

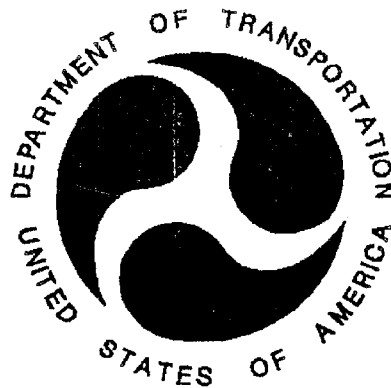
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REPORT NO. KAR-98-8

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

CHRYSLER CORPORATION
1998 DODGE DAKOTA EXTENDED CAB PICKUP
NHTSA NO. MW0303

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



FEBRUARY 12, 1998
FINAL REPORT

PREPARED FOR:
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NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
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16. <i>Abstract</i> A 35 mph (56.3 km/h) frontal barrier impact test was conducted on a 1998 Dodge Dakota Extended Cab Pick-up at KARCO Engineering on January 28, 1998. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301 and footwell intrusion performance. The impact velocity was 57.02 km/h. The ambient temperature at the barrier face at the time of impact was 16.7°C. The vehicle's maximum post-test static crush was 634 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>549.5</td><td>563.0</td></tr> <tr> <td>Chest Resultant Peak 3 msec clip</td><td>60 G's</td><td>50.9</td><td>49.5</td></tr> <tr> <td>Left Femur Force</td><td>10009 N</td><td>-3552.2</td><td>-5292.3</td></tr> <tr> <td>Right Femur Force</td><td>10009 N</td><td>-3542.5</td><td>-2002.0</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	549.5	563.0	Chest Resultant Peak 3 msec clip	60 G's	50.9	49.5	Left Femur Force	10009 N	-3552.2	-5292.3	Right Femur Force	10009 N	-3542.5	-2002.0
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SECTION 1

PURPOSE, TEST PROCEDURE AND SUMMARY OF TEST MW0303

1.1 PURPOSE

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

1.2 TEST PROCEDURE

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

The test was conducted at KARCO Engineering on January 28, 1998, at a speed of 57.02 km/h. The test vehicle was instrumented with eight (8) accelerometers to measure longitudinal axis accelerations. The driver and passenger's restraint systems were instrumented with four (4) seat belt load cells to measure lap and shoulder belt tension. The specified impact velocity range was 55.5 to 57.1 km/h. The frontal barrier impact event was documented by one (1) real-time panning motion picture camera and seventeen (17) high-speed motion picture cameras. The pre- and post-test conditions were recorded by one (1) real-time motion picture camera. Camera locations and pertinent camera information is documented in the data sheets. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

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

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

1.3 SUMMARY OF FRONTAL BARRIER IMPACT TEST

An immovable barrier was impacted by a 1998 Dodge Dakota Extended Cab Pick-up at a velocity of 57.02 km/h. The test weight, with two (2) 50th percentile male ATDs, was 2034 kg.

The driver's Head Injury Criteria (HIC) was 549.5, the maximum chest deceleration over three (3) milliseconds was 50.9 g and the left and right femur loads were -3552.2 and -3542.5 Newtons, respectively. Chest deflection for the driver ATD was -29.5 mm. The driver ATD head contacted the airbag, headrest and headliner, 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 563.0, maximum chest deceleration over three (3) milliseconds was 49.5 g and the left and right femur loads were -5292.3 and -2002.0 Newtons respectively. Chest deflection for the passenger ATD was -37.8 mm. The passenger ATD head contacted the airbag and headrest, the chest and abdomen contacted the airbag and both knees contacted the glove box.

Seat belt spoolout, measured by on-board pullout potentiometers was 204.7 mm for the driver ATD and 146.2 mm for the passenger ATD. Shoulder belt stretch was 0.67 mm/cm for the driver ATD and 0.24 mm/cm for the passenger ATD.

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

The test vehicle sustained a maximum static crush of 634 mm at the vehicle centerline. All doors on both the driver side and the passenger side opened without the aid of tools.

1.4 GENERAL COMMENTS

The 1998 Dodge Dakota Extended Cab Pick-up passed the requirements of FMVSS 212, FMVSS 219 and FMVSS 301-75. Data pertaining to these standards are presented in the data sheets.

The vehicle, occupant, camera and measurement data are presented in Section 2. Appendix A contains the still photograph prints. Appendix B contains the dummy, vehicle and response data traces. Appendix C contains Load Cell Barrier information, which is not applicable to this test. Appendix D contains the instrumentation data channel assignments. Appendix E contains the dummy calibration data and Appendix F contains the owner's manual instructions for the occupant restraint systems.

SECTION 2.

OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

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

CONVERSION FACTORS USED IN THIS REPORT:

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

DATA SHEET NO. 1

CRASH TEST SUMMARY

TEST VEHICLE: 1998 DODGE DAKOTA EXTENDED CAB PICK-UP

NHTSA NO. MW0303

TEST MODE: 56.3 km/h NCAP Frontal Barrier Impact

TEST DATE: January 28, 1998

TIME: 1:00 PM

TEMPERATURE: 16.7° C

TEST WEIGHT: 2034 kg

IMPACT VELOCITY: 57.02 km/h

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

Measurements in mm	Left Side	Centerline	Right Side
Vehicle Rebound	530	570	560

VEHICLE STATIC CRUSH

Measurements in mm	Left	Center	Right
Pre-test Measurements	5216	5458	5216
Post-test Measurements	4704	4824	4703
Static Crush	-512	-634	-513

DOOR OPENING AND SEAT TRACK INFORMATION

	Driver	Passenger
Door Opening (Front)	OPENED	OPENED
Door Opening (Rear)	N/A	N/A
Seat Track Shift (mm of shift)	45	NONE
Seat Back Failure	NONE	NONE

DUMMY INFORMATION

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

DATA SHEET NO. 2

GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE: 1998 DODGE DAKOTA EXTENDED CAB PICK-UP

NHTSA NO. MW0303

TEST VEHICLE INFORMATION			
Manufacturer	CHRYSLER CORPORATION	VIN	1B7GL22X2WS628991
Manufacturing Date	12/97	Delivery Date	1/20/98
Dealer	ONTARIO DODGE/SUZUKI	NHTSA NO.	MW0303
Odometer Reading	000062 Mi.	Fuel Type	UNLEADED
Engine Displacement	3.9 Liters	Cylinders	6
Transmission	AUTOMATIC	Final Drive	REAR
Engine Placement	LONGITUDINAL	Color	WHITE
Tire Press./Max. Cap. Front	245 kPa	Cold Tire Press. Front	245 kPa
Tire Press./Max. Cap. Rear	245 kPa	Cold Tire Press. Rear	245 kPa
Recommend Tire Size	215/75R15	Type of Spare	CONVENTIONAL 215/75R15
Tire Size on Vehicle	215/75R15	Manufacturer	GOODYEAR
GVWR	2359 kg	Cargo Capacity	136 kg
GAWR Front	1361 kg	GAWR Rear	1436 kg
Air Conditioning	YES	Power Steering	YES
Power Brakes	YES	AM/FM/Cassette	YES
Disc Brakes (Front)	YES	Disc Brakes (Rear)	NO
Power Windows	YES	Tilt Steering	YES
Anti-lock Brakes (ABS)	YES	Power Seats	NO
Driver Airbag	YES	Passenger Airbag	YES

VEHICLE CAPACITY DATA:

TYPE OF FRONT SEATS Split Bench

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

WEIGHT OF VEHICLE AS RECEIVED AT KARCO (with maximum fluids): 1751 kg

Data Sheet No. 2... (Continued)

VEHICLE CAPACITY WEIGHT (kg):

Vehicle Capacity Weight 658 kg
 Occupant Weight 340 kg
 Rated Cargo/Luggage Weight (RCLW) 318 kg *

	FRONT	REAR	TOTAL
Right	528	350	878
Left	516	357	873
Total	1044	707	1751
Percent of Total	59.6	40.4	100%

* Actual RCLW, 300 kg used for test per maximum for pickup trucks.

CALCULATION OF TEST

TARGET WEIGHT (kg):

Total Delivered Weight 1751 kg
 RCLW 136 kg
 Weight of 2 P572 ATDs 152 kg
TARGET TEST WEIGHT 2039 kg

TEST WEIGHT OF VEHICLE WITH 2 ATDs AND BALLAST

	FRONT	REAR	TOTAL
Right	554	449	1003
Left	582	449	1031
Total	1136	898	2034
Percent of Total	55.8	44.2	100%

Weight of Ballast secured in cargo area: 65.8 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, spare tire and paneling.

TEST VEHICLE ATTITUDE (mm)

ATTITUDE	LF	RF	LR	RR
As Delivered	813	819	870	870
As Tested	790	790	842	840

Vehicle Wheelbase: 3327 mm

FUEL SYSTEM DATA:

Fuel System Capacity From Owner's Manual = 83.3 liters

Usable Capacity Figure Furnished by COTR = 83.3 liters

Test Volume Range (92 to 94% of Usable Capacity) = 76.6 to 78.3 liters

ACTUAL TEST VOLUME = 77.2 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: With ignition on and adequate oil pressure.

DATA SHEET NO. 3

POST IMPACT DATA

TEST VEHICLE: 1998 DODGE DAKOTA EXTENDED CAB PICK-UP NHTSA NO. MW0303

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

TEST DATE: January 28, 1998 TIME: 1:00 PM TEMPERATURE: 16.7 ° 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 = 57.02 km/h Trap No. 2 = 57.03 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)	5216	5458	5216
Post-test Measurements (mm)	4704	4824	4703
Static Crush (mm)	-512	-634	-513
Average	-553		

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	530	570	560

DATA SHEET NO. 4

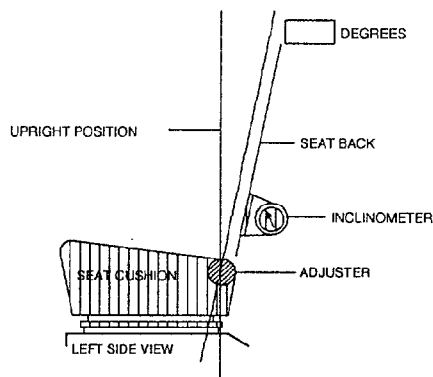
TEST VEHICLE INFORMATION

TEST VEHICLE: 1998 DODGE DAKOTA EXTENDED CAB PICK-UP

NHTSA NO. MW0303

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°

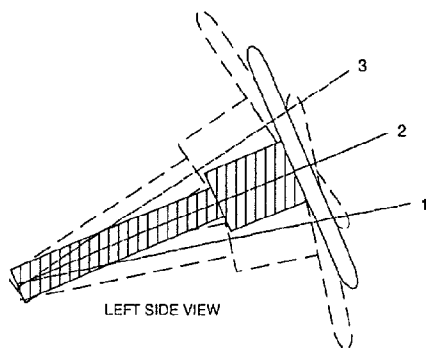
2. SEAT FORE & AFT POSITIONS -

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: 22 seating positions, set to 12th position, per manufacturers specifications.

Positioning of the passenger's seat (if applicable): 22 seating positions, set to the 12th position, per manufacturers specifications.

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 13°

Position No. 2 is at 26°

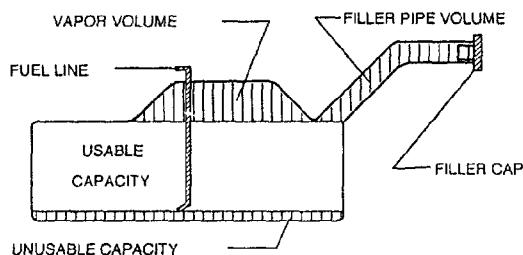
Position No. 3 is at 38°

4. SEAT BELT UPPER ANCHORAGE:

Set to mid-position

DATA SHEET NO. 4 (continued)

5. FUEL TANK CAPACITY DATA



5.1 A. "Usable Capacity" of standard equipment fuel tank = 83.3 liters.

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

C. "Usable Capacity" of vehicle(s) used for certification testing to requirements of FMVSS 301 = 76.6 to 78.3 liters.

VEHICLE FUEL TANK ASSEMBLY

Operational Instructions:

5.2 Amount of Stoddard solvent added to vehicle(s) used for certification test(s) = 77.2 liters

5.3 Is vehicle equipped with electric fuel pump?

Yes X No

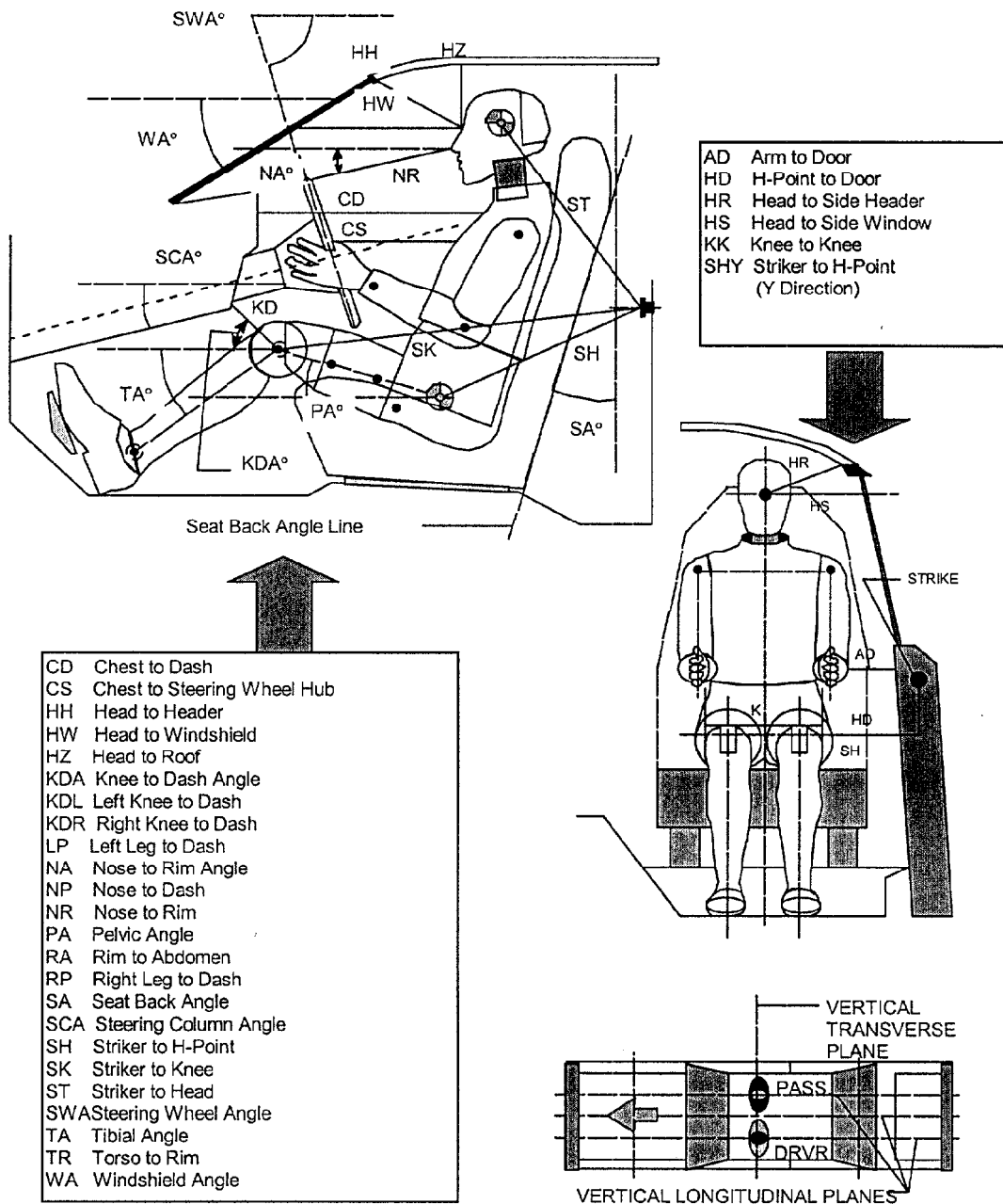
If YES, explain the vehicle operating conditions under which the fuel pump will pump fuel.

With ignition on and adequate oil pressure.

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 DODGE DAKOTA EXTENDED CAB PICK-UP

NHTSA NO. MW0303

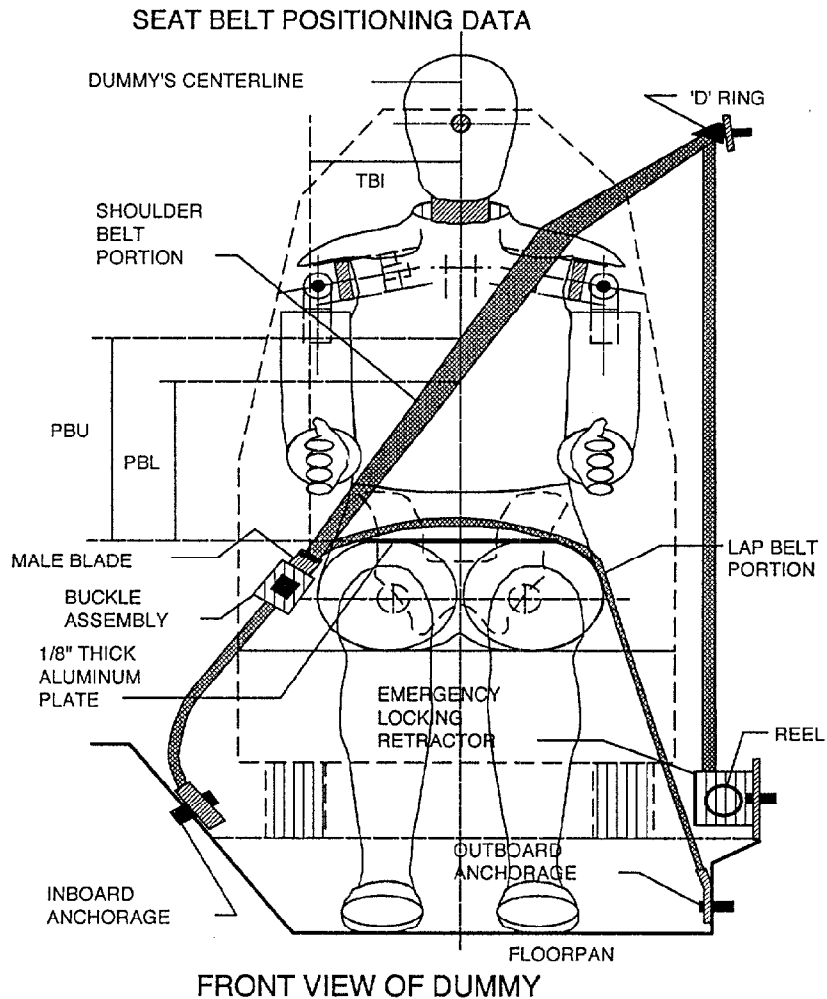
FRONT SEAT MEASUREMENT TABLE

	DRIVER (Serial No. <u>35</u>)		PASS. (Serial No. <u>34</u>)	
	DISTANCE (mm)	ANGLE (°)	DISTANCE (mm)	ANGLE (°)
WA°		35		
SWA°		65		
SCA°		26		
SA°		25		25
HZ	215	90	230	90
HH	420	0	385	0
HW	630	0	630	0
HR	390		200	
NR	370	11		
CD	530		530	
CS	280	0		
RA	180	0		
KDL	111	35	75	
KDR	95		80	24
PA°		22		22
TA°		40		46
KK	200		172	
ST	615	20	620	20
SH	232	5	250	7
SHY	260		240	
HS	350		325	
HD	155		175	
AD	90		60	

DATA SHEET NO. 6

SEAT BELT POSITIONING DATA

SEATING POSITION	DRIVER	PASSENGER
TCI -- Dummy centerline to shoulder bolt	188	193
PBU--Top surface of aluminum plate to belt upper edge	309	307
PBL--Top surface of aluminum plate to belt lower edge	238	233
Lap Belt tension	10 Newtons	10 Newtons
Shoulder Belt tension	Retractor	Retractor



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

TEST VEHICLE: 1998 DODGE DAKOTA SLT PICKUP

NHTSA No.: MW0303

TEST PROGRAM: 1998 NHTSA 35 MPH NCAP

TEST DATE: 1/28/98

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

No.	Accelerometer Location	Measurements (mm)			Peak Values				
		X	Y	Z	Units	Max	Time	Min	Time
1	Left Rear X-Member (Pri.)	2744	-625	491	G's	2.3	179.6	-44.1	50.3
2	Right Rear X-Member (Pri.)	2699	632	495	G's	2.7	135.3	-46.8	48.7
3	Engine Top	4597	-220	837	G's	0.0	0.0	0.0	0.0
4	Engine Bottom	4414	106	226	G's	37.2	44.5	-111.4	36.3
5	Left Brake Caliper	4435	-661	340	G's	84.4	57.2	-95.3	39.7
6	Right Brake Caliper	4432	657	340	G's	62.9	54.9	-79.5	37.8
7	Instrument Panel	3815	0	1215	G's	32.0	49.5	-93.8	62.7
8	Left Rear X-Member (Rednt.)	2669	-625	491	G's	2.5	120.5	-41.6	50.2

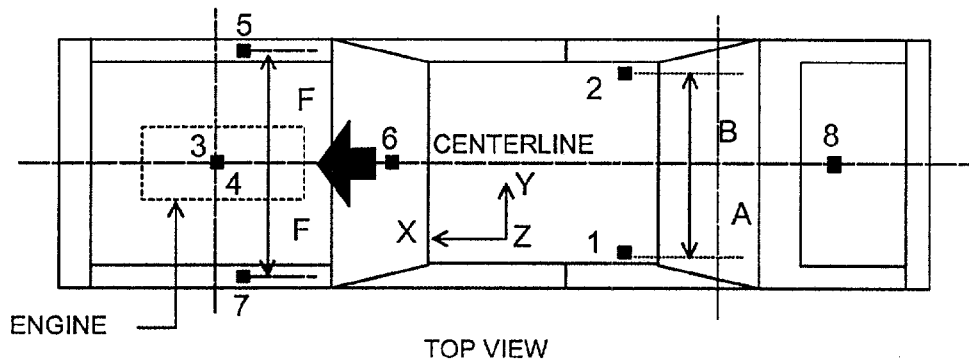
Reference Points

X - From Rear Surface of Vehicle

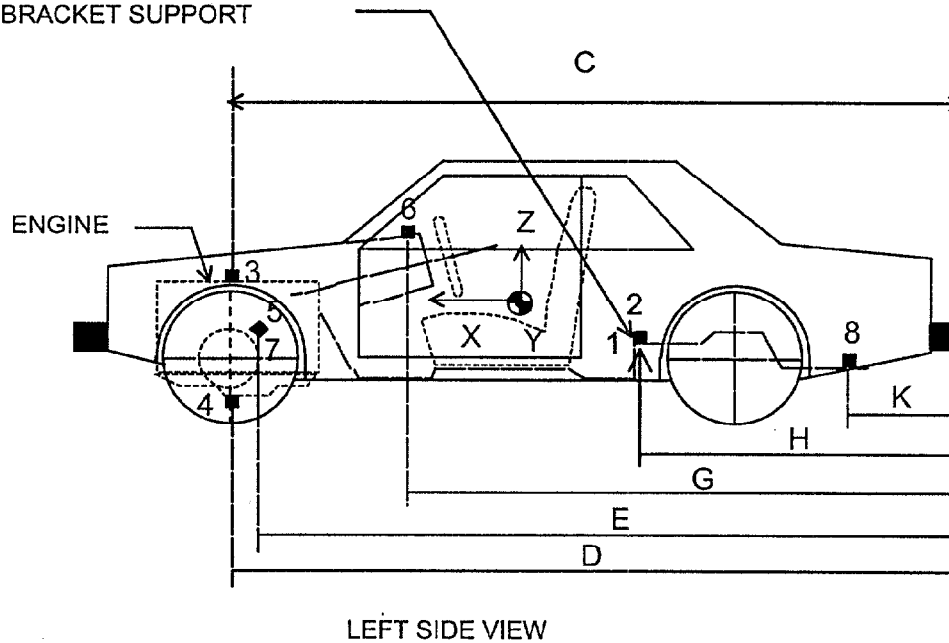
Y - Vehicle Centerline

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

TEST VEHICLE: 1998 DODGE DAKOTA SLT PICKUP

NHTSA No.: MW0303

TEST PROGRAM: 1998 NHTSA 35 MPH NCAP

TEST DATE: 1/28/98

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	19.1	208.5	-59.0	80.2	21.0	225.1	-46.6	86.4
Head CG	Y	G's	15.5	93.4	-3.1	185.2	18.5	90.8	-13.1	67.3
Head CG	Z	G's	24.0	54.5	-34.5	79.2	33.7	74.8	-2.9	107.0
Head CG Resultant	N/A	G's	60.1	80.3			58.1	79.3		

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	6.1	191.7	-50.0	74.1	0.7	167.1	-44.4	72.0
Chest CG	Y	G's	3.7	110.4	-8.9	89.8	19.2	69.3	-2.5	35.5
Chest CG	Z	G's	22.8	84.1	-16.6	109.4	14.2	103.0	-22.9	76.9
Chest CG Resultant	N/A	G's	53.9	84.0			50.7	70.3		

FEMUR PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Femur	Z	Newtons	609.9	42.3	-3552.2	52.5	621.5	37.9	-5292.3	73.0
Right Femur	Z	Newtons	665.3	38.8	-3542.5	72.0	976.4	44.2	-2002.0	52.0

SEAT BELT PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Lap Belt	N/A	Newtons	12311.0	57.0	-48.8	299.9	12072.1	54.6	-28.0	103.2
Shoulder Belt	N/A	Newtons	7557.8	79.7	-40.8	129.8	10712.4	77.1	-30.1	143.0

HEAD INJURY CRITERIA (HIC)

Location	Driver				Passenger			
	HIC	Avg G's	T ¹	T ²	HIC	Avg G's	T ¹	T ²
Head CG Primary	549.5	44.9	63.6	99.5	563.0	45.1	56.6	92.5

CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Primary	50.9	82.9	85.9	49.5	69.8	72.8

DATA SHEET NO. 8...(continued)

TEST VEHICLE: 1998 DODGE DAKOTA SLT PICKUP NHTSA No.: MW0303

TEST PROGRAM: 1998 NHTSA 35 MPH NCAP TEST DATE: 1/28/98

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	8.6	120.3	-72.3	50.3	9.6	118.6	-68.9	47.6
Pelvis	Y	G's	6.6	91.5	-10.7	70.6	12.5	47.6	-7.7	50.5
Pelvis	Z	G's	4.9	199.0	-12.2	69.6	5.9	47.9	-16.3	66.1

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	549.9	81.1	-352.7	111.5	944.0	138.8	-132.7	267.6
Neck Force	Y	Newtons	213.2	97.7	-179.5	138.2	491.3	68.1	-127.2	166.2
Neck Force	Z	Newtons	3040.4	67.7	-963.3	236.7	1814.3	74.6	-194.7	103.8
Neck Moment	X	Joules	22.3	97.3	-12.8	186.0	31.8	65.2	-11.9	79.3
Neck Moment	Y	Joules	35.2	161.9	-64.1	238.5	44.9	145.8	-34.9	244.1
Neck Moment	Z	Joules	24.4	110.7	-11.3	178.6	20.3	88.5	-6.0	139.1

FOOT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Foot Aft	X	G's	80.3	56.0	-5.0	3.2	341.8	46.1	-28.1	68.3
Left Foot Aft	Z	G's	11.2	49.3	-53.4	77.7	39.9	45.9	-101.2	47.3
Left Foot Fore	Z	G's	13.9	38.3	-62.5	79.5	78.0	58.6	-299.0	47.2
Right Foot Aft	X	G's	155.5	47.4	-33.9	92.7	92.4	86.1	-87.9	44.8
Right Foot Aft	Z	G's	20.7	64.4	-90.0	48.3	6.0	67.6	-85.3	85.9
Right Foot Fore	Z	G's	40.8	64.6	-139.2	46.1	12.1	142.3	-68.9	87.2

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	74.4	211.4	-639.0	48.1	203.1	51.5	-1639.8	47.3
Left Lower Force	Z	Newtons	248.3	211.4	-3677.1	78.8	443.1	81.9	-4196.2	45.8
Left Lower Moment	Y	Joules	55.4	41.5	-55.1	78.4	147.3	47.3	-30.3	96.2
Left Upper Moment	X	Joules	20.5	147.6	-46.1	91.8	19.7	283.3	-80.9	48.1
Left Upper Moment	Y	Joules	96.0	48.0	-12.7	299.6	155.4	46.6	-46.2	51.3
Right Lower Force	X	Newtons	81.2	211.4	-1121.8	46.8	137.4	61.8	-708.6	46.1
Right Lower Force	Z	Newtons	369.4	211.4	-2937.4	53.0	172.4	61.5	-5919.8	87.3
Right Lower Moment	Y	Joules	89.3	46.3	-112.9	92.9	49.0	46.1	-114.0	86.3
Right Upper Moment	X	Joules	52.9	52.7	-18.8	65.0	36.7	110.6	-31.2	84.7
Right Upper Moment	Y	Joules	152.4	49.2	-12.9	173.6	84.5	46.4	-43.7	62.6

DATA SHEET NO. 8...(continued)

TEST VEHICLE: 1998 DODGE DAKOTA SLT PICKUP NHTSA No.: MW0303

TEST PROGRAM: 1998 NHTSA 35 MPH NCAP TEST DATE: 1/28/98

CHEST PEAK DISPLACEMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	MM	0.1	10.7	-29.5	67.5	0.2	12.3	-37.8	82.8

HEAD REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	23.5	206.3	-58.5	80.2	13.1	225.7	-47.3	78.5
Head CG	Y	G's	14.6	92.9	-3.2	37.7	13.9	87.7	-8.5	68.2
Head CG	Z	G's	23.3	58.3	-35.0	79.3	35.0	74.6	-2.6	106.0
Head CG Resultant	N/A	G's	59.3	80.2			58.0	78.5		

CHEST REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	8.0	199.5	-48.8	74.1	4.8	167.0	-43.3	71.9
Chest CG	Y	G's	5.0	133.1	-11.1	84.0	17.4	70.8	-3.3	33.6
Chest CG	Z	G's	23.8	84.0	-18.4	109.3	16.2	114.8	-21.2	76.9
Chest CG Resultant	N/A	G's	54.1	83.9			49.2	70.3		

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	540.8	44.7	62.8	98.7	555.8	45.4	56.8	92.7

REDUNDANT CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Redundant	51.7	83.0	86.0	48.1	69.8	72.8

DATA SHEET NO. 9

SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

TEST VEHICLE: 1998 DODGE DAKOTA EXTENDED CAB PICK-UP NHTSA NO. MW0303

BELT LENGTH DATA (mm)	DRIVER	PASSENGER
Total belt length for continuous webbing systems.	3238	3238
Retractor reel to 'D' ring	863	876
Shoulder belt length as measured on Part 572 Dummy	851	863
Lap belt length as measured on Part 572 Dummy	863	876
Remainder of belt on reel	661	623

SHOULDER BELT SPOOL-OFF DATA (mm)	DRIVER	PASSENGER
As determined mechanically	215	103
As determined electronically	205	146

BELT STRETCH DATA (mm/cm)	DRIVER	PASSENGER
Measured electronically between shoulder belt load cell and the "D" ring	0.67	0.24
Measured mechanically	0.16	0.20

DATA SHEET NO. 10

SUMMARY OF FMVSS 212 DATA

TEST VEHICLE: 1998 DODGE DAKOTA EXTENDED CAB PICK-UP

NHTSA NO. MW0303

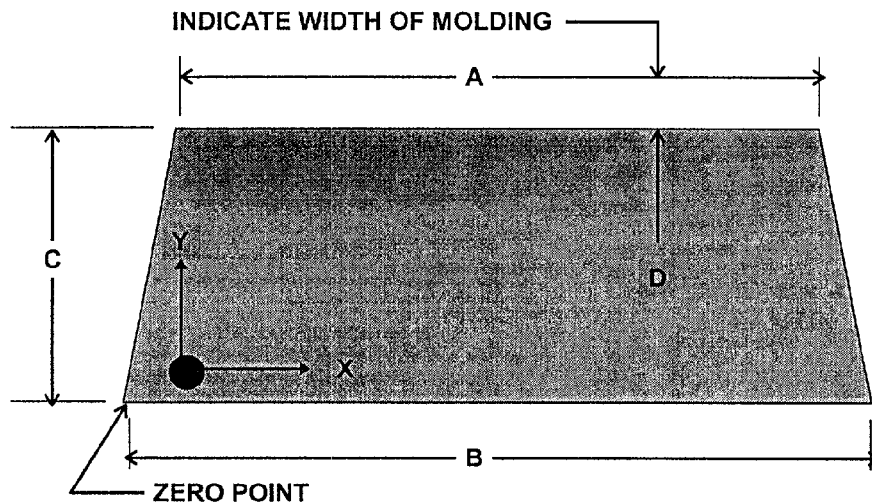
Details of windshield mounting (method of retention, type of trim, etc.):

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	2075	2075	100%
Left Side	2075	2075	100%
Total	4150	4150	100%

Indicate area of retention failure.



FRONT VIEW OF WINDSHIELD

Width of molding = Top 23 mm , Sides 23 mm, Bottom 50 mm.

Temperature of windshield molding during test = 21.1 °C

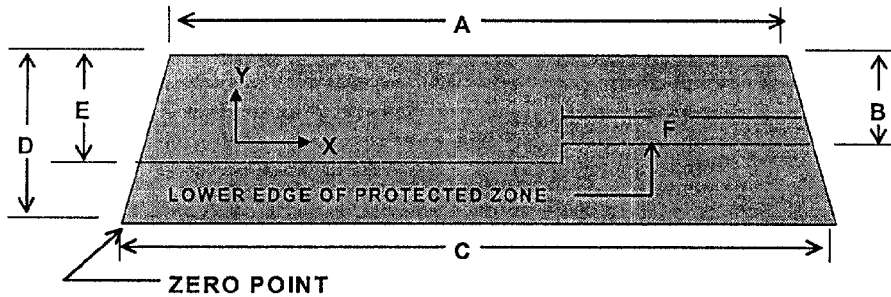
DATA SHEET NO. 11

WINDSHIELD ZONE INTRUSION FMVSS 219 (PARTIAL) DATA

TEST VEHICLE: 1998 DODGE DAKOTA EXTENDED CAB PICK-UP NHTSA NO. MW0303

SKETCH OF FRONT VIEW OF WINDSHIELD:

Provide all dimensions necessary to reproduce the protected area.



	DIMENSION mm
A	1280
B	360
C	1510
D	680
E	510
F	960

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 DODGE DAKOTA EXTENDED CAB PICK-UP NHTSA NO. MW0303

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

TEST DATE: January 28, 1998 TIME: 1:00 PM TEMPERATURE 16.7 C

STODDARD SOLVENT SPILLAGE MEASUREMENT:

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

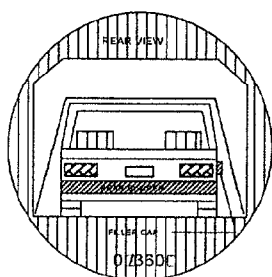
DATA SHEET NO. 13

FMVSS 301 STATIC ROLLOVER DATA SHEET

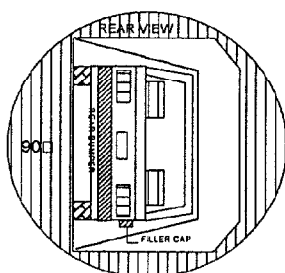
TEST VEHICLE: 1998 DODGE DAKOTA EXTENDED CAB PICK-UP NHTSA NO. MW0303

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

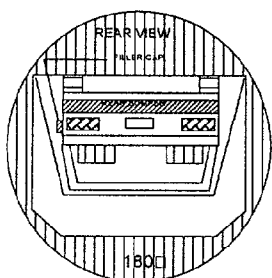
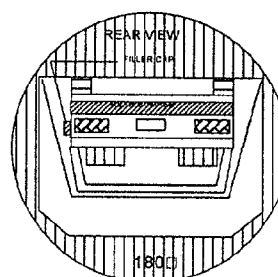
TEST DATE: January 28, 1998 TIME: 1:00 PM TEMPERATURE: 16.7C



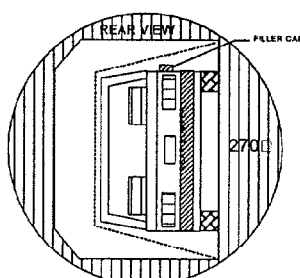
0° TO 90°



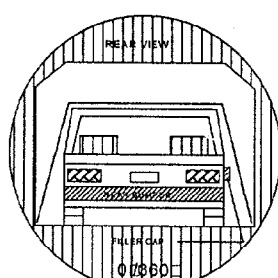
90° TO 180°



180° TO 270°



270° TO 0°



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

TEST PHASE	ROTATION TIME (sec.)	POSITION HOLD TIME (sec)	STODDARD SPILLAGE (oz.)
0° TO 90°	81	300	0
90° TO 180°	80	300	0
180° TO 270°	80	300	0
270° TO 360°	82	300	0

3. Provide Details of Stoddard Solvent Spillage Locations--

No solvent leakage occurred during rollover tests.

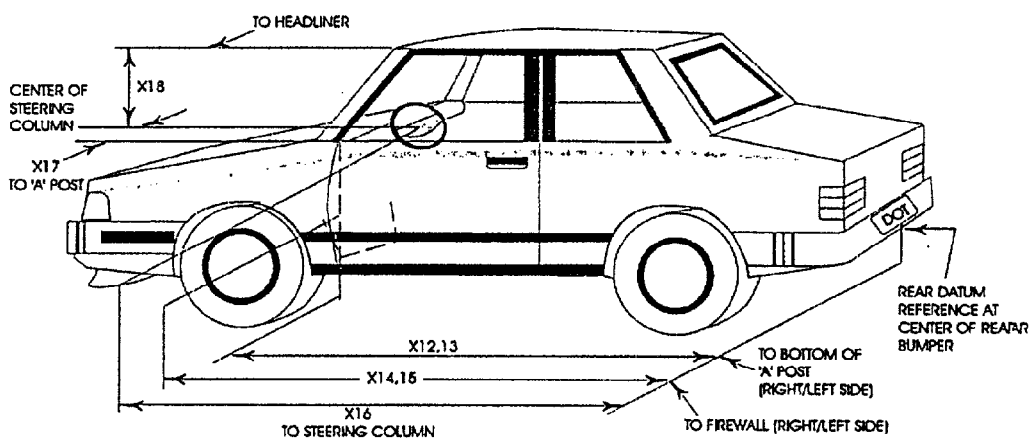
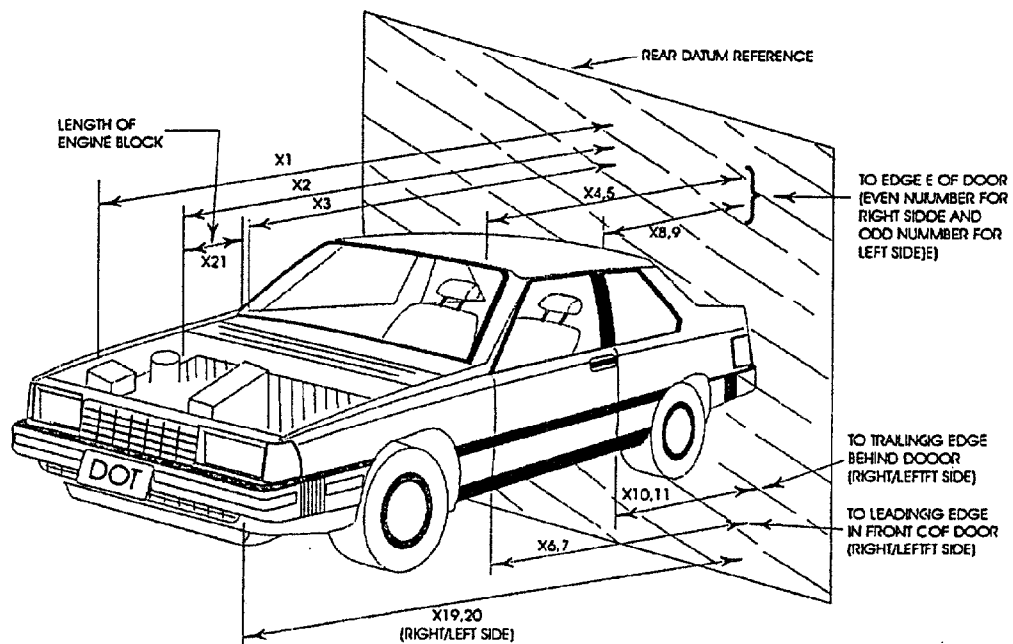
DATA SHEET NO. 14

VEHICLE MEASUREMENTS

TEST VEHICLE: 1998 DODGE DAKOTA EXTENDED CAB PICK-UP

NHTSA NO. MW0303

NO.	MEASUREMENT DESCRIPTION	DIMENSIONS IN MM		
		PRE-TEST	POST-TEST	DIFFERENCE
1	Total length of vehicle at centerline	5458	4824	-634
2	Rear surface of vehicle (RSOV) to front of engine	4850	4489	-361
3	RSOV to firewall centerline	4300	4240	-60
4	RSOV to leading edge of right door	4050	4026	-24
5	RSOV to leading edge of left door	4010	3979	-31
6	RSOV to lower leading edge of right door	4028	4024	-4
7	RSOV to lower leading edge of left door	4014	4010	-4
8	RSOV to upper trailing edge of right door	2852	2814	-38
9	RSOV to upper trailing edge of left door	2840	2809	-31
10	RSOV to lower trailing edge of right door	2834	2843	+9
11	RSOV to lower trailing edge of left door	2825	2815	-10
12	RSOV to bottom of right 'A' pillar	4062	4042	-20
13	RSOV to bottom of left 'A' pillar	4055	4018	-37
14	RSOV to firewall on right side	4420	4170	-250
15	RSOV to firewall of left side	4375	4217	-158
16	RSOV to steering column	3516	3489	-27
17	Center of steering column to left 'A' pillar	460	344	-94
18	Center of steering column to headlining	436	395	-41
19	RSOV to right side of front bumper	5216	4703	-513
20	RSOV to left side of front bumper	5216	4704	-512
21	Length of engine block	380	380	0
22	RSOV to right side of dash panel	3827	3822	-5
23	RSOV to center of dash panel	3704	3696	-8
24	RSOV to left side of dash panel	3760	3713	-47



DATA SHEET NO. 15

CAMERA LOCATIONS

TEST VEHICLE: 1998 DODGE DAKOTA EXTENDED CAB PICK-UP

NHTSA NO. MW0303

CAMERA NO.	VIEW	CAMERA POSITIONS (mm) *			ANGLE (Deg.)	FILM PLANE TO HEAD TARGET (mm)	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Right Side View-Real Time	2083	8331	914	0	1651	Zoom	24
2A	Left Side View No. 1	1321	-8382	864	0	7798	13	350
2B	Left Side View No. 2	1499	-9855	1270	0	7925	25	960
3	Left Side View No. 3	991	-10,566	1486	0	9906	50	1050
4	Left Side View No. 4	3835	3150	2083	20	2438	19	1000
5	Left Side View No. 5	1905	-8306	2515	14	7925	25	1010
6	Left Side View No. 6	1880	-8382	1092	8	8179	25	1010
7	Right Side View No. 1	1295	10,160	1168	0	7798	13	170
8	Right Side View No. 2	1372	10,490	1346	0	9982	50	1250
9	Right Side View No. 3	6832	11,633	1321	10	10,289	80	950
10	Right Side View No. 4	2870	10,719	1372	0	11,887	50	1180
11	Overhead Windshield	914	0	5715	90	N/A	13	1220
12	Front View No. 1 Driver	-356	356	2540	40	2845	19	1050
13	Front View No. 2 Passenger	-356	508	2540	40	2845	19	990
14	Pit Camera Engine View	610	0	-660	90	N/A	13	870
15	Pit Camera Fuel Tank View	5029	0	406	58	N/A	19	920
16	Driver Side Onboard	3683	381	1448	9	1219	13	490
17	Passenger Side Onboard	3683	381	1488	10	1245	13	560

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

DATA SHEET NO. 16

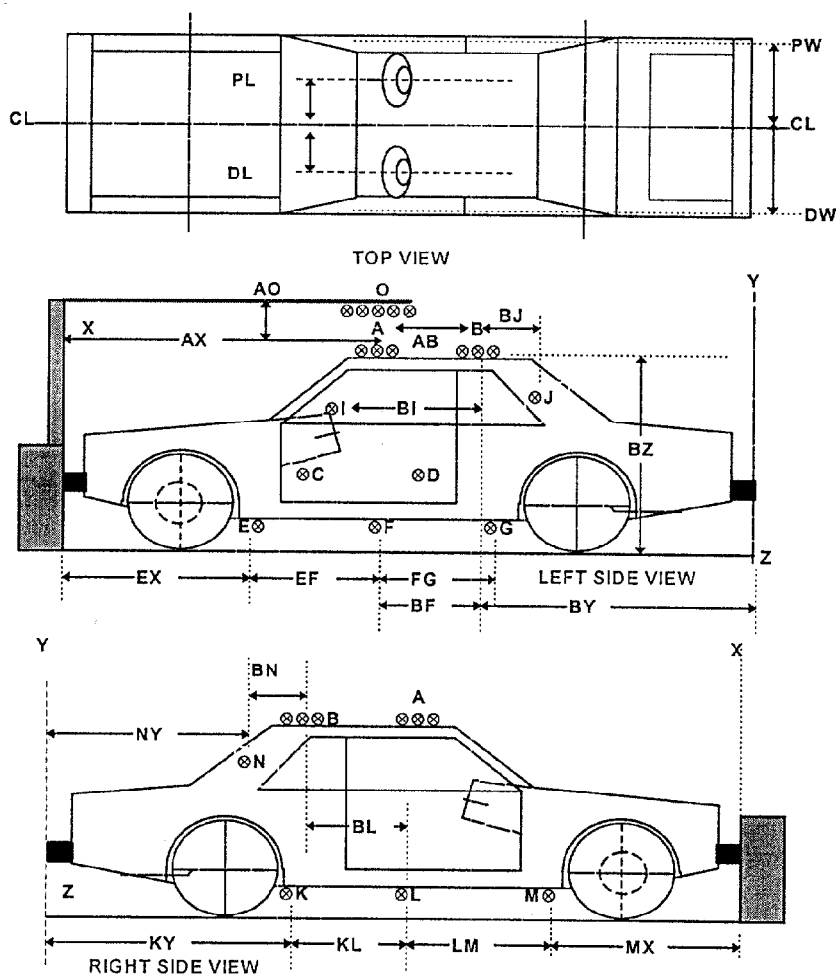
REFERENCE PHOTOGRAPH TARGETS

TEST VEHICLE: 1998 DODGE DAKOTA EXTENDED CAB PICK-UP

NHTSA NO. MW0303

ITEM	DESCRIPTION	VALUE	ITEM	DESCRIPTION	VALUE
AX	TARGET A TO BARRIER	2350	NY	TARGET N TO REAR BUMPER	2342
AB	TARGET A TO TARGET B	610	BN	TARGET B TO TARGET N	215
AO	VERTICAL DISTANCE A TO O	152	KY	TARGET K TO REAR BUMPER	1793
BJ	TARGET B TO TARGET J	215	KL	TARGET K TO TARGET L	1150
BI	TARGET B TO STEERING COLUMN	1095	BL	TARGET B TO TARGET L	400
BZ	TARGET B TO GROUND LEVEL	1700	LM	TARGET L TO TARGET M	1142
EX	TARGET E TO BARRIER	1394	MX	TARGET M TO BARRIER	1400
EF	TARGET E TO TARGET F	1133	CL/PL	VEHICLE CENTERLINE TO PASSENGER	370
FG	TARGET F TO TARGET G	1141	CL/PW	VEHICLE CENTERLINE TO RIGHT SILL	780
BF	TARGET B TO TARGET F	400	CL/DL	VEHICLE CENTERLINE TO DRIVER	370
BY	TARGET B TO REAR BUMPER	2560	CL/DW	VEHICLE CENTERLINE TO LEFT SILL	780

Distances in mm



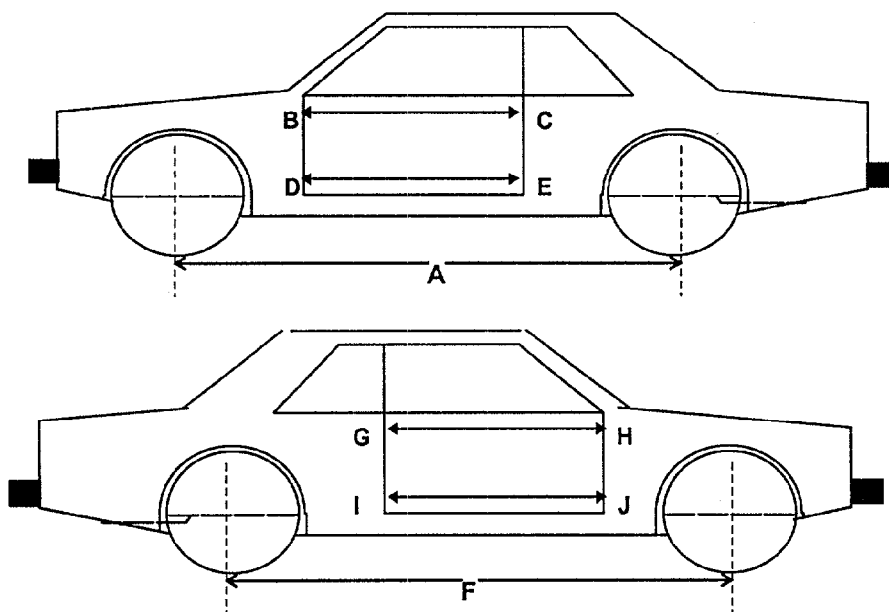
DATA SHEET NO. 17

VEHICLE INTRUSION MEASUREMENTS

TEST VEHICLE: 1998 DODGE DAKOTA EXTENDED CAB PICK-UP

NHTSA NO. MW0303

DOOR OPENING WIDTH



UNITS (mm)	LEFT SIDE		RIGHT SIDE	
MEASUREMENT	BC	DE	GH	IJ
PRE-TEST	1170	1189	1198	1194
POST-TEST	1170	1195	1212	1181
DIFFERENCE	0	+6	+14	-13

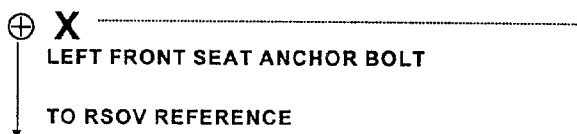
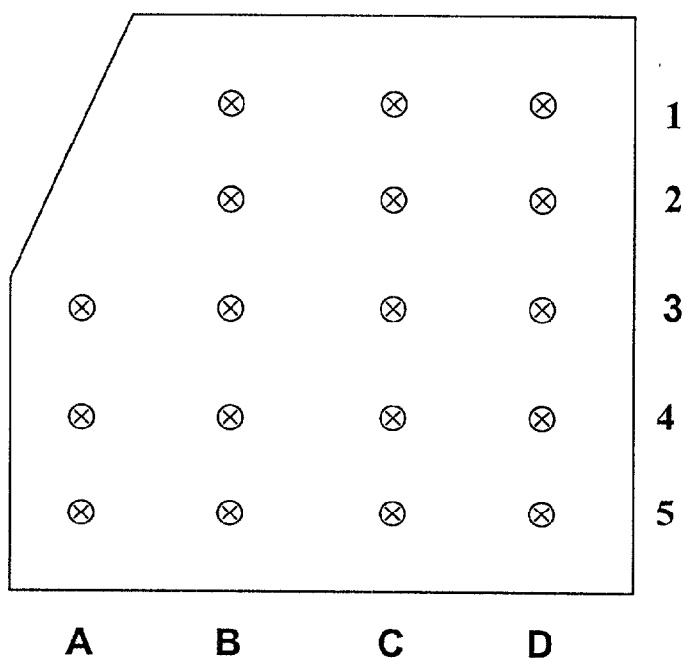
VEHICLE WHEELBASE CHANGE

UNITS (mm)	A = LEFT SIDE WHEELBASE	F = RIGHT SIDE WHEELBASE
PRE-TEST	3327	3327
POST-TEST	3180	3213
DIFFERENCE	-147	-114

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	775	724	775	660	775	668
2	620	588	620	486	620	590	620	578
3	465	439	465	440	465	453	465	456
4	310	287	310	286	310	300	310	299
5	155	134	155	135	155	155	155	145
REF. POINT	RSOV TO ANCHOR BOLT (PRE-TEST)		3450		RSOV TO ANCHOR BOLT (POST-TEST)		3484	



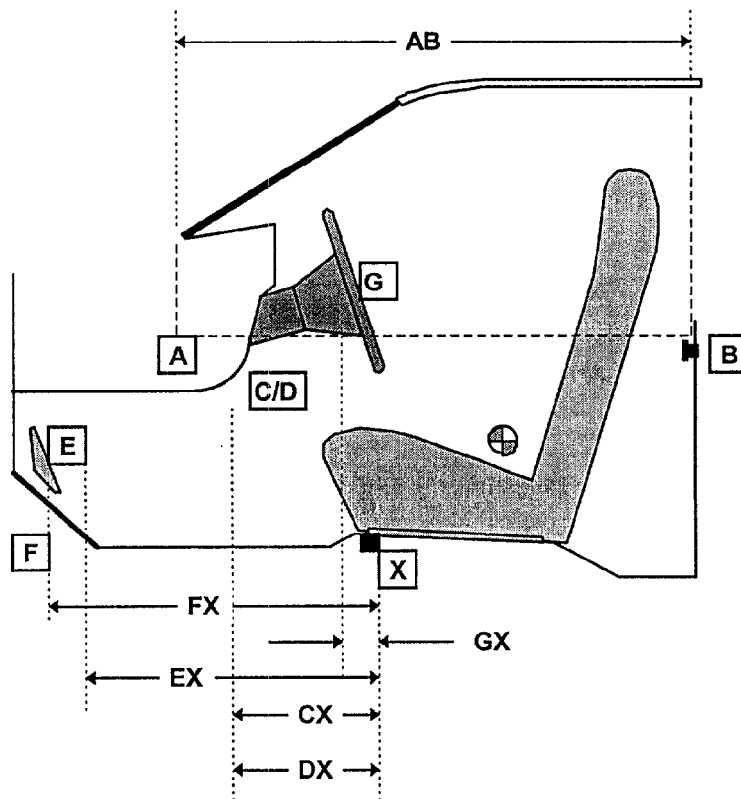
DRIVER SIDE FLOOR PLAN

(Data Sheet No. 17 Continued)

DRIVER COMPARTMENT INTRUSION (Distances in mm)

REF.	DESCRIPTION	PRE-TEST	POST-TEST
AB	DOOR OPENING (INSIDE WINDOW JAM)	1166	1153
CX	LOWER LEFT KNEE BOLSTER TO X	300	296
DX	LOWER RIGHT KNEE BOLSTER TO X	300	288
EX	BRAKE PEDAL TO X	505	413
FX	FOOT REST TO X	654	640
GX	STEERING COLUMN HUB (CENTER) TO X	0	-1.6

X = LEFT FRONT SEAT ANCHOR BOLT



DRIVER COMPARTMENT

DATA SHEET NO. 18

OFFSET BARRIER ORIENTATION

TEST VEHICLE: 1998 DODGE DAKOTA EXTENDED CAB PICK-UP NHTSA NO. MW0303

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 DODGE DAKOTA EXTENDED CAB PICK-UP NHTSA NO. MW0303

VIN: 1B7GL22X2WS628991

TEST DATE: 1/28/98

WHEELBASE: 3327 mm

TEST WEIGHT: 2034 kg

VEHICLE SIZE CATEGORY: EXTENDED CAB PICK-UP

ACCELEROMETER DATA:

LOCATION: Left and right rear floor pans

CALIBRATION PROCEDURE: 6 months/ drop test

LINEARITY: Good

INTEGRATION ALGORITHM: NHTSA Standard

VEHICLE IMPACT SPEED: 57.02 km/h

TIME OF SEPARATION: 68.4 msec

VELOCITY CHANGE: 69.90 km/h

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

IMPACT MODE: Full Frontal

CRUSH DEPTH DIMENSIONS:

C1 = 506 mm

C2 = 626 mm

C3 = 642 mm

C4 = 641 mm

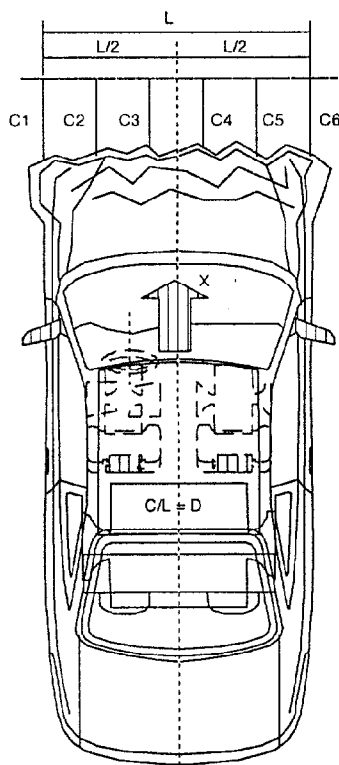
C5 = 613 mm

C6 = 507 mm

MIDPOINT OF DAMAGE: D = vehicle centerline 850 MM

LENGTH OF DAMAGE REGION:

