

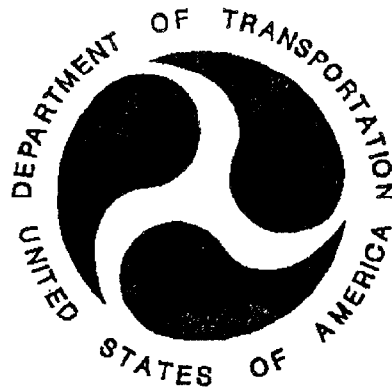
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REPORT NO. KAR-98-3

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

HONDA MOTORS CORPORATION
1998 HONDA CIVIC DX
4-DOOR SEDAN
NHTSA NO. MW5302

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



DECEMBER 26, 1997
FINAL REPORT

PREPARED FOR:
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Date of Acceptance

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16. <i>Abstract</i> A 35 mph (56.3 km/h) frontal barrier impact test was conducted on a 1998 HONDA CIVIC DX 4-DOOR SEDAN at KARCO Engineering on December 11, 1997. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301 and footwell intrusion performance. The impact velocity was 56.73 km/h. The ambient temperature at the barrier face at the time of impact was 7.2°C. The vehicle's maximum post-test static crush was 530 mm, located at the centerline of the vehicle. The test vehicle was equipped with a 3-point continuous belt system and second generation supplemental airbags at both frontal outboard-seating positions. With respect to FMVSS 208 "Occupant Crash Protection - Injury Criteria" the occupant injury response data summary is as follows: <table border="1"> <thead> <tr> <th><u>Injury Criteria</u></th> <th><u>Threshold Value</u></th> <th><u>Driver Dummy</u></th> <th><u>Passenger Dummy</u></th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC)</td> <td>1000</td> <td>619.5</td> <td>530.8</td> </tr> <tr> <td>Chest Resultant Peak 3 msec clip</td> <td>60 G's</td> <td>49.8</td> <td>54.8</td> </tr> <tr> <td>Left Femur Force</td> <td>10009 N</td> <td>-4475.6</td> <td>-3406.1</td> </tr> <tr> <td>Right Femur Force</td> <td>10009 N</td> <td>-4406.3</td> <td>-3928.8</td> </tr> </tbody> </table>				<u>Injury Criteria</u>	<u>Threshold Value</u>	<u>Driver Dummy</u>	<u>Passenger Dummy</u>	Head Injury Criteria (HIC)	1000	619.5	530.8	Chest Resultant Peak 3 msec clip	60 G's	49.8	54.8	Left Femur Force	10009 N	-4475.6	-3406.1	Right Femur Force	10009 N	-4406.3	-3928.8
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SECTION 1

PURPOSE, TEST PROCEDURE AND SUMMARY OF TEST MW5302

1.1 PURPOSE

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

1.2 TEST PROCEDURE

This 56.3 km/h frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards (OCS) New Car Assessment Program (NCAP) Laboratory Indicant Test Procedure, dated 01 October 1996 and corresponding KARCO Engineering Test Procedure KTP-001, dated October 18, 1996. Data was obtained indicant of FMVSS 208, "Occupant Crash Protection"; FMVSS 212, "Windshield Retention"; FMVSS 219, "Windshield Zone Intrusion (Partial)"; and FMVSS 301 "Fuel System Integrity" performance. Procedures for receiving, inspection testing and reporting of test results are described in the test procedures and are not repeated in this report.

The test was conducted at KARCO Engineering on December 11, 1997, at a speed of 56.73 km/h. The test vehicle was instrumented with nine (9) accelerometers to measure longitudinal axis accelerations. The driver and passenger's restraint systems were instrumented with four (4) seat belt load cells to measure lap and shoulder belt tension. The specified impact velocity range was 55.5 to 57.1 km/h. The frontal barrier impact event was documented by one (1) real-time panning motion picture camera and seventeen (17) high-speed motion picture cameras. The pre- and post-test conditions were recorded by one (1) real-time motion picture camera. Camera locations and pertinent camera information is documented in the data sheets. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

The test vehicle contained two (2) part 572E 50th percentile adult male anthropomorphic test devices (ATDs). Both ATDs were instrumented with head and chest primary and redundant tri-axial accelerometers, pelvic tri-axial accelerometers, left/right femur load cells, left/right lower leg sensors and left/right feet accelerometers. In addition, chest displacement and neck six-axis load and moment sensors were utilized. Seat belt load cells were also placed on the driver and passenger shoulder and lap belts to measure torso and pelvic section loading. The ATDs were positioned in the front outboard seating positions according to the dummy placement procedures specified in the Laboratory Indicant Test Procedure. Ninety-six channels of data were recorded with a PC based (TDAS) on-board data acquisition system. The data was digitally sampled at 10,000 samples per second and processed per section IP11 of the Laboratory Indicant Test Procedure.

The Driver ATD (serial No. 34) and the right-front passenger ATD (serial No. 35) were used in two frontal impact tests since their last calibration. Injury criteria were not exceeded by either ATD during this NCAP frontal offset impact test.

1.3 SUMMARY OF FRONTAL BARRIER IMPACT TEST

A immovable barrier was impacted by a 1998 HONDA CIVIC DX 4-DOOR SEDAN at a velocity of 56.62 km/h. The test weight, with two (2) 50th percentile male ATDs, was 1626 kg.

The driver's Head Injury Criteria (HIC) was 619.5, the maximum chest deceleration over three (3) milliseconds was 49.8 g and the left and right femur loads were -4475.6 and -4406.3 Newtons, respectively. Chest deflection for the driver ATD was -40.1 mm. The driver ATD head contacted the airbag and D-ring and B-pillar, its chest and abdomen contacted the airbag, and both knees contacted the lower dash knee bolster, with the left knee contacting the steering column.

The right front passenger's HIC was 530.8, maximum chest deceleration over three (3) milliseconds was 54.8 g, and the left and right femur loads were -3406.1 and -3928.8 Newtons respectively. Chest deflection for the passenger ATD was -28.4 mm. The passenger ATD head contacted the airbag and headrest, the chest and abdomen contacted the airbag and seat belt both knees contacted the glove box and knee bolster.

Seat belt spoolout, measured by on-board pullout potentiometers was 60.9 mm for the driver ATD and 46.0 mm for the passenger ATD. Shoulder belt stretch was 0.25 mm/cm for the driver ATD and 0.54 mm/cm for the passenger ATD.

There was 71.9 percent windshield retention (minimum 50 percent required for passive restraint systems), no intrusion into the protected or unprotected zone of the windshield, and no Stoddard solvent leakage occurred after impact or during any phase of the rollover.

The test vehicle sustained a maximum static crush of 530 mm at the vehicle centerline. The driver side door opened without the aid of tools. The passenger side door opened without the aid of tools.

1.4 GENERAL COMMENTS

The 1998 HONDA CIVIC DX 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 dummy, vehicle and response data traces. Appendix C Load Cell Barrier information, is not applicable to this test. Appendix D contains the instrumentation data channel assignments. 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: 56.3 km/h New Car Assessment Program (NCAP) Frontal Barrier Impact

CONVERSION FACTORS USED IN THIS REPORT:

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

DATA SHEET NO. 1

CRASH TEST SUMMARY

TEST VEHICLE: 1998 HONDA CIVIC DX 4-DOOR SEDAN NHTSA NO. MW5302

TEST MODE: 56.3 km/h NCAP Frontal Barrier Impact

TEST DATE: December 11, 1997 TIME: 2:00 PM TEMPERATURE: 7.2° C

TEST WEIGHT: 1272 kg IMPACT VELOCITY: 56.73 km/h

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

Measurements in mm	Left Side	Centerline	Right Side
Vehicle Rebound	605	530	610

VEHICLE STATIC CRUSH

Measurements in mm	Left	Center	Right
Pre-test Measurements	4200	4440	4200
Post-test Measurements	3820	3910	3870
Static Crush	-380	-530	-330

DOOR OPENING AND SEAT TRACK INFORMATION

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

DUMMY INFORMATION

	Driver	Passenger
Dummy Type/No.	5% Female Hybrid III (S/N 34)	5% Female Hybrid III (S/N 35)
Data Channels	44	44
Visible Contact Points		
Head	D-RING, AIR BAG, B-PILLAR	AIR BAG, HEAD REST
Chest	AIR BAG	AIR BAG
Abdomen	AIR BAG	AIR BAG
Left Knee	KNEE BOLSTER	KNEE BOLSTER
Right Knee	KNEE BOLSTER, STEERING COLUMN	KNEE BOLSTER

DATA SHEET NO. 2

GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE: 1998 HONDA CIVIC DX 4-DOOR SEDAN

TEST VEHICLE INFORMATION			
Manufacturer	HONDA MOTOR COMPANY	VIN	JHMEJ6623WS000844
Manufacturing Date	9/97	Delivery Date	12/5/97
Dealer	VALLEY HI-TOYOTA/HONDA	NHTSA No.	MW5302
Odometer Reading	00018 mi.	Fuel Type	Unleaded Gasoline
Engine Displacement	1590 cc	Cylinders	4
Transmission	AUTOMATIC	Final Drive	FRONT
Engine Placement	TRANSVERSE	Color	DARK GREEN
Tire Press./Max. Cap. Front	210 kPa	Cold Tire Press. Front	210 kPa
Tire Press./Max. Cap. Rear	200 kPa	Cold Tire Press. Rear	200 kPa
Recommend Tire Size	P185/65R14 85S	Type of Spare	TEMPORARY T105/80D13 82M
Tire Size on Vehicle	P185/65R14 85S	Manufacturer	FIRESTONE
GVWR	1510 kg	Cargo Capacity	46 kg
GAWR Front	798 kg	GAWR Rear	730 kg
Air Conditioning	YES	Power Steering	YES
Power Brakes	YES	AM/FM/Cassette	YES
Disc Brakes (Front)	YES	Disc Brakes (Rear)	YES
Power Windows	NO	Tilt Steering	YES
Anti-lock Brakes (ABS)	YES	Power Seats	NO
Driver Airbag	YES	Passenger Airbag	YES

VEHICLE CAPACITY DATA:

TYPE OF FRONT SEATS Split Bench

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

WEIGHT OF VEHICLE AS RECEIVED AT KARCO (with maximum fluids): 1179 kg

Data Sheet No. 2... (Continued)

VEHICLE CAPACITY WEIGHT (kg):
 Vehicle Capacity Weight 386 kg
 Occupant Weight 340 kg
 Rated Cargo/Luggage Weight (RCLW) 46 kg

	FRONT	REAR	TOTAL
Right	328	204	532
Left	337	210	547
Total	665	414	1079
Percent of Total	61.6	38.4	100%

CALCULATION OF TEST
 TARGET WEIGHT (kg):

Total Delivered Weight 1079 kg
 RCLW 46 kg
 Weight of 2 P572 ATDs 152 kg
 TARGET TEST WEIGHT 1277 kg

TEST WEIGHT OF VEHICLE WITH 2 ATDs AND BALLAST

	FRONT	REAR	TOTAL
Right	362	272	634
Left	367	271	638
Total	729	543	1272
Percent of Total	57.3	42.7	100%

Weight of Ballast secured in cargo area: 0 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 and spare tire.

TEST VEHICLE ATTITUDE (mm)

ATTITUDE	LF	RF	LR	RR
As Delivered	630	640	650	660
As Tested	600	600	620	620

Vehicle Wheelbase: 2642 mm

FUEL SYSTEM DATA:

Fuel System Capacity From Owner's Manual = 45.04 liters

Usable Capacity Figure Furnished by COTR = 45.04 liters

Test Volume Range (92 to 94% of Usable Capacity) = 41.43 to 42.33 liters

ACTUAL TEST VOLUME = 42.01 liters (With entire fuel system filled)

Test Fluid Type = Stoddard Solvent

Specific Gravity = 0.764

Kinematic Viscosity = as per ASTM Standard D484-71

Color = Red

Type of Fuel Pump = Electric X Mechanical _____

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

DETAILS OF FUEL SYSTEM: Electric fuel pump shuts off if RPM is not picked up by sensor.

DATA SHEET NO. 3

POST IMPACT DATA

TEST VEHICLE: 1998 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA NO. MW5302

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

TEST DATE: December 11, 1997

TIME: 2:00 PM

TEMPERATURE: 7.2 ° C

REQUIRED IMPACT VELOCITY RANGE: 55.51 km/h to 57.11 km/h

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

Trap No. 1 = 56.73 km/h

Trap No. 2 = 56.75 km/h

Distance from vehicle to barrier - -

A. entering trap = 1524 mm

B. leaving trap = 305 mm

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

Vehicle Length	Left	Center	Right
Pre-test Measurements (mm)	4200	4440	4200
Post-test Measurements (mm)	3820	3910	3870
Static Crush (mm)	380	530	330
Average	413		

VEHICLE REBOUND: (from rigid barrier with rotational movement)

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

Measurements in mm	Left Side	Centerline	Right Side
Vehicle Rebound	605	530	610

DATA SHEET NO. 4

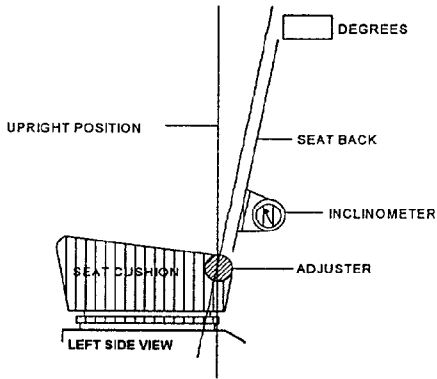
TEST VEHICLE INFORMATION

TEST VEHICLE: 1998 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA NO. MW5302

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 = 25°

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

Seat back angle for passenger's seat = 25°

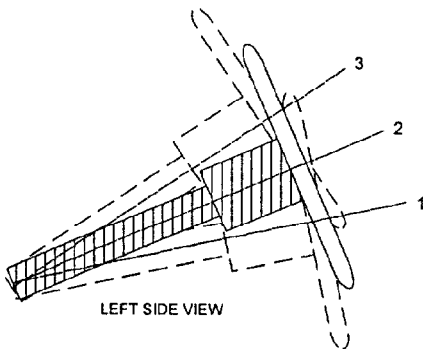
2. SEAT FORE & AFT POSITIONS -

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: 24 seating positions, seat set at detent location no.12, per instructions.

Positioning of the passenger's seat (if applicable): 24 seating positions, set at detent no. 12, per instructions.

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 21°

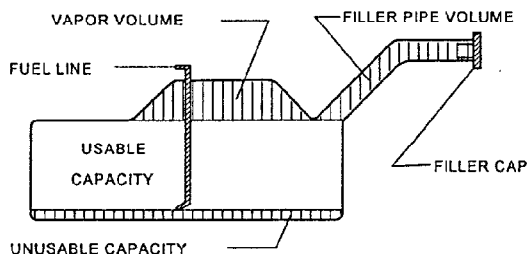
Position No. 2 is at 23.5°

Position No. 3 is at 26°

4. SEAT BELT UPPER ANCHORAGE:

DATA SHEET NO. 4 (continued)

5. FUEL TANK CAPACITY DATA



5.1 A. "Usable Capacity" of standard equipment fuel tank = 45.0 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 = 41.4 to 42.3 liters.

VEHICLE FUEL TANK ASSEMBLY

Operational Instructions:

5.2 Amount of Stoddard solvent added to vehicle(s) used for certification test(s) = 42.0 liters

5.3 Is vehicle equipped with electric fuel pump?

Yes X No _____

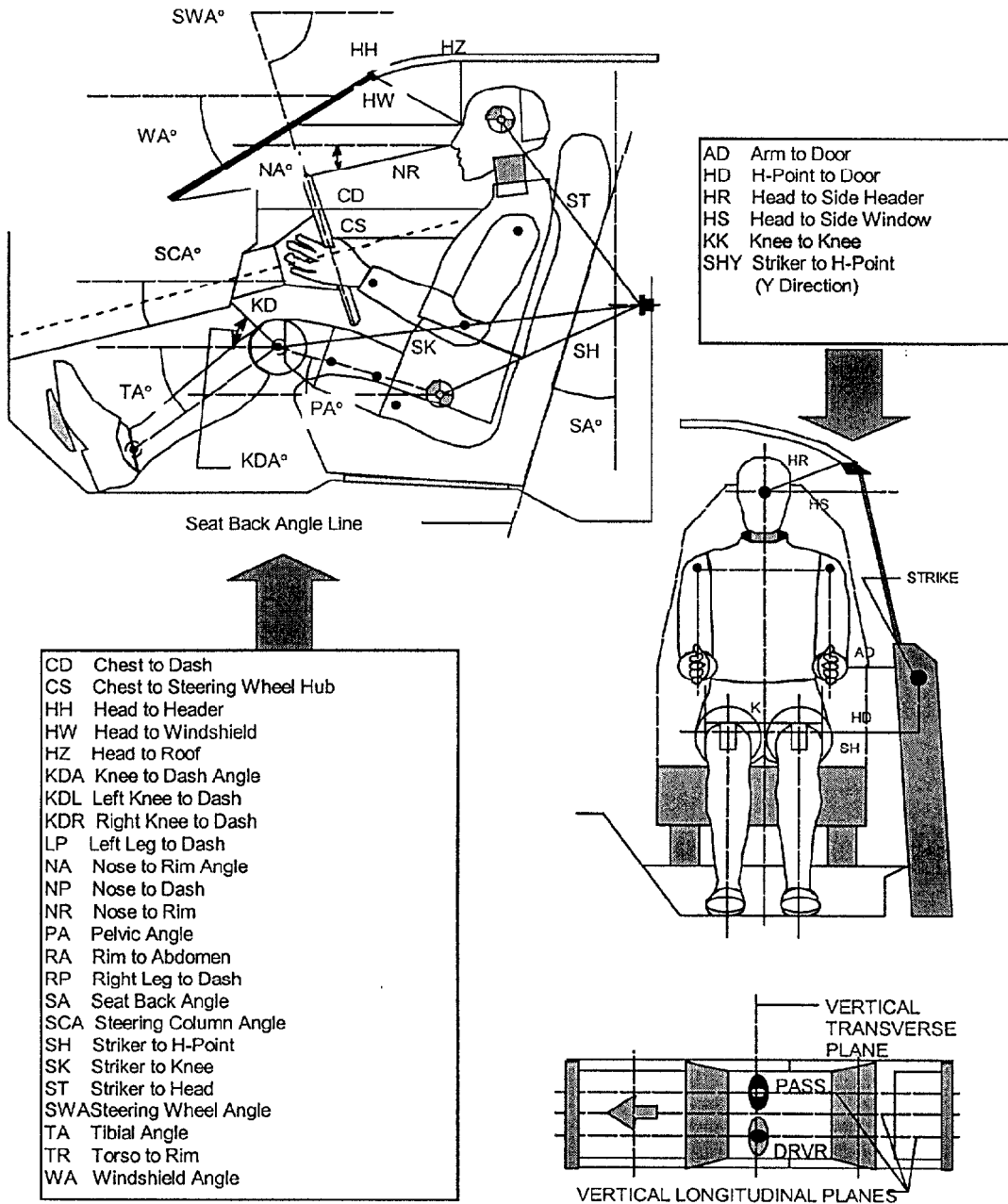
If YES, explain the vehicle operating conditions under which the fuel pump will pump fuel.

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: 1998 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA NO. MW5302

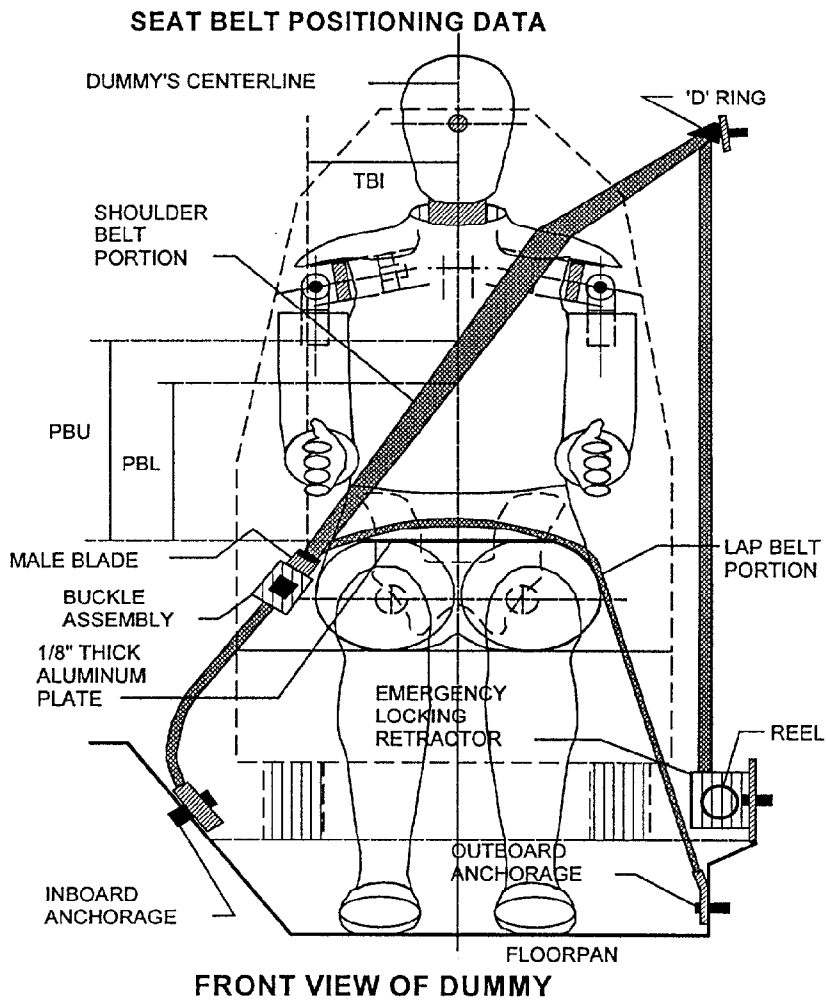
FRONT SEAT MEASUREMENT TABLE

	DRIVER (Serial No. <u>34</u>)		PASS. (Serial No. <u>35</u>)	
	DISTANCE (mm)	ANGLE (°)	DISTANCE (mm)	ANGLE (°)
WA°		31		
SWA°		67		
SCA°		25		
SA°		25		25
HZ	215	90	215	90
HH	320	0	295	0
HW	555	0	510	0
HR	240		210	
NR	440	10		
CD	580		540	
CS	300	0		
RA	195	0		
KDL	145	38	135	
KDR	110		135	31
PA°		25		24
TA°		36		38.5
KK	285		240	
ST	500	4	530	7
SH	152	44	153	36
SHY	250		245	
HS	315		322	
HD	138		132	
AD	110		10	
AA	13.7		9.7	

DATA SHEET NO. 6

SEAT BELT POSITIONING DATA

SEATING POSITION	DRIVER	PASSENGER
TCI -- Dummy centerline to shoulder bolt	229	246
PBU--Top surface of aluminum plate to belt upper edge	350	340
PBL--Top surface of aluminum plate to belt lower edge	249	246
Lap Belt tension	10 Newtons	10 Newtons
Shoulder Belt tension	Retractor	Retractor



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

VEHICLE YR/MAKE/MODEL/BODY: 1998 HONDA CIVIC DX 4 DOOR SEDAN

NHTSA No.: MW5302

TEST PROGRAM: 1998 NHTSA 35 MPH NCAP

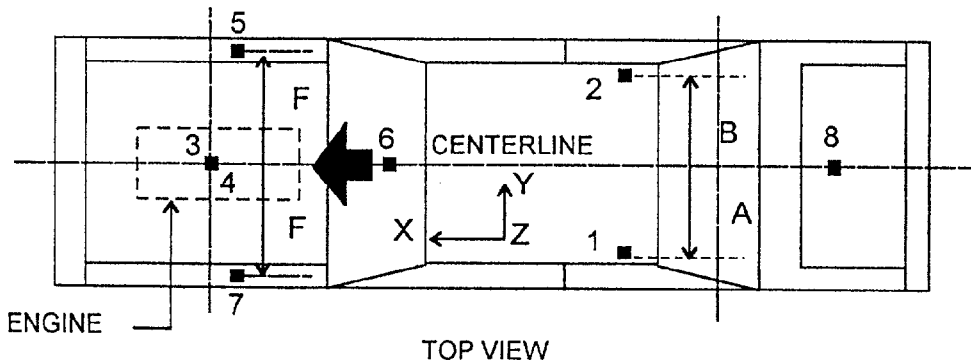
TEST DATE: 12/11/97

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

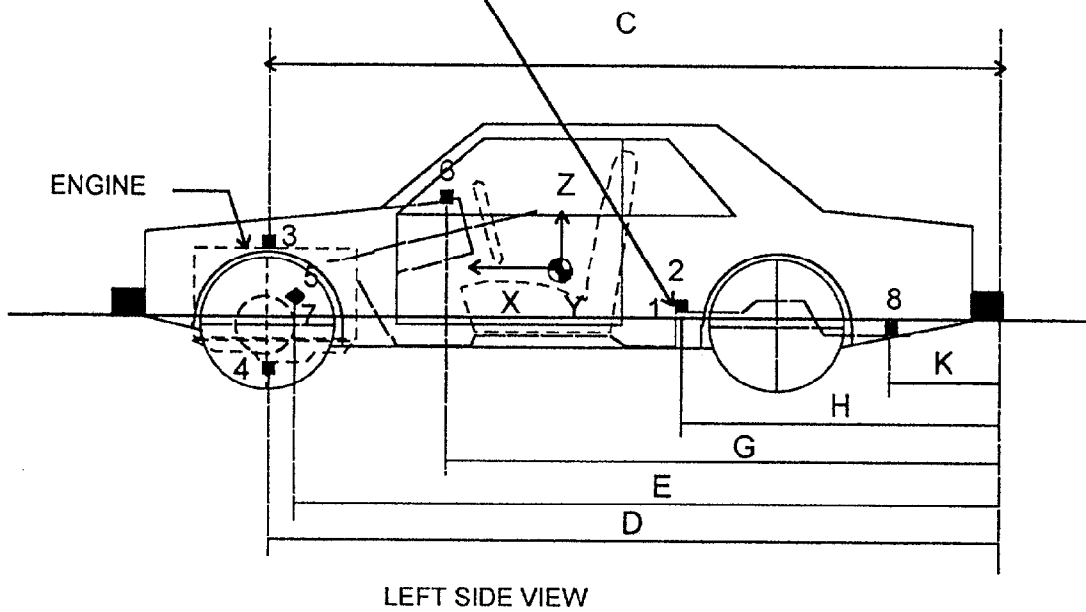
No.	Accelerometer Location	Measurements (mm)			Peak Values				
		X	Y	Z	Units	Max	Time	Min	Time
1	Left Rear X-Member (Pri.)	1607	-670	379	G's	4.6	108.7	-37.2	51.8
2	Right Rear X-Member (Pri.)	1610	650	380	G's	5.3	110.3	-39.1	60.5
3	Engine Top	3788	-298	765	G's	99.9	38.7	-212.5	28.4
4	Engine Bottom	3685	-322	123	G's	90.4	36.6	-213.6	28.7
5	Left Brake Caliper	3660	-640	205	G's	5.0	5.9	-76.4	38.0
6	Right Brake Caliper	3660	640	205	G's	2.2	4.8	-96.2	36.6
7	Instrument Panel	2830	0	894	G's	16.0	30.1	-41.9	15.9
8	Left Rear X-Member (Rednt.)	1349	-620	412	G's	5.2	107.9	-34.7	63.1

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

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



REAR SEAT CUSHION
ASSY. FRONT ATTACHMENT
BRACKET SUPPORT



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

VEHICLE YR/MAKE/MODEL/BODY: 1998 HONDA CIVIC DX 4 DOOR SEDAN

NHTSA No.: MW5302

TEST PROGRAM: 1998 NHTSA 35 MPH NCAP

TEST DATE: 12/11/97

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	70.4	195.7	-67.4	72.1	9.5	201.6	-60.7	77.1
Head CG	Y	G's	12.4	190.6	-32.1	194.8	16.3	81.5	-12.9	32.9
Head CG	Z	G's	13.9	192.0	-28.4	194.6	30.9	66.3	-11.6	102.7
Head CG Resultant	N/A	G's	78.1	195.7			62.8	77.1		

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	6.2	207.6	-50.4	71.3	3.9	126.0	-55.6	58.3
Chest CG	Y	G's	3.8	107.8	-6.3	57.6	3.9	46.9	-3.8	79.2
Chest CG	Z	G's	13.1	98.7	-11.4	58.5	16.6	40.9	-15.2	89.3
Chest CG Resultant	N/A	G's	50.7	71.2			56.2	58.6		

FEMUR PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Femur	Z	Newtons	86.7	23.2	-4475.6	49.3	81.3	21.6	-3406.1	47.4
Right Femur	Z	Newtons	212.5	32.1	-4406.3	47.7	311.4	231.2	-3928.8	74.4

SEAT BELT PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Lap Belt	N/A	Newtons	6389.3	52.3	-17.9	3.3	6944.5	48.5	-21.7	0.1
Shoulder Belt	N/A	Newtons	12469.4	70.8	-61.6	181.8	10196.1	58.8	-57.0	122.6

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	619.5	50.7	57.8	90.9	530.8	50.2	59.0	88.2

CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Primary	49.8	69.9	72.9	54.8	57.4	60.4

DATA SHEET NO. 8...(continued)

VEHICLE YR/MAKE/MODEL/BODY: 1998 HONDA CIVIC DX 4 DOOR SEDAN

NHTSA No.: MW5302

TEST PROGRAM: 1998 NHTSA 35 MPH NCAP

TEST DATE: 12/11/97

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	6.5	90.3	-59.3	49.2	7.6	114.6	-44.9	56.6
Pelvis	Y	G's	8.8	91.7	-7.7	45.7	6.6	47.2	-7.1	44.9
Pelvis	Z	G's	6.5	197.1	-23.6	66.4	11.9	37.5	-21.7	81.6

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	353.8	208.0	-334.8	77.9	172.0	126.8	-1138.3	59.7
Neck Force	Y	Newtons	134.0	165.0	-181.0	116.9	362.8	55.6	-83.0	160.9
Neck Force	Z	Newtons	2140.7	69.1	-1157.4	199.4	902.3	73.3	-524.3	112.4
Neck Moment	X	Joules	9.4	111.7	-15.1	201.6	30.9	56.0	-10.7	110.7
Neck Moment	Y	Joules	28.1	130.2	-28.9	208.2	85.0	60.0	-23.8	230.7
Neck Moment	Z	Joules	10.3	90.6	-9.7	216.5	15.0	66.9	-2.2	276.6

FOOT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Foot Aft	X	G's	65.1	44.4	-89.2	52.2	237.1	40.0	-129.9	56.1
Left Foot Aft	Z	G's	46.3	53.0	-88.4	43.5	78.4	58.9	-175.0	36.0
Left Foot Fore	Z	G's	63.2	53.7	-84.6	42.4	116.0	60.4	-241.6	36.0
Right Foot Aft	X	G's	186.0	44.5	-153.0	51.3	219.7	39.2	-75.0	50.4
Right Foot Aft	Z	G's	70.2	50.5	-139.6	43.6	113.8	55.1	-179.9	38.4
Right Foot Fore	Z	G's	13.7	27.7	-271.7	36.5	130.2	56.1	-224.8	39.1

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	83.1	183.4	-1311.1	45.8	735.5	71.7	-1809.0	40.2
Left Lower Force	Z	Newtons	434.3	67.1	-2947.5	44.6	135.3	147.1	-8635.8	39.6
Left Lower Moment	Y	Joules	17.1	22.2	-247.5	54.6	47.2	41.9	-190.9	60.6
Left Upper Moment	X	Joules	63.0	51.2	-5.1	299.9	64.3	40.7	-59.7	38.0
Left Upper Moment	Y	Joules	103.6	45.5	-59.4	73.9	258.3	39.5	-116.3	71.0
Right Lower Force	X	Newtons	101.0	127.1	-1679.1	45.7	735.6	49.1	-2019.7	39.3
Right Lower Force	Z	Newtons	224.1	137.6	-5573.2	45.7	248.9	49.5	-9175.2	38.7
Right Lower Moment	Y	Joules	55.8	45.7	-379.3	53.3	71.4	40.6	-282.0	56.9
Right Upper Moment	X	Joules	122.4	52.9	-122.6	47.0	25.9	36.4	-60.6	75.4
Right Upper Moment	Y	Joules	201.9	45.8	-47.6	71.5	261.4	39.2	-108.3	49.2

DATA SHEET NO. 8...(continued)

VEHICLE YR/MAKE/MODEL/BODY: 1998 HONDA CIVIC DX 4 DOOR SEDAN

NHTSA No.: MW5302

TEST PROGRAM: 1998 NHTSA 35 MPH NCAP

TEST DATE: 12/11/97

CHEST PEAK DISPLACEMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	MM	0.2	8.5	-40.1	72.8	0.3	14.6	-28.4	77.0

HEAD REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	68.1	195.5	-68.1	71.7	10.7	205.5	-61.2	76.9
Head CG	Y	G's	9.4	190.5	-33.3	194.6	17.5	81.0	-12.2	33.0
Head CG	Z	G's	8.8	191.9	-32.1	194.8	29.4	66.4	-10.5	106.6
Head CG Resultant	N/A	G's	78.5	195.5			63.7	76.9		

CHEST REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	6.5	207.4	-51.1	71.3	3.8	125.6	-55.1	58.2
Chest CG	Y	G's	4.2	106.8	-10.7	63.9	6.2	46.7	-2.6	106.4
Chest CG	Z	G's	11.3	97.9	-9.1	44.2	15.7	40.9	-13.4	89.2
Chest CG Resultant	N/A	G's	51.2	71.3			56.0	58.5		

REDUNDANT HEAD INJURY CRITERIA (HIC)

Location	Driver				Passenger			
	HIC	Avg G's	T ¹	T ²	HIC	Avg G's	T ¹	T ²
Head CG Redundant	661.6	52.4	58.1	90.7	517.1	48.8	57.7	88.3

REDUNDANT CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Redundant	50.2	70.0	73.0	54.6	57.4	60.4

DATA SHEET NO. 9

SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

TEST VEHICLE: 1998 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA NO. MW5302

BELT LENGTH DATA (mm)	DRIVER	PASSENGER
Total belt length for continuous webbing systems.	3070	3070
Retractor reel to 'D' ring	580	580
Shoulder belt length as measured on Part 572 Dummy	920	900
Lap belt length as measured on Part 572 Dummy	800	810
Remainder of belt on reel	770	680

SHOULDER BELT SPOOL-OFF DATA (mm)	DRIVER	PASSENGER
As determined mechanically	45	80
As determined electronically	60.9	46.0

BELT STRETCH DATA (mm/cm)	DRIVER	PASSENGER
Measured electronically between shoulder belt load cell and the "D" ring	.03	.01
Measured mechanically	0.25	0.54

DATA SHEET NO. 10

SUMMARY OF FMVSS 212 DATA

TEST VEHICLE: 1998 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA NO. MW5302

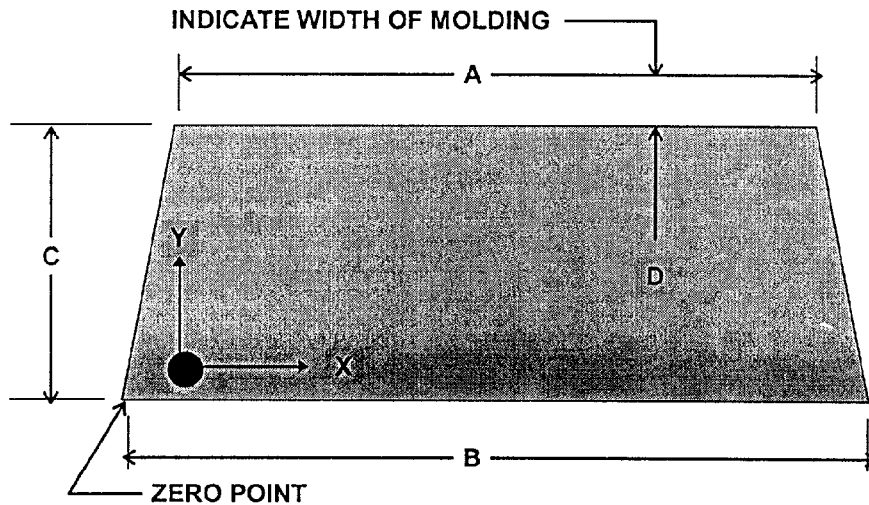
Details of windshield mounting (method of retention, type of trim, etc.):

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

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

WINDSHIELD PERIPHERY MEASUREMENTS (mm)			
	PRETEST	POST TEST	PERCENT RETENTION
Right Side	2025	912	45%
Left Side	2025	2025	100%
Total	4050	2912	72%

Indicate area of retention failure.



FRONT VIEW OF WINDSHIELD

Width of molding = Top & Sides 30 mm, Bottom 40 mm.

Temperature of windshield molding during test = 21.1 °C

DATA SHEET NO. 11

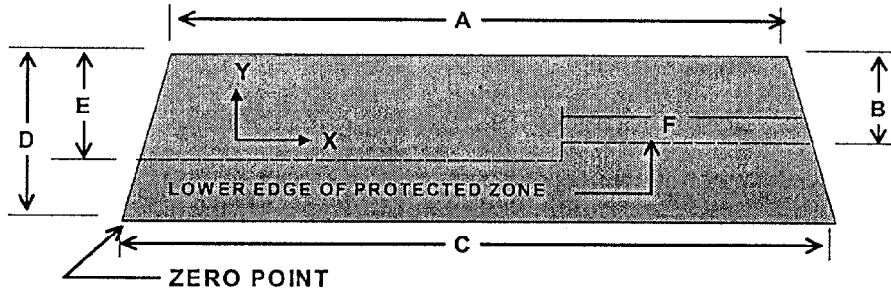
WINDSHIELD ZONE INTRUSION FMVSS 219 (PARTIAL) DATA

TEST VEHICLE: 1998 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA NO. MW5302

SKETCH OF FRONT VIEW OF WINDSHIELD:

Provide all dimensions necessary to reproduce the protected area.



	DIMENSION mm
A	1090
B	350
C	1440
D	760
E	480
F	605

FRONT VIEW OF WINDSHIELD

AREA OF PROTECTED ZONE FAILURES:

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

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

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

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

DATA SHEET NO. 12

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

TEST VEHICLE: 1998 HONDA CIVIC DX 4-DOOR SEDAN
MW5302

NHTSA NO.

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

TEST DATE: December 11, 1997 TIME: 2:00 PM TEMPERATURE 7.2° C

STODDARD SOLVENT SPILLAGE MEASUREMENT:

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

DATA SHEET NO. 13

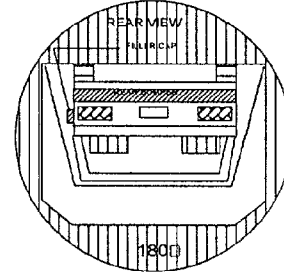
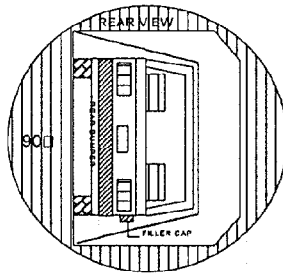
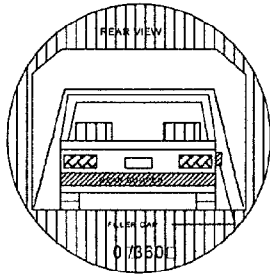
FMVSS 301 STATIC ROLLOVER DATA SHEET

TEST VEHICLE: 1998 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA NO. MW5302

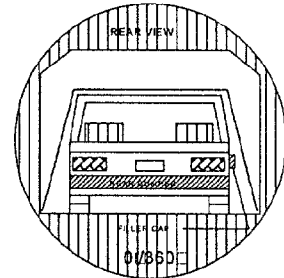
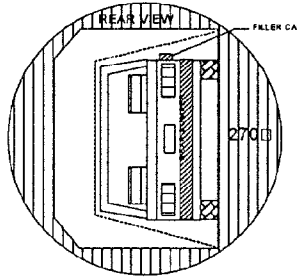
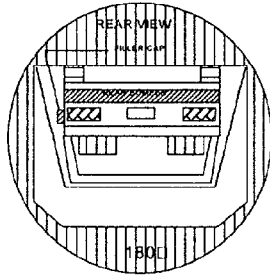
TEST MODE: 56.3 km/h New Car Assessment Program (NCAP) Frontal Barrier Impact

TEST DATE: December 11, 1997 TIME: 2:00 PM TEMPERATURE: 7.2° 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°	84	302	0
90° TO 180°	83	387	0
180° TO 270°	81	304	0
270° TO 360°	81	304	0

3. Provide Details of Stoddard Solvent Spillage Locations--

No solvent leakage occurred during rollover tests.

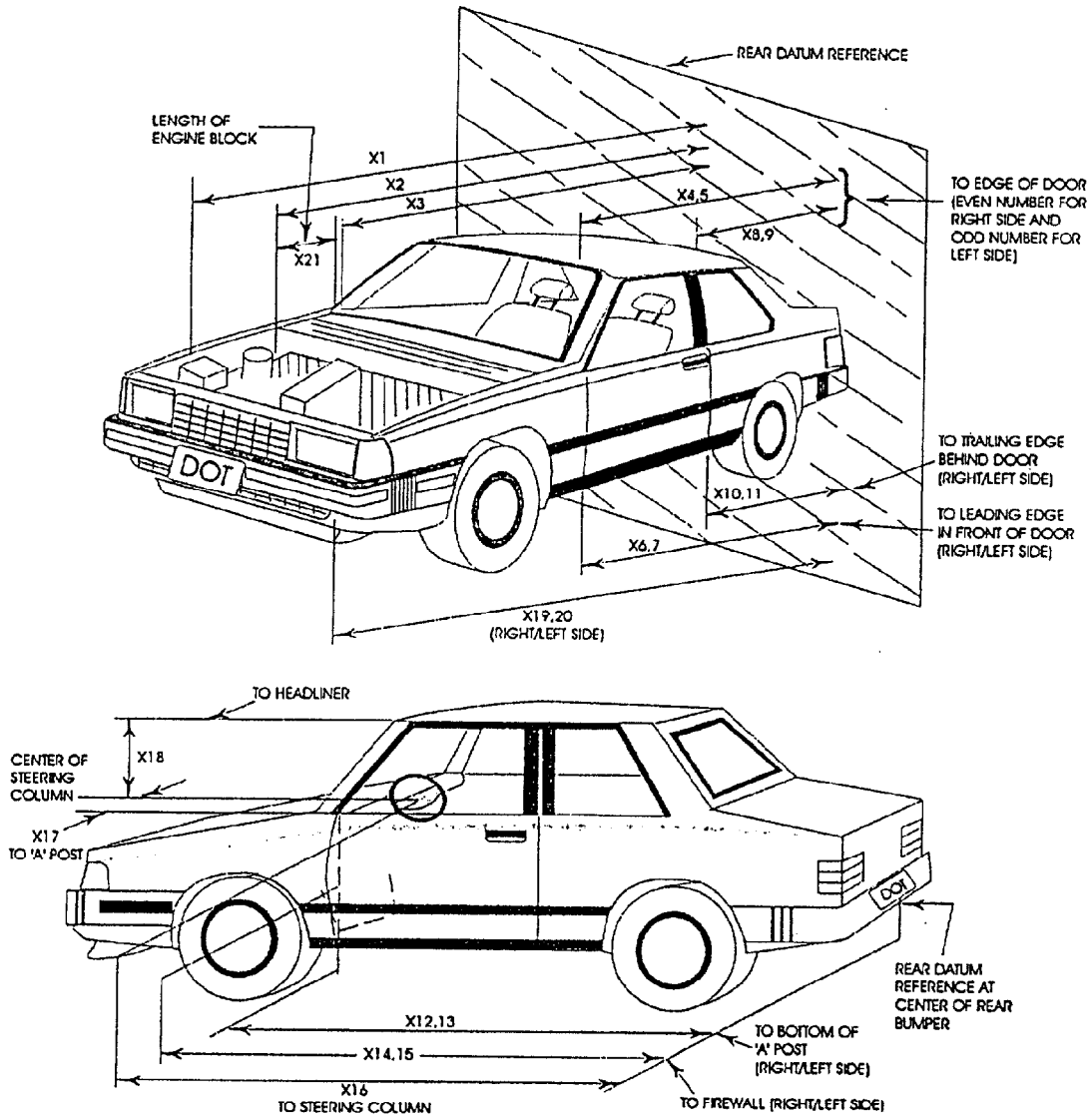
DATA SHEET NO. 14

VEHICLE MEASUREMENTS

TEST VEHICLE: 1998 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA NO. MW5302

NO.	MEASUREMENT DESCRIPTION	DIMENSIONS IN MM		
		PRE-TEST	POST-TEST	DIFFERENCE
1	Total length of vehicle at centerline	4440	3910	-530
2	Rear surface of vehicle (RSOV) to front of engine	3910	3570	-340
3	RSOV to firewall centerline	3360	3222	-138
4	RSOV to leading edge of right door	3010	3030	+20
5	RSOV to leading edge of left door	3010	3025	+15
6	RSOV to lower leading edge of right door	3030	3000	-30
7	RSOV to lower leading edge of left door	3030	3000	-30
8	RSOV to upper trailing edge of right door	2010	2005	-5
9	RSOV to upper trailing edge of left door	1990	2000	+10
10	RSOV to lower trailing edge of right door	2000	1995	-5
11	RSOV to lower trailing edge of left door	2020	1992	-28
12	RSOV to bottom of right 'A' pillar	3030	3052	+22
13	RSOV to bottom of left 'A' pillar	3030	3045	-15
14	RSOV to firewall on right side	3290	3080	-210
15	RSOV to firewall of left side	3330	3212	-118
16	RSOV to steering column	2570	2290	-280
17	Center of steering column to left 'A' pillar	330	265	-65
18	Center of steering column to headlining	450	424	-26
19	RSOV to right side of front bumper	4200	3870	-330
20	RSOV to left side of front bumper	4200	3820	-380
21	Length of engine block	440	440	0
22	RSOV to right side of dash panel	2870	2760	-110
23	RSOV to center of dash panel	2830	2800	-30
24	RSOV to left side of dash panel	2820	2780	-40



DATA SHEET NO. 15

CAMERA LOCATIONS

TEST VEHICLE: 1998 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA NO. MW5302

CAMERA NO.	VIEW	CAMERA POSITIONS (mm) *			ANGLE (Deg.)	FILM PLANE TO HEAD TARGET (mm)	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Right Side View-Real Time	2083	8331	914	0	7620	Zoom	24
2A	Left Side View No. 1	1321	-8382	864	0	7798	13	350
2B	Left Side View No. 2	1499	-9855	1270	1	9271	25	970
3	Left Side View No. 3	3480	-2489	1930	1	2108	50	950
4	Left Side View No. 4	3048	2565	1955	20	2315	19	1000
5	Left Side View No. 5	1905	-8306	2515	15	7747	25	1010
6	Left Side View No. 6	1880	-8382	1092	11	7620	25	980
7	Right Side View No. 1	1295	10,160	1168	1	9296	13	1100
8	Right Side View No. 2	4851	12,598	2794	1	11,887	50	1150
9	Right Side View No. 3	6832	11,633	3175	8	12,310	80	900
10	Right Side View No. 4	2997	10,871	1066	1	10,546	50	1100
11	Overhead Windshield	914	0	5715	95	N/A	13	1100
12	Front View No. 1 Driver	-356	356	2540	41	3022	19	1100
13	Front View No. 2 Passenger	-356	508	2540	45	3022	19	930
14	Pit Camera Engine View	864	0	-1600	2	N/A	13	860
15	Pit Camera Fuel Tank View	4953	0	-1778	44	N/A	19	780
16	Driver Side Onboard	3022	279	1117	10	1016	13	420
17	Passenger Side Onboard	2946	279	1168	10	1016	13	420

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

DATA SHEET NO. 16

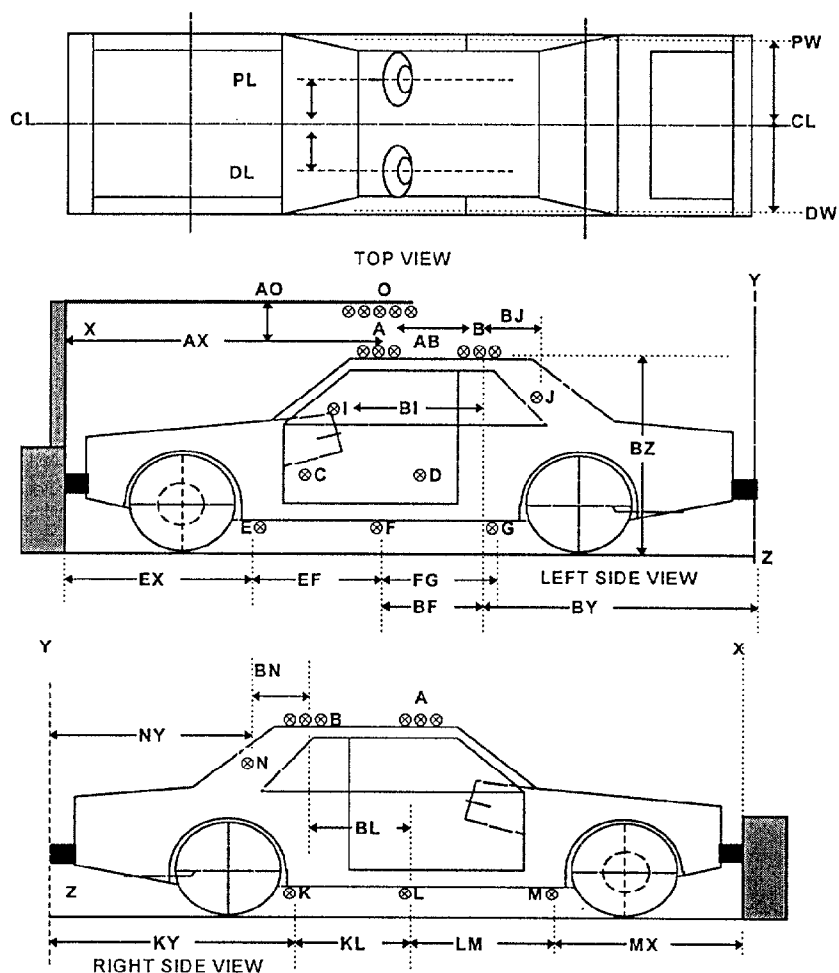
REFERENCE PHOTOGRAPH TARGETS

TEST VEHICLE: 1998 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA NO. MW5302

ITEM	DESCRIPTION	VALUE	ITEM	DESCRIPTION	VALUE
AX	TARGET A TO BARRIER	2260	NY	TARGET N TO REAR BUMPER	1120
AB	TARGET A TO TARGET B	610	BN	TARGET B TO TARGET N	420
AO	VERTICAL DISTANCE A TO O	152	KY	TARGET K TO REAR BUMPER	1102
BJ	TARGET B TO TARGET J	420	KL	TARGET K TO TARGET L	897
BI	TARGET B TO STEERING COLUMN	1180	BL	TARGET B TO TARGET L	690
BZ	TARGET B TO GROUND LEVEL	1445	LM	TARGET L TO TARGET M	890
EX	TARGET E TO BARRIER	1320	MX	TARGET M TO BARRIER	1310
EF	TARGET E TO TARGET F	892	CL/PL	VEHICLE CENTERLINE TO PASSENGER	335
FG	TARGET F TO TARGET G	880	CL/PW	VEHICLE CENTERLINE TO RIGHT SILL	712
BF	TARGET B TO TARGET F	690	CL/DL	VEHICLE CENTERLINE TO DRIVER	335
BY	TARGET B TO REAR BUMPER	1580	CL/DW	VEHICLE CENTERLINE TO LEFT SILL	712

Distances in mm



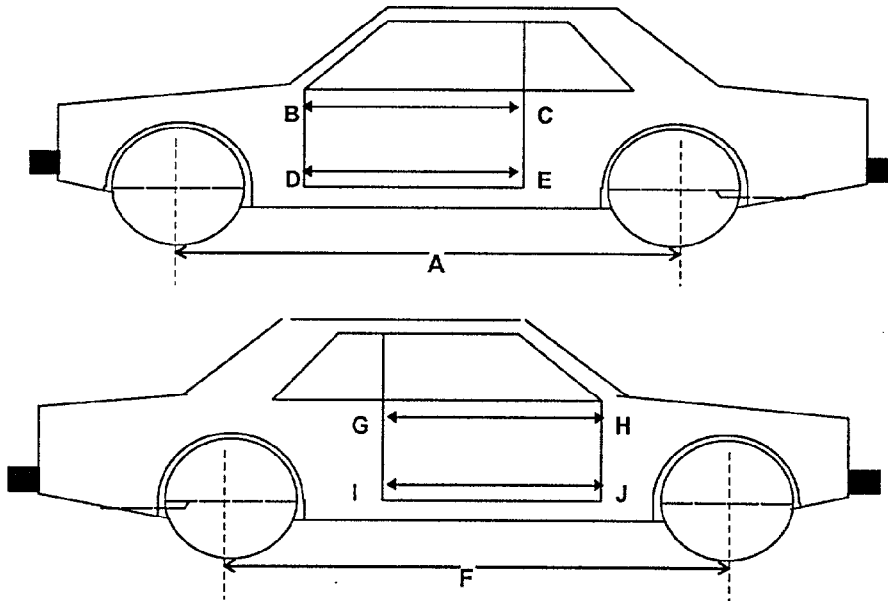
DATA SHEET NO. 17

VEHICLE INTRUSION MEASUREMENTS

TEST VEHICLE: 1998 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA NO. MW5302

DOOR OPENING WIDTH



UNITS (mm)	LEFT SIDE		RIGHT SIDE	
	BC	DE	GH	IJ
PRE-TEST	1020	1010	1000	1030
POST-TEST	1025	1008	1005	1025
DIFFERENCE	+5	-2	+5	-5

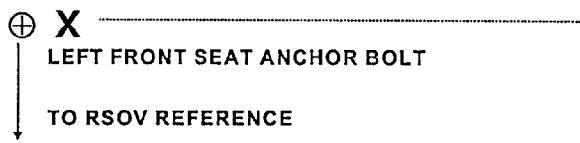
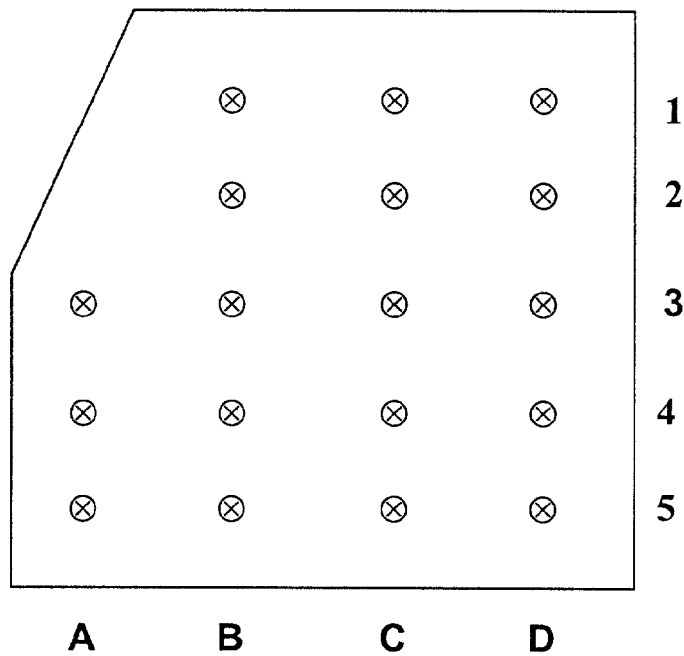
VEHICLE WHEELBASE CHANGE

UNITS (mm)	A = LEFT SIDE WHEELBASE	F = RIGHT SIDE WHEELBASE
PRE-TEST	2642	2642
POST-TEST	2525	2520
DIFFERENCE	-117	-122

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	620	750	620	750	630
2	N/A	N/A	600	520	600	520	600	510
3	450	440	450	430	450	430	450	440
4	300	280	300	280	300	280	300	280
5	150	130	150	130	150	130	150	130
REF. POINT	RSOV TO ANCHOR BOLT (PRE-TEST)		2490		RSOV TO ANCHOR BOLT (POST-TEST)		2482	



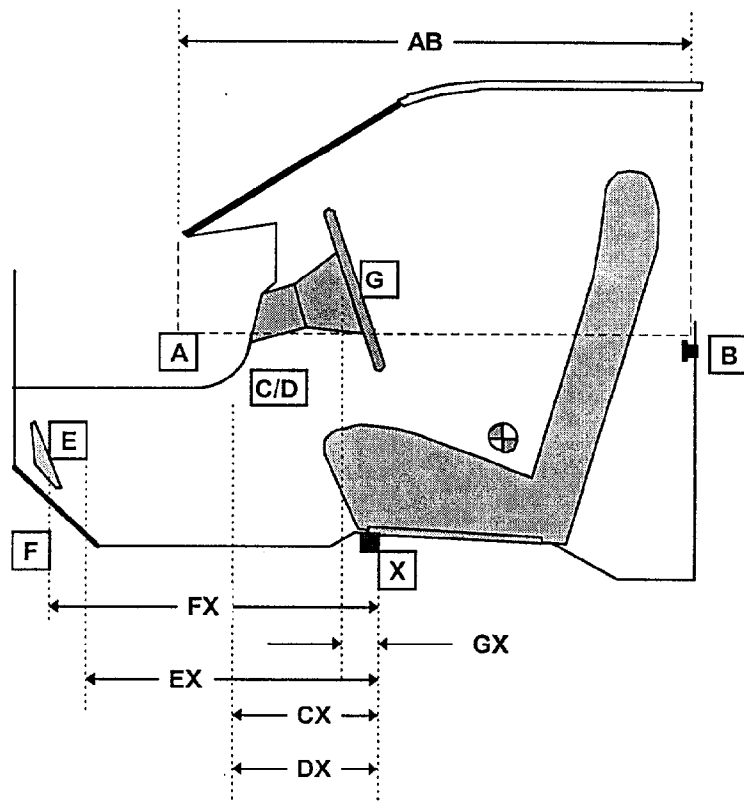
DRIVER SIDE FLOOR PLAN

(Data Sheet No. 17Continued)

DRIVER COMPARTMENT INTRUSION (Distances in mm)

REF.	DESCRIPTION	PRE-TEST	POST-TEST
AB	DOOR OPENING (INSIDE WINDOW JAM)	962	960
CX	LOWER LEFT KNEE BOLSTER TO X	380	370
DX	LOWER RIGHT KNEE BOLSTER TO X	360	348
EX	BRAKE PEDAL TO X	600	500
FX	FOOT REST TO X	670	570
GX	STEERING COLUMN HUB (CENTER) TO X	-50	0

X = LEFT FRONT SEAT ANCHOR BOLT



DRIVER COMPARTMENT

Small, illegible text or signature.

DATA SHEET NO. 18

BARRIER ORIENTATION

TEST VEHICLE: 1998 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA NO. MW5302

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

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

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

(NO OFFSET REQUIRED FOR THIS TEST)

DATA SHEET NO. 19

ACCIDENT INVESTIGATION DIVISION DATA

TEST VEHICLE: 1998 HONDA CIVIX DX 4-DOOR SEDAN NHTSA NO. MW05302

VIN: JHMEJ6623WS000844

TEST DATE: 12/11/97

WHEELBASE: 2742 mm

TEST WEIGHT: 1272 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: 56.73 km/h

TIME OF SEPARATION: 71.20 msec

VELOCITY CHANGE: 69.89 km/h

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

IMPACT MODE: Full Frontal

CRUSH DEPTH DIMENSIONS:

C1 = 352 mm

C2 = 519 mm

C3 = 530 mm

C4 = 523 mm

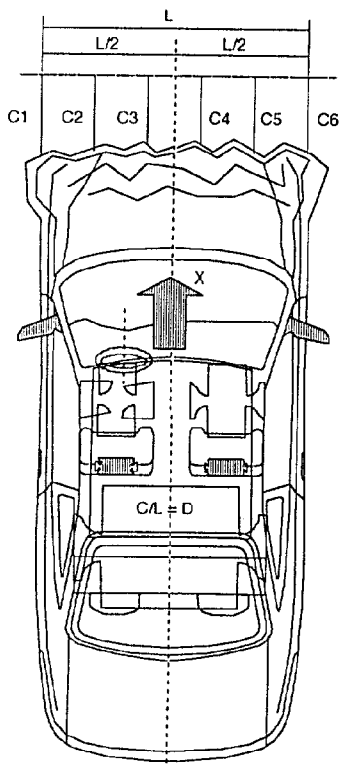
C5 = 482 mm

C6 = 355 mm

MIDPOINT OF DAMAGE: D = vehicle centerline

LENGTH OF DAMAGE REGION:

L = 1440 mm



DATA SHEET NO. 20

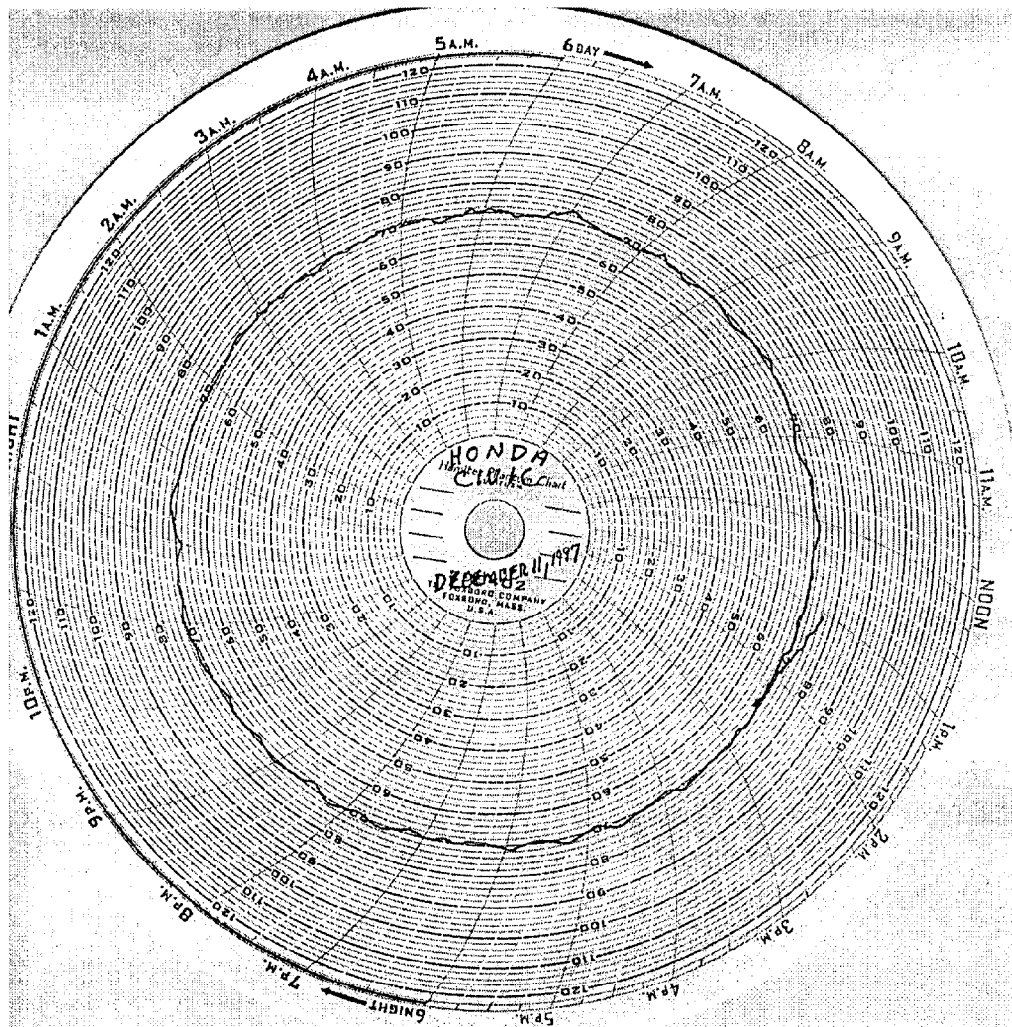
DUMMY/VEHICLE TEMPERATURE STABILIZATION

TEST VEHICLE: 1998 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA NO. MW5302

VIN: JHMEJ6623WS00844

TEST DATE: 12/11/97



APPENDIX A
PHOTOGRAPHS

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FIGURE A-1. RIGHT FRONT AS RECEIVED

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FIGURE A-2. LEFT REAR AS RECEIVED

A-2

KAR-97-R97050-03

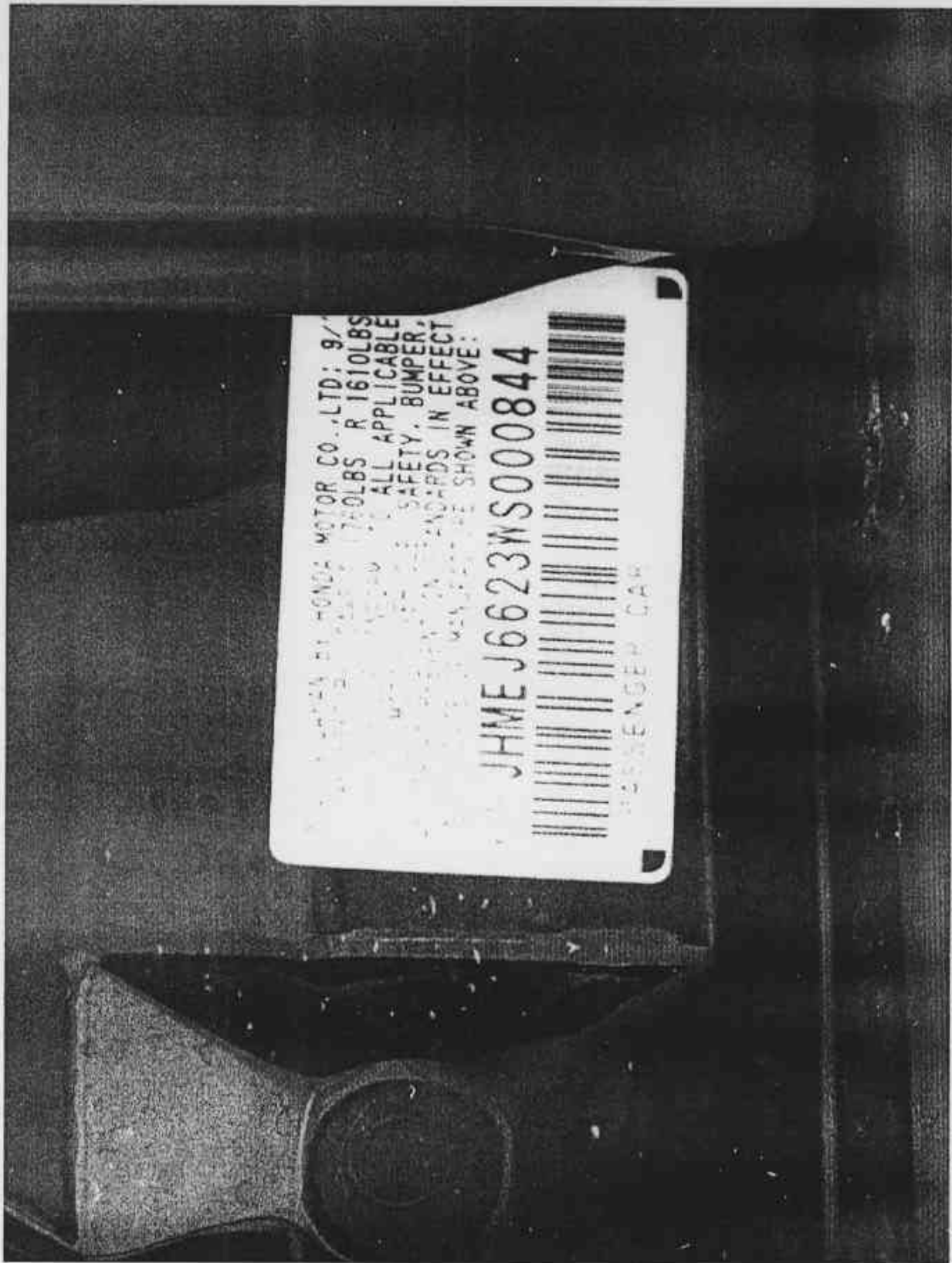


FIGURE A-3. VEHICLE CERTIFICATION LABEL

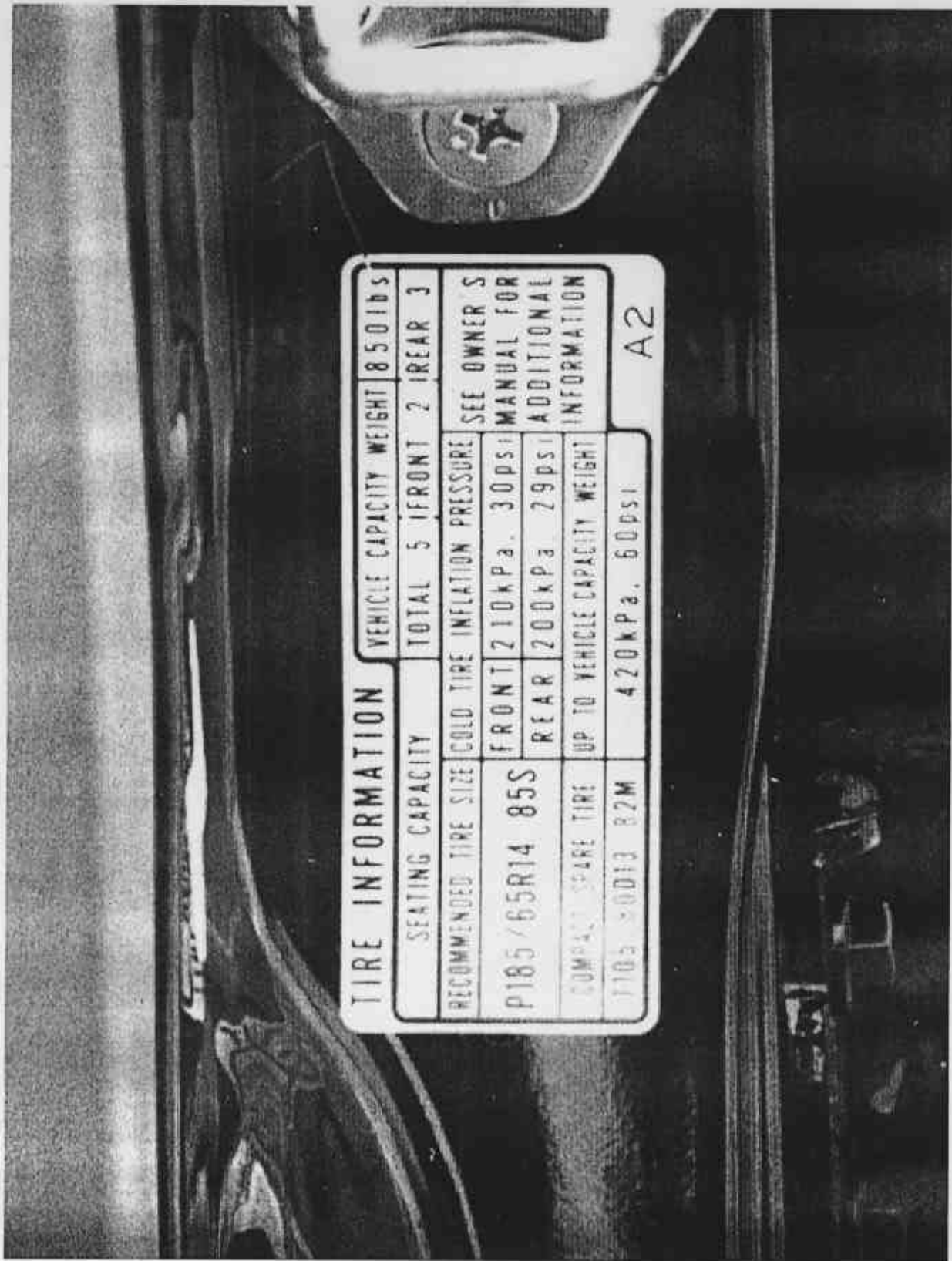


FIGURE A-4. VEHICLE TIRE PLACARD

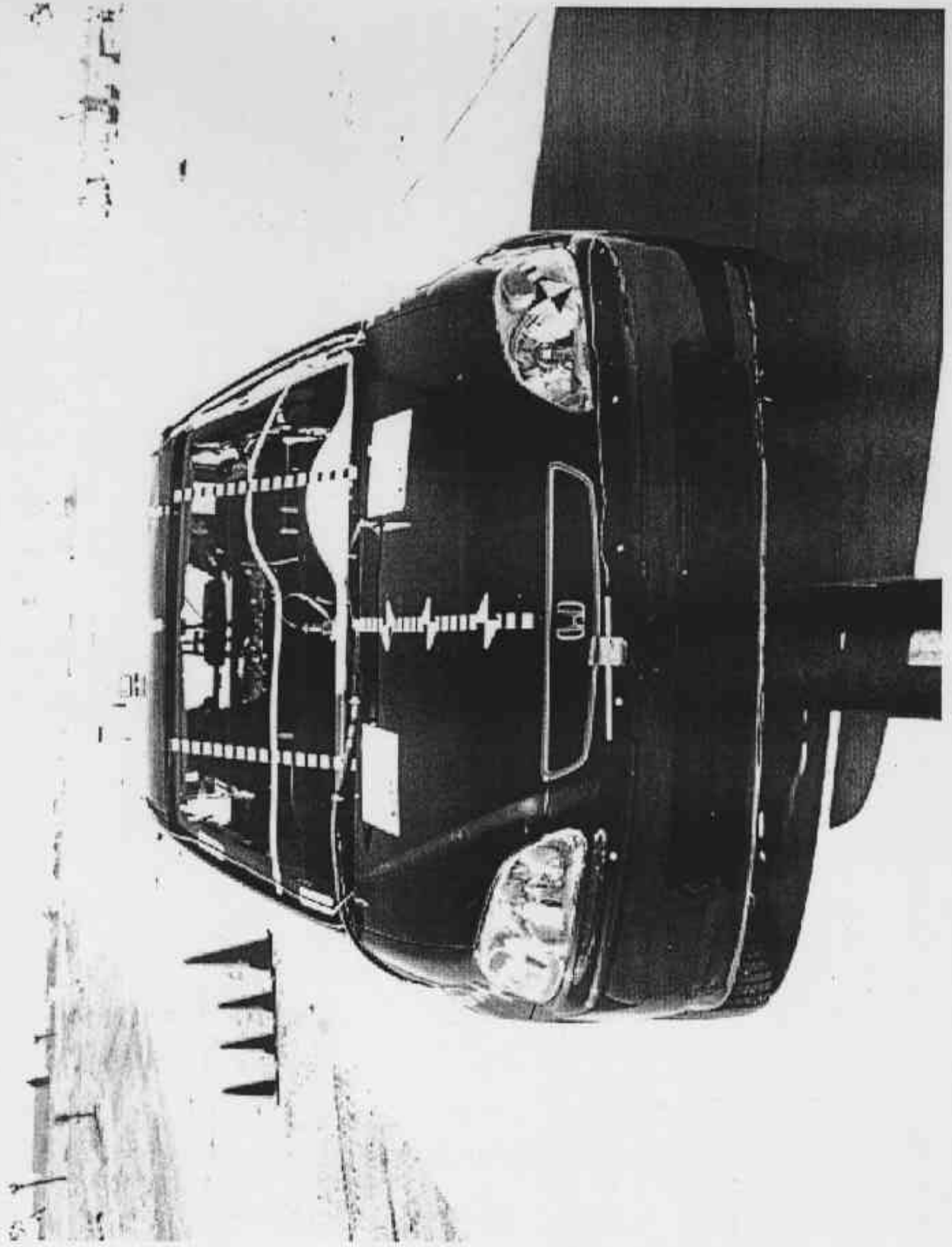


FIGURE A-5. PRETEST FRONT VIEW

A-5

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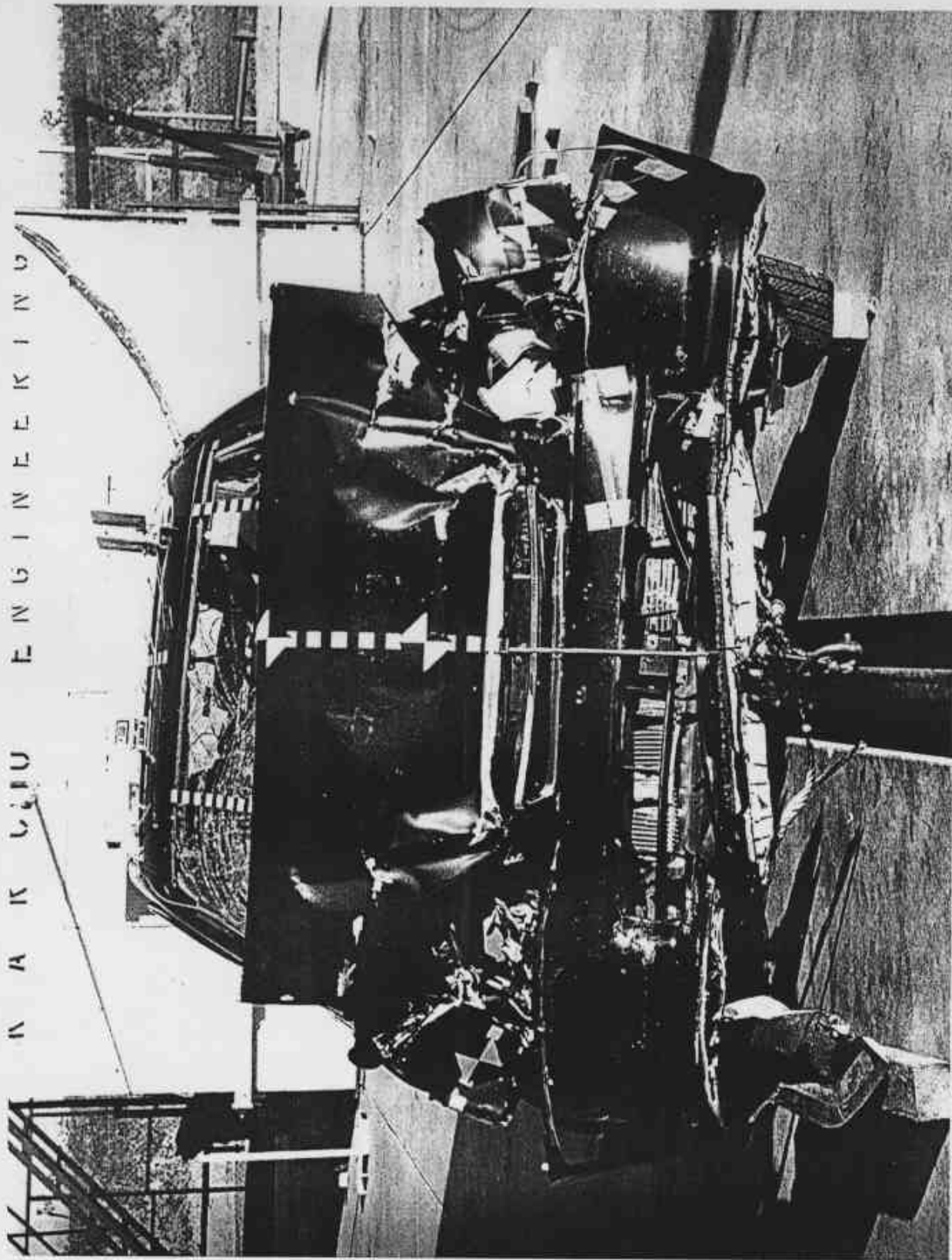


FIGURE A-6. POST TEST FRONT VIEW

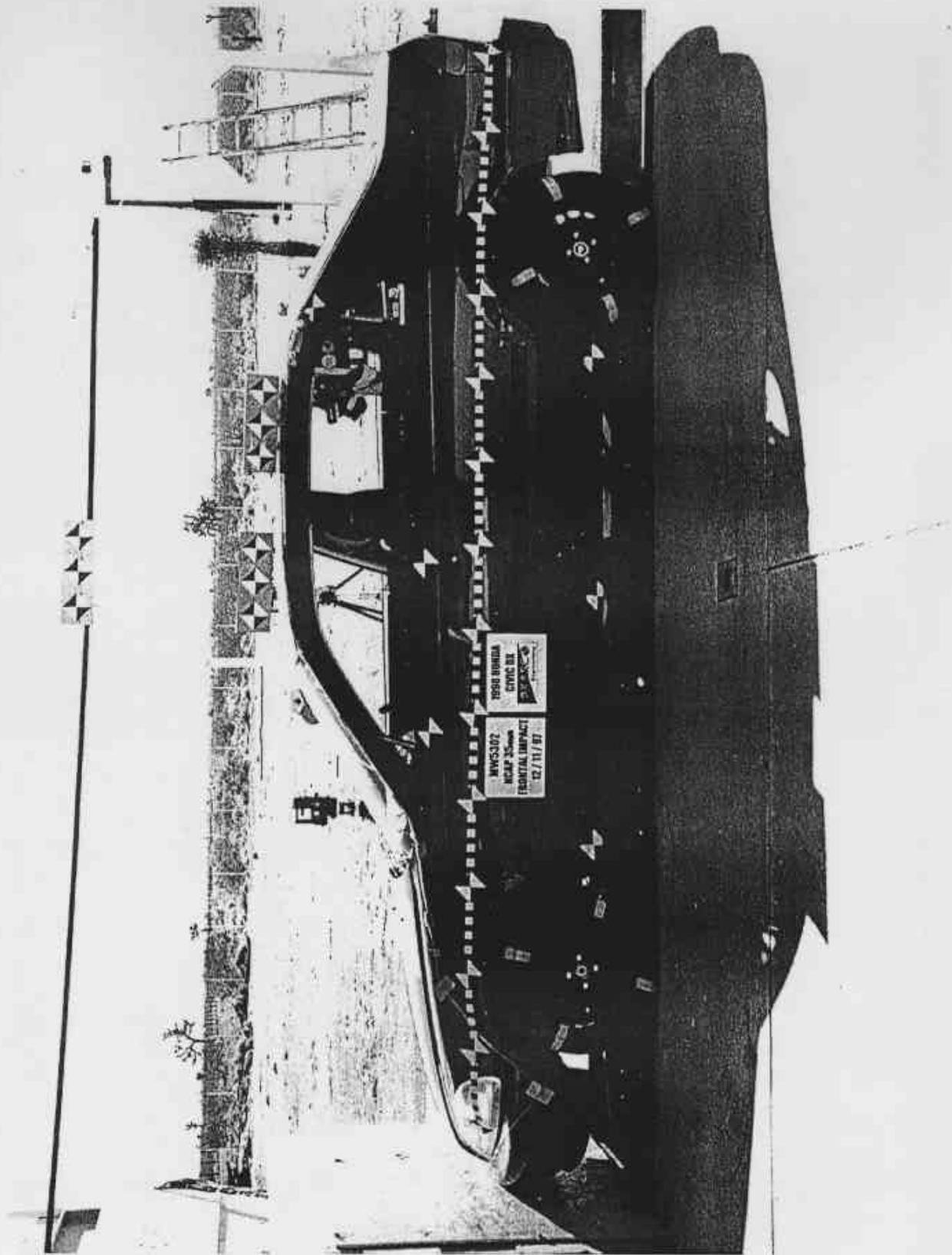


FIGURE A-7. PRETEST LEFT SIDE VIEW

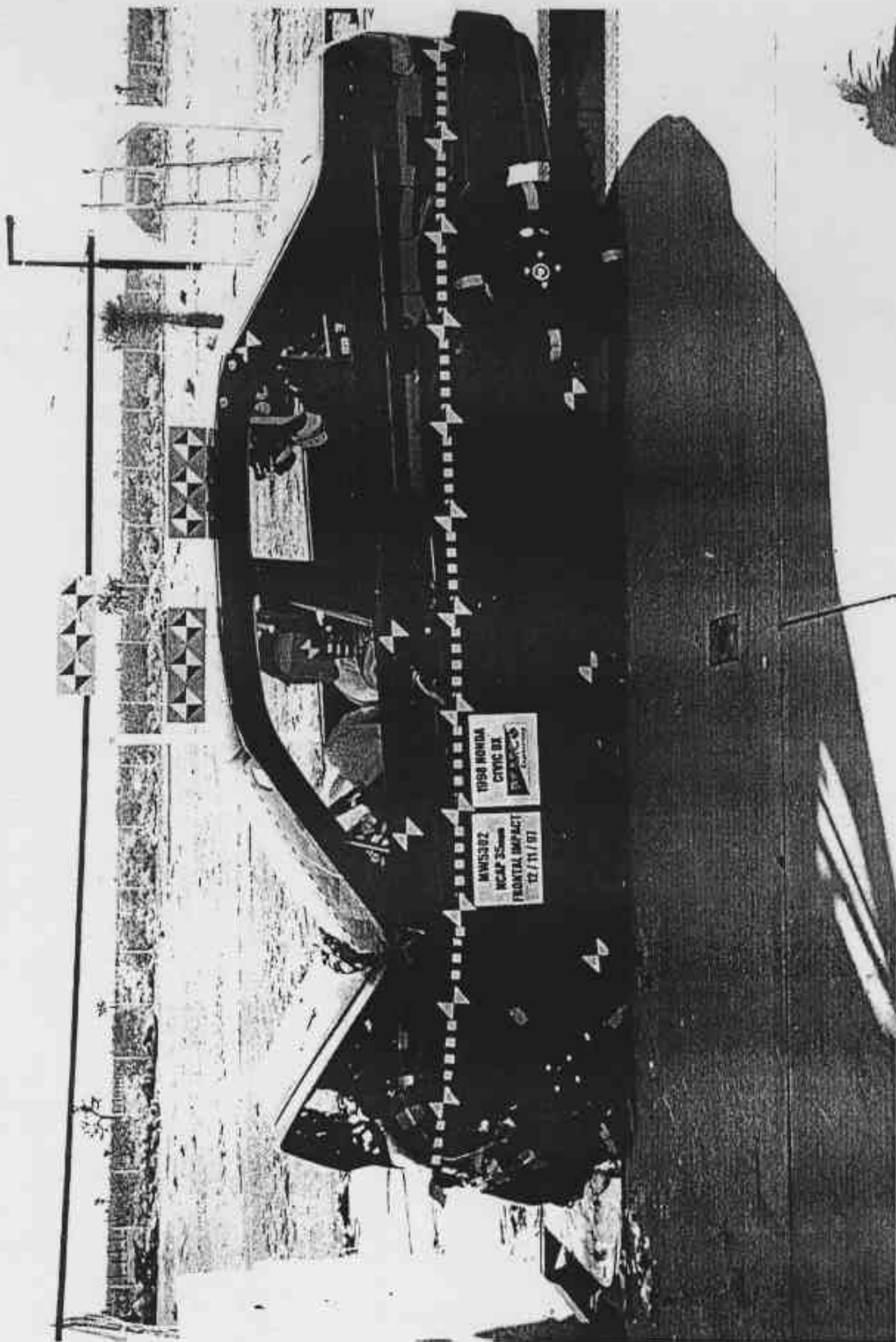


FIGURE A-8. POST TEST LEFT SIDE VIEW

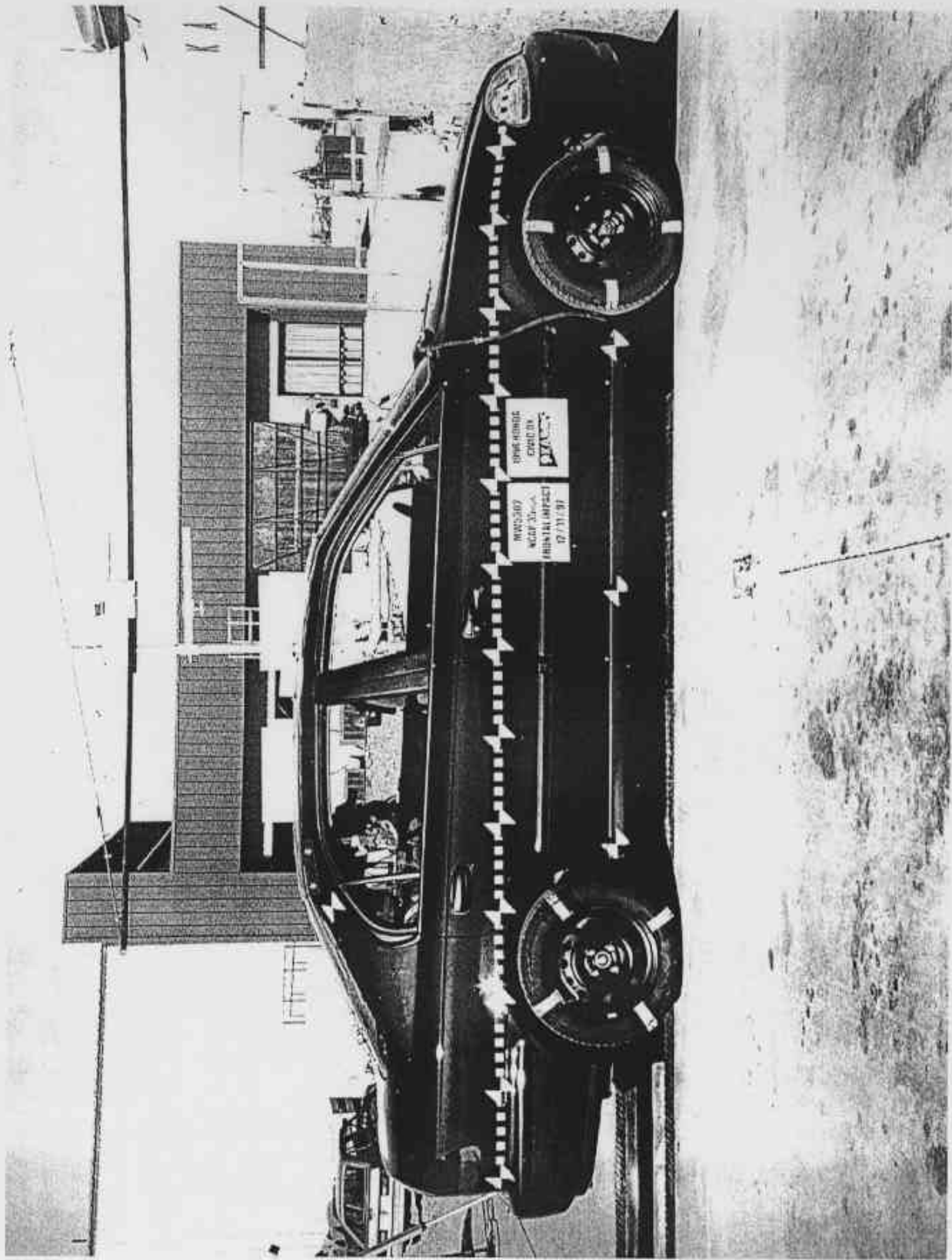


FIGURE A-9. PRETEST RIGHT SIDE VIEW

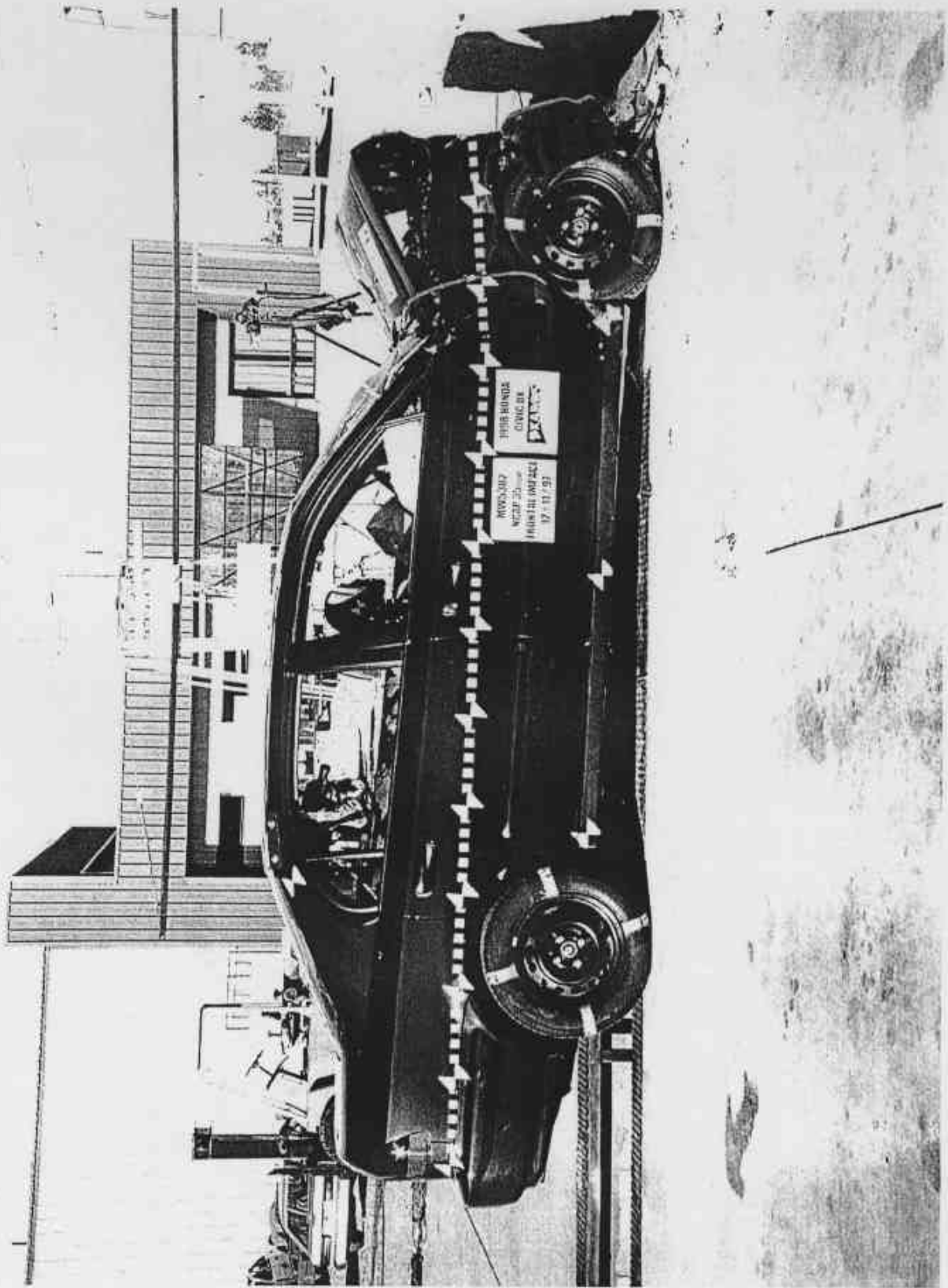


FIGURE A-10. POST TEST RIGHT SIDE VIEW

A-10

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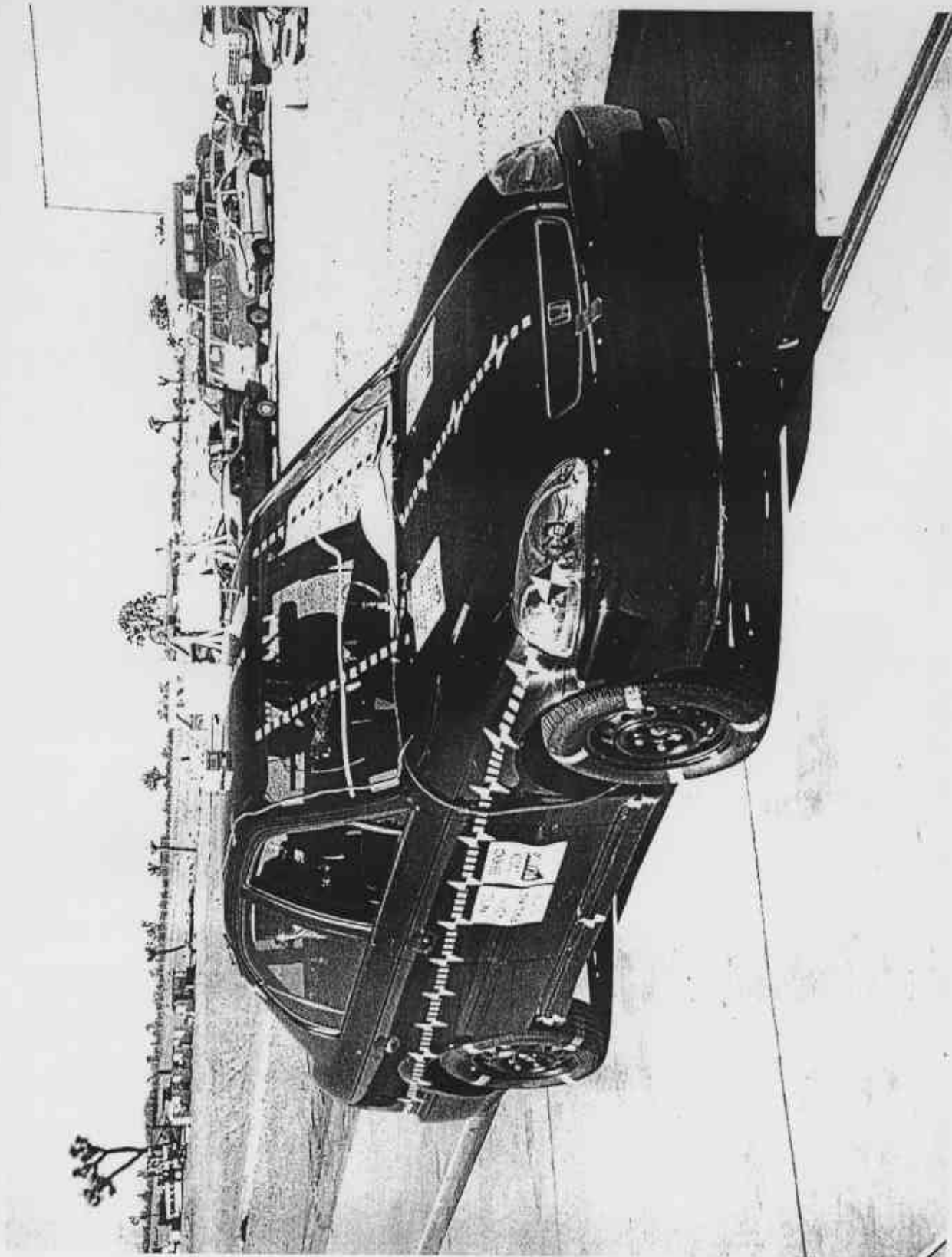


