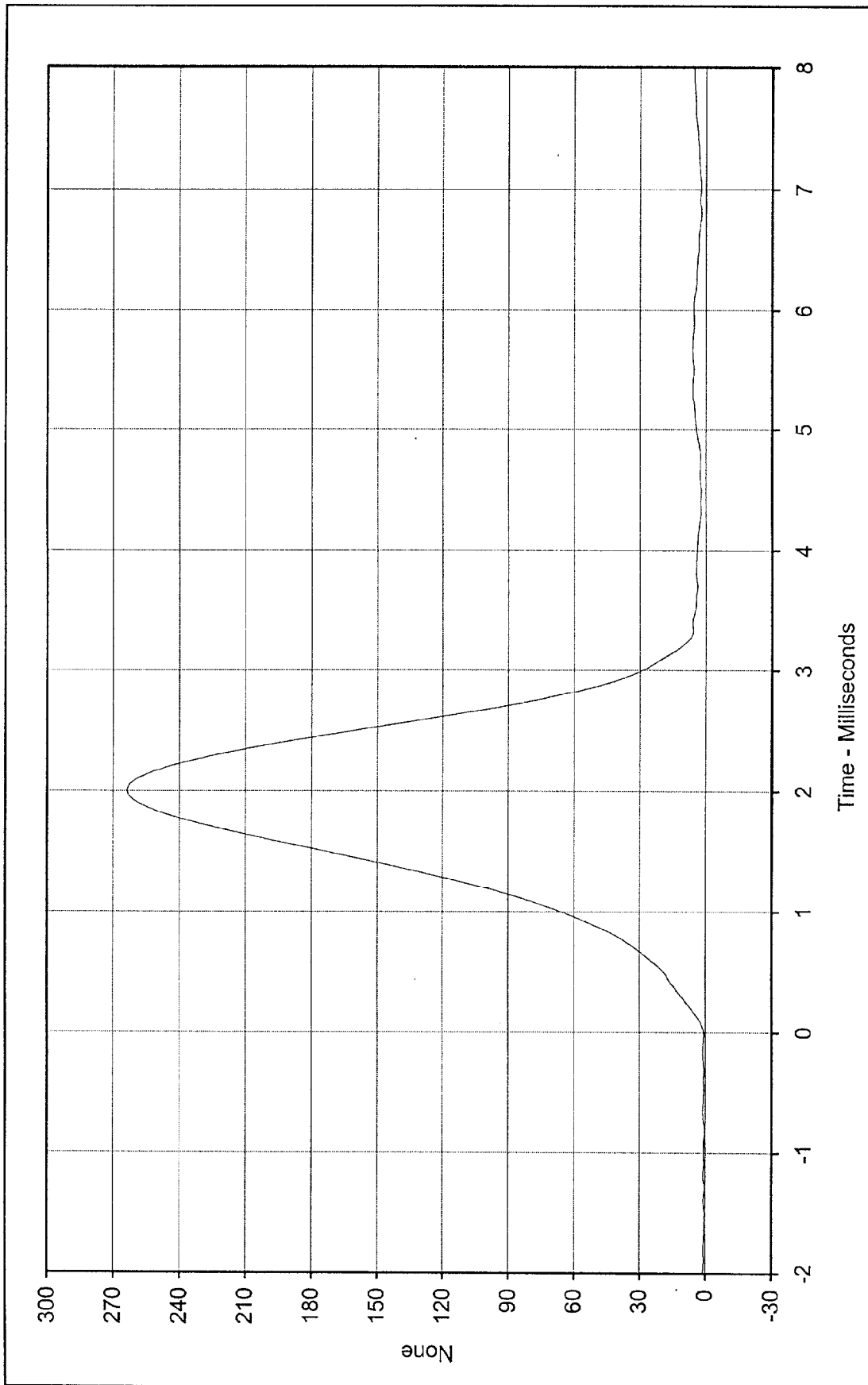
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	40	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	263.8	Pass
Peak Lateral Acceleration	G's	≤15.0	13.5	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

N 202
Laboratory Technician

J. W. Rutan
Approved By

December 15, 1997
Test Date

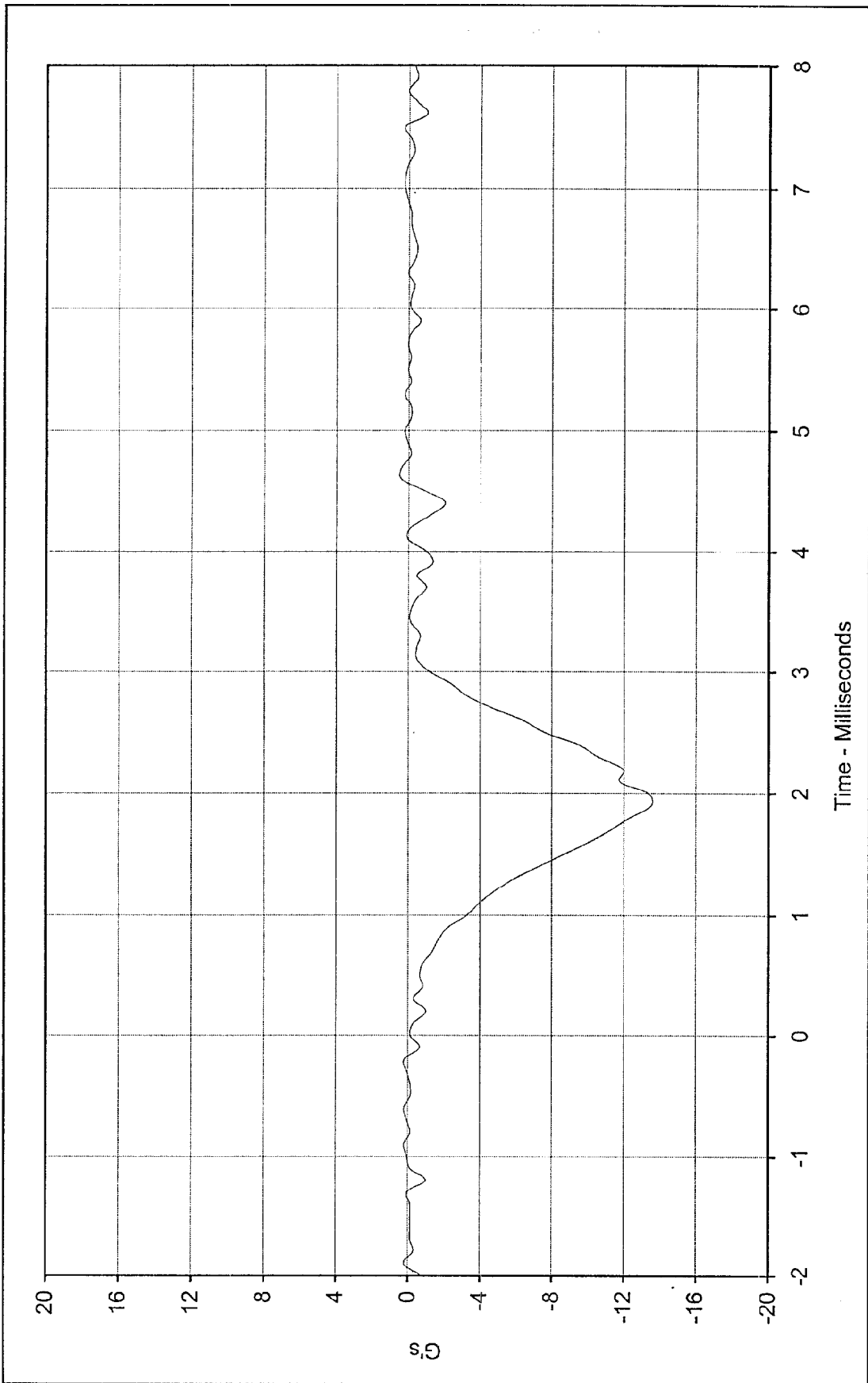
12/15/97
Date



Curve Description: Head Resultant Acceleration
 Testing Program: Hybrid III Head Drop Calibration (Male)
 Test Information: S/N of Part: N/A Test I.D.: HD101

Maximum Value: 263.8 at 2.0 Milliseconds
 Minimum Value: 0.3 at -1.3 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/15/97
 ATD Serial No.: 35





Curve Description: Hybrid III Head Drop Calibration (Male)
 Test Information: S/N of Part: N/A Test I.D.: HD101

Head Acceleration Y Axis
 Maximum Value: 0.4 at 4.6 Milliseconds
 Minimum Value: -13.5 at 1.9 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/15/97
 ATD Serial No.: 35





Hybrid III Calibration Data Sheet

50TH Percentile Male

Thorax Impact Test

ATD Serial No.: 035

Part Serial No.: n/a

Test I.D.: CH100

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	39	Pass
Probe Velocity	m/s	6.58 to 6.82	6.68	Pass
Peak Probe Force	Newtons	5159 to 5893	5861	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.51	Pass
Internal Hysteresis	%	69 to 85	73.0	Pass
Overall Test Results				Pass