L = 1700 mm



DATA SHEET NO. 20

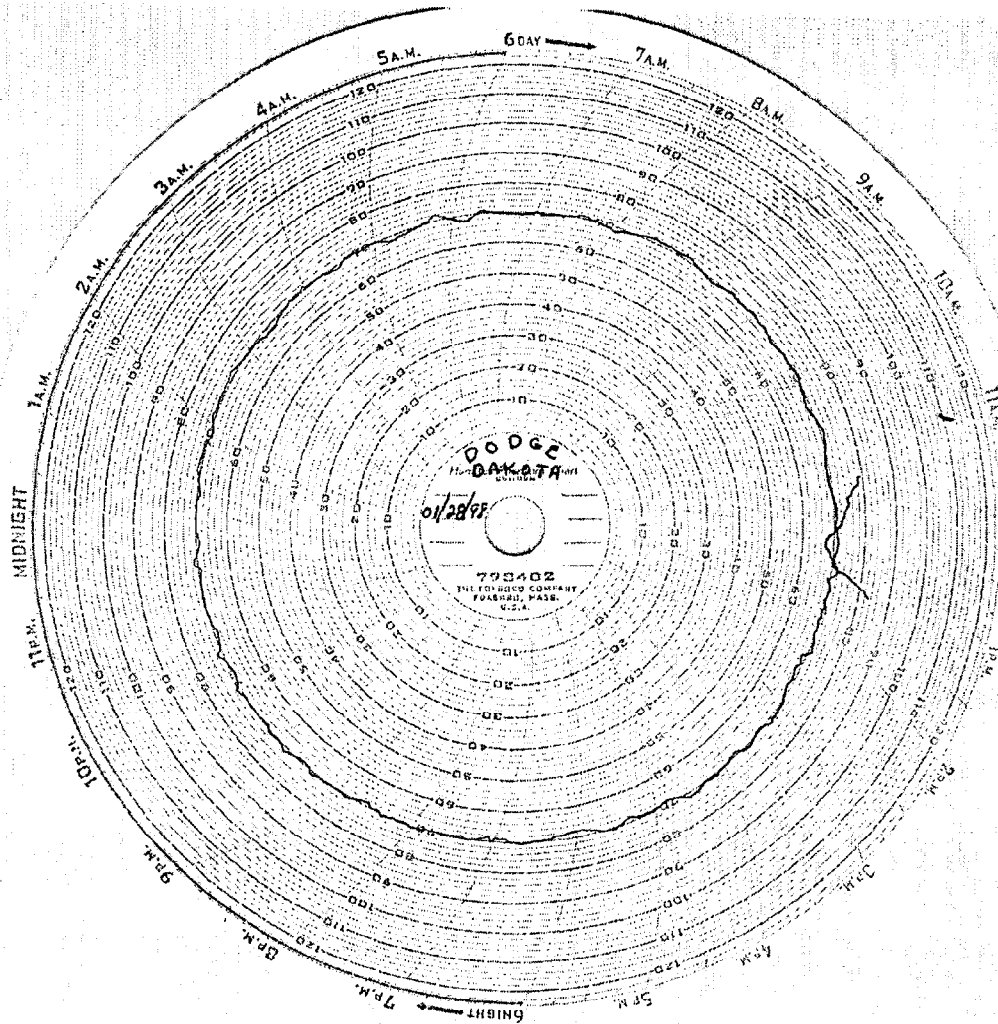
DUMMY/VEHICLE TEMPERATURE STABILIZATION

TEST VEHICLE: 1998 DODGE DAKOTA EXTENDED CAB PICK-UP

NHTSA NO. MW0303

VIN: 1B7GL22X2WS628991

TEST DATE: 1/28/98



APPENDIX A
PHOTOGRAPHS

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FIGURE A-1. RIGHT FRONT AS RECEIVED



FIGURE A-2. LEFT REAR AS RECEIVED

KAR-98-R98050-08

A-2

KAR-98-R98050-08

MADE BY CHRYSLER DATE OF MFR 2009 KG (85200 LB)
 CORPORATION 12-97
 1361 KG (3000 LB) 11/11/03 215/75R15 241 (PA 35 PSI)
 1437 KG (3186 LB) 11/11/03 215/75R15 241 (PA 35 PSI)

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

VIN: 1B7BL22X2G628931 TYPE: TRUCK SINGLE X 200L



121517 83748 041207 VEHICLE MADE IN U.S.A. TBM1082 004485103

FIGURE A-3. VEHICLE CERTIFICATION LABEL

MFG BY CHRYSLER DATE OF MFG 2953 KG 25288 LB
 CORPORATION 12-97
 SAE TREAD 1111 SIZES 15X6.0 241 (PA 35 PS1)
 1361 KG 3866 LB 92.5/75R15 15X6.0 241 (PA 35 PS1)
 SAE WEAR WITH TREAD 15X6.0 241 (PA 35 PS1)
 1437 KG 3166 LB 92.5/75R15
 THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY
 STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.
 VIN 1B7GL22X2S62891 TYPE TRUCK SINGLE X 2004
 121517 83744 241 PA3 VEHICLE MADE IN U.S.A. 1201-1962 481010000

FIGURE A-4. VEHICLE TIRE PLACARD



FIGURE A-5. PRETEST FRONT VIEW

KAR-98-R98050-08

A-5

KAR-98-R98050-08

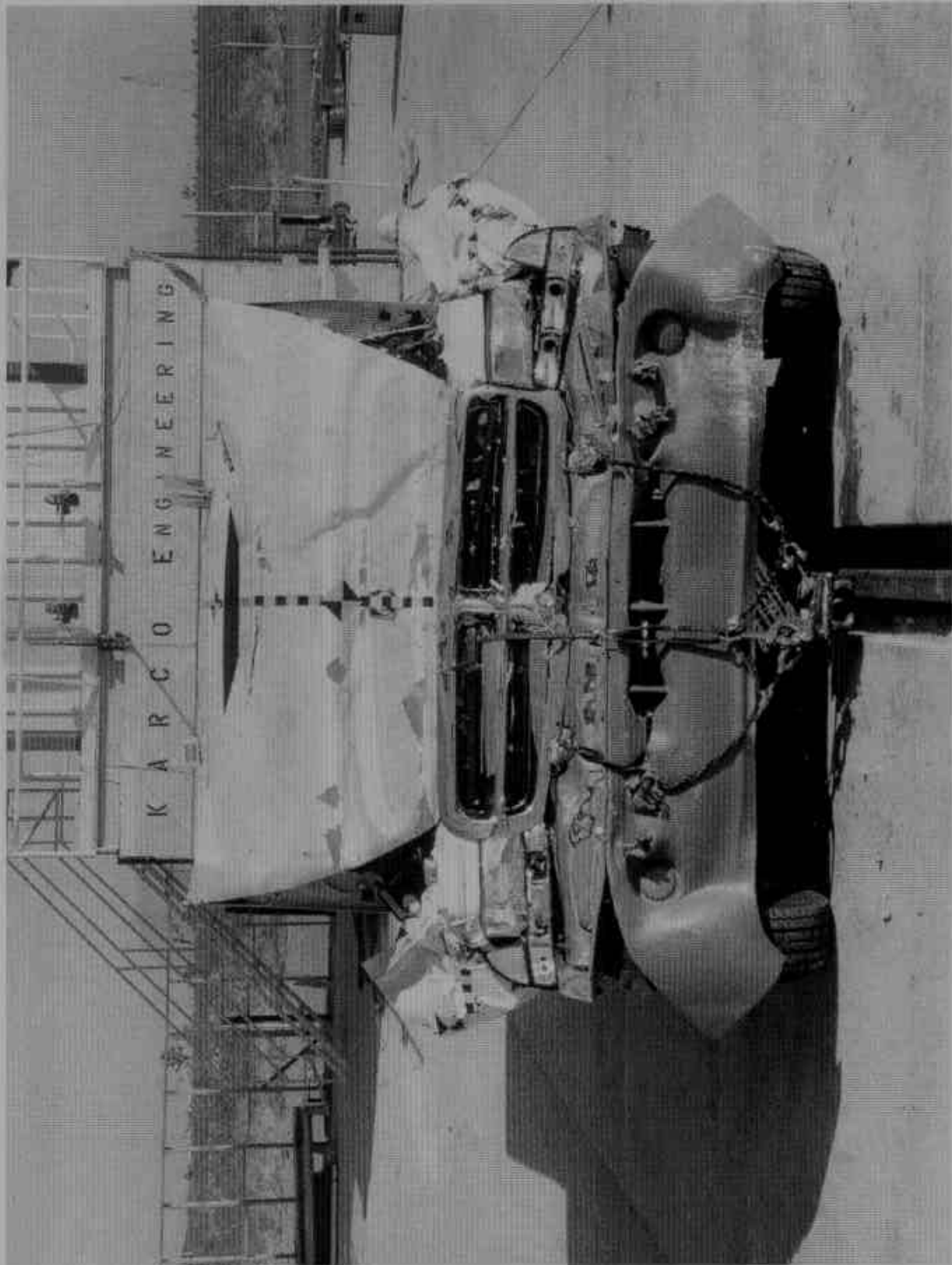


FIGURE A-6. POST TEST FRONT VIEW



FIGURE A-7. PRETEST LEFT SIDE VIEW



FIGURE A-9. PRETEST RIGHT SIDE VIEW

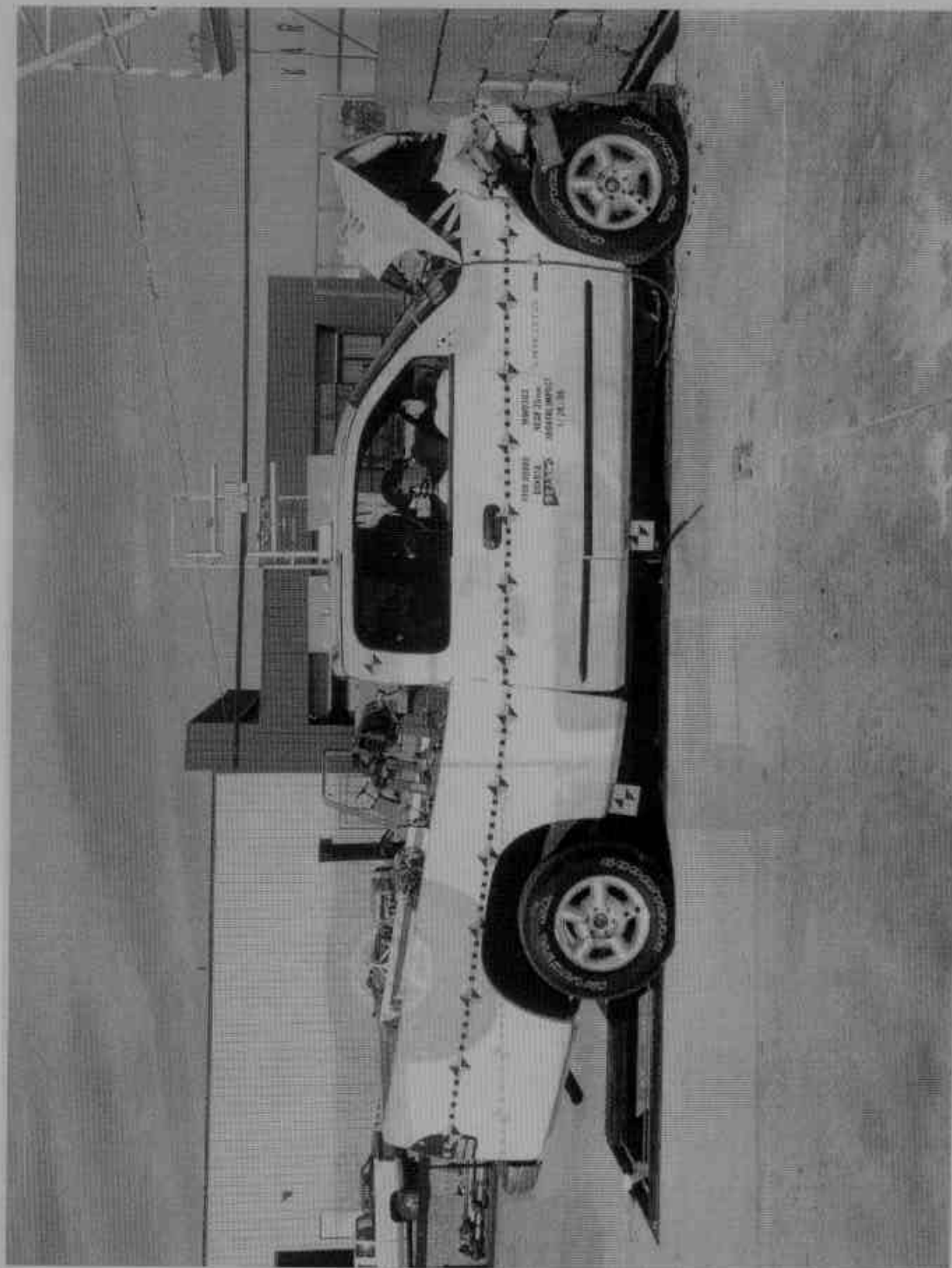


FIGURE A-10. POST TEST RIGHT SIDE VIEW



FIGURE A-11. PRETEST RIGHT FRONT VIEW

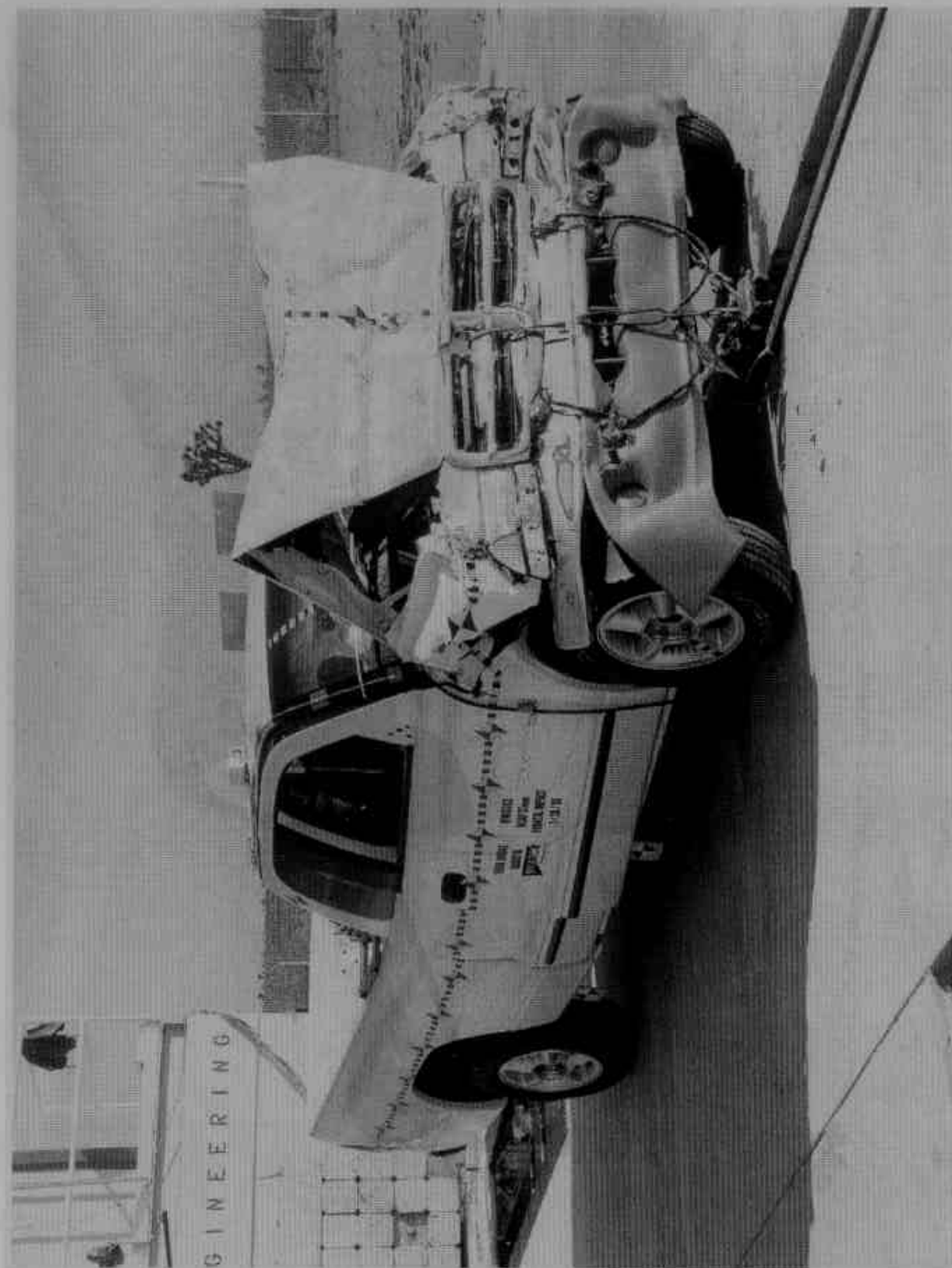


FIGURE A-12. POST TEST RIGHT FRONT VIEW

KAR-98-R98050-08

A-12

KAR-98-R98050-08



FIGURE A-13. PRETEST LEFT REAR VIEW



FIGURE A-14. POST TEST LEFT REAR VIEW

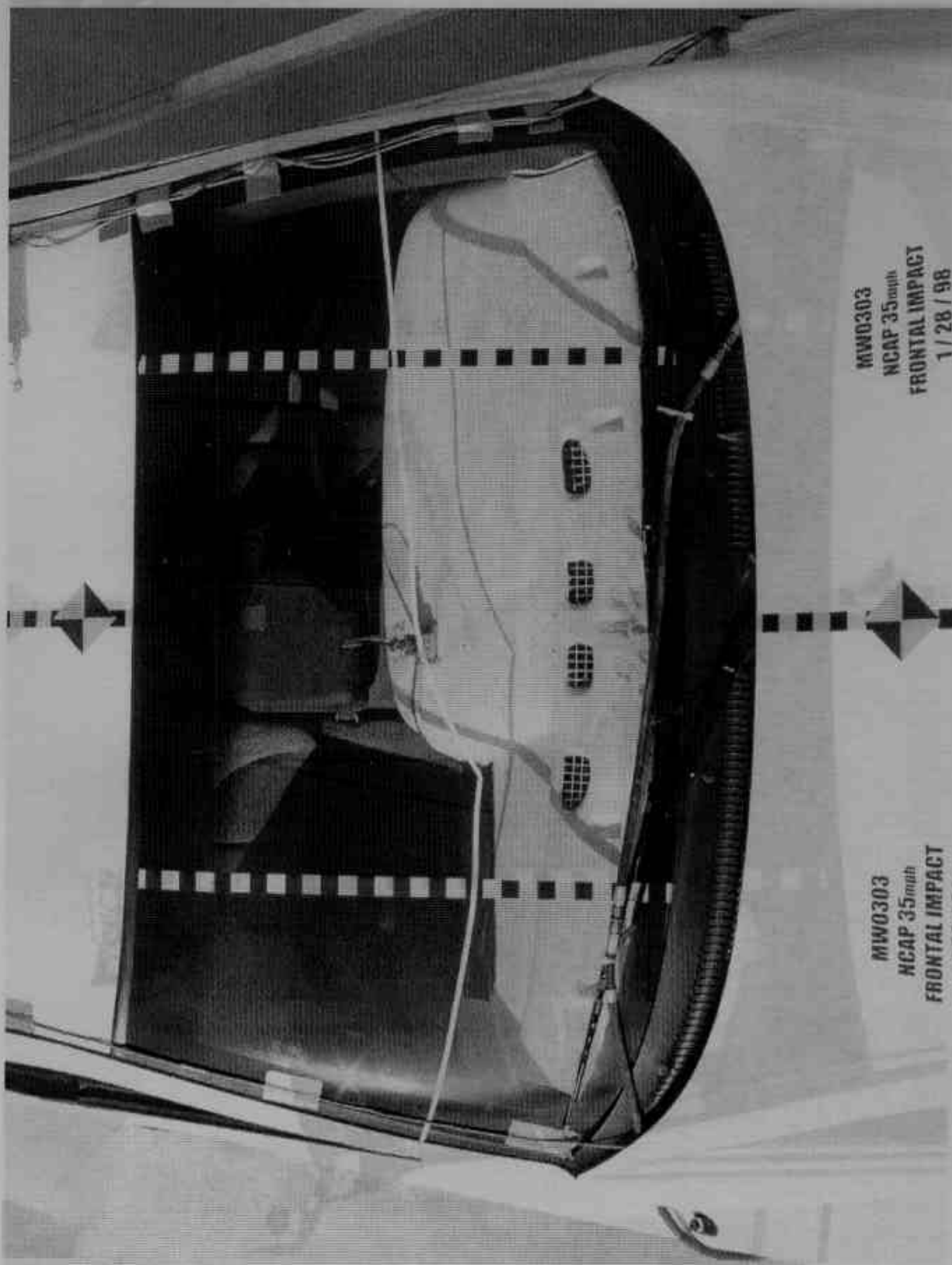


FIGURE A-15. PRETEST WINDSHIELD

KAR-98-R98050-08

A-15

KAR-98-R98050-08

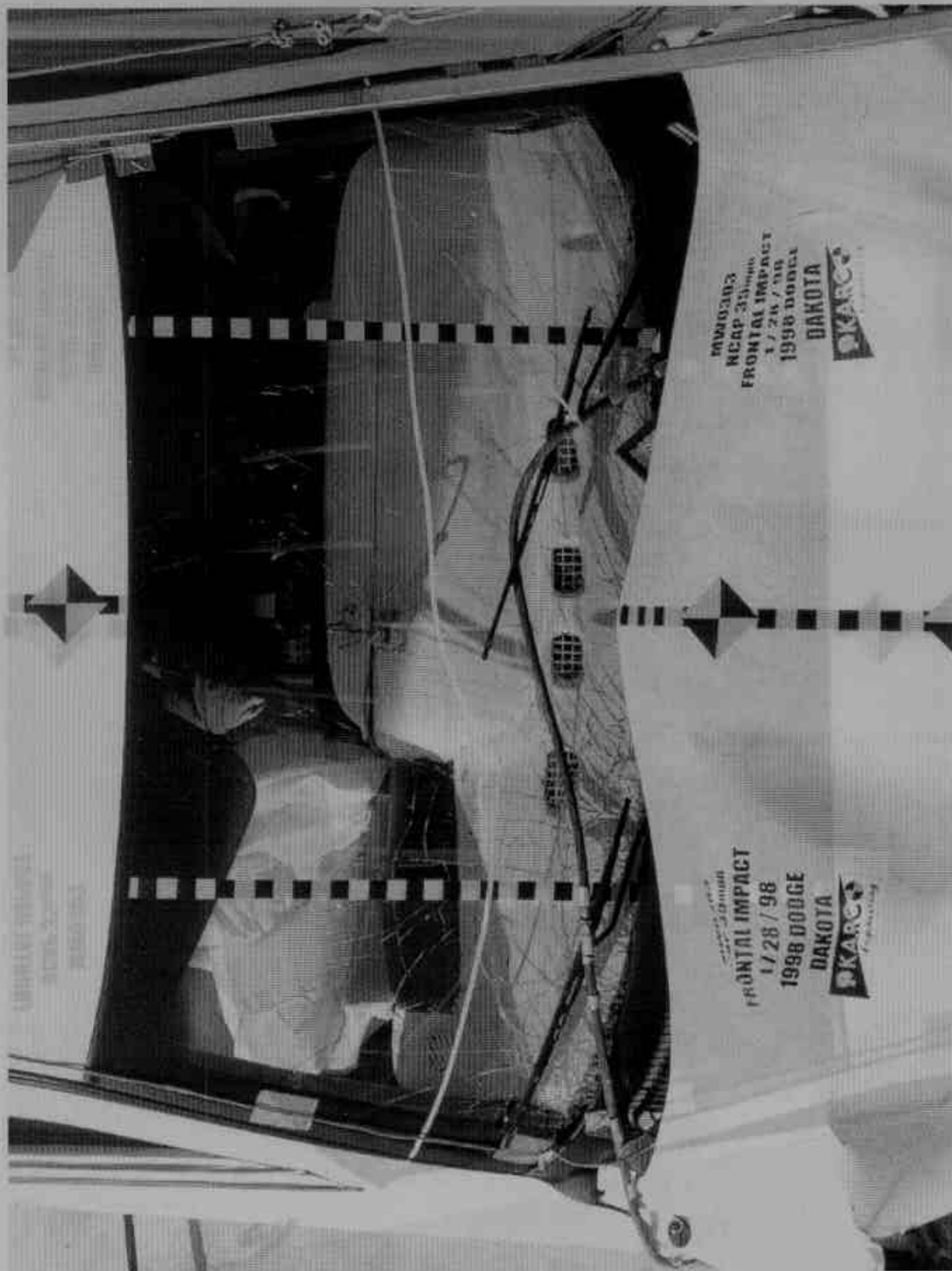


FIGURE A-16. POST TEST WINDSHIELD

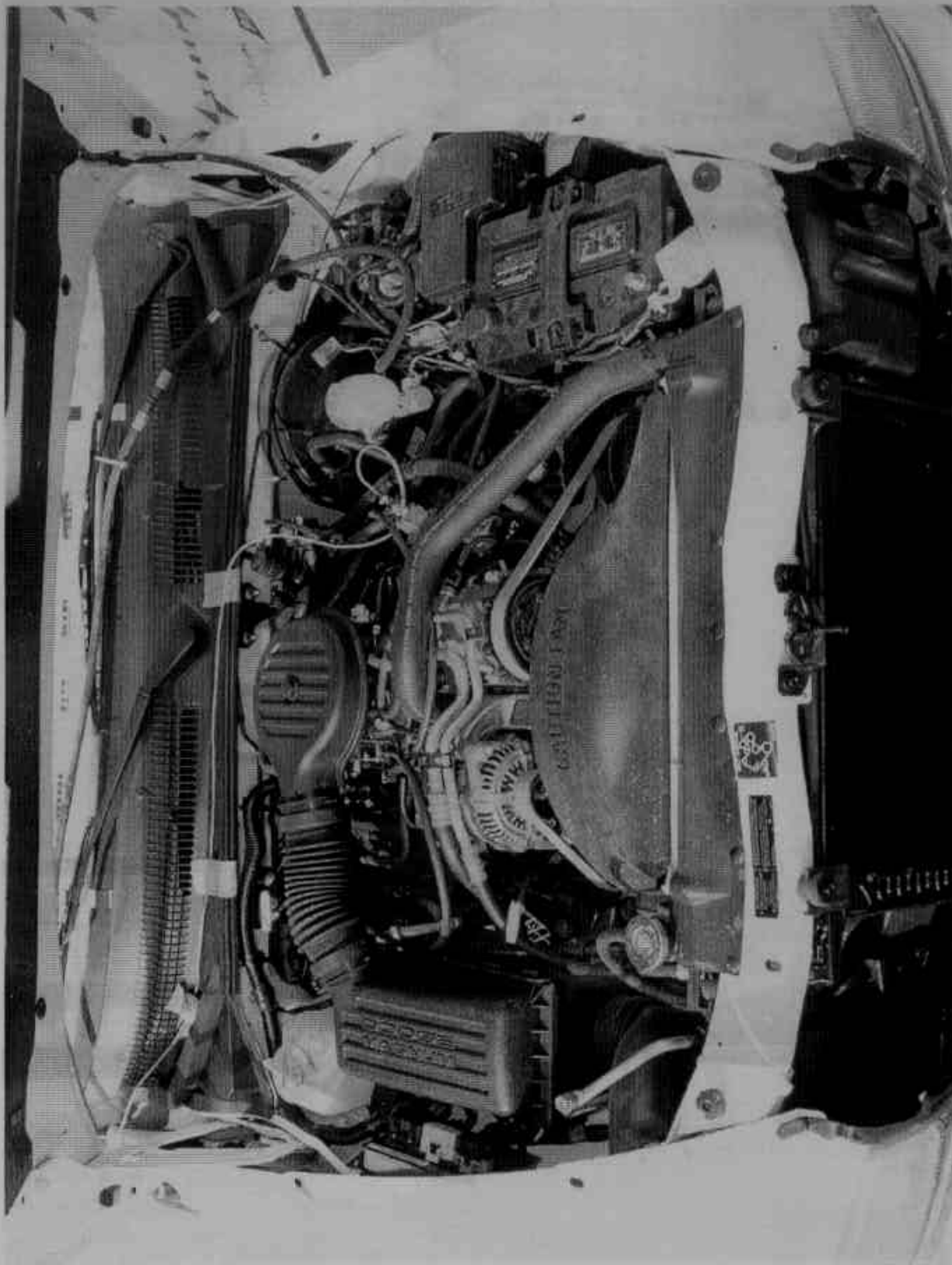


FIGURE A-17. PRETEST ENGINE COMPARTMENT

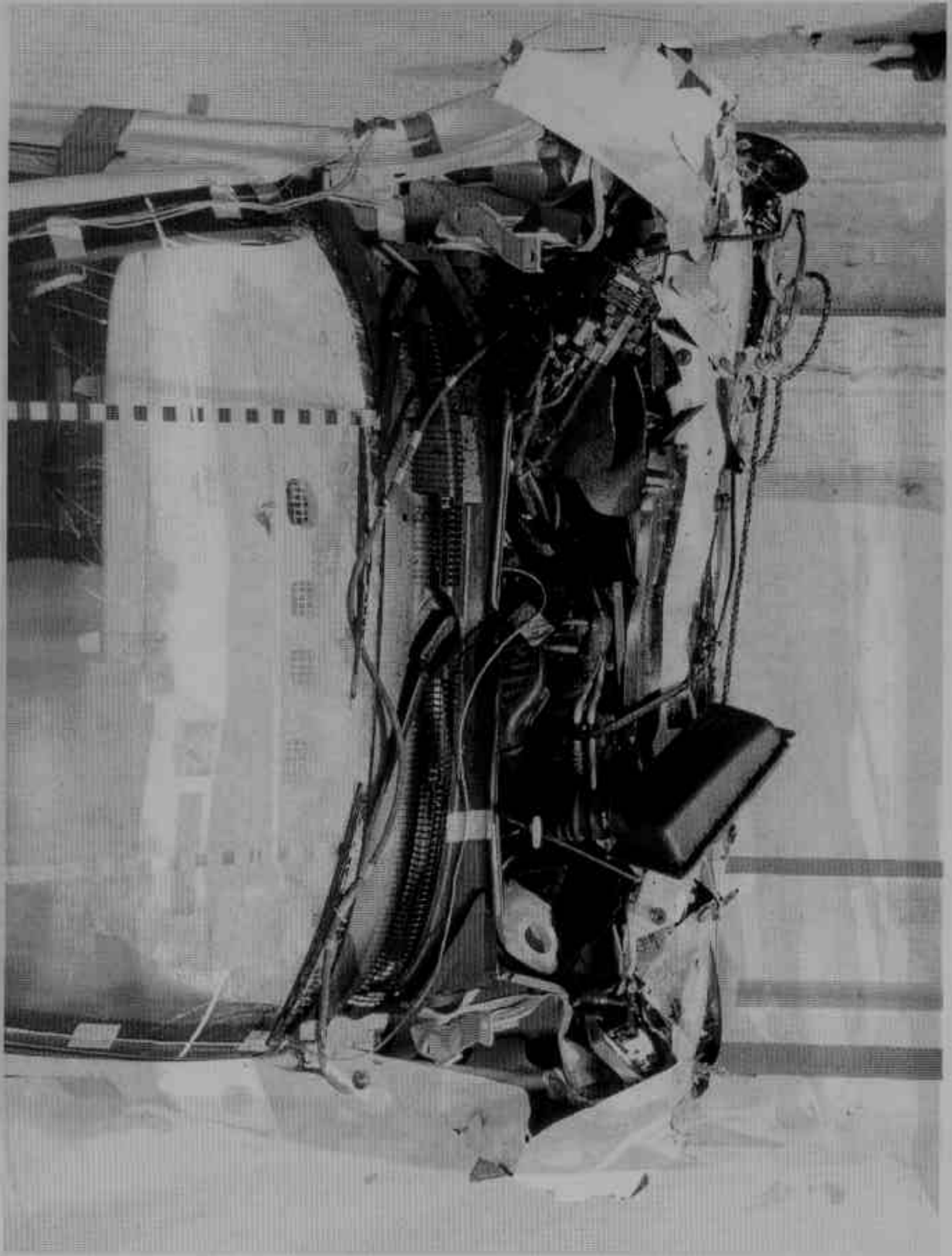


FIGURE A-18. POST TEST ENGINE COMPARTMENT



FIGURE A-19. PRETEST FUEL CAP

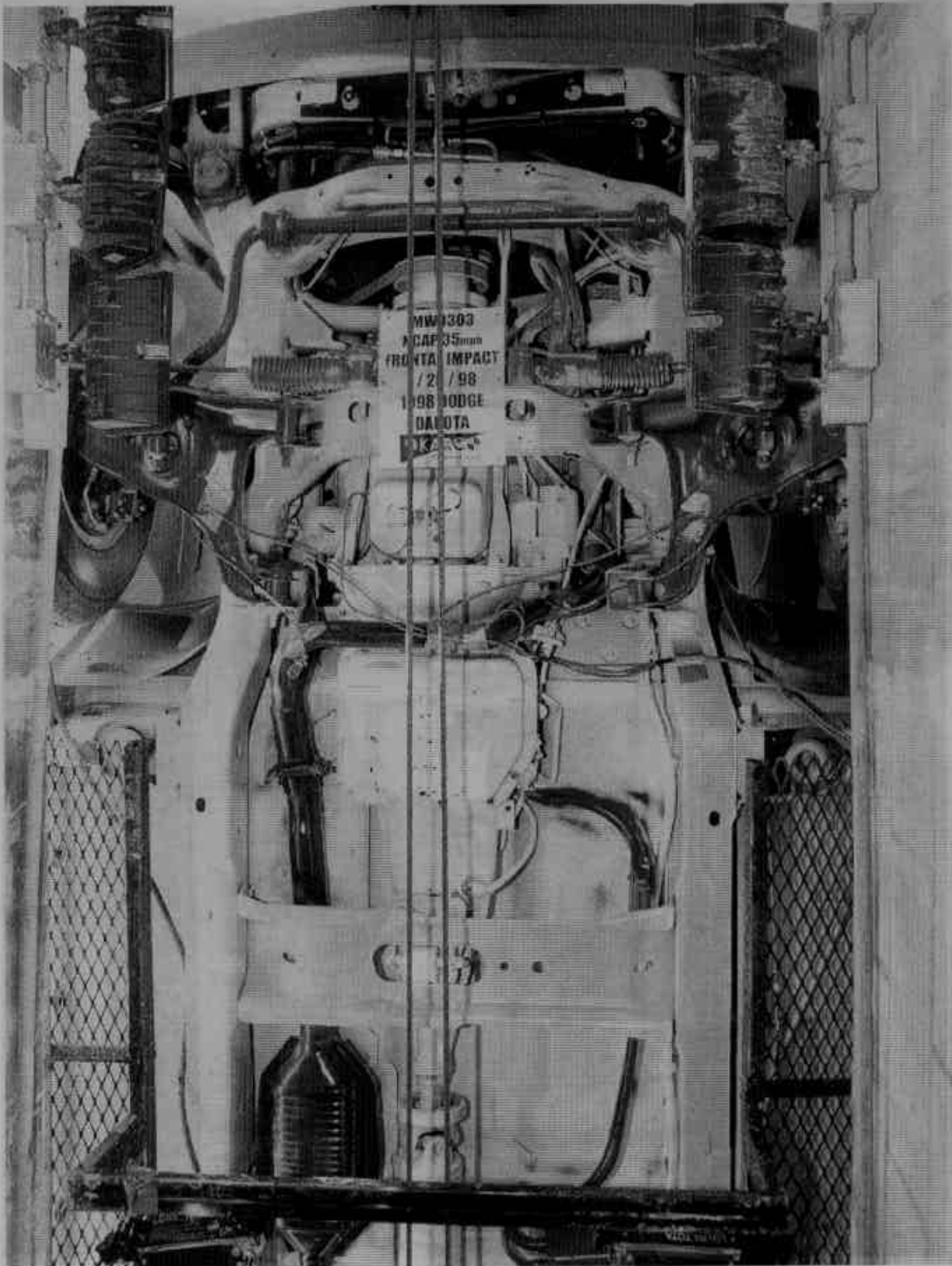


FIGURE A-21. PRETEST FRONT UNDERSIDE

KAR-98-R98050-08

A-21

KAR-98-R98050-08

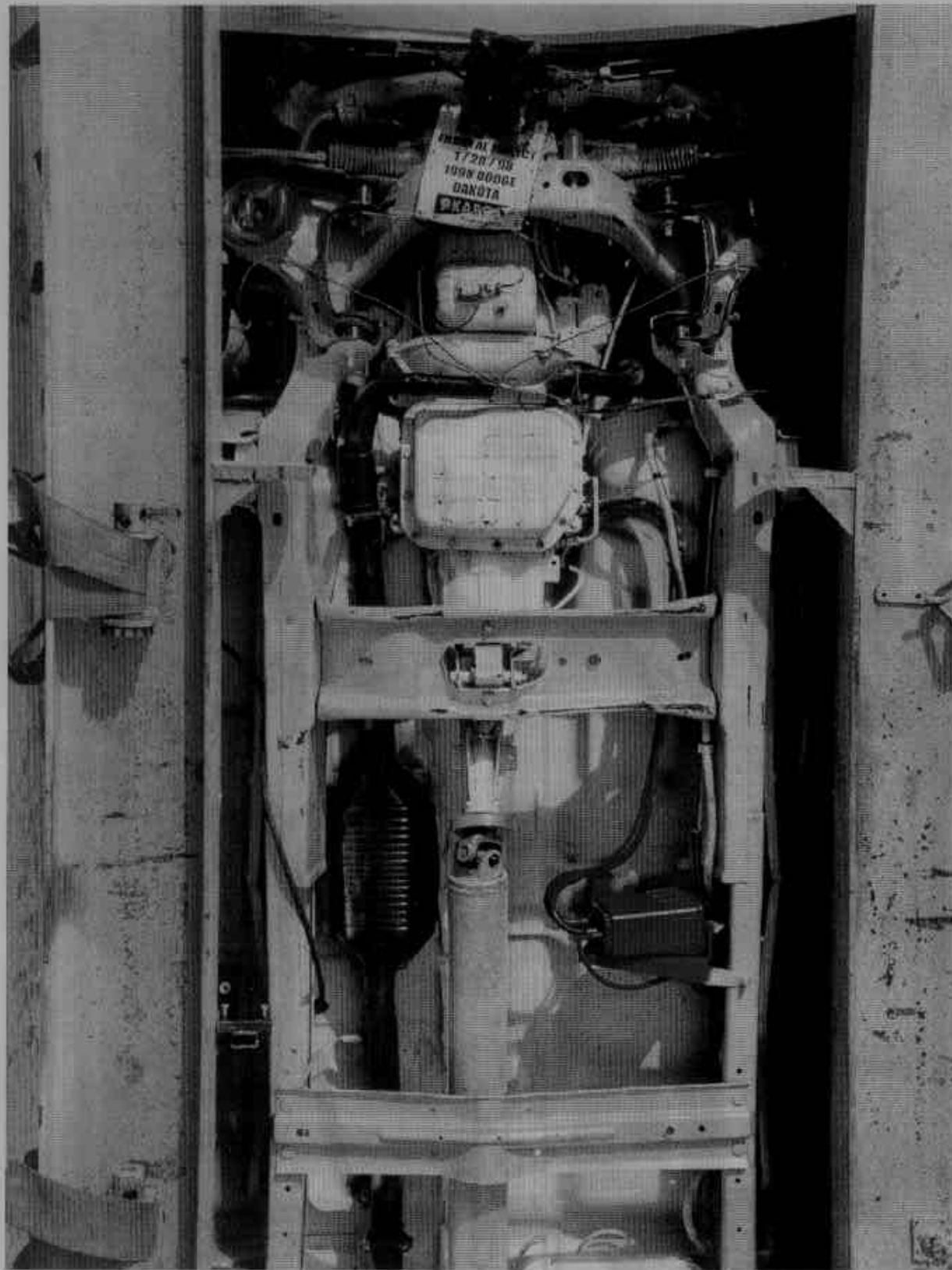


FIGURE A-22. POST TEST FRONT UNDERSIDE

KAR-98-R98050-08

A-22

KAR-98-R98050-08

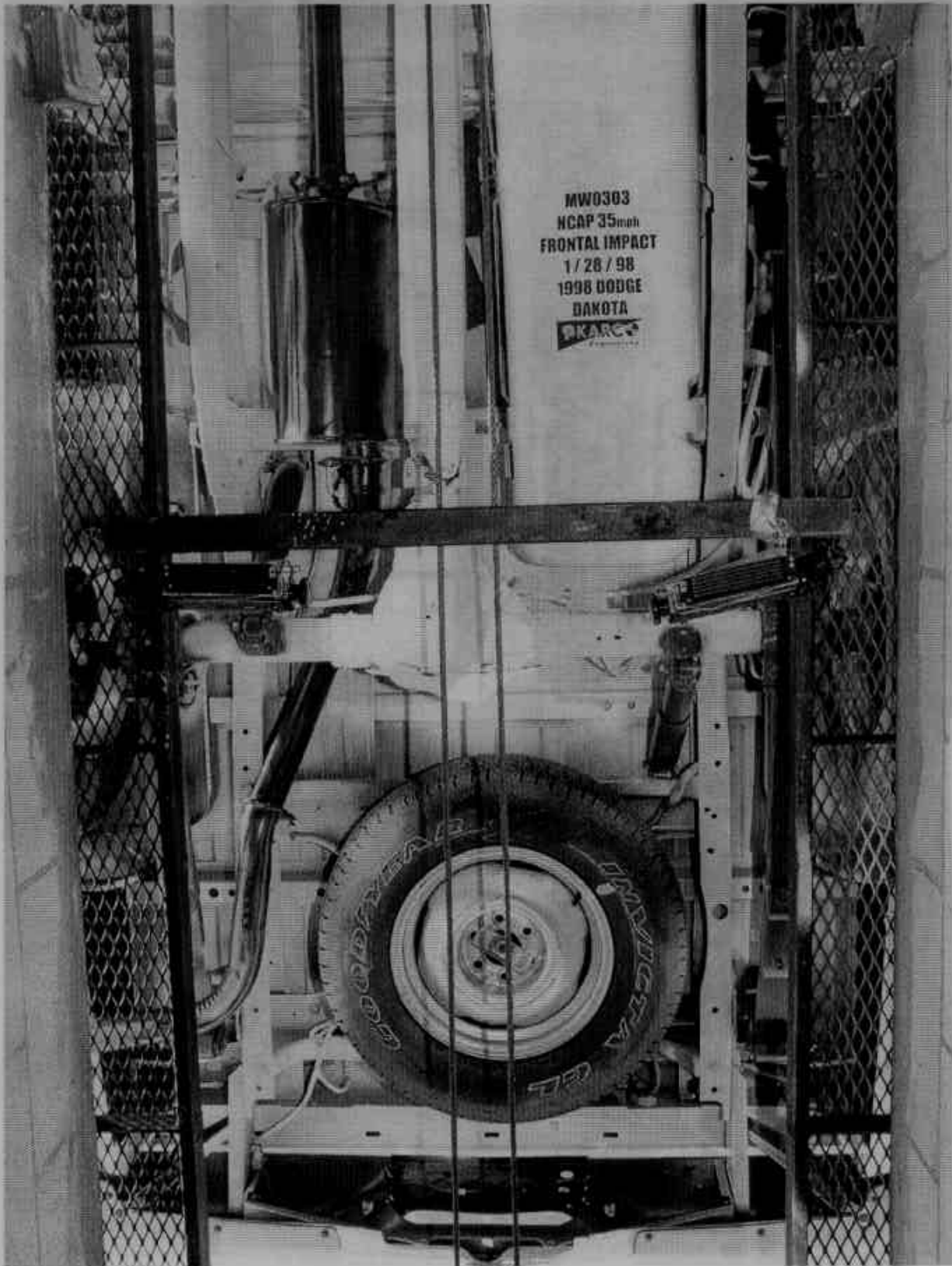


FIGURE A-23. PRETEST REAR UNDERSIDE

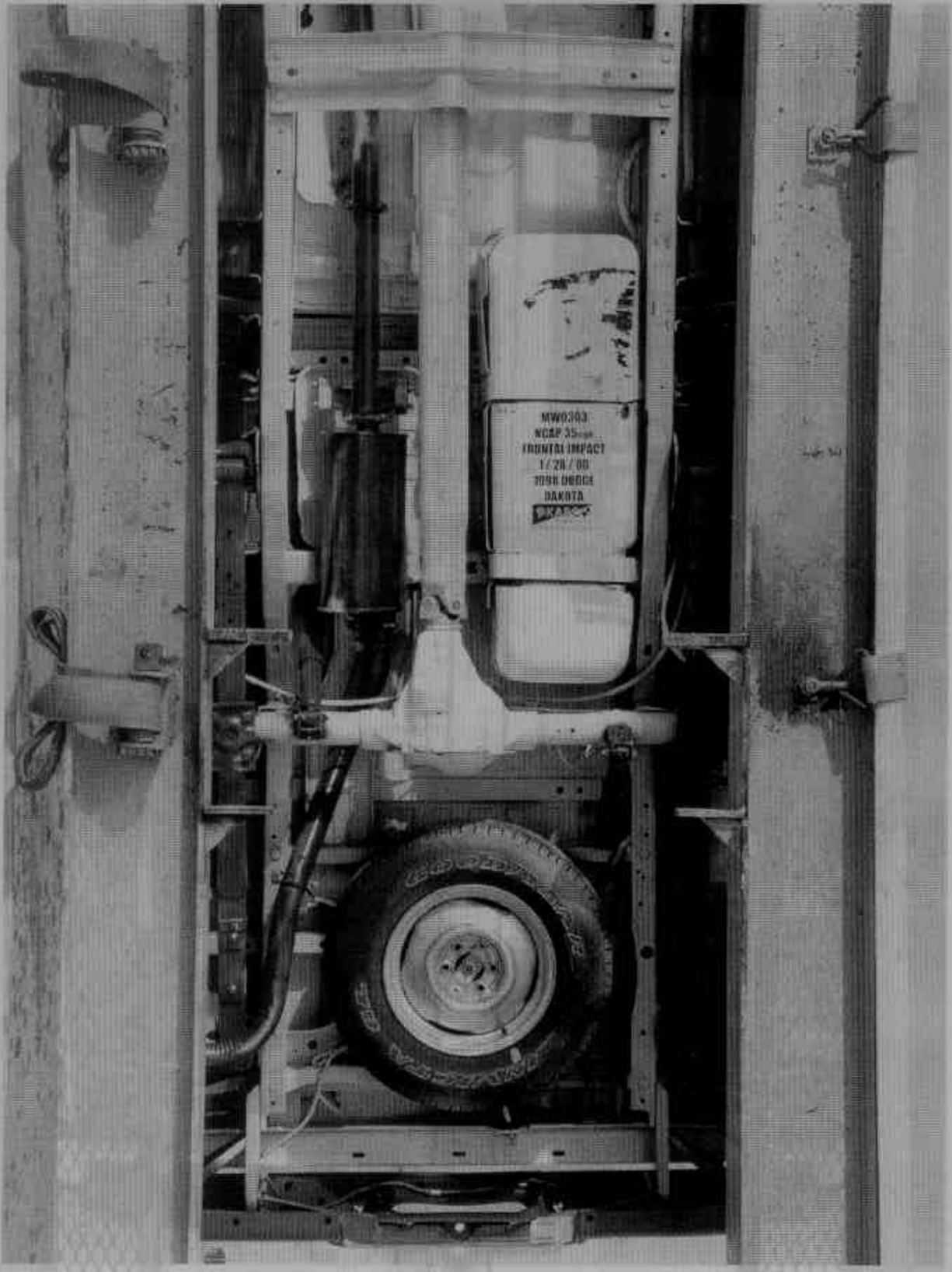


FIGURE A-24. POST TEST REAR UNDERSIDE

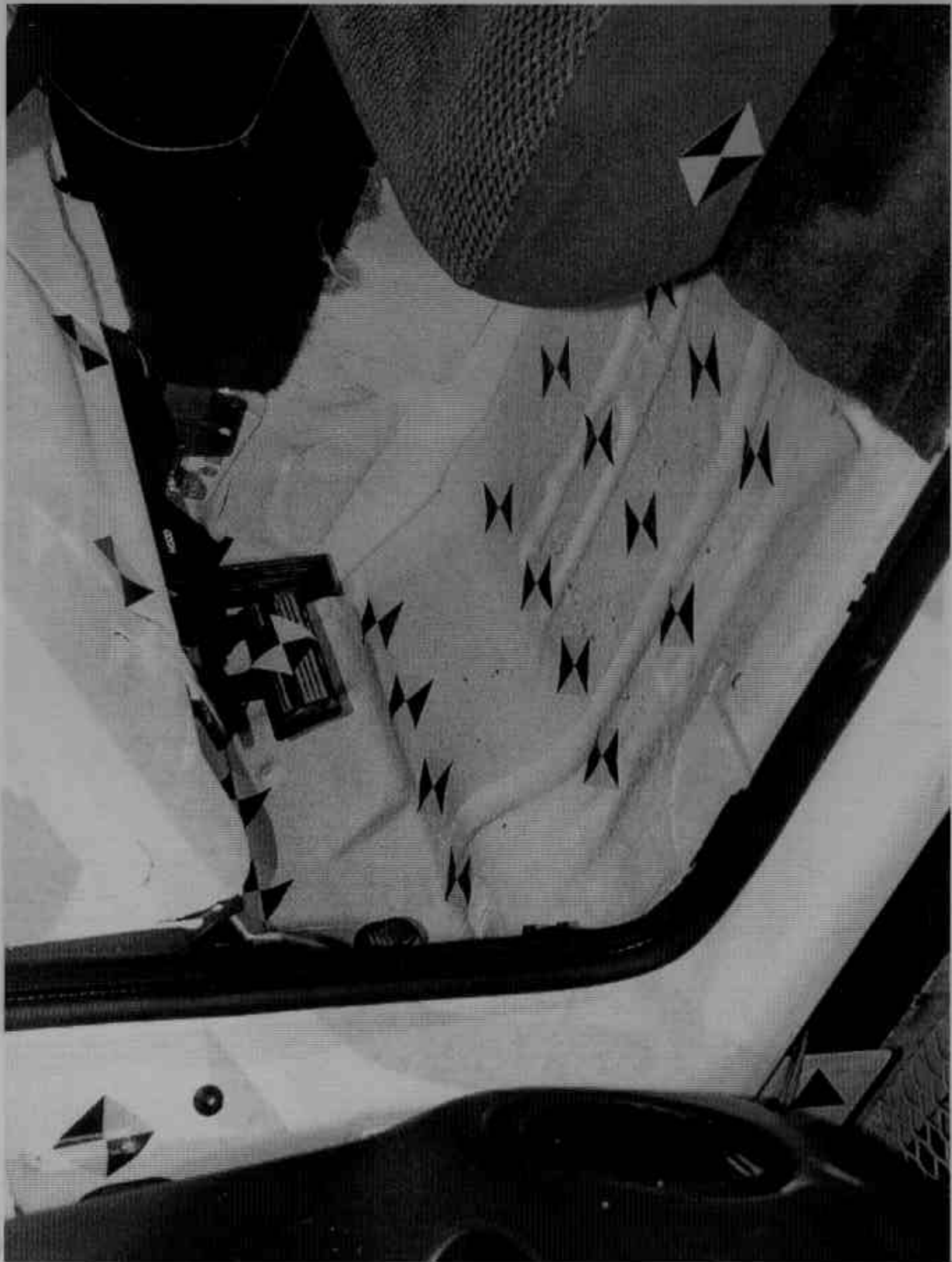


FIGURE A-25. PRETEST DRIVER FLOOR PAN



FIGURE A-26. POST TEST DRIVER FLOOR PAN

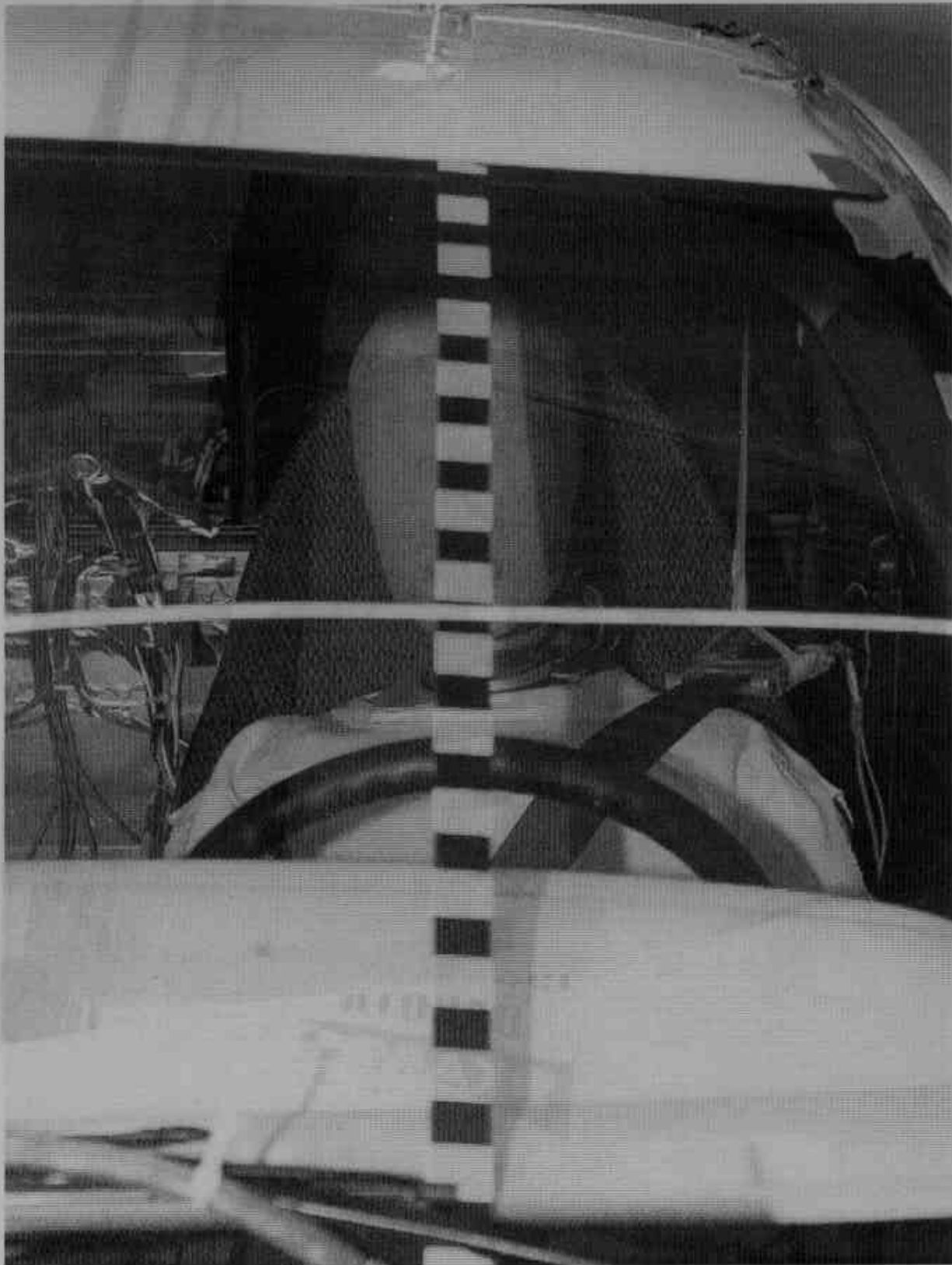


FIGURE A-27. PRETEST DRIVER DUMMY (FRONT VIEW)