FIGURE A-11. PRETEST RIGHT FRONT VIEW

A-11

KAR-97-R97050-03

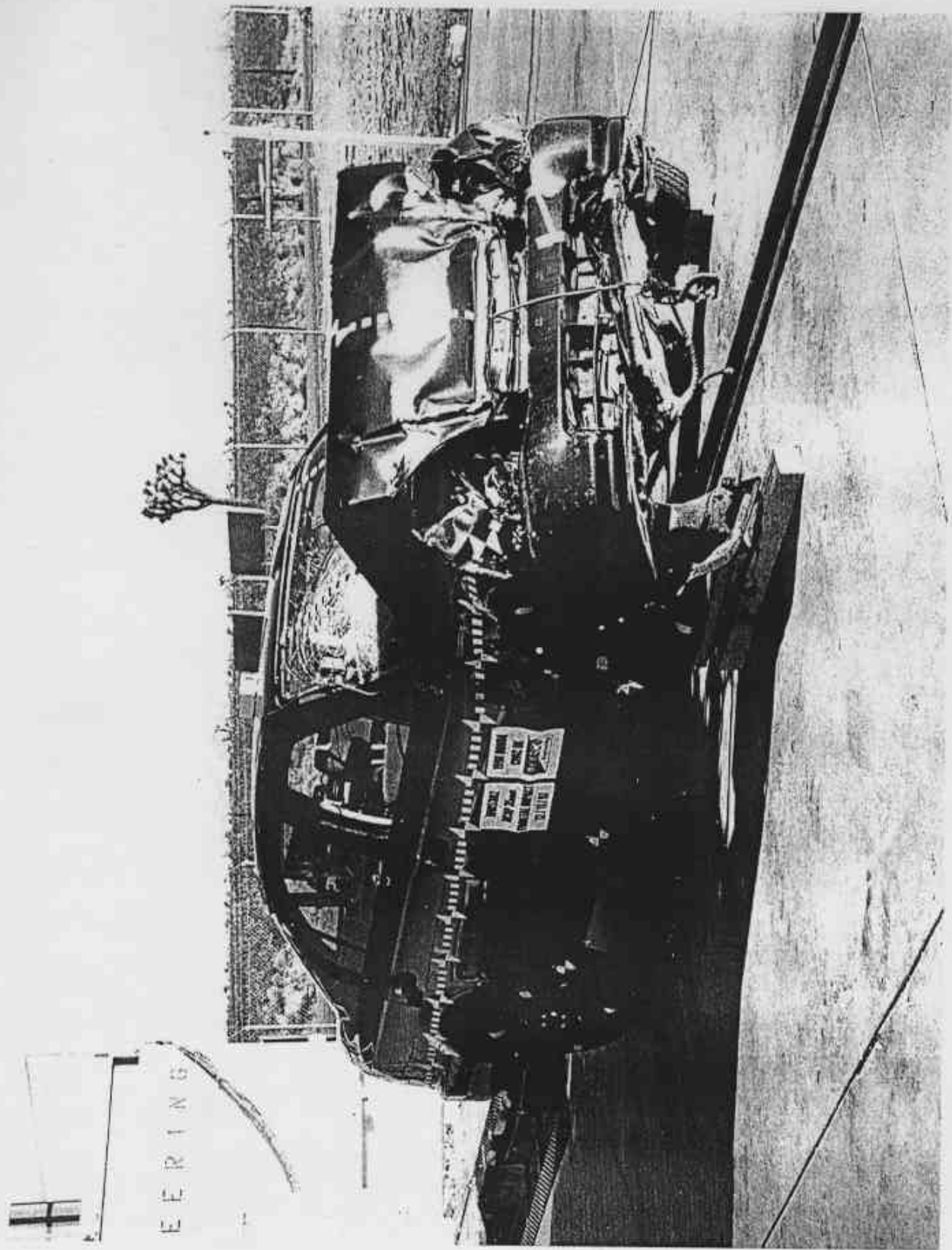


FIGURE A-12. POST TEST RIGHT FRONT VIEW

A-12

KAR-97-R97050-03

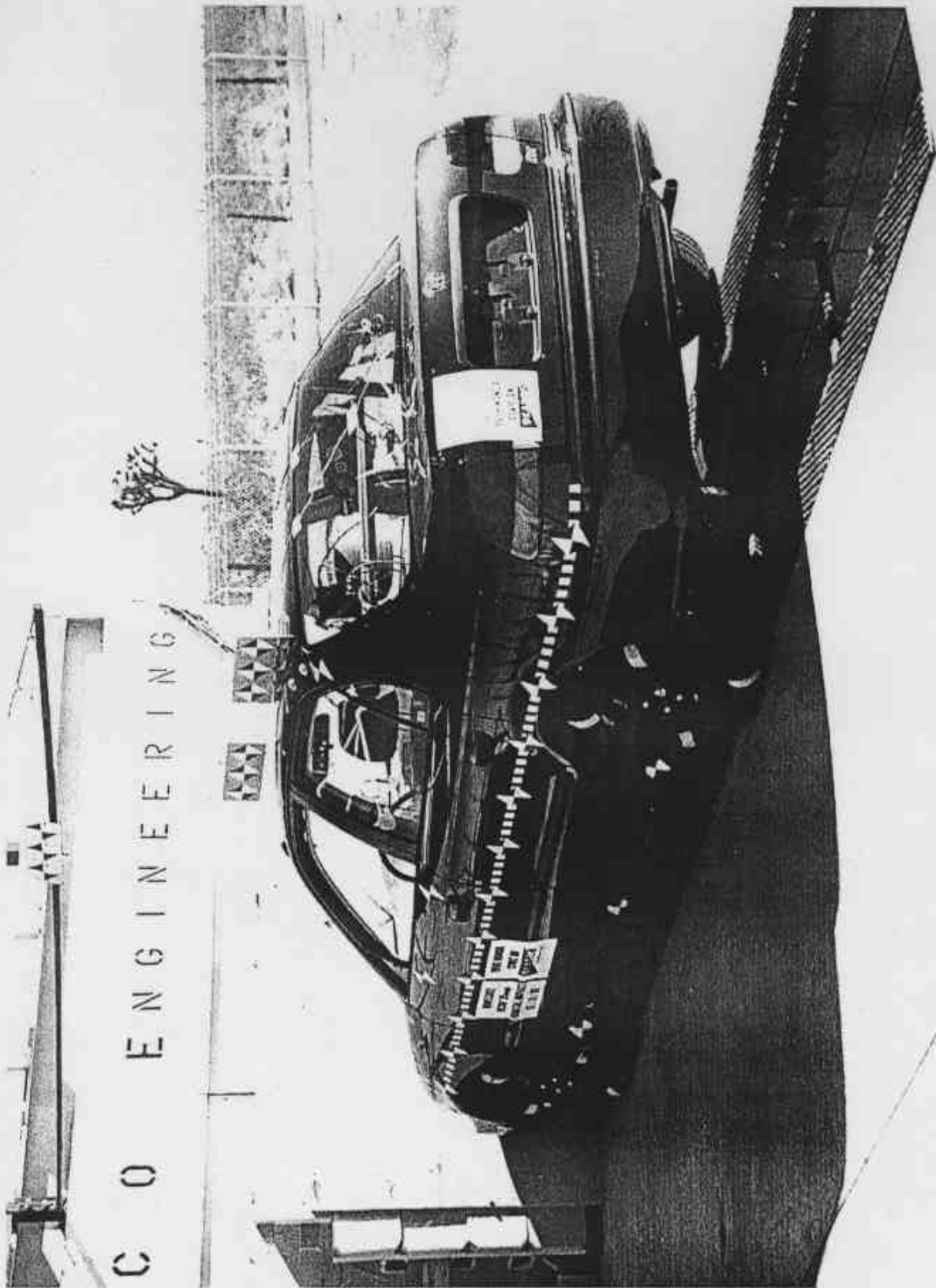


FIGURE A-13. PRETEST LEFT REAR VIEW

A-13

KAR-97-R97050-03

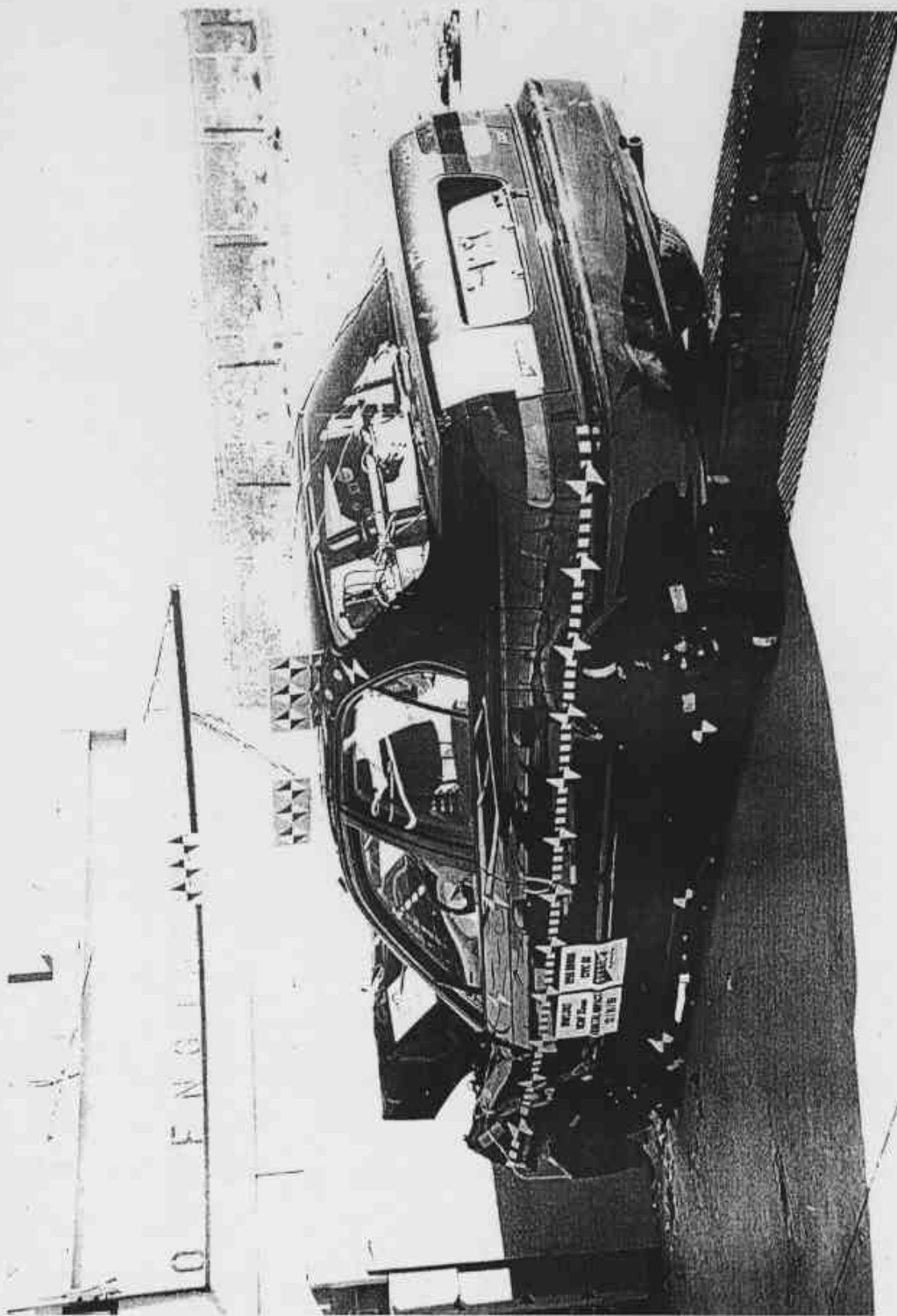


FIGURE A-14. POST TEST LEFT REAR VIEW

A-14

KAR-97-R97050-03

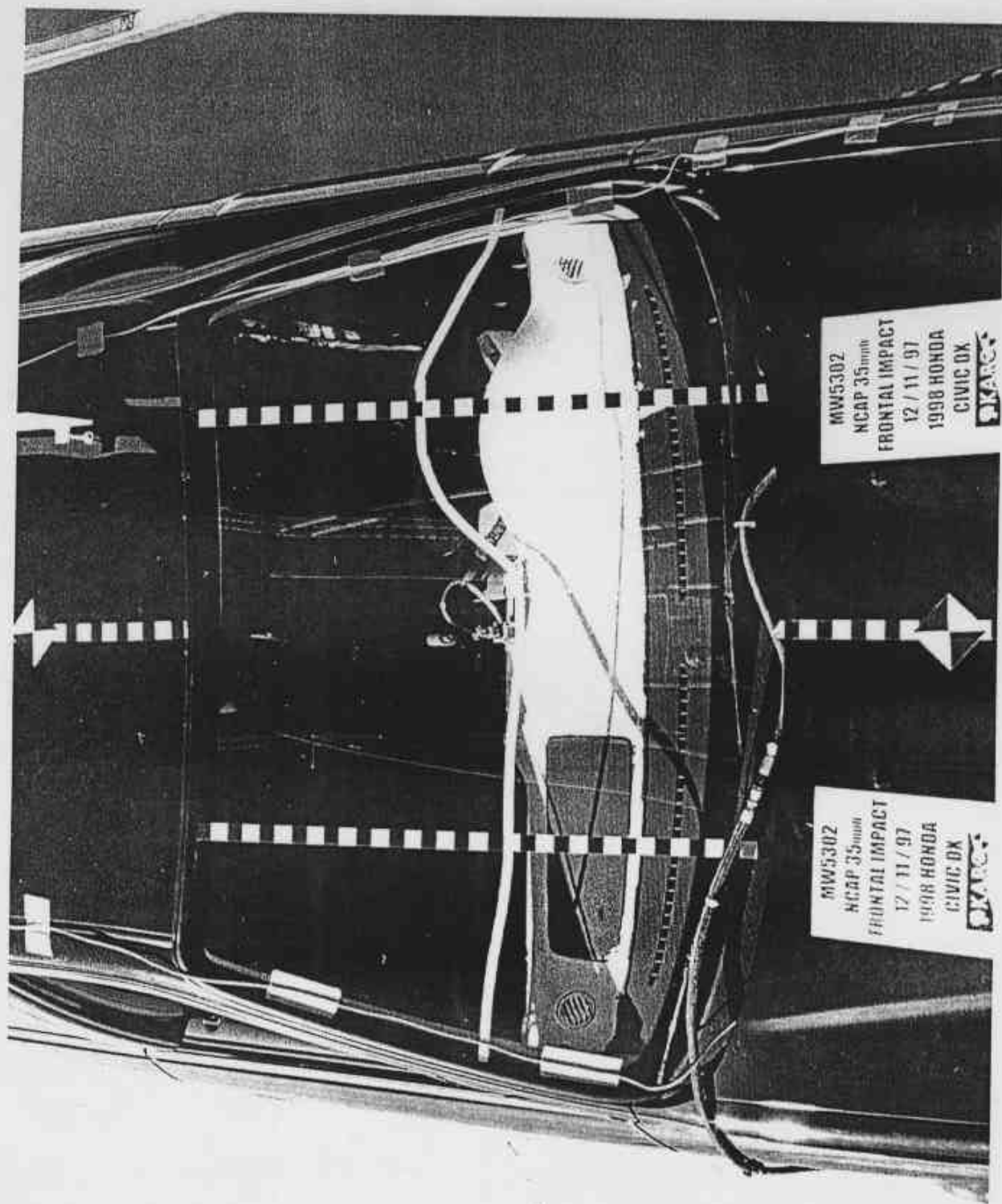


FIGURE A-15. PRETEST WINDSHIELD

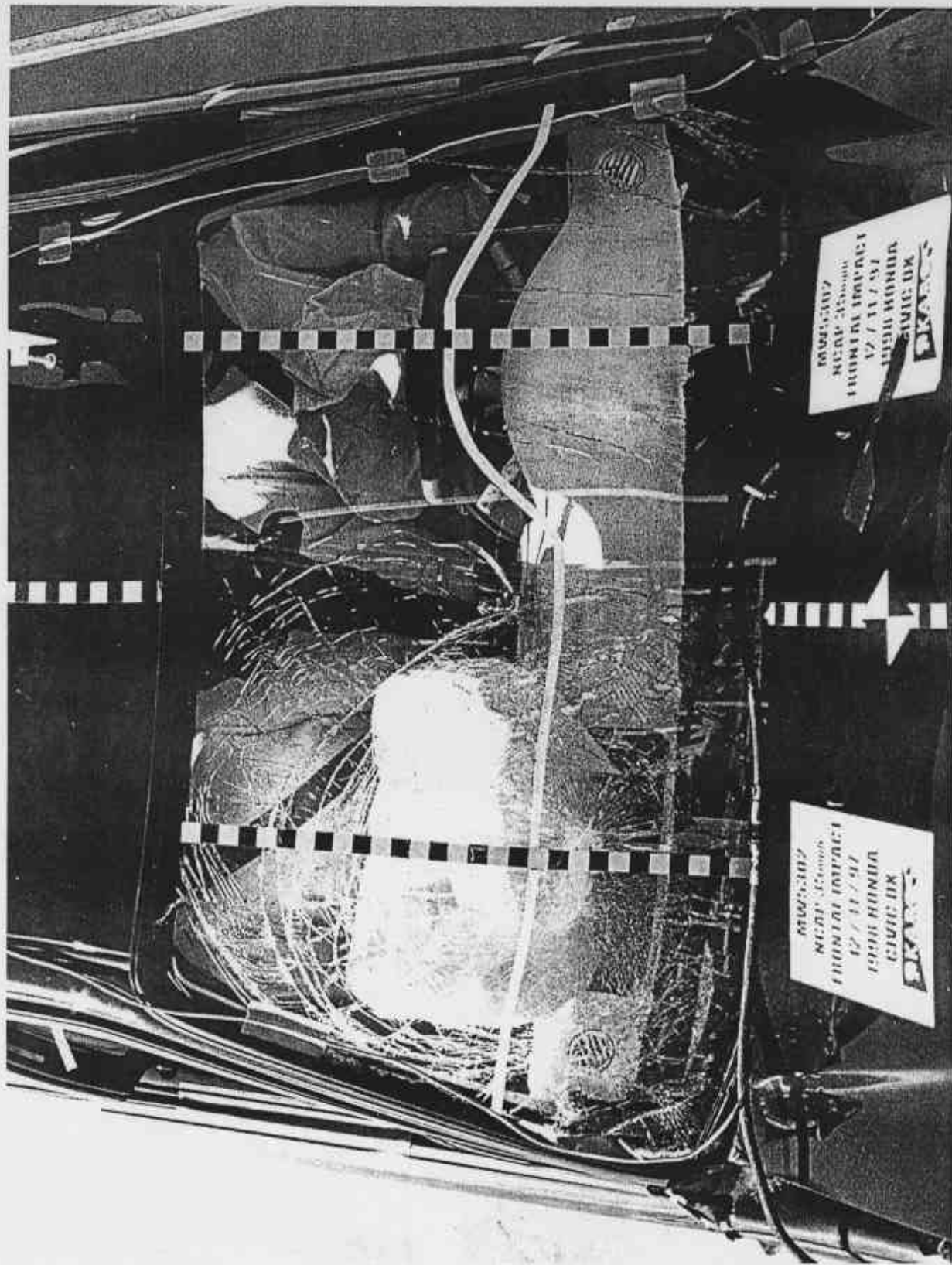


FIGURE A-16. POST TEST WINDSHIELD

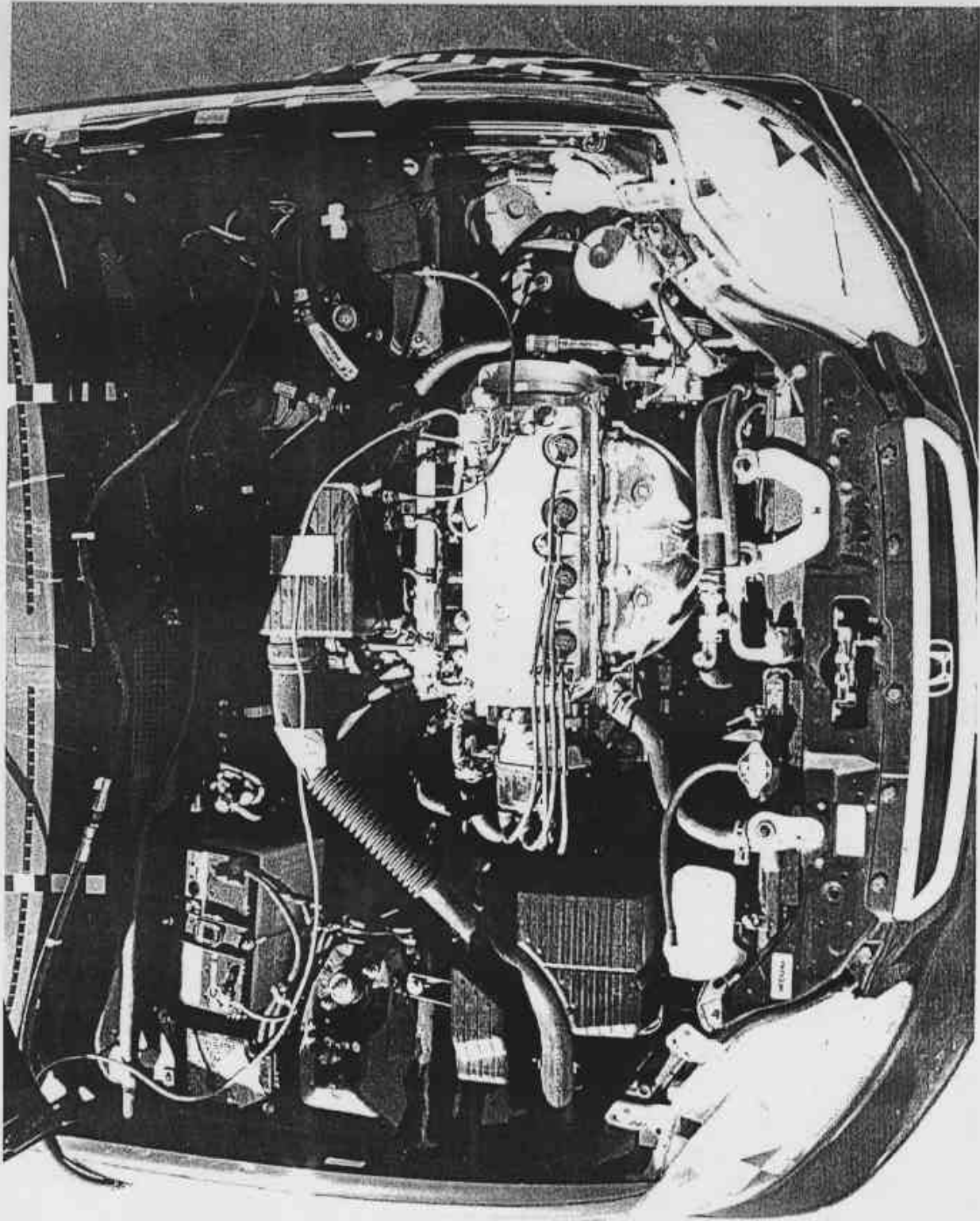


FIGURE-17. PRETEST ENGINE COMPARTMENT

A-17

KAR-97-R97050-03

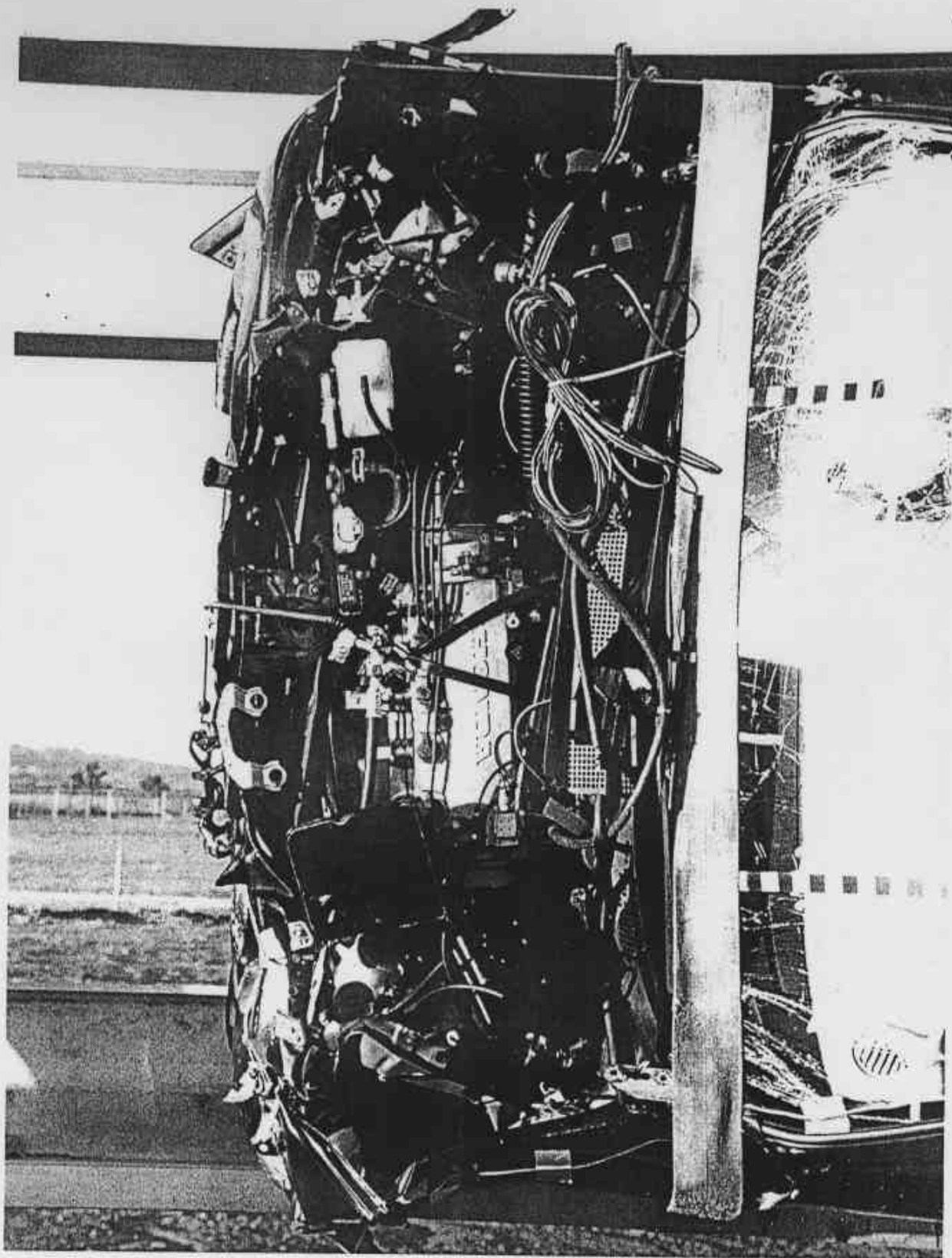


FIGURE A-18. POST TEST ENGINE COMPARTMENT

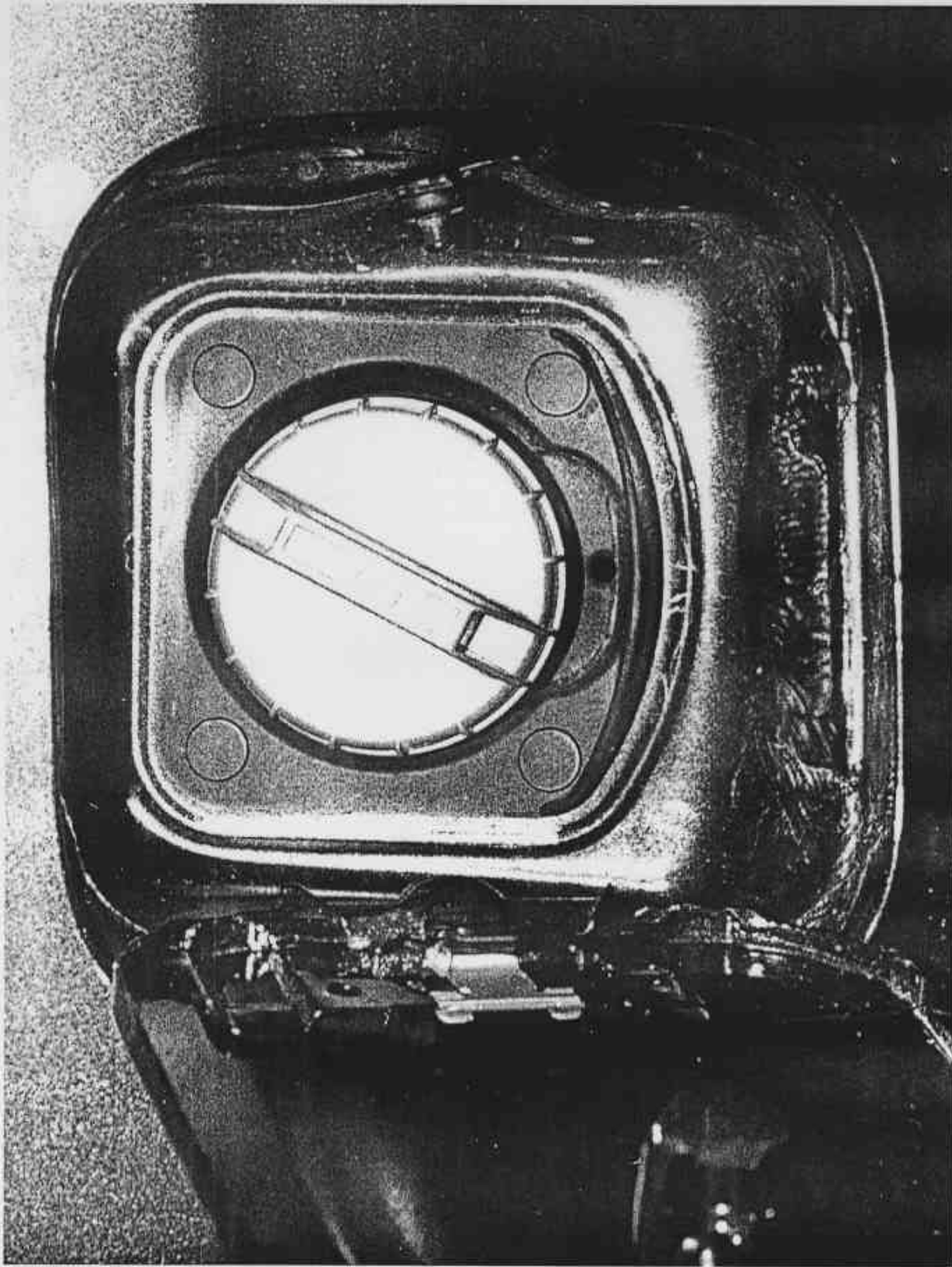


FIGURE A-19. PRETEST FUEL CAP

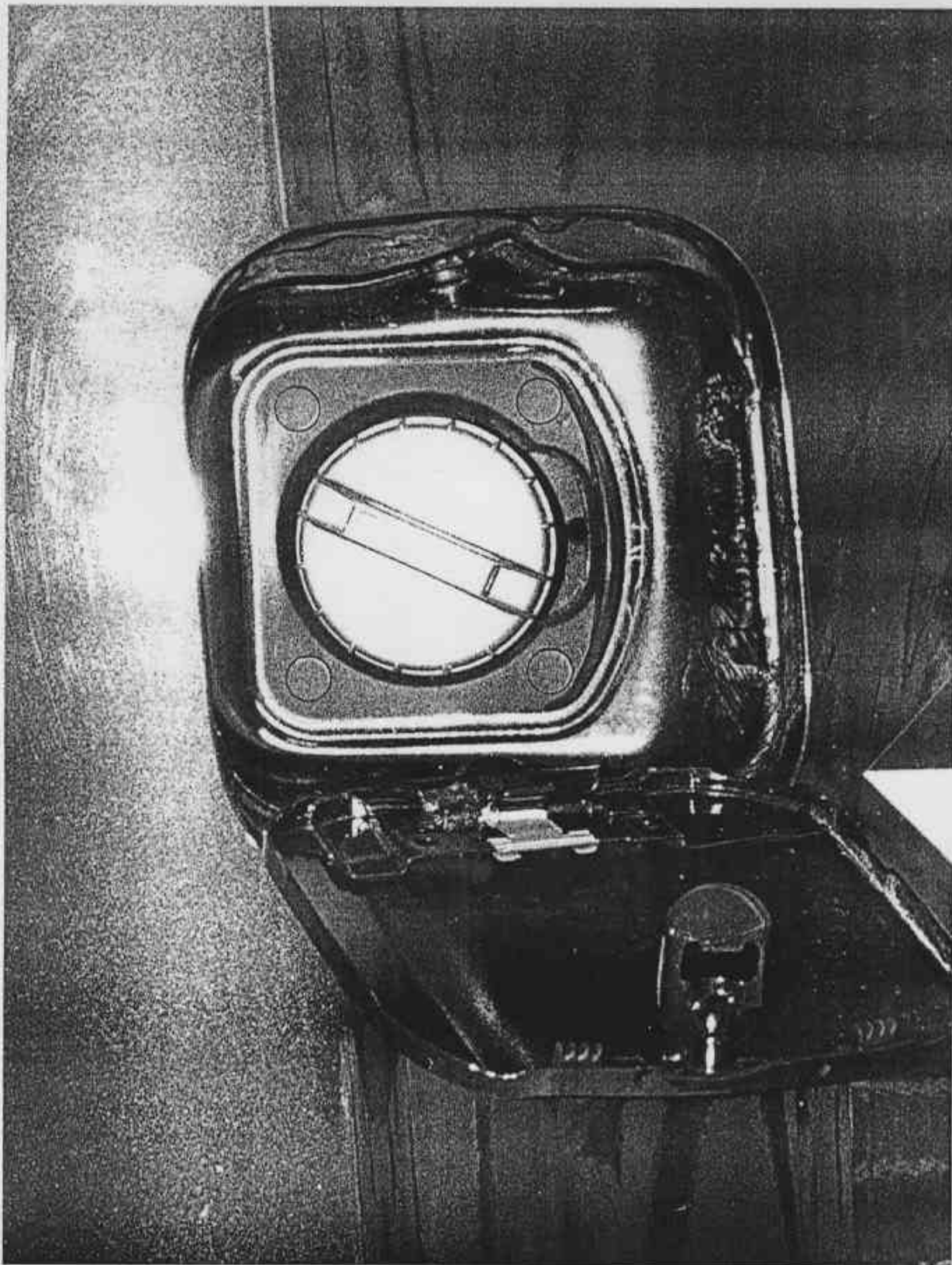


FIGURE A-20. POST TEST FUEL CAP

A-20

KAR-97-R97050-03

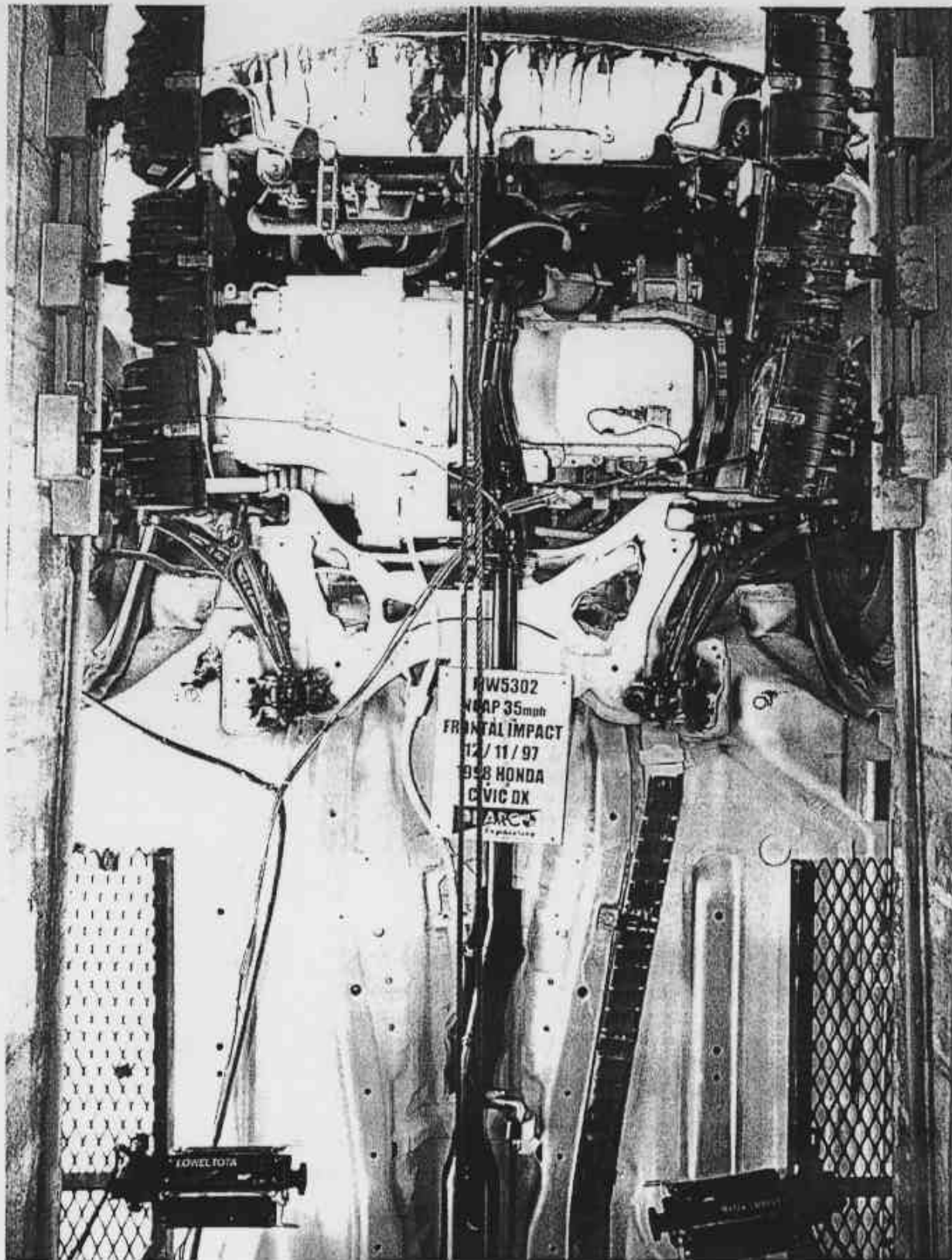


FIGURE-21. PRETEST FRONT UNDERSIDE

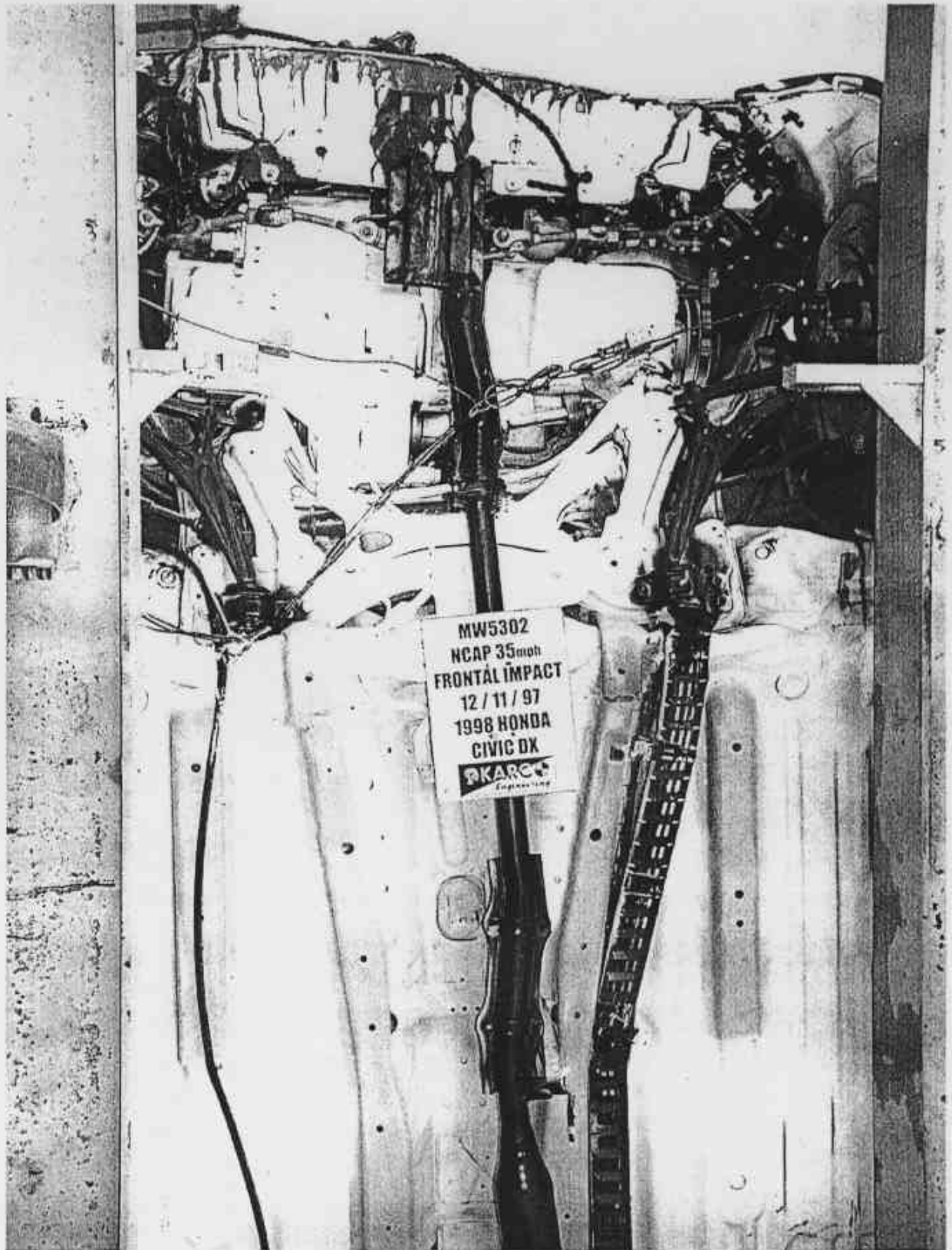


FIGURE A-22. POST TEST FRONT UNDERSIDE

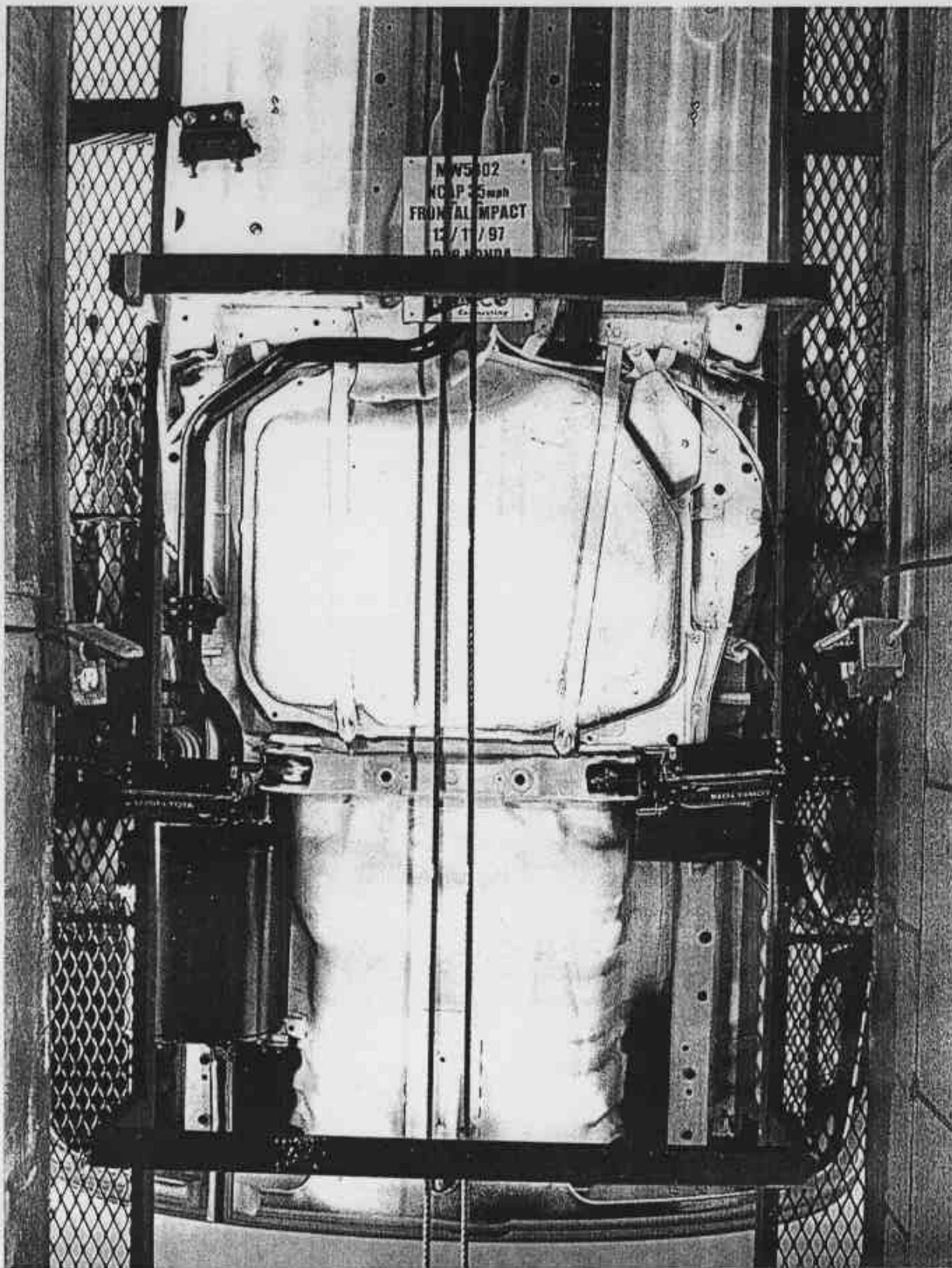


FIGURE A-23. PRETEST REAR UNDERSIDE

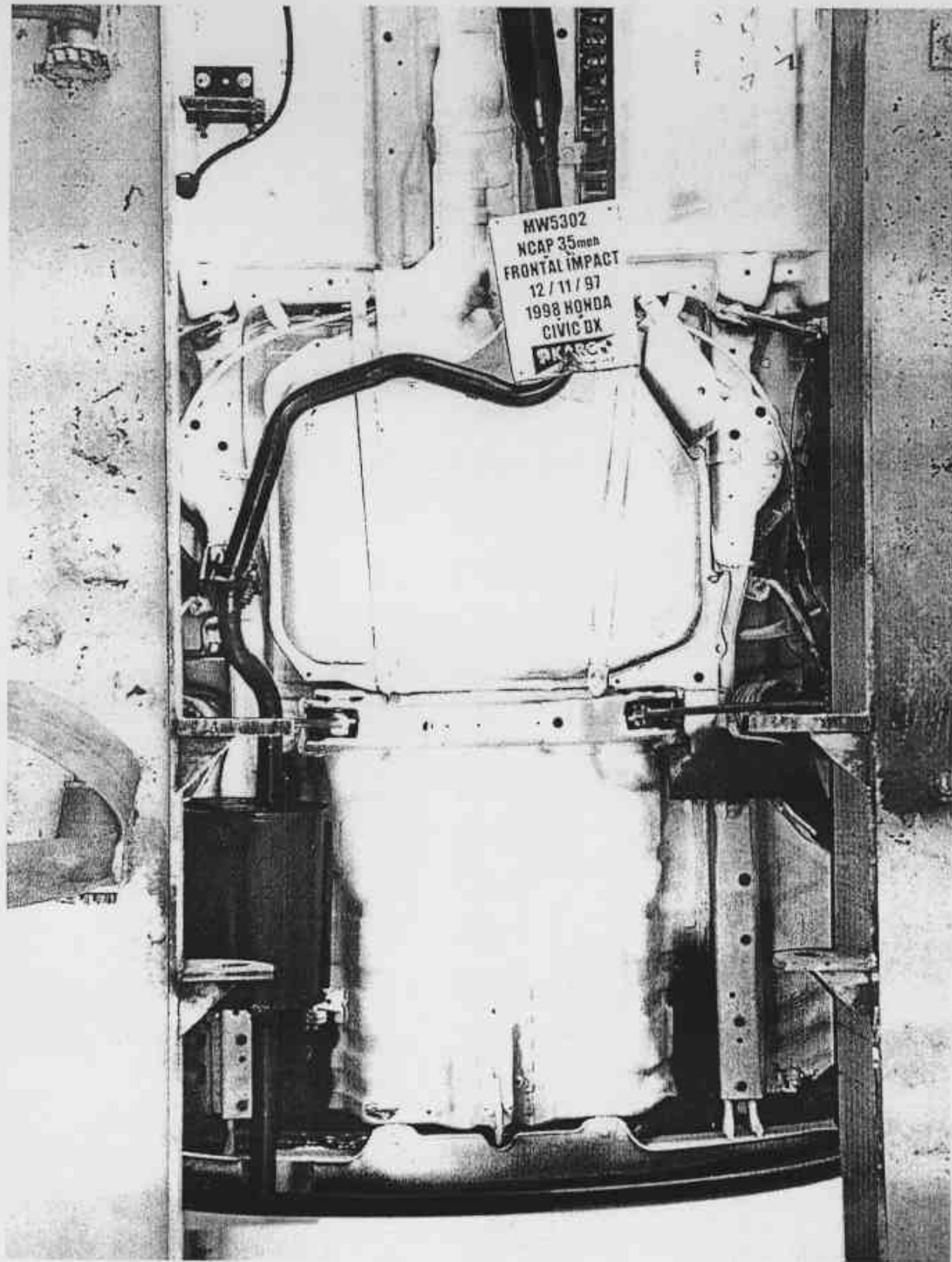


FIGURE A-24. POST TEST REAR UNDERSIDE

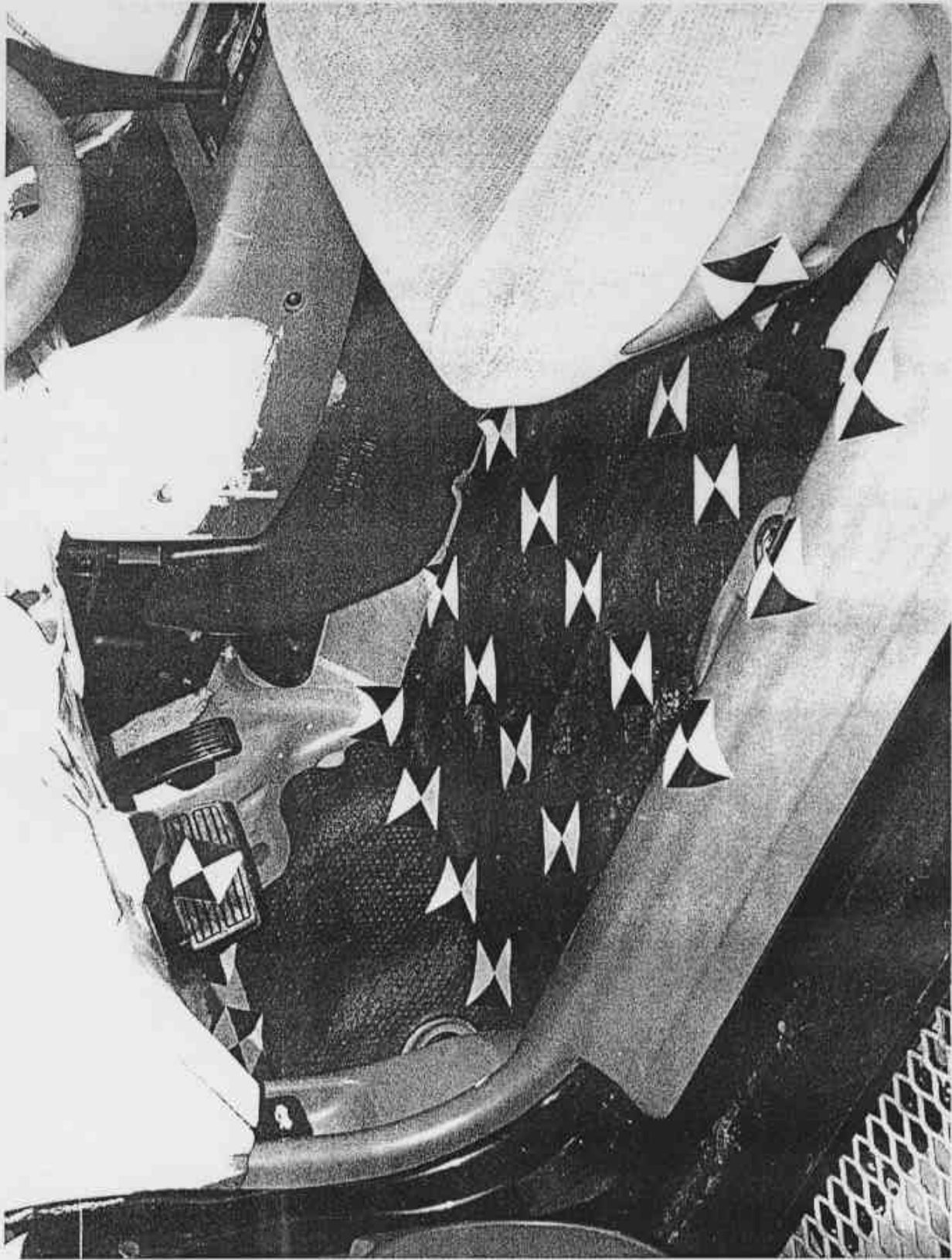


FIGURE A-25. PRETEST DRIVER FLOOR PAN

A-25

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FIGURE A-26. POST TEST DRIVER FLOOR PAN

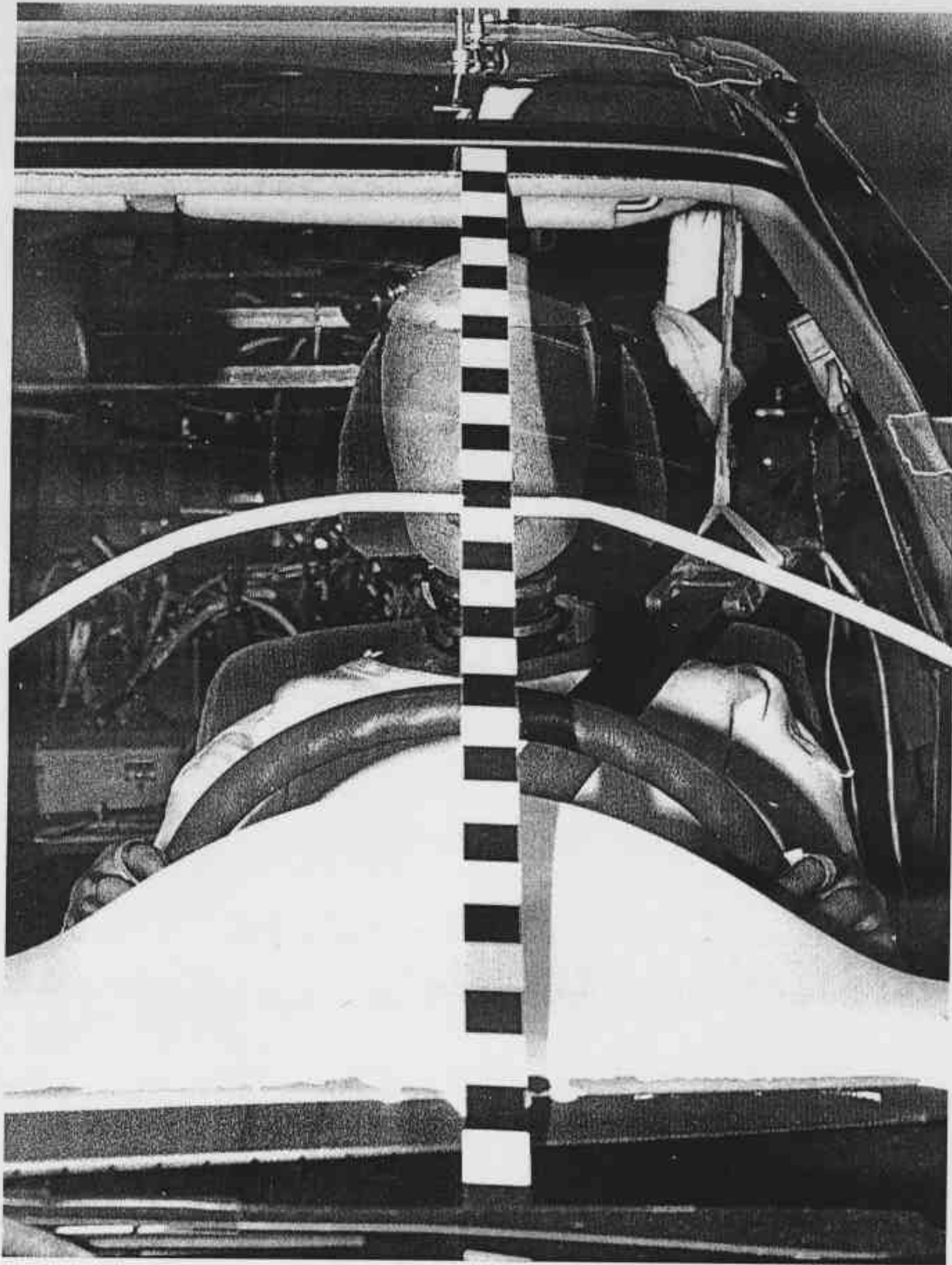


FIGURE A-27. PRETEST DRIVER DUMMY (FRONT VIEW)

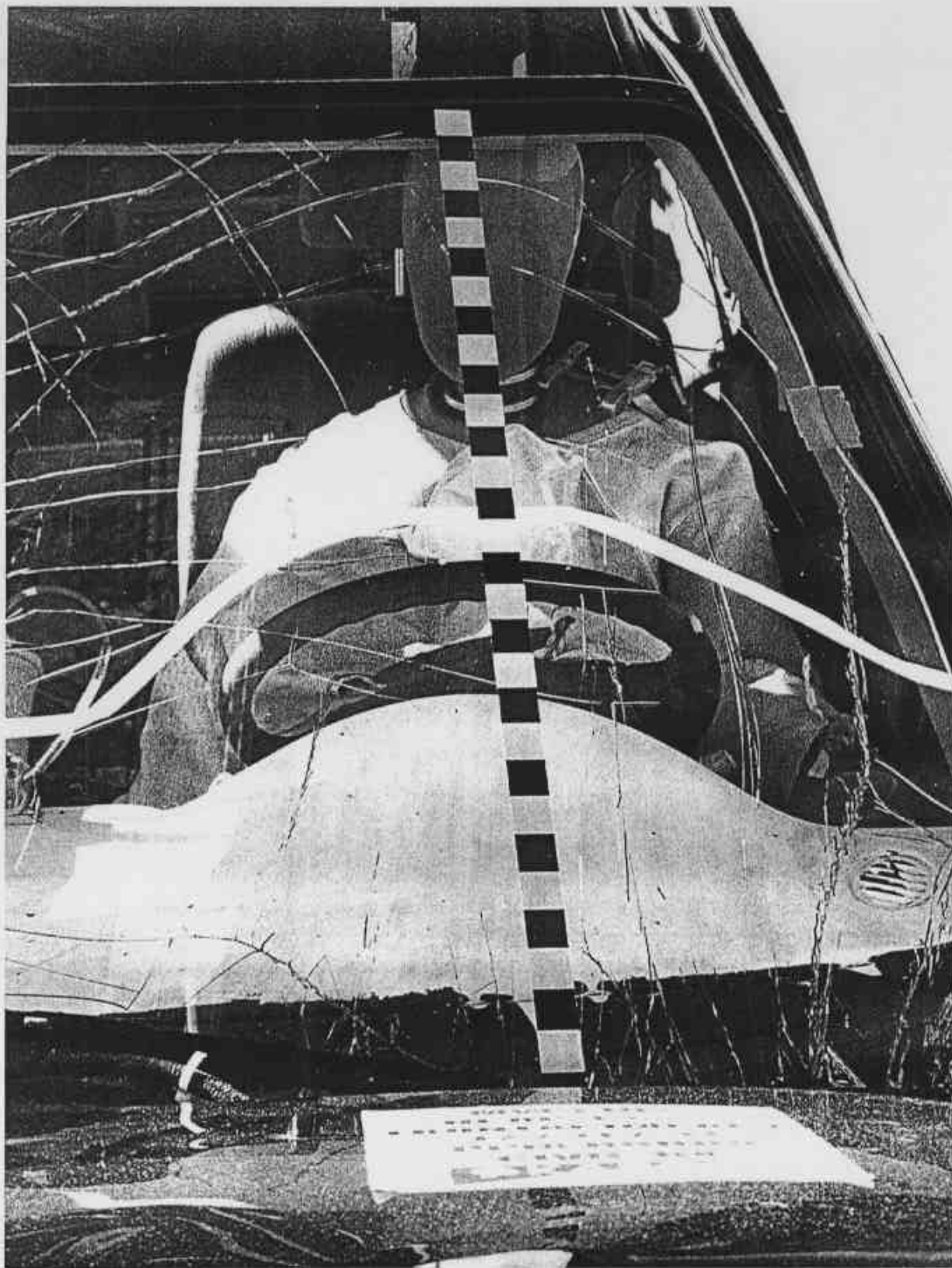


FIGURE A-28. POST TEST DRIVER DUMMY (FRONT VIEW)

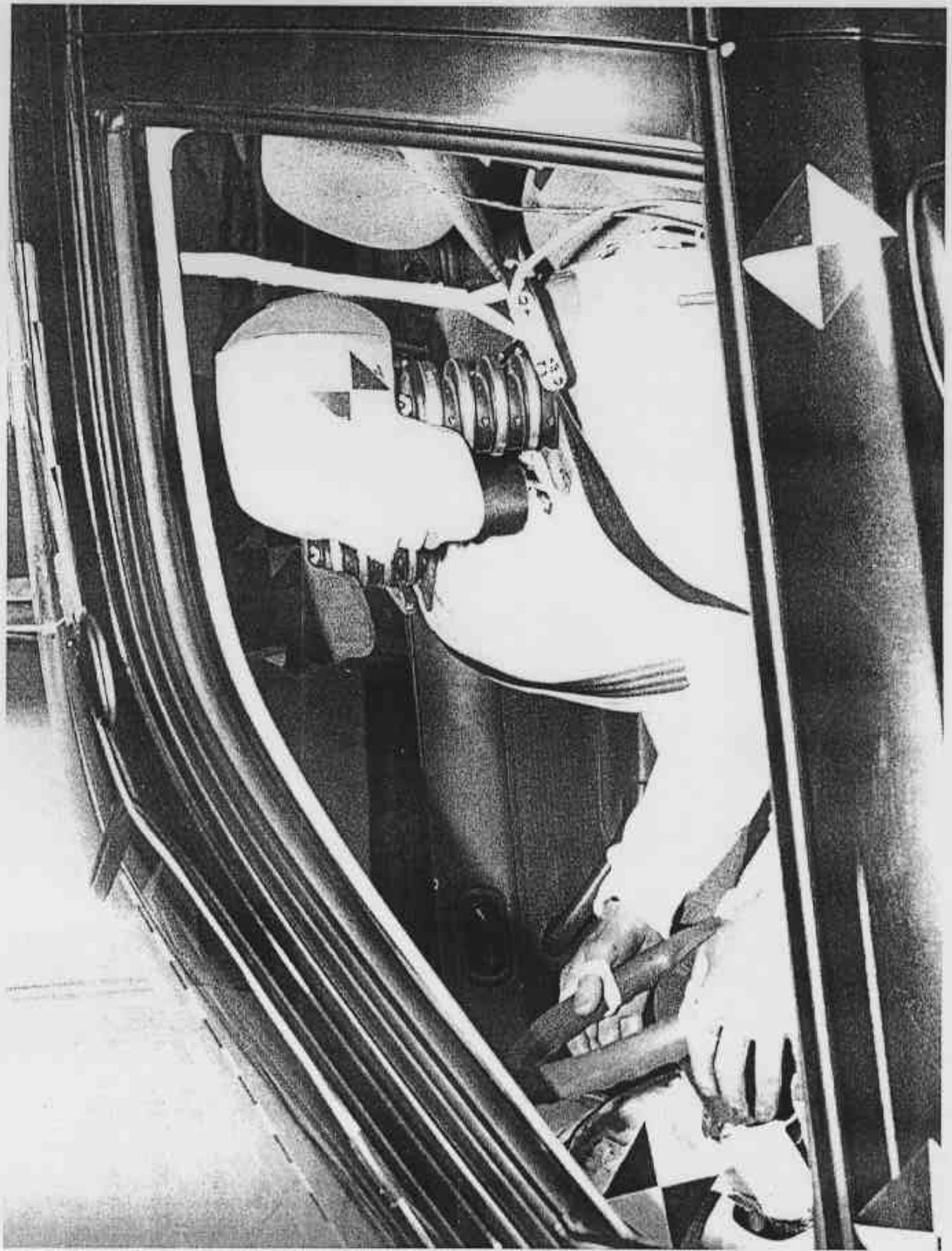


FIGURE A-29. PRETEST DRIVER DUMMY (THRU WINDOW)



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

A-30

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



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

A-32

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



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

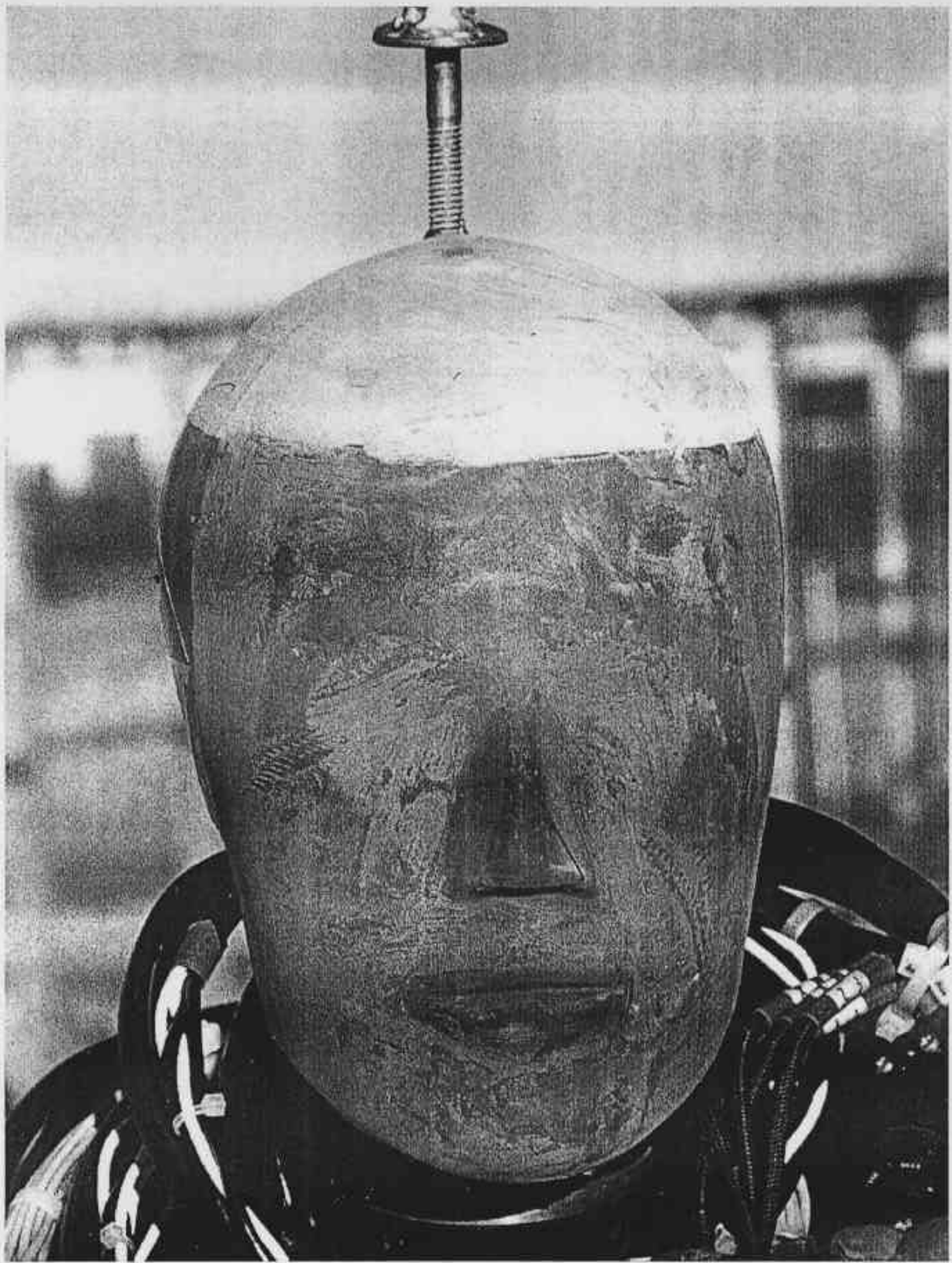


FIGURE A-35. POST TEST DRIVER DUMMY HEAD

A-35

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FIGURE A-36. POST TEST DRIVER DUMMY CONTACT POINT

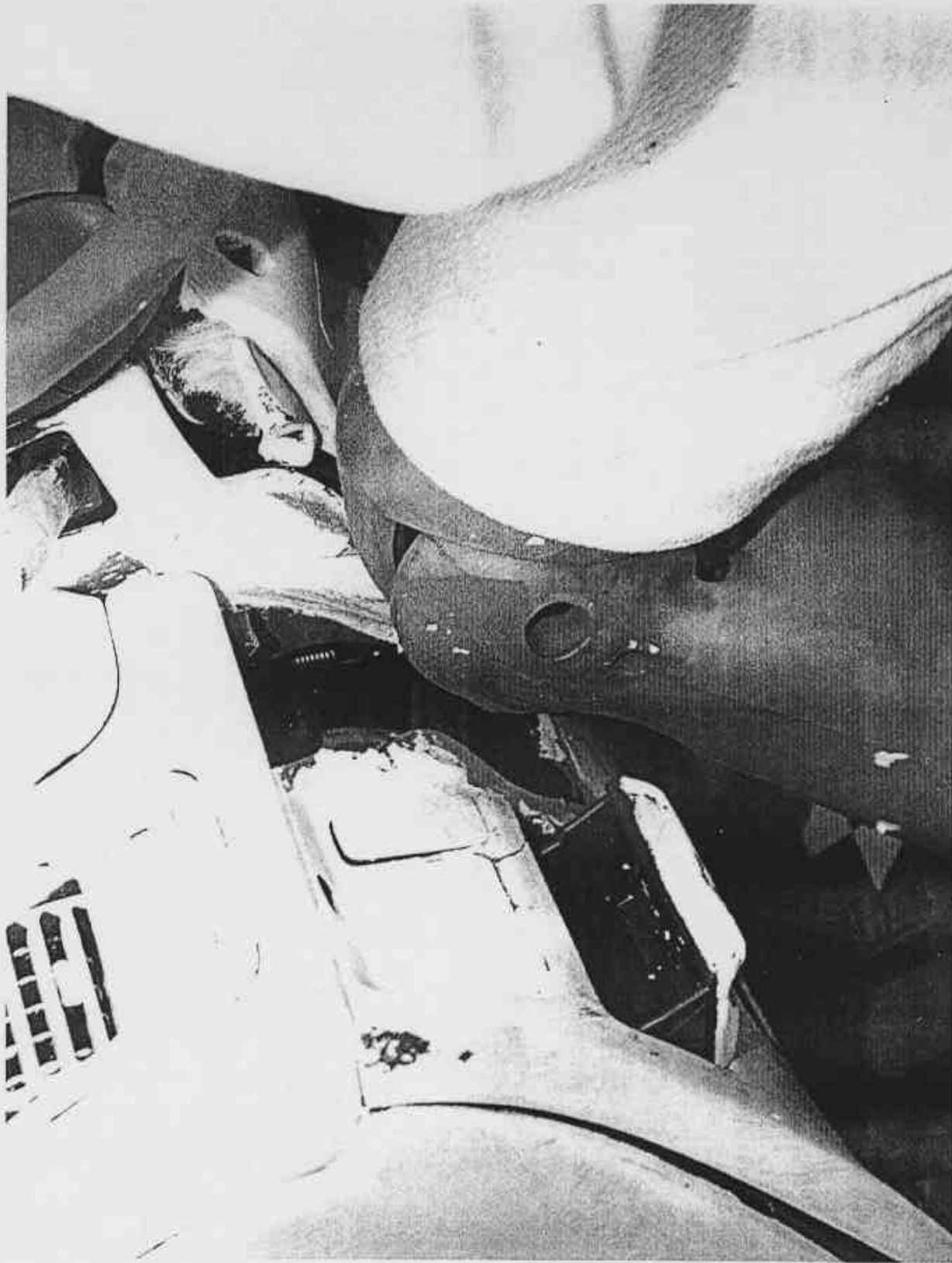


FIGURE A-37. POST TEST DRIVER DUMMY CONTACT POINT

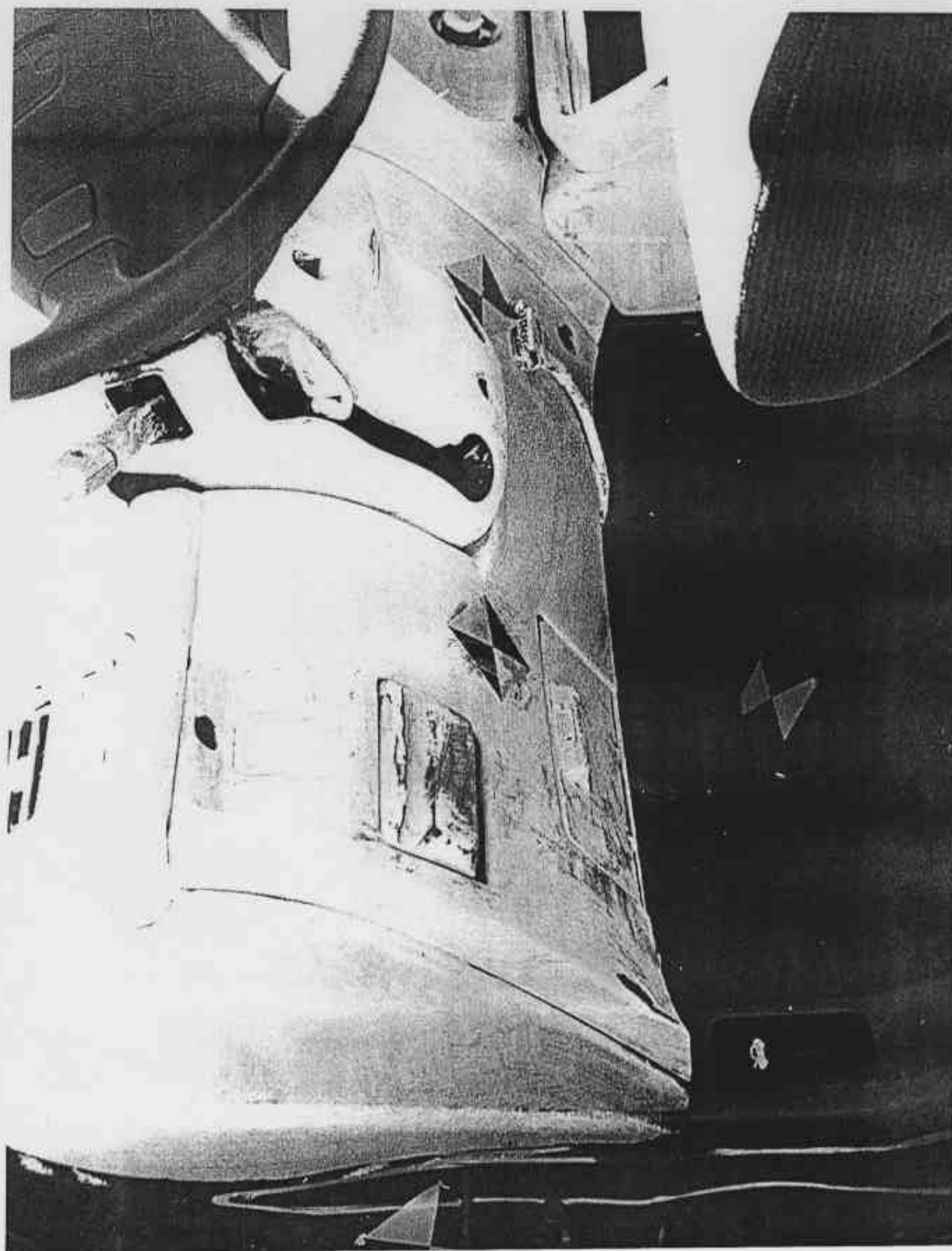


FIGURE A-38.PRETEST DRIVER SIDE KNEE BOLSTER

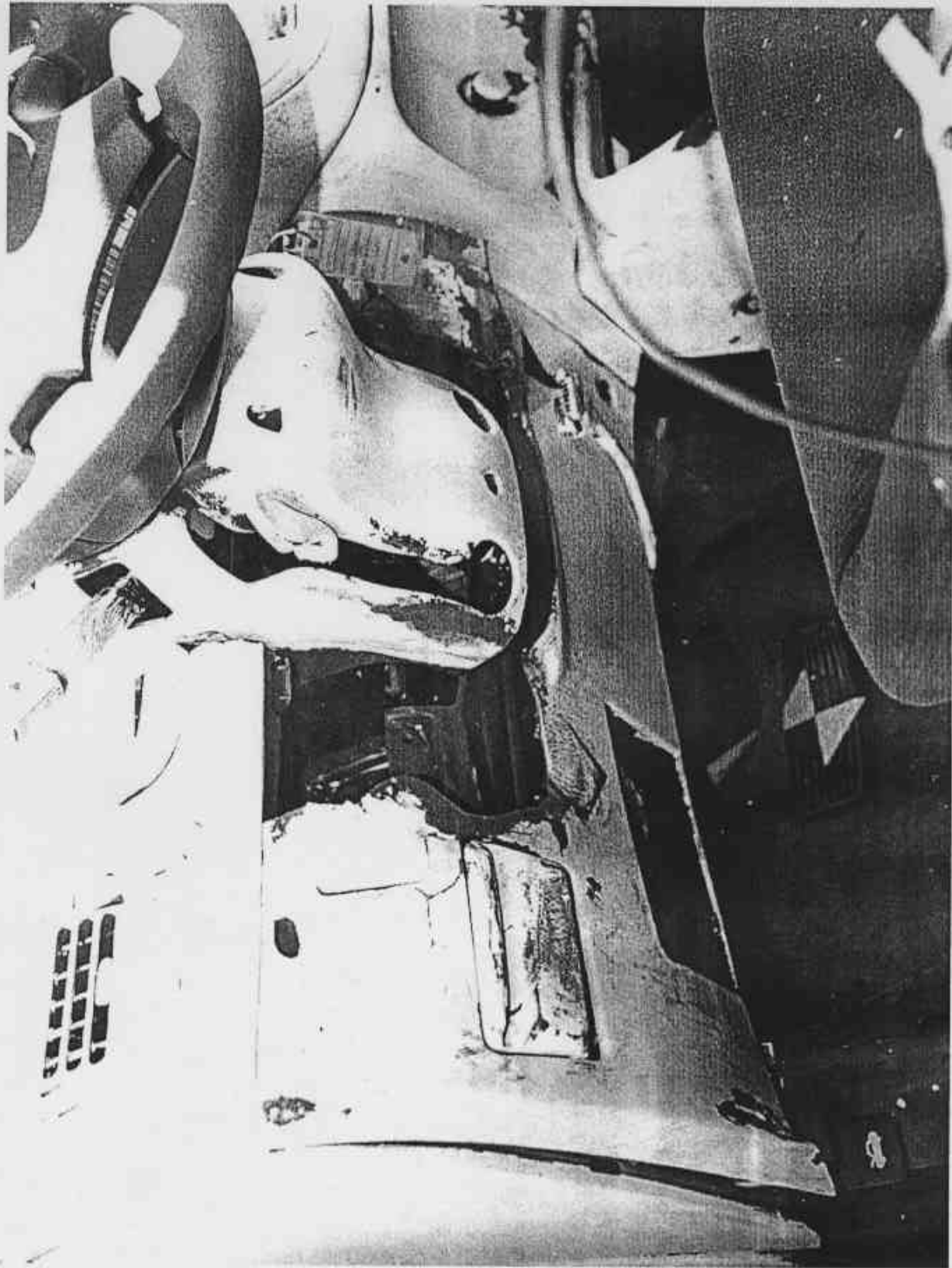


FIGURE A-39. POST TEST DRIVER KNEE BOLSTER

A-39

KAR-97-R97050-03

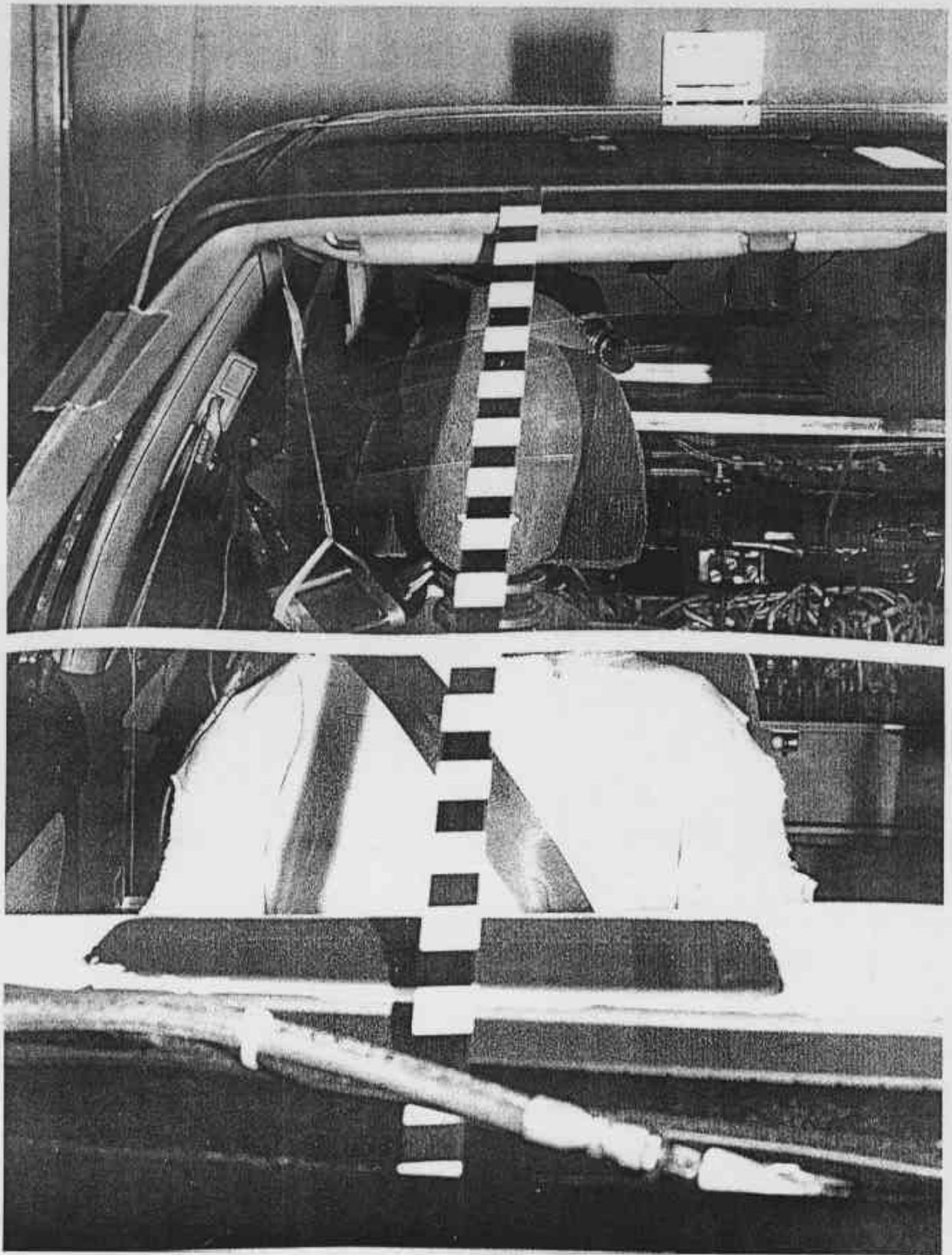


FIGURE A-40. PRETEST PASSENGER DUMMY (FRONT VIEW)



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



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

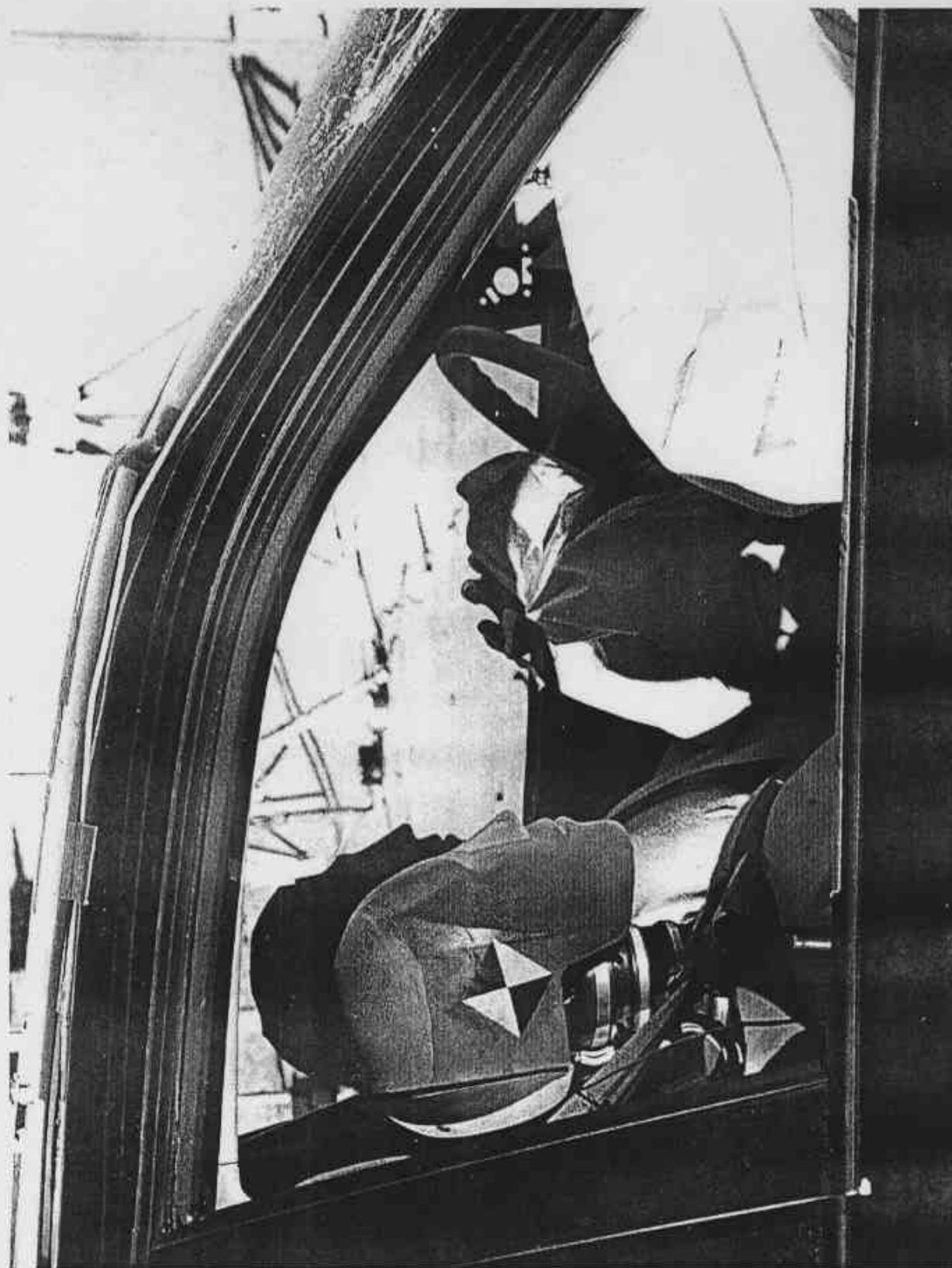


FIGURE A-43. POST TEST PASSENGER DUMMY (THRU WINDOW)

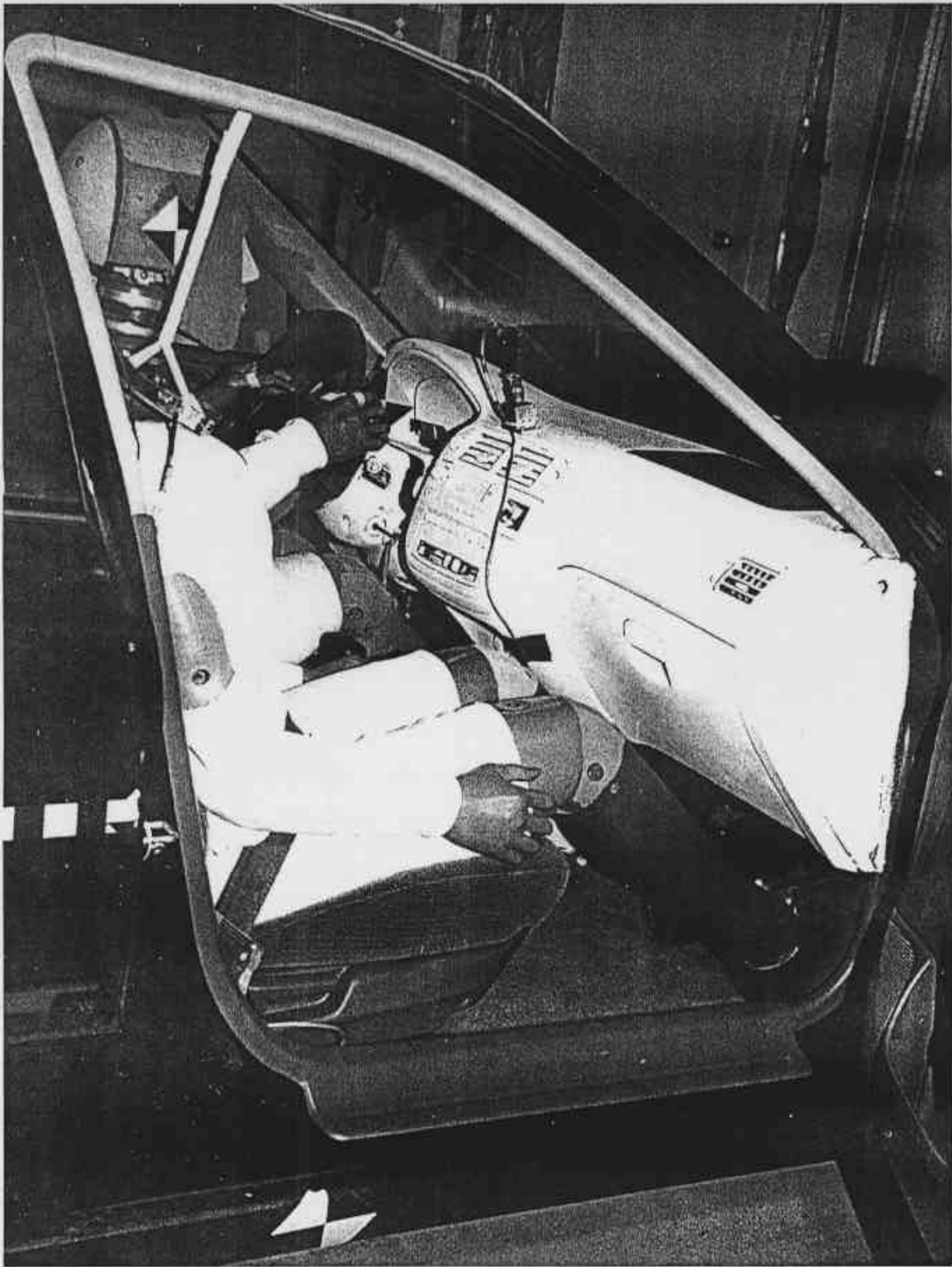


FIGURE A-44. PRETEST PASSENGER DUMMY (DOOR OPEN)



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

A-45

KAR-97-R97050-03

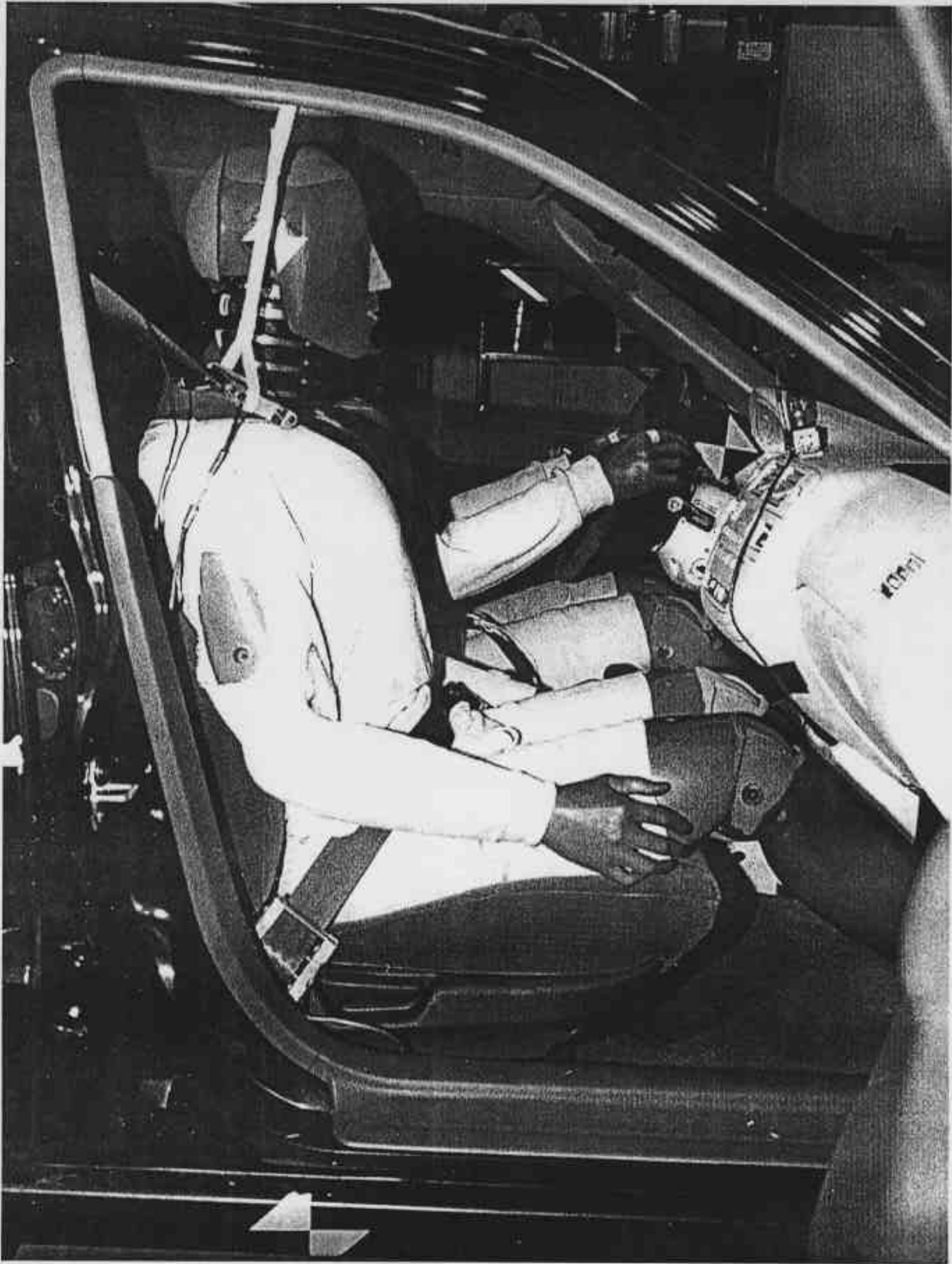


FIGURE A-46. PRETEST PASSENGER DUMMY (90° TO VEHICLE)



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

A-47

KAR-97-R97050-03

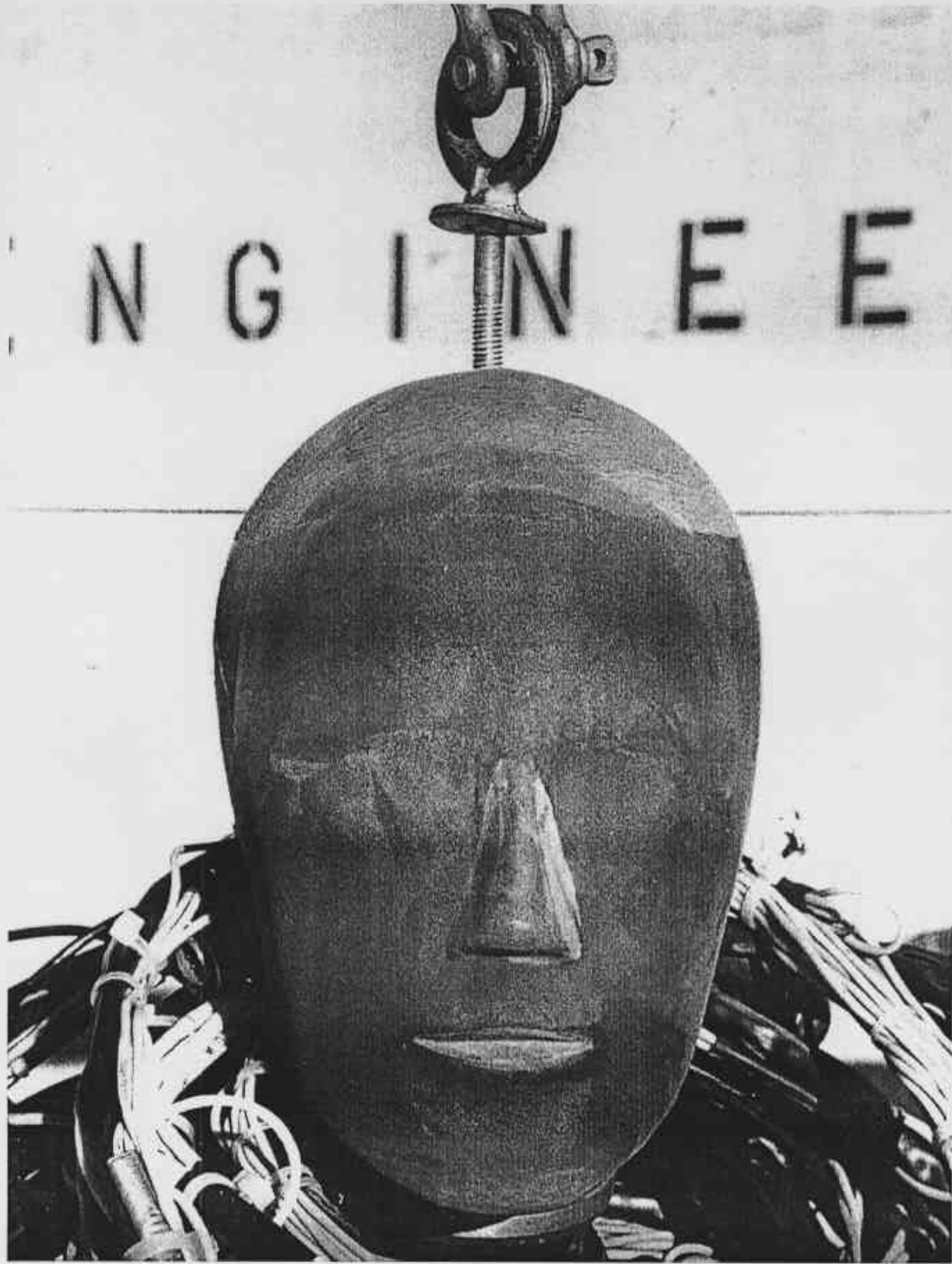


FIGURE A-48. POST TEST PASSENGER DUMMY HEAD

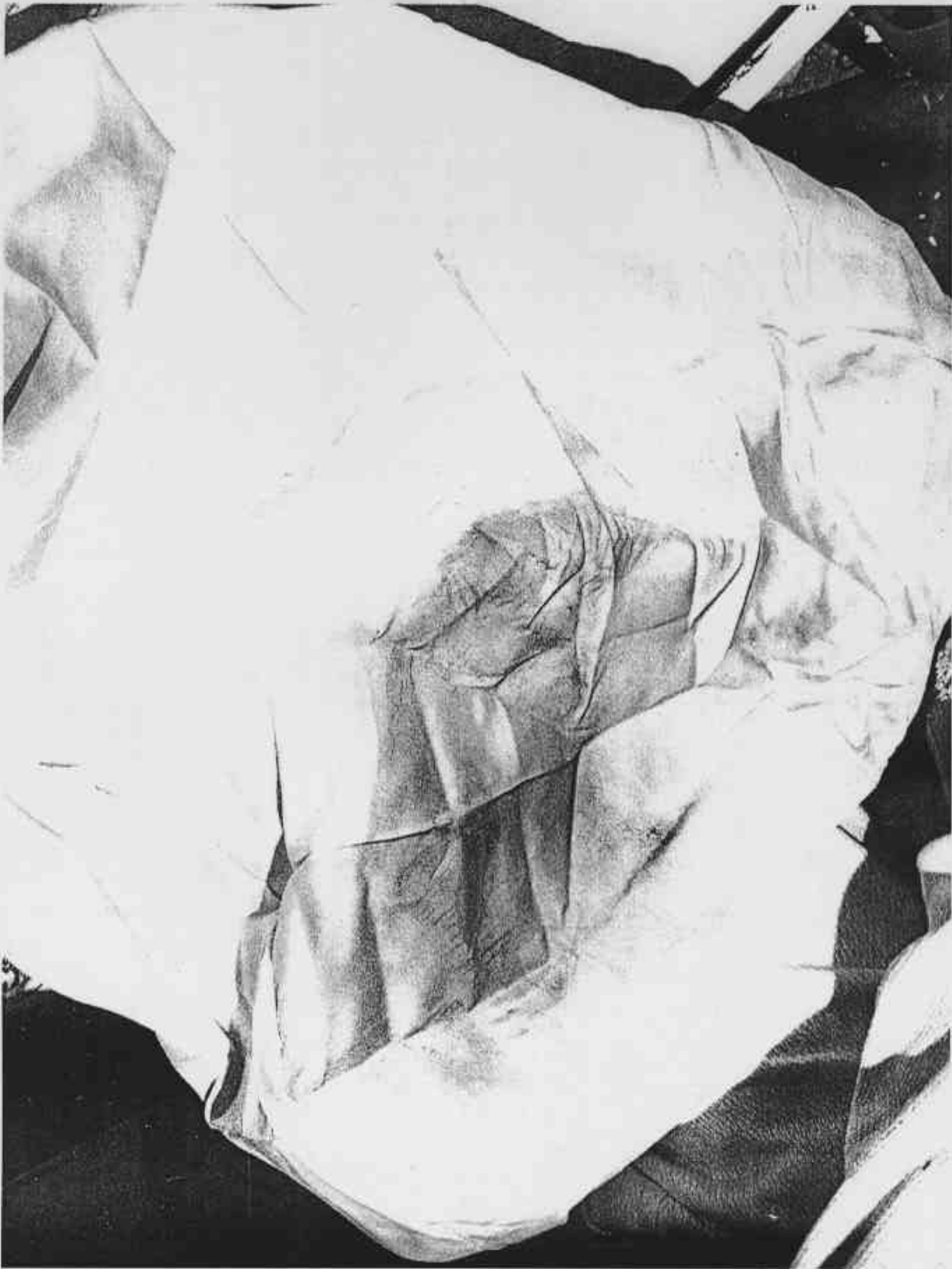


FIGURE A-49. POST TEST PASSENGER DUMMY CONTACT POINT

A-49

KAR-97-R97050-03

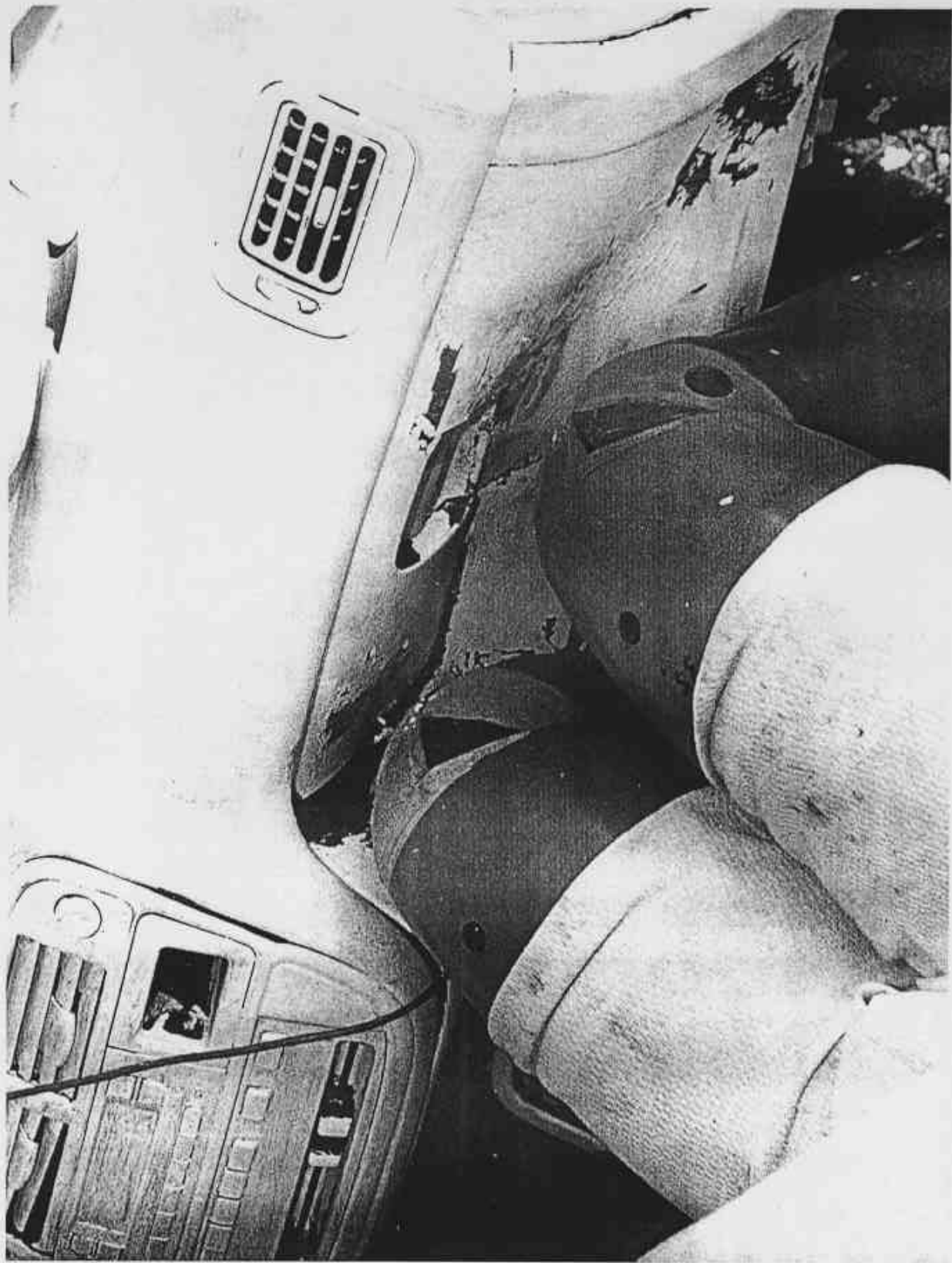


FIGURE A-50. POST TEST PASSENGER DUMMY CONTACT POINT

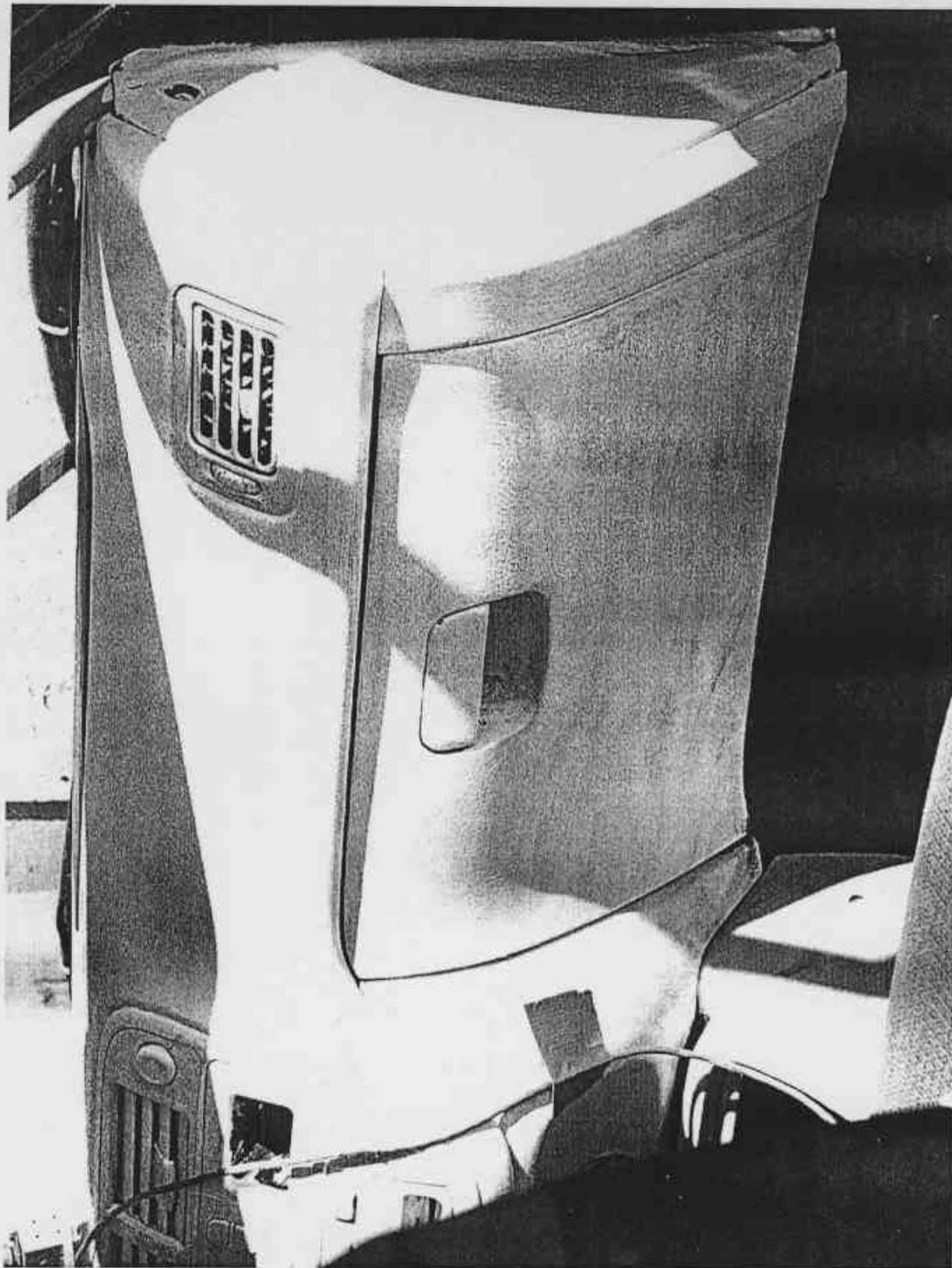


FIGURE A-51. PRETEST PASSENGER SIDE KNEE BOLSTER

A-51

KAR-97-R97050-03

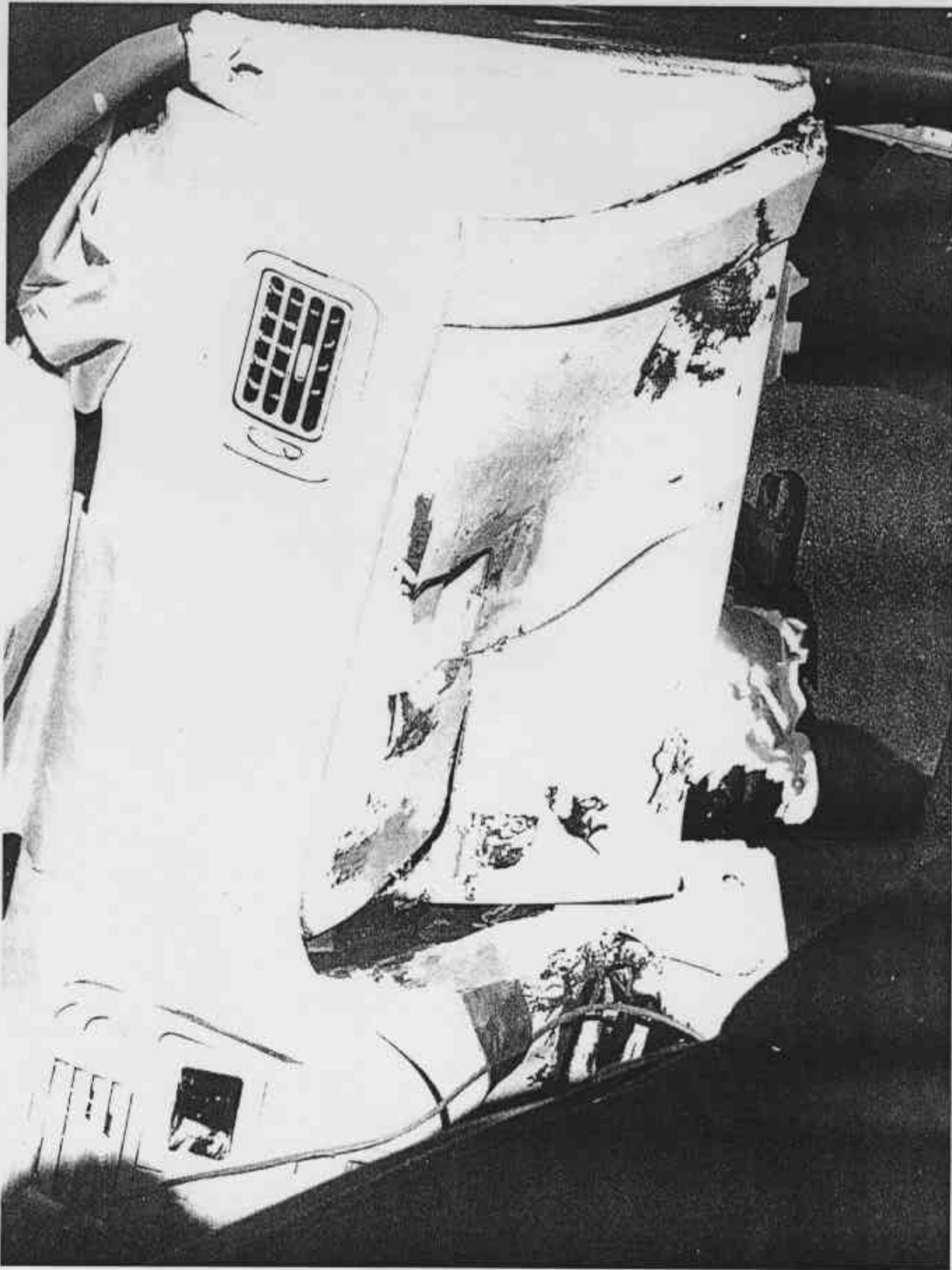


FIGURE A-52. POST TEST PASSENGER SIDE KNEE BOLSTER

A-52

KAR-97-R97050-03

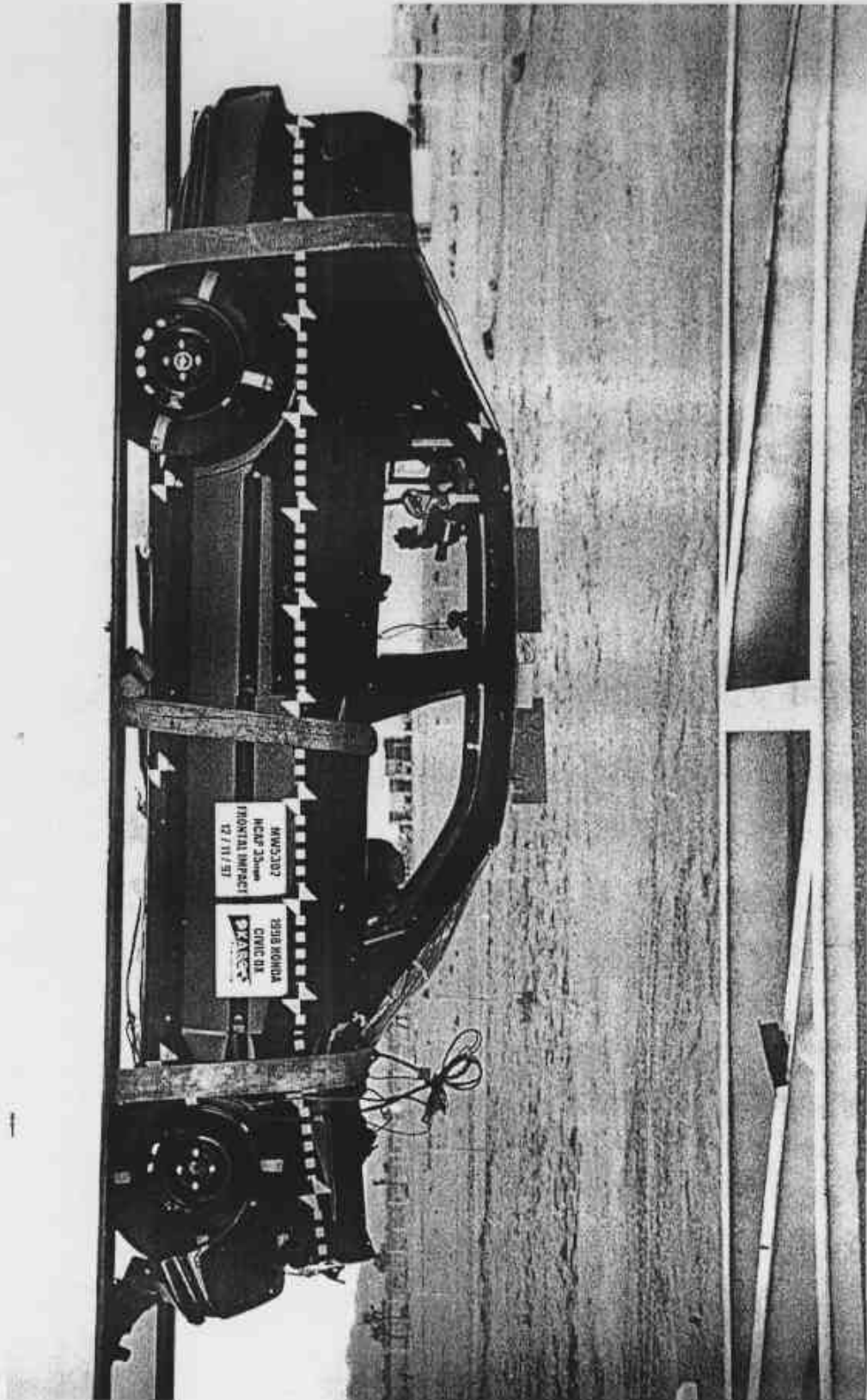


FIGURE 53. VEHICLE ON ROLLOVER

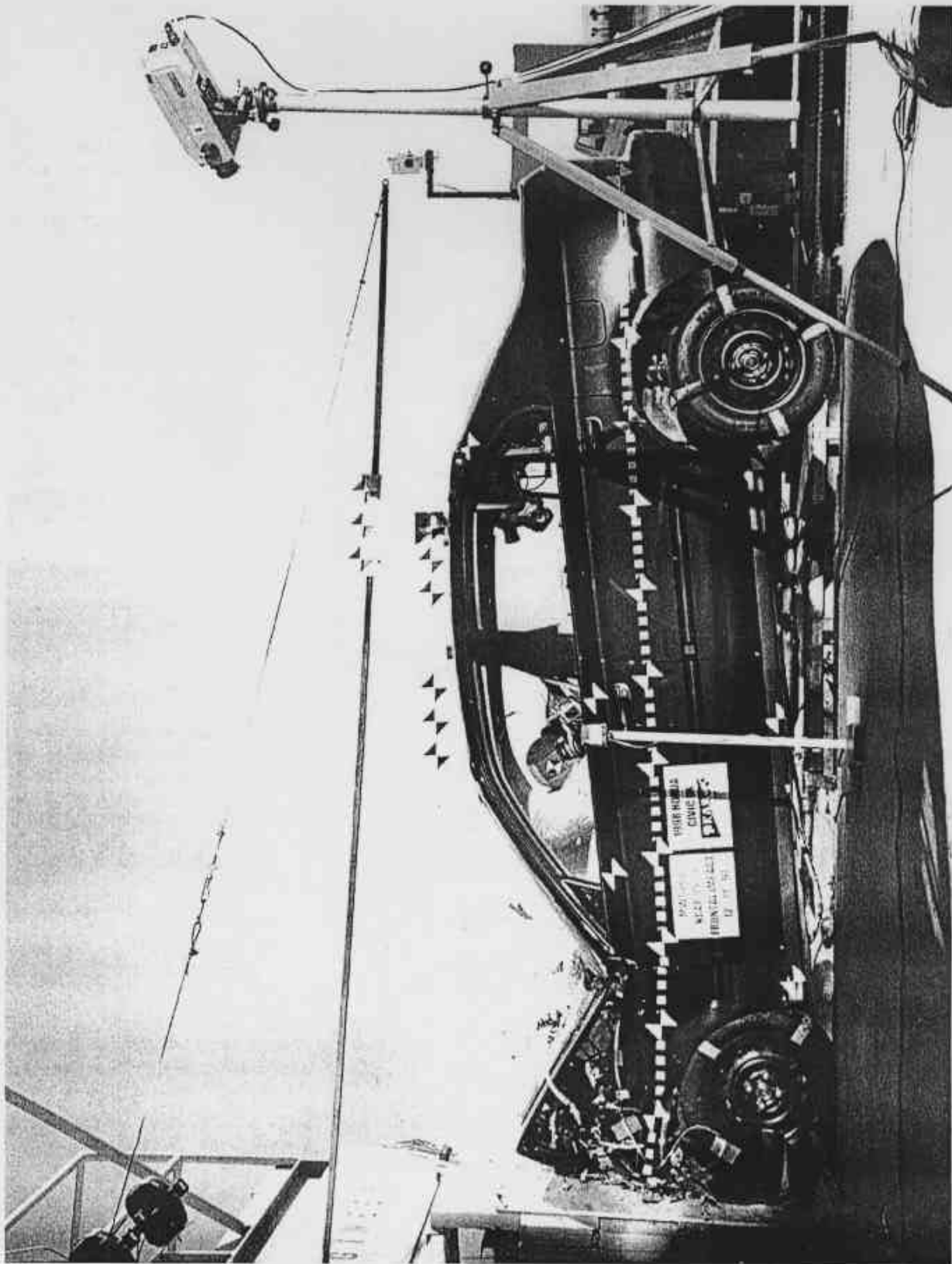


FIGURE 54. VEHICLE DURING IMPACT

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FIGURE 55. POST TEST CLOSE-UP OF PASSENGER WINDSHIELD

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APPENDIX B
DUMMY, VEHICLE AND RESPONSE DATA TRACES

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B-6	Driver Head Resultant Primary	B-6
B-7	Driver Head Redundant X	B-7
B-8	Driver Head Redundant X Velocity	B-8
B-9	Driver Head Redundant X Displacement	B-9
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B-11	Driver Head Redundant Z	B-11
B-12	Driver Head Resultant Redundant	B-12
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B-23	Driver Chest Primary X Displacement	B-23
B-24	Driver Chest Primary Y	B-24
B-25	Driver Chest Primary Z	B-25
B-26	Driver Chest Primary Resultant	B-26
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B-56	Driver Right Foot Aft Z	B-56
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B-68	Passenger Head Redundant X	B-68
B-69	Passenger Head Redundant X Velocity	B-69
B-70	Passenger Head Redundant X Displacement	B-70

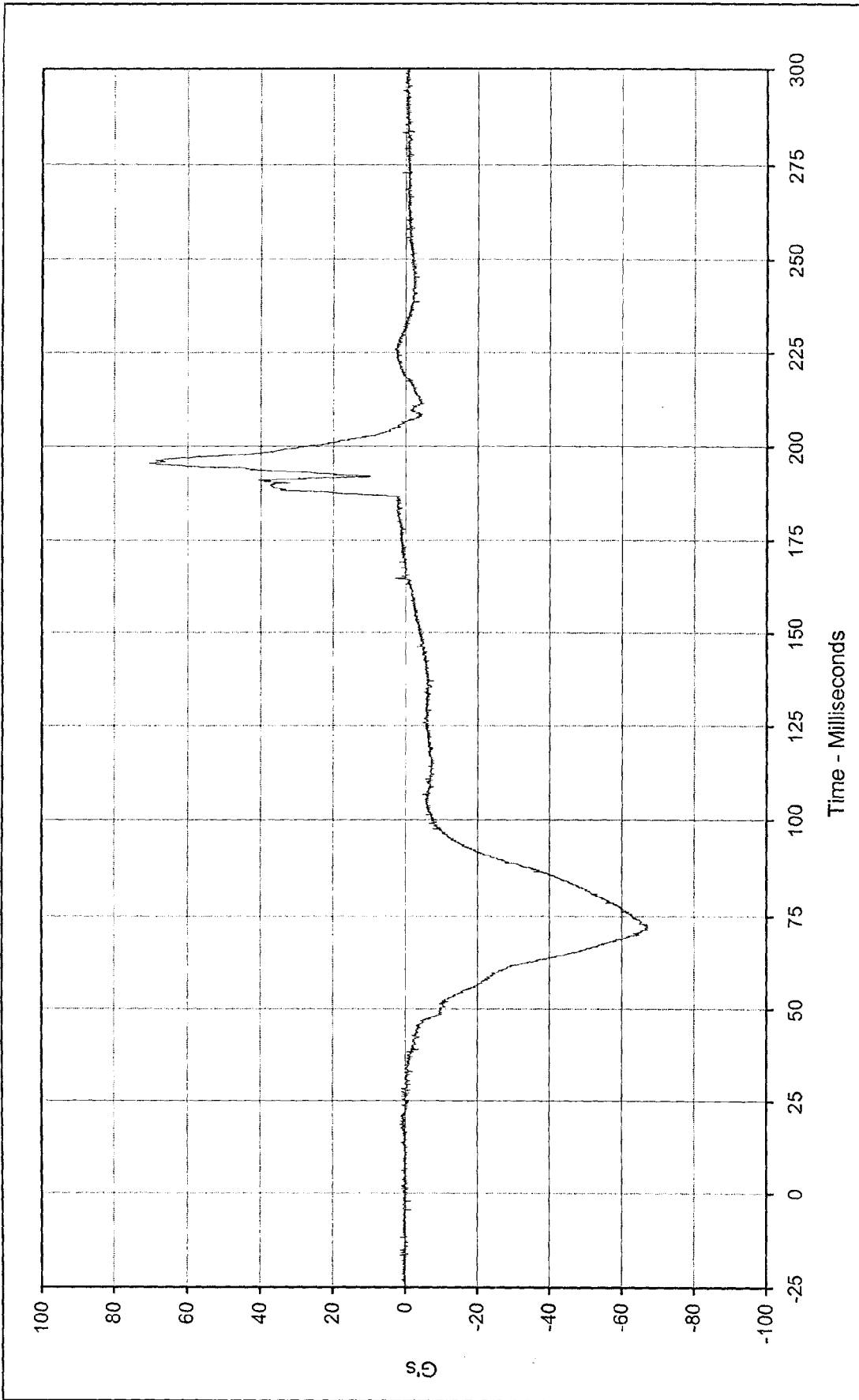
LIST OF DATA PLOTS...(Continued)

Data Plot		Page
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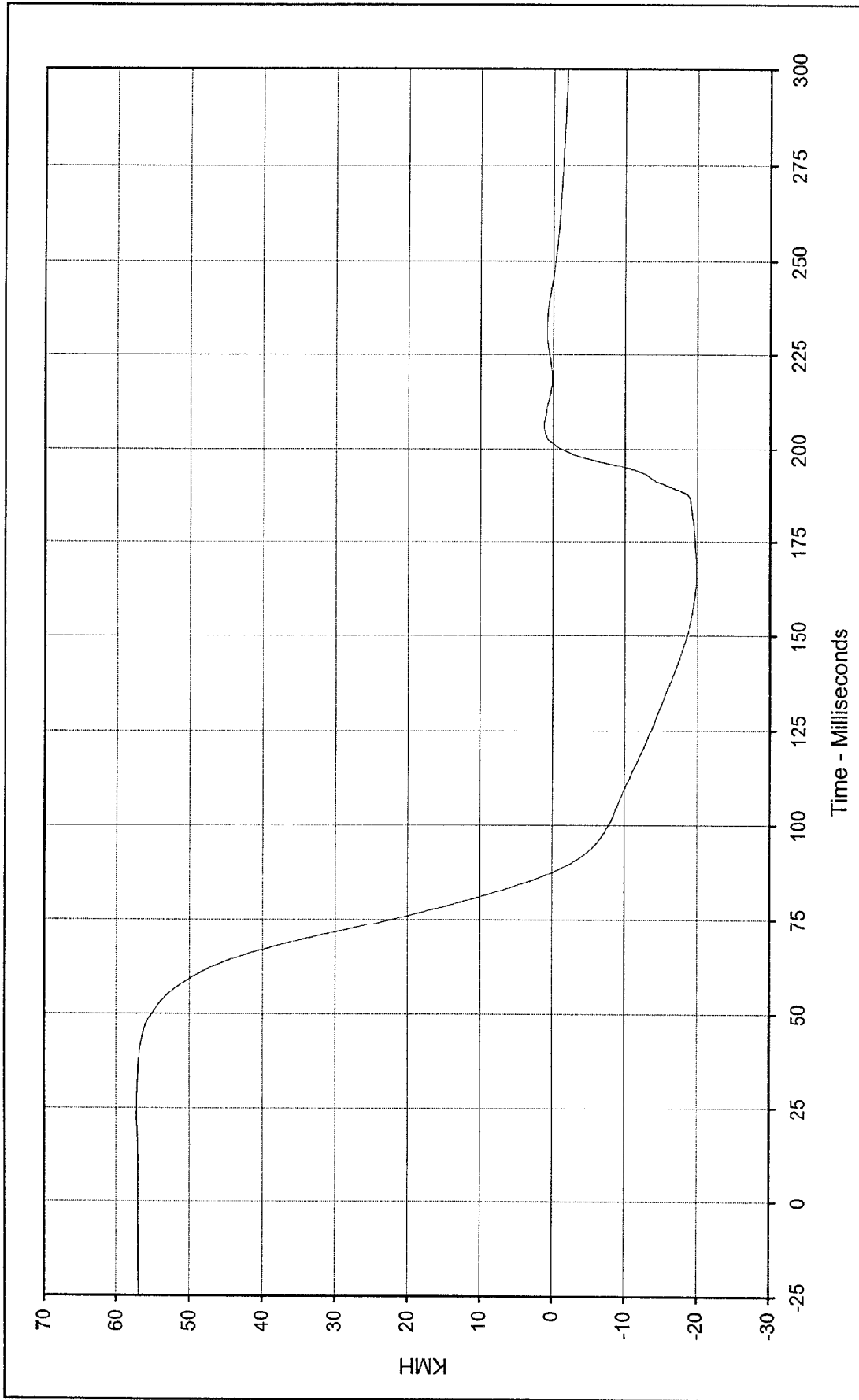
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Curve Description: Driver Head Primary X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 70.4 at 195.7 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -67.4 at 72.1 Milliseconds



SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-001



Curve Description: Driver Head Primary X Velocity Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 57.2 at 22.3 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

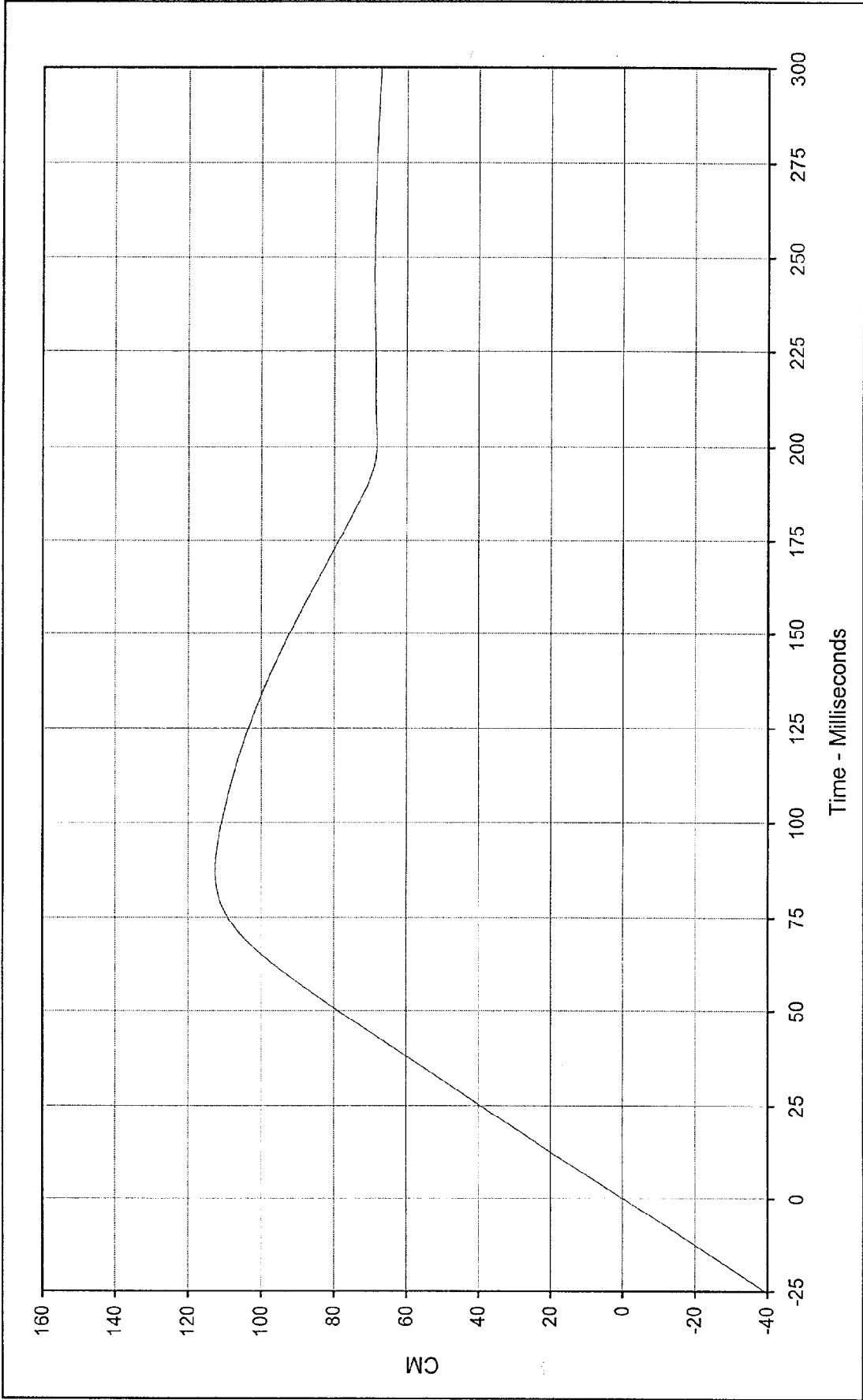
Minimum Value: -19.8 at 164.7 Milliseconds

SAE Filter Class: 180

Date of Test: 12/11/97

Curve Number: IN1-001

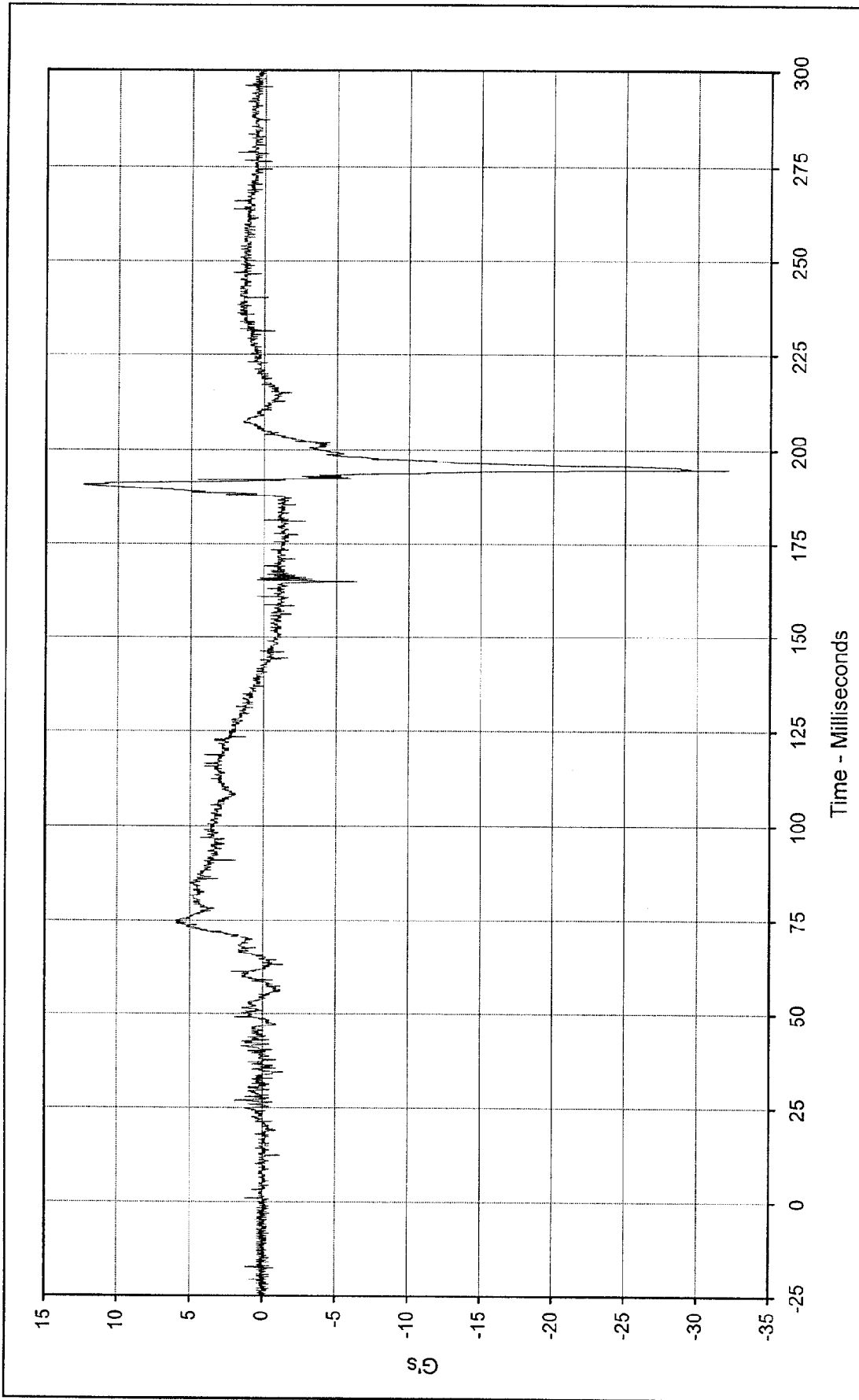




Curve Description: Driver Head Primary X Displ.
 Maximum Value: 112.6 at 87.3 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN2-001

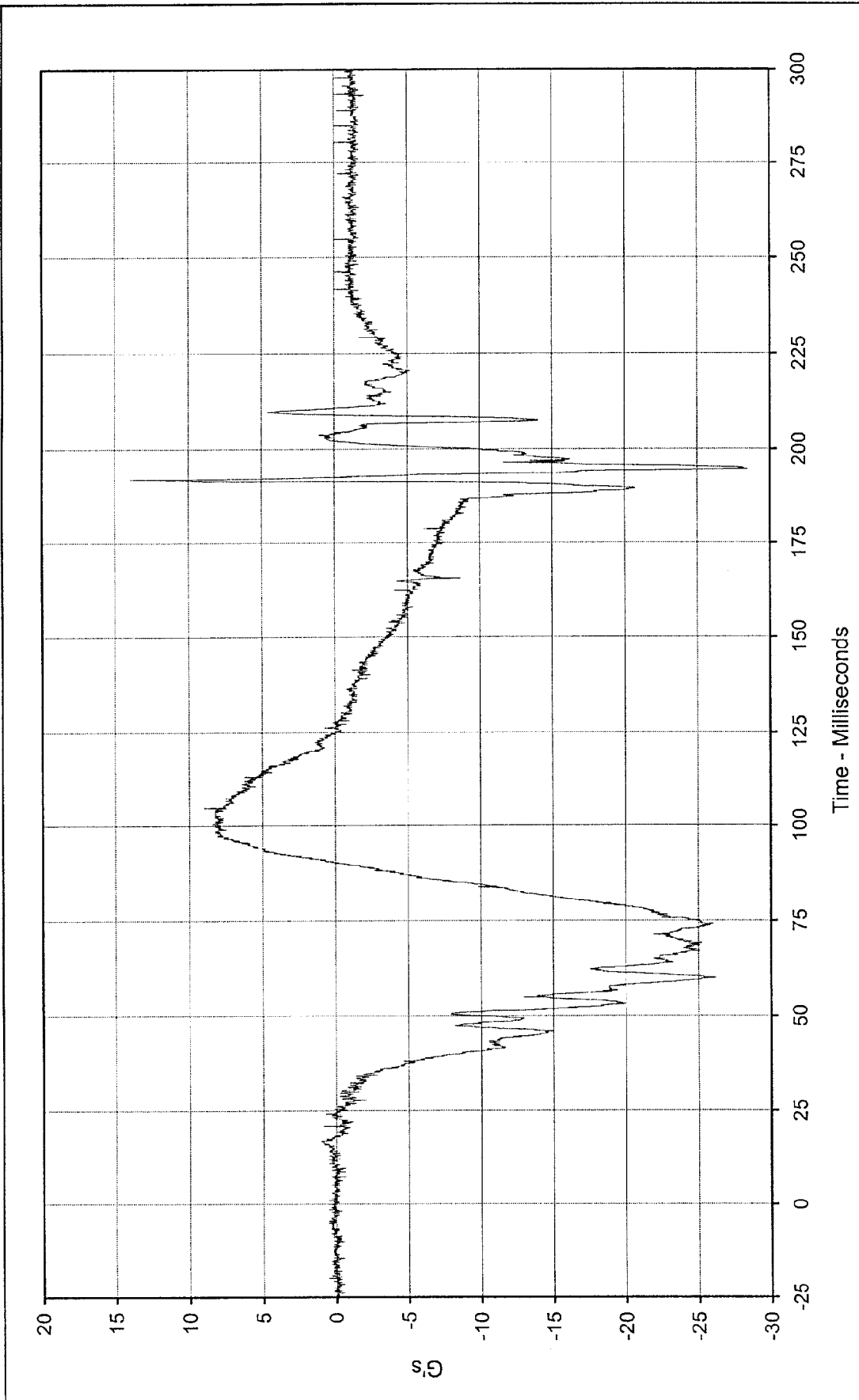
Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