Laboratory Technician

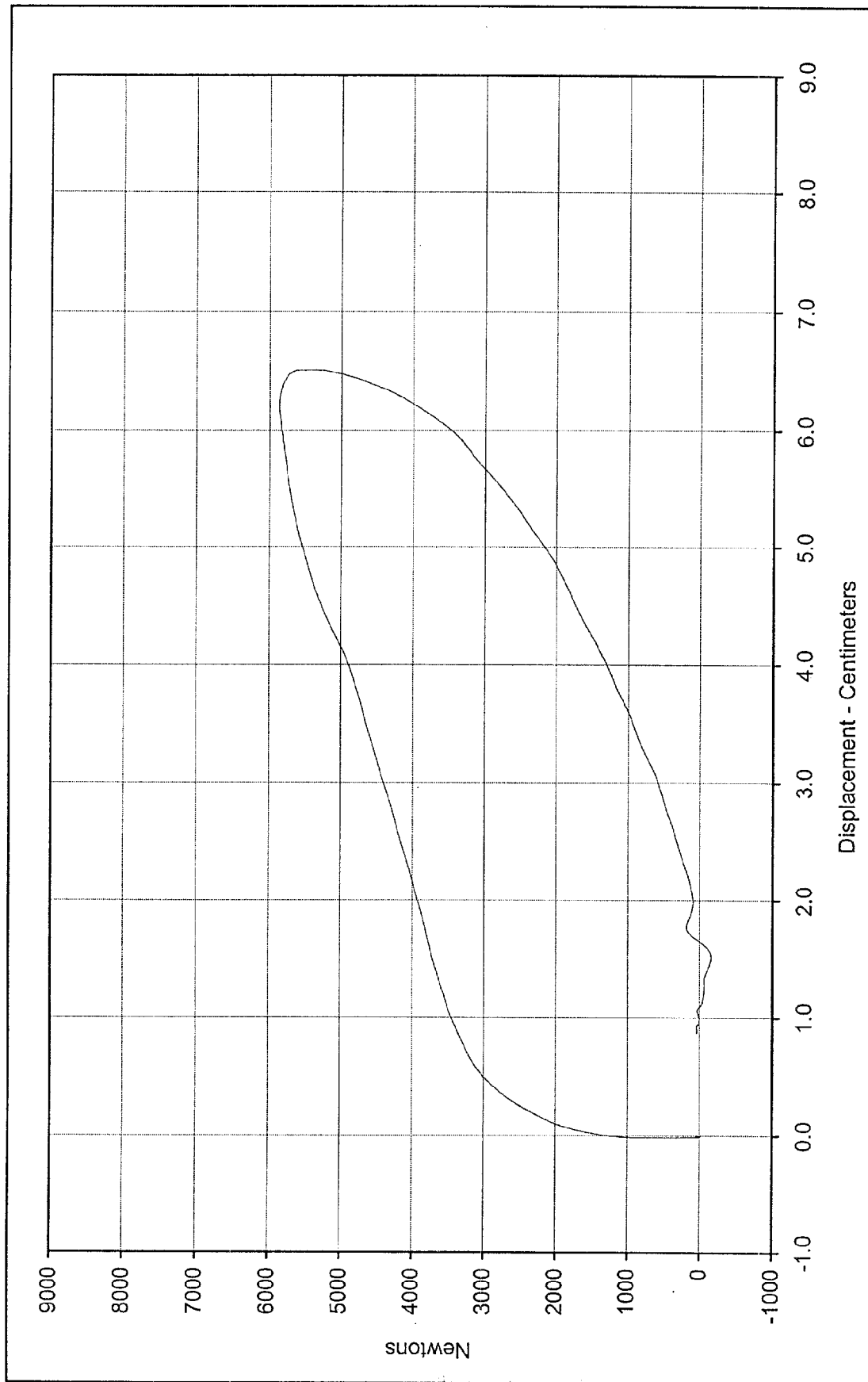
December 16, 1997

Test Date

Approved By

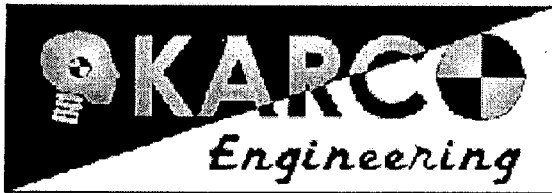
12/16/97

Date



Curve Description:	Probe Force vs. Chest Displacement	Testing Program	Hybrid III Thorax Impact Test
Probe Force:	5860.5 Newtons	Test Information:	S/N of Part: n/a Test I.D.: CH100
Chest Displ.:	6.51 Centimeters		
SAE Filter Class:	180		
Date of Test:	12/16/97		
ATD Serial No.:	035		





Hybrid III Calibration Data Sheet

50TH Percentile Male

Neck Flexion Test

ATD Serial No.: 35

Part Serial No.: n/a

Test I.D.: NF101

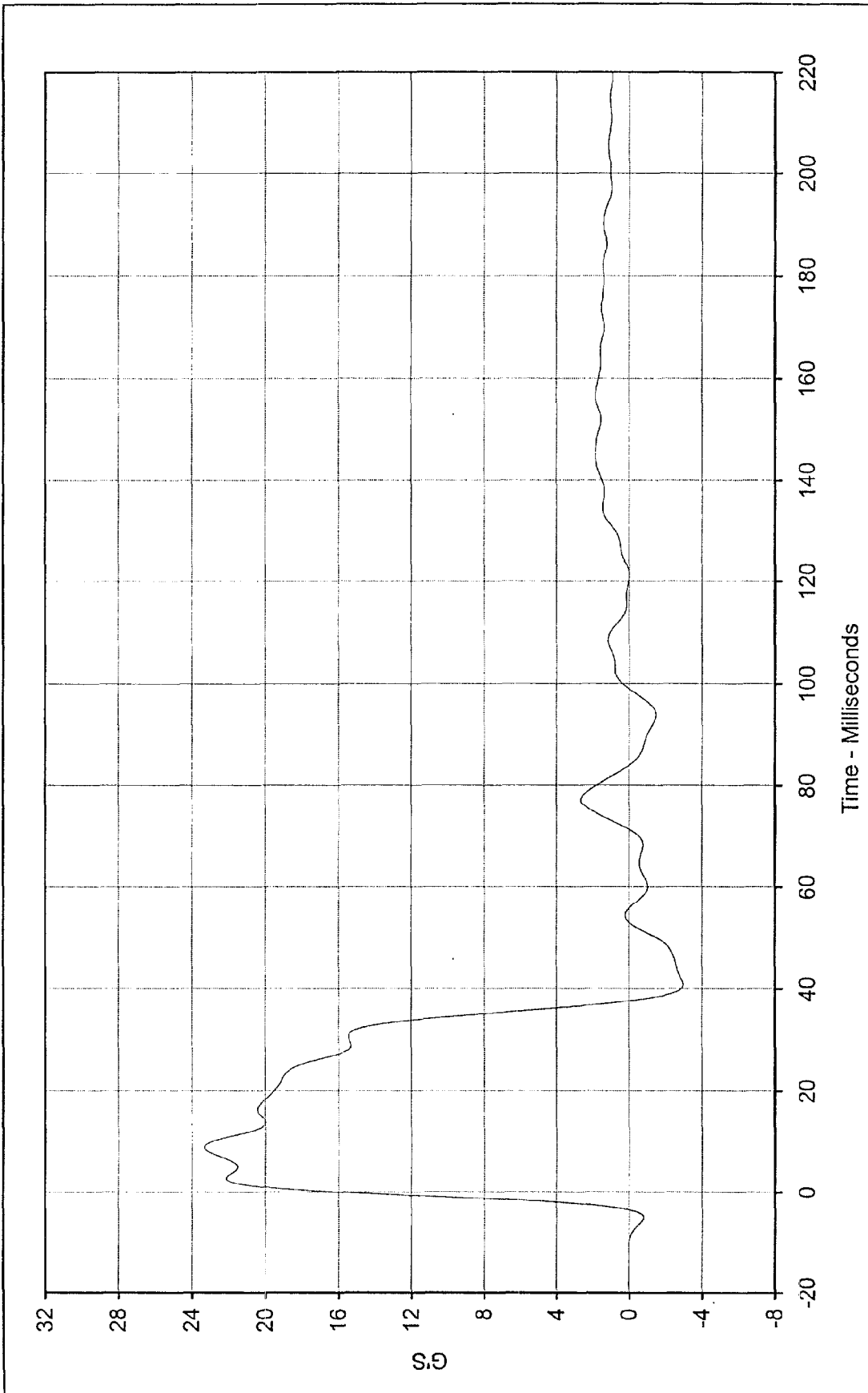
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	36	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.93	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.9	Pass
	20 Msec.	G's	17.6 to 22.6	19.5	Pass
	30 Msec.	G's	12.5 to 18.5	15.4	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	15.4	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	35.9	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	76.1	Pass
	Time	Msec.	57.0 to 64.0	61.7	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	94.0	Pass
	Time	Msec.	47.0 to 58.0	53.2	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	105.8	Pass
Overall Test Results					Pass

N 2080
Laboratory Technician

Robert [Signature]
Approved By

December 14, 1997
Test Date

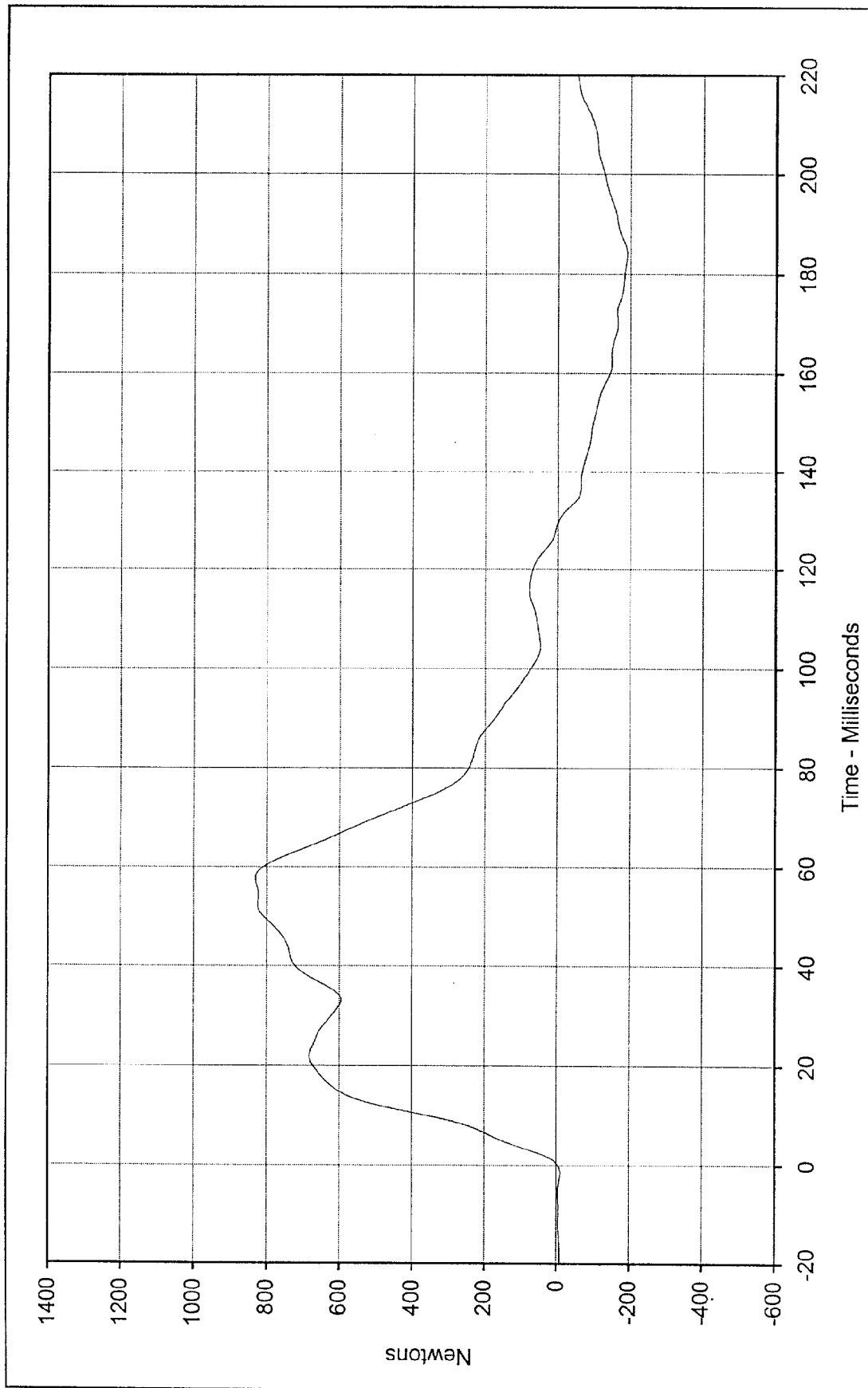
12/17/97
Date



Curve Description:	Pendulum Deceleration	Testing Program	Hybrid III Neck Flexion Test (Male)
Maximum Value:	23.3 at 8.9 Milliseconds	Test Information:	S/N of Part: n/a Test I.D.: NF101
Minimum Value:	-3.0 at 40.8 Milliseconds		



