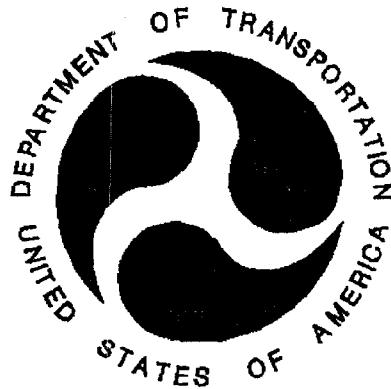


REPORT NO. KAR-97-13

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
FRONTAL BARRIER FORTY PERCENT OFFSET IMPACT TEST

CHRYSLER CORPORATION
1996 DODGE NEON
4-DOOR SEDAN
NHTSA NO. MT0307

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




OCTOBER 29, 1997
FINAL REPORT

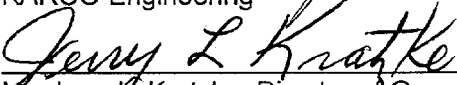
PREPARED FOR:
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NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
SAFETY PERFORMANCE STANDARDS
OFFICE OF CRASHWORTHINESS STANDARDS
MAIL CODE: NPS-10
400 SEVENTH STREET, SW, ROOM 5313
WASHINGTON, D.C. 20590

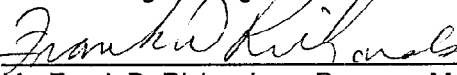
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This final test report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, in response to Contract Number DTNH22-97-D-02007.

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KARCO Engineering

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Manager, Offset Frontal Impact Program

Date of Acceptance

COTR, Offset Frontal Impact Program

Date of Acceptance

Technical Report Documentation Page

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16. <i>Abstract</i>																									
<p>A 60.3 km/h frontal barrier impact test was conducted on a 1996 Dodge Neon 4-door sedan at KARCO Engineering on August 21, 1997. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301 and footwell intrusion performance. The impact velocity was 60.76 km/h. The ambient temperature at the barrier face at the time of impact was 32.3 °C. The vehicle's maximum post-test static crush was 585 mm, located at the left edge of the front bumper. The test vehicle was equipped with a 3-point continuous belt system and supplemental airbags at both frontal outboard-seating positions.</p> <p>With respect to FMVSS 208 "Occupant Crash Protection - Injury Criteria" the occupant injury response data summary is as follows:</p> <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>111.5</td> <td>115.9</td> </tr> <tr> <td>Chest Resultant Peak 3 msec clip</td> <td>60 G's</td> <td>47.8</td> <td>28.4</td> </tr> <tr> <td>Left Femur Force</td> <td>10009 N</td> <td>-4273.5</td> <td>-1830.2</td> </tr> <tr> <td>Right Femur Force</td> <td>10009 N</td> <td>-2571.6</td> <td>-1344.4</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	111.5	115.9	Chest Resultant Peak 3 msec clip	60 G's	47.8	28.4	Left Femur Force	10009 N	-4273.5	-1830.2	Right Femur Force	10009 N	-2571.6	-1344.4
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17. <i>Key Words</i> 60.3 km/h Offset Frontal Barrier Impact Test 1996 DODGE NEON 4-door sedan, NHTSA NO. MT0307				18. <i>Distribution Statement</i> Copies of this report are available from: Technical Reference Division National Highway Traffic Safety Admin. Room 5108, Nassif Building 400 7th St., SW Washington, DC 20590																					
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SECTION 1

PURPOSE, TEST PROCEDURE AND SUMMARY OF TEST MT0307

1.1 PURPOSE

This 37.5 mph (60.3 km/h) frontal barrier impact test is part of the FY' 97 Forty Percent Offset frontal barrier crash worthiness evaluation program sponsored by the National Highway Traffic Safety Administration (NHTSA) under contract No. DTNH22-97-D-02007. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for frontal barrier impacts with the vehicle impacting a deformable barrier at an impact speed in excess of the current 30 mph (48 km/h) FMVSS 208/212/219/301 requirements. The test program will be used to develop a standard for driver footwell intrusion data during frontal offset collisions.

1.2 TEST PROCEDURE

This 60.3 km/h forty percent frontal barrier offset impact test was conducted in accordance with the Office of Crashworthiness Standards (OCS) New Car Assessment Program (NCAP) Laboratory Indicant Test Procedure, dated 01 September 1996 and corresponding KARCO Engineering Test Procedure KTP-001, dated September 18, 1996. Data was obtained indicant of FMVSS 208, "Occupant Crash Protection"; FMVSS 212, "Windshield Retention"; FMVSS 219, "Windshield Zone Intrusion (Partial)"; and FMVSS 301 "Fuel System Integrity" performance. Procedures for receiving, inspection testing and reporting of test results are described in the test procedures and are not repeated in this report.

The test was conducted at KARCO Engineering on August 21, 1997 at a speed of 60.76 km/h. The test vehicle was aligned with the deformable barrier such that the right edge of the barrier face was offset to the left of the vehicle centerline by ten percent of the vehicle's width. The test vehicle was instrumented with eight (8) accelerometers to measure longitudinal axis and rotational 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 59.53 to 61.14 km/h. The frontal barrier impact event was documented by one (1) real-time panning motion picture camera and seventeen (17) high-speed motion picture cameras. The pre- and post-test conditions were recorded by one (1) real-time motion picture camera. 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, pelvic tri-axial accelerometers, left/right femur load cells and left/right lower leg sensors. 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. 202) and the right-front passenger ATD (serial No. 274) were used in two previous tests since their last calibration. Injury criteria were not exceeded by either ATD during this frontal offset barrier impact test.

1.3 SUMMARY OF FRONTAL BARRIER IMPACT TEST

A deformable honeycomb barrier was impacted by a 1996 Dodge Neon 4-door sedan at a velocity of 60.76 km/h. The test weight, with two (2) 5th percentile female dummies, was 1278 kg.

The driver's Head Injury Criteria (HIC) was 111.5, the maximum chest deceleration over three (3) milliseconds was 47.8 g and the left and right femur loads were -4273.5 and -2571.6 Newtons, respectively. Chest deflection for the driver ATD was -50.8 mm. The driver ATD head contacted the airbag, headrest and 'B' pillar; its chest and abdomen contacted the airbag, and both knees contacted the lower dash knee bolster.

The right front passenger's HIC was 115.9, maximum chest deceleration over three (3) milliseconds was 28.4 g, and the left and right femur loads were -1830.2 and -1344.4 Newtons respectively. Chest deflection for the passenger ATD was -48.8 mm. The passenger ATD head contacted the airbag and headrest, the chest and abdomen contacted the airbag, both knees contacted the glove box and knee bolster.

Seat belt spoolout, measured by on-board pullout potentiometers was 42.6 mm for the driver ATD and 0.7 mm for the passenger ATD. Shoulder belt stretch was 0.018 cm/cm for the driver ATD and 0.006 cm/cm for the passenger ATD.

There was 100 percent windshield retention, 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 585 mm at the left side of the front bumper. The driver side door was jammed. The passenger side door opened without the aid of tools.

1.4 GENERAL COMMENTS

The 1996 Dodge Neon 4-door sedan passed the requirements of FMVSS 212, FMVSS 219 and FMVSS 301-75. Data pertaining to these standards are presented in the data sheets.

The vehicle, occupant, camera and measurement data are presented in Section 2. Appendix A contains the still photograph prints. The dummy and vehicle response data traces are presented in Appendix B. Appendix C contains the deformable barrier pre- and post-test measurement data. Appendix D is for test equipment and instrument calibration data. Appendix E contains the dummy calibration data and Appendix F the owner's manual instructions for the occupant restraint systems.

SECTION 2.

OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

TEST MODE: 60.3 km/h Forty Percent Offset Frontal Barrier Impact

CONVERSION FACTORS USED IN THIS REPORT:

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

DATA SHEET NO. 1

CRASH TEST SUMMARY

TEST MODE: 60.3 km/h Forty Percent Offset Frontal Barrier Impact NHTSA NO. MT0307

TEST DATE: August 21, 1997 TIME: 3:55 PM TEMPERATURE: 32.3° C

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1996 DODGE NEON 4-DOOR SEDAN

TEST WEIGHT: 1278 kg IMPACT VELOCITY: 60.76 km/h

VEHICLE REBOUND; REBOUND ANGLE = 43°

Vehicle Rebound in mm	Left Side		Centerline		Right Side	
	X	Y	X	Y	X	Y
Post-test Measurements	2450	610	1990	720	1220	900

VEHICLE STATIC CRUSH

Measurements in mm	Left Side	Centerline	Right Side
Pre-test Measurements	4200	4360	4200
Post-test Measurements	3630	4010	4230
Static Crush	570	350	+30

DOOR OPENING AND SEAT TRACK INFORMATION

	Driver	Passenger
Door Opening (Front)	JAMMED	OPENED
Door Opening (Rear)	JAMMED	OPENED
Seat Track Shift (mm of shift)	0	0
Seat Back Failure	NO	NO

DUMMY INFORMATION

	Driver	Passenger
Dummy Type/No.	5% Female Hybrid III (S/N 202)	5% Female Hybrid III (S/N 274)
Data Channels	44	44
Visible Contact Points		
Head	AIR BAG, DASH, HEAD REST	AIR BAG, HEAD REST
Chest	AIR BAG, STEERING WHEEL	AIR BAG
Abdomen	AIR BAG	AIR BAG
Left Knee	KNEE BOLSTER	KNEE BOLSTER
Right Knee	KNEE BOLSTER	KNEE BOLSTER

DATA SHEET NO. 2

GENERAL TEST AND VEHICLE PARAMETER DATA

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1996 DODGE NEON 4-DOOR SEDAN

TEST VEHICLE INFORMATION			
Manufacturer	CHRYSLER CORPORATION	VIN	1B3ES47COTD681329
Manufacturing Date	5/96	Delivery Date	7/3/97
Dealer	Pomona DODGE Pomona, CA	NHTSA No.	MT0307
Odometer Reading	20,818 mi.	Fuel Type	Unleaded Gasoline
Engine Displacement	2.0 Liter	Cylinders	4
Transmission	3-speed Automatic	Final Drive	Front Wheel Drive
Engine Placement	Transverse	Color	Red
Tire Press./Max. Cap. Front	220 kPa	Cold Tire Press. Front	220 kPa
Tire Press./Max. Cap. Rear	220 kPa	Cold Tire Press. Rear	220 kPa
Recommend Tire Size	P165/80R13	Type of Spare	T115/70/R14 Temporal Spare
Tire Size on Vehicle	P185/70R14	Manufacturer	Goodyear
GVWR	1586 kg	Cargo Capacity	52 kg
GAWR Front	888 kg	GAWR Rear	732 kg
Air Conditioning	YES	Power Steering	YES
Power Brakes	YES	AM/FM/Cassette	YES
Disc Brakes (Front)	YES	Disc Brakes (Rear)	NO
Power Windows	YES	Tilt Steering	YES
Anti-lock Brakes (ABS)	YES	Power Seats	NO
Driver Airbag	YES	Passenger Airbag	YES

VEHICLE CAPACITY DATA:

TYPE OF FRONT SEATS Bucket Seats

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

WEIGHT OF VEHICLE AS RECEIVED AT KARCO (with maximum fluids): 1127 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	370	199	
Left	376	182	
Total	746	381	1127
Percent of Total	66.2	33.8	

CALCULATION OF TEST TARGET WEIGHT (kg):

Total Delivered Weight 1127 kg
 RCLW 52 kg
 Weight of 2 P572 ATDs 105 kg
 TARGET TEST WEIGHT 1284 kg

TEST WEIGHT OF VEHICLE WITH 2 ATDs AND BALLAST

	FRONT	REAR	TOTAL
Right	393	236	
Left	408	241	
Total	801	477	1278
Percent of Total	62.7	37.3	

Weight of Ballast secured in cargo area: 22 kg

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

Vehicle Components Removed for Weight Reduction:

Side mirrors, jack, tools, rear seat assembly, rear bumper, molding and spare tire.

TEST VEHICLE ATTITUDE (mm)

ATTITUDE	LF	RF	LR	RR
As Delivered	641	648	673	673
As Tested	630	630	660	660

Vehicle Wheelbase: 2642 mm

FUEL SYSTEM DATA:

Fuel System Capacity From Owner's Manual = 47.5 liters

Usable Capacity Figure Furnished by COTR = N/A liters

Test Volume Range (92 to 94% of Usable Capacity) = 43.7 to 44.7 liters

ACTUAL TEST VOLUME = 44.6 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 Mechanical

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

DETAILS OF FUEL SYSTEM: Electrically operated, ignition key activated, with automatic shutoff

DATA SHEET NO. 3

POST IMPACT DATA

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1996 DODGE NEON 4-DOOR SEDAN

TEST MODE: 60.3 km/h Forty Percent Offset Frontal Barrier Impact NHTSA NO. MT0307

TEST DATE: August 21, 1997 TIME: 3:55 PM TEMPERATURE: 32.3° C

REQUIRED IMPACT VELOCITY RANGE: 59.53 km/h to 61.14 km/h

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

Trap No. 1 = 60.76 km/h Trap No. 2 = 60.84 km/h

Distance from vehicle to barrier - -

A. entering trap = 1818 mm

B. leaving trap = 599 mm

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

Vehicle Length	Left	Center	Right
Pre-test Measurements (mm)	4200	4360	4200
Post-test Measurements (mm)	3630	4010	4230
Static Crush (mm)	570	350	+30
Average	297		

VEHICLE REBOUND: (from rigid barrier with rotational movement); REBOUND ANGLE = 43°

Vehicle Rebound in mm	Left Side		Centerline		Right Side	
	X	Y	X	Y	X	Y
Post-test Measurements	2450	610	1990	720	1220	900

DATA SHEET NO. 4

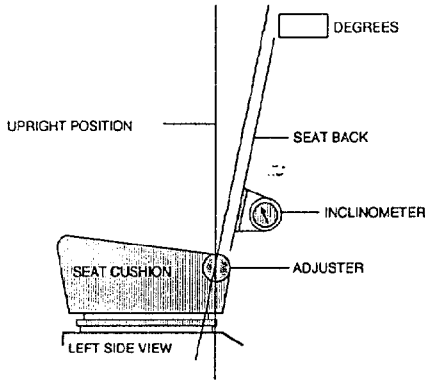
TEST VEHICLE INFORMATION

TEST VEHICLE: 1996 DODGE NEON 4-DOOR SEDAN

NHTSA NO. MT0307

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 = 18.0 ° set to the upright position.

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".

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 = 18.0 °; set to the full upright position.

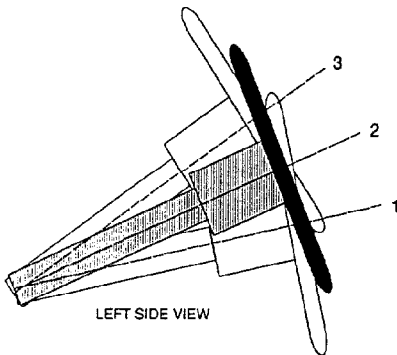
2. SEAT FORE & AFT POSITIONS -

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: 22 seating positions; set to full forward (1st) seating position.

Positioning of the passenger's seat (if applicable): 22 seating positions; set to full forward (1st) seating position.

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 20°

Position No. 2 is at 23°

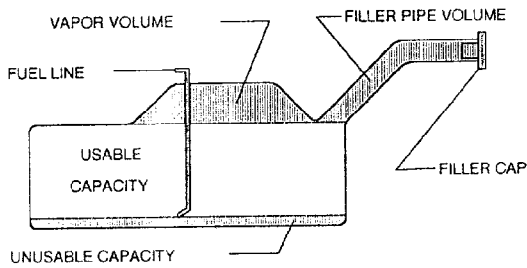
Position No. 3 is at 26°

4. SEAT BELT UPPER ANCHORAGE:

Set to mid-position

DATA SHEET NO. 4 (continued)

5. FUEL TANK CAPACITY DATA



5.1 A. "Usable Capacity" of standard equipment fuel tank = 47.3 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 = 40.0 to 40.9 liters.

VEHICLE FUEL TANK ASSEMBLY

Operational Instructions:

5.2 Amount of Stoddard solvent added to vehicle(s) used for certification test(s) = 40.7 liters

5.3 Is vehicle equipped with electric fuel pump?

Yes X No

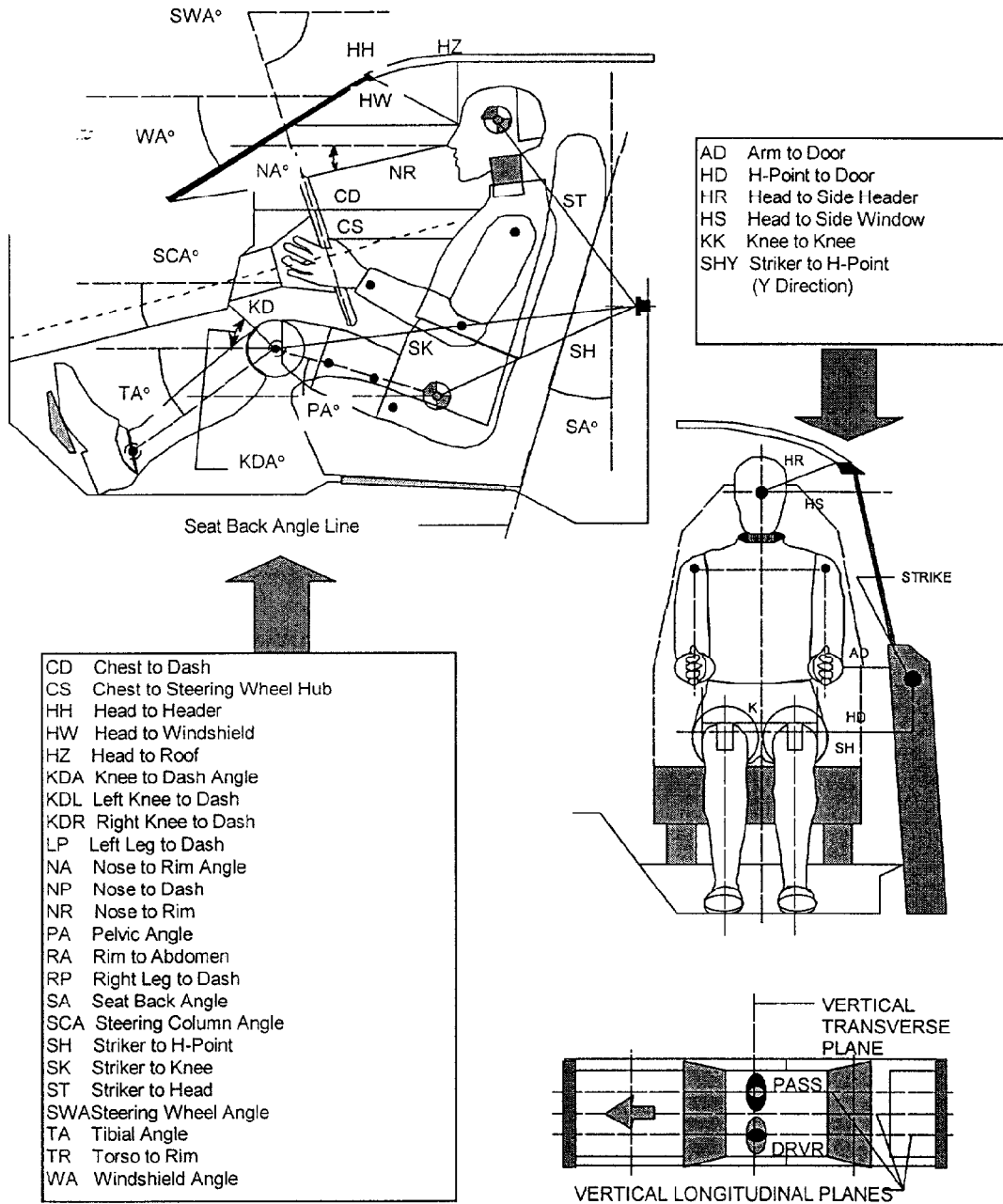
If YES, explain the vehicle operating conditions under which the fuel pump will pump fuel.

Fuel pump is activated when ignition key is turned to the "ON" (operational) position.

DATA SHEET NO. 5

DUMMY POSITIONING IN VEHICLE

DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS



DATA SHEET NO. 5...(continued)

DUMMY POSITIONING IN VEHICLE

TEST VEHICLE: 1996 DODGE NEON 4-DOOR SEDAN

NHTSA NO. MT0307

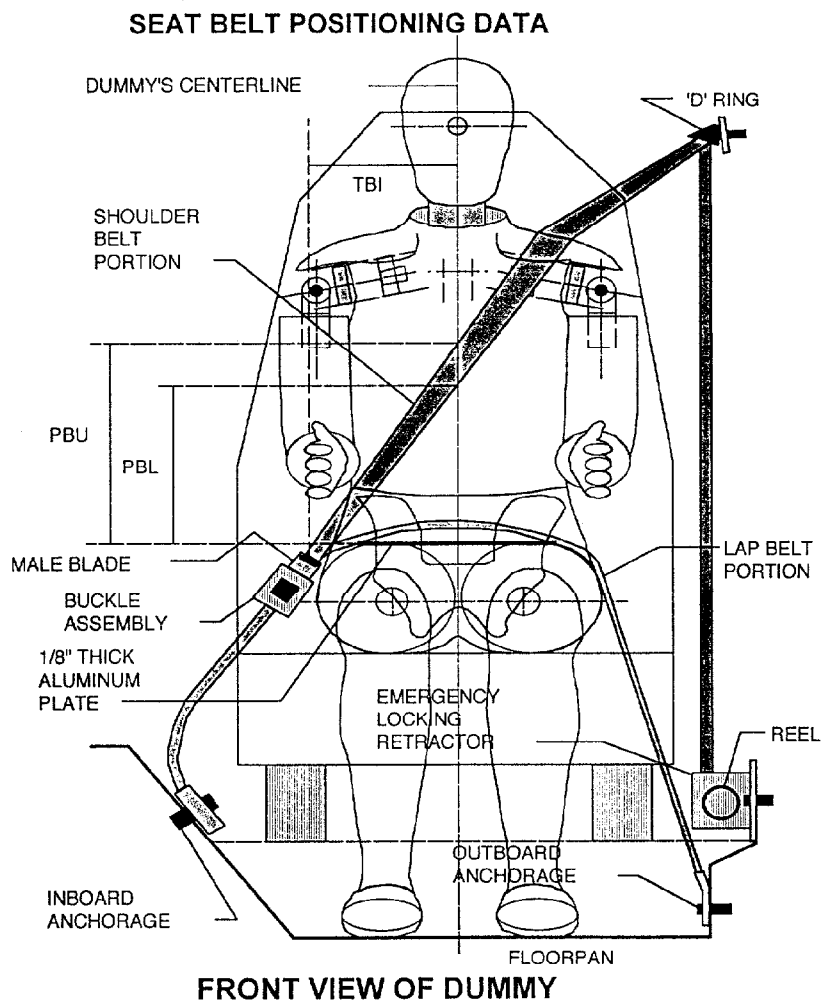
FRONT SEAT MEASUREMENT TABLE

	DRIVER (Serial No. <u>202</u>)		PASS. (Serial No. <u>274</u>)	
	DISTANCE (mm)	ANGLE (°)	DISTANCE (mm)	ANGLE (°)
WA°		27		
SWA°		67		
SCA°		23		
SA°		18.0		18.0
HZ	260	90	250	90
HH	250	0	230	0
HW	600	0	510	0
HR	250		260	
NR	384	7		
CD	435		350	
CS	180	0		
RA	40	0		
KDL	60	42	70	
KDR	40		70	35
PA°		25		25
TA°		-48		-50
KK	290		185	
ST	510	65	530	65
SH	280	20	260	17
SHY	280		290	
HS	300		320	
HD	245		180	
AD	30		50	

DATA SHEET NO. 6

SEAT BELT POSITIONING DATA

SEATING POSITION	DRIVER	PASSENGER
TCI -- Dummy centerline to shoulder bolt	165 mm	165 mm
PBU--Top surface of aluminum plate to belt upper edge	241 mm	241 mm
PBL--Top surface of aluminum plate to belt lower edge	152 mm	152 mm
Lap Belt tension	10 Newtons	10 Newtons
Shoulder Belt tension	Retractor	Retractor



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

VEHICLE YR/MAKE/MODEL/BODY: 1996 Dodge Neon 4 Door Sedan

NHTSA No.: MT0307

TEST PROGRAM: 1997 NHTSA 40% Offset Impact (Female)

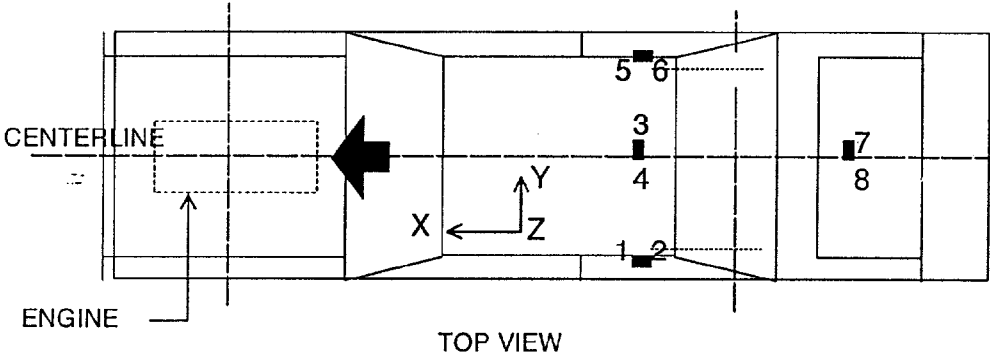
TEST DATE: 8/21/97

VEHICLE ACCELEROMETER LOCATIONS AND PEAK ACCELERATIONS

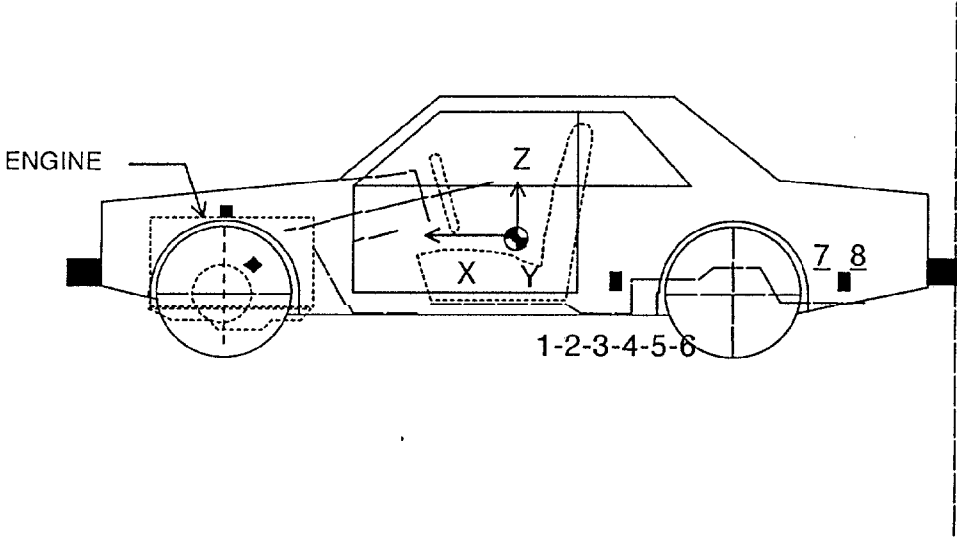
No.	Accelerometer Locations	Measurements (mm)			Peak Values				
		X	Y	Z	Units	Max	Time	Min	Time
1	Left Rear Sill X	1910	-640	250	G's	2.7	149.2	-47.2	86.2
2	Left Rear Sill Y	1830	-640	250	G's	27.0	88.2	-12.3	78.4
3	Center Console Rear X	1810	40	225	G's	2.4	219.7	-41.6	87.1
4	Center Console Rear Y	1720	10	225	G's	14.3	89.9	-5.0	97.7
5	Right Rear Sill X	1910	640	240	G's	1.8	150.3	-29.8	86.7
6	Right Rear Sill Y	1830	640	245	G's	19.9	90.8	-6.0	114.4
7	Center Rear Trunk X	330	-290	270	G's	3.9	206.6	-37.4	96.3
8	Center Rear Trunk Y	320	290	270	G's	16.3	96.8	-3.2	156.4

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

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



TOP VIEW



LEFT SIDE VIEW

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

VEHICLE YR/MAKE/MODEL/BODY: 1996 Dodge Neon 4 Door Sedan

NHTSA No.: MT0307

TEST PROGRAM: 1997 NHTSA 40% Offset Impact (Female)

TEST DATE: 8/21/97

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	31.1	149.8	-31.0	43.2	3.6	35.5	-39.2	60.2
Head CG	Y	G's	25.8	150.0	-2.5	39.4	18.8	33.9	-10.2	61.7
Head CG	Z	G's	23.4	130.6	-17.7	100.5	17.0	49.7	-4.6	36.2
Head CG Resultant	N/A	G's	45.0	149.8			40.8	60.2		

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	16.0	153.9	-46.8	98.0	0.8	81.3	-28.9	63.9
Chest CG	Y	G's	19.7	97.9	-1.1	76.4	9.6	78.6	-0.3	81.3
Chest CG	Z	G's	18.9	137.5	-21.9	95.8	1.1	23.3	-4.6	50.9
Chest CG Resultant	N/A	G's	52.4	96.0			29.7	63.9		

FEMUR PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Femur	Z	Newtons	131.9	269.3	-4273.5	91.4	32.2	22.0	-1830.2	67.0
Right Femur	Z	Newtons	1176.6	21.4	-2571.6	90.1	411.2	119.6	-1344.4	66.2

SEAT BELT PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Lap Belt	N/A	Newtons	2375.4	119.3	-25.1	185.1	3048.8	72.1	-4.2	153.6
Shoulder Belt	N/A	Newtons	2835.3	97.1	-56.9	267.2	3940.0	93.1	-3.9	0.7

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	111.5	17.3	127.7	163.6	115.9	19.4	51.6	77.5

CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Primary	47.8	95.6	98.6	28.4	62.7	65.7

VEHICLE YR/MAKE/MODEL/BODY: 1996 Dodge Neon 4 Door Sedan

NHTSA No.: MT0307

TEST PROGRAM: 1997 NHTSA 40% Offset Impact (Female)

TEST DATE: 8/21/97

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	7.0	187.1	-39.1	91.6	0.4	1.9	-38.5	89.3
Pelvis	Y	G's	14.5	123.3	-6.8	92.2	14.2	80.2	-8.8	113.8
Pelvis	Z	G's	7.7	94.7	-19.4	95.9	0.8	1.9	-22.2	105.8

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	546.1	65.0	-182.9	42.9	334.0	122.3	-693.5	55.4
Neck Force	Y	Newtons	326.0	164.4	-162.3	84.3	367.5	153.3	-94.5	97.1
Neck Force	Z	Newtons	1532.7	46.8	-283.2	101.5	719.5	64.3	-207.7	40.2
Neck Moment	X	Joules	17.6	101.8	-27.2	122.6	15.1	114.4	-14.6	167.8
Neck Moment	Y	Joules	12.0	191.3	-50.3	97.2	47.8	56.1	-21.4	102.3
Neck Moment	Z	Joules	7.4	252.3	-25.1	101.0	5.3	182.3	-7.2	113.2

CHEST PEAK DISPLACEMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest	X	CM	0.19	186.9	-5.08	87.1	0.05	33.1	-4.88	110.4

CHEST REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	19.9	153.9	-47.0	98.0	0.1	7.6	-28.8	59.6
Chest CG	Y	G's	20.4	97.9	-2.5	242.2	15.3	111.9	-2.2	136.2
Chest CG	Z	G's	17.9	137.6	-21.3	95.9	3.5	85.3	-5.4	54.8
Chest CG Resultant	N/A	G's	52.9	96.0			29.5	64.1		

REDUNDANT CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Redundant	48.0	95.6	98.6	28.9	61.1	64.1

VEHICLE YR/MAKE/MODEL/BODY: 1996 Dodge Neon 4 Door SedanNHTSA No.: MT0307TEST PROGRAM: 1997 NHTSA 40% Offset Impact (Female)TEST DATE: 8/21/97**FOOT PEAK ACCELERATIONS**

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Foot Aft	X	G's	59.4	79.2	-73.8	106.6	35.6	70.0	-8.5	127.3
Left Foot Aft	Z	G's	21.0	71.7	-51.6	80.0	12.3	57.3	-13.6	77.7
Left Foot Fore	Z	G's	77.8	71.7	-62.5	79.9	6.0	57.7	-24.0	85.7
Right Foot Aft	X	G's	121.3	61.7	-28.6	70.9	32.9	92.7	-2.7	133.6
Right Foot Aft	Z	G's	25.2	74.8	-98.4	67.3	0.0	0.0	0.0	0.0
Right Foot Fore	Z	G's	47.9	74.7	-156.0	59.7	8.3	85.5	-18.2	73.5

UPPER AND LOWER TIBIA PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Lower Force	X	Newtons	1486.8	85.6	-10.8	3.6	69.5	254.5	-429.3	66.7
Left Lower Force	Z	Newtons	40.5	0.5	-1891.4	108.3	22.7	203.2	-1157.1	67.5
Left Lower Moment	X	Joules	72.1	87.5	-6.1	53.7				
Left Lower Moment	Y	Joules	212.9	84.5	-25.7	52.8	19.8	86.8	-11.5	125.6
Left Upper Force	X	Newtons	1098.3	92.5	-86.7	289.3				
Left Upper Force	Z	Newtons	77.6	183.5	-1680.9	92.8				
Left Upper Moment	X	Joules	28.3	75.2	-56.7	122.3	27.0	122.8	-22.5	70.9
Left Upper Moment	Y	Joules	27.1	82.6	-48.4	64.0	54.4	65.7	-12.7	261.8
Right Lower Force	X	Newtons	1849.9	83.0	-77.0	254.5	0.0	0.0	0.0	0.0
Right Lower Force	Z	Newtons	97.6	31.8	-4201.0	68.5	0.0	0.0	0.0	0.0
Right Lower Moment	X	Joules	172.1	68.4	-4.7	274.3				
Right Lower Moment	Y	Joules	229.0	82.0	-25.0	61.6	0.0	0.0	0.0	0.0
Right Upper Force	X	Newtons	1314.5	81.8	-233.3	60.9				
Right Upper Force	Z	Newtons	167.3	21.3	-3334.6	68.5				
Right Upper Moment	X	Joules	115.6	68.5	-17.1	269.5	20.5	122.7	-24.9	57.8
Right Upper Moment	Y	Joules	15.9	124.8	-85.1	67.8	55.6	66.3	-7.8	281.8

DATA SHEET NO. 9

SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

TEST VEHICLE: 1996 DODGE NEON 4-DOOR SEDAN

NHTSA NO. MT0307

BELT LENGTH DATA (mm)	DRIVER	PASSENGER
Total belt length for continuous webbing systems.	2750	2750
Retractor reel to 'D' ring	550	550
Shoulder belt length as measured on Part 572 Dummy	850	870
Lap belt length as measured on Part 572 Dummy	790	790
Remainder of belt on reel	560	540

SHOULDER BELT SPOOL-OFF DATA (mm)	DRIVER	PASSENGER
As determined mechanically	30.0	1.0
As determined electronically	42.6	0.70

BELT STRETCH DATA (cm/cm)	DRIVER	PASSENGER
Measured electronically between shoulder belt load cell and the "D" ring	0.018	0.006
Measured mechanically	0.0	0.0

DATA SHEET NO. 10

SUMMARY OF FMVSS 212 DATA

TEST VEHICLE: 1996 DODGE NEON 4-DOOR SEDAN

NHTSA NO. MT0307

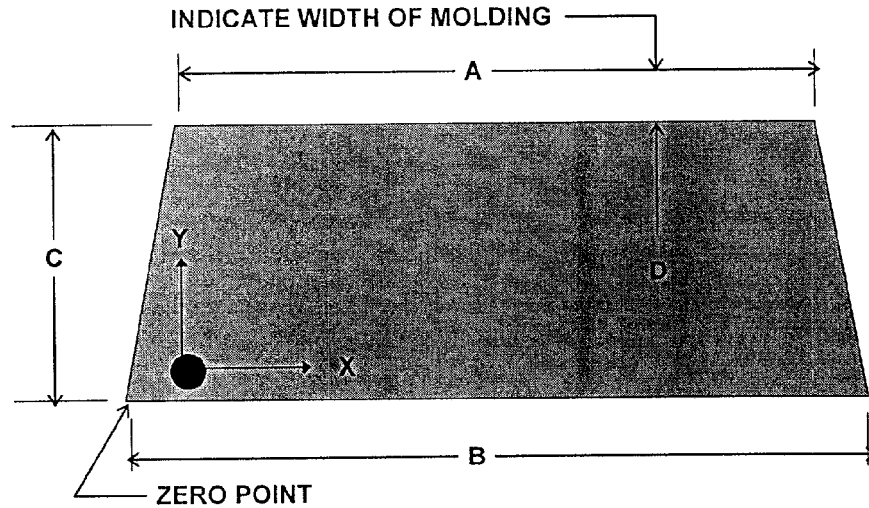
Details of windshield mounting (method of retention, type of trim, etc.):

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

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

WINDSHIELD PERIPHERY MEASUREMENTS (mm)			
	PRETEST	POST TEST	PERCENT RETENTION
Right Side	1700	1700	100%
Left Side	1700	1700	100%
Total	3400	3400	100%

Indicate area of retention failure.



FRONT VIEW OF WINDSHIELD

Width of molding = Sides 17 mm, Top & Bottom 12 mm.

Temperature of windshield molding during test = 29.0 °C

DATA SHEET NO. 11

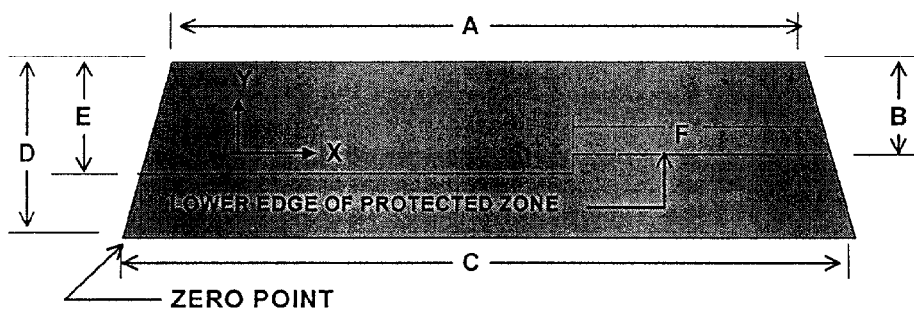
WINDSHIELD ZONE INTRUSION FMVSS 219 (PARTIAL) DATA

TEST VEHICLE: 1996 DODGE NEON 4-DOOR SEDAN

NHTSA NO. MT0307

SKETCH OF FRONT VIEW OF WINDSHIELD:

Provide all dimensions necessary to reproduce the protected area.



	DIMENSION (mm)
A	1100
B	400
C	1500
D	800
E	550
F	560

FRONT VIEW OF WINDSHIELD

AREA OF PROTECTED ZONE FAILURES:

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

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

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

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

DATA SHEET NO. 12

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1996 DODGE NEON 4-DOOR SEDAN

TEST MODE: 60.3 km/h Forty Percent Offset Frontal Barrier Impact NHTSA NO. MT0307

TEST DATE: August 21, 1997 TIME: 3:55 PM TEMPERATURE: 32.3° 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

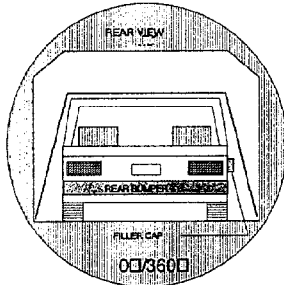
DATA SHEET NO. 13

FMVSS 301 STATIC ROLLOVER DATA SHEET

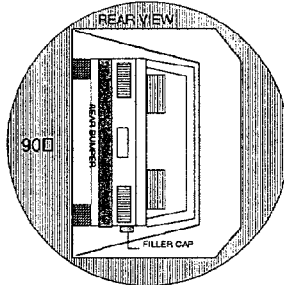
VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1996 DODGE NEON 4-DOOR SEDAN

TEST MODE: 60.3 km/h Forty Percent Offset Frontal Barrier Impact NHTSA NO. MT0307

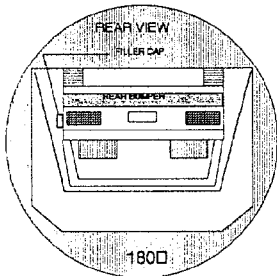
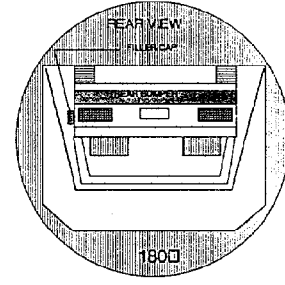
TEST DATE: August 21, 1997 TIME: 3:55 PM TEMPERATURE: 32.3° C



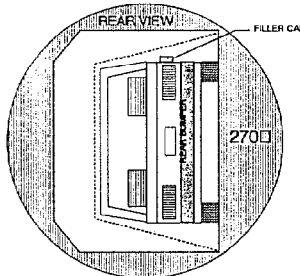
0° TO 90°



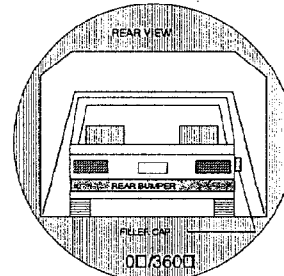
90° TO 180°



180° TO 270°



270° TO 0°



1. The specified fixture rollover rate for each 90° of rotation = 1 to 3 minutes.
2. The position hold time at each position = 5 minutes (minimum)

TEST PHASE	ROTATION TIME (sec.)	POSITION HOLD TIME (sec)	STODDARD SPILLAGE (oz.)
0° TO 90°	88	349	0.0
90° TO 180°	86	348	0.0
180° TO 270°	79	352	0.0
270° TO 360°	84	346	0.0

3. Provide Details of Stoddard Solvent Spillage Locations--

No solvent leakage occurred during rollover tests.

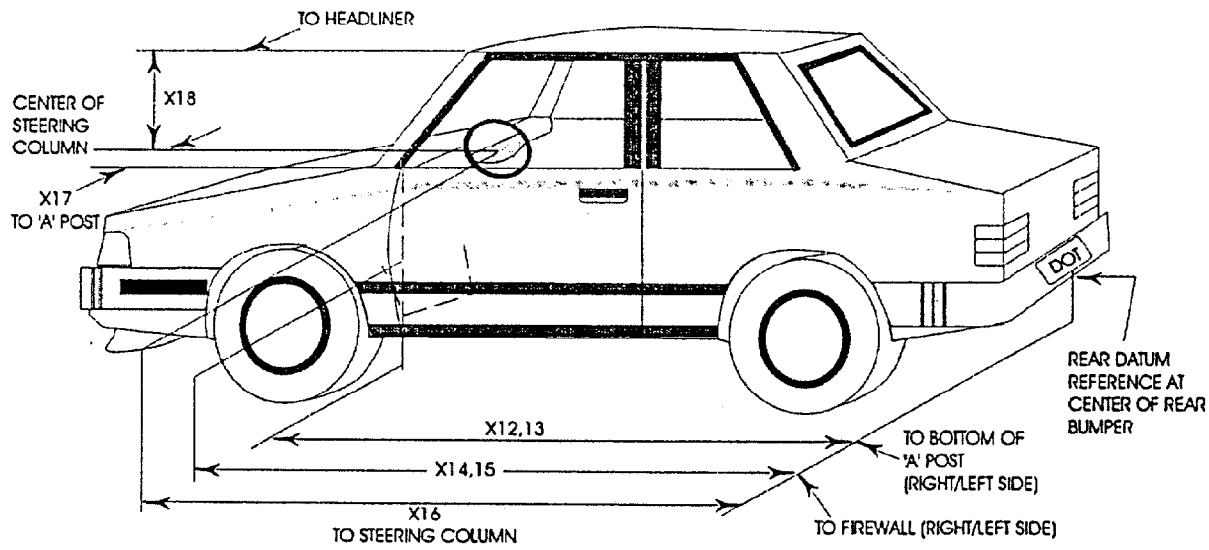
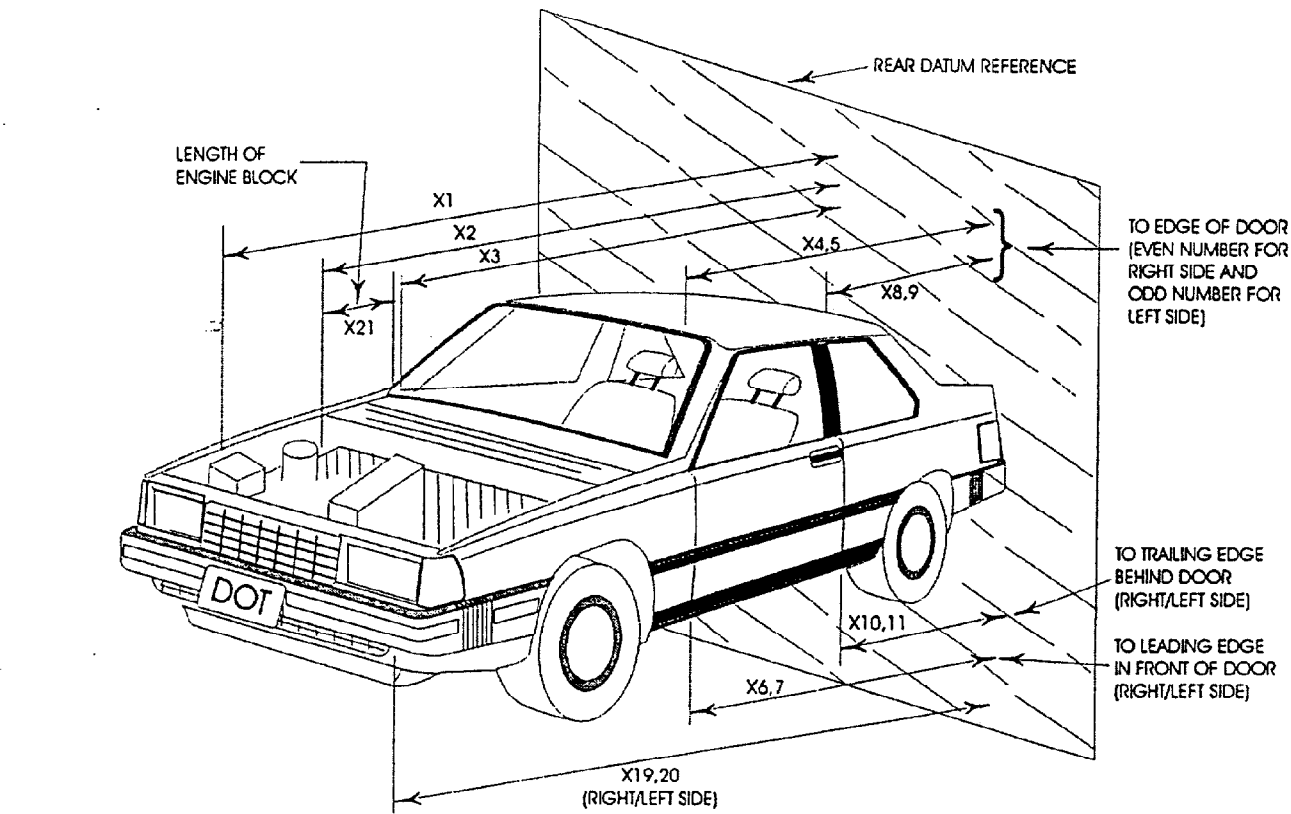
DATA SHEET NO. 14

VEHICLE MEASUREMENTS

TEST VEHICLE: 1996 DODGE NEON 4-DOOR SEDAN

NHTSA NO. MT0307

NO.	MEASUREMENT DESCRIPTION	DIMENSIONS IN MM		
		PRE-TEST	POST-TEST	DIFFERENCE
1	Total length of vehicle at centerline	4360	4010	350
2	Rear surface of vehicle (RSOV) to front of engine	3830	3780	50
3	RSOV to firewall centerline	3300	3280	20
4	RSOV to leading edge of right door	2960	2980	+20
5	RSOV to leading edge of left door	2960	2860	100
6	RSOV to lower leading edge of right door	3045	3000	45
7	RSOV to lower leading edge of left door	3045	2880	165
8	RSOV to upper trailing edge of right door	1950	1970	+20
9	RSOV to upper trailing edge of left door	1950	1930	20
10	RSOV to lower trailing edge of right door	1960	1940	20
11	RSOV to lower trailing edge of left door	1960	1900	60
12	RSOV to bottom of right 'A' pillar	2985	3000	+15
13	RSOV to bottom of left 'A' pillar	2985	2880	105
14	RSOV to firewall on right side	3285	3300	+15
15	RSOV to firewall of left side	3285	3100	185
16	RSOV to steering column	2535	2400	135
17	Center of steering column to left 'A' pillar	330	400	+70
18	Center of steering column to headlining	420	470	+50
19	RSOV to right side of front bumper	4200	4230	+30
20	RSOV to left side of front bumper	4200	3630	570
21	Length of engine block	480	480	0
22	RSOV to right side of dash panel	2710	2710	0
23	RSOV to center of dash panel	2710	2670	40
24	RSOV to left side of dash panel	2710	2560	150



DATA SHEET NO. 15

CAMERA LOCATIONS

TEST VEHICLE: 1996 DODGE NEON 4-DOOR SEDAN

NHTSA NO. MT0307

CAMERA NO.	VIEW	CAMERA POSITIONS (mm) *			ANGLE (Deg.)	FILM PLANE TO HEAD TARGET (mm)	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Left Side View-Real Time	---	---	---	---	---	Zoom	24
2	Left Side View No. 1	1270	-8280	765	0	8015	25	850
3	Left Side View No. 2	3327	-2210	1994	8	2038	80	1100
4	Left Side View No. 3	2489	3835	2083	16	2515	19	1100
5	Left Side View No. 4	2057	-8280	3073	15	8669	25	1000
6	Left Side View No. 5	2057	-8290	2540	12	8555	25	1000
7	Right Side View No. 1	1956	8382	1118	2	9322	17	1000
8	Right Side View No. 2	1524	4547	1372	10	4229	50	950
9	Right Side View No. 3	7290	7595	1372	11	8788	80	950
10	Right Side View No. 4	1626	10363	1245	2	10668	50	1000
11	Right Side View No. 5	2007	12751	1219	10	12090	13	1300
12	Overhead No. 1 Overall	559	1219	1168	0	N/A	5.6	450
13	Overhead No. 2 Close-up	0	-178	6071	55	N/A	35	500
14	Front View No. 1 Windshield	-330	0	3531	-65	N/A	12.5	1000
15	Front View No. 2 Driver	-292	-318	2489	-36	N/A	19	1200
16	Front View No. 3 Passenger	-368	318	2489	-36	N/A	19	1100
17	Driver Side Belt	2896	191	1067	15	N/A	13	1000
18	Passenger Side Belt	2896	330	1143	15	N/A	13	1000

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

DATA SHEET NO. 16

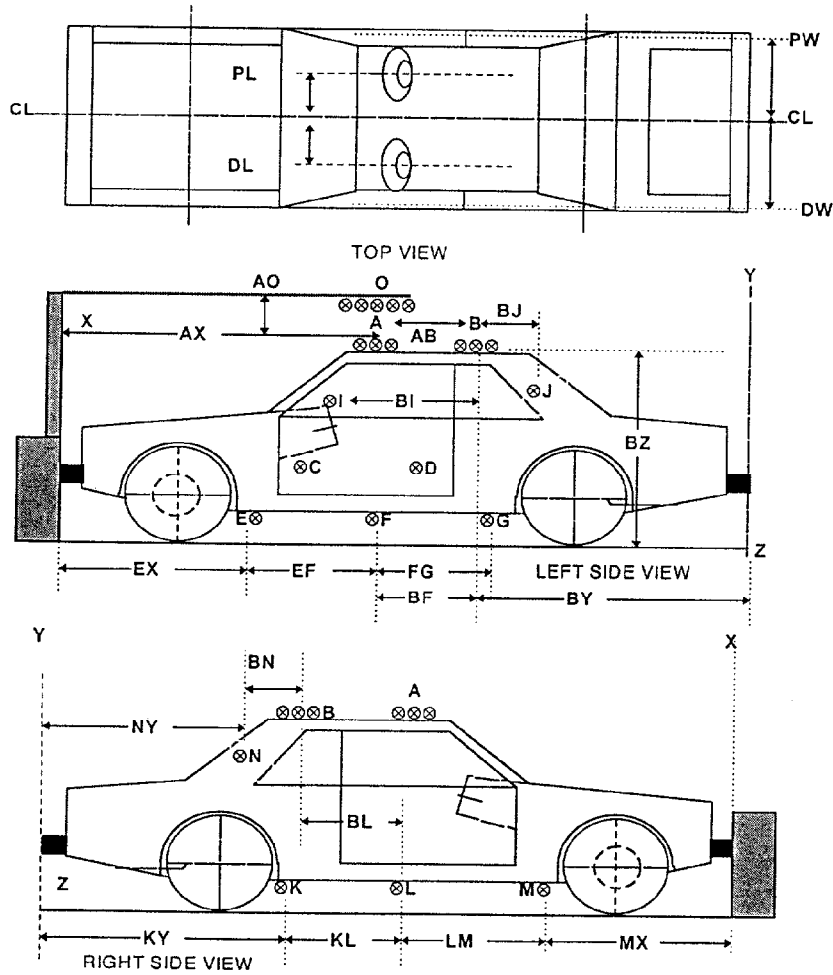
REFERENCE PHOTOGRAPH TARGETS

TEST VEHICLE: 1996 DODGE NEON 4-DOOR SEDAN

NHTSA NO. MT0307

ITEM	DESCRIPTION	VALUE	ITEM	DESCRIPTION	VALUE
AX	TARGET A TO BARRIER	2190	NY	TARGET N TO REAR BUMPER	1125
AB	TARGET A TO TARGET B	610	BN	TARGET B TO TARGET N	445
AO	VERTICAL DISTANCE A TO O	152	KY	TARGET K TO REAR BUMPER	1230
BJ	TARGET B TO TARGET J	445	KL	TARGET K TO TARGET L	835
BI	TARGET B TO STEERING COLUMN	1160	BL	TARGET B TO TARGET L	612
BZ	TARGET B TO GROUND LEVEL	1530	LM	TARGET L TO TARGET M	883
EX	TARGET E TO BARRIER	1375	MX	TARGET M TO BARRIER	1365
EF	TARGET E TO TARGET F	860	CL/PL	VEHICLE CENTERLINE TO PASSENGER	280
FG	TARGET F TO TARGET G	880	CL/PW	VEHICLE CENTERLINE TO RIGHT SILL	810
BF	TARGET B TO TARGET F	610	CL/DL	VEHICLE CENTERLINE TO DRIVER	270
BY	TARGET B TO REAR BUMPER	1610	CL/DW	VEHICLE CENTERLINE TO LEFT SILL	810

Distances in mm



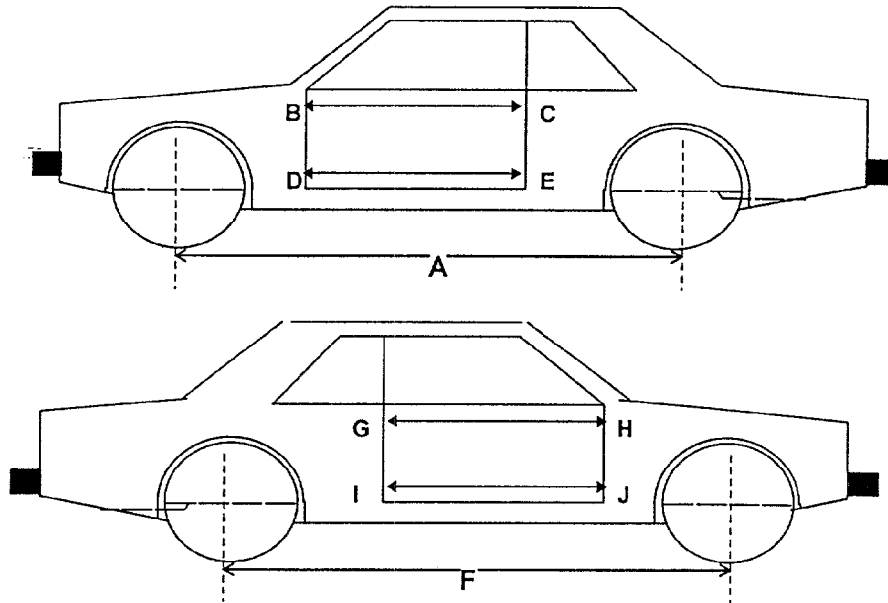
DATA SHEET NO. 17

VEHICLE INTRUSION MEASUREMENTS

TEST VEHICLE: 1996 DODGE NEON 4-DOOR SEDAN

NHTSA NO. MT0307

DOOR OPENING WIDTH



UNITS (mm)	LEFT SIDE		RIGHT SIDE	
	BC	DE	GH	IJ
PRE-TEST	1010	1085	1010	1085
POST-TEST	1010	980	1010	1060
DIFFERENCE	0	105	0	25

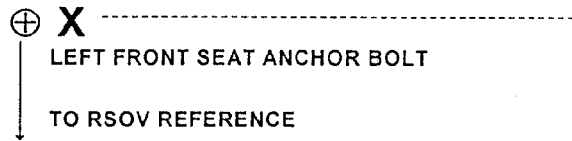
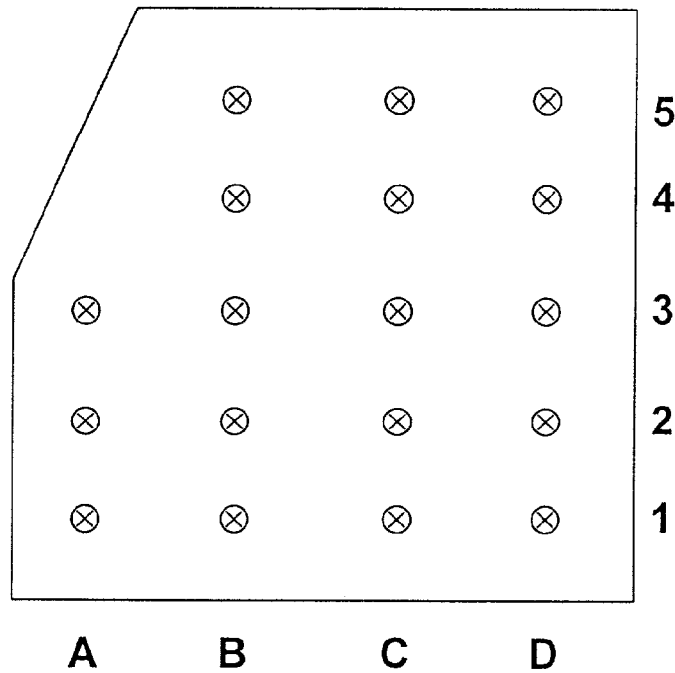
VEHICLE WHEELBASE CHANGE

UNITS (mm)	A = LEFT SIDE WHEELBASE	F = RIGHT SIDE WHEELBASE
PRE-TEST	2642	2642
POST-TEST	2400	2718
DIFFERENCE	242	+76

Data Sheet No. 17(Continued)

FLOOR PAN INTRUSION (Distances in mm)

TARGET COLUMN	A		B		C		D	
TARGET ROW	PRE-TEST	POST-TEST	PRE-TEST	POST-TEST	PRE-TEST	POST-TEST	PRE-TEST	POST-TEST
1	N/A	N/A	750	570	750	575	750	750
2	600	540	600	540	600	550	600	600
3	450	440	450	450	450	450	450	450
4	300	300	300	300	300	300	300	300
5	150	150	150	150	150	150	150	150
REF. POINT	RSOV TO ANCHOR BOLT (PRE-TEST)		2395		RSOV TO ANCHOR BOLT (POST-TEST)		2420	



DRIVER SIDE FLOOR PLAN

DATA SHEET NO. 19

ACCIDENT INVESTIGATION DIVISION DATA

TEST VEHICLE: 1996 DODGE NEON 4-DOOR SEDAN NHTSA NO. MT0307
VIN: 1B3ES47COTD681329 TEST DATE: 07/17/97
WHEELBASE: 2591 mm TEST WEIGHT: 1278 kg
VEHICLE SIZE CATEGORY: 4-DOOR PASSENGER SEDAN

ACCELEROMETER DATA:

LOCATION: Left and right side passenger compartment

CALIBRATION PROCEDURE: 6 months/ drop test

LINEARITY: Good

INTEGRATION ALGORITHM: NHTSA Standard

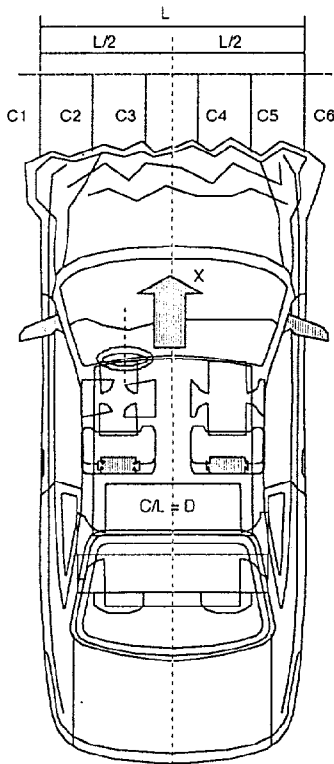
VEHICLE IMPACT SPEED: 60.76 km/h

TIME OF SEPARATION: 92.4 msec

VELOCITY CHANGE: 79.50 km/h

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

IMPACT MODE: Frontal Offset (40%)



CRUSH DEPTH DIMENSIONS:

C1 = 585 mm

C2 = 560 mm

C3 = 430 mm

C4 = 285 mm

C5 = 140 mm

C6 = +55 mm

MIDPOINT OF DAMAGE: D = vehicle centerline

LENGTH OF DAMAGE REGION:

L = 1500 mm

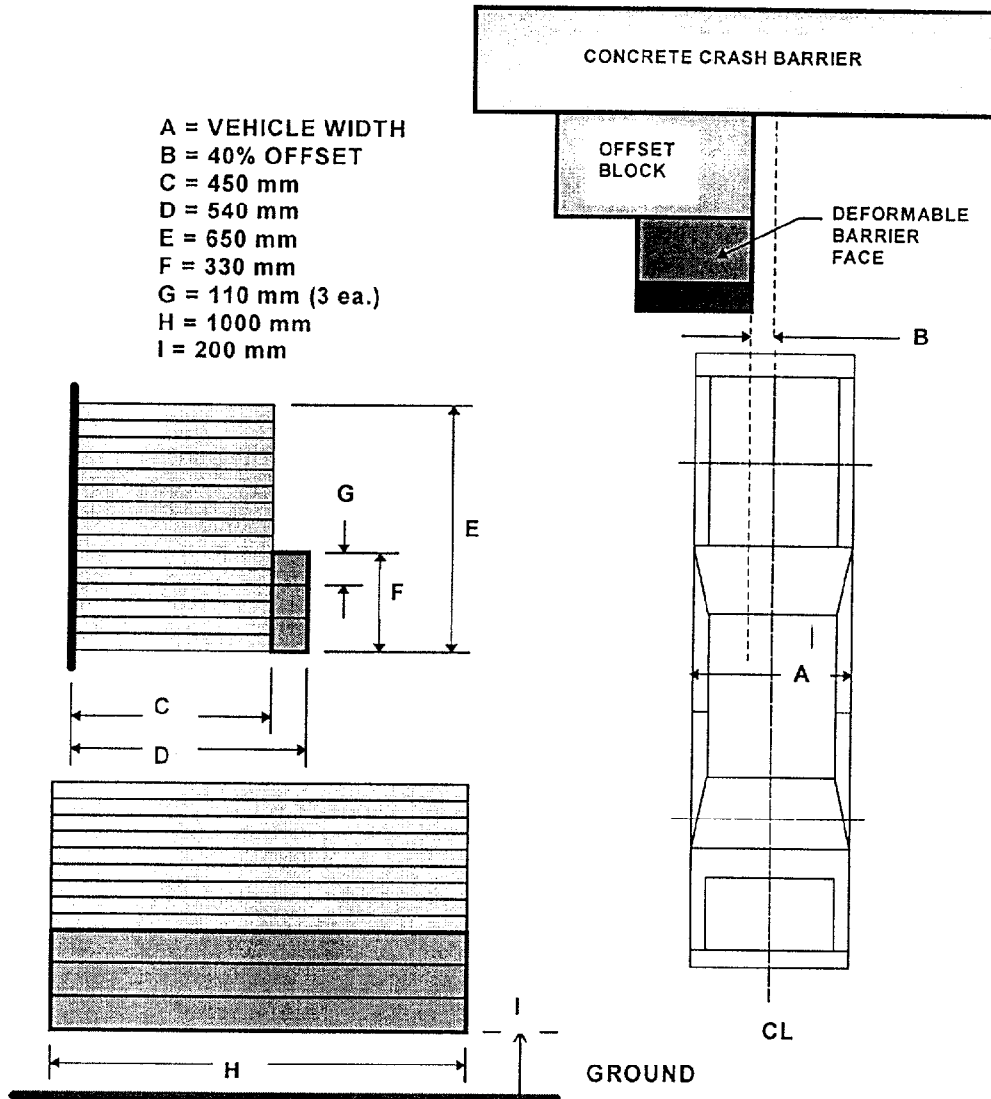
DATA SHEET NO. 18

OFFSET BARRIER ORIENTATION

TEST VEHICLE: 1996 DODGE NEON 4-DOOR SEDAN

NHTSA NO. MT0307

A = VEHICLE WIDTH MEASURED AT WIDEST POINT 1778 mm



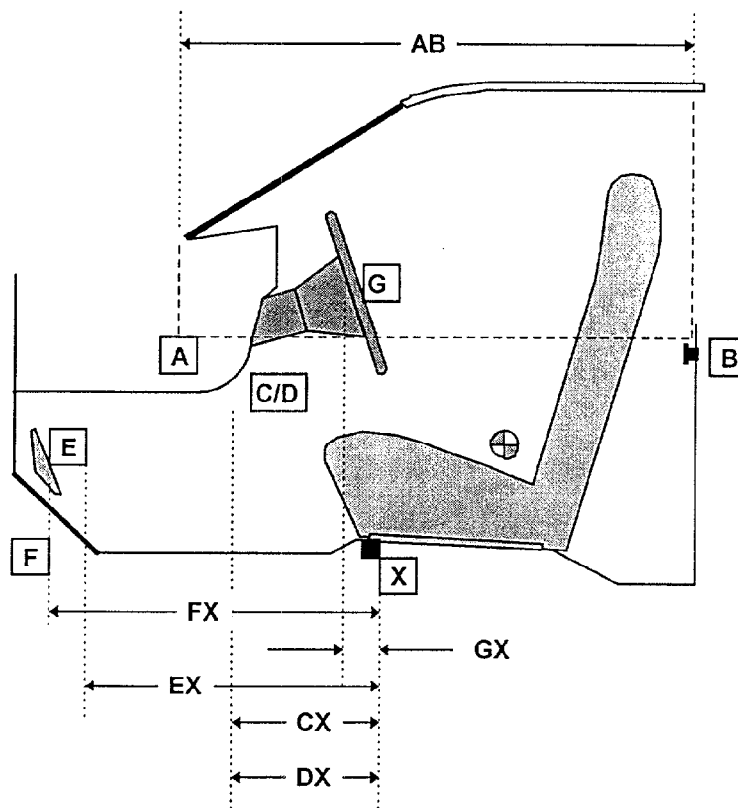
B = 40% OFFSET FROM LEFT EDGE OF VEHICLE
ACTUAL OFFSET DURING TEST

$$\frac{178 \text{ mm}}{178 \text{ mm}} = 40.0 \%$$

DRIVER COMPARTMENT INTRUSION (Distances in mm)

REF.	DESCRIPTION	PRE-TEST	POST-TEST
AB	DOOR OPENING (INSIDE WINDOW JAM)	960	845
CX	LOWER LEFT KNEE BOLSTER TO X	466	370
DX	LOWER RIGHT KNEE BOLSTER TO X	480	495
EX	BRAKE PEDAL TO X	590	420
FX	FOOT REST TO X	N/A	N/A
GX	STEERING COLUMN HUB (CENTER) TO X	80	-20

X = LEFT FRONT SEAT ANCHOR BOLT



DRIVER COMPARTMENT

DATA SHEET NO. 20

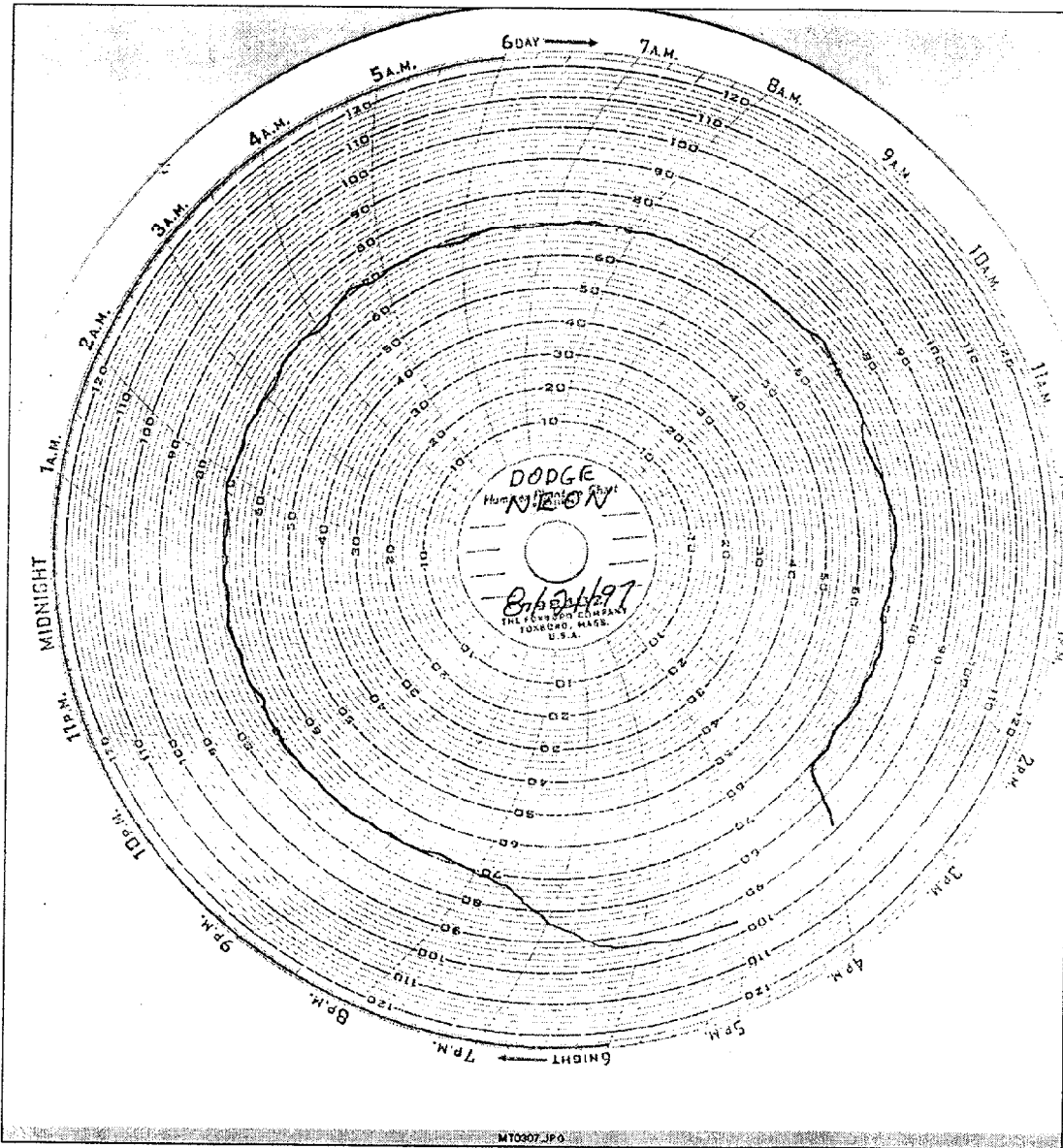
DUMMY/VEHICLE TEMPERATURE STABILIZATION

TEST VEHICLE: 1996 DODGE NEON 4-DOOR SEDAN

NHTSA NO. MT0307

VIN: 1B3ES47COTD681329

TEST DATE: 08/21/97



APPENDIX A
PHOTOGRAPHS

KAR-97-R97015-05

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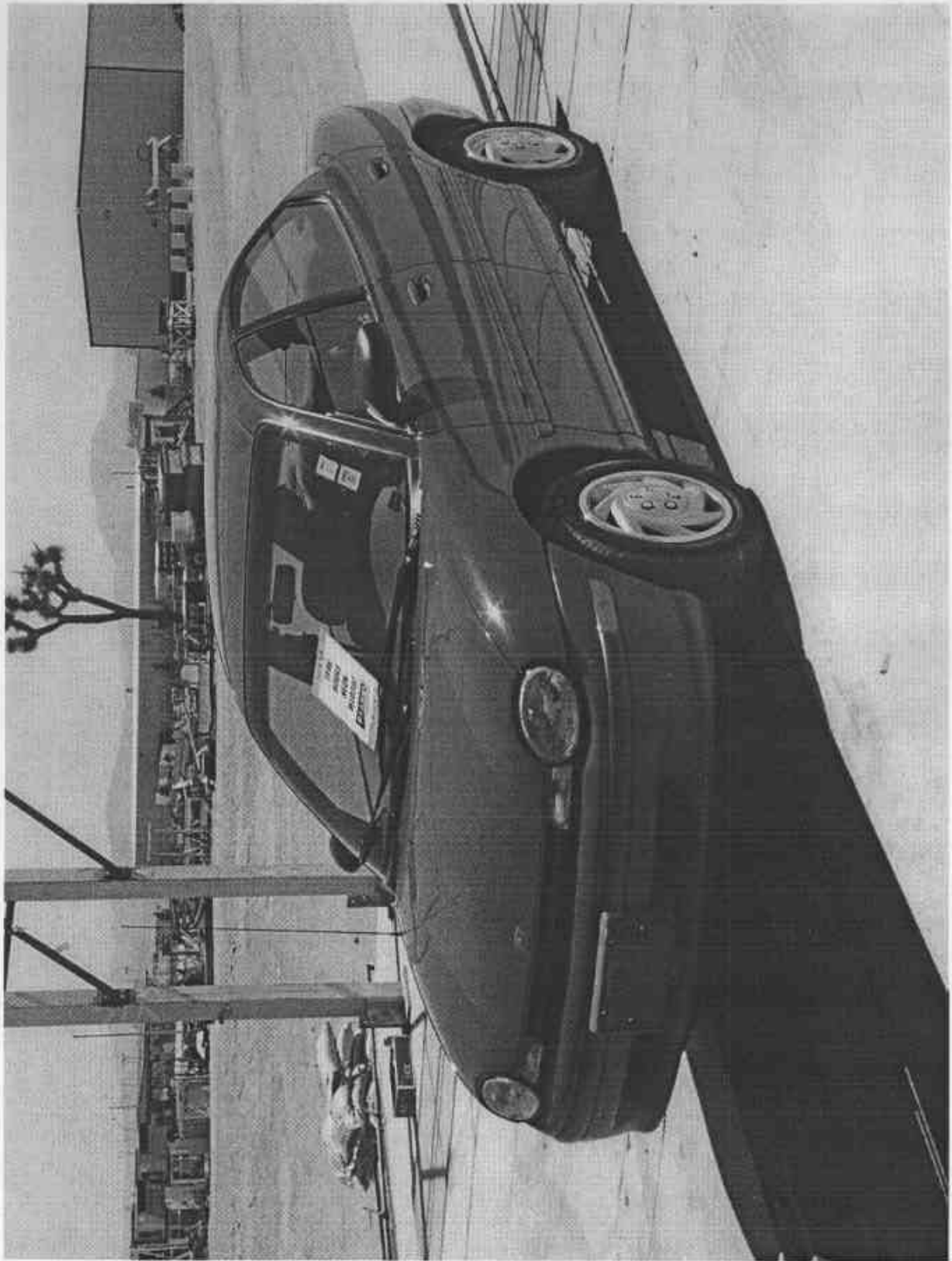


FIGURE A-1. LEFT FRONT AS RECEIVED

A-1

KAR-97-R97015-05

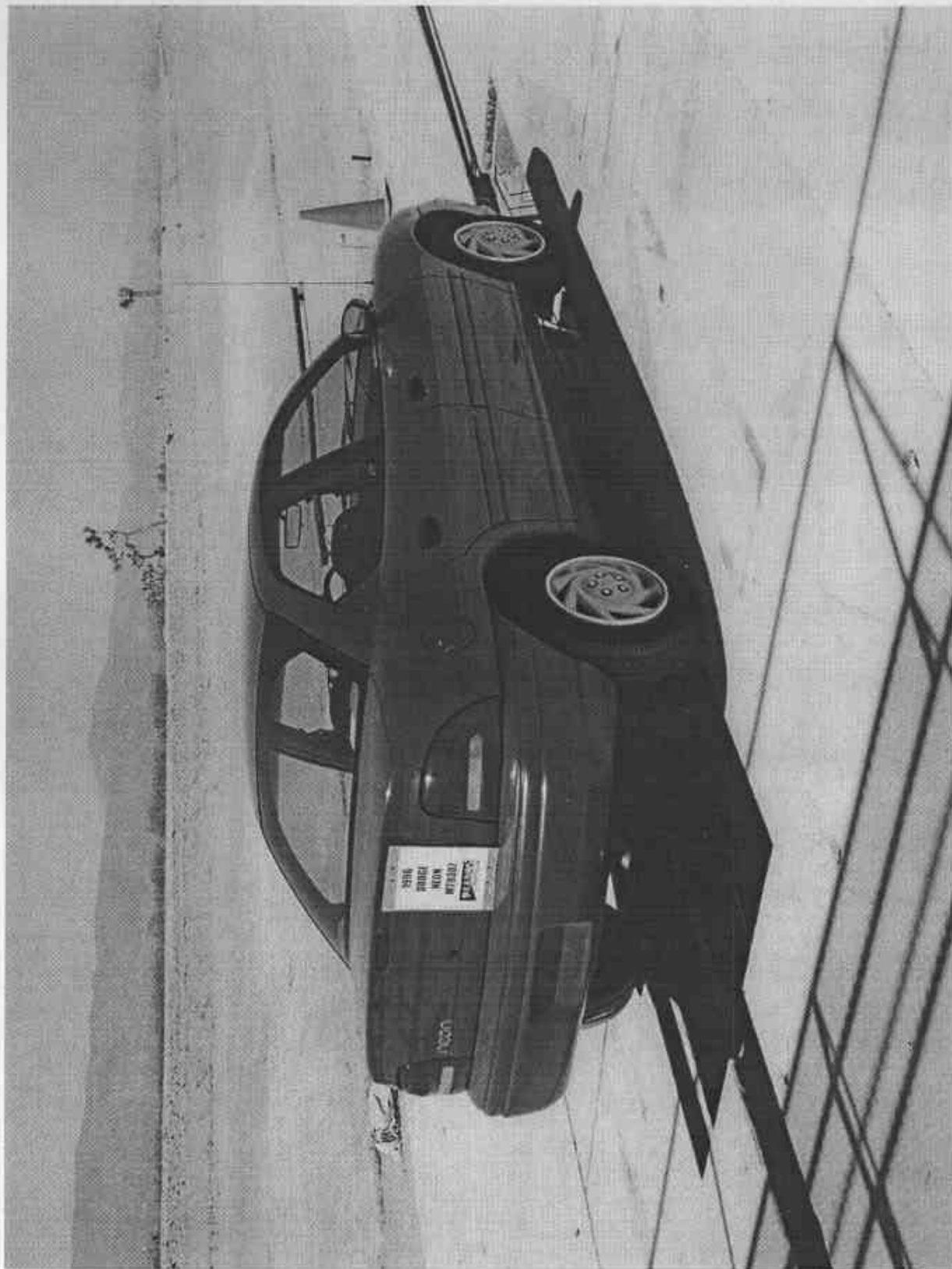


FIGURE A-2. RIGHT REAR AS RECEIVED

A-2

KAR-97-R97015-05

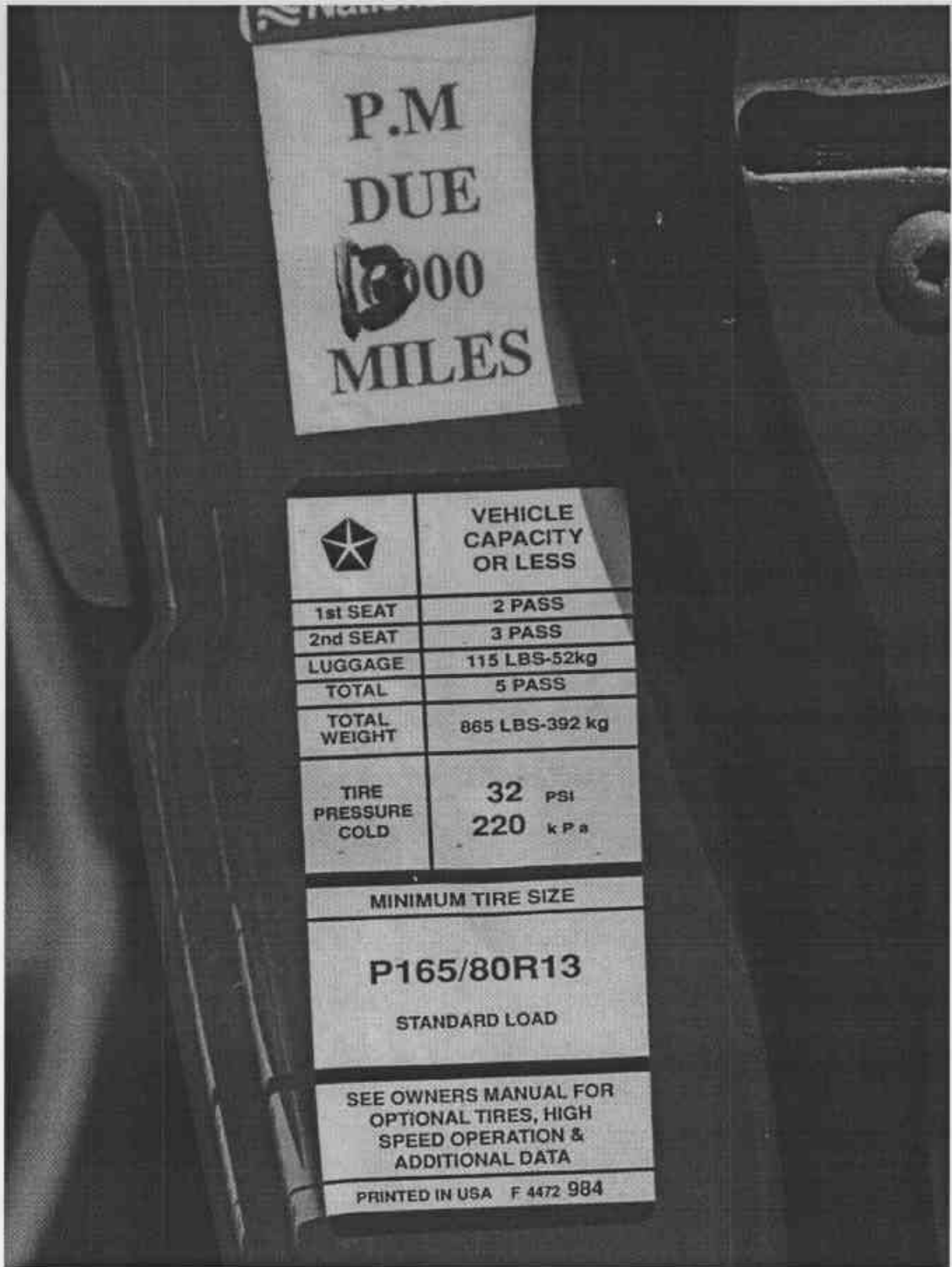
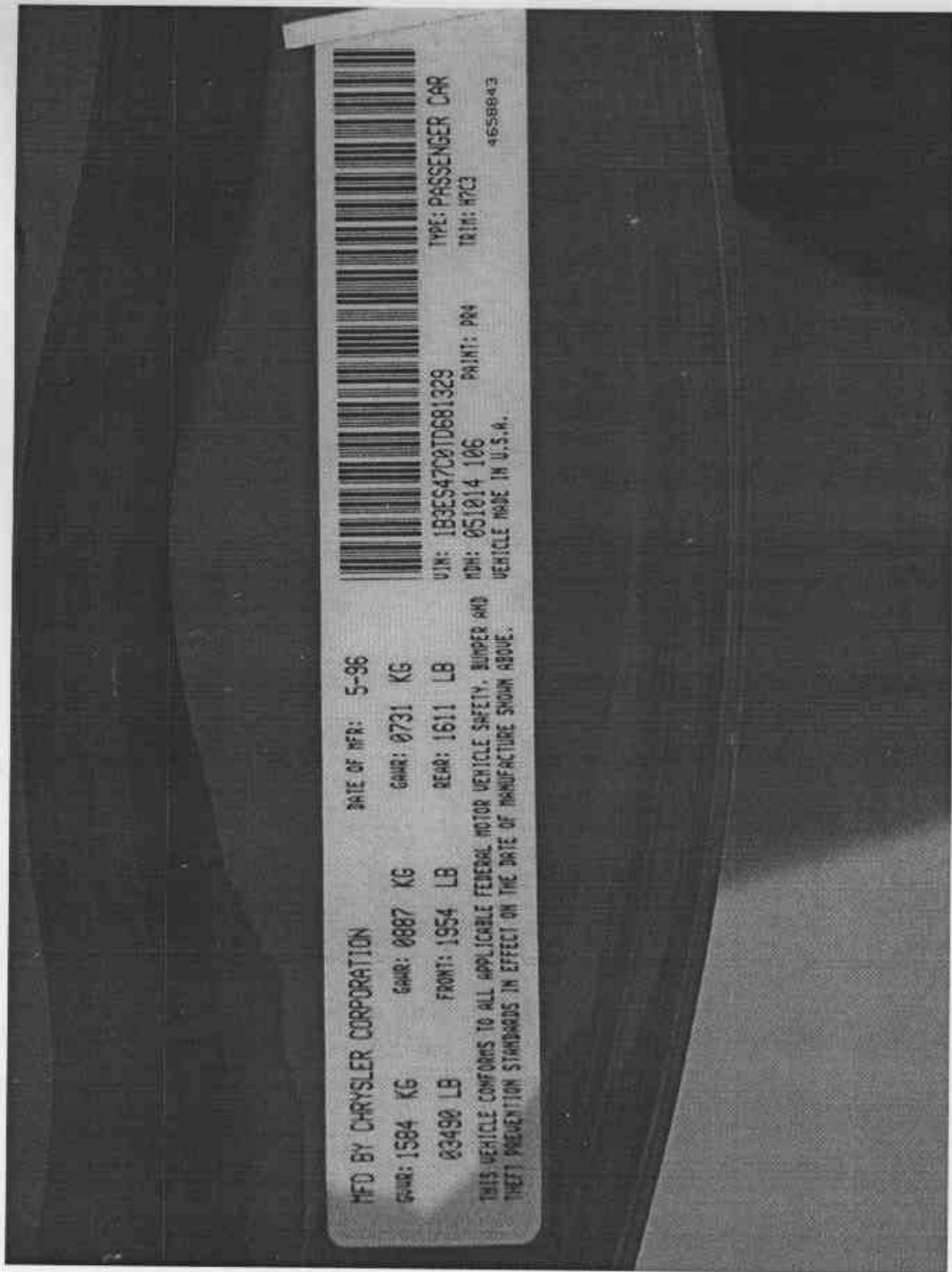


FIGURE A-3. VEHICLE CERTIFICATION LABEL



MFD BY CHRYSLER CORPORATION

DATE OF MFR: 5-96

GMW: 1584 KG

GMW: 0887 KG

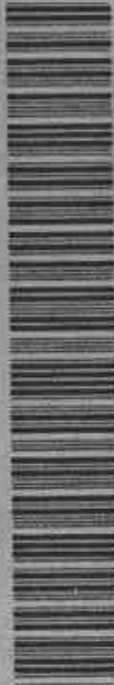
GMW: 0731 KG

03490 LB

FRONT: 1954 LB

REAR: 1611 LB

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY, BUMPER AND THEFT PREVENTION STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.



VIN: 1B3ES47D0TD681329

PAINT: P04

TRIM: RT3

MDH: 051014 106

VEHICLE MADE IN U.S.A.