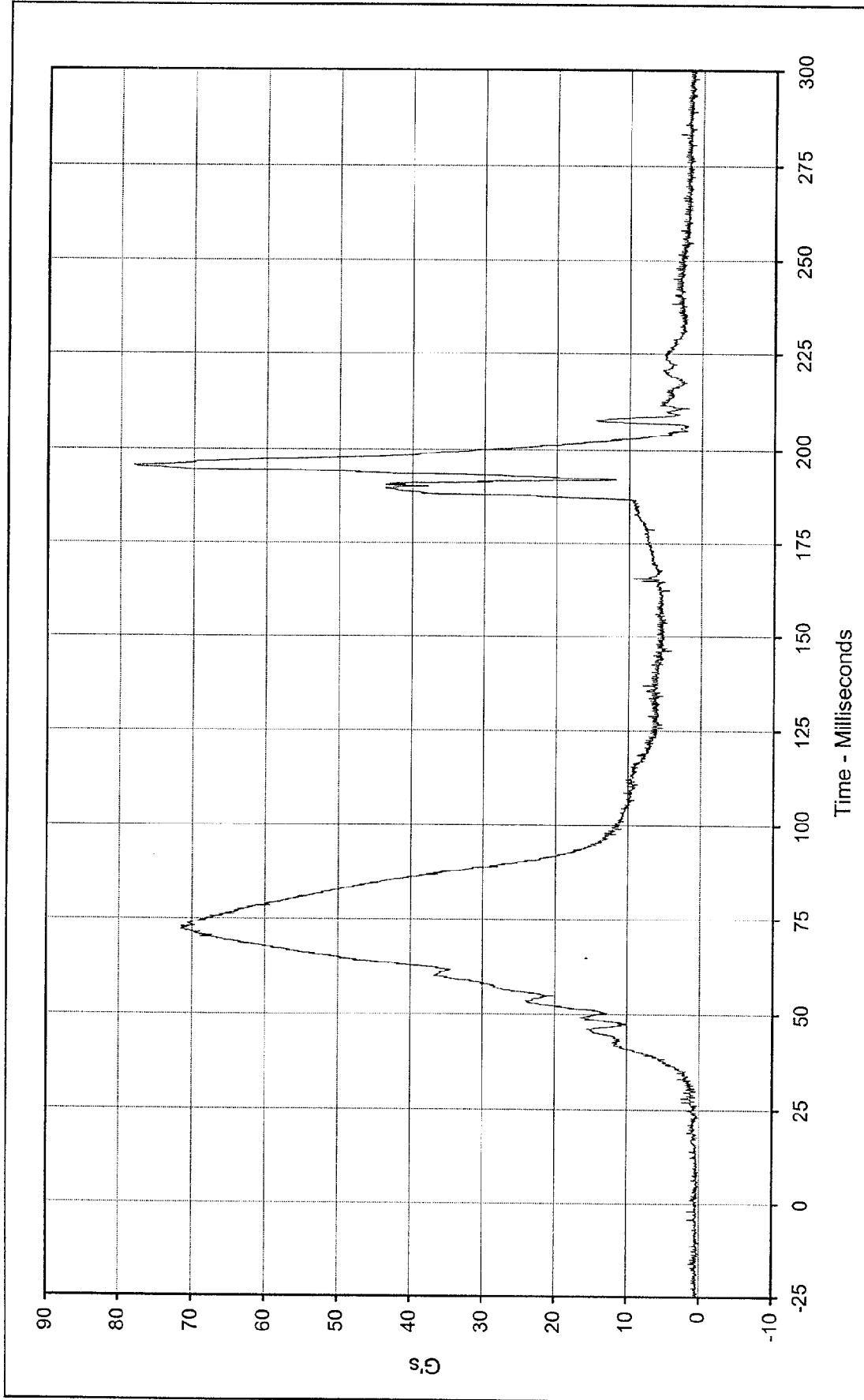
Curve Description: Driver Head Primary Y Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 12.4 at 190.6 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -32.1 at 194.8 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-002





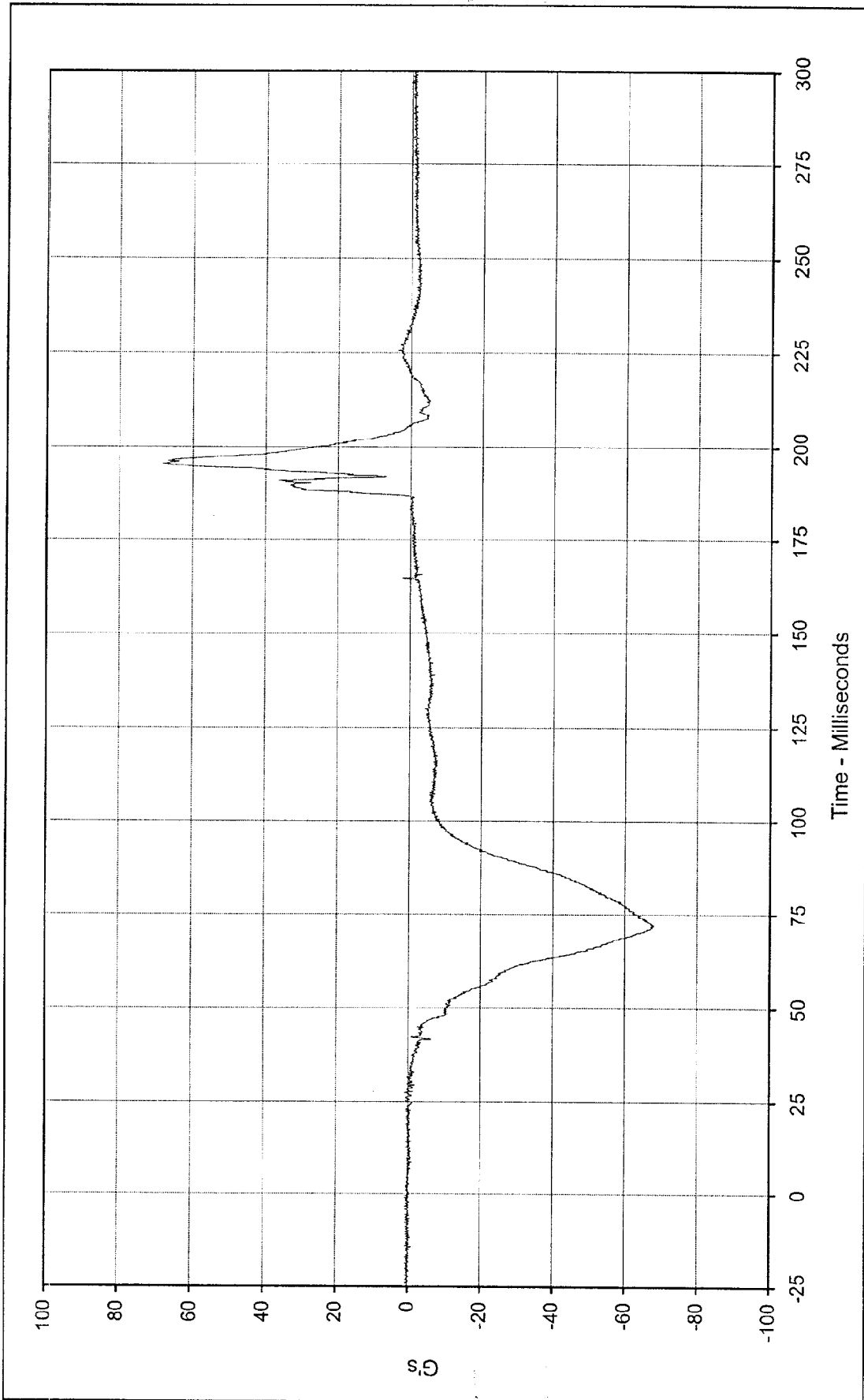
Curve Description: Driver Head Primary Z Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 13.9 at 192.0 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -28.4 at 194.6 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/1/97
 Curve Number: FIL-003





Curve Description: Driver Head Resultant Primary Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 78.1 at 195.7 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: 0.1 at 8.5 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: RES-001

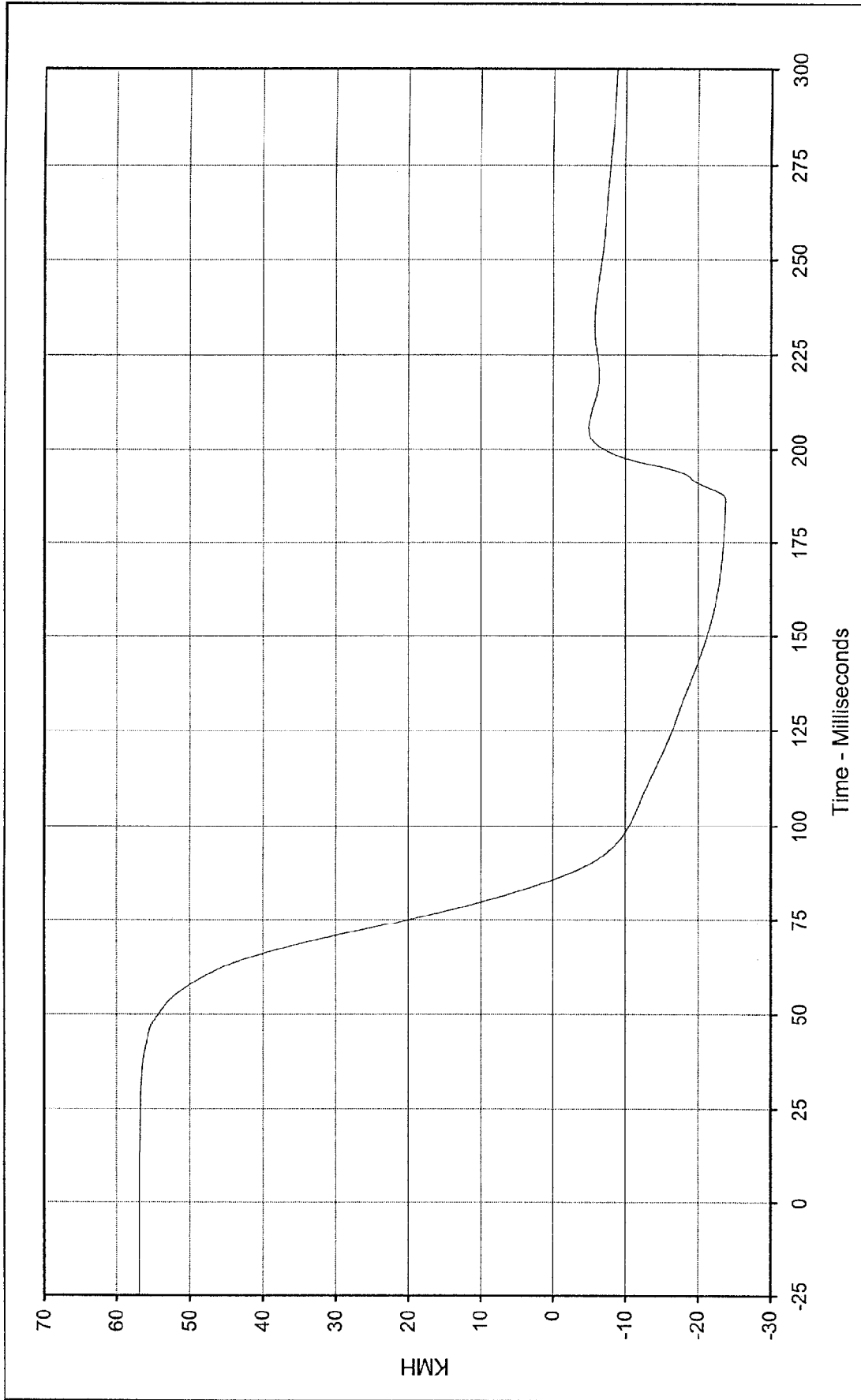




Curve Description: Driver Head Redundant X
 Maximum Value: 68.1 at 195.5 Milliseconds
 Minimum Value: -68.1 at 71.7 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-004

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





Curve Description: Driver Head Redundant X Velocity Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 56.9 at 2.9 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

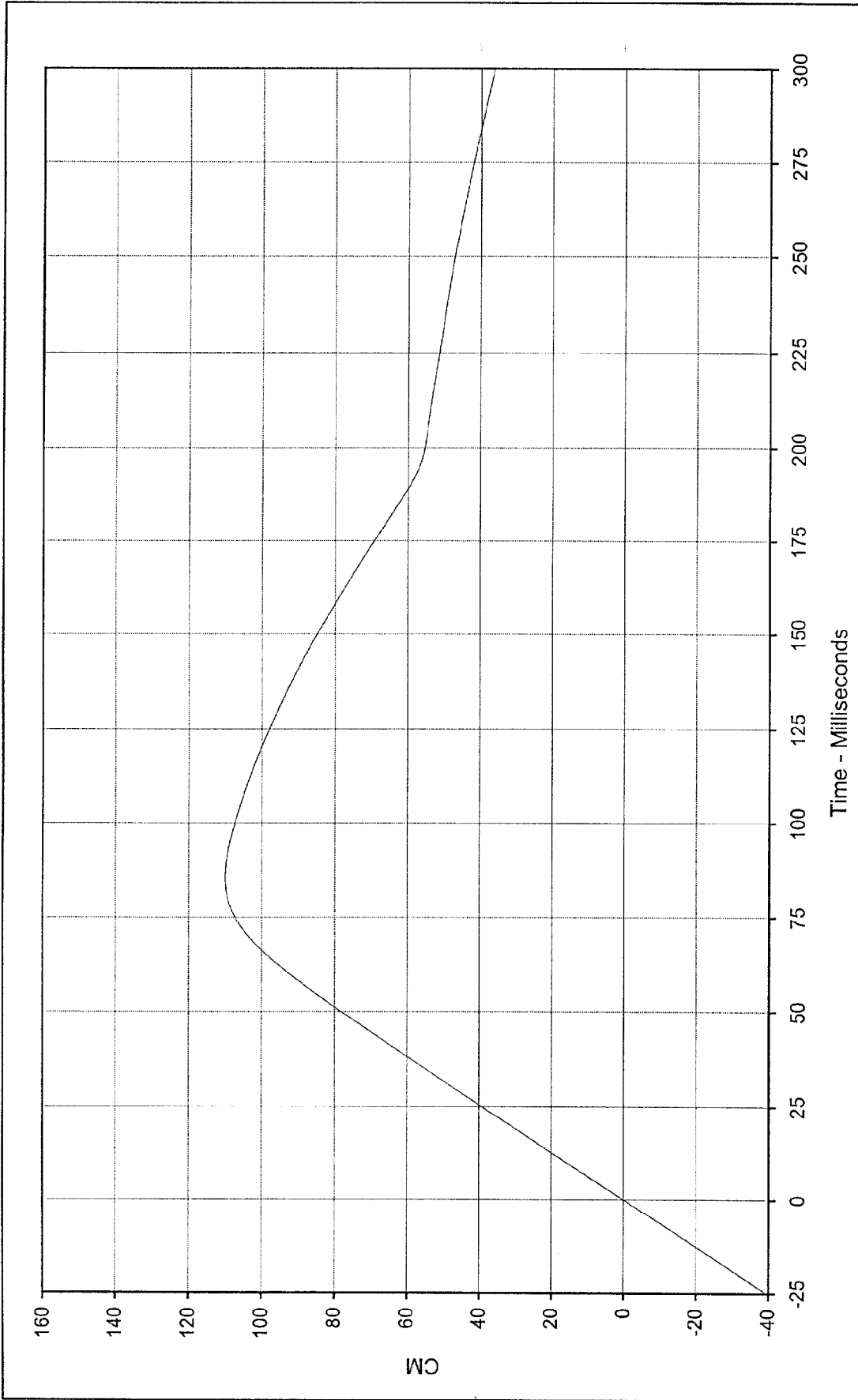
Minimum Value: -23.8 at 186.4 Milliseconds

SAE Filter Class: 180

Date of Test: 12/11/97

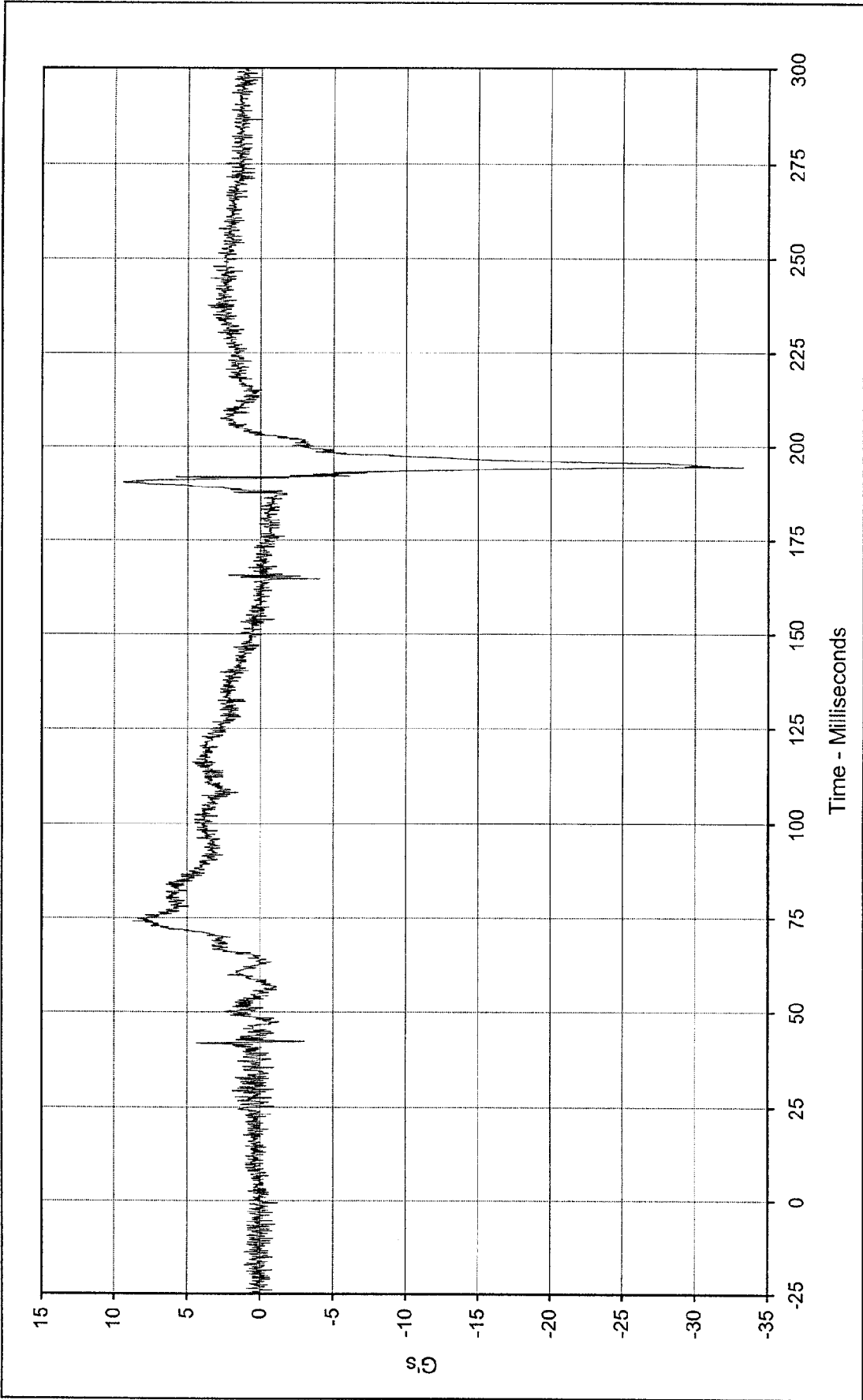
Curve Number: IN1-004





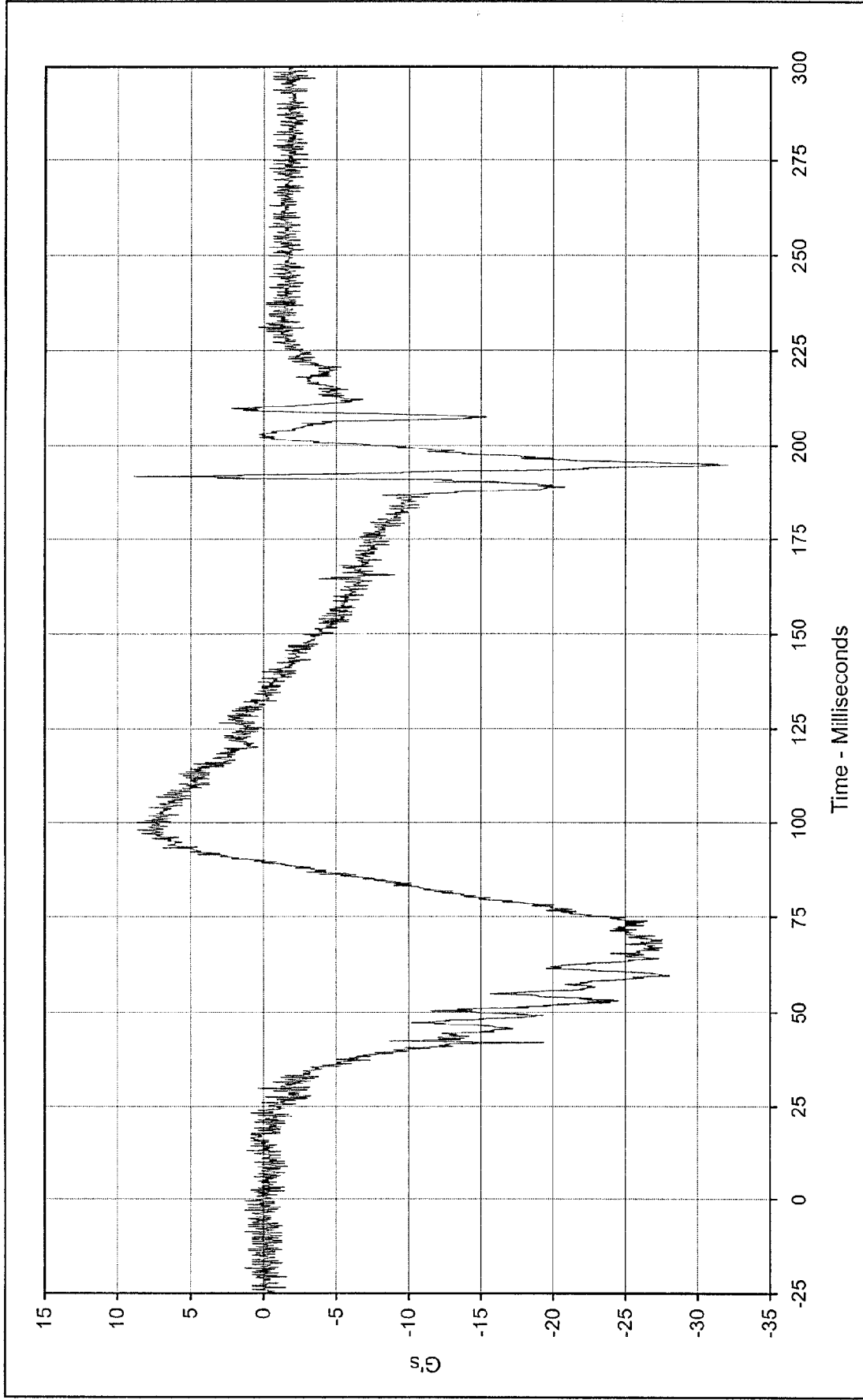
Curve Description: Driver Head Redundant X Displ. Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 110.0 at 85.5 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -0.1 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN2-004





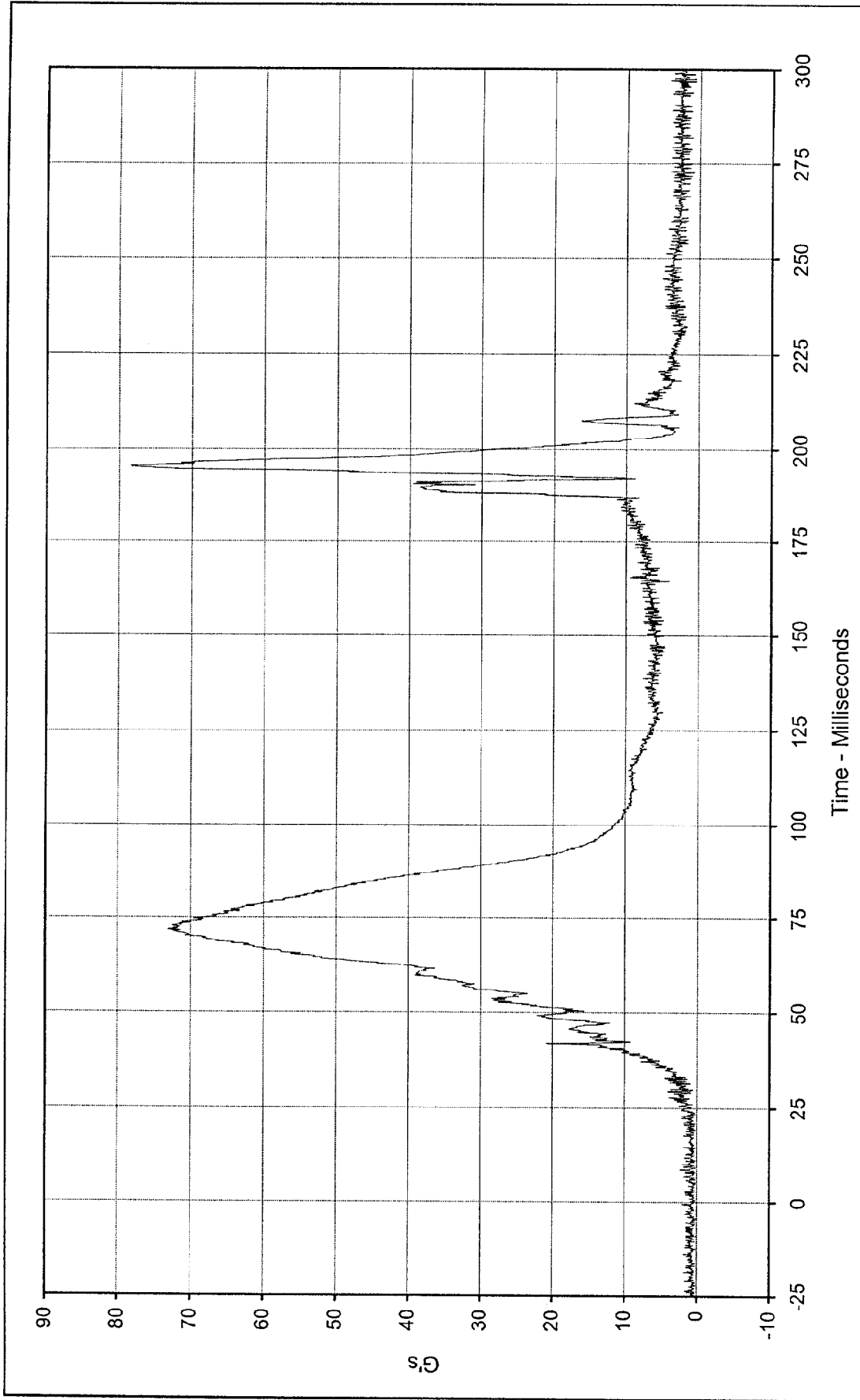
Curve Description: Driver Head Redundant Y Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 9.4 at 190.5 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -33.3 at 194.6 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-005





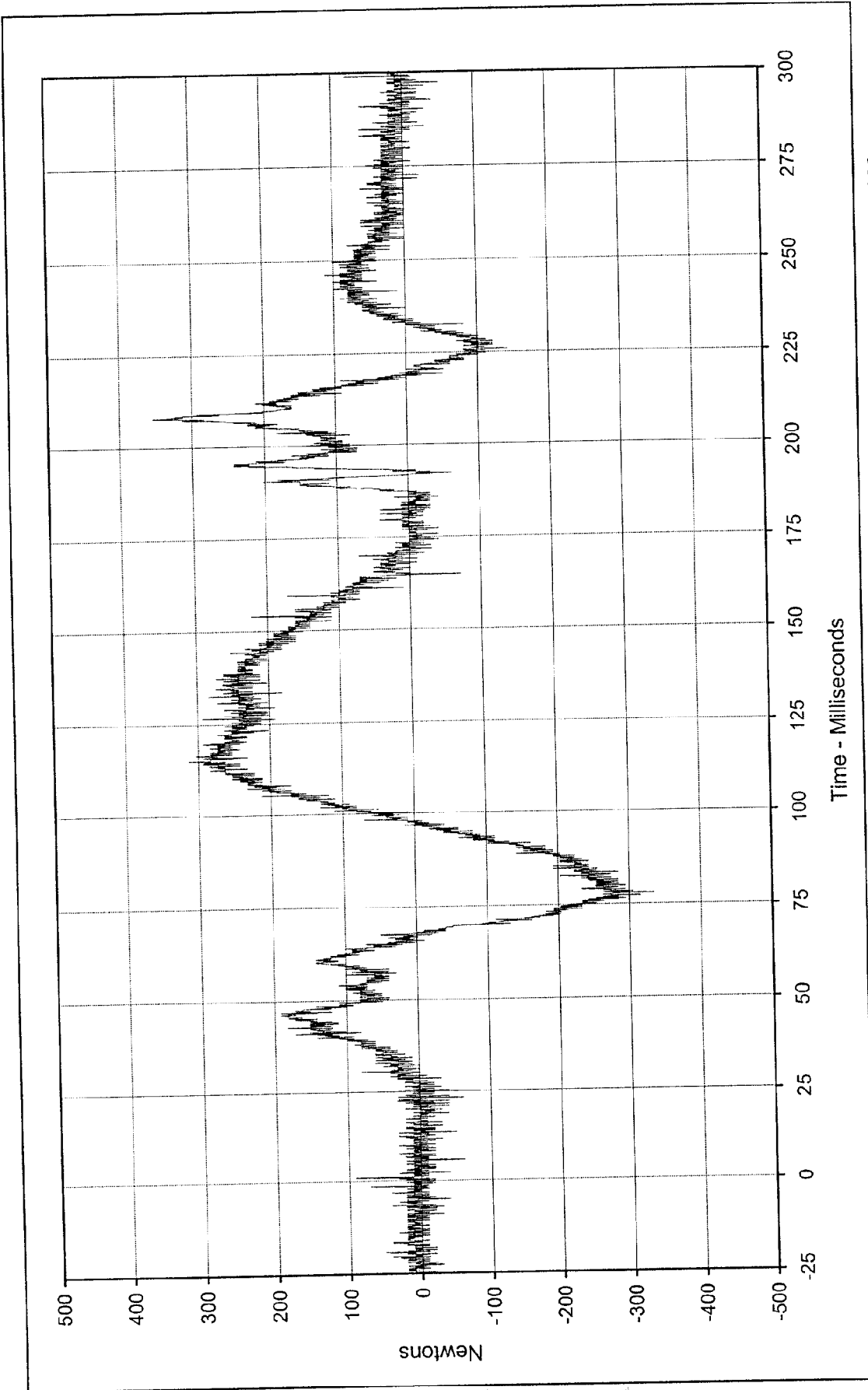
Curve Description: Driver Head Redundant Z Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 8.8 at 191.9 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -32.1 at 194.8 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-006





Curve Description: Driver Head Resultant Redundant Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 78.5 at 195.5 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: 0.1 at 0.5 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: RES-004





Curve Description: Driver Neck Force X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 353.8 at 208.0 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

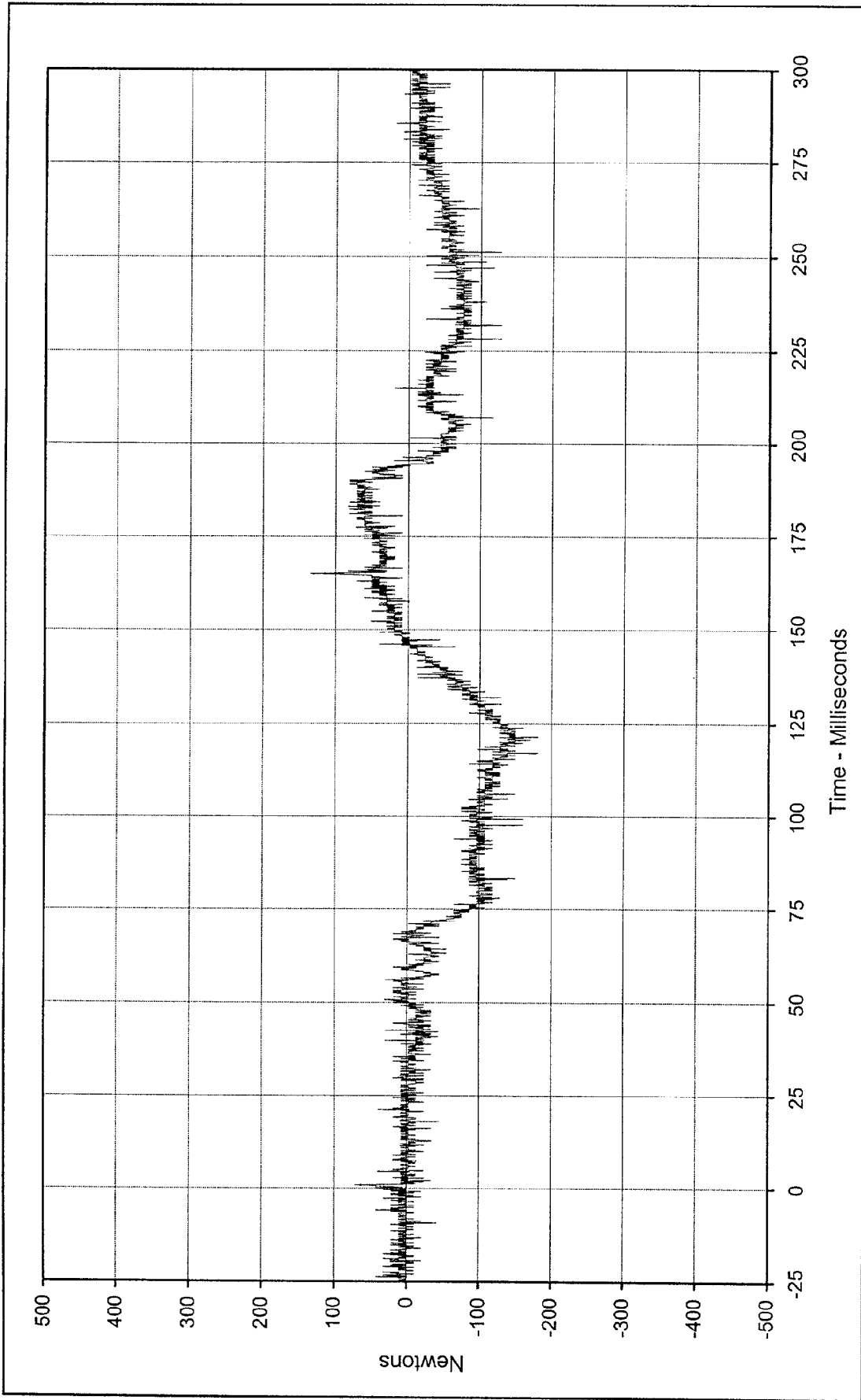
Minimum Value: -334.8 at 77.9 Milliseconds

SAE Filter Class: 1000

Date of Test: 12/11/97

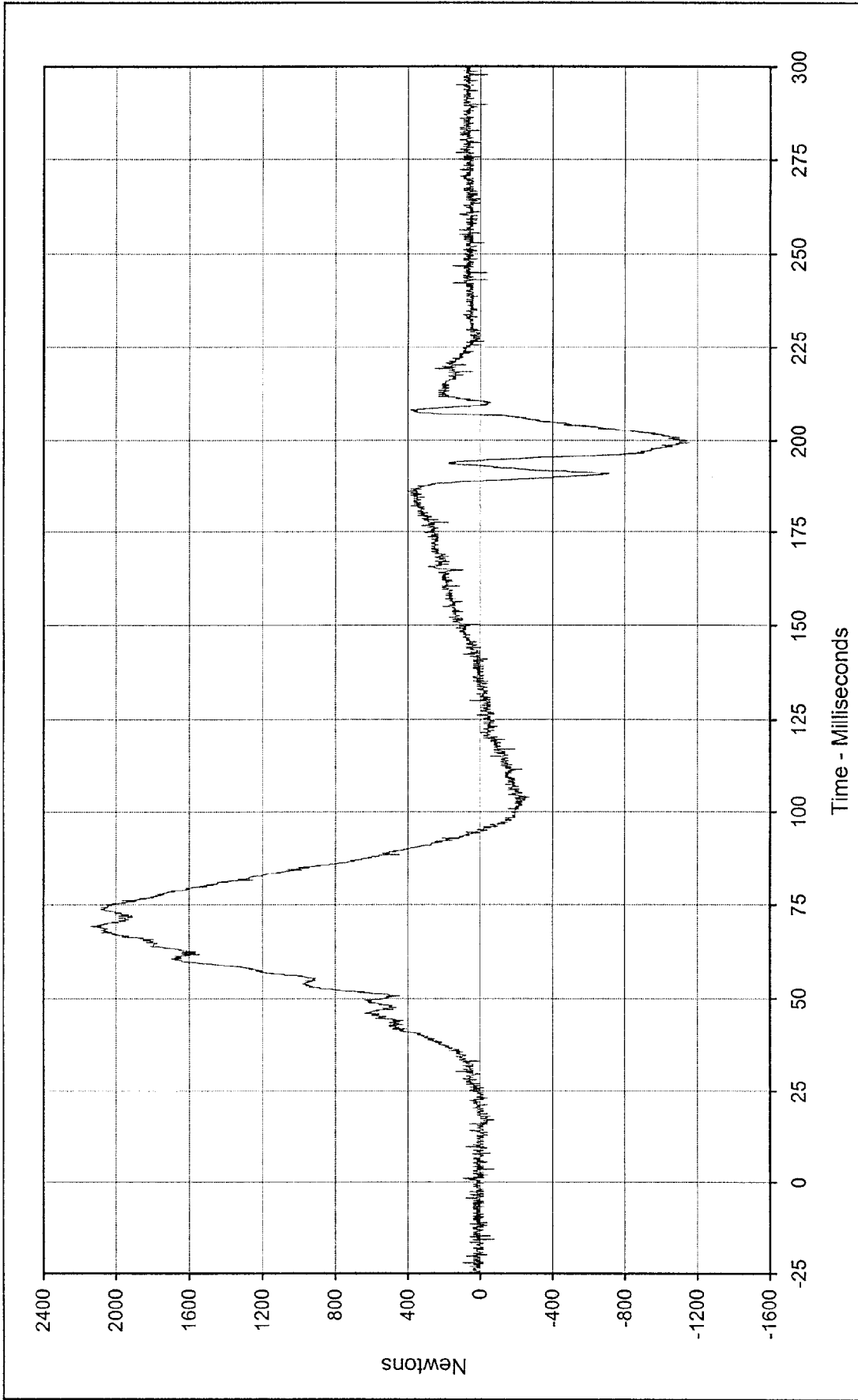
Curve Number: FIL-007





Curve Description: Driver Neck Force Y Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 134.0 at 165.0 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -181.0 at 116.9 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-008

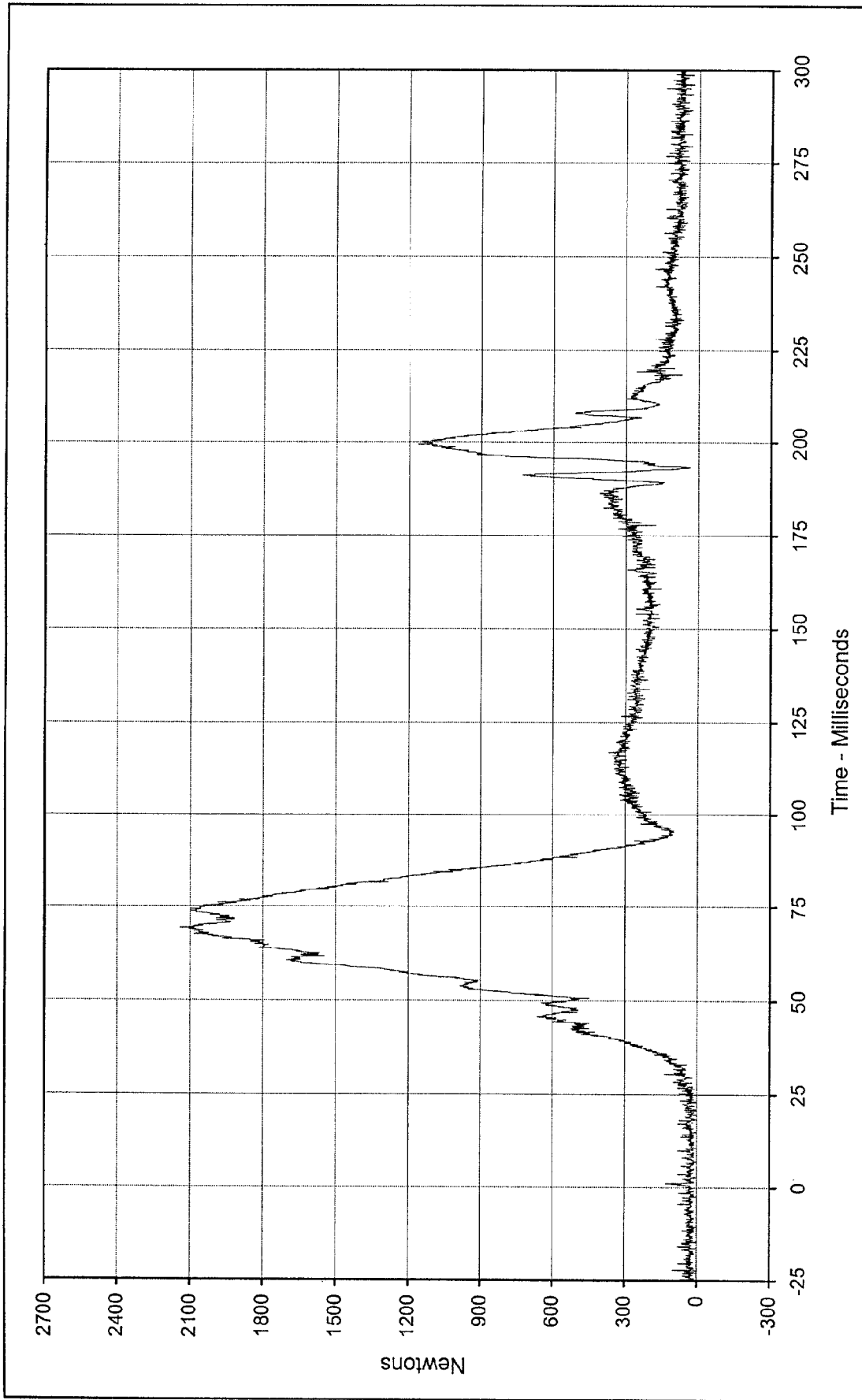




Curve Description: Driver Neck Force Z Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 2140.7 at 69.1 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -1157.4 at 199.4 Milliseconds



SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-009



Curve Description: Driver Neck Force Resultant Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 2141.2 at 69.1 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

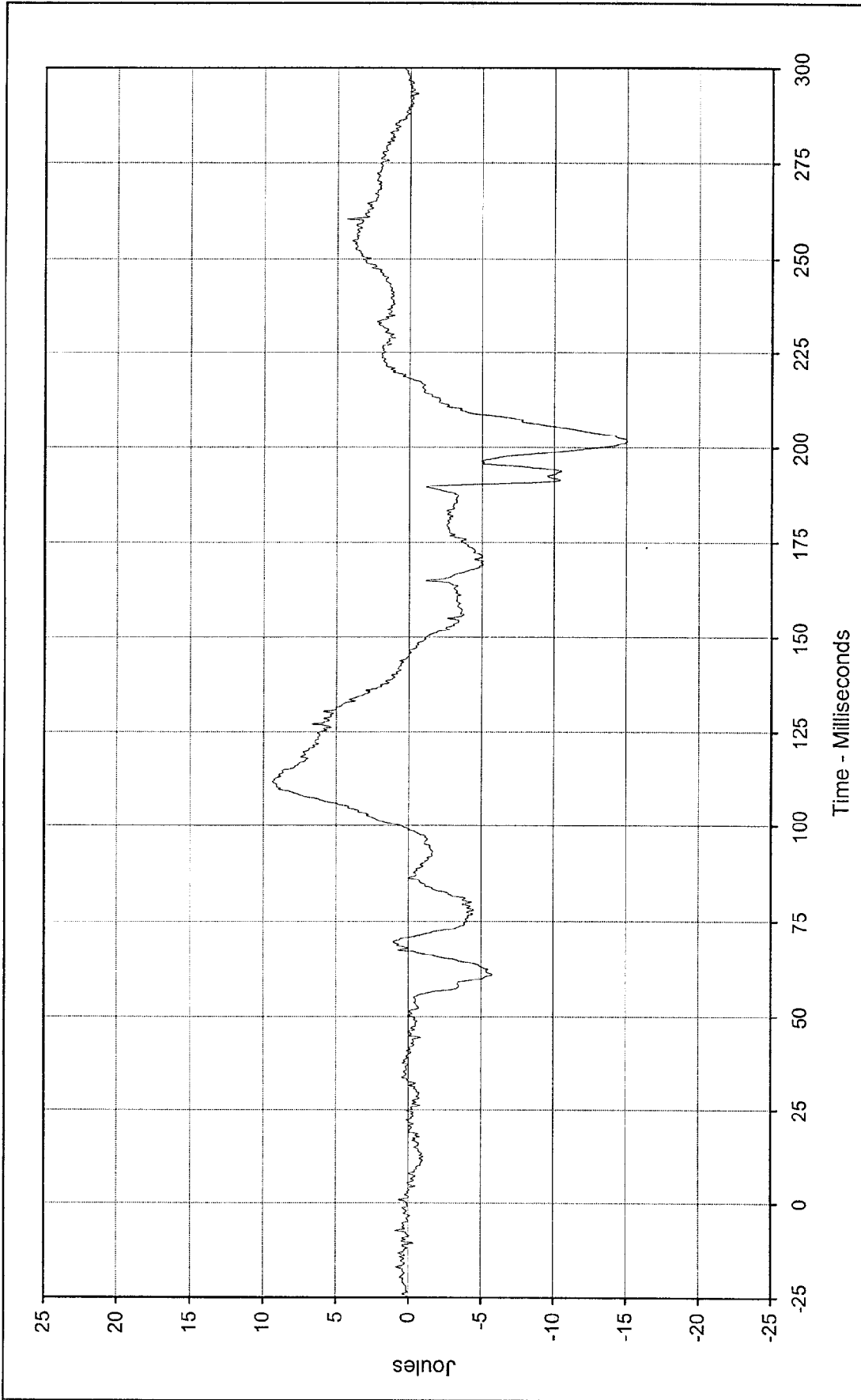
Minimum Value: 2.6 at 2.7 Milliseconds

SAE Filter Class: 1000

Date of Test: 12/11/97

Curve Number: RES-007

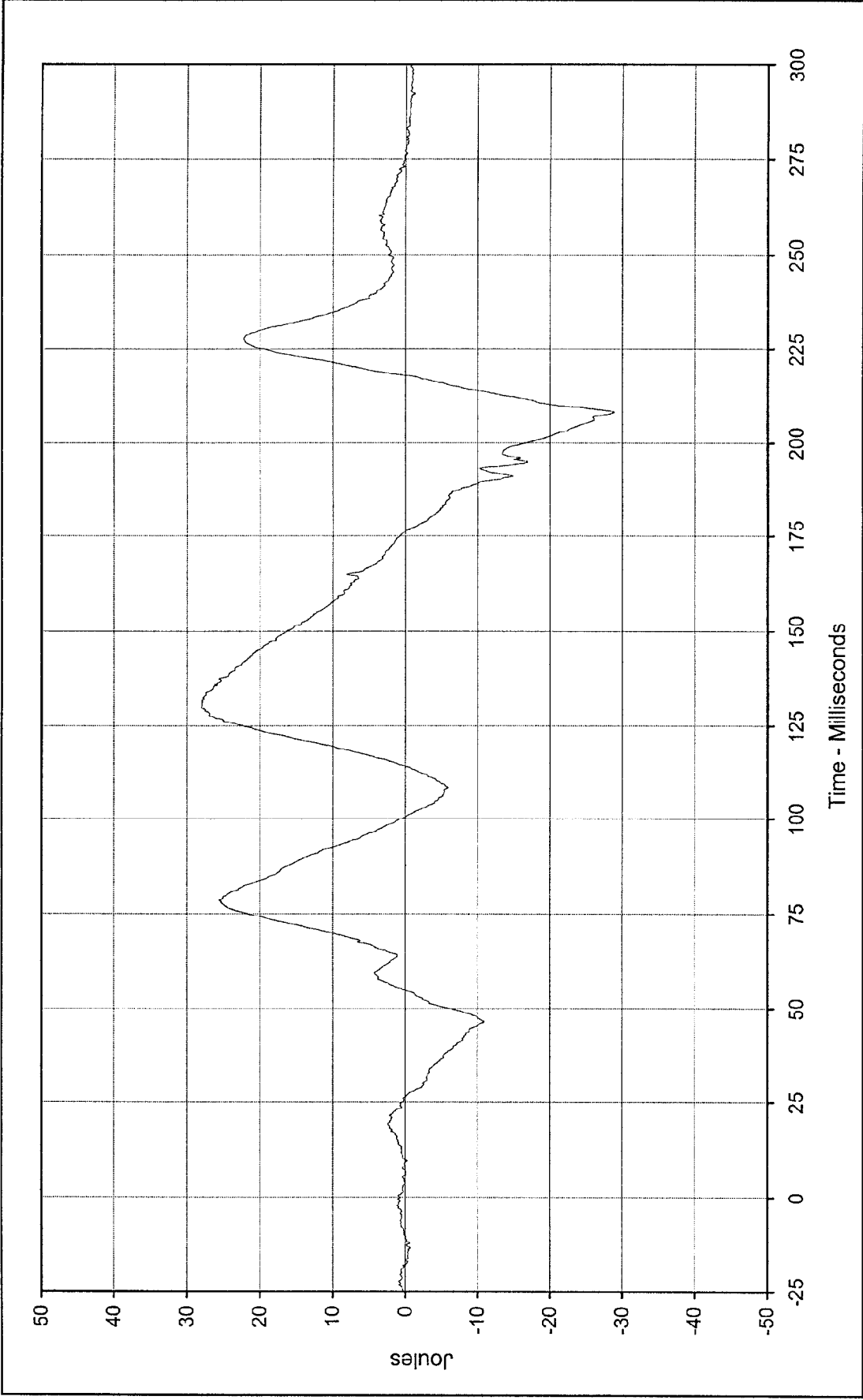




Curve Description: Driver Neck Moment X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 9.4 at 111.7 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -15.1 at 201.6 Milliseconds

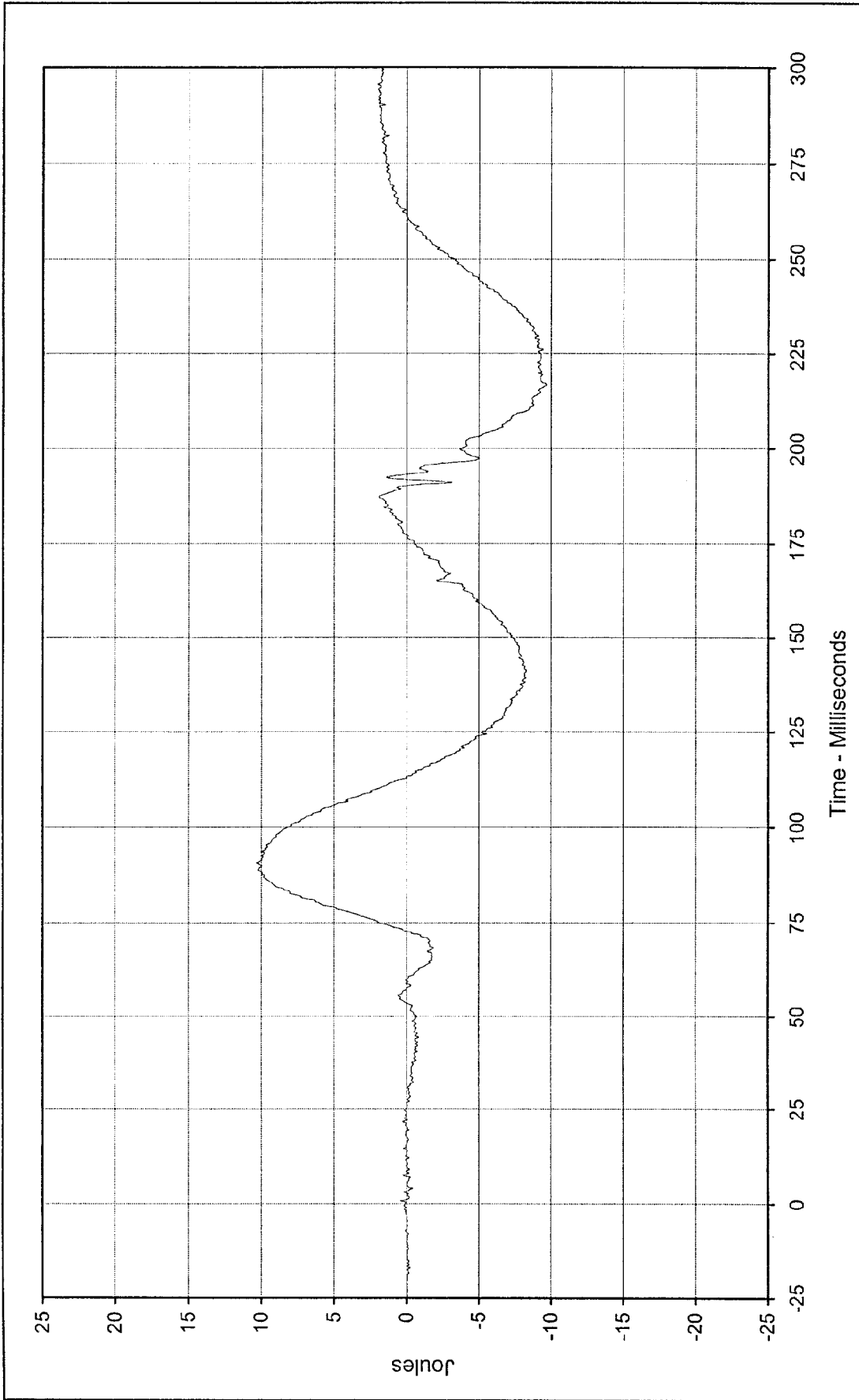


SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: FIL-010



Curve Description: Driver Neck Moment Y Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 28.1 at 130.2 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -28.9 at 208.2 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: FIL-011





Curve Description: Driver Neck Moment Z

Maximum Value: 10.3 at 90.6 Milliseconds

Minimum Value: -9.7 at 216.5 Milliseconds

SAE Filter Class: 600

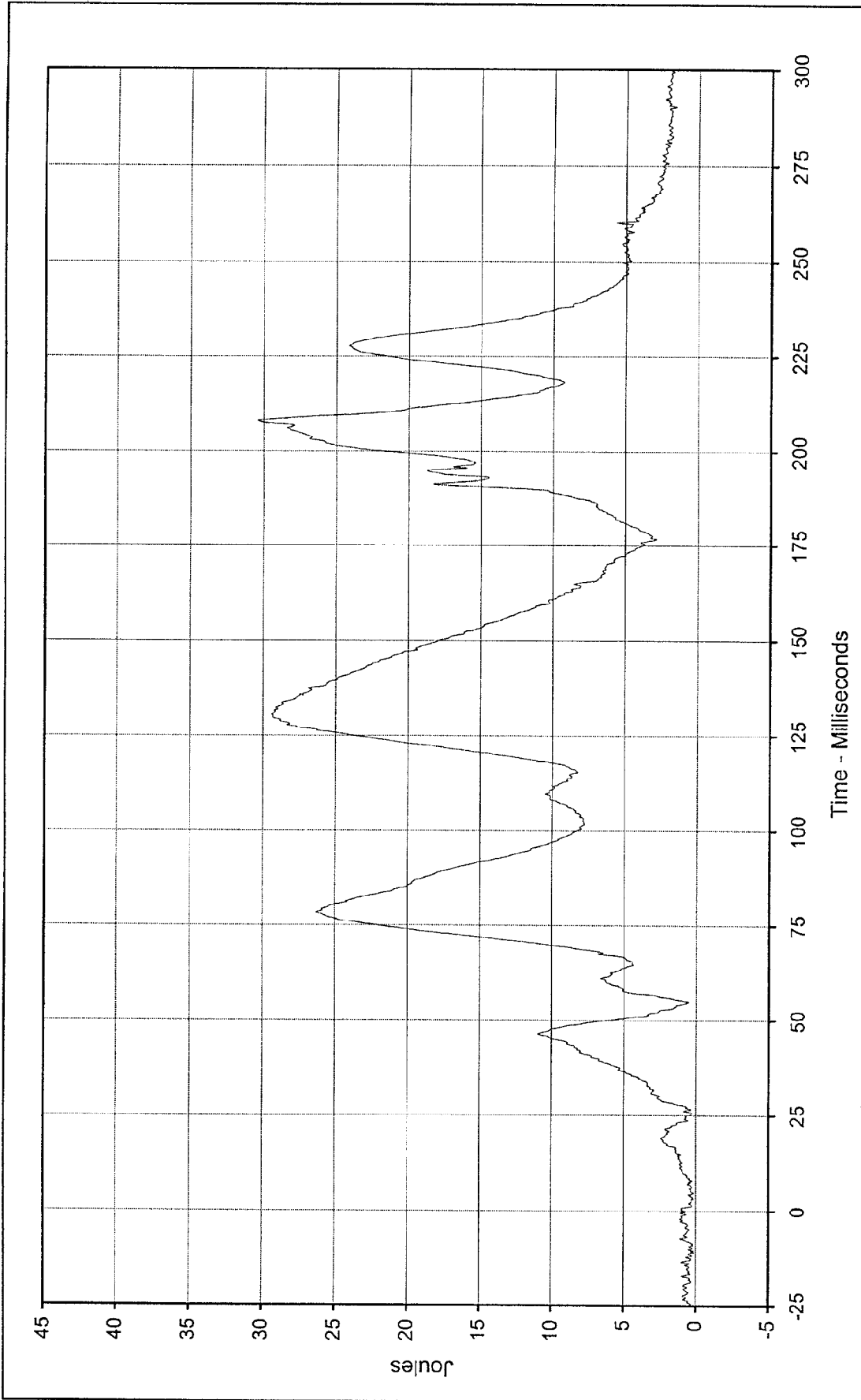
Date of Test: 12/11/97

Curve Number: FIL-012

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

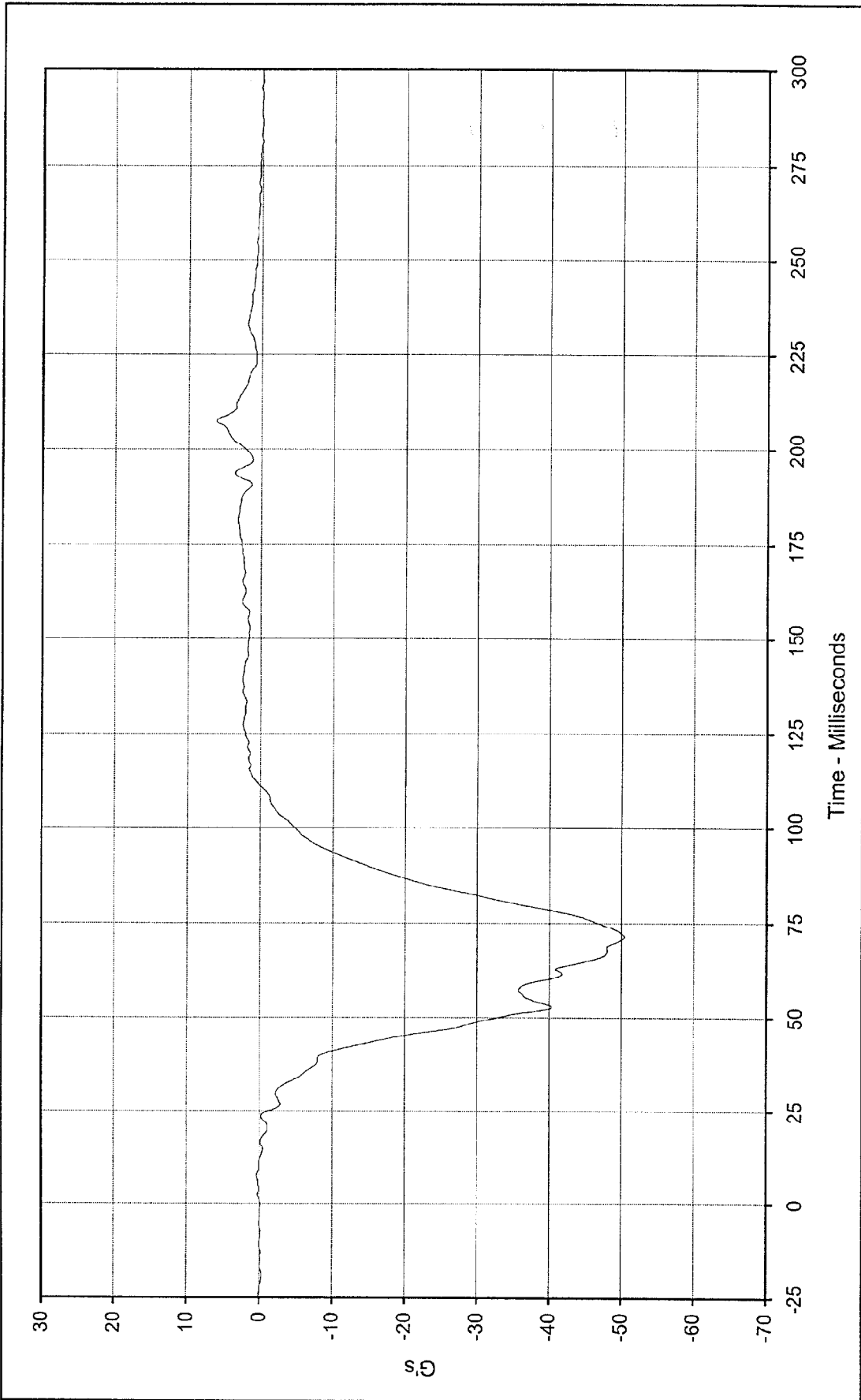




Curve Description: Driver Neck Moment Resultant
 Maximum Value: 30.4 at 208.2 Milliseconds
 Minimum Value: 0.1 at 4.8 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: RES-010

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

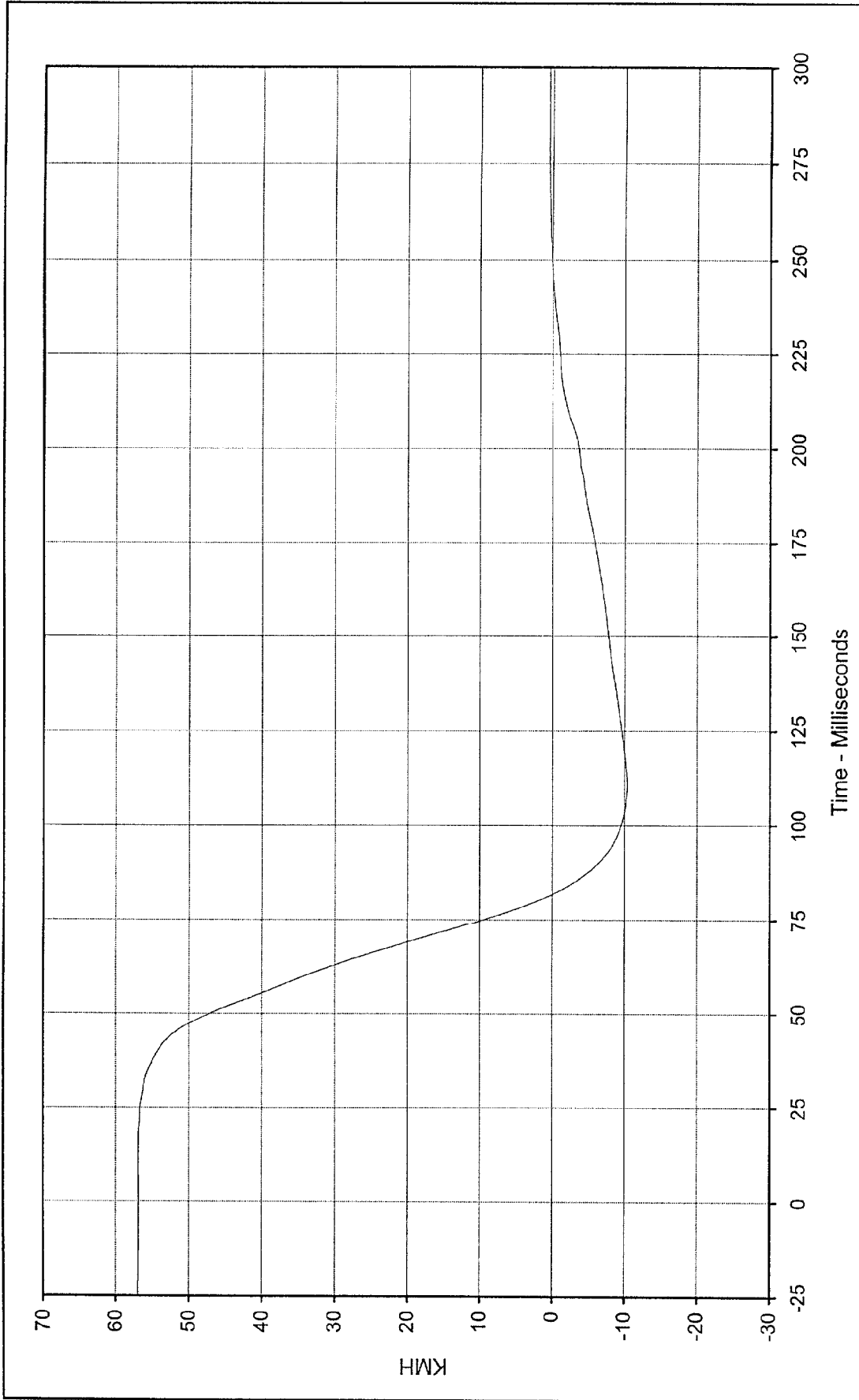




Curve Description: Driver Chest Primary X
 Maximum Value: 6.2 at 207.6 Milliseconds
 Minimum Value: -50.4 at 71.3 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: FIL-013

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

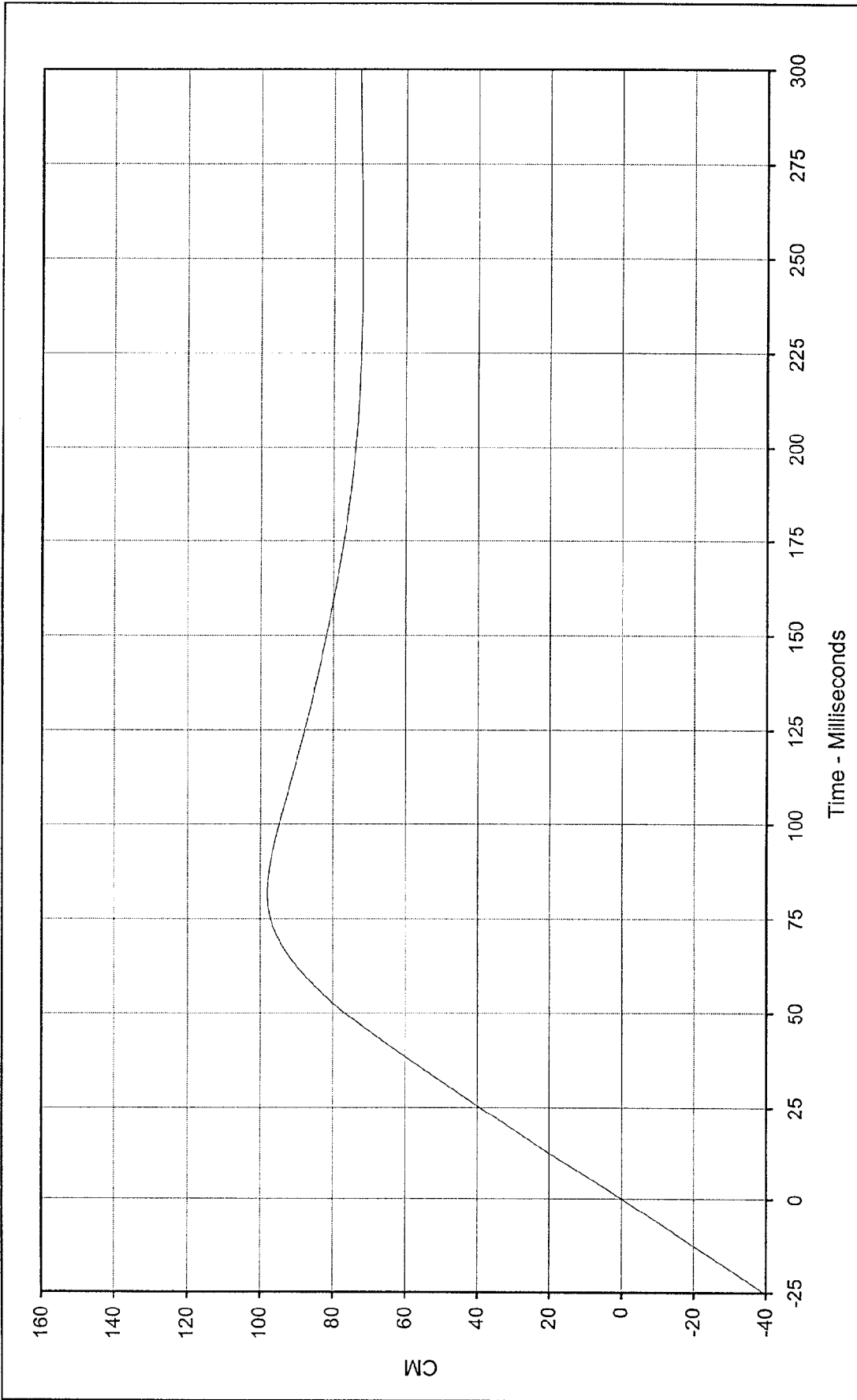




Curve Description: Driver Chest Primary X Velocity Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 56.9 at 11.8 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -10.3 at 110.9 Milliseconds

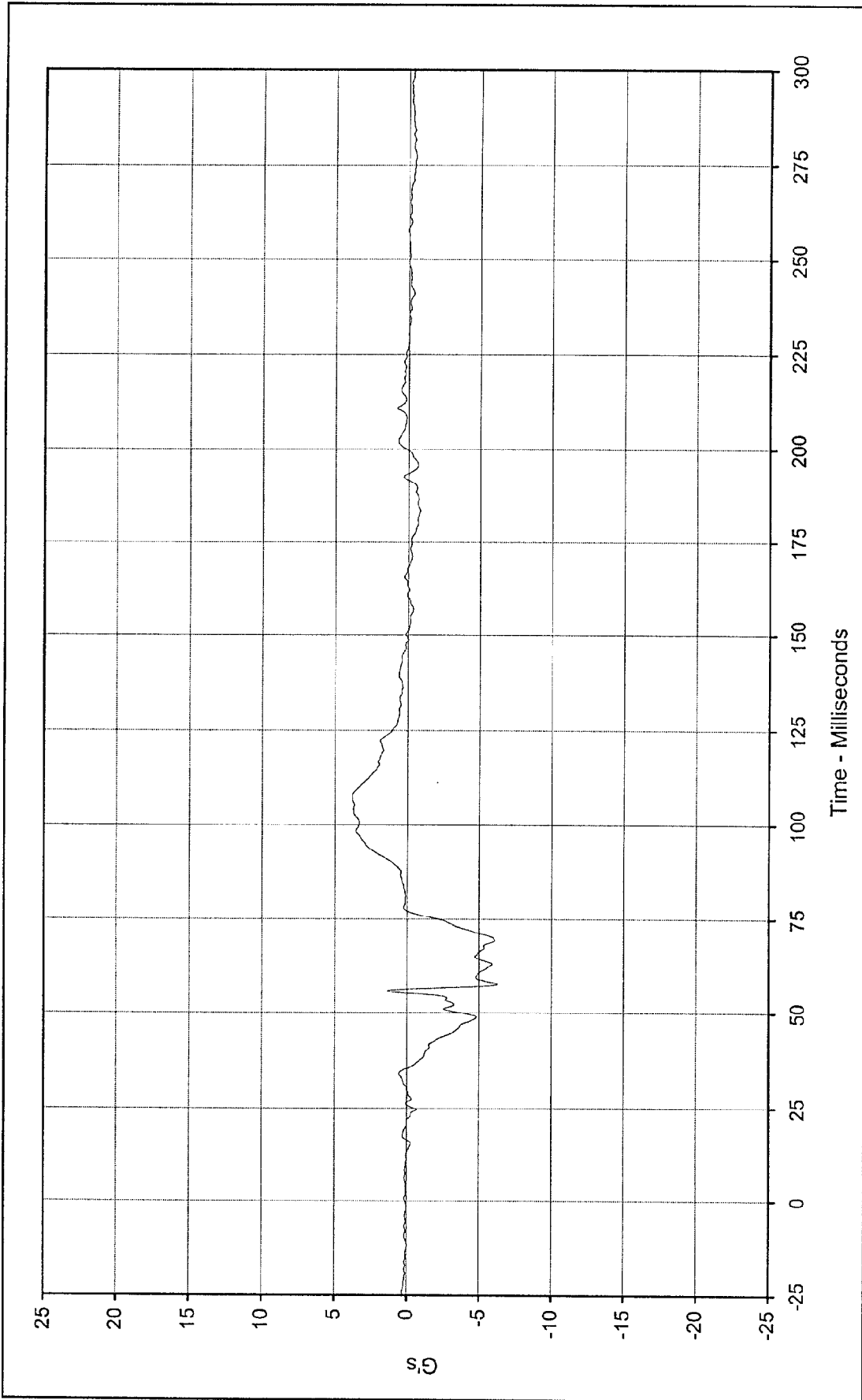


SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN1-013



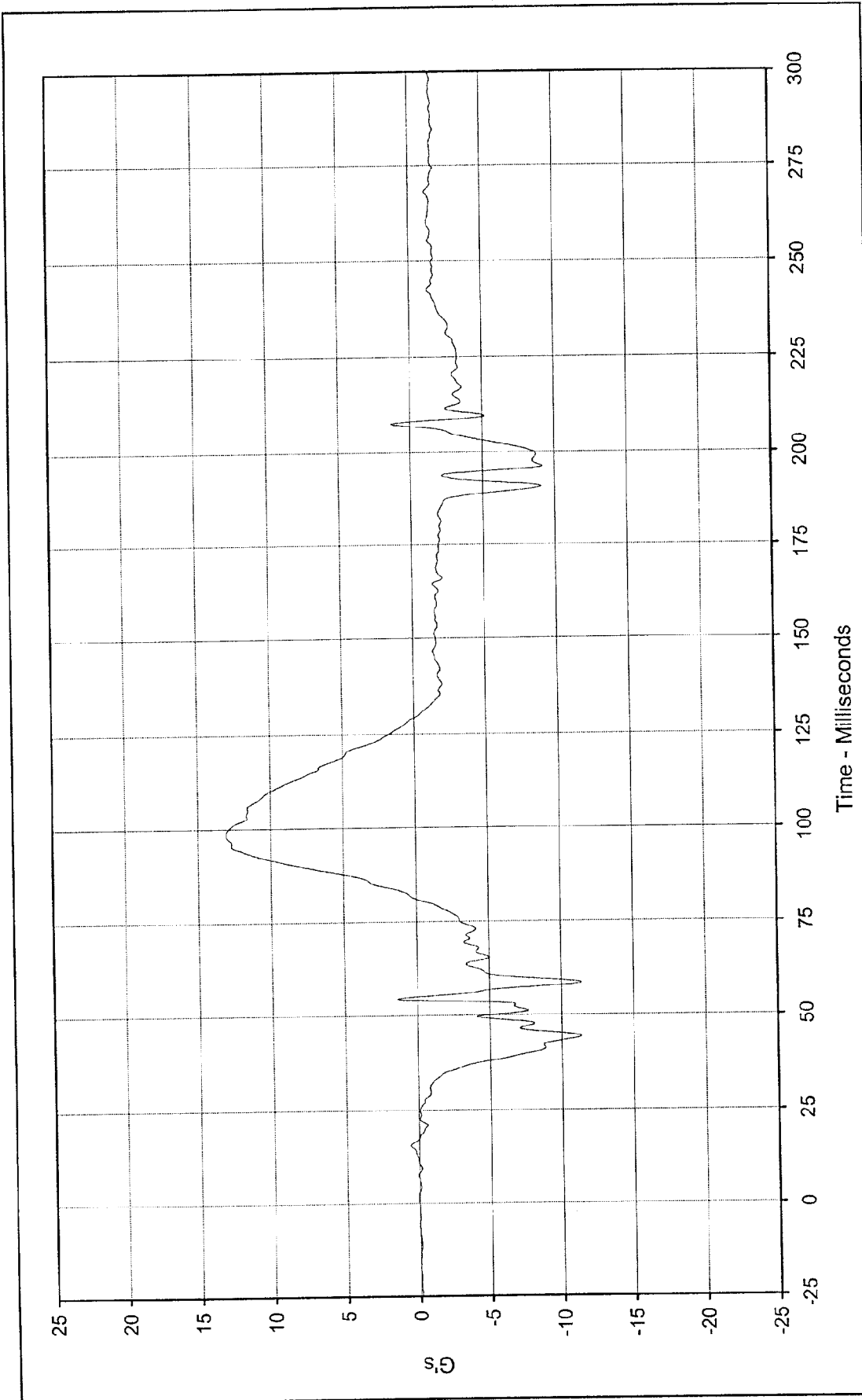
Curve Description: Driver Chest Primary X Displ. Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 98.0 at 81.8 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -0.1 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN2-013





Curve Description: Driver Chest Primary Y Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 3.8 at 107.8 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -6.3 at 57.6 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/1/97
 Curve Number: FIL-014

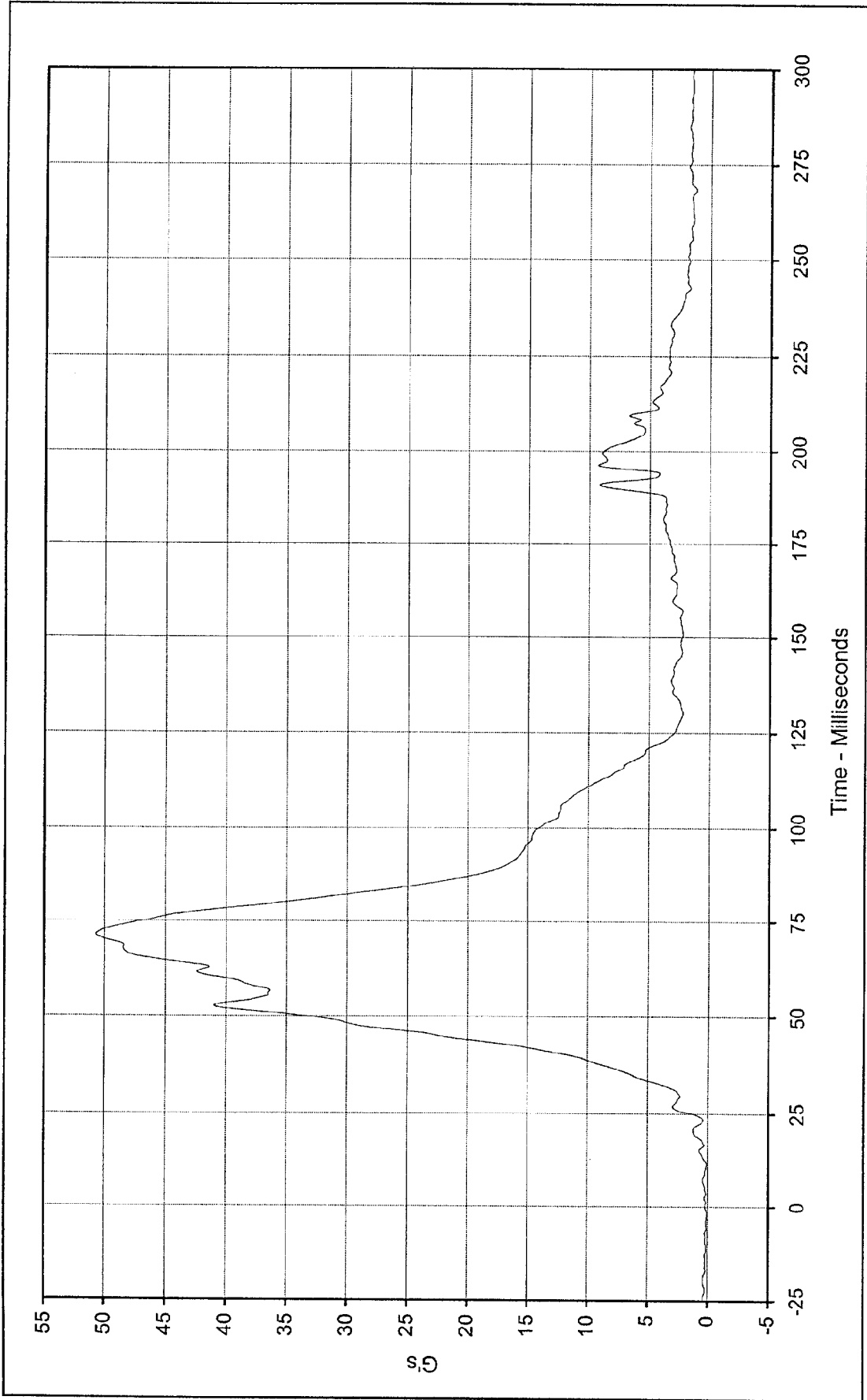




Curve Description: Driver Chest Primary Z
 Maximum Value: 13.1 at 98.7 Milliseconds
 Minimum Value: -11.4 at 58.5 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: FIL-015

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

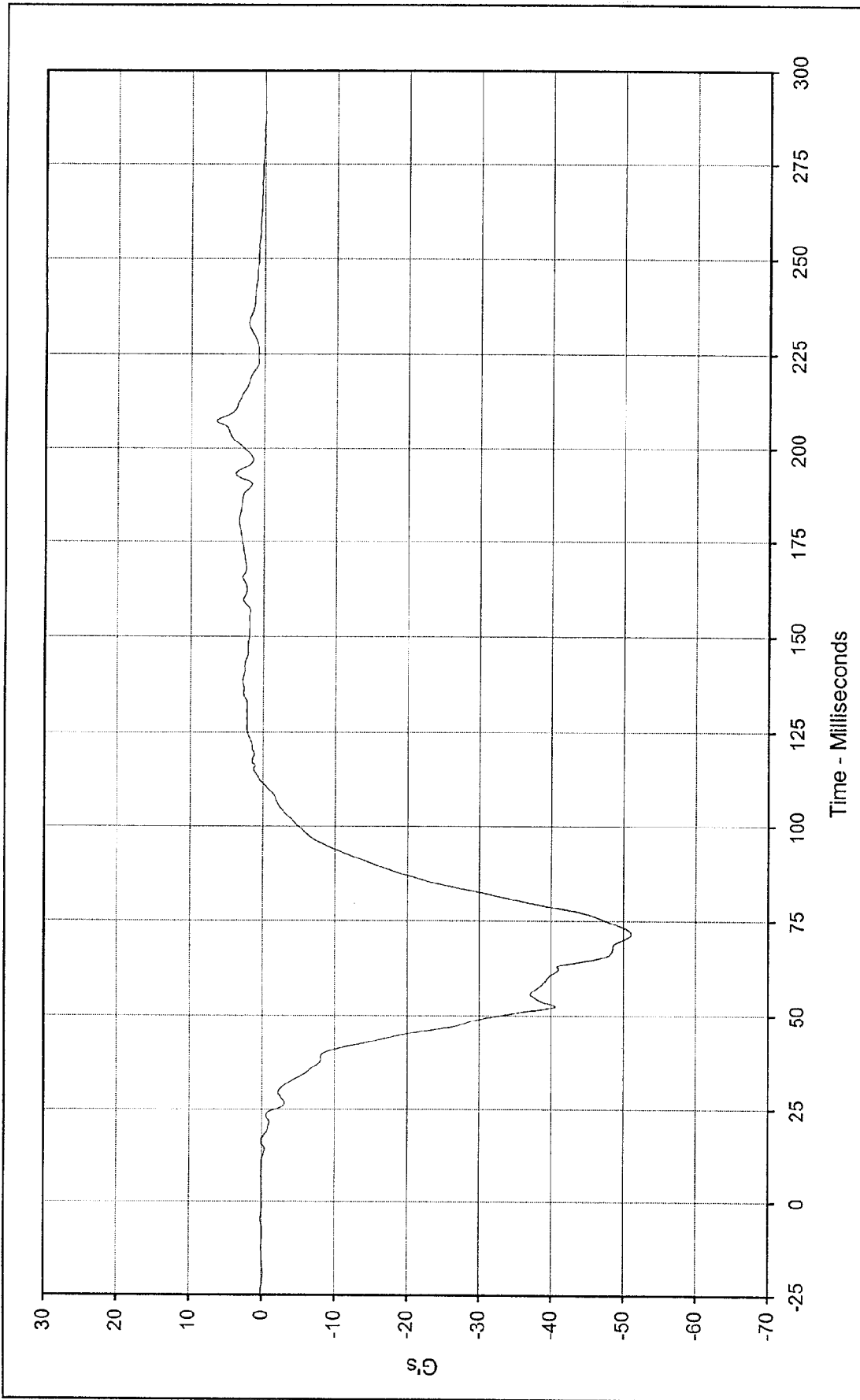




Curve Description: Driver Chest Resultant Primary
 Maximum Value: 50.7 at 71.2 Milliseconds
 Minimum Value: 0.1 at 11.7 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: RES-013

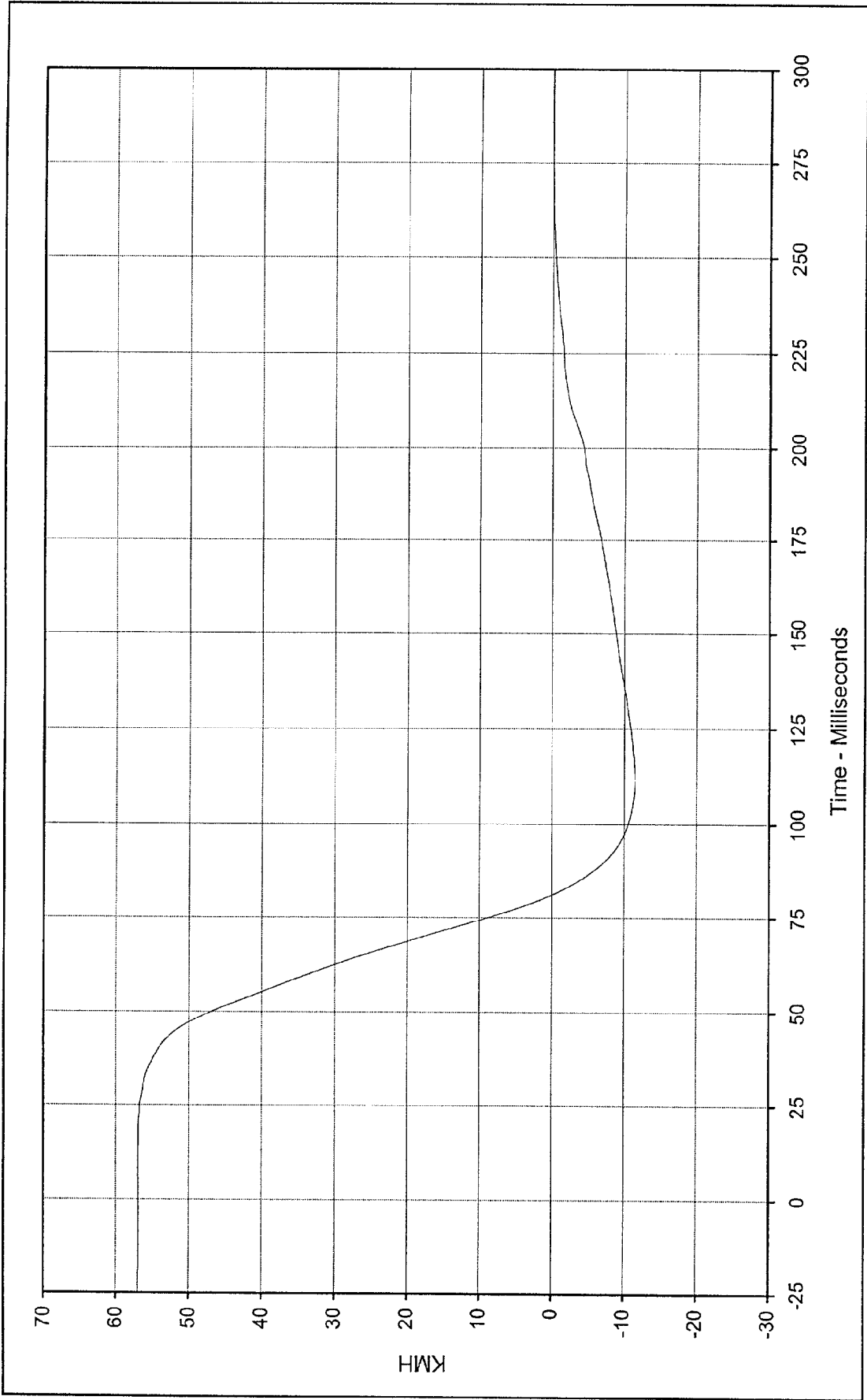
Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





Curve Description: Driver Chest Redundant X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 6.5 at 207.4 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -51.1 at 71.3 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: FIL-016





Curve Description: Driver Chest Redundant X Velocity Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 57.0 at 11.7 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

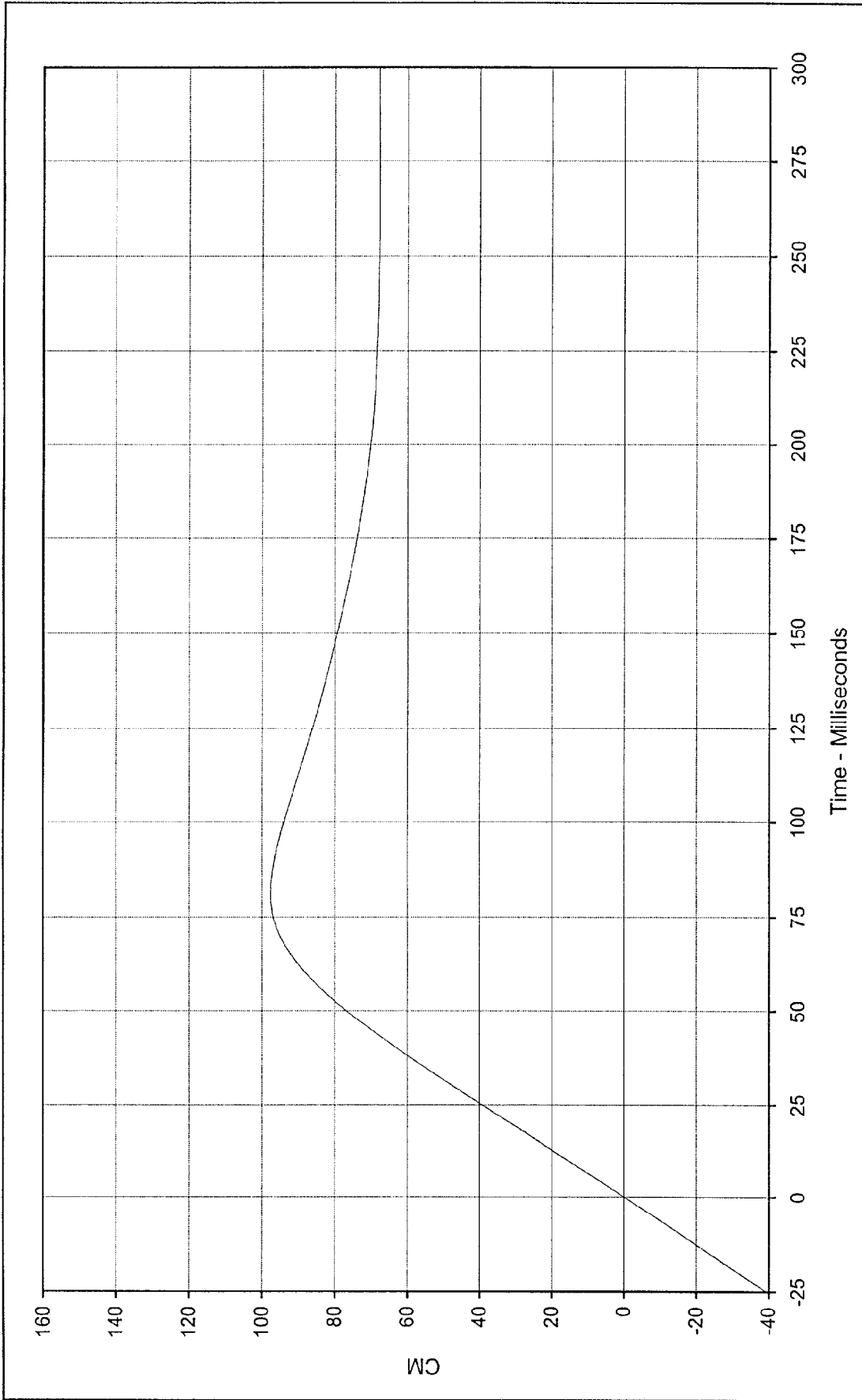
Minimum Value: -11.5 at 111.6 Milliseconds

SAE Filter Class: 180

Date of Test: 12/11/97

Curve Number: IN1-016





Curve Description: Driver Chest Redundant X Displ. Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 97.6 at 81.0 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

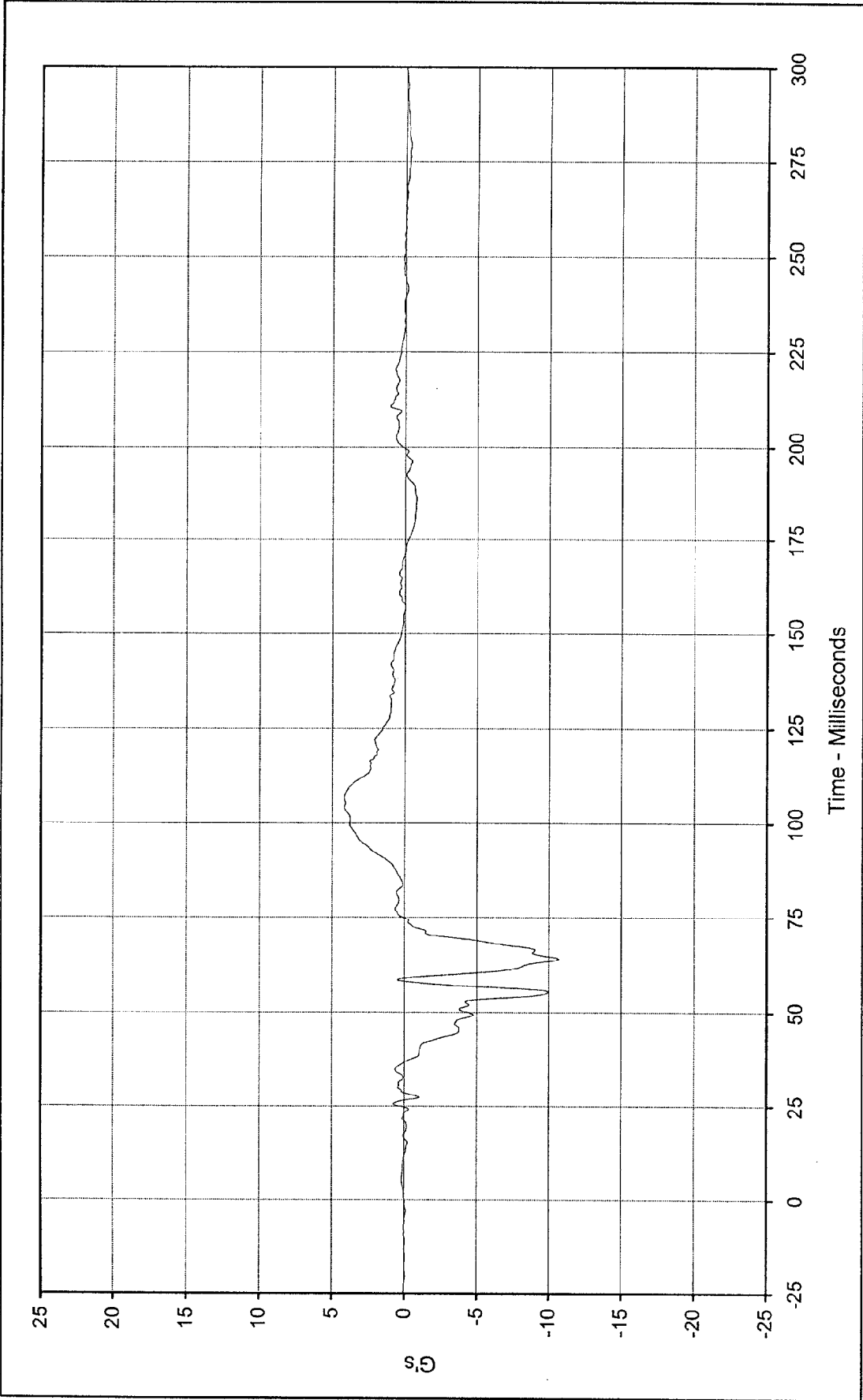
Minimum Value: -0.1 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 12/11/97

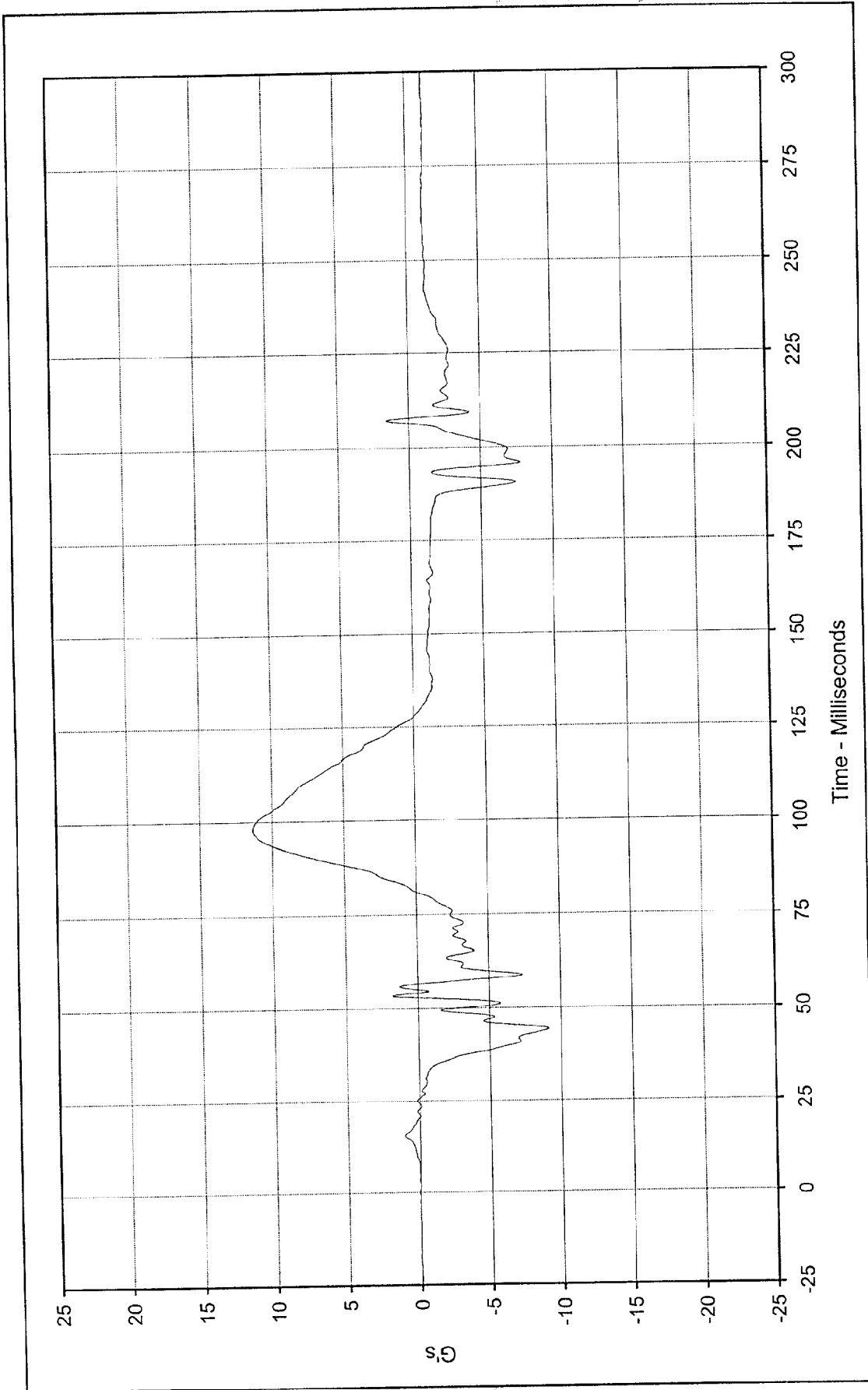
Curve Number: IN2-016





Curve Description: Driver Chest Redundant Y Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
Maximum Value: 4.2 at 106.8 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
Minimum Value: -10.7 at 63.9 Milliseconds
SAE Filter Class: 180
Date of Test: 12/11/97
Curve Number: FIL-017





Curve Description: Driver Chest Redundant Z Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 11.3 at 97.9 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

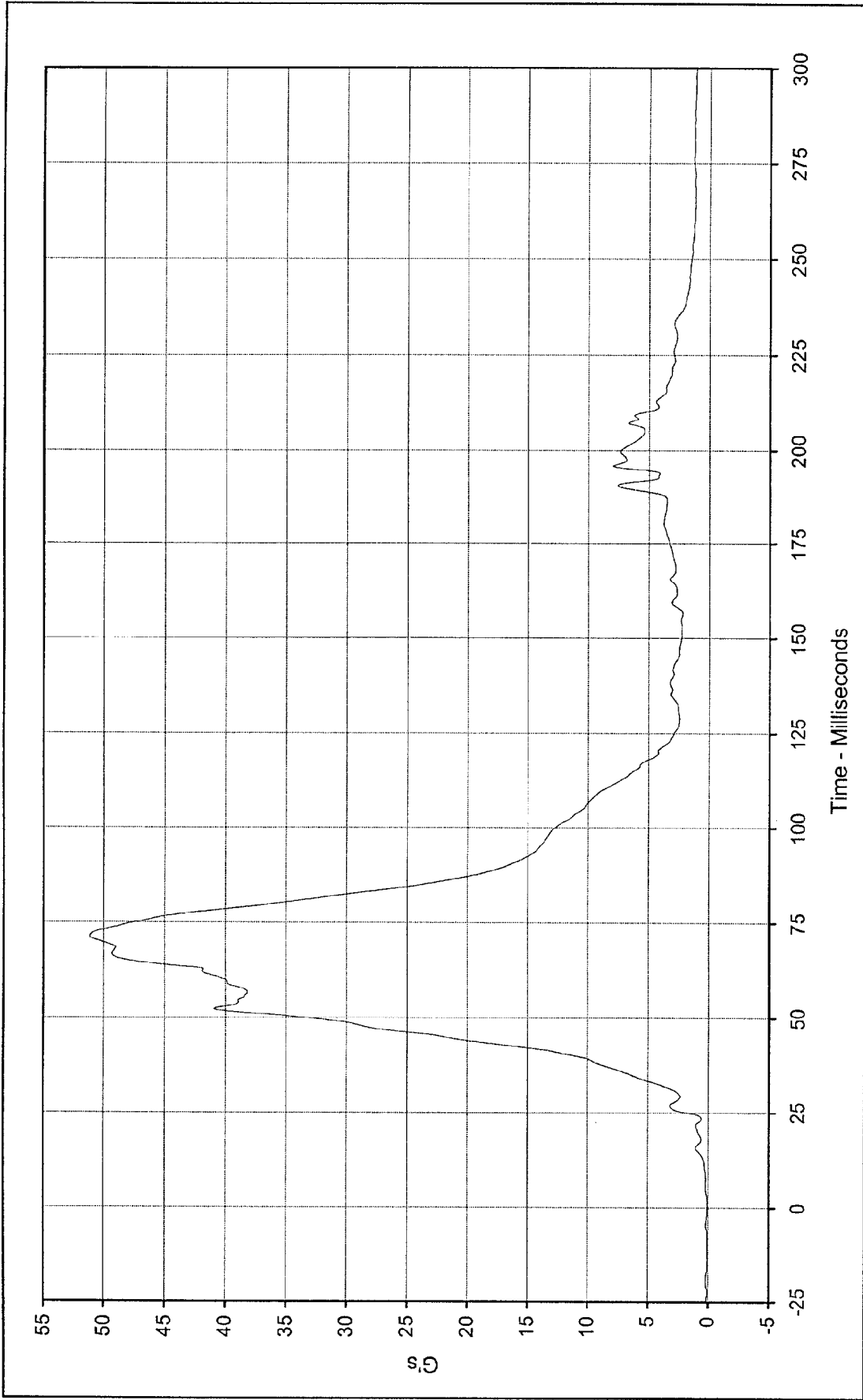
Minimum Value: -9.1 at 44.2 Milliseconds

SAE Filter Class: 180

Date of Test: 12/1/97

Curve Number: FIL-018

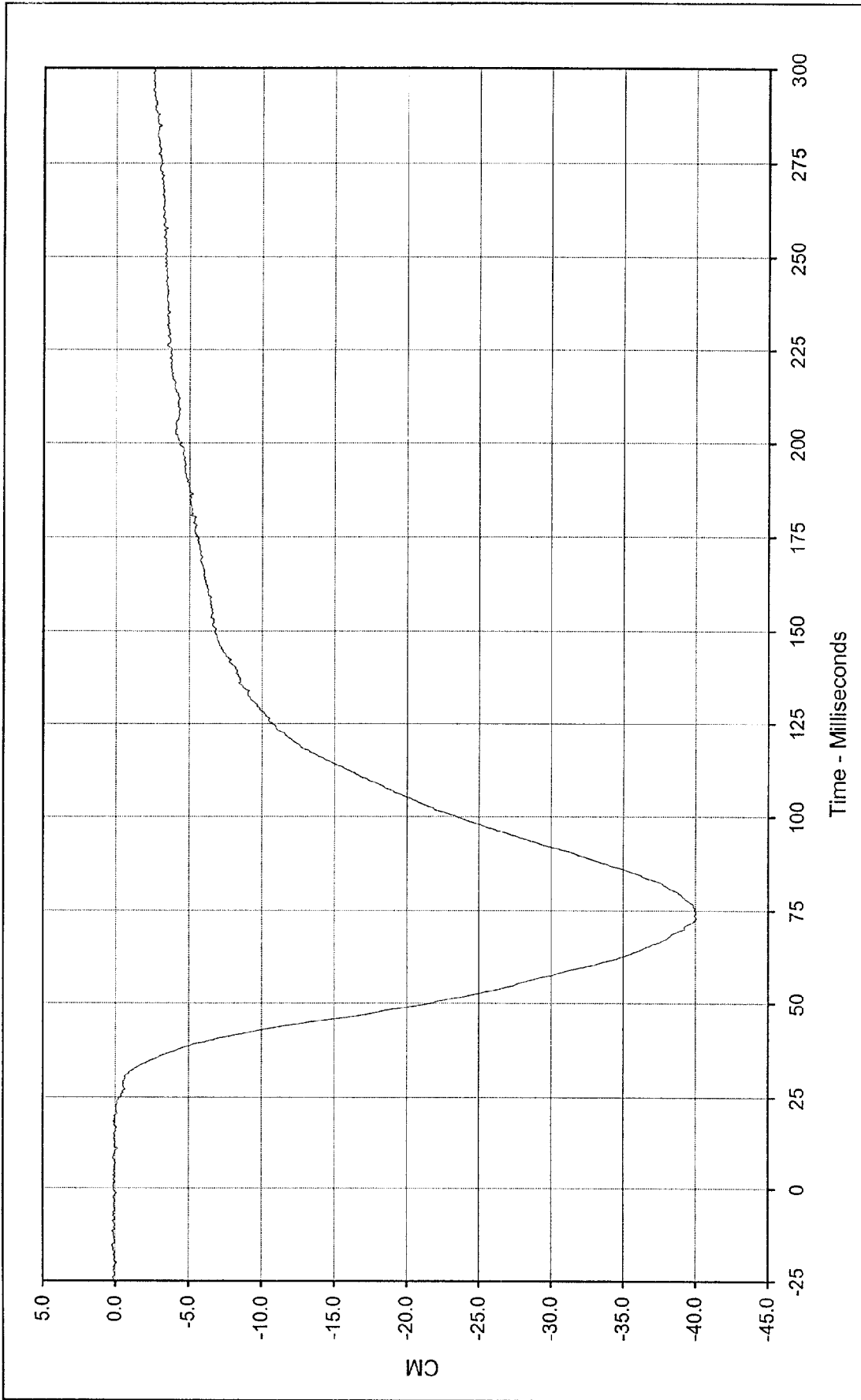




Curve Description: Driver Chest Resultant Redundant
 Maximum Value: 51.2 at 71.3 Milliseconds
 Minimum Value: 0.0 at 2.2 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: RES-016

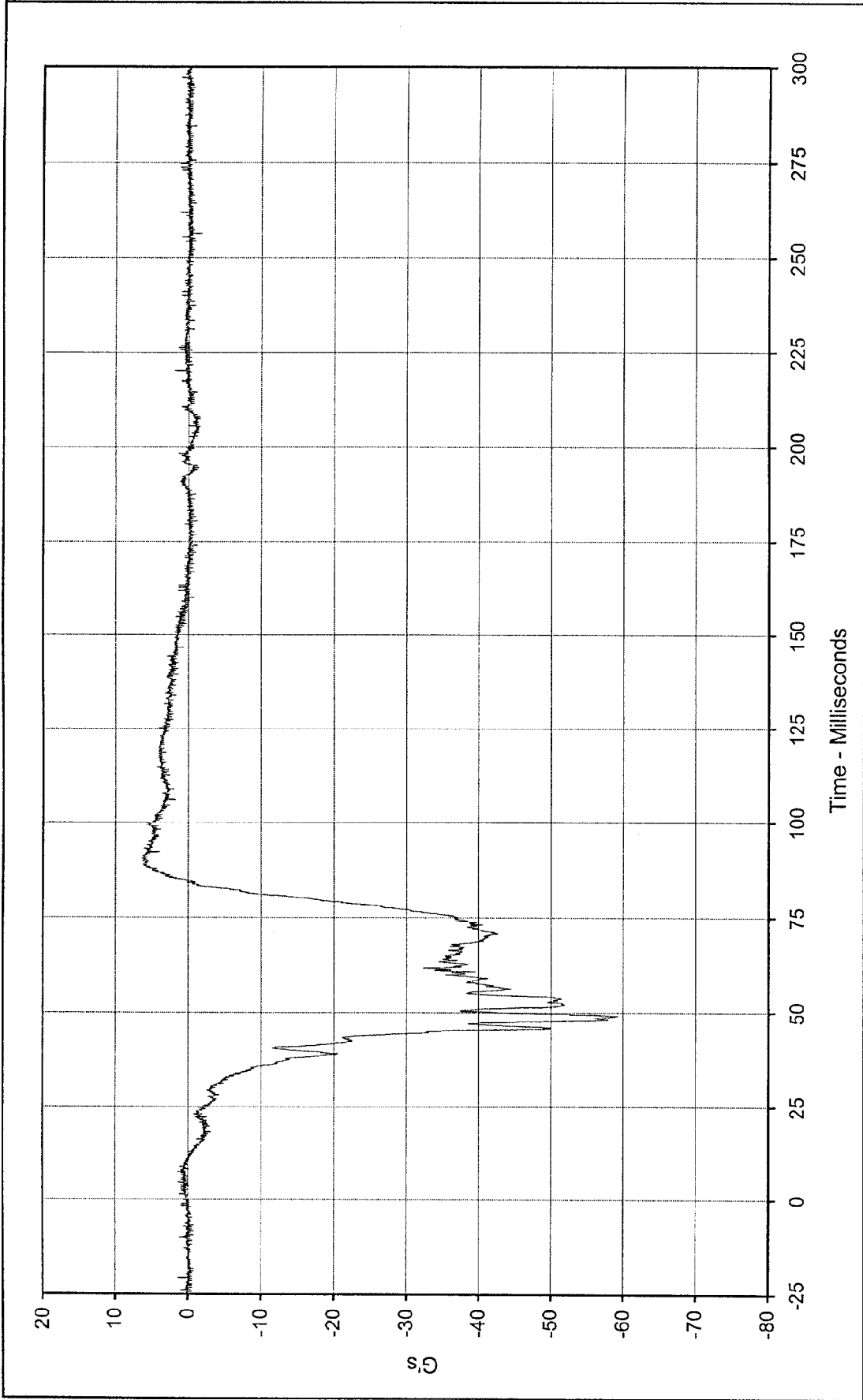
Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





Curve Description: Driver Chest Displacement X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 0.2 at 8.5 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -40.1 at 72.8 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: FIL-019

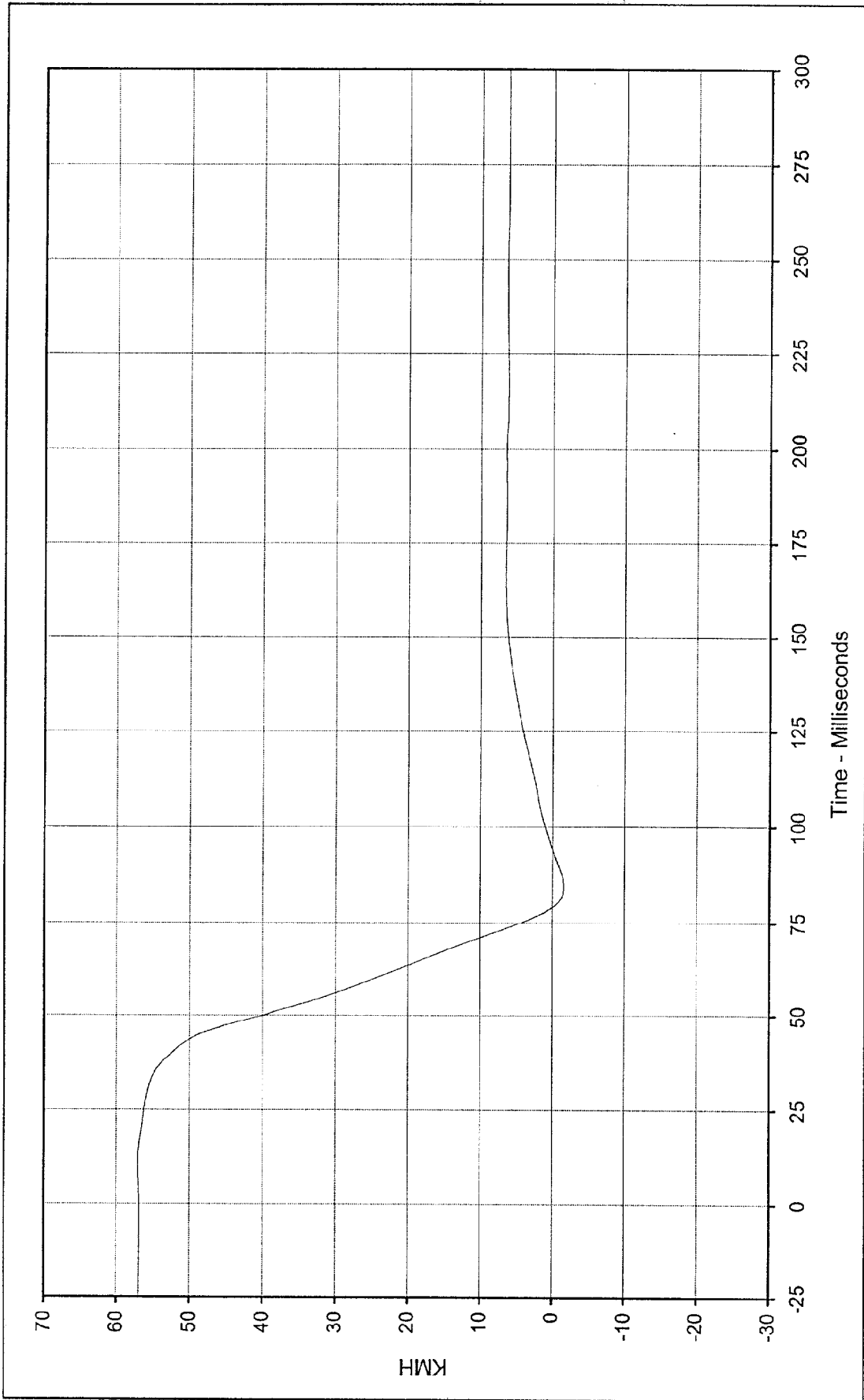




Curve Description: Driver Pelvis X
 Maximum Value: 6.5 at 90.3 Milliseconds
 Minimum Value: -59.3 at 49.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-020

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

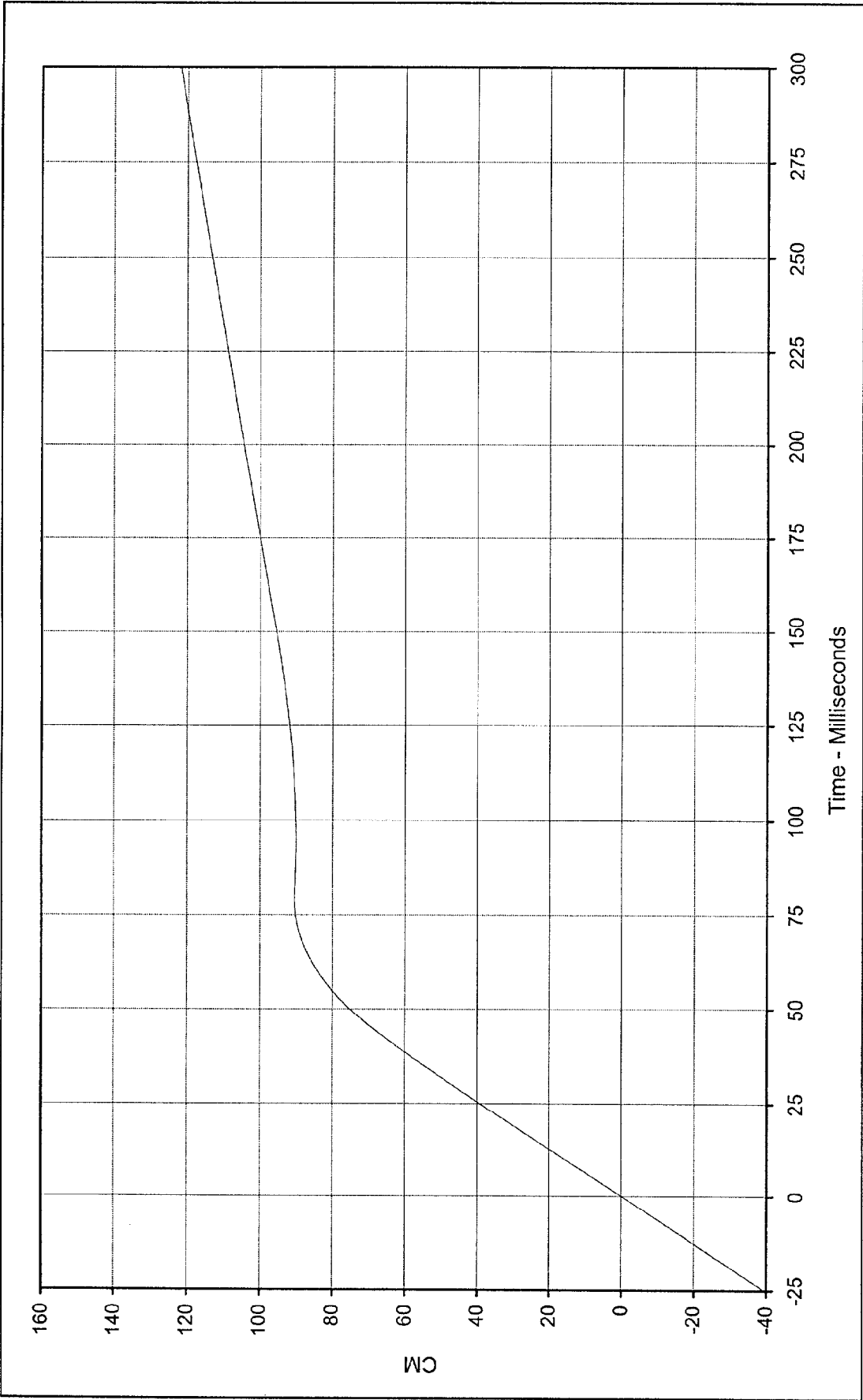




Curve Description: Driver Pelvis X Velocity
 Maximum Value: 57.0 at 10.9 Milliseconds
 Minimum Value: -1.6 at 84.5 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN1-020

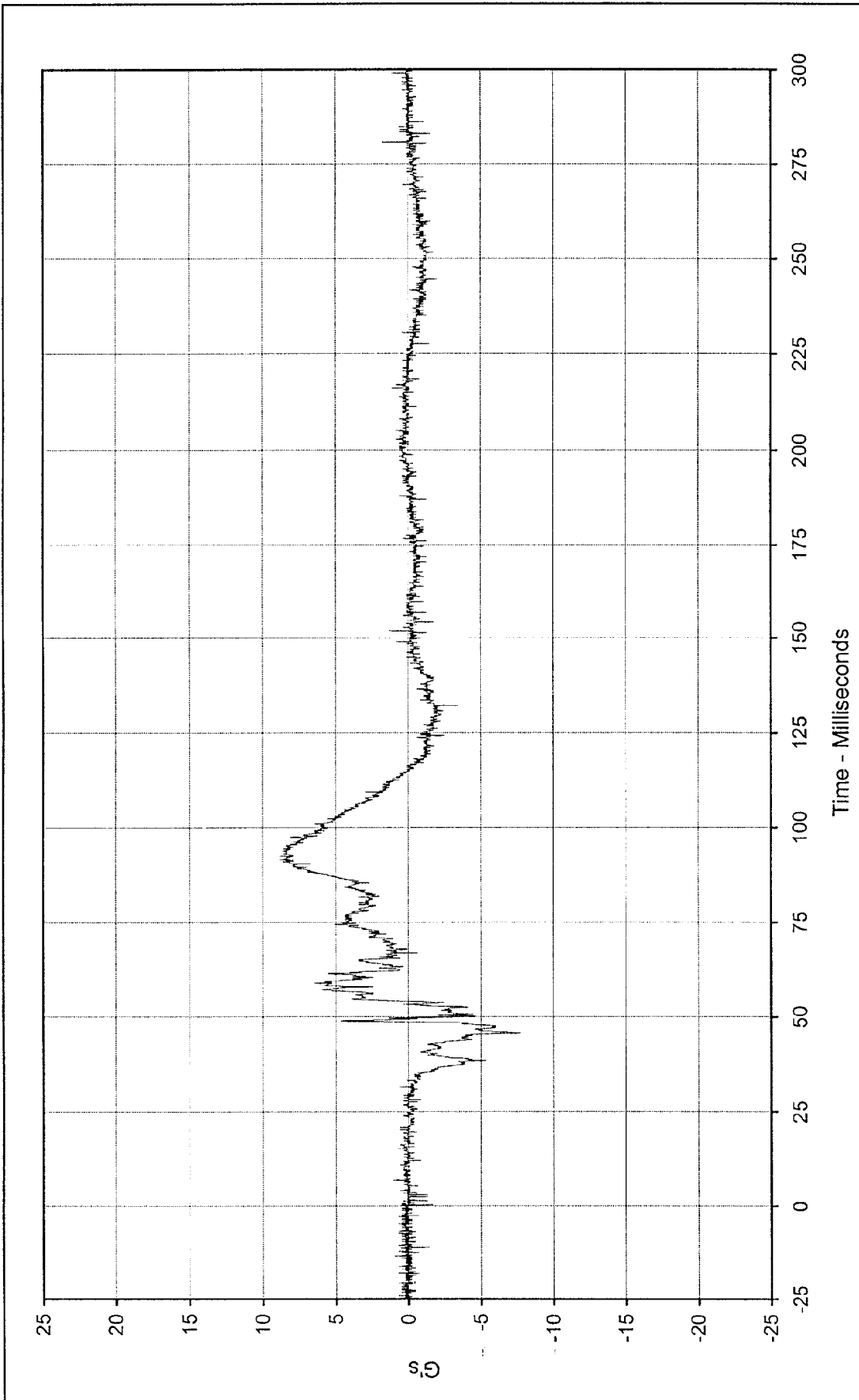
Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