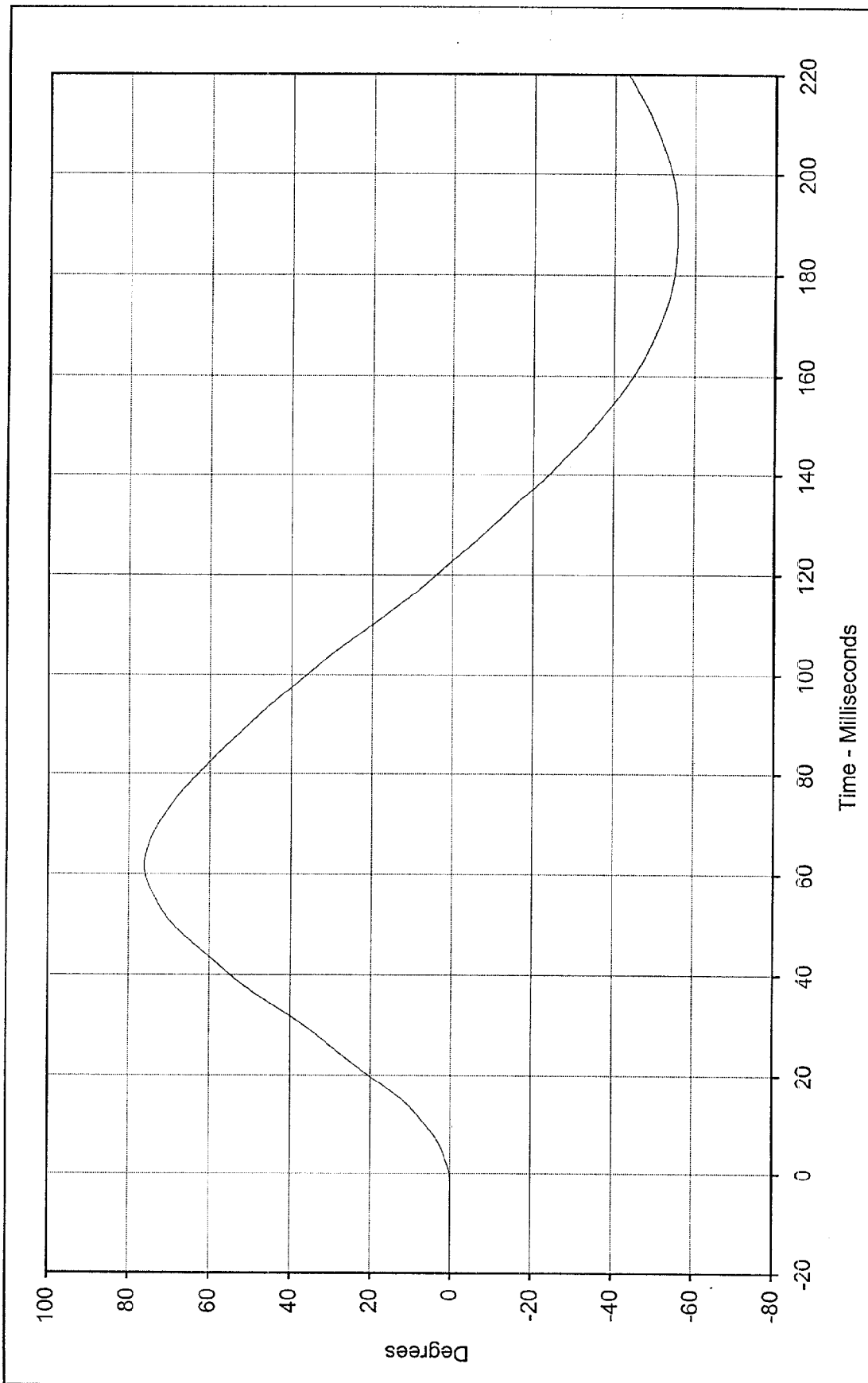
SAE Filter Class:	60
Date of Test:	12/14/97
ATD Serial No.:	35



Testing Program: Hybrid II Neck Flexion Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NF101

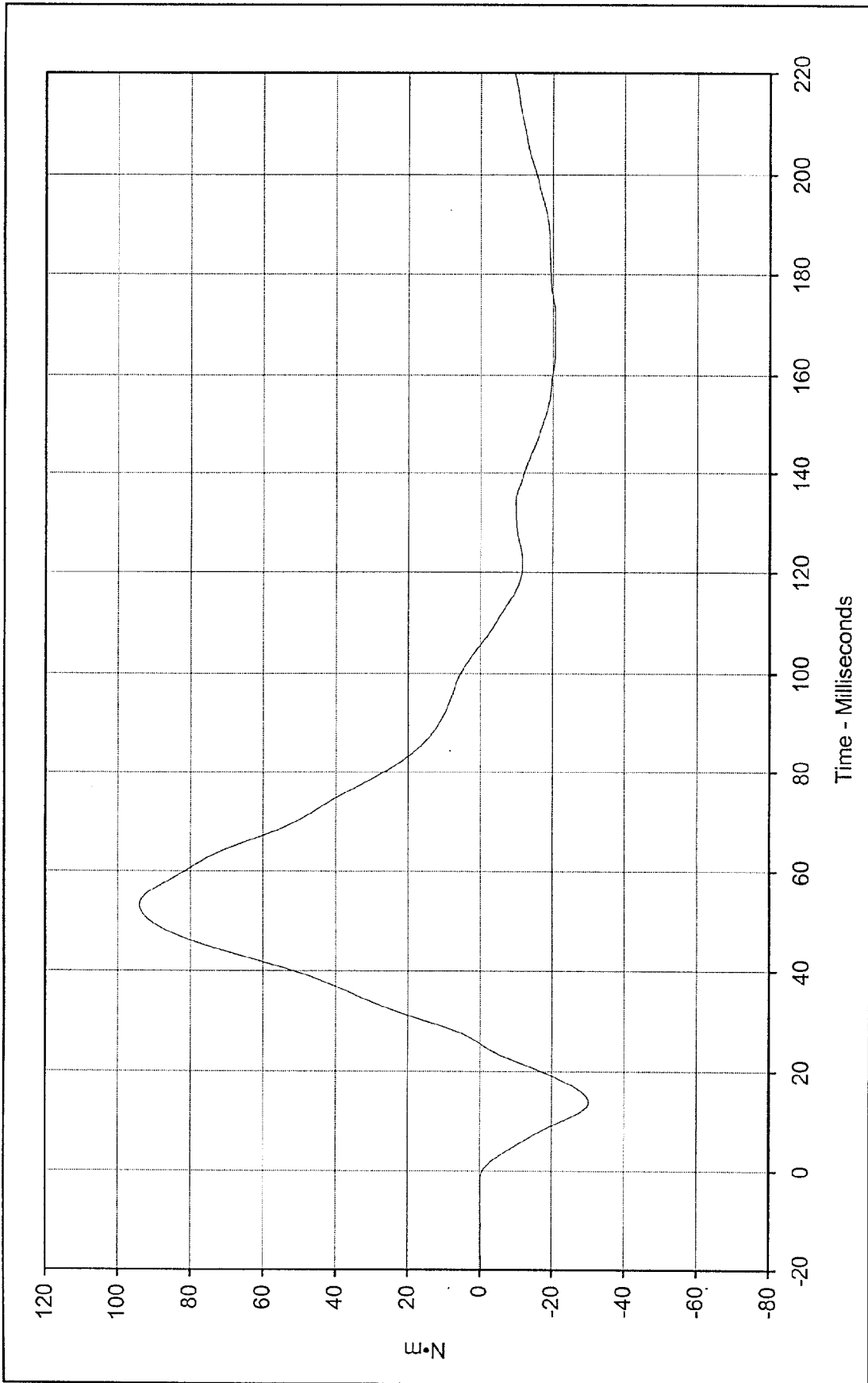


Curve Description: Neck Force X
 Maximum Value: 830.8 at 57.7 Milliseconds
 Minimum Value: -189.8 at 183.9 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/97
 ATD Serial No.: 35



Curve Description: _____ Testing Program _____ Hybrid III Neck Flexion Test (Male)
 Maximum Value: 76.1 at 61.7 Milliseconds
 Minimum Value: -55.6 at 188.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/97
 ATD Serial No.: 35





Curve Description:		Moment About Occipital Condyles	
Maximum Value:	94.0	at	53.2
Minimum Value:	-30.1	at	13.8
SAE Filter Class:	60		
Date of Test:	12/14/97		
ATD Serial No.:	35		

Testing Program: Hybrid III Neck Flexion Test (Male)
 Test Information: SN of Part: n/a Test I.D.: NF101





Hybrid III Calibration Data Sheet

50TH Percentile Male

Neck Extension Test

ATD Serial No.: 35Part Serial No.: n/aTest I.D.: NE100

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	36	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.03	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.2	Pass
	20 Msec.	G's	14.0 to 19.0	16.1	Pass
	30 Msec.	G's	11.0 to 16.0	15.0	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.0	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	40.9	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	102.0	Pass
	Time	Msec.	72.0 to 82.0	77.5	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	161.7	Pass
Moment About Occipital Condyle	Maximum	N • m	-52.9 to- 79.9	-77.6	Pass
	Time	Msec.	65.0 to 79.0	72.2	Pass
Negative Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	147.0	Pass
Overall Test Results					Pass