4658843

FIGURE A-4. VEHICLE TIRE PLACARD

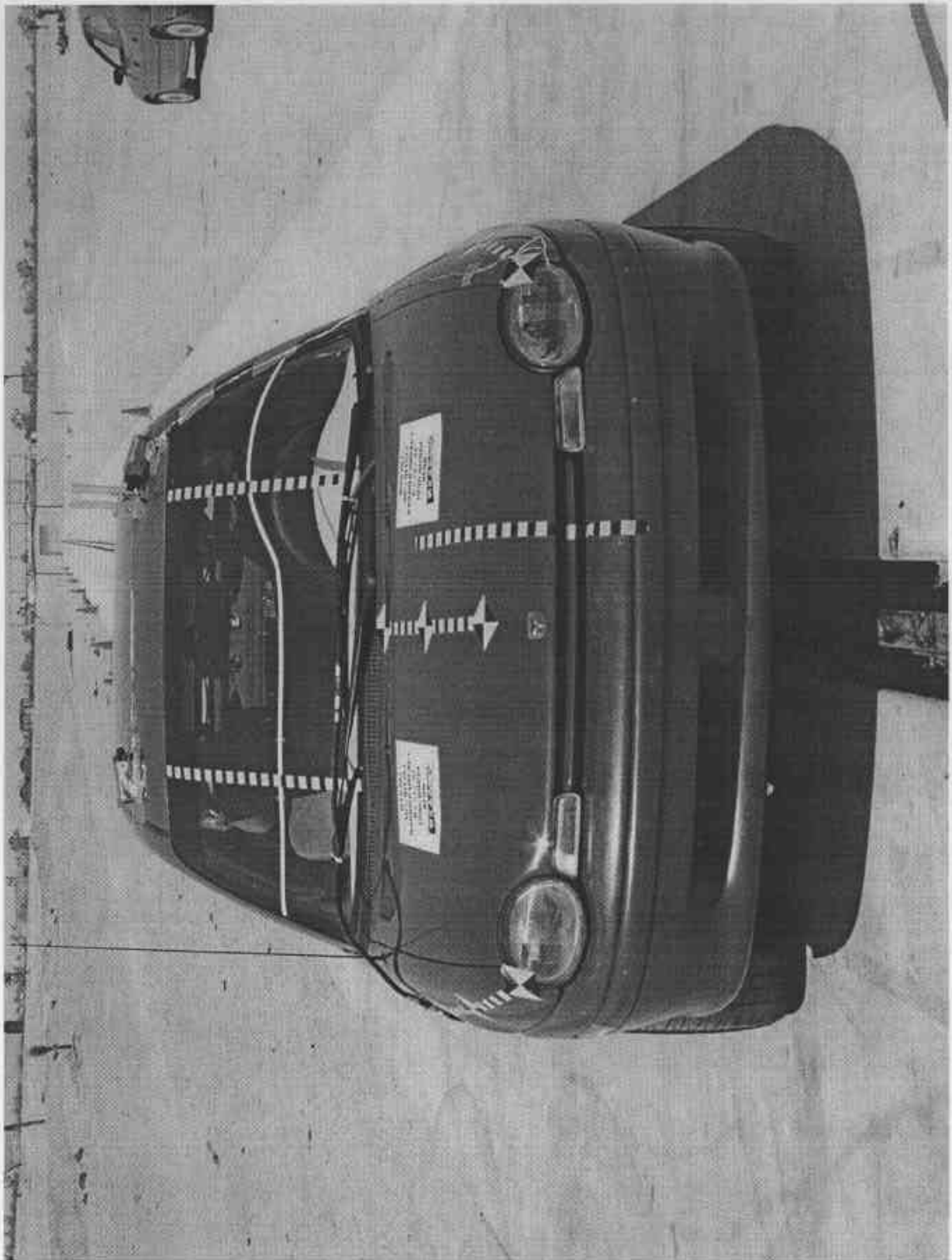


FIGURE A-5. PRETEST FRONT VIEW

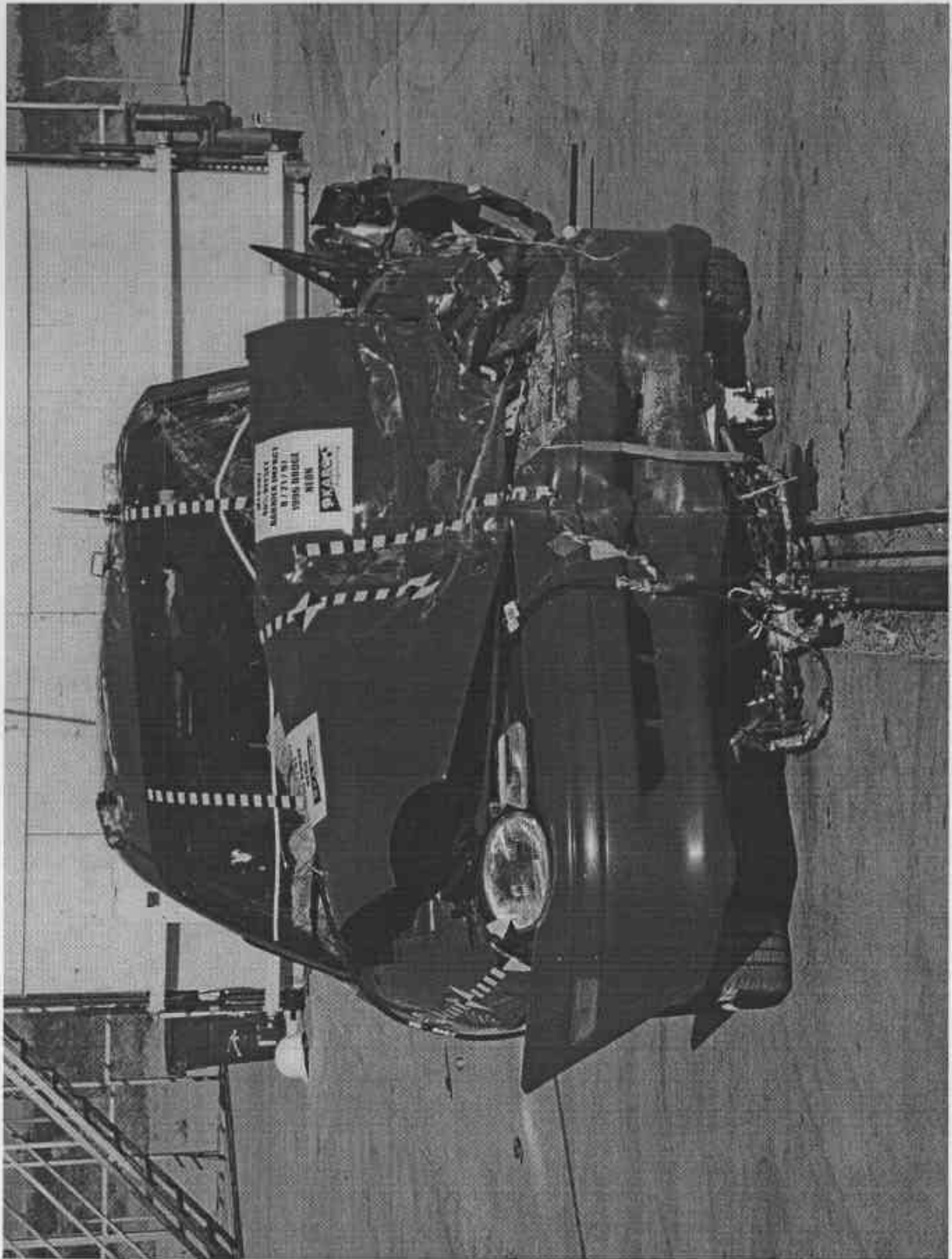


FIGURE A-6. POST TEST FRONT VIEW

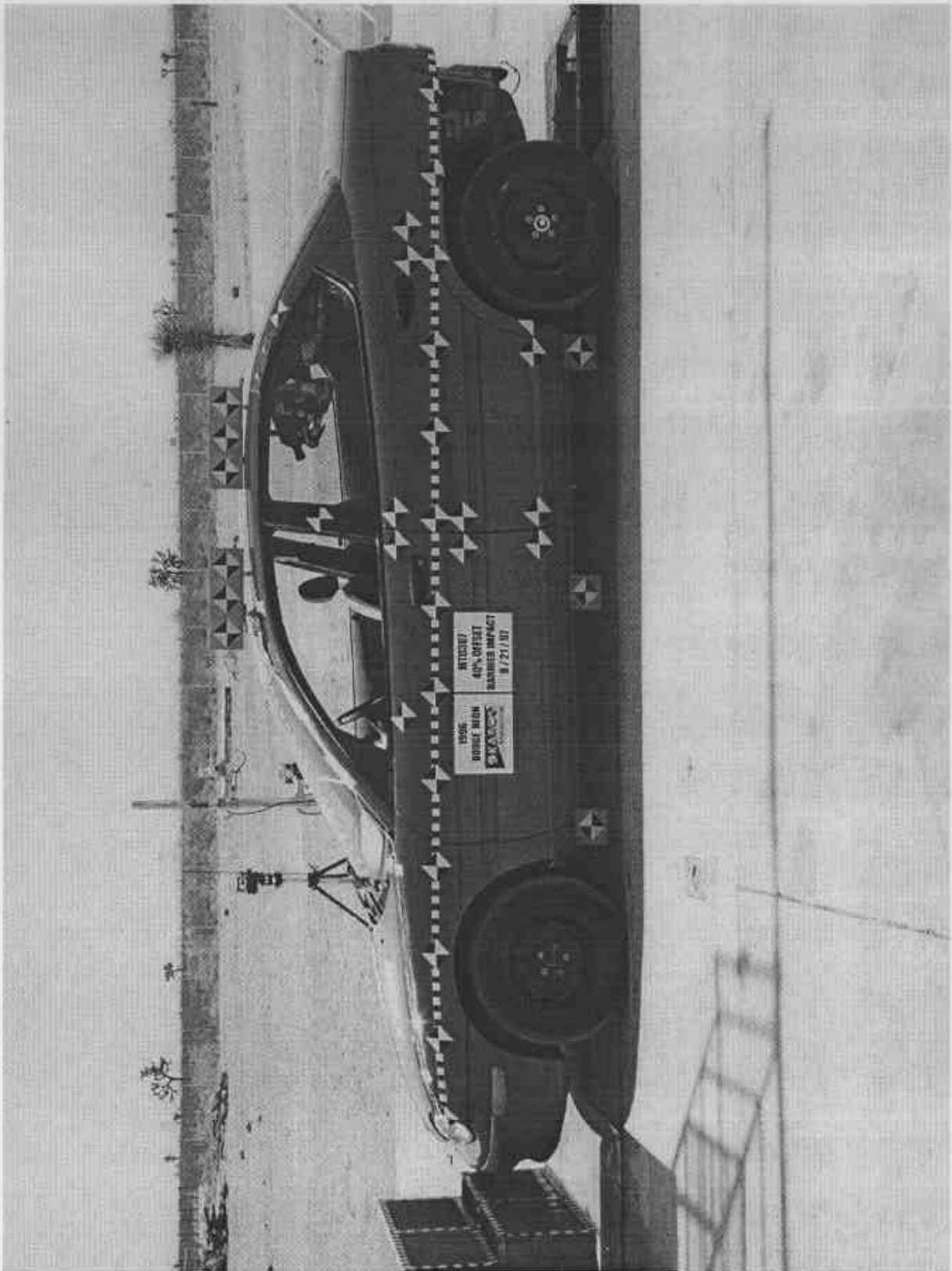


FIGURE A-7. PRETEST LEFT SIDE VIEW

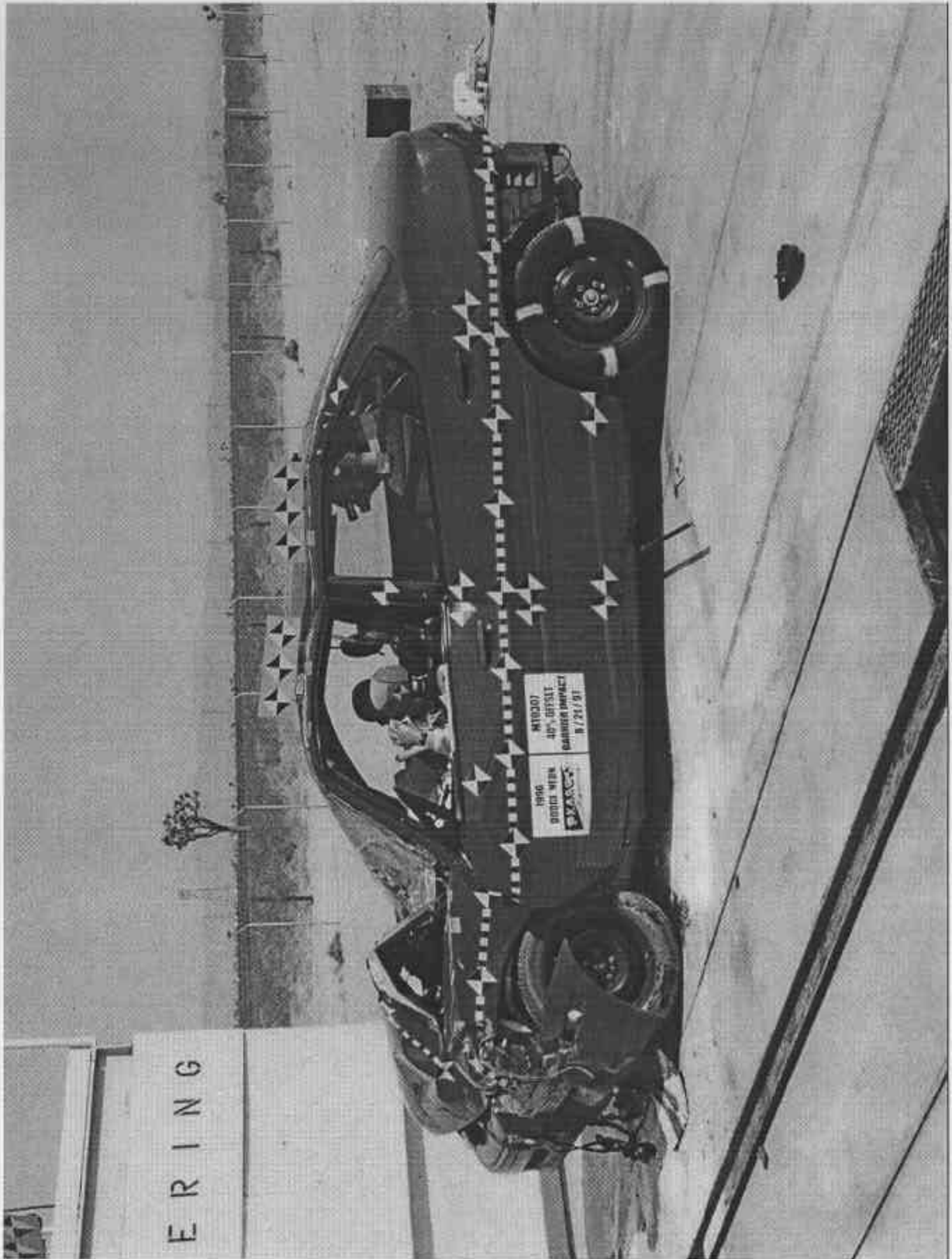


FIGURE A-8. POST TEST LEFT SIDE VIEW

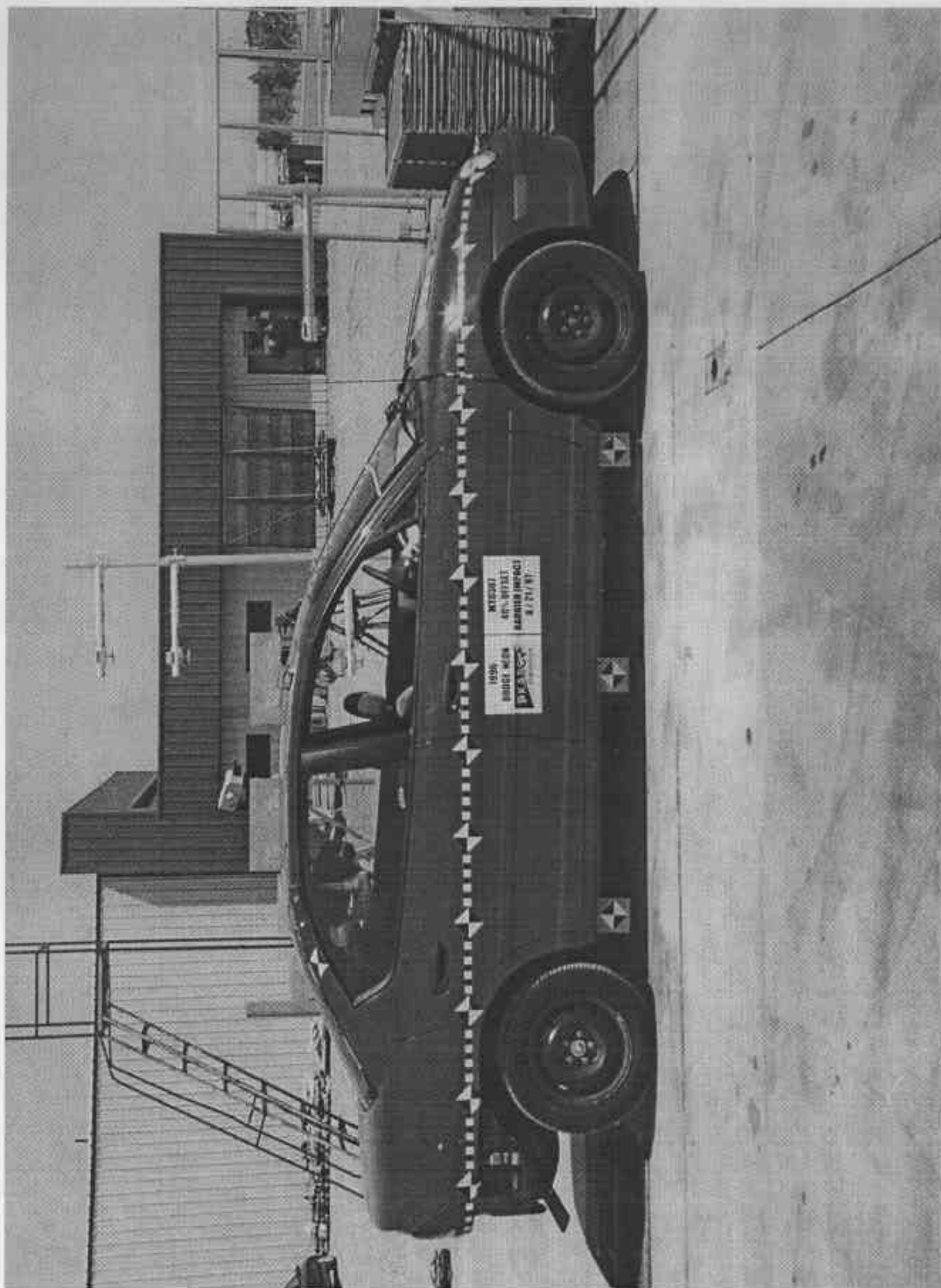


FIGURE A-9 PRETEST RIGHT SIDE VIEW

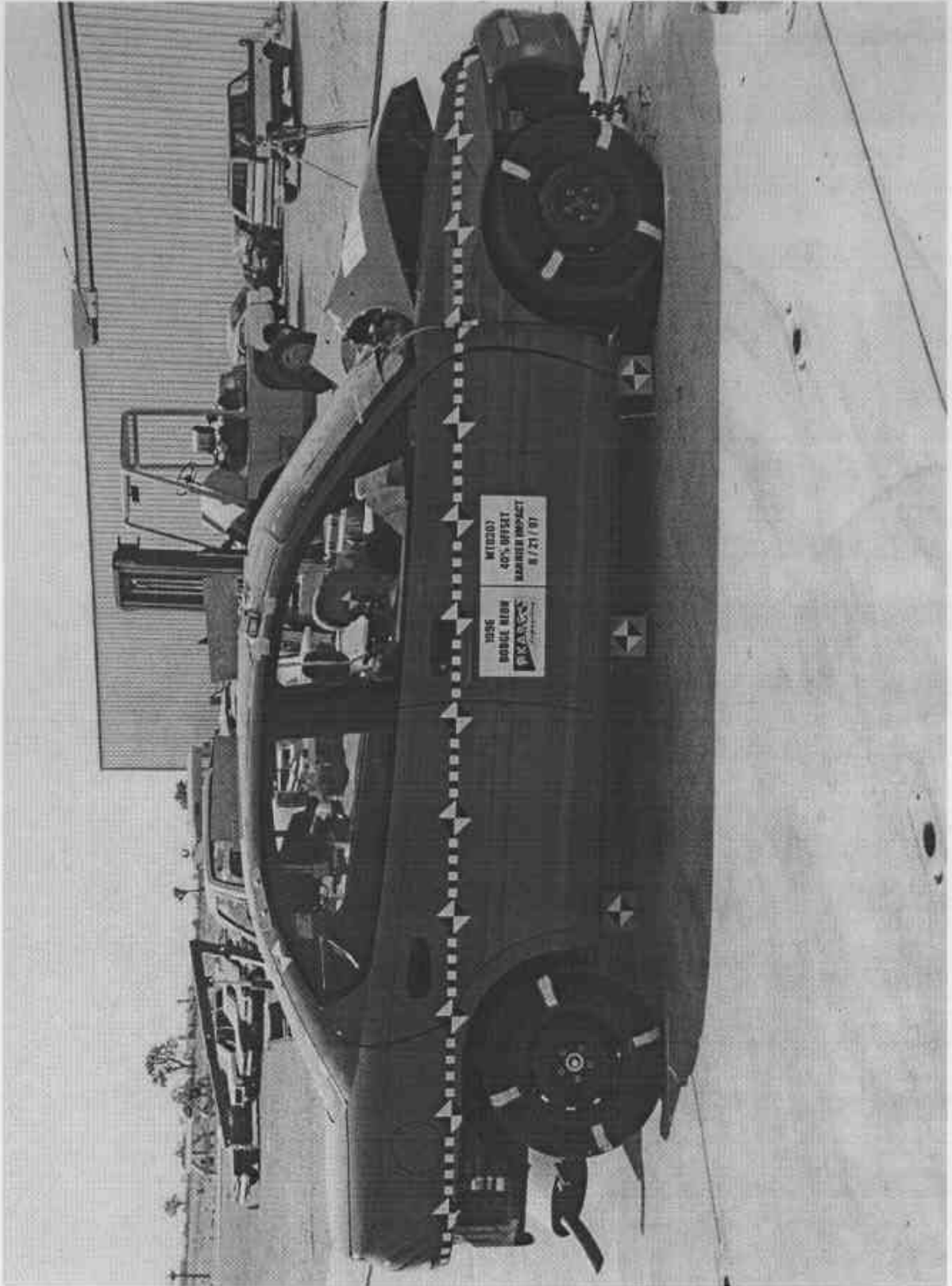


FIGURE A-10. POST TEST RIGHT SIDE VIEW

A-10

KAR-97-R97015-05

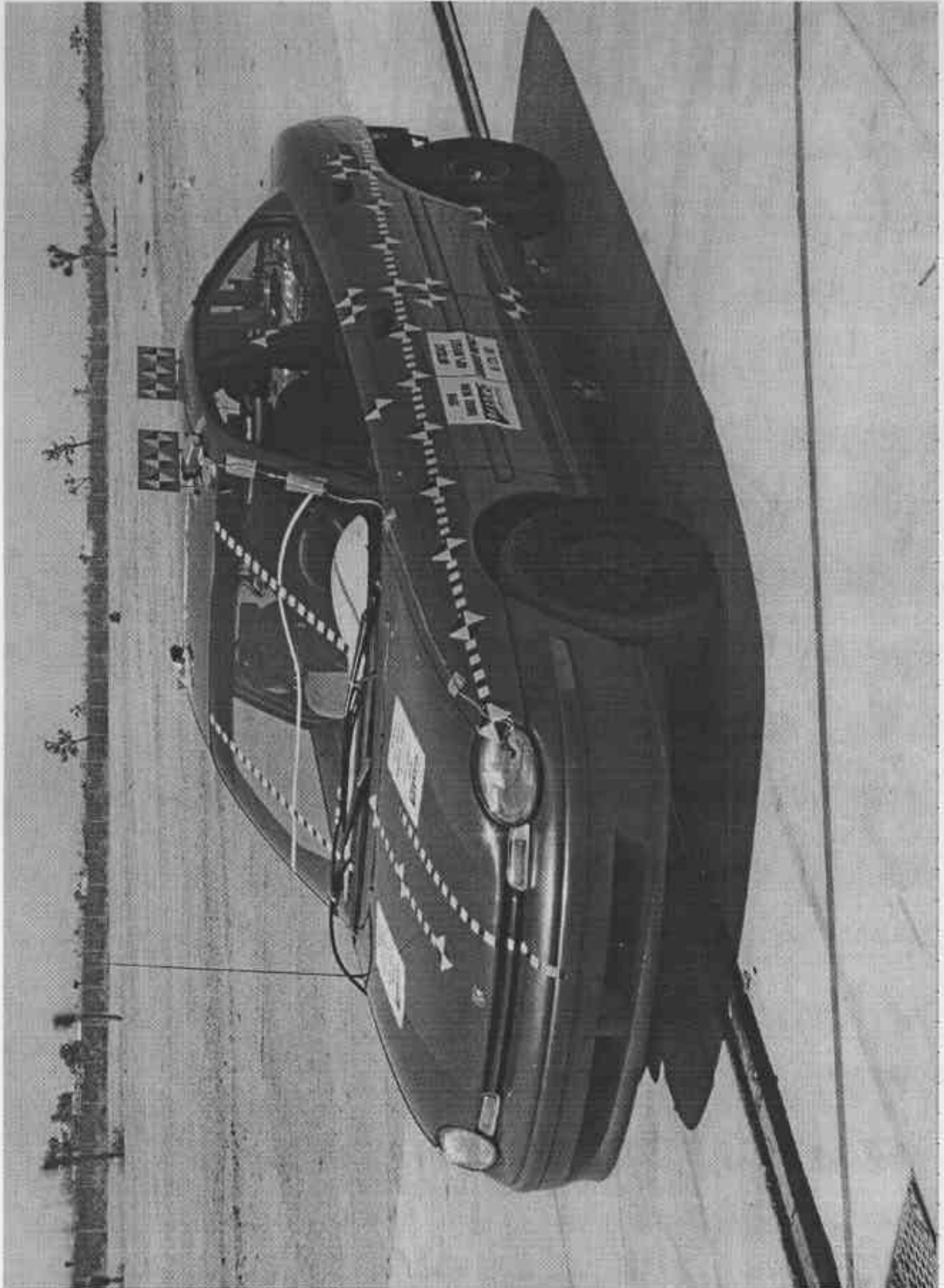


FIGURE A-11. PRETEST LEFT FRONT VIEW

A-11

KAR-97-R97015-05

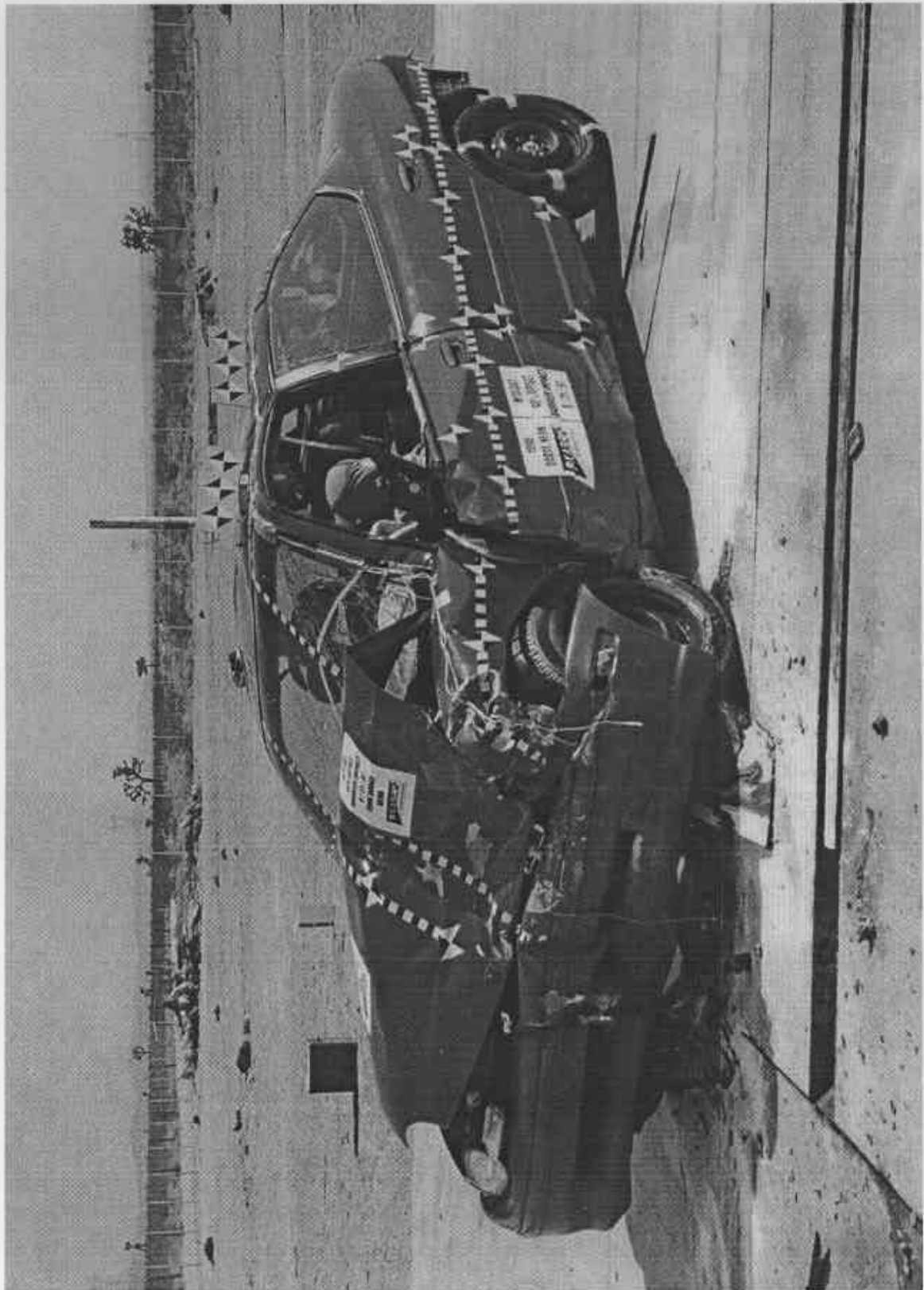


FIGURE A-12. POST TEST LEFT FRONT VIEW

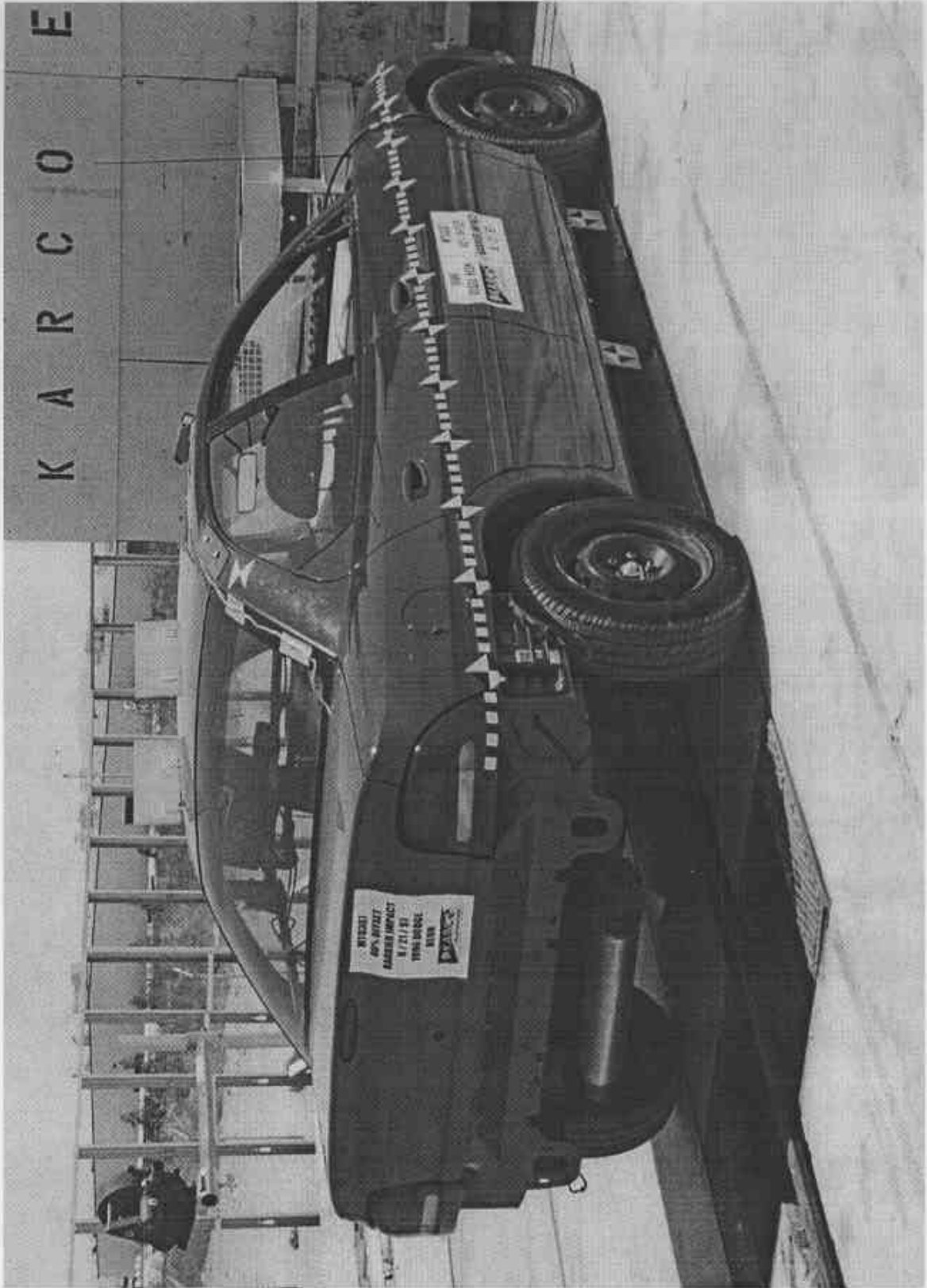


FIGURE A-13. PRETEST RIGHT REAR VIEW

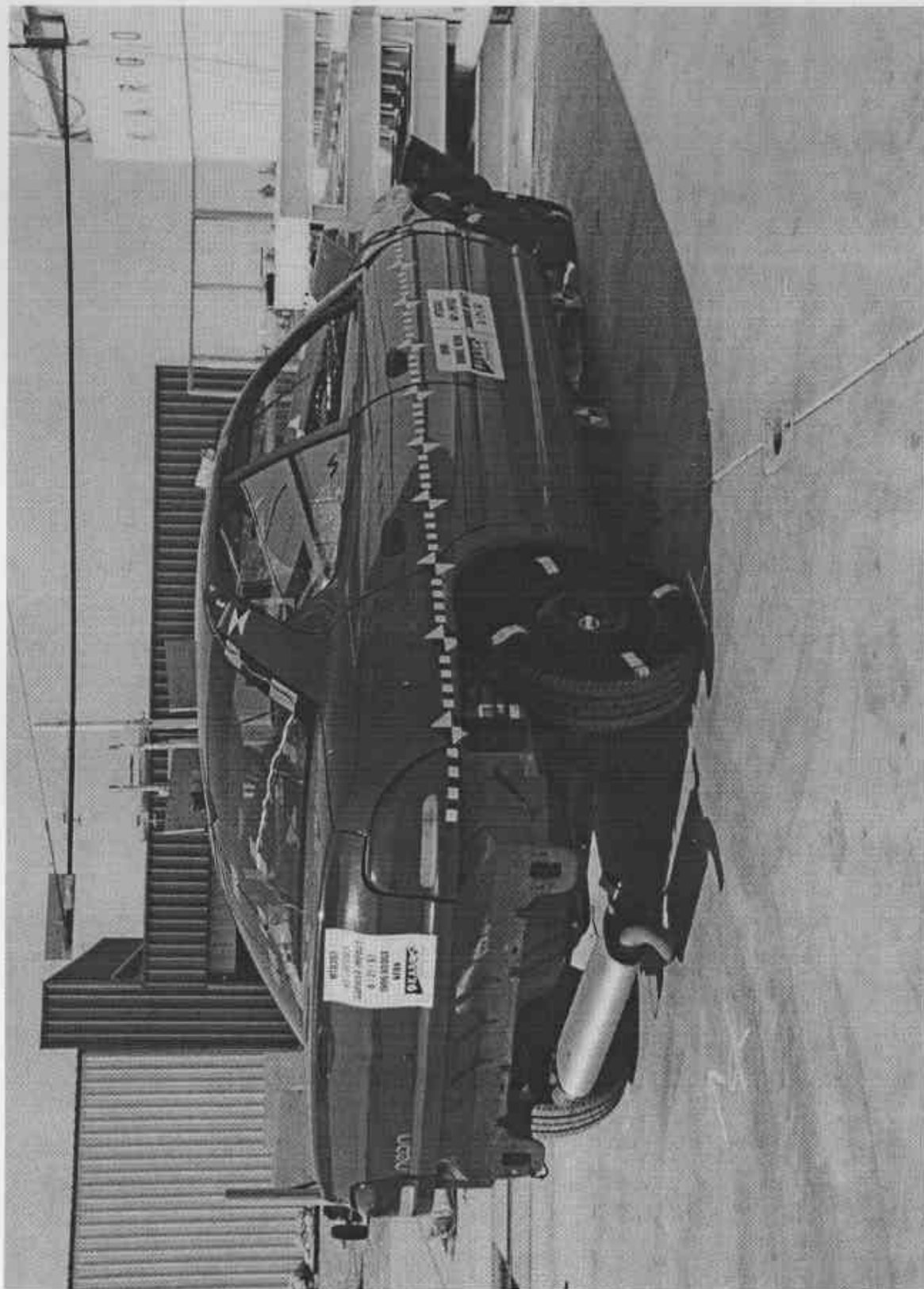


FIGURE A-14 POST TEST RIGHT REAR VIEW

A14

KAR-97-R97015-05

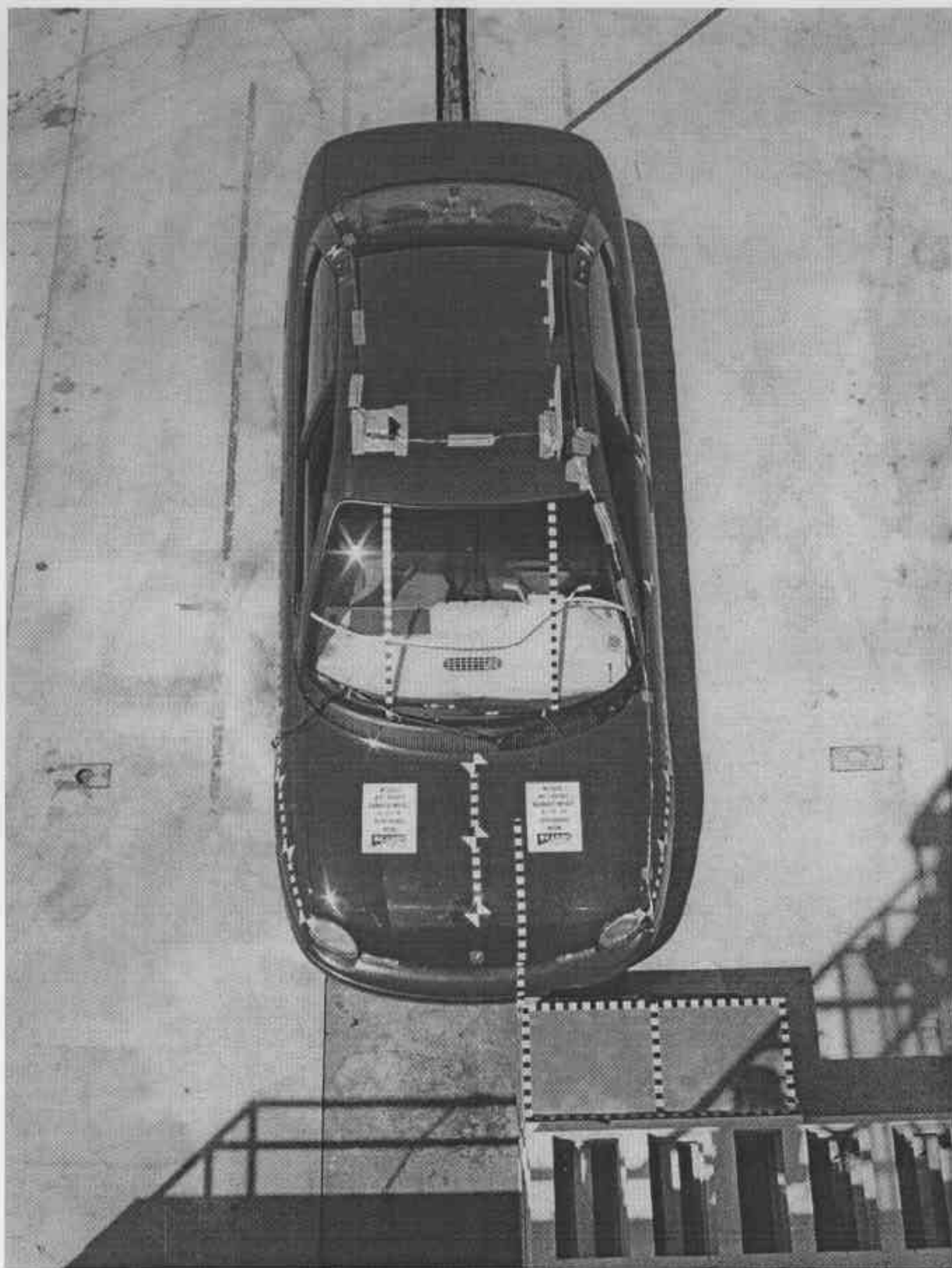


FIGURE A-15. PRETEST OVERHEAD VIEW

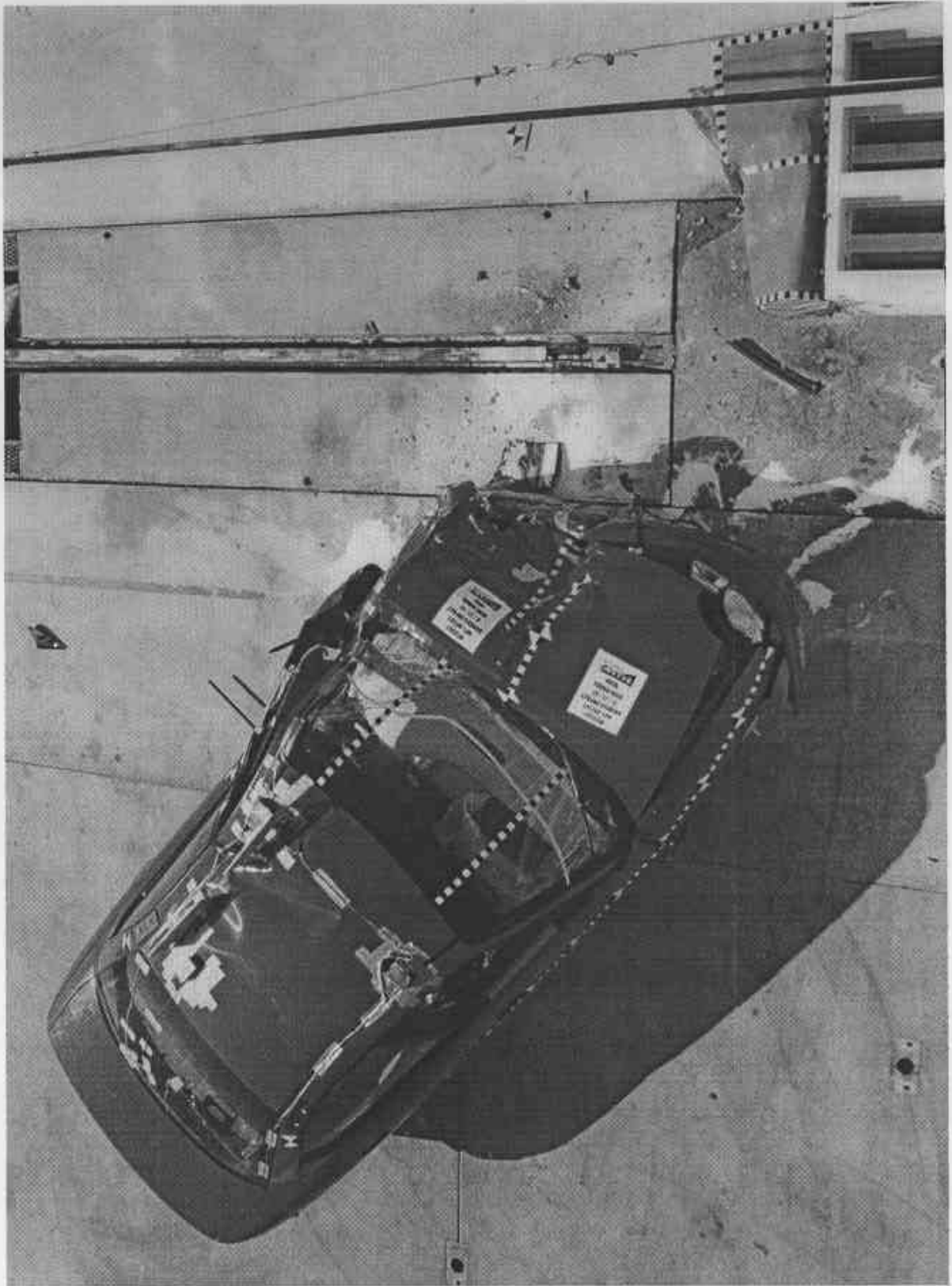


FIGURE A-16. POST TEST OVERHEAD VIEW

A-16

KAR-97-R97015-05

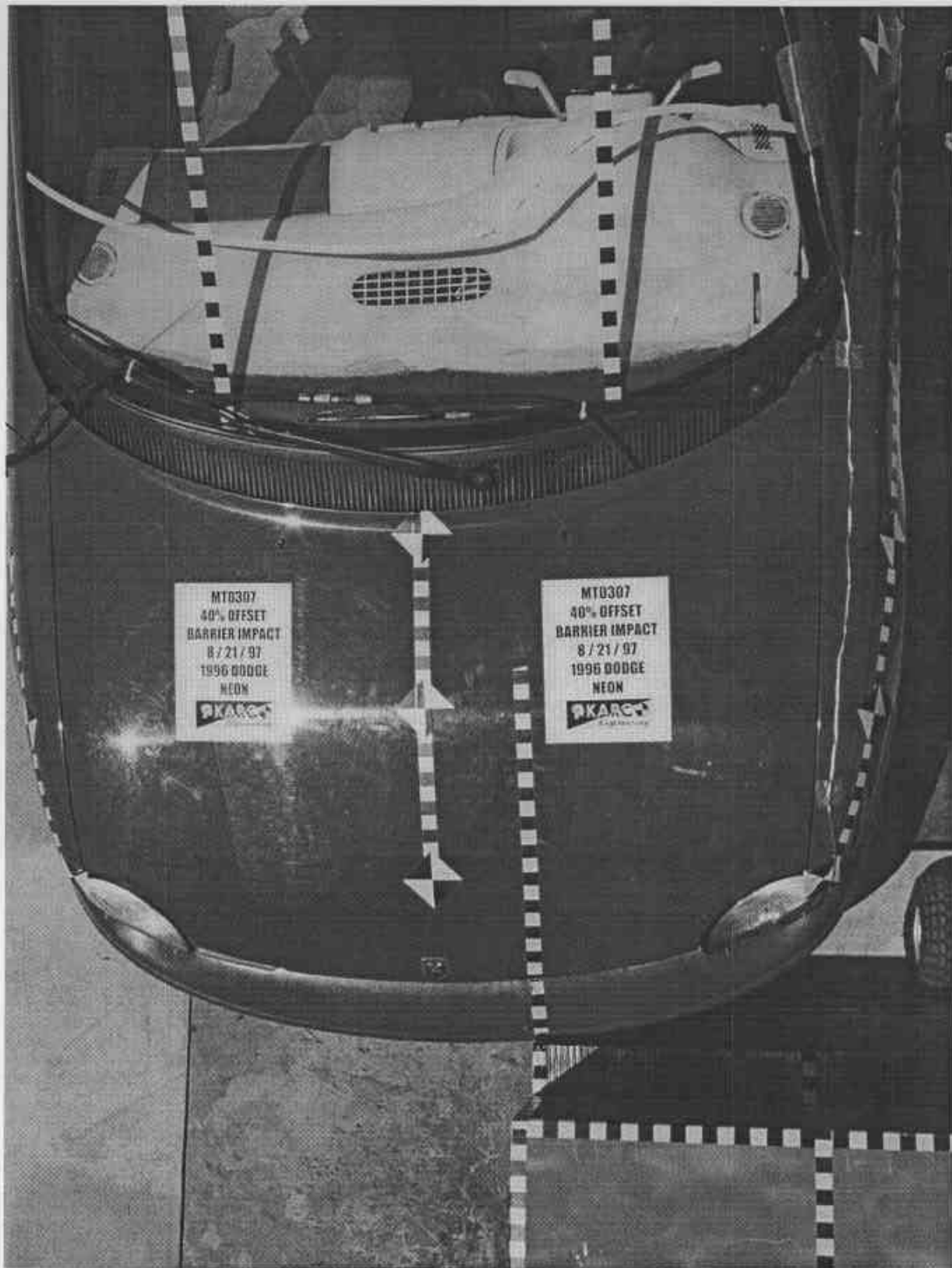


FIGURE -17. PRETEST OVERHEAD CLOSE-UP



FIGURE A-18. POST TEST OVERHEAD CLOSE-UP

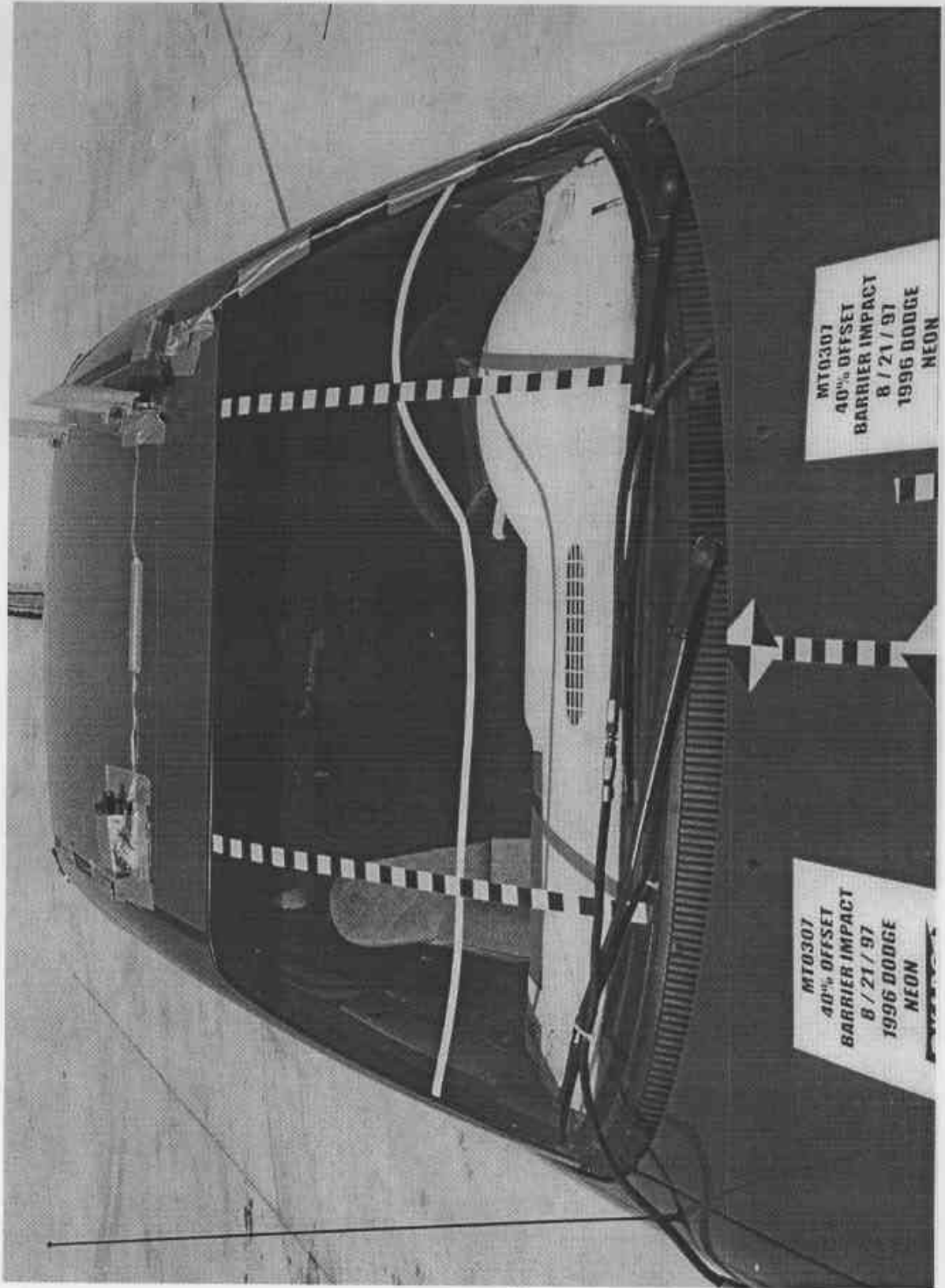


FIGURE A-19. PRETEST WINDSHIELD

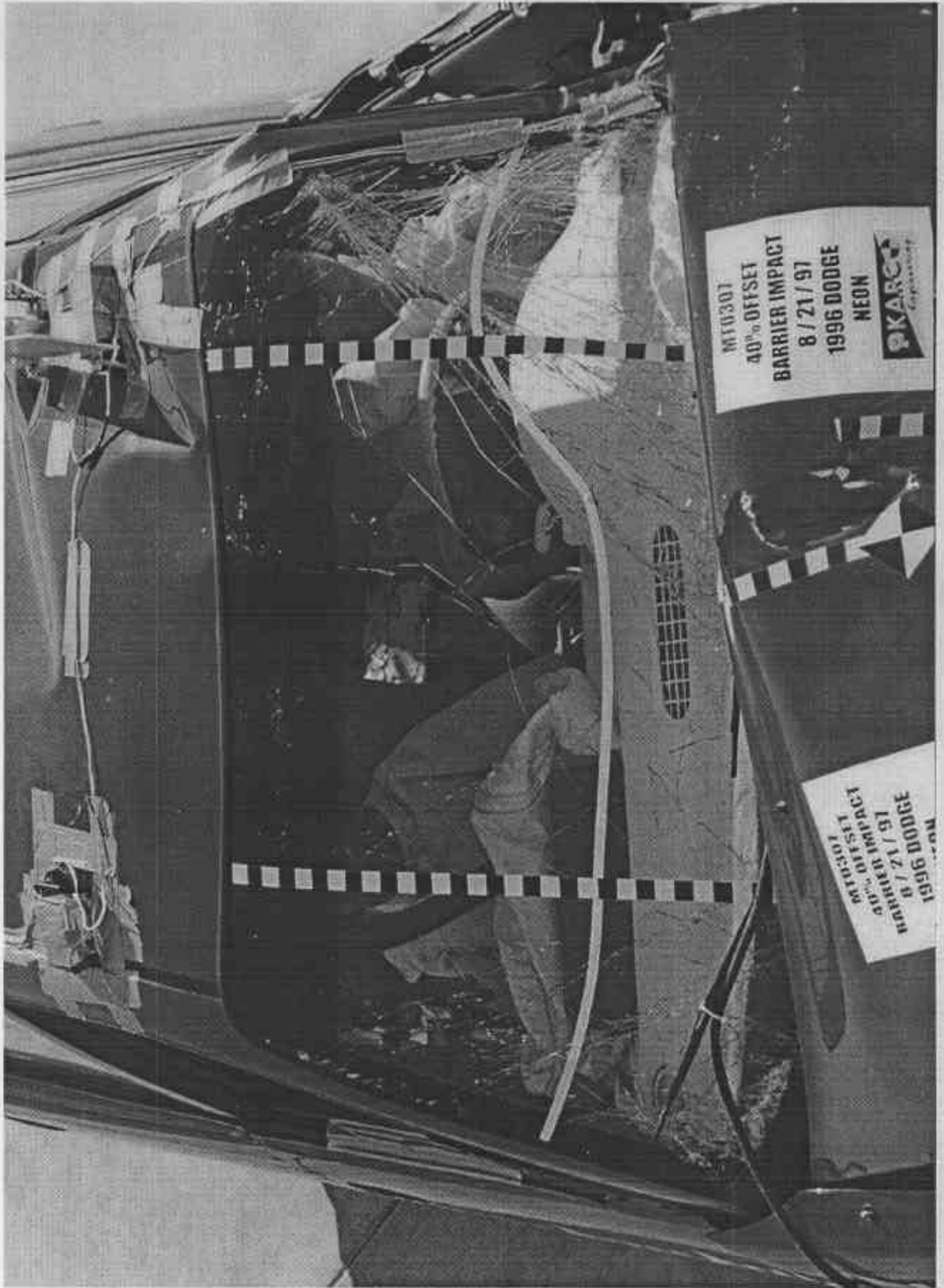


FIGURE A-20. POST TEST WINDSHIELD

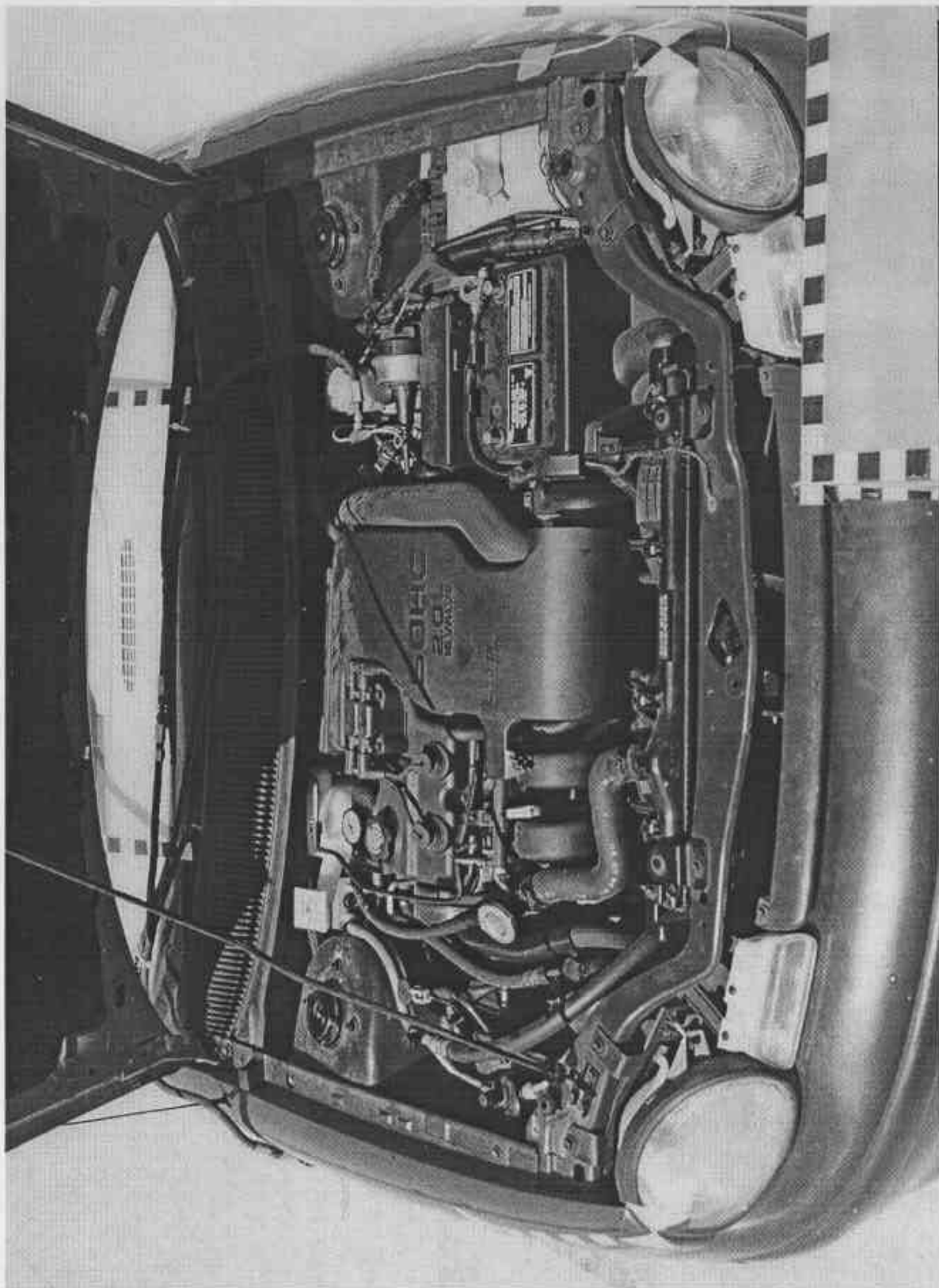


FIGURE-21. PRETEST ENGINE COMPARTMENT

A-21

KAR-97-R97015-05

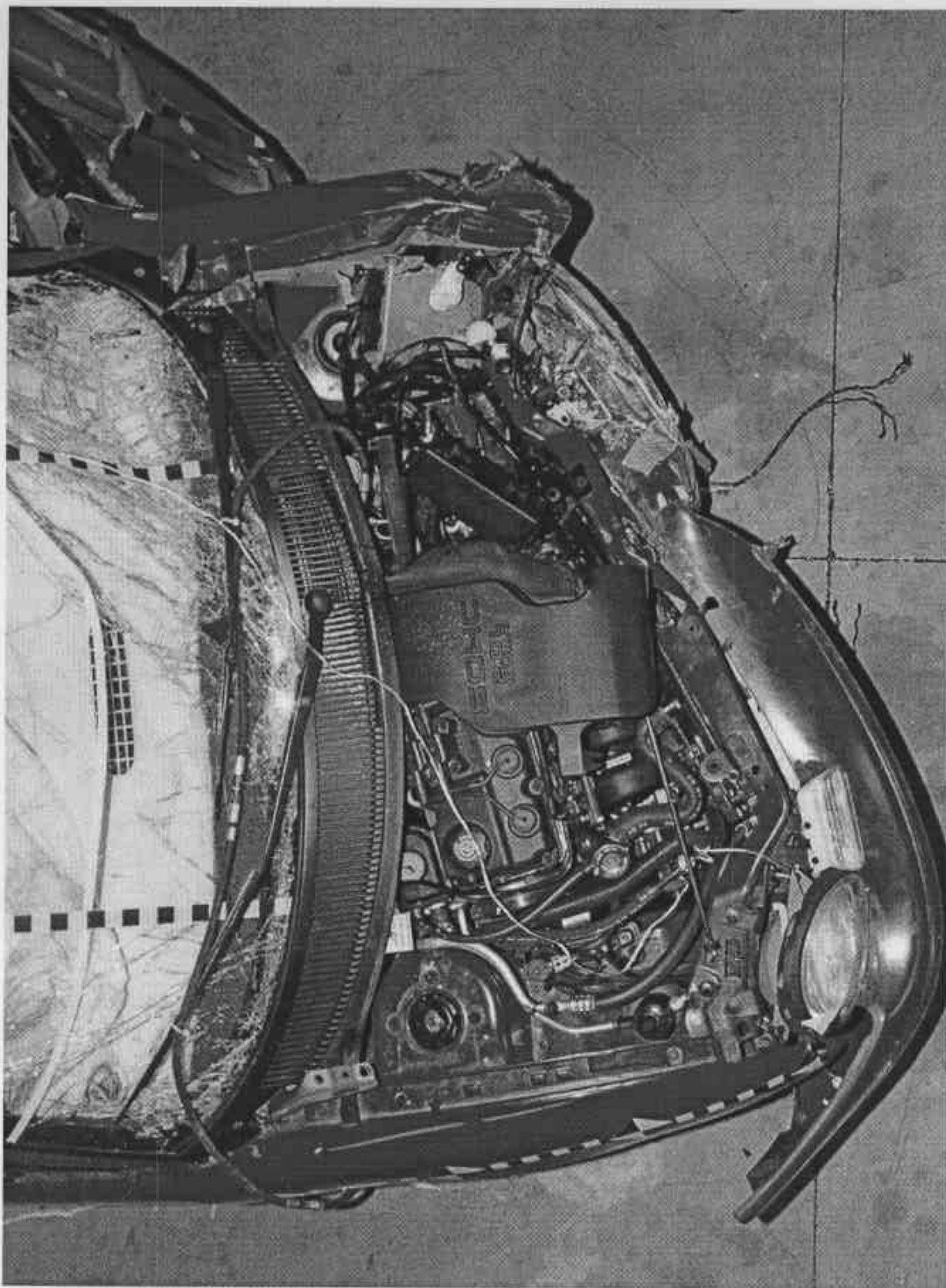


FIGURE A-22. POST TEST ENGINE COMPARTMENT

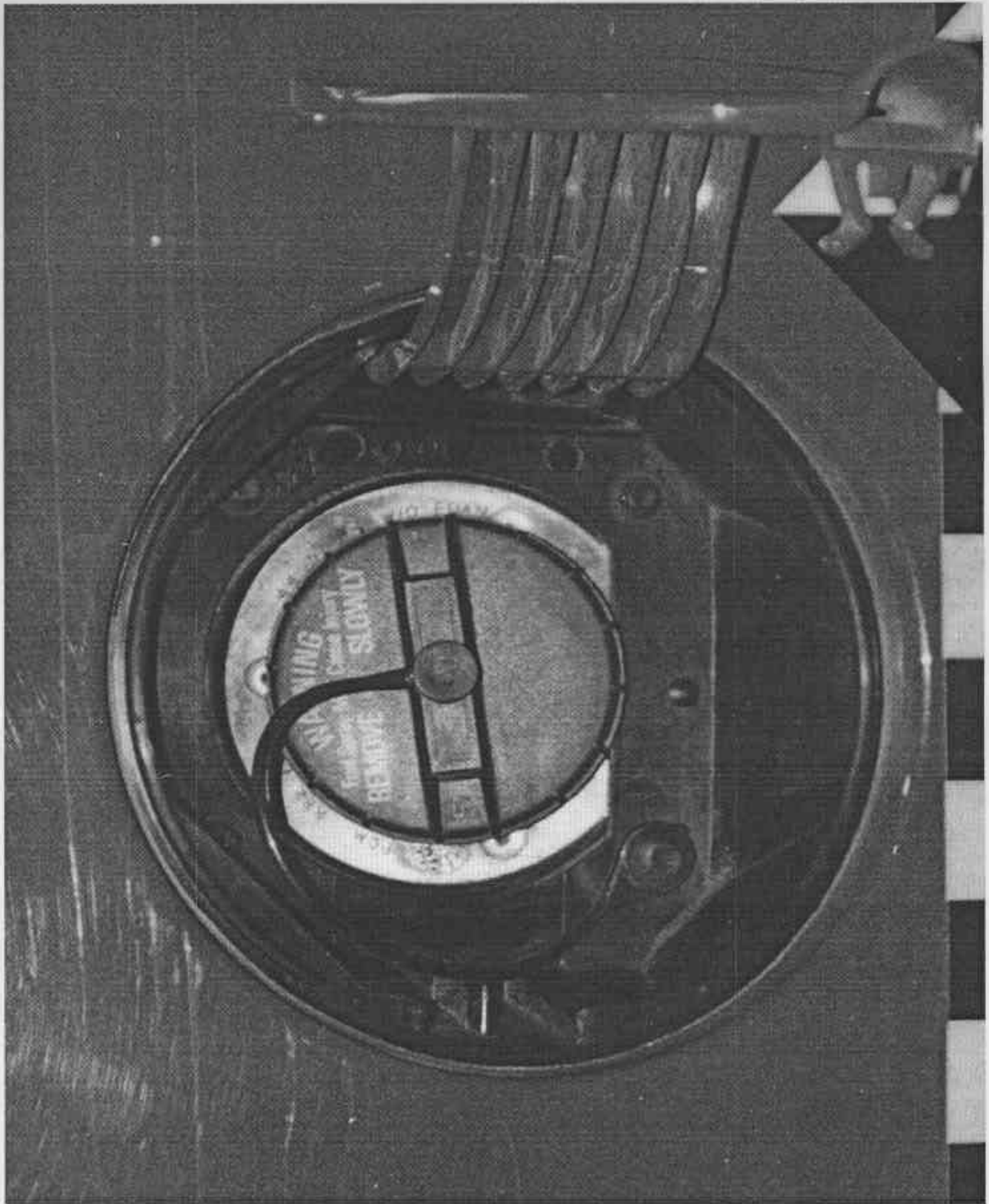


FIGURE A-23. FUEL CAP

A-23

KAR-97-R97015-05

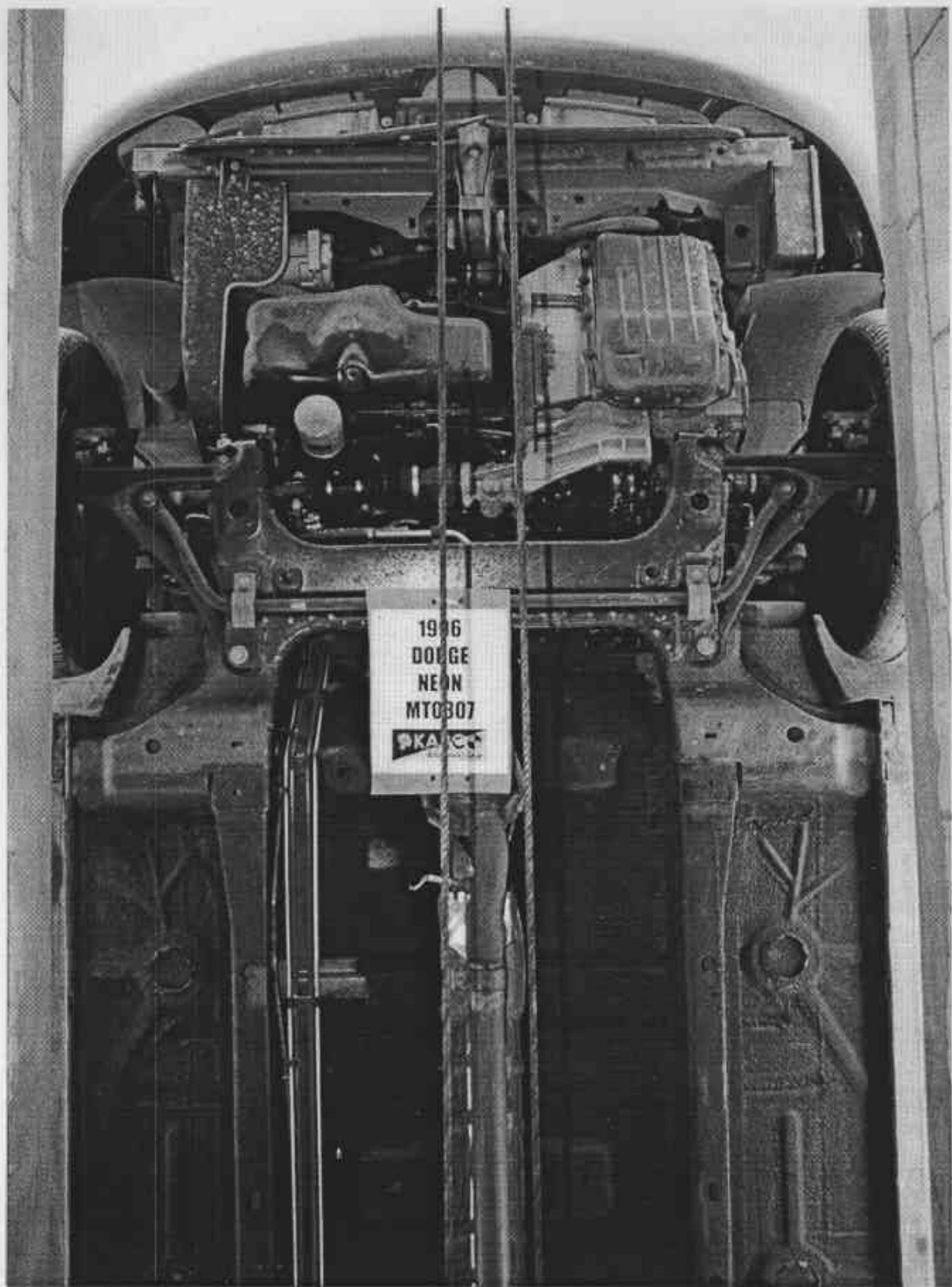


FIGURE A-24.PRETEST FRONT UNDERBODY

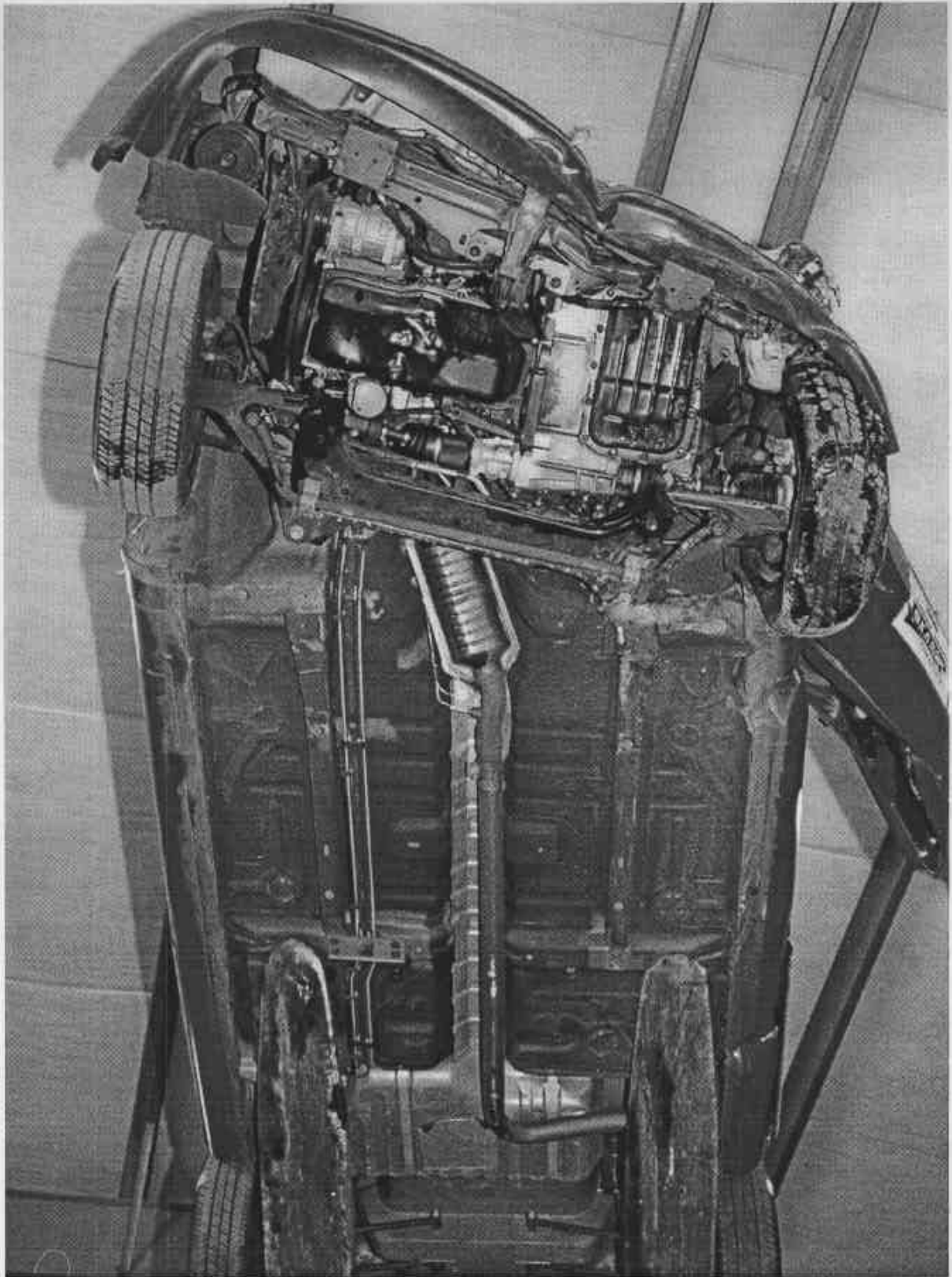


FIGURE A-25. POST TEST FRONT UNDERBODY

A-25

KAR-97-R97015-05

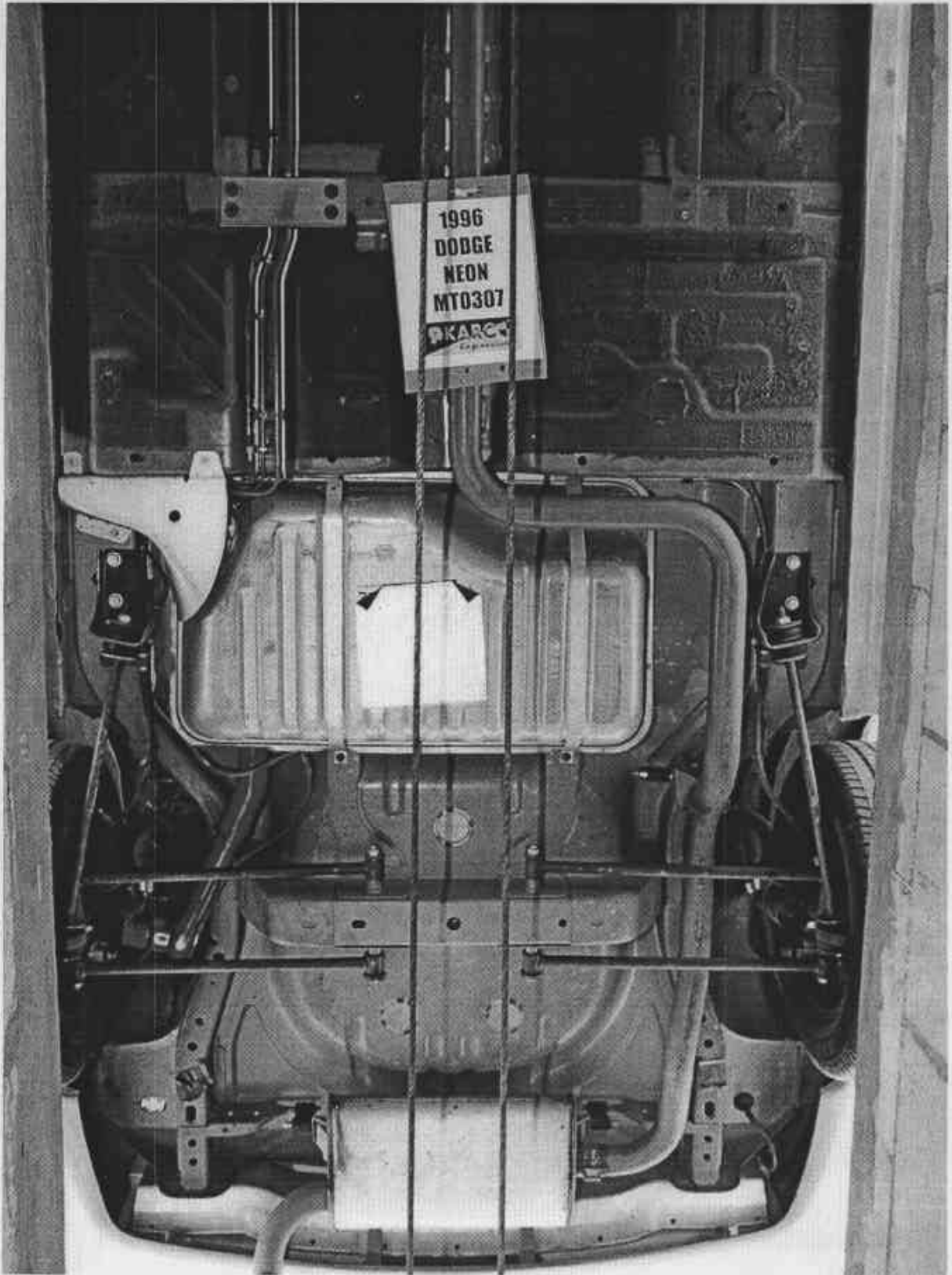


FIGURE A-26. PRETEST REAR UNDERBODY

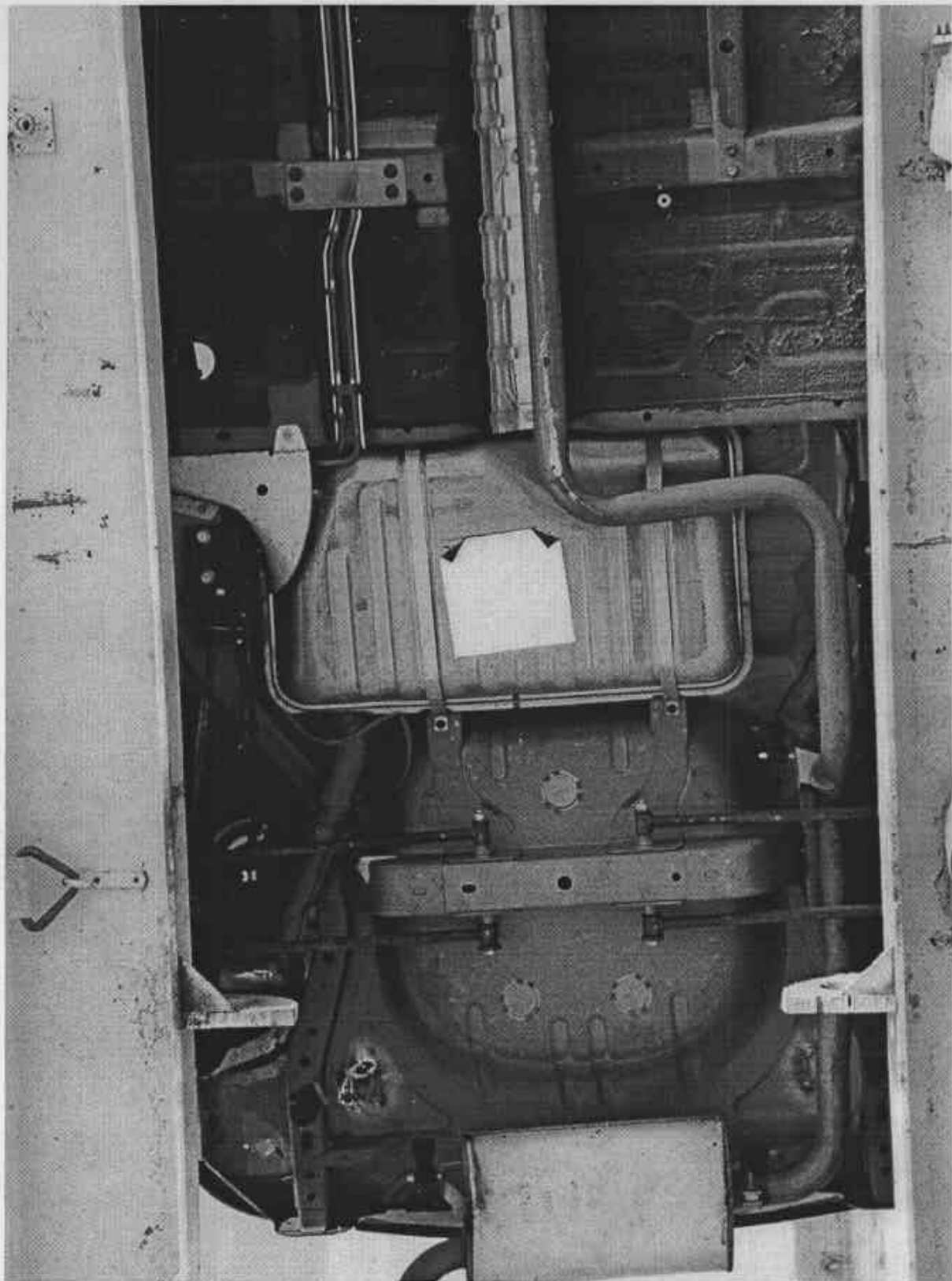


FIGURE A-27. POST TEST REAR UNDERBODY

A-27

KAR-97-R97015-05

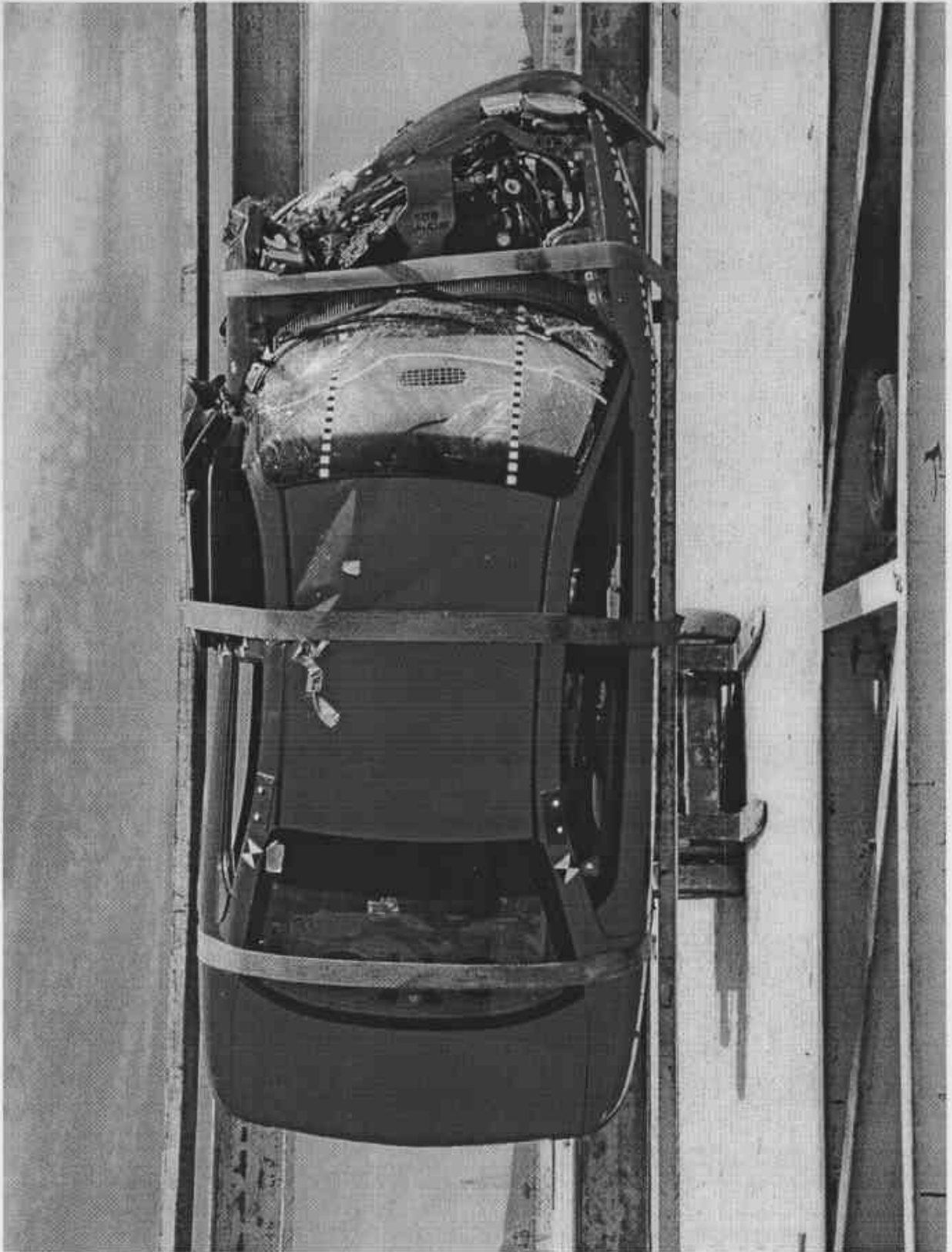


FIGURE A-28. VEHICLE ON ROLLOVER DEVICE

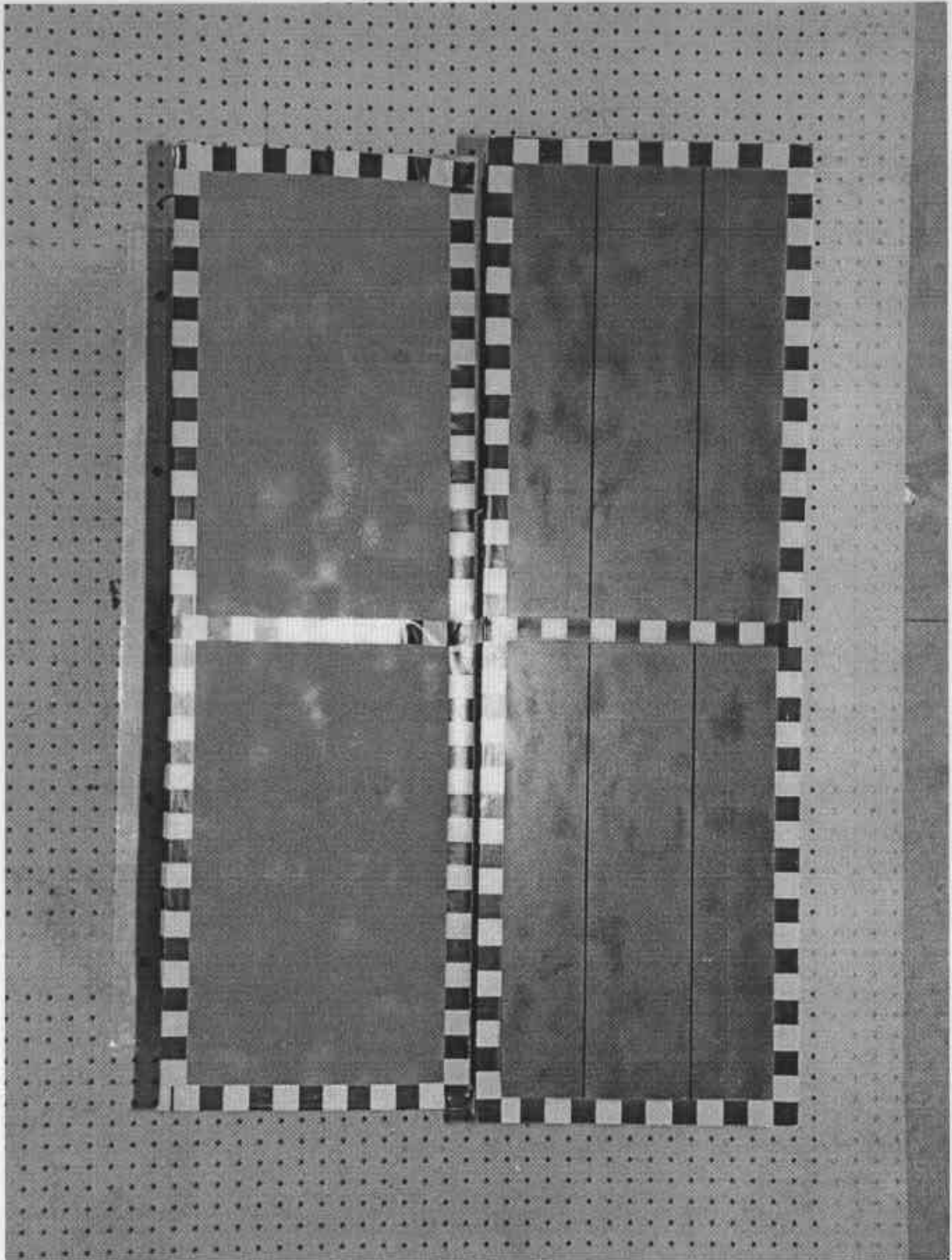


FIGURE A-29. PRETEST BARRIER FRONT VIEW

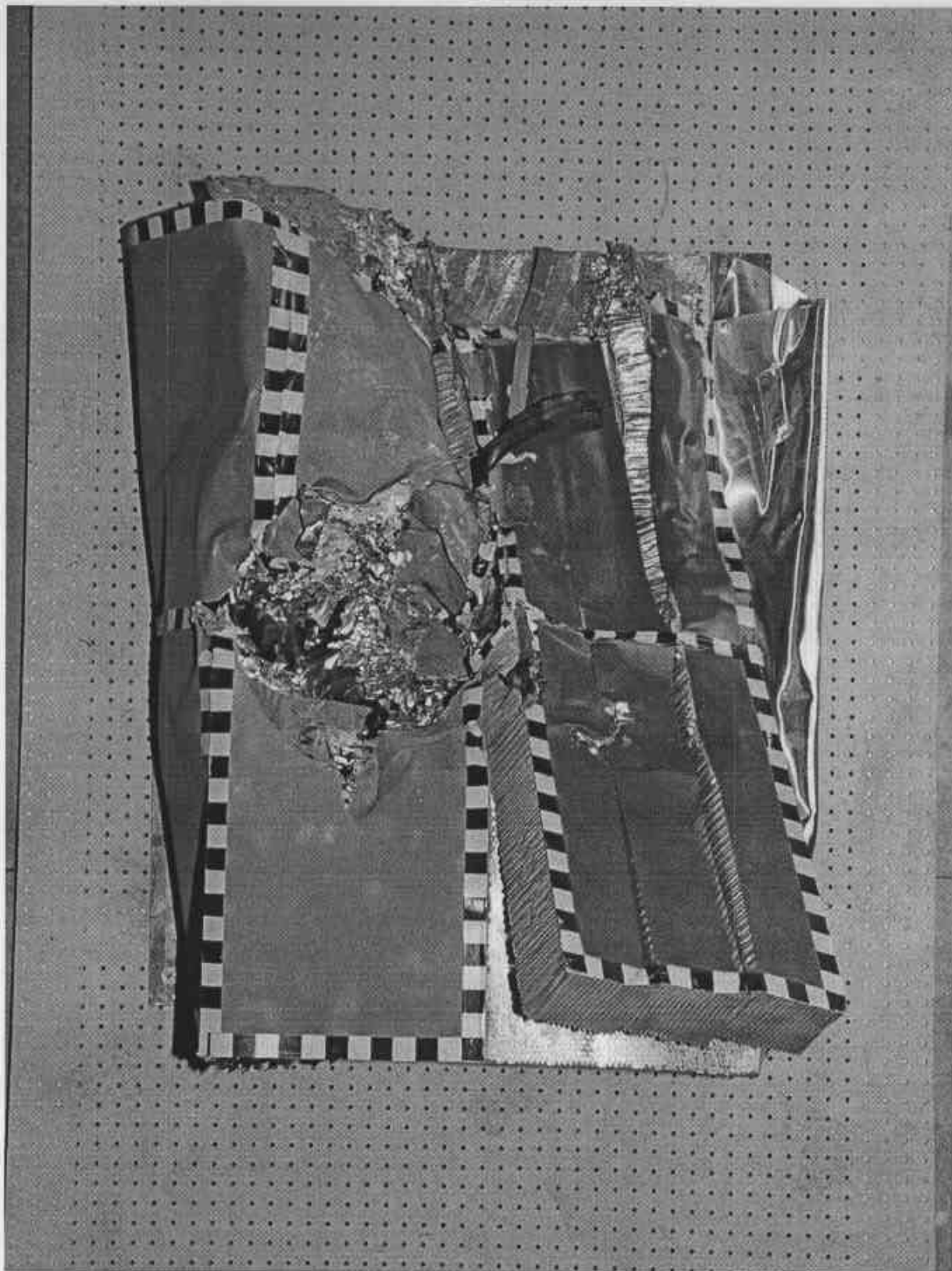


FIGURE A-30. POST TEST BARRIER FRONT VIEW

A-30

KAR-97-R97015-05

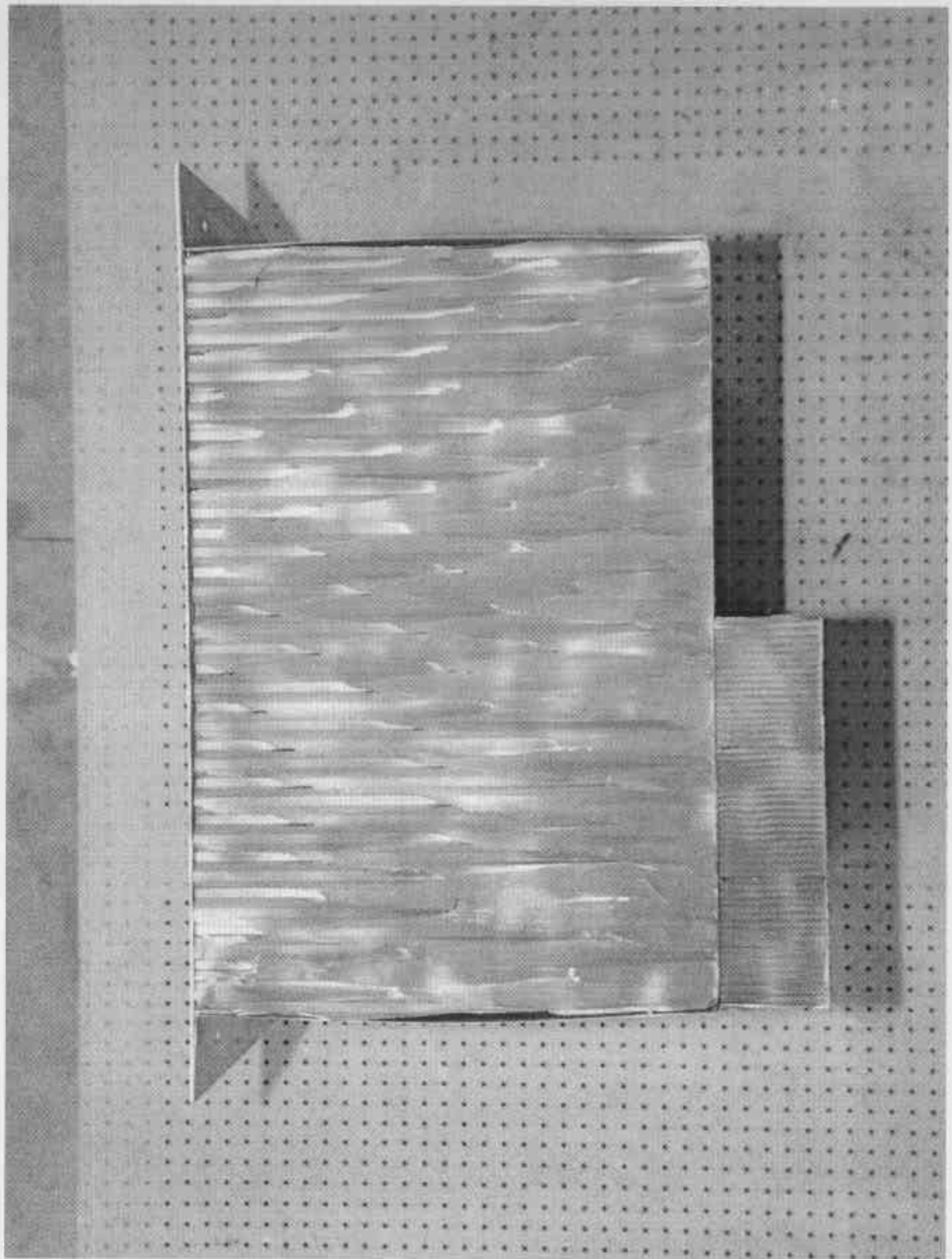


FIGURE A-31. PRE TEST BARRIER LEFT SIDE VIEW

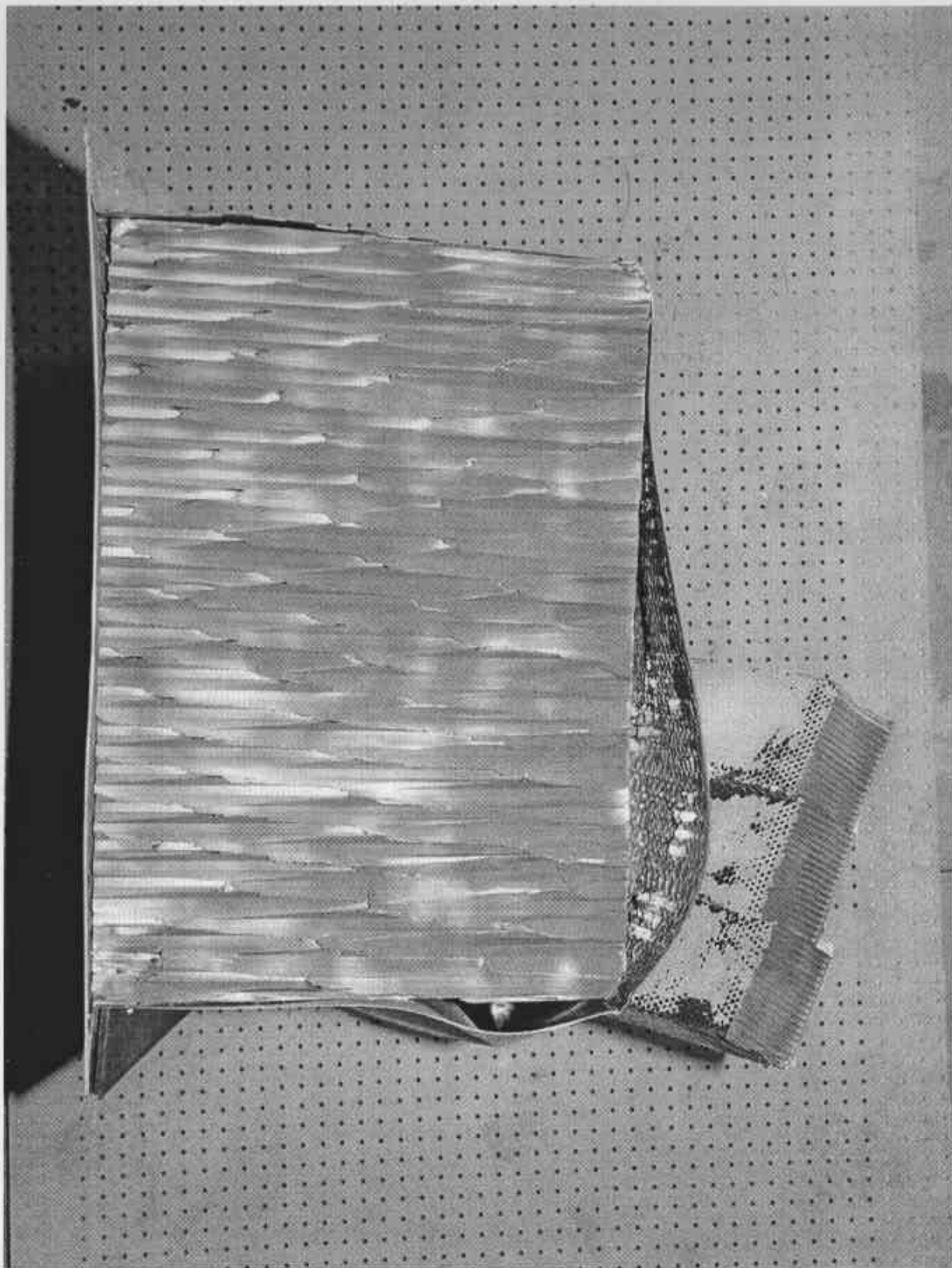


FIGURE A-32. POST TEST BARRIER LEFT SIDE VIEW

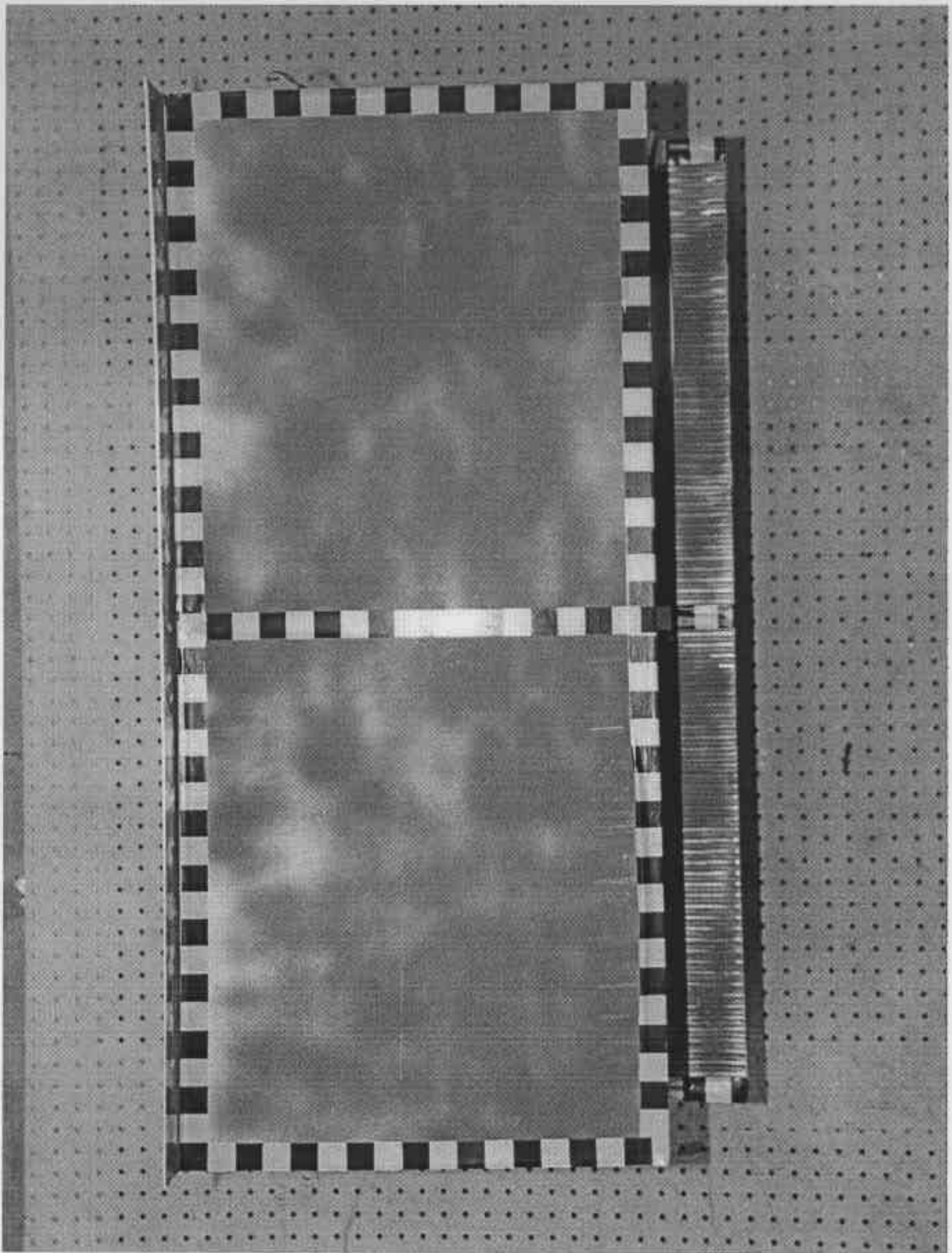


FIGURE A-33. PRETEST BARRIER TOP VIEW

A-33

KAR-97-R97015-05

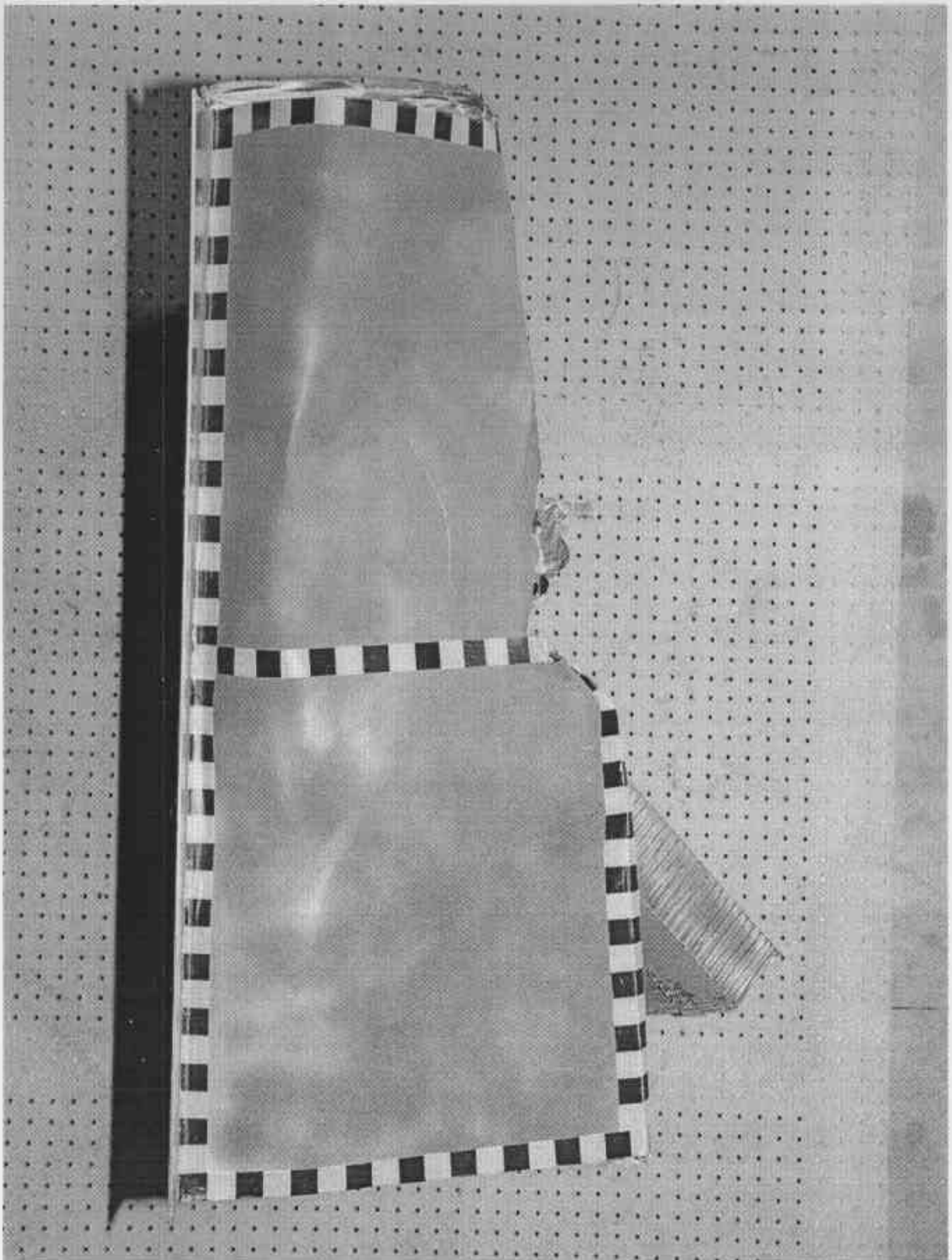


FIGURE A-34. POST TEST BARRIER TOP VIEW

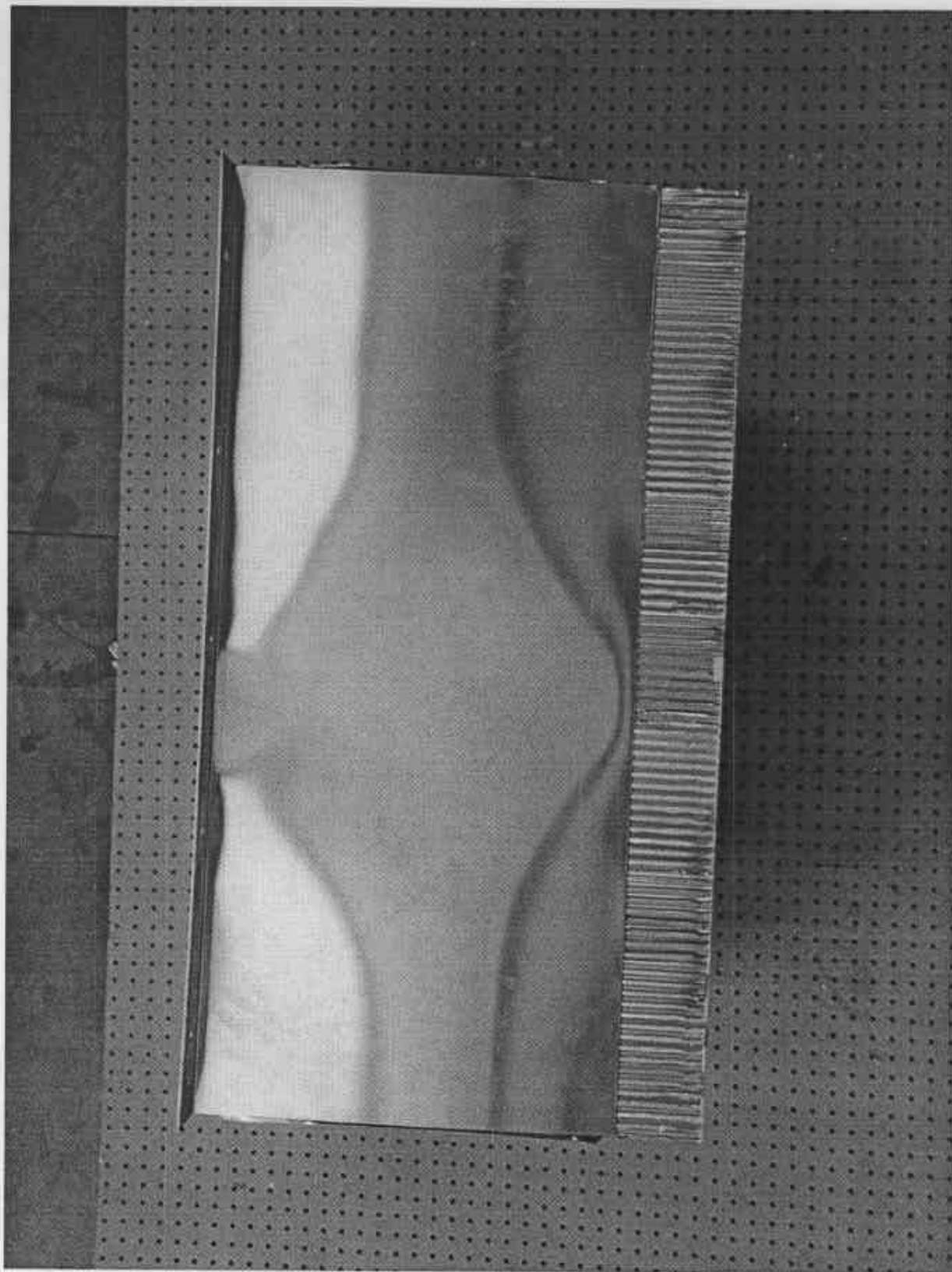


FIGURE A-35. PRETEST BARRIER BOTTOM VIEW

A-35

KAR-97-R97015-05

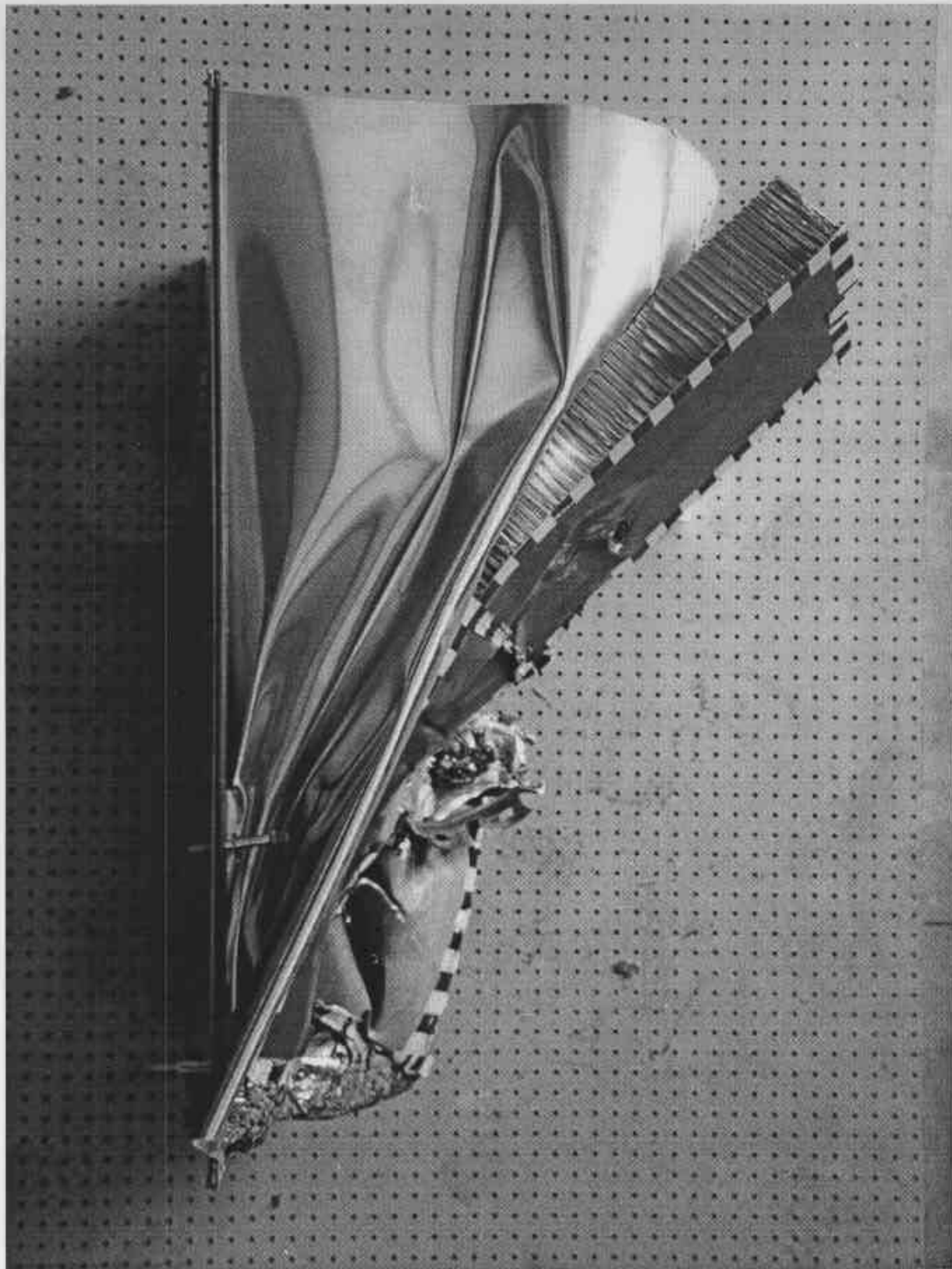


FIGURE A-36. POST TEST BARRIER BOTTOM VIEW

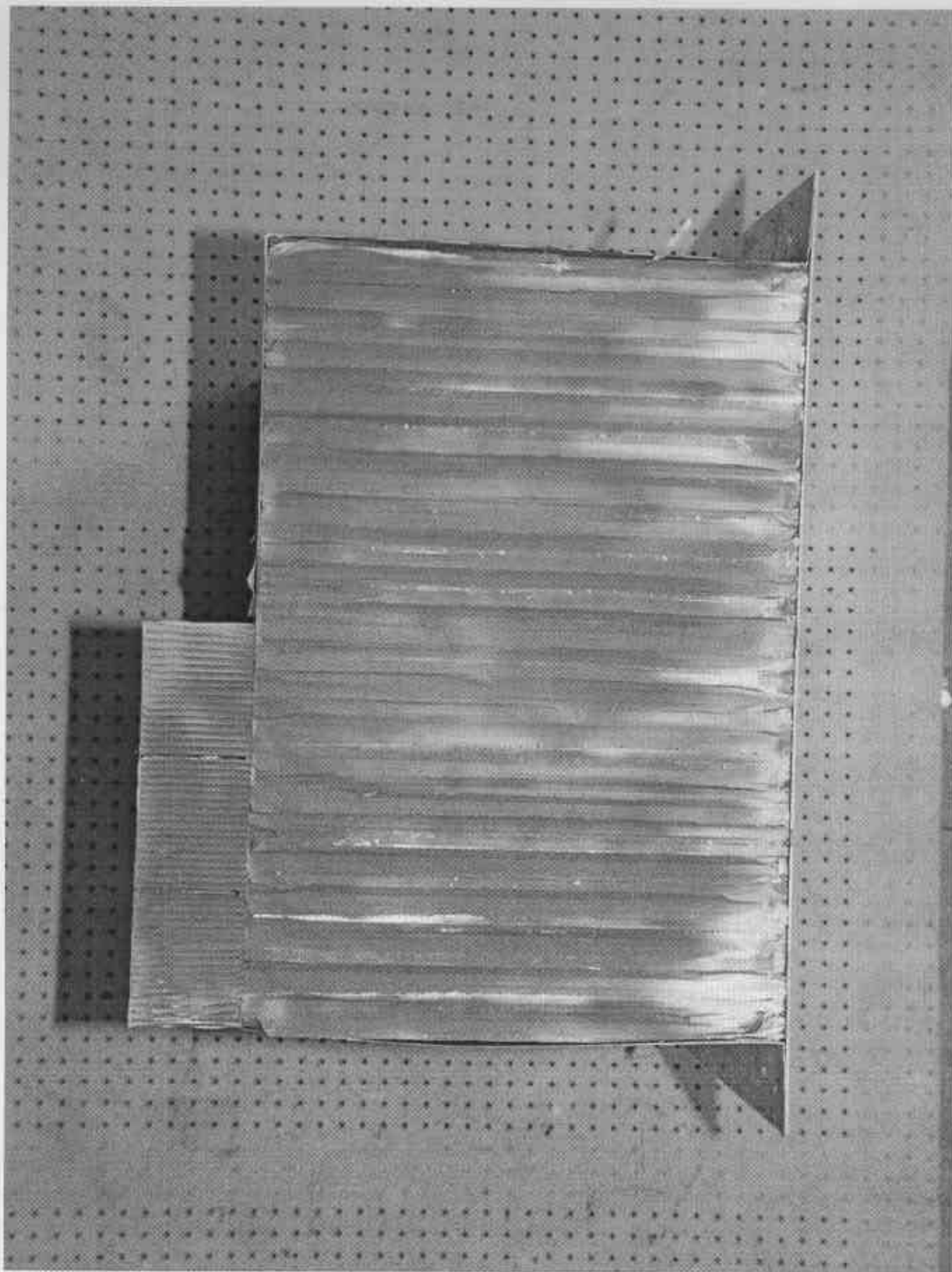


FIGURE A-37. PRETEST BARRIER RIGHT SIDE VIEW

A-37

KAR-97-R97015-05

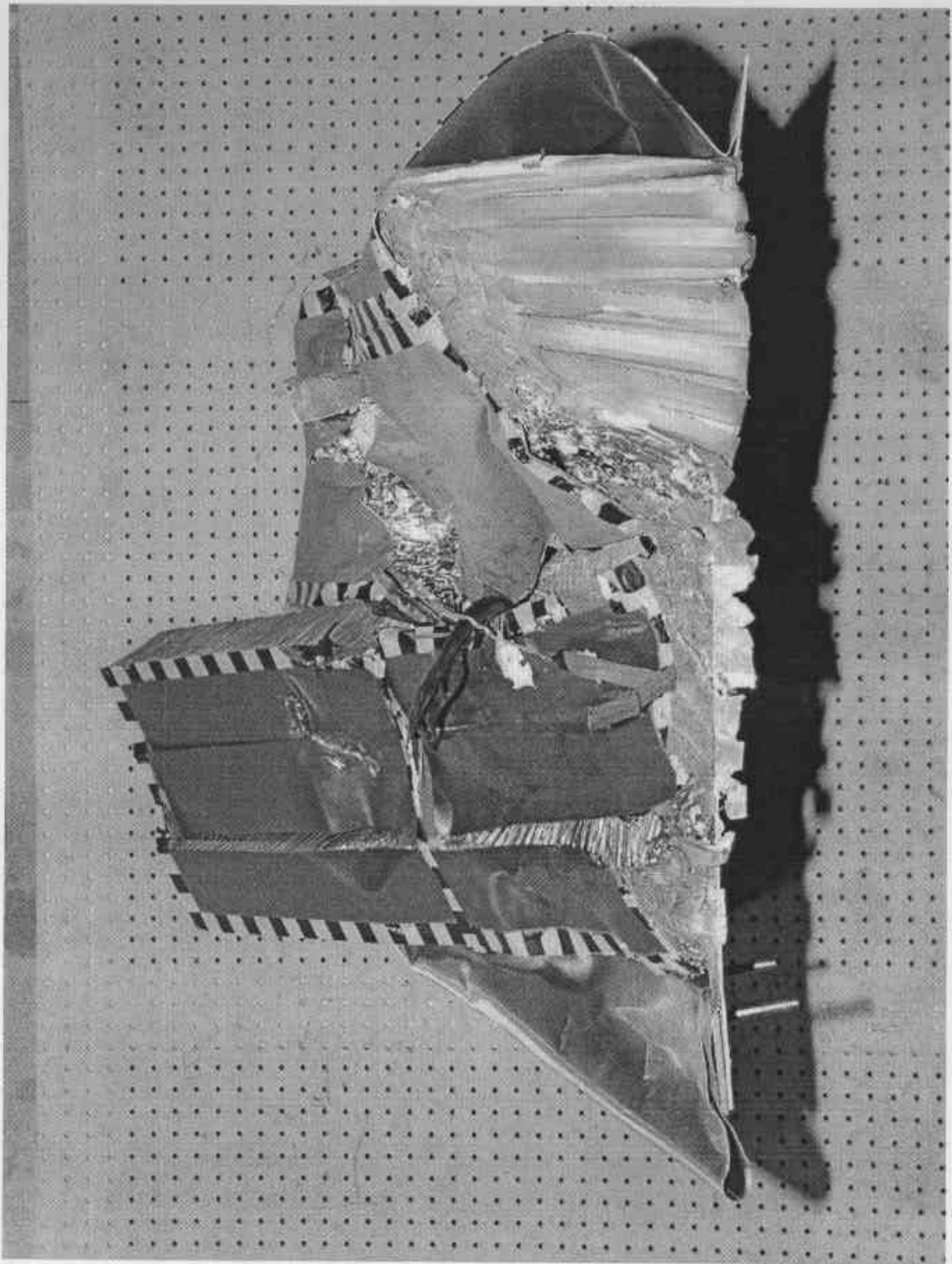


FIGURE A-38. POST TEST BARRIER RIGHT SIDE VIEW



FIGURE A39. PRETEST DRIVER DUMMY (THRU WINDOW)



FIGURE A-40. POST TEST DRIVER DUMMY (THRU WINDOW)



FIGURE A-41. PRETEST DRIVER DUMMY (DOOR OPEN)



FIGURE A-42. POST TEST DRIVER DUMMY (DOOR OPEN)



FIGURE A-43. PRE TEST DRIVER DUMMY (90° TO VEHICLE)



FIGURE A-44. POST TEST DRIVER DUMMY (90° TO VEHICLE)

A-44

KAR-97-R97015-05



FIGURE A-45. PRETEST DRIVER DUMMY FEET

A-45

KAR-97-R97015-05



FIGURE A-46. POST TEST DRIVER DUMMY FEET



FIGURE A-47. PRETEST DRIVER SIDE FLOOR

A-47

KAR-97-R97015



FIGURE A-48.POST TEST DRIVER SIDE FLOOR

A-48

KAR-97-R97015-05

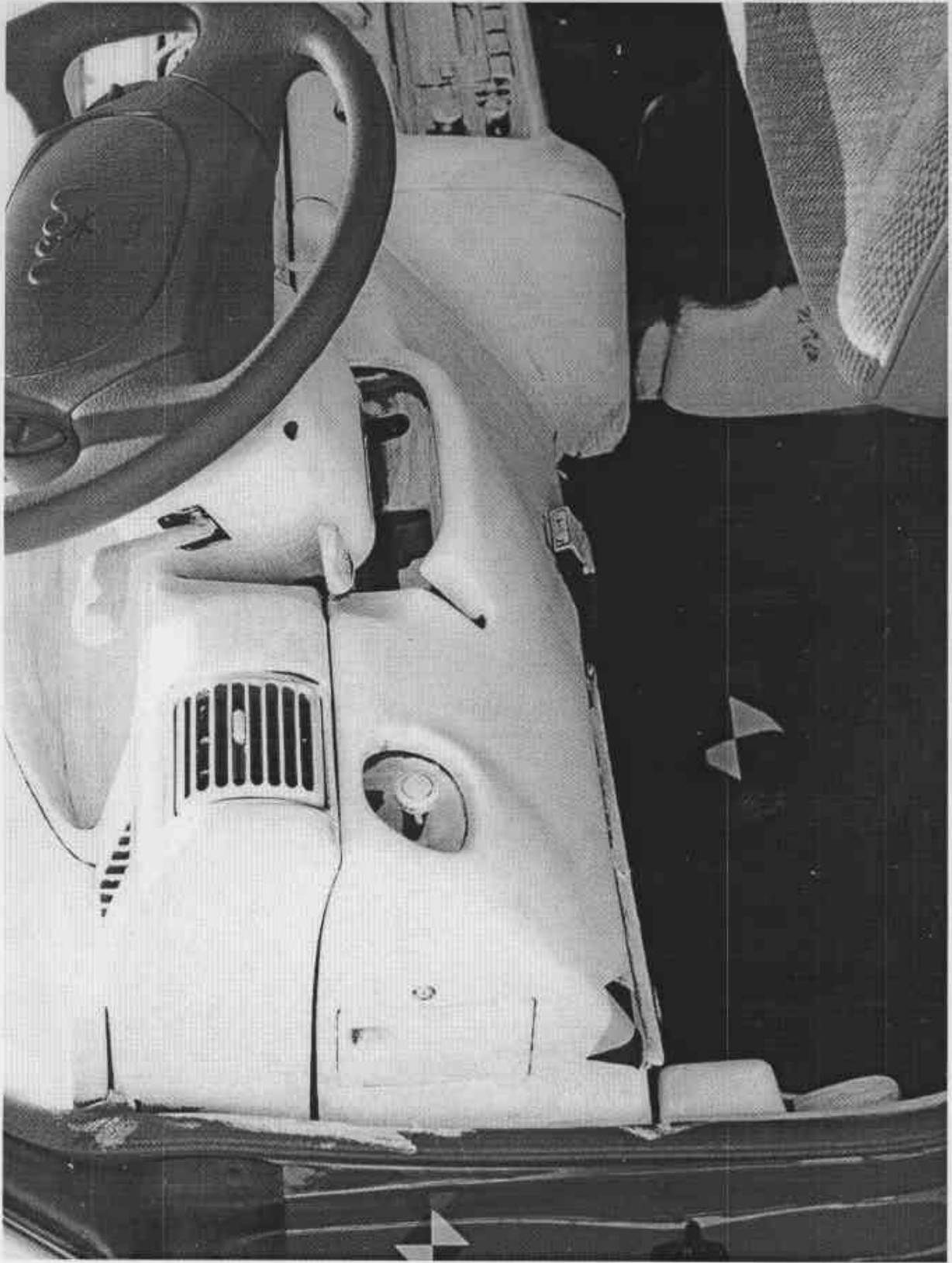


FIGURE A-49. PRETEST DRIVER KNEE BOLSTER

A-49

KAR-97-R97015-05

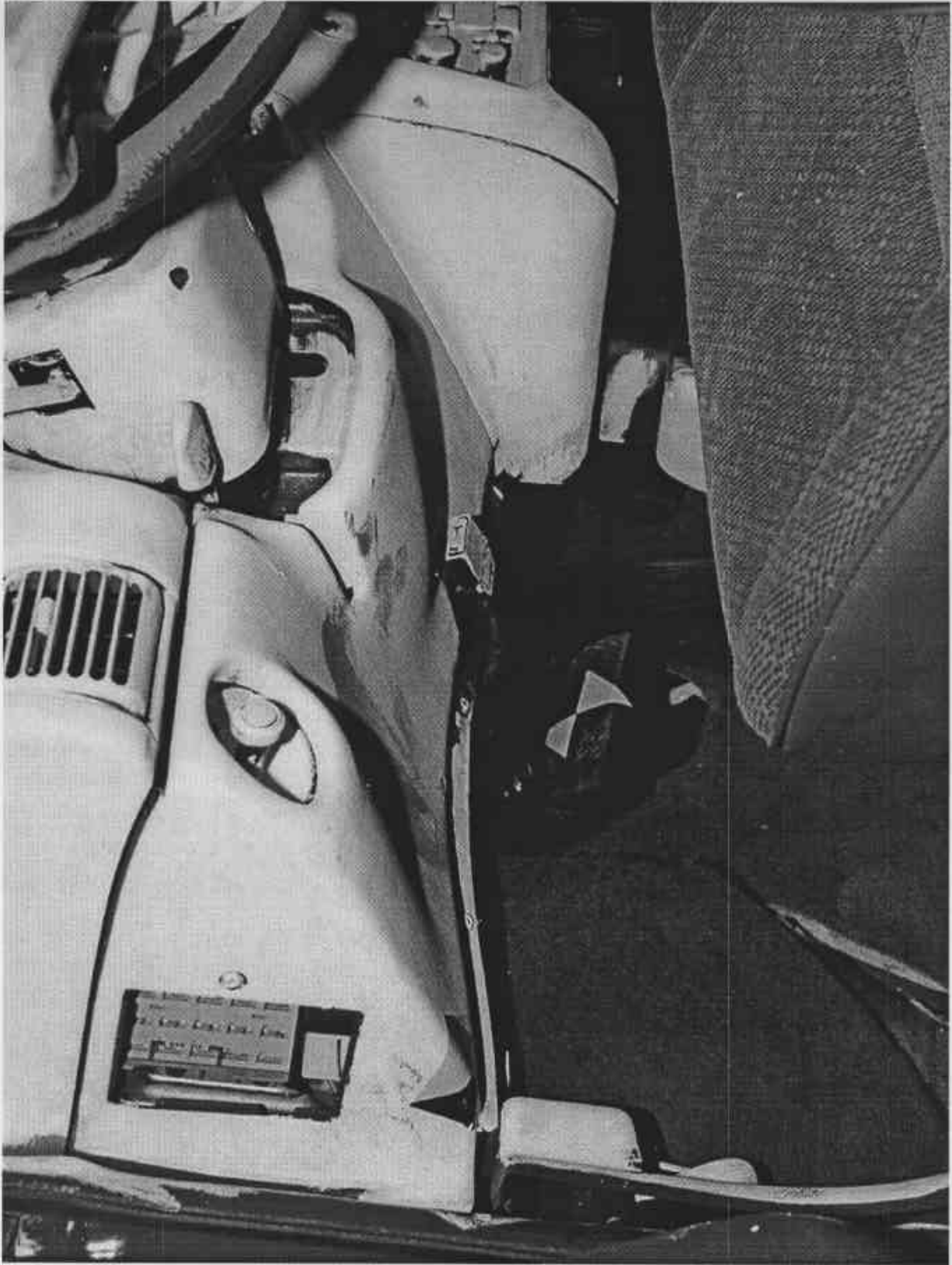


FIGURE A-50. POST TEST DRIVER KNEE BOLSTER AND DUMMY CONTACT

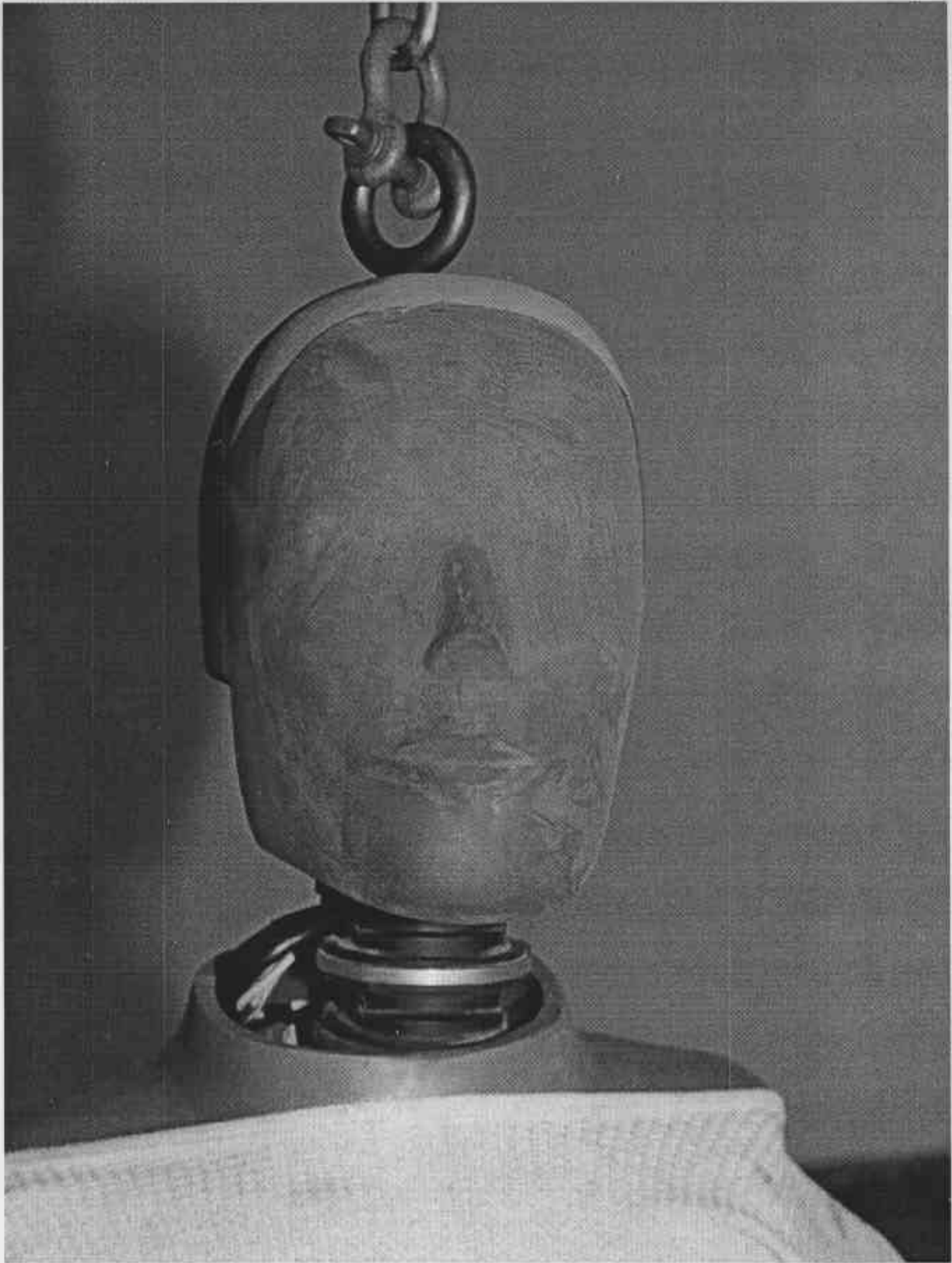


FIGURE A-51. DRIVER HEAD POST TEST

A-51

KAR-97-R97015-05

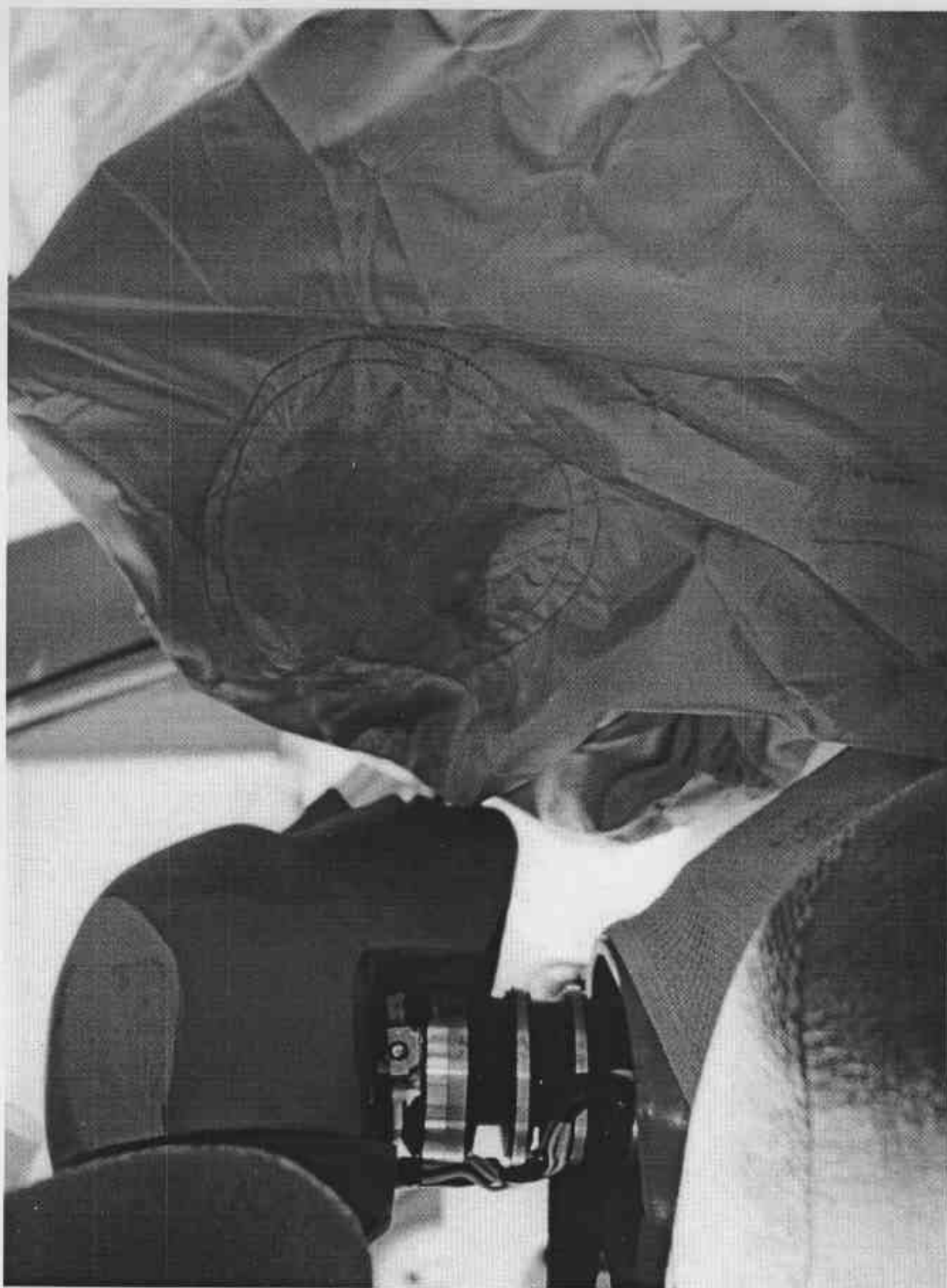


FIGURE A-52. DRIVER DUMMY HEAD CONTACT POINT

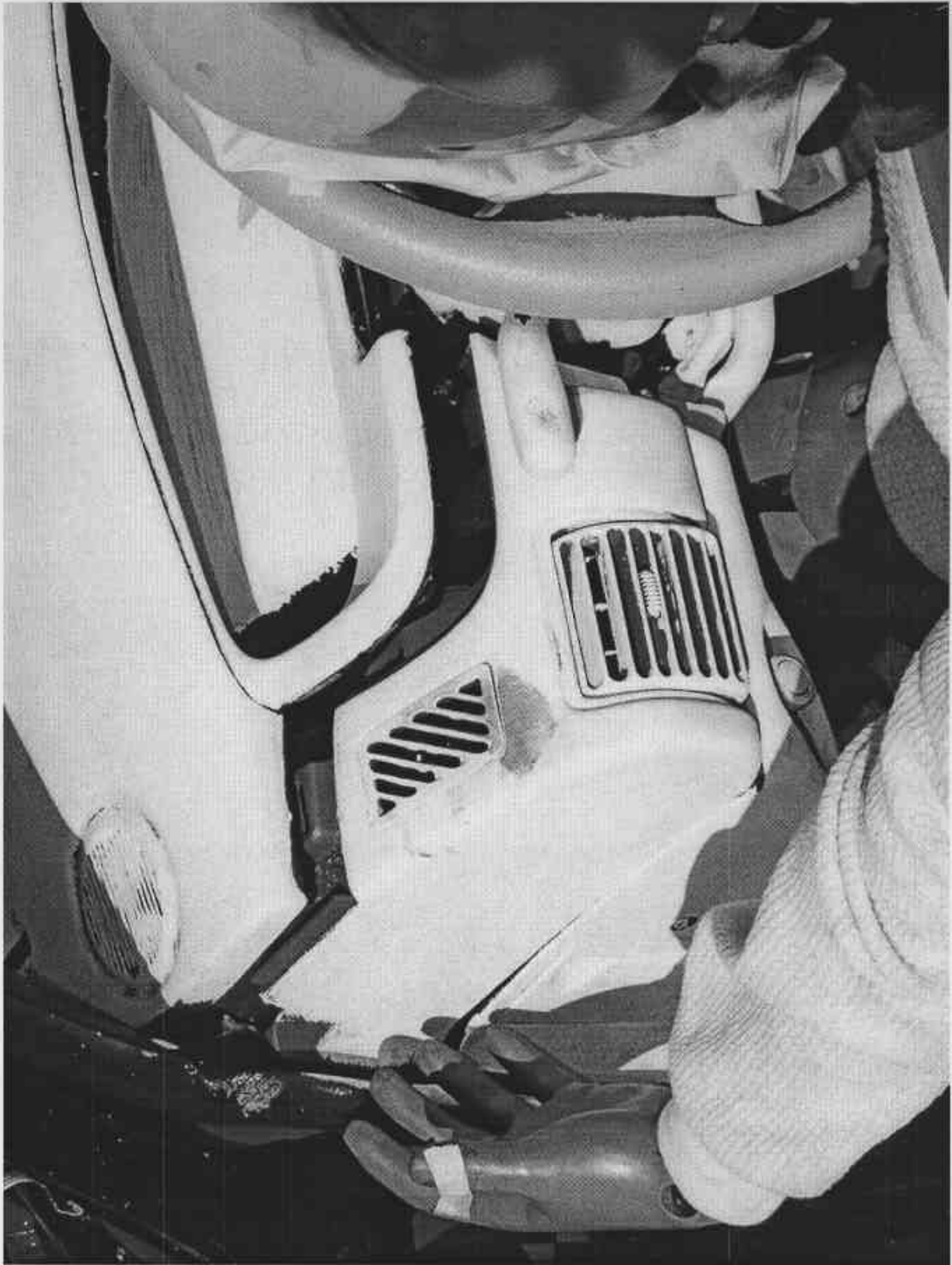


FIGURE A-53. DRIVER DUMMY HEAD CONTACT POINT



FIGURE A-54. PRETEST PASSENGER DUMMY (THRU WINDOW)