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

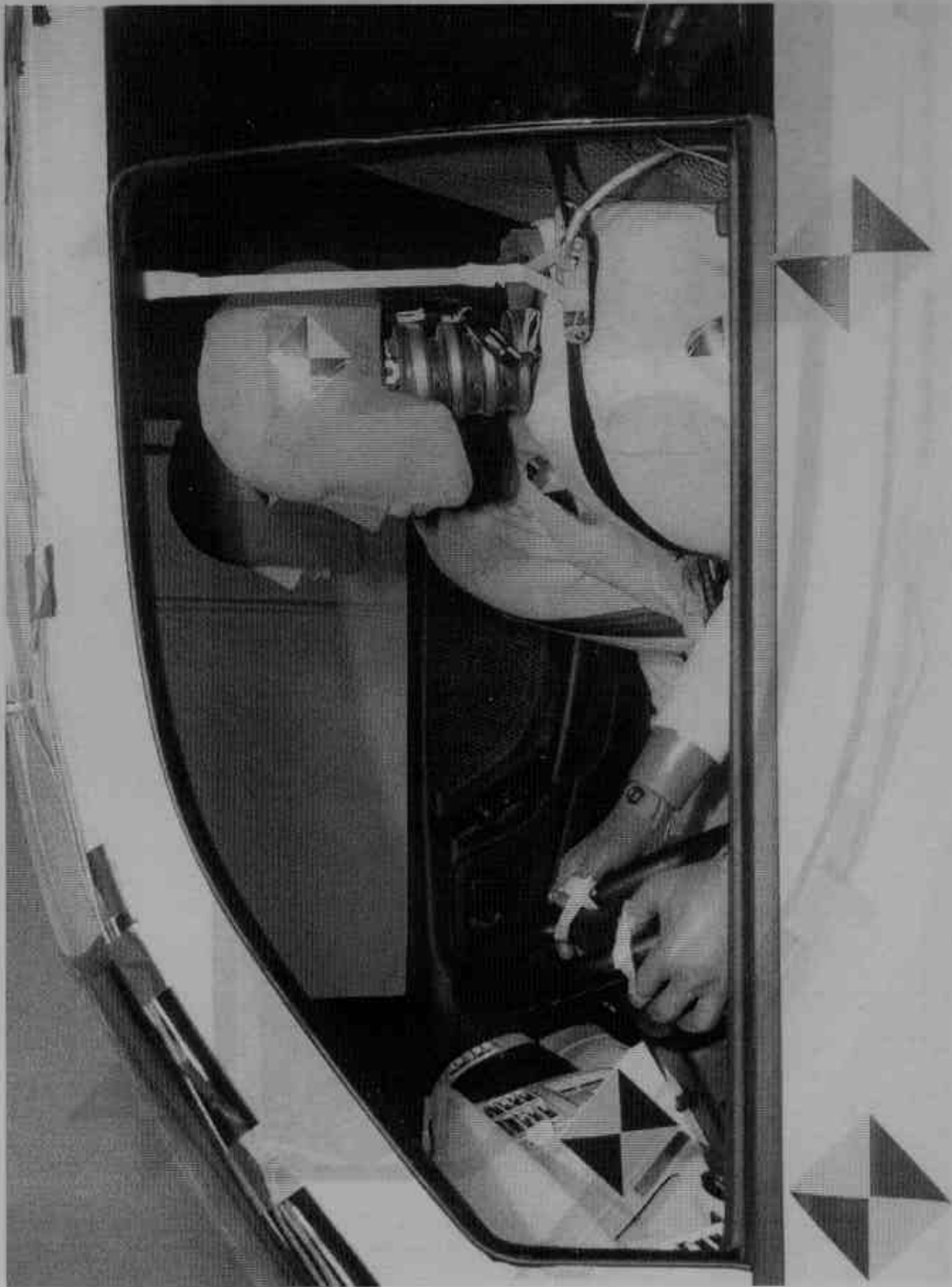


FIGURE A-29. PRETEST DRIVER DUMMY (THRU WINDOW)

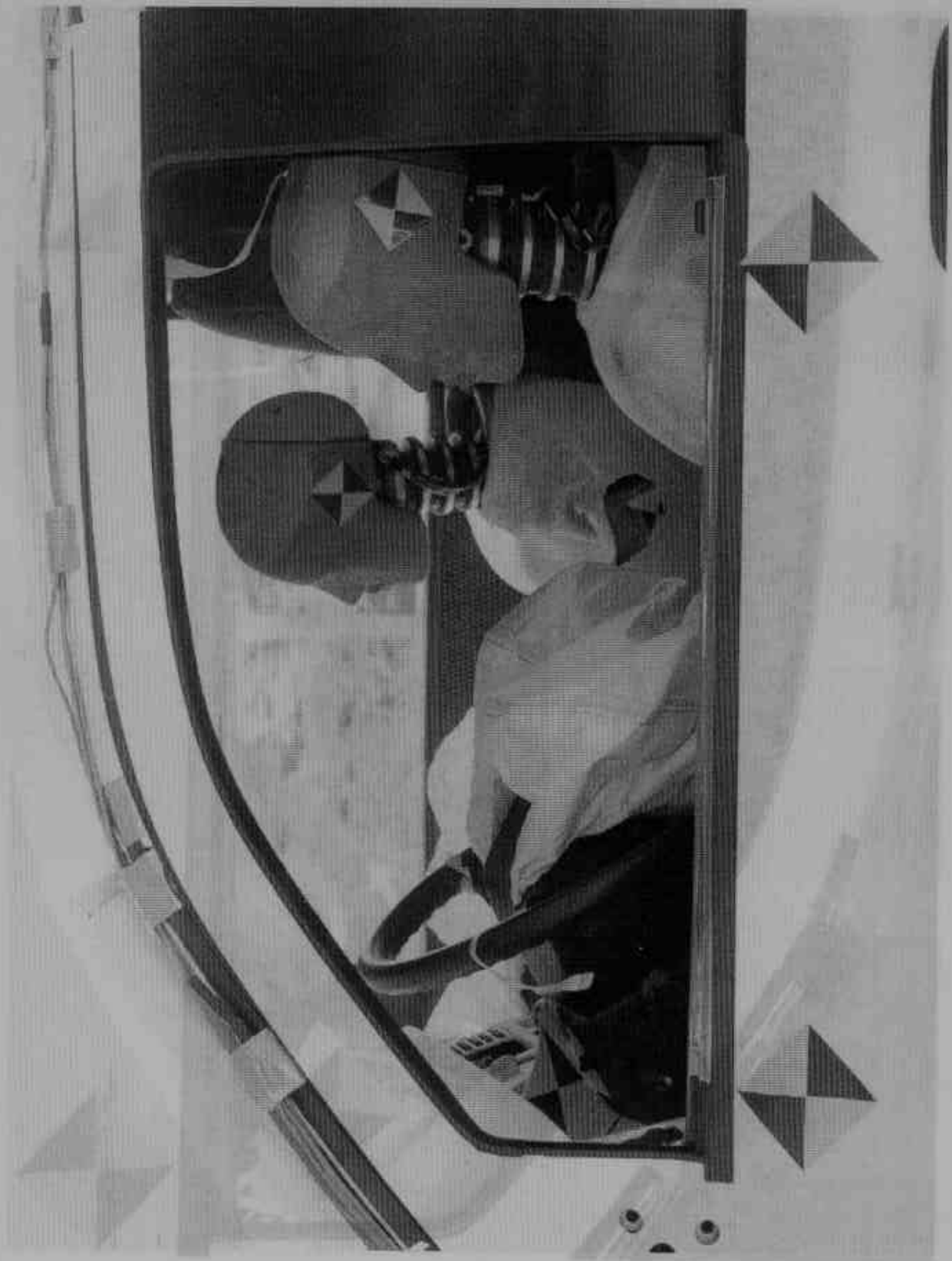


FIGURE A-30. POST TEST DRIVER DUMMY (THRU WINDOW)



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



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

KAR-98-R98050-08

A-32

KAR-98-R98050-08



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

KAR-98-R98050-08

A-33

KAR-98-R98050-08



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

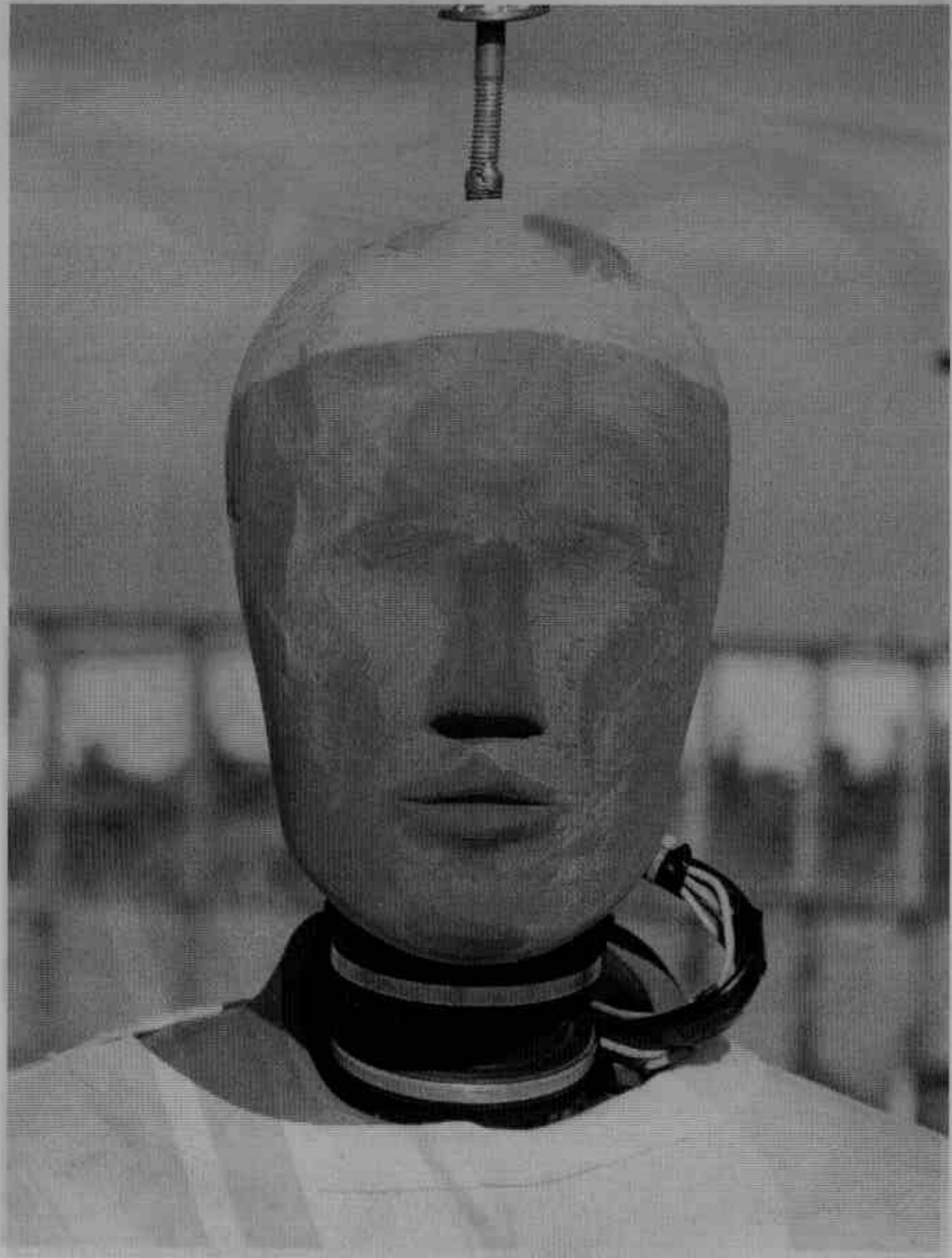


FIGURE A-35. POST TEST DRIVER DUMMY HEAD



FIGURE A-36. POST TEST DRIVER DUMMY CONTACT POINT

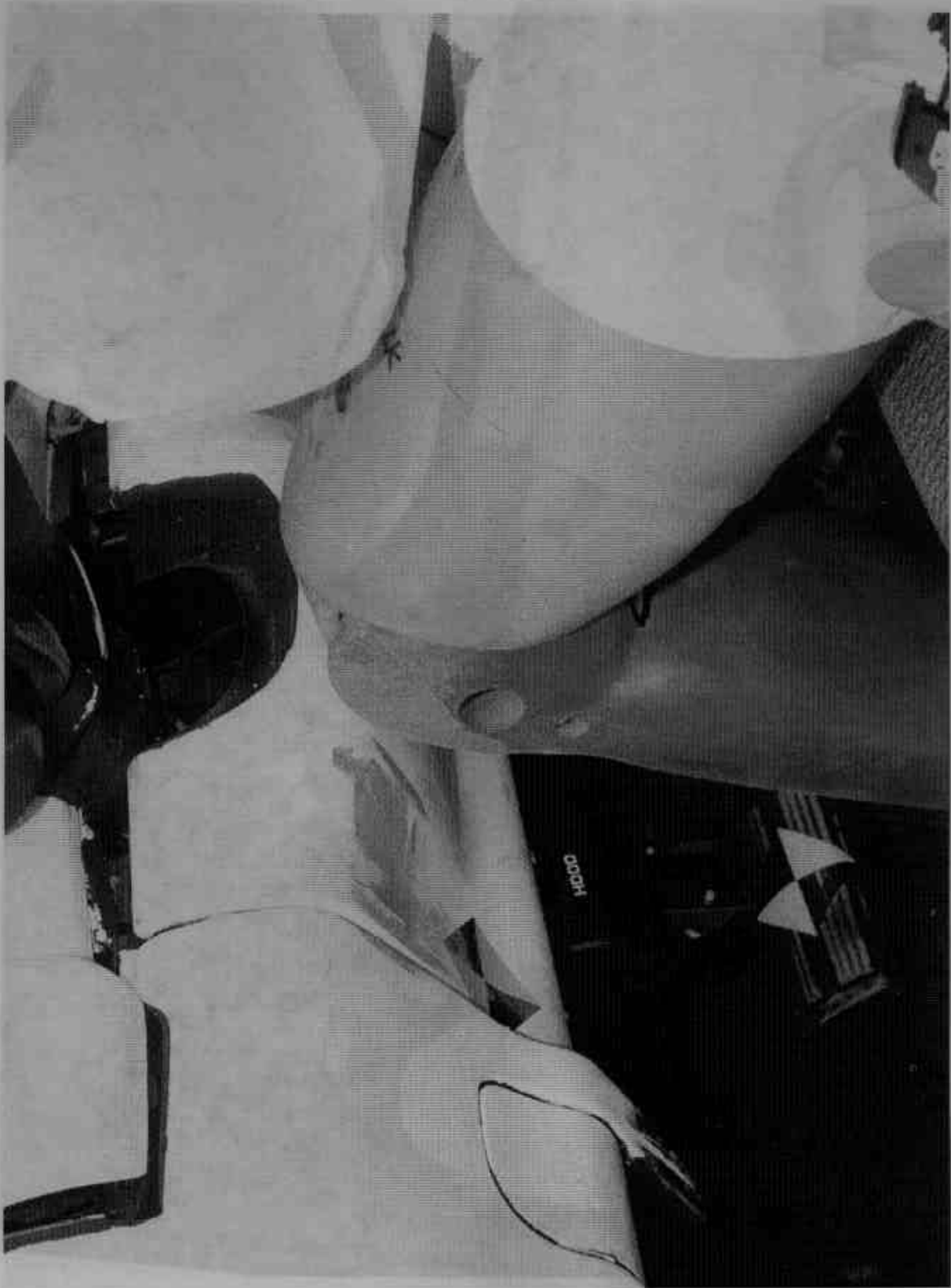


FIGURE A-37. POST TEST DRIVER DUMMY CONTACT POINT

80-020005-00-PAX

A-37

KAR-98-R98050-08

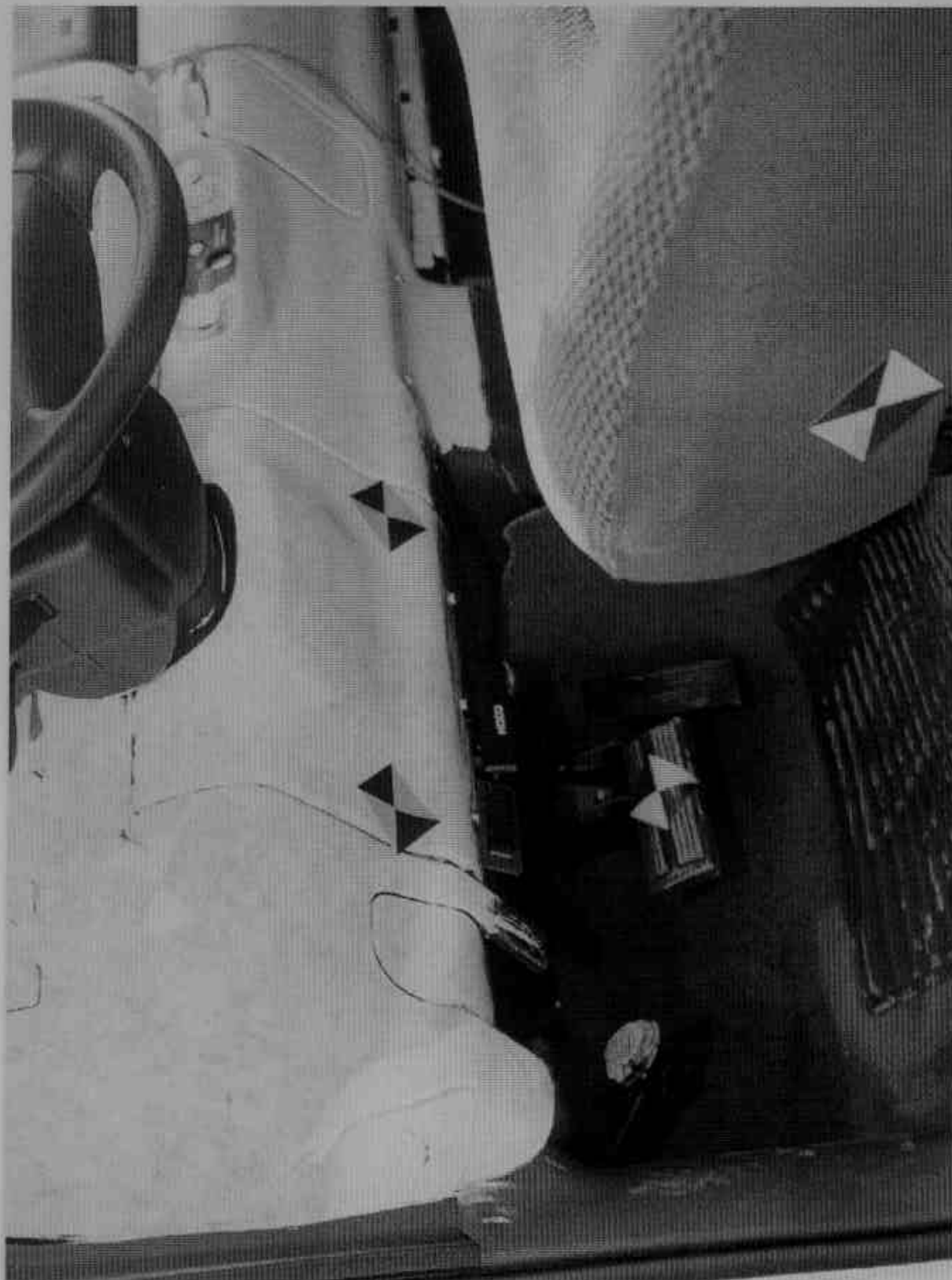


FIGURE A-38. PRETEST DRIVER SIDE KNEE BOLSTER

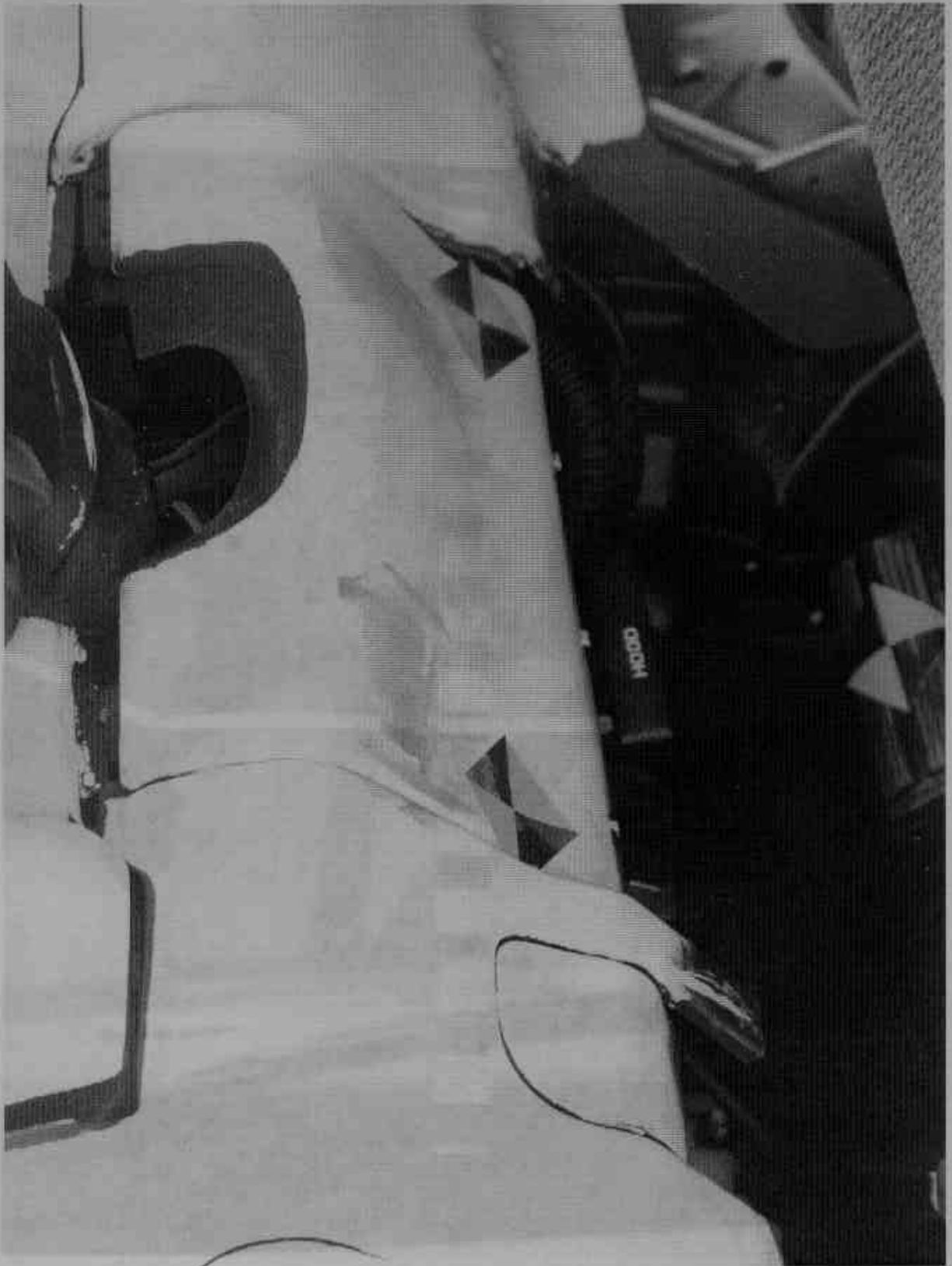


FIGURE A-39. POST TEST DRIVER KNEE BOLSTER



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

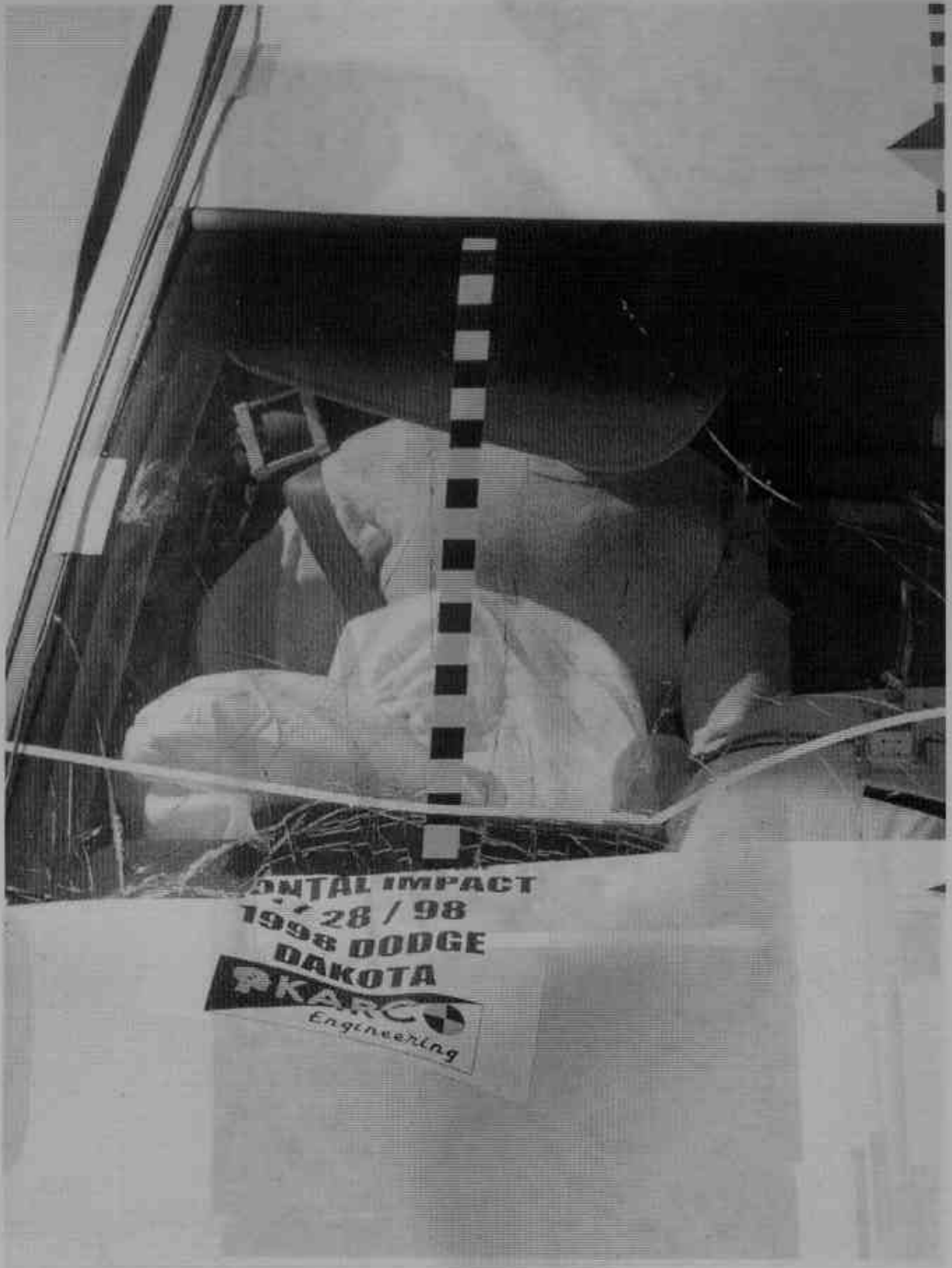


FIGURE A-41. POST TEST PASSENGER DUMMY (FRONT VIEW)

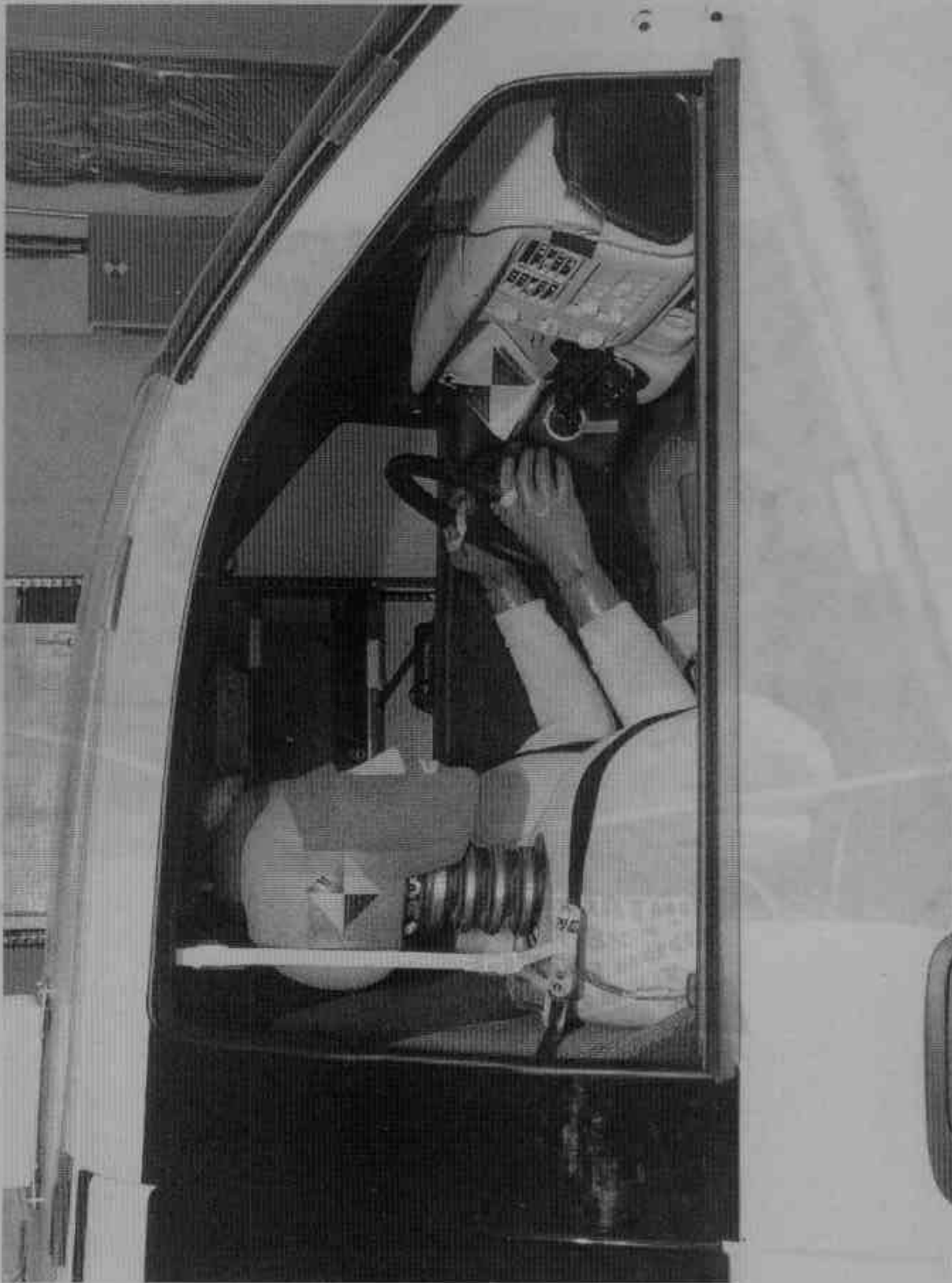


FIGURE A-42. PRETEST PASSENGER DUMMY (THRU WINDOW)



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



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



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

10-020007-00-PAC

A-45

KAR-98-R98050-08



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



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

KAR-98-R98050-08

A-47

KAR-98-R98050-08

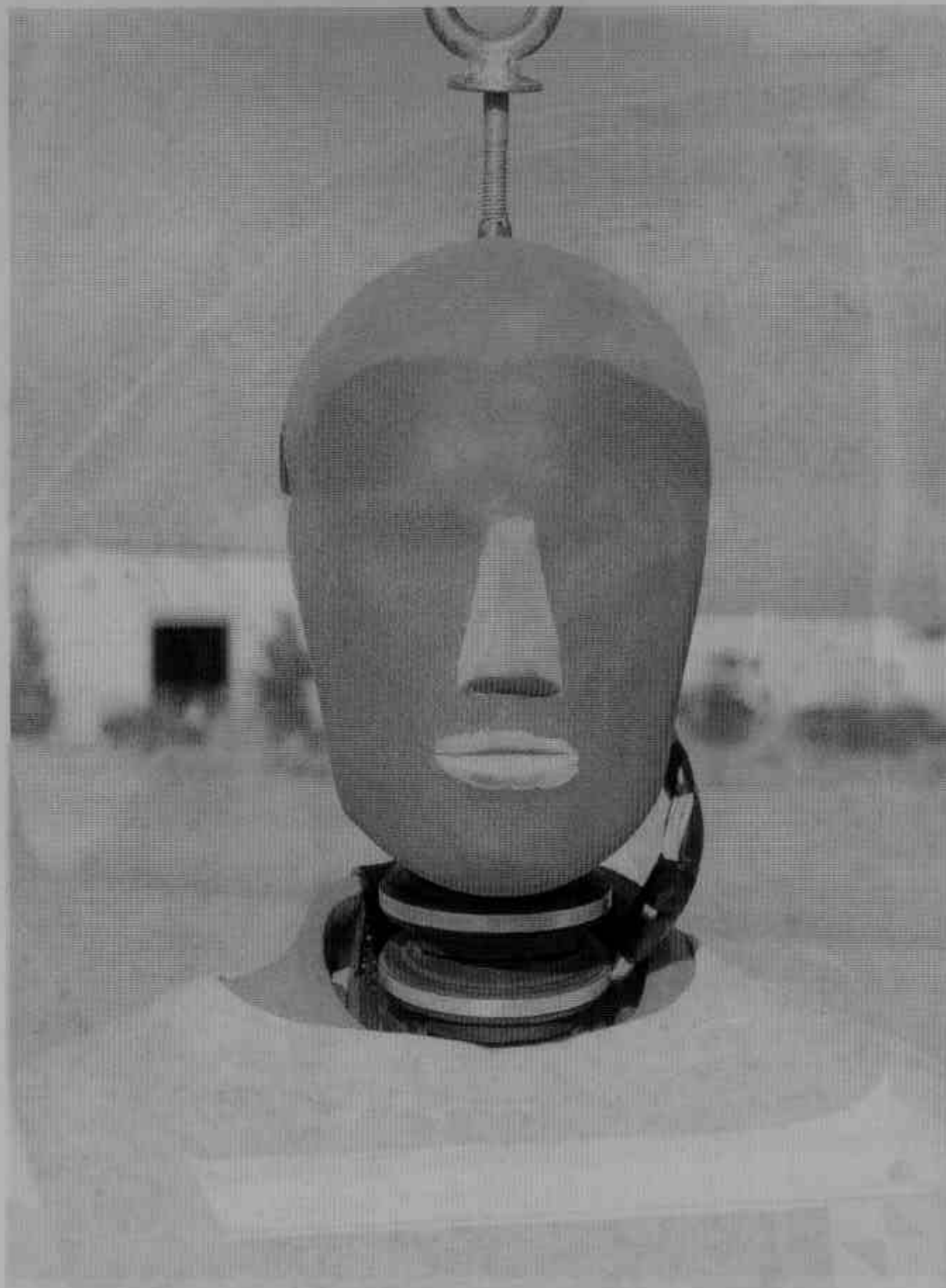


FIGURE A-48. POST TEST PASSENGER DUMMY HEAD



FIGURE A-49. POST TEST PASSENGER DUMMY CONTACT POINT

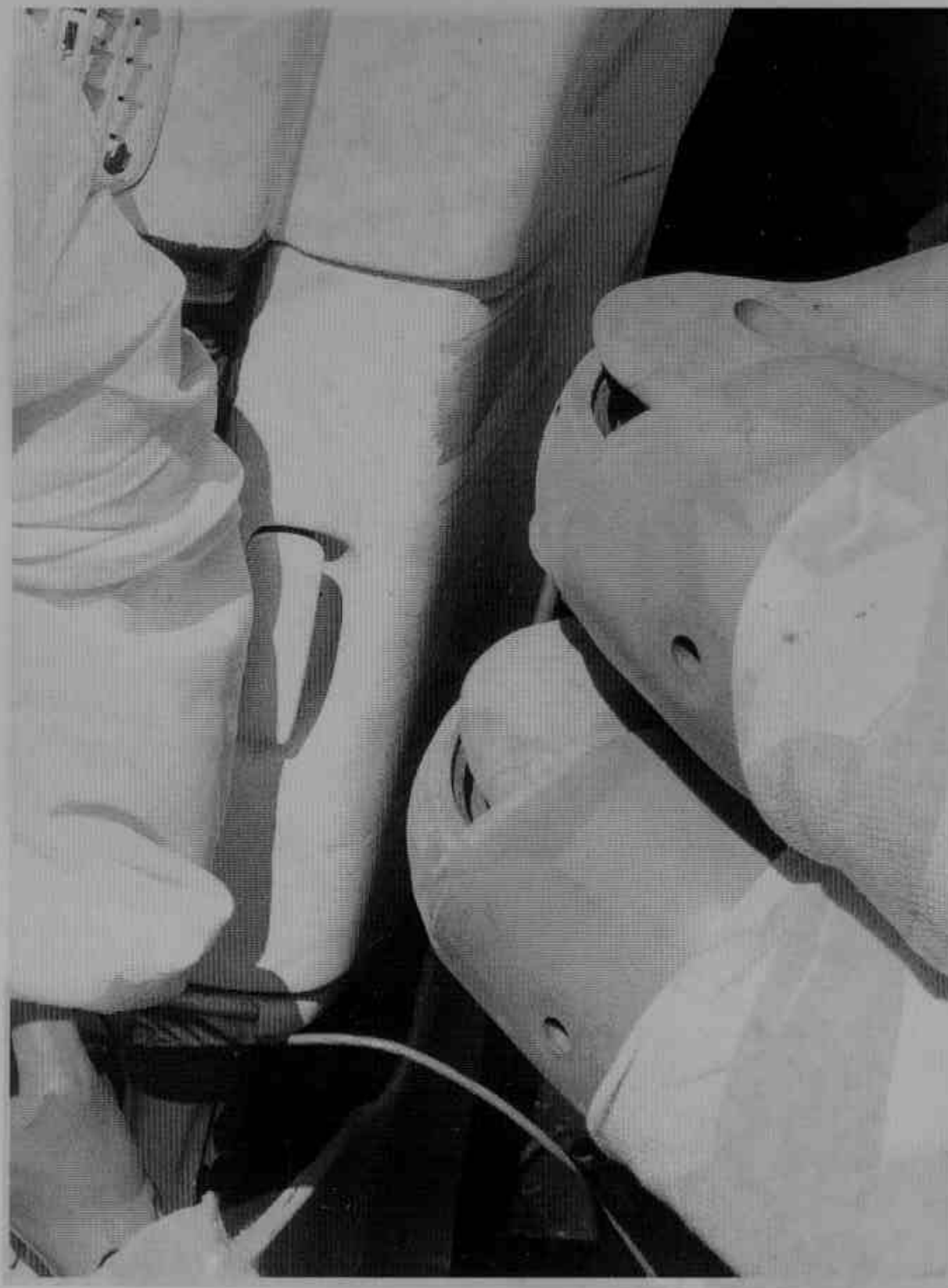


FIGURE A-50. POST TEST PASSENGER DUMMY CONTACT POINT

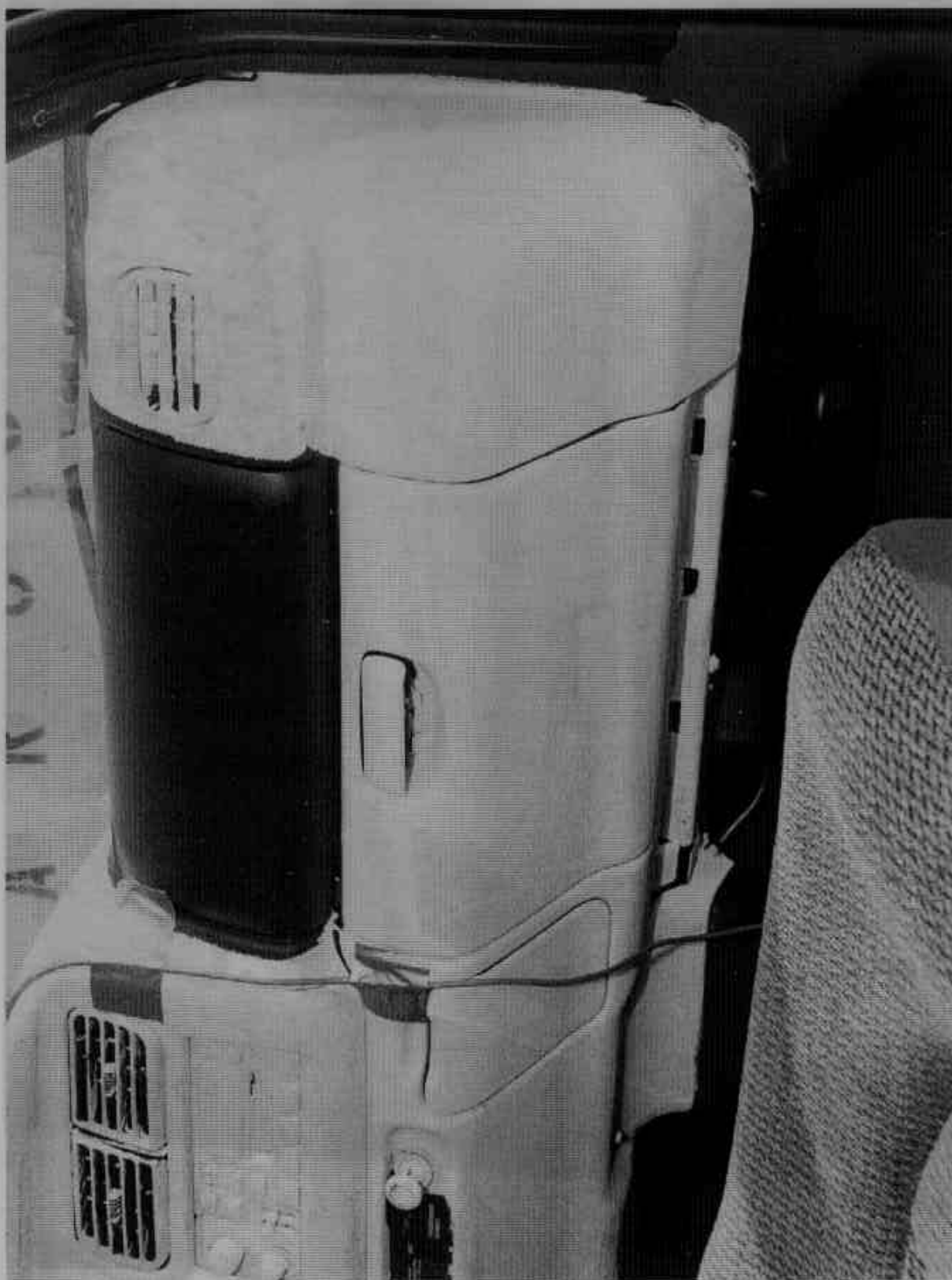


FIGURE A-51. PRETEST PASSENGER SIDE KNEE BOLSTER

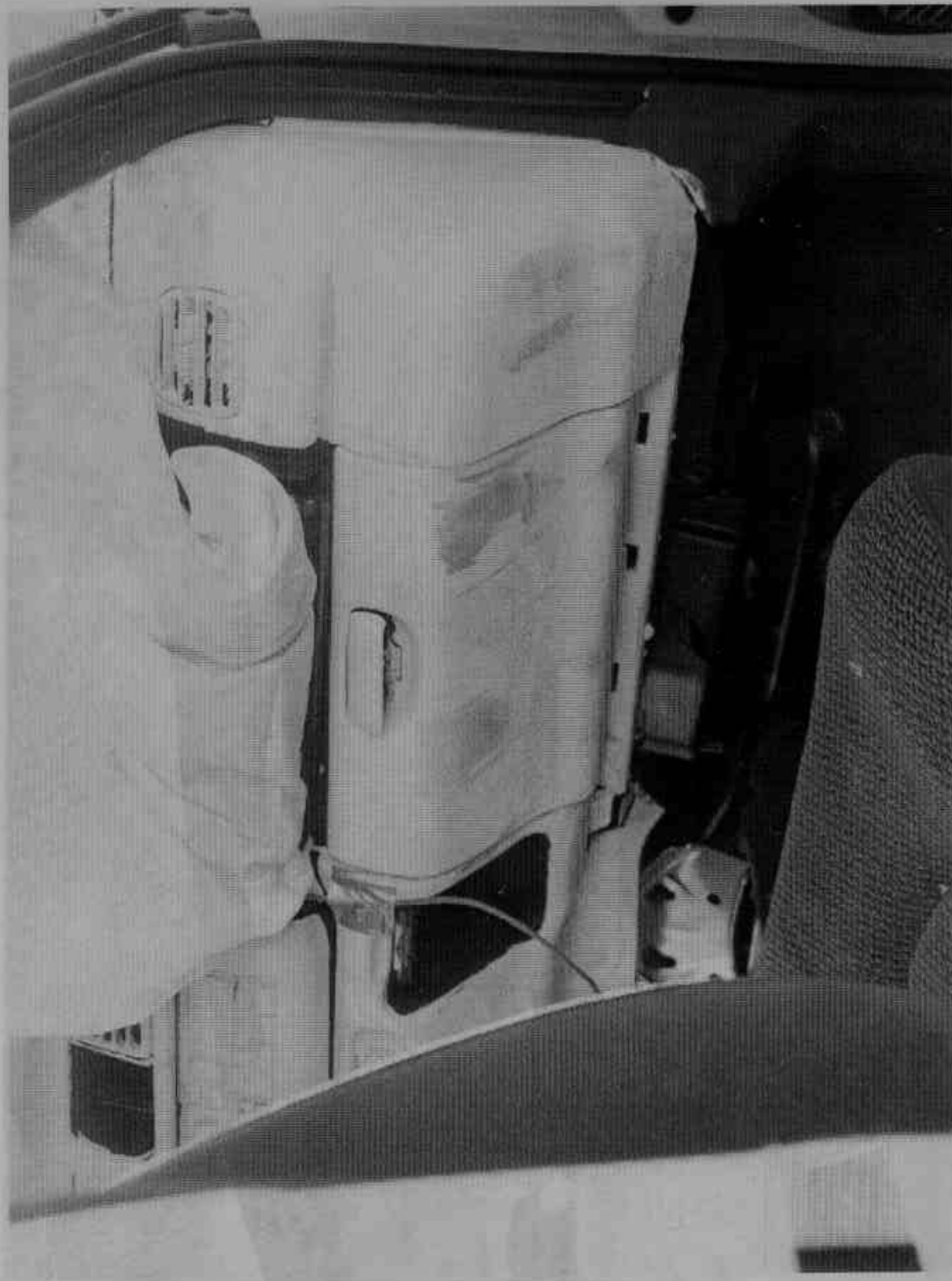


FIGURE A-52. POST TEST PASSENGER SIDE KNEE BOLSTER



FIGURE A-53. VEHICLE ON ROLLOVER

A-53

KAR-98-R98050-08



FIGURE A-54. VEHICLE DURING IMPACT

APPENDIX B

DUMMY, VEHICLE AND RESPONSE DATA TRACES

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B-4	Driver Head Primary Y	B-4
B-5	Driver Head Primary Z	B-5
B-6	Driver Head Resultant Primary	B-6
B-7	Driver Head Redundant X	B-7
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B-26	Driver Chest Primary Resultant	B-26
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LIST OF DATA PLOTS...(Continued)

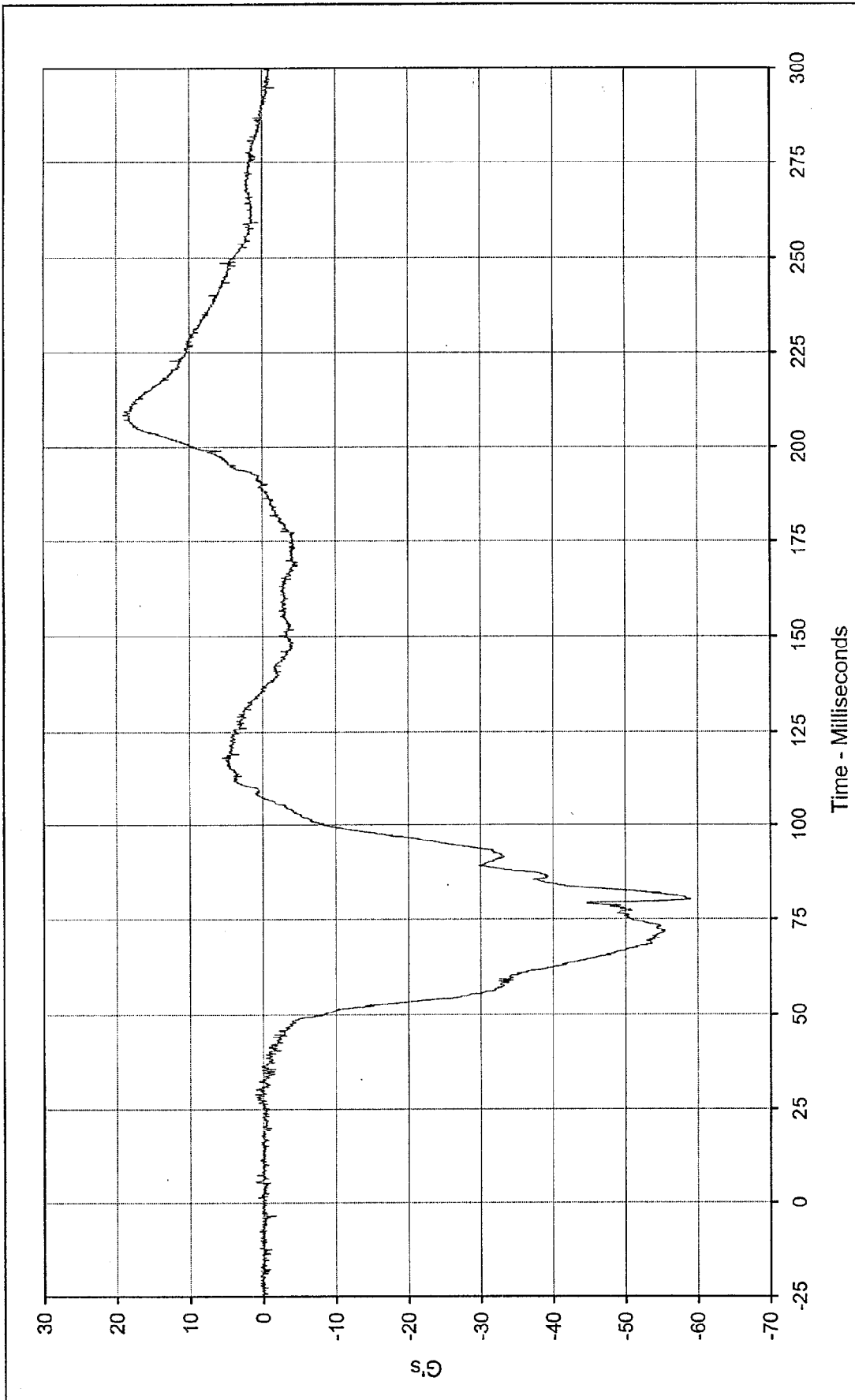
Data Plot		Page
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B-76	Passenger Neck Force Z	B-76
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B-79	Passenger Neck Moment Y	B-79
B-80	Passenger Neck Moment Z	B-80
B-81	Passenger Neck Moment Resultant	B-81
B-82	Passenger Chest Primary X	B-82
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B-84	Passenger Chest Primary X Displacement	B-84
B-85	Passenger Chest Primary Y	B-85
B-86	Passenger Chest Primary Z	B-86
B-87	Passenger Chest Primary Resultant	B-87
B-88	Passenger Chest Redundant X	B-88
B-89	Passenger Chest Redundant X Velocity	B-89
B-90	Passenger Chest Redundant X Displacement	B-90
B-91	Passenger Chest Redundant Y	B-91
B-92	Passenger Chest Redundant Z	B-92
B-93	Passenger Chest Redundant Resultant	B-93
B-94	Passenger Chest Displacement X	B-94
B-95	Passenger Pelvis X	B-95
B-96	Passenger Pelvis X Velocity	B-96
B-97	Passenger Pelvis X Displacement	B-97
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LIST OF DATA PLOTS...(Continued)

Data Plot		Page
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B-109	Passenger Left Lower Tibia Moment Y	B-109
B-110	Passenger Right Lower Tibia Force X	B-110
B-111	Passenger Right Lower Tibia Force Z	B-111
B-112	Passenger Right Lower Tibia Moment Y	B-112
B-113	Passenger Left Foot Aft X	B-113
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B-115	Passenger Left Foot Fore Z	B-115
B-116	Passenger Right Foot Aft X	B-116
B-117	Passenger Right Foot Aft Z	B-117
B-118	Passenger Right Foot Fore Z	B-118
B-119	Passenger Lap Belt Force	B-119
B-120	Passenger Shoulder Belt Force	B-120
B-121	Passenger Shoulder Belt Pullout	B-121
B-122	Passenger Shoulder Belt Elongation	B-122
B-123	Vehicle Left Rear Primary X	B-123
B-124	Vehicle Left Rear Primary Velocity X	B-124
B-125	Vehicle Left Rear Primary Displacement	B-125
B-126	Vehicle Right Rear Primary X	B-126
B-127	Vehicle Right Rear Primary Velocity X	B-127
B-128	Vehicle Right Rear Primary Displacement	B-128
B-129	Vehicle Engine Top X	B-129
B-130	Vehicle Engine Top Velocity X	B-130
B-131	Vehicle Engine Top Displacement	B-131
B-132	Vehicle Engine Bottom X	B-132
B-133	Vehicle Engine Bottom Velocity X	B-133
B-134	Vehicle Engine Bottom Displacement	B-134
B-135	Vehicle Left Brake Caliper X	B-135
B-136	Vehicle Left Brake Caliper Velocity X	B-136
B-137	Vehicle Left Brake Caliper Displacement	B-137
B-138	Vehicle Right Brake Caliper X	B-138
B-139	Vehicle Right Brake Caliper Velocity X	B-139
B-140	Vehicle Right Brake Caliper Displacement	B-140

LIST OF DATA PLOTS...(Continued)

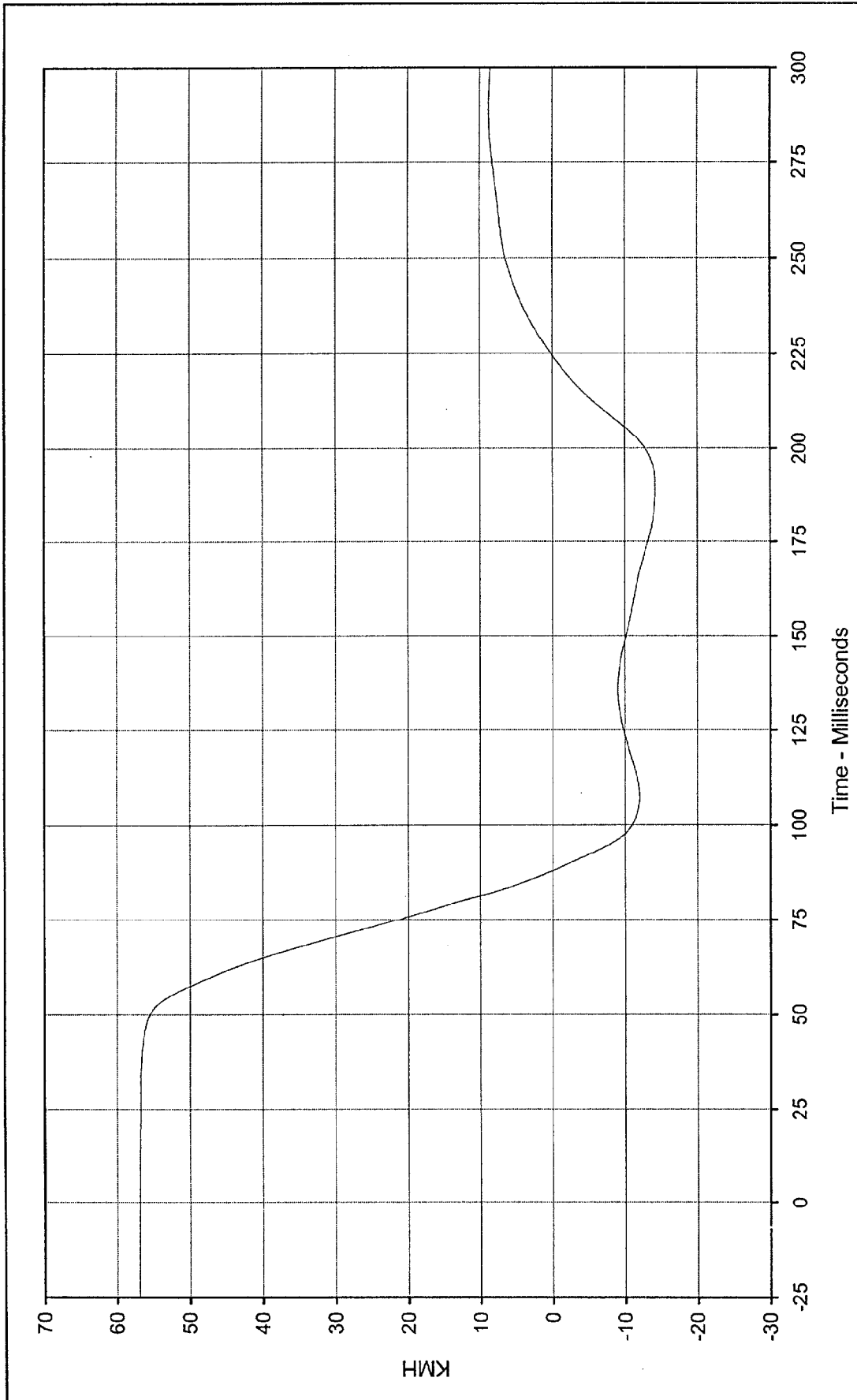
Data Plot		Page
B-141	Vehicle Instrument Panel X	B-141
B-142	Vehicle Instrument Panel Velocity X	B-142
B-143	Vehicle Instrument Panel Displacement	B-143
B-144	Vehicle Left Rear Redundant X	B-144
B-145	Vehicle Left Rear Redundant Velocity X	B-145
B-146	Vehicle Left Rear Redundant Displacement	B-146