Curve Description: Driver Pelvis X Displ. Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 121.9 at 299.9 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -0.1 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN2-020

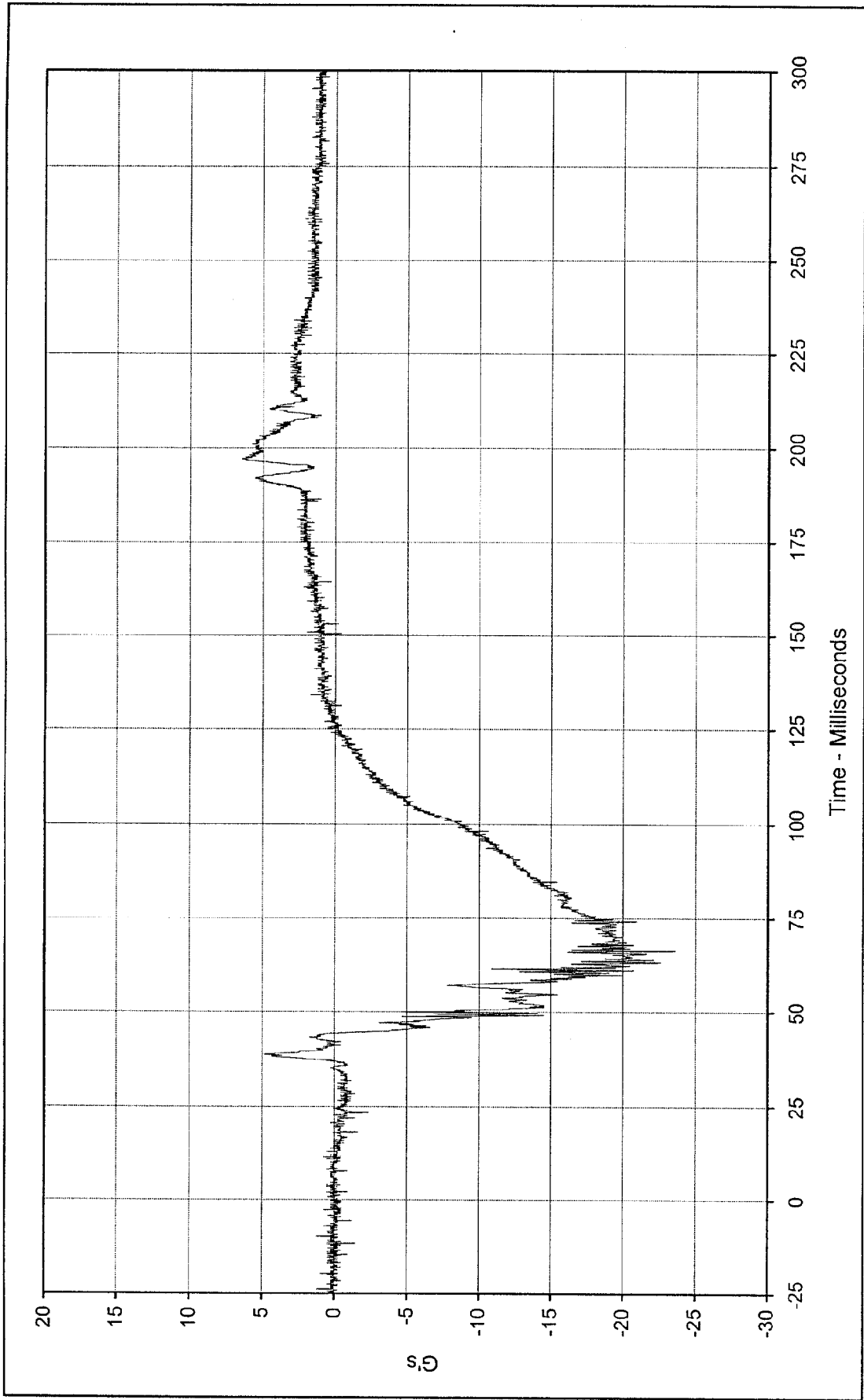




Curve Description: Driver Pelvis Y
 Maximum Value: 8.8 at 91.7 Milliseconds
 Minimum Value: -7.7 at 45.7 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/1/97
 Curve Number: FIL-021

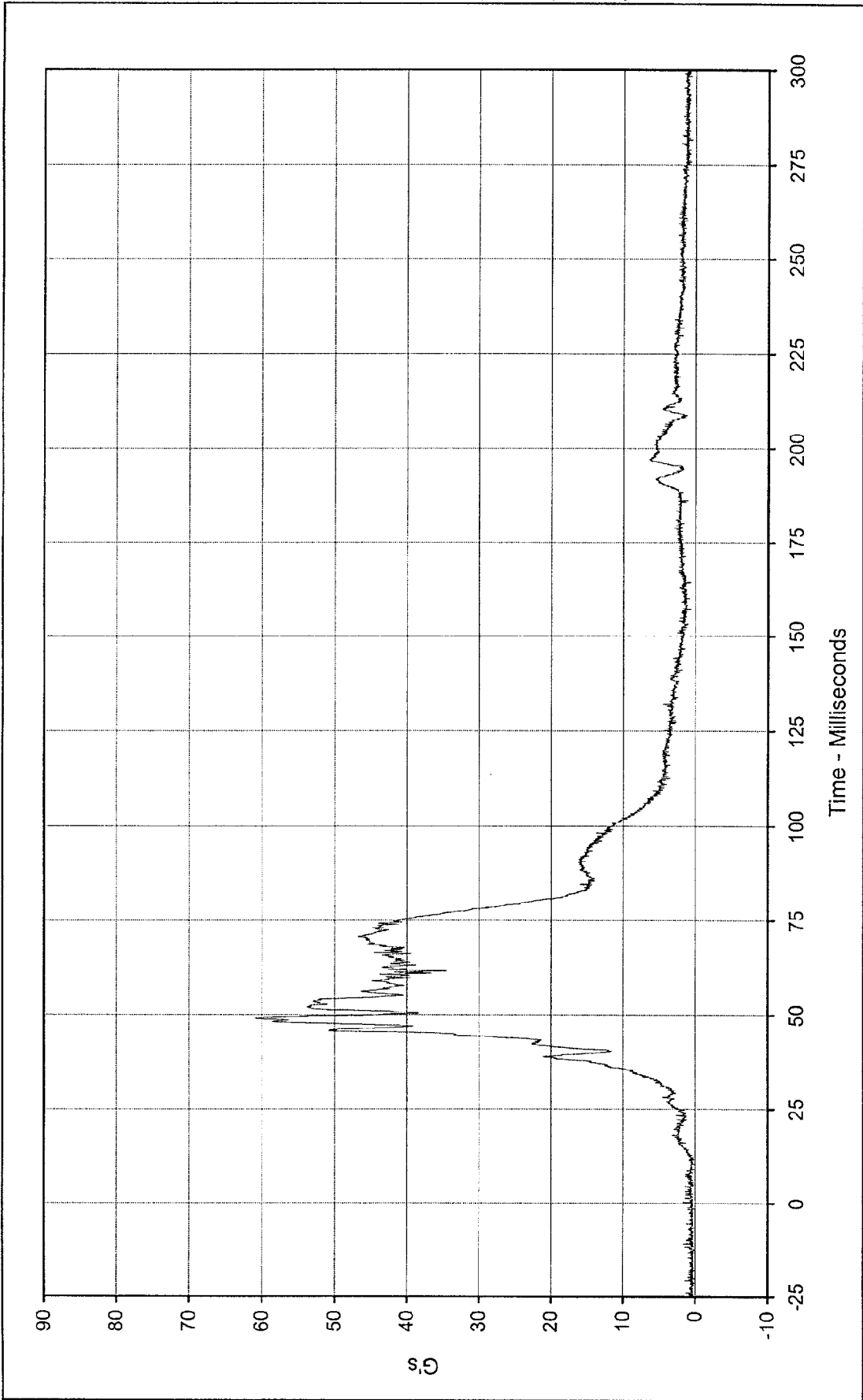
Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





Curve Description: Driver Pelvis Z Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 6.5 at 197.1 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -23.6 at 66.4 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-022





Curve Description: Driver Pelvis Resultant

Maximum Value: 60.9 at 49.0 Milliseconds

Minimum Value: 0.1 at 5.6 Milliseconds

SAE Filter Class: 1000

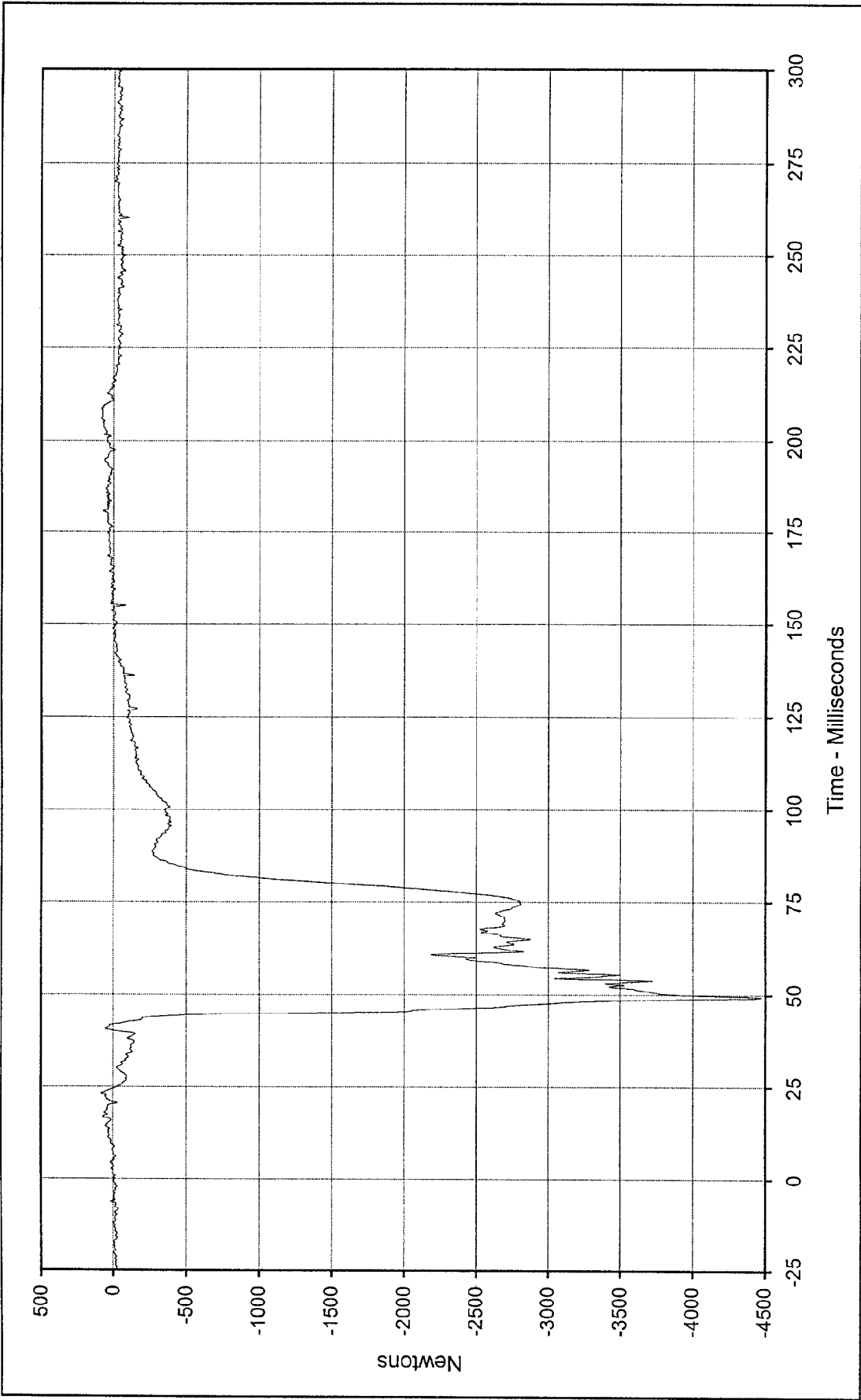
Date of Test: 12/11/97

Curve Number: RES-020

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

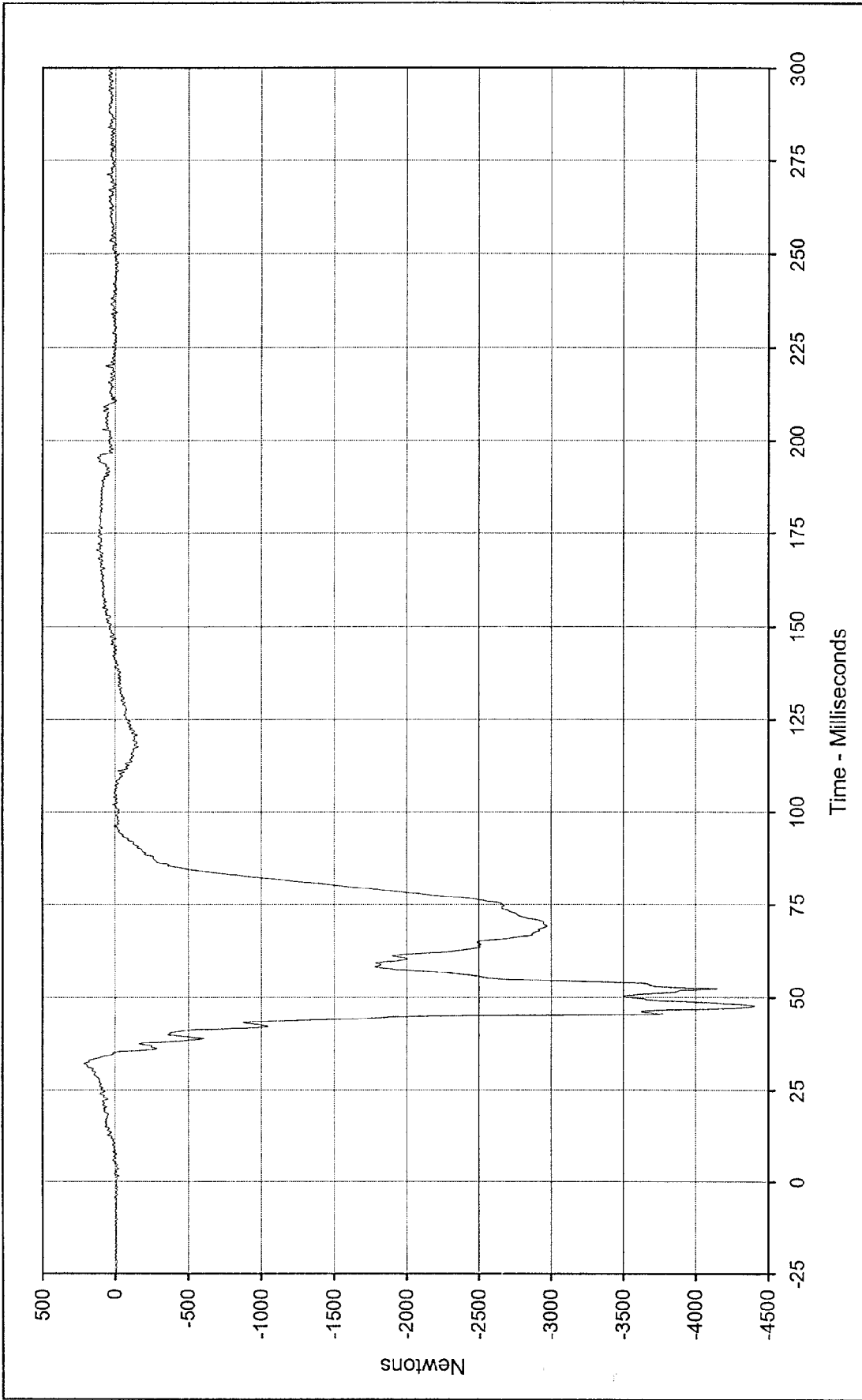




Curve Description: Driver Left Femur Force Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 86.7 at 23.2 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -4475.6 at 49.3 Milliseconds



SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: FIL-023



Curve Description: Driver Right Femur Force

Maximum Value: 212.5 at 32.1 Milliseconds

Minimum Value: -4406.3 at 47.7 Milliseconds

SAE Filter Class: 600

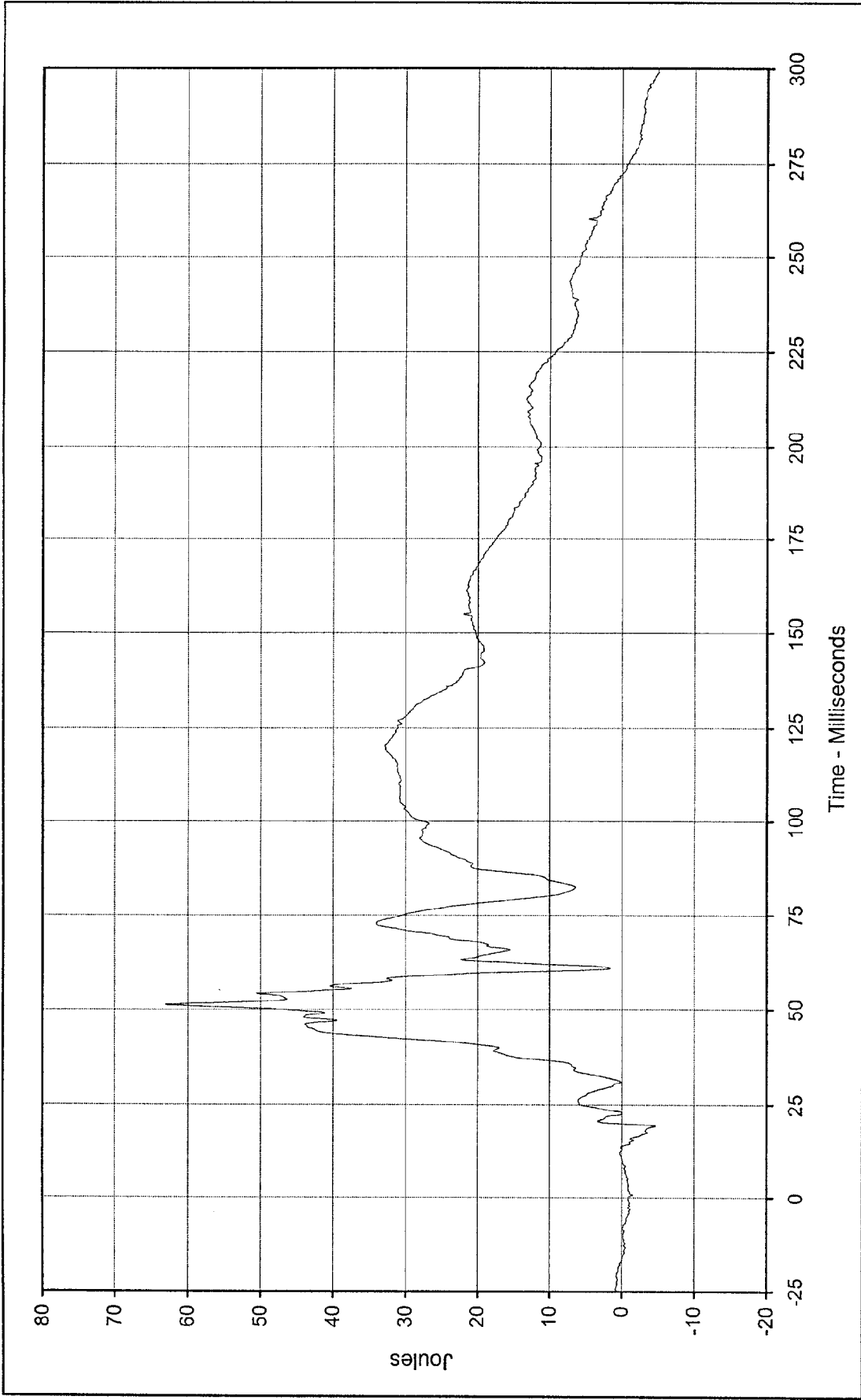
Date of Test: 12/11/97

Curve Number: FIL-024

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

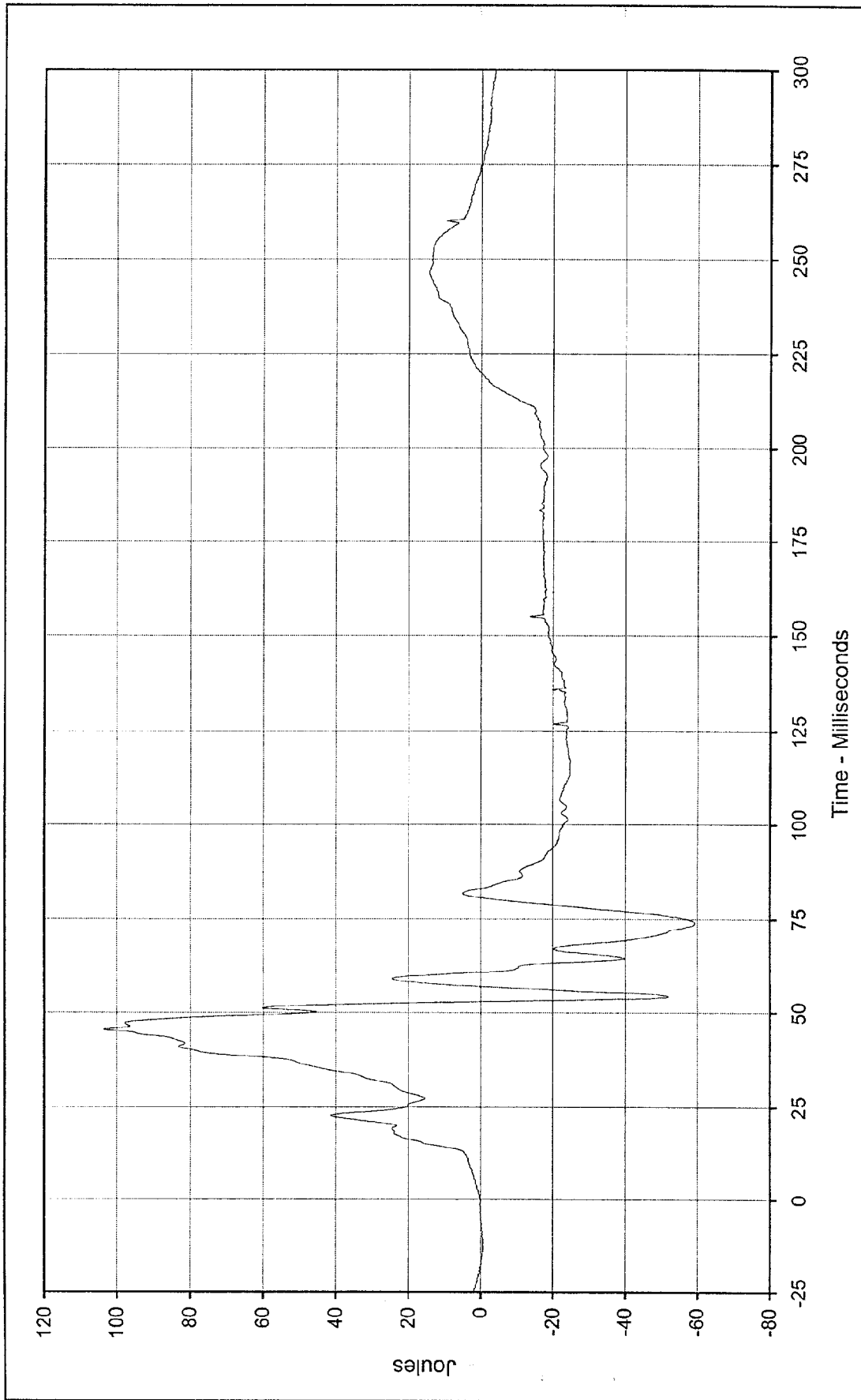
Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





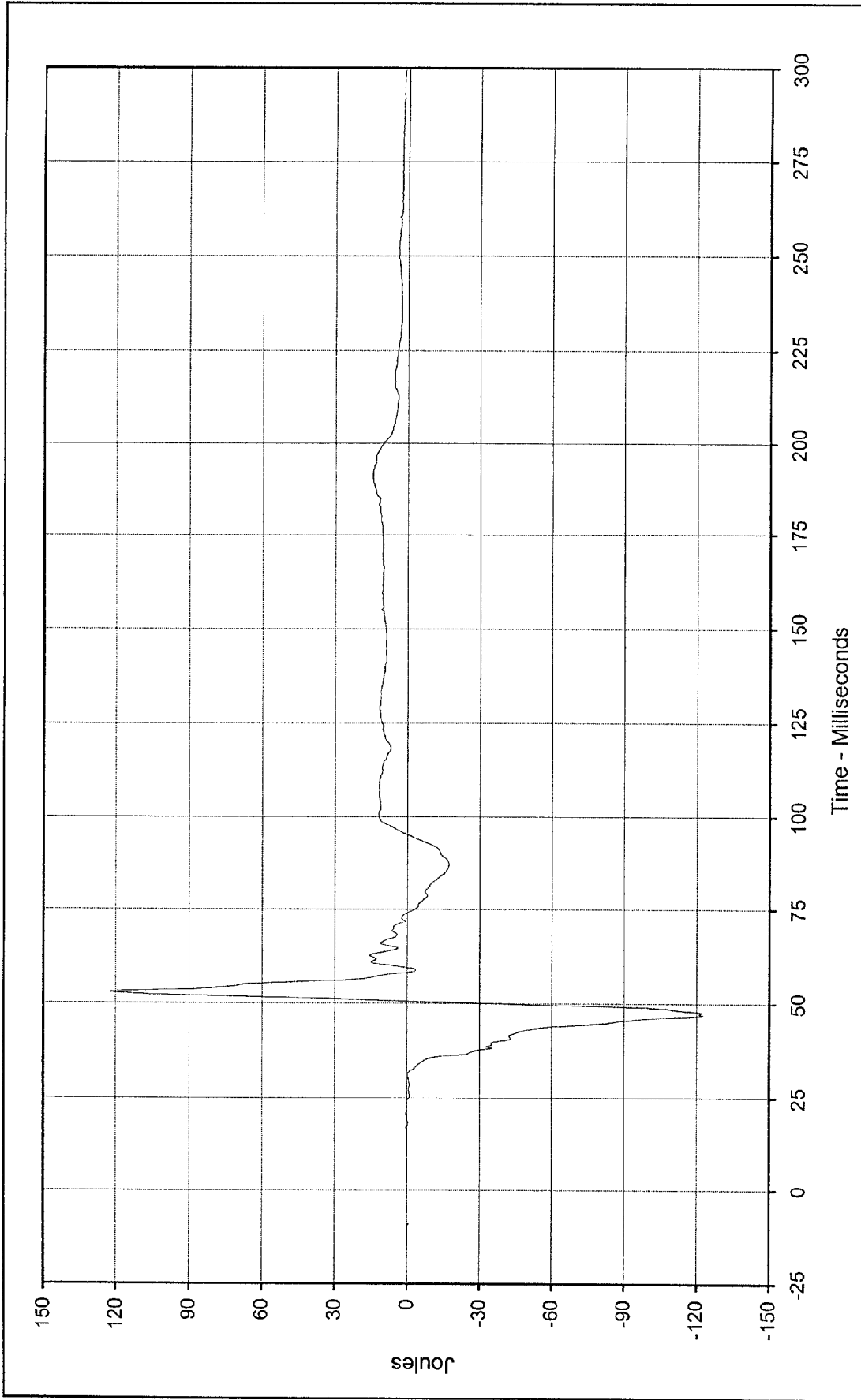
Curve Description: Driver Left Upper Tibia Moment X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 63.0 at 51.2 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -5.1 at 299.9 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: FIL-025





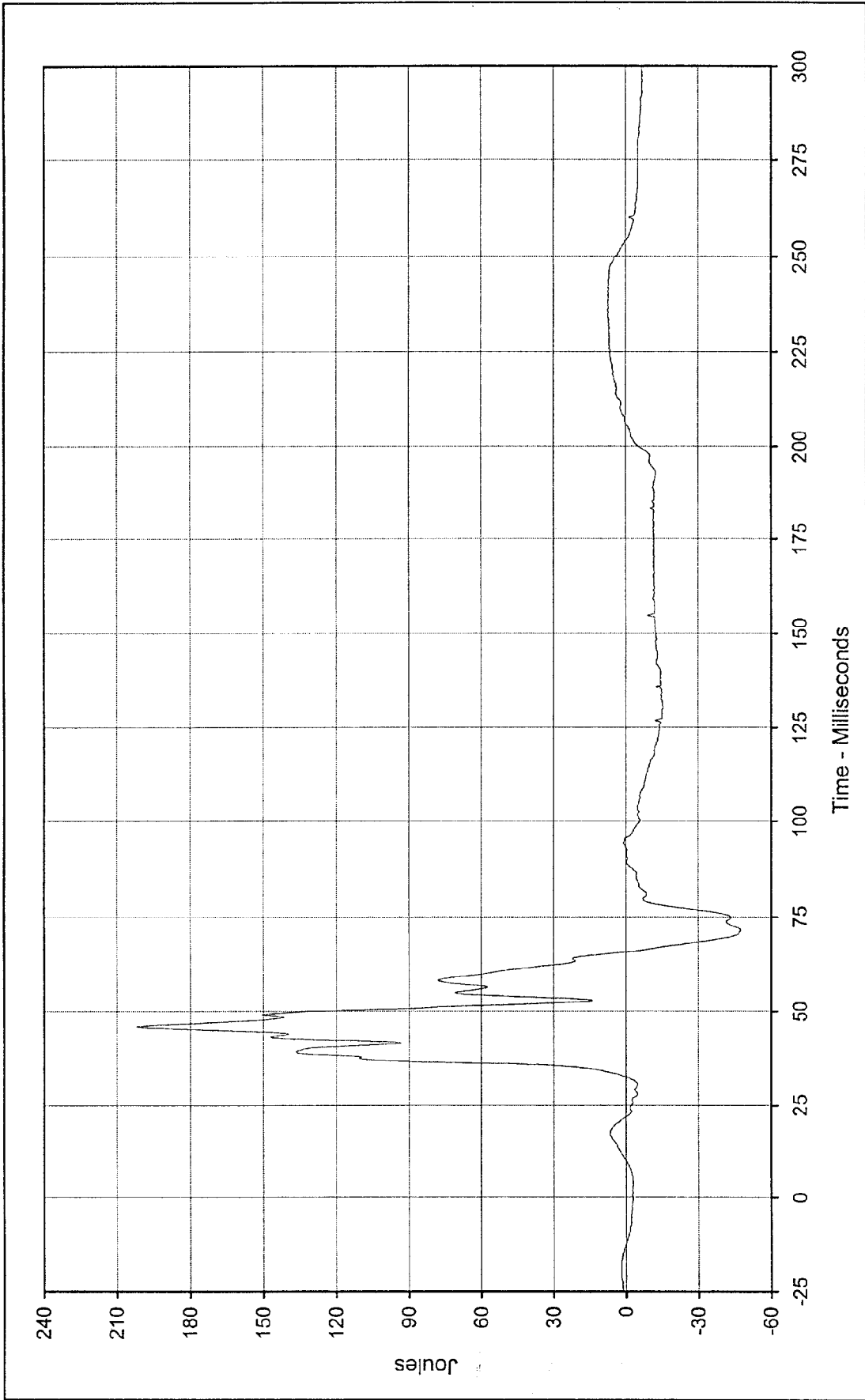
Curve Description: Driver Left Upper Tibia Moment Y Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 103.6 at 45.5 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -59.4 at 73.9 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: FIL-026





Curve Description: Driver Right Upper Tibia Moment X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 122.4 at 52.9 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -122.6 at 47.0 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: FIL-027





Curve Description: Driver: Right Upper Tibia Moment Y Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 201.9 at 45.8 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

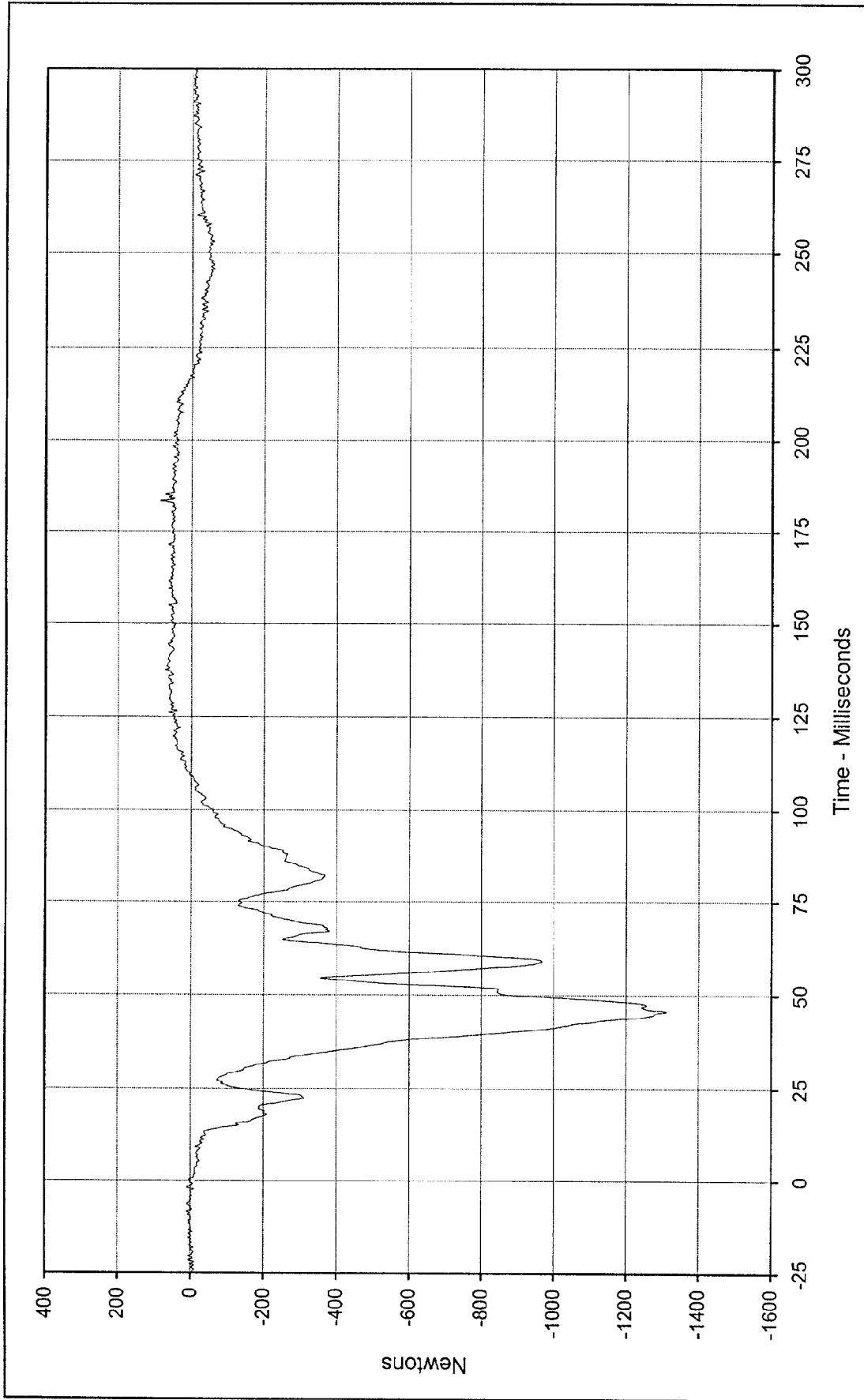
Minimum Value: -47.6 at 71.5 Milliseconds

SAE Filter Class: 600

Date of Test: 12/11/97

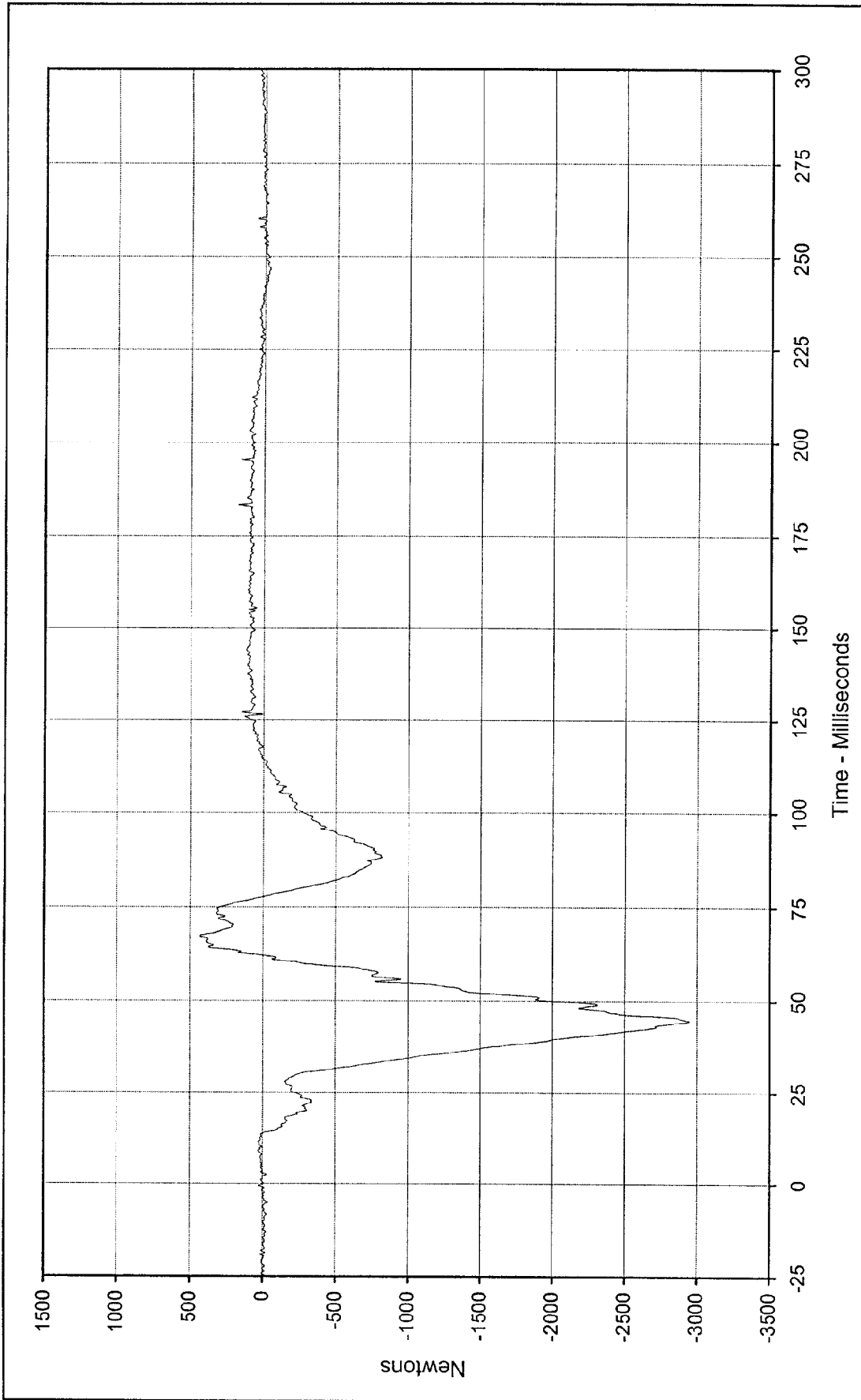
Curve Number: FIL-028





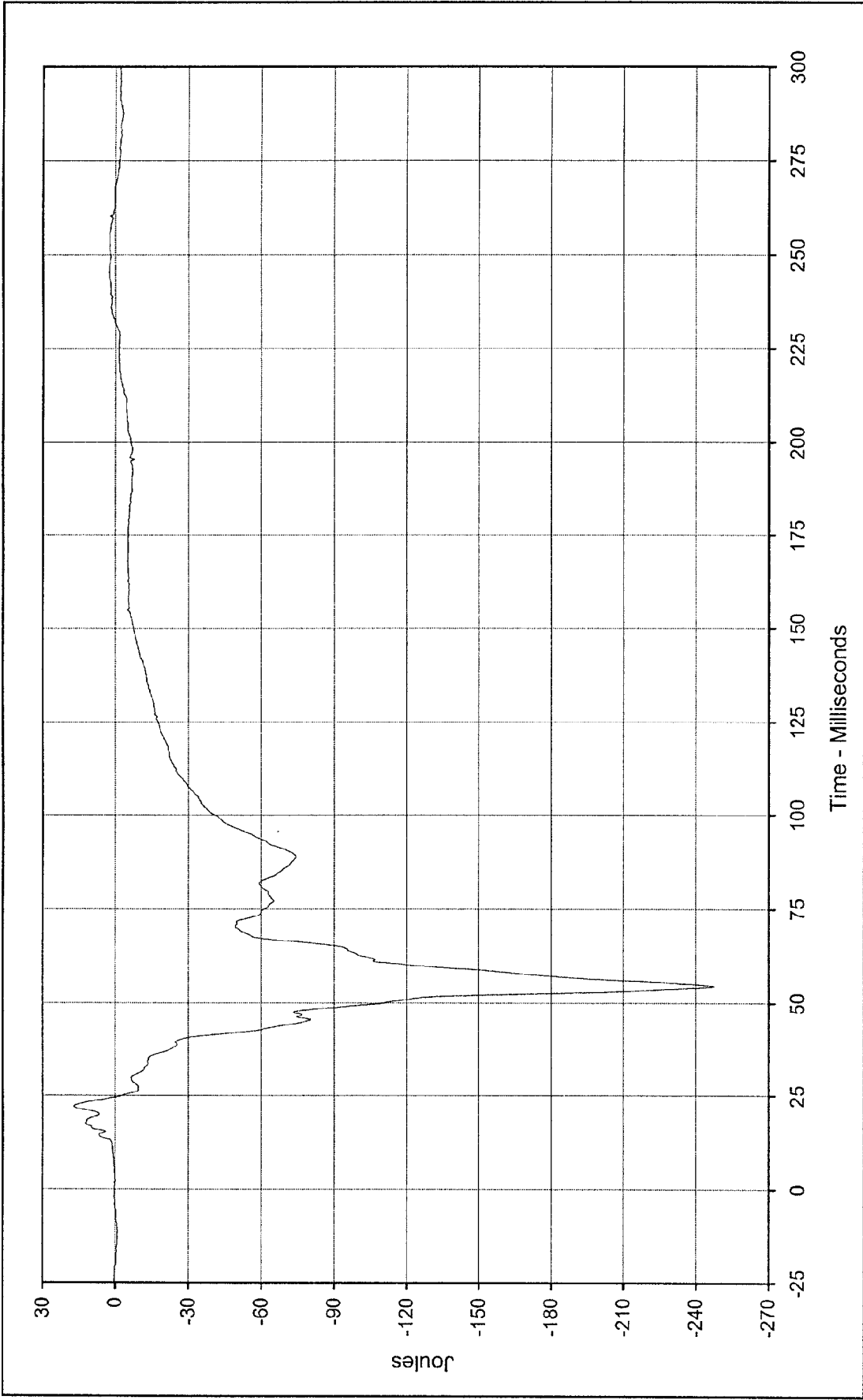
Curve Description:	Driver Left Lower Tibia Force X	Testing Program	1998 NHTSA 35 mph NCAP	No.:	MW5302	
Maximum Value:	83.1	at	183.4	Milliseconds	Test Vehicle:	1998 Honda Civic DX 4 Door Sedan
Minimum Value:	-1311.1	at	45.8	Milliseconds		
SAE Filter Class:	600					
Date of Test:	12/11/97					
Curve Number:	FIL-029					





Curve Description: Driver Left Lower Tibia Force Z Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 434.3 at 67.1 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -2947.5 at 44.6 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: FIL-030

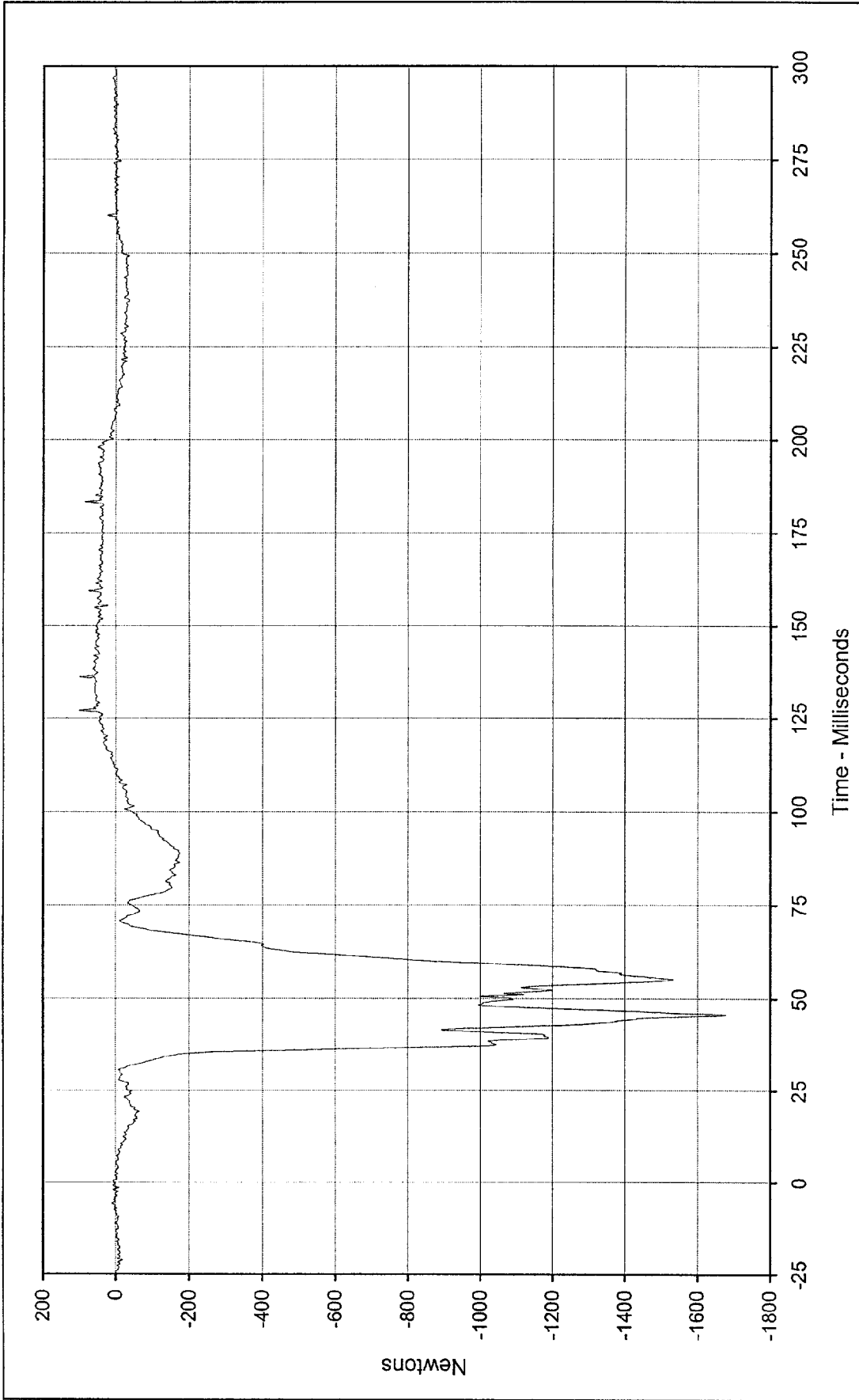




Curve Description: Driver Left Lower Tibia Moment Y
 Testing Program: 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 17.1 at 22.2 Milliseconds
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -247.5 at 54.6 Milliseconds



SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: FIL-031

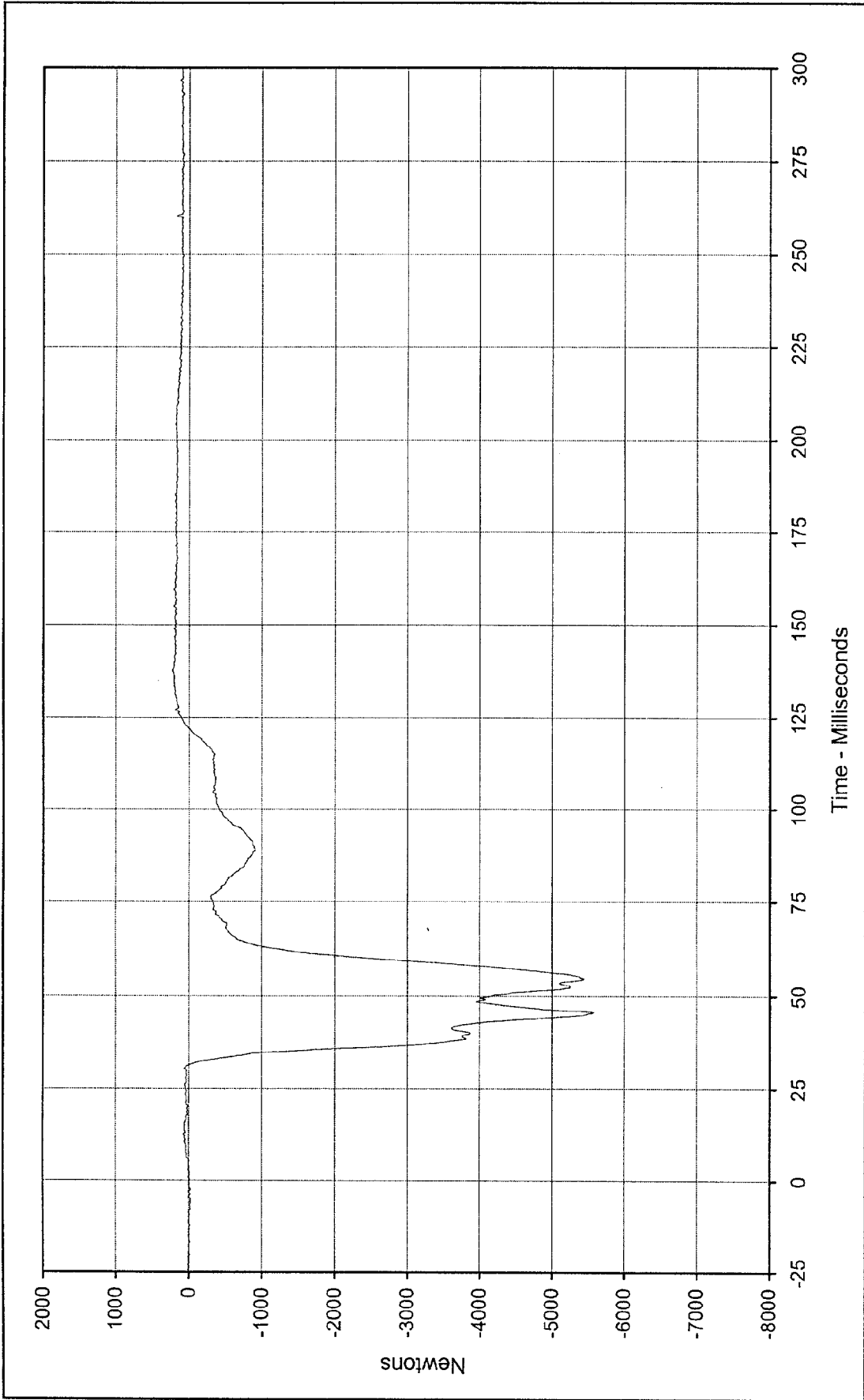


Curve Description: Driver Right Lower Tibia Force X
 Maximum Value: 101.0 at 127.1 Milliseconds
 Minimum Value: -1679.1 at 45.7 Milliseconds

SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: FIL-032

Testing Program: 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

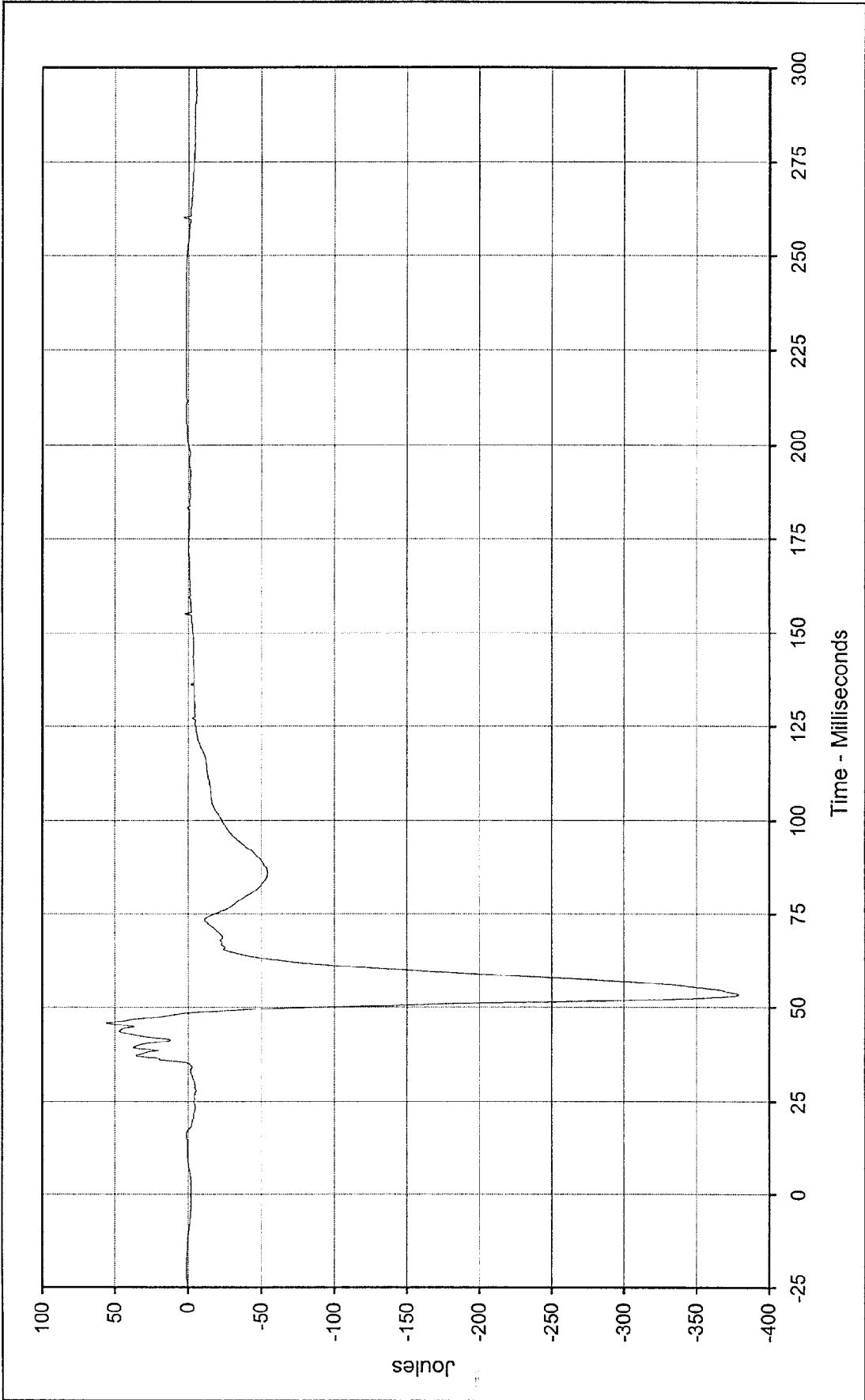




Curve Description: Driver Right Lower Tibia Force Z
 Maximum Value: 224.1 at 137.6 Milliseconds
 Minimum Value: -5573.2 at 45.7 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: FIL-033

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

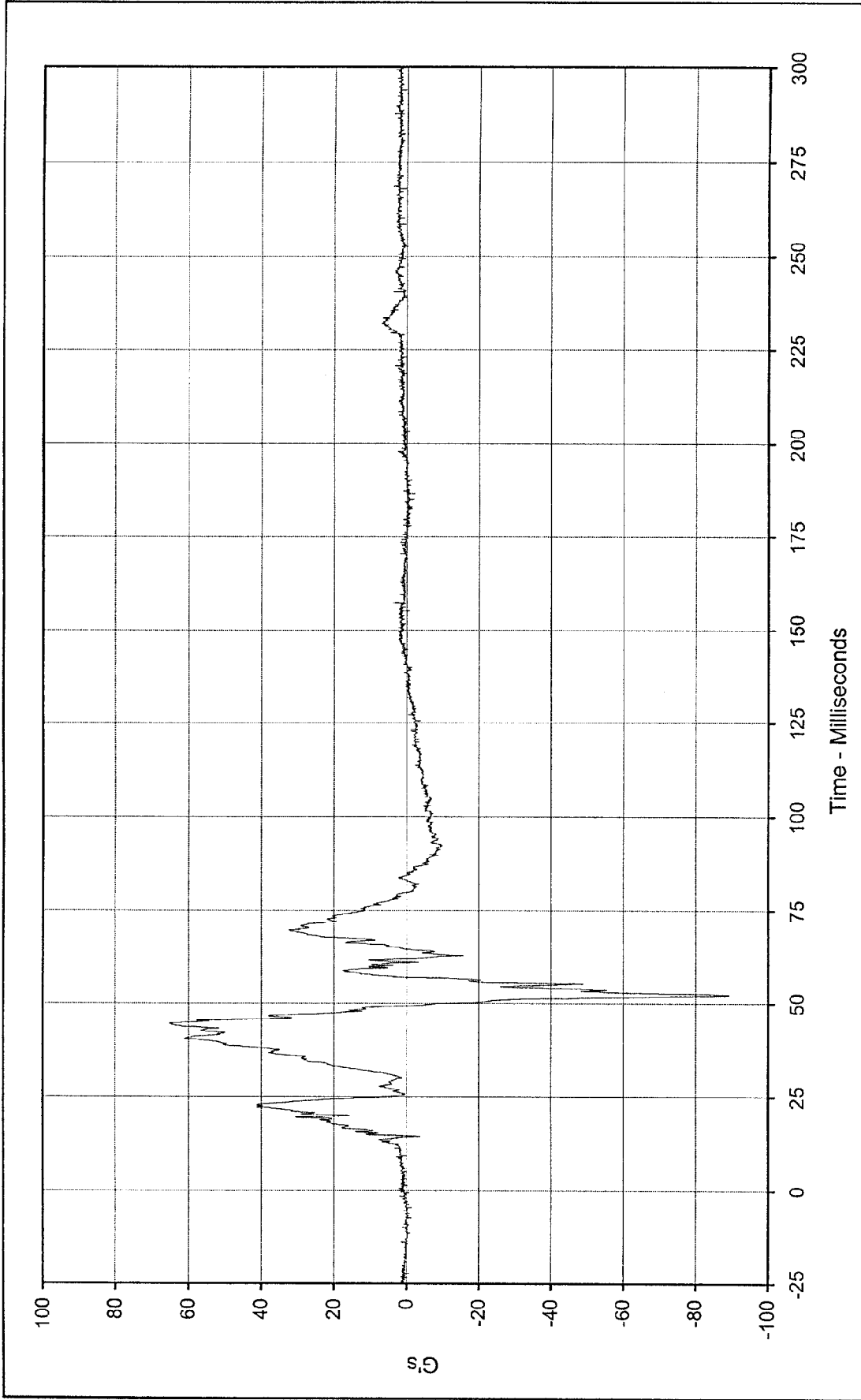




Curve Description: Driver Right Lower Tibia Moment Y
 Maximum Value: 55.8 at 45.7 Milliseconds
 Minimum Value: -379.3 at 53.3 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: FIL-034

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





Curve Description: Driver Left Foot Aft X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 65.1 at 44.4 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

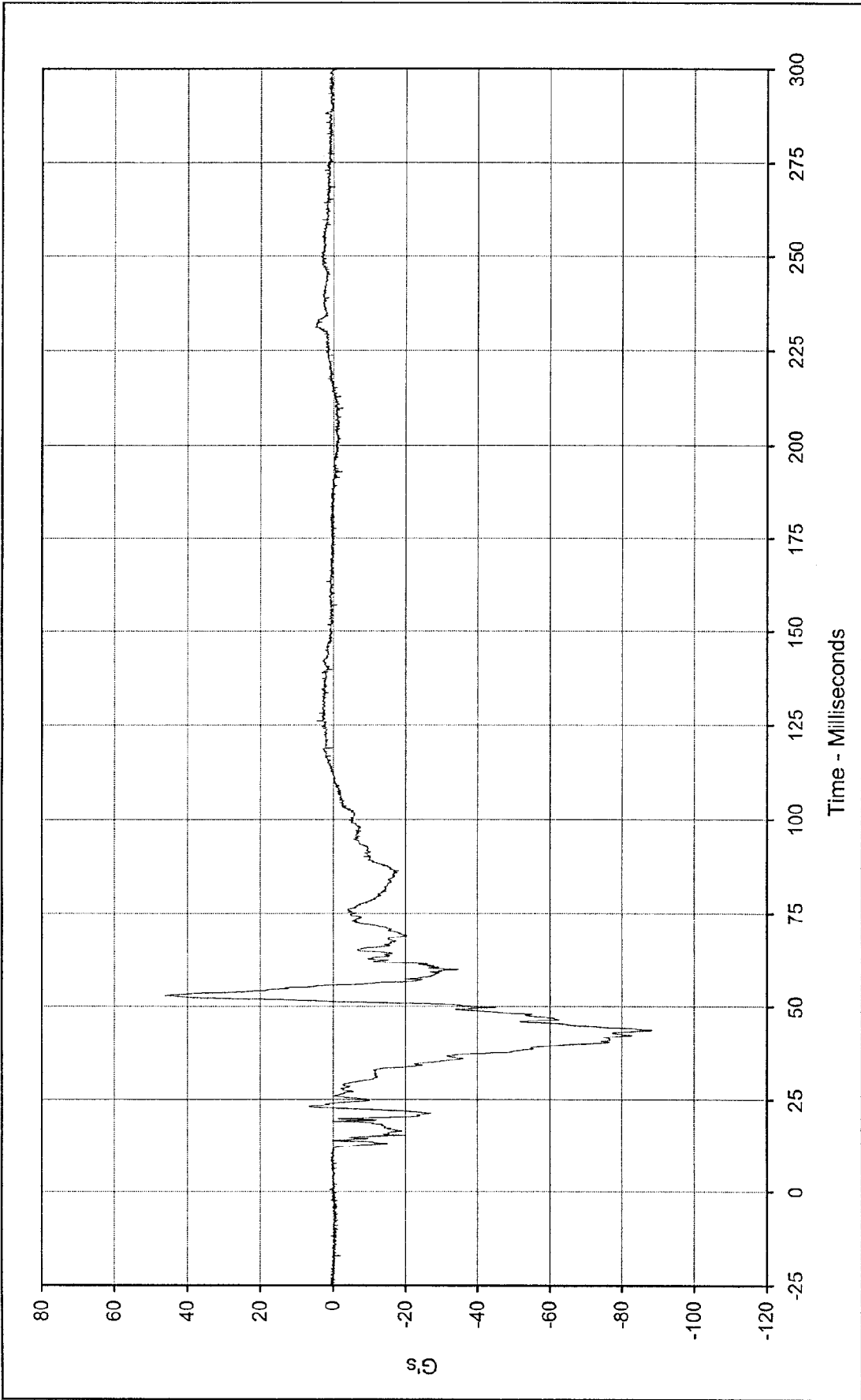
Minimum Value: -89.2 at 52.2 Milliseconds

SAE Filter Class: 1000

Date of Test: 12/11/97

Curve Number: FIL-035





Curve Description: Driver Left Foot Aft Z Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 46.3 at 53.0 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

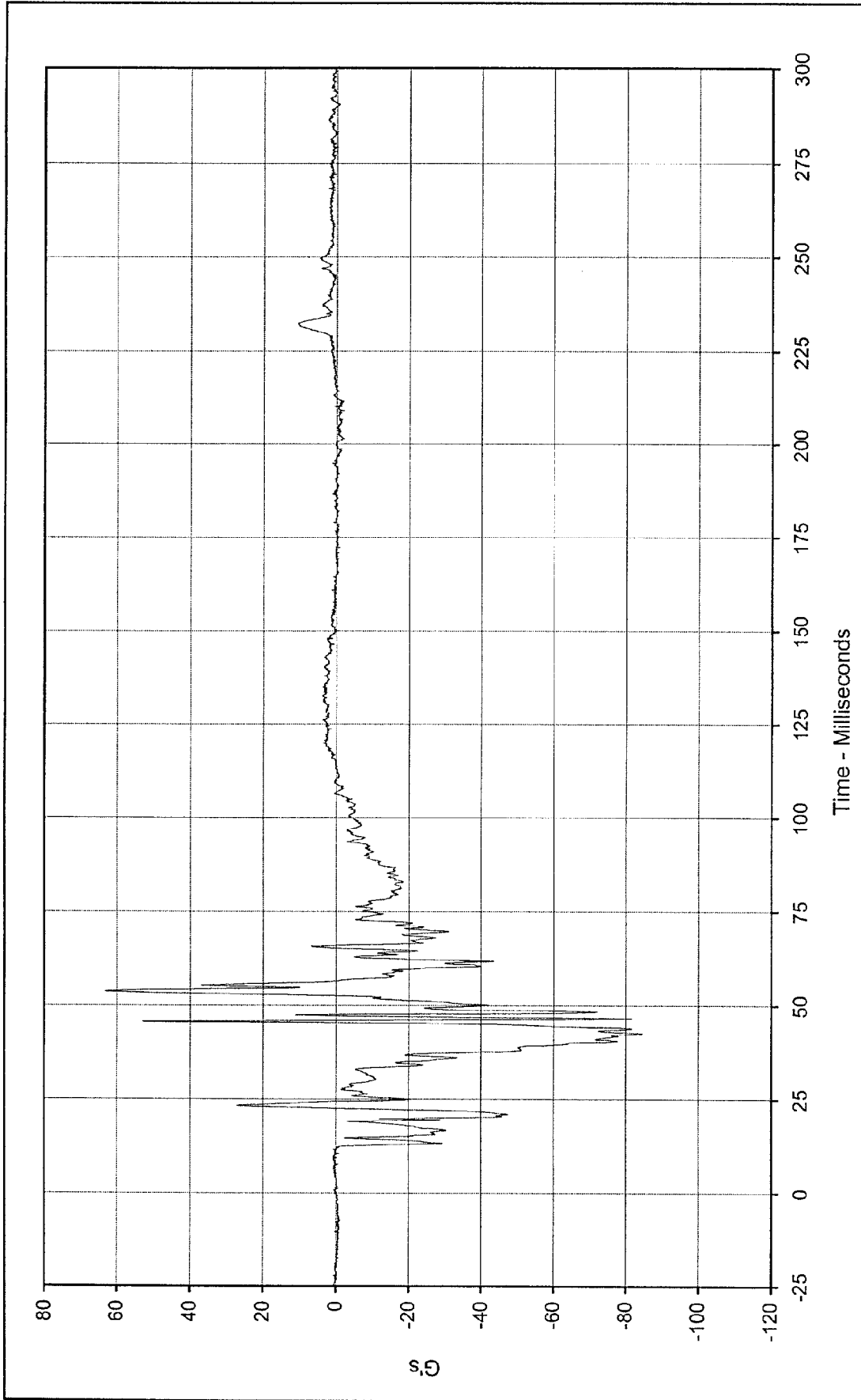
Minimum Value: -88.4 at 43.5 Milliseconds

SAE Filter Class: 1000

Date of Test: 12/11/97

Curve Number: FIL-036





Curve Description: Driver Left Foot Fore Z Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 63.2 at 53.7 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

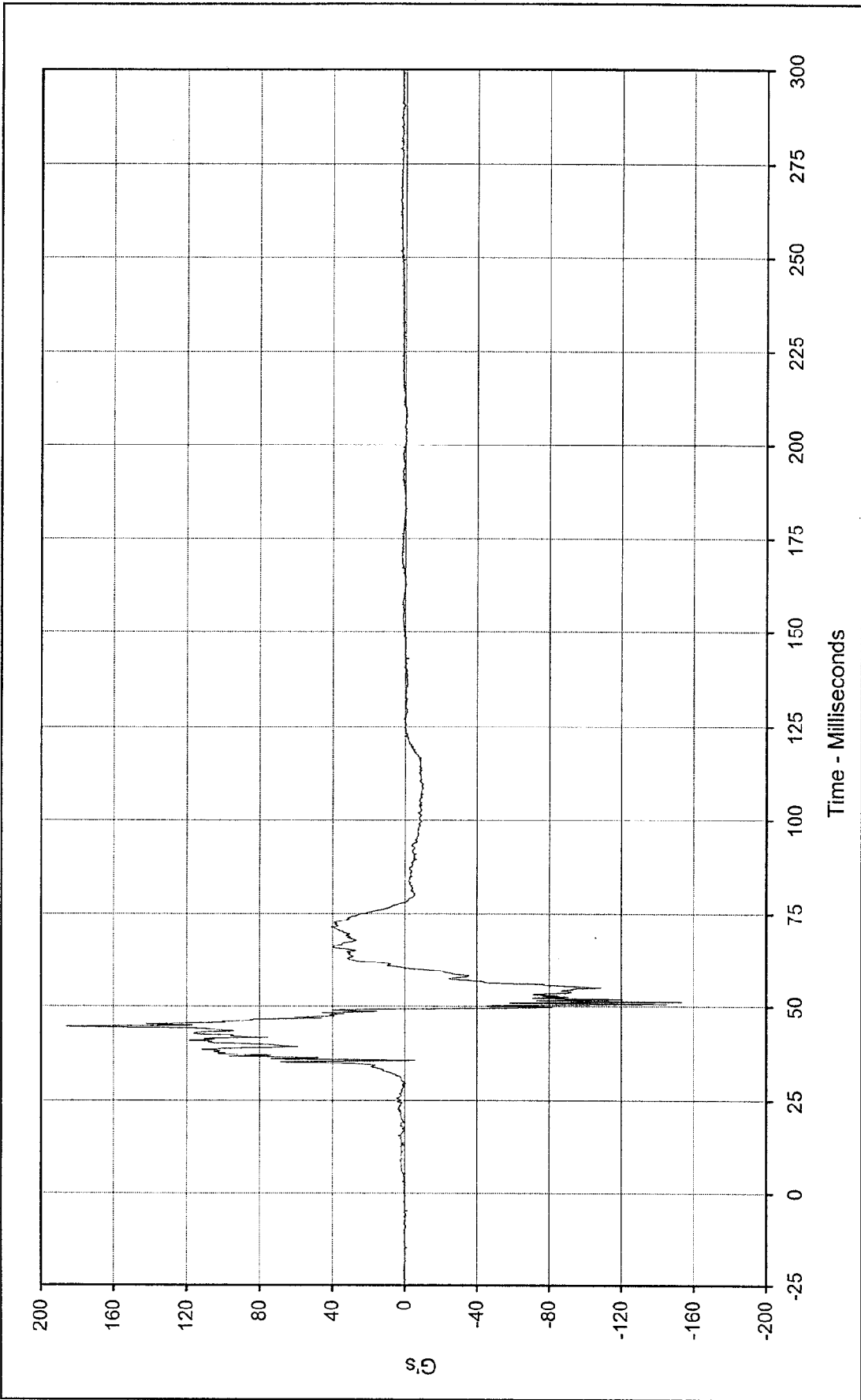
Minimum Value: -84.6 at 42.4 Milliseconds

SAE Filter Class: 1000

Date of Test: 12/11/97

Curve Number: FIL-037

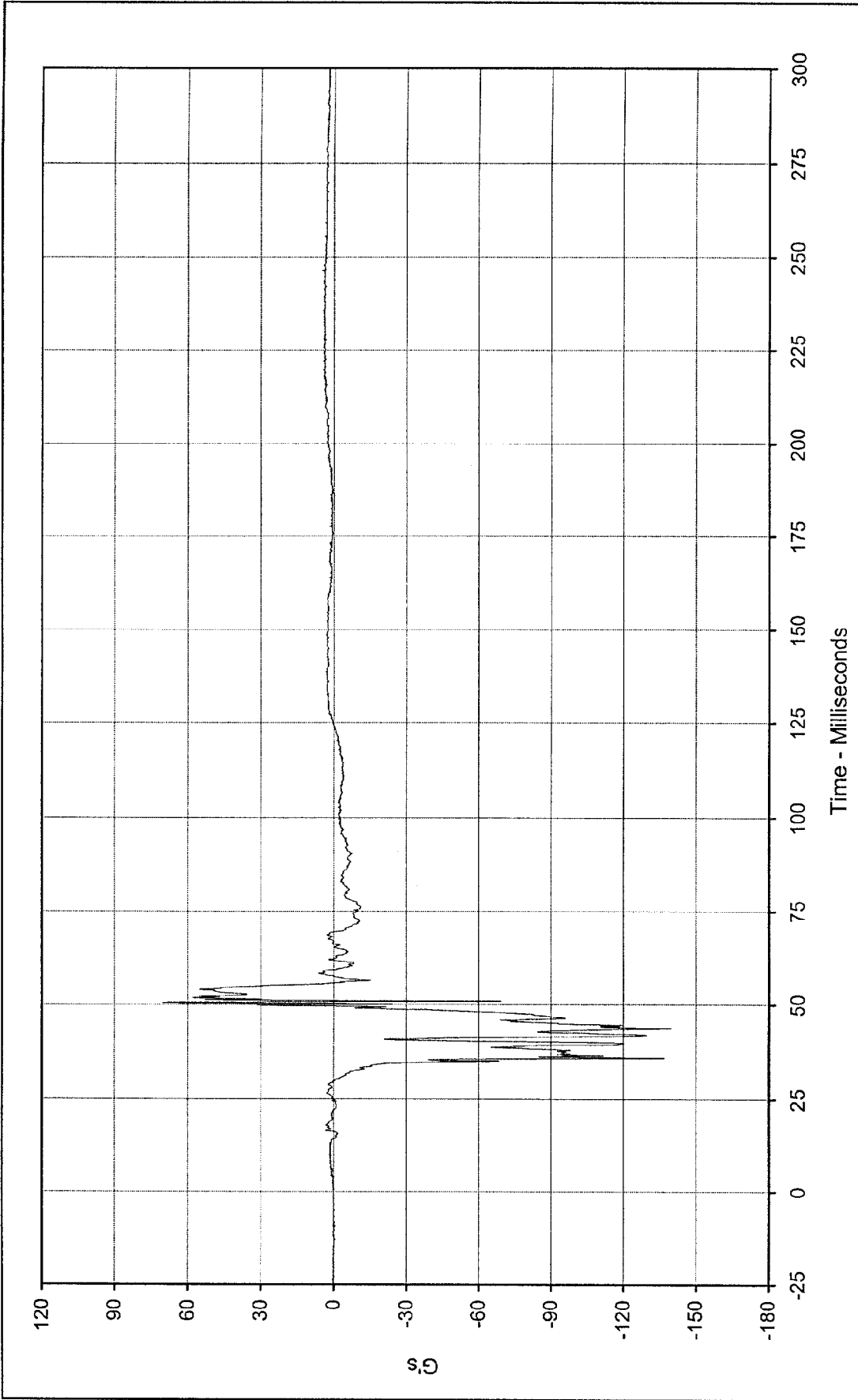




Curve Description: Driver Right Foot Aft X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 186.0 at 44.5 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -153.0 at 51.3 Milliseconds

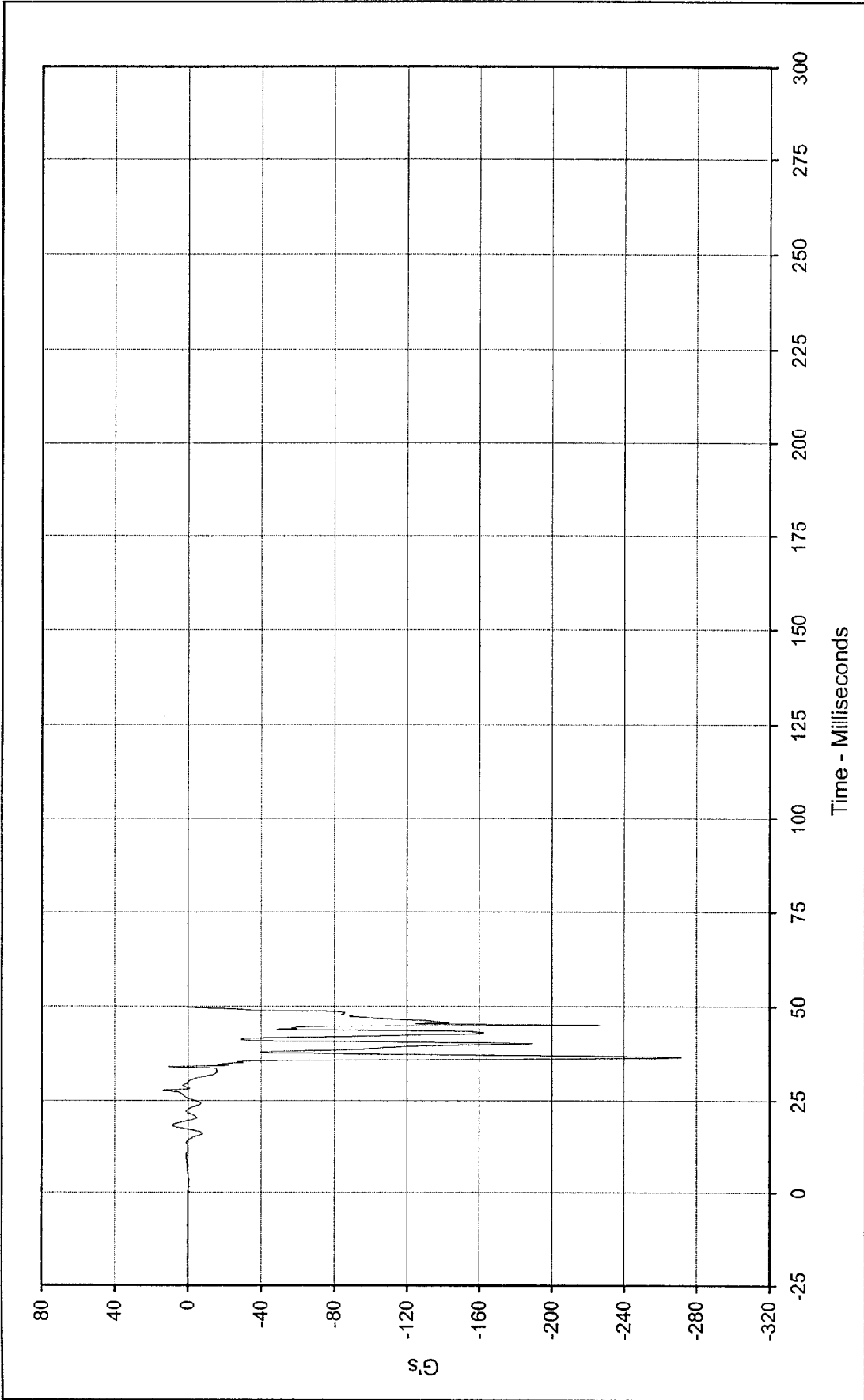


SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-038



Curve Description: Driver Right Foot Aft Z Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 70.2 at 50.5 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -139.6 at 43.6 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-039



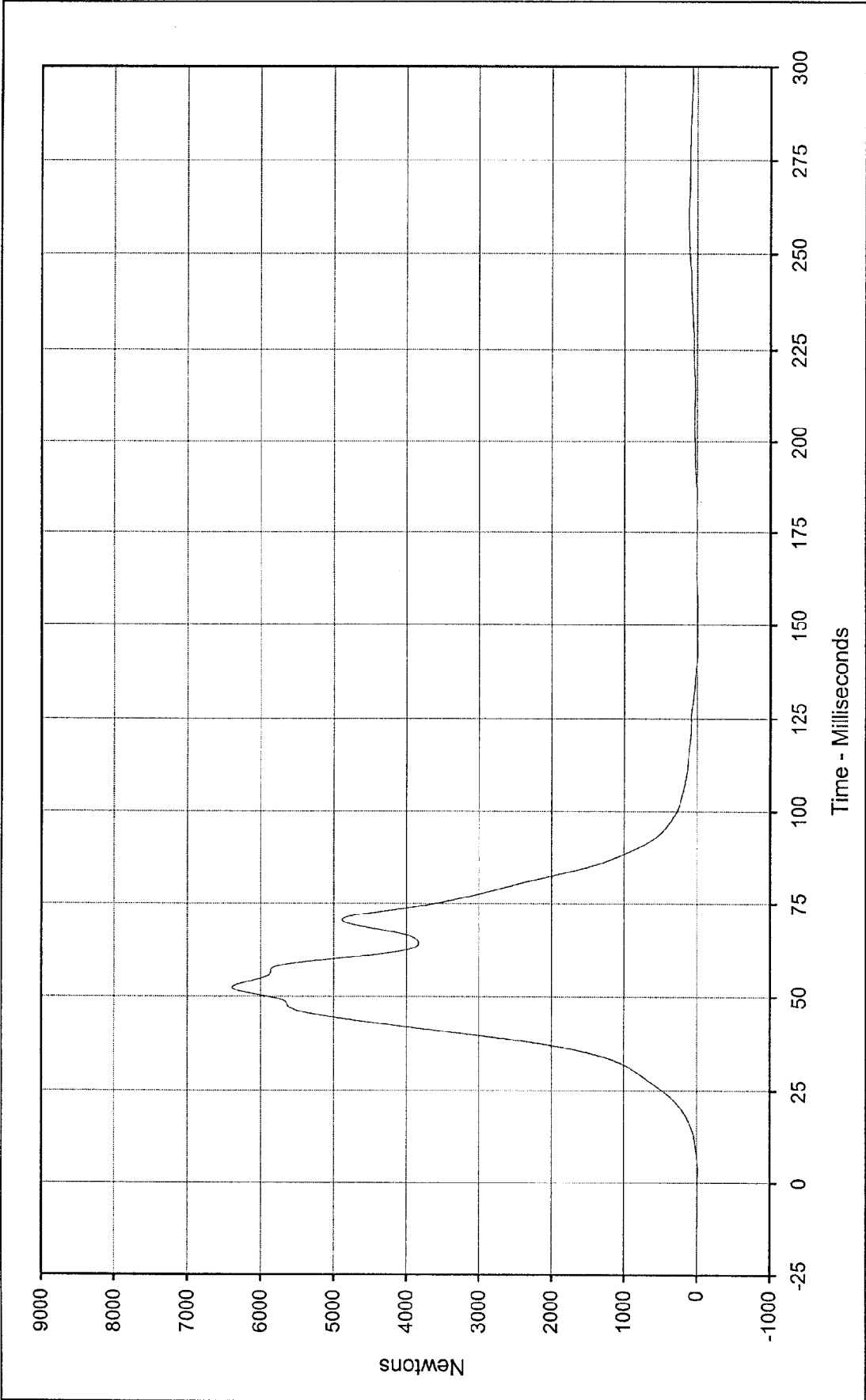


Curve Description: Driver Right Foot Fore Z * Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 13.7 at 27.7 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -271.7 at 36.5 Milliseconds



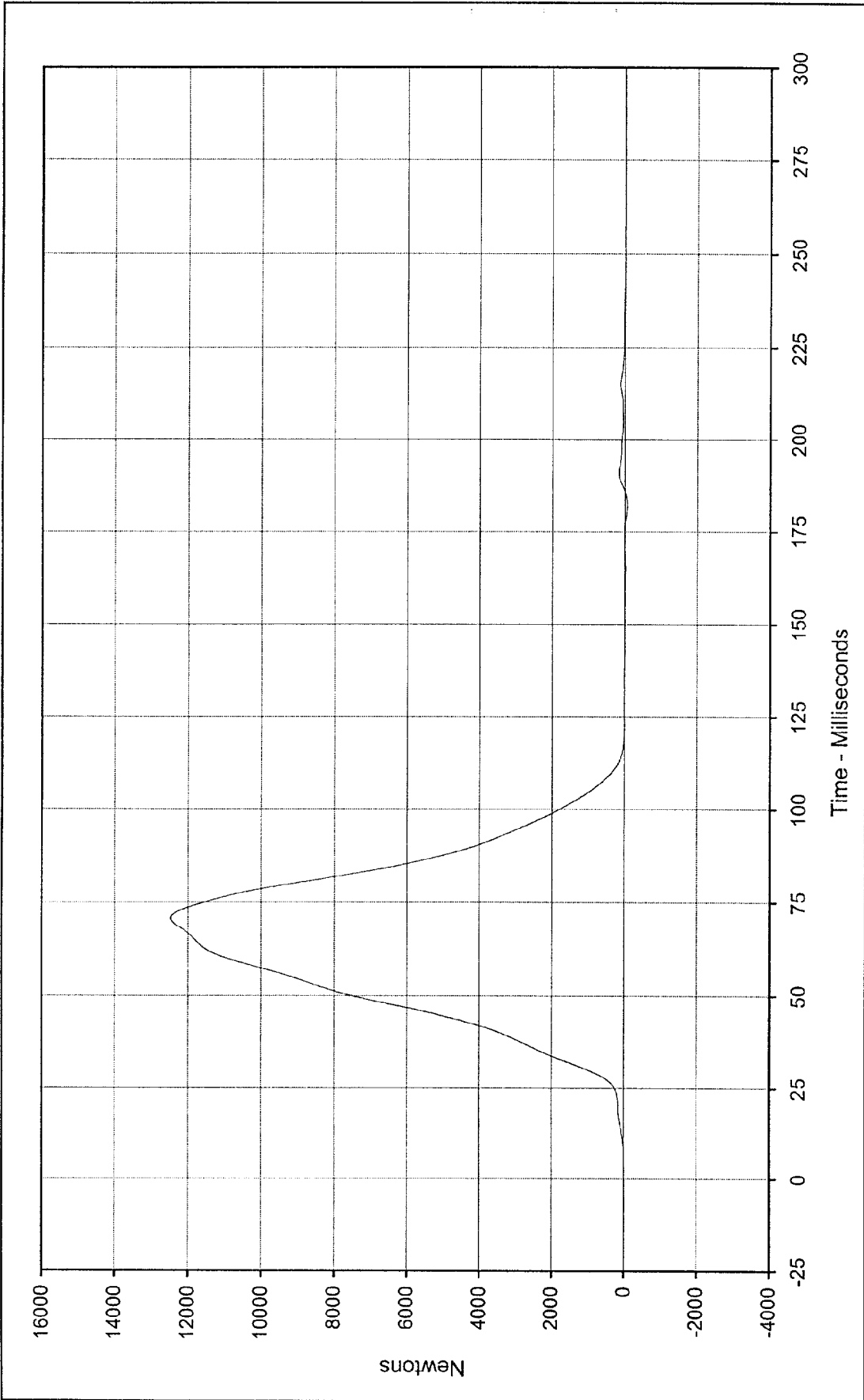
SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-040

* Channel Failed at 50.0 Msec.



Curve Description: Driver Lap Belt Force Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 6389.3 at 52.3 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -17.9 at 3.3 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/11/97
 Curve Number: FIL-041

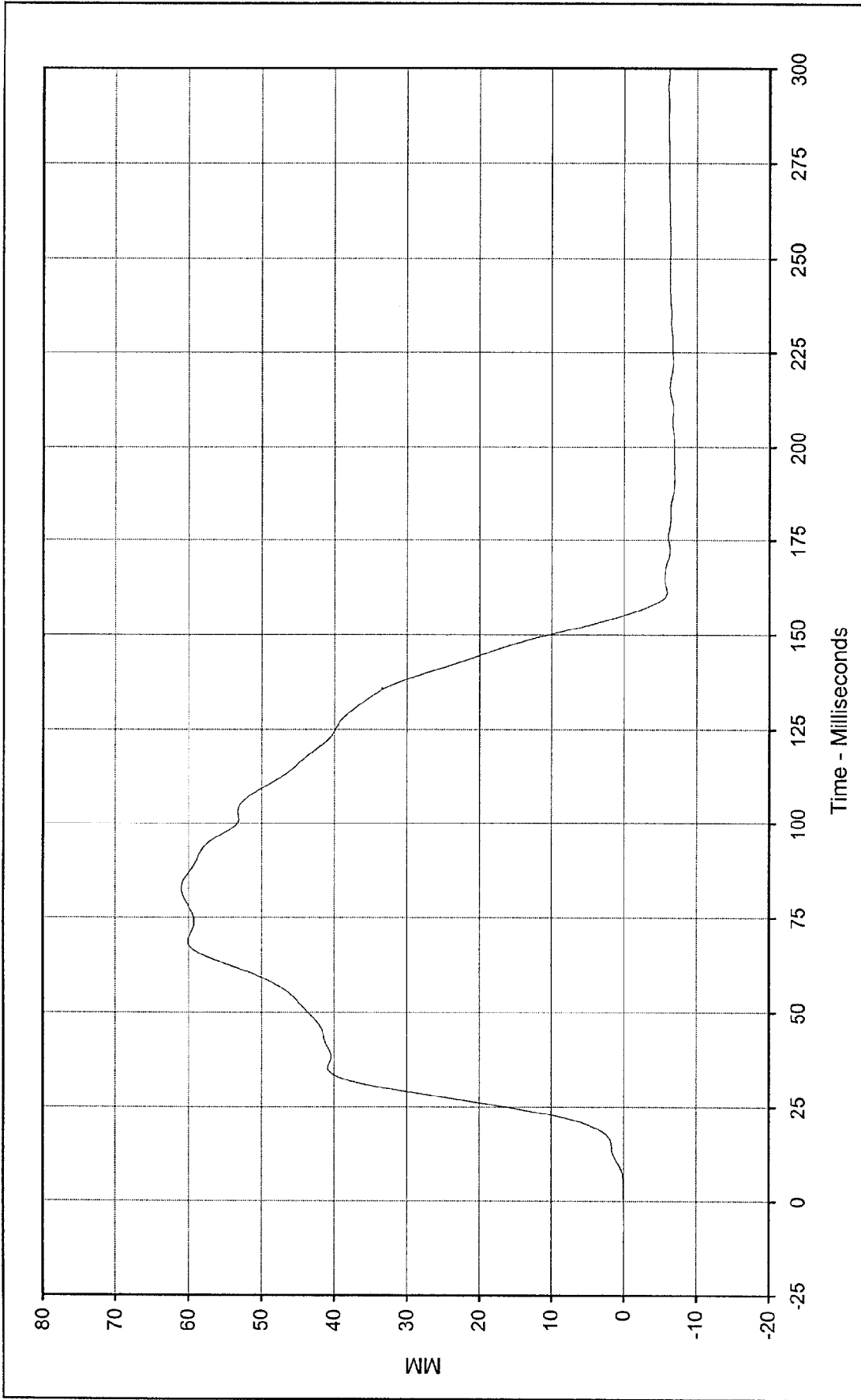




Curve Description: Driver Shoulder Belt Force
 Maximum Value: 12469.4 at 70.8 Milliseconds
 Minimum Value: -61.6 at 181.8 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/11/97
 Curve Number: FIL-042

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





Curve Description: Driver Shoulder Belt Pullout Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 60.9 at 82.6 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

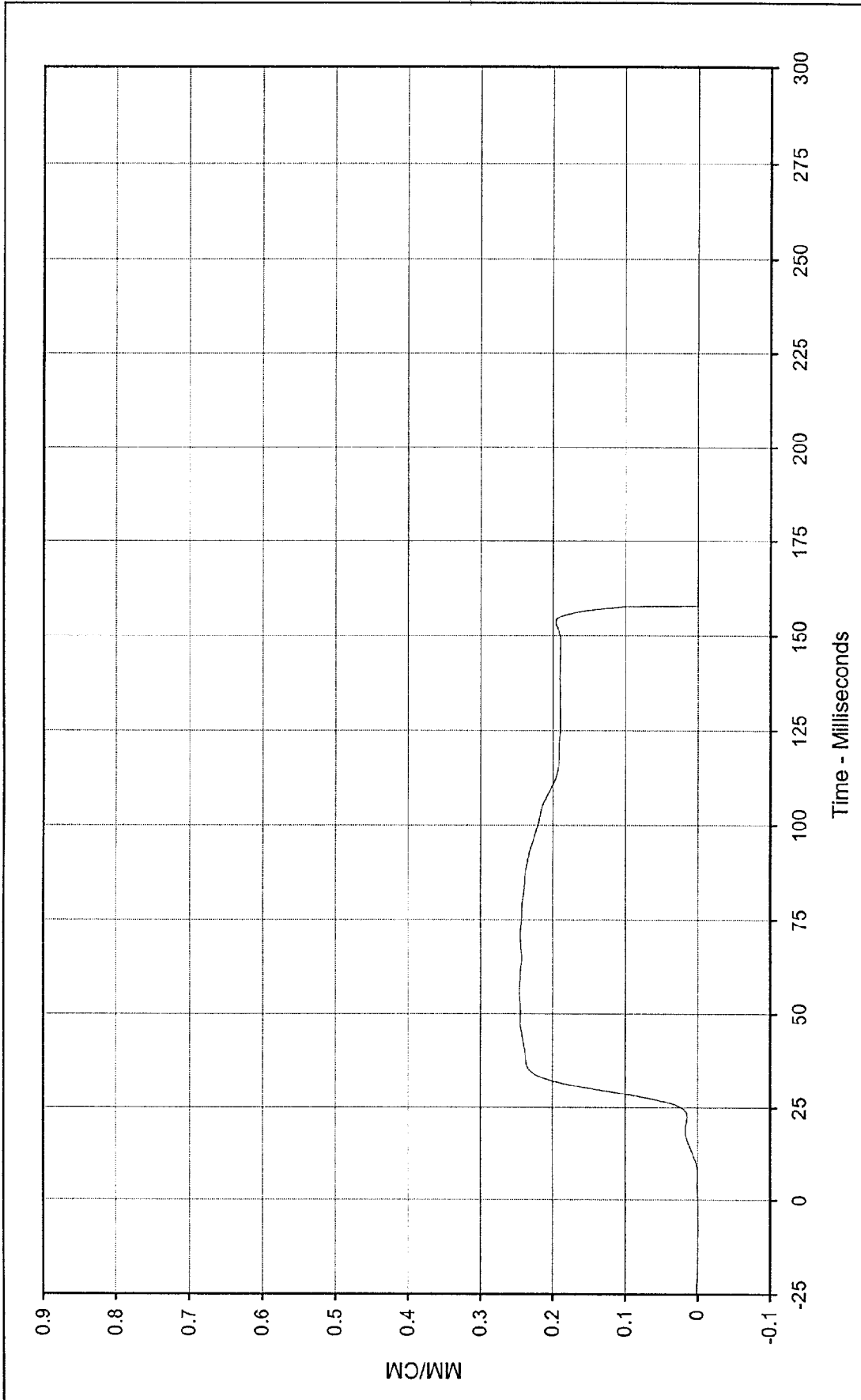
Minimum Value: -7.0 at 190.9 Milliseconds

SAE Filter Class: 60

Date of Test: 12/11/97

Curve Number: FIL-043

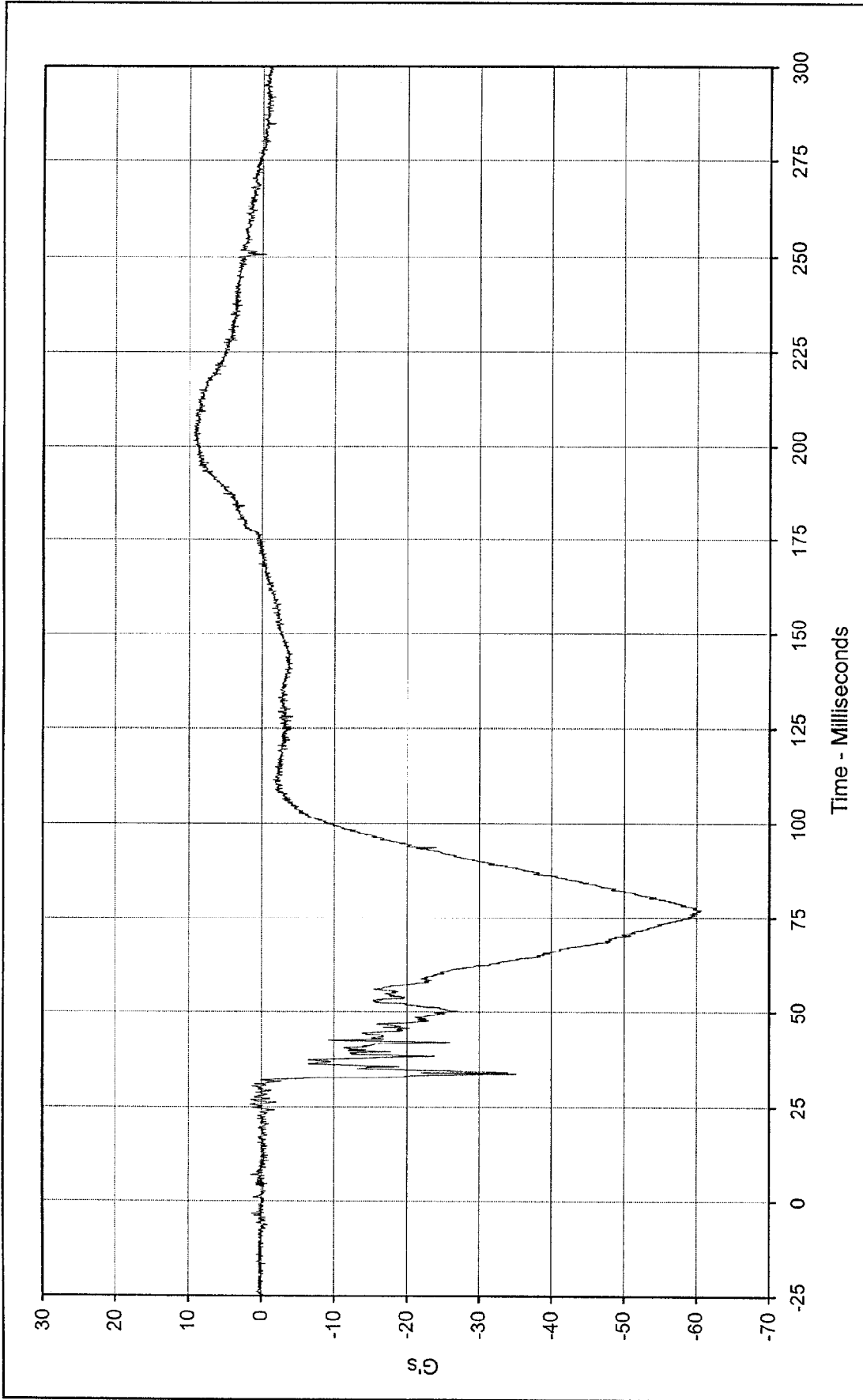




Curve Description: Driver Shoulder Belt Elongation * Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 0.25 at 55.8 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: 0.00 at 0.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/11/97
 Curve Number: FIL-044

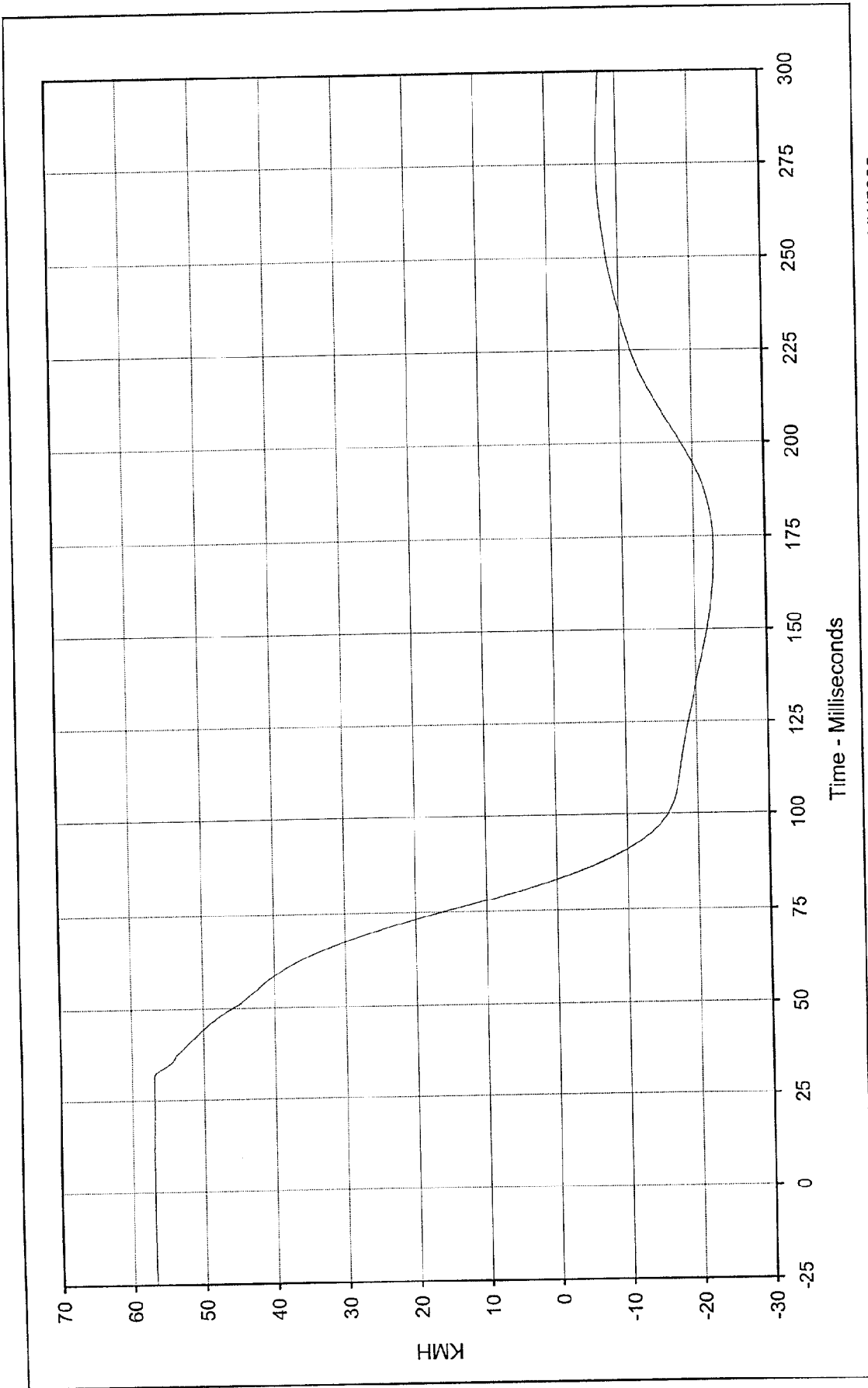


* Channel Failed at 158 Msec.