FIGURE A-55. POST TEST PASSENGER DUMMY (THRU WINDOW)

A-55

KAR-97-R97015-05



FIGURE A-56. PRETEST PASSENGER DUMMY (DOOR OPEN)

A-56

KAR-97-R97015-05



FIGURE A-57. POST TEST PASSENGER DUMMY (DOOR OPEN)

A-57

KAR-97-R97015-05

PHOTOGRAPH
NOT AVAILABLE

FIGURE A-58. PRETEST PASSENGER DUMMY (90° TO VEHICLE)



FIGURE A-59. POST TEST PASSENGER DUMMY (90° TO VEHICLE)

A-59

KAR-97-R97015-05

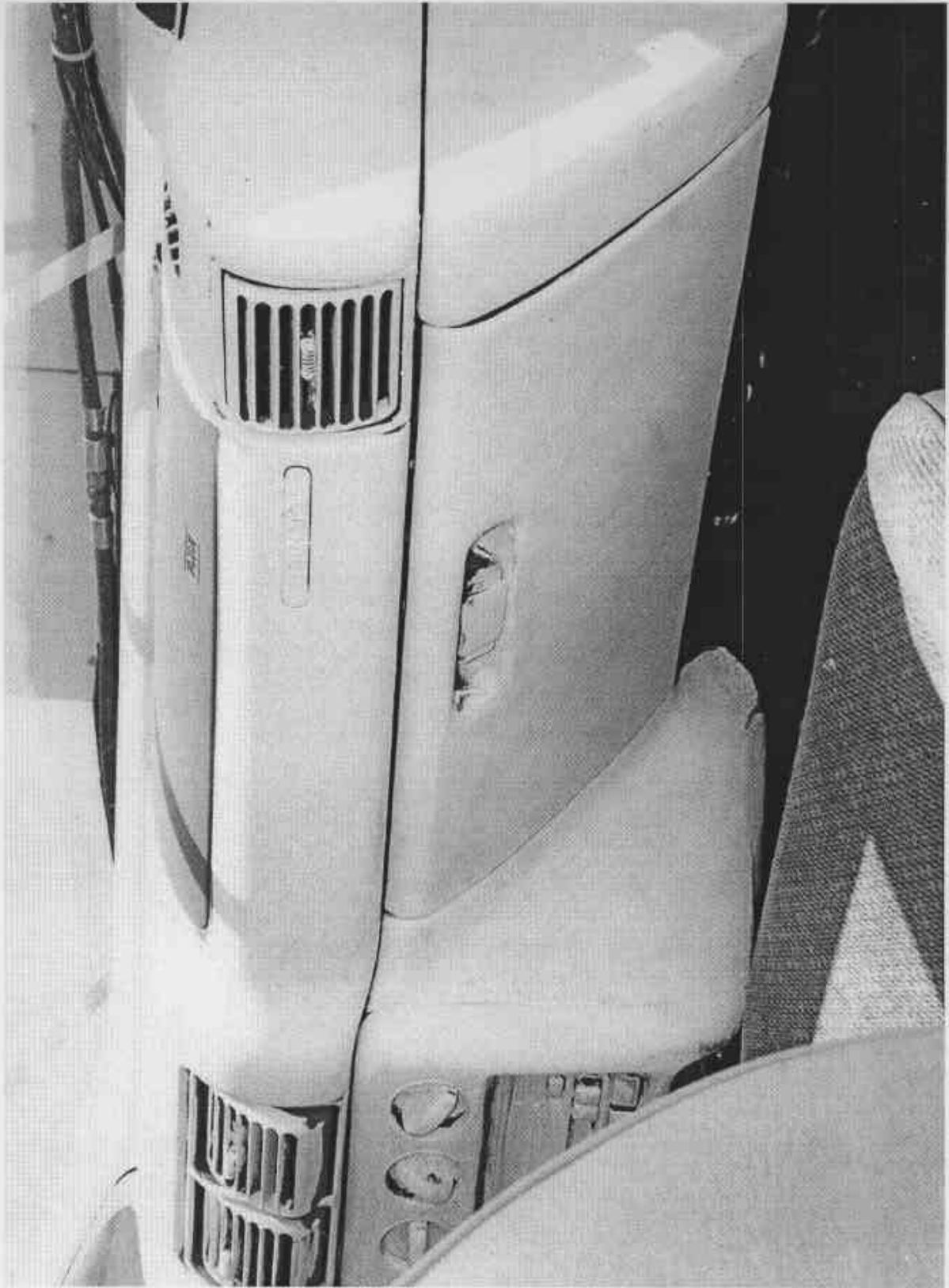


FIGURE A-60.PRETEST PASSENGER KNEE BOLSTER

A-60

KAR-97-R97015-05

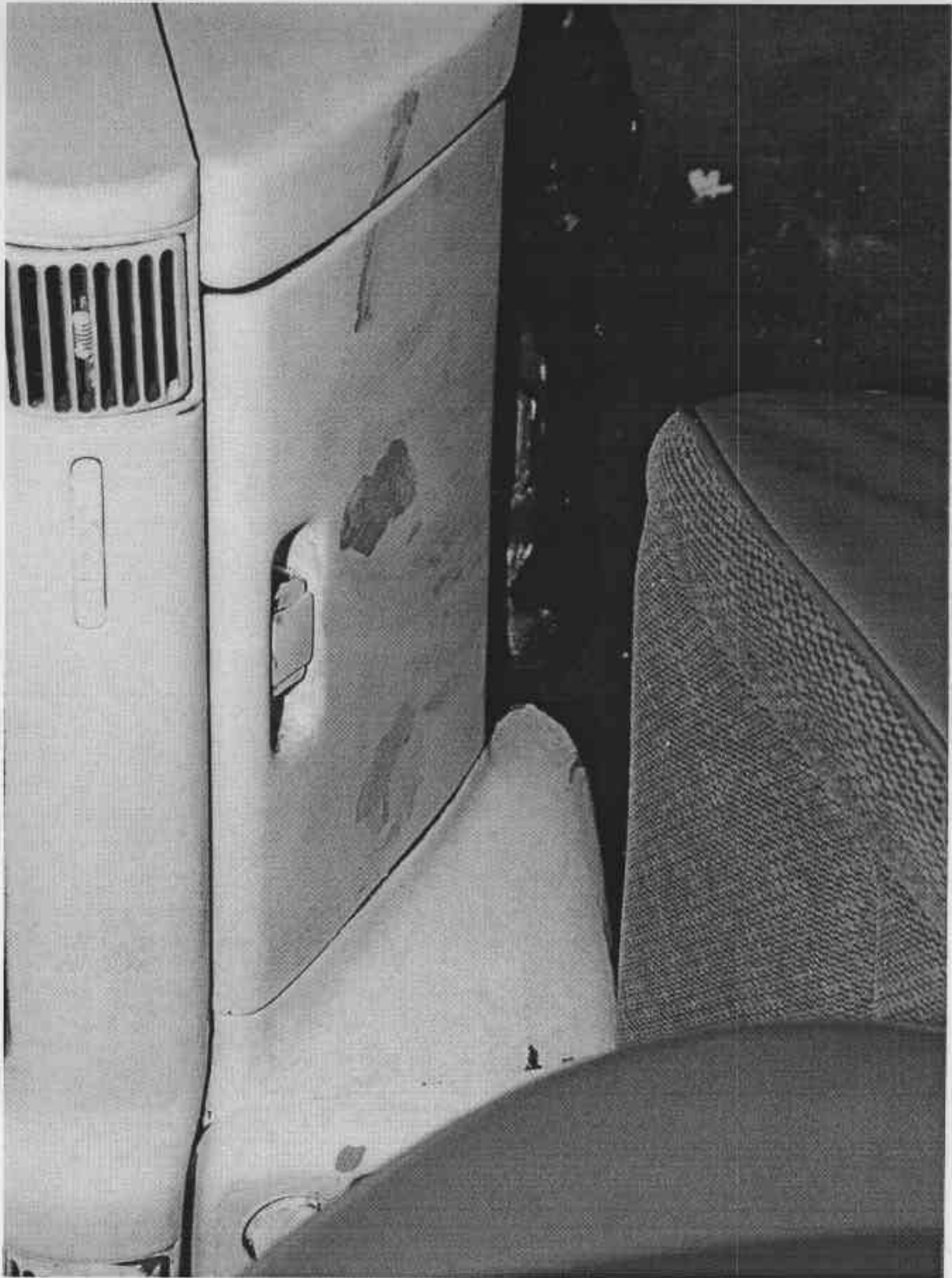


FIGURE A-61. POST TEST PASSENGER DUMMY KNEE BOLSTER AND DUMMY CONTACT

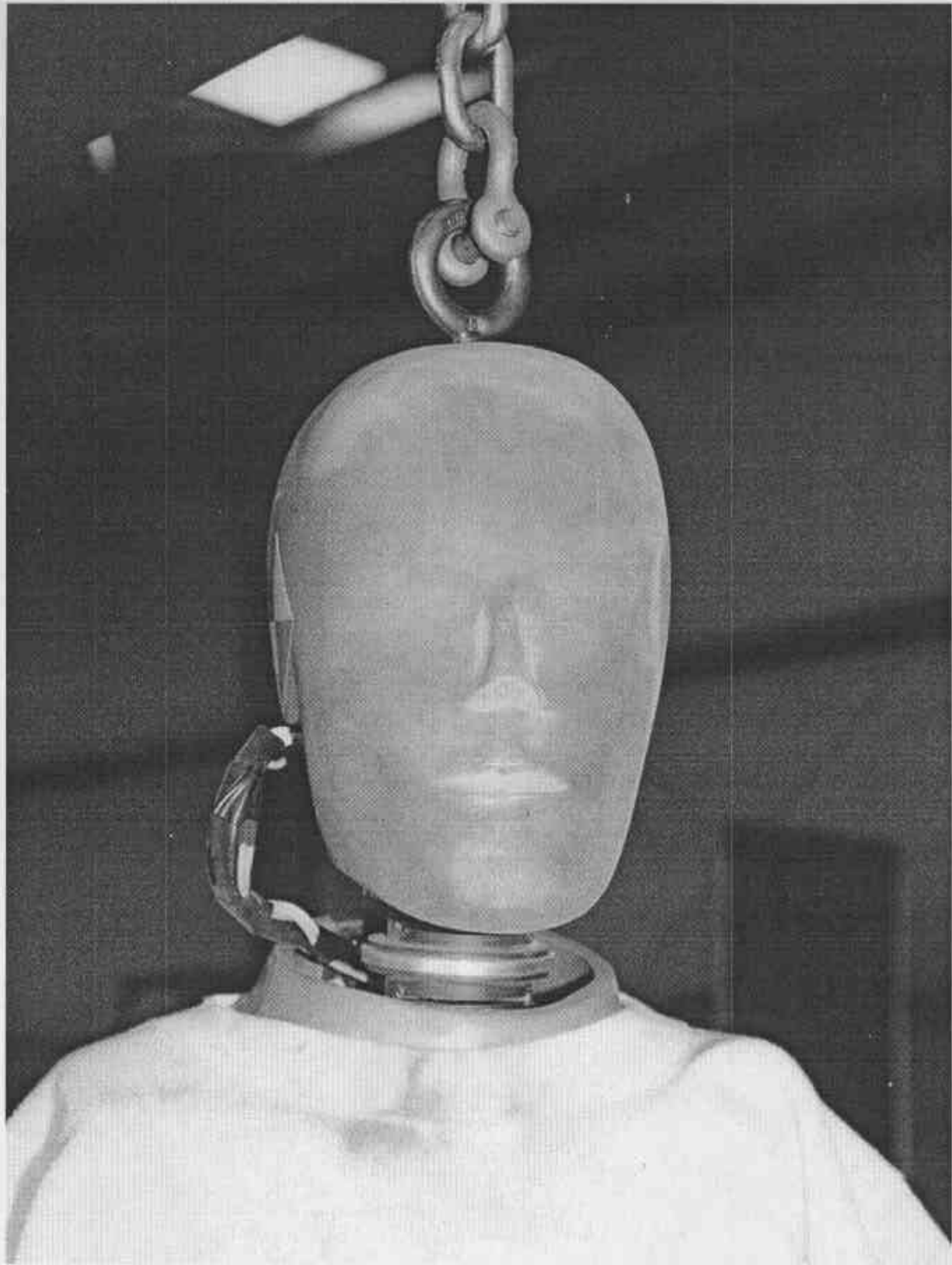


FIGURE A-62.PASSENGER HEAD POST TEST

A-62

KAR-97-R97015-05

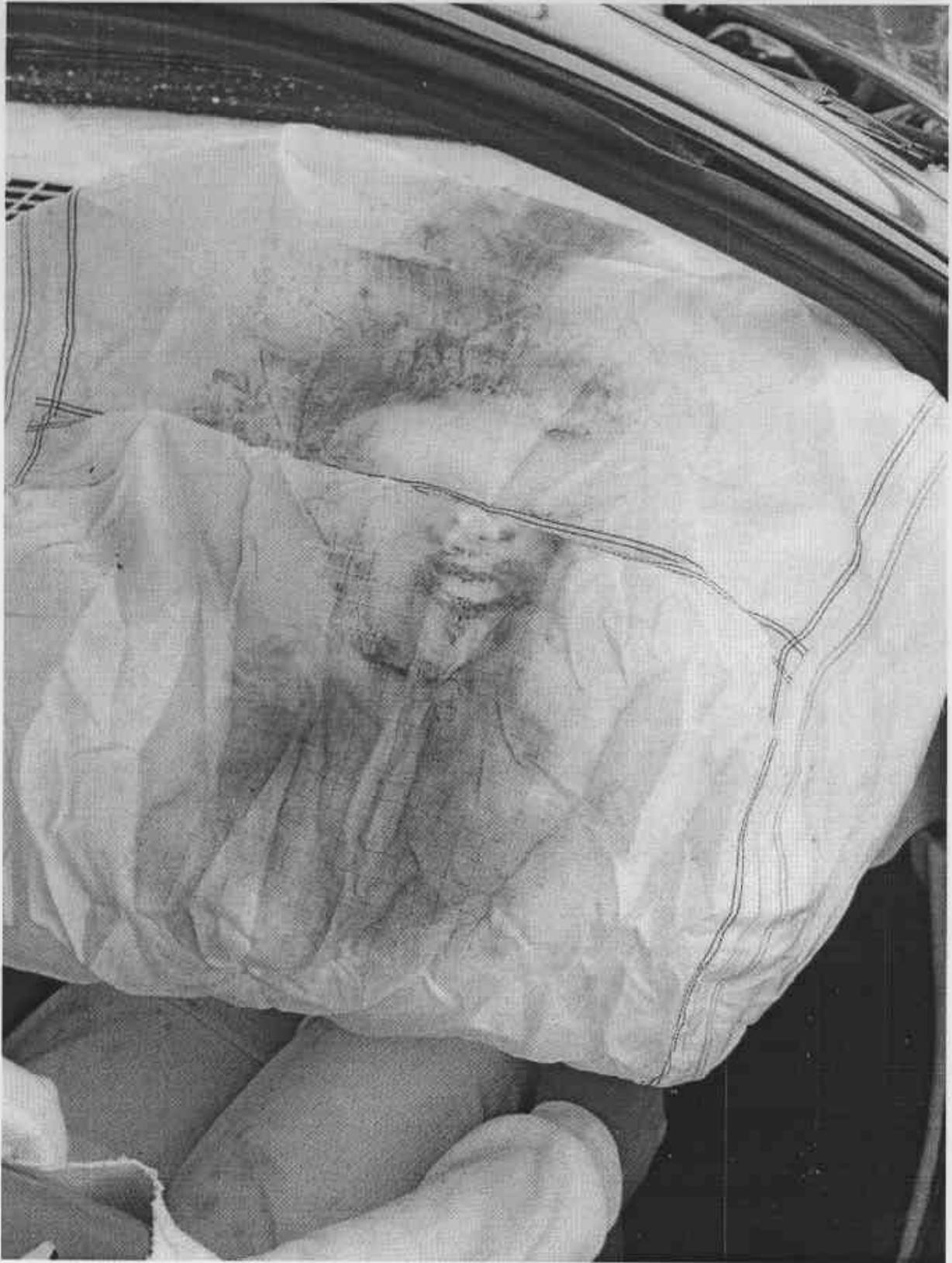


FIGURE A-63. PASSENGER HEAD CONTACT POINT

A-63

KAR-97-R97015-05

APPENDIX B
DUMMY, VEHICLE AND RESPONSE DATA TRACES

LIST OF DATA PLOTS

Data Plot		Page
B-1	Driver Head Primary X	B-1
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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
B-15	Driver Chest Primary X	B-15
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 Primary Resultant	B-20
B-21	Driver Chest Redundant X	B-21
B-22	Driver Chest Redundant X Velocity	B-22
B-23	Driver Chest Redundant X Displacement	B-23
B-24	Driver Chest Redundant Y	B-24
B-25	Driver Chest Redundant Z	B-25
B-26	Driver Chest Redundant Resultant	B-26
B-27	Driver Chest Displacement X	B-27
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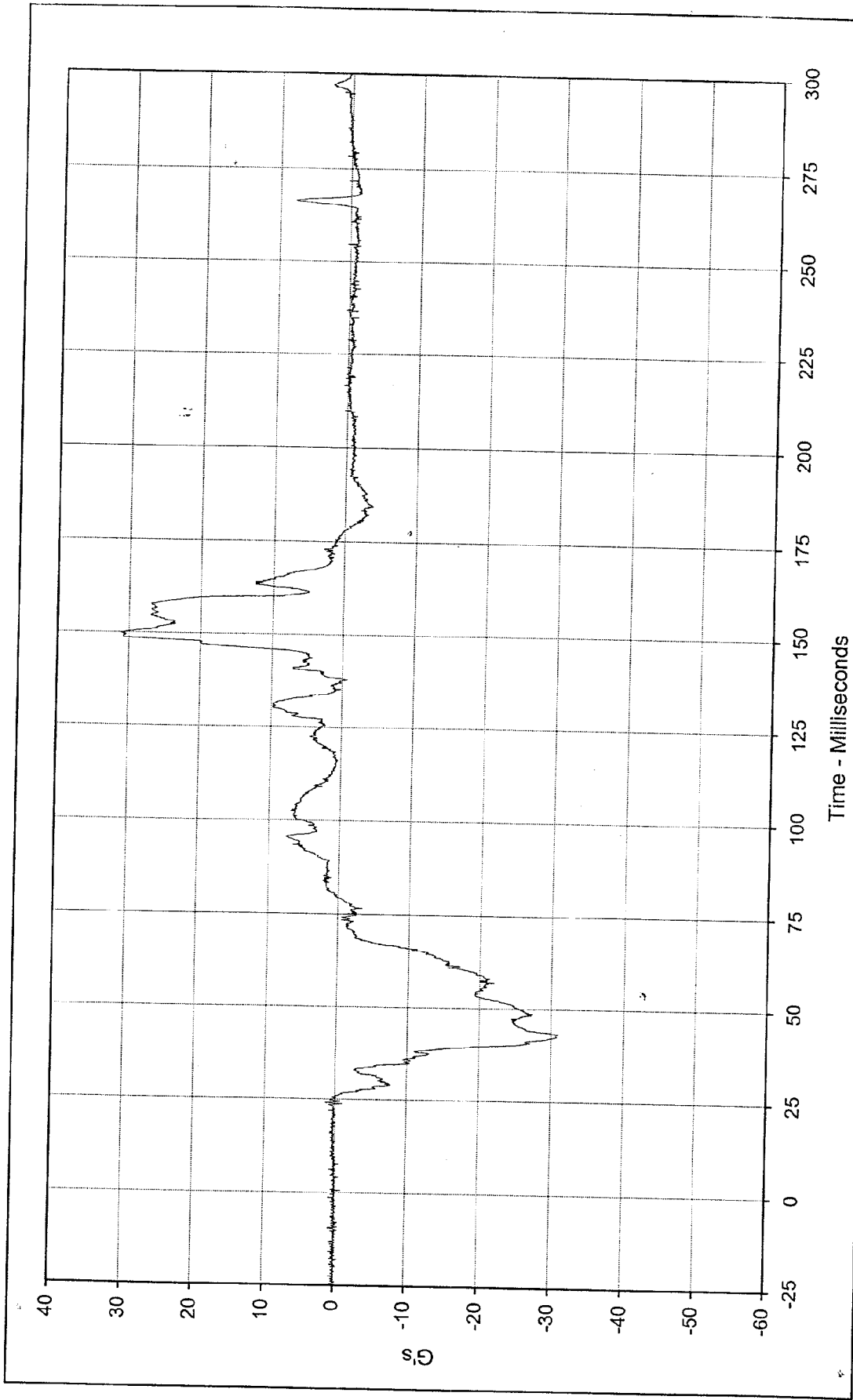
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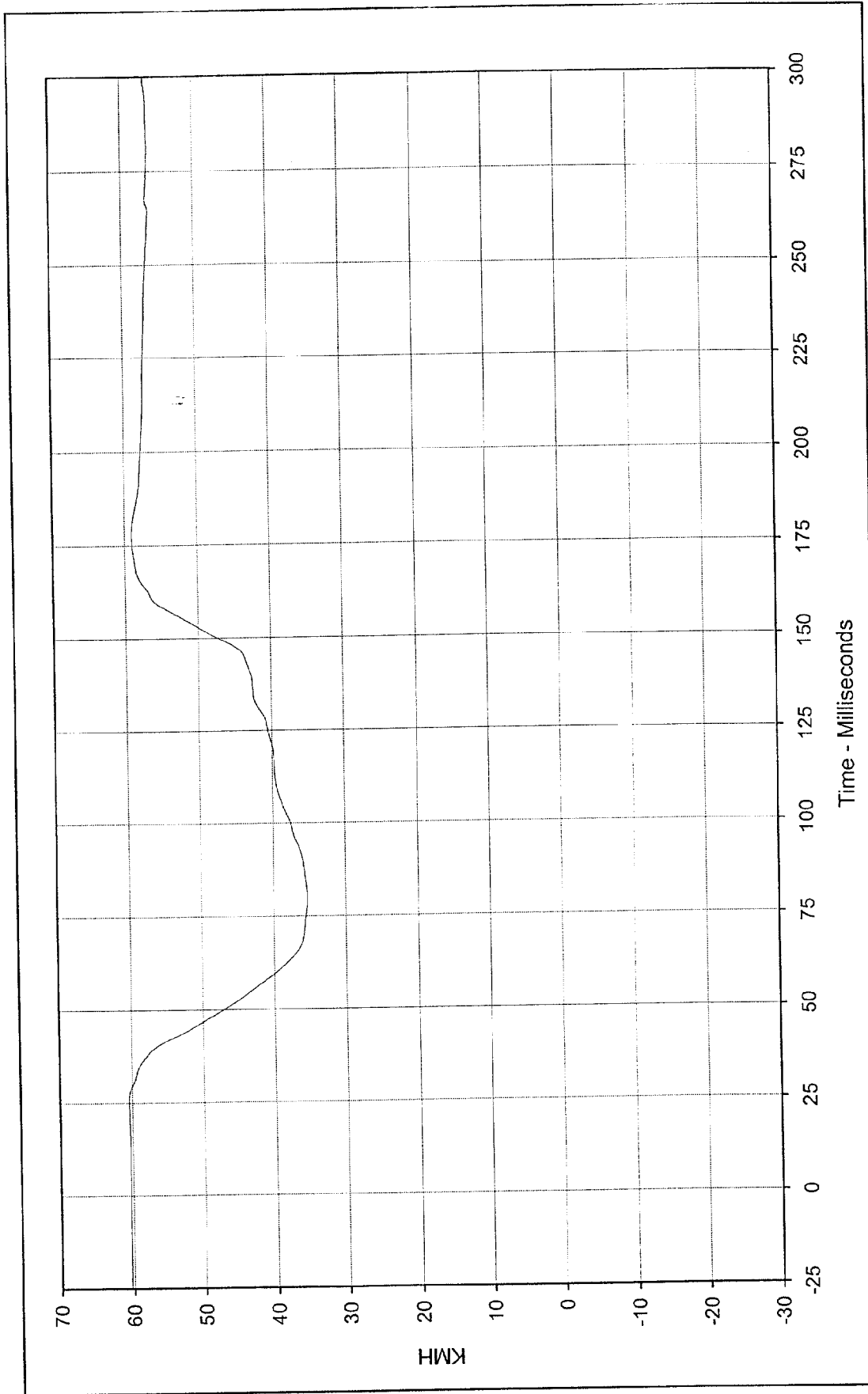
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Curve Description: Driver Head Primary X
 Maximum Value: 31.1 at 149.8 Milliseconds
 Minimum Value: -31.0 at 43.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-001

Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan





Curve Description: Driver Head Primary X Velocity Testing Program 1997 NHTSA 40% Offset Impact (Female)

Maximum Value: 60.5 at 25.7 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan

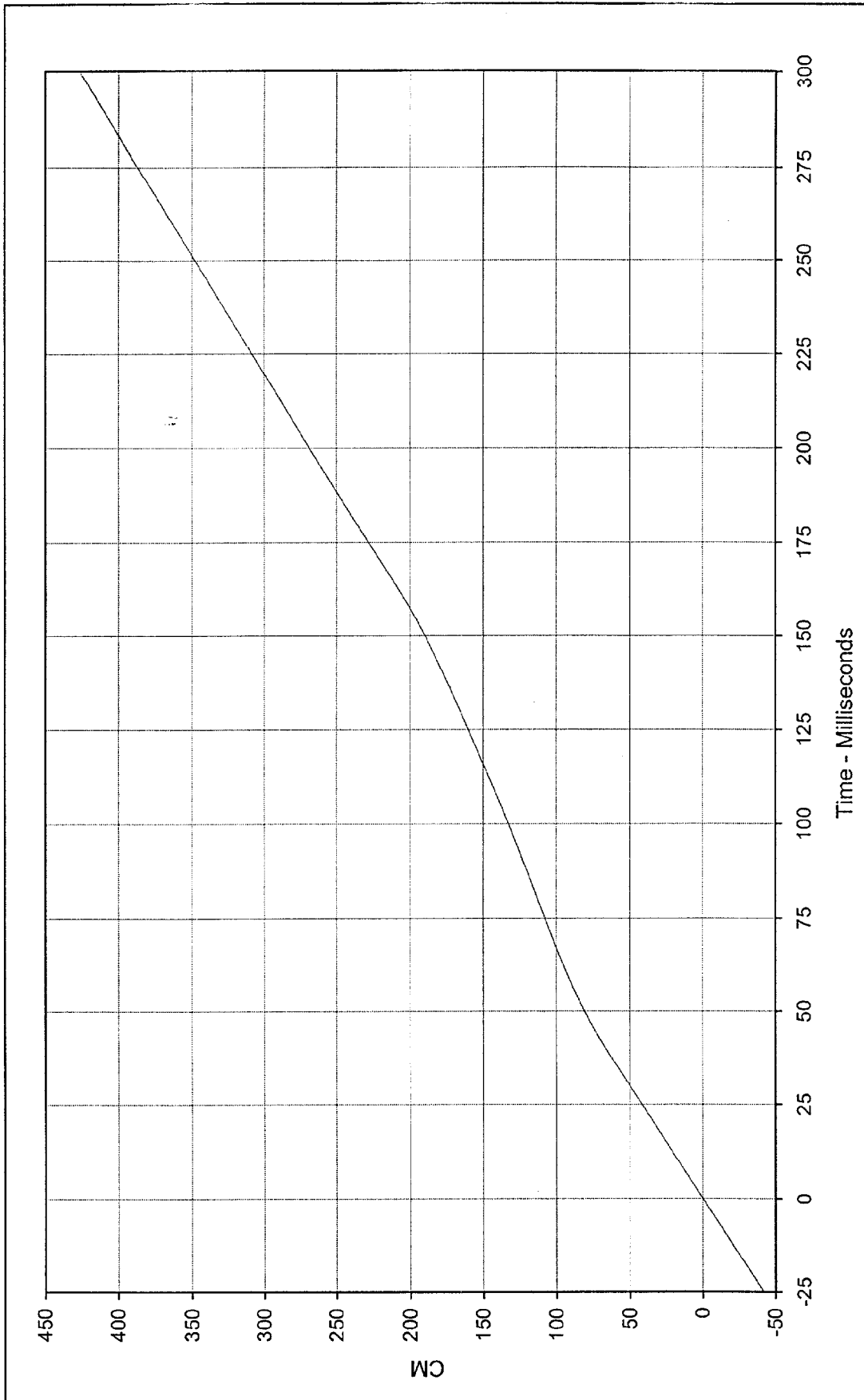
Minimum Value: 35.3 at 79.4 Milliseconds

SAE Filter Class: 180

Date of Test: 8/21/97

Curve Number: IN1-001

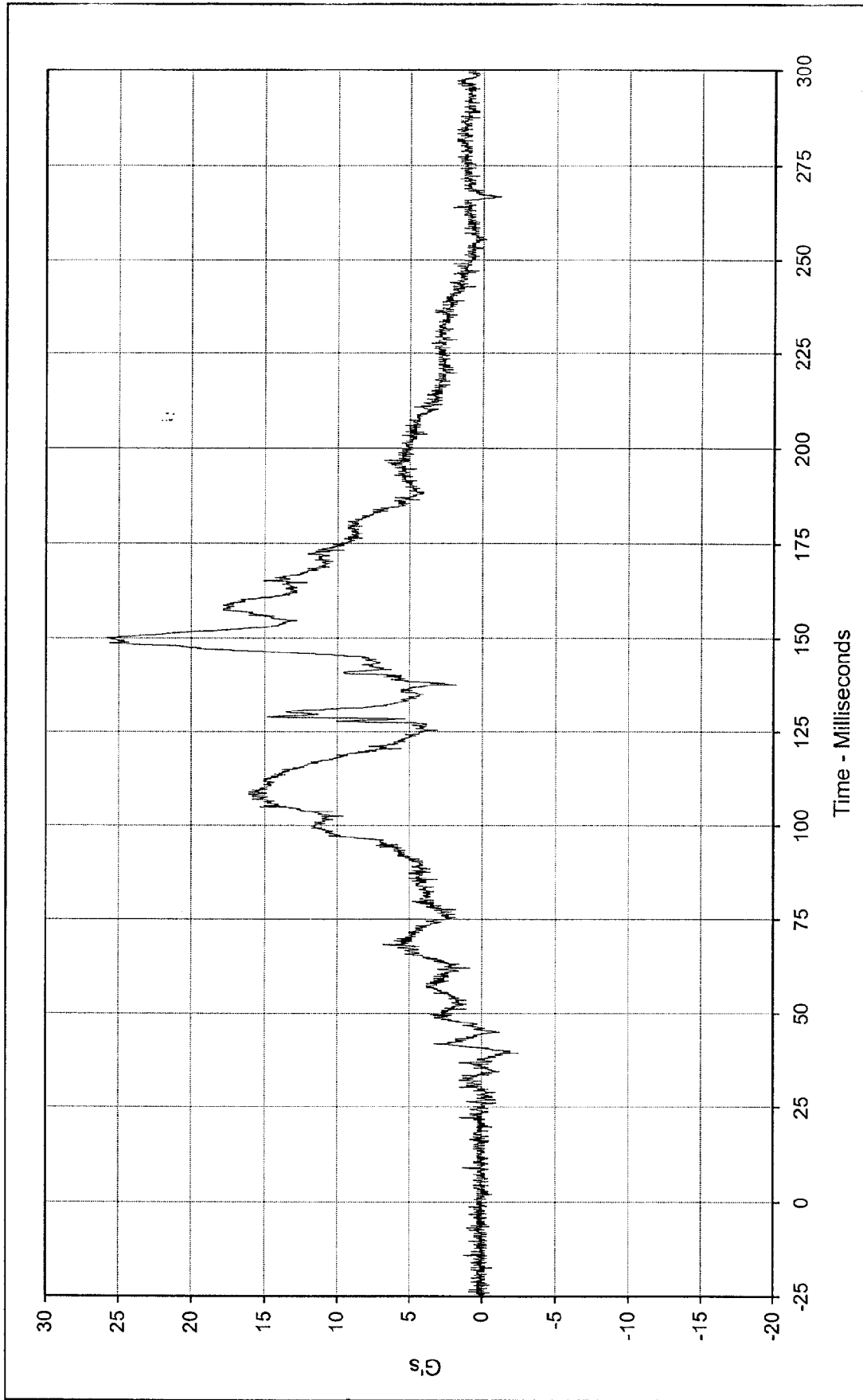




Curve Description: Driver Head Primary X Displ. Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 426.1 at 299.9 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN2-001





Curve Description: Driver Head Primary Y Testing Program: 1997 NHTSA 40% Offset Impact (Female)

Maximum Value: 25.8 at 150.0 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan

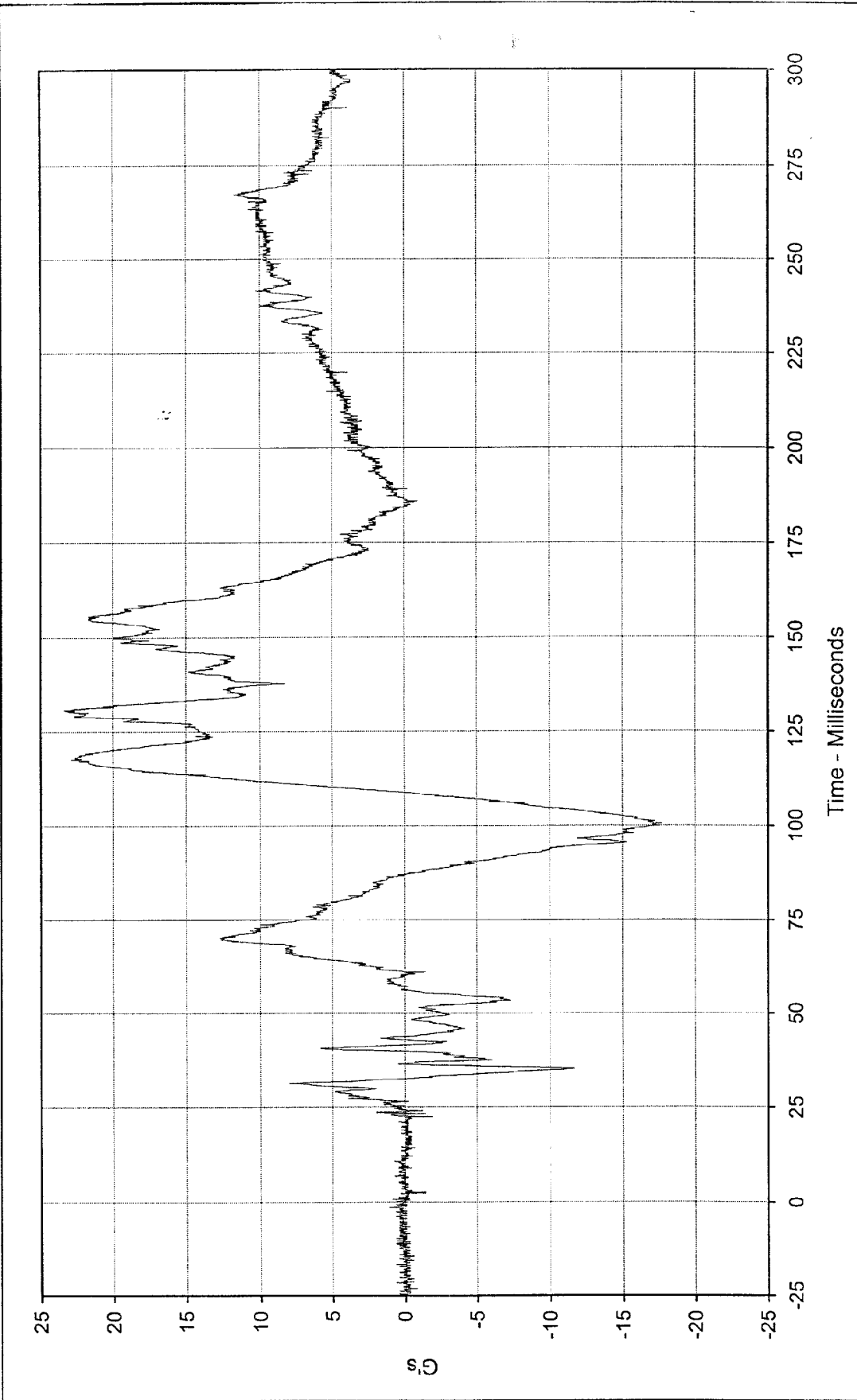
Minimum Value: -2.5 at 39.4 Milliseconds

SAE Filter Class: 1000

Date of Test: 8/21/97

Curve Number: FIL-002

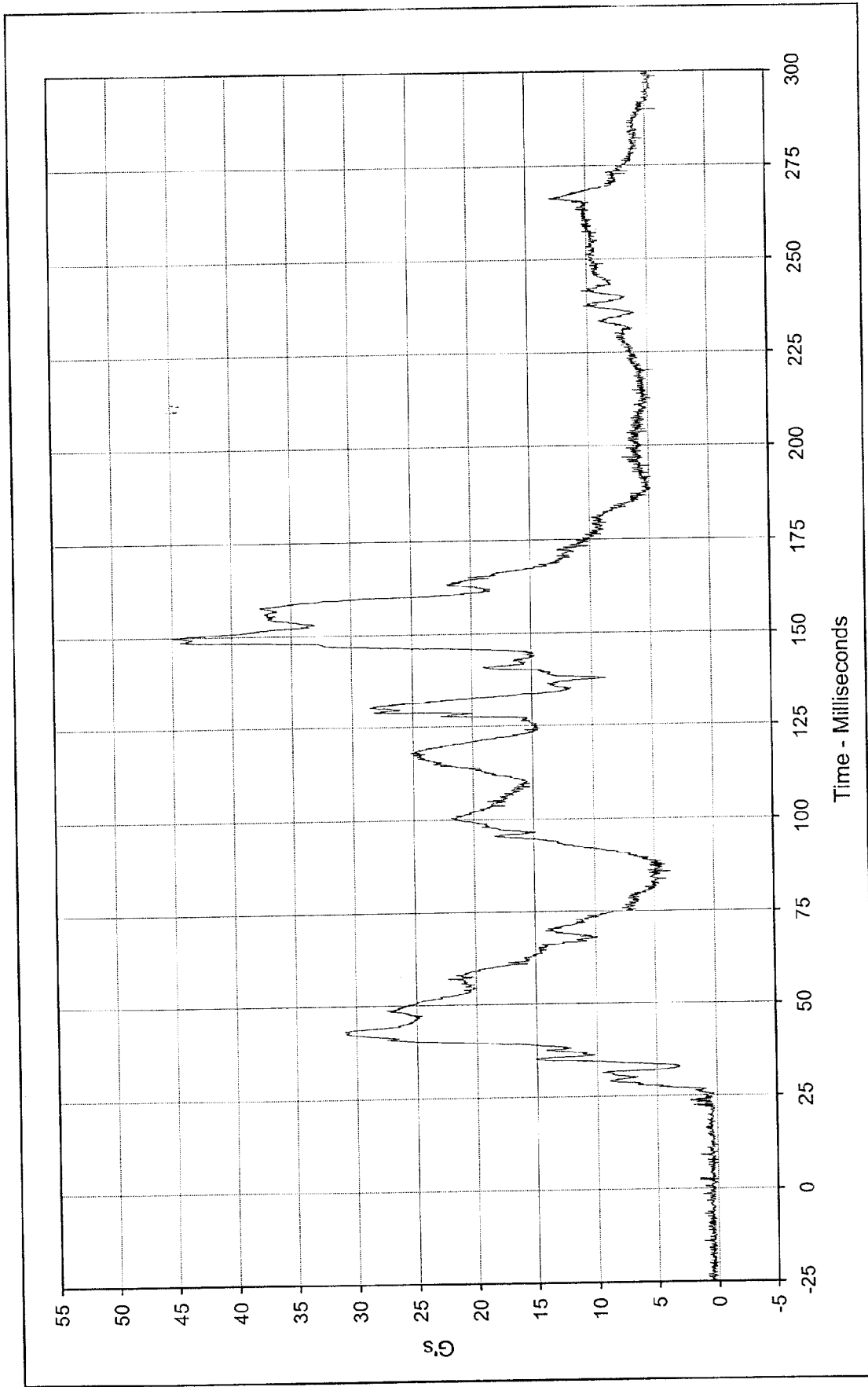




Curve Description: Driver Head Primary Z
 Maximum Value: 23.4 at 130.6 Milliseconds
 Minimum Value: -17.7 at 100.5 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-003

Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan

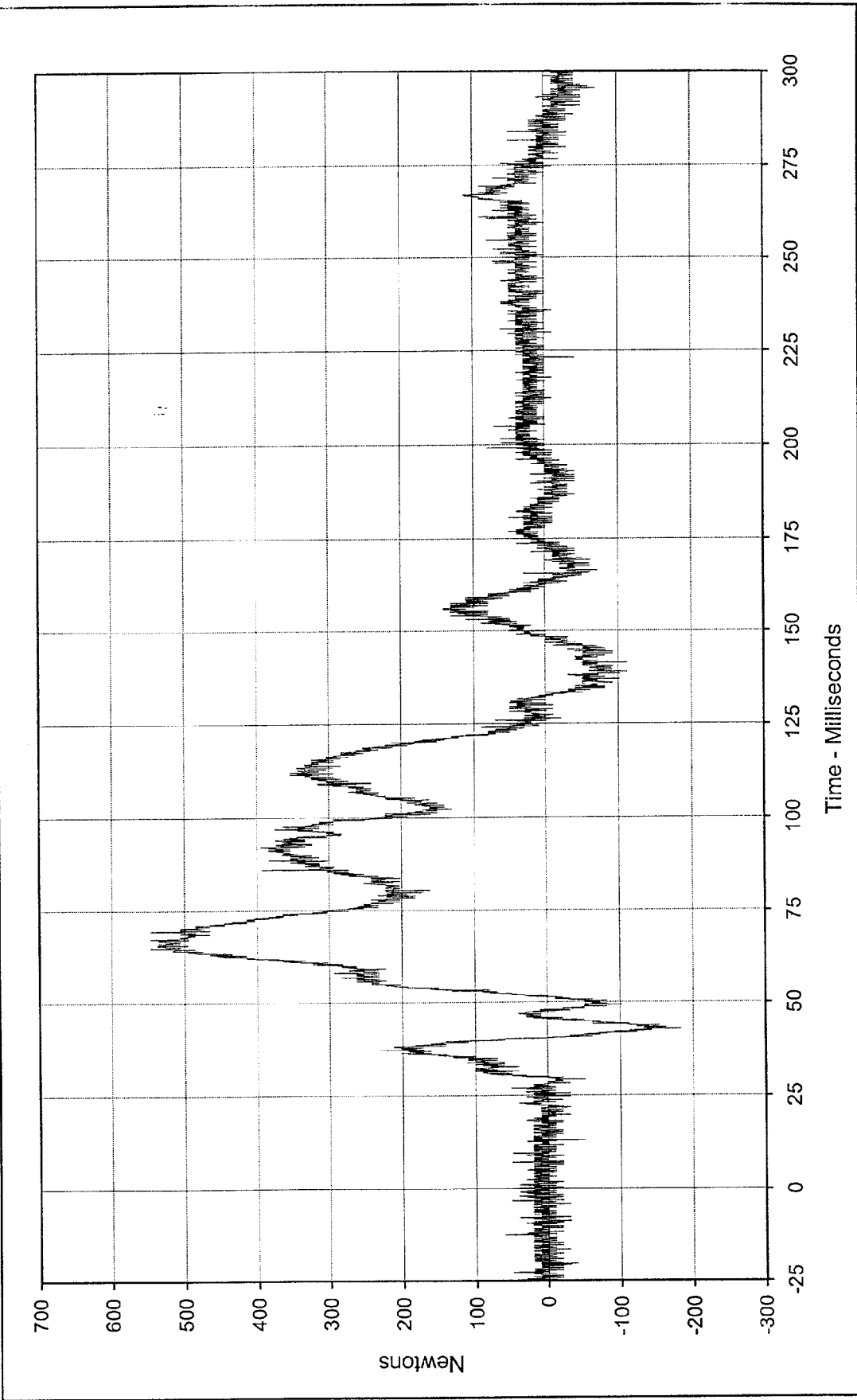




Curve Description: Driver Head Resultant Primary
 Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan

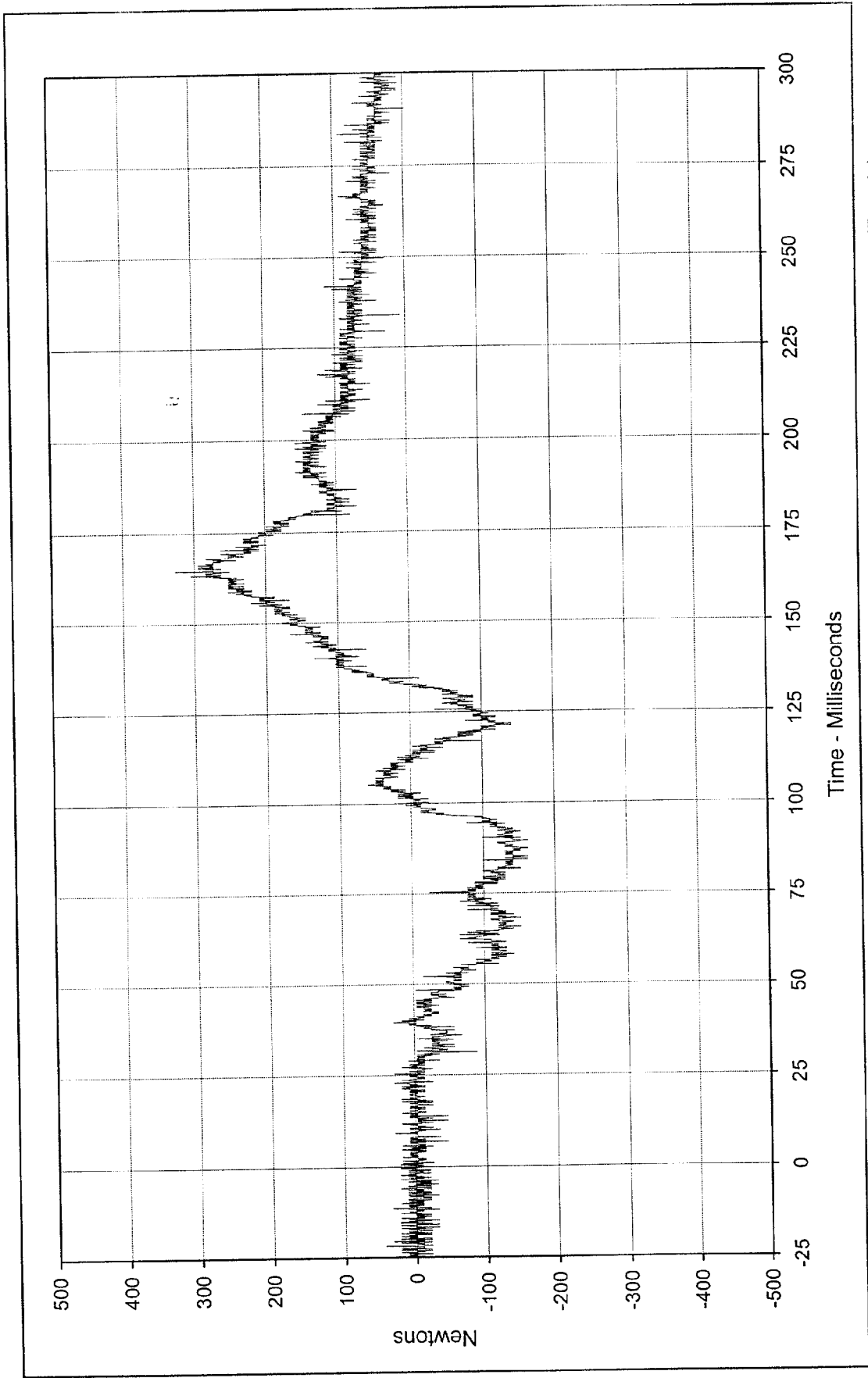
Maximum Value: 45.0 at 149.8 Milliseconds
 Minimum Value: 0.1 at 1.7 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: RES-001





Curve Description: Driver Neck Force X Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 546.1 at 65.0 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -182.9 at 42.9 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-004

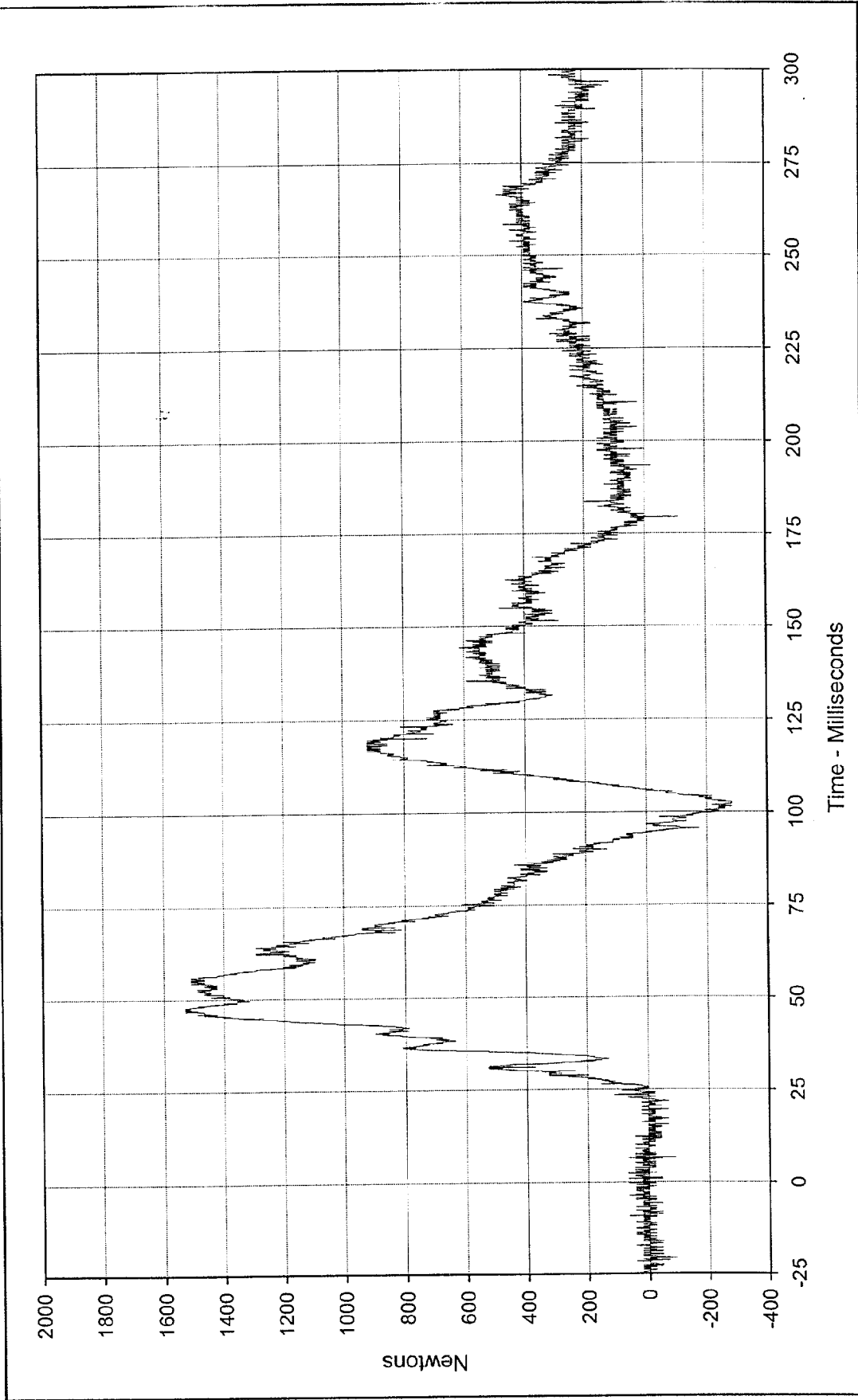




Curve Description: Driver Neck Force Y
 Maximum Value: 326.0 at 164.4 Milliseconds
 Minimum Value: -162.3 at 84.3 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-005

Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan





Curve Description: Driver Neck Force Z Testing Program 1997 NHTSA 40% Offset Impact (Female)

Maximum Value: 1532.7 at 46.8 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan

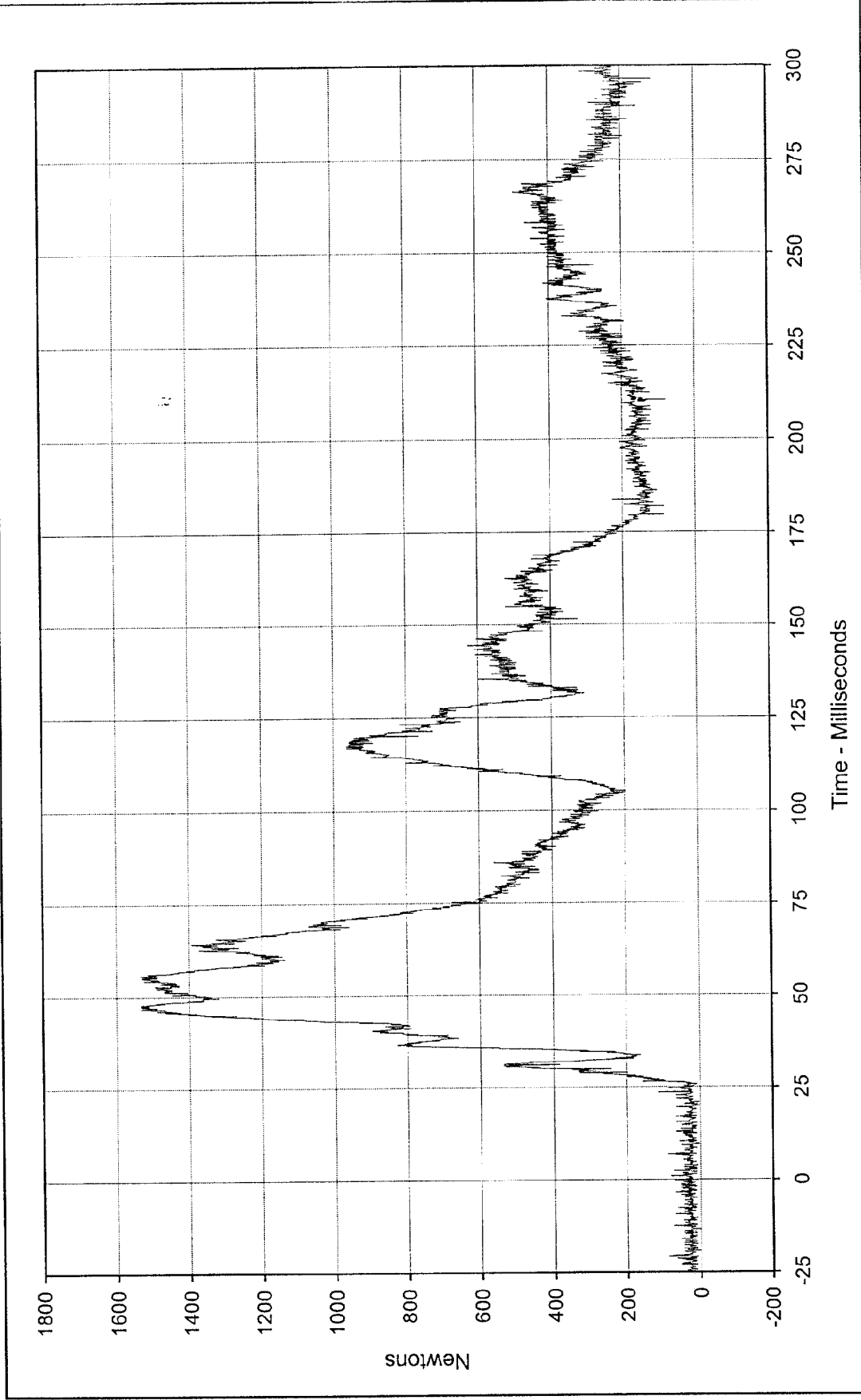
Minimum Value: -283.2 at 101.5 Milliseconds

SAE Filter Class: 1000

Date of Test: 8/21/97

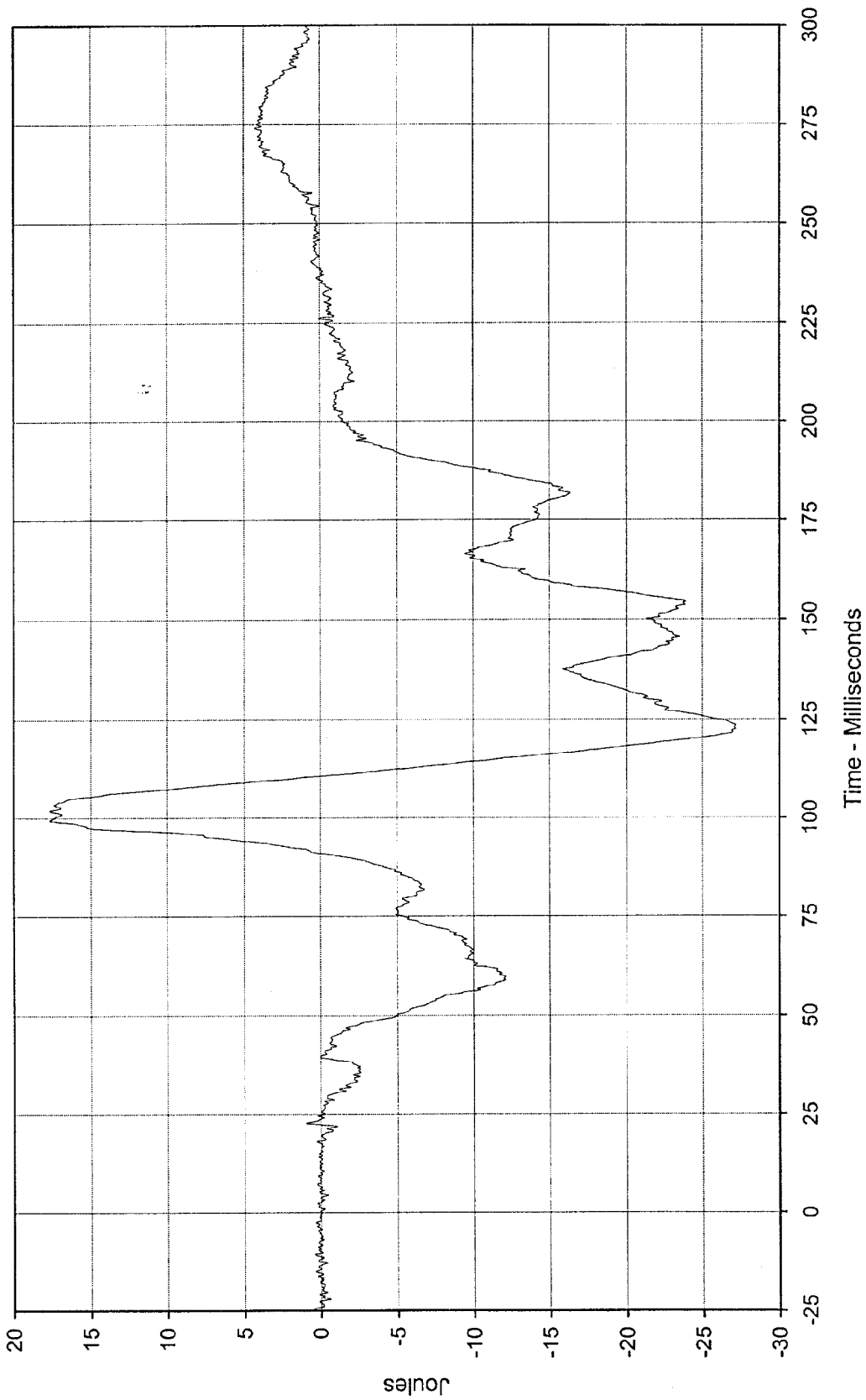
Curve Number: FIL-006





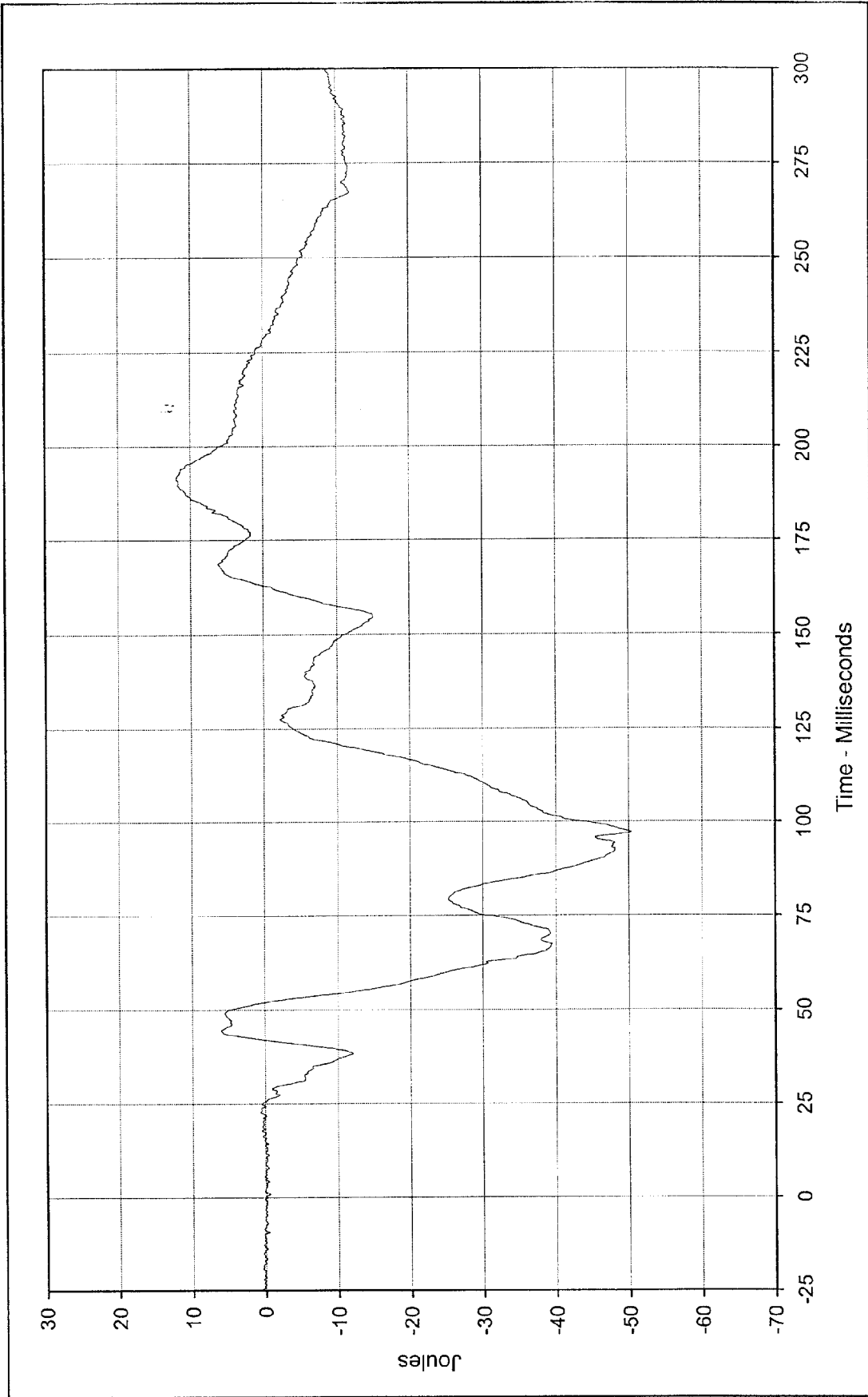
Curve Description: Driver Neck Force Resultant Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 1536.0 at 55.7 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 3.4 at 9.6 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: RES-004





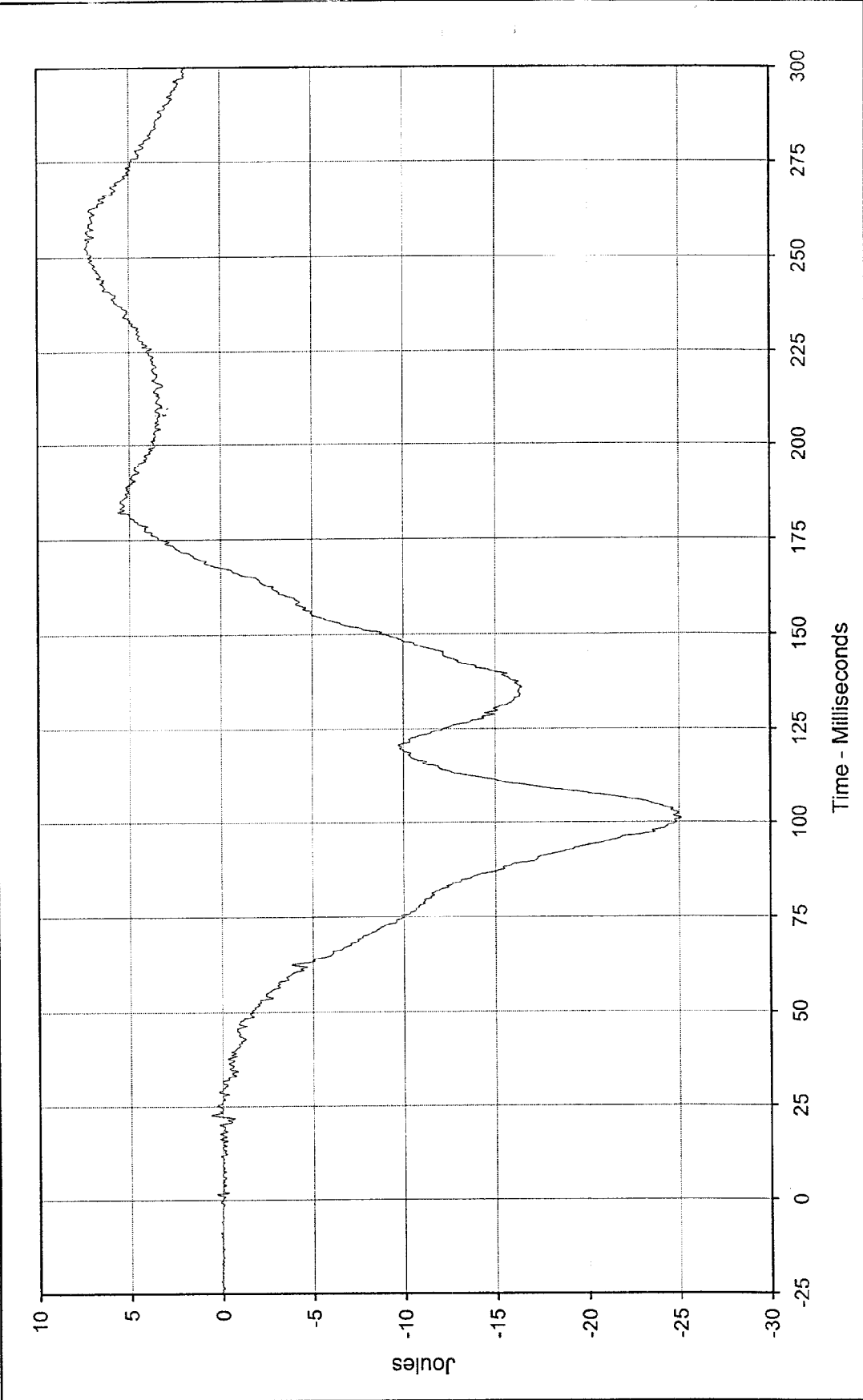
Curve Description: Driver Neck Moment X Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 17.6 at 101.8 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -27.2 at 122.6 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-007





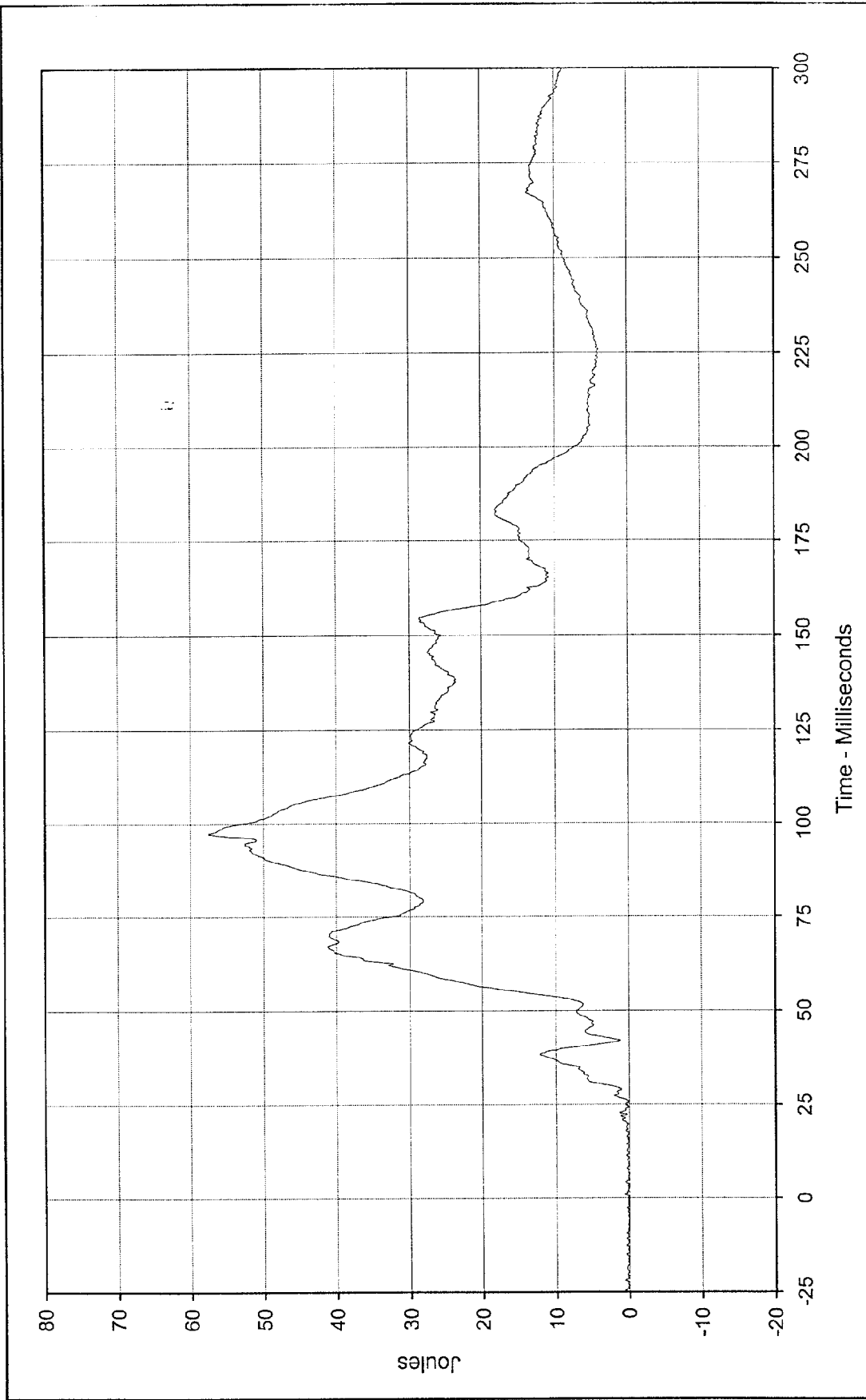
Curve Description: Driver Neck Moment Y Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 12.0 at 191.3 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -50.3 at 97.2 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-008





Curve Description: Driver Neck Moment Z Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 7.4 at 252.3 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -25.1 at 101.0 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-009

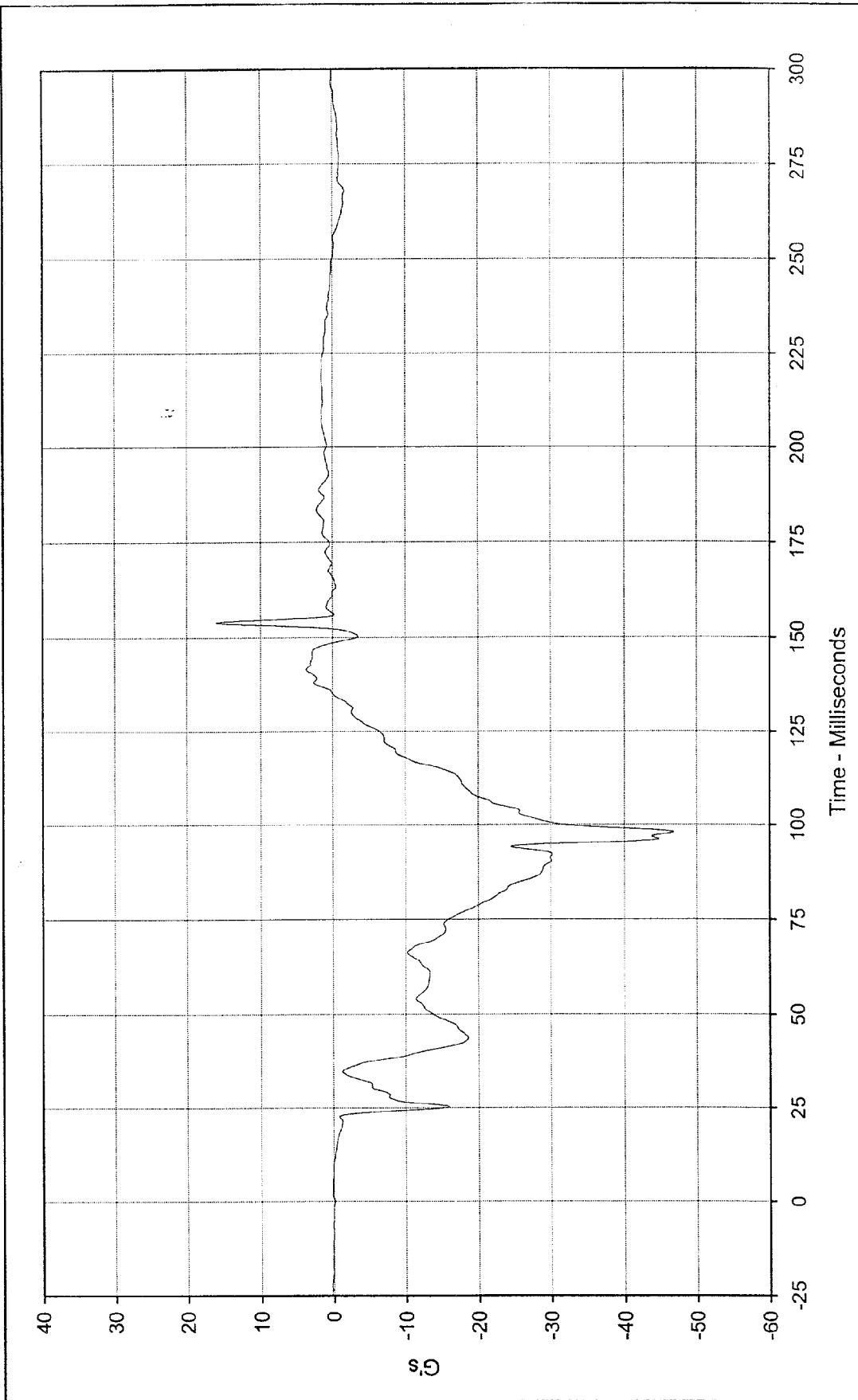




Curve Description: Driver Neck Moment Resultant
 Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 57.5 at 97.3 Milliseconds
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 0.0 at 0.4 Milliseconds



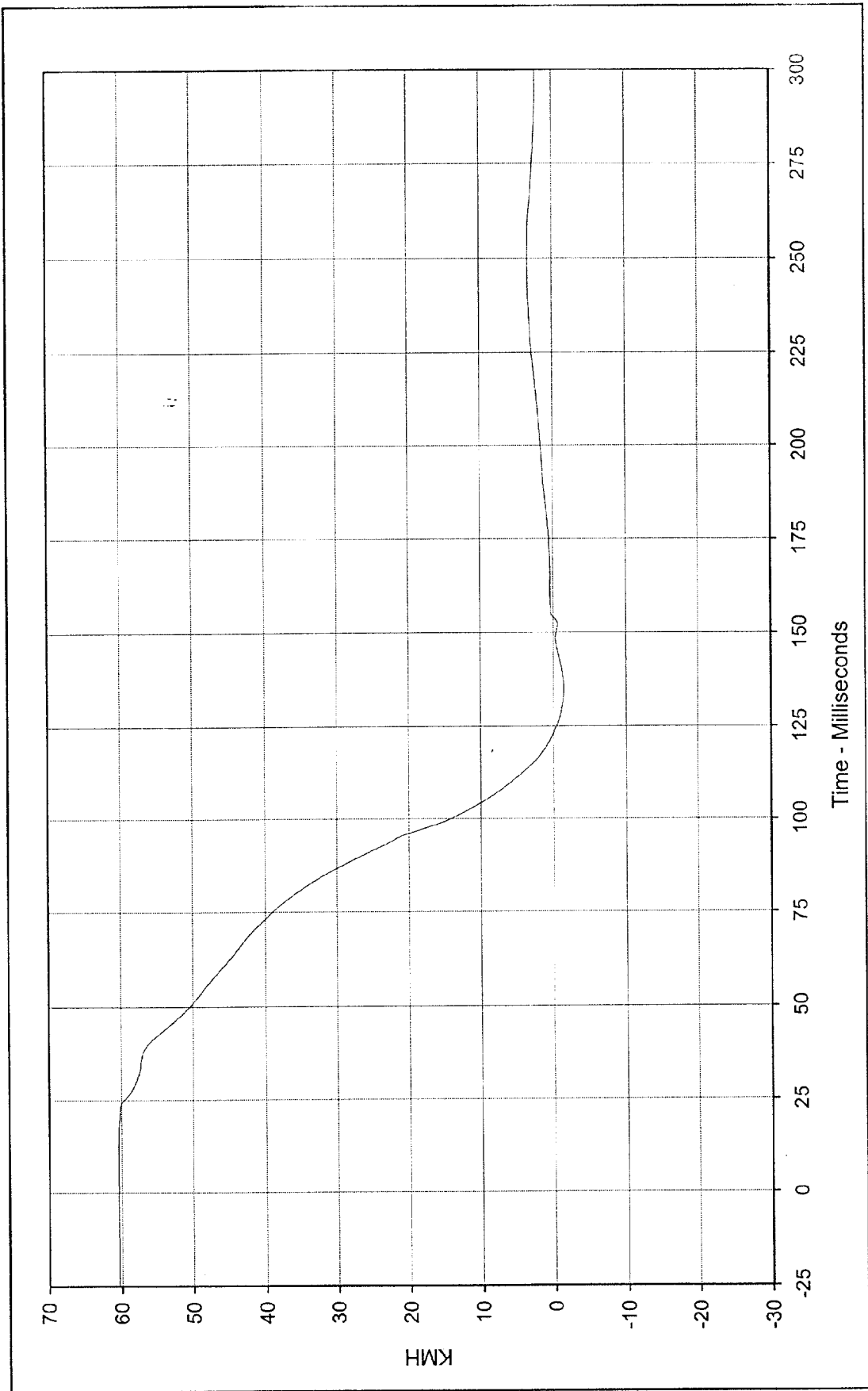
SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: RES-007



Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan

Curve Description: Driver Chest Primary X
 Maximum Value: 16.0 at 153.9 Milliseconds
 Minimum Value: -46.8 at 98.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: FIL-010

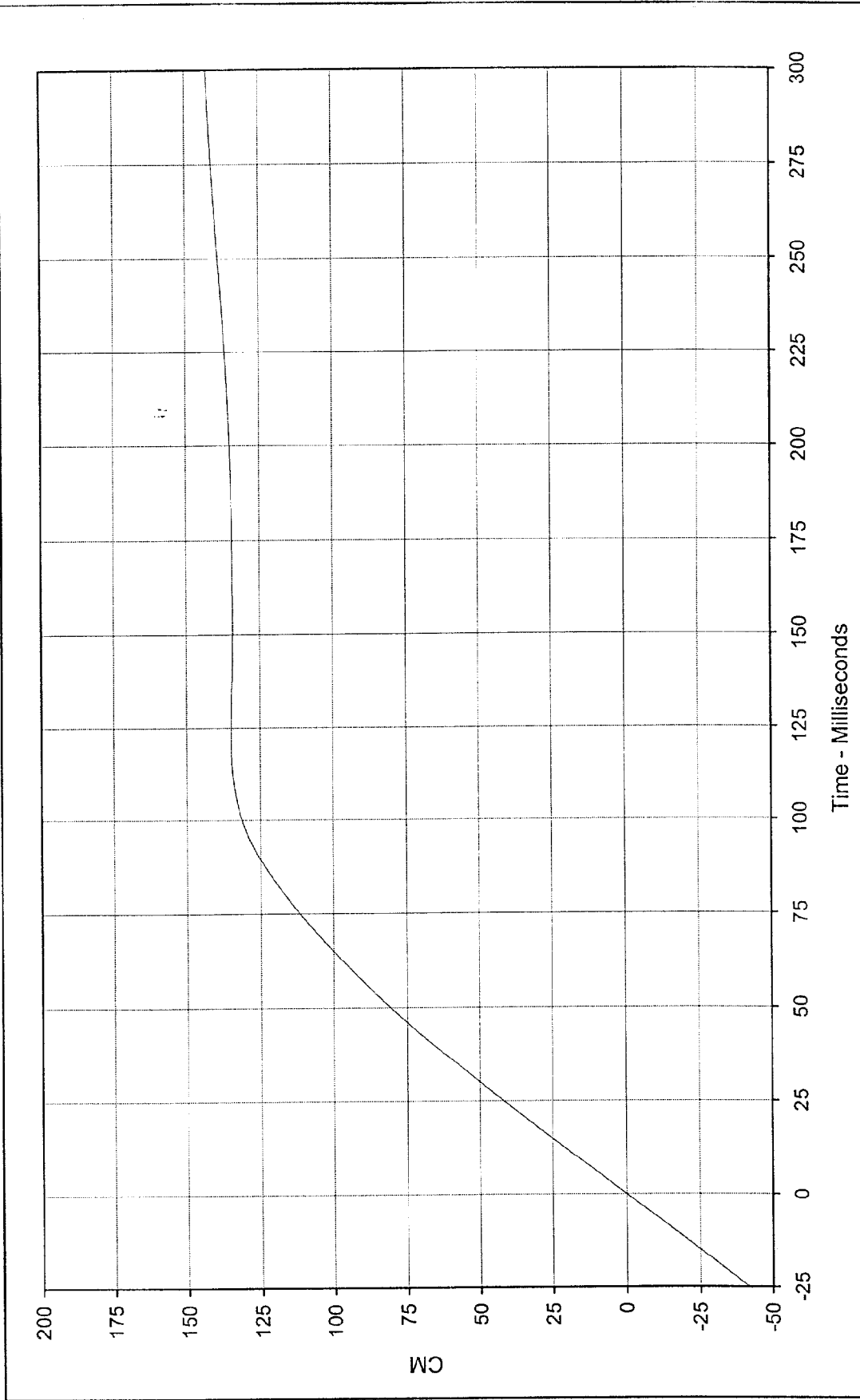




Curve Description: Driver Chest Primary X Velocity
 Maximum Value: 60.4 at 9.8 Milliseconds
 Minimum Value: -1.5 at 135.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN1-010

Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan

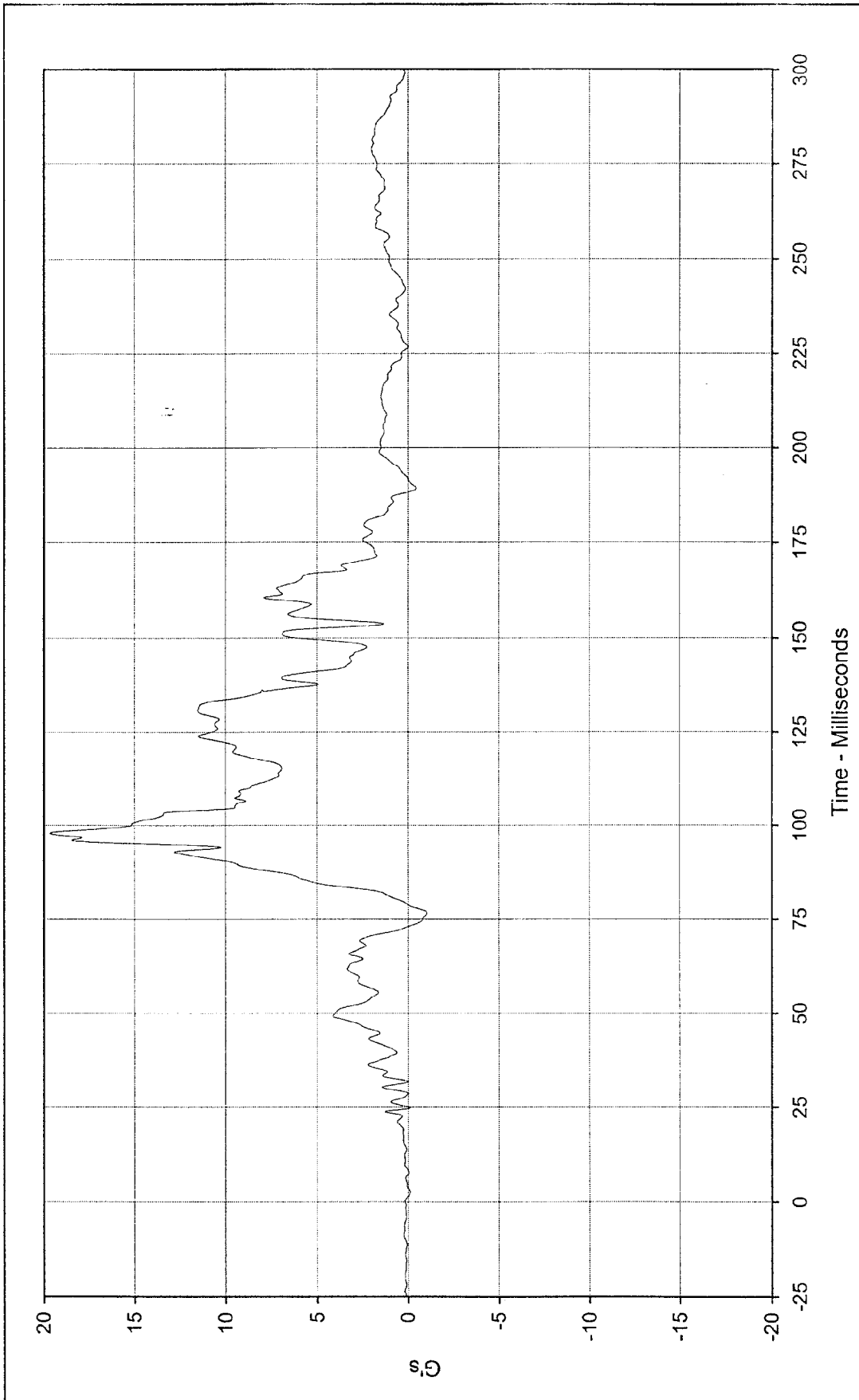




Curve Description: Driver Chest Primary X Displ. Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 142.7 at 299.9 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 0.1 at 0.0 Milliseconds

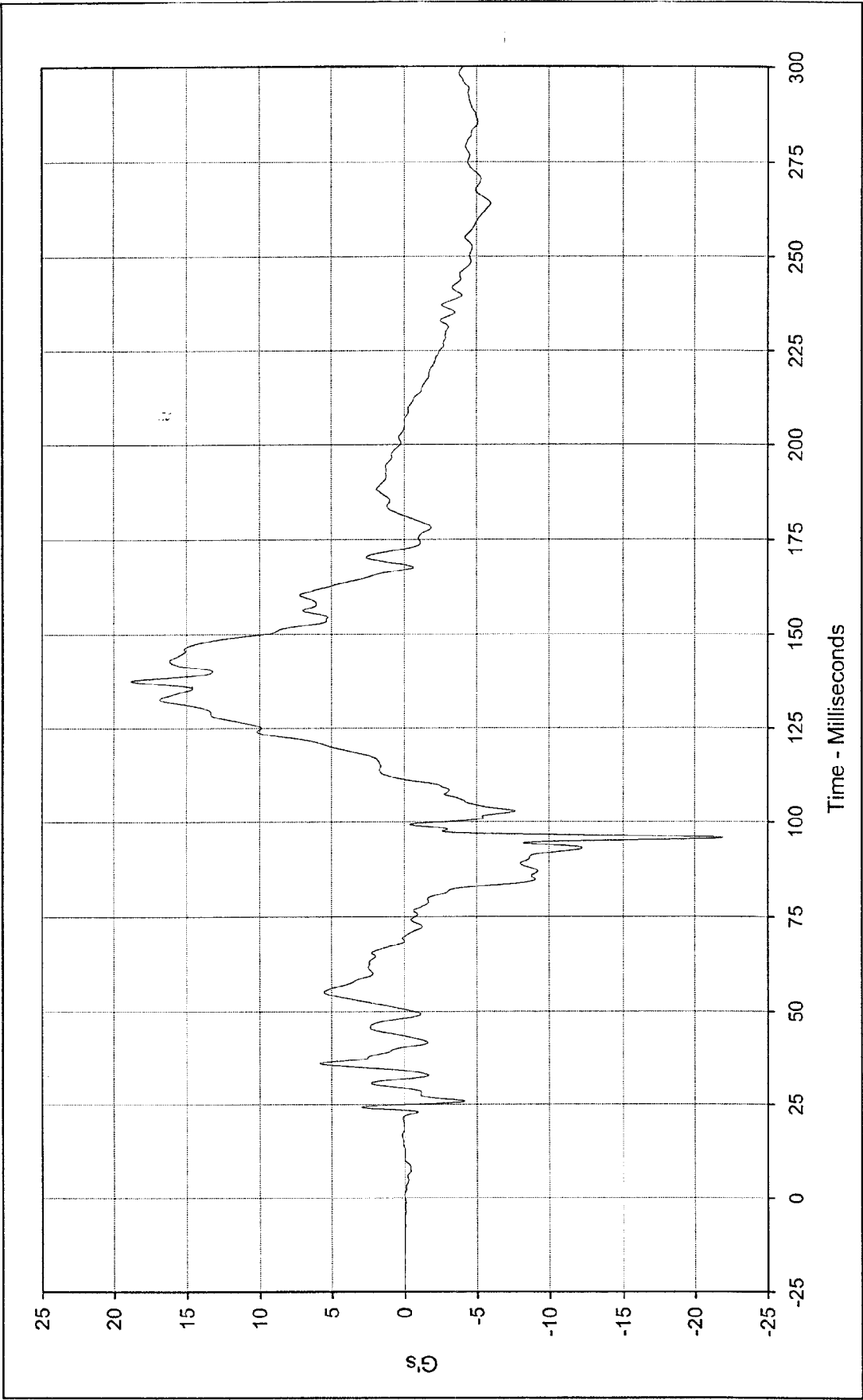


SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN2-010



Curve Description: Driver Chest Primary Y Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 19.7 at 19.7 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -1.1 at 76.4 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: FIL-011





Curve Description: Driver Chest Primary Z Testing Program: 1997 NHTSA 40% Offset Impact (Female)

Maximum Value: 18.9 at 137.5 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan

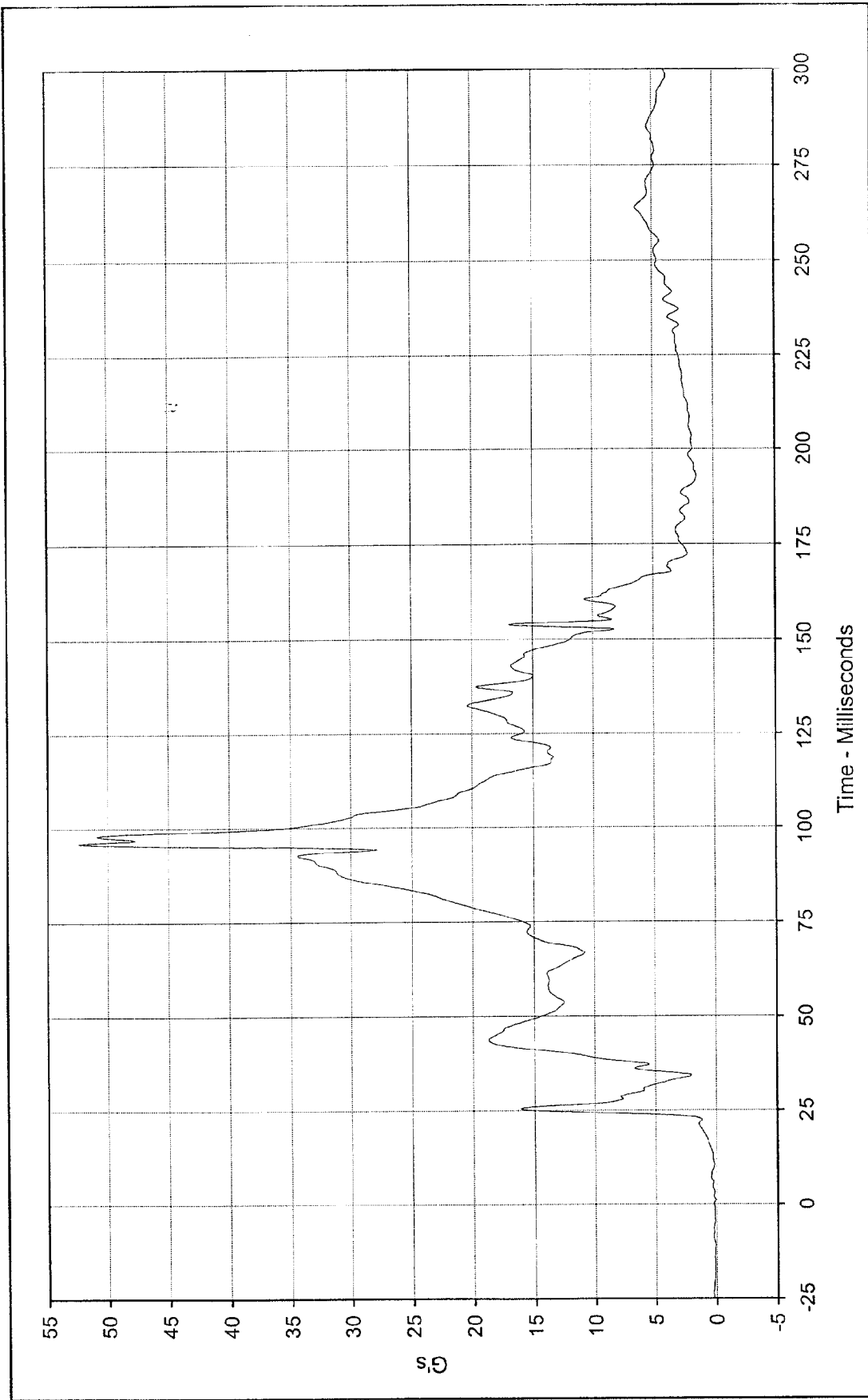
Minimum Value: -21.9 at 95.8 Milliseconds

SAE Filter Class: 180

Date of Test: 8/21/97

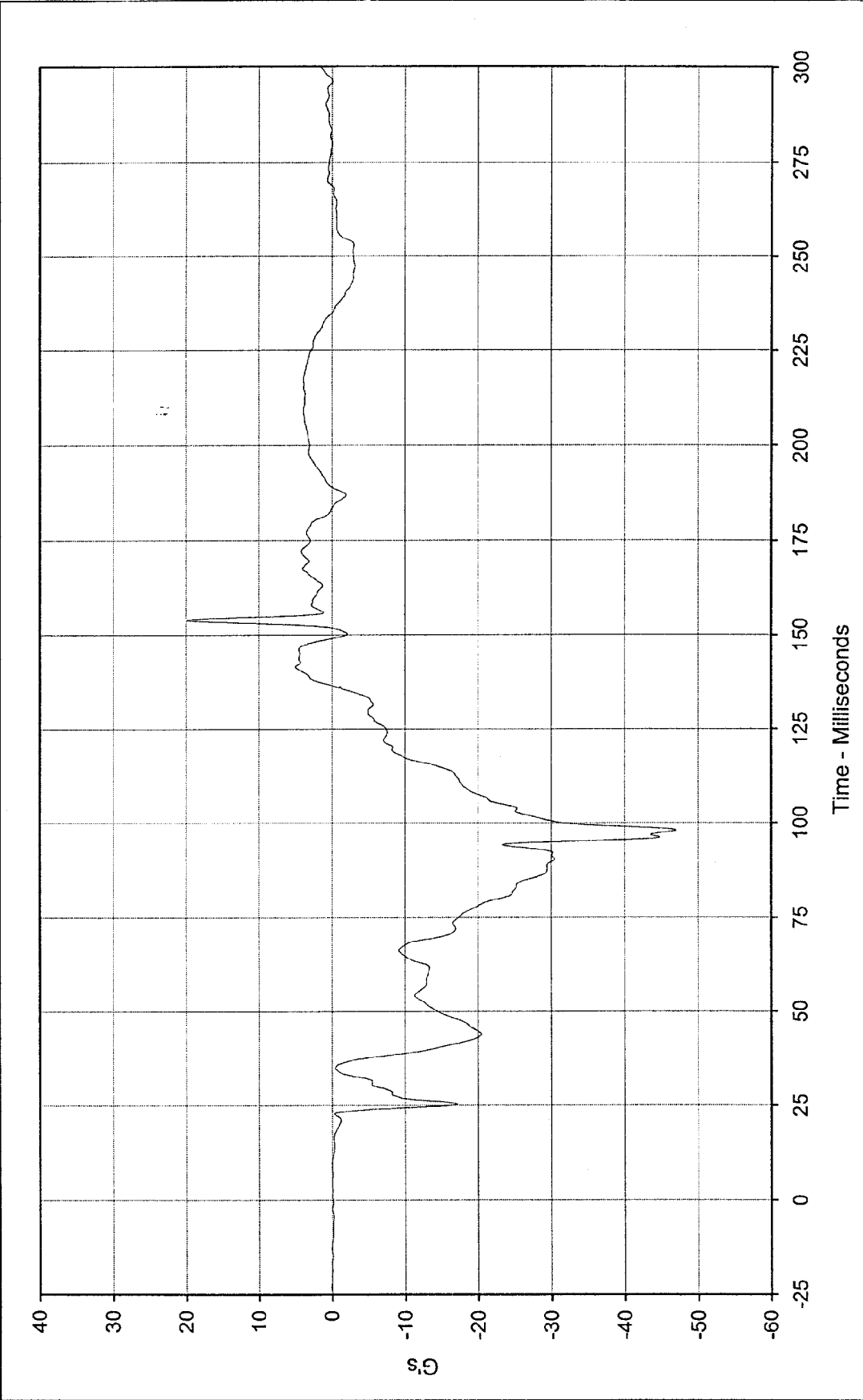
Curve Number: FIL-012





Curve Description: Driver Chest Resultant Primary Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 52.4 at 96.0 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 0.1 at 1.1 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: RES-010

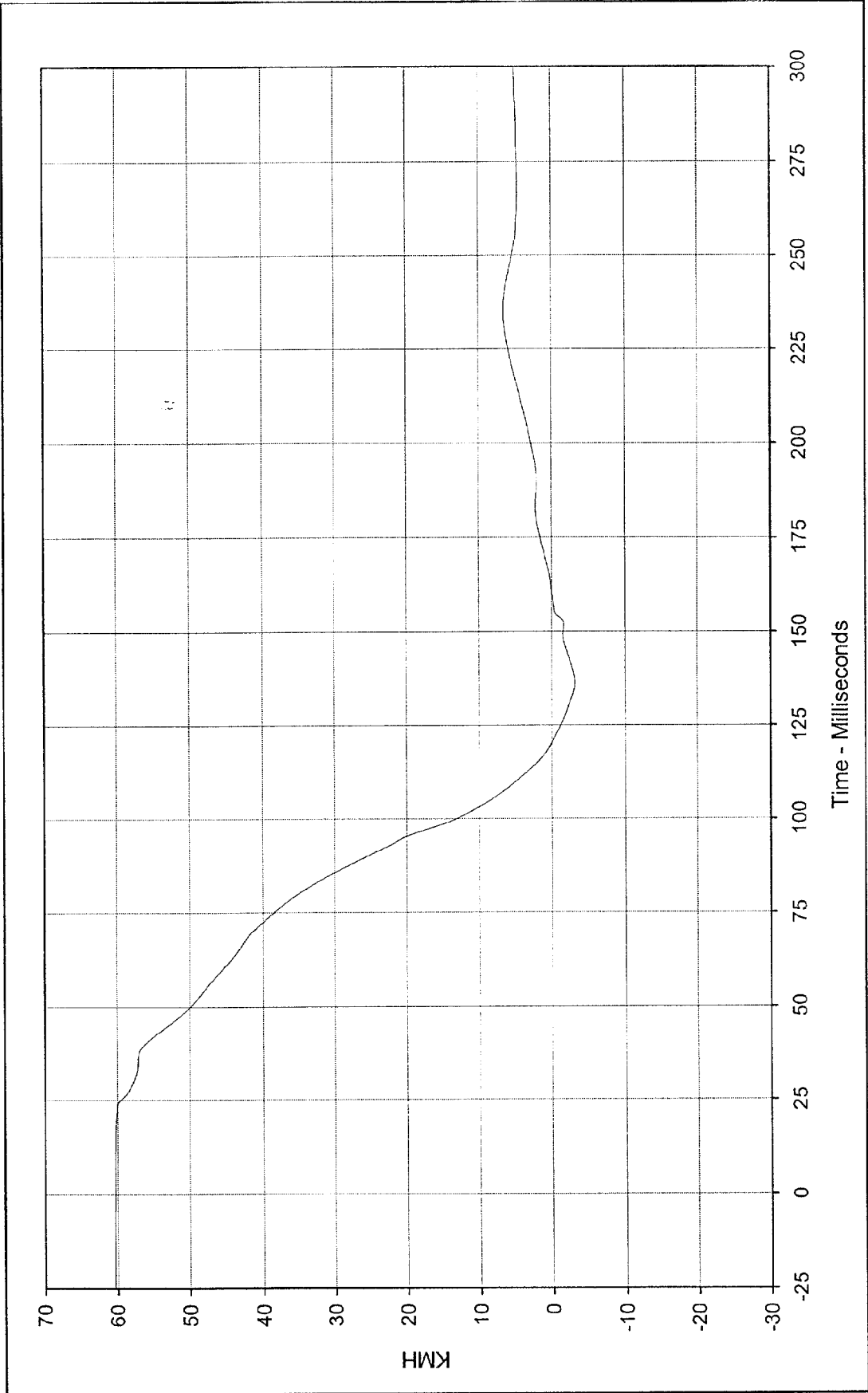




Curve Description: Driver Chest Redundant X Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 19.9 at 153.9 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -47.0 at 98.0 Milliseconds



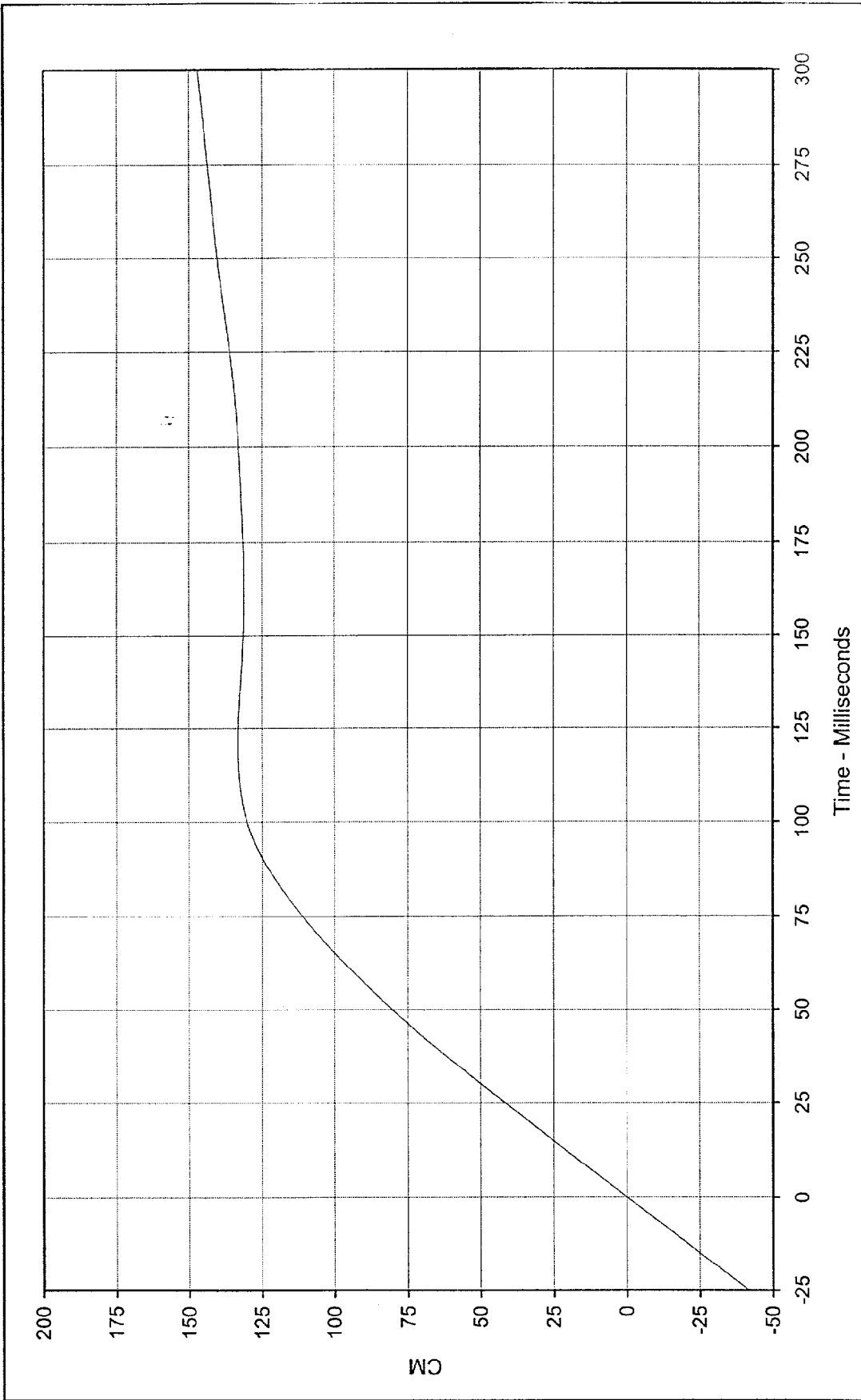
SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: FIL-013



Curve Description: Driver Chest Redundant X Velocity Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 60.3 at 0.0 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -3.2 at 136.4 Milliseconds