Curve Description: Driver Head Primary X
 Maximum Value: 19.1 at 208.5 Milliseconds
 Minimum Value: -59.0 at 80.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: FIL-001

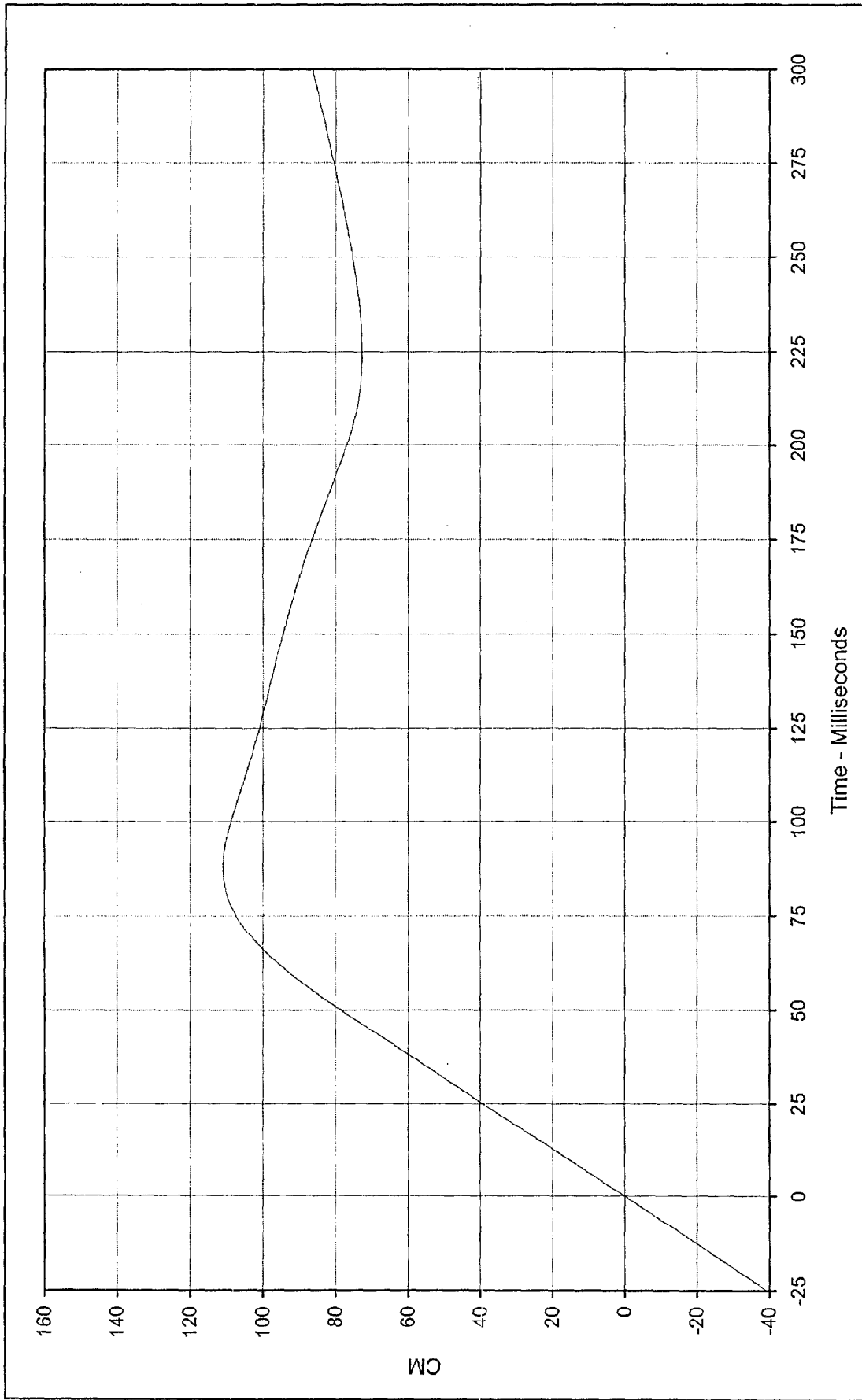
Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description:	Driver Head Primary X Velocity	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW0303
Maximum Value:	56.9 at 0.0 Milliseconds	Test Vehicle:	1998 Dodge Dakota SLT Pickup	
Minimum Value:	-14.2 at 188.8 Milliseconds			
SAE Filter Class:	180			
Date of Test:	1/28/98			
Curve Number:	IN1-001			

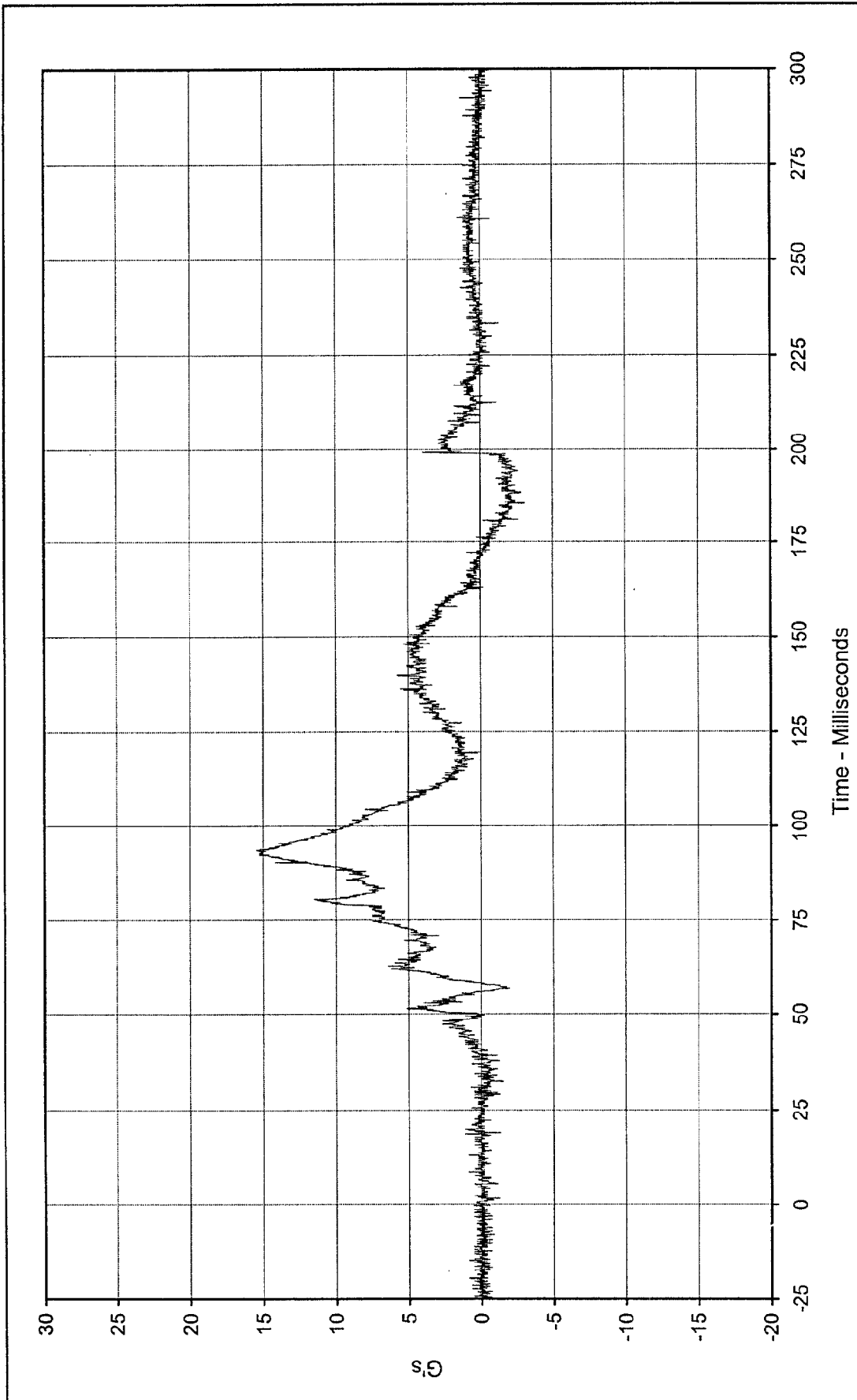




Curve Description: Driver Head Primary X Displ.
 Maximum Value: 111.0 at 87.7 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: IN2-001

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Driver Head Primary Y Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Maximum Value: 15.5 at 93.4 Milliseconds Test Vehicle: 1998 Dodge Dakota SLT Pickup

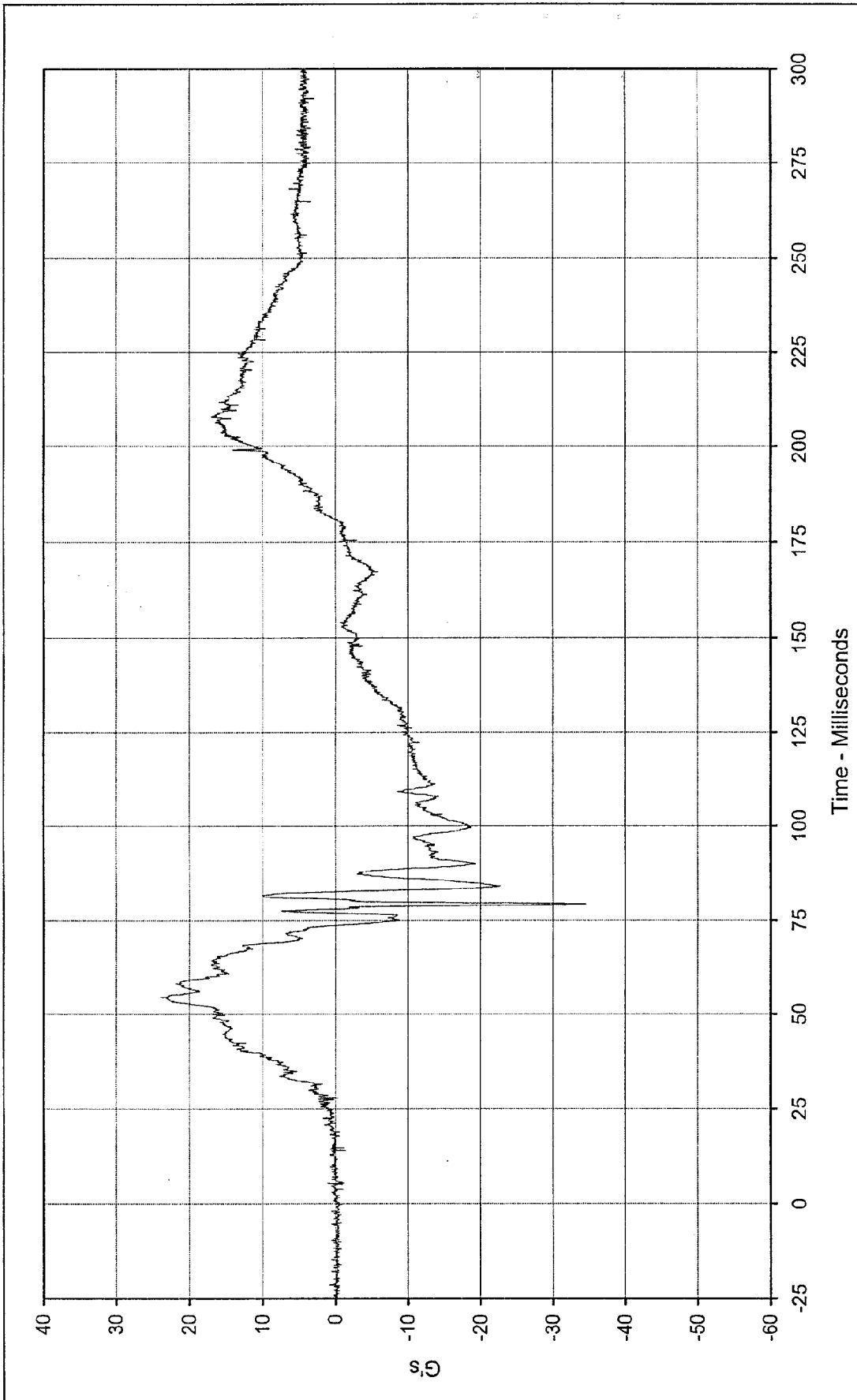
Minimum Value: -3.1 at 185.2 Milliseconds

SAE Filter Class: 1000

Date of Test: 1/28/98

Curve Number: FIL-002

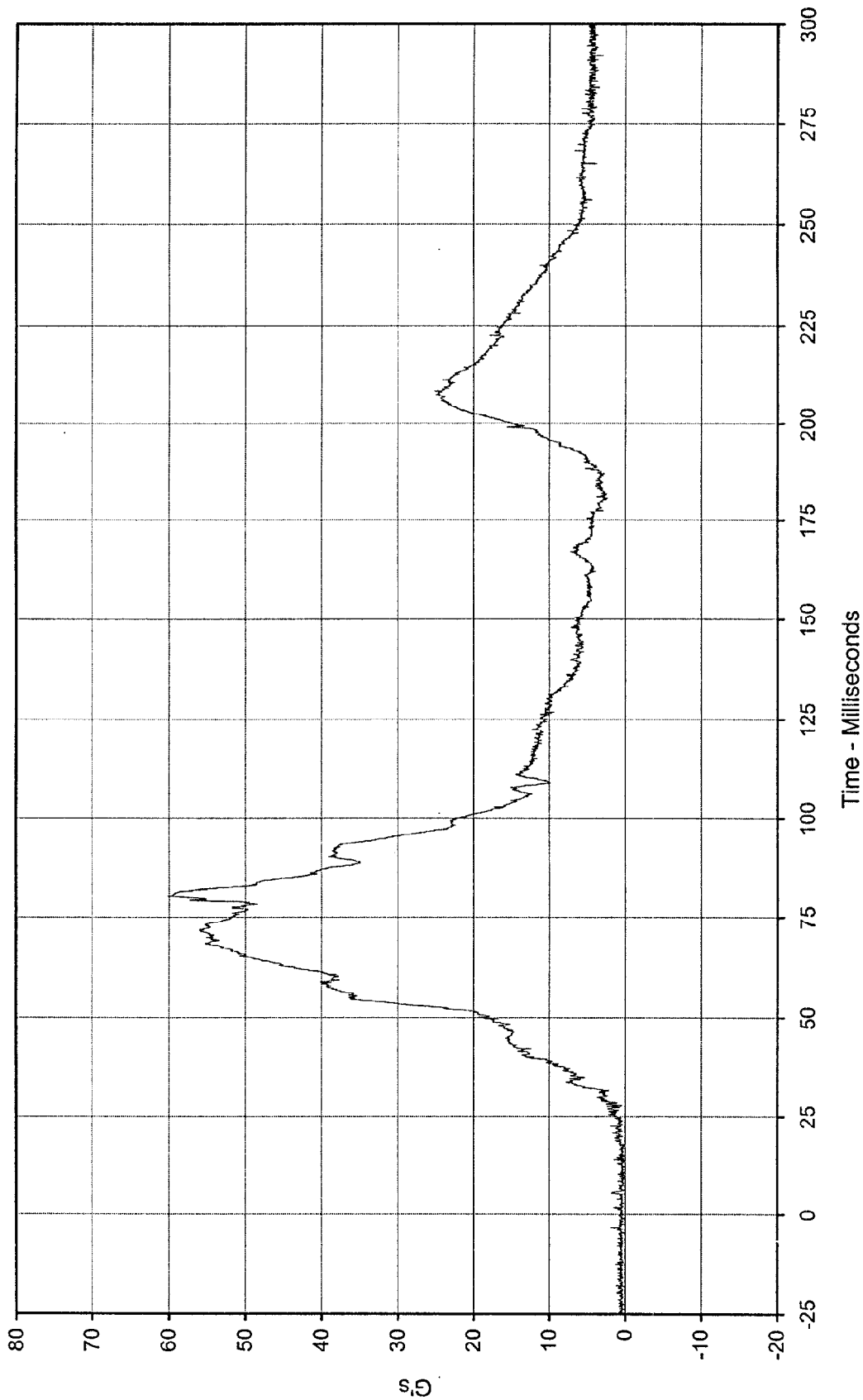




Curve Description: Driver Head Primary Z
 Maximum Value: 24.0 at 54.5 Milliseconds
 Minimum Value: -34.5 at 79.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: FIL-003

Testing Program: 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Driver Head Resultant Primary

Maximum Value: 60.1 at 80.3 Milliseconds

Minimum Value: 0.1 at 5.2 Milliseconds

SAE Filter Class: 1000

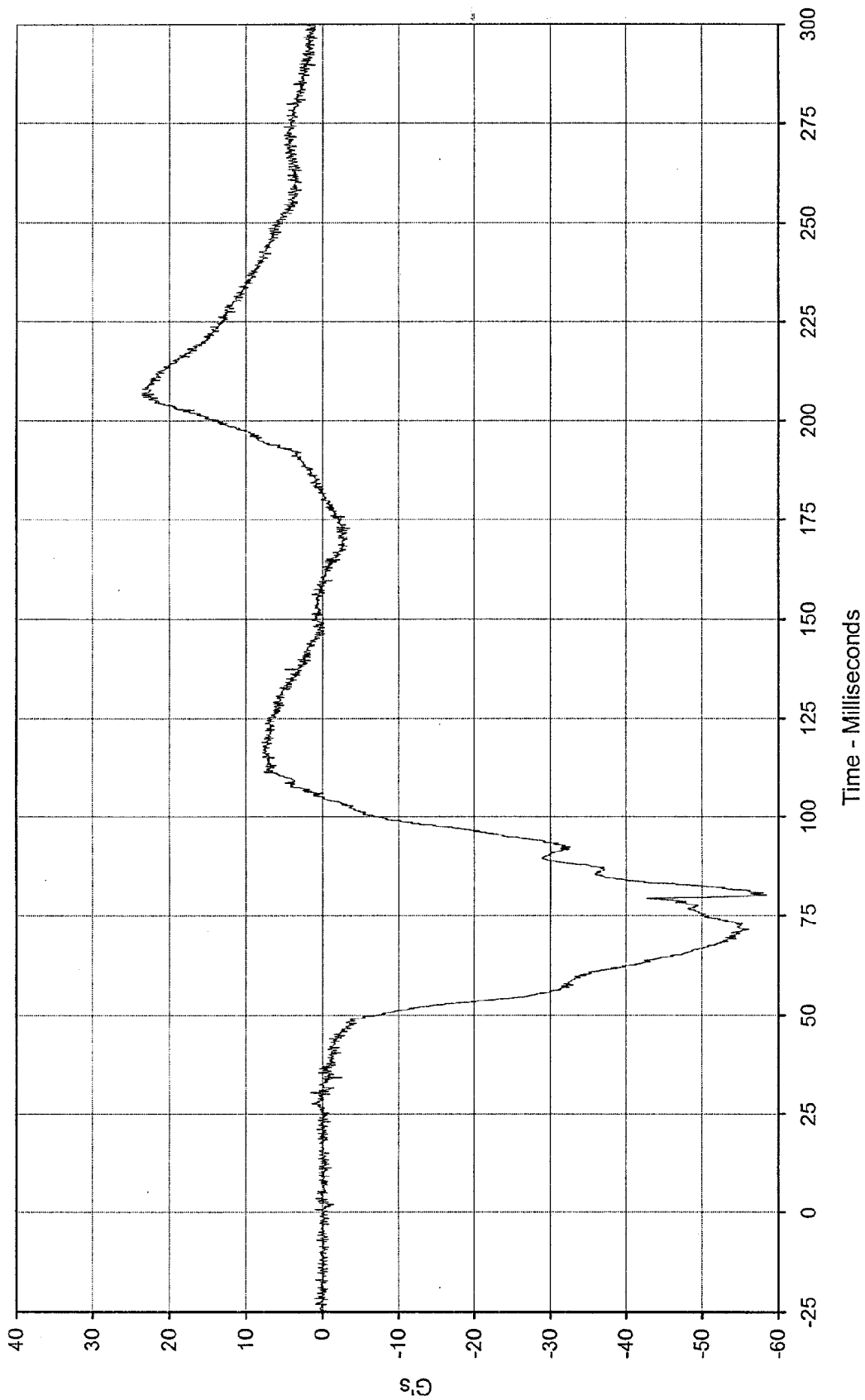
Date of Test: 1/28/98

Curve Number: RES-001

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Driver Head Redundant X

Maximum Value: 23.5 at 206.3 Milliseconds

Minimum Value: -58.5 at 80.2 Milliseconds

SAE Filter Class: 1000

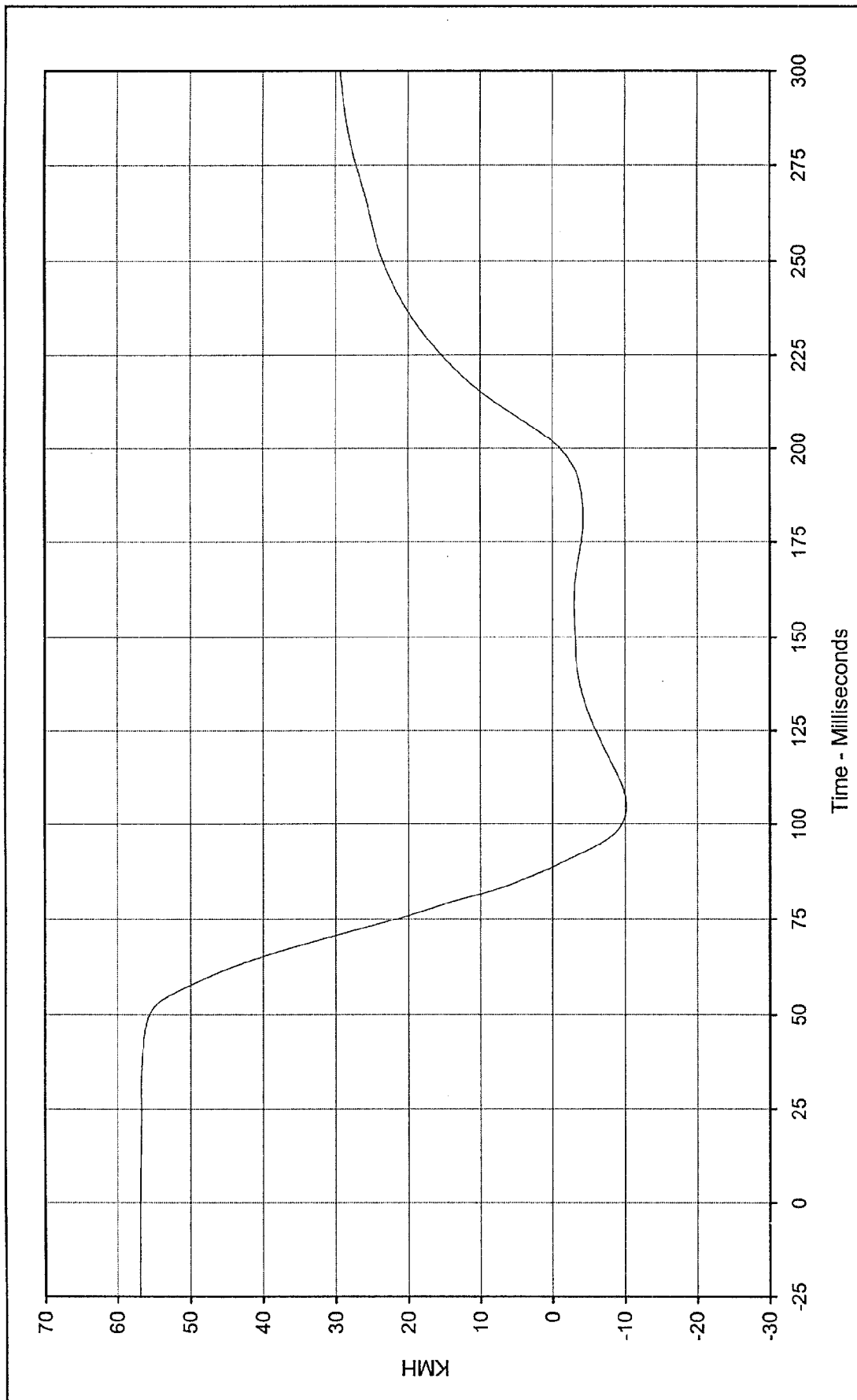
Date of Test: 1/28/98

Curve Number: FIL-004

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Driver Head Redundant X Velocity

Maximum Value: 56.9 at 0.0 Milliseconds

Minimum Value: -10.2 at 104.9 Milliseconds

SAE Filter Class: 180

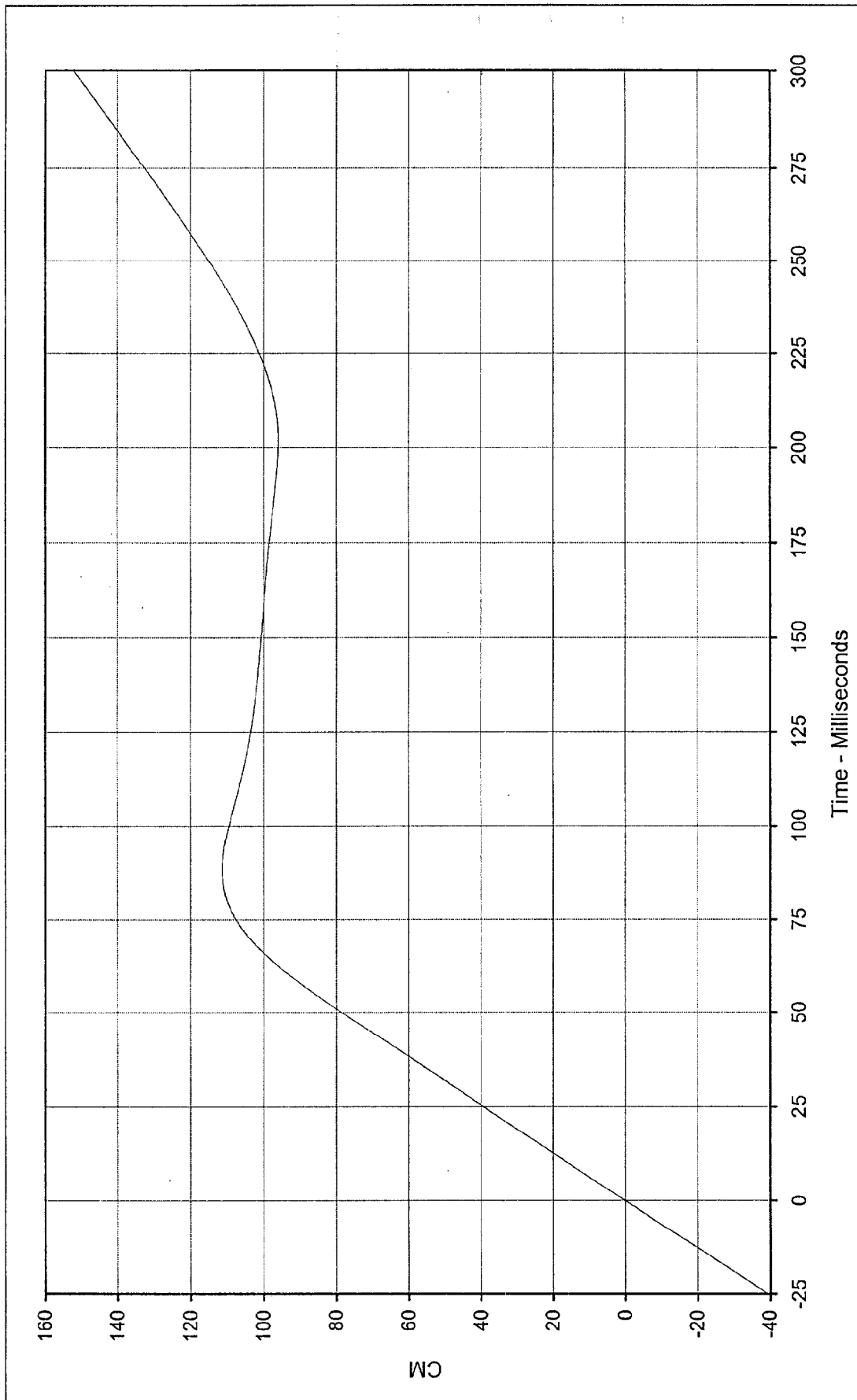
Date of Test: 1/28/98

Curve Number: IN1-004

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Driver Head Redundant X Displ.

Maximum Value: 152.2 at 299.9 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

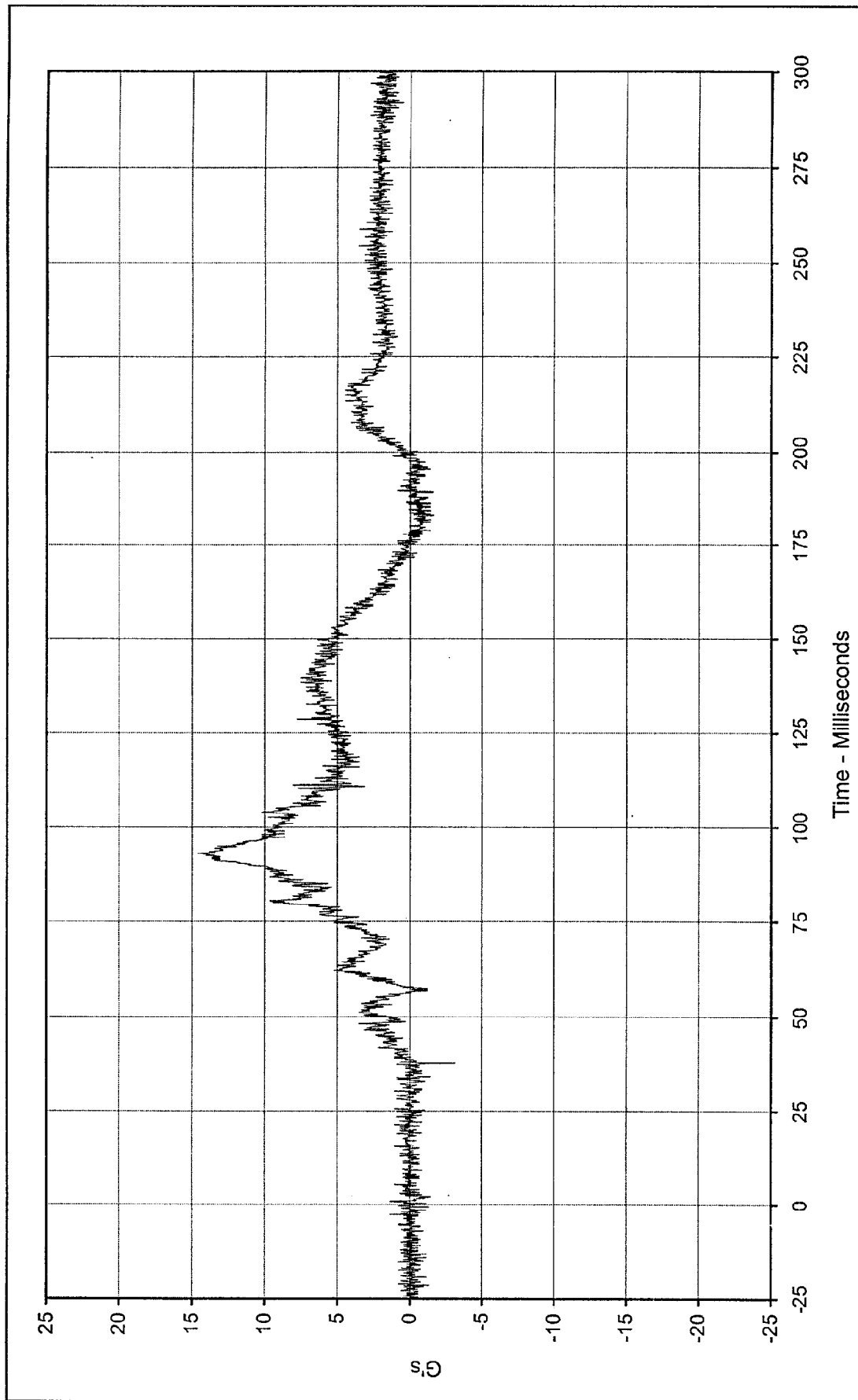
Date of Test: 1/28/98

Curve Number: IN2-004

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Driver Head Redundant Y

Maximum Value: 14.6 at 92.9 Milliseconds

Minimum Value: -3.2 at 37.7 Milliseconds

SAE Filter Class: 1000

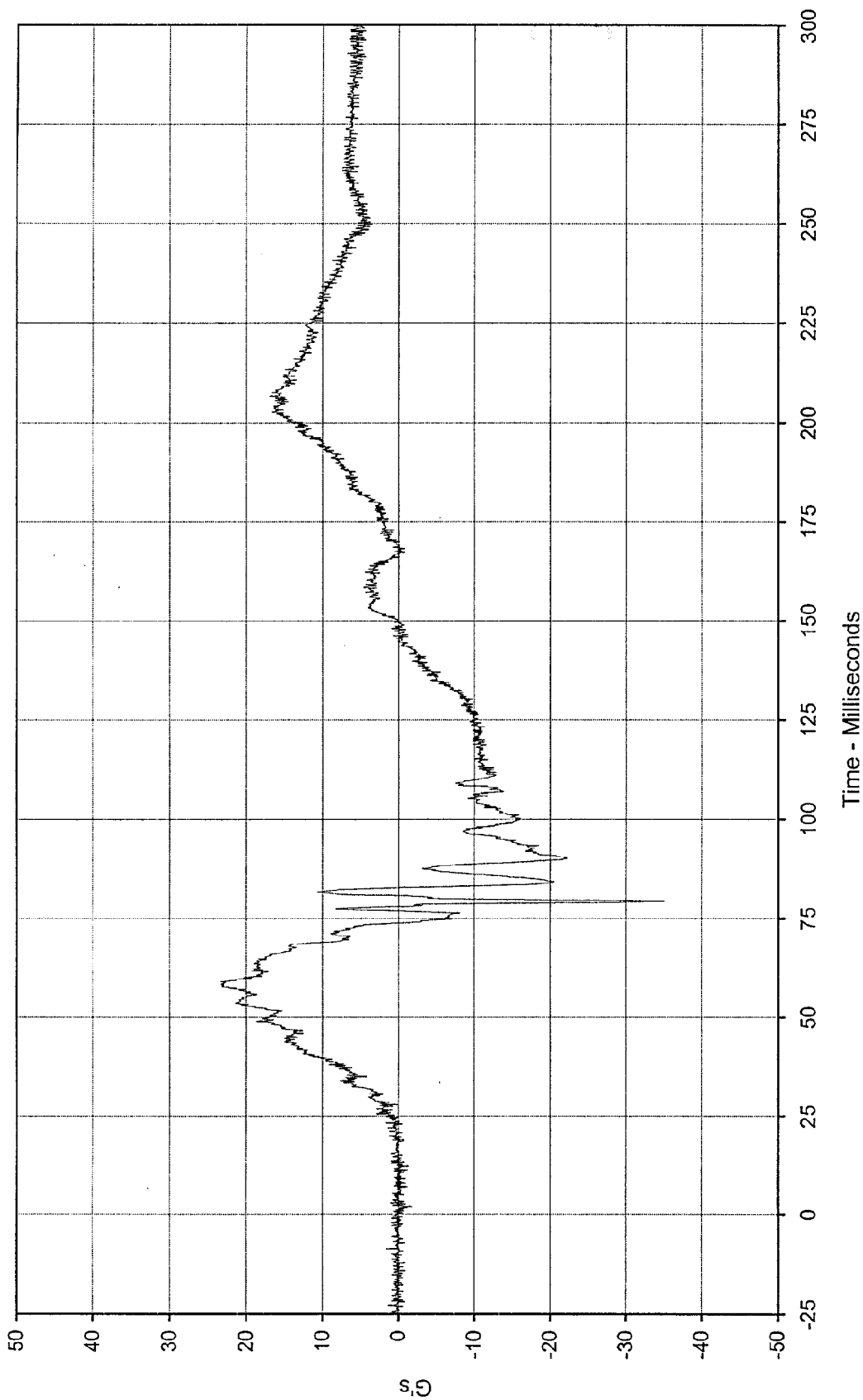
Date of Test: 1/28/98

Curve Number: FIL-005

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Driver Head Redundant Z

Maximum Value: 23.3 at 58.3 Milliseconds

Minimum Value: -35.0 at 79.3 Milliseconds

SAE Filter Class: 1000

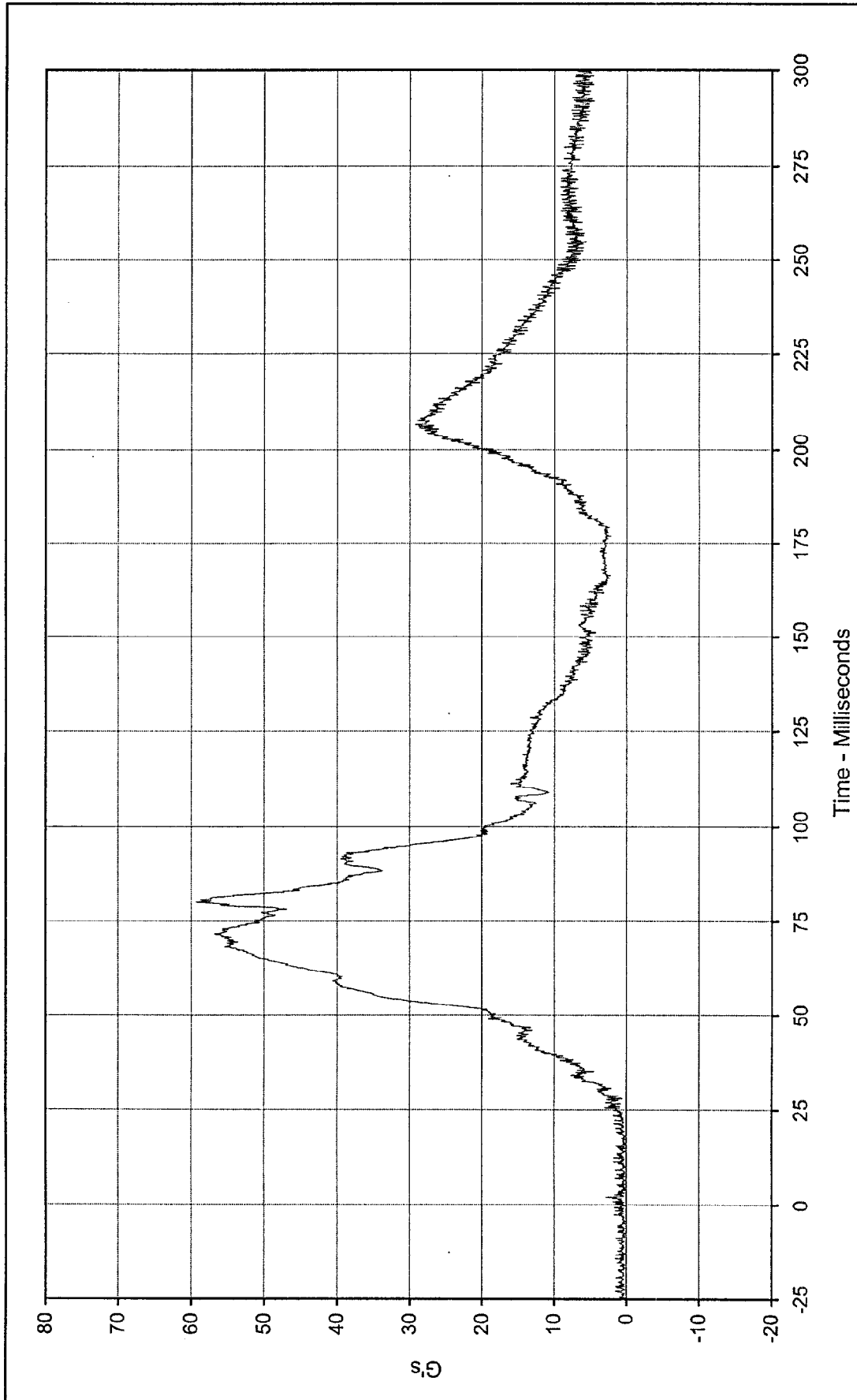
Date of Test: 1/28/98

Curve Number: FIL-006

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup

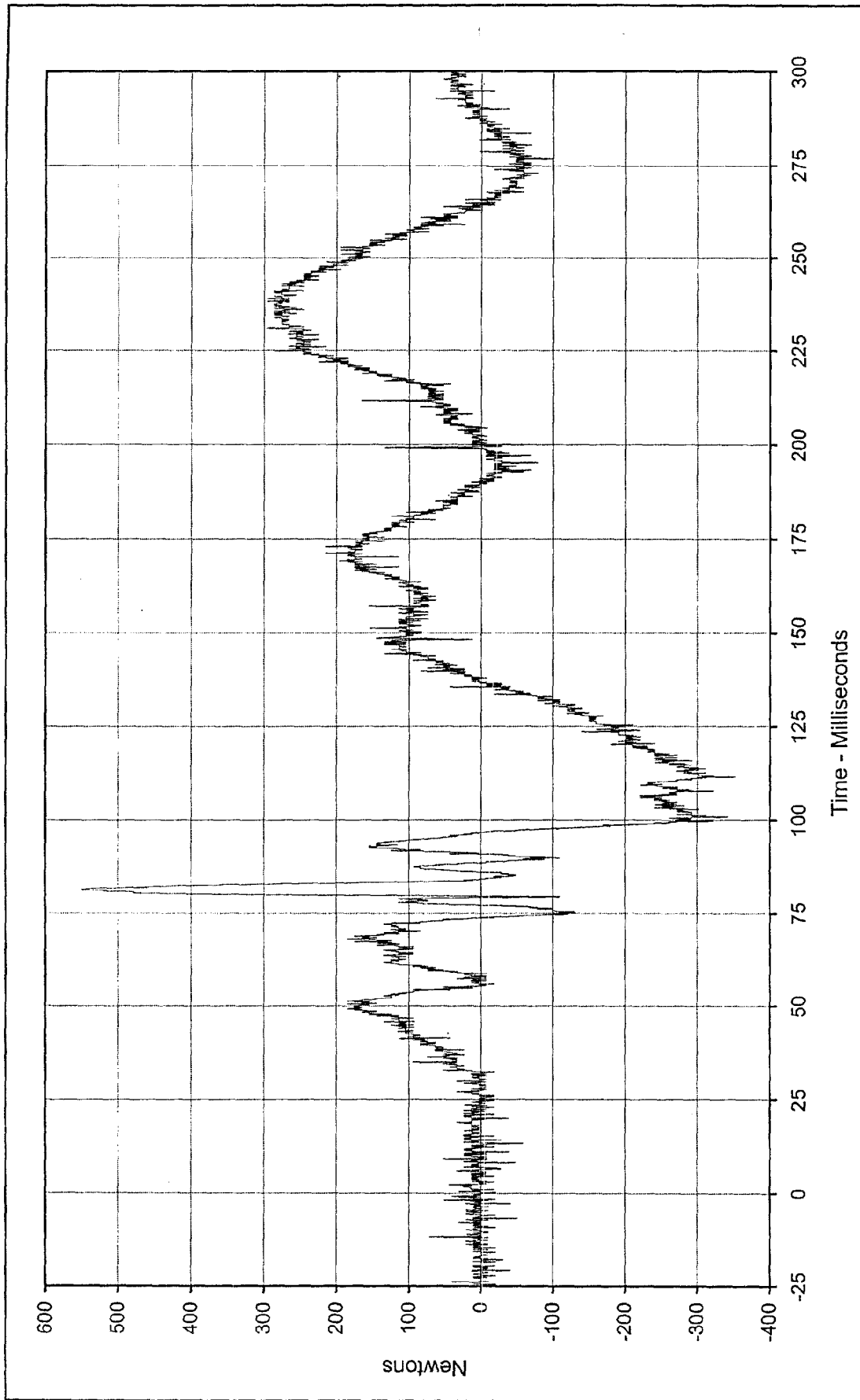




Curve Description: Driver Head Resultant Redundant
 Maximum Value: 59.3 at 80.2 Milliseconds
 Minimum Value: 0.1 at 4.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: RES-004

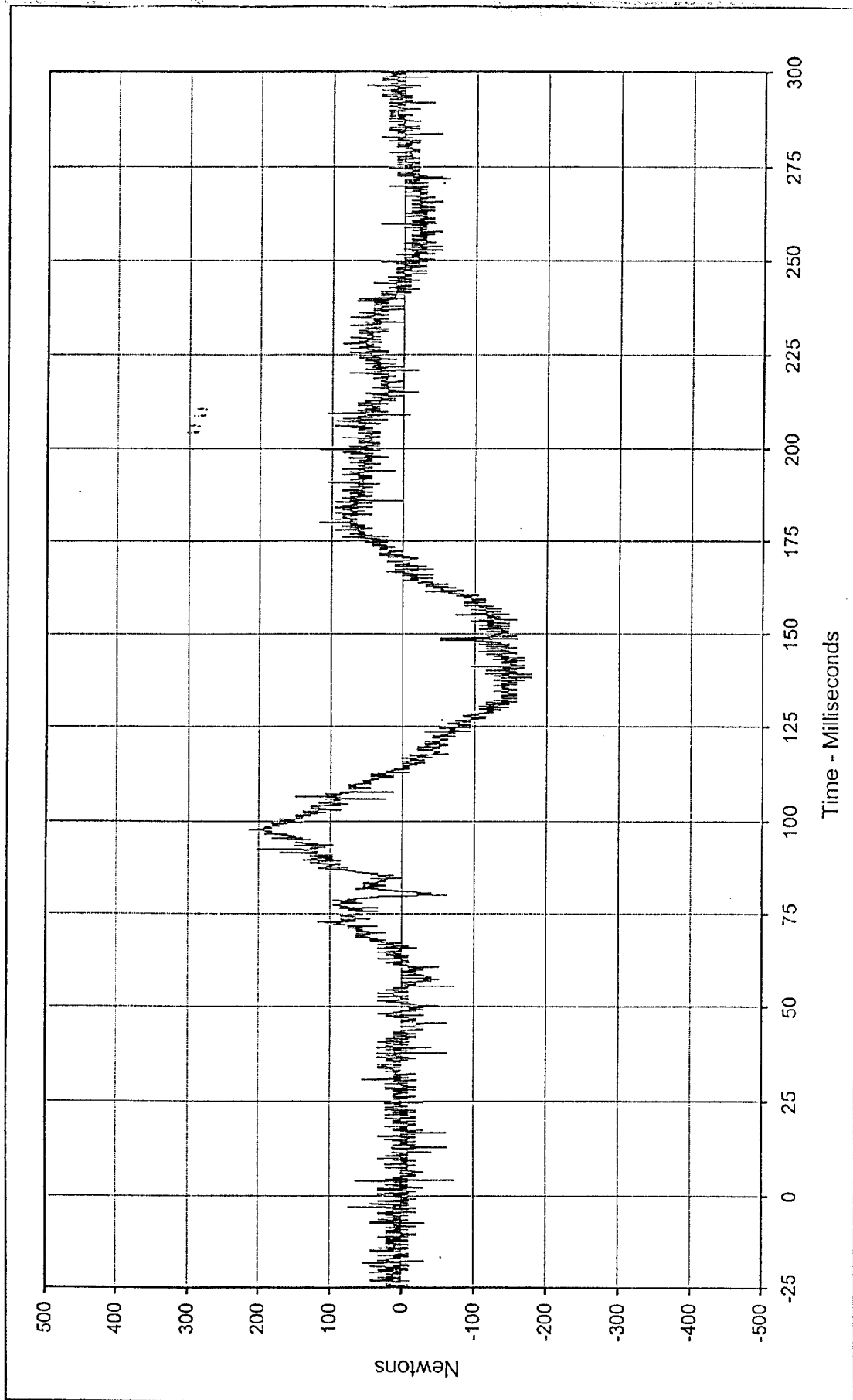
Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





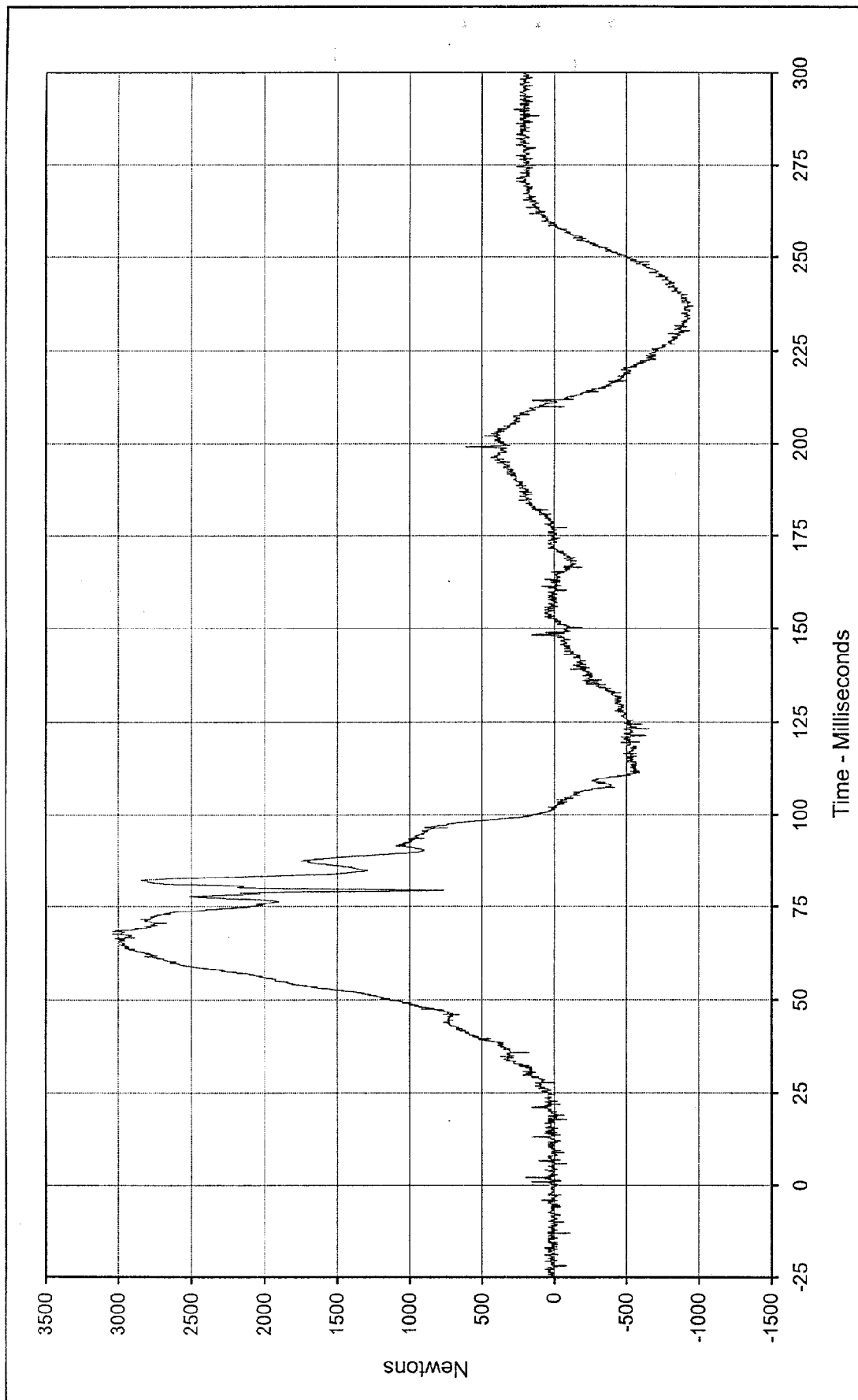
Curve Description:	Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303			
Maximum Value:	549.9	at	81.1	Milliseconds
Minimum Value:	-352.7	at	111.5	Milliseconds
SAE Filter Class:	1000			
Date of Test:	1/28/98			
Curve Number:	FIL-007			
	Test Vehicle: 1998 Dodge Dakota SLT Pickup			





Curve Description: Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Maximum Value: 213.2 at 97.7 Milliseconds
 Minimum Value: -179.5 at 138.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: FIL-008

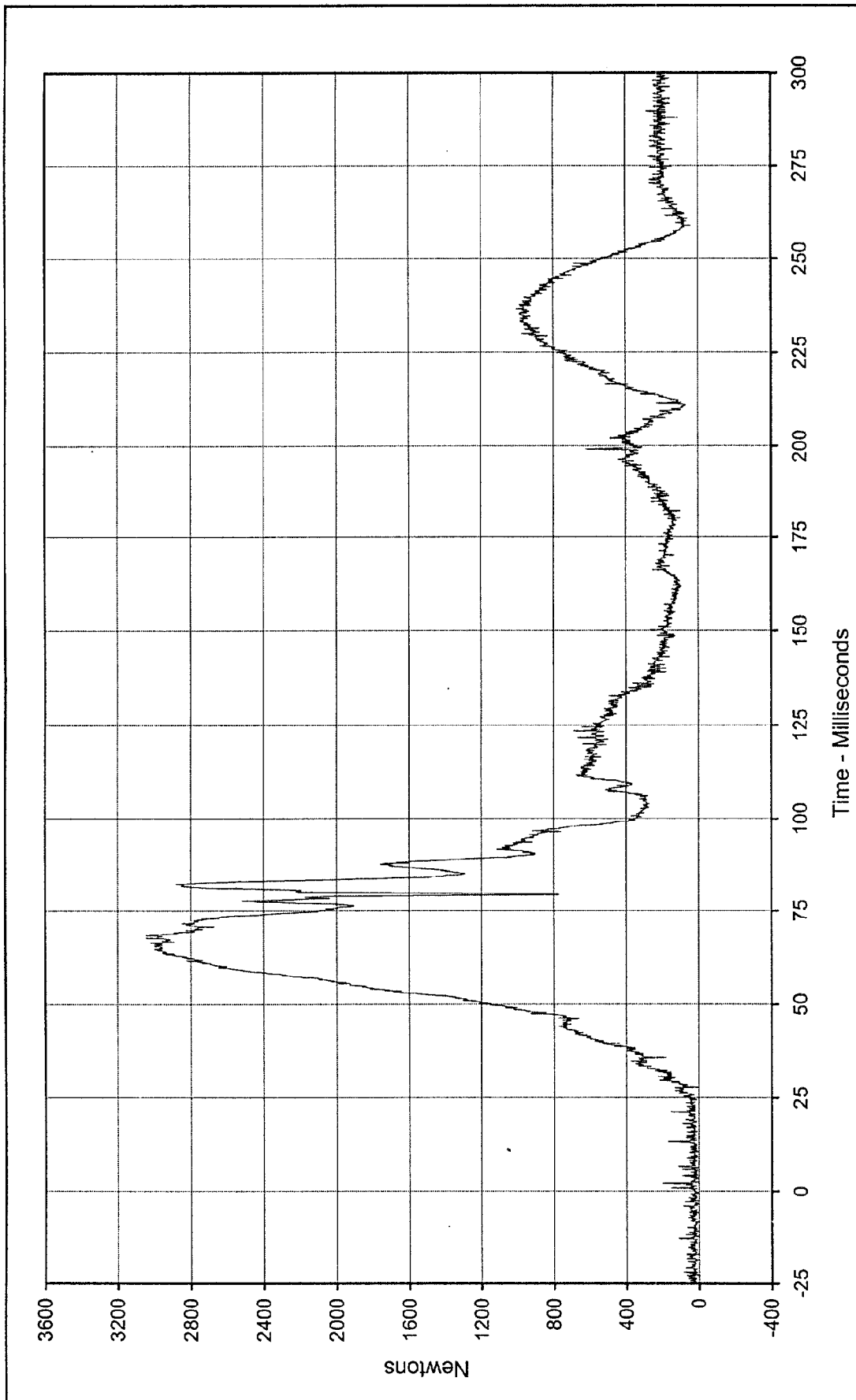




Curve Description: Driver Neck Force Z
 Maximum Value: 3040.4 at 67.7 Milliseconds
 Minimum Value: -963.3 at 236.7 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: FIL-009

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

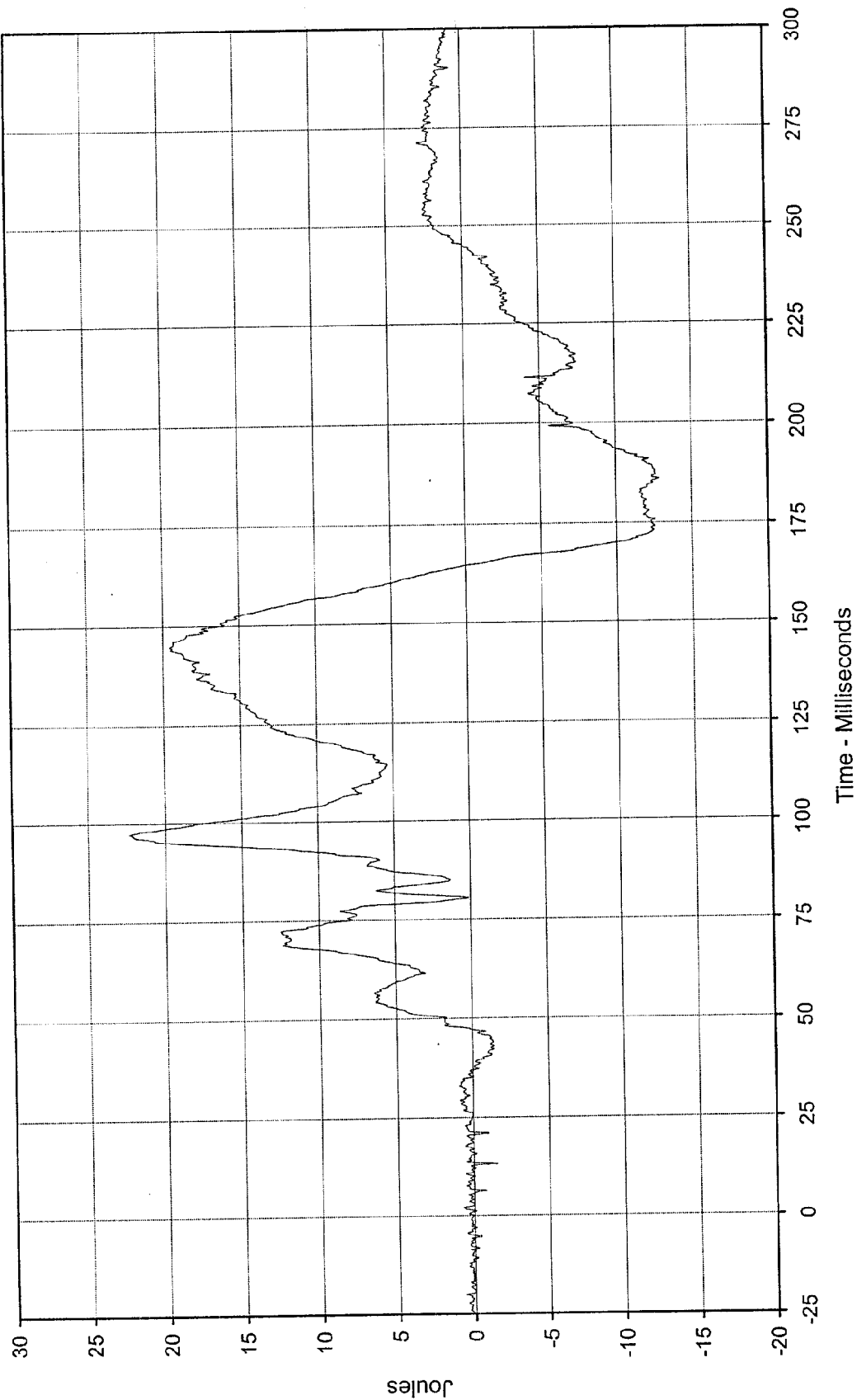




Curve Description: Driver Neck Force Resultant
 Maximum Value: 3045.2 at 68.4 Milliseconds
 Minimum Value: 2.6 at 2.4 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: RES-007

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Maximum Value: 22.3 at 97.3 Milliseconds

Minimum Value: -12.8 at 186.0 Milliseconds

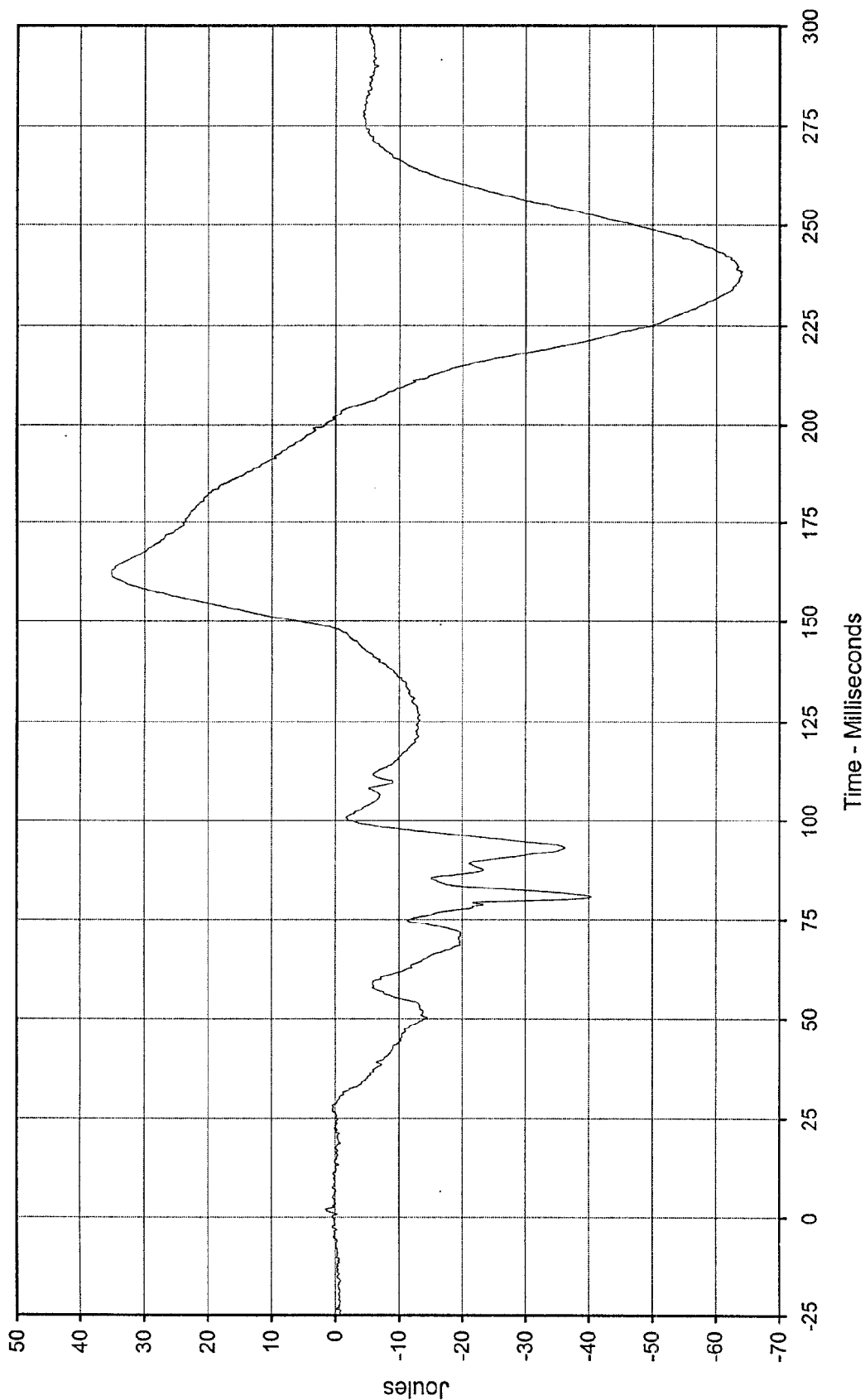
SAE Filter Class: 600

Date of Test: 1/28/98

Curve Number: FIL-010

Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup

Driver Neck Moment Y

Maximum Value: 35.2 at 161.9 Milliseconds

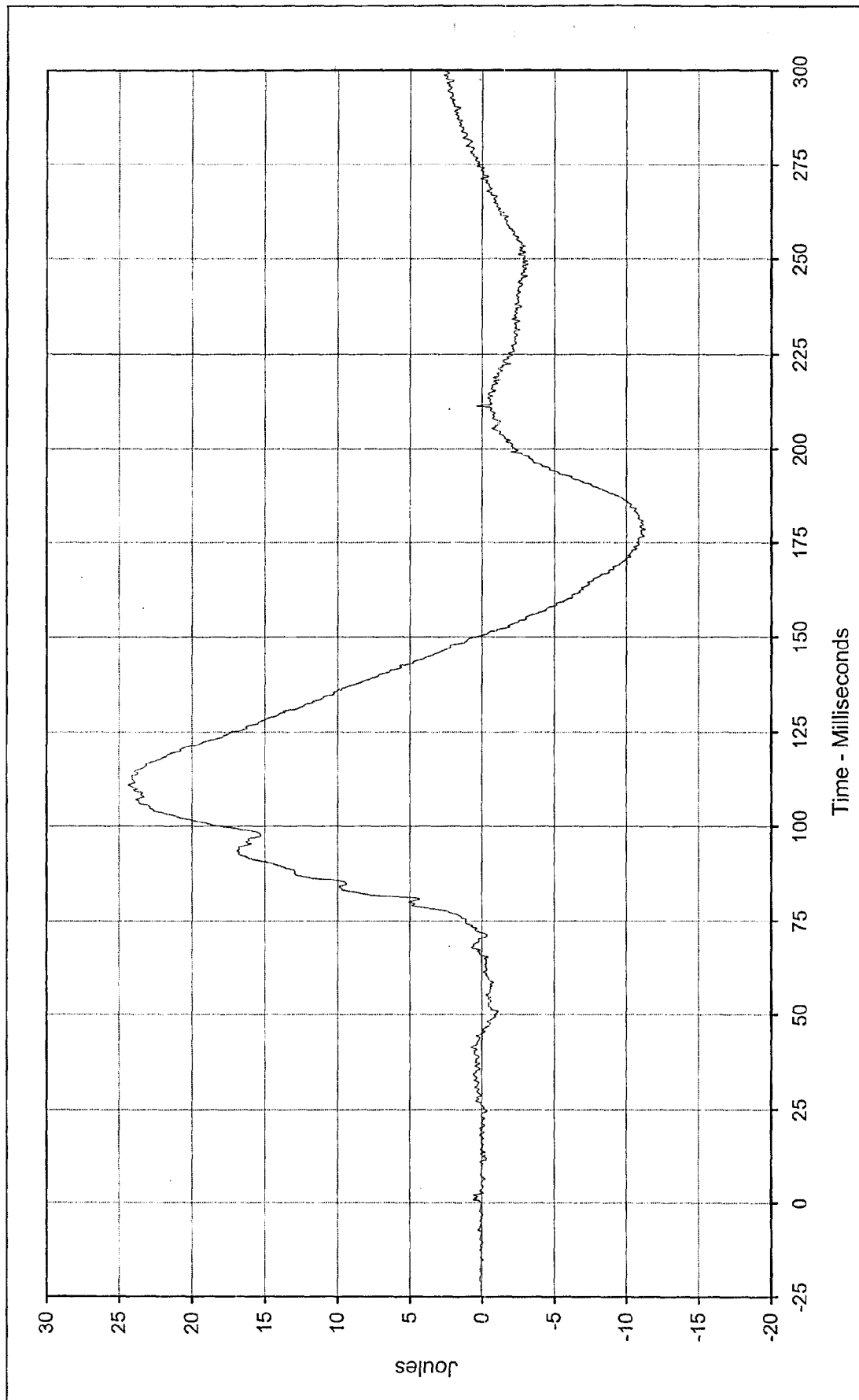
Minimum Value: -64.1 at 238.5 Milliseconds

SAE Filter Class: 600

Date of Test: 1/28/98

Curve Number: FIL-011

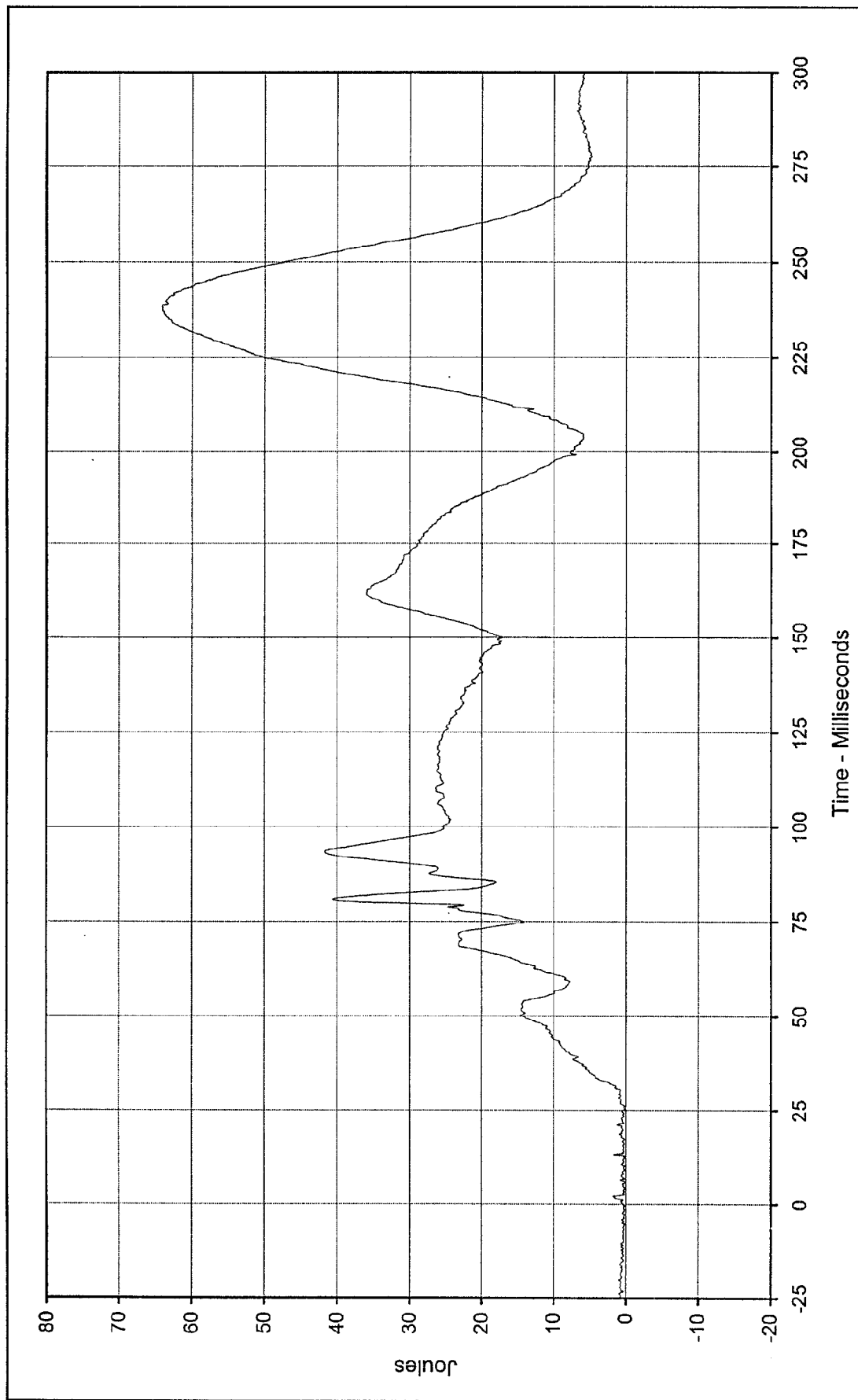




Curve Description: Driver Neck Moment Z
 Maximum Value: 24.4 at 110.7 Milliseconds
 Minimum Value: -11.3 at 178.6 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/28/98
 Curve Number: FIL-012

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





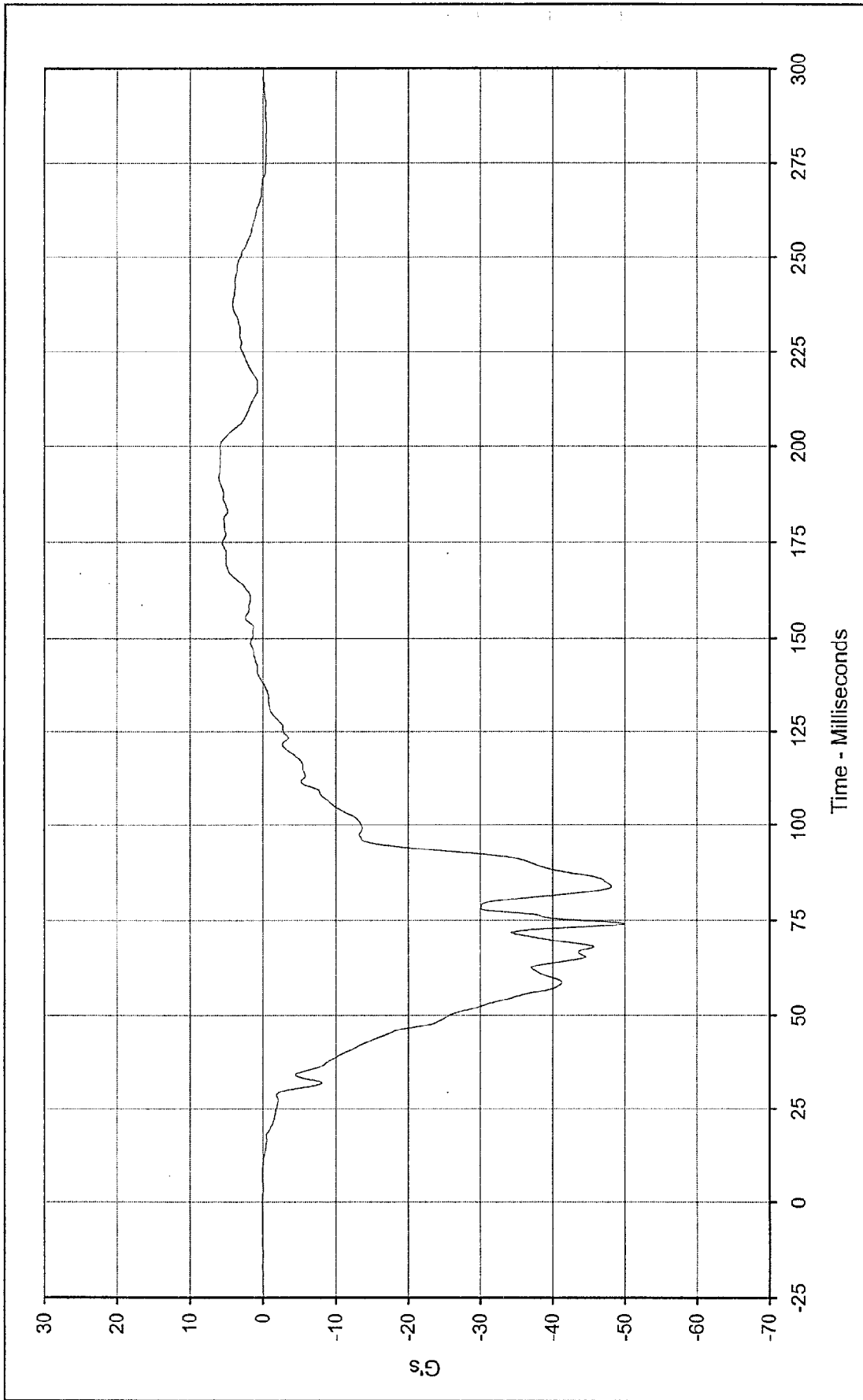
Curve Description: Driver Neck Moment Resultant

Maximum Value:	64.2	at	238.5	Milliseconds
Minimum Value:	0.1	at	9.1	Milliseconds
SAE Filter Class:	600			
Date of Test:	1/28/98			
Curve Number:	RES-010			

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup

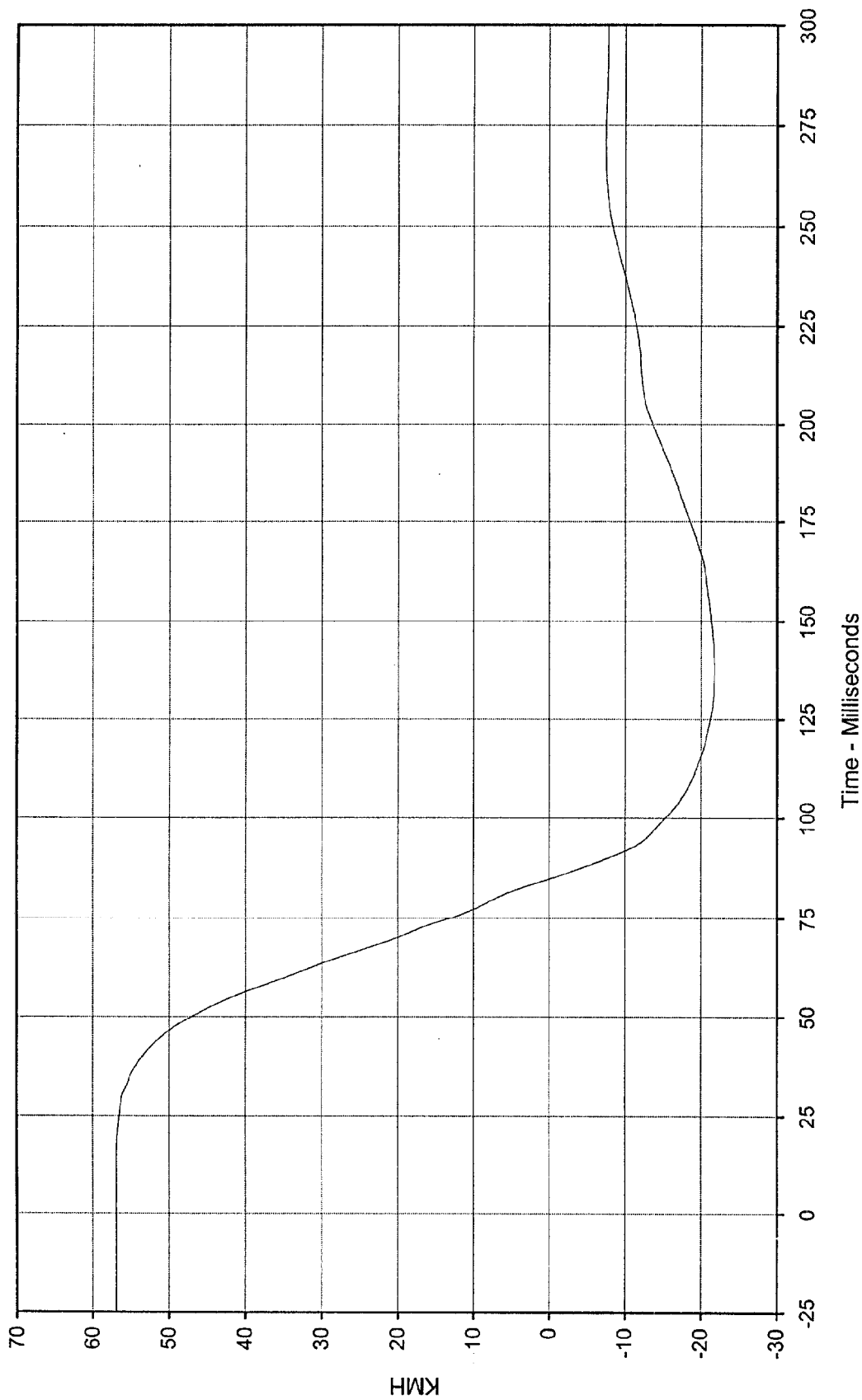




Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

Curve Description: Driver Chest Primary X
 Maximum Value: 6.1 at 191.7 Milliseconds
 Minimum Value: -50.0 at 74.1 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: FIL-013





Curve Description: Driver Chest Primary X Velocity

Maximum Value: 56.9 at 2.1 Milliseconds

Minimum Value: -21.8 at 138.0 Milliseconds

SAE Filter Class: 180

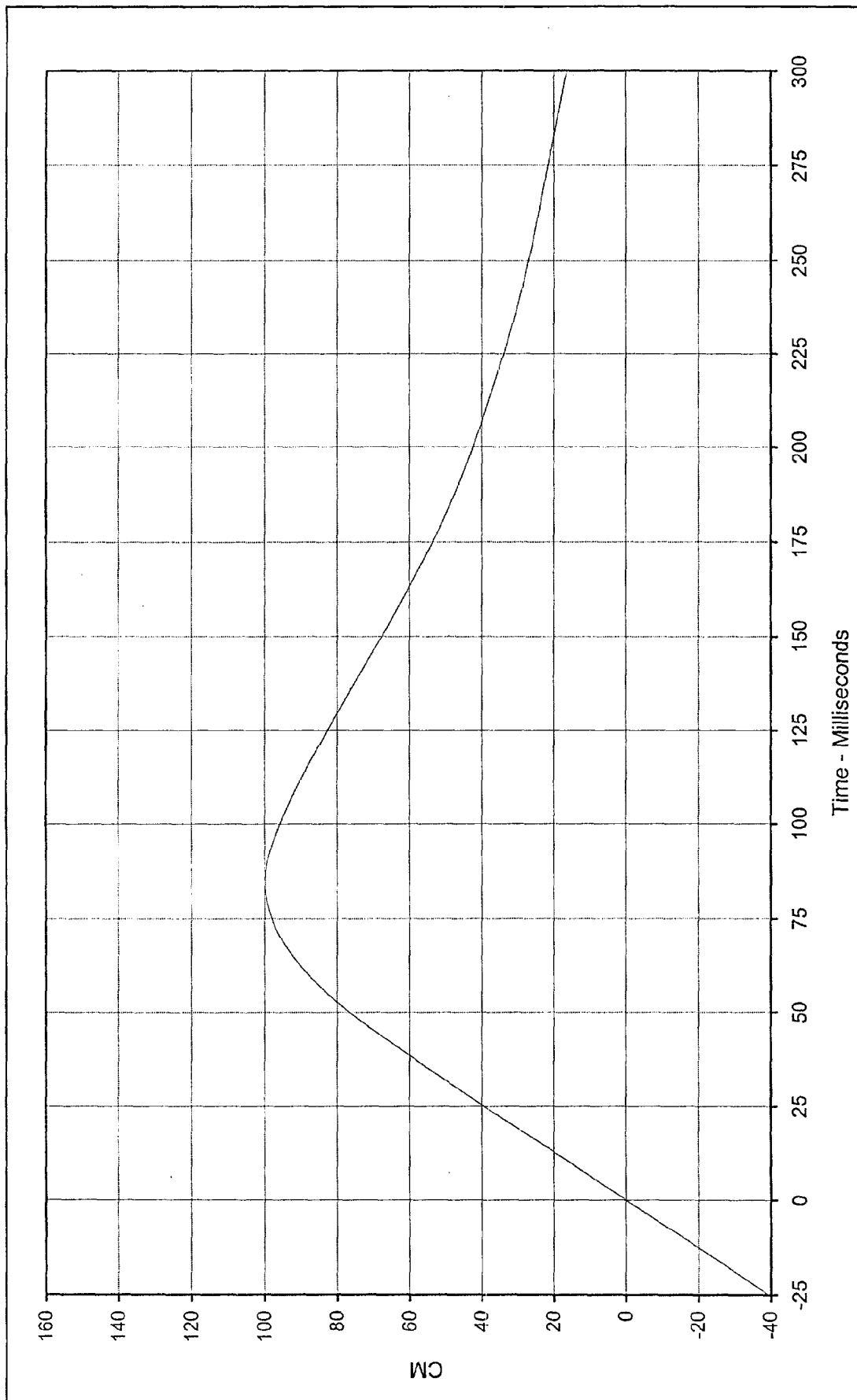
Date of Test: 1/28/98

Curve Number: IN1-013

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup

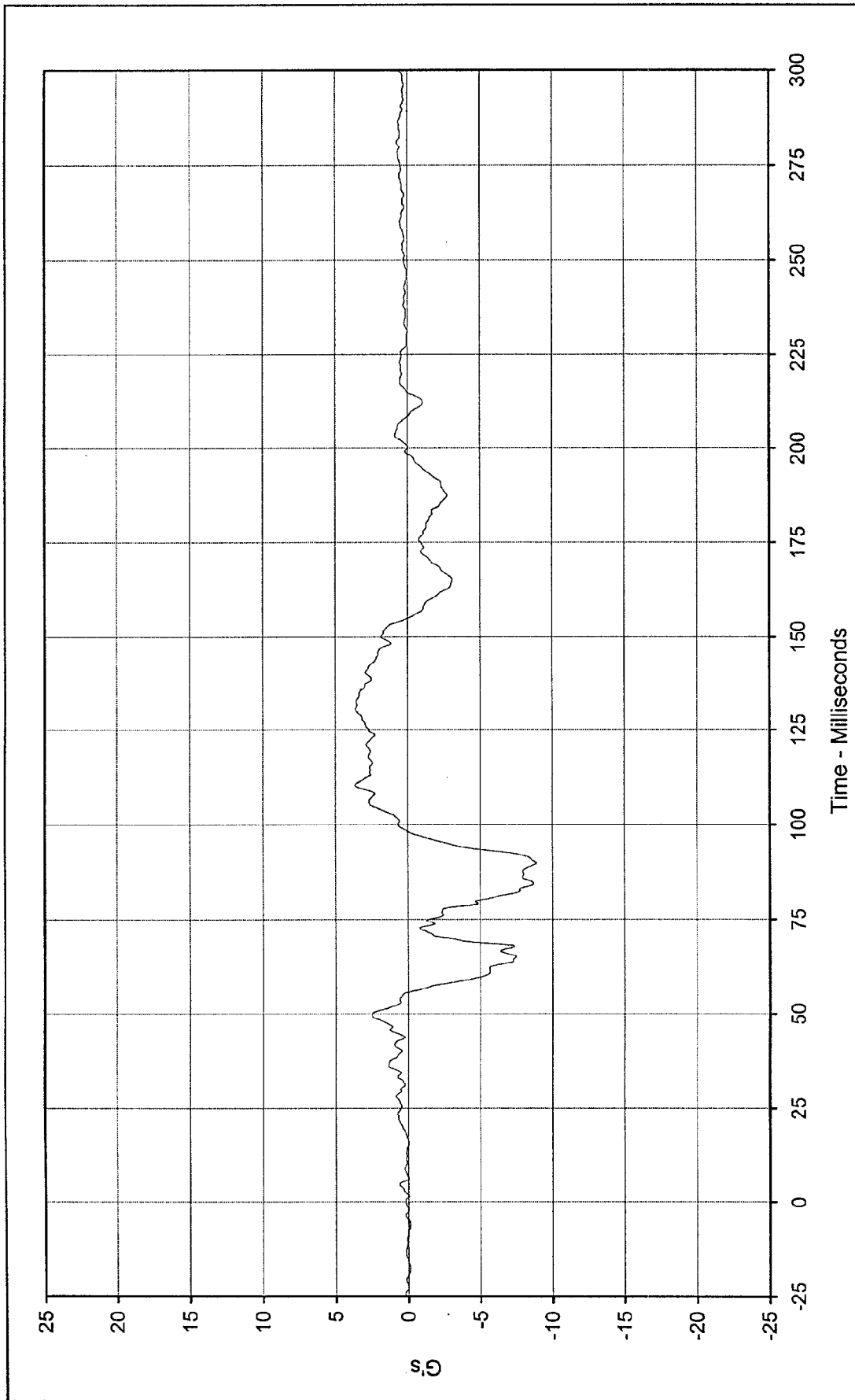




Curve Description: Driver Chest Primary X Displ.
 Maximum Value: 99.8 at 84.7 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: IN2-013

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Driver Chest Primary Y Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Maximum Value: 3.7 at 110.4 Milliseconds Test Vehicle: 1998 Dodge Dakota SLT Pickup

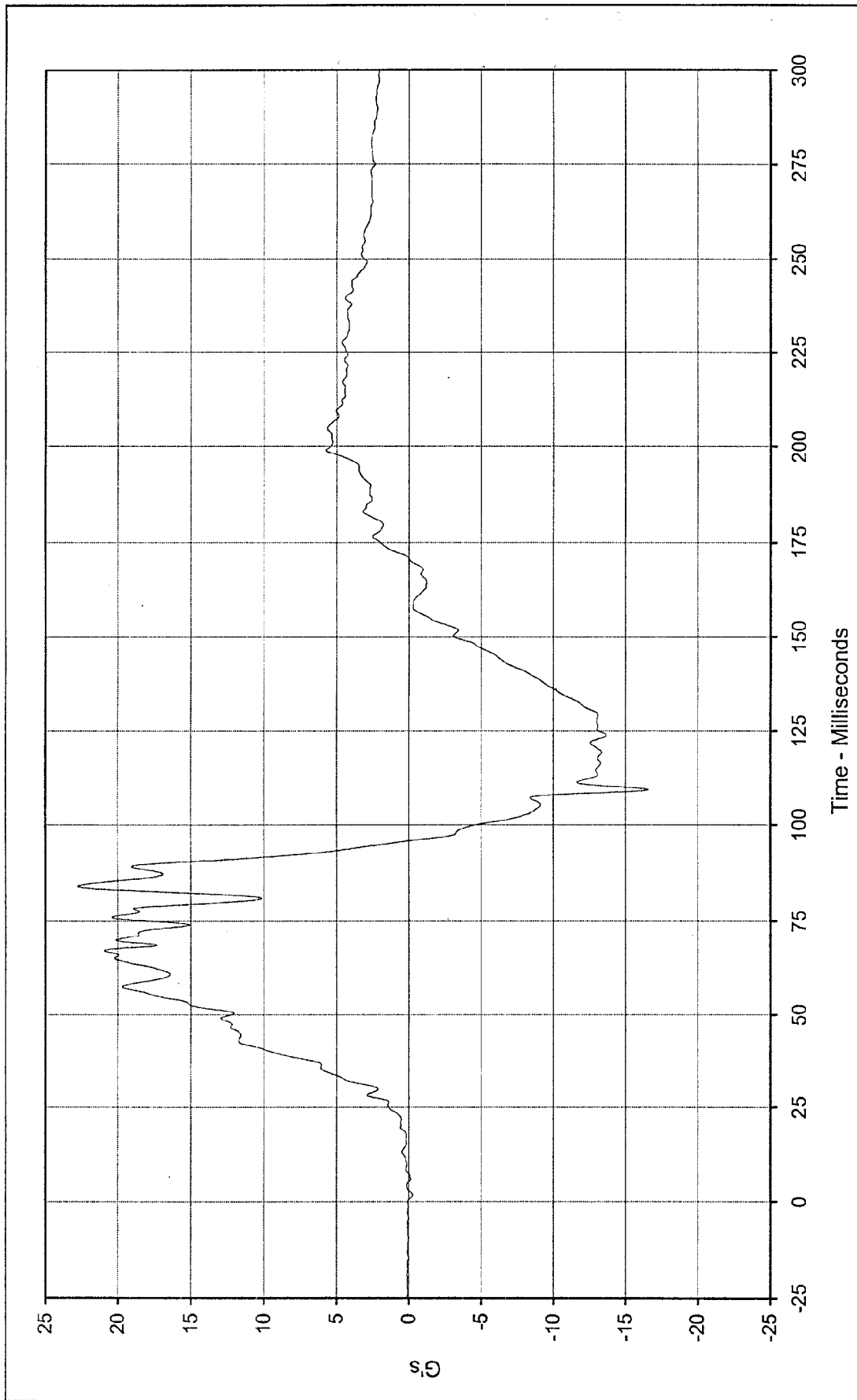
Minimum Value: -8.9 at 89.8 Milliseconds

SAE Filter Class: 180

Date of Test: 1/28/98

Curve Number: FIL-014

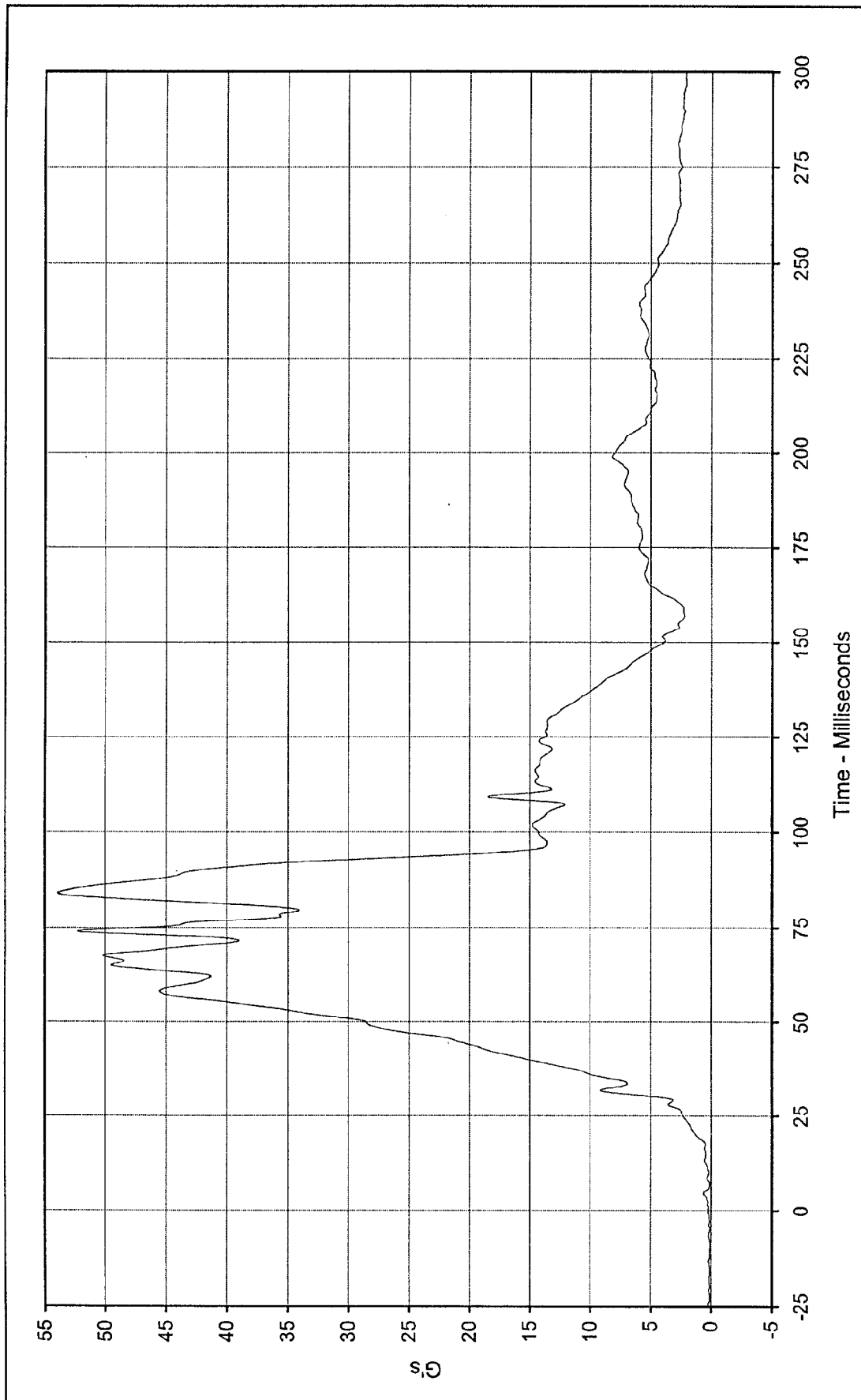




Curve Description: Driver Chest Primary Z
 Maximum Value: 22.8 at 84.1 Milliseconds
 Minimum Value: -16.6 at 109.4 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: FIL-015

Testing Program: 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Driver Chest Resultant Primary Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Maximum Value: 53.9 at 84.0 Milliseconds Test Vehicle: 1998 Dodge Dakota SLT Pickup

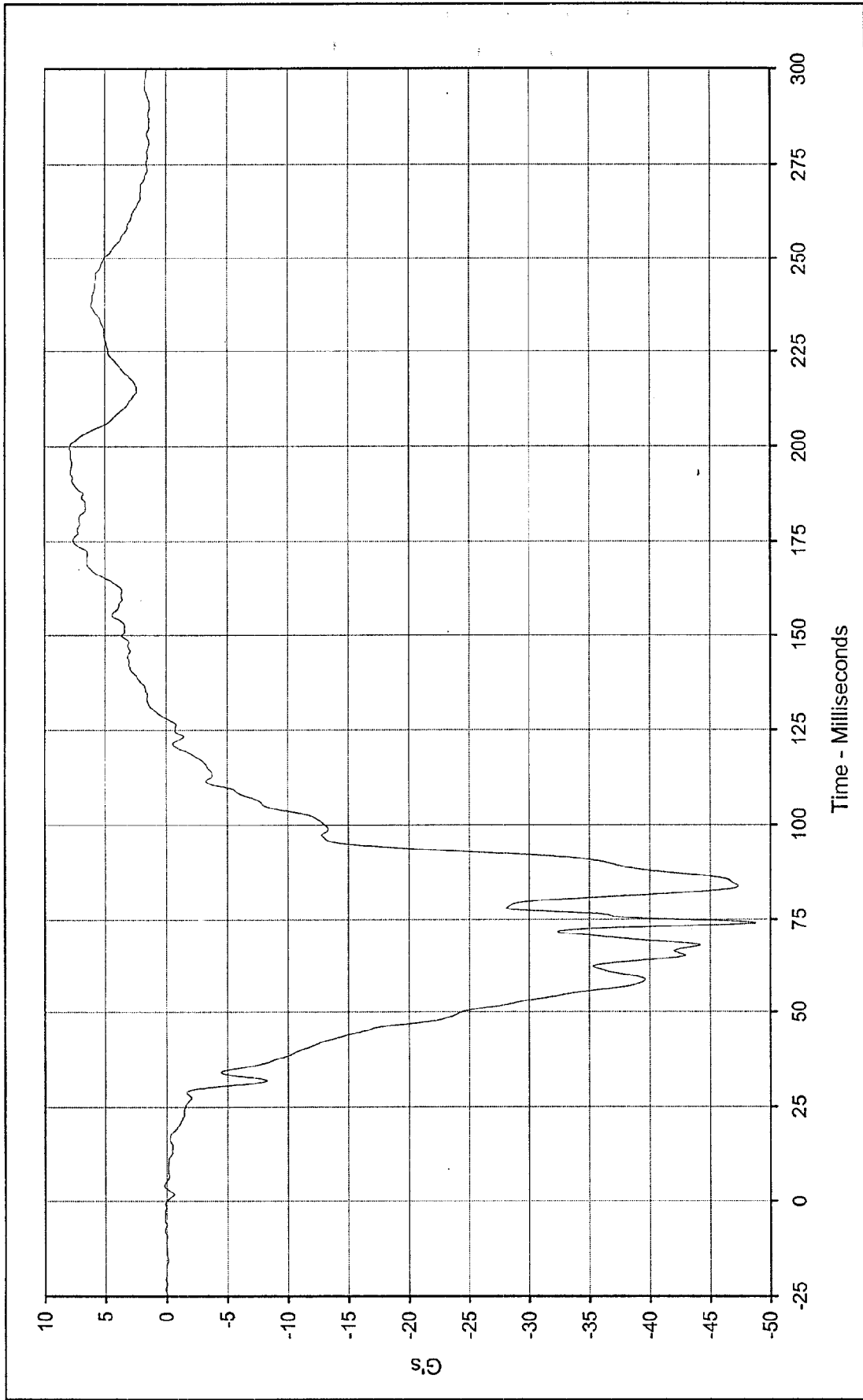
Minimum Value: 0.1 at 7.3 Milliseconds

SAE Filter Class: 180

Date of Test: 1/28/98

Curve Number: RES-013

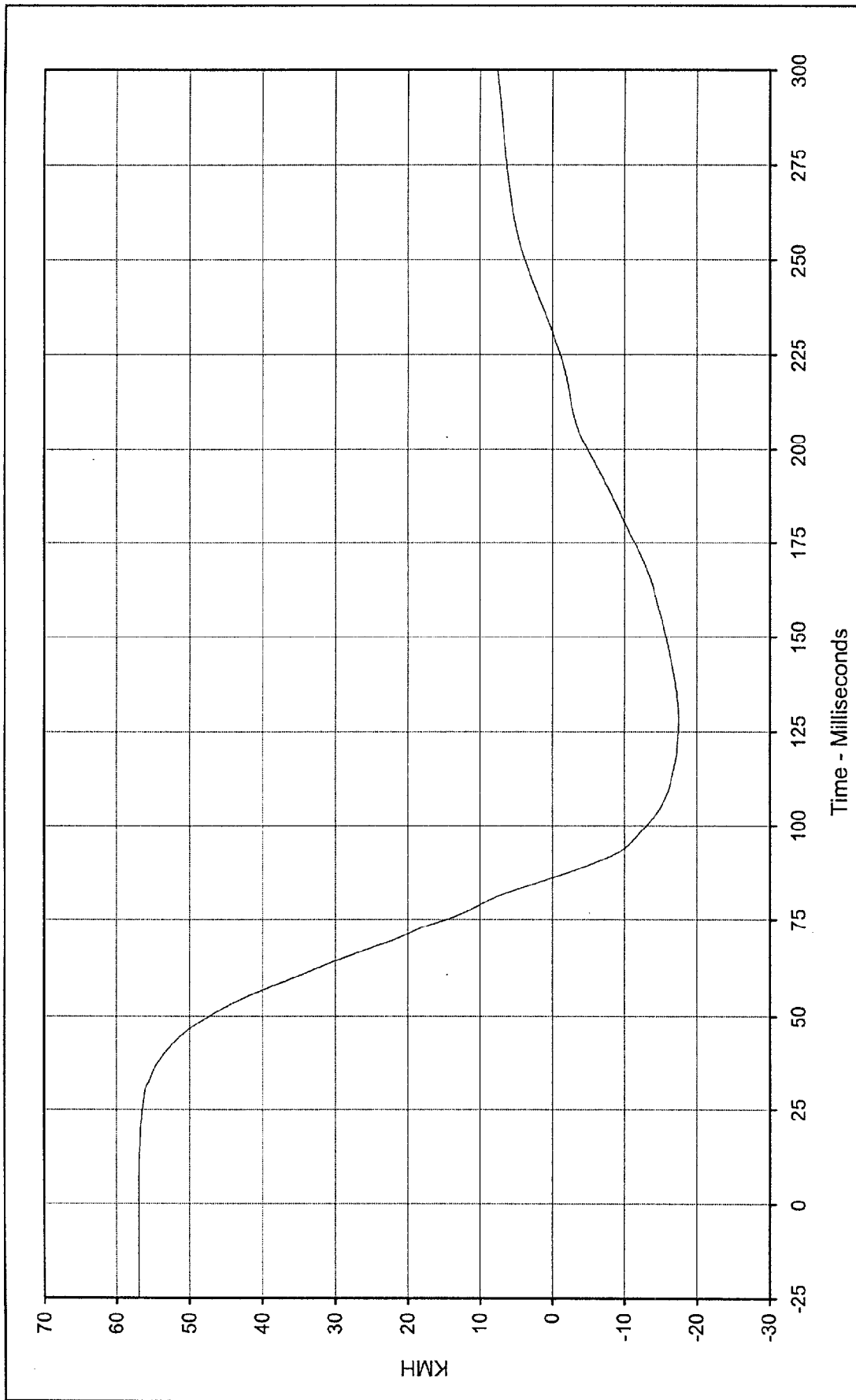




Curve Description: Driver Chest Redundant X
 Maximum Value: 8.0 at 199.5 Milliseconds
 Minimum Value: -48.8 at 74.1 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: FIL-016

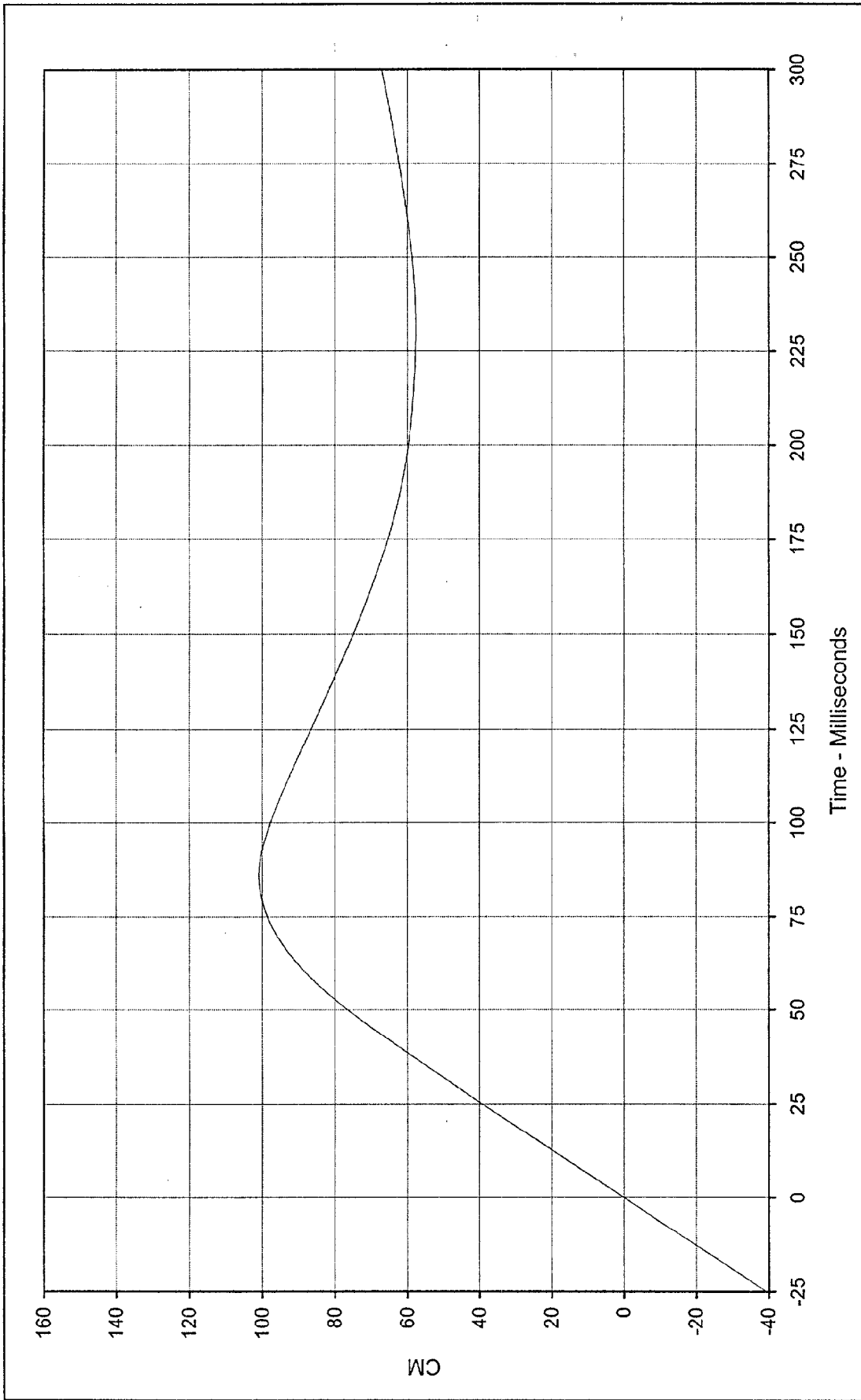
Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description:	Driver Chest Redundant X Velocity	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW0303
Maximum Value:	56.9	at	0.0	Milliseconds
Minimum Value:	-17.5	at	128.0	Milliseconds
SAE Filter Class:	180	Test Vehicle:	1998 Dodge Dakota SLT Pickup	
Date of Test:	1/28/98			
Curve Number:	IN1-016			

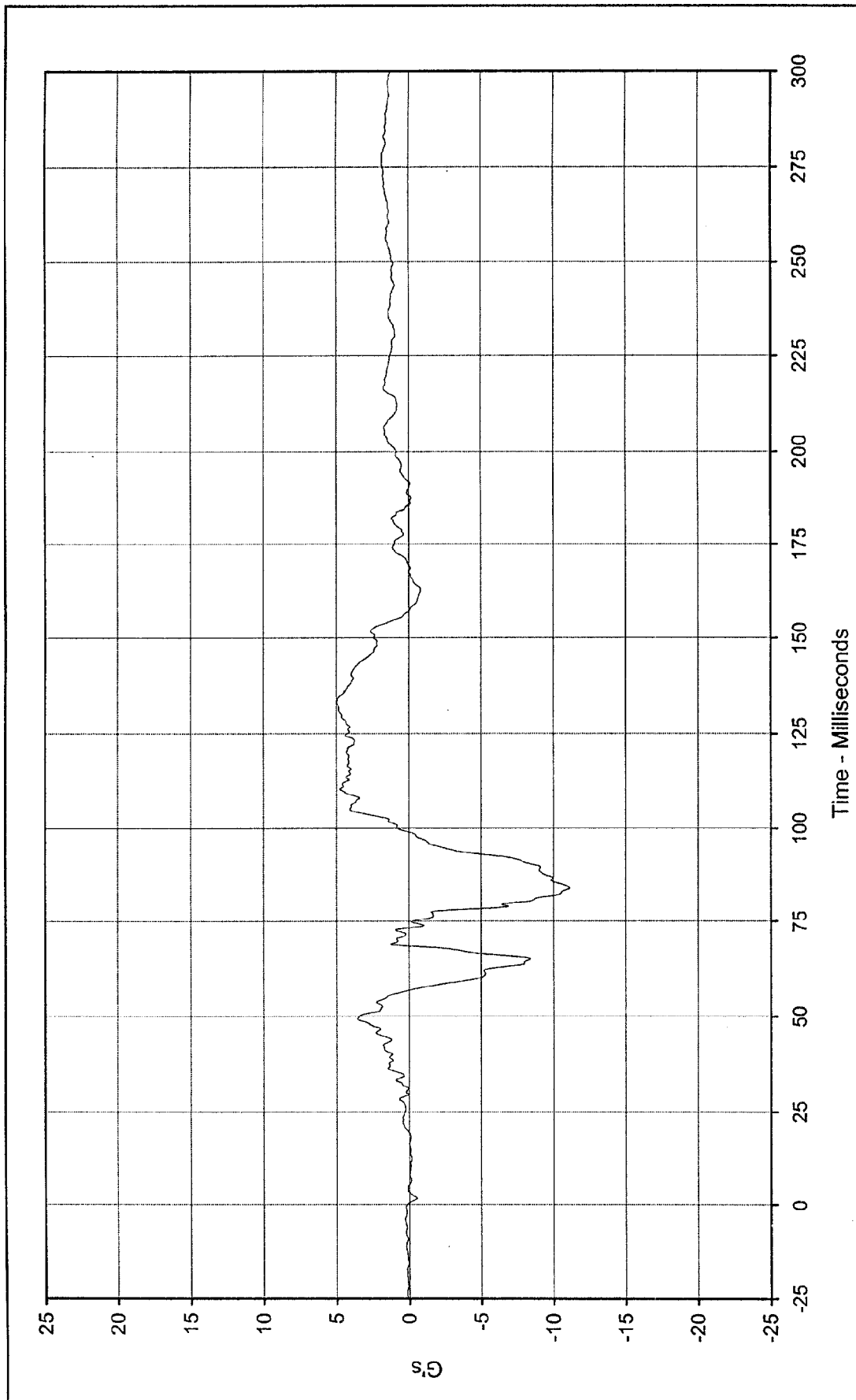




Curve Description: Driver Chest Redundant X Displ.
 Maximum Value: 100.9 at 85.9 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: IN2-016

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

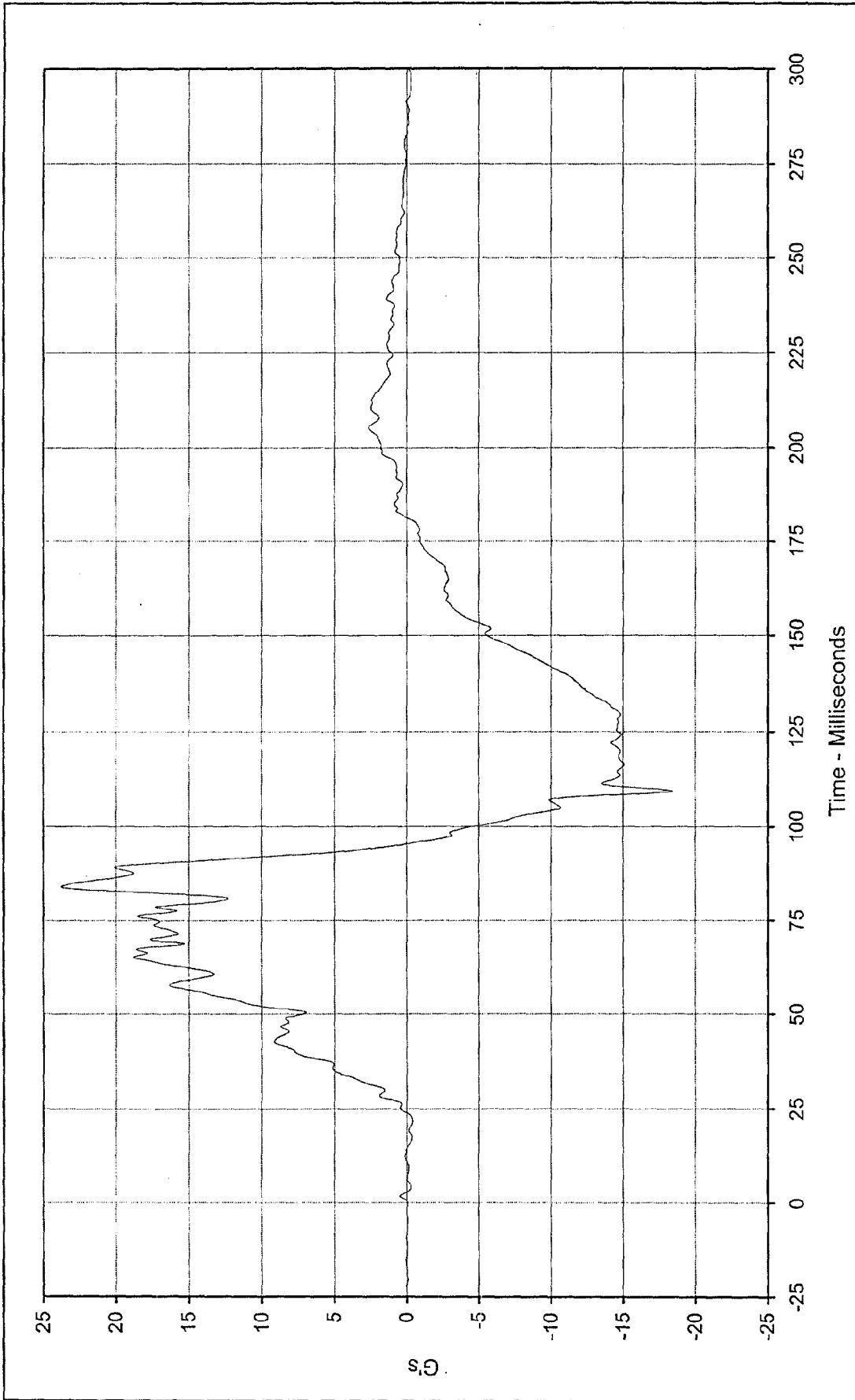




Curve Description: Driver Chest Redundant Y
 Maximum Value: 5.0 at 133.1 Milliseconds
 Minimum Value: -11.1 at 84.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: FIL-017

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

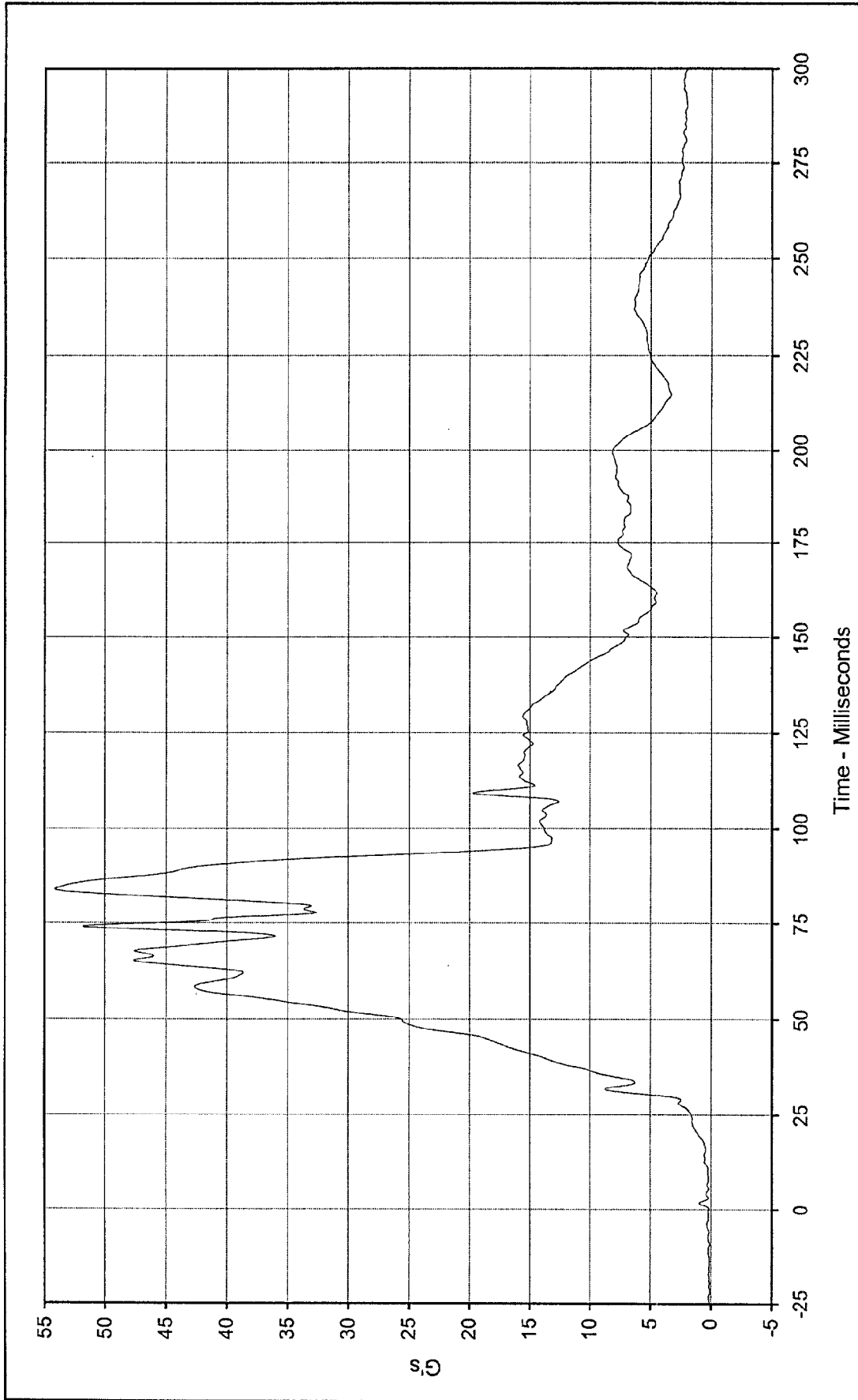




Curve Description: Driver Chest Redundant Z
 Maximum Value: 23.8 at 84.0 Milliseconds
 Minimum Value: -18.4 at 109.3 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: FIL-018

Testing Program: 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

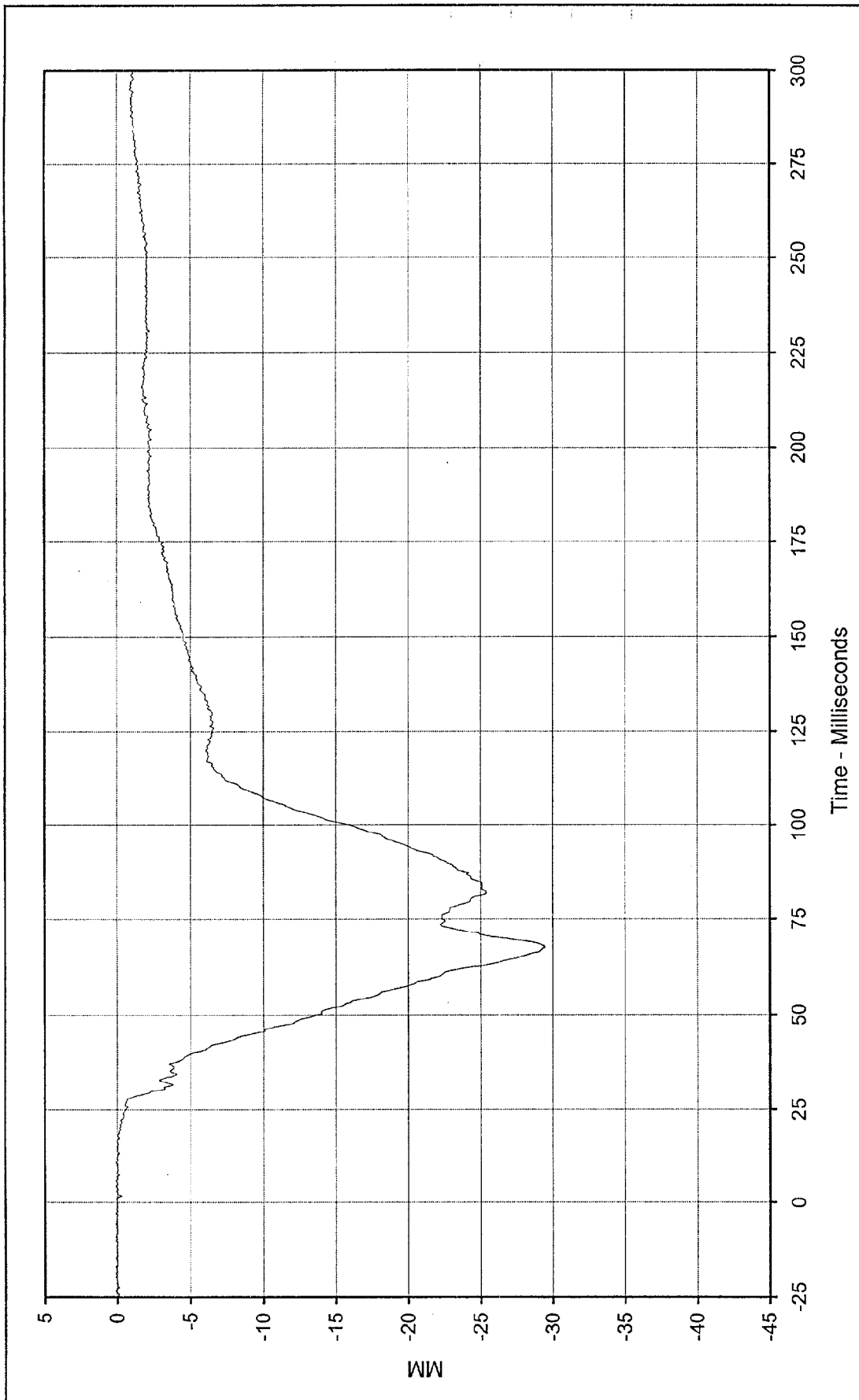




Curve Description: Driver Chest Resultant Redundant
 Maximum Value: 54.1 at 83.9 Milliseconds
 Minimum Value: 0.1 at 0.3 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: RES-016

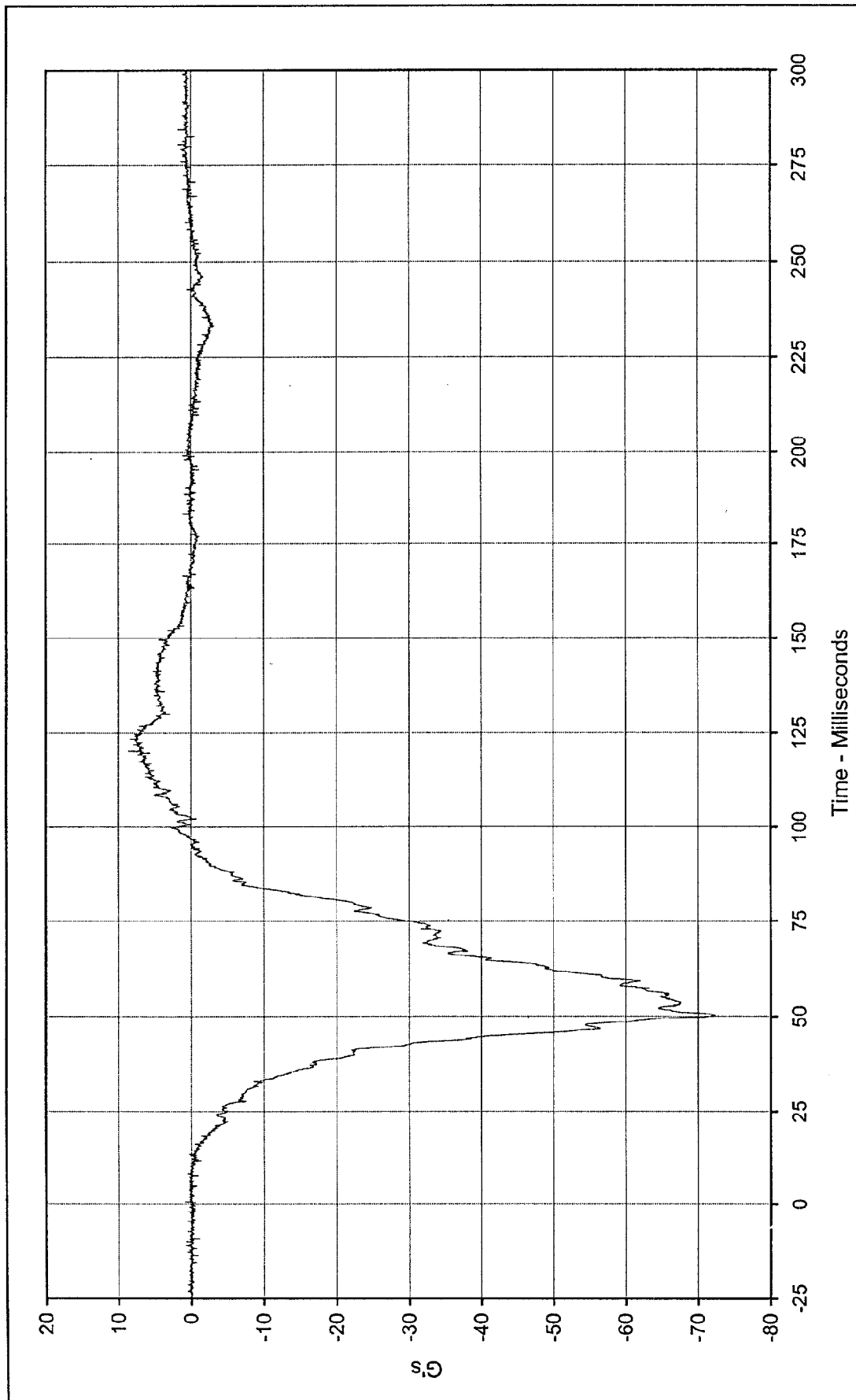
Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description:	Driver Chest Displacement X	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW0303
Maximum Value:	0.1	at	10.7	Milliseconds
Minimum Value:	-29.5	at	67.5	Milliseconds
SAE Filter Class:	600			
Date of Test:	1/28/98	Test Vehicle:	1998 Dodge Dakota SLT Pickup	
Curve Number:	FIL-019			

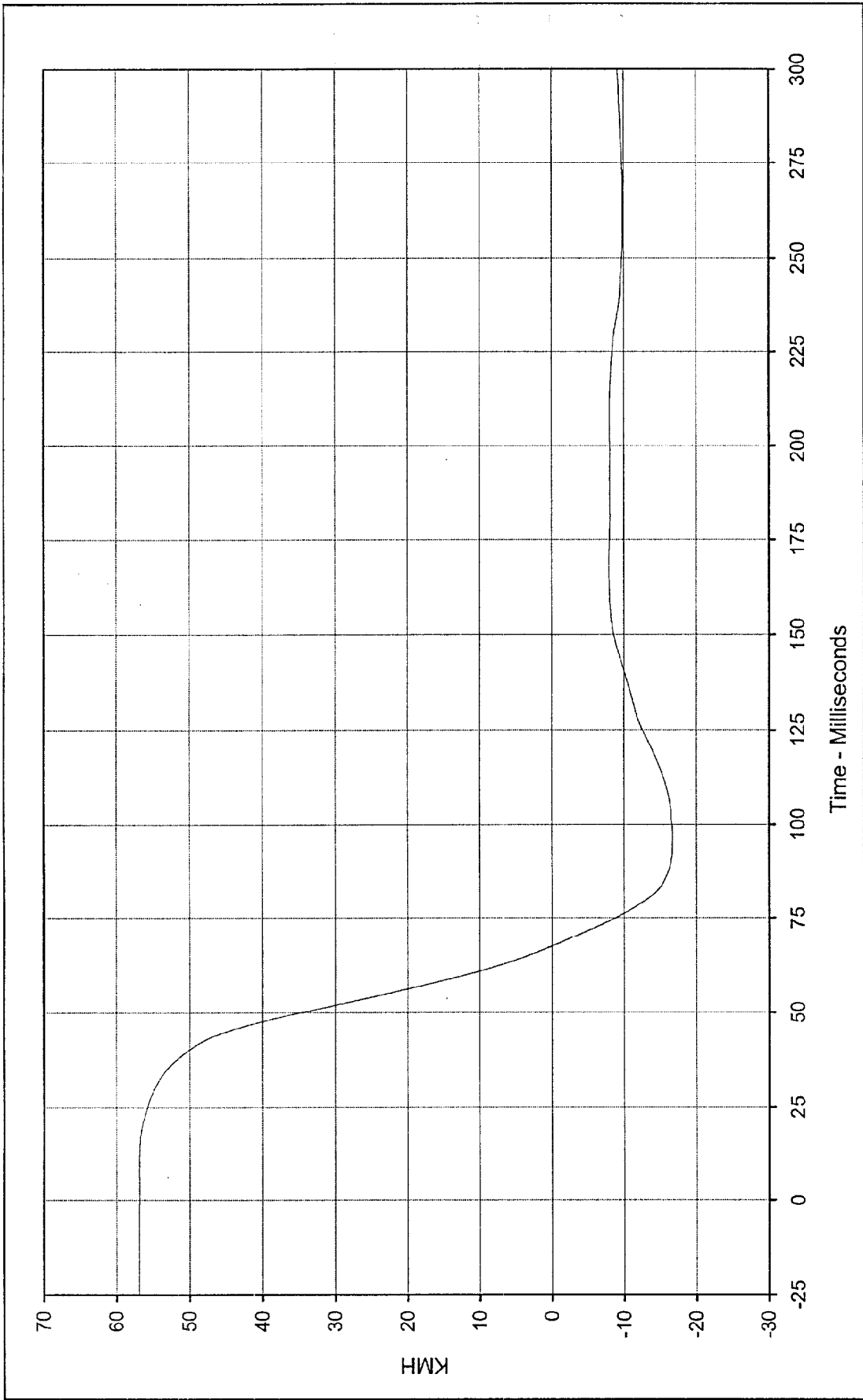




Curve Description: Driver Pelvis X
 Maximum Value: 8.6 at 120.3 Milliseconds
 Minimum Value: -72.3 at 50.3 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: FIL-020

Testing Program: 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

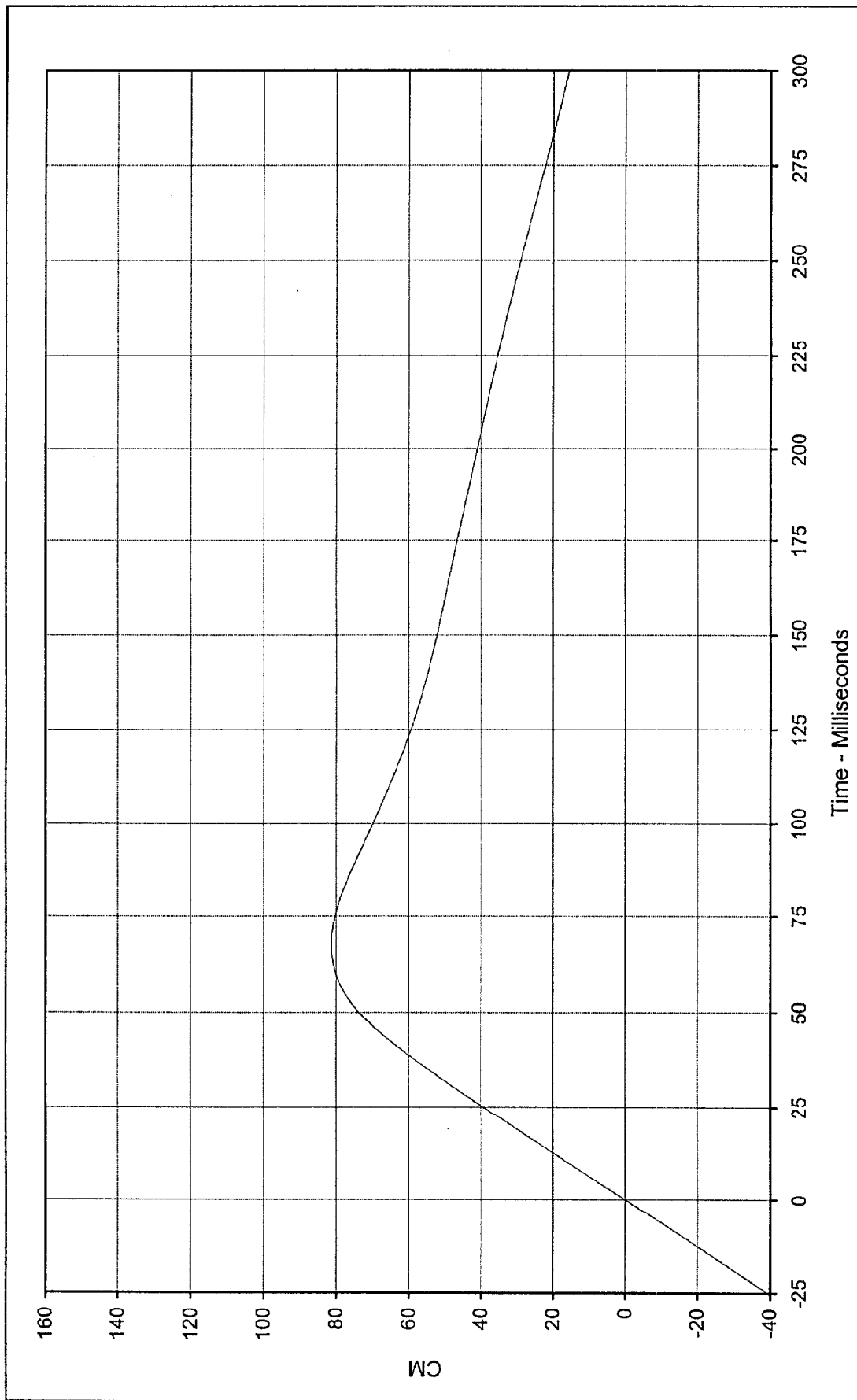




Curve Description: 1998 NHTSA 35 mph NCAP No.: MW0303
 Testing Program: 1998 Dodge Dakota SLT Pickup
 Test Vehicle:

Maximum Value: 56.9 at 7.2 Milliseconds
 Minimum Value: -16.7 at 97.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: IN1-020





Curve Description: Driver Pelvis X Displ. Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Maximum Value: 81.2 at 67.5 Milliseconds Test Vehicle: 1998 Dodge Dakota SLT Pickup

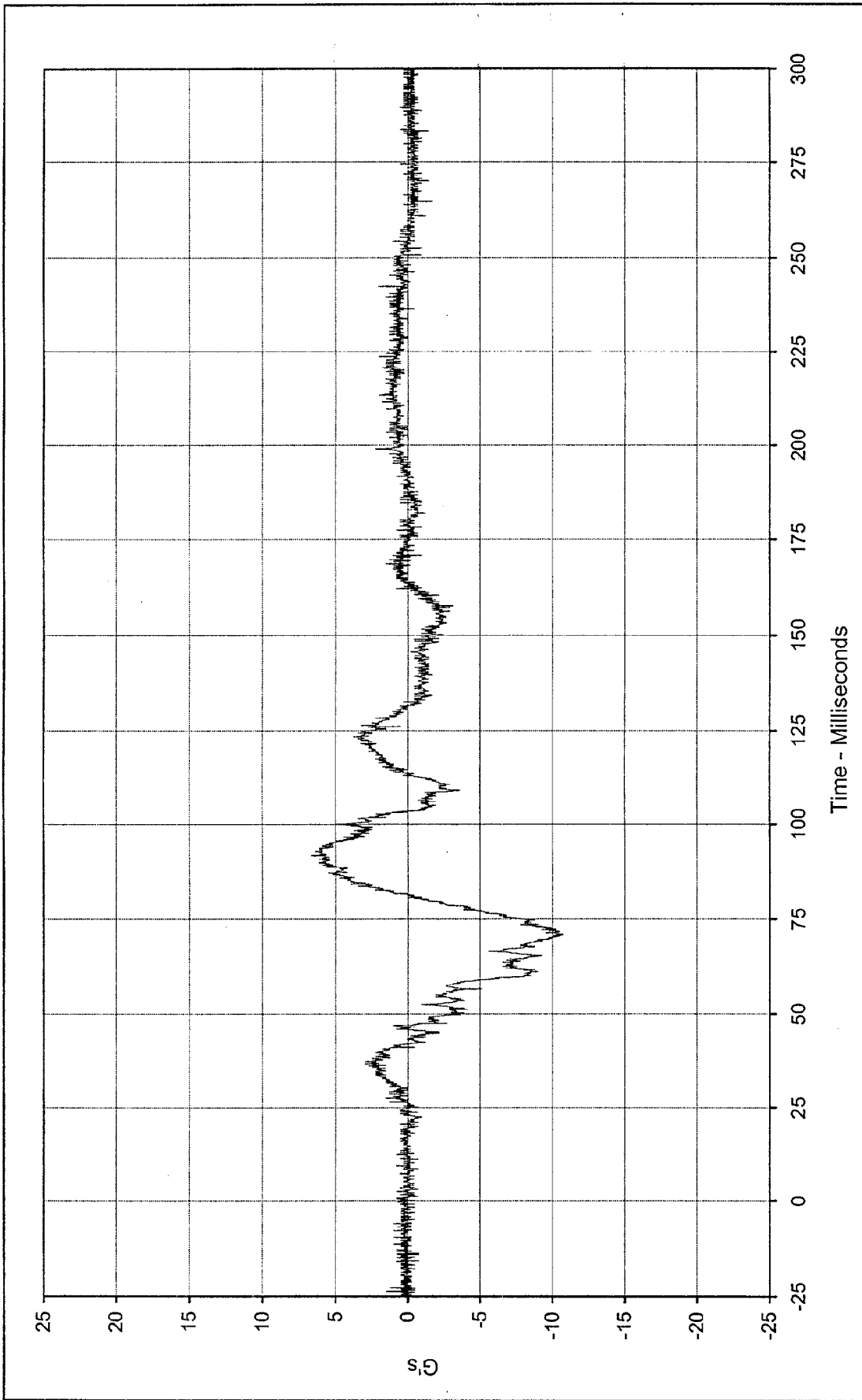
Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 1/28/98

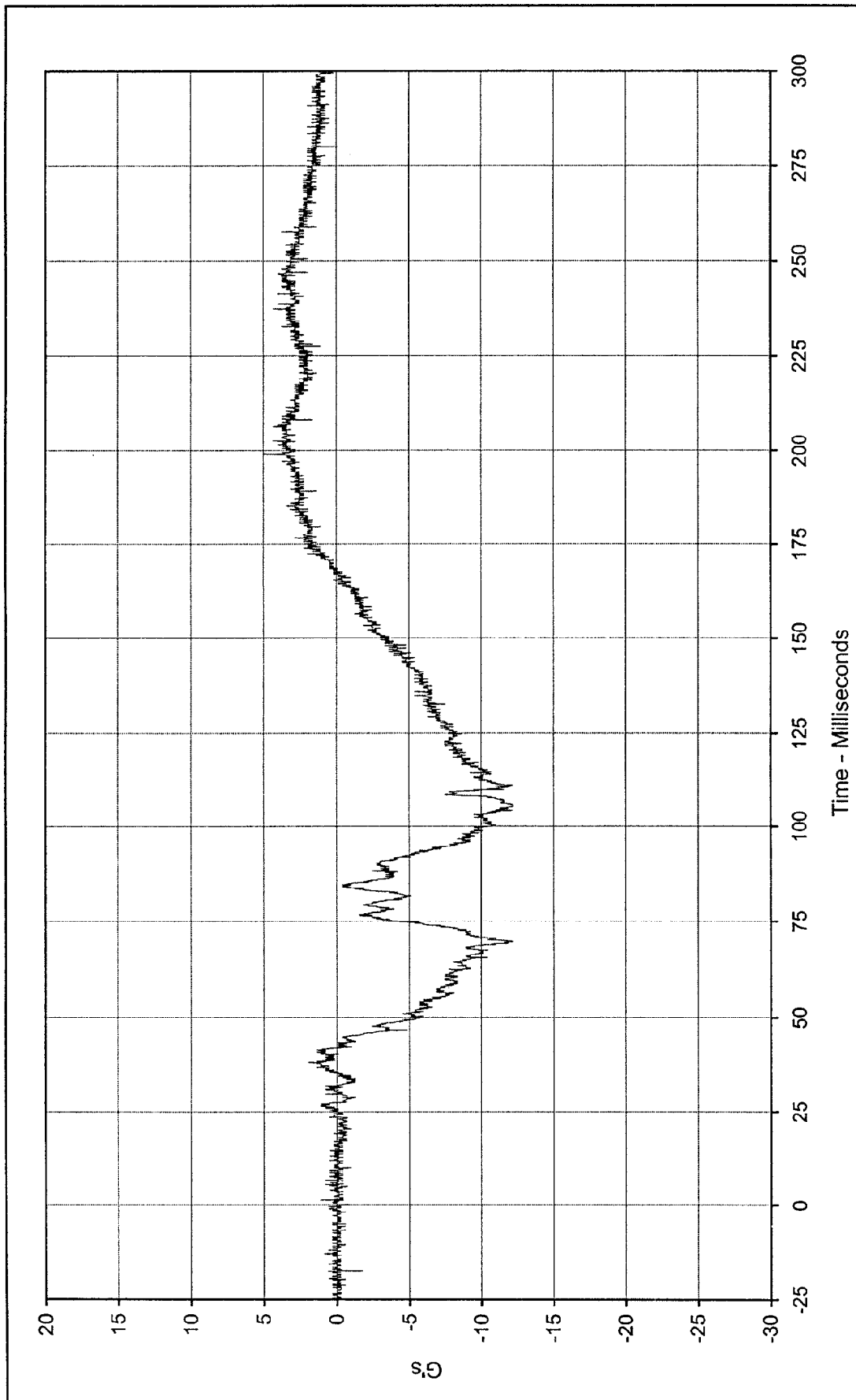
Curve Number: IN2-020





Curve Description: Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Maximum Value: 6.6 at 91.5 Milliseconds
 Minimum Value: -10.7 at 70.6 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: FIL-021

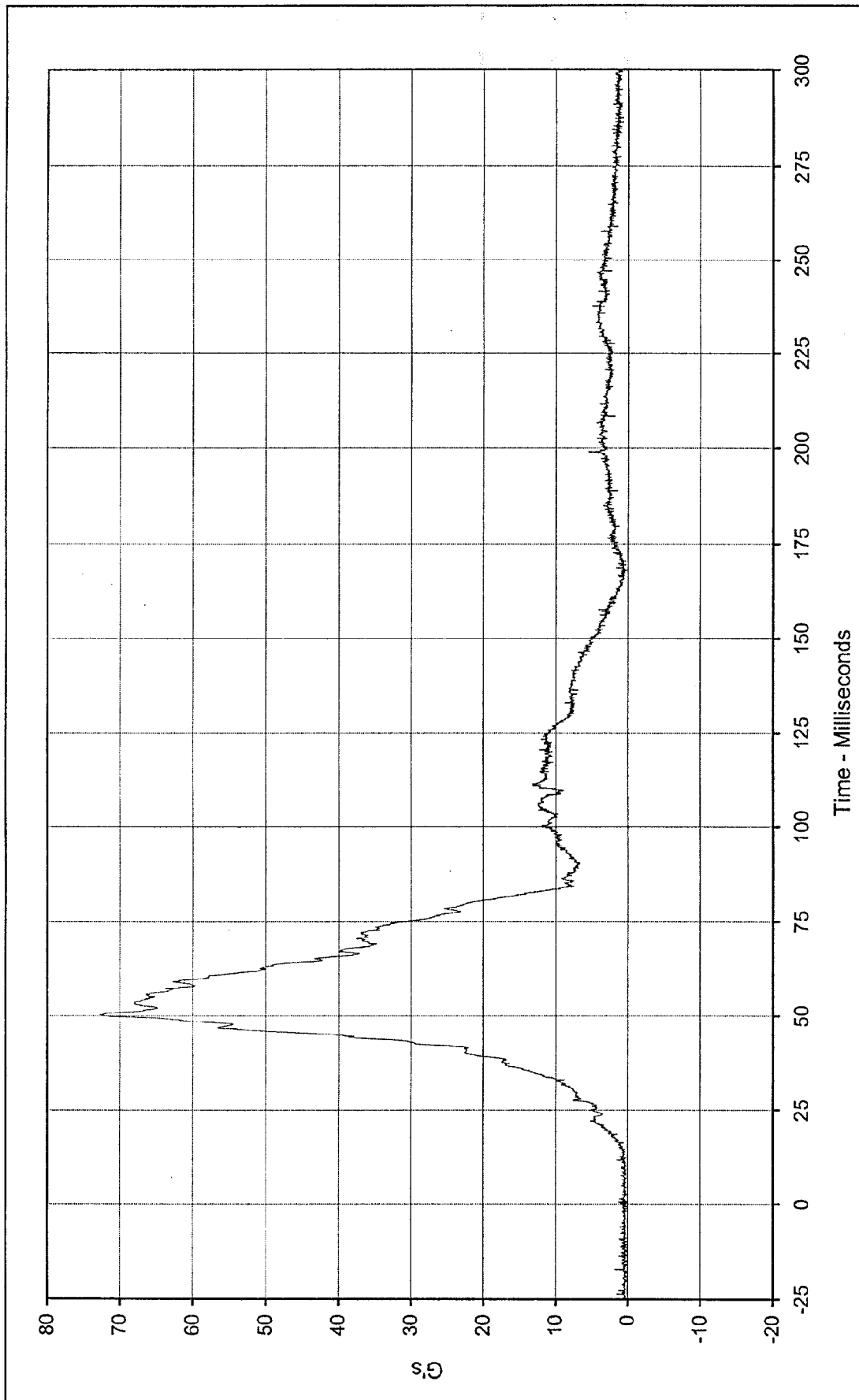




Curve Description: Driver Pelvis Z
 Maximum Value: 4.9 at 199.0 Milliseconds
 Minimum Value: -12.2 at 69.6 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: FIL-022

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Maximum Value: 72.7 at 50.4 Milliseconds

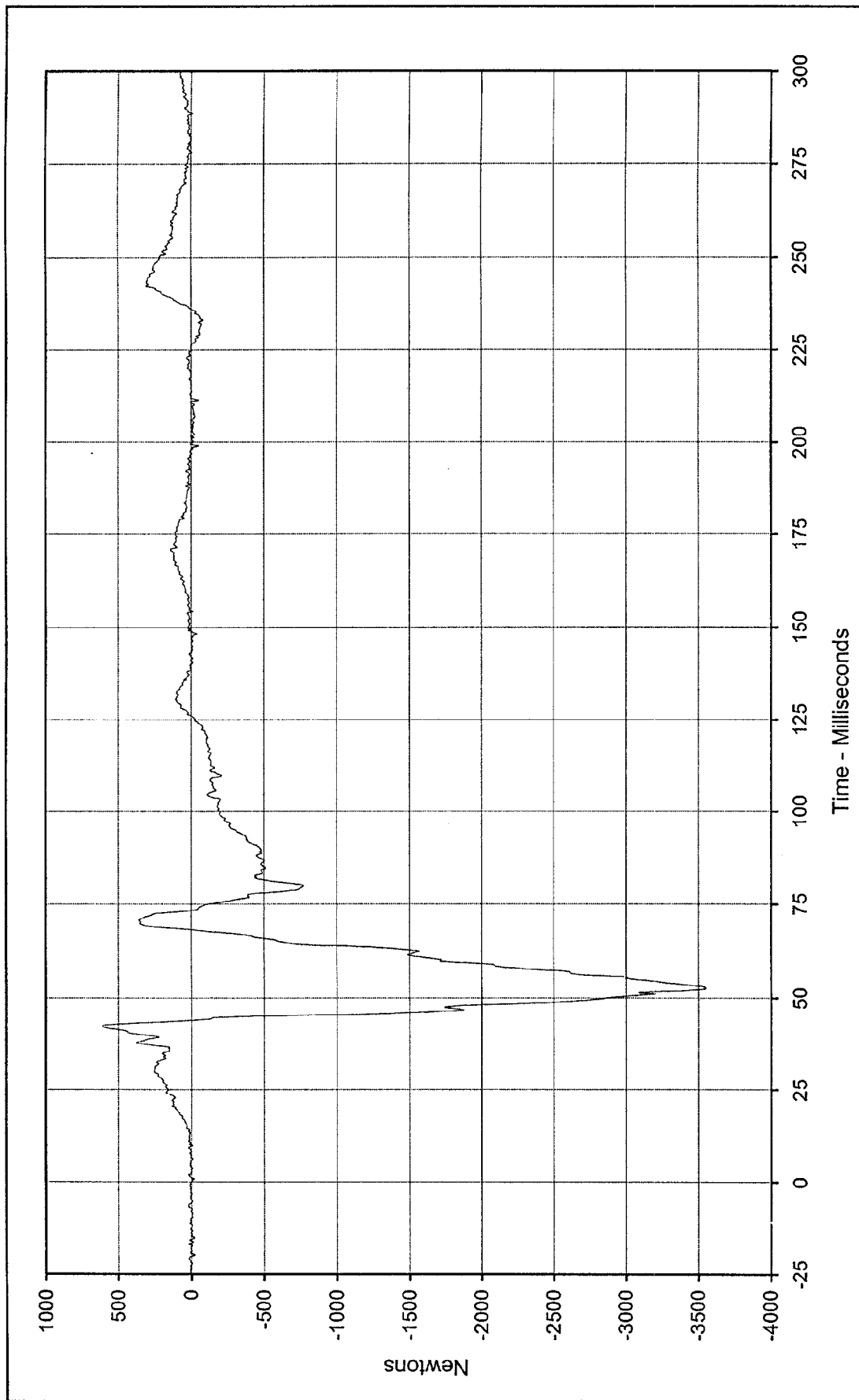
Minimum Value: 0.1 at 0.3 Milliseconds

SAE Filter Class: 1000

Date of Test: 1/28/98

Curve Number: RES-020





Curve Description: Driver Left Femur Force

Maximum Value: 609.9 at 42.3 Milliseconds

Minimum Value: -3552.2 at 52.5 Milliseconds

SAE Filter Class: 600

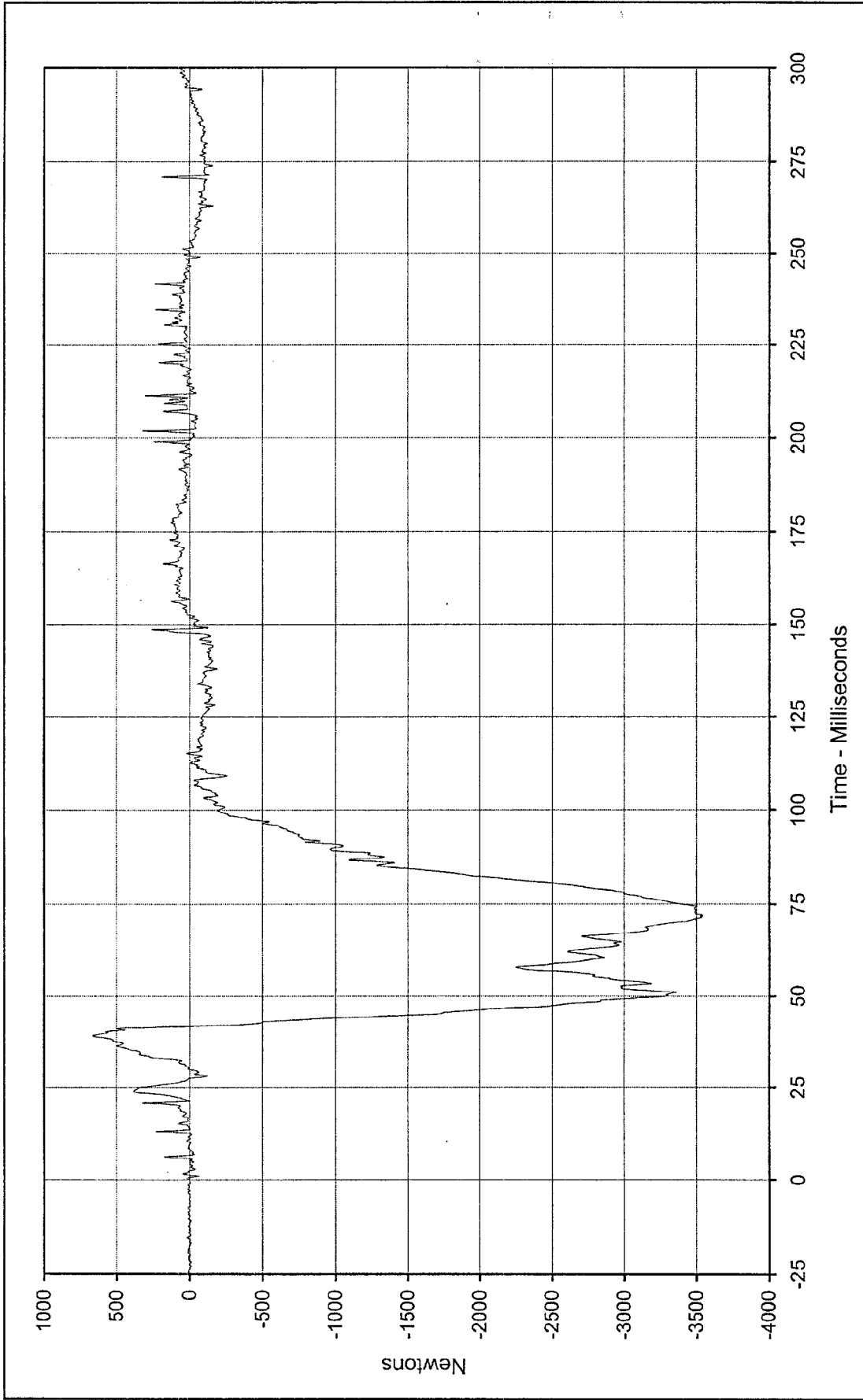
Date of Test: 1/28/98

Curve Number: FIL-023

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup

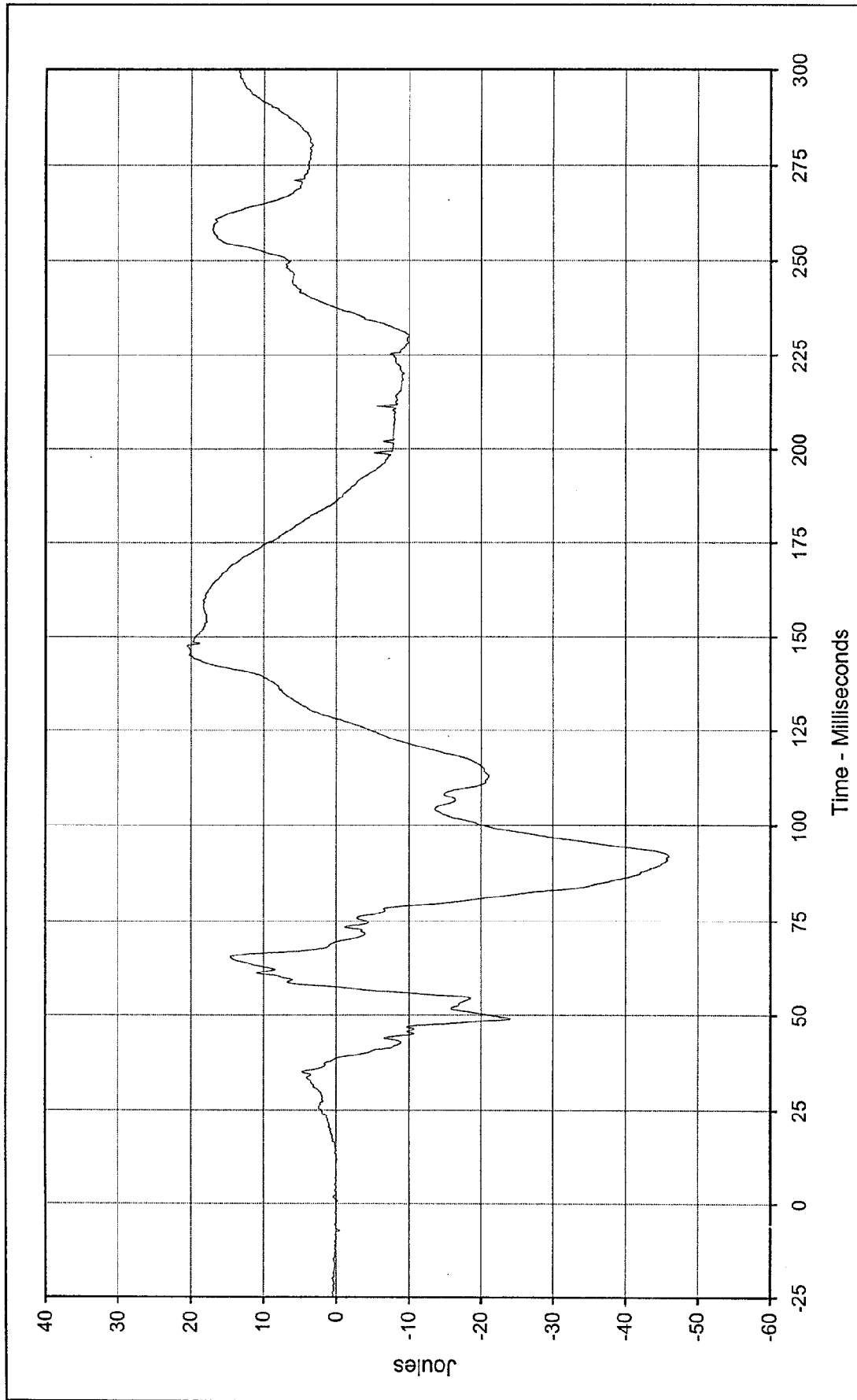




Curve Description: Driver Right Femur Force
Maximum Value: 665.3 at 38.8 Milliseconds
Minimum Value: -3542.5 at 72.0 Milliseconds
SAE Filter Class: 600
Date of Test: 1/28/98
Curve Number: FIL-024

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Driver Left Upper Tibia Moment X

Maximum Value: 20.5 at 147.6 Milliseconds

Minimum Value: -46.1 at 91.8 Milliseconds

SAE Filter Class: 600

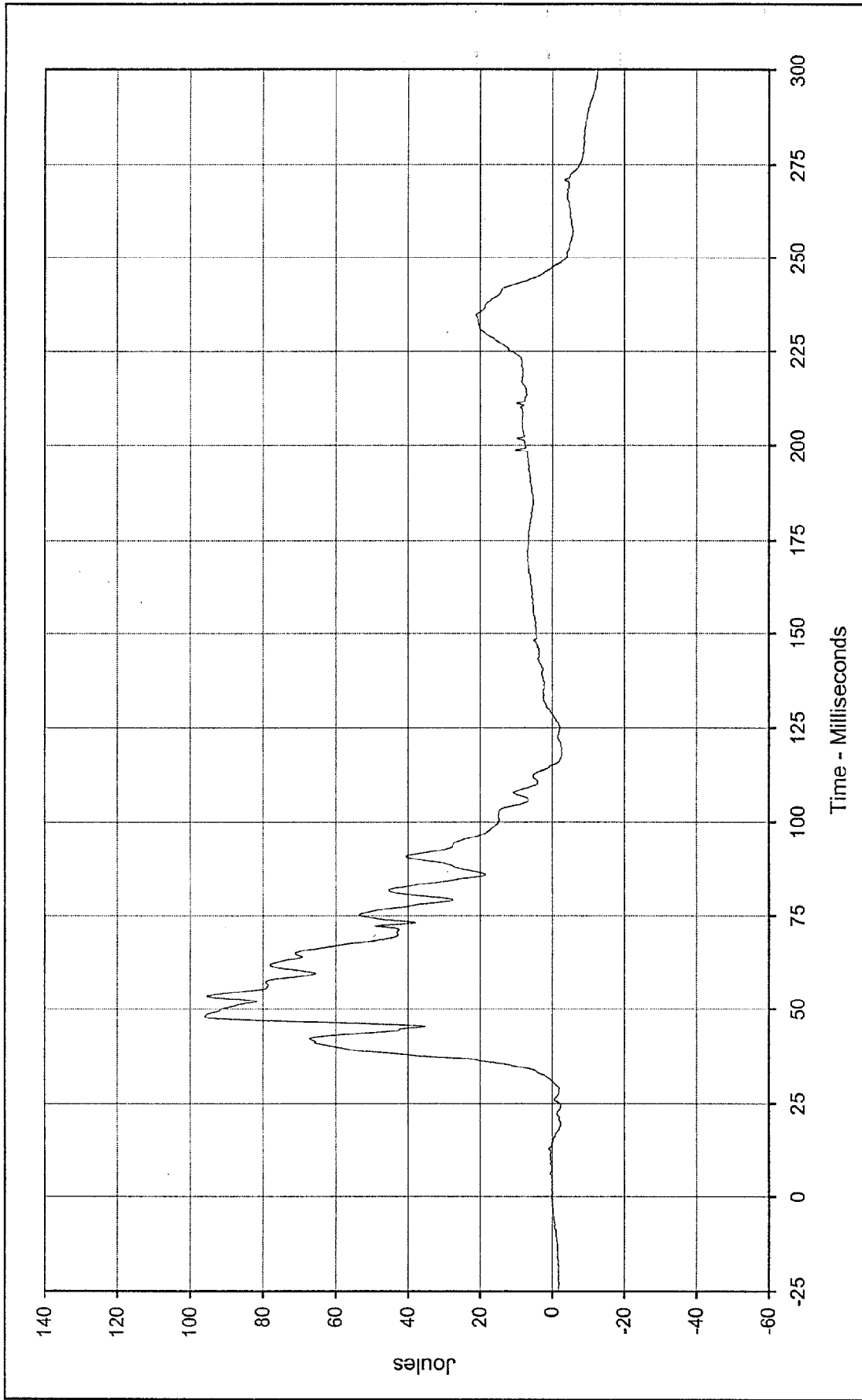
Date of Test: 1/28/98

Curve Number: FIL-025

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup

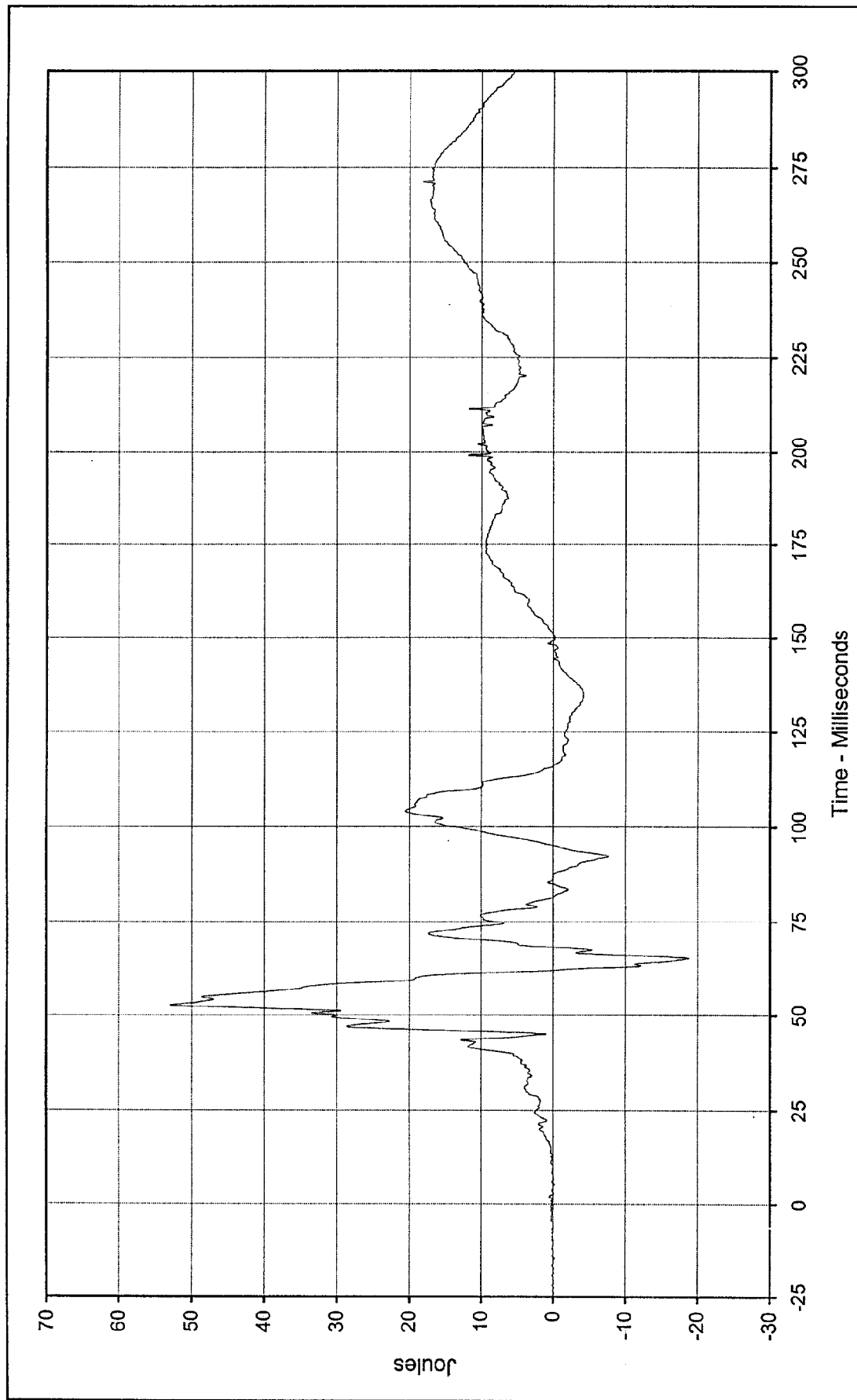




Curve Description: Driver Left Upper Tibia Moment Y
 Maximum Value: 96.0 at 48.0 Milliseconds
 Minimum Value: -12.7 at 299.6 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/28/98
 Curve Number: FIL-026

Testing Program: 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

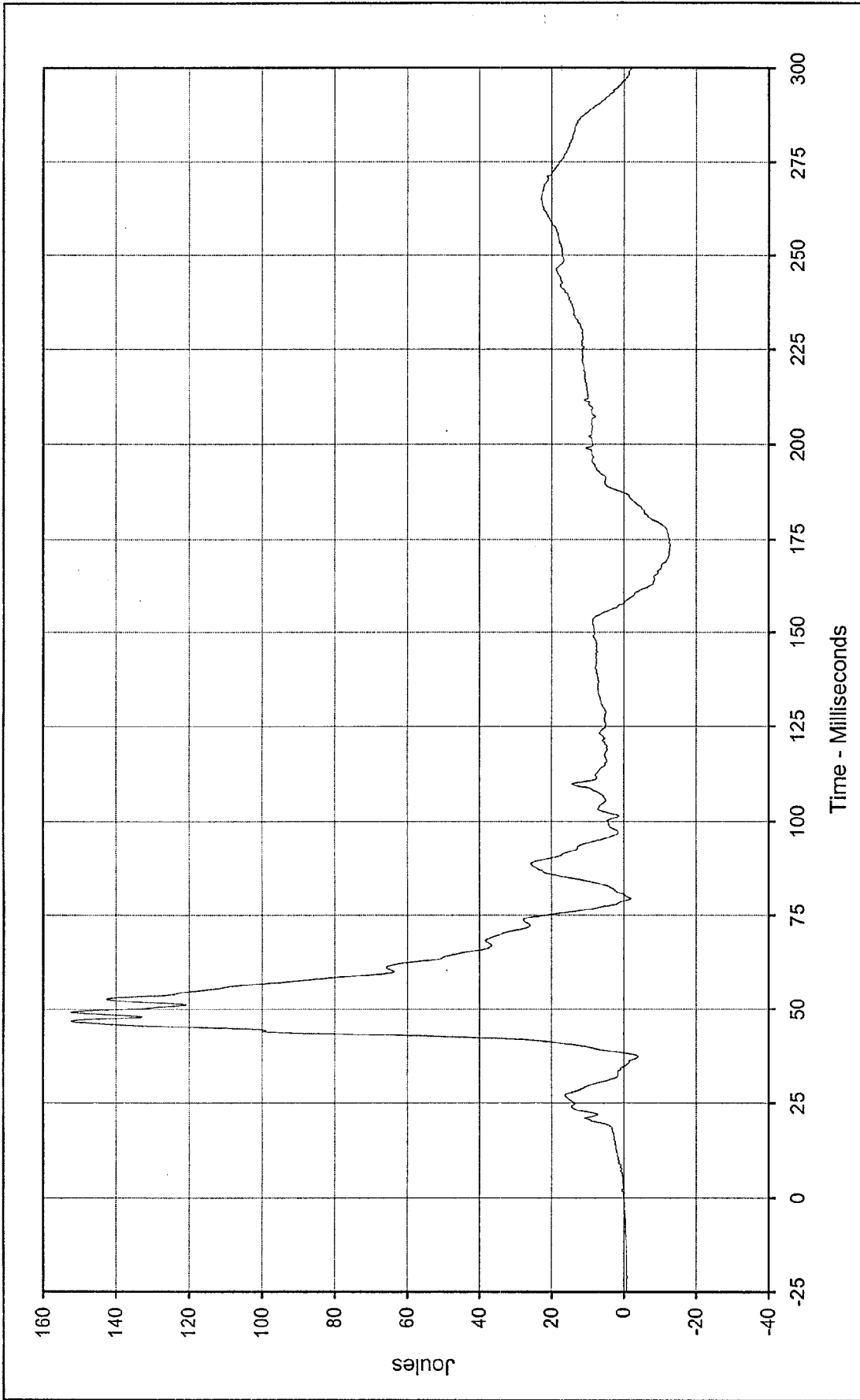




Curve Description: Driver Right Upper Tibia Moment X
 Maximum Value: 52.9 at 52.7 Milliseconds
 Minimum Value: -18.8 at 65.0 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/28/98
 Curve Number: FIL-027

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

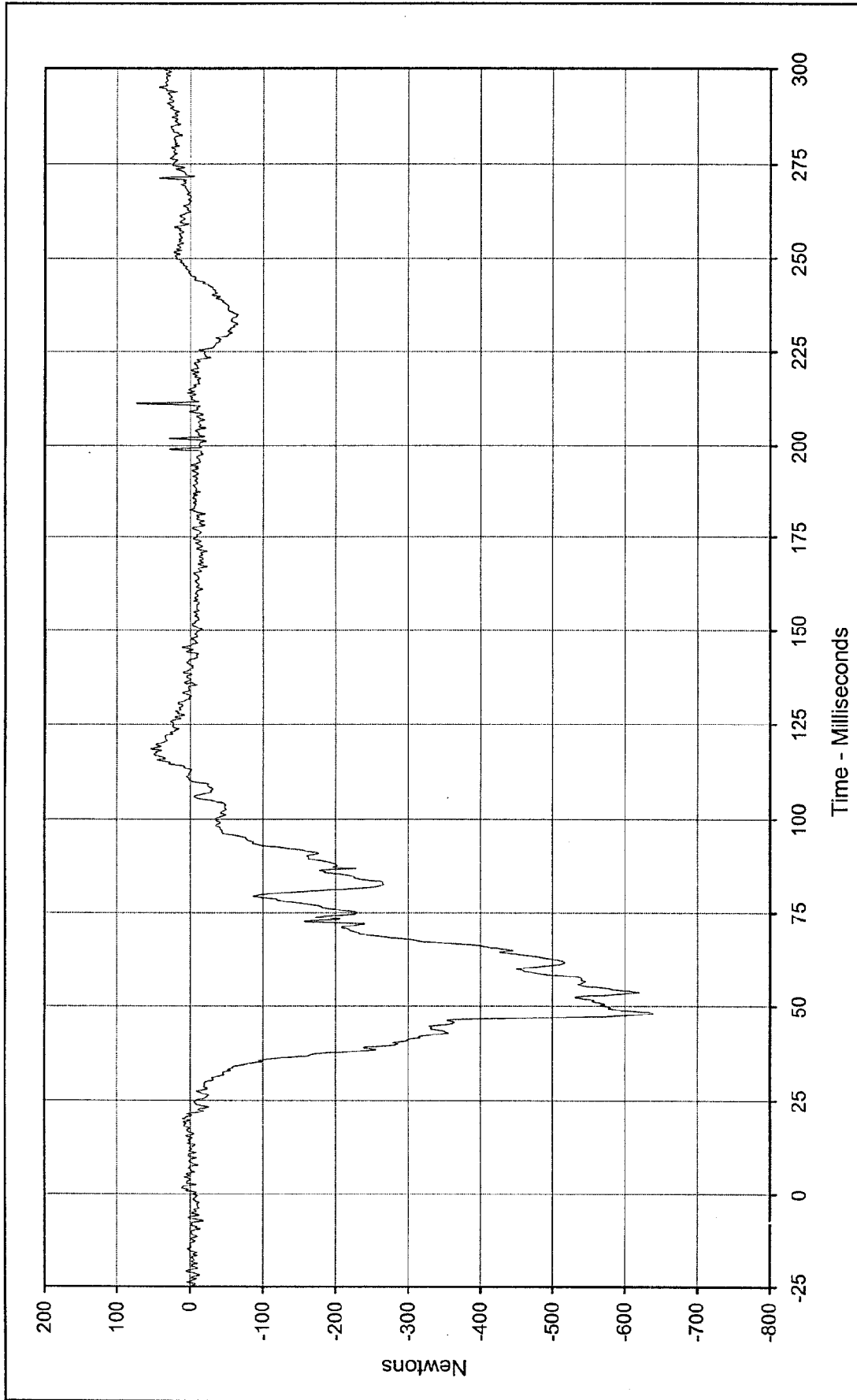




Curve Description: Driver Right Upper Tibia Moment Y
 Maximum Value: 152.4 at 49.2 Milliseconds
 Minimum Value: -12.9 at 173.6 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/28/98
 Curve Number: FIL-028

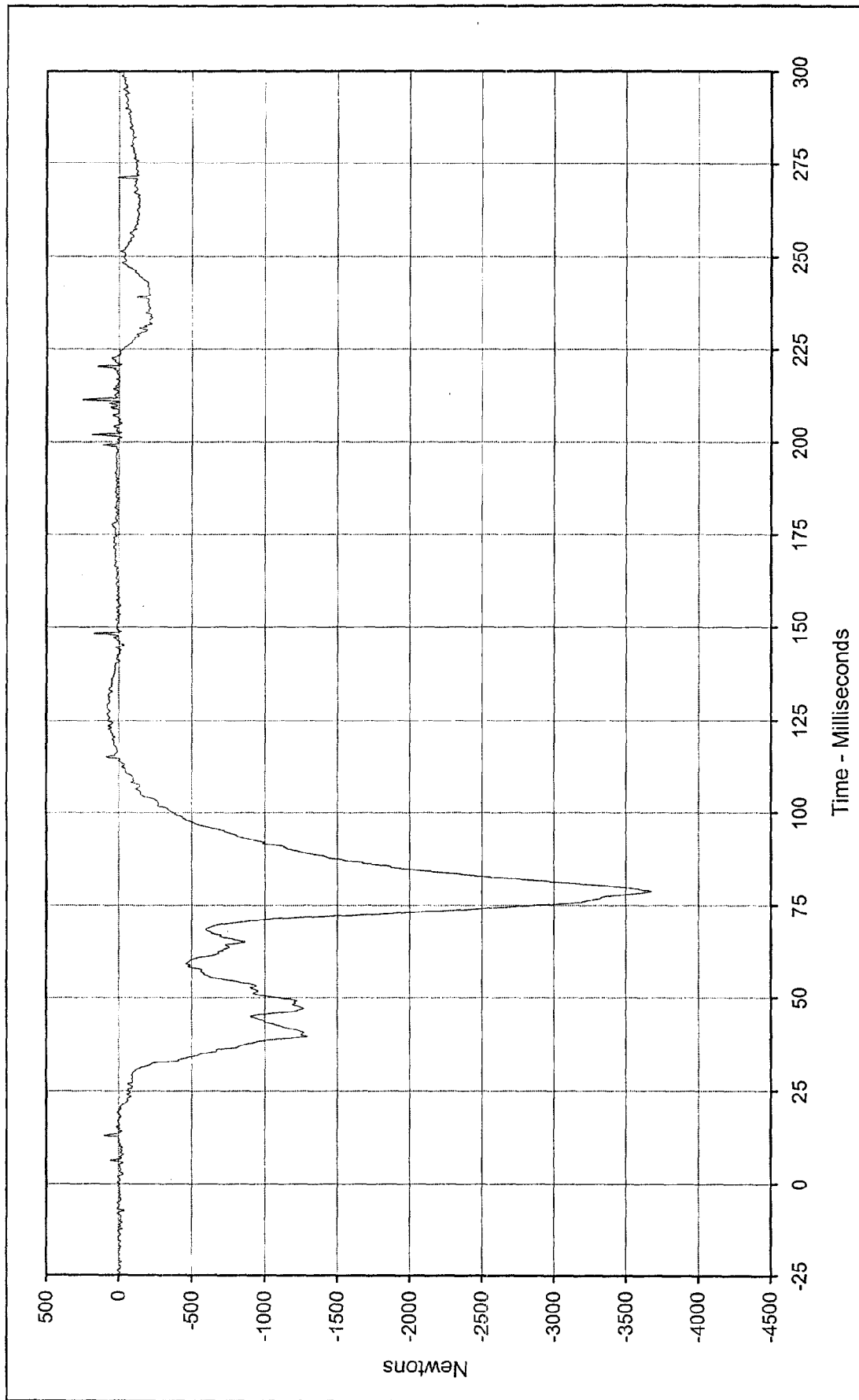
Testing Program: 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description:	Driver Left Lower Tibia Force X	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW0303
Maximum Value:	74.4	at	211.4	Milliseconds
Minimum Value:	-639.0	at	48.1	Milliseconds
SAE Filter Class:	600			
Date of Test:	1/28/98			
Curve Number:	FIL-029	Test Vehicle:	1998 Dodge Dakota SLT Pickup	

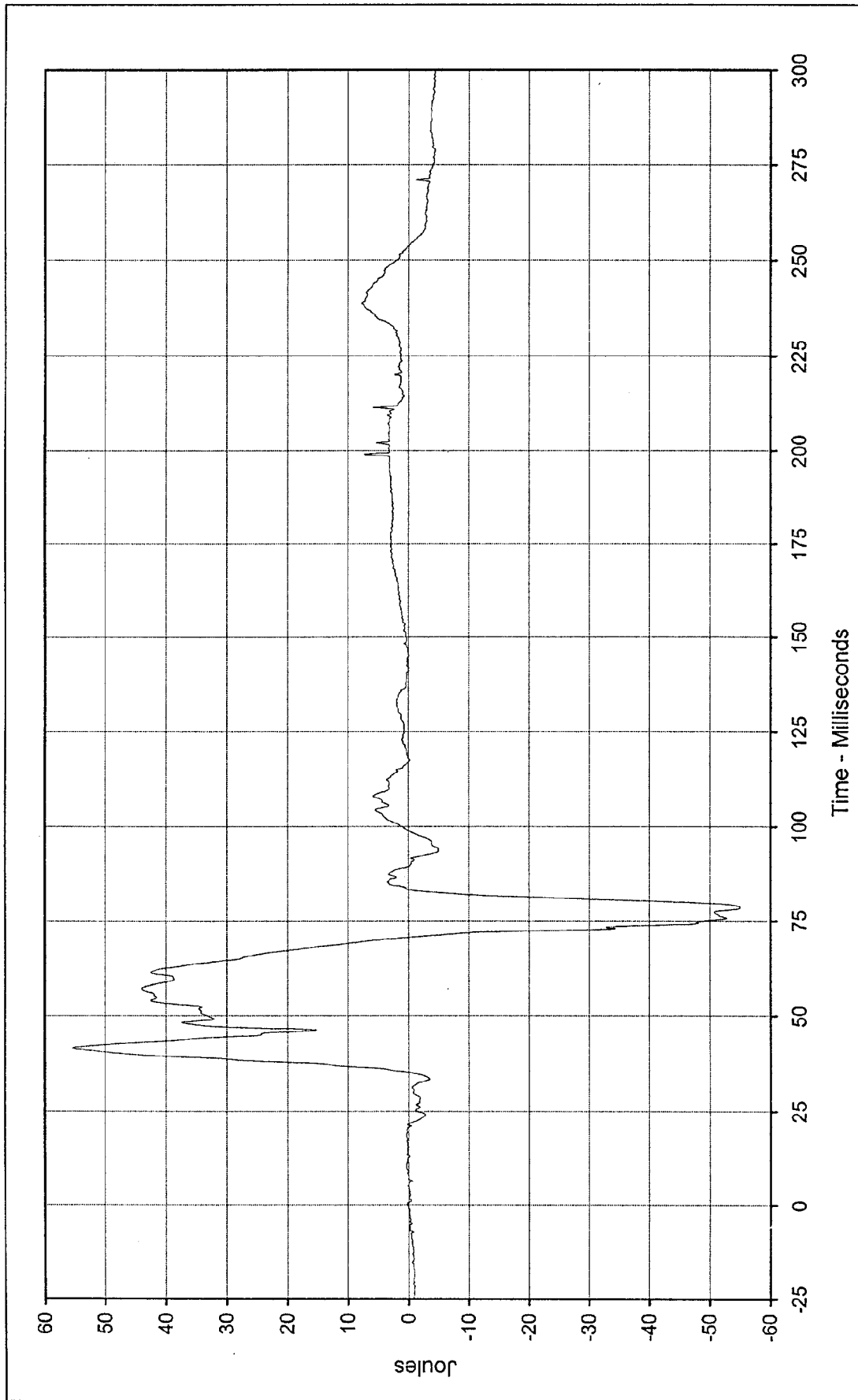




Curve Description: Driver Left Lower Tibia Force Z
 Maximum Value: 248.3 at 211.4 Milliseconds
 Minimum Value: -3677.1 at 78.8 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/28/98
 Curve Number: FIL-030

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

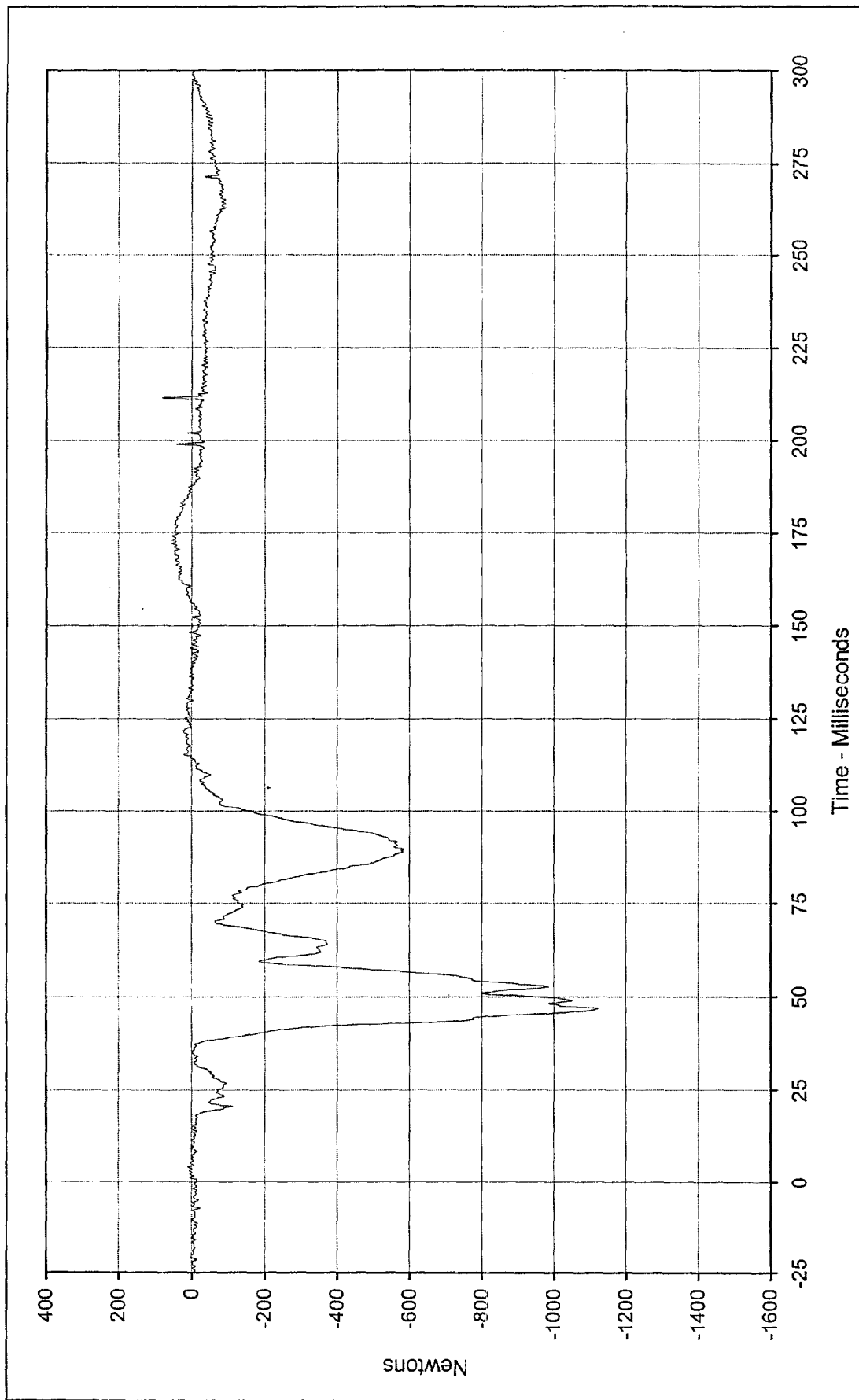




Curve Description: Driver Left Lower Tibia Moment Y
 Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

Maximum Value: 55.4 at 41.5 Milliseconds
 Minimum Value: -55.1 at 78.4 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/28/98
 Curve Number: FIL-031

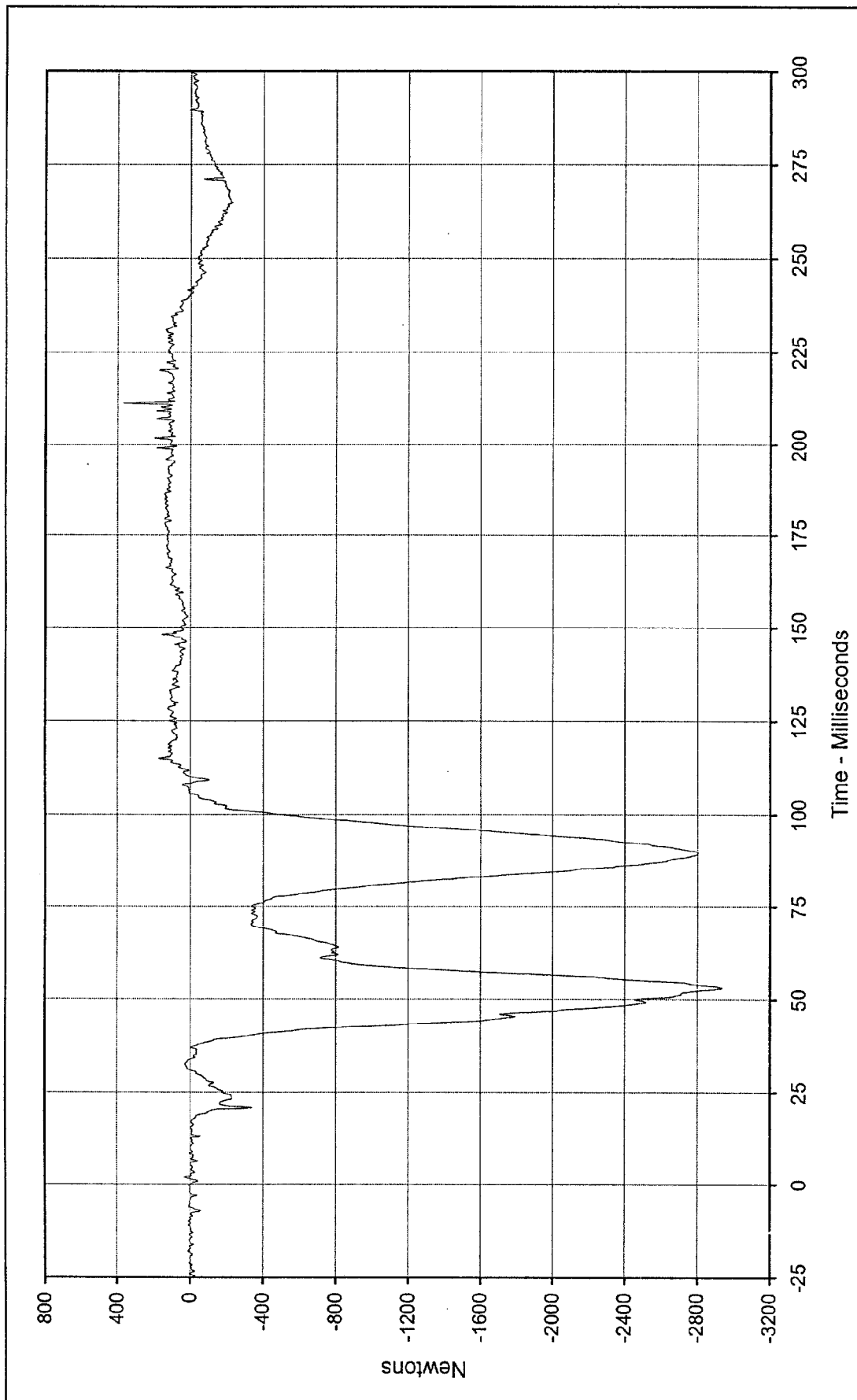




Curve Description: Driver Right Lower Tibia Force X
 Maximum Value: 81.2 at 211.4 Milliseconds
 Minimum Value: -1121.8 at 46.8 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/28/98
 Curve Number: FIL-032

Testing Program: 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

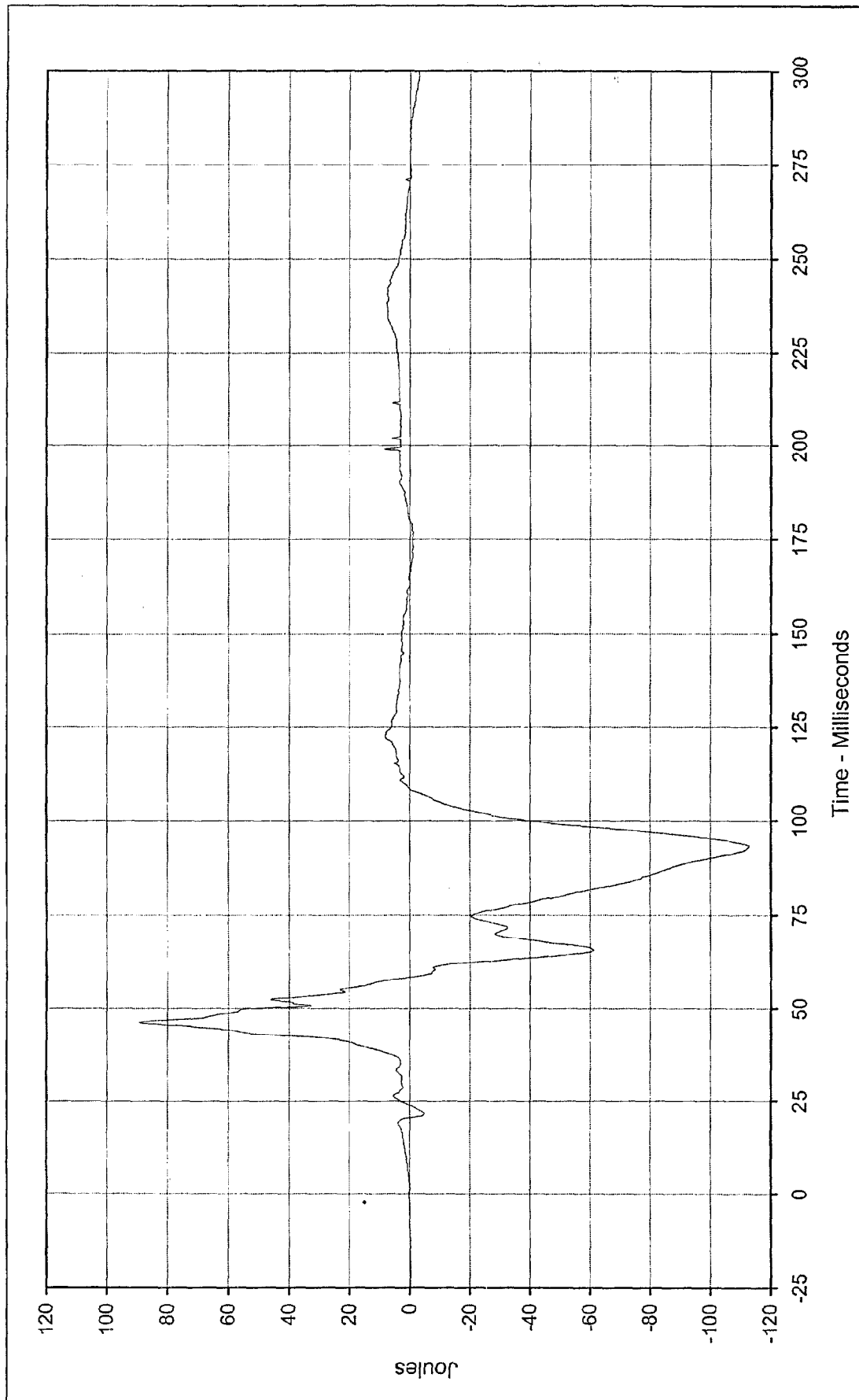




Curve Description: Driver Right Lower Tibia Force Z
 Testing Program: 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

Maximum Value: 369.4 at 211.4 Milliseconds
 Minimum Value: -2937.4 at 53.0 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/28/98
 Curve Number: FIL-033

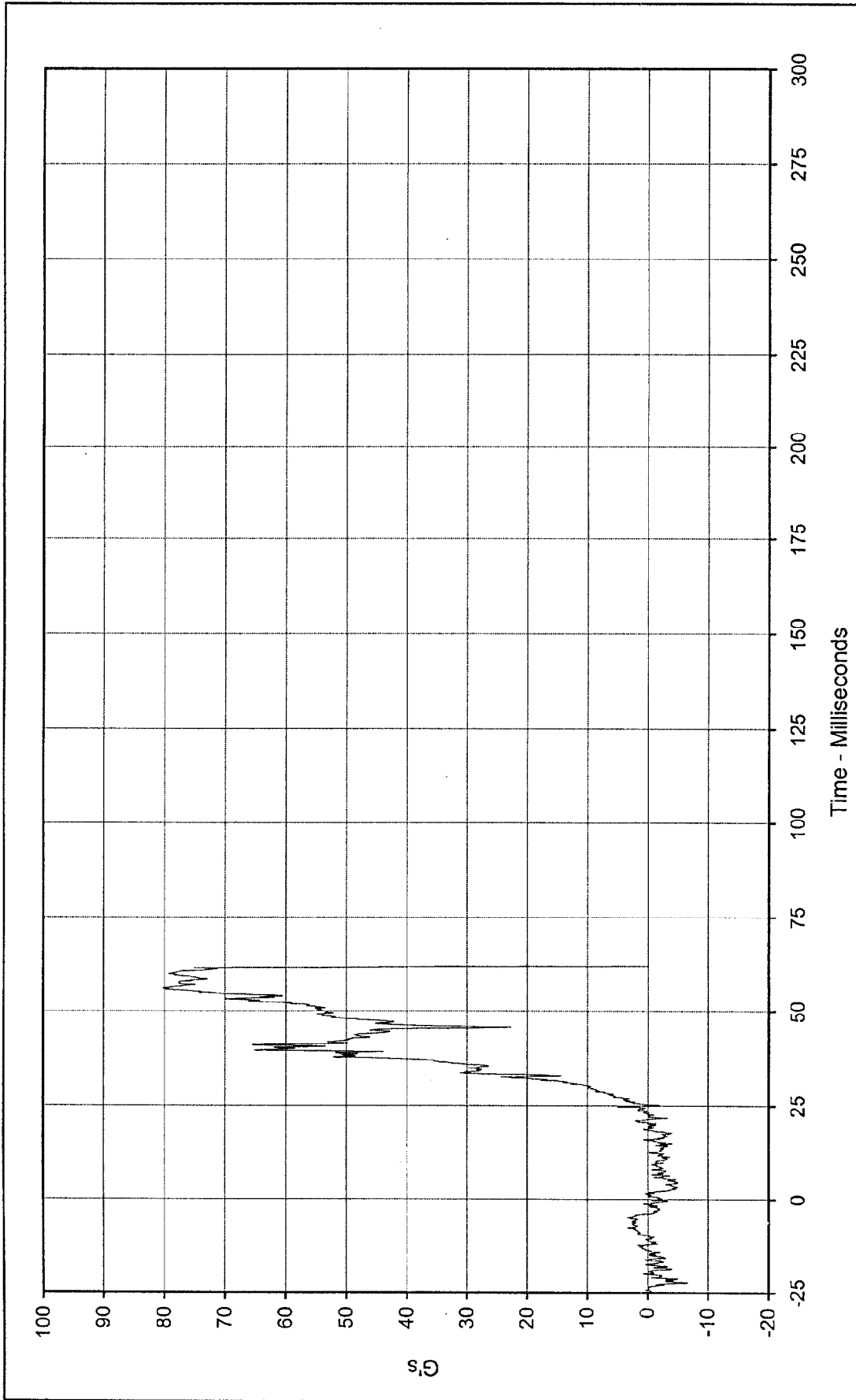




Curve Description: Driver Right Lower Tibia Moment Y
 Maximum Value: 89.3 at 46.3 Milliseconds
 Minimum Value: -112.9 at 92.9 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/28/98
 Curve Number: FIL-034

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

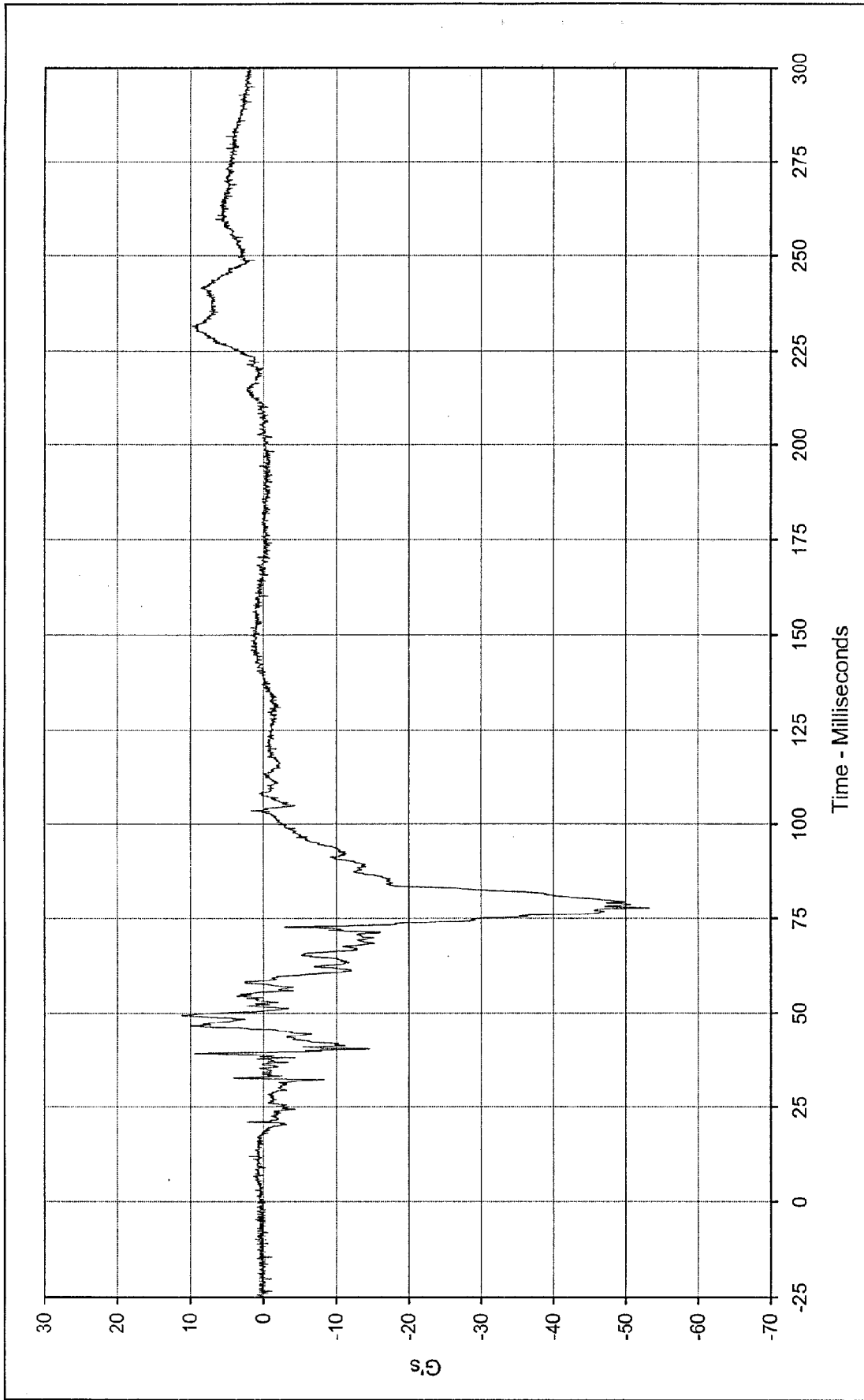




Curve Description: Driver Left Foot Aft X *
 Maximum Value: 80.3 at 56.0 Milliseconds
 Minimum Value: -5.0 at 3.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: FIL-035



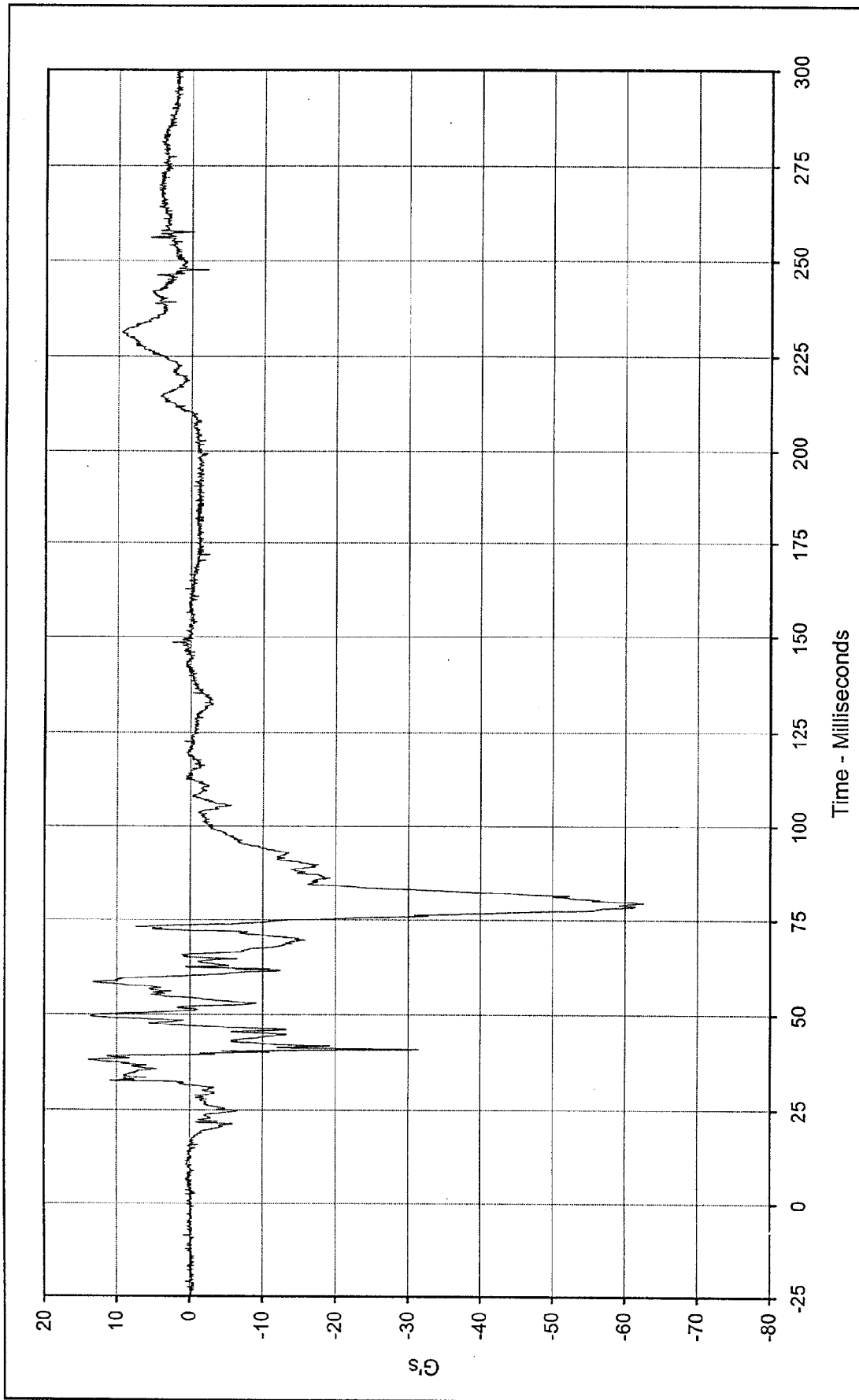
* Channel Failed at 62.0 Msec.



Curve Description: Driver Left Foot Aft Z
 Maximum Value: 11.2 at 49.3 Milliseconds
 Minimum Value: -53.4 at 77.7 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: FIL-036

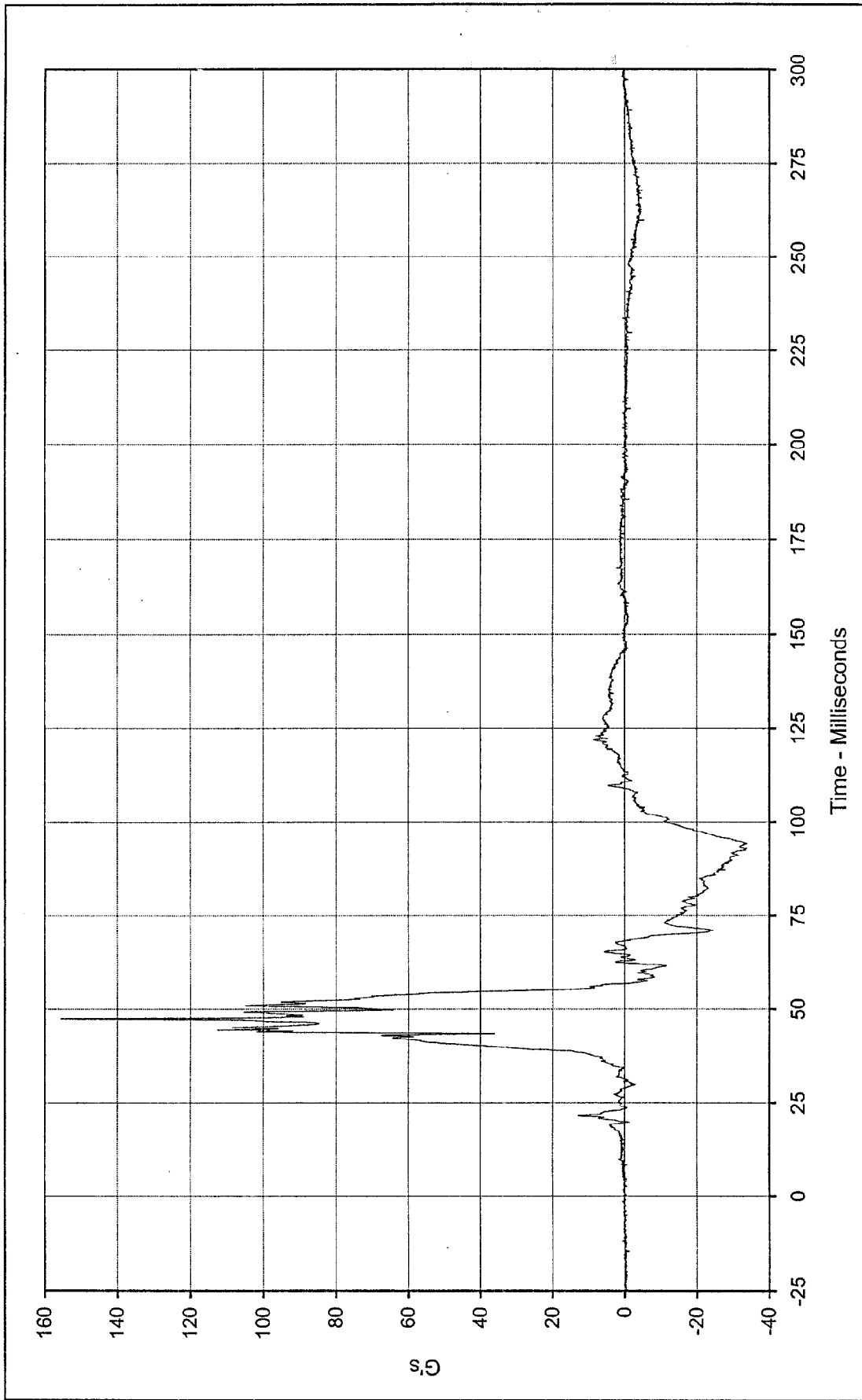
Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description:	Driver Left Foot Fore Z	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW0303
Maximum Value:	13.9 at 38.3 Milliseconds	Test Vehicle:	1998 Dodge Dakota SLT Pickup	
Minimum Value:	-62.5 at 79.5 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	1/28/98			
Curve Number:	FIL-037			

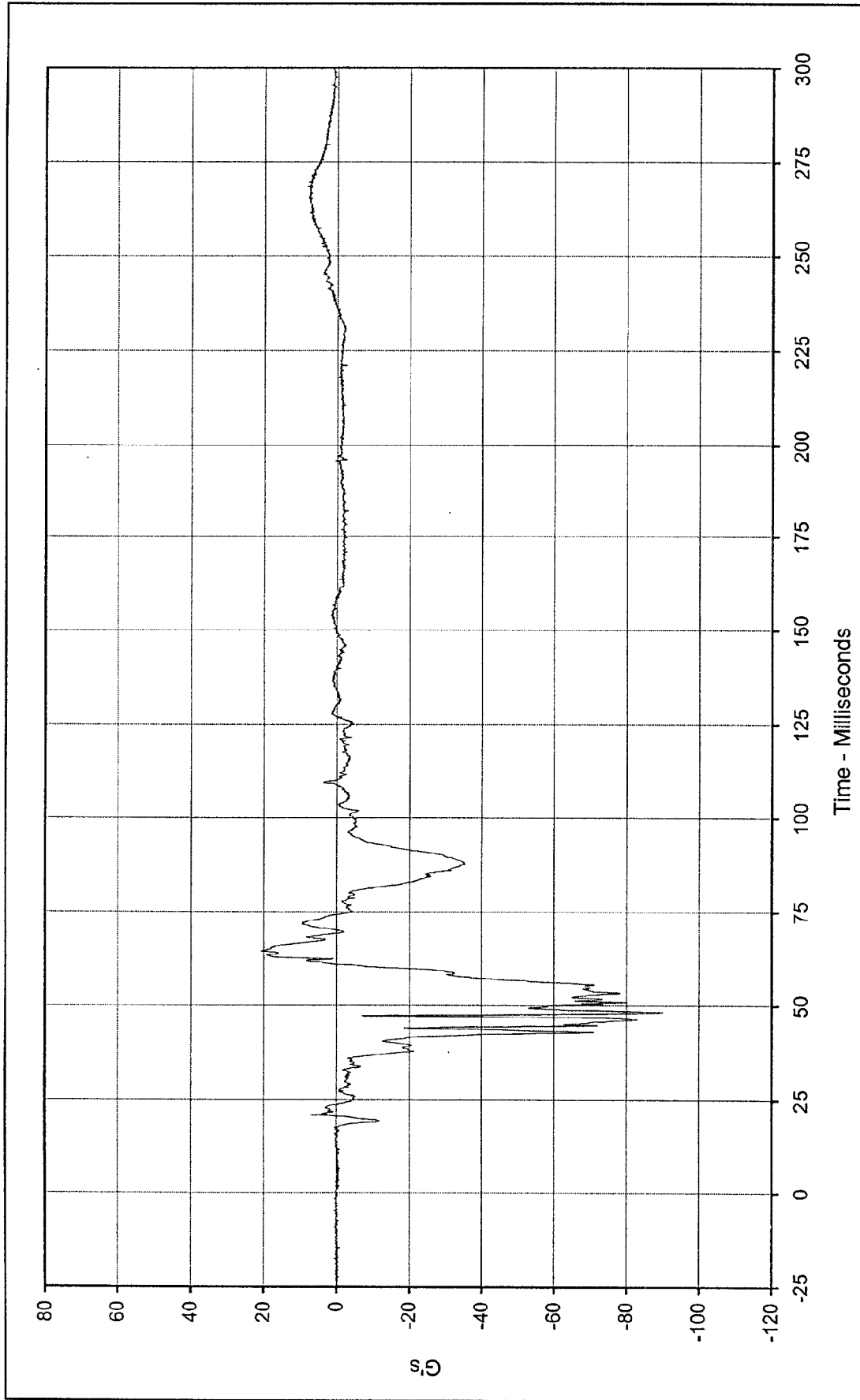




Curve Description: Driver Right Foot Aft X
 Maximum Value: 155.5 at 47.4 Milliseconds
 Minimum Value: -33.9 at 92.7 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: FIL-038

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

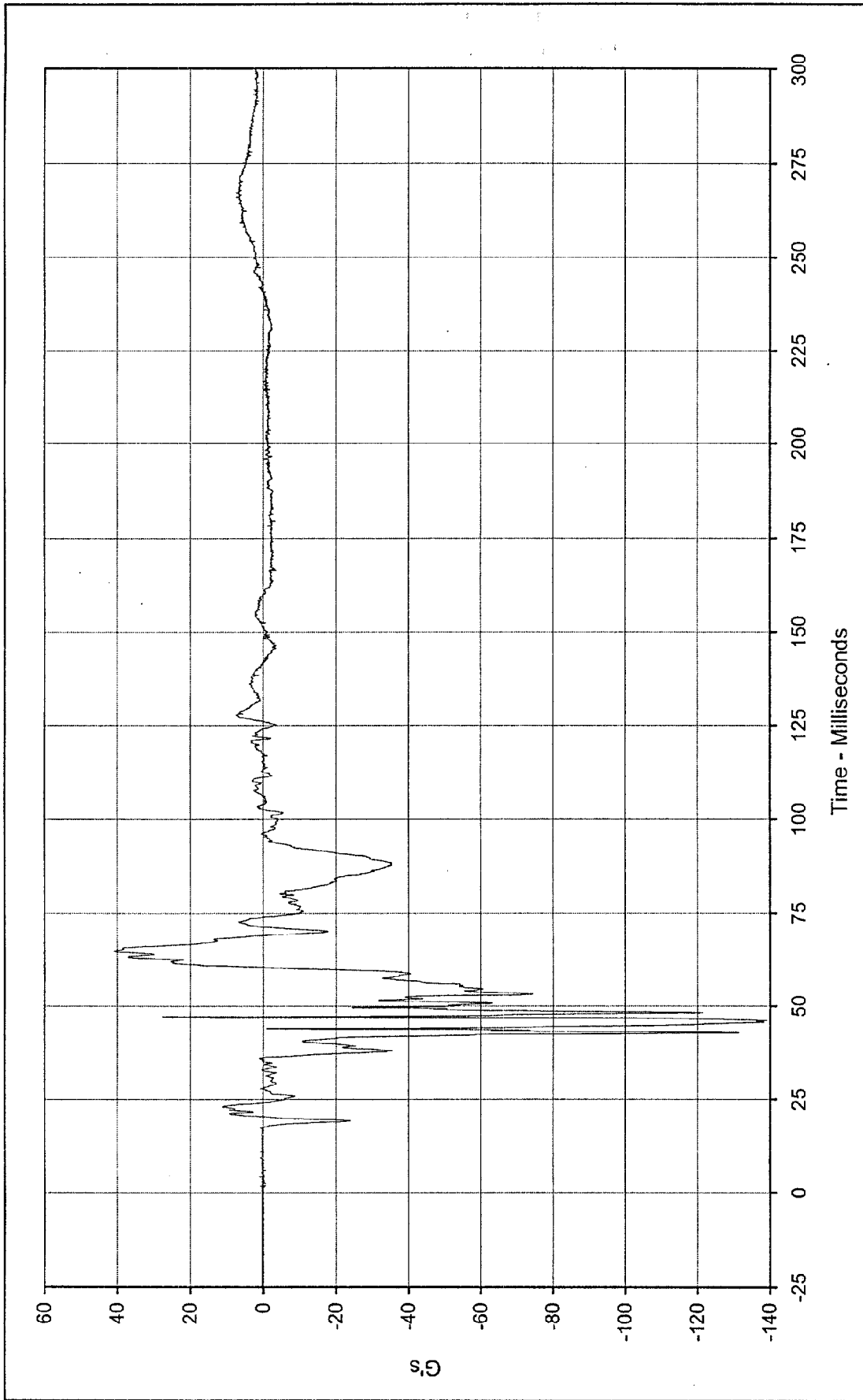




Curve Description: Driver Right Foot Aft Z
 Maximum Value: 20.7 at 64.4 Milliseconds
 Minimum Value: -90.0 at 48.3 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: FIL-039

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

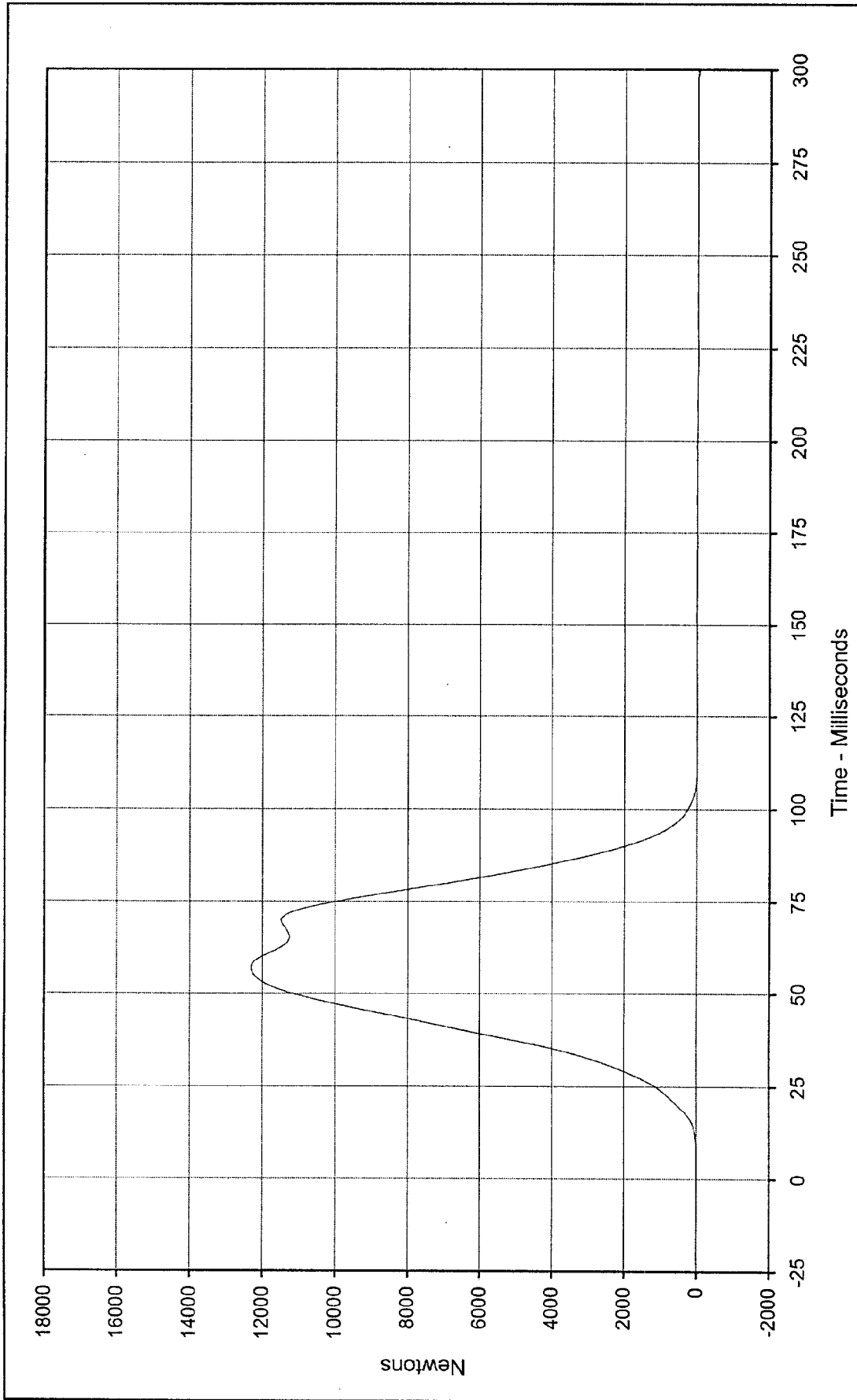




Curve Description: Driver Right Foot Fore Z
 Maximum Value: 40.8 at 64.6 Milliseconds
 Minimum Value: -139.2 at 46.1 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: FIL-040

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Driver Lap Belt Force Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Maximum Value: 12311.0 at 57.0 Milliseconds Test Vehicle: 1998 Dodge Dakota SLT Pickup

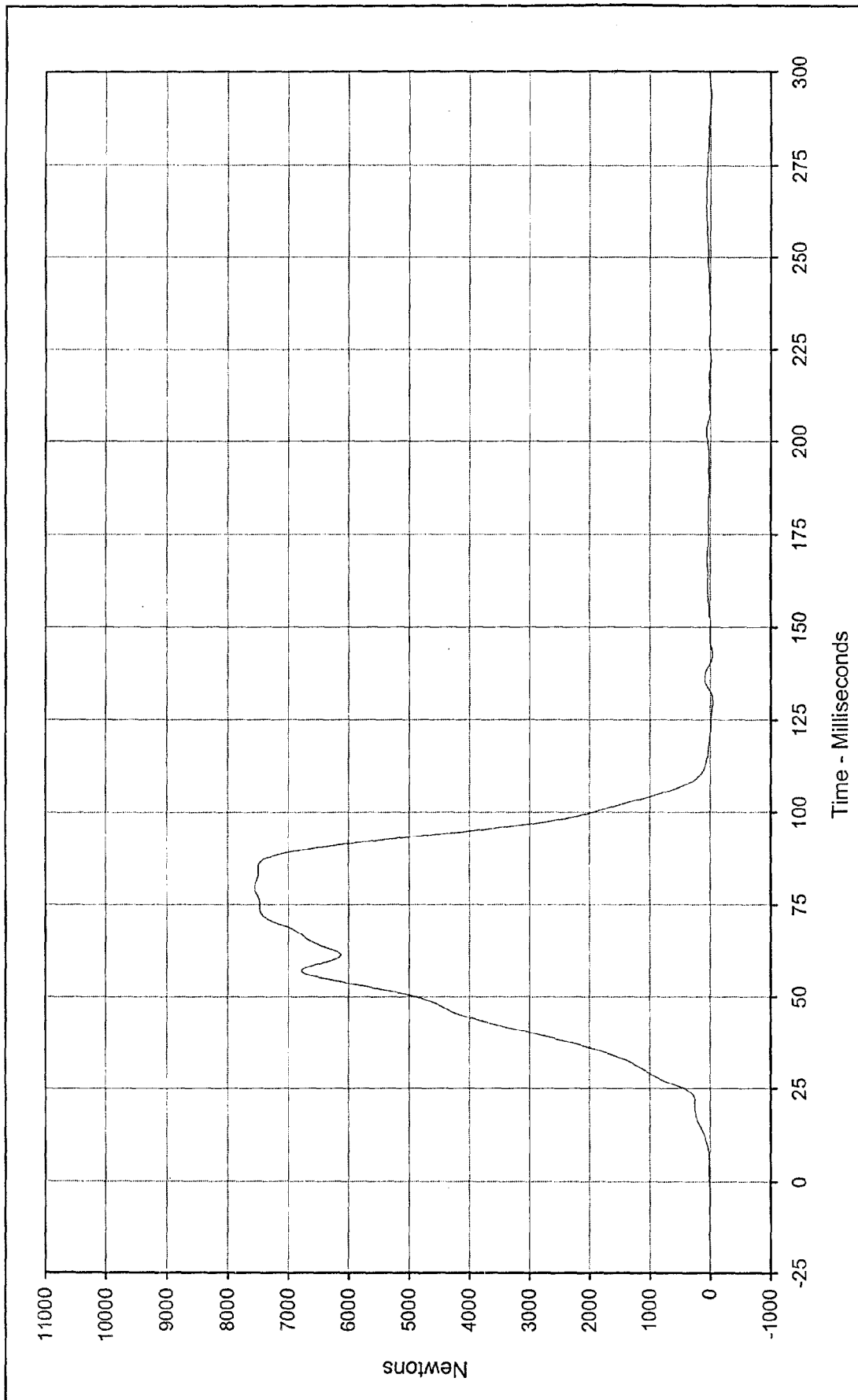
Minimum Value: -48.8 at 299.9 Milliseconds

SAE Filter Class: 60

Date of Test: 1/28/98

Curve Number: FIL-041

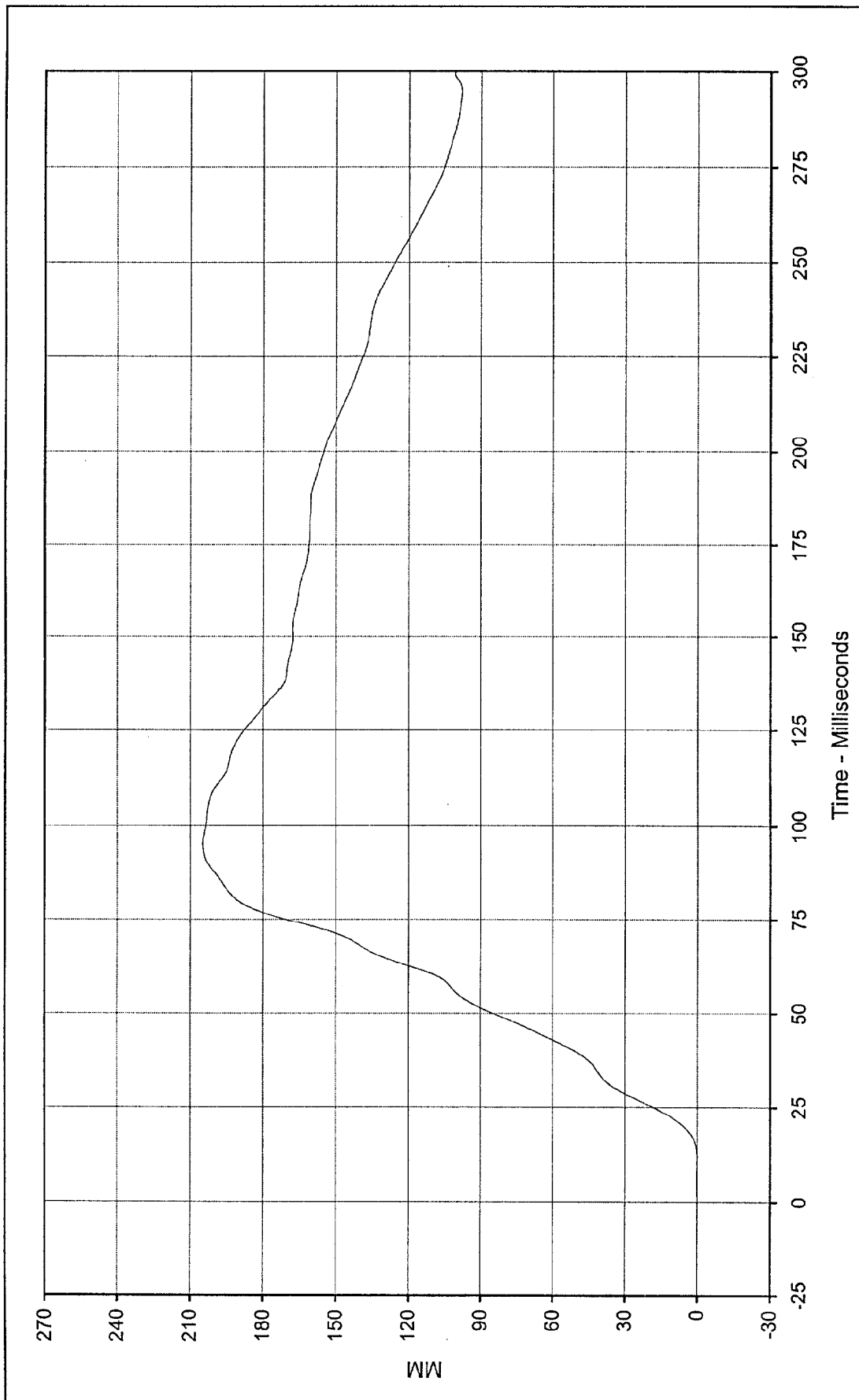




Curve Description: Driver Shoulder Belt Force
 Maximum Value: 7557.8 at 79.7 Milliseconds
 Minimum Value: -40.8 at 129.8 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/28/98
 Curve Number: FIL-042

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Driver Shoulder Belt Pullout

Maximum Value: 204.7 at 95.4 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 60

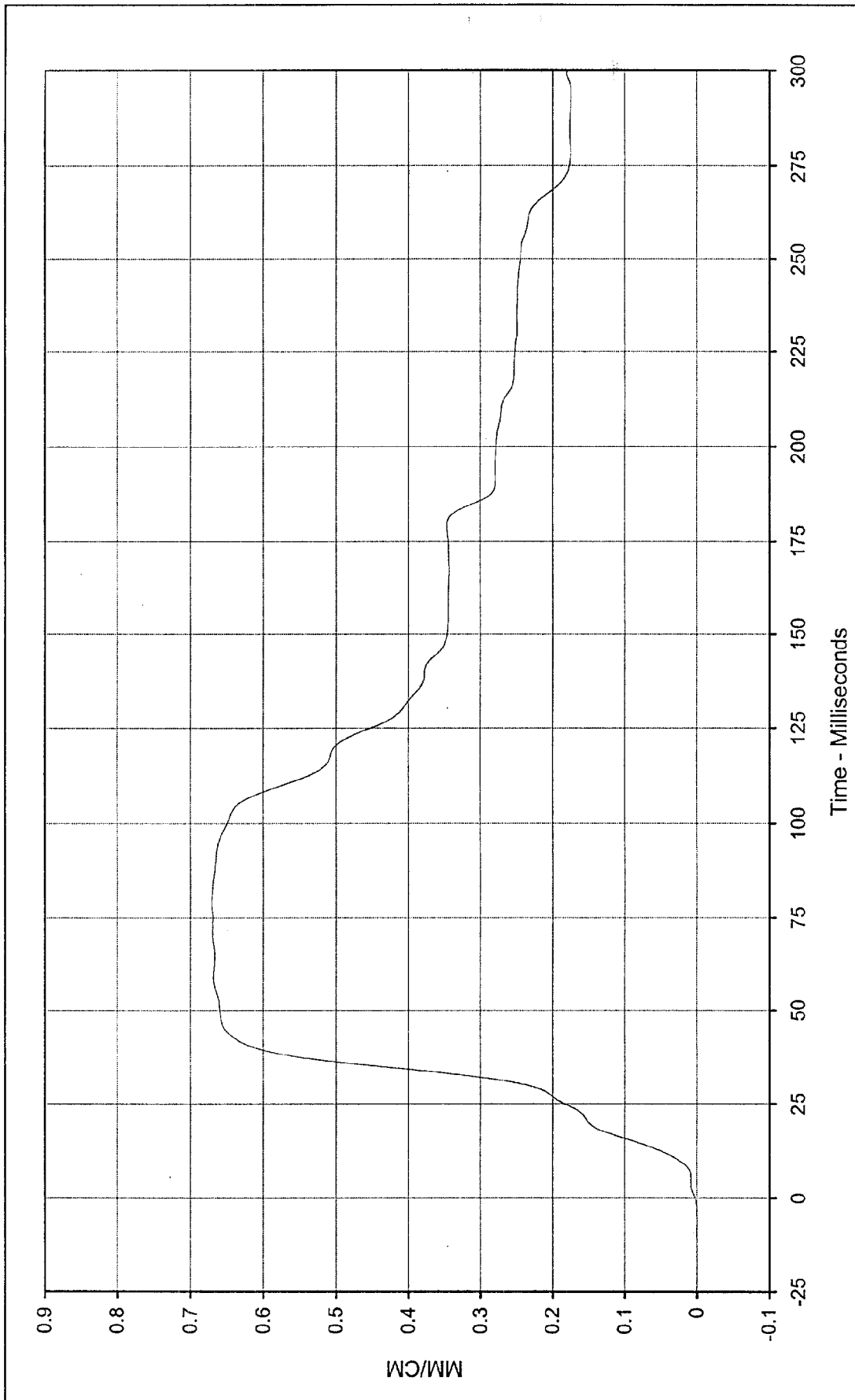
Date of Test: 1/28/98

Curve Number: FIL-043

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup

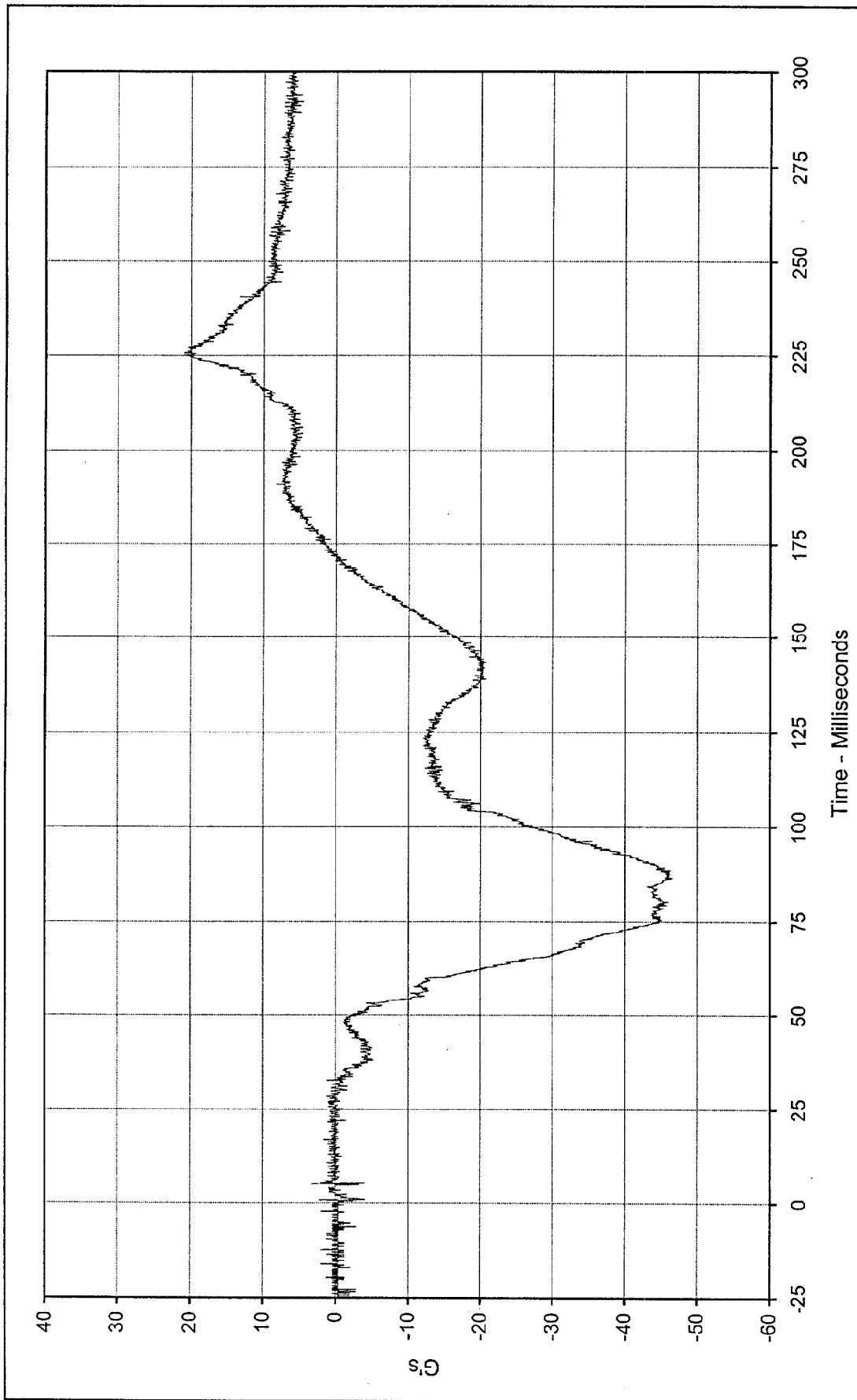




Curve Description: Driver Shoulder Belt Elongation
 Maximum Value: 0.67 at 78.9 Milliseconds
 Minimum Value: 0.00 at 0.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/28/98
 Curve Number: FIL-044

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

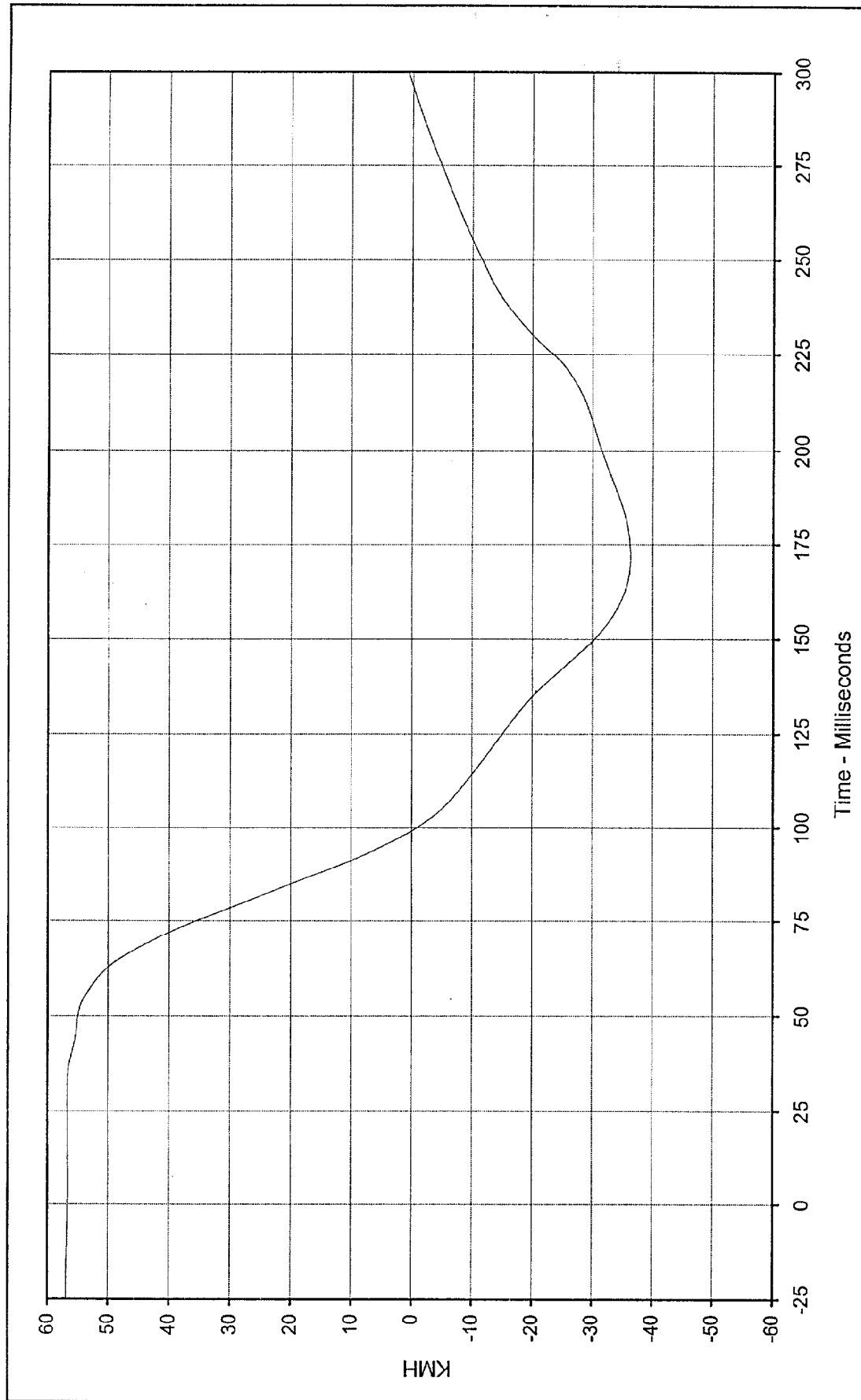




Curve Description: Passenger Head Primary X
 Maximum Value: 21.0 at 225.1 Milliseconds
 Minimum Value: -46.6 at 86.4 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: FIL-045

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

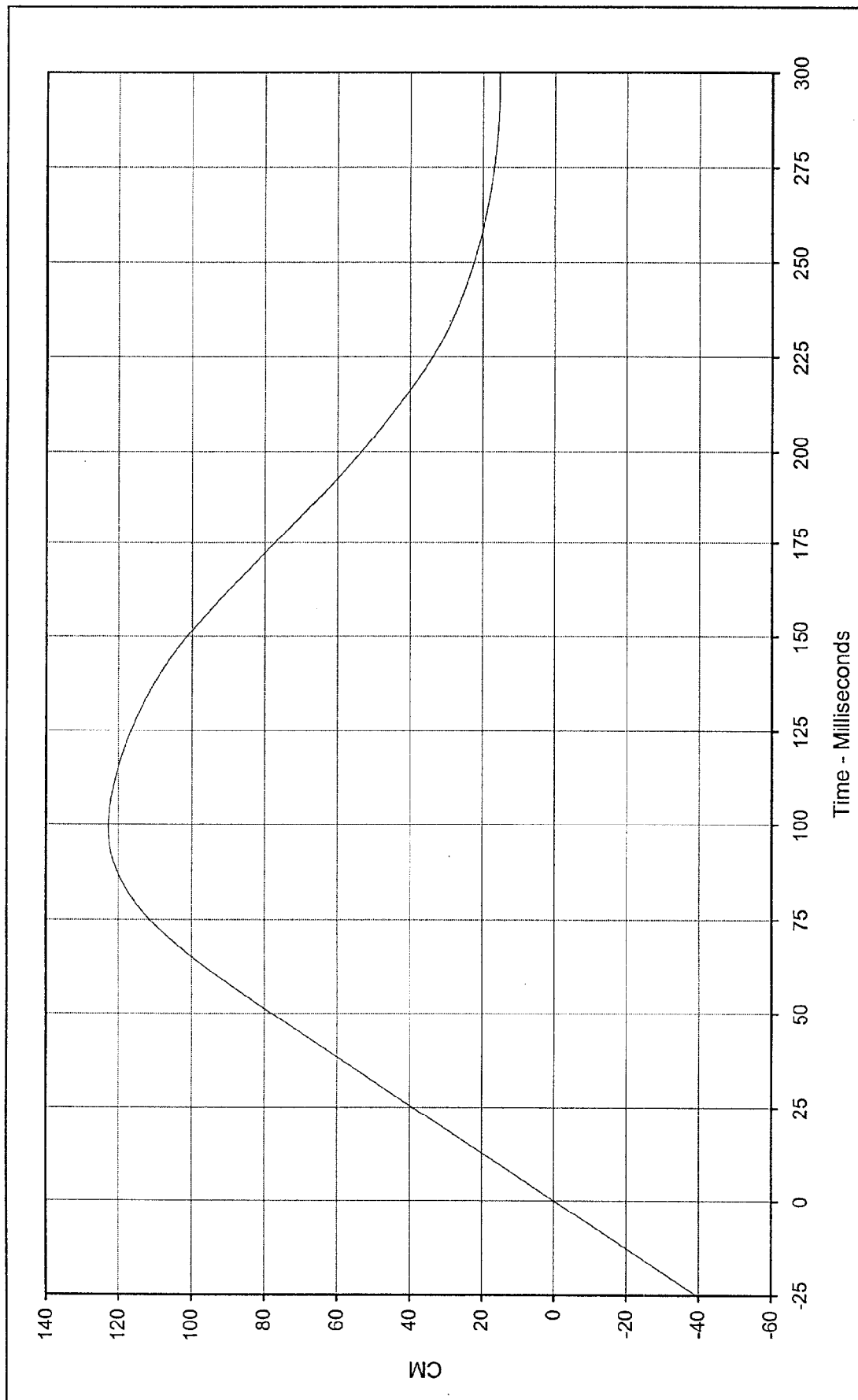




Curve Description: Passenger Head Primary X Velocity
 Maximum Value: 56.7 at 29.1 Milliseconds
 Minimum Value: -36.4 at 171.7 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: IN1-045

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Passenger Head Primary X Displ.

Maximum Value: 122.8 at 99.1 Milliseconds

Minimum Value: -0.1 at 0.0 Milliseconds

SAE Filter Class: 180

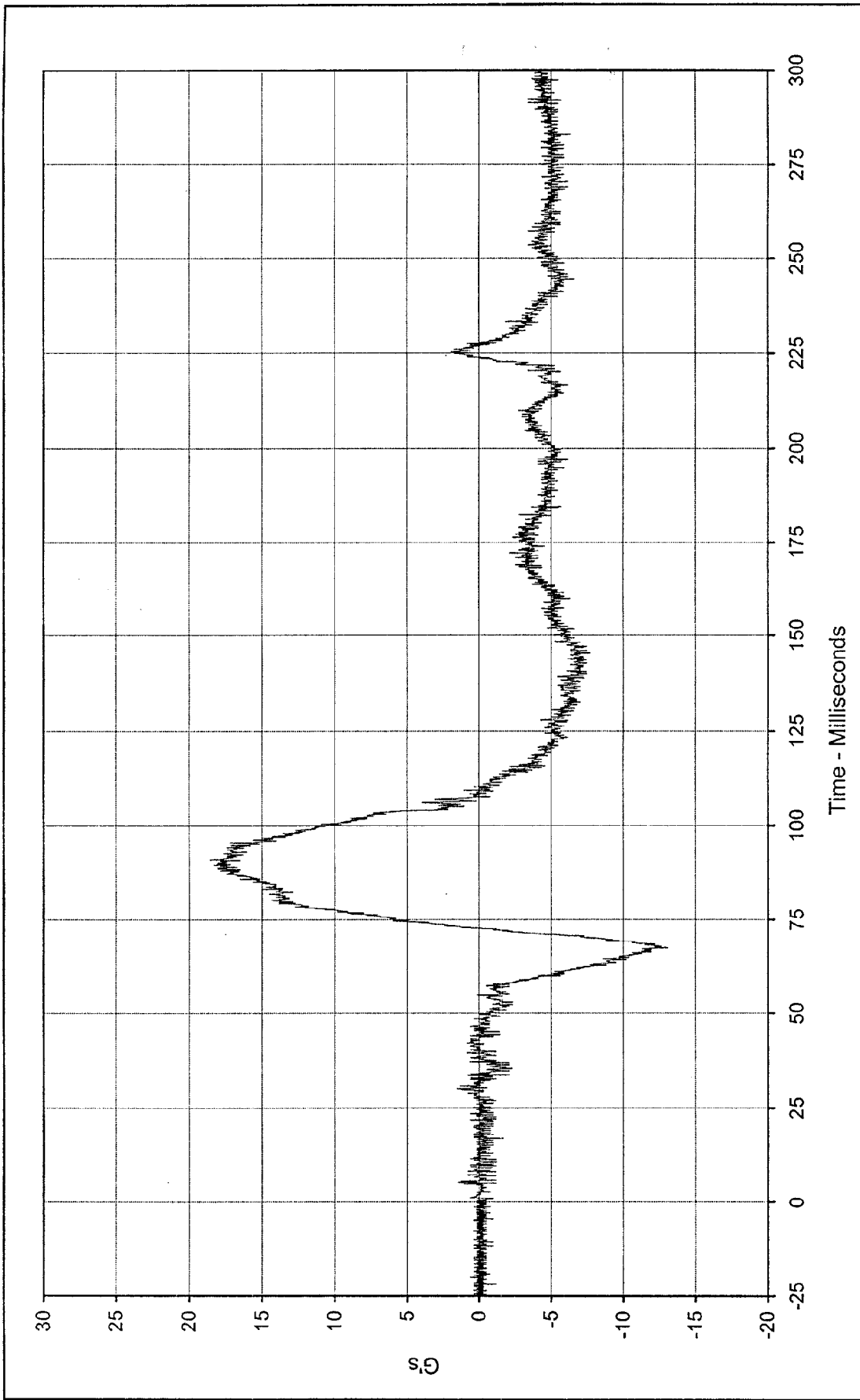
Date of Test: 1/28/98

Curve Number: IN2-045

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup

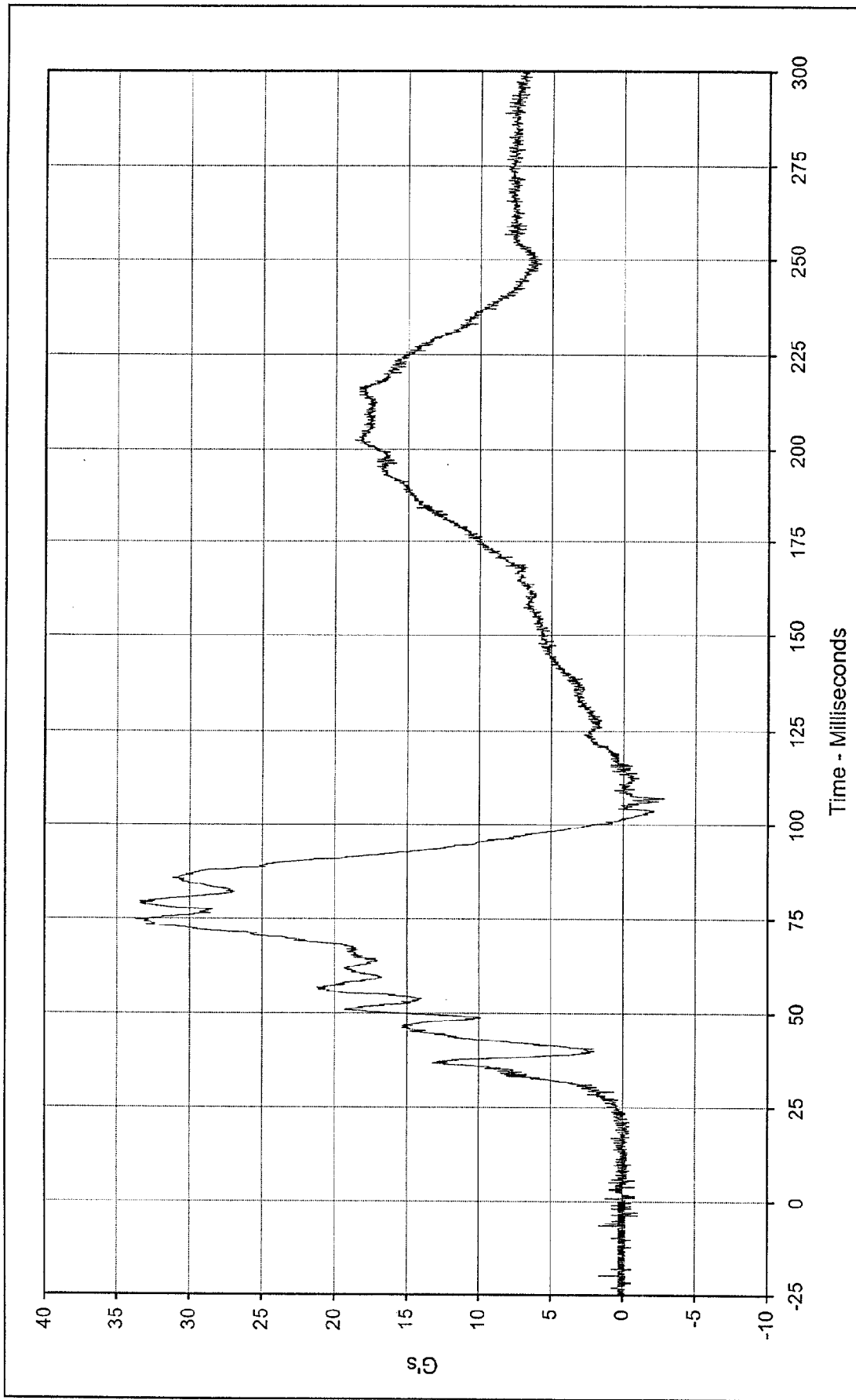




Curve Description: Passenger Head Primary Y
 Maximum Value: 18.5 at 90.8 Milliseconds
 Minimum Value: -13.1 at 67.3 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: FIL-046

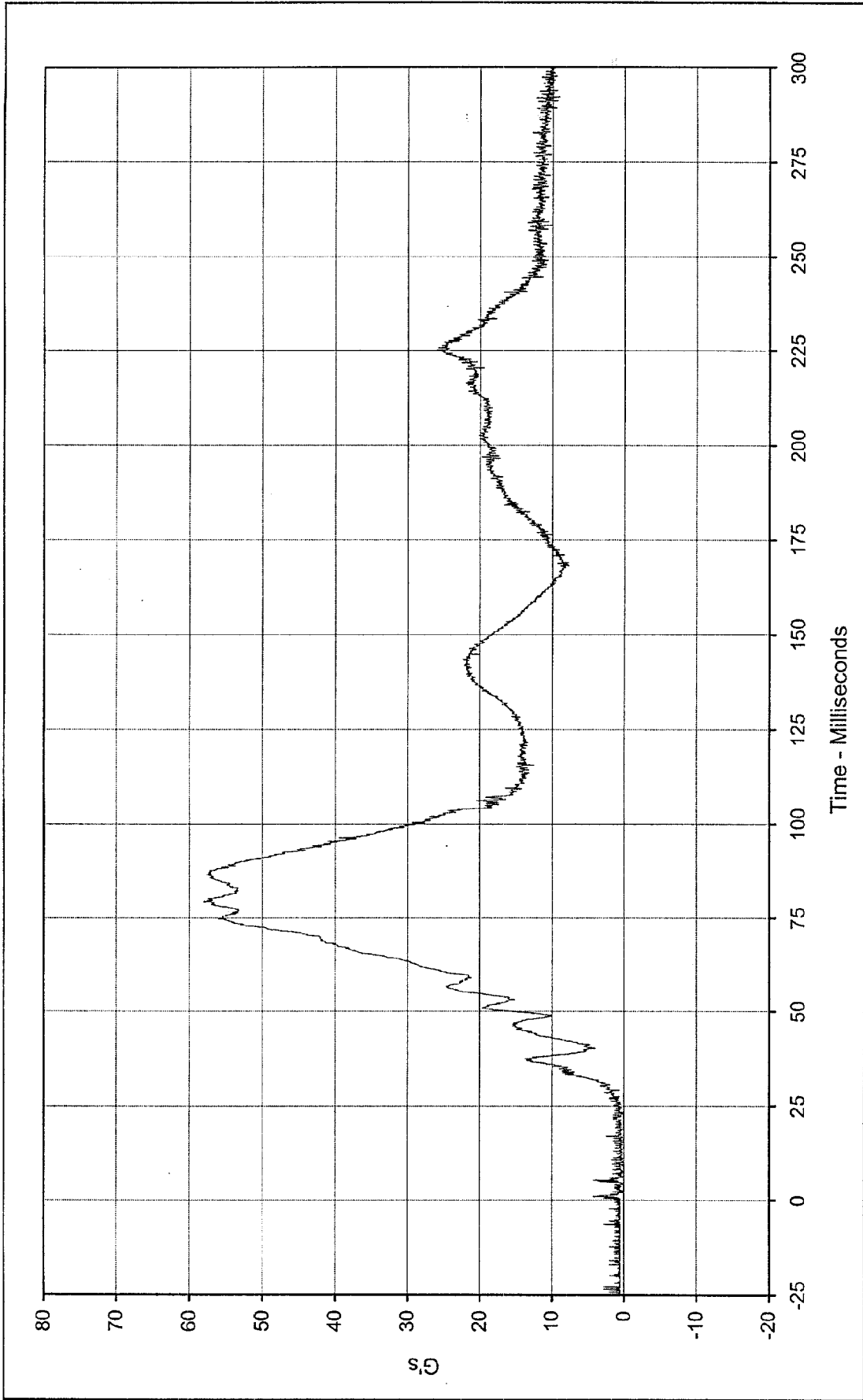
Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description:	Passenger Head Primary Z	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW0303
Maximum Value:	33.7 at 74.8 Milliseconds	Test Vehicle:	1998 Dodge Dakota SLT Pickup	
Minimum Value:	-2.9 at 107.0 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	1/28/98			
Curve Number:	FIL-047			

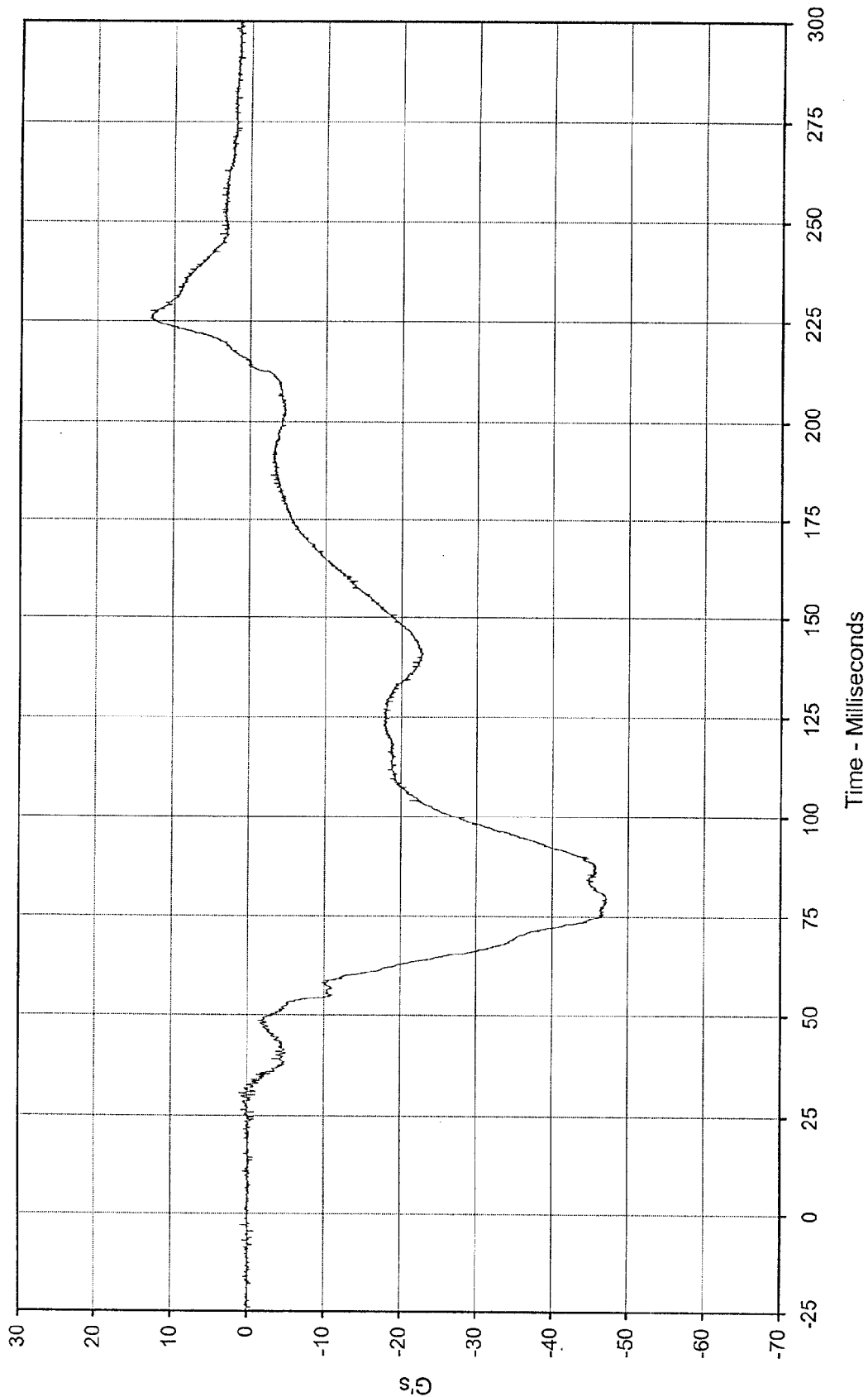




Curve Description: Passenger Head Resultant Primary
 Maximum Value: 58.1 at 79.3 Milliseconds
 Minimum Value: 0.1 at 6.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: RES-045

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

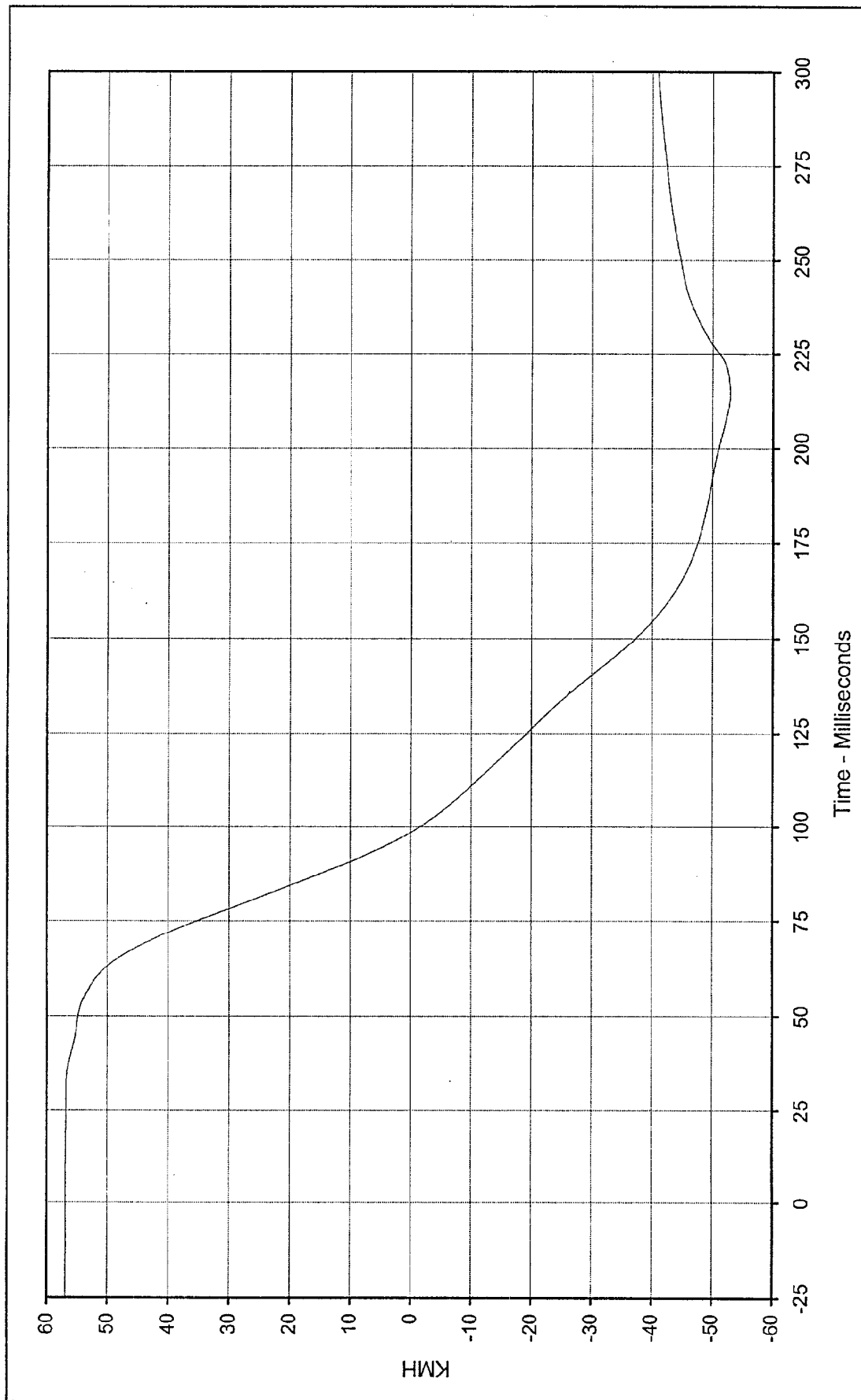




Curve Description: Passenger Head Redundant X
 Maximum Value: 13.1 at 225.7 Milliseconds
 Minimum Value: -47.3 at 78.5 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: FIL-048

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

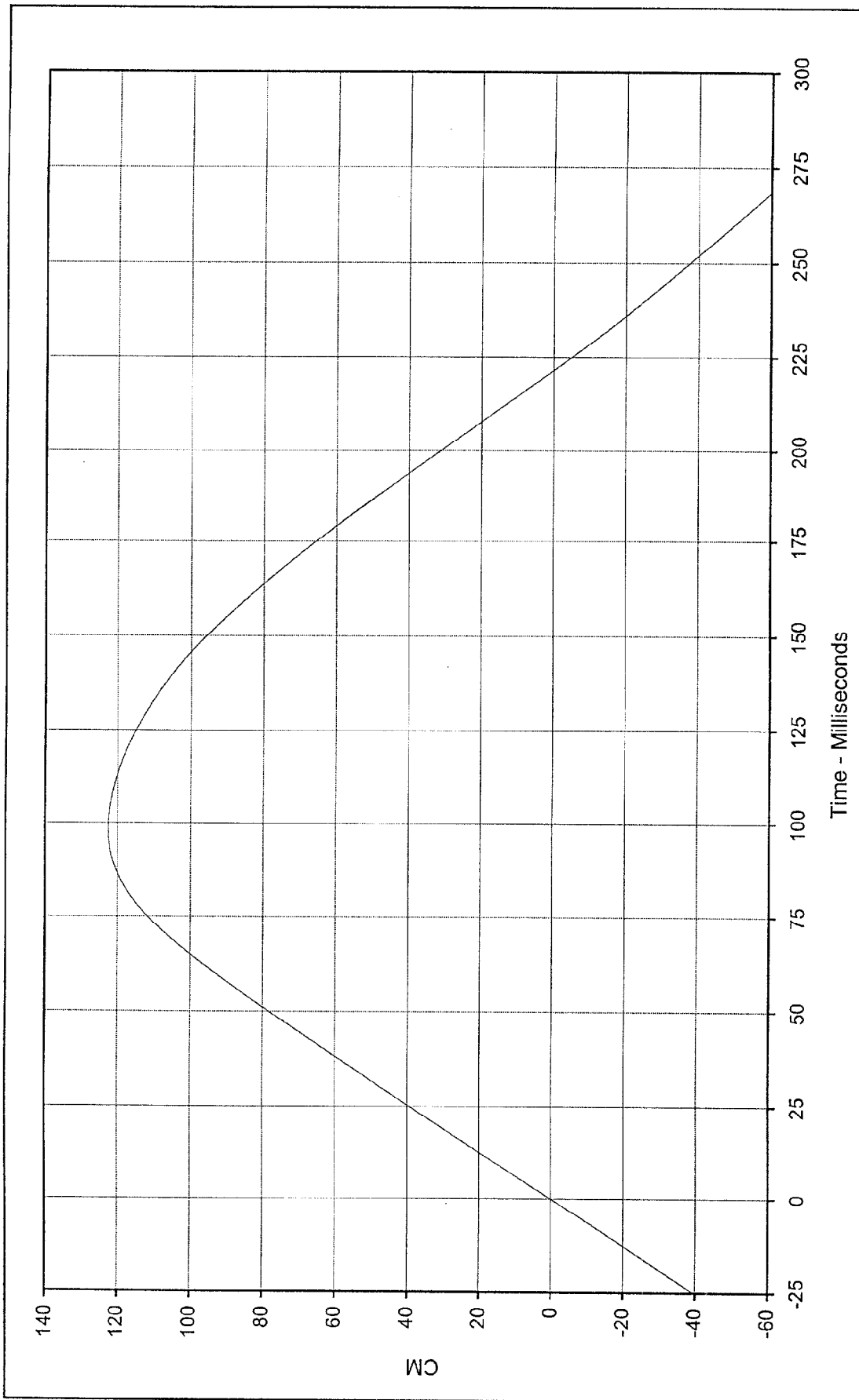




Curve Description: Passenger Head Redundant X Velocity
 Maximum Value: 56.9 at 2.7 Milliseconds
 Minimum Value: -53.0 at 214.4 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: IN1-048

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

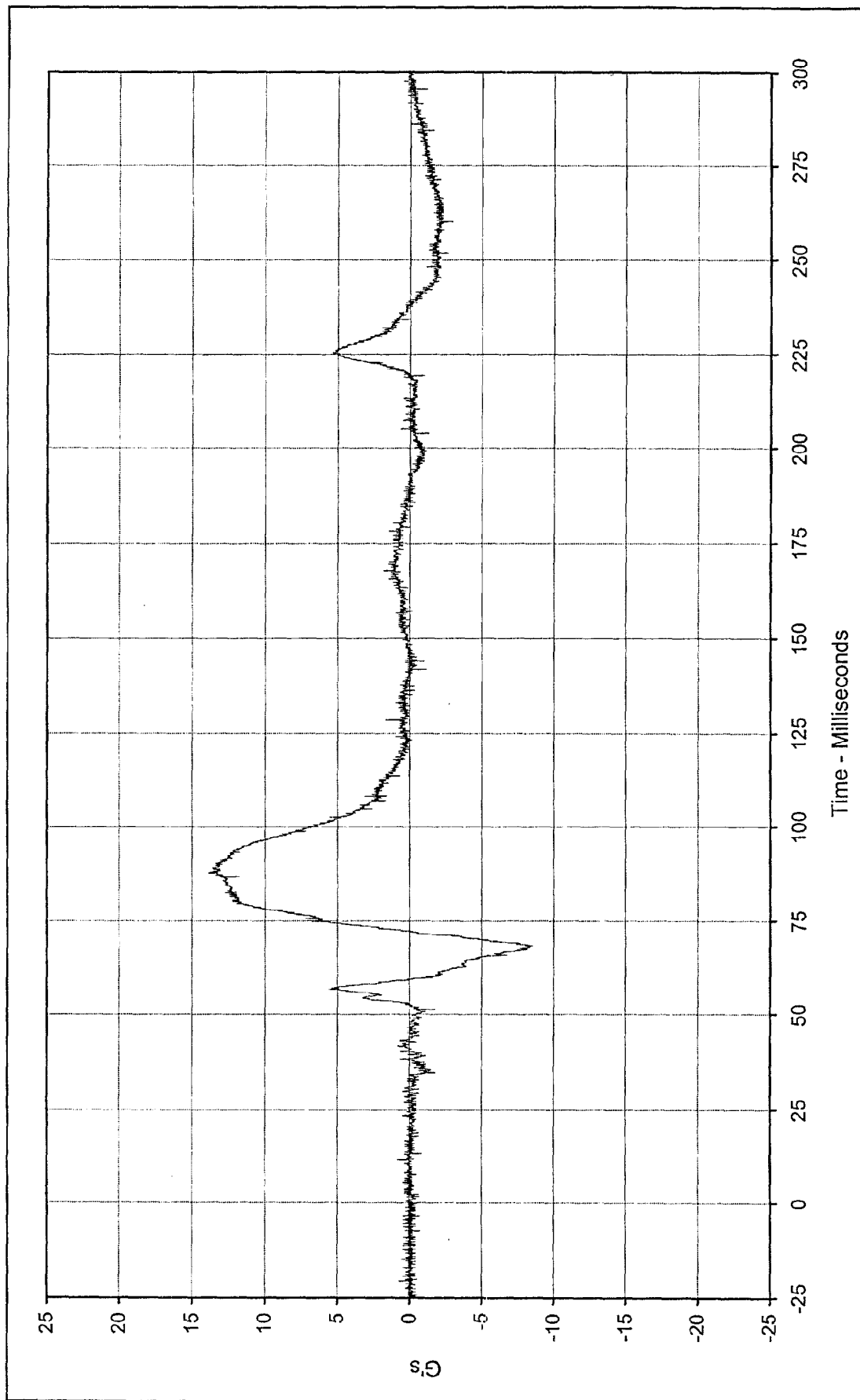




Curve Description: Passenger Head Redundant X Displ.
 Maximum Value: 122.5 at 98.5 Milliseconds
 Minimum Value: -96.4 at 299.9 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: IN2-048

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

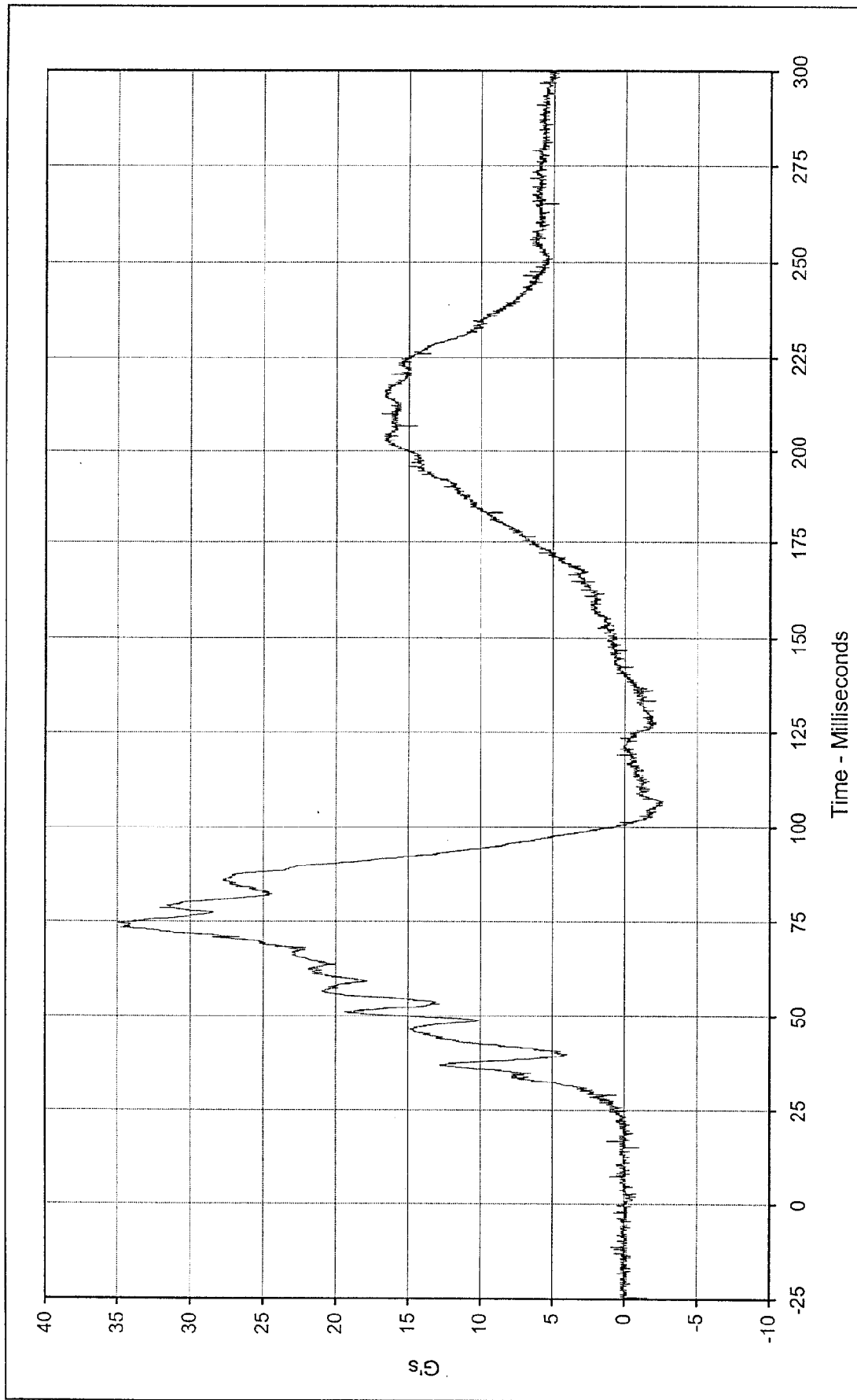




Curve Description: Passenger Head Redundant Y
 Maximum Value: 13.9 at 87.7 Milliseconds
 Minimum Value: -8.5 at 68.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: FIL-049

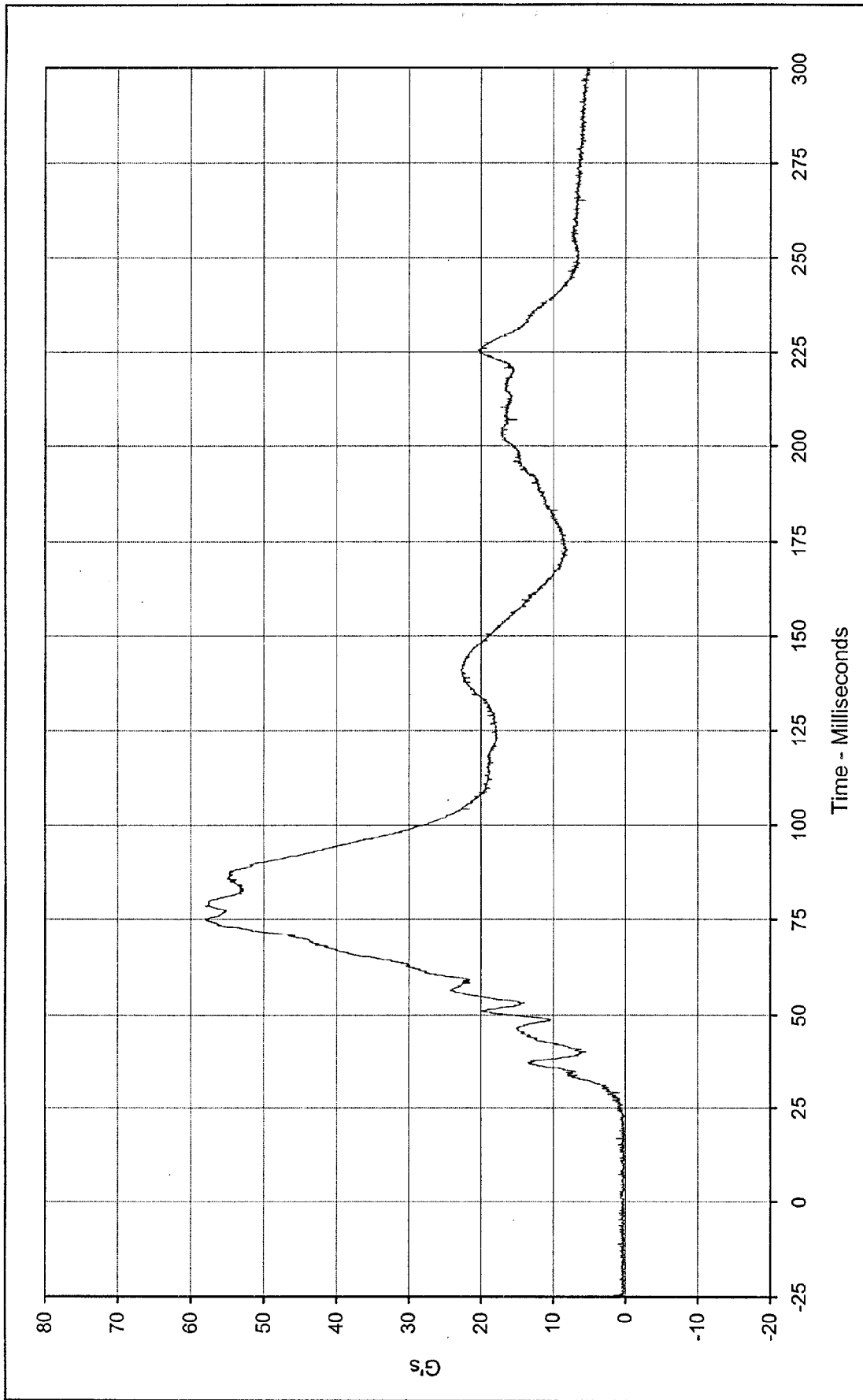
Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Passenger Head Redundant Z
 Maximum Value: 35.0 at 74.6 Milliseconds
 Minimum Value: -2.6 at 106.0 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: FIL-050

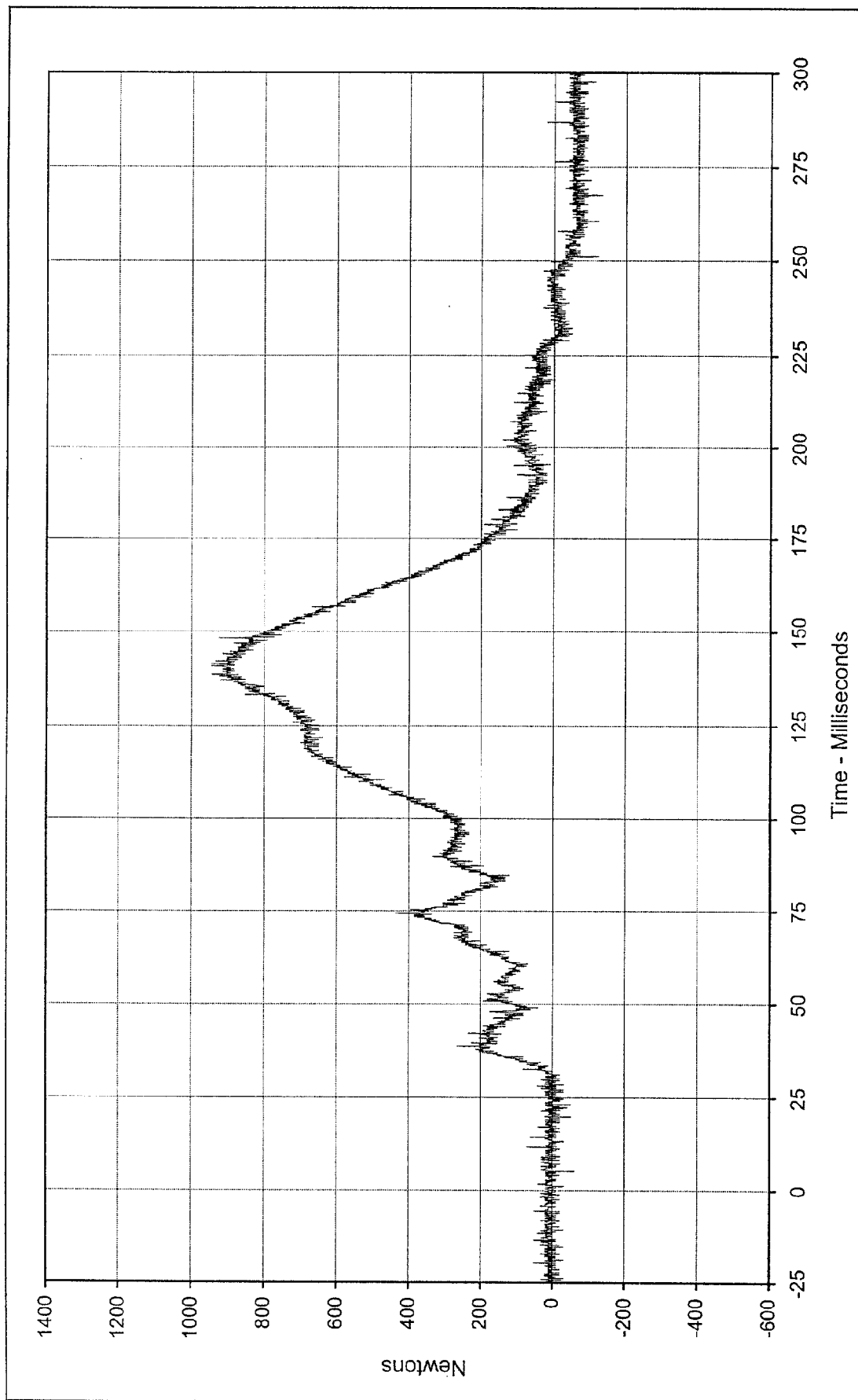




Curve Description: Passenger Head Resultant Redundant
 Maximum Value: 58.0 at 78.5 Milliseconds
 Minimum Value: 0.1 at 6.8 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: RES-048

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Maximum Value: 944.0 at 138.8 Milliseconds