Curve Description: Passenger Head Primary X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 9.5 at 201.6 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -60.7 at 77.1 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-045

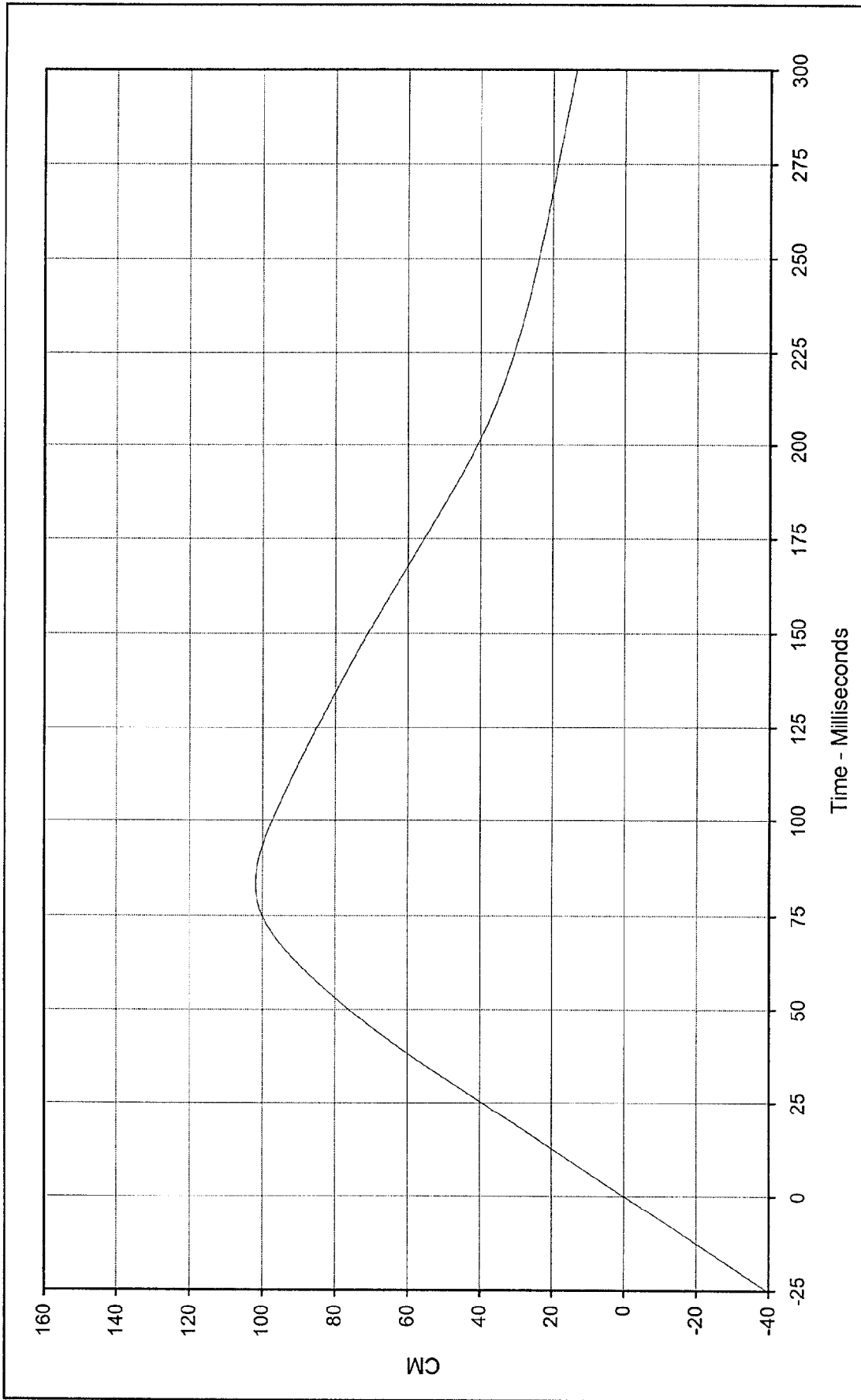




Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

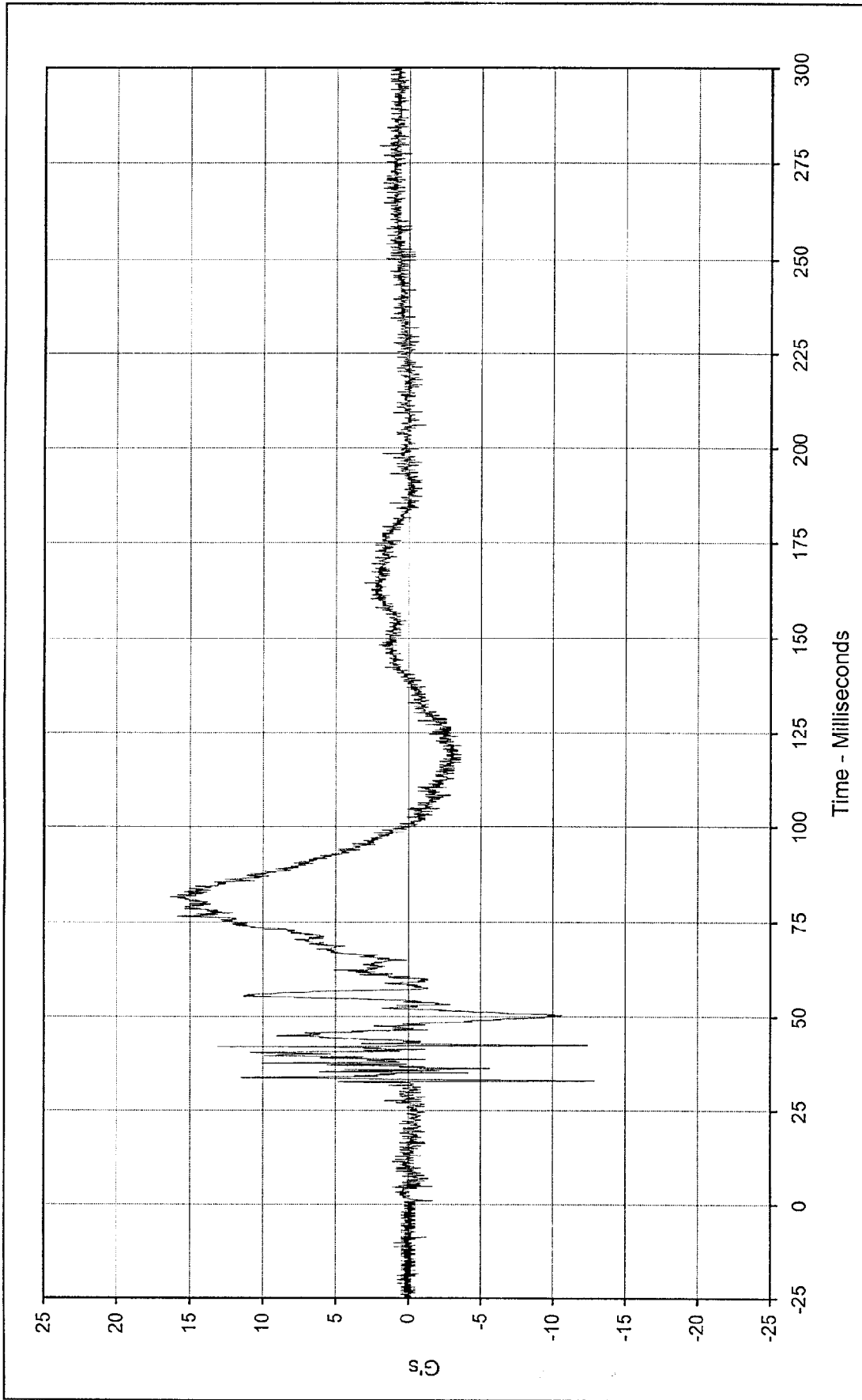
Curve Description: Passenger Head Primary X Velocity
 Maximum Value: 57.0 at 8.8 Milliseconds
 Minimum Value: -22.8 at 171.2 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN1-045





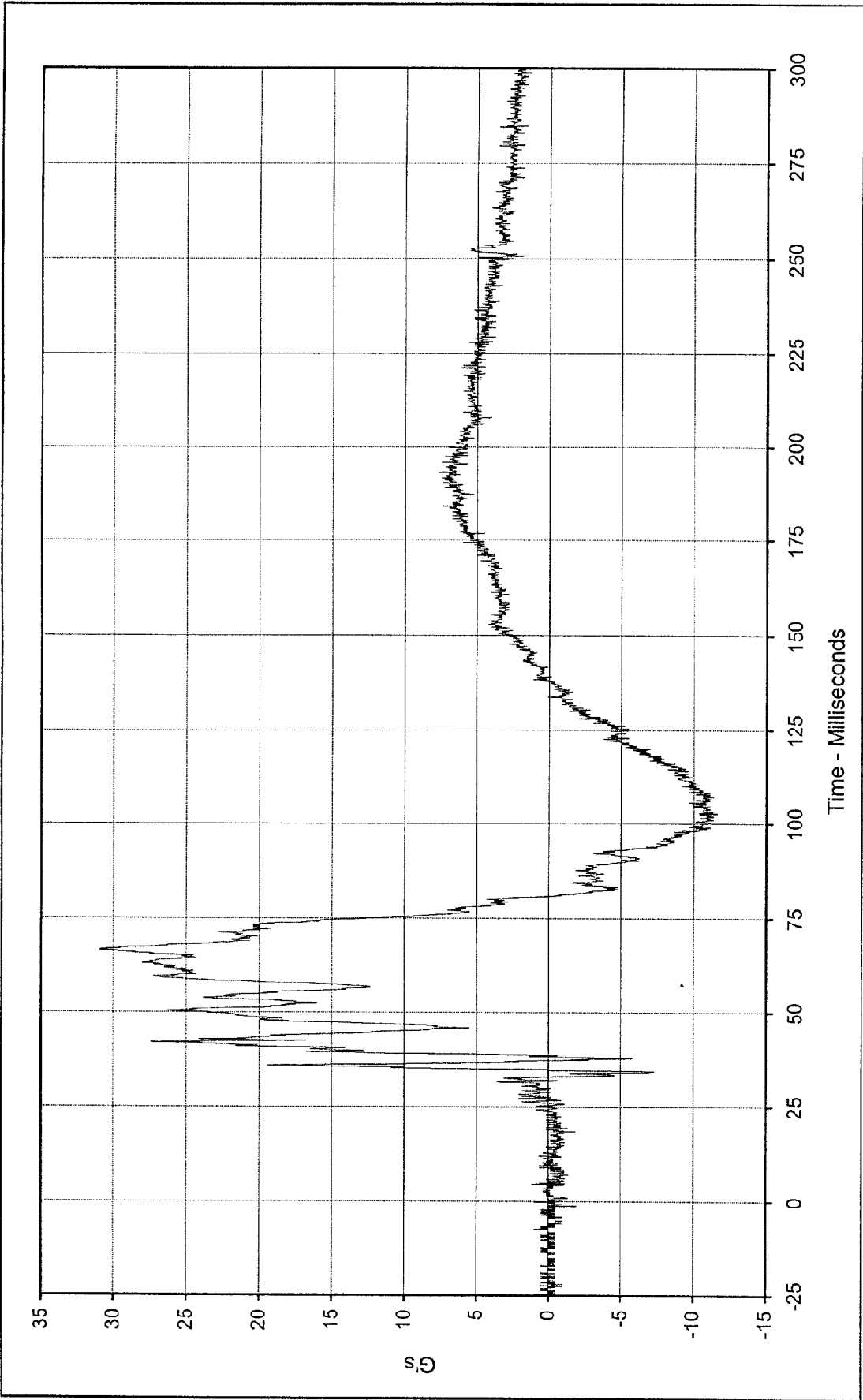
Curve Description: Passenger Head Primary X Displ. Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 101.8 at 83.2 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN2-045





Curve Description: Passenger Head Primary Y Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 16.3 at 81.5 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -12.9 at 32.9 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/1/97
 Curve Number: FIL-046





Curve Description: Passenger Head Primary Z Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 30.9 at 66.3 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

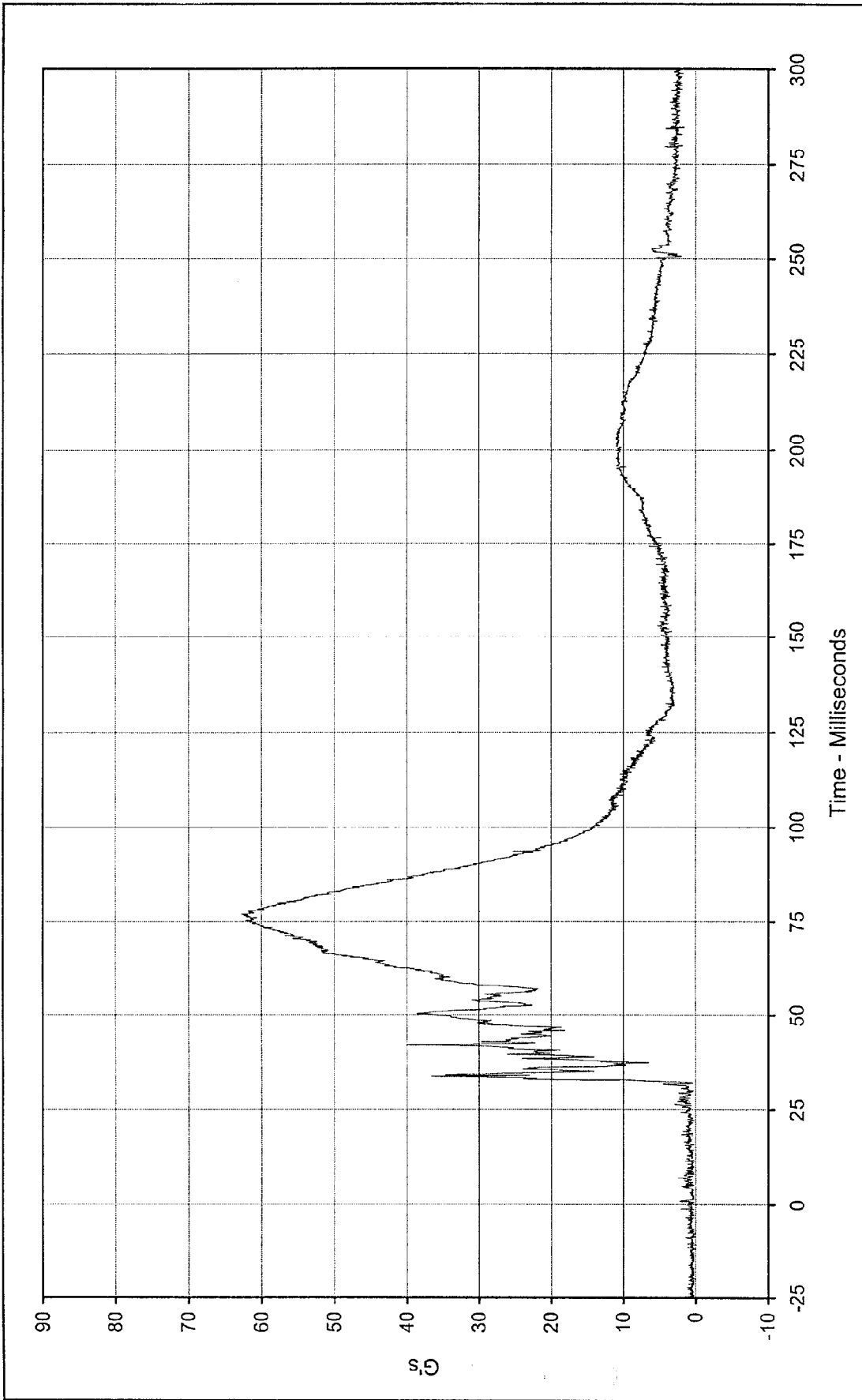
Minimum Value: -11.6 at 102.7 Milliseconds

SAE Filter Class: 1000

Date of Test: 12/11/97

Curve Number: FIL-047

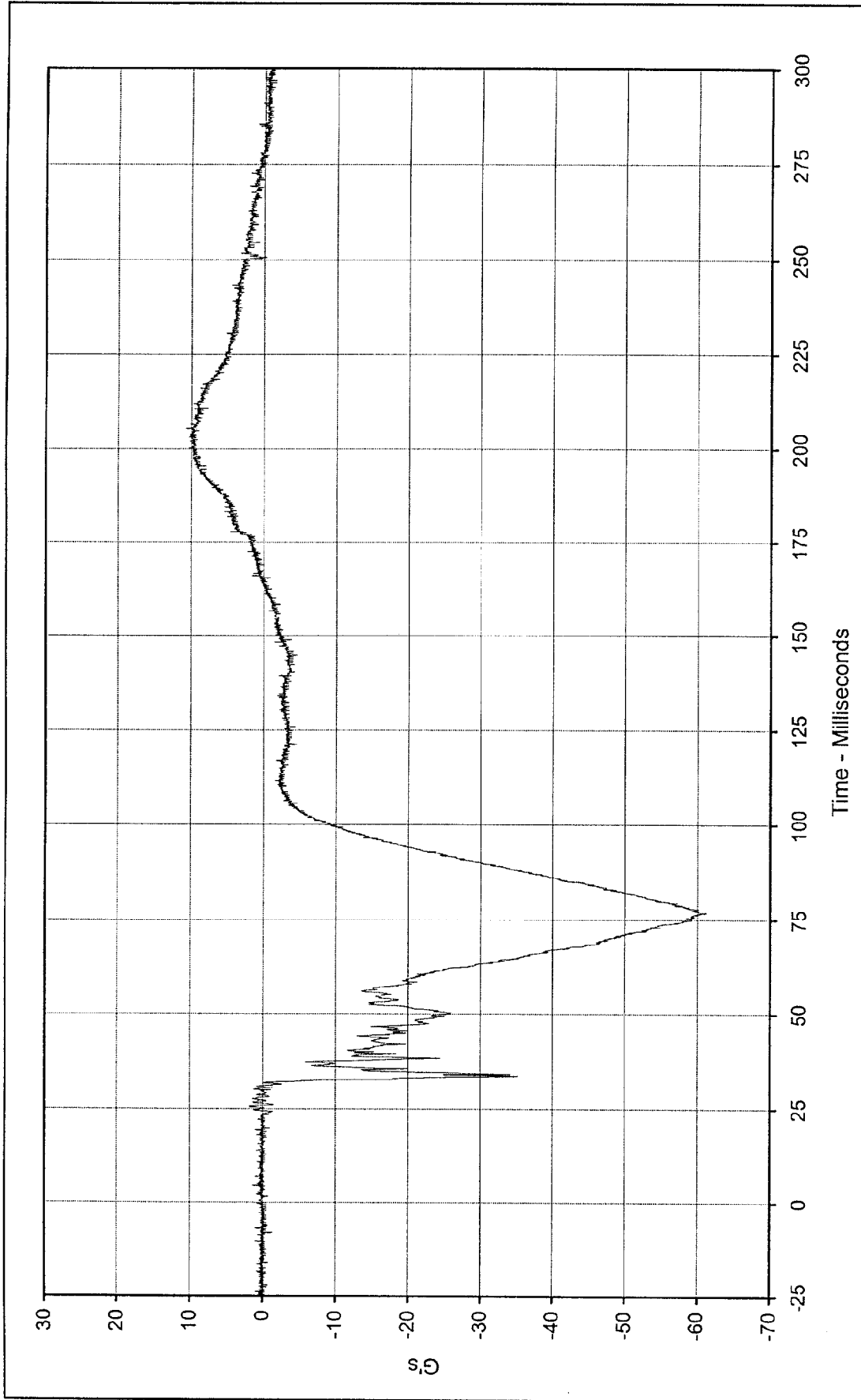




Curve Description: Passenger Head Resultant Primary
 Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

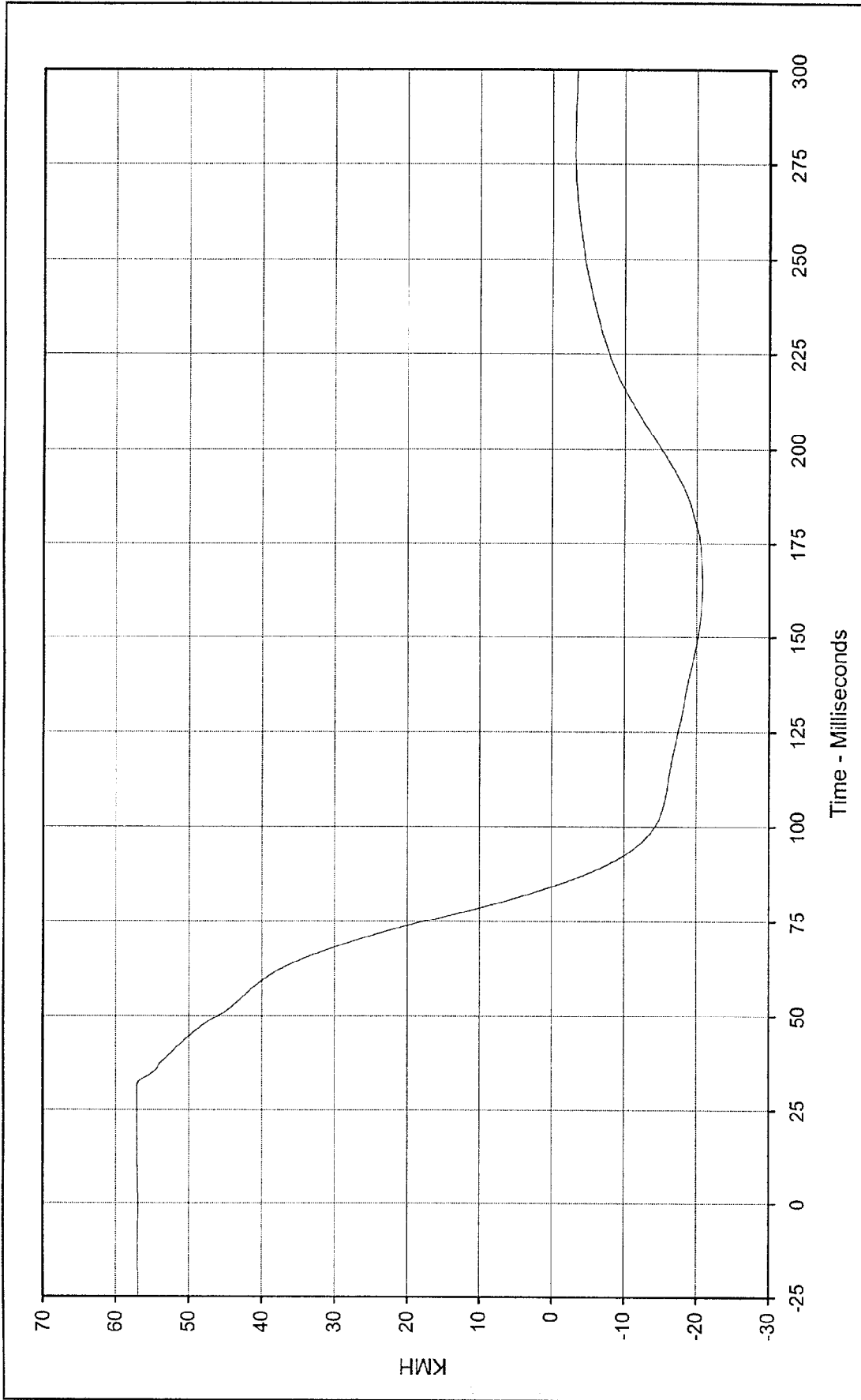
Maximum Value: 62.8 at 77.1 Milliseconds
 Minimum Value: 0.2 at 11.6 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: RES-045





Curve Description: Passenger Head Redundant X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 10.7 at 205.5 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -61.2 at 76.9 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-048

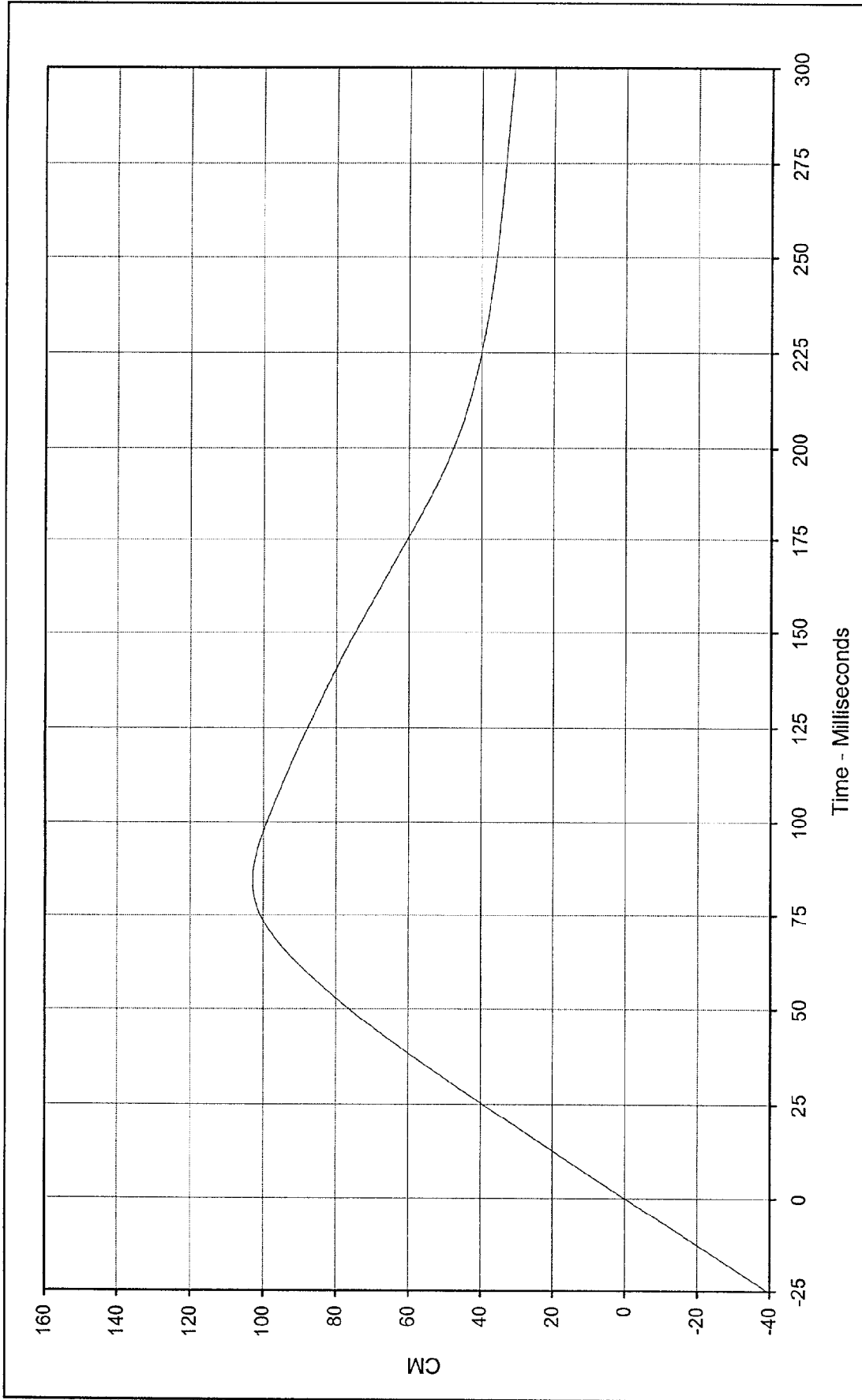




Curve Description: Passenger Head Redundant X Velocity Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 57.1 at 31.0 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -20.8 at 164.1 Milliseconds



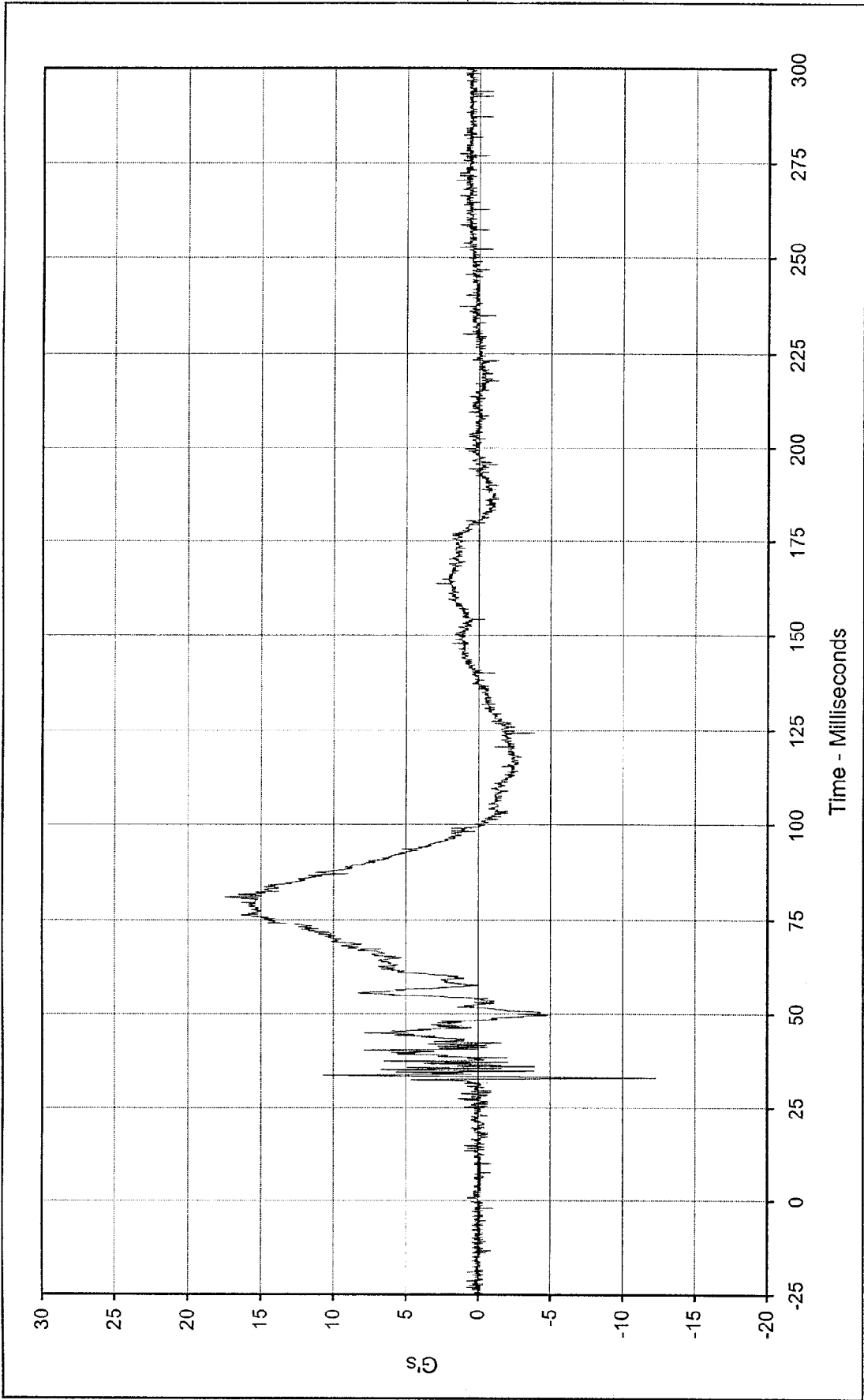
SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN1-048



Curve Description: Passenger Head Redundant X Displ.
 Maximum Value: 102.9 at 84.1 Milliseconds
 Minimum Value: -0.1 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN2-048

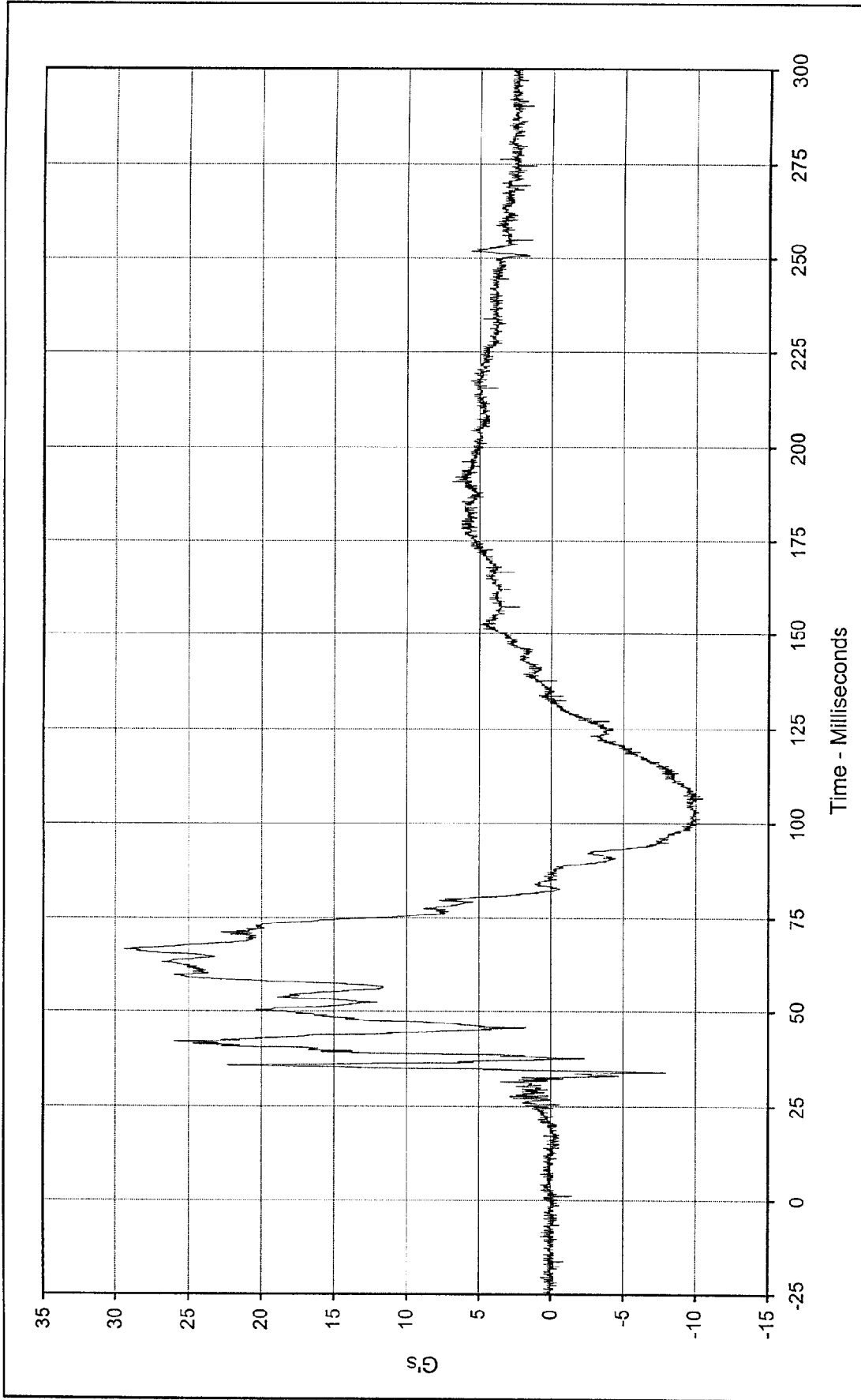
Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





Curve Description: Passenger Head Redundant Y Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 17.5 at 81.0 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -12.2 at 33.0 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-049





Curve Description: Passenger Head Redundant Z

Maximum Value: 29.4 at 66.4 Milliseconds

Minimum Value: -10.5 at 106.6 Milliseconds

SAE Filter Class: 1000

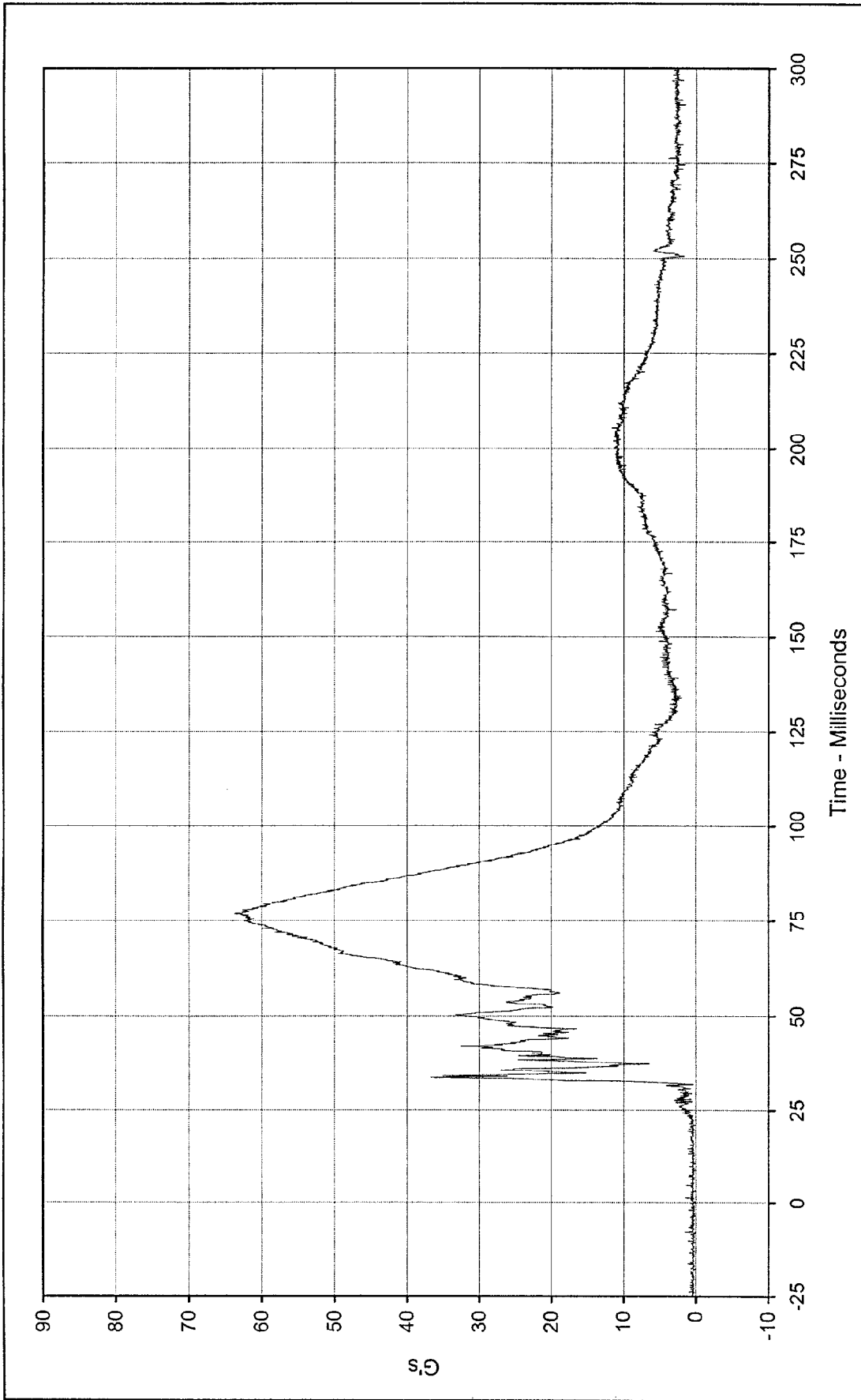
Date of Test: 12/11/97

Curve Number: FIL-050

Testing Program: 1998 NHTSA 35 mph NCAP No.: MW5302

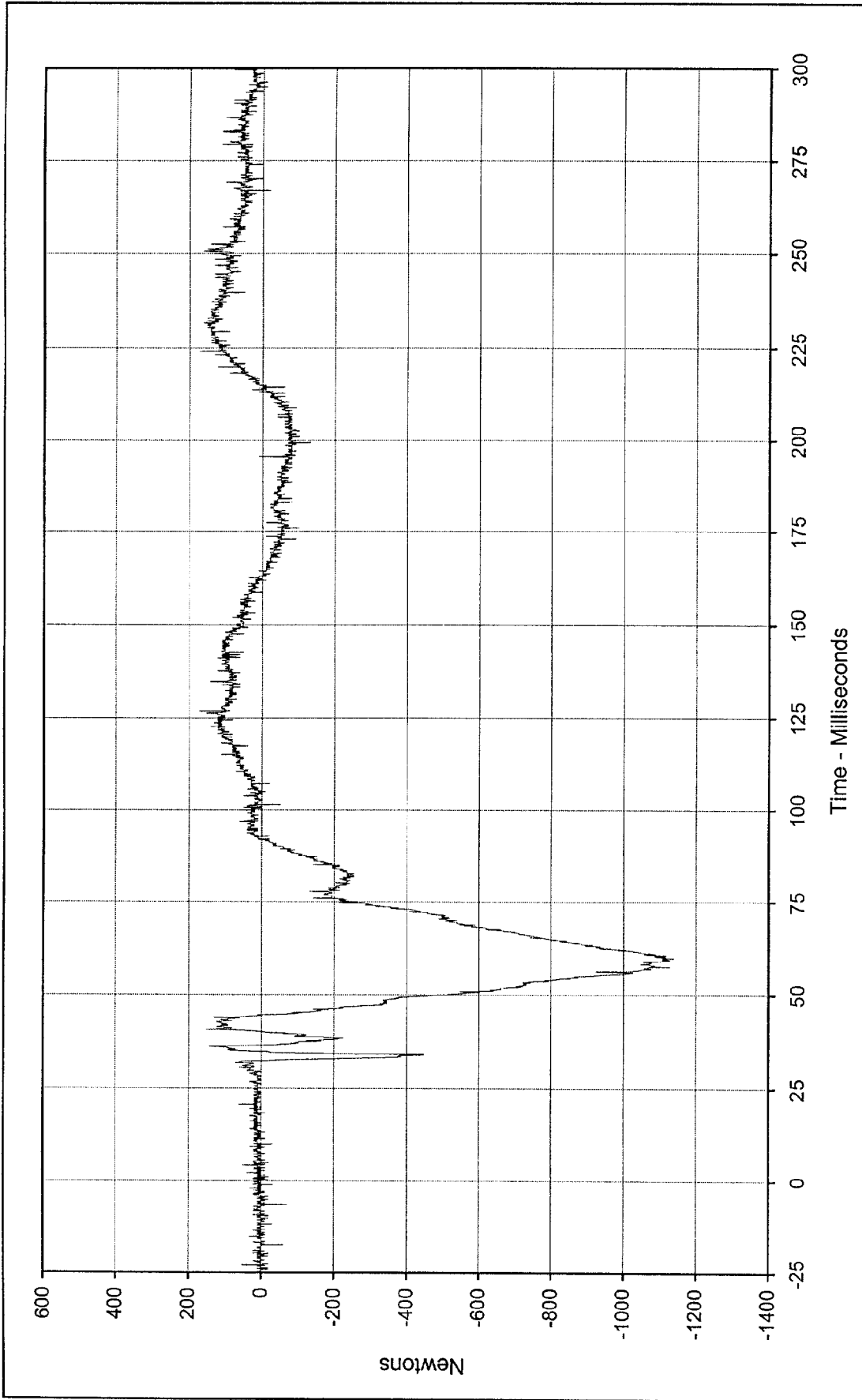
Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





Curve Description: Passenger Head Resultant Redundant Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 63.7 at 76.9 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: 0.0 at 0.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: RES-048





Curve Description: Passenger Neck Force X

Maximum Value: 172.0 at 126.8 Milliseconds

Minimum Value: -1138.3 at 59.7 Milliseconds

SAE Filter Class: 1000

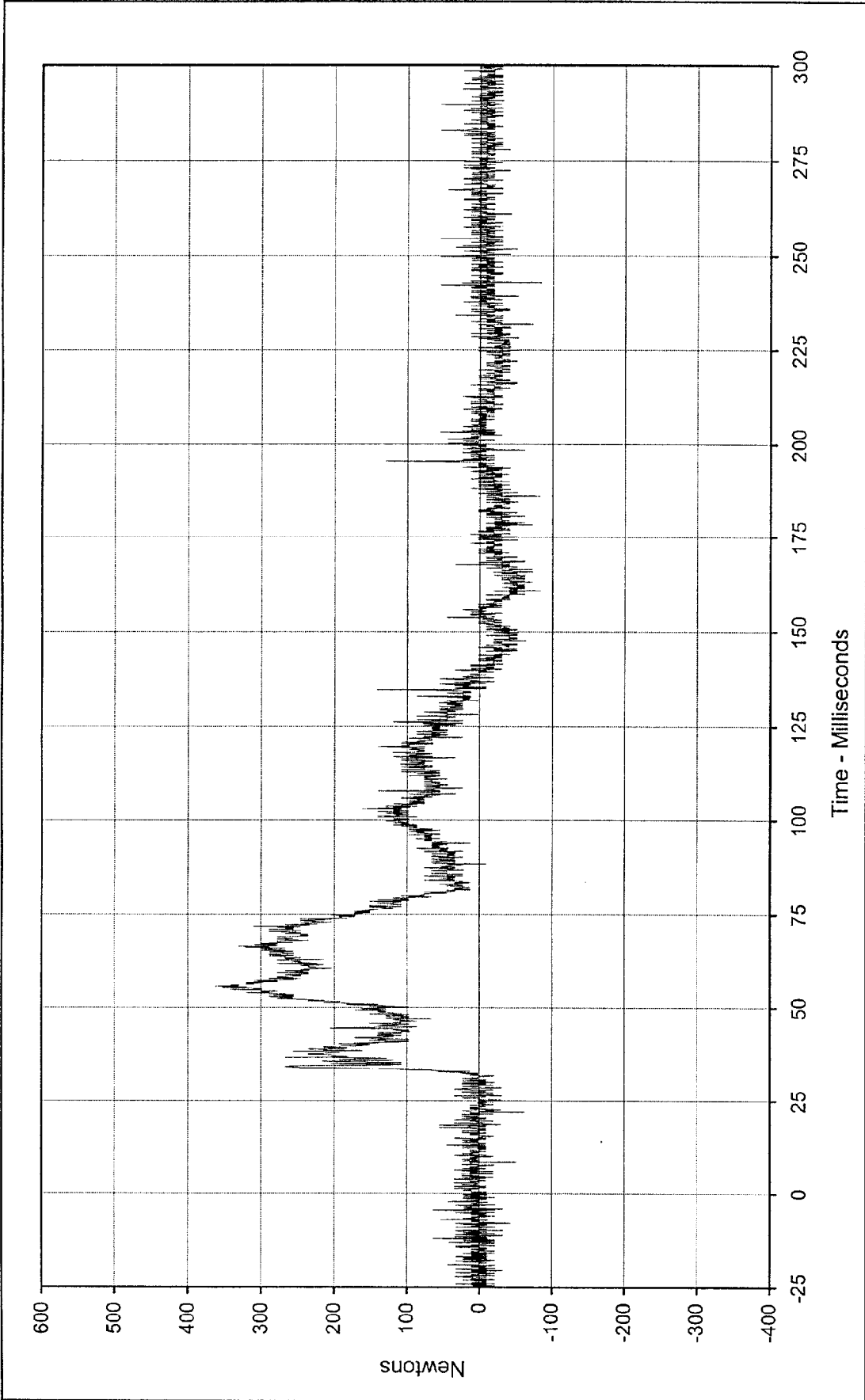
Date of Test: 12/11/97

Curve Number: FIL-051

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

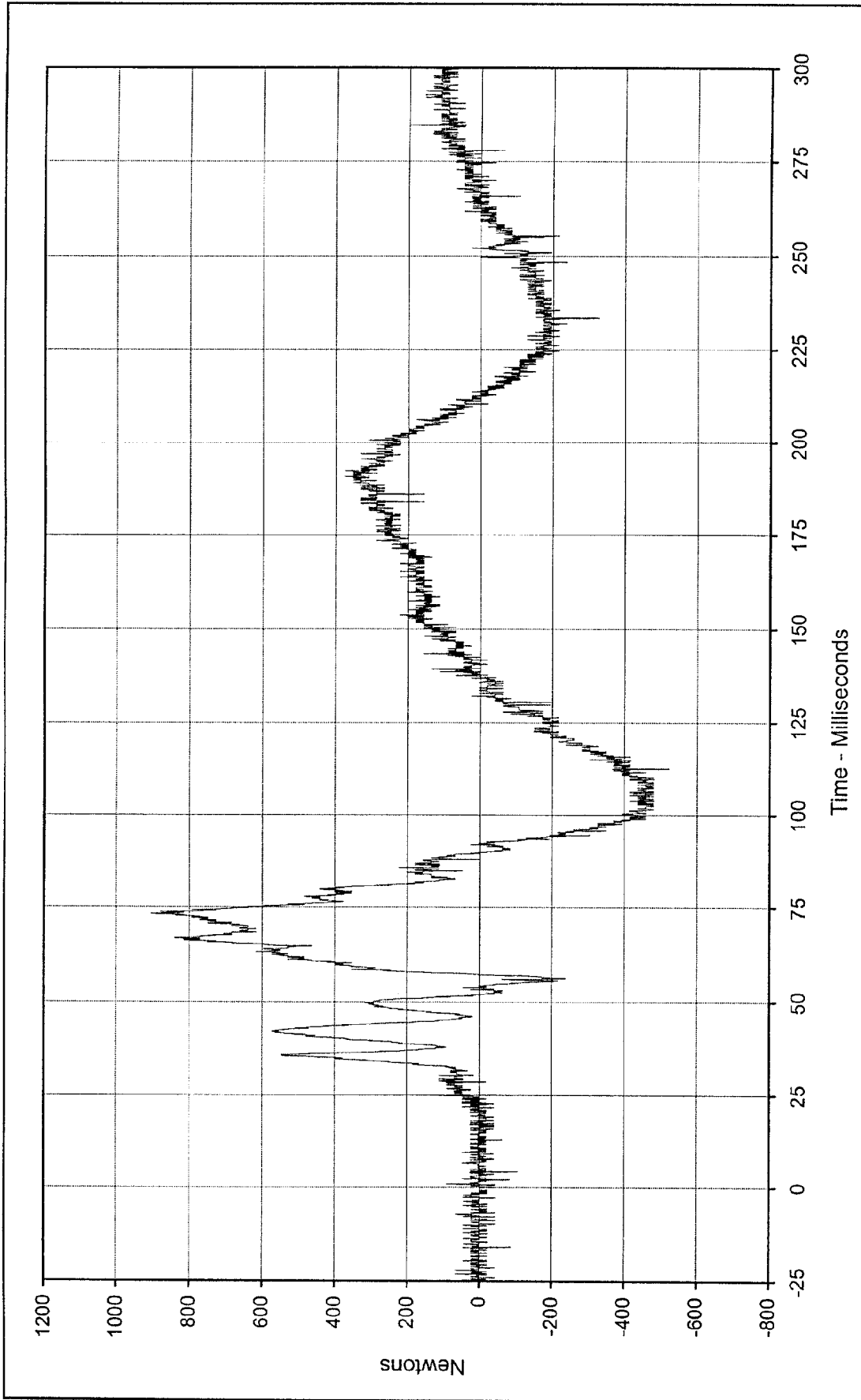




Curve Description: Passenger Neck Force Y Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 362.8 at 55.6 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -83.0 at 160.9 Milliseconds

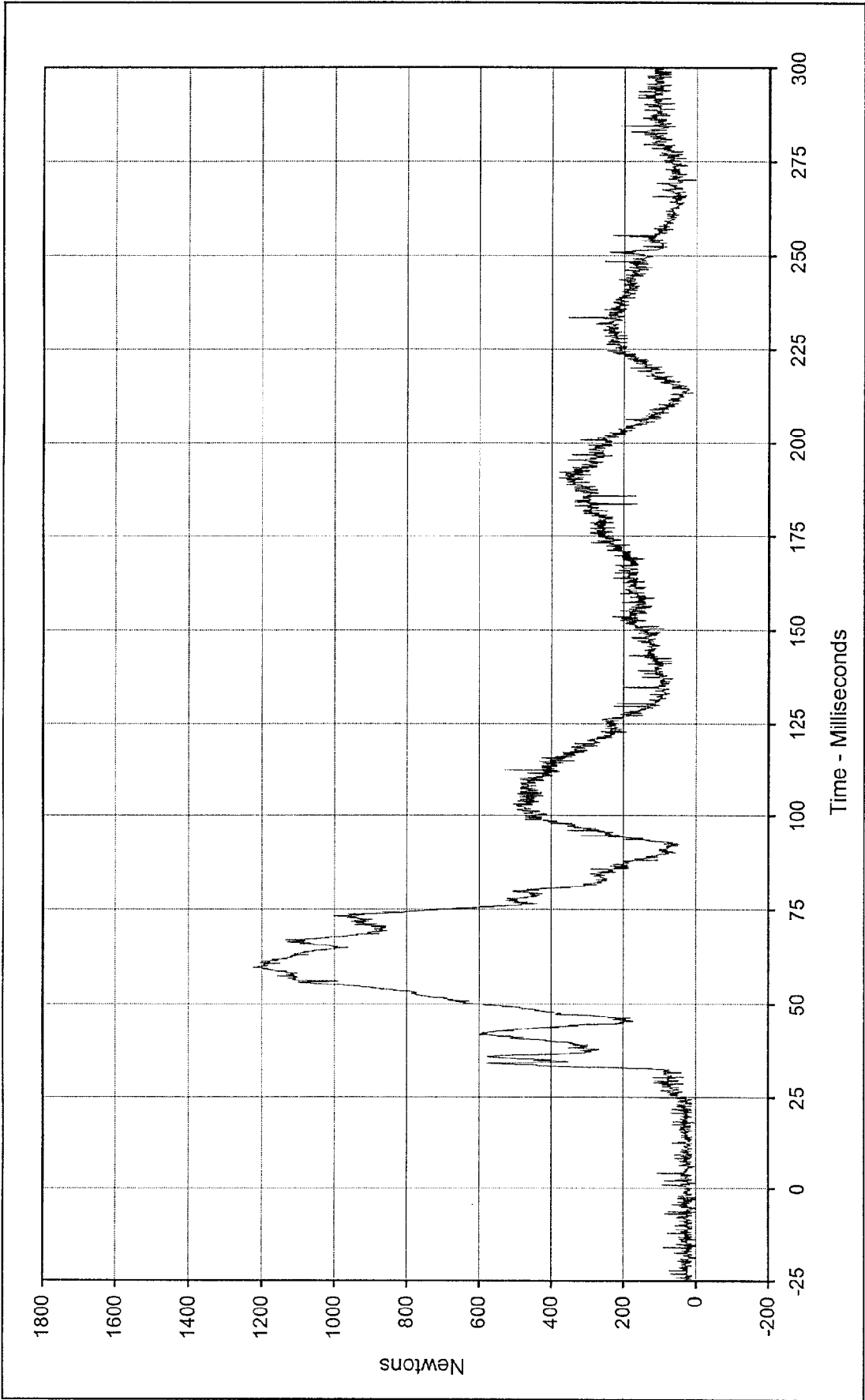


SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-052



Curve Description: Passenger Neck Force Z Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 902.3 at 73.3 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -524.3 at 112.4 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-053

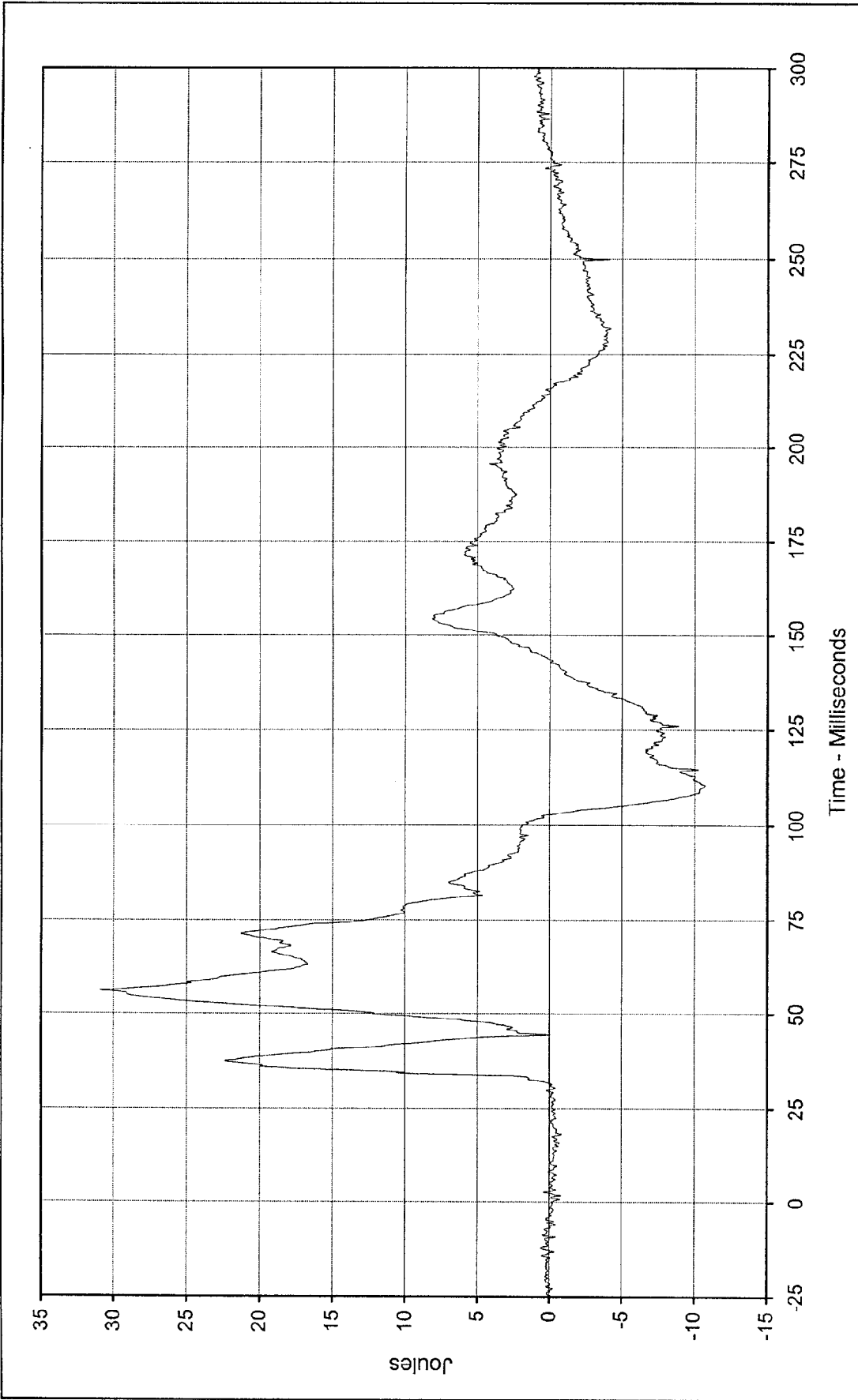




Curve Description: Passenger Neck Force Resultant Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 1223.6 at 59.7 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: 3.2 at 1.4 Milliseconds



SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: RES-051



Curve Description: Passenger Neck Moment X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 30.9 at 56.0 Milliseconds

Minimum Value: -10.7 at 110.7 Milliseconds

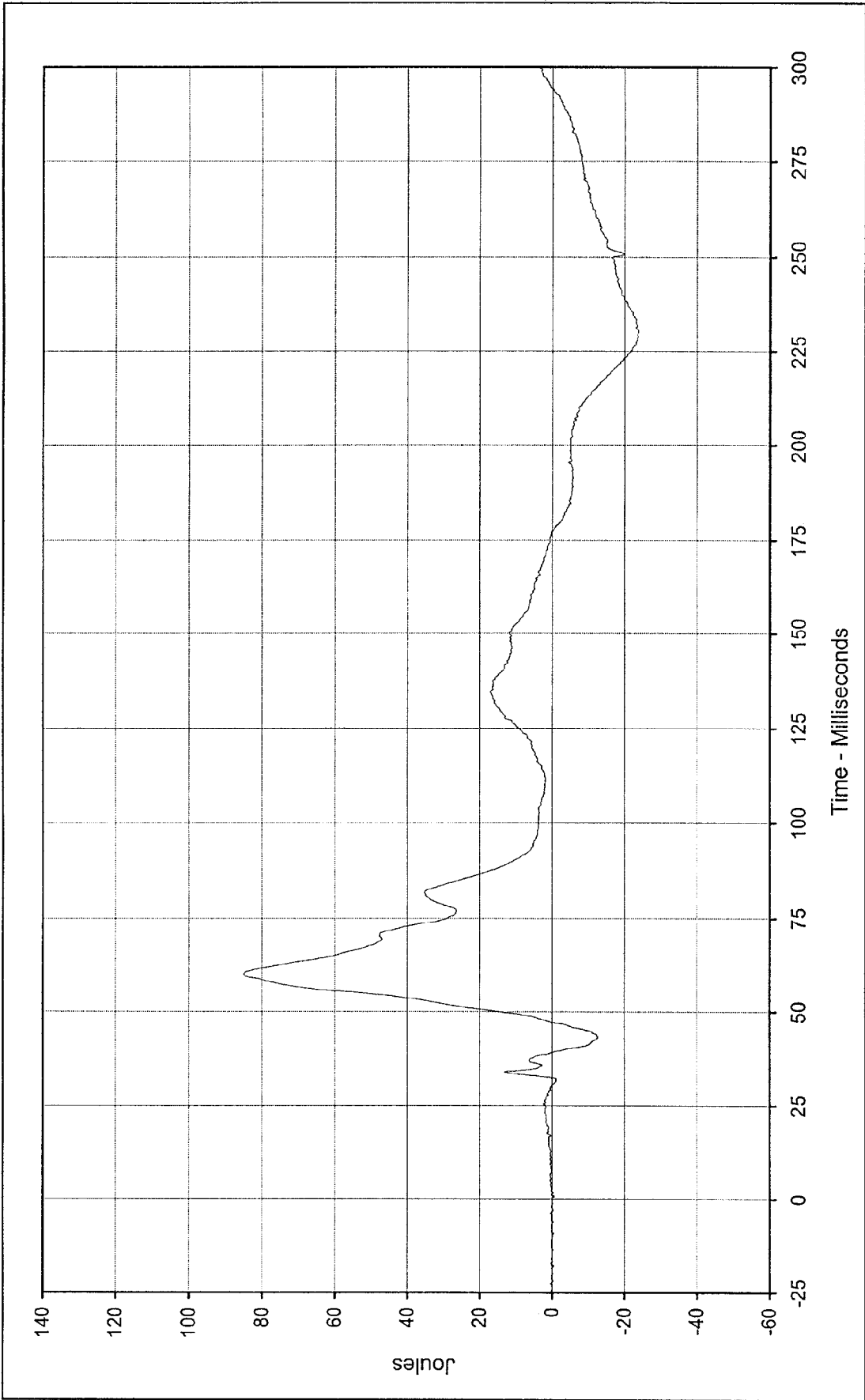
SAE Filter Class: 600

Date of Test: 12/11/97

Curve Number: FIL-054

Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

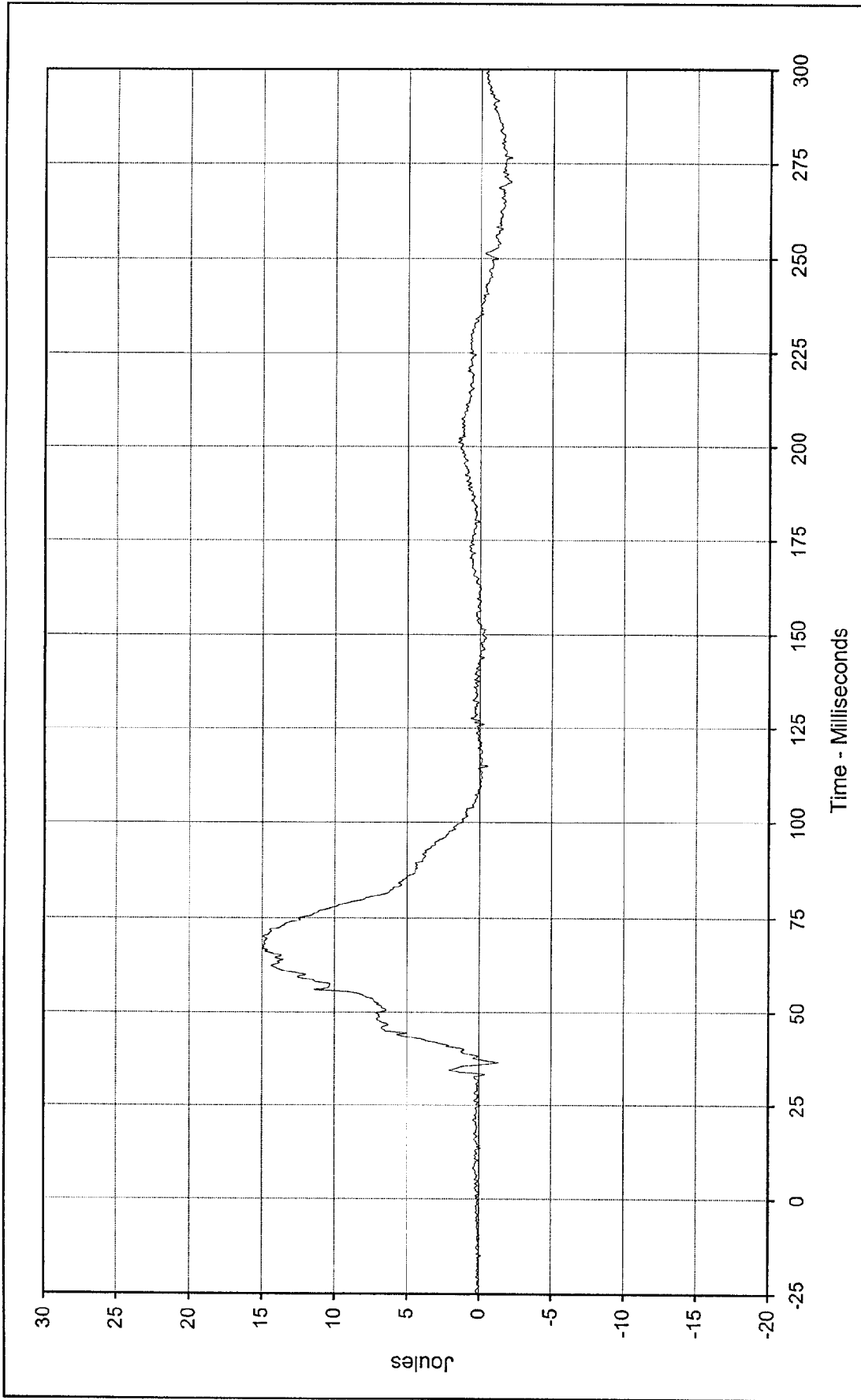




Curve Description: Passenger Neck Moment Y
 Maximum Value: 85.0 at 60.0 Milliseconds
 Minimum Value: -23.8 at 230.7 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: FIL-055

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





Curve Description: Passenger Neck Moment Z

Maximum Value: 15.0 at 66.9 Milliseconds

Minimum Value: -2.2 at 276.6 Milliseconds

SAE Filter Class: 600

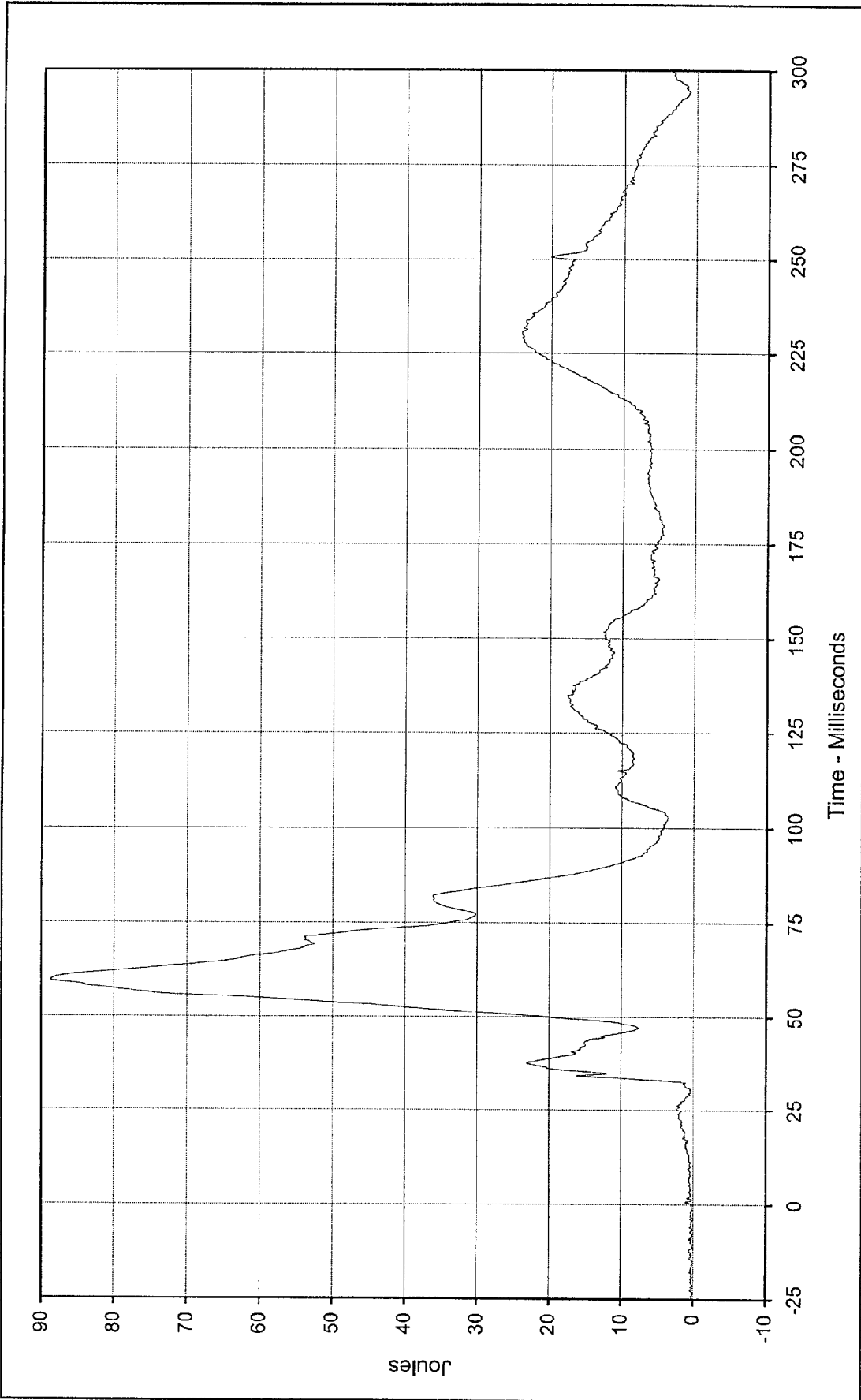
Date of Test: 12/11/97

Curve Number: FIL-056

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

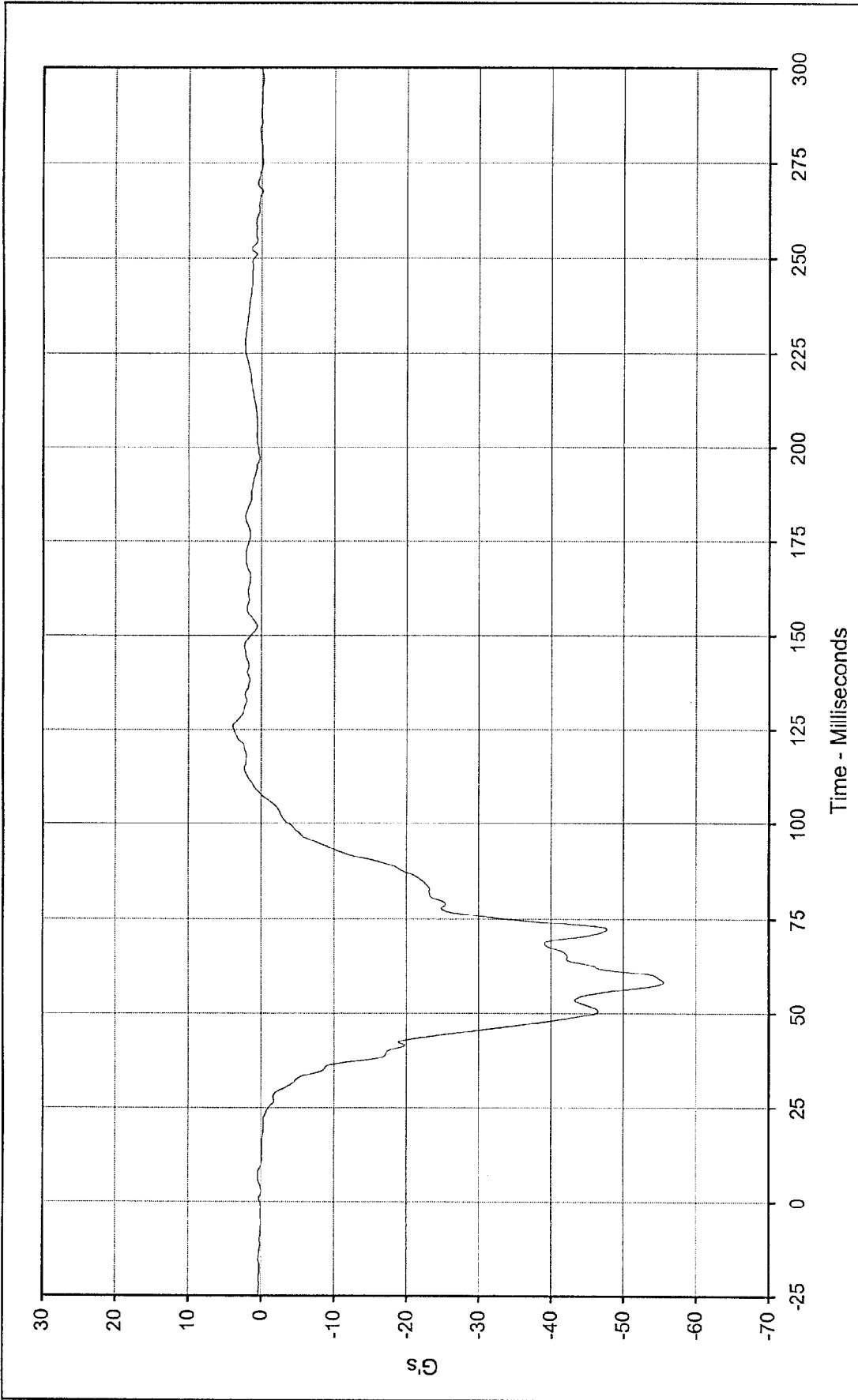




Curve Description: Passenger Neck Moment Resultant
 Maximum Value: 88.7 at 59.6 Milliseconds
 Minimum Value: 0.2 at 0.0 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: RES-054

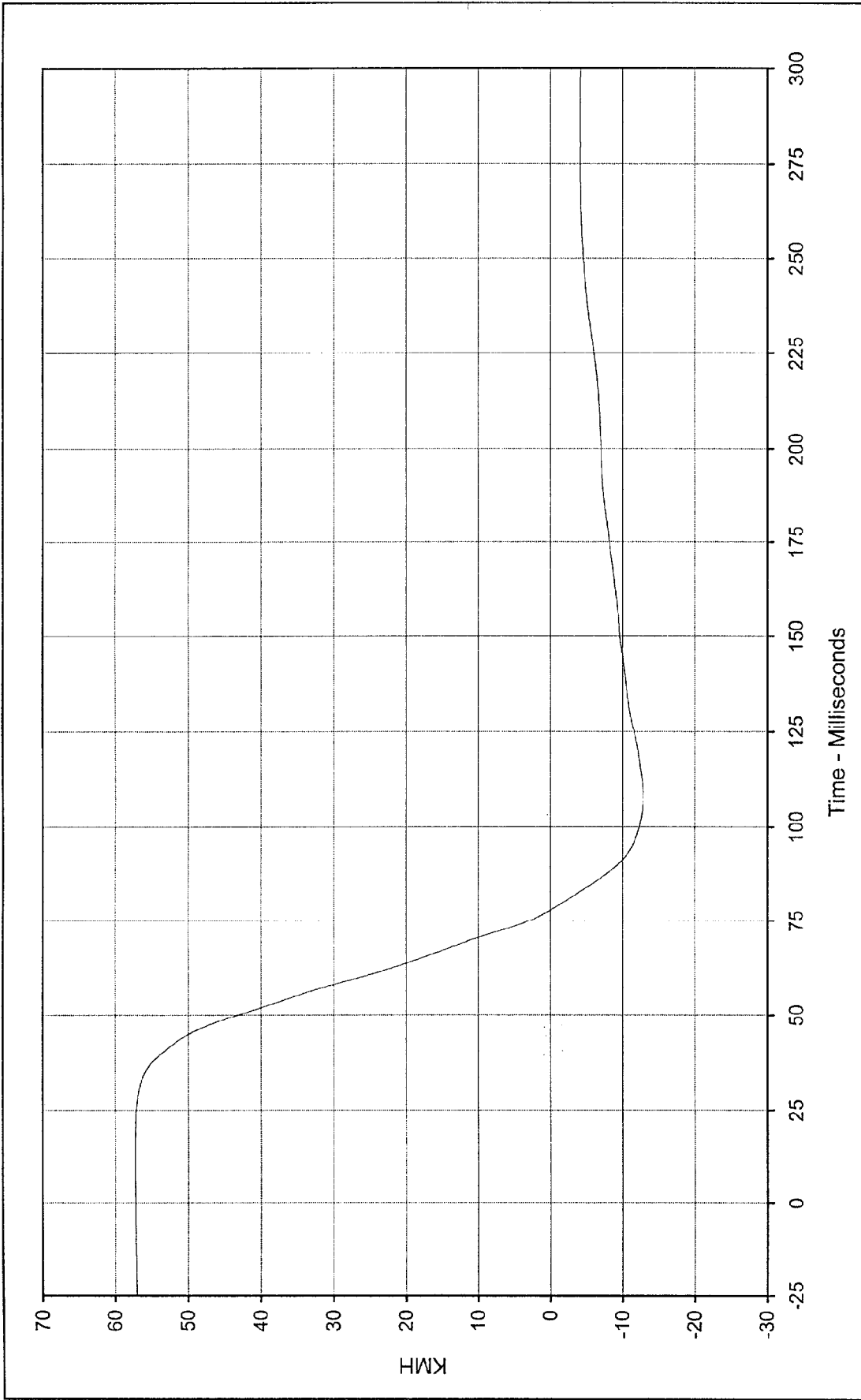
Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





Curve Description: Passenger Chest Primary X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 3.9 at 126.0 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -55.6 at 58.3 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: FIL-057

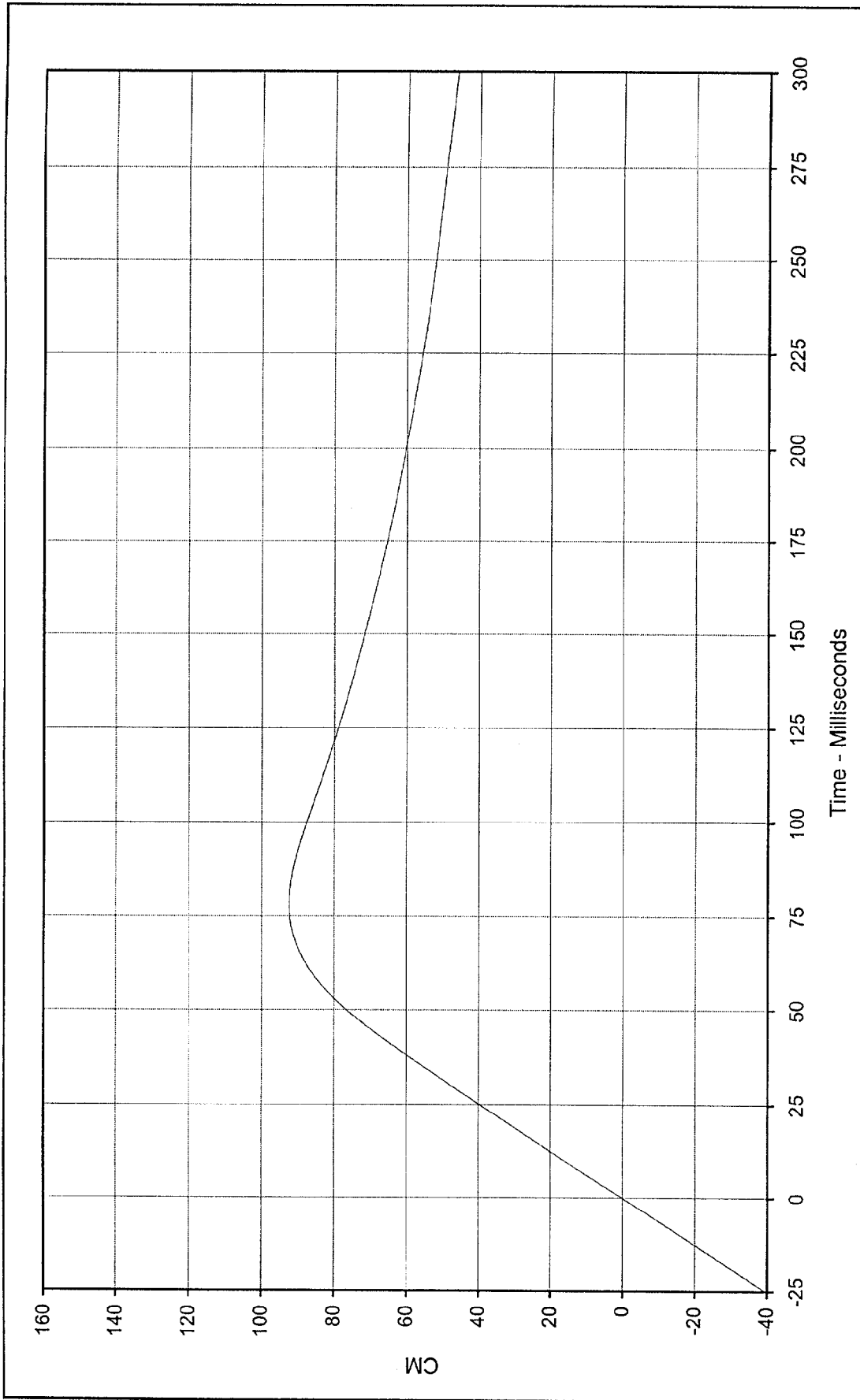




Curve Description: Passenger Chest Primary X Velocity Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 57.3 at 9.9 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -12.9 at 107.7 Milliseconds



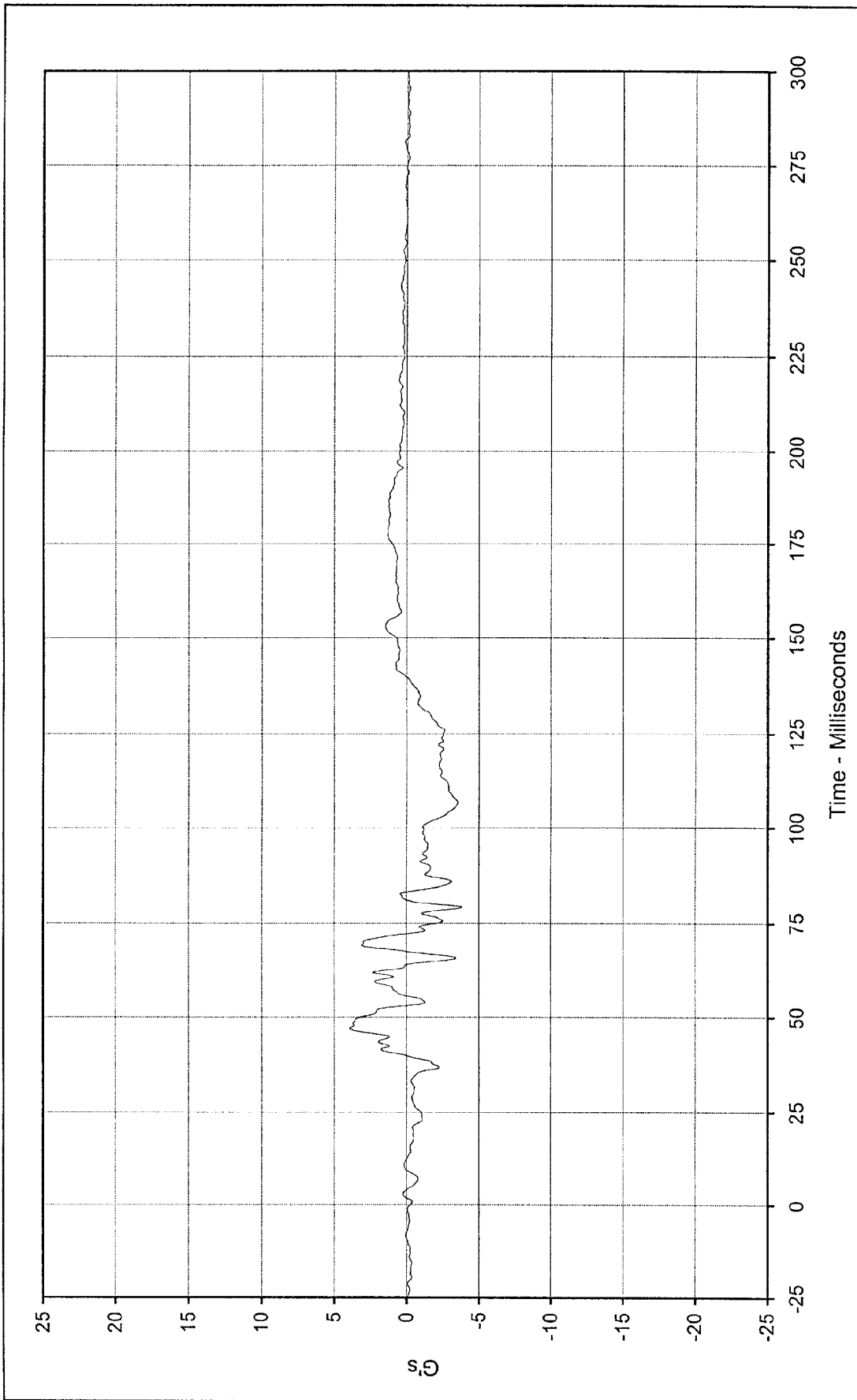
SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN1-057



Curve Description: Passenger Chest Primary X Displ.
 Maximum Value: 92.3 at 77.9 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN2-057

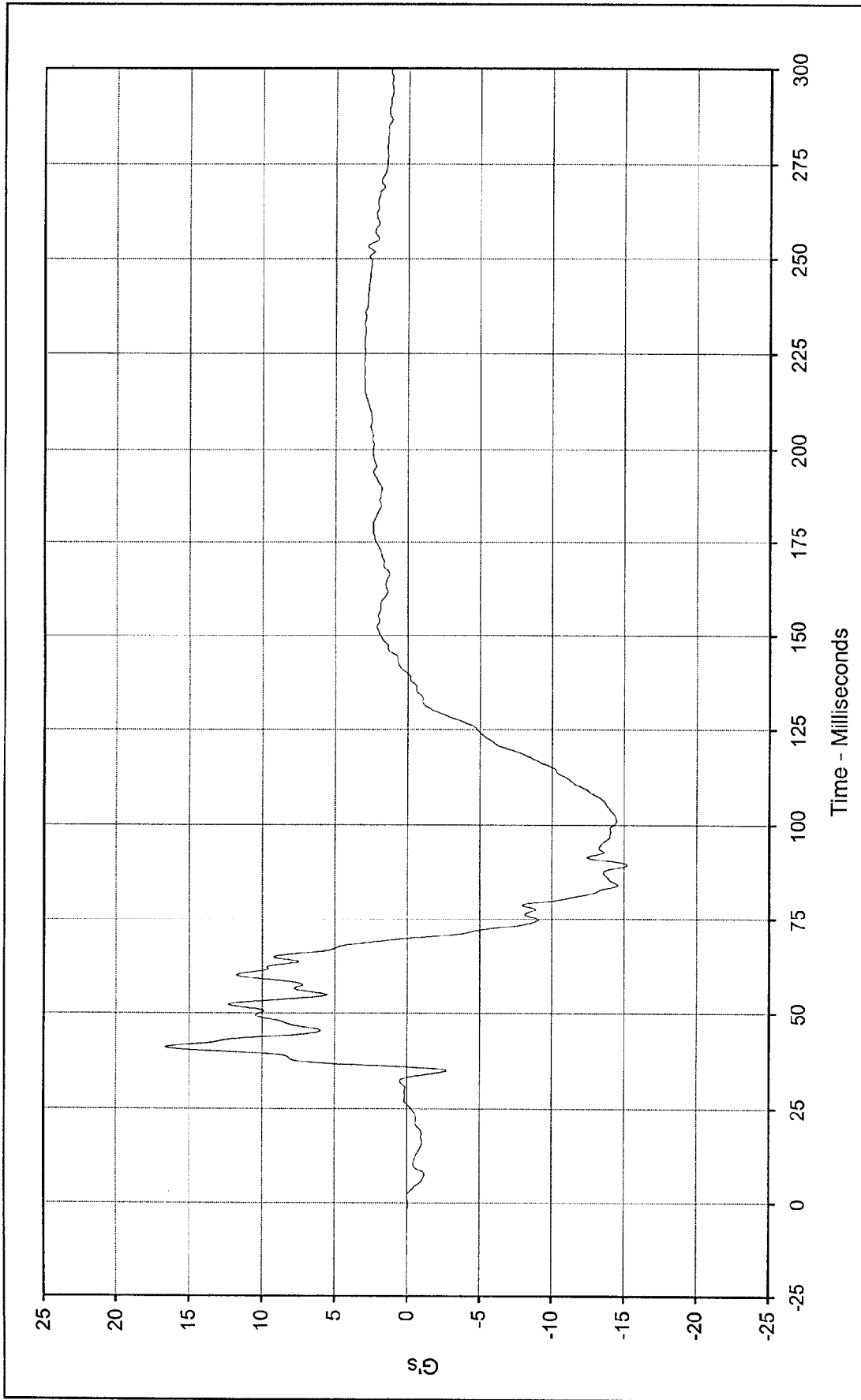
Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





Curve Description: Passenger Chest Primary Y Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 3.9 at 46.9 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -3.8 at 79.2 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: FIL-058





Curve Description: Passenger Chest Primary Z Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 16.6 at 40.9 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

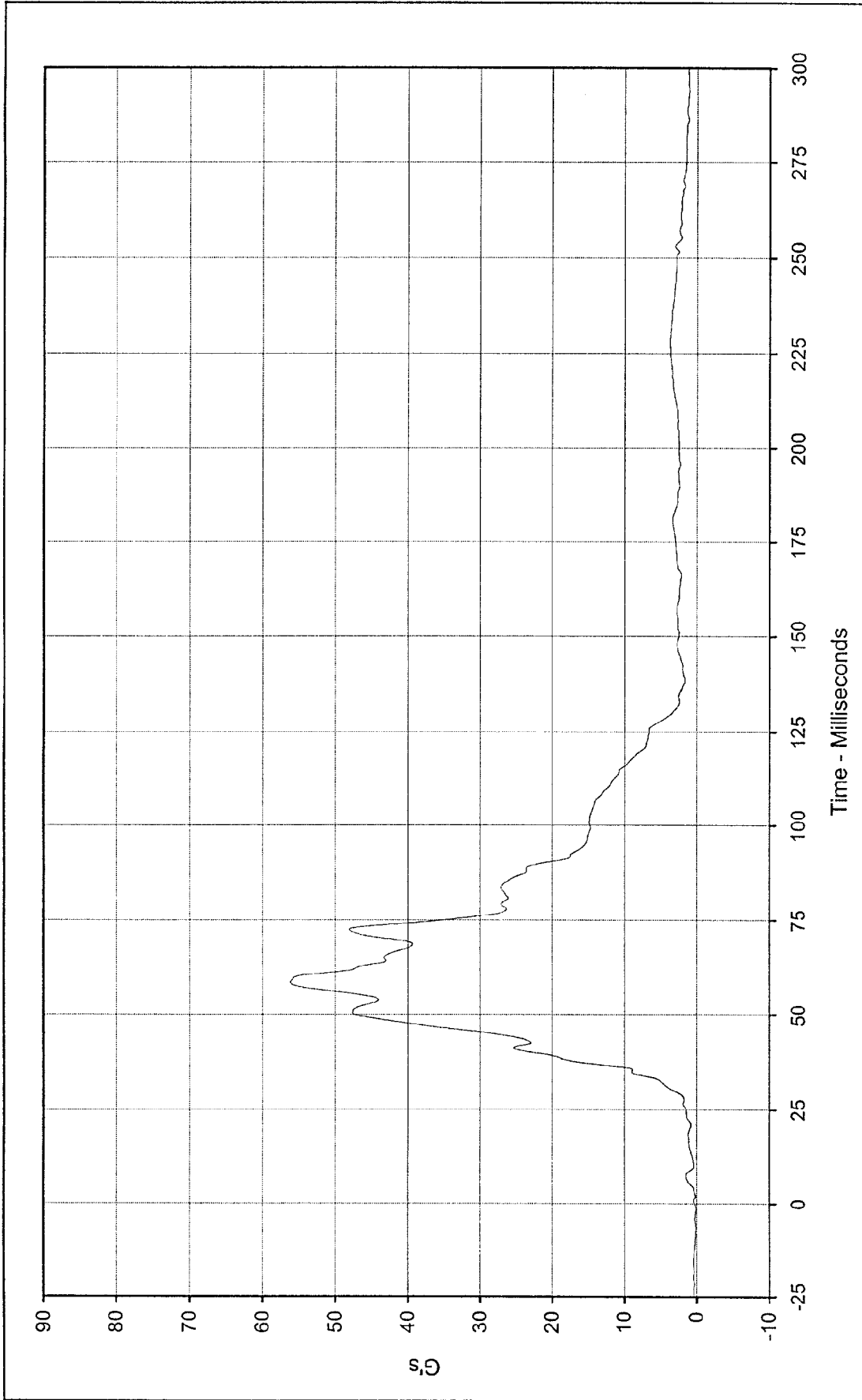
Minimum Value: -15.2 at 89.3 Milliseconds

SAE Filter Class: 180

Date of Test: 12/11/97

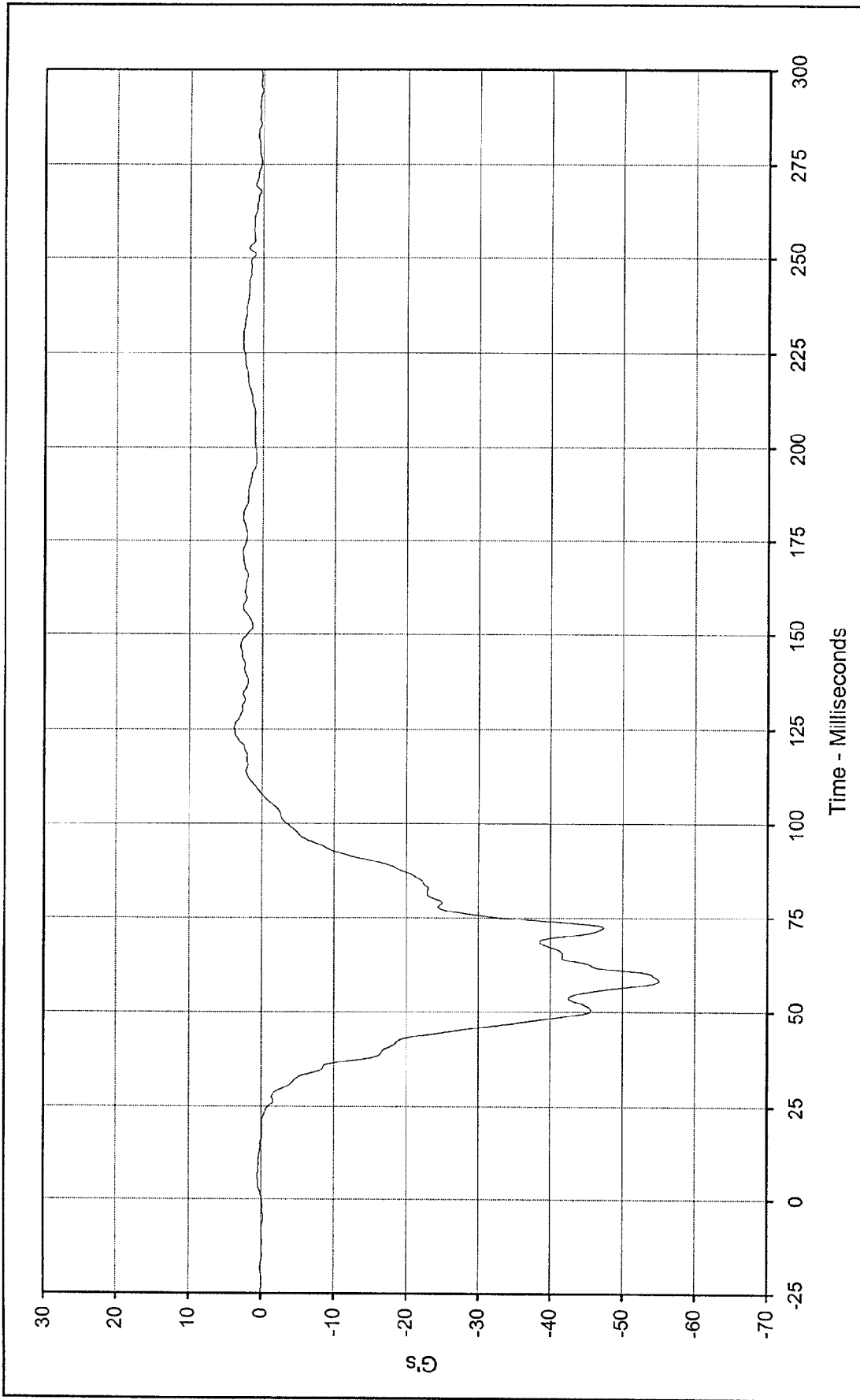
Curve Number: FIL-059





Curve Description: Passenger Chest Resultant Primary Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 56.2 at 58.6 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: 0.1 at 2.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: RES-057





Curve Description: Passenger Chest Redundant X

Maximum Value: 3.8 at 125.6 Milliseconds

Minimum Value: -55.1 at 58.2 Milliseconds

SAE Filter Class: 180

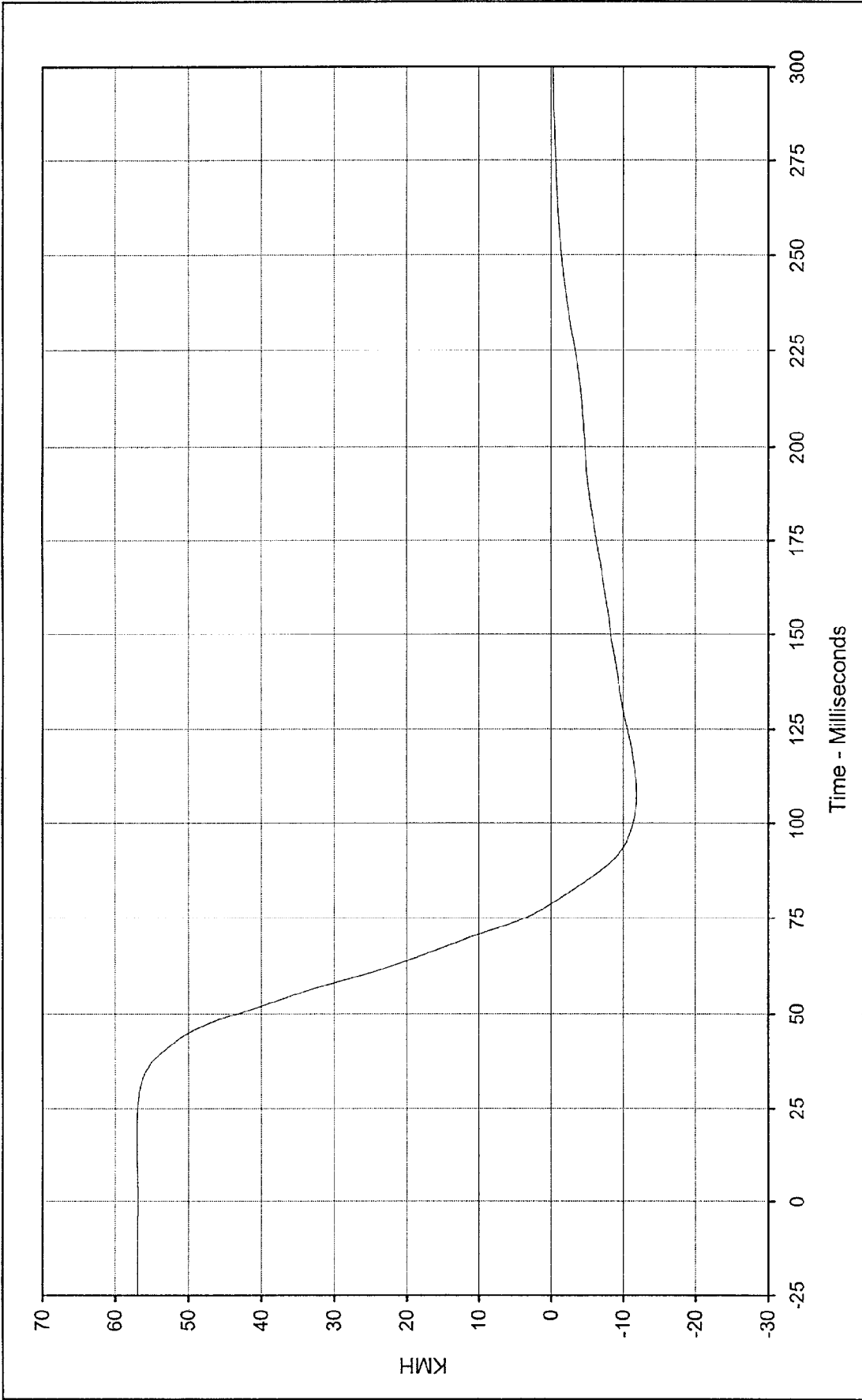
Date of Test: 12/11/97

Curve Number: FIL-060

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

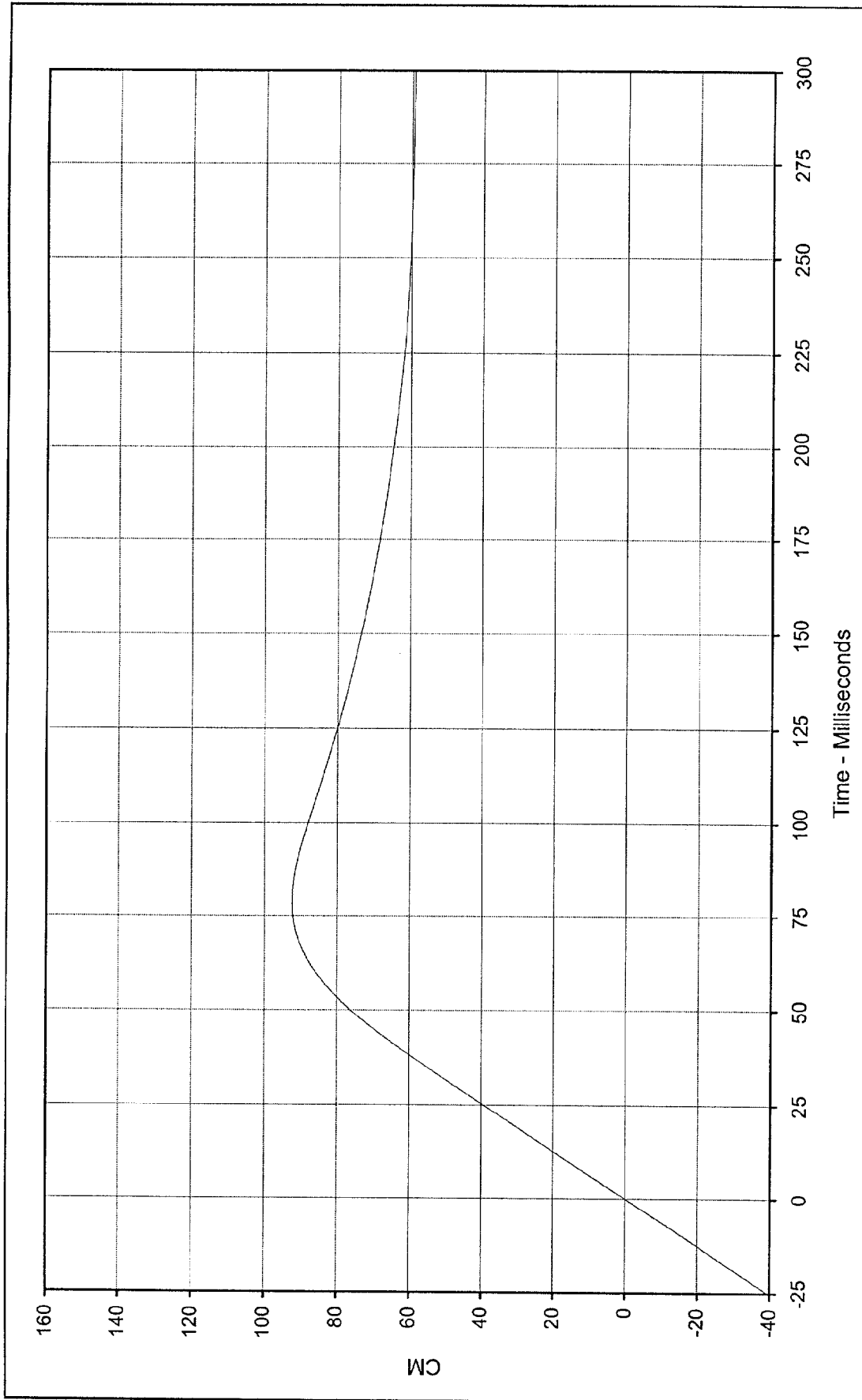




Curve Description: Passenger Chest Redundant X Velocity
 Maximum Value: 57.0 at 16.0 Milliseconds
 Minimum Value: -11.9 at 107.9 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN1-060

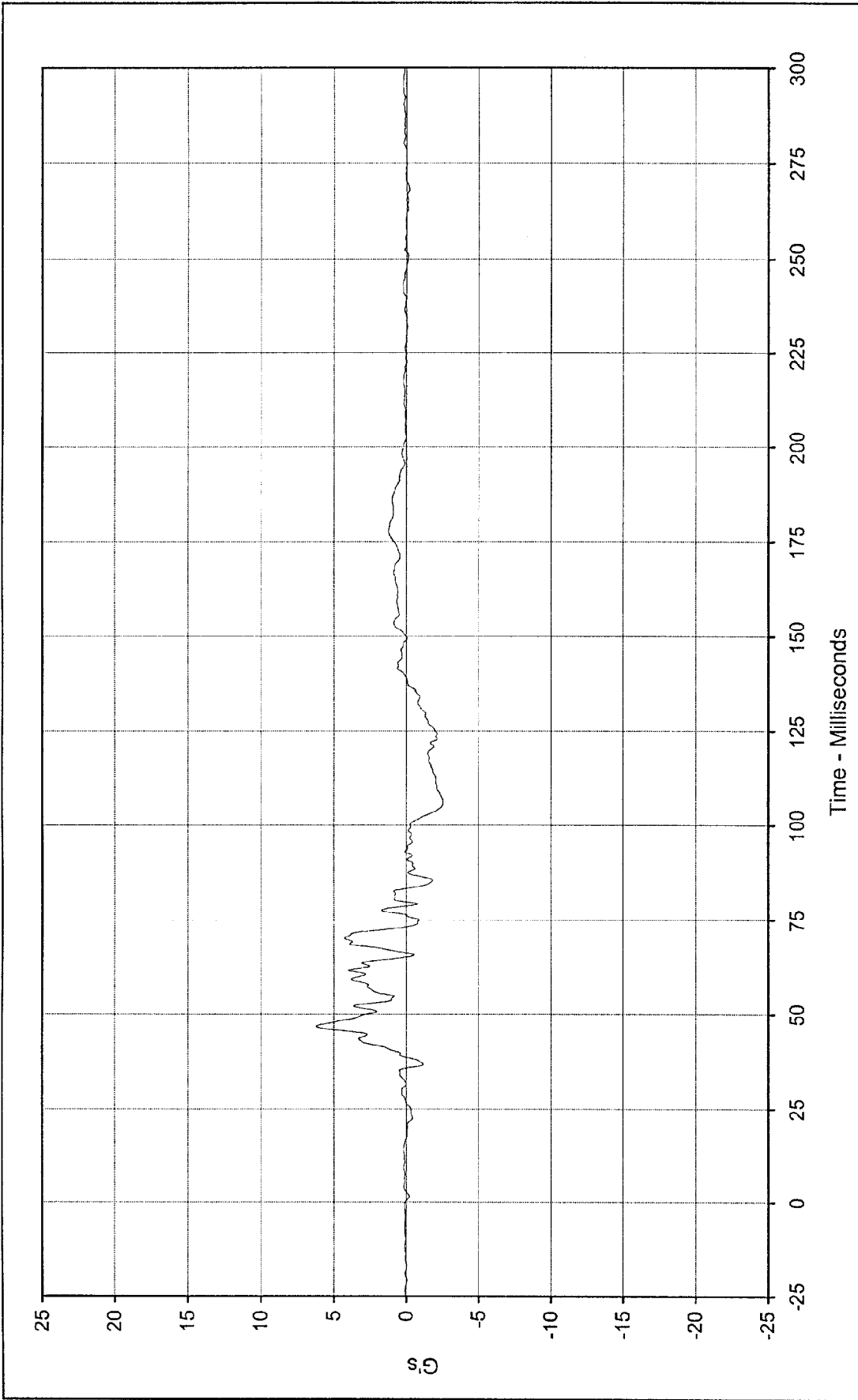
Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





Curve Description: Passenger Chest Redundant X Displ. Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 92.3 at 78.7 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -0.1 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN2-060

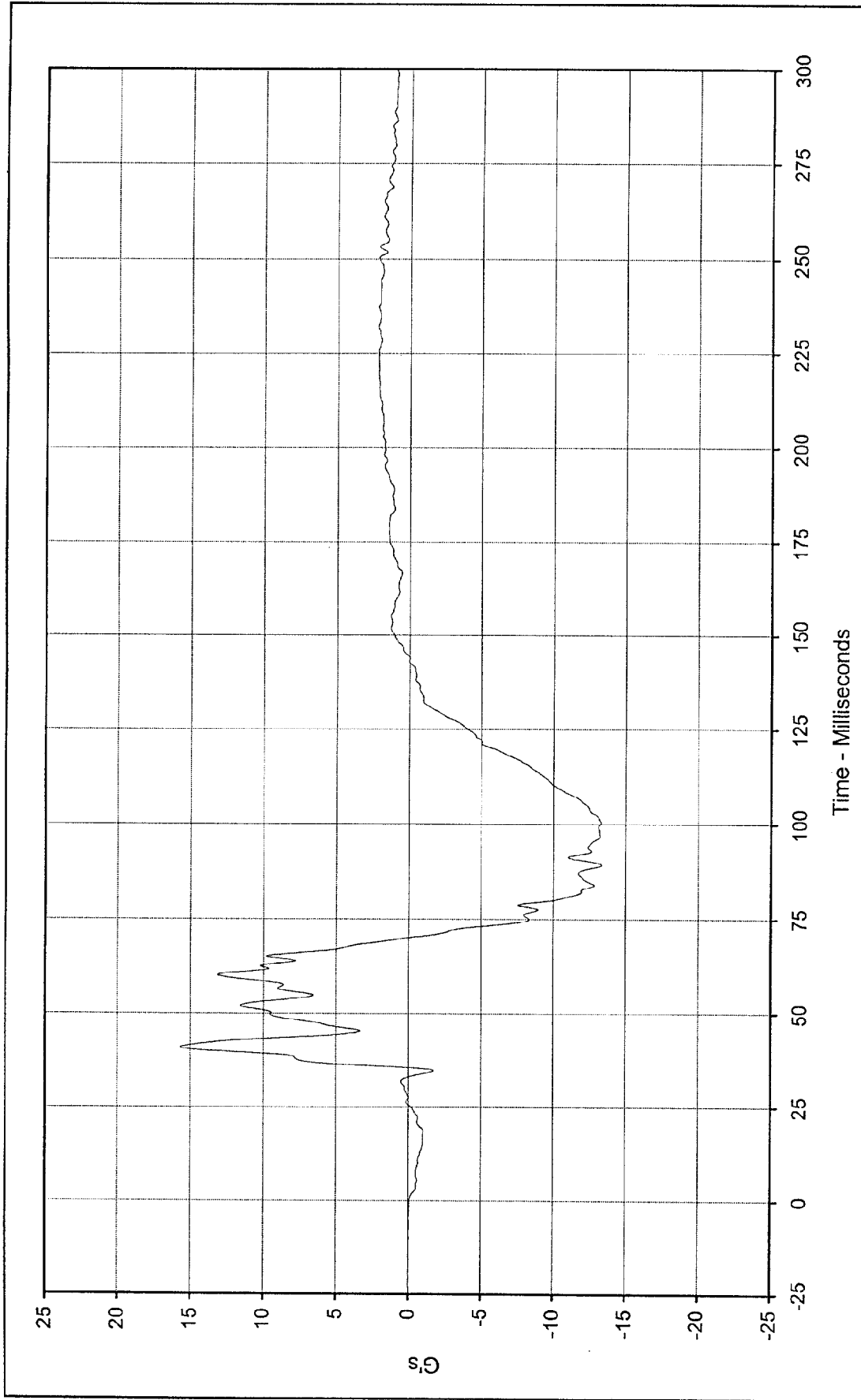




Curve Description: Passenger Chest Redundant Y Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 6.2 at 46.7 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -2.6 at 106.4 Milliseconds



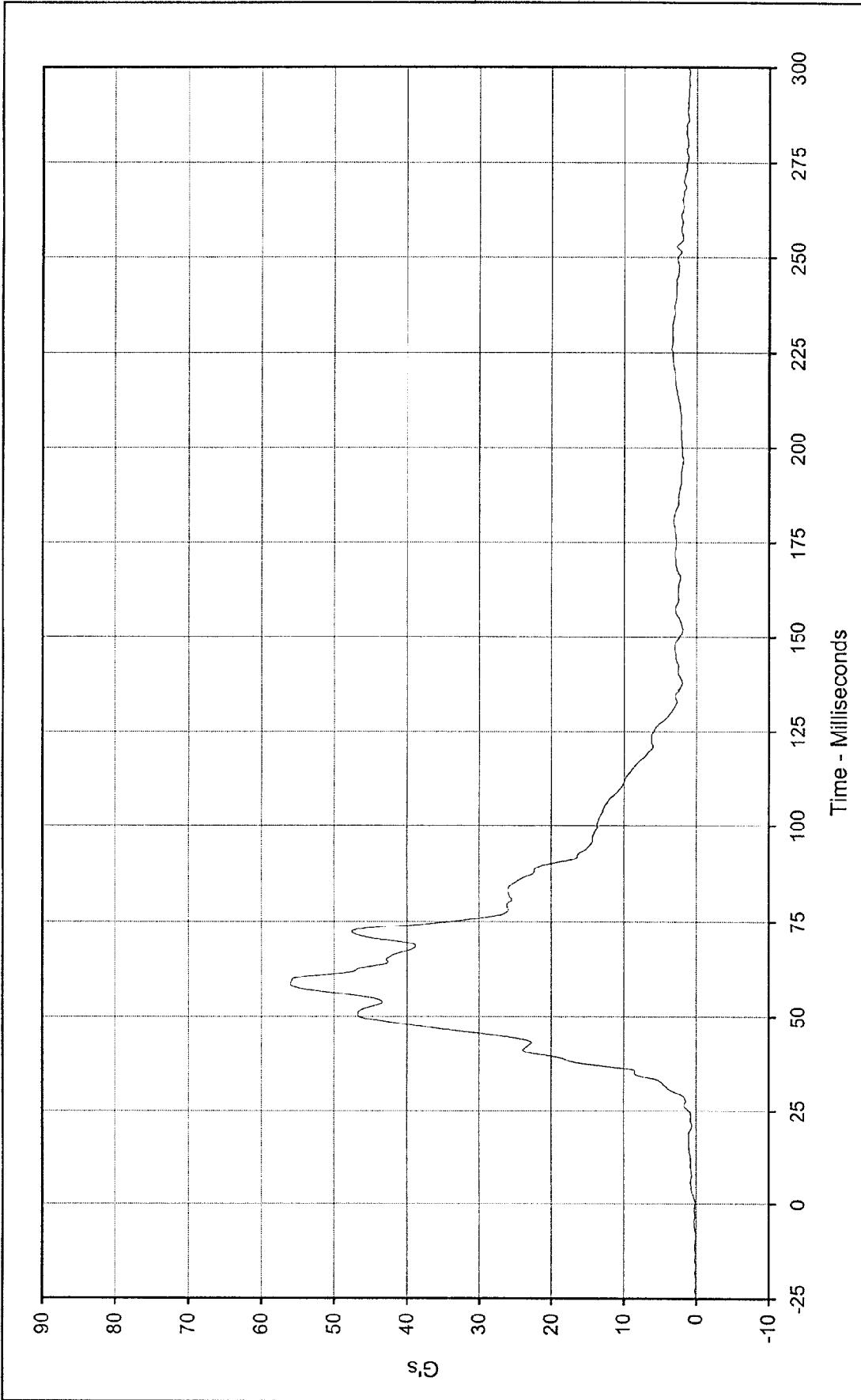
SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: FIL-061



Curve Description: Passenger Chest Redundant Z
 Maximum Value: 15.7 at 40.9 Milliseconds
 Minimum Value: -13.4 at 89.2 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: FIL-062

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

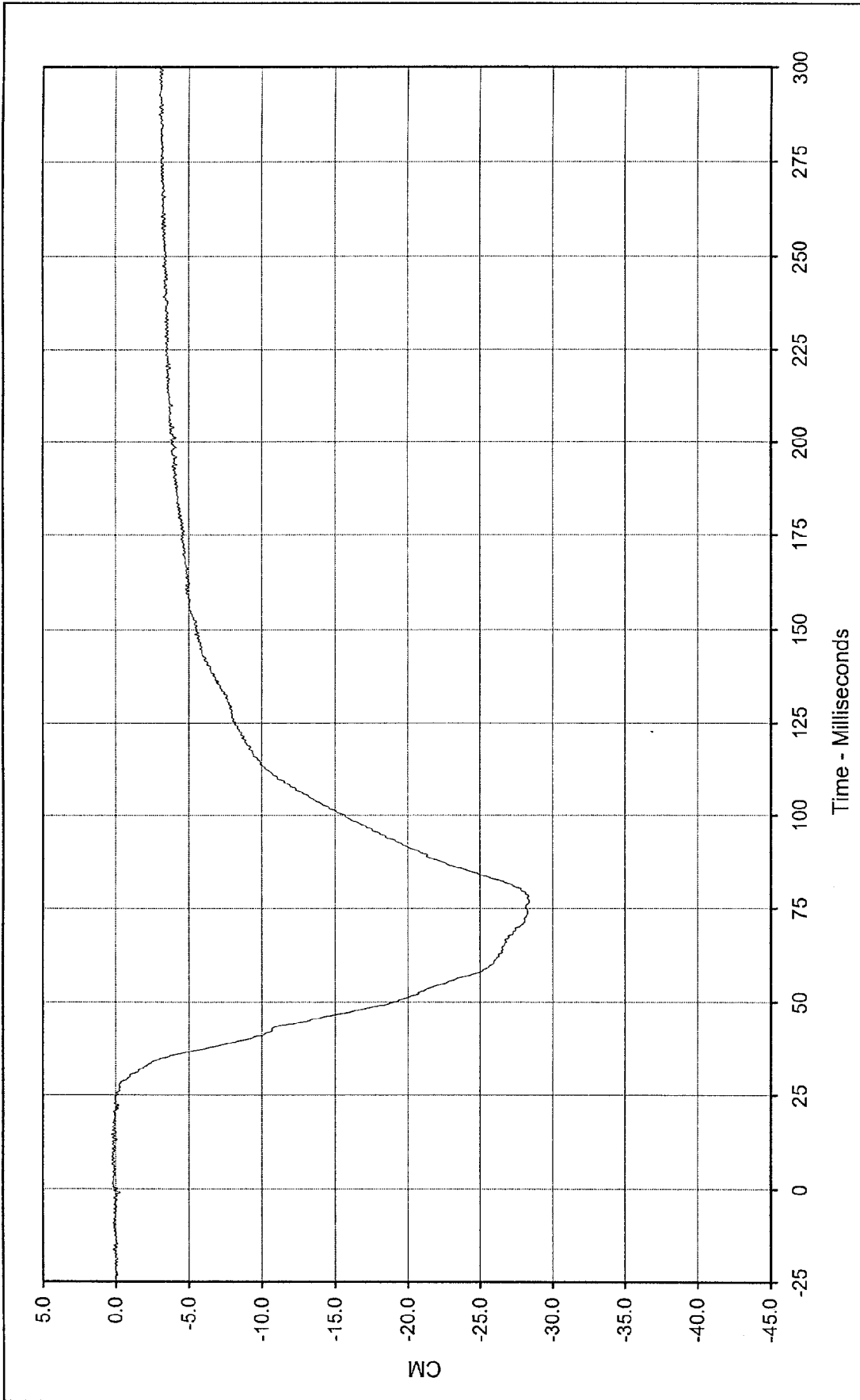




Curve Description: Passenger Chest Resultant Redundant
 Maximum Value: 56.0 at 58.5 Milliseconds
 Minimum Value: 0.1 at 0.5 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: RES-060

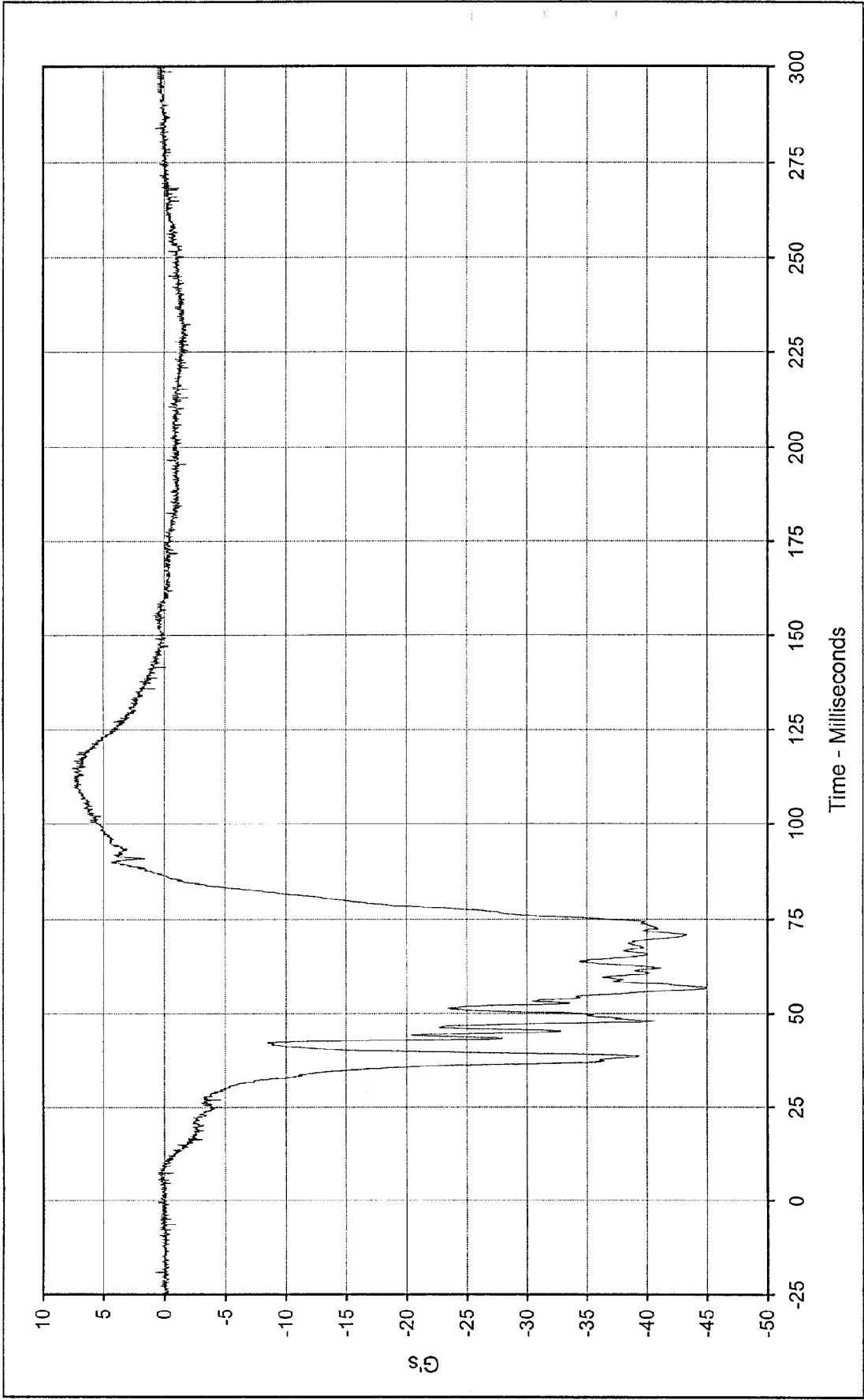
Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





Curve Description: Passenger Chest Displacement X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 0.3 at 14.6 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -28.4 at 77.0 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: FIL-063

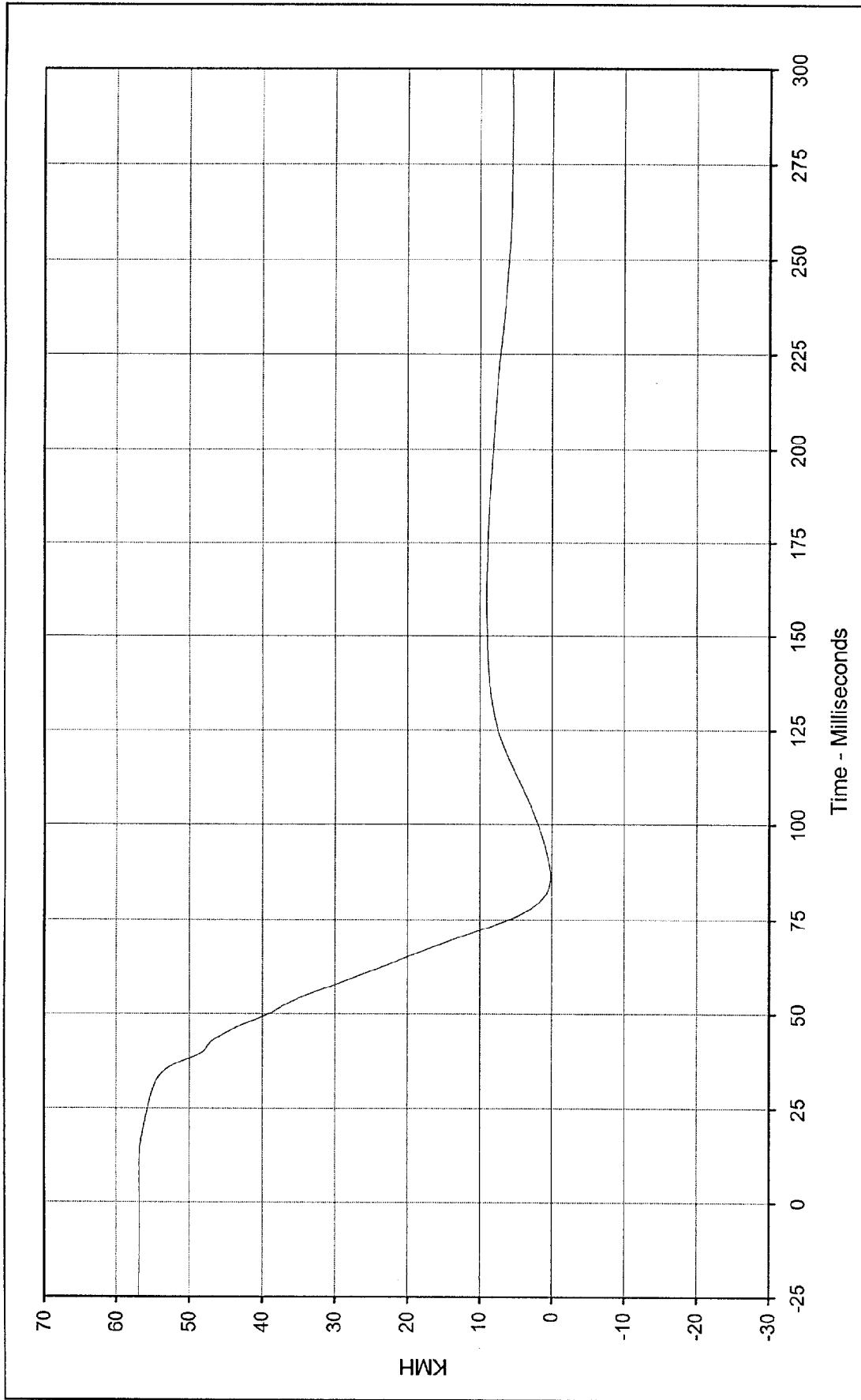




Curve Description: Passenger Pelvis X
 Maximum Value: 7.6 at 114.6 Milliseconds
 Minimum Value: -44.9 at 56.6 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-064

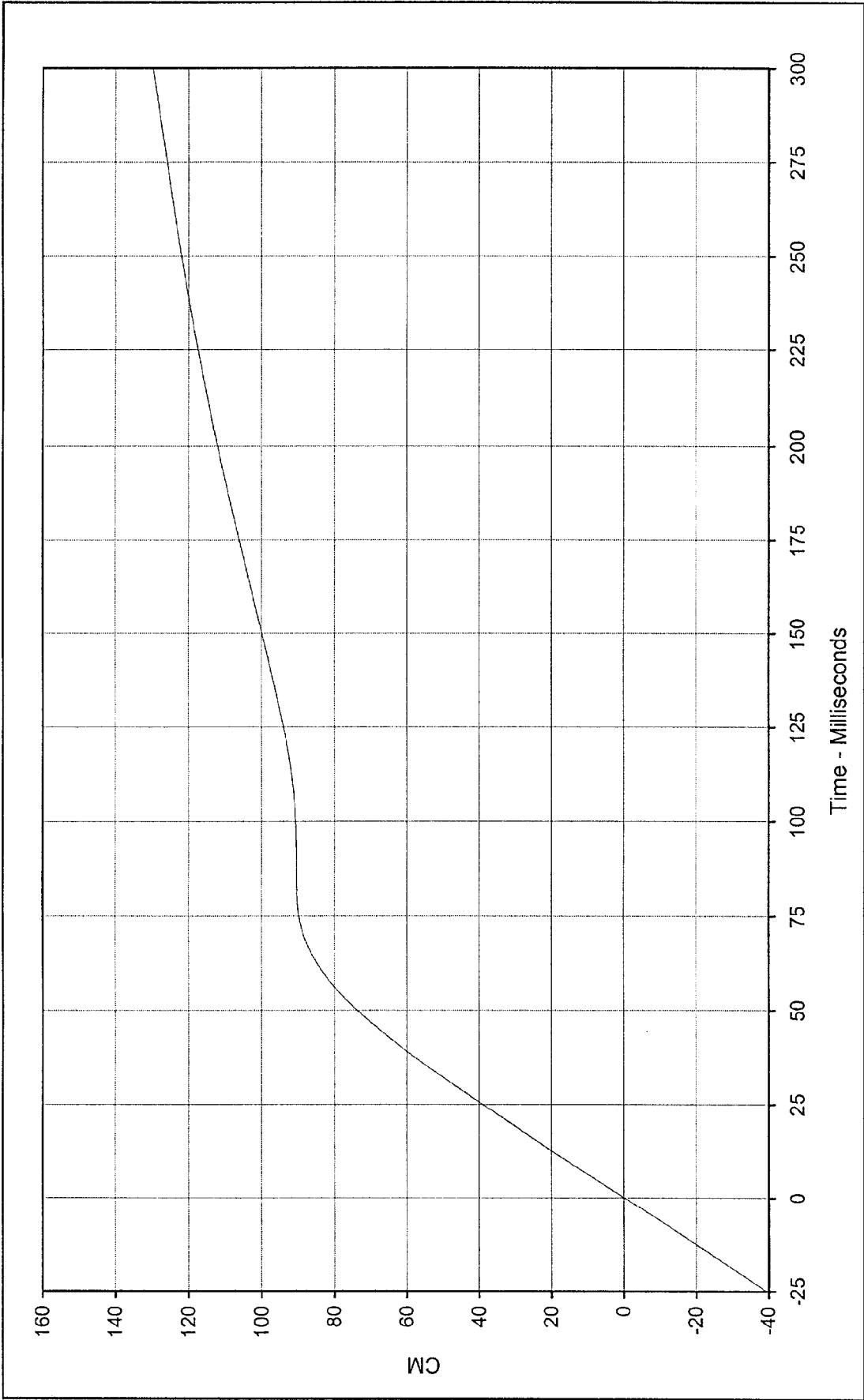
Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





Curve Description: Passenger Pelvis X Velocity Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 56.9 at 9.0 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: 0.2 at 86.3 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/1/97
 Curve Number: IN1-064

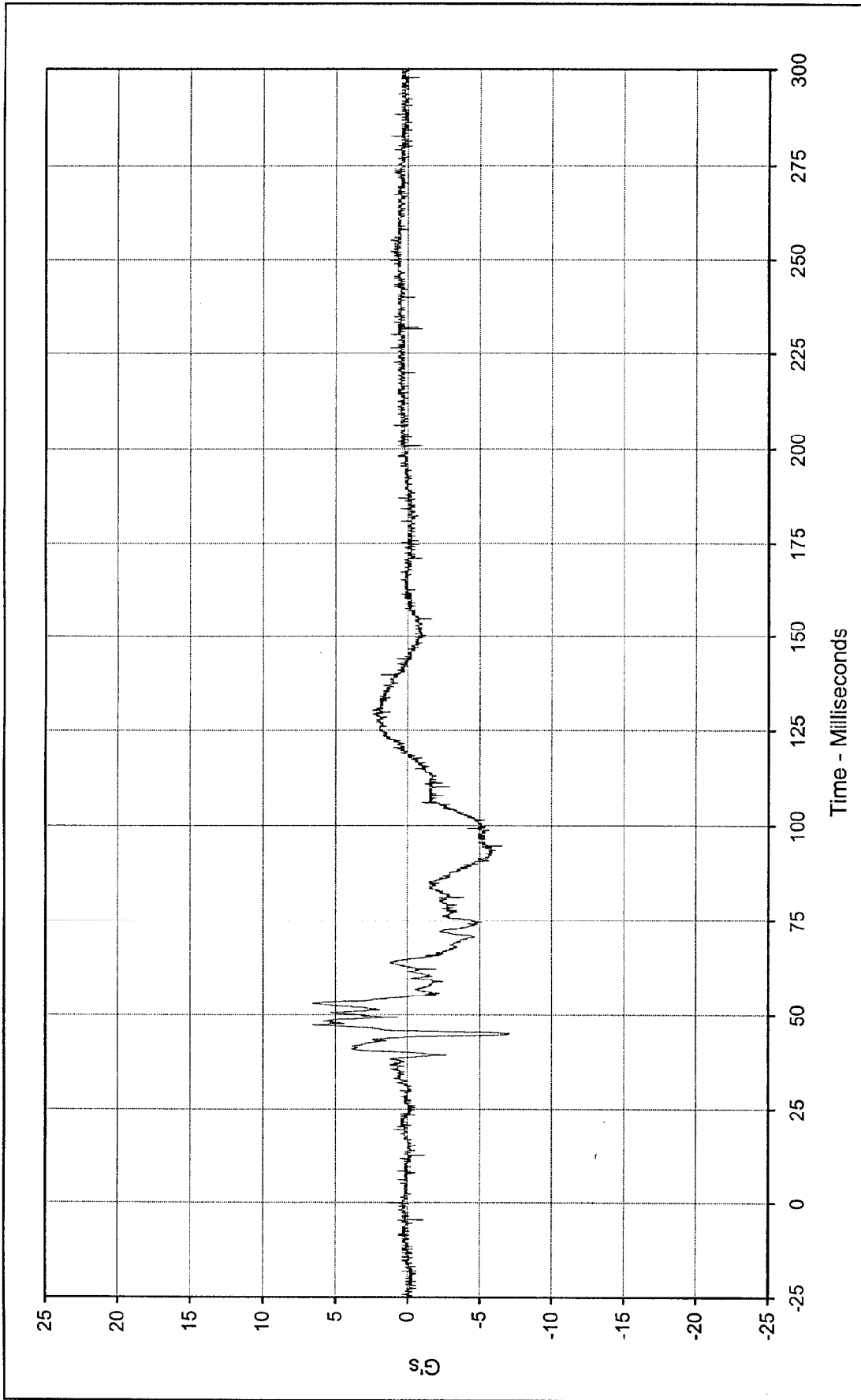




Curve Description: Passenger Pelvis X Displ.
 Maximum Value: 129.7 at 299.9 Milliseconds
 Minimum Value: -0.1 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN2-064

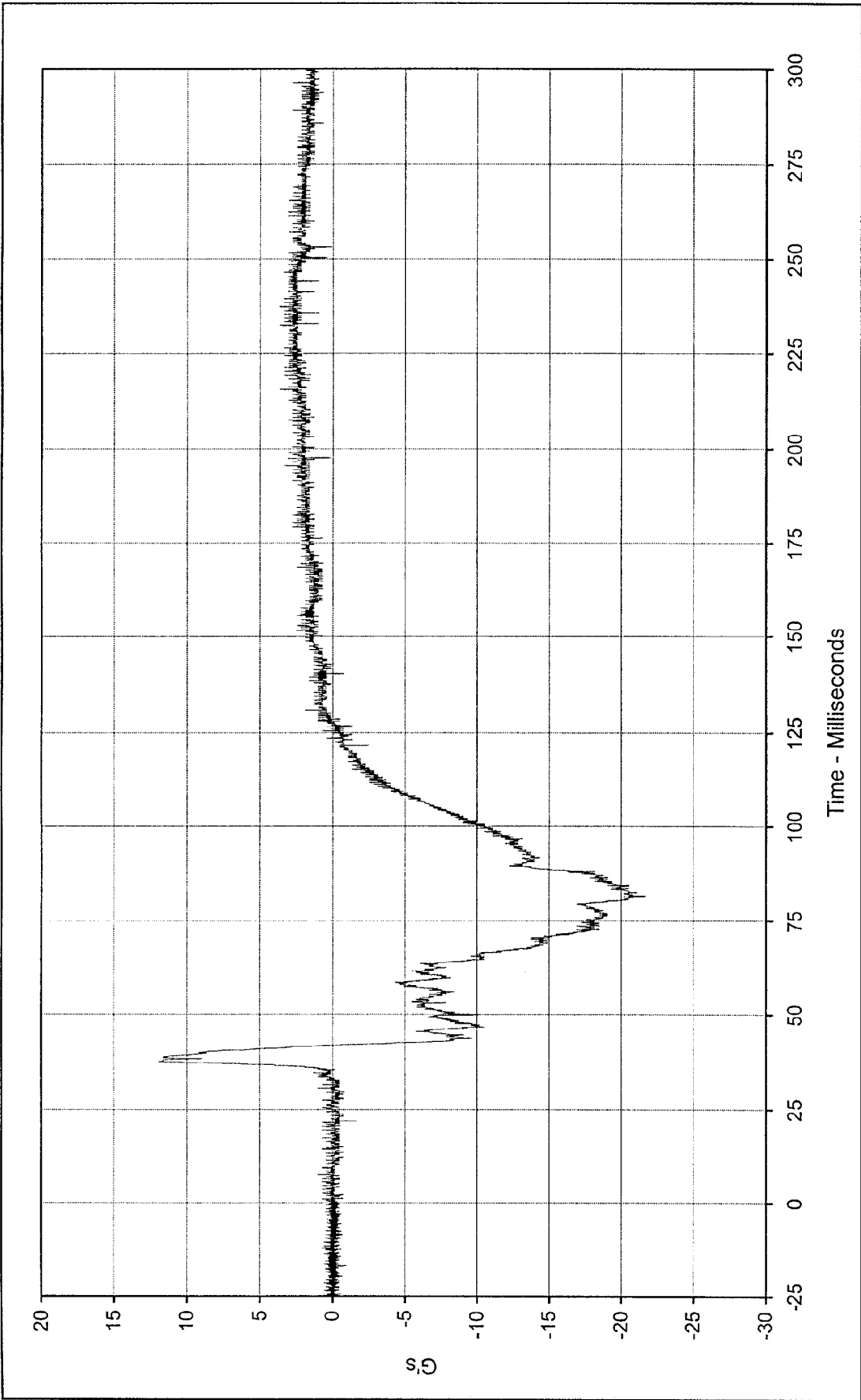
Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