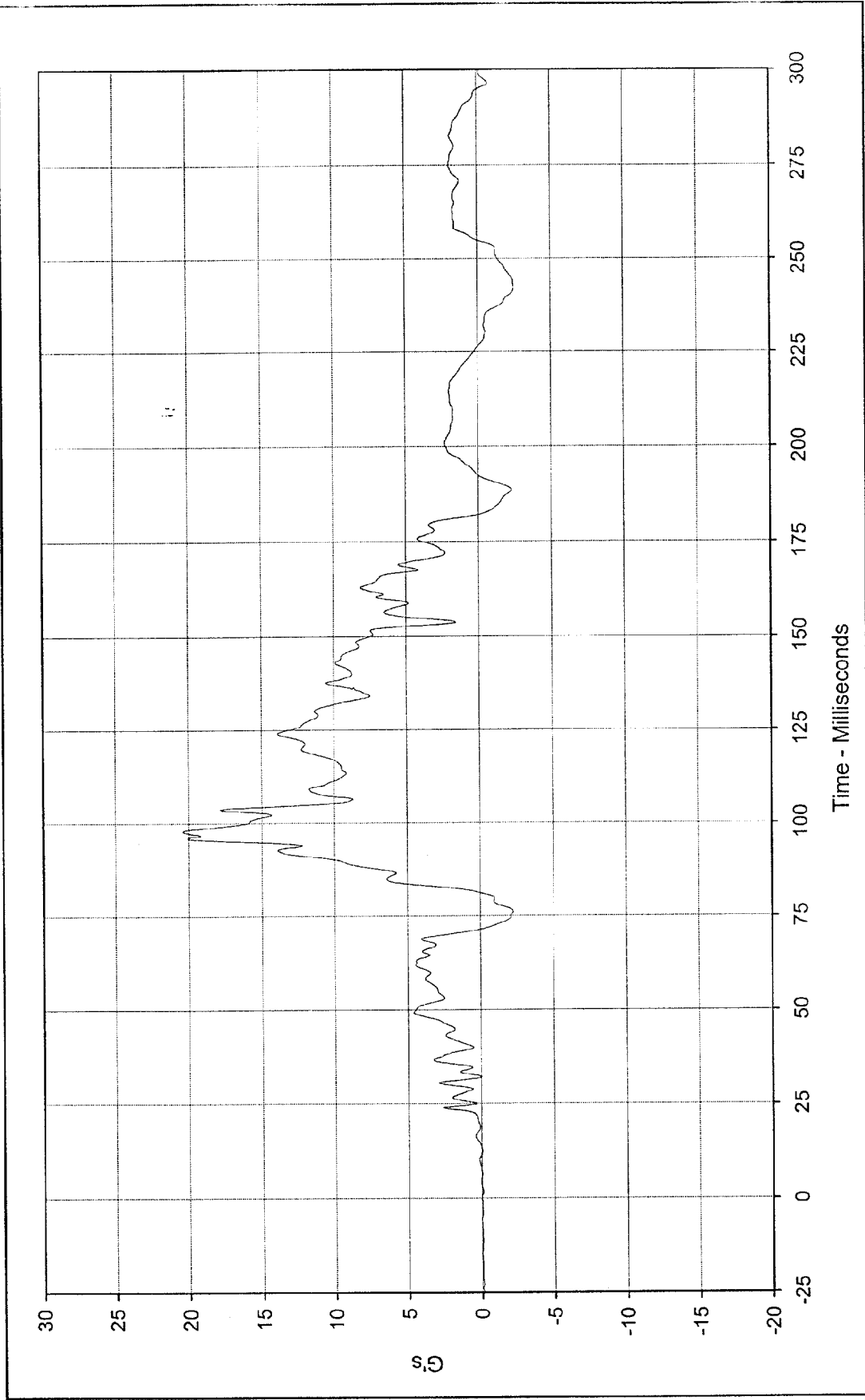


SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN1-013



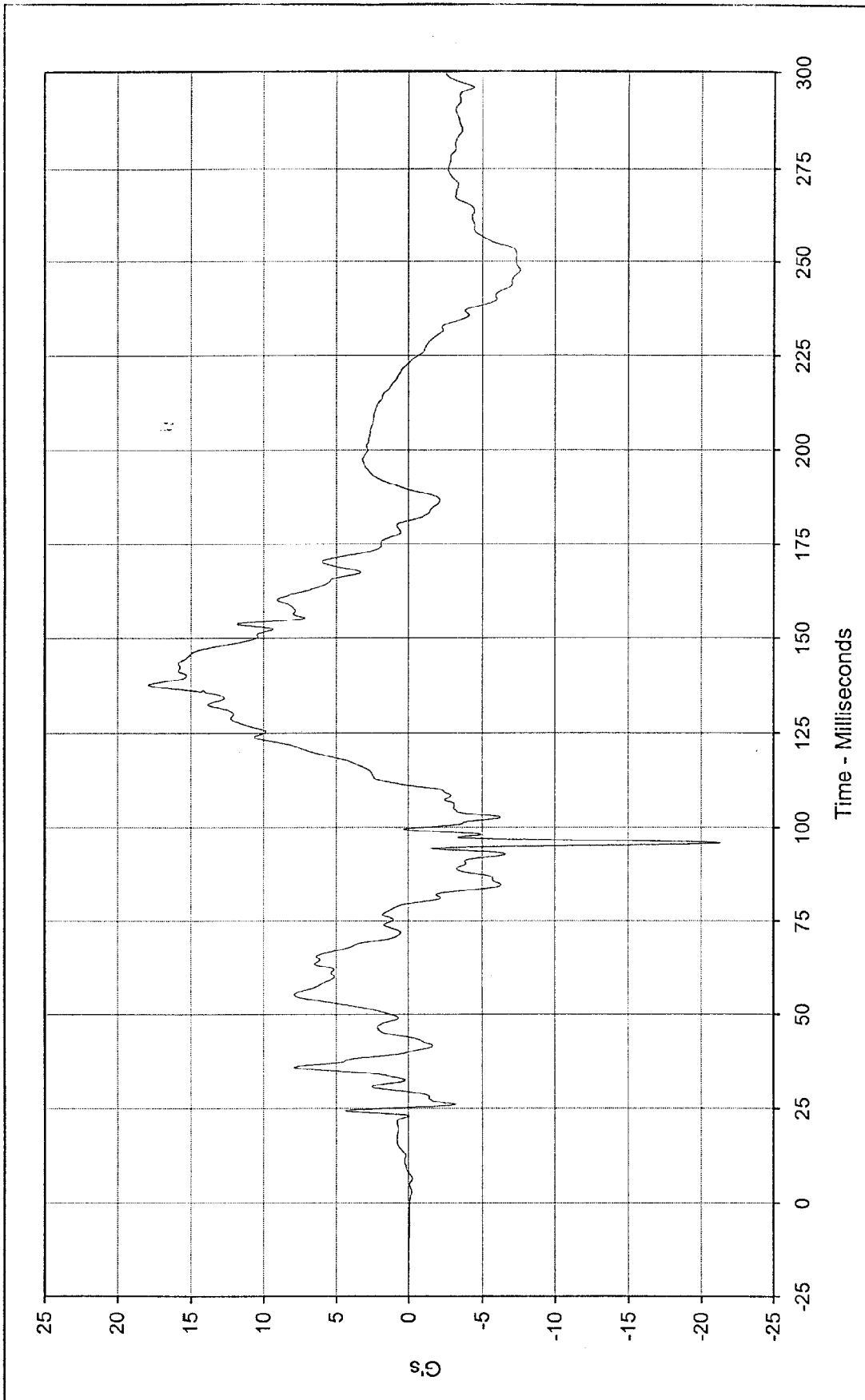
Curve Description: Driver Chest Redundant X Displ. Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 146.9 at 299.9 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN2-013





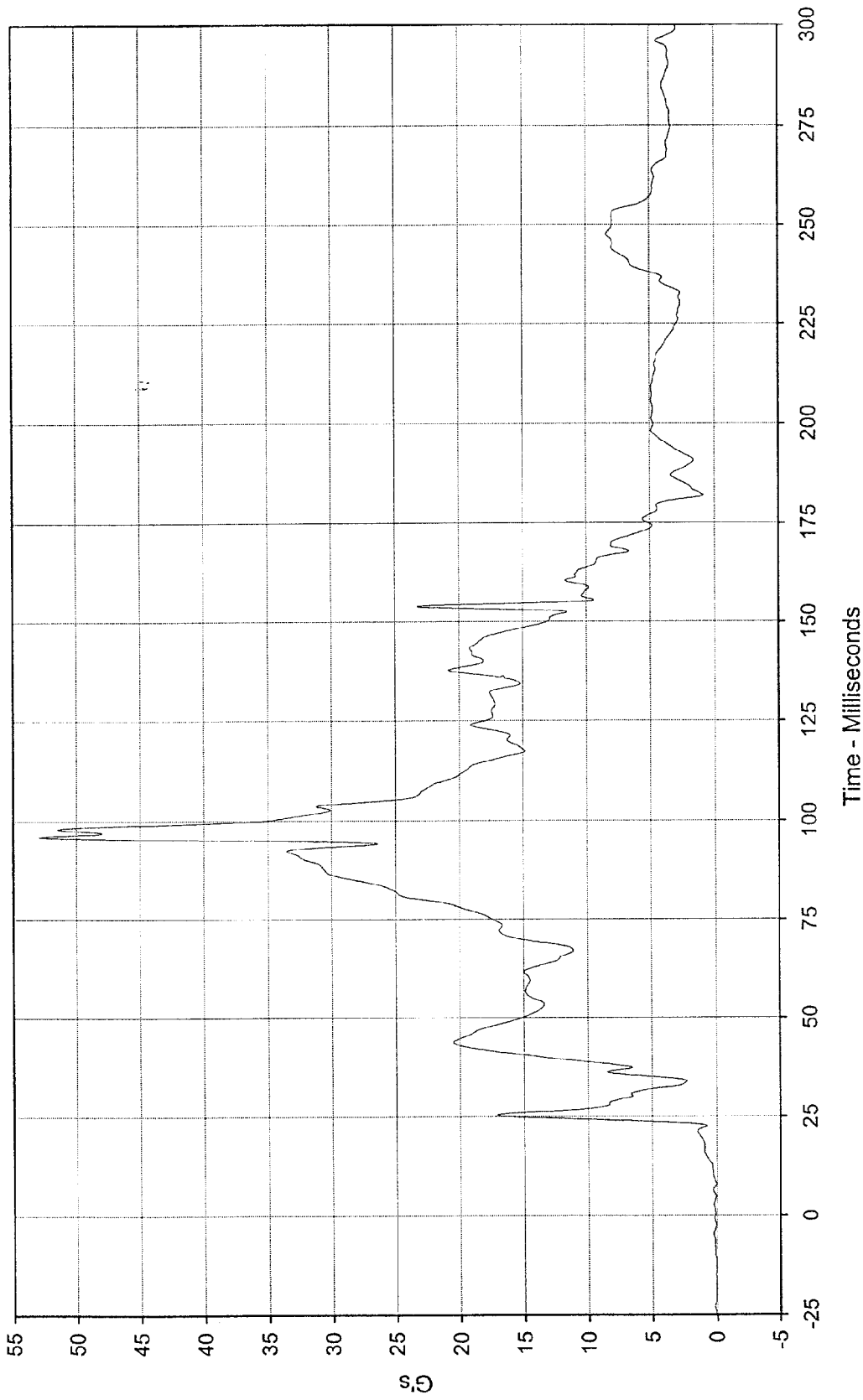
Curve Description: Driver Chest Redundant Y Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 20.4 at 20.4 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -2.5 at 242.2 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: FIL-014





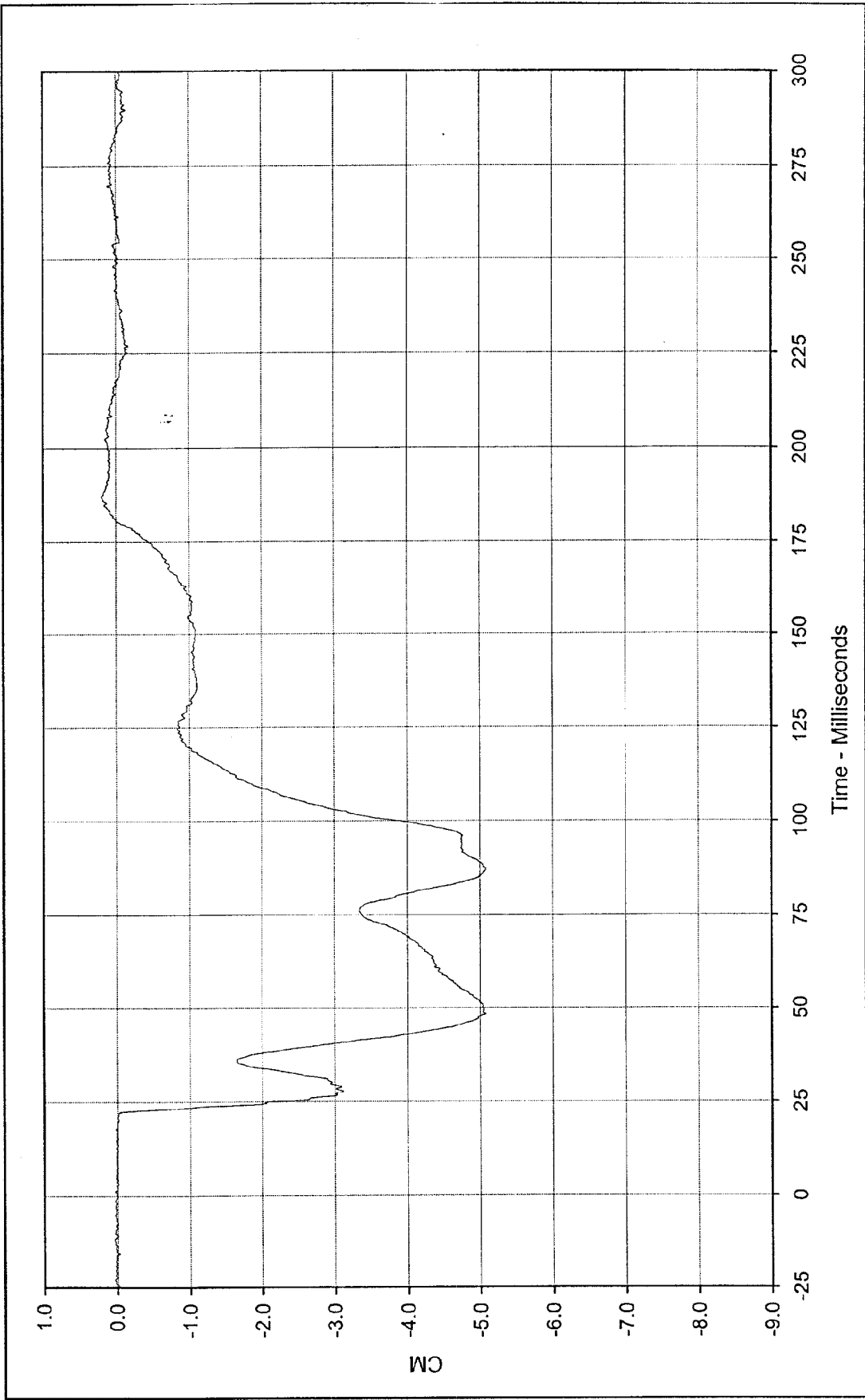
Curve Description:	Driver Chest Redundant Z	Testing Program	1997 NHTSA 40% Offset Impact (Female)
Maximum Value:	17.9 at 137.6 Milliseconds	Test Vehicle:	1996 Dodge Neon 4 Door Sedan
Minimum Value:	-21.3 at 95.9 Milliseconds		
SAE Filter Class:	180		
Date of Test:	8/21/97		
Curve Number:	FIL-015		





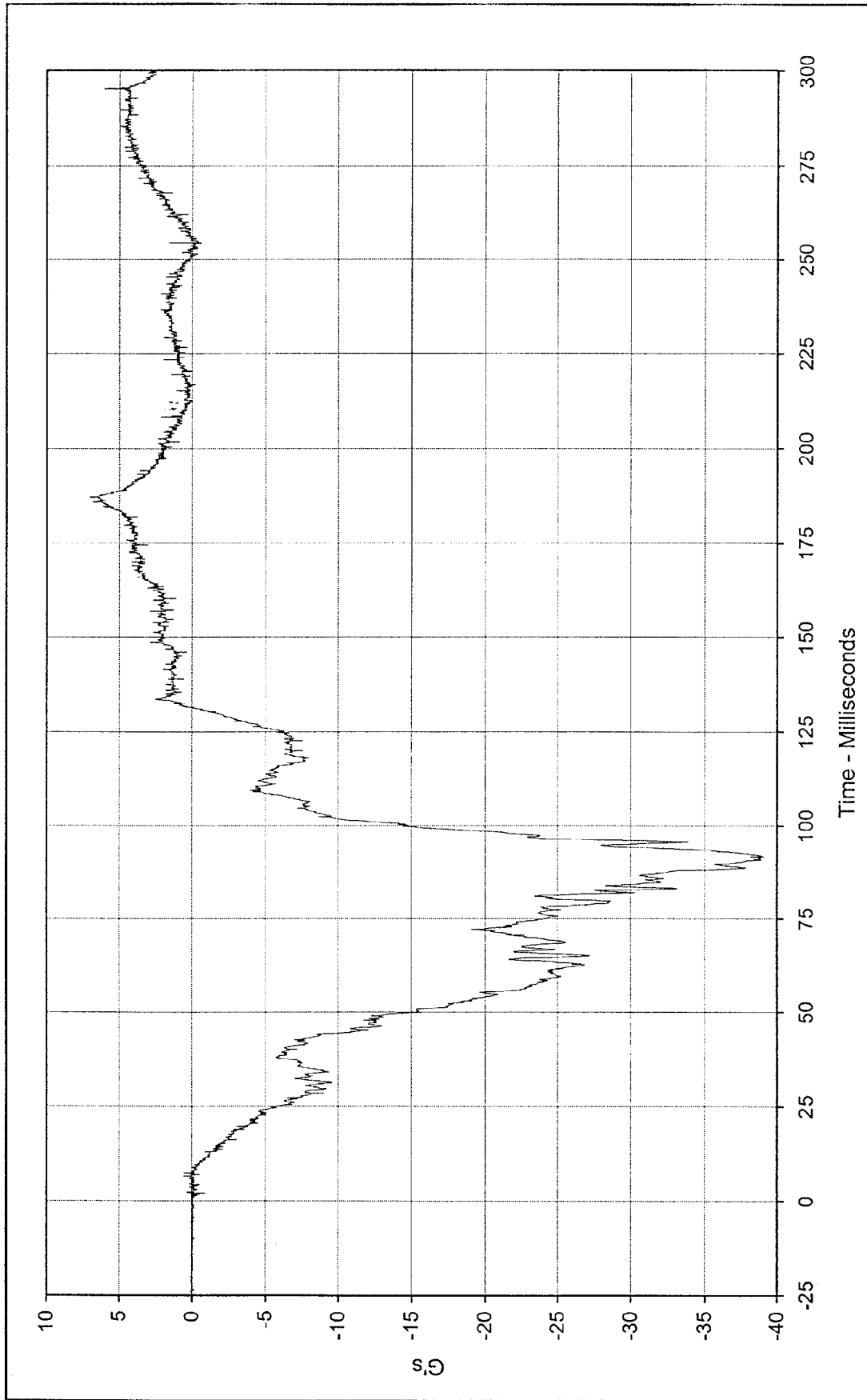
Curve Description: Driver Chest Resultant Redundant Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 52.9 at 96.0 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 0.0 at 7.9 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: RES-013





Curve Description: Driver Chest Displacement X Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 0.19 at 186.9 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -5.08 at 87.1 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-016

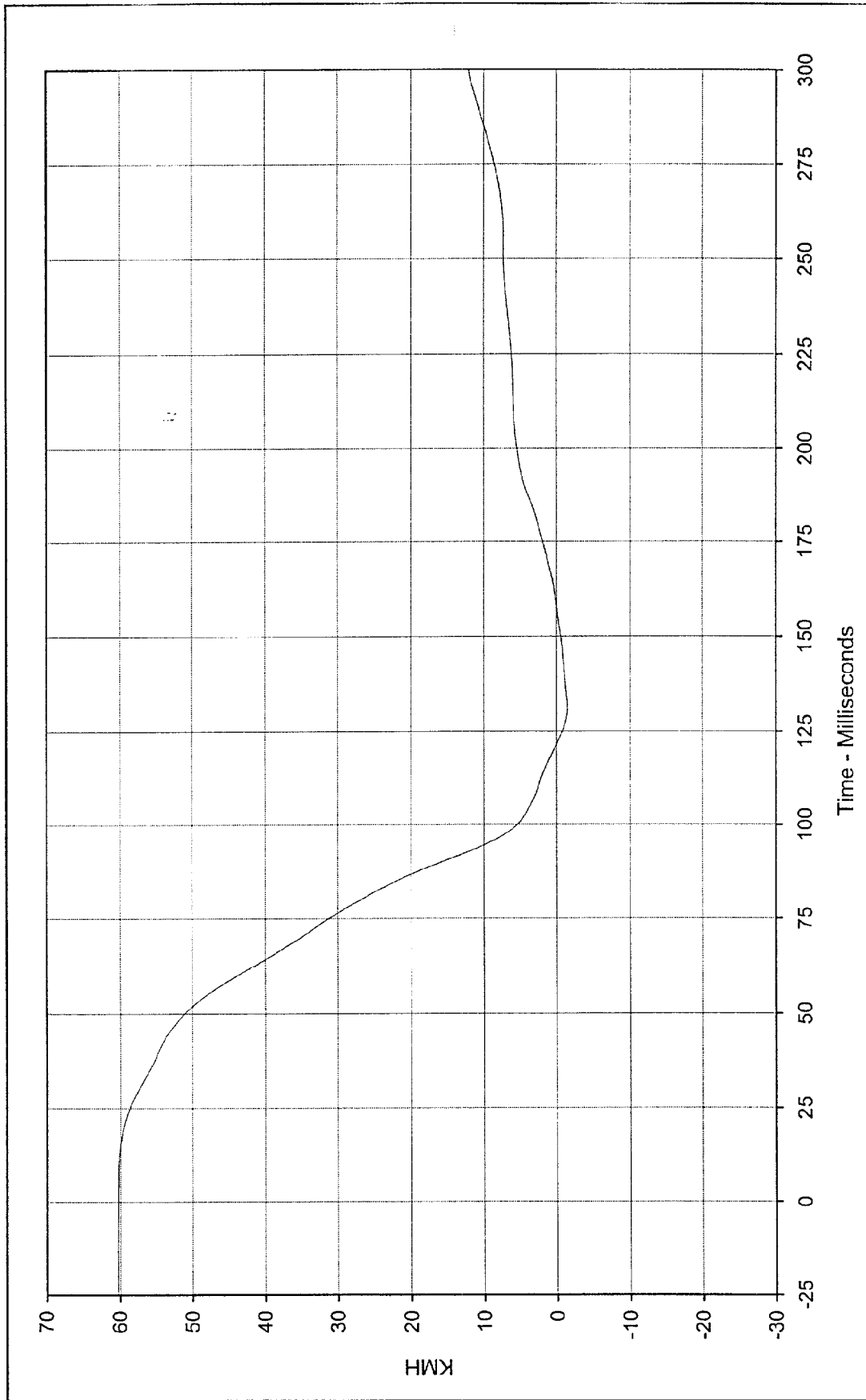




Curve Description: Driver Pelvis X
 Maximum Value: 7.0 at 187.1 Milliseconds
 Minimum Value: -39.1 at 91.6 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-017

Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan





Curve Description: Driver Pelvis X Velocity Testing Program 1997 NHTSA 40% Offset Impact (Female)

Maximum Value: 60.3 at 0.0 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan

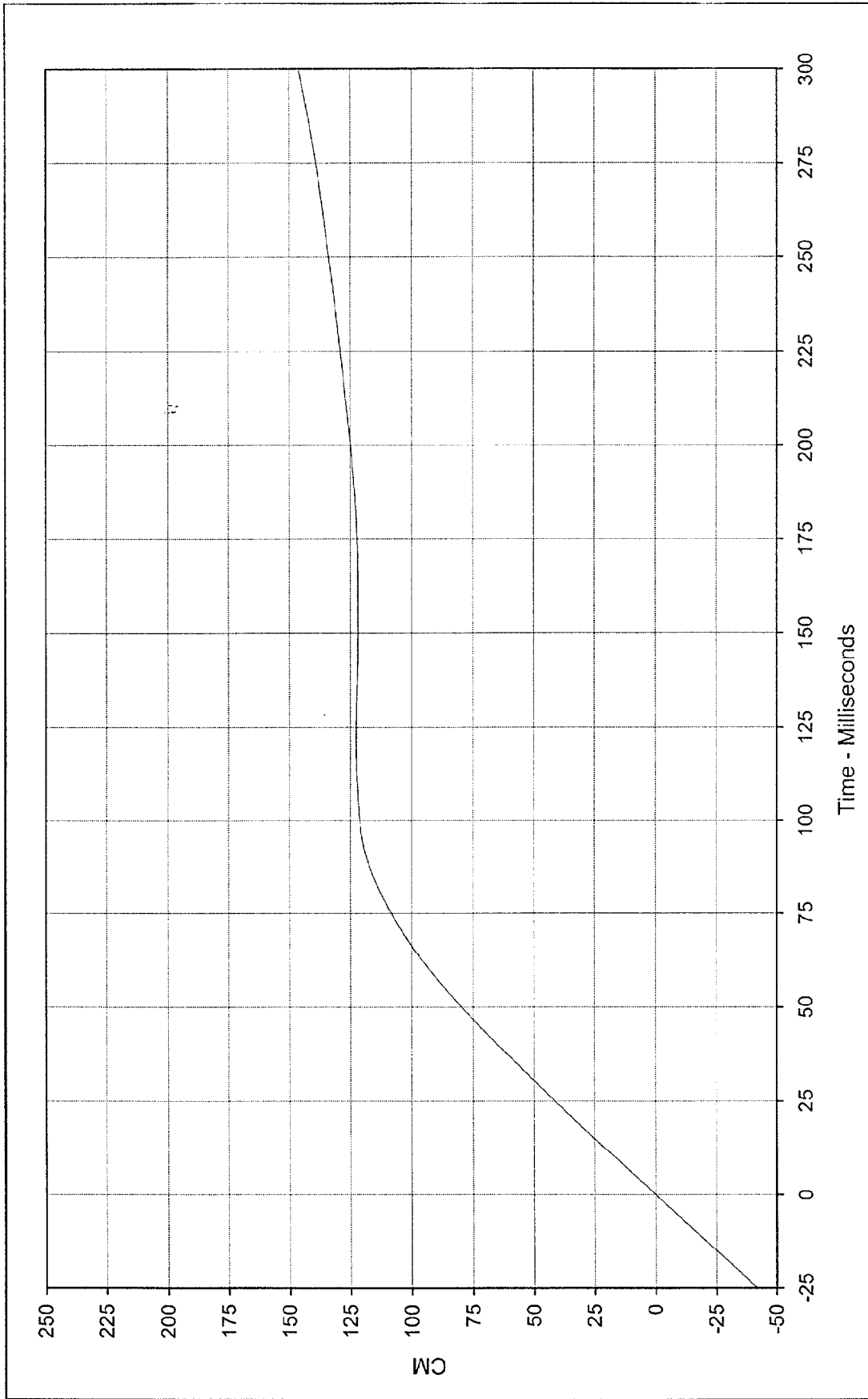
Minimum Value: -1.4 at 131.4 Milliseconds

SAE Filter Class: 180

Date of Test: 8/21/97

Curve Number: IN1-017





Curve Description: Driver Pelvis X Displ. Testing Program 1997 NHTSA 40% Offset Impact (Female)

Maximum Value: 146.2 at 299.9 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan

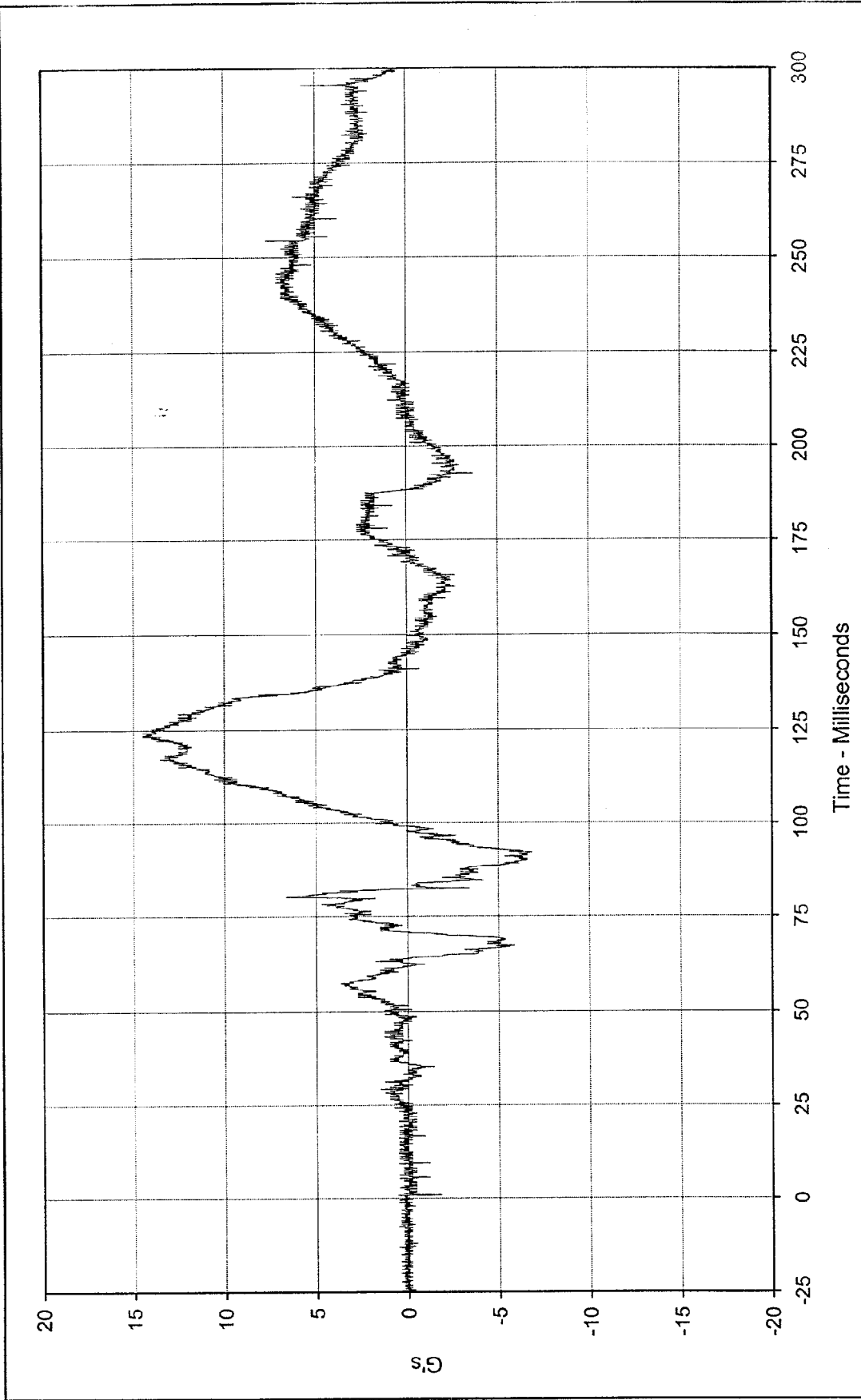
Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 8/21/97

Curve Number: IN2-017

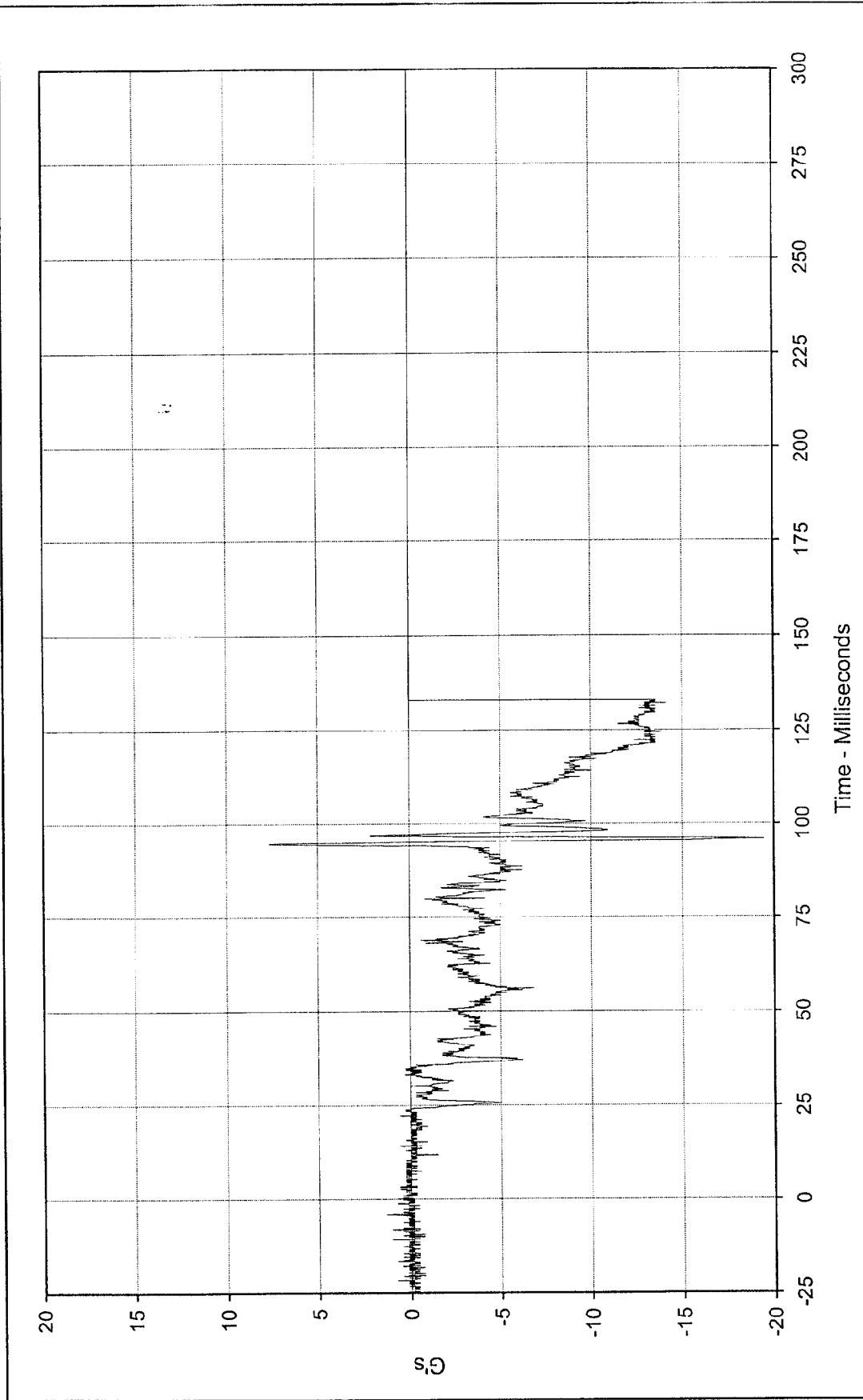




Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan

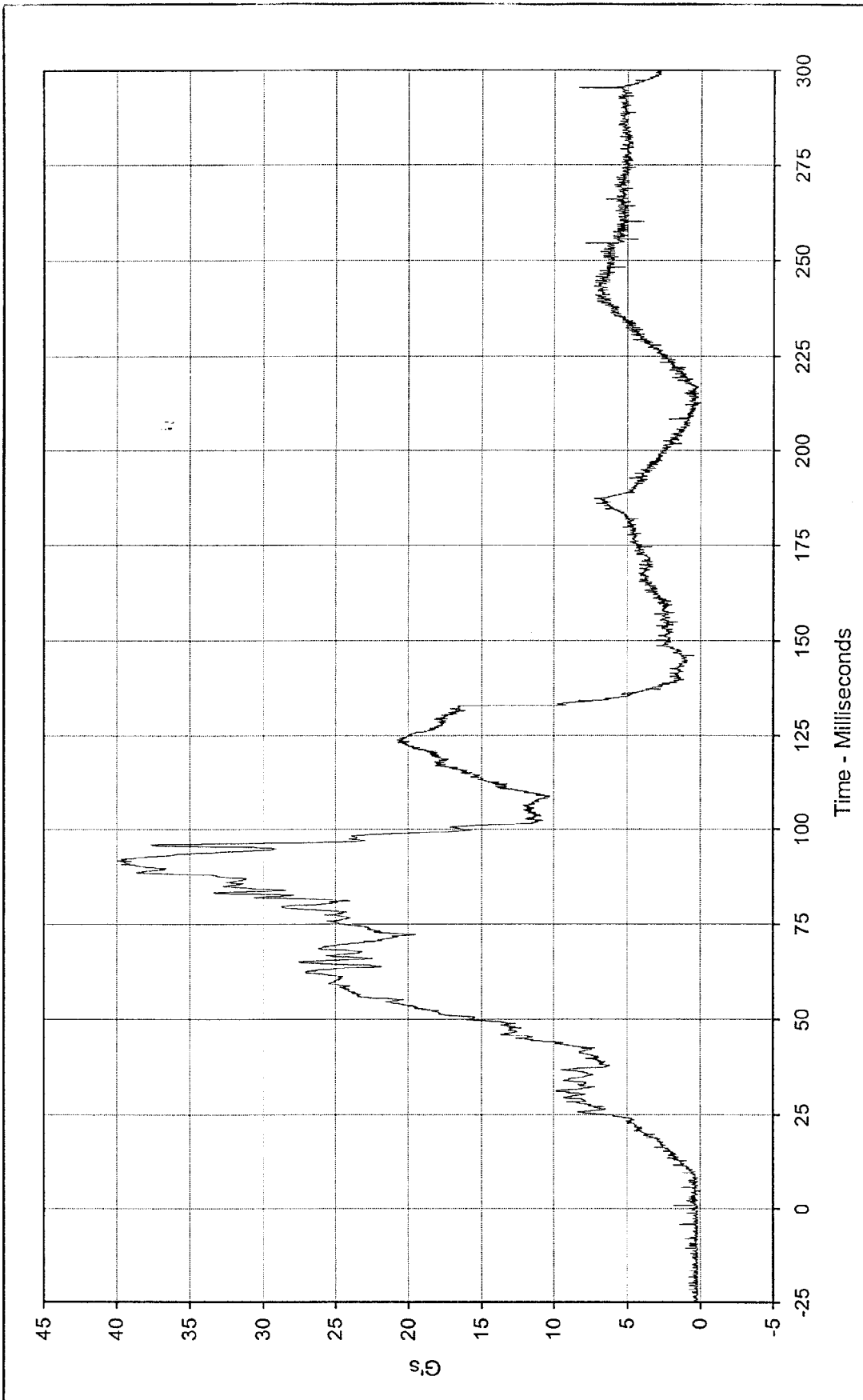
Curve Description: Driver Pelvis Y
 Maximum Value: 14.5 at 123.3 Milliseconds
 Minimum Value: -6.8 at 92.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-018





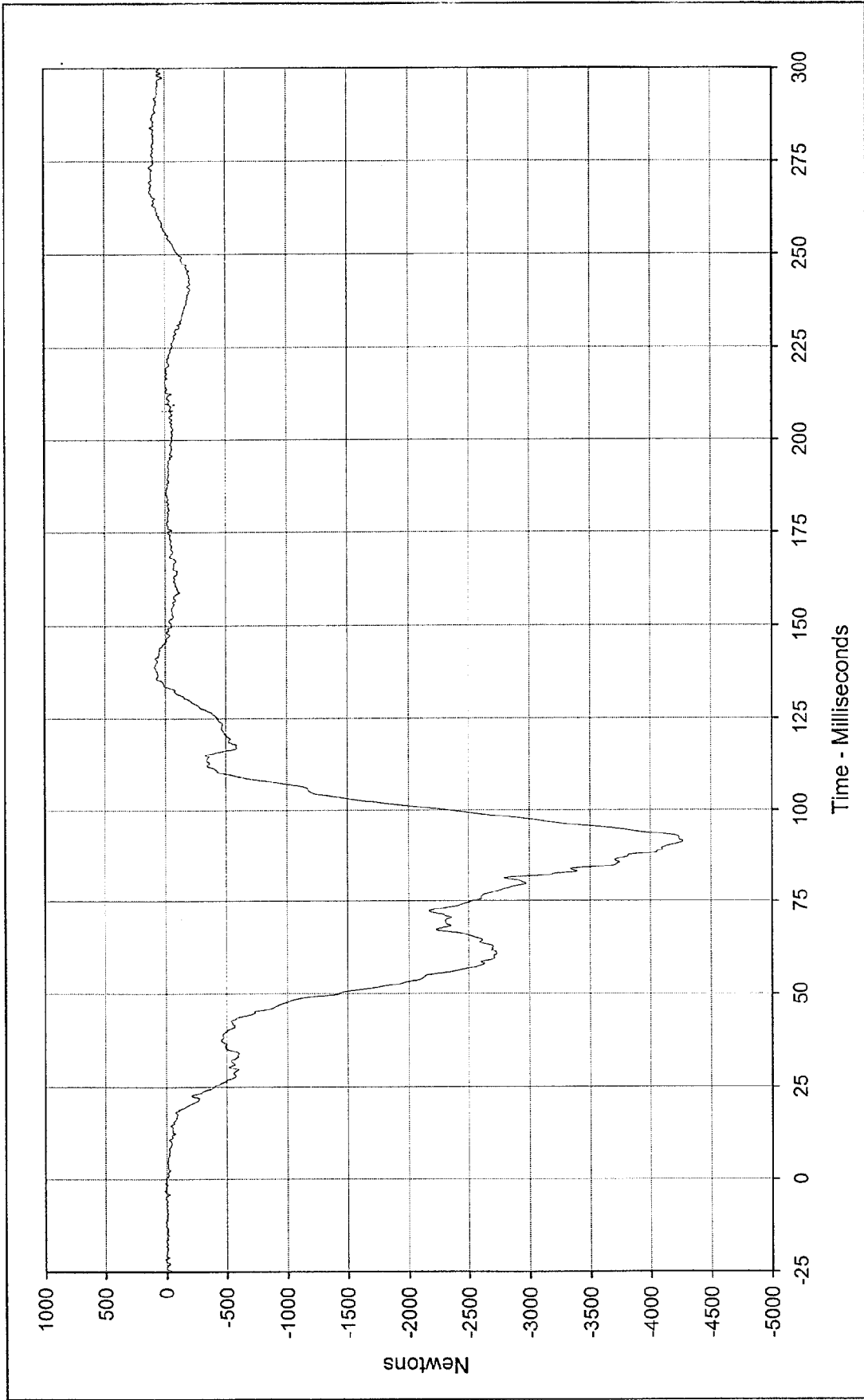
Curve Description: Driver Pelvis Z * Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 7.7 at 94.7 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -19.4 at 95.9 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-019 * Channel Failed at 133 Msec.





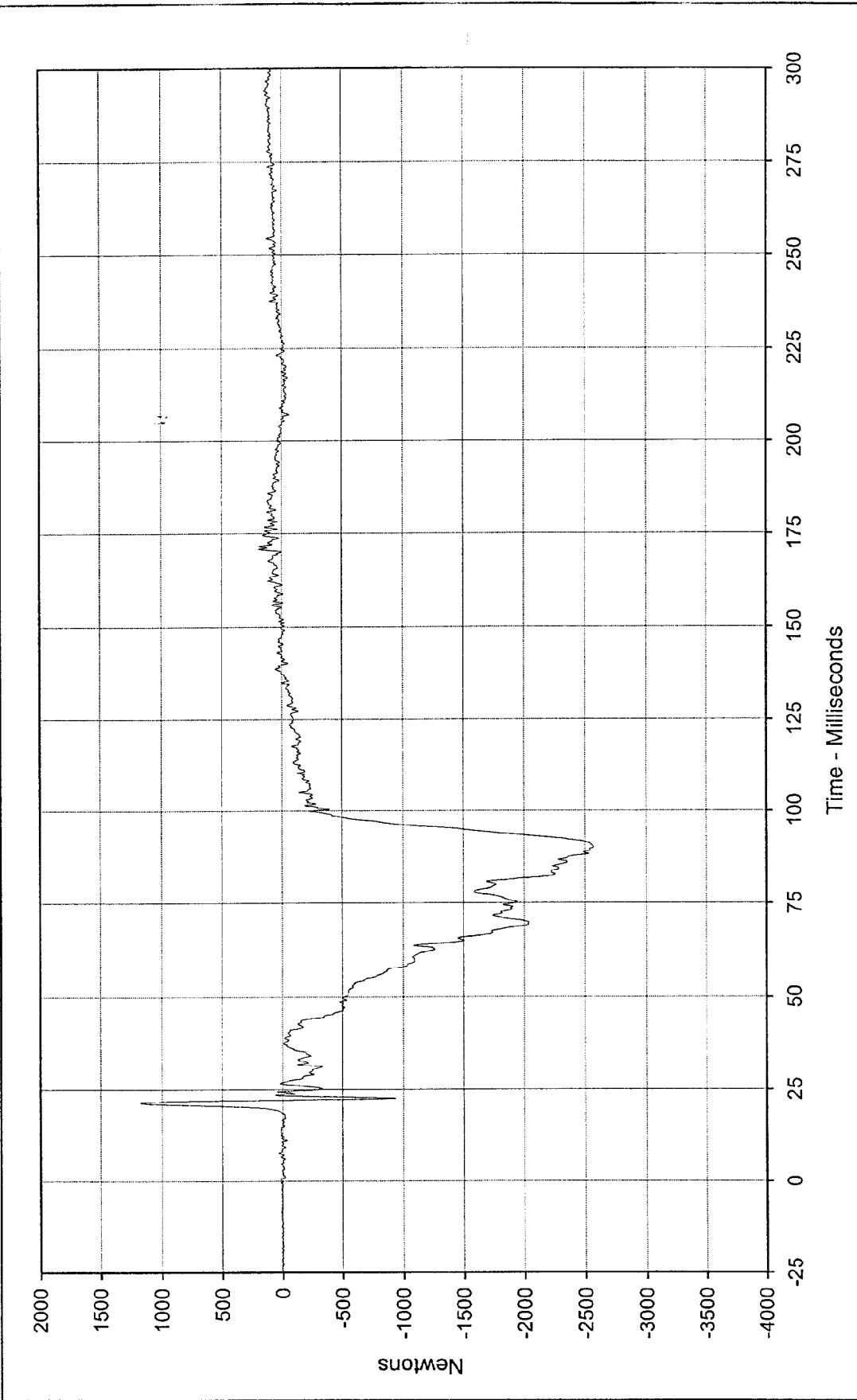
Curve Description: Driver Pelvis Resultant Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 39.9 at 91.6 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 0.0 at 212.5 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: RES-017





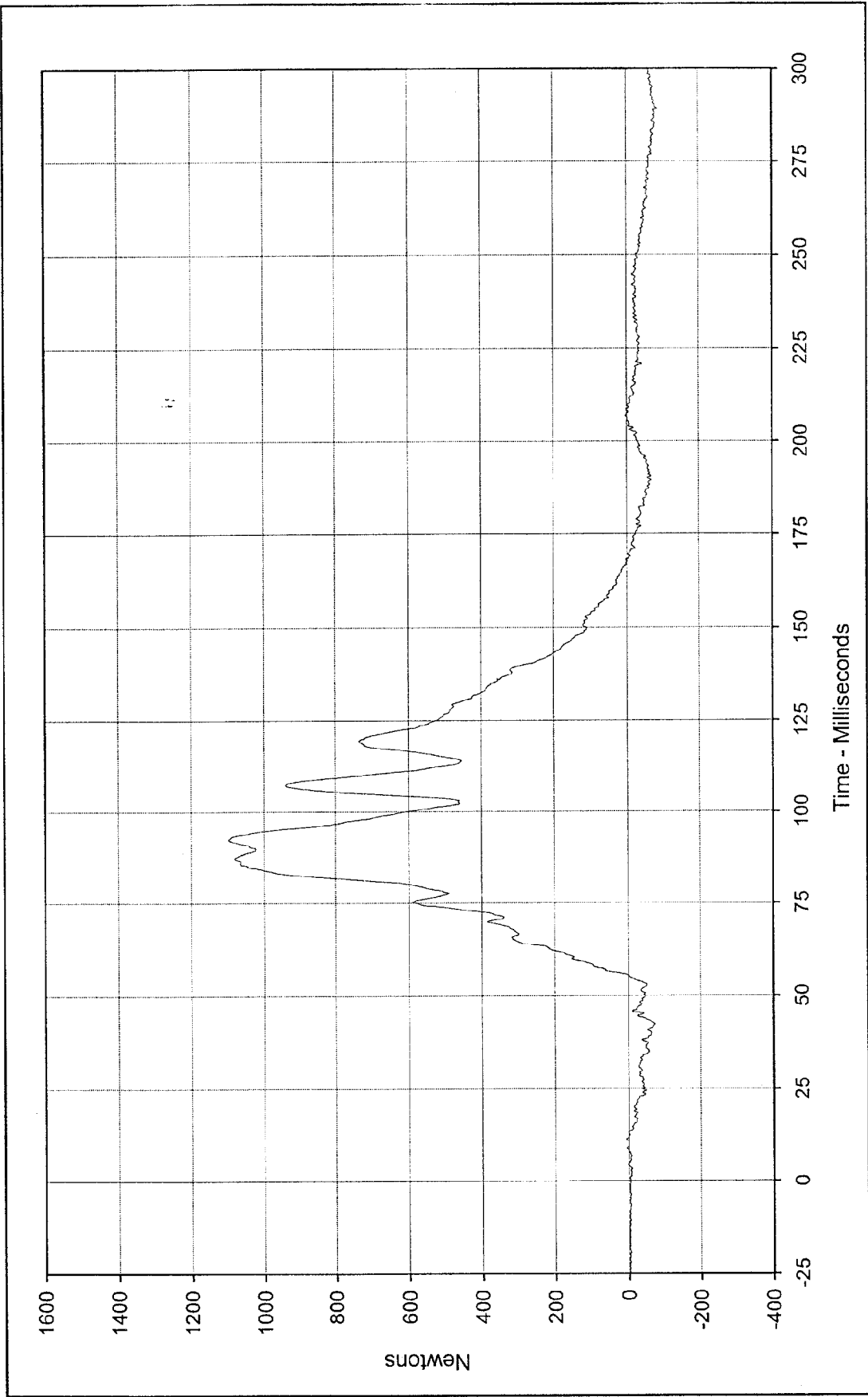
Curve Description: Driver Left Femur Force Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 131.9 at 269.3 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -4273.5 at 91.4 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-020





Curve Description: Driver Right Femur Force Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 1176.6 at 21.4 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -2571.6 at 90.1 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-021

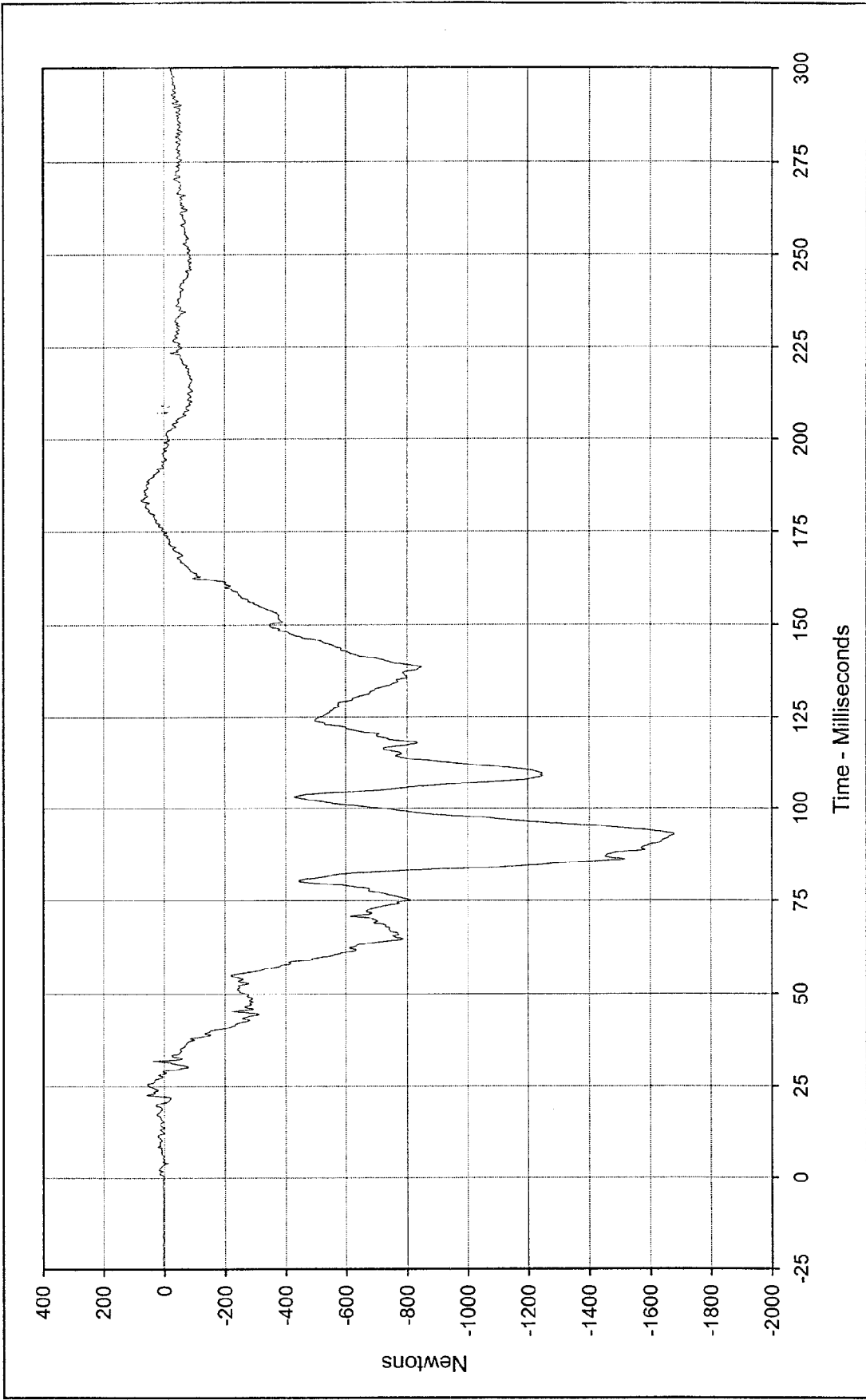




Curve Description: Driver Left Upper Tibia Force X
 Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 1098.3 at 92.5 Milliseconds
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -86.7 at 289.3 Milliseconds



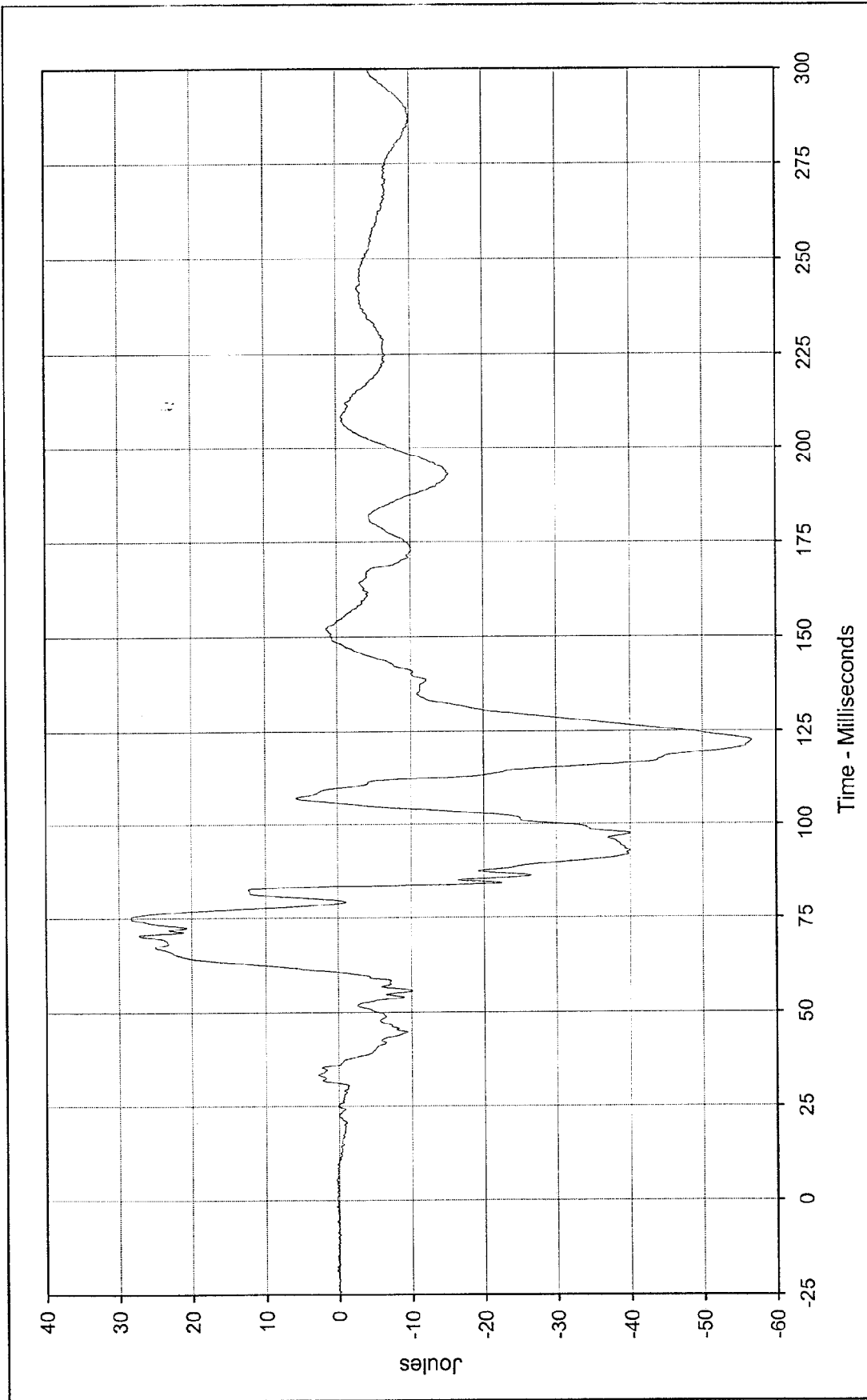
SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-022



Curve Description: Driver Left Upper Tibia Force Z Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 77.6 at 183.5 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -1680.9 at 92.8 Milliseconds



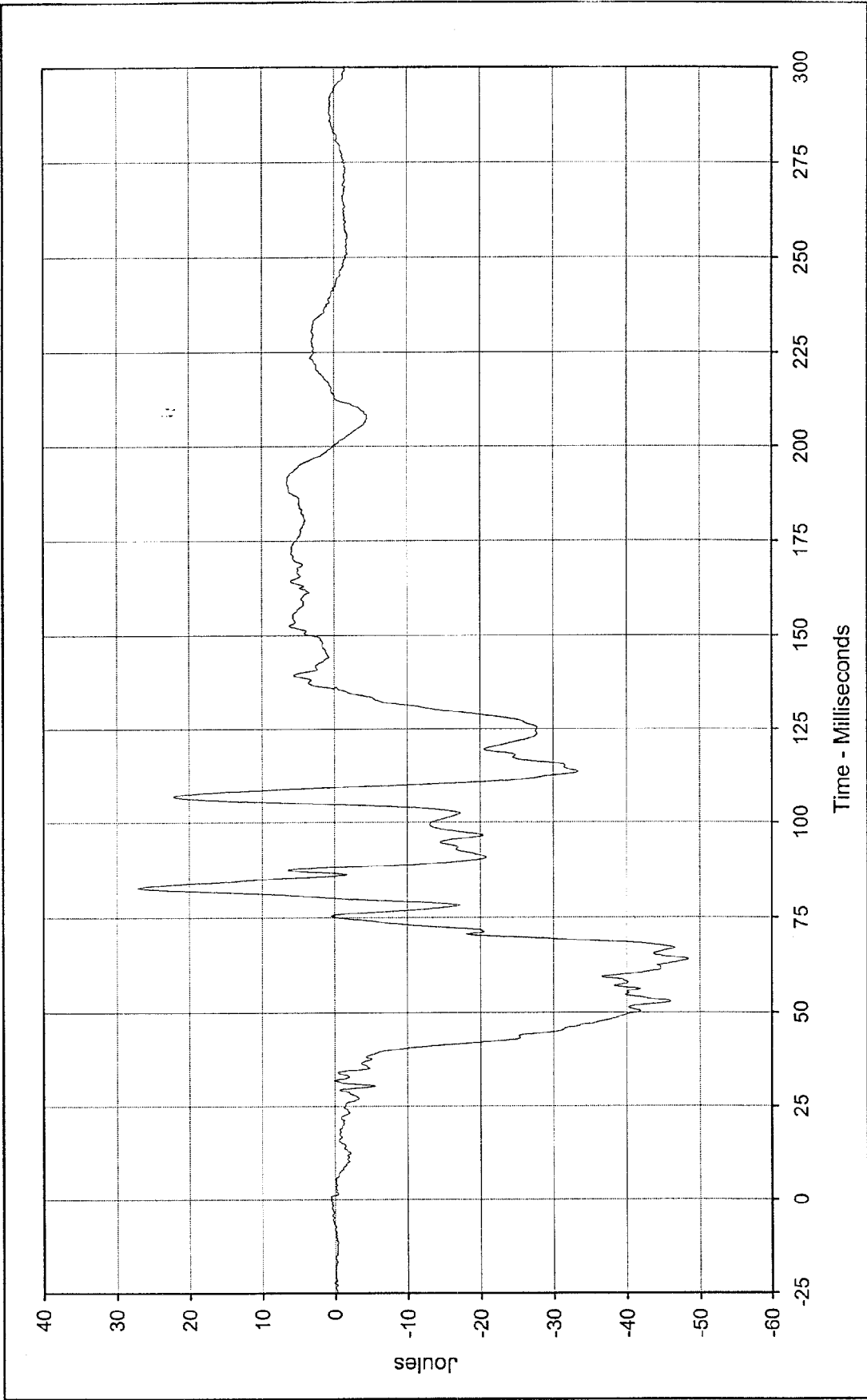
SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-023



Curve Description: Driver Left Upper Tibia Moment X
 Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 28.3 at 75.2 Milliseconds
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -56.7 at 122.3 Milliseconds

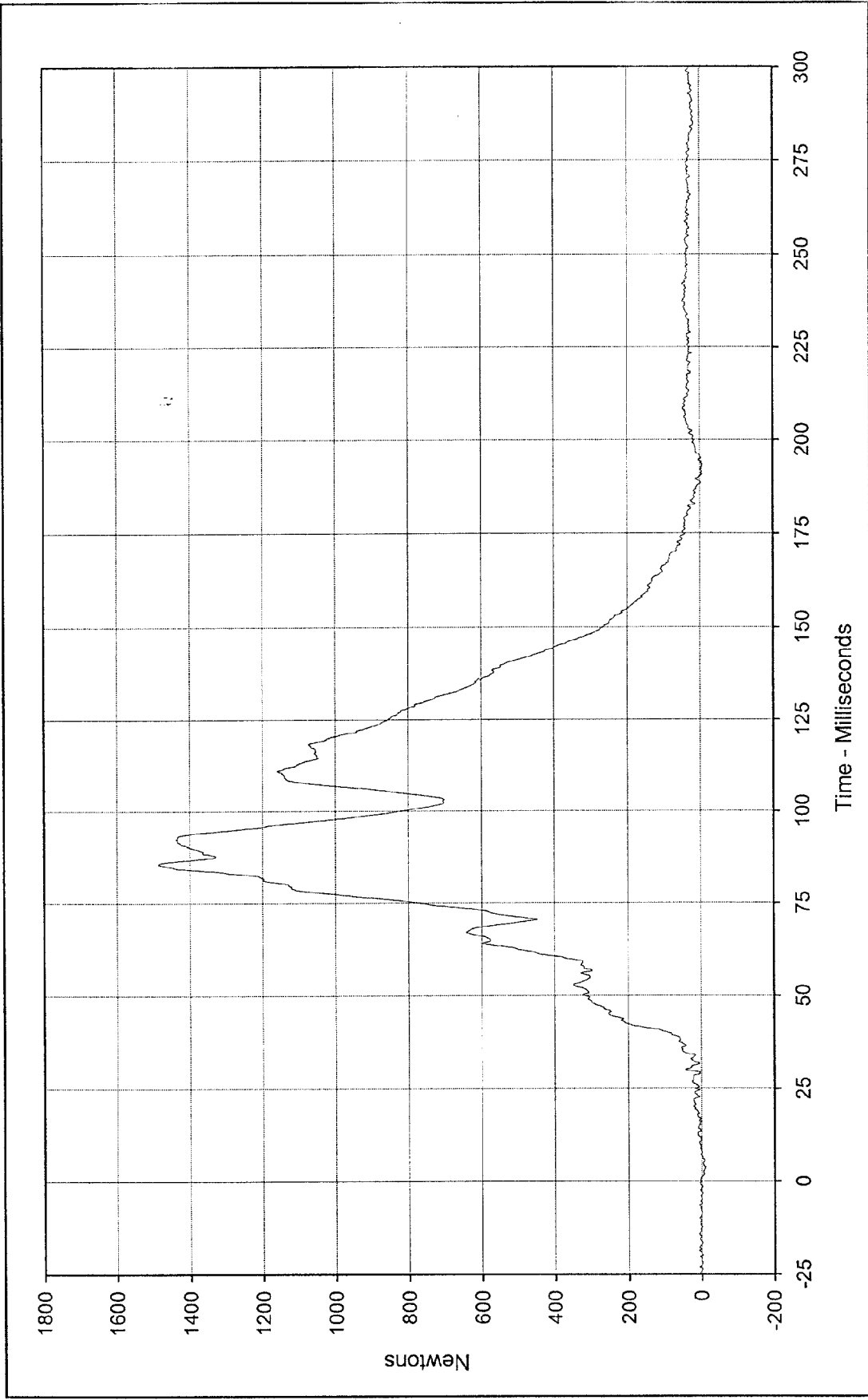


SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-024



Curve Description: Driver Left Upper Tibia Moment Y Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 27.1 at 82.6 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -48.4 at 64.0 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-025

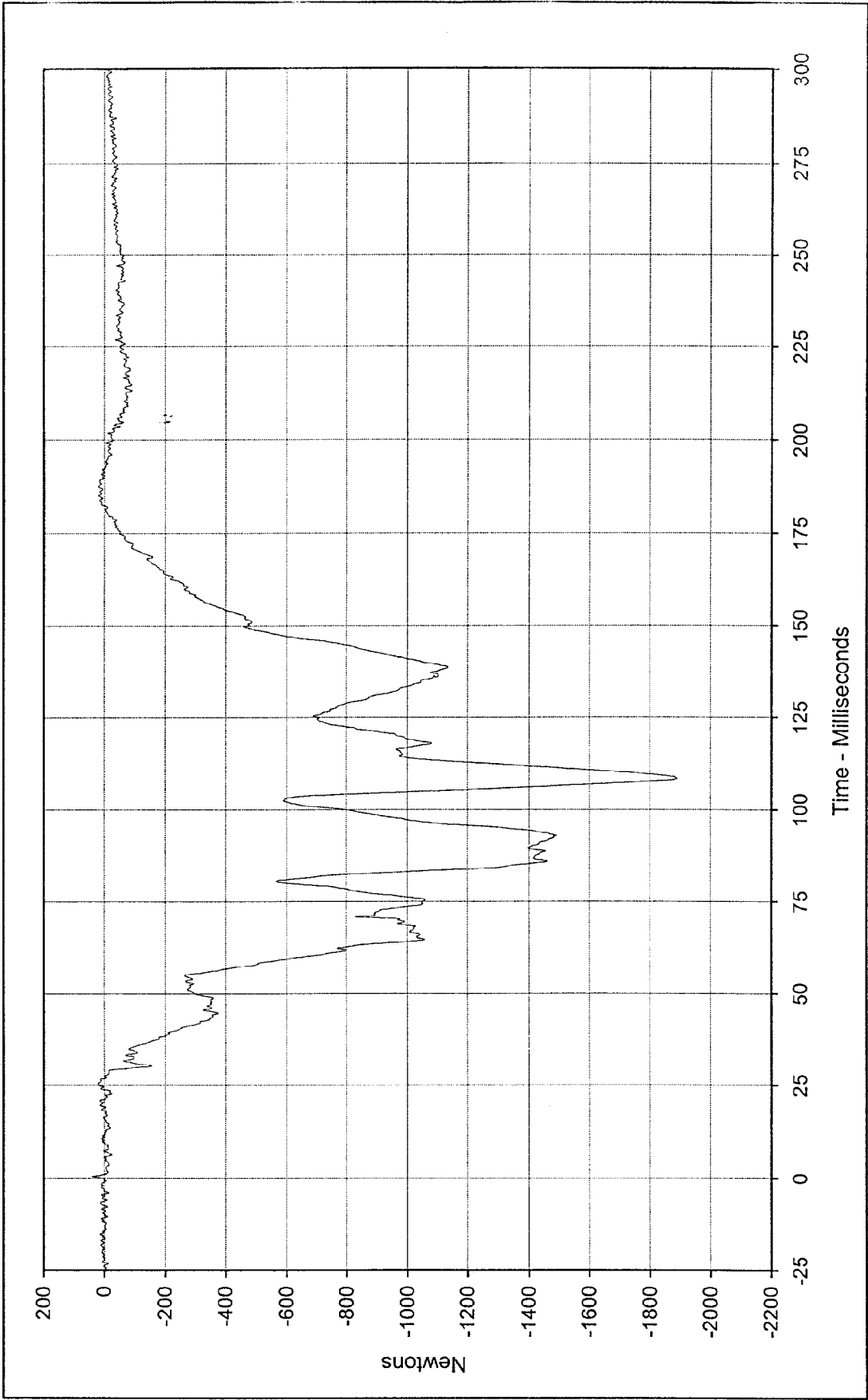




Curve Description: Driver Left Lower Tibia Force X
 Maximum Value: 1486.8 at 85.6 Milliseconds
 Minimum Value: -10.8 at 3.6 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-026

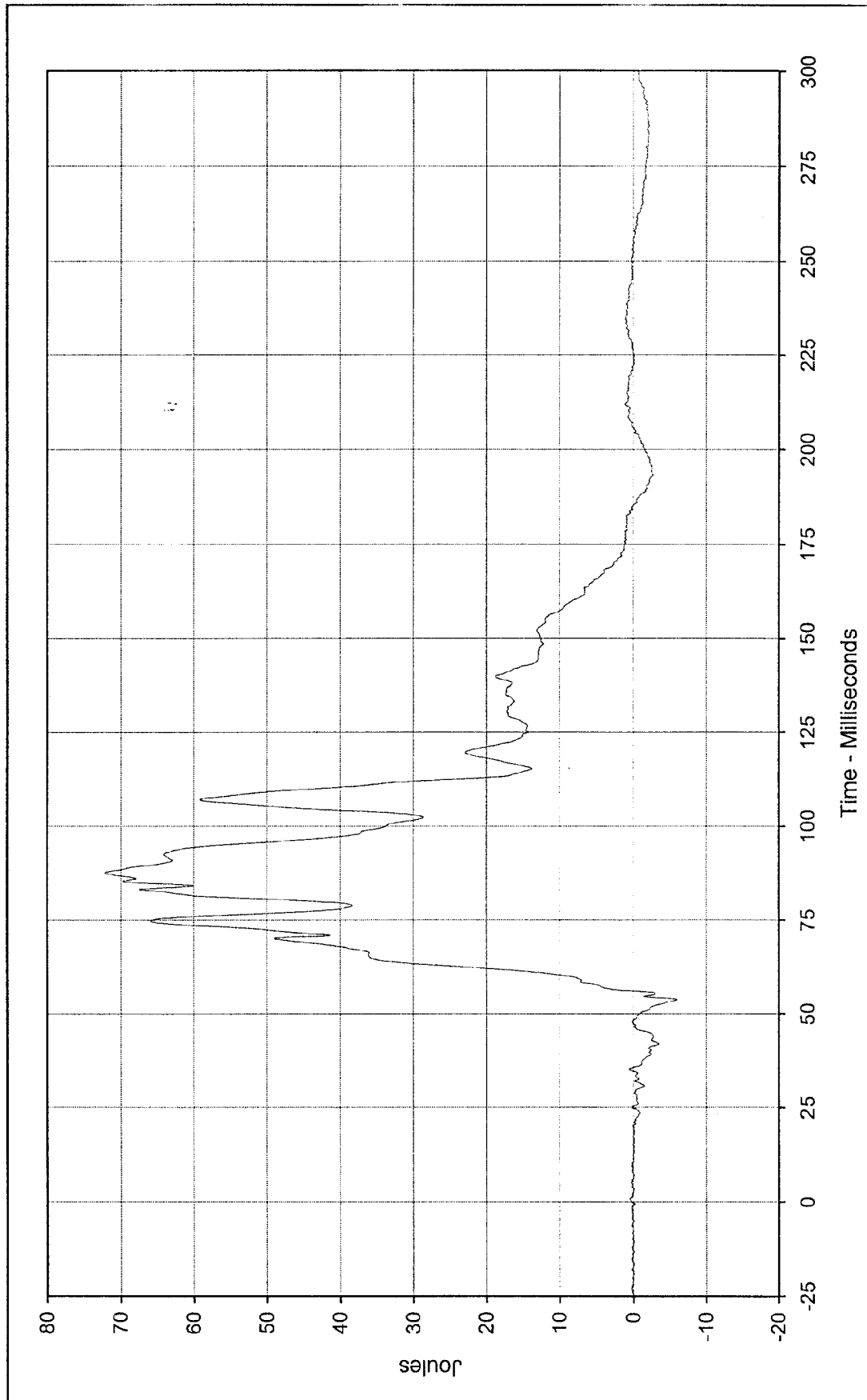
Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan





Curve Description: Driver Left Lower Tibia Force Z Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 40.5 at 0.5 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -1891.4 at 108.3 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-027

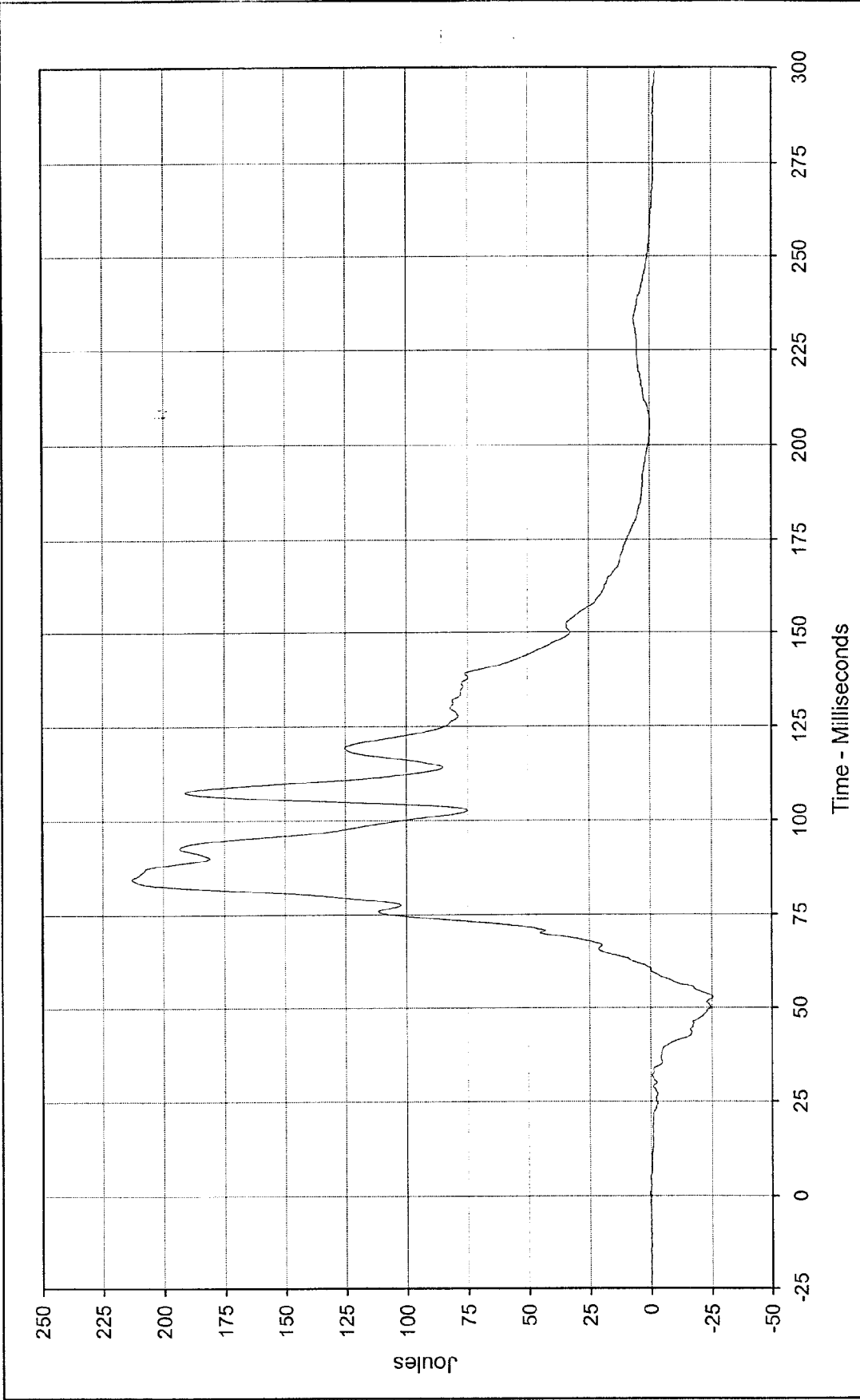




Curve Description: Driver Left Lower Tibia Moment X
 Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 72.1 at 87.5 Milliseconds
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -6.1 at 53.7 Milliseconds



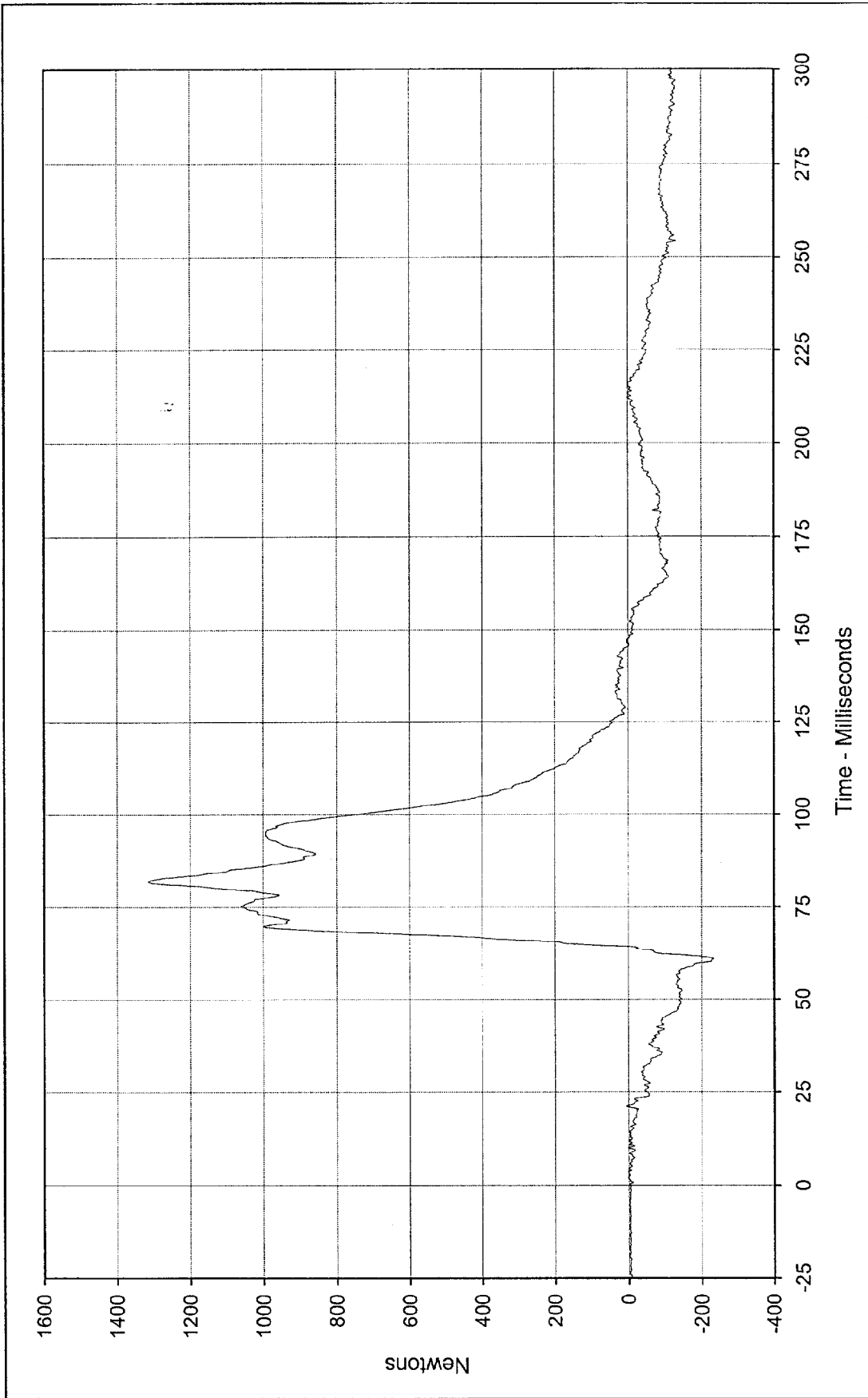
SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-028



Curve Description: Driver Left Lower Tibia Moment Y Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 212.9 at 84.5 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -25.7 at 52.8 Milliseconds



SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-029



Curve Description: Driver Right Upper Tibia Force X Testing Program 1997 NHTSA 40% Offset Impact (Female)

Maximum Value: 1314.5 at 81.8 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan

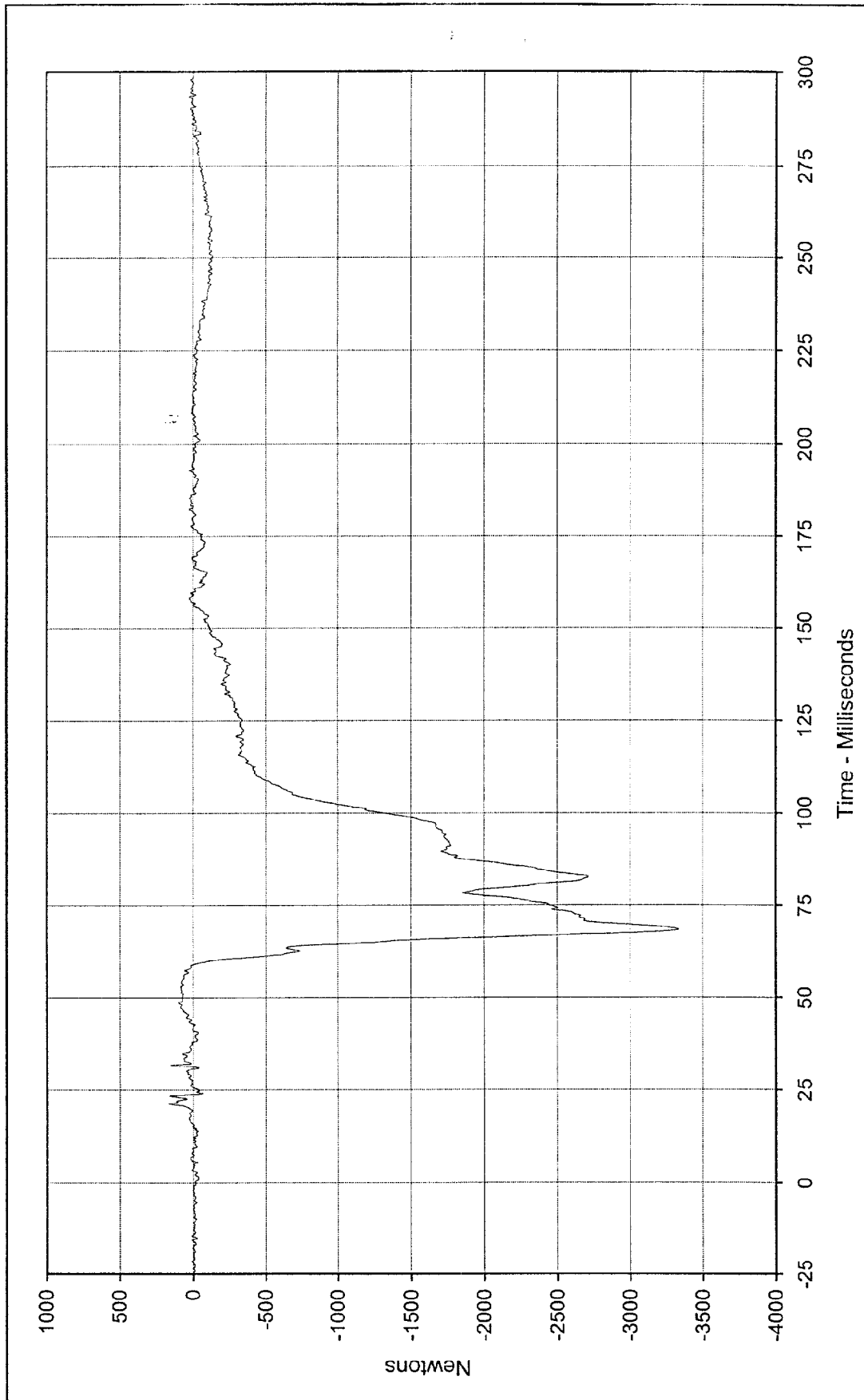
Minimum Value: -233.3 at 60.9 Milliseconds

SAE Filter Class: 600

Date of Test: 8/21/97

Curve Number: FIL-030





Curve Description: Driver Right Upper Tibia Force Z Testing Program 1997 NHTSA 40% Offset Impact (Female)

Maximum Value: 167.3 at 21.3 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan

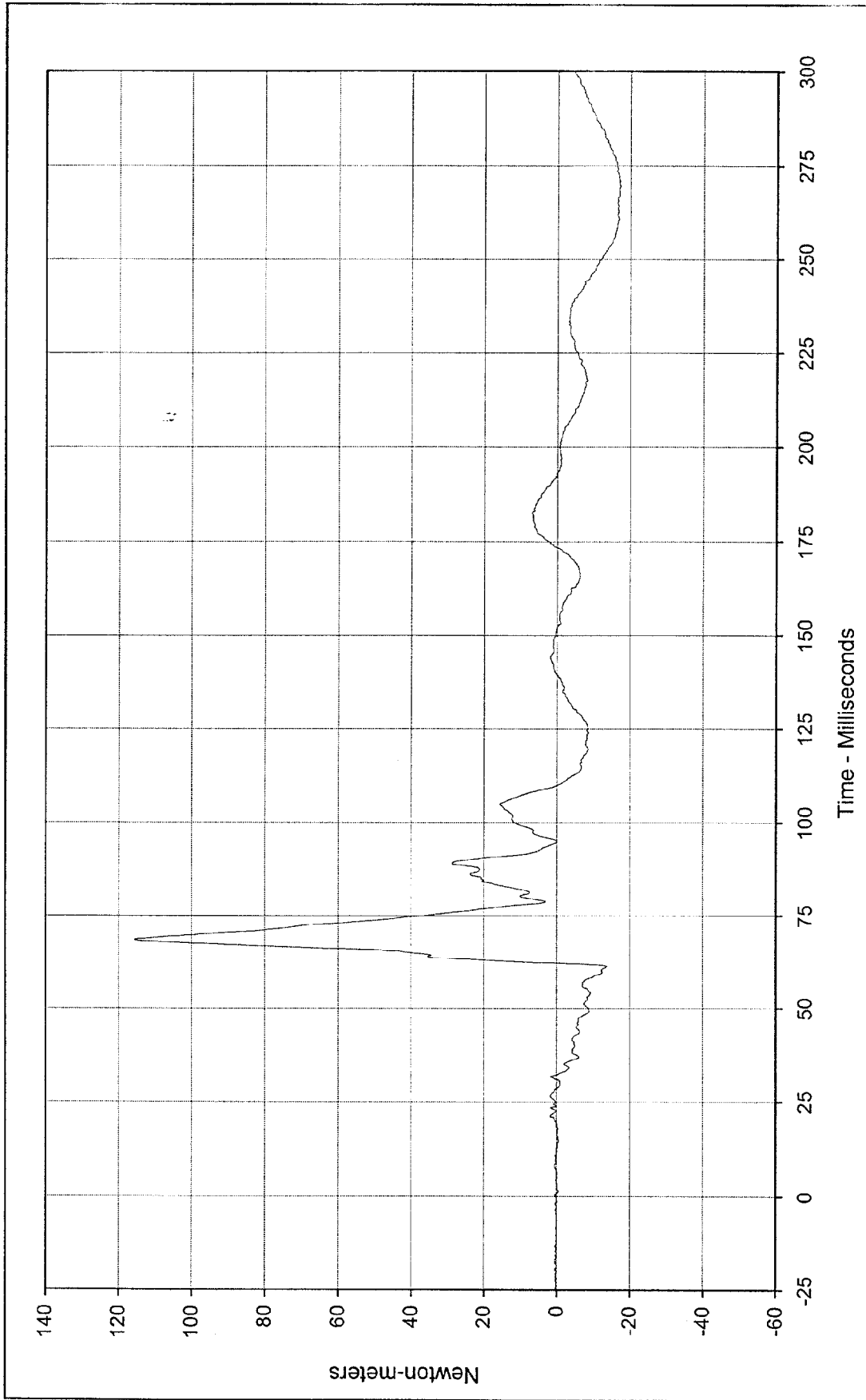
Minimum Value: -3334.6 at 68.5 Milliseconds

SAE Filter Class: 600

Date of Test: 8/21/97

Curve Number: FIL-031

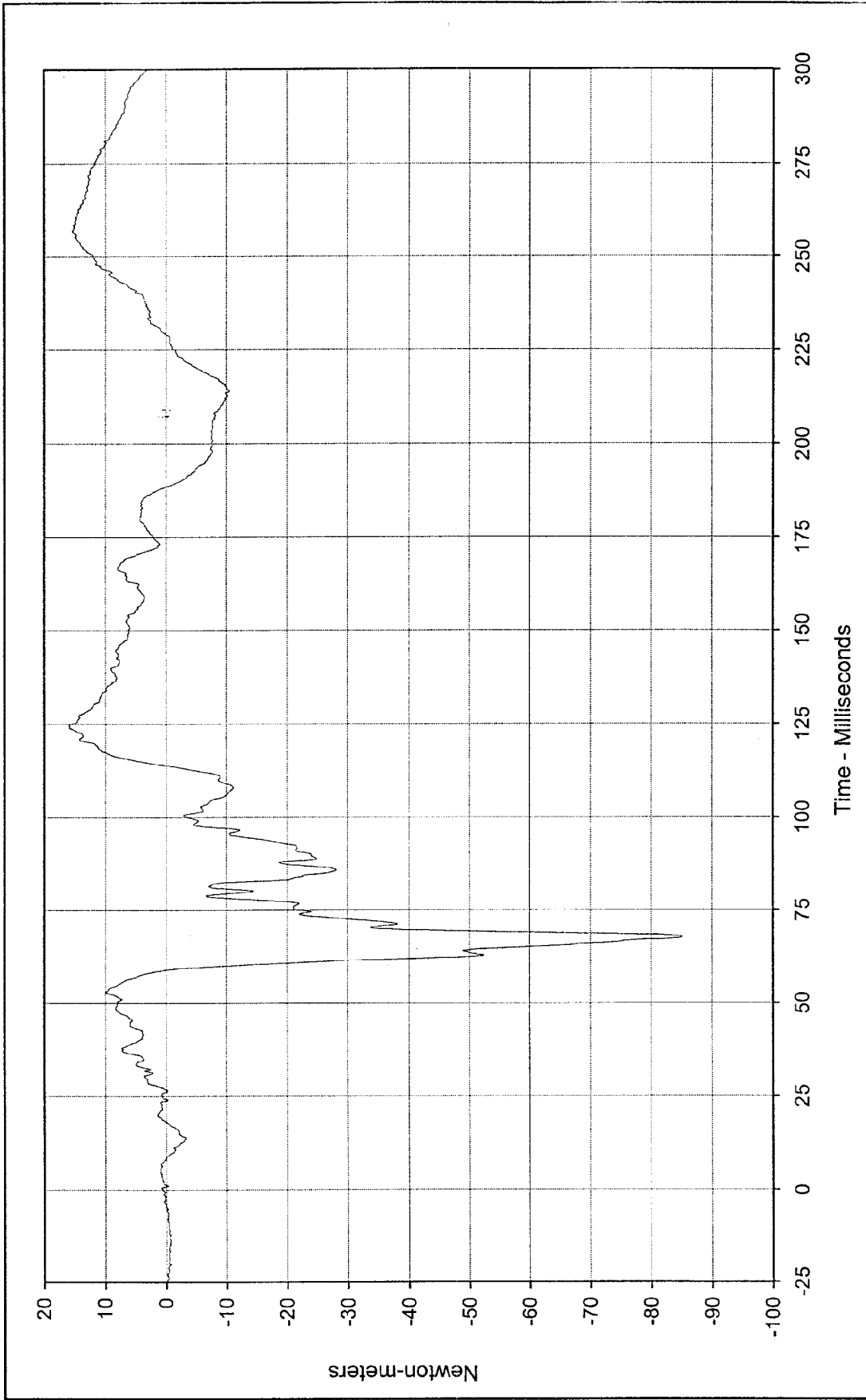




Curve Description: Driver Right Upper Tibia Moment X
 Maximum Value: 115.6 at 68.5 Milliseconds
 Minimum Value: -17.1 at 269.5 Milliseconds

Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-032

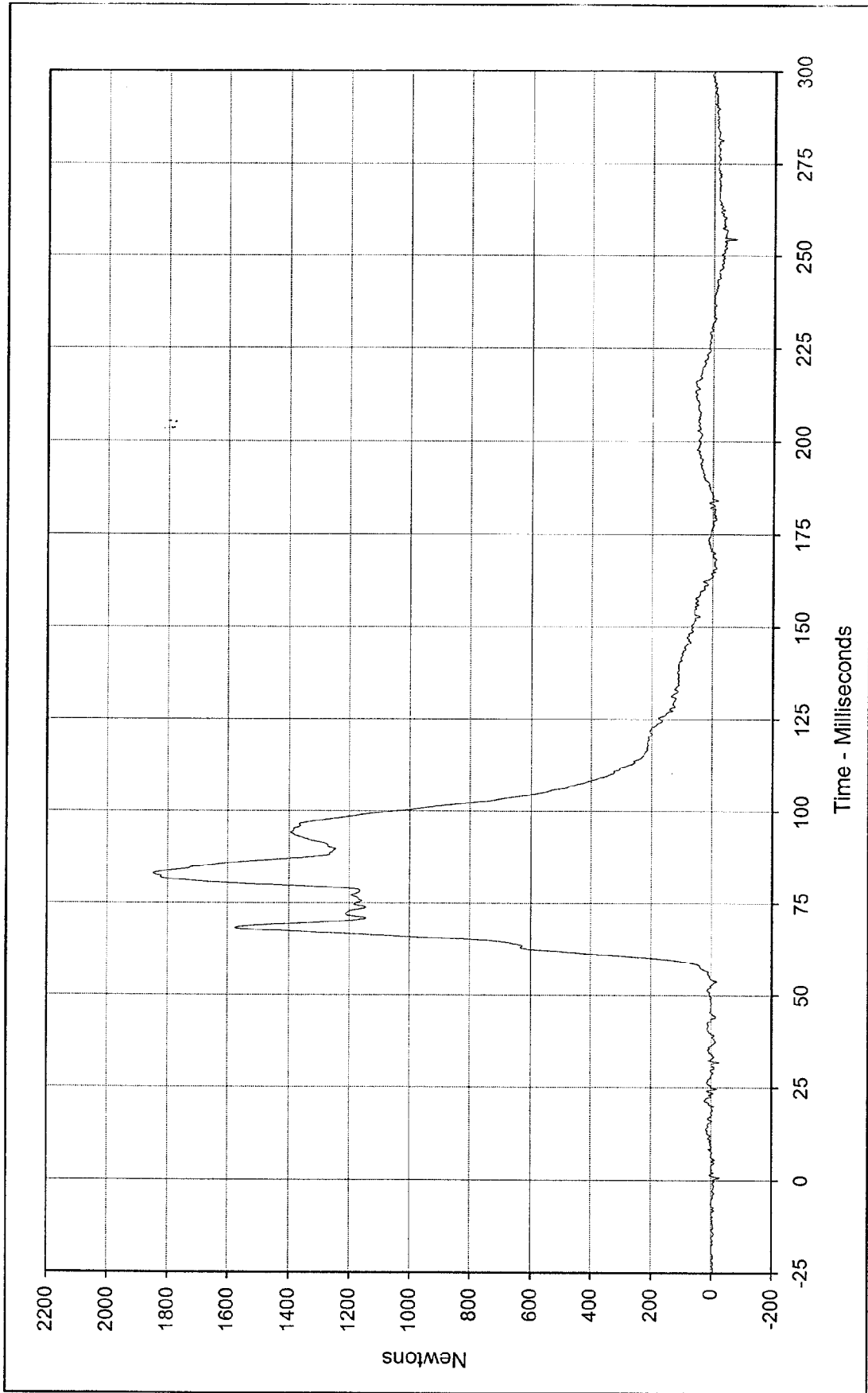




Curve Description: Driver Right Upper Tibia Moment Y Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 15.9 at 124.8 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -85.1 at 67.8 Milliseconds



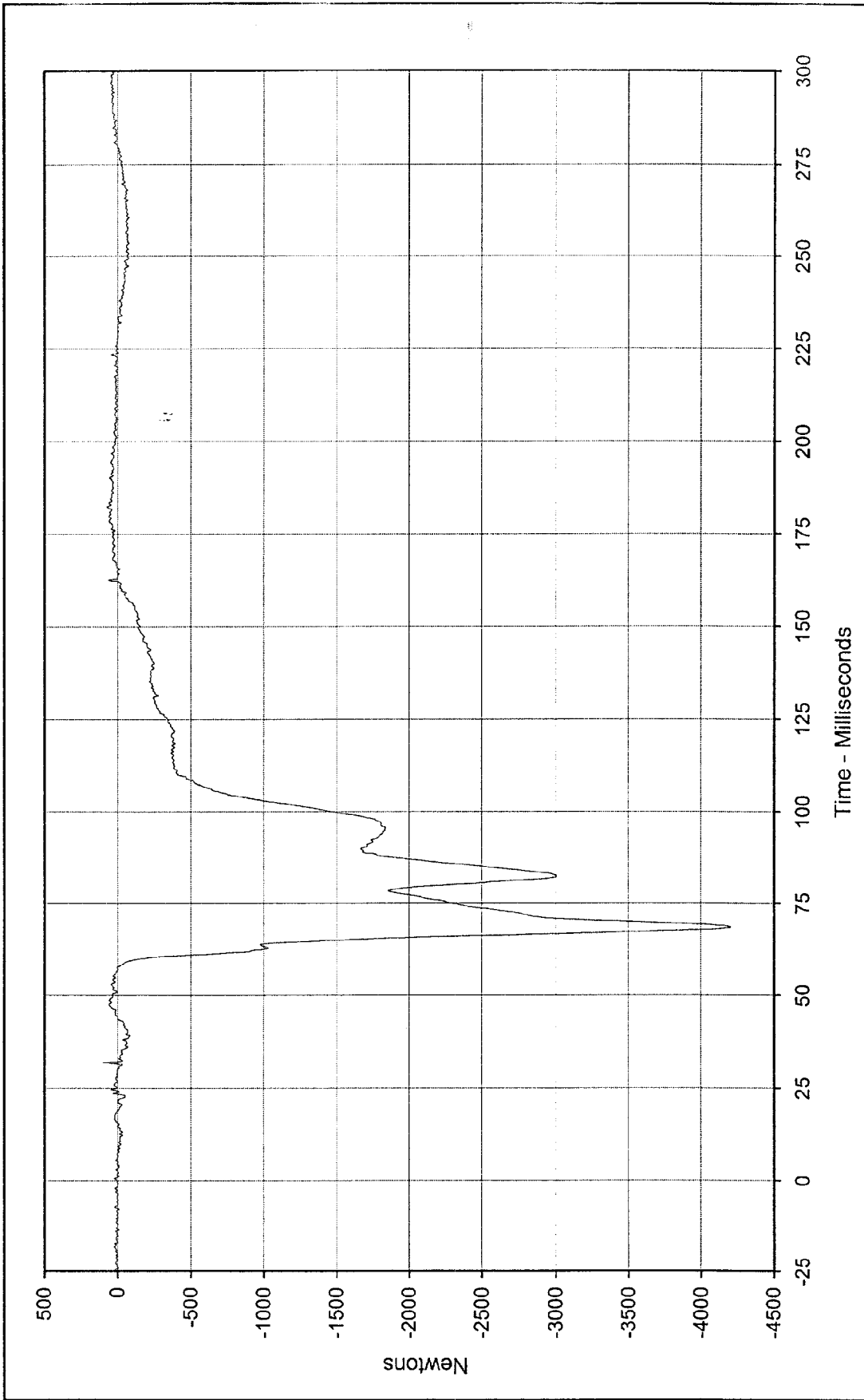
SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-033



Curve Description: Driver Right Lower Tibia Force X
 Maximum Value: 1849.9 at 83.0 Milliseconds
 Minimum Value: -77.0 at 254.5 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-034

Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan

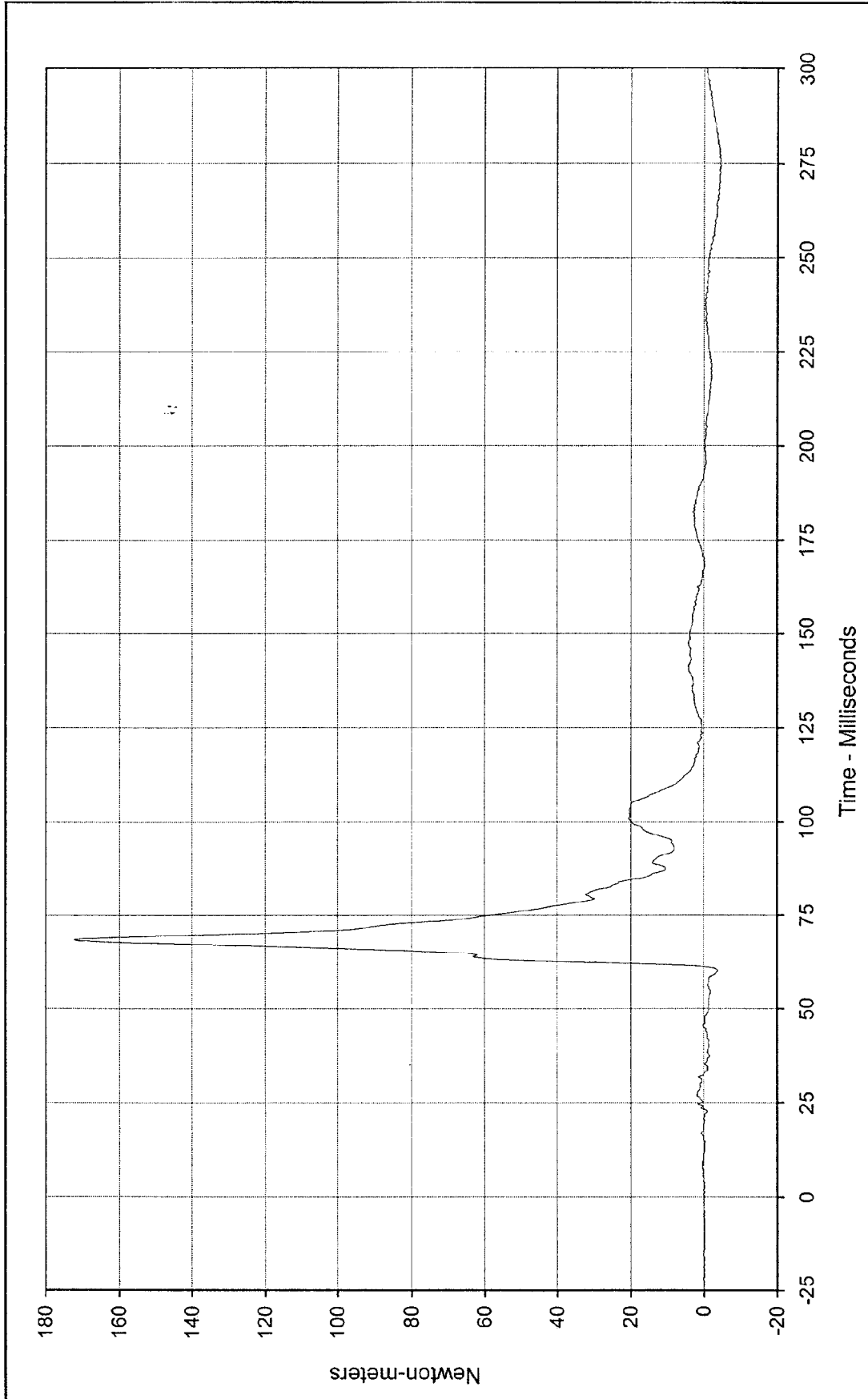




Curve Description: Driver Right Lower Tibia Force Z
 Maximum Value: 97.6 at 31.8 Milliseconds
 Minimum Value: -4201.0 at 68.5 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-035

Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan

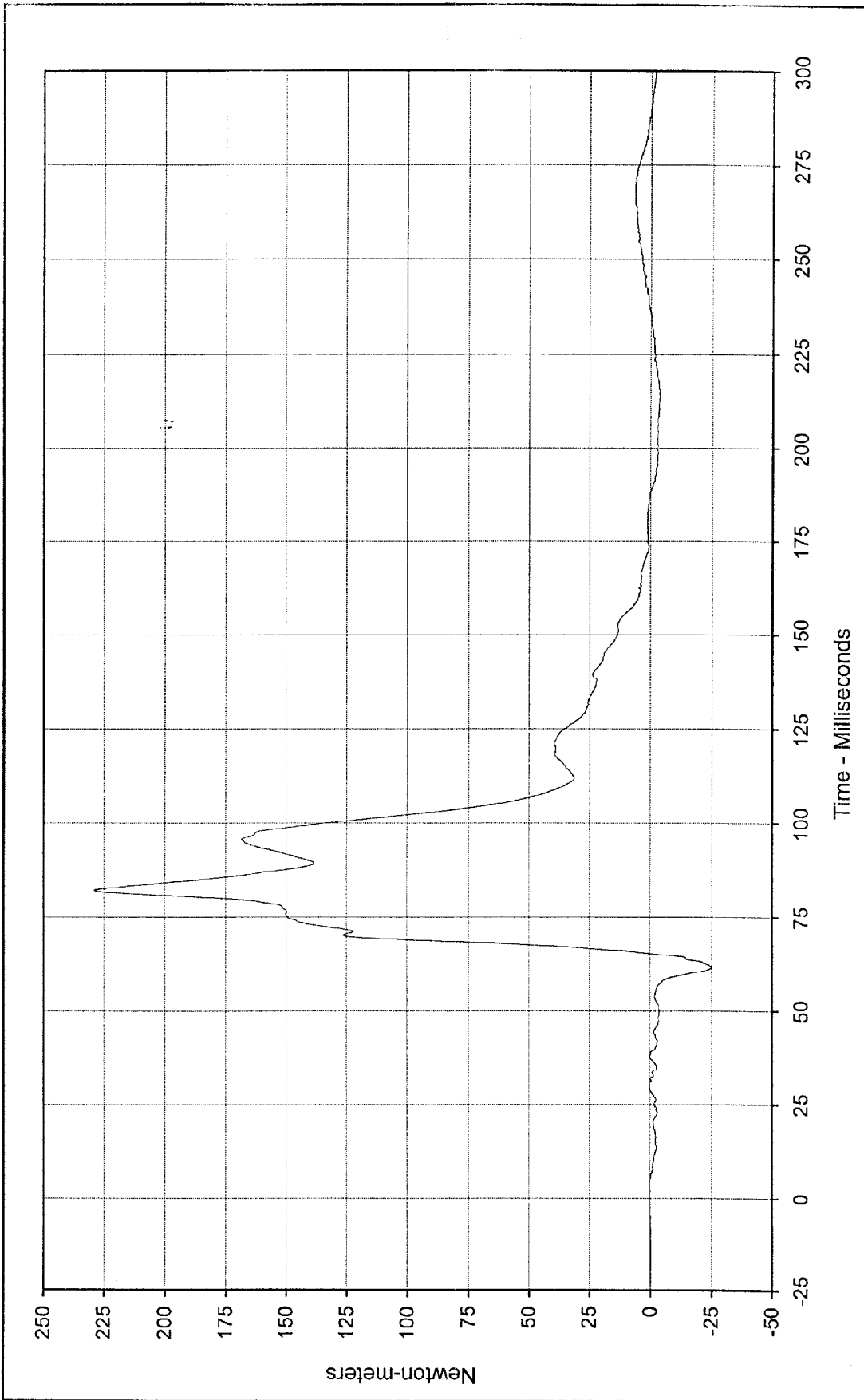




Curve Description: Driver Right Lower Tibia Moment X
 Maximum Value: 172.1 at 68.4 Milliseconds
 Minimum Value: -4.7 at 274.3 Milliseconds

Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-036

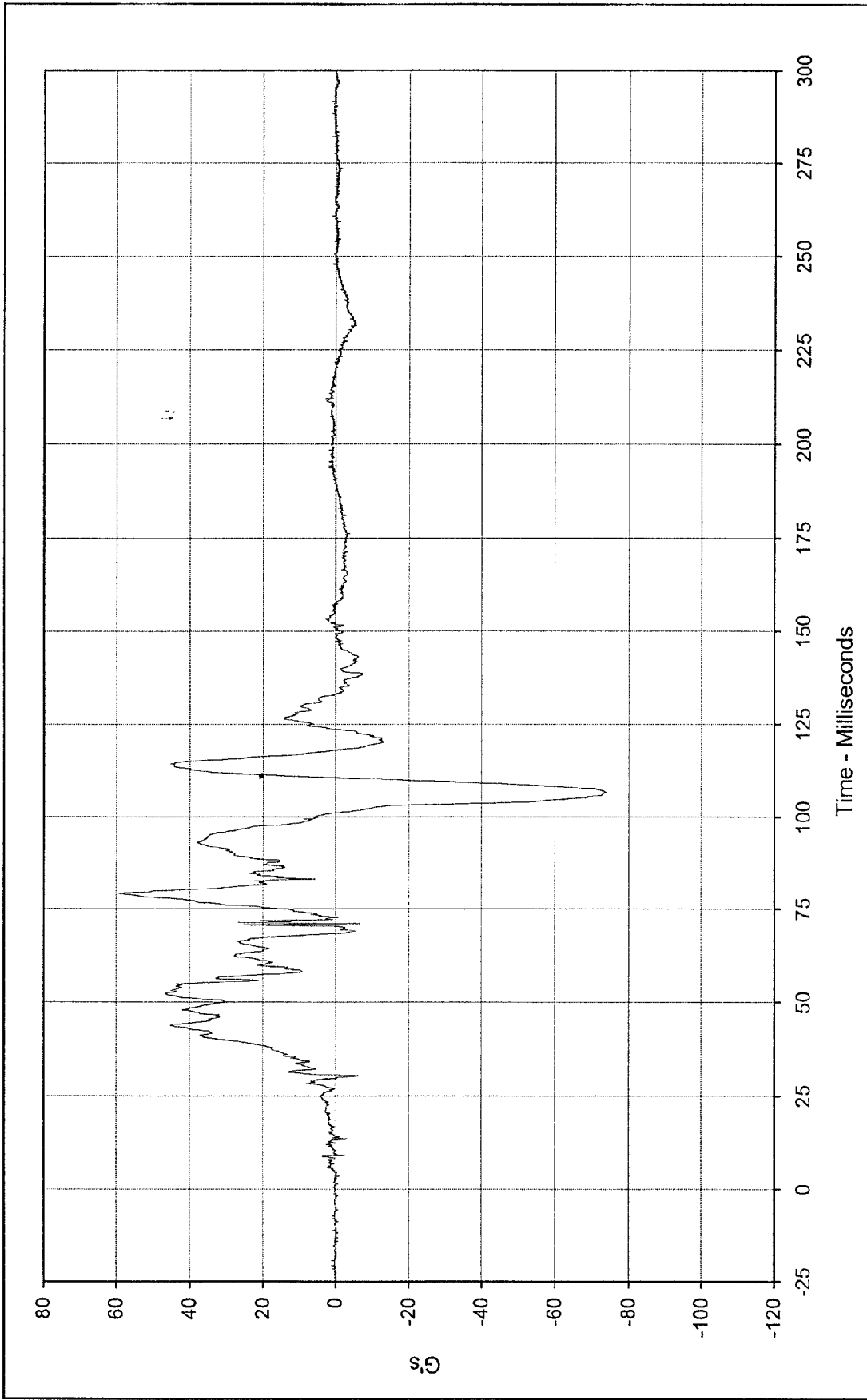




Curve Description: Driver Right Lower Tibia Moment Y
 Maximum Value: 229.0 at 82.0 Milliseconds
 Minimum Value: -25.0 at 61.6 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-037

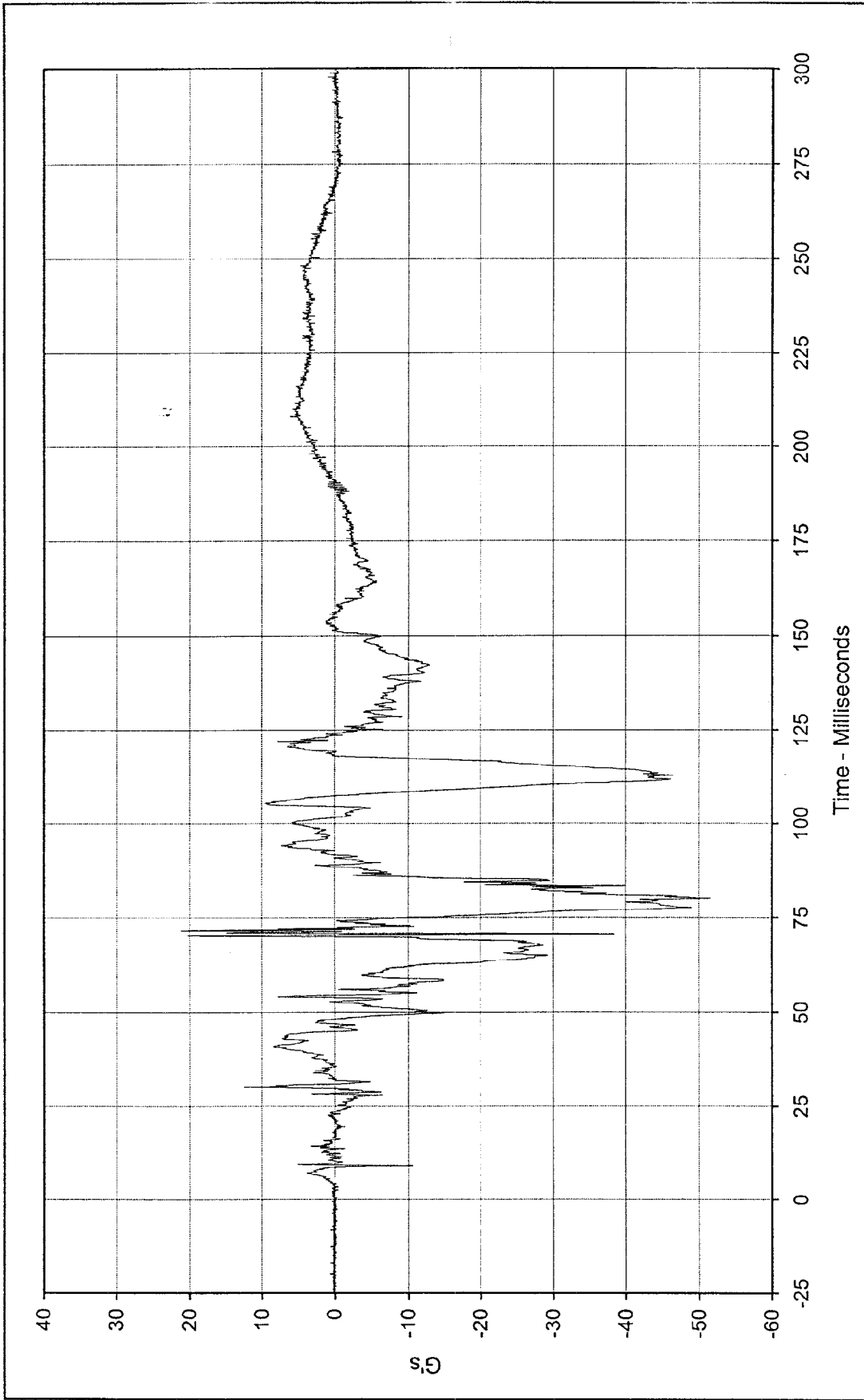
Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan





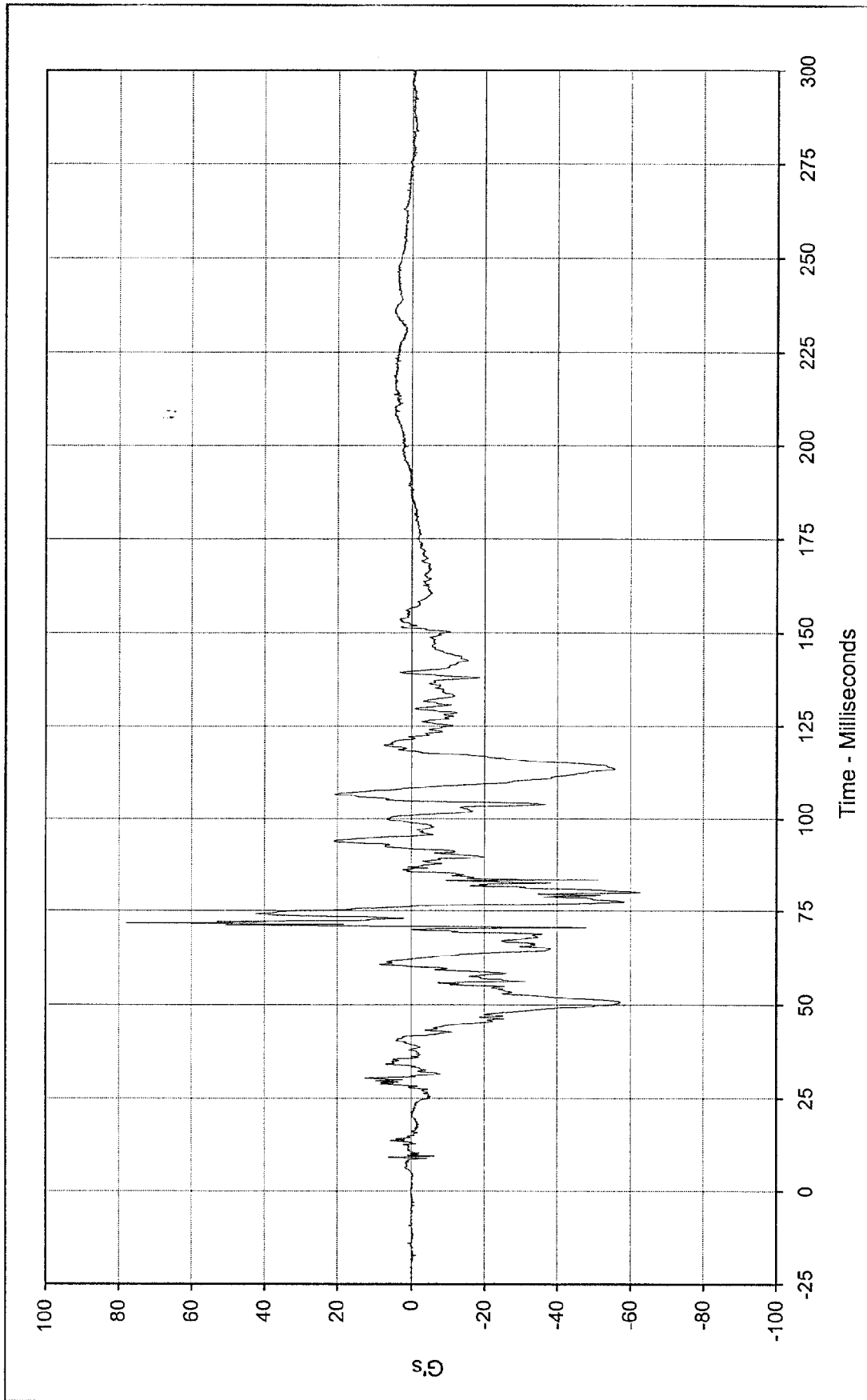
Curve Description: Driver Left Foot Aft X Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 59.4 at 79.2 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -73.8 at 106.6 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-038





Curve Description: Driver Left Foot Aft Z Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 21.0 at 71.7 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -51.6 at 80.0 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-039

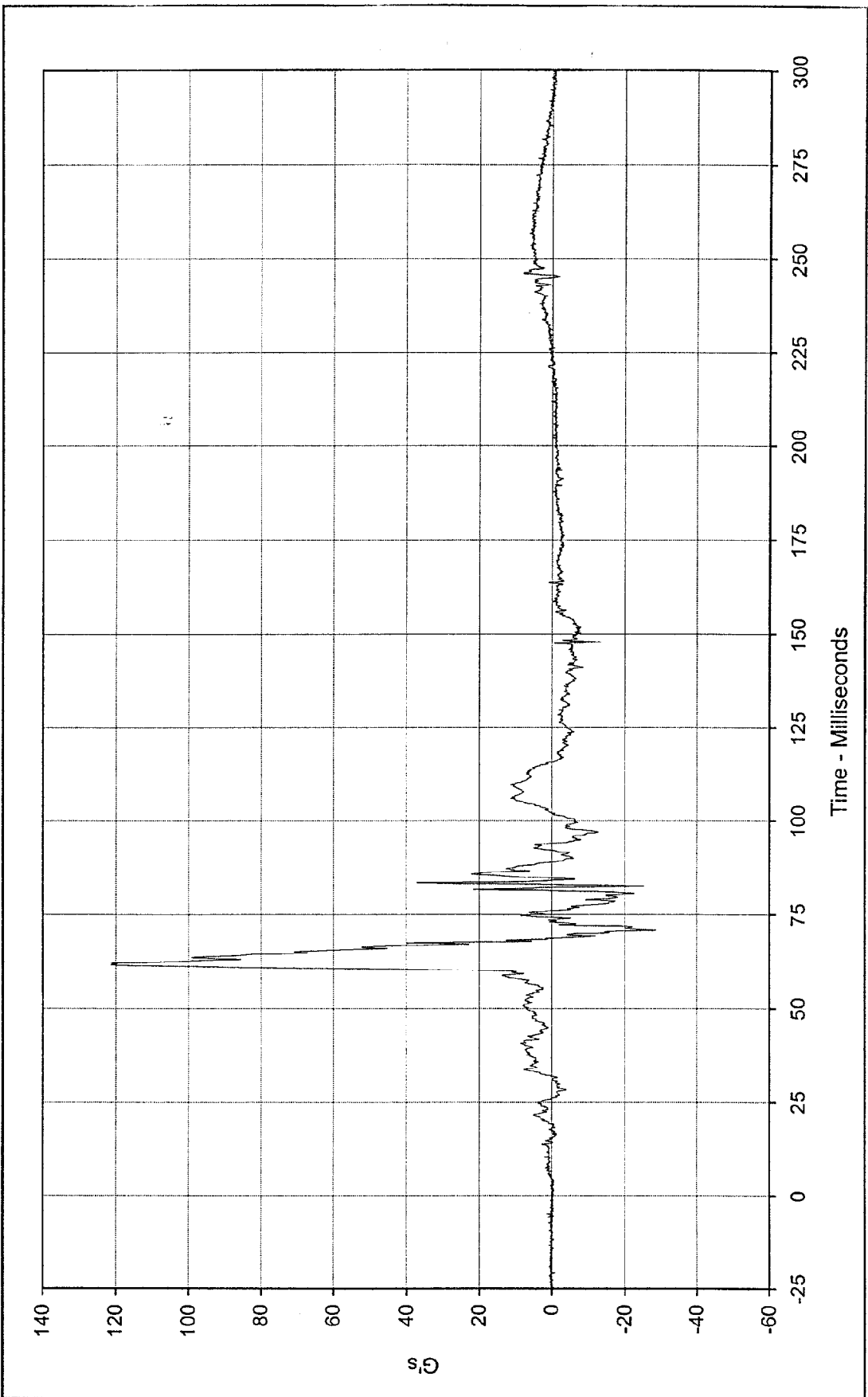




Curve Description: Driver Left Foot Fore Z
 Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 77.8 at 71.7 Milliseconds
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -62.5 at 79.9 Milliseconds

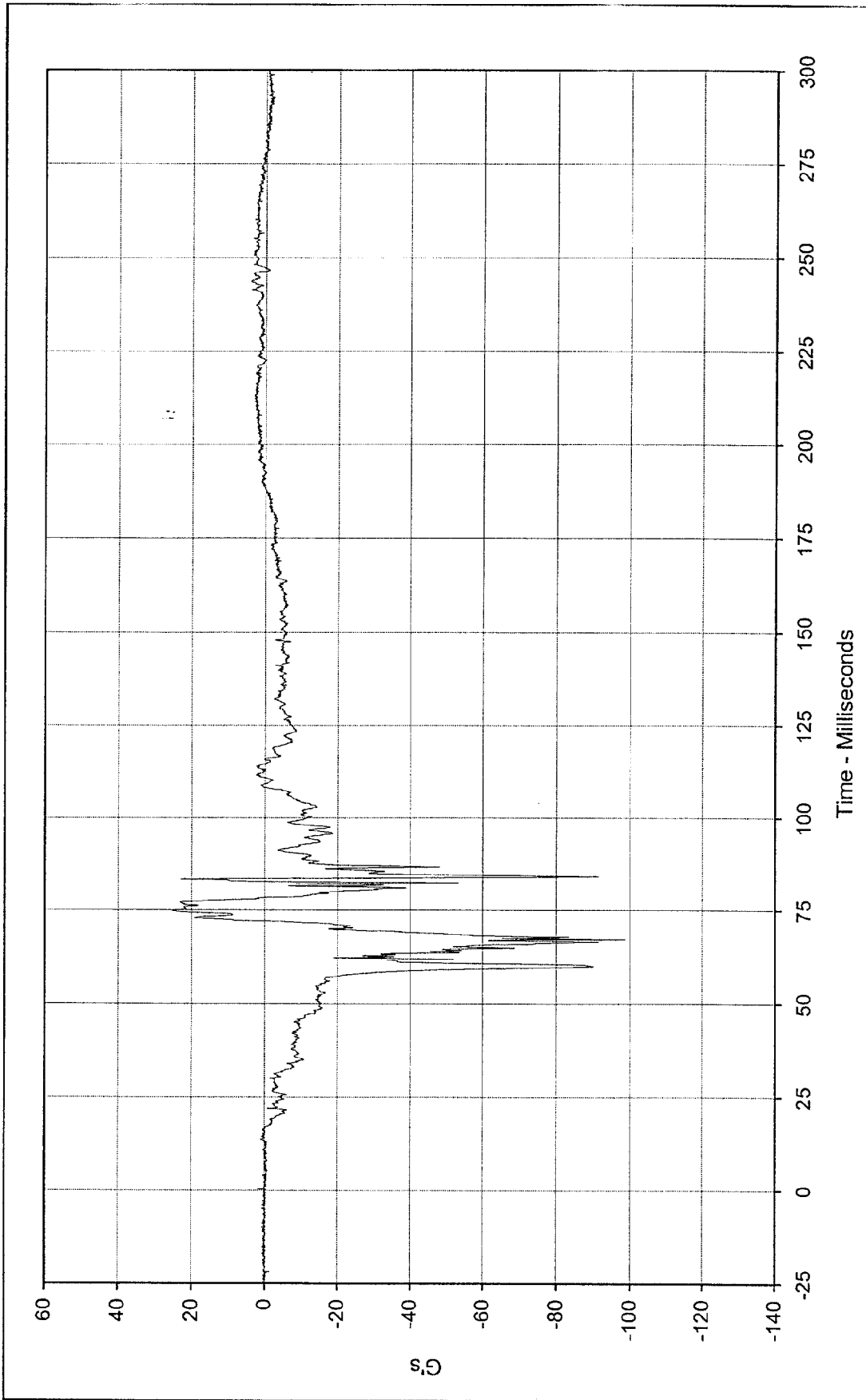


SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-040



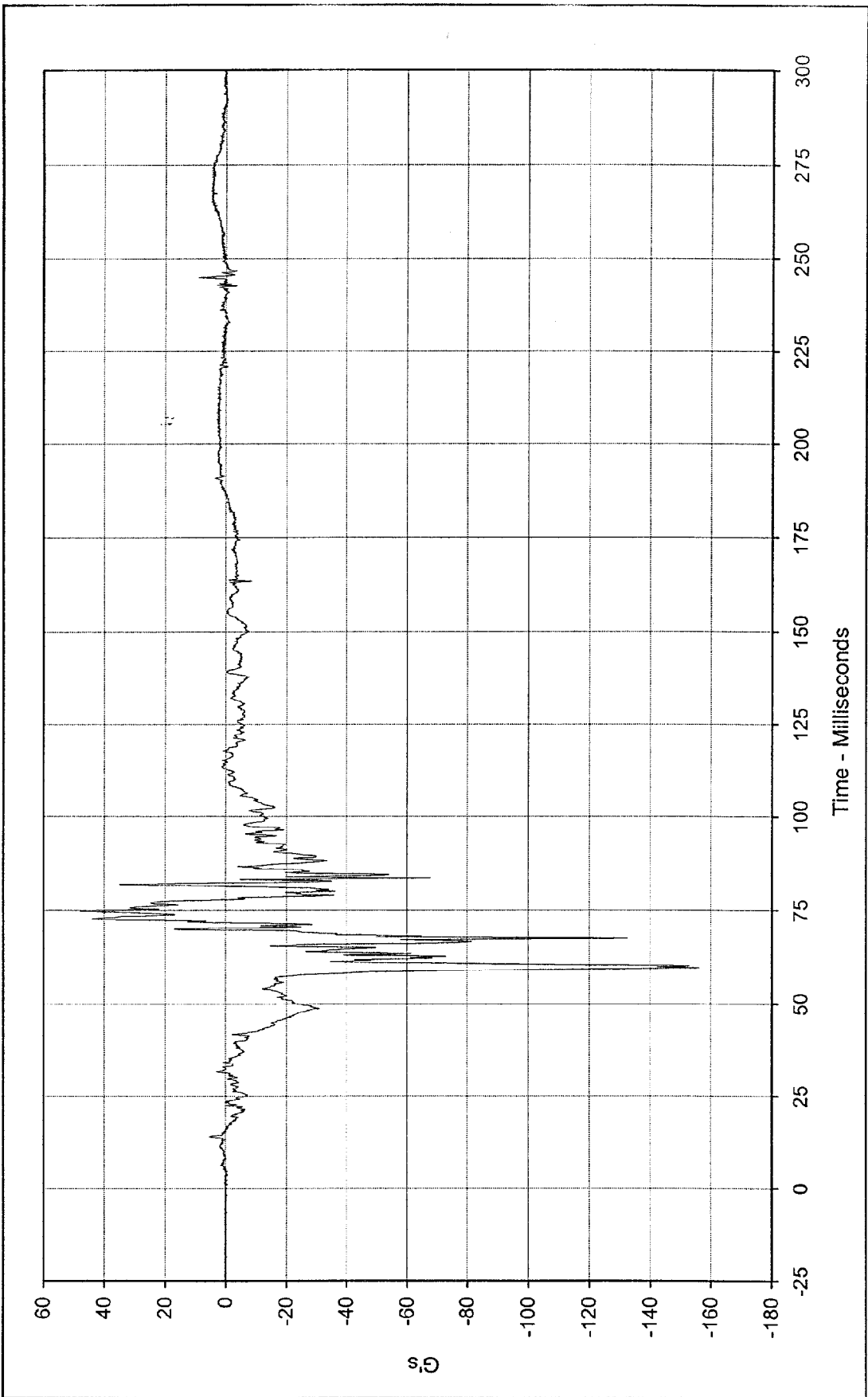
Curve Description: Driver Right Foot Aft X Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 121.3 at 61.7 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -28.6 at 70.9 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-041





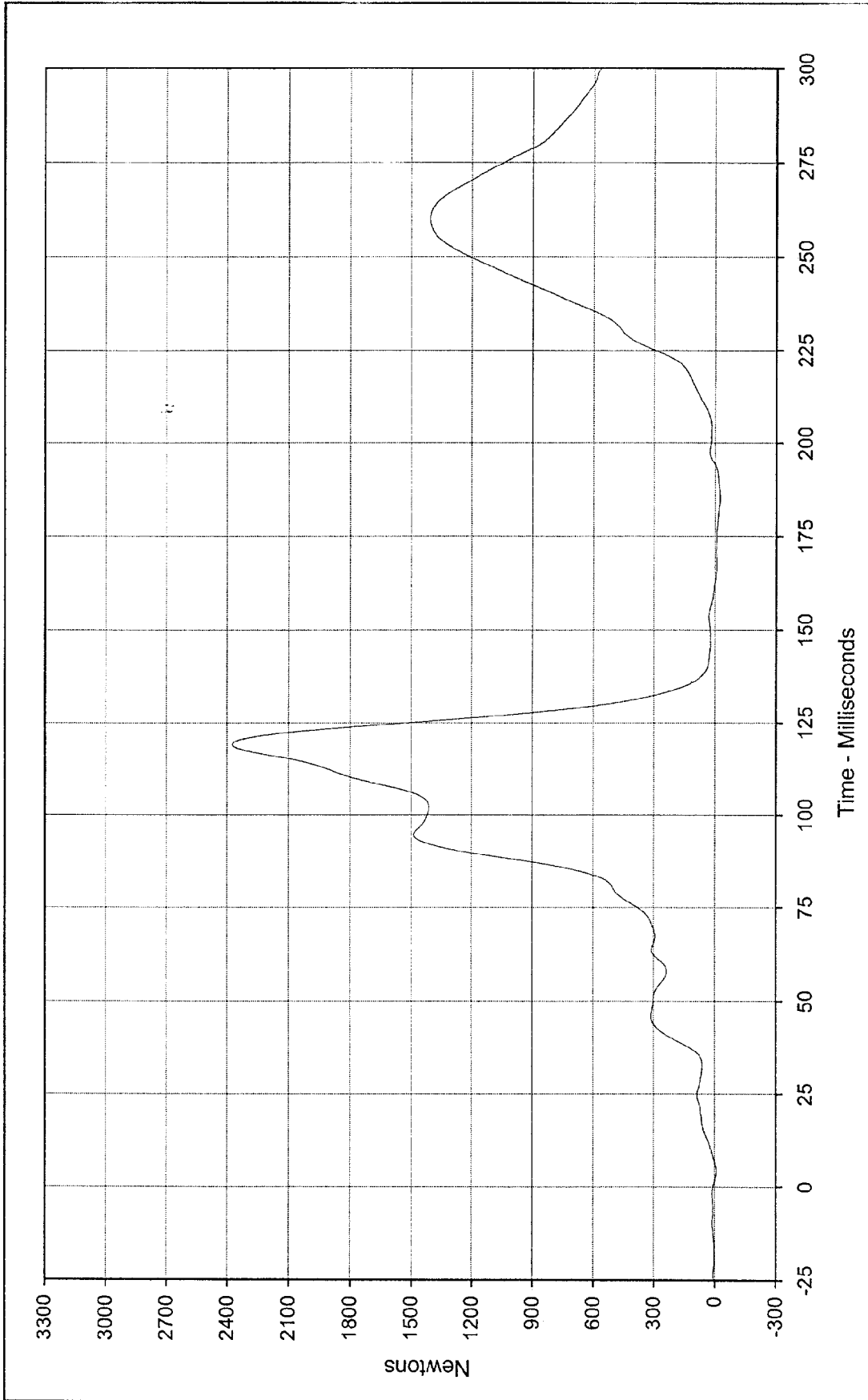
Curve Description: Driver Right Foot Aft Z Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 25.2 at 74.8 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -98.4 at 67.3 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-042





Curve Description: Driver Right Foot Fore Z Testing Program 1997 NHTSA 40% Offset Impact (Female)
Maximum Value: 47.9 at 74.7 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
Minimum Value: -156.0 at 59.7 Milliseconds
SAE Filter Class: 1000
Date of Test: 8/21/97
Curve Number: FIL-043

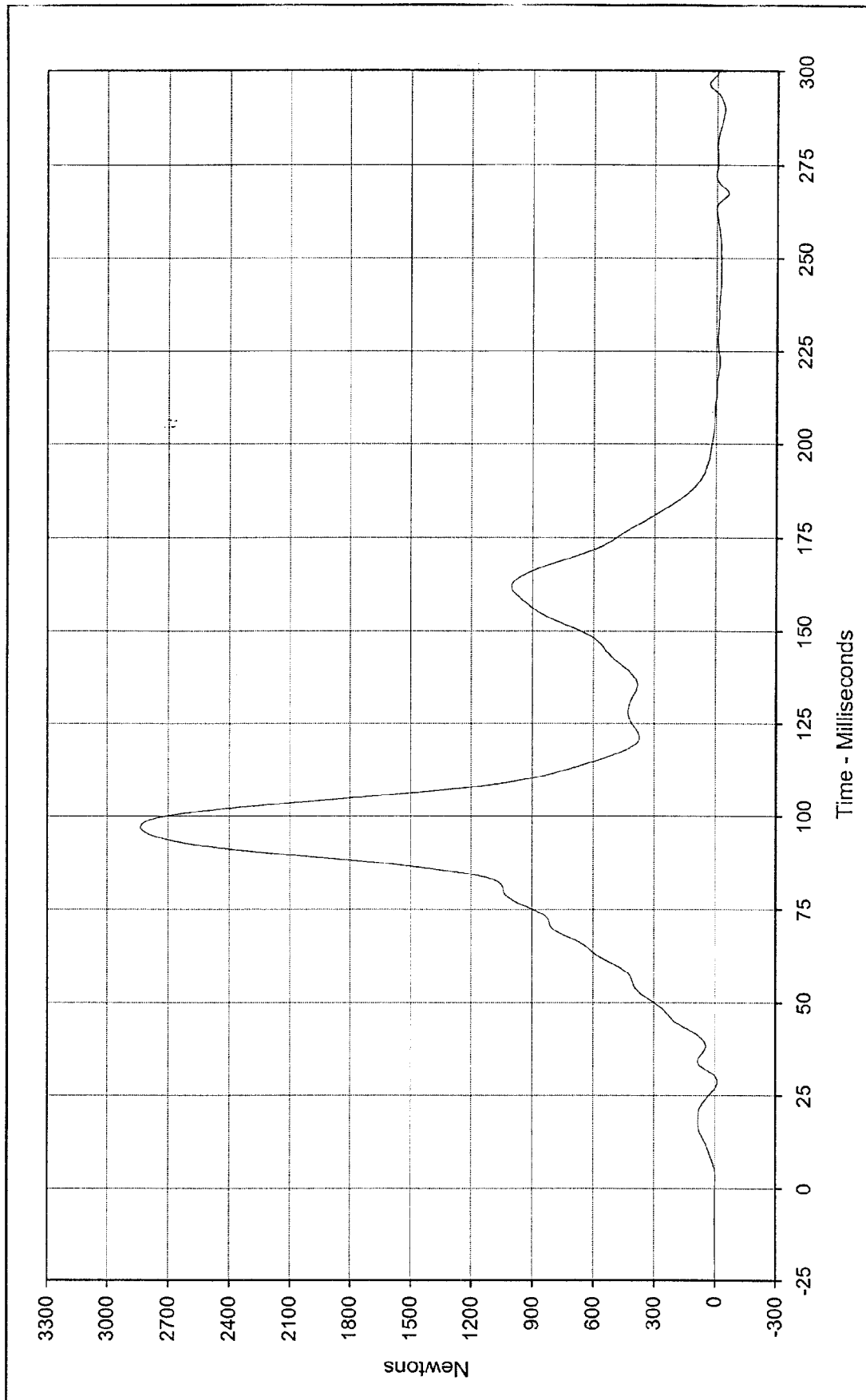




Curve Description: Driver Lap Belt Force
 Maximum Value: 2375.4 at 119.3 Milliseconds
 Minimum Value: -25.1 at 185.1 Milliseconds
 SAE Filter Class: 60
 Date of Test: 8/21/97
 Curve Number: FIL-044

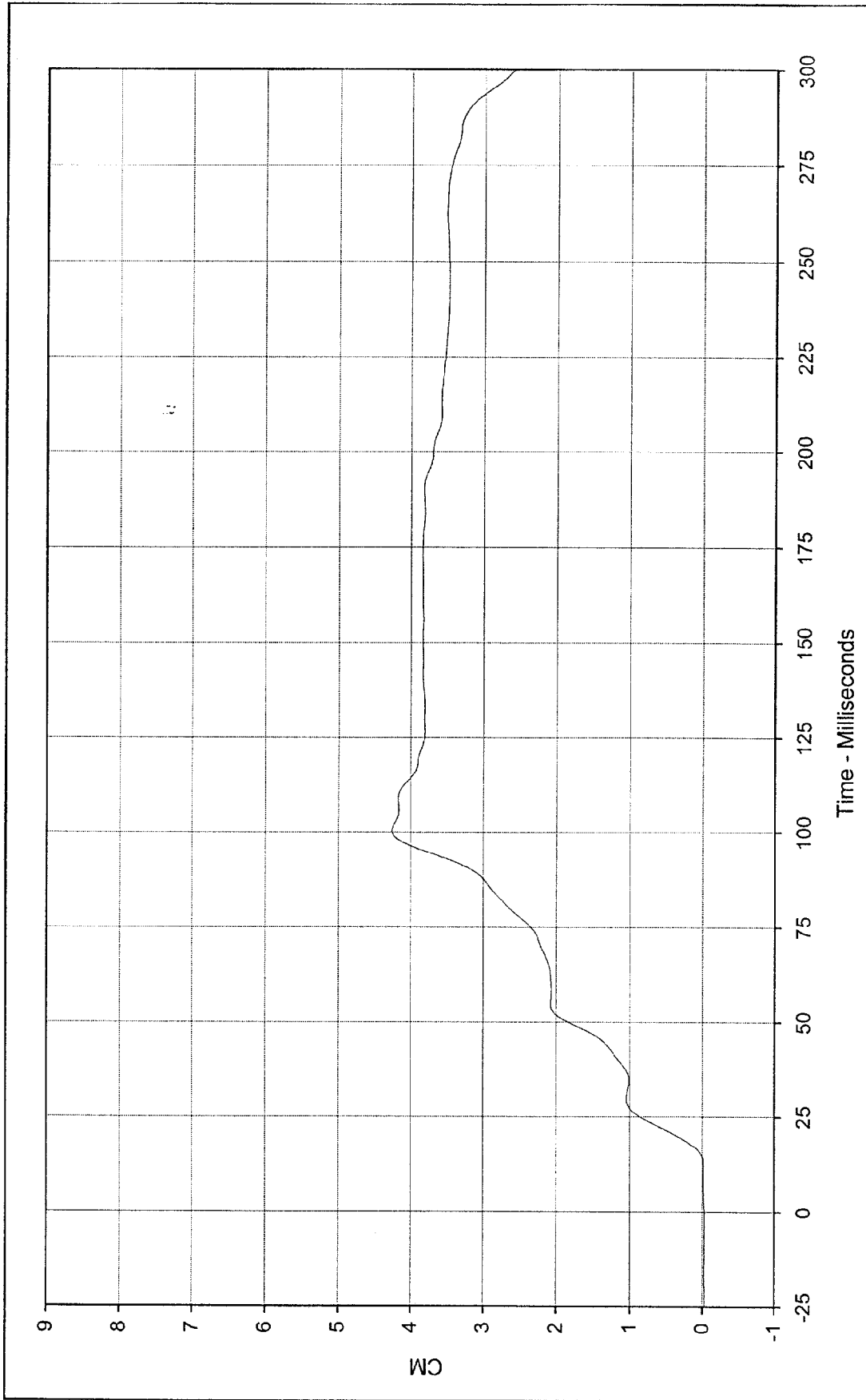
Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan





Curve Description: Driver Shoulder Belt Force Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 2835.3 at 97.1 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -56.9 at 267.2 Milliseconds
 SAE Filter Class: 60
 Date of Test: 8/21/97
 Curve Number: FIL-045

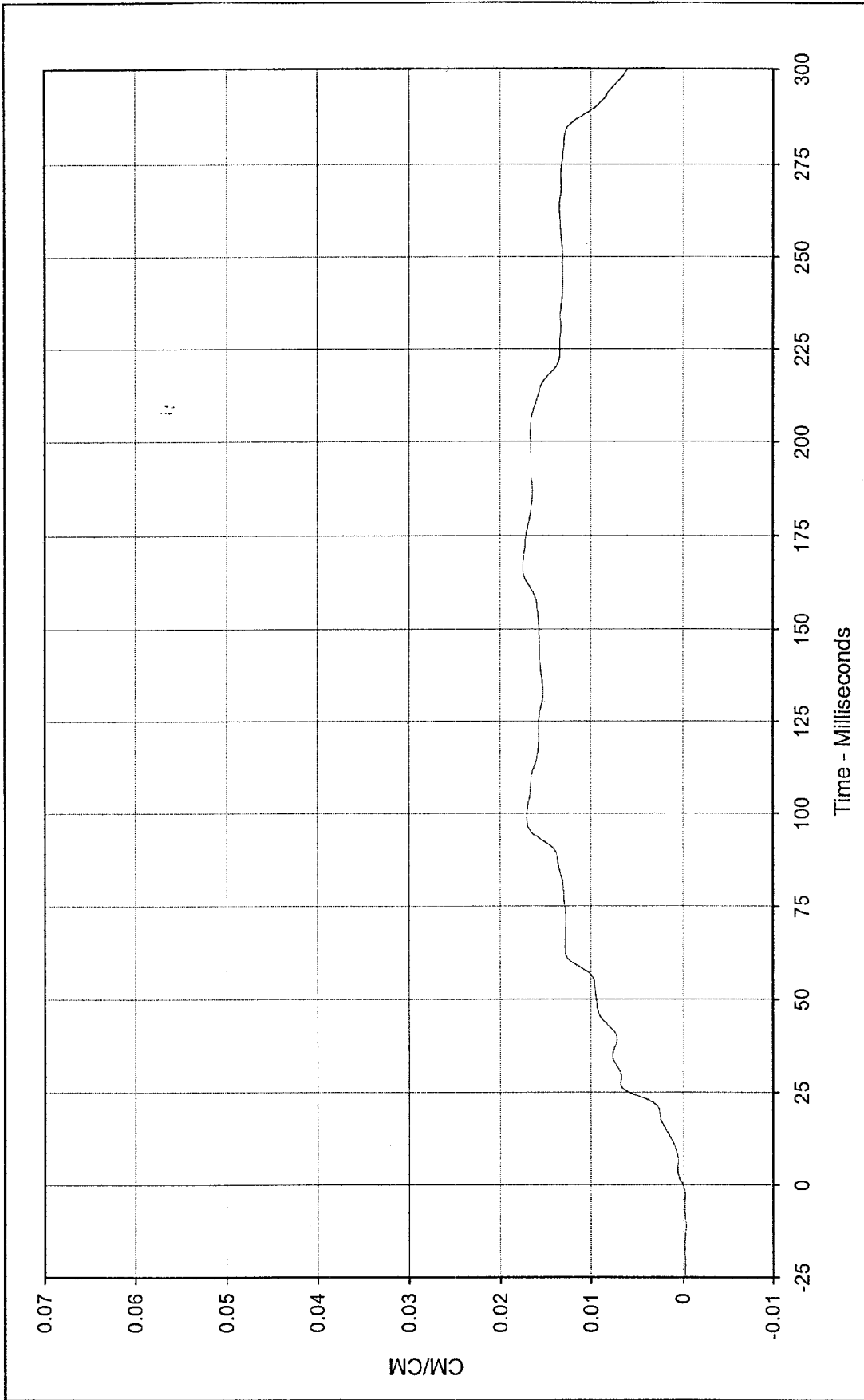




Curve Description: Driver Shoulder Belt Pullout
 Maximum Value: 4.26 at 100.3 Milliseconds
 Minimum Value: -0.02 at 0.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 8/21/97
 Curve Number: FIL-046

Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan

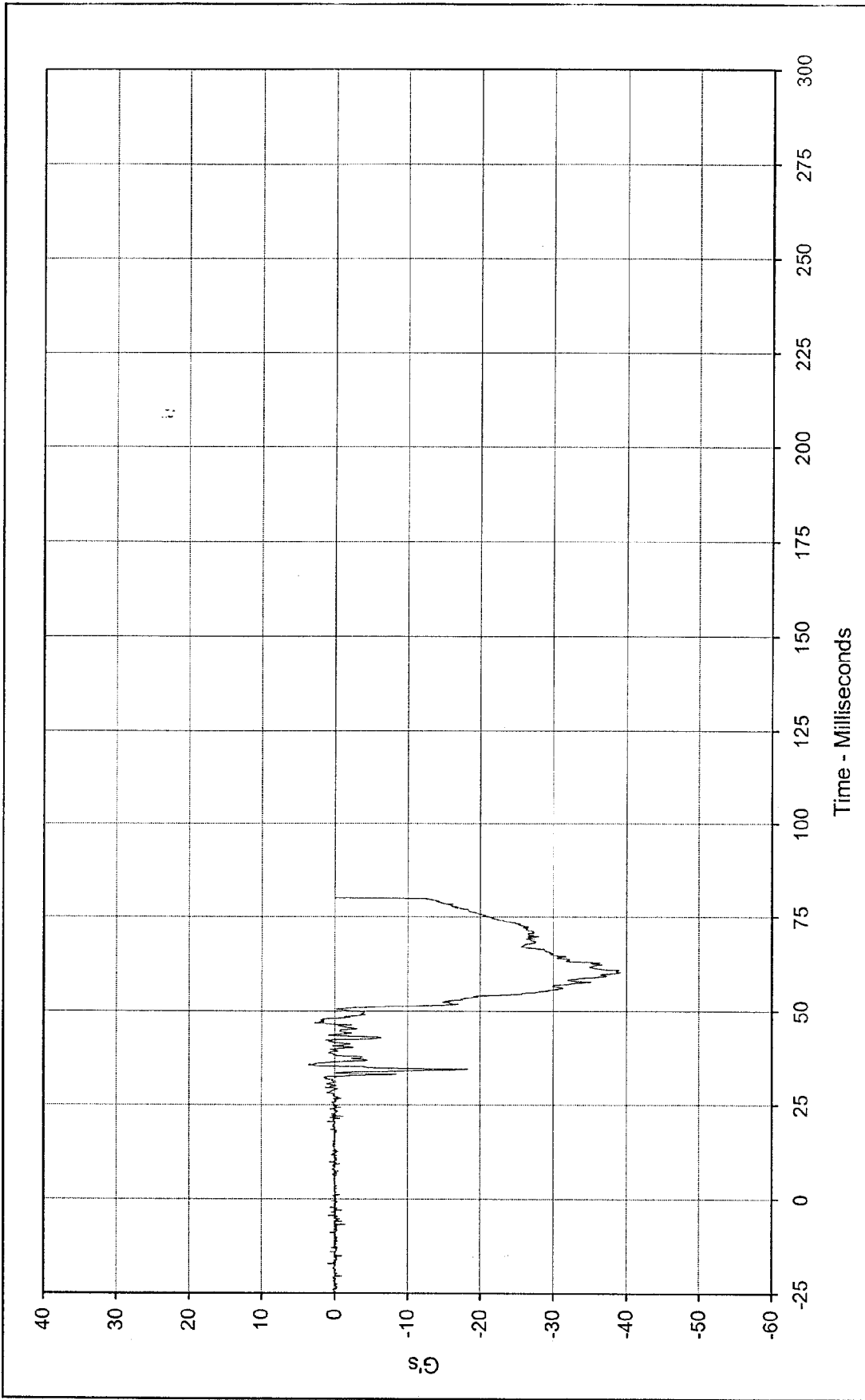




Curve Description: Driver Shoulder Belt Elongation
 Maximum Value: 0.018 at 166.4 Milliseconds
 Minimum Value: 0.000 at 0.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 8/21/97
 Curve Number: FIL-047

Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan

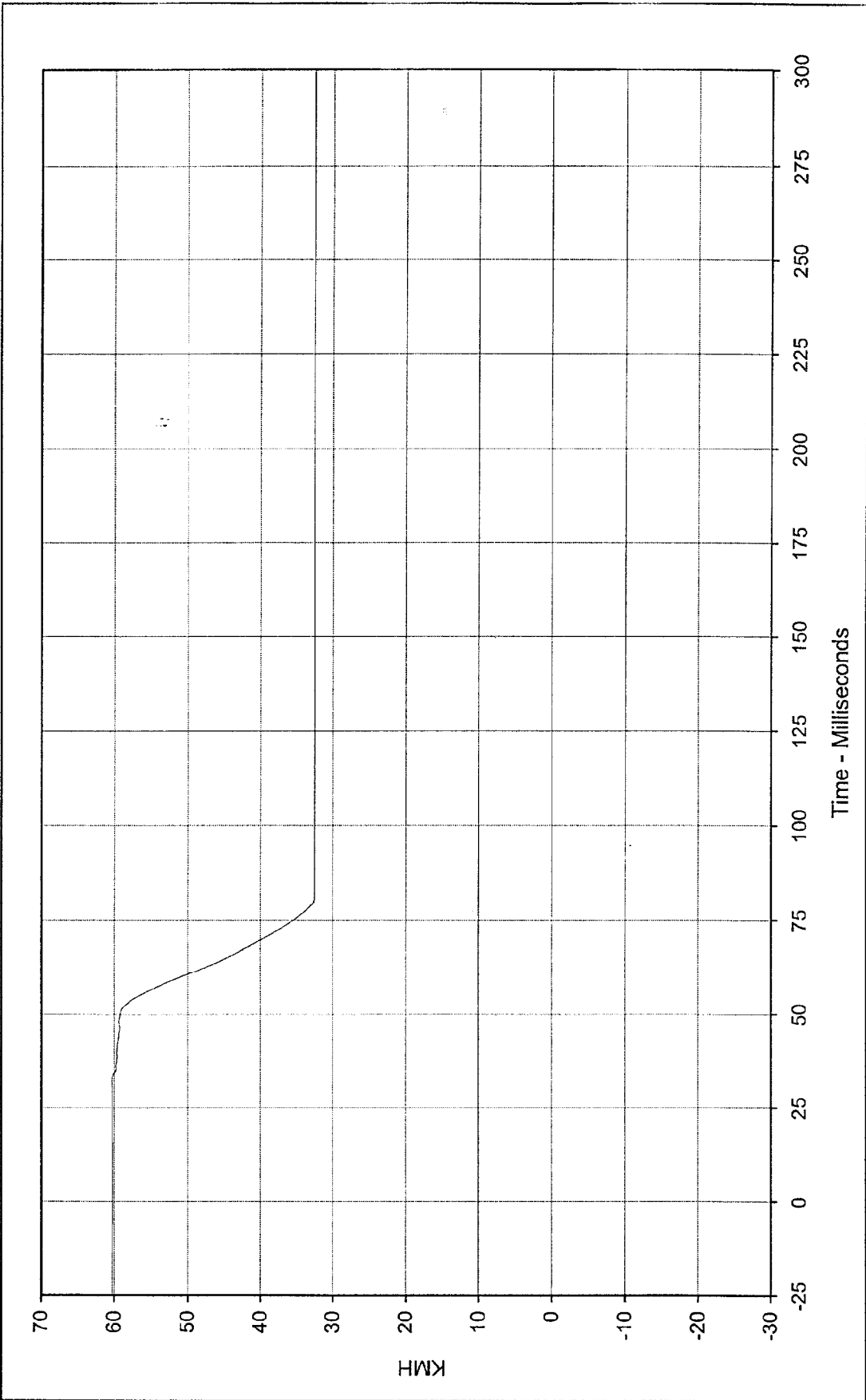




Curve Description: Passenger Head Primary X * Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 3.6 at 35.5 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -39.2 at 60.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-048



*Channel Failed at 80 Msec.

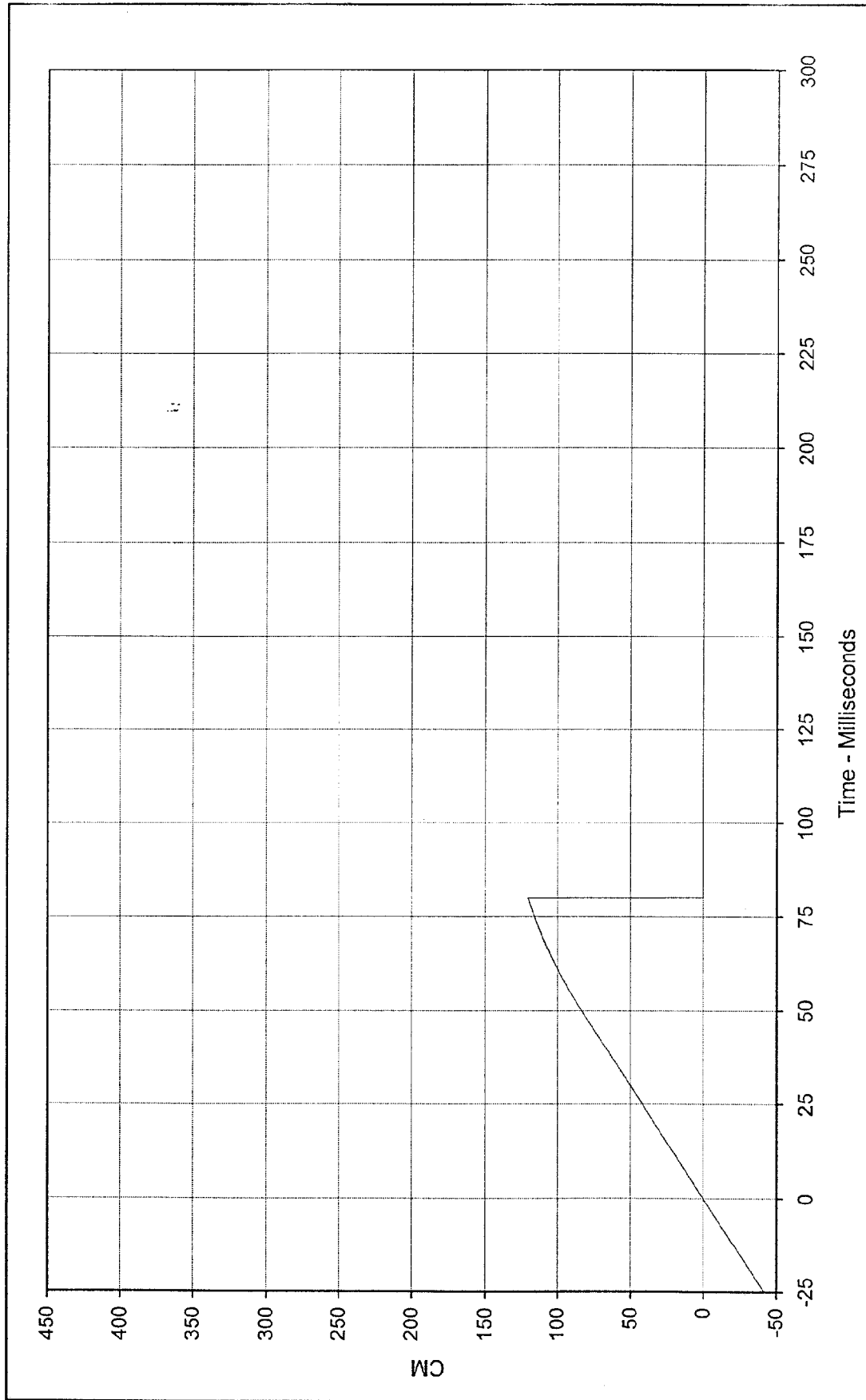


Curve Description: Passenger Head Primary X Velocity * Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 60.3 at 32.1 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 32.5 at 80.8 Milliseconds



SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN1-048

* Channel Failed at 80 Msec.

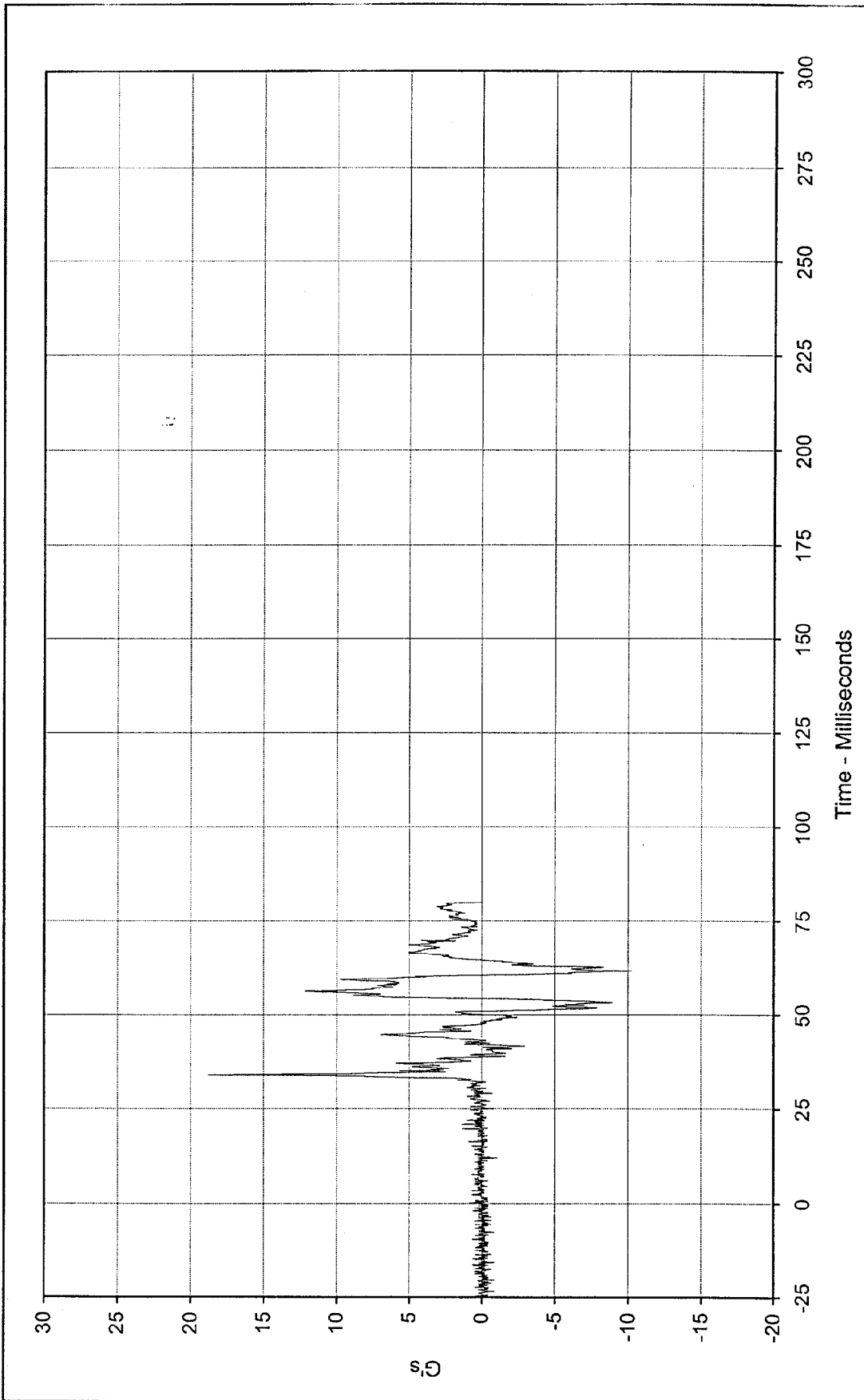


Curve Description: Passenger Head Primary X Displ. * 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 120.9 at 79.9 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN2-048

Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan



* Channel Failed at 80 Msec.



Curve Description: Passenger Head Primary Y * Testing Program 1997 NHTSA 40% Offset Impact (Female)

Maximum Value: 18.8 at 33.9 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan

Minimum Value: -10.2 at 61.7 Milliseconds

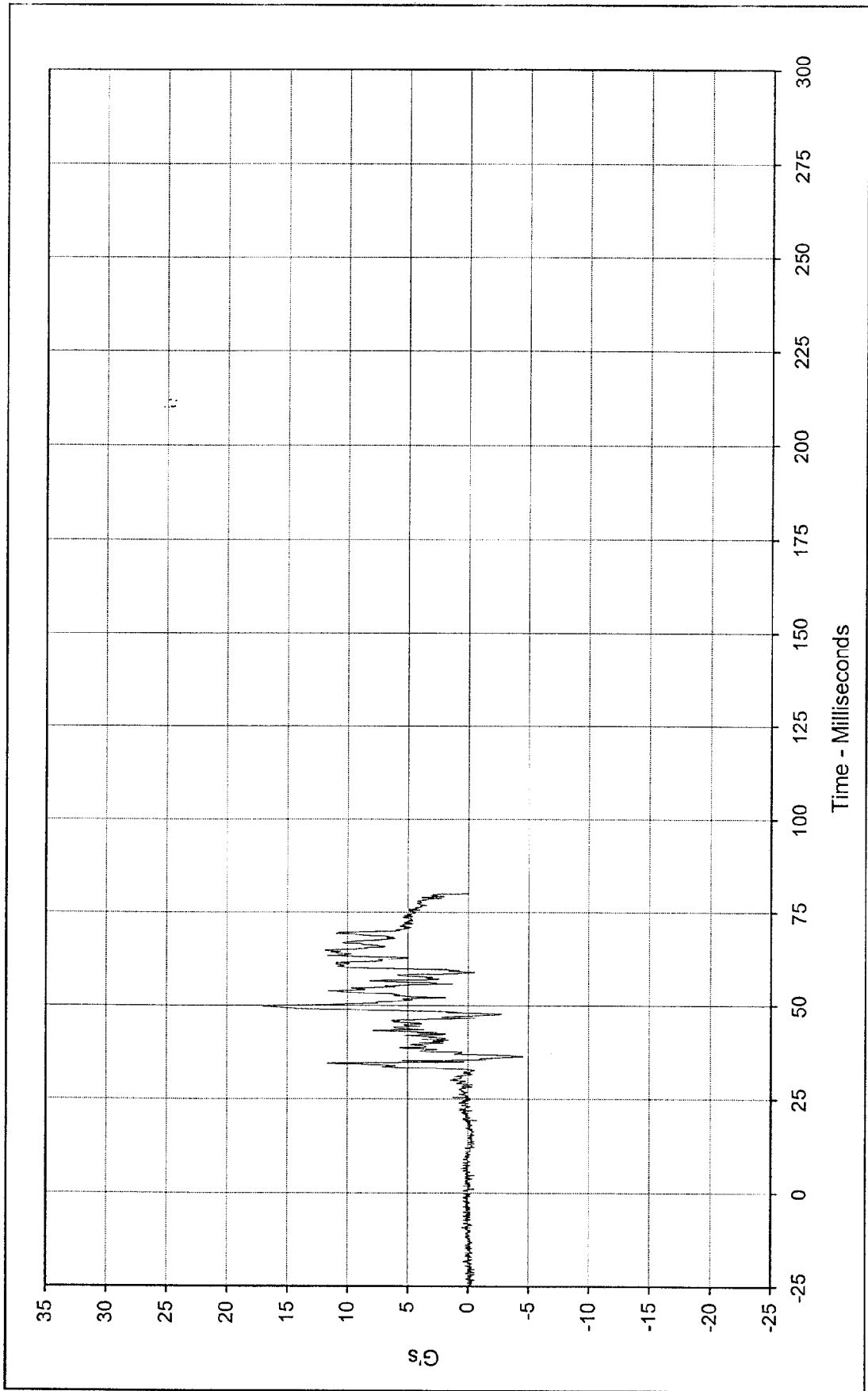
SAE Filter Class: 1000

Date of Test: 8/21/97

Curve Number: FIL-049



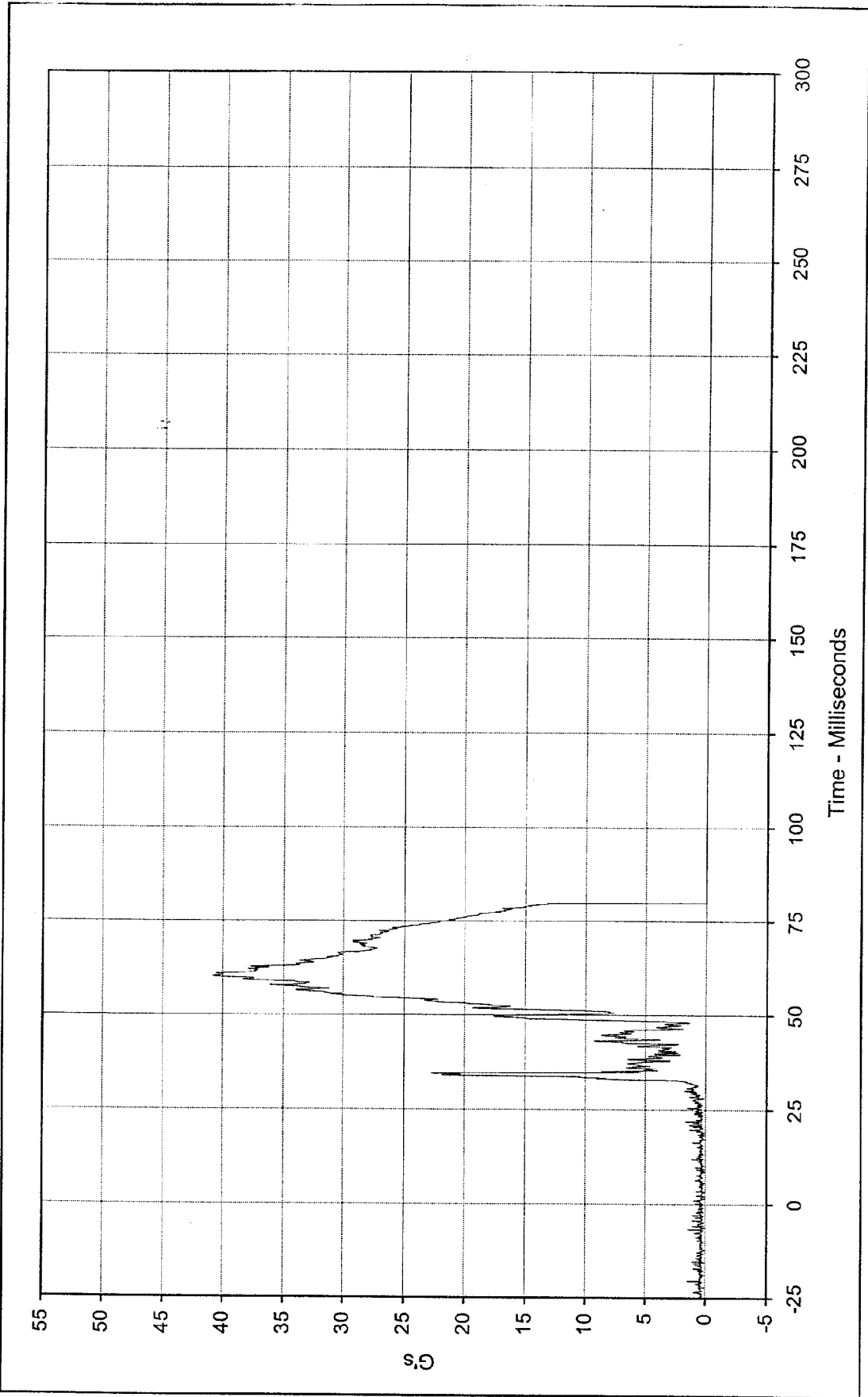
*Channel Failed at 80 Msec.



Curve Description: Passenger Head Primary Z * Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 17.0 at 49.7 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -4.6 at 36.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-050



*Channel Failed at 80 Msec.

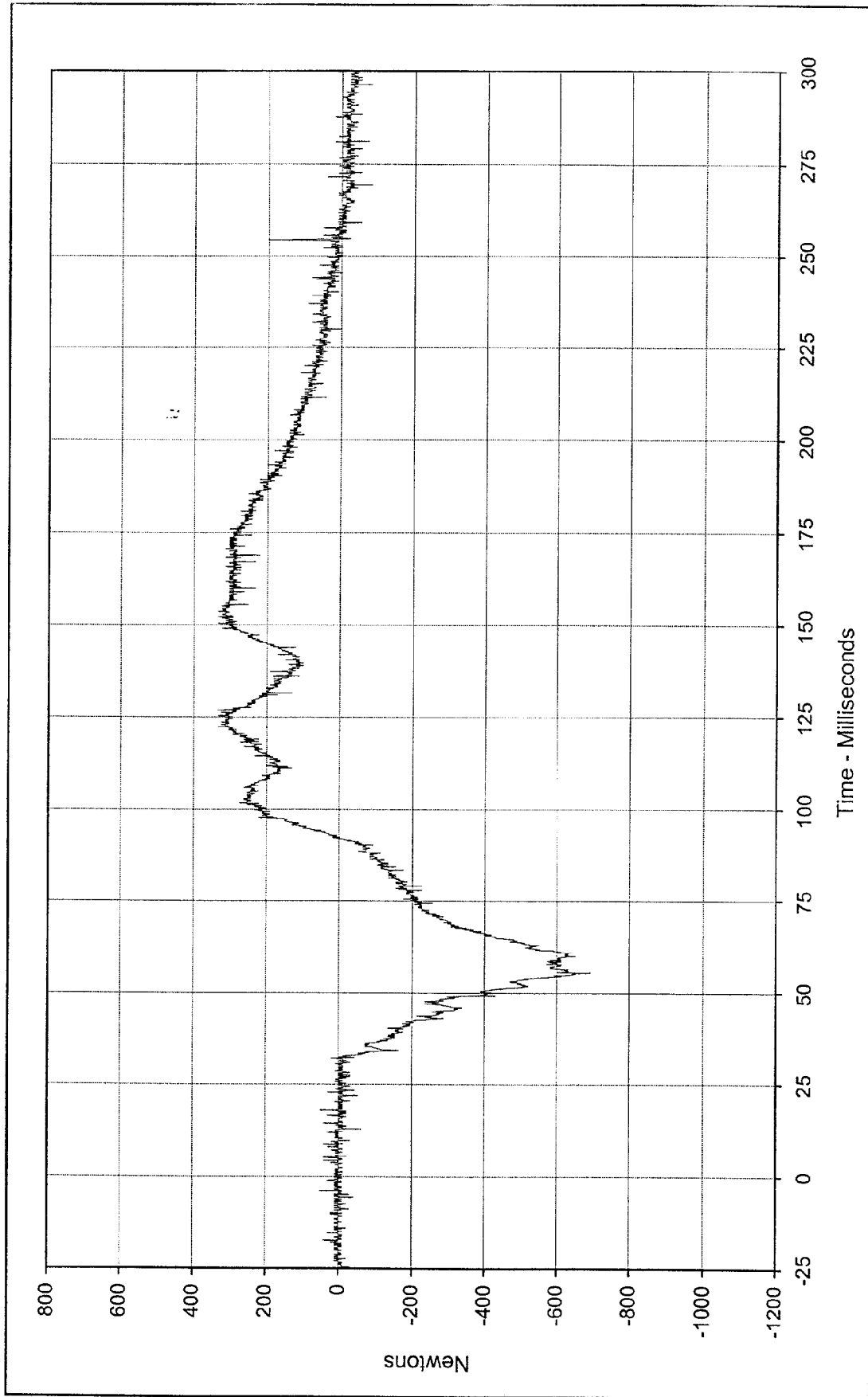


Curve Description: Passenger Head Resultant Primary * Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 40.8 at 60.2 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 0.0 at 79.9 Milliseconds



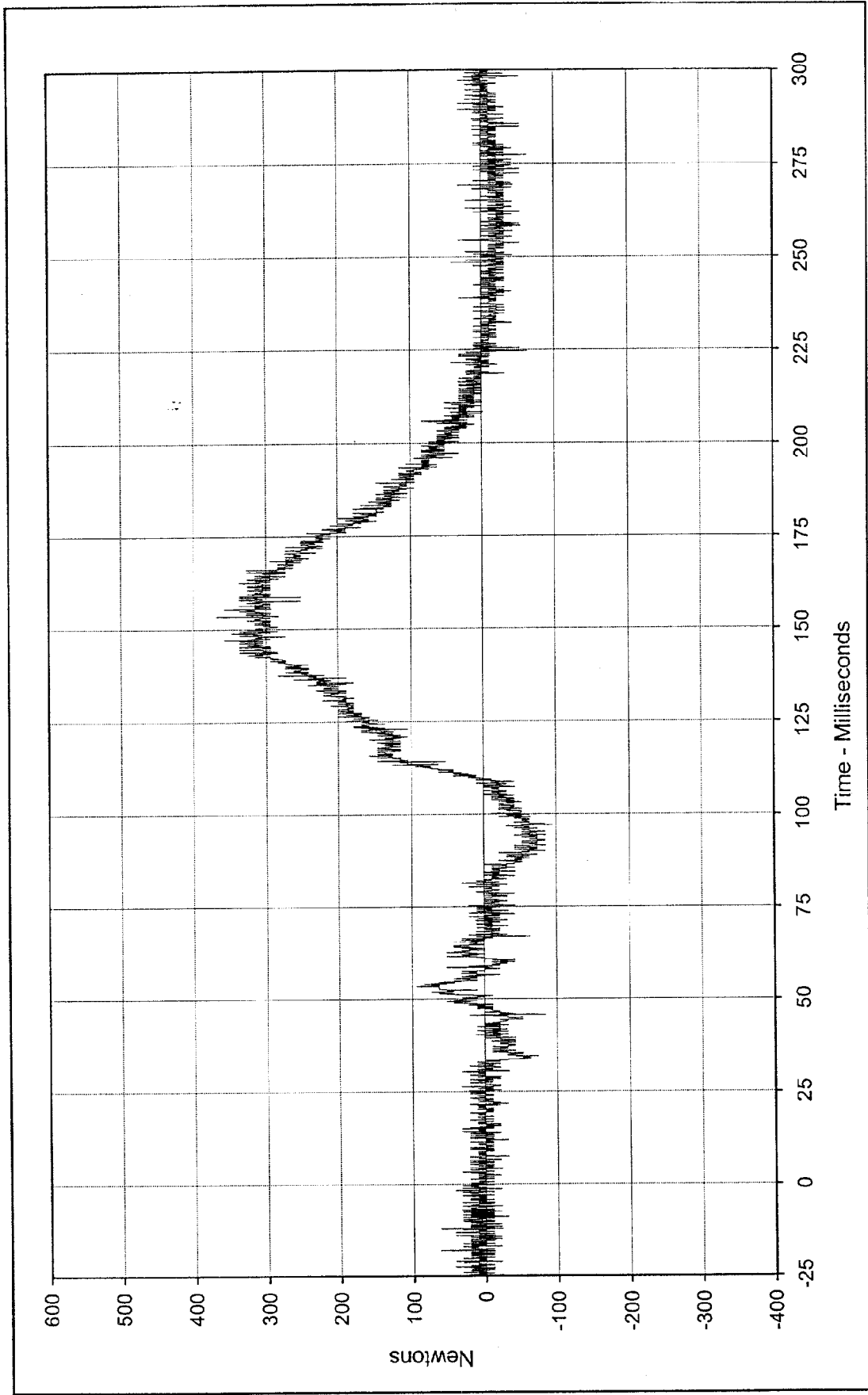
SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: RES-048

* Channel Failed at 80 Msec.



Curve Description: Passenger Neck Force X Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 334.0 at 122.3 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -693.5 at 55.4 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-051

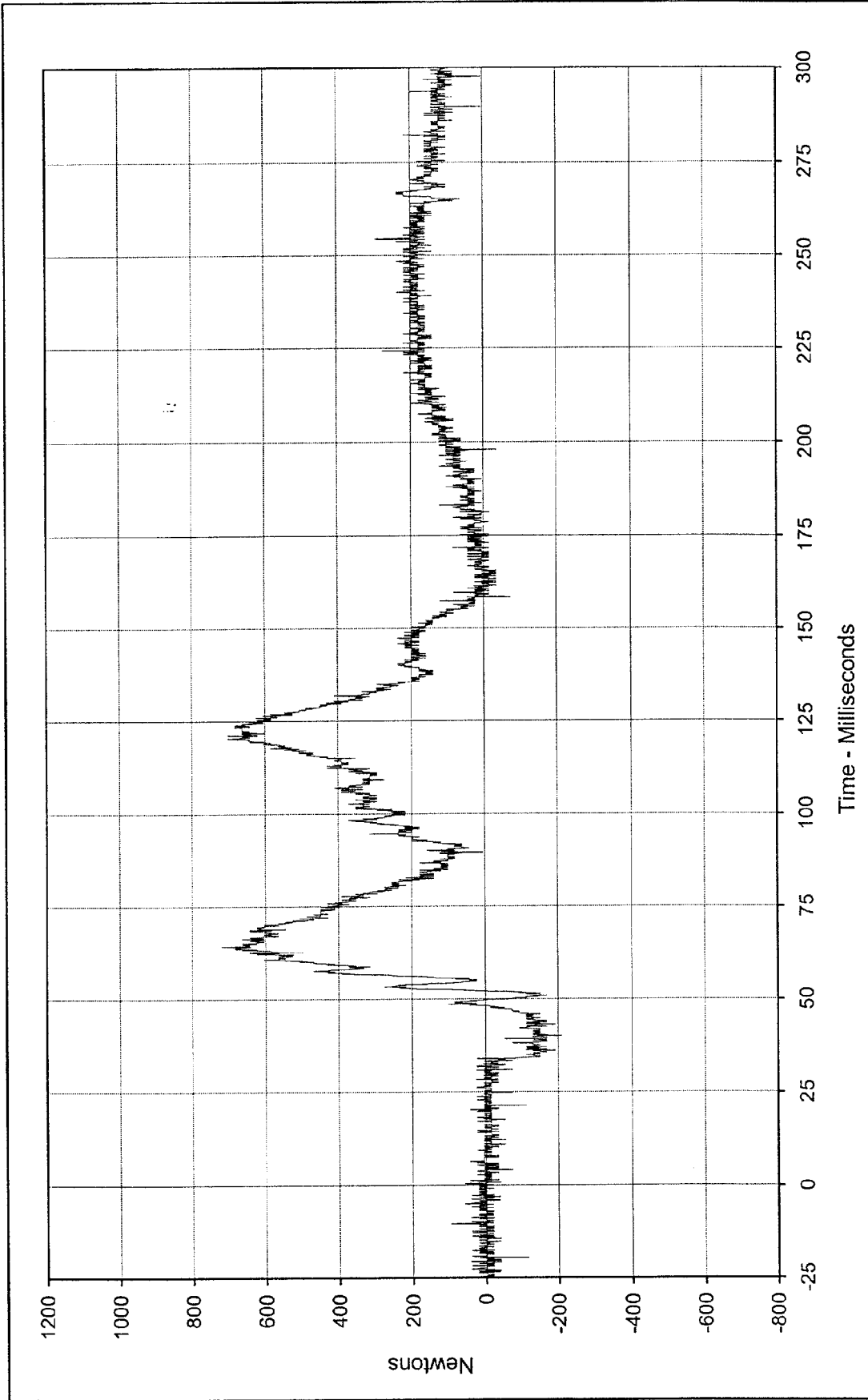




Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan

Curve Description: Passenger Neck Force Y
 Maximum Value: 367.5 at 153.3 Milliseconds
 Minimum Value: -94.5 at 97.1 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-052

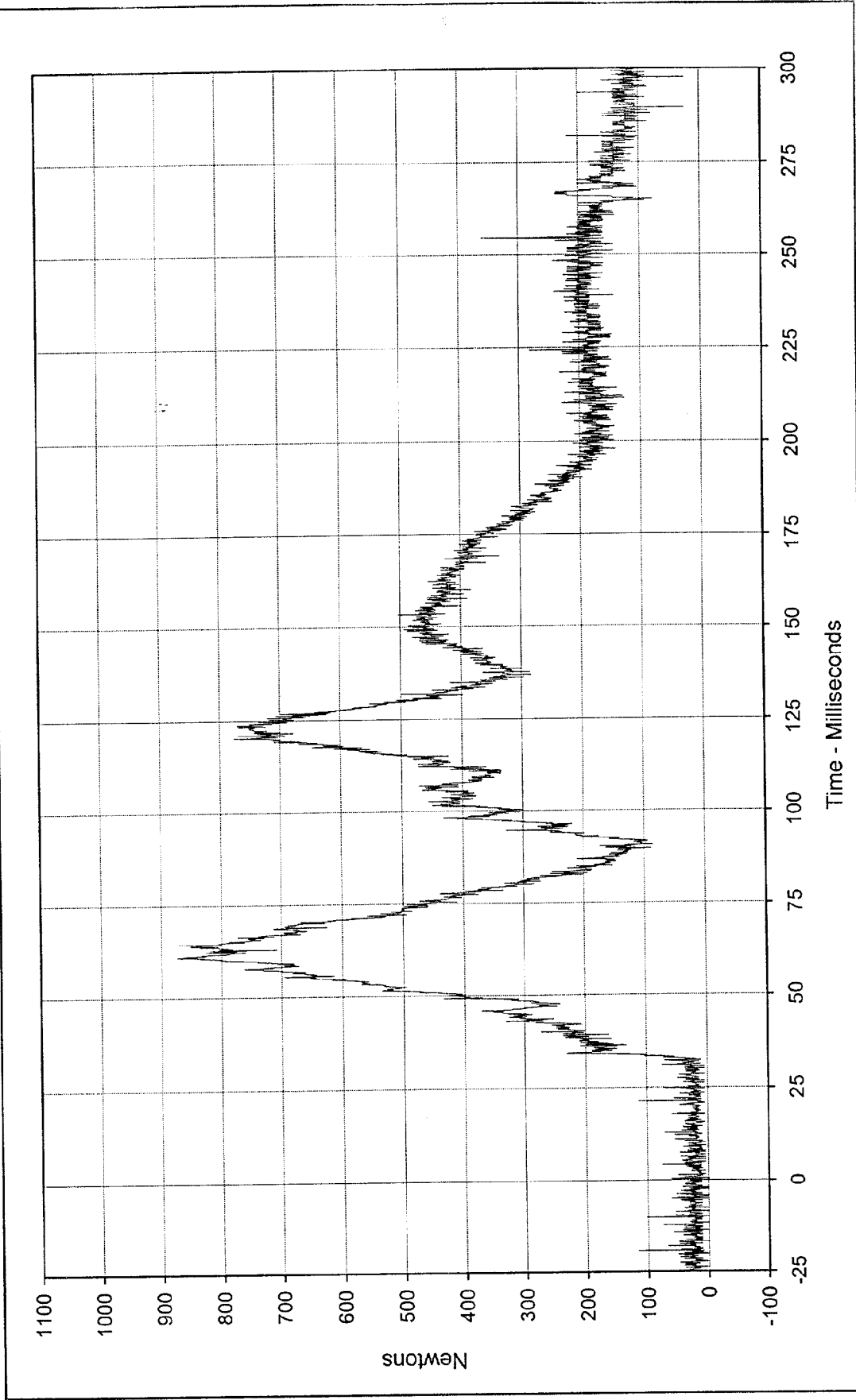




Curve Description: Passenger Neck Force Z
 Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 719.5 at 64.3 Milliseconds
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -207.7 at 40.2 Milliseconds



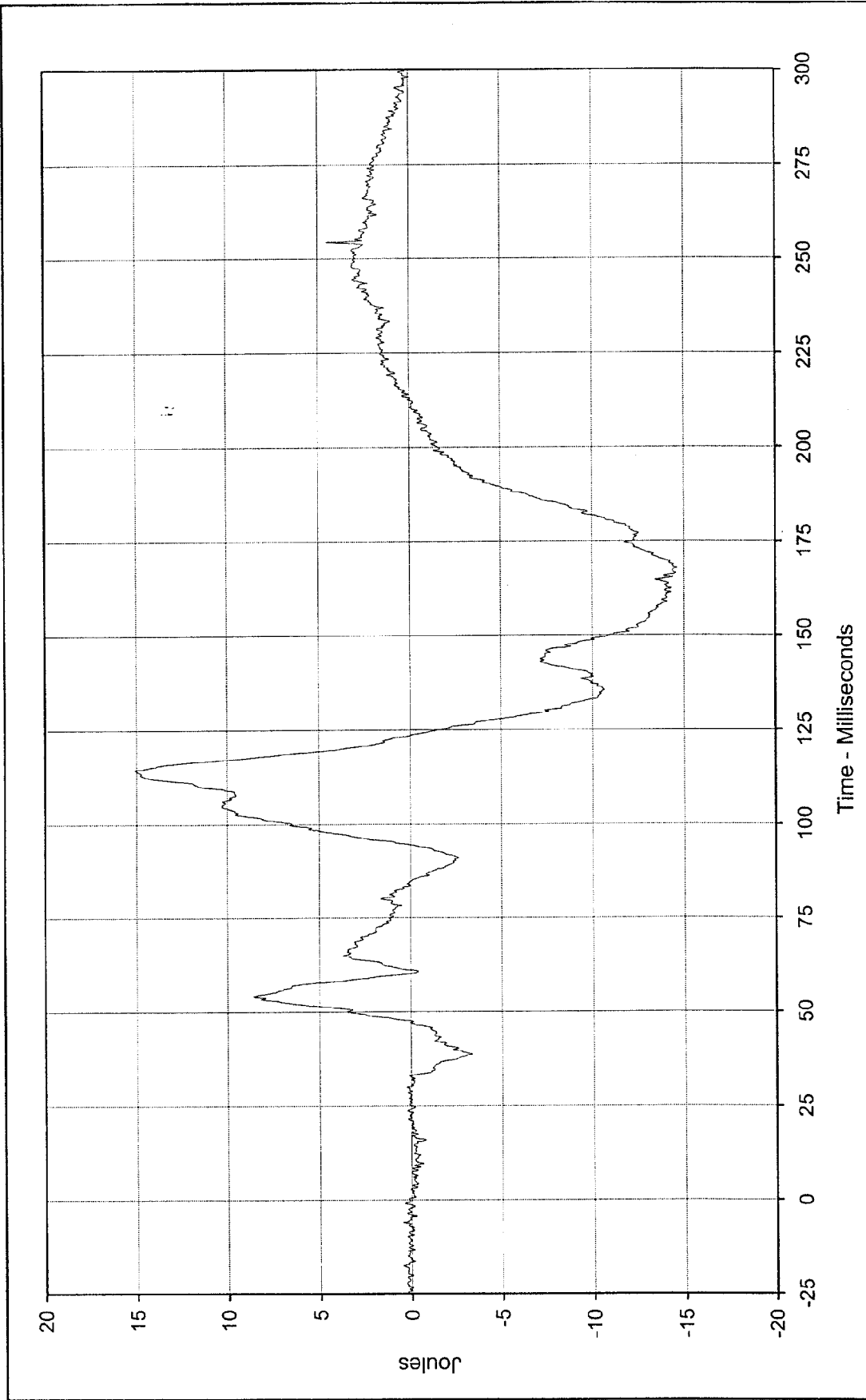
SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-053



Curve Description: Passenger Neck Force Resultant Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 874.3 at 60.7 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 0.0 at 0.5 Milliseconds



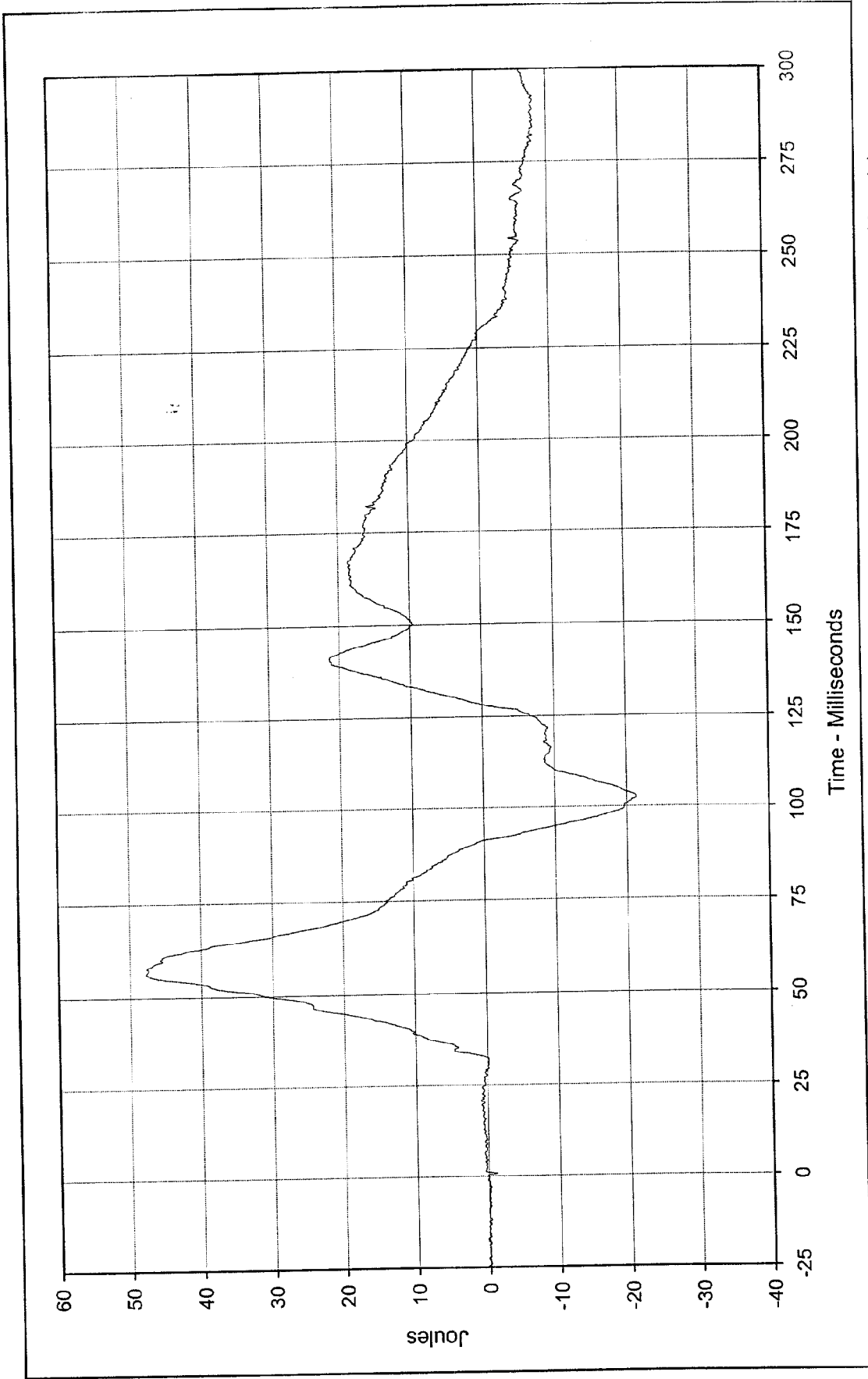
SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: RES-051



Curve Description: Passenger Neck Moment X Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 15.1 at 114.4 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -14.6 at 167.8 Milliseconds



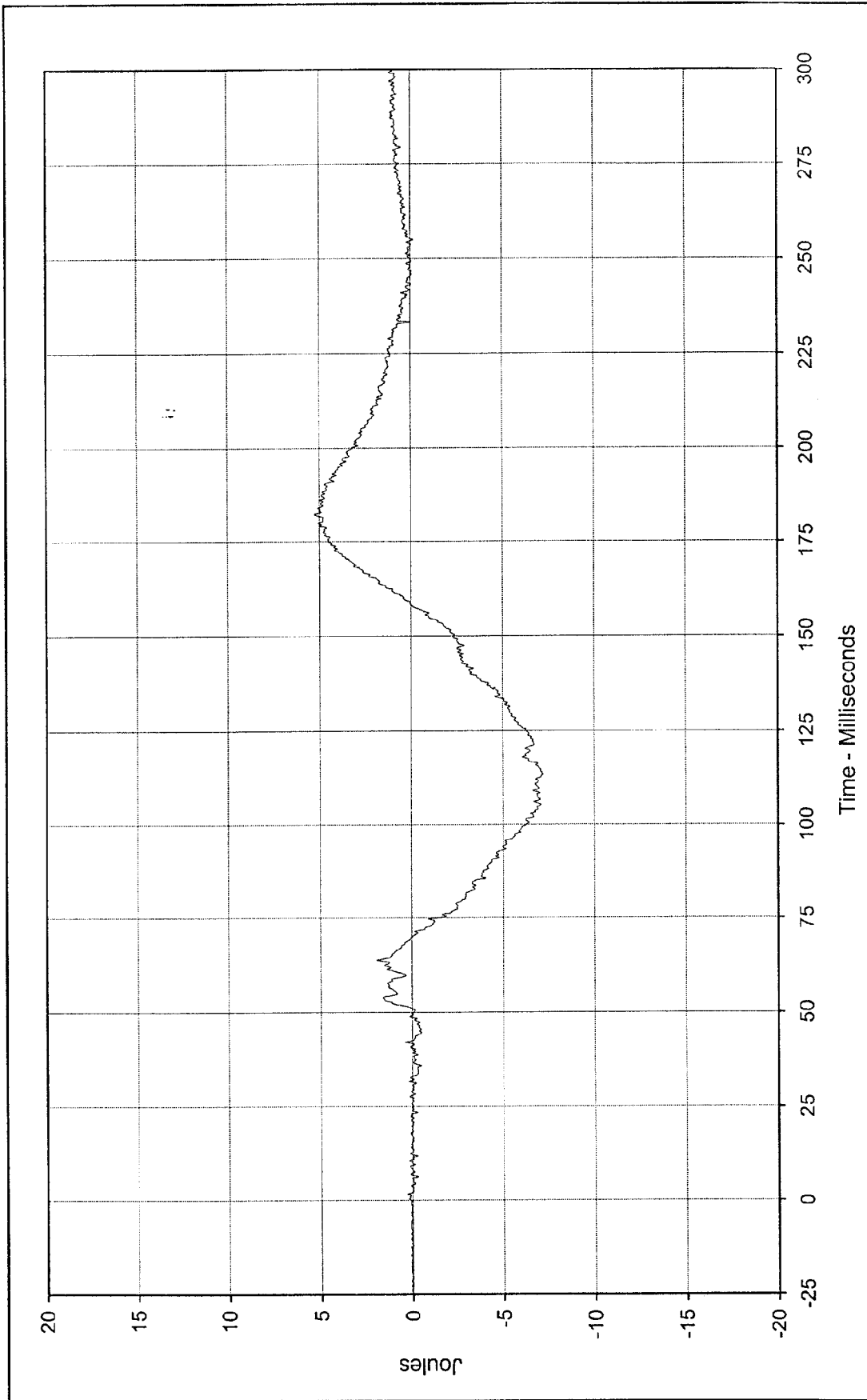
SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-054



Curve Description: Passenger Neck Moment Y Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 47.8 at 56.1 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -21.4 at 102.3 Milliseconds



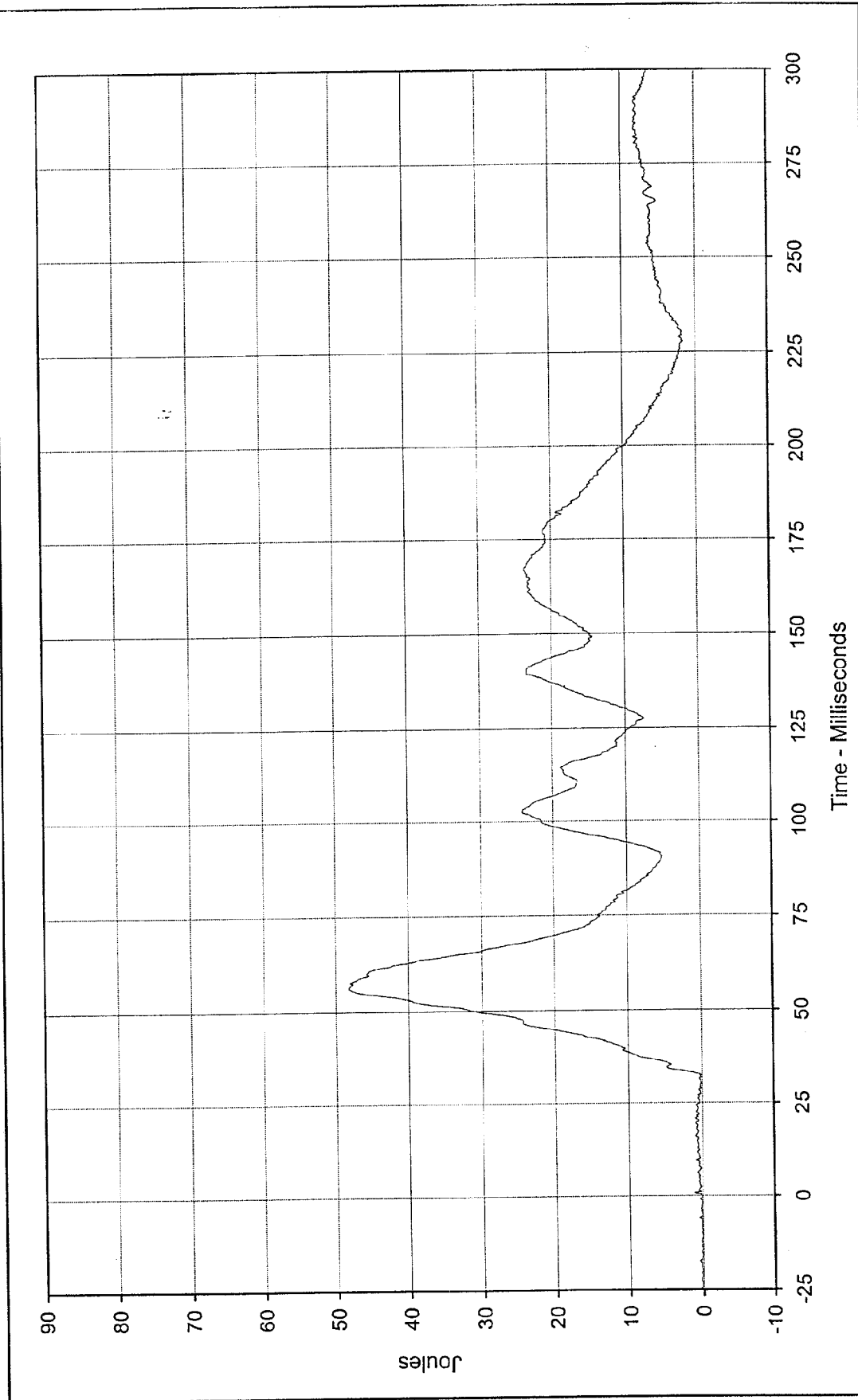
SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-055



Curve Description: Passenger Neck Moment Z Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 5.3 at 182.3 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -7.2 at 113.2 Milliseconds



SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-056



Curve Description: Passenger Neck Moment Resultant Testing Program: 1997 NHTSA 40% Offset Impact (Female)

Maximum Value: 48.3 at 56.1 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan

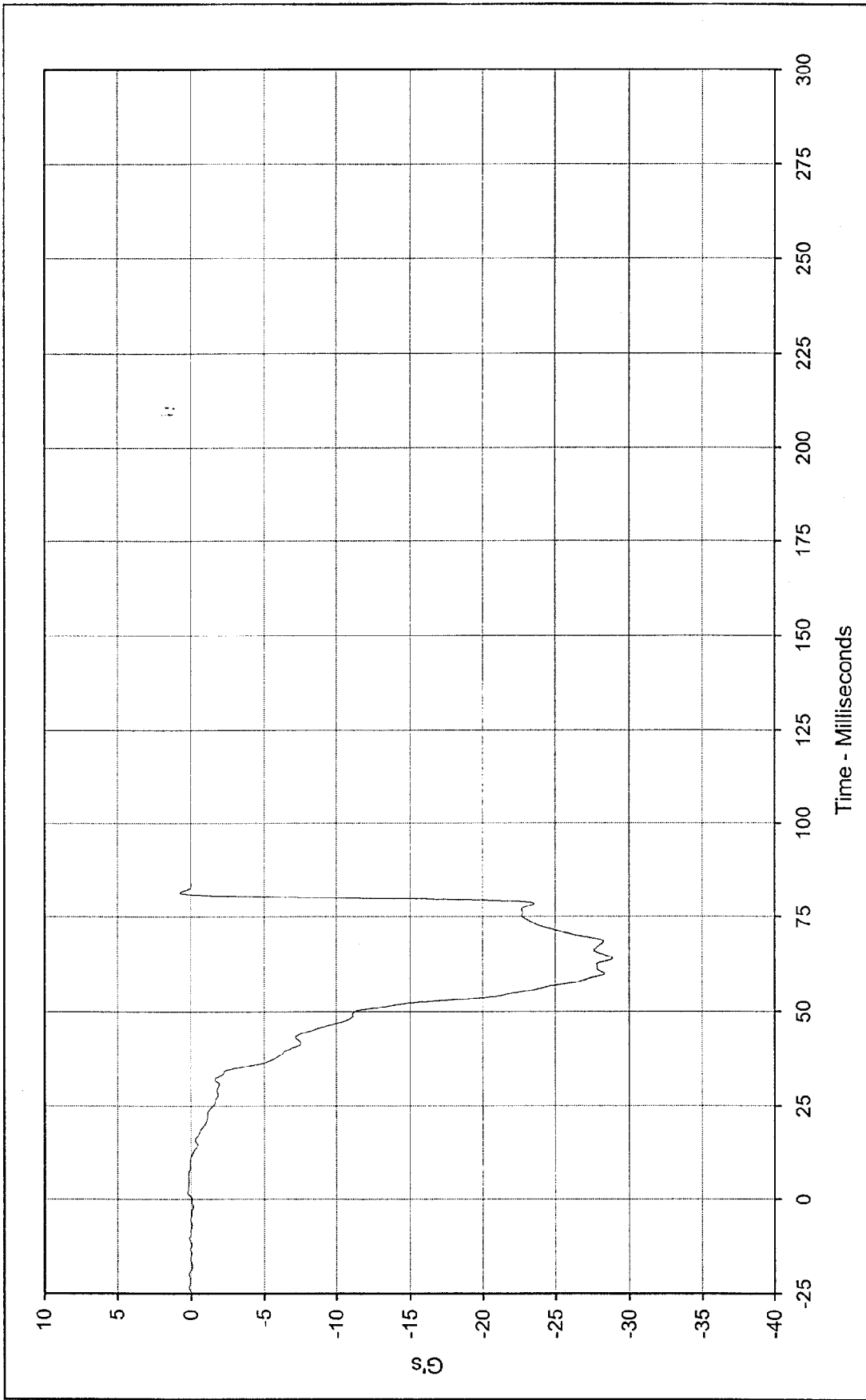
Minimum Value: 0.1 at 28.8 Milliseconds

SAE Filter Class: 600

Date of Test: 8/21/97

Curve Number: RES-054

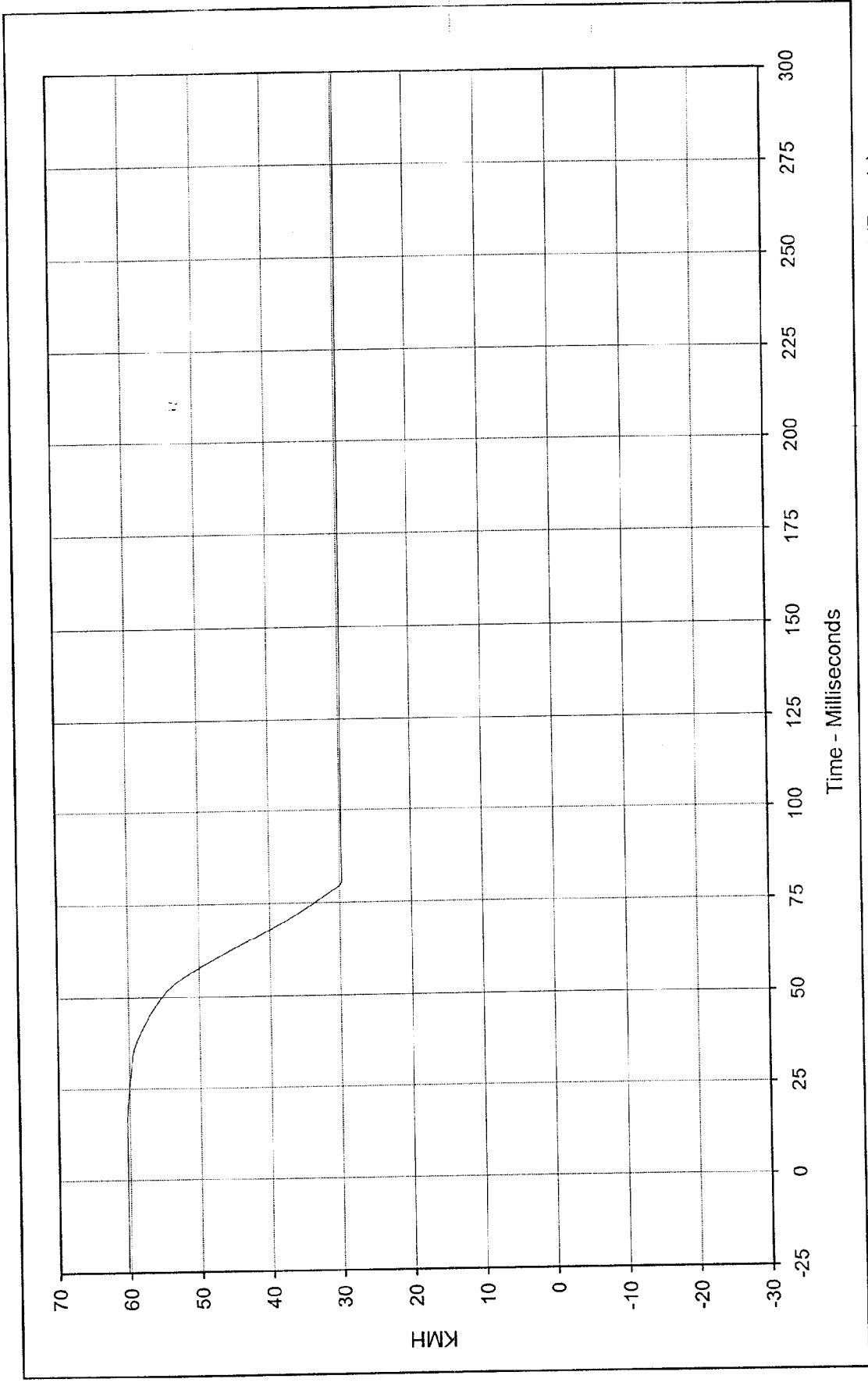




Curve Description: Passenger Chest Primary X * Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 0.8 at 81.3 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -28.9 at 63.9 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: FIL-057



*Channel Failed at 80 Msec.

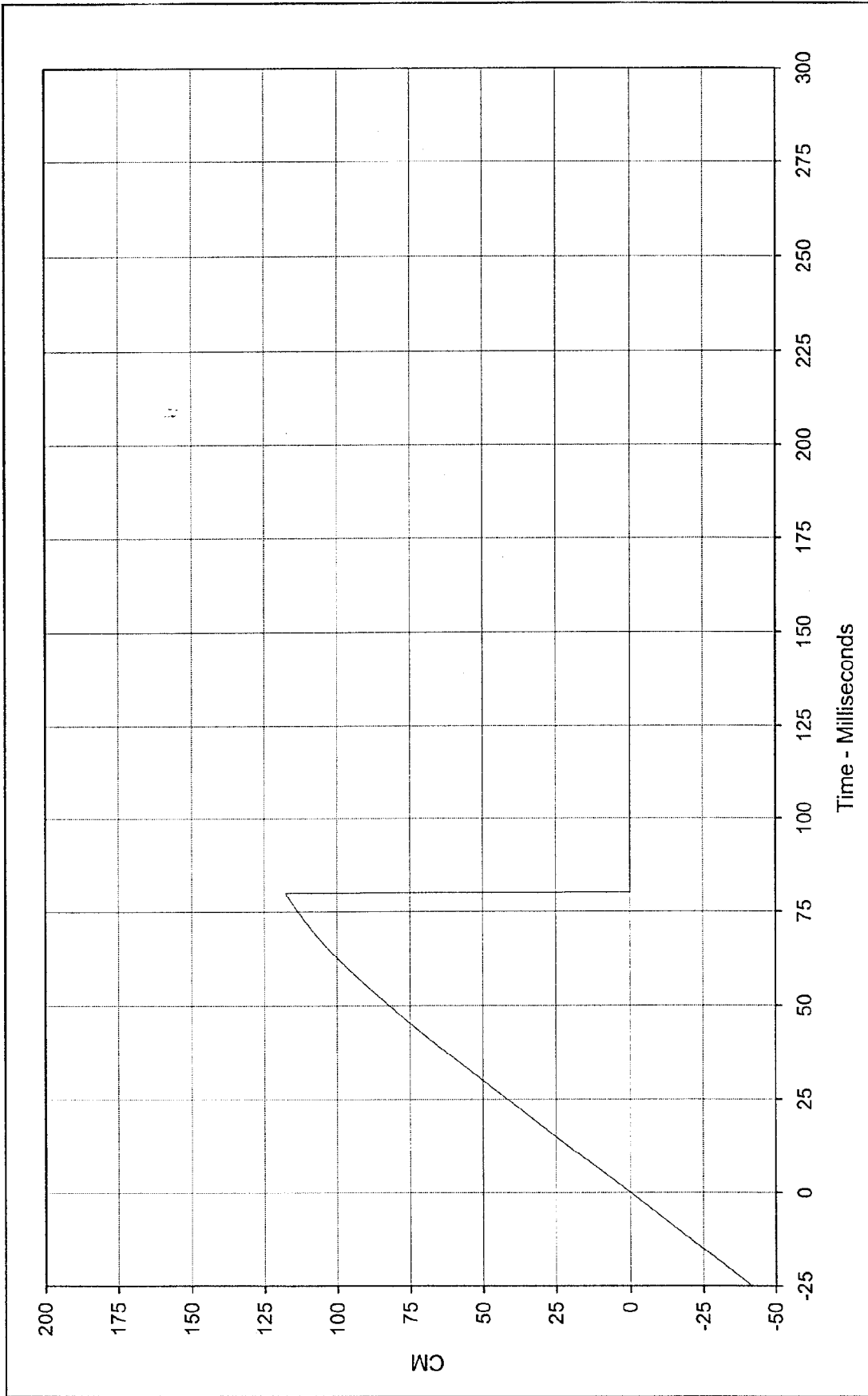


Curve Description: Passenger Chest Primary X Velocity * Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 60.4 at 11.3 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 29.7 at 80.8 Milliseconds



SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN1-057

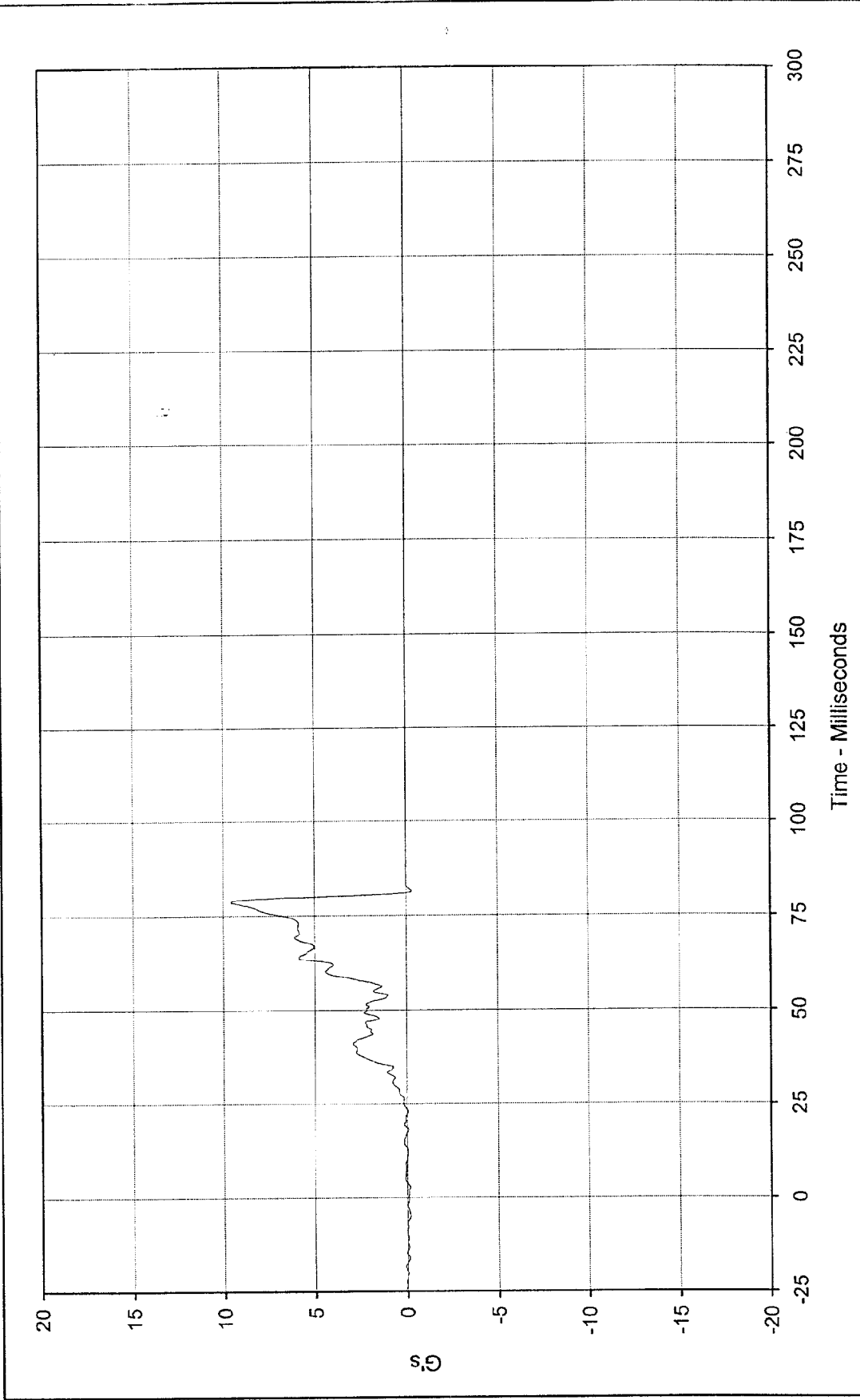
* Channel Failed at 80 Msec.



Curve Description: Passenger Chest Primary X Displ. * Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 117.8 at 79.9 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 0.0 at 80.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN2-057



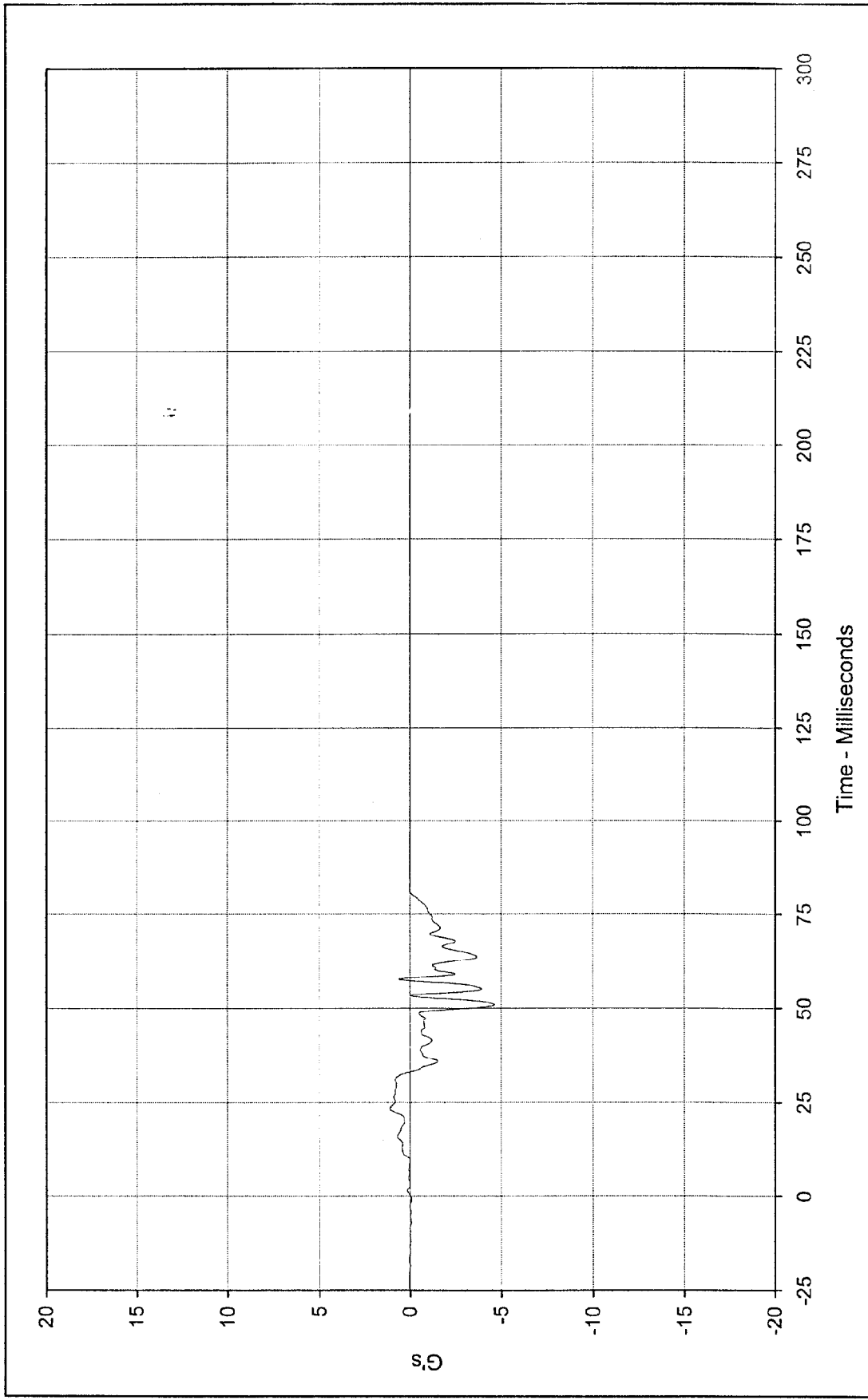
* Channel Failed at 80 Msec.



Curve Description: Passenger Chest Primary Y * Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 9.6 at 78.6 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -0.3 at 81.3 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: FIL-058



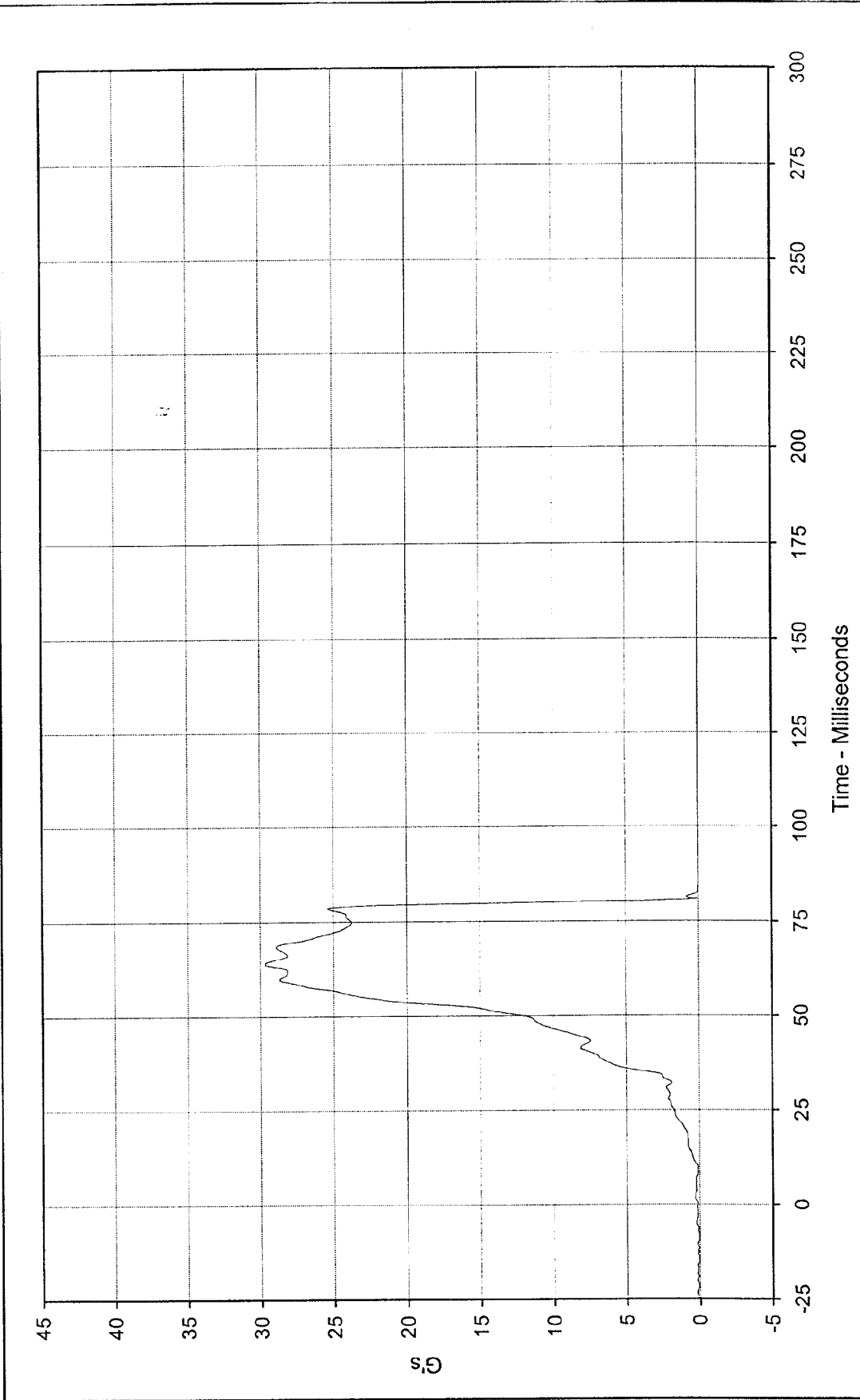
*Channel Failed at 80 Msec.



Curve Description: Passenger Chest Primary Z * Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 1.1 at 23.3 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -4.6 at 50.9 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: FIL-059

*Channel Failed at 80 Msec.



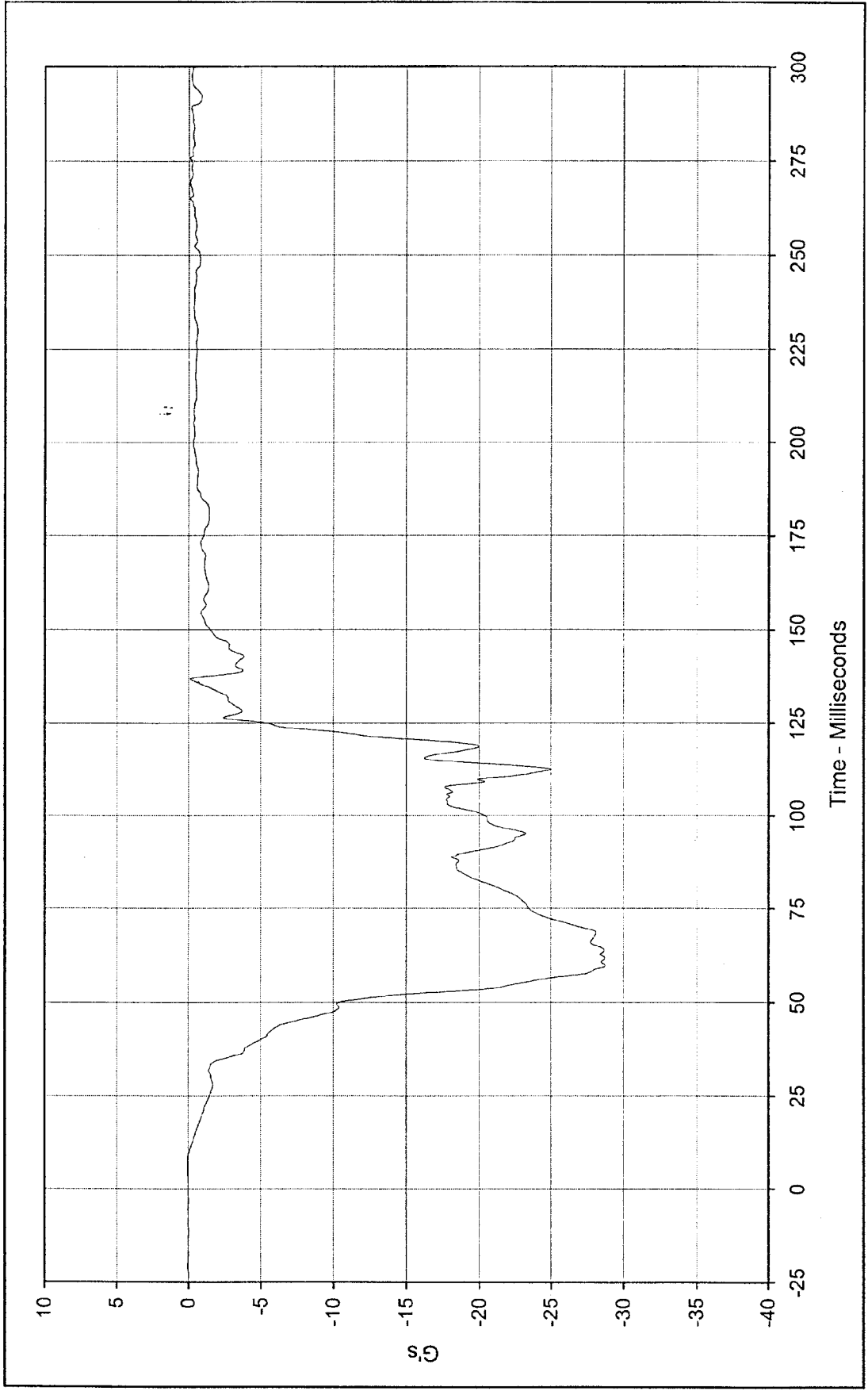


Curve Description: Passenger Chest Resultant Primary * Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 29.7 at 63.9 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 0.0 at 89.8 Milliseconds



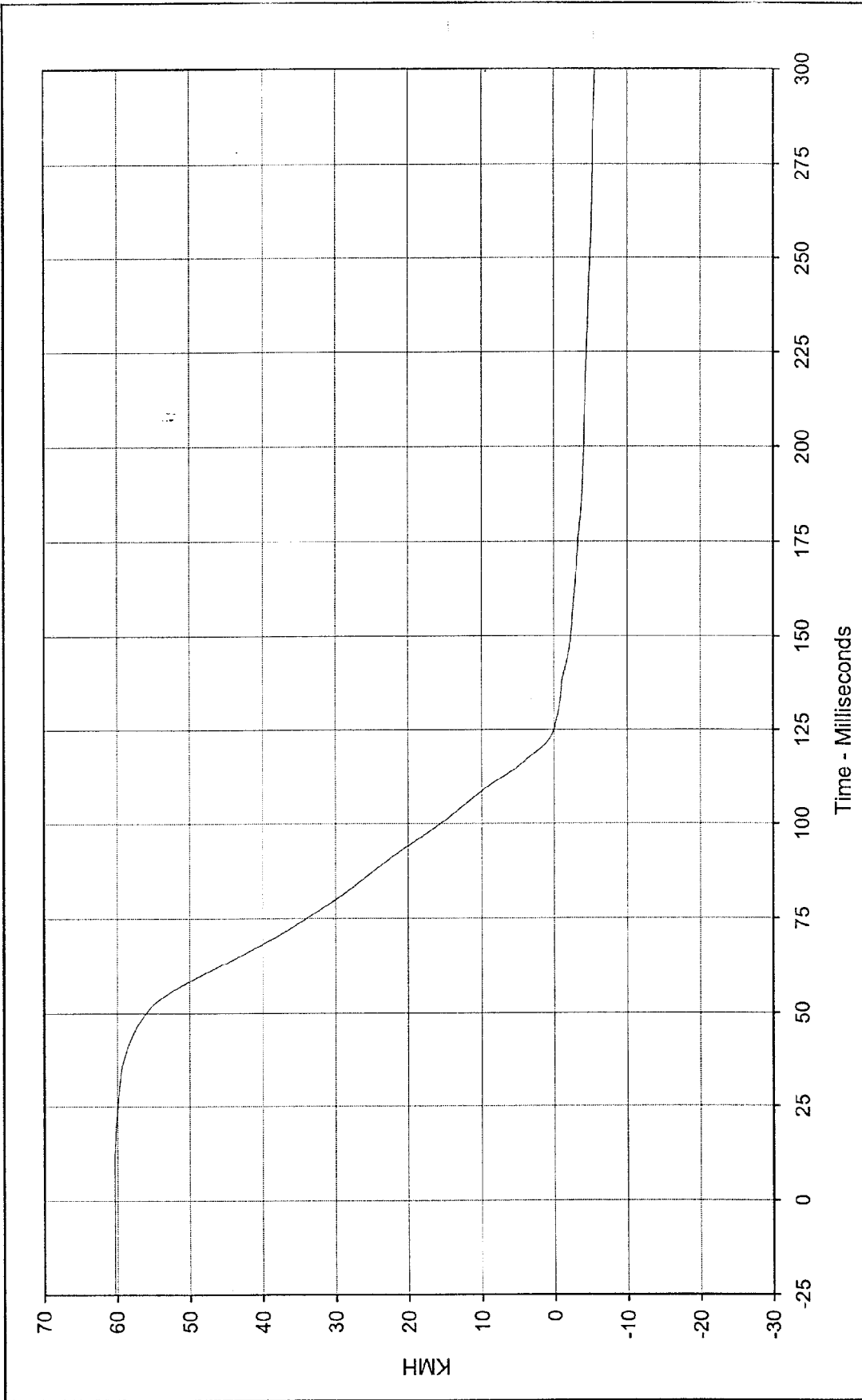
SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: RES-057

* Channel Failed at 80 Msec.



