

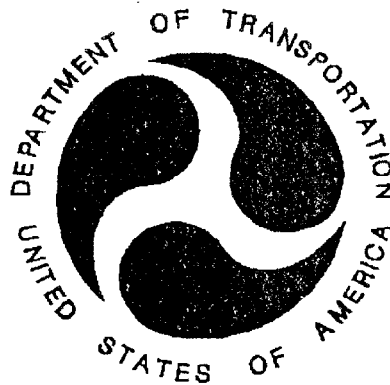
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NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

FRONTAL BARRIER 40% OFFSET IMPACT TEST

CHRYSLER CORPORATION
1998 DODGE NEON 4-DOOR
NIHTSA NO. MW0311

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



NOVEMBER 13, 1998
FINAL REPORT

PREPARED FOR:
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16. <i>Abstract</i> A 60.3 km/h (37.5 MPH) 40% offset frontal barrier impact test was conducted on a 1998 DODGE NEON 4-DOOR at KARCO Engineering on October 27, 1998. This test was conducted to obtain data indicant of FMVSS 212, 219 (partial), 301 and footwell intrusion performance. The impact velocity was 60.72 km/h. The ambient temperature at the barrier face at the time of impact was 22.2°C. The vehicle's maximum post-test static crush was 642 mm, located to the left side of the vehicle. 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 "Occupant Crash Protection – Injury Criteria" the occupant injury response data summary is as follows: <table border="1"> <thead> <tr> <th><u>Injury Criteria</u></th> <th><u>Threshold Value</u></th> <th><u>Driver Dummy</u></th> <th><u>Passenger Dummy</u></th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC)</td> <td>1000</td> <td>386.7</td> <td>276.6</td> </tr> <tr> <td>Chest Resultant Peak 3 msec clip</td> <td>60 G's</td> <td>44.3</td> <td>48.8</td> </tr> <tr> <td>Left Femur Force</td> <td>10009 N</td> <td>-4169.7</td> <td>-2886.2</td> </tr> <tr> <td>Right Femur Force</td> <td>10009 N</td> <td>-1563.2</td> <td>-866.8</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	386.7	276.6	Chest Resultant Peak 3 msec clip	60 G's	44.3	48.8	Left Femur Force	10009 N	-4169.7	-2886.2	Right Femur Force	10009 N	-1563.2	-866.8
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SECTION 1

PURPOSE, TEST PROCEDURE AND SUMMARY OF TEST MW0311

1.1 PURPOSE

This 37.5 mph (60.3 km/h) frontal barrier impact test is part of the FY' 98 forty percent offset 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, occupant restraint system performance data and lower leg data for frontal barrier impacts with the vehicle impacting a deformable barrier with the vehicle centerline offset on the driver side. The velocity used in this test was in excess of the current 37.5 mph (60.3 km/h) FMVSS 212/219/301 requirements. The test program will be used to develop a standard for driver footwell intrusion data during frontal collisions.

1.2 TEST PROCEDURE

This 60.3 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 "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 October 27, 1998, at a speed of 60.72 km/h. The test vehicle was instrumented with eight (8) 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 59.5 to 61.1 km/h. The frontal barrier impact event was documented by one (1) real-time panning motion picture camera and sixteen (16) 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 5th percentile adult female anthropomorphic test devices (ATDs). Both ATDs were instrumented with head, chest and 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. 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. 273) and the right-front passenger ATD (serial No. 274) were used in one prior test since their last calibration. Injury criteria were not exceeded by either ATD during this forty percent offset frontal barrier impact test.

1.3 SUMMARY OF FRONTAL BARRIER IMPACT TEST

A deformable barrier was mounted to an immovable barrier to simulate the oncoming vehicle. The deformable barrier was impacted by a 1998 Dodge Neon at a velocity of 60.72 km/h. The test vehicle was equipped with a transverse mounted 2.0 liter, four cylinder engine and a three speed automatic transmission. The test weight, with (2) 5th percentile female ATDs, was 1307 kg.

The driver's Head Injury Criteria (HIC) was 386.7, the maximum chest deceleration over three (3) milliseconds was 44.3 g and the left and right femur loads were -4169.7 and -1563.2 Newtons, respectively. Chest deflection for the driver ATD was -33.5 mm. The driver ATD head contacted the airbag, its chest and abdomen contacted the airbag, both knees contacted the dash knee bolster.

The right front passenger's (HIC) was 276.6, the maximum chest deceleration over three (3) milliseconds was 48.8 g and the left and right femur loads were -2886.2 and -866.8 Newtons respectively. Chest deflection for the passenger ATD was -22.1 mm. The passenger ATD head contacted the airbag, the chest and abdomen contacted the airbag and both knees contacted the glove box.

Seat belt spoolout, measured by on-board pullout potentiometers was 65.1 mm for the driver ATD and 99.9 mm for the passenger ATD. Shoulder belt stretch was 254.7 mm/cm for the driver ATD and 0.0 mm/cm for the passenger ATD. Channel failed on the passenger, no data.

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 642 mm at the left side of the vehicle. The driver side front door required the aid of tools to open, all other doors opened without the aid of tools.

1.4 GENERAL COMMENTS

The 1998 DODGE NEON 4-DOOR passed the requirements of FMVSS 212, FMVSS 219 and FMVSS 301. 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 Deformable Barrier information. Appendix D contains the instrumentation data channel assignments. Appendix E contains the dummy calibration data and Appendix F contains the owner's manual instructions for the occupant restraint systems.

SECTION 2.

OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 1998 DODGE NEON 4-DOOR SEDAN NHTSA No.: MW0311

Test Program: 1998 37.5MPH 40% OFFSET W/5TH FEMALE Test Date: 10/27/98

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 DODGE NEON 4-DOOR SEDAN

NHTSA No.: MW0311

Test Program: 1998 37.5MPH 40% OFFSET W/5TH FEMALE

Test Date: 10/27/98

VEHICLE REBOUND AND STATIC CRUSH; REBOUND ANGLE = 0°

Measurements in mm	Left	Center	Right
Pre-test Measurements	4075	4360	4074
Post-test Measurements	3433	3996	4270
Static Crush	-642	-364	+196

DOOR OPENING AND SEAT TRACK INFORMATION

	Driver	Passenger
Door Opening (Front)	JAMMED	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.	5% Female Hybrid III (S/N 273)	5% Female Hybrid III (S/N 274)
Data Channels	44	44
Visible Contact Points		
Head	AIR BAG	AIR BAG
Chest	AIR BAG	AIR BAG
Abdomen	BELT	BELT
Left Knee	KNEE BOLSTER	GLOVE BOX
Right Knee	KNEE BOLSTER	GLOVE BOX

DATA SHEET NO. 2

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 1998 DODGE NEON 4-DOOR SEDAN

NHTSA No.: MW0311

Test Program: 1998 37.5MPH 40% OFFSET W/5TH FEMALE

Test Date: 10/27/98

TEST VEHICLE INFORMATION			
Manufacturer	CHRYSLER CORPORATION	VIN	1B3ES47C1WD550365
Manufacturing Date	9/97	Delivery Date	10/15/98
Dealer	VICTORVILLE MOTORS	NHTSA NO.	MW0311
Odometer Reading	250.0	Fuel Type	UNLEADED
Engine Displacement	2.0 Liters	Cylinders	4
Transmission	AUTOMATIC	Final Drive	FRONT
Engine Placement	TRANSVERSE	Color	RED
Tire Press./Max. Cap. Front	224 kPa	Cold Tire Press. Front	224 kPa
Tire Press./Max. Cap. Rear	224 kPa	Cold Tire Press. Rear	224 kPa
Recommend Tire Size	P185/65R14	Type of Spare	TEMPORARY T115/70D14
Tire Size on Vehicle	P185/65R14	Manufacturer	GOODYEAR
GVWR	1589 kg	Cargo Capacity	52 kg
GAWR Front	866 kg	GAWR Rear	728 kg
Air Conditioning	YES	Power Steering	YES
Power Brakes	YES	AM/FM/Cassette	YES
Disc Brakes (Front)	YES	Disc Brakes (Rear)	NO
Power Windows	NO	Tilt Steering	NO
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): 1166 kg

Data Sheet No. 2... (Continued)

VEHICLE CAPACITY WEIGHT (kg):

Vehicle Capacity Weight 392 kg
 Occupant Weight 340 kg
 Rated Cargo/Luggage Weight (RCLW) 52 kg

	FRONT	REAR	TOTAL
Right	373	205	578
Left	381	207	588
Total	754	412	1166
Percent of Total	64.6	35.4	100%

CALCULATION OF TEST TARGET WEIGHT (kg):

Total Delivered Weight 1166 kg
 RCLW 52 kg
 Weight of 2 P572 ATDs 95 kg
 TARGET TEST WEIGHT 1313 kg

TEST WEIGHT OF VEHICLE WITH 2 ATDs AND BALLAST

	FRONT	REAR	TOTAL
Right	381	252	633
Left	406	268	674
Total	787	520	1307
Percent of Total	60.2	39.8	100%

Weight of Ballast secured in cargo area: 0 kg Does not include cameras, instrumentation, and brake abort system.

Vehicle Components Removed For Weight Reduction:

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

TEST VEHICLE ATTITUDE (mm)

	LF	RF	LR	RR
As Delivered	650	649	685	685
As Tested	632	630	662	662

Vehicle Wheelbase: 2645 mm

FUEL SYSTEM DATA:

Fuel System Capacity From Owner's Manual = 47.31 liters

Usable Capacity Figure Furnished by COTR = 47.31 liters

Test Volume Range (92 to 94% of Usable Capacity) = 43.53 to 44.48 liters

ACTUAL TEST VOLUME = 43.91 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 operated w/automatic shutoff.

DATA SHEET NO. 3

POST IMPACT DATA

Test Vehicle: 1998 DODGE NEON 4-DOOR SEDAN

NHTSA No.: MW0311

Test Program: 1998 37.5MPH 40% OFFSET W/5TH FEMALE

Test Date: 10/27/98

REQUIRED IMPACT VELOCITY RANGE: 59.5 km/h to 61.1 km/h

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

Trap No. 1 = 60.74 km/h Trap No. 2 = 60.73 km/h

Distance from vehicle to barrier - -

A. entering trap = 1524 mm

B. leaving trap = 305 mm

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

Vehicle Length	Left	Center	Right
Pre-test Measurements (mm)	4075	4360	4074
Post-test Measurements (mm)	3433	3996	4270
Static Crush (mm)	-642	-364	+196
Average	-270		

VEHICLE REBOUND: (from rigid barrier with rotational movement)

Measurements in mm	Left Front	Right Front	Left Rear	Right Rear
Vehicle Rebound X axis	2630	1090	3845	2600
Vehicle Rebound Y axis	1000	1580	2910	3910
Average X axis	2541			
Average Y axis	2350			

DATA SHEET NO. 4

TEST VEHICLE INFORMATION

Test Vehicle: 1998 DODGE NEON 4-DOOR SEDAN

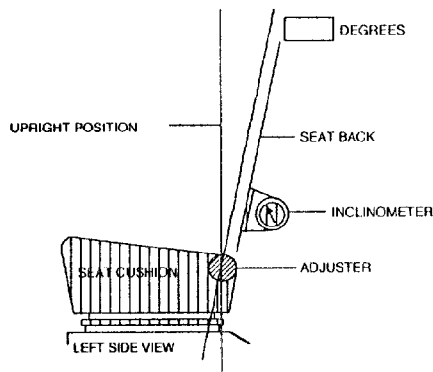
NHTSA No.: MW0311

Test Program: 1998 37.5MPH 40% OFFSET W/5TH FEMALE

Test Date: 10/27/98

1. NOMINAL DESIGN RIDING POSITION -

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



FRONT SEAT ASSEMBLY

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 = 18°

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 = 18°

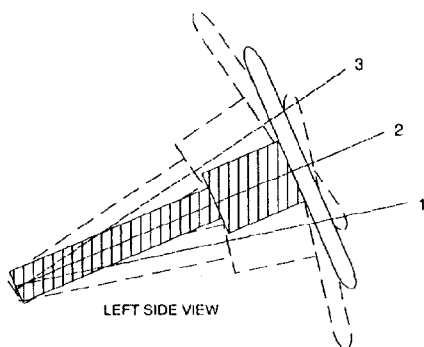
2. SEAT FORE & AFT POSITIONS:

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: 23 seating positions, set to 1st detent from the front.

Positioning of the passenger's seat (if applicable): 23 seating positions, set to 1st detent from the front.

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 N/A°

Position No. 2 is at 23°

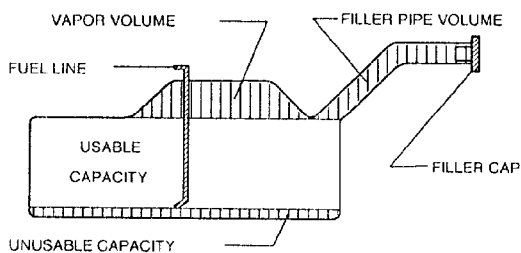
Position No. 3 is at N/A°

4. SEAT BELT UPPER ANCHORAGE:

6 Positions, set in 4th per manufacturers specifications.

DATA SHEET NO. 4 (continued)

5. FUEL TANK CAPACITY DATA



- 5.1 A. "Usable Capacity" of standard equipment fuel tank = 47.31 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 = 43.53 to 44.48 liters.

VEHICLE FUEL TANK ASSEMBLY

Operational Instructions:

5.2 Amount of Stoddard solvent added to vehicle(s) used for certification test(s) = 43.91 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 operated w/automatic shutoff.

DATA SHEET NO. 5

DUMMY POSITIONING IN VEHICLE

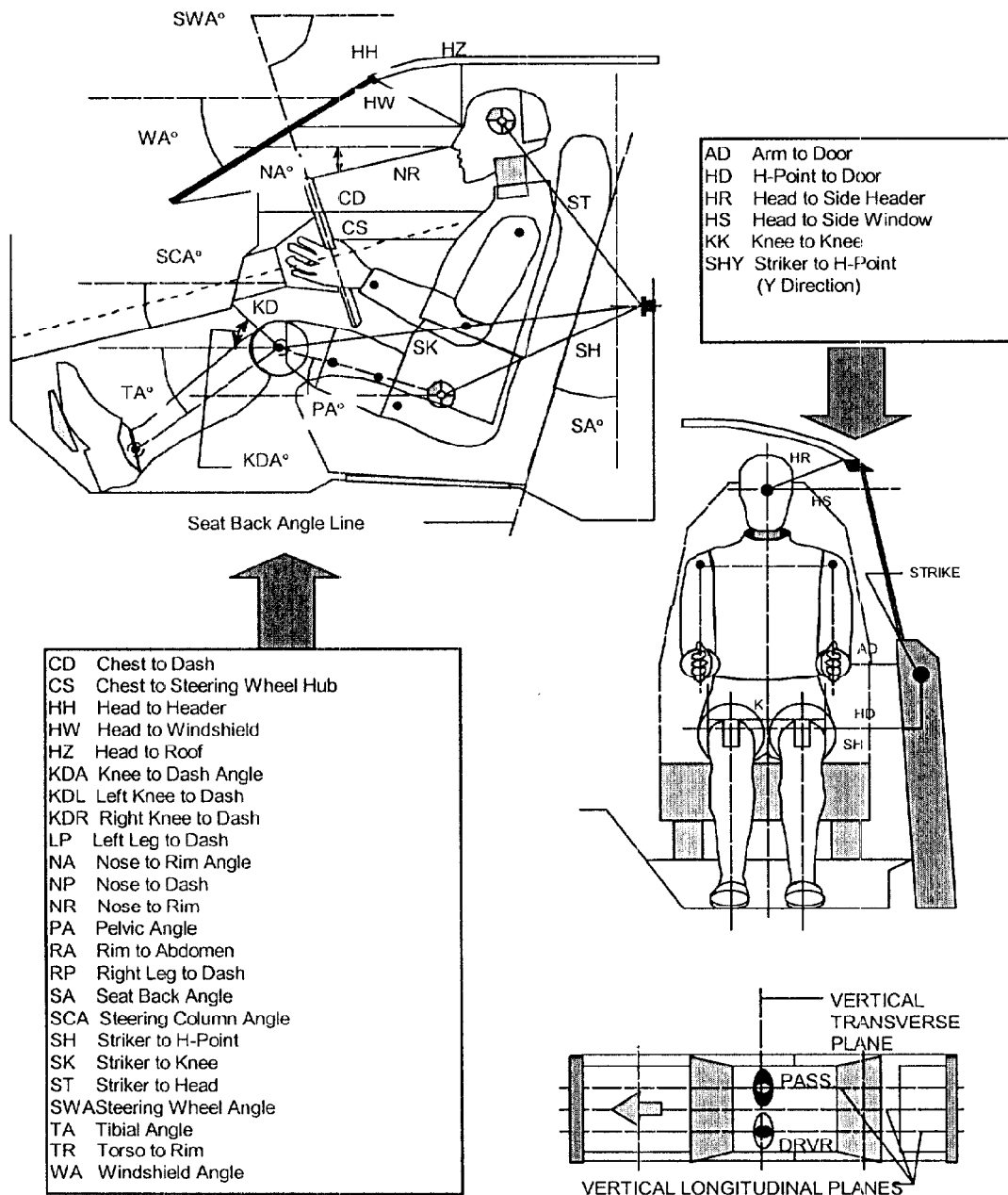
Test Vehicle: 1998 DODGE NEON 4-DOOR SEDAN

NHTSA No.: MW0311

Test Program: 1998 37.5MPH 40% OFFSET W/5TH FEMALE

Test Date: 10/27/98

DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS



DATA SHEET NO. 5...(continued)

DUMMY POSITIONING IN VEHICLE

FRONT SEAT MEASUREMENT TABLE

	DRIVER (Serial No. <u>273</u>)		PASS. (Serial No. <u>274</u>)	
	DISTANCE (mm)	ANGLE (°)	DISTANCE (mm)	ANGLE (°)
WA°		28		
SWA°		67		
SCA°		23		
SA°		18		18
HZ	260	90	250	90
HH	264	0	250	0
HW	610	0	585	0
HR	240		245	
NR	230	5		
CD	440		390	
CS	180	0		
RA	60	0		
KDL	85	32	90	
KDR	60		95	50
PA°		2		22
TA°		44		46
KK	230		200	
ST	540	66	520	68
SH	325	0	320	0
SHY	250		225	
HS	300		310	
HD	150		140	
AD	45		91	

DATA SHEET NO. 6

SEAT BELT POSITIONING DATA

Test Vehicle: 1998 DODGE NEON 4-DOOR SEDAN

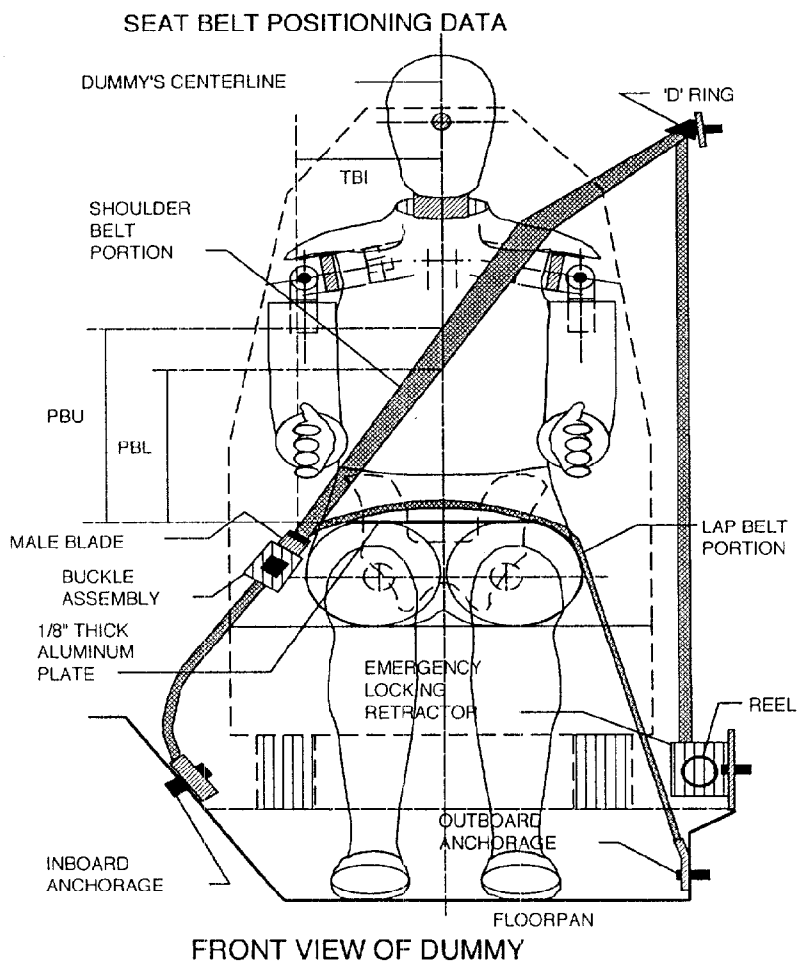
NHTSA No.: MW0311

Test Program: 1998 37.5MPH 40% OFFSET W/5TH FEMALE

Test Date: 10/27/98

SEAT BELT PLACEMENT MEASUREMENTS

Measurement Description	Units	Driver	Passenger
TCI - Dummy centerline to shoulder bolt	mm	160	160
PBU - Top surface of reference to belt upper edge	mm	200	210
PBL - Top surface of reference to belt lower edge	mm	130	135
Lap Belt tension	Newtons	10	10
Shoulder Belt tension	N/A	Retractor	Retractor



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

TEST VEHICLE: 1998 DODGE NEON 4 DOOR SEDAN NHTSA No.: MW0311
 TEST PROGRAM: 1998 37.5MPH OFFSET, 5TH FEMALE TEST DATE: 10/27/98

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 Sill X	1605	-533	354	G's	2.0	255.0	-30.5	75.5
2	Left Sill Y	1565	-533	354	G's	10.7	90.0	-4.5	109.4
3	Center Tunnel X	1690	0	250	G's	1.2	181.7	-38.5	88.6
4	Center Tunnel Y	1776	28	250	G's	18.8	89.5	-8.0	108.8
5	Right Sill X	1420	635	340	G's	1.1	254.7	-22.3	58.9
6	Right Sill Y	1370	635	340	G's	11.6	89.4	-3.4	108.9
7	Trunk X	245	0	568	G's	3.9	231.5	-28.1	78.2
8	Trunk Y	284	126	495	G's	15.0	79.6	-3.4	90.1

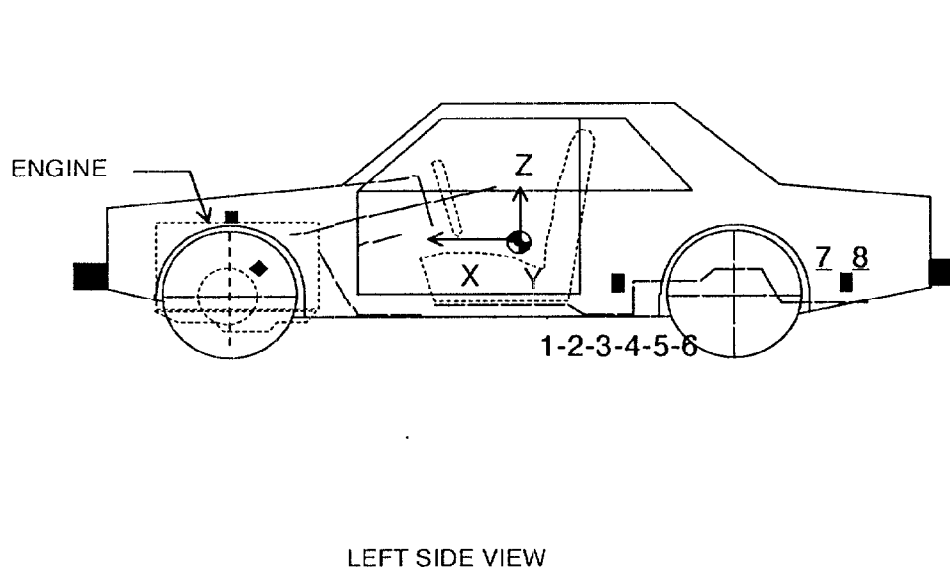
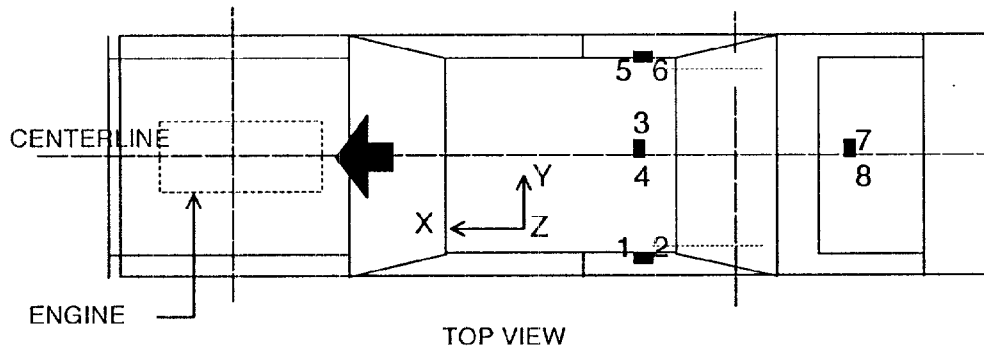
Reference Points

X - From Rear Surface of Vehicle

Y - Vehicle Centerline

Z - Ground Plane

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



DATA SHEET NO. 8 - HYBRID III 5TH FEMALE ATD INJURY CRITERIA AND SENSOR DATA

TEST VEHICLE: 1998 DODGE NEON 4 DOOR SEDAN NHTSA No.: MW0311

TEST PROGRAM: 1998 37.5MPH OFFSET, 5TH FEMALE TEST DATE: 10/27/98

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	18.2	131.1	-59.1	65.1	7.9	153.0	-49.0	74.6
Head CG	Y	G's	19.7	88.4	-10.4	59.2	21.7	95.3	-14.3	70.7
Head CG	Z	G's	30.1	62.4	-8.3	137.4	25.5	65.5	-1.8	32.8
Head CG Resultant	N/A	G's	65.5	62.4			52.0	79.3		

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	9.5	140.7	-44.9	65.5	4.7	175.5	-47.4	76.6
Chest CG	Y	G's	19.1	115.4	-1.8	74.7	20.2	71.9	-2.7	170.5
Chest CG	Z	G's	23.9	138.2	-4.1	69.1	15.4	66.9	-6.3	130.3
Chest CG Resultant	N/A	G's	45.3	65.3			50.5	71.8		

FEMUR PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Femur	Z	Newtons	207.6	218.9	-4169.7	86.1	221.4	57.9	-2876.2	77.2
Right Femur	Z	Newtons	660.3	99.1	-1563.2	73.5	633.7	52.8	-866.8	62.2

SEAT BELT SENSOR PEAK VALUES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Lap Belt Force	N/A	Newtons	1862.8	58.7	-2.0	0.9	4385.7	70.4	2.9	0.0
Shoulder Belt Force	N/A	Newtons	1604.1	65.2	-10.3	299.9	5037.2	75.0	6.8	299.9
Shoulder Belt Spoolout	N/A	MM	43.6	65.1	0.0	73.7	71.9	99.9	0.0	14.1
Shoulder Belt Stretch	N/A	MM/CM	0.226	254.7	-0.005	48.7	0.000	0.0	0.000	0.0*

* Passenger Side Failed

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	386.7	43.0	57.0	88.8	276.6	35.8	61.6	97.5

CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Primary	44.3	64.4	67.4	48.8	75.0	78.0

DATA SHEET NO. 8...(continued)

TEST VEHICLE: 1998 DODGE NEON 4 DOOR SEDAN

NHTSA No.: MW0311

TEST PROGRAM: 1998 37.5MPH OFFSET, 5TH FEMALE

TEST DATE: 10/27/98

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	452.5	63.4	-154.3	231.9	355.8	74.6	-77.5	61.0
Neck Force	Y	Newtons	210.0	180.7	-241.5	133.1	524.8	182.0	-206.3	106.3
Neck Force	Z	Newtons	2102.2	66.7	-424.3	137.7	1516.6	78.3	-96.3	29.9
Neck Moment	X	N·m	17.0	103.0	-5.8	158.5	23.8	175.0	-10.0	278.2
Neck Moment	Y	N·m	17.1	64.1	-25.6	168.0	14.1	71.3	-19.5	163.9
Neck Moment	Z	N·m	13.0	193.4	-30.7	118.2	19.0	184.7	-29.4	119.4

FOOT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Foot Aft	X	G's	47.1	73.5	-97.6	48.8	10.4	112.9	-53.0	70.8
Left Foot Aft	Z	G's	11.5	70.9	-45.4	78.5	18.2	60.9	-32.7	74.2
Left Foot Fore	Z	G's	88.6	65.0	-91.0	47.5	12.0	69.5	-40.7	74.4
Right Foot Aft	X	G's	35.5	66.4	-94.4	62.0	15.9	76.1	-55.2	66.8
Right Foot Aft	Z	G's	17.7	71.1	-89.6	60.6	8.0	76.0	-24.3	78.0
Right Foot Fore	Z	G's	165.1	64.1	-206.0	59.0	9.7	43.2	-53.4	64.9

UPPER AND LOWER TIBIA PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Upper Force	X	Newtons	188.6	49.5	-1669.4	75.5	99.2	21.6	-264.5	76.9
Left Upper Force	Z	Newtons	101.9	7.2	-2222.4	79.4	101.4	293.6	-1678.7	75.1
Left Upper Moment	X	N·m	20.0	115.4	-60.0	71.2	48.2	114.8	-23.7	61.4
Left Upper Moment	Y	N·m	66.4	76.6	-60.5	49.3	13.2	285.0	-66.9	73.2
Left Lower Force	X	Newtons	37.0	11.7	-1978.8	78.2	98.8	208.7	-592.4	72.5
Left Lower Force	Z	Newtons	99.0	3.4	-2332.1	73.8	5877.4	60.3	-1393.1	116.0
Left Lower Moment	X	N·m	2.4	47.8	-90.9	73.7	48.1	114.6	-41.0	72.4
Left Lower Moment	Y	N·m	364.7	76.0	-38.9	48.7	11.7	112.1	-20.5	60.1
Right Upper Force	X	Newtons	330.2	60.7	-685.5	72.9	140.1	242.3	-197.7	69.4
Right Upper Force	Z	Newtons	222.2	54.9	-3024.8	67.5	138.4	256.1	-1107.3	69.7
Right Upper Moment	X	N·m	18.8	105.8	-204.5	68.1	37.6	121.0	-39.6	70.4
Right Upper Moment	Y	N·m	3.9	22.4	-99.1	68.2	24.9	117.3	-61.7	67.6
Right Lower Force	X	Newtons	45.1	22.7	-1354.8	67.9	98.9	239.3	-461.5	69.3
Right Lower Force	Z	Newtons	235.1	52.6	-3516.5	67.1	122.5	236.8	-1282.1	69.4
Right Lower Moment	X	N·m	7.5	60.6	-262.5	67.3	7.9	137.6	-51.6	70.9
Right Lower Moment	Y	N·m	73.9	72.7	-42.7	60.8	16.1	117.2	-22.0	65.1

DATA SHEET NO. 8...(continued)

TEST VEHICLE: 1998 DODGE NEON 4 DOOR SEDAN

NHTSA No.: MW0311

TEST PROGRAM: 1998 37.5MPH OFFSET, 5TH FEMALE

TEST DATE: 10/27/98

CHEST PEAK DISPLACEMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	MM	0.1	8.4	-28.5	80.6	0.2	3.9	-22.1	79.1

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	3.8	110.8	-59.0	66.0	1.8	139.9	-57.1	69.5
Pelvis	Y	G's	13.9	123.6	-11.4	67.6	16.8	76.5	-9.4	142.6
Pelvis	Z	G's	5.5	269.1	-20.7	135.7	3.8	271.3	-14.7	73.4

DATA SHEET NO. 9**SEAT BELT PERFORMANCE ASSESSMENT TEST DATA**Test Vehicle: 1998 DODGE NEON 4-DOOR SEDANNHTSA No.: MW0311Test Program: 1998 37.5MPH 40% OFFSET W/5TH FEMALETest Date: 10/27/98**BELT LENGTH DATA**

Measurement Description	Units	Driver	Passenger
Retractor reel to 'D' ring	mm	480	480
Shoulder belt length as measured on ATD	mm	820	840
Lap belt length as measured on ATD	mm	730	720
Remainder of belt on reel	mm	560	570
Total belt length for continuous webbing systems	mm	2590	2610

SHOULDER BELT SPOOL-OFF DATA

Measurement Description	Units	Driver	Passenger
As determined mechanically	mm	40.0	70.0
As determined electronically	mm	65.1	99.9

BELT STRETCH DATA

Measurement Description	Units	Driver	Passenger
Electronically from shoulder belt load cell and "D" ring	mm/cm	254.70	FAILED
Mechanically	mm/cm	0.00	0.01

DATA SHEET NO. 10

SUMMARY OF FMVSS 212 DATA

Test Vehicle: 1998 DODGE NEON 4-DOOR SEDAN

NHTSA No.: MW0311

Test Program: 1998 37.5MPH 40% OFFSET W/5TH FEMALE

Test Date: 10/27/98

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

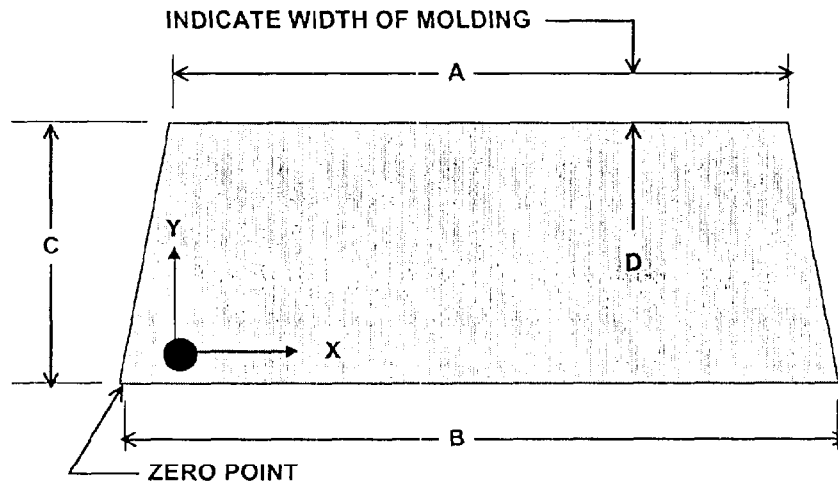
Windshield glass is secured to the vehicle frame with a rubber type adhesive, with rubber molding along the top and sides with rubber and plastic molding along the bottom.

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

	Units	Left Side	Right Side	Total
Pre-Test	mm	1969	1969	100%
Post-Test	mm	1969	1969	100%
Percent of retention	Percent	100%	100%	

Indicate area of retention failure.



FRONT VIEW OF WINDSHIELD

Width of molding: Top: 17 mm, Sides: 17 mm, Bottom: 7 mm

Temperature of windshield molding during test: 21.1 °C

DATA SHEET NO. 11

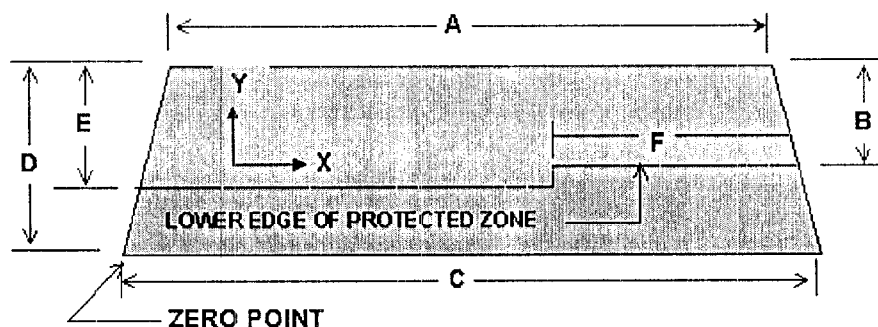
WINDSHIELD ZONE INTRUSION FMVSS 219 (PARTIAL) DATA

Test Vehicle: 1998 DODGE NEON 4-DOOR SEDAN

NHTSA No.: MW0311

Test Program: 1998 37.5MPH 40% OFFSET W/5TH FEMALE

Test Date: 10/27/98



FRONT VIEW OF WINDSHIELD

Item	Units	Value
A	mm	1041
B	mm	463
C	mm	1513
D	mm	692
E	mm	485
F	mm	5066

Provide all dimensions necessary to reproduce the protected area.

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 DODGE NEON 4-DOOR SEDAN NHTSA No.: MW0311
Test Program: 1998 37.5MPH 40% OFFSET W/5TH FEMALE Test Date: 10/27/98
Test Time: 11:40 AM Temperature at Time of Impact: 22.2 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

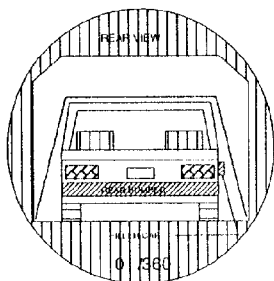
Test Vehicle: 1998 DODGE NEON 4-DOOR SEDAN

NHTSA No.: MW0311

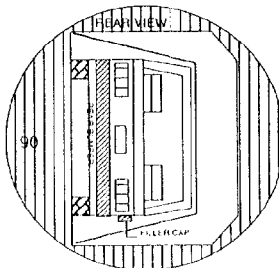
Test Program: 1998 37.5MPH 40% OFFSET W/5TH FEMALE

Test Date: 10/27/98

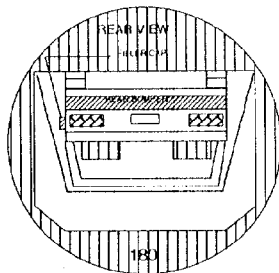
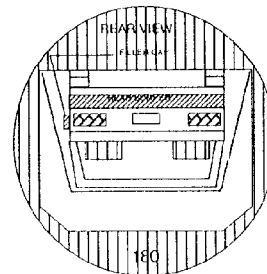
Time: 11:40 AM Temperature: 22.2 °C



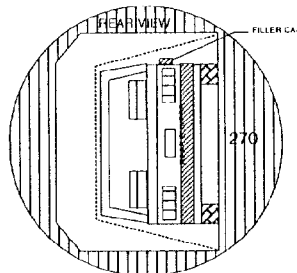
0° TO 90°



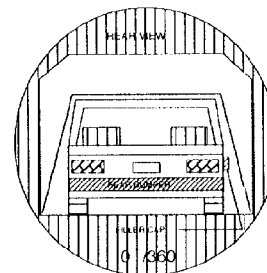
90° TO 180°



180° TO 270°



270° TO 360°



1. The specified fixture rollover rate for each 90° of rotation = 60 to 120 seconds.
2. The position hold time at each position = 300 seconds (minimum).
3. Provide details of Stoddard Solvent spillage locations:
No solvent leakage occurred during rollover testing.

TEST PHASE	Rotation Time (sec.)	Hold Time (sec.)	Spillage (oz.)
0° TO 90°	83	300	0.0
90° TO 180°	81	300	0.0
180° TO 270°	80	300	0.0
270° TO 360°	81	300	0.0

DATA SHEET NO. 14

VEHICLE MEASUREMENTS

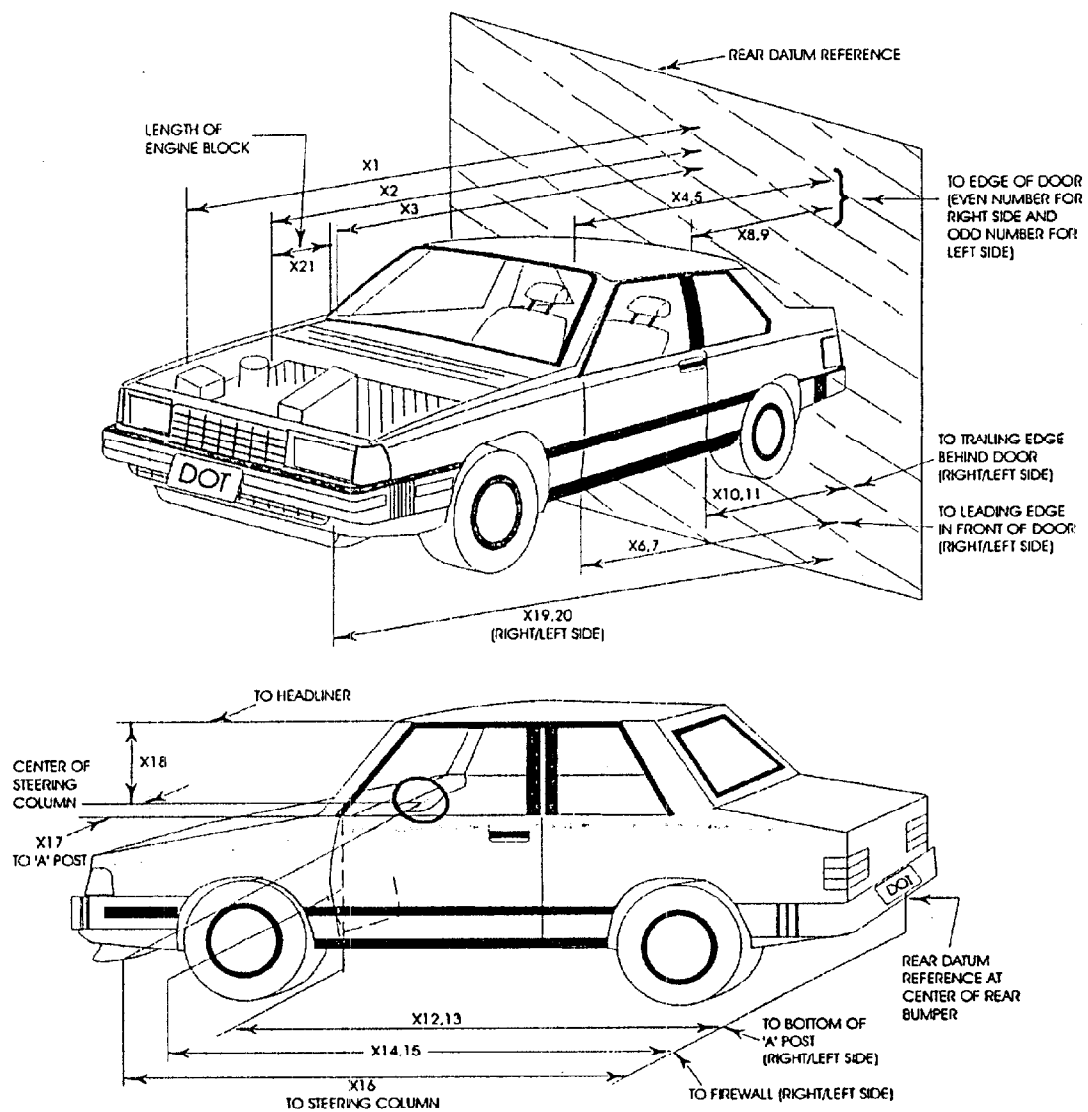
Test Vehicle: 1998 DODGE NEON 4-DOOR SEDAN

NHTSA No.: MW0311

Test Program: 1998 37.5MPH 40% OFFSET W/5TH FEMALE

Test Date: 10/27/98

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
1	Total length of vehicle at centerline	mm	4360	3996	-364
2	RSOV to front of engine	mm	3728	3620	-108
3	RSOV to firewall centerline	mm	3394	3125	-269
4	RSOV to leading edge of right door	mm	2974	2975	1
5	RSOV to leading edge of left door	mm	2968	2945	-23
6	RSOV to lower leading edge of right door	mm	3014	3019	5
7	RSOV to lower leading edge of left door	mm	3023	2947	-76
8	RSOV to upper trailing edge of right door	mm	1966	1979	13
9	RSOV to upper trailing edge of left door	mm	1965	1976	11
10	RSOV to lower trailing edge of right door	mm	1962	1964	2
11	RSOV to lower trailing edge of left door	mm	1964	1935	-29
12	RSOV to bottom of right 'A' pillar	mm	2989	2989	0
13	RSOV to bottom of left 'A' pillar	mm	2992	2727	-265
14	RSOV to firewall on right side	mm	3292	3236	-56
15	RSOV to firewall of left side	mm	3282	3028	-254
16	RSOV to steering column	mm	2575	2362	-213
17	Center of steering column to left 'A' pillar	mm	460	475	15
18	Center of steering column to headlining	mm	435	617	182
19	RSOV to right side of front bumper	mm	4074	4270	196
20	RSOV to left side of front bumper	mm	4075	3433	-642
21	Length of engine block	mm	220	220	0
22	RSOV to right side of dash panel	mm	2689	2685	-4
23	RSOV to center of dash panel	mm	2670	2508	-162
24	RSOV to left side of dash panel	mm	2704	2454	-250



DATA SHEET NO. 15

CAMERA LOCATIONS

Test Vehicle: 1998 DODGE NEON 4-DOOR SEDAN

NHTSA No.: MW0311

Test Program: 1998 37.5MPH 40% OFFSET W/5TH FEMALE

Test Date: 10/27/98

No.	Camera View	Location (mm)			Angle (°)	Film Plane to Head	Lens (mm)	Speed (fps)
		X	Y	Z				
1	Right Side, Real Time	3454	10973	1245	0	1651	Zoom	24
2	Left Side, No. 1	1041	8255	1067	3	7671	19	980
3	Left Side, No. 2	406	7874	1372	0	7442	35	1010
4	Left Side, No. 3	-1219	4343	1842	10	5004	13	860
5	Left Side, No. 4	3658	3404	1981	16	3277	19	990
6	Left Side, No. 5	1168	8306	3073	15	8001	24	1000
7	Left Side, No. 6	1168	8230	2565	12	7772	19	990
8	Right Side, No. 1	1067	8128	1048	1	7671	25	940
9	Right Side, No. 2	762	8255	1511	4	7747	50	930
10	Right Side, No. 3	5690	7620	2146	9	8026	40	470
11	Right Side, No. 4	1905	11481	1054	1	10820	CAMERA	JAMMED
12	Overhead Overall	610	178	5486	86	N/A	6	1020
13	Overhead Close-up	406	0	5791	87	N/A	35	980
14	Front View Driver	-1778	457	2642	40	N/A	13	1020
15	Front View, Passenger	-1778	406	2642	40	N/A	13	1010
16	Onboard, Driver	3302	140	1067	3	1194	13	510
17	Onboard, Passenger	3277	140	1067	6	1194	13	500

* X - Barrier Face Y - Monorail Centerline Z - Ground

DATA SHEET NO. 16

REFERENCE PHOTOGRAPH TARGETS

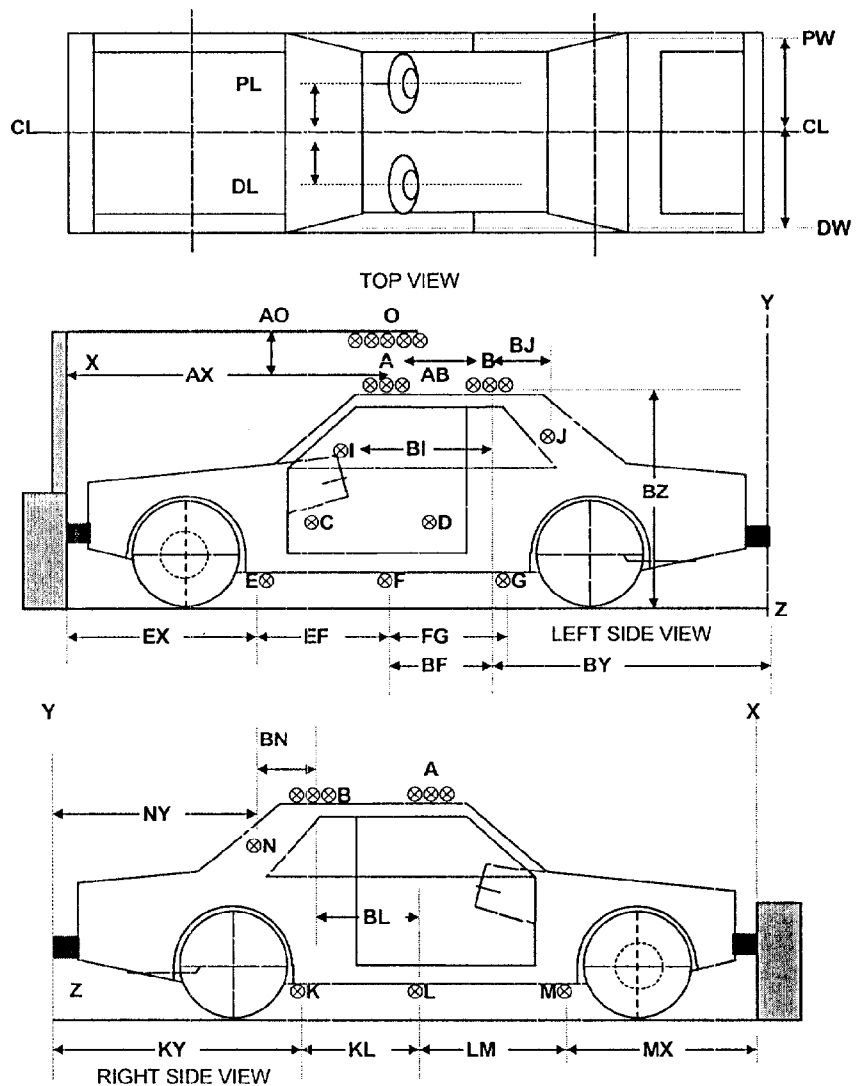
Test Vehicle: 1998 DODGE NEON 4-DOOR SEDAN

NHTSA No.: MW0311

Test Program: 1998 37.5MPH 40% OFFSET W/5TH FEMALE

Test Date: 10/27/98

Item	Value
AX	2153
AB	607
AO	153
BJ	489
BI	1125
BZ	1453
EX	1306
EF	894
FG	894
BF	555
BY	1605
NY	1126
BN	523
KY	1281
KL	891
BL	566
LM	893
MX	1299
CL/PL	350
CL/PW	728.5
CL/DL	350
CL/DW	728.5



DATA SHEET NO. 17

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 1998 DODGE NEON 4-DOOR SEDAN

NHTSA No.: MW0311

Test Program: 1998 37.5MPH 40% OFFSET W/5TH FEMALE

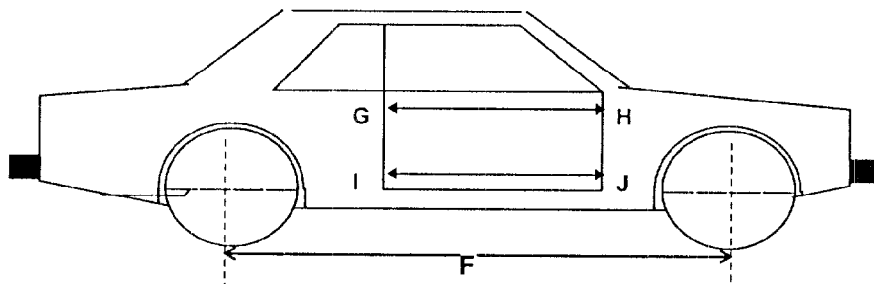
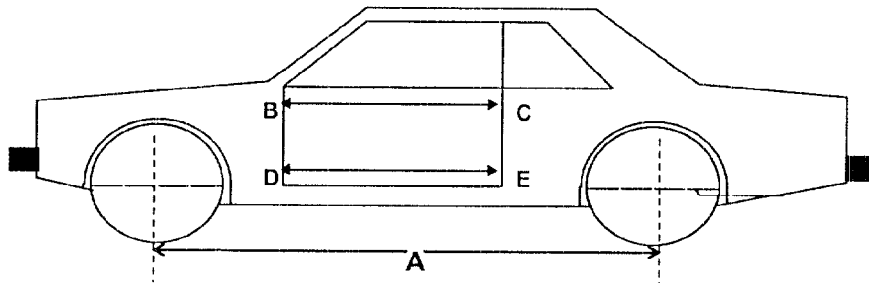
Test Date: 10/27/98

DOOR OPENING WIDTH

UNITS (mm)	LEFT SIDE		RIGHT SIDE	
MEASUREMENT	BC	DE	GH	IJ
PRE-TEST	966	907	966	908
POST-TEST	729	738	967	914
DIFFERENCE	-237	-169	+1	+6

VEHICLE WHEELBASE CHANGE

UNITS (mm)	A = LEFT SIDE WHEELBASE	F = RIGHT SIDE WHEELBASE
PRE-TEST	2645	2645
POST-TEST	2315	2736
DIFFERENCE	-330	+91



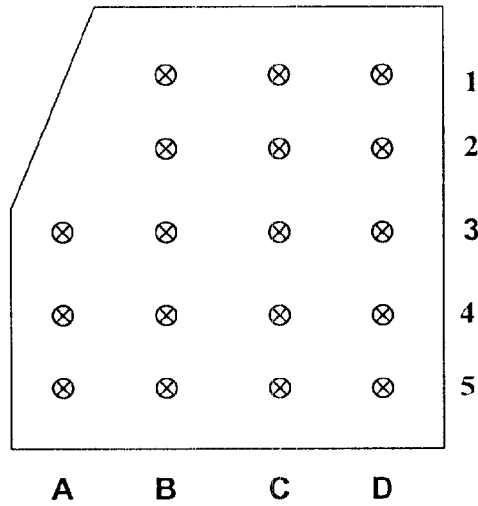
Data Sheet No. 17(Continued)

Test Vehicle: 1998 DODGE NEON 4-DOOR SEDAN

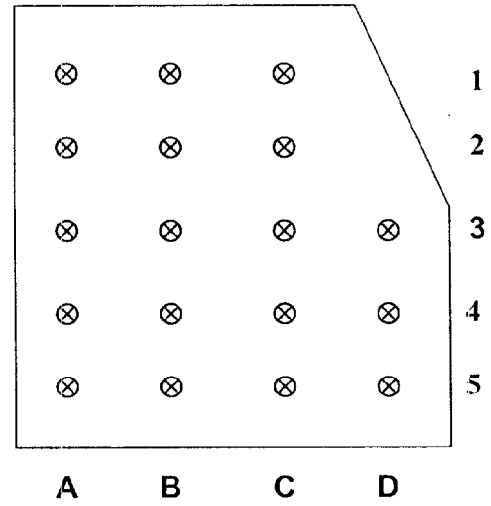
NHTSA No.: MW0311

Test Program: 1998 37.5MPH 40% OFFSET W/5TH FEMALE

Test Date: 10/27/98



DRIVER SIDE FLOOR PLAN



PASSENGER SIDE FLOORPAN

(Data Sheet No. 17 Continued)

DRIVER SIDE "X"

	A			B			C			D		
	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.
1	N/A	N/A		795	512	-283	798	543	-255	789	560	-229
2	N/A	N/A		694	446	-248	695	459	-236	695	521	-174
3	590	459	459	589	486	-103	592	475	-117	592	518	-74
4	460	400	-60	488	407	-81	489	411	-78	490	416	-74
5	330	306	-24	388	315	-73	389	308	-81	389	317	-72

DRIVER SIDE "Z"

	A			B			C			D		
	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.
1	N/A	N/A		150	229	79	145	255	110	150	240	90
2	N/A	N/A		28	99	71	27	85	58	11	70	59
3	-41	26	67	-41	-7	34	-40	-14	26	-42	-36	6
4	-50	-34	16	-48	-40	8	-47	-28	19	-46	-34	12
5	-49	-50	-1	-50	-69	-19	-48	-33	15	-47	-35	12

PASSENGER SIDE "X"

	A			B			C			D		
	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.
1	791	761	-30	793	769	-24	794	769	-25	N/A	N/A	
2	690	673	-17	690	674	-16	690	666	-24	N/A	N/A	
3	590	587	-3	590	582	-8	590	572	-18	590	572	-18
4	490	490	0	490	486	-4	490	474	-16	490	476	-14
5	389	391	2	389	386	-3	390	384	-6	390	386	-4

PASSENGER SIDE "Z"

	A			B			C			D		
	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.
1	146	159	13	145	155	10	147	163	16	N/A	N/A	
2	22	28	6	21	26	5	27	29	2	N/A	N/A	
3	-47	-66	-19	-47	-57	-10	-45	-51	-6	-47	-47	0
4	-51	-88	-37	-53	-78	-25	-50	-56	-6	-51	-52	-1
5	-52	-94	-42	-52	-74	-22	-51	-61	-10	-52	-52	0

DRIVER SIDE

	PRE-TEST	POST-TEST	DIFF.
RSOV to anchor bolt	2454	2451	-3
Ground level to anchor bolt	251	155	-96

PASSENGER SIDE

	PRE-TEST	POST-TEST	DIFF.
	2459	2457	-2
	245	216	-29

(Data Sheet No. 17 Continued)

Test Vehicle: 1998 DODGE NEON 4-DOOR SEDAN

NHTSA No.: MW0311

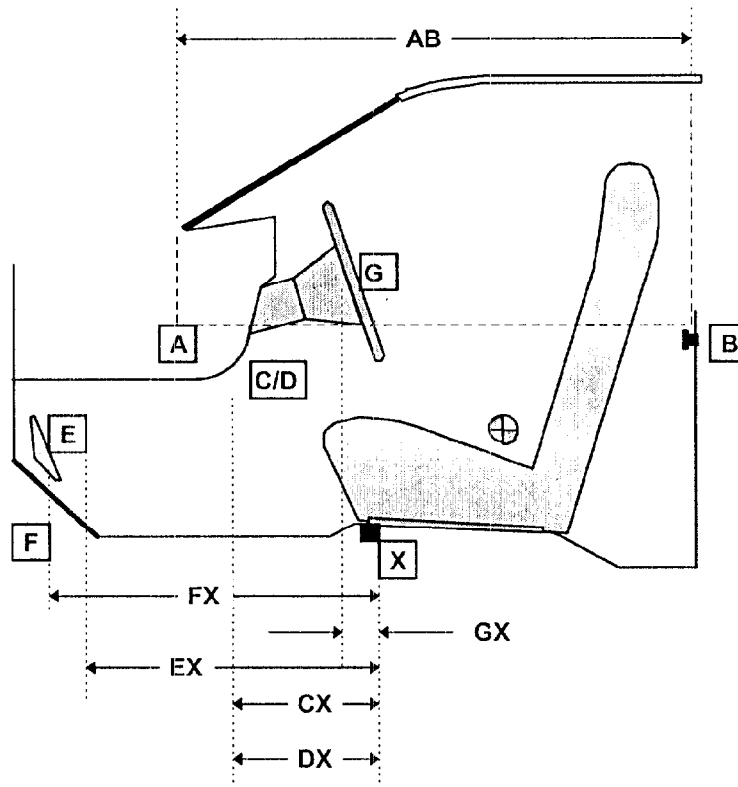
Test Program: 1998 37.5MPH 40% OFFSET W/5TH FEMALE

Test Date: 10/27/98

DRIVER COMPARTMENT INTRUSION (Distances in mm)

REF.	DESCRIPTION	PRE-TEST	POST-TEST
AB	DOOR OPENING (INSIDE WINDOW JAM)	963	729
CX	LOWER LEFT KNEE BOLSTER TO X	380	235
DX	LOWER RIGHT KNEE BOLSTER TO X	385	280
EX	BRAKE PEDAL TO X	624	330
FX	FOOT REST TO X	660	457
GX	STEERING COLUMN HUB (CENTER) TO X	60	-12
GX	STEERING COLUMN HUB (CENTER) TO X	60	-12

X = LEFT FRONT SEAT ANCHOR BOLT



DRIVER COMPARTMENT

DATA SHEET NO. 18

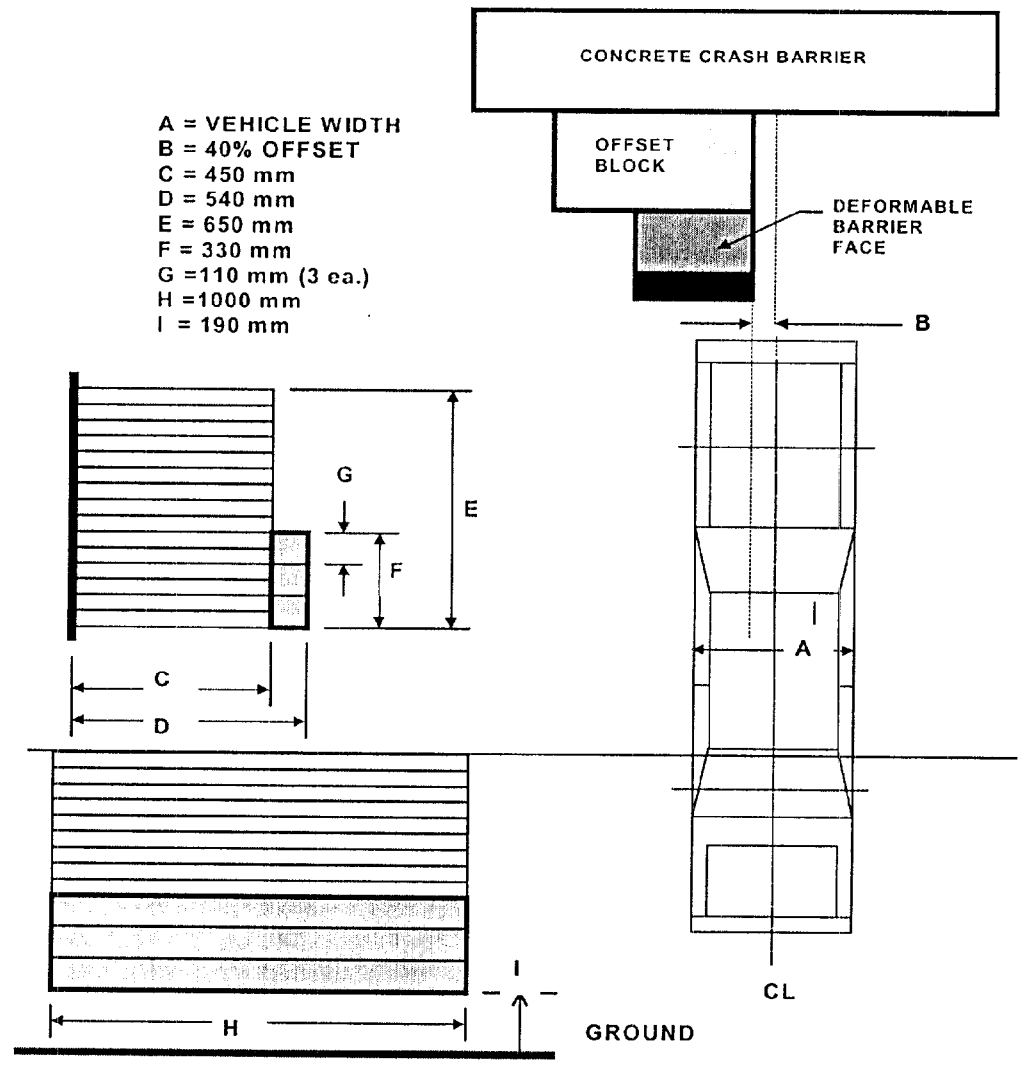
OFFSET BARRIER ORIENTATION

Test Vehicle: 1998 DODGE NEON 4-DOOR SEDAN

NHTSA No.: MW0311

Test Program: 1998 37.5MPH 40% OFFSET W/5TH FEMALE

Test Date: 10/27/98



A = VEHICLE WIDTH MEASURED AT WIDEST POINT 1495 mm
 B = 40% OFFSET FROM LEFT EDGE OF VEHICLE 598 mm
 ACTUAL OFFSET DURING TEST 597 mm = 39.93 %

DATA SHEET NO. 19

ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle: 1998 DODGE NEON 4-DOOR SEDAN

NHTSA No.: MW0311

Test Program: 1998 37.5MPH 40% OFFSET W/5TH FEMALE

Test Date: 10/27/98

VIN: 1B3ES47C1WD550365 Wheelbase: 2645 mm Test Weight: 1307 kg

Vehicle Size Category: DODGE NEON 4-DOOR

ACCELEROMETER DATA:

LOCATION: Left and right rear floor pans

CALIBRATION PROCEDURE: 6 months/ drop test

LINEARITY: Good

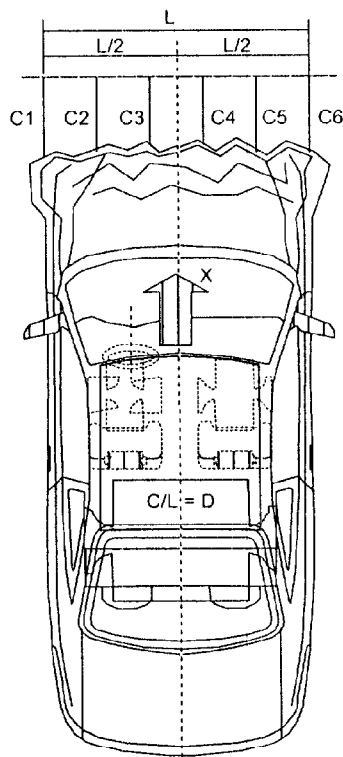
INTEGRATION ALGORITHM: NHTSA Standard

VEHICLE IMPACT SPEED: 60.72 km/h

TIME OF SEPARATION: 76.14 msec

VELOCITY CHANGE: 64.98 km/h

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



IMPACT MODE: Full Frontal Offset

CRUSH DEPTH DIMENSIONS:

C1 = 642 mm

C2 = 632 mm

C3 = 435 mm

C4 = 321 mm

C5 = 83 mm

C6 = +196 mm

MIDPOINT OF DAMAGE: Vehicle Centerline

LENGTH OF DAMAGE REGION: 1495 mm

DATA SHEET NO. 20

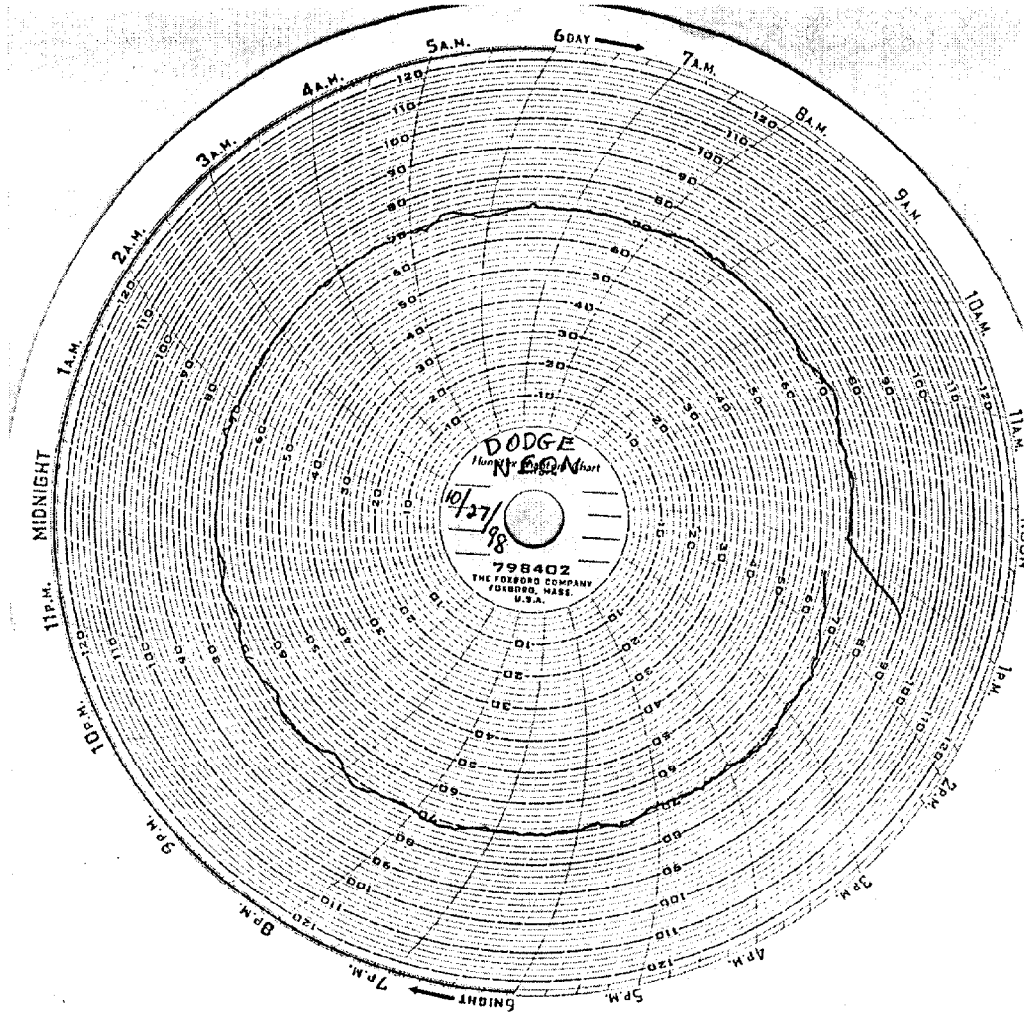
DUMMY/VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 1998 DODGE NEON 4-DOOR SEDAN

NHTSA No.: MW0311

Test Program: 1998 37.5MPH 40% OFFSET W/5TH FEMALE

Test Date: 10/27/98



APPENDIX A
PHOTOGRAPHS

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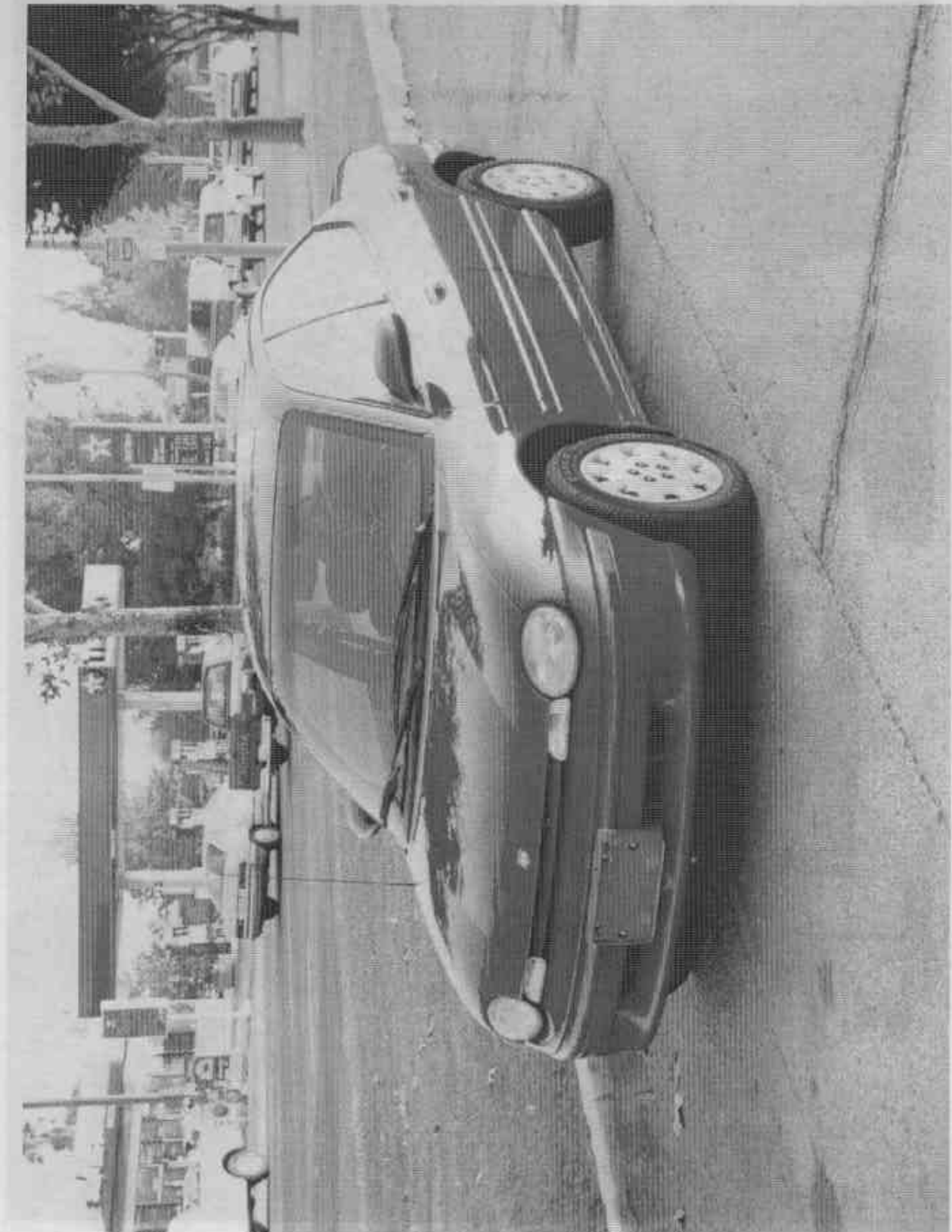


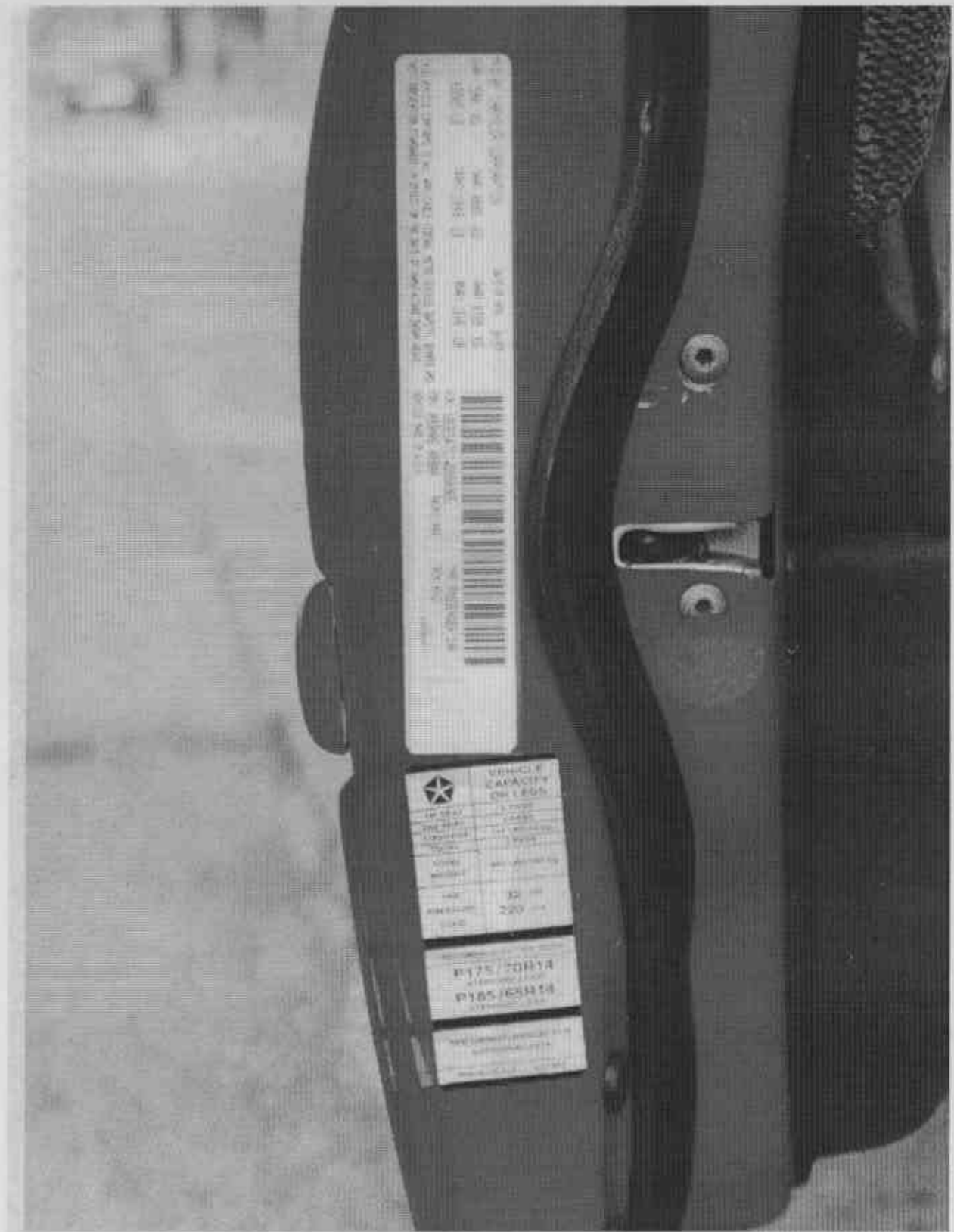
FIGURE A-1. LEFT FRONT AS RECEIVED

A-1

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FIGURE A-2. RIGHT REAR AS RECEIVED



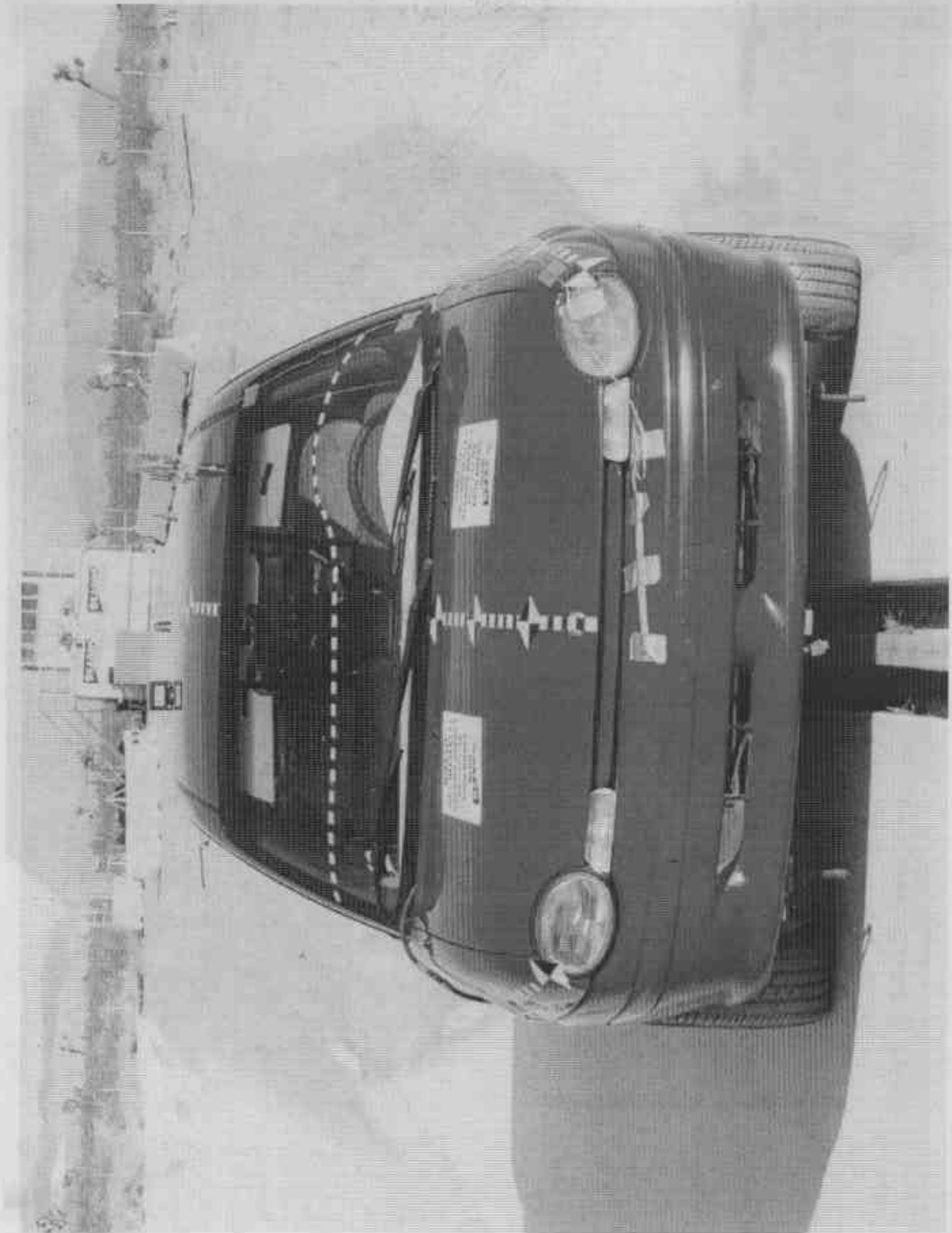


FIGURE A-5. PRE-TEST FRONT VIEW



FIGURE A-6. POST-TEST FRONT VIEW

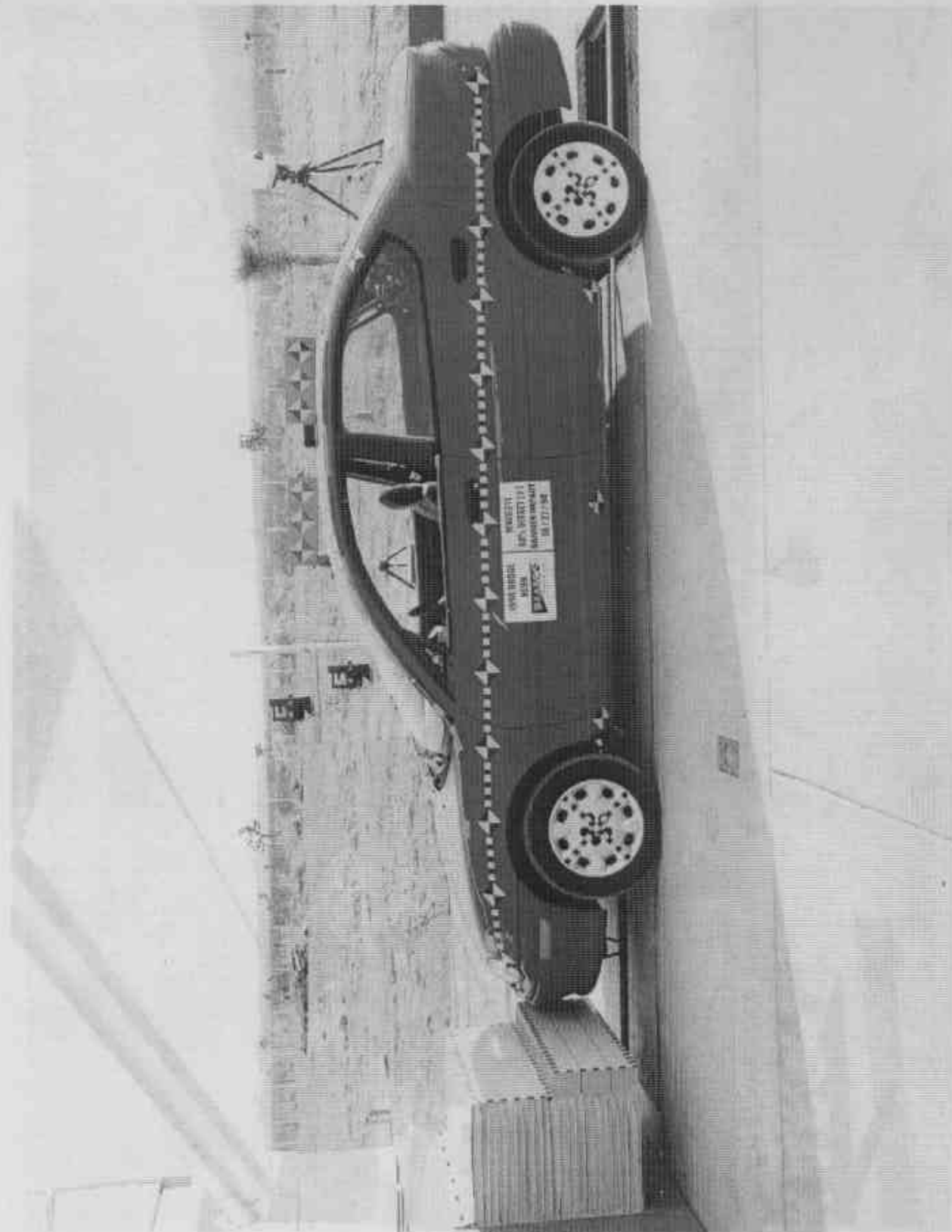


FIGURE A-7. PRE-TEST LEFT SIDE VIEW



FIGURE A-8. POST-TEST LEFT SIDE VIEW



FIGURE A-9. PRE-TEST RIGHT SIDE VIEW

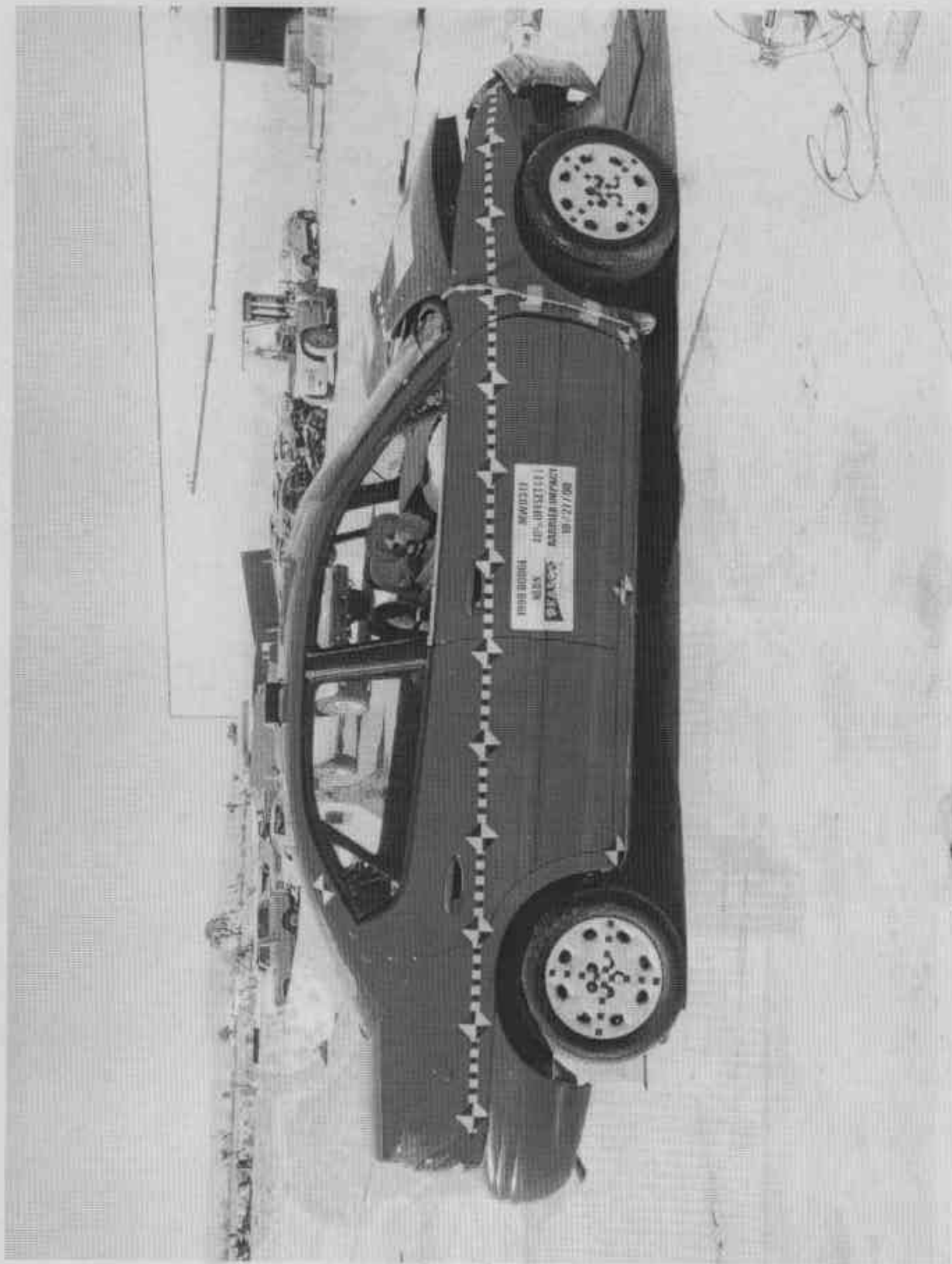


FIGURE A-10. POST-TEST RIGHT SIDE VIEW

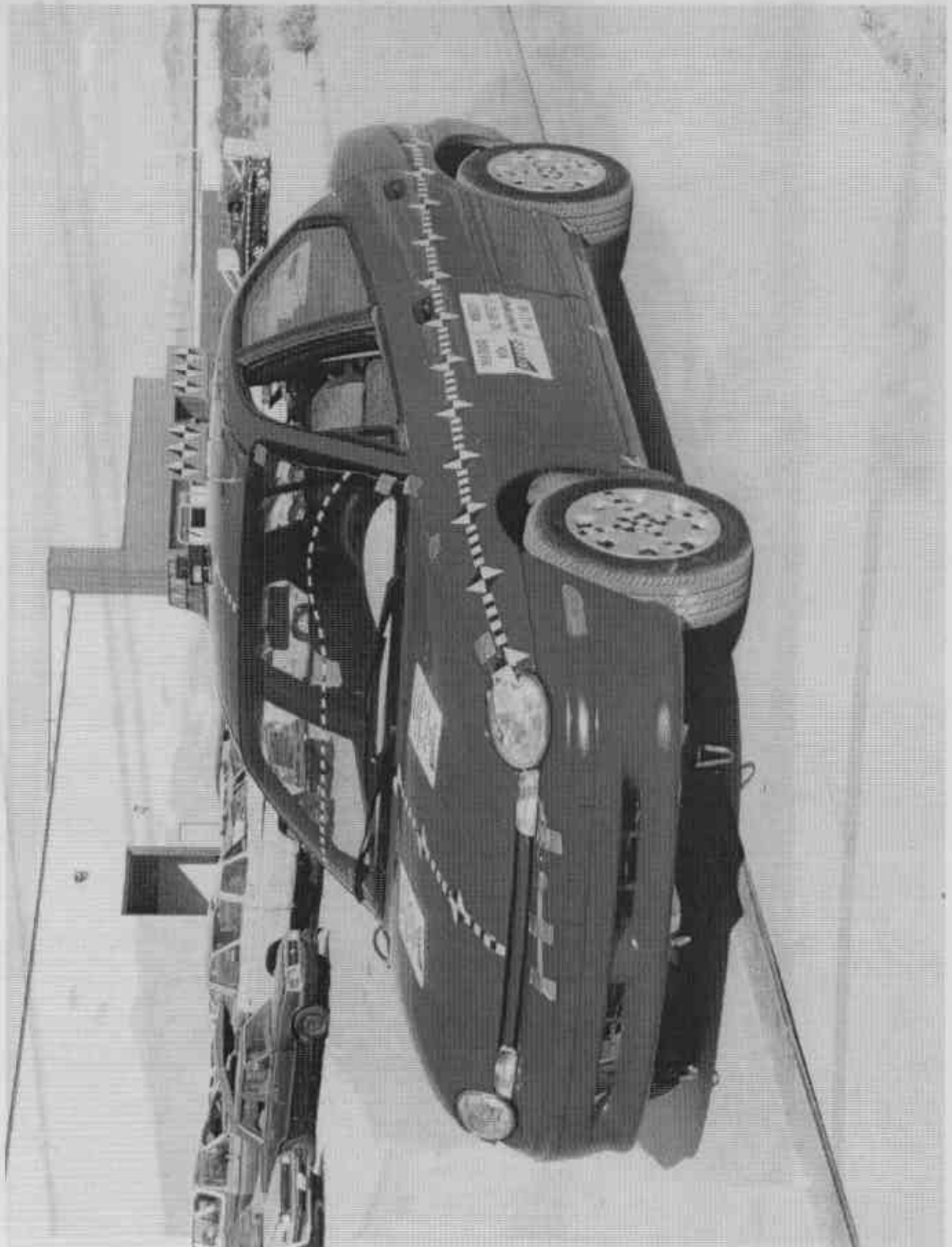


FIGURE A-11. PRE-TEST LEFT FRONT VIEW

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A-11

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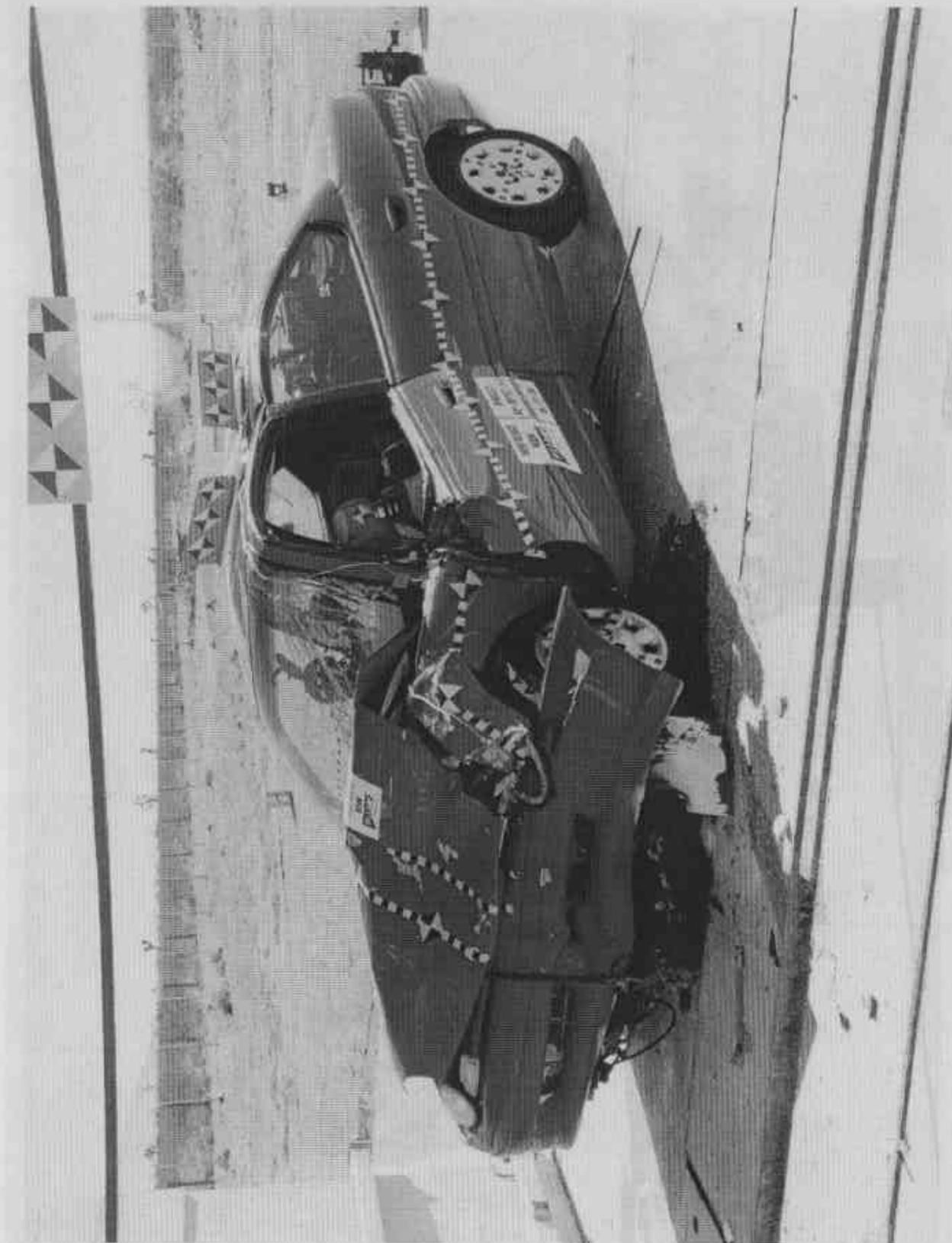


FIGURE A-12. POST-TEST LEFT FRONT VIEW



FIGURE A-13. PRE-TEST RIGHT REAR VIEW



FIGURE A-14. POST-TEST RIGHT REAR VIEW

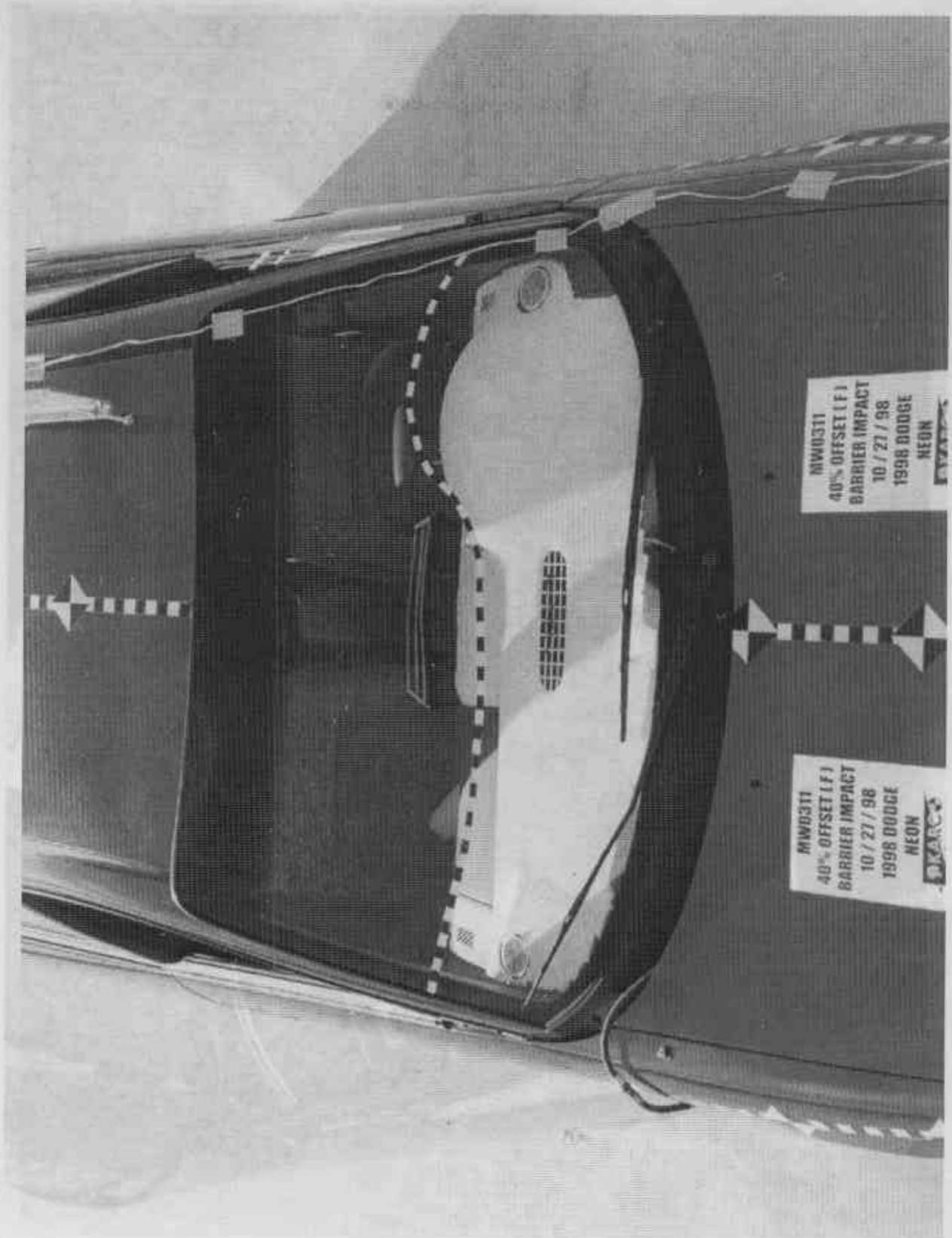


FIGURE A-15. PRE-TEST WINDSHIELD

00-30080PA01

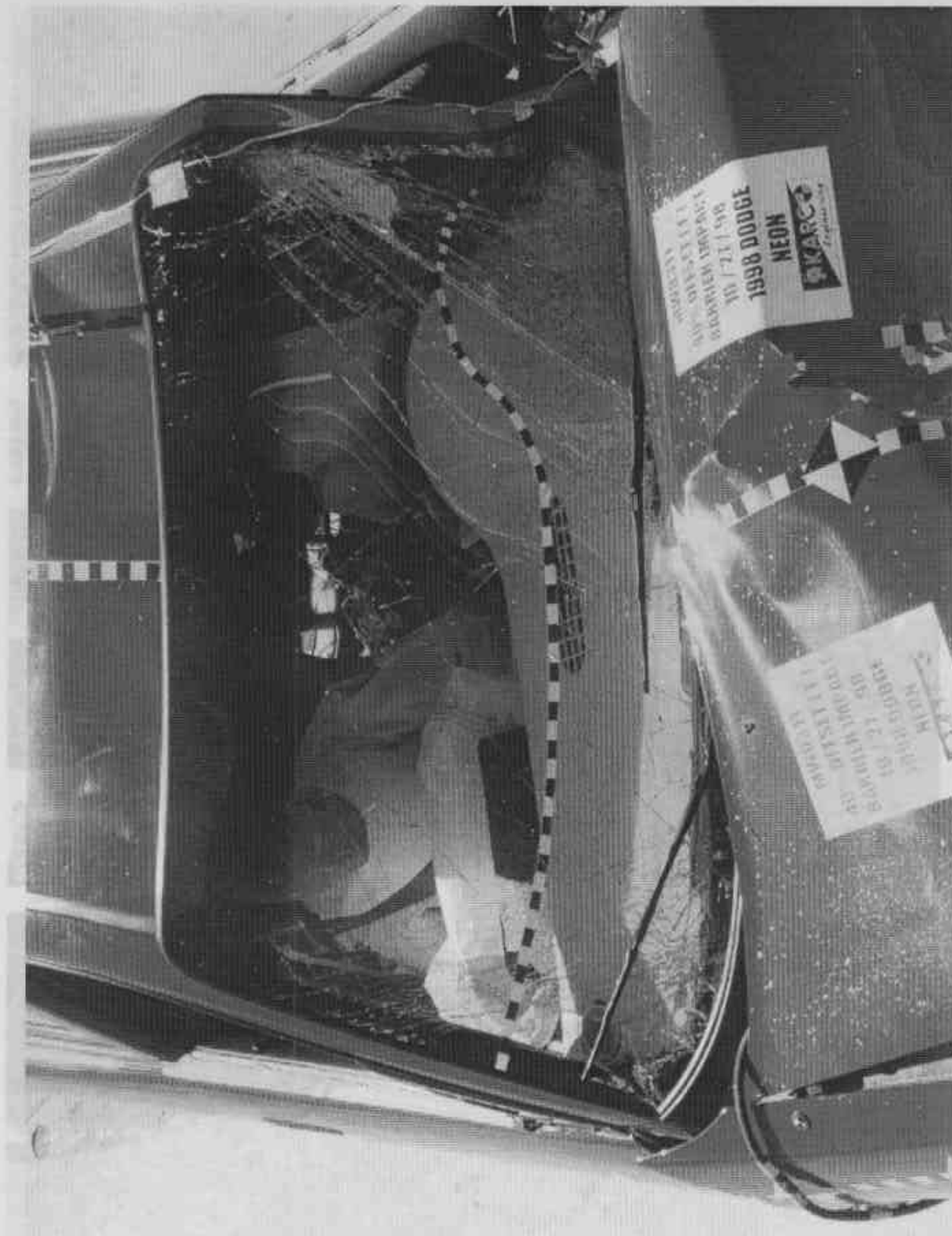


FIGURE A-16. POST-TEST WINDSHIELD

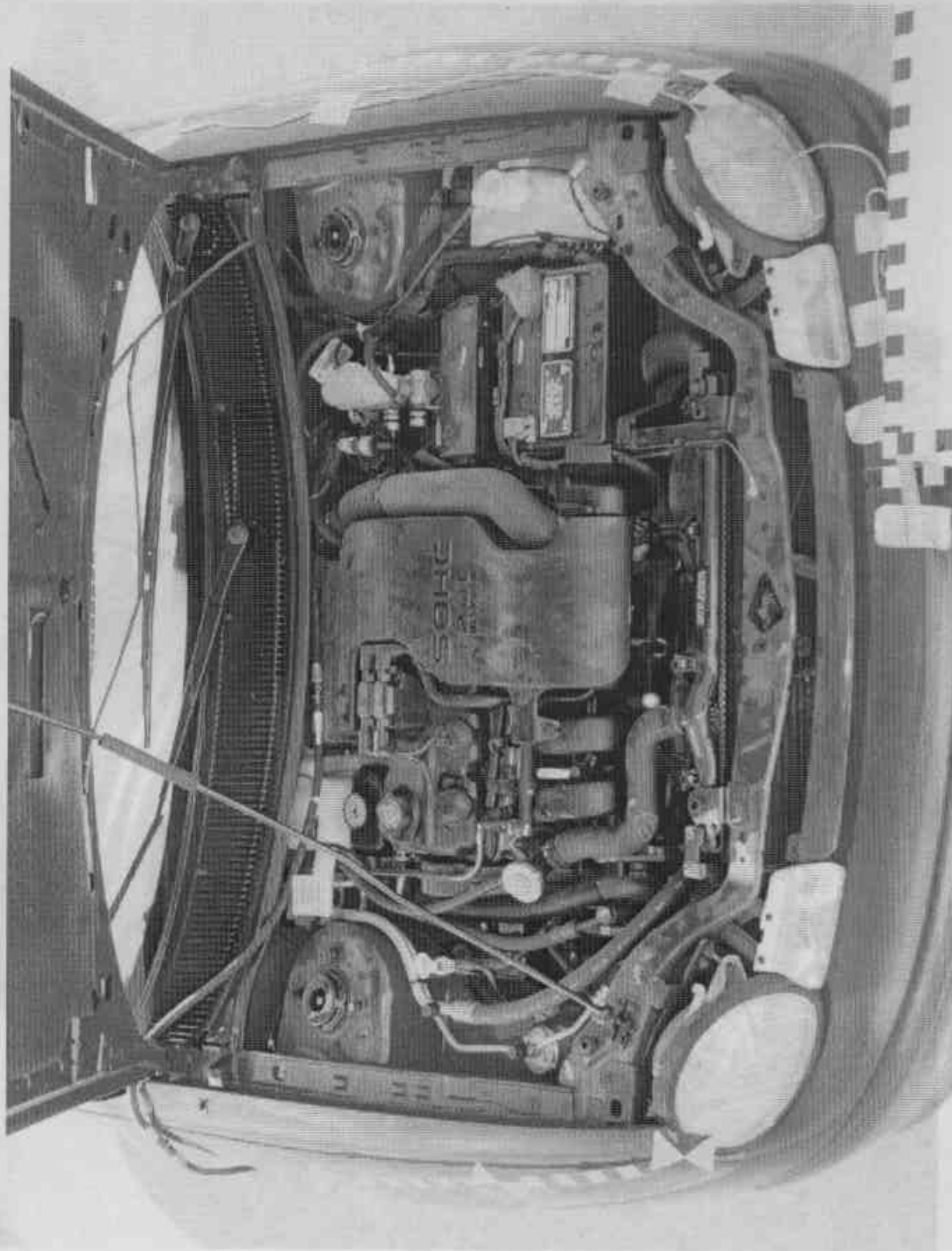


FIGURE A-17. PRE-TEST ENGINE COMPARTMENT

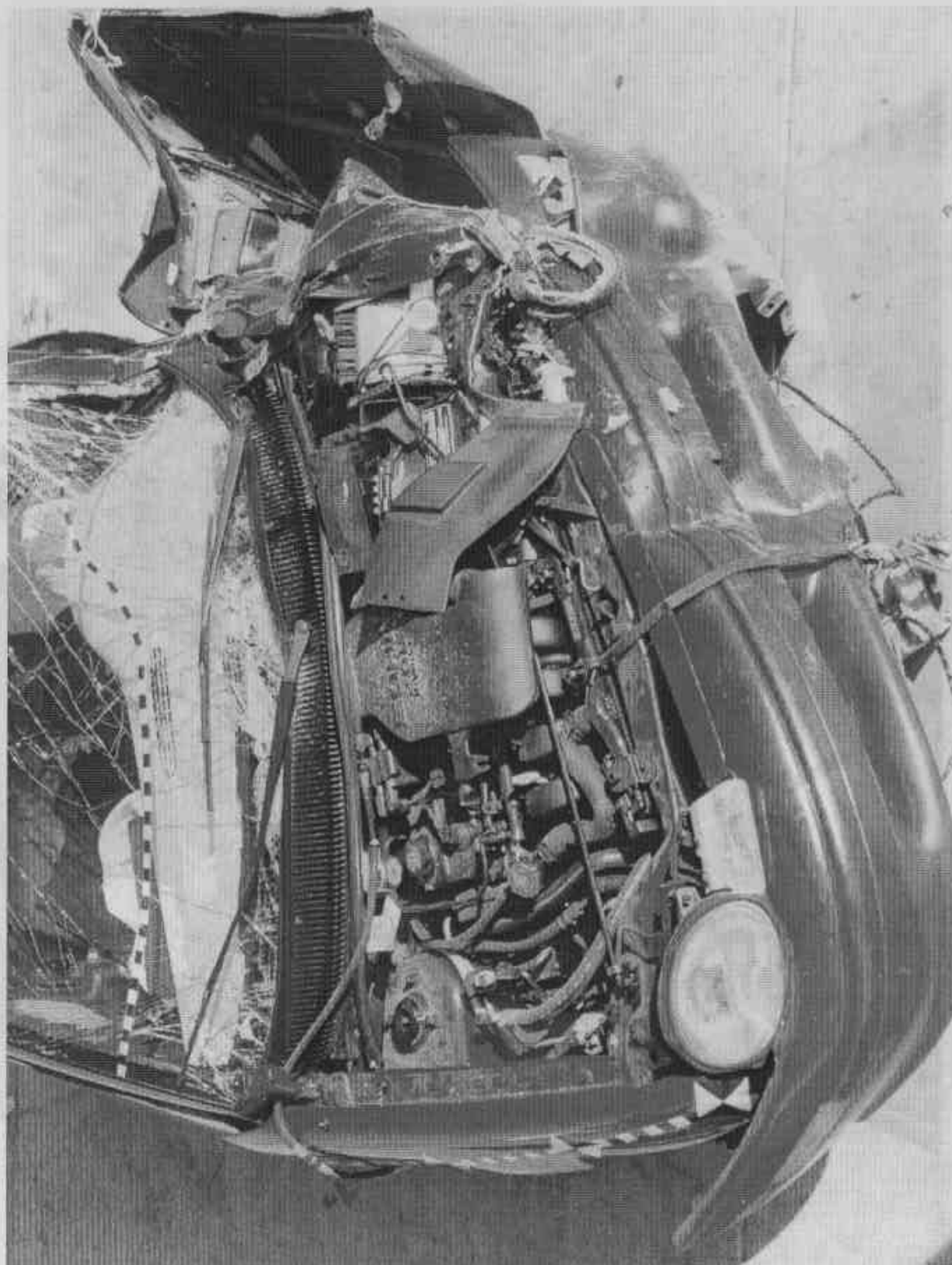


FIGURE A-18. POST-TEST ENGINE COMPARTMENT

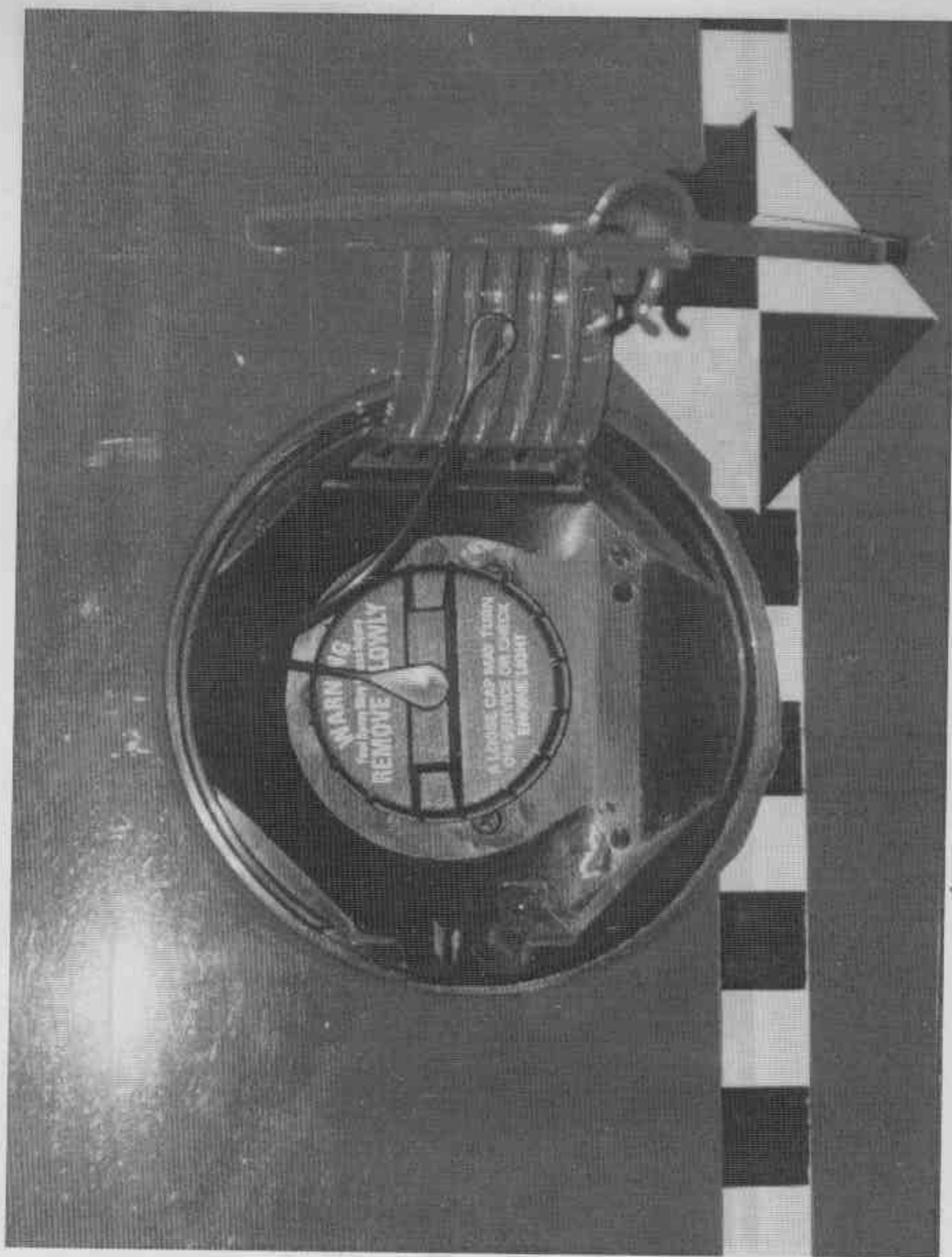


FIGURE A-19. PRE-TEST FUEL CAP

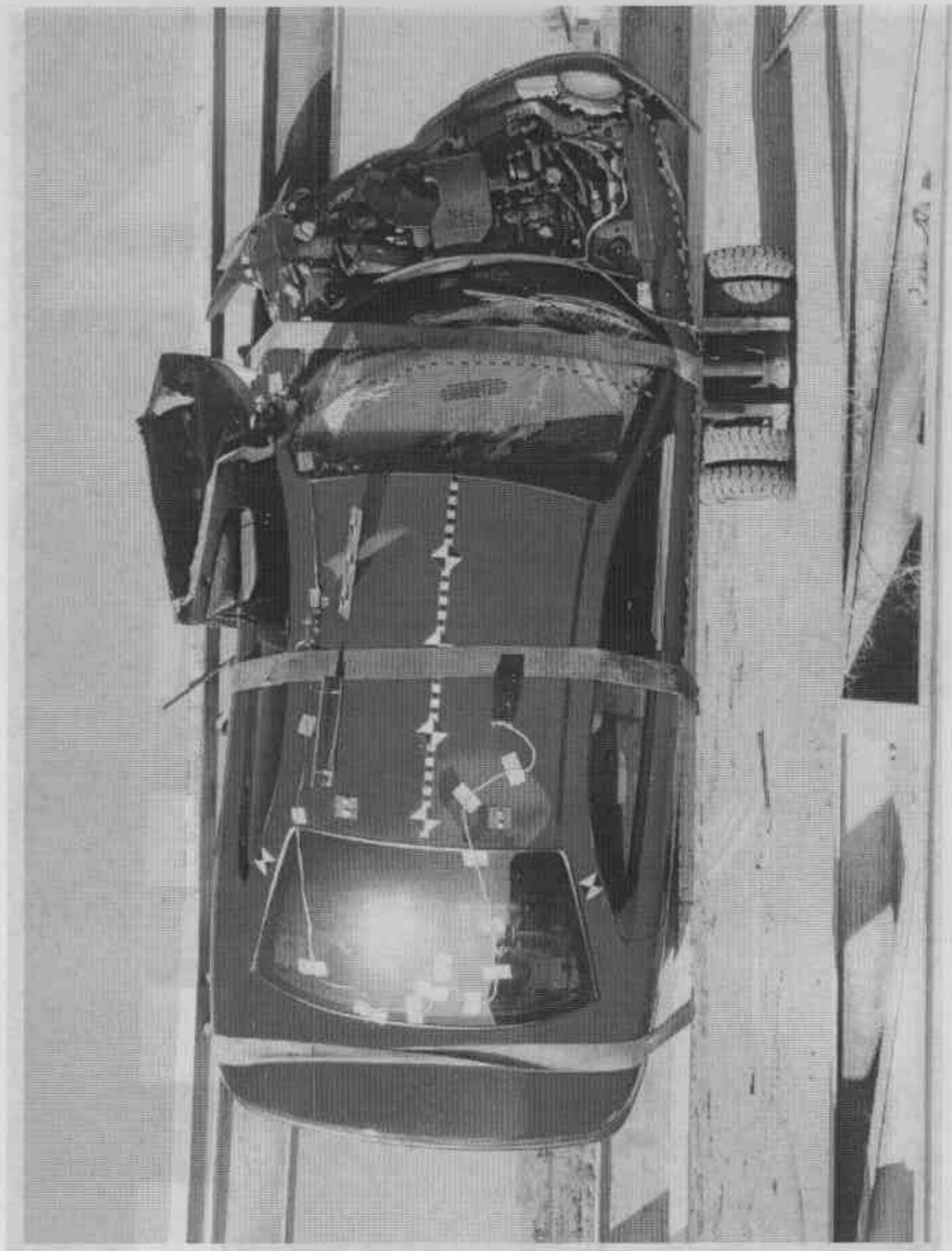


FIGURE A-20. VEHICLE ON ROLLOVER

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A-20

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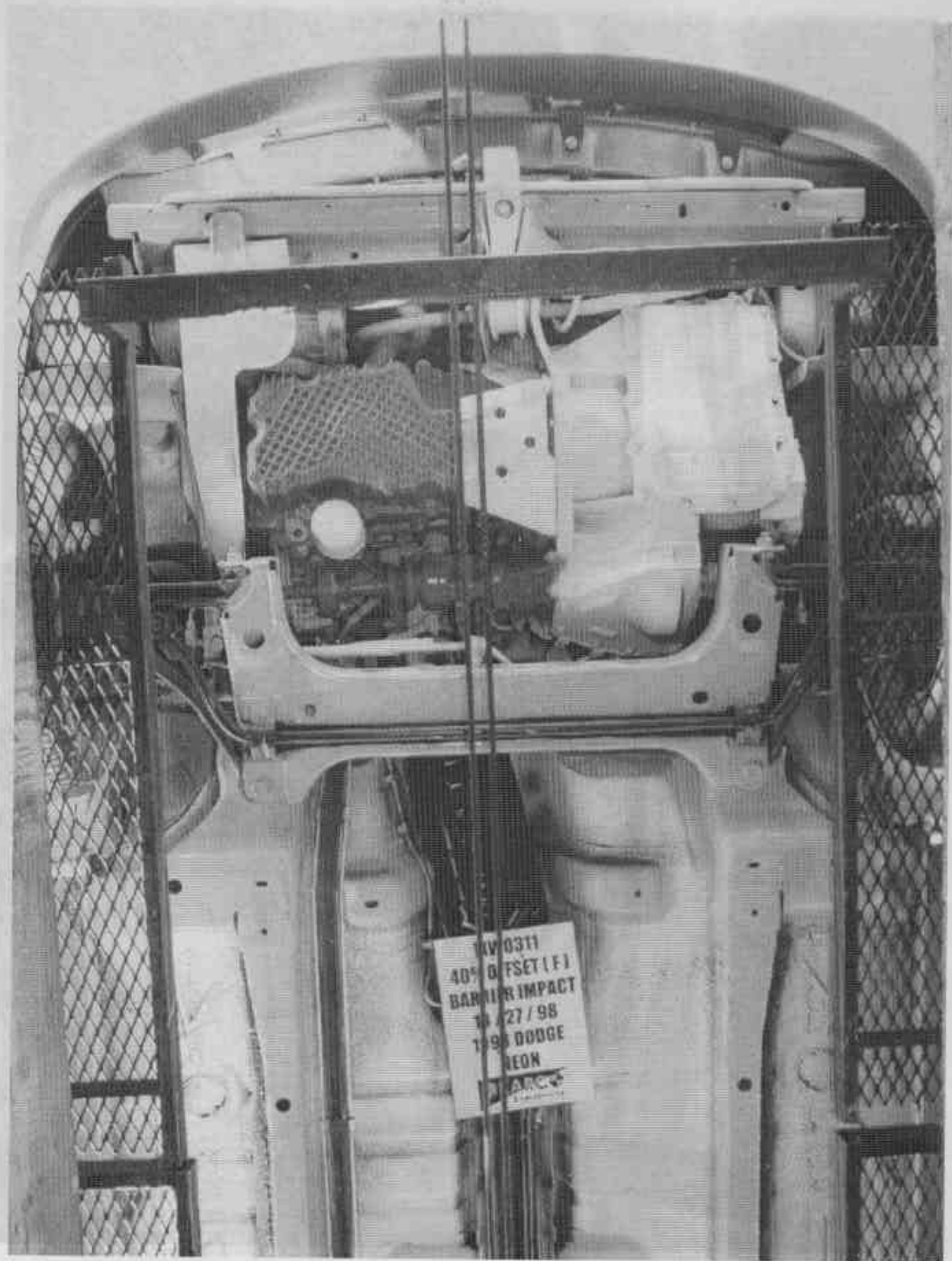


FIGURE A-21. PRE-TEST FRONT UNDERSIDE

86-500825A-1

A-21

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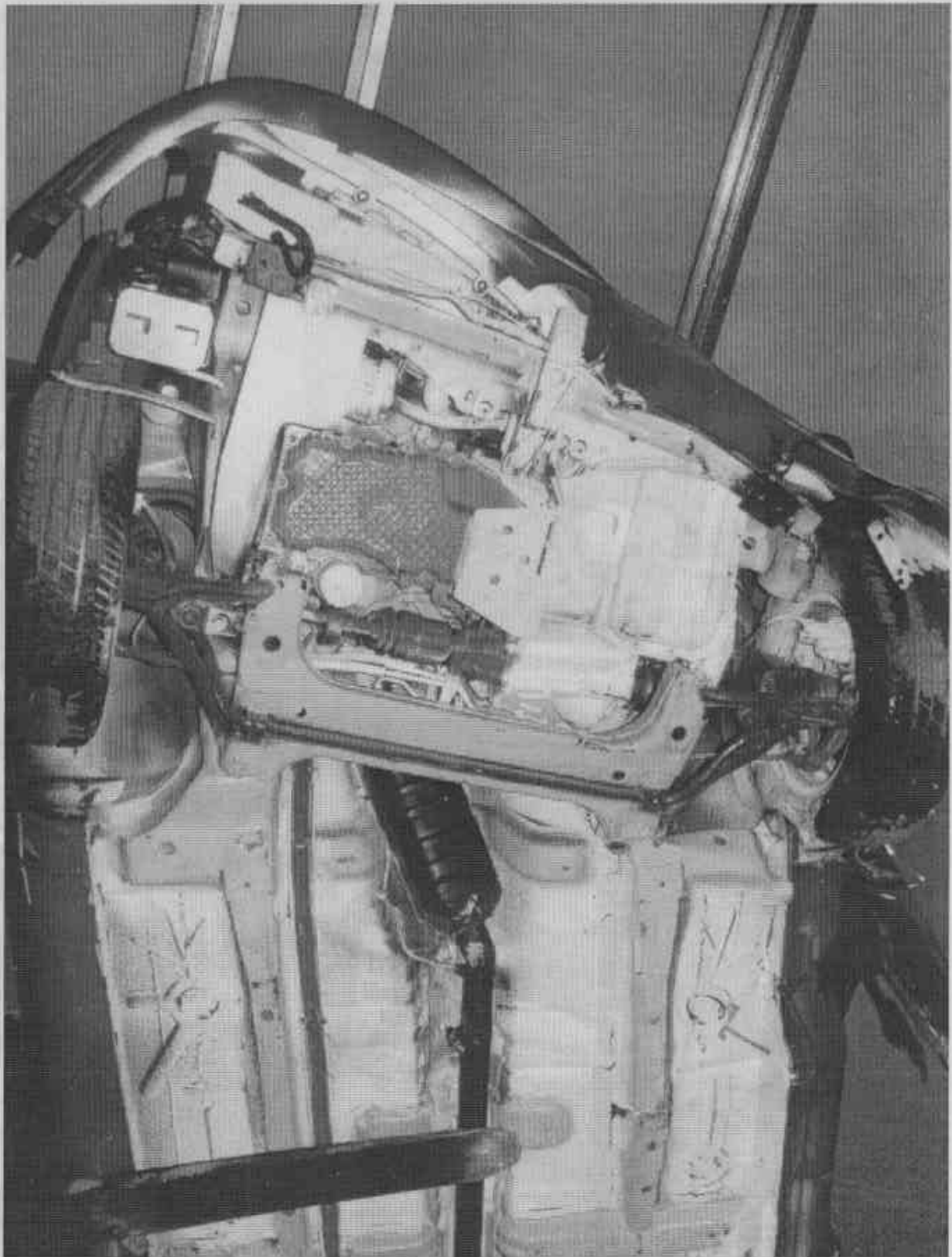


FIGURE A-22. POST-TEST FRONT UNDERSIDE

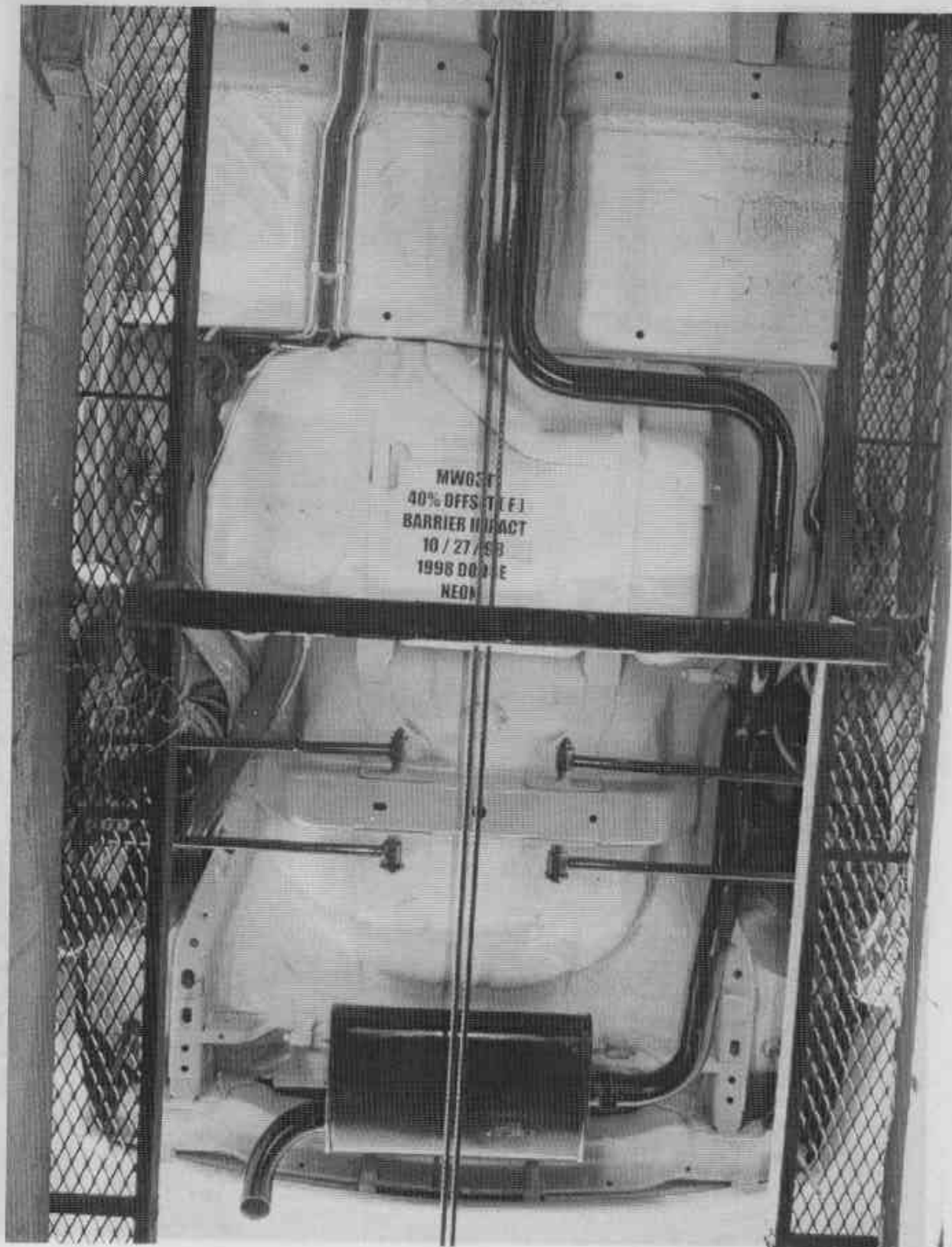


FIGURE A-23. PRE-TEST REAR UNDERSIDE

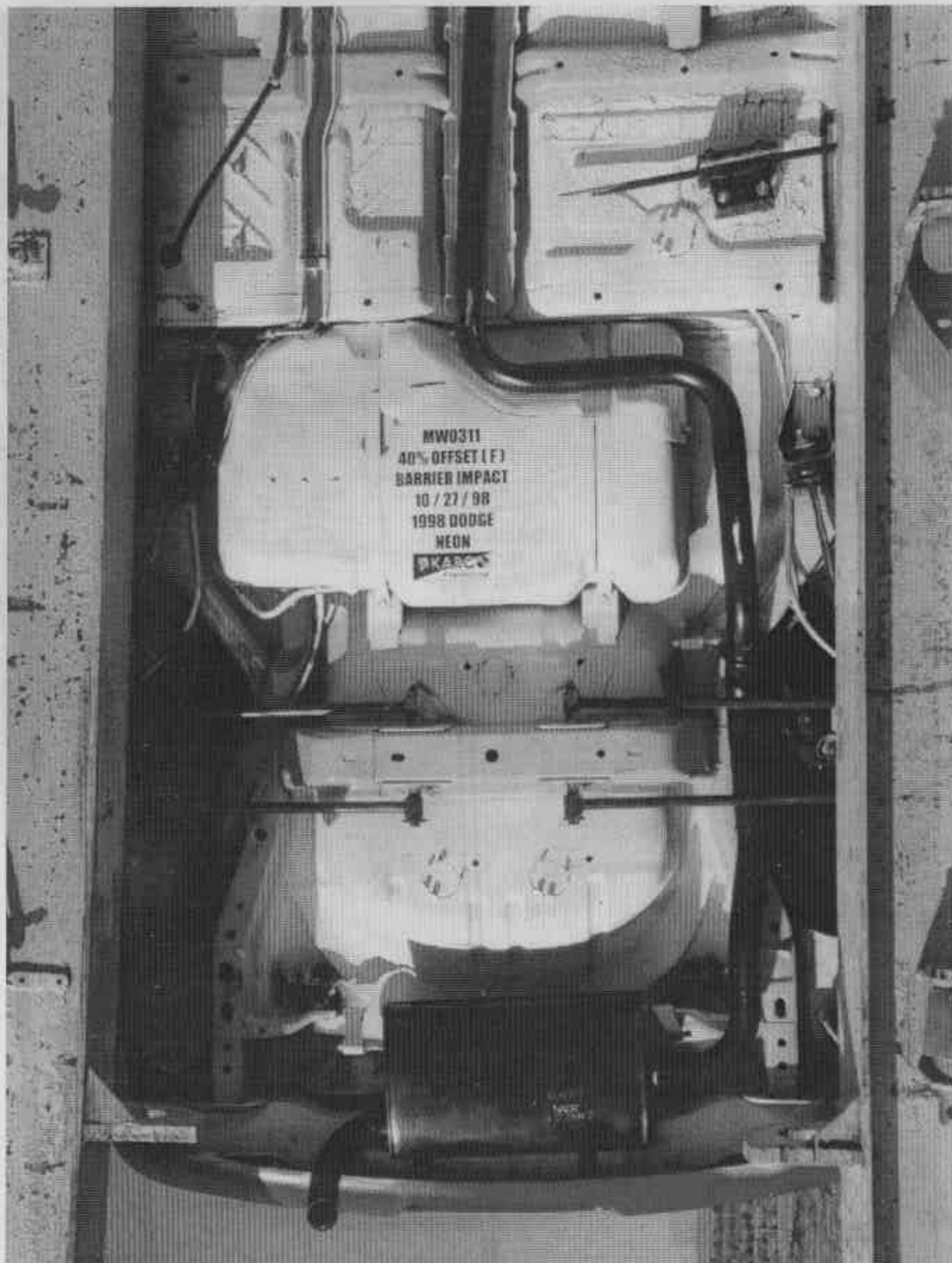


FIGURE A-24. POST-TEST REAR UNDERSIDE

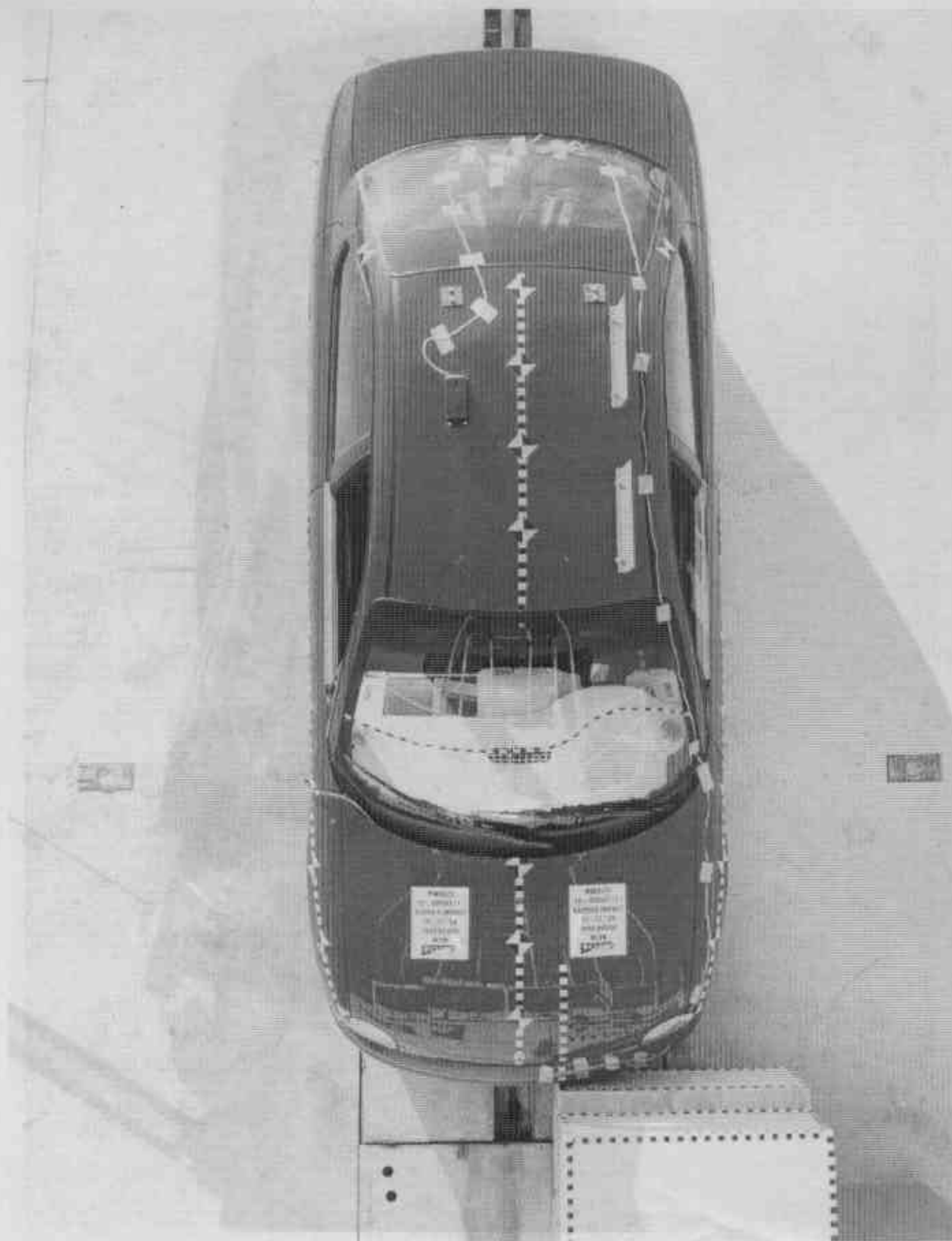


FIGURE A-25. PRE-TEST OVERHEAD OVERALL

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FIGURE A-26. POST-TEST OVERHEAD OVERALL

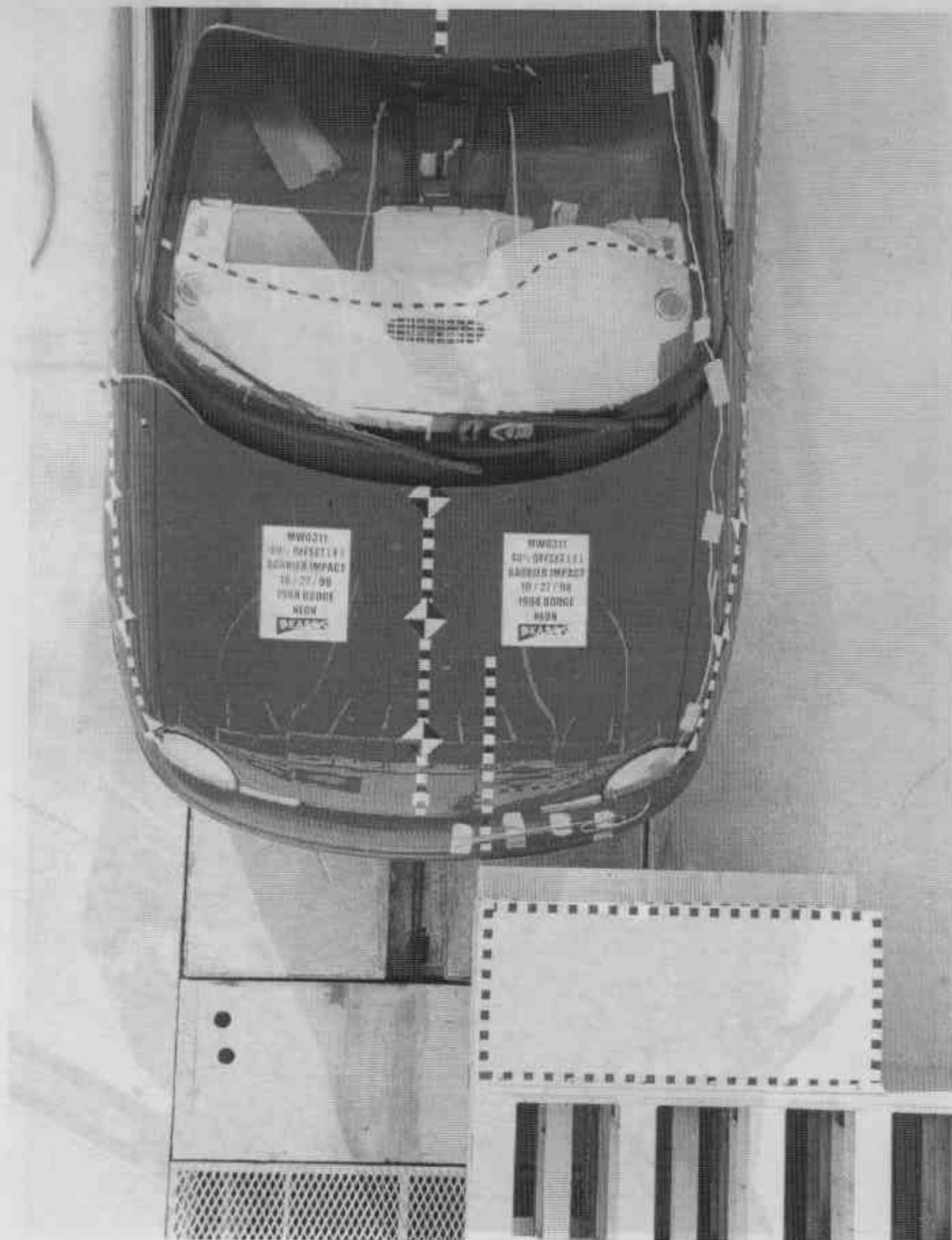


FIGURE A-27. PRE-TEST OVERHEAD CLOSE-UP



FIGURE A-28. POST-TEST OVERHEAD CLOSE-UP

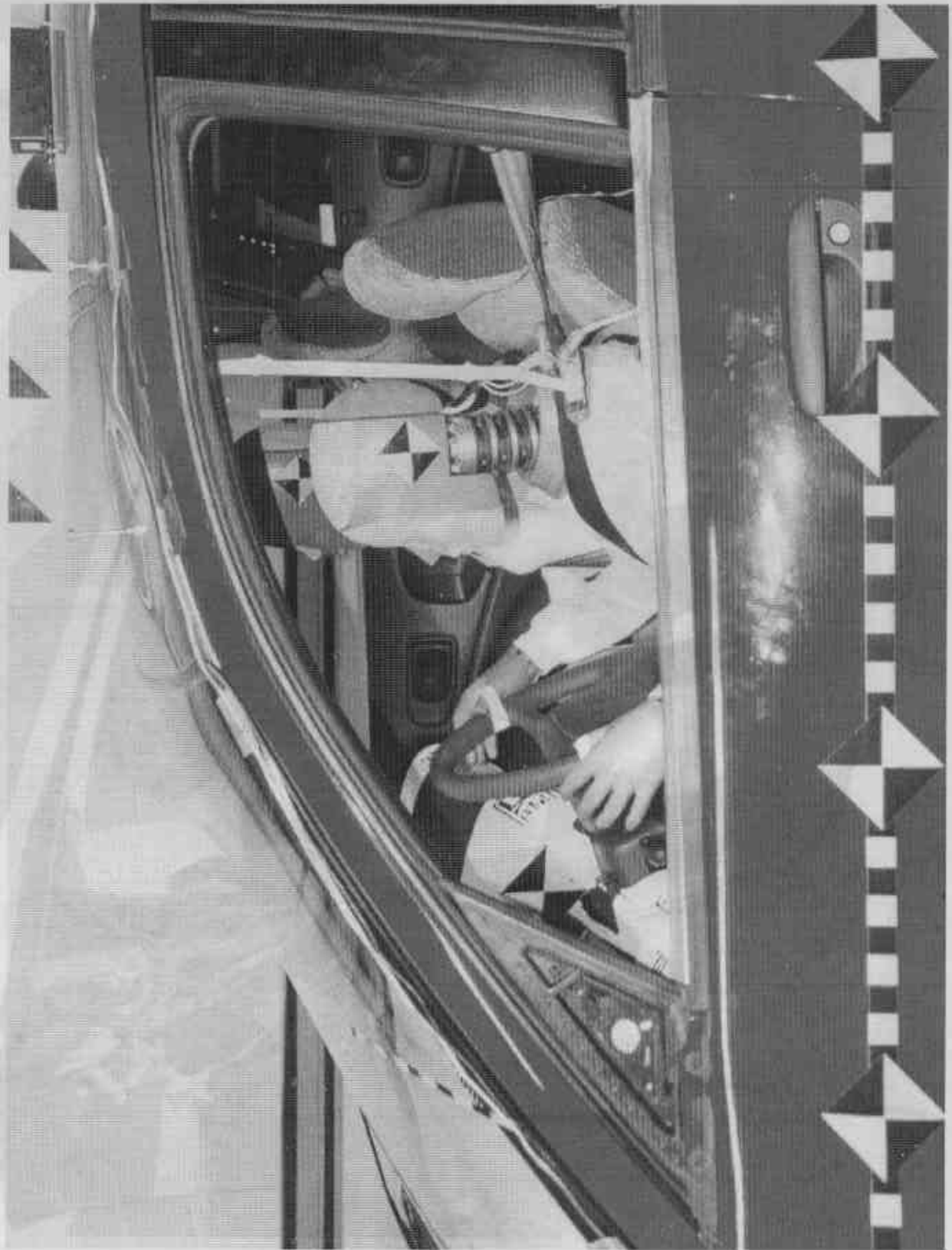


FIGURE A-29. PRE-TEST DRIVER DUMMY (THROUGH WINDOW)



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



FIGURE A-31. PRE-TEST DRIVER DUMMY (DOOR OPEN)



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



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

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



FIGURE A-35. PRE-TEST DRIVER DUMMY FEET



FIGURE A-36. POST-TEST DRIVER DUMMY FEET

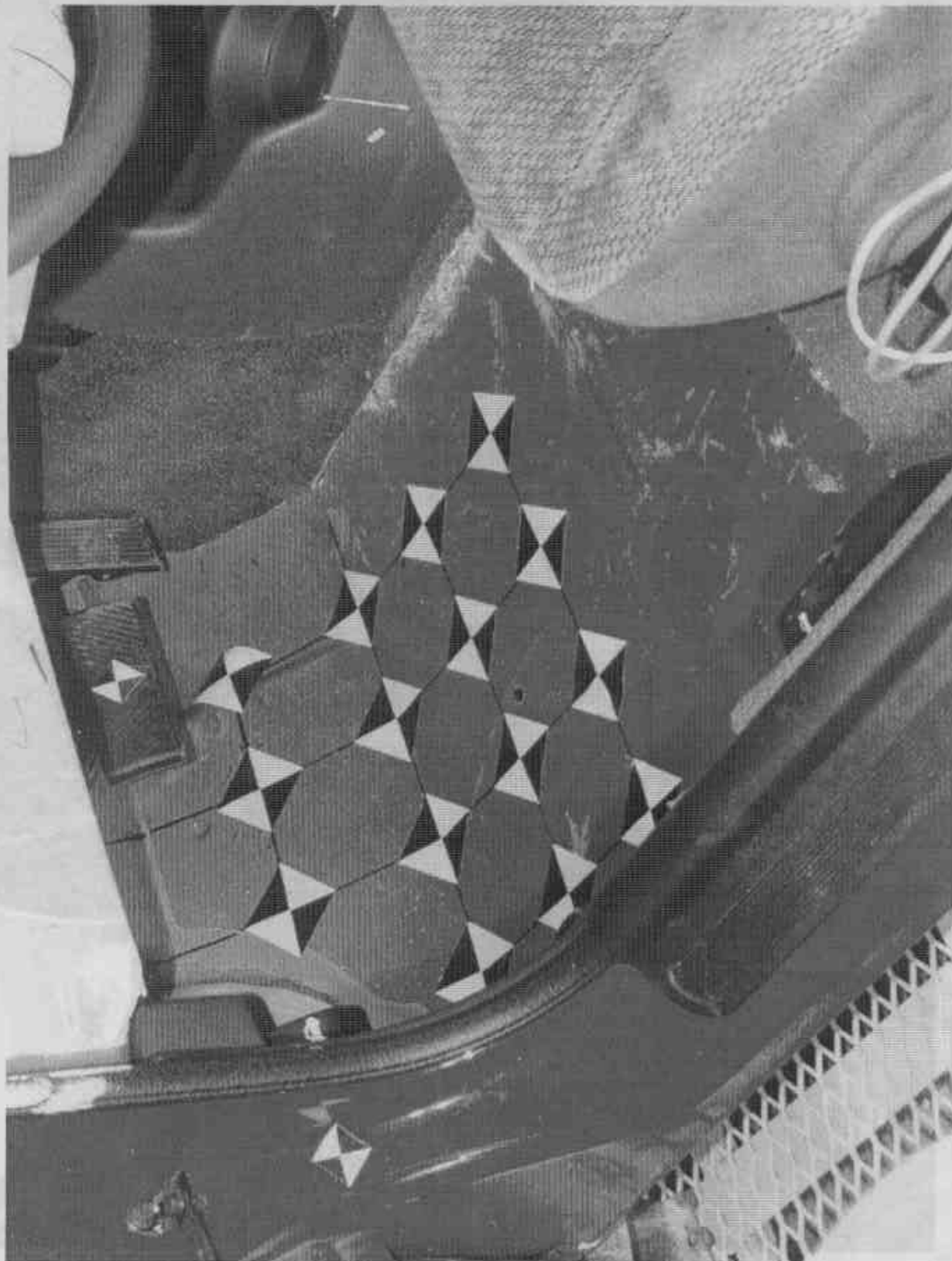


FIGURE A-37. PRE-TEST DRIVER SIDE FLOOR PAN



FIGURE A-38. POST-TEST DRIVER SIDE FLOOR PAN

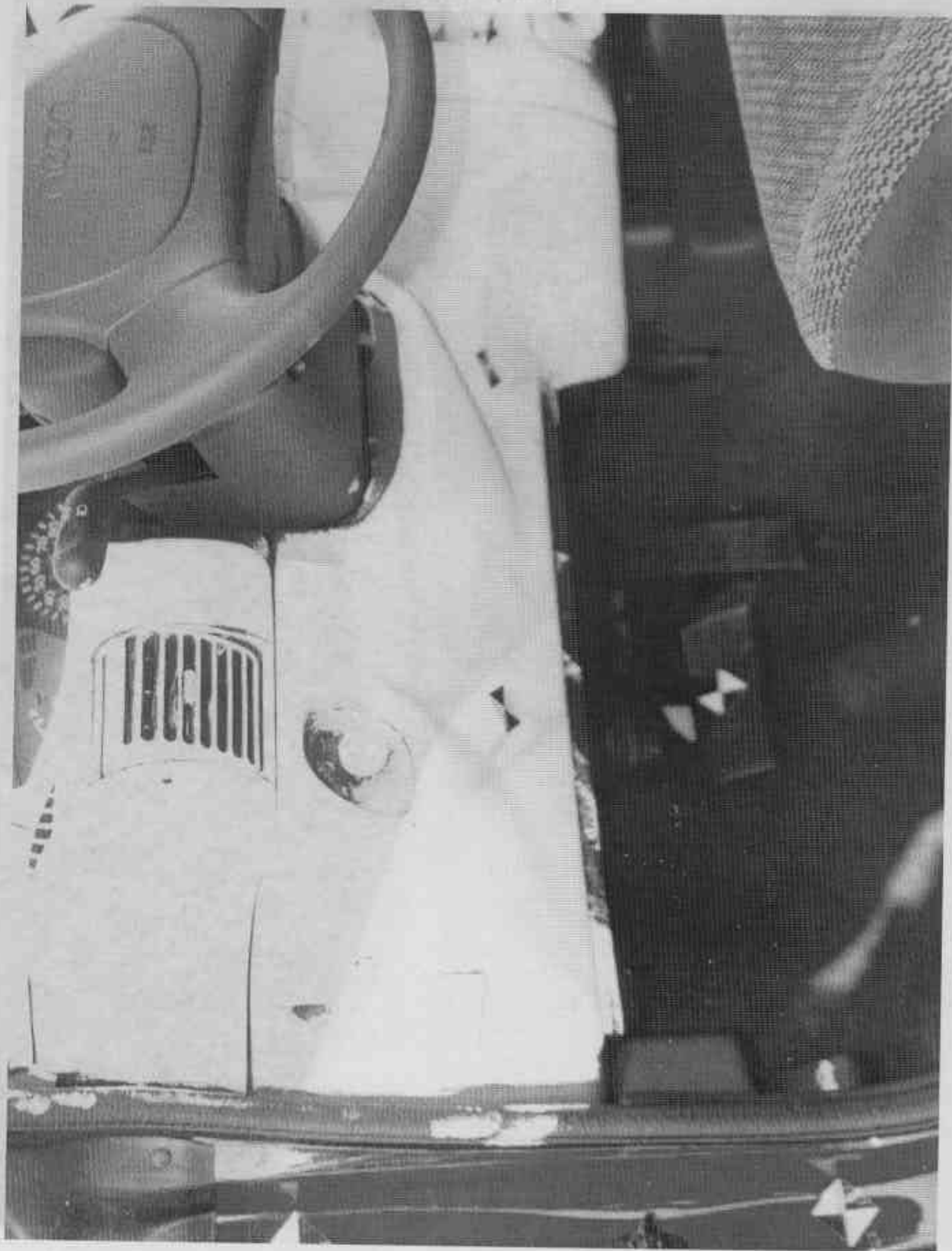


FIGURE A-39. PRE-TEST DRIVER SIDE KNEE BOLSTER



FIGURE A-40. POST-TEST DRIVER KNEE BOLSTER AND DUMMY CONTACT



FIGURE A-41. POST-TEST DRIVER DUMMY HEAD

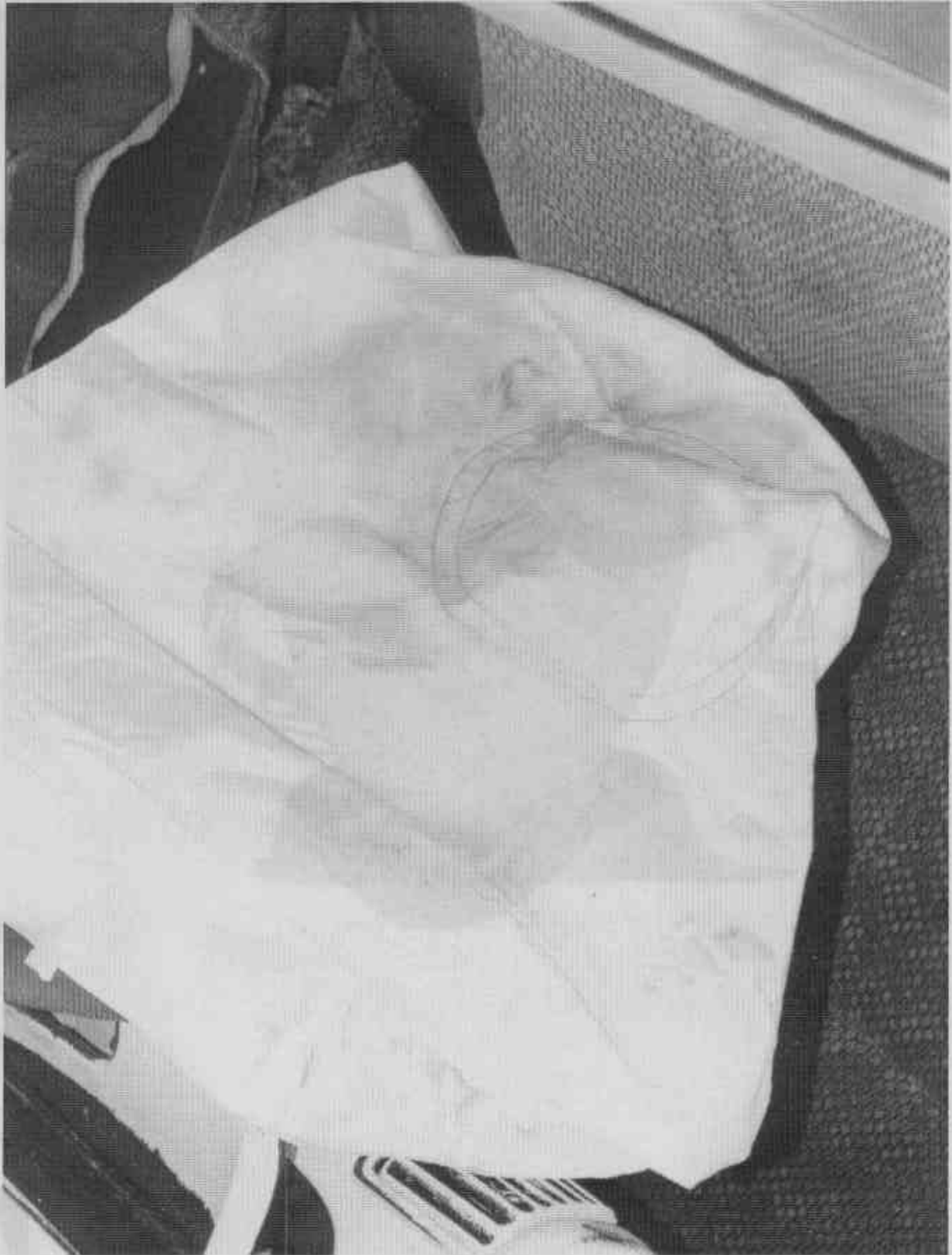


FIGURE A-42. POST-TEST DRIVER DUMMY CONTACT POINT



FIGURE A-43. PRE-TEST PASSENGER DUMMY (THROUGH WINDOW)

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FIGURE A-44. POST-TEST PASSENGER DUMMY (THROUGH WINDOW)



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

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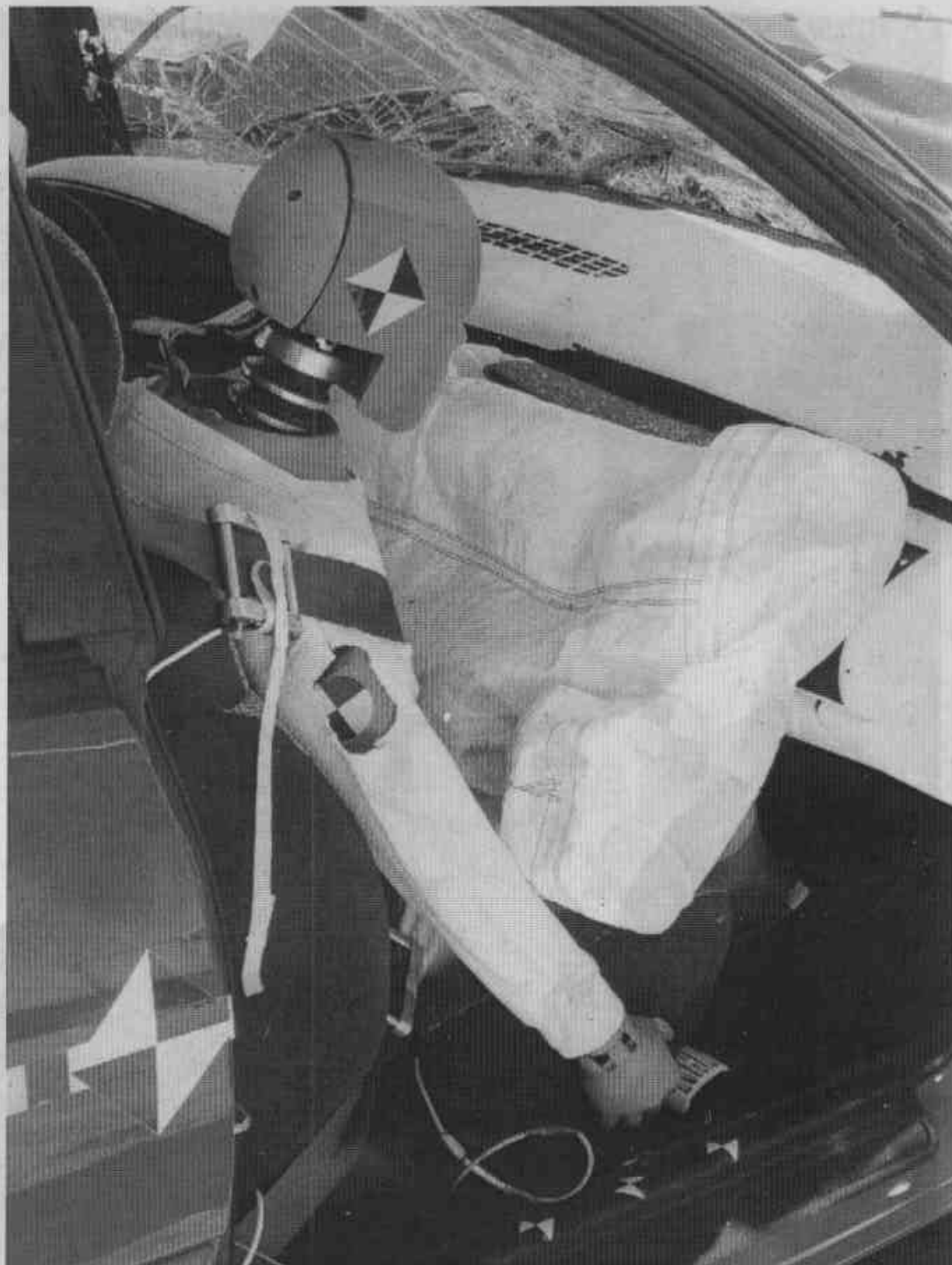


FIGURE A-46. POST-TEST PASSENGER DUMMY (DOOR OPEN)

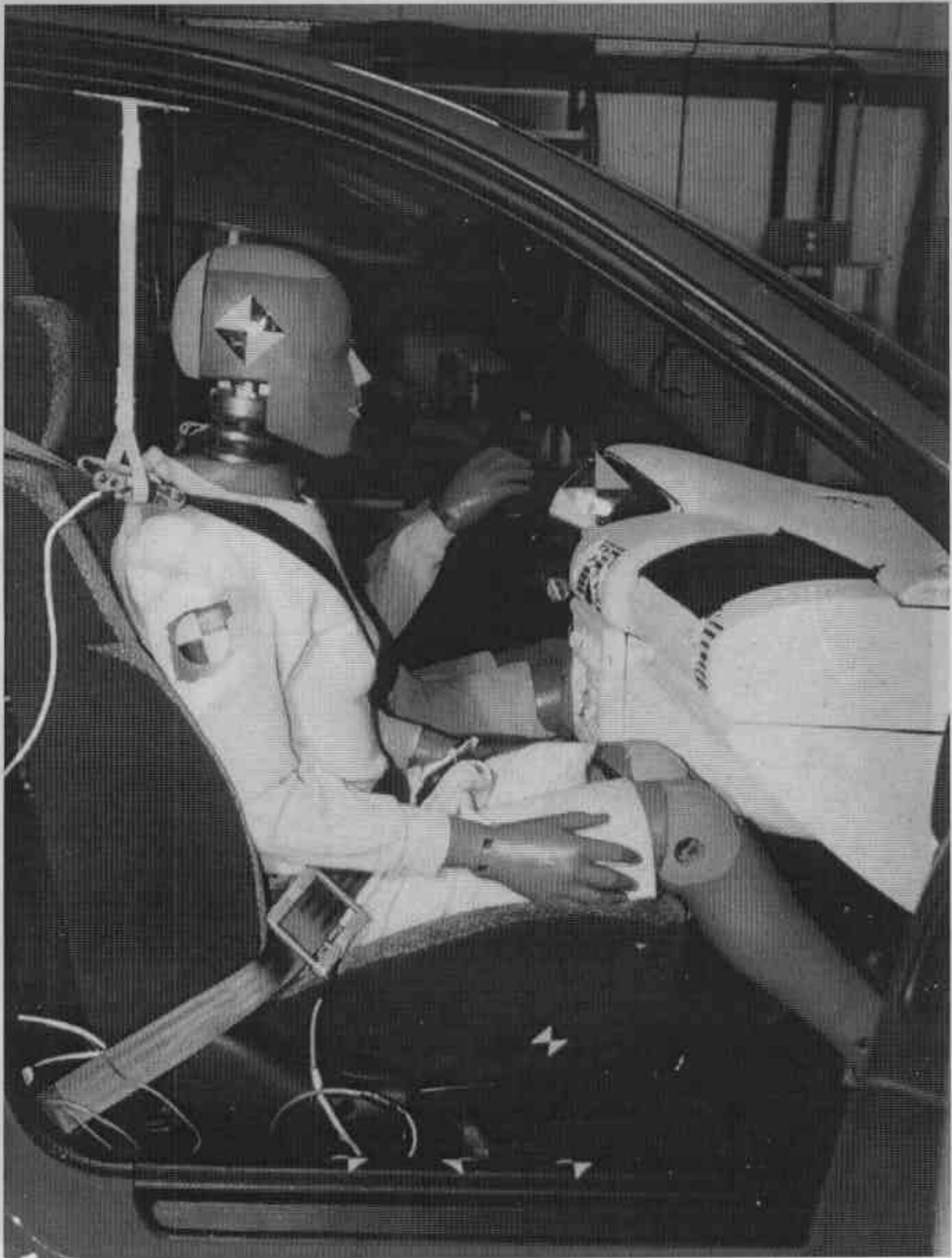


FIGURE A-47. PRE-TEST PASSENGER DUMMY (90° TO VEHICLE)

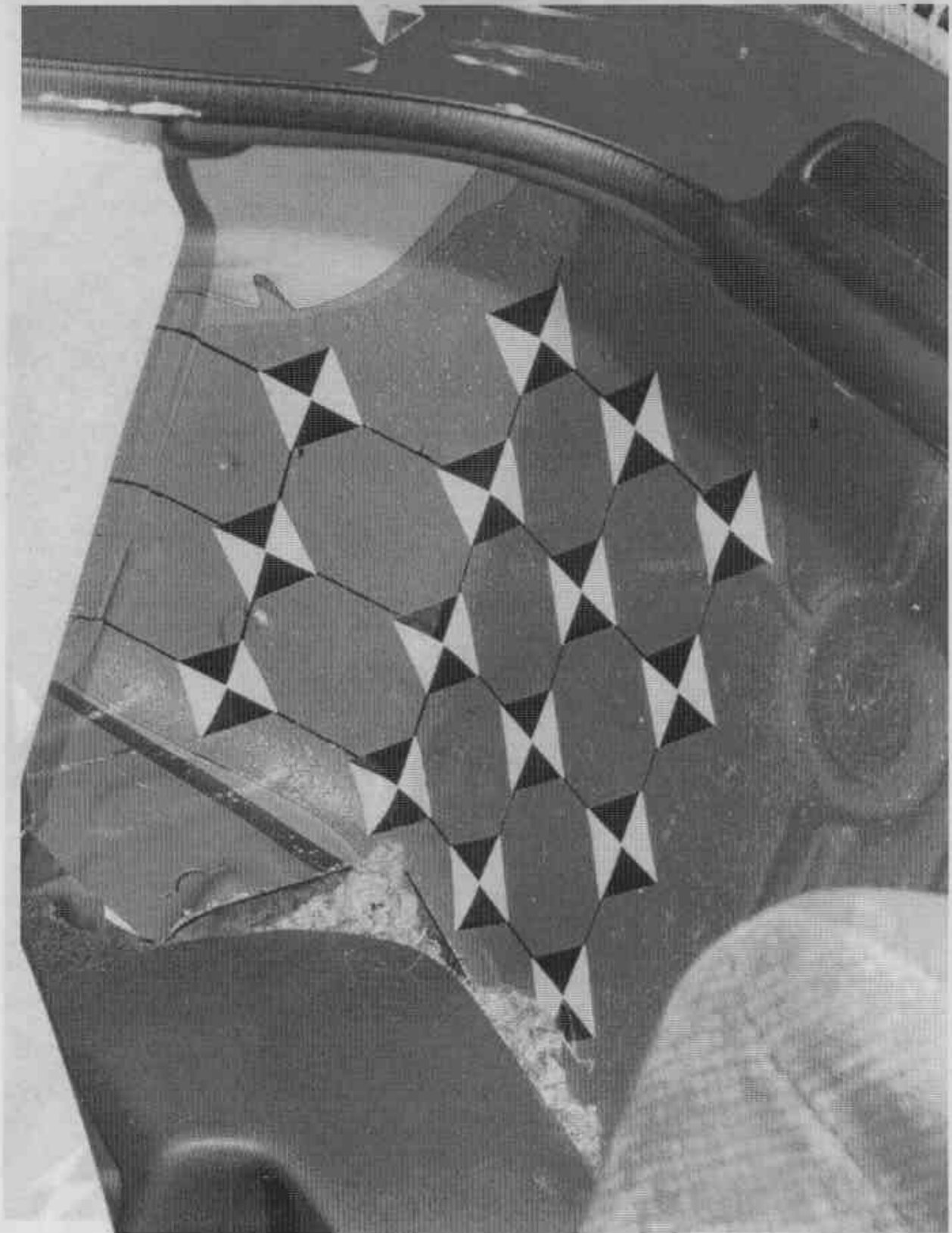


FIGURE A-49. PRE-TEST PASSENGER SIDE FLOOR PAN

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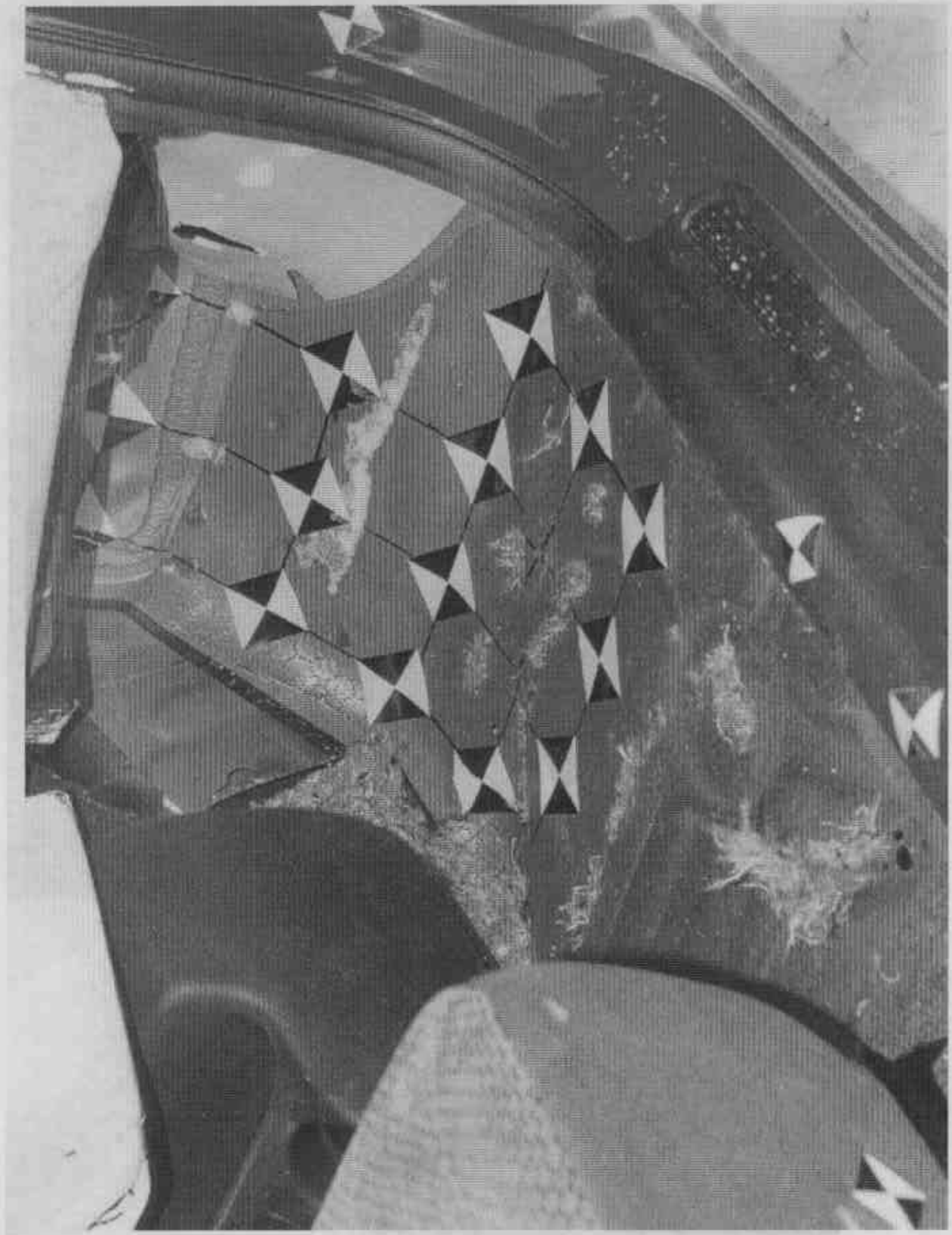


FIGURE A-50. POST-TEST PASSENGER SIDE FLOOR PAN

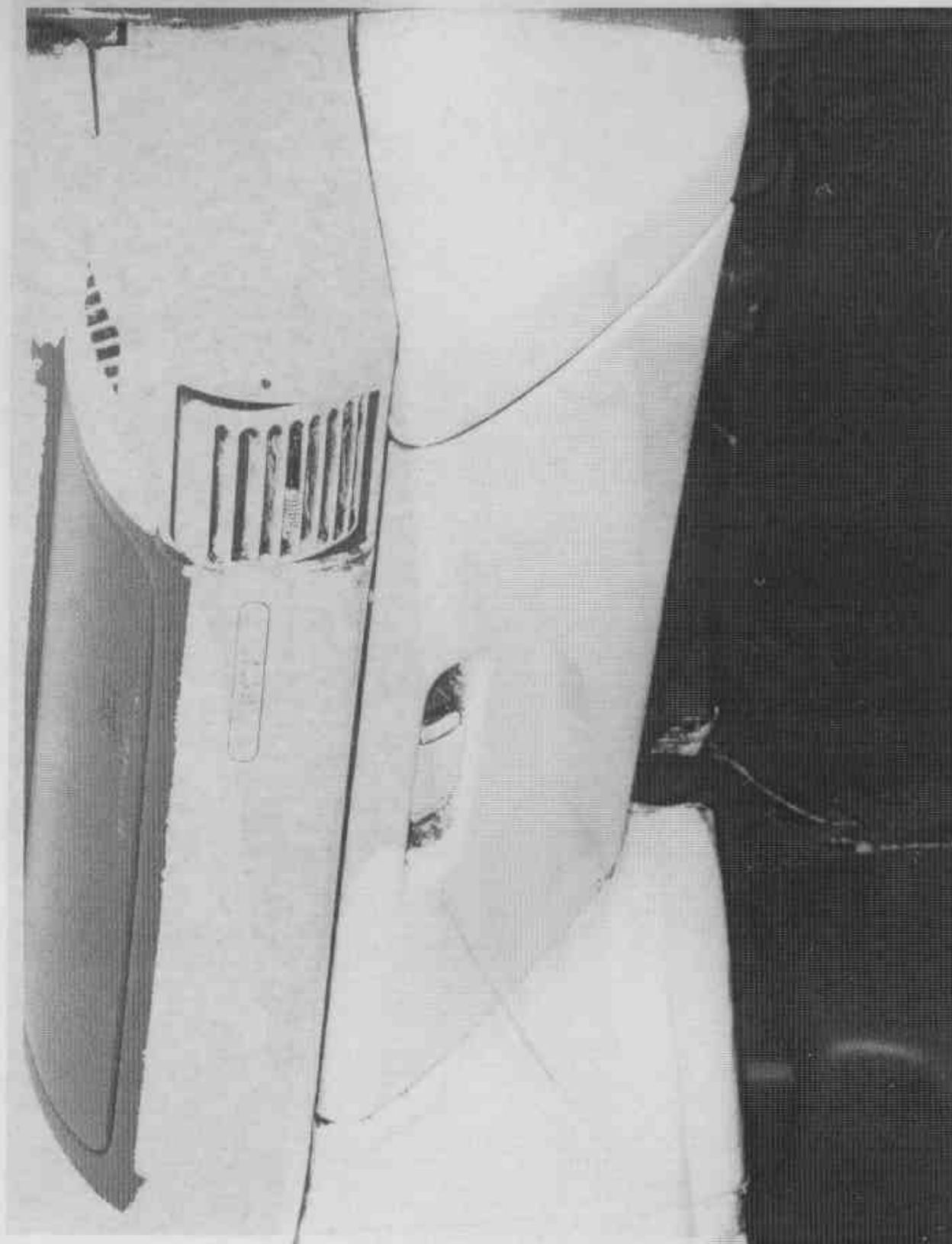


FIGURE A-51. PRE-TEST PASSENGER SIDE KNEE BOLSTER

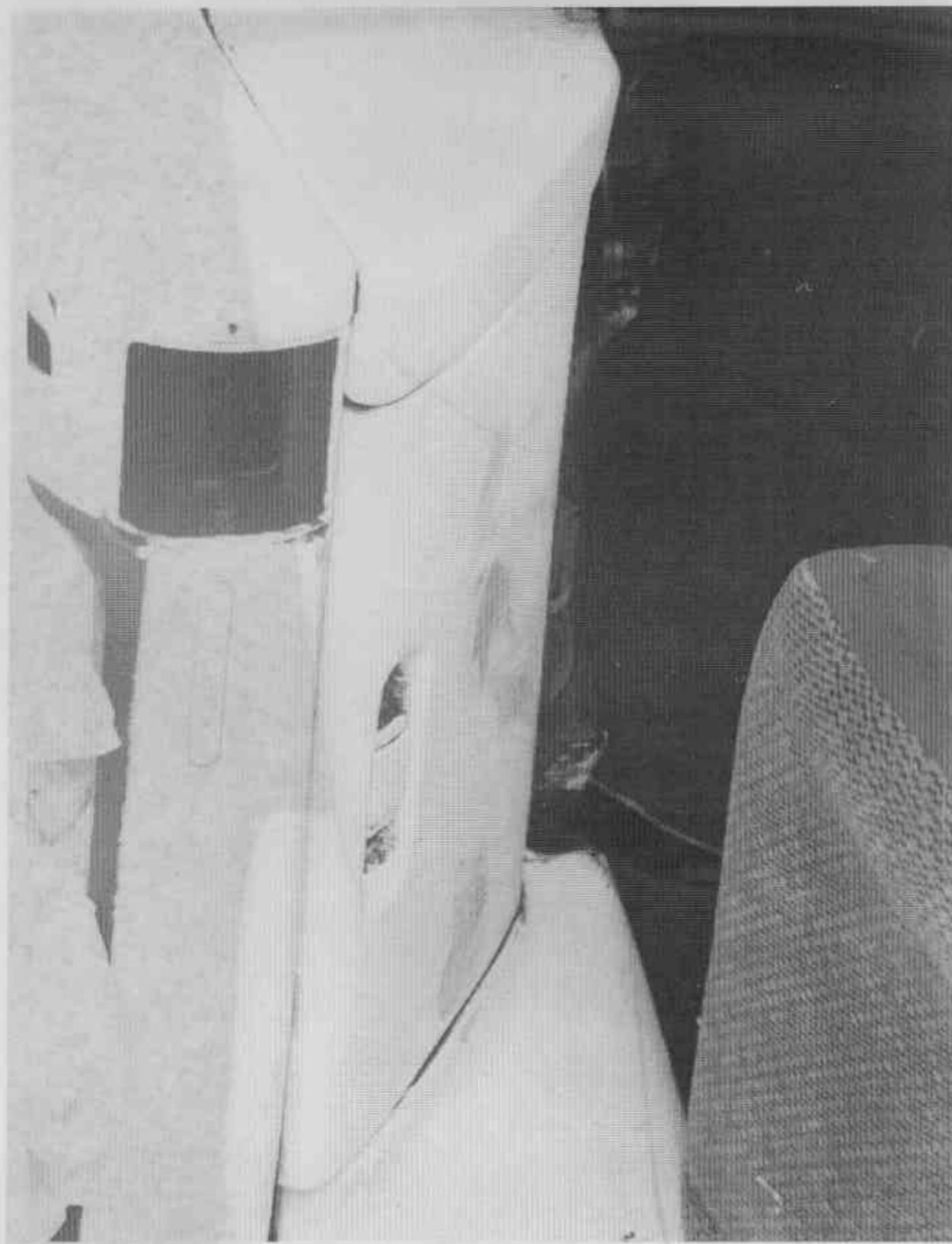


FIGURE A-52. POST-TEST PASSENGER KNEE BOLSTER AND DUMMY CONTACT



FIGURE A-53. POST-TEST PASSENGER DUMMY HEAD



FIGURE A-54. POST-TEST PASSENGER DUMMY CONTACT POINT

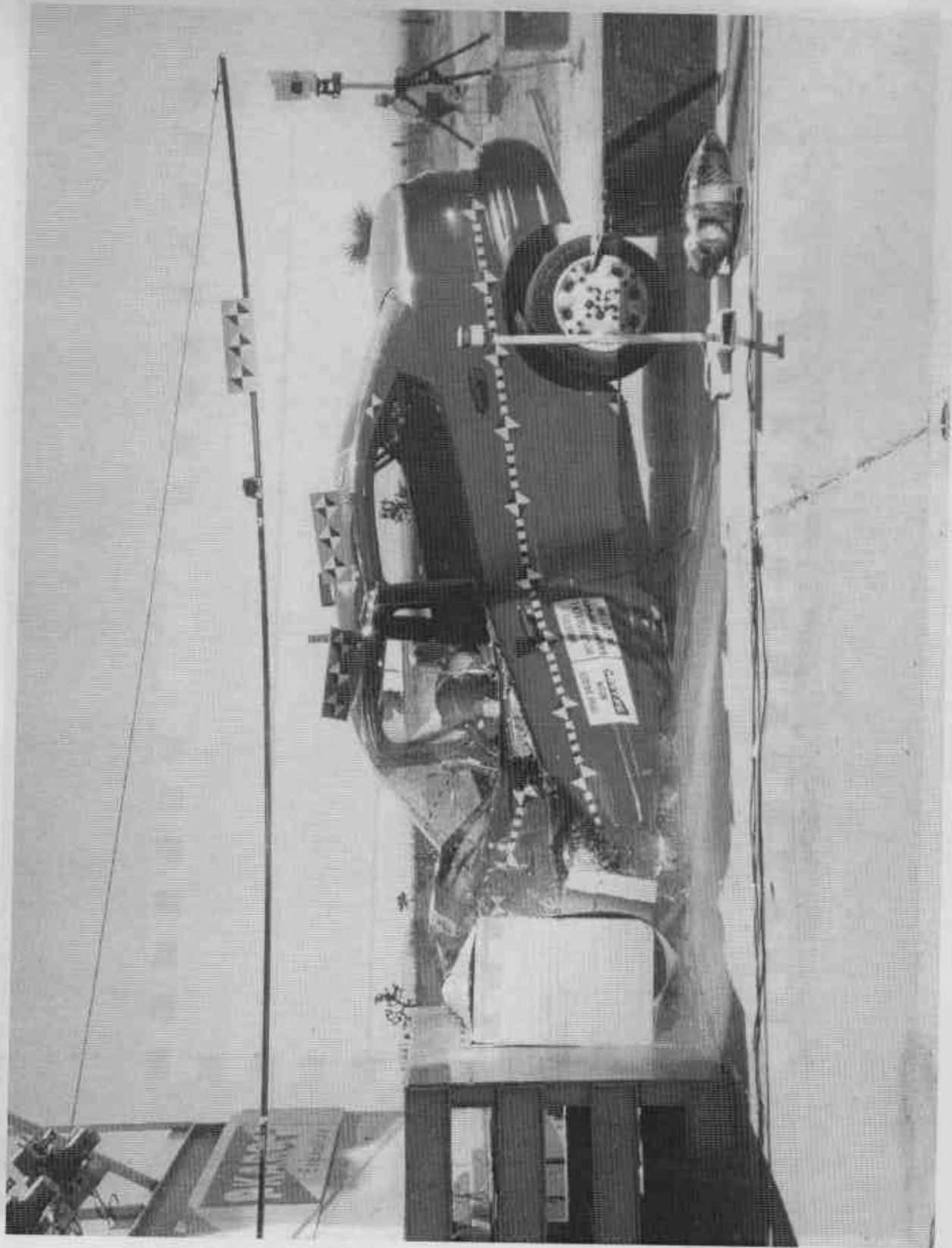


FIGURE A-55. VEHICLE DURING IMPACT

A-55

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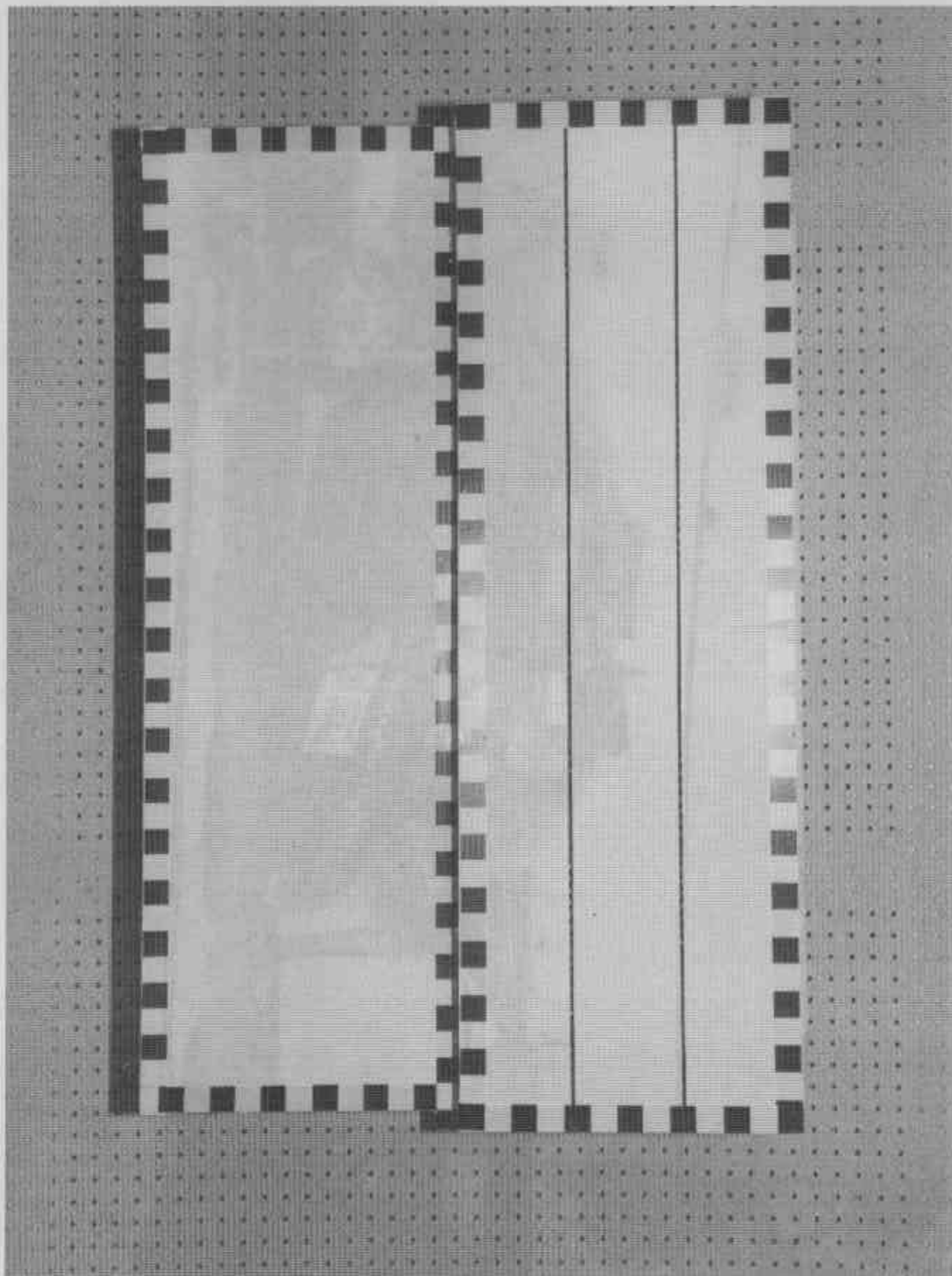


FIGURE A-56. PRE-TEST BARRIER FRONT VIEW

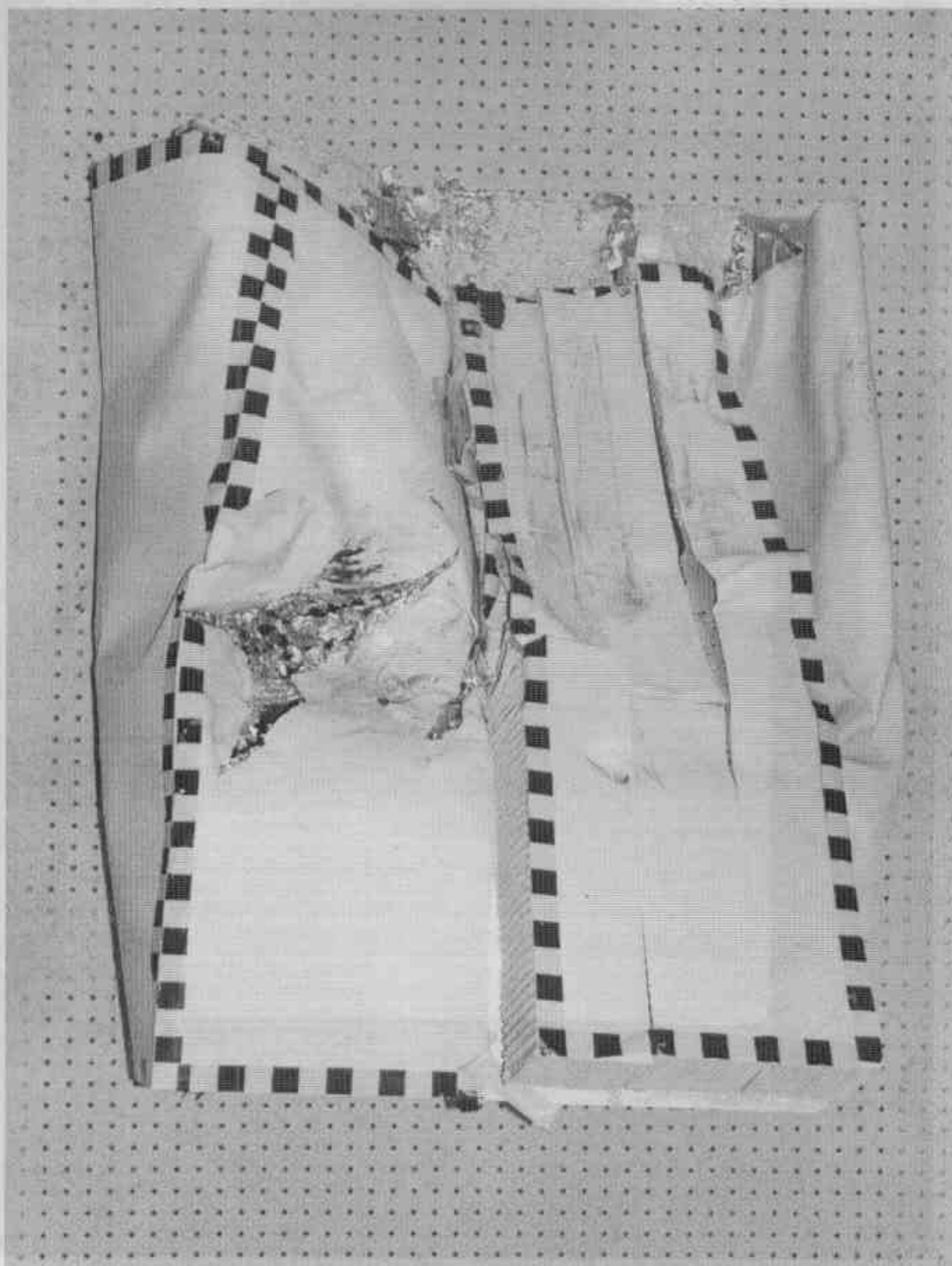


FIGURE A-57. POST-TEST BARRIER FRONT VIEW

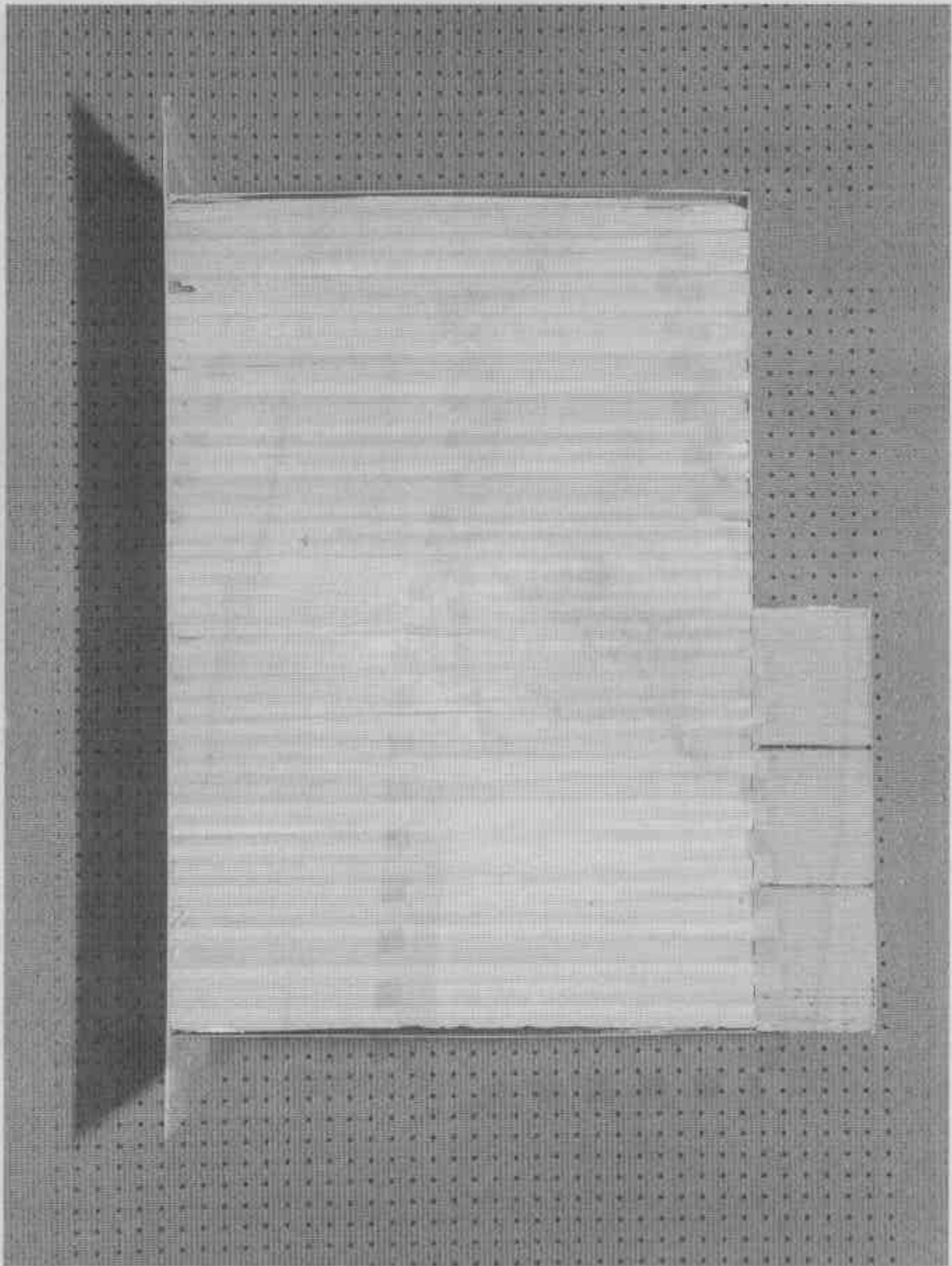


FIGURE A-58. PRE-TEST BARRIER LEFT SIDE VIEW

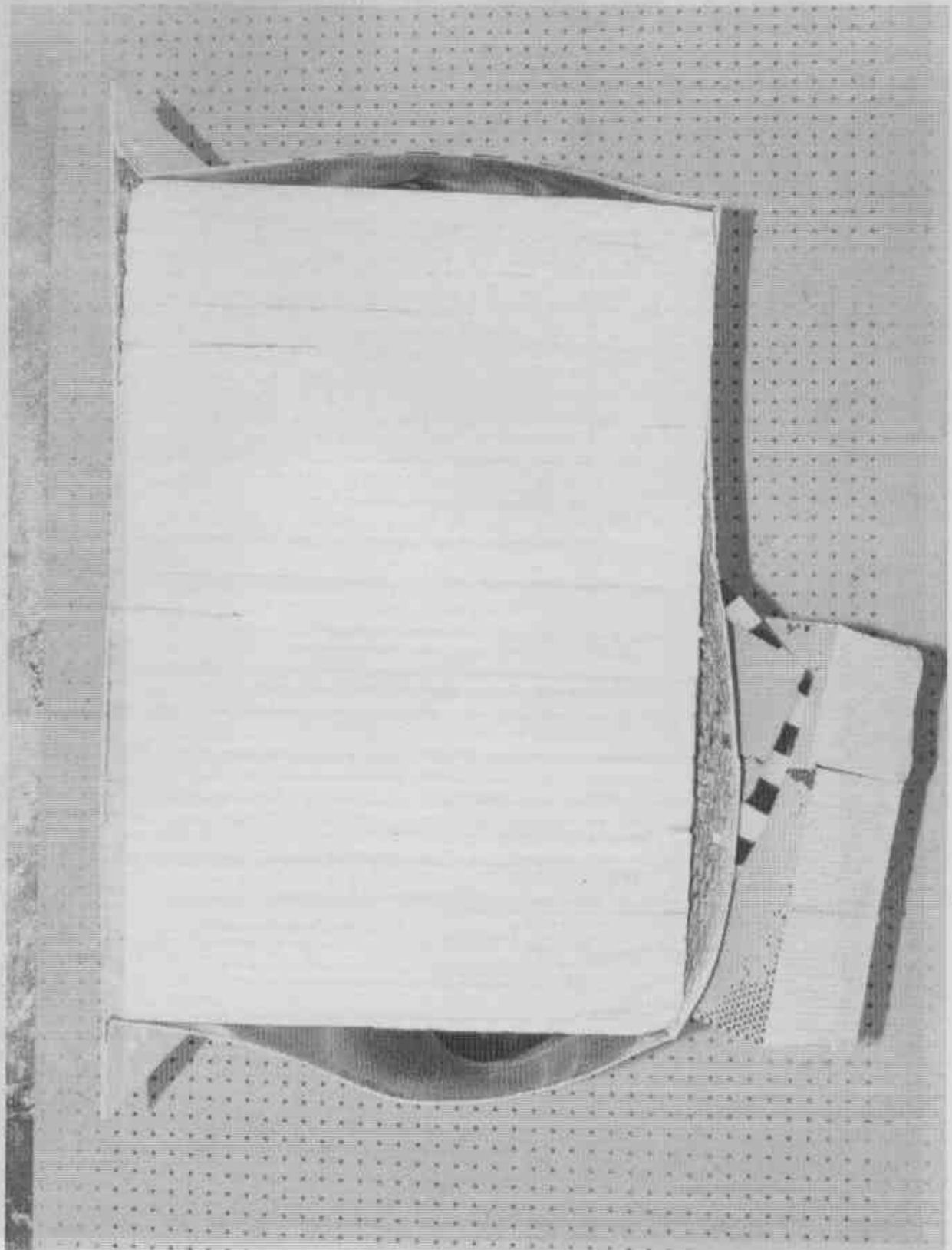


FIGURE A-59. POST-TEST BARRIER LEFT SIDE VIEW

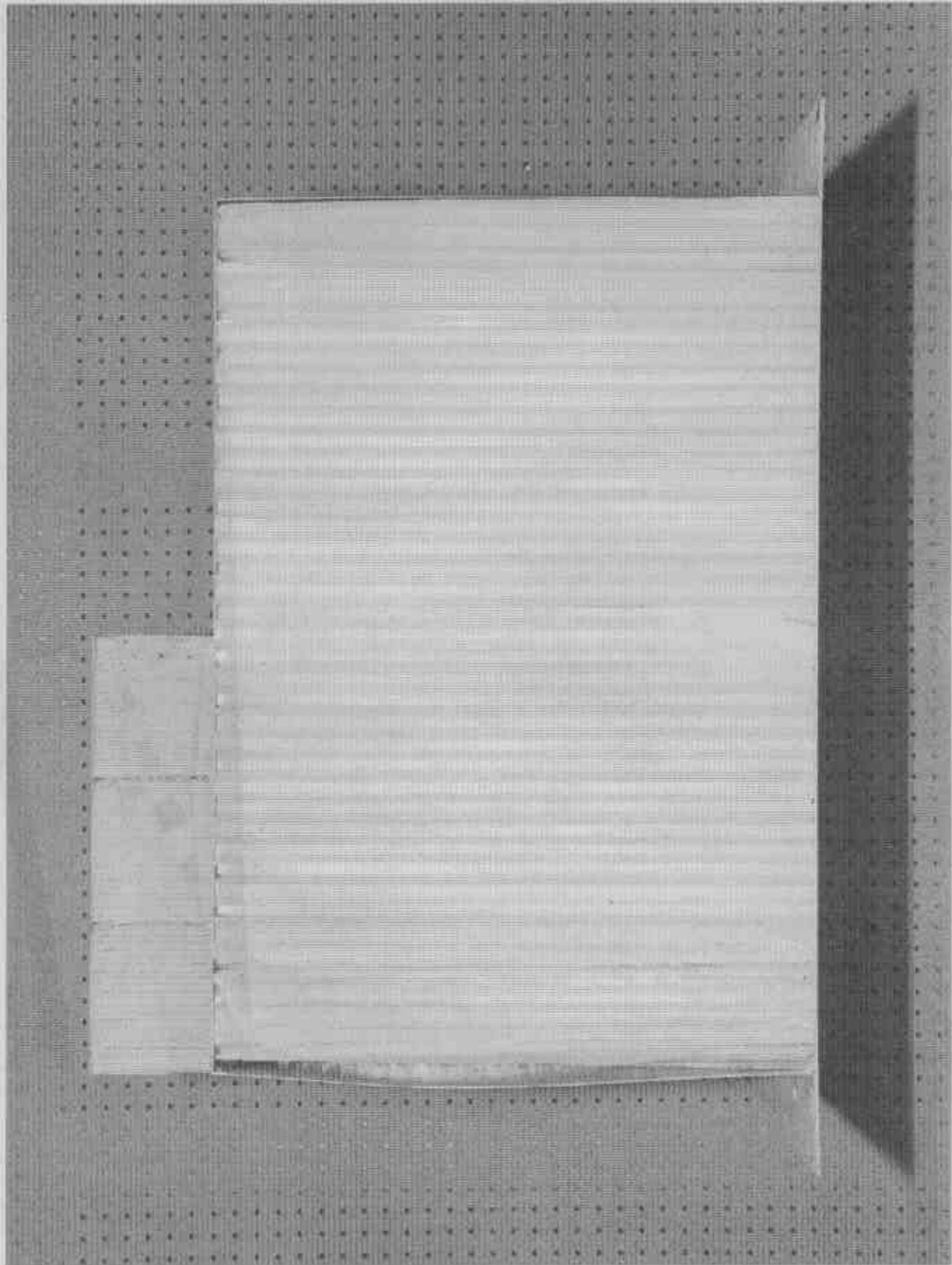


FIGURE A-60. PRE-TEST BARRIER RIGHT SIDE VIEW

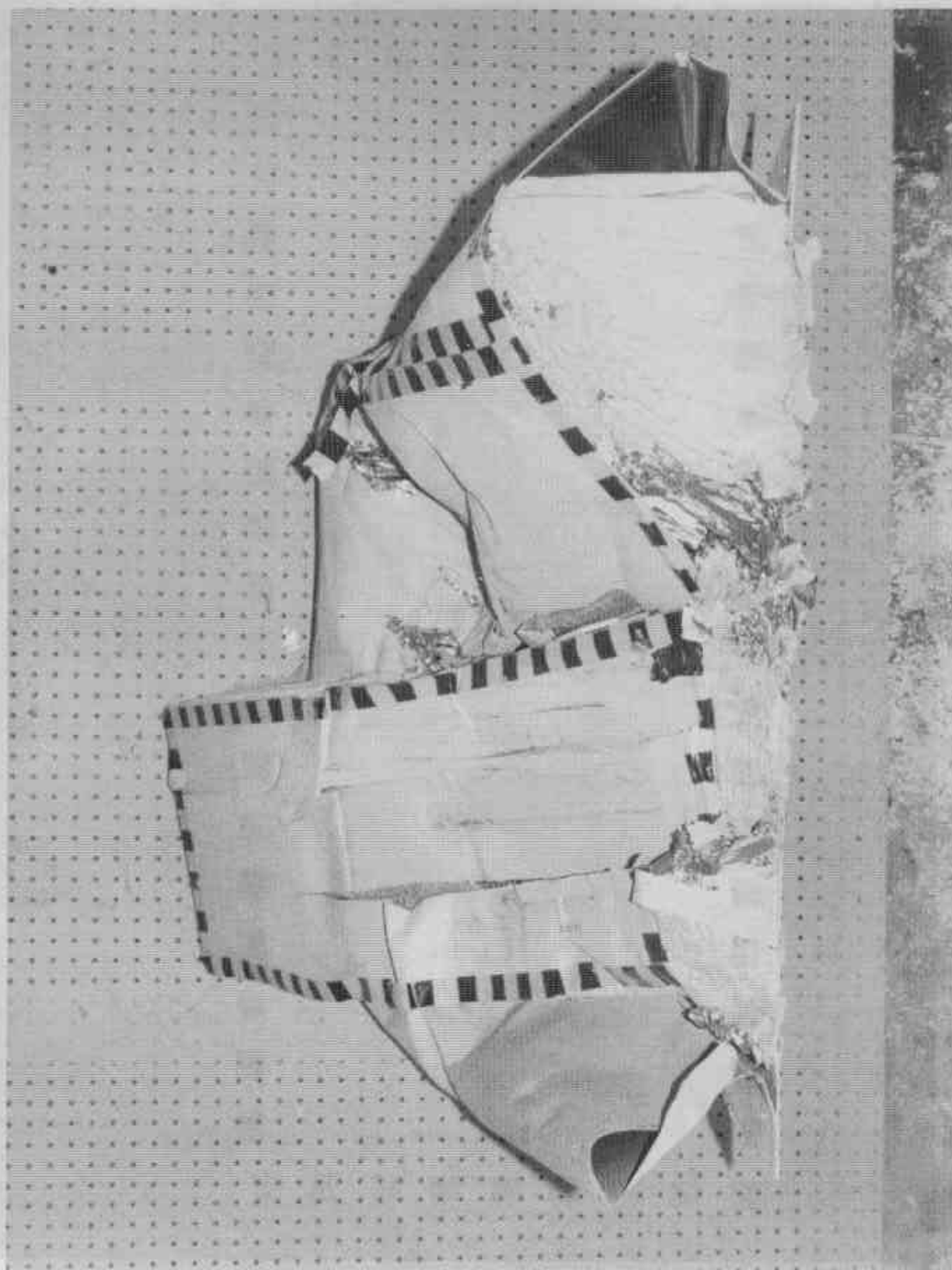


FIGURE A-61. POST-TEST BARRIER RIGHT SIDE VIEW

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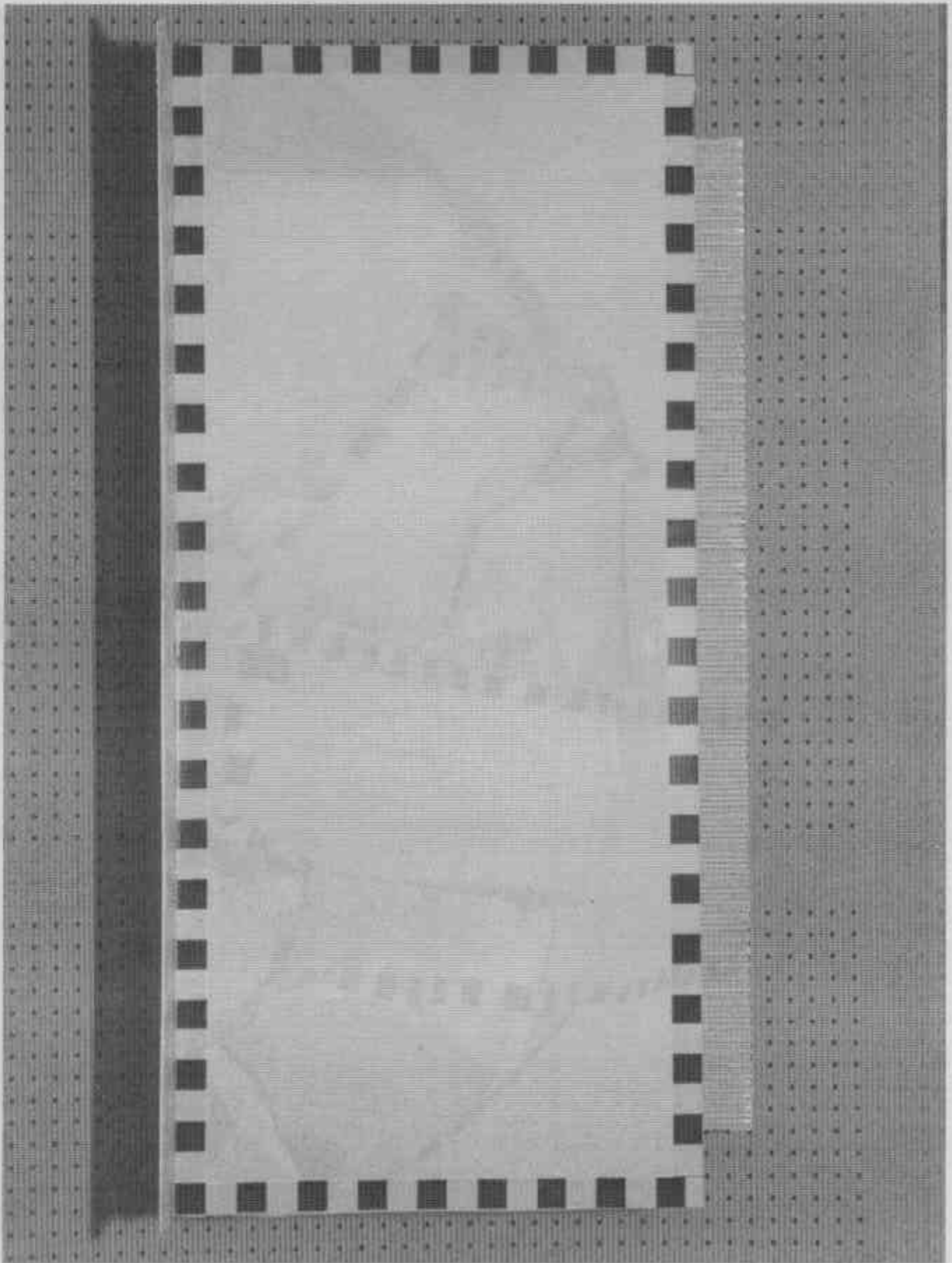


FIGURE A-62. PRE-TEST BARRIER TOP VIEW

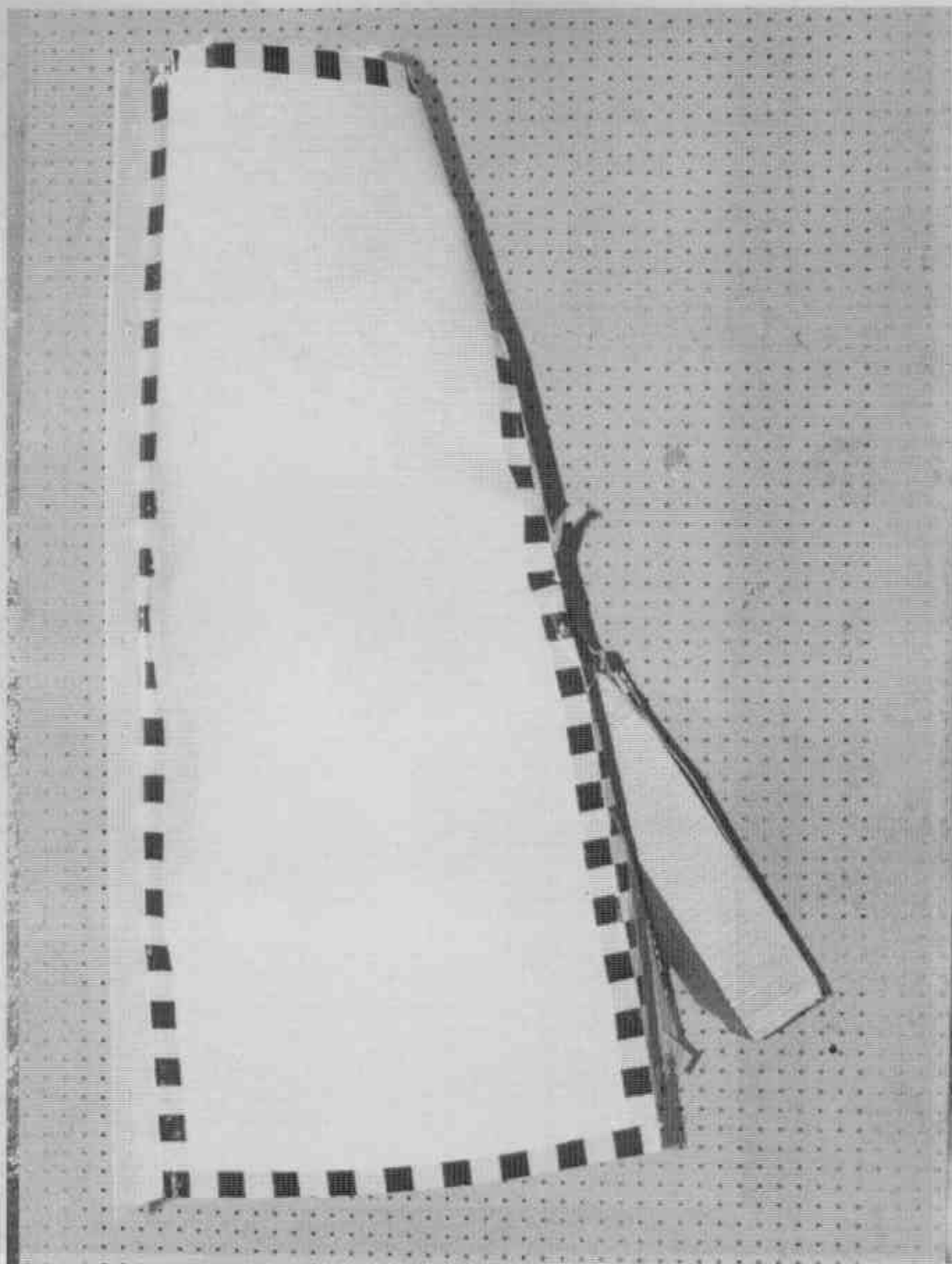


FIGURE A-63. POST-TEST BARRIER TOP VIEW

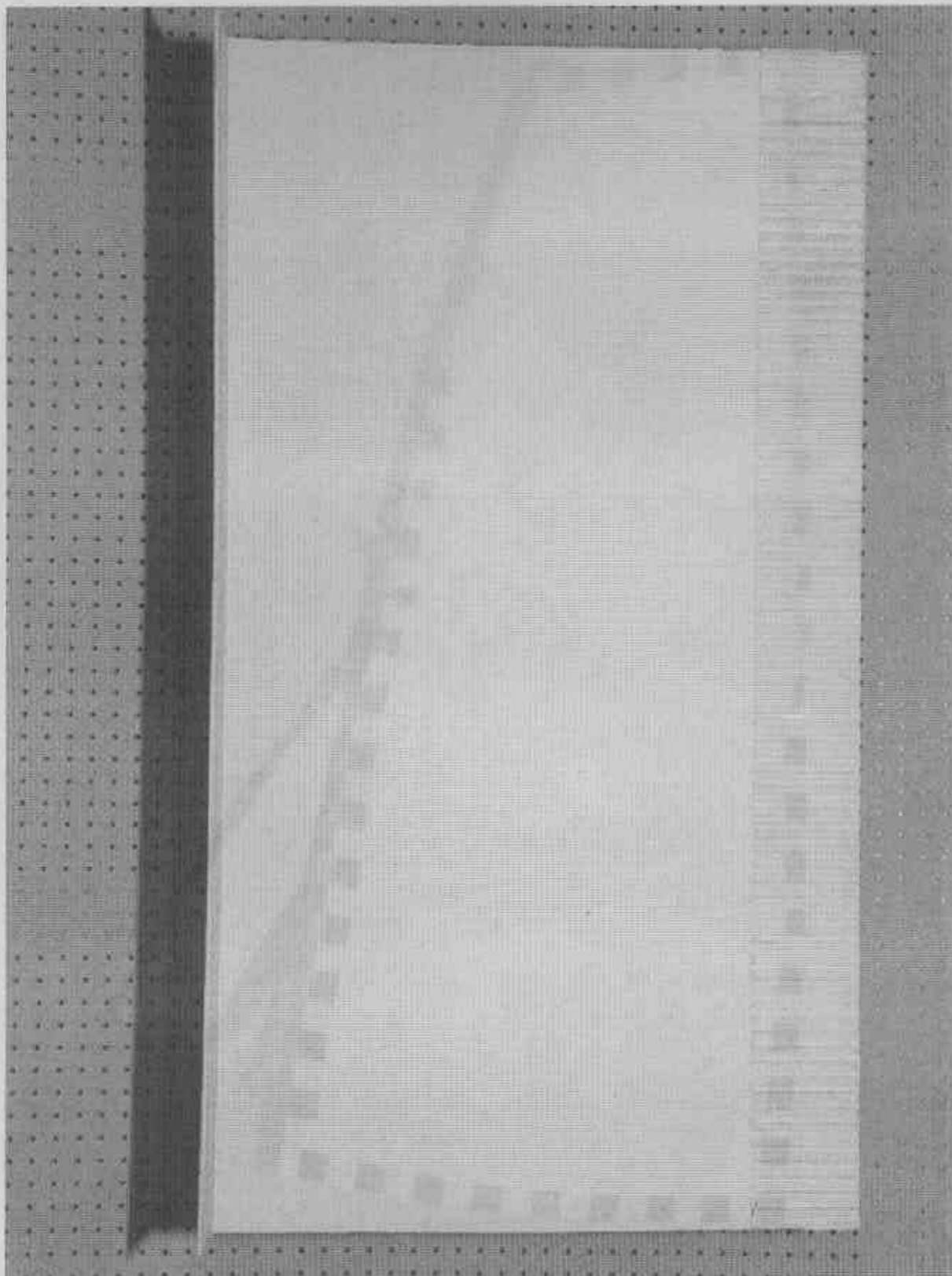


FIGURE A-64. PRE-TEST BARRIER BOTTOM VIEW

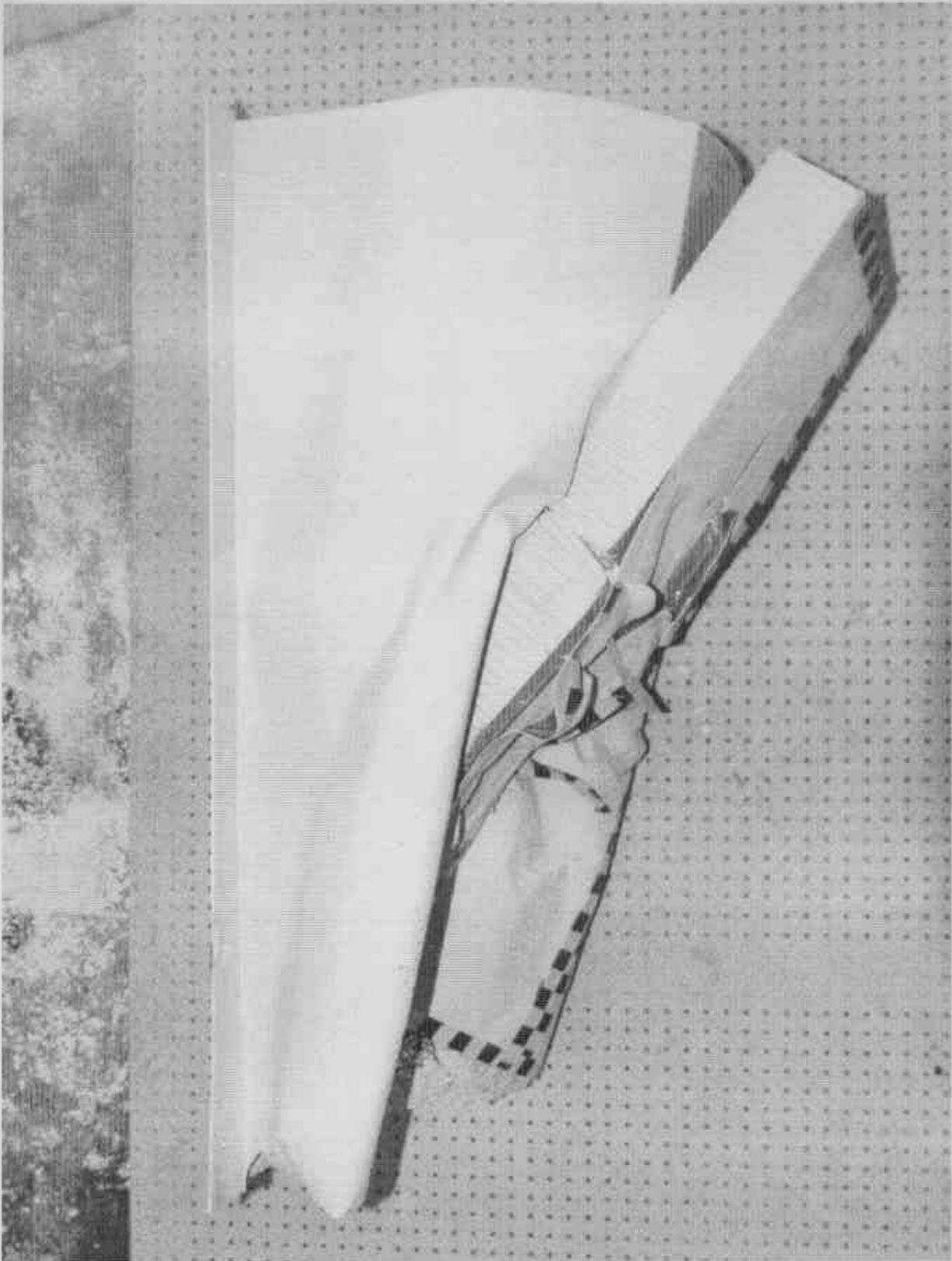


FIGURE A-65. POST-TEST BARRIER BOTTOM VIEW

A-65

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APPENDIX B
DUMMY, VEHICLE AND RESPONSE DATA TRACES

LIST OF DATA PLOTS

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B-3	Driver Head Primary X Displacement	B-3
B-4	Driver Head Primary Y	B-4
B-5	Driver Head Primary Z	B-5
B-6	Driver Head Resultant Primary	B-6
B-7	Driver Neck Force X	B-7
B-8	Driver Neck Force Y	B-8
B-9	Driver Neck Force Z	B-9
B-10	Driver Neck Force Resultant	B-10
B-11	Driver Neck Moment X	B-11
B-12	Driver Neck Moment Y	B-12
B-13	Driver Neck Moment Z	B-13
B-14	Driver Neck Moment Resultant	B-14
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B-16	Driver Chest Primary X Velocity	B-16
B-17	Driver Chest Primary X Displacement	B-17
B-18	Driver Chest Primary Y	B-18
B-19	Driver Chest Primary Z	B-19
B-20	Driver Chest Resultant Primary	B-20
B-21	Driver Chest Displacement X	B-21
B-22	Driver Pelvis X	B-22
B-23	Driver Pelvis X Velocity	B-23
B-24	Driver Pelvis X Displacement	B-24
B-25	Driver Pelvis Y	B-25
B-26	Driver Pelvis Z	B-26
B-27	Driver Pelvis Resultant	B-27
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B-31	Driver Left Upper Tibia Force Z	B-31
B-32	Driver Left Upper Tibia Moment X	B-32
B-33	Driver Left Upper Tibia Moment Y	B-33
B-34	Driver Left Lower Tibia Force X	B-34
B-35	Driver Left Lower Tibia Force Z	B-35

LIST OF DATA PLOTS...(Continued)

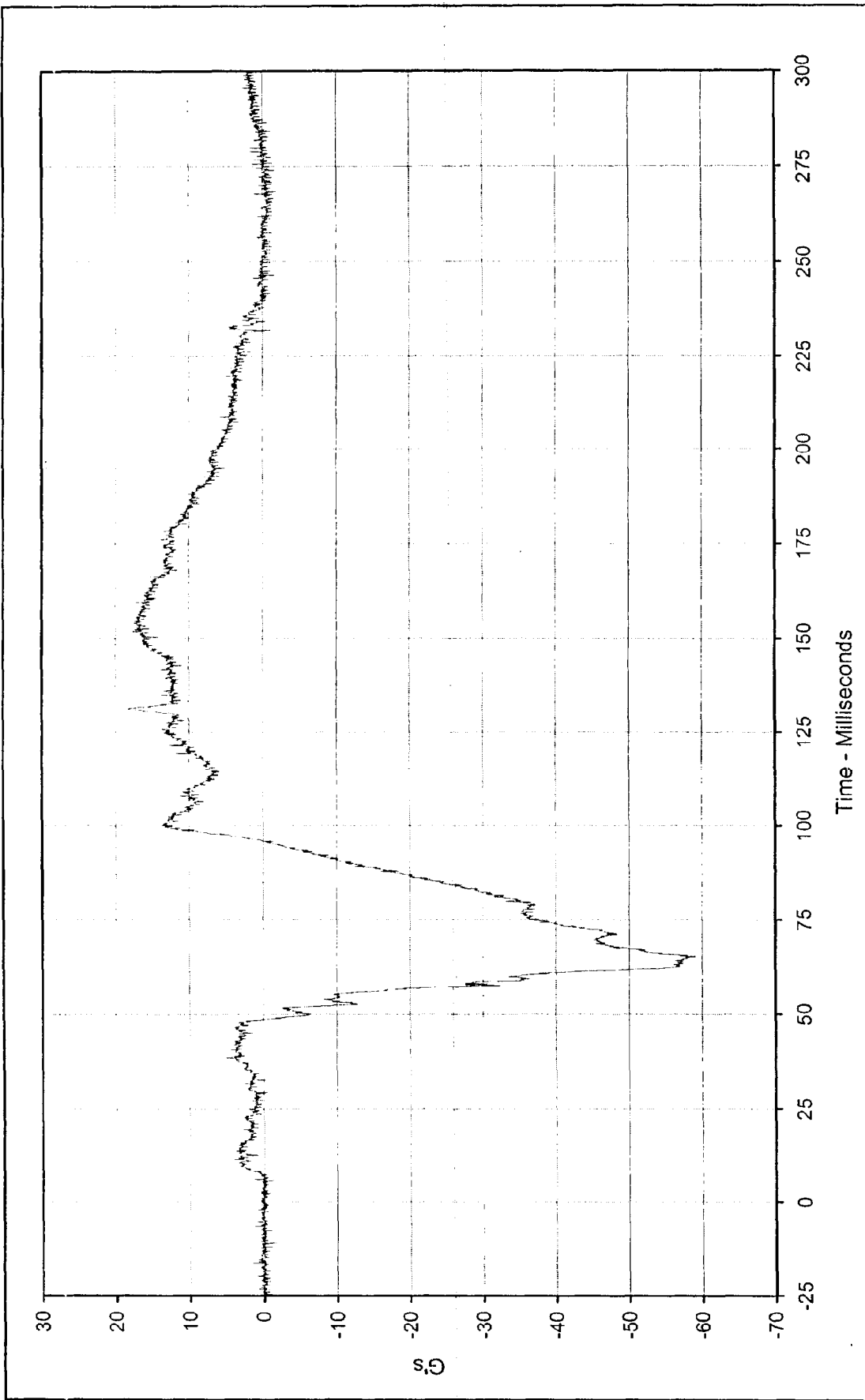
Data Plot		Page
B-36	Driver Left Lower Tibia Moment X	B-36
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B-38	Driver Right Upper Tibia Force X	B-38
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B-45	Driver Right Lower Tibia Moment Y	B-45
B-46	Driver Left Foot Aft X	B-46
B-47	Driver Left Foot Aft Z	B-47
B-48	Driver Left Foot Fore Z	B-48
B-49	Driver Right Foot Aft X	B-49
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Curve Description: Driver Head Primary X Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 18.2 at 131.1 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

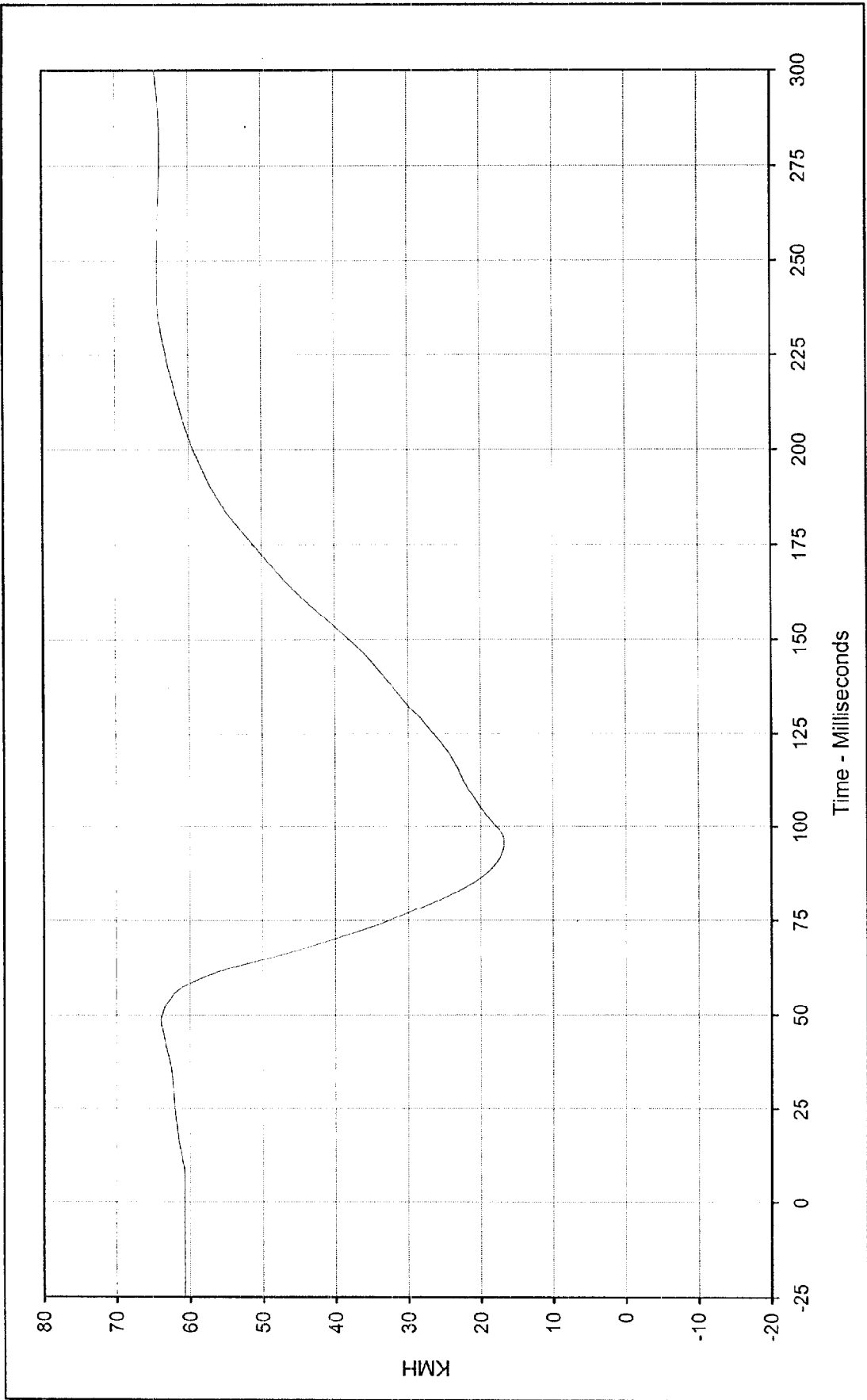
Minimum Value: -59.1 at 65.1 Milliseconds

SAE Filter Class: 1000

Date of Test: 10/27/98

Curve Number: FIL-001





Curve Description: Driver Head Primary X Velocity

Maximum Value: 64.6 at 299.9 Milliseconds

Minimum Value: 16.8 at 95.8 Milliseconds

SAE Filter Class: 180

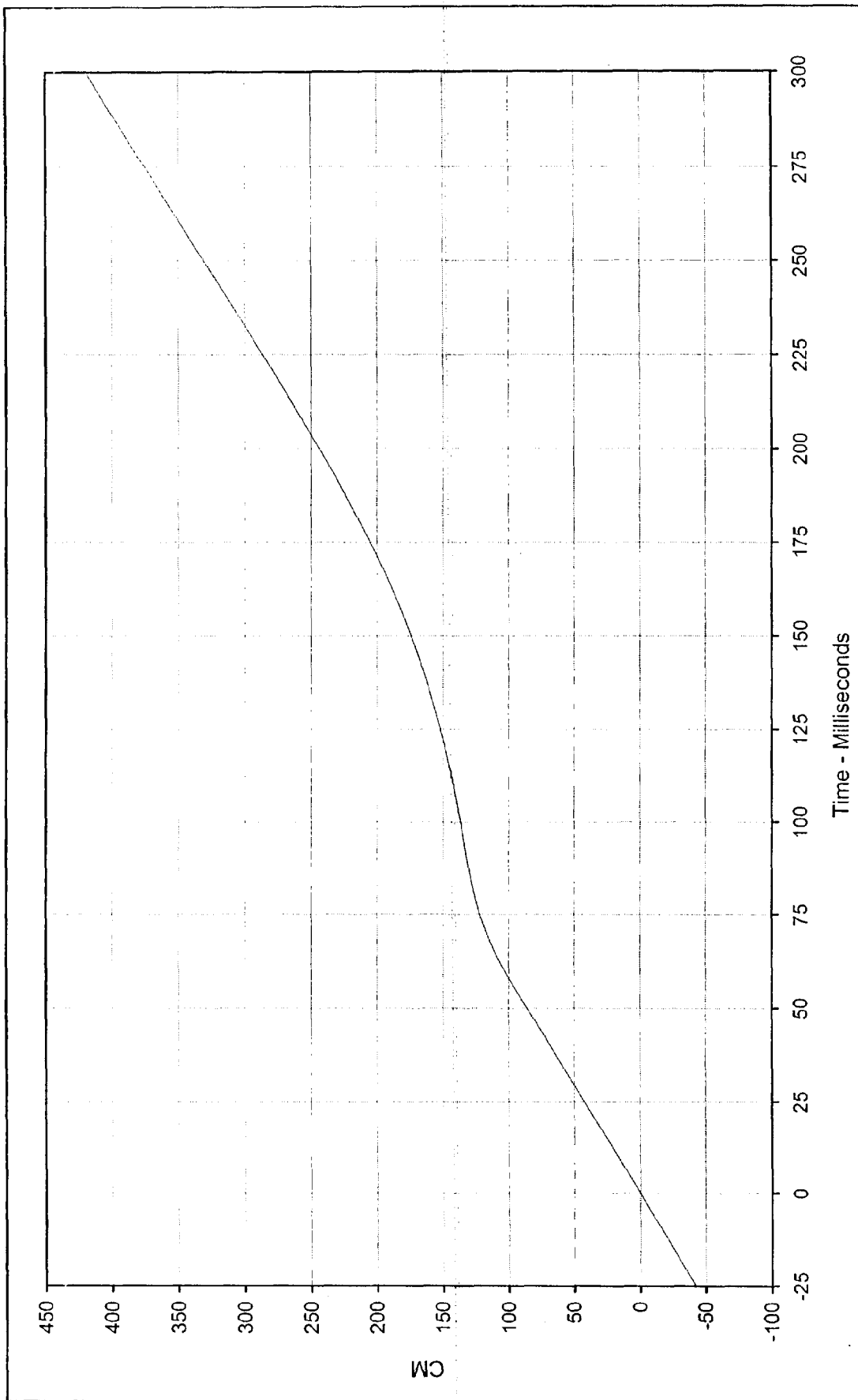
Date of Test: 10/27/98

Curve Number: IN1-001

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan

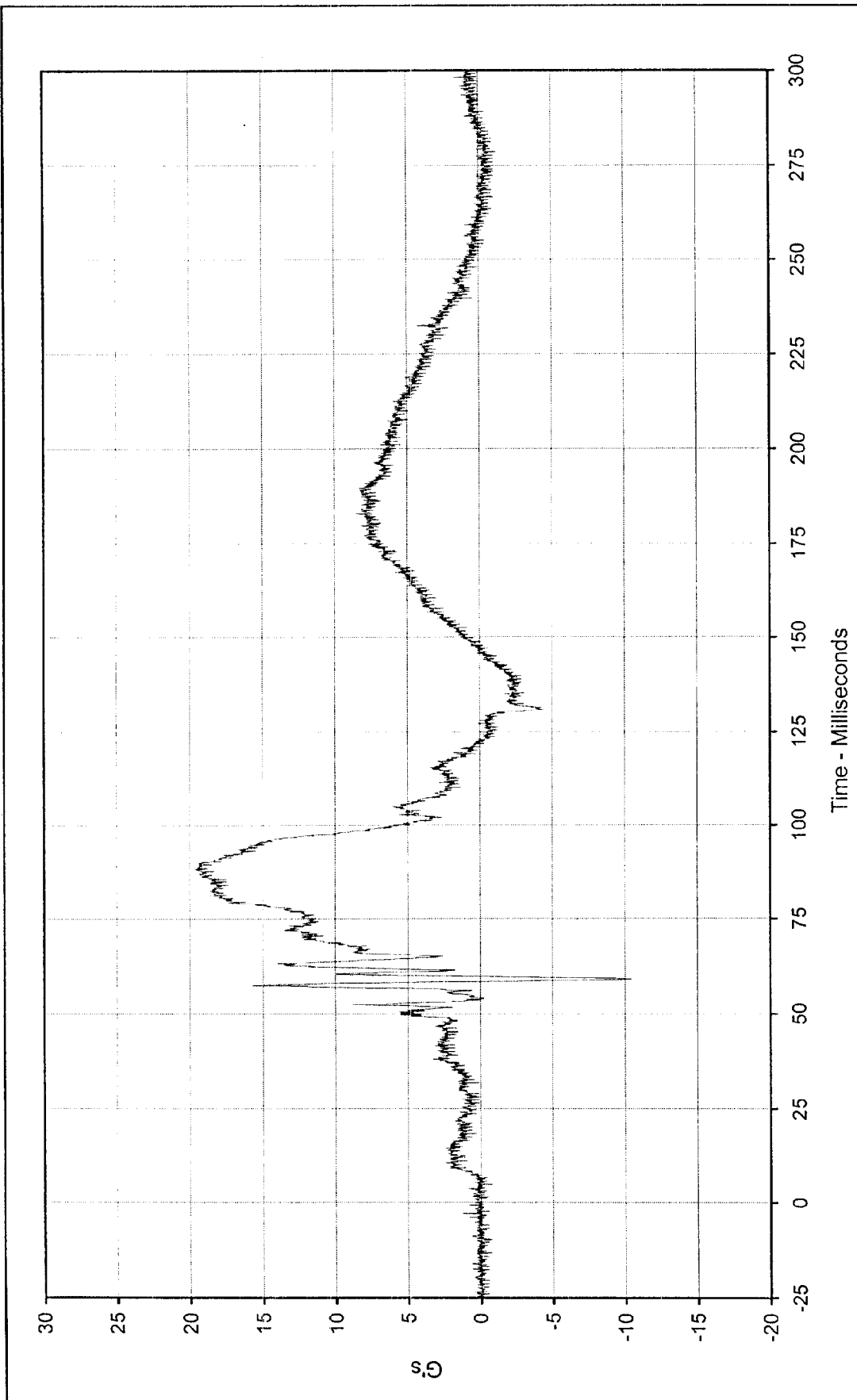




Curve Description: Driver Head Primary X Displ.
 Maximum Value: 419.1 at 299.9 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 10/27/98
 Curve Number: IN2-001

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Driver Head Primary Y Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 19.7 at 88.4 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

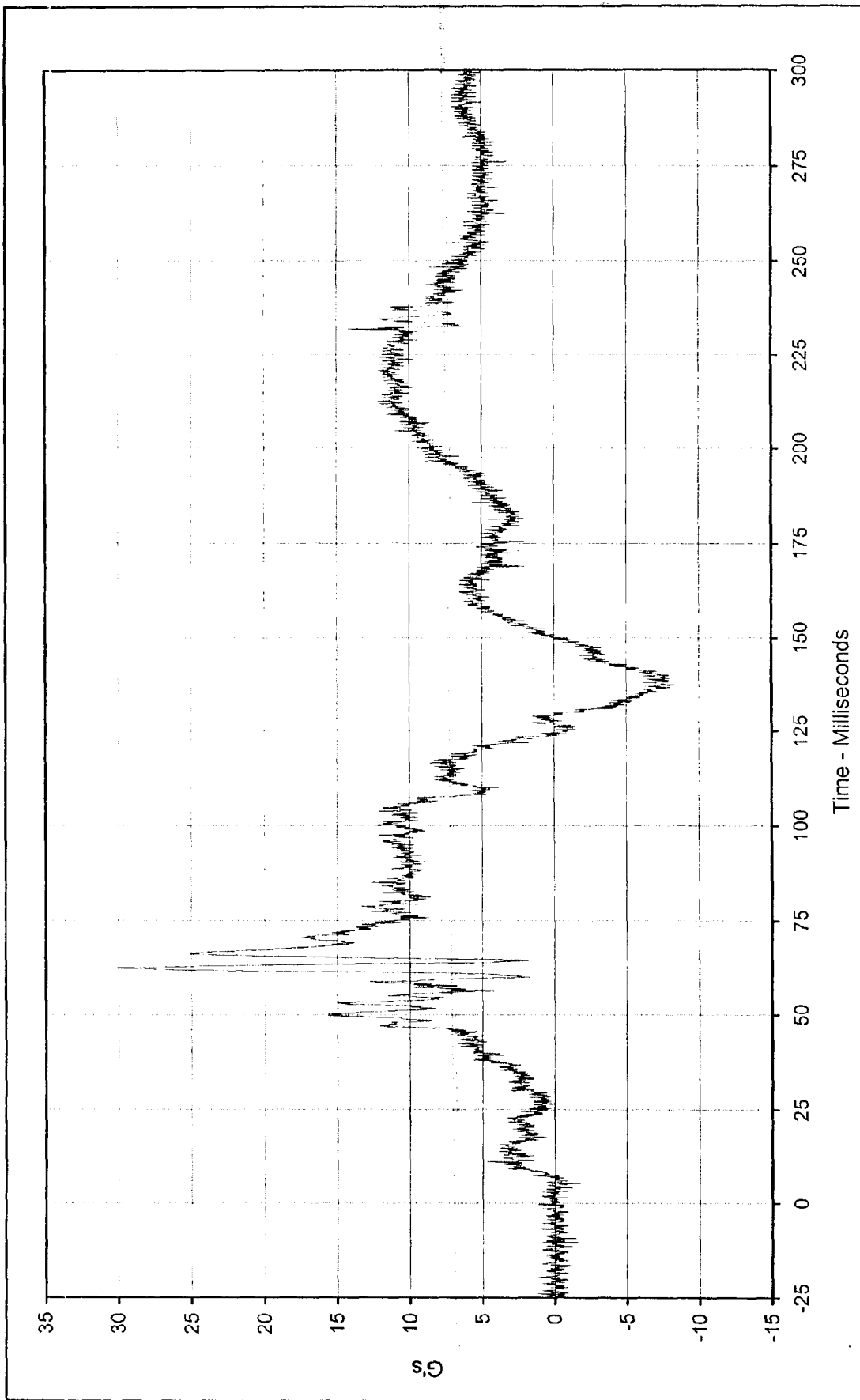
Minimum Value: -10.4 at 59.2 Milliseconds

SAE Filter Class: 1000

Date of Test: 10/27/98

Curve Number: FIL-002

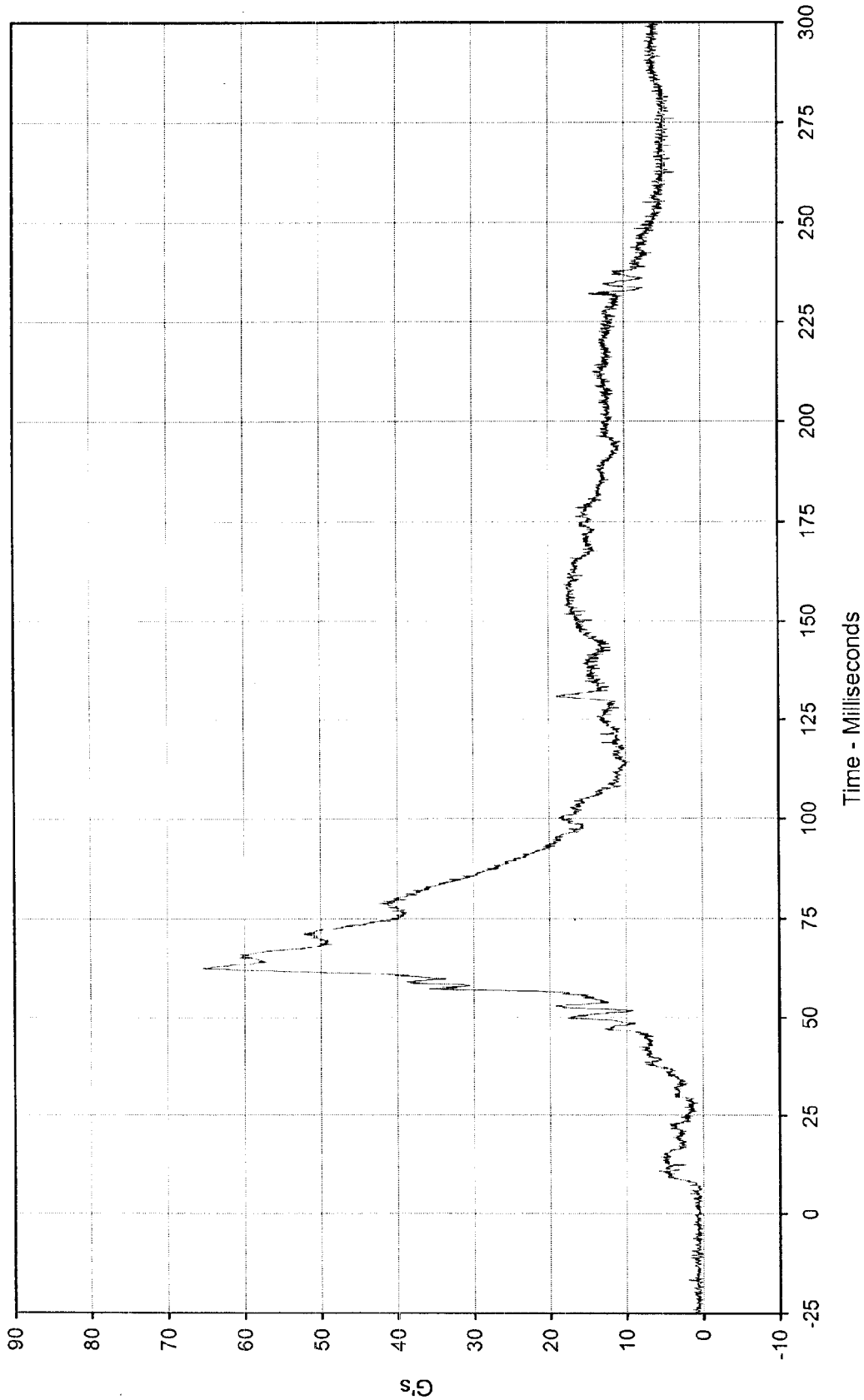




Curve Description: Driver Head Primary Z
 Maximum Value: 30.1 at 62.4 Milliseconds
 Minimum Value: -8.3 at 137.4 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 10/27/98
 Curve Number: FIL-003

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Driver Head Resultant Primary

Maximum Value: 65.5 at 62.4 Milliseconds

Minimum Value: 0.1 at 1.9 Milliseconds

SAE Filter Class: 1000

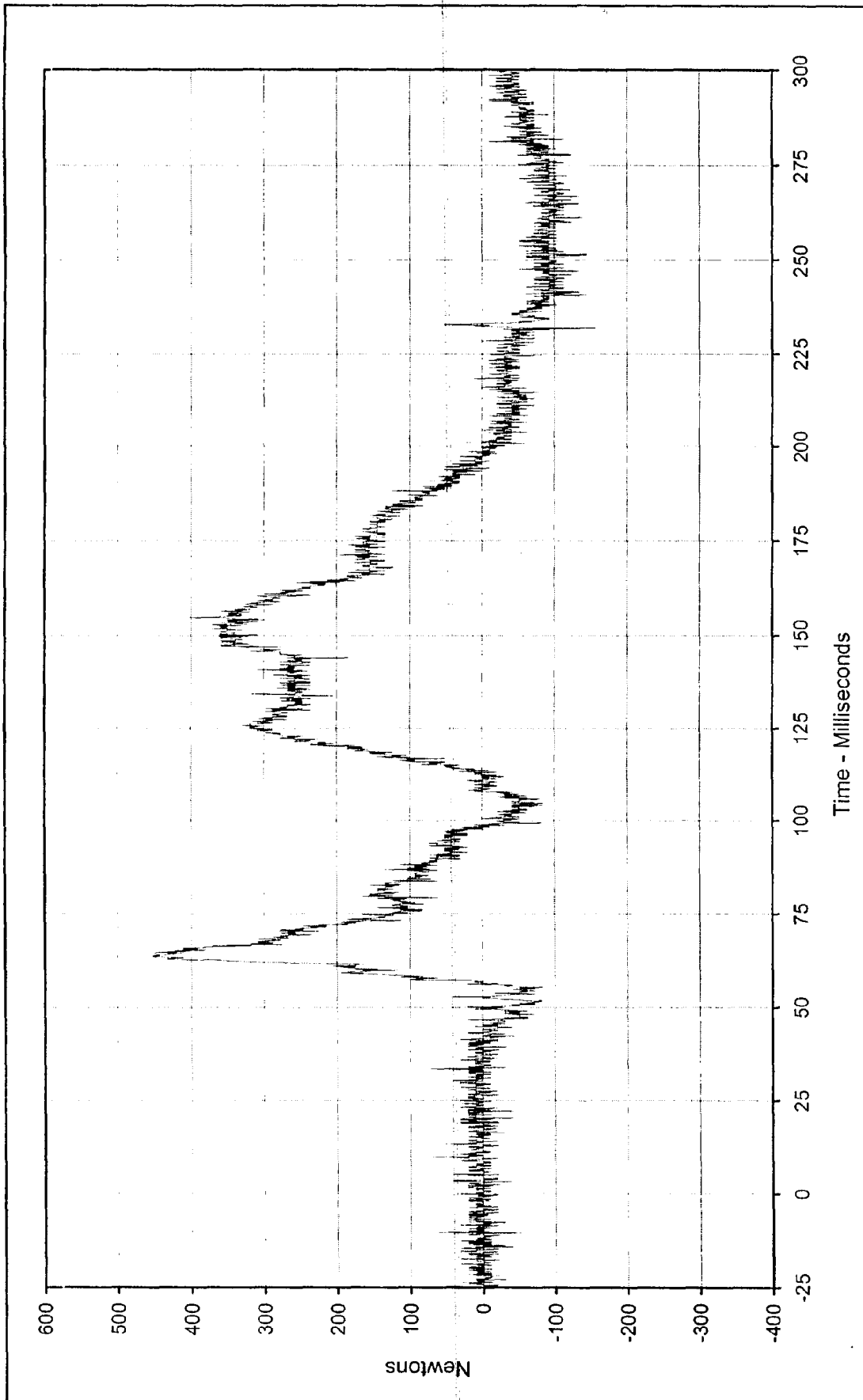
Date of Test: 10/27/98

Curve Number: RES-001

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan

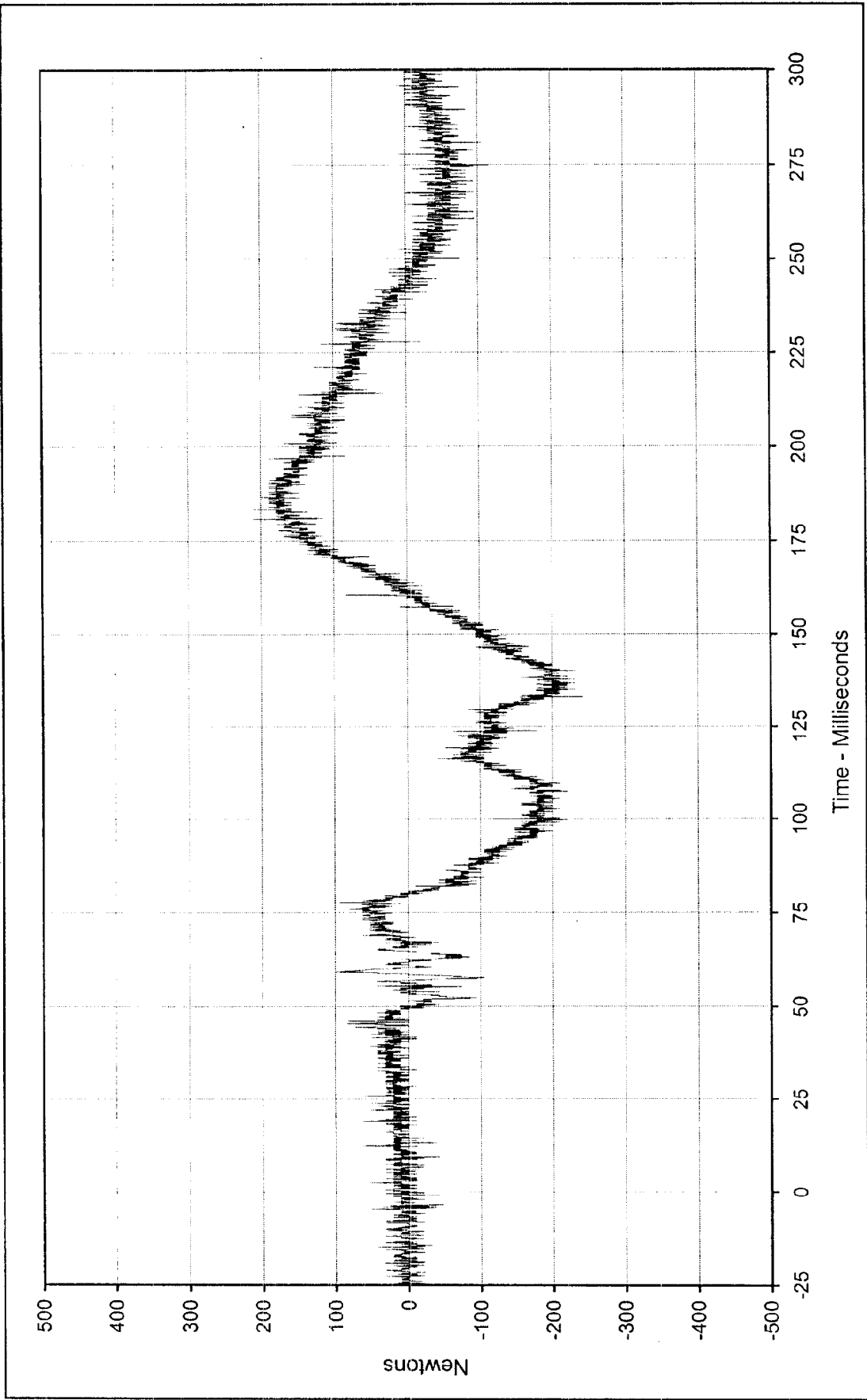




Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan

Curve Description:	Driver Neck Force X			
Maximum Value:	452.5	at	63.4	Milliseconds
Minimum Value:	-154.3	at	231.9	Milliseconds
SAE Filter Class:	1000			
Date of Test:	10/27/98			
Curve Number:	FIL-004			





Curve Description: Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 210.0 at 180.7 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

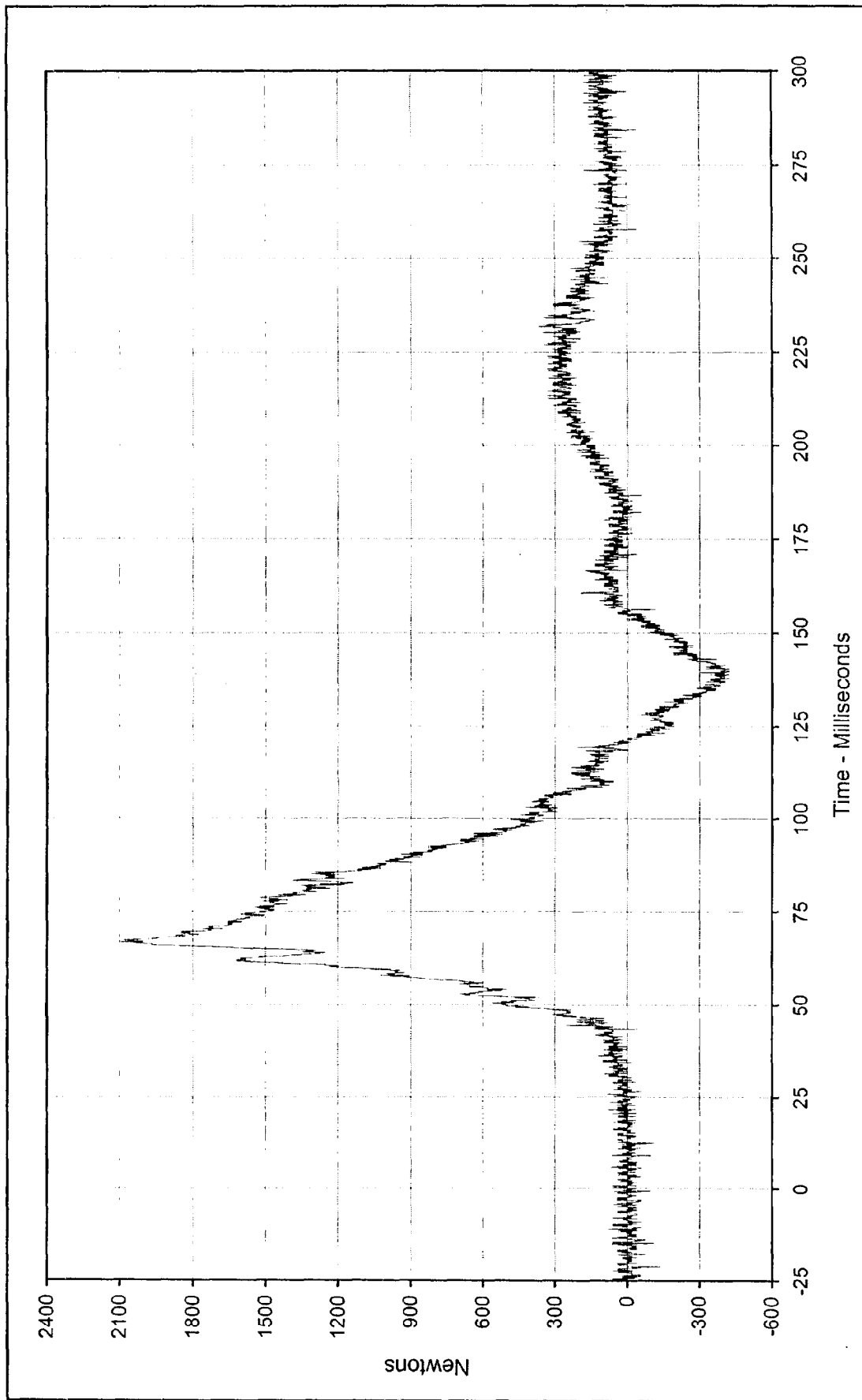
Minimum Value: -241.5 at 133.1 Milliseconds

SAE Filter Class: 1000

Date of Test: 10/27/98

Curve Number: FIL-005

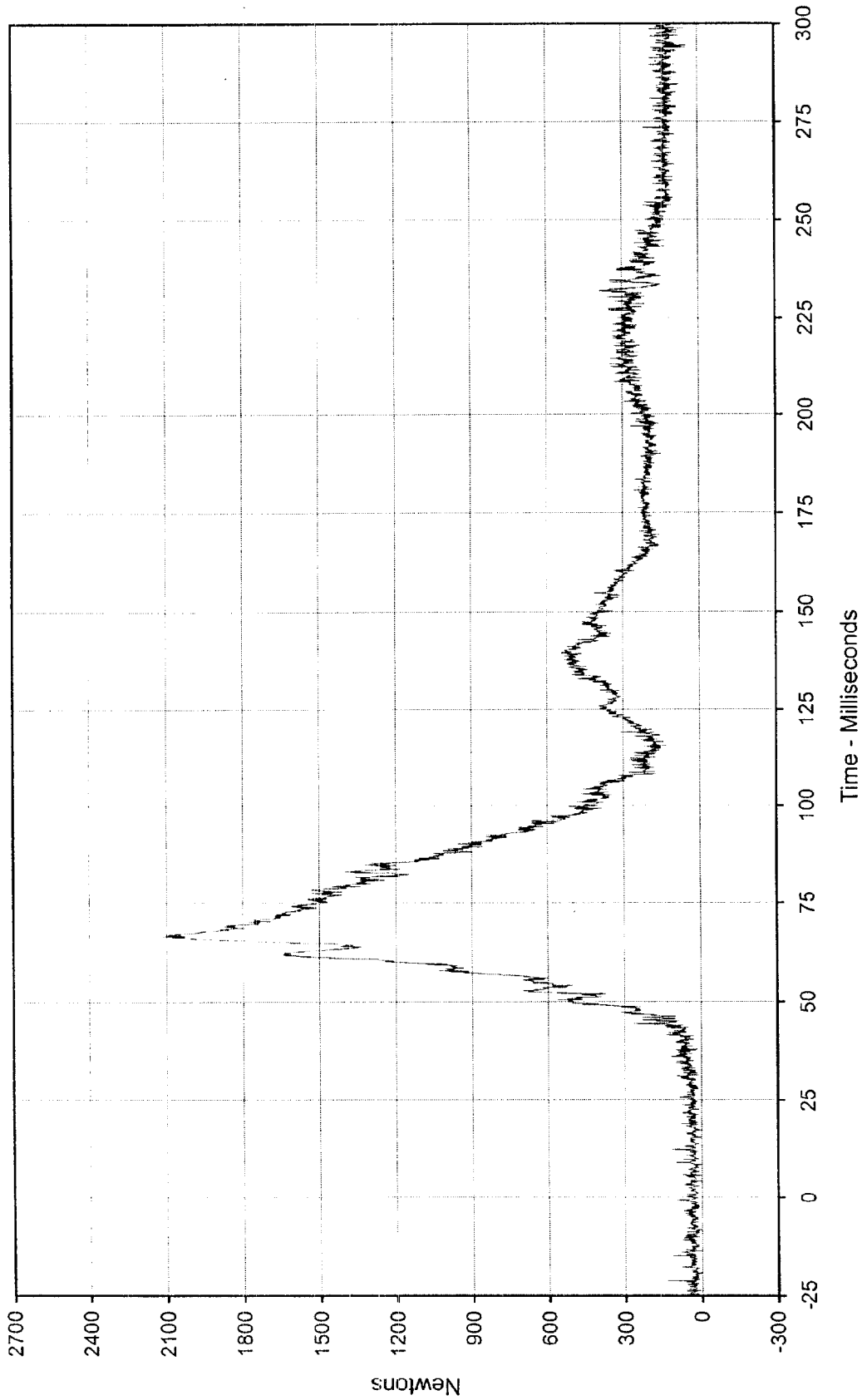




Curve Description: Driver Neck Force Z
 Maximum Value: 2102.2 at 66.7 Milliseconds
 Minimum Value: -424.3 at 137.7 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 10/27/98
 Curve Number: FIL-006

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Driver Neck Force Resultant

Maximum Value: 2120.5 at 66.7 Milliseconds

Minimum Value: 0.0 at 4.2 Milliseconds

SAE Filter Class: 1000

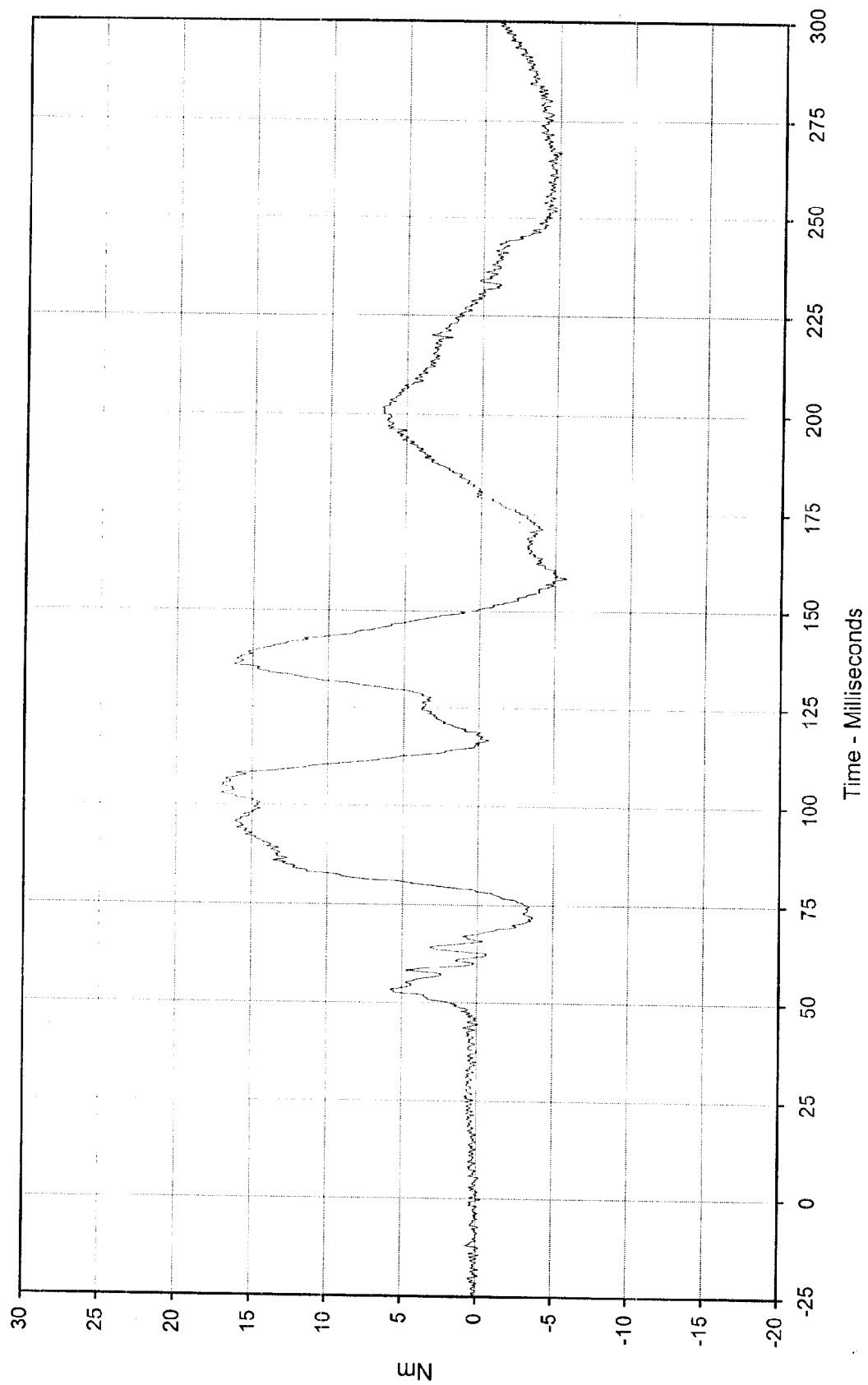
Date of Test: 10/27/98

Curve Number: RES-004

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

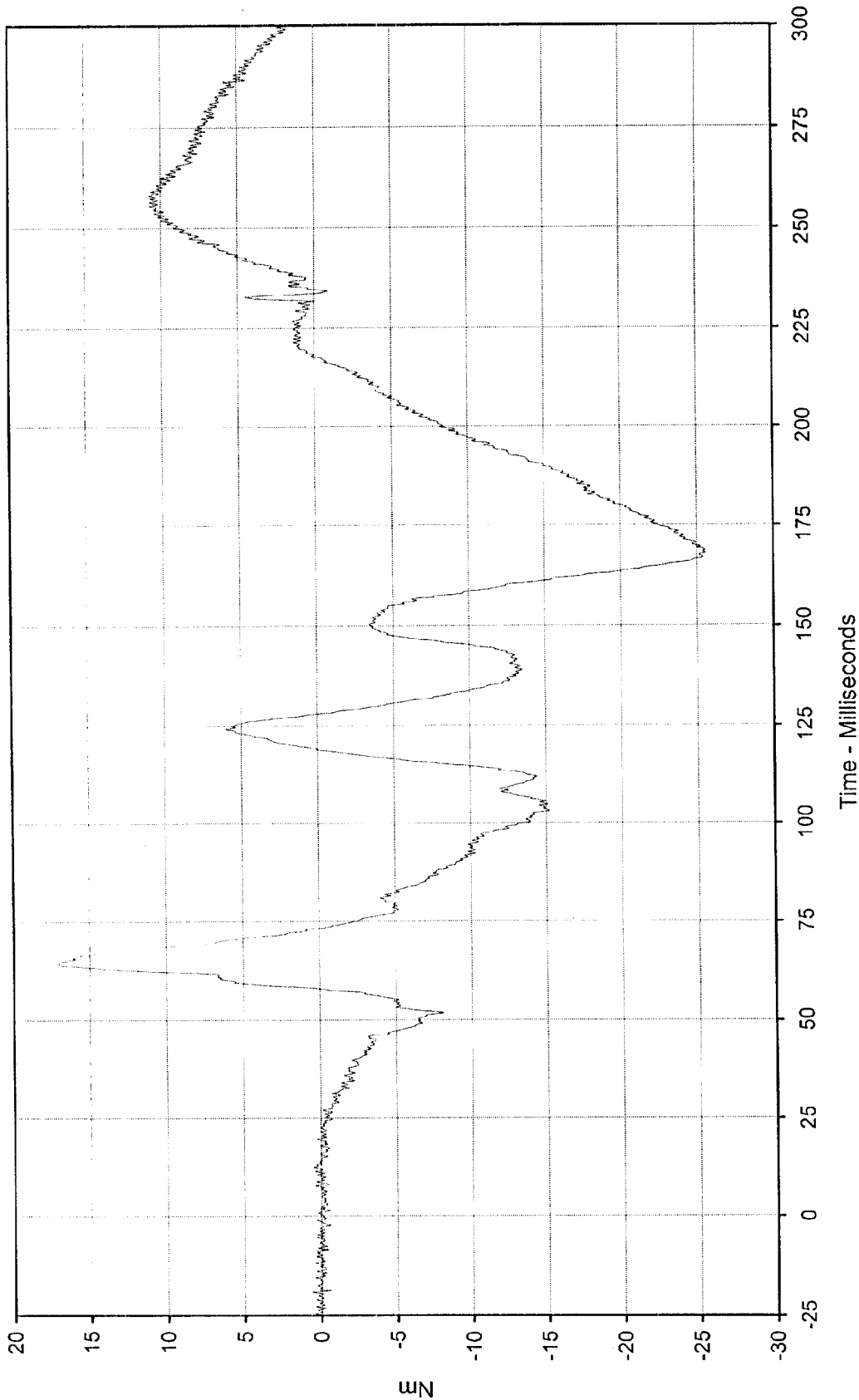
Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description:		Driver Neck Moment X		Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311	
Maximum Value:	17.0	at	103.0	Milliseconds	Test Vehicle: 1998 Dodge Neon 4 Door Sedan
Minimum Value:	-5.8	at	158.5	Milliseconds	
SAE Filter Class:	600				
Date of Test:	10/27/98				
Curve Number:	FIL-007				





Curve Description: Driver Neck Moment Y Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 17.1 at 64.1 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

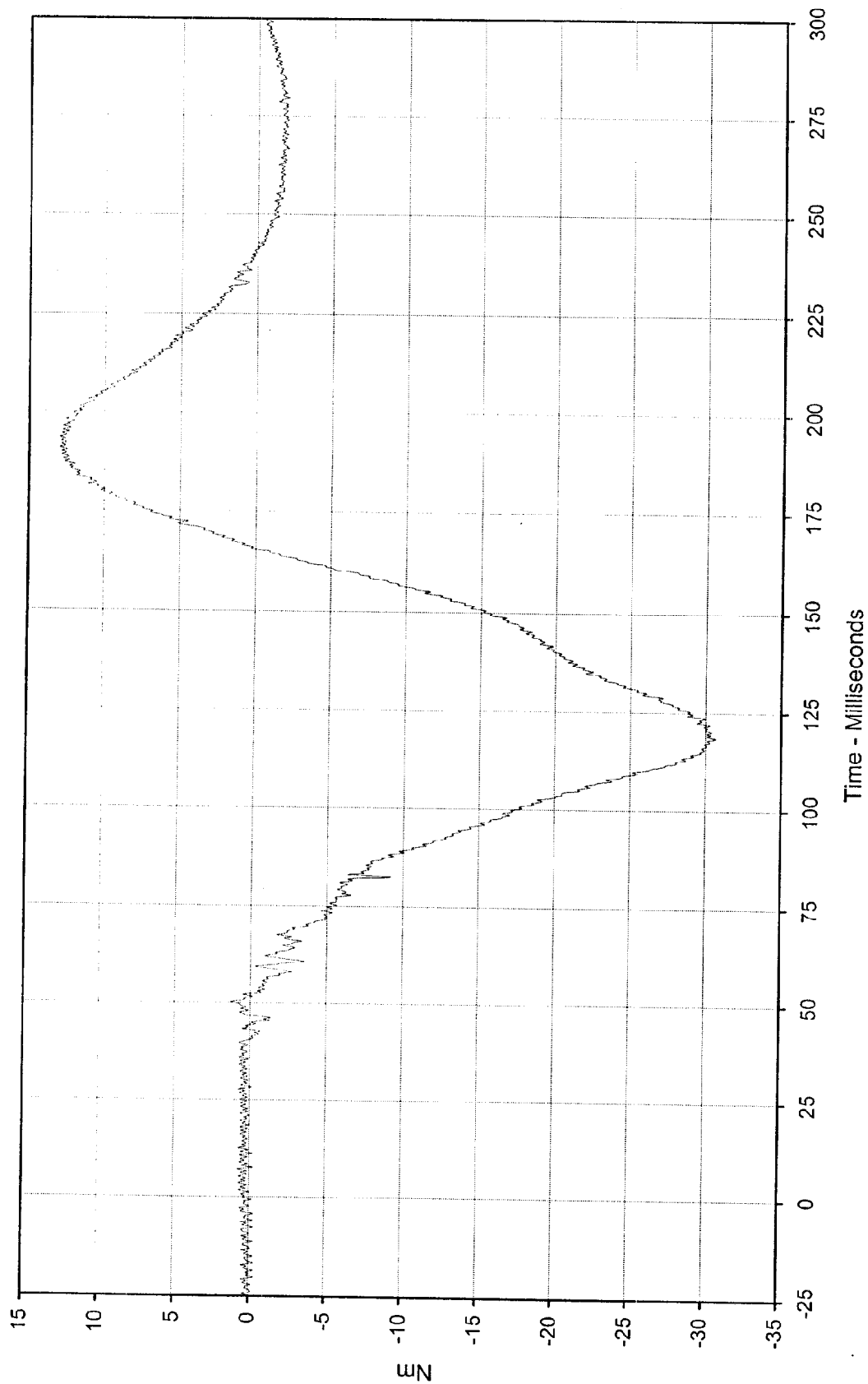
Minimum Value: -25.6 at 168.0 Milliseconds

SAE Filter Class: 600

Date of Test: 10/27/98

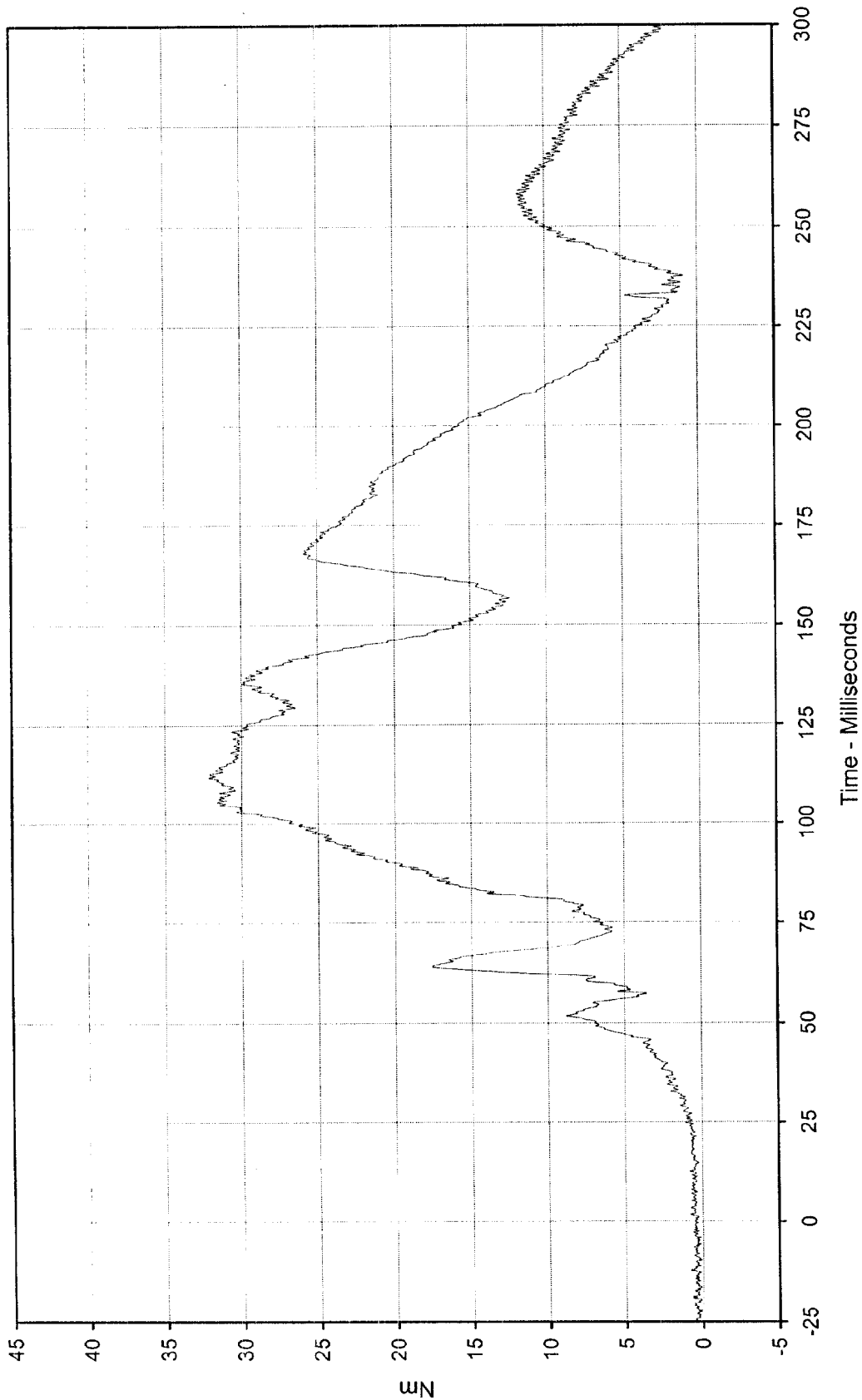
Curve Number: FIL-008





Curve Description:	Driver Neck Moment Z	Testing Program:	1998 37.5mph Offset, 5th Female	No.: MW0311
Maximum Value:	13.0 at 193.4 Milliseconds	Test Vehicle:	1998 Dodge Neon 4 Door Sedan	
Minimum Value:	-30.7 at 118.2 Milliseconds			
SAE Filter Class:	600			
Date of Test:	10/27/98			
Curve Number:	FIL-009			





Curve Description: Driver Neck Moment Resultant

Maximum Value: 32.2 at 112.1 Milliseconds

Minimum Value: 0.2 at 1.1 Milliseconds

SAE Filter Class: 600

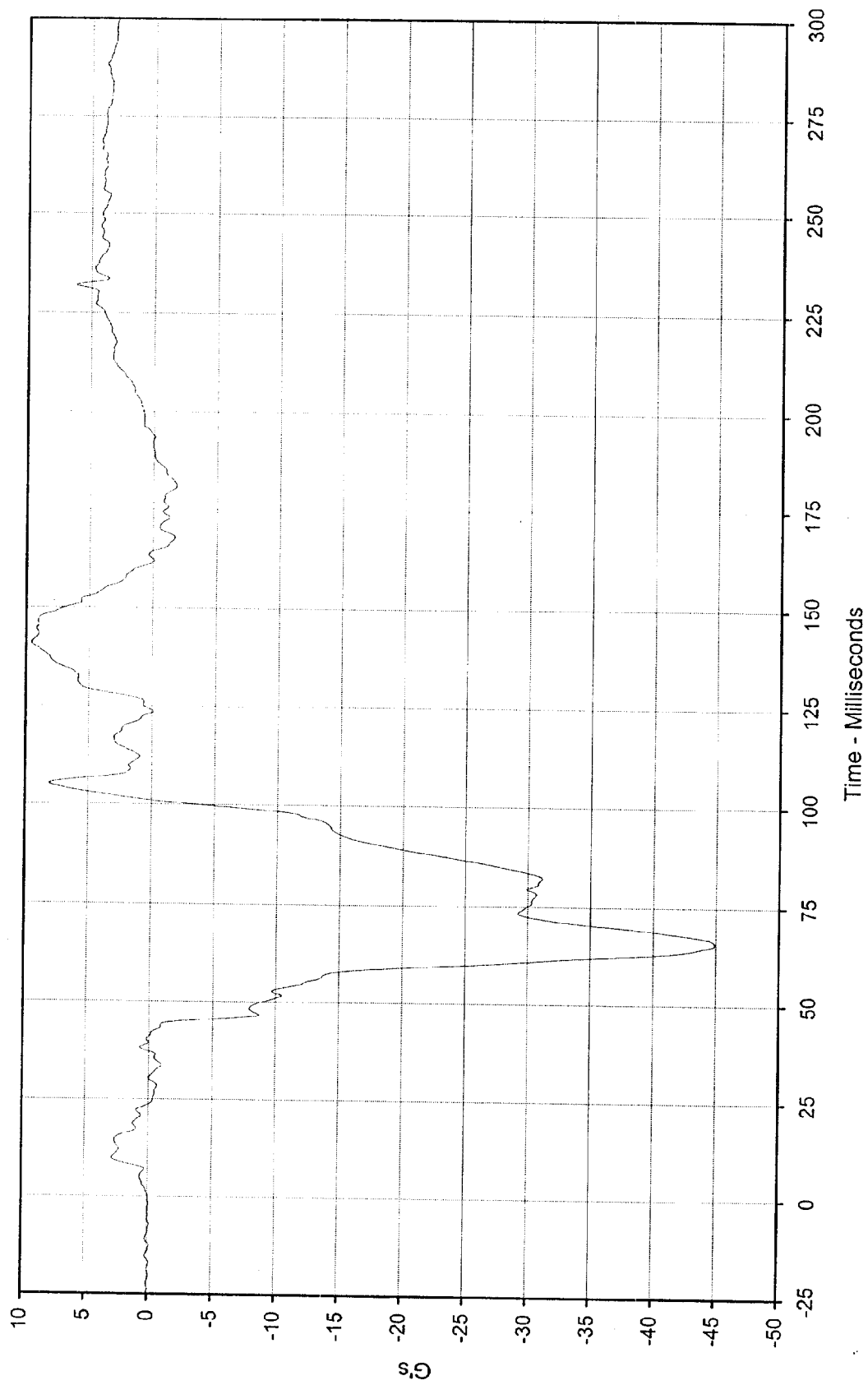
Date of Test: 10/27/98

Curve Number: RES-007

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan



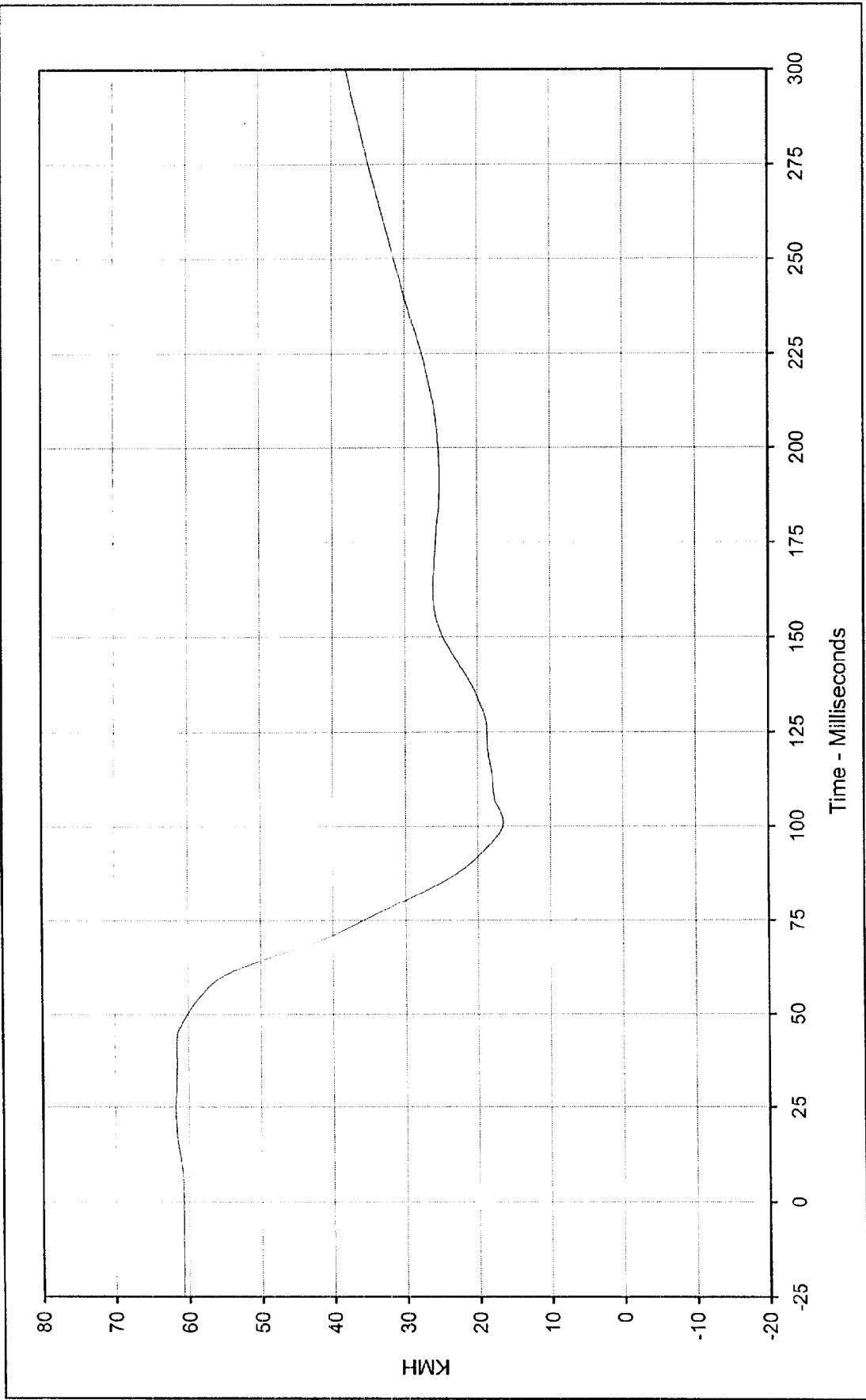


Curve Description:	Driver Chest Primary X				Testing Program:	1998 37.5mph Offset, 5th Female No.: MW0311	
Maximum Value:	9.5	at	140.7	Milliseconds	Test Vehicle:	1998 Dodge Neon 4 Door Sedan	
Minimum Value:	-44.9	at	65.5	Milliseconds			
SAE Filter Class:	180						
Date of Test:	10/27/98						
Curve Number:	FIL-010						



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Curve Description: Driver Chest Primary X Velocity

Maximum Value: 61.8 at 23.8 Milliseconds

Minimum Value: 16.5 at 101.0 Milliseconds

SAE Filter Class: 180

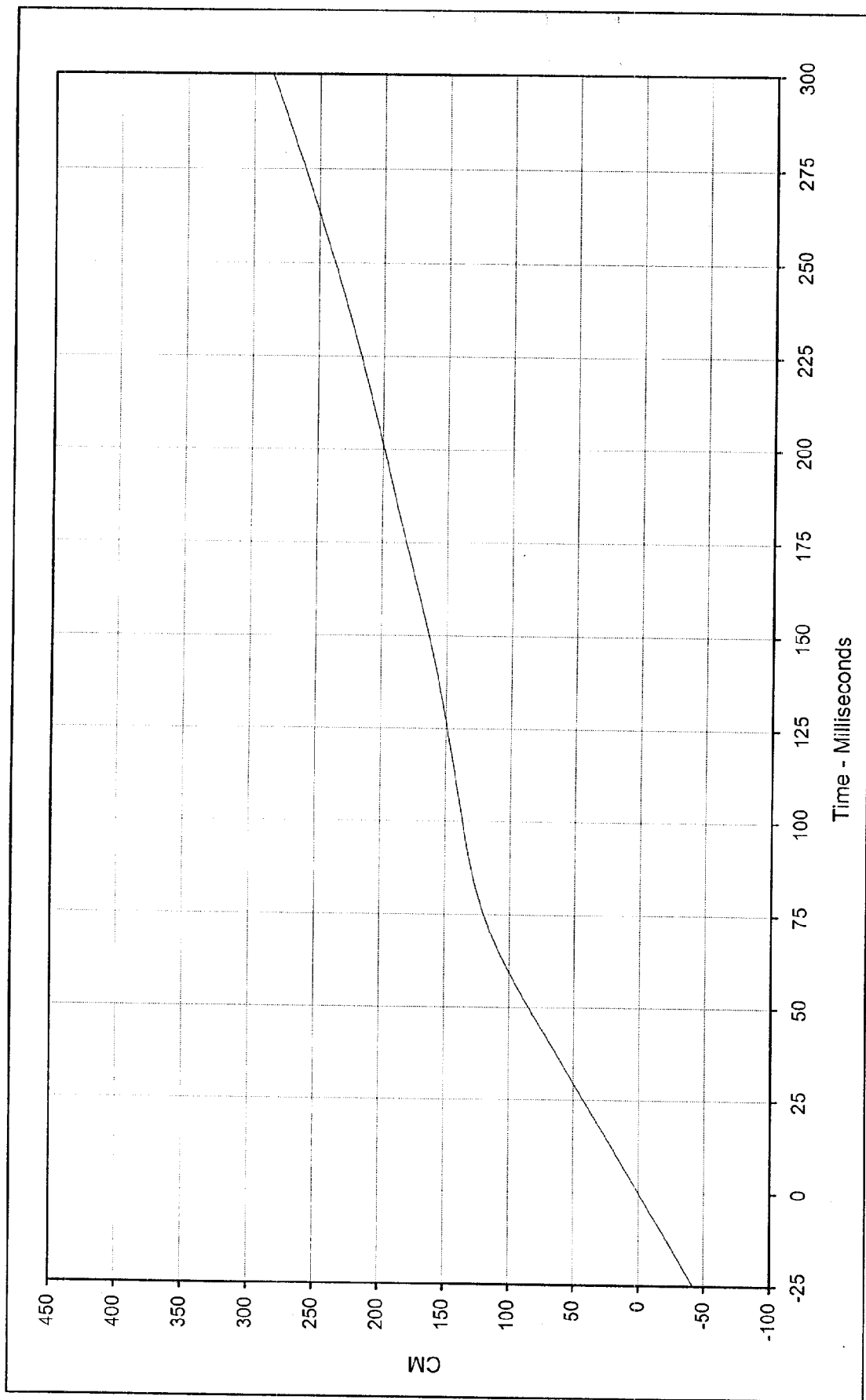
Date of Test: 10/27/98

Curve Number: IN1-010

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Driver Chest Primary X Displ.

Maximum Value: 285.8 at 299.9 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

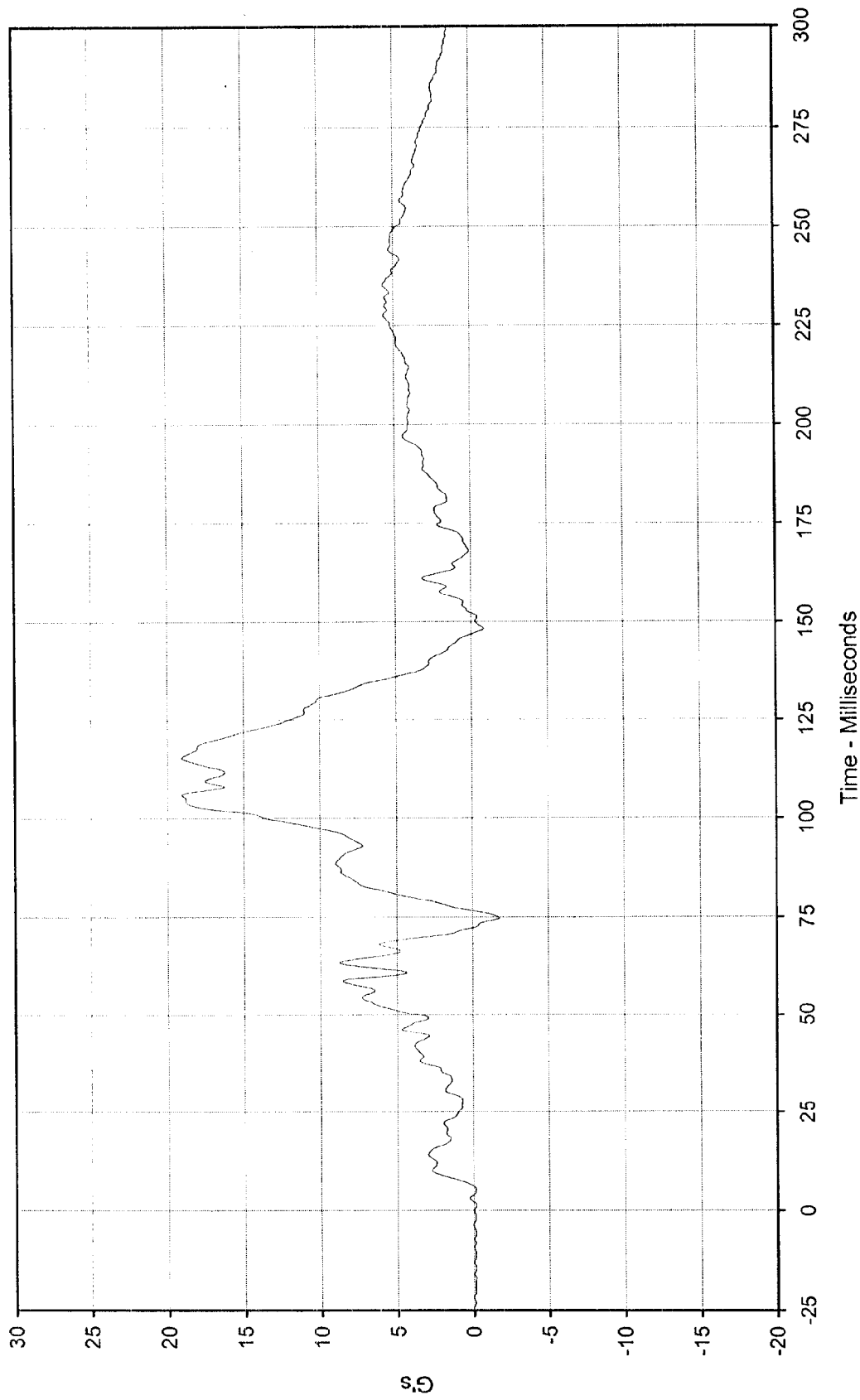
Date of Test: 10/27/98

Curve Number: IN2-010

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Driver Chest Primary Y Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 19.1 at 115.4 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

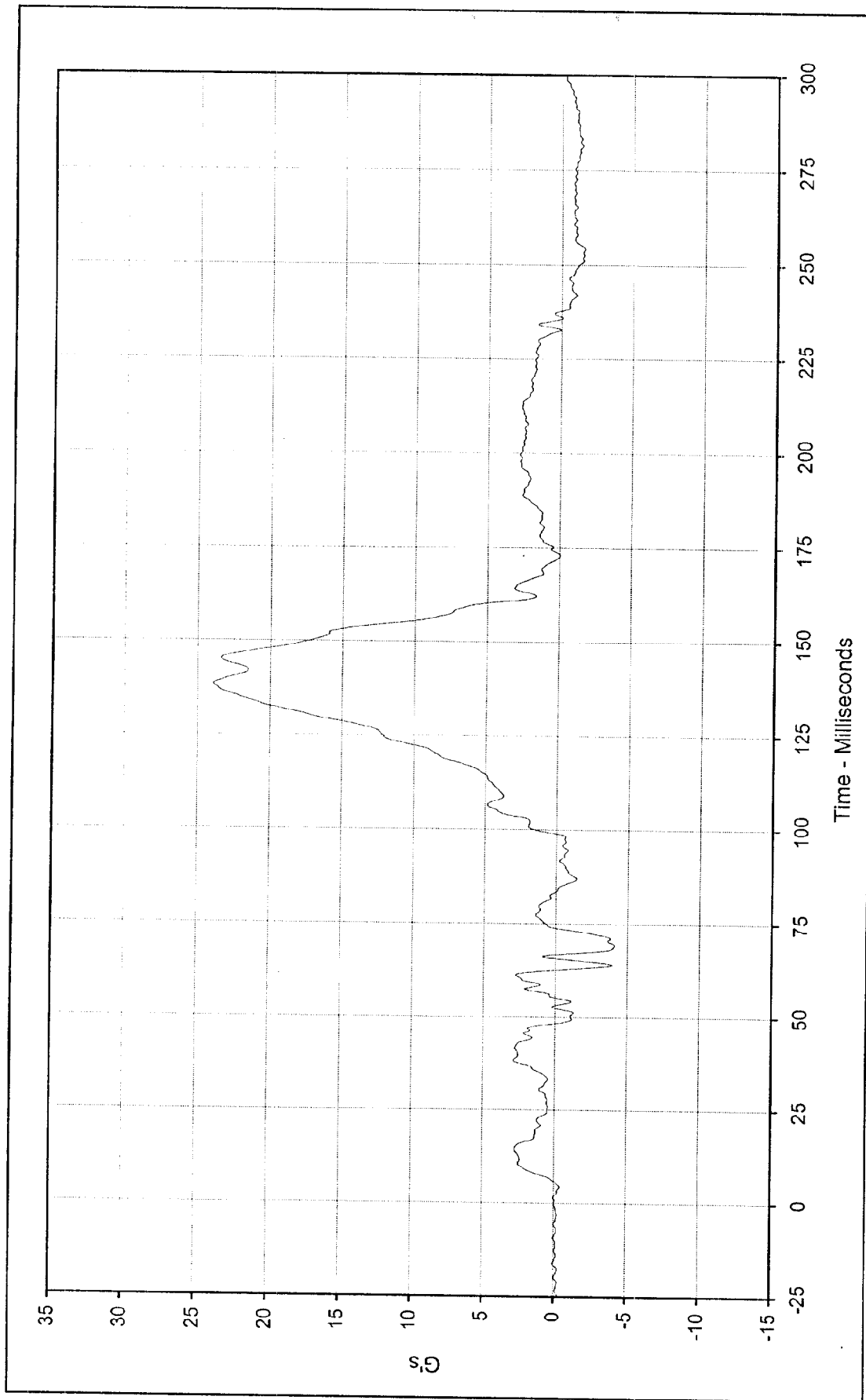
Minimum Value: -1.8 at 74.7 Milliseconds

SAE Filter Class: 180

Date of Test: 10/27/98

Curve Number: FIL-011

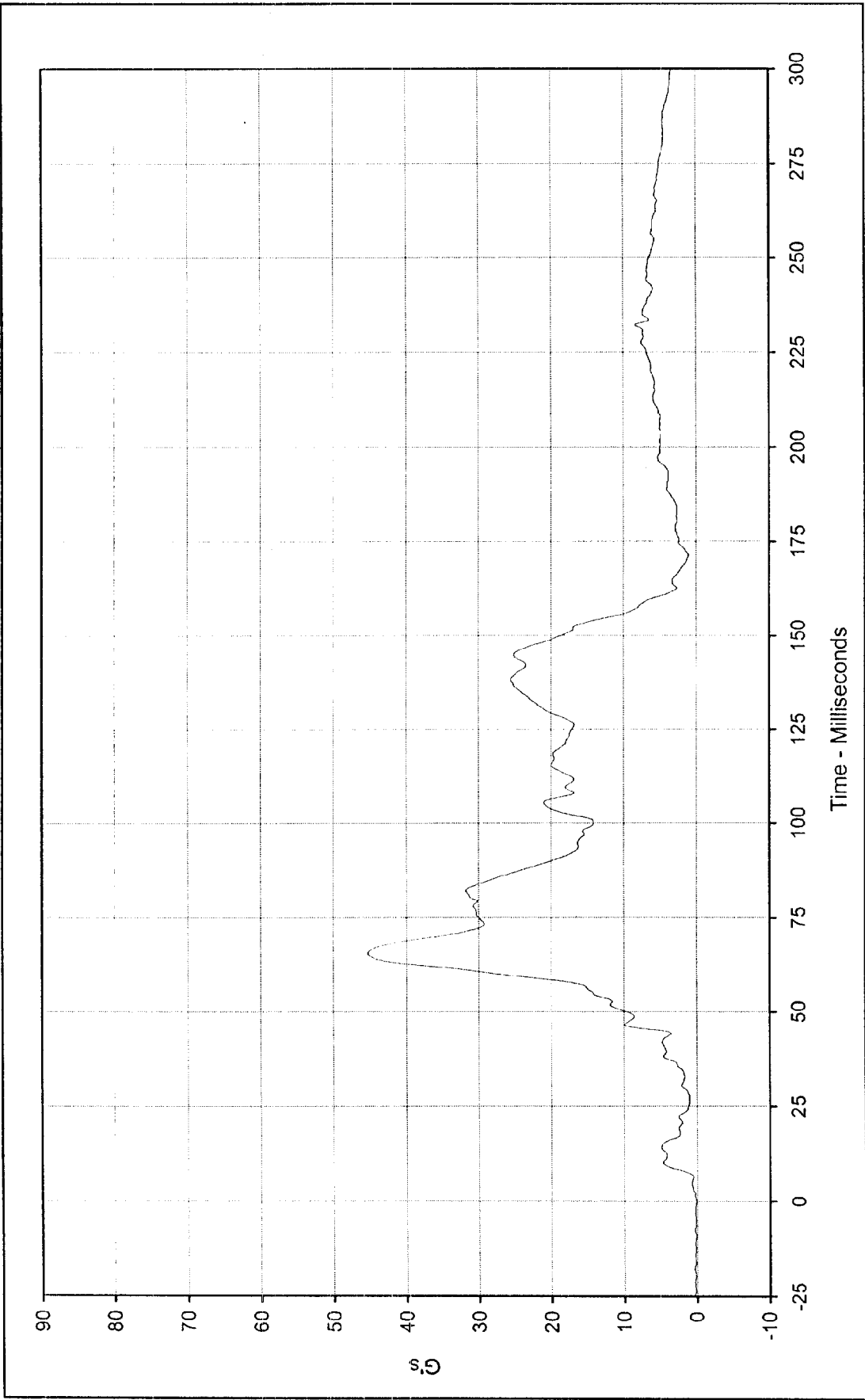




Curve Description: Driver Chest Primary Z
 Maximum Value: 23.9 at 138.2 Milliseconds
 Minimum Value: -4.1 at 69.1 Milliseconds
 SAE Filter Class: 180
 Date of Test: 10/27/98
 Curve Number: FIL-012

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Driver Chest Resultant Primary Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 45.3 at 65.3 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

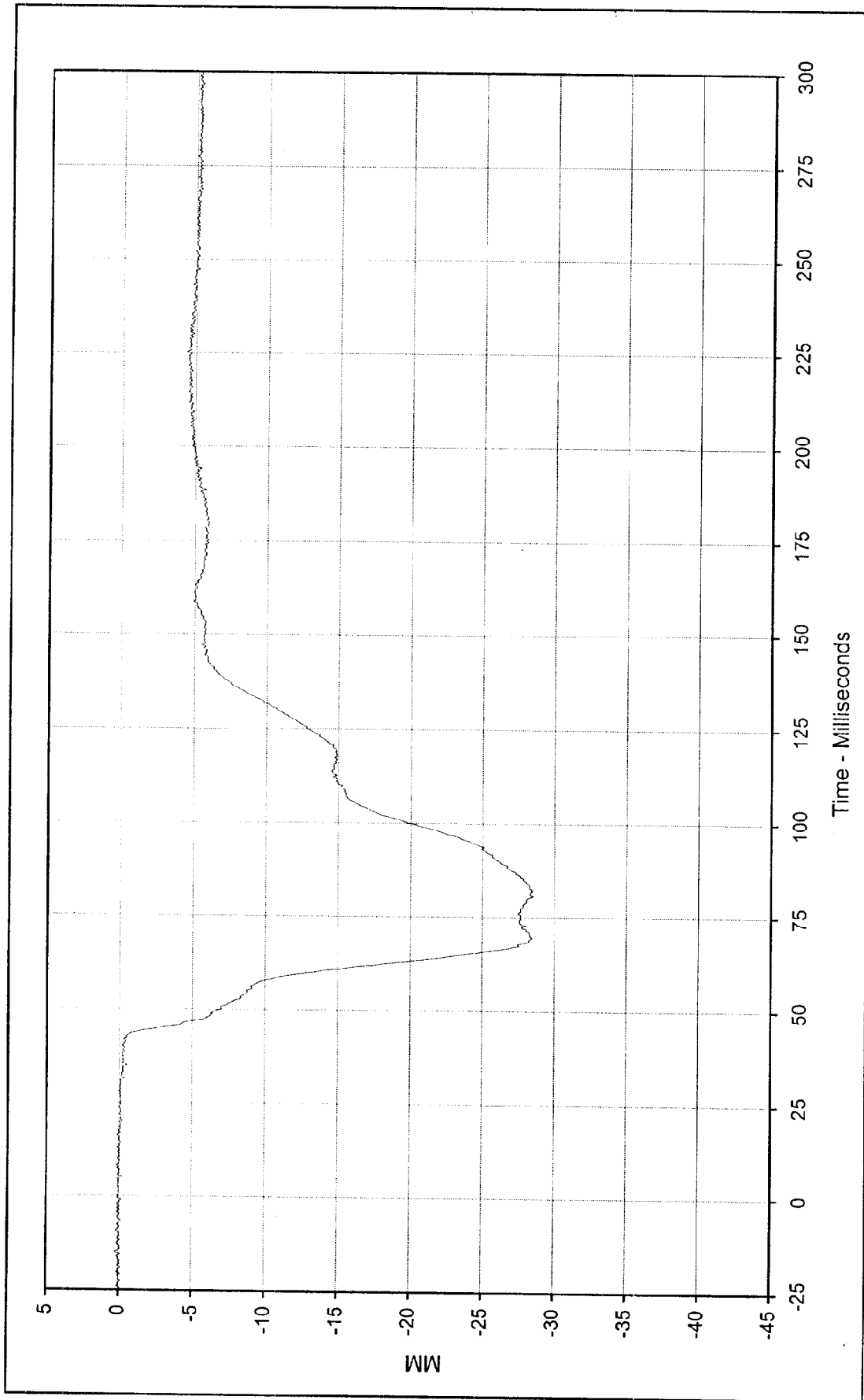
Minimum Value: 0.0 at 0.2 Milliseconds

SAE Filter Class: 180

Date of Test: 10/27/98

Curve Number: RES-010

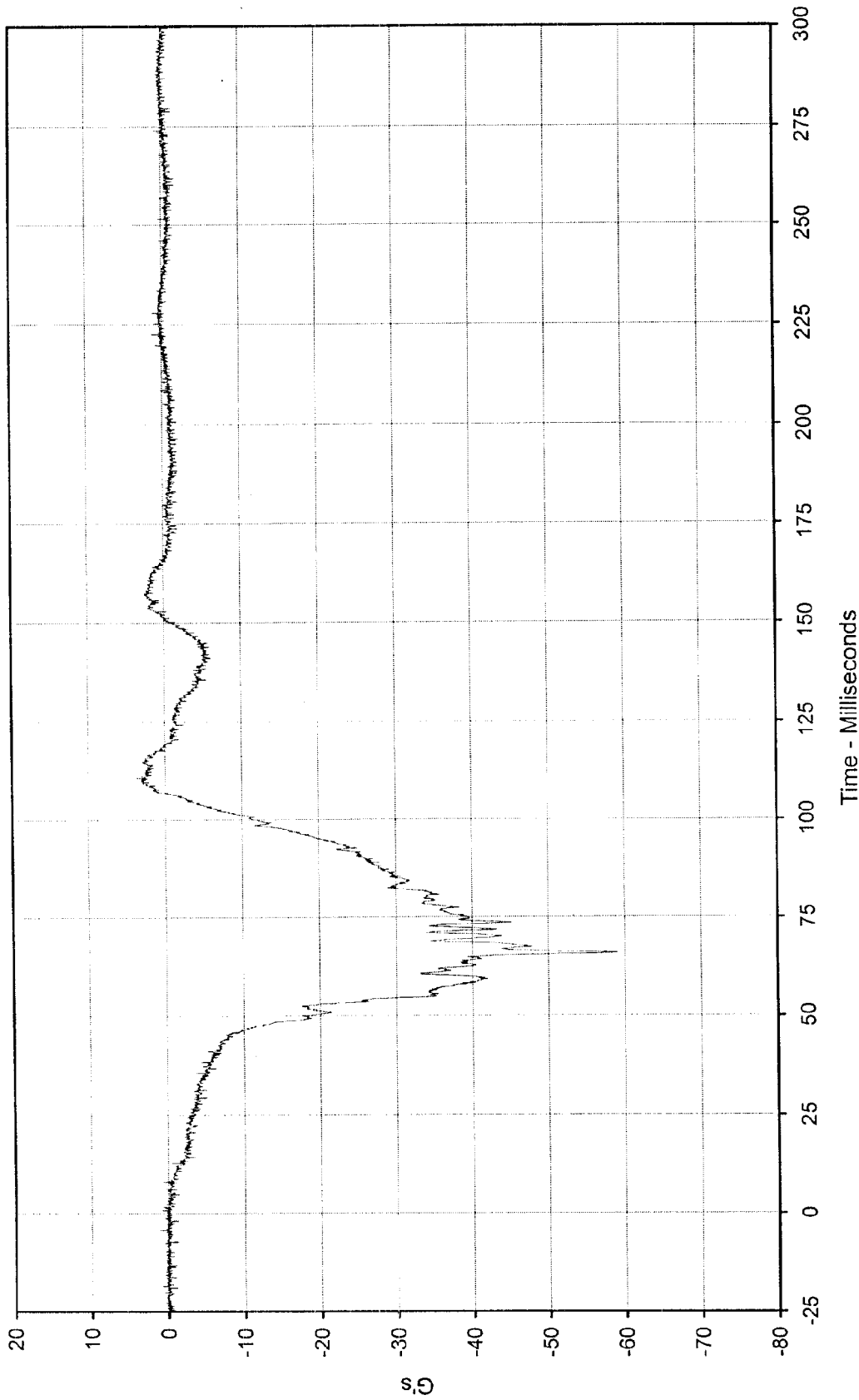




Curve Description:	Driver Chest Displacement X				Testing Program:	1998 37.5mph Offset, 5th Female	No.: MW0311
Maximum Value:	0.1	at	8.4	Milliseconds	Test Vehicle:	1998 Dodge Neon 4 Door Sedan	
Minimum Value:	-28.5	at	80.6	Milliseconds			
SAE Filter Class:	600						
Date of Test:	10/27/98						
Curve Number:	FIL-013						

The logo for KARCO Engineering features a stylized lightbulb with a checkered pattern inside, positioned to the left of the word "KARCO" in a bold, sans-serif font. Below "KARCO", the word "Engineering" is written in a script font, all enclosed within a rectangular border.





Curve Description: Driver Pelvis X

Maximum Value: 3.8 at 110.8 Milliseconds

Minimum Value: -59.0 at 66.0 Milliseconds

SAE Filter Class: 1000

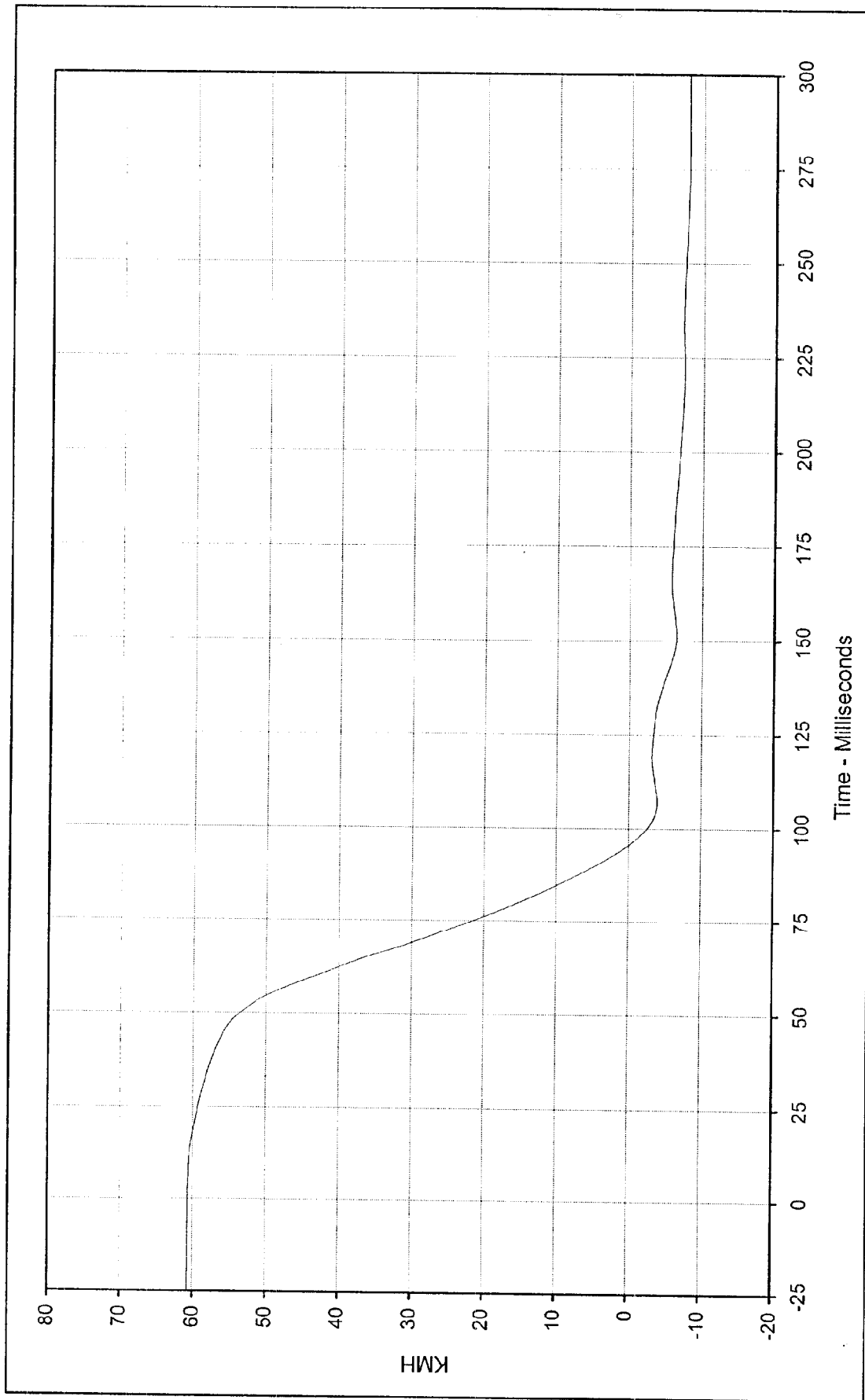
Date of Test: 10/27/98

Curve Number: FIL-014

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

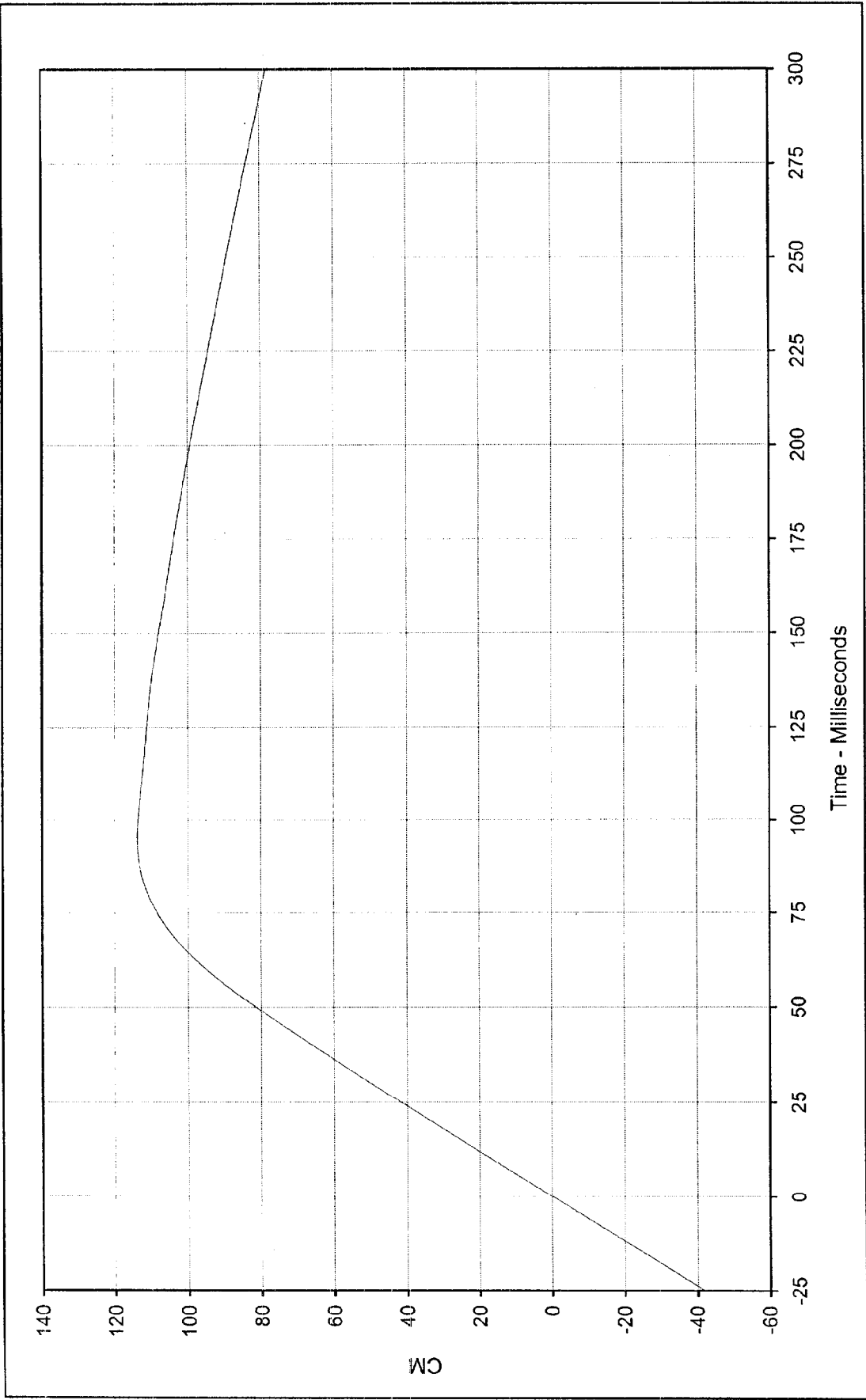
Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description:	Driver Pelvis X Velocity	Testing Program:	1998 37.5mph Offset, 5th Female	No.: MW0311
Maximum Value:	60.7 at 1.1 Milliseconds	Test Vehicle:	1998 Dodge Neon 4 Door Sedan	
Minimum Value:	-8.1 at 280.2 Milliseconds			
SAE Filter Class:	180			
Date of Test:	10/27/98			
Curve Number:	IN1-014			





Curve Description: Driver Pelvis X Displ. Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 113.8 at 95.3 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

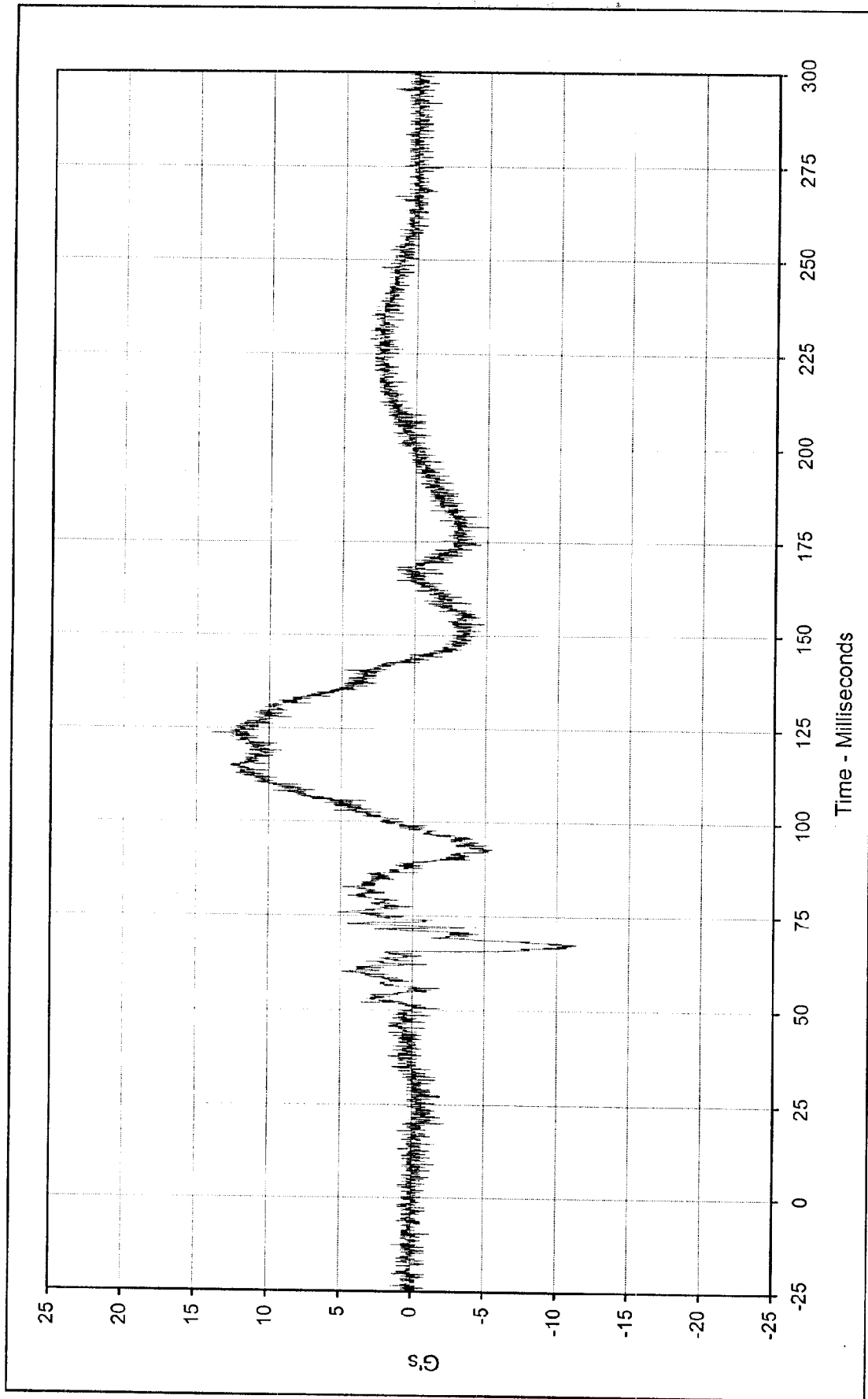
Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 10/27/98

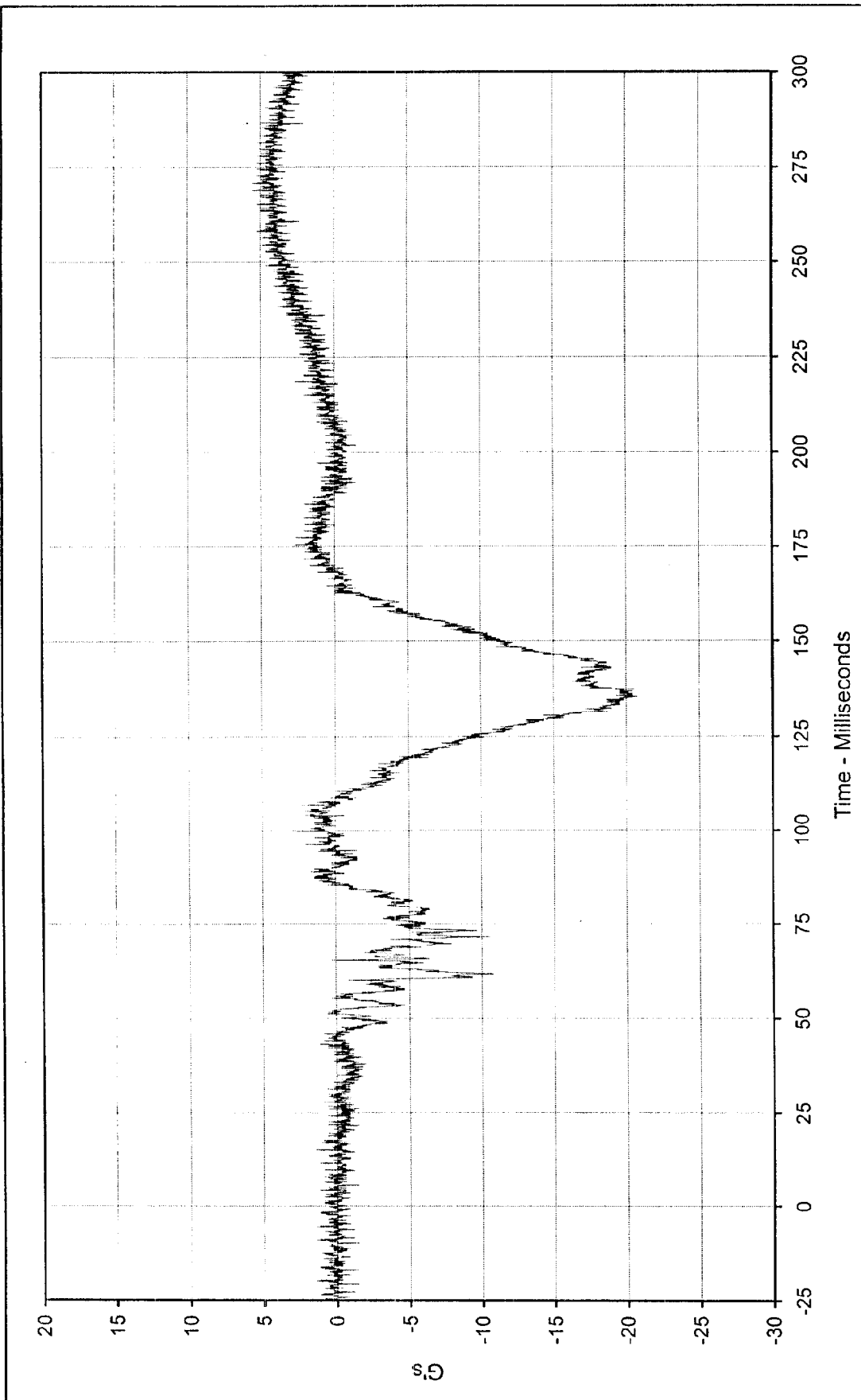
Curve Number: IN2-014





Curve Description:		Driver Pelvis Y		Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311	
Maximum Value:	13.9	at	123.6	Milliseconds	Test Vehicle: 1998 Dodge Neon 4 Door Sedan
Minimum Value:	-11.4	at	67.6	Milliseconds	
SAE Filter Class:	1000				
Date of Test:	10/27/98				
Curve Number:	FIL-015				





Curve Description: Driver Pelvis Z

Maximum Value: 5.5 at 269.1 Milliseconds

Minimum Value: -20.7 at 135.7 Milliseconds

SAE Filter Class: 1000

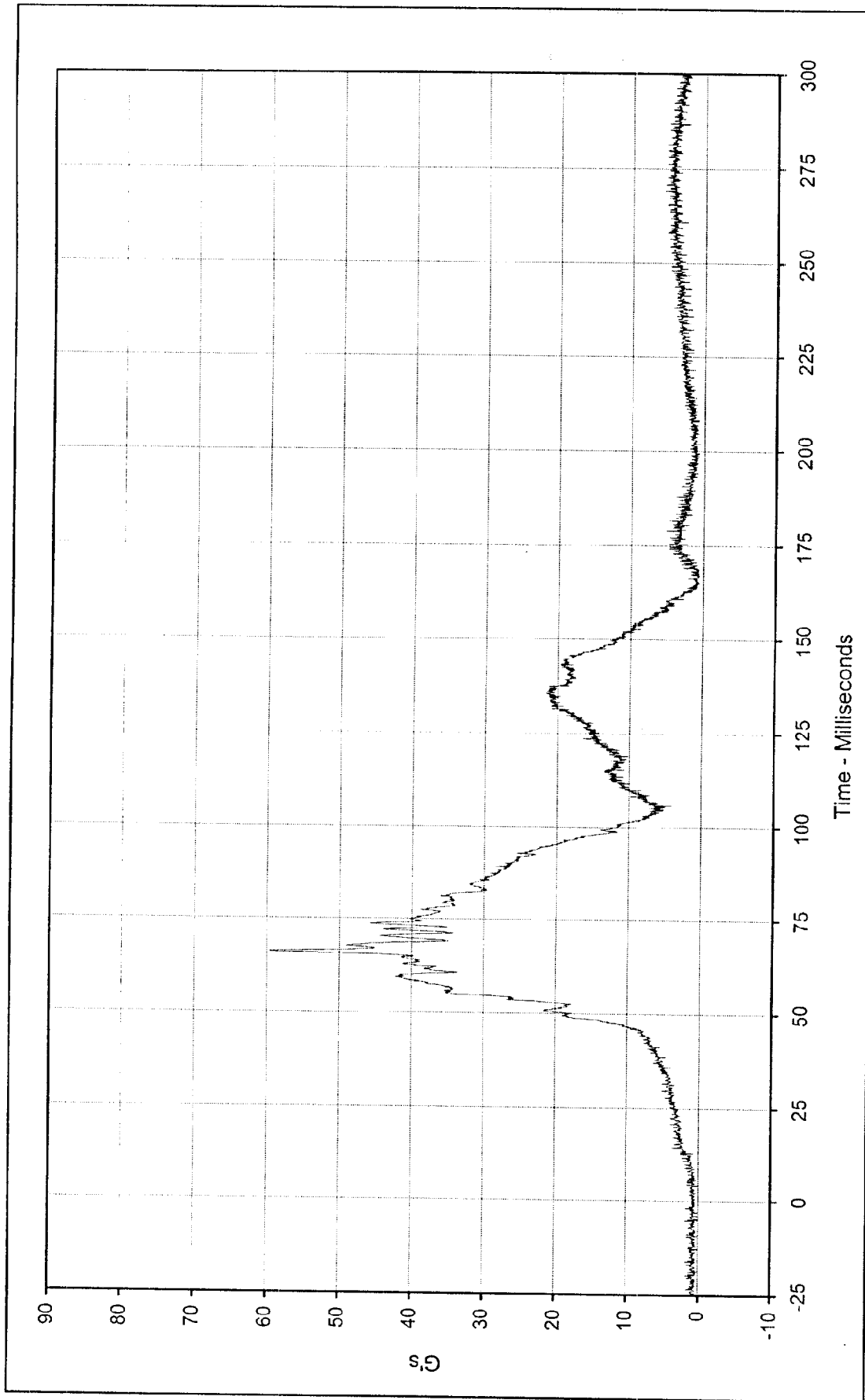
Date of Test: 10/27/98

Curve Number: FIL-016

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

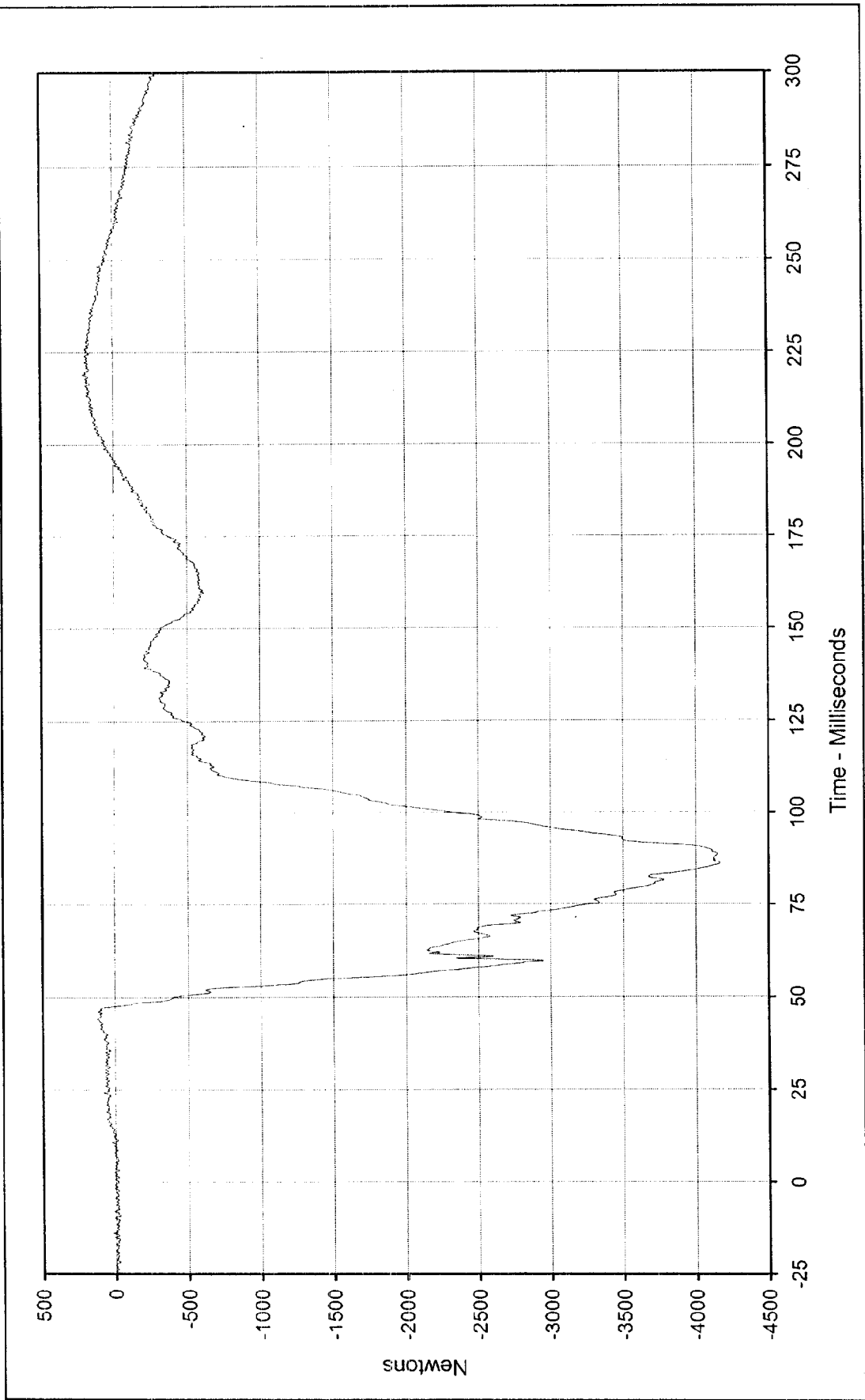
Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description:	Driver Pelvis Resultant		Testing Program:	1998 37.5mph Offset, 5th Female	No.: MW0311
Maximum Value:	59.7	at 66.0	Test Vehicle:	1998 Dodge Neon 4 Door Sedan	
Minimum Value:	0.0	at 4.1			
SAE Filter Class:	1000				
Date of Test:	10/27/98				
Curve Number:	RES-014				





Curve Description: Driver Left Femur Force

Maximum Value: 207.6 at 218.9 Milliseconds

Minimum Value: -4169.7 at 86.1 Milliseconds

SAE Filter Class: 600

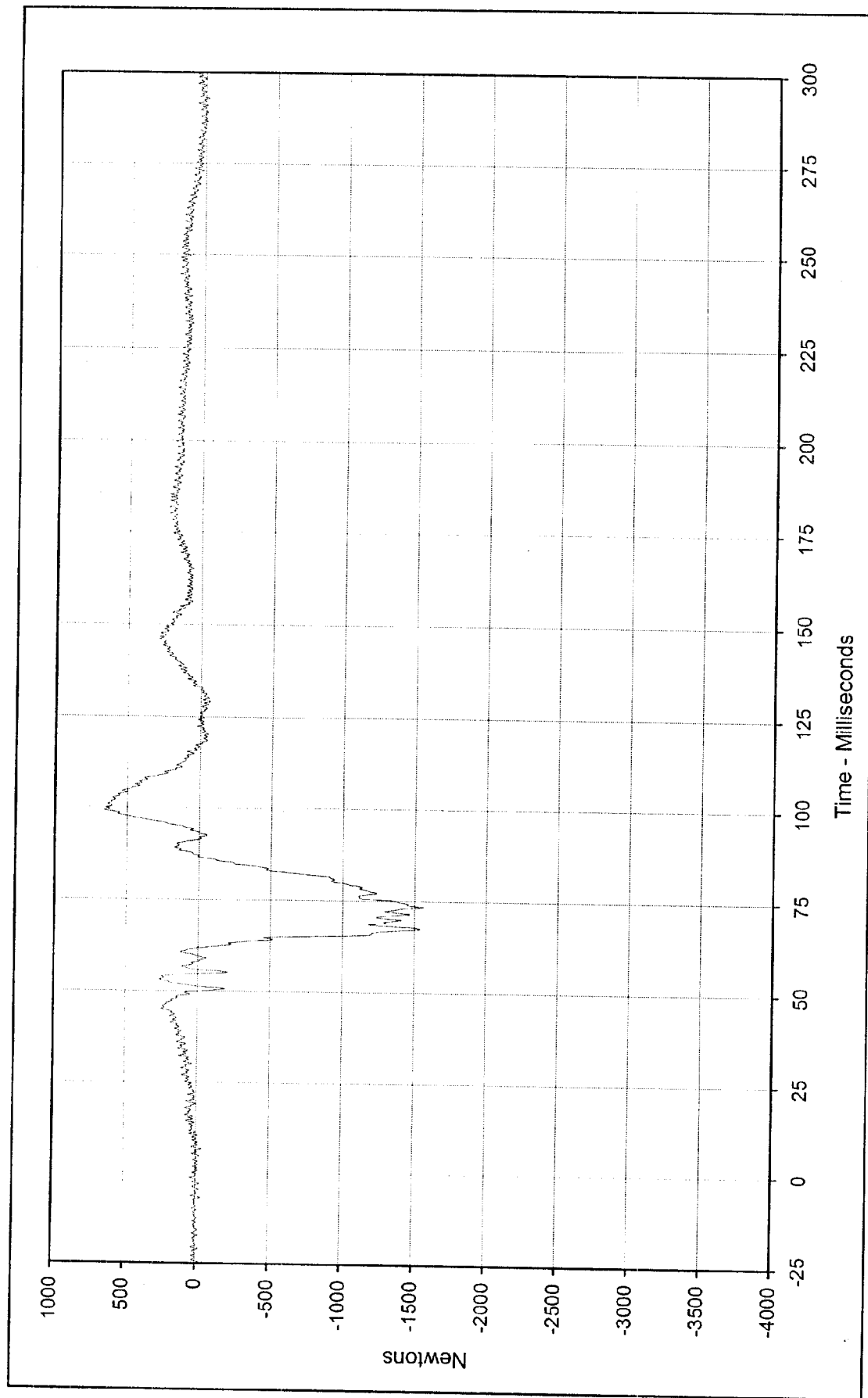
Date of Test: 10/27/98

Curve Number: FIL-017

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

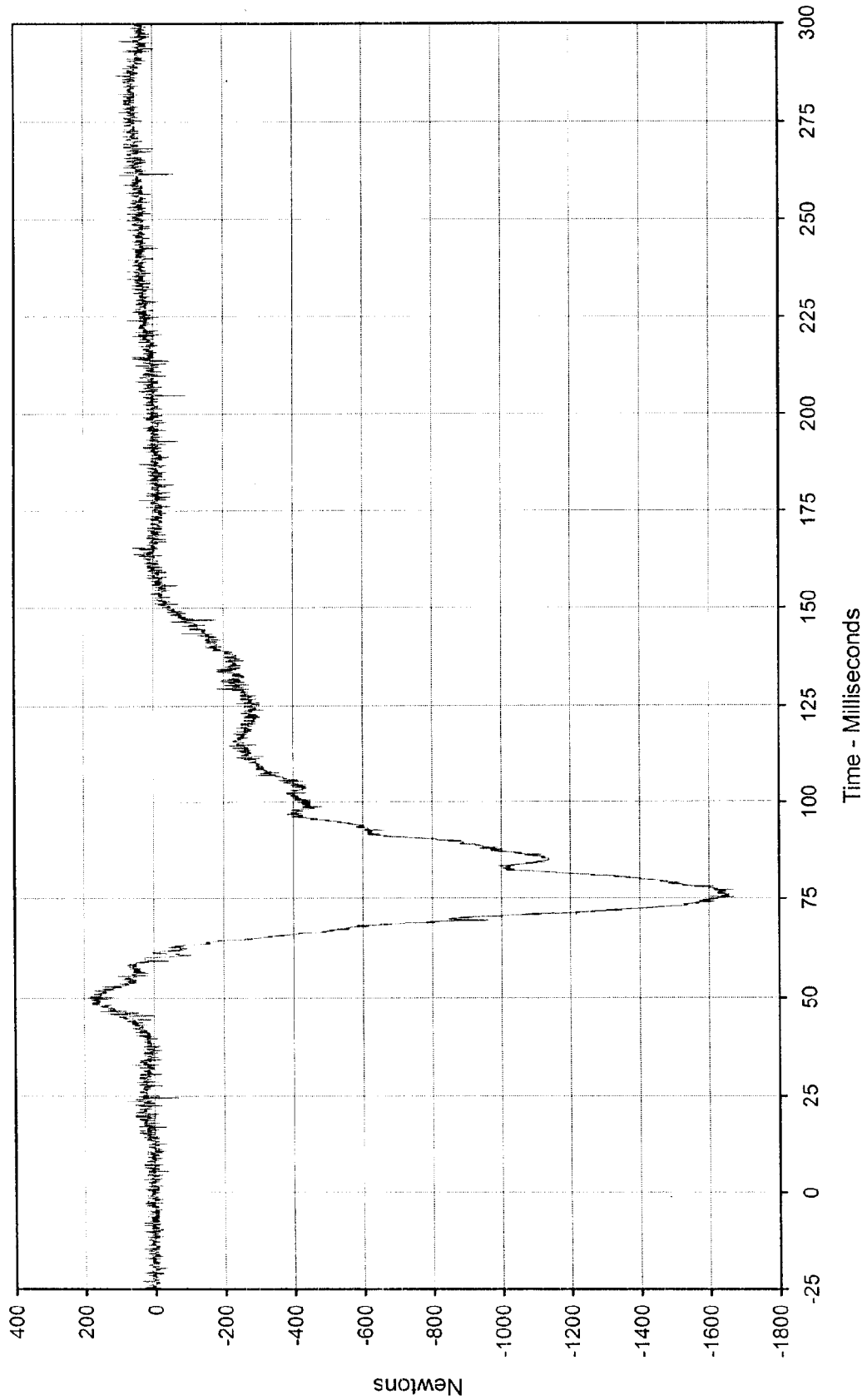
Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description:		Driver Right Femur Force		Testing Program:	1998 37.5mph Offset, 5th Female	No.: MW0311
Maximum Value:	660.3	at	99.1	Test Vehicle:	1998 Dodge Neon 4 Door Sedan	
Minimum Value:	-1563.2	at	73.5			
SAE Filter Class:	600					
Date of Test:	10/27/98					
Curve Number:	FIL-018					





Curve Description: Driver Left Upper Tibia Force X

Maximum Value: 188.6 at 49.5 Milliseconds

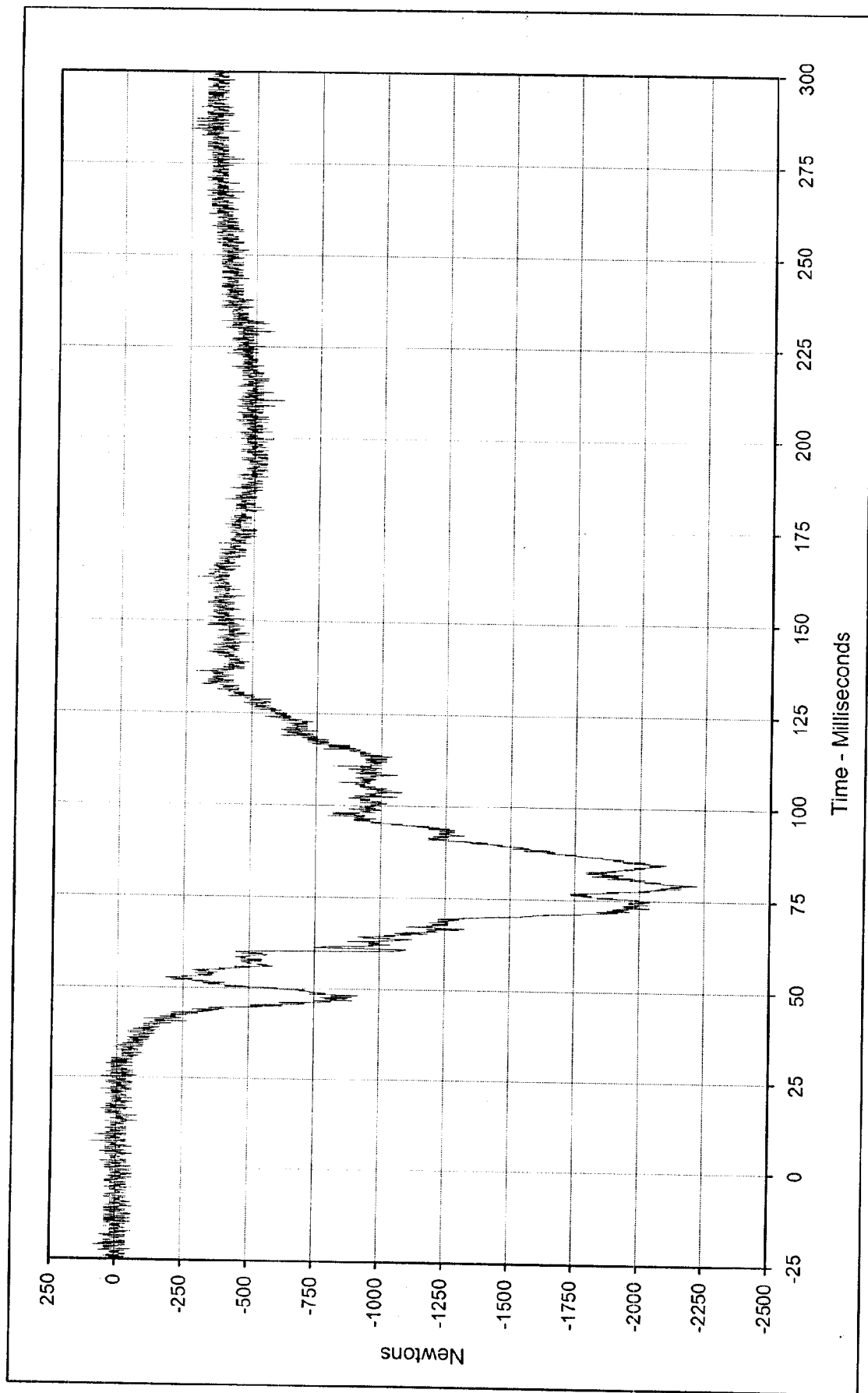
Minimum Value: -1669.4 at 75.5 Milliseconds

SAE Filter Class: 1000

Date of Test: 10/27/98

Curve Number: FIL-019



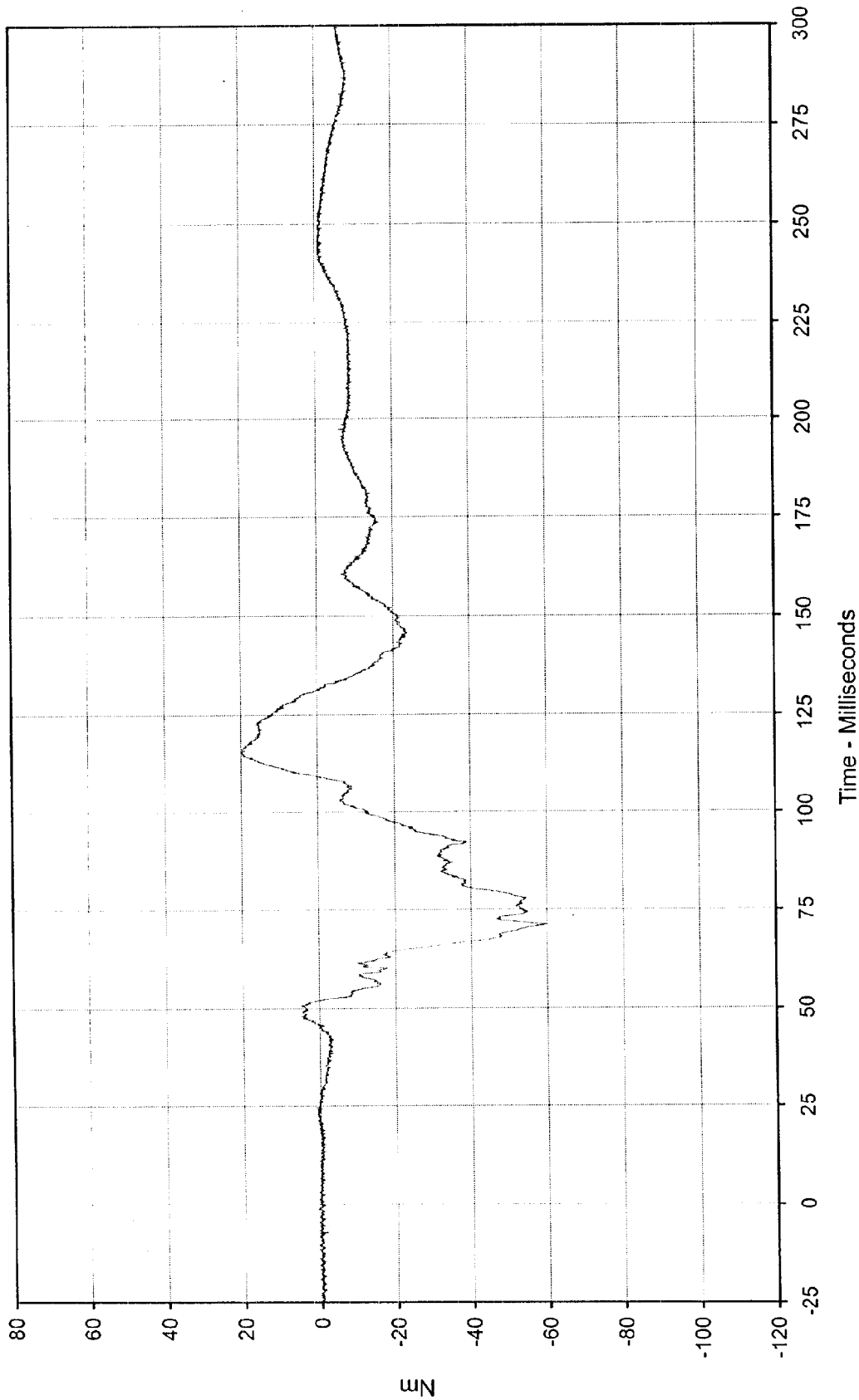


Curve Description:	Driver Left Upper Tibia Force Z				Testing Program:	1998 37.5mph Offset, 5th Female No.: MW0311	
Maximum Value:	101.9	at	7.2	Milliseconds	Test Vehicle:	1998 Dodge Neon 4 Door Sedan	
Minimum Value:	-2222.4	at	79.4	Milliseconds			
SAE Filter Class:	1000						
Date of Test:	10/27/98						
Curve Number:	FIL-020						



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Curve Description: Driver Left Upper Tibia Moment X

Maximum Value: 20.0 at 115.4 Milliseconds

Minimum Value: -60.0 at 71.2 Milliseconds

SAE Filter Class: 1000

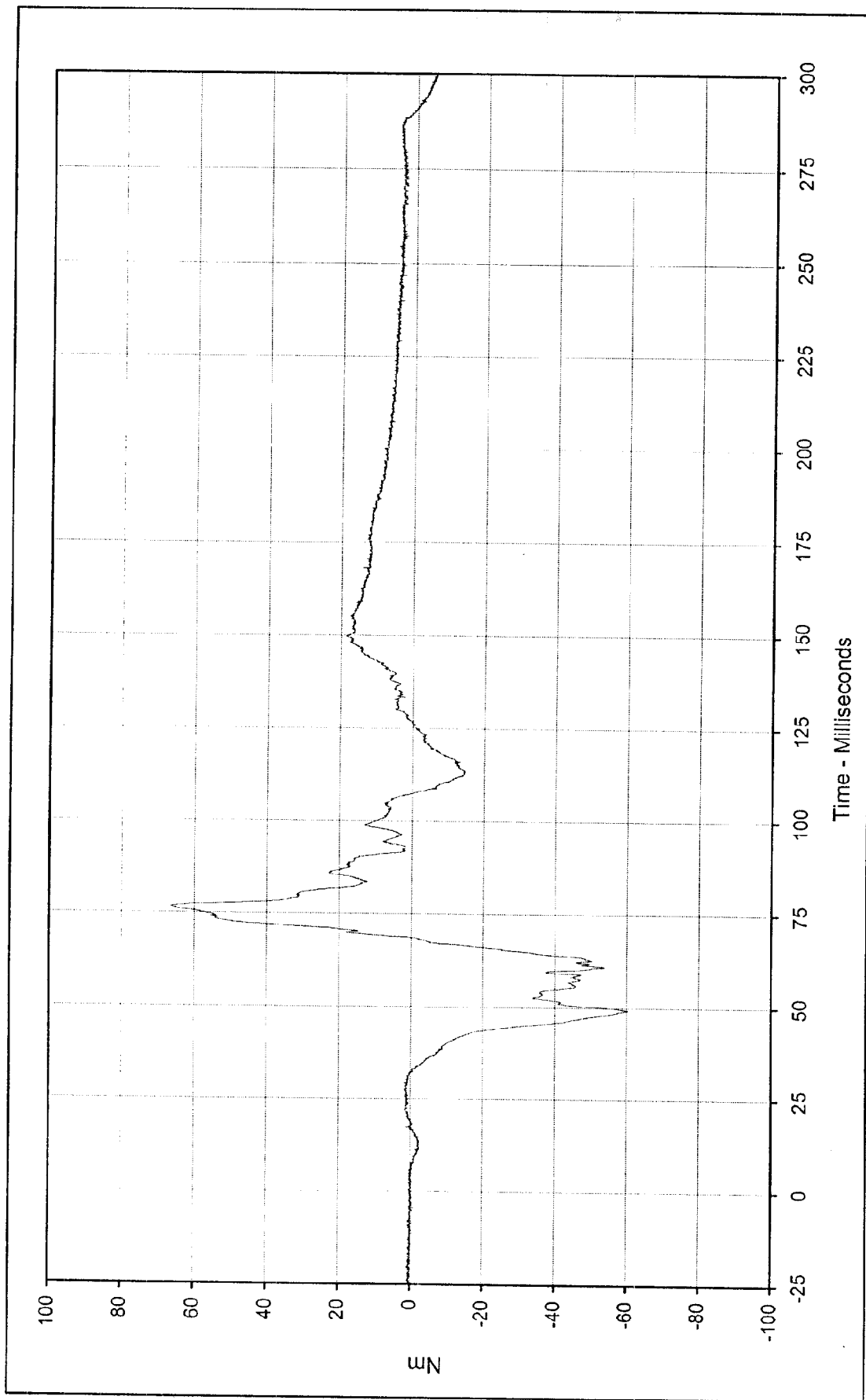
Date of Test: 10/27/98

Curve Number: FIL-021

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan





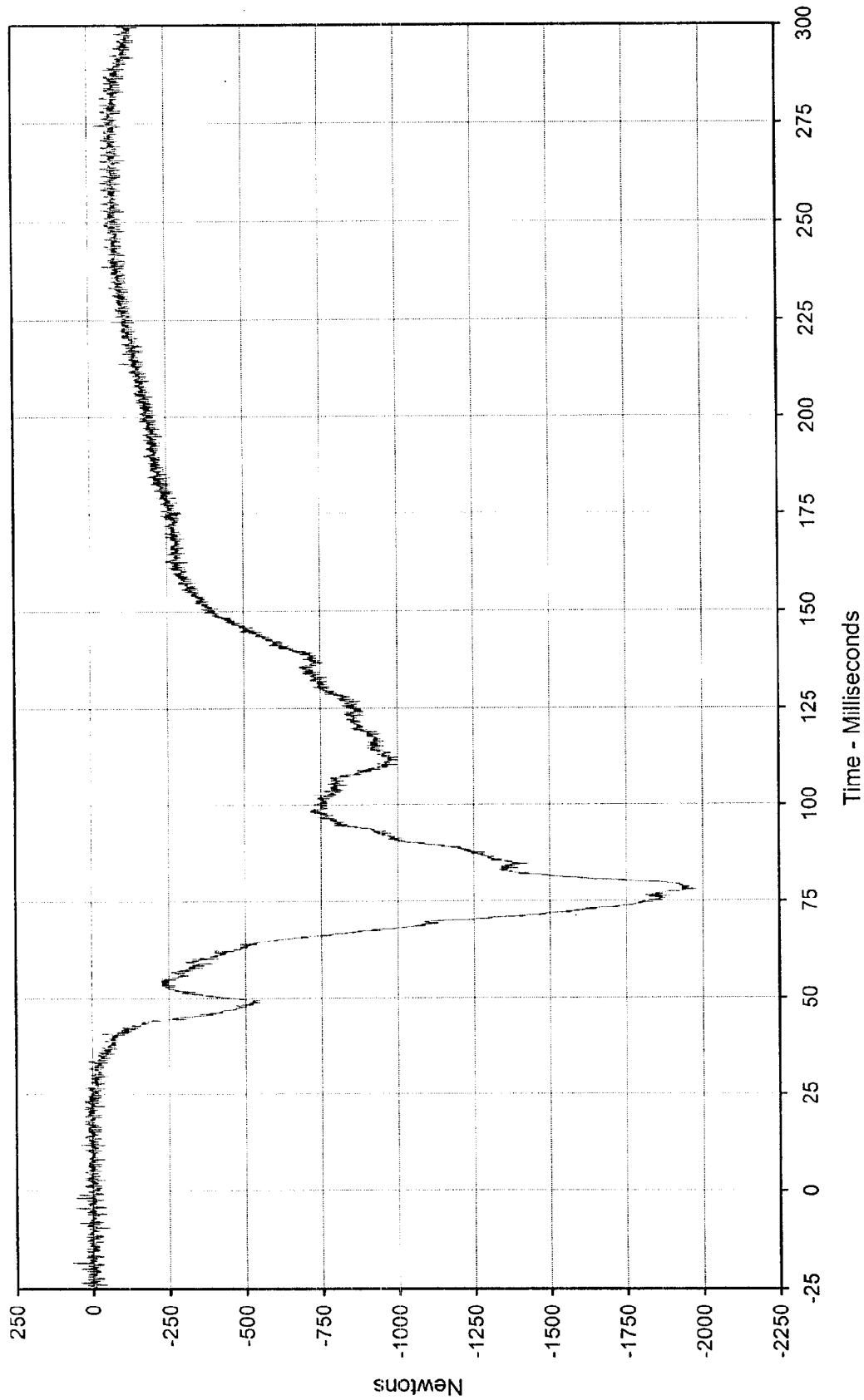
Curve Description: Driver Left Upper Tibia Moment Y

Maximum Value:	66.4	at	76.6	Milliseconds
Minimum Value:	-60.5	at	49.3	Milliseconds
SAE Filter Class:	1000			
Date of Test:	10/27/98			
Curve Number:	FIL-022			

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Driver Left Lower Tibia Force X

Maximum Value: 37.0 at 11.7 Milliseconds

Minimum Value: -1978.8 at 78.2 Milliseconds

SAE Filter Class: 1000

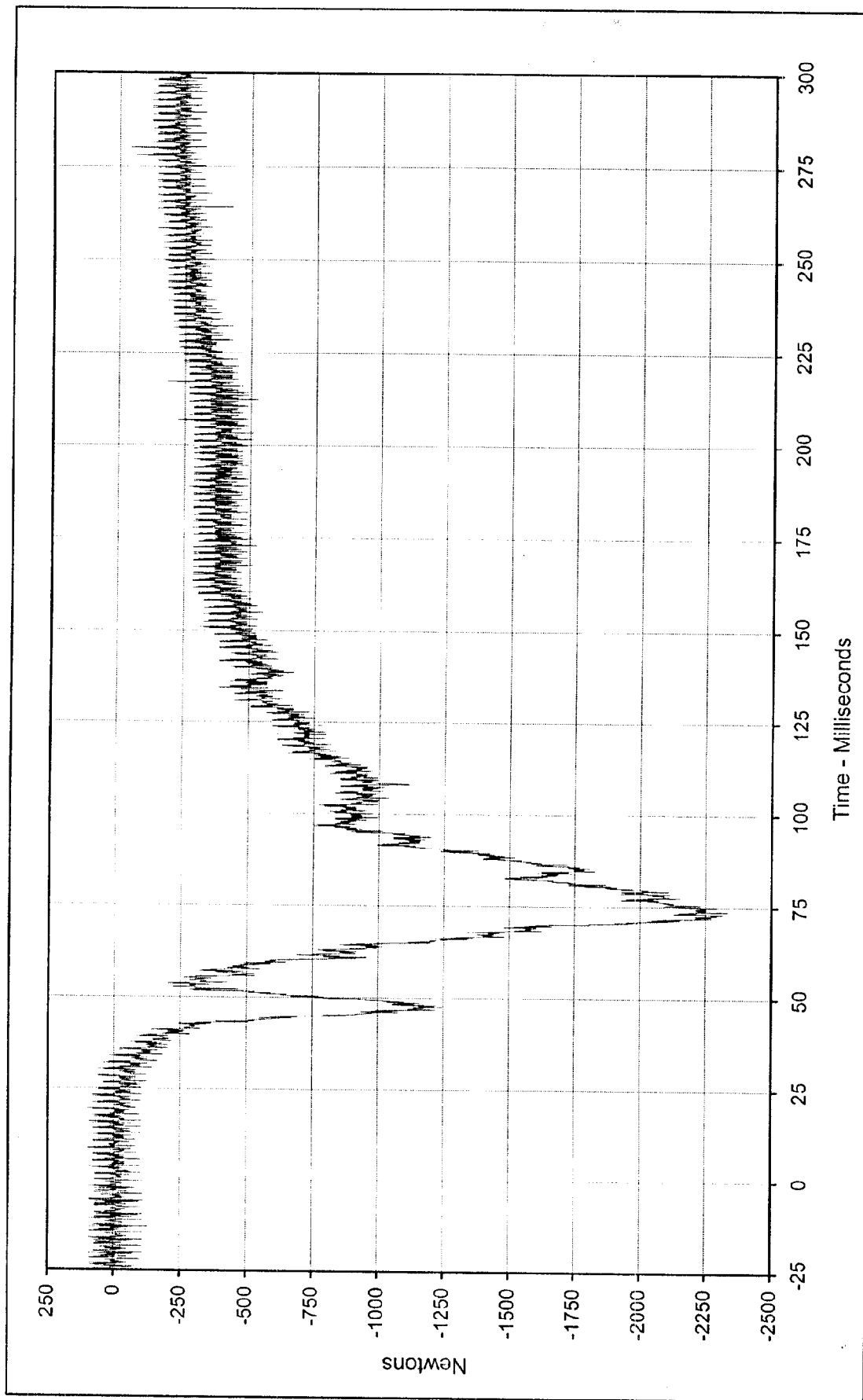
Date of Test: 10/27/98

Curve Number: FIL-023

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

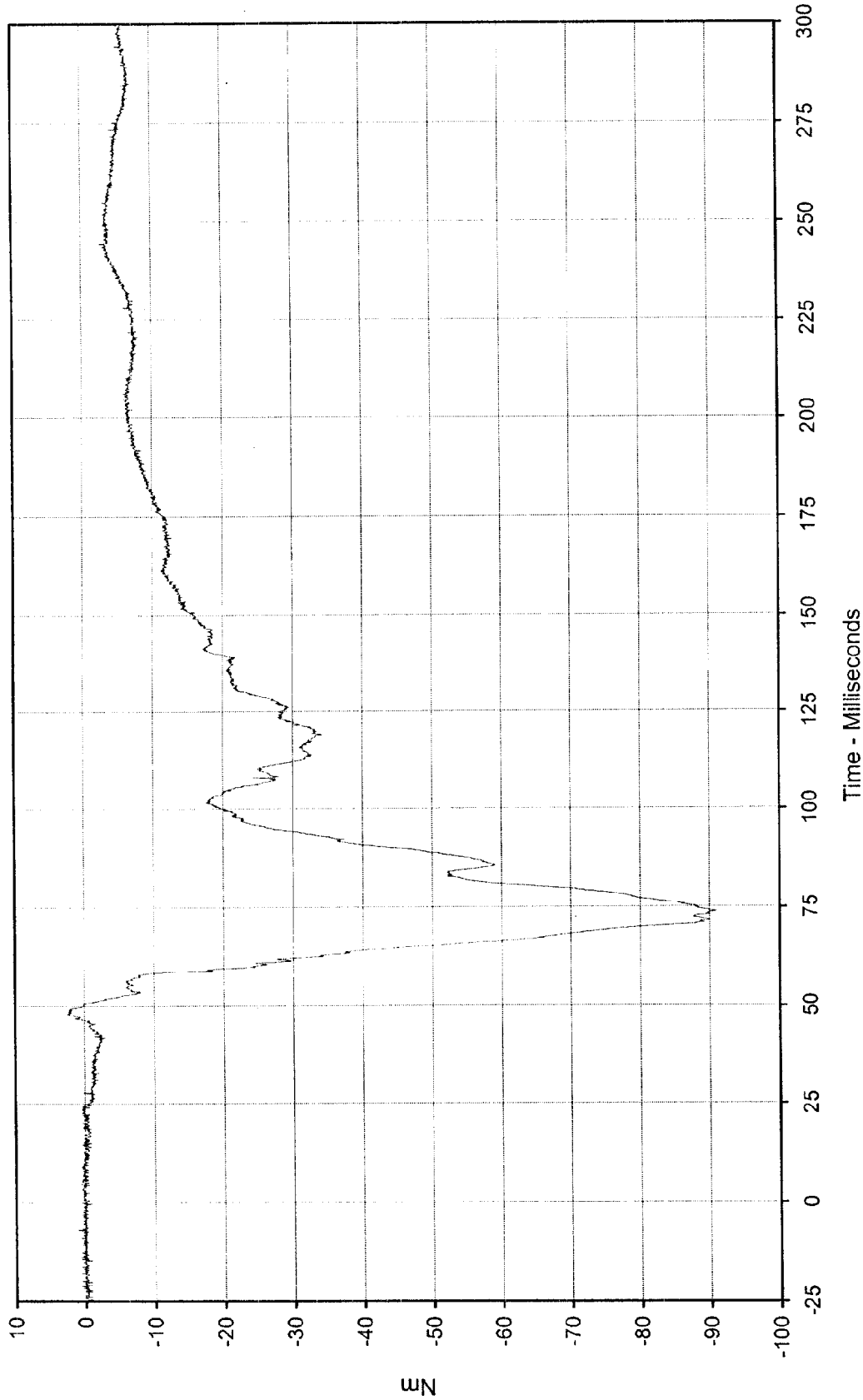
Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description:	Driver Left Lower Tibia Force Z	Testing Program:	1998 37.5mph Offset, 5th Female	No.: MW0311
Maximum Value:	99.0 at 3.4 Milliseconds	Test Vehicle:	1998 Dodge Neon 4 Door Sedan	
Minimum Value:	-2332.1 at 73.8 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	10/27/98			
Curve Number:	FIL-024			





Curve Description: Driver Left Lower Tibia Moment X

Maximum Value: 2.4 at 47.8 Milliseconds

Minimum Value: -90.9 at 73.7 Milliseconds

SAE Filter Class: 1000

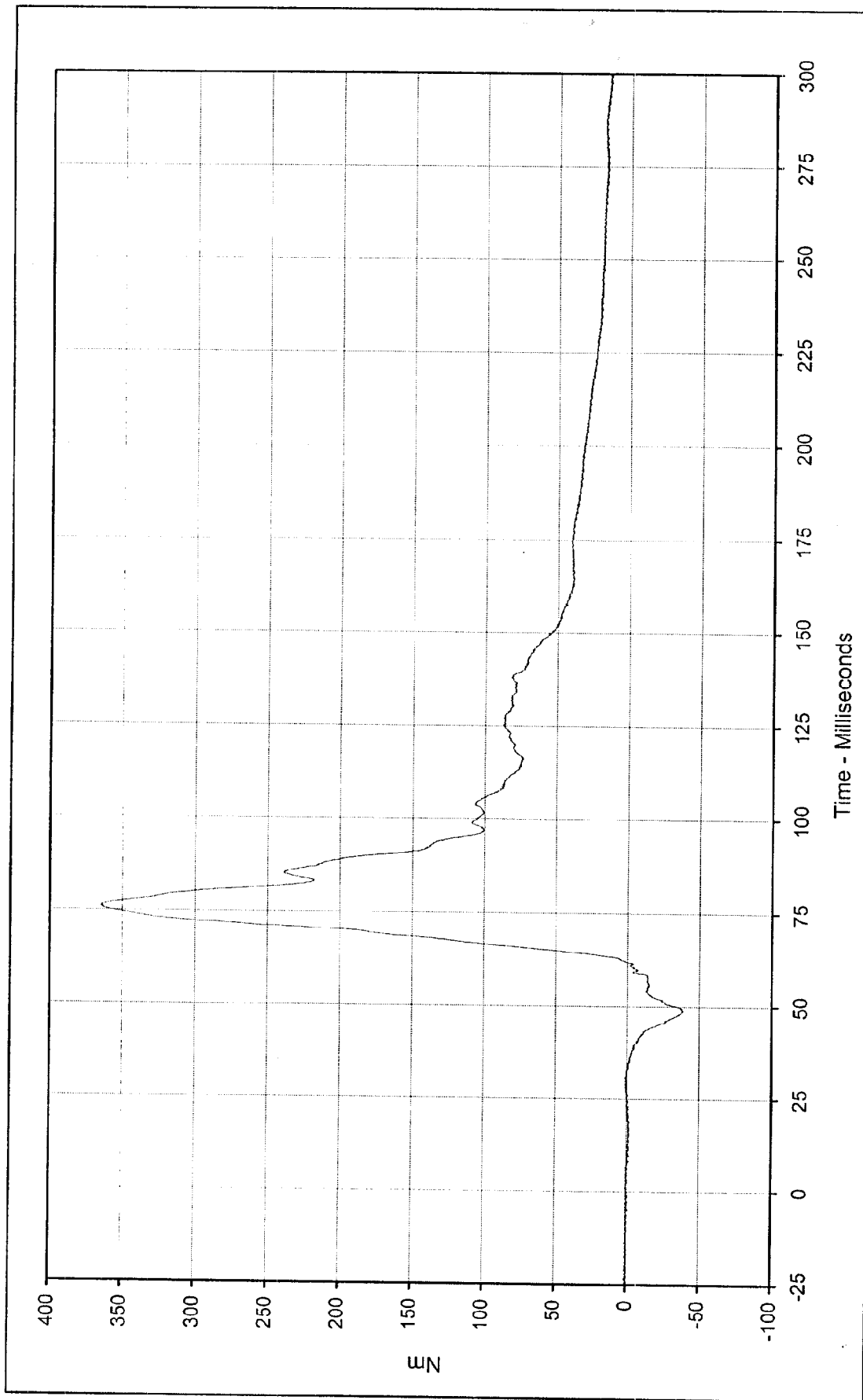
Date of Test: 10/27/98

Curve Number: FIL-025

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

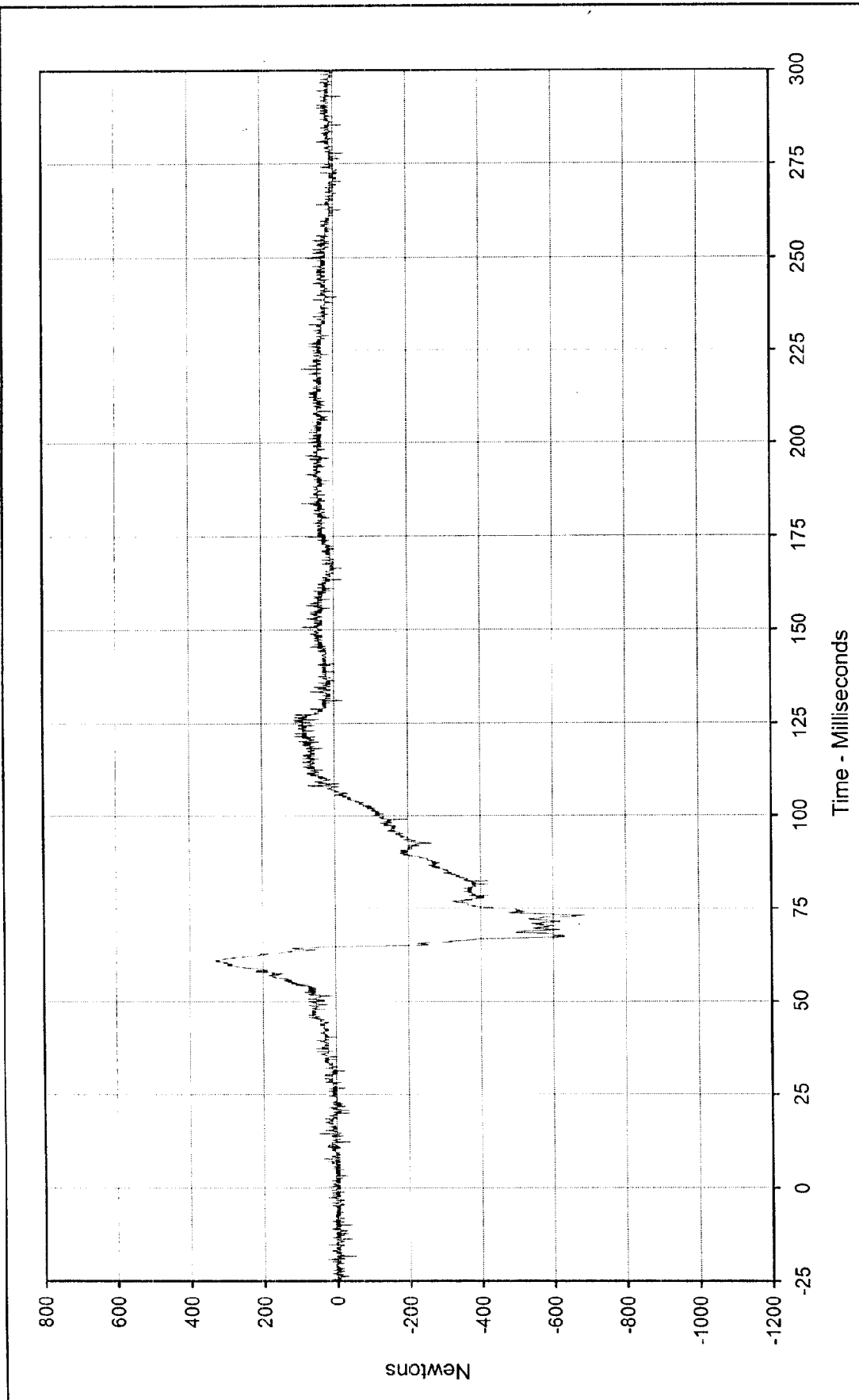
Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description:		Driver Left Lower Tibia Moment Y		Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311	
Maximum Value:	364.70	at	76.0	Milliseconds	Test Vehicle: 1998 Dodge Neon 4 Door Sedan
Minimum Value:	-38.88	at	48.7	Milliseconds	
SAE Filter Class:	1000				
Date of Test:	10/27/98				
Curve Number:	FIL-026				





Curve Description: Driver Right Upper Tibia Force X

Maximum Value: 330.2 at 60.7 Milliseconds

Minimum Value: -685.5 at 72.9 Milliseconds

SAE Filter Class: 1000

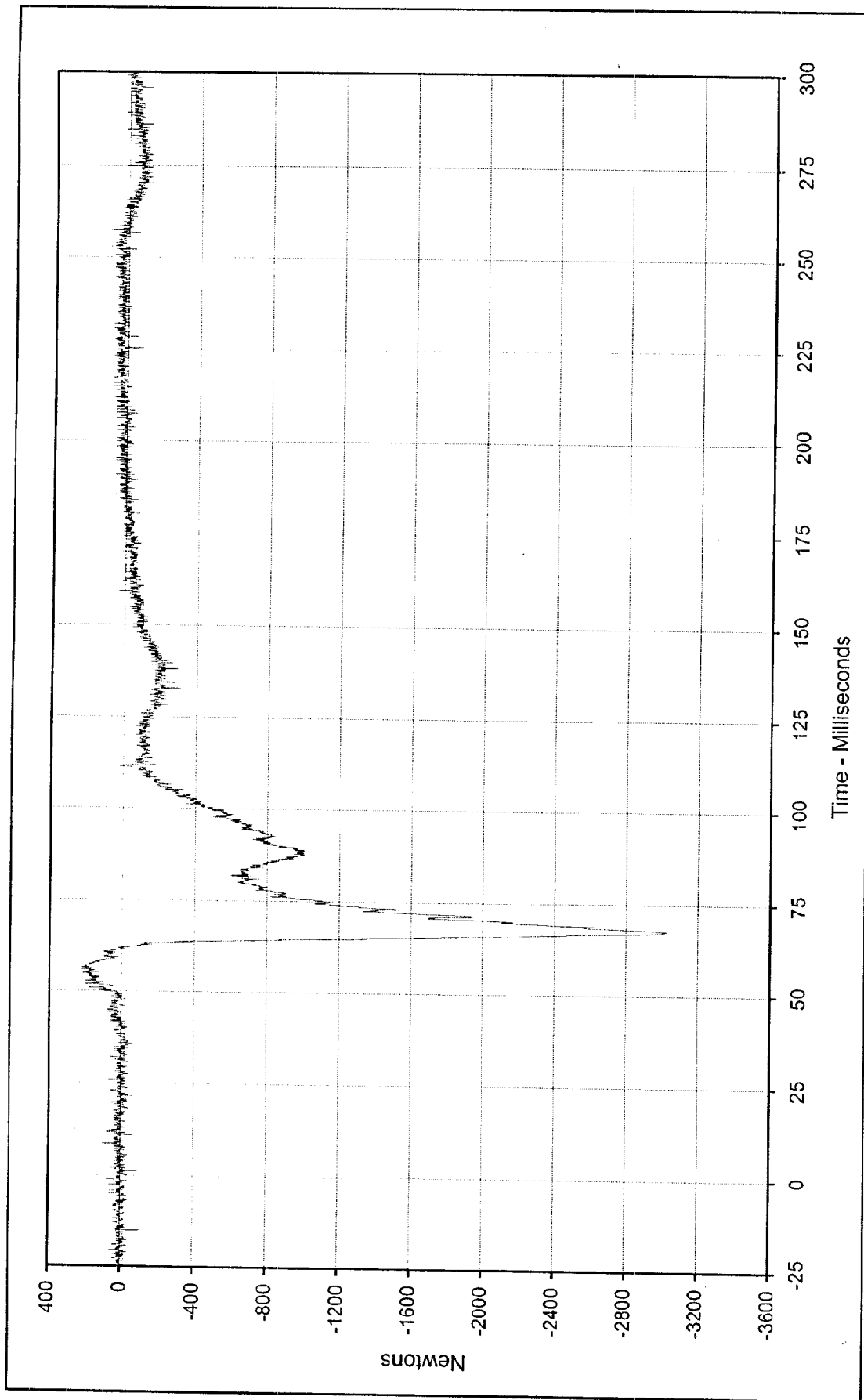
Date of Test: 10/27/98

Curve Number: FIL-027

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan

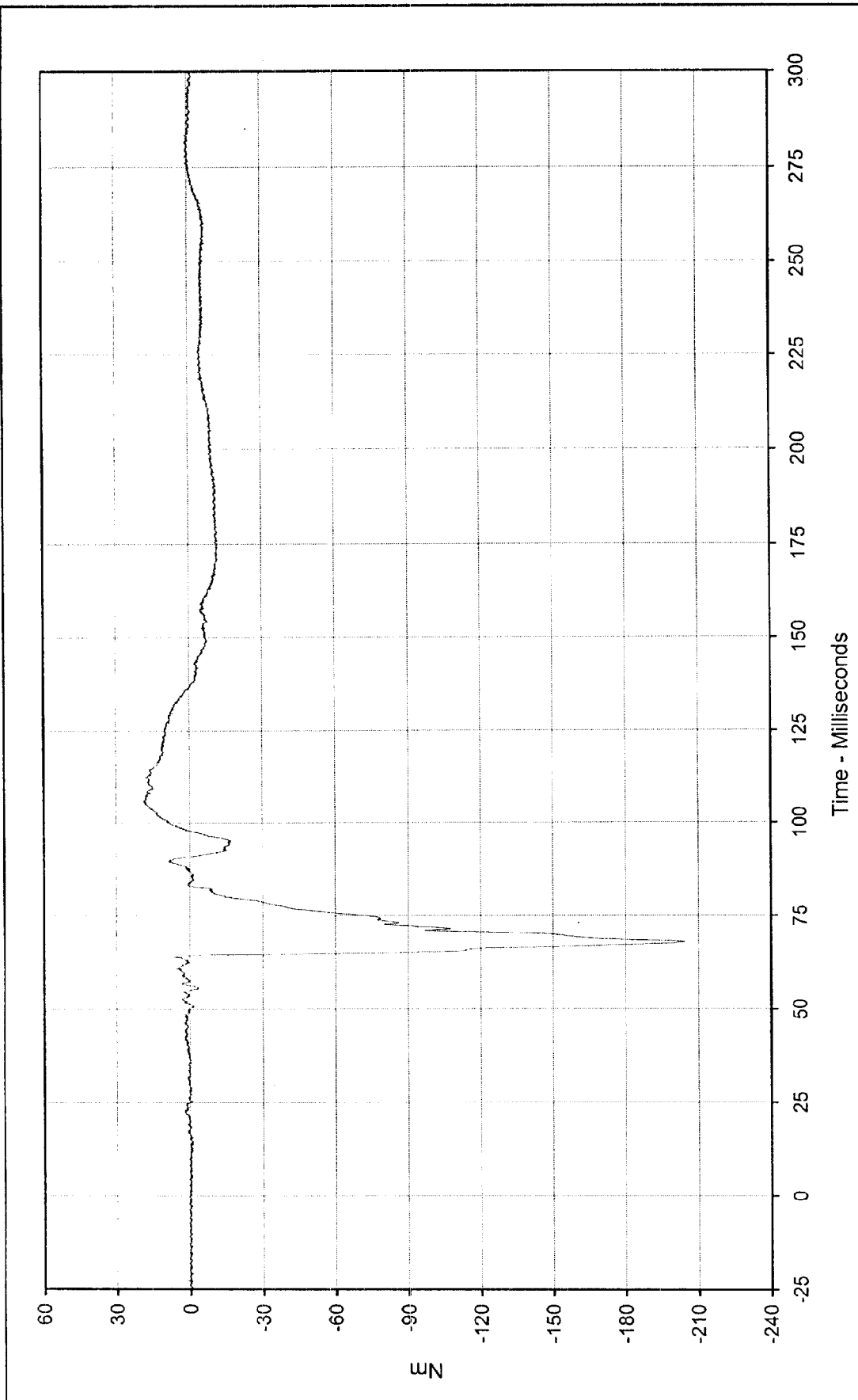




Curve Description: Driver Right Upper Tibia Force Z Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
Maximum Value: 222.2 at 54.9 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan
Minimum Value: -3024.8 at 67.5 Milliseconds



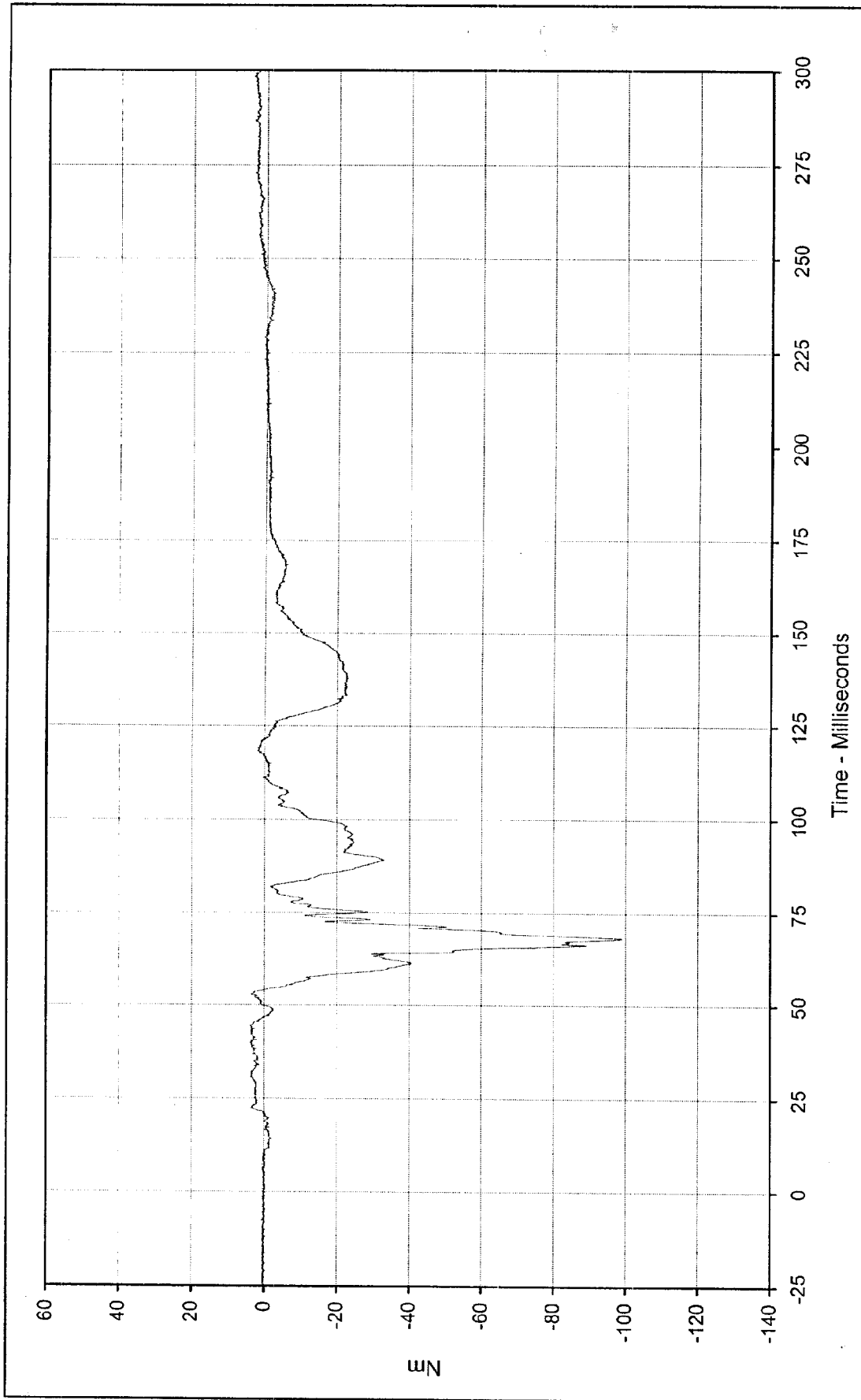
SAE Filter Class: 1000
Date of Test: 10/27/98
Curve Number: FIL-028



Curve Description: Driver Right Upper Tibia Moment X
 Maximum Value: 18.8 at 105.8 Milliseconds
 Minimum Value: -204.5 at 68.1 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 10/27/98
 Curve Number: FIL-029

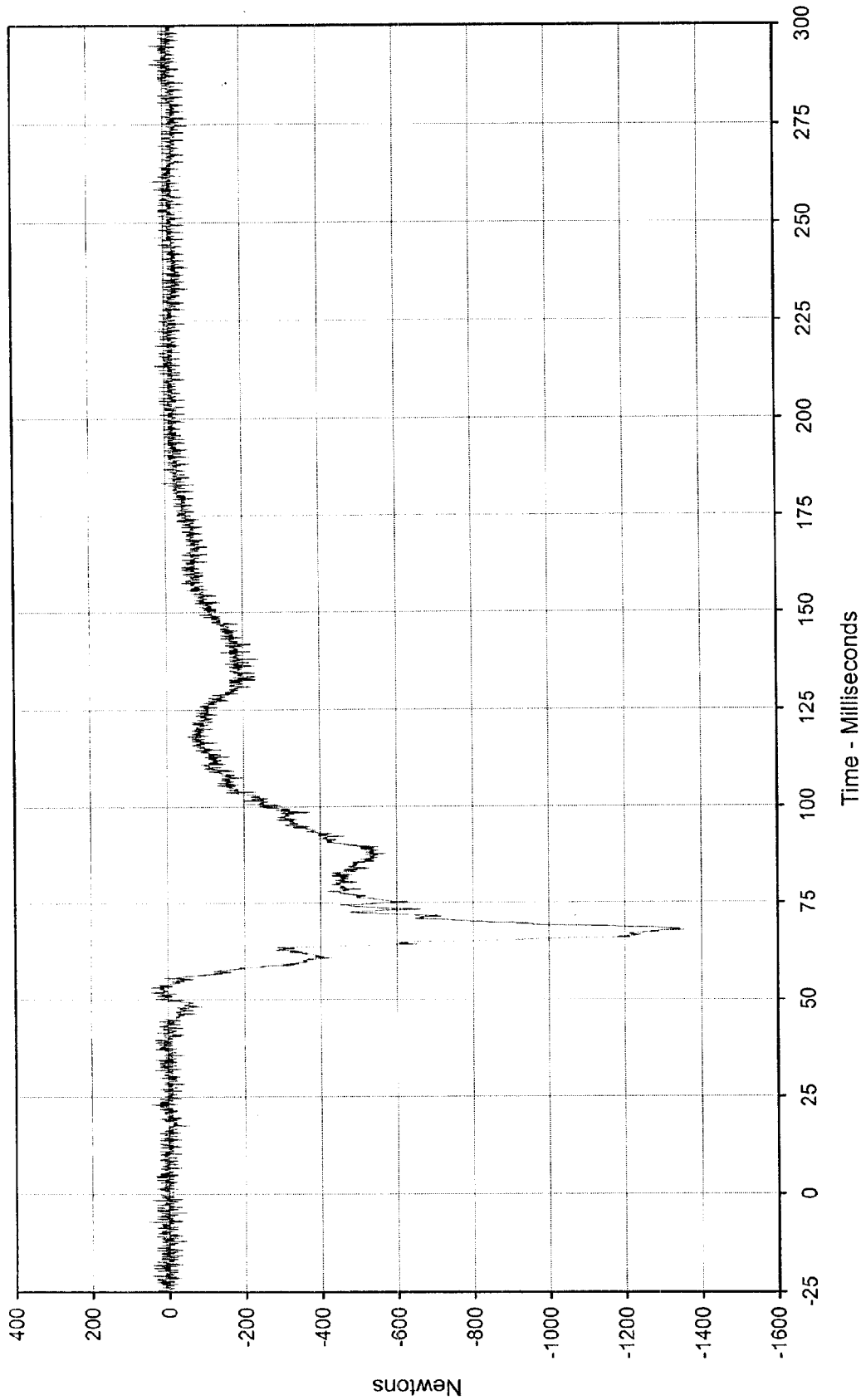
Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description:		Driver Right Upper Tibia Moment Y		Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311	
Maximum Value:	3.9	at	22.4	Milliseconds	Test Vehicle: 1998 Dodge Neon 4 Door Sedan
Minimum Value:	-99.1	at	68.2	Milliseconds	
SAE Filter Class:	1000				
Date of Test:	10/27/98				
Curve Number:	FIL-030				





Curve Description: Driver Right Lower Tibia Force X

Maximum Value: 45.1 at 22.7 Milliseconds

Minimum Value: -1354.8 at 67.9 Milliseconds

SAE Filter Class: 1000

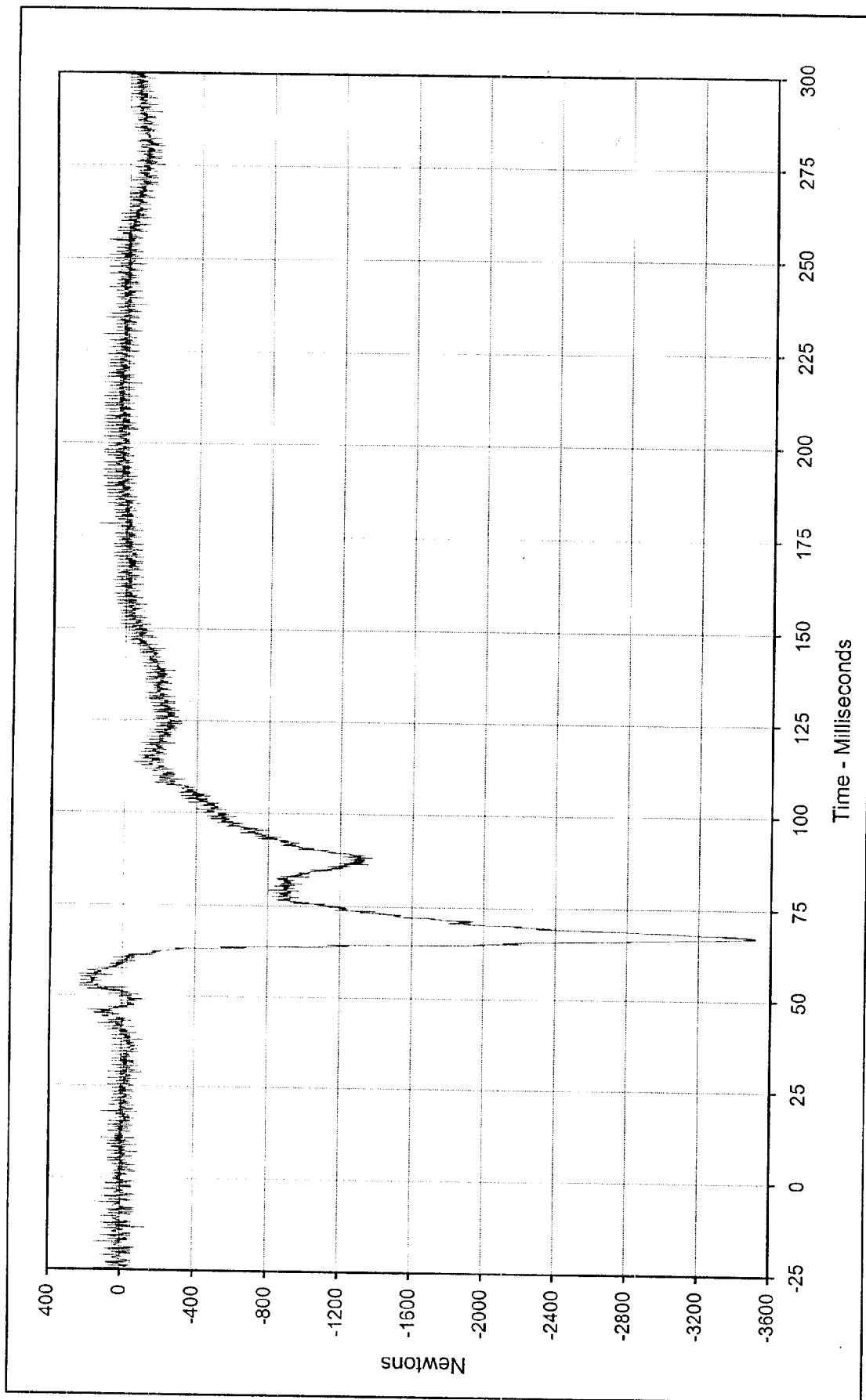
Date of Test: 10/27/98

Curve Number: FIL-031

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

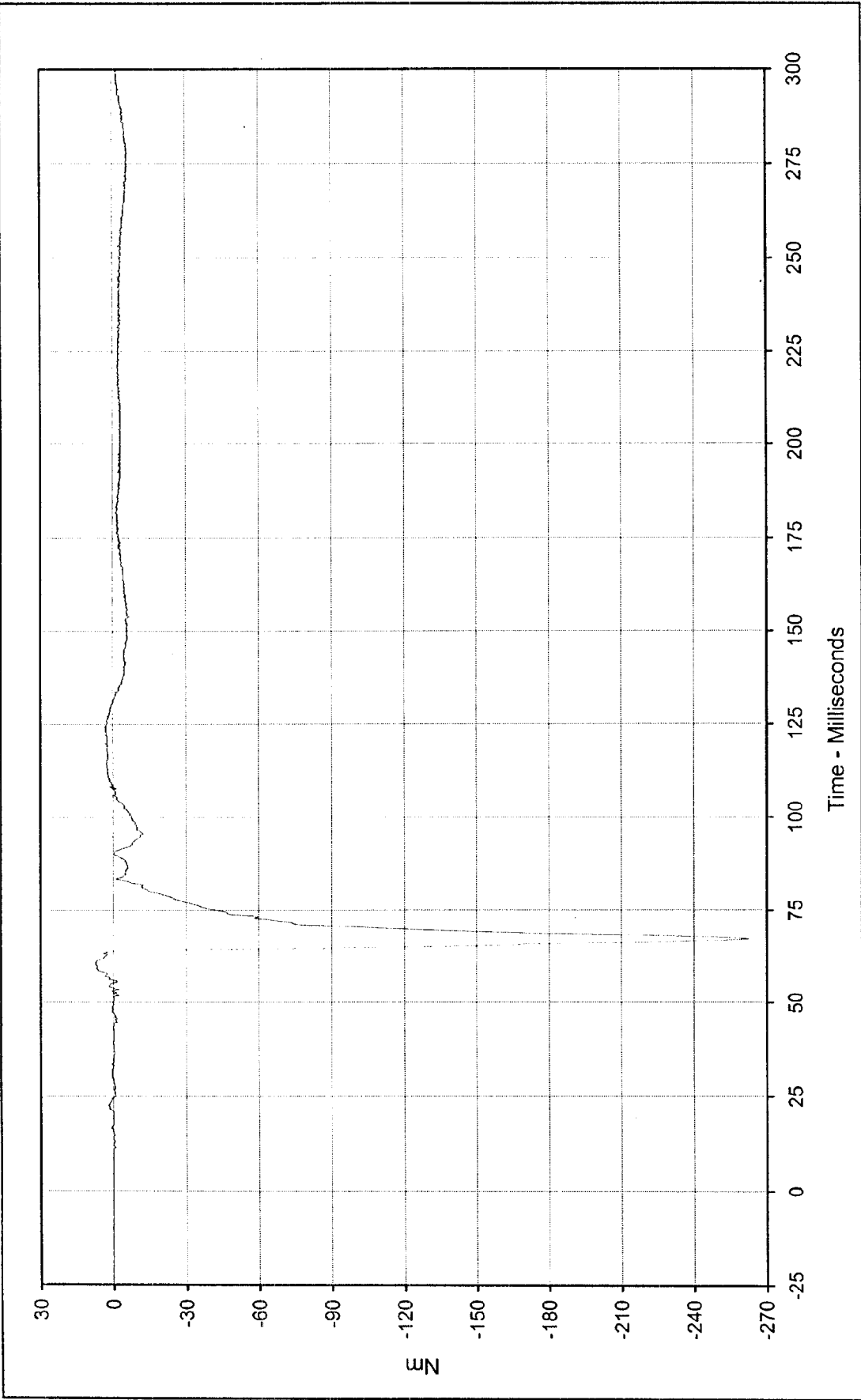
Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Driver Right Lower Tibia Force Z
 Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Maximum Value: 235.1 at 52.6 Milliseconds
 Minimum Value: -3516.5 at 67.1 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 10/27/98
 Curve Number: FIL-032
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Driver Right Lower Tibia Moment X

Maximum Value: 7.5 at 60.6 Milliseconds

Minimum Value: -262.5 at 67.3 Milliseconds

SAE Filter Class: 1000

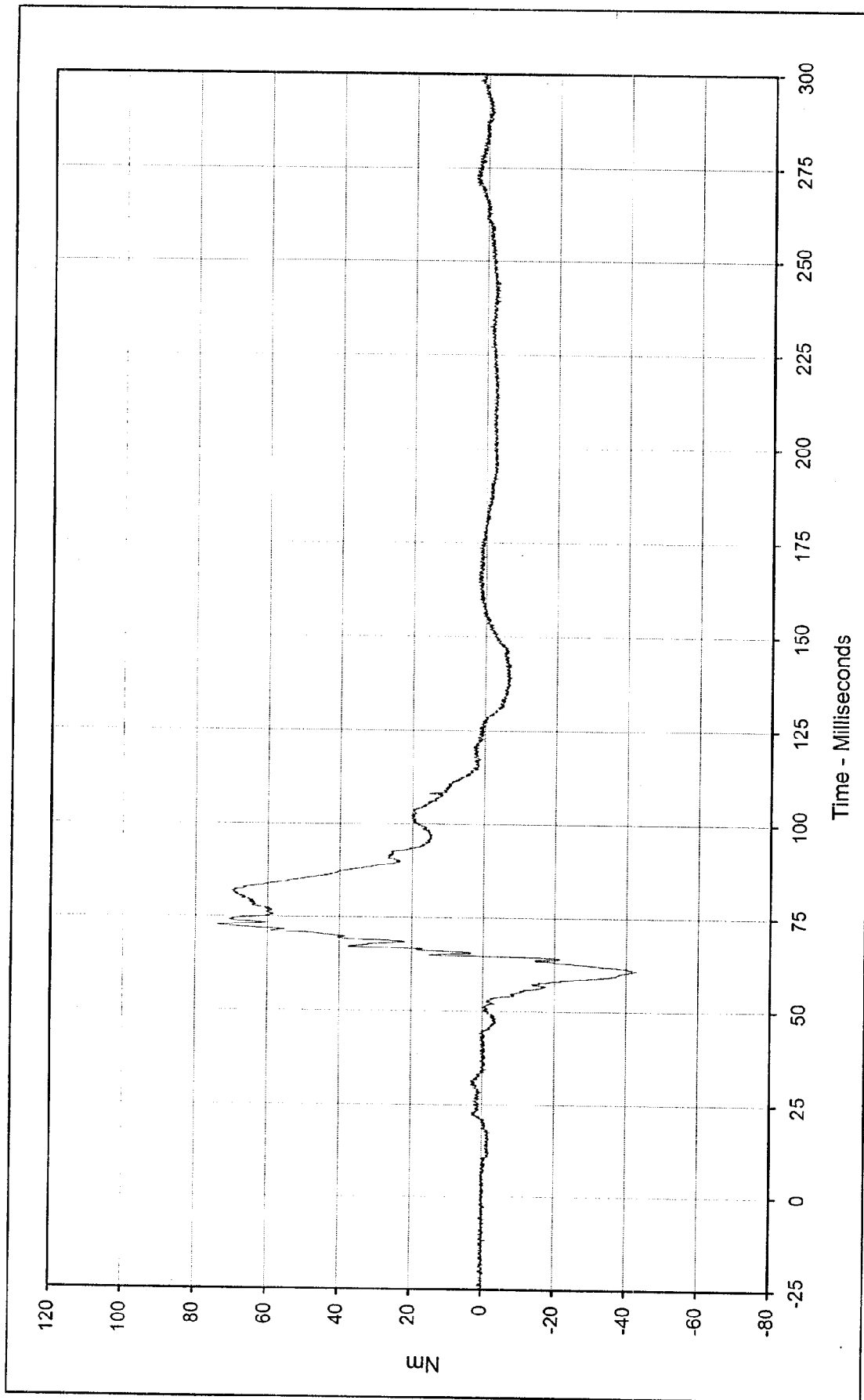
Date of Test: 10/27/98

Curve Number: FIL-033

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan

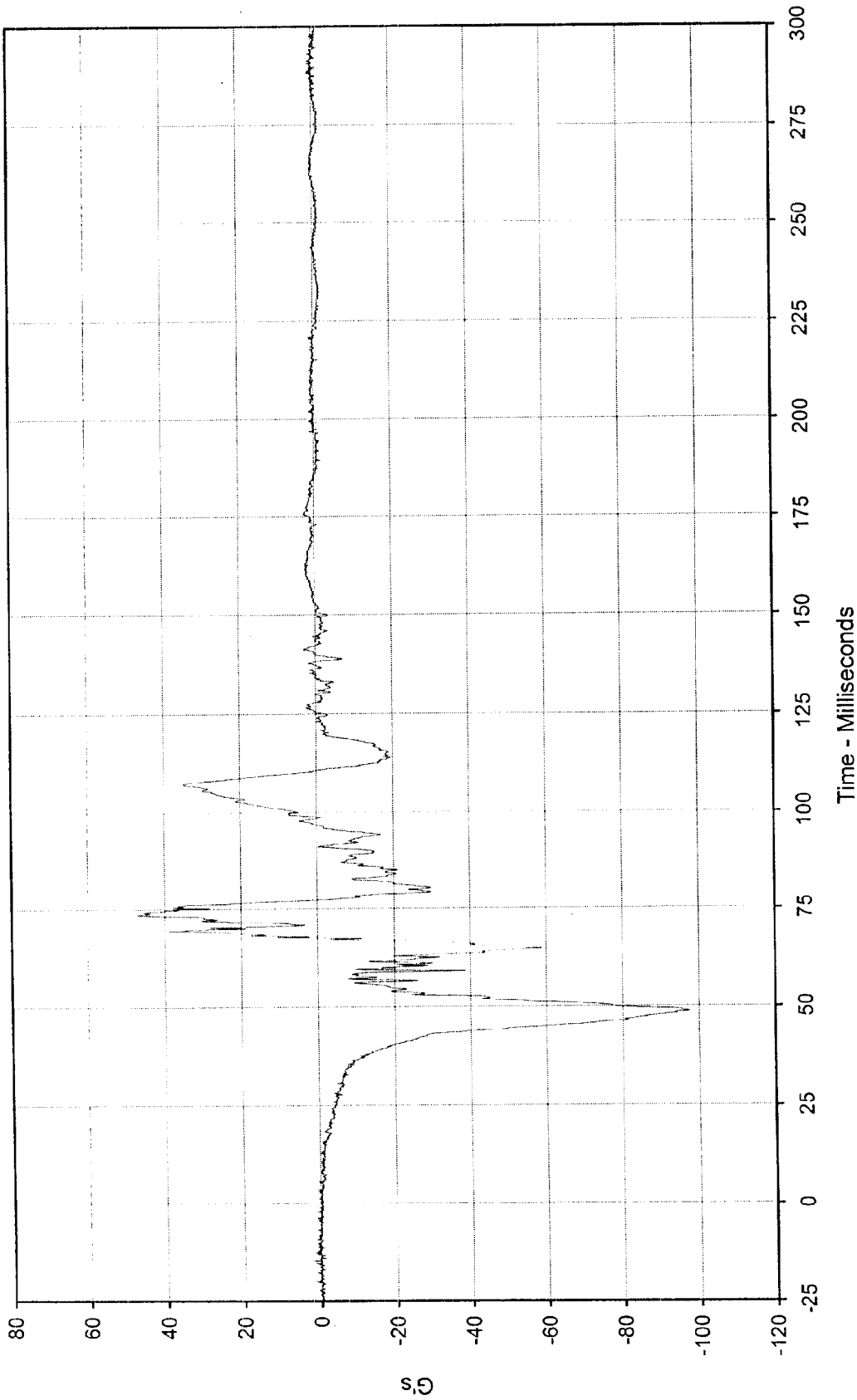




Curve Description: Driver Right Lower Tibia Moment Y
Maximum Value: 73.9 at 72.7 Milliseconds
Minimum Value: -42.7 at 60.8 Milliseconds
SAE Filter Class: 1000
Date of Test: 10/27/98
Curve Number: FIL-034

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Driver Left Foot Aft X

Maximum Value: 47.1 at 73.5 Milliseconds

Minimum Value: -97.6 at 48.8 Milliseconds

SAE Filter Class: 1000

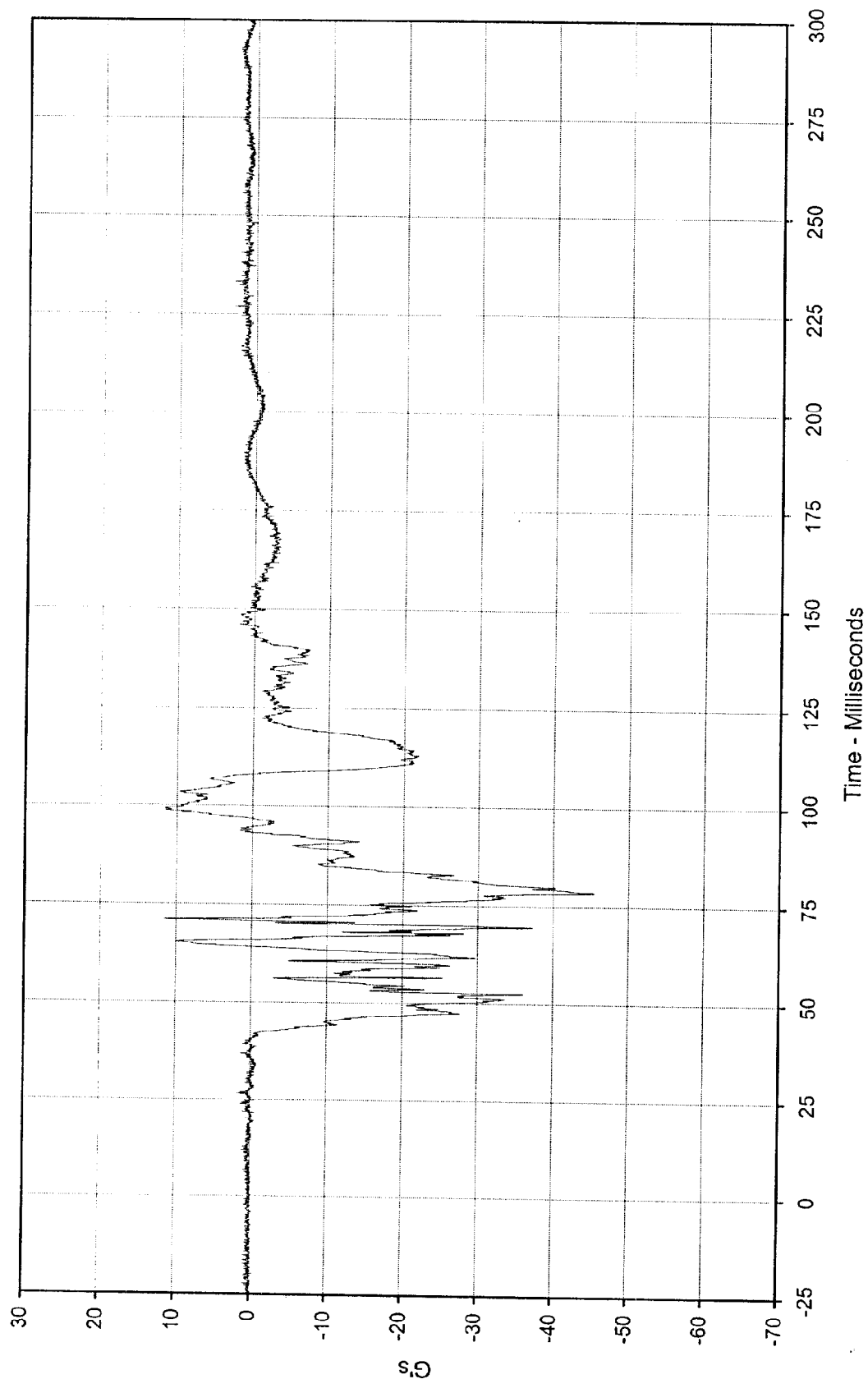
Date of Test: 10/27/98

Curve Number: FIL-035

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan

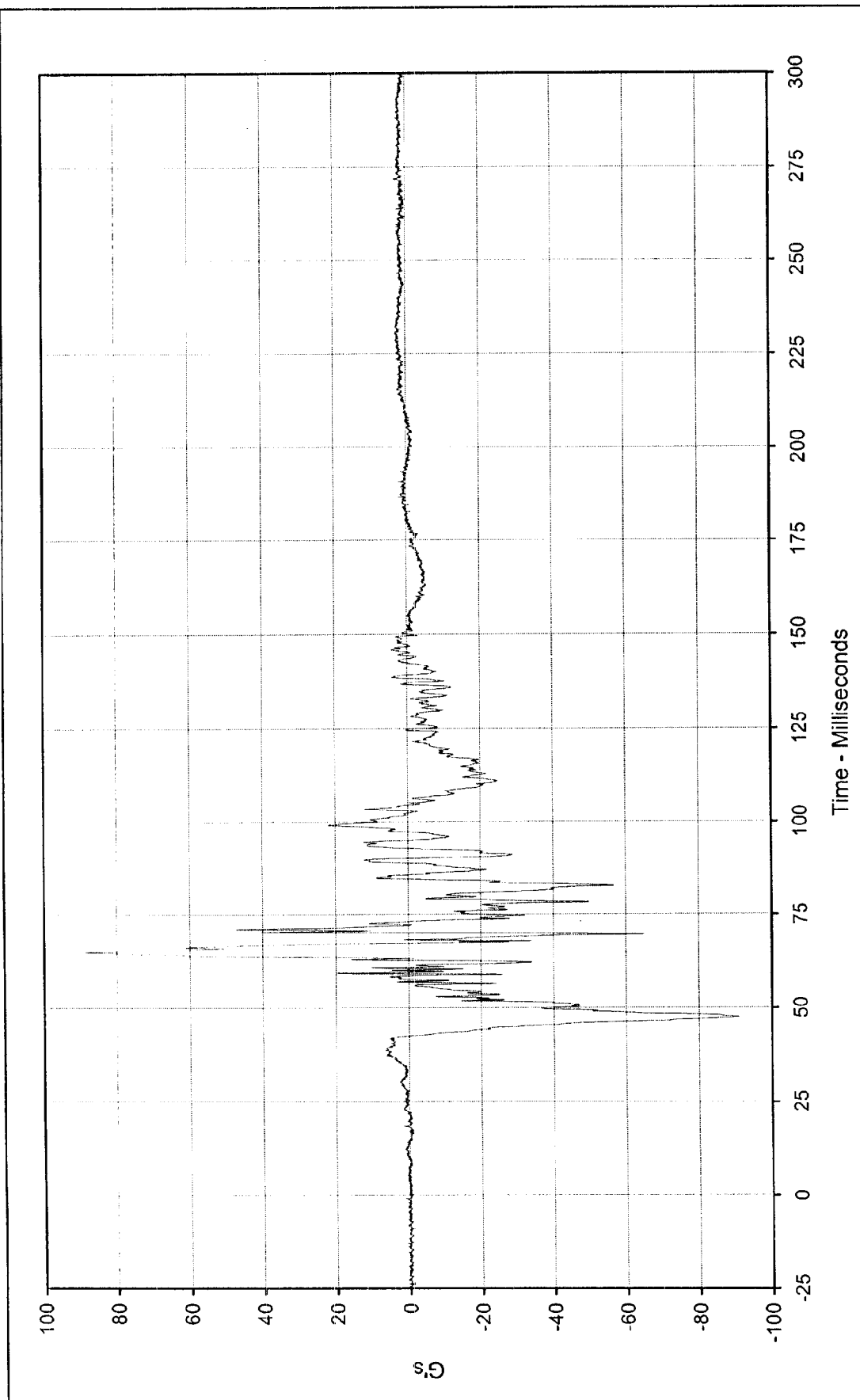




Curve Description:	Driver Left Foot Aft Z			Testing Program:	1998 37.5mph Offset, 5th Female	No.: MW0311
Maximum Value:	11.5	at	70.9	Milliseconds	Test Vehicle:	1998 Dodge Neon 4 Door Sedan
Minimum Value:	-45.4	at	78.5	Milliseconds		
SAE Filter Class:	1000					
Date of Test:	10/27/98					
Curve Number:	FIL-036					

**KARCO**
Engineering





Curve Description: Driver Left Foot Fore Z

Maximum Value: 88.6 at 65.0 Milliseconds

Minimum Value: -91.0 at 47.5 Milliseconds

SAE Filter Class: 1000

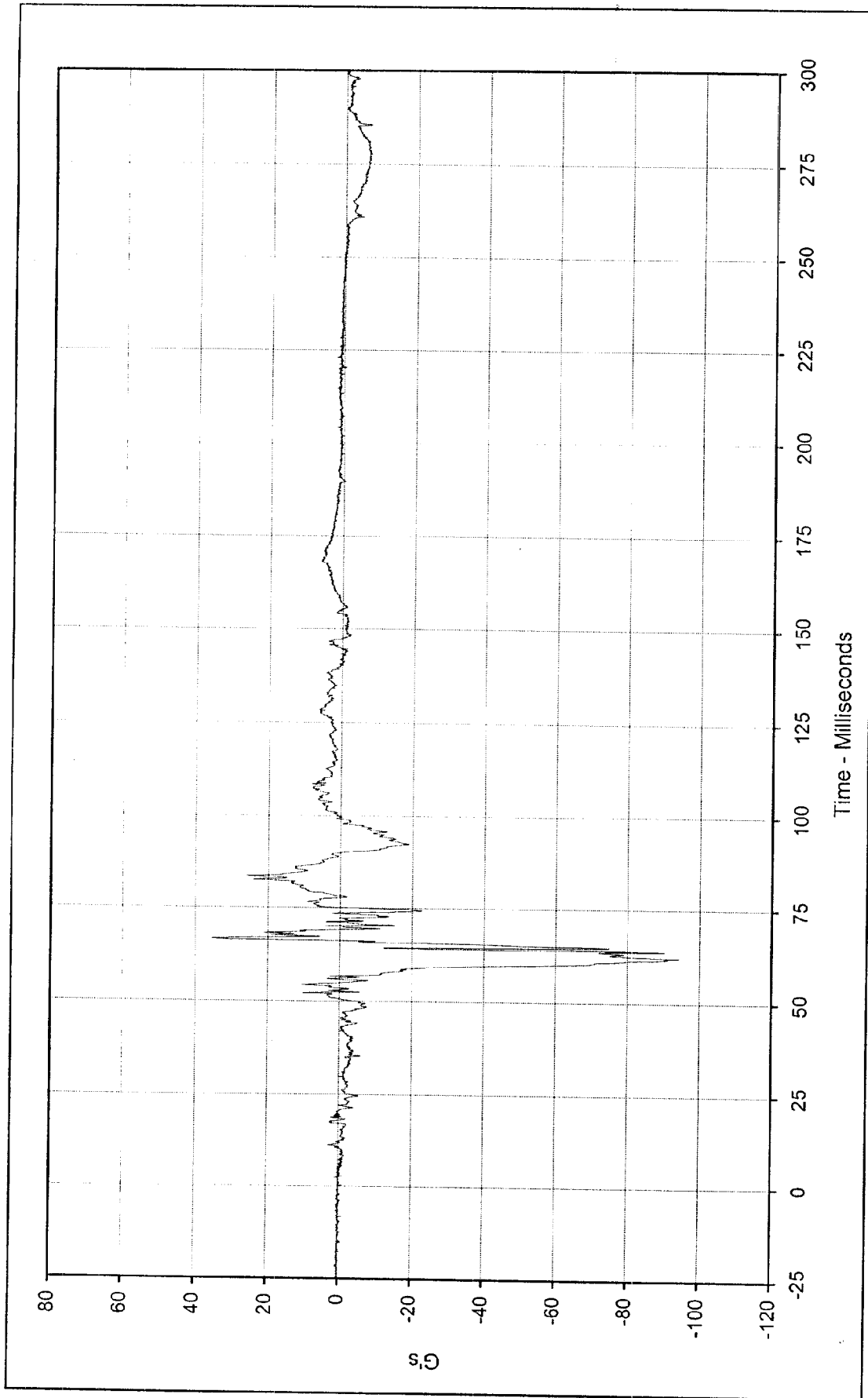
Date of Test: 10/27/98

Curve Number: FIL-037

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan

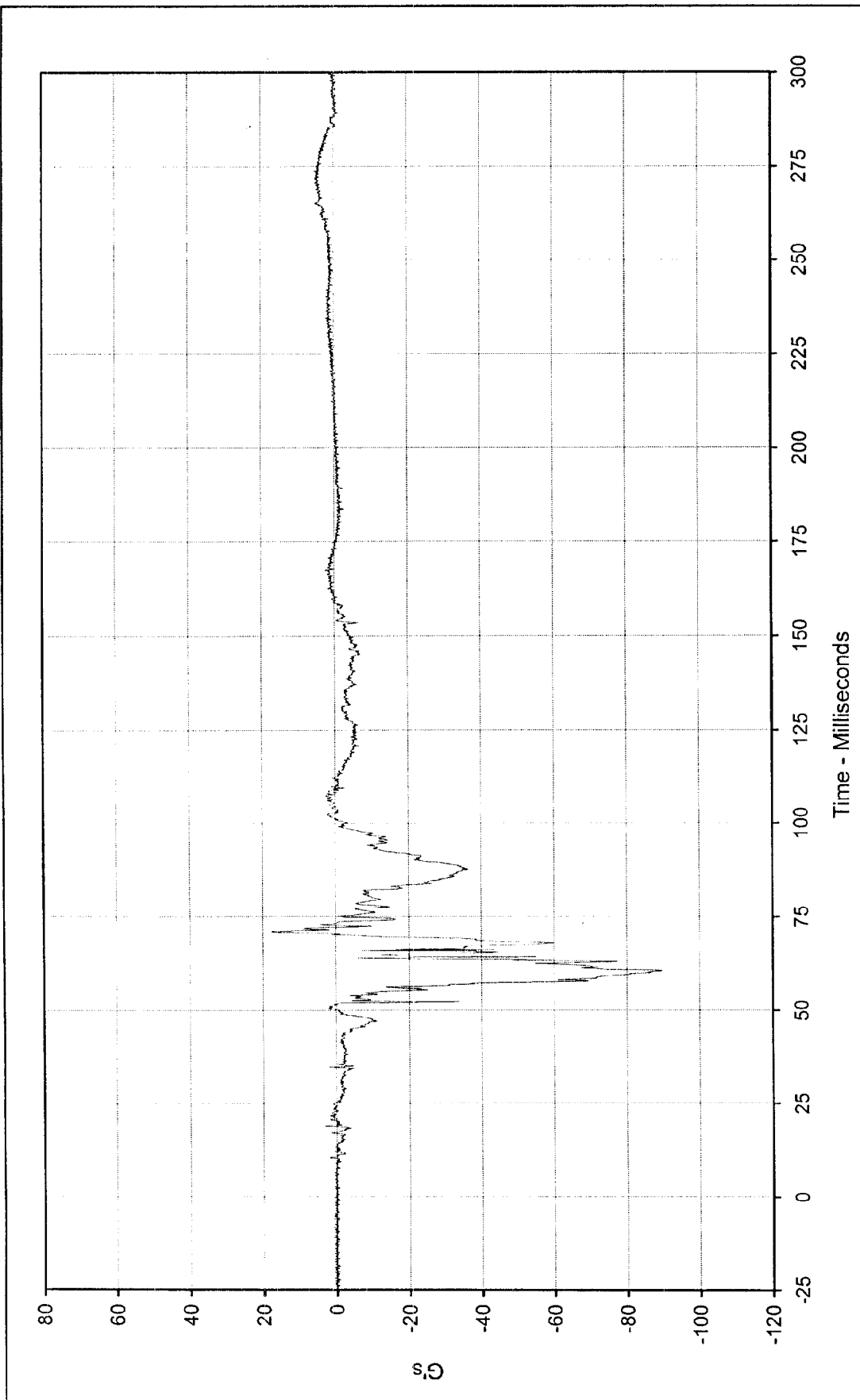




Curve Description: Driver Right Foot Aft X
 Maximum Value: 35.5 at 66.4 Milliseconds
 Minimum Value: -94.4 at 62.0 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 10/27/98
 Curve Number: FIL-038

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Driver Right Foot Aft Z Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 17.7 at 71.1 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

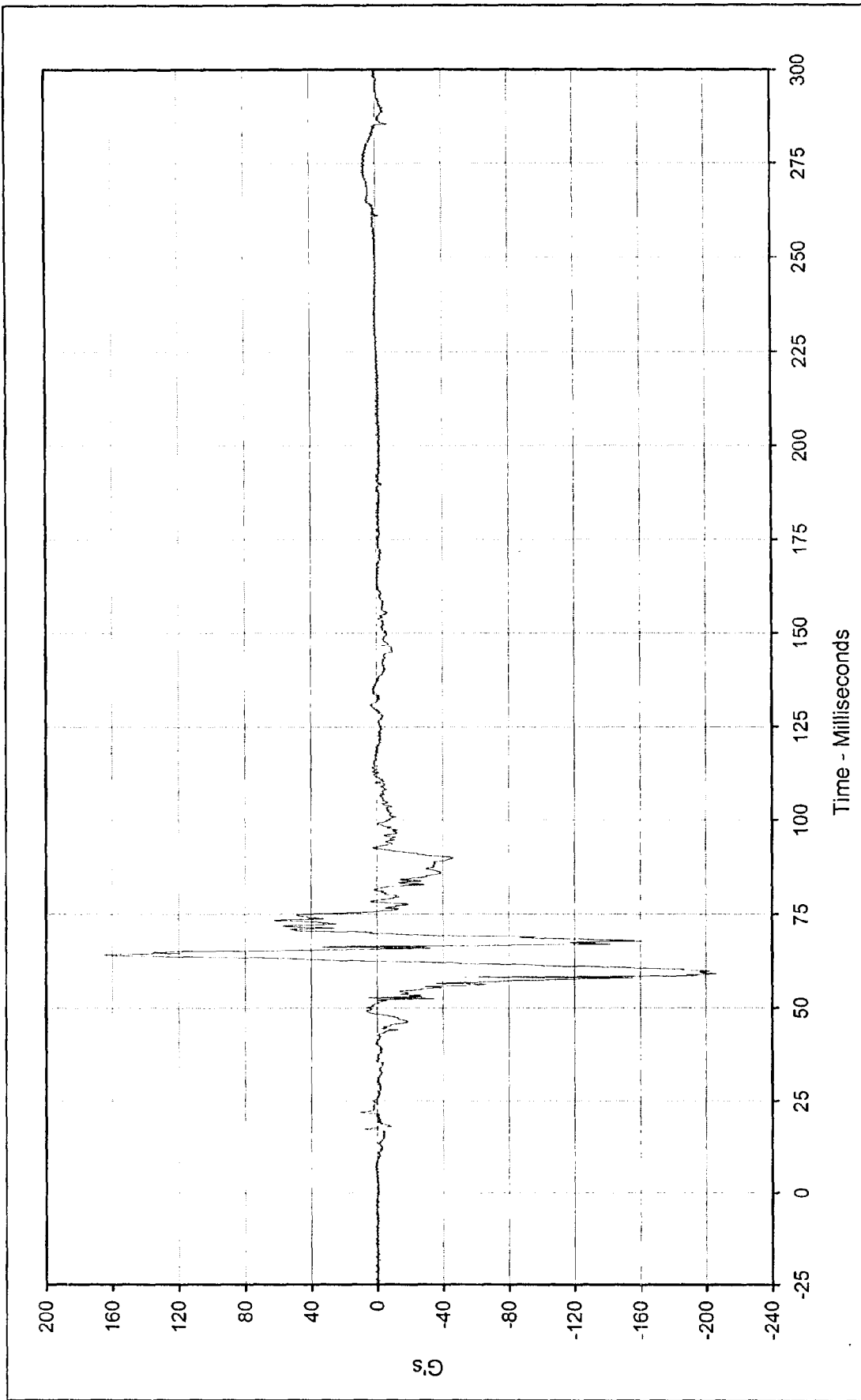
Minimum Value: -89.6 at 60.6 Milliseconds

SAE Filter Class: 1000

Date of Test: 10/27/98

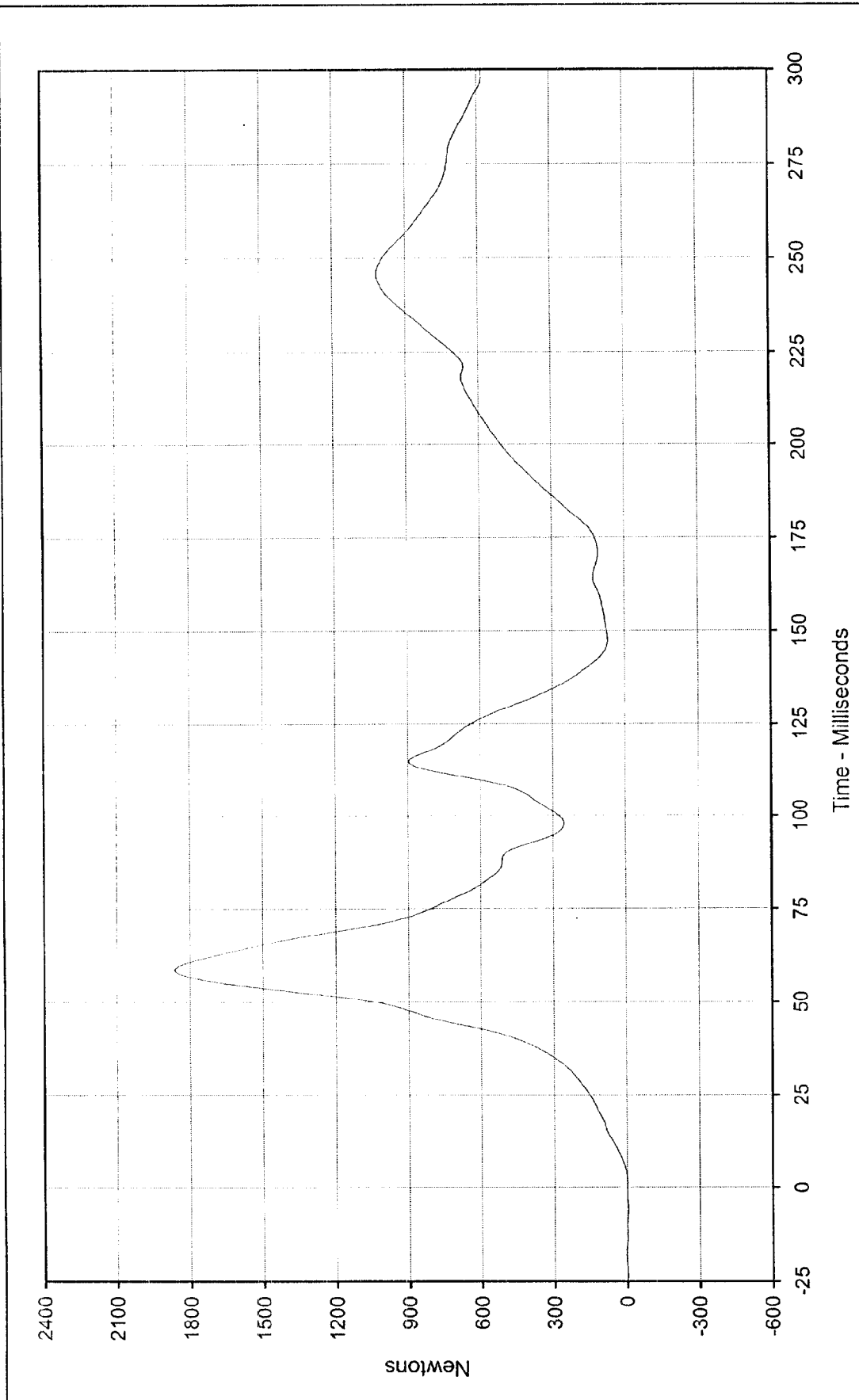
Curve Number: FIL-039





Curve Description:	Driver Right Foot Fore Z	Testing Program:	1998 37.5mph Offset, 5th Female No.: MW0311
Maximum Value:	165.1 at 64.1 Milliseconds	Test Vehicle:	1998 Dodge Neon 4 Door Sedan
Minimum Value:	-206.0 at 59.0 Milliseconds		
SAE Filter Class:	1000		
Date of Test:	10/27/98		
Curve Number:	FIL-040		





Curve Description: Driver Lap Belt Force Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 1862.8 at 58.7 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

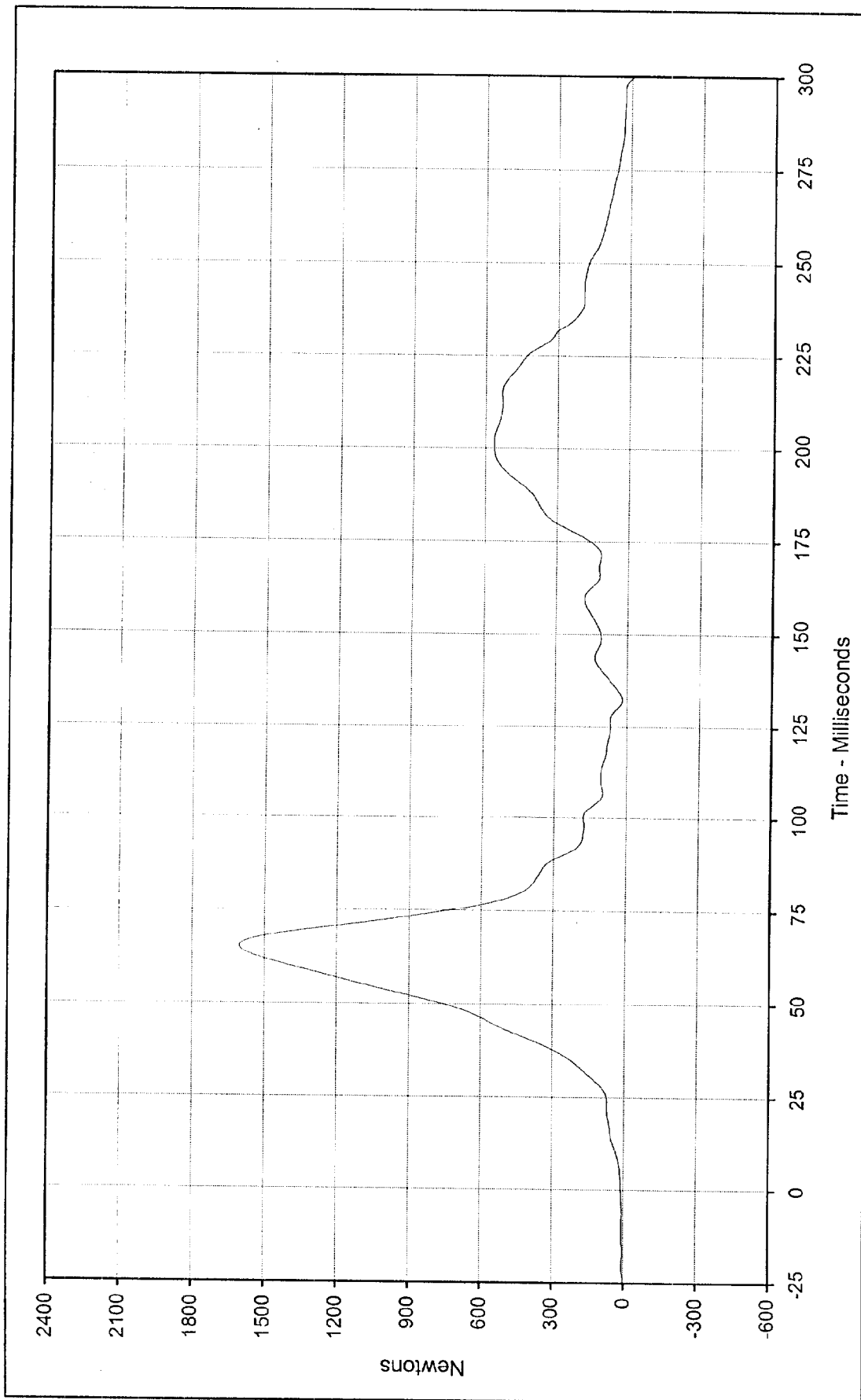
Minimum Value: -2.0 at 0.9 Milliseconds

SAE Filter Class: 60

Date of Test: 10/27/98

Curve Number: FIL-041





Curve Description: Driver Shoulder Belt Force Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 1604.1 at 65.2 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

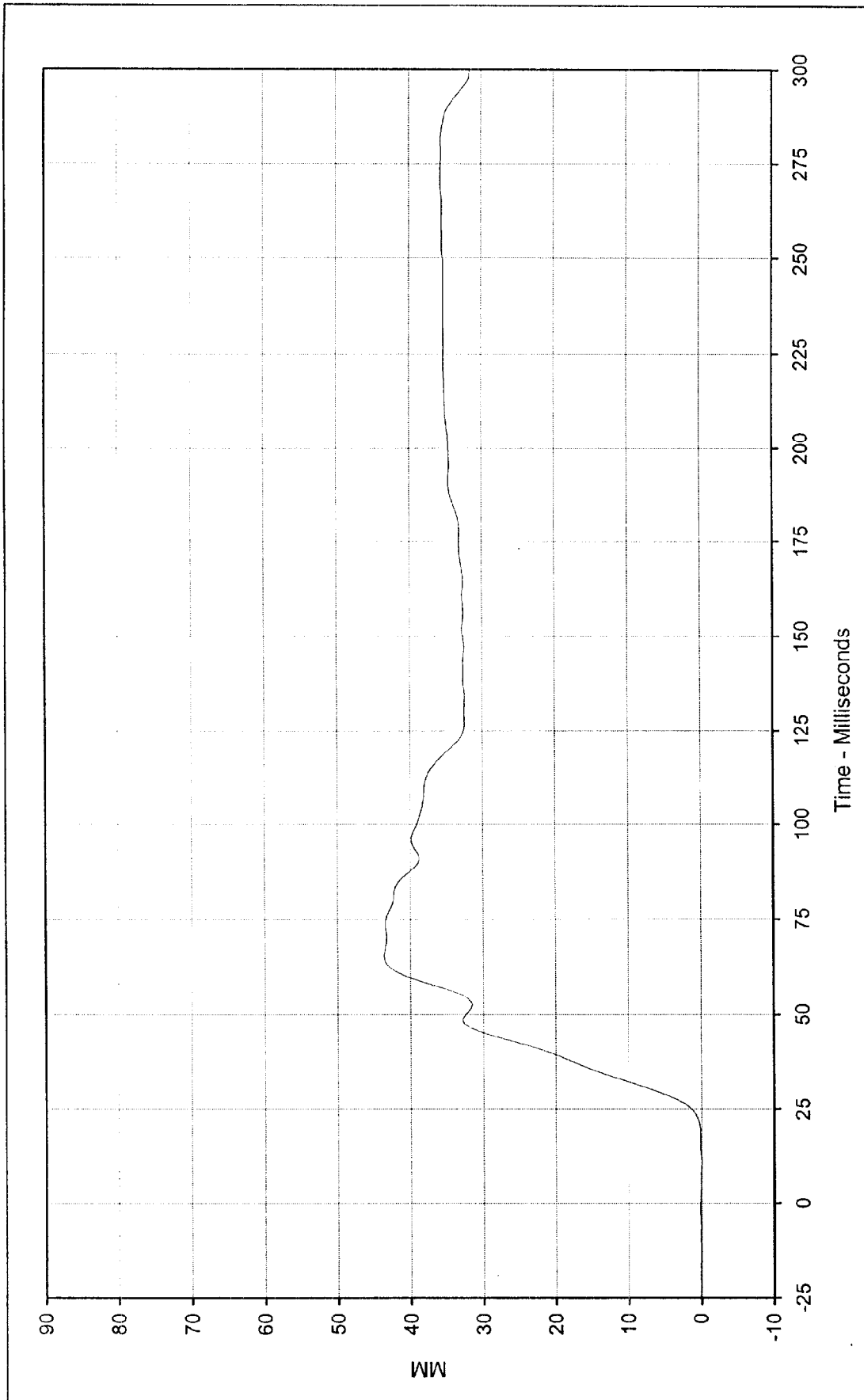
Minimum Value: -10.3 at 299.9 Milliseconds

SAE Filter Class: 60

Date of Test: 10/27/98

Curve Number: FIL-042





Curve Description: Driver Shoulder Belt Pullout Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 43.6 at 65.1 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

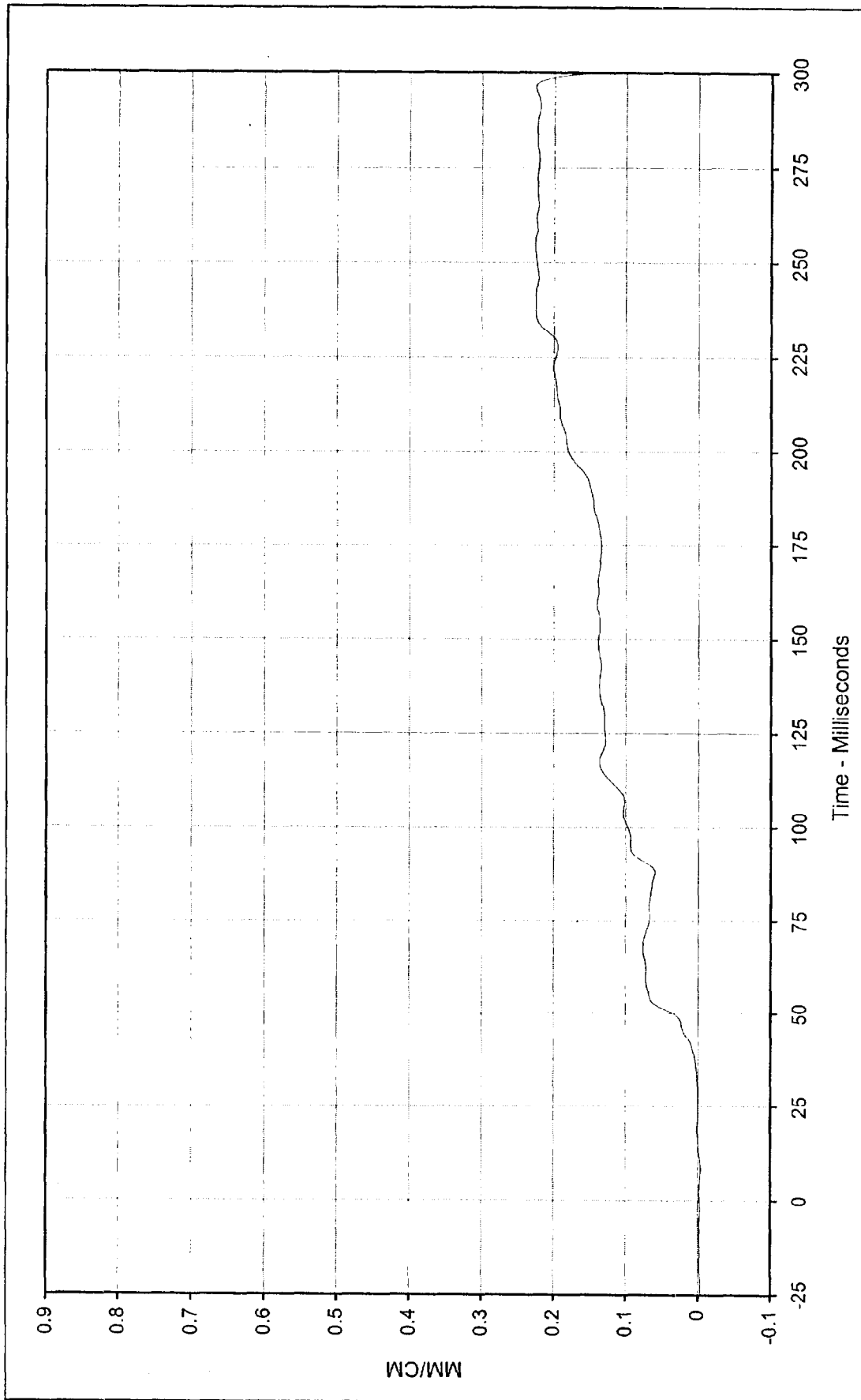
Minimum Value: 0.0 at 10.9 Milliseconds

SAE Filter Class: 60

Date of Test: 10/27/98

Curve Number: FIL-043





Curve Description: Driver Shoulder Belt Elongation Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 0.226 at 254.7 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

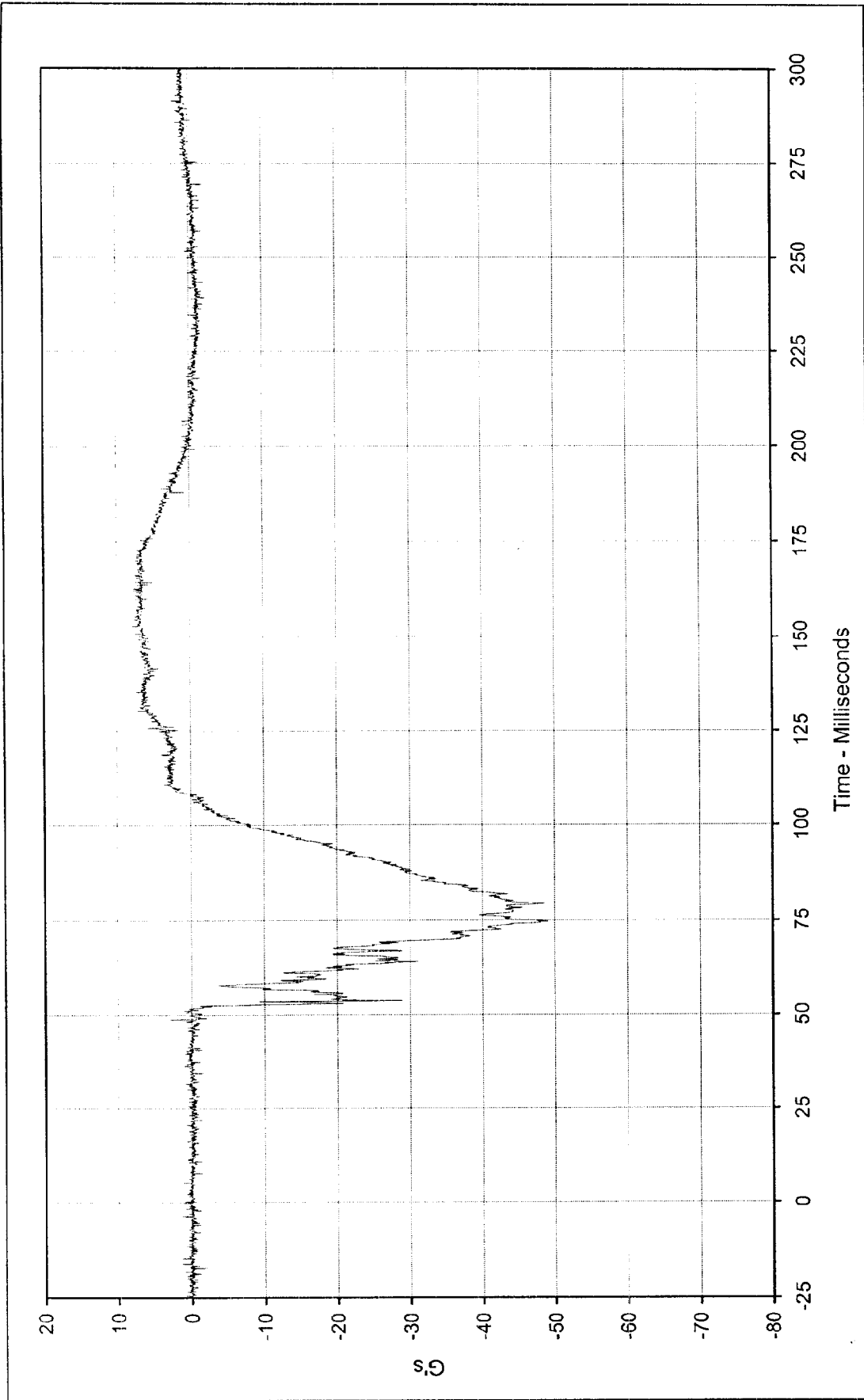
Minimum Value: -0.005 at 8.4 Milliseconds

SAE Filter Class: 60

Date of Test: 10/27/98

Curve Number: FIL-044





Curve Description: Passenger Head Primary X

Maximum Value: 7.9 at 153.0 Milliseconds

Minimum Value: -49.0 at 74.6 Milliseconds

SAE Filter Class: 1000

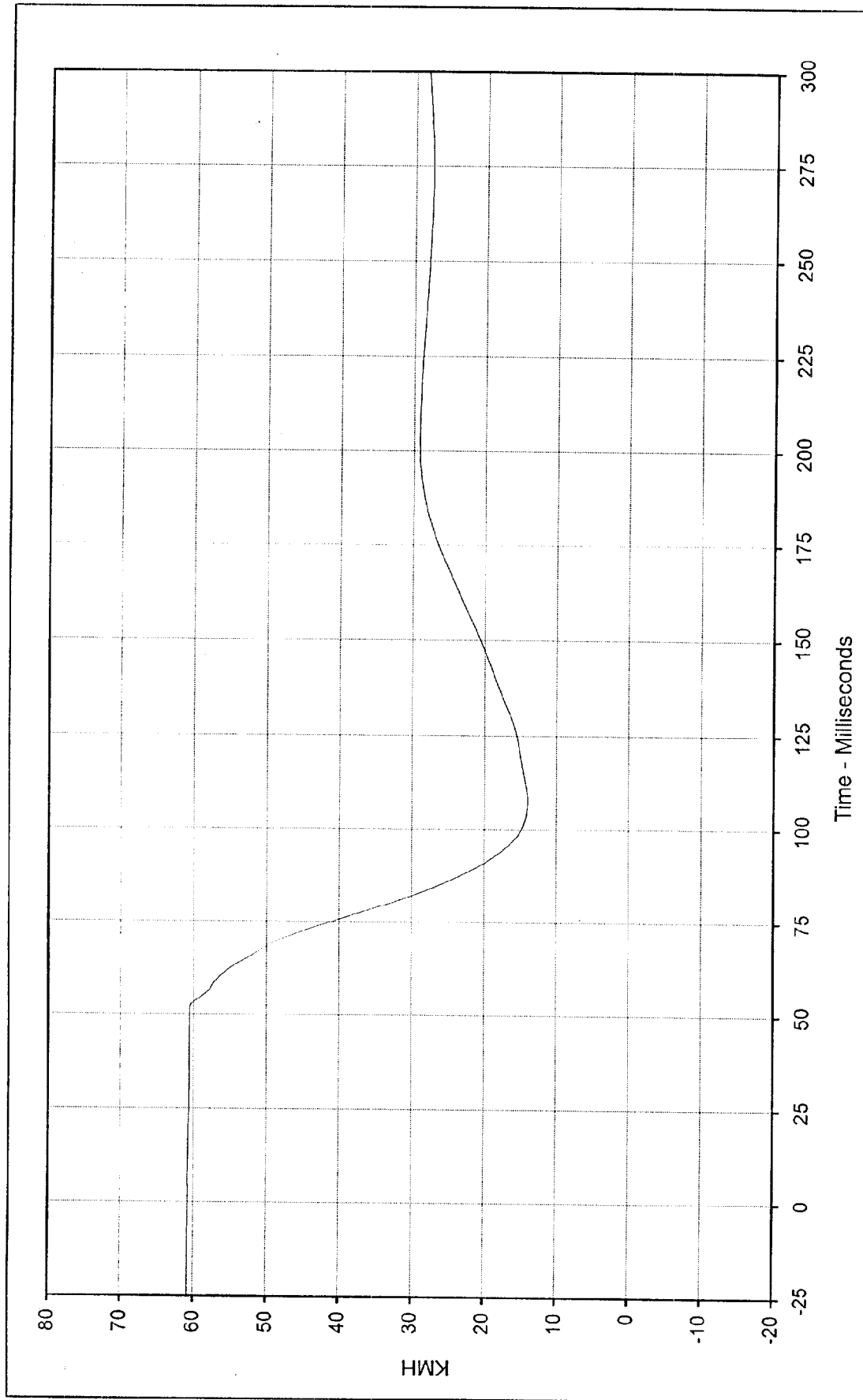
Date of Test: 10/27/98

Curve Number: FIL-045

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Passenger Head Primary X Velocity

Maximum Value: 60.7 at 6.8 Milliseconds

Minimum Value: 13.9 at 108.0 Milliseconds

SAE Filter Class: 180

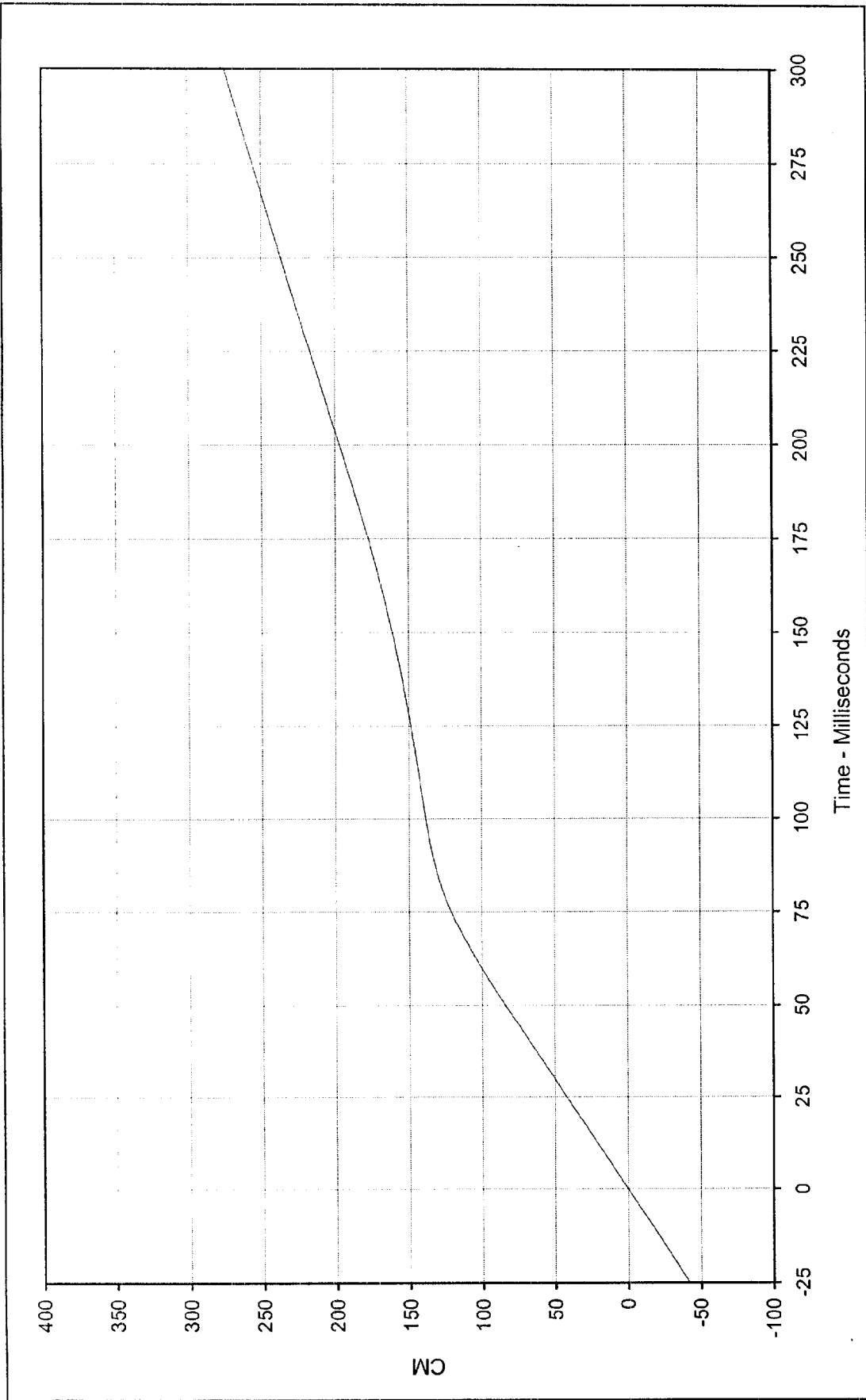
Date of Test: 10/27/98

Curve Number: IN1-045

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Passenger Head Primary X Displ. Testing Program 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 274.8 at 299.9 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

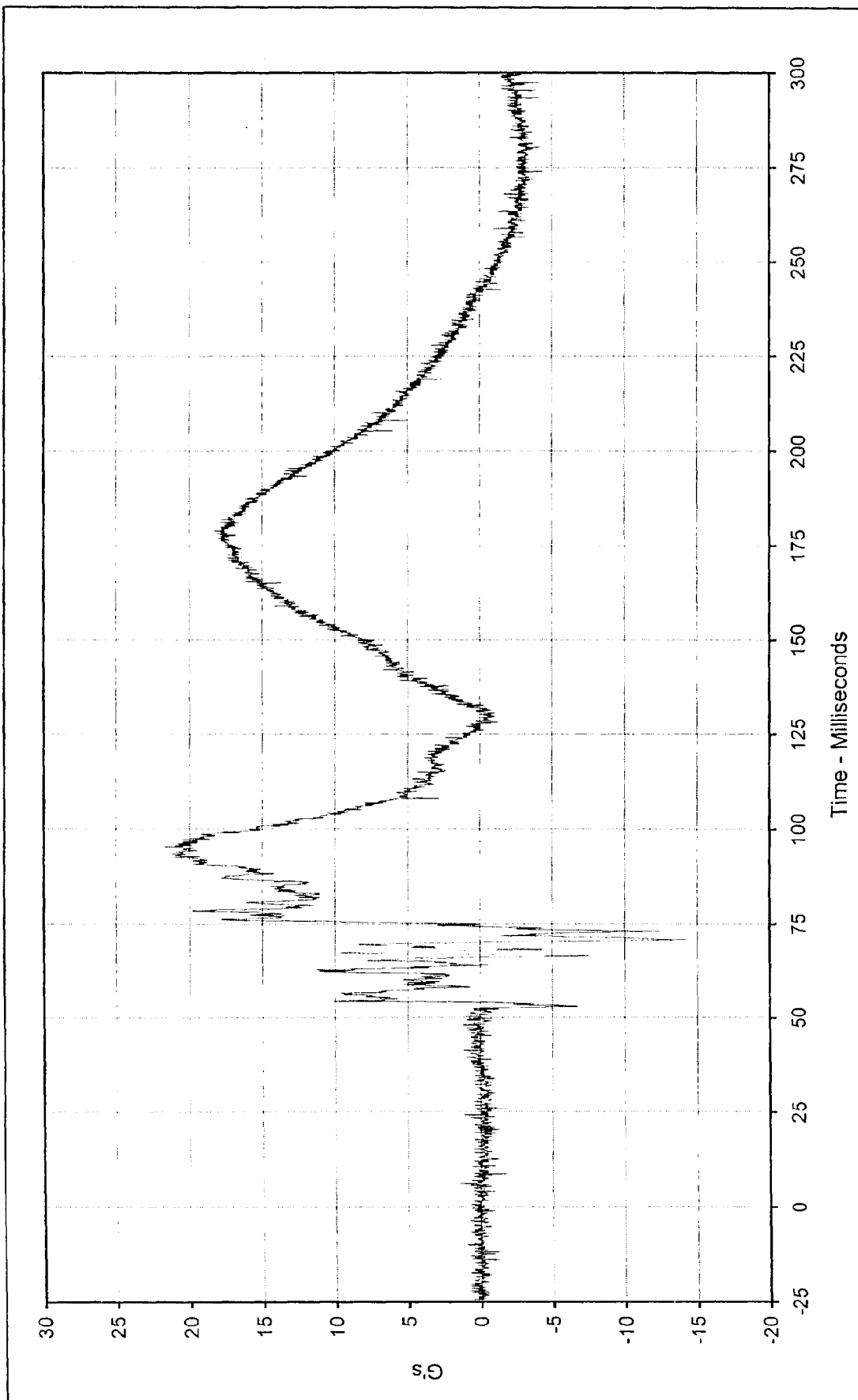
Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 10/27/98

Curve Number: IN2-045





Curve Description: Passenger Head Primary Y Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 21.7 at 95.3 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

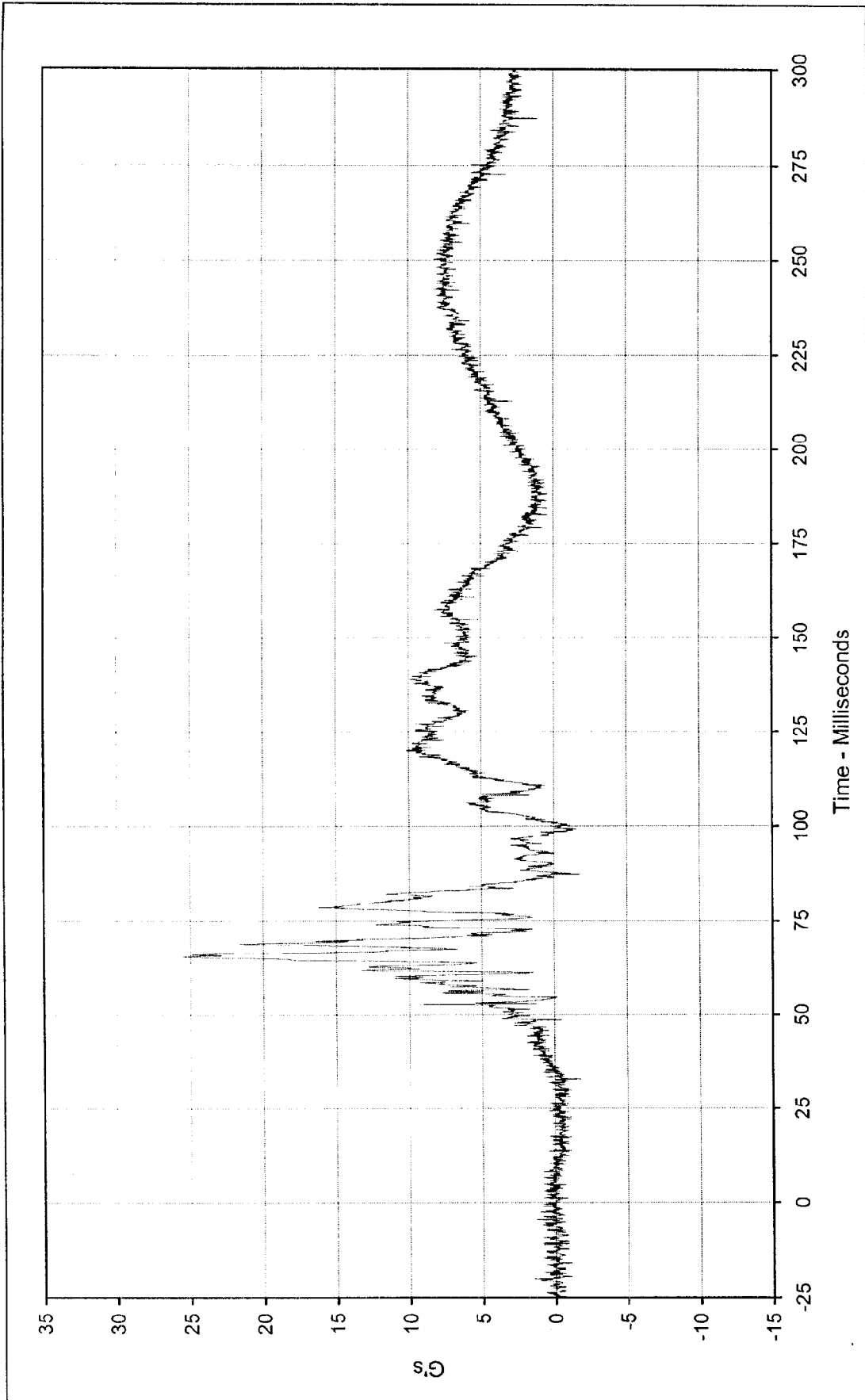
Minimum Value: -14.3 at 70.7 Milliseconds

SAE Filter Class: 1000

Date of Test: 10/27/98

Curve Number: FIL-046





Curve Description: Passenger Head Primary Z

Maximum Value: 25.5 at 65.5 Milliseconds

Minimum Value: -1.8 at 32.8 Milliseconds

SAE Filter Class: 1000

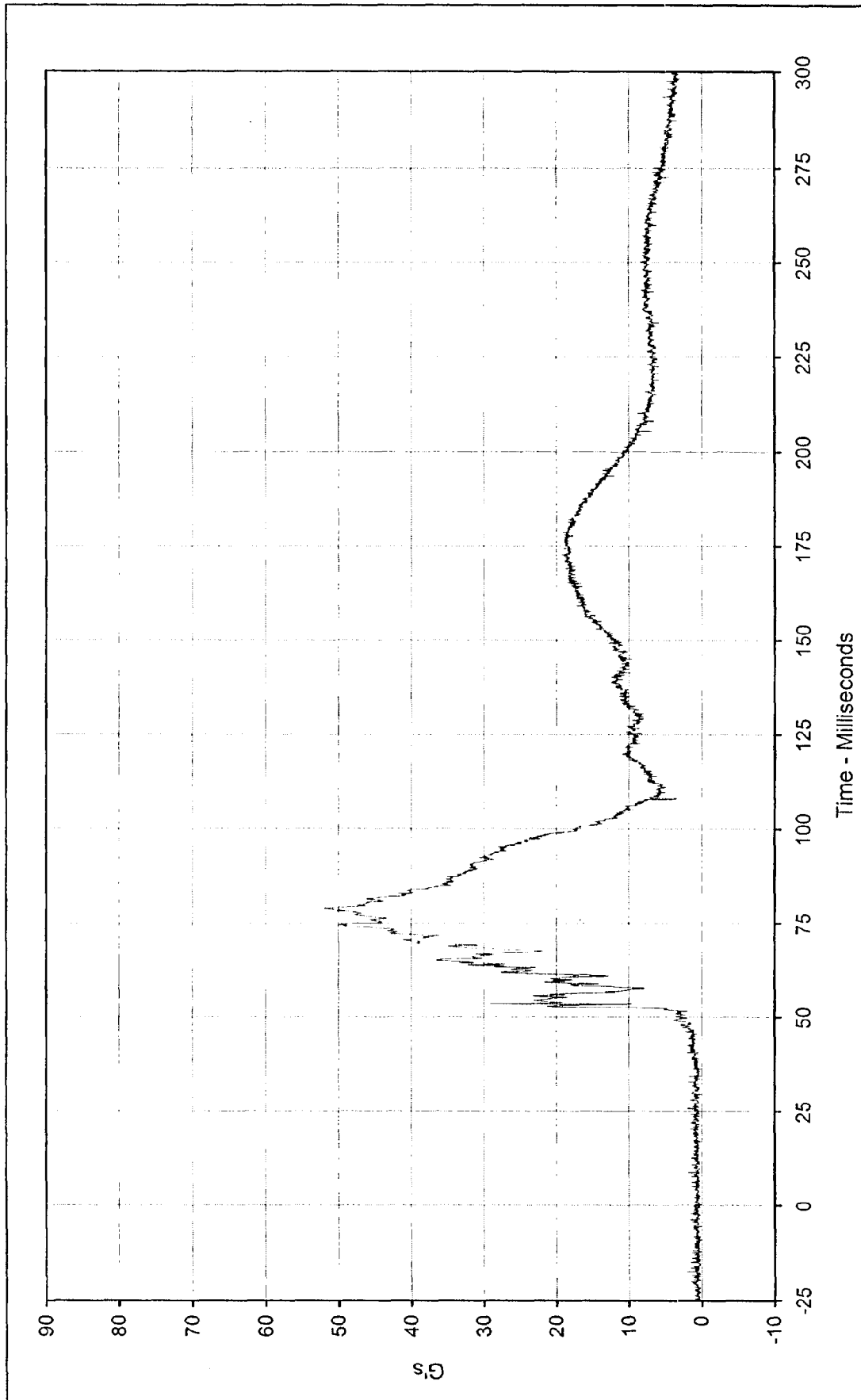
Date of Test: 10/27/98

Curve Number: FIL-047

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan

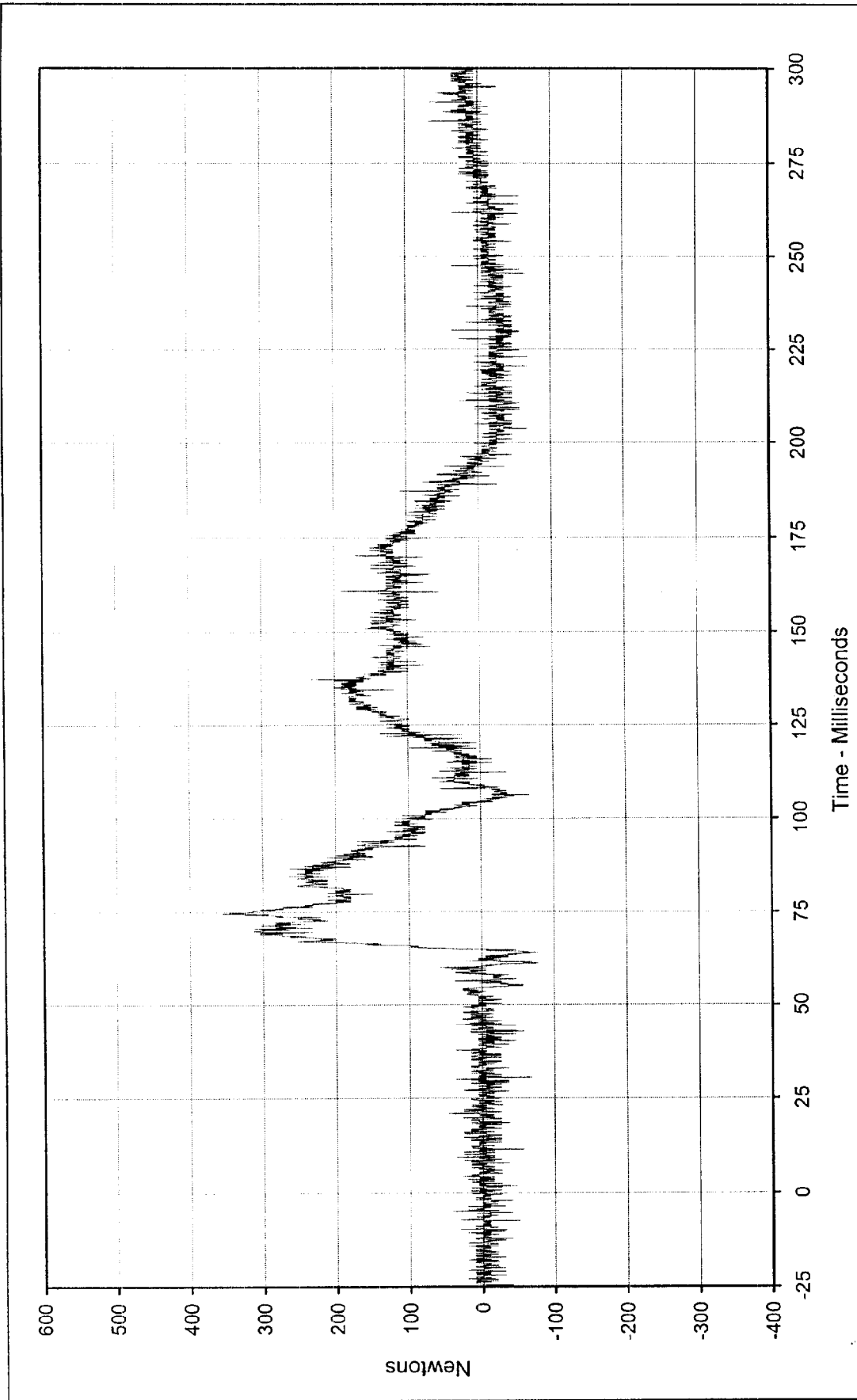




Curve Description: Passenger Head Resultant Primary
 Maximum Value: 52.0 at 79.3 Milliseconds
 Minimum Value: 0.0 at 0.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 10/27/98
 Curve Number: RES-045

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan

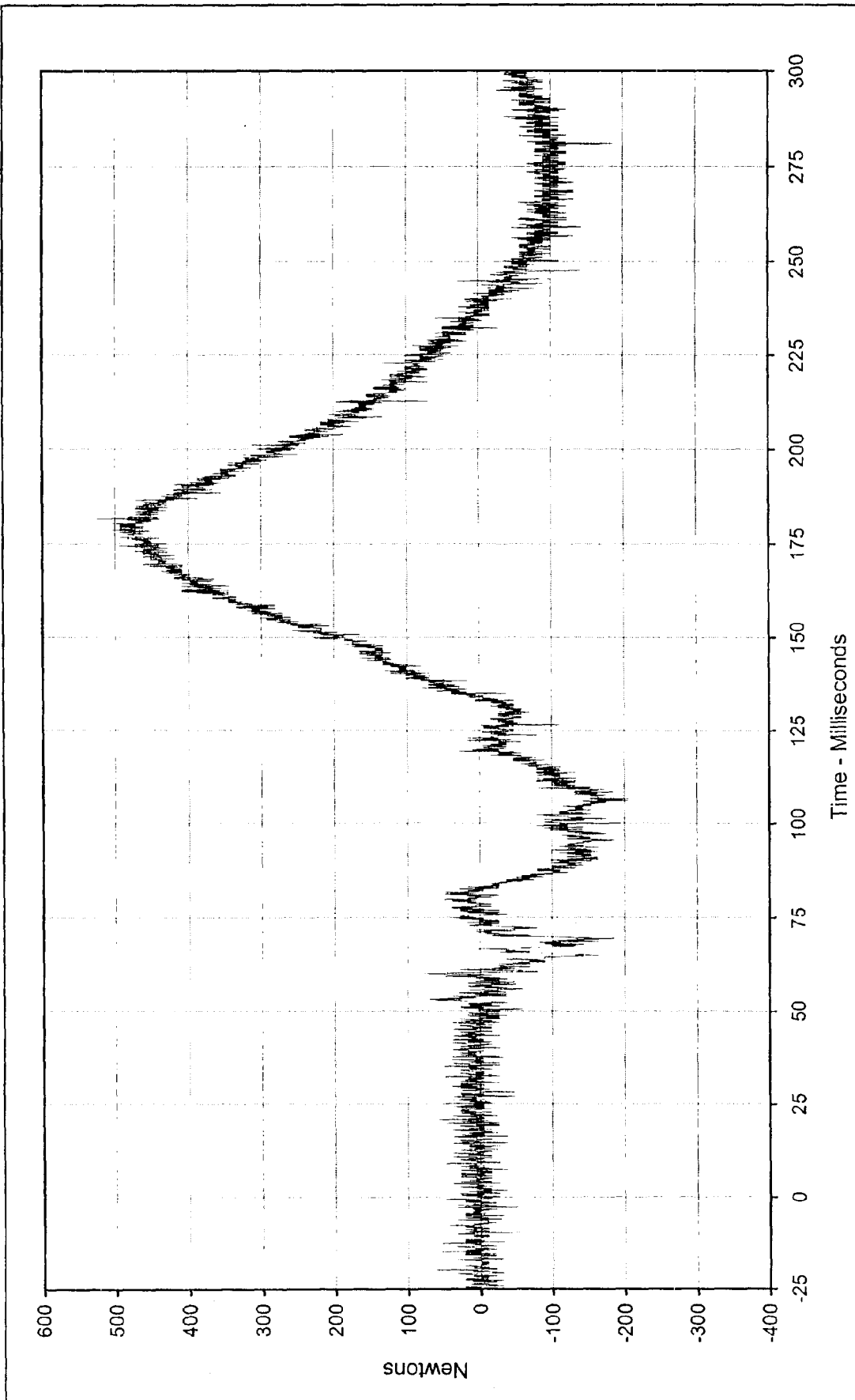




Curve Description: Passenger Neck Force X
 Maximum Value: 355.8 at 74.6 Milliseconds
 Minimum Value: -77.5 at 61.0 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 10/27/98
 Curve Number: FIL-048

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Passenger Neck Force Y Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 524.8 at 182.0 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

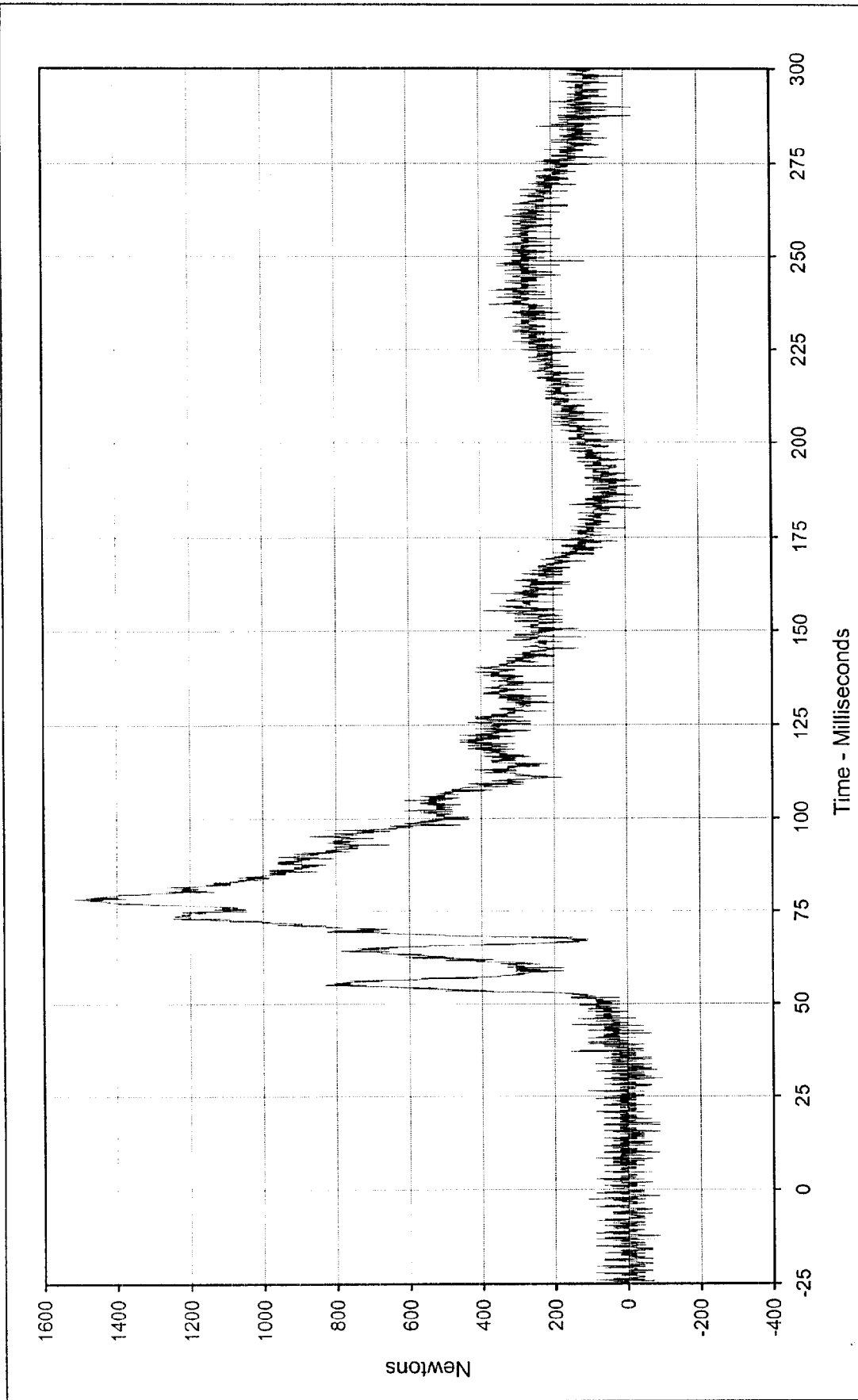
Minimum Value: -206.3 at 106.3 Milliseconds

SAE Filter Class: 1000

Date of Test: 10/27/98

Curve Number: FIL-049





Curve Description: Passenger Neck Force Z Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 1516.6 at 78.3 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

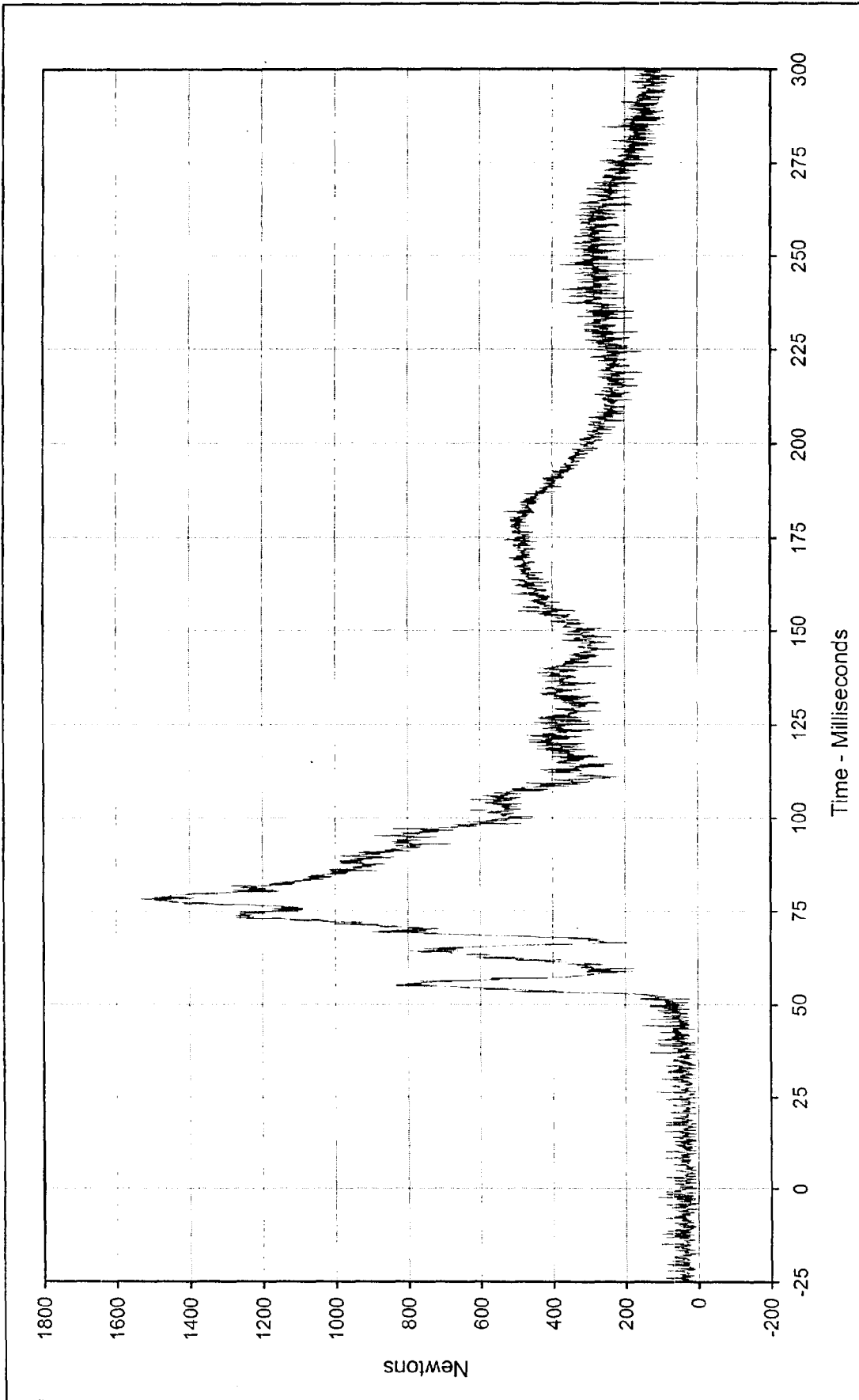
Minimum Value: -96.3 at 29.9 Milliseconds

SAE Filter Class: 1000

Date of Test: 10/27/98

Curve Number: FIL-050





Curve Description: Passenger Neck Force Resultant

Maximum Value: 1531.3 at 78.3 Milliseconds

Minimum Value: 7.1 at 0.2 Milliseconds

SAE Filter Class: 1000

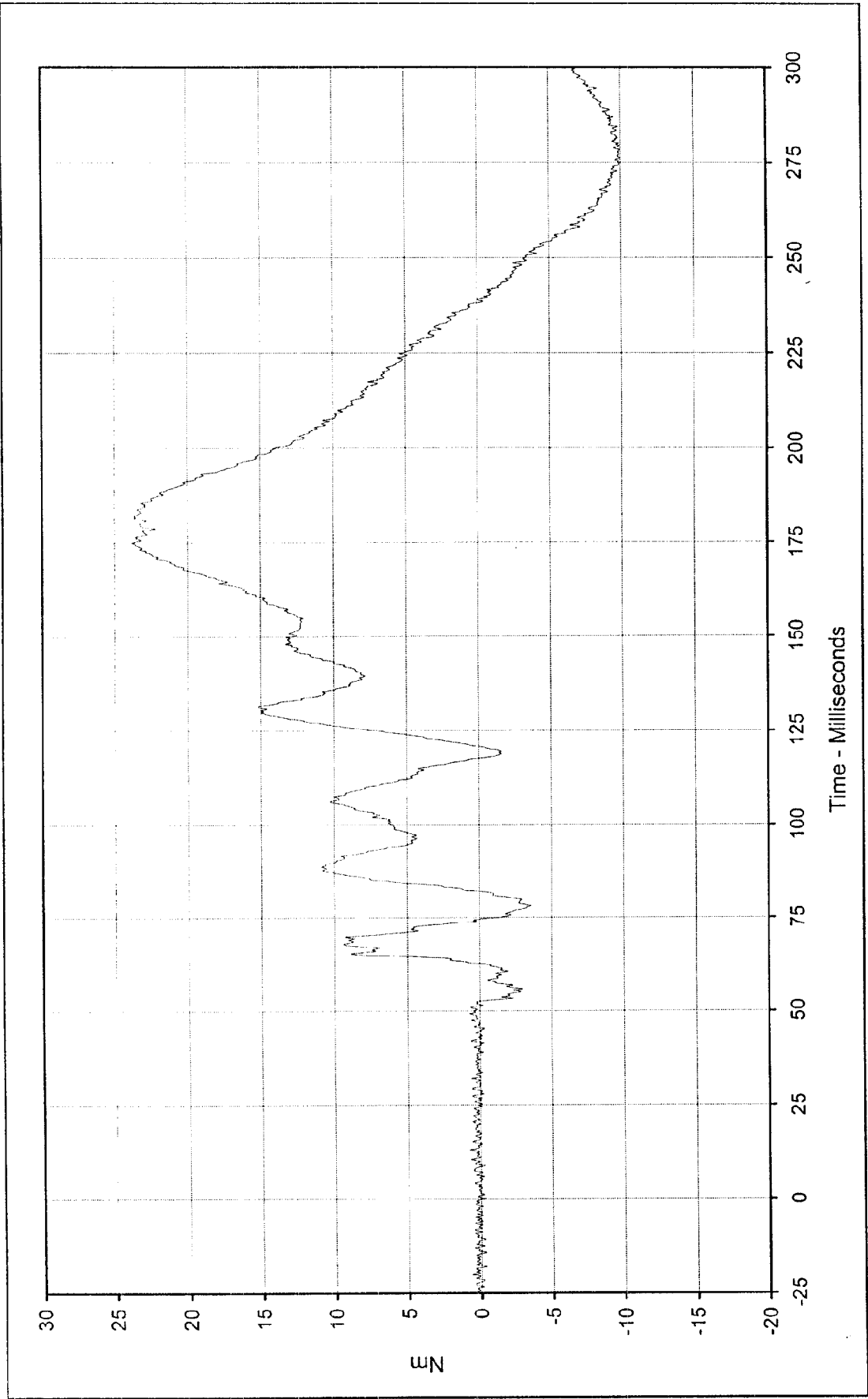
Date of Test: 10/27/98

Curve Number: RES-048

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Passenger Neck Moment X

Maximum Value: 23.8 at 175.0 Milliseconds

Minimum Value: -10.0 at 278.2 Milliseconds

SAE Filter Class: 600

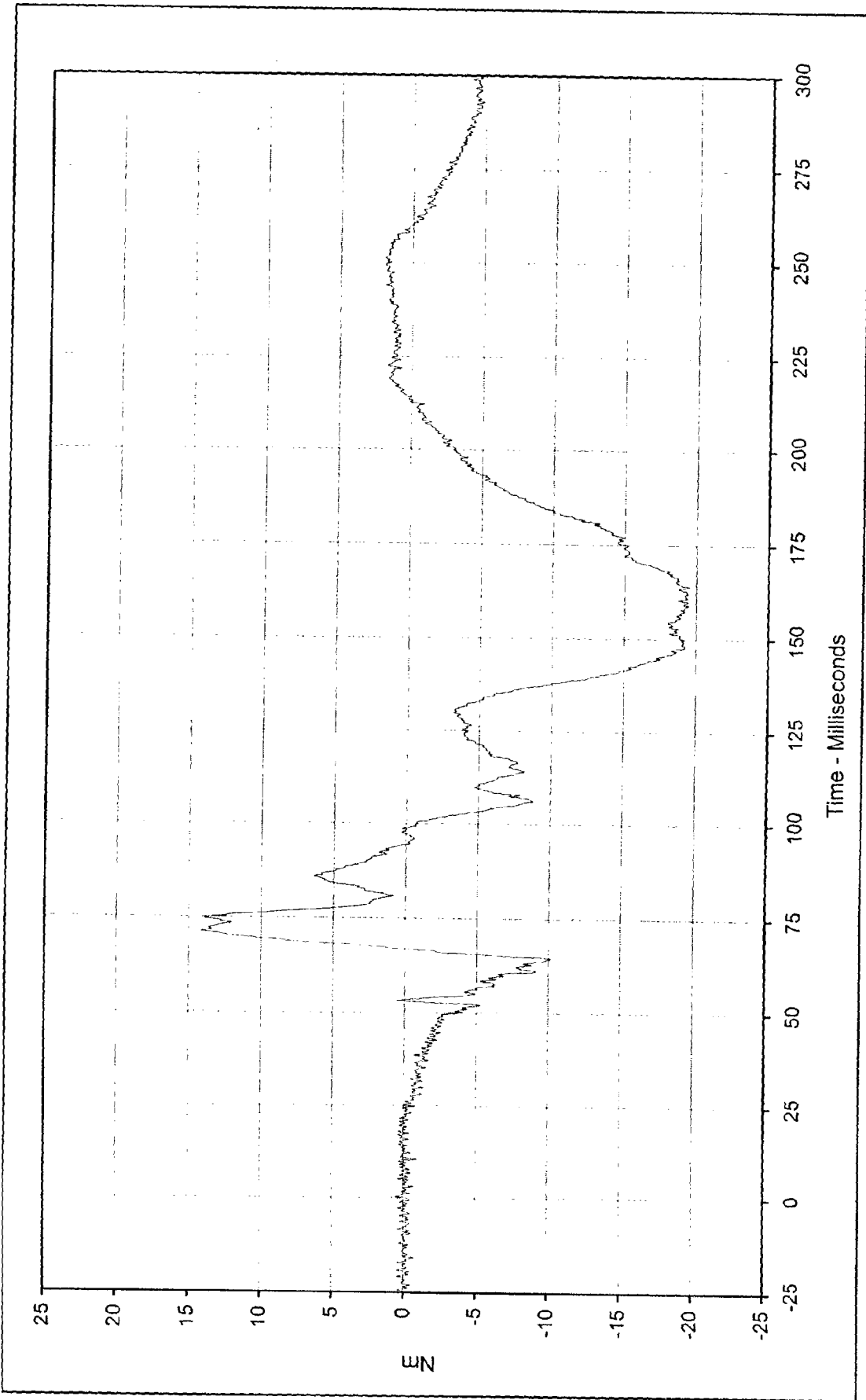
Date of Test: 10/27/98

Curve Number: FIL-051

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan

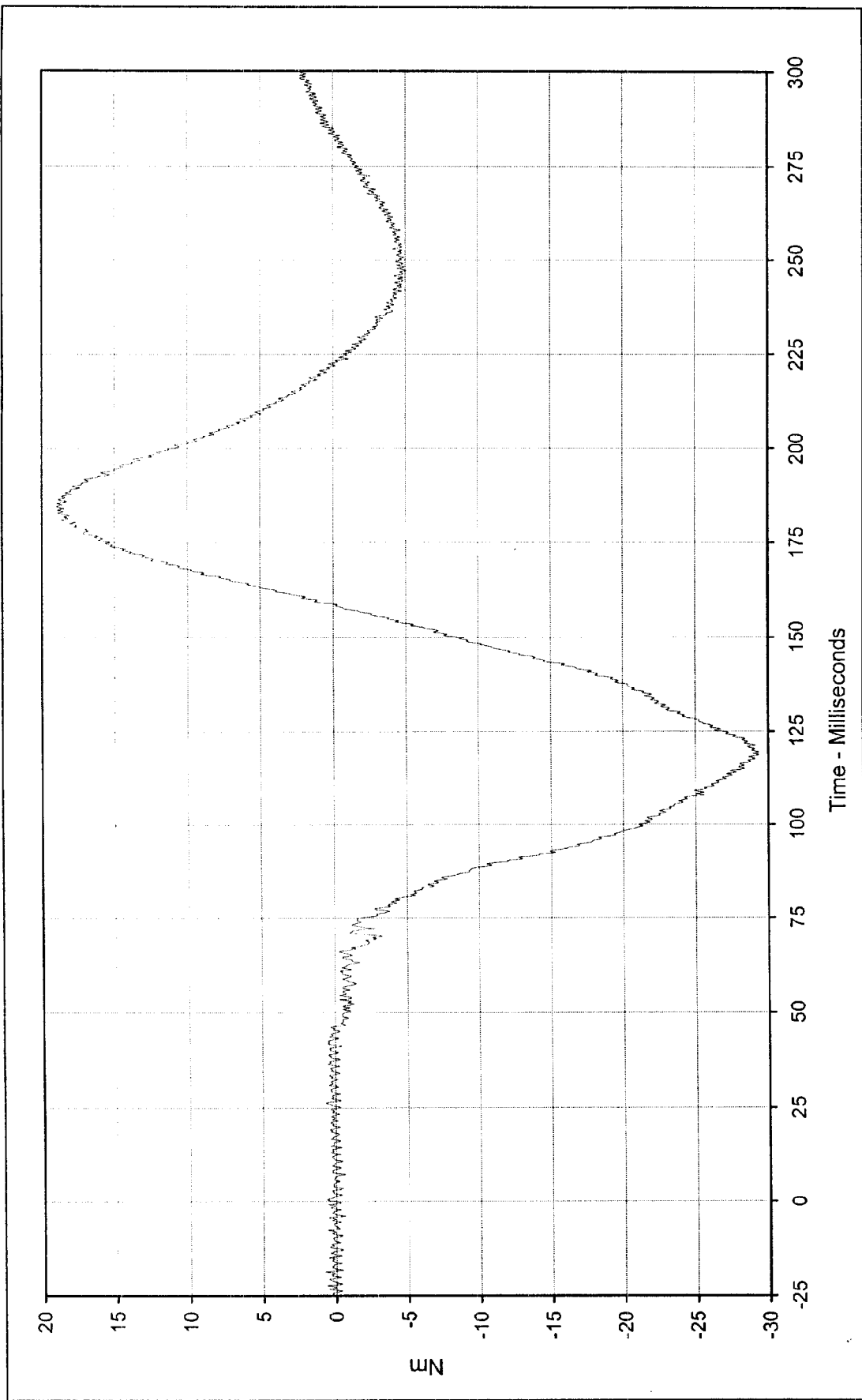




Curve Description: Passenger Neck Moment Y
 Maximum Value: 14.1 at 71.3 Milliseconds
 Minimum Value: -19.5 at 163.9 Milliseconds
 SAE Filter Class: 600
 Date of Test: 10/27/98
 Curve Number: FIL-052

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Passenger Neck Moment Z

Maximum Value: 19.0 at 184.7 Milliseconds

Minimum Value: -29.4 at 119.4 Milliseconds

SAE Filter Class: 600

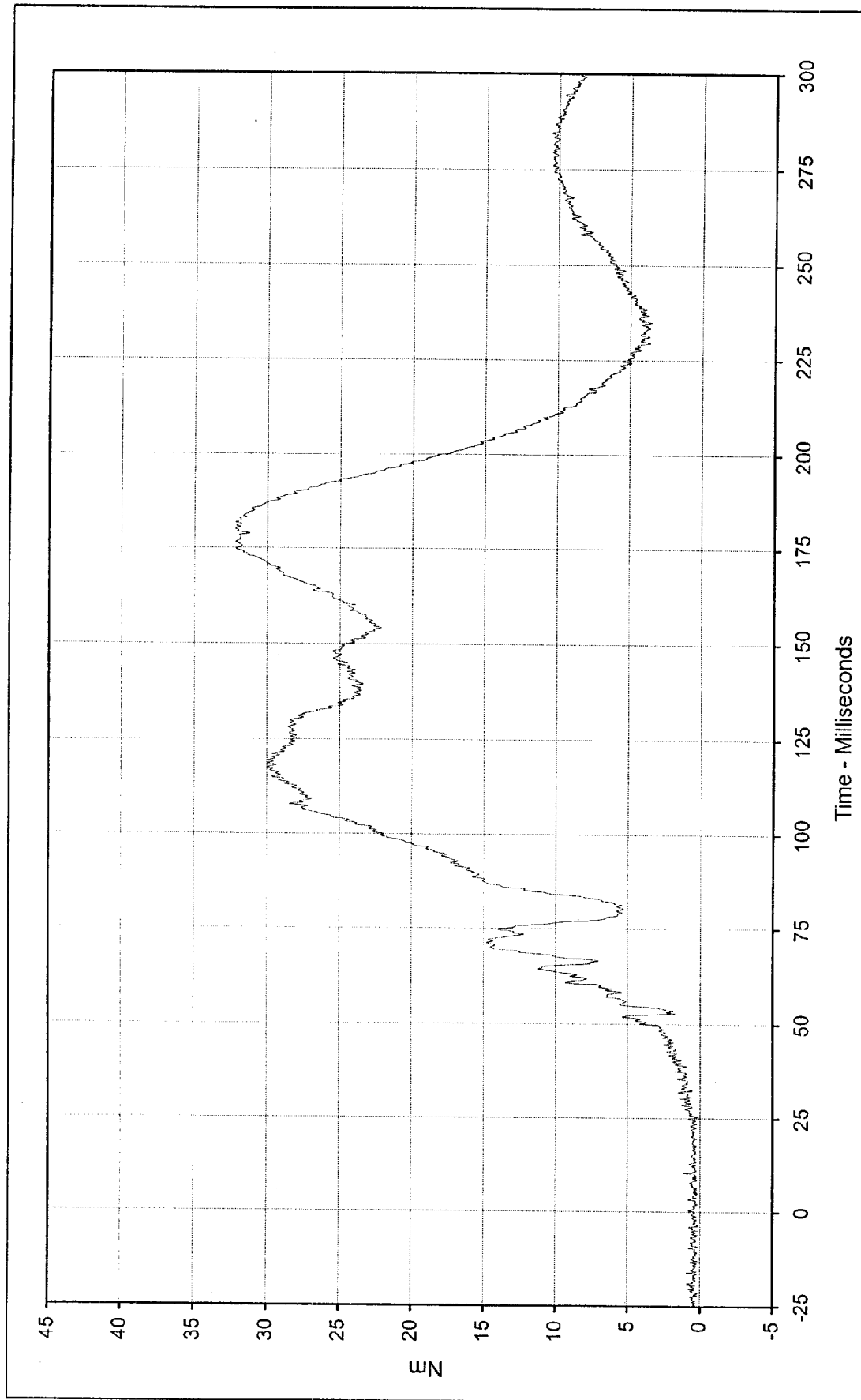
Date of Test: 10/27/98

Curve Number: FIL-053

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Passenger Neck Moment Resultant

Maximum Value: 32.2 at 180.1 Milliseconds

Minimum Value: 0.0 at 25.4 Milliseconds

SAE Filter Class: 600

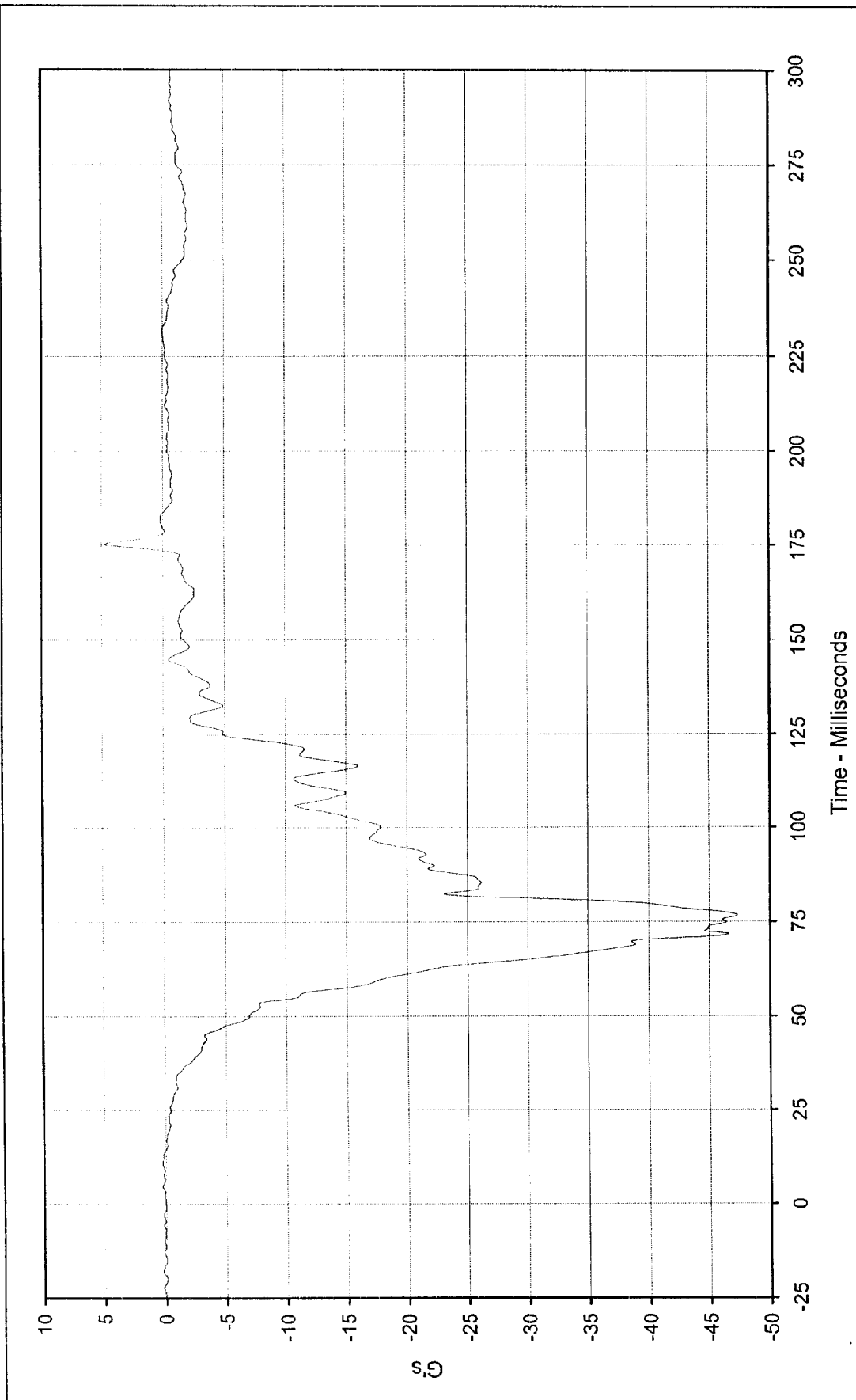
Date of Test: 10/27/98

Curve Number: RES-051

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan

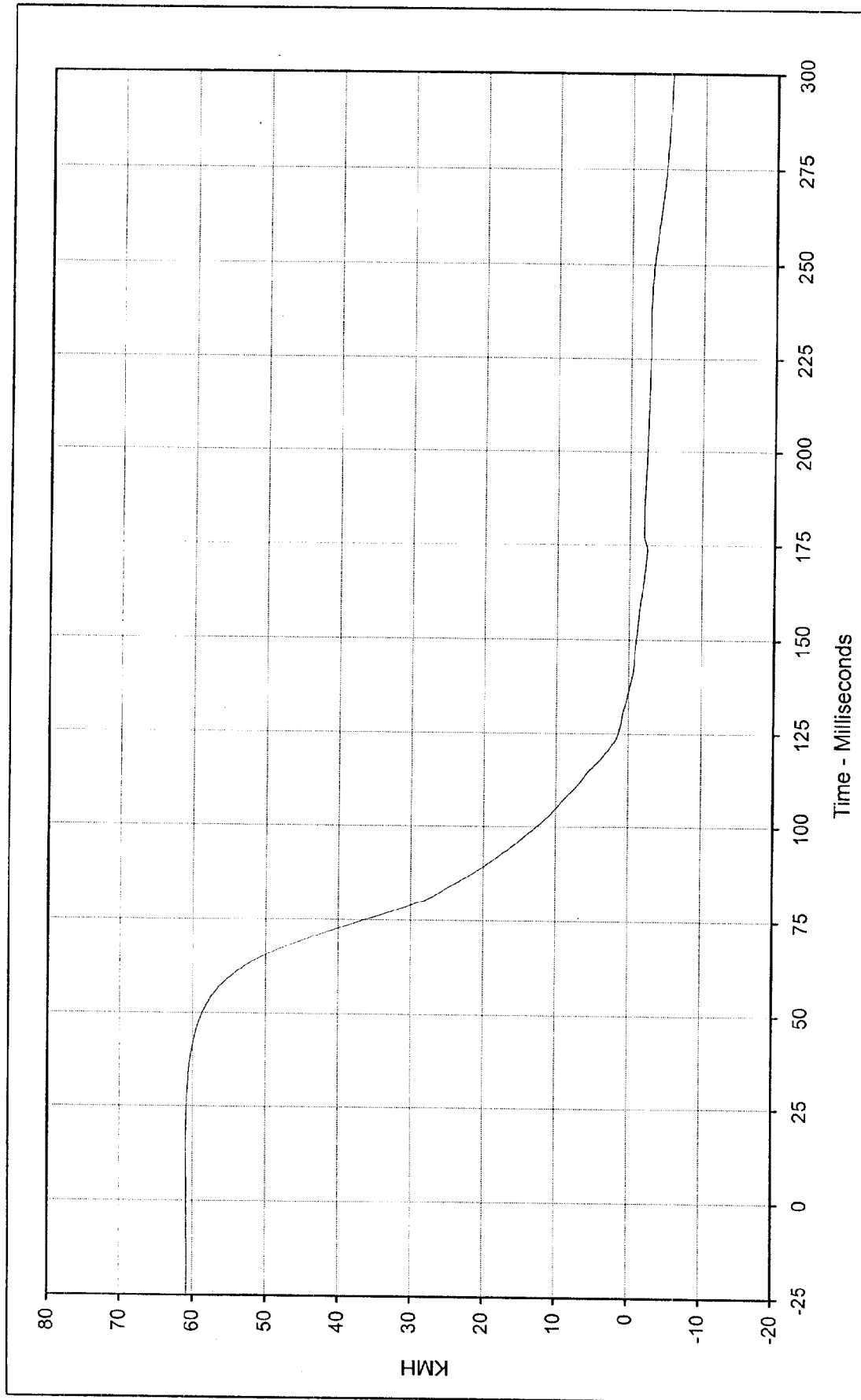




Curve Description: Passenger Chest Primary X
 Maximum Value: 4.7 at 175.5 Milliseconds
 Minimum Value: -47.4 at 76.6 Milliseconds
 SAE Filter Class: 180
 Date of Test: 10/27/98
 Curve Number: FIL-054

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan

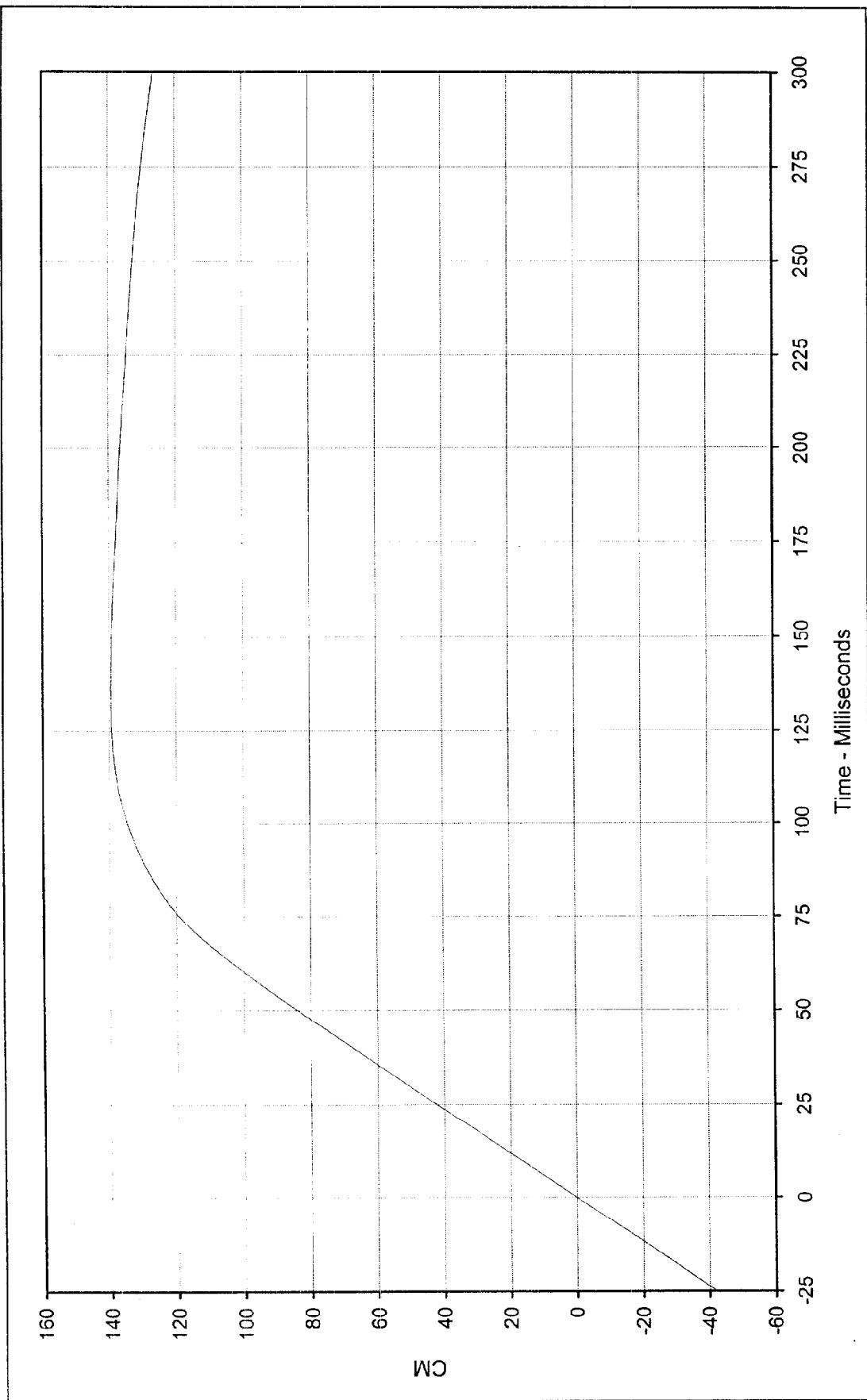




Curve Description: Passenger Chest Primary X Velocity
Maximum Value: 60.9 at 14.2 Milliseconds
Minimum Value: -5.5 at 299.9 Milliseconds
SAE Filter Class: 180
Date of Test: 10/27/98
Curve Number: IN1-054

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
Test Vehicle: 1998 Dodge Neon 4 Door Sedan

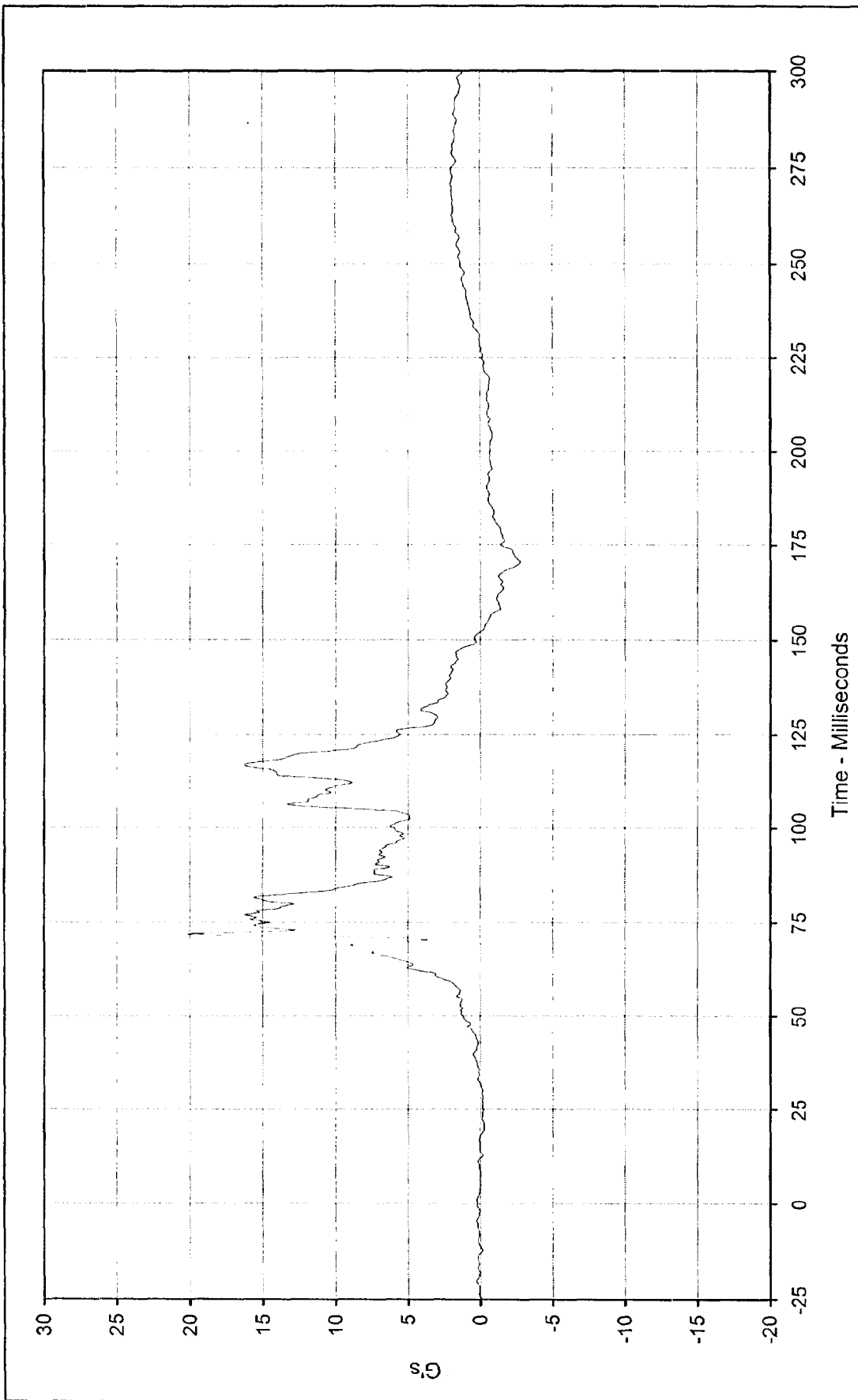




Curve Description: Passenger Chest Primary X Displ.
 Maximum Value: 139.4 at 136.5 Milliseconds
 Minimum Value: 0.1 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 10/27/98
 Curve Number: IN2-054

Testing Program 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Passenger Chest Primary Y

Maximum Value: 20.2 at 71.9 milliseconds

Minimum Value: -2.7 at 170.5 milliseconds

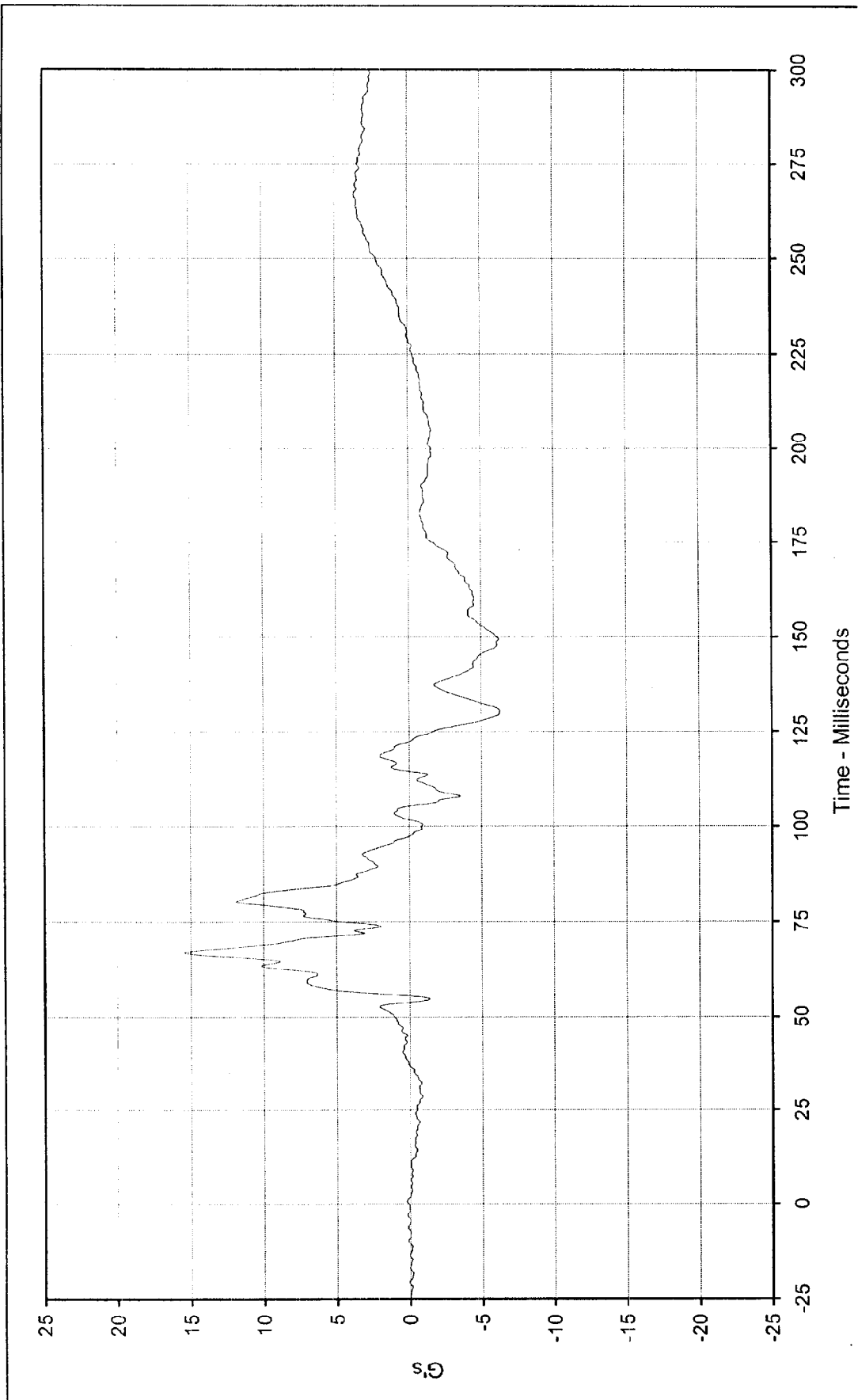
SAE Filter Class: 180

Date of Test: 10/27/98

Curve Number: FIL-055

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311





Curve Description: Passenger Chest Primary Z

Maximum Value: 15.4 at 66.9 Milliseconds

Minimum Value: -6.3 at 130.3 Milliseconds

SAE Filter Class: 180

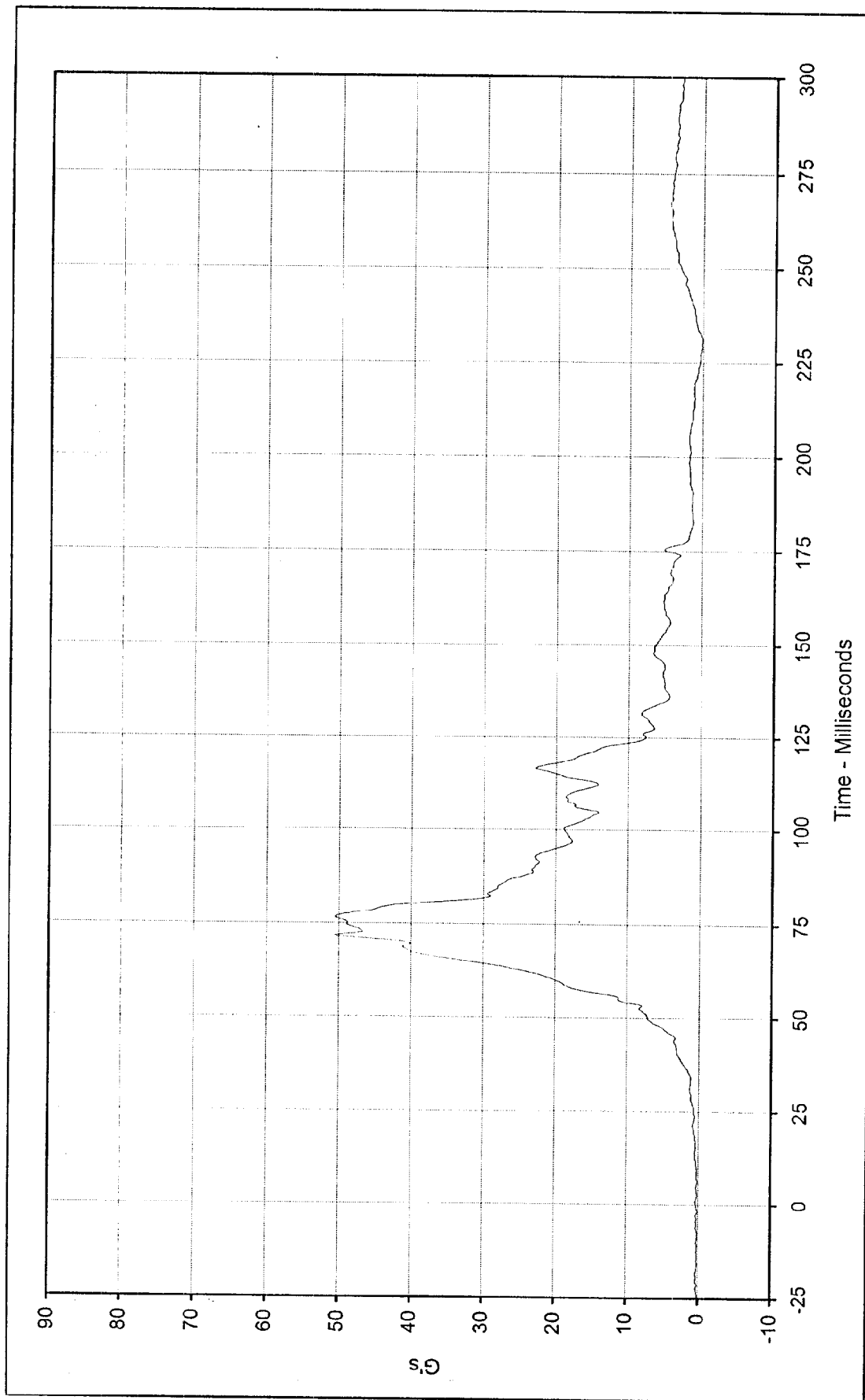
Date of Test: 10/27/98

Curve Number: FIL-056

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Passenger Chest Resultant Primary Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 50.5 at 71.8 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

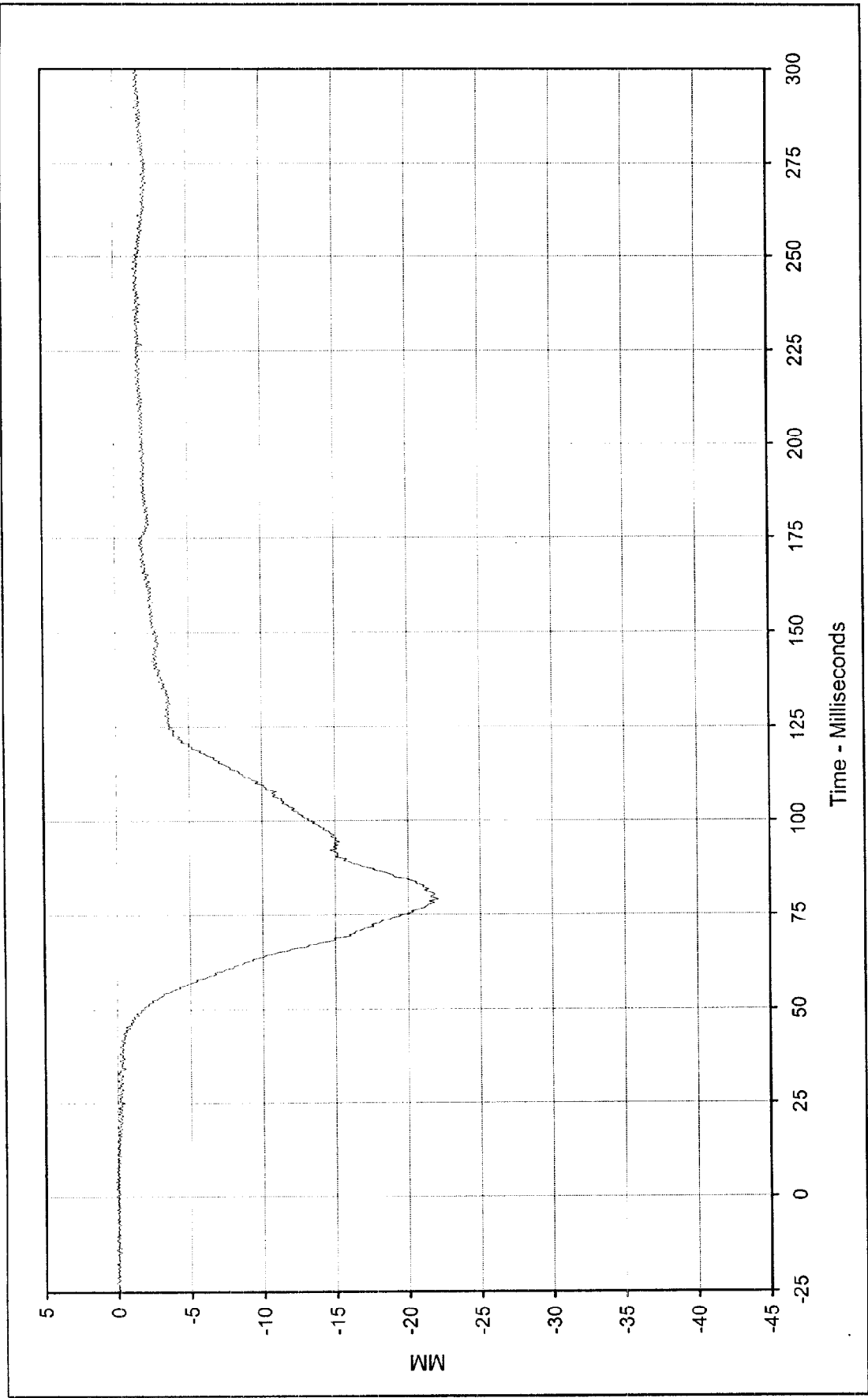
Minimum Value: 0.0 at 231.0 Milliseconds

SAE Filter Class: 180

Date of Test: 10/27/98

Curve Number: RES-054

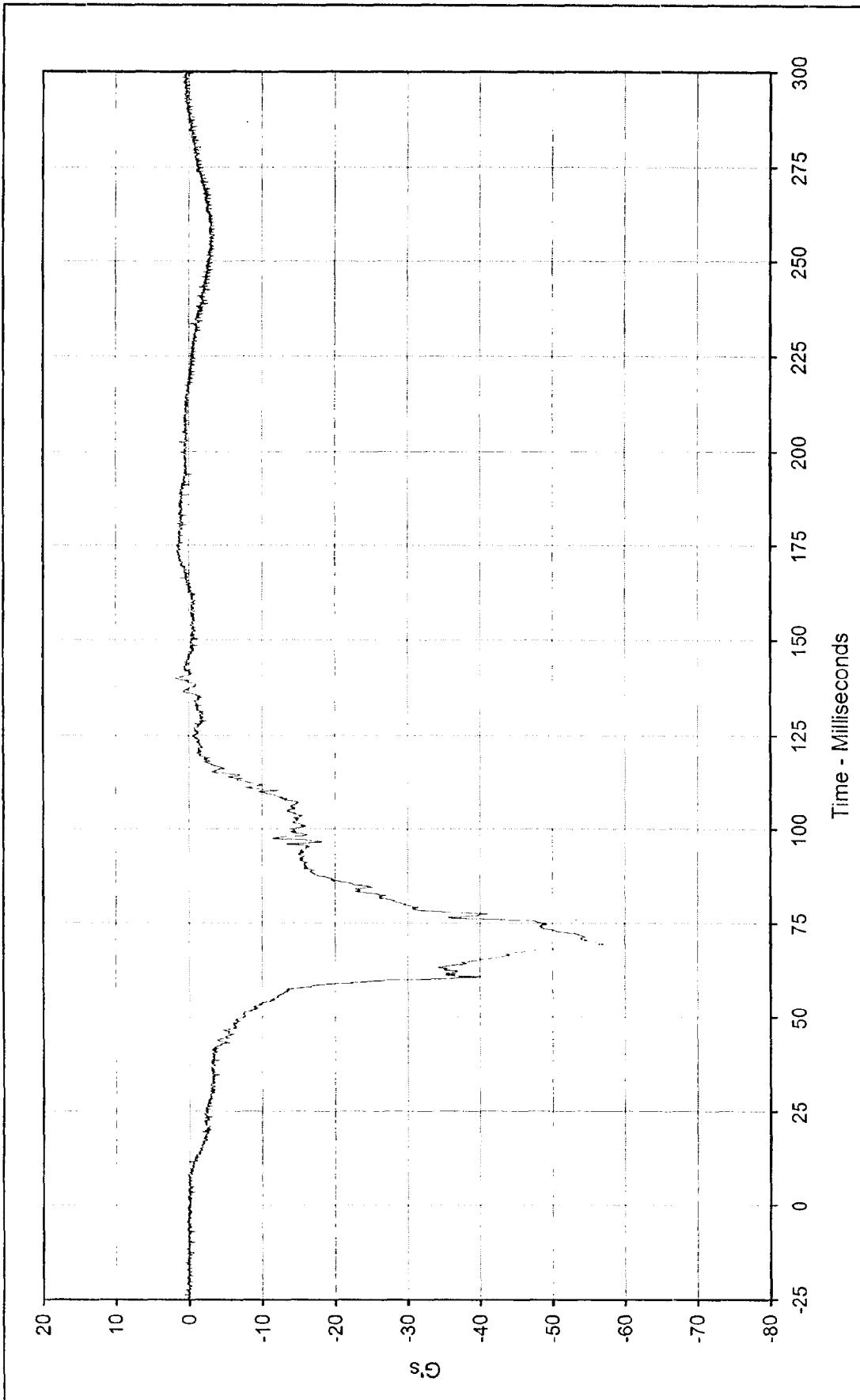




Curve Description: Passenger Chest Displacement X
Maximum Value: 0.2 at 3.9 Milliseconds
Minimum Value: -22.1 at 79.1 Milliseconds
SAE Filter Class: 600
Date of Test: 10/27/98
Curve Number: FIL-057

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Passenger Pelvis X

Maximum Value: 1.8 at 139.9 Milliseconds

Minimum Value: -57.1 at 69.5 Milliseconds

SAE Filter Class: 1000

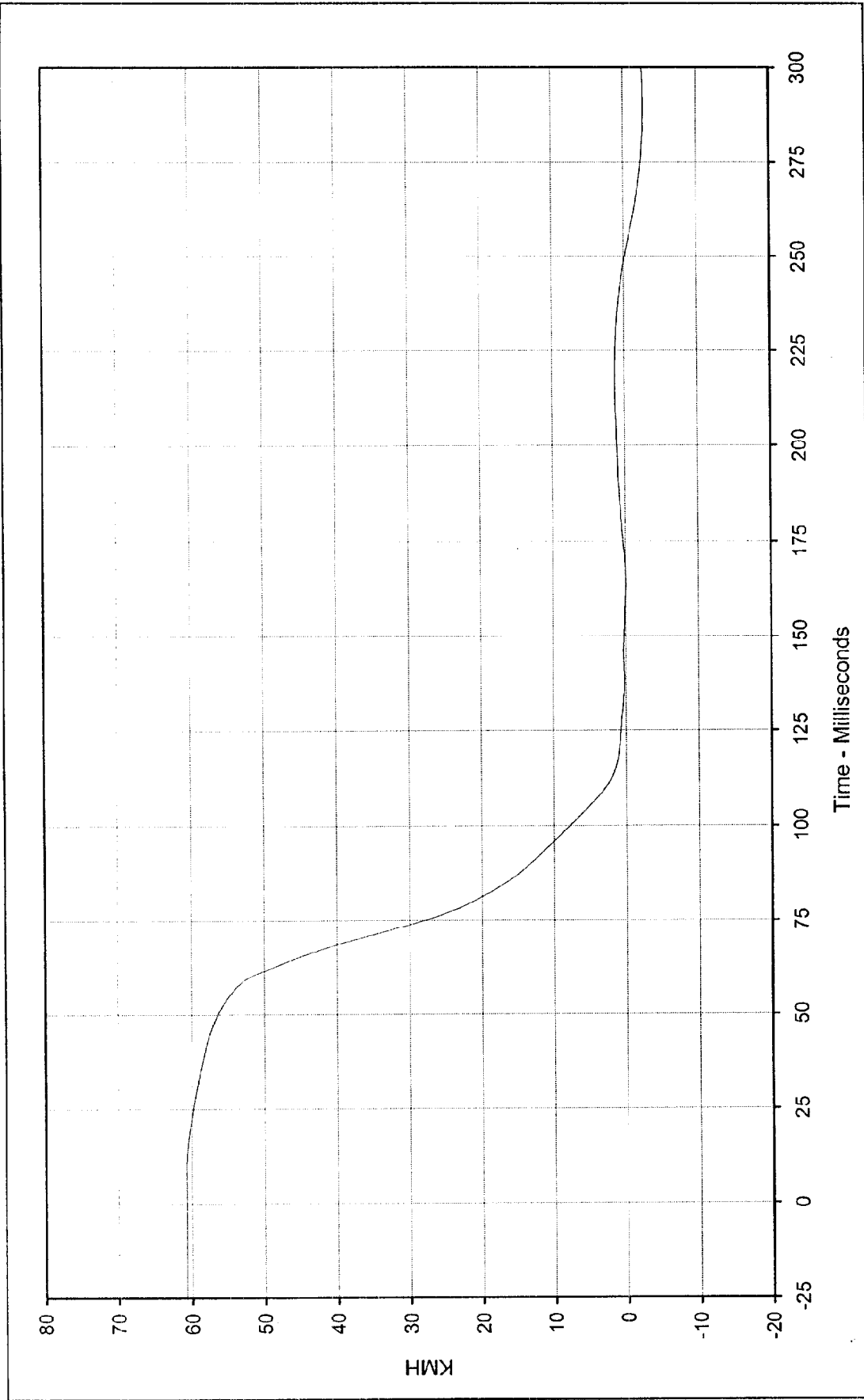
Date of Test: 10/27/98

Curve Number: FIL-058

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Passenger Pelvis X Velocity

Maximum Value: 60.8 at 0.0 Milliseconds

Minimum Value: -2.7 at 289.6 Milliseconds

SAE Filter Class: 180

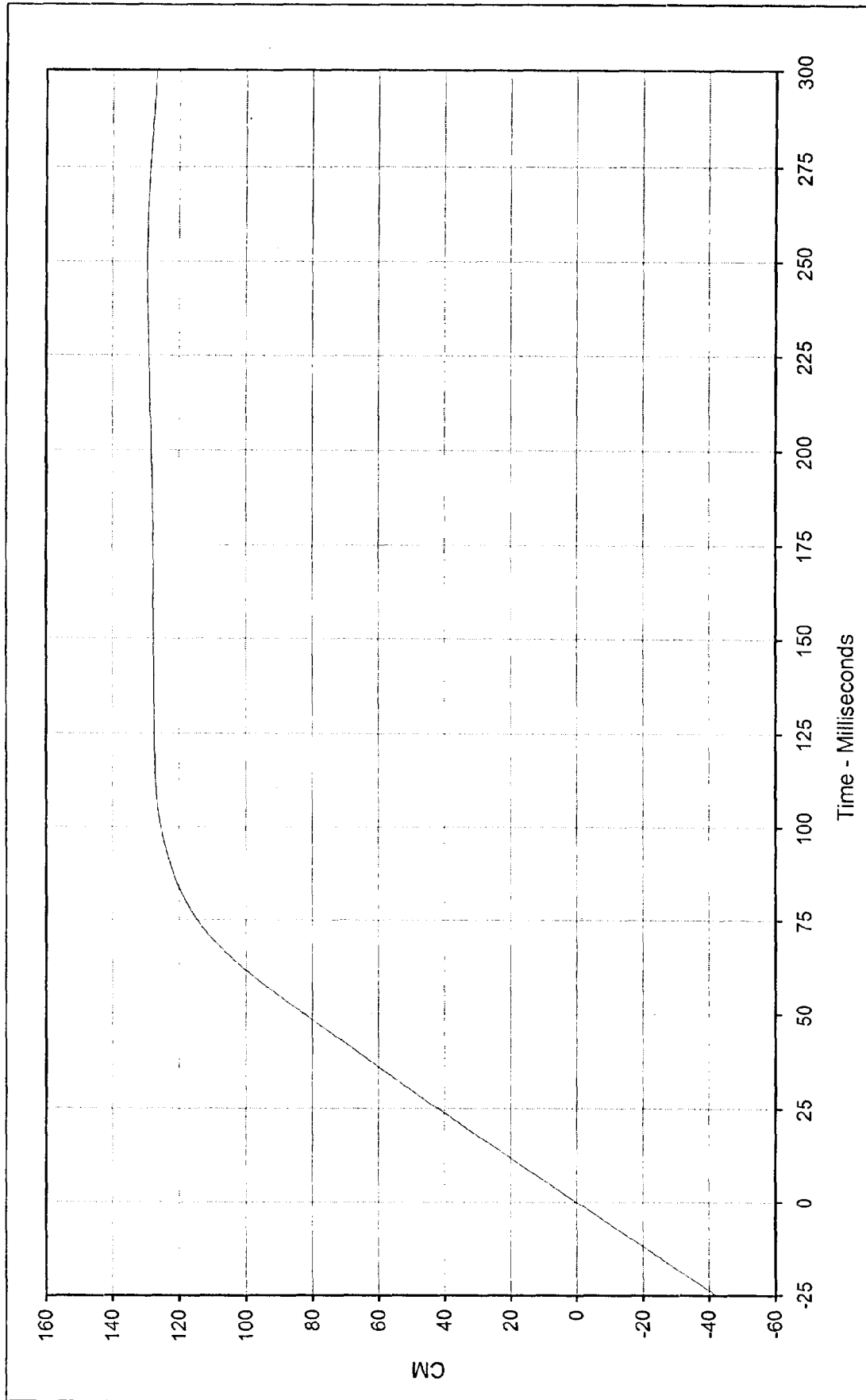
Date of Test: 10/27/98

Curve Number: IN1-058

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Passenger Pelvis X Displ. Testing Program 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 129.6 at 248.6 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

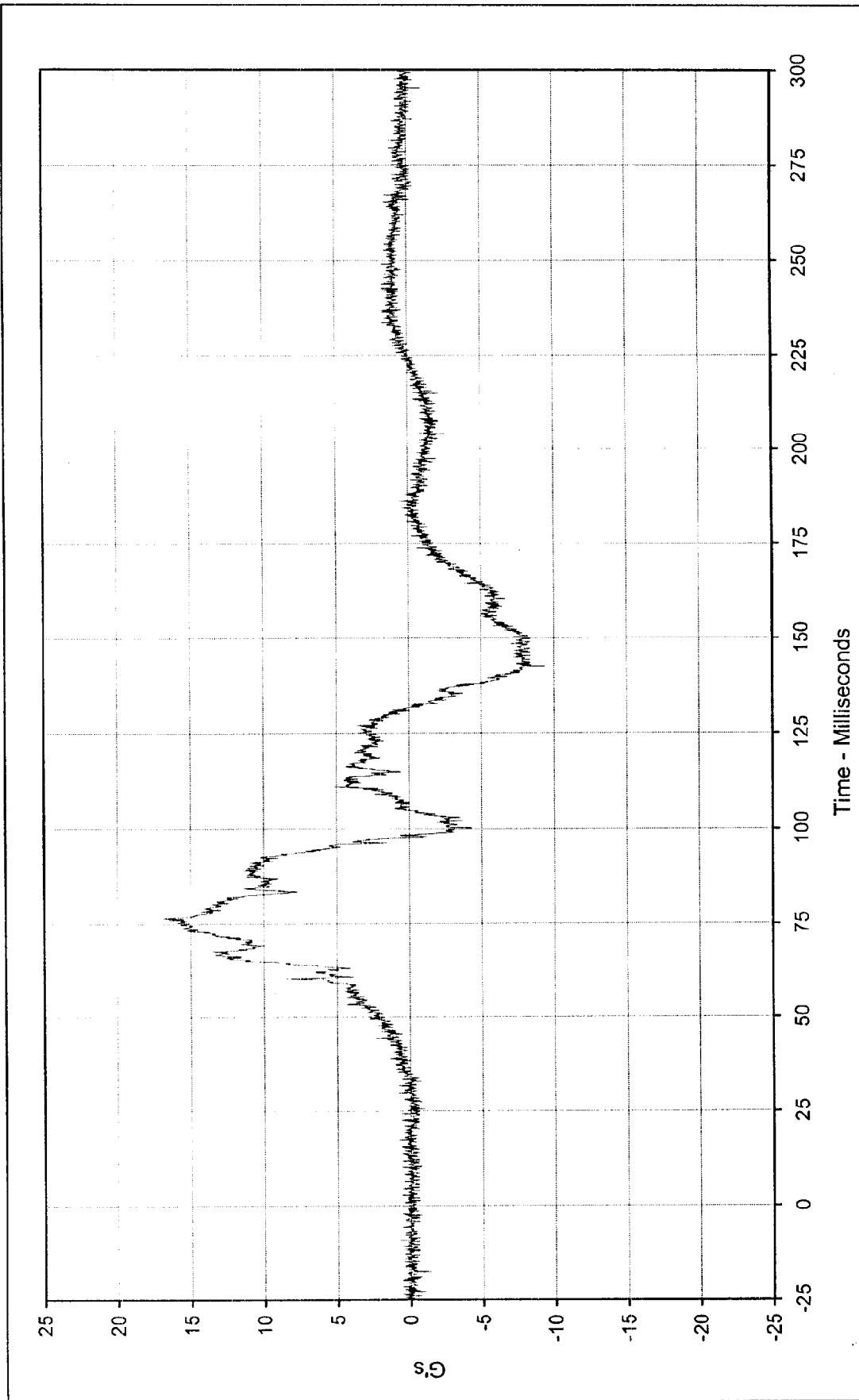
Minimum Value: 0.1 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 10/27/98

Curve Number: IN2-058

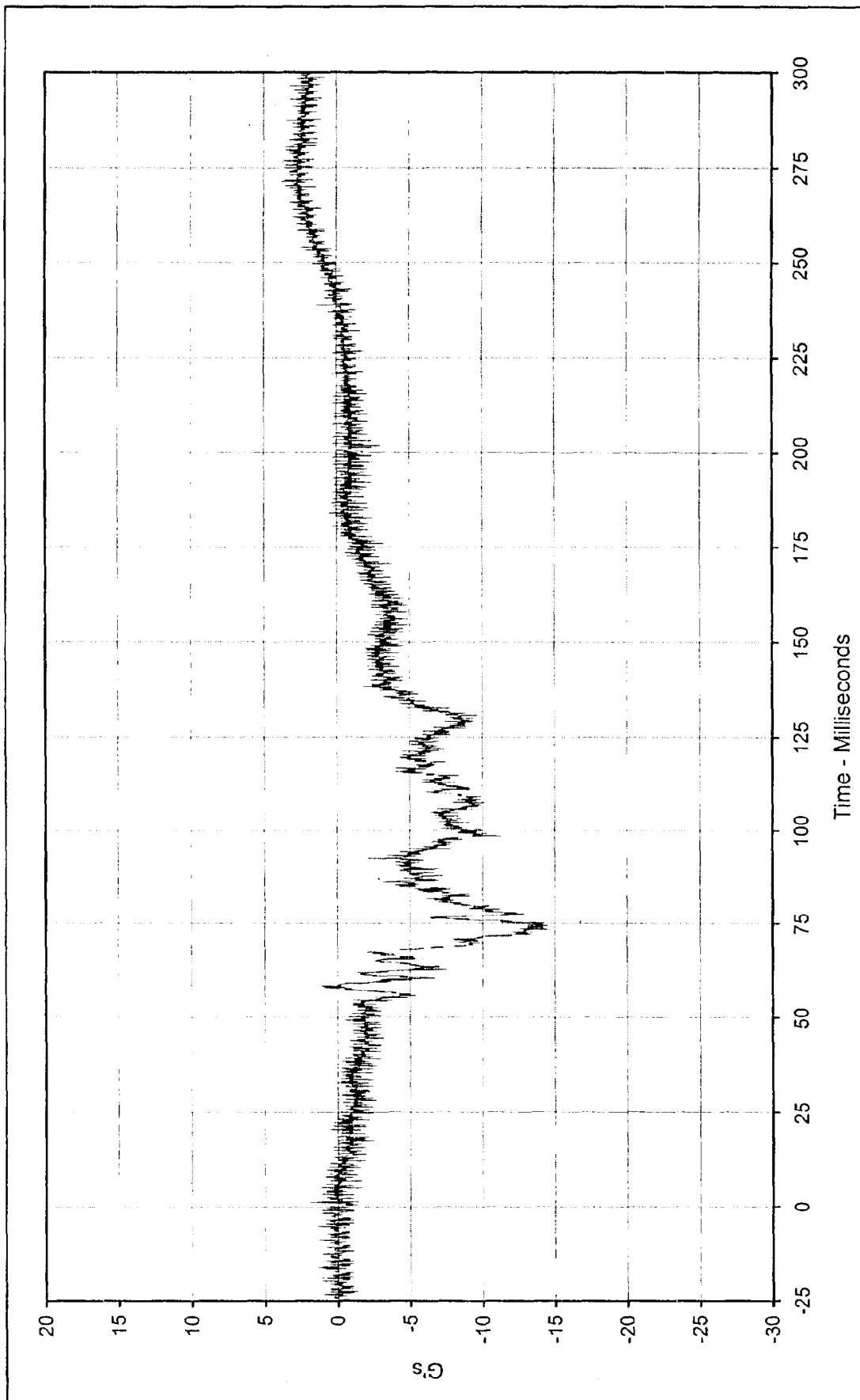




Curve Description: Passenger Pelvis Y
 Maximum Value: 16.8 at 76.5 Milliseconds
 Minimum Value: -9.4 at 142.6 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 10/27/98
 Curve Number: FIL-059

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Passenger Pelvis Z
 Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 3.8 at 271.3 Milliseconds
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan

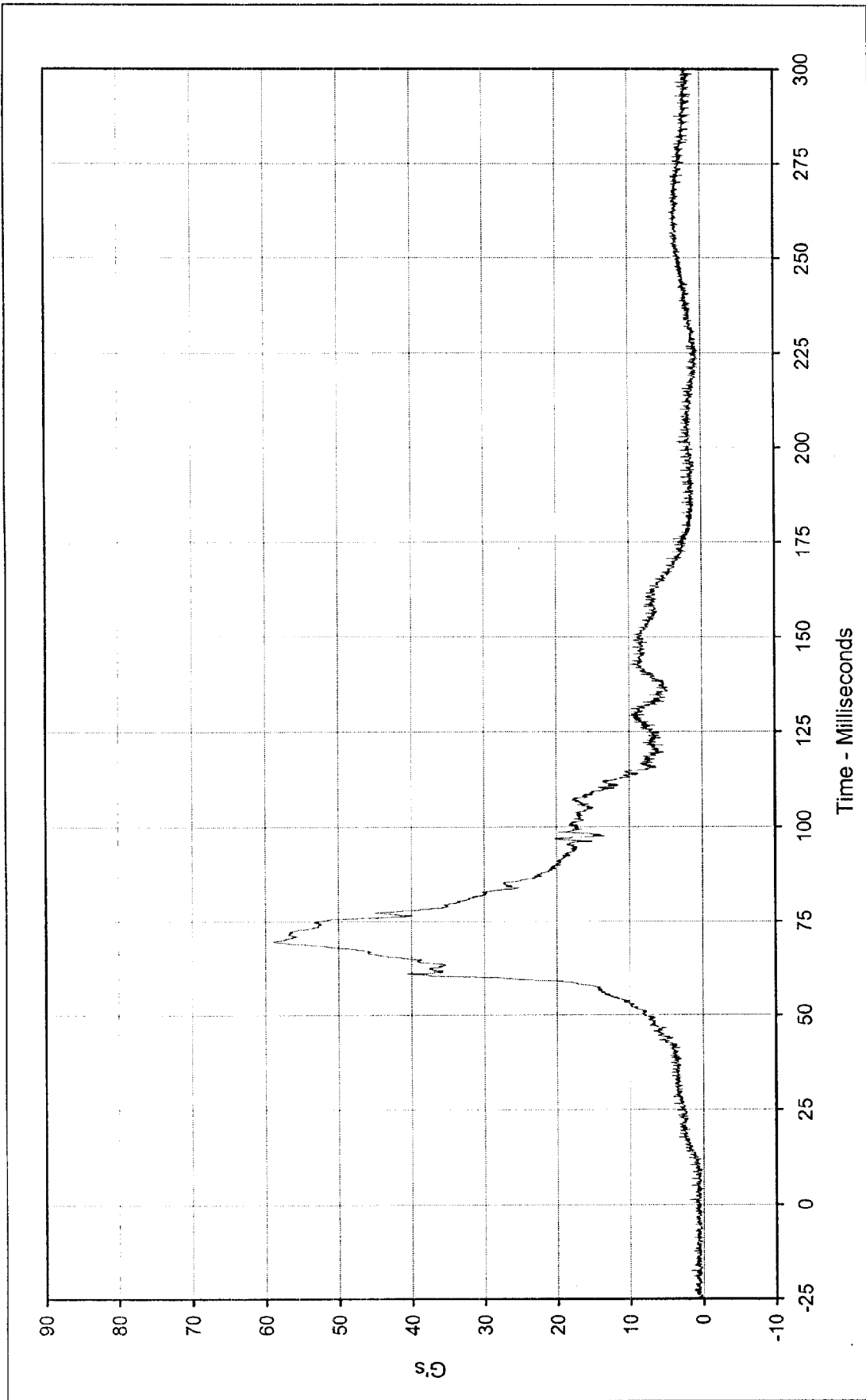
Minimum Value: -14.7 at 73.4 Milliseconds

SAE Filter Class: 1000

Date of Test: 10/27/98

Curve Number: FIL-060

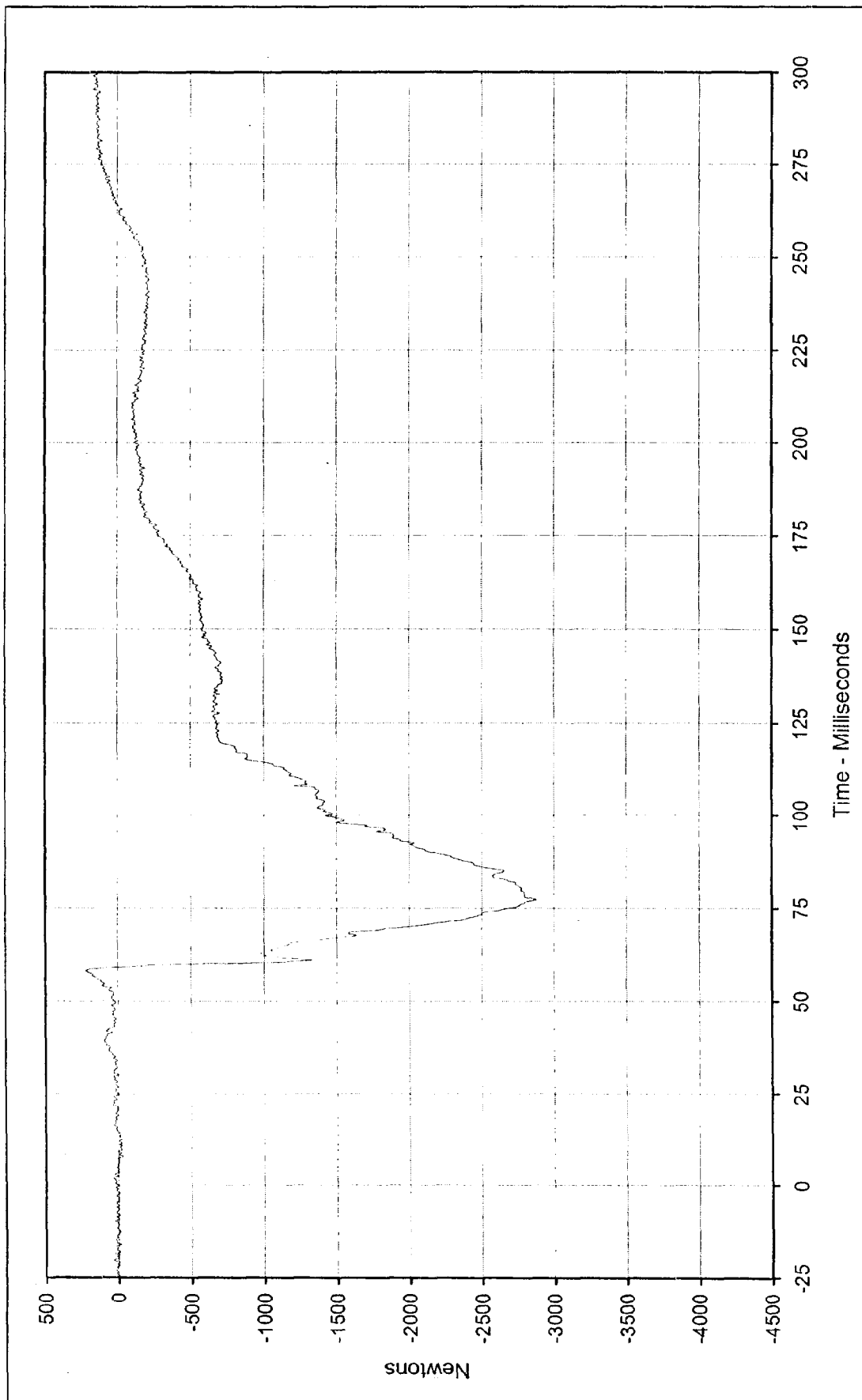




Curve Description: Passenger Pelvis Resultant
 Maximum Value: 58.9 at 69.5 Milliseconds
 Minimum Value: 0.1 at 4.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 10/27/98
 Curve Number: RES-058

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Passenger Left Femur Force Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 221.4 at 57.9 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

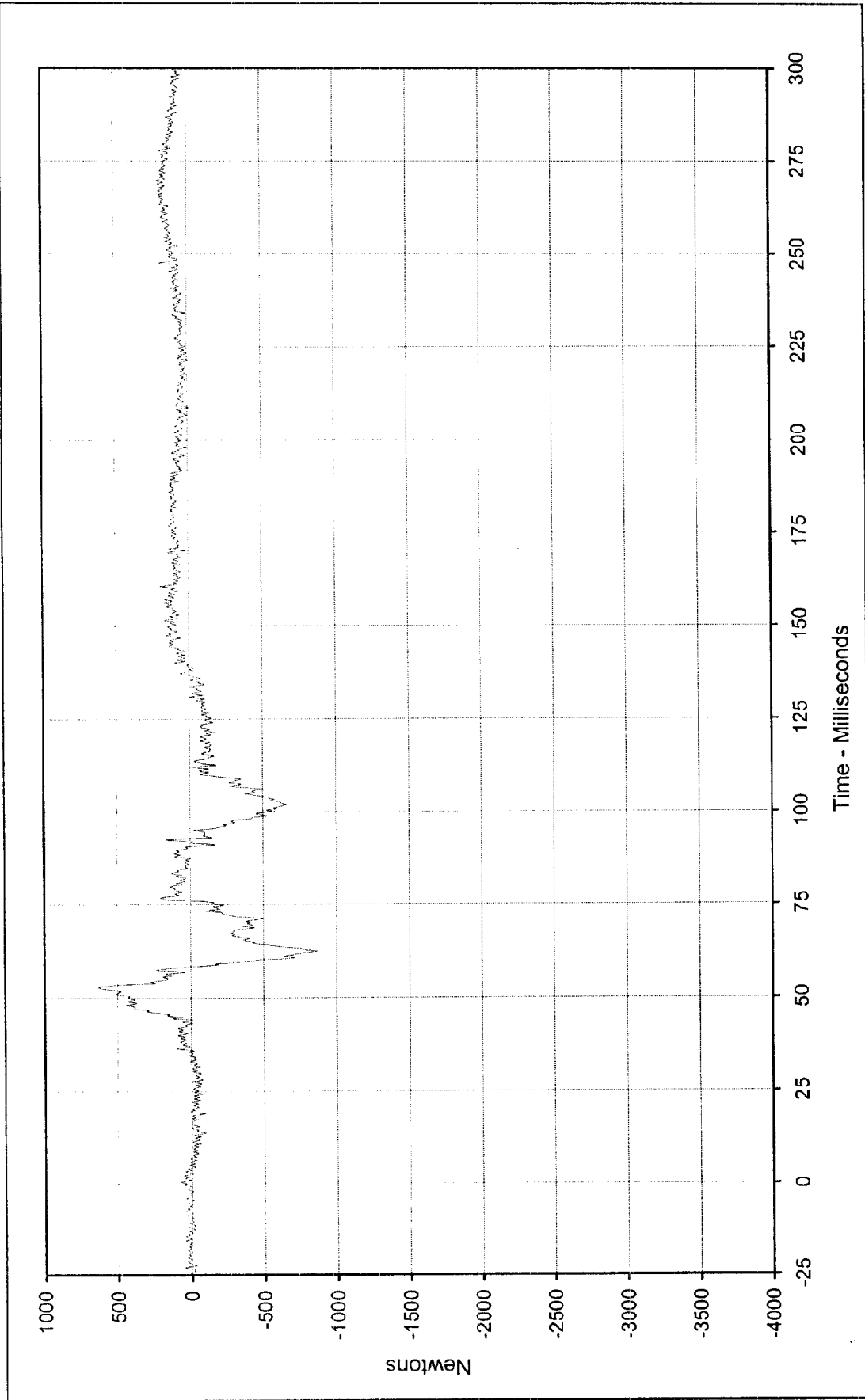
Minimum Value: -2876.2 at 77.2 Milliseconds

SAE Filter Class: 600

Date of Test: 10/27/98

Curve Number: FIL-061





Curve Description: Passenger Right Femur Force Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 633.7 at 52.8 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

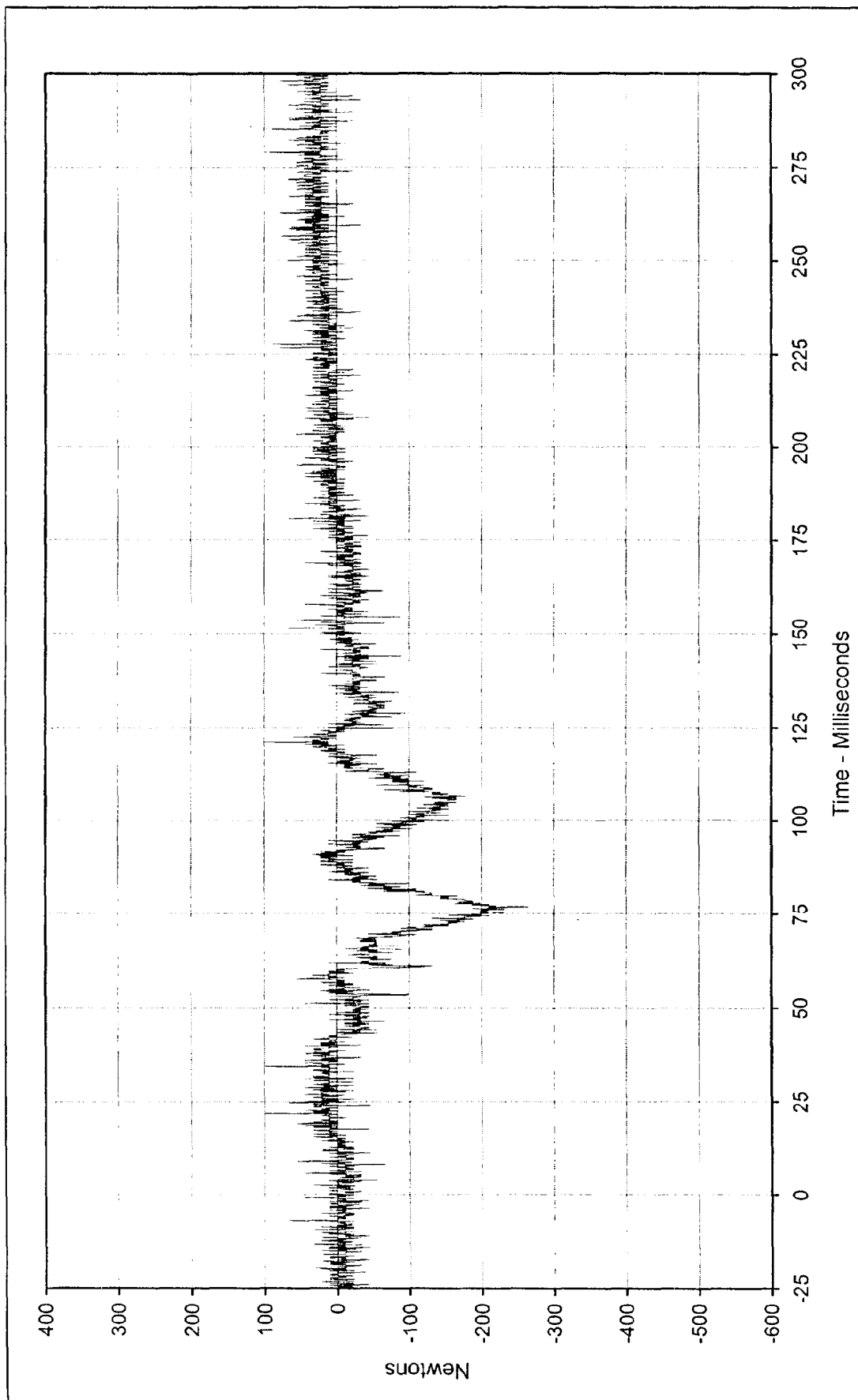
Minimum Value: -866.8 at 62.2 Milliseconds

SAE Filter Class: 600

Date of Test: 10/27/98

Curve Number: FIL-062

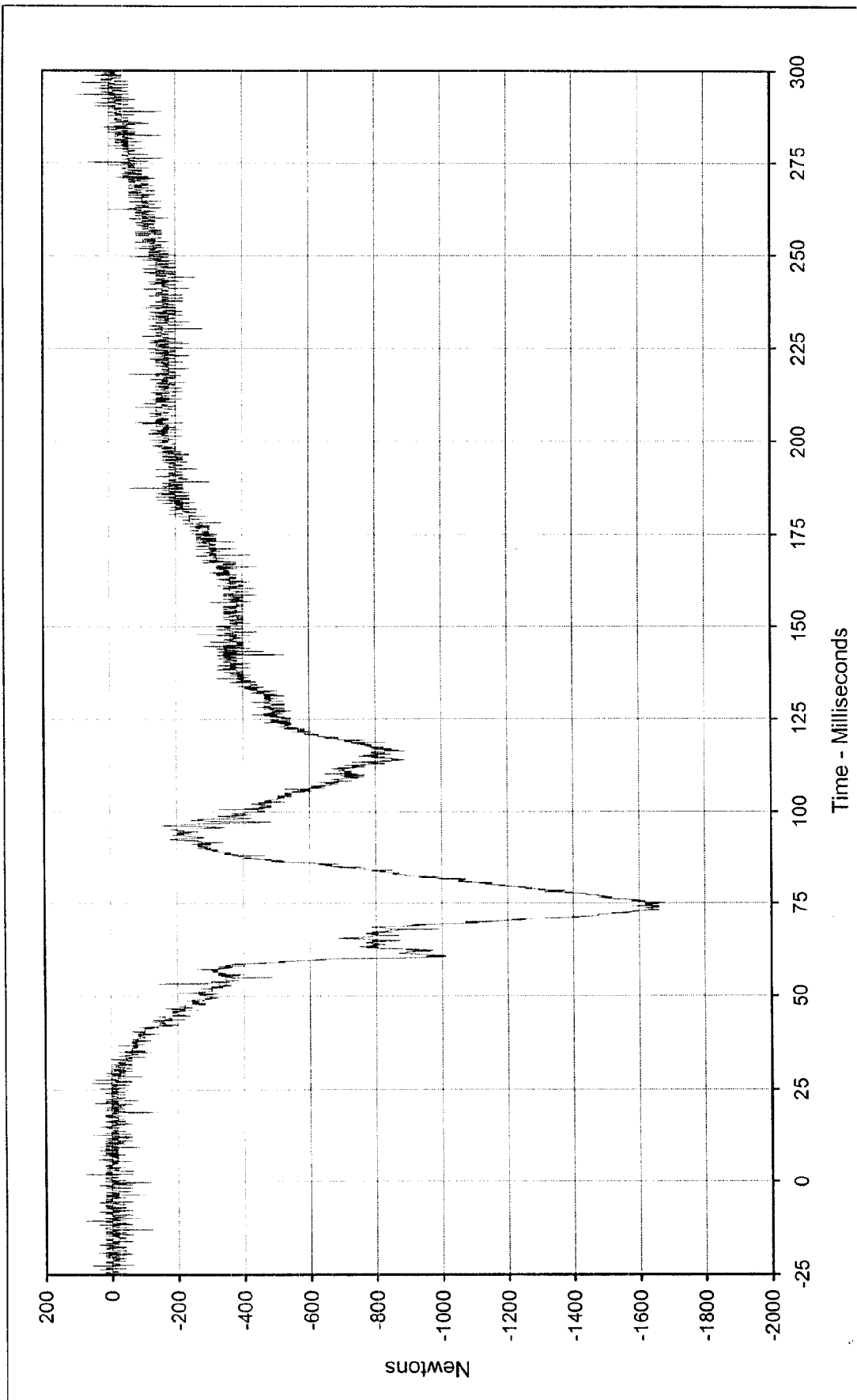




Curve Description: Passenger Left Upper Tibia Force X
 Maximum Value: 99.2 at 21.6 Milliseconds
 Minimum Value: -264.5 at 76.9 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 10/27/98
 Curve Number: FIL-063

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Passenger Left Upper Tibia Force Z Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 101.4 at 293.6 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

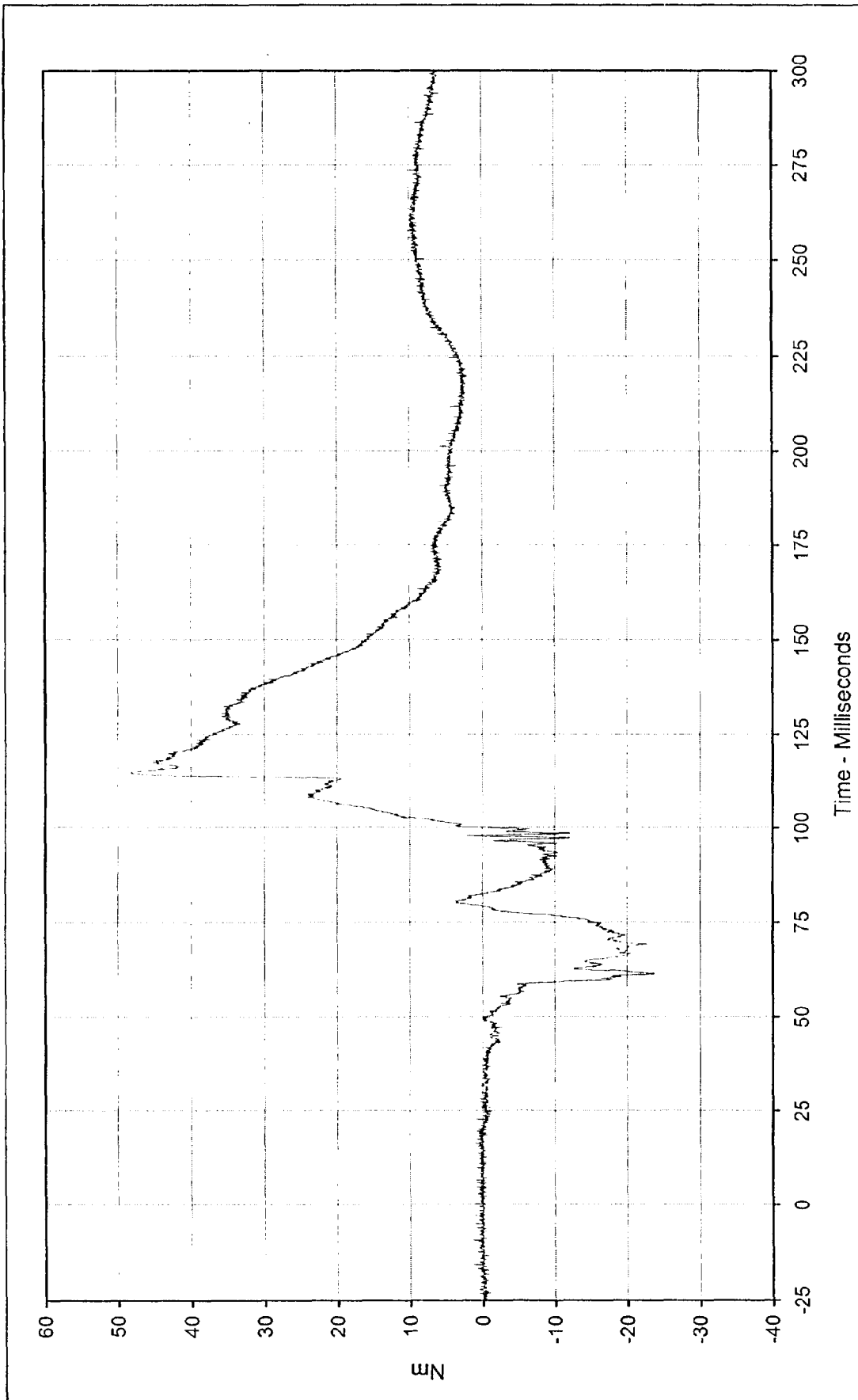
Minimum Value: -1678.7 at 75.1 Milliseconds

SAE Filter Class: 1000

Date of Test: 10/27/98

Curve Number: FIL-064

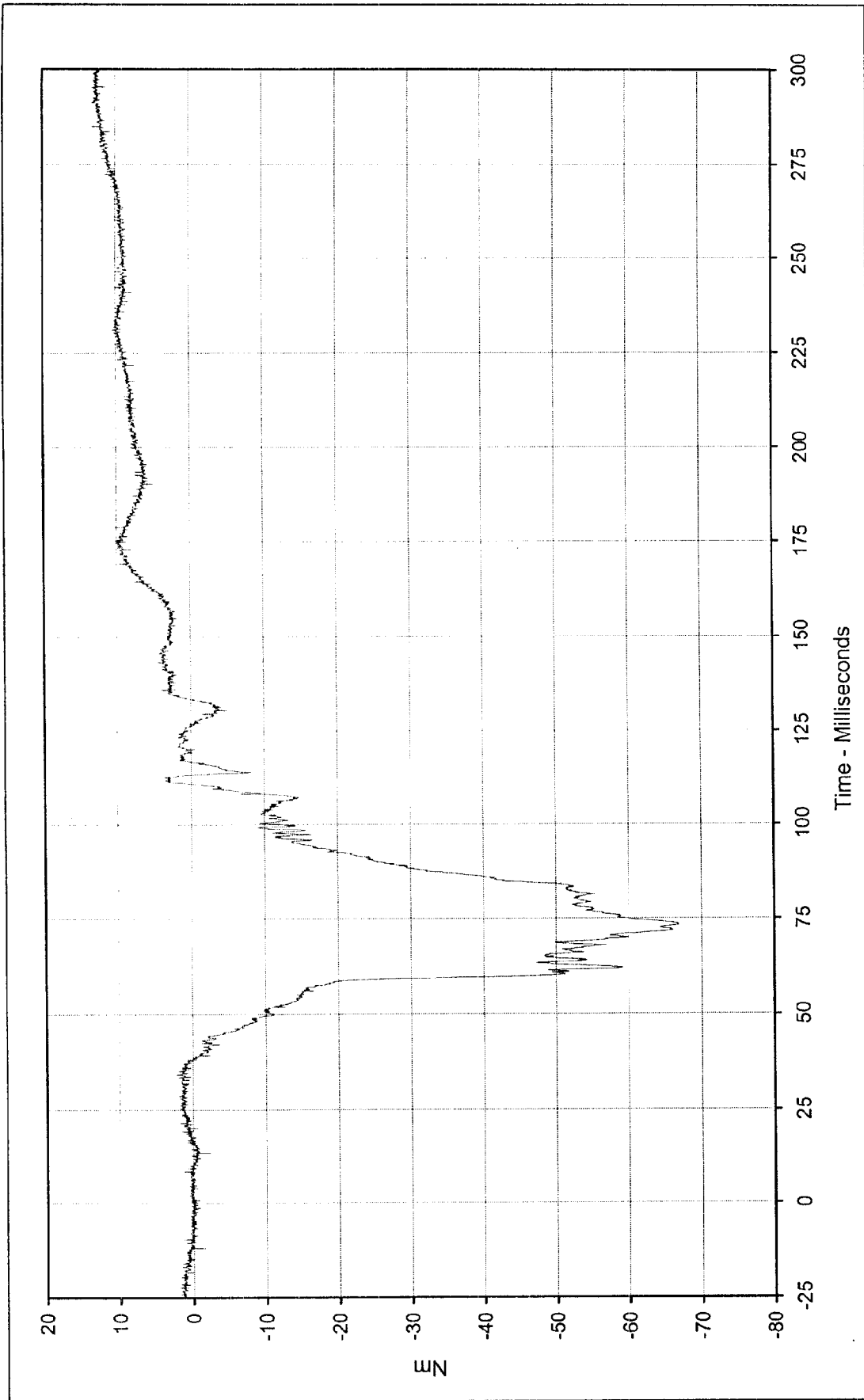




Curve Description: Passenger Left Upper Tibia Moment X
 Maximum Value: 48.2 at 114.8 Milliseconds
 Minimum Value: -23.7 at 61.4 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 10/27/98
 Curve Number: FIL-065

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Passenger Left Upper Tibia Moment Y

Maximum Value: 13.2 at 285.0 Milliseconds

Minimum Value: -66.9 at 73.2 Milliseconds

SAE Filter Class: 1000

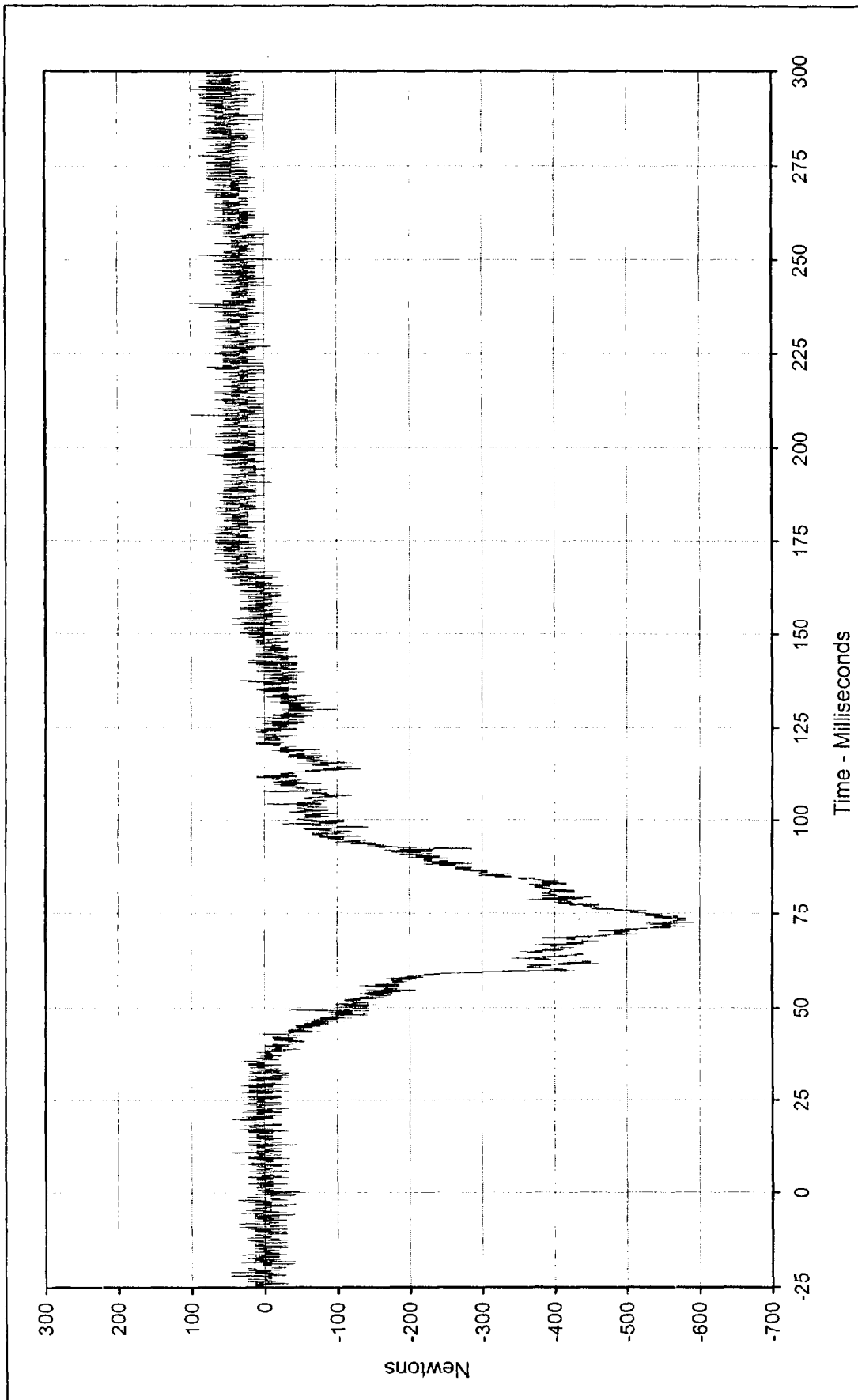
Date of Test: 10/27/98

Curve Number: FIL-066

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan

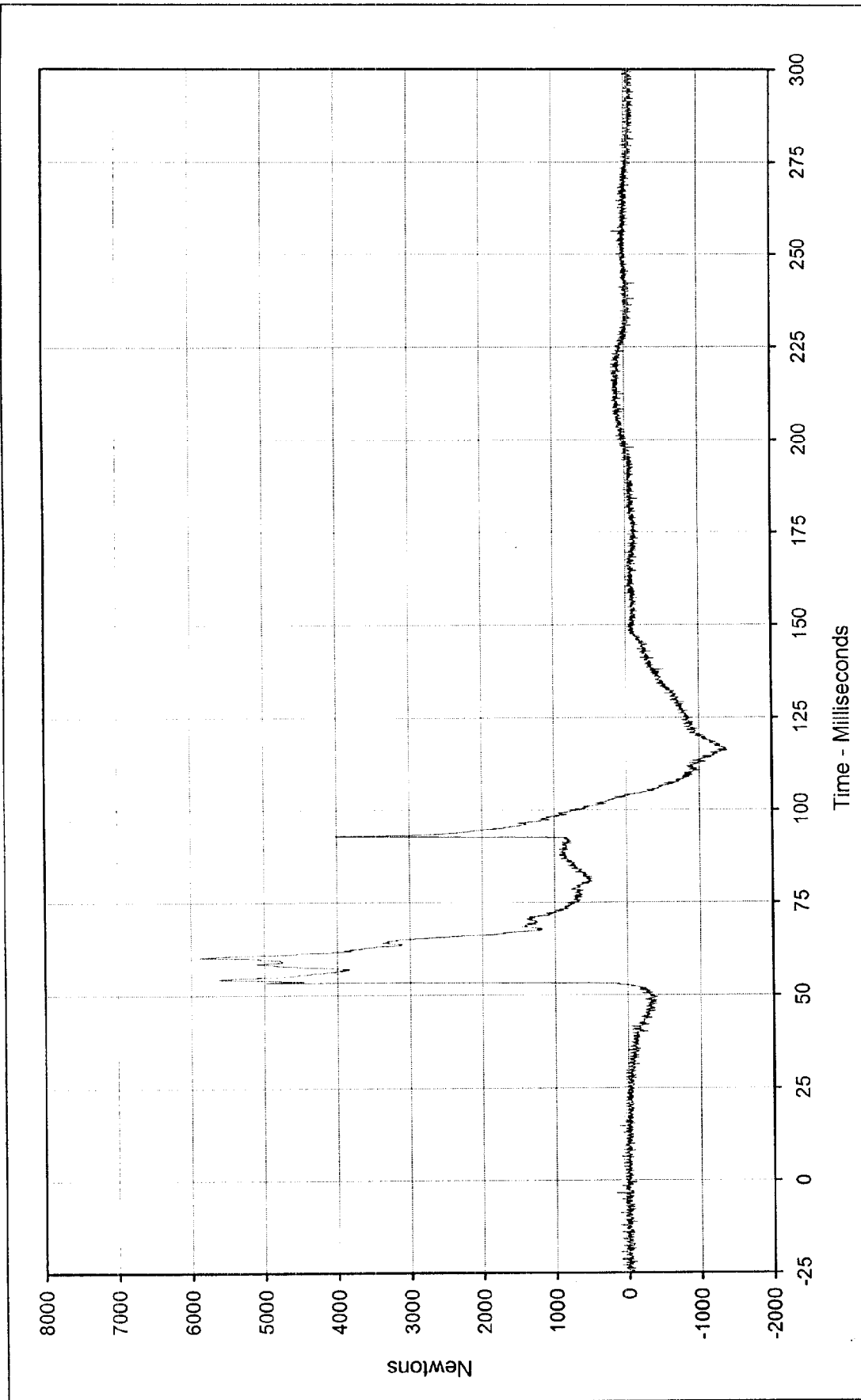




Curve Description: Passenger Left Lower Tibia Force X
Maximum Value: 98.8 at 208.7 Milliseconds
Minimum Value: -592.4 at 72.5 Milliseconds
SAE Filter Class: 1000
Date of Test: 10/27/98
Curve Number: FIL-067

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
Test Vehicle: 1998 Dodge Neon 4 Door Sedan

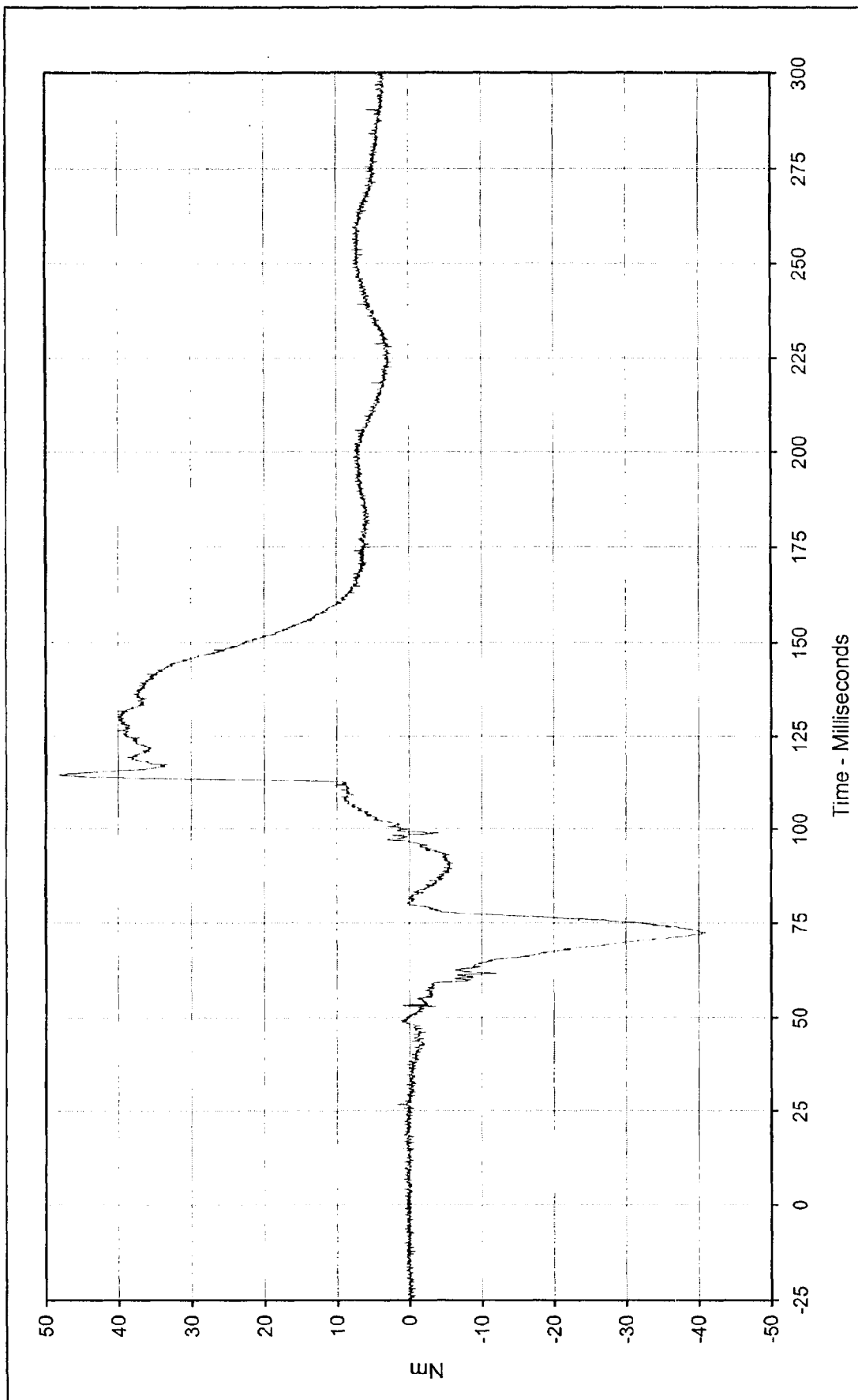




Curve Description: Passenger Left Lower Tibia Force Z
Maximum Value: 5877.4 at 60.3 Milliseconds
Minimum Value: -1393.1 at 116.0 Milliseconds
SAE Filter Class: 1000
Date of Test: 10/27/98
Curve Number: FIL-068

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
Test Vehicle: 1998 Dodge Neon 4 Door Sedan





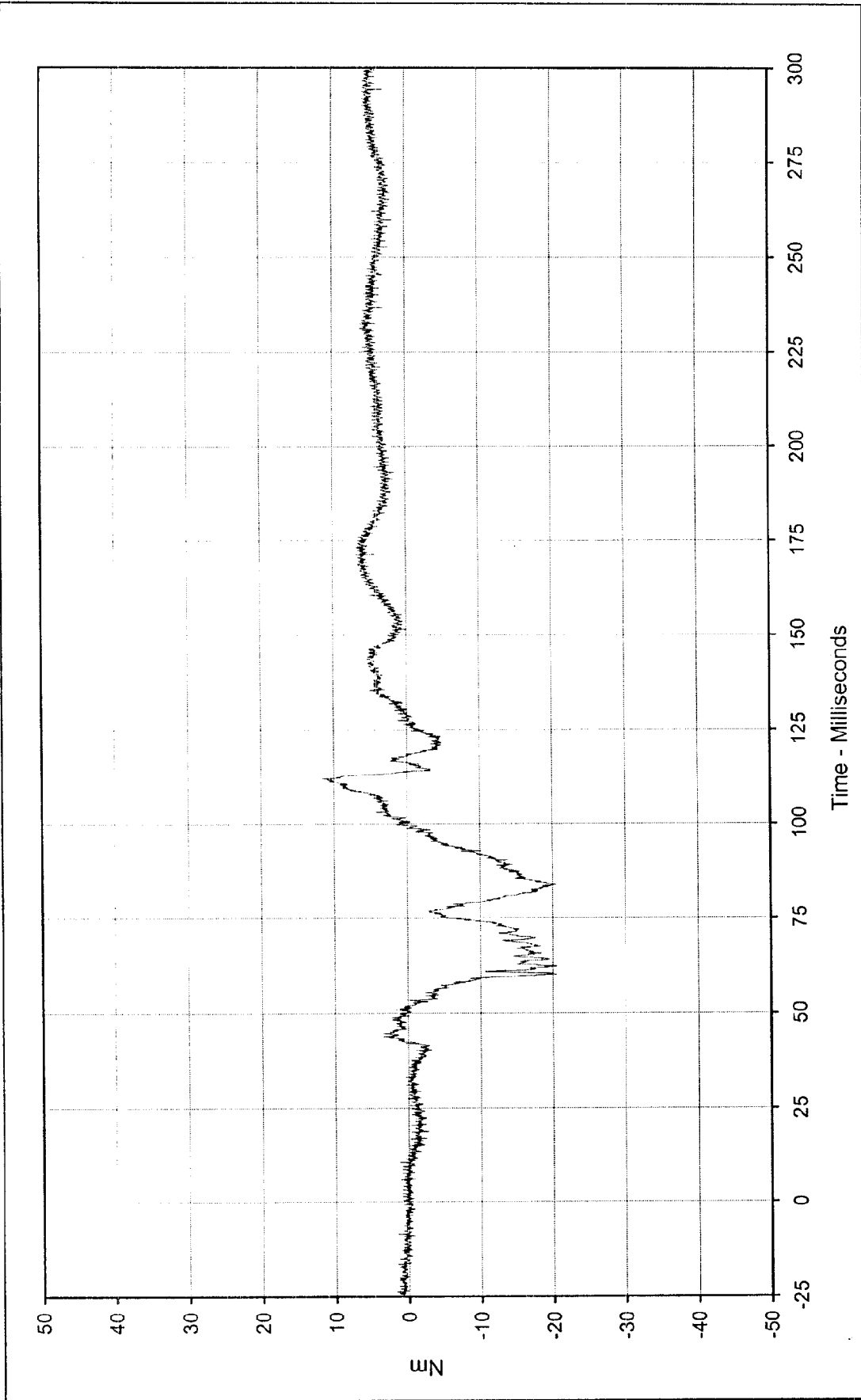
Curve Description: Passenger Left Lower Tibia Moment X

Maximum Value:	48.1	at	114.6	Milliseconds
Minimum Value:	-41.0	at	72.4	Milliseconds
SAE Filter Class:	1000			
Date of Test:	10/27/98			
Curve Number:	FIL-069			

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Passenger Left Lower Tibia Moment Y

Maximum Value: 11.7 at 112.1 Milliseconds

Minimum Value: -20.5 at 60.1 Milliseconds

SAE Filter Class: 1000

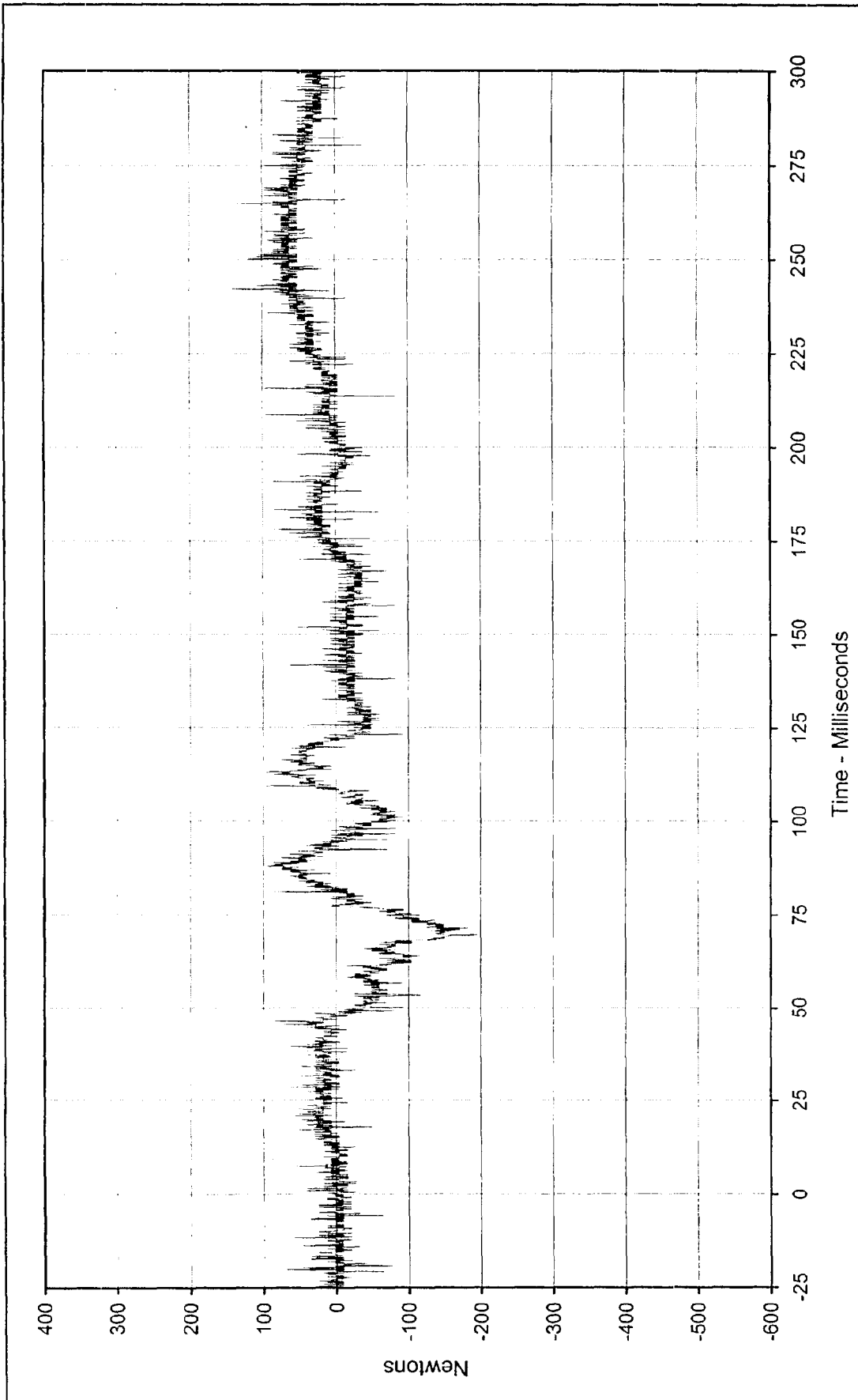
Date of Test: 10/27/98

Curve Number: FIL-070

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Passenger Right Upper Tibia Force X

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 140.1 at 242.3 Milliseconds

Test Vehicle: 1998 Dodge Neon 4 Door Sedan

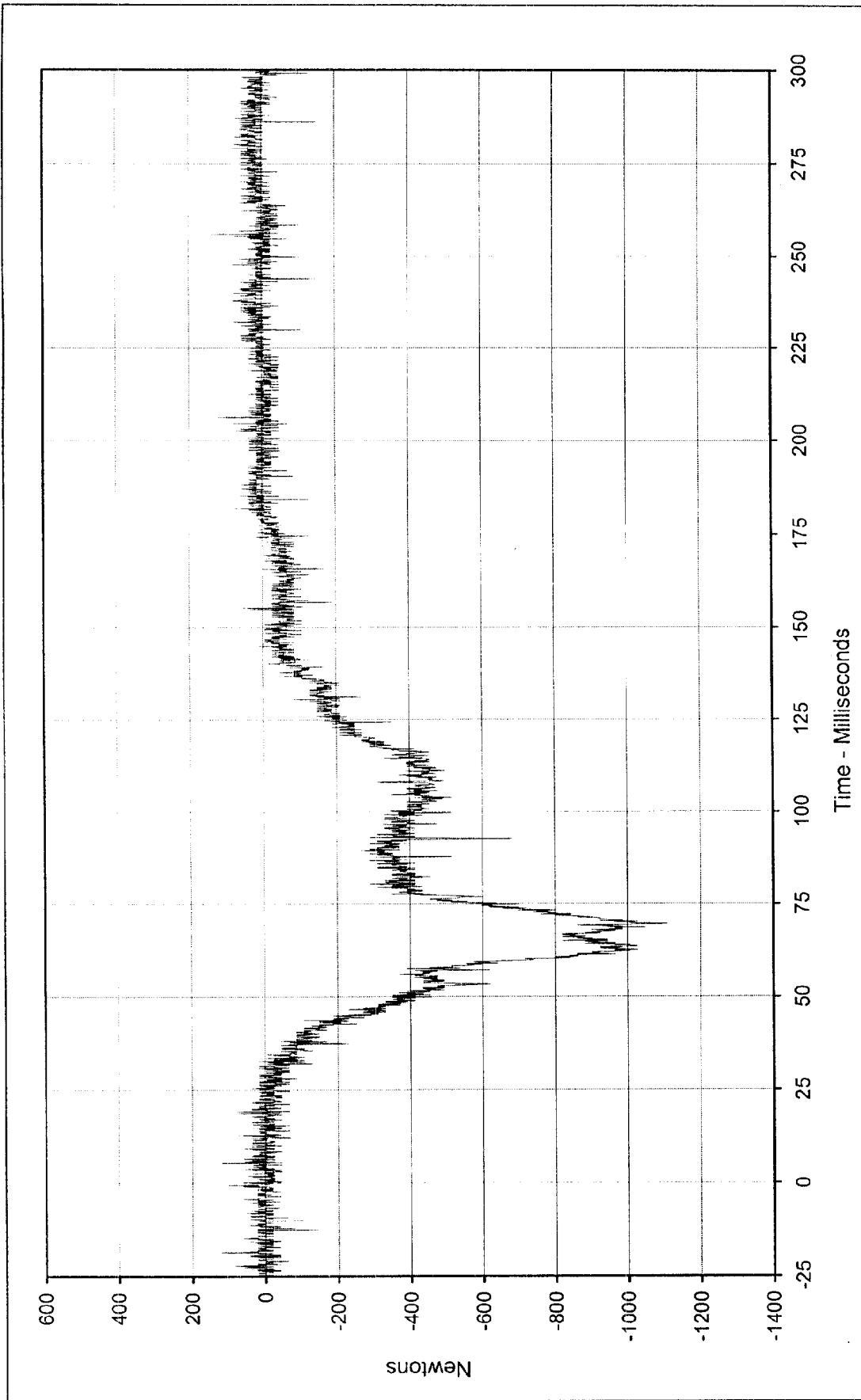
Minimum Value: -197.7 at 69.4 Milliseconds

SAE Filter Class: 1000

Date of Test: 10/27/98

Curve Number: FIL-071

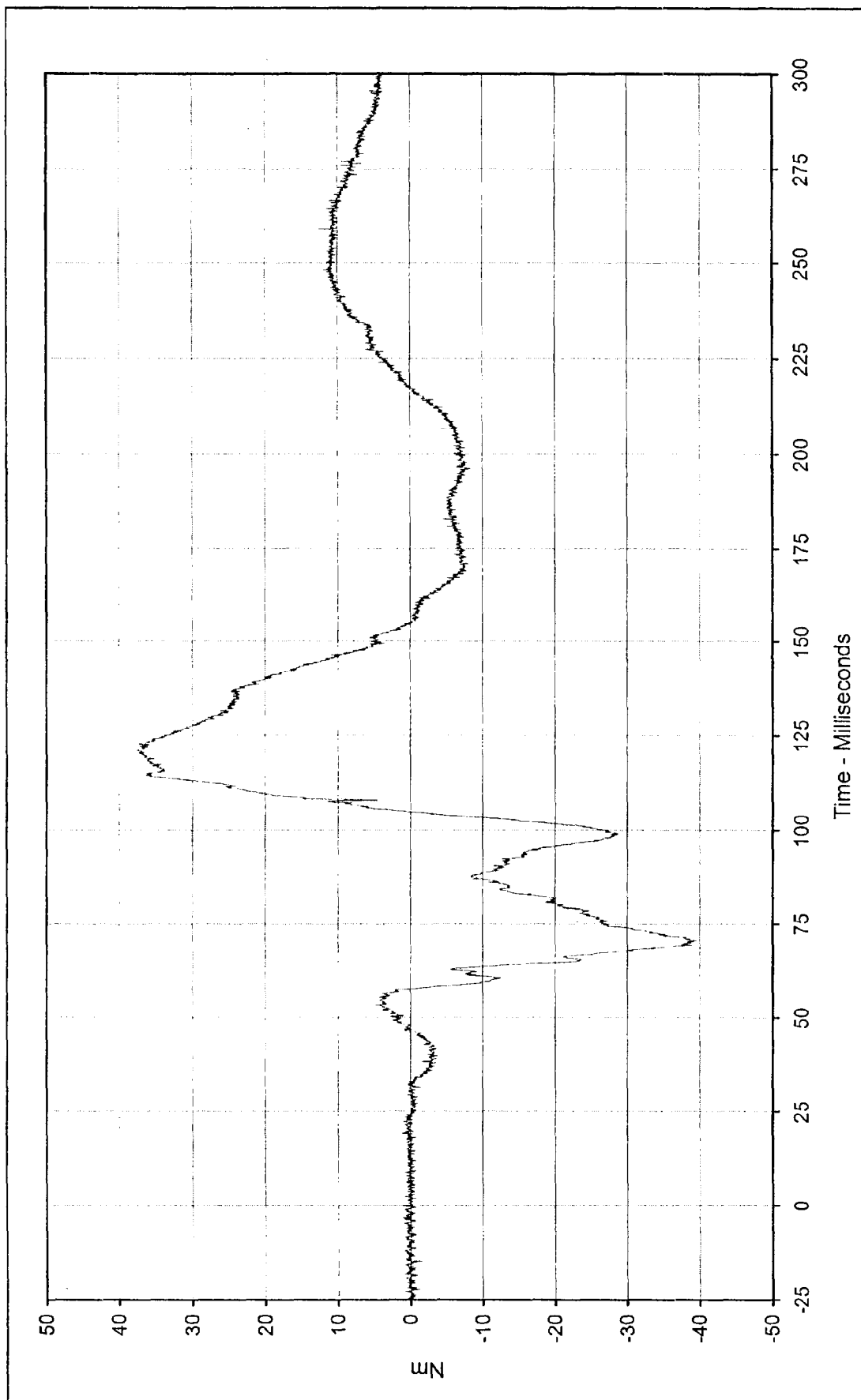




Curve Description: Passenger Right Upper Tibia Force Z
Maximum Value: 138.4 at 256.1 Milliseconds
Minimum Value: -1107.3 at 69.7 Milliseconds
SAE Filter Class: 1000
Date of Test: 10/27/98
Curve Number: FIL-072

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Passenger Right Upper Tibia Moment X

Maximum Value: 37.6 at 121.0 Milliseconds

Minimum Value: -39.6 at 70.4 Milliseconds

SAE Filter Class: 1000

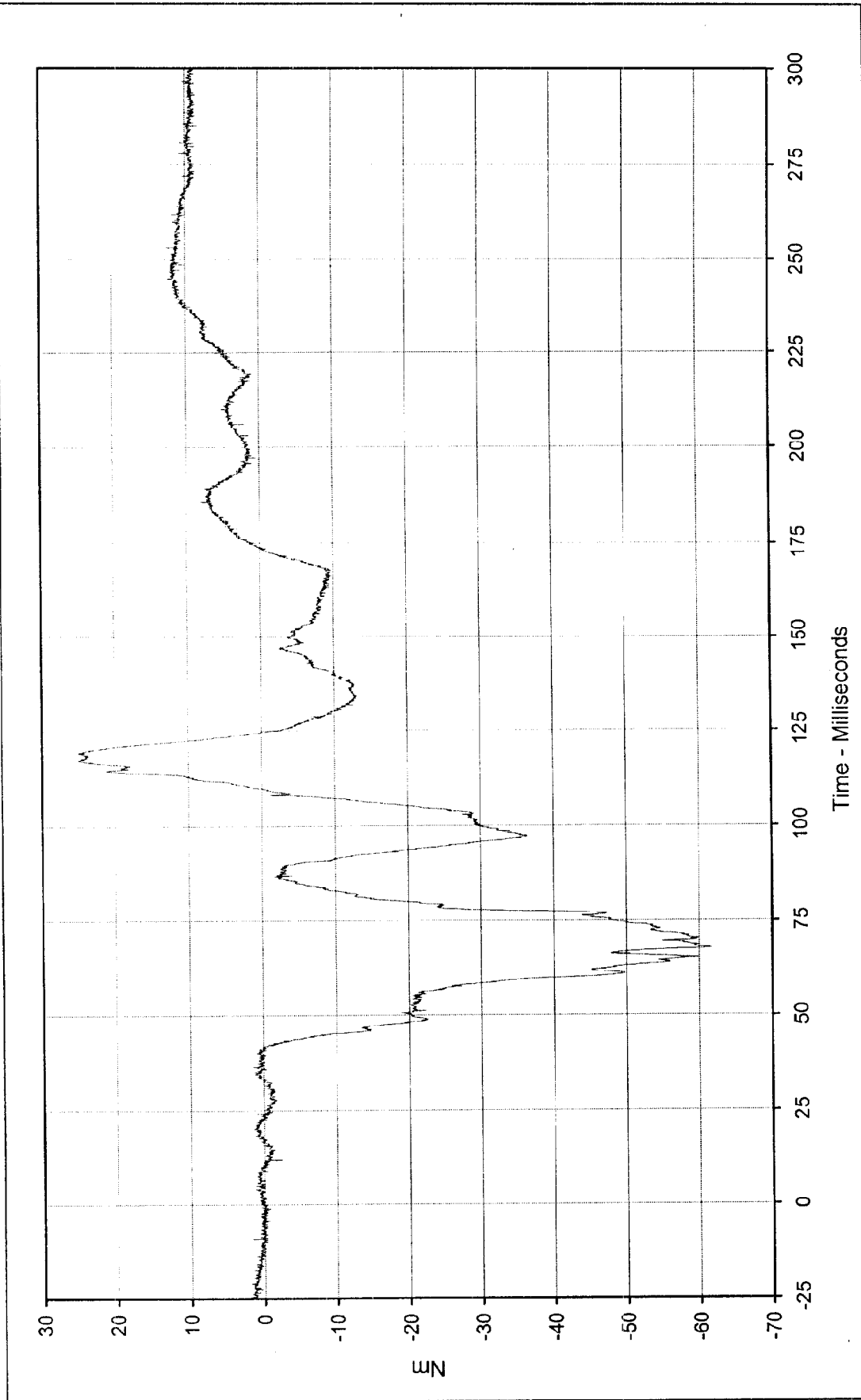
Date of Test: 10/27/98

Curve Number: FIL-073

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan

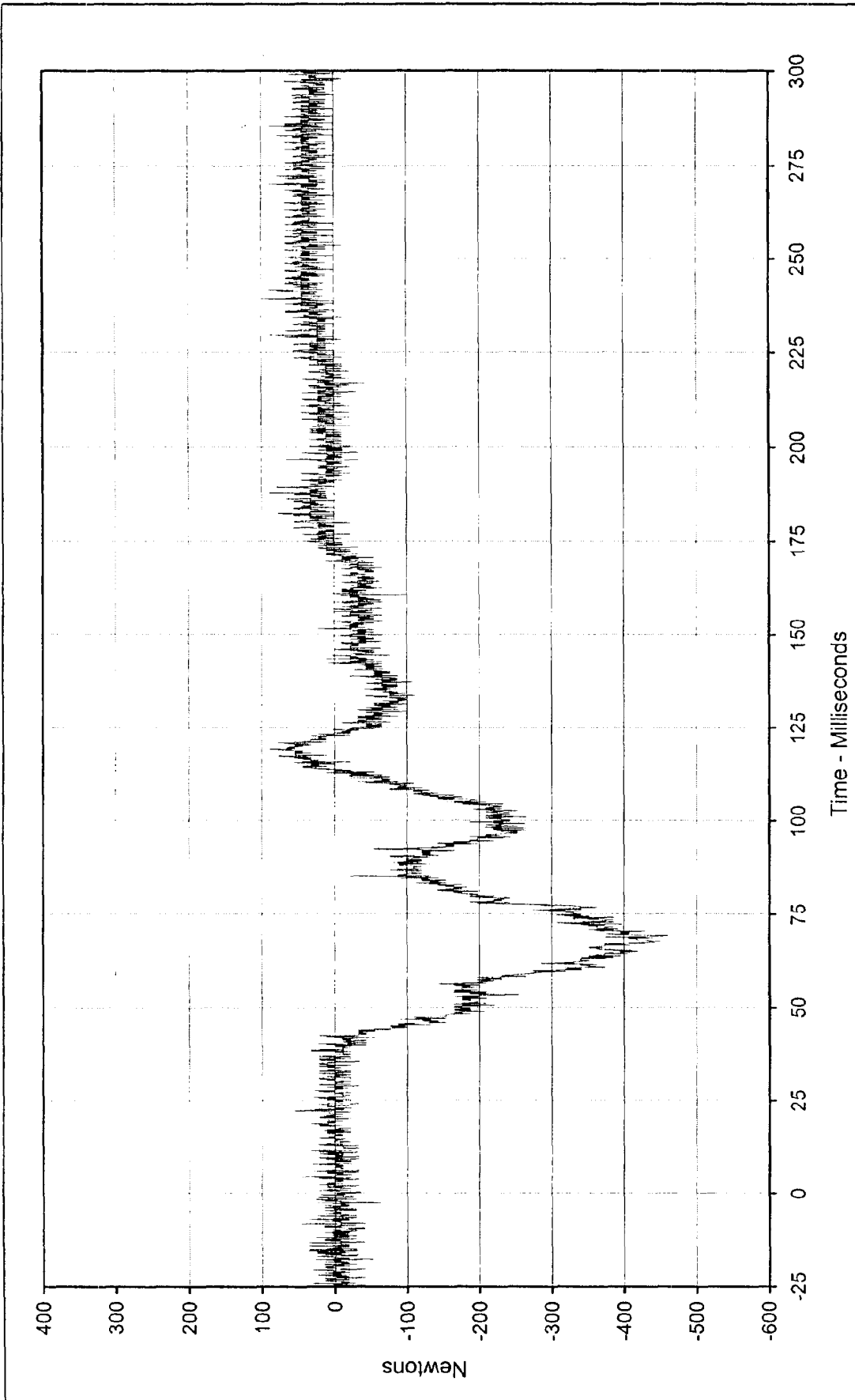




Curve Description: Passenger Right Upper Tibia Moment Y
Maximum Value: 24.9 at 117.3 Milliseconds
Minimum Value: -61.7 at 67.6 Milliseconds
SAE Filter Class: 1000
Date of Test: 10/27/98
Curve Number: FIL-074

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
Test Vehicle: 1998 Dodge Neon 4 Door Sedan

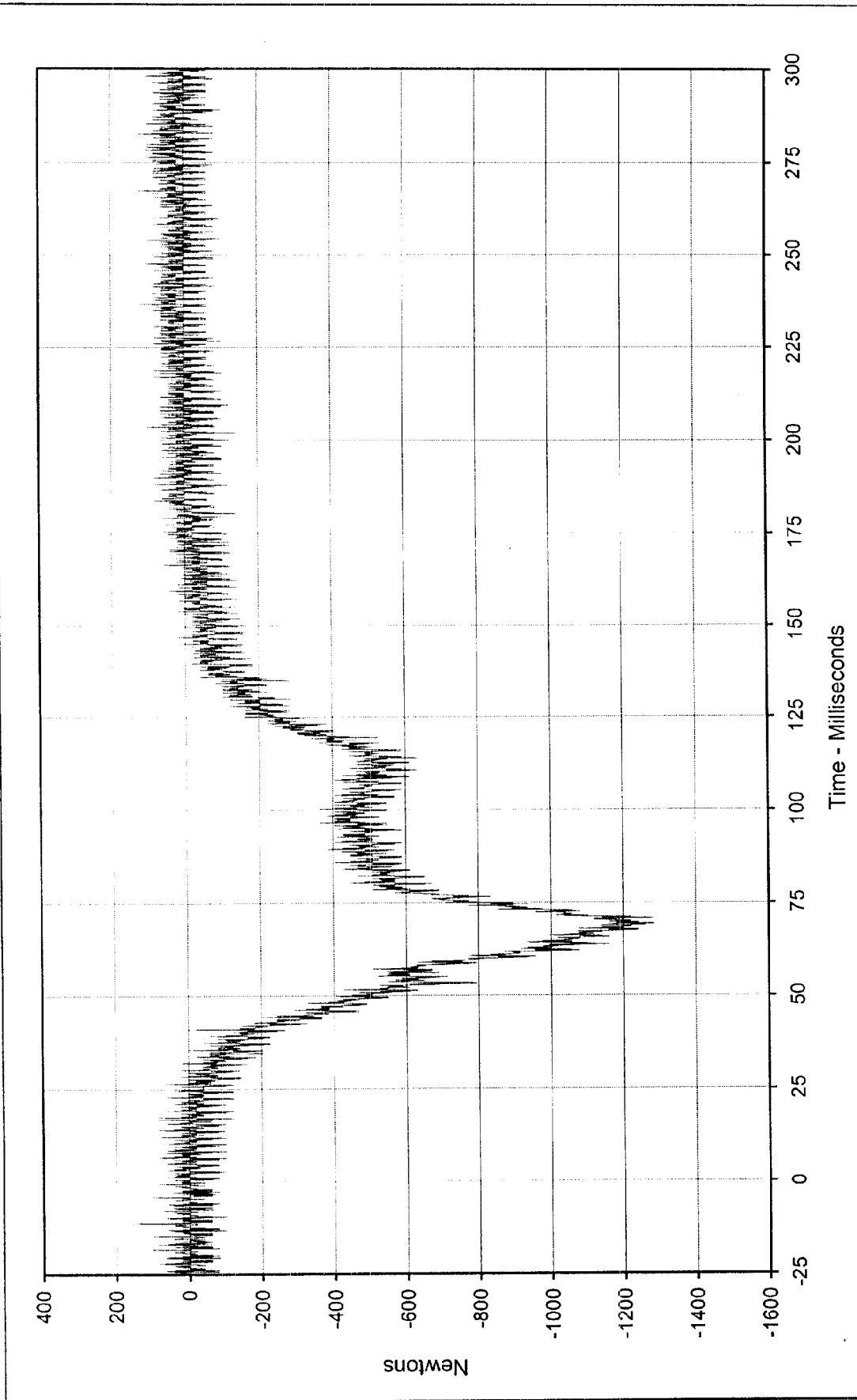




Curve Description: Passenger Right Lower Tibia Force X
 Maximum Value: 98.9 at 239.3 Milliseconds
 Minimum Value: -461.5 at 69.3 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 10/27/98
 Curve Number: FIL-075

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan

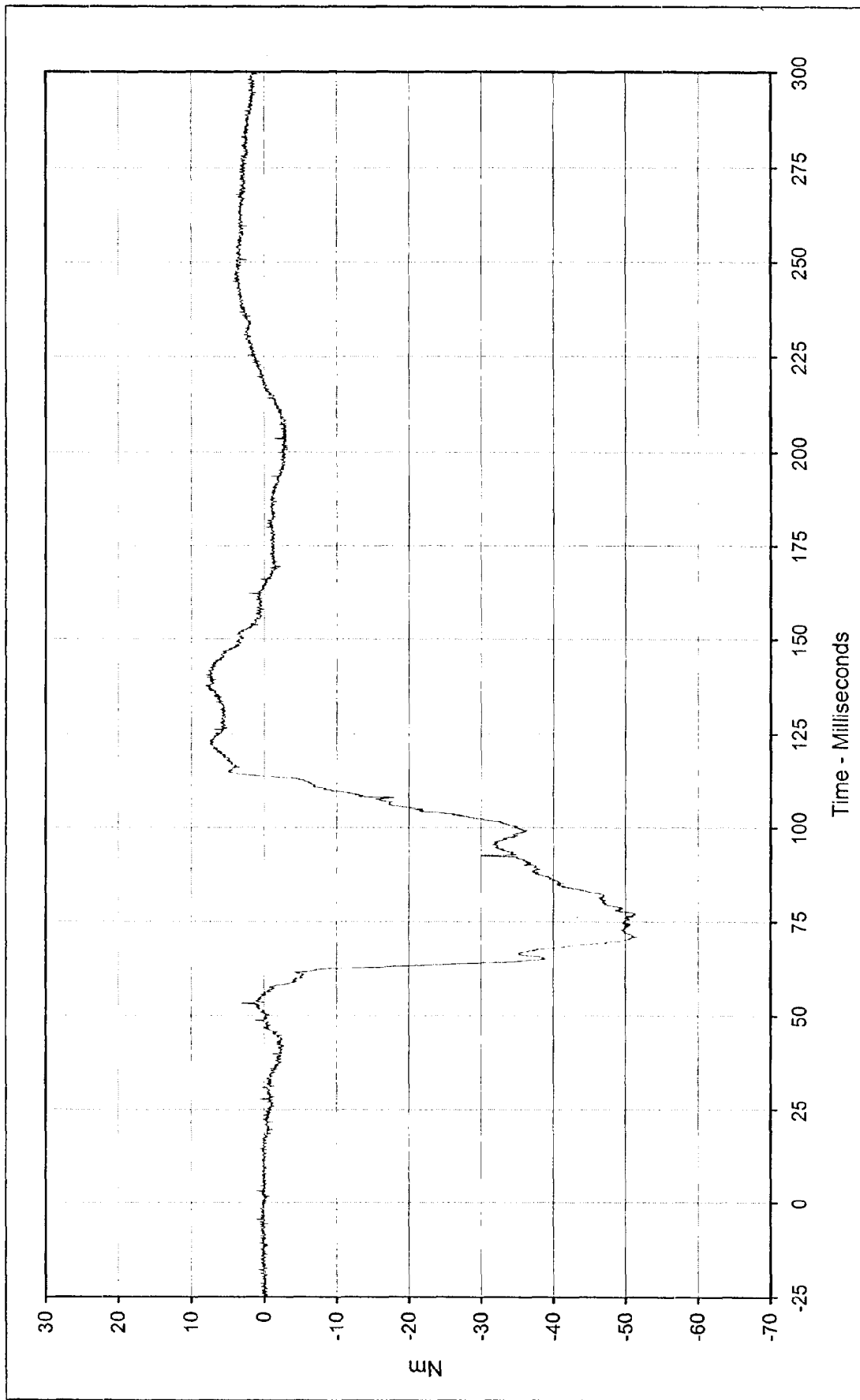




Curve Description: Passenger Right Lower Tibia Force Z
Maximum Value: 122.5 at 236.8 Milliseconds
Minimum Value: -1282.1 at 69.4 Milliseconds
SAE Filter Class: 1000
Date of Test: 10/27/98
Curve Number: FIL-076

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Passenger Right Lower Tibia Moment X

Maximum Value: 7.9 at 137.6 Milliseconds

Minimum Value: -51.6 at 70.9 Milliseconds

SAE Filter Class: 1000

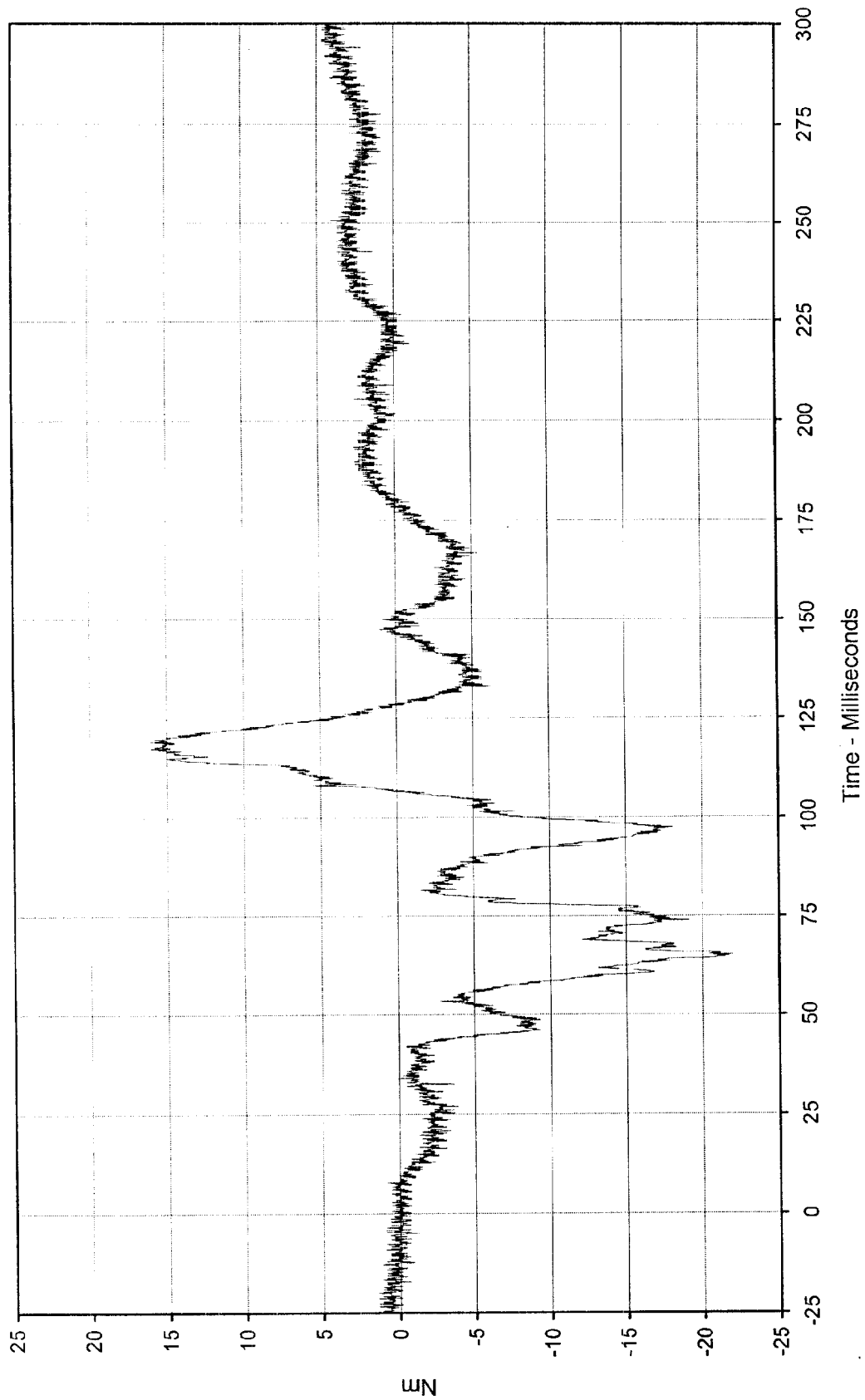
Date of Test: 10/27/98

Curve Number: FIL-077

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Passenger Right Lower Tibia Moment Y

Maximum Value: 16.1 at 117.2 Milliseconds

Minimum Value: -22.0 at 65.1 Milliseconds

SAE Filter Class: 1000

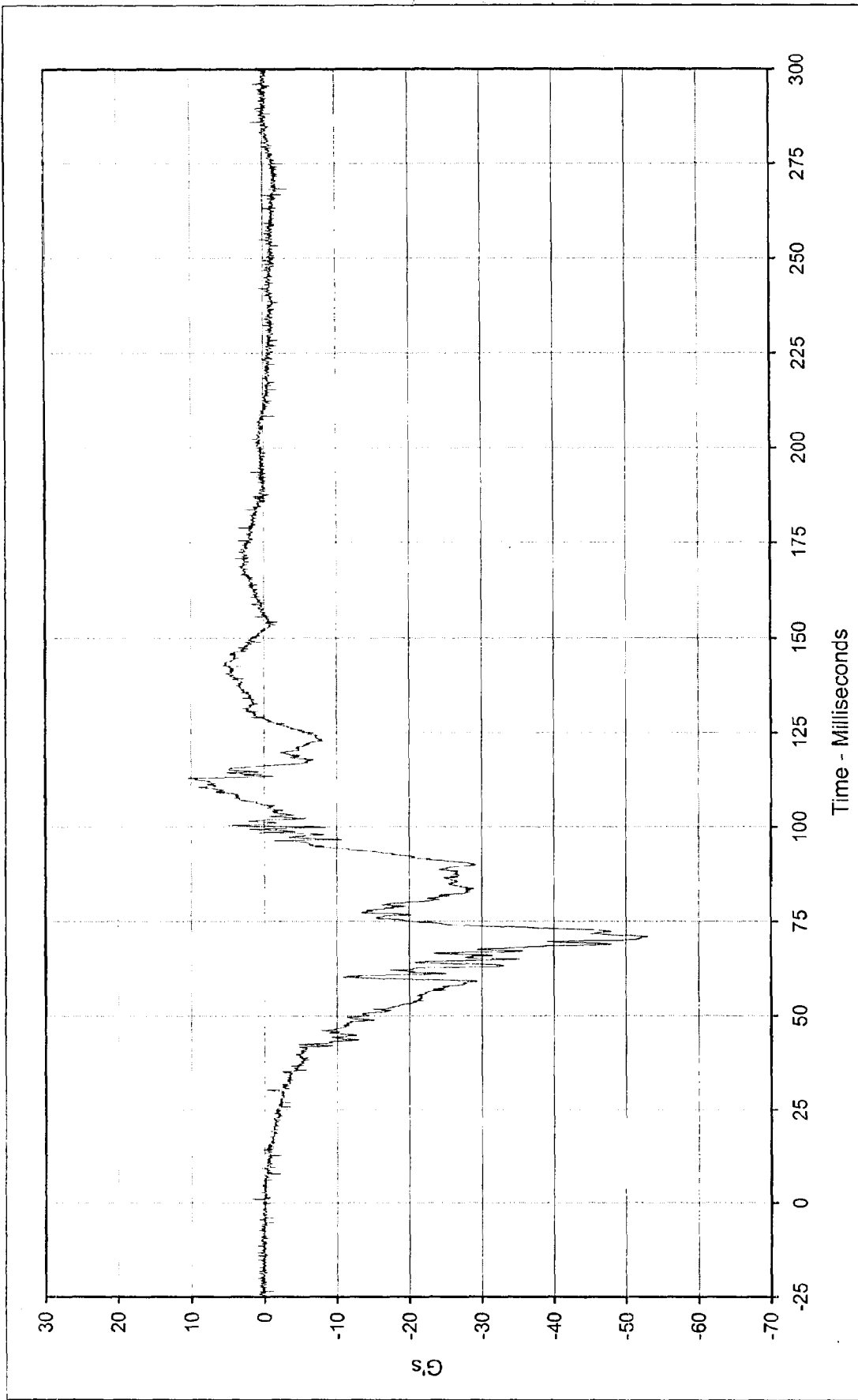
Date of Test: 10/27/98

Curve Number: FIL-078

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan

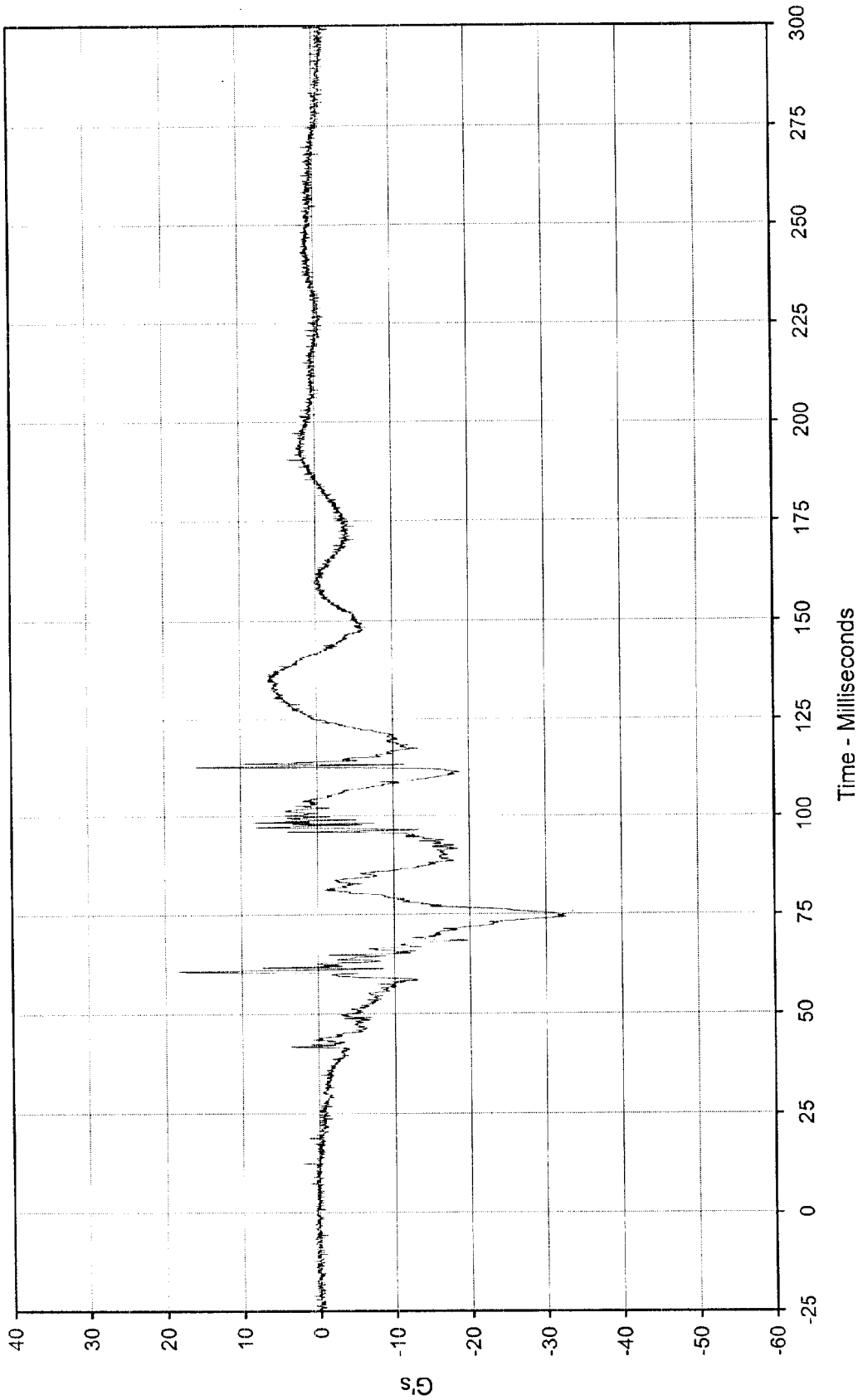




Curve Description: Passenger Left Foot Aft X
 Maximum Value: 10.4 at 112.9 Milliseconds
 Minimum Value: -53.0 at 70.8 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 10/27/98
 Curve Number: FIL-079

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Passenger Left Foot Aft Z

Maximum Value: 18.2 at 60.9 Milliseconds

Minimum Value: -32.7 at 74.2 Milliseconds

SAE Filter Class: 1000

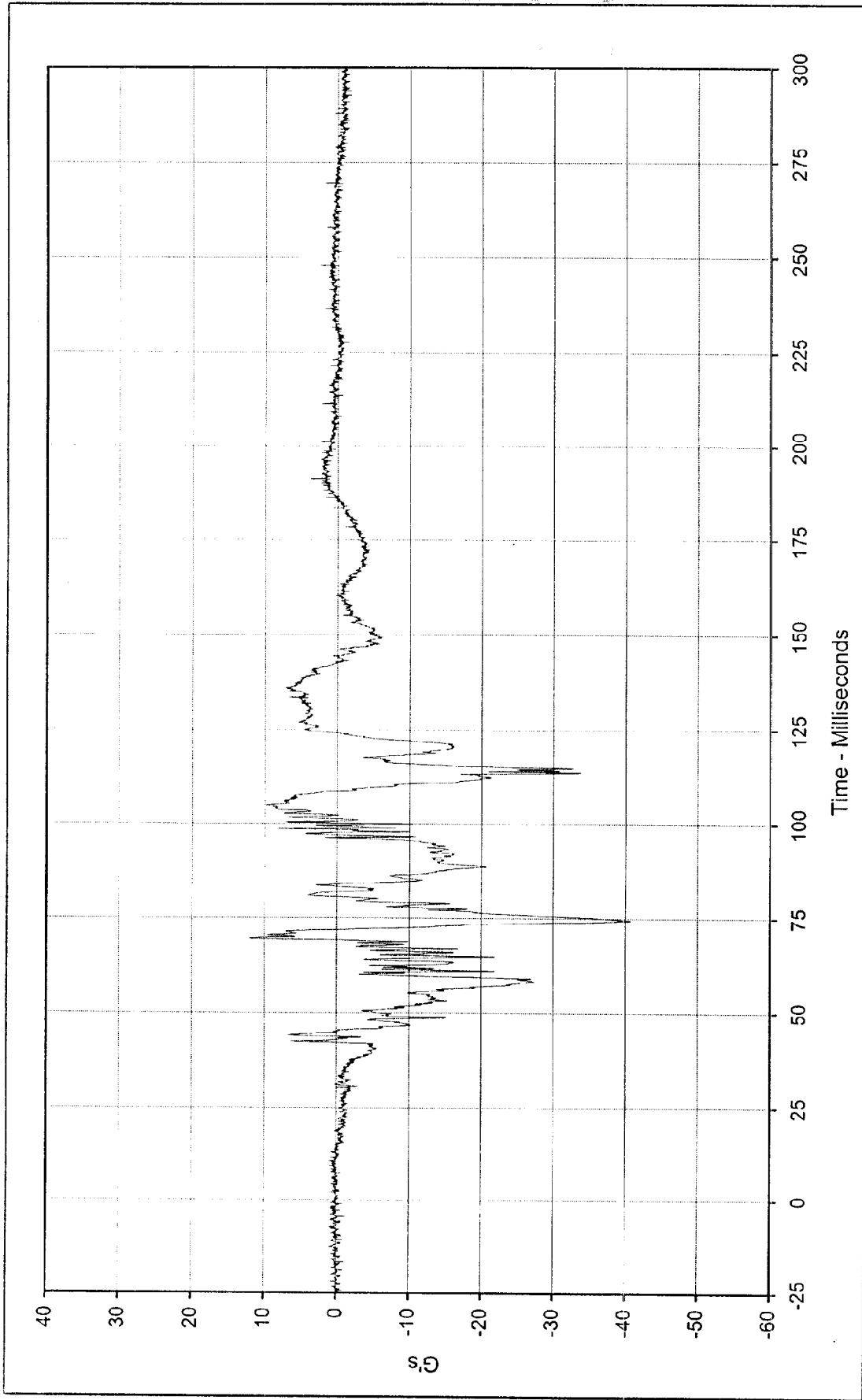
Date of Test: 10/27/98

Curve Number: FIL-080

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan

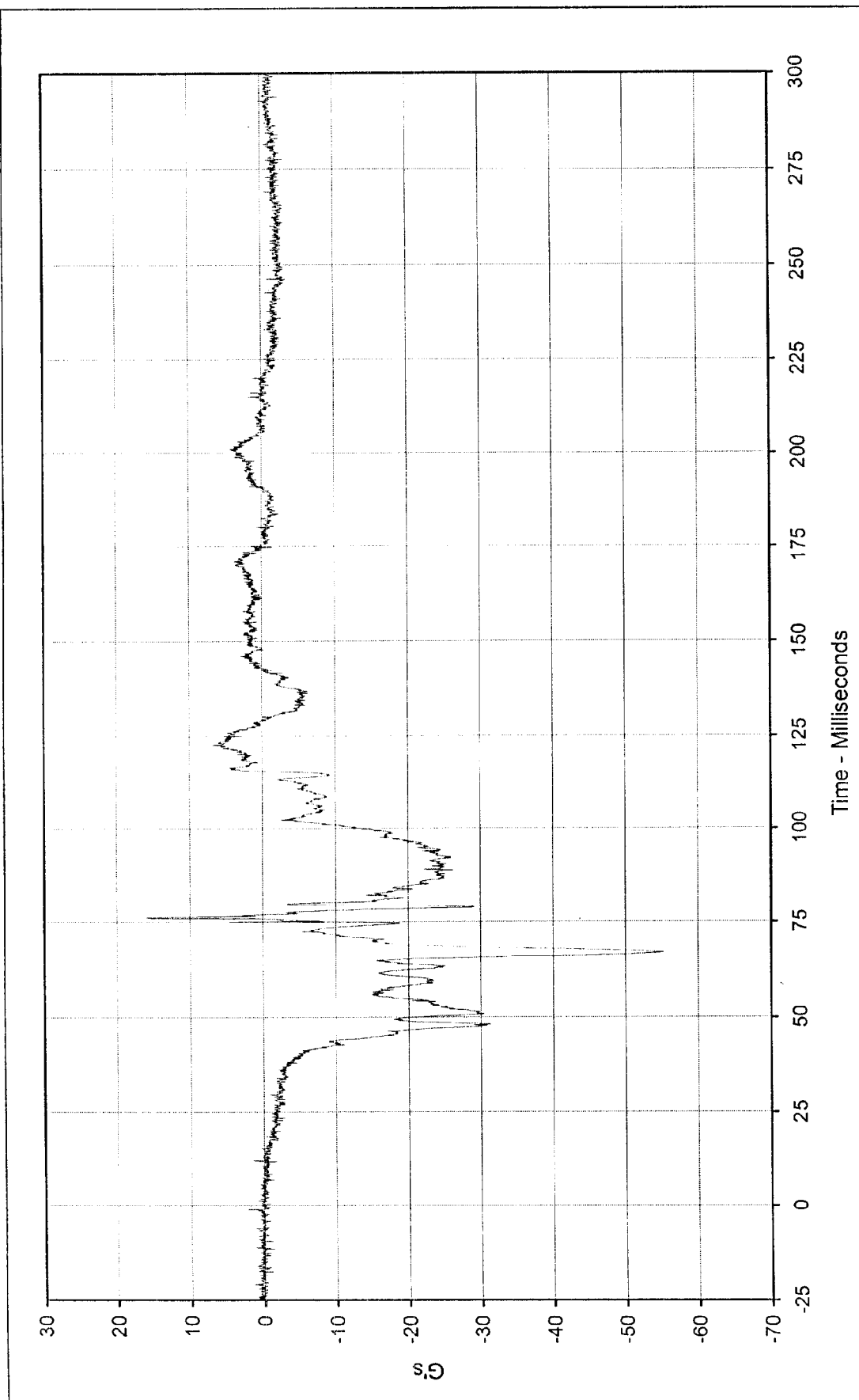




Curve Description: Passenger Left Foot Fore Z
 Maximum Value: 12.0 at 69.5 Milliseconds
 Minimum Value: -40.7 at 74.4 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 10/27/98
 Curve Number: FIL-081

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Passenger Right Foot Aft X Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 15.9 at 76.1 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

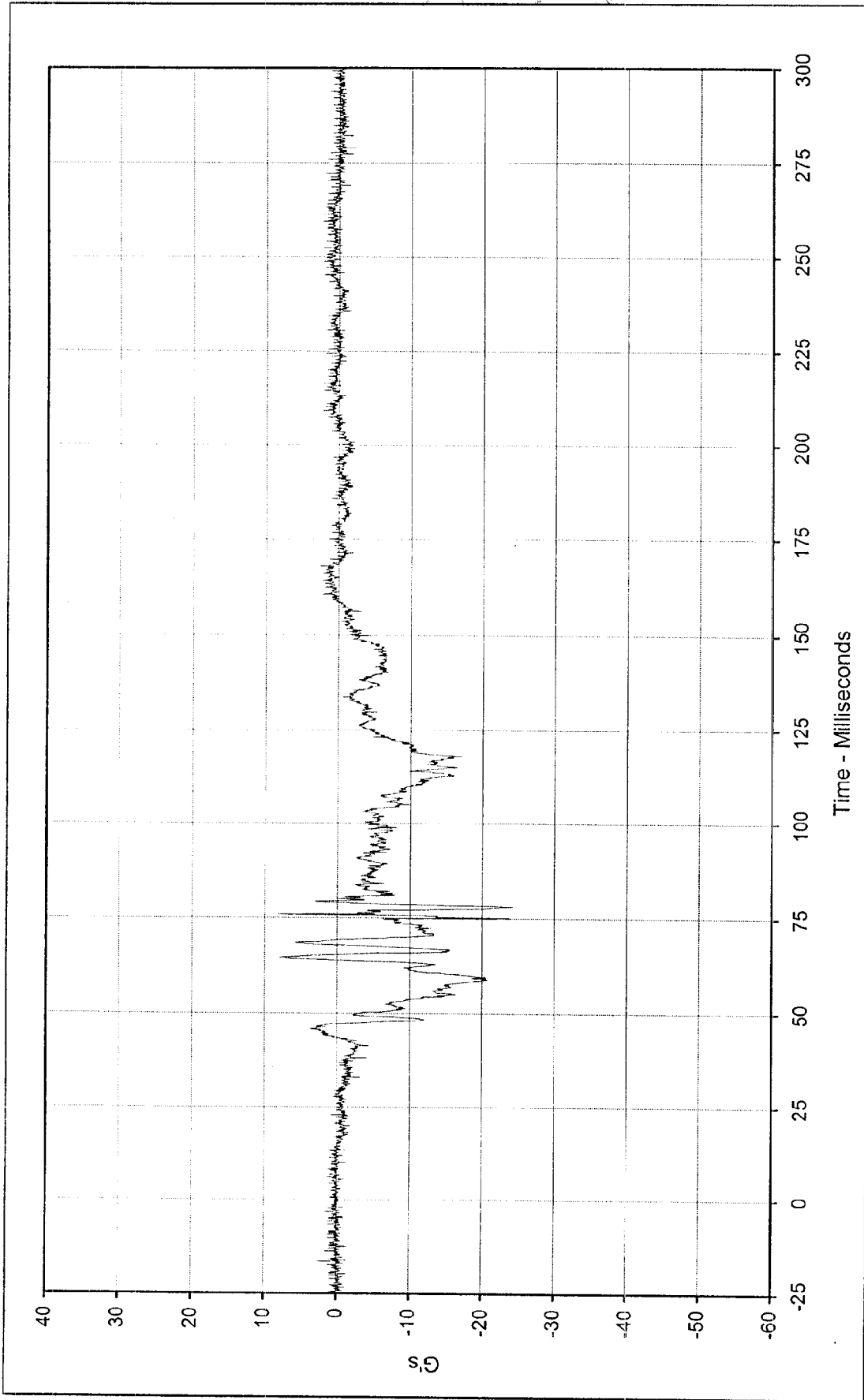
Minimum Value: -55.2 at 66.8 Milliseconds

SAE Filter Class: 1000

Date of Test: 10/27/98

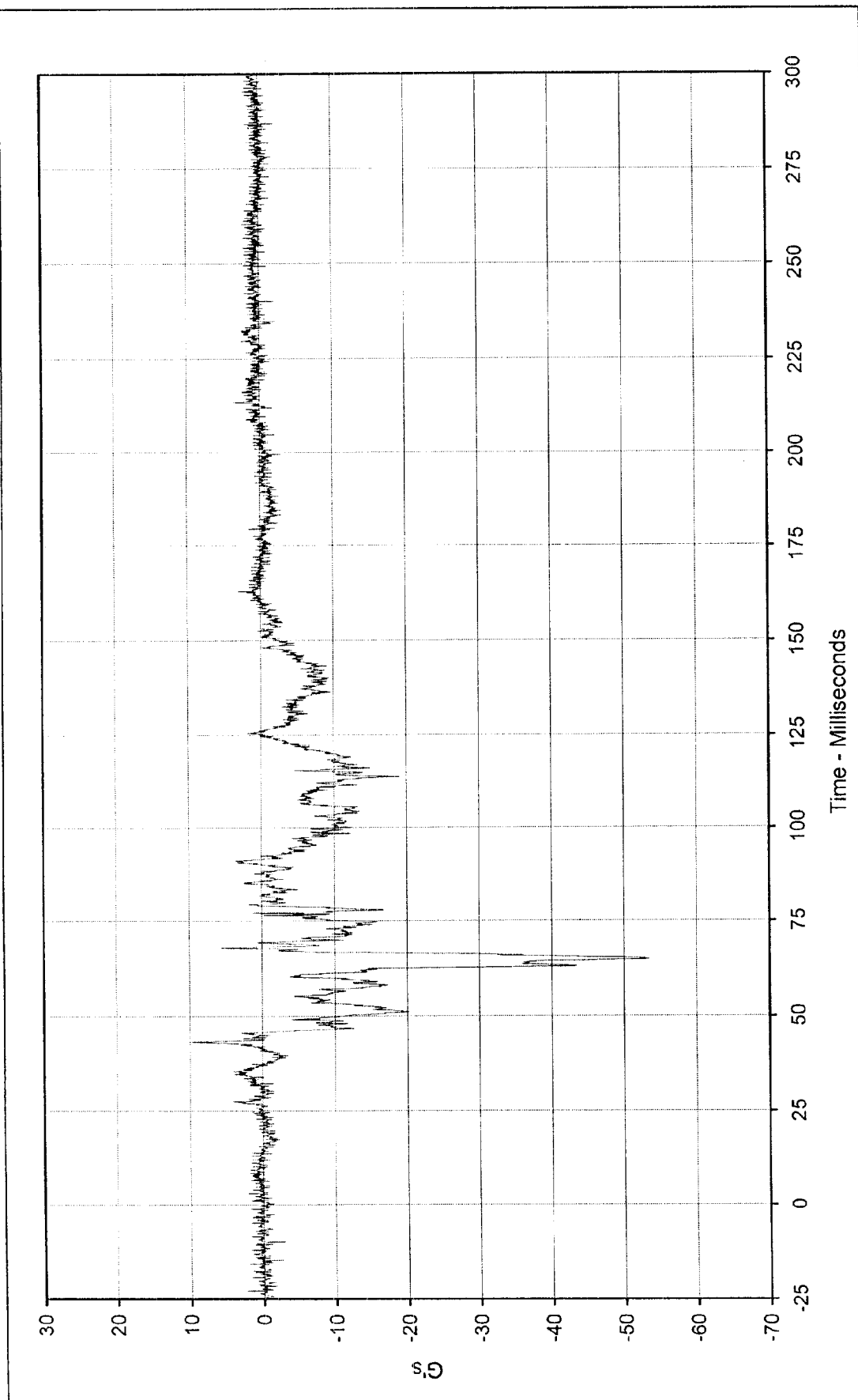
Curve Number: FIL-082





Curve Description:	Passenger Right Foot Aft Z		Testing Program:	1998 37.5mph Offset, 5th Female No.: MW0311	
Maximum Value:	8.0	at 76.0 Milliseconds	Test Vehicle:	1998 Dodge Neon 4 Door Sedan	
Minimum Value:	-24.3	at 78.0 Milliseconds			
SAE Filter Class:	1000				
Date of Test:	10/27/98				
Curve Number:	FIL-083				





Curve Description: Passenger Right Foot Fore Z

Maximum Value: 9.7 at 43.2 Milliseconds

Minimum Value: -53.4 at 64.9 Milliseconds

SAE Filter Class: 1000

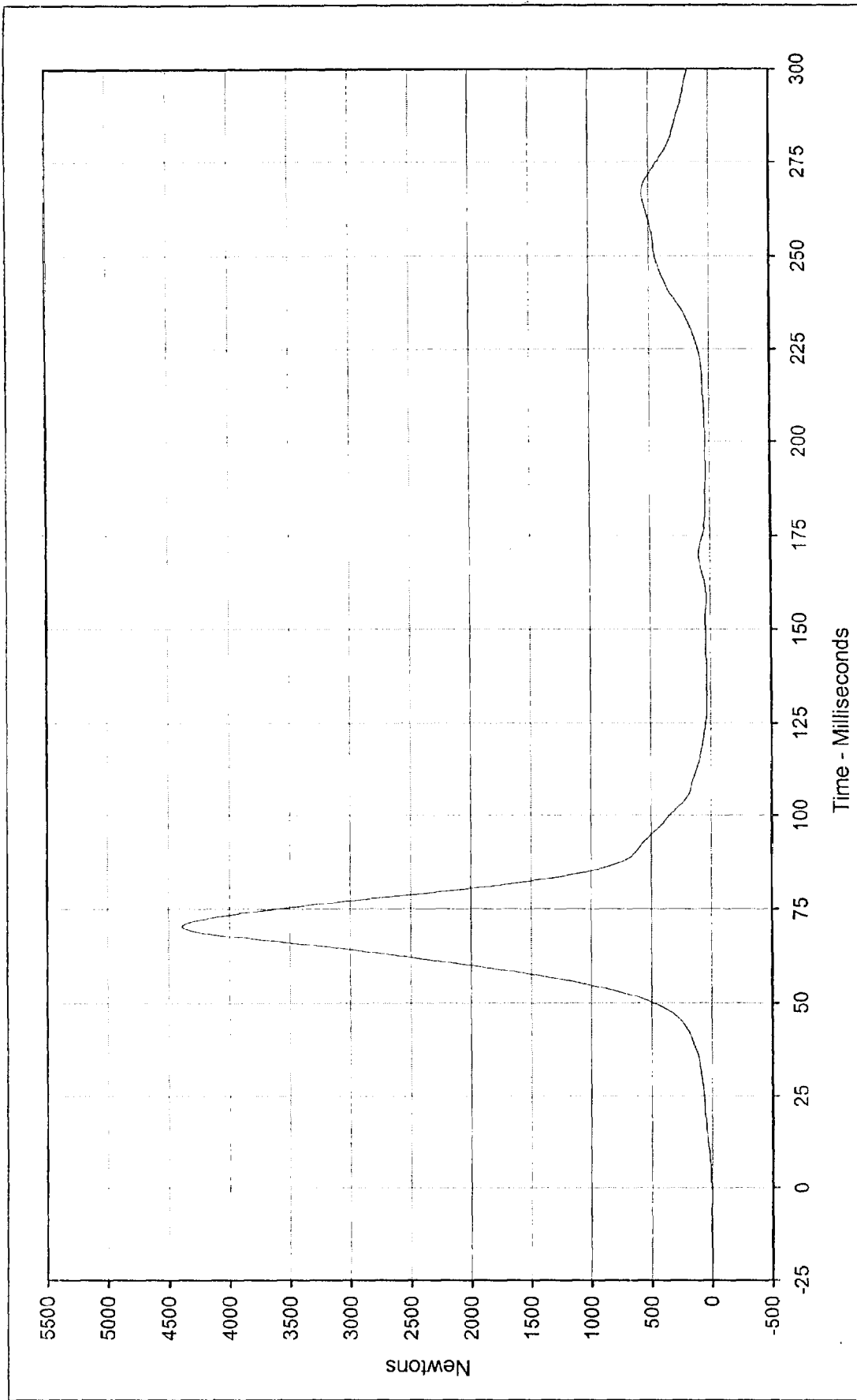
Date of Test: 10/27/98

Curve Number: FIL-084

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan

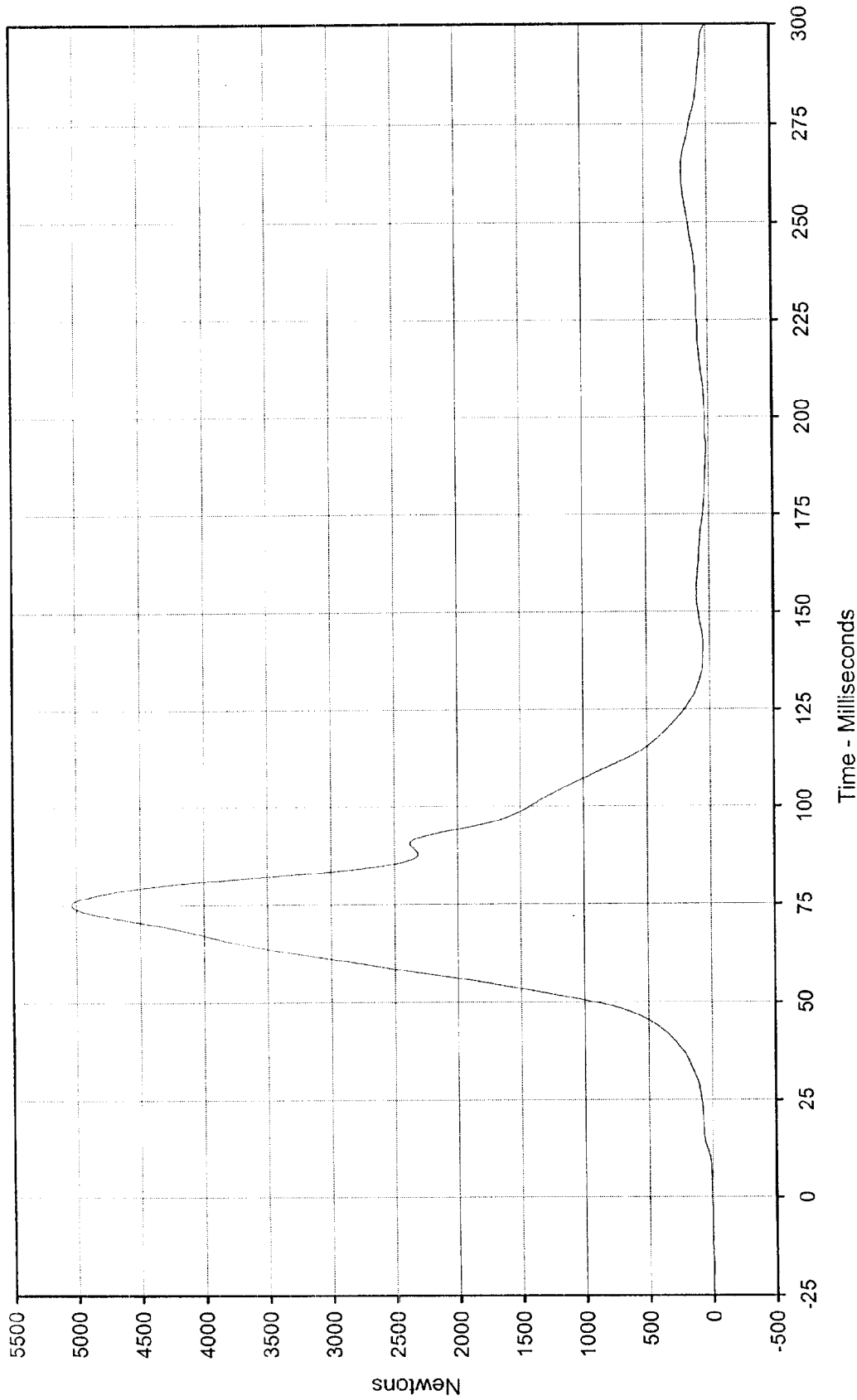




Curve Description: Passenger Lap Belt Force
 Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan

Maximum Value: 4385.7 at 70.4 Milliseconds
 Minimum Value: 2.9 at 0.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 10/27/98
 Curve Number: FIL-085





Curve Description: Passenger Shoulder Belt Force

Maximum Value: 5037.2 at 75.0 Milliseconds

Minimum Value: 6.8 at 299.9 Milliseconds

SAE Filter Class: 60

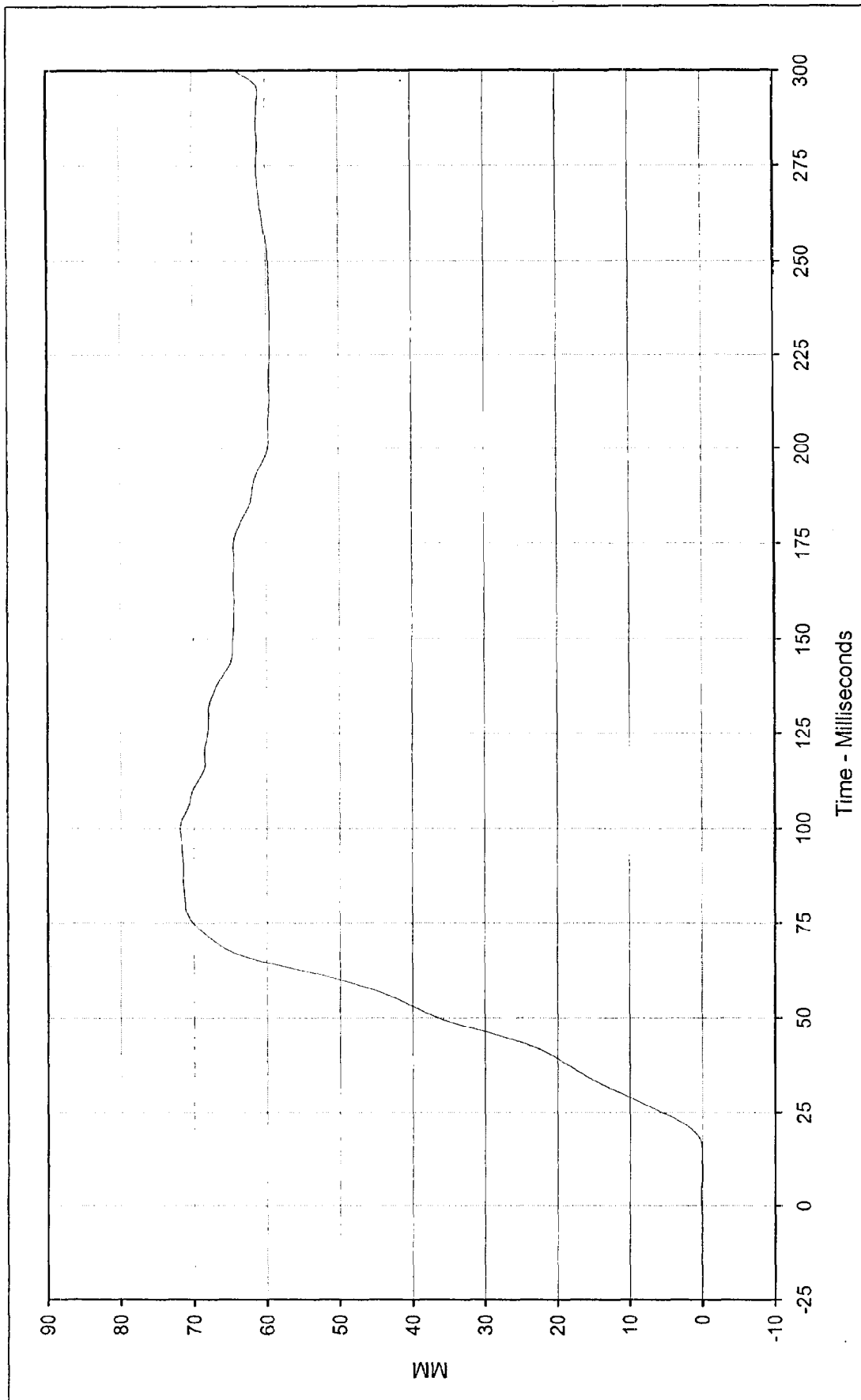
Date of Test: 10/27/98

Curve Number: FIL-086

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan

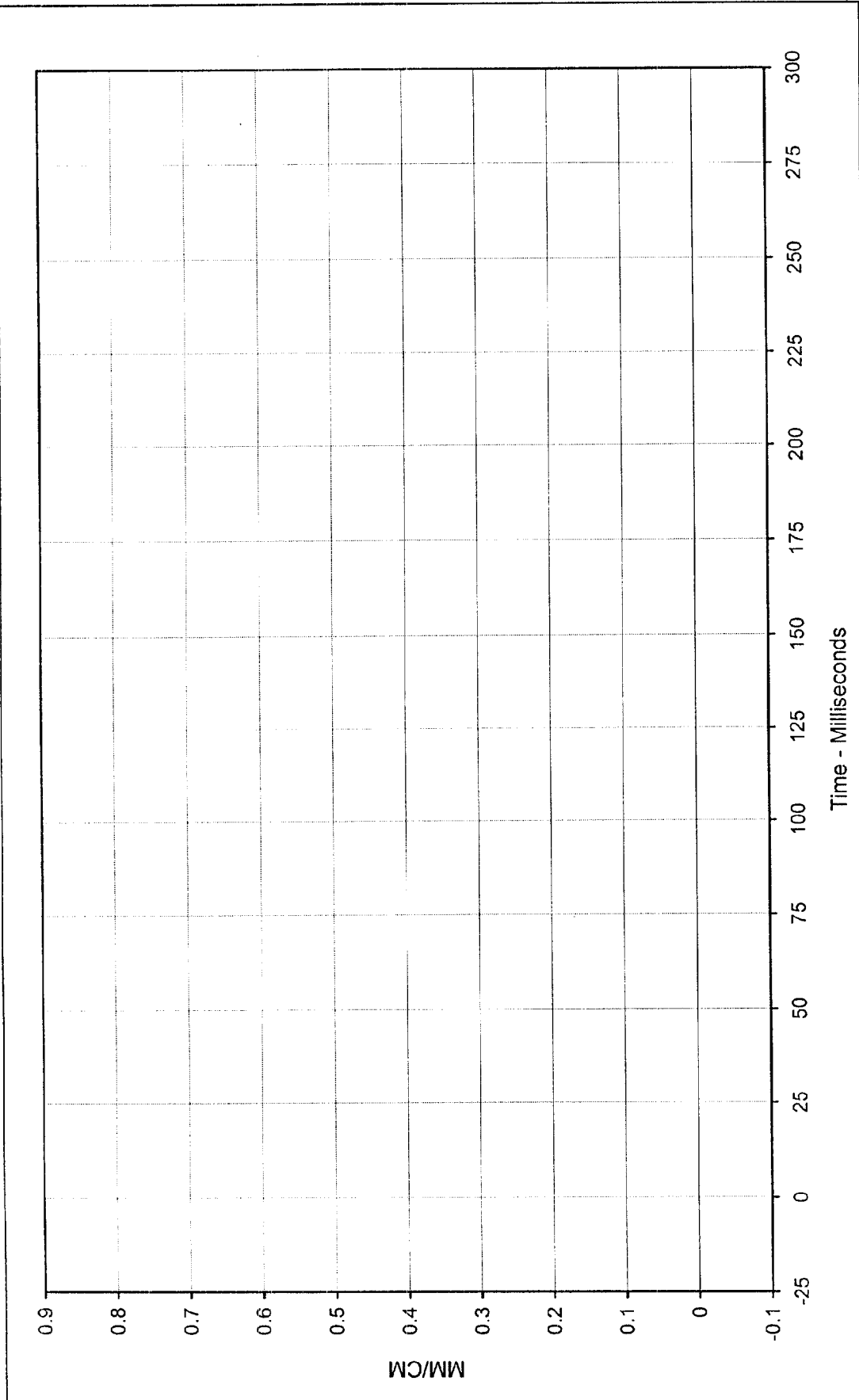




Curve Description: Passenger Shoulder Belt Pullover
 Maximum Value: 71.9 at 71.9 Milliseconds
 Minimum Value: 0.0 at 14.1 Milliseconds
 SAE Filter Class: 60
 Date of Test: 10/27/98
 Curve Number: FIL-087

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Passenger Shoulder Belt Elongation * Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 0.00 at 0.0 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

Minimum Value: 0.00 at 0.0 Milliseconds

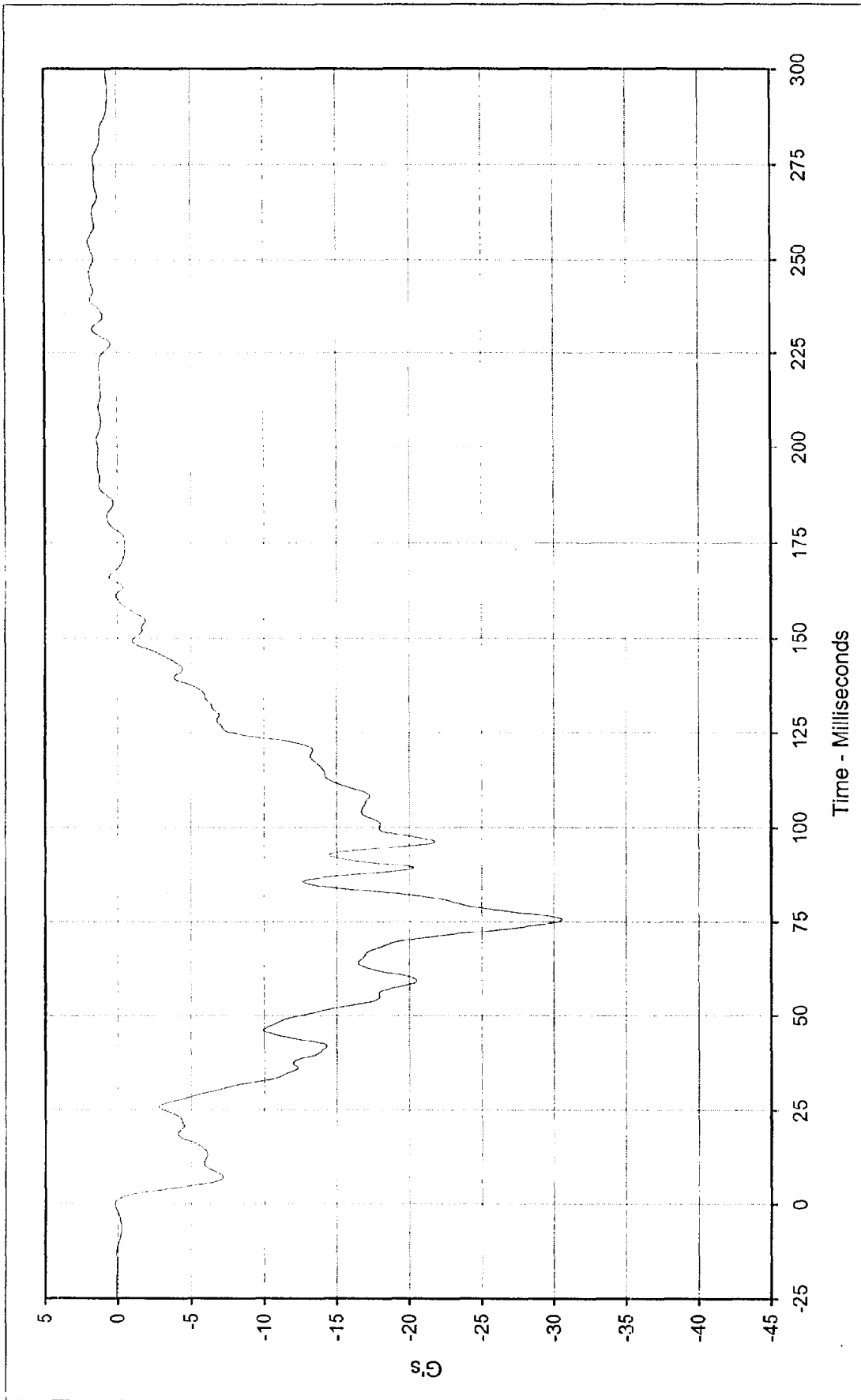
SAE Filter Class: 60

Date of Test: 10/27/98

Curve Number: FIL-088



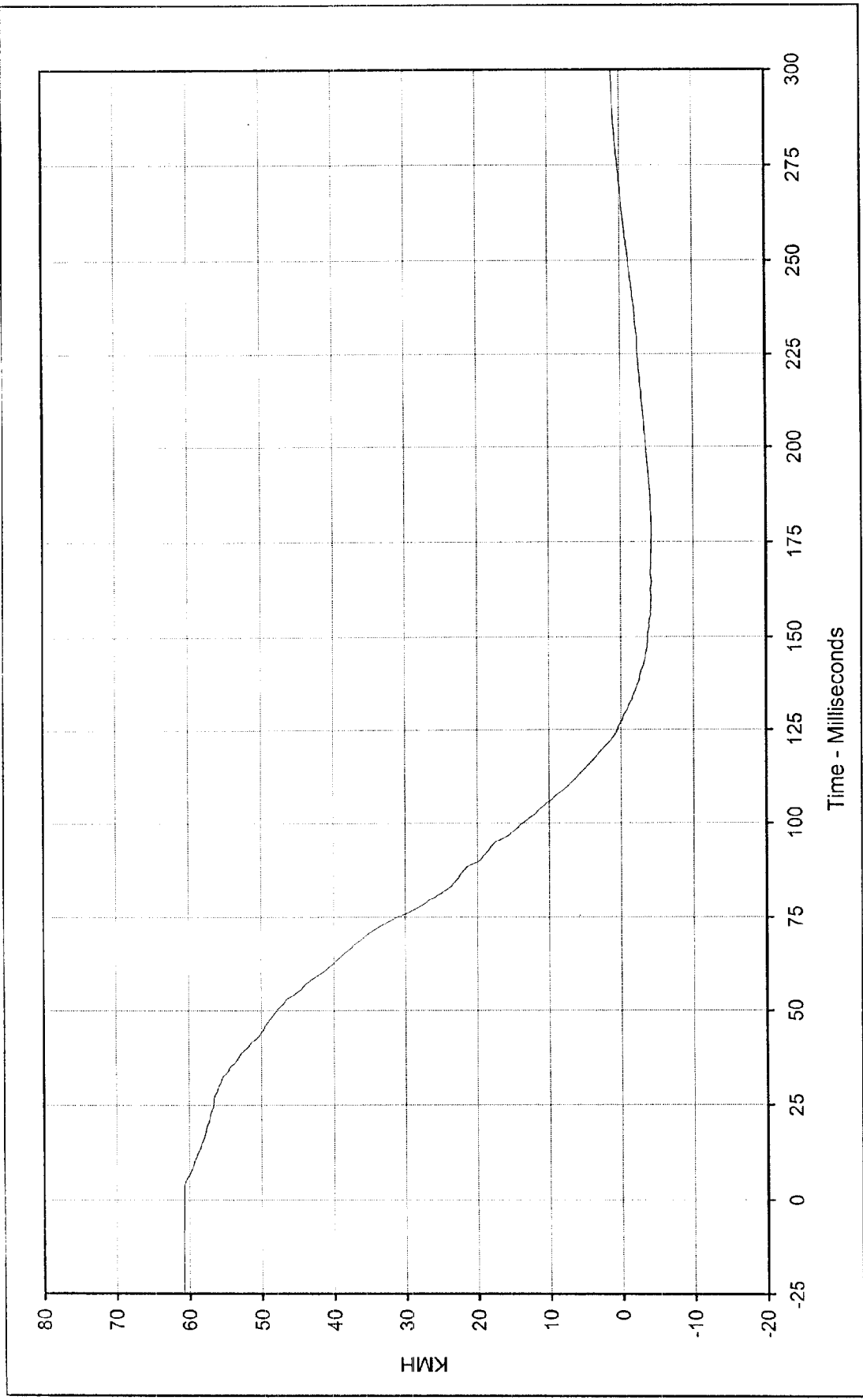
* Channel Failed, No Data



Curve Description: Vehicle Left Sill X
 Maximum Value: 2.0 at 255.0 Milliseconds
 Minimum Value: -30.5 at 75.5 Milliseconds
 SAE Filter Class: 60
 Date of Test: 10/27/98
 Curve Number: FIL-089

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: _____ Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 60.7 at 2.9 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

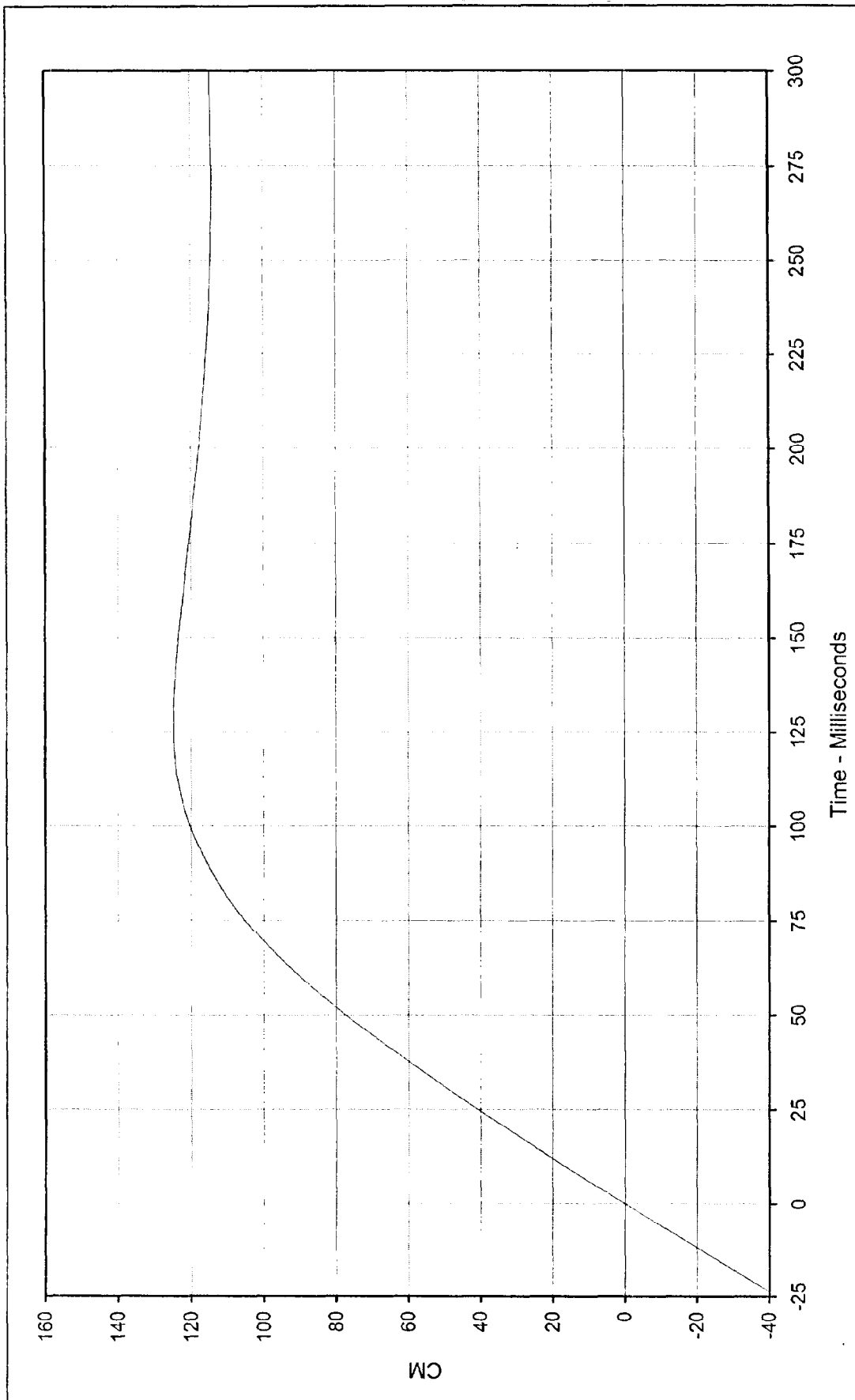
Minimum Value: -4.3 at 178.1 Milliseconds

SAE Filter Class: 180

Date of Test: 10/27/98

Curve Number: IN1-089

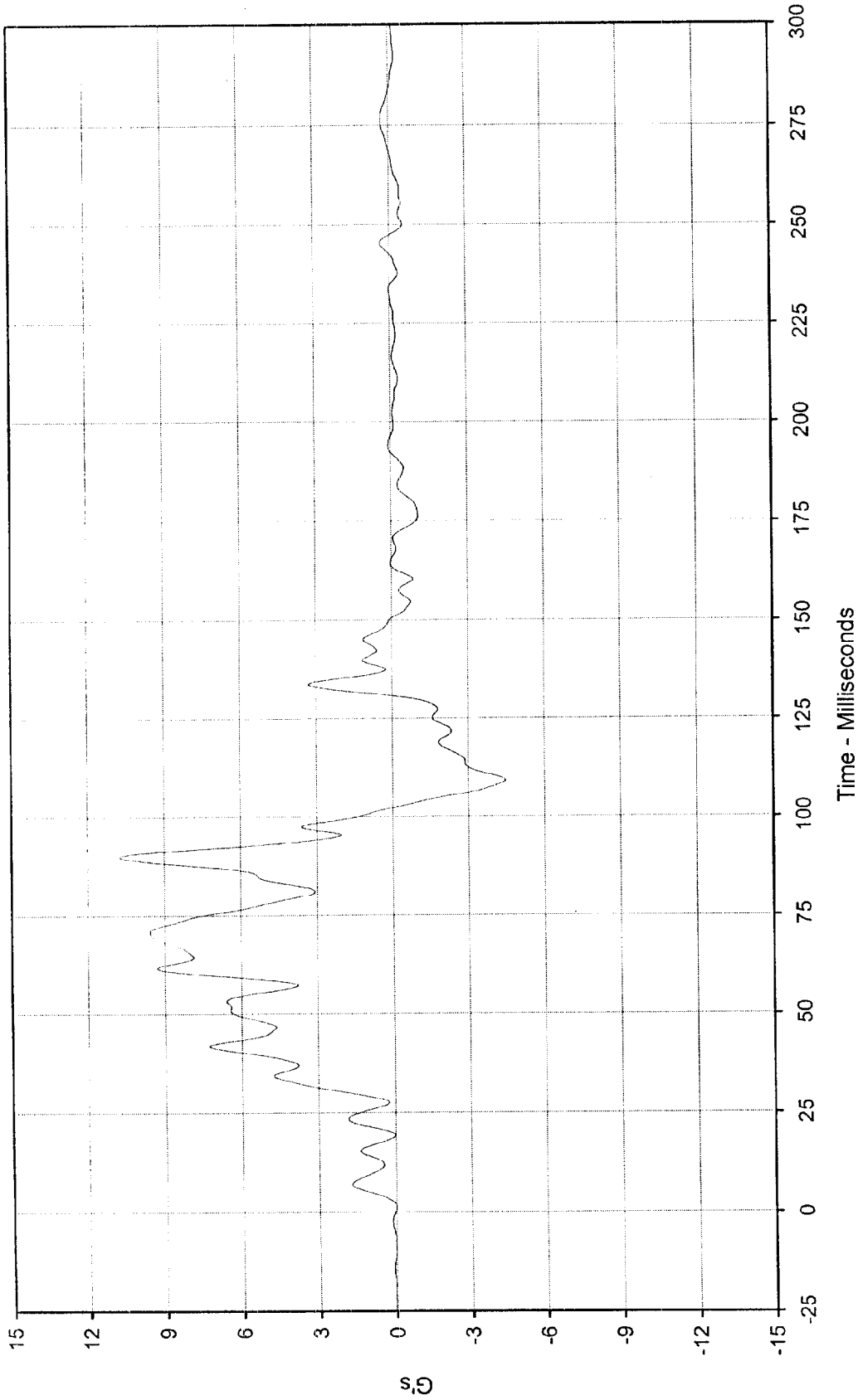




Curve Description: Vehicle Left Sill X Displ.
 Maximum Value: 124.7 at 127.1 Milliseconds
 Minimum Value: 0.1 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 10/27/98
 Curve Number: IN2-089

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

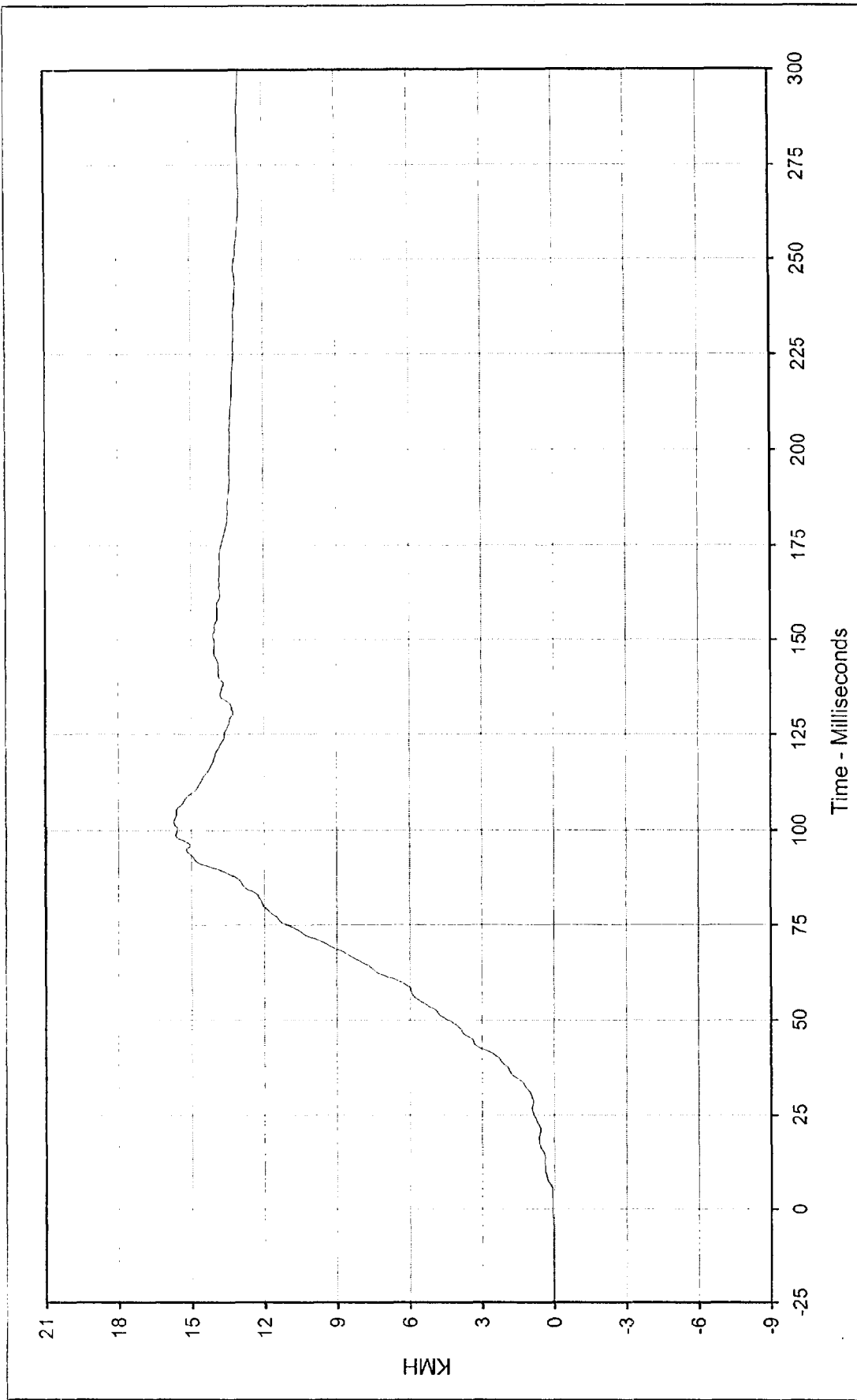
Maximum Value: 10.7 at 90.0 Milliseconds
Minimum Value: -4.5 at 109.4 Milliseconds

SAE Filter Class: 60

Date of Test: 10/27/98

Curve Number: FIL-090

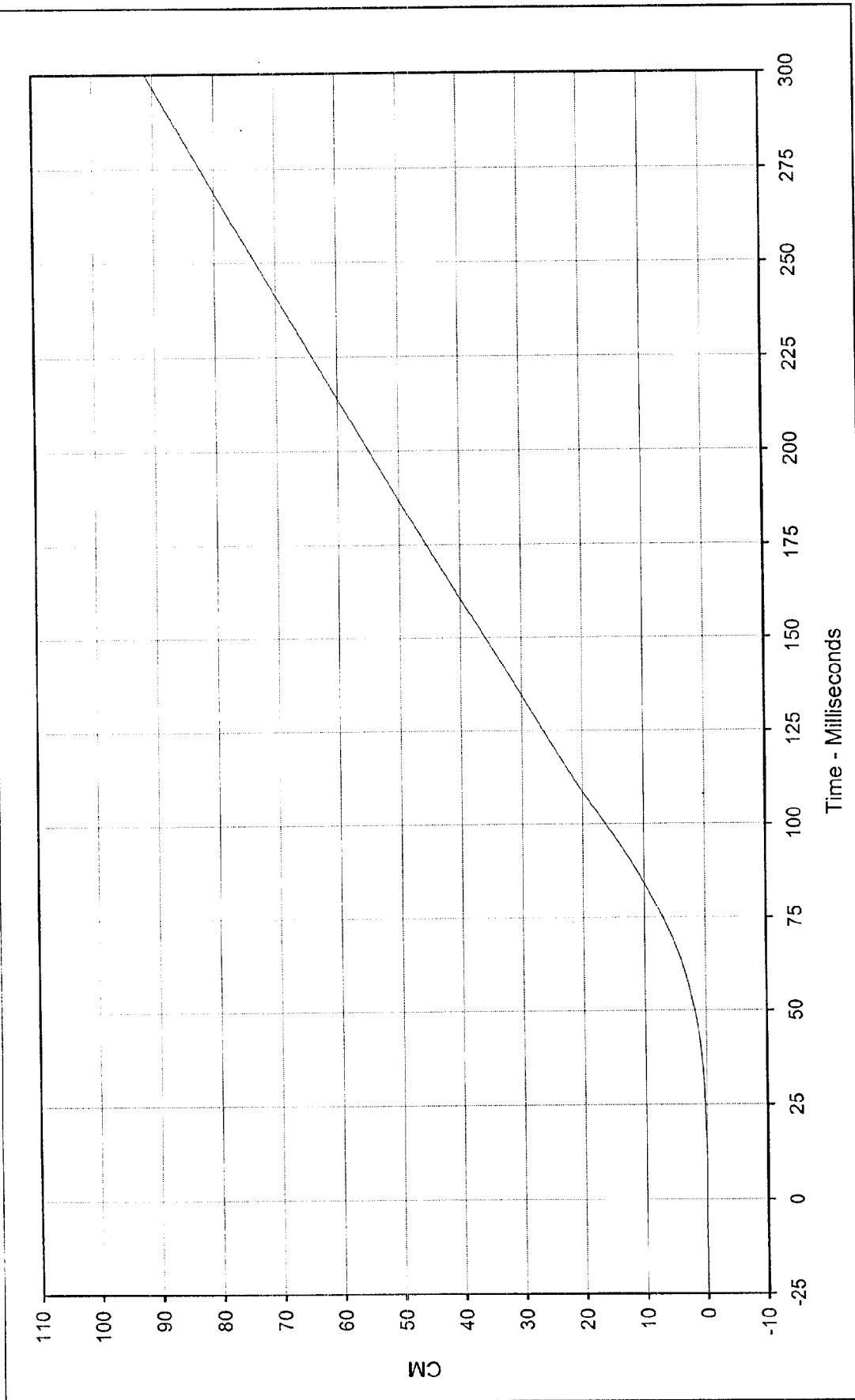




Curve Description: Vehicle Left Sill Y Velocity
 Maximum Value: 15.7 at 102.4 Milliseconds
 Minimum Value: 0.1 at 2.2 Milliseconds
 SAE Filter Class: 180
 Date of Test: 10/27/98
 Curve Number: IN1-090

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan

Curve Description: Vehicle Left Sill Y Displ.

Maximum Value: 91.2 at 299.9 Milliseconds

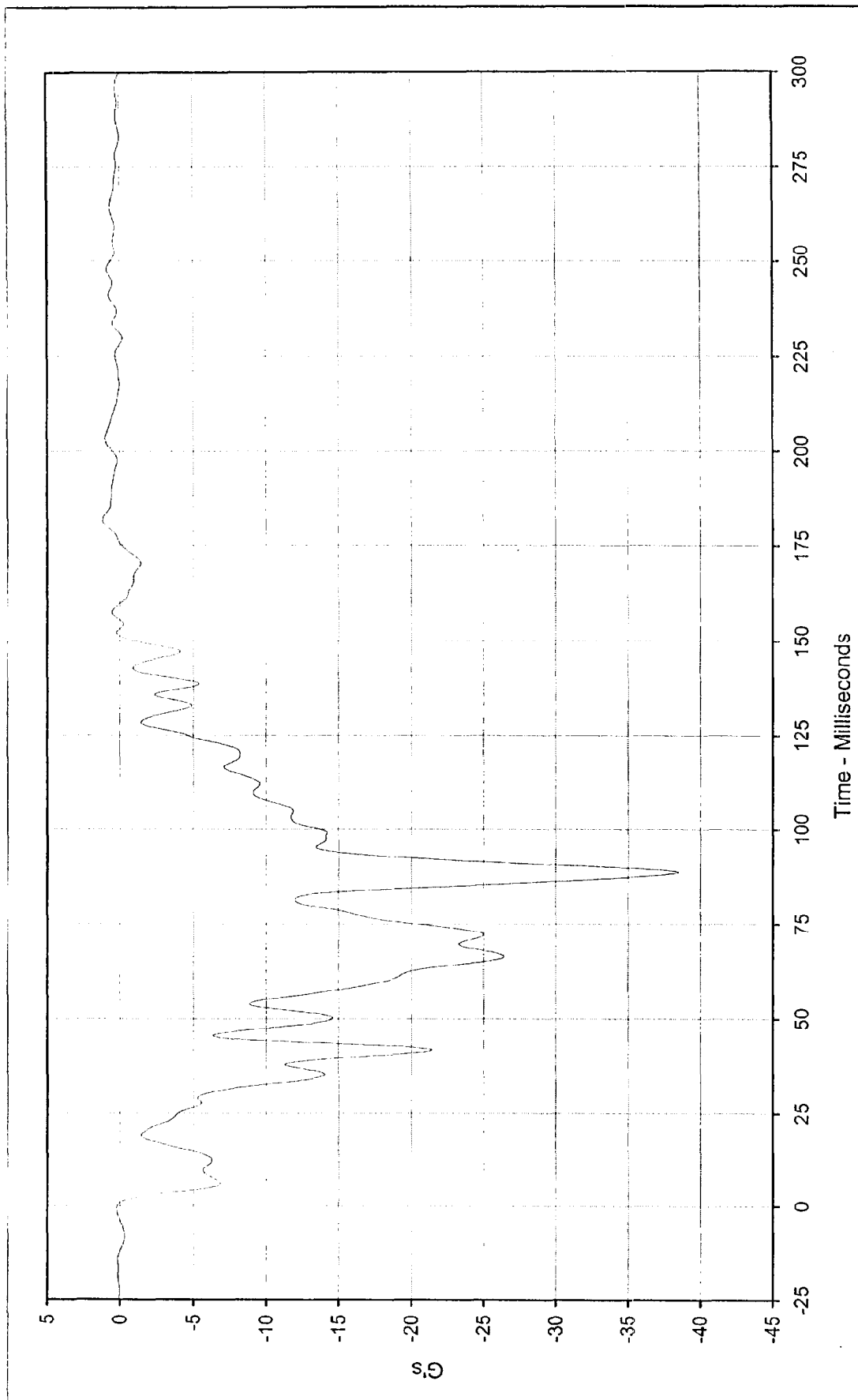
Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 10/27/98

Curve Number: IN2-090

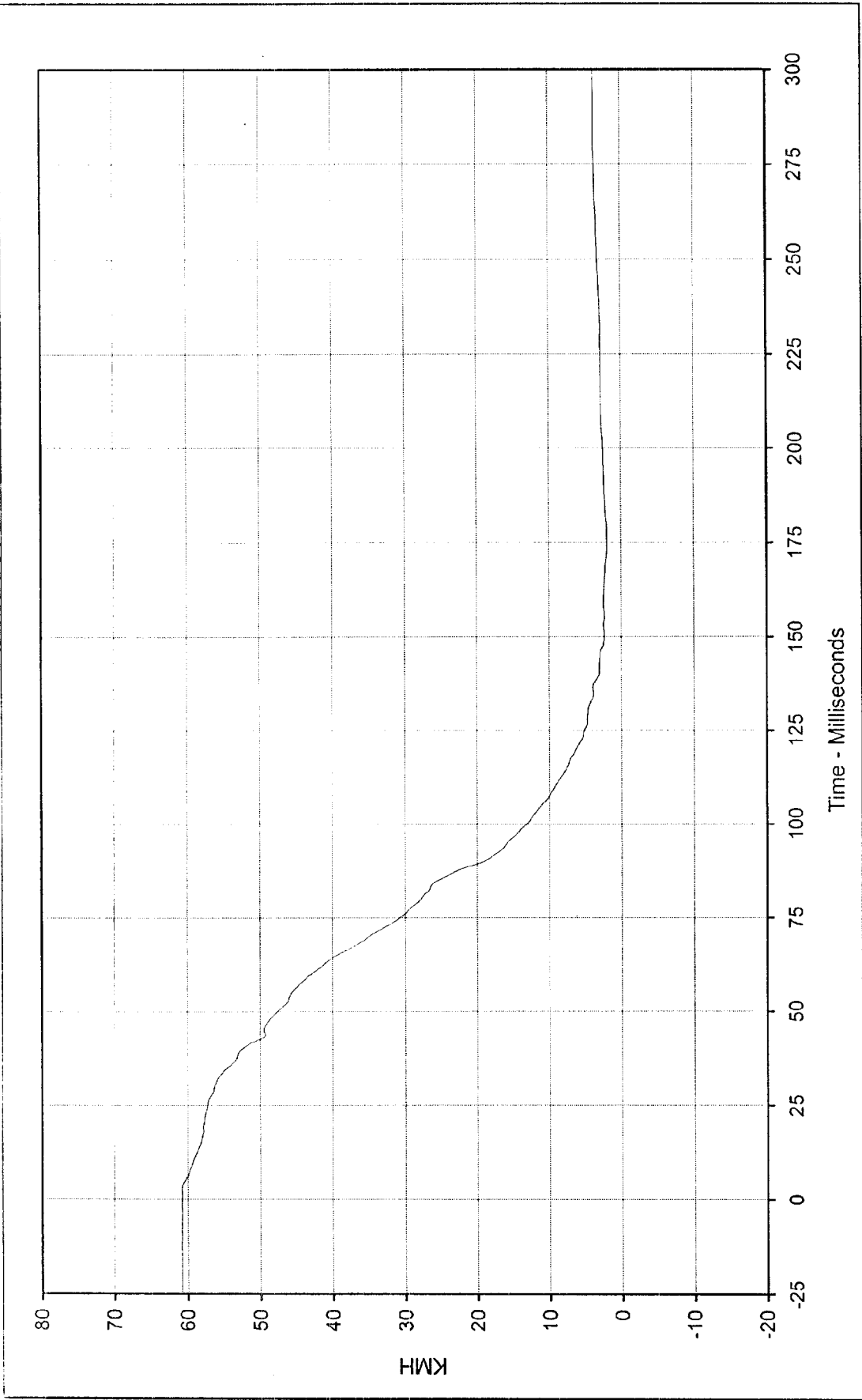




Curve Description: _____ Vehicle Center Tunnel X
 Maximum Value: 1.2 at 181.7 Milliseconds
 Minimum Value: -38.5 at 88.6 Milliseconds
 SAE Filter Class: 60
 Date of Test: 10/27/98
 Curve Number: FIL-091

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Vehicle Center Tunnel X Velocity Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 60.7 at 2.8 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

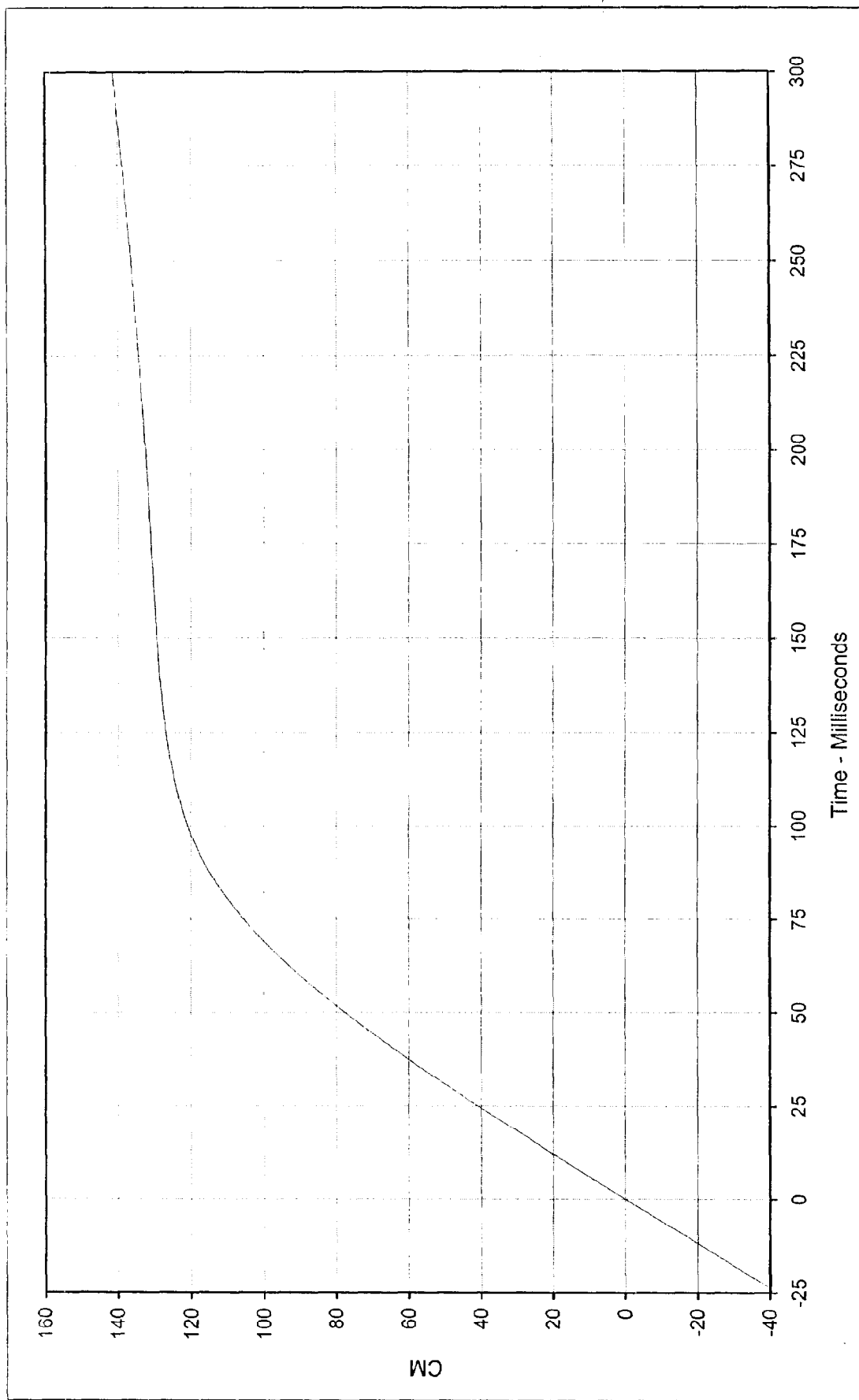
Minimum Value: 2.0 at 175.6 Milliseconds

SAE Filter Class: 180

Date of Test: 10/27/98

Curve Number: IN1-091





Curve Description: Vehicle Center Tunnel X Displ. Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 141.2 at 299.9 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

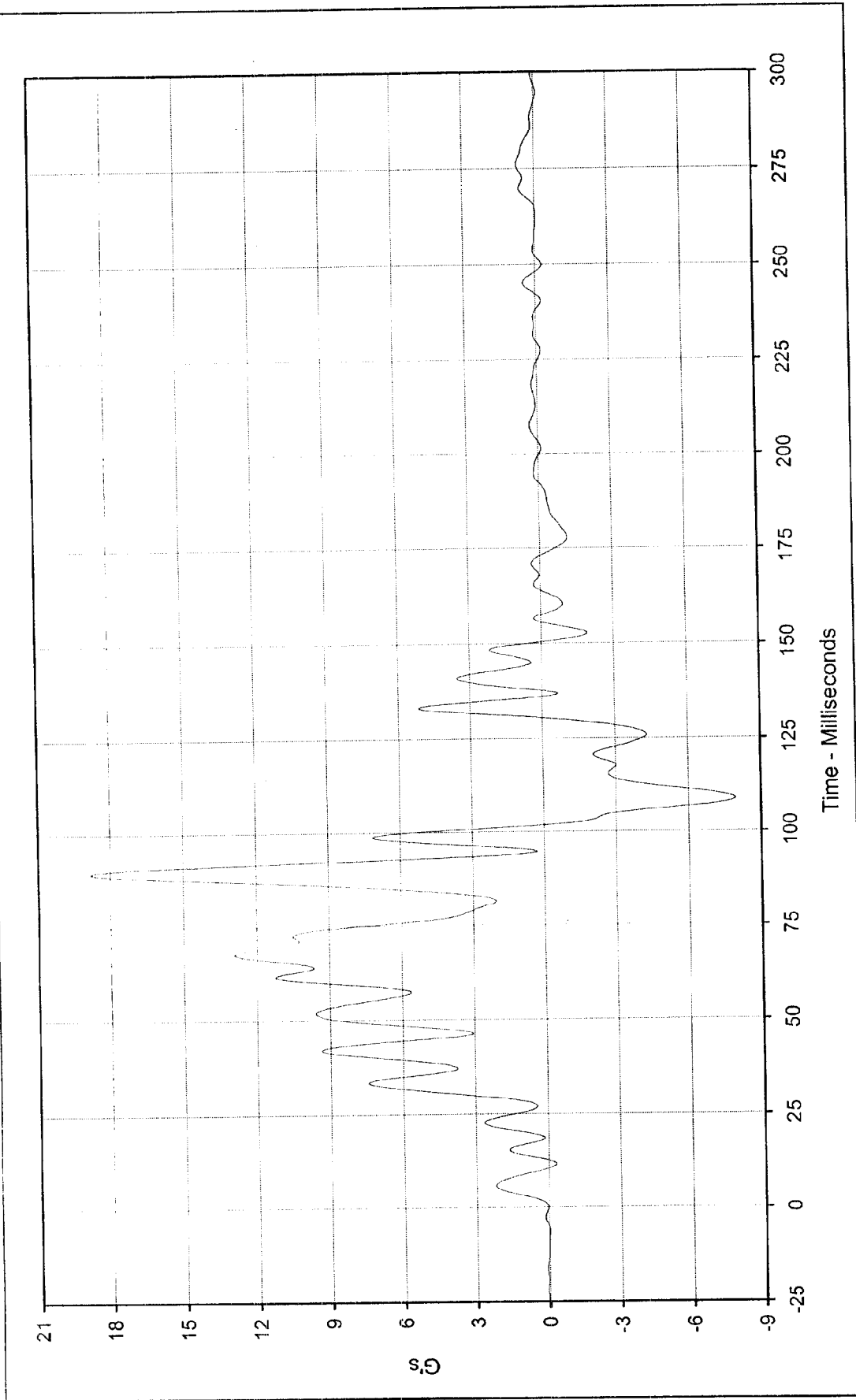
Minimum Value: 0.1 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 10/27/98

Curve Number: IN2-091





Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan

Curve Description: Vehicle Center Tunnel Y

Maximum Value: 18.8 at 89.5 Milliseconds

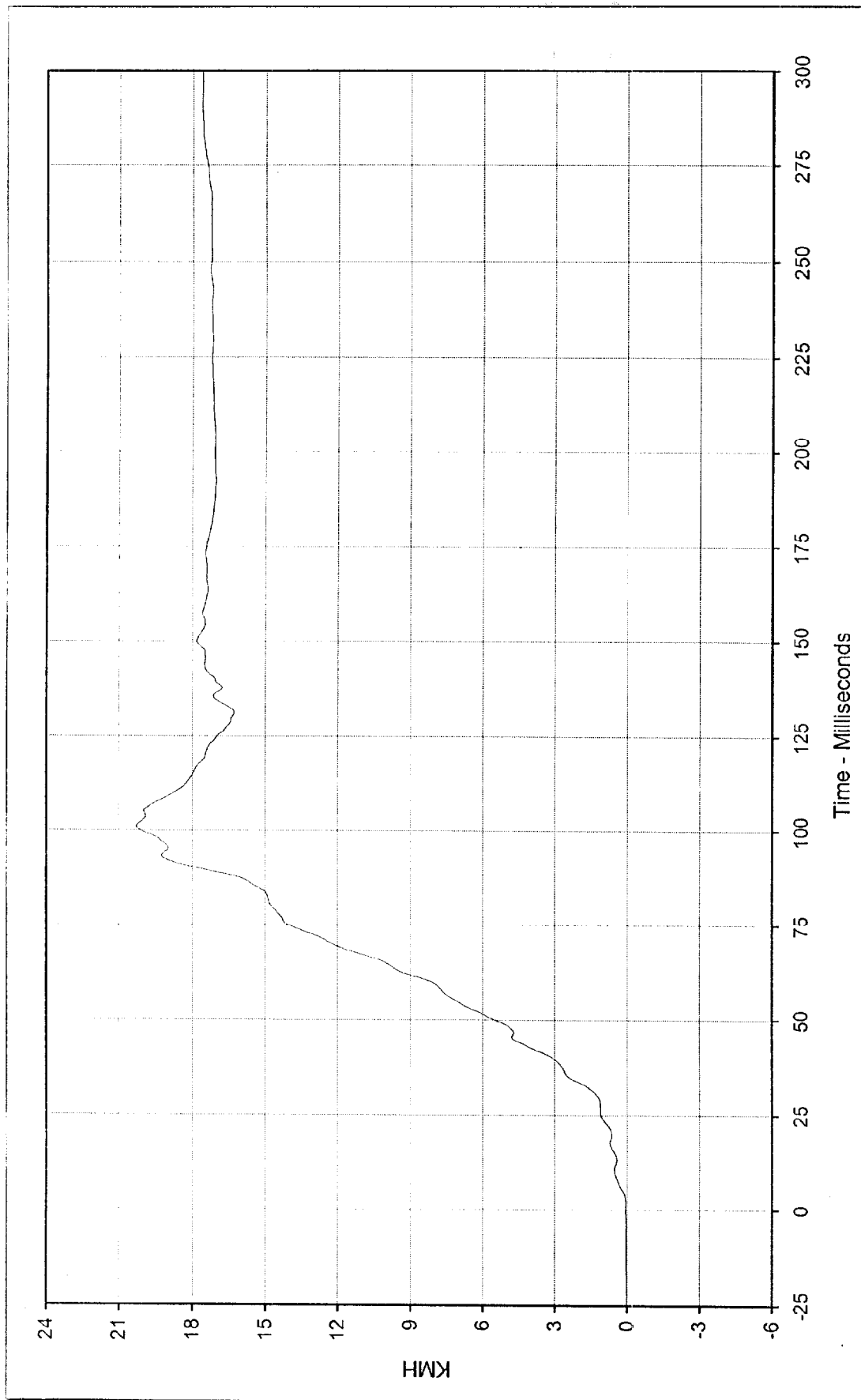
Minimum Value: -8.0 at 108.8 Milliseconds

SAE Filter Class: 60

Date of Test: 10/27/98

Curve Number: FIL-092

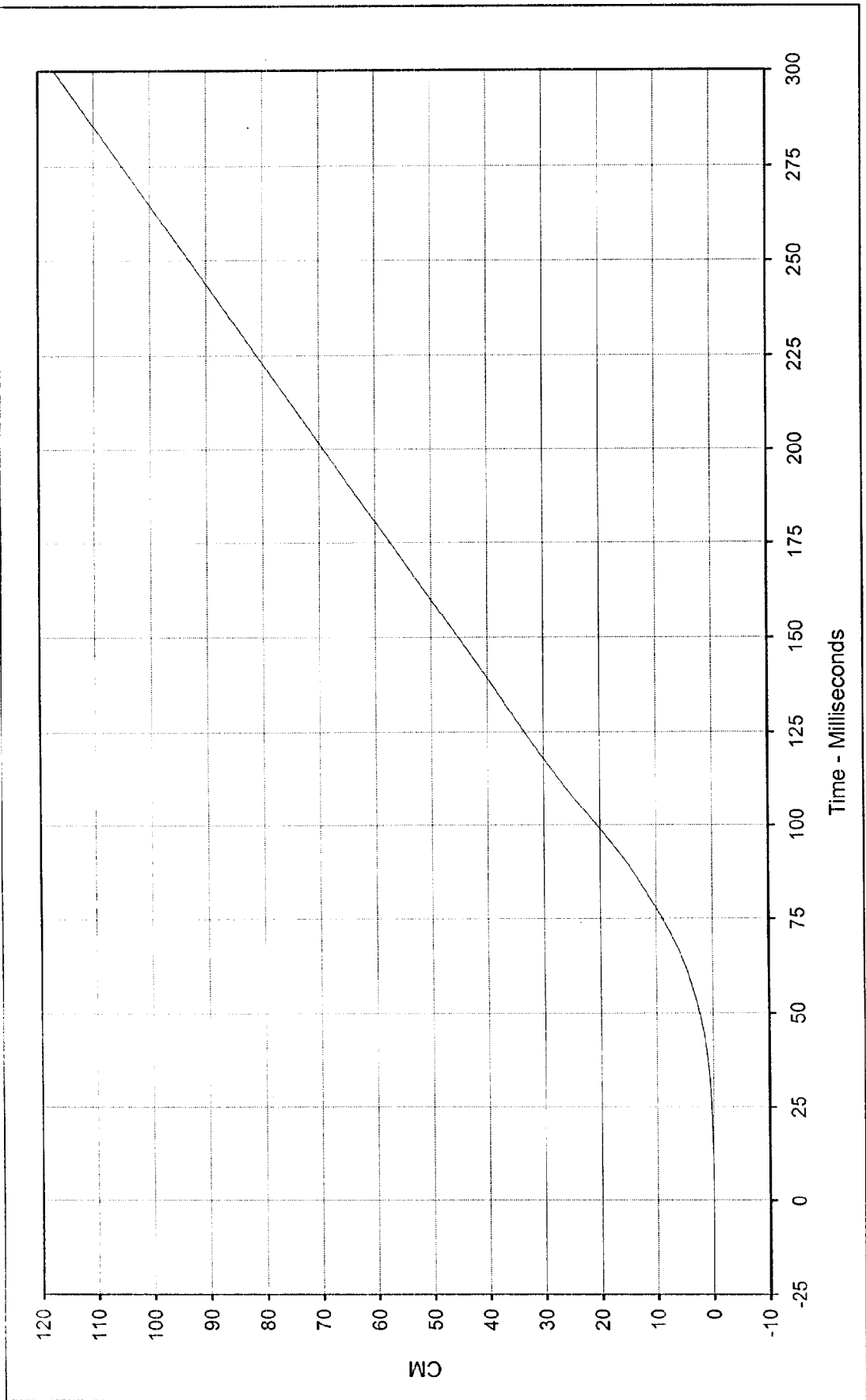




Curve Description: Vehicle Center Tunnel Y Velocity
 Maximum Value: 20.3 at 101.2 Milliseconds
 Minimum Value: 0.1 at 1.4 Milliseconds
 SAE Filter Class: 180
 Date of Test: 10/27/98
 Curve Number: IN1-092

Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: _____ Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 117.0 at 299.9 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

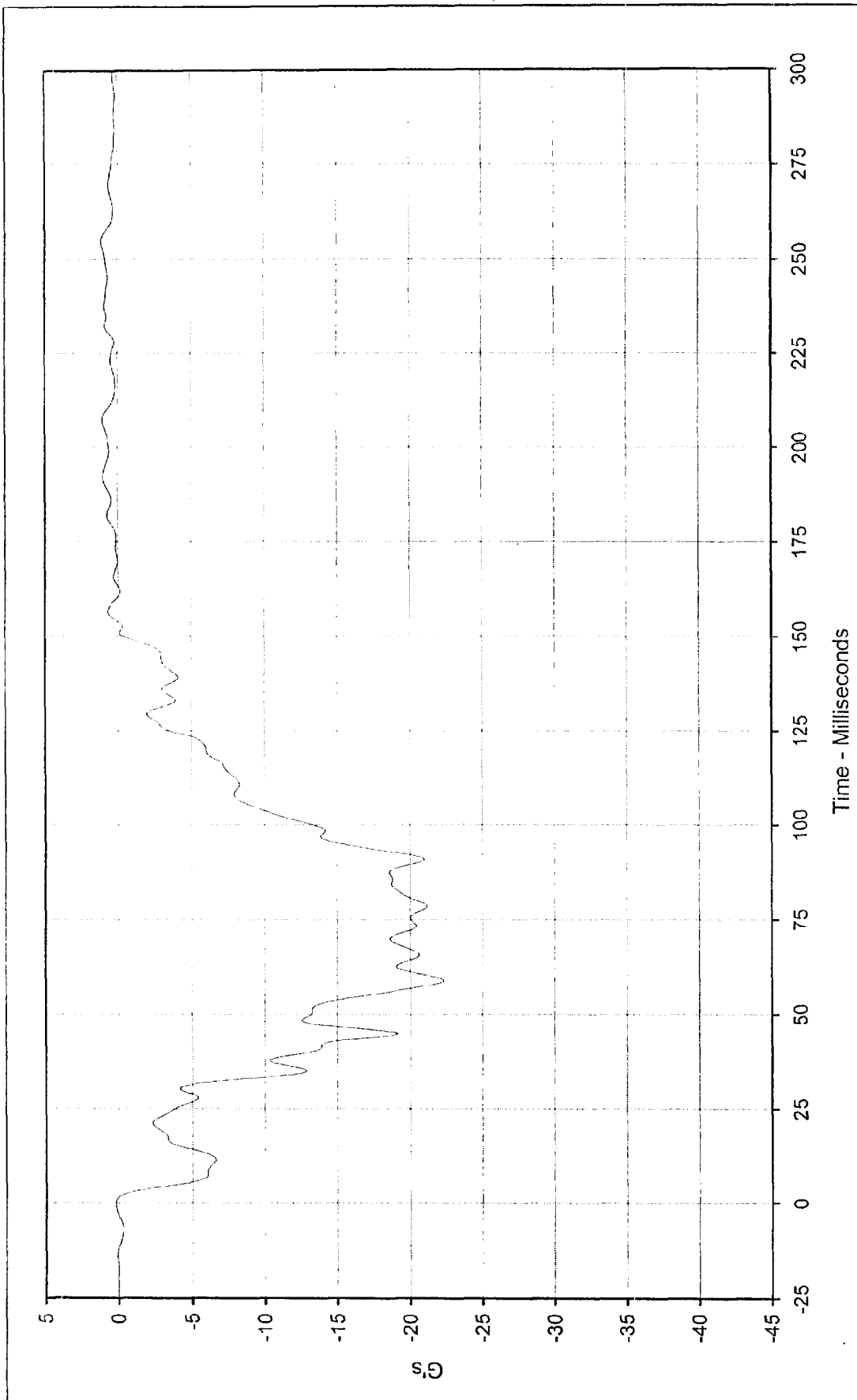
Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 10/27/98

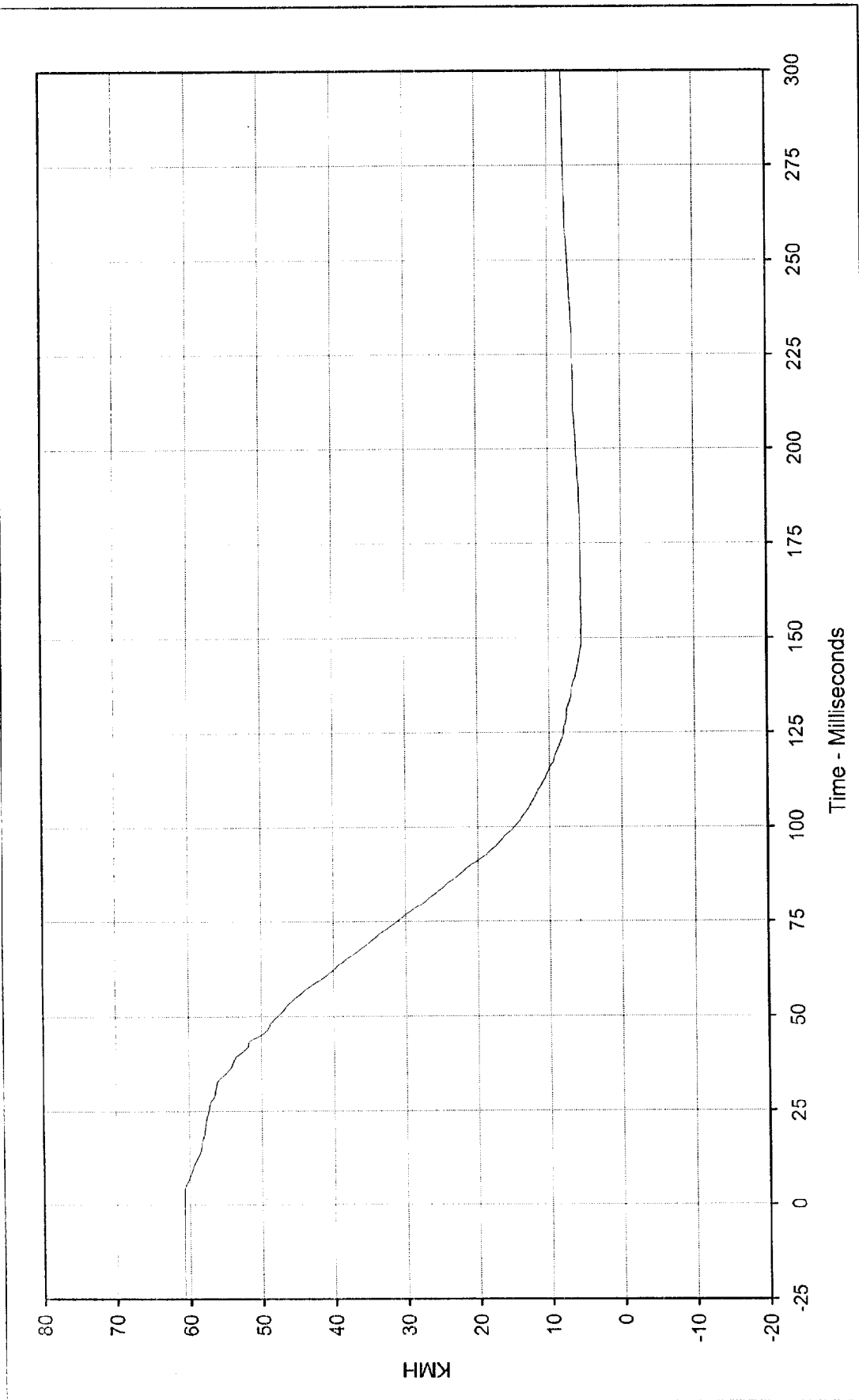
Curve Number: IN2-092





Curve Description: Vehicle Right Side X
 Maximum Value: 1.1 at 254.7 Milliseconds
 Minimum Value: -22.3 at 58.9 Milliseconds
 SAE Filter Class: 60
 Date of Test: 10/27/98
 Curve Number: FIL-093





Curve Description: Vehicle Right Sill X Velocity

Maximum Value: 60.7 at 3.5 Milliseconds

Minimum Value: 5.4 at 154.1 Milliseconds

SAE Filter Class: 180

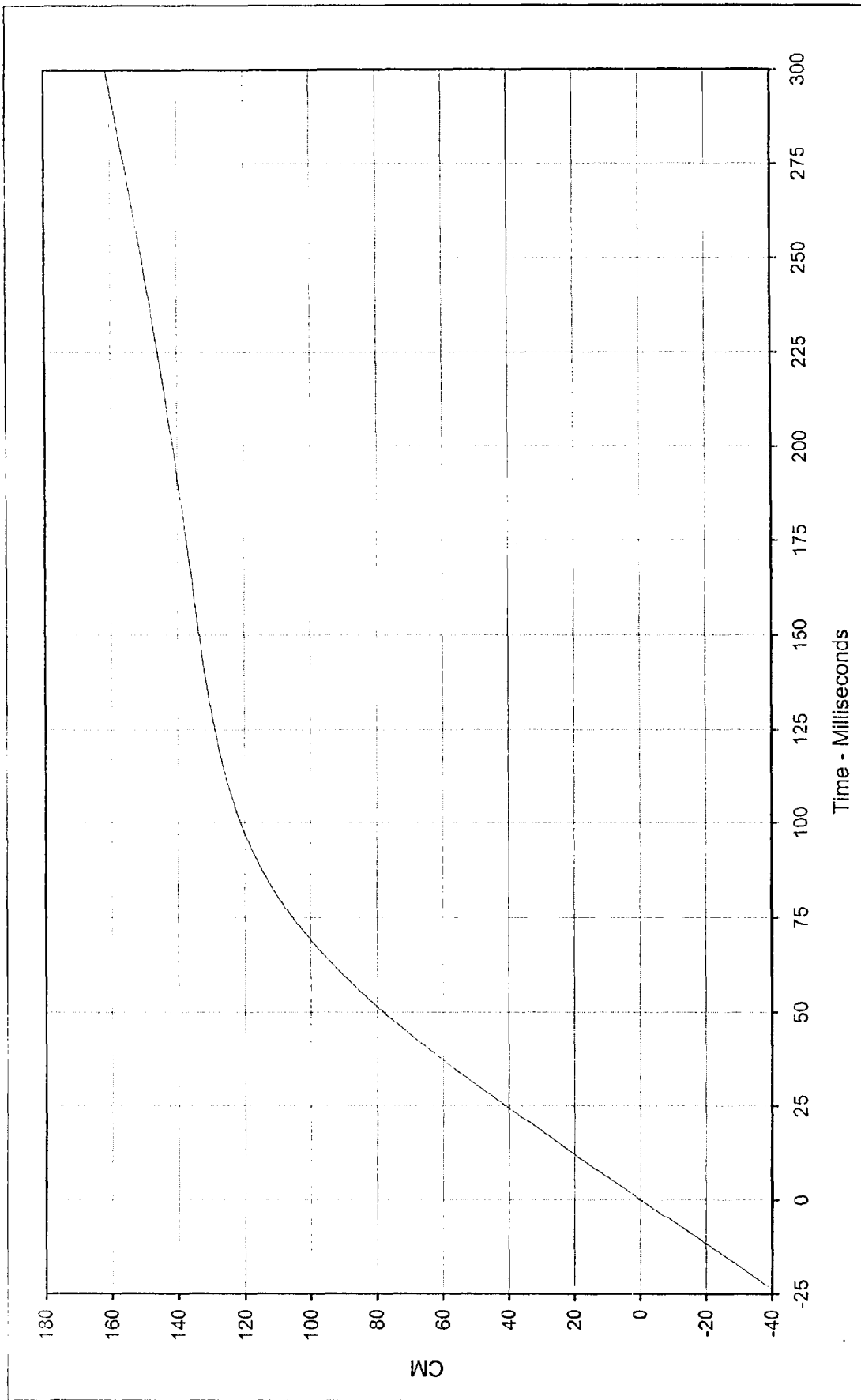
Date of Test: 10/27/98

Curve Number: IN1-093

Testing Program: 1998 37.5mph Offset, 5th Female No. MW0311

Test Vehicle: 1998 Dodge Neon 4 Door Sedan

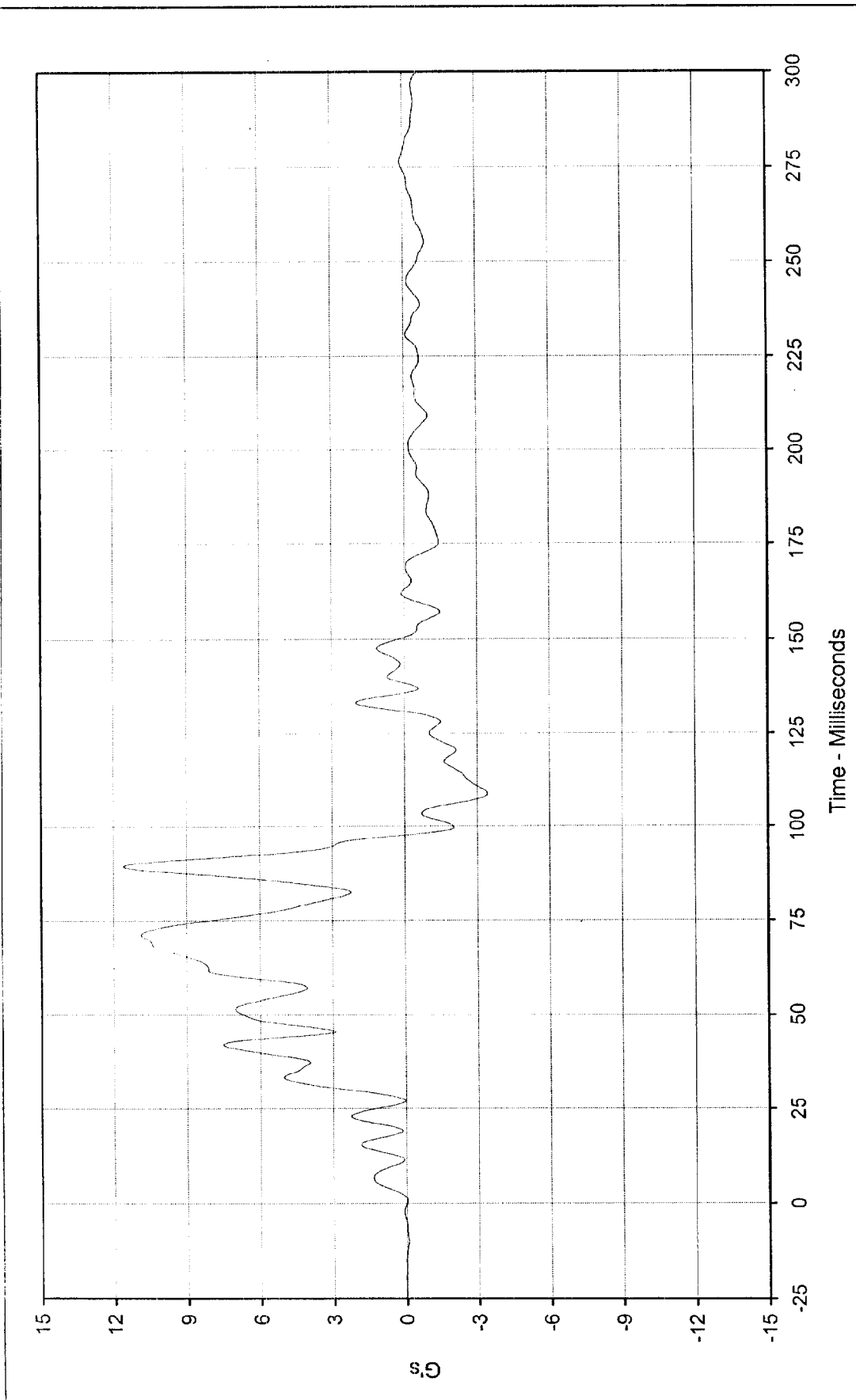




Curve Description: Vehicle Right Side X Displ. Testing Program: 1998 27 5mph Offset, 5th Female Not: MW0311
 Maximum Value: 161.2 at 299.9 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan
 Minimum Value: 0.0 at 0.0 Milliseconds



SAE Filter Class: 180
 Date of Test: 10/27/98
 Curve Number: IN2-093



Curve Description: Vehicle Right Sill Y Testing Program: 1998 37 5mph Offset, 5th Female No.: MW0211

Maximum Value: 11.6 at 89.4 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

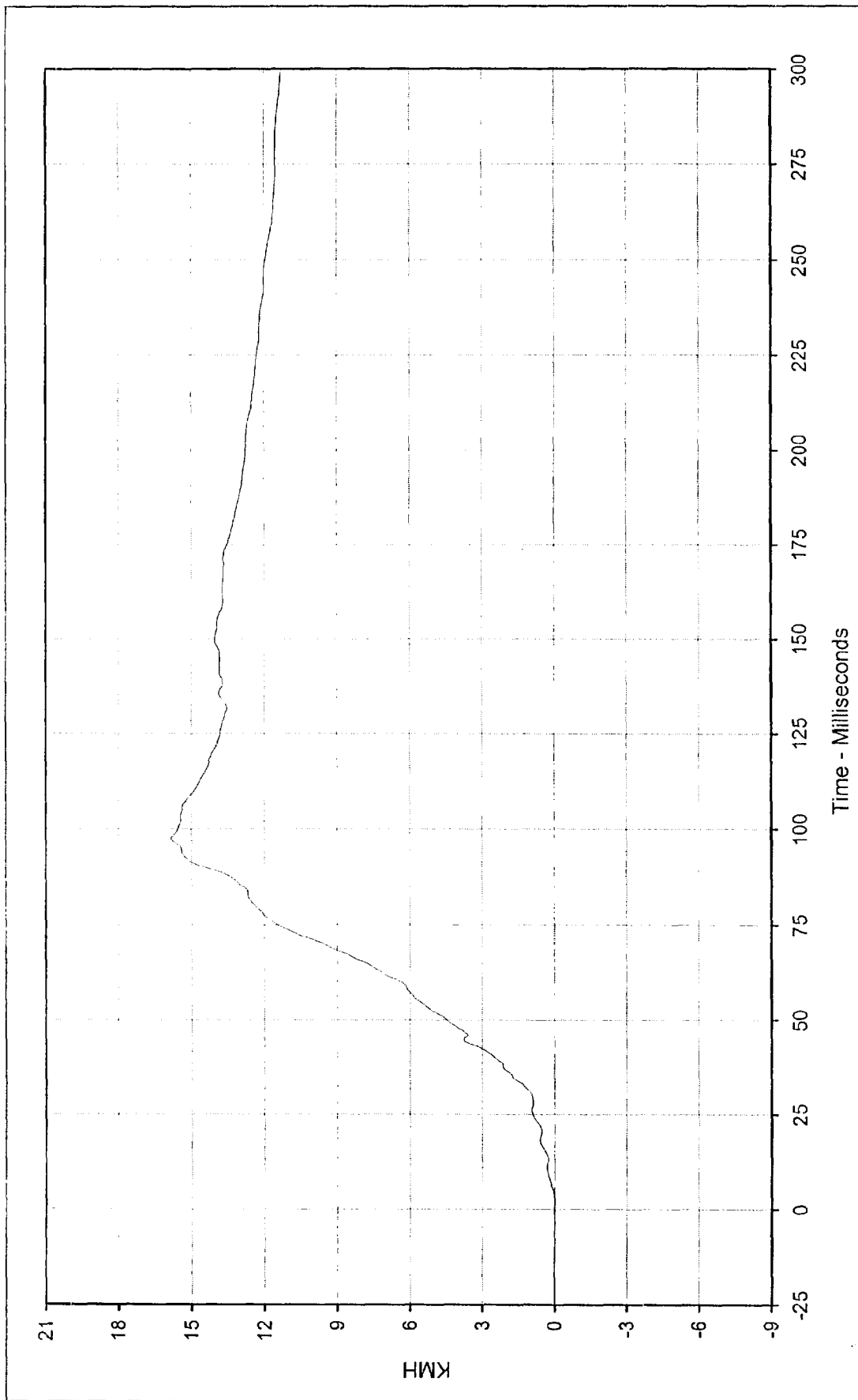
Minimum Value: -3.4 at 108.9 Milliseconds

SAE Filter Class: 60

Date of Test: 10/27/98

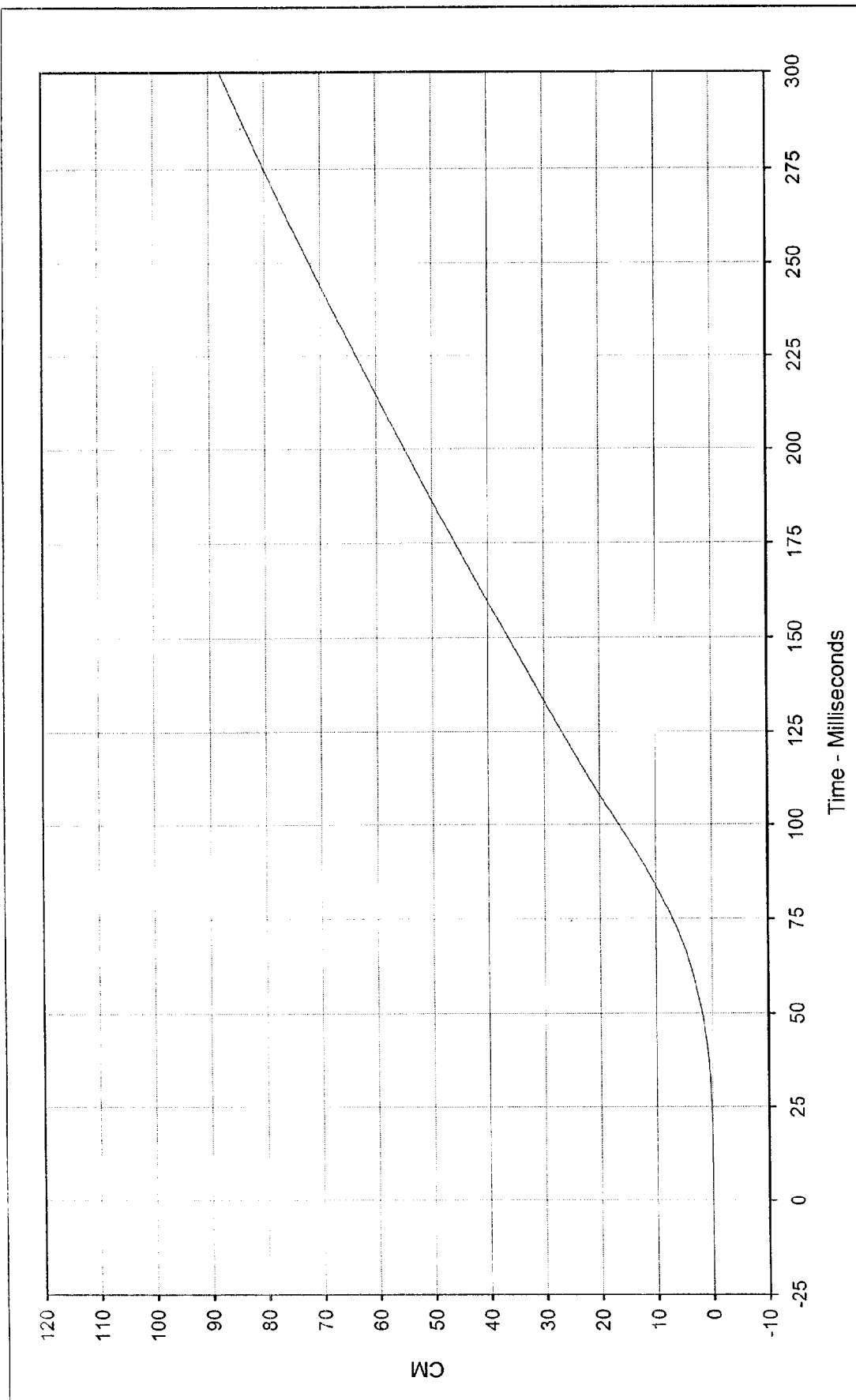
Curve Number: FIL-094





Curve Description:	Vehicle Right Sill Y Velocity			
Maximum Value:	15.8	at	97.3	Milliseconds
Minimum Value:	0.0	at	2.6	Milliseconds
SAE Filter Class:	180			
Date of Test:	10/27/98			
Curve Number:	IN1-094			
Testing Program:	1998 27.5mph Offset, 5 th Female No.: MW0311			
Test Vehicle:	1998 Dodge Neon 4 Door Sedan			





Curve Description: Vehicle Right Sill V Displ. Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 88.0 at 299.9 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

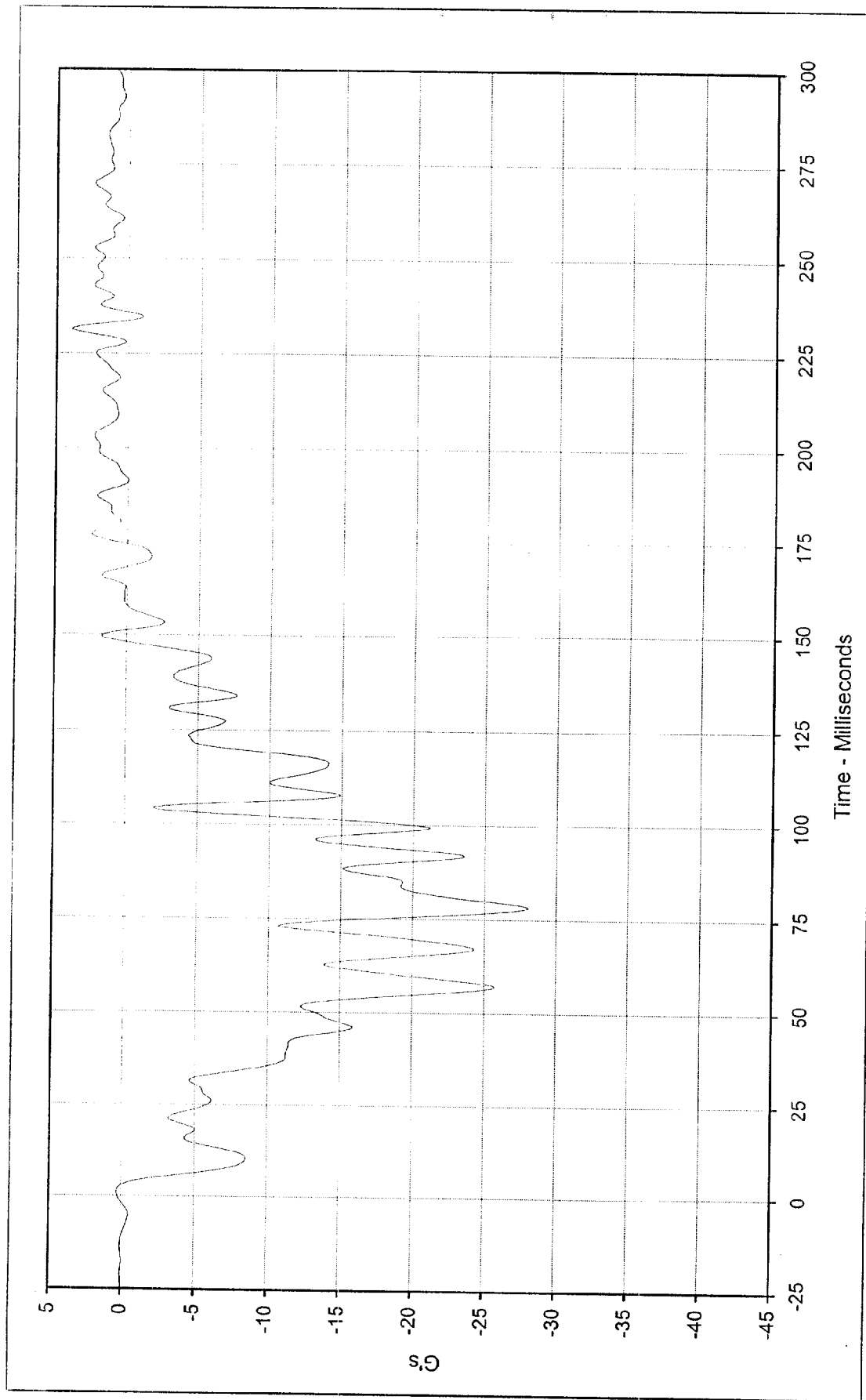
Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 10/27/98

Curve Number: IN2-094





Curve Description:

Vehicle Trunk X

Maximum Value:

3.9

at

231.5

Milliseconds

Minimum Value:

-28.1

at

78.2

Milliseconds

SAE Filter Class:

60

Date of Test:

10/27/98

Curve Number:

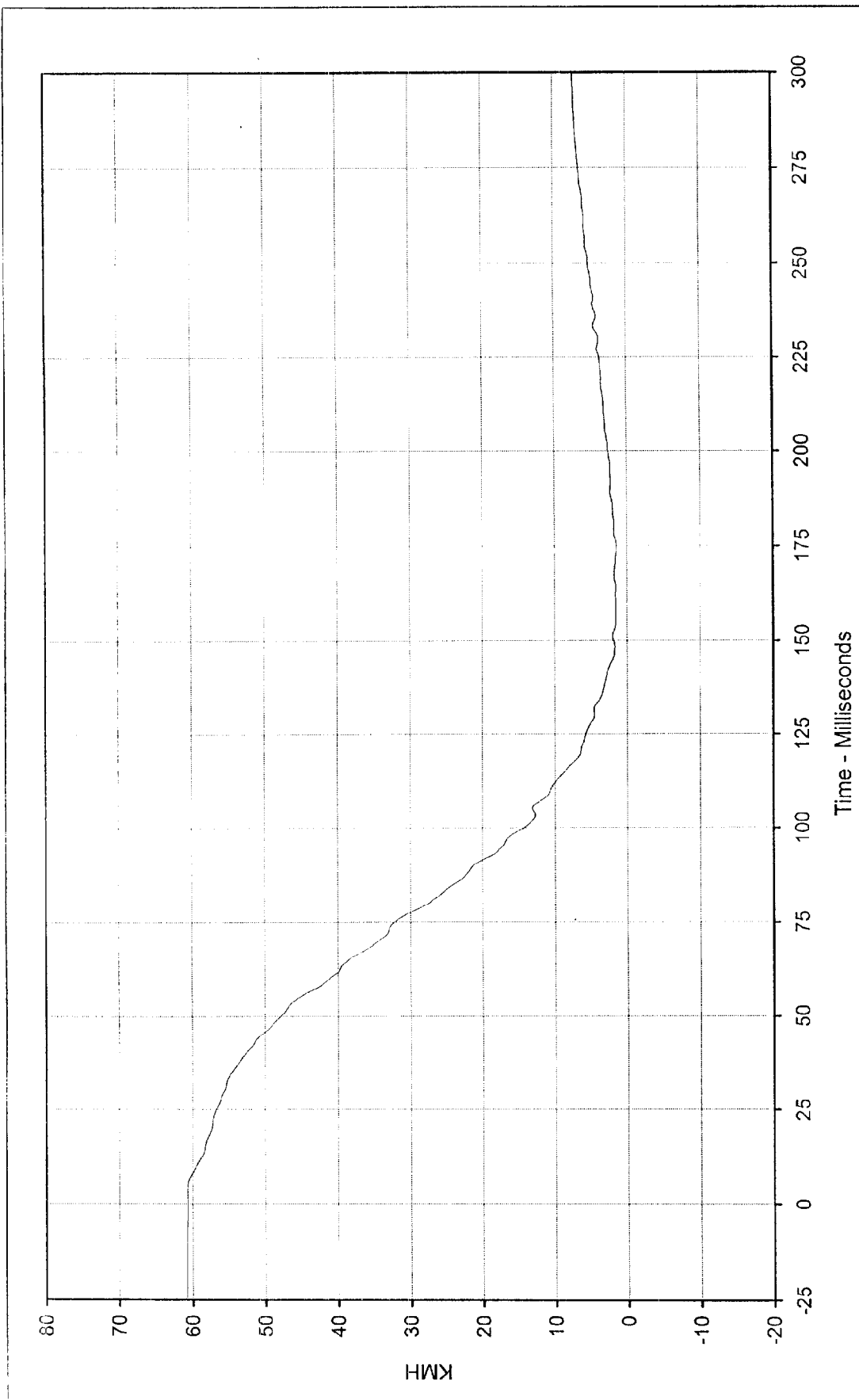
FIL-095

Testing Program: 1998 27.5mph Offset, 5th Female No.: MW0311

Test Vehicle:

1998 Dodge Neon 4 Door Sedan





Curve Description: Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 60.7 at 1.4 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

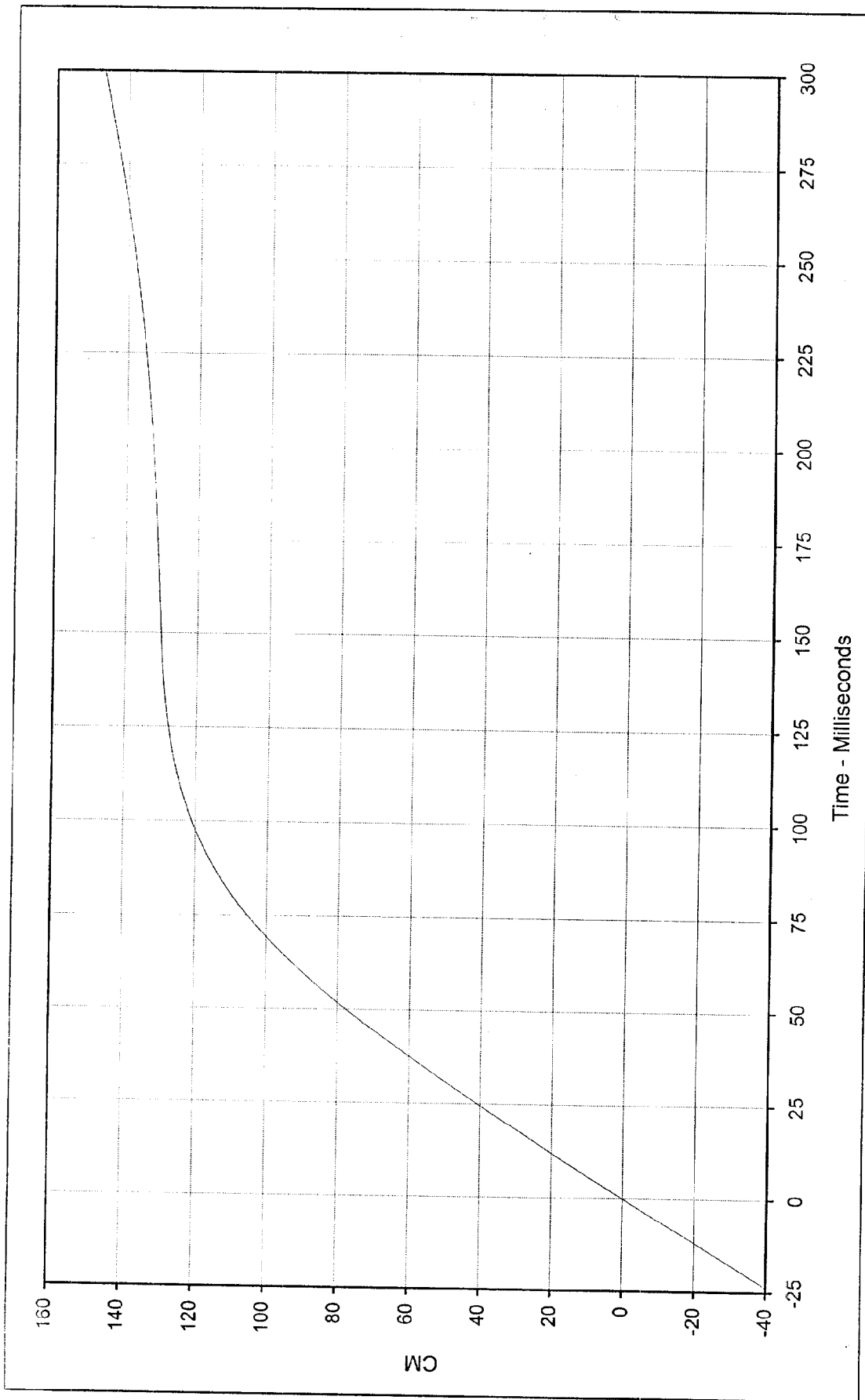
Minimum Value: 1.5 at 174.3 Milliseconds

SAE Filter Class: 180

Date of Test: 10/27/98

Curve Number: IN1-095

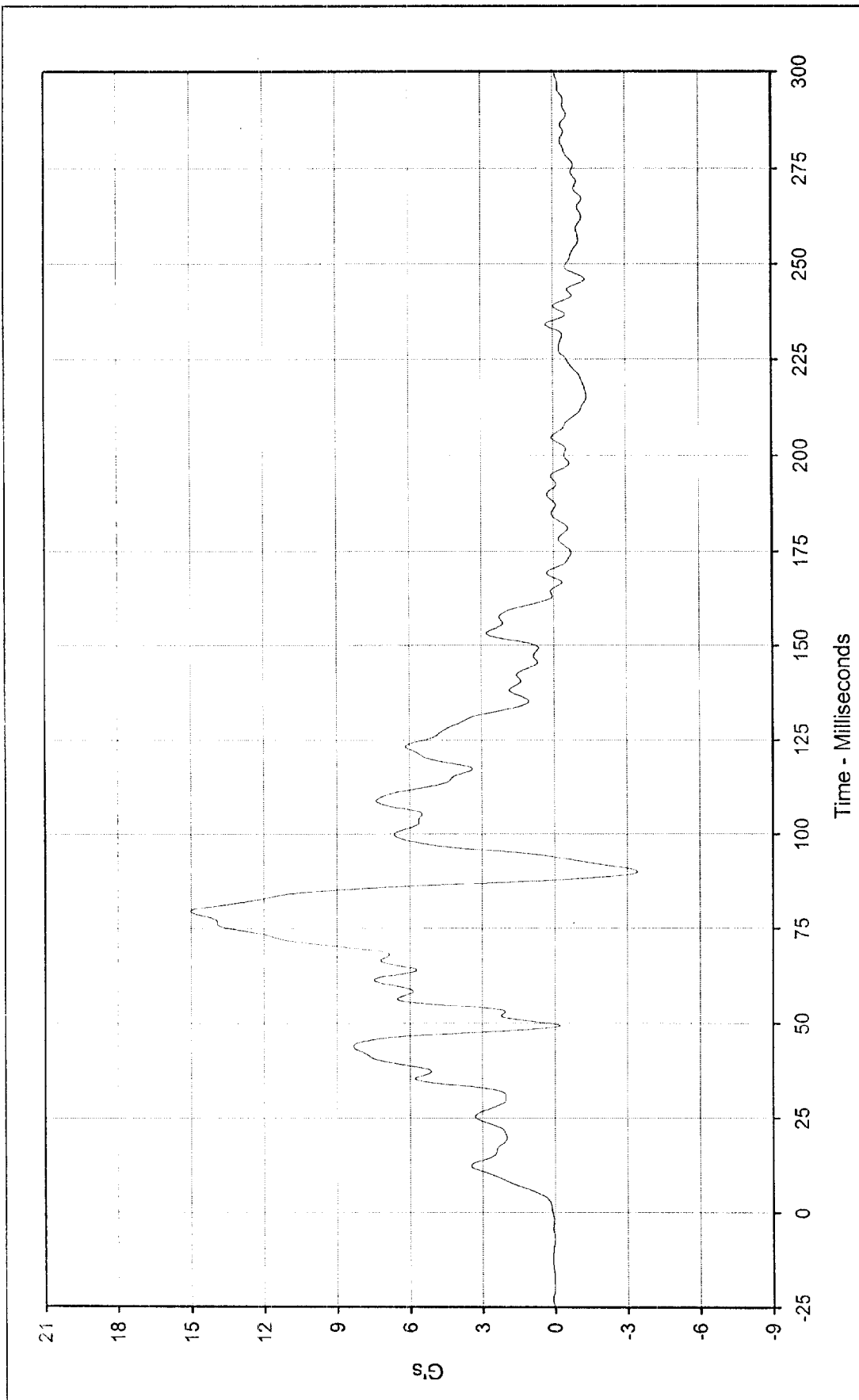




Curve Description: Vehicle Trunk X Displ.
 Maximum Value: 146.8 at 299.9 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 10/27/98
 Curve Number: IN2-095

Testing Program: 1998 37.5mph Offset, 5th Female No: MW0311
 Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: Vehicle Trunk Y Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 15.0 at 73.3 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

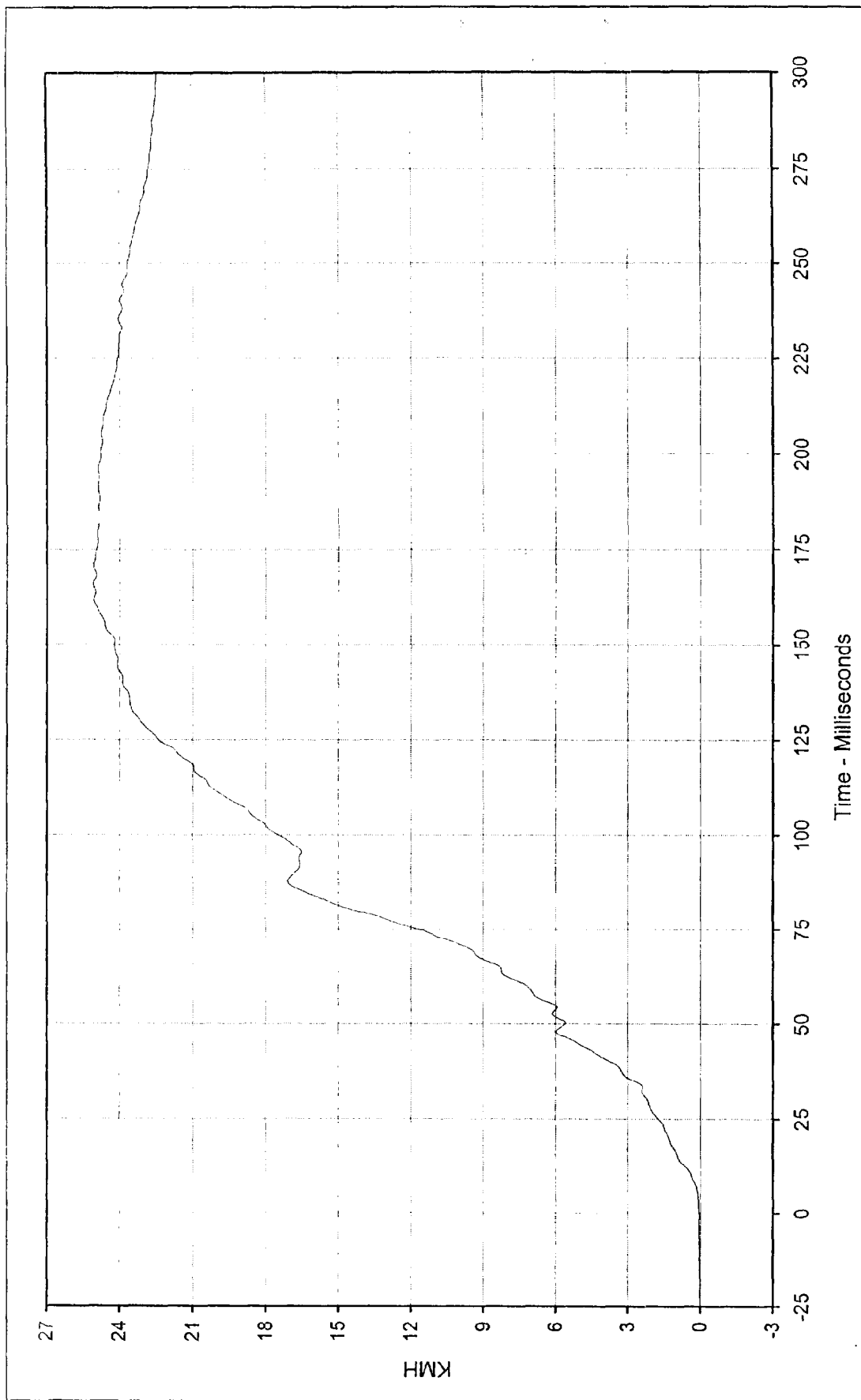
Minimum Value: -3.4 at 90.1 Milliseconds

SAE Filter Class: 60

Date of Test: 10/27/98

Curve Number: FIL-096





Curve Description: _____ Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Vehicle Trunk Y Velocity _____

Maximum Value: 25.1 at 165.8 Milliseconds

Minimum Value: 0.1 at 0.0 Milliseconds

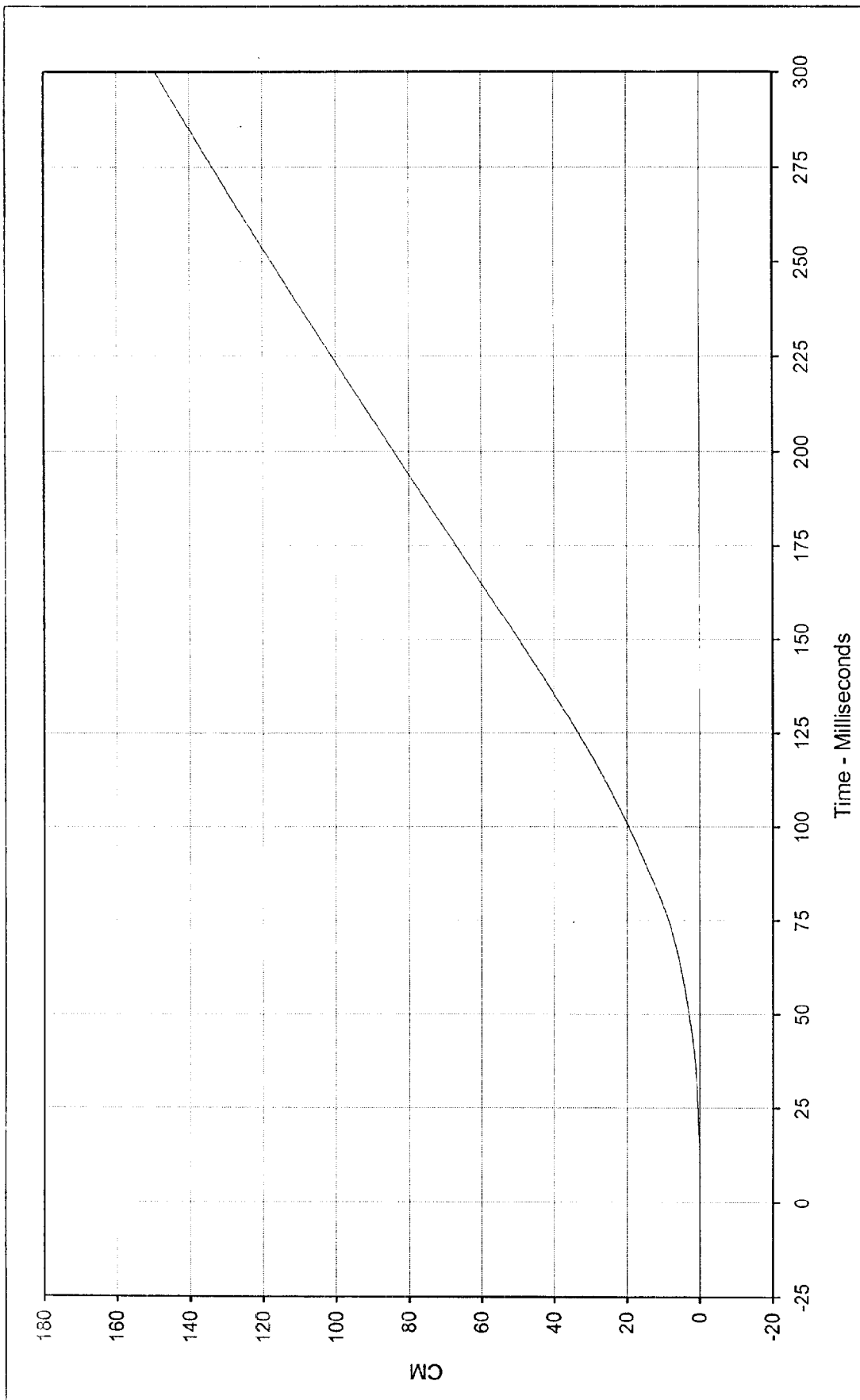
SAE Filter Class: 180

Date of Test: 10/27/98

Curve Number: IN1-096

Test Vehicle: 1998 Dodge Neon 4 Door Sedan





Curve Description: _____ Testing Program: 1998 37.5mph Offset, 5th Female No.: MW0311

Maximum Value: 149.3 at 299.9 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 10/27/98

Curve Number: IN2-096



APPENDIX C
DEFORMABLE BARRIER INFORMATION

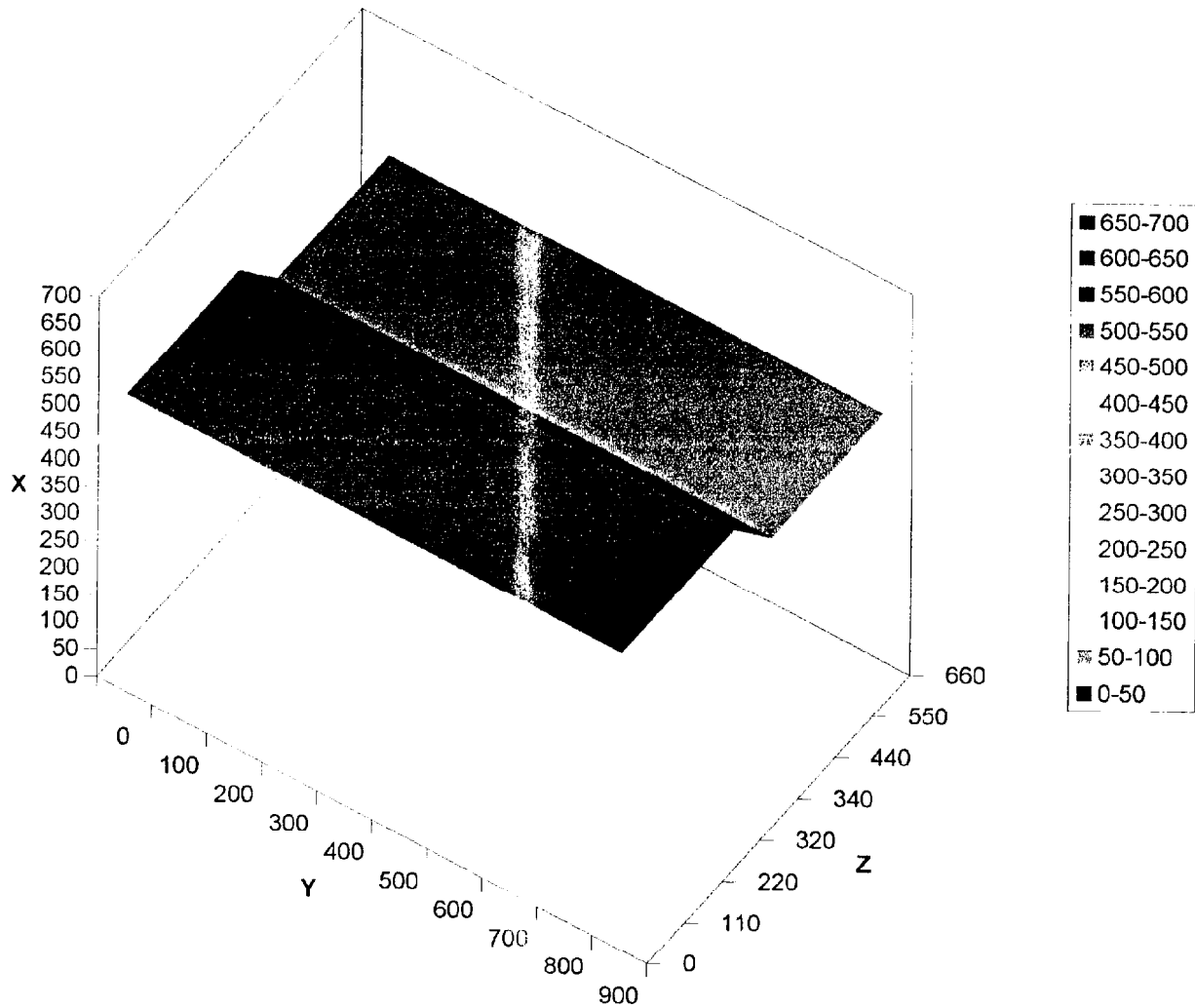
DEFORMABLE BARRIER MEASUREMENTS, PRE-TEST

TEST VEHICLE: 1998 DODGE NEON 4 DOOR SEDAN

NHTSA No.: MW0311

TEST PROGRAM: 1998 37.5MPH OFFSET, 5TH FEMALE

TEST DATE: 10/27/98



All Measurements are in Millimeters

	Z Axis	A	B	C	D	E	F	G	H	I	J
Y Axis		0	100	200	300	400	500	600	700	800	900
Level 1	660	454	454	454	454	454	454	454	454	454	454
Level 2	550	454	454	454	454	454	454	454	454	454	454
Level 3	440	454	454	454	454	454	454	454	454	454	454
Level 4	340	454	454	454	454	454	454	454	454	454	454
Level 5	320	544	544	544	544	544	544	544	544	544	544
Level 6	220	544	544	544	544	544	544	544	544	544	544
Level 7	110	544	544	544	544	544	544	544	544	544	544
Level 8	0	544	544	544	544	544	544	544	544	544	544

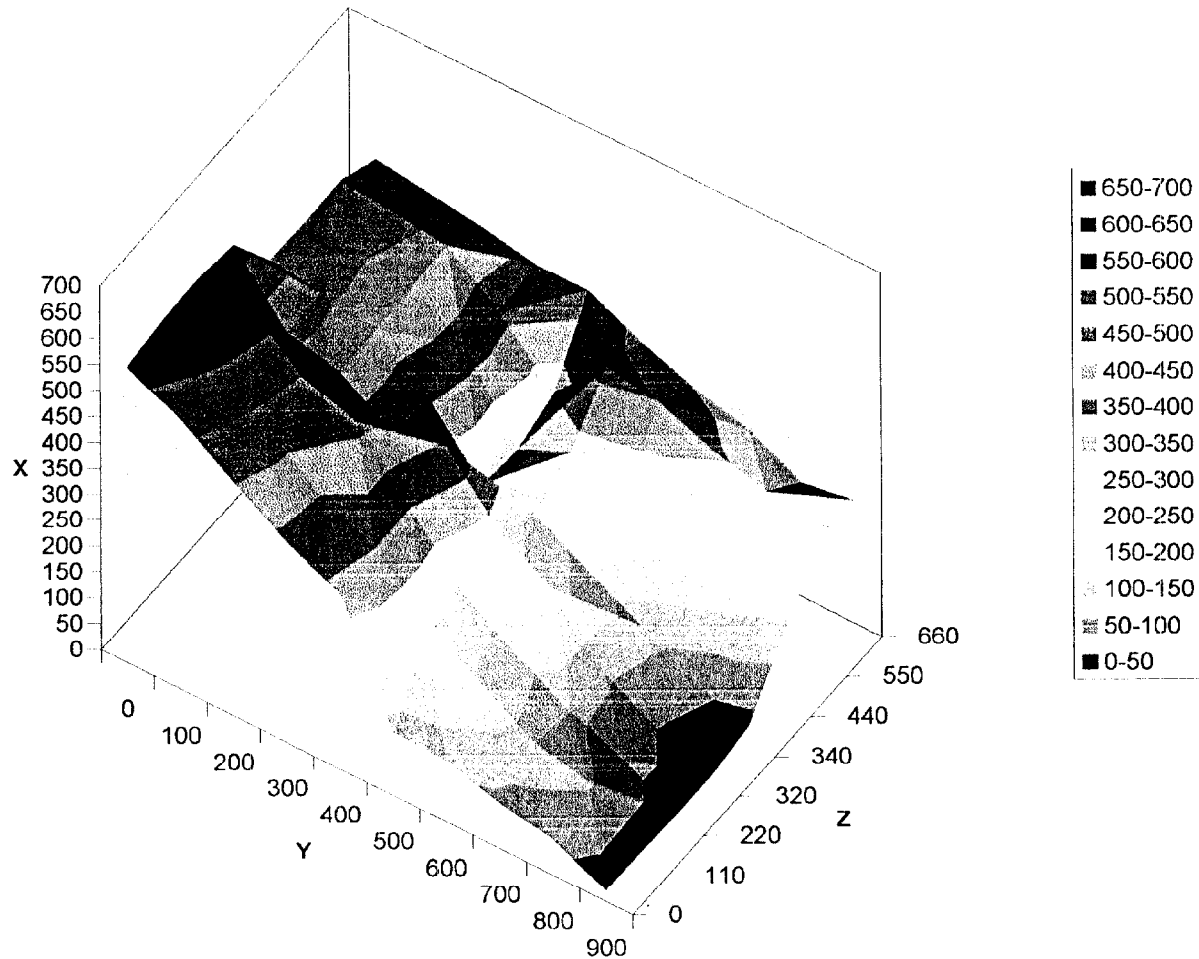
DEFORMABLE BARRIER MEASUREMENTS, POST-TEST

TEST VEHICLE: 1998 DODGE NEON 4 DOOR SEDAN

NHTSA No.: MW0311

TEST PROGRAM: 1998 37.5MPH OFFSET, 5TH FEMALE

TEST DATE: 10/27/98



All Measurements are in Millimeters

	Z Axis	A	B	C	D	E	F	G	H	I	J
Y Axis		0	100	200	300	400	500	600	700	800	900
Level 1	660	431	417	404	382	383	336	298	272	221	236
Level 2	550	467	457	444	366	265	367	348	309	280	237
Level 3	440	464	452	439	381	233	279	264	242	186	133
Level 4	340	468	454	436	356	242	236	178	123	60	32
Level 5	320	575	457	433	364	394	278	219	107	48	17
Level 6	220	584	579	497	465	349	236	169	112	70	16
Level 7	110	582	556	480	398	350	252	190	129	106	20
Level 8	0	570	522	453	387	338	122	118	86	68	22

APPENDIX D
INSTRUMENTATION DATA CHANNEL ASSIGNMENTS

1998 37.5mph Offset w/5th Female
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 273
10/27/98
1998 Dodge Neon 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
1	HEAD, PRIMARY	X	KEAC079	Accel., 1/2 bridge	Endevco	7264-2000X	G
2	HEAD, PRIMARY	Y	KEAC080	Accel., 1/2 bridge	Endevco	7264-2000Y	G
3	HEAD, PRIMARY	Z	KEAC081	Accel., 1/2 bridge	Endevco	7264-2000Z	G
4	NECK FORCE	X	GPUN02FX	Load cell, six axis neck	R. A. Denton	1716A	N
5	NECK FORCE	Y	GPUN02FY	Load cell, six axis neck	R. A. Denton	1716A	N
6	NECK FORCE	Z	GPUN02FZ	Load cell, six axis neck	R. A. Denton	1716A	N
7	NECK MOMENT	X	GPUN02MX	Load cell, six axis neck	R. A. Denton	1716A	N.m
8	NECK MOMENT	Y	GPUN02MY	Load cell, six axis neck	R. A. Denton	1716A	N.m
9	NECK MOMENT	Z	GPUN02MZ	Load cell, six axis neck	R. A. Denton	1716A	N.m
10	CHEST, PRIMARY	X	KEAC073	Accel., 1/2 bridge	Endevco	7264-2000X	G
11	CHEST, PRIMARY	Y	KEAC074	Accel., 1/2 bridge	Endevco	7264-2000Y	G
12	CHEST, PRIMARY	Z	KEAC075	Accel., 1/2 bridge	Endevco	7264-2000Z	G
13	CHEST DISPLACEMENT	X	GPCP003	Rotary Pot Chest Female	Servo	14CBI	MM
14	PELVIS, PRIMARY	Y	KEAC033	Accel., 1/2 bridge	Endevco	7264-2000	G
15	PELVIS, PRIMARY	Z	GPAC016	Accel., 1/2 bridge	Endevco	7264-2000	G
16	PELVIS, PRIMARY	X	KEAC035	Accel., 1/2 bridge	Endevco	7264-2000	G
17	LEFT FEMUR FORCE	Z	KEFF003	Load cell, Femur	R.A. Denton	2121	N
18	RIGHT FEMUR FORCE	Z	KEFF004	Load cell, Femur	R.A. Denton	2121	N
19	UP. TIBIA LEFT MOM.	X	GPLT05MX	4 ch., lower tibia gage	R. A. Denton	3287	N.m
20	UP. TIBIA LEFT MOM.	Y	GPLT05MY	4 ch., lower tibia gage	R. A. Denton	3287	N.m
21	UP. TIBIA LEFT FORCE	X	GPLT05FX	4 ch., lower tibia gage	R. A. Denton	3287	N
22	UP. TIBIA LEFT FORCE	Z	GPLT05FZ	4 ch., lower tibia gage	R. A. Denton	3287	N

1998 37.5mph Offset w/5th Female
Instrumentation Data Channel Assignments

Passenger A.T.D Serial Number 273

10/27/98

1998 Dodge Neon 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
23	UP. TIBIA RIGHT MOM.	X	GPLT05MX	4 ch., lower tibia gage	R. A. Denton	3287	N.m
24	UP. TIBIA RIGHT MOM.	Y	GPLT05MY	4 ch., lower tibia gage	R. A. Denton	3287	N.m
25	UP. TIBIA RIGHT FORCE	X	GPLT05FX	4 ch., lower tibia gage	R. A. Denton	3287	N
26	UP. TIBIA RIGHT FORCE	Z	GPLT05FZ	4 ch., lower tibia gage	R. A. Denton	3287	N
27	LWR. TIBIA LEFT MOM.	X	GPLT05MX	4 ch., lower tibia gage	R. A. Denton	3287	N.m
28	LWR. TIBIA LEFT MOM.	Y	GPLT05MY	4 ch., lower tibia gage	R. A. Denton	3287	N.m
29	LWR. TIBIA LEFT FORCE	X	GPLT05FX	4 ch., lower tibia gage	R. A. Denton	3287	N
30	LWR. TIBIA LEFT FORCE	Z	GPLT05FZ	4 ch., lower tibia gage	R. A. Denton	3287	N
31	LWR. TIBIA RIGHT MOM.	X	GPLT05MX	4 ch., lower tibia gage	R. A. Denton	3287	N.m
32	LWR. TIBIA RIGHT MOM.	Y	GPLT05MY	4 ch., lower tibia gage	R. A. Denton	3287	N.m
33	LWR. TIBIA RIGHT FORCE	X	GPLT05FX	4 ch., lower tibia gage	R. A. Denton	3287	N
34	LWR. TIBIA RIGHT FORCE	Z	GPLT05FZ	4 ch., lower tibia gage	R. A. Denton	3287	N
35	FOOT LEFT	X	KEIC007X	Accel., Foot Triax	I.C. Sensor	3031-500	G
36	FOOT LEFT	Z	KEIC007Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
37	FOOT LEFT	Z	KEIC007Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
38	FOOT RIGHT	X	KEIC006X	Accel., Foot Triax	I.C. Sensor	3031-500	G
39	FOOT RIGHT	Z	KEIC006Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
40	FOOT RIGHT	Z	KEIC006Z	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	Celeco	PTX101-0030	MM
44	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

1998 37.5mph Offset w/5th Female
Instrumentation Data Channel Assignments
Passenger A.T.D Serial Number 274
10/27/98

1998 Dodge Neon 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
45	HEAD, PRIMARY	X	KEAC070	Accel., 1/2 bridge	Endevco	7264-2000X	G
46	HEAD, PRIMARY	Y	KEAC071	Accel., 1/2 bridge	Endevco	7264-2000Y	G
47	HEAD, PRIMARY	Z	KEAC072	Accel., 1/2 bridge	Endevco	7264-2000Z	G
48	NECK FORCE	X	GPUN01FX	Load cell, six axis neck	R. A. Denton	1716A	N
49	NECK FORCE	Y	GPUN01FY	Load cell, six axis neck	R. A. Denton	1716A	N
50	NECK FORCE	Z	GPUN01FZ	Load cell, six axis neck	R. A. Denton	1716A	N
51	NECK MOMENT	X	GPUN01MX	Load cell, six axis neck	R. A. Denton	1716A	N.m
52	NECK MOMENT	Y	GPUN01MY	Load cell, six axis neck	R. A. Denton	1716A	N.m
53	NECK MOMENT	Z	GPUN01MZ	Load cell, six axis neck	R. A. Denton	1716A	N.m
54	CHEST , PRIMARY	X	KEAC076	Accel., 1/2 bridge	Endevco	7264-2000X	G
55	CHEST , PRIMARY	Y	KEAC077	Accel., 1/2 bridge	Endevco	7264-2000Y	G
56	CHEST , PRIMARY	Z	KEAC078	Accel., 1/2 bridge	Endevco	7264-2000Z	G
57	CHEST DISPLACEMENT	X	GPCP004	Rotary Pot Chest Female	Servo	14CBI	MM
58	PELVIS, PRIMARY	Y	KEAC060	Accel., 1/2 bridge	Endevco	7264-2000	G
59	PELVIS, PRIMARY	Z	KEAC061	Accel., 1/2 bridge	Endevco	7264-2000	G
60	PELVIS, PRIMARY	X	KEAC062	Accel., 1/2 bridge	Endevco	7264-2000	G
61	LEFT FEMUR FORCE	Z	KEFF001	Load cell, Femur	R.A. Denton	2121	N
62	RIGHT FEMUR FORCE	Z	GPLC001	Load cell, Femur	G.S.E.	2430	N
63	UP. TIBIA LEFT MOM.	X	GPLT05MX	4 ch., lower tibia gage	R. A. Denton	3287	N.m
64	UP. TIBIA LEFT MOM.	Y	GPLT05MY	4 ch., lower tibia gage	R. A. Denton	3287	N.m
65	UP. TIBIA LEFT FORCE	X	GPLT05FX	4 ch., lower tibia gage	R. A. Denton	3287	N
66	UP. TIBIA LEFT FORCE	Z	GPLT05FZ	4 ch., lower tibia gage	R. A. Denton	3287	N

1998 37.5mph Offset w/5th Female
Instrumentation Data Channel Assignments
Passenger A.T.D Serial Number 274
10/27/98

1998 Dodge Neon 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
67	UP. TIBIA RIGHT MOM.	X	GPLT05MX	4 ch., lower tibia gage	R. A. Denton	3287	N.m
68	UP. TIBIA RIGHT MOM.	Y	GPLT05MY	4 ch., lower tibia gage	R. A. Denton	3287	N.m
69	UP. TIBIA RIGHT FORCE	X	GPLT05FX	4 ch., lower tibia gage	R. A. Denton	3287	N
70	UP. TIBIA RIGHT FORCE	Z	GPLT05FZ	4 ch., lower tibia gage	R. A. Denton	3287	N
71	LWR. TIBIA LEFT MOM.	X	GPLT05MX	4 ch., lower tibia gage	R. A. Denton	3287	N.m
72	LWR. TIBIA LEFT MOM.	Y	GPLT05MY	4 ch., lower tibia gage	R. A. Denton	3287	N.m
73	LWR. TIBIA LEFT FORCE	X	GPLT05FX	4 ch., lower tibia gage	R. A. Denton	3287	N
74	LWR. TIBIA LEFT FORCE	Z	GPLT05FZ	4 ch., lower tibia gage	R. A. Denton	3287	N
75	LWR. TIBIA RIGHT MOM.	X	GPLT05MX	4 ch., lower tibia gage	R. A. Denton	3287	N.m
76	LWR. TIBIA RIGHT MOM.	Y	GPLT05MY	4 ch., lower tibia gage	R. A. Denton	3287	N.m
77	LWR. TIBIA RIGHT FORCE	X	GPLT05FX	4 ch., lower tibia gage	R. A. Denton	3287	N
78	LWR. TIBIA RIGHT FORCE	Z	GPLT05FZ	4 ch., lower tibia gage	R. A. Denton	3287	N
79	FOOT LEFT	X	ICST005X	Accel., Triax	I.C. Sensor	3031-500	G
80	FOOT LEFT	Z	ICST005Y	Accel., Triax	I.C. Sensor	3031-500	G
81	FOOT LEFT	Z	ICST005Z	Accel., Triax	I.C. Sensor	3031-500	G
82	FOOT RIGHT	X	ICST004X	Accel., Triax	I.C. Sensor	3031-500	G
83	FOOT RIGHT	Z	ICST004Y	Accel., Triax	I.C. Sensor	3031-500	G
84	FOOT RIGHT	Z	ICST004Z	Accel., 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	Celeco	PTX101-0030	MM
88	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

1998 37.5mph Offset w/5th Female
Instrumentation Data Channel Assignments
Vehicle Channels
10/27/98

1998 Dodge Neon 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
89	Left Rear Sill	X	KEVA005	Accel., Vehicle block	I.C. Sensor	3031-500	G
90	Left Rear Sill	Y	KEVA006	Accel., Vehicle block	I.C. Sensor	3031-200	G
91	Center Tunnel	X	KEVA009	Accel., Vehicle block	I.C. Sensor	3031-500	G
92	Center Tunnel	Y	KEVA008	Accel., Vehicle block	I.C. Sensor	3031-500	G
93	Right Sill	X	KEVA010	Accel., Vehicle block	I.C. Sensor	3031-200	G
94	Right Sill	Y	KEVA004	Accel., Vehicle block	I.C. Sensor	3031-500	G
95	Trunk	X	KEVA007	Accel., Vehicle block	I.C. Sensor	3031-500	G
96	Trunk	Y	KEVA011	Accel., Vehicle block	I.C. Sensor	3031-200	G

APPENDIX E
DUMMY CALIBRATION DATA



Hybrid III Calibration Data Sheet

5TH Percentile Female

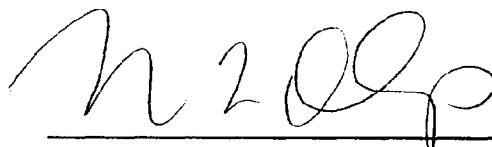
Left Knee Impact Test

ATD Serial No.: 273

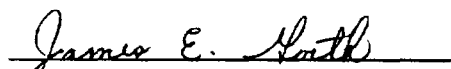
Part Serial No.: n/a

Test I.D.: KL002

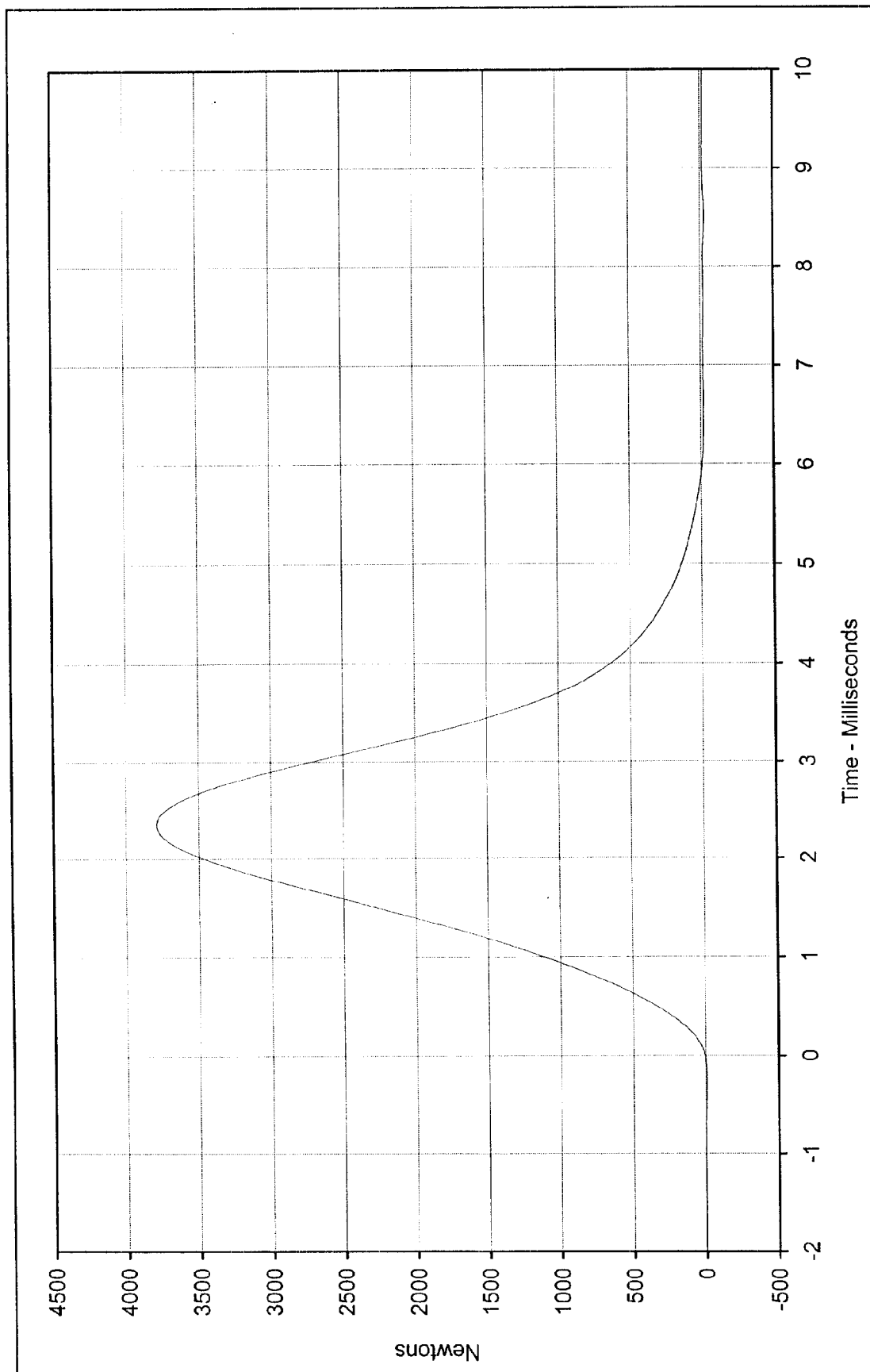
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Probe Velocity	m/s	2.073 to 2.134	2.124	Pass
Peak Probe Force	Newtons	3400 to 4200	3783.4	Pass
Overall Test Results				Pass


Laboratory Technician

August 24, 1998
Test Date


Approved By

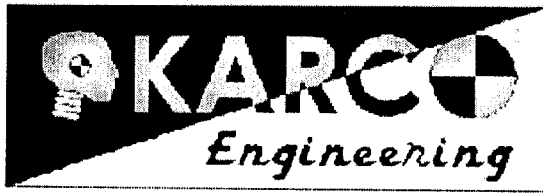
11/24/98
Date



Testing Program Hybrid III 5th Female Left Knee Impact
 Test Information: Part S/N: n/a Test I.D.: KL002



Curve Description: Probe Force
 Maximum Value: 3783.4 at 2.4 Milliseconds
 Minimum Value: -19.6 at 7.7 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/24/98
 ATD Serial No.: 273



Hybrid III Calibration Data Sheet

5TH Percentile Female

Right Knee Impact Test

ATD Serial No.: 273

Part Serial No.: n/a

Test I.D.: KR002

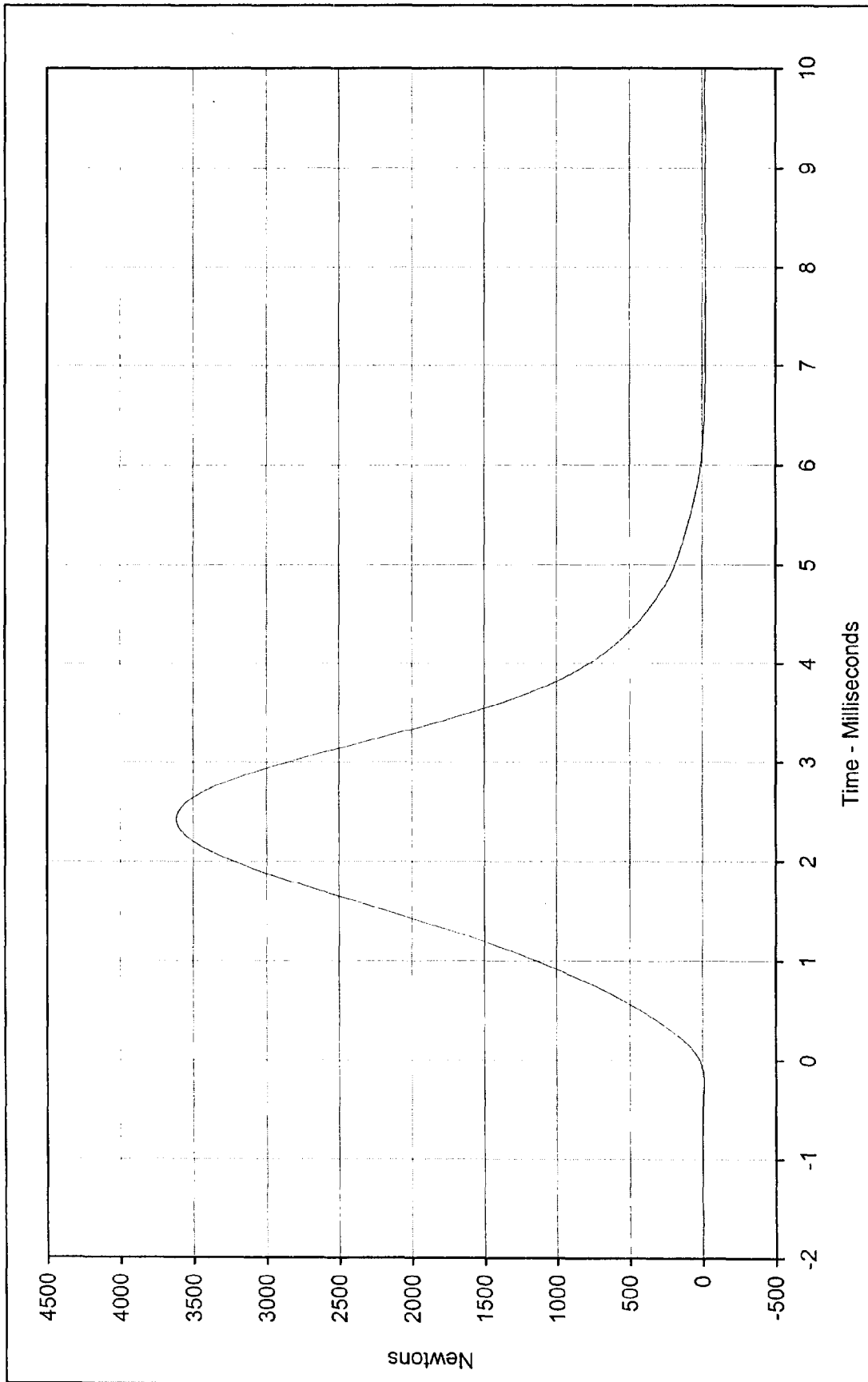
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Probe Velocity	m/s	2.073 to 2.134	2.111	Pass
Peak Probe Force	Newtons	3400 to 4200	3613.8	Pass
Overall Test Results				Pass

N200p
Laboratory Technician

James E. Smith
Approved By

August 25, 1998
Test Date

11/24/98
Date



Testing Program Hybrid III 5th Female Right Knee Impact
 Test Information: Part S/N: n/a Test I.D.: KR002



Curve Description: Probe Force
 Maximum Value: 3613.8 at 2.4 Milliseconds
 Minimum Value: -22.7 at 7.5 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/25/98
 ATD Serial No.: 273



Hybrid III Calibration Data Sheet

5TH Percentile Female

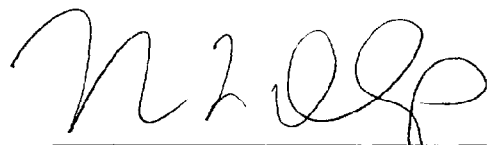
Head Drop Calibration

ATD Serial No.: 273

Part Serial No.: n/a

Test I.D.: DH002

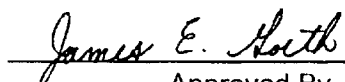
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	31	Pass
Peak Resultant Acceleration	G's	240.0 to 295.0	287.6	Pass
Peak Lateral Acceleration	G's	≤15.0	4.1	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass



Laboratory Technician

August 26, 1998

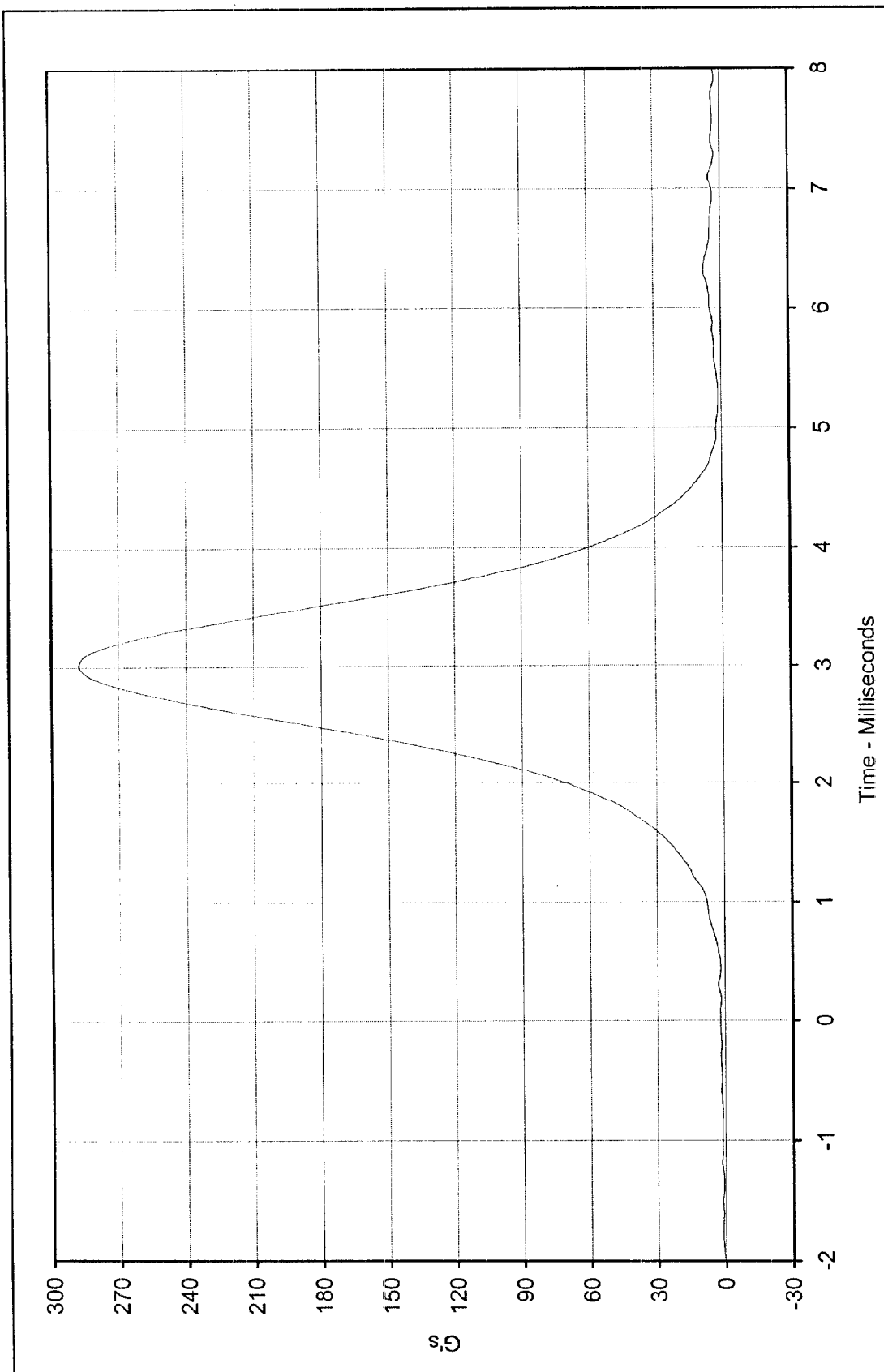
Test Date



Approved By

11/24/98

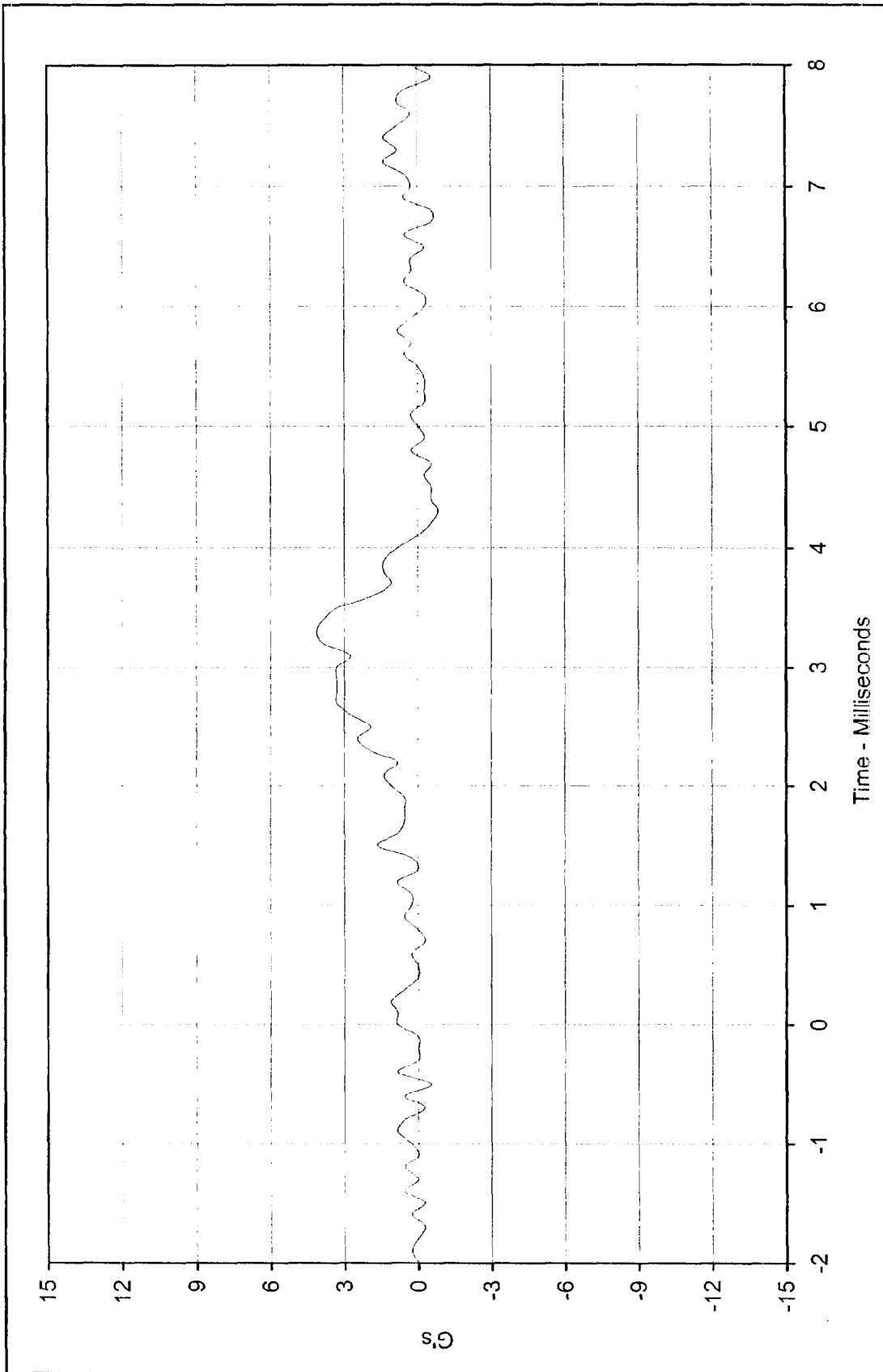
Date



Testing Program Hybrid III Head Drop Calibration (Female)
 Test Information: S/N of Part: n/a Test I.D.: DH002



Curve Description: Head Acceleration Resultant
 Maximum Value: 287.6 at 3.0 Milliseconds
 Minimum Value: 0.6 at -2.0 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/26/98
 ATD Serial No.: 273



Curve Description: Hybrid III Head Drop Calibration (Female)

Test Information: S/N of Part: n/a Test I.D.: DH002

Head Acceleration Y Axis

Maximum Value: 4.1 at 3.3 Milliseconds

Minimum Value: -0.8 at 4.3 Milliseconds

SAE Filter Class: 1000

Date of Test: 8/26/98

ΔTD Serial No.: 273





Hybrid III Calibration Data Sheet

5TH Percentile Female

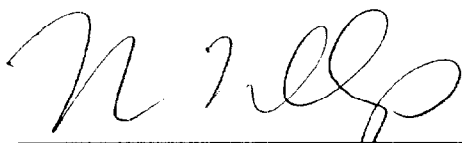
Thorax Impact Test

ATD Serial No.: 273

Part Serial No.: N/A

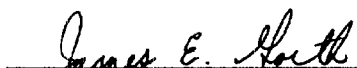
Test I.D.: CF001

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	31	Pass
Probe Velocity	m/s	6.58 to 6.82	6.60	Pass
Peak Probe Force	Newtons	3800 to 4300	4053	Pass
Peak Sternum Displacement	mm	51.0 to 58.0	57.4	Pass
Internal Hysteresis	%	69.0 to 85.0	77.0	Pass
Overall Test Results			Pass	


Laboratory Technician

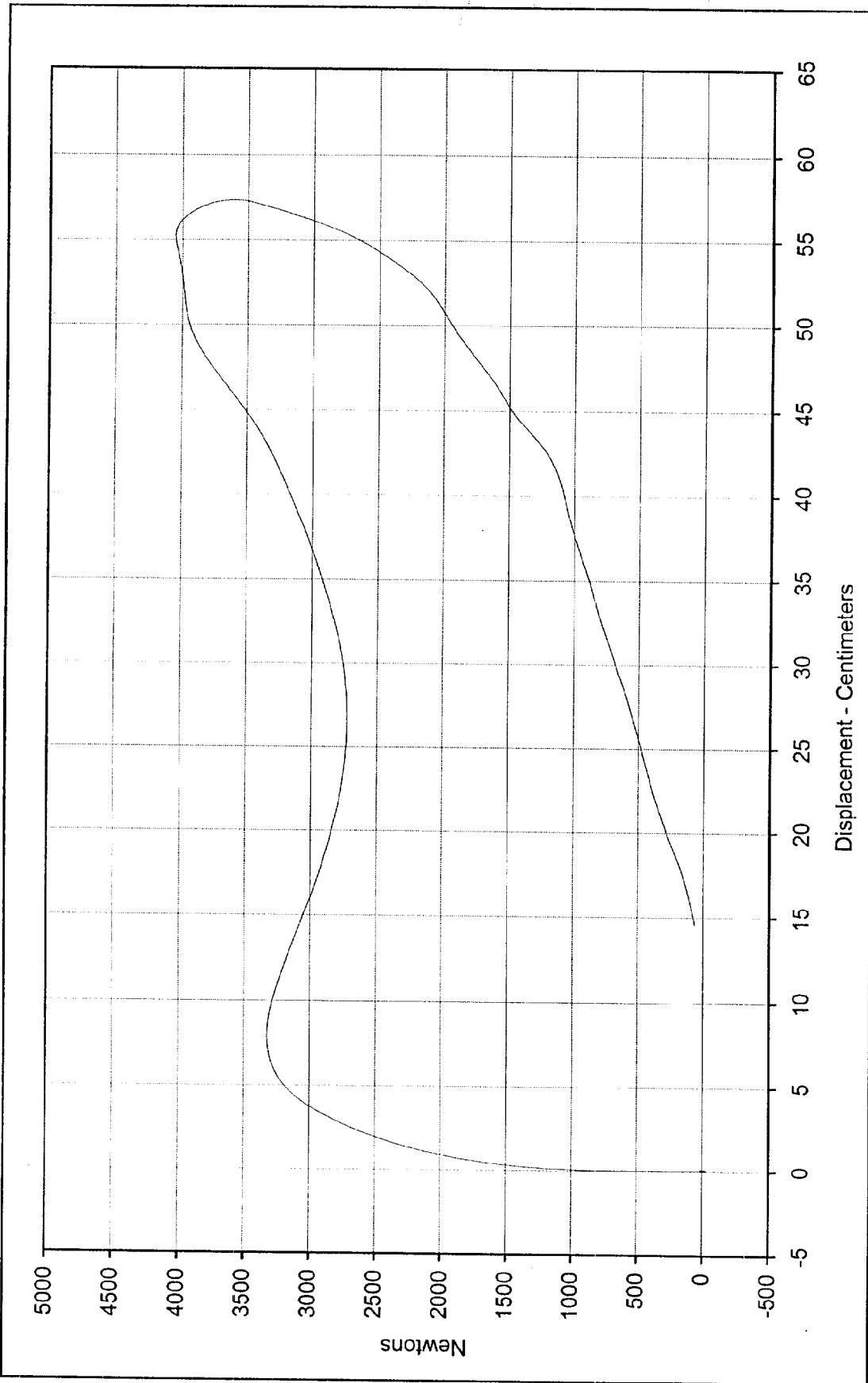
August 31, 1998

Test Date


Approved By

11/24/98

Date



Curve Description: Probe Force vs. Chest Displacement Testing Program Hybrid III Thorax Impact Test (5TH Female)

Probe Force: 4052.8 Newtons Test Information: S/N of Part: N/A Test I.D.: CF001

Chest Displ.: 57.4 Millimeters



SAE Filter Class: 180

Date of Test: 8/31/98

ATD Serial No.: 273



Hybrid III Calibration Data Sheet

5TH Percentile Female

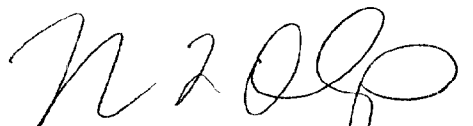
Neck Flexion Test

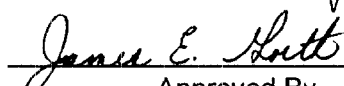
ATD Serial No.: 273

Part Serial No.: N/A

Test I.D.: FF001

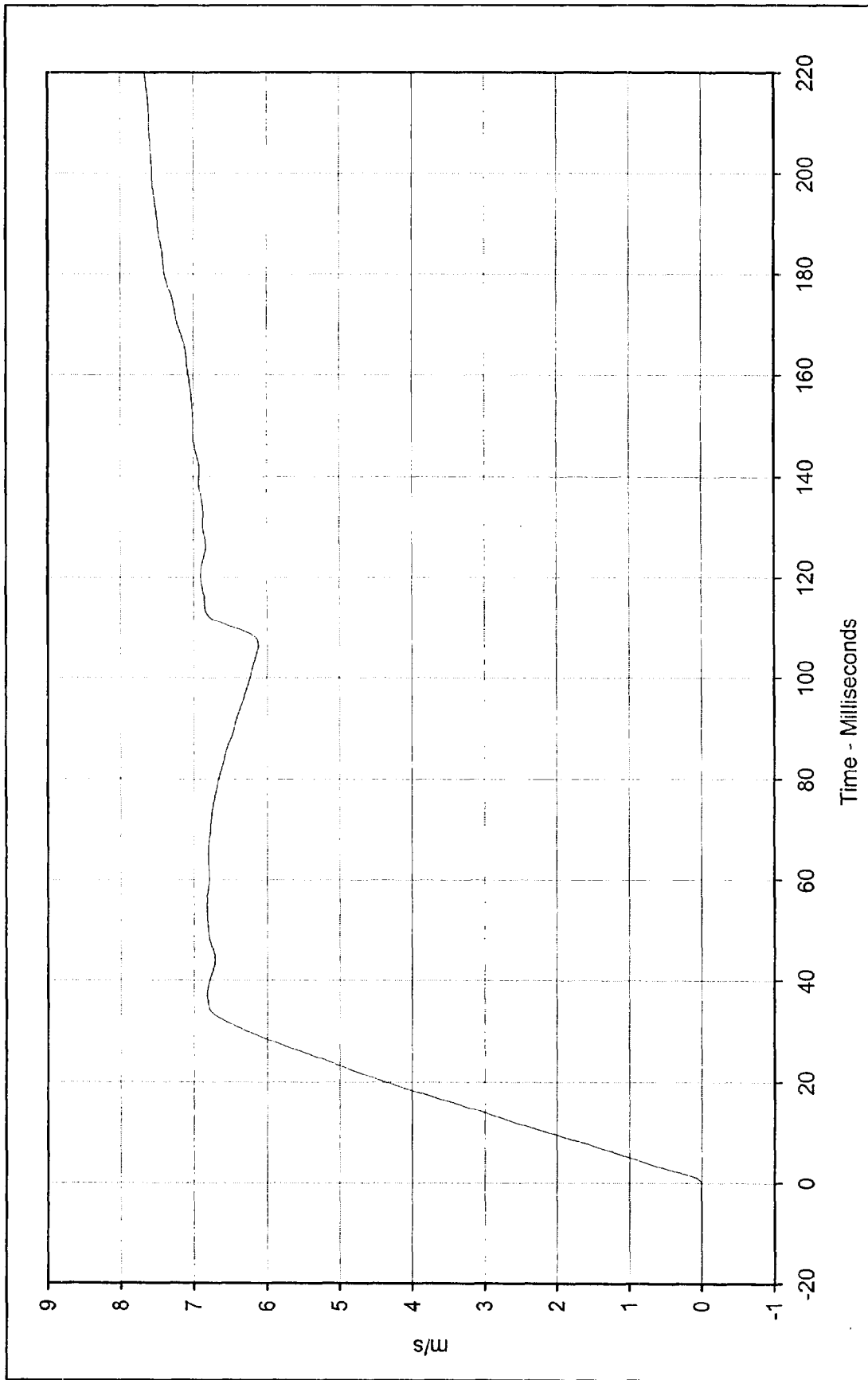
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity		%	10 to 70	31	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.04	Pass
Pendulum Deceleration	10 Msec	m/s	2.10 to 2.50	2.12	Pass
	20 Msec	m/s	4.00 to 5.00	4.37	Pass
	30 Msec	m/s	5.80 to 7.00	6.29	Pass
Maximum "D" Plane Rotation		Degrees	78.0 to 96.0	87.1	Pass
"D" Plane Rotation Decay, Time From Peak Value To Zero Crossing		Msec.	57.0 to 69.0	62.6	Pass
Moment About Occipital Condyle		N•m	69.0 to 84.0	70.3	Pass
Moment About Occipital Condyle Decay, Time From Peak Value To Zero Crossing		Msec.	41.0 to 50.0	49.5	Pass
Time of Peak Rotation With Respect to Peak Moment		Msec.	2.0 to 12.0	7.6	Pass
Overall Test Results					Pass


 Laboratory Technician


 Approved By

August 26, 1998
 Test Date

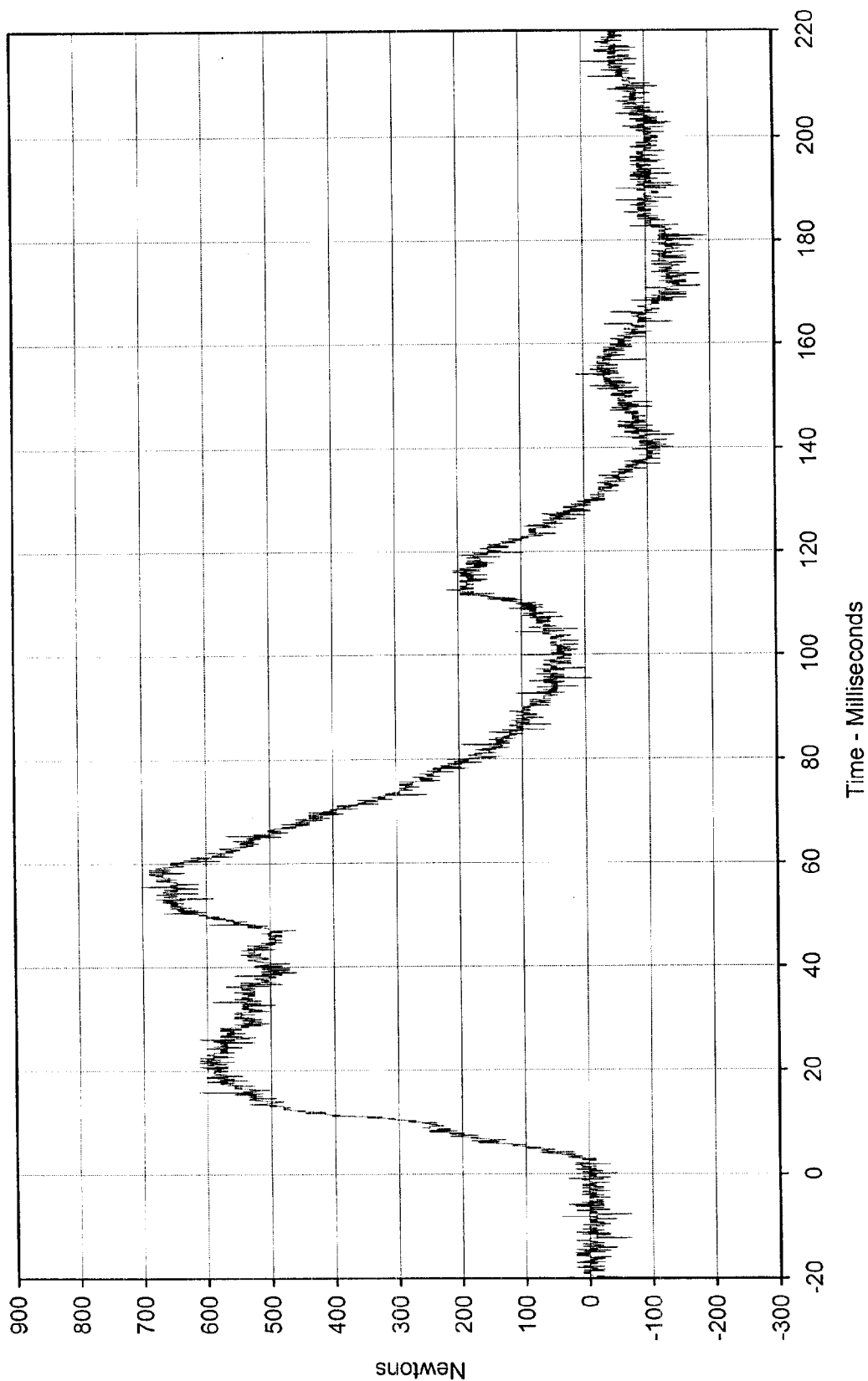
11/24/98
 Date



Curve Description: Hybrid III Neck Flexion Test (Female)
 Testing Program: S/N of Part: N/A Test I.D.: FF001

Pendulum Velocity: 7.7 at 220.0 Milliseconds
 Maximum Value: 7.7 at 220.0 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/26/98
 ATD Serial No.: 273





Curve Description: Neck Force X

Maximum Value: 699.9 at 55.5 Milliseconds

Minimum Value: -196.9 at 180.8 Milliseconds

SAE Filter Class: 1000

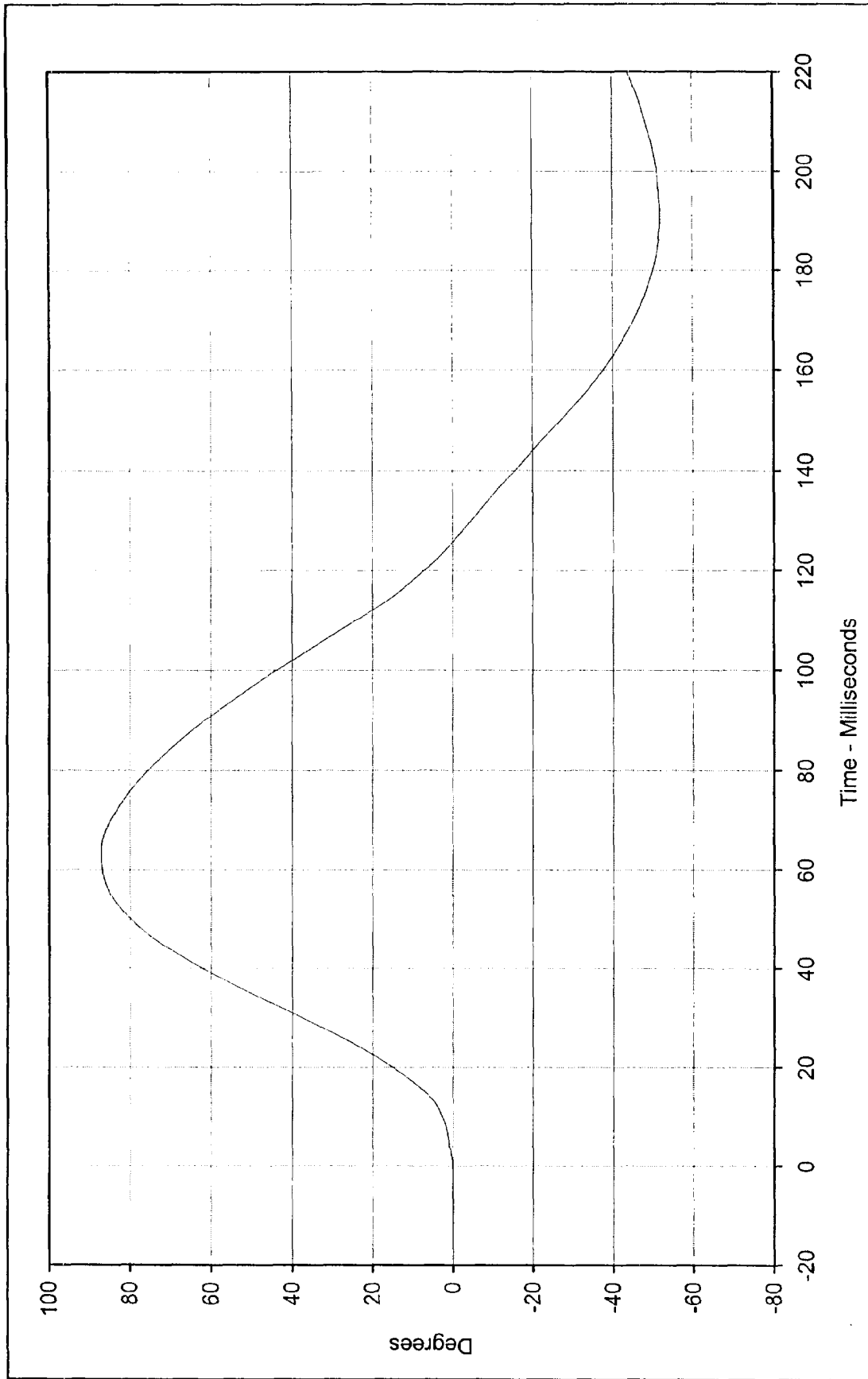
Date of Test: 8/26/98

ATD Serial No.: 273

Testing Program: Hybrid III Neck Flexion Test (Female)

Test Information: S/N of Part: N/A Test I.D.: FF001

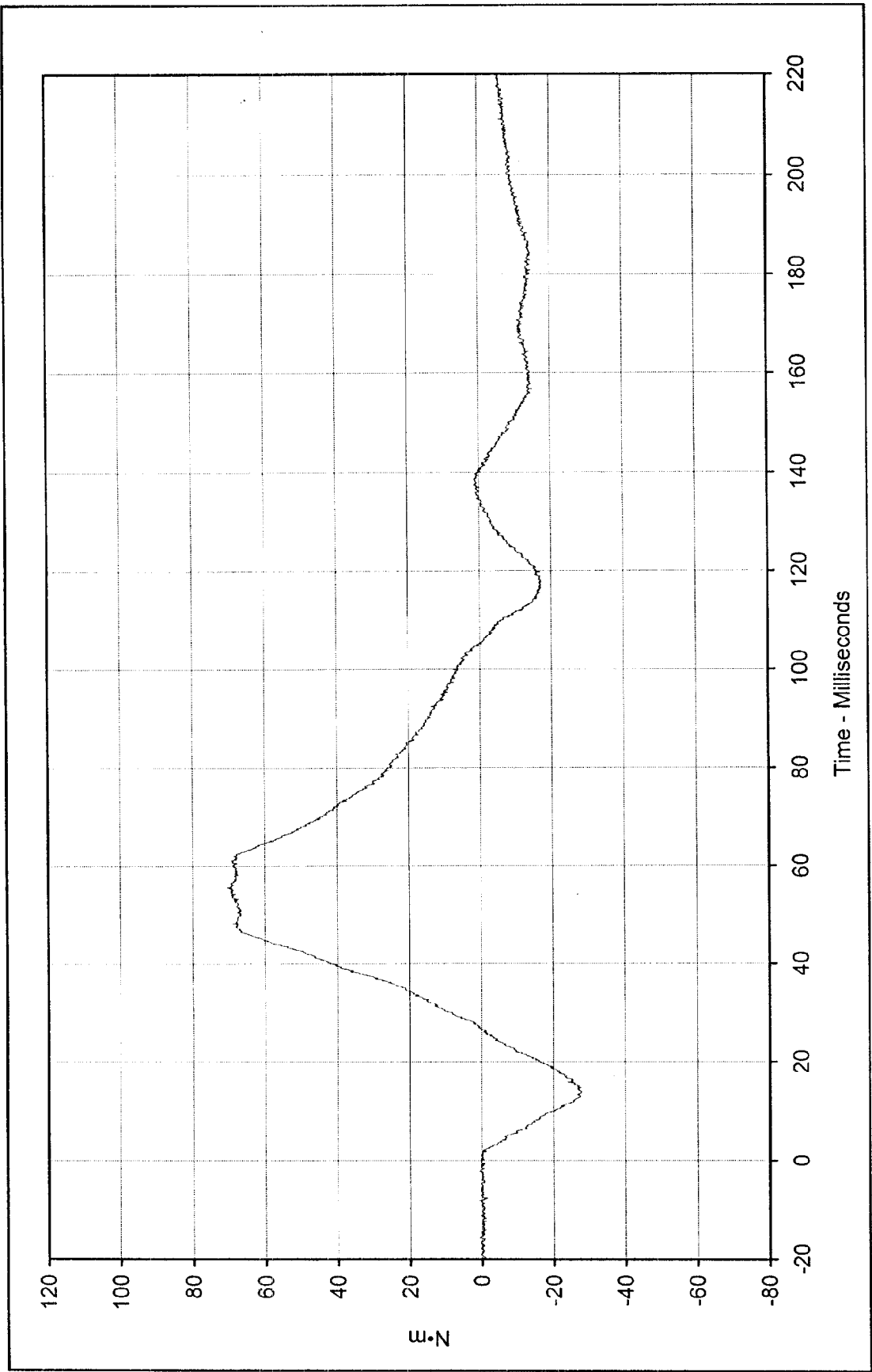




Curve Description: "D" Plane Rotation
 Maximum Value: 87.1 at 63.1 Milliseconds
 Minimum Value: -51.9 at 191.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 8/26/98
 ATD Serial No.: 273

Testing Program Hybrid III Neck Flexion Test (Female)
 Test Information: S/N of Part: N/A Test I.D.: FF001





Curve Description: Moment About Occipital Condyles
 Maximum Value: 70.3 at 55.5 Milliseconds
 Minimum Value: -27.9 at 13.9 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/26/98
 ATD Serial No.: 273

Testing Program Hybrid III Neck Flexion Test (Female)
 Test Information: S/N of Part: N/A Test I.D.: FF001





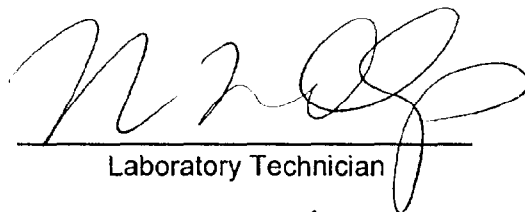
Hybrid III Calibration Data Sheet

5TH Percentile Female

Neck Extension Test

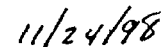
ATD Serial No.: 273Part Serial No.: N/ATest I.D.: FNE50

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	40	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.03	Pass
Pendulum Deceleration	10 Msec	m/s	1.50 to 1.90	1.52	Pass
	20 Msec	m/s	3.10 to 3.90	3.21	Pass
	30 Msec	m/s	4.60 to 5.60	4.89	Pass
Maximum "D" Plane Rotation		Degrees	97.0 to 119.0	98.8	Pass
"D" Plane Rotation Decay, Angle When the Decaying Y Moment is at -10 N•m		Degrees	80.0 to 96.0	80.3	Pass
Calculated Moment About Occipital Condyle		N•m	-54.0 to -67.0	-61.2	Pass
Moment About Occipital Condyle Decay, Time From Negative Peak Value To -10 N•m		Msec.	28.0 to 38.0	31.9	Pass
Overall Test Results					Pass

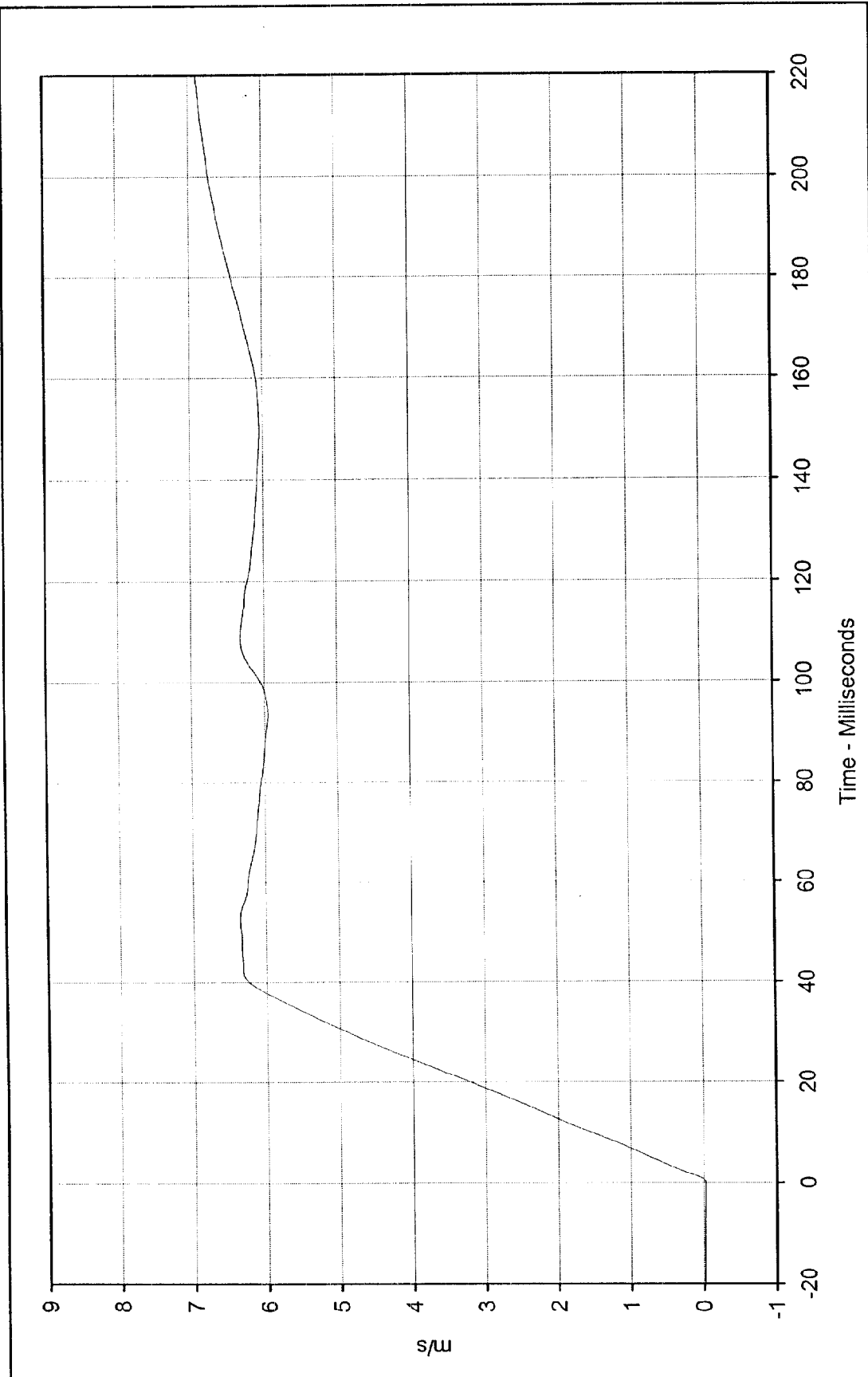

Laboratory Technician
Approved By

August 17, 1998

Test Date


Date

Date



Testing Program: Hybrid III Neck Extension Test (Female)

Test Information: SN of Part: N/A Test I.D.: FNE50

Curve Description: Pendulum Velocity

Maximum Value: 6.9 at 220.0 Milliseconds

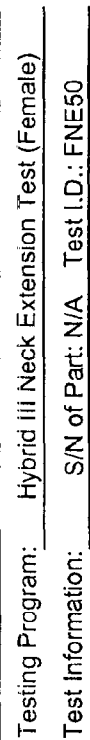
Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

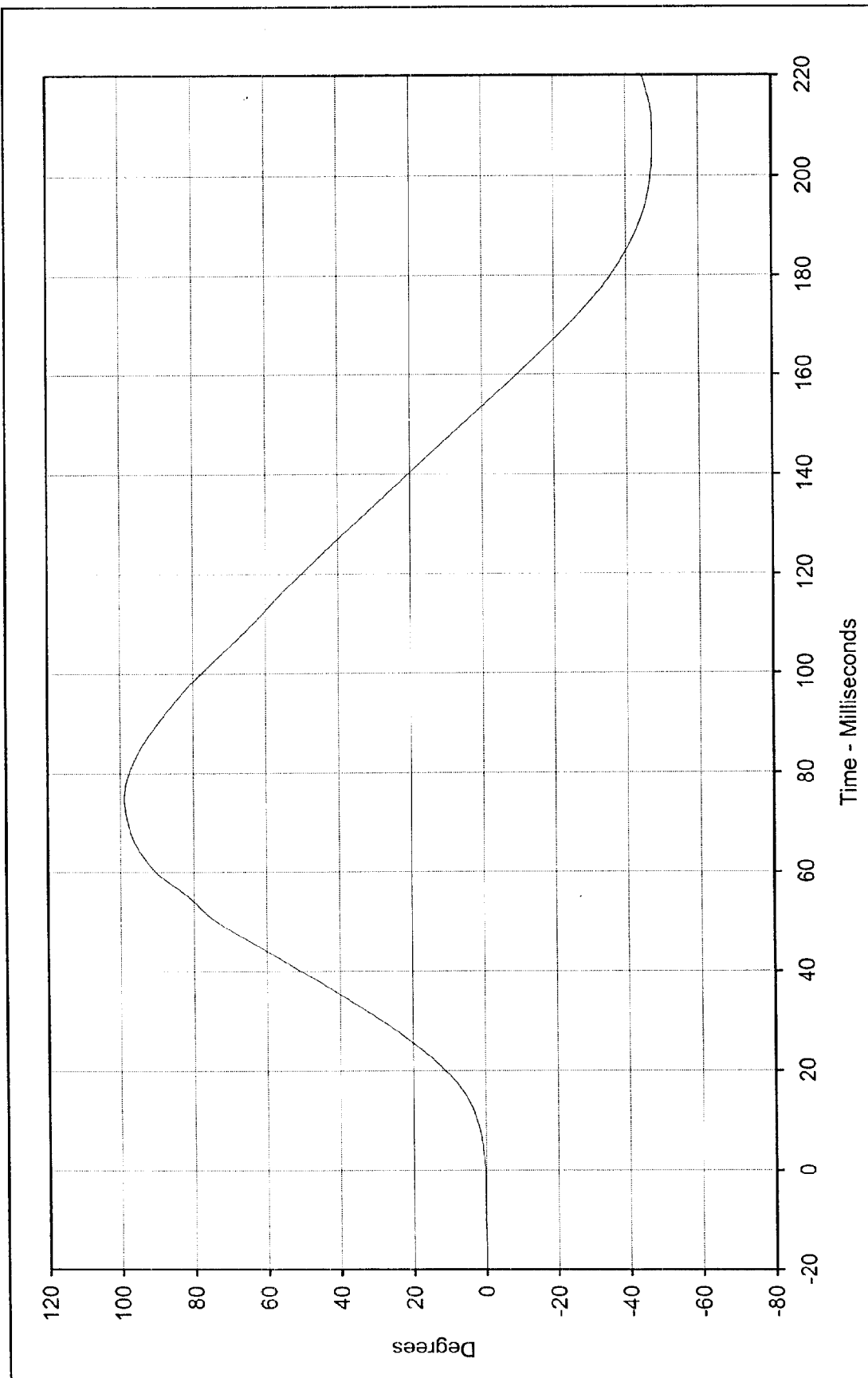
Date of Test: 8/17/98

ATD Serial No.: 273





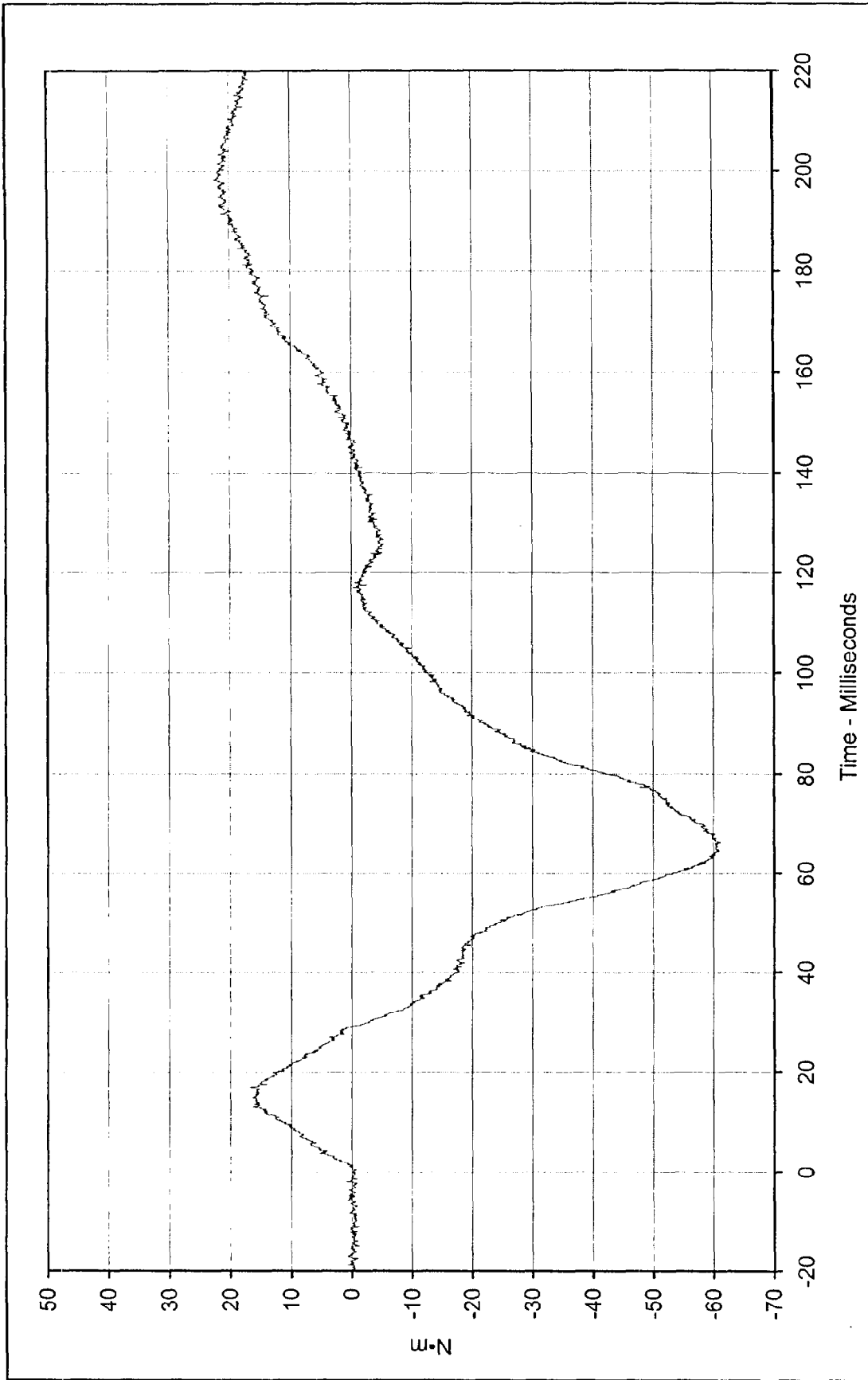
KARCO
Engineering



Testing Program: Hybrid III Neck Extension Test (Female)
 Test Information: S/N of Part: N/A Test I.D.: FNE50



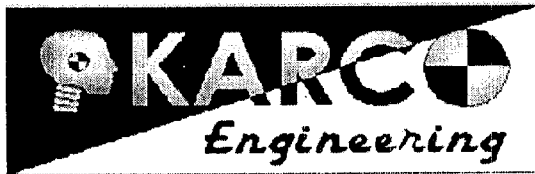
Curve Description: "D" Plane Rotation
 Maximum Value: 98.8 at 74.8 Milliseconds
 Minimum Value: -47.4 at 206.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 8/17/98
 ATD Serial No.: 273



Testing Program: Hybrid III Neck Extension Test (Female)
 Test Information: S/N of Part: N/A Test I.D.: FNE50



Curve Description: Moment About Occipital Condyles
 Maximum Value: 22.5 at 198.2 Milliseconds
 Minimum Value: -61.2 at 66.2 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/17/98
 ATD Serial No.: 273



Hybrid III Calibration Data Sheet

5TH Percentile Female

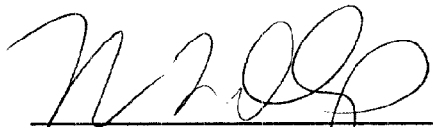
External Measurements

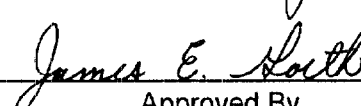
ATD Serial No.: 273

Part Serial No.: N/A

Test I.D.: N/A

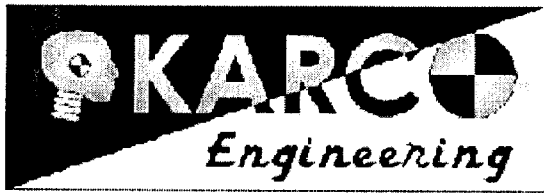
External Measurement Data				
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory temperature	°C	20.4 to 22.1	21.0	Pass
Laboratory relative humidity	%	10 to 70	43	Pass
A - Total sitting height	mm	785.0 to 795.0	786.0	Pass
B - Shoulder pivot height	mm	434.0 to 450.0	449.0	Pass
C - "H" point height	mm	81.5 to 86.5	83.0	Pass
D - "H" point from seat back	mm	144.5 to 149.5	145.5	Pass
E - Shoulder pivot from back	mm	71.0 to 81.0	79.0	Pass
F - Thigh clearance	mm	114.0 to 130.0	120.5	Pass
G - Elbow to finger tip	mm	393.0 to 409.0	400.0	Pass
H - Skull cap to back line	mm	43.2 to 48.5	47.4	Pass
I - Shoulder to elbow length	mm	287.0 to 303.0	300.0	Pass
J - Elbow rest height	mm	191.0 to 211.0	210.0	Pass
K - Buttock to knee length	mm	509.5 to 533.5	512.0	Pass
L - Popliteal height	mm	349.5 to 373.5	369.8	Pass
M - Knee to floor height	mm	449.0 to 465.0	460.0	Pass
N - Buttock popliteal length	mm	399.5 to 423.5	421.3	Pass
O - Chest depth	mm	183.0 to 200.0	199.0	Pass
P - Foot length	mm	216.0 to 232.0	222.0	Pass
R - Foot width	mm	76.0 to 92.0	80.4	Pass
V - Shoulder width	mm	348.0 to 364.0	359.6	Pass
W - Hip width at "H" point	mm	299.0 to 315.0	302.1	Pass
X - Chest circumference	mm	783.0 to 813.0	800.0	Pass
Y - Waist circumference	mm	757.0 to 787.0	785.3	Pass
AA - Location for chest circumference	mm	300.0 to 310.0	309.0	Pass
BB - Location for waist circumference	mm	160.0 to 170.0	163.8	Pass
Overall Test Results				Pass


 Laboratory Technician


 Approved By

August 31, 1998
 Test Date

11/24/98
 Date



Hybrid III Calibration Data Sheet

5TH Percentile Female

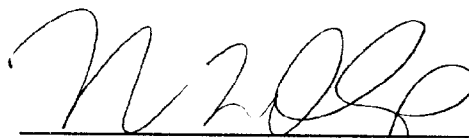
Left Knee Impact Test

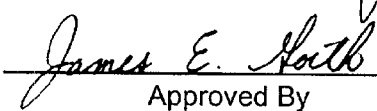
ATD Serial No.: 274

Part Serial No.: n/a

Test I.D.: KL004

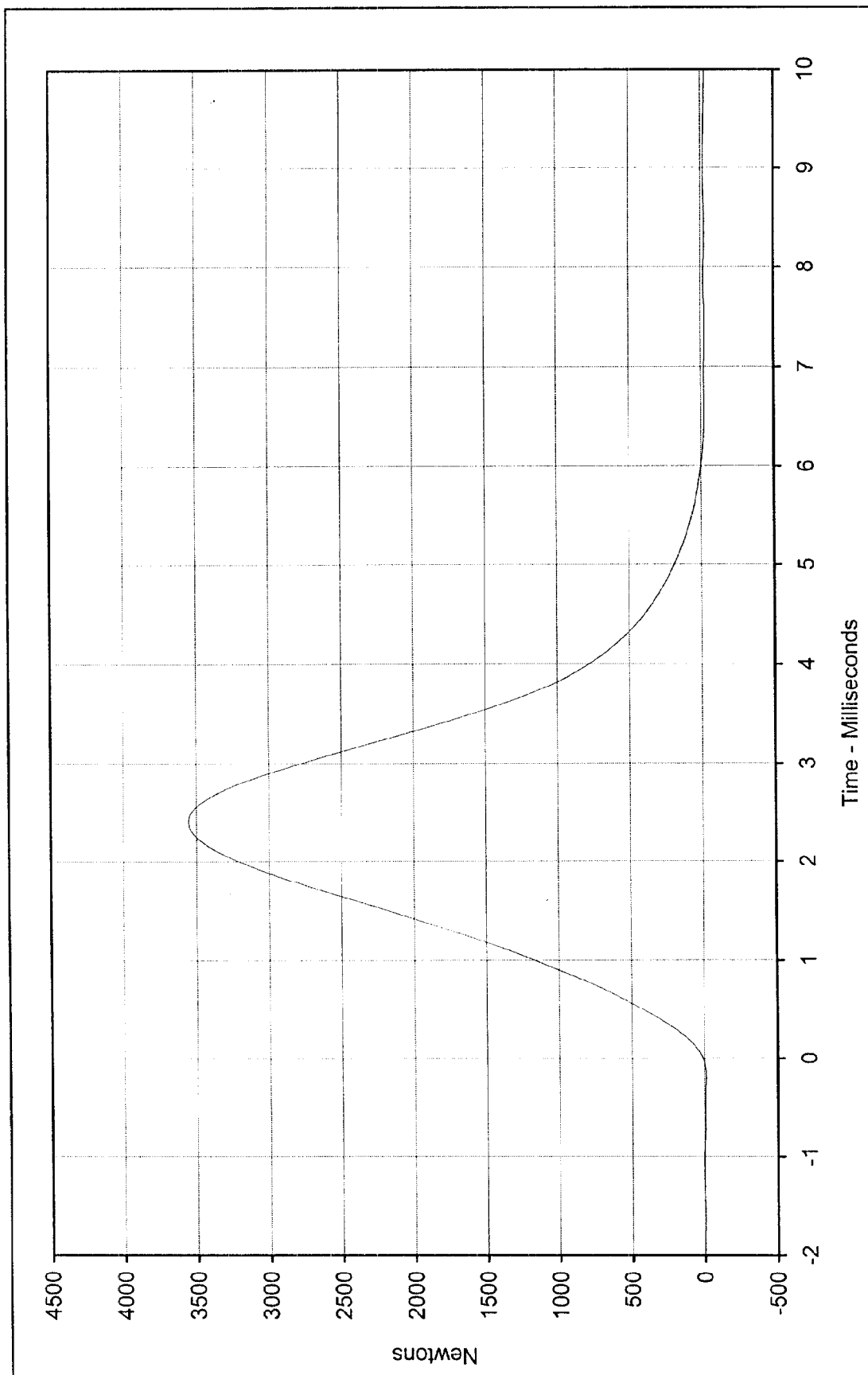
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Probe Velocity	m/s	2.073 to 2.134	2.120	Pass
Peak Probe Force	Newtons	3400 to 4200	3555.3	Pass
Overall Test Results				Pass


Laboratory Technician


Approved By

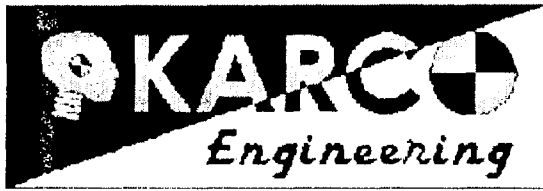
August 25, 1998
Test Date

11/24/98
Date



Curve Description: _____ Testing Program Hybrid III 5th Female Left Knee Impact
 Maximum Value: 3555.3 at 2.4 Milliseconds
 Minimum Value: -25.2 at 7.4 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/25/98
 ATD Serial No.: 274





Hybrid III Calibration Data Sheet

5TH Percentile Female

Right Knee Impact Test

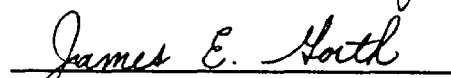
ATD Serial No.: 274

Part Serial No.: n/a

Test I.D.: KR004

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Probe Velocity	m/s	2.073 to 2.134	2.127	Pass
Peak Probe Force	Newtons	3400 to 4200	3515.2	Pass
Overall Test Results				Pass


Laboratory Technician

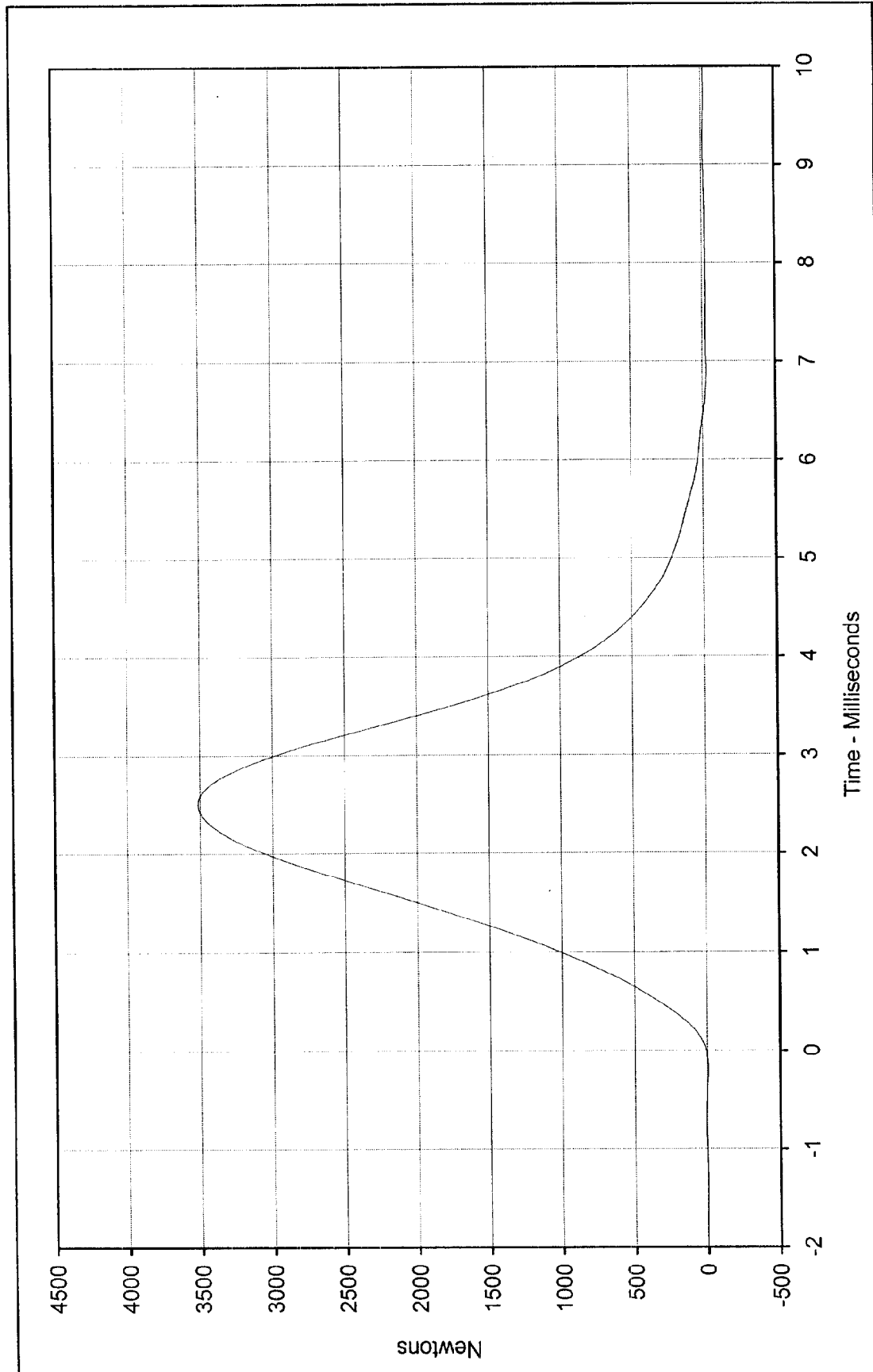

Approved By

August 25, 1998

Test Date

11/24/98

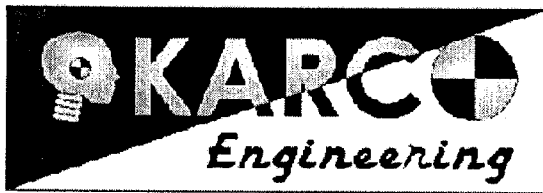
Date



Testing Program Hybrid III 5th Female Right Knee Impact
 Test Information: Part S/N: n/a Test I.D.: KR004



Curve Description:		Probe Force	
Maximum Value:	3515.2	at	2.5 Milliseconds
Minimum Value:	-22.6	at	6.9 Milliseconds
SAE Filter Class:	600		
Date of Test:	8/25/98		
ATD Serial No.:	274		



Hybrid III Calibration Data Sheet

5TH Percentile Female

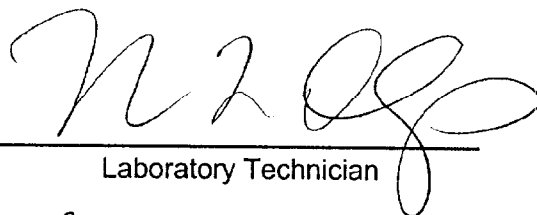
Head Drop Calibration

ATD Serial No.: 274

Part Serial No.: n/a

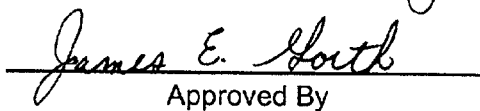
Test I.D.: DH001

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	31	Pass
Peak Resultant Acceleration	G's	240.0 to 295.0	282.5	Pass
Peak Lateral Acceleration	G's	≤15.0	2.2	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass


Laboratory Technician

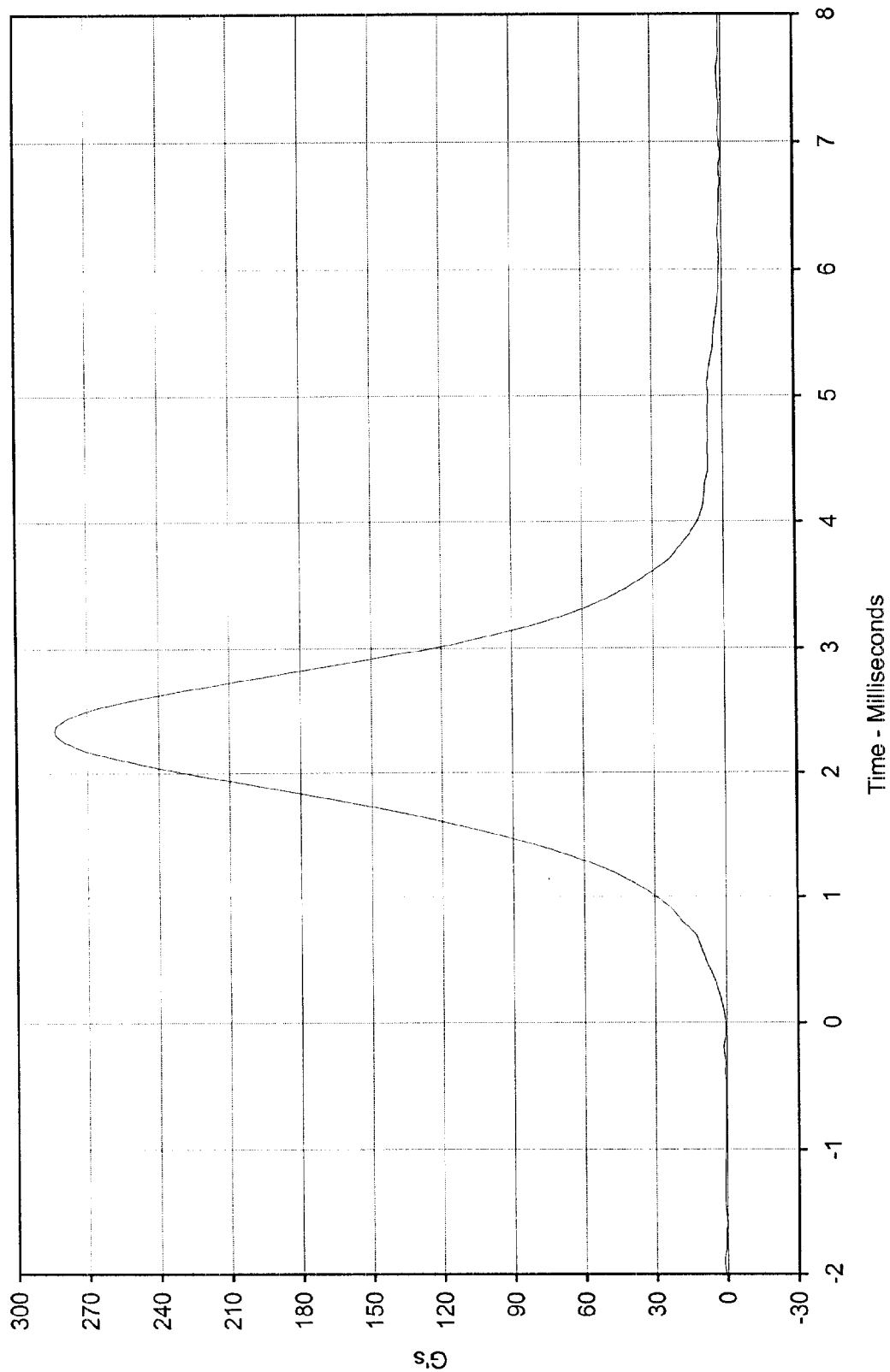
August 26, 1998

Test Date


Approved By

11/24/98

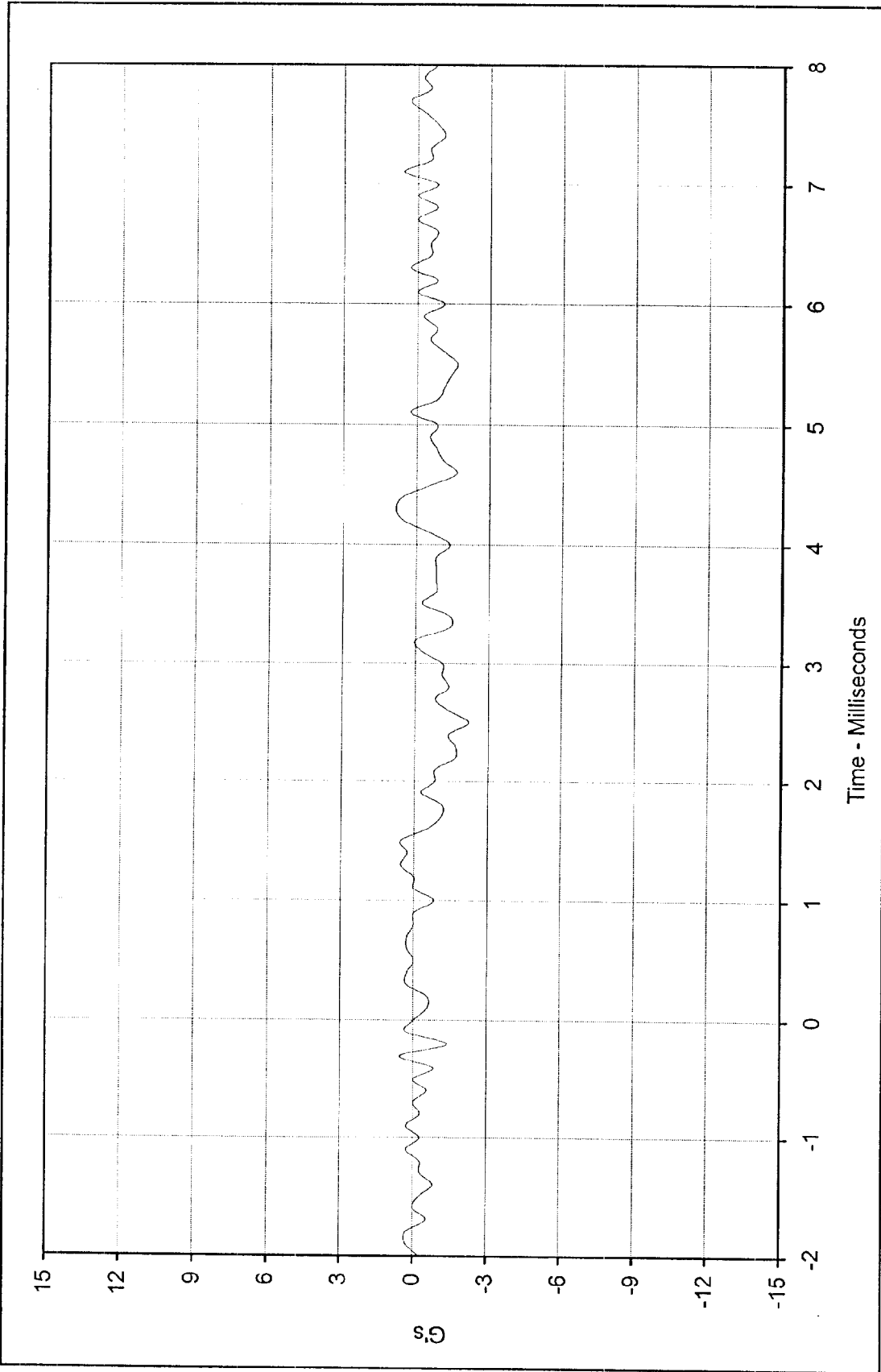
Date



Curve Description: Head Acceleration Resultant
 Maximum Value: 282.5 at 2.3 Milliseconds
 Minimum Value: 0.0 at -1.6 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/26/98
 ATD Serial No.: 274

Testing Program Hybrid III Head Drop Calibration (Female)
 Test Information: S/N of Part: n/a Test I.D.: DH001

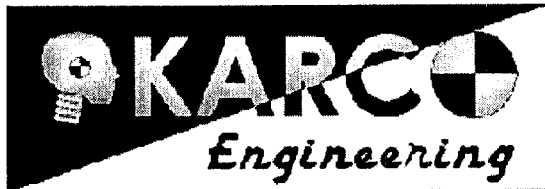




Curve Description: Head Acceleration Y Axis
 Maximum Value: 0.8 at 4.3 Milliseconds
 Minimum Value: -2.2 at 2.5 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/26/98
 ATD Serial No.: 274

Testing Program Hybrid III Head Drop Calibration (Female)
 Test Information: S/N of Part: n/a Test I.D.: DH001





Hybrid III Calibration Data Sheet

5TH Percentile Female

Thorax Impact Test

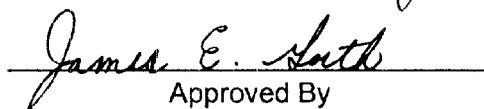
ATD Serial No.: 274

Part Serial No.: N/A

Test I.D.: CF002

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	31	Pass
Probe Velocity	m/s	6.58 to 6.82	6.77	Pass
Peak Probe Force	Newtons	3800 to 4300	4015	Pass
Peak Sternum Displacement	mm	51.0 to 58.0	52.6	Pass
Internal Hysteresis	%	69.0 to 85.0	78.2	Pass
Overall Test Results				Pass

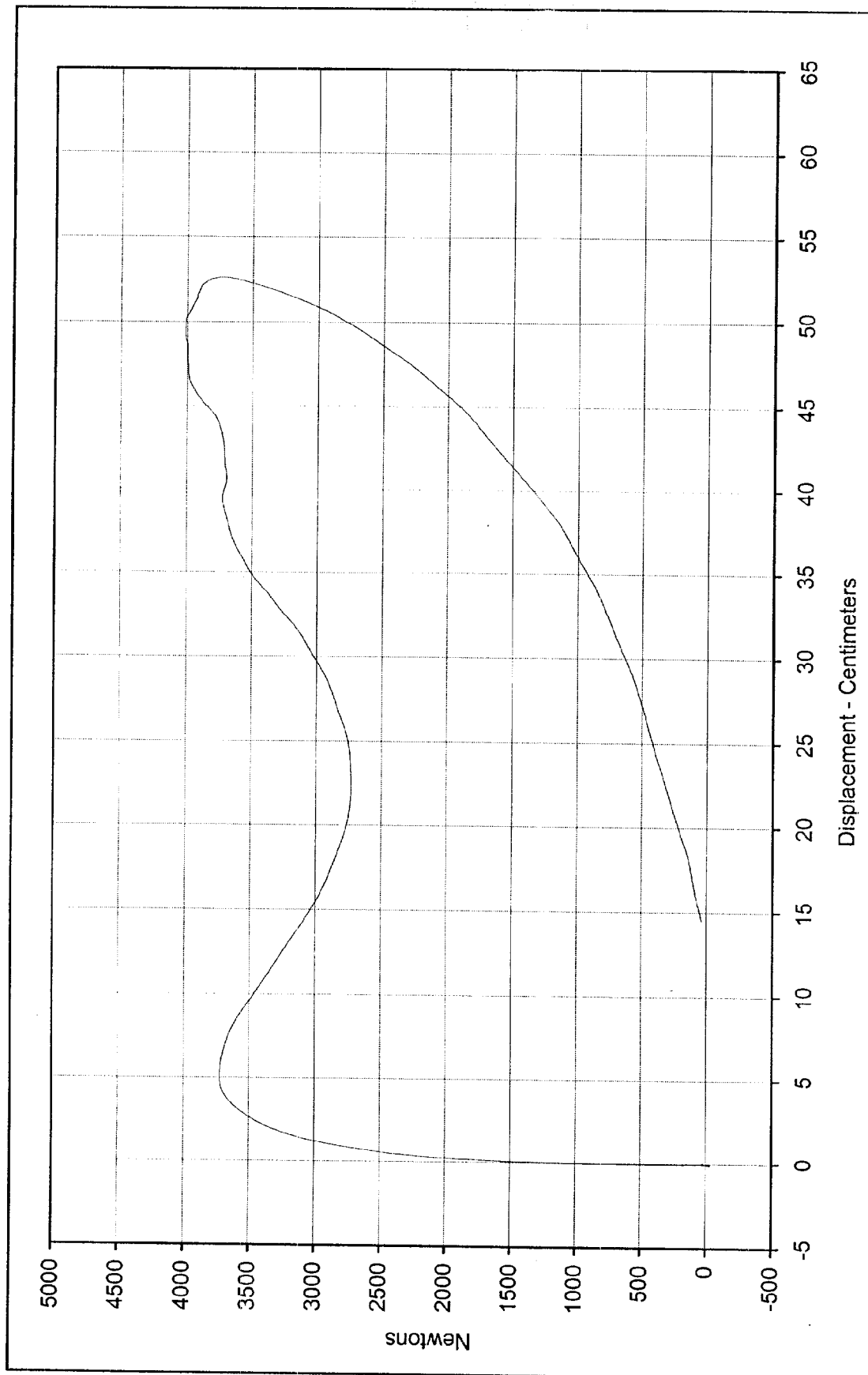

Laboratory Technician


Approved By

August 31, 1998

Test Date

11/24/98
Date



Curve Description: Probe Force vs. Chest Displacement
 Testing Program Hybrid III Thorax Impact Test (5TH Female)
 Test Information: S/N of Part: N/A Test I.D.: CF002

Probe Force: 4014.5 Newtons
 Chest Displ.: 52.6 Millimeters
 SAE Filter Class: 180
 Date of Test: 8/31/98
 ATD Serial No.: 274





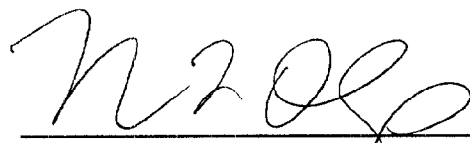
Hybrid III Calibration Data Sheet

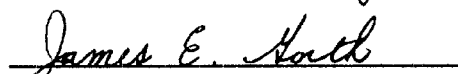
5TH Percentile Female

Neck Flexion Test

ATD Serial No.: 274Part Serial No.: N/ATest I.D.: FNF51

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity		%	10 to 70	31	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.04	Pass
Pendulum Deceleration	10 Msec	m/s	2.10 to 2.50	2.16	Pass
	20 Msec	m/s	4.00 to 5.00	4.46	Pass
	30 Msec	m/s	5.80 to 7.00	6.53	Pass
Maximum "D" Plane Rotation		Degrees	78.0 to 96.0	81.5	Pass
"D" Plane Rotation Decay, Time From Peak Value To Zero Crossing		Msec.	57.0 to 69.0	59.5	Pass
Moment About Occipital Condyle		N•m	69.0 to 84.0	72.0	Pass
Moment About Occipital Condyle Decay, Time From Peak Value To Zero Crossing		Msec.	41.0 to 50.0	50.0	Pass
Time of Peak Rotation With Respect to Peak Moment		Msec.	2.0 to 12.0	2.6	Pass
Overall Test Results				Pass	


Laboratory Technician

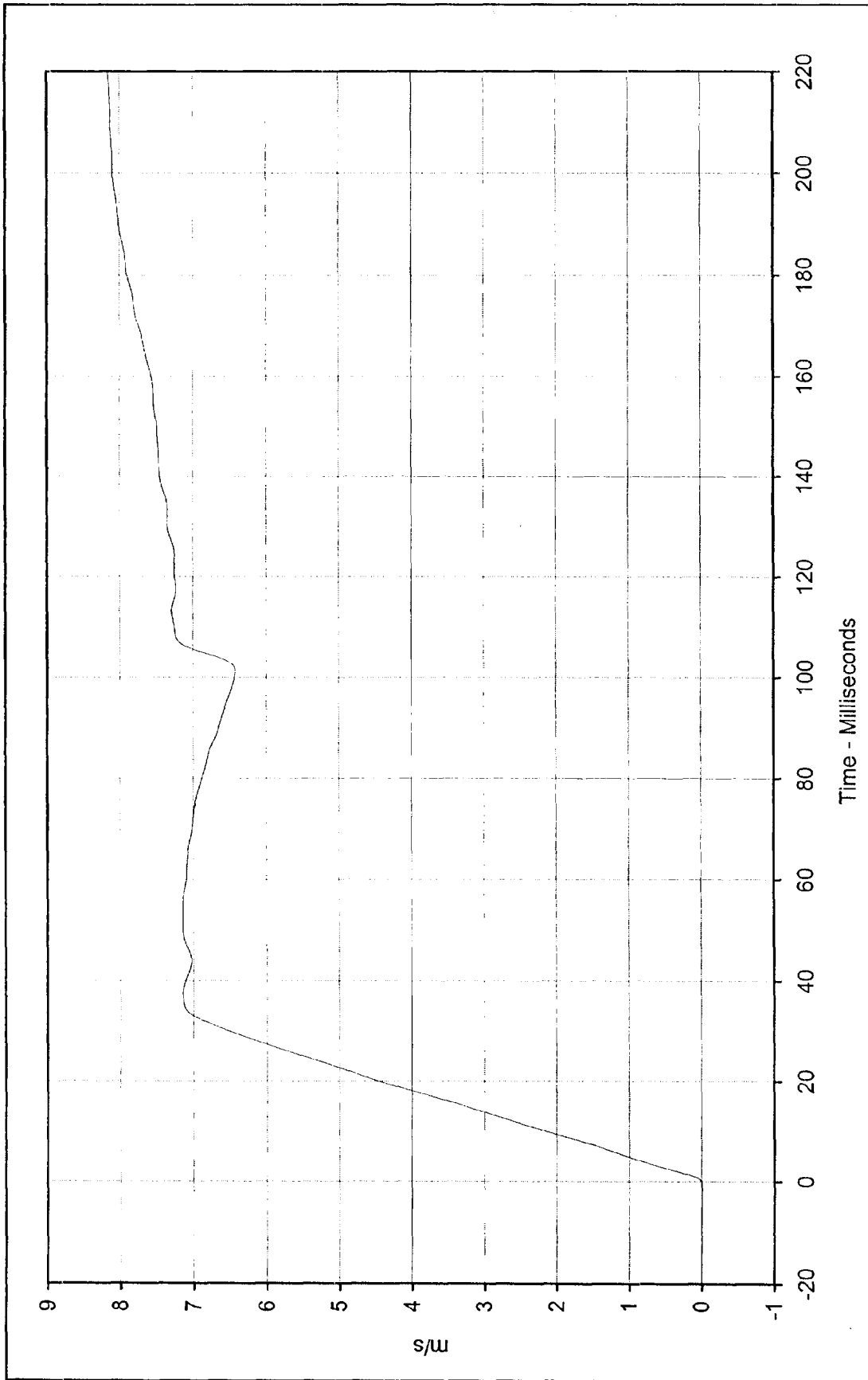

Approved By

August 17, 1998

Test Date

11/24/98

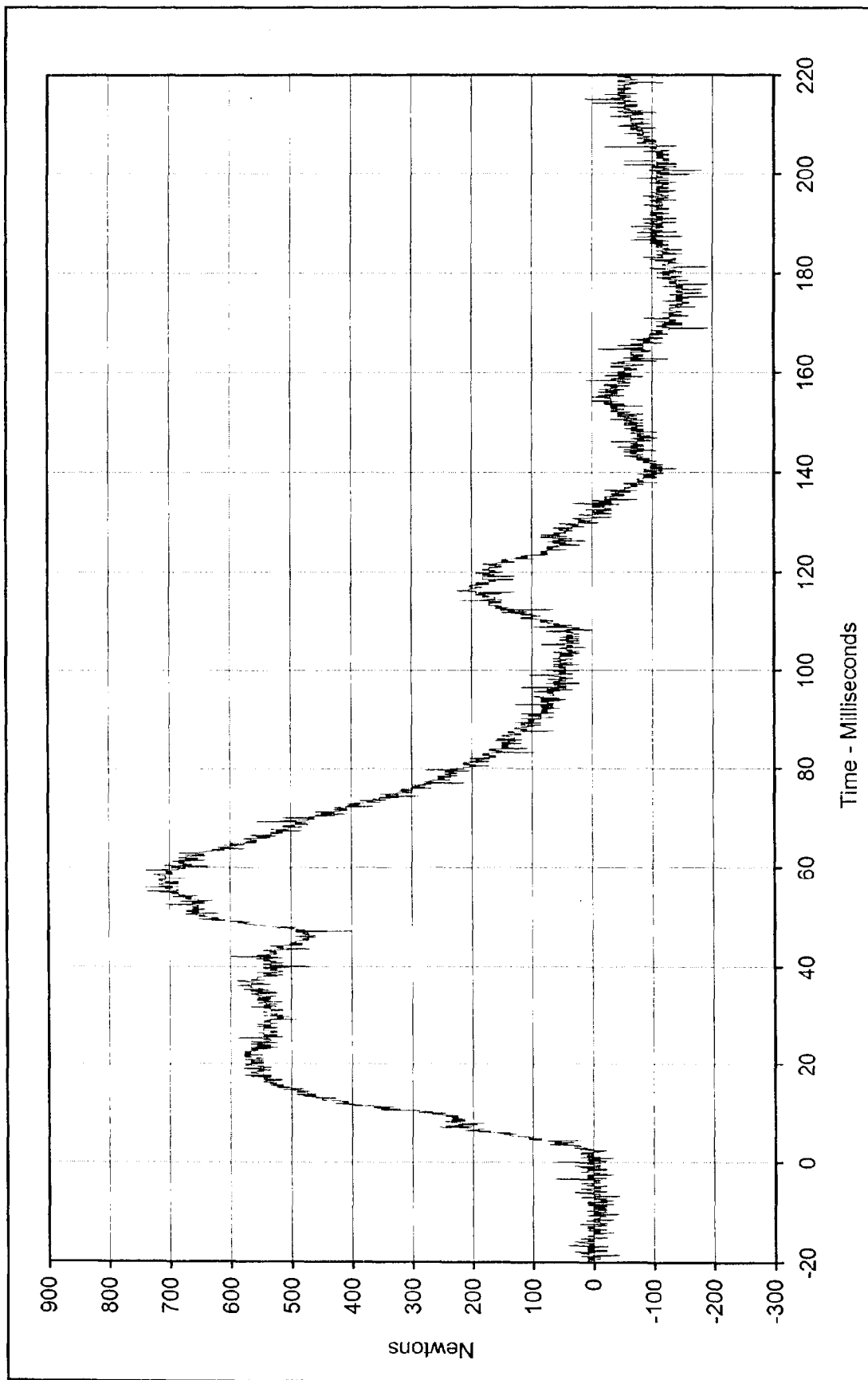
Date



Curve Description: Hybrid III Neck Flexion Test (Female)
 Testing Program: S/N of Part: N/A Test I.D.: FNF51

Maximum Value: 8.2 at 220.0 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/17/98
 ATD Serial No.: 274

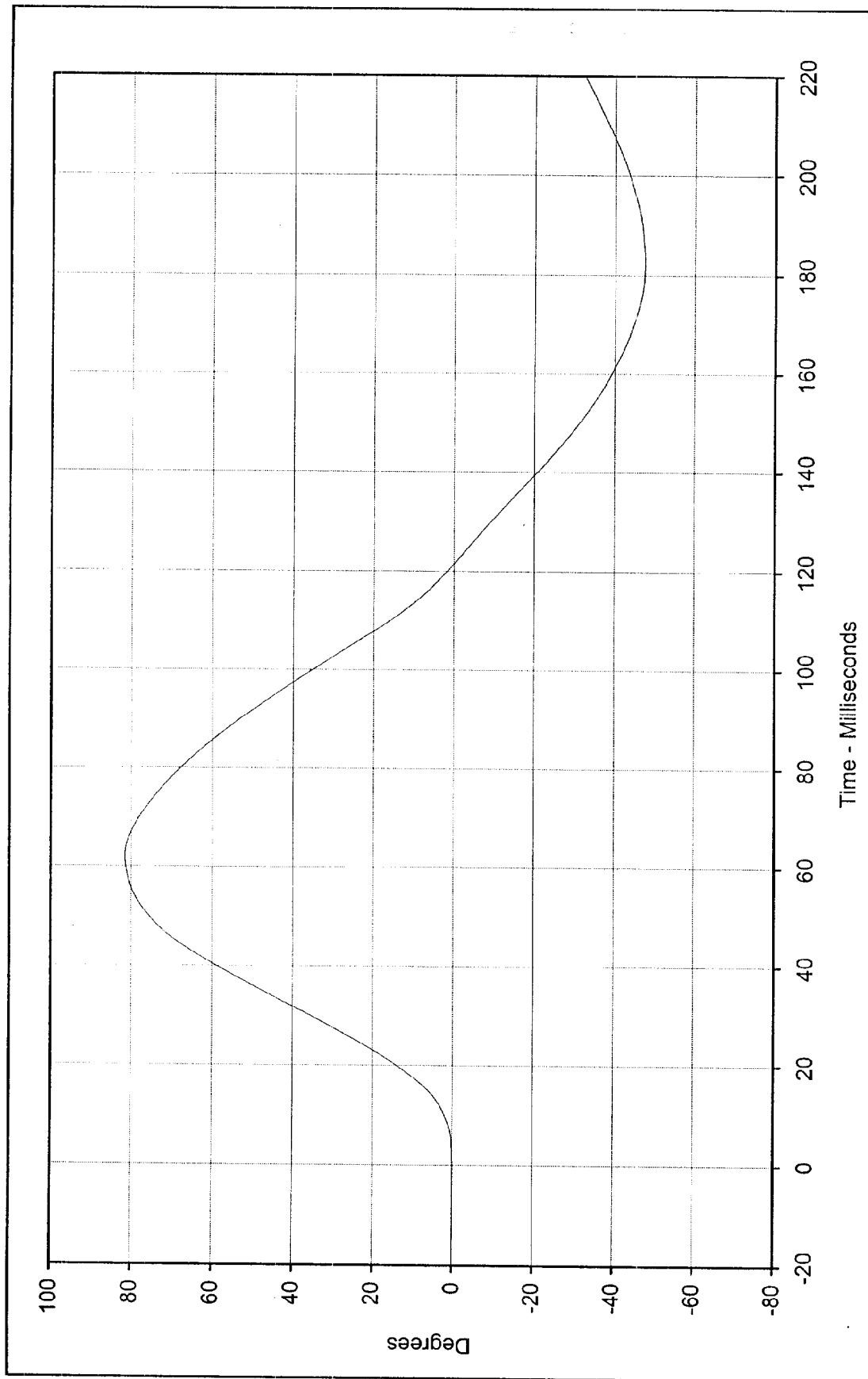




Testing Program: Hybrid III Neck Flexion Test (Female)
 Test Information: S/N of Part: N/A Test I.D.: FNF51

Curve Description: Neck Force X
 Maximum Value: 748.9 at 56.0 Milliseconds
 Minimum Value: -192.6 at 168.9 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/17/98
 ATD Serial No.: 274

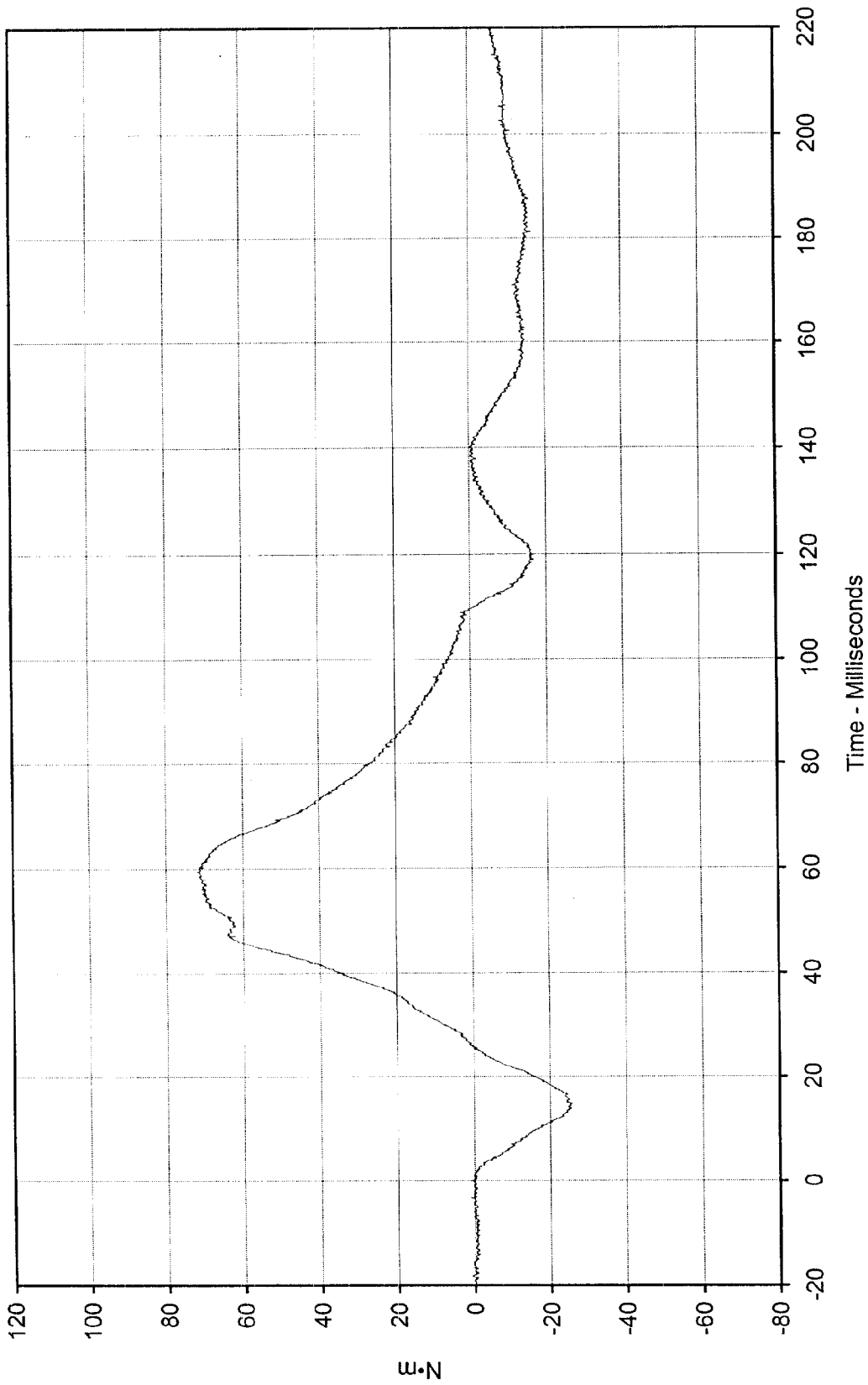




Curve Description: "D" Plane Rotation
 Maximum Value: 81.5 at 62.1 Milliseconds
 Minimum Value: -47.5 at 182.5 Milliseconds
 SAE Filter Class: 60
 Date of Test: 8/17/98
 ATD Serial No.: 274

Testing Program: Hybrid III Neck Flexion Test (Female)
 Test Information: S/N of Part: N/A Test I.D.: FNF51





Curve Description: Moment About Occipital Condyles

Maximum Value:	72.0	at	59.5	Milliseconds
Minimum Value:	-25.7	at	14.7	Milliseconds
SAE Filter Class:	600			
Date of Test:	8/17/98			
ATD Serial No.:	274			

Testing Program: Hybrid III Neck Flexion Test (Female)

Test Information: S/N of Part: N/A Test I.D.: FNF51





Hybrid III Calibration Data Sheet

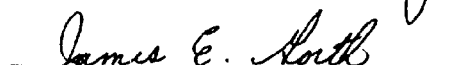
5TH Percentile Female

Neck Extension Test

ATD Serial No.: 274Part Serial No.: N/ATest I.D.: FNE54

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	40	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.09	Pass
Pendulum Deceleration	10 Msec	m/s	1.50 to 1.90	1.61	Pass
	20 Msec	m/s	3.10 to 3.90	3.58	Pass
	30 Msec	m/s	4.60 to 5.60	5.49	Pass
Maximum "D" Plane Rotation		Degrees	97.0 to 119.0	110.1	Pass
"D" Plane Rotation Decay, Angle When the Decaying Y Moment is at -10 N•m		Degrees	80.0 to 96.0	81.2	Pass
Calculated Moment About Occipital Condyle		N•m	-54.0 to -67.0	-66.9	Pass
Moment About Occipital Condyle Decay, Time From Negative Peak Value To -10 N•m		Msec.	28.0 to 38.0	36.3	Pass
Overall Test Results					Pass


Laboratory Technician

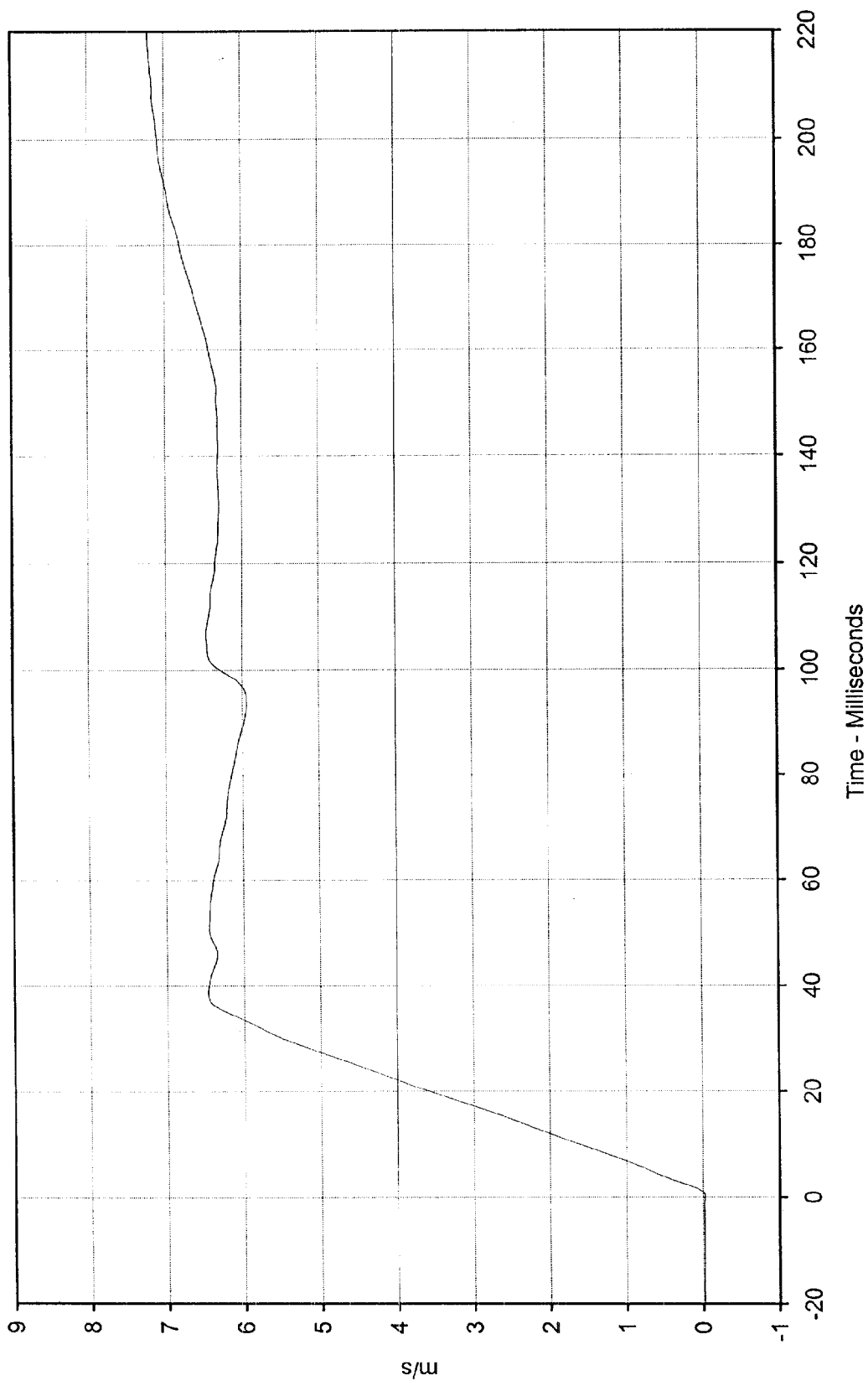

Approved By

August 17, 1998

Test Date

11/24/98

Date



Testing Program: Hybrid III Neck Extension Test (Female)

Test Information: S/N of Part: N/A Test I.D.: FNE54

Curve Description: Pendulum Velocity

Maximum Value: 7.2 at 220.0 Milliseconds

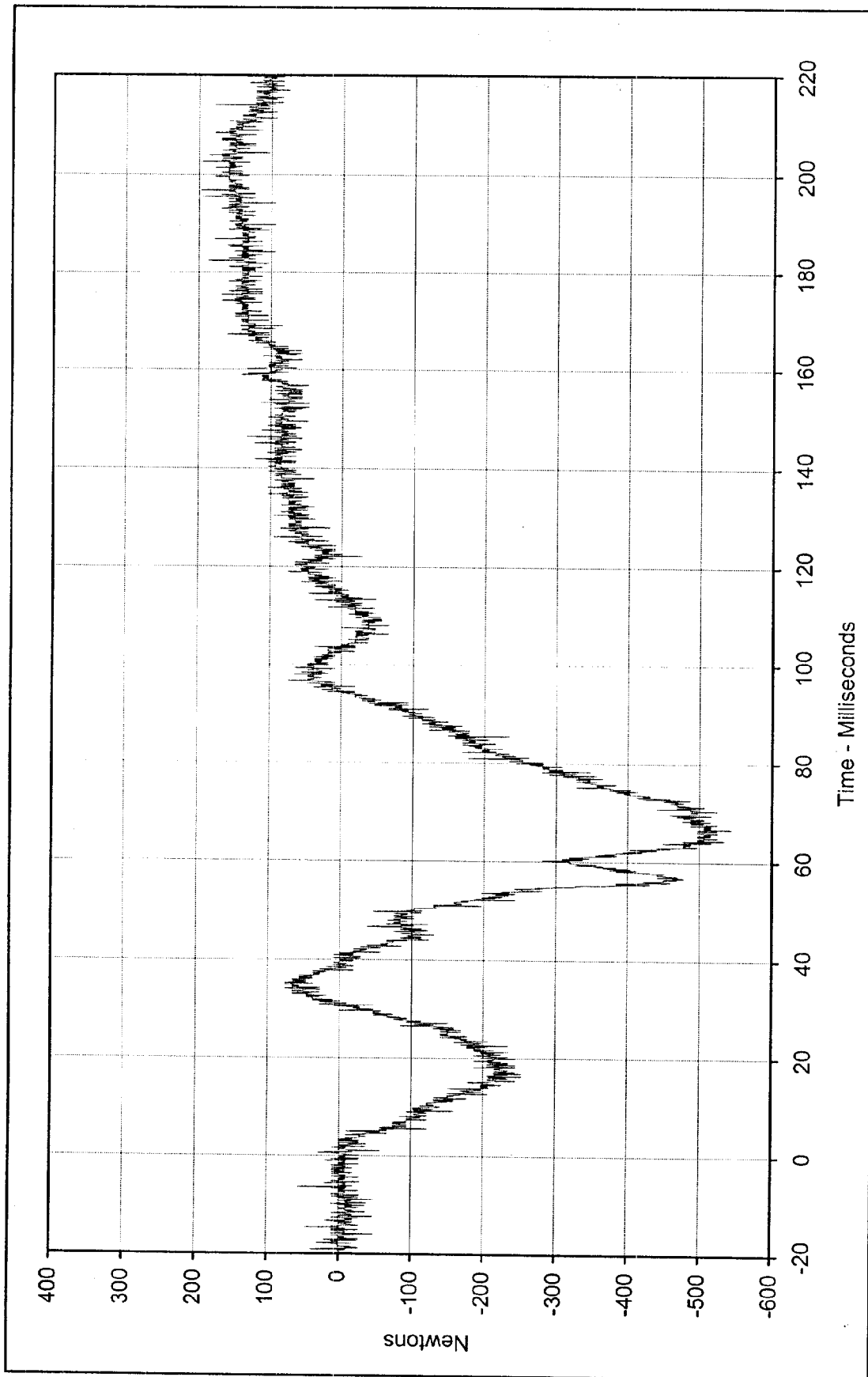
Minimum Value: 0.0 at 0.2 Milliseconds

SAE Filter Class: 180

Date of Test: 8/17/98

ATD Serial No.: 274

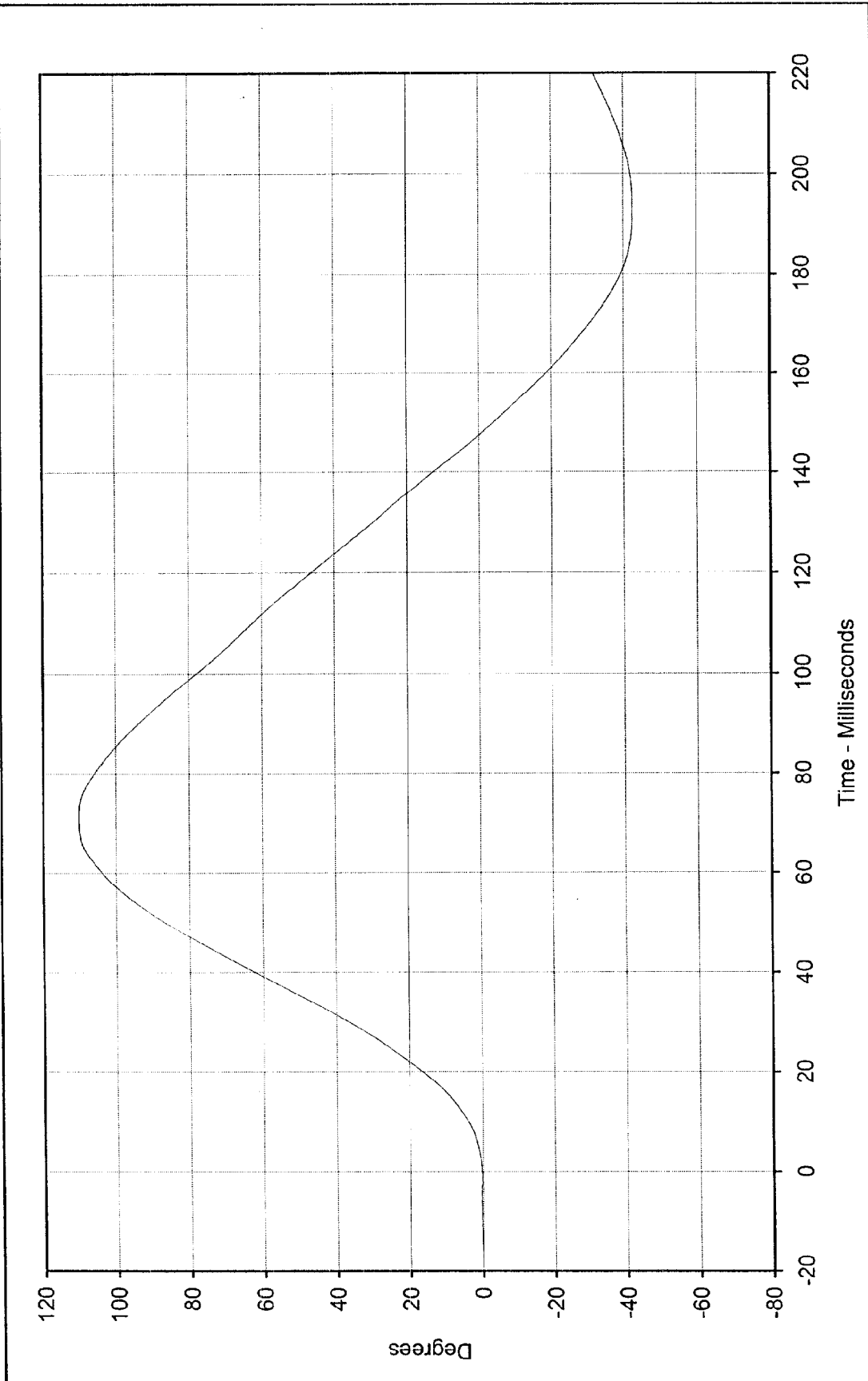




Testing Program: Hybrid III Neck Extension Test (Female)
 Test Information: S/N of Part: N/A Test I.D.: FNE54



Curve Description: Neck Force X
 Maximum Value: 196.8 at 195.7 Milliseconds
 Minimum Value: -543.6 at 66.7 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/17/98
 ATD Serial No.: 274



Curve Description: "D" Plane Rotation

Maximum Value: 110.1 at 71.1 Milliseconds

Minimum Value: -42.5 at 191.4 Milliseconds

SAE Filter Class: 60

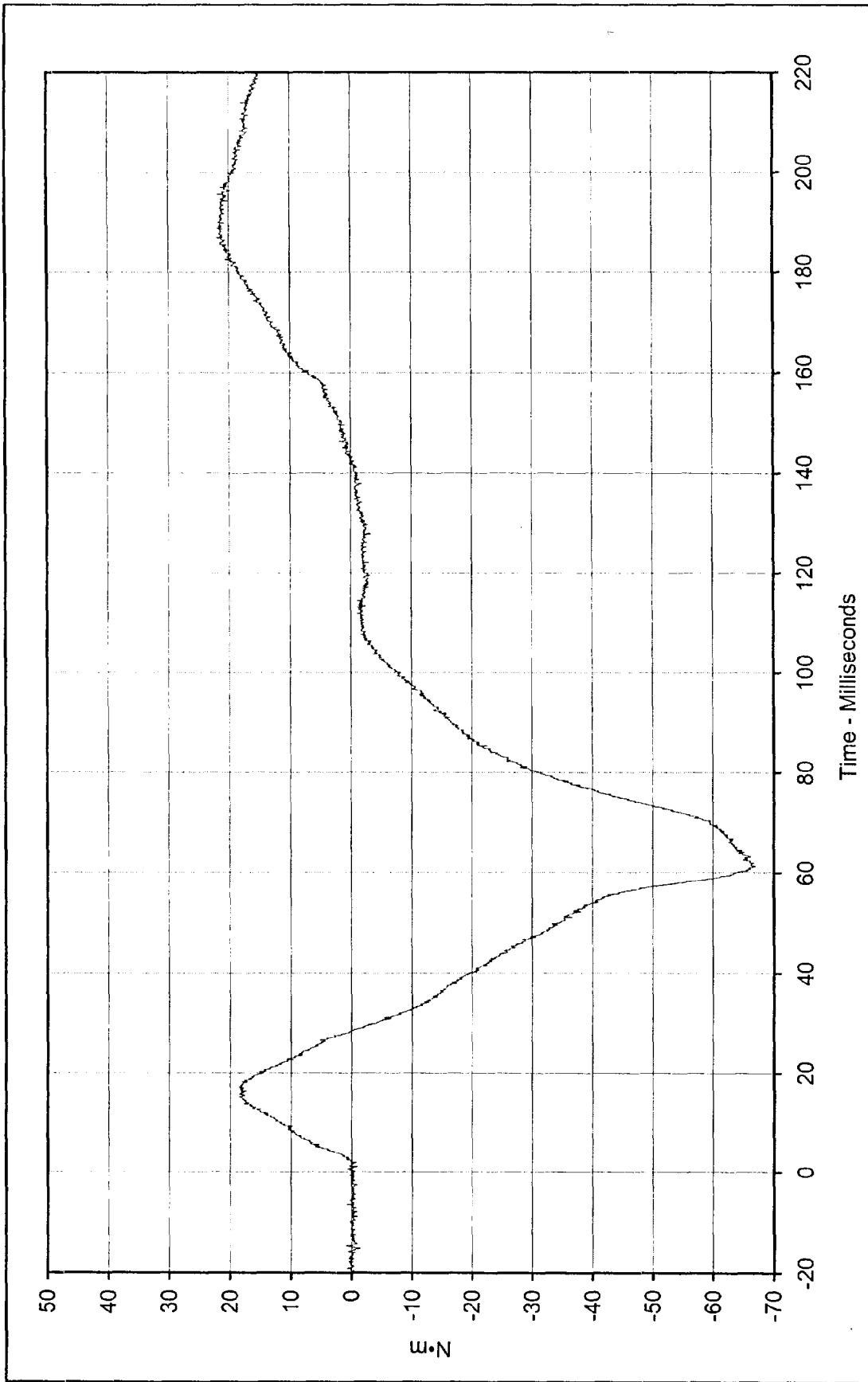
Date of Test: 8/17/98

ATD Serial No.: 274

Testing Program: Hybrid III Neck Extension Test (Female)

Test Information: S/N of Part: N/A Test I.D.: FNE54





Curve Description: Moment About Occipital Condyles
 Maximum Value: 22.0 at 186.9 Milliseconds
 Minimum Value: -66.9 at 61.3 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/17/98
 ATD Serial No.: 274

Testing Program: Hybrid III Neck Extension Test (Female)
 Test Information: S/N of Part: N/A Test I.D.: FNE54





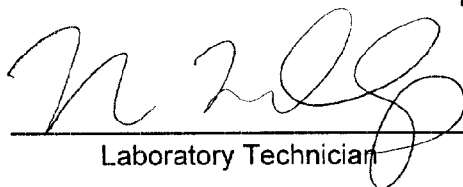
Hybrid III Calibration Data Sheet

5TH Percentile Female

External Measurements

ATD Serial No.: 274Part Serial No.: N/ATest I.D.: N/A

External Measurement Data				
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory temperature	°C	20.4 to 22.1	21.0	Pass
Laboratory relative humidity	%	10 to 70	43	Pass
A - Total sitting height	mm	785.0 to 795.0	787.2	Pass
B - Shoulder pivot height	mm	434.0 to 450.0	449.3	Pass
C - "H" point height	mm	81.5 to 86.5	86.1	Pass
D - "H" point from seat back	mm	144.5 to 149.5	145.6	Pass
E - Shoulder pivot from back	mm	71.0 to 81.0	80.0	Pass
F - Thigh clearance	mm	114.0 to 130.0	119.0	Pass
G - Elbow to finger tip	mm	393.0 to 409.0	402.1	Pass
H - Skull cap to back line	mm	43.2 to 48.5	48.0	Pass
I - Shoulder to elbow length	mm	287.0 to 303.0	301.0	Pass
J - Elbow rest height	mm	191.0 to 211.0	209.3	Pass
K - Buttock to knee length	mm	509.5 to 533.5	522.0	Pass
L - Popliteal height	mm	349.5 to 373.5	370.1	Pass
M - Knee to floor height	mm	449.0 to 465.0	461.0	Pass
N - Buttock popliteal length	mm	399.5 to 423.5	401.2	Pass
O - Chest depth	mm	183.0 to 200.0	190.8	Pass
P - Foot length	mm	216.0 to 232.0	230.0	Pass
R - Foot width	mm	76.0 to 92.0	91.0	Pass
V - Shoulder width	mm	348.0 to 364.0	360.2	Pass
W - Hip width at "H" point	mm	299.0 to 315.0	314.0	Pass
X - Chest circumference	mm	783.0 to 813.0	811.0	Pass
Y - Waist circumference	mm	757.0 to 787.0	760.0	Pass
AA - Location for chest circumference	mm	300.0 to 310.0	308.5	Pass
BB - Location for waist circumference	mm	160.0 to 170.0	168.3	Pass
Overall Test Results				Pass


Laboratory Technician


Approved By

August 31, 1998

Test Date

11/24/98

Date

APPENDIX F
VEHICLE OWNER'S MANUAL
OCCUPANT RESTRAINT INSTRUCTIONS

KAR98002-08

OCCUPANT RESTRAINTS

One of the most important safety features in your vehicle is the restraint system. This system includes the front and rear seat belts, and airbags for the driver and right front passenger. Your seat belts also can be used to hold infant and child restraint systems if you will be carrying children too small for adult-size belts.

Please pay careful attention to the information in this section. It tells you how to use your restraint system properly to keep you and your passengers as safe as possible.

WARNING!

In a collision, you and your passengers can suffer much greater injuries if you are not properly buckled up. You can strike the interior of your vehicle or other passengers, or you can be thrown out of the vehicle. Always be sure you and others in your vehicle are buckled up properly.

Buckle up even though you are an excellent driver. Even on short trips. Someone on the road may be a poor driver and cause a collision which includes you. And this can happen far away from home or on your own street.

Research has shown that seat belts save lives. And they can reduce the seriousness of injuries in a collision. Some of the worst injuries happen when people are thrown from the vehicle. Seat belts provide protection from that, and they reduce the risk of injury caused by striking the inside of the vehicle. Everyone in a motor vehicle needs to be buckled up all the time.

Unibelts

The seats next to the front and rear doors of your vehicle are equipped with Unibelts.

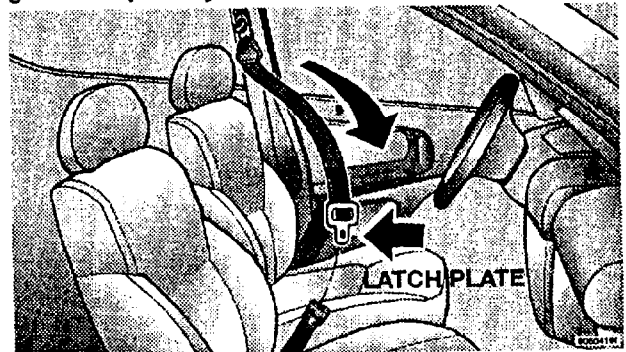
Each unbelt is a combined lap/shoulder belt system. The belt webbing retractor will lock only during very sudden stops or impacts. This feature allows the shoulder part of the belt to move freely with you under normal conditions. But in a collision, the belt will lock and reduce the risk of your striking the inside of the vehicle or being thrown out.

WARNING!

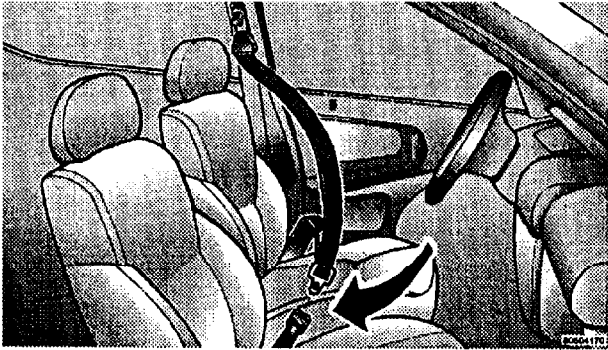
- Wearing a seat belt incorrectly is dangerous. Seat belts are designed to go around the large bones of your body. These are the strongest parts of your body and can take the forces of a collision the best.
- Belting two people into one seat belt can lead to greater injury. People belted together can crash into one another in an accident, hurting one another badly. Never use a unbelt or a lap belt for more than one person, no matter what their size.
- Wearing your belt in the wrong place could make your injuries in a collision much worse. You might suffer internal injuries, or you could even slide out of part of the belt. Follow these instructions to wear your seat belt safely and to keep your passengers safe, too.

Unibelt Operating Instructions

1. Enter the vehicle and close the door. Sit back and adjust the seat.
2. The seat belt latch plate is above the back of your seat. Grasp the latch plate and pull out the belt. Slide the latch plate up the webbing as far as necessary to make the belt go around your lap.

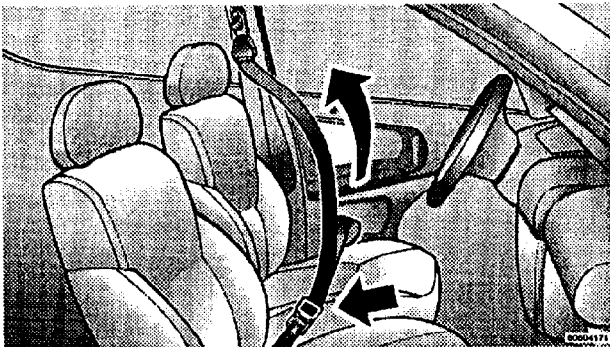


3. When the belt is long enough to fit, insert the latch plate into the buckle until you hear a “click”.

**WARNING!**

- A belt that is buckled into the wrong buckle will not protect you properly. The lap portion could ride too high on your body, possibly causing internal injuries. Always buckle your belt into the buckle nearest you.
- A belt that is too loose will not protect you as well. In a sudden stop you could move too far forward, increasing the possibility of injury. Wear your seat belt snugly.
- A belt that is worn under your arm is very dangerous. Your body could fall into the inside surfaces of the vehicle in a collision, increasing head and neck injury. And a belt worn under the arm can cause internal injuries. Ribs aren't as strong as shoulder bones. Wear the belt over your shoulder so that your strongest bones will take the force in a collision.

4. Position the lap belt across your thighs, below your abdomen. To remove slack in the lap belt portion, pull up a bit on the shoulder belt, as shown. To loosen the lap belt if it is too tight, tilt the latch plate and pull on the lap belt. A snug belt reduces the risk of sliding under the belt in a collision.

**WARNING!**

- A lap belt worn too high can increase the risk of internal injury in a collision. The belt forces won't be at the strong hip and pelvic bones, but across your abdomen. Always wear the lap belt as low as possible and keep it snug.
- A twisted belt can't do its job as well. In a collision it could even cut into you. Be sure the belt is straight. Use the Unibelt Untwisting Procedure. If you can't straighten a belt in your vehicle, take it to your dealer and have it fixed.

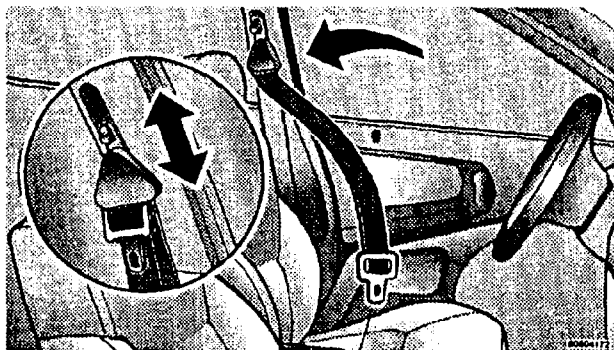
2

5. Position the shoulder belt on your chest so that it is comfortable and not resting on your neck. The retractor will withdraw any slack in the belt.

6. To release the belt, push the red button marked PRESS on the buckle. The belt will automatically retract to its stowed position. If necessary, slide the latch plate down the webbing to allow it to retract fully.

Adjustable Upper Shoulder Belt Anchorage**4 Door Models**

In the front seat, the shoulder belt can be adjusted upward or downward to position the belt away from your neck. Push up or down on the anchorage control to release the anchorage, and move it up or down to the position that serves you best.



As a guide, if you are shorter than average, you will prefer a lower position, and if you are taller than average, you'll prefer a higher position. When you release the anchorage, try to move it up or down to make sure that it is locked in position.

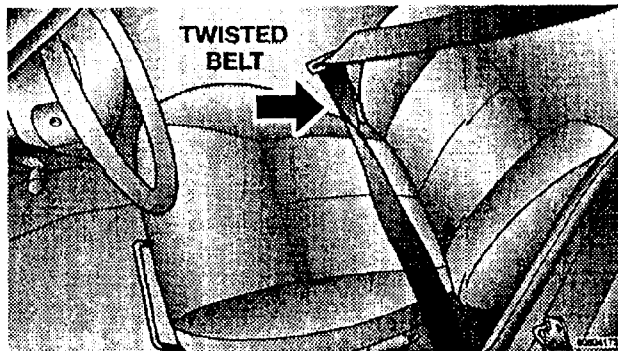
In the rear seat, move toward the center of the seat to position the belt away from your neck.

2 Door Models

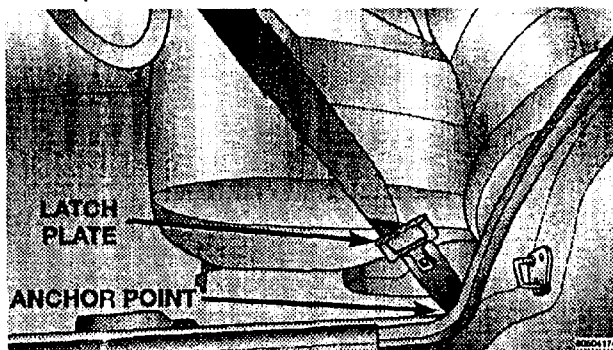
In the front seats, the shoulder belt upper anchorage adjusts automatically to your height as you position the shoulder belt on your chest. If the belt is not comfortable, pull the shoulder belt webbing forward from the retractor and guide it over the desired point on your shoulder belt as it retracts.

Unibelt Untwisting Procedure

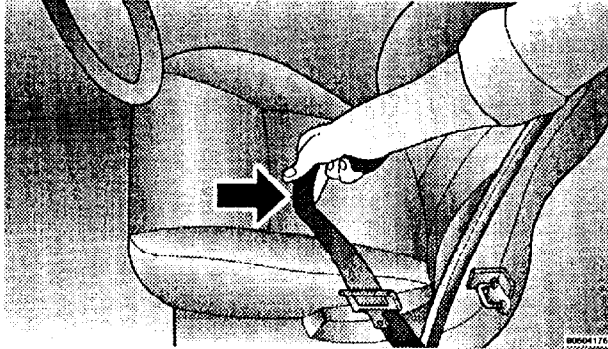
Use the following procedure to untwist a twisted unibelt.



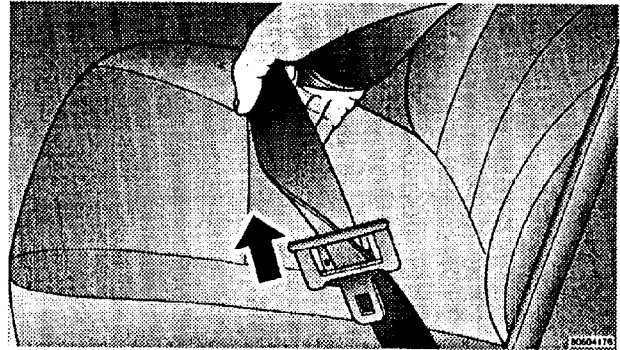
1. Position the latchplate as close as possible to the anchor point.



2. At about 6 to 12 inches above the latchplate, grasp and twist the belt webbing 180° to create a fold that begins immediately above the latchplate.



3. Slide the latchplate upward over the folded webbing. The folded webbing must enter the slot at the top of the latchplate.



4. Continue to slide the latchplate up until it clears the folded webbing.

Seat Belts And Pregnant Women

We recommend that pregnant women use the seat belts throughout their pregnancy. Keeping the mother safe is the best way to keep the baby safe.

Pregnant women should wear the lap part of the belt across the thighs and as snug across the hips as possible. Keep the belt low so that it does not come across the abdomen. That way the strong bones of the hips will take the force if there is a collision.

Rear Center Lap Belts

The center rear seating position has a lap belt only. To fasten a lap belt, slip the latch plate into the buckle.

To lengthen a lap belt, tilt the latch plate and pull. To remove slack, pull the loose end of the webbing. Wear the belt snug against the hips. Sit back and erect in the seat, then adjust the belt as tightly as is comfortable.

WARNING!

A lap belt worn too loose or too high is dangerous. A belt worn too loose can allow you to slip down and under the belt in a collision. A belt that is too high will apply crash forces to the abdomen, not to the stronger hip bones. In either case, the risk of internal injuries is greater. Wear the lap belt low and snug.

2

WARNING!

A frayed or torn belt could rip apart in a collision and leave you with no protection. Inspect the belt system periodically, checking for cuts, frays, or loose parts. Damaged parts must be replaced immediately. Do not disassemble or modify the system. Seat belt assemblies must be replaced after an accident if they have been damaged (bent retractor, torn webbing, etc.).

Seat Belt Extender

If a seat belt is too short, even when fully extended, your dealer can provide you with a seat belt extender. This extender should be used only if the existing belt is not long enough.

WARNING!

Using a seat belt extender when not needed can increase the risk of injury in a collision. Only use the extender when a lap belt is not long enough when it is worn low and snug, and in the recommended seating positions. Remove and stow the seat belt extender when it is not needed.

Child Restraint

Everyone in your vehicle needs to be buckled up all the time, babies and children, too.

WARNING!

In a collision, an unrestrained child, even a tiny baby, can become a missile inside the vehicle. The force required to hold even an infant on your lap could become so great that you could not hold the child, no matter how strong you are. The child and others could be badly injured. Any child riding in your vehicle should be in a proper restraint for the child's size. All states and Canadian provinces require small children to ride in proper restraint systems. This is the law, and you can be prosecuted for ignoring it.

Chrysler Integrated Child Seat Optional
Operating Instructions for this seat are included with the seat. If the instructions are not with the seat or in the owner's manual package, replacement instructions can be obtained.

To obtain replacement instructions:

Use the order form at the rear of this manual and specify publication N-016-9470.

Infants And Small Children

There are different sizes and types of restraints for children from newborn size to the bigger child almost large enough for an adult safety belt. Use the restraint that is correct for your child.

Two different child restraint systems are generally available:

- The infant carrier for babies weighing up to 20 lbs. (9kg.)
- The child seat for small children over 20 lbs.

In addition, some manufacturers make systems that can be first used as an infant carrier, and then converted to a child seat as the child grows.

Here are some tips on getting the most out of your child restraint:

- Before buying any restraint system, make sure that it has a label certifying that it meets Motor Vehicle Safety Standard 213. Chrysler also recommends that before you buy a child restraint, you try it in the vehicle seats where you will use it.
- The restraint must be appropriate for your child's weight and height. Check the label on the restraint for this too.

WARNING!

- A rearward facing infant restraint should only be used in a rear seat. A rearward facing infant restraint in the front seat may be struck by a deploying passenger airbag which may cause severe or fatal injury to the infant.
- Improper installation can lead to failure of an infant or child restraint. It could come loose in a collision. The child could be badly injured or killed. Follow the manufacturer's directions exactly when installing an infant or child restraint.

- If possible, install the restraint in the rear seat. According to accident statistics, children are safer when properly restrained in the rear seats than in the front.
- Carefully follow the instructions that come with the restraint. If you install the restraint improperly, it may not work when you need it.
- Infant and child restraints are secured in the vehicle seats by the lap belt or the lap part of the lap/shoulder belt.
- In the center rear seat if the belt still can't be tightened, or if pulling and pushing on the restraint loosens the belt, you may need to do something more. Disconnect the latch plate from the buckle, turn it over, and reconnect it to the buckle. If you still can't make the child restraint secure, try a different seating position.
- Some child seat manufacturers recommend the use of a top anchorage (tether) strap in addition to the lap belt. Your vehicle has tether strap anchorages behind the rear seating positions for use with these child seats. Your dealer can provide you with anchorage hardware and installation instructions.
- Buckle the child into the seat exactly as the seat manufacturer's directions tell you. The seat belt is equipped with a cinching latch plate which is designed to keep the belt tight around the child seat. Pull up on the shoulder portion to tighten the belt. The cinching latch plate will keep the belt tight.
- When your infant carrier or child seat is not in use, secure it with the seat belt or remove it from the vehicle. Don't leave it loose in the vehicle. In a sudden stop or collision, it could strike occupants and injure them.

Children Too Large For Child Seats

Children who are too large for child seats and who can sit upright by themselves should use the available lap/shoulder belts for best protection.

- Make sure that the child is seated upright in the seat.
- The lap belt should be fastened low on the hips and as snug as possible.
- Check belt fit periodically. A child's squirming or slouching can move the belt out of position.

If the shoulder belt contacts the face or neck, move the child closer to the middle of the vehicle. If this doesn't solve the problem, move the child to the center rear seating position and use the lap belt.

Belt-positioning booster seats that may help overcome this problem are also available for use with lap/shoulder belts. Before buying a booster seat, make sure that it has a label certifying that it meets applicable Motor Vehicle Safety Standards. Make sure that it is satisfactory for use in this vehicle.

Driver and Right Front Passenger Supplemental Restraint System (SRS) - Airbag

This vehicle has airbags for the driver and right front passenger as a supplement to the seat belt restraint systems. The driver's airbag is mounted in the steering wheel. The passenger side airbag is mounted in the instrument panel, above the glove compartment, under a cover marked SRS/AIRBAG. These airbags inflate in higher speed impacts. They work with the instrument panel knee bolsters and the seat belts to provide improved protection for the driver and right front passenger.

The seat belts are designed to protect you in many types of collisions. The airbags deploy only in frontal collisions and will not deploy in collisions at slow speed. But even in collisions where the airbags work, you need the seat belts to keep you in the right position for the airbags to protect you properly.

WARNING!

- Relying on the airbags alone could lead to more severe injuries in a collision. The airbags work with your seat belt to restrain you properly. In some collisions the airbags won't deploy at all. Wear your seat belts even though you have airbags.
- Being too close to the steering wheel or instrument panel during airbag deployment could cause serious injury. Airbags need room to inflate.

Here are four simple steps you can take to minimize the risk of harm from a deploying airbag.

28 THINGS TO KNOW BEFORE STARTING YOUR VEHICLE

1. Children **12** years old and under should ride buckled up in a rear seat.

Infants in rear facing child safety seats designed for children up to one year or 20 pounds (9 kg) should **NEVER** ride in the front seat of a vehicle with a passenger side airbag. An airbag deployment can cause severe injury or death to infants in this position.

Children up to 60 pounds (27 kg) should be secured in the rear seat in child safety seats or booster seats. If the booster seat is not equipped with a front shield, the child should be seated in either rear outboard seat to take advantage of the added safety of the available lap and shoulder belt.

Older children who do not use child safety seats or booster seats should ride properly buckled up in the rear seat; in the outboard seat if possible.

Never allow children to slide the shoulder belt behind them or under the arm.

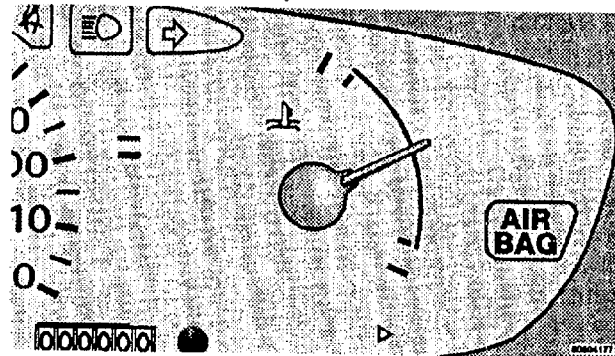
2. All occupants should wear their lap and shoulder belts properly.

3. The driver and front passenger seats should be moved back as far as practical to allow the airbags room to inflate.

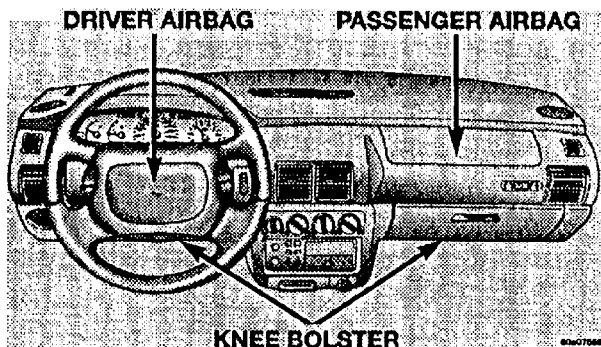
4. You should read the instructions provided with your child safety or booster seat to make sure that you are using it properly.

The airbag system consists of the following:

- Airbag Electronic Control Module (AECM)
- AIRBAG Readiness Light.



- Driver and Passenger Airbag/Inflator Units
- Unique Steering Wheel and Column
- Unique Instrument Panel
- Interconnecting Wiring
- Knee Impact Bolster.



How The Airbag System Works

- The Airbag Electronic Control Module (AECM) in the front of the vehicle and in the occupant compartment determines if a frontal impact is severe enough to

THINGS TO KNOW BEFORE STARTING YOUR VEHICLE E 29

require the airbags. The AECM will not detect side, roll over, or rear impacts. The AECM is connected to the airbag/inflator units.

- The AECM monitors the readiness of the electronic parts of the system whenever the ignition switch is in the START or RUN positions. These include all of the items listed previously except the knee bolster, instrument panel, and steering column. The AECM also turns on the AIRBAG light in the instrument panel for 6 to 8 seconds when the ignition is first turned on, then turns the light off. If it detects a malfunction in any part of the system, it turns on the light either momentarily or continuously.

2

WARNING!

Ignoring the AIRBAG light in your instrument panel could mean you won't have the airbags to protect you in a collision. If the light does not come on, stays on after you start the vehicle, or if it comes on as you drive, have the airbag system checked right away.

- The **Airbag/Inflator Units** are in the center of the steering wheel and in the instrument panel. The words SRS/AIRBAG are embossed on the airbag covers.

WARNING!

Do not put anything on or around the airbag covers or attempt to manually open them. You may damage the airbags and you could be injured because the airbags are not there to protect you. These protective covers for the airbag cushions are designed to open only when the airbags are inflating.

- When the AECM detects an impact requiring the airbags, it signals the inflator units. A large quantity of non toxic nitrogen gas is generated to inflate the airbags. The airbag covers separate and fold out of the way as the airbags inflate to their full size. The airbags fully inflate in about 50 milliseconds. This is only about half of the time it takes you to blink your eyes. The airbags then quickly deflate while helping to restrain the driver and right front passenger. The airbag gas is vented through the airbag material

towards the instrument panel. In this way the airbags do not interfere with your control of the vehicle.

- The **Knee Impact Bolsters** help protect the knees and position you for the best interaction with the airbags.

If A Deployment Occurs

The airbag system is designed to deploy when the AECM detects a moderate-to-severe frontal collision, to help restrain the driver and right front passenger, and then to immediately deflate.

NOTE: A frontal collision that is not severe enough to need airbag protection will not activate the system. This does not mean something is wrong with the airbag system.

If you do have a collision which deploys the airbags, any or all of the following may occur:

- The nylon airbag material may sometimes cause abrasions and/or skin reddening to the driver and right front passenger as the airbags deploy and unfold. The abrasions are similar to friction rope burns or those you might get sliding along a carpet or gymnasium floor. They are not caused by contact with chemicals.

They are not permanent and normally heal quickly. However, if you haven't healed significantly within a few days, or if you have any blistering, see your doctor immediately.

- As the airbags deflate you may see some smoke-like particles. The particles are a normal by-product of the process that generates the non toxic nitrogen gas used for airbag inflation. These airborne particles may irritate the skin, eyes, nose, or throat. If you have skin or eye irritation, rinse the area with cool water. For nose or throat irritation, move to fresh air. If the irritation continues, see your doctor. If these particles settle on your clothing, follow the garment manufacturer's instructions for cleaning.
- Your vehicle may be drivable after the airbags deploy. If so, you can tuck the deployed airbags inside the opening in the steering wheel hub and instrument panel trim covers to make driving somewhat easier.

WARNING!

Deployed airbags can't protect you in another collision. Have the airbags replaced by an authorized dealer as soon as possible.

2

Transporting Pets

Airbags deploying in the front seat could harm your pet. An unrestrained pet will be thrown about and possibly injured, or injure a passenger during panic braking or in a collision.

Pets should be restrained in the rear seat in pet harnesses or pet carriers that are secured by seat belts.

32 THINGS TO KNOW BEFORE STARTING YOUR VEHICLE

Maintaining Your Airbag System

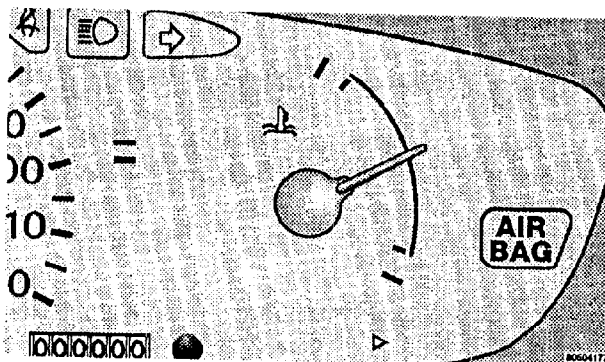
WARNING!

- Modifications to any part of the airbag system could cause it to fail when you need it. You could be injured because the airbag is not there to protect you. Do not modify the components or wiring, including adding any kind of badges or stickers to the airbag covers. Do not modify the front bumper or vehicle body structure.
- You need proper knee impact protection in a collision. Do not mount or locate any aftermarket equipment on or behind the knee bolsters.
- It is dangerous to try to repair any part of the airbag system yourself. Don't try to repair the airbag system. Be sure to tell anyone who works on your vehicle that it has airbags.

You will want to have the airbags ready for your protection in a collision. The airbag Supplemental Restraint System (SRS) is designed to be maintenance free.

If any of the following occurs, have an authorized dealer service the system immediately.

- The AIRBAG light does not come on or flickers during the 6 to 8 seconds when the ignition switch is first turned on.



- The light remains on or flickers after the 6 to 8 second interval.
- The light flickers or comes on and remains on while driving.

ENGINE BREAK-IN RECOMMENDATIONS

The engine in your new vehicle does not require a long break-in period.

Drive moderately during the first 300 miles (500 km). After the initial 60 miles (100 km), speeds up to 50 or 55 mph (80 or 90 km/h) are desirable.

While cruising, brief full-throttle acceleration, within the limits of local traffic laws, contributes to a good break-in.

Wide open throttle acceleration in low gear can be detrimental and should be avoided.

The crankcase oil installed in the engine at the factory is a high quality energy conserving type lubricant. Oil changes should be consistent with expected climate conditions under which vehicle operations will occur. The recommended viscosity and quality grades are in Section 7 of this manual.

Do not use non-detergent or straight mineral oils.

A new engine may consume some oil during its first few thousand miles of operation. This is a normal part of the break-in and not an indication of a problem.

THINGS TO KNOW BEFORE STARTING YOUR VEHICLE 3

SAFETY TIPS

Exhaust Gas

WARNING!

Exhaust gases can injure or kill. They contain carbon monoxide (CO) which is colorless and odorless. Breathing it can make you unconscious and can eventually poison you. To avoid breathing (CO) follow the safety tips below.

Do not run the engine in a closed garage or in confined areas any longer than needed to move your vehicle in or out of the area.

If it is necessary to sit in a parked vehicle with the engine running, adjust your heating or cooling controls to force outside air into the vehicle. Set the blower at high speed.

To avoid drawing exhaust gases into the vehicle, close the trunk while driving. However, if for some reason it must remain open, close all windows. Adjust the heating or cooling system to force outside air into the vehicle. Set the blower at high speed.

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34 THINGS TO KNOW BEFORE STARTING YOUR VEHICLE

Safety Checks You Should Make Inside The Vehicle

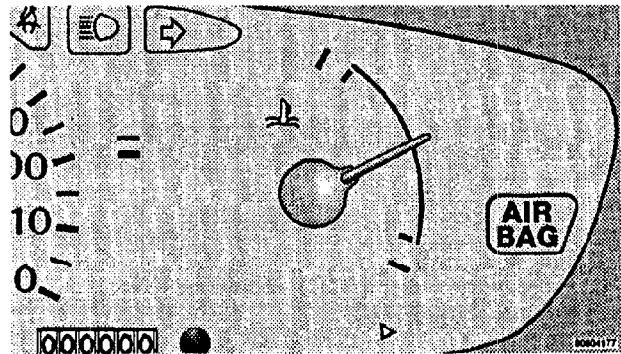
Seat Belts

Inspect the belt system periodically, checking for cuts, frays and loose parts. Damaged parts must be replaced immediately. Do not disassemble or modify the system.

Safety belt assemblies must be replaced after an accident if they have been damaged (bent retractor, torn webbing, etc.). If there is any question regarding belt or retractor condition, replace the belt.

Airbag Light

The light should come on and remain on for 6 to 8 seconds as a bulb check when the ignition switch is first turned ON. If the bulb is not lit during starting, have it replaced. If the light stays on or comes on while driving, have the system checked by an authorized dealer.



Defrosters

Check operation by selecting the defrost mode and place the blower control on high speed. You should be able to feel the air directed against the windshield.