Curve Description: Passenger Pelvis Y Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 6.6 at 47.2 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -7.1 at 44.9 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-065

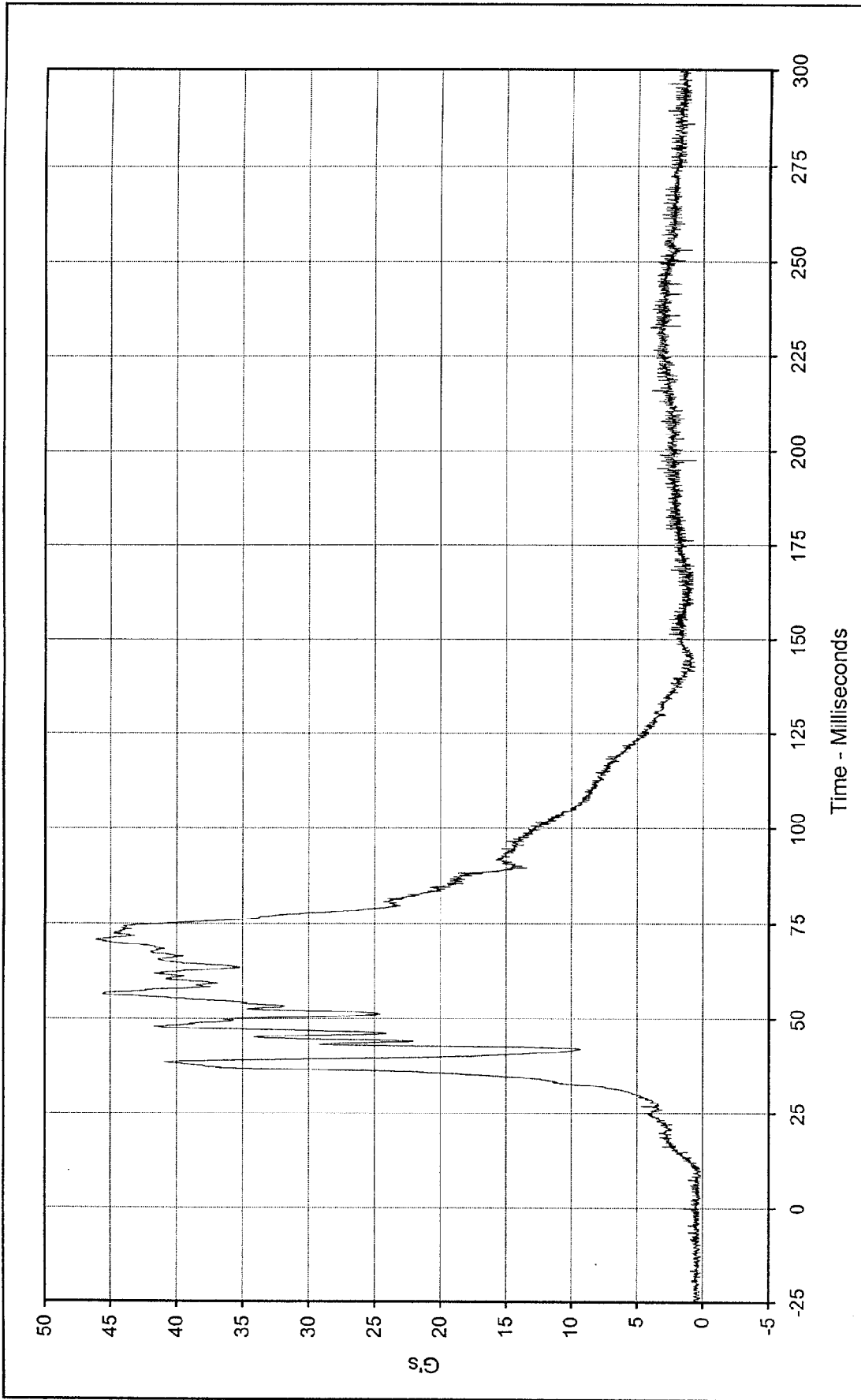




Curve Description: Passenger Pelvis Z Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 11.9 at 37.5 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -21.7 at 81.6 Milliseconds

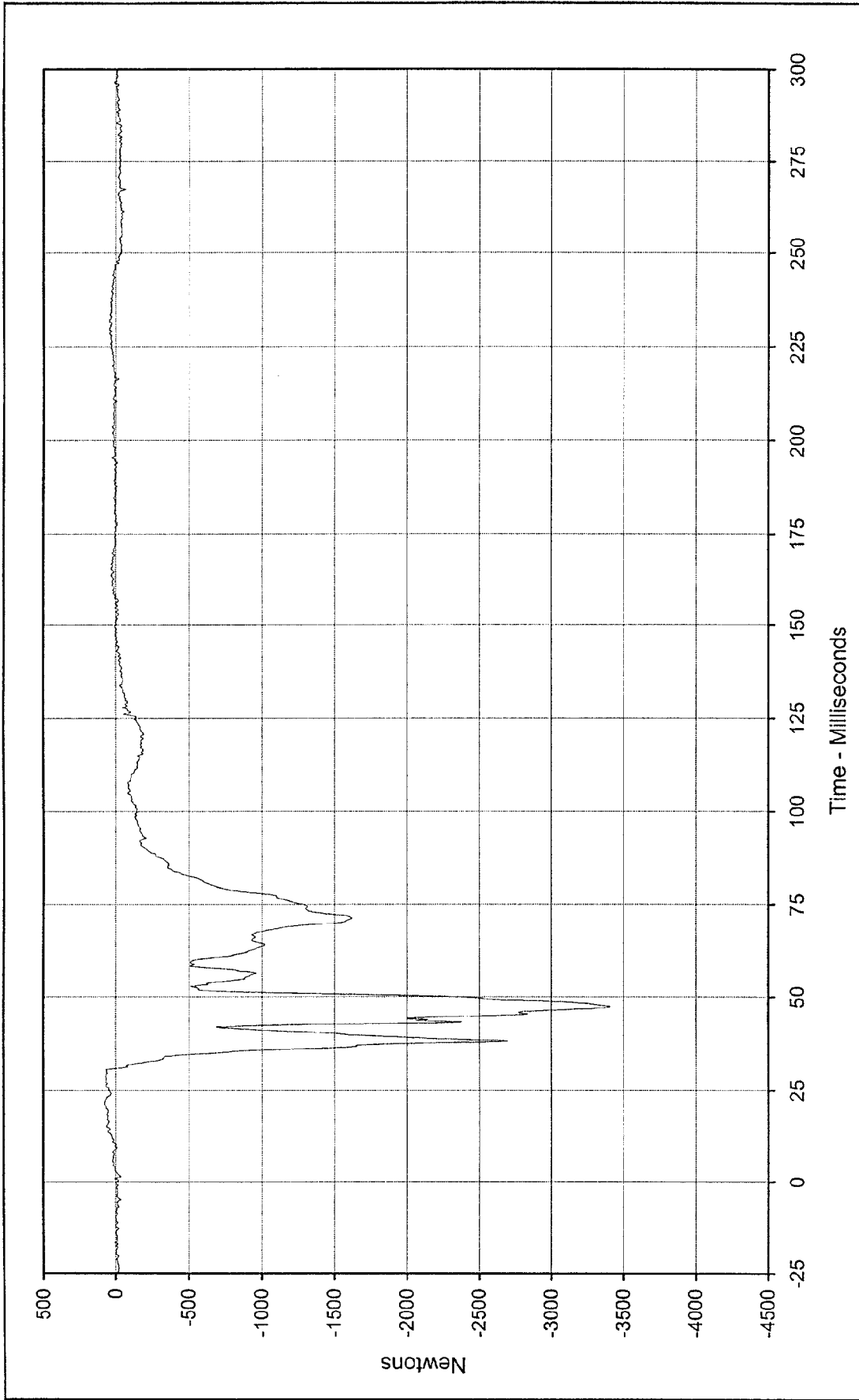


SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-066



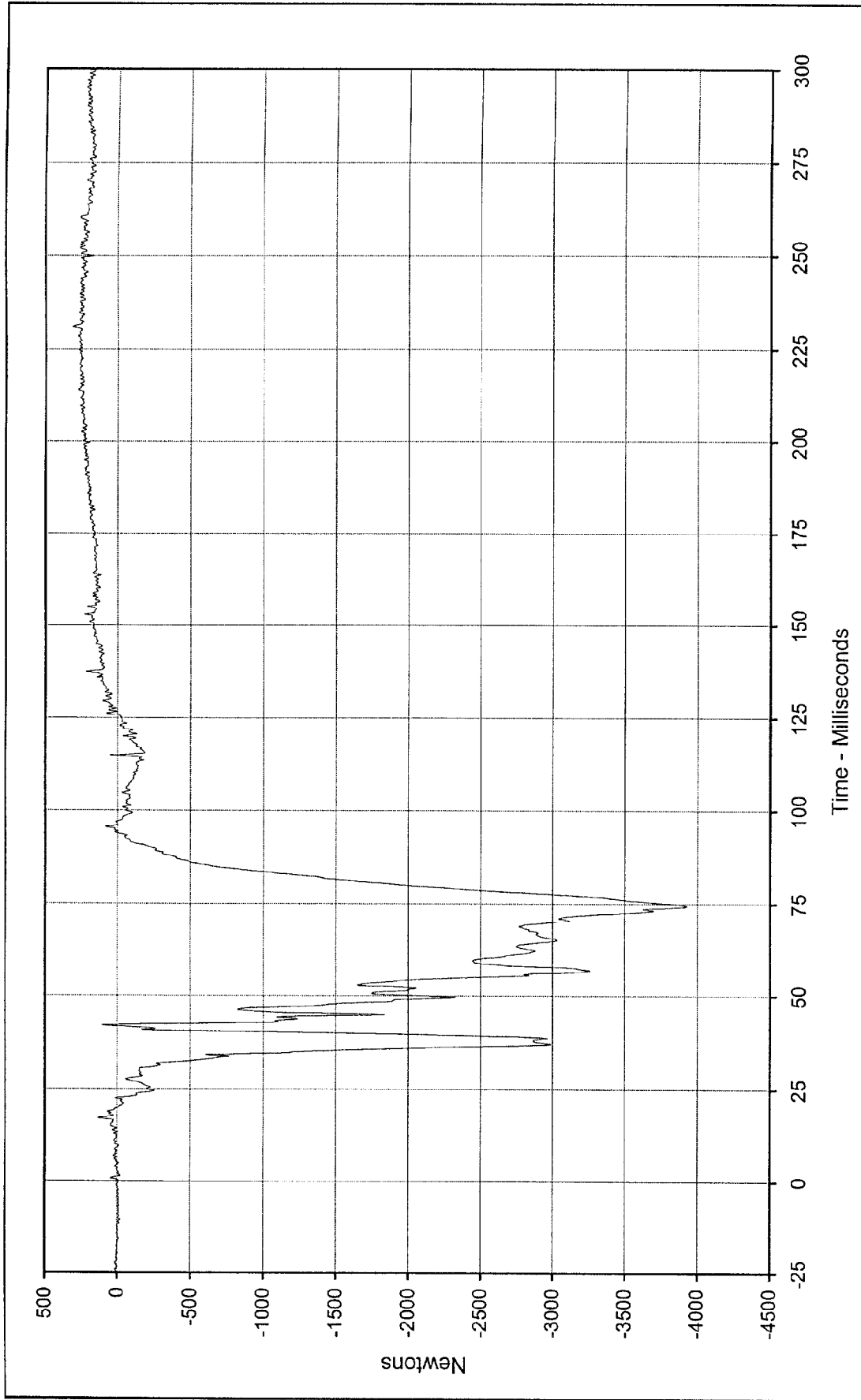
Curve Description: Passenger Pelvis Resultant Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 46.1 at 70.8 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: 0.1 at 2.8 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: RES-064





Curve Description: Passenger Left Femur Force Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 81.3 at 21.6 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -3406.1 at 47.4 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: FIL-067





Curve Description: Passenger Right Femur Force Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 311.4 at 231.2 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

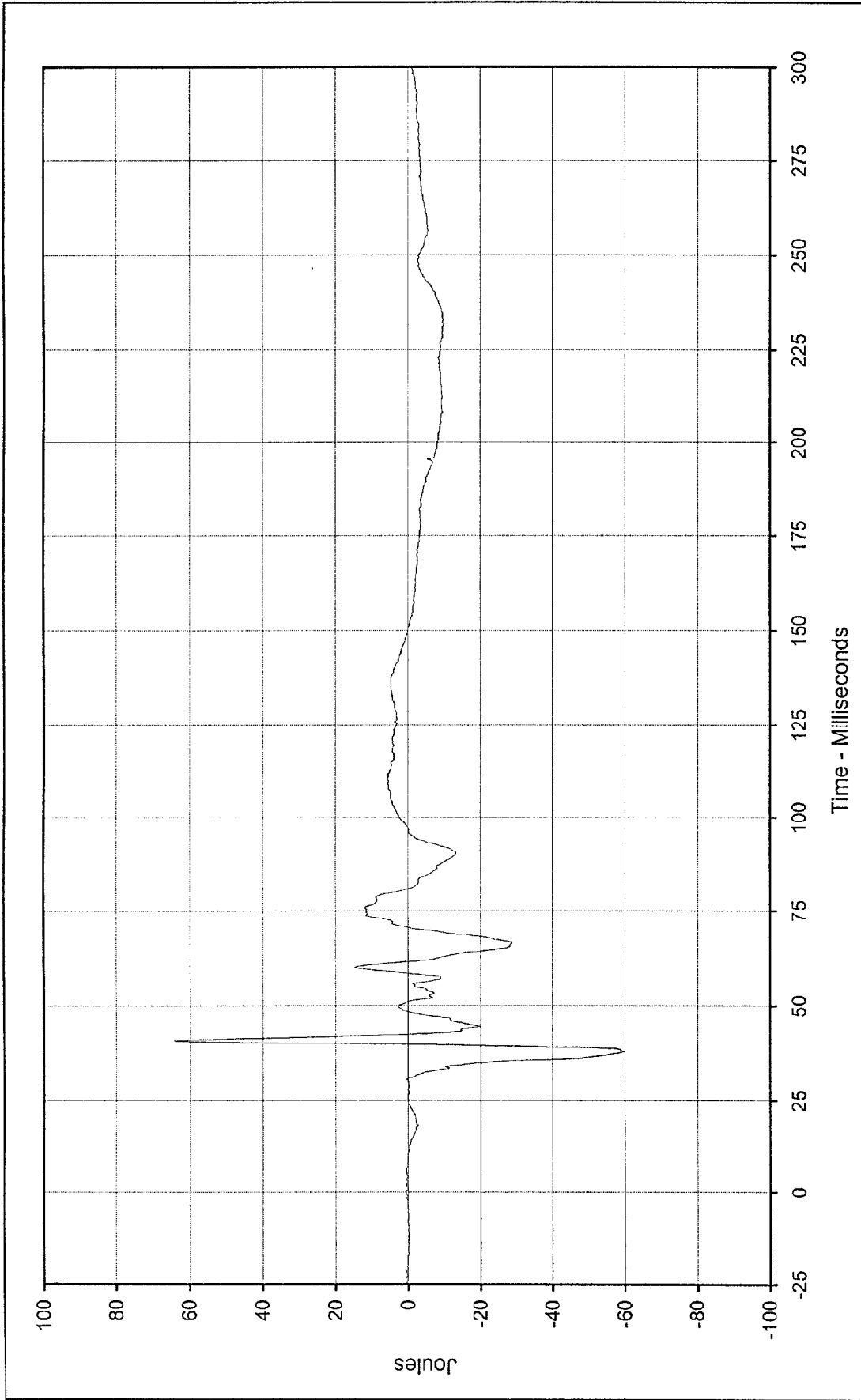
Minimum Value: -3928.8 at 74.4 Milliseconds

SAE Filter Class: 600

Date of Test: 12/11/97

Curve Number: FIL-068

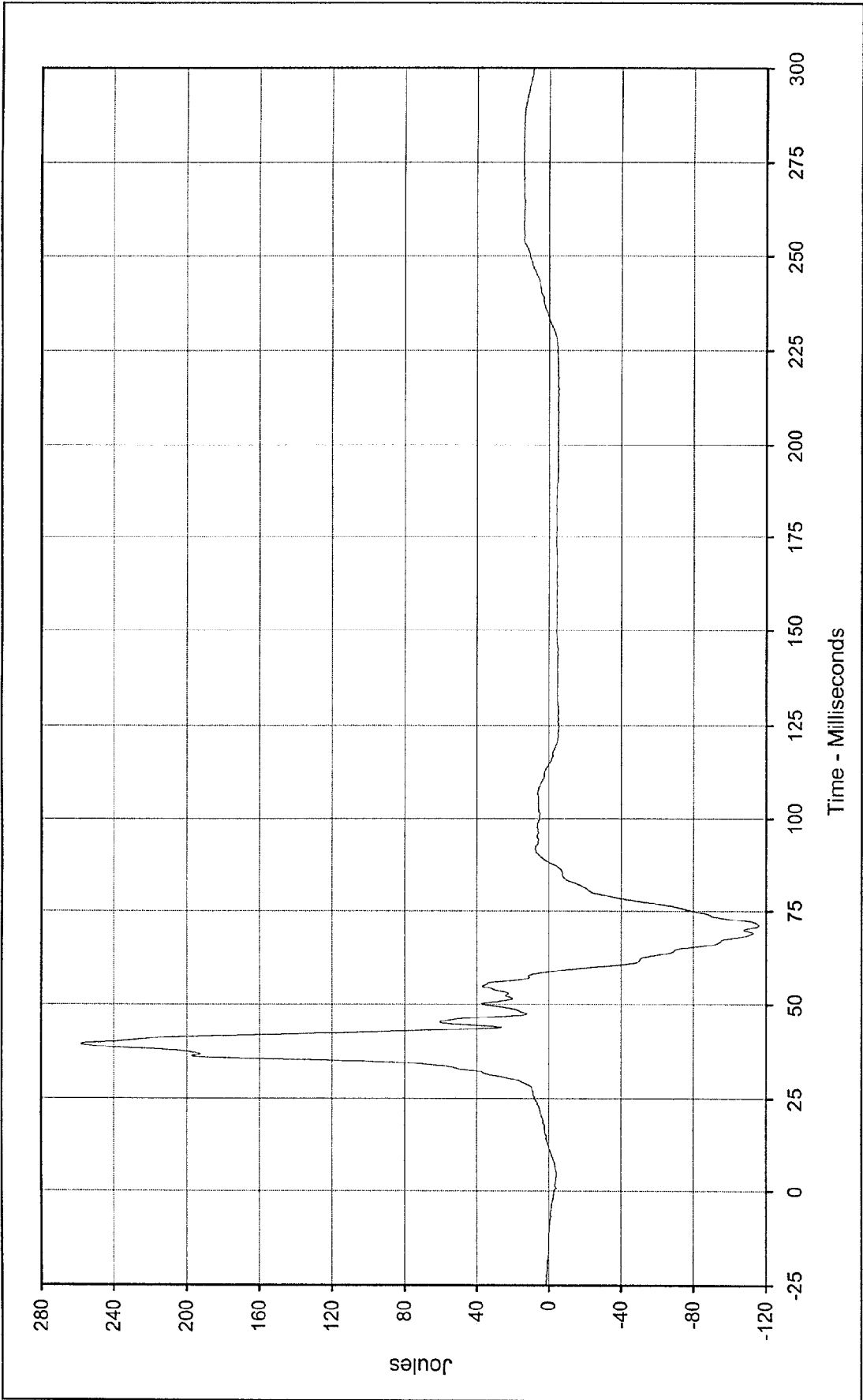




Curve Description: Passenger Left Upper Tibia Moment X
 Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 64.3 at 40.7 Milliseconds
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -59.7 at 38.0 Milliseconds



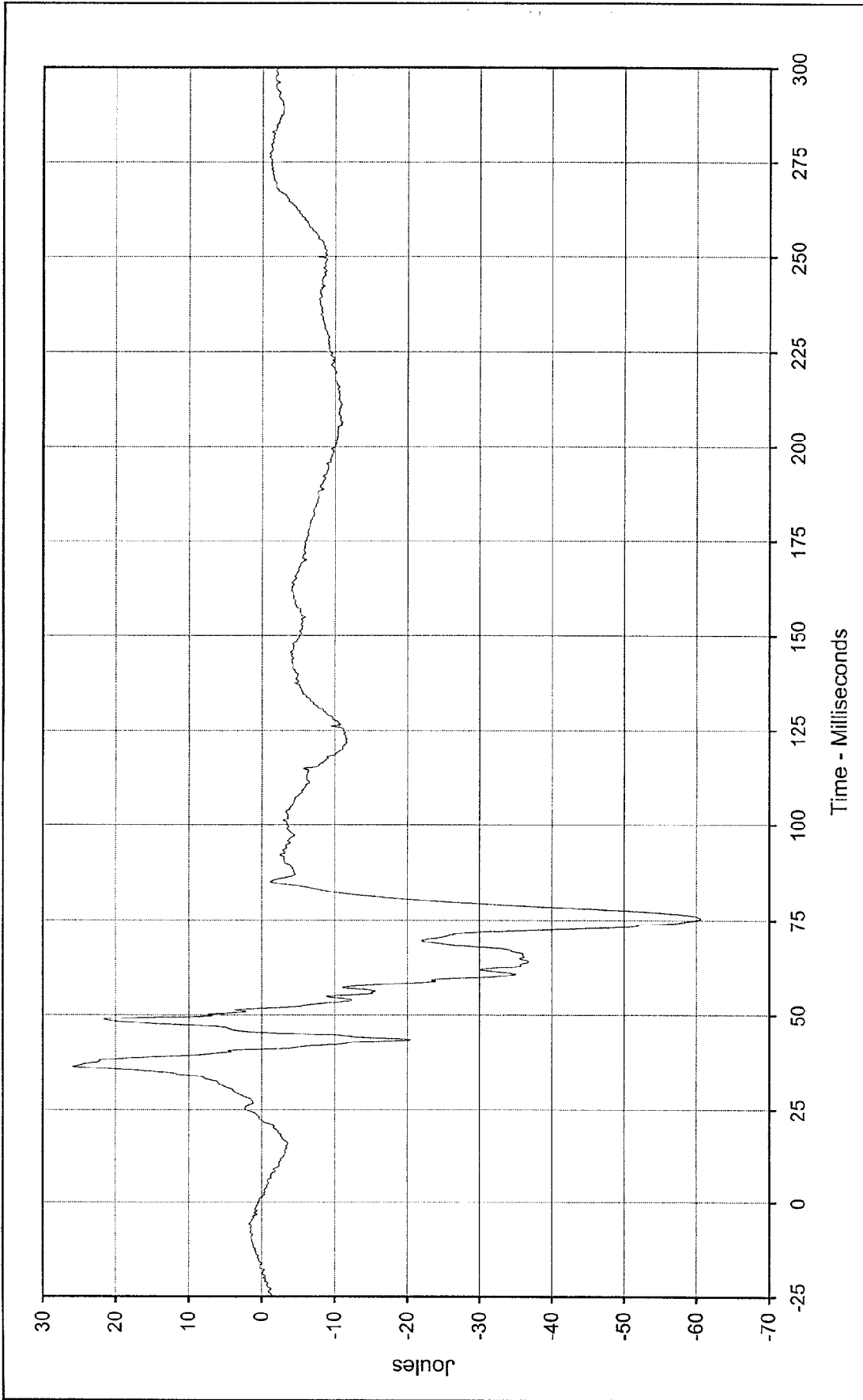
SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: FIL-069



Curve Description: Passenger Left Upper Tibia Moment Y Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 258.3 at 39.5 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -116.3 at 71.0 Milliseconds

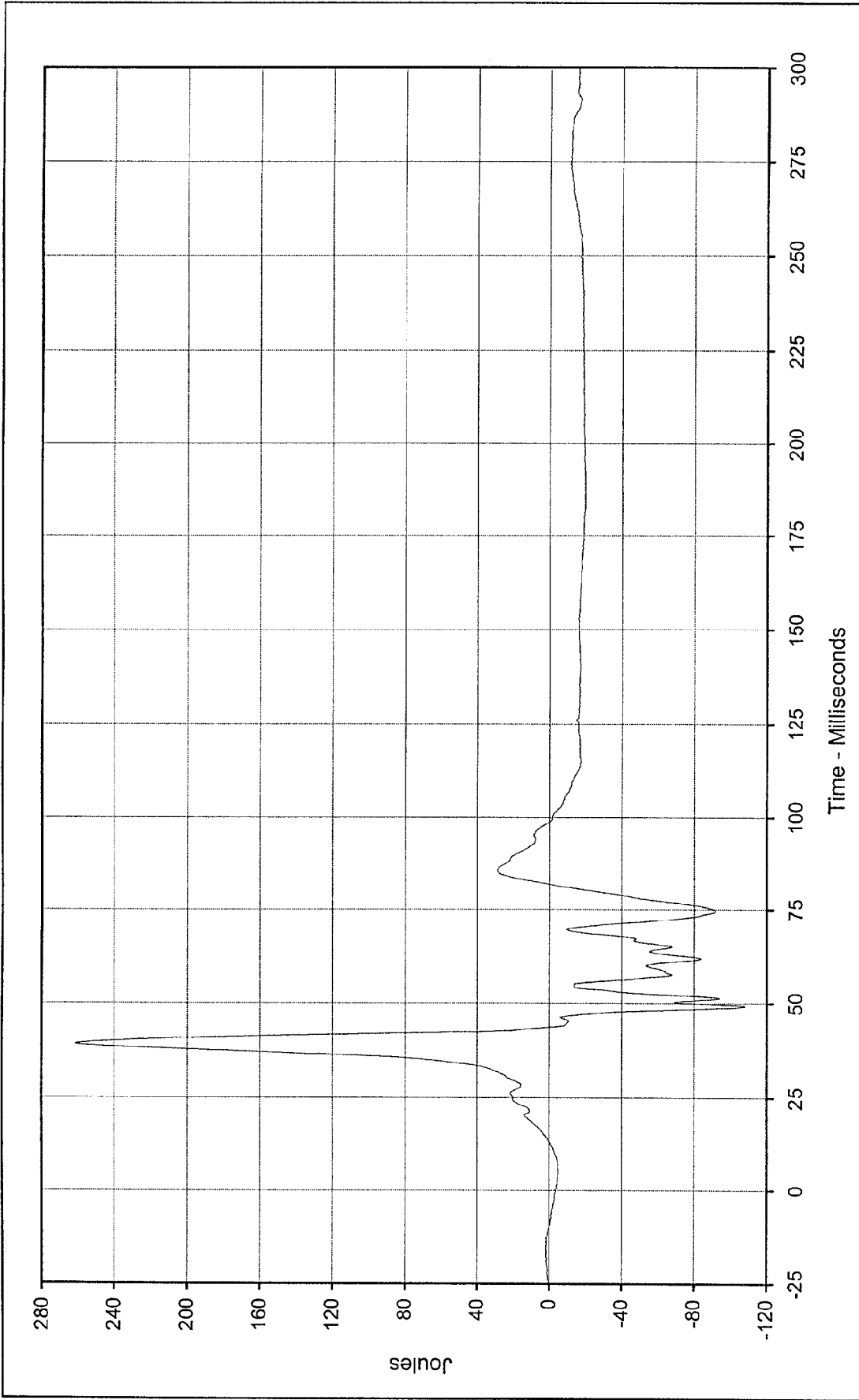


SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: FIL-070



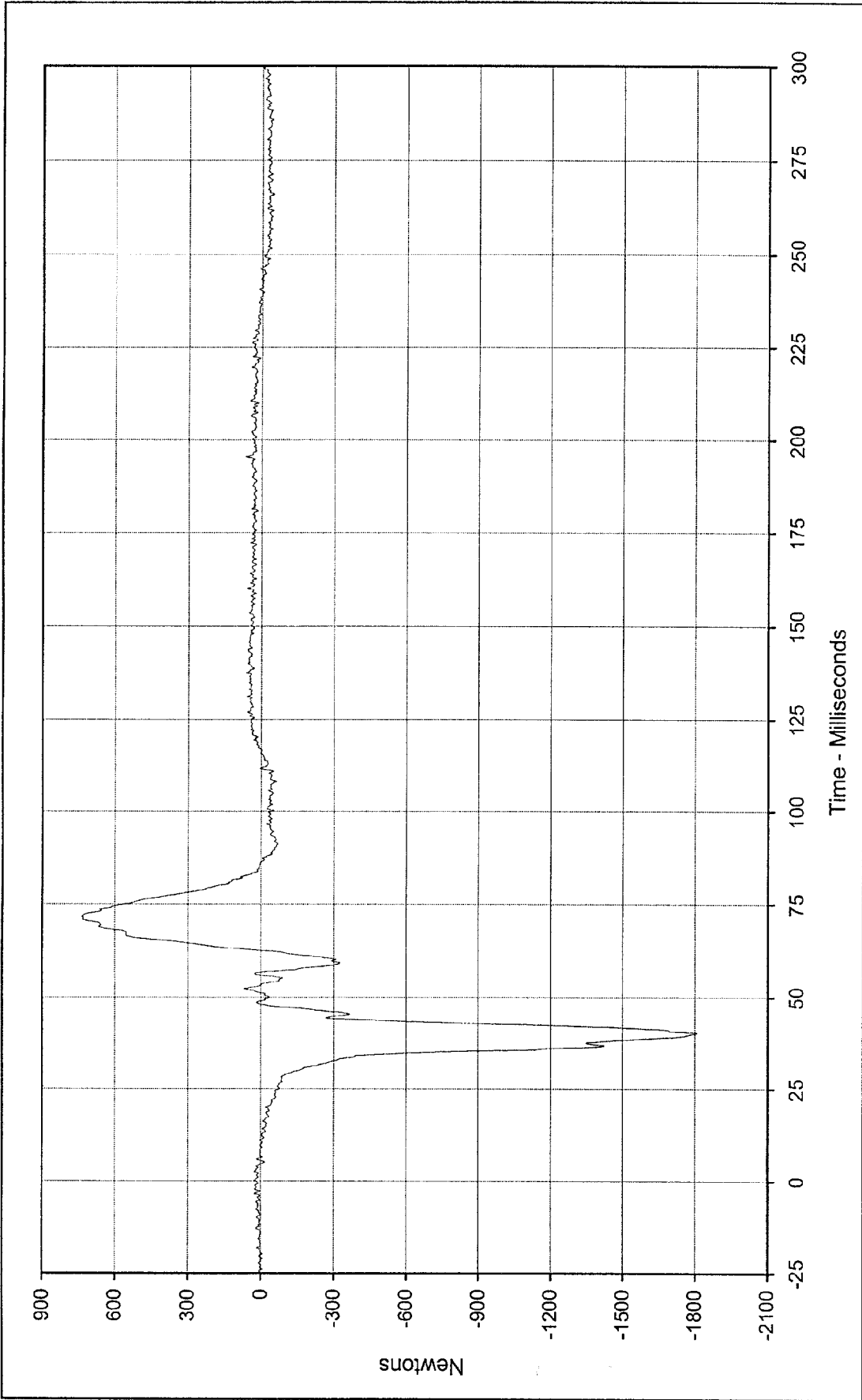
Curve Description: Passenger Right Upper Tibia Moment X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 25.9 at 36.4 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -60.6 at 75.4 Milliseconds
 SAE Filter Class: 500
 Date of Test: 12/11/97
 Curve Number: FIL-071





Curve Description: Passenger Right Upper Tibia Moment Y
 Testing Program: 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Maximum Value: 261.4 at 39.2 Milliseconds
 Minimum Value: -108.3 at 49.2 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: FIL-072

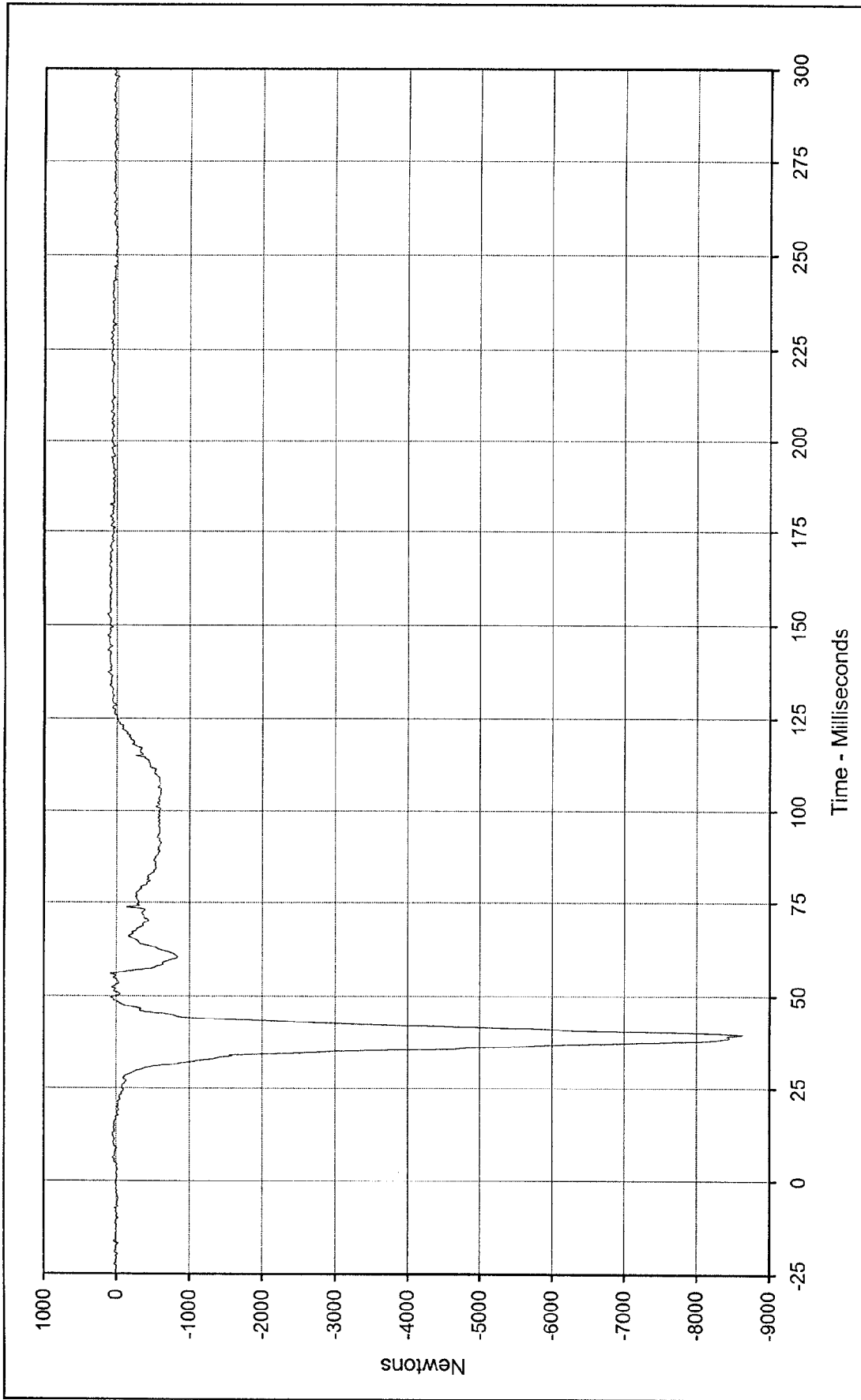




Curve Description: Passenger Left Lower Tibia Force X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 735.5 at 71.7 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -1809.0 at 40.2 Milliseconds

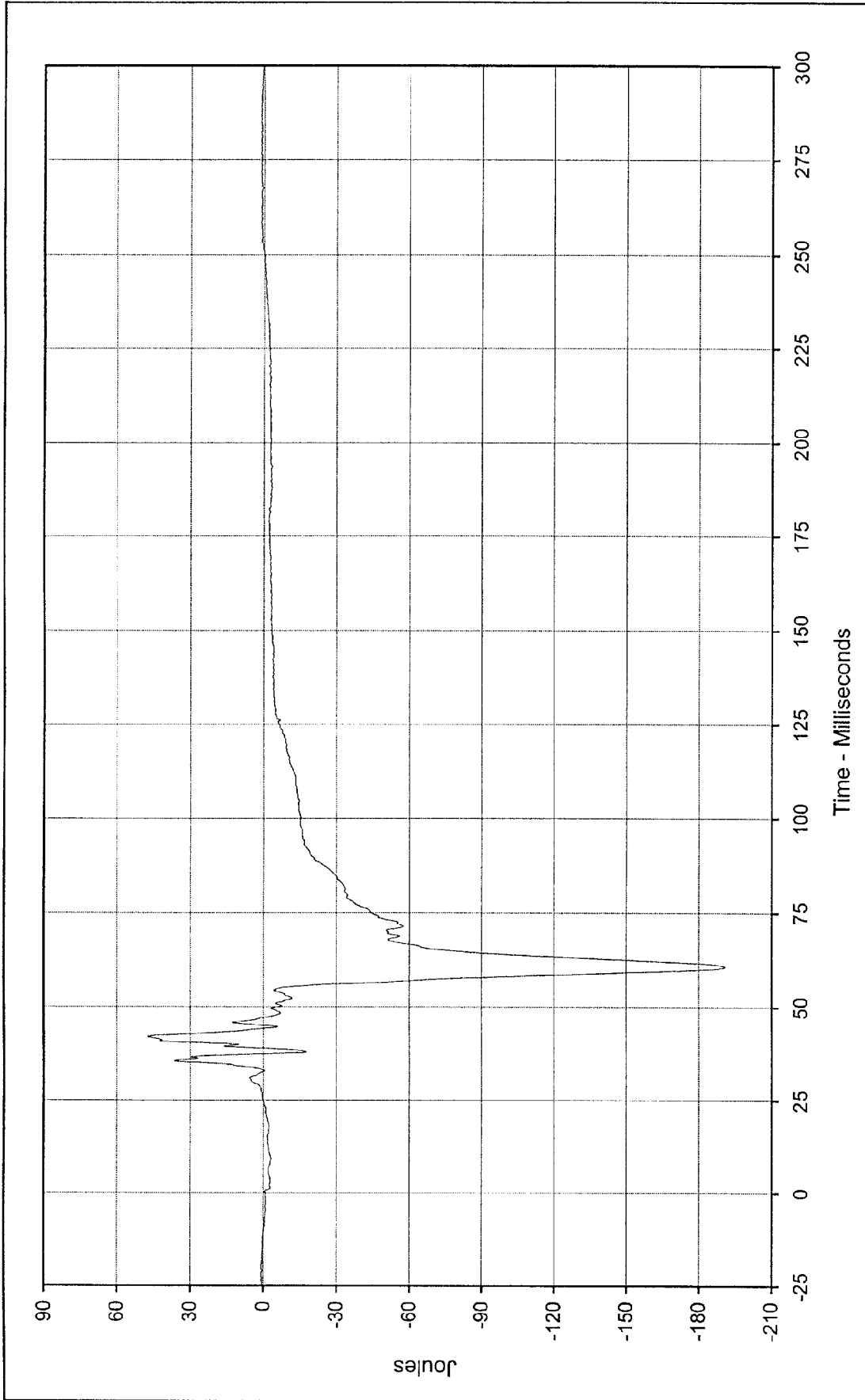


SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: FIL-073



Curve Description: Passenger Left Lower Tibia Force Z Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 135.3 at 147.1 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -8635.8 at 39.6 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: FIL-074

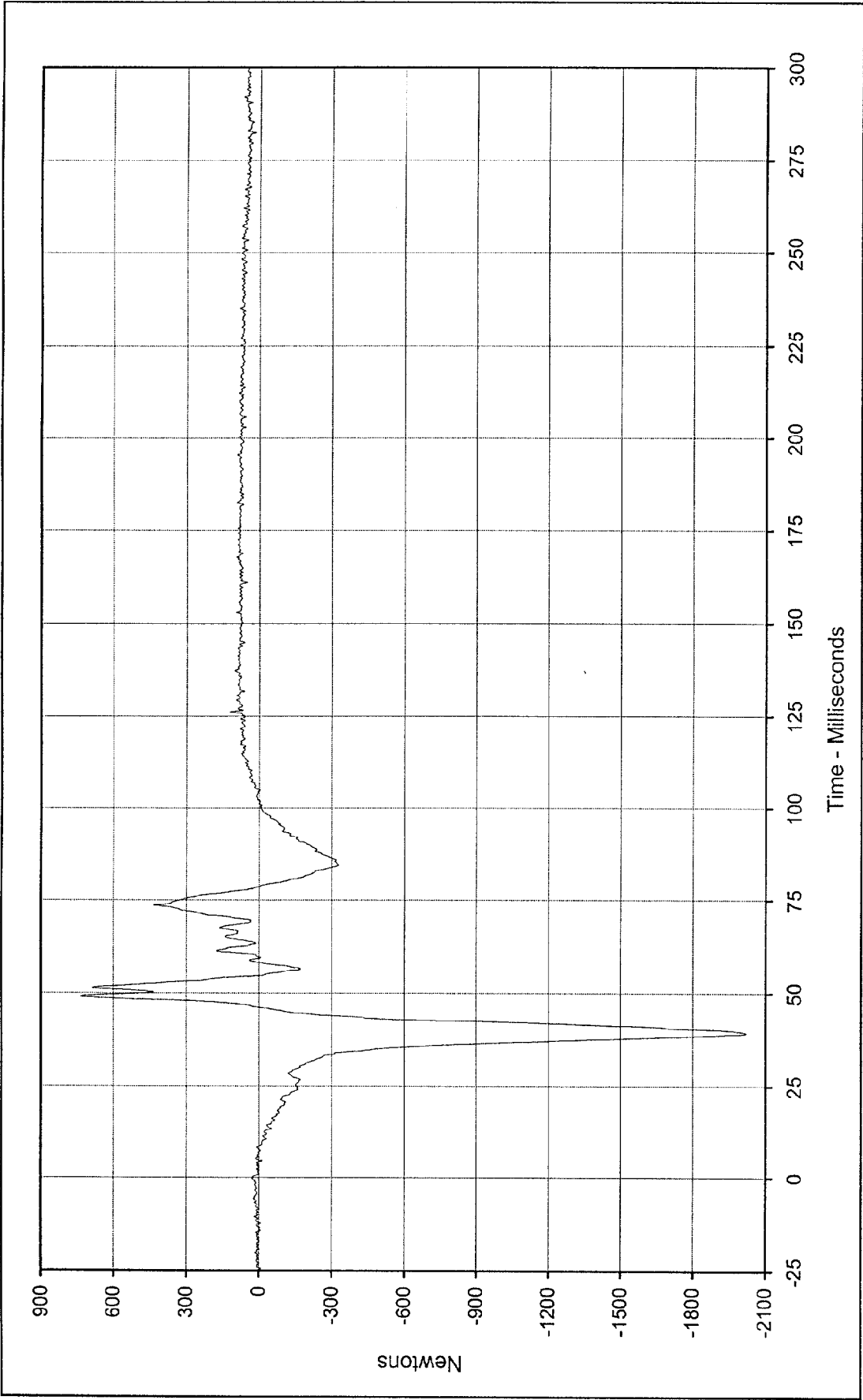




Curve Description: Passenger Left Lower Tibia Moment Y
 Maximum Value: 47.2 at 41.9 Milliseconds
 Minimum Value: -190.9 at 60.6 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: FIL-075

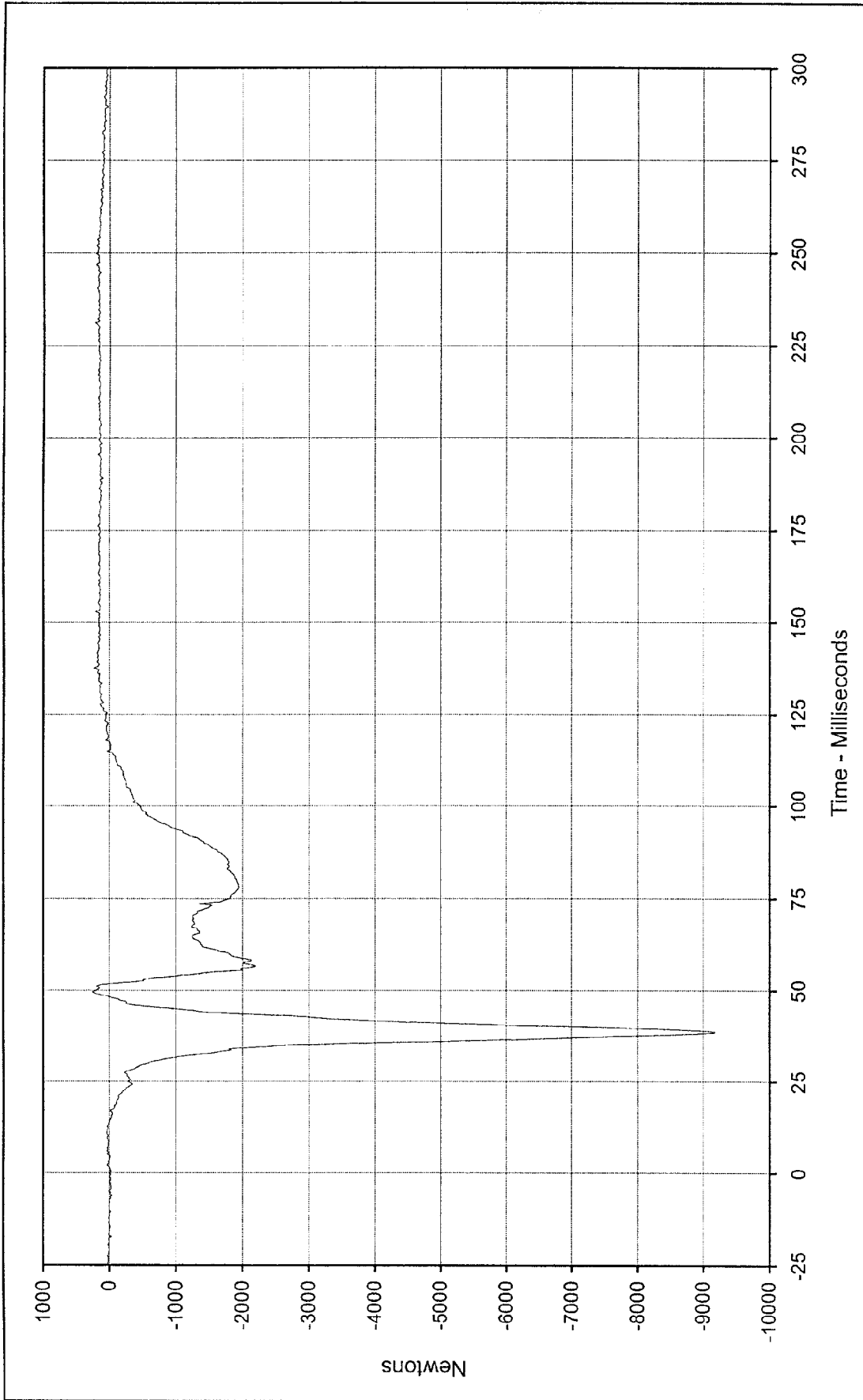
Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





Curve Description: Passenger Right Lower Tibia Force X Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 735.6 at 49.1 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -2019.7 at 39.3 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: FIL-076



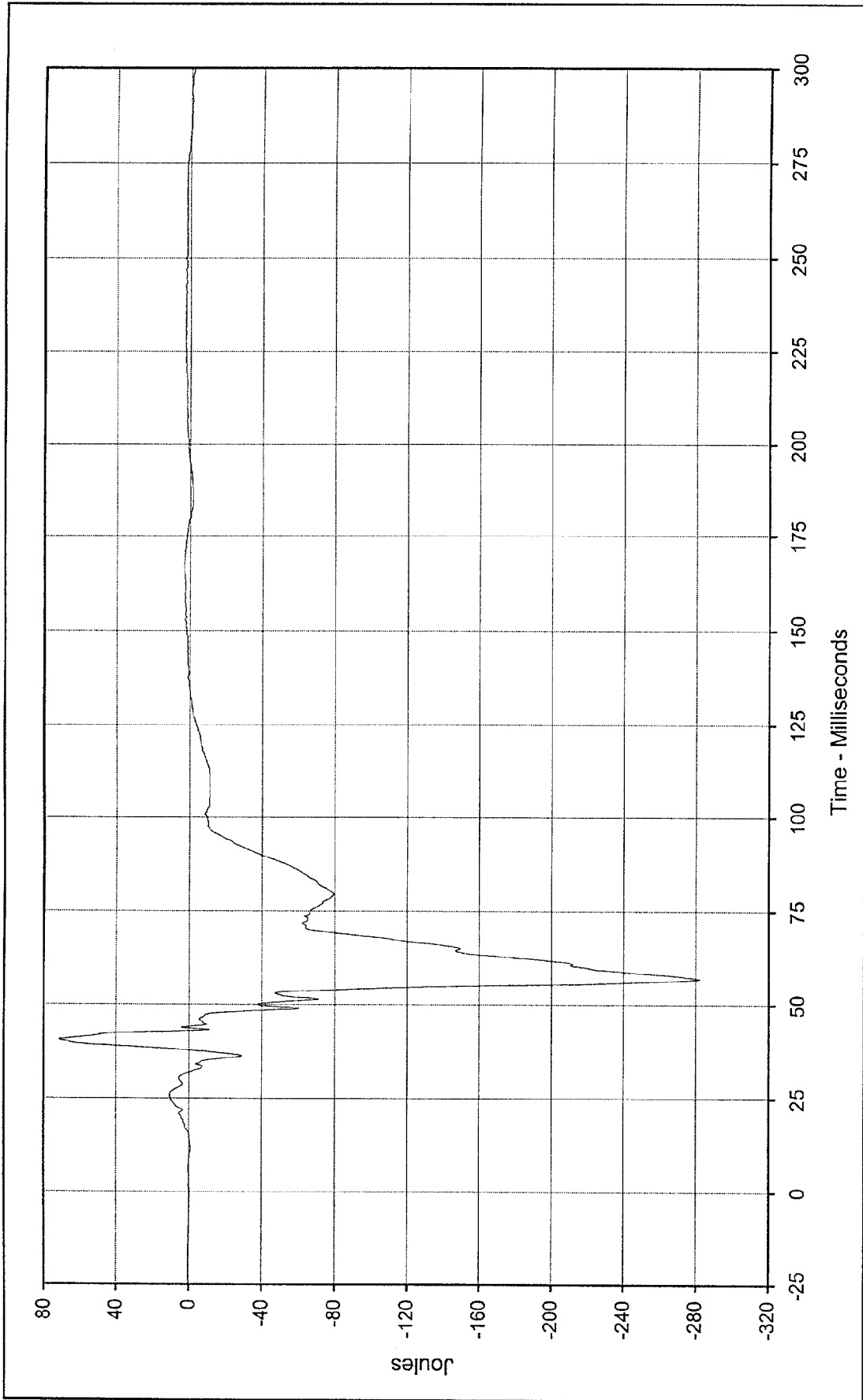


Curve Description: Passenger Right Lower Tibia Force Z
 Maximum Value: 248.9 at 49.5 Milliseconds
 Minimum Value: -9175.2 at 38.7 Milliseconds

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

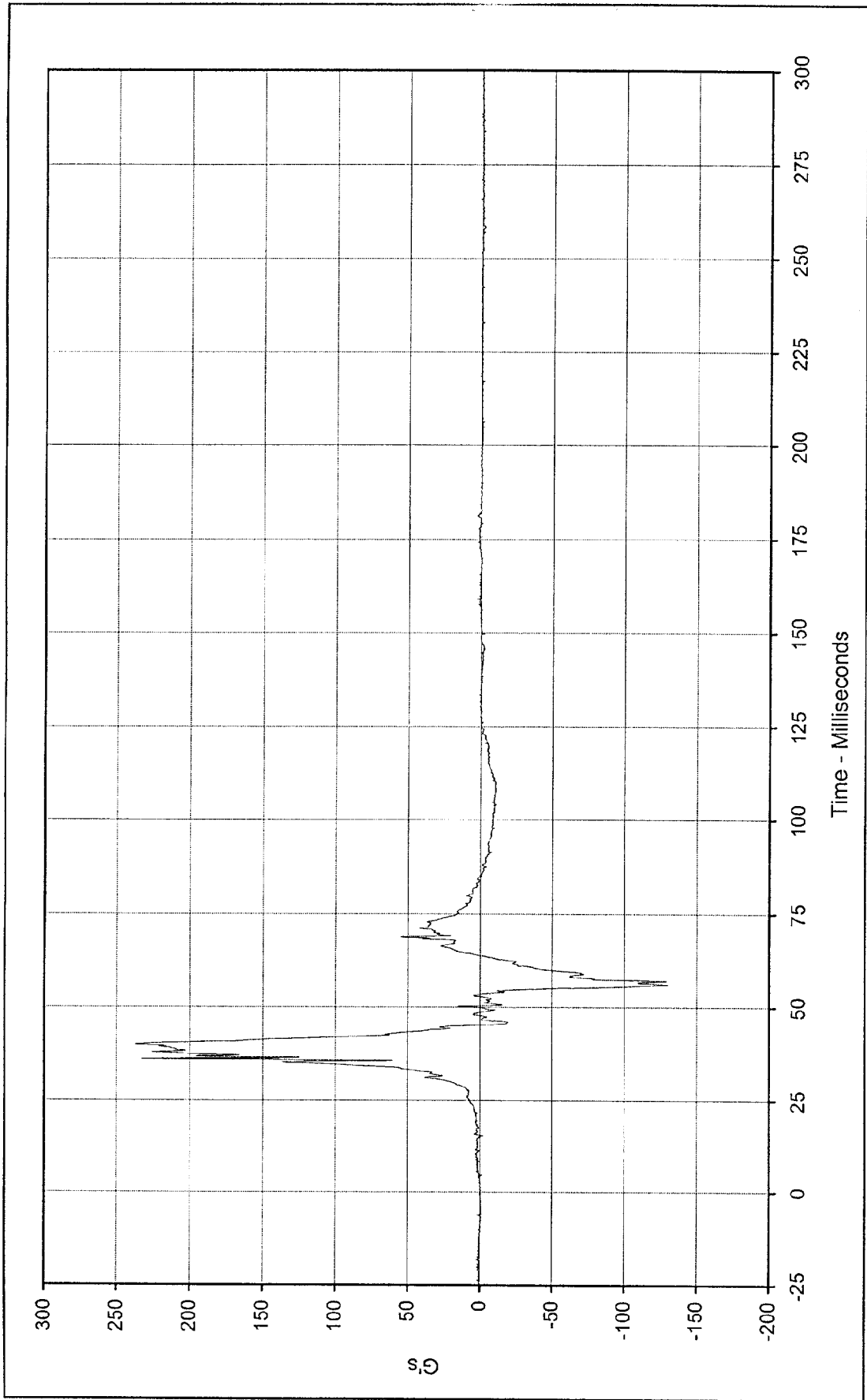


SAE Filter Class: 600
 Date of Test: 12/1/97
 Curve Number: FIL-077



Curve Description: Passenger Right lower Tibia Moment Y Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 71.4 at 40.6 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -282.0 at 56.9 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/11/97
 Curve Number: FIL-078

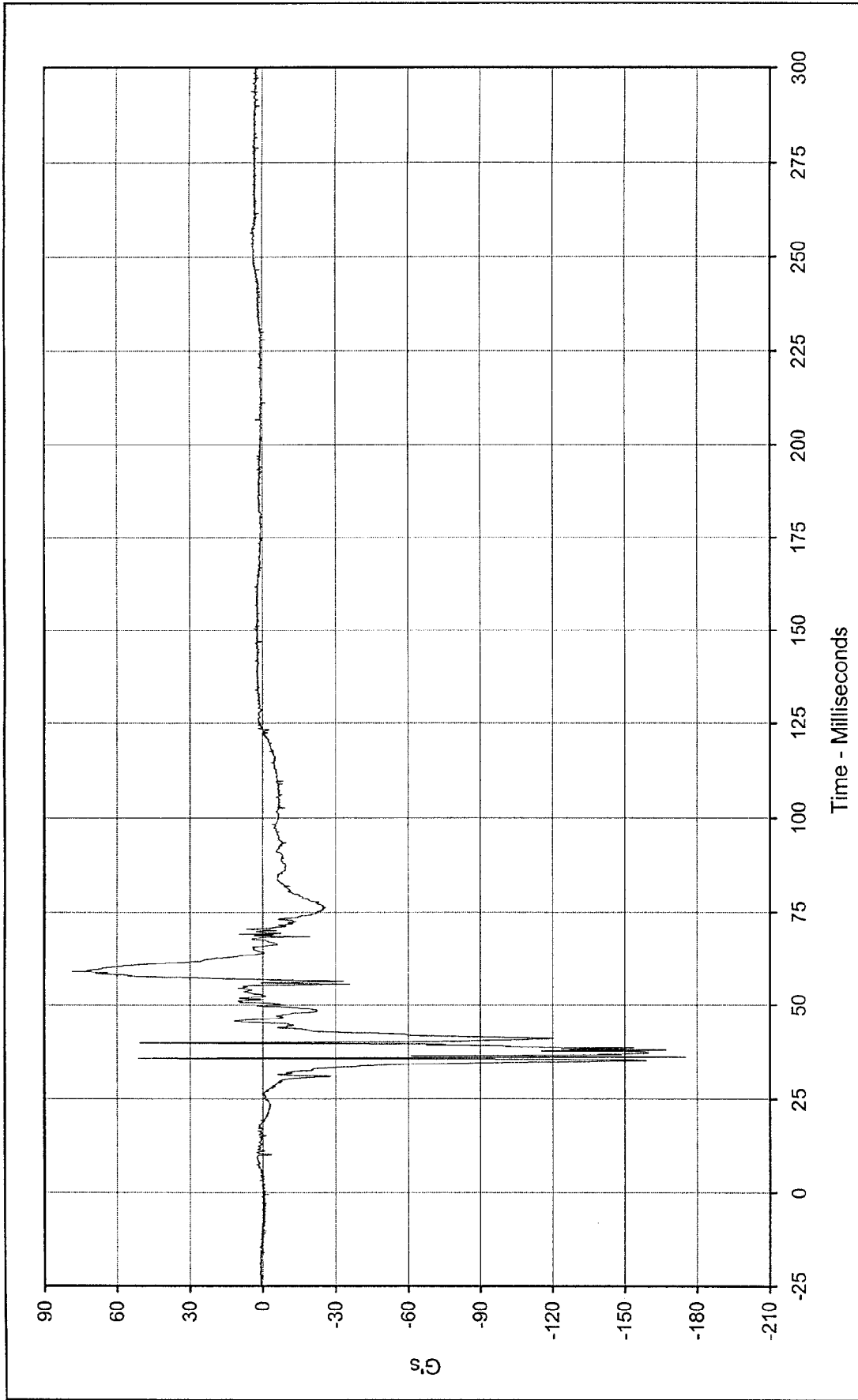




Curve Description: Passenger Left Foot Aft X
 Maximum Value: 237.1 at 40.0 Milliseconds
 Minimum Value: -129.9 at 56.1 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/1/97
 Curve Number: FIL-079

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





Curve Description: Passenger Left Foot Aft Z Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 78.4 at 58.9 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

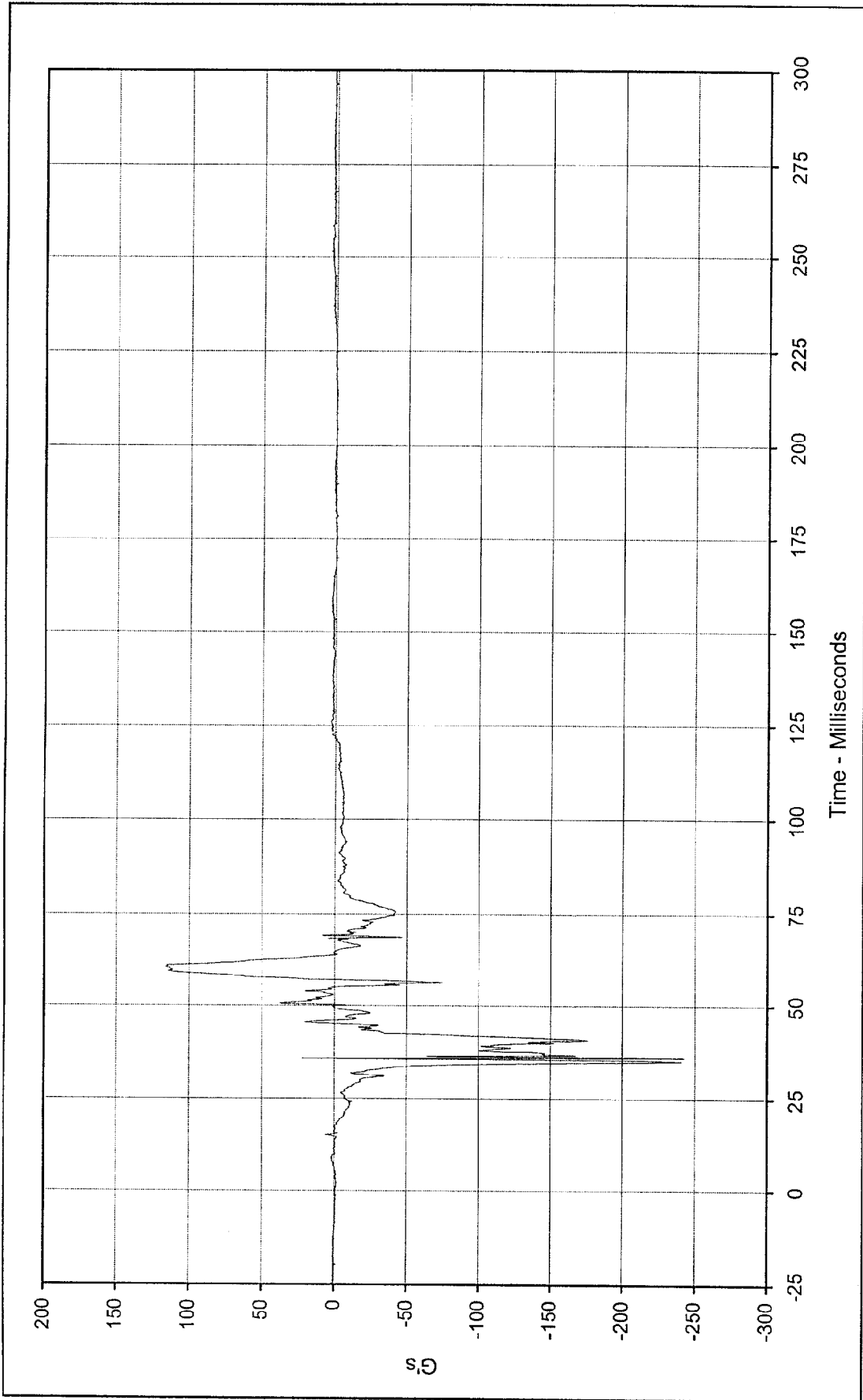
Minimum Value: -175.0 at 36.0 Milliseconds

SAE Filter Class: 1000

Date of Test: 12/11/97

Curve Number: FIL-080

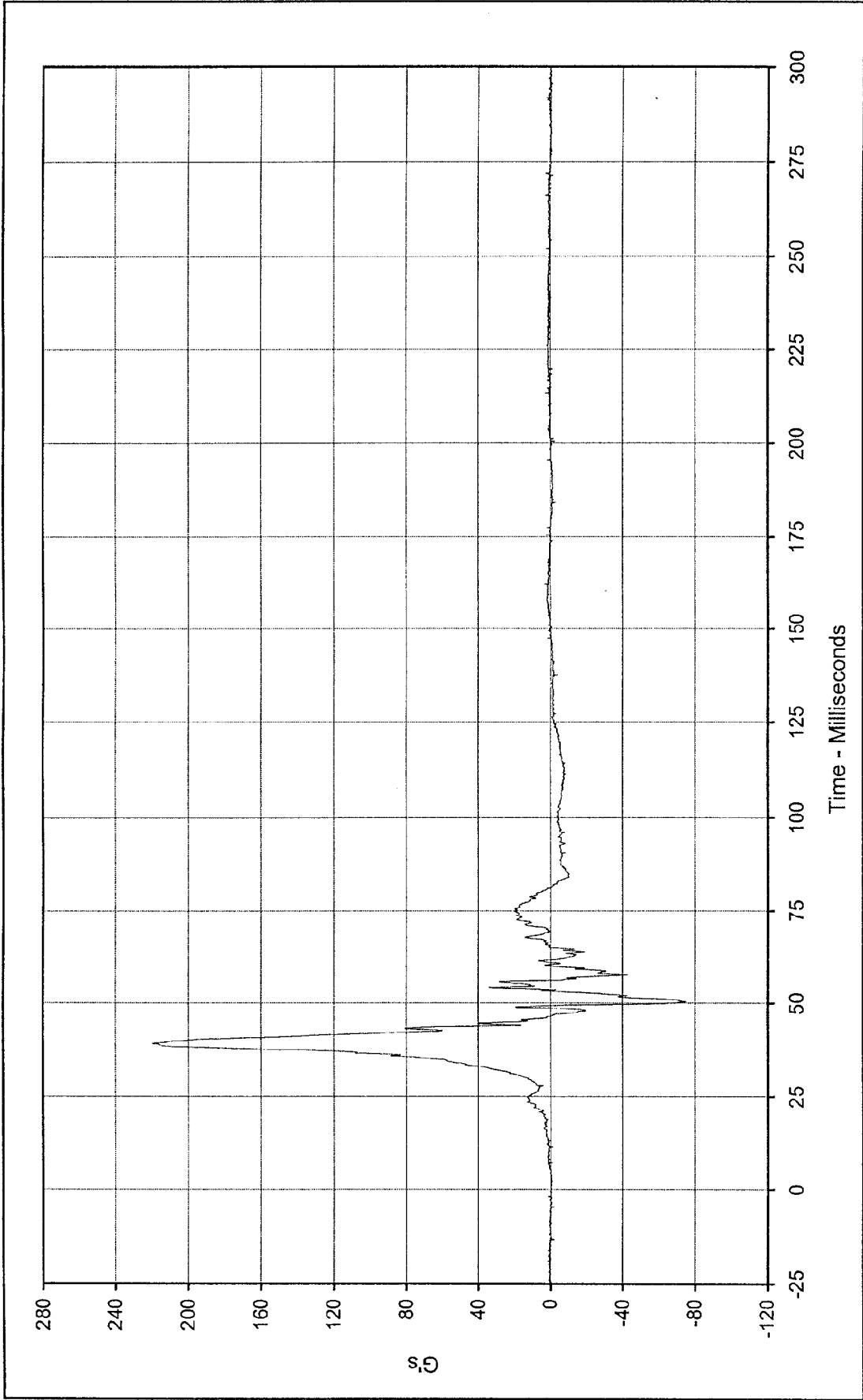




Curve Description: Passenger Left Foot Fore Z
 Maximum Value: 116.0 at 60.4 Milliseconds
 Minimum Value: -241.6 at 36.0 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-081

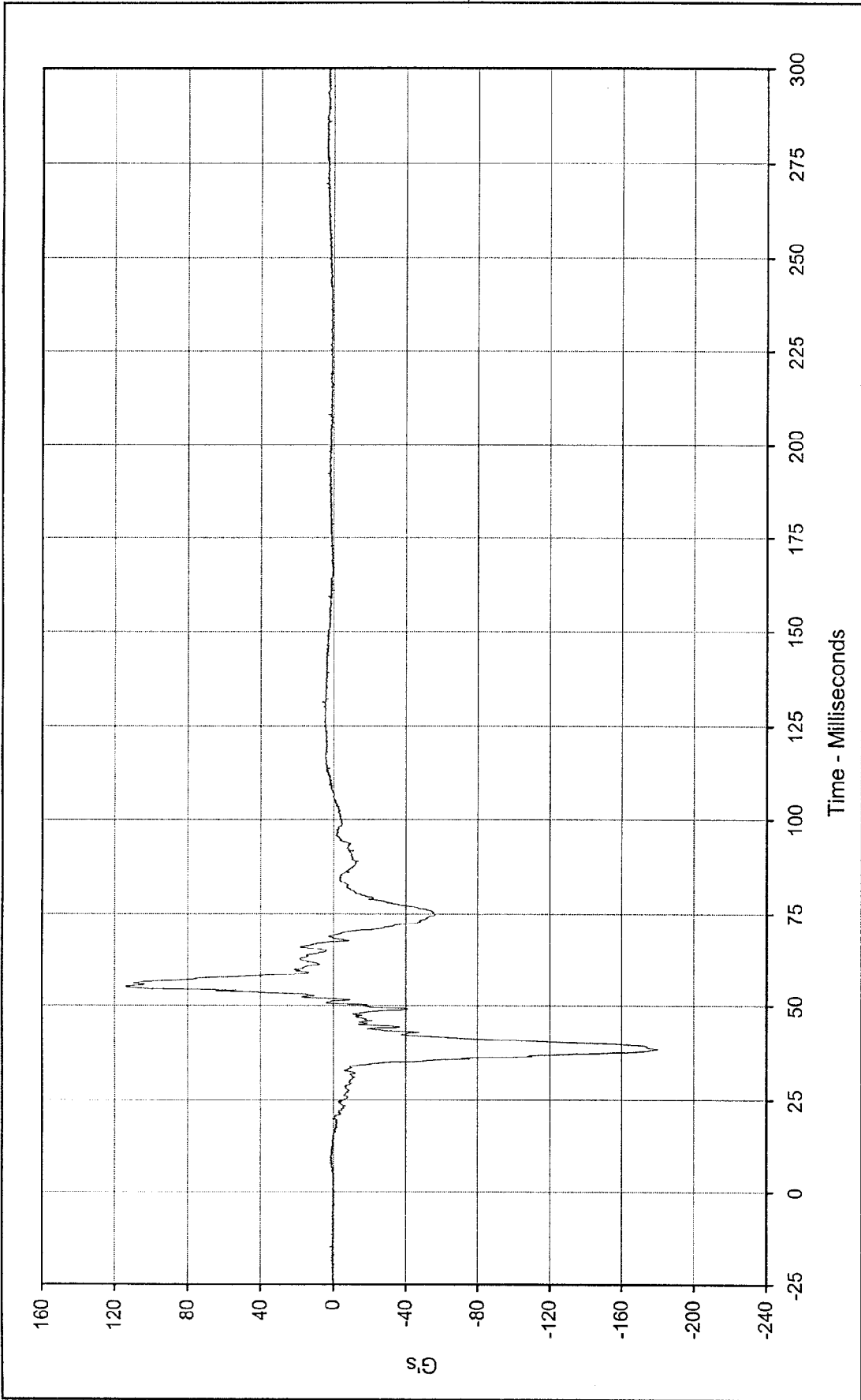
Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





Curve Description: Passenger Right Foot Aft X
 Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 219.7 at 39.2 Milliseconds
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -75.0 at 50.4 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-082

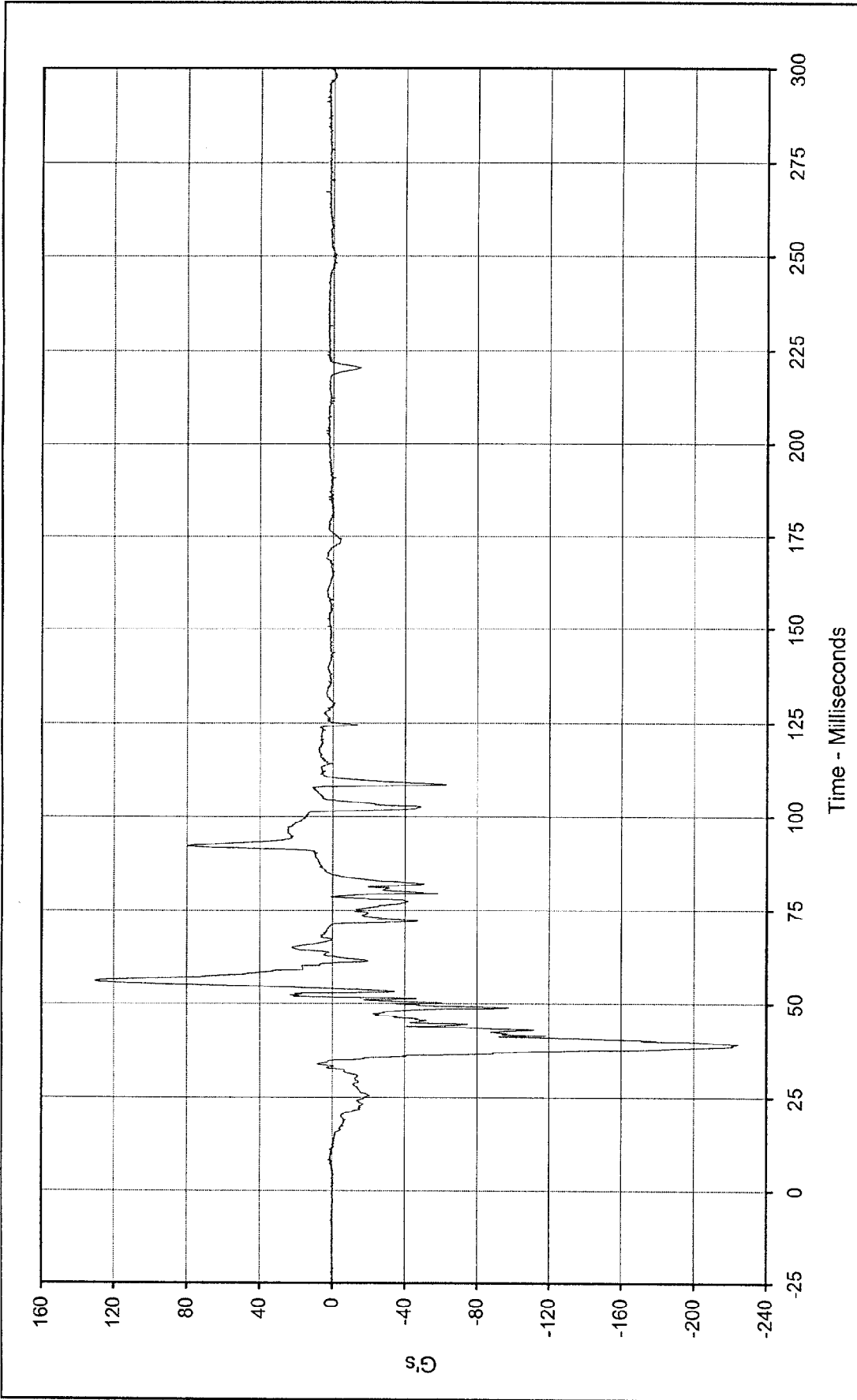




Curve Description: Passenger Right Foot Aff Z
 Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

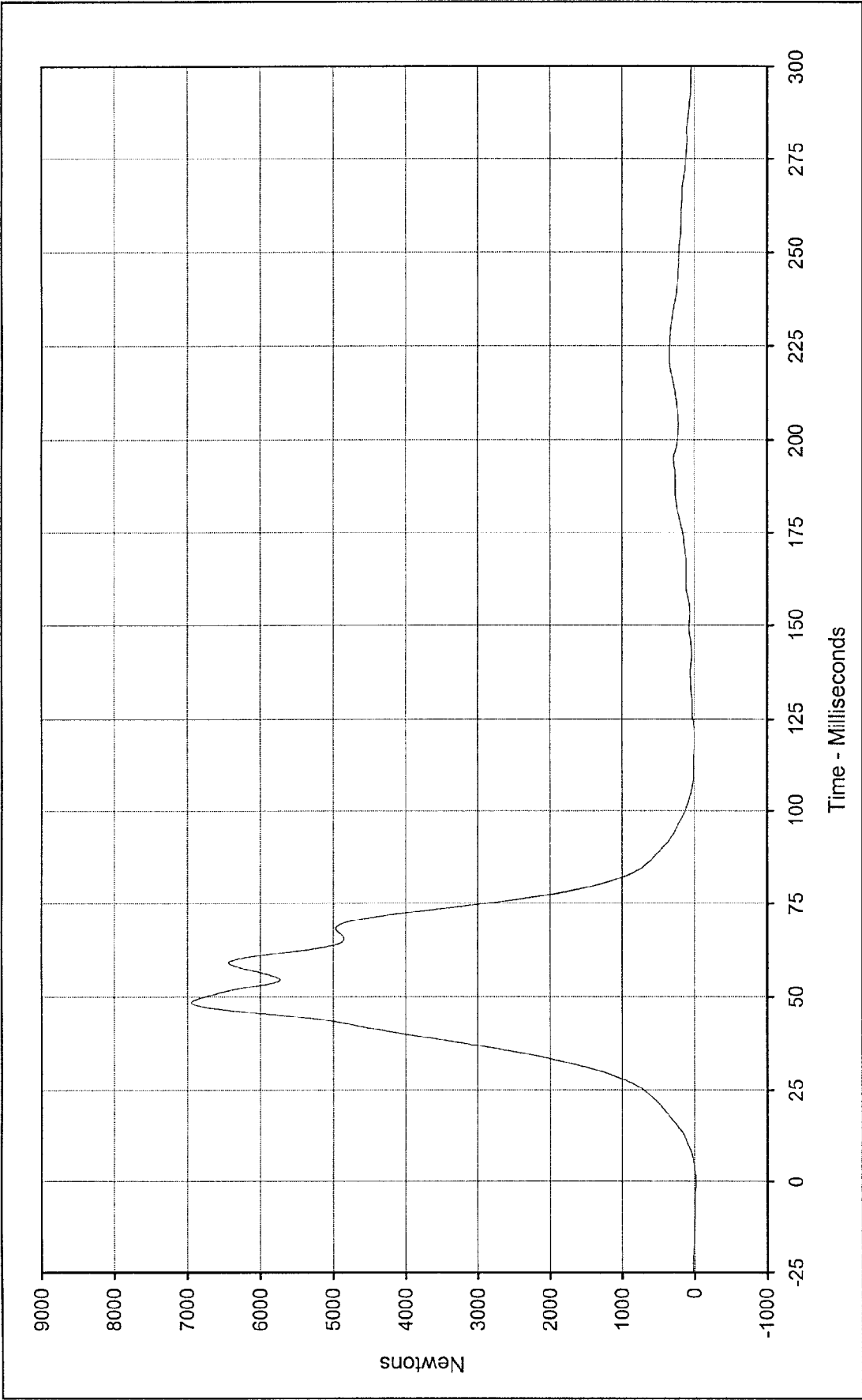
Maximum Value: 113.8 at 55.1 Milliseconds
 Minimum Value: -179.9 at 38.4 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-083





Curve Description: Passenger Right Foot Fore Z Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 130.2 at 56.1 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -224.8 at 39.1 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/11/97
 Curve Number: FIL-084





Curve Description: Passenger Lap Belt Force

Maximum Value: 6944.5 at 48.5 Milliseconds

Minimum Value: -21.7 at 0.1 Milliseconds

SAE Filter Class: 60

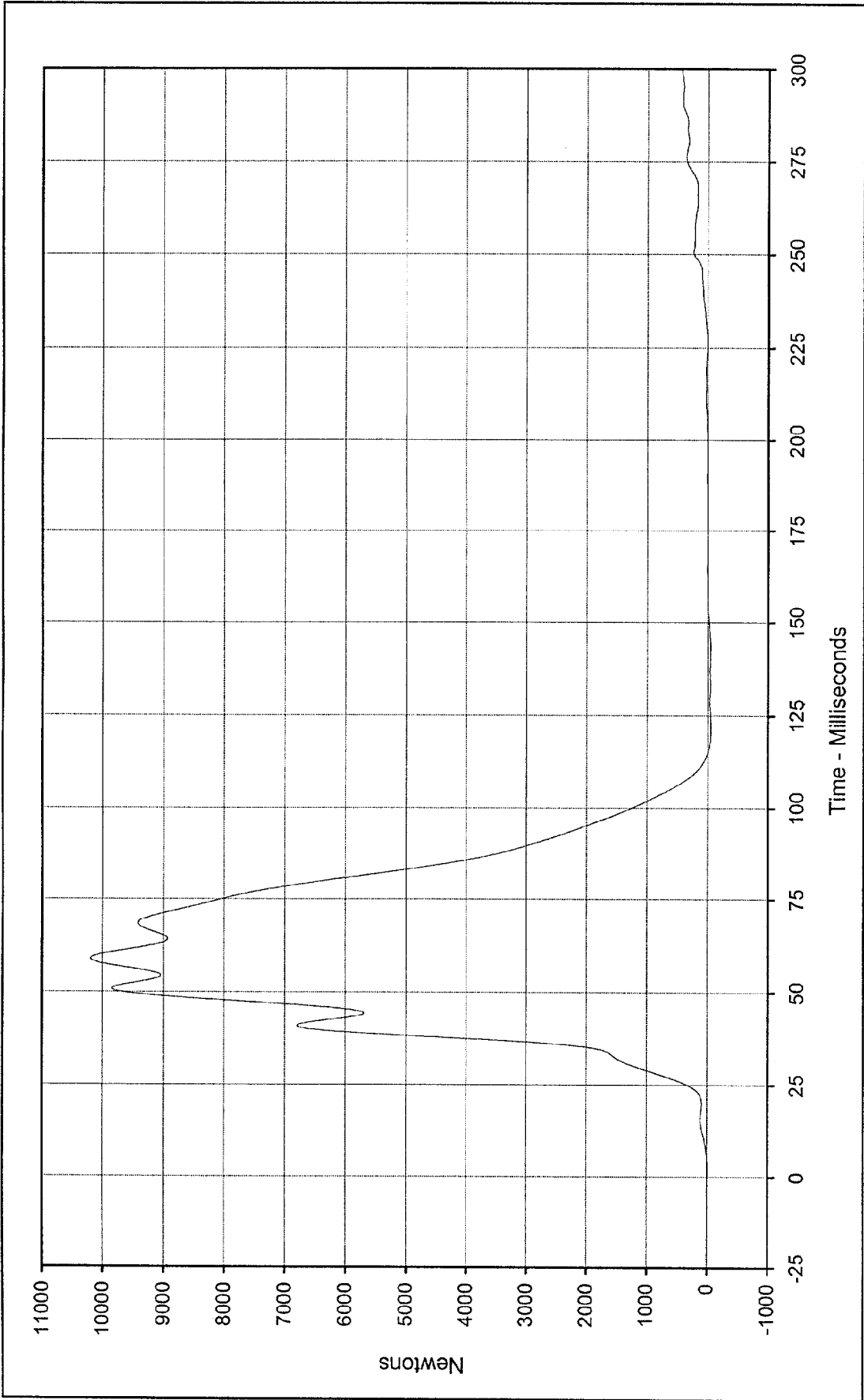
Date of Test: 12/11/97

Curve Number: FIL-085

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





Curve Description: Passenger Shoulder Belt Force Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 10196.1 at 58.8 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

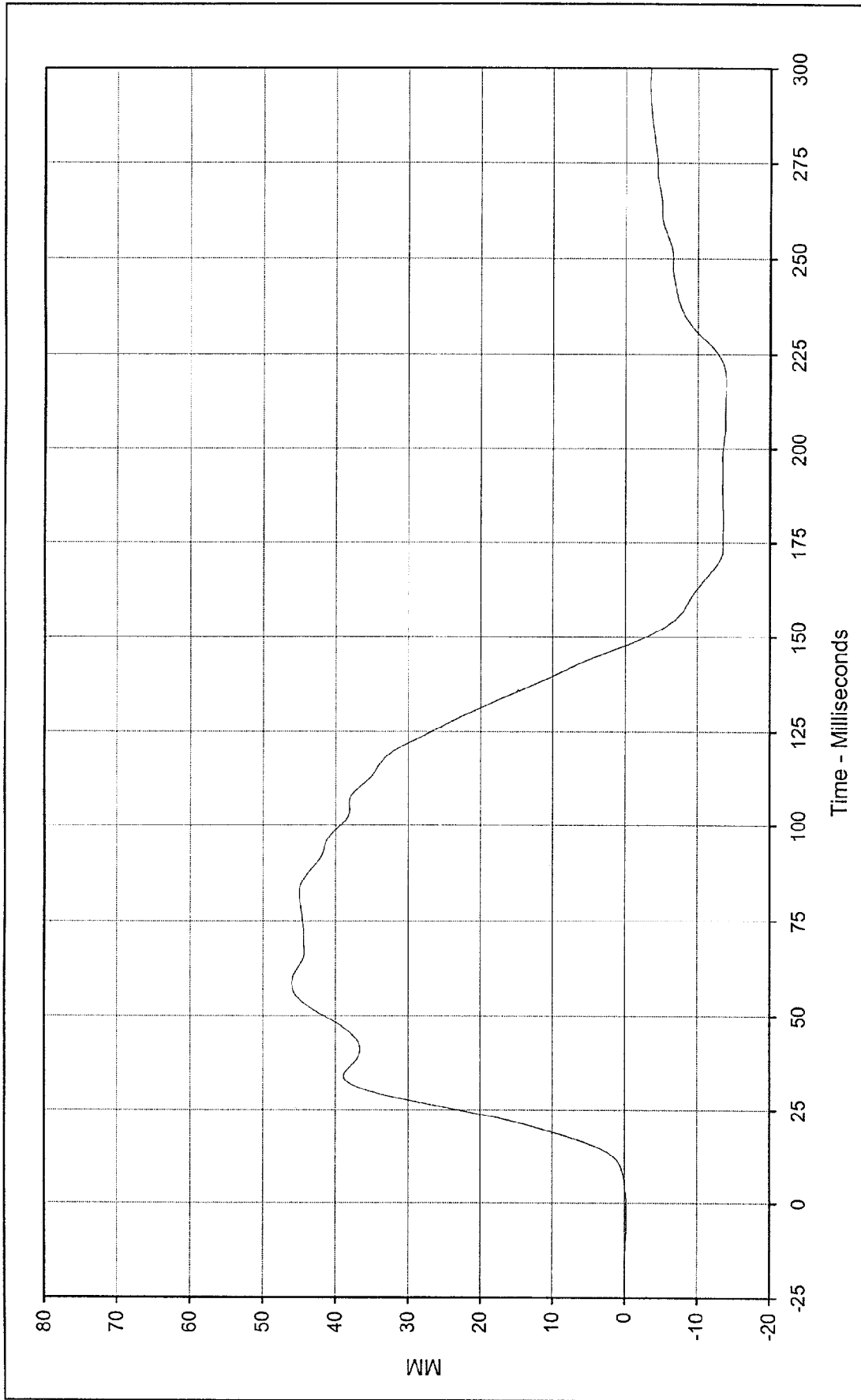
Minimum Value: -57.0 at 122.6 Milliseconds

SAE Filter Class: 60

Date of Test: 12/11/97

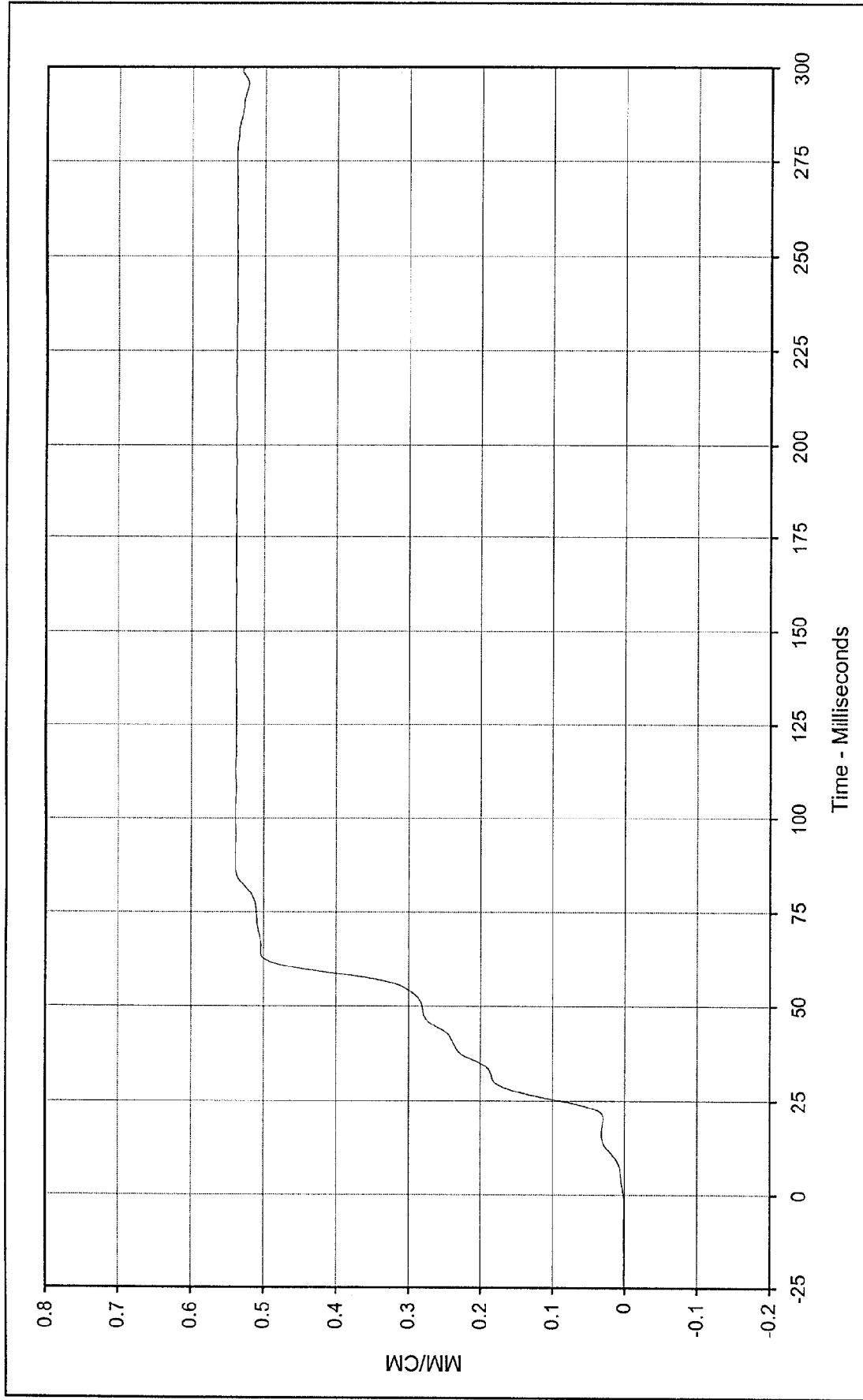
Curve Number: FIL-086





Curve Description: Passenger Shoulder Belt Pullover Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 46.0 at 58.5 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -13.9 at 217.8 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/11/97
 Curve Number: FIL-087

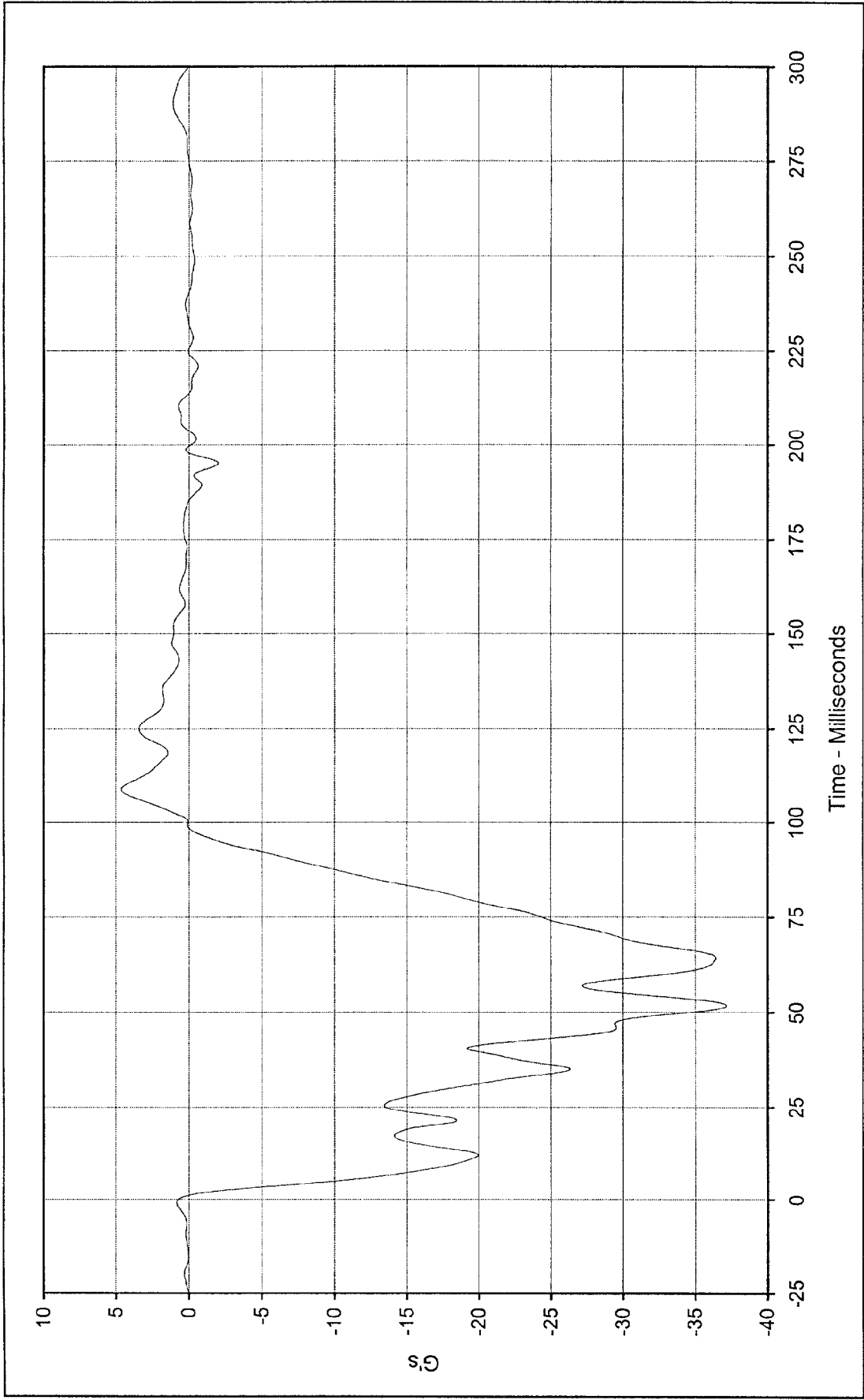




Curve Description: Passenger Shoulder Belt Elongation Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 0.54 at 90.8 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: 0.00 at 0.0 Milliseconds



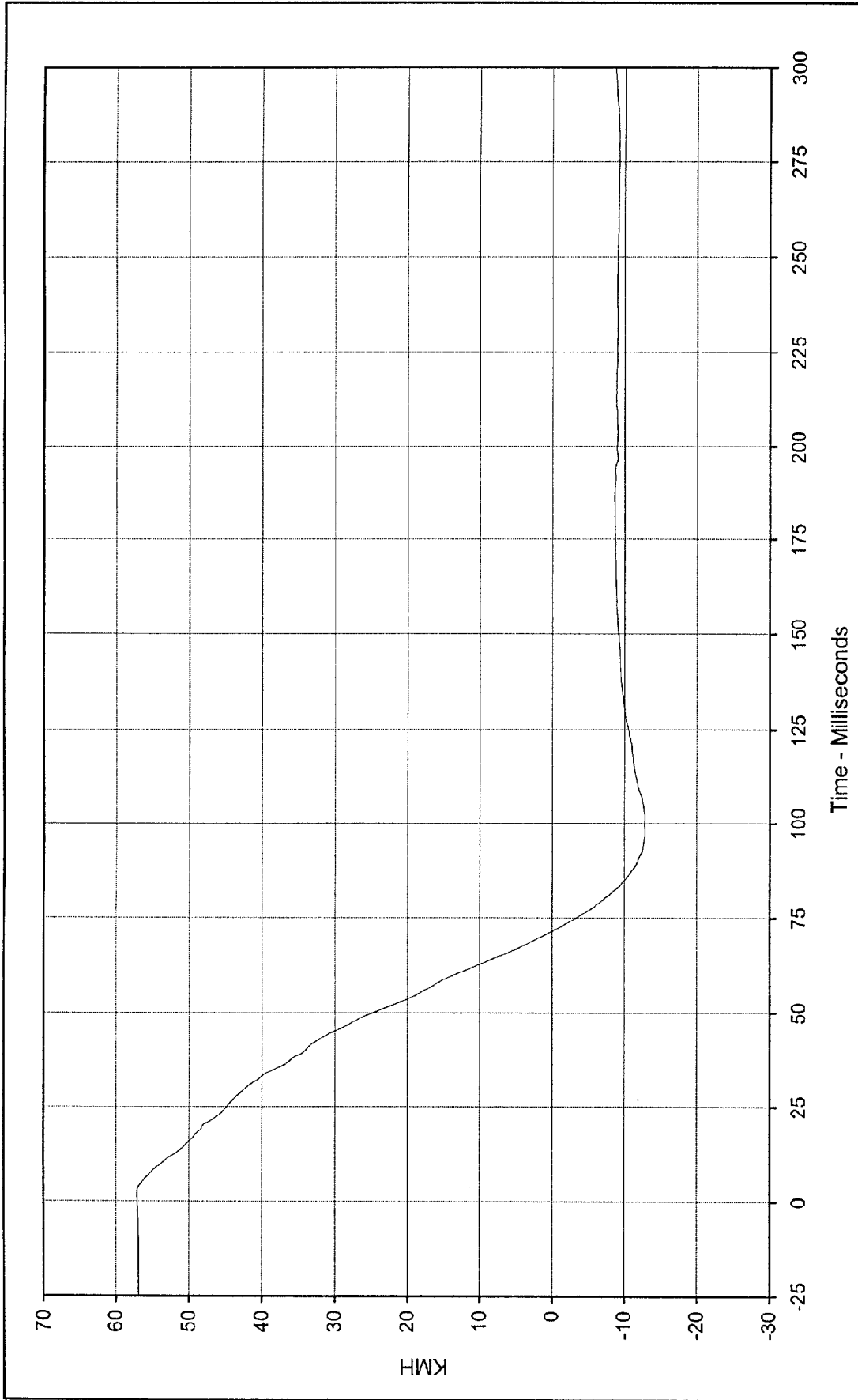
SAE Filter Class: 60
 Date of Test: 12/11/97
 Curve Number: FIL-088



Curve Description: Vehicle Left Rear Primary Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 4.6 at 108.7 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -37.2 at 51.8 Milliseconds



SAE Filter Class: 60
 Date of Test: 12/11/97
 Curve Number: FIL-089



Curve Description: Vehicle Left Rear Primary Velocity Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 57.1 at 2.4 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

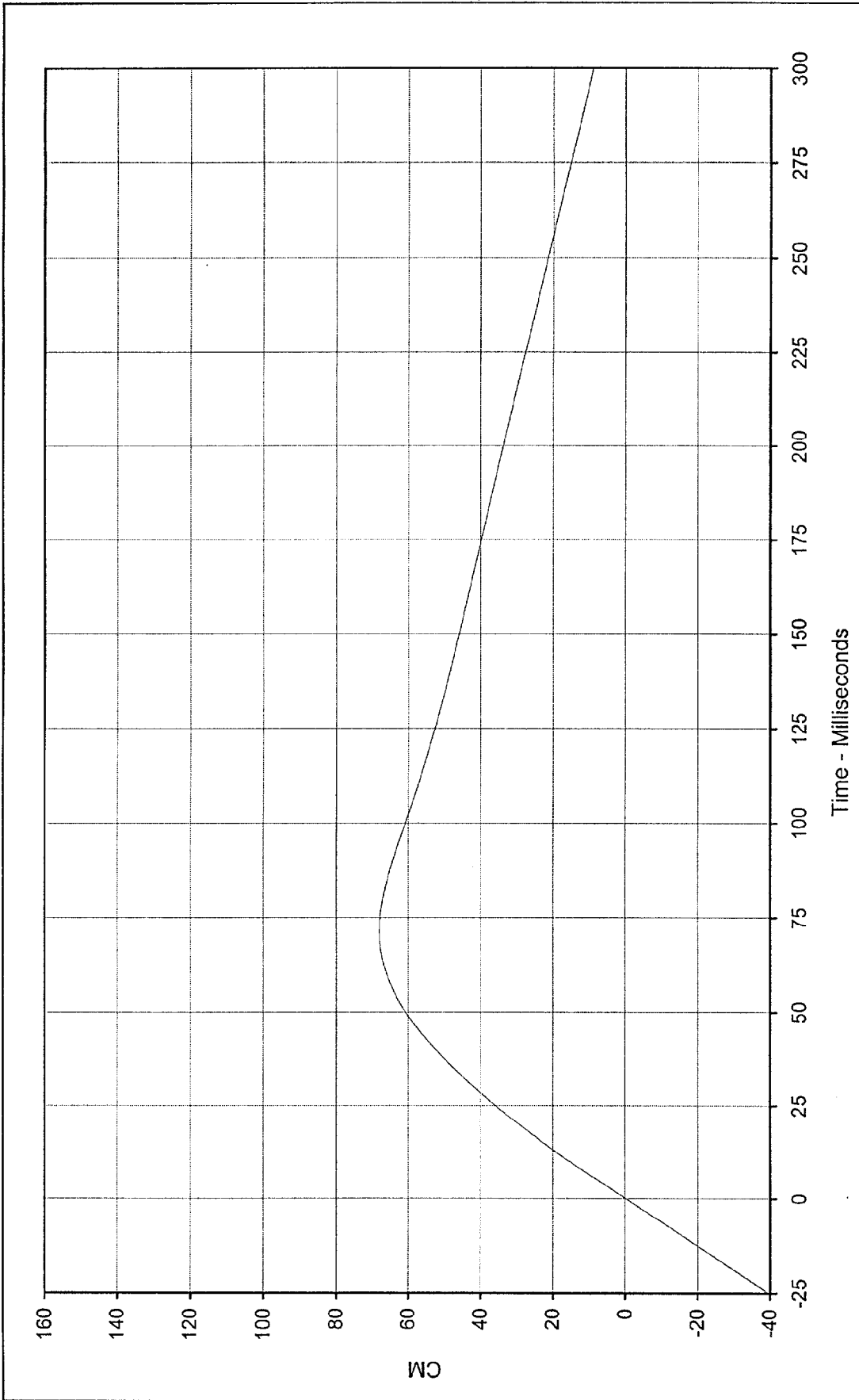
Minimum Value: -12.8 at 101.6 Milliseconds

SAE Filter Class: 180

Date of Test: 12/11/97

Curve Number: IN1-089

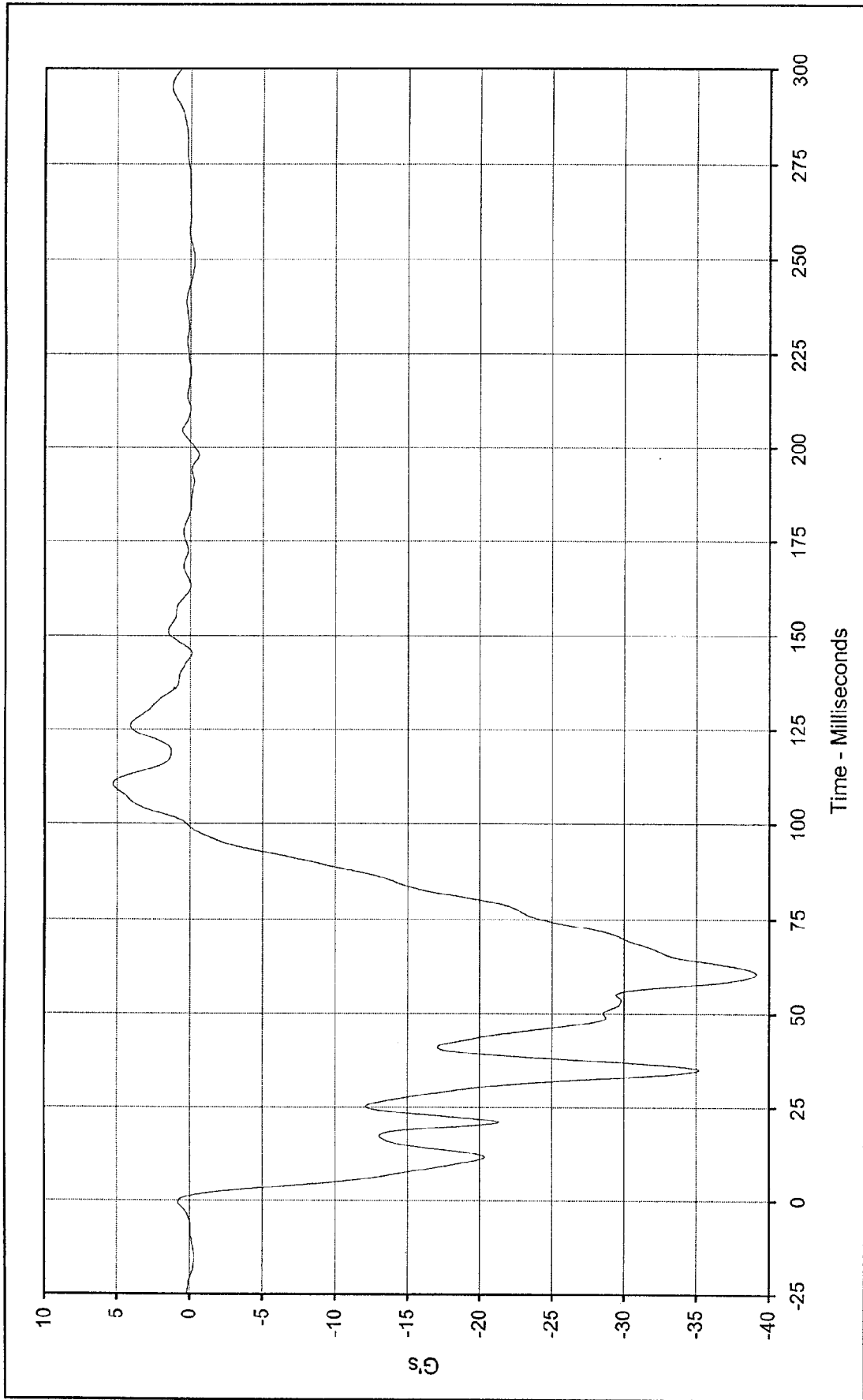




Curve Description: Vehicle Left Rear Primary Displ.
 Maximum Value: 68.0 at 71.3 Milliseconds
 Minimum Value: -0.1 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN2-089

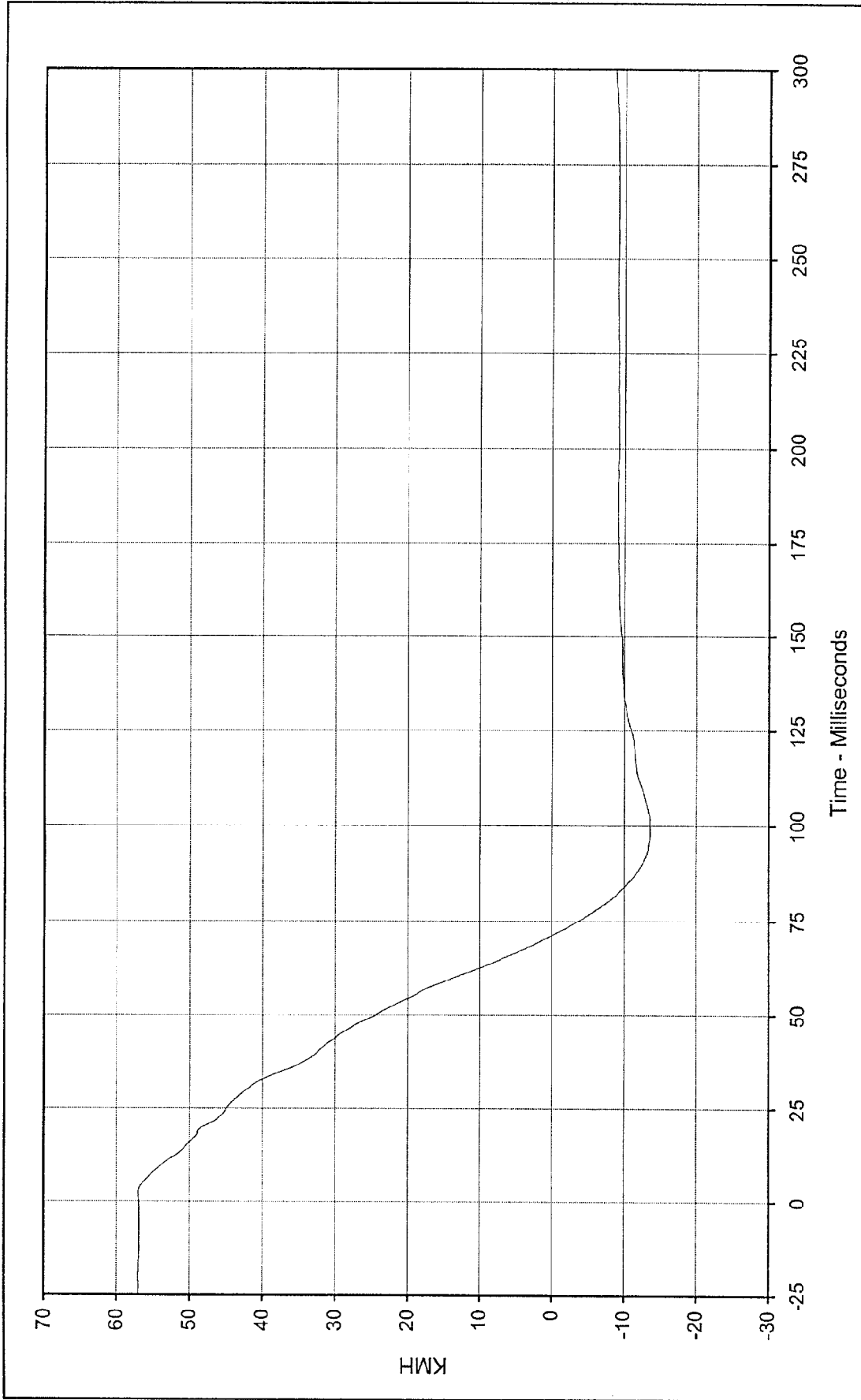
Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





Curve Description: Vehicle Right Rear Primary Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 5.3 at 110.3 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -39.1 at 60.5 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/11/97
 Curve Number: FIL-090

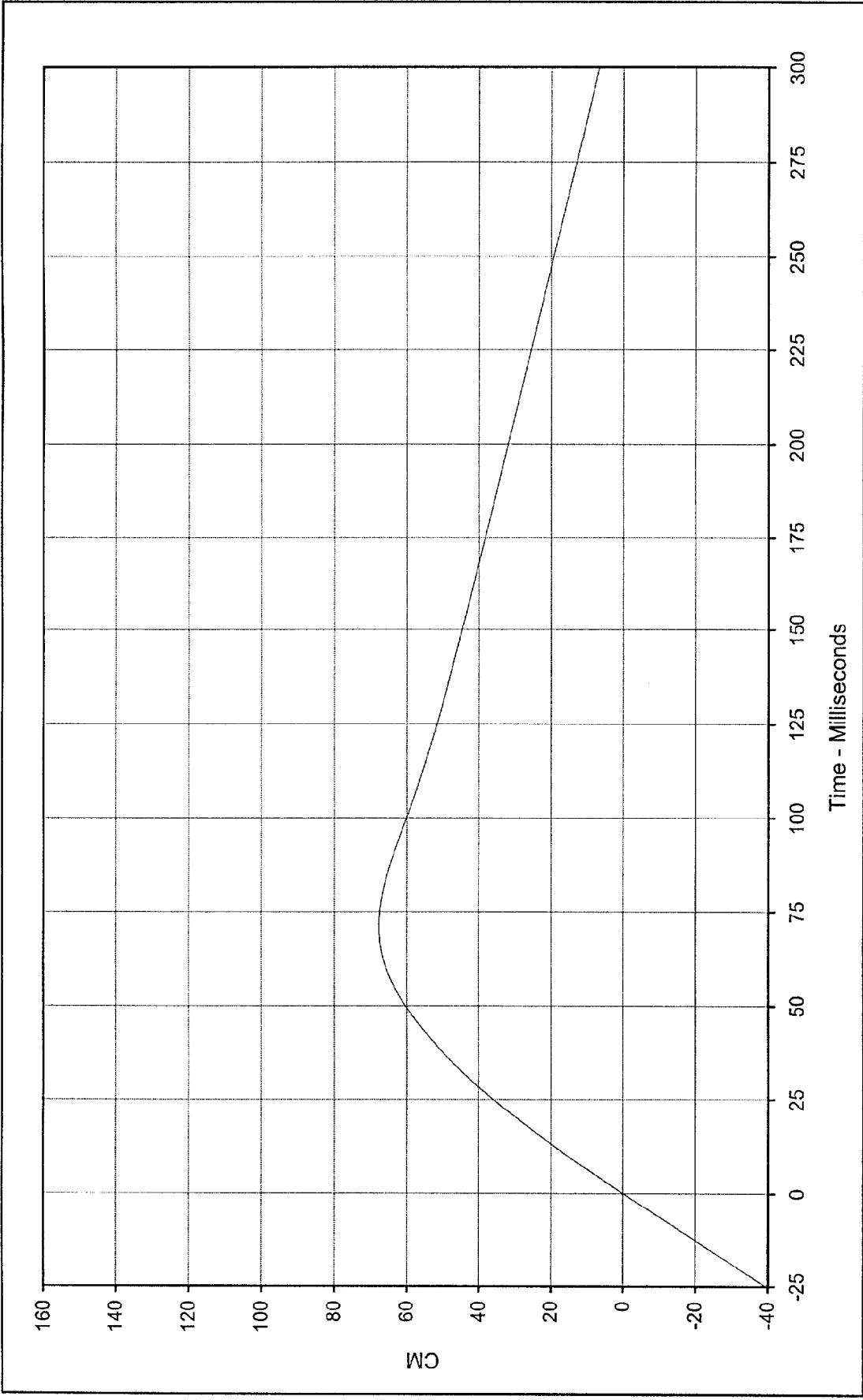




Curve Description: Vehicle Right Rear Primary Velocity Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 57.0 at 2.6 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -13.6 at 97.8 Milliseconds

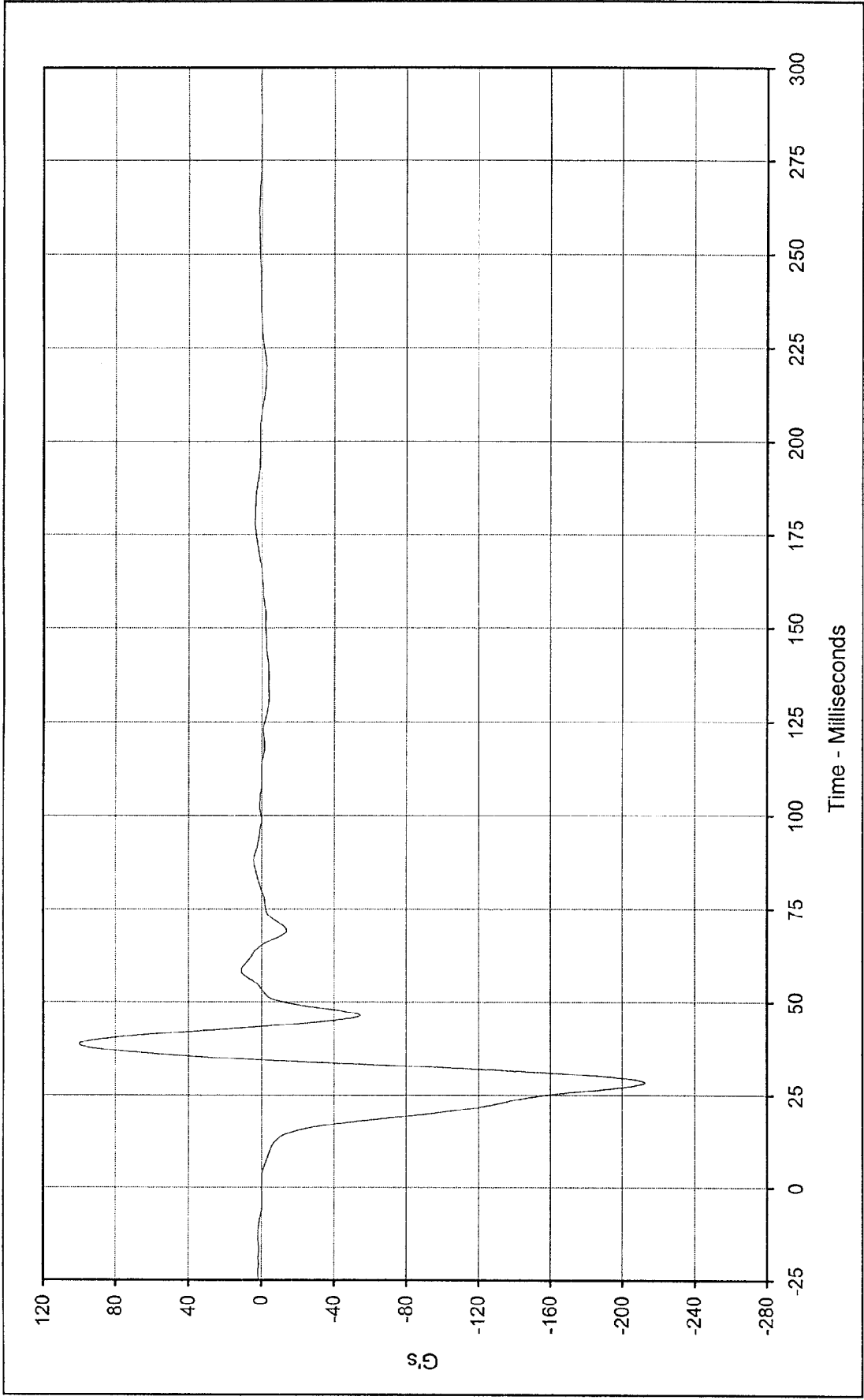


SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN1-090



Curve Description: Vehicle Right Rear Primary Displ. Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 67.6 at 71.1 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -0.1 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN2-090

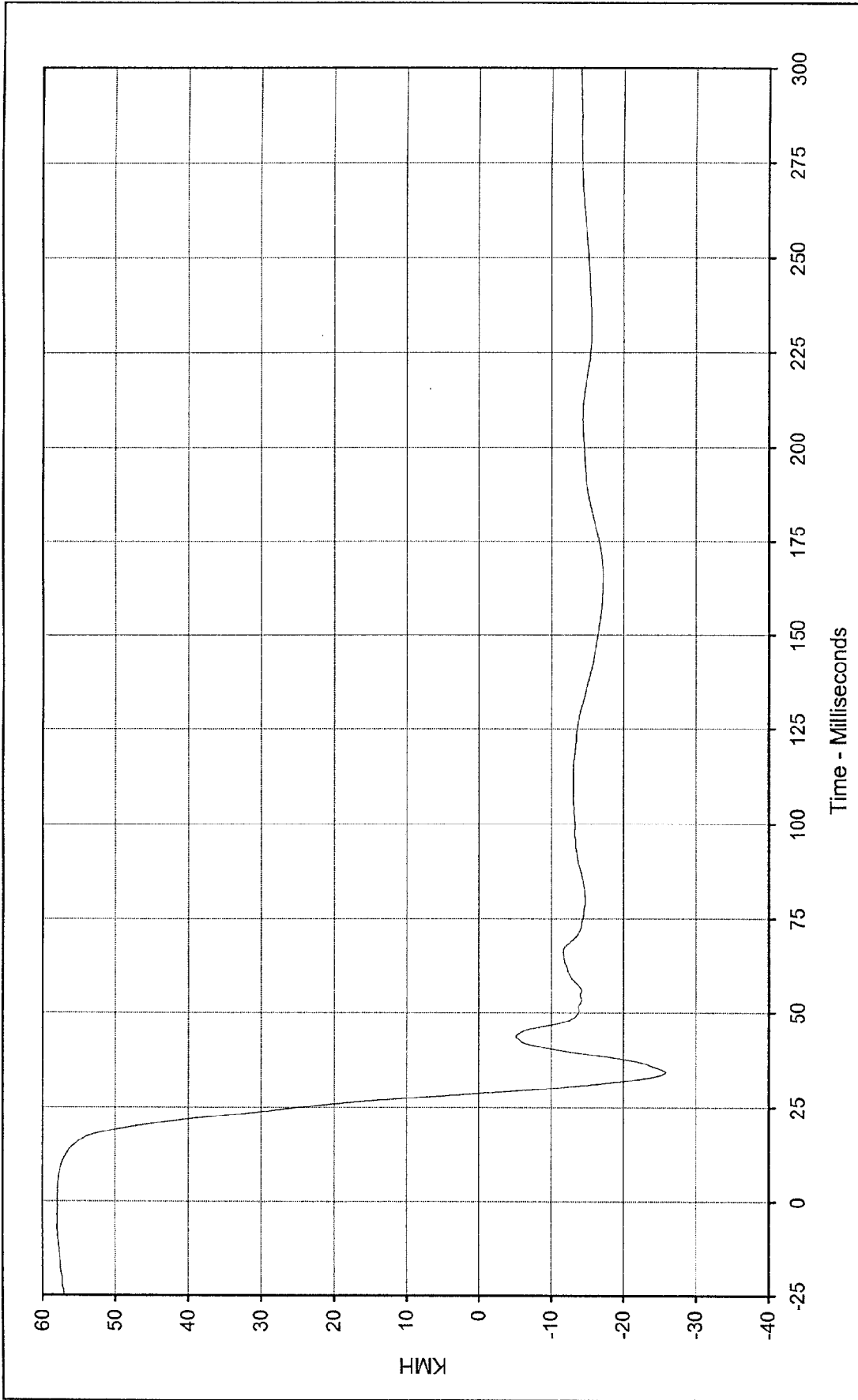




Curve Description: Vehicle Engine Top
 Maximum Value: 99.9 at 38.7 Milliseconds
 Minimum Value: -212.5 at 28.4 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/11/97
 Curve Number: FIL-091

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan





Curve Description: Vehicle Engine Top Velocity Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 58.0 at 0.6 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

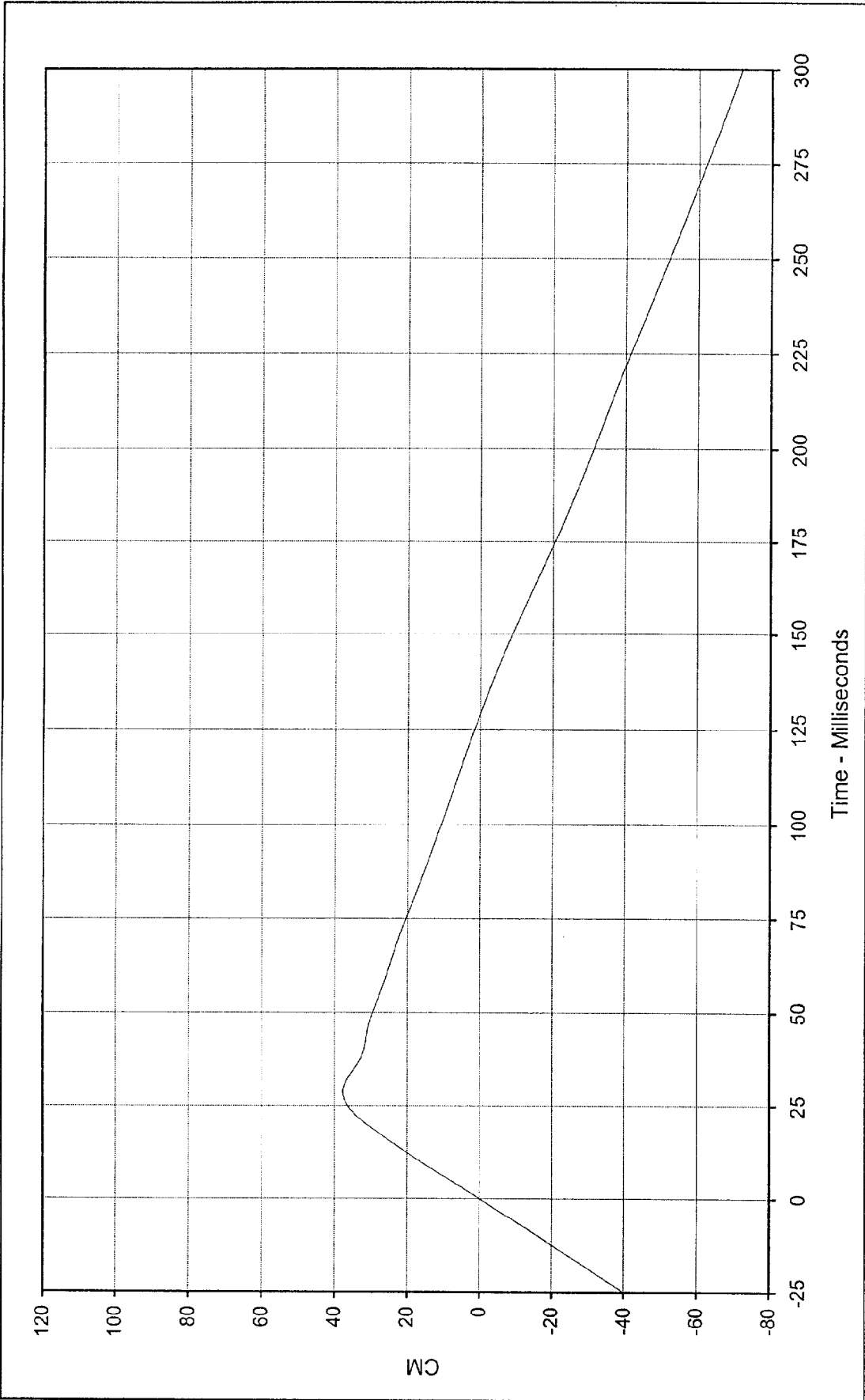
Minimum Value: -25.9 at 34.1 Milliseconds

SAE Filter Class: 180

Date of Test: 12/11/97

Curve Number: IN1-091





Curve Description: Vehicle Engine Top Displ. Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 37.7 at 28.7 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

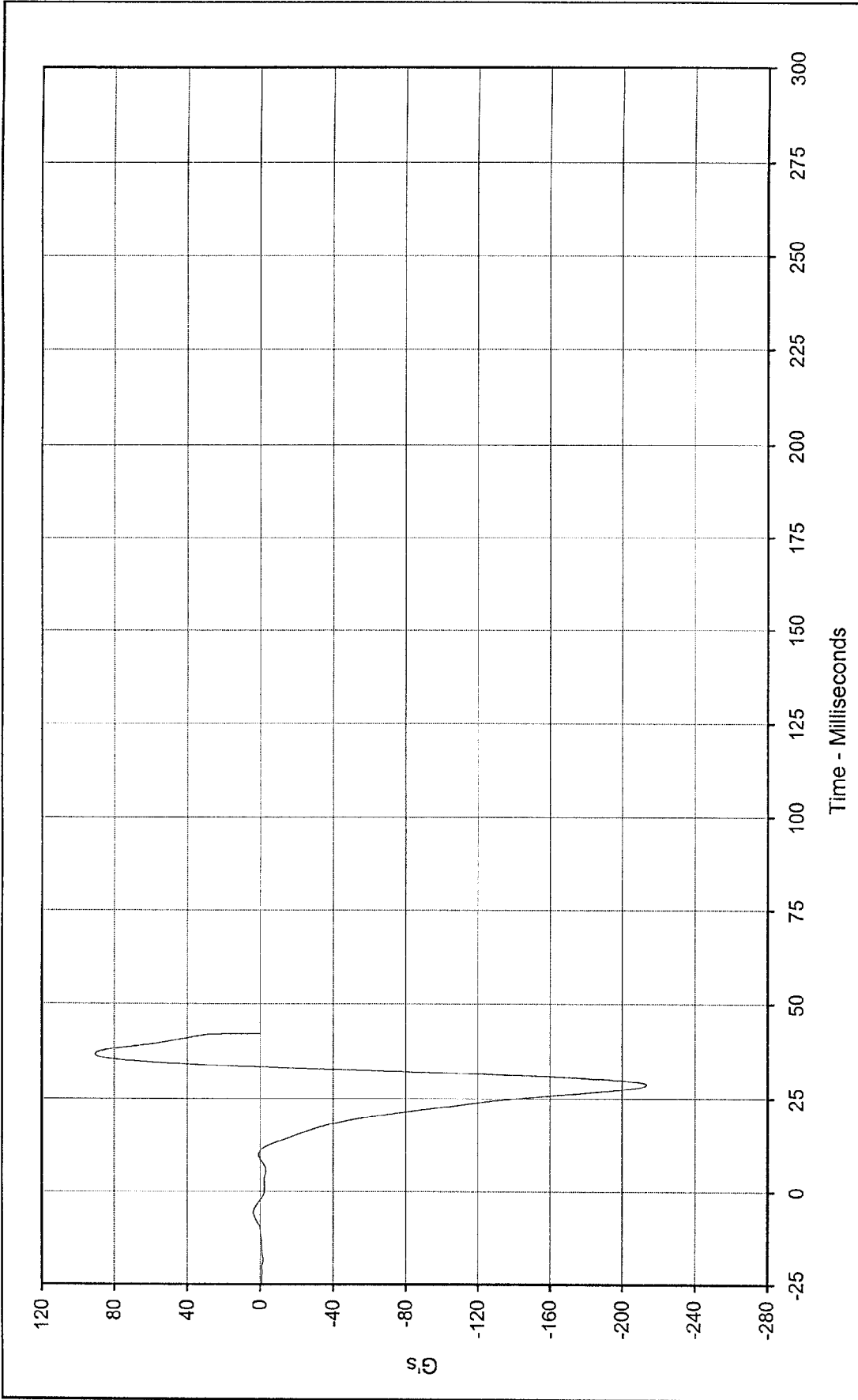
Minimum Value: -71.9 at 299.9 Milliseconds

SAE Filter Class: 180

Date of Test: 12/11/97

Curve Number: IN2-091

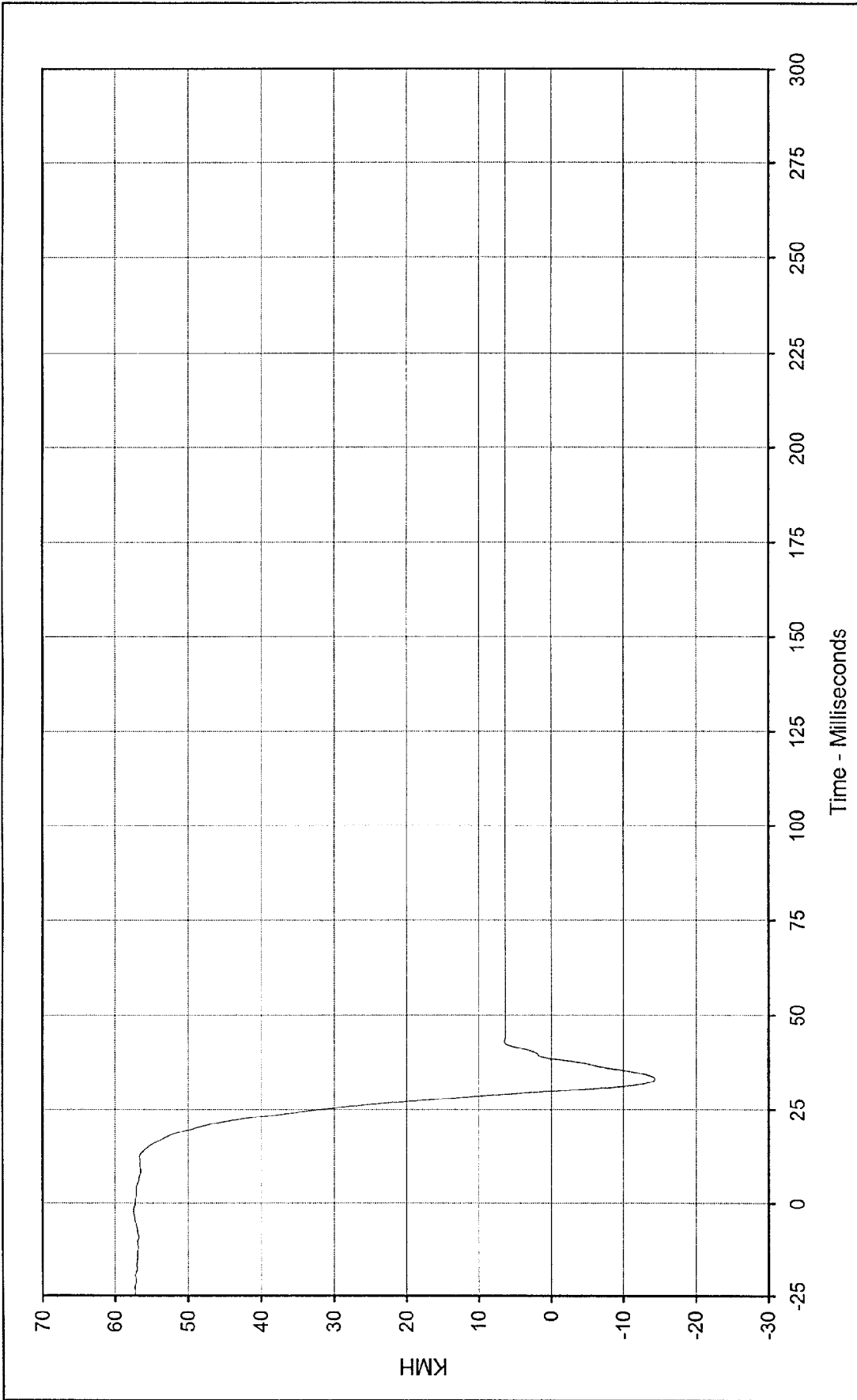




Curve Description: Vehicle Engine Bottom * Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 90.4 at 36.6 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -213.6 at 28.7 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/11/97
 Curve Number: FIL-092



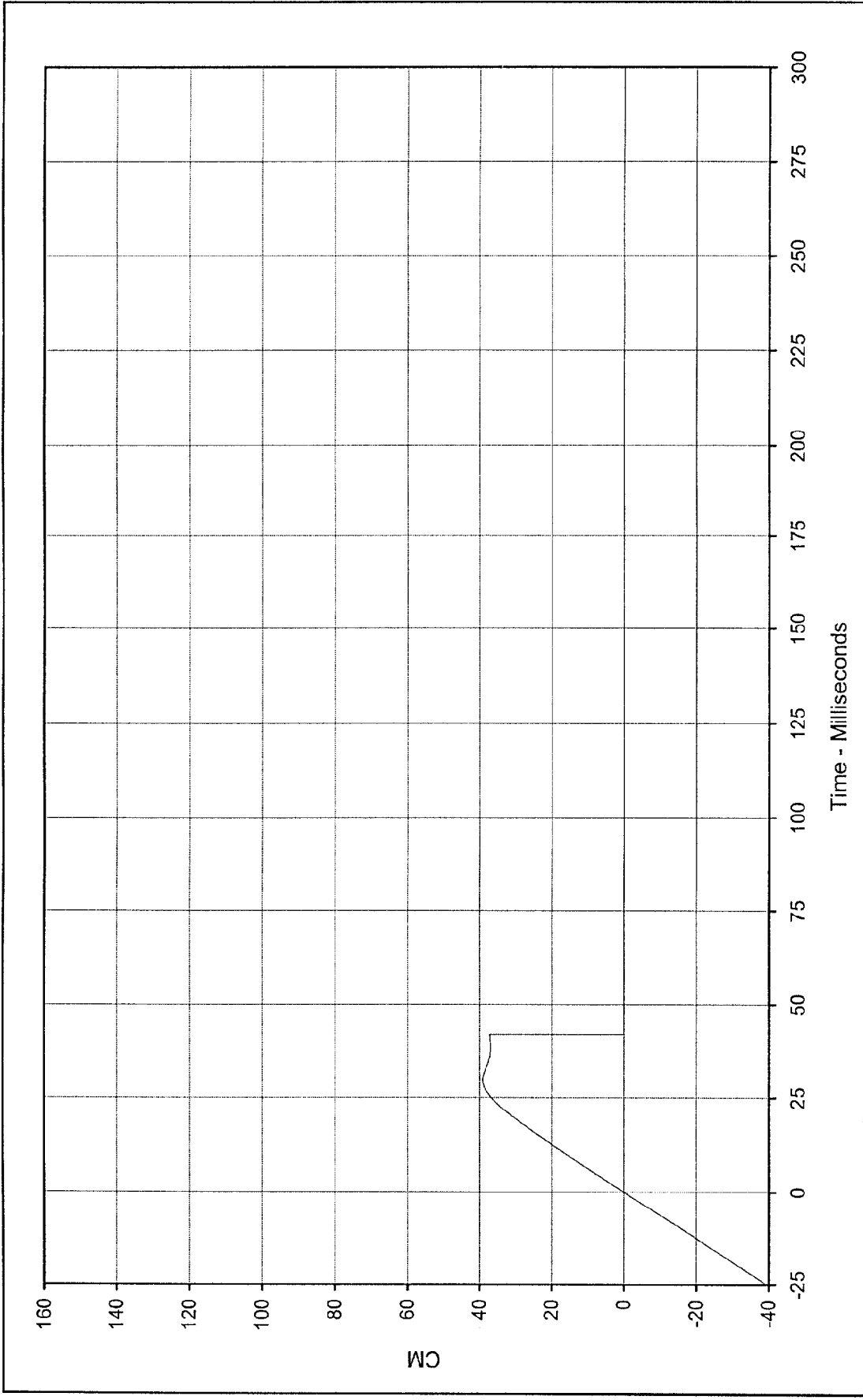
* Channel Failed at 42.0 Msec.