Curve Description: Passenger Chest Redundant X Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 0.1 at 7.6 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -28.8 at 59.6 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: FIL-060





Curve Description: Passenger Chest Redundant X Velocity Testing Program: 1997 NHTSA 40% Offset Impact (Female)

Maximum Value: 60.3 at 9.1 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan

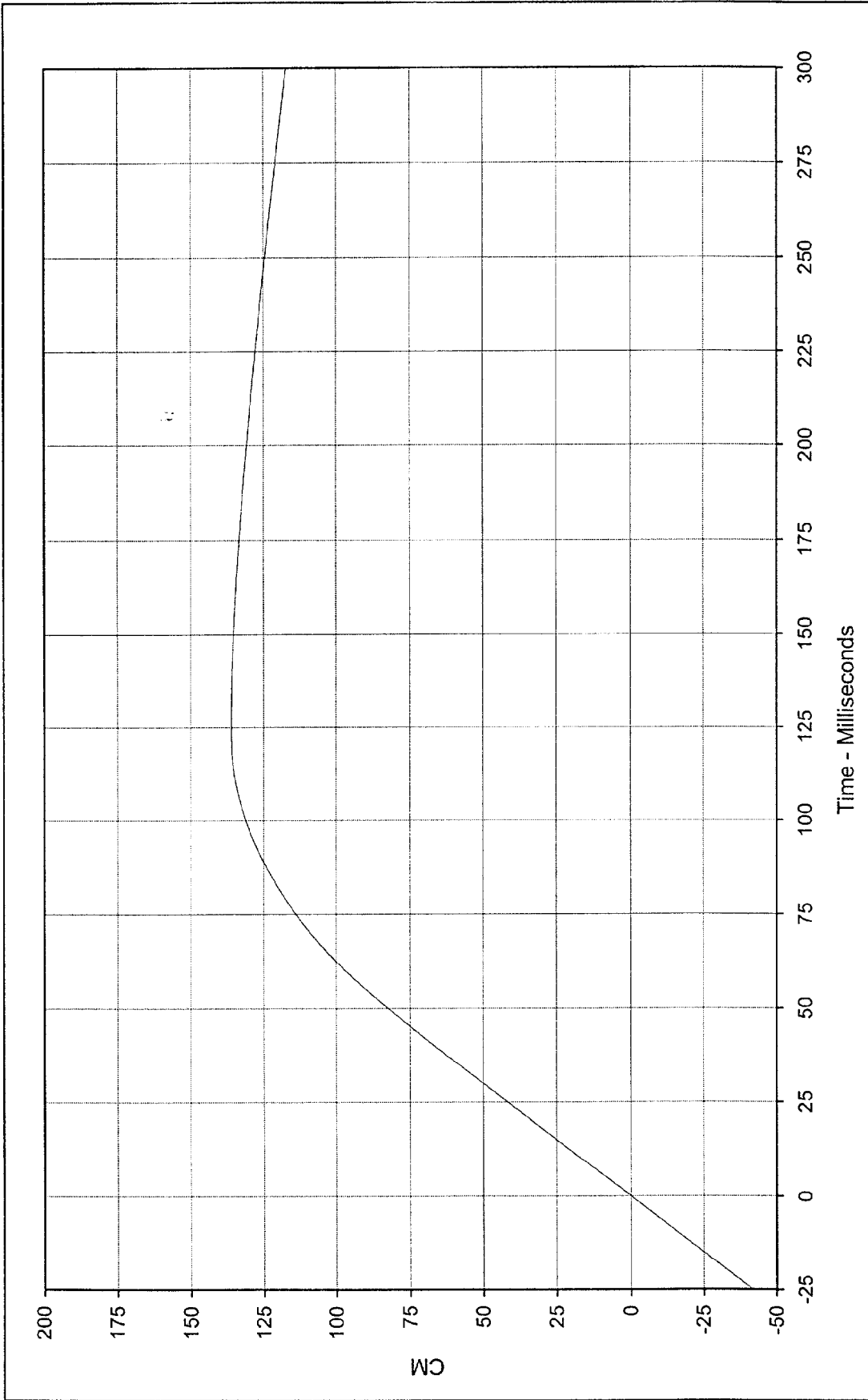
Minimum Value: -5.6 at 299.9 Milliseconds

SAE Filter Class: 180

Date of Test: 8/21/97

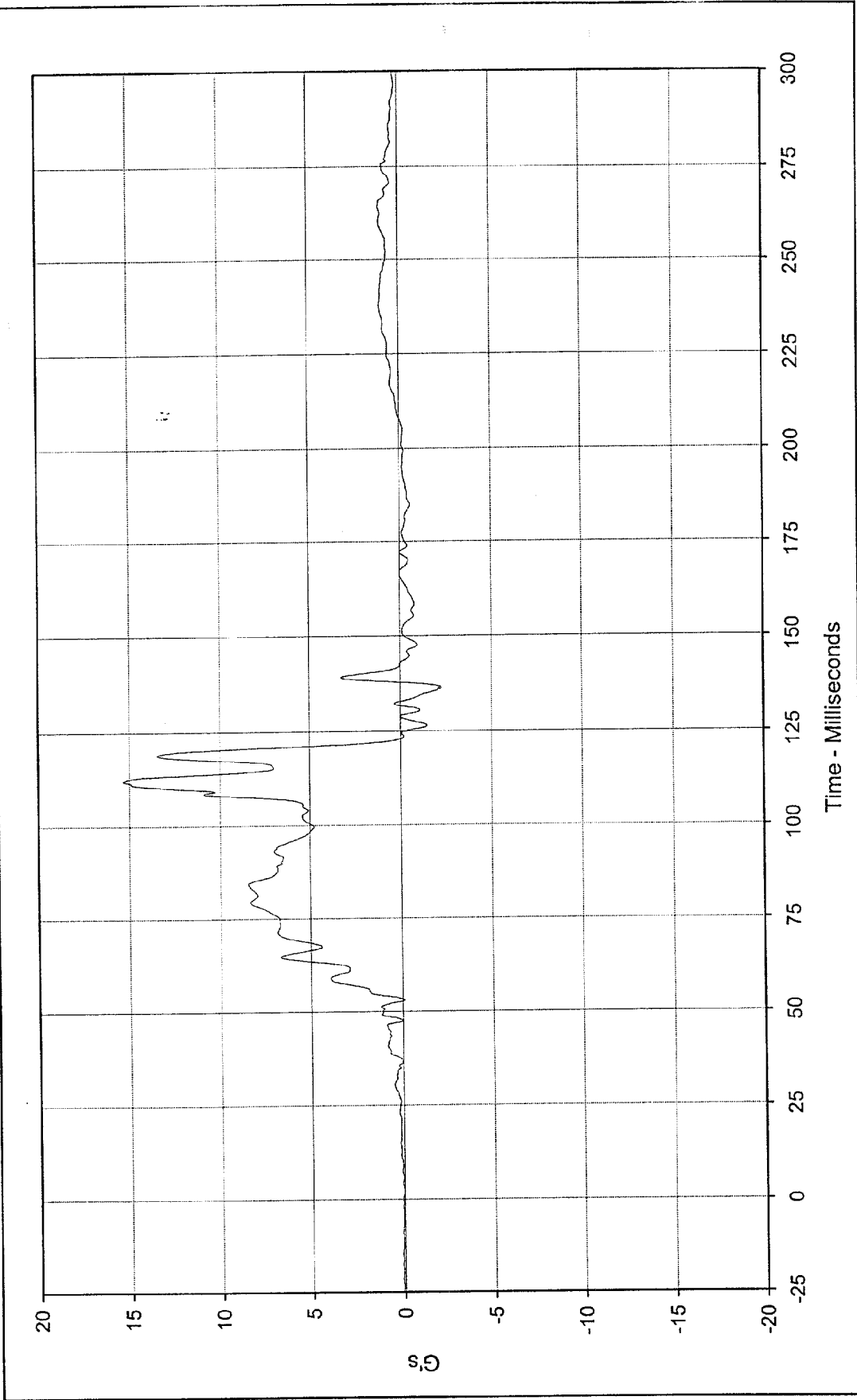
Curve Number: IN1-060





Curve Description: Passenger Chest Redundant X Displ. Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 136.0 at 125.2 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN2-060





Curve Description: Passenger Chest Redundant Y Testing Program 1997 NHTSA 40% Offset Impact (Female)

Maximum Value: 15.3 at 111.9 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan

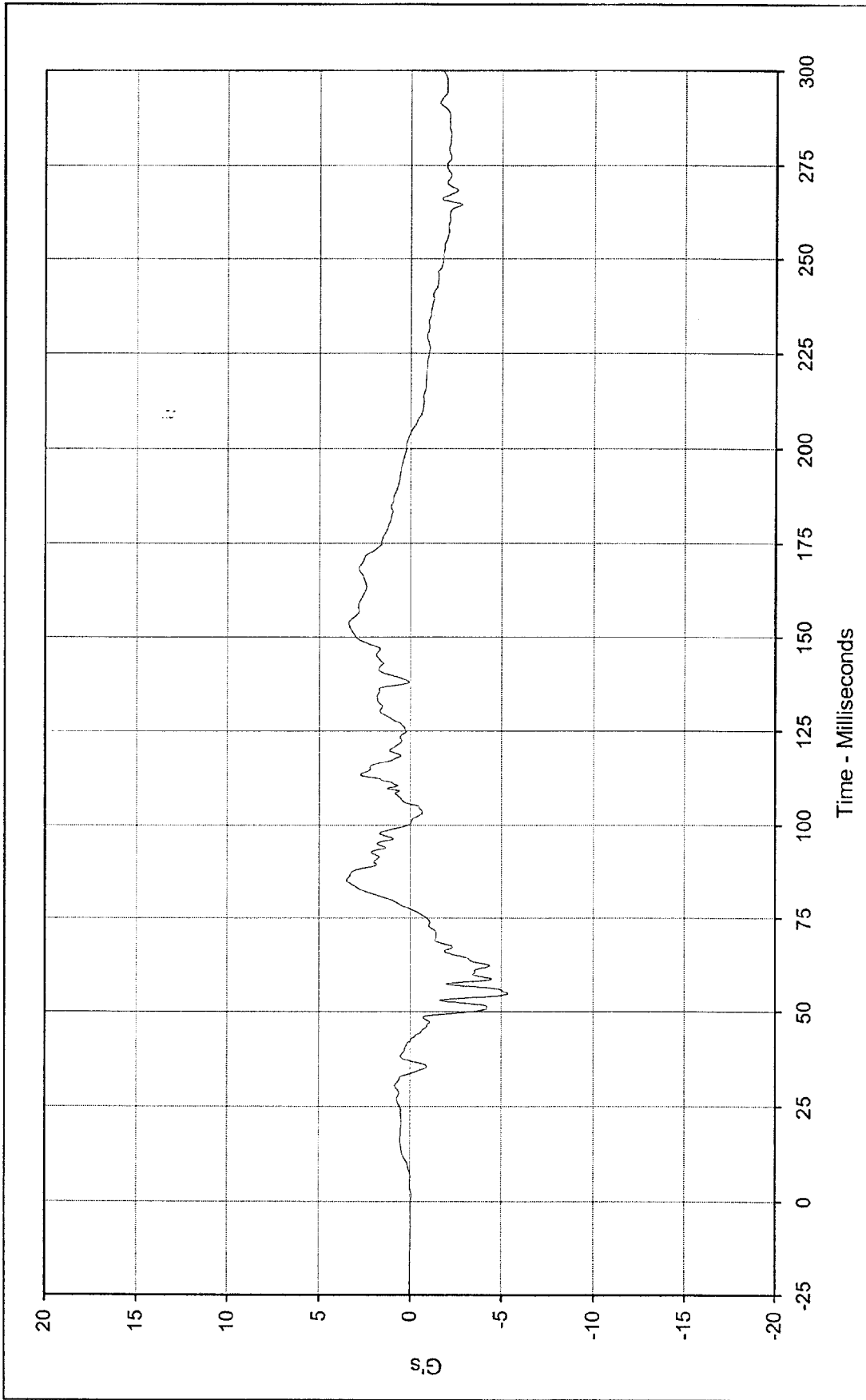
Minimum Value: -2.2 at 136.2 Milliseconds

SAE Filter Class: 180

Date of Test: 8/21/97

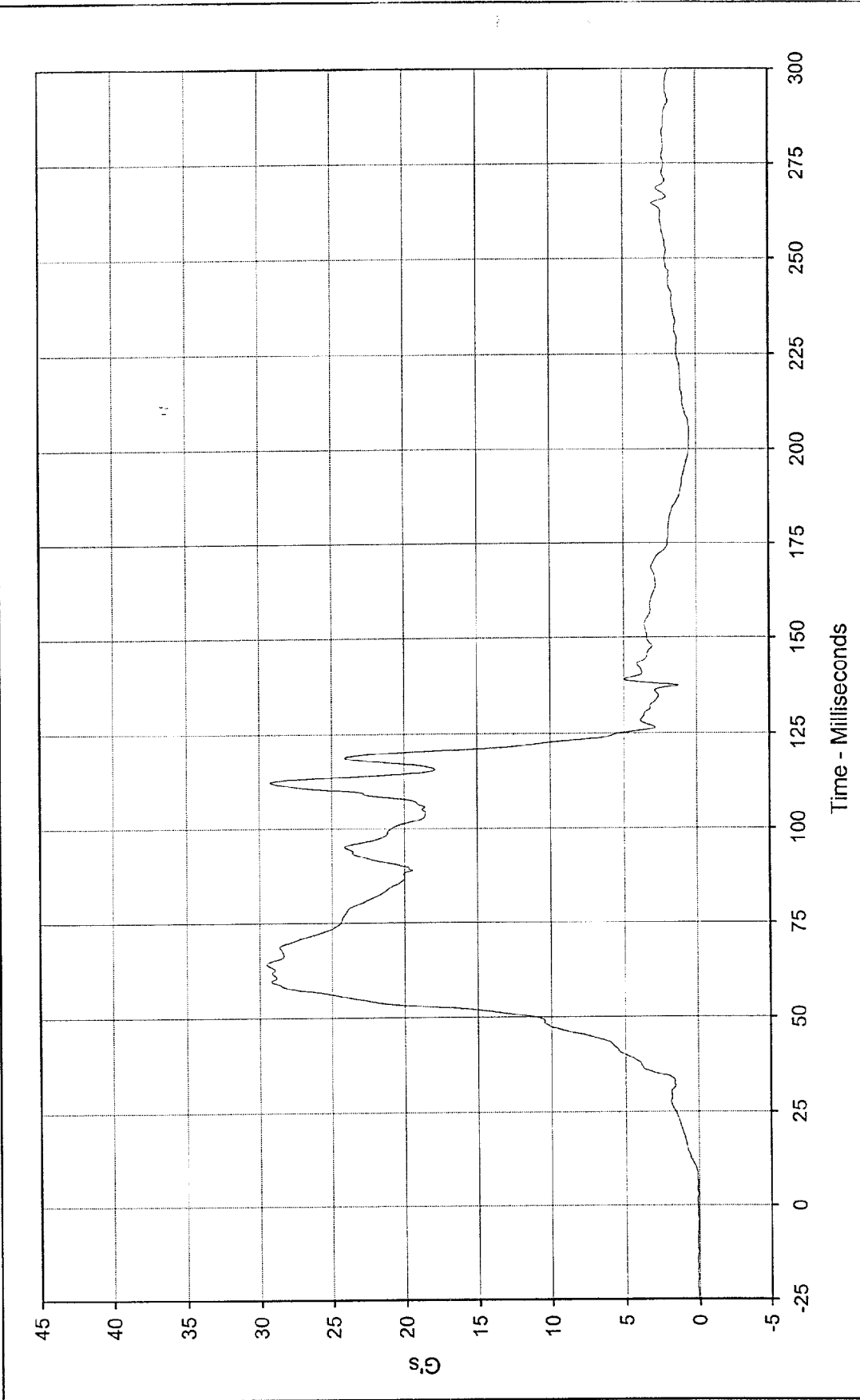
Curve Number: FIL-061





Curve Description: Passenger Chest Redundant Z Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 3.5 at 85.3 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -5.4 at 54.8 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: FIL-062





Curve Description: Passenger Chest Resultant Redundant

Maximum Value: 29.5 at 64.1 Milliseconds

Minimum Value: 0.0 at 3.0 Milliseconds

SAE Filter Class: 180

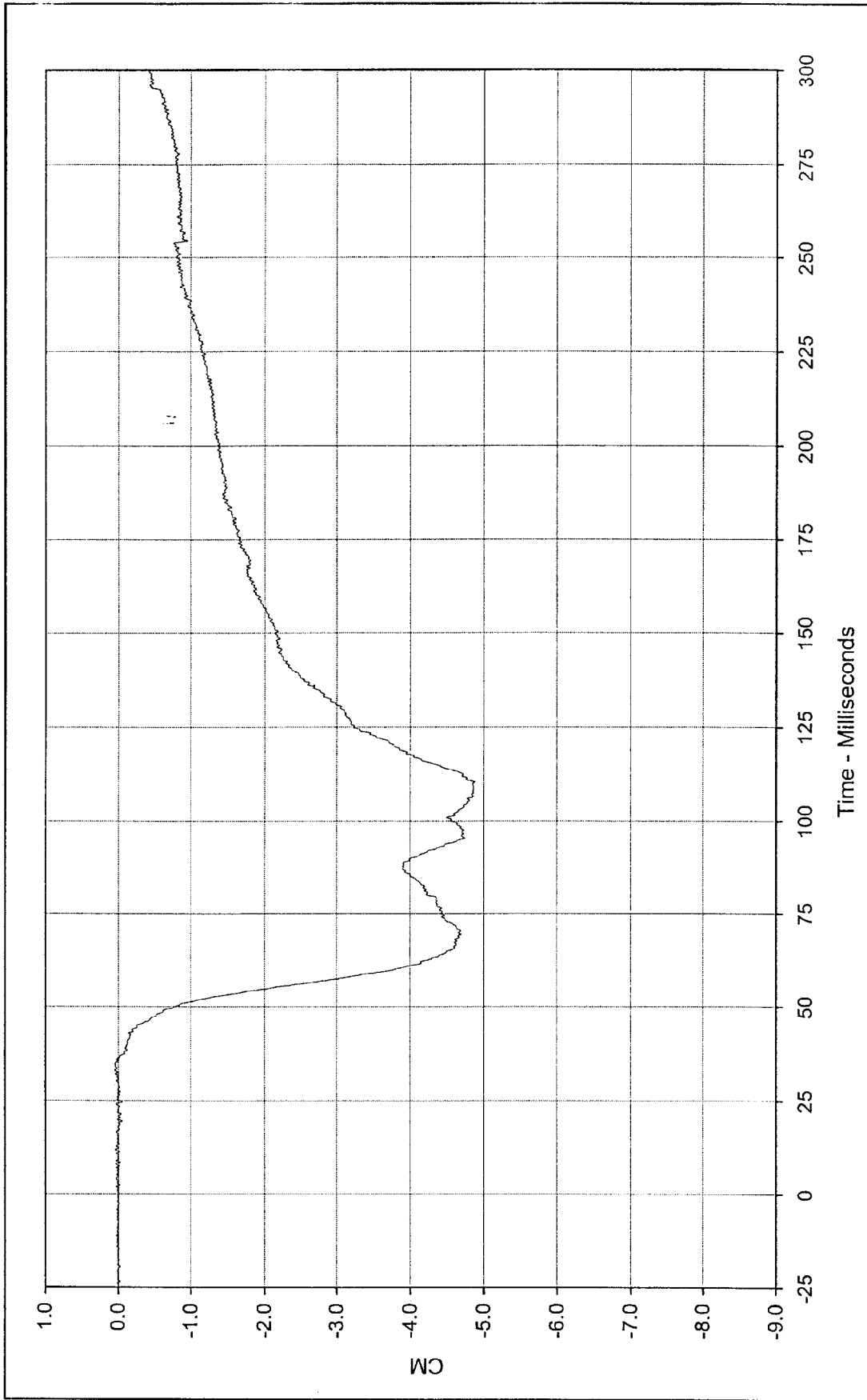
Date of Test: 8/21/97

Curve Number: RES-060

Testing Program 1997 NHTSA 40% Offset Impact (Female)

Test Vehicle: 1996 Dodge Neon 4 Door Sedan

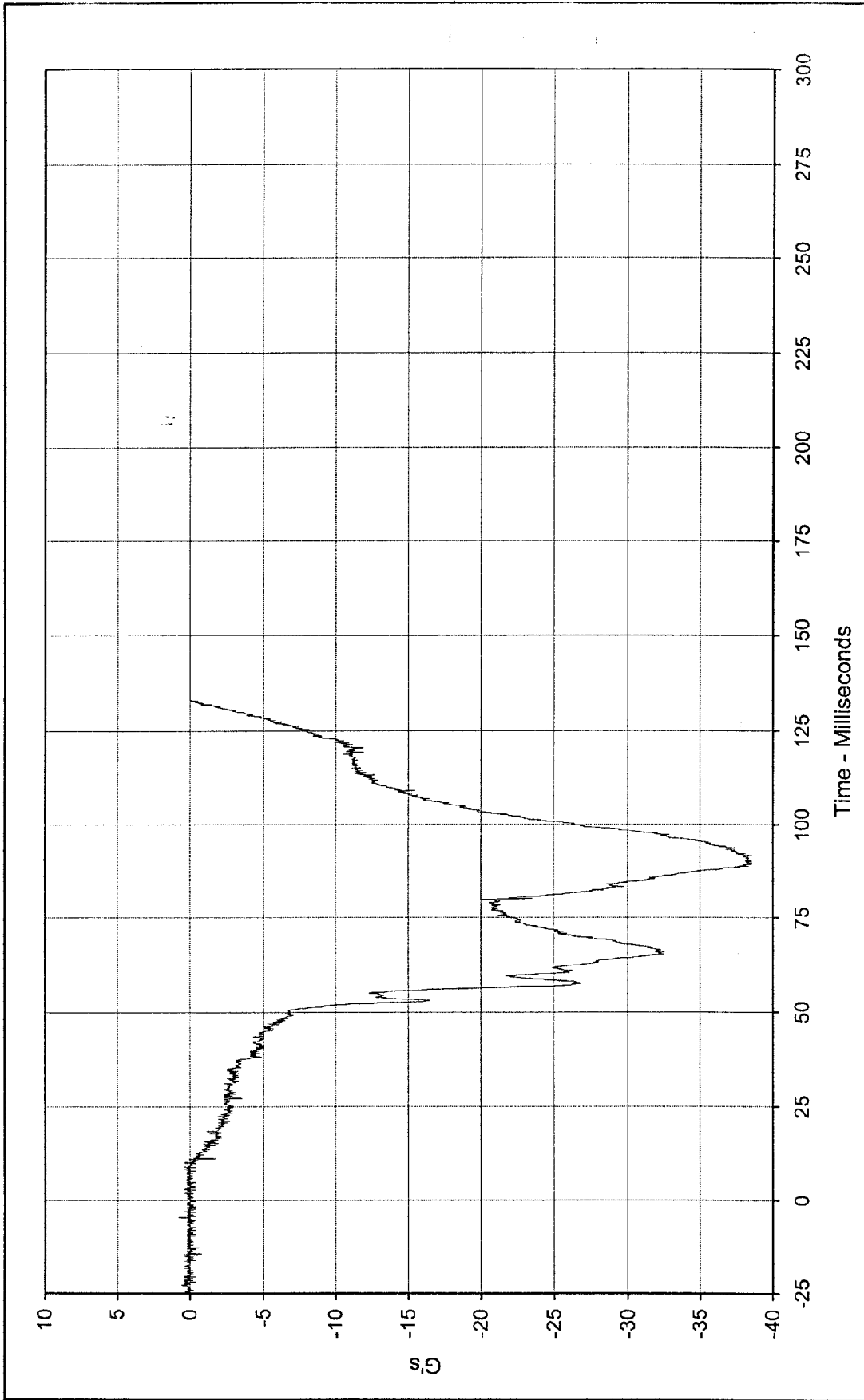




Curve Description: Passenger Chest Displacement X Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 0.05 at 33.1 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -4.88 at 110.4 Milliseconds



SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-063

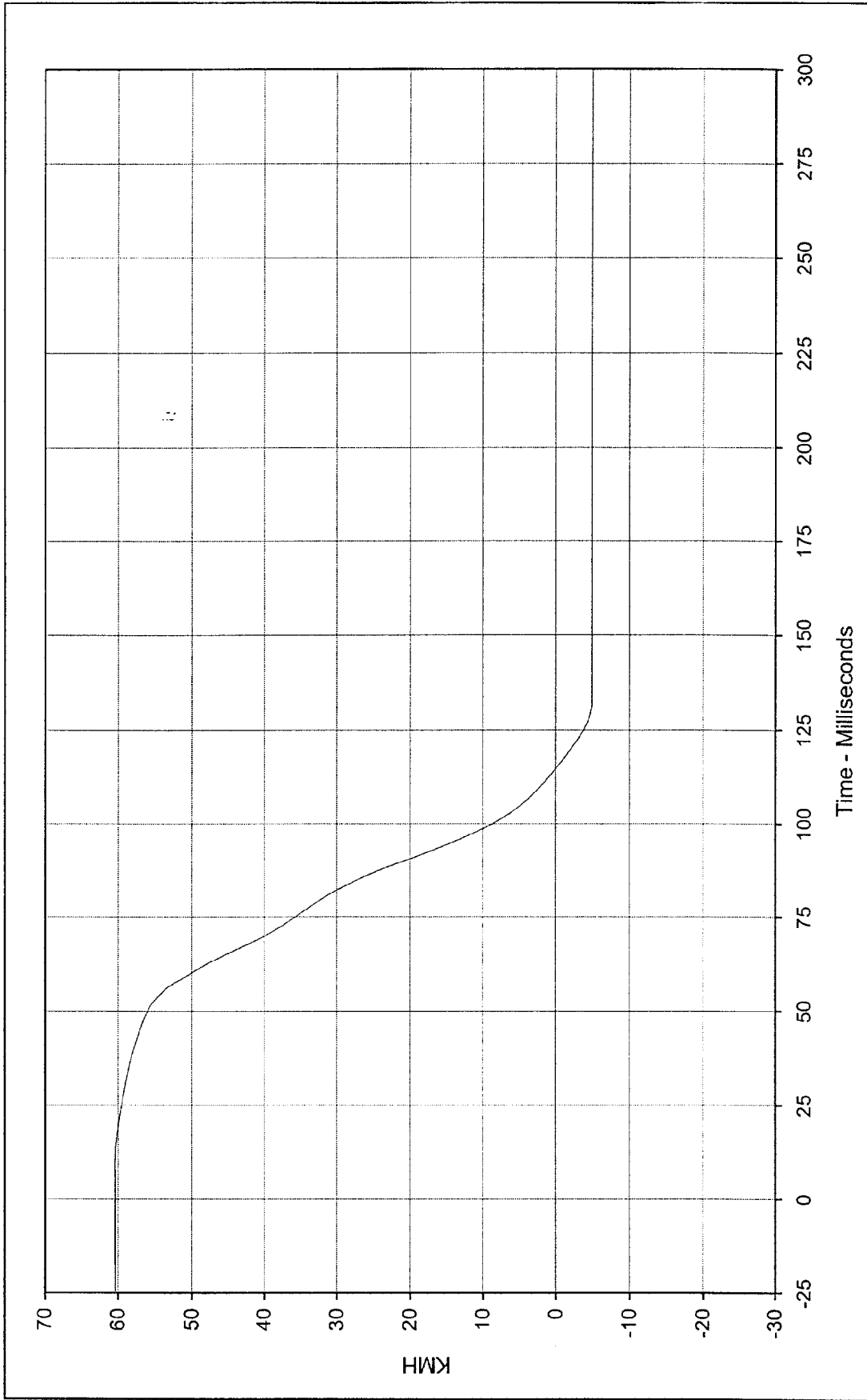


Curve Description: Passenger Pelvis X * Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 0.4 at 1.9 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -38.5 at 89.3 Milliseconds



SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-064

* Channel Failed at 133 Msec.

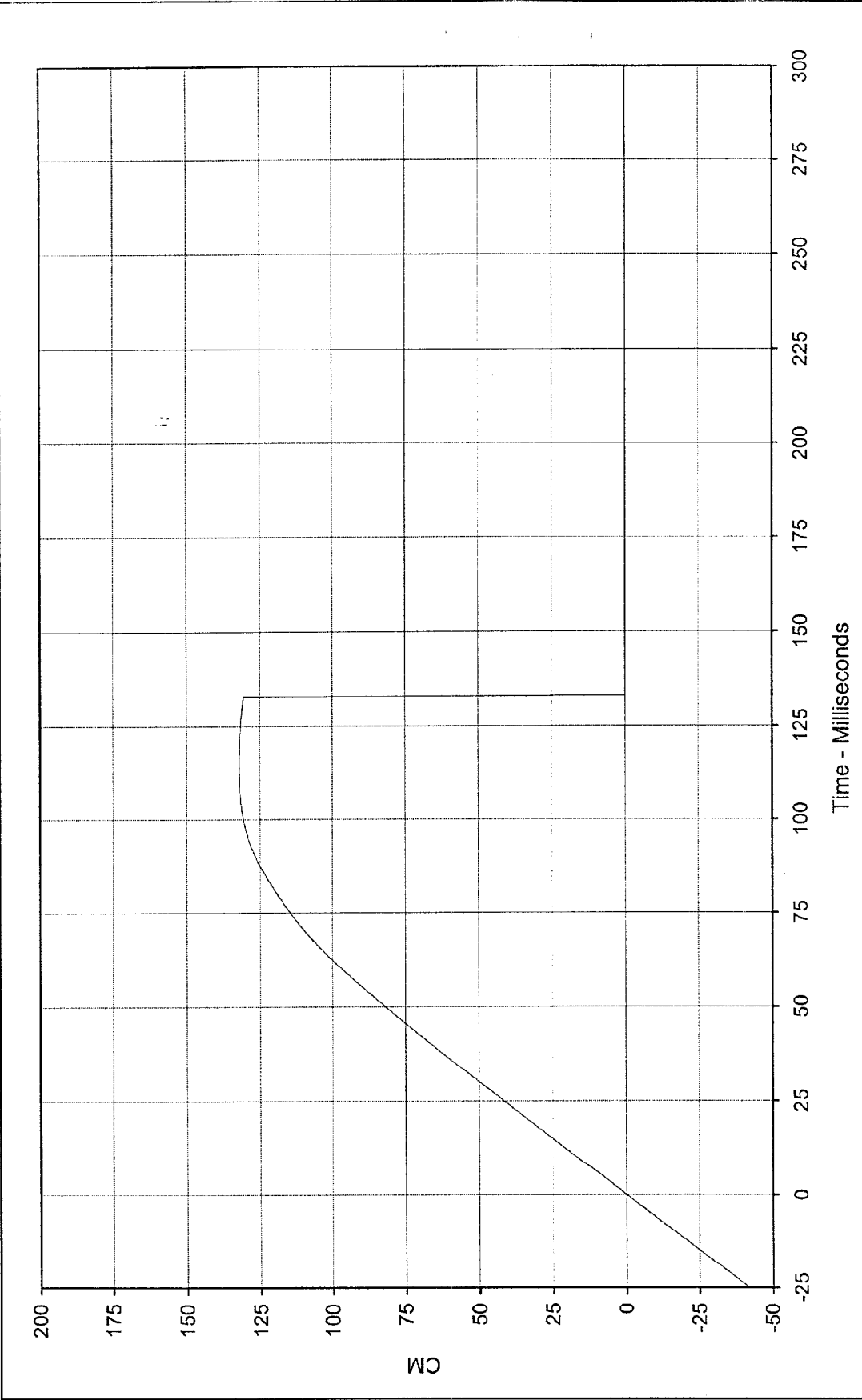


Curve Description: Passenger Pelvis X Velocity * 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 60.4 at 9.6 Milliseconds
 Minimum Value: -5.0 at 133.6 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN1-064

Testing Program: 1996 Dodge Neon 4 Door Sedan
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan

KARCO
Engineering

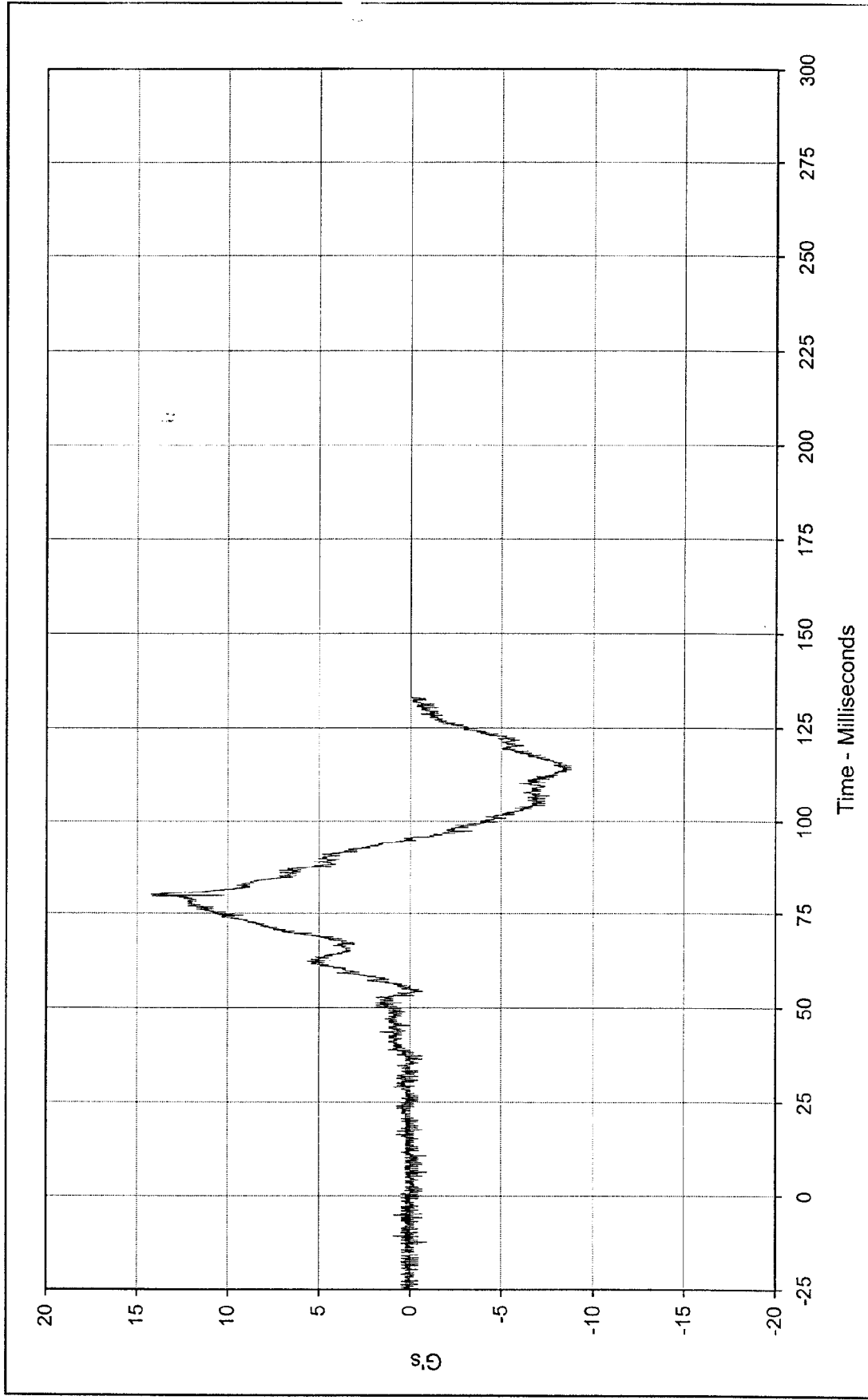
* Channel Failed at 133 Msec.



Curve Description: Passenger Pelvis X Displ. * Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 132.2 at 114.8 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 0.0 at 133.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN2-064



* Channel Failed at 133 Msec.

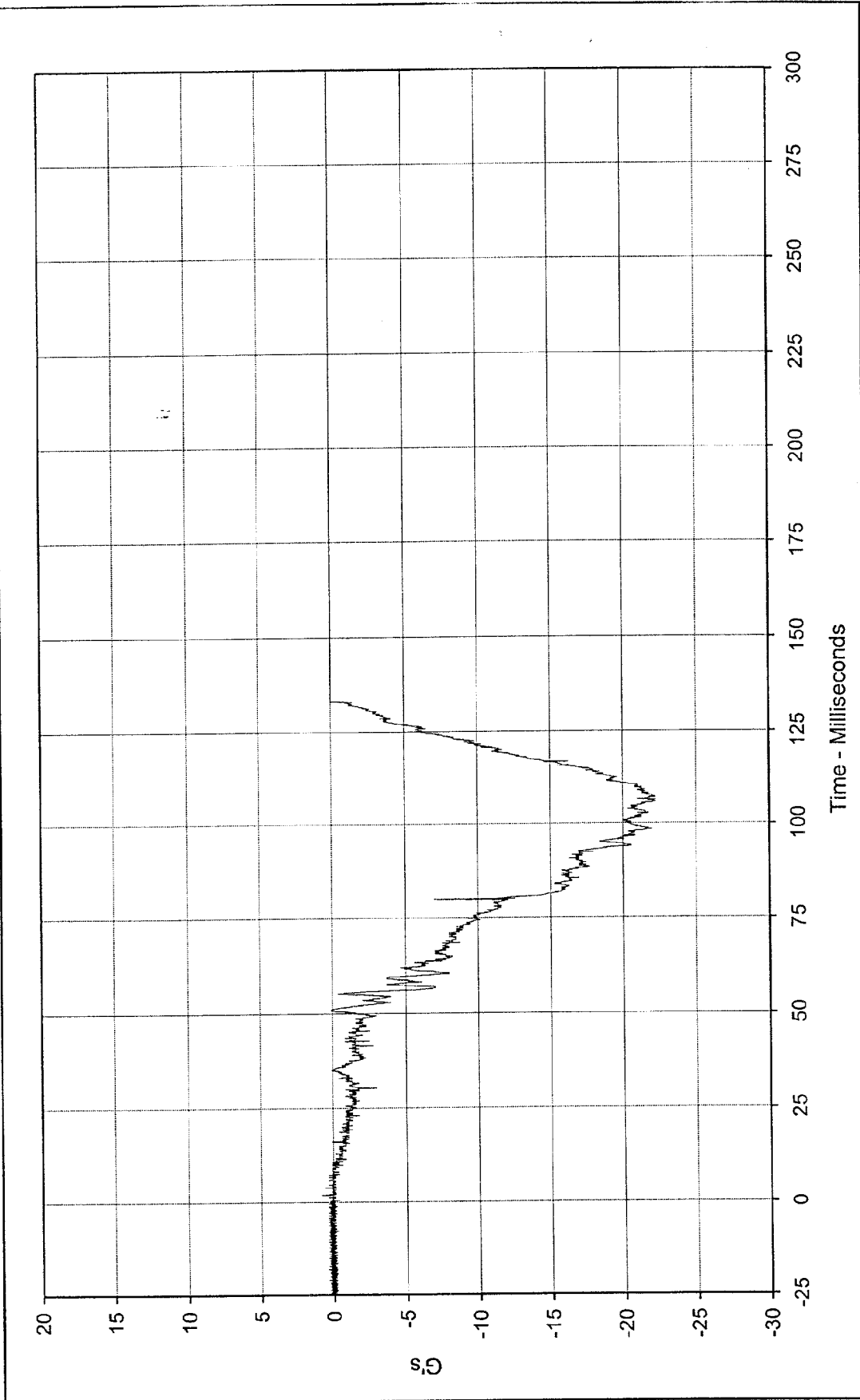


Curve Description: Passenger Pelvis Y * 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 14.2 at 80.2 Milliseconds
 Minimum Value: -8.8 at 113.8 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-065

Testing Program 1996 Dodge Neon 4 Door Sedan
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan

KARCO
Engineering

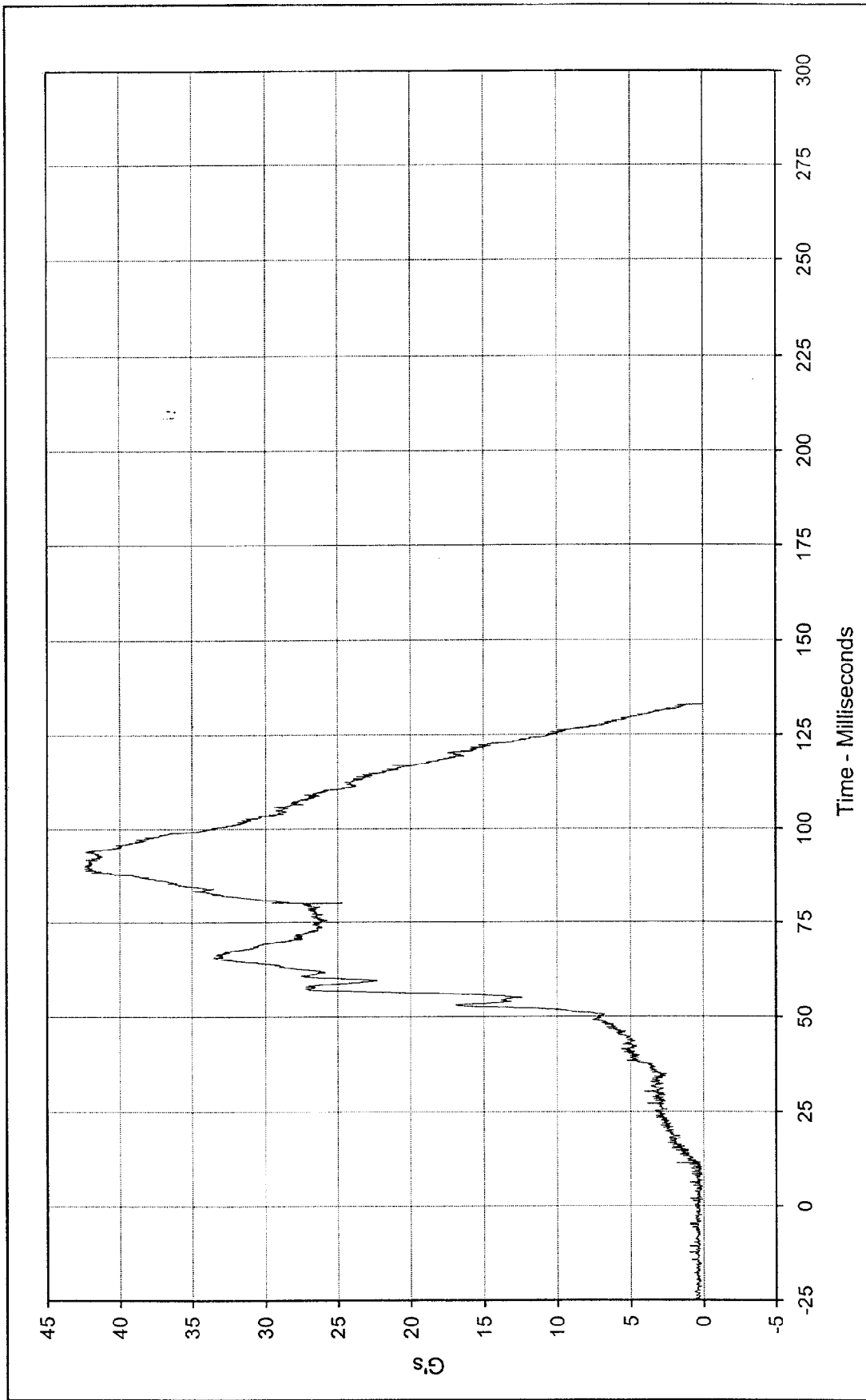
* Channel Failed at 133 Msec.



Curve Description: Passenger Pelvis Z * 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 0.8 at 1.9 Milliseconds 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -22.2 at 105.8 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-066

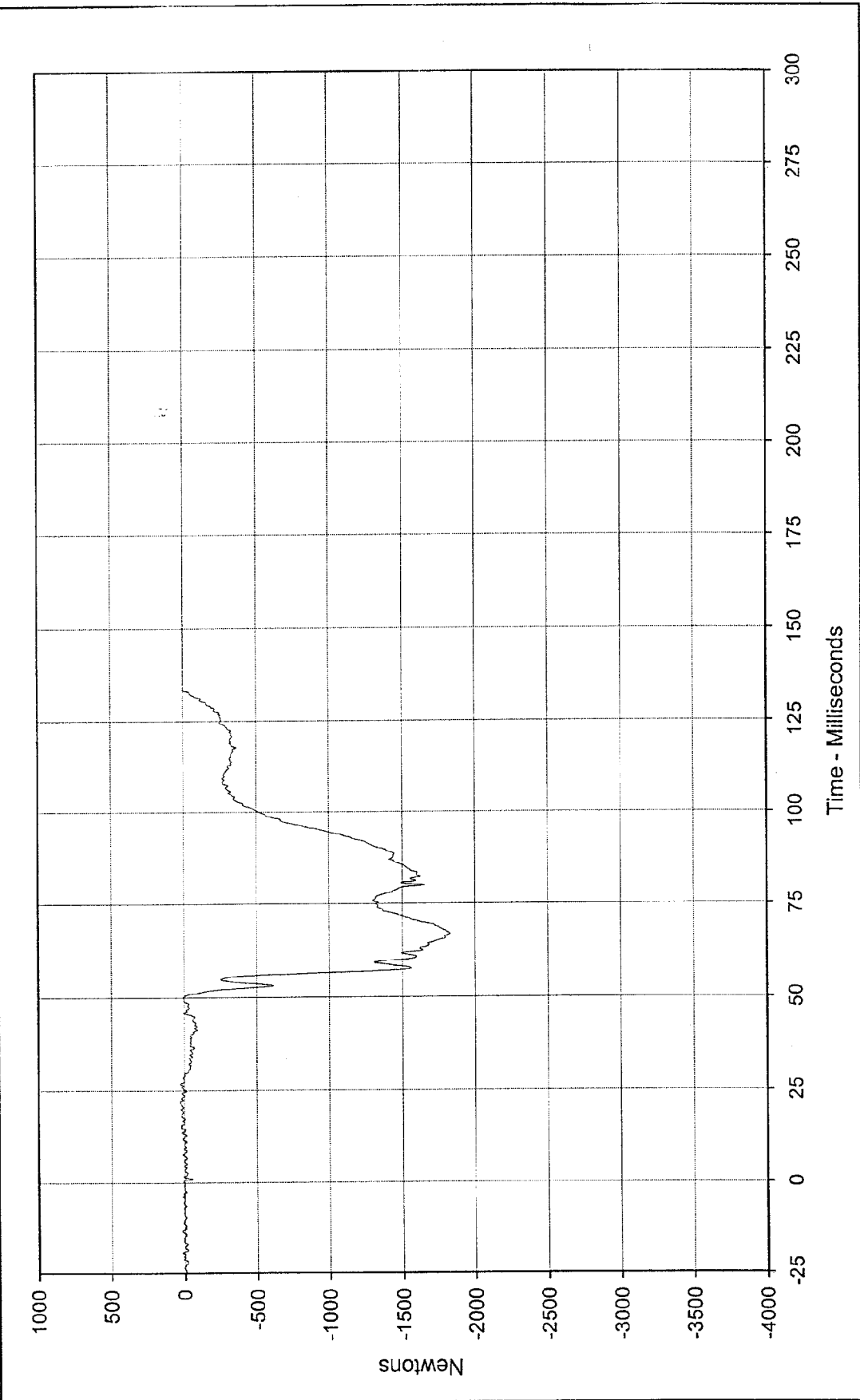
* Channel Failed at 133 Msec.





Curve Description: Passenger Pelvis Resultant * Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 42.4 at 89.3 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 0.0 at 133.0 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: RES-064 * Channel Failed at 133 Msec.

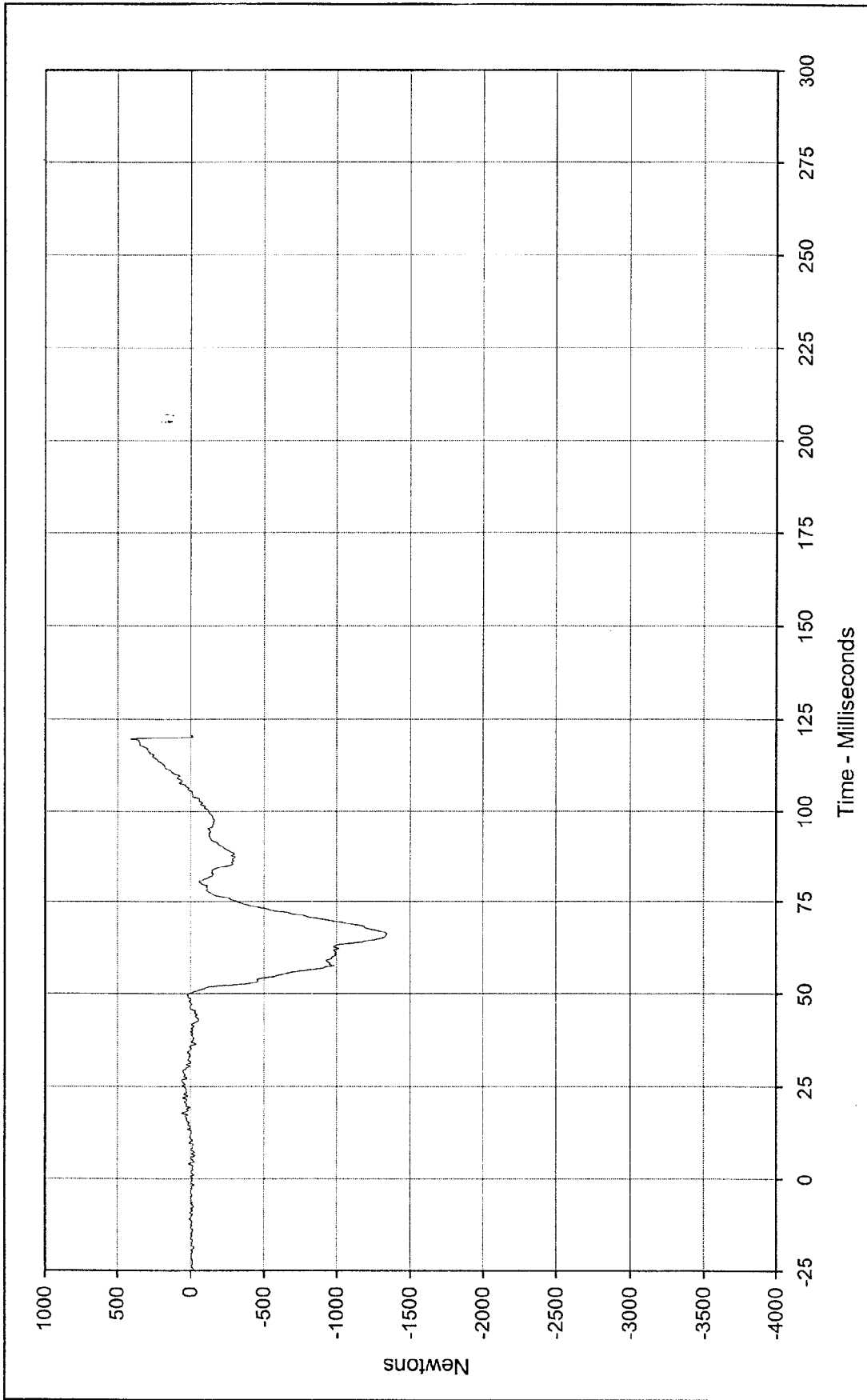




Curve Description: Passenger Left Femur Force * Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 32.2 at 22 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -1830.2 at 67.0 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-067



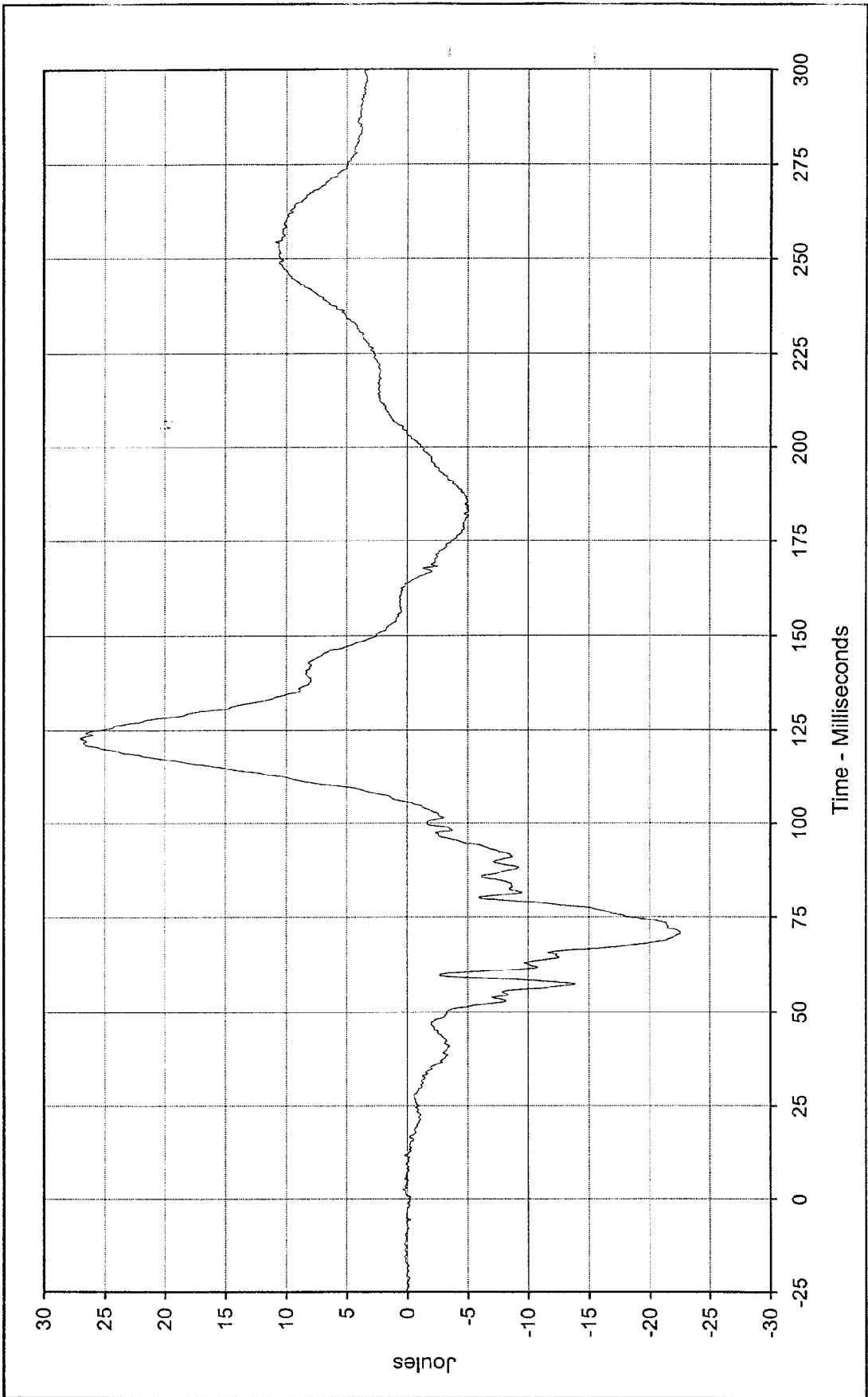
*Channel Failed at 133 Msec.



Curve Description: Passenger Right Femur Force * Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 411.2 at 119.6 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -1344.4 at 66.2 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-068



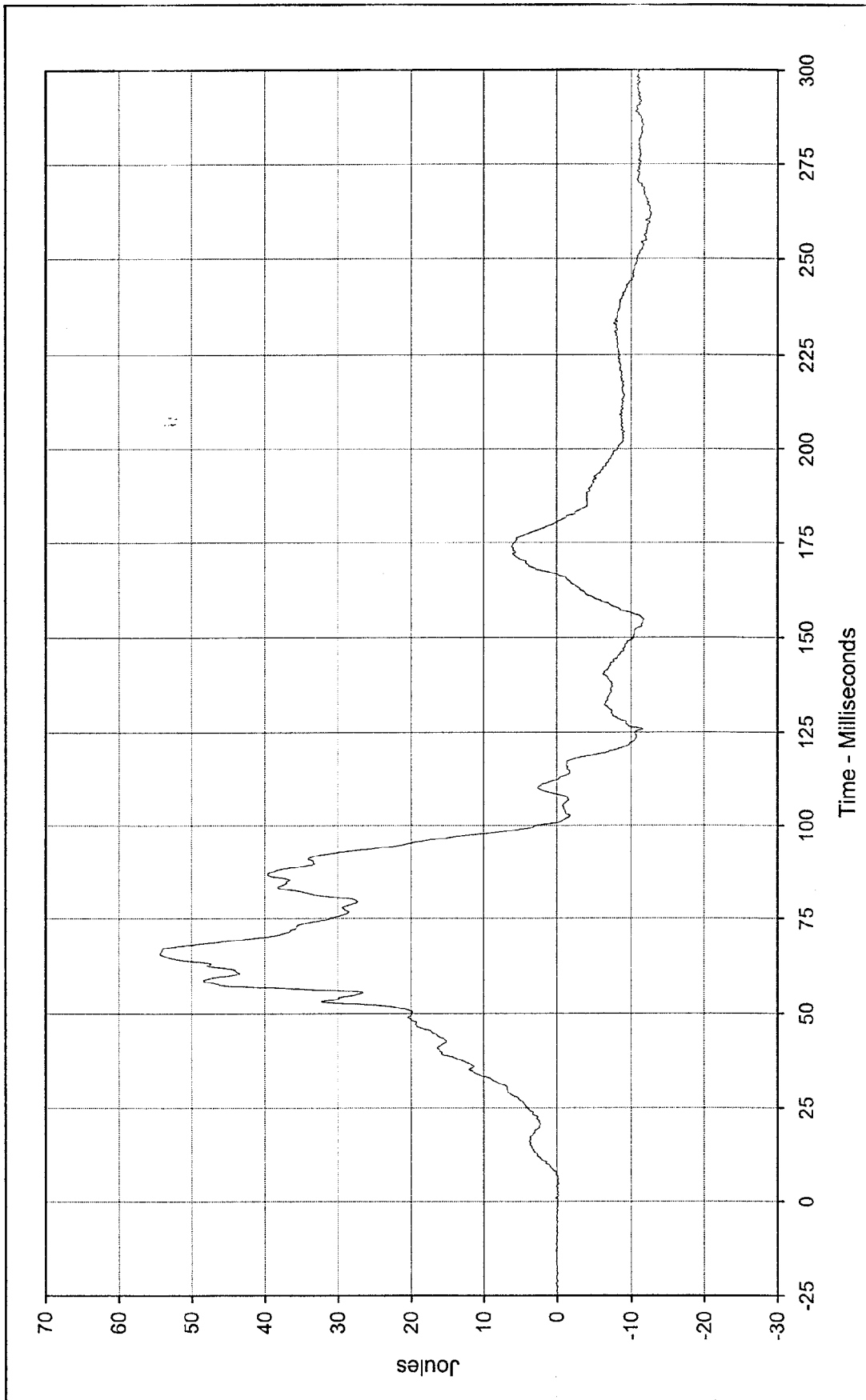
*Channel Failed at 120 Msec.



Curve Description: Passenger Left Upper Tibia Moment X
 Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan

Maximum Value: 27.0 at 122.8 Milliseconds
 Minimum Value: -22.5 at 70.9 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-069

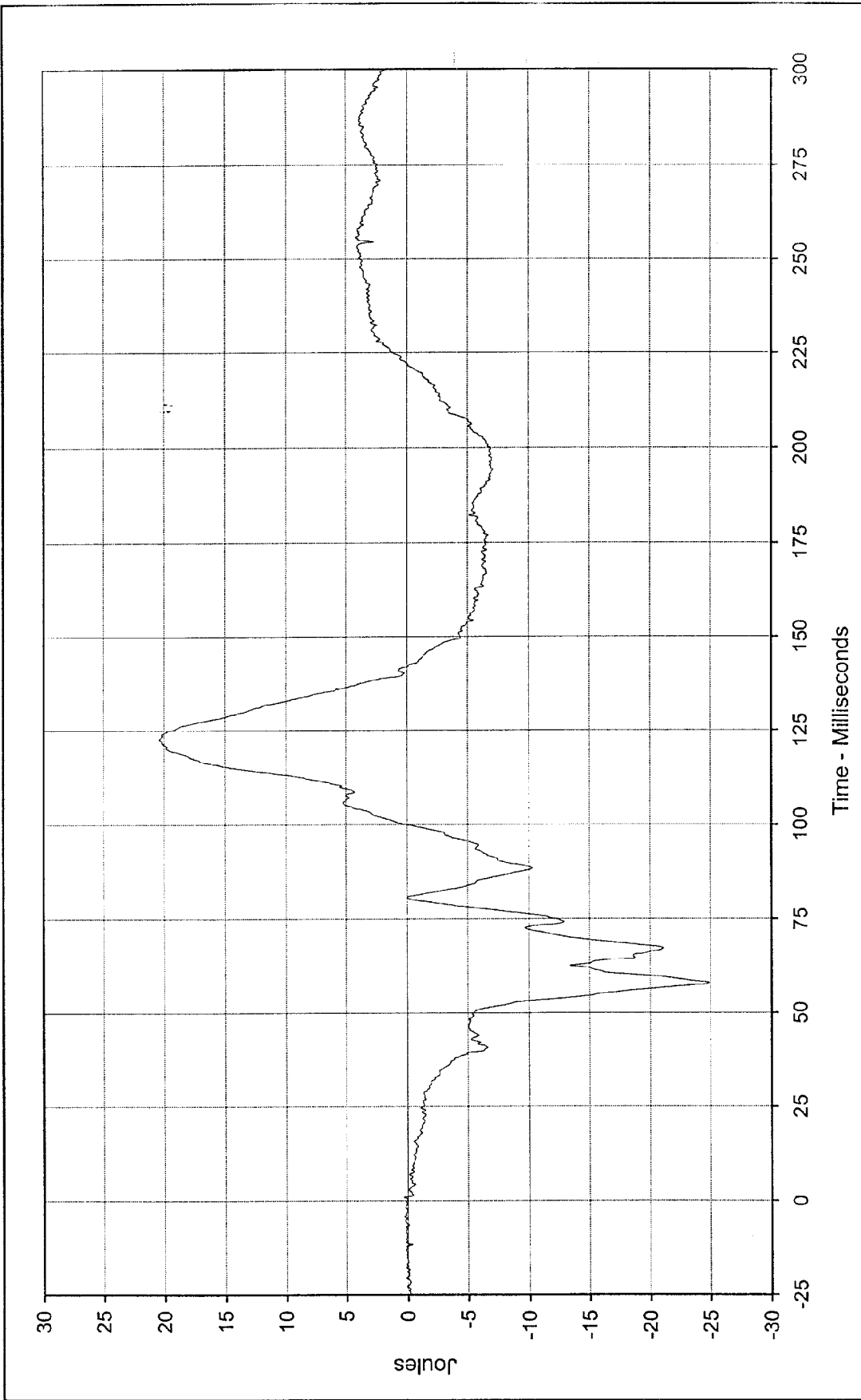




Curve Description: Passenger Left Upper Tibia Moment Y Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 54.4 at 65.7 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -12.7 at 261.8 Milliseconds



SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-070



Curve Description: Passenger Right Upper Tibia Moment X Testing Program 1997 NHTSA 40% Offset Impact (Female)

Maximum Value: 20.5 at 122.7 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan

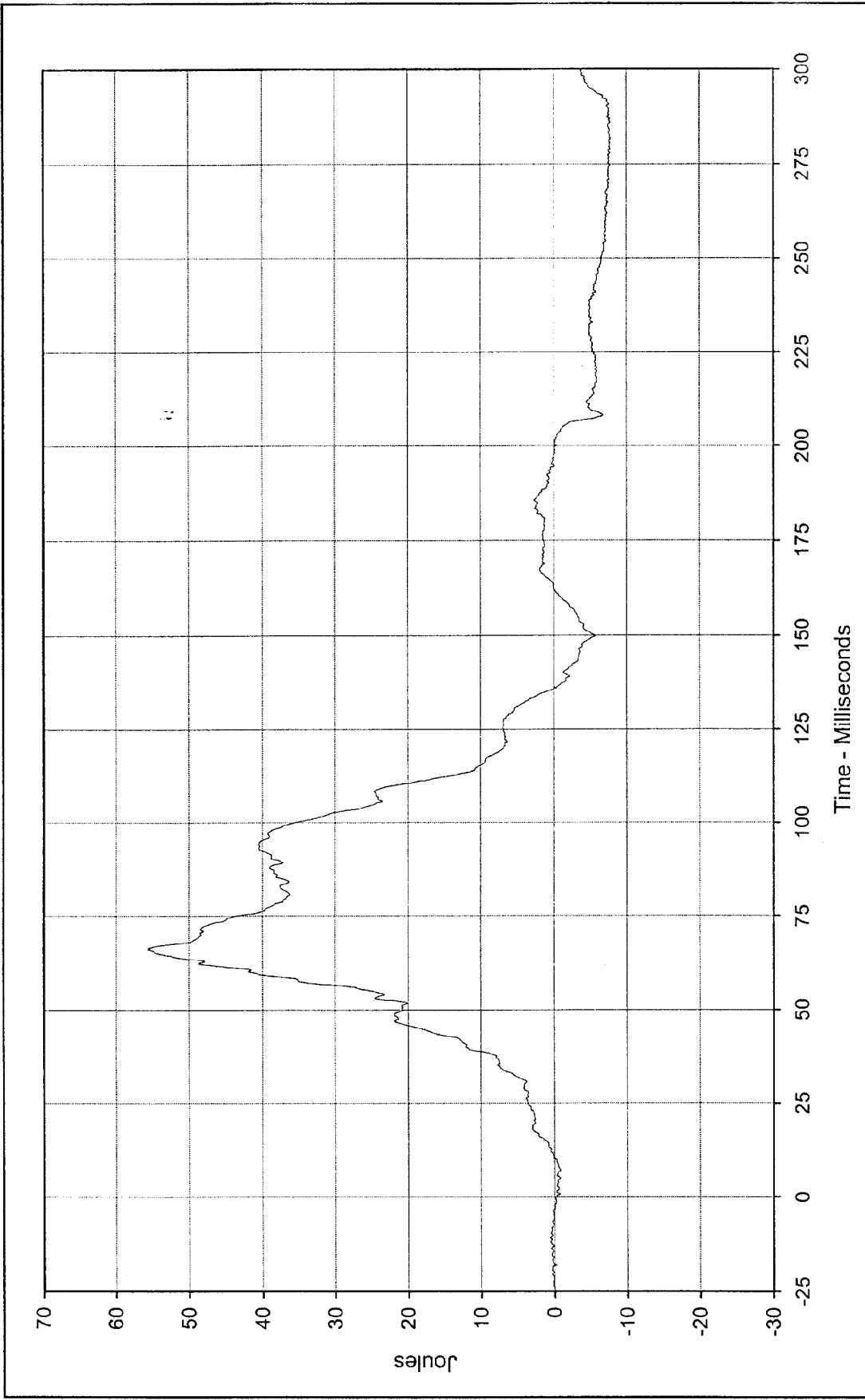
Minimum Value: -24.9 at 57.8 Milliseconds

SAE Filter Class: 600

Date of Test: 8/21/97

Curve Number: FIL-071

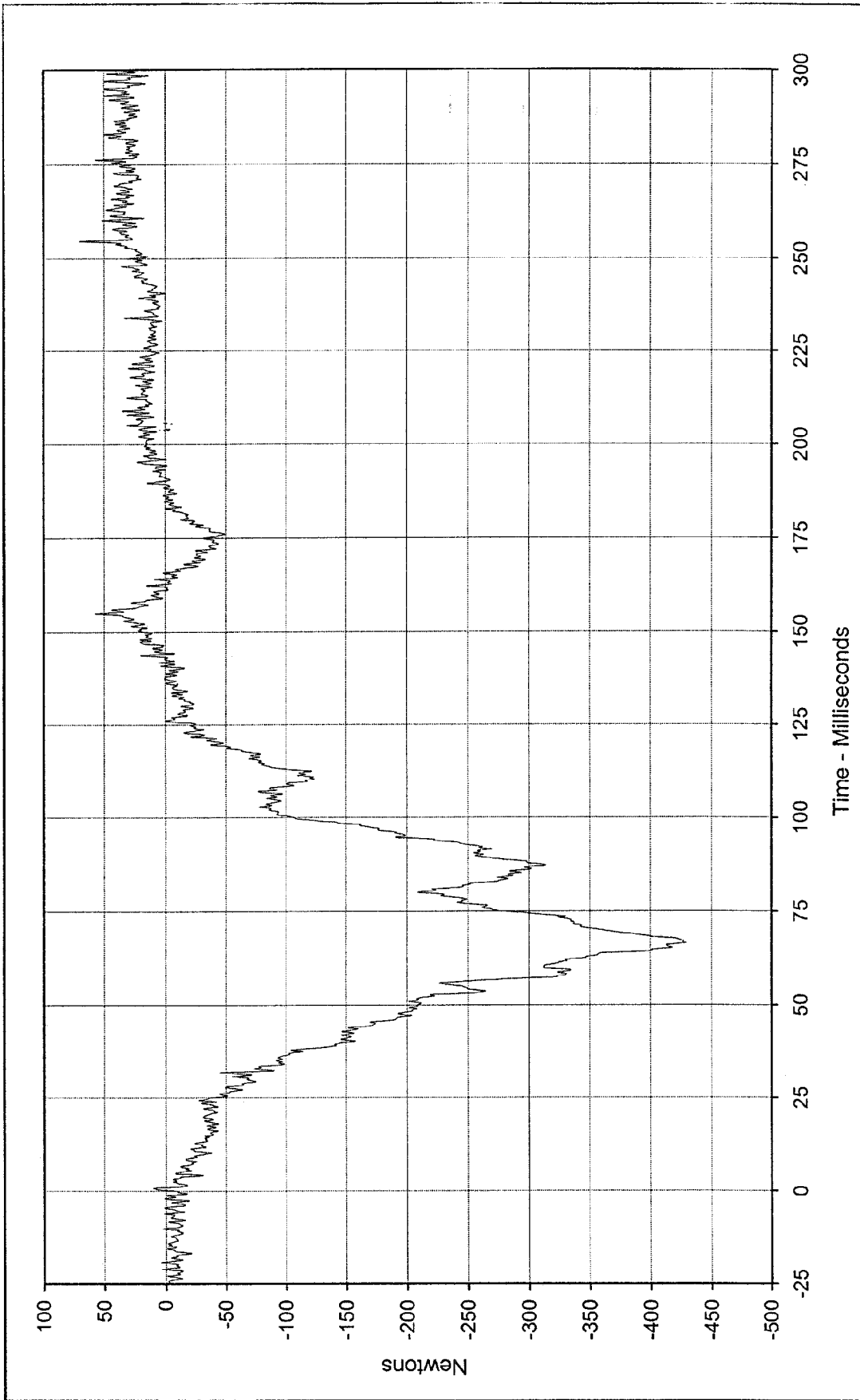




Curve Description: Passenger Right Upper Tibia Moment Y
 Maximum Value: 55.6 at 66.3 Milliseconds
 Minimum Value: -7.8 at 281.8 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-072

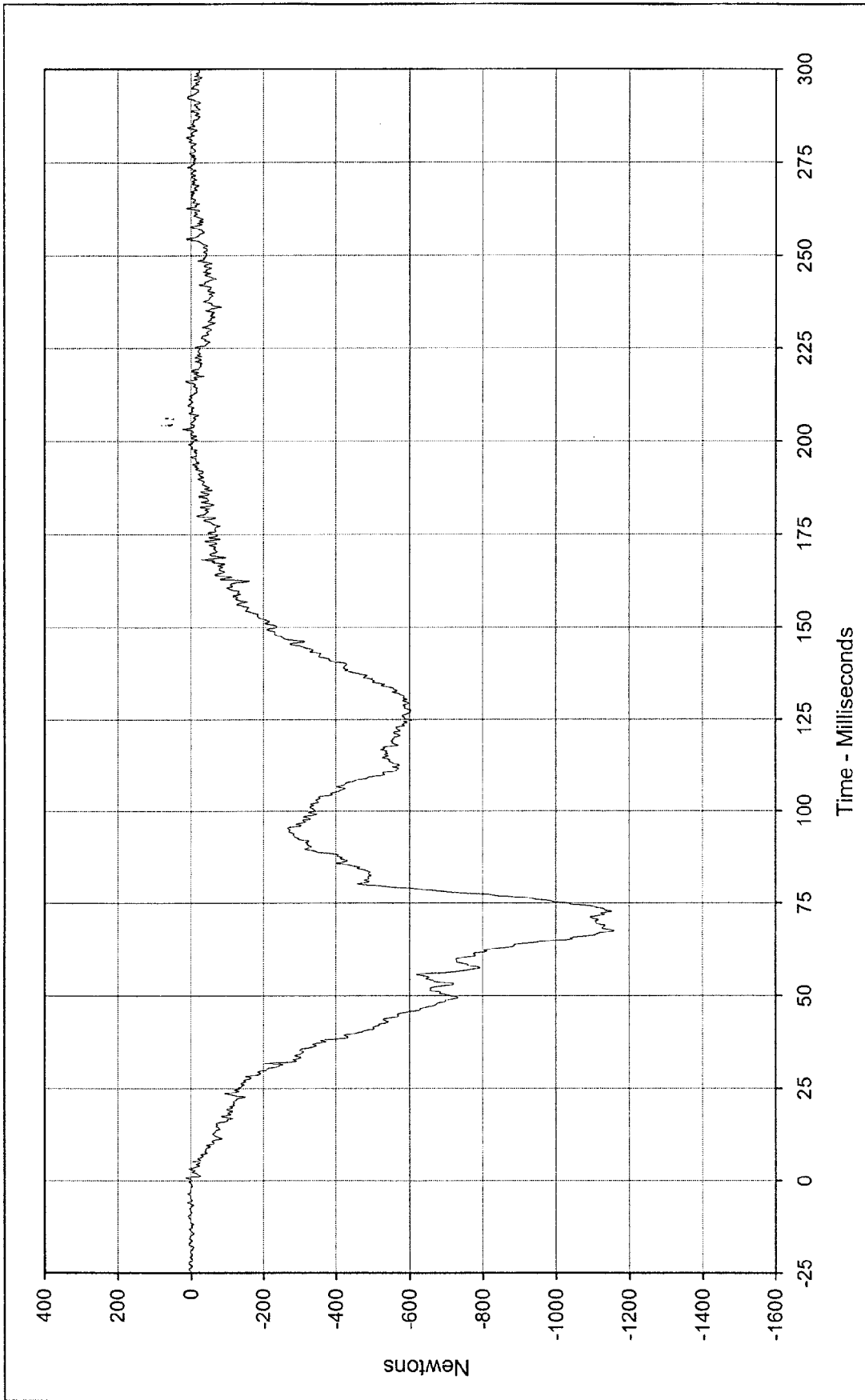
Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan





Curve Description: Passenger Left Lower Tibia Force X Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 69.5 at 254.5 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -429.3 at 66.7 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-073





Curve Description: Passenger Left Lower Tibia force Z Testing Program: 1997 NHTSA 40% Offset Impact (Female)

Maximum Value: 22.7 at 203.2 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan

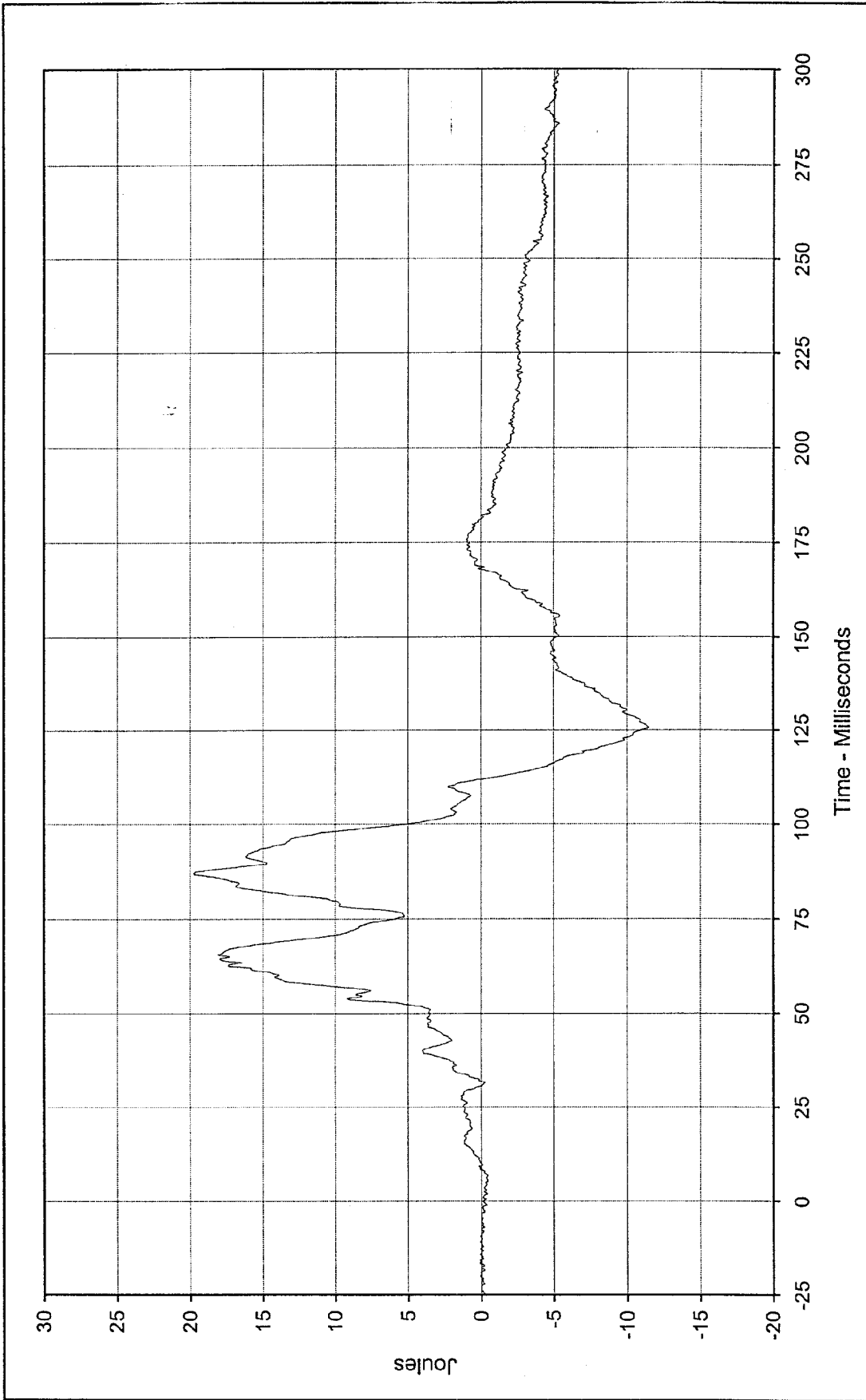
Minimum Value: -1157.1 at 67.5 Milliseconds

SAE Filter Class: 600

Date of Test: 8/21/97

Curve Number: FIL-074





Curve Description: Passenger Left Lower Tibia Moment Y Testing Program 1997 NHTSA 40% Offset Impact (Female)

Maximum Value: 19.8 at 86.8 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan

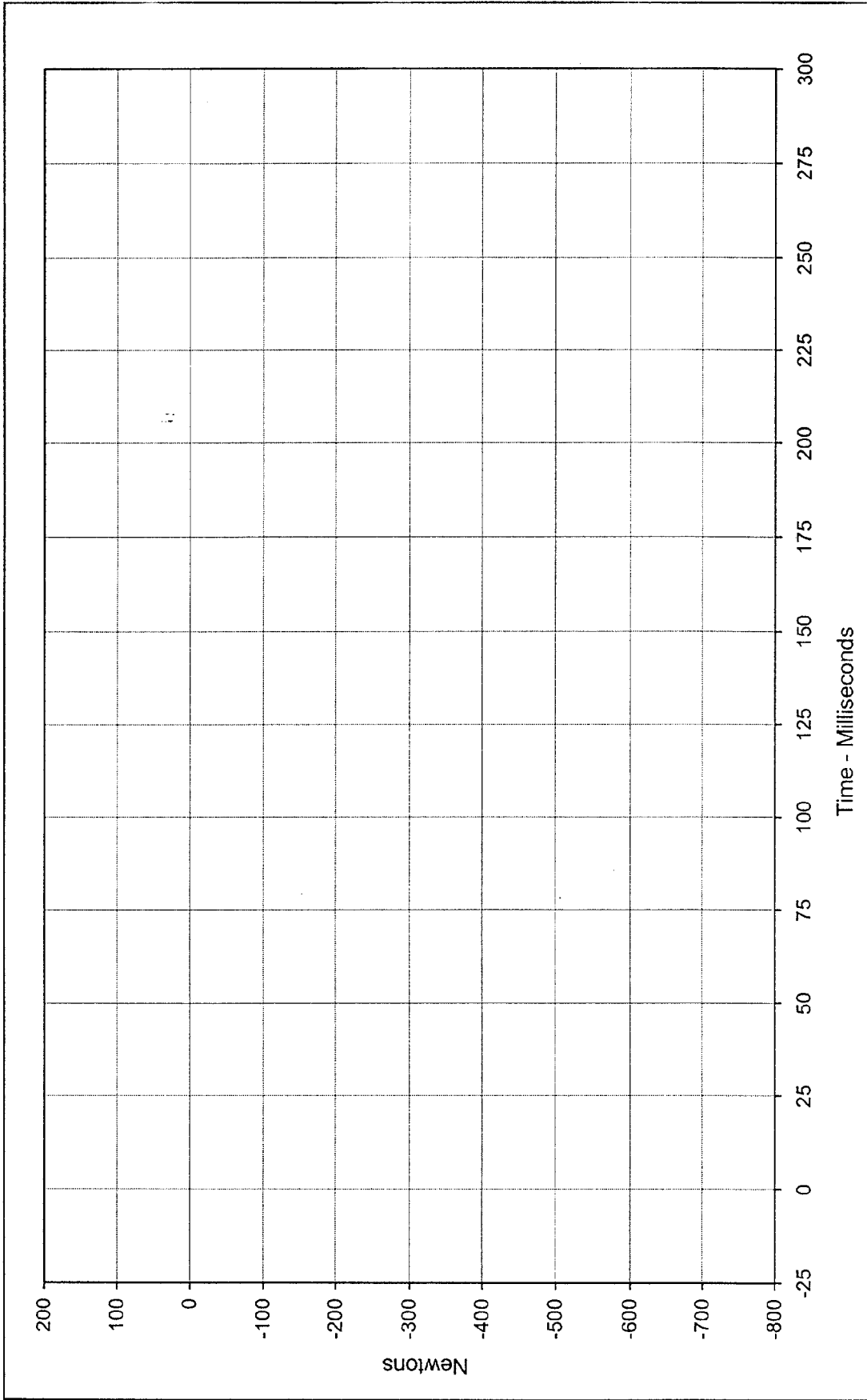
Minimum Value: -11.5 at 125.6 Milliseconds

SAE Filter Class: 600

Date of Test: 8/21/97

Curve Number: FIL-075

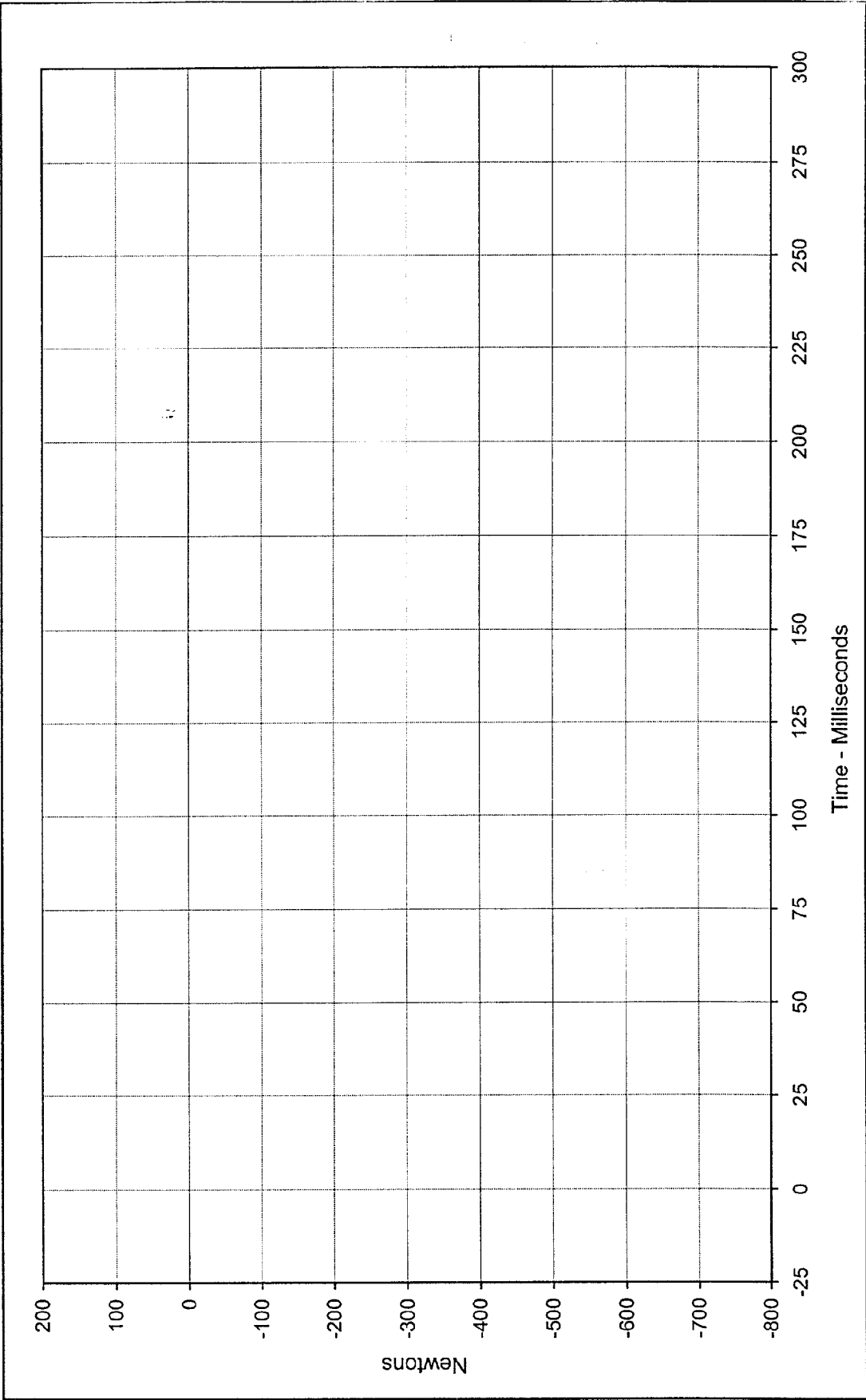




Curve Description: Passenger Right Lower Tibia Force X * Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 0.0 at 0.0 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-076



* Channel Failed, No Data



Curve Description: Passenger Right Lower Tibia Force Z * Testing Program 1997 NHTSA 40% Offset Impact (Female)

Maximum Value: 0.0 at 0.0 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan

Minimum Value: 0.0 at 0.0 Milliseconds

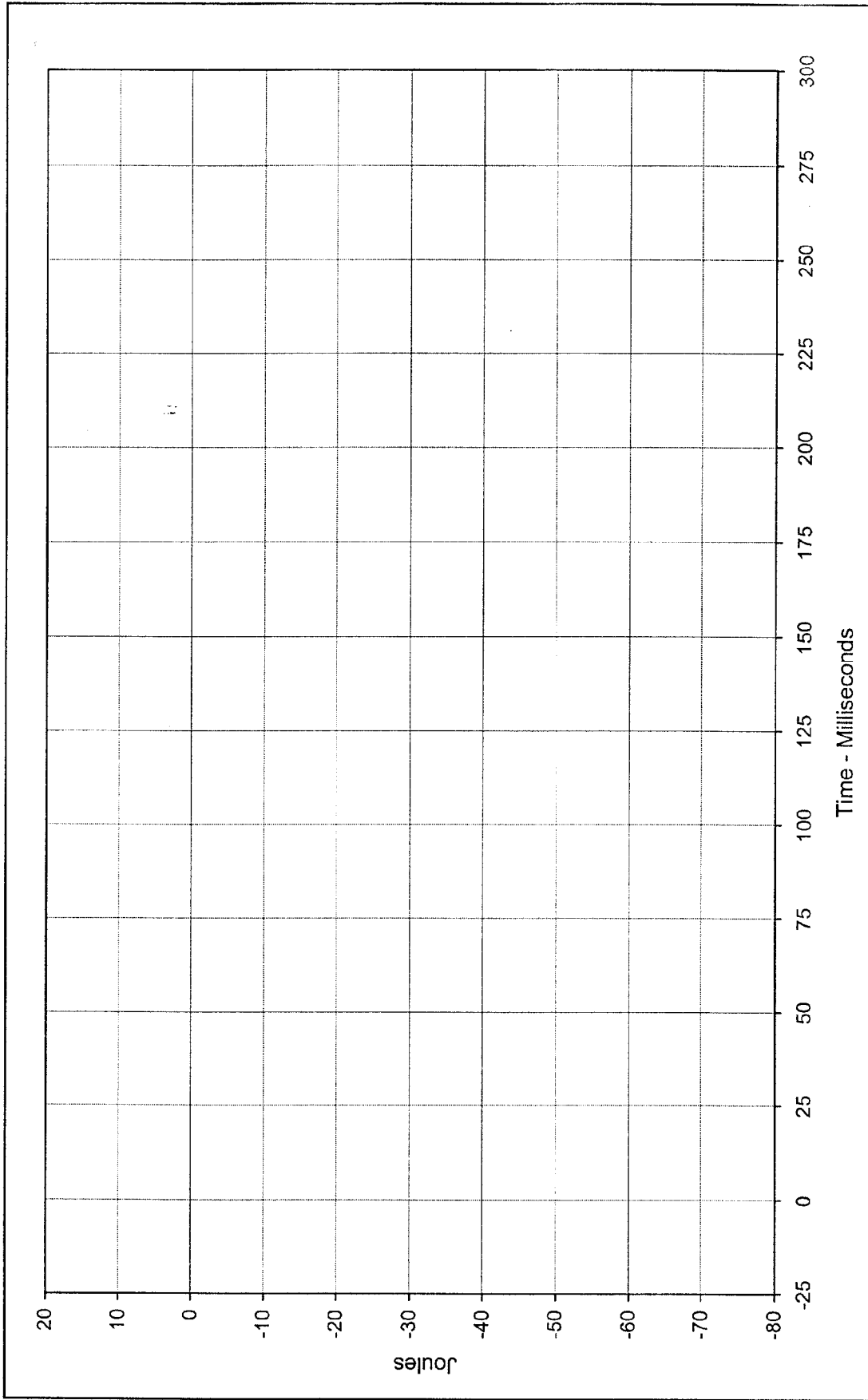
SAE Filter Class: 600

Date of Test: 8/21/97

Curve Number: FIL-077



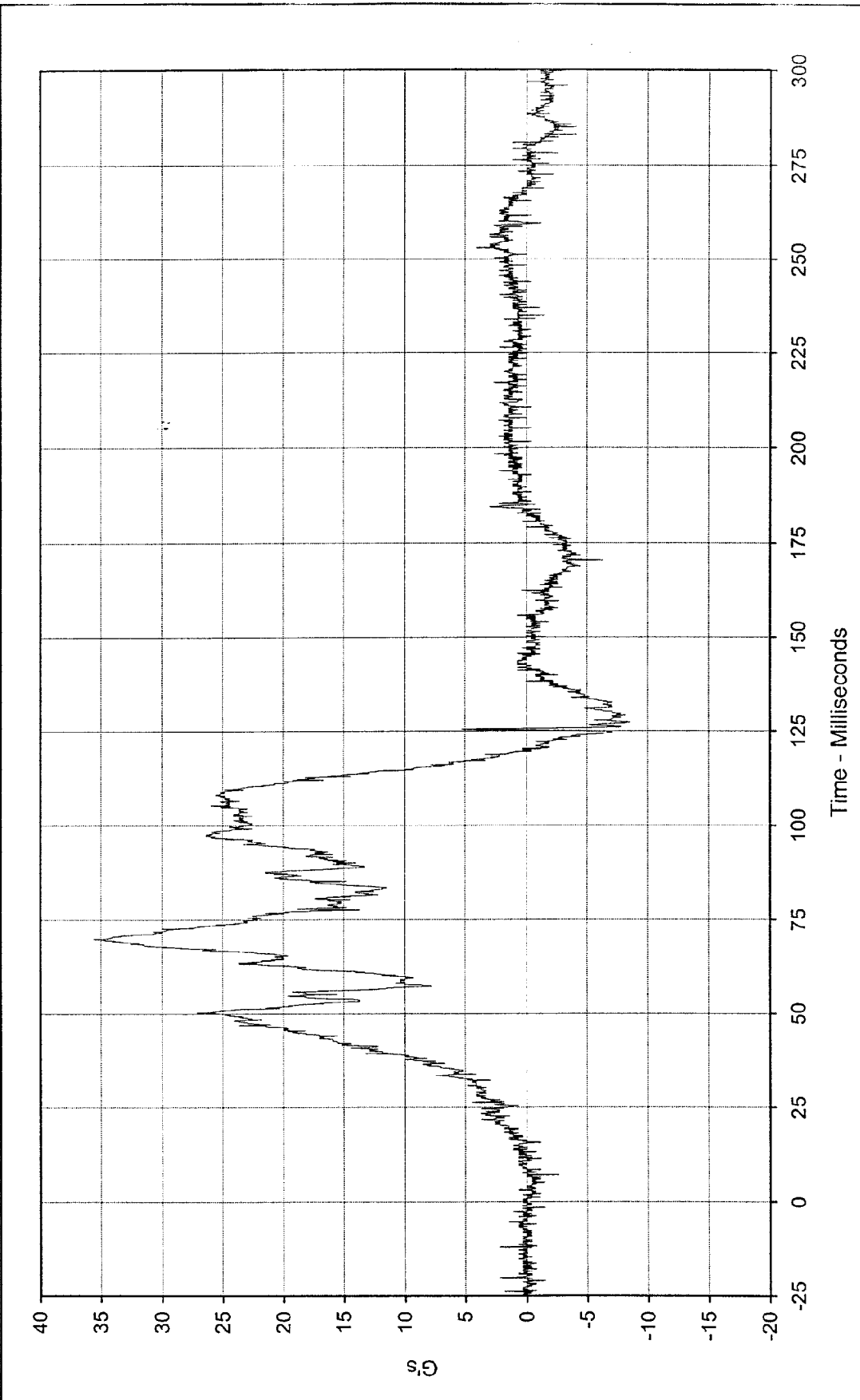
* Channel Failed, No Data



Curve Description: Passenger Right lower Tibia Moment Y * Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 0.0 at 0.0 Milliseconds Test Vehicle: 1998 Dodge Neon 4 Door Sedan
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 600
 Date of Test: 8/21/97
 Curve Number: FIL-078



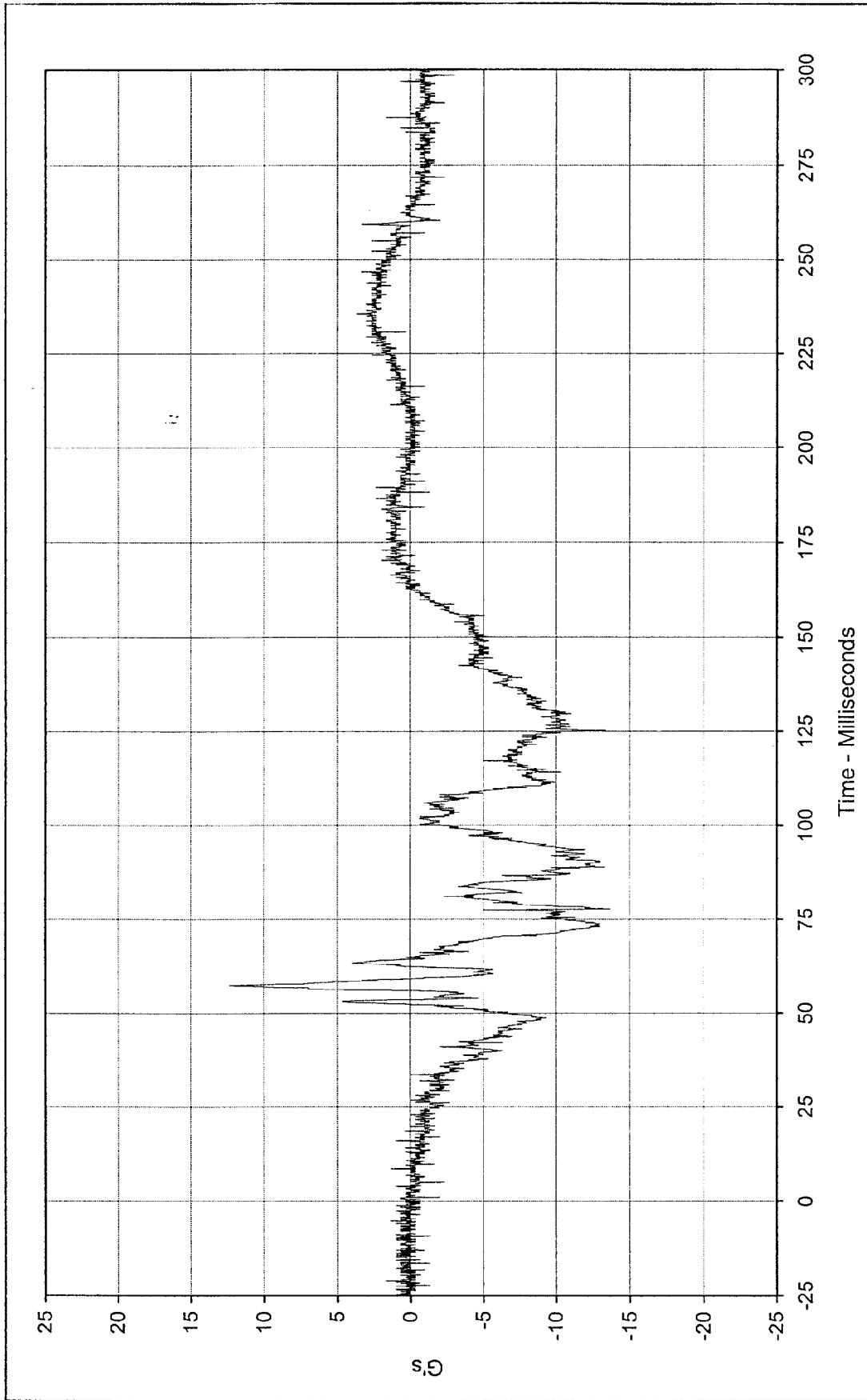
* Channel Failed, No Data



Curve Description: Passenger Left Foot Aft X
 Maximum Value: 35.6 at 70.0 Milliseconds
 Minimum Value: -8.5 at 127.3 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-079

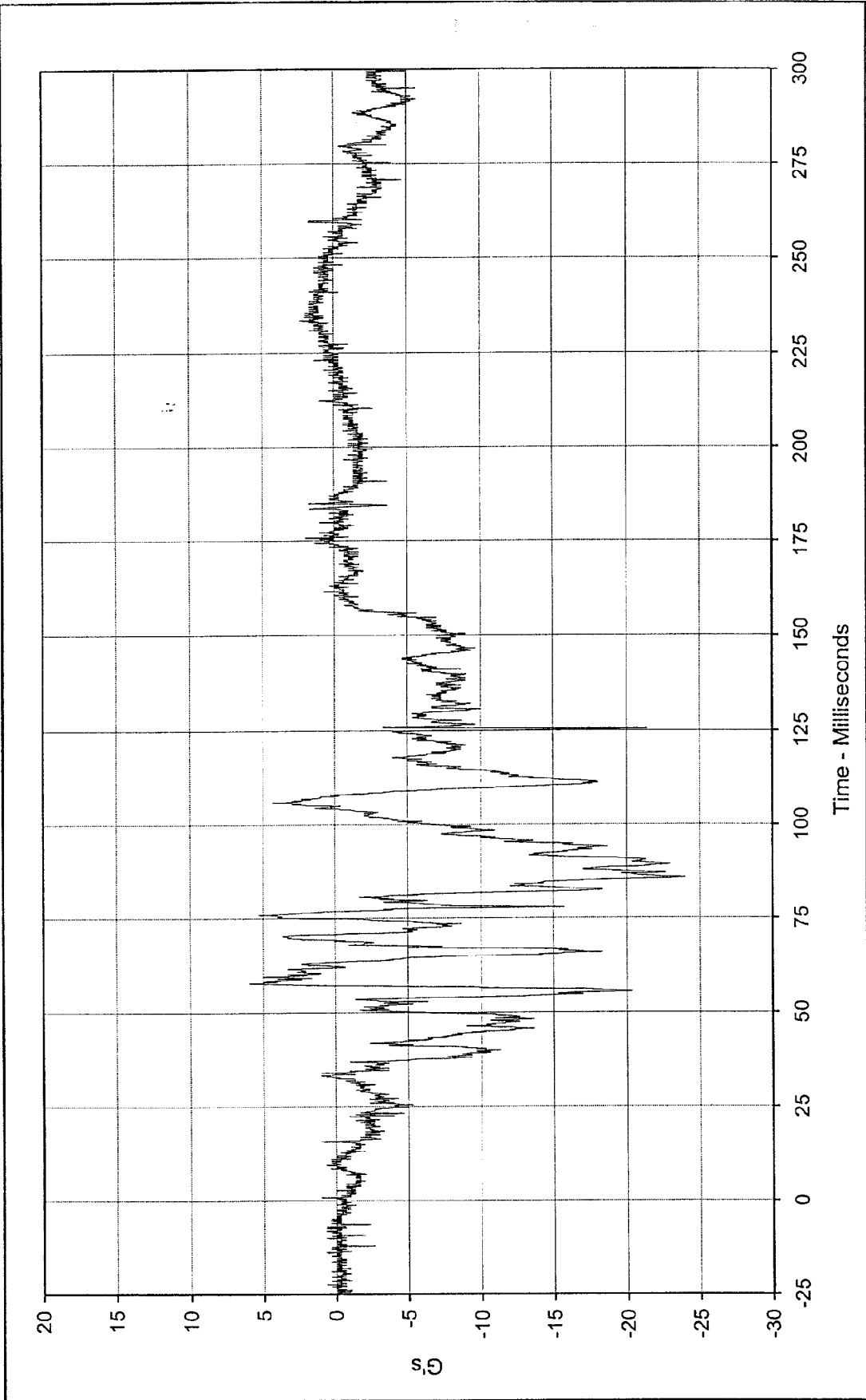
Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan





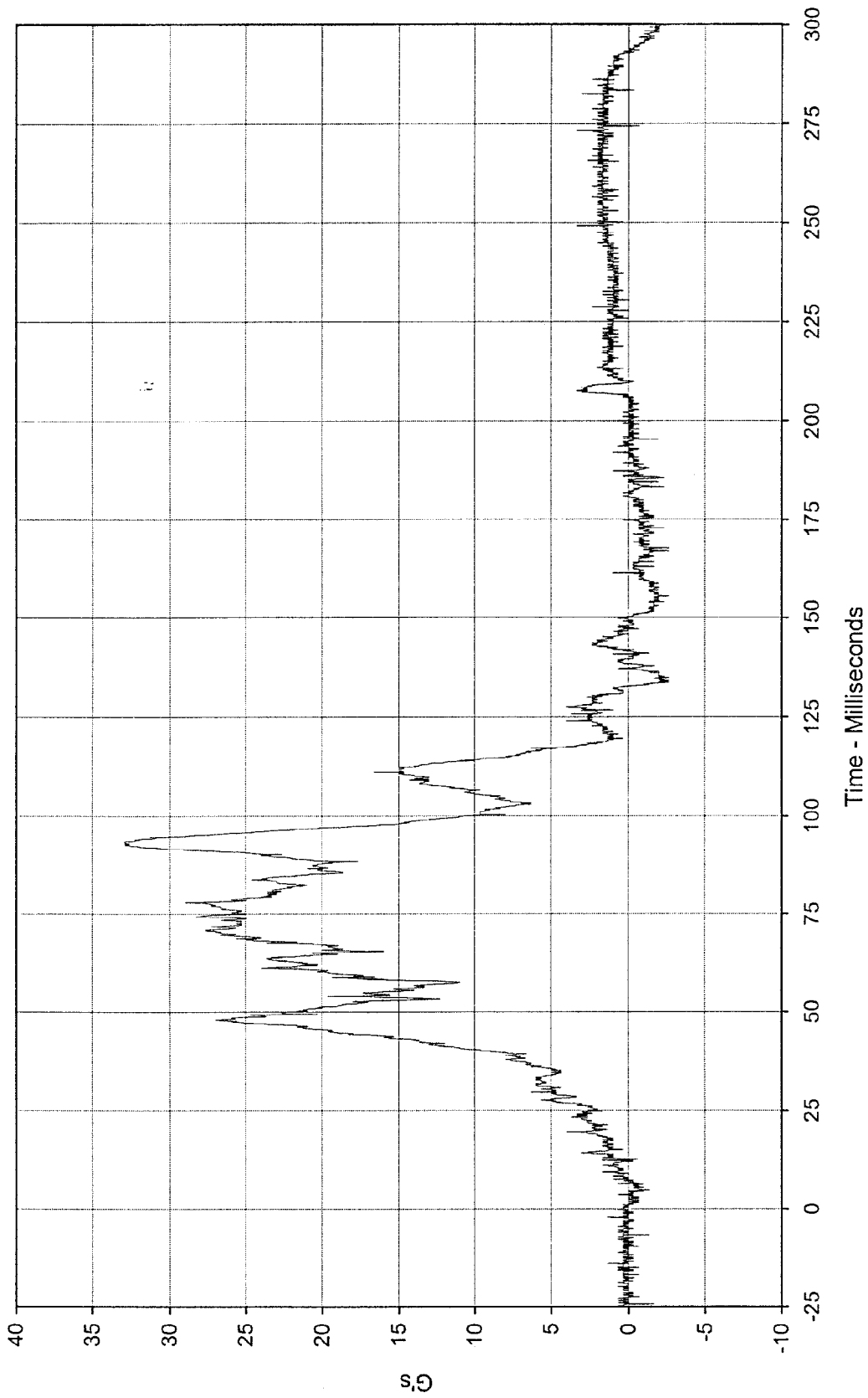
Curve Description: Passenger Left Foot Aft Z Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 12.3 at 57.3 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -13.6 at 77.7 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-080





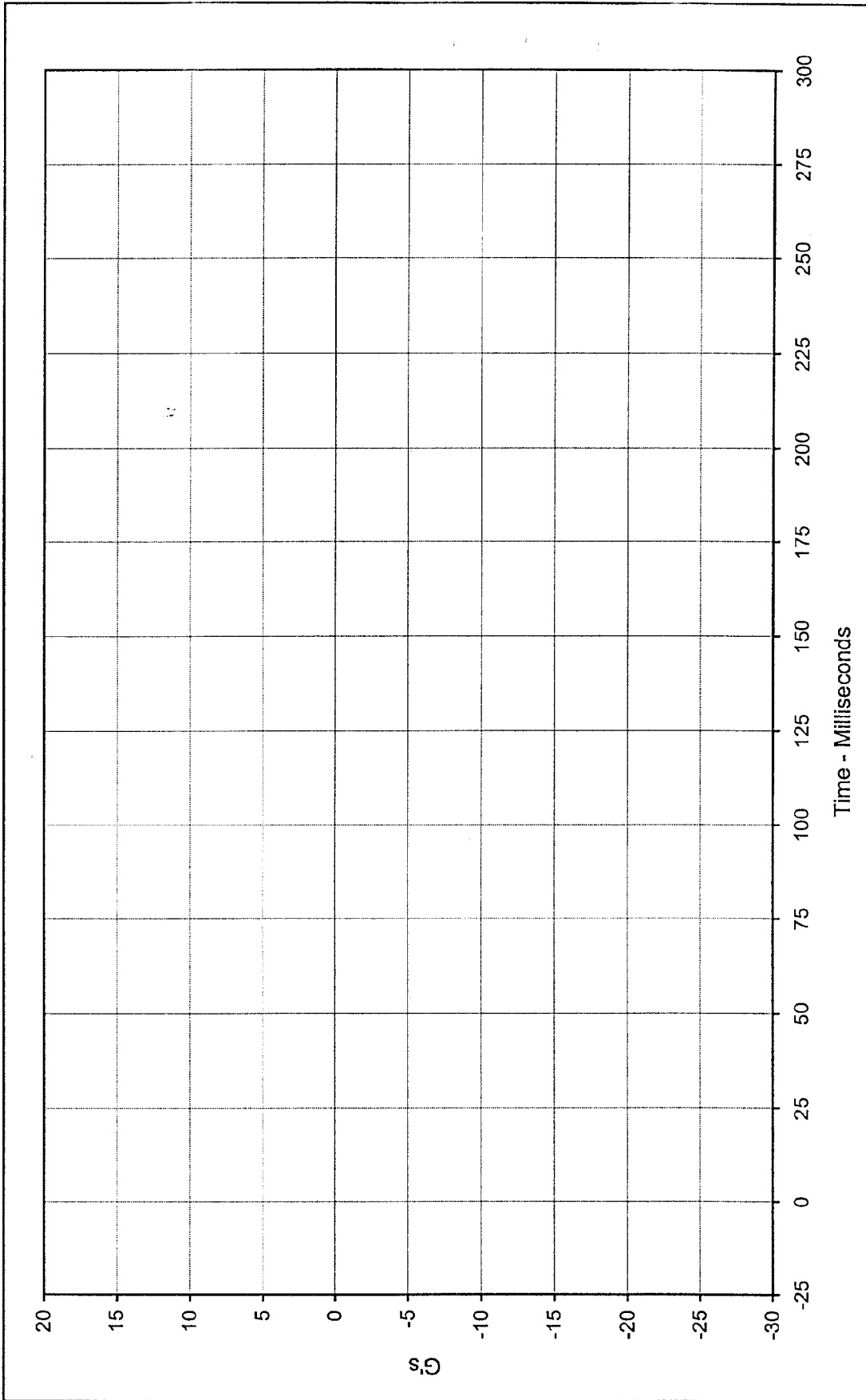
Curve Description: Passenger Left Foot Fore Z Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 6.0 at 57.7 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -24.0 at 85.7 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-081





Curve Description: Passenger Right Foot Aft X Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 32.9 at 92.7 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -2.7 at 133.6 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-082





Curve Description: Passenger Right Foot Aft Z * Testing Program: 1997 NHTSA 40% Offset Impact (Female)

Maximum Value: 0.0 at 0.0 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan

Minimum Value: 0.0 at 0.0 Milliseconds

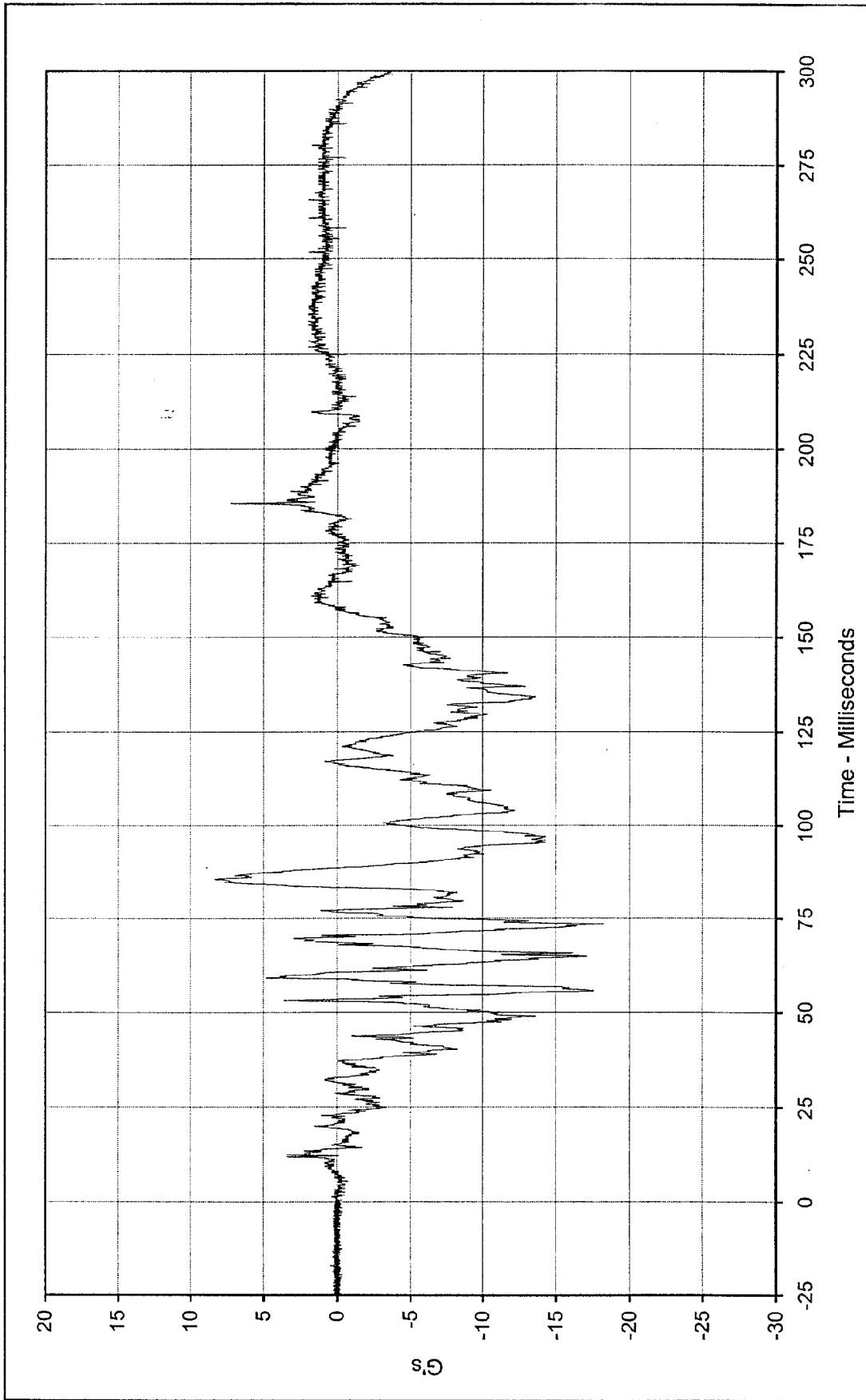
SAE Filter Class: 1000

Date of Test: 8/21/97

Curve Number: FIL-083



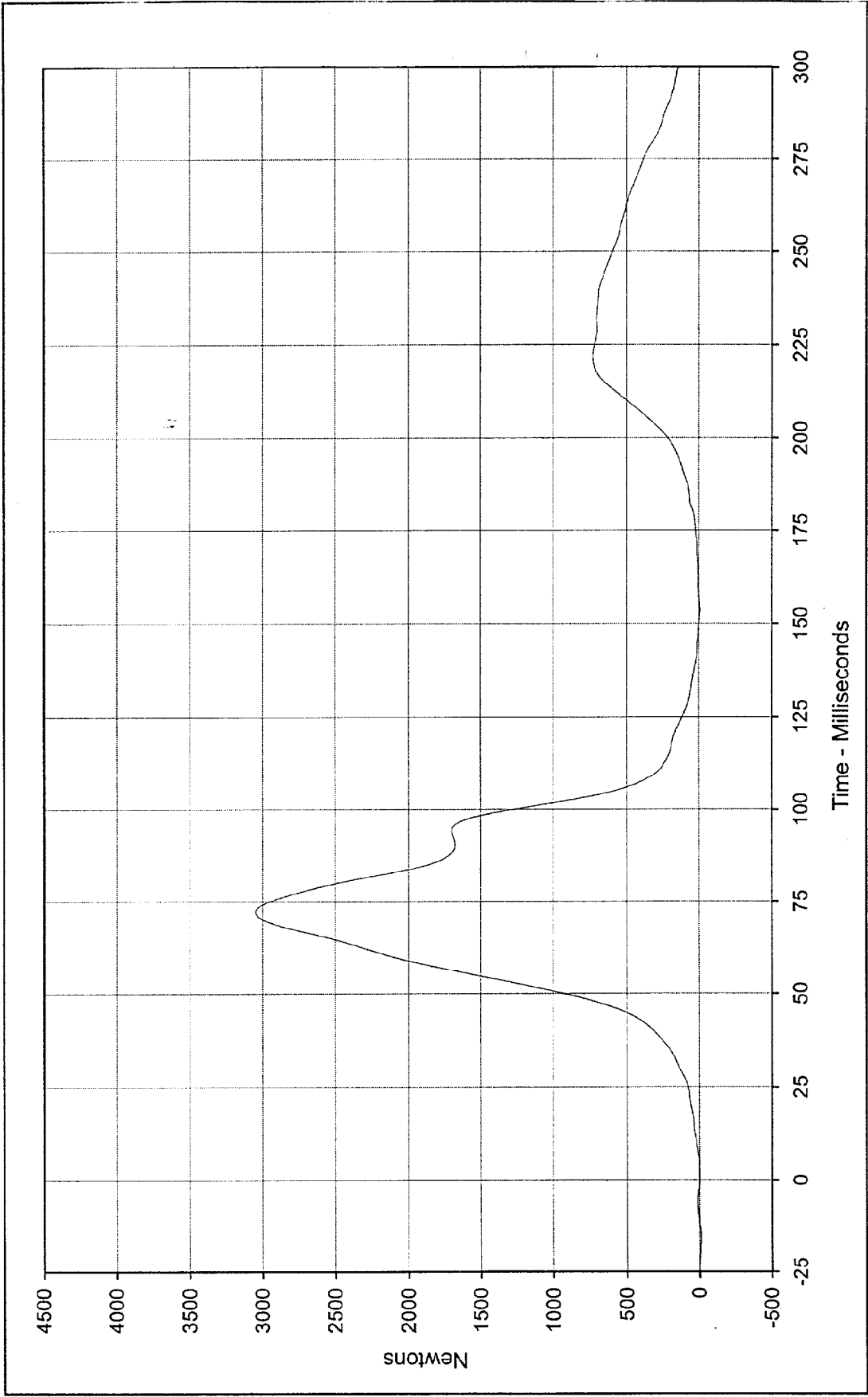
* Channel Failed, No Data



Curve Description: Passenger Right Foot Fore Z
 Maximum Value: 8.3 at 85.5 Milliseconds
 Minimum Value: -18.2 at 73.5 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 8/21/97
 Curve Number: FIL-084

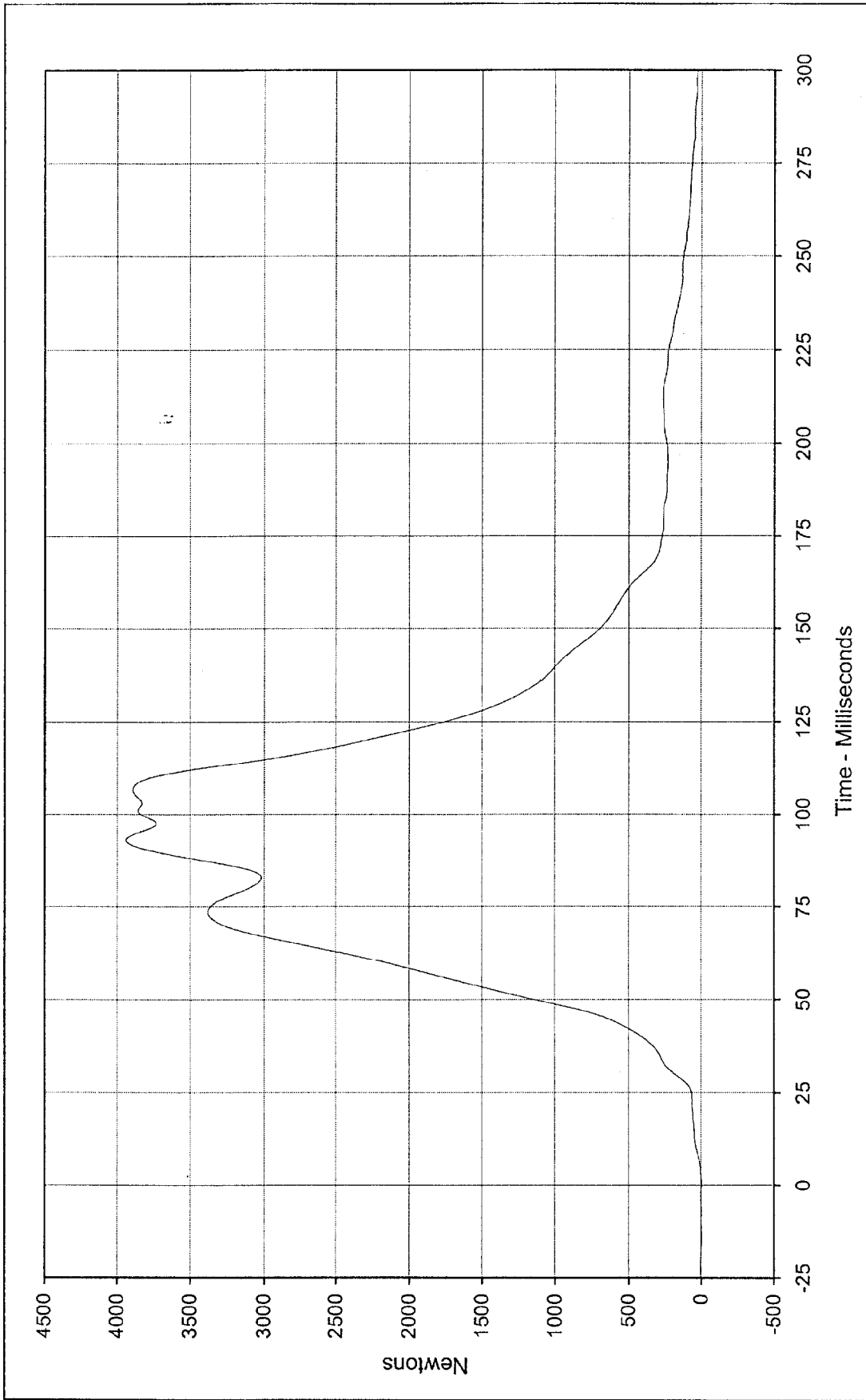
Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan





Curve Description: Passenger Lap Belt Force Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 3048.8 at 72.1 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -4.2 at 153.6 Milliseconds
 SAE Filter Class: 60
 Date of Test: 8/21/97
 Curve Number: FIL-085

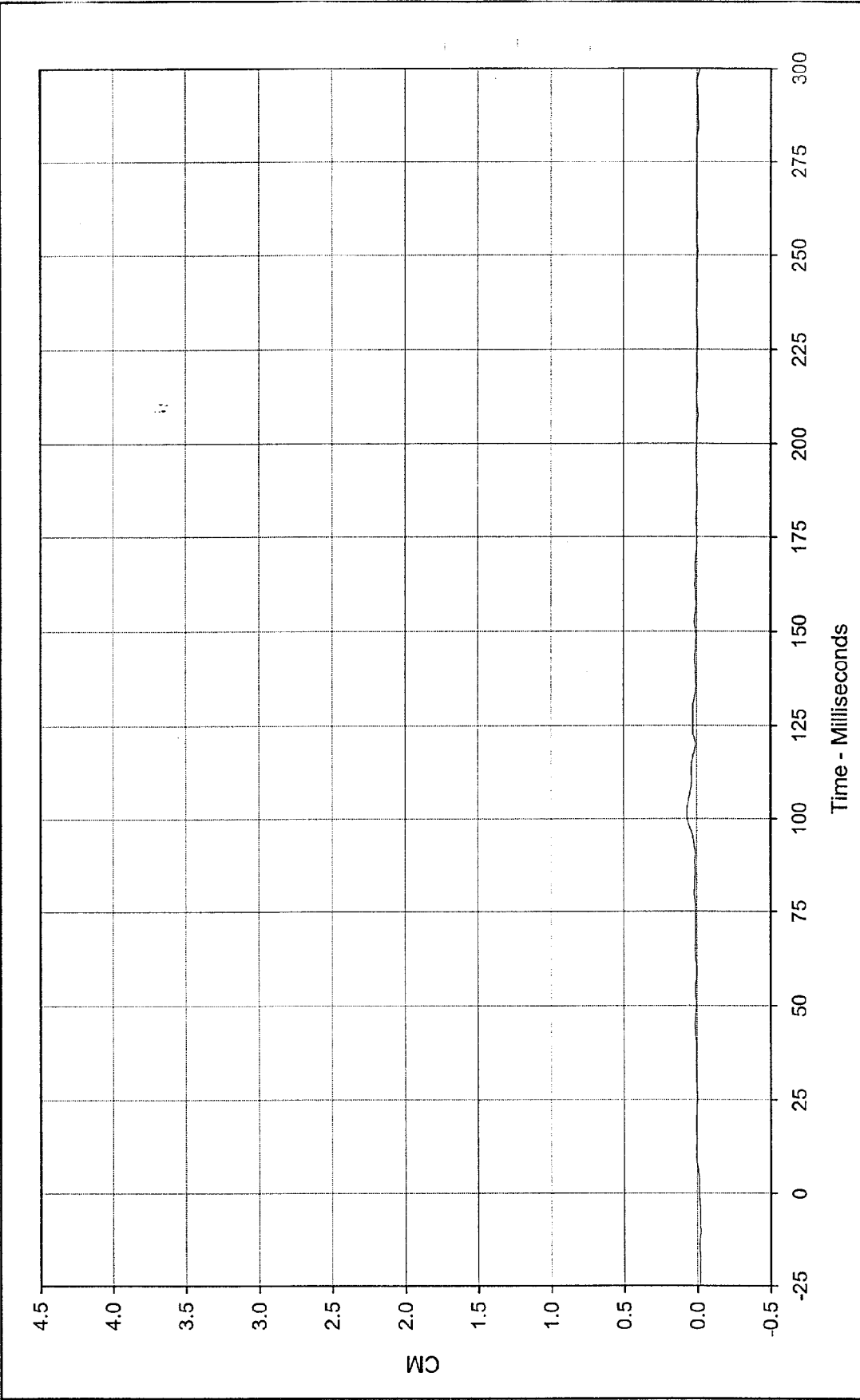




Curve Description: Passenger Shoulder Belt Force Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 3940.0 at 93.1 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -3.9 at 0.7 Milliseconds



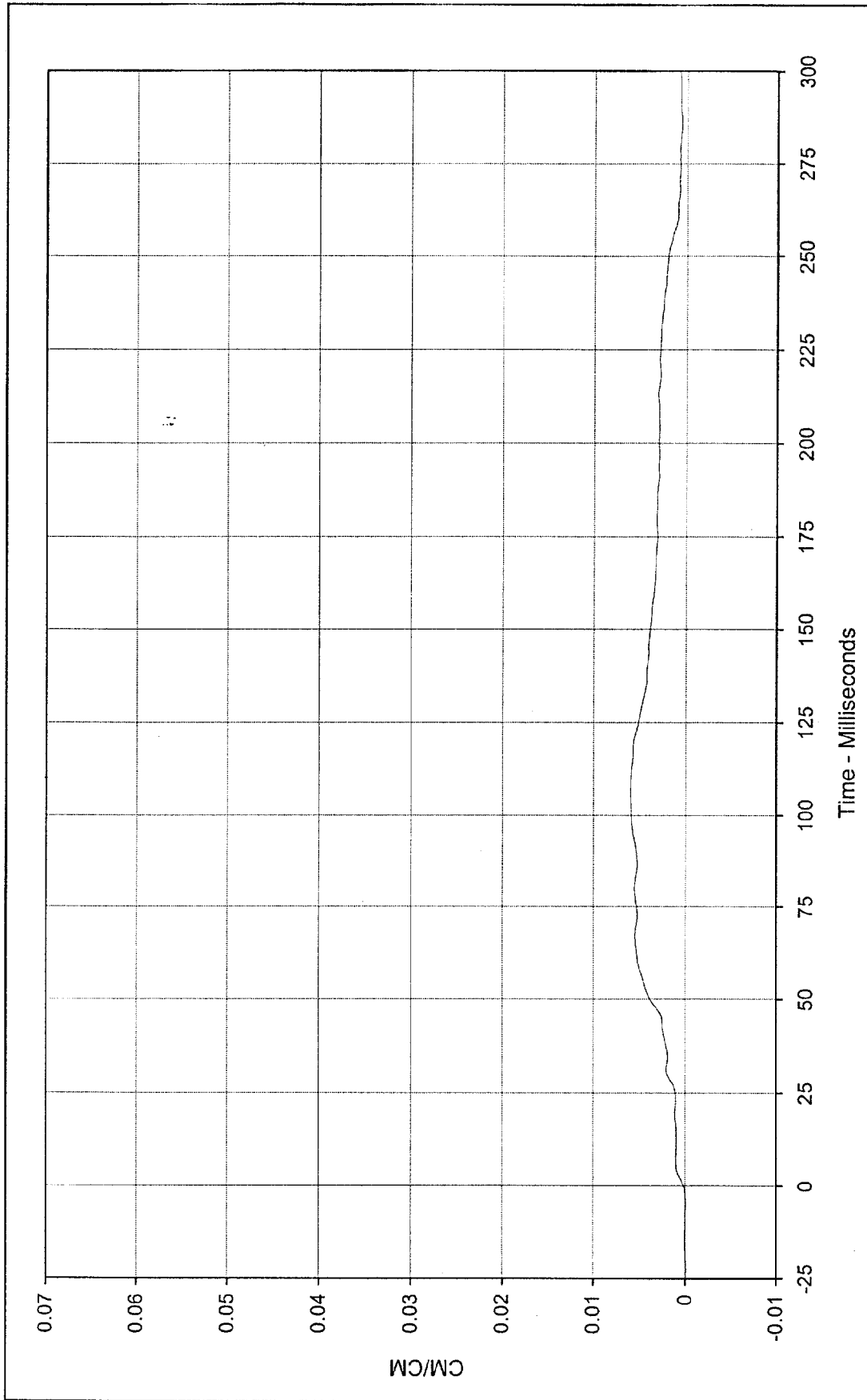
SAE Filter Class: 60
 Date of Test: 8/21/97
 Curve Number: FIL-086



Curve Description: Passenger Shoulder Belt Pullout * Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 0.07 at 101.5 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -0.02 at 299.9 Milliseconds
 SAE Filter Class: 60
 Date of Test: 8/21/97
 Curve Number: FIL-087

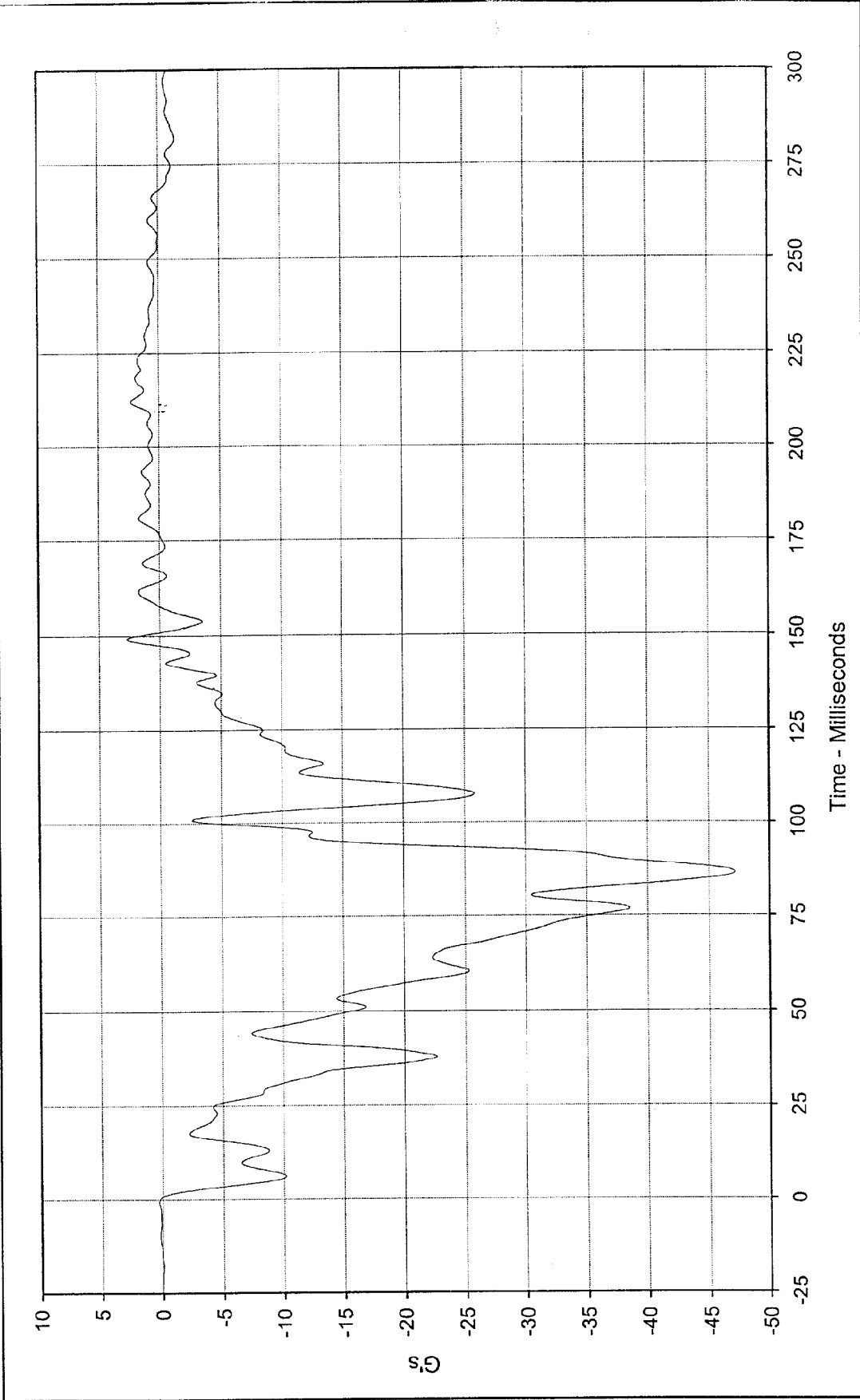


* Question able Data



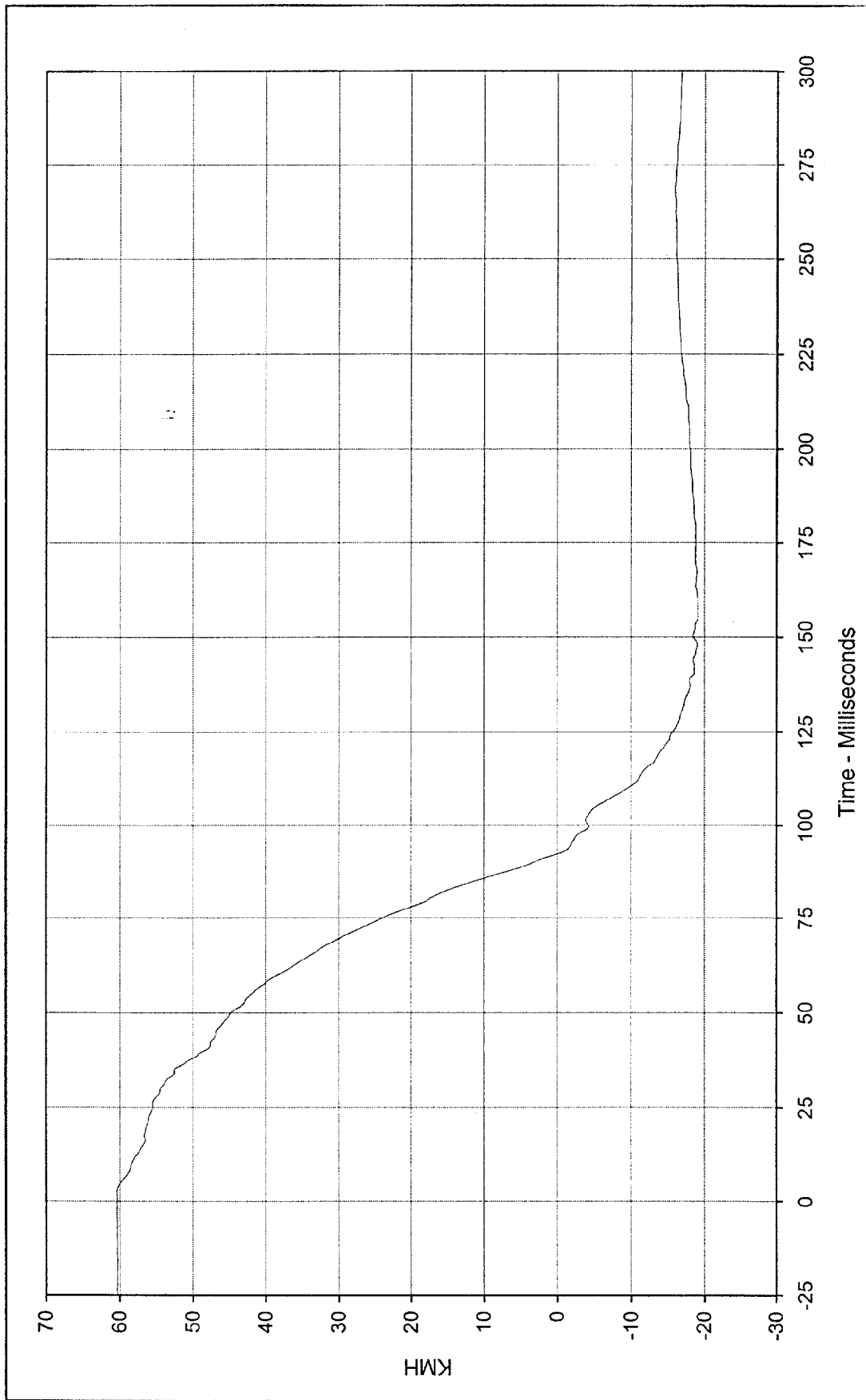
Curve Description: Passenger Shoulder Belt Elongation Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 0.006 at 106.3 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 0.000 at 0.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 8/21/97
 Curve Number: FIL-088





Curve Description: Vehicle Left Rear Sill X Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 2.7 at 149.2 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -47.2 at 86.2 Milliseconds
 SAE Filter Class: 60
 Date of Test: 8/21/97
 Curve Number: FIL-089

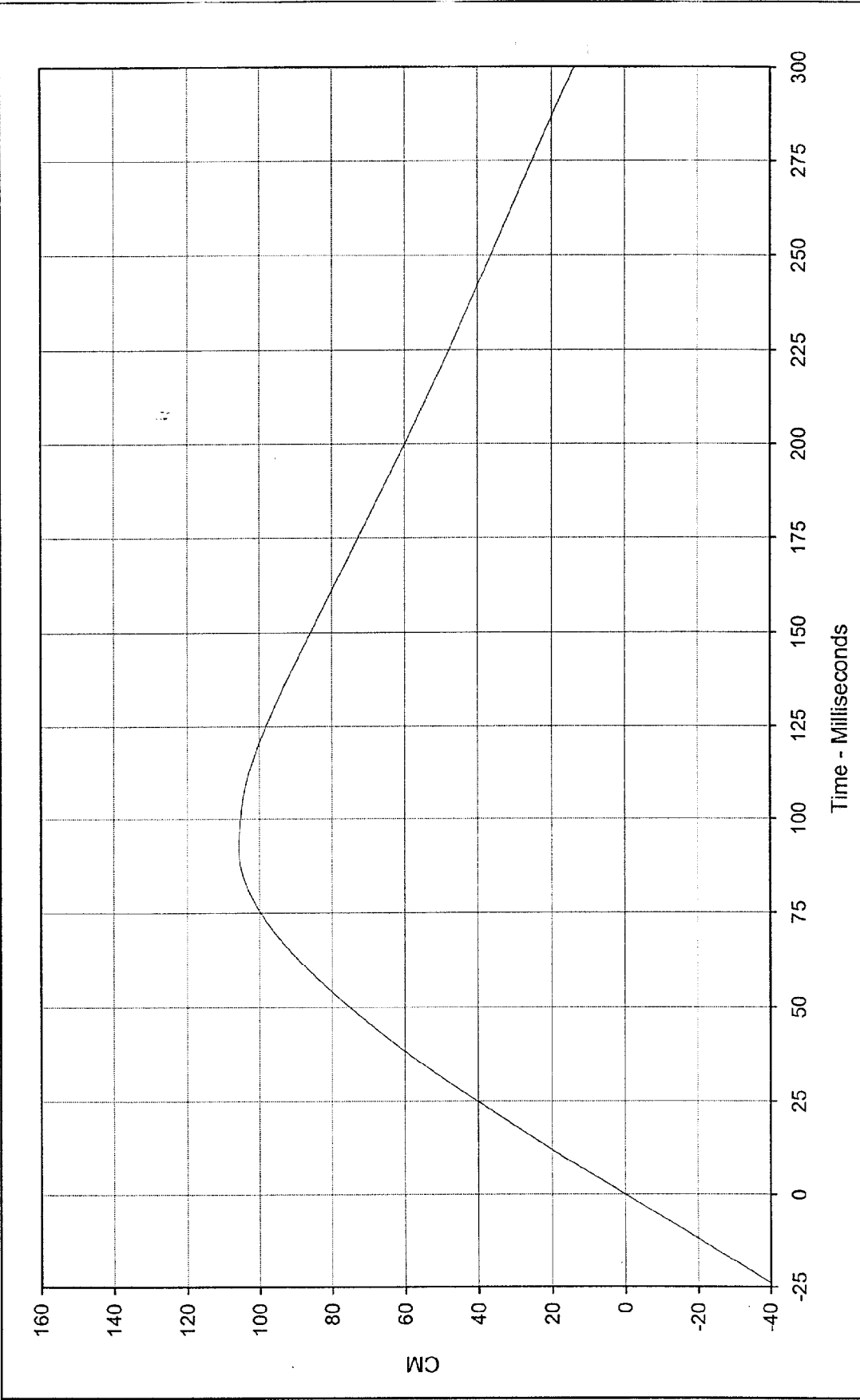




Curve Description: Vehicle Left Rear Sill X Velocity
 Maximum Value: 60.4 at 2.5 Milliseconds
 Minimum Value: -19.1 at 155.1 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN1-089

Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan

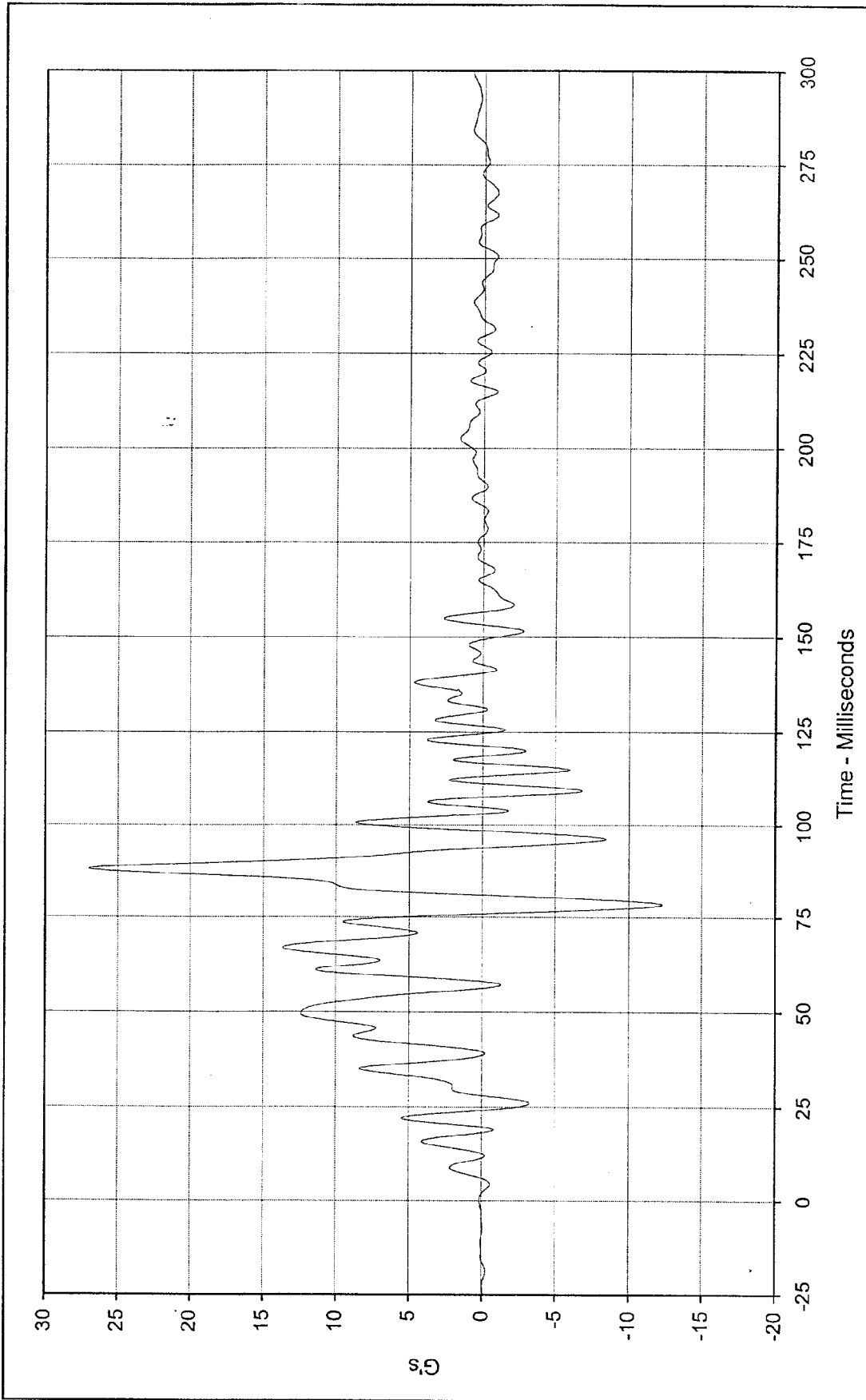




Curve Description: Vehicle Left Rear Sill X Displ. Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 105.7 at 92.4 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 0.0 at 0.0 Milliseconds

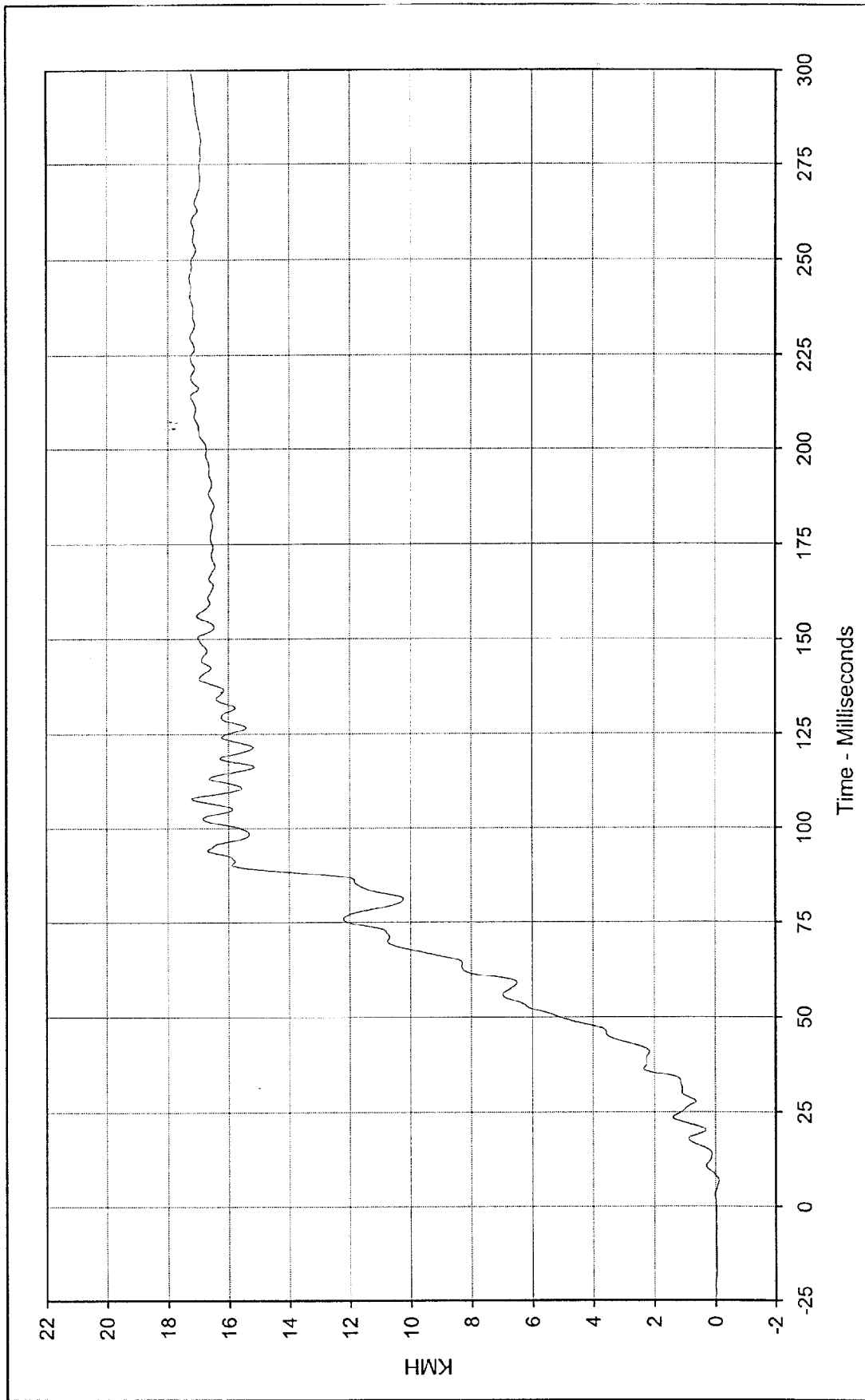


SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN2-089



Curve Description: Vehicle Left Rear Sill Y Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 27.0 at 88.2 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -12.3 at 78.4 Milliseconds
 SAE Filter Class: 60
 Date of Test: 8/21/97
 Curve Number: FIL-090

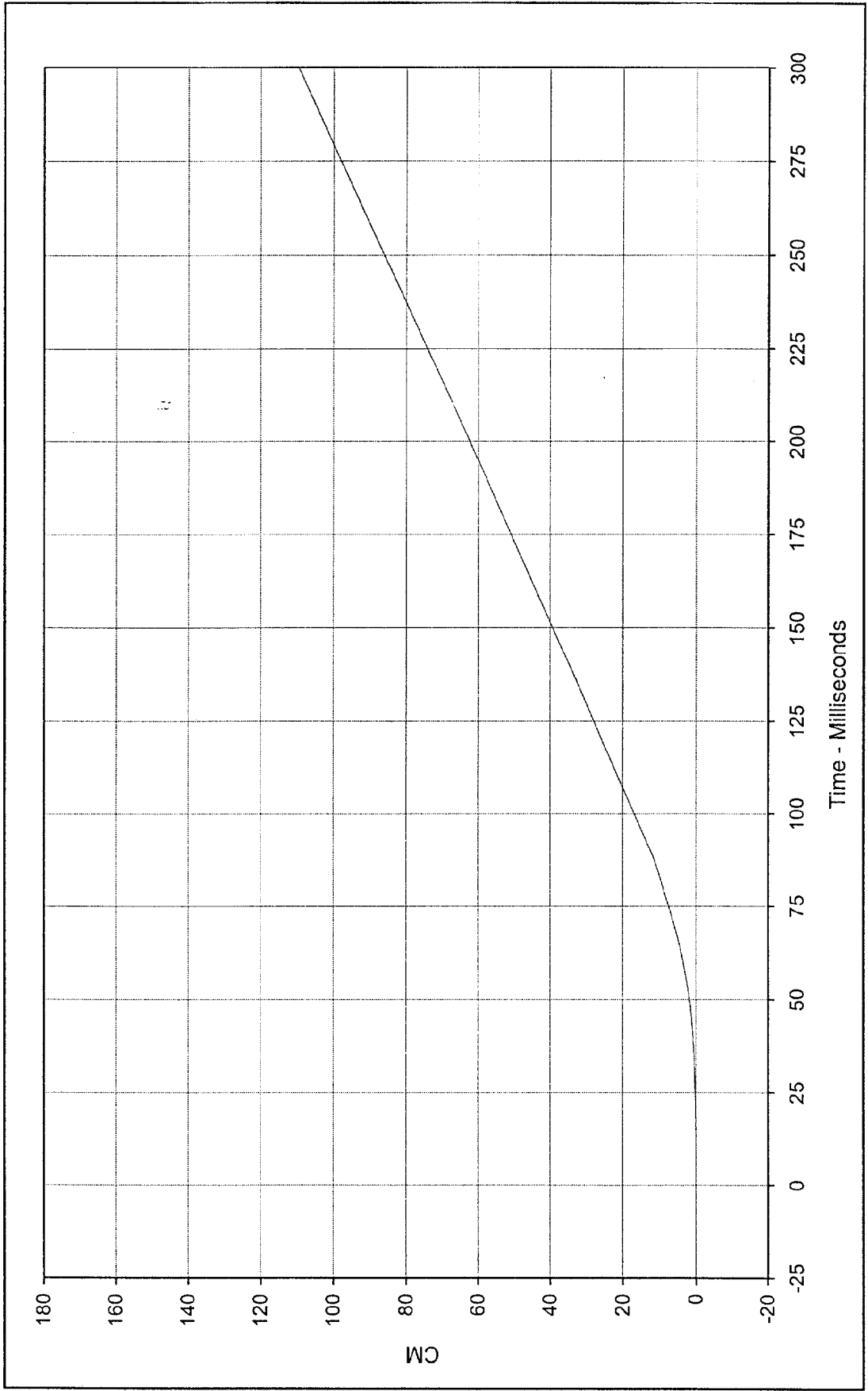




Curve Description: Vehicle Left Rear Sill Y Velocity
 Maximum Value: 17.3 at 245.3 Milliseconds
 Minimum Value: -0.1 at 6.9 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN1-090

Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan

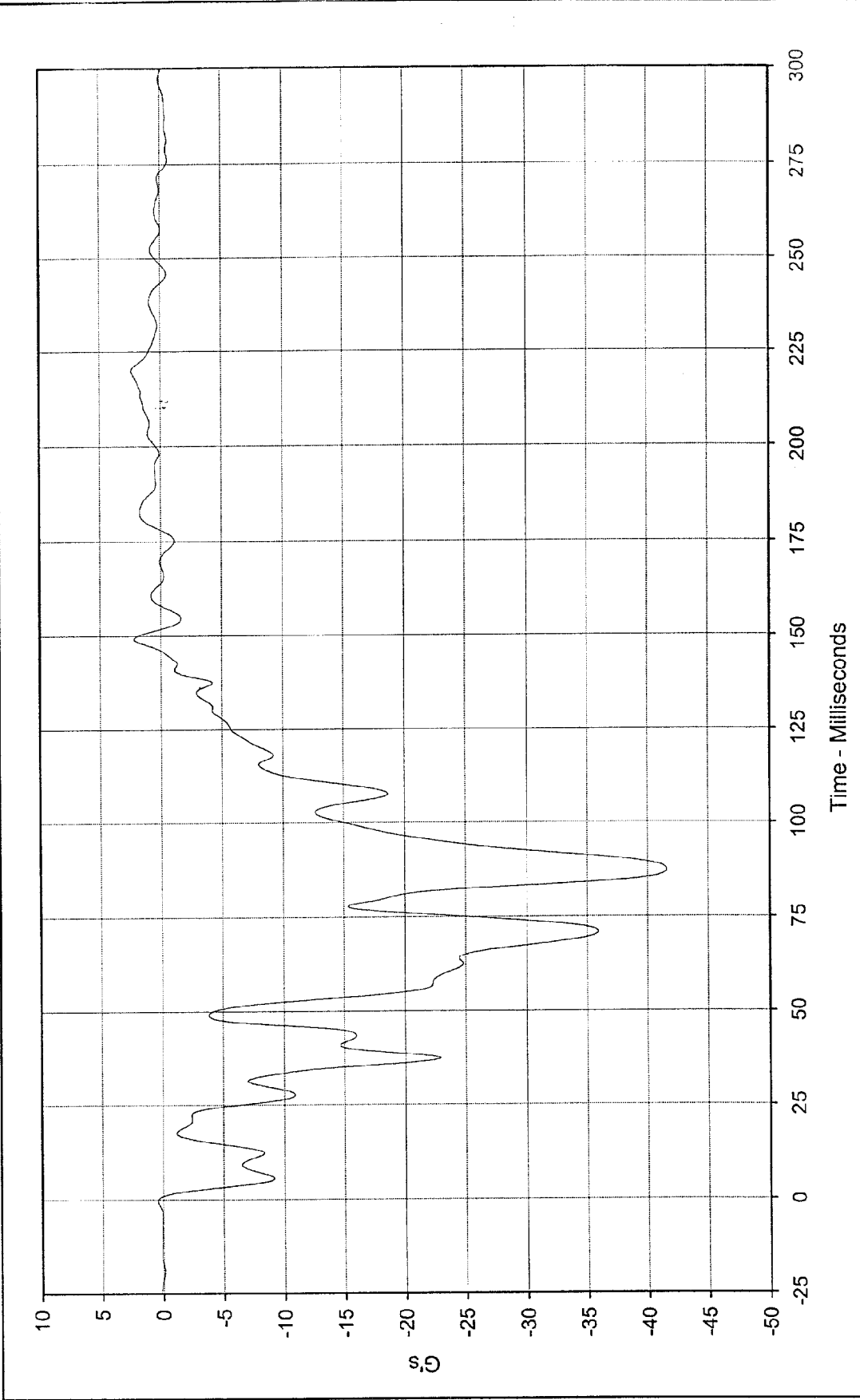




Curve Description: Vehicle Left Rear Sill Y Displ.
 Maximum Value: 109.7 at 299.9 Milliseconds
 Minimum Value: 0.0 at 8.3 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN2-090

Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan

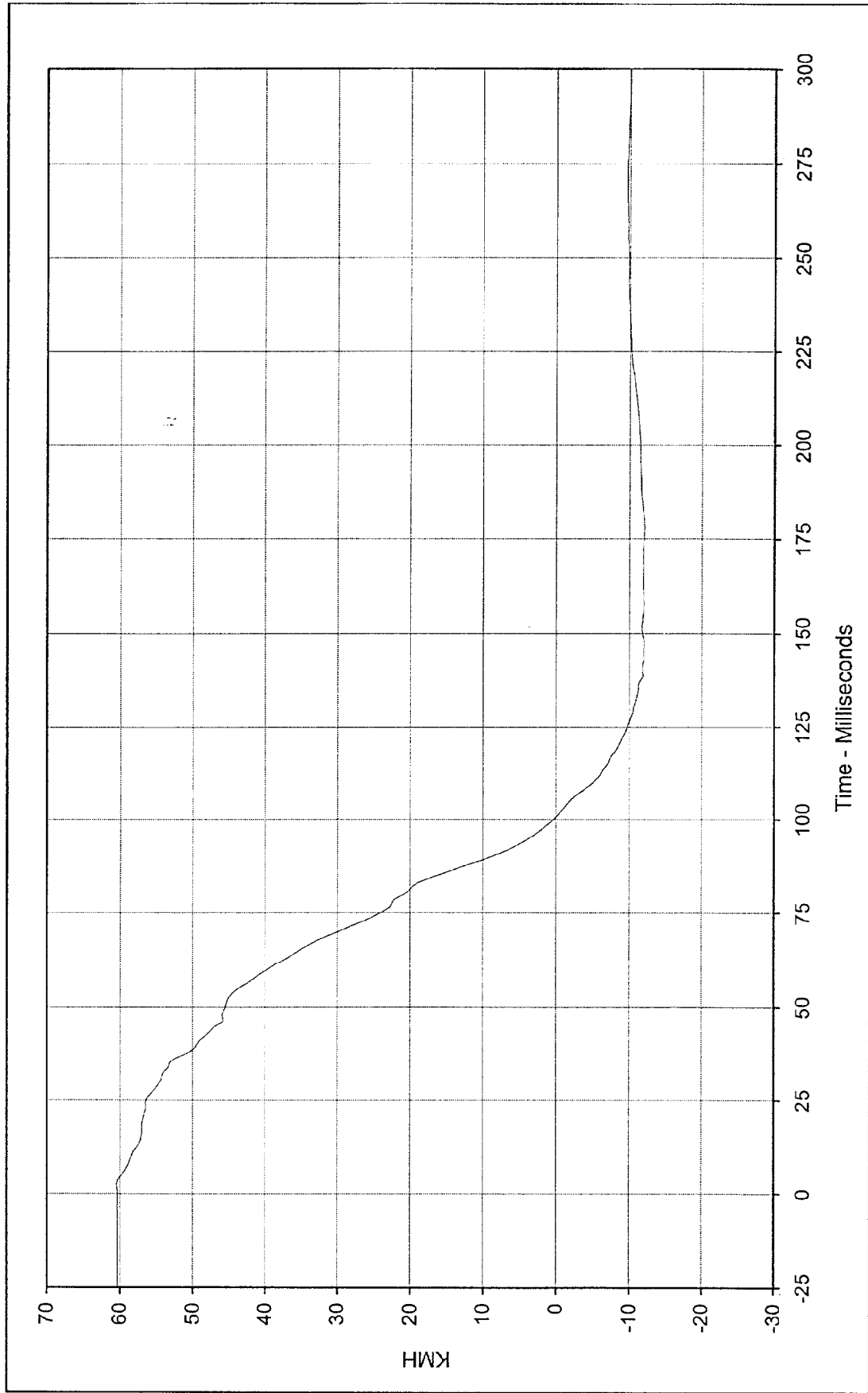




Curve Description: Vehicle Center Console Rear X
 Maximum Value: 2.4 at 219.7 Milliseconds
 Minimum Value: -41.6 at 87.1 Milliseconds
 SAE Filter Class: 60
 Date of Test: 8/21/97
 Curve Number: FIL-091

Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan

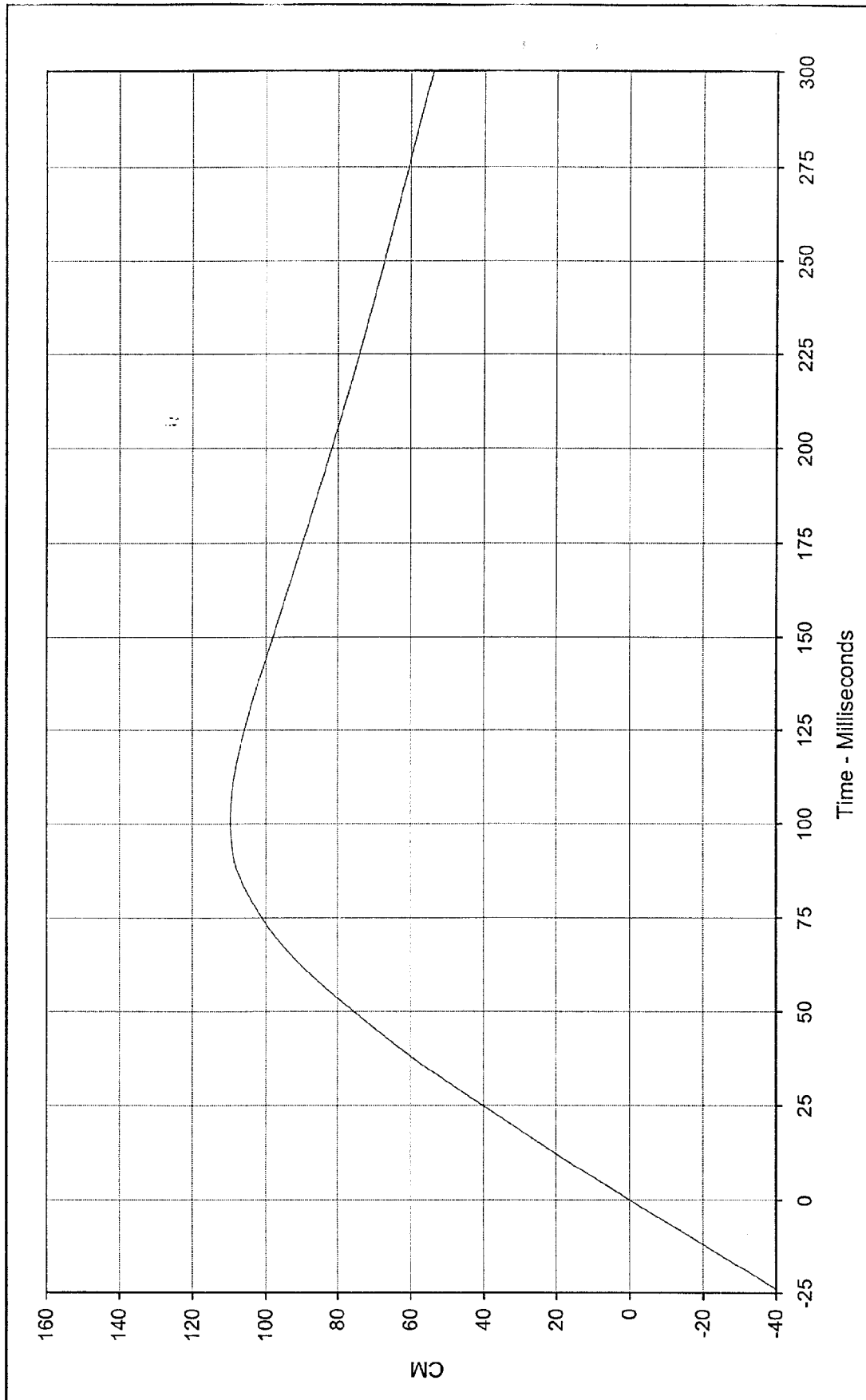




Curve Description: Vehicle Center Rear Console X Velocity
 Maximum Value: 60.4 at 2.3 Milliseconds
 Minimum Value: -12.1 at 178.1 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN1-091

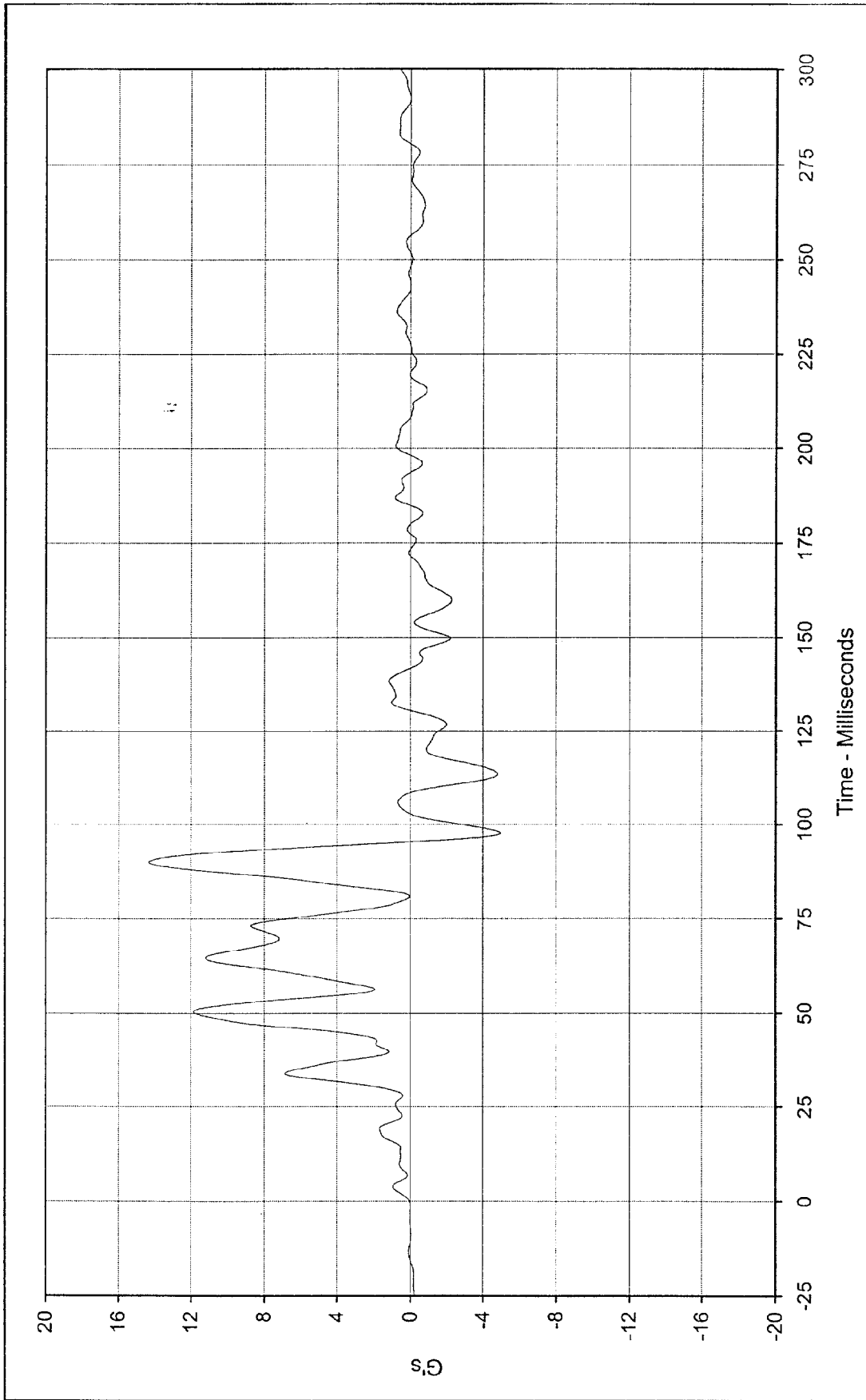
Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan





Curve Description: Vehicle Center Rear Console X Displ. Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 109.7 at 100.7 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN2-091



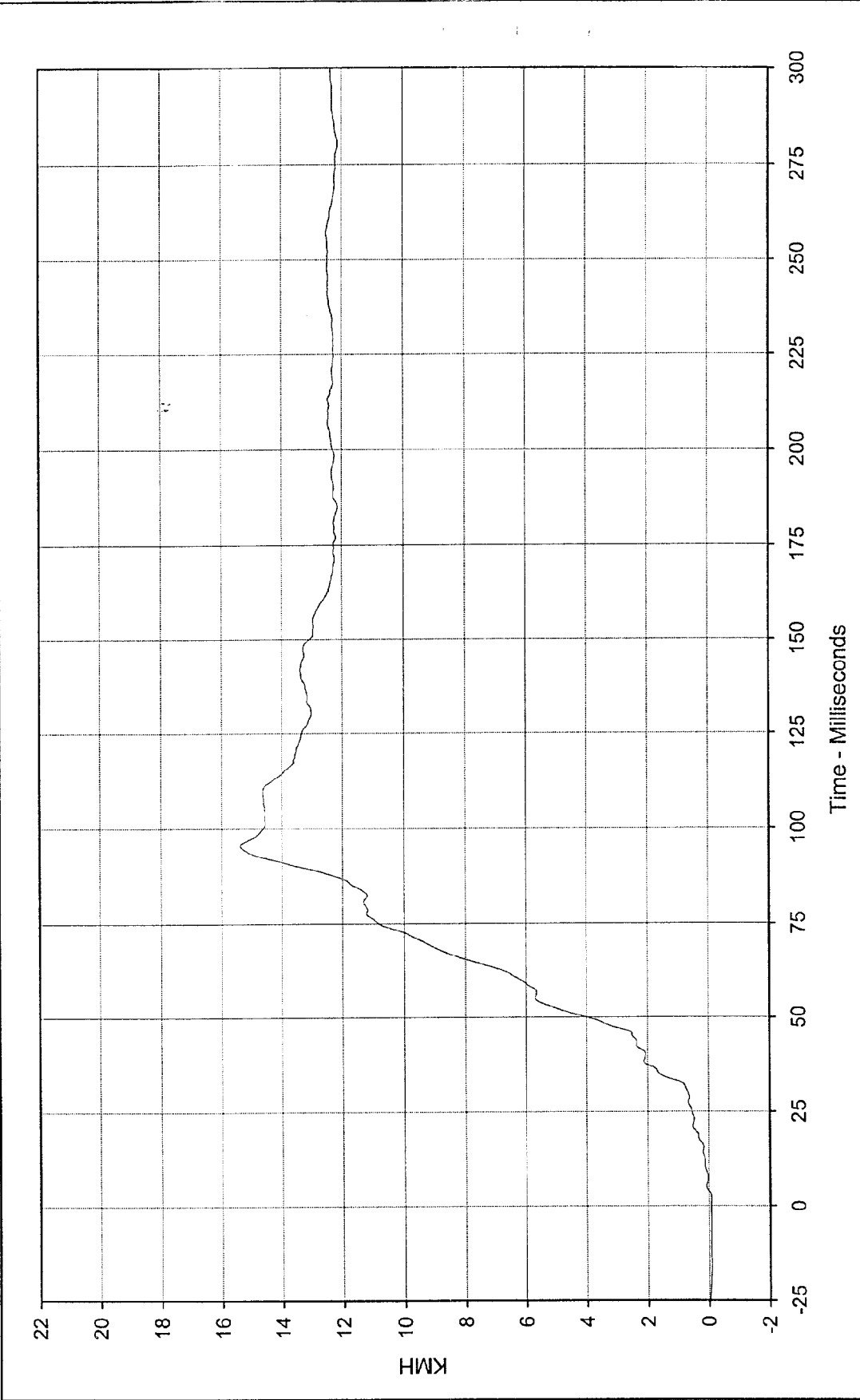


Curve Description: Vehicle Center Console Rear Y
 Maximum Value: 14.3 at 89.9 Milliseconds
 Minimum Value: -5.0 at 97.7 Milliseconds

Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan



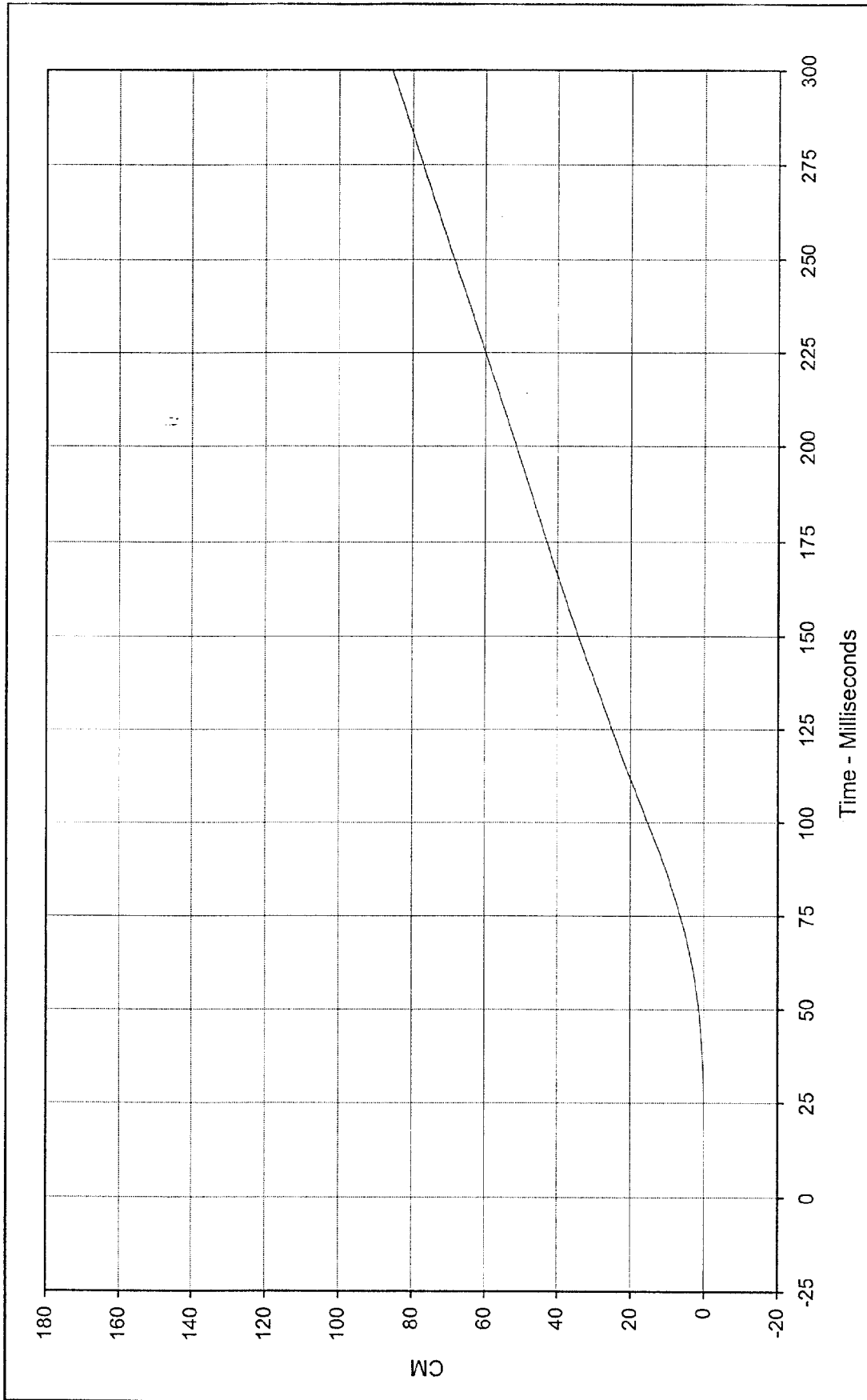
SAE Filter Class: 60
 Date of Test: 8/21/97
 Curve Number: FIL-092



Curve Description: Vehicle Center Rear Console Y Velocity
 Maximum Value: 15.4 at 95.5 Milliseconds
 Minimum Value: -0.1 at 2.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN1-092

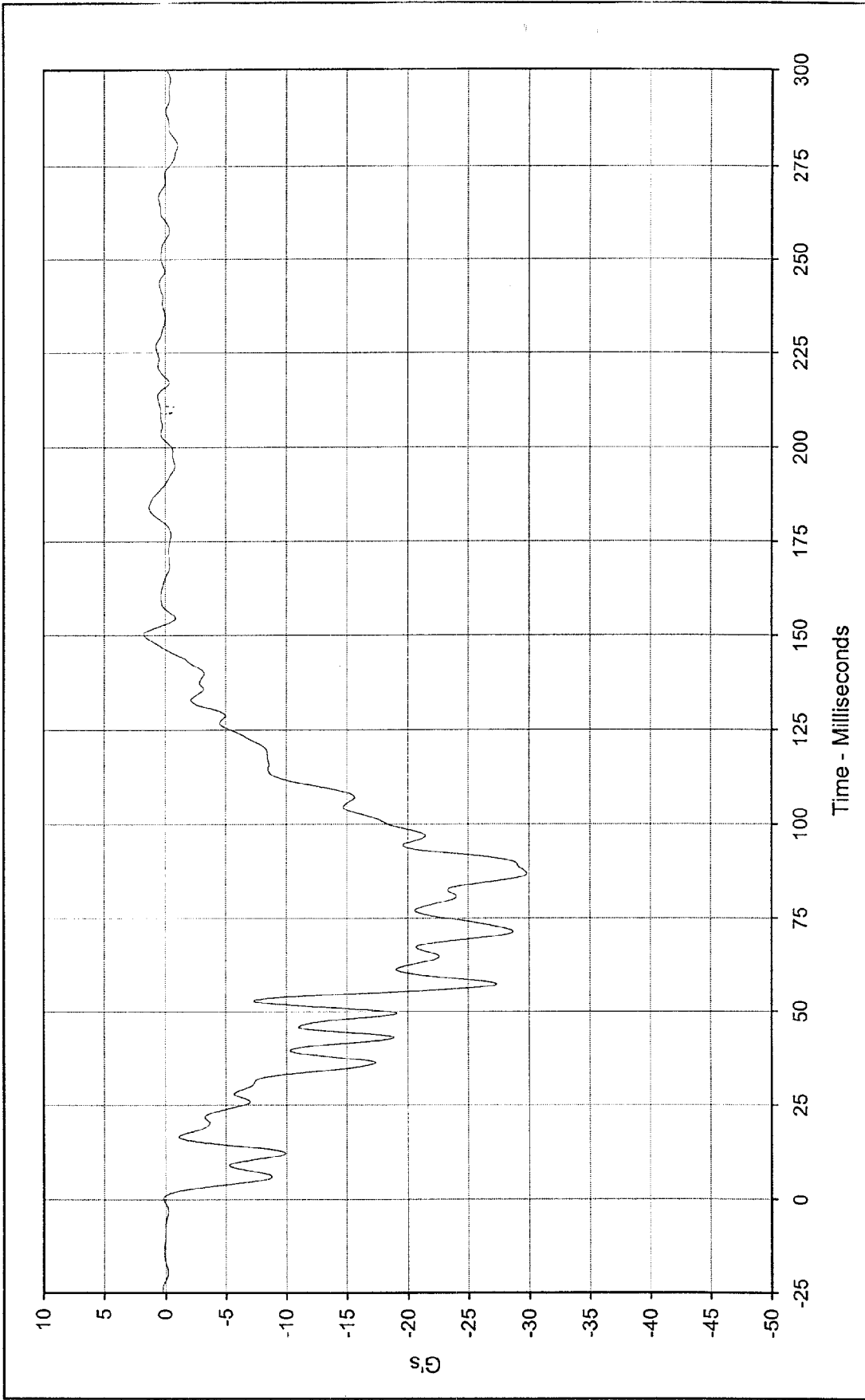
Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan





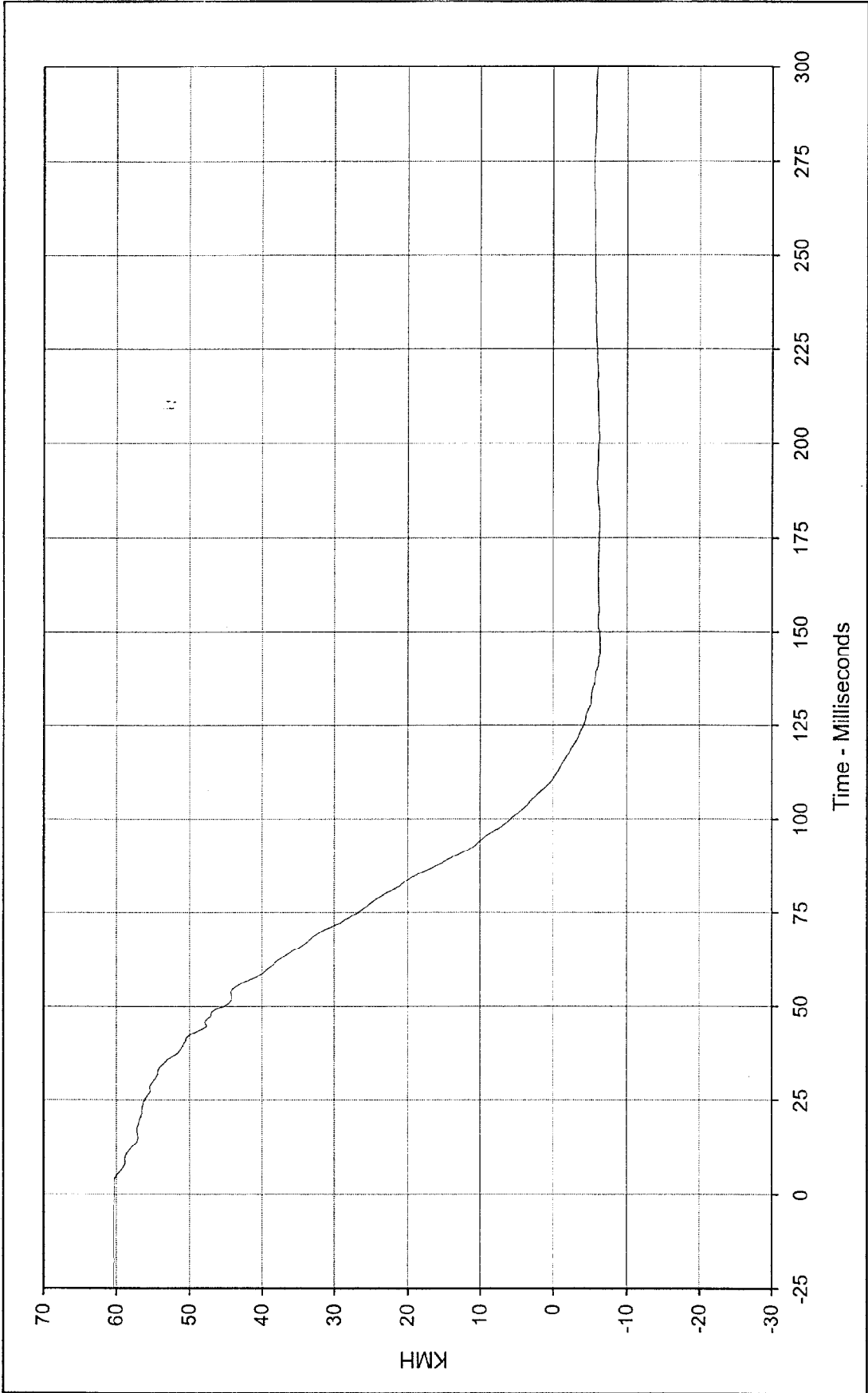
Curve Description: Vehicle Center Rear Console Y Displ. Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 85.6 at 299.9 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 0.0 at 4.1 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN2-092





Curve Description: Vehicle Right Rear Sill X Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 1.8 at 150.3 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -29.8 at 86.7 Milliseconds
 SAE Filter Class: 60
 Date of Test: 8/21/97
 Curve Number: FIL-093

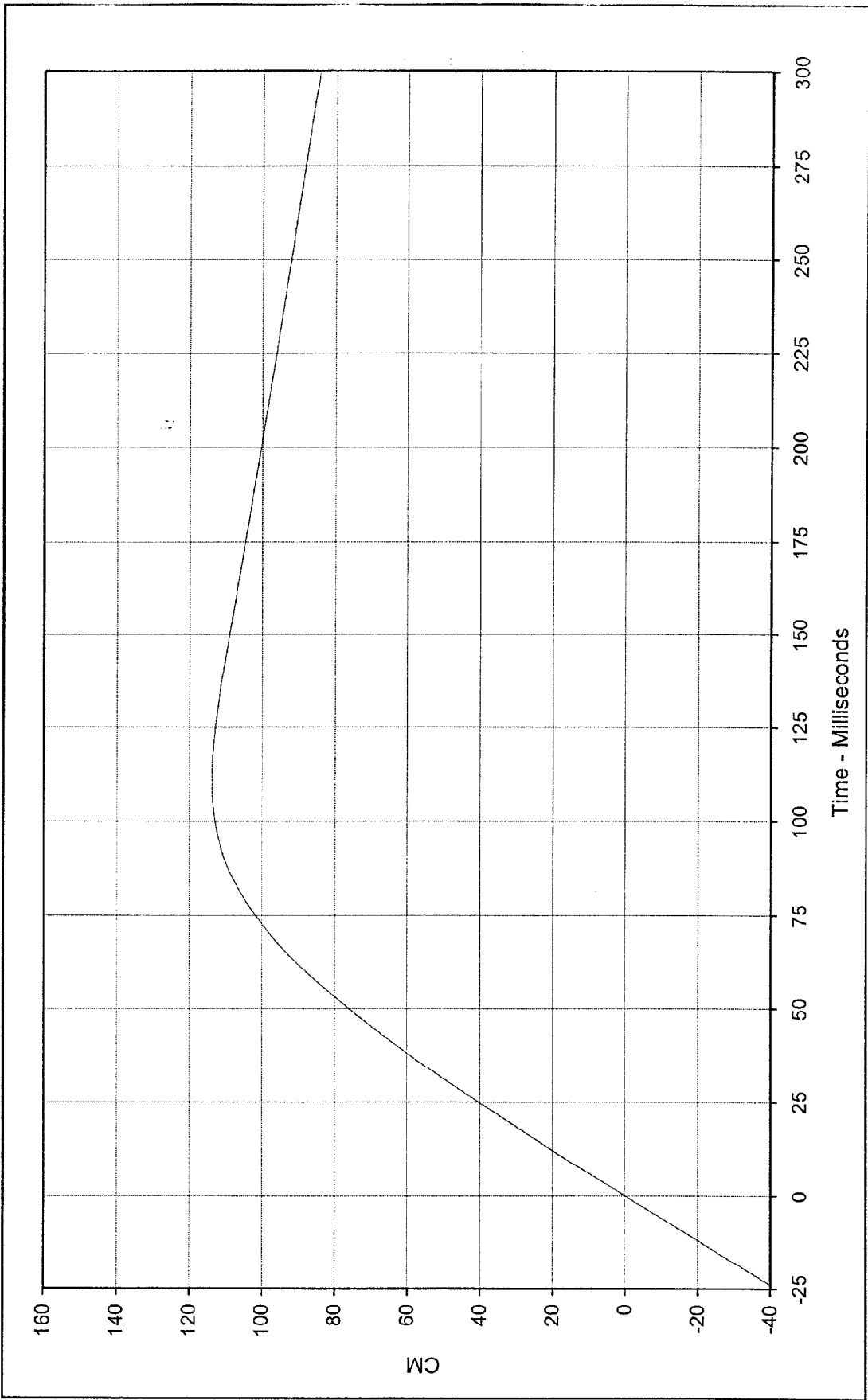




Curve Description: Vehicle Right Rear Sill X Velocity Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 60.3 at 3.1 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -6.4 at 145.4 Milliseconds

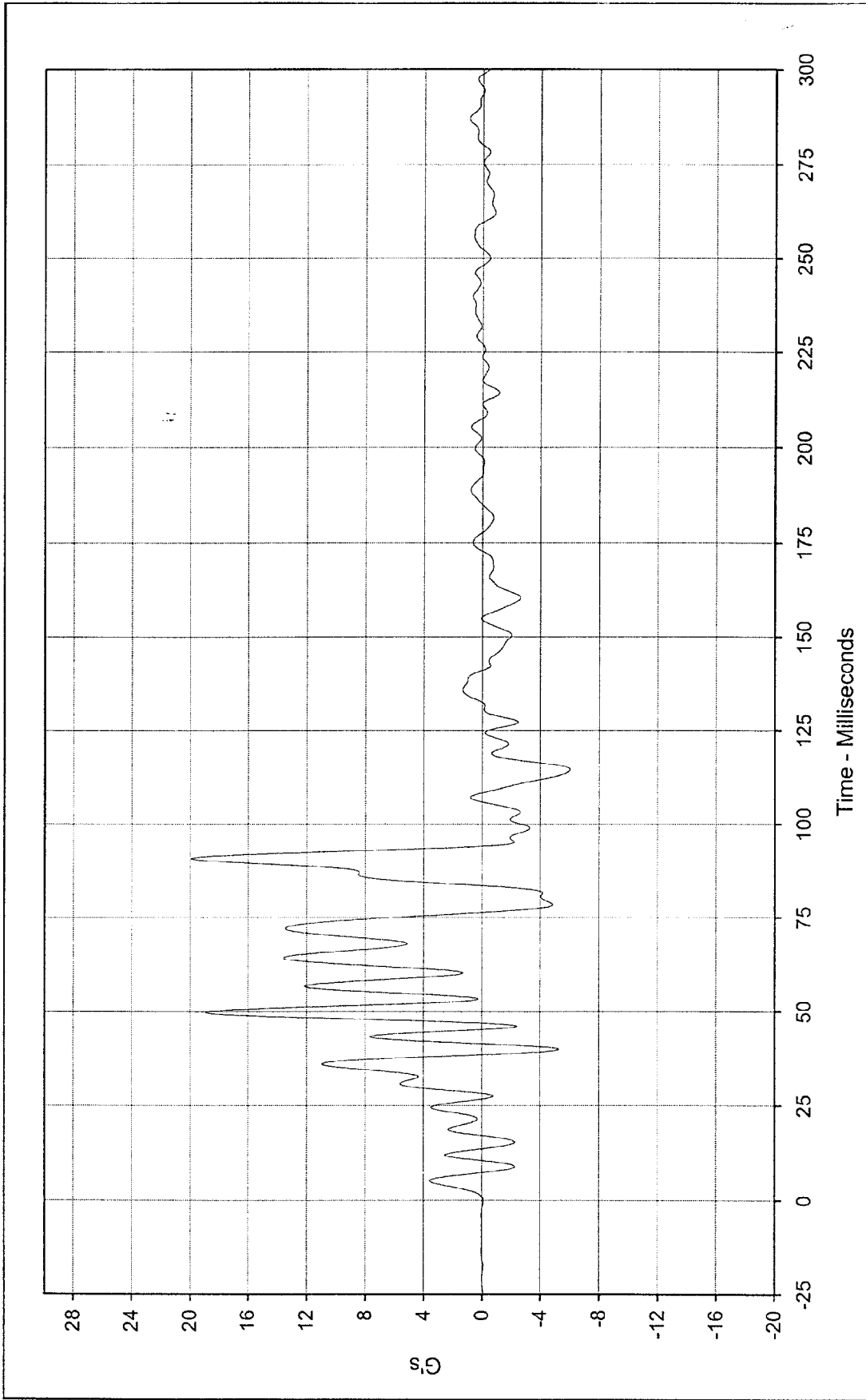


SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN1-093



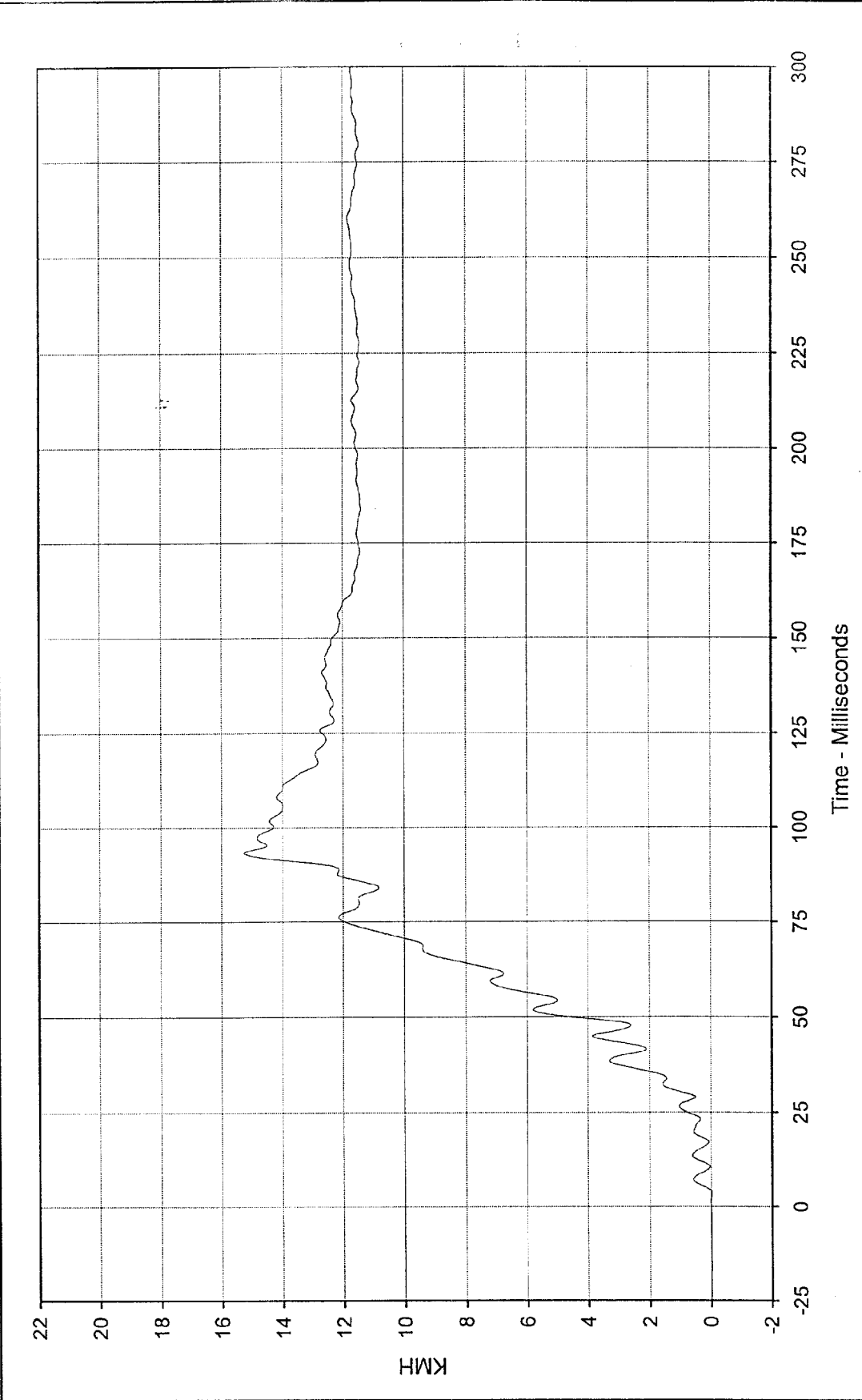
Curve Description: Vehicle Right Rear Sill X Displ. Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 113.7 at 110.6 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN2-093





Curve Description: Vehicle Right Rear Sill Y Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 19.9 at 90.8 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -6.0 at 114.4 Milliseconds
 SAE Filter Class: 60
 Date of Test: 8/21/97
 Curve Number: FIL-094

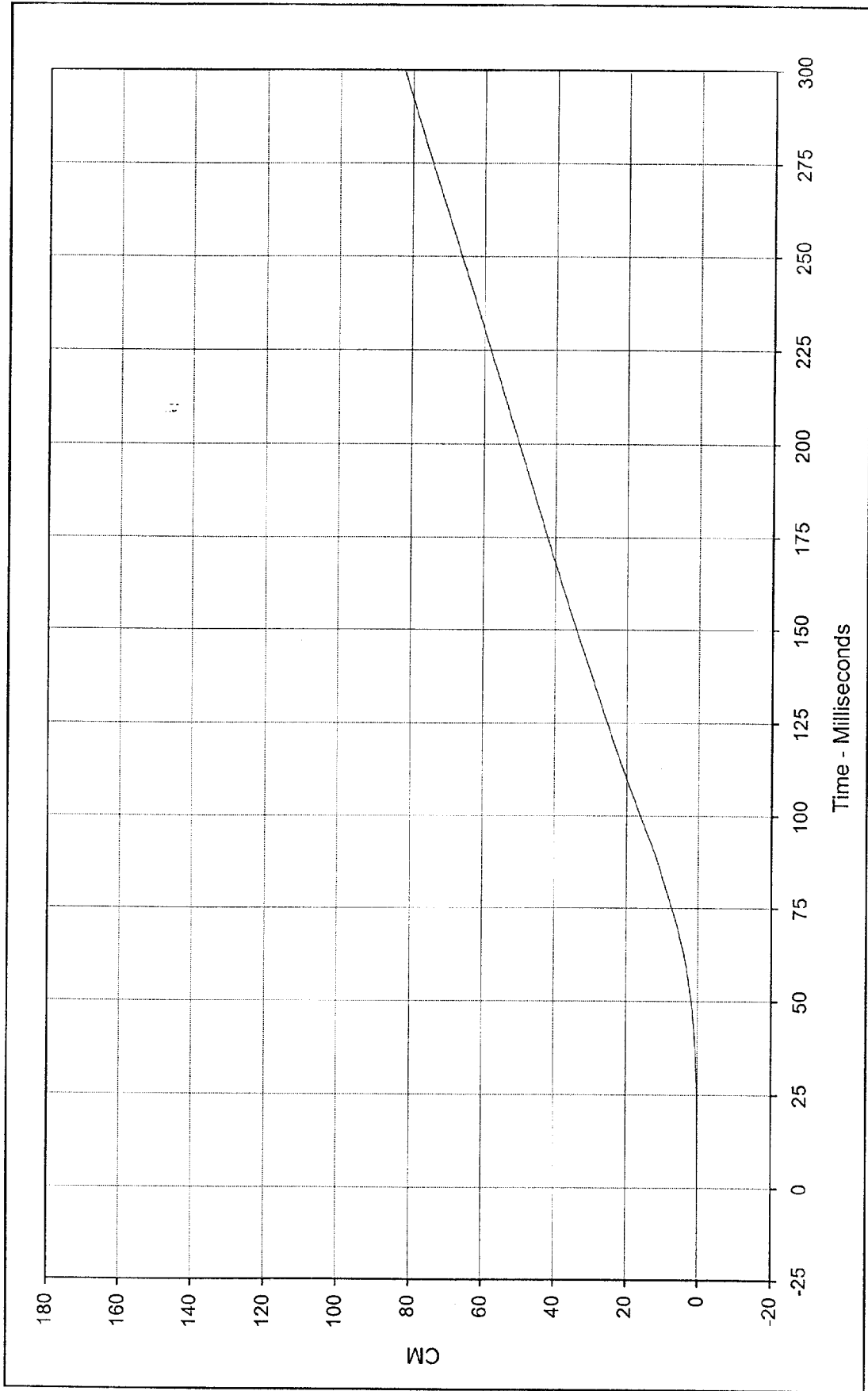




Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan

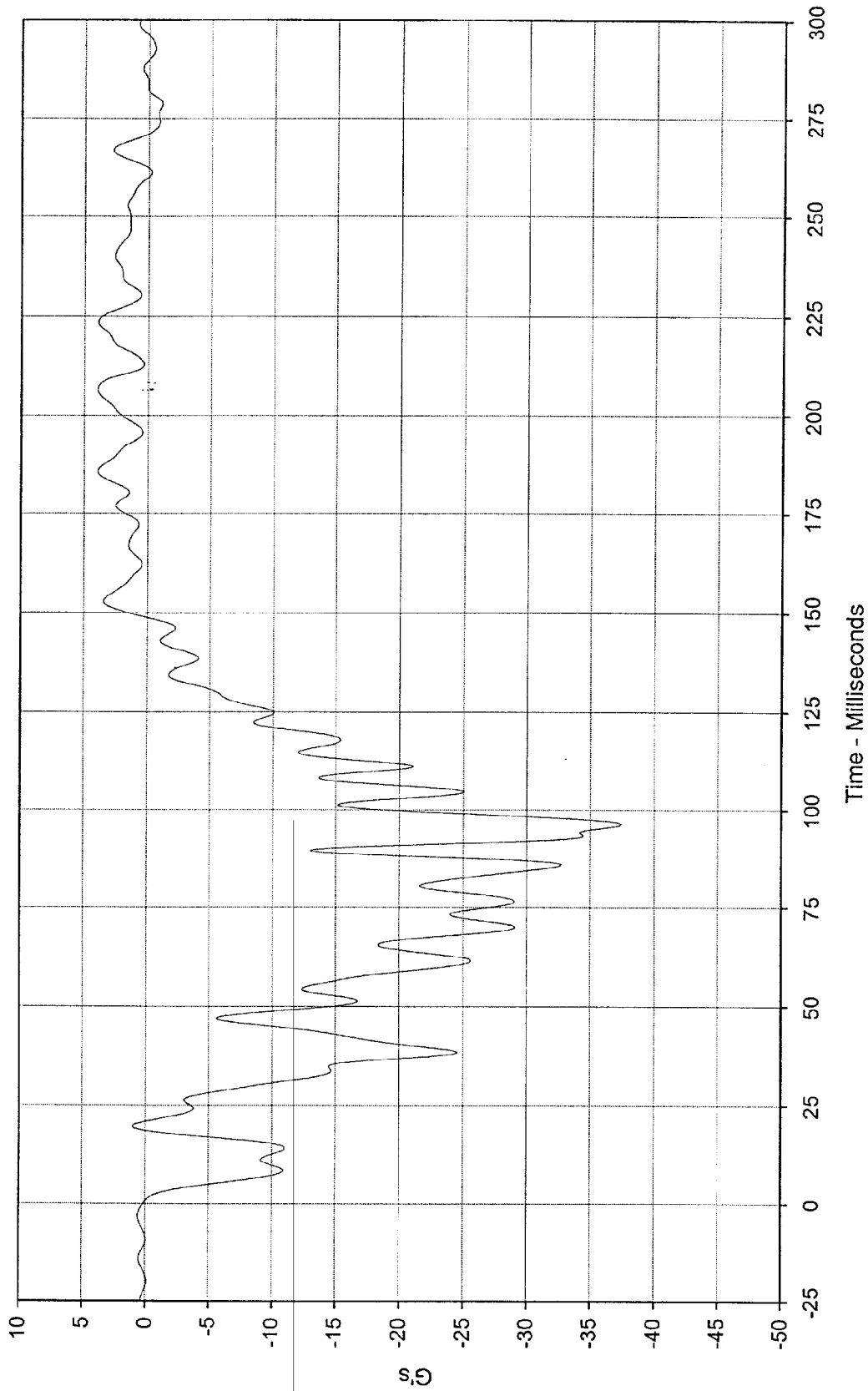
Curve Description: Vehicle Right Rear Sill Y Velocity
 Maximum Value: 15.3 at 93.3 Milliseconds
 Minimum Value: 0.0 at 3.6 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN1-094





Curve Description: Vehicle Right Rear Sill Y Displ. Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 82.5 at 299.9 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: 0.0 at 4.3 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN2-094





Curve Description: Vehicle Center Rear Trunk X Testing Program 1997 NHTSA 40% Offset Impact (Female)

Maximum Value: 3.9 at 206.6 Milliseconds

Minimum Value: -37.4 at 96.3 Milliseconds

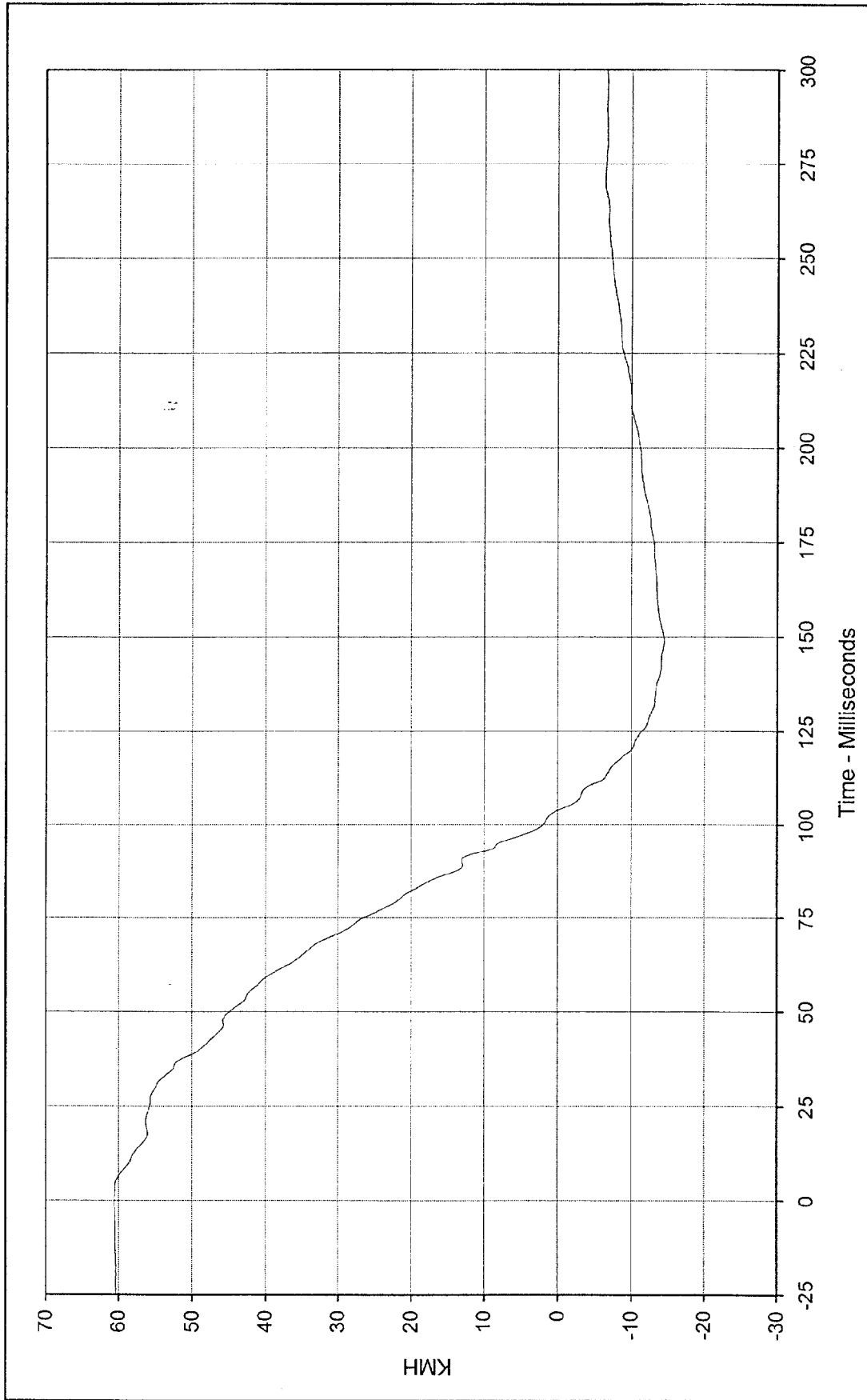
SAE Filter Class: 60

Date of Test: 8/21/97

Curve Number: FIL-095

Test Vehicle: 1996 Dodge Neon 4 Door Sedan

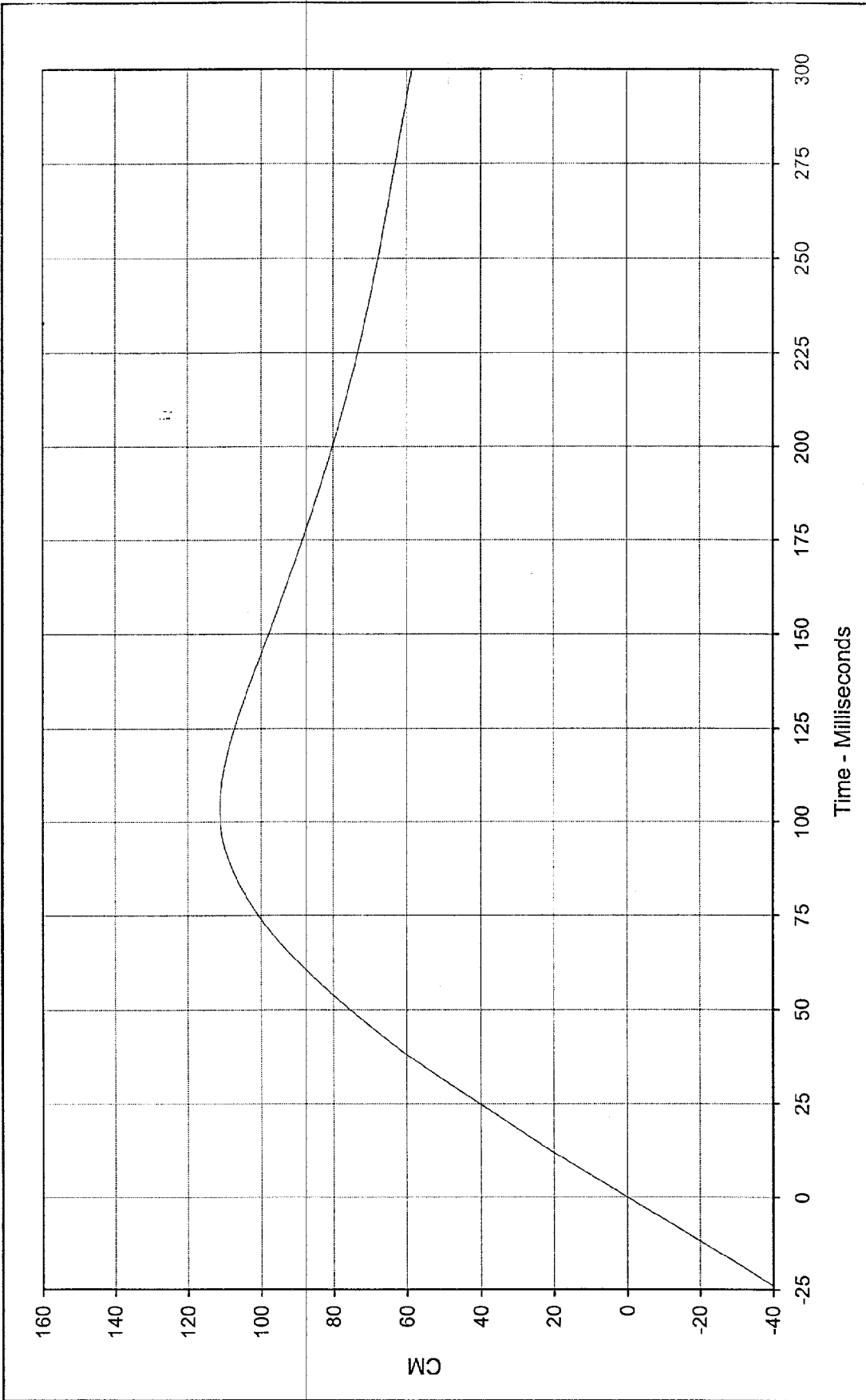




Curve Description: Vehicle Center Rear Trunk X Velocity
 Maximum Value: 60.6 at 0.0 Milliseconds
 Minimum Value: -14.4 at 148.9 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN1-095

Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan

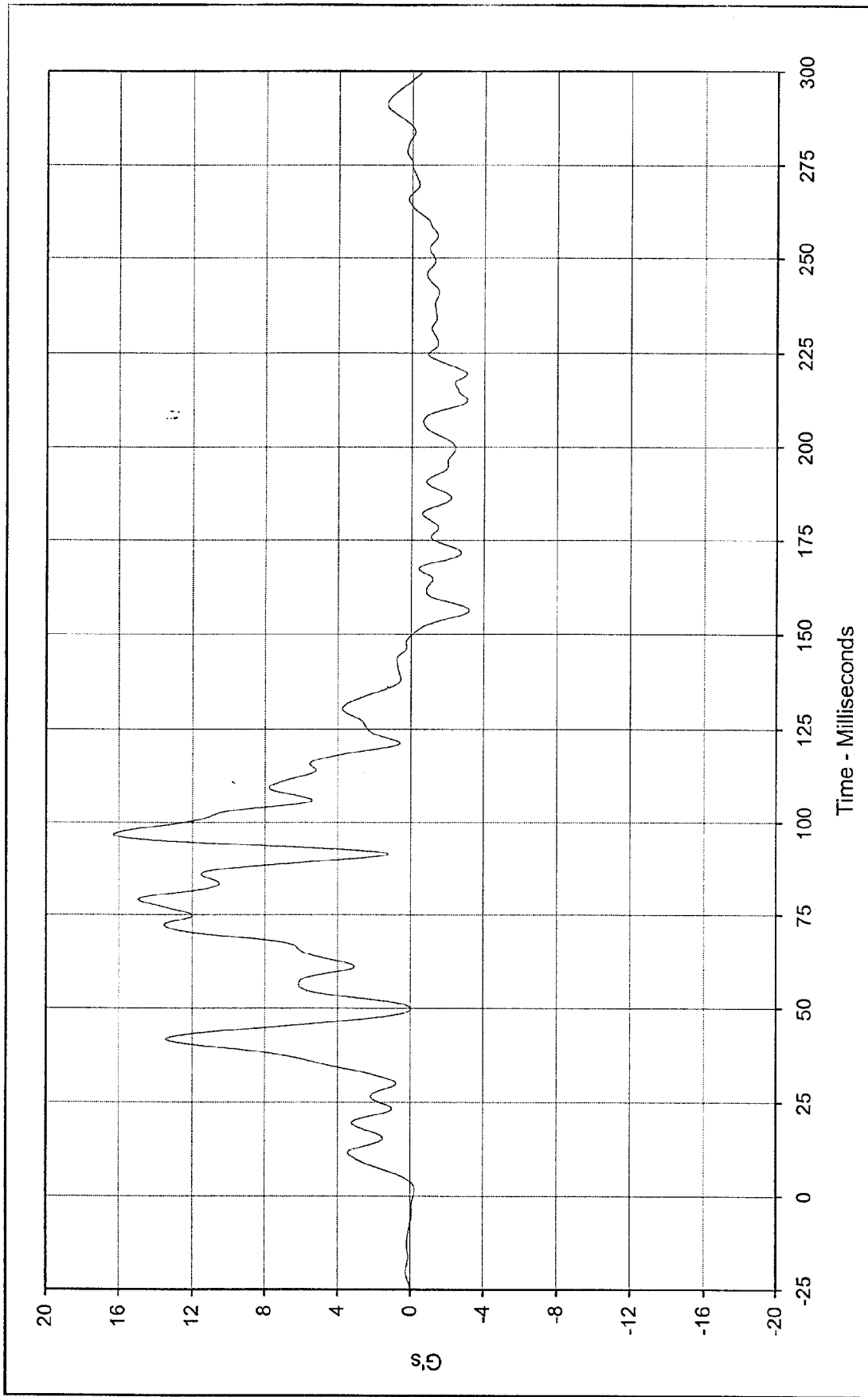




Curve Description: Vehicle Center Rear Trunk X Displ.
 Maximum Value: 111.1 at 103.9 Milliseconds
 Minimum Value: 0.1 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN2-095

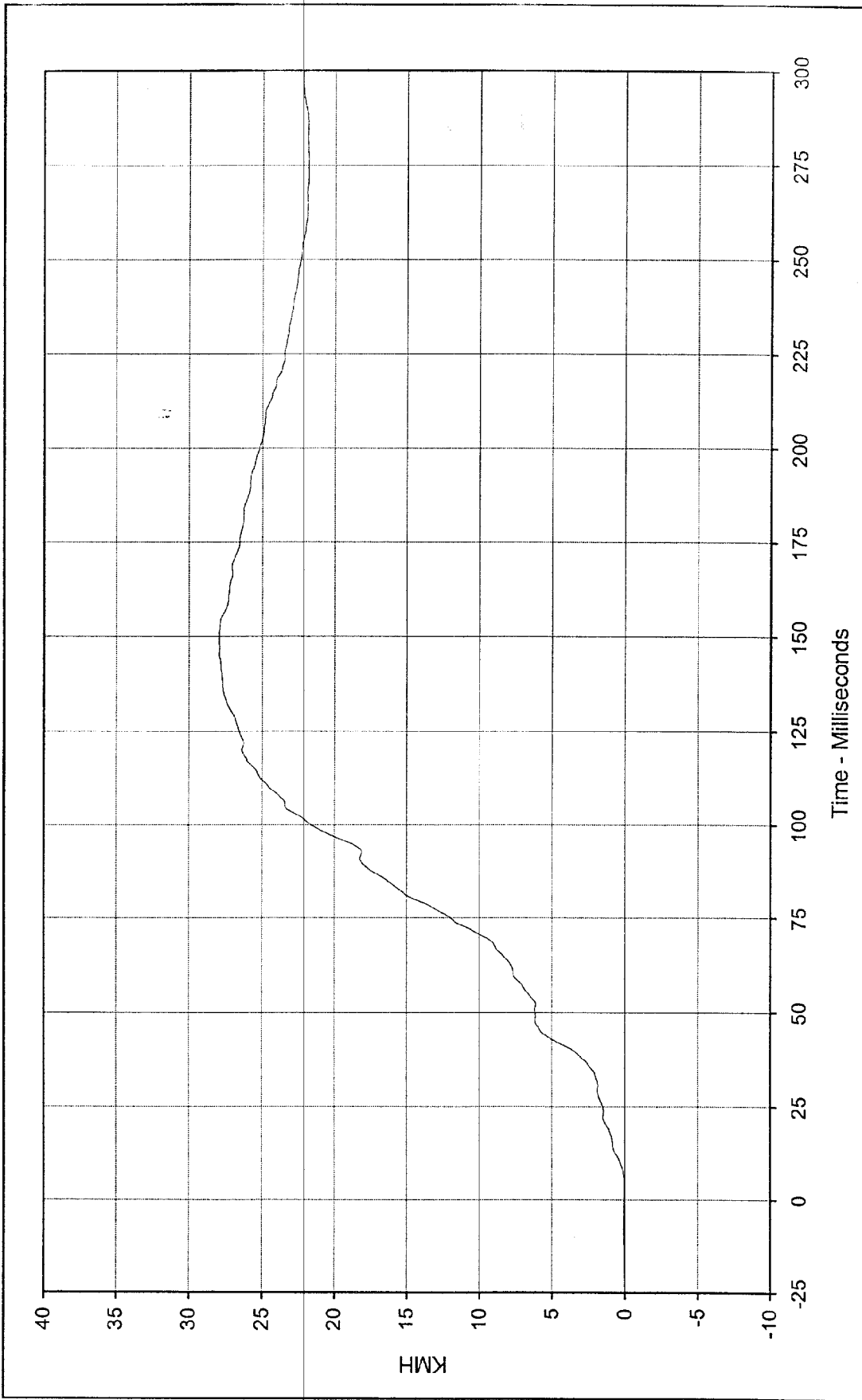
Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan





Curve Description: Vehicle Center Rear Trunk Y Testing Program 1997 NHTSA 40% Offset Impact (Female)
 Maximum Value: 16.3 at 96.8 Milliseconds Test Vehicle: 1996 Dodge Neon 4 Door Sedan
 Minimum Value: -3.2 at 156.4 Milliseconds
 SAE Filter Class: 60
 Date of Test: 8/21/97
 Curve Number: FIL-096

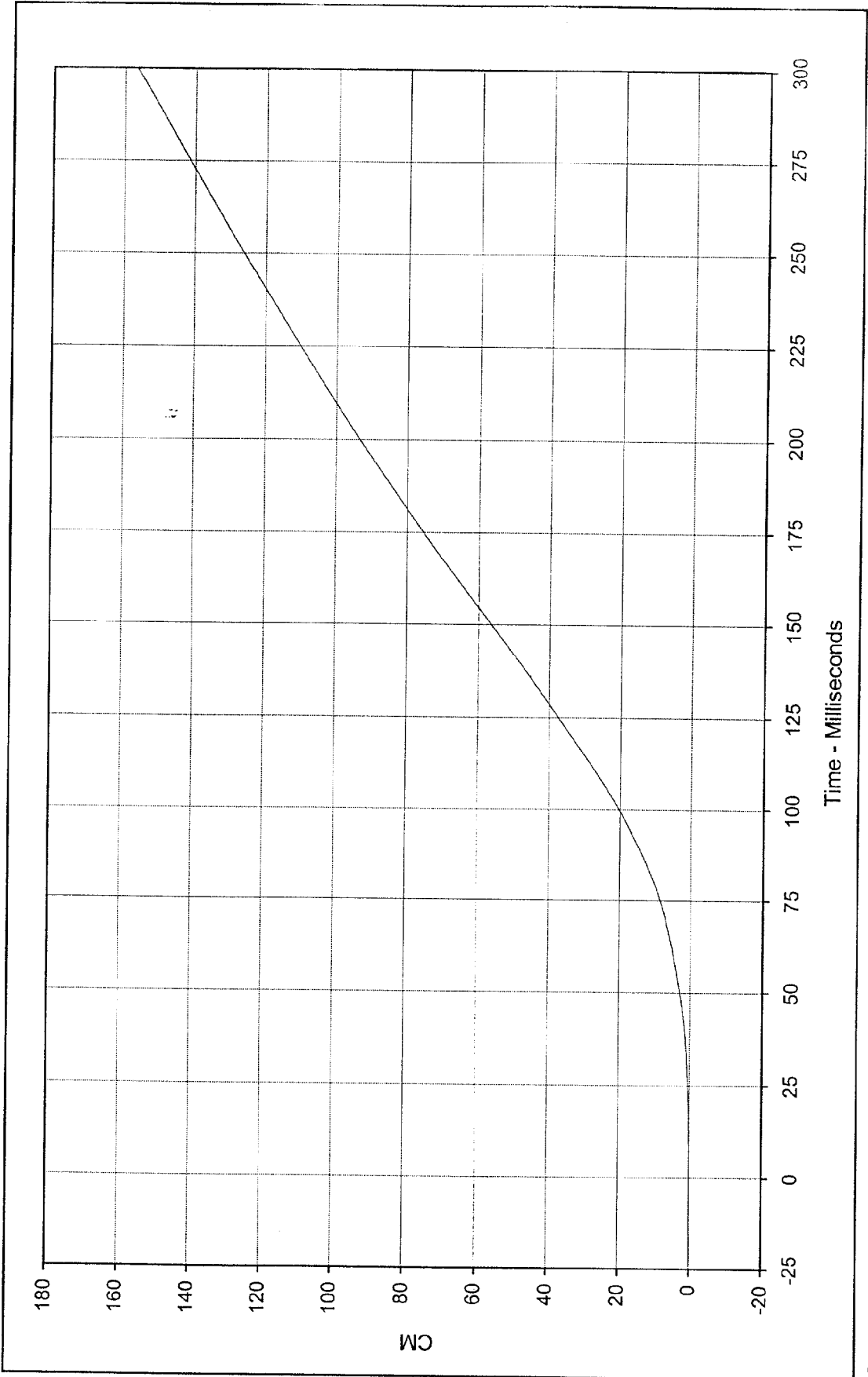




Curve Description: Vehicle Center Rear Trunk Y Velocity
 Maximum Value: 27.9 at 149.4 Milliseconds
 Minimum Value: 0.0 at 4.1 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN1-096

Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan





Curve Description: Vehicle Center Rear Trunk Y Displ.
 Maximum Value: 156.6 at 299.9 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 8/21/97
 Curve Number: IN2-096

Testing Program: 1997 NHTSA 40% Offset Impact (Female)
 Test Vehicle: 1996 Dodge Neon 4 Door Sedan



APPENDIX C
DEFORMABLE BARRIER DATA

KAR-97-R97015-05

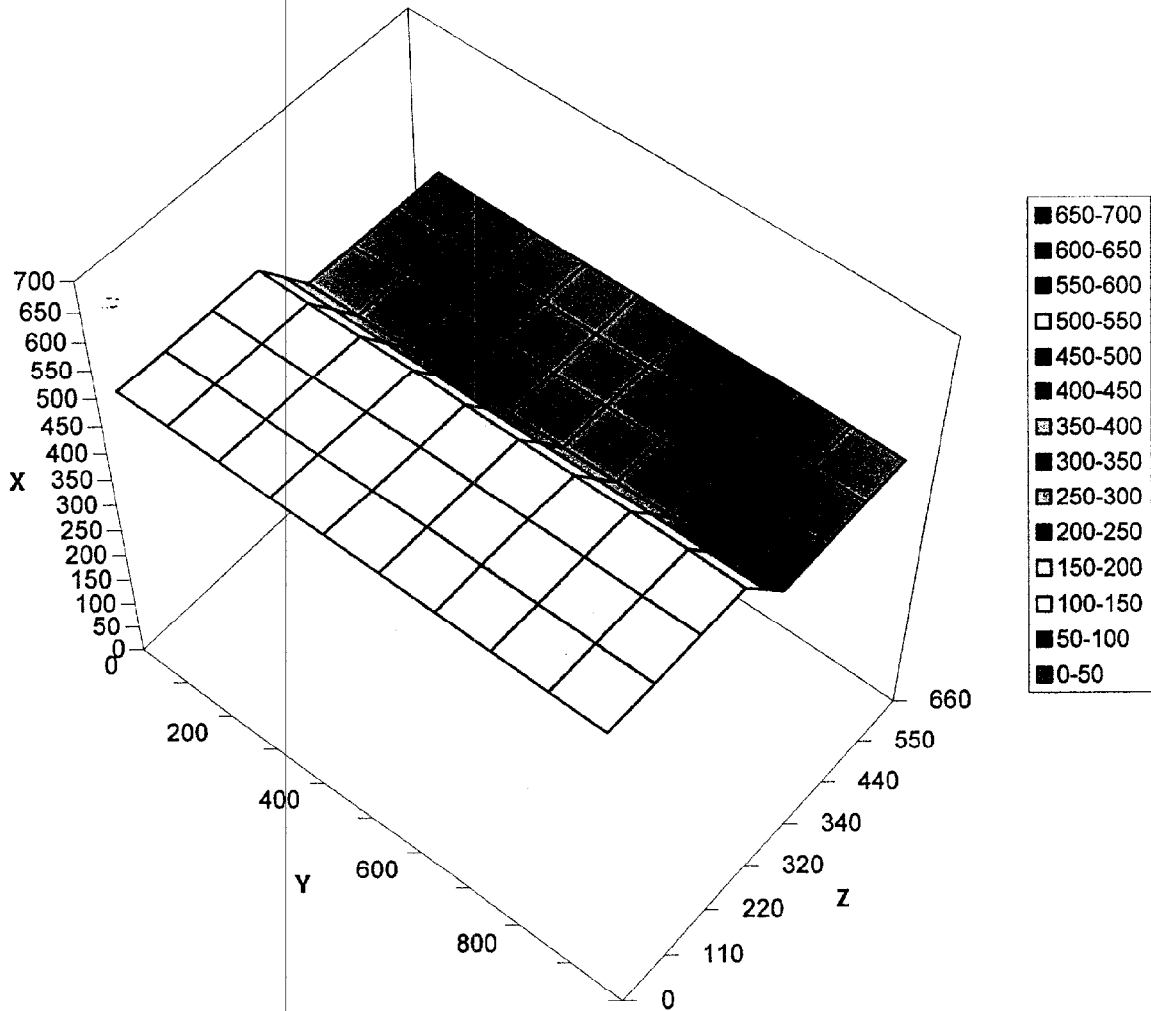
DEFORMABLE BARRIER MEASUREMENTS - PRETEST

VEHICLE YR/MAKE/MODEL/BODY: 1996 DODGE NEON 4 DOOR SEDAN

NHTSA No.: MT0307

TEST PROGRAM 1997 NHTSA 40% OFFSET IMPACT (Female)