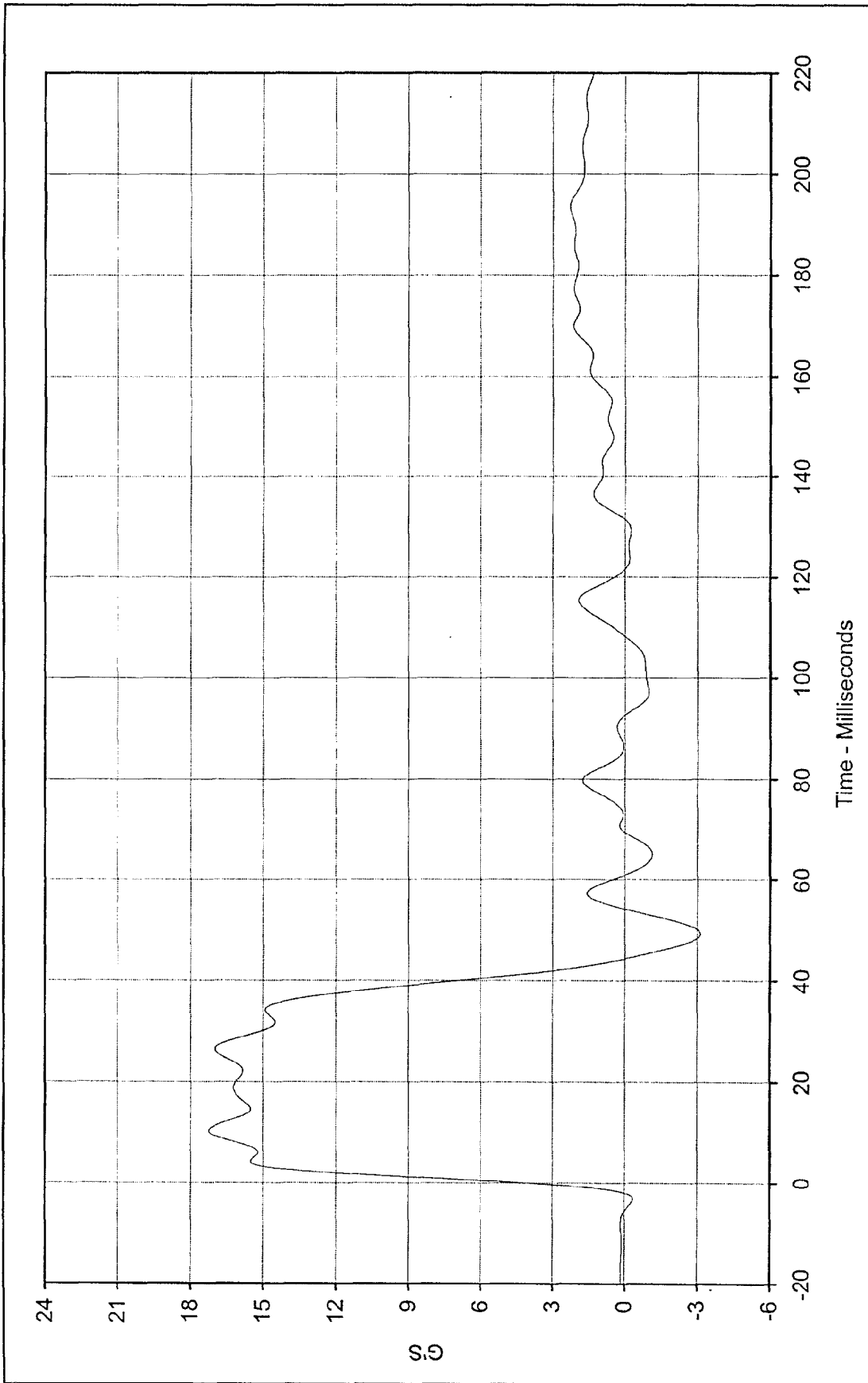
Laboratory Technician

Approved By

December 14, 1997

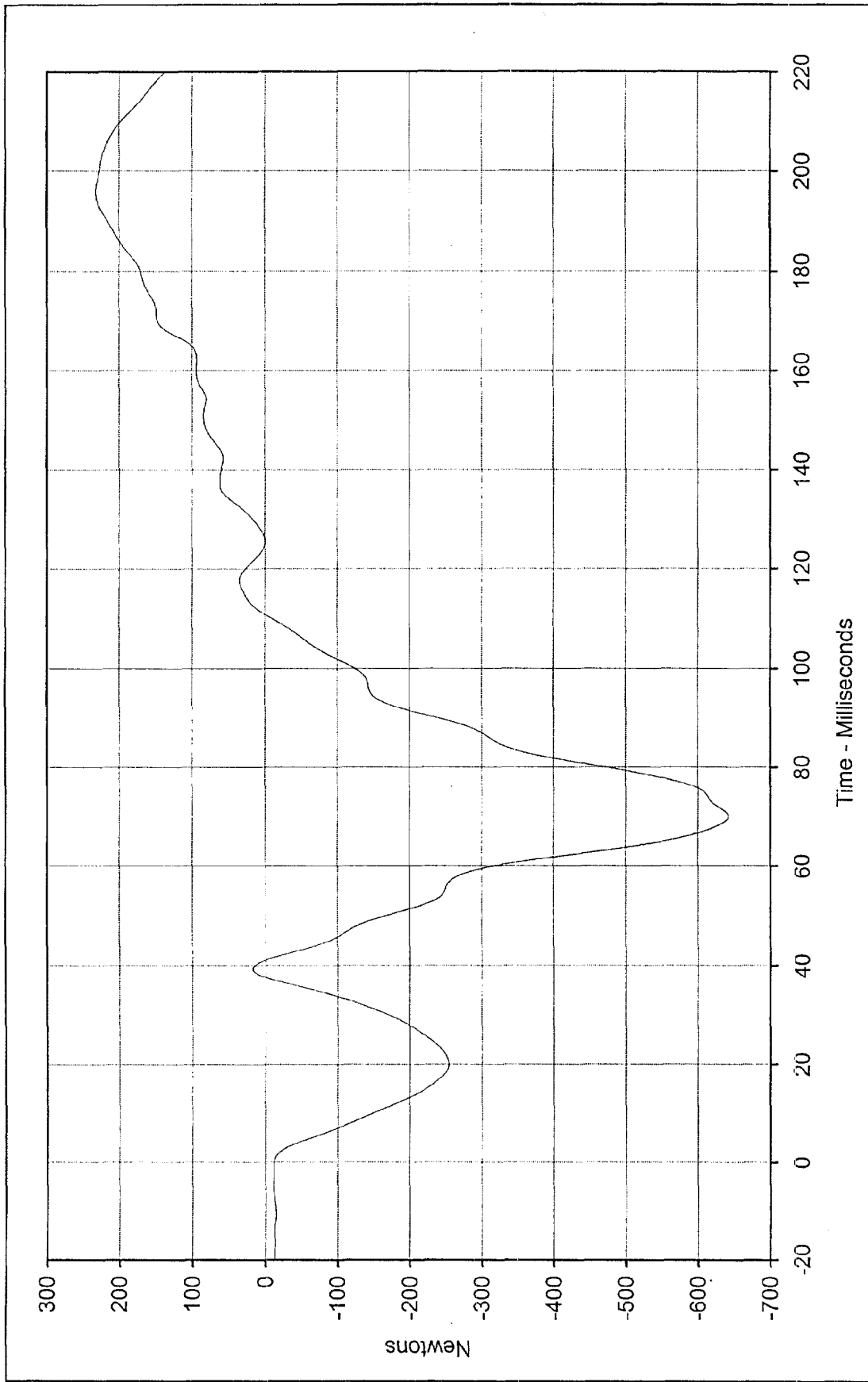
Test Date

Date



Curve Description: _____ Testing Program: Hybrid III Neck Extension Test (Male)
 Maximum Value: 17.2 at 10.3 Milliseconds
 Minimum Value: -3.1 at 49.1 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/97
 ATD Serial No.: 35

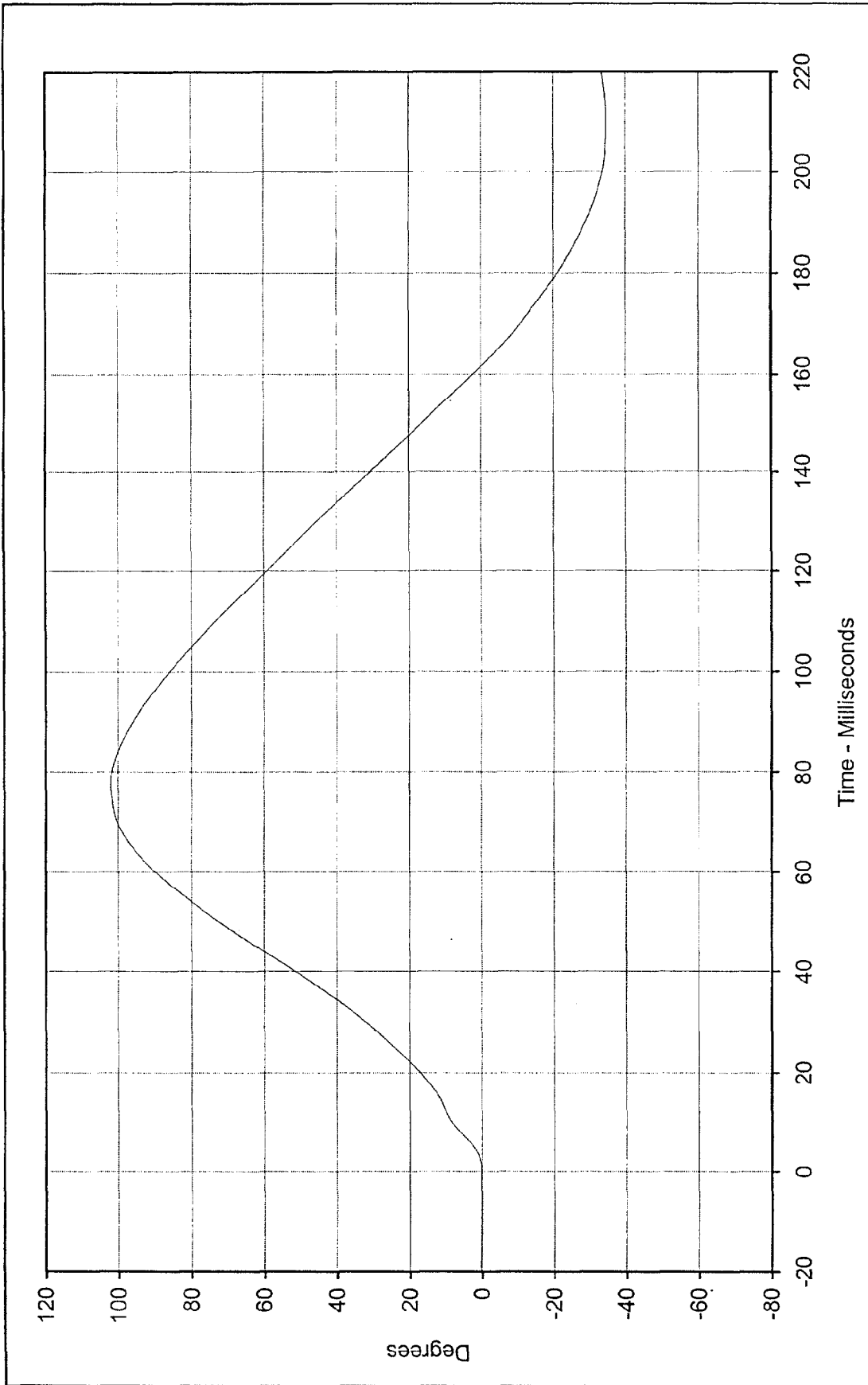




Curve Description: Neck Force X
Maximum Value: 232.3 at 196.0 Milliseconds
Minimum Value: -642.5 at 70.0 Milliseconds
SAE Filter Class: 60
Date of Test: 12/14/97
ATD Serial No.: 35

Testing Program: Hybrid III Neck Extension Test (Male)
Test Information: S/N of Part: n/a Test I.D.: NE100

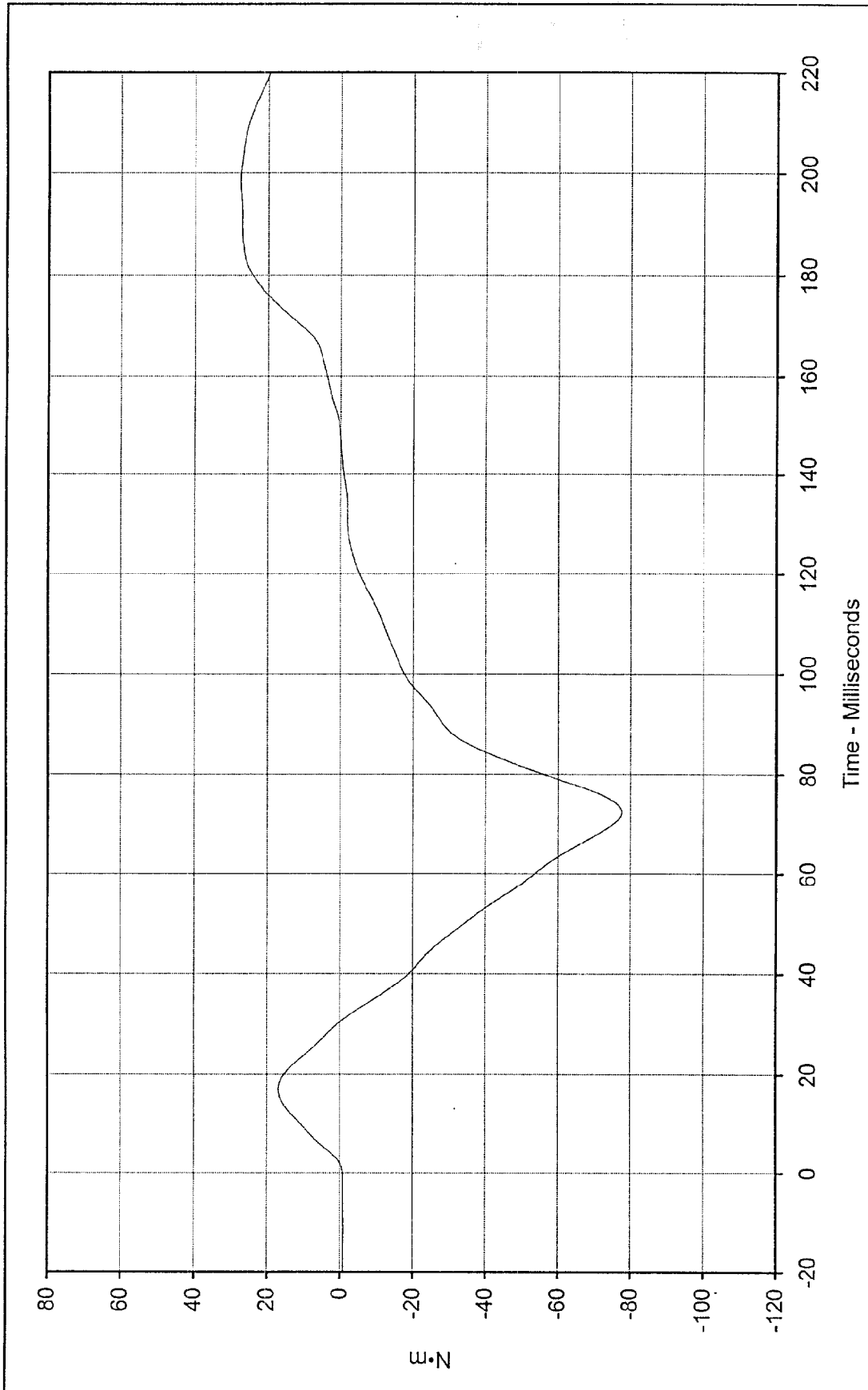




Testing Program: Hybrid III Neck Extension Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NE100

Curve Description:		"D" Plane Rotation	
Maximum Value:	102.0	at	77.5 Milliseconds
Minimum Value:	-34.6	at	209.3 Milliseconds
SAE Filter Class:	60		
Date of Test:	12/14/97		
ATD Serial No.:	35		





Curve Description: Moment About Occipital Condyles Testing Program Hybrid III Neck Extension; Test (Male)

Maximum Value: 27.6 at 198.5 Milliseconds

Minimum Value: -77.6 at 72.2 Milliseconds

SAE Filter Class: 60

Date of Test: 12/14/97

ATD Serial No.: 35

Test Information: S/N of Part: n/a Test I.D.: NE100





Hybrid III Calibration Data Sheet

50TH Percentile Male

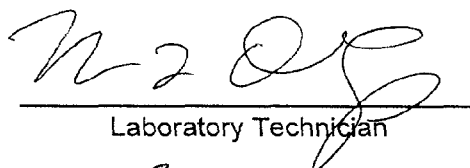
External Measurements

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	43.0	Pass
A - Total sitting height	mm	878.8 to 889.0	881.0	Pass
B - Shoulder pivot height	mm	505.5 to 520.7	510.0	Pass
C - "H" point height	mm	83.8 to 88.9	85.0	Pass
D - "H" point from seat back	mm	134.6 to 139.7	138.1	Pass
E - Shoulder pivot from back	mm	83.8 to 94.0	91.0	Pass
F - Thigh clearance	mm	139.7 to 154.9	151.0	Pass
G - Elbow back to wrist pivot	mm	289.6 to 304.8	301.0	Pass
H - Skull cap to back line	mm	40.6 to 45.7	44.0	Pass
I - Shoulder to elbow length	mm	330.2 to 345.4	344.0	Pass
J - Elbow rest height	mm	190.5 to 210.8	209.0	Pass
K - Buttock to knee length	mm	579.1 to 604.5	600.0	Pass
L - Popliteal length	mm	429.3 to 454.7	430.0	Pass
M - Knee pivot height	mm	485.1 to 500.4	499.0	Pass
N - Buttock popliteal length	mm	452.1 to 477.5	470.0	Pass
O - Chest depth	mm	213.4 to 228.6	216.0	Pass
P - Foot length	mm	251.5 to 266.7	265.0	Pass
V - Shoulder breadth	mm	421.6 to 436.9	435.0	Pass
W - Foot breadth	mm	91.4 to 106.7	100.0	Pass
Y - Chest circumference	mm	970.3 to 1000.8	980.0	Pass
Z - Waist circumference	mm	835.7 to 866.1	860.0	Pass
AA - Location for chest circumference	mm	429.3 to 434.3	431.0	Pass
BB - Location for waist circumference	mm	226.1 to 231.1	229.0	Pass
Overall Test Results				Pass


Laboratory Technician

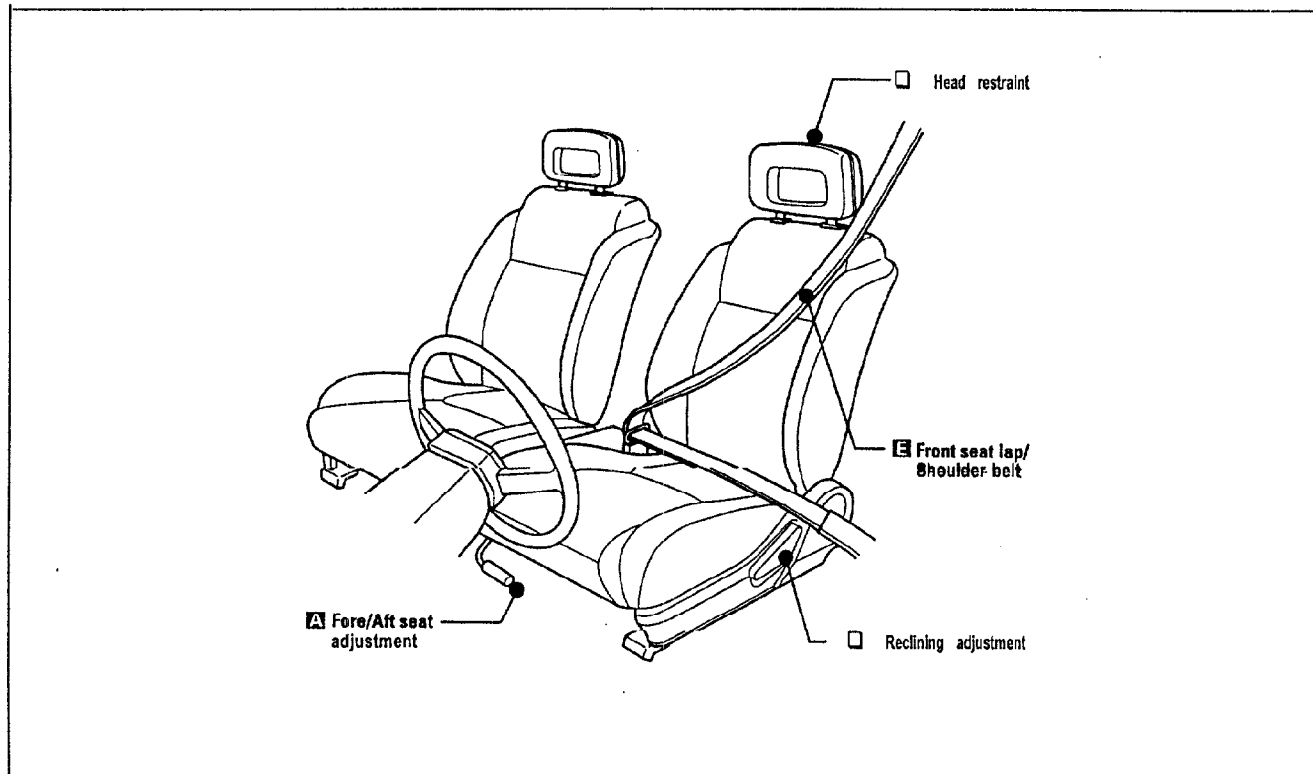

Approved By

December 16, 1997
Test Date

12/16/97
Date

APPENDIX F
VEHICLE OWNER'S MANUAL
OCCUPANT RESTRAINT INSTRUCTIONS

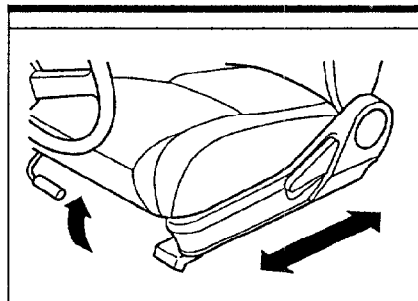
3. Seats, Seat Belts and Air Bags



3-2

750RT008

□ FORE/AFT SEAT ADJUSTMENT



750RT005

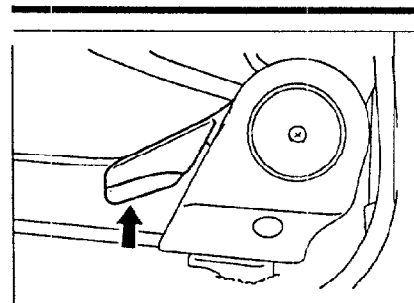
The front seats may be adjusted forward or backward by pulling up the lever at the front of the seat and then using body pressure to move the seat to the desired position. Let go of the lever and the seat will lock into the desired position.

WARNING



- After adjusting a manually operated seat, always use body weight to push forward and backward on the seat to be sure the seat adjusters have latched. Movement of the seat indicates that at least one latch did not engage. This could increase the chance of injury and/or the degree of injury in an accident. Take the vehicle to your Isuzu Dealer for service if you find that your seat adjusters do not latch.
- Do not attempt to adjust the driver's seat while the vehicle is in motion. The seat could move suddenly, causing you to lose control of your vehicle.

□ RECLINING ADJUSTMENT



750RT010

Front seatbacks can be tilted backward if so desired, using the lever on the door side of each front seat. Raise the lever and use body pressure to move the seatback to the desired position. Let go of the lever and the seatback will lock into the desired position. Keep seat belt webbing and latch clear of the seat parts when you tilt the folding seats forward or backward. This helps to prevent damage to the seat belt system.

3-3

F-1

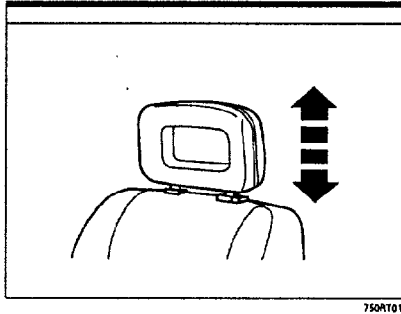
KAR-98-R98050-06

WARNING



- To reduce the risk of injury and to ensure maximum seat belt effectiveness during a collision or a sudden stop, the seat should not be reclined any more than needed for comfort. The seatback and seat belts work best only when the occupant is sitting well back and straight up in the seat. If the seat is reclined, you may slide under the lap belt, causing force to be applied to your abdomen, or you may not be fully restrained, depending on the nature of the accident, increasing the likelihood of injuries.
- Do not adjust the driver's seatback while the vehicle is in motion. The seatback could move unexpectedly and cause the driver to lose control of the vehicle.

HEAD RESTRAINT



Head restraints are designed to help reduce the risk of neck injuries. Choose the position which places the top of the head restraint closest to the top of your ears. Push the lock knob to unlock the head restraint. Move the restraint up or down as required.

WARNING



- Do not attempt to adjust the driver's head restraint while the vehicle is in motion, because it could cause a loss of control of the vehicle.
- Do not operate the vehicle with the head restraint removed, since it will increase the risk of neck injury in the event of an accident.

REAR SEAT

WARNING



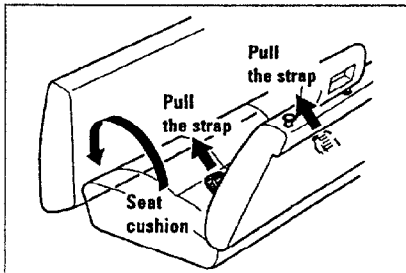
- To avoid injury, keep your hands and feet clear of the rear seat when folding and unfolding the seat. Carefully follow the instructions below.

The rear seat can be folded forward to provide additional cargo area.

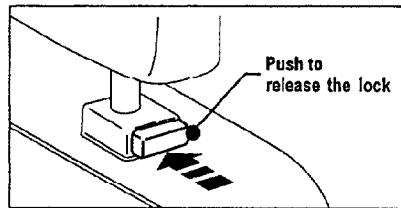
3-4

FOLDING

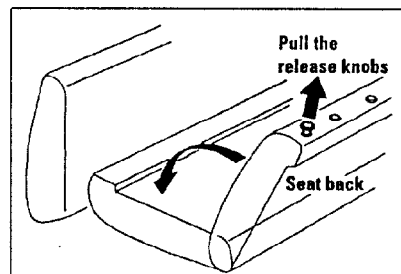
1. • Pull the strap forward and fold the seat cushion up. Pull the seat belts through the cushions to the rear so they do not interfere with folding operation of the rear seat.



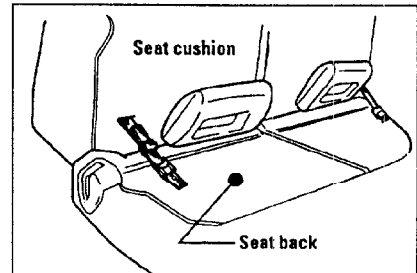
2. To remove the head restraints, press the release knob and pull up on the restraint.



3. Pull the release knobs on both the right and left, and pull the seat back forward to fold it down.



4. Attach the band on the bottom of the cushion to the clasp on the back of the seat back.
5. Insert the head restraints between seat back and seat cushion.



WARNING



- When the rear seats are folded in the down position, the head restraints should always be properly secured between the seat back and seat cushion to prevent them from becoming a hazard in the event of a sudden stop or an accident.

3-5

UNFOLDING

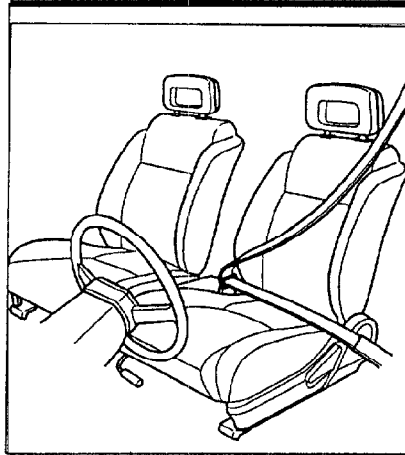
1. To raise the seatback, pull the seatback up to the locked upright position.
2. When latching the rear seat cushion to the floor, push the cushion with enough force to lock it. After this, confirm it is locked by pulling the seat belt buckle upward.
3. Make sure that the head restraints are properly reinstalled on the top of the seat back.

WARNING

- A!**
- Do not permit anyone to ride in the cargo area or on a rear seat while it is folded down during vehicle operation. Rear seat occupants should be seated in the seat only in its locked upright position and properly restrained at all the times.
 - Always check to see that both the seat back latches are engaged.
 - Failure to lock the rear seat securely to the floor and engage the seat back latches could increase the risk of personal injury in an accident

- Failure to properly route the seat belts could result in damage to belts, reducing their effectiveness in case of an accident.

FRONT AND REAR SEAT LAP/SHOULDER BELTS



Safety Belt/Air Bag Relationship
The Air Bag is formally called a

3-6

Supplemental Restraint System (SRS). The SRS may not provide protection for an unbelted driver and an unbelted right front passenger. Both the driver and the right front passenger must always use the seat belts. That's true not only in frontal collisions, but especially in side and other collisions.

WARNING

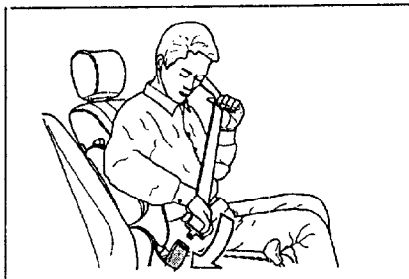


- To help lessen the chance of injury in accidents or sudden stops, we urge that people riding in the vehicle must be properly restrained at all times, using the seat belts provided. This includes children and pregnant women. See the following pages for use of restraints by children and pregnant women.

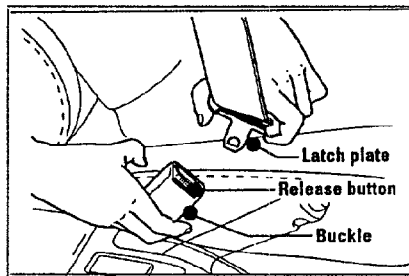
To Fasten the Seat Lap/Shoulder Belt

1. Adjust the front seat as needed. Sit up straight and well back in the seat.
2. Grasp the latch plate and:
- Pull the lap-shoulder belt webbing across the body.

- At the same time, slide the latch along the belt until it reaches the buckle.
- Push the latch plate into the buckle until it clicks.

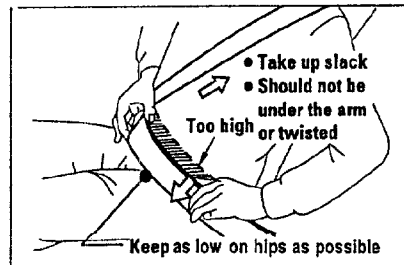


760RT029



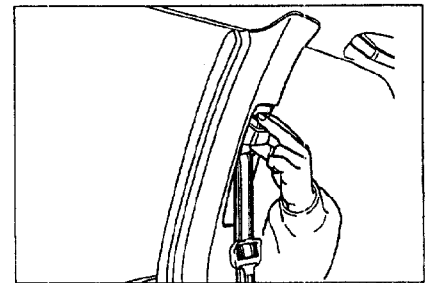
760RT016

3. Position the "lap" portion of the belt across the lap as **LOW ON THE HIPS** as possible.



760RT017

4. With the shoulder anchor pushed, move it up and down to adjust the position of the shoulder belt so that it comes right onto the shoulder. The adjustment position is available in 5 steps at front shoulder belt, 3 steps at rear shoulder belt.

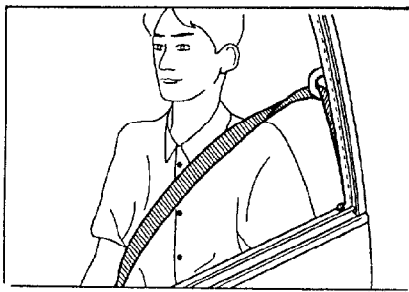


760RT010

Then, adjust to a **SNUG FIT** by holding the "shoulder" portion of the front seat belt and pulling it **UPWARD** through the latch plate until the lap portion is snug across the lap. This reduces the risk of sliding under the belt during an accident.

5. To unfasten the belt, push in the button on the buckle. The belt should retract when the buckle is unlatched but hold the latch plate as it does so, to keep it from hitting people or nearby objects. To help prevent damage to the safety belt and interior trim, before closing the door be sure the belt is fully retracted and the latch plate is out of the way.

3-7



WARNING



- A snug fit with the lap belt positioned low on the hips is necessary to lessen the chance of injury and/or the degree of injury in an accident. This spreads the force of the lap belt over the hip bone instead of across the abdomen.
- Never use the same seat belt for more than one person at a time. A seat belt worn by more than one person will not provide adequate protection in the event of a collision.
- Never wear twisted seat belts.
- Be very careful not to damage

seat belts or seat belt buckles by pinching them in the seat or the door.

- Too much slack could increase the amount of injury because the belt would not be able to properly restrain you in an accident. DO NOT wear the shoulder belt under the arm or out of position. Such use could increase the chance of injury and/or the degree of injury in an accident.
- According to Federal accident statistics, children are the safest when properly restrained in rear seating positions. It is advisable to have children seated in the rear center seat and restrained with the vehicle's safety belt. Children who have outgrown child restraint systems should use the vehicle's safety belts and sit in the rear seat.
- If the child's seating position has a shoulder belt which is on or very close to the face or neck, position the child so that the belt is properly positioned.

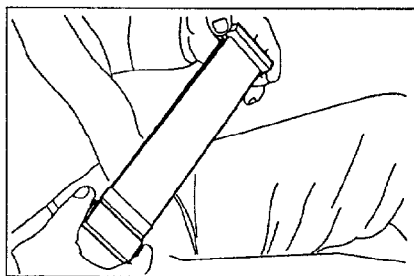
NOTE

- The retractor will lock the belt only during a sudden stop or on impact.
- At other times you can move around freely.
- The seat belts for the passenger seats have an additional locking mechanism designed for securing child restraint seats. When the belt is pulled all the way out, the locking mechanism will only permit the belt to retract. Do not pull the belt all the way out except when using it to secure a child restraint seat. If the belt is inadvertently pulled all the way out, let the belt fully retract before using it for normal passenger restraint.

3-8

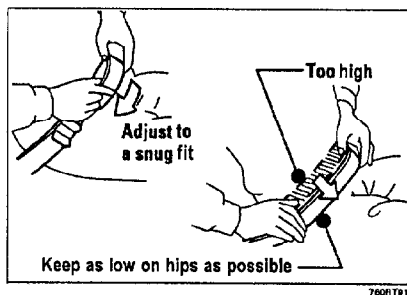
REAR CENTER SEAT LAP BELTS (Non-retractor type)

1. Sit up straight and well back in the seat.
2. Take hold of the latch plate at an angle to the webbing and slide it toward the front of vehicle. Then pull it slowly across your lap and push the latch plate into the buckle until it clicks.



3. Position the belt across the lap as LOW ON THE HIPS as possible. Then, adjust to SNUG FIT by holding the free end of the webbing and pulling it through the latch plate until the belt is snug across the lap. This reduces the risk of sliding under the belt during an accident.

4. To unfasten the belt, push in the button on the buckle.



SAFETY BELT EXTENDER

If the vehicle's safety belt will fasten around you. You should use it. But if a safety belt isn't long enough to fasten around you, your dealer will order you an extender. When you go in to order it, take the heaviest coat you will wear, so the extender will be just for you, and just for the seat in your vehicle that you choose. Don't let someone else use it, and use it only for the seat it is made to fit. To wear it, just attach it to the regular safety belt.

SEAT BELT INSPECTION

- Occasionally check that the belts, buckles, latch plates, retractors, reminder systems, guide loops, and anchors work properly. Also check for damage that could keep the restraint system from doing its job.
- Keep sharp edges and damaging objects away from the belts and other parts of the restraint system.
- Replace belts if cut, weakened, or frayed. Also, have belts replaced if they have been worn in a collision.
- If there is any doubt, have all related parts including belts replaced.
- Keep belts clean and dry.

WARNING



- Do not bleach or dye the belts since it may severely weaken them. In the event of an accident or a sudden stop, the belts may not adequately restrain the occupants. Clean the safety belts only with mild soap and luke warm water.

3-9

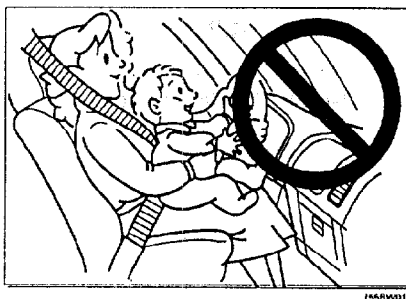
F-4

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CHILD RESTRAINT

Children in vehicles should be restrained to help lessen the chance and/or severity of injuries in the event of an accident or a sudden stop. Never let a child of any age stand or kneel on any seat. Use of infant or child restraint systems which conform to Federal motor vehicle safety standards and which are installed according to their instructions is the surest way of minimizing the risk of injury to young passengers. Older children should be placed on a seat and restrained with the seat belts provided with your vehicle. Both lap and shoulder belts should be used.

The use of infant or child restraint systems may be required by the laws of your state. You should check with the appropriate state authorities to ensure that you are in compliance with these laws.



WARNING



- For effective protection in automobile accidents and sudden stops, children should not be transported unrestrained. The preferred restraint for small children is a child restraint system. Children should be placed in the rear seat and restrained with seat belt if they are old enough to sit alone.
- Holding a child in your arms is dangerous. In an accident, a child held in a person's arms can be struck or crushed by any unrestrained occupant.

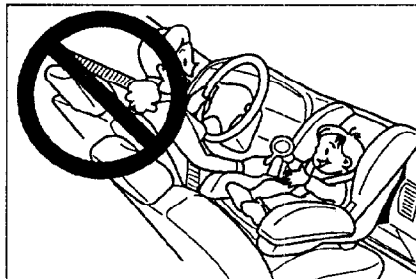
An unrestrained child can be killed or seriously injured by an inflating air bag or by being ejected from the vehicle in an accident.

- All child restraint systems are designed to be secured in vehicle seats by lap belts or the lap portion of a lap-shoulder belt.
- Children could be injured in a collision or sudden stop if the child restraint is not properly secured in your vehicle. An unsecured safety seat could also injure other passengers in the vehicle.
- According to Federal accident statistics, children are the safest when properly restrained in rear seating positions.
- It is recommended that children or infants be restrained in an appropriate child or infant restraint secured in the rear seating position.
- Children 12 and under can be killed or seriously injured by inflation of the front passenger's air bag.

3-10

Do not install rearward-facing child seats in front passenger seat position.

- Do not use a rear-facing child restraint system in the rear seat if it interferes with the lock mechanism of the front seats. This may cause severe injury to the child and front passengers in case of sudden braking or a collision.
- Children should not ride in the cargo area.



WARNING



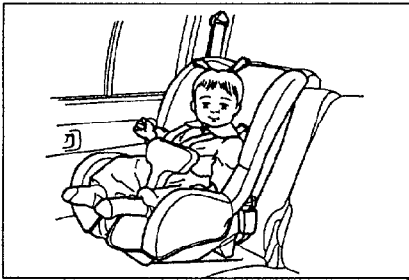
- Do not install a rear-facing child restraint system in the front passenger seat. In the event the front passenger's air bag inflates, it can cause death or even fatally injure the child.
- If it is absolutely necessary to put a child in a front facing child restraint in the front passenger seat, the passenger seat should be moved as far back as possible.

CHILD RESTRAINT SEAT INSTALLATION WITH THE SEAT BELT

A child restraint seat can be secured in the passenger seat with the seat belt, as follows :

1. Seatbacks should be upright for use with child restraint seat.
2. Place the child restraint seat on the passenger seat.
3. Secure the child in the child restraint seat, carefully following the child restraint seat instructions.
4. Pull out the seat belt and place the lap portion of the belt through or around the child restraint seat, carefully following the child restraint seat instructions.
5. Buckle the seat belt.
6. Pull the seat belt all the way out from the retractor to its full length and then let the belt retract slowly until the child restraint seat is secured by the belt. This step is required to lock the seat belt in place to secure the child restraint seat.
7. To remove the child restraint seat, unbuckle the seat belt and let it fully retract.

3-11

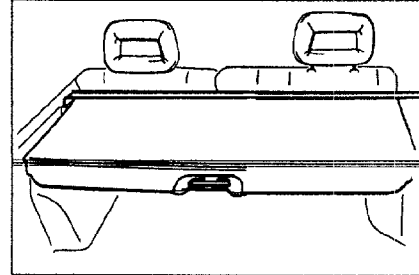


REINFORCEMENT OF PREGNANT WOMEN

It is recommended that pregnant women use seat belts. Check with your doctor for specific recommendations. The lap belt should be snug and positioned as low as possible around the hips. Do not position the lap belt around the waist. This can be very dangerous in the event of an accident or sudden stop.

CARGO COVER (If so equipped)

The cargo cover is provided to cover the compartment behind the rear seat. When not in use, the cargo cover should be stored in its retractor.

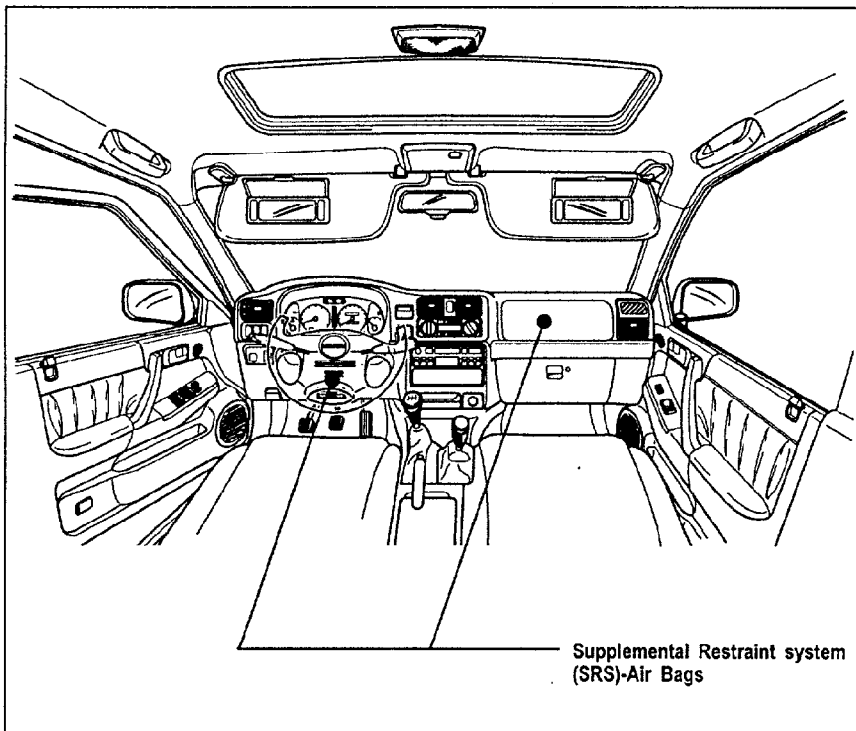


NOTE

- The seat belts for the passenger seats have an additional locking mechanism designed for securing child restraint seats. When the belt is pulled all the way out, the locking mechanism will only permit the belt to retract. Do not pull the belt all the way out except when using it to secure a child restraint seat. If the belt is inadvertently pulled all the way out, let the belt fully retract before using it for normal passenger restraint.

3-12

3. Seat, Seat Belts and Air Bags / SUPPLEMENTAL RESTRAINT SYSTEM (SRS)-AIR BAGS



Supplemental Restraint system (SRS)-Air Bags

Supplemental Restraint System (SRS)-Air Bags

This section explains the Supplemental Restraint System (SRS) - Air Bags. Your vehicle has an air bag for both the driver and the right-front passenger.

Here's the most important thing to know:

WARNING



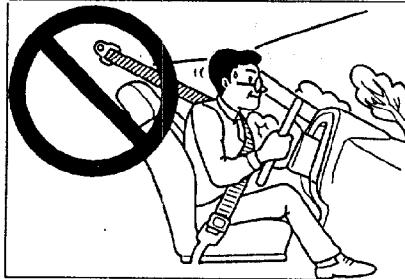
- The Supplemental Restraint System (SRS) - Air Bags may not provide protection for an unbelted driver and a right front passenger. Air bags are not designed to inflate in rollovers or in rear, side or low-speed frontal crashes. You must wear your seat belt to reduce the chance of hitting things inside the vehicle or being ejected from it. Always wear your seat belt, even though your vehicle is equipped with air bags. Also refer to the supplement "Supplemental Restraint System (AIR BAG)".

3-13

WARNING



- If you are too close to an inflating air bag, it can kill or seriously injure you, since it inflates with great force, faster than the blink of an eye.
 - While the air bag can reduce serious injuries and even save your life, the air bag might cause facial abrasions or other injuries.
- Seat belts help keep you in position for an air bag inflation in a crash. Always wear your seat belt even though your vehicle is equipped with air bags.
- Children 12 and under can be seriously or even fatally injured by inflation of the front passenger's air bag.

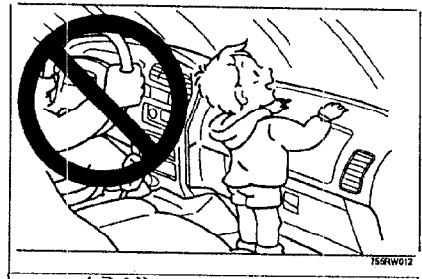


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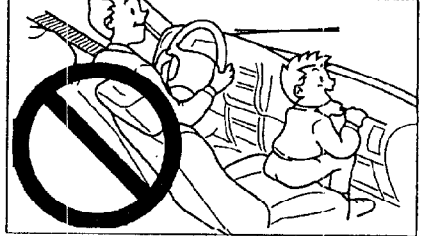
WARNING



- The driver should sit as far back as possible while still maintaining control of the vehicle and the front passenger should also sit as far back as possible.
- If you are sitting too close to the air bag, it can cause death or seriously injure you when it inflates.



755RW012



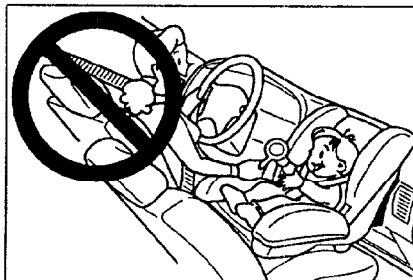
755RW001

WARNING



- Always secure children properly in your vehicle. Do not allow a child to stand or kneel on the front passenger's seat. Do not hold a child in your lap or hands. The inflating air bag can cause death or seriously injure the child.

3-14



755RW003

WARNING



- Do not install rearward-facing child seats in the front passenger seat position. In the event the front passenger's air bag inflates, it can cause death or seriously injure the child.



755RW010

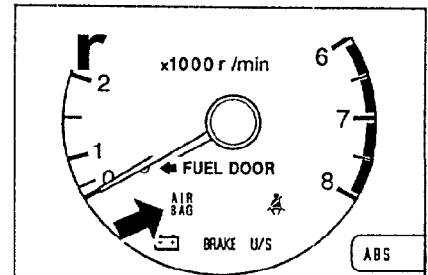
WARNING



- Children 12 and under can be seriously or even fatally injured by inflation of the front passenger's air bag.
- A child who is too small for seat belts should be properly secured in a child restraint. However, a child is the safest when properly restrained in the rear seat. The child can be killed or seriously injured if the air bag deploys. If it is absolutely necessary to put a child in a front facing child restraint in the front passenger seat, the

passenger seat should be moved as far back as possible.

AIR BAG READINESS INDICATOR LIGHT



821RW115

There is an air bag readiness indicator light on the instrument panel, which has "AIR BAG" on it. The system checks itself and the light tells you if there is a problem. You will see this light blink 7 times when you turn your ignition to ON or START. Then the light should go out which means the system is ready. If the air bag readiness indicator light illuminates at any other time, or the indicator fails to perform properly when you turn your ignition to ON or START, the Air Bag System needs repair. Until it

3-15

is serviced, the system may not inflate in the event of the type of collision that would normally activate. The air bag readiness indicator light monitors itself and the electrical system that connects the air bags and various electronic components and power sources. Your Isuzu Dealer is best qualified to check and repair the system if needed.

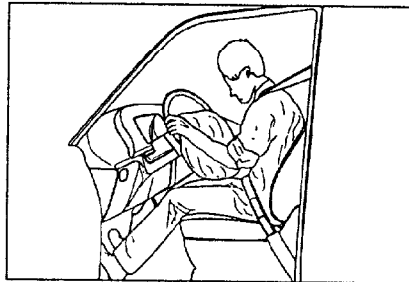
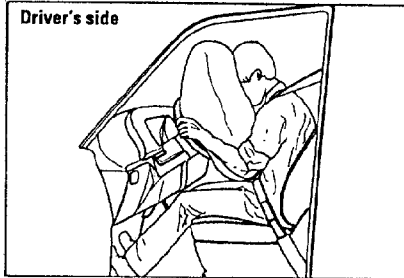
WARNING



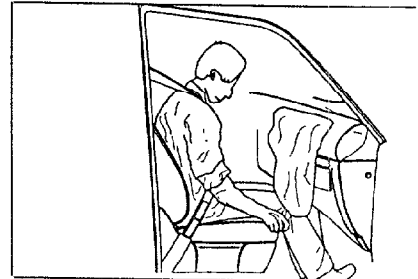
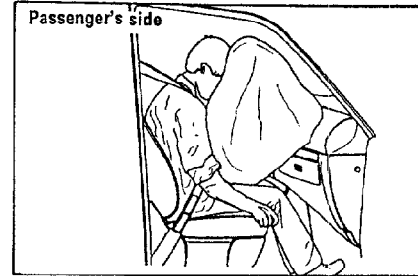
If the air bag readiness indicator light doesn't come on and blink 7 times when you turn your ignition to ON or START, your air bag system may not work properly. Have your vehicle serviced right away at your nearest Isuzu Dealer.

HOW THE AIR BAG SYSTEM WORKS

Where are the air bags?
The driver's air bag is in the middle of the steering wheel.



The right-front passenger's air bag is located in the instrument panel on the passenger's side.



3-16

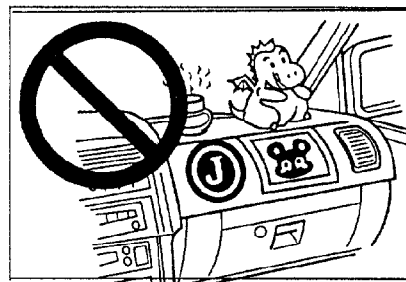
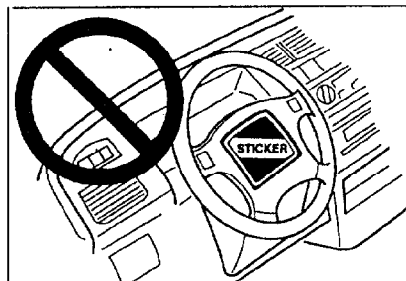
What will you see after an air bag inflation?

After the air bag has inflated, it will then quickly deflate. This occurs so quickly that some people may not even realize that the air bag inflated. The air bag will not impede the driver's vision or ability to steer the vehicle, nor will it hinder the occupants from exiting the vehicle. There will be small amounts of smoke coming from vents in the deflated air bags. Some components of the air bag module in the steering wheel hub for the driver's air bag or the instrument panel for the passenger's bag may be hot for a short time.

The gas in both driver and front passenger sides used to inflate the air bag will have vented into the passenger compartment and the bag will be deflated within seconds after the collision.

As the gas vent from the bag, small particles are also vented into the passenger compartment.

In many crashes severe enough to inflate an air bag, windshields are broken by vehicle deformation. Additional windshield breakage may occur in vehicles with passenger air bags because the windshield acts as a reaction surface for the inflating air bag.



WARNING



*Don't put anything on, or attach anything to, the steering wheel pad or the instrument panel. Also, don't put anything (such as objects or pets) between any occupant and the steering wheel pad or instrument panel. If anything is between the occupant and the air bag, it could affect the performance of the air bag, or, worse, it could cause injuries to the occupants.

- The air bags are designed to inflate only once. After they inflate, you'll need some new parts for your air bag system. If the air bag is not replaced, the unrepaired area will increase the risk of injury in a collision. A new system will include air bag modules, control unit; SRS and possibly other parts.

- Let only qualified technicians work on your air bag system. Improper service can mean that your air bag system won't work properly. See your Isuzu Dealer for service.

3-17

SERVICING YOUR ISUZU WITH THE AIR BAG SYSTEM

Please tell or remind anyone who works on your Isuzu that it has an air bag system. There are parts of the air bag system in several places around your vehicle. You don't want the system to inflate while someone is working; on your vehicle. The air bag system does not need regular maintenance. Scrapping a damaged vehicle that has an undeployed air bag(s) can be dangerous. Ask your authorized Isuzu Dealer for assistance if your involvement in the disposal or the repair of the vehicle is required.

WARNING



Do not attempt to repair or service the air bag system by yourself. Tampering with it could cause it to activate, and this could result in serious injuries. For service and repairs, have an authorized Isuzu Dealer do the work.



WARNING



•For repairs around the steering wheel, instrument panel, center console, and dashboard, and installation of stereo equipment etc.

Please contact your Isuzu Dealer.

Such action may affect the air bag or cause its accidental inflation.

The air bag system may not function properly when the vehicle is reconstructed such as installing a bumper guard, snow plow, etc., to the front of the vehicle, or altering the

frame, front construction, front sheet metal, vehicle height, etc. If you plan to make any of these changes, consult the nearest Isuzu Dealer for advice.

NOTE

Contact your nearest Isuzu Dealer when the steering wheel pad or the cover on the instrument panel for the passenger's air bag is scratched, cracked or damaged. If you damage the door for the right-front passenger's air bag, it may not work properly. You may have to replace the air bag. Don't open or break the air bag door.

WARNING



For up to 15 seconds after the ignition key is turned off and the battery disconnected, an air bag can still inflate during improper service. You can be injured if you are close to an air bag when it inflates. Be sure to follow proper service procedures, and make sure the person performing the work for you is qualified to do so.

3-18

When is an air bag expected to inflate?

The air bag is designed to inflate in moderate to severe frontal or near-frontal crashes. In frontal collisions of sufficient force, the air bags inflate even though the front passenger seat is unoccupied. If the frame or suspension strikes hard against an obstacle on the roadway, the air bag sometime inflate. The air bags will only inflate if the velocity of the impact is above the designed threshold level. When impacting straight into a wall that does not move or deform, the threshold level is between 9 and 15 mph (14.5 and 24 km/h). However, this velocity threshold may be several miles-per-hour faster or slower. In addition, this threshold velocity will be considerably higher if the vehicle strikes an object such as a parked car which will move and deform on impact. The air bag is also not designed to inflate in rollovers, side impacts, or rear impacts where the inflation would provide no occupant protection benefit. In any particular crash, the determination of whether the air bag should have inflated cannot be based solely on the level of damage on the vehicle(s). Inflation is determined by the angle of the impact and the vehicle's deceleration of which vehicle damage is only one

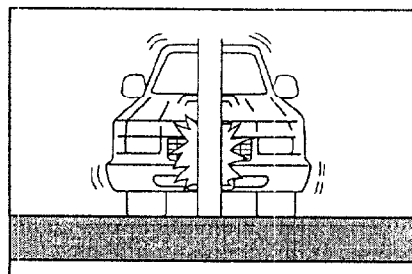
indication. Repair cost is not a good indicator of whether an air bag should have deployed.

When the air bag may not inflate.

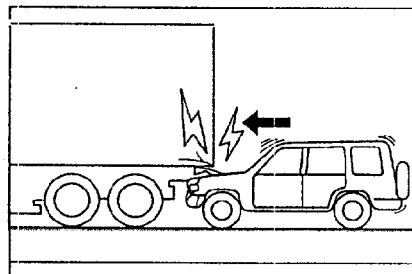
In certain types of accidents, the air bag may not inflate, even though your vehicle may appear severely damaged. This does not mean there is a problem with the air bag, but rather the forces of the collision were insufficient to activate the air bag system. In other words, the air bag inflates only in collisions of sufficient force to require a supplement to seat belt protection.

If the air bag fails to inflate in a frontal collision, have the air bag system inspected as soon as possible by your Isuzu Dealer.

@Depending on the severity of impact, a collision with a pole may or may not activate the air bag.

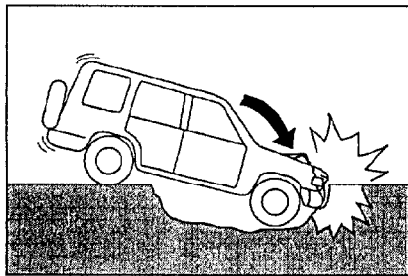


• If an automobile underrides the bed of a truck, the impact may not be severe enough to activate the system.

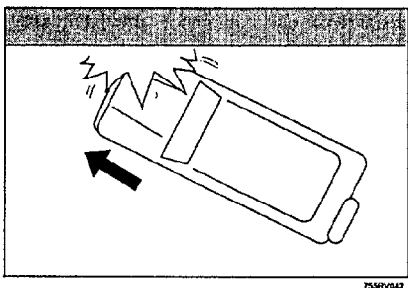


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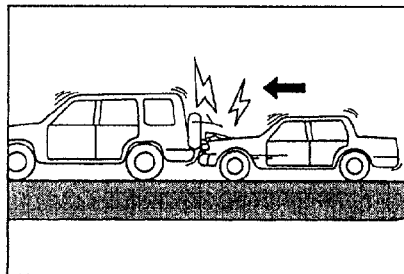
- An impact caused by dropping into a large pothole or depression in the roadway may or may not inflate the air bag.



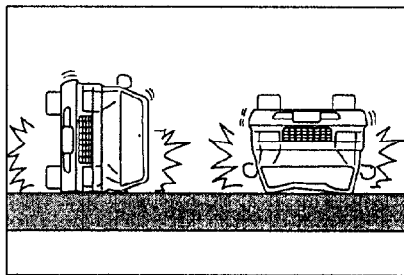
- A frontal angle collision may not inflate the air bag.



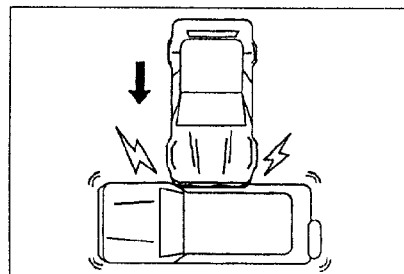
- A rear-end collision may not inflate the air bag.



- A rollover may not inflate the air bag.



- A side collision may not inflate the air bag.



What makes an air bag inflate?

In a frontal or near-frontal impact of sufficient severity, control units strategically located on the vehicle detect that the vehicle is suddenly stopping as a result of a crash. The control units complete an electrical circuit, triggering a chemical reaction the inflator. The reaction produces gas in both driver and front passenger sides which inflates a cloth bag. The inflator, cloth bag, and related hardware are all part of the air bag inflator modules packed inside the steering wheel and in the instrument panel in front of the passenger.

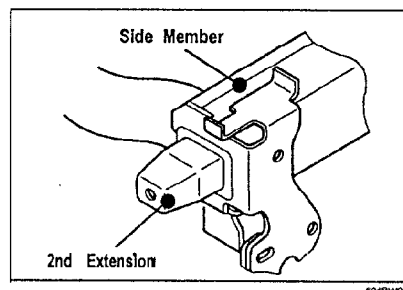
How does an air bag restrain?

In moderate to severe frontal or near-frontal collisions, even belted occupants can contact the steering wheel or the instrument panel. The air bag supplements the protection provided by safety belts. Air bags distribute the force of the impact more evenly over the occupant's upper body, stopping the occupant more gradually. But air bags will not provide protection in many types of collisions, including rollovers and rear and side impacts, primarily because an occupant's motion is not toward the air bag. Air bags should never be regarded as anything more than a supplement to

safety belt protection in moderate to severe frontal and near-frontal collisions.

2ND EXTENSION

2nd Extension located at the 1st cross member.



NOTE

- If the front of your vehicle is damaged, the air bag may fail to deploy. In the event the front of the vehicle is damaged, have the vehicle inspected by your Isuzu Dealer.