Curve Description: Vehicle Engine Bottom Velocity * Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 57.3 at 0.0 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -14.3 at 33.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN1-092



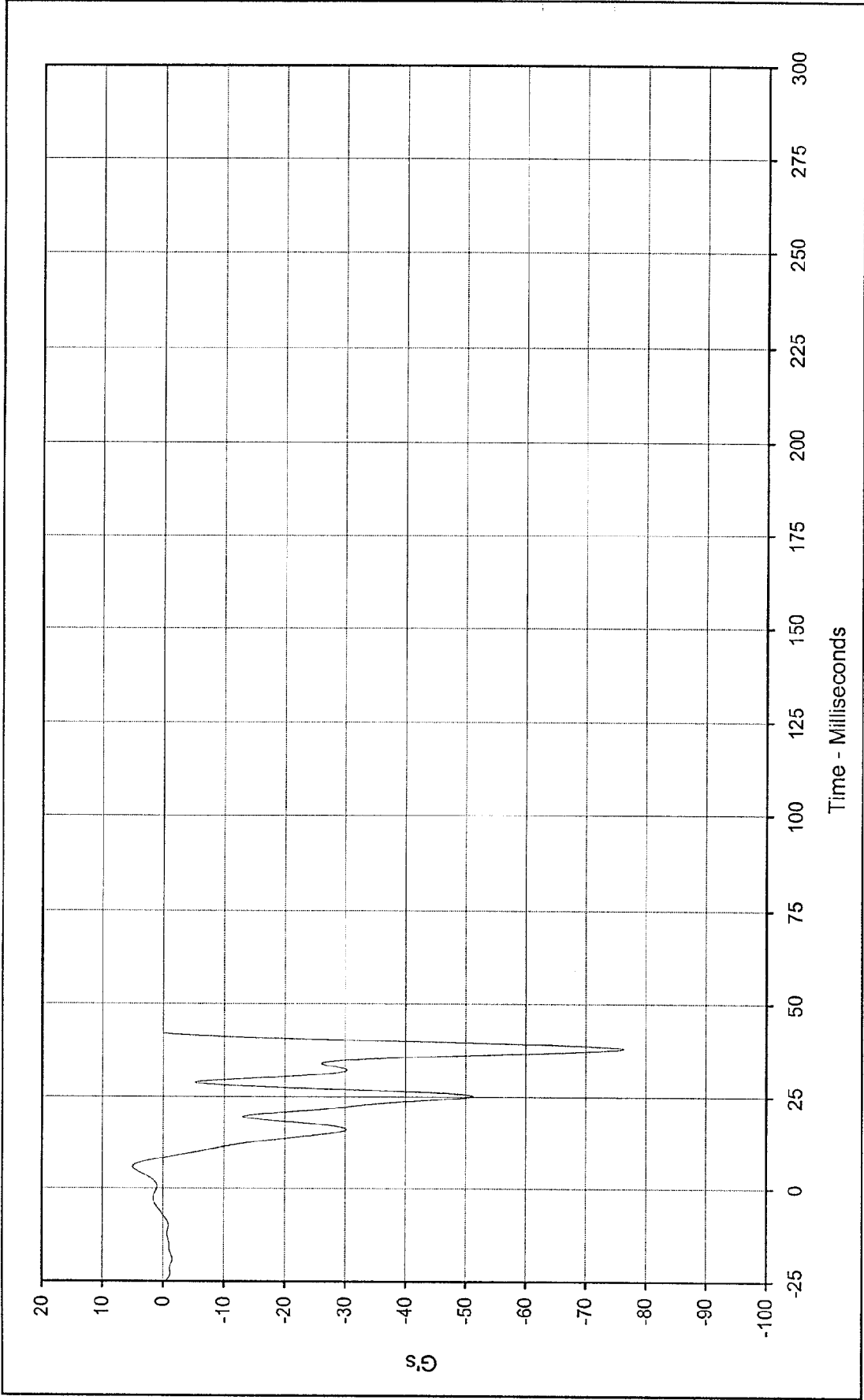
* Channel Failed at 42.0 Msec.



Curve Description: Vehicle Engine Bottom Displ. * Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 39.1 at 29.8 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: 0.0 at 42.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN2-092



* Channel Failed at 42.0 Msec.

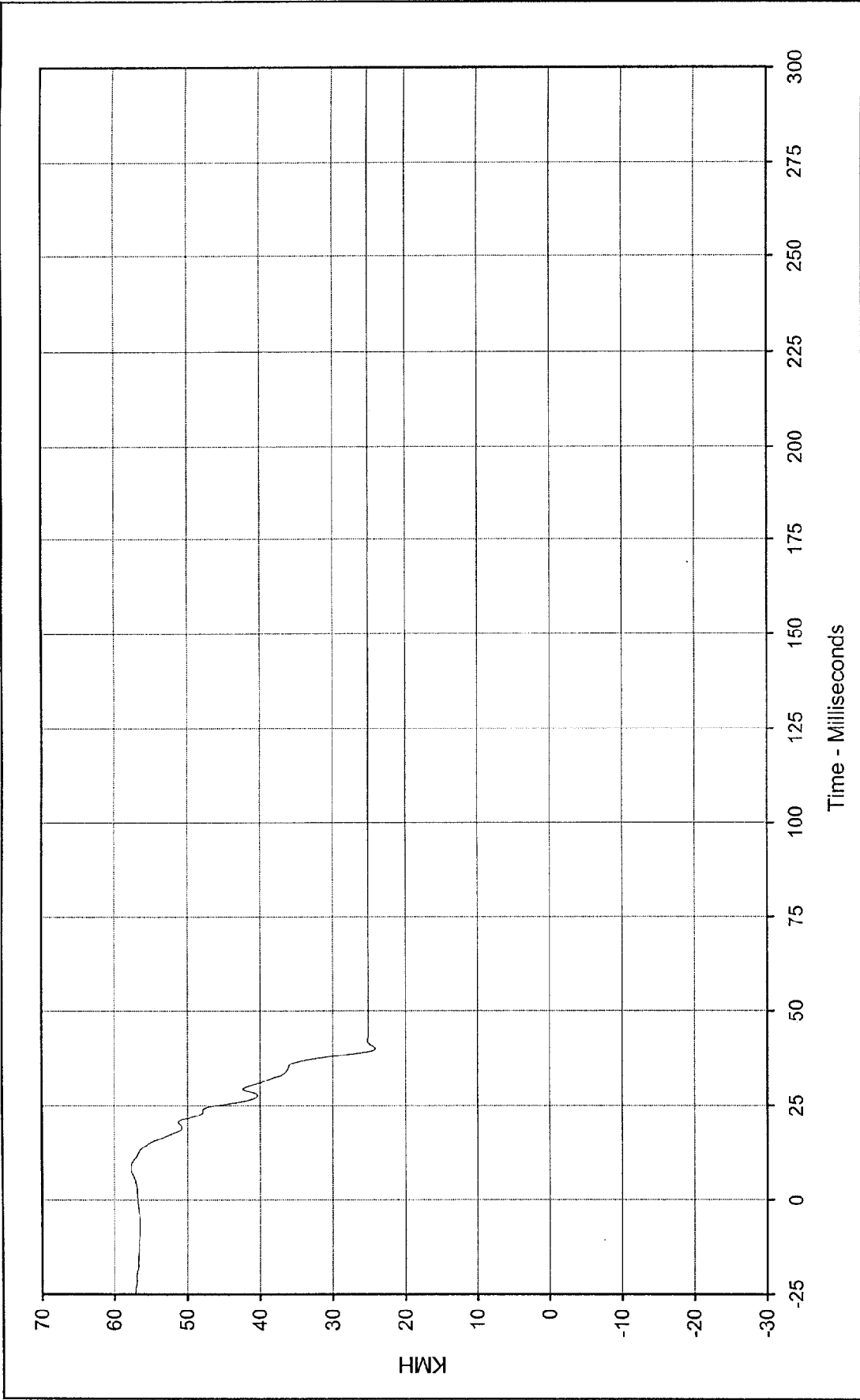


Curve Description: Vehicle Left Brake Caliper *
 Maximum Value: 5.0 at 5.9 Milliseconds
 Minimum Value: -76.4 at 38.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/11/97
 Curve Number: FIL-093

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

* Channel Failed at 42.0 Msec.





Curve Description: Vehicle Left Brake Caliper Velocity * Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 57.7 at 8.3 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

Minimum Value: 24.1 at 40.1 Milliseconds

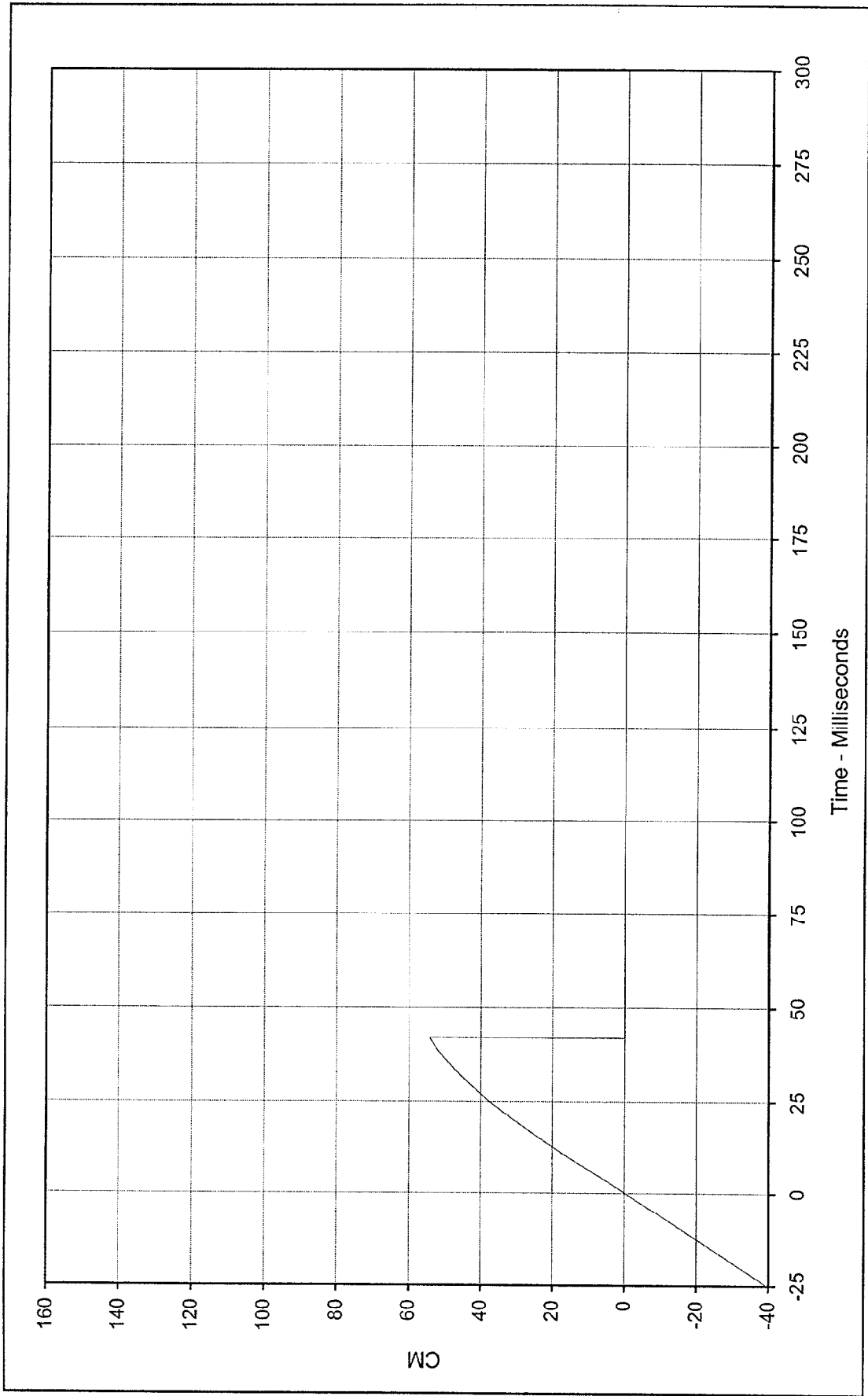
SAE Filter Class: 180

Date of Test: 12/11/97

Curve Number: IN1-093




* Channel Failed at 42.0 Msec.

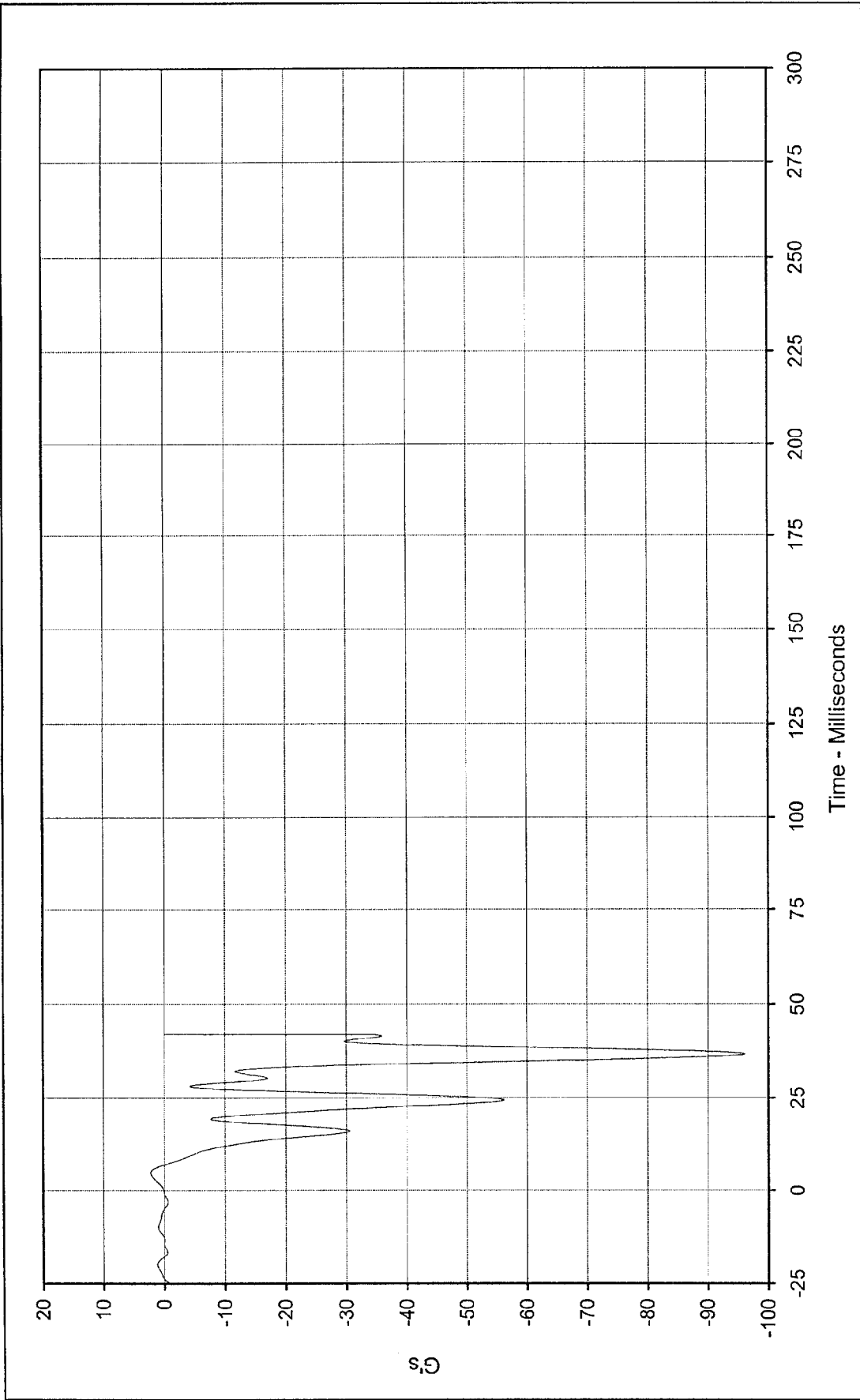


Curve Description: Vehicle Left Brake Caliper Displ. *
 Maximum Value: 54.2 at 41.9 Milliseconds
 Minimum Value: -0.2 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN2-093

Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Test Vehicle: 1998 Honda Civic DX 4 Door Sedan



* Channel Failed at 42.0 Msec.



Curve Description: Vehicle Right Brake Caliper * Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 2.2 at 4.8 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

Minimum Value: -96.2 at 36.6 Milliseconds

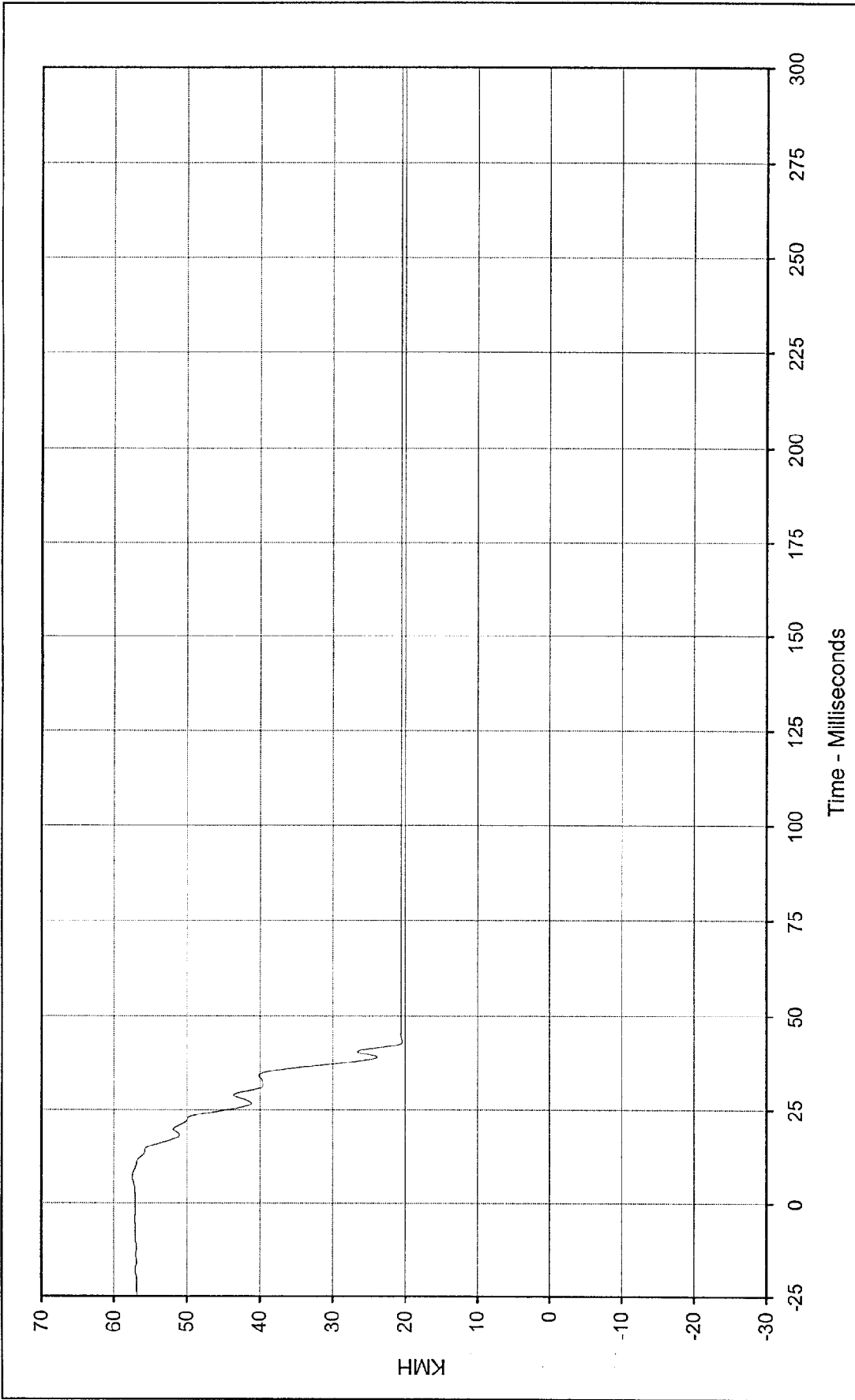
SAE Filter Class: 60

Date of Test: 12/11/97

Curve Number: FIL-094



* Channel Failed at 42.0 Msec.

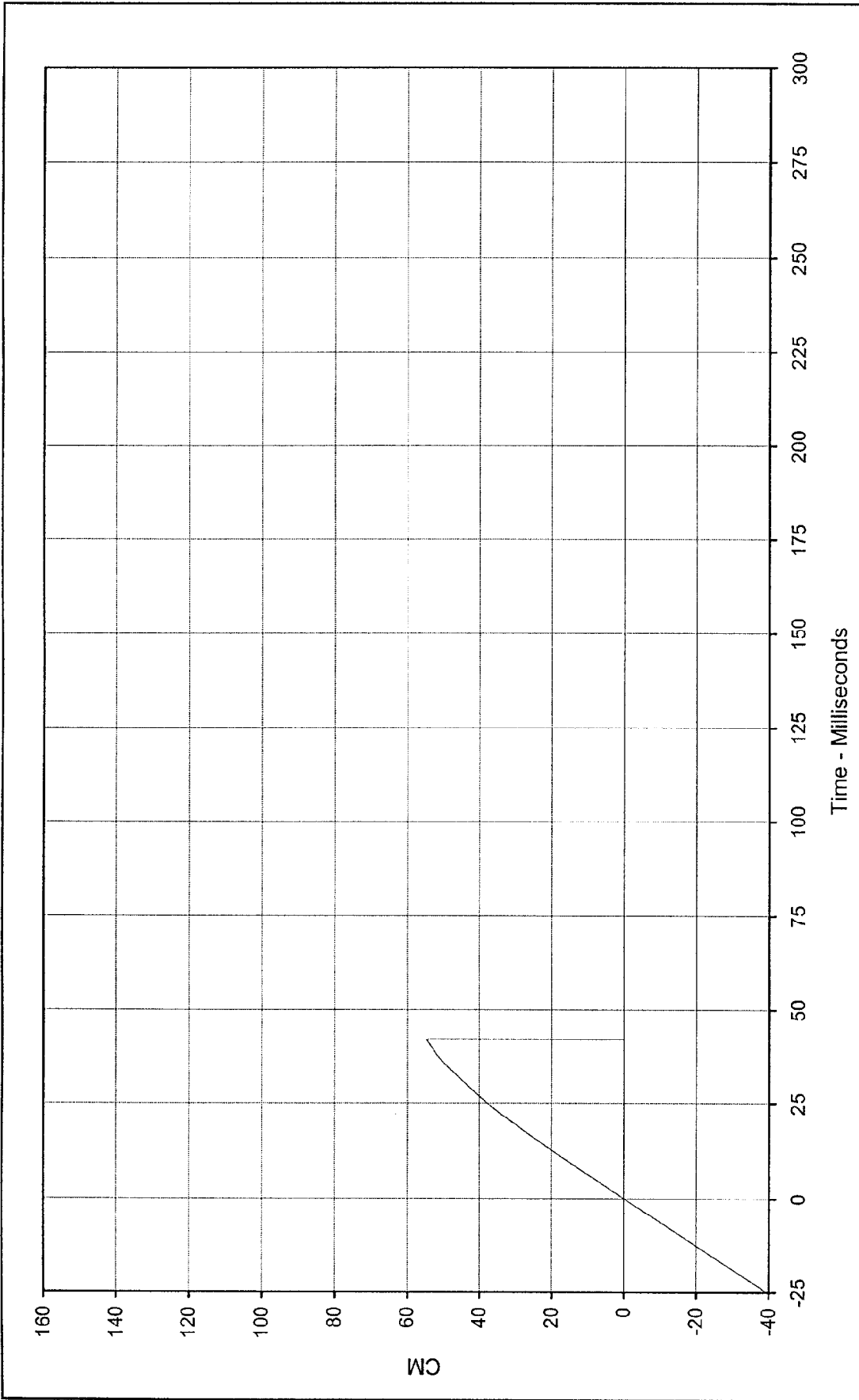


Curve Description: Vehicle Right Brake Caliper Velocity * Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 57.5 at 6.9 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: 20.4 at 43.0 Milliseconds



SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN1-094

* Channel Failed at 42.0 Msec.

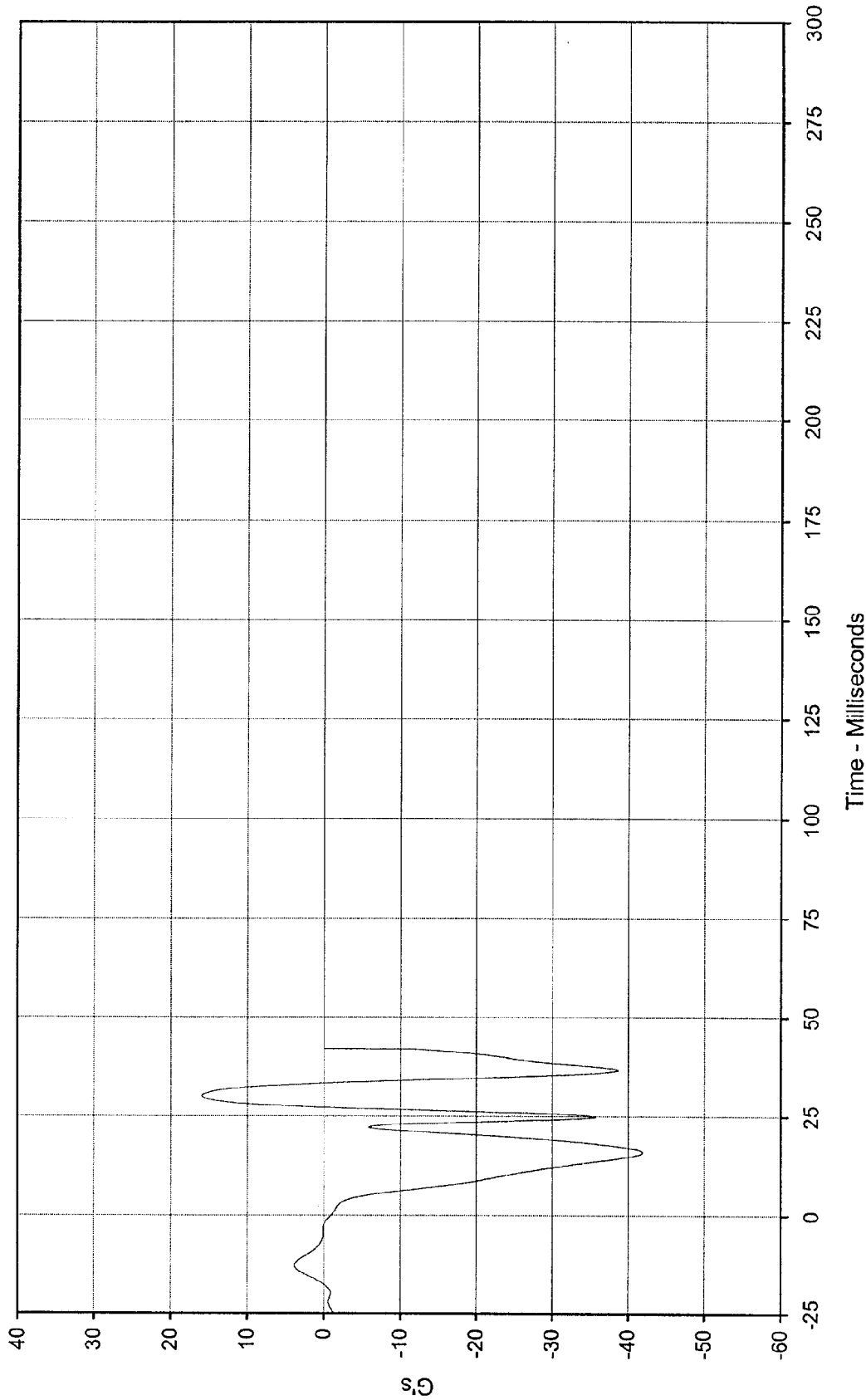


Curve Description: Vehicle Right Brake Caliper Displ. * Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 54.6 at 41.9 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: 0.0 at 0.0 Milliseconds



SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN2-094

* Channel Failed at 42.0 Msec.



Curve Description: Vehicle Instrument Panel * Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 16.0 at 30.1 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

Minimum Value: -41.9 at 15.9 Milliseconds

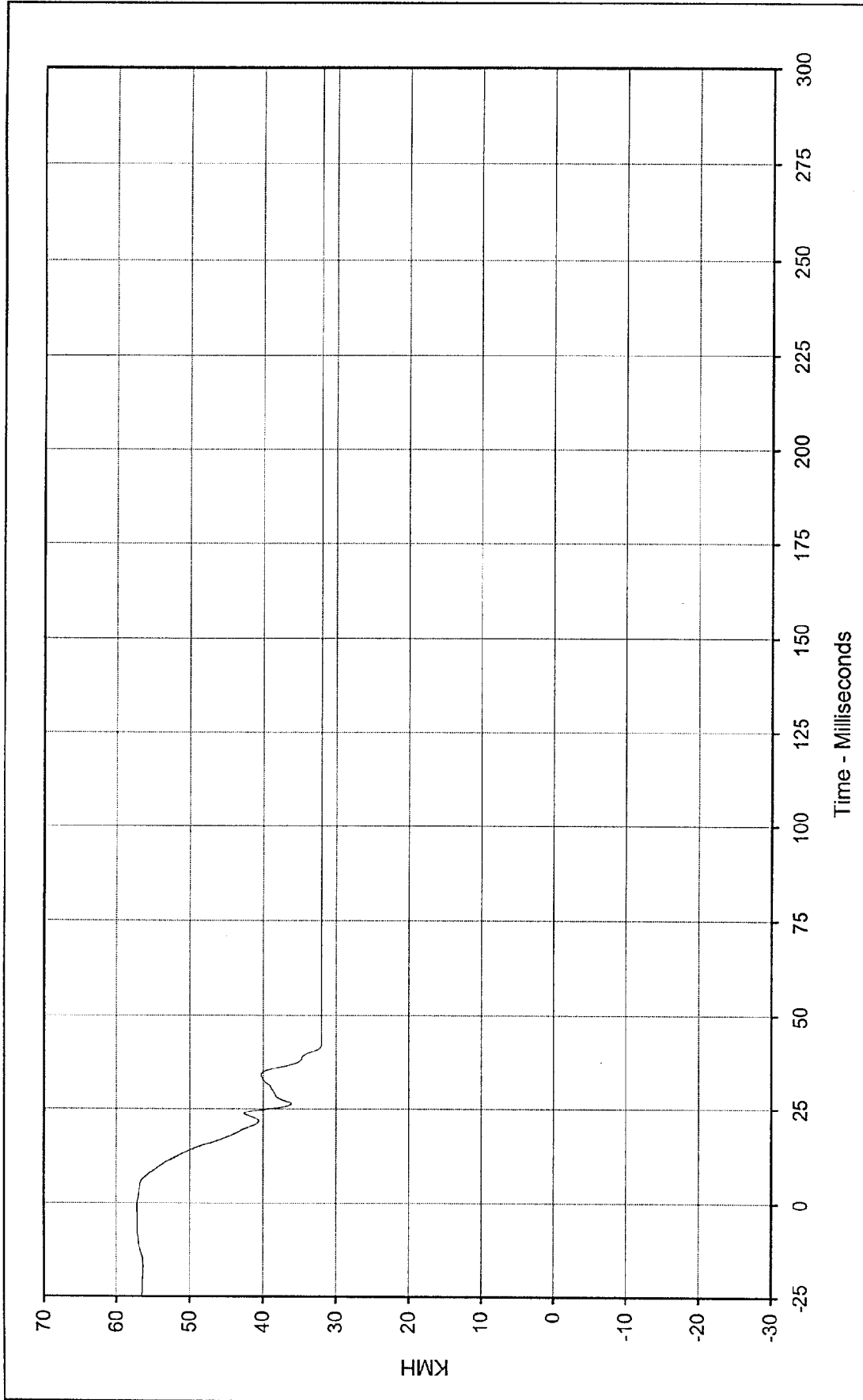
SAE Filter Class: 60

Date of Test: 12/11/97

Curve Number: FIL-095



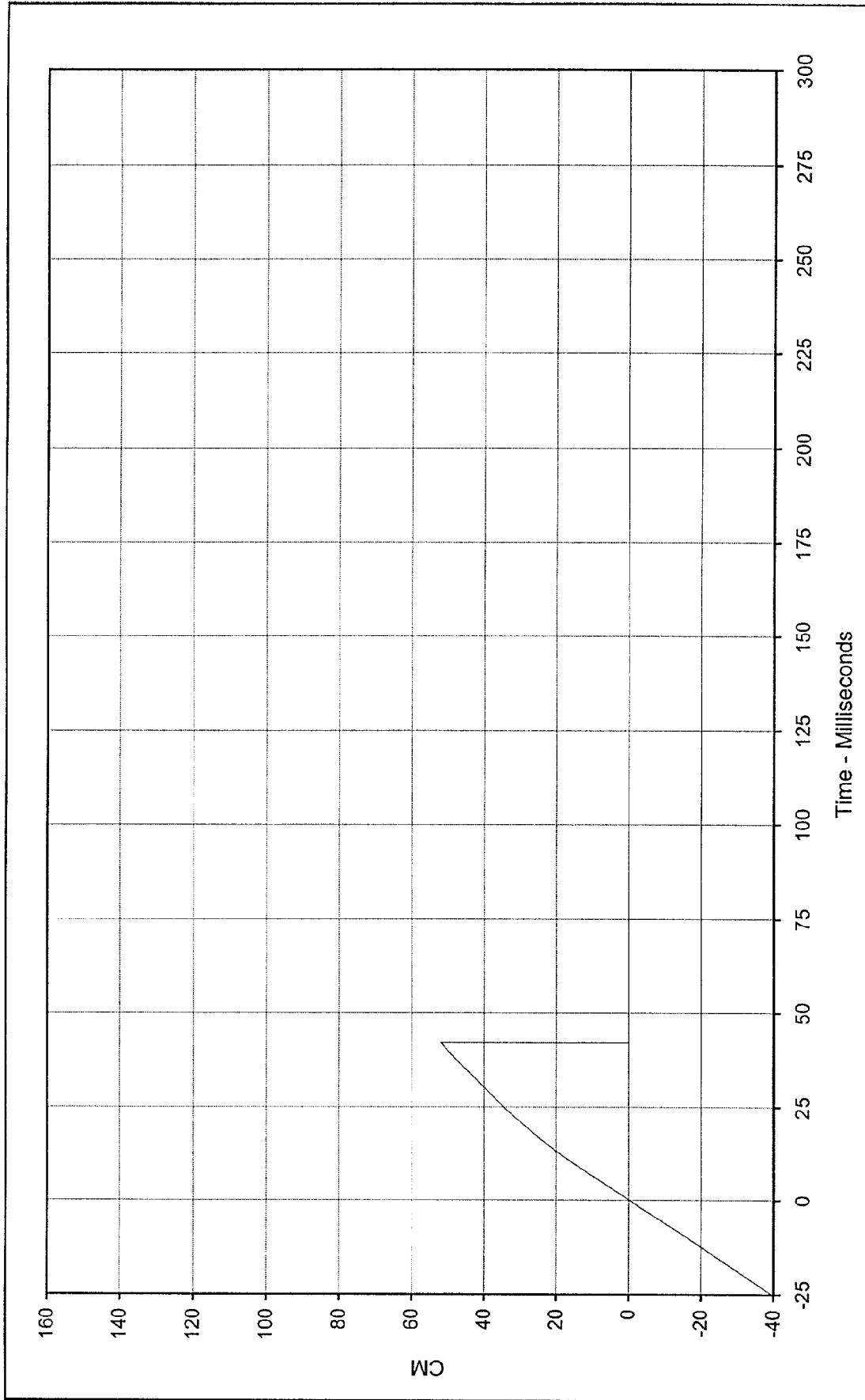
* Channel Failed at 42.0 Msec.



Curve Description: Vehicle Instrument Panel Velocity * Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 57.2 at 0.0 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: 32.0 at 42.5 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN1-095



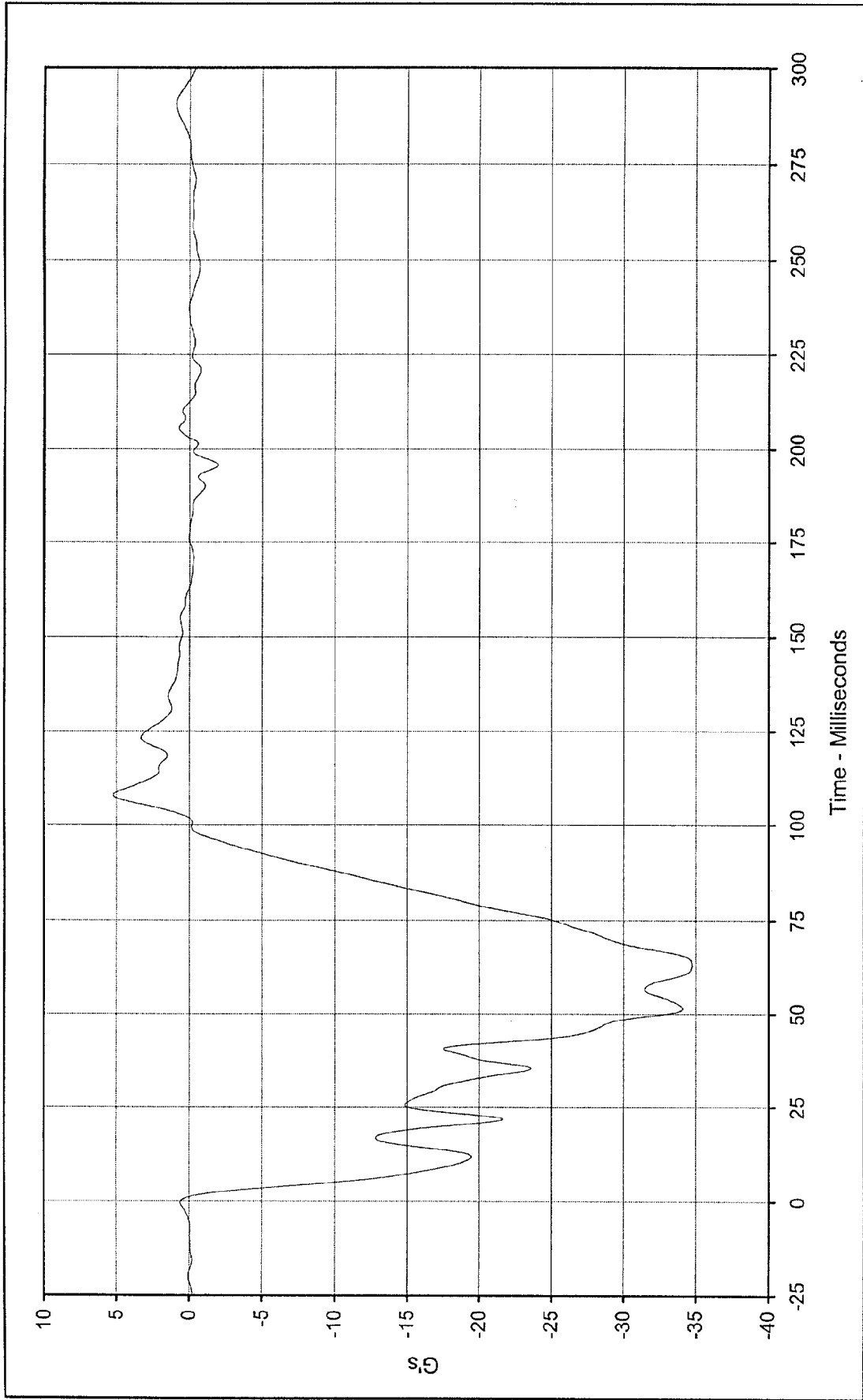
* Channel Failed at 42.0 Msec.



Curve Description: Vehicle Instrument Panel Displ. * Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 51.9 at 41.9 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -0.2 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN2-095



* Channel Failed at 42.0 Msec.



Curve Description: Vehicle Left Rear Redundant Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302

Maximum Value: 5.2 at 107.9 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan

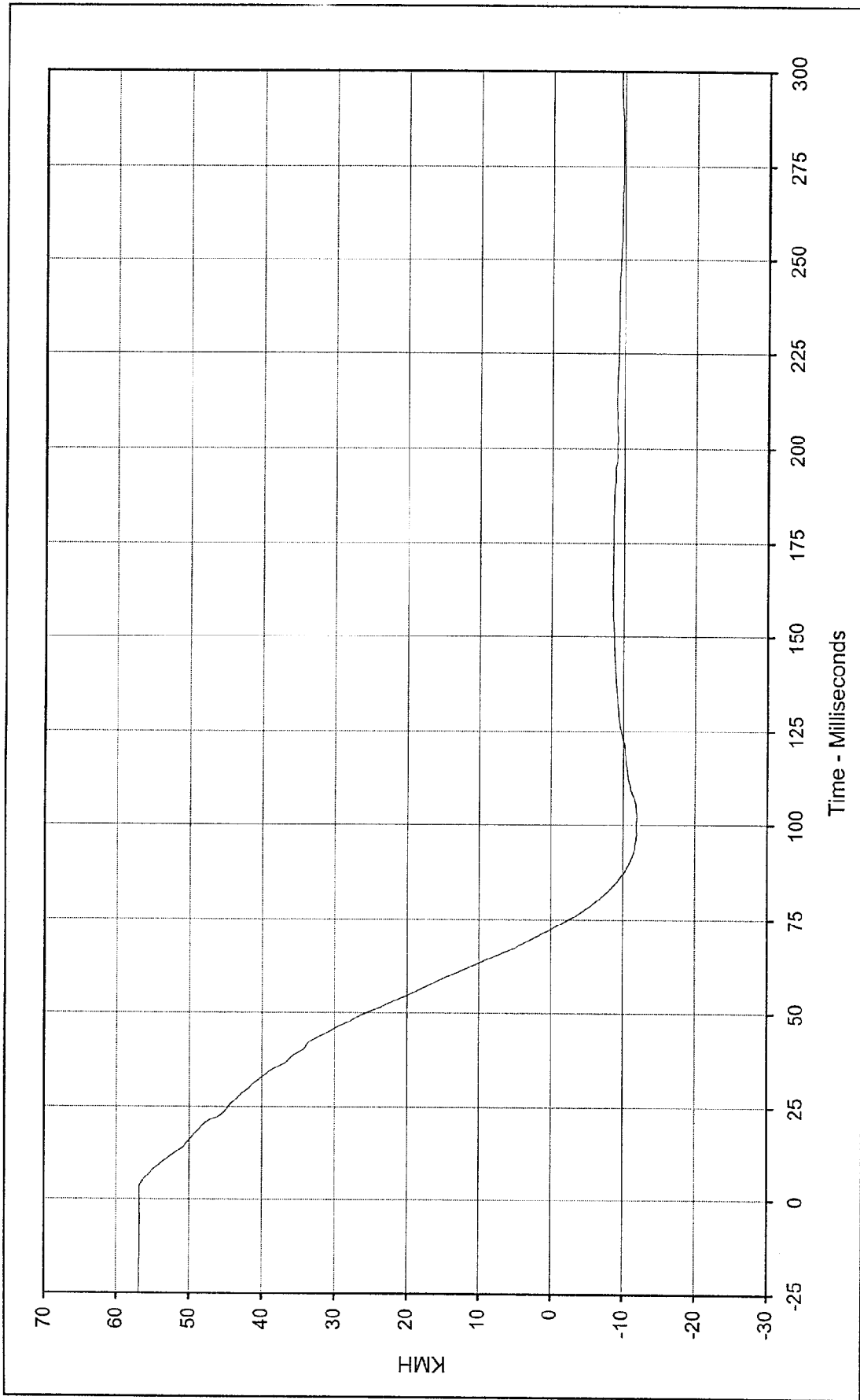
Minimum Value: -34.7 at 63.1 Milliseconds

SAE Filter Class: 60

Date of Test: 12/11/97

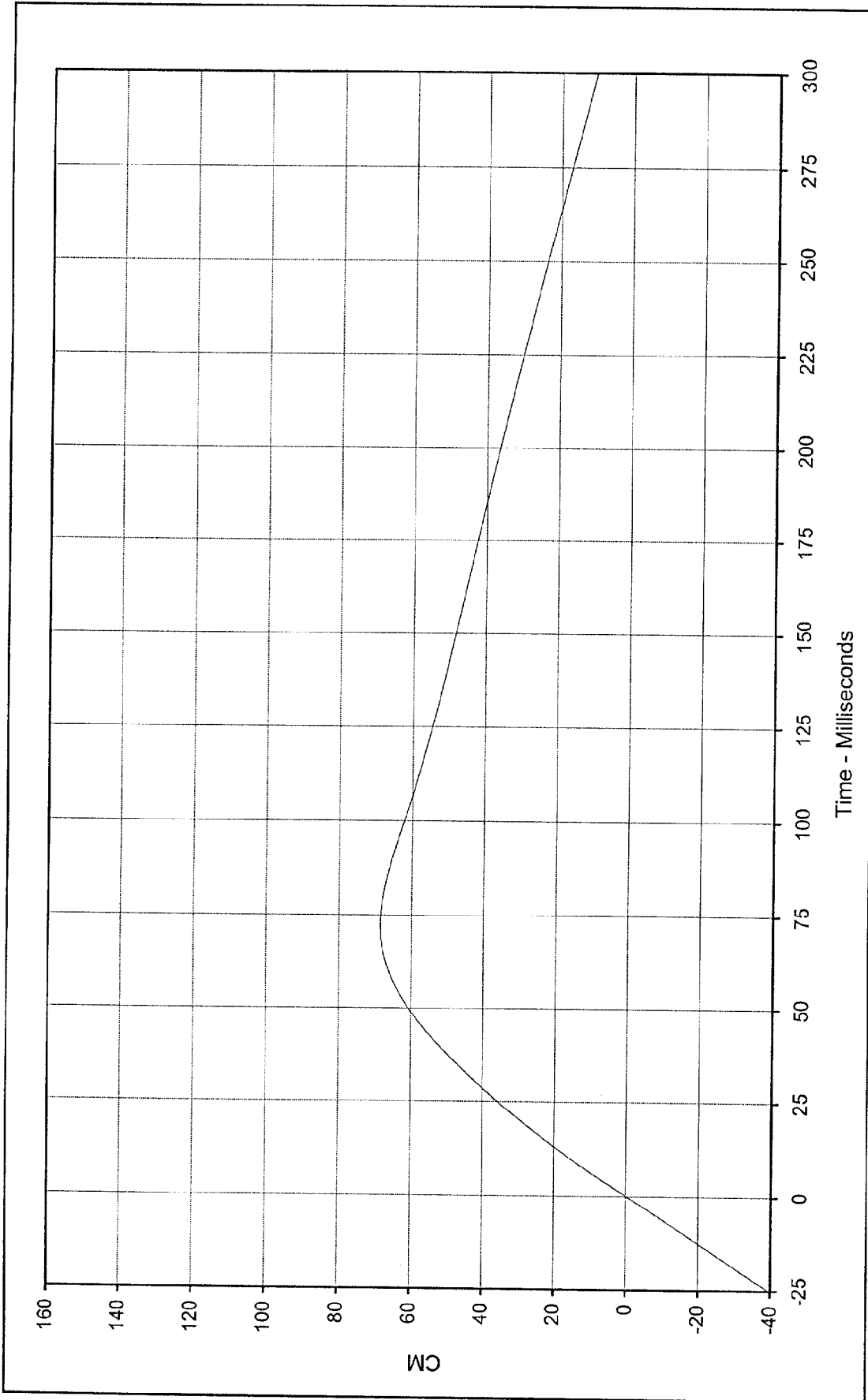
Curve Number: FIL-096





Curve Description: Vehicle Left Rear Redundant Velocity Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 56.9 at 2.5 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -11.9 at 102.2 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN1-096





Curve Description: Vehicle Left Rear Redundant Displ. Testing Program 1998 NHTSA 35 mph NCAP No.: MW5302
 Maximum Value: 68.6 at 72.3 Milliseconds Test Vehicle: 1998 Honda Civic DX 4 Door Sedan
 Minimum Value: -0.2 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/11/97
 Curve Number: IN2-096



APPENDIX C

LOAD CELL BARRIER INFORMATION (NOT APPLICABLE FOR THIS TEST)

APPENDIX D
INSTRUMENTATION DATA CHANNEL ASSIGNMENTS

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

**Driver A.T.D Serial Number 34
Test Date: 12/11/97**

Vehicle: 1998 Honda Civic DX 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
1	HEAD, PRIMARY	X	KEAC039	Accel., 1/2 bridge	Endevco	7264-2000	G
2	HEAD, PRIMARY	Y	KEAC038	Accel., 1/2 bridge	Endevco	7264-2000	G
3	HEAD, PRIMARY	Z	KEAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
4	HEAD, REDUNDANT	X	KEAC031	Accel., 1/2 bridge	Endevco	7264-2000	G
5	HEAD, REDUNDANT	Y	KEAC032	Accel., 1/2 bridge	Endevco	7264-2000	G
6	HEAD, REDUNDANT	Z	KEAC026	Accel., 1/2 bridge	Endevco	7264-2000	G
7	NECK FORCE	X	GPUN02FX	Load cell, six axis neck	R. A. Denton	1716A	N
8	NECK FORCE	Y	GPUN02FY	Load cell, six axis neck	R. A. Denton	1716A	N
9	NECK FORCE	Z	GPUN02FZ	Load cell, six axis neck	R. A. Denton	1716A	N
10	NECK MOMENT	X	GPUN02MX	Load cell, six axis neck	R. A. Denton	1716A	N.m
11	NECK MOMENT	Y	GPUN02MY	Load cell, six axis neck	R. A. Denton	1716A	N.m
12	NECK MOMENT	Z	GPUN02MZ	Load cell, six axis neck	R. A. Denton	1716A	N.m
13	CHEST , PRIMARY	X	GPAC031	Accel., 1/2 bridge	Endevco	7264-2000	G
14	CHEST , PRIMARY	Y	GPAC024	Accel., 1/2 bridge	Endevco	7264-2000	G
15	CHEST , PRIMARY	Z	GPAC029	Accel., 1/2 bridge	Endevco	7264-2000	G
16	CHEST , REDUNDANT	X	KEAC023	Accel., 1/2 bridge	Endevco	7264-2000	G
17	CHEST , REDUNDANT	Y	KEAC022	Accel., 1/2 bridge	Endevco	7264-2000	G
18	CHEST , REDUNDANT	Z	KEAC024	Accel., 1/2 bridge	Endevco	7264-2000	G
19	CHEST DISPLACEMENT	X	GPRP002	Potentiometer, Rotary	Servo	14CBI	MM
20	PELVIS, PRIMARY	X	GPAC009	Accel., 1/2 bridge	Endevco	7264-2000	G
21	PELVIS, PRIMARY	Y	GPAC017	Accel., 1/2 bridge	Endevco	7264-2000	G
22	PELVIS, PRIMARY	Z	GPAC018	Accel., 1/2 bridge	Endevco	7264-2000	G
23	LEFT FEMUR FORCE	Z	KEFF003	Load cell, Femur	R.A. Denton	2121	N
24	RIGHT FEMUR FORCE	Z	KEFF002	Load cell, Femur	R.A. Denton	2121	N

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

Driver A.T.D Serial Number 34

Test Date: 12/11/97

Vehicle: 1998 Honda Civic DX 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
25	UP. TIBIA LEFT MOM.	X	GPUT03MX	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
26	UP. TIBIA LEFT MOM.	Y	GPUT03MY	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
27	UP. TIBIA RIGHT MOM.	X	GPUT04MX	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
28	UP. TIBIA RIGHT MOM.	Y	GPUT04MY	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
29	LWR. TIBIA LEFT FORCE	Y	GPLT03FY	3 ch., lower tibia gage	R. A. Denton	1584	N
30	LWR. TIBIA LEFT FORCE	Z	GPLT03FZ	3 ch., lower tibia gage	R. A. Denton	1584	N
31	LWR. TIBIA LEFT MOM.	X	GPLT03MX	3 ch., lower tibia gage	R. A. Denton	1584	N.m
32	LWR. TIBIA RIGHT FORCE	Y	GPLT04FY	3 ch., lower tibia gage	R. A. Denton	1584	N
33	LWR. TIBIA RIGHT FORCE	Z	GPLT04FZ	3 ch., lower tibia gage	R. A. Denton	1584	N
34	LWR. TIBIA RIGHT MOM.	X	GPLT04MX	3 ch., lower tibia gage	R. A. Denton	1584	N.m
35	FOOT LEFT	X	KEIC003X	Accel., Foot Triax	I.C. Sensor	3031-500	G
36	FOOT LEFT	Y	KEIC003Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
37	FOOT LEFT	Z	KEIC003Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
38	FOOT RIGHT	X	KEIC004X	Accel., Foot Triax	I.C. Sensor	3031-500	G
39	FOOT RIGHT	Y	KEIC004Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
40	FOOT RIGHT	Z	KEIC004Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
41	LAP BELT FORCE	X	KELC003	Load cell, Seat belt	Lebow	3371	N
42	SHOULDER BELT FORCE	X	KELC004	Load cell, Seat belt	Lebow	3371	N
43	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	MM
44	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

**Ncap Test With Hybrid III Male 50th Percentile ATD
Instrumentation Data Channel Assignments
Passenger A.T.D Serial Number 35
Test Date: 12/11/97**

Vehicle: 1998 Honda Civic DX 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
45	HEAD, PRIMARY	X	GPAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
46	HEAD, PRIMARY	Y	GPAC002	Accel., 1/2 bridge	Endevco	7264-2000	G
47	HEAD, PRIMARY	Z	GPAC003	Accel., 1/2 bridge	Endevco	7264-2000	G
48	HEAD, REDUNDANT	X	GPAC032	Accel., 1/2 bridge	Endevco	7264-2000	G
49	HEAD, REDUNDANT	Y	GPAC021	Accel., 1/2 bridge	Endevco	7264-2000	G
50	HEAD, REDUNDANT	Z	GPAC026	Accel., 1/2 bridge	Endevco	7264-2000	G
51	NECK FORCE	X	GPUN01FX	Load cell, six axis neck	R. A. Denton	1716A	N
52	NECK FORCE	Y	GPUN01FY	Load cell, six axis neck	R. A. Denton	1716A	N
53	NECK FORCE	Z	GPUN01FZ	Load cell, six axis neck	R. A. Denton	1716A	N
54	NECK MOMENT	X	GPUN01MX	Load cell, six axis neck	R. A. Denton	1716A	N.m
55	NECK MOMENT	Y	GPUN01MY	Load cell, six axis neck	R. A. Denton	1716A	N.m
56	NECK MOMENT	Z	GPUN01MZ	Load cell, six axis neck	R. A. Denton	1716A	N.m
57	CHEST, PRIMARY	X	GPAC005	Accel., 1/2 bridge	Endevco	7264-2000	G
58	CHEST, PRIMARY	Y	GPAC011	Accel., 1/2 bridge	Endevco	7264-2000	G
59	CHEST, PRIMARY	Z	GPAC010	Accel., 1/2 bridge	Endevco	7264-2000	G
60	CHEST, REDUNDANT	X	GPAC034	Accel., 1/2 bridge	Endevco	7264-2000	G
61	CHEST, REDUNDANT	Y	GPAC023	Accel., 1/2 bridge	Endevco	7264-2000	G
62	CHEST, REDUNDANT	Z	GPAC020	Accel., 1/2 bridge	Endevco	7264-2000	G
63	CHEST DISPLACEMENT	X	GPRP001	Potentiometer, Rotary	Servo	14CBI	MM
64	PELVIS, PRIMARY	X	GPAC025	Accel., 1/2 bridge	Endevco	7264-2000	G
65	PELVIS, PRIMARY	Y	GPAC022	Accel., 1/2 bridge	Endevco	7264-2000	G
66	PELVIS, PRIMARY	Z	GPAC019	Accel., 1/2 bridge	Endevco	7264-2000	G
67	LEFT FEMUR FORCE	Z	KEFF001	Load cell, Femur	R.A. Denton	2121	N
68	RIGHT FEMUR FORCE	Z	GPLC001	Load cell, Femur	G.S.E.	2430	N

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

Passenger A.T.D Serial Number 35

Test Date: 12/11/97

Vehicle: 1998 Honda Civic DX 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
69	UP. TIBIA LEFT MOM.	X	GPUT01MX	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
70	UP. TIBIA LEFT MOM.	Y	GPUT01MY	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
71	UP. TIBIA RIGHT MOM.	X	GPUT02MX	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
72	UP. TIBIA RIGHT MOM.	Y	GPUT02MY	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
73	LWR. TIBIA LEFT FORCE	Y	GPLT01FY	3 ch., lower tibia gage	R. A. Denton	1584	N
74	LWR. TIBIA LEFT FORCE	Z	GPLT01FZ	3 ch., lower tibia gage	R. A. Denton	1584	N
75	LWR. TIBIA LEFT MOM.	X	GPLT01MX	3 ch., lower tibia gage	R. A. Denton	1584	N.m
76	LWR. TIBIA RIGHT FORCE	Y	GPLT02FY	3 ch., lower tibia gage	R. A. Denton	1584	N
77	LWR. TIBIA RIGHT FORCE	Z	GPLT02FZ	3 ch., lower tibia gage	R. A. Denton	1584	N
78	LWR. TIBIA RIGHT MOM.	X	GPLT02MX	3 ch., lower tibia gage	R. A. Denton	1584	N.m
79	FOOT LEFT	X	KEIC002X	Accel., Foot Triax	I.C. Sensor	3031-500	G
80	FOOT LEFT	Y	KEIC002Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
81	FOOT LEFT	Z	KEIC002Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
82	FOOT RIGHT	X	KEIC001X	Accel., Foot Triax	I.C. Sensor	3031-500	G
83	FOOT RIGHT	Y	KEIC001Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
84	FOOT RIGHT	Z	KEIC001Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
85	LAP BELT FORCE	X	KELC001	Load cell, Seat belt	Lebow	3371	N
86	SHOULDER BELT FORCE	X	KELC002	Load cell, Seat belt	Lebow	3371	N
87	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Ceasco	PTX101-0030	MM
88	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

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

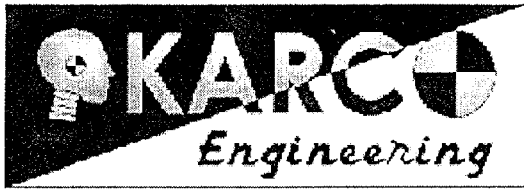
Vehicle Accelerometers

Test Date: 12/11/97

Vehicle: 1998 Honda Civic DX 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
89	LEFT REAR PRIMARY	X	KEVA005	Accel., Vehicle block	I.C. Sensor	3031-500	G
90	RIGHT REAR PRIMARY	X	KEVA006	Accel., Vehicle block	I.C. Sensor	3031-200	G
91	ENGINE TOP	X	KEVA001	Accel., Vehicle block	I.C. Sensor	3031-500	G
92	ENGINE BOTTOM	X	KEVA009	Accel., Vehicle block	I.C. Sensor	3031-500	G
93	LEFT BRAKE CALIPER	X	KEVA010	Accel., Vehicle block	I.C. Sensor	3031-500	G
94	RIGHT BRAKE CALIPER	X	KEVA004	Accel., Vehicle block	I.C. Sensor	3031-500	G
95	INSTUMENT PANEL	X	KEVA007	Accel., Vehicle block	I.C. Sensor	3031-200	G
96	LEFT REAR REDUNDANT	X	KEVA011	Accel., Vehicle block	I.C. Sensor	3031-200	G

APPENDIX E
DUMMY CALIBRATION DATA



Hybrid III Calibration Data Sheet

50TH Percentile Male

Left Knee Impact Test

ATD Serial No.: 34

Part Serial No.: N/A

Test I.D.: MK010

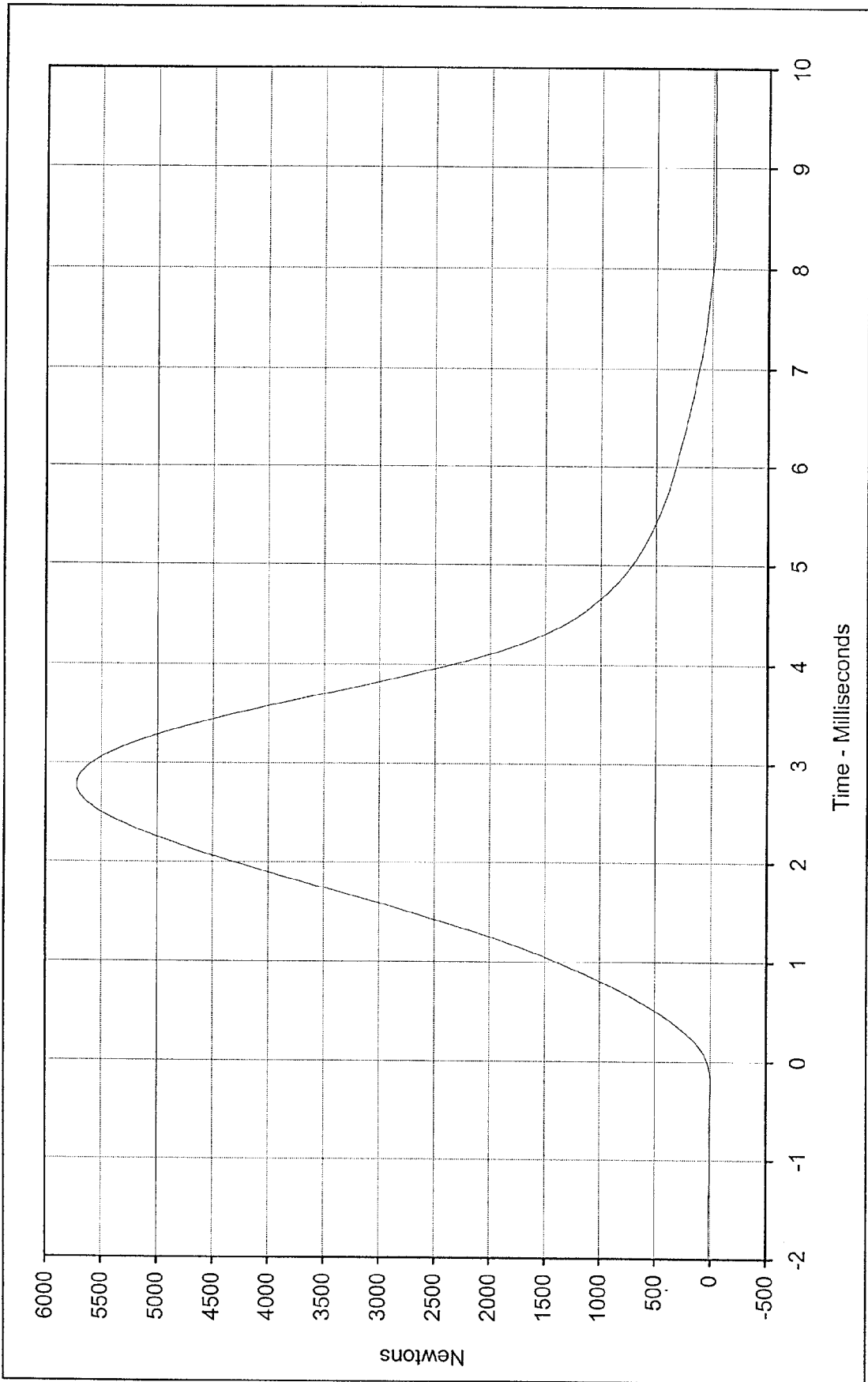
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	2.073 to 2.134	2.103	Pass
Peak Probe Force	Newtons	4715 to 5782	5720.4	Pass
Overall Test Results				Pass


Laboratory Technician


Approved By

September 18, 1997
Test Date

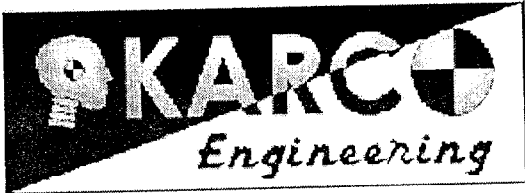
9/18/97
Date



Curve Description: Hybrid III Left Knee Impact Test
 Testing Program: Part S/N: N/A Test I.D.: MK010

Probe Force
 Maximum Value: 5720.4 at 2.8 Milliseconds
 Minimum Value: -8.0 at 8.0 Milliseconds
 SAE Filter Class: 600
 Date of Test: 9/18/97
 ATD Serial No.: 34





Hybrid III Calibration Data Sheet

50TH Percentile Male

Right Knee Impact Test

ATD Serial No.: 34

Part Serial No.: N/A

Test I.D.: MK007

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	2.073 to 2.134	2.091	Pass
Peak Probe Force	Newtons	4715 to 5782	5680.9	Pass
Overall Test Results				Pass

Laboratory Technician

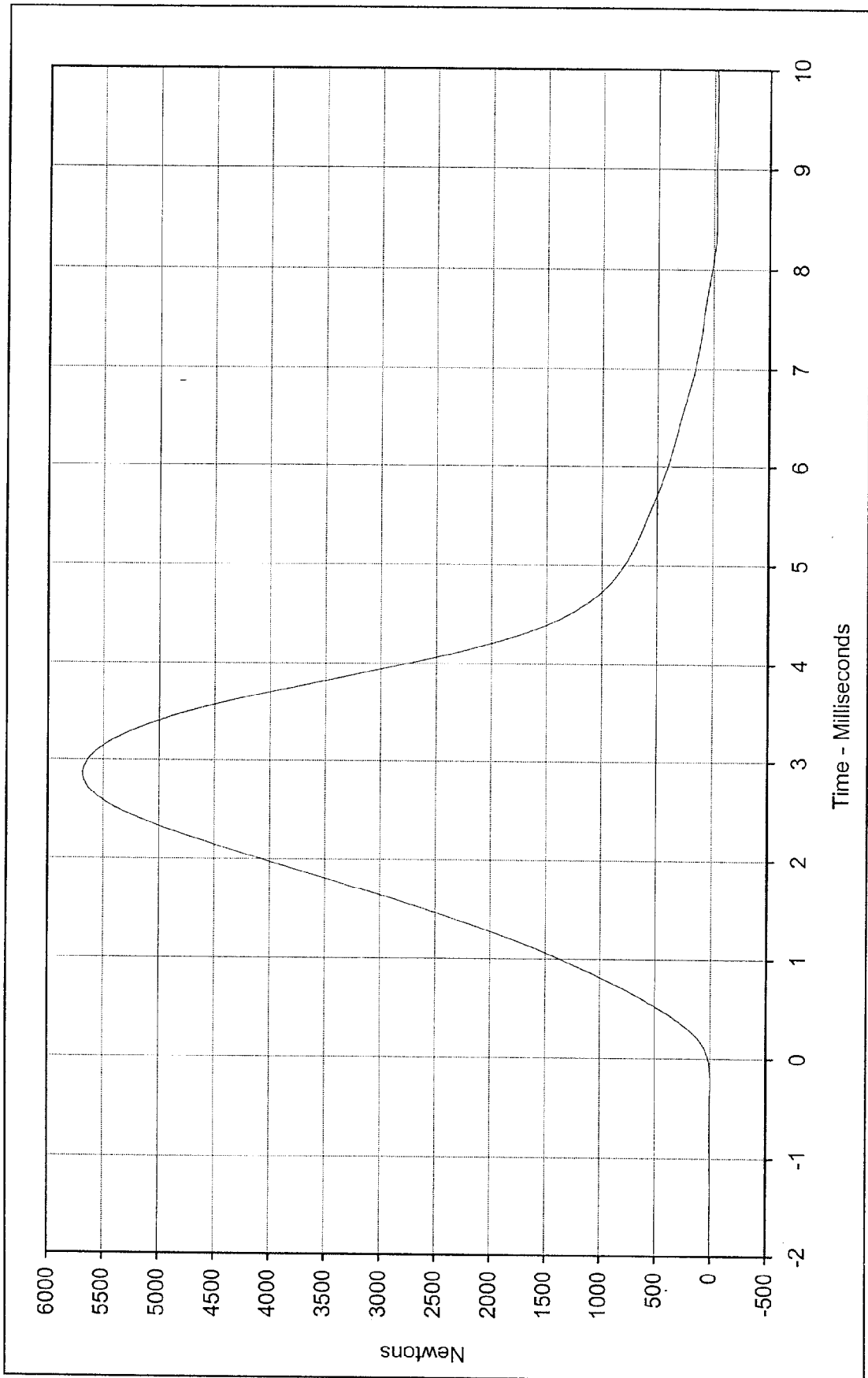
Approved By

September 18, 1997

Test Date

9/18/97

Date



Curve Description: Probe Force Testing Program Hybrid III Right Knee Impact Test
 Maximum Value: 5680.9 at 2.9 Milliseconds Test Information: Part S/N: N/A Test I.D.: MK007
 Minimum Value: 0.0 at -0.2 Milliseconds



SAE Filter Class: 600
 Date of Test: 9/18/97
 ATD Serial No.: 34



Hybrid III Calibration Data Sheet

50TH Percentile Male

Head Drop Calibration

ATD Serial No.: 034

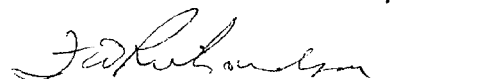
Part Serial No.: N/A

Test I.D.: MH009

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	20.6	Pass
Laboratory Relative Humidity	%	10 to 70	35	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	269.0	Pass
Peak Lateral Acceleration	G's	≤15.0	10.8	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass



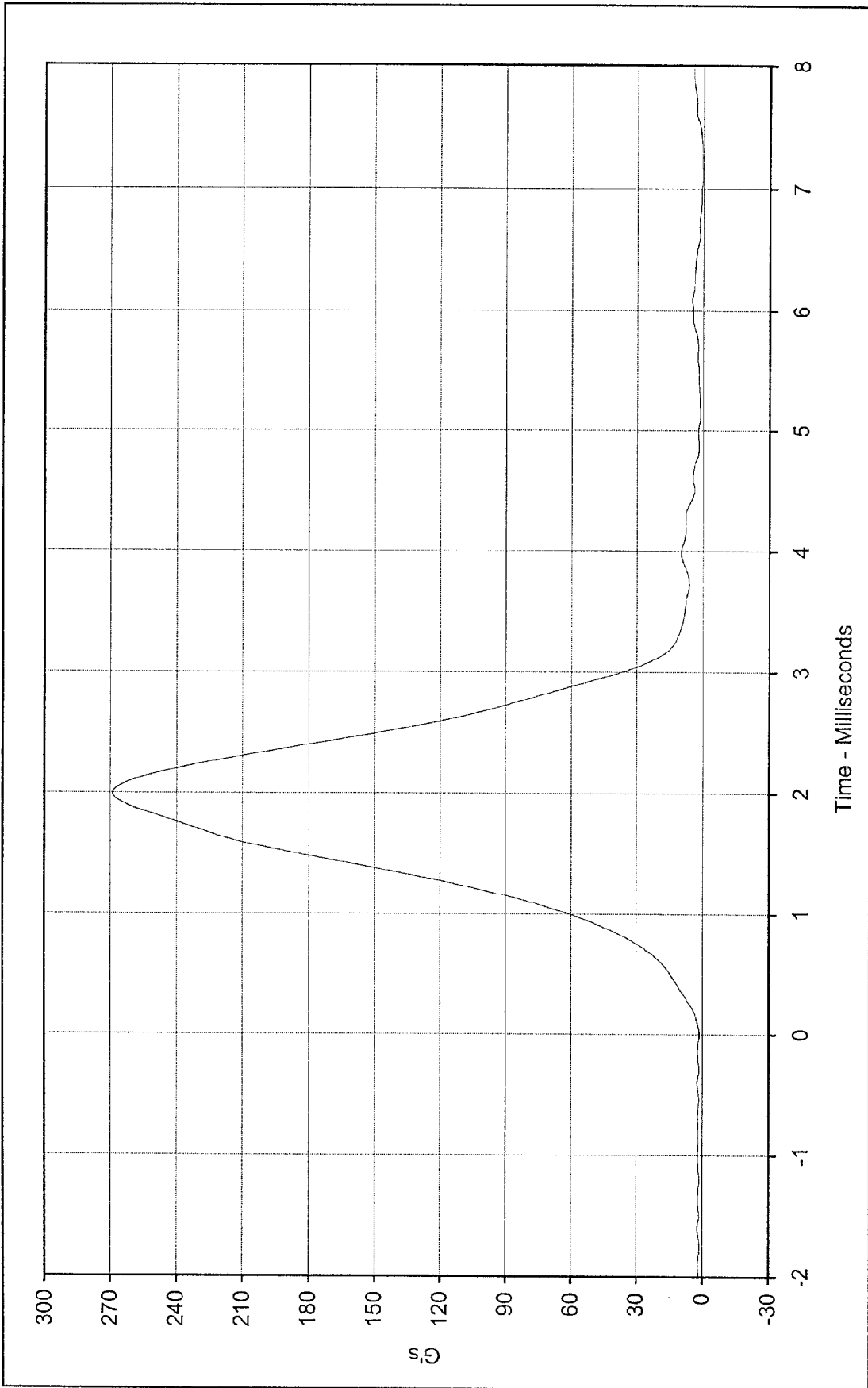
 Laboratory Technician



 Approved By

September 16, 1997
 Test Date

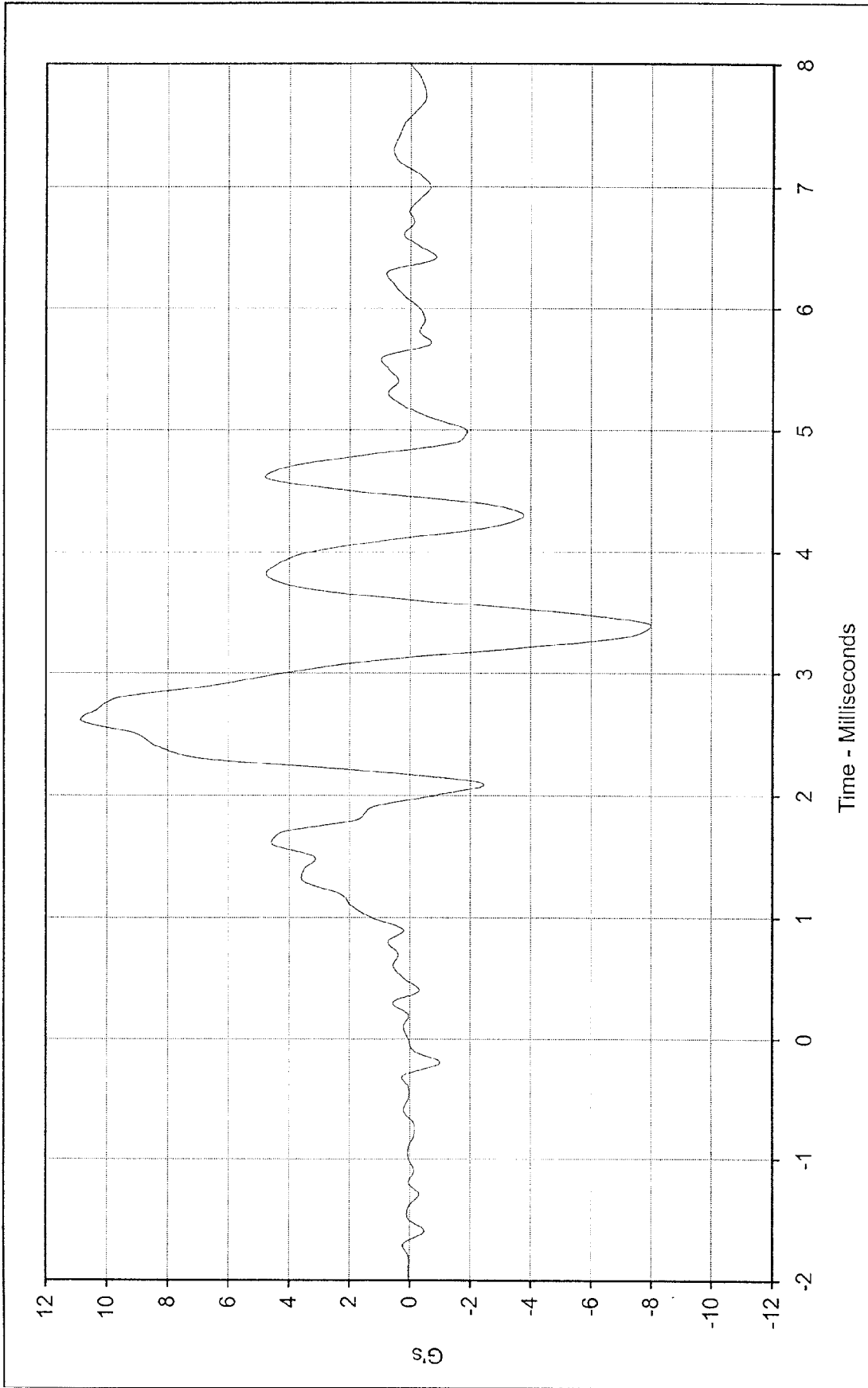
9/16/97
 Date



Curve Description: Head Resultant Acceleration Testing Program Hybrid III Head Drop Calibration (Male)
 Maximum Value: 269.0 at 2.0 Milliseconds Test Information: S/N of Part: N/A Test I.D.: MH009
 Minimum Value: 0.4 at 7.1 Milliseconds



SAE Filter Class: 1000
 Date of Test: 9/16/97
 ATD Serial No.: 034



Curve Description: Hybrid III Head Drop Calibration (Male)
 Testing Program: S/N of Part: N/A Test I.D.: MH009

Head Acceleration Y Axis
 Maximum Value: 10.8 at 2.6 Milliseconds
 Minimum Value: -7.9 at 3.4 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 9/16/97
 ATD Serial No.: 034





Hybrid III Calibration Data Sheet

50TH Percentile Male

Thorax Impact Test

ATD Serial No.: 034

Part Serial No.: N/A

Test I.D.: H3C01

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
Probe Velocity	m/s	6.58 to 6.82	6.77	Pass
Peak Probe Force	Newtons	5159 to 5893	5215	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.69	Pass
Internal Hysteresis	%	69 to 85	75.7	Pass
Overall Test Results				Pass

M. Lopez

Laboratory Technician

J. Johnson

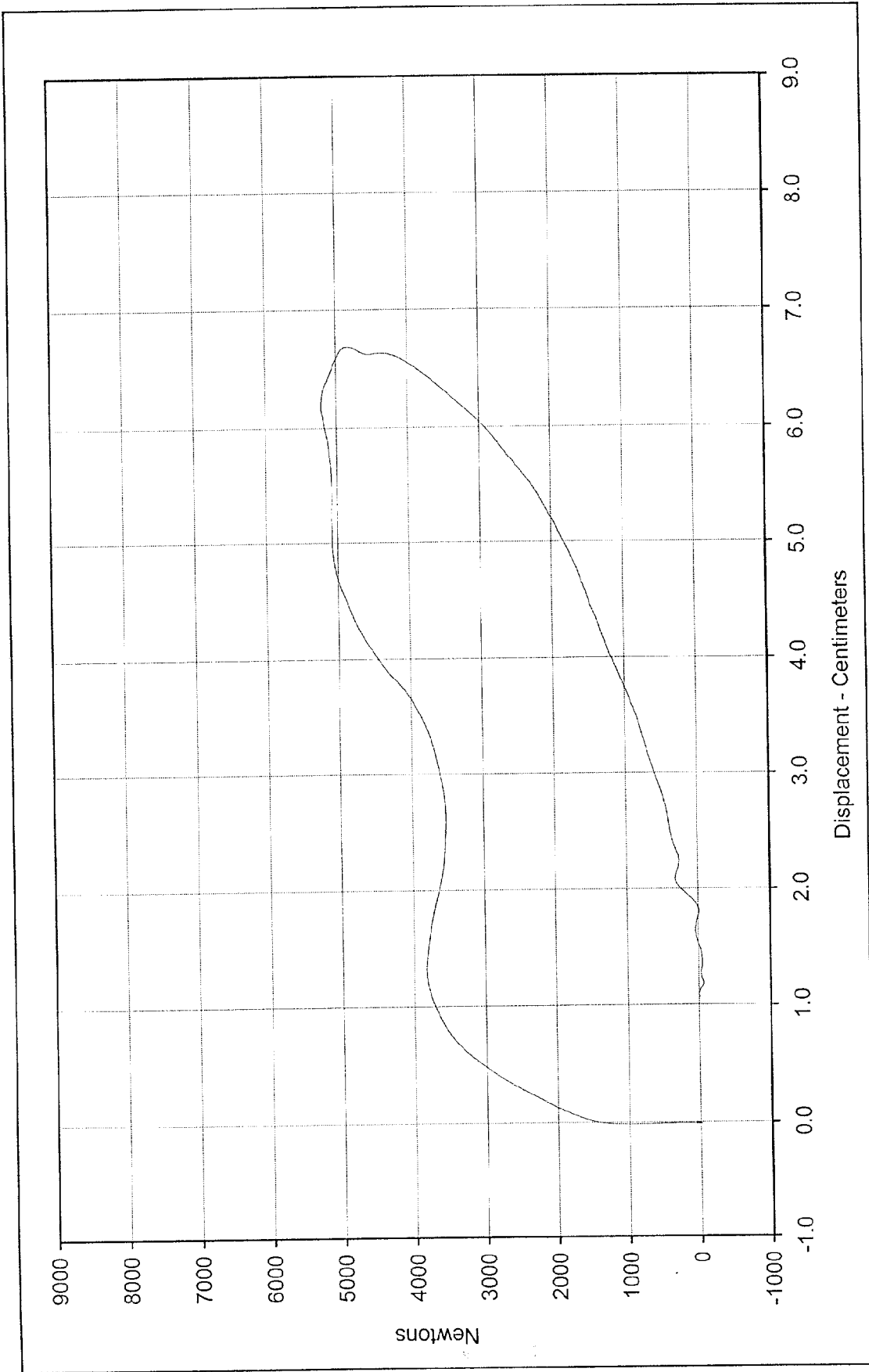
Approved By

October 10, 1997

Test Date

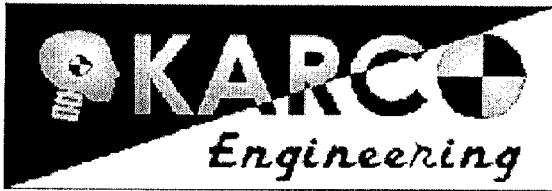
10/10/97

Date



Curve Description: Probe Force vs. Chest Displacement Testing Program: Hybrid III Thorax Impact Test
 Probe Force: 5215.5 Newtons Test Information: S/N of Part: N/A Test I.D.: H3C01
 Chest Displ.: 6.69 Centimeters
 SAE Filter Class: 180
 Date of Test: 10/10/97
 ATD Serial No.: 034





Hybrid III Calibration Data Sheet

50TH Percentile Male

Neck Flexion Test

ATD Serial No.: 34

Part Serial No.: N/A

Test I.D.: MNF09

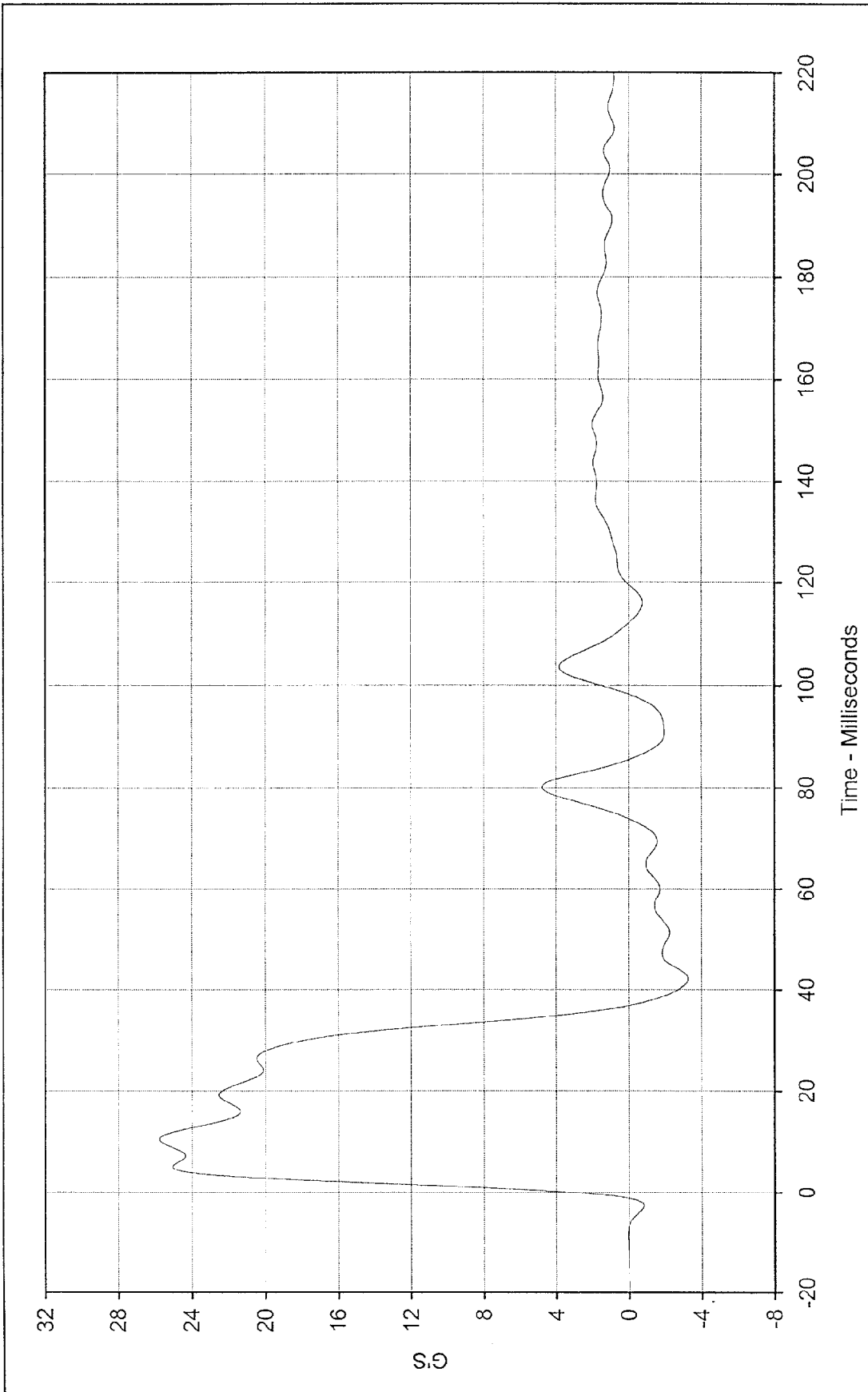
Tested Parameter	Units	Specification	Result	Pass/Fail	
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass	
Laboratory Relative Humidity	%	10 to 70	36	Pass	
Pendulum Velocity	m/s	6.89 to 7.13	6.94	Pass	
Pendulum Deceleration	10 Msec.	m/s	22.5 to 27.5	25.7	Pass
	20 Msec.	m/s	17.6 to 22.6	22.4	Pass
	30 Msec.	m/s	12.5 to 18.5	17.7	Pass
Peak Pendulum Decel. after 30 Msec.	G's	≤ 29.0	17.7	Pass	
Deceleration Decay, Time to Cross 5 G's	Msec.	34.0 to 42.0	34.4	Pass	
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	77.6	Pass
	Time	Msec.	57.0 to 64.0	60.3	Pass
"D" Plane Rotation Decay, Time To Zero Crossing	Msec.	113.0 to 128.0	121.2	Pass	
Moment About Occipital Condyle	Maximum	N • m	84.1 to 108.5	100.4	Pass
	Time	Msec.	47.0 to 58.0	55.1	Pass
Positive Moment Decay, Time To Zero Crossing	Msec.	97.0 to 107.0	105.7	Pass	
Overall Test Results				Pass	


 Laboratory Technician


 Approved By

September 19, 1997
 Test Date

9/19/97
 Date



Curve Description: Pendulum Deceleration

Maximum Value: 25.8 at 10.5 Milliseconds

Minimum Value: -3.3 at 42.1 Milliseconds

SAE Filter Class: 60

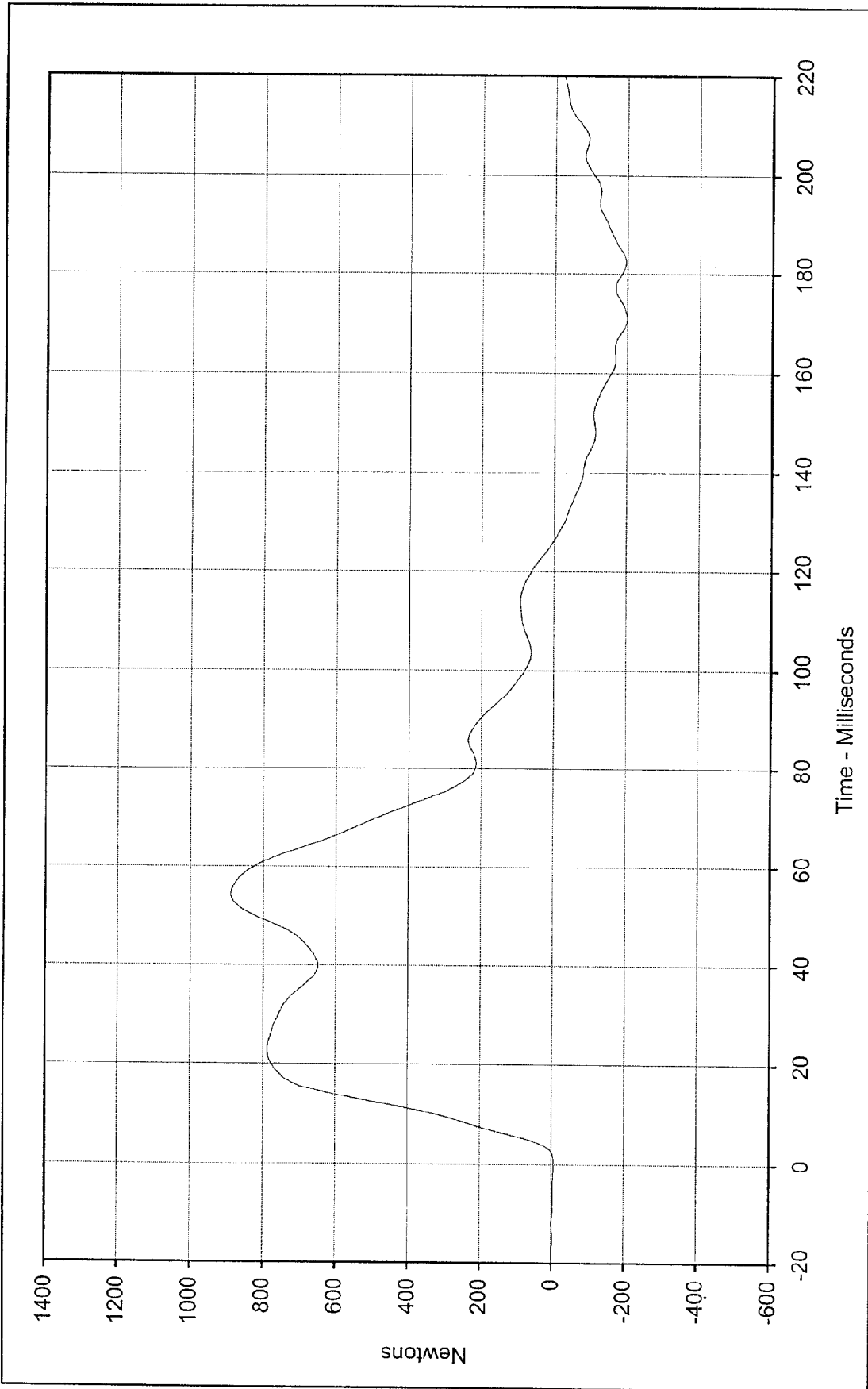
Date of Test: 9/19/97

ATD Serial No.: 34

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: N/A Test I.D.: MNF09

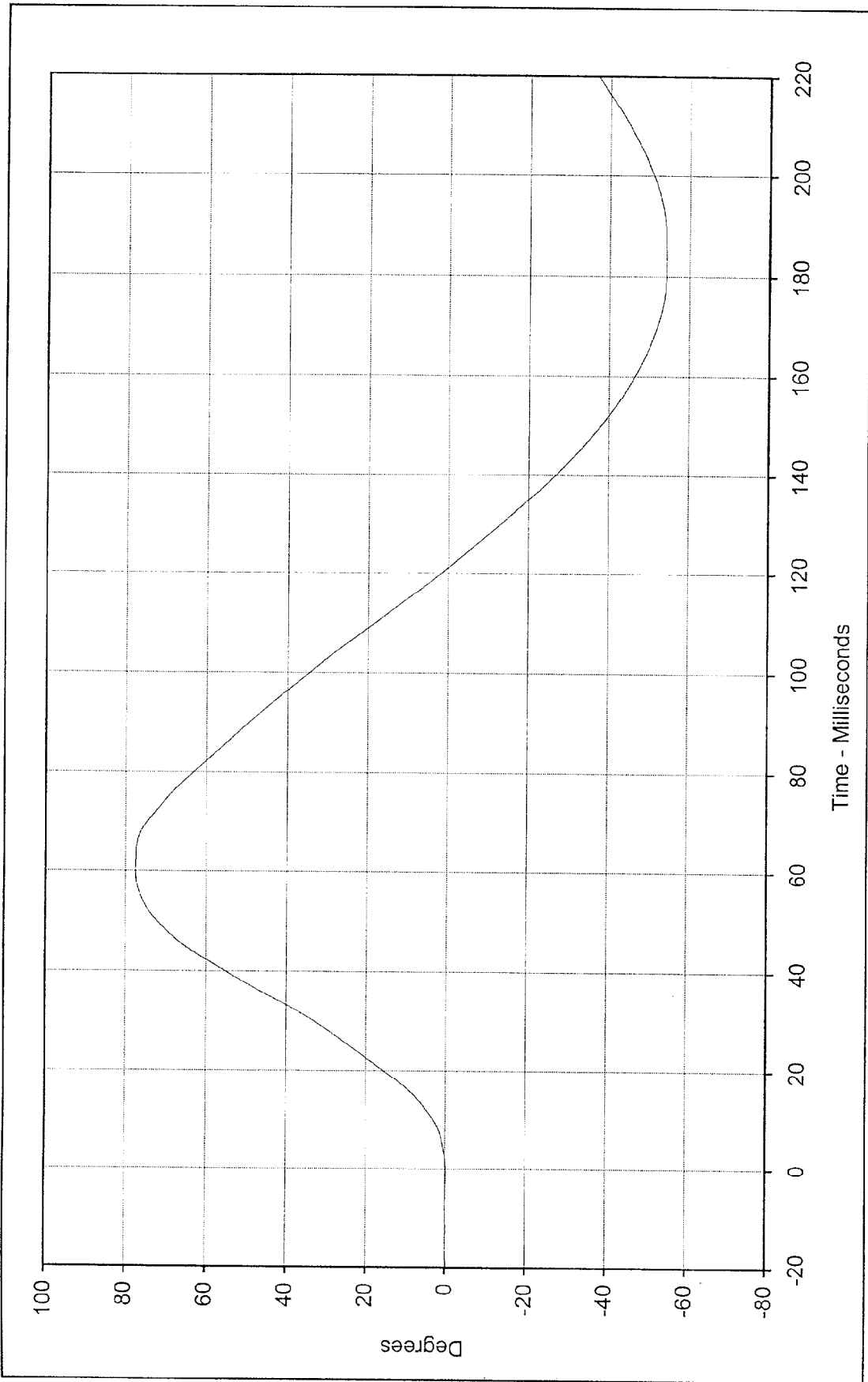




Curve Description: Neck Force X
 Maximum Value: 888.9 at 54.3 Milliseconds
 Minimum Value: -199.2 at 170.9 Milliseconds
 SAE Filter Class: 60
 Date of Test: 9/19/97
 ATD Serial No.: 34

Testing Program: Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: N/A Test I.D.: MNF09

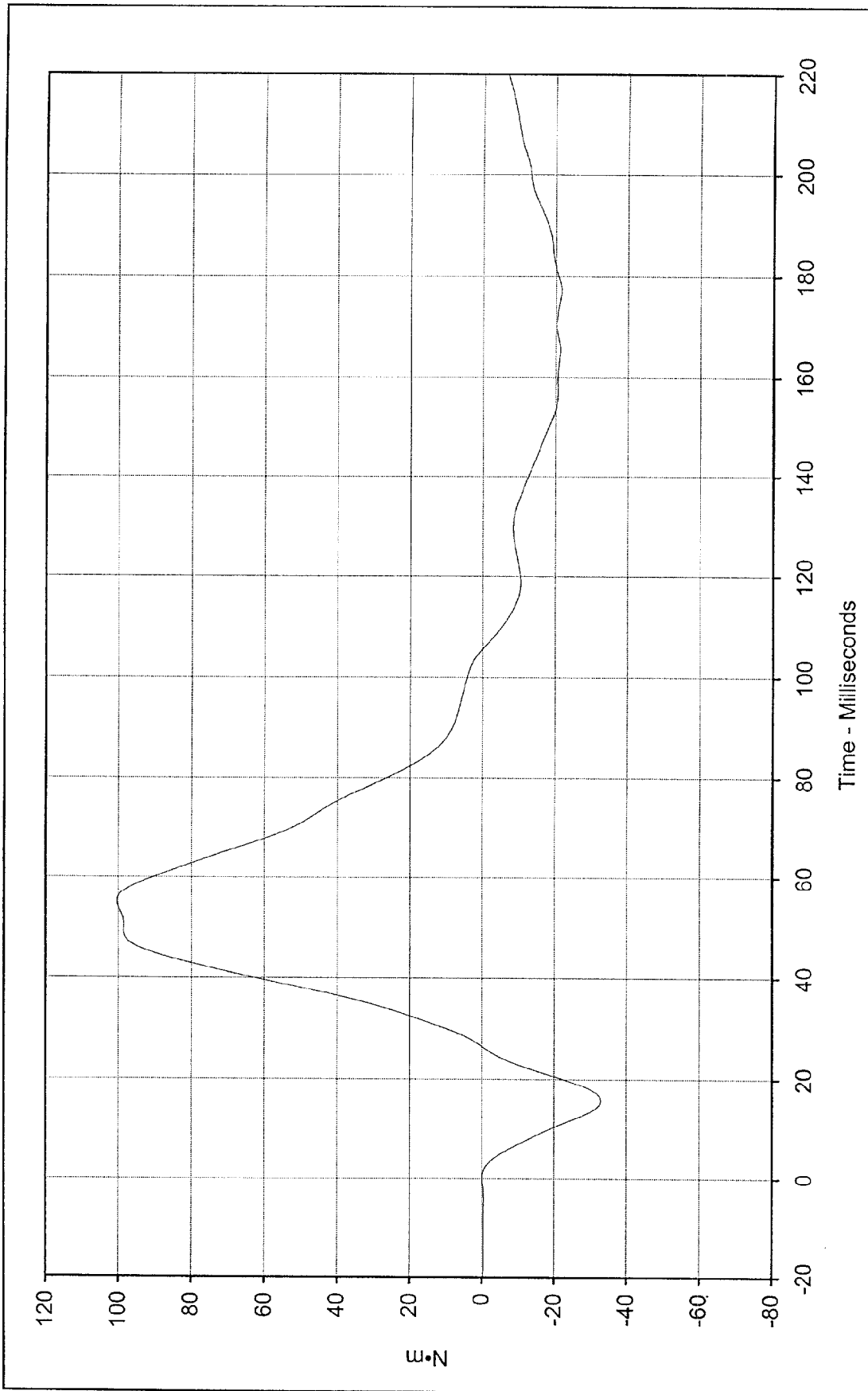




Curve Description: "D" Plane Rotation
 Maximum Value: 77.6 at 60.3 Milliseconds
 Minimum Value: -54.3 at 181.6 Milliseconds
 SAE Filter Class: 60
 Date of Test: 9/19/97
 ATD Serial No.: 34

Testing Program: Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: N/A Test I.D.: MNF09

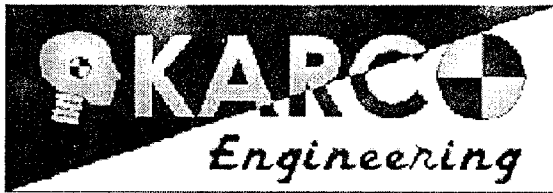




Curve Description: Moment About Occipital Condyles Testing Program: Hybrid III Neck Flexion Test (Male)
 Maximum Value: 100.4 at 55.1 Milliseconds Test Information: SIN of Part: N/A Test I.D.: MNF09
 Minimum Value: -32.9 at 15.7 Milliseconds



SAE Filter Class: 60
 Date of Test: 9/19/97
 ATD Serial No.: 34



Hybrid III Calibration Data Sheet

50TH Percentile Male

Neck Extension Test

ATD Serial No.: 034

Part Serial No.: N/A

Test I.D.: NE001

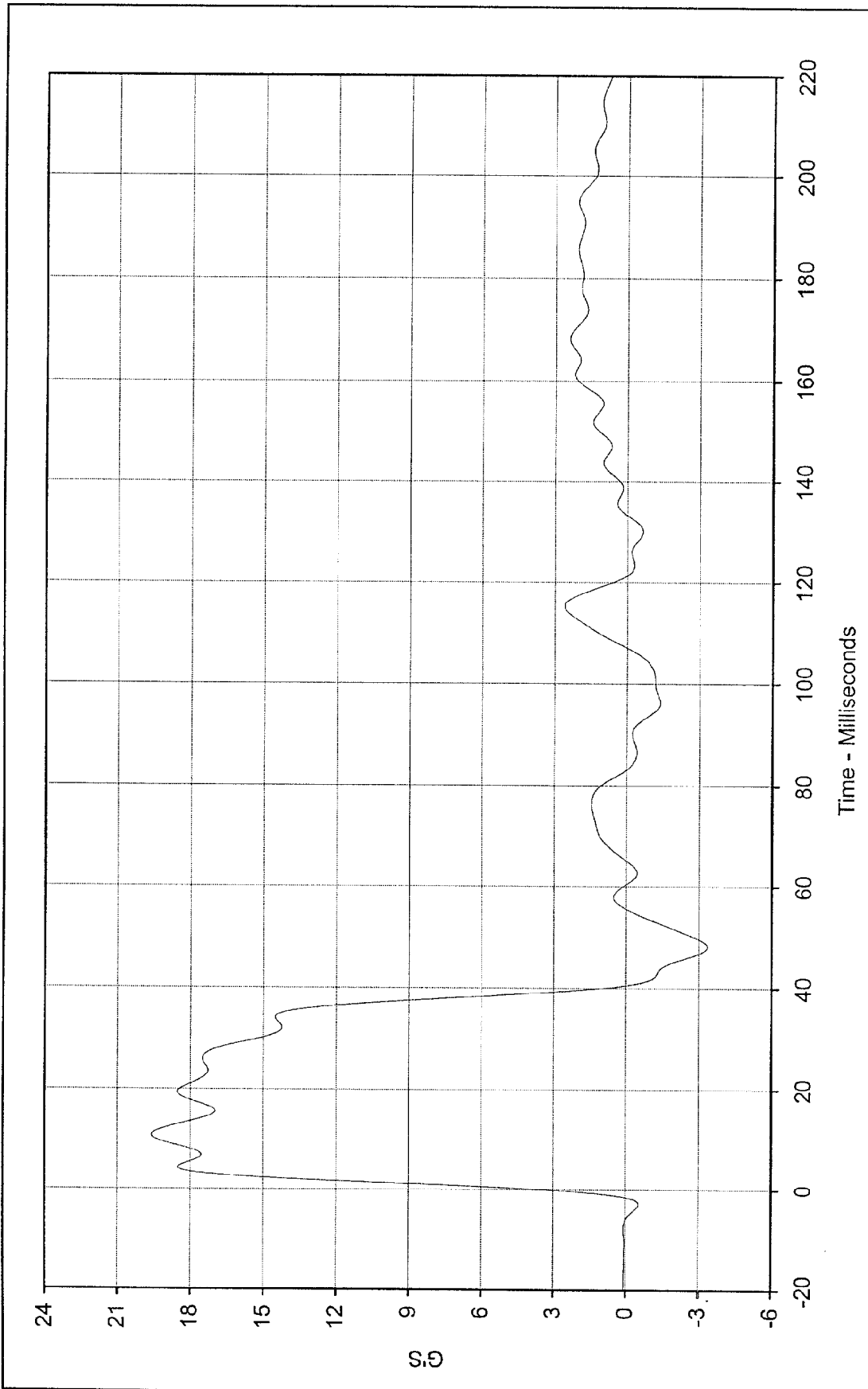
Tested Parameter	Units	Specification	Result	Pass/Fail	
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass	
Laboratory Relative Humidity	%	10 to 70	36	Pass	
Pendulum Velocity	m/s	5.95 to 6.19	6.08	Pass	
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	19.4	Pass
	20 Msec.	G's	14.0 to 19.0	18.4	Pass
	30 Msec.	G's	11.0 to 16.0	15.2	Pass
Peak Pendulum Decel. after 30 Msec.	G's	≤ 22.0	15.2	Pass	
Deceleration Decay, Time to Cross 5 G's	Msec.	38.0 to 46.0	38.6	Pass	
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	91.5	Pass
	Time	Msec.	72.0 to 82.0	73.4	Pass
"D" Plane Rotation Decay, Time To Zero Crossing	Msec.	147.0 to 174.0	153.4	Pass	
Moment About Occipital Condyle	Maximum	N • m	-52.9 to -79.9	-66.1	Pass
	Time	Msec.	65.0 to 79.0	68.9	Pass
Negative Moment Decay, Time To Zero Crossing	Msec.	120.0 to 148.0	123.9	Pass	
Overall Test Results				Pass	

Laboratory Technician

Approved By

September 19, 1997
 Test Date

Date



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

Maximum Value: 19.6 at 10.7 Milliseconds

Minimum Value: -3.4 at 48.1 Milliseconds

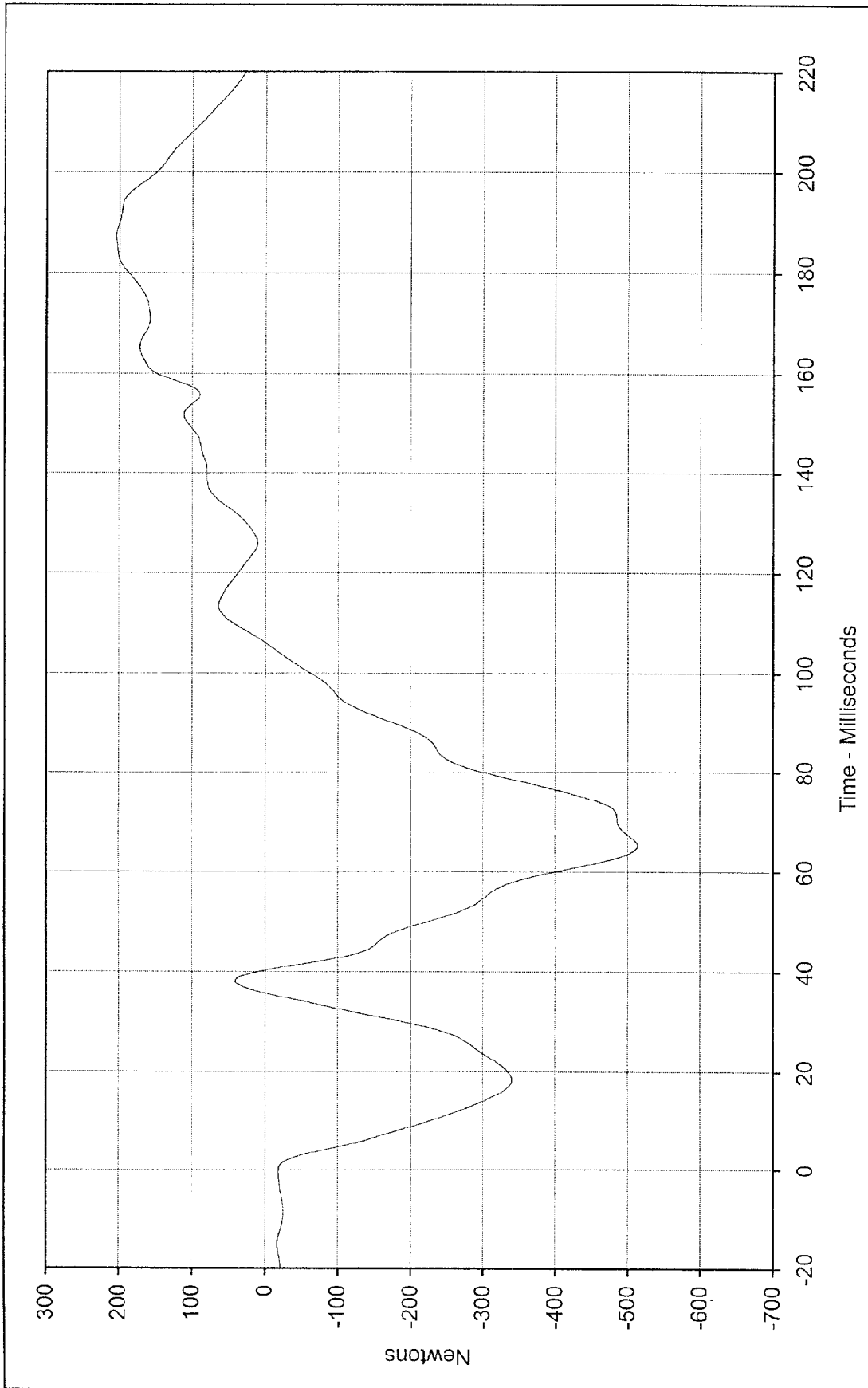
SAE Filter Class: 60

Date of Test: 09/19/97

ATD Serial No.: 034

Test Information: S/N of Part: N/A Test I.D.: NE001



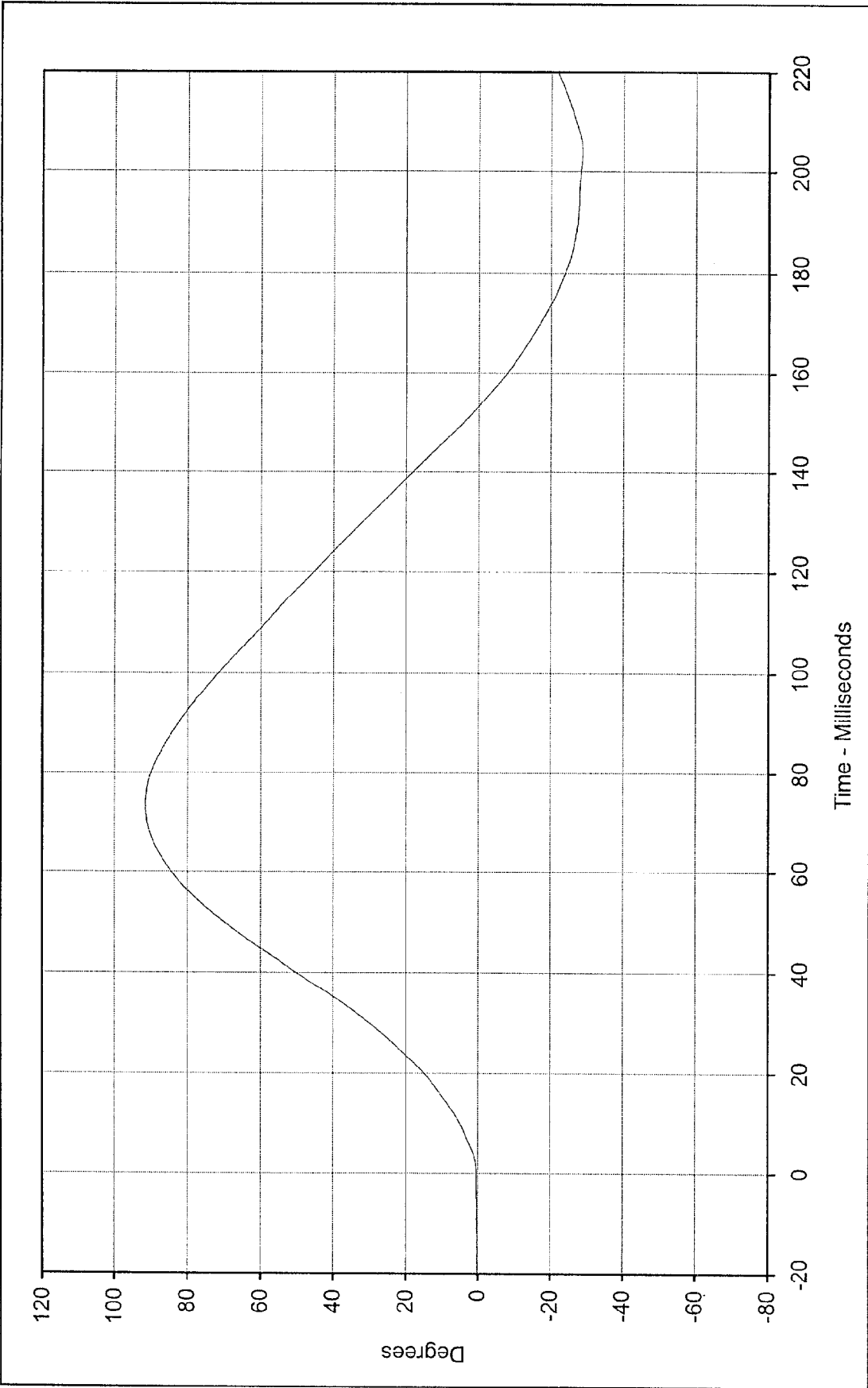


Testing Program: Hybrid III Neck Extension Test (Male)
 Test Information: S/N of Part: N/A Test I.D.: NE001

Curve Description: Neck Force X
 Maximum Value: 204.2 at 187.4 Milliseconds
 Minimum Value: -513.6 at 65.1 Milliseconds

SAE Filter Class: 60
 Date of Test: 09/19/97
 ATD Serial No.: 034

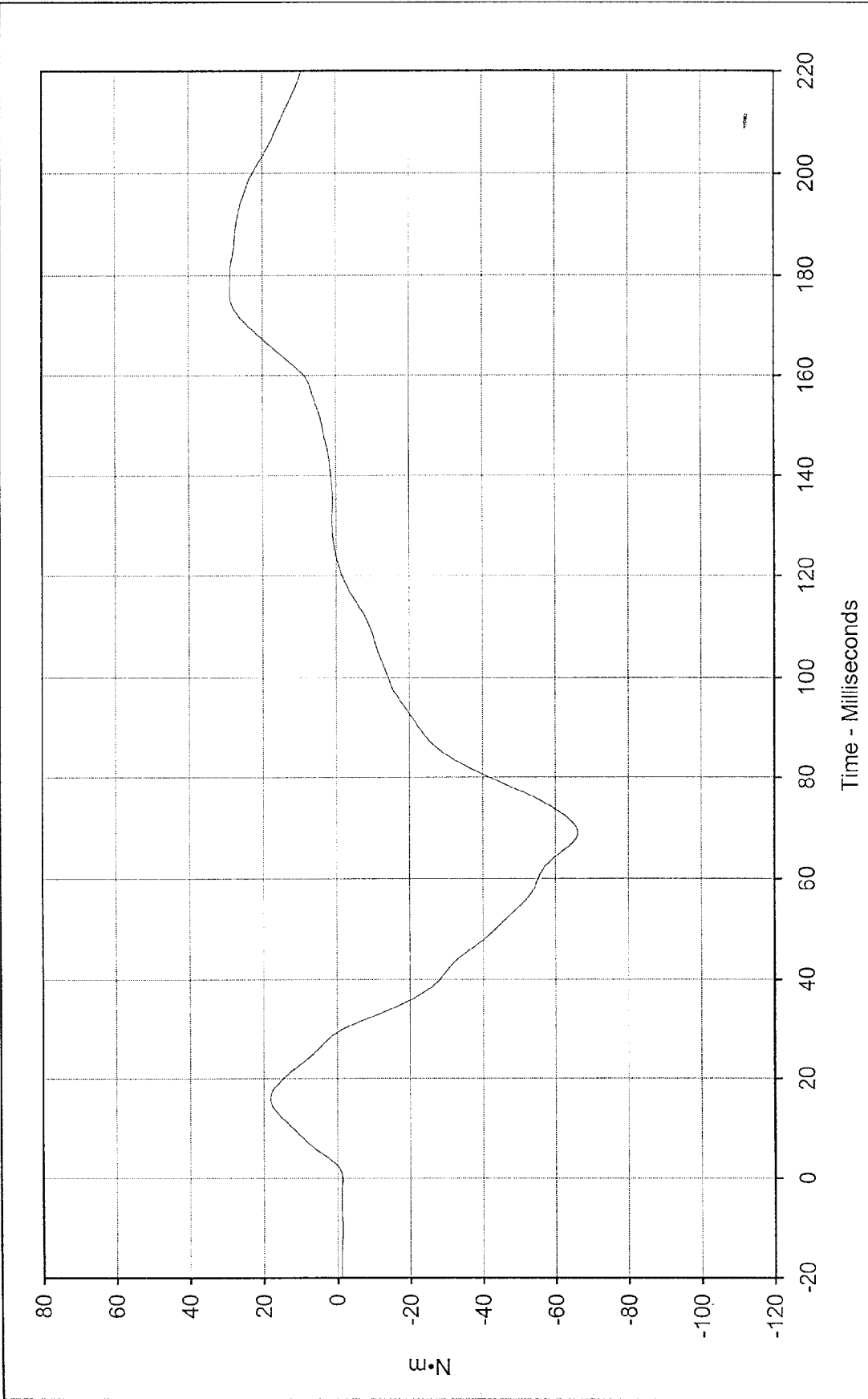




Curve Description: "D" Plane Rotation
Maximum Value: 91.5 at 73.4 Milliseconds
Minimum Value: -28.6 at 203.9 Milliseconds
SAE Filter Class: 60
Date of Test: 09/19/97
ATD Serial No.: 034

Testing Program: Hybrid III Neck Extension Test (Male)
Test Information: S/N of Part: N/A Test I.D.: NE001

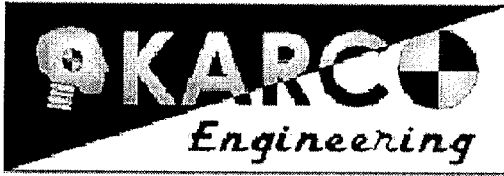




Curve Description: Moment About Occipital Condyles
 Maximum Value: 28.9 at 176.7 Milliseconds
 Minimum Value: -66.1 at 68.9 Milliseconds
 SAE Filter Class: 60
 Date of Test: 09/19/97
 ATD Serial No.: 034

Testing Program: Hybrid III Neck Extension Test (Male)
 Test Information: SIN of Part: N/A Test I.D.: NE001





Hybrid III Calibration Data Sheet

50TH Percentile Male


External Measurements

ATD Serial No.: 034

Part Serial No.: N/A

Test I.D.: N/A

External Measurement Data				
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory temperature	°C	20.4 to 22.1	20.9	Pass
Laboratory relative humidity	%	10 to 70	43	Pass
A - Total sitting height	mm	878.8 to 889.0	880.0	Pass
B - Shoulder pivot height	mm	505.5 to 520.7	510.7	Pass
C - "H" point height	mm	83.8 to 88.9	87.7	Pass
D - "H" point from seat back	mm	134.6 to 139.7	137.5	Pass
E - Shoulder pivot from back	mm	83.8 to 94.0	84.0	Pass
F - Thigh clearance	mm	139.7 to 154.9	147.0	Pass
G - Elbow back to wrist pivot	mm	289.6 to 304.8	300.1	Pass
H - Skull cap to back line	mm	40.6 to 45.7	44.0	Pass
I - Shoulder to elbow length	mm	330.2 to 345.4	340.1	Pass
J - Elbow rest height	mm	190.5 to 210.8	209.0	Pass
K - Buttock to knee length	mm	579.1 to 604.5	595.0	Pass
L - Popliteal length	mm	429.3 to 454.7	444.0	Pass
M - Knee pivot height	mm	485.1 to 500.4	490.7	Pass
N - Buttock popliteal length	mm	452.1 to 477.5	467.0	Pass
O - Chest depth	mm	213.4 to 228.6	216.0	Pass
P - Foot length	mm	251.5 to 266.7	259.7	Pass
V - Shoulder breadth	mm	421.6 to 436.9	430.0	Pass
W - Foot breadth	mm	91.4 to 106.7	99.0	Pass
Y - Chest circumference	mm	970.3 to 1000.8	999.0	Pass
Z - Waist circumference	mm	835.7 to 866.1	861.0	Pass
AA - Location for chest circumference	mm	429.3 to 434.3	433.0	Pass
BB - Location for waist circumference	mm	226.1 to 231.1	229.0	Pass
Overall Test Results				Pass



 Laboratory Technician

October 12, 1997

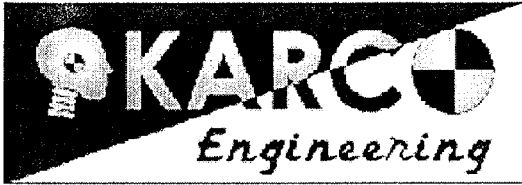
Test Date



 Approved By

10/12/97

Date



Hybrid III Calibration Data Sheet

50TH Percentile Male

Left Knee Impact Test

ATD Serial No.: 35


Part Serial No.: N/A

Test I.D.: MK005

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	2.073 to 2.134	2.105	Pass
Peak Probe Force	Newtons	4715 to 5782	5605.8	Pass
Overall Test Results				Pass



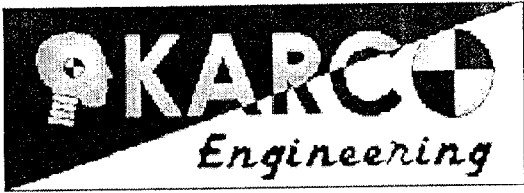
Laboratory Technician



Approved By

September 18, 1997
Test Date

9/18/97
Date



Hybrid III Calibration Data Sheet

50TH Percentile Male

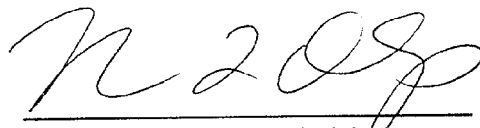
Right Knee Impact Test

ATD Serial No.: 35

Part Serial No.: N/A

Test I.D.: MK001

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	2.073 to 2.134	2.108	Pass
Peak Probe Force	Newtons	4715 to 5782	5726.1	Pass
Overall Test Results				Pass


Laboratory Technician

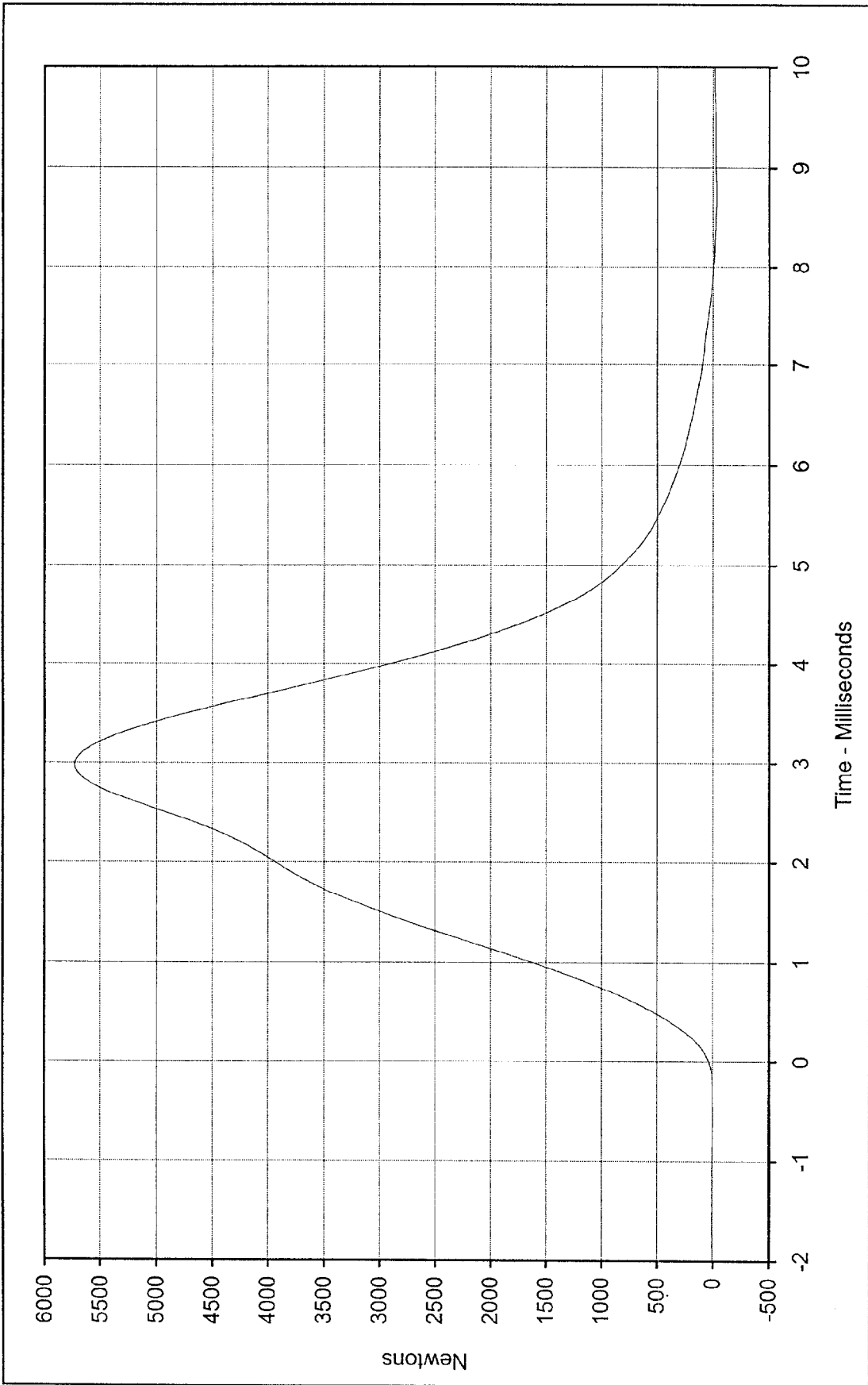

Approved By

September 17, 1997

Test Date

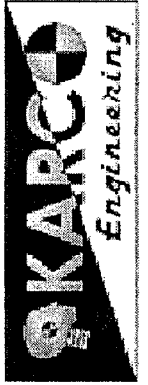
9/17/97

Date



Curve Description: Hybrid III Right Knee Impact Test
 Maximum Value: 5726.1 at 3.0 Milliseconds
 Minimum Value: -4.6 at 8.0 Milliseconds

Testing Program: Hybrid III Right Knee Impact Test
 Test Information: Part S/N: N/A Test I.D.: MK001
 SAE Filter Class: 600
 Date of Test: 9/17/97
 ATD Serial No.: 35





Hybrid III Calibration Data Sheet

50TH Percentile Male

Head Drop Calibration

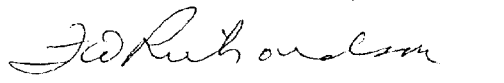
ATD Serial No.: 035

Part Serial No.: N/A

Test I.D.: MH006

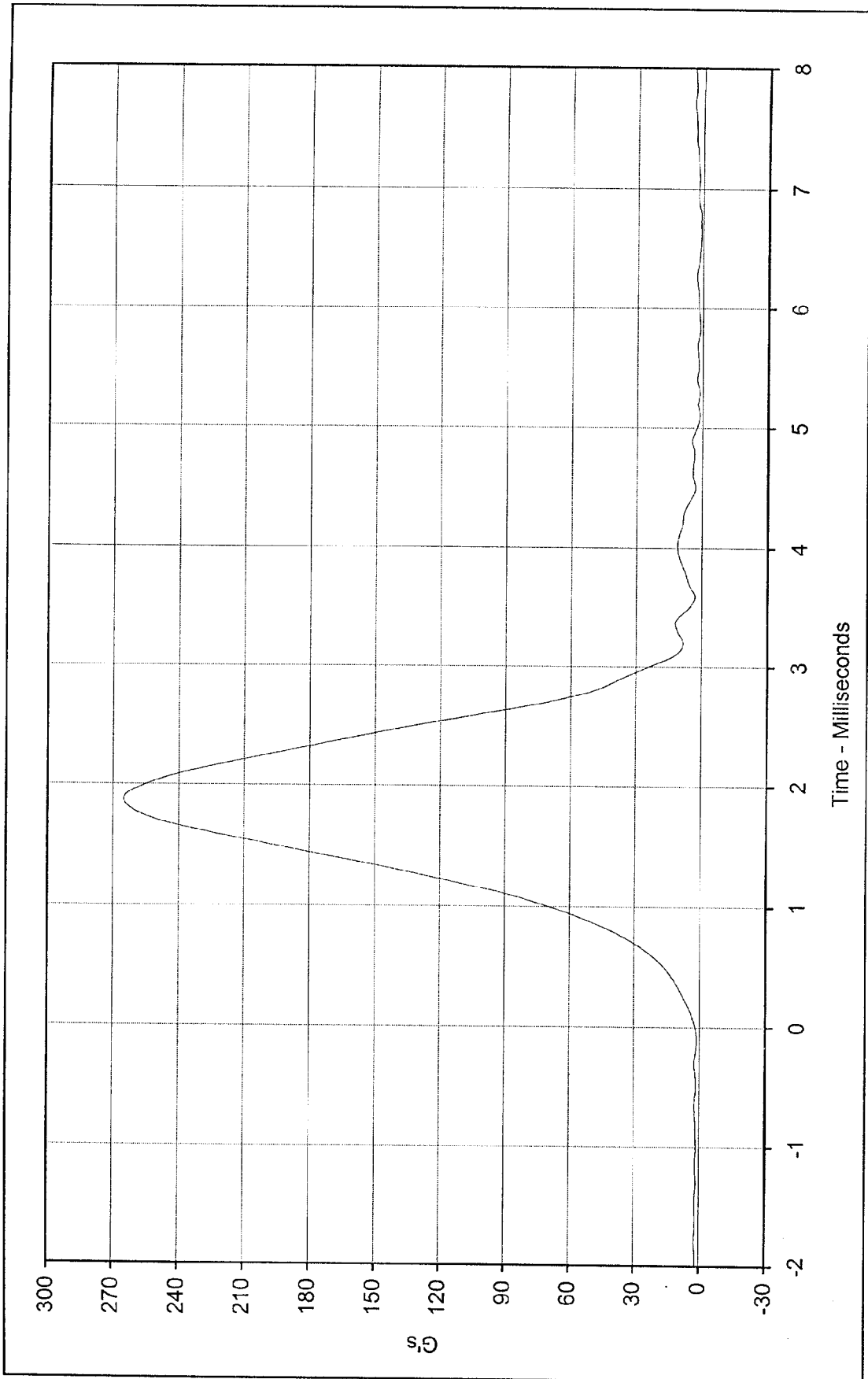
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	20.6	Pass
Laboratory Relative Humidity	%	10 to 70	35	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	264.6	Pass
Peak Lateral Acceleration	G's	≤15.0	9.2	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass


Laboratory Technician


Approved By

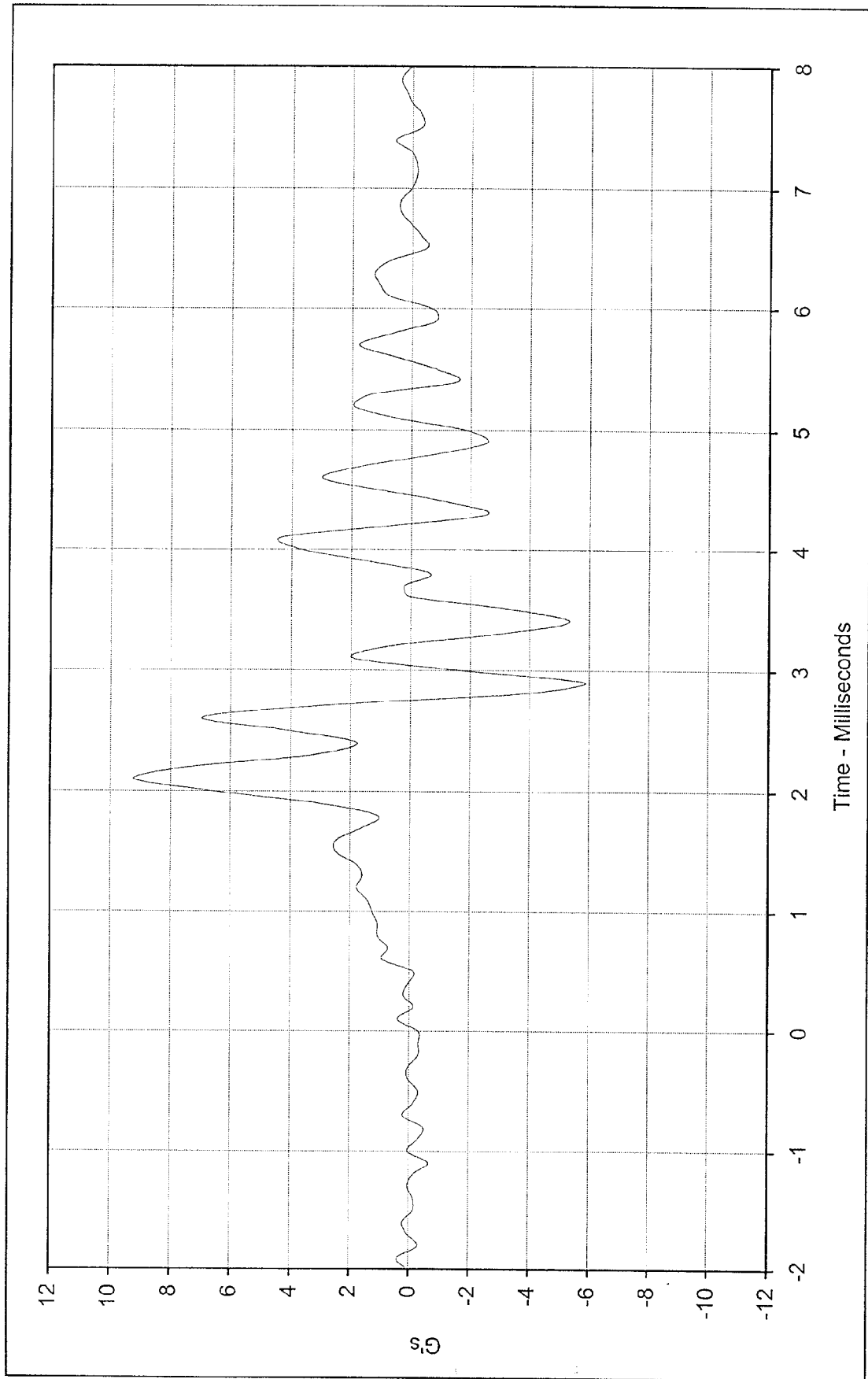
September 17, 1997
Test Date

9/17/97
Date



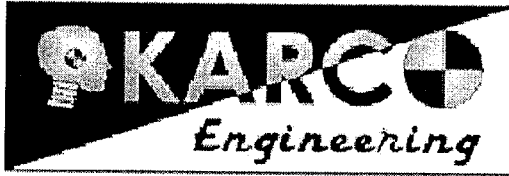
Curve Description: Head Resultant Acceleration Testing Program Hybrid III Head Drop Calibration (Male)
 Maximum Value: 264.6 at 1.9 Milliseconds Test Information: S/N of Part: N/A Test I.D.: MH006
 Minimum Value: 0.8 at 6.6 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 9/17/97
 ATD Serial No.: 035





Curve Description:	Head Acceleration Y Axis	Testing Program	Hybrid III Head Drop Calibration (Male)
Maximum Value:	9.2 at 2.1 Milliseconds	S/N of Part:	N/A Test I.D.: MH006
Minimum Value:	-5.8 at 2.9 Milliseconds		
SAE Filter Class:	1000		
Date of Test:	9/17/97		
ATD Serial No.:	035		





Hybrid III Calibration Data Sheet

50TH Percentile Male

Thorax Impact Test

ATD Serial No.: 35

Part Serial No.: N/A

Test I.D.: H3CH1

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	39	Pass
Probe Velocity	m/s	6.58 to 6.82	6.64	Pass
Peak Probe Force	Newtons	5159 to 5893	5370	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.46	Pass
Internal Hysteresis	%	69 to 85	76.8	Pass
Overall Test Results				Pass

Laboratory Technician

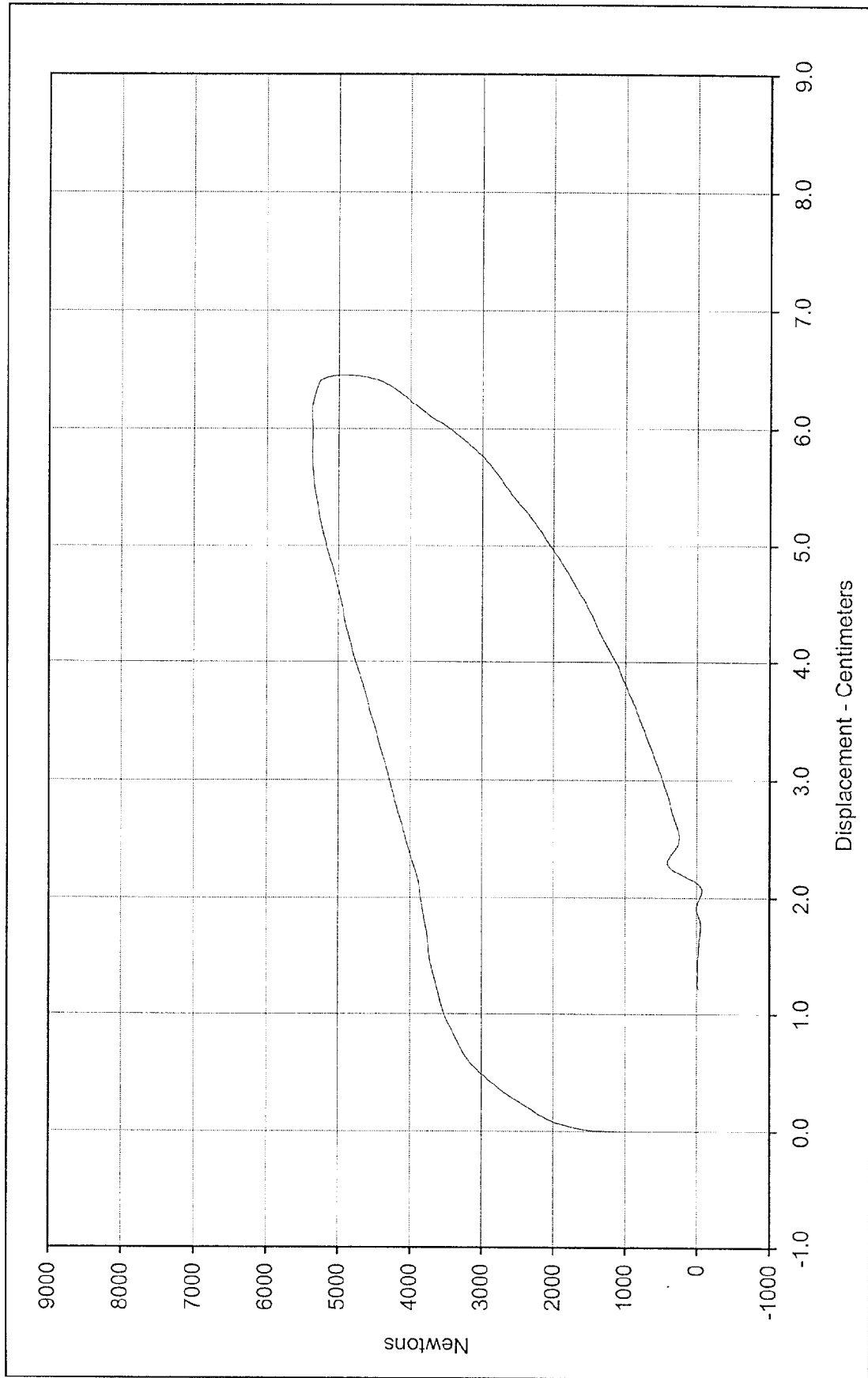
Approved By

October 10, 1997

Test Date

10/10/97

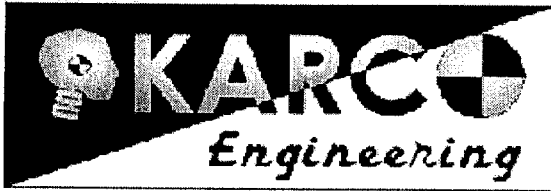
Date



Curve Description: Probe Force vs. Chest Displacement
 Testing Program: Hybrid III Thorax Impact Test
 Probe Force: 5370.0 Newtons
 Test Information: S/N of Part: N/A Test I.D.: H3CH1
 Chest Displ.: 6.46 Centimeters



SAE Filter Class: 180
 Date of Test: 10/10/97
 ATD Serial No.: 35



Hybrid III Calibration Data Sheet

50TH Percentile Male

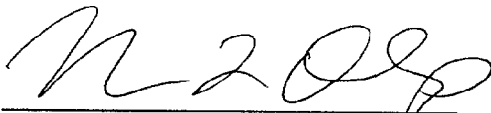
Neck Flexion Test

ATD Serial No.: 35

Part Serial No.: N/A

Test I.D.: MNF03

Tested Parameter	Units	Specification	Result	Pass/Fail	
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass	
Laboratory Relative Humidity	%	10 to 70	36	Pass	
Pendulum Velocity	m/s	6.89 to 7.13	6.94	Pass	
Pendulum Deceleration	10 Msec.	m/s	22.5 to 27.5	23.2	Pass
	20 Msec.	m/s	17.6 to 22.6	20.0	Pass
	30 Msec.	m/s	12.5 to 18.5	16.2	Pass
Peak Pendulum Decel. after 30 Msec.	G's	≤ 29.0	16.2	Pass	
Deceleration Decay, Time to Cross 5 G's	Msec.	34.0 to 42.0	35.7	Pass	
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	72.3	Pass
	Time	Msec.	57.0 to 64.0	59.9	Pass
"D" Plane Rotation Decay, Time To Zero Crossing	Msec.	113.0 to 128.0	115.3	Pass	
Moment About Occipital Condyle	Maximum	N • m	84.1 to 108.5	94.7	Pass
	Time	Msec.	47.0 to 58.0	53.3	Pass
Positive Moment Decay, Time To Zero Crossing	Msec.	97.0 to 107.0	106.5	Pass	
Overall Test Results				Pass	



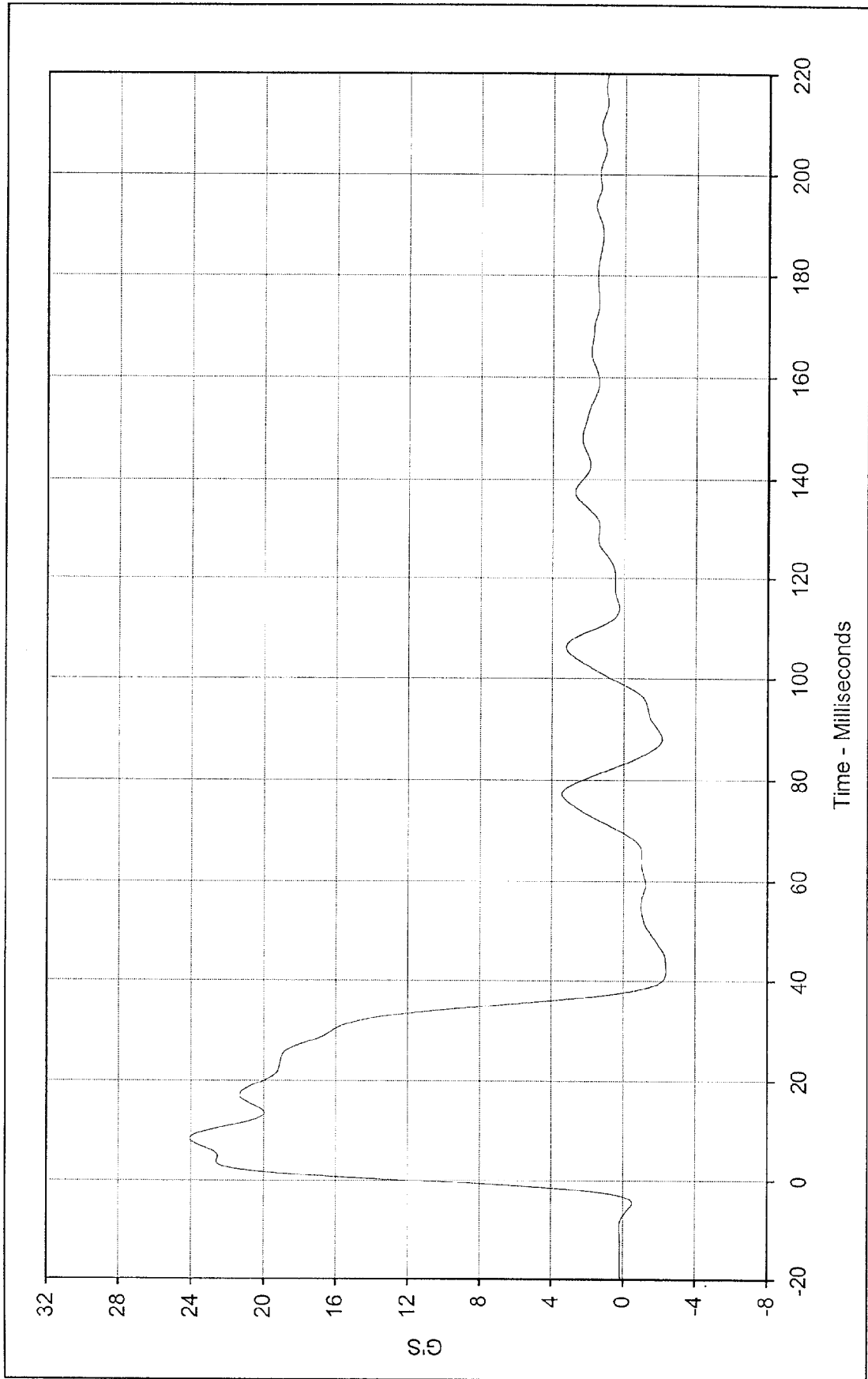
 Laboratory Technician



 Approved By

September 19, 1997
 Test Date

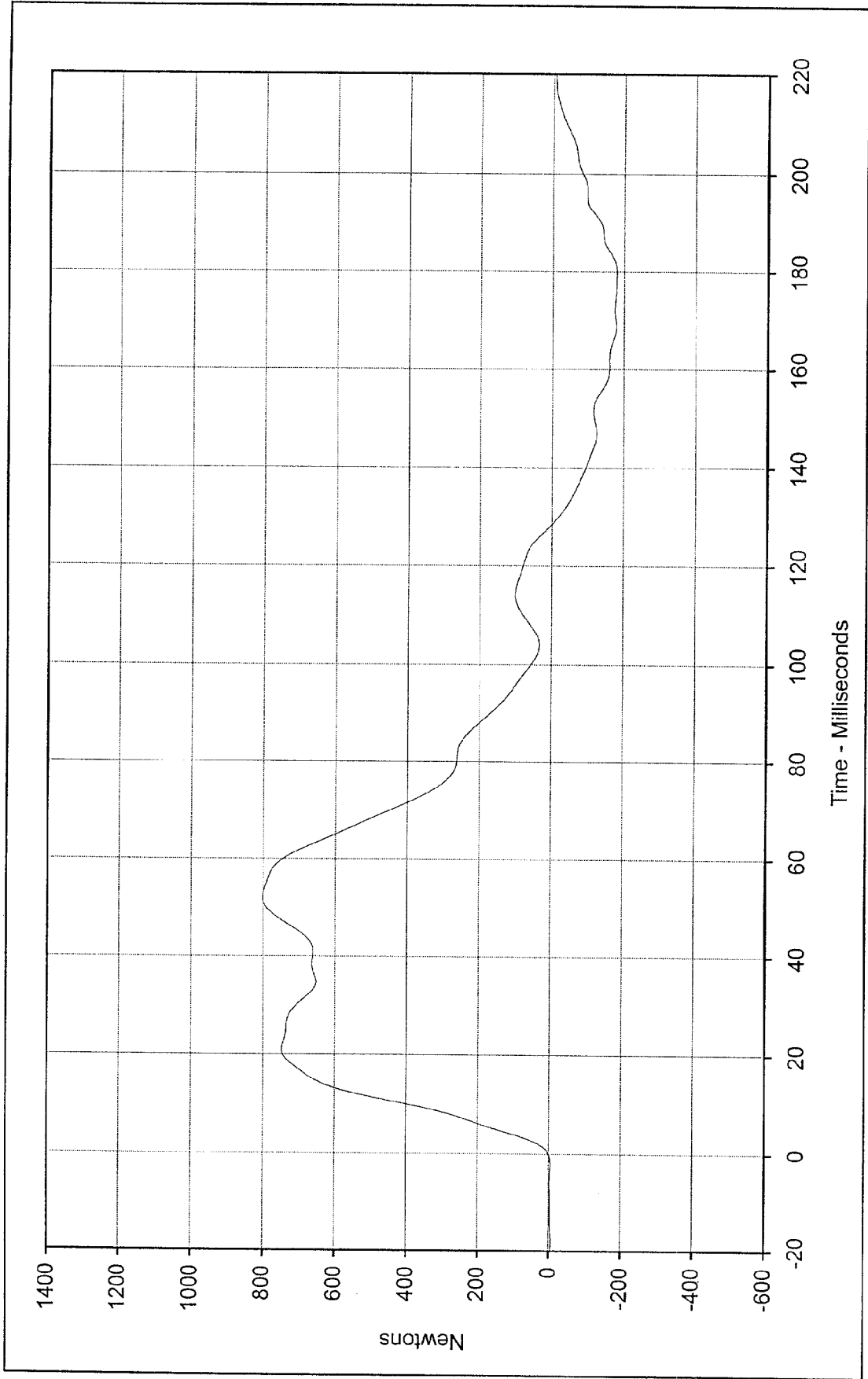
9/19/97
 Date



Curve Description: Pendulum Deceleration
 Maximum Value: 24.1 at 8.4 Milliseconds
 Minimum Value: -2.4 at 41.9 Milliseconds
 SAE Filter Class: 60
 Date of Test: 9/19/97
 ATD Serial No.: 35

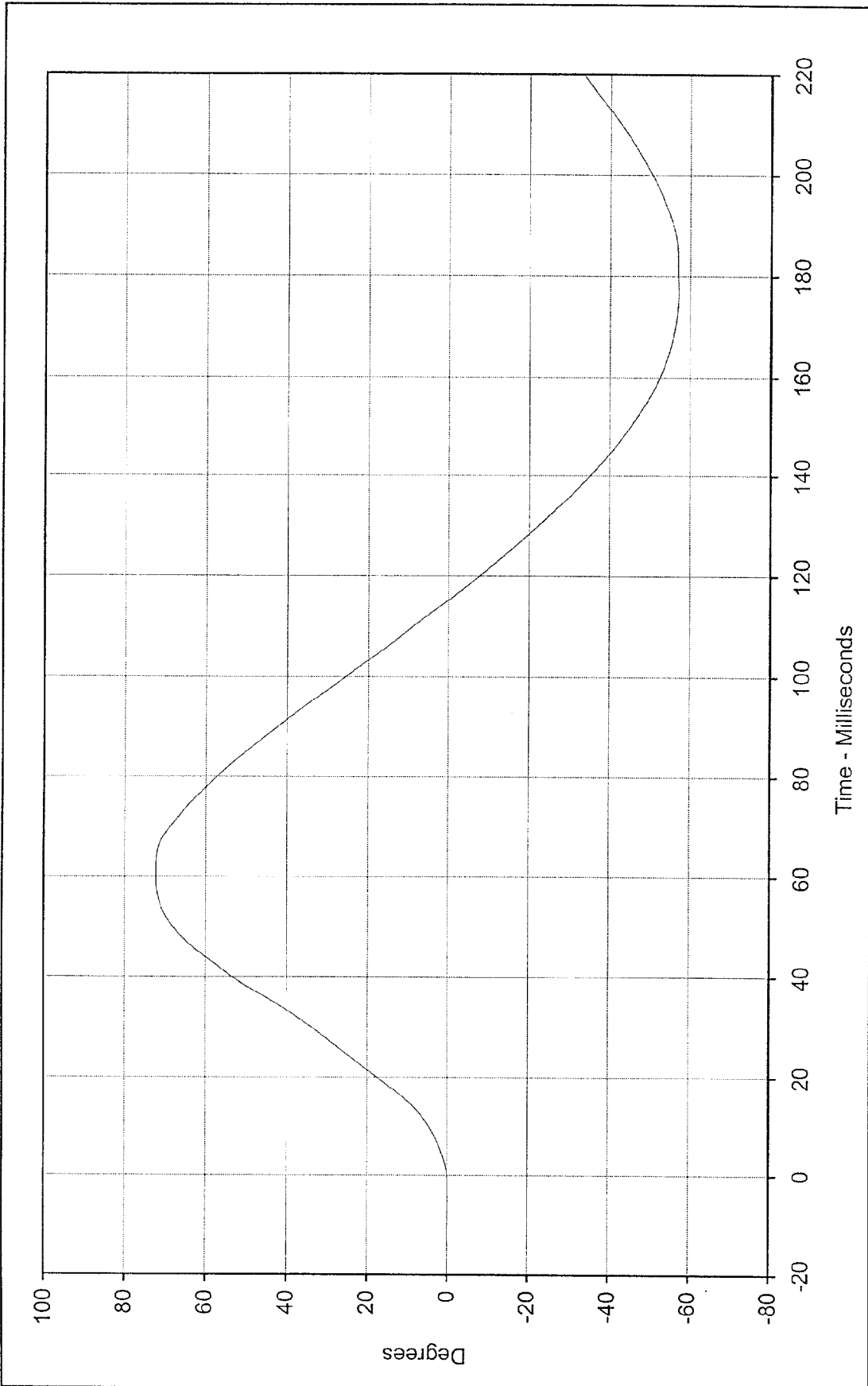
Testing Program: Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: N/A Test I.D.: MNF03





Curve Description: Neck Force X Testing Program: Hybrid III Neck Flexion Test (Male)
 Maximum Value: 801.7 at 52.0 Milliseconds Test Information: S/N of Part: N/A Test I.D.: MNF03
 Minimum Value: -179.2 at 179.8 Milliseconds
 SAE Filter Class: 60
 Date of Test: 9/19/97
 ATD Serial No.: 35

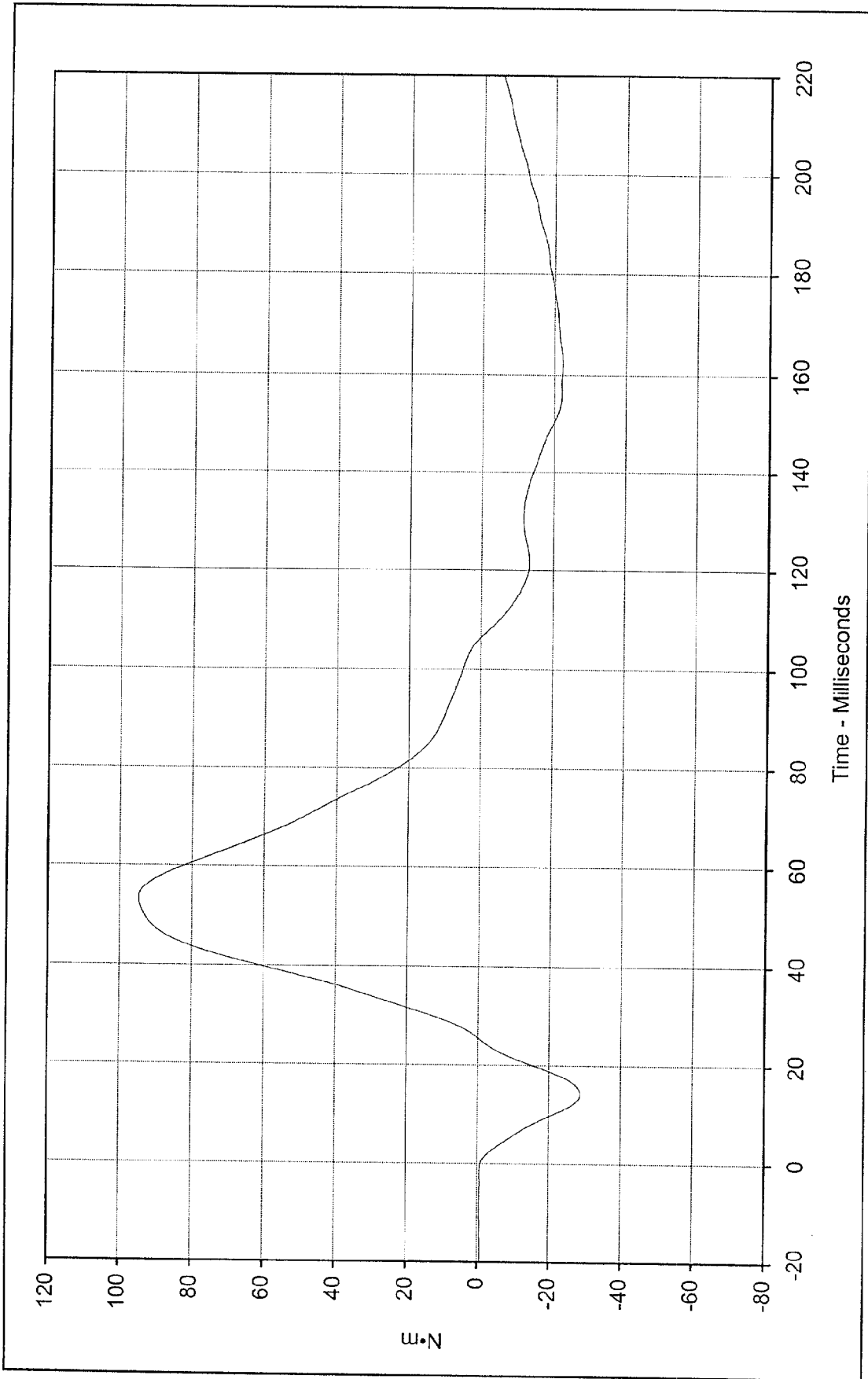




Curve Description: "D" Plane Rotation
 Maximum Value: 72.3 at 59.9 Milliseconds
 Minimum Value: -57.1 at 176.5 Milliseconds
 SAE Filter Class: 60
 Date of Test: 9/19/97
 ATD Serial No.: 35

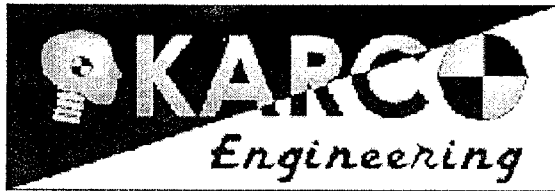
Testing Program: Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: N/A Test I.D.: MNF03





Curve Description: Moment About Occipital Condyles
 Testing Program: Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: N/A Test I.D.: MNF03
 Maximum Value: 94.7 at 53.3 Milliseconds
 Minimum Value: -28.7 at 14.2 Milliseconds
 SAE Filter Class: 60
 Date of Test: 9/19/97
 ATD Serial No.: 35





Hybrid III Calibration Data Sheet

50TH Percentile Male

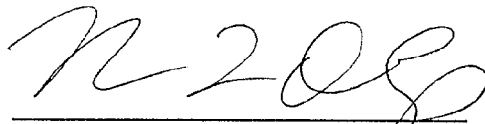
Neck Extension Test

ATD Serial No.: _____


Part Serial No.: 35

Test I.D.: NE002

Tested Parameter	Units	Specification	Result	Pass/Fail	
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass	
Laboratory Relative Humidity	%	10 to 70	36	Pass	
Pendulum Velocity	m/s	5.95 to 6.19	6.08	Pass	
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	19.5	Pass
	20 Msec.	G's	14.0 to 19.0	18.8	Pass
	30 Msec.	G's	11.0 to 16.0	15.6	Pass
Peak Pendulum Decel. after 30 Msec.	G's	≤ 22.0	16.3	Pass	
Deceleration Decay, Time to Cross 5 G's	Msec.	38.0 to 46.0	40.9	Pass	
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	101.8	Pass
	Time	Msec.	72.0 to 82.0	76.1	Pass
"D" Plane Rotation Decay, Time To Zero Crossing	Msec.	147.0 to 174.0	156.6	Pass	
Moment About Occipital Condyle	Maximum	N • m	-52.9 to- 79.9	-65.3	Pass
	Time	Msec.	65.0 to 79.0	70.7	Pass
Negative Moment Decay, Time To Zero Crossing	Msec.	120.0 to 148.0	127.8	Pass	
Overall Test Results				Pass	



 Laboratory Technician



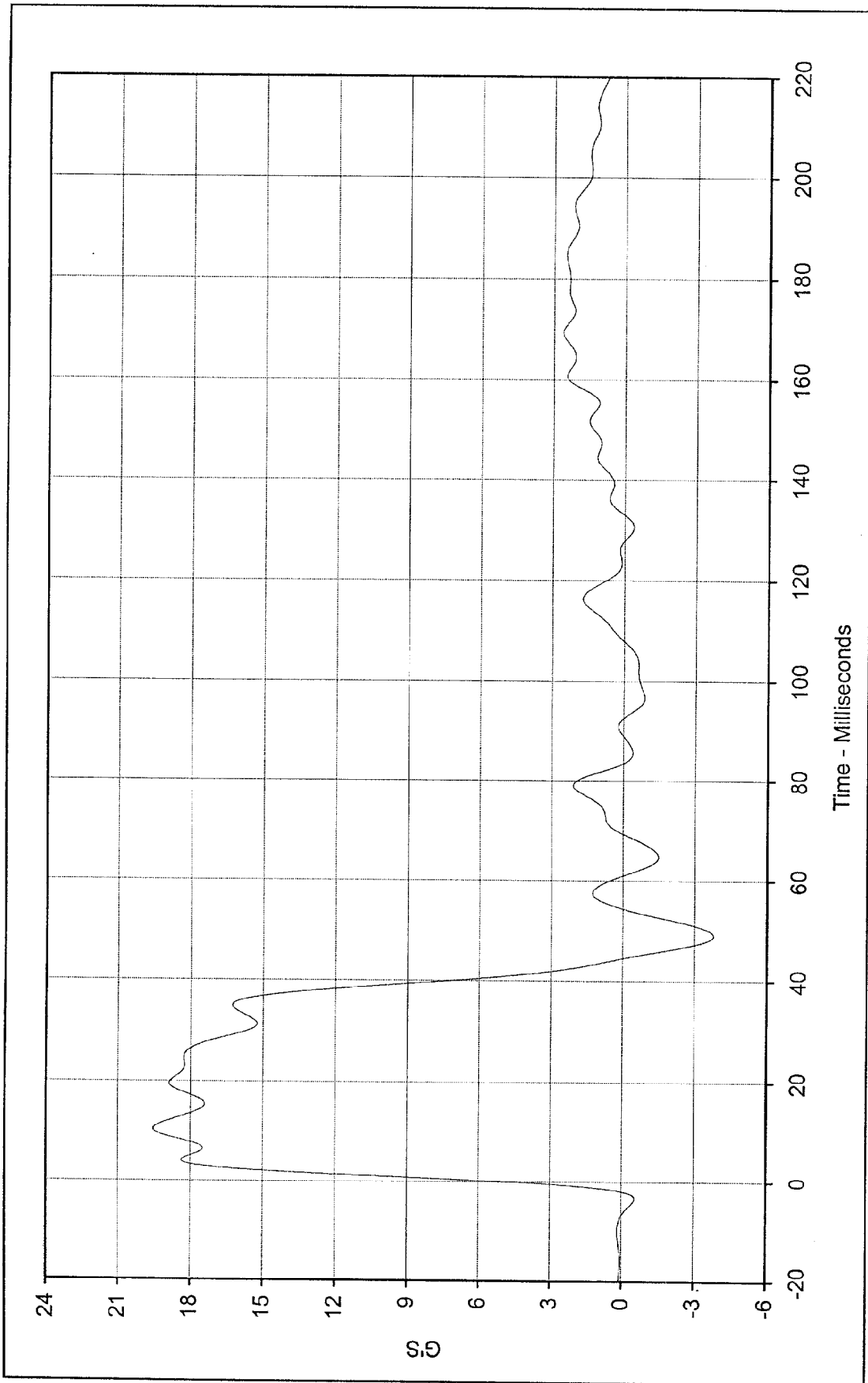
 Approved By

September 19, 1997

 Test Date

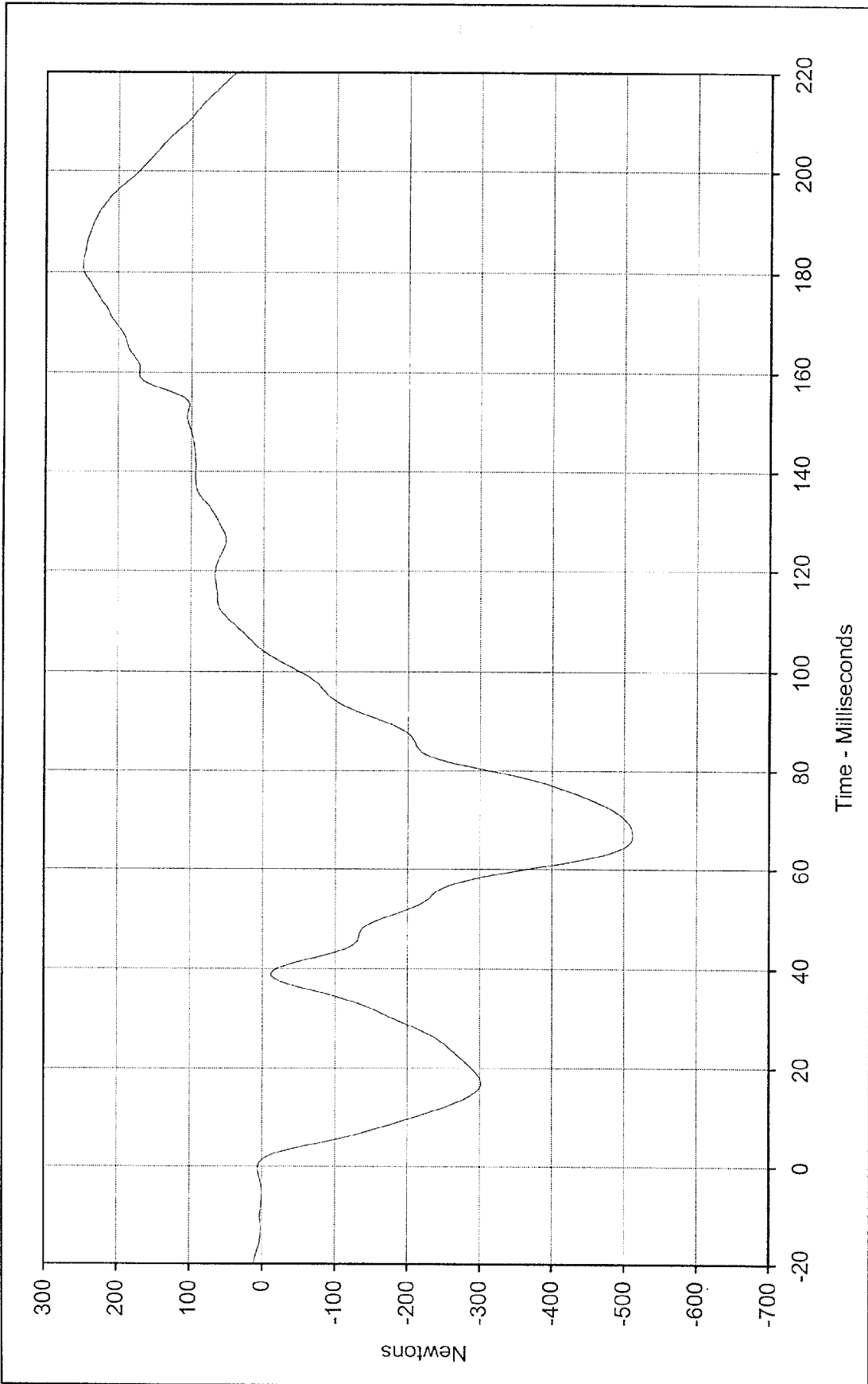
9/19/97

 Date



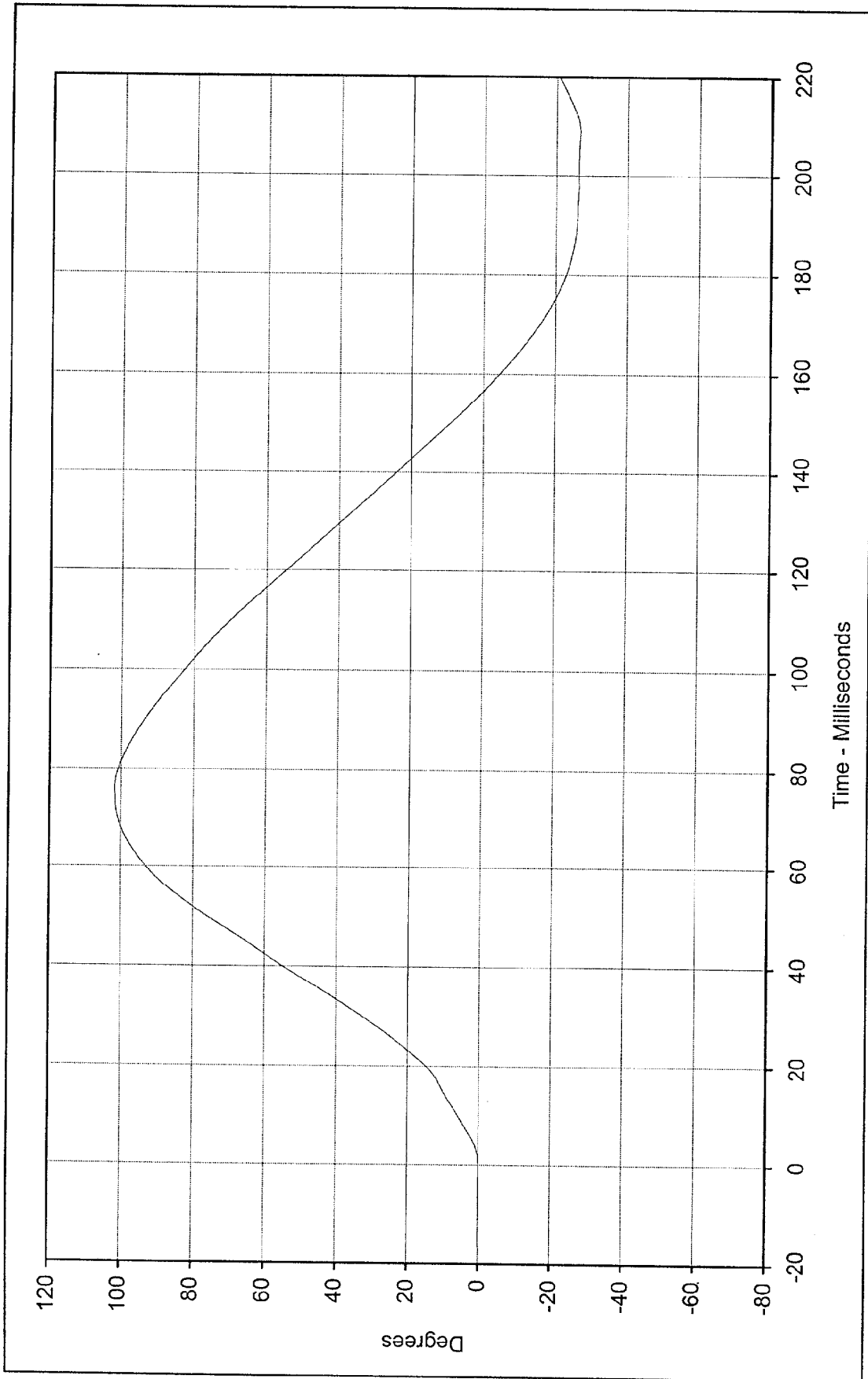
Curve Description: Pendulum Deceleration Testing Program Hybrid III Neck Extension Test (Male)
 Maximum Value: 19.5 at 10.4 Milliseconds Test Information: S/N of Part: 35 Test I.D.: NE002
 Minimum Value: -3.8 at 49.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 9/19/97
 ATD Serial No.:





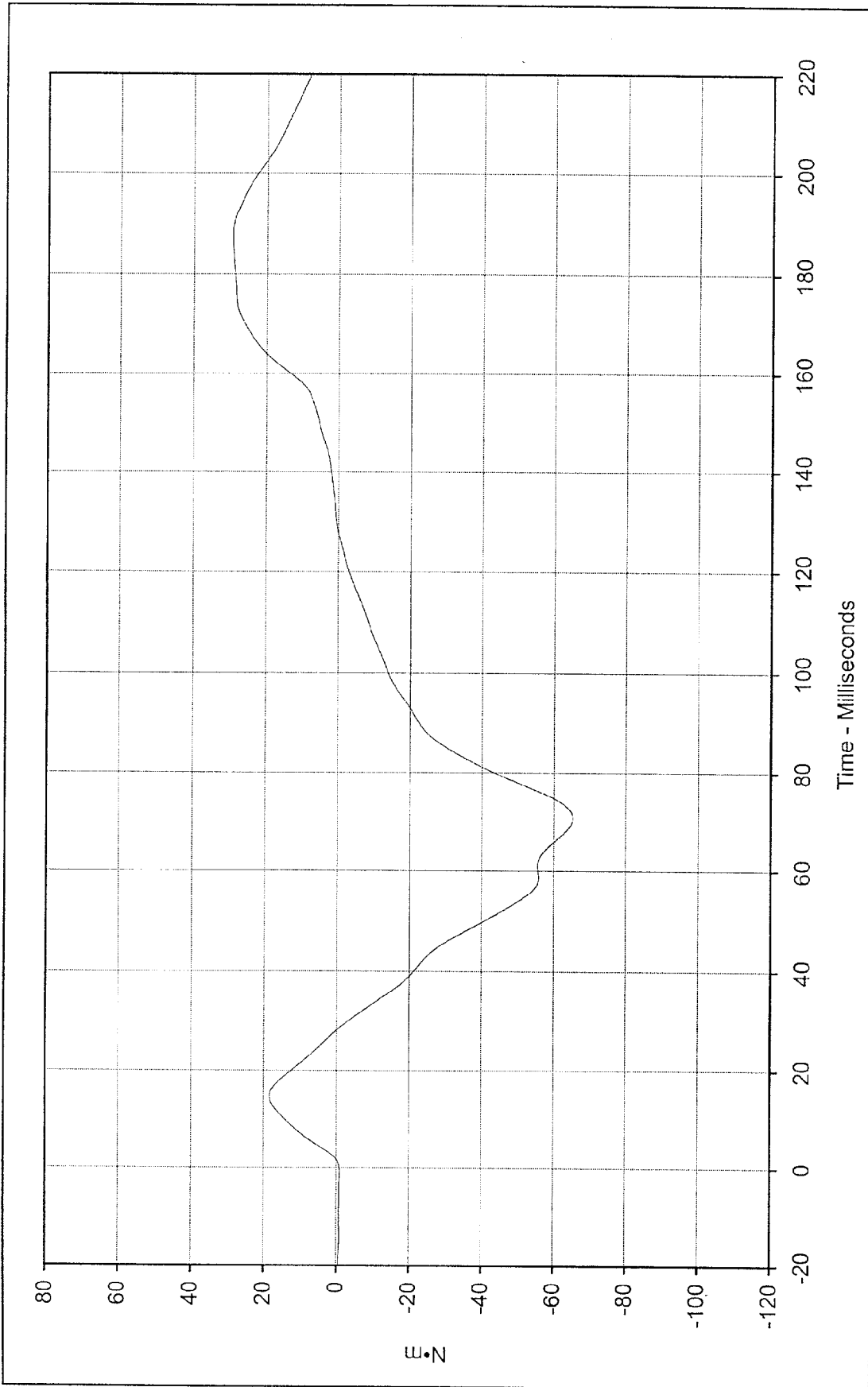
Curve Description: Neck Force X Testing Program Hybrid III Neck Extension Test (Male)
 Maximum Value: 249.1 at 181.3 Milliseconds Test Information: S/N of Part: 35 Test I.D.: NE002
 Minimum Value: -511.9 at 66.8 Milliseconds
 SAE Filter Class: 60
 Date of Test: 9/19/97
 ATD Serial No.: _____





Curve Description: "D" Plane Rotation Testing Program: Hybrid III Neck Extension Test (Male)
 Maximum Value: 101.8 at 76.1 Milliseconds Test Information: S/N of Part: 35 Test I.D.: NE002
 Minimum Value: -26.6 at 208.8 Milliseconds
 SAE Filter Class: 60
 Date of Test: 9/19/97
 ATD Serial No.: _____

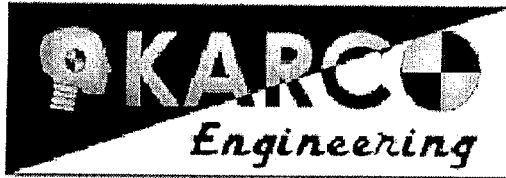




Curve Description: Moment About Occipital Condyles
 Testing Program: Hybrid III Neck Extension Test (Male)
 Maximum Value: 29.4 at 187.7 Milliseconds
 Test Information: SIN of Part: 35 Test I.D.: NE002
 Minimum Value: -65.3 at 70.7 Milliseconds



SAE Filter Class: 60
 Date of Test: 9/19/97
 ATD Serial No.: _____



Hybrid III Calibration Data Sheet

50TH Percentile Male

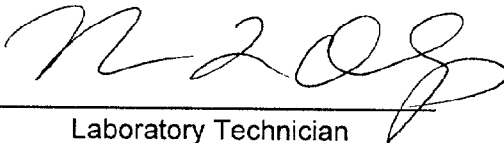
External Measurements

ATD Serial No.: 035

Part Serial No.: N/A

Test I.D.: N/A

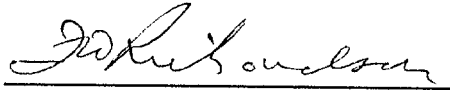
External Measurement Data				
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory temperature	°C	20.4 to 22.1	20.9	Pass
Laboratory relative humidity	%	10 to 70	43.0	Pass
A - Total sitting height	mm	878.8 to 889.0	882.0	Pass
B - Shoulder pivot height	mm	505.5 to 520.7	515.0	Pass
C - "H" point height	mm	83.8 to 88.9	88.0	Pass
D - "H" point from seat back	mm	134.6 to 139.7	138.1	Pass
E - Shoulder pivot from back	mm	83.8 to 94.0	85.0	Pass
F - Thigh clearance	mm	139.7 to 154.9	150.0	Pass
G - Elbow back to wrist pivot	mm	289.6 to 304.8	300.0	Pass
H - Skull cap to back line	mm	40.6 to 45.7	44.0	Pass
I - Shoulder to elbow length	mm	330.2 to 345.4	341.0	Pass
J - Elbow rest height	mm	190.5 to 210.8	209.0	Pass
K - Buttock to knee length	mm	579.1 to 604.5	590.0	Pass
L - Popliteal length	mm	429.3 to 454.7	441.0	Pass
M - Knee pivot height	mm	485.1 to 500.4	490.7	Pass
N - Buttock popliteal length	mm	452.1 to 477.5	467.0	Pass
O - Chest depth	mm	213.4 to 228.6	215.0	Pass
P - Foot length	mm	251.5 to 266.7	260.0	Pass
V - Shoulder breadth	mm	421.6 to 436.9	431.0	Pass
W - Foot breadth	mm	91.4 to 106.7	99.0	Pass
Y - Chest circumference	mm	970.3 to 1000.8	998.0	Pass
Z - Waist circumference	mm	835.7 to 866.1	860.0	Pass
AA - Location for chest circumference	mm	429.3 to 434.3	430.0	Pass
BB - Location for waist circumference	mm	226.1 to 231.1	229.0	Pass
Overall Test Results				Pass



 Laboratory Technician

October 12, 1997

Test Date



 Approved By

10/12/97

Date

APPENDIX F
VEHICLE OWNER'S MANUAL
OCCUPANT RESTRAINT INSTRUCTIONS

Protecting Adults

Introduction

The following pages provide instructions on how to properly protect the driver and other adult occupants.

These instructions also apply to children who have outgrown child seats and are large enough to wear lap/shoulder belts. (See page 35 for important additional guidelines on how to properly protect larger children.)

1. Close and Lock the Doors

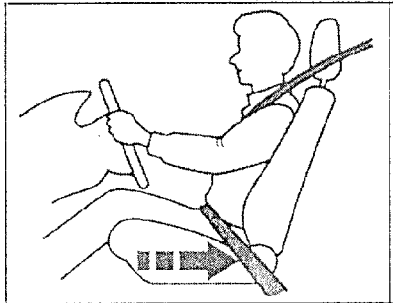
After everyone has entered the vehicle, be sure the doors are closed and locked.

For safety, locking the doors reduces the chance of a passenger, especially a child, opening a door while the vehicle is moving and accidentally falling out. It also reduces the chance of someone being thrown out of the vehicle during a crash.

For security, locked doors can prevent an outsider from unexpectedly opening a door when you come to a stop.

See page 68 for how to lock the doors.

2. Adjust the Front Seats



Any driver who sits too close to the steering wheel is at risk of being seriously injured or killed by striking the steering wheel or being struck by an inflating airbag during a crash.

To reduce the chance of injury, wear your seat belt properly, sit upright with your back against the seat, and move the seat as far back as possible from the steering wheel while still maintaining full control of the car. Also make sure your front seat passenger moves their seat as far to the rear as possible.

Protecting Adults

⚠ WARNING

Sitting too close to an airbag can result in serious injury or death if the airbags inflate.

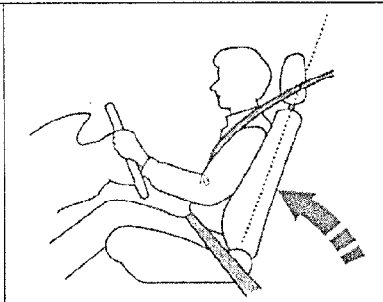
Always sit as far back from the airbags as possible.

Most shorter drivers can get far enough away from the steering wheel and still reach the pedals. However, if you are concerned about sitting too close, we recommend that you investigate whether some type of adaptive equipment may help.

Once your seat is adjusted correctly, rock it forward and back to make sure the seat is locked in position.

See page 74 for how to adjust the front seats.

3. Adjust the Seat-Backs



Adjust the driver's seat-back to a comfortable, upright position, leaving ample space between your chest and the airbag cover in the center of the steering wheel. If you sit too close to the steering wheel, you could be injured if the airbag inflates.

A front passenger should also adjust the seat-back to an upright position, but not too close to the dashboard. If

the passenger sits too close to the dashboard, they could be injured if the airbag inflates.

Reclining a seat-back so that the shoulder part of the belt no longer rests against an occupant's chest reduces the protective capability of the belt. It also increases the chance of sliding under the belt and being seriously injured in a crash. The farther a seat-back is reclined, the greater the risk of injury.

⚠ WARNING

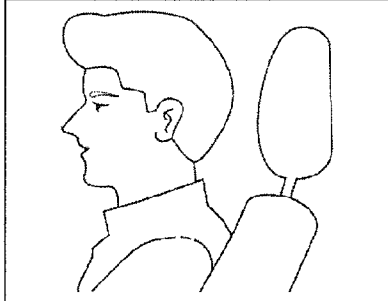
Reclining the seat-back too far can result in serious injury or death in a crash.

Adjust the seat-back to an upright position and sit well back in the seat.

See page 75 for how to adjust seat-backs.

Protecting Adults

4. Adjust the Head Restraints



Before driving, make sure everyone with an adjustable head restraint has properly positioned the head restraint. The restraint should be positioned so the back of the occupant's head rests against the center of the restraint. A taller person should adjust the restraint as high as possible.

⚠ WARNING

Improperly positioned head restraints reduce their effectiveness and you can be seriously injured in a crash.

Make sure head restraints are in place and positioned properly before driving.

Properly adjusted head restraints will help protect you from whiplash and other crash injuries.

See page 75 for how to adjust the head restraints.

Protecting Adults

5. Fasten and Position the Seat Belts

Using a Lap/Shoulder Belt

Insert the latch plate into the buckle, then tug on the belt to make sure the belt is securely latched. Also check that the belt is not twisted, because a twisted belt can cause serious injuries in a crash.



Position the lap part of the belt as low as possible across your hips, then pull up on the shoulder part of the belt so the lap part fits snugly. This lets your strong pelvic bones take the force of a crash and reduces the chance of internal injuries.

⚠ WARNING

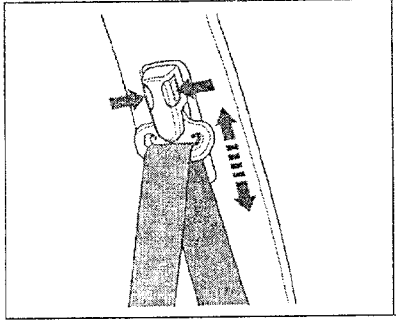
Improperly positioning the seat belts can cause serious injury or death in a crash.

Make sure all seat belts are properly positioned before driving.

If necessary, pull up on the belt again to remove any slack from the shoulder part, then check that the belt rests across the center of your chest and over your shoulder. This spreads the forces of a crash over the strongest bones in your upper body.

CONTINUED

Protecting Adults

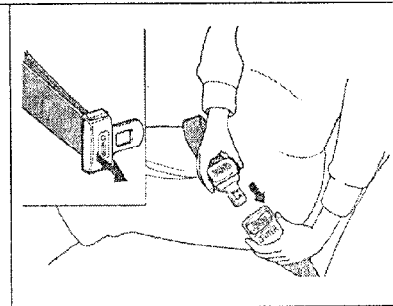


If the seat belt touches or crosses your neck, or if it crosses your arm instead of your shoulder, you need to adjust the seat belt anchor height. An improperly positioned seat belt can cause severe neck injuries if the belt is positioned too high, or serious chest or internal injuries if the belt is positioned too low.

To adjust the height of a front seat belt anchor, squeeze the two release buttons and slide the anchor up or down as needed (it has four positions).

Never place the shoulder portion of a lap/shoulder belt under your arm or behind your back. This could cause very serious injuries in a crash.

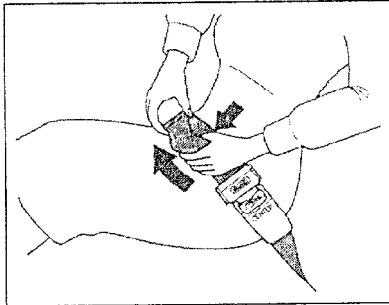
Using the Lap Belt



Insert the latch plate into the buckle marked **CENTER**.

If the belt is too short, hold the latch plate at a right angle and pull on the plate to extend the belt. Then insert the latch plate into the buckle, and tug on the belt to make sure the belt is securely latched.

Protecting Adults



Position the belt as low as possible across your hips. This lets your strong pelvic bones take the force of a crash and reduces the chance of internal injuries.

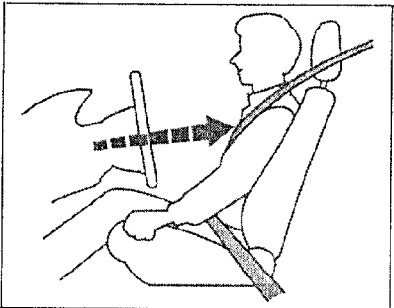
Pull on the loose end of the belt for a snug but comfortable fit.

If a Seat Belt Doesn't Work Properly. If your seat belt does not seem to work as it should, it may not protect you in a crash. Anyone using an inoperative seat belt can be seriously injured or killed. *No one should sit in a seat with an inoperative seat belt.* Have your Honda dealer check the belt as soon as possible.

See page 40 for additional information about your seat belt system and how to take care of your belts.

Protecting Adults

6. Adjust the Steering Wheel



Adjust the steering wheel, if needed, so that the wheel points toward your chest, not toward your face.

Pointing the steering wheel toward your face decreases the protective capability of the driver's airbag.

See page 63 for how to adjust the steering wheel.

7. Maintain a Proper Sitting Position

After all occupants have adjusted their seats and put on seat belts, it is very important that they continue to sit upright, with their bodies well back in their seats and both feet on the floor, until the car is parked and the engine is off.

Sitting improperly can increase the chance of injury during a crash. For example, if an occupant slouches, lies down, turns sideways, sits forward, leans forward, or puts one or both feet up, their chance of injury during a crash is greatly increased.

In addition, if an occupant is out of position in the front seat, they can be seriously or fatally injured by striking interior parts of the vehicle, or by being struck by an inflating airbag.

WARNING

Sitting improperly or out of position can result in serious injury or death in a crash.

Always sit upright, well back in the seat, with your feet on the floor.

Remember, to get the best protection from your vehicle's airbags and other safety features, you must sit properly and wear your seat belt properly.

Protecting Adults

Advice for Pregnant Women



Because protecting the mother is the best way to protect her unborn child, a pregnant woman should always wear a seat belt whenever she drives or rides in a car.

We recommend that pregnant women use a lap/shoulder belt whenever possible. Remember to keep the lap portion of the belt as low as possible across your hips.

Pregnant women should also sit as far back as practical from the steering wheel or dashboard. This will reduce the risk of injuries to both the mother and her unborn child that can be caused by a crash or an inflating airbag.

Each time you have a checkup, ask your doctor if it's okay for you to drive.

Additional Safety Precautions

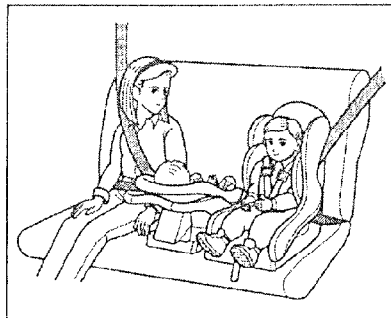
- *Two people should never use the same seat belt.* If they do, they could be very seriously injured in a crash.
- *Do not put any accessories on seat belts.* Devices intended to improve occupant comfort, or reposition the shoulder part of a seat belt, can severely compromise the protective capability of seat belts and increase the chance of serious injury in a crash.

CONTINUED

Protecting Adults

- *Do not place hard or sharp objects between yourself and an airbag. Carrying hard or sharp objects on your lap, or driving with a pipe or other sharp object in your mouth, can result in injuries if your airbags inflate.*
- *Keep your hands and arms away from the airbag covers. If your hands or arms are close to the SRS covers in the center of the steering wheel and on top of the dashboard, they could be injured if the airbags inflate.*

Protecting Children



Children depend on adults to protect them. However, despite their best intentions, many parents and other adults do not know how to *properly* protect young passengers.

So if you have children, or if you ever need to drive with a grandchild or other children in your vehicle, be sure to read this section.

WARNING

Children who are unrestrained or improperly restrained can be seriously injured or killed in a crash.

Any child too small for a seat belt should be properly restrained in a child seat. Larger children should be properly restrained with a seat belt.

All Children Must Be Restrained
Each year, many children are injured or killed in vehicle crashes because they are either unrestrained or not properly restrained. In fact, vehicle accidents are the number one cause of death of children age 12 and under.

To reduce the number of child deaths and injuries, every state and Canadian province requires that infants and children be restrained whenever they ride in a vehicle.

Any child who is too small to wear a seat belt should be properly restrained in a child seat. (See page 23.)

Larger children should always be restrained with a seat belt. (See page 35.)

Protecting Children

Children Should Sit in the Back Seat

According to accident statistics, children of all ages and sizes are safer when they are restrained in the back seat, not the front seat. The National Highway Traffic Safety Administration recommends that all children age 12 and under ride in the back seat, properly restrained.

In the back seat, children are less likely to be injured by striking hard interior vehicle parts during a collision or hard braking. Also, children cannot be injured by an inflating airbag when they ride in the back.

The Passenger's Airbag Poses Serious Risks to Children

Airbags have been designed to help protect adults in a severe frontal collision. To do this, the passenger's airbag is quite large, and it inflates with tremendous speed.

Infants

Never put a rear-facing child seat in the front seat of a vehicle equipped with a passenger's airbag. If the airbag inflates, it can hit the back of the child seat with enough force to kill or very seriously injure an infant.

Small Children

Placing a forward-facing child seat in the front seat of a vehicle equipped with a passenger's airbag can be hazardous. If the vehicle seat is too far forward, or the child's head is thrown forward during a collision, an inflating airbag can strike the child with enough force to kill or very seriously injure a small child.

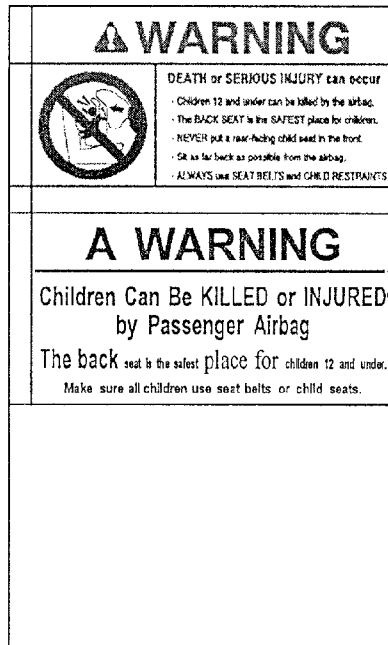
Larger Children

Children who have outgrown child seats are also at risk of being injured or killed by an inflating passenger airbag. Whenever possible, larger children should sit in the back seat, properly restrained with a seat belt. (See page 35 for important information about protecting larger children.)

Protecting Children

U.S. Models

To remind you of the passenger airbag hazards, and that children must be properly restrained in the back seat, your vehicle has warning labels on the dashboard and on the driver's and front passenger's visors. Please read and follow the instructions on these labels.



If You Must Drive With Several Children

Your vehicle has three seating positions in the back seat where children can be properly restrained.

If you ever have to carry more than three children in your vehicle:

- Place the largest child in the front seat, provided the child is large enough to wear a seat belt properly (see page 35).
- Move the vehicle seat as far to the rear as possible (see page 10).
- Have the child sit upright and well back in the seat (see page 16).
- Make sure the seat belt is properly positioned and secured (see page 13).

Protecting Children

If A Child Requires Close Attention

Many parents say they prefer to put an infant or small child in the front passenger seat so they can watch the child, or because the child requires attention.

Placing a child in the front seat exposes them to hazards from the airbag, and paying close attention to a child distracts the driver from the important tasks of driving, creating serious safety risks.

If a child requires physical attention or frequent visual contact, we strongly recommend that another adult ride with the child in the back seat. The back seat is far safer for a child than the front.

Additional Safety Precautions

- **Use childproof door locks to prevent children from opening the doors.** Using this feature will prevent children from opening the doors and accidentally falling out (see page 73).

Use the main power window switch to prevent children from opening the rear windows. Using this feature will prevent children from playing with the windows, which could expose them to hazards or distract the driver (see page 77).

- **Do not leave children alone in your vehicle.** Leaving children without adult supervision is illegal in most states and can be very hazardous. For example, infants and small children left in a vehicle on a hot day can die from heatstroke. And children left alone with the key in the ignition can accidentally set the vehicle in motion, possibly injuring themselves or others.

Protecting Children

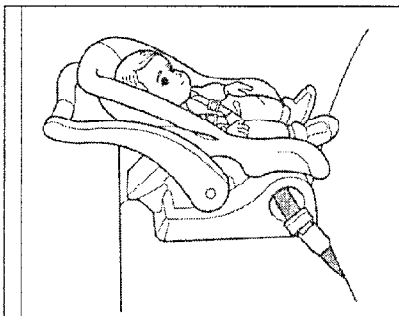
General Guidelines for Using Child Seats

The following pages give general guidelines for selecting and installing child seats for infants and small children.

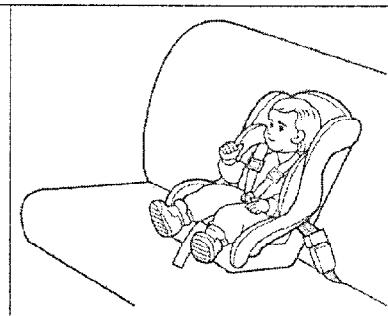
Selecting a Child Seat

To provide proper protection, a child seat should meet three requirements:

1. **The child seat should meet safety standards.** The child seat should meet Federal Motor Vehicle Safety Standard 213 (FMVSS 213) or Canadian Motor Vehicle Safety Standards. Look for the manufacturer's statement of compliance on the box and seat.
2. **The child seat should be of the proper type and size to fit the child.**



Infants Children up to about one year old should be restrained in a rear-facing, reclining child seat. Only rear-facing seats provide the support an infant needs to protect their head, neck, and back. See page 27 for additional information on protecting infants.



Small Children A child who is too large for a rear-facing child seat, and who can sit up without support, should be restrained in a forward-facing child seat. See page 31 for additional information on protecting small children.

CONTINUED

Protecting Children

3. The child seat should fit the vehicle seating position (or positions) where it will be used.

Due to variations in the design of child seats, vehicle seats, and seat belts, all child seats will not fit all vehicle seating positions.

However, Honda is confident that one or more child seat models can fit and be properly installed in all recommended seating positions in your vehicle.

Whenever possible, we recommend that parents test a child seat in the specific vehicle seating position (or positions) where they intend to use the seat before making a purchase. If a previously purchased child seat does not fit, you may need to buy a different one that will fit.

Protecting Children

Placing a Child Seat

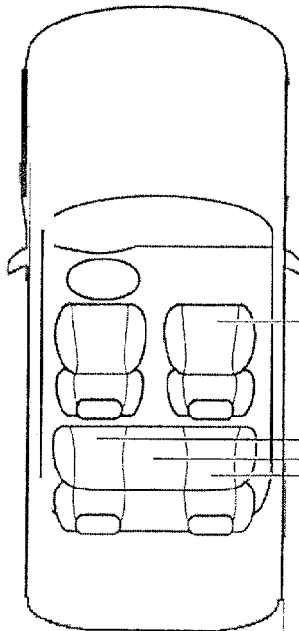
This page briefly summarizes Honda's recommendations on where to place rear-facing and forward-facing child seats in your vehicle.

Airbags Pose Serious Risks to Children

The passenger's airbag inflates with enough force to kill or seriously injure an infant in a rear-facing child seat.

A small child in a forward-facing child seat is also at risk. If the vehicle seat is too far forward, or the child's head is thrown forward during a collision, an inflating airbag can kill or seriously injure the child.

If a small child must ride in the front, follow the instructions provided.



Front Passenger Seat

Infants: Never in the front seat, due to the passenger airbag hazard.

Small children: Not recommended, due to the passenger's airbag hazard. If a small child must ride in front, move the vehicle seat to the rear-most position and secure a front-facing child seat with the seat belt. (see page 32)

Back Seats

Infants: Recommended positions. Secure a rear-facing child seat with the seat belt. (see page 28).

Small children: Recommended positions. Secure a front-facing child seat with the seat belt. (see page 32).

CONTINUED

Protecting Children

Installing a Child Seat

After selecting a proper child seat, and a good place to install the seat, there are three main steps in installing the seat:

1. **Secure the child seat to the car with a seat belt.** All child seats must be secured to the car with the lap belt or the lap part of a lap/shoulder belt. A child whose seat is not properly secured to the car can be endangered in a crash. See pages 28 and 32 for instructions on how to secure child seats in this vehicle.
2. **Make sure the child seat is firmly secured.** After installing a child seat, push and pull the seat forward and from side to side to verify that it is secure.

To provide security during normal driving maneuvers, as well as during a collision, we recommend that parents secure a child seat as fiily as possible.

However, a child seat does not need to be "rock solid." In some vehicles or seating positions, it may be difficult to install a child seat so that it does not move at all. Some side-to-side or forward-and-backward movement can be expected and should not reduce the child seat's effectiveness.

If the child seat is not secure, try installing it in a different seat position, or use a different style of child seat that can be firmly secured in the desired seating position.

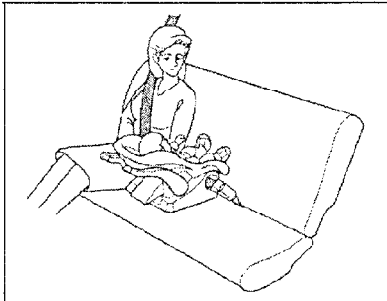
3. **Secure the child in the child seat.** Make sure the child is properly strapped in the child seat according to the child seat maker's instructions. A child who is not properly secured in a child seat can be thrown out of the seat and be seriously injured in a crash.

Storing a Child Seat

When you are not using a child seat, either remove it and store it in a safe place, or make sure it is properly secured. An unsecured child seat can be thrown around the vehicle during a crash or sudden stop and injure someone.

Protecting Children

Protecting Infants



Child Seat Type

To provide proper support for a baby's head, neck and back, infants up to about one year of age must be restrained in a rear-facing child seat,

Two types of seats may be used: a seat designed exclusively for infants or a convertible seat used in the rear facing, reclining mode.

WARNING

Placing a rear-facing child seat in the front seat can result in serious injury or death if the airbags inflate.

Always place a rear-facing child seat in the back seat, not the front.

We recommend that an infant stay in a rear-facing child seat as long as possible, until they reach the seat maker's weight or height limit and are able to sit up without support.

Infant Seat Placement

In this vehicle, a rear-facing child seat can be placed in any seating position in the back seat, but not in the front seat.

Never put a rear-facing child seat in the front seat. If the passenger's airbag inflates, it can hit the back of the child seat with enough force to kill or seriously injure an infant. If an infant must be closely watched, we recommend that another adult sit in the back seat with the baby.

Do not put a rear-facing child seat in a forward-facing position. If an infant faces forward, they could be very seriously injured during a frontal collision.

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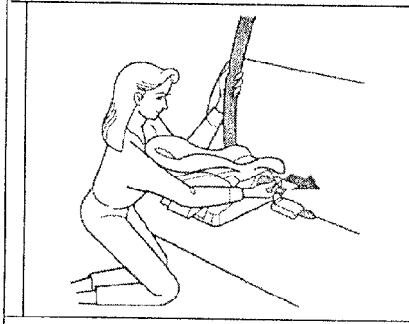
Protecting Children

Installing an Infant Seat With a Lap/Shoulder Belt

The lap/shoulder belts in the outer back seats have a locking mechanism that must be activated to secure a child seat.

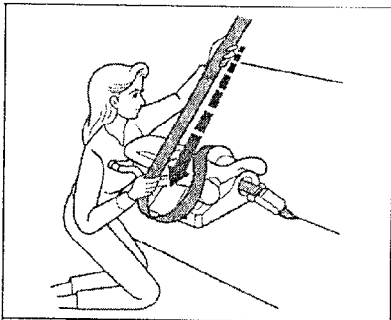
The following pages provide instructions on how to secure a rear-facing child seat with this type of seat belt.

See page 30 for how to secure a rear-facing child seat in the center back seat with the lap belt. See page 30 for tips on installing an infant seat with either type of seat belt.

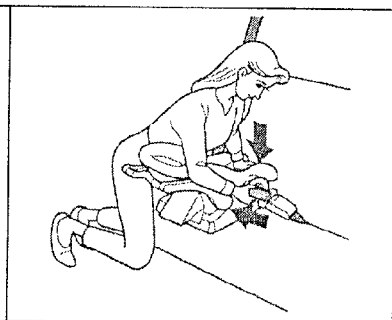


1. With the child seat in the desired back seating position, route the belt through the child seat according to the seat maker's instructions, then insert the latch plate into the buckle.

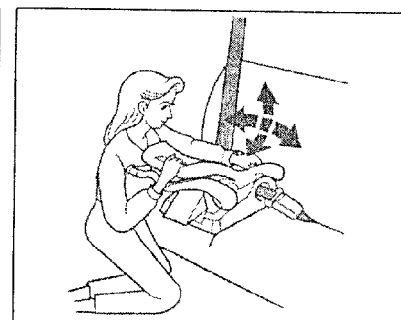
Protecting Children



2. To activate the lockable retractor, slowly pull the shoulder part of the belt all the way out until it stops, then let the belt feed back into the retractor (you might hear a clicking noise as the belt retracts).
3. After the belt has retracted, tug on it. If the belt is locked, you will not be able to pull it out. If you can pull the belt out, it is not locked and you will need to repeat these steps.



4. After confirming that the belt is locked, grab the shoulder part of the belt near the buckle and pull up to remove any slack from the lap part of the belt. Remember, if the lap part of the belt is not tight, the child seat will not be secure. To remove slack, it may help to put weight on the child seat, or push on the back of the seat while pulling up on the belt.

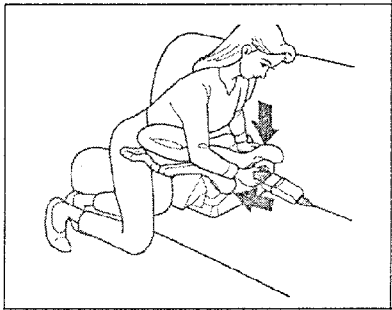


5. Rush and pull the child seat forward and from side to side to verify that it is secure enough to stay upright during normal driving maneuvers. If the child seat is not secure, unlatch the belt, allow it to retract fully, then repeat these steps. To deactivate the locking mechanism in order to remove a child seat, unlatch the buckle, unroute the seat belt, and let the belt fully retract.

CONTINUED

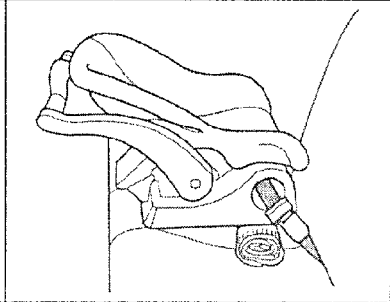
Protecting Children

Installing an Infant Seat With the Lap Belt



To install a rear-facing child seat in the center back seat with the lap belt, follow instruction number 1 on page 28 for routing and latching the seat belt. Then pull hard on the loose end of the belt to remove any slack (it may help to put weight on the child seat while pulling on the belt). Finally, follow instruction number 5 of page 29 to verify that the child seat is secure.

Infant Seat Installation Tips



For proper protection, an infant must ride in a reclined, or semi-reclined position. To determine the proper reclining angle, check with the baby's doctor or follow the seat maker's recommendations.

To achieve the desired reclining angle, it may help to put a rolled up towel under the toe of the child seat, as shown above.

When properly installed a rear-facing child seat may prevent the driver or a front-seat passenger from moving their seat as far back as recommended (see page 10). Or it may prevent them from locking their seat-back in the desired upright position (see page 11).

In either case, we recommend that you place the child seat directly behind the front passenger seat, move the front seat as far forward as needed, and leave it unoccupied. You may also wish to get a smaller child seat that allows you to safely carry a front passenger.

Protecting Children

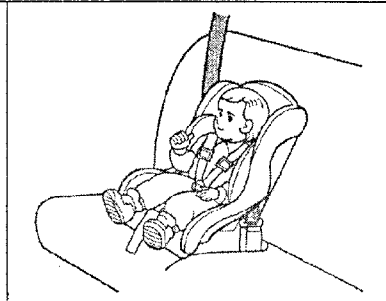
Additional Precautions for Infants

- **Never hold a baby on your lap.** If you are not wearing a seat belt in a crash, you could be thrown forward into the dashboard and crush the child.

If you are wearing a seat belt, the baby can be torn from your arms. For example, if the vehicle crashes into a parked vehicle at 30 mph (48 km/h), a 20 lb (9 kg) baby will become a 600-lb (275-kg) force, and you will not be able to hold it.

- **Never put a seat belt over yourself and a baby.** During a crash, the belt could press deep into the child and cause very serious injuries.

Protecting Small Children



Child Seat Type

A child who can sit up without support, and who fits within the child seat maker's weight and height limits, should be restrained in a forward-facing, upright child seat.

Of the different seats available, we recommend those that have a five-point harness system as shown.

We also recommend that a small child stay in the child seat as long as possible, until they reach the weight or height limit for the seat.

Child Seat Placement

In this vehicle, the best place to install a forward-facing child seat is in one of the seating positions in the back seat.

Placing a forward-facing child seat in the front seat of a vehicle equipped with a passenger airbag can be hazardous.

If the vehicle seat is too far forward, or the child's head is thrown forward during a collision, an inflating passenger's airbag can strike the child with enough force to cause very serious or fatal injuries. If a small child must be closely watched, we recommend that another adult sit in the back seat with the child.

CONTINUED

Protecting Children

⚠ WARNING

Improperly placing a forward-facing child seat in the front seat can result in serious injury or death if the airbags inflate.

If you must place a forward-facing child seat in front, move the vehicle seat as far back as possible and properly restrain the child.

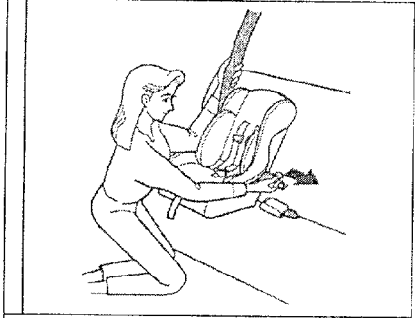
If it is necessary to put a forward-facing child seat in the front, move the vehicle seat as far to the rear as possible, be sure the child seat is firmly secured to the car, and that the child is properly strapped in the seat.

Installing a Child Seat With a Lap/Shoulder Belt

The retractors in the lap/shoulder belts of the outer back and front passenger seating positions have a locking mechanism that can be activated to secure a child seat.

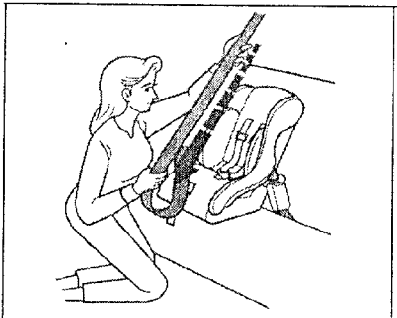
The following pages provide instructions on how to secure a forward-facing child seat with this type of seat belt.

See page 34 for how to secure a forward-facing child seat in the center back seat with the lap belt.

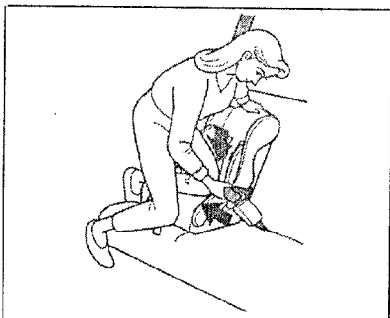


1. With the child seat in the desired seating position, route the belt through the child seat according to the seat maker's instructions, then insert the latch plate into the buckle.

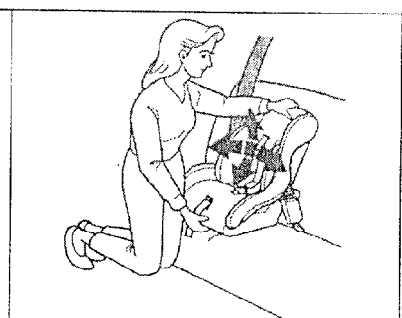
Protecting Children



2. To activate the lockable retractor, slowly pull the shoulder part of the belt all the way out until it stops, then let the belt feed back into the retractor (you might hear a clicking noise as the belt retracts).
3. After the belt has retracted, tug on it. If the belt is locked, you will not be able to pull it out. If you can pull the belt out, it is not locked and you will need to repeat these steps



4. After confirming that the belt is locked, grab the shoulder part of the belt near the buckle and pull up to remove any slack from the lap part of the belt. Remember, if the lap part of the belt is not tight, the child seat will not be secure. It may help to put weight on the child seat, or push on the back of the seat while pulling up on the belt.



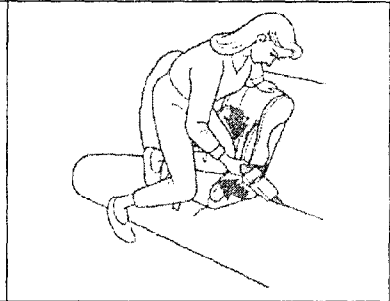
5. Push and pull the child seat forward and from side to side to verify that it is secure enough to stay upright during normal driving maneuvers. If the child seat is not secure, unlatch the belt, allow it to retract fully, then repeat these steps.

CONTINUED

Protecting Children

To deactivate the locking mechanism in order to remove a child seat, unlatch the buckle, unrout the seat belt, and let the belt fully retract.

Installing a Child Seat With the Lap Belt



To install a forward-facing child seat in the center back seat with the lap belt, follow instruction number 1 on page 32 for routing and latching the seat belt. Then pull hard on the loose end of the belt to remove any slack (it may help to put weight on the child seat while pulling on the belt). Finally, follow instruction number 5 on page 33 to verify that the child seat is secure.

Additional Precautions for Small Children

- *Never hold a small child on your lap. If you are not wearing a seat belt in a crash, you could be thrown forward into the dashboard and crush the child.*

If you are wearing a seat belt, the child can be torn from your arms during a crash. For example, if the vehicle crashes into a parked vehicle at 30 mph (48 km/h), a 30 lb (14 kg) child will become a 900-lb (410-kg) force, and you will not be able to hold it.

- *Never put a seat belt over yourself and a child. During a crash, the belt could press deep into the child and cause very serious injuries.*

Protecting Children

Protecting Larger Children

When a child reaches the recommended weight or height limit for a forward-facing child seat, the child should sit in one of the outer back seats and wear a lap/shoulder belt. The lap/shoulder belt provides better protection than the lap belt.

If a child is too short for the shoulder part of the belt to properly fit, we recommend that the child use a booster seat until they are tall enough to use the seat belt without a booster.

The following pages give instructions on how to check proper seat belt fit, what kind of booster seat to use if one is needed, and important precautions for children who must sit in the front seat.

A WARNING

Allowing a larger child to sit improperly in the front seat can result in injury or death if the airbags inflate.

If a larger child must sit in front, they should move the seat as far back as possible and wear their seat belt properly.

Checking Seat Belt Fit

To determine whether a lap/shoulder belt properly fits a child, first have the child put on the seat belt, following the instructions on page 13. Then check how the belt fits.

CONTINUED

Protecting Larger Children

When a child reaches the recommended weight or height limit for a forward-facing child seat, the child should sit in one of the outer back seats and wear a lap/shoulder belt. The lap/shoulder belt provides better protection than the lap belt.

If a child is too short for the shoulder part of the belt to properly fit, we recommend that the child use a booster seat until they are tall enough to use the seat belt without a booster.

The following pages give instructions on how to check proper seat belt fit, what kind of booster seat to use if one is needed, and important precautions for children who must sit in the front seat.

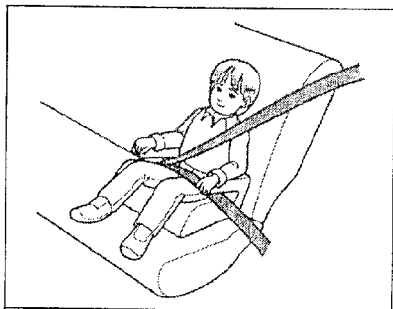
⚠ WARNING	
<p>Allowing a larger child to sit improperly in the front seat can result in injury or death if the airbags inflate.</p> <p>If a larger child must sit in front, they should move the seat as far back as possible and wear their seat belt properly.</p>	

Checking Seat Belt Fit

To determine whether a lap/shoulder belt properly fits a child, first have the child put on the seat belt, following the instructions on page 13. Then check how the belt fits.

CONTINUED

Using a Booster Seat



If a child needs a booster seat, we recommend choosing a style that allows the child to use the lap/shoulder belt directly, without a shield, as shown above.

Whichever style you select, follow the booster seat maker's instructions

A child may continue using a booster until the top of their ears are even with the top of the seat-back. When a child reaches this height, they should be tall enough to use the lap/shoulder belt without a booster.

When Can a Larger Child Sit in Front

The National Highway Traffic Safety Administration and Transport Canada recommends that all children age 12 and under ride in the back seat, properly restrained.

The back seat is the safest place for a child of any age or size.

In addition, the passenger's airbag poses serious risks to children. If the seat is too far forward, or the child's head is thrown forward during a collision, or the child is unrestrained or out of position, an inflating airbag can kill or seriously injure the child.

Of course, children vary widely. And while age may be one indicator of when a child can safely ride in the front, there are other important factors you should consider.

CONTINUED

Protecting Children

Physical Size

Physically, a child must be large enough for the lap/shoulder belt to properly fit over their hips, chest, and shoulder (see page 13). If the seat belt does not fit properly, the child should not sit in the front.

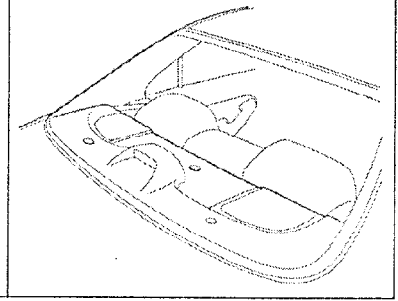
Maturity

To safely ride in front, a child must be able to follow the rules, including sitting properly and wearing their seat belt properly throughout a ride.

If you decide that a child can safely ride up front, be sure to:

- Read the owner's manual and make sure you both understand all seat belt instructions and all safety information.
- Move the vehicle seat to the rear-most position.
- Have the child sit up straight with their back against the seat and their feet on or near the floor.
- Check that the child's seat belt is properly positioned and secured.
- Closely supervise the child. Even mature children sometimes need to be reminded to fasten their seat belt or sit properly.

Using Child Seats with Tethers



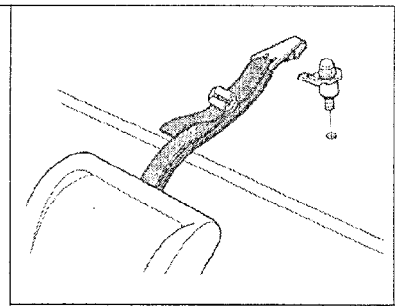
Your car has three attachment points on the rear shelf for securing a tether-style child seat to the car.

Since a tether can provide additional security we recommend using a tether whenever one is required or available. (Tethers are required in Canada. U.S. owners may check with the child seat maker to determine whether a tether is available for a particular child seat.)

Protecting Children

To attach a tether to your car:

1. Using the illustration on page 38 , locate the attachment point you want to use.
2. Remove the plug with a small flat-tipped screwdriver or a fingernail file.
3. Install the anchor plate and mounting hardware. The hardware is available for purchase from your Honda dealer (part number 82410-SE3-C01). For Canadian models, the hardware is supplied with the vehicle.



When installing tether hardware, make sure the toothed washer is on the bottom of the bolt. Tighten the bolt to:
16 lbf-ft (22 N-m, 2.2 kgf-m)

If a torque wrench was not used, see your Honda dealer as soon as possible to verify proper installation.

To attach the tether to the child seat, follow the child seat maker's instructions.

If you are not sure how to install the tether, or you need mounting hardware, contact your Honda dealer.

Additional Information About Your Seat Belts

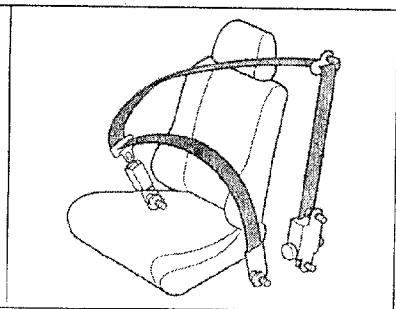
Seat Belt System Components

Your seat belt system includes lap/shoulder belts in the front seats and the outer back seats, and a lap belt in the center back seat.



The system also includes a light on the instrument panel to remind you and your passengers to fasten your belts. If the driver's seat belt is not fastened before the ignition is turned ON (II), the light will come on and a beeper will also sound. The beeper will stop after a few seconds, but the light will stay on until the driver's seat belt is fastened.

Lap/Shoulder Belt



This seat belt has a single belt that goes over your shoulder, across your chest and across your hips.

To fasten the belt, insert the latch plate into the buckle, then tug on the belt to make sure the buckle is latched.

To unlock the belt, push the red PRESS button on the buckle.

Guide the belt across your body to the door pillar. After exiting the vehicle, be sure the belt is out of the

way and will not get closed in the door.

All lap/shoulder belts have an emergency locking retractor.

In normal driving, the retractor lets you move freely in your seat while it keeps some tension on the belt. During a collision or sudden stop, the retractor automatically locks the belt to help restrain your body.

The lap/shoulder belts in all seating positions except the driver's have an additional locking mechanism that can be activated to secure a child seat. (See pages 28 and 32 for instructions on how to secure child seats with this type of seat belt.)

If the shoulder part of the belt is pulled all the way out, the locking mechanism will activate. The belt will retract, but it will not allow a passenger to move freely.

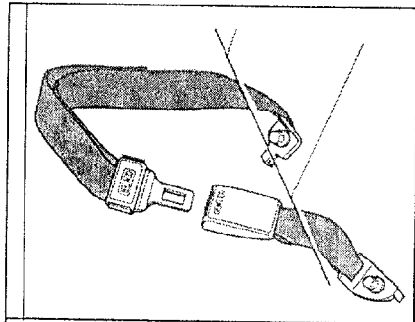
Additional Information About Your Seat Belts

To deactivate the locking mechanism, unlatch the buckle and let the seat belt fully retract. To refasten the belt, pull it out only as far as needed.

See page 13 for instructions on how to wear the lap/shoulder belt properly.

Lap Belt

The lap belt has one manually-adjusted belt that fits across the hips.



To fasten the belt, insert the latch plate into the buckle marked CENTER, then tug on the belt to make sure the buckle is latched.

To unlock the belt, push the red PRESS button on the buckle.

See page 14 for how to lengthen the lap belt, and how to properly position the belt.

Additional Information About Your Seat Belts

Seat Belt Maintenance

For safety, you should check the condition of your seat belts regularly.

Pull each belt out fully and lock for frays, cuts, burns, and wear. Check that the latches work smoothly and that the lap/shoulder belts retract easily. Any belt not in good condition or not working properly will not provide good protection and should be replaced as soon as possible.

Honda provides a lifetime warranty on seat belts. Honda will repair or replace any seat belt component that fails to function properly during normal use.

Please see your *Honda Warranty Information* booklet for details.

If a seat belt is worn during a crash, you should have your dealer inspect the belt, and replace it if necessary. A belt that has been worn during a crash may not provide the same level of protection in a subsequent crash. The dealer should also inspect the anchors for damage and replace them if needed.

WARNING

Not checking or maintaining seat belts can result in serious injury or death if the seat belts do not work properly when needed.

Check your seat belts regularly and have any problem corrected as soon as possible.

For information on how to clean your seat belts, see page 198.

Additional Information About Your SRS

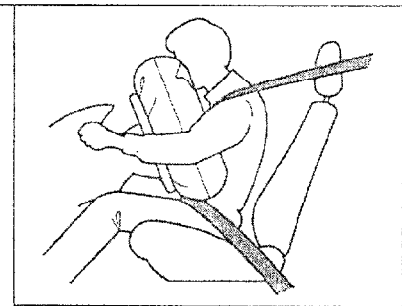
SRS Components

Your Supplemental Restraint System (SRS) includes:

- Two frontal airbags. The driver's airbag is stored in the center of the steering wheel; the front passenger's airbag is stored in the dashboard. Both are marked "SRS".
- Sensors that can detect a severe frontal collision.
- A sophisticated electronic system that continually monitors the sensors, control unit, the airbag activators, and all related wiring when the ignition is ON (II).

- An indicator light on the instrument panel to alert you to a possible problem with the system (see page 45).
- Emergency backup power in case your vehicle's electrical system is disconnected in a crash.

How Your Airbags Work



If you ever have a severe frontal collision, the sensors will detect rapid deceleration and signal the control unit to instantly inflate the airbags.

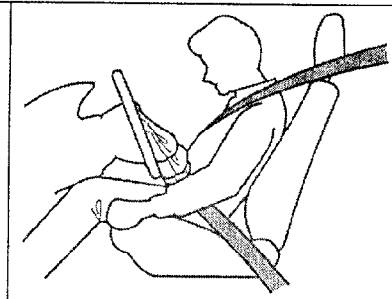
During a crash, your seat belt helps restrain your lower body and torso. Your airbag provides a cushion to help restrain and protect your head and chest.

CONTINUED

Additional Information About Your SRS

Since both air-bags use the same sensors, both airbags normally inflate at the same time. However, it is possible for only one airbag to inflate.

This can occur when the severity of a collision is at the margin, or threshold, that determines whether or not the airbags will deploy. In such cases, the seat belt will provide sufficient protection, and the supplemental protection offered by the airbag would be minimal.



After inflating, the airbags immediately deflate, so they won't interfere with the driver's visibility, or the ability to steer or operate other controls.

The total time for inflation and deflation is approximately one-tenth of a second, so fast that most occupants are not aware that the airbags deployed until they see them lying in their laps.

After a crash, you may see what looks like smoke. This is actually powder from the airbag's surface. Although the powder is not harmful, people with respiratory problems may experience some temporary discomfort. If this occurs, get out of the car as soon as it is safe to do so.

US. Owners

For additional information on how your airbags work, see the booklet titled *SRS: What You Need to Know About Airbags*, that came with your owner's manual.

Additional Information About Your SRS

How Your SRS Indicator Light Works

SRS The purpose of the SRS indicator light is to alert you to a potential problem with your Supplemental Restraint System.

When you turn the ignition ON (II), this indicator will light up briefly then go out. This tells you that the system is working properly.

However, if the light comes on at any other time, you should have your system checked by your dealer. For example:

- If the SRS indicator light does not come on after you turn the ignition ON (II).
- If the light stays on after the engine starts.

- If the light comes on or flashes on and off while you drive.

If you see any of these indications, your airbags may not deploy when you need them. See your Honda dealer as soon as possible.

▲WARNING

Ignoring the SRS indicator light can result in serious injury or death if the airbags do not inflate when needed.

Have your vehicle checked by a dealer as soon as possible if the SRS light alerts you to a potential problem.

SRS Service

Your Supplemental Restraint System is virtually maintenance-free, and there are no parts you can safely service. However, you must have your vehicle serviced if:

- **Your airbags ever inflate.** The airbags and the control unit must be replaced. Do not try to remove or replace the airbags yourself. This must be done by a Honda dealer or a knowledgeable body shop.
- **The SRS indicator light alerts you to a problem.** Take your vehicle to an authorized Honda dealer as soon as possible. If you ignore this indication, the airbags might not inflate when you need them.

Additional Information About Your SRS

Additional Safety Precautions

- Do not attempt to deactivate your airbags. Together, airbags and seat belts provide the best protection in a severe frontal collision.
- Do not tamper with SRS components or wiring for any reason. Tampering could cause the airbags to deploy, possibly causing very serious injury.

See page 115 for further information and precautions relating to your SRS.