TEST DATE: 8/21/97



All Measurements are in Millimeters

	Z Axis	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10
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

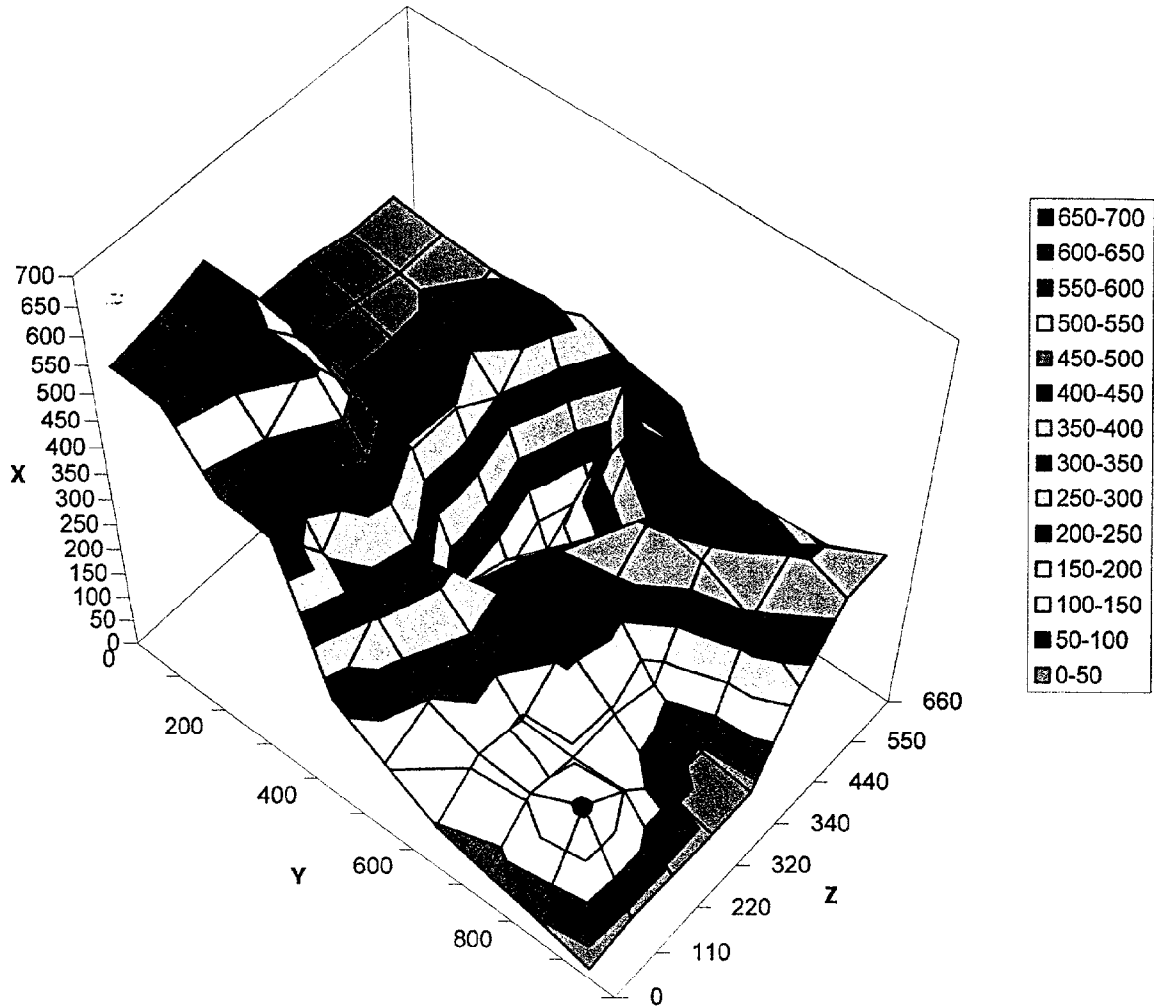
DEFORMABLE BARRIER MEASUREMENTS - POSTTEST

VEHICLE YR/MAKE/MODEL/BODY: 1996 DODGE NEON 4 DOOR SEDAN

NHTSA No.: MT0307

TEST PROGRAM 1997 NHTSA 40% OFFSET IMPACT (Female)

TEST DATE: 8/21/97



All Measurements are in Millimeters

	Z Axis	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10
Y Axis		0	100	200	300	400	500	600	700	800	900
Level 1	660	220	266	314	360	326	309	130	217	225	276
Level 2	550	471	460	453	442	175	354	349	335	310	273
Level 3	440	472	457	440	347	104	201	307	290	244	175
Level 4	340	488	472	442	398	165	247	234	117	44	32
Level 5	320	489	474	440	396	195	231	216	144	59	32
Level 6	220	620	567	565	458	335	249	145	141	148	34
Level 7	110	595	596	500	355	306	197	163	157	213	35
Level 8	0	579	574	472	464	217	156	97	71	48	23

APPENDIX D
INSTRUMENTATION DATA CHANNEL ASSIGNMENTS

KAR-97-R97015-05

40 % Offset Test With Hybrid III Female 5th Percentile ATD
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 202
Test Date: 8/21/97
Vehicle: 1996 Dodge Neon 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
1	HEAD, PRIMARY	X	GPAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
2	HEAD, PRIMARY	Y	GPAC002	Accel., 1/2 bridge	Endevco	7264-2000	G
3	HEAD, PRIMARY	Z	GPAC003	Accel., 1/2 bridge	Endevco	7264-2000	G
4	NECK FORCE	X	GPUN01FX	Load cell, six axis neck	R. A. Denton	1716A	N
5	NECK FORCE	Y	GPUN01FY	Load cell, six axis neck	R. A. Denton	1716A	N
6	NECK FORCE	Z	GPUN01FZ	Load cell, six axis neck	R. A. Denton	1716A	N
7	NECK MOMENT	X	GPUN01MX	Load cell, six axis neck	R. A. Denton	1716A	N.m
8	NECK MOMENT	Y	GPUN01MY	Load cell, six axis neck	R. A. Denton	1716A	N.m
9	NECK MOMENT	Z	GPUN01MZ	Load cell, six axis neck	R. A. Denton	1716A	N.m
10	CHEST, PRIMARY	X	GPAC005	Accel., 1/2 bridge	Endevco	7264-2000	G
11	CHEST, PRIMARY	Y	GPAC011	Accel., 1/2 bridge	Endevco	7264-2000	G
12	CHEST, PRIMARY	Z	GPAC010	Accel., 1/2 bridge	Endevco	7264-2000	G
13	CHEST, REDUNDANT	X	GPAC034	Accel., 1/2 bridge	Endevco	7264-2000	G
14	CHEST, REDUNDANT	Y	GPAC023	Accel., 1/2 bridge	Endevco	7264-2000	G
15	CHEST, REDUNDANT	Z	GPAC020	Accel., 1/2 bridge	Endevco	7264-2000	G
16	CHEST DISPLACEMENT	X	GPRP001	Potentiometer, Rotary	Servo	14CBI	CM
17	PELVIS, PRIMARY	X	GPAC025	Accel., 1/2 bridge	Endevco	7264-2000	G
18	PELVIS, PRIMARY	Y	GPAC022	Accel., 1/2 bridge	Endevco	7264-2000	G
19	PELVIS, PRIMARY	Z	GPAC019	Accel., 1/2 bridge	Endevco	7264-2000	G
20	LEFT FEMUR FORCE	Z	KEFF001	Load cell, Femur	R.A. Denton	2121	N
21	RIGHT FEMUR FORCE	Z	GPLC001	Load cell, Femur	G.S.E.	2430	N

**40 % Offset Test With Hybrid III Female 5th Percentile ATD
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 202
Test Date: 8/21/97
Vehicle: 1996 Dodge Neon 4 Door Sedan**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
22	UP. TIBIA LEFT FORCE	X	GPU05FX	4 ch., Upper Tibia Gage	R. A. Denton	3115	N.m
23	UP. LEFT TIBIA FORCE	Z	GPU05FZ	4 ch., Upper Tibia Gage	R. A. Denton	3115	N.m
24	UP. TIBIA LEFT MOM.	X	GPU05MX	4 ch., Upper Tibia Gage	R. A. Denton	3115	N.m
25	UP. TIBIA LEFT MOM.	Y	GPU05MY	4 ch., Upper Tibia Gage	R. A. Denton	3115	N.m
26	LWR. TIBIA LEFT FORCE	X	GPLT05FX	4 ch., lower tibia gage	R. A. Denton	3287	N
27	LWR. LEFT TIBIA FORCE	Z	GPLT05FZ	4 ch., lower tibia gage	R. A. Denton	3287	N
28	LWR. TIBIA LEFT MOM.	X	GPLT05MX	4 ch., lower tibia gage	R. A. Denton	3287	N.m
29	LWR. TIBIA LEFT MOM.	Y	GPLT05MY	4 ch., lower tibia gage	R. A. Denton	3287	N.m
30	UP. TIBIA RIGHT FORCE	X	GPU06FX	4 ch., Upper Tibia Gage	R. A. Denton	3115	N
31	UP. RIGHT TIBIA FORCE	Z	GPU06FZ	4 ch., Upper Tibia Gage	R. A. Denton	3115	N
32	UP. TIBIA RIGHT MOM.	X	GPU06MX	4 ch., Upper Tibia Gage	R. A. Denton	3115	N.m
33	UP. TIBIA RIGHT MOM.	Y	GPU06MY	4 ch., Upper Tibia Gage	R. A. Denton	3115	N.m
34	LWR. TIBIA RIGHT FORCE	X	GPLT06FX	4 ch., lower tibia gage	R. A. Denton	3287	N
35	LWR. RIGHT TIBIA FORCE	Z	GPLT06FZ	4 ch., lower tibia gage	R. A. Denton	3287	N
36	LWR. TIBIA RIGHT MOM.	X	GPLT06MX	4 ch., lower tibia gage	R. A. Denton	3287	N.m
37	LWR. TIBIA RIGHT MOM.	Y	GPLT06MY	4 ch., lower tibia gage	R. A. Denton	3287	N.m
38	FOOT LEFT	X	KEIC002X	Accel., Foot Triax	I.C. Sensor	3031-500	G
39	FOOT LEFT	Y	KEIC002Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
40	FOOT LEFT	Z	KEIC002Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
41	FOOT RIGHT	X	KEIC001X	Accel., Foot Triax	I.C. Sensor	3031-500	G
42	FOOT RIGHT	Y	KEIC001Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
43	FOOT RIGHT	Z	KEIC001Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
44	LAP BELT FORCE	X	KELC001	Load cell, Seat belt	Lebow	3371	N
45	SHOULDER BELT FORCE	X	KELC002	Load cell, Seat belt	Lebow	3371	N
46	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celecco	PTX101-0030	CM
47	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	CM/CM

40 % Offset Test With Hybrid III Female 5th Percentile ATD

Instrumentation Data Channel Assignments

Passenger A.T.D Serial Number 274

Test Date: 8/21/97

Vehicle: 1996 Dodge Neon 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
48	HEAD, PRIMARY	X	KEAC039	Accel., 1/2 bridge	Endevco	7264-2000	G
49	HEAD, PRIMARY	Y	KEAC038	Accel., 1/2 bridge	Endevco	7264-2000	G
50	HEAD, PRIMARY	Z	KEAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
51	NECK FORCE	X	GPUN02FX	Load cell, six axis neck	R. A. Denton	1716A	N
52	NECK FORCE	Y	GPUN02FY	Load cell, six axis neck	R. A. Denton	1716A	N
53	NECK FORCE	Z	GPUN02FZ	Load cell, six axis neck	R. A. Denton	1716A	N
54	NECK MOMENT	X	GPUN02MX	Load cell, six axis neck	R. A. Denton	1716A	N.m
55	NECK MOMENT	Y	GPUN02MY	Load cell, six axis neck	R. A. Denton	1716A	N.m
56	NECK MOMENT	Z	GPUN02MZ	Load cell, six axis neck	R. A. Denton	1716A	N.m
57	CHEST , PRIMARY	X	GPAC031	Accel., 1/2 bridge	Endevco	7264-2000	G
58	CHEST , PRIMARY	Y	GPAC024	Accel., 1/2 bridge	Endevco	7264-2000	G
59	CHEST , PRIMARY	Z	GPAC029	Accel., 1/2 bridge	Endevco	7264-2000	G
60	CHEST , REDUNDANT	X	KEAC023	Accel., 1/2 bridge	Endevco	7264-200	G
61	CHEST , REDUNDANT	Y	KEAC022	Accel., 1/2 bridge	Endevco	7264-200	G
62	CHEST , REDUNDANT	Z	KEAC024	Accel., 1/2 bridge	Endevco	7264-200	G
63	CHEST DISPLACEMENT	X	GPRP002	Potentiometer, Rotary	Servo	14CBI	CM
64	PELVIS, PRIMARY	X	GPAC009	Accel., 1/2 bridge	Endevco	7264-2000	G
65	PELVIS, PRIMARY	Y	GPAC017	Accel., 1/2 bridge	Endevco	7264-2000	G
66	PELVIS, PRIMARY	Z	GPAC018	Accel., 1/2 bridge	Endevco	7264-2000	G
67	LEFT FEMUR FORCE	Z	KEFF003	Load cell, Femur	R.A. Denton	2121	N
68	RIGHT FEMUR FORCE	Z	KEFF002	Load cell, Femur	R.A. Denton	2121	N

**40 % Offset Test With Hybrid III Female 5th Percentile ATD
Instrumentation Data Channel Assignments
Passenger A.T.D Serial Number 274
Test Date: 8/21/97
Vehicle: 1996 Dodge Neon 4 Door Sedan**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
69	UP. TIBIA LEFT MOM.	X	GPU T07MX	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
70	UP. TIBIA LEFT MOM.	Y	GPU T07MY	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
71	UP. TIBIA RIGHT MOM.	X	GPU T08MX	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
72	UP. TIBIA RIGHT MOM.	Y	GPU T08MY	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
73	LWR. TIBIA LEFT FORCE	X	GPL T07FY	3 ch., lower tibia gage	R. A. Denton	1584	N
74	LWR. TIBIA LEFT FORCE	Z	GPL T07FZ	3 ch., lower tibia gage	R. A. Denton	1584	N
75	LWR. TIBIA LEFT MOM.	Y	GPL T07MX	3 ch., lower tibia gage	R. A. Denton	1584	N.m
76	LWR. TIBIA RIGHT FORCE	X	GPL T08FY	3 ch., lower tibia gage	R. A. Denton	1584	N
77	LWR. TIBIA RIGHT FORCE	Z	GPL T08FZ	3 ch., lower tibia gage	R. A. Denton	1584	N
78	LWR. TIBIA RIGHT MOM.	Y	GPL T08MX	3 ch., lower tibia gage	R. A. Denton	1584	N.m
79	FOOT LEFT	X	KEIC003X	Accel., Foot Triax	I.C. Sensor	3031-500	G
80	FOOT LEFT	Y	KEIC003Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
81	FOOT LEFT	Z	KEIC003Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
82	FOOT RIGHT	X	KEIC004X	Accel., Foot Triax	I.C. Sensor	3031-500	G
83	FOOT RIGHT	Y	KEIC004Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
84	FOOT RIGHT	Z	KEIC004Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
85	LAP BELT FORCE	X	KELC003	Load cell, Seat belt	Lebow	3371	N
86	SHOULDER BELT FORCE	X	KELC004	Load cell, Seat belt	Lebow	3371	N
87	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celeco	PTX101-0030	CM
88	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	CM/CM

**40 % Offset Test With Hybrid III Female 5th Percentile ATD
Instrumentation Data Channel Assignments
Vehicle Accelerometers**

Test Date: 8/21/97

Vehicle: 1996 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 CONSOLE REAR	X	KEVA001	Accel., Vehicle block	I.C. Sensor	3031-500	G
92	CENTER CONSOLE REAR	Y	KEVA002	Accel., Vehicle block	I.C. Sensor	3031-500	G
93	RIGHT REAR SILL	X	KEVA010	Accel., Vehicle block	I.C. Sensor	3031-500	G
94	RIGHT REAR SILL	Y	KEVA004	Accel., Vehicle block	I.C. Sensor	3031-500	G
95	CENTER TRUNK REAR	X	KEVA007	Accel., Vehicle block	I.C. Sensor	3031-200	G
96	CENTER TRUNK REAR	Y	KEVA011	Accel., Vehicle block	I.C. Sensor	3031-200	G

APPENDIX E
DUMMY CALIBRATION DATA



Hybrid III Calibration Data Sheet

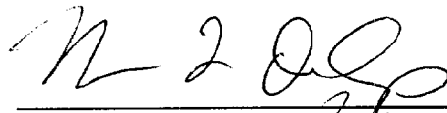
5TH Percentile Female Head Drop Calibration

ATD Serial No.: 202

Part Serial No.: N/A

Test I.D.: 202HD

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	264.5	Pass
Peak Lateral Acceleration	G's	≤15.0	7.1	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass



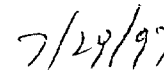
Laboratory Technician



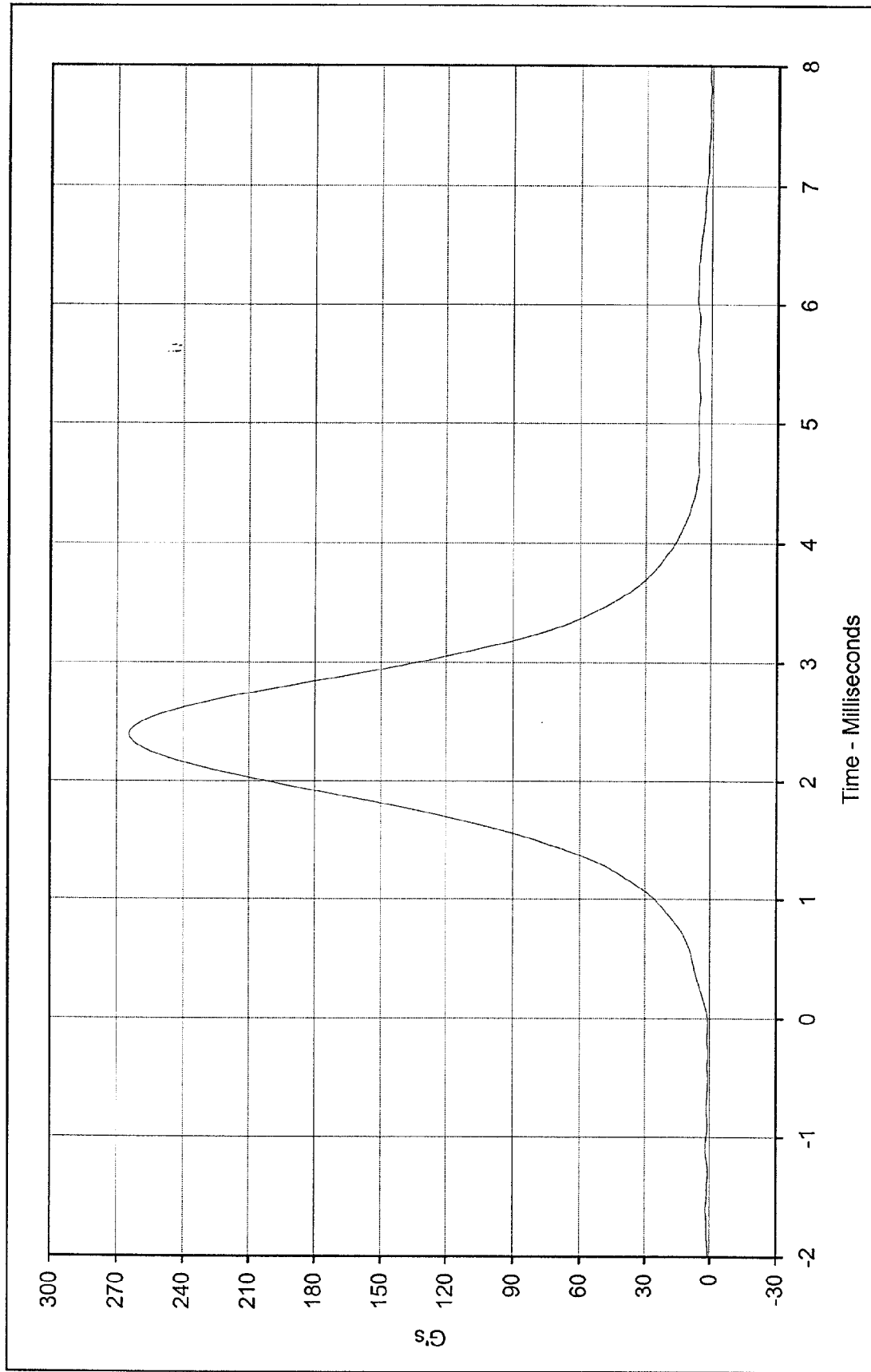
Approved By

July 29, 1997

Test Date

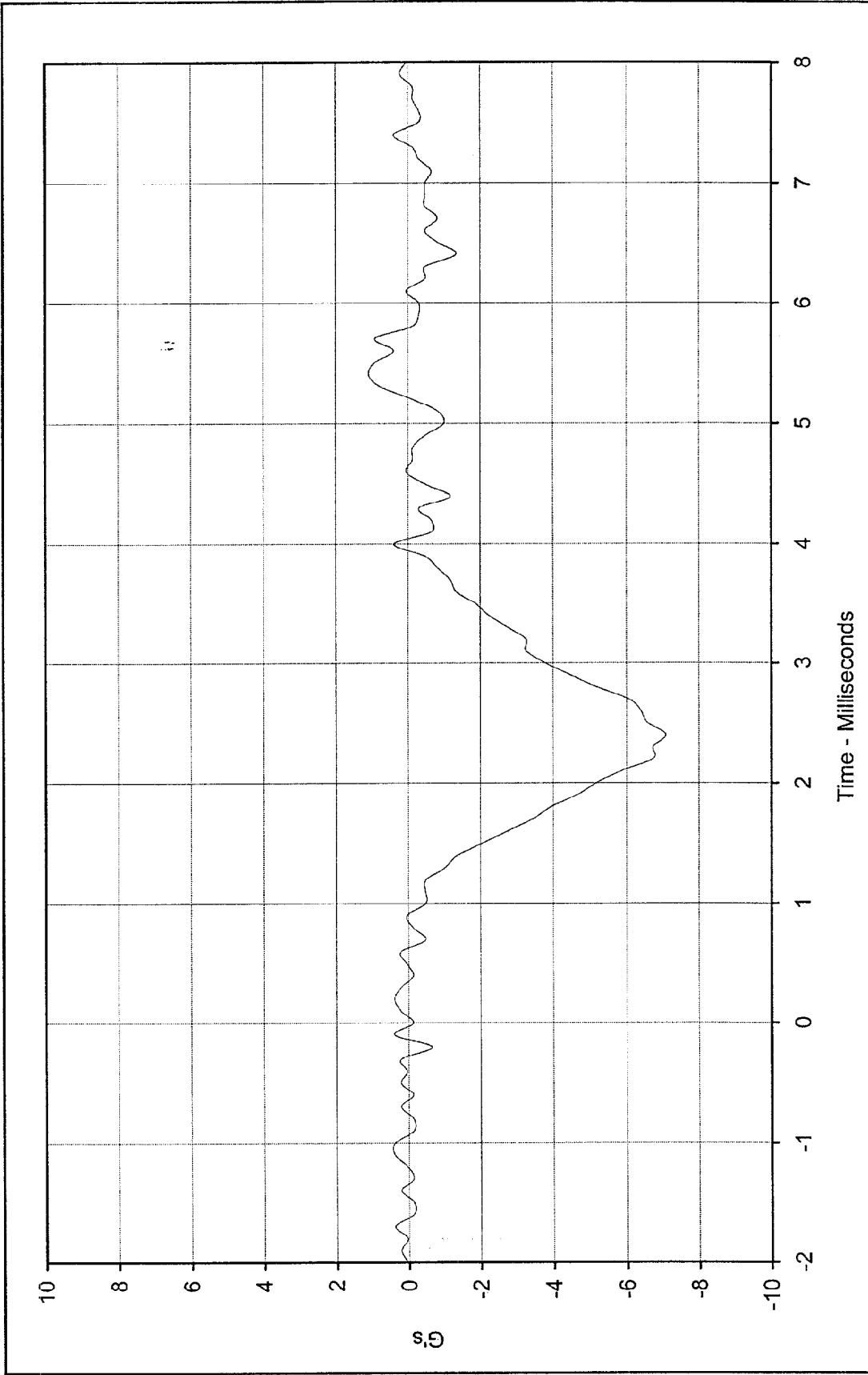


Date



Curve Description: Head Resultant Acceleration Testing Program Hybrid III Head Drop Calibration (Female)
 Maximum Value: 264.5 at 2.4 Milliseconds Test Information: S/N of Part: N/A Test I.D.: 202HD
 Minimum Value: 0.6 at 7.8 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 7/29/97
 ATD Serial No.: 202





Curve Description: Head Acceleration Y Axis Testing Program Hybrid III Head Drop Calibration (Female)
 Maximum Value: 1.1 at 5.4 Milliseconds Test Information: S/N of Part: N/A Test I.D.: 202HD
 Minimum Value: -7.1 at 2.4 Milliseconds



SAE Filter Class: 1000
 Date of Test: 7/29/97
 ATD Serial No.: 202



Hybrid III Calibration Data Sheet

5TH Percentile Female

Thorax Impact Test

ATD Serial No.: 202

Part Serial No.: N/A

Test I.D.: FC003

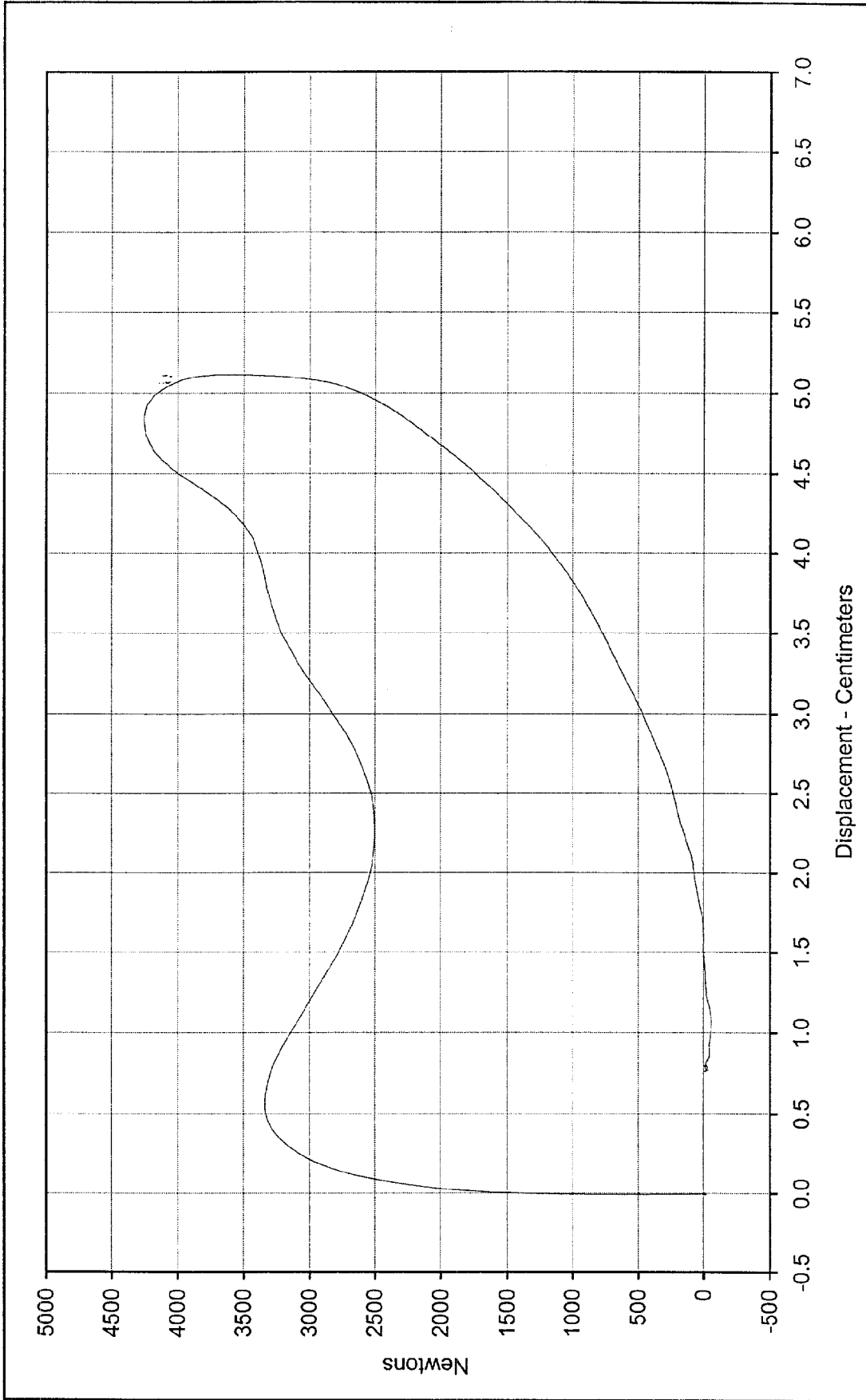
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	31	Pass
Peak Probe Force	Newtons	3800 to 4300	4257	Pass
Peak Sternum Displacement	CM	5.1 to 5.8	5.1	Pass
Internal Hysteresis	%	69 to 85	80.4	Pass
Overall Test Results				Pass

N Z Oelp
 Laboratory Technician

J A Kuhlmann
 Approved By

August 4, 1997
 Test Date

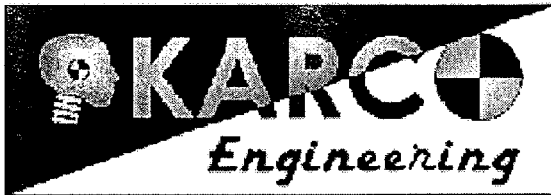
8/4/97
 Date



Curve Description: Probe Force vs. Chest Displacement Testing Program Hybrid III Thorax Impact Test (5TH Female)
 Probe Force: 4256.9 Newtons Test Information: S/N of Part: N/A Test I.D.: FC003

Chest Displ.: 5.11 Centimeters
 SAE Filter Class: 180
 Date of Test: 8/4/97
 ATD Serial No.: 202





Hybrid III Calibration Data Sheet

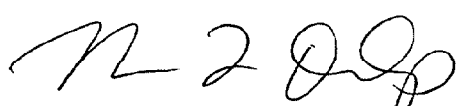
5TH Percentile Female Neck Flexion Test

ATD Serial No.: 202

Part Serial No.: N/A

Test I.D.: 202N1

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	7.06	Pass	
Pendulum Deceleration	10 Msec	m/s	2.10 to 2.50	2.13	Pass
	20 Msec	m/s	4.00 to 5.00	4.60	Pass
	30 Msec	m/s	5.80 to 7.00	6.63	Pass
Maximum "D" Plane Rotation	Degrees	78.0 to 96.0	95.4	Pass	
"D" Plane Rotation Decay, Time From Peak Value To Zero Crossing	Msec.	57.0 to 69.0	67.0	Pass	
Moment About Occipital Condyle	N•m	69.0 to 84.0	75.8	Pass	
Moment About Occipital Condyle Decay, Time From Peak Value To Zero Crossing	Msec.	41.0 to 50.0	47.3	Pass	
Time of Peak Rotation With Respect to Peak Moment	Msec.	2.0 to 12.0	7.3	Pass	
Overall Test Results				Pass	



 Laboratory Technician

August 6, 1997

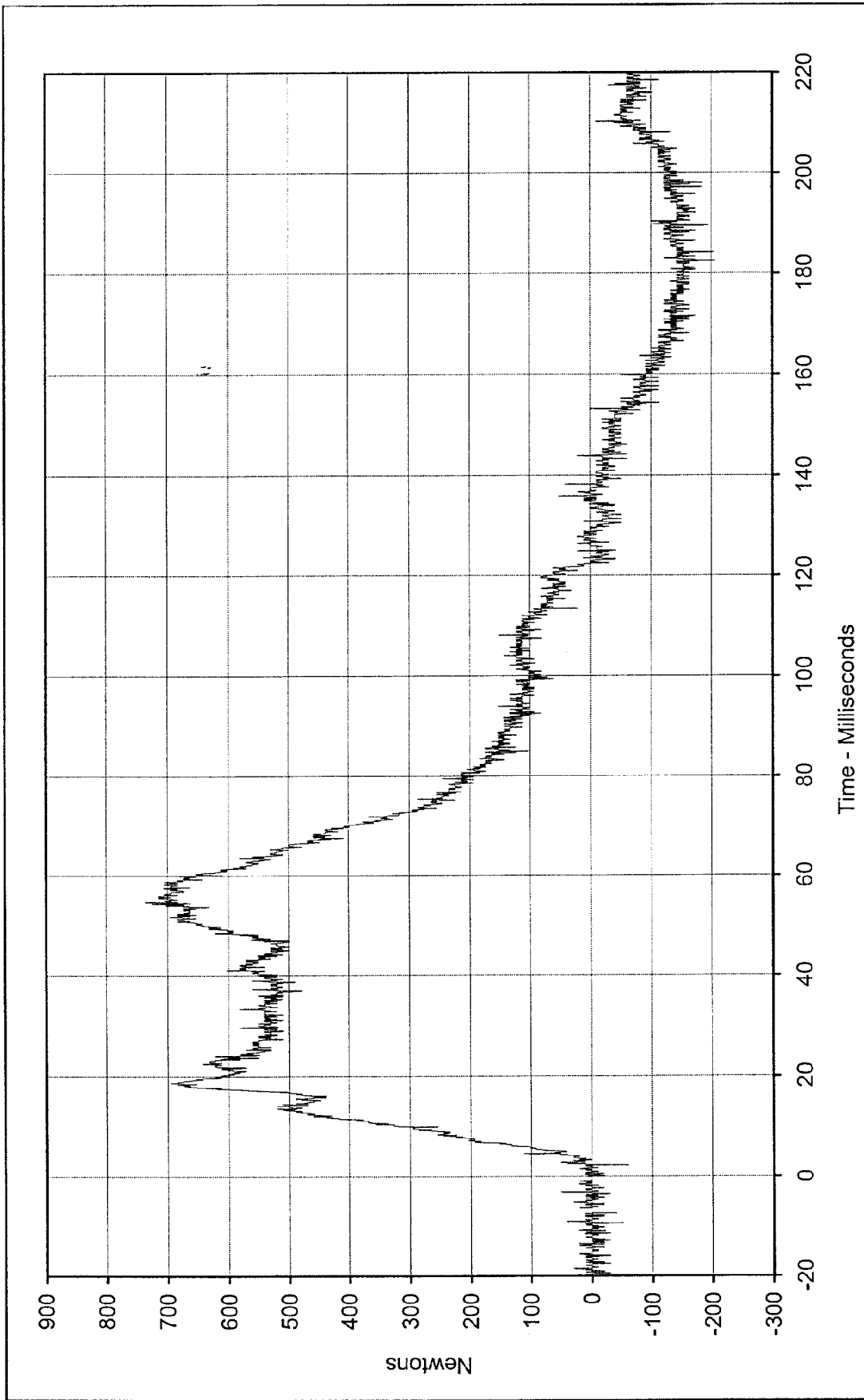
 Test Date



 Approved By

8/6/97

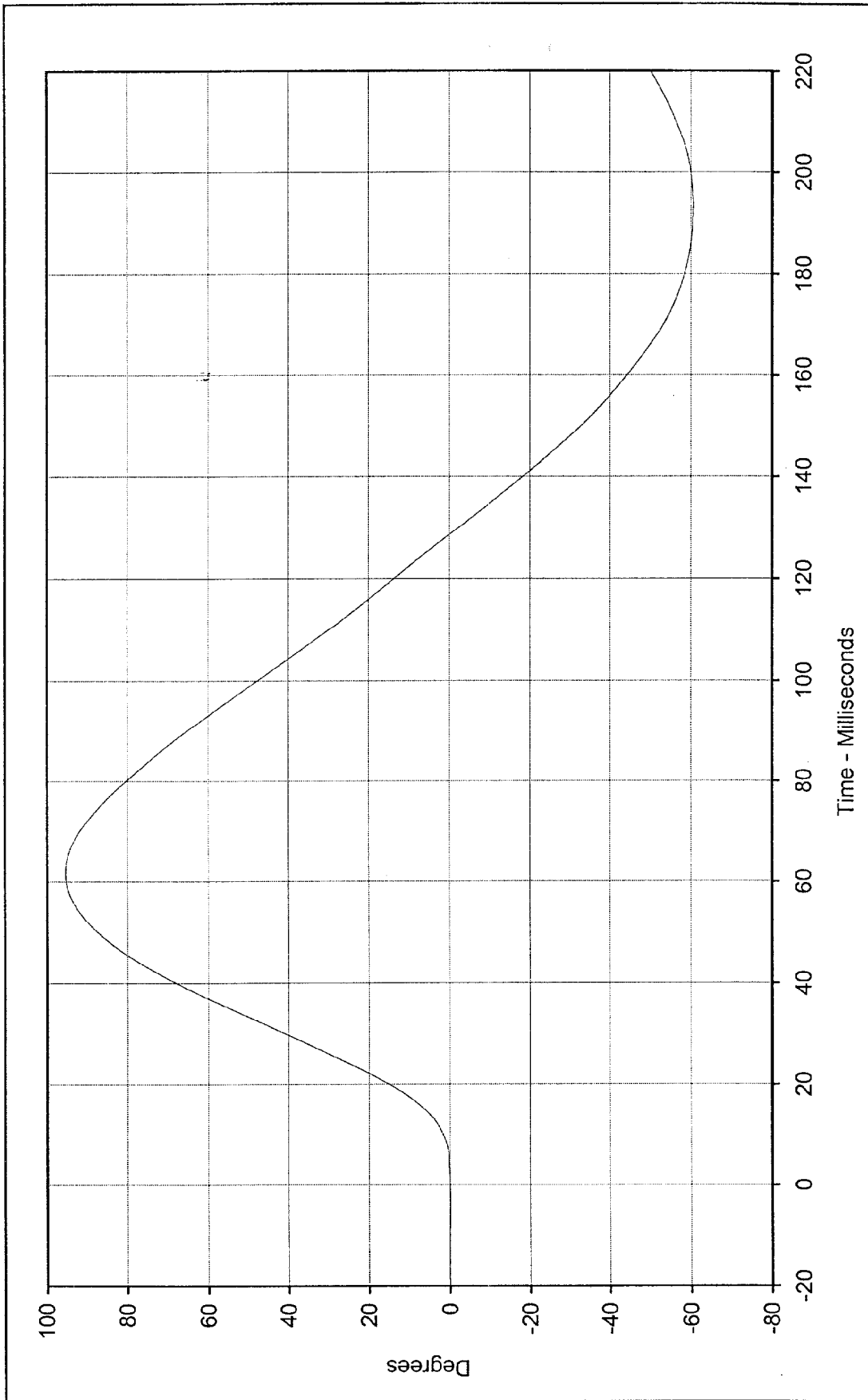
 Date



Curve Description: Neck Force X Testing Program: Hybrid III Neck Flexion Test (Female)
 Maximum Value: 734.8 at 54.7 Milliseconds Test Information: S/N of Part: N/A Test I.D.: 202N1
 Minimum Value: -204.1 at 182.4 Milliseconds



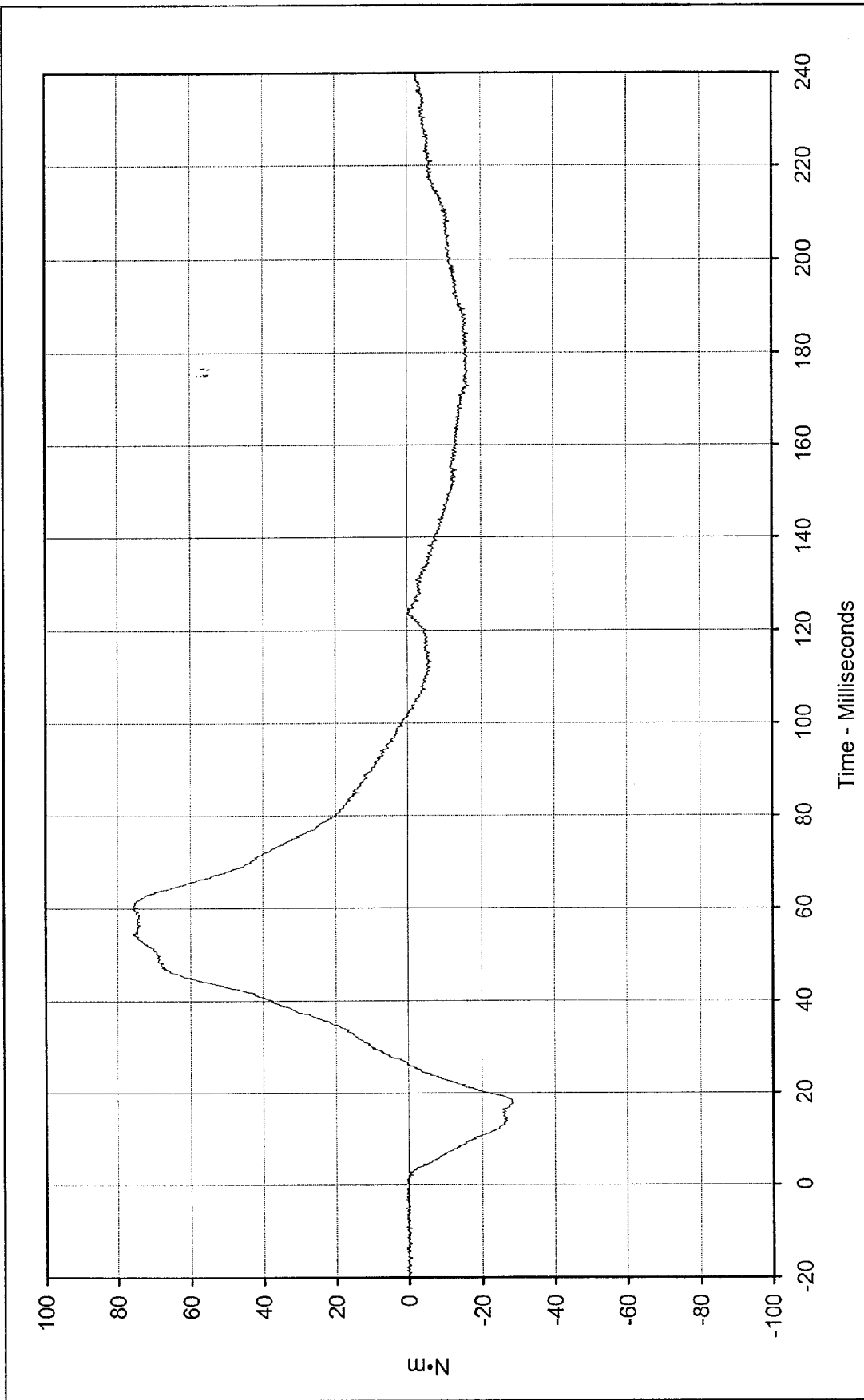
SAE Filter Class: 1000
 Date of Test: 8/6/97
 ATD Serial No.: 202



Curve Description: "D" Plane Rotation
 Maximum Value: 95.4 at 61.7 Milliseconds
 Minimum Value: -60.5 at 193.7 Milliseconds
 SAE Filter Class: 60
 Date of Test: 8/6/97
 ATD Serial No.: 202

Testing Program: Hybrid III Neck Flexion Test (Female)
 Test Information: S/N of Part: N/A Test I.D.: 202N1





Curve Description: Moment About Occipital Condyles Testing Program: Hybrid III Neck Flexion Test (Female)

Maximum Value: 75.8 at 54.4 Milliseconds

Minimum Value: -28.6 at 17.7 Milliseconds

SAE Filter Class: 600

Date of Test: 8/6/97

ATD Serial No.: 202

Test Information: S/N of Part: N/A Test I.D.: 202N1





Hybrid III Calibration Data Sheet

5TH Percentile Female

Neck Extension Test

ATD Serial No.: 202

Part Serial No.: N/A

Test I.D.: FNE01

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	1.73	Pass
	20 Msec	m/s	3.10 to 3.90	3.79	Pass
	30 Msec	m/s	4.60 to 5.60	5.49	Pass
Maximum "D" Plane Rotation	Degrees	97.0 to 119.0	104.9	Pass	
"D" Plane Rotation Decay, Angle When the Decaying Y Moment is at -10 N•m	Degrees	80.0 to 96.0	91.2	Pass	
Calculated Moment About Occipital Condyle	N•m	-54.0 to -67.0	-65.3	Pass	
Moment About Occipital Condyle Decay, Time From Negative Peak Value To -10 N•m	Msec.	28.0 to 38.0	31.3	Pass	
Overall Test Results				Pass	

N 200

Laboratory Technician

JW Kulowson

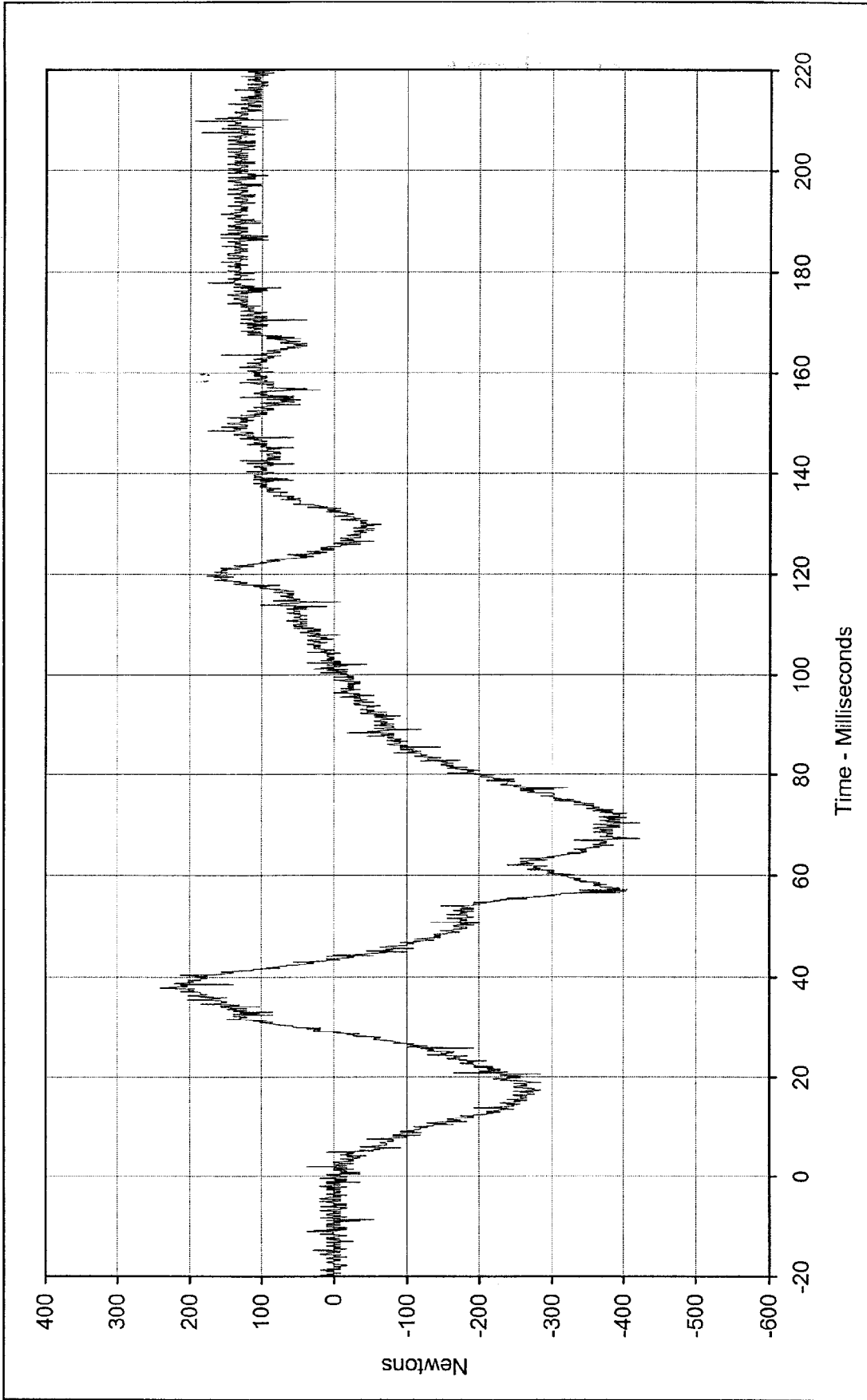
Approved By

August 6, 1997

Test Date

8/6/97

Date



Curve Description: Neck Force X

Maximum Value: 240.0 at 37.9 Milliseconds

Minimum Value: -422.4 at 67.1 Milliseconds

SAE Filter Class: 1000

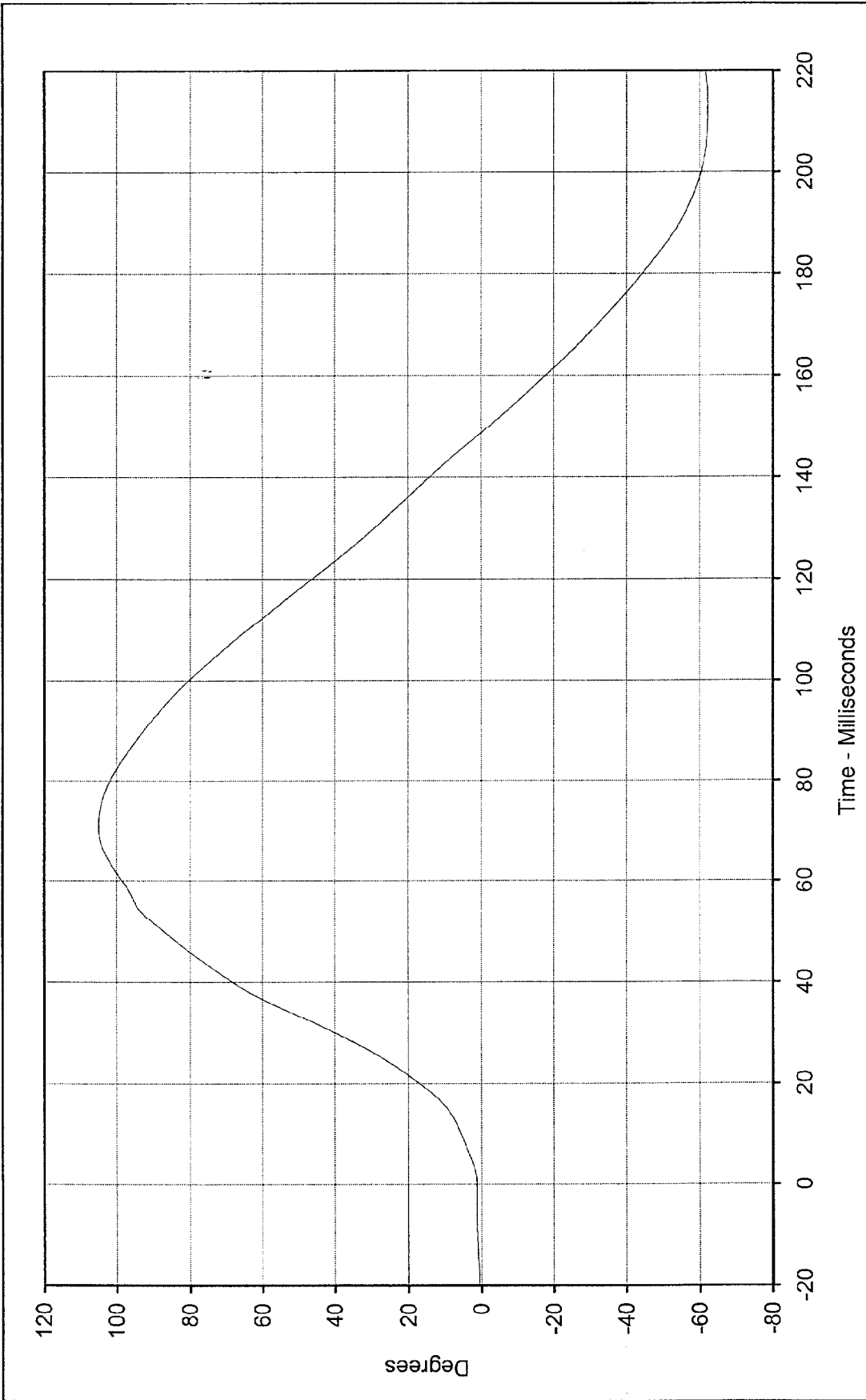
Date of Test: 8/6/97

ATD Serial No.: 202

Testing Program: Hybrid III Neck Extension Test (Female)

Test Information: S/N of Part: N/A Test I.D.: FNE01





Curve Description: "D" Plane Rotation
 Maximum Value: 104.9 at 71.1 Milliseconds
 Minimum Value: -62.3 at 213.5 Milliseconds
 SAE Filter Class: 60
 Date of Test: 8/6/97
 ATD Serial No.: 202

Testing Program: Hybrid III Neck Extension Test (Female)
 Test Information: S/N of Part: N/A Test I.D.: FNE01





Hybrid III Calibration Data Sheet

50TH Percentile Female

External Measurements

ATD Serial No.: 202

Part Serial No.: N/A

Test I.D.: N/A

External Measurement Data				
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory temperature	°C	20.4 to 22.1	20.9	Pass
Laboratory relative humidity	%	10 to 70	43	Pass
A - Total sitting height	mm	785.0 to 795.0	790.0	Pass
B - Shoulder pivot height	mm	434.0 to 450.0	439.0	Pass
C - "H" point height	mm	81.5 to 86.5	82.0	Pass
D - "H" point from seat back	mm	144.5 to 149.5	145.0	Pass
E - Shoulder pivot from back	mm	71.0 to 81.0	78.0	Pass
F - Thigh clearance	mm	114.0 to 130.0	120.0	Pass
G - Elbow to finger tip	mm	303.0 to 409.0	396.0	Pass
H - Skull cap to back line	mm	43.2 to 48.5	45.0	Pass
I - Shoulder to elbow length	mm	287.0 to 303.0	296.0	Pass
J - Elbow rest height	mm	191.0 to 211.0	205.0	Pass
K - Buttock to knee length	mm	509.5 to 533.5	520.0	Pass
L - Popliteal height	mm	349.5 to 373.5	360.0	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	420.0	Pass
O - Chest depth	mm	183.0 to 200.0	190.0	Pass
P - Foot length	mm	216.0 to 232.0	225.0	Pass
R - Foot width	mm	76.0 to 92.0	80.0	Pass
V - Shoulder width	mm	348.0 to 364.0	360.0	Pass
W - Hip width at "H" point	mm	299.0 to 315.0	300.0	Pass
X - Chest circumference	mm	783.0 to 813.0	800.0	Pass
Y - Waist circumference	mm	757.0 to 787.0	780.0	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	166.0	Pass
Overall Test Results				Pass

Laboratory Technician

Approved By

August 6, 1997

Test Date

Date



Hybrid III Calibration Data Sheet

5TH Percentile Female

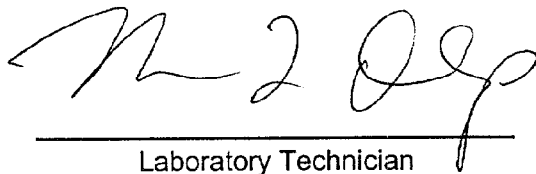
Head Drop Calibration

ATD Serial No.: 274

Part Serial No.: N/A

Test I.D.: 274HD

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	278.0	Pass
Peak Lateral Acceleration	G's	≤15.0	4.6	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass



Laboratory Technician

July 29, 1997

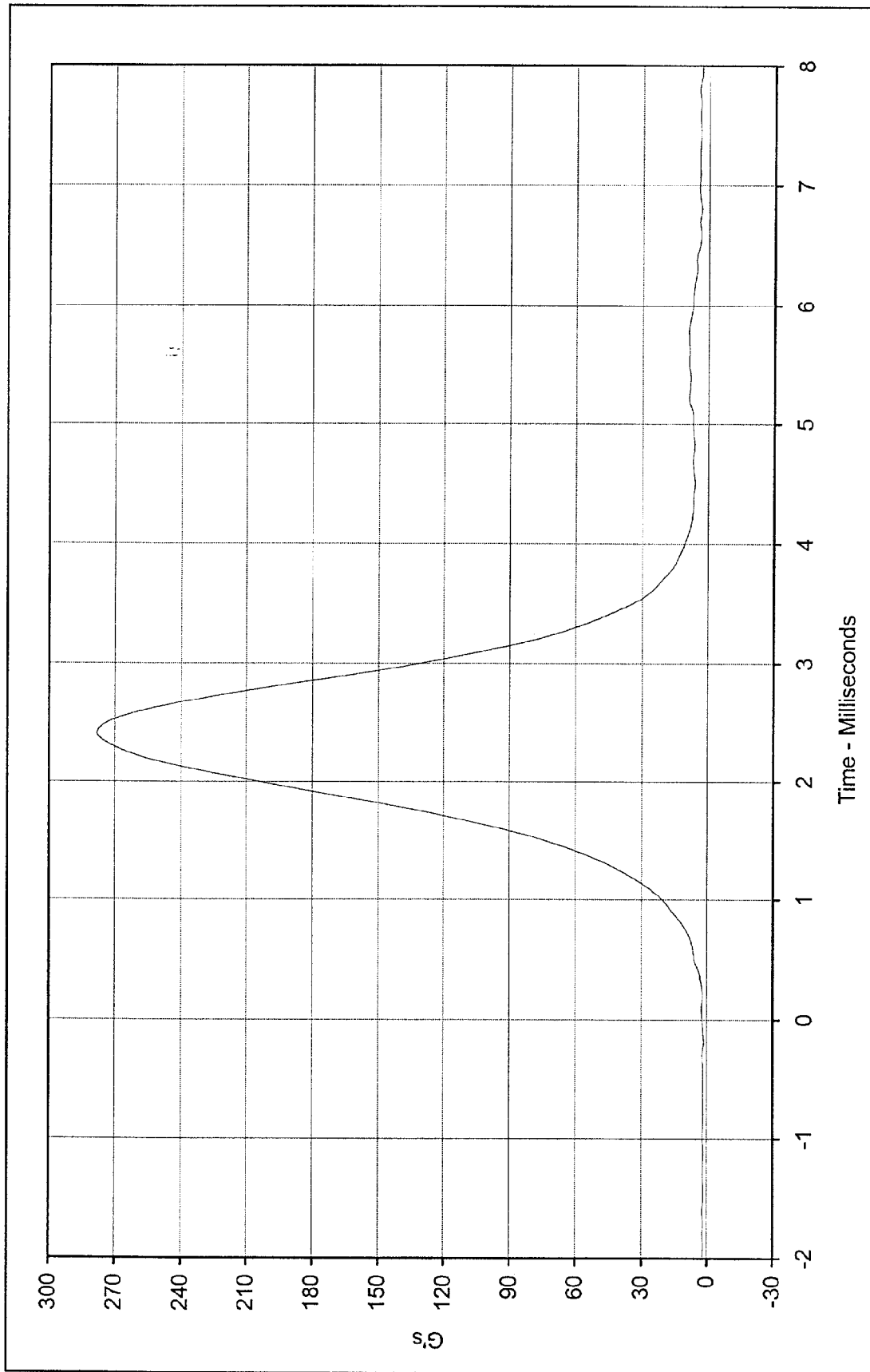
Test Date



Approved By

7/29/97

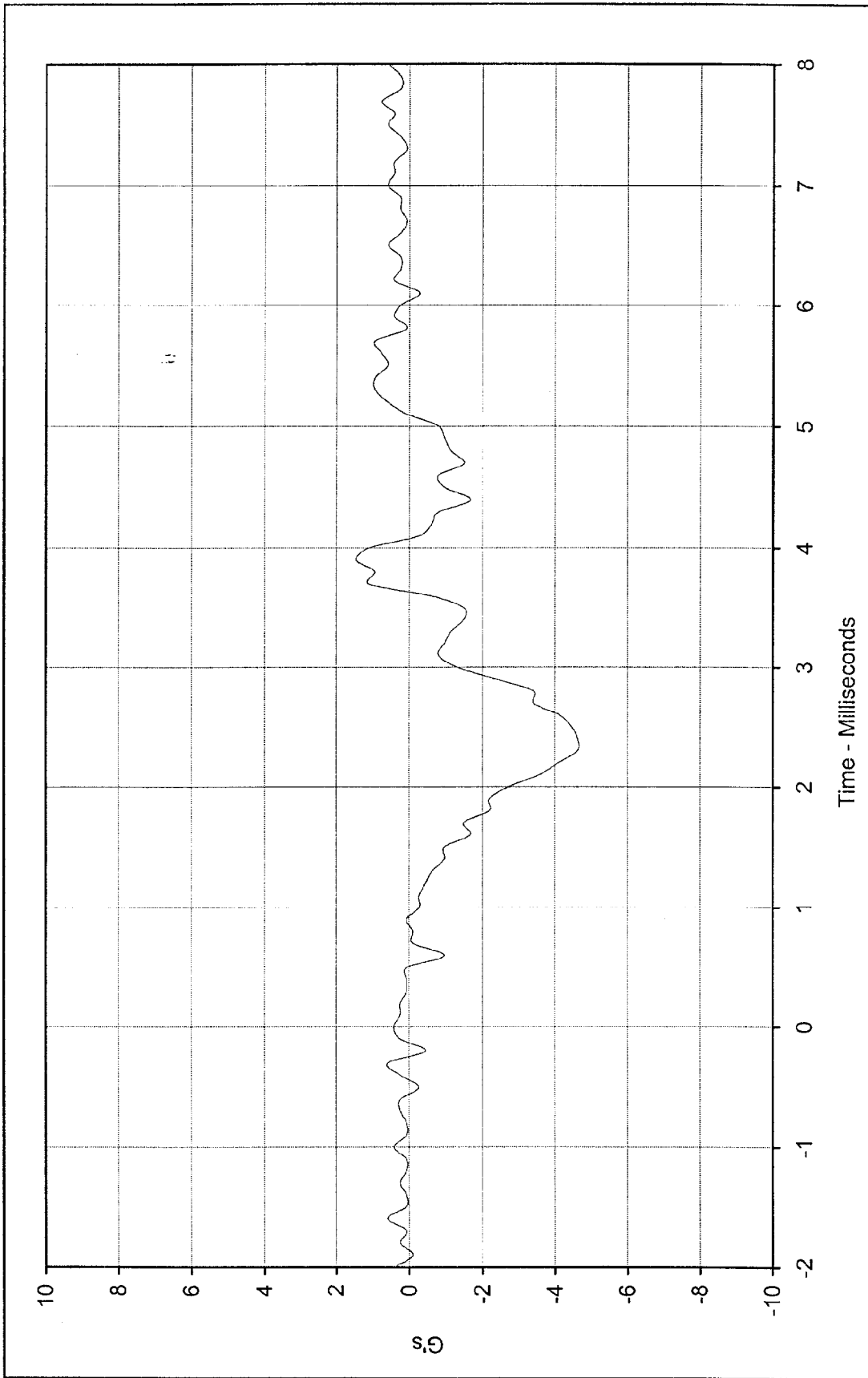
Date



Curve Description: Head Resultant Acceleration Testing Program Hybrid III Head Drop Calibration (Female)
 Maximum Value: 278.0 at 2.4 Milliseconds Test Information: S/N of Part: N/A Test I.D.: 274HD
 Minimum Value: 1.3 at -0.2 Milliseconds

SAE Filter Class: 1000
 Date of Test: 7/29/97
 ATD Serial No.: 274

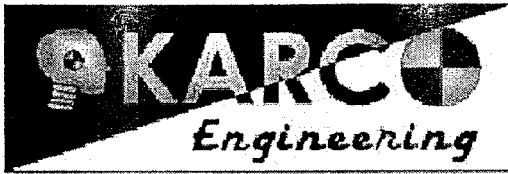




Curve Description: Head Acceleration Y Axis
 Maximum Value: 1.5 at 3.9 Milliseconds
 Minimum Value: -4.6 at 2.3 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 7/29/97
 ATD Serial No.: 274

Testing Program Hybrid III Head Drop Calibration (Female)
 Test Information: S/N of Part: N/A Test I.D.: 274HD





Hybrid III Calibration Data Sheet

5TH Percentile Female

Thorax Impact Test

ATD Serial No.: 274

Part Serial No.: N/A

Test I.D.: FC001

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
Peak Probe Force	Newtons	3800 to 4300	3972	Pass
Peak Sternum Displacement	CM	5.1 to 5.8	5.4	Pass
Internal Hysteresis	%	69 to 85	74.9	Pass
Overall Test Results				Pass

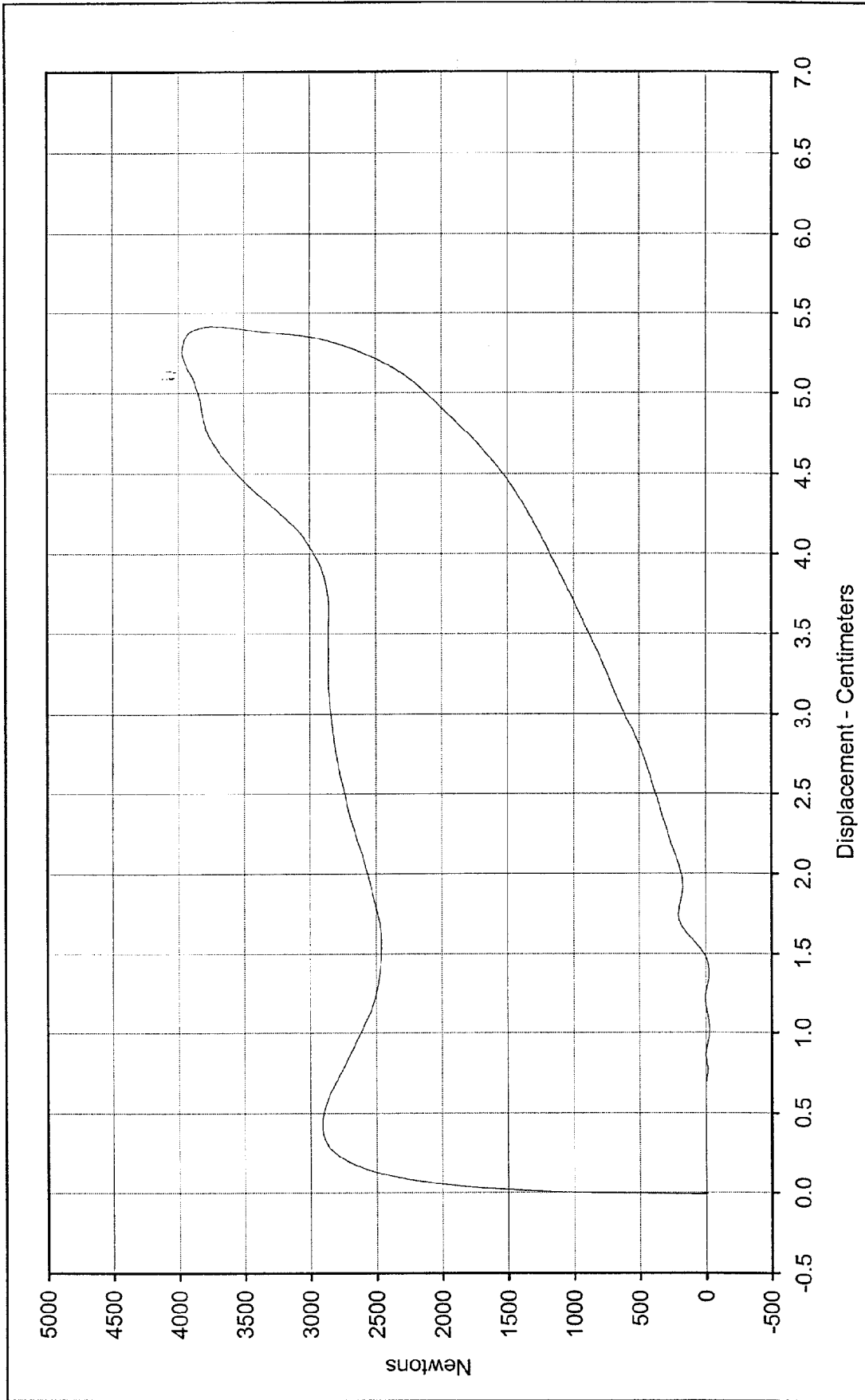
Laboratory Technician

Approved By

August 4, 1997

Test Date

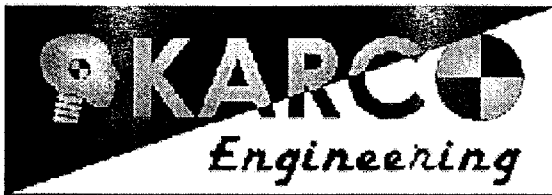
Date



Curve Description: Probe Force vs. Chest Displacement Testing Program Hybrid III Thorax Impact Test (5TH Female)
 Probe Force: 3972.2 Newtons Test Information: S/N of Part: N/A Test I.D.: FC001
 Chest Displ.: 5.42 Centimeters



SAE Filter Class: 180
 Date of Test: 8/4/97
 ATD Serial No.: 274



Hybrid III Calibration Data Sheet

5TH Percentile Female

Neck Flexion Test

ATD Serial No.: 274

Part Serial No.: N/A

Test I.D.: FNF03

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	7.06	Pass	
Pendulum Deceleration	10 Msec	m/s	2.10 to 2.50	2.12	Pass
	20 Msec	m/s	4.00 to 5.00	4.77	Pass
	30 Msec	m/s	5.80 to 7.00	6.75	Pass
Maximum "D" Plane Rotation	Degrees	78.0 to 96.0	95.4	Pass	
"D" Plane Rotation Decay, Time From Peak Value To Zero Crossing	Msec.	57.0 to 69.0	66.0	Pass	
Moment About Occipital Condyle	N•m	69.0 to 84.0	78.3	Pass	
Moment About Occipital Condyle Decay, Time From Peak Value To Zero Crossing	Msec.	41.0 to 50.0	44.9	Pass	
Time of Peak Rotation With Respect to Peak Moment	Msec.	2.0 to 12.0	2.9	Pass	
Overall Test Results				Pass	



 Laboratory Technician



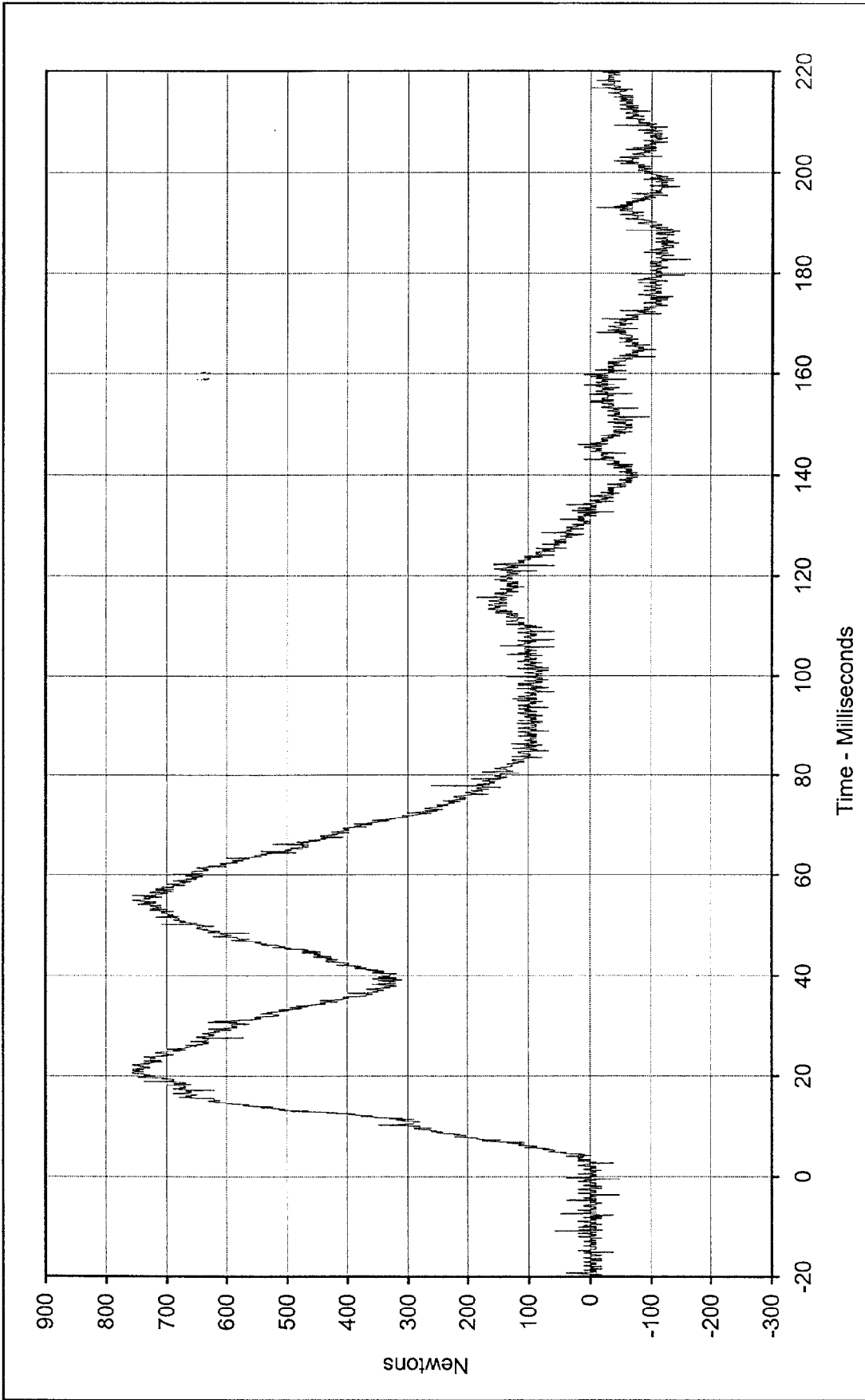
 Approved By

August 6, 1997

 Test Date

 8/6/97

 Date



Curve Description: Neck Force X

Maximum Value: 756.3 at 20.5 Milliseconds

Minimum Value: -164.8 at 182.7 Milliseconds

SAE Filter Class: 1000

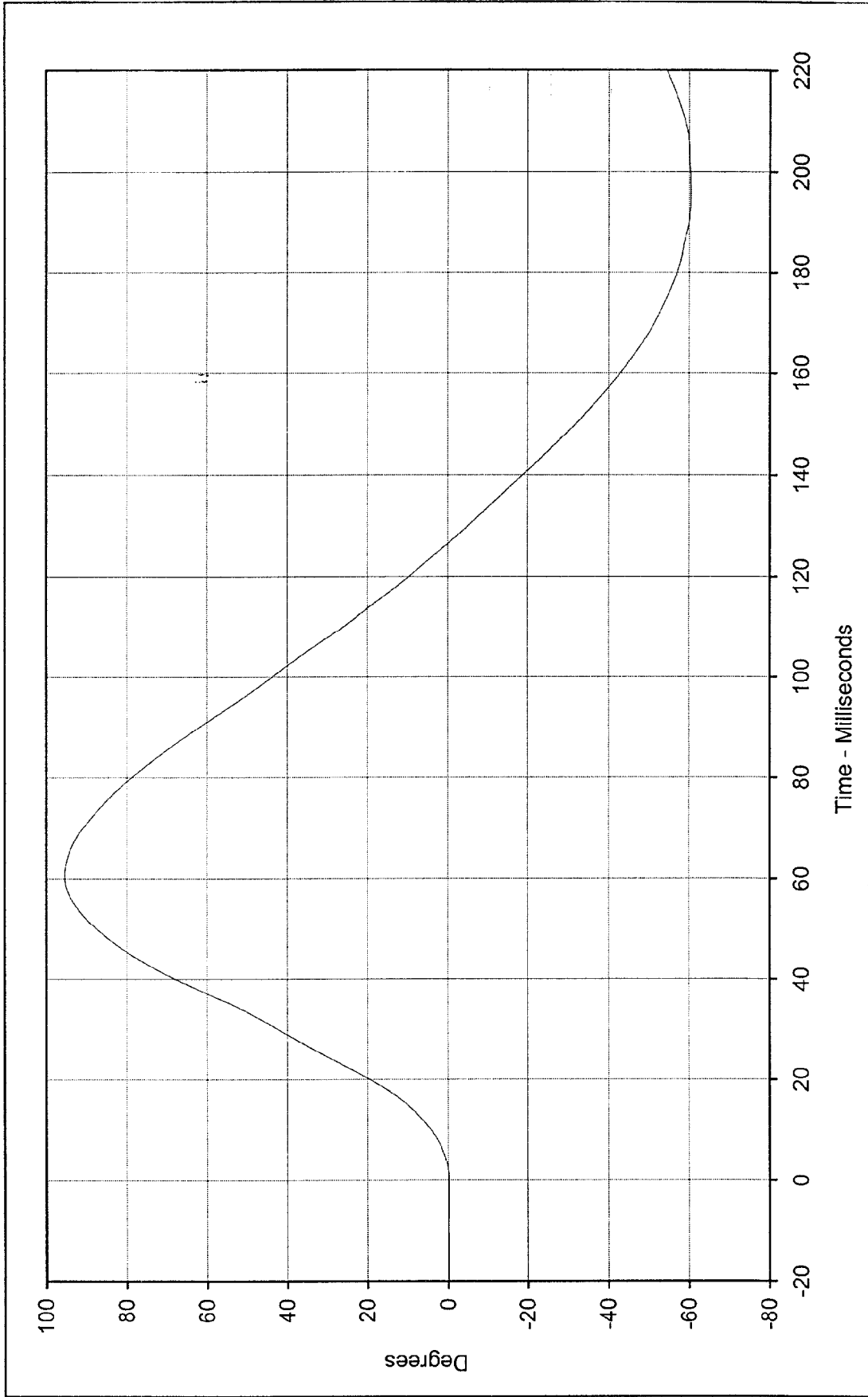
Date of Test: 8/6/97

ATD Serial No.: 274

Testing Program: Hybrid III Neck Flexion Test (Female)

Test Information: S/N of Part: N/A Test I.D.: FNF03

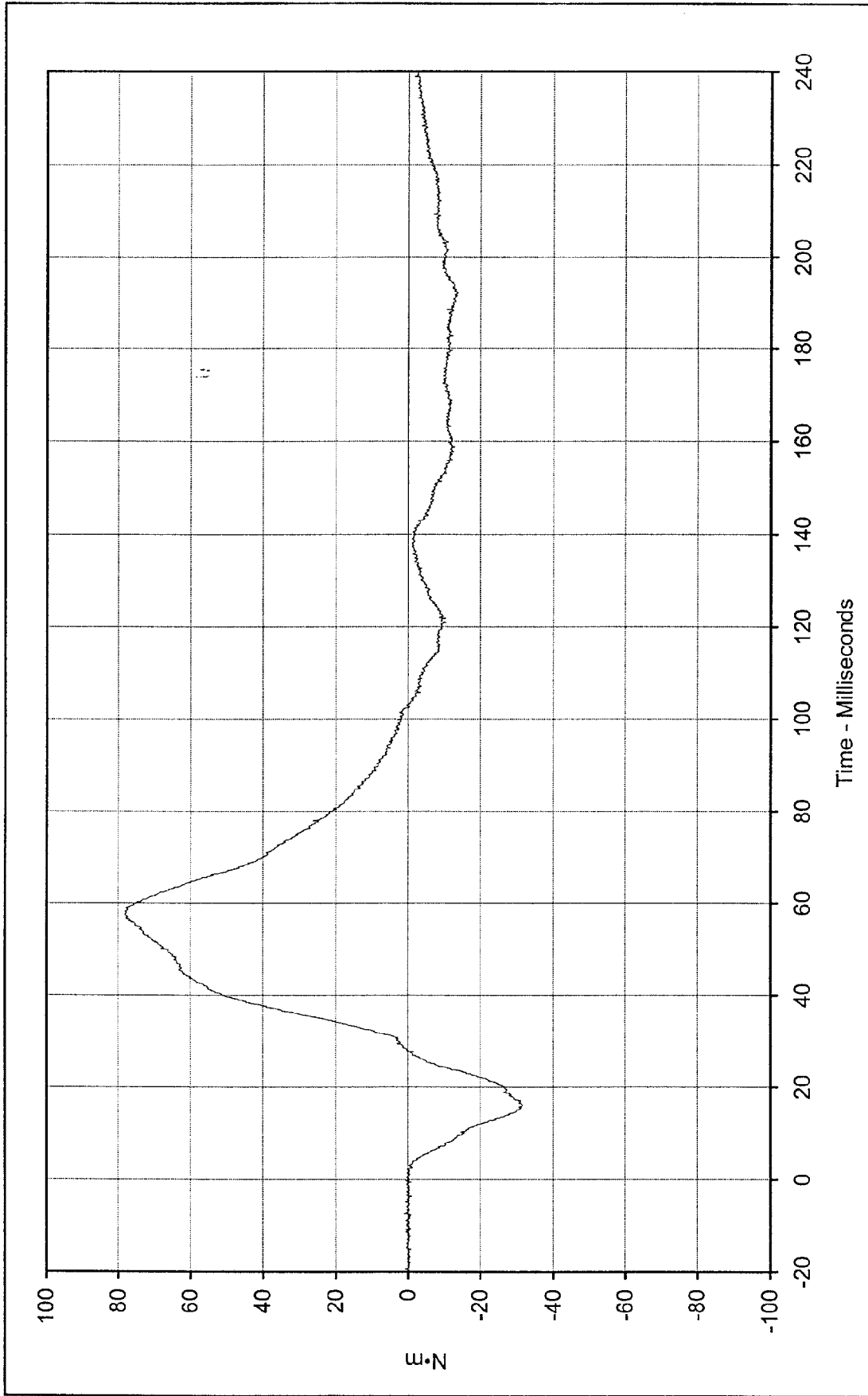




Curve Description: "D" Plane Rotation
 Maximum Value: 95.4 at 60.6 Milliseconds
 Minimum Value: -60.4 at 195.1 Milliseconds
 SAE Filter Class: 60
 Date of Test: 8/6/97
 ATD Serial No.: 274

Testing Program: Hybrid III Neck Flexion Test (Female)
 Test Information: S/N of Part: N/A Test I.D.: FNF03

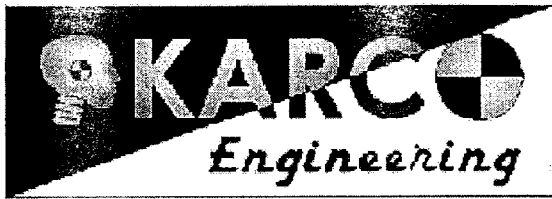




Curve Description: Moment About Occipital Condyles
 Testing Program: Hybrid III Neck Flexion Test (Female)
 Maximum Value: 78.3 at 57.7 Milliseconds
 Test Information: S/N of Part: N/A Test I.D.: FNF03
 Minimum Value: -31.7 at 16.2 Milliseconds



SAE Filter Class: 600
 Date of Test: 8/6/97
 ATD Serial No.: 274



Hybrid III Calibration Data Sheet

5TH Percentile Female

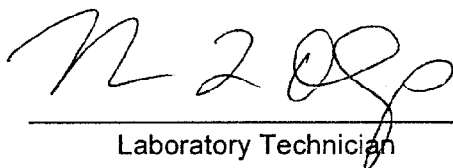
Neck Extension Test

ATD Serial No.: 274

Part Serial No.: N/A

Test I.D.: FNE03

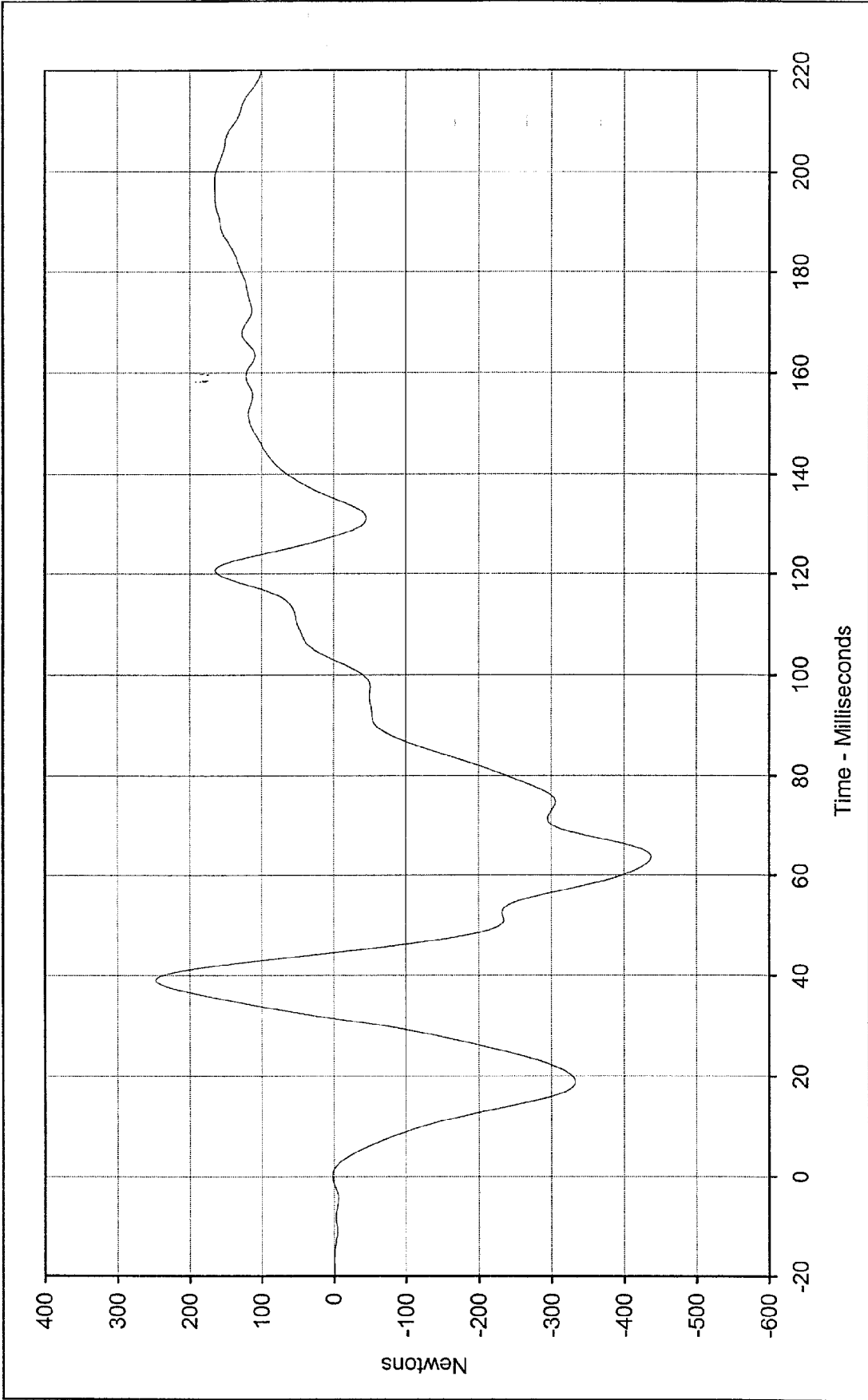
Tested Parameter	Units	Specification	Result	Pass/Fail	
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass	
Laboratory Relative Humidity	%	10 to 70	40	Pass	
Pendulum Velocity	m/s	5.95 to 6.19	6.09	Pass	
Pendulum Deceleration	10 Msec	m/s	1.50 to 1.90	1.63	Pass
	20 Msec	m/s	3.10 to 3.90	3.83	Pass
	30 Msec	m/s	4.60 to 5.60	5.40	Pass
Maximum "D" Plane Rotation	Degrees	97.0 to 119.0	104.0	Pass	
"D" Plane Rotation Decay, Angle When the Decaying Y Moment is at -10 N•m	Degrees	80.0 to 96.0	87.1	Pass	
Calculated Moment About Occipital Condyle	N•m	-54 to -67	-64.0	Pass	
Moment About Occipital Condyle Decay, Time From Negative Peak Value To -10 N•m	Msec.	28.0 to 38.0	30.2	Pass	
Overall Test Results				Pass	


 Laboratory Technician


 Approved By

August 6, 1997
 Test Date

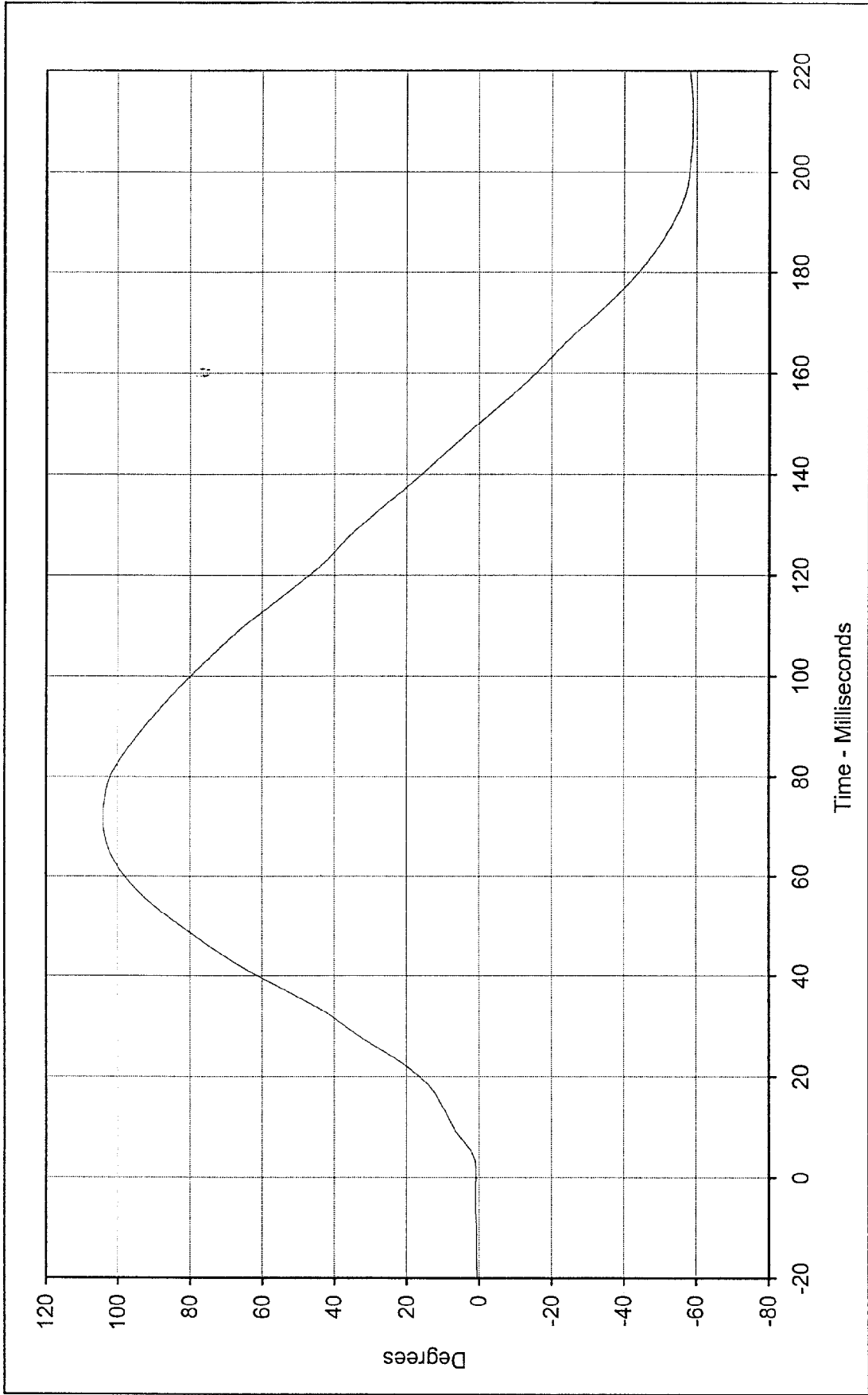
8/6/97
 Date



Curve Description: Neck Force X
 Maximum Value: 247.2 at 39.1 Milliseconds
 Minimum Value: -437.0 at 63.7 Milliseconds
 SAE Filter Class: 60
 Date of Test: 8/6/97
 ATD Serial No.: 274

Testing Program: Hybrid III Neck Extension Test (Female)
 Test Information: S/N of Part: N/A Test I.D.: FNE03

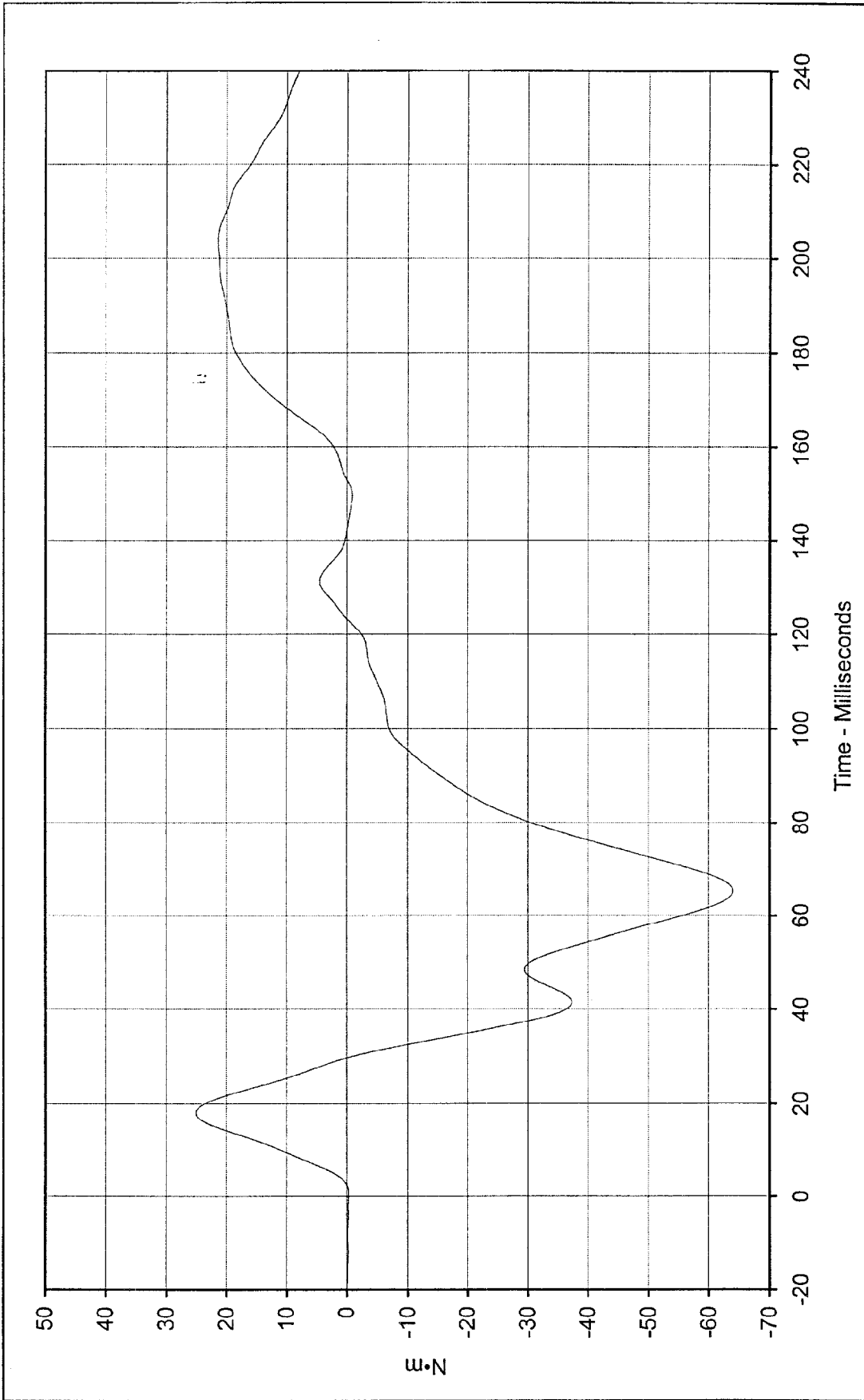




Curve Description: "D" Plane Rotation
 Maximum Value: 104.0 at 71.8 Milliseconds
 Minimum Value: -58.9 at 207.7 Milliseconds
 SAE Filter Class: 60
 Date of Test: 8/6/97
 ATD Serial No.: 274

Testing Program: Hybrid III Neck Extension Test (Female)
 Test Information: S/N of Part: N/A Test I.D.: FNE03





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

Maximum Value: 25.1 at 18.0 Milliseconds

Minimum Value: -64.0 at 65.3 Milliseconds

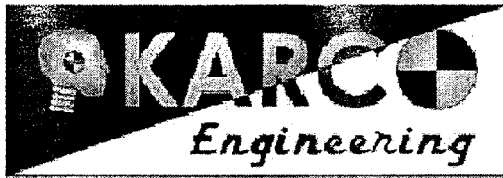
SAE Filter Class: 60

Date of Test: 8/6/97

ATD Serial No.: 274

Test Information: S/N of Part: N/A Test I.D.: FNE03





Hybrid III Calibration Data Sheet

50TH Percentile Female

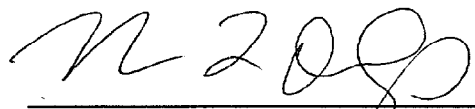
External Measurements

ATD Serial No.: 274

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	791.0	Pass
B - Shoulder pivot height	mm	434.0 to 450.0	445.0	Pass
C - "H" point height	mm	81.5 to 86.5	84.0	Pass
D - "H" point from seat back	mm	144.5 to 149.5	147.0	Pass
E - Shoulder pivot from back	mm	71.0 to 81.0	80.0	Pass
F - Thigh clearance	mm	114.0 to 130.0	125.0	Pass
G - Elbow to finger tip	mm	393.0 to 409.0	396.0	Pass
H - Skull cap to back line	mm	43.2 to 48.5	46.0	Pass
I - Shoulder to elbow length	mm	287.0 to 303.0	298.0	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	532.0	Pass
L - Popliteal height	mm	349.5 to 373.5	370.0	Pass
M - Knee to floor height	mm	449.0 to 465.0	459.0	Pass
N - Buttock popliteal length	mm	399.5 to 423.5	422.0	Pass
O - Chest depth	mm	183.0 to 200.0	197.0	Pass
P - Foot length	mm	216.0 to 232.0	230.0	Pass
R - Foot width	mm	76.0 to 92.0	90.0	Pass
V - Shoulder width	mm	348.0 to 364.0	361.0	Pass
W - Hip width at "H" point	mm	299.0 to 315.0	299.0	Pass
X - Chest circumference	mm	783.0 to 813.0	785.0	Pass
Y - Waist circumference	mm	757.0 to 787.0	780.0	Pass
AA - Location for chest circumference	mm	300.0 to 310.0	305.0	Pass
BB - Location for waist circumference	mm	160.0 to 170.0	168.0	Pass
Overall Test Results				Pass



 Laboratory Technician

August 6, 1997

 Test Date



 Approved By

8/6/97

 Date

APPENDIX F
VEHICLE OWNER'S MANUAL
OCCUPANT RESTRAINT INSTRUCTIONS

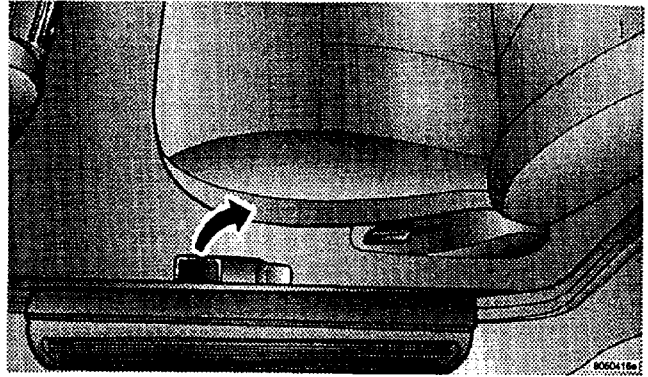
NOTE: For emergency exit with the system engaged, move the lock plunger up (unlocked position), roll down window and open the door with the outside door handle.

POWER WINDOWS — OPTIONAL

The window switches on the driver's door panel control both front windows. The switch on the passenger's door panel controls the passenger's window.

TRUNK LOCK AND RELEASE — OPTIONAL

Use the key to open the trunk from outside the vehicle. From inside the vehicle the trunk lid can be released by lifting the remote cable release lever. The lever is just outboard of the driver's seat riser, next to the sill trim.



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 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 unibelt 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.

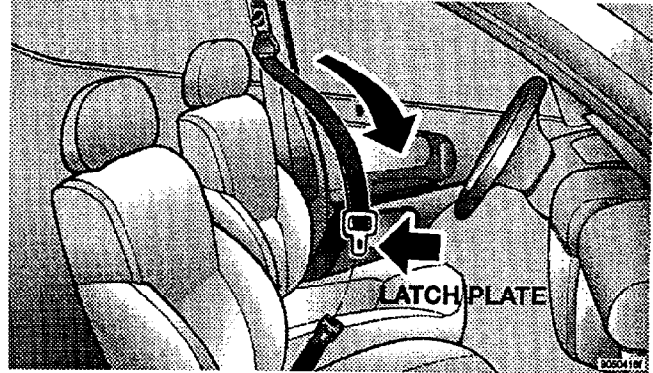
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WARNING!

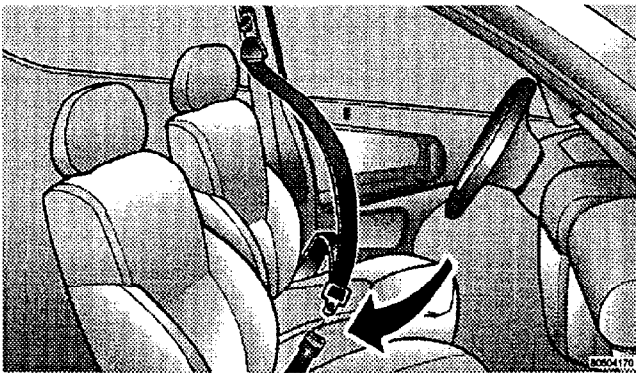
- Wearing a seat belt incorrectly is dangerous. Seat belts are designed to go around the large bones of your body. These are the strongest parts of your body and can take the forces of a collision the best.
- Wearing your belt in the wrong place could make your injuries in a collision much worse. You 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.
- 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 unibelt or a lap belt for more than one person, no matter what their size.

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.



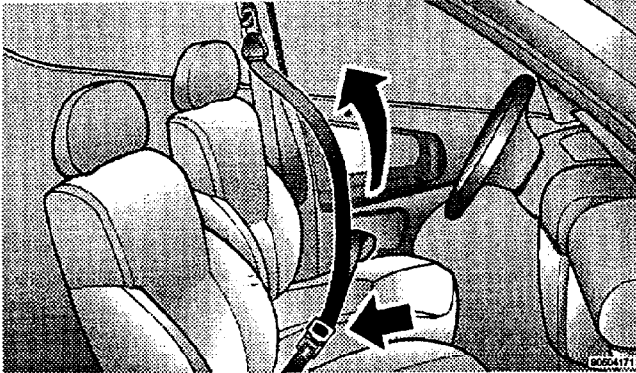
3. When the belt is long enough to fit, insert the latch plate into the buckle until you hear a "click".

**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.

2

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!**

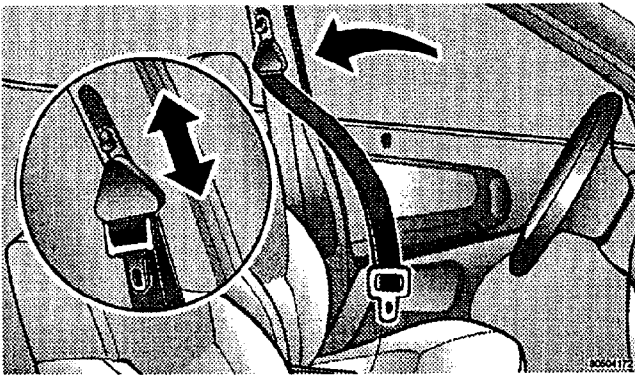
- A lap belt worn too high can increase the risk of internal injury in a collision. The belt forces won't be at the strong hip and pelvic bones, but across your abdomen. Always wear the lap belt as low as possible and keep it snug.
- A twisted belt can't do its job as well. In a collision it could even 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.

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. 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.

2**2 Door Models**

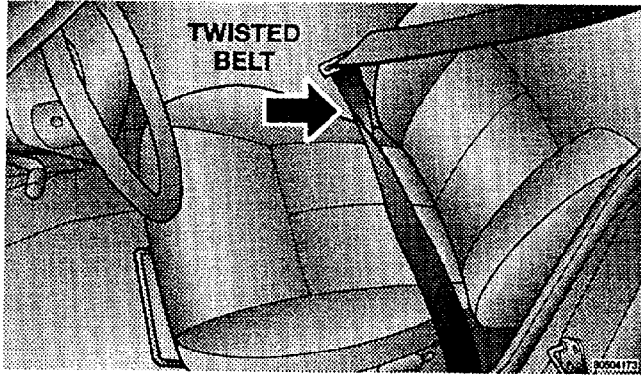
In the front seats, the shoulder belt upper anchorage adjusts automatically to your height as you position the shoulder belt on your chest. If the belt is not comfortable, pull the shoulder belt webbing forward from the retractor and guide it over the desired point on your shoulder belt as it retracts.

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

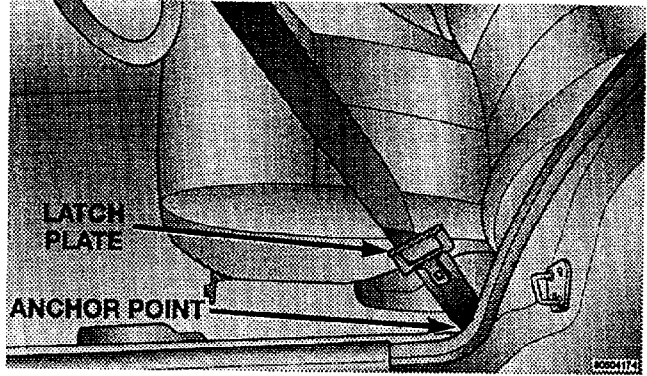
To release the belt, push the red button marked PRESS on the buckle. The belt will automatically retract to its stowed position. If necessary, slide the latch plate down the webbing to allow it to retract fully.

Unibelt Untwisting Procedure

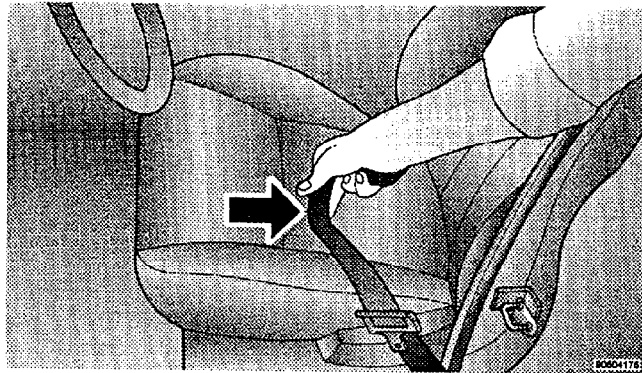
Use the following procedure to untwist a twisted unibelt.



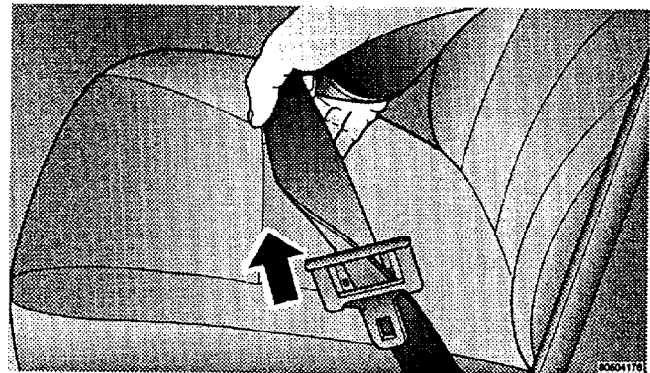
1. Position the latchplate as close as possible to the anchor point.



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.



2

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.

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. (9 kg)
- 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.

THINGS TO KNOW BEFORE STARTING YOUR VEHICLE 2

- 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 rear seats, you may have trouble tightening the belt on the child restraint because the buckle or latch plate interferes with the belt path opening on the restraint. Disconnect the latch plate from the buckle and twist the short buckle-end belt several turns to shorten it. Reassemble the latch plate to the buckle with the release button facing out.

In the front seat, move the seat forward to reposition the buckle against the side of the child restraint.

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 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.

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 im-

proved protection for the driver and right front passenger.

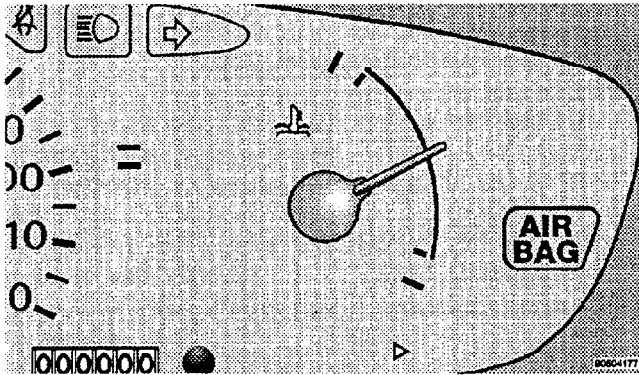
WARNING!

- 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. Sit back, comfortably extending your arms to reach the steering wheel or instrument panel.

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.

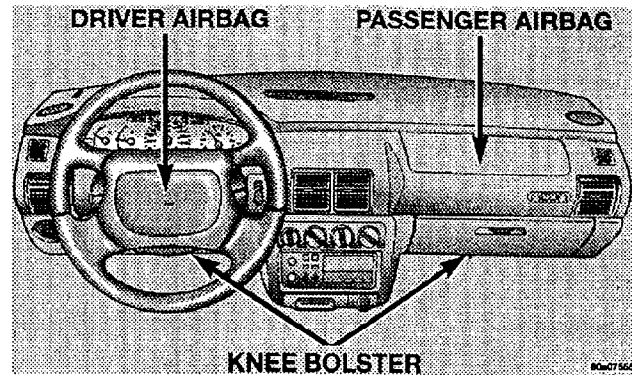
The airbag system consists of the following:

- Crash Sensors
- Diagnostic Unit
- 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

- Crash Sensors in the front of the vehicle and in the occupant compartment determine if a frontal impact is severe enough to require the airbag. The sensors will not detect side, rollover, or rear impacts. Switches in the sensors are connected to the diagnostic unit and to the airbag/inflator unit.
- The Diagnostic Unit 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 Diagnostic Unit 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

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 crash sensors detect an impact requiring the airbags, they signal 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 impact sensors detect 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 safely driveable 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.

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.

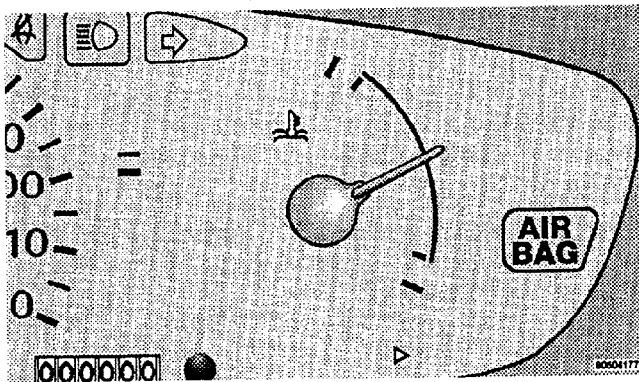
Maintaining Your Airbag System**WARNING!**

- 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.

2

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.

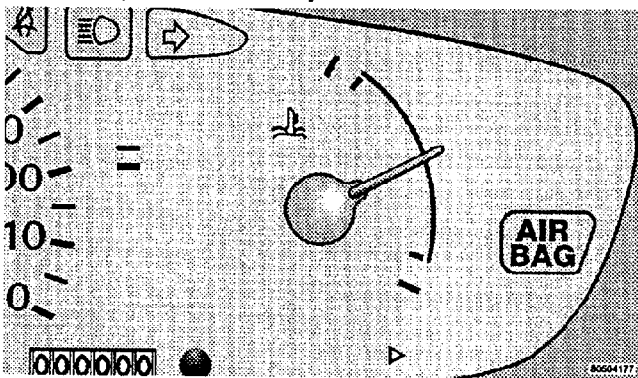
Safety Checks You Should Make Inside The Vehicle**Seat Belts**

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.

Periodic Safety Checks You Should Make Outside The Vehicle**Tires**

Examine tires for excessive tread wear or uneven wear patterns. Check for stones, nails, glass, or other objects lodged in the tread. Inspect for tread cuts or sidewall cracks. Check wheel nuts for tightness, and tires (including spare) for proper pressure.

Lights

Have someone observe the operation of exterior lights while you work the controls. Check turn signal and high beam indicator lights on the instrument panel.

Fluid Leaks

Check area under vehicle after overnight parking for fuel, water, oil, or other fluid leaks. Also, if gasoline fumes are present, the cause should be corrected immediately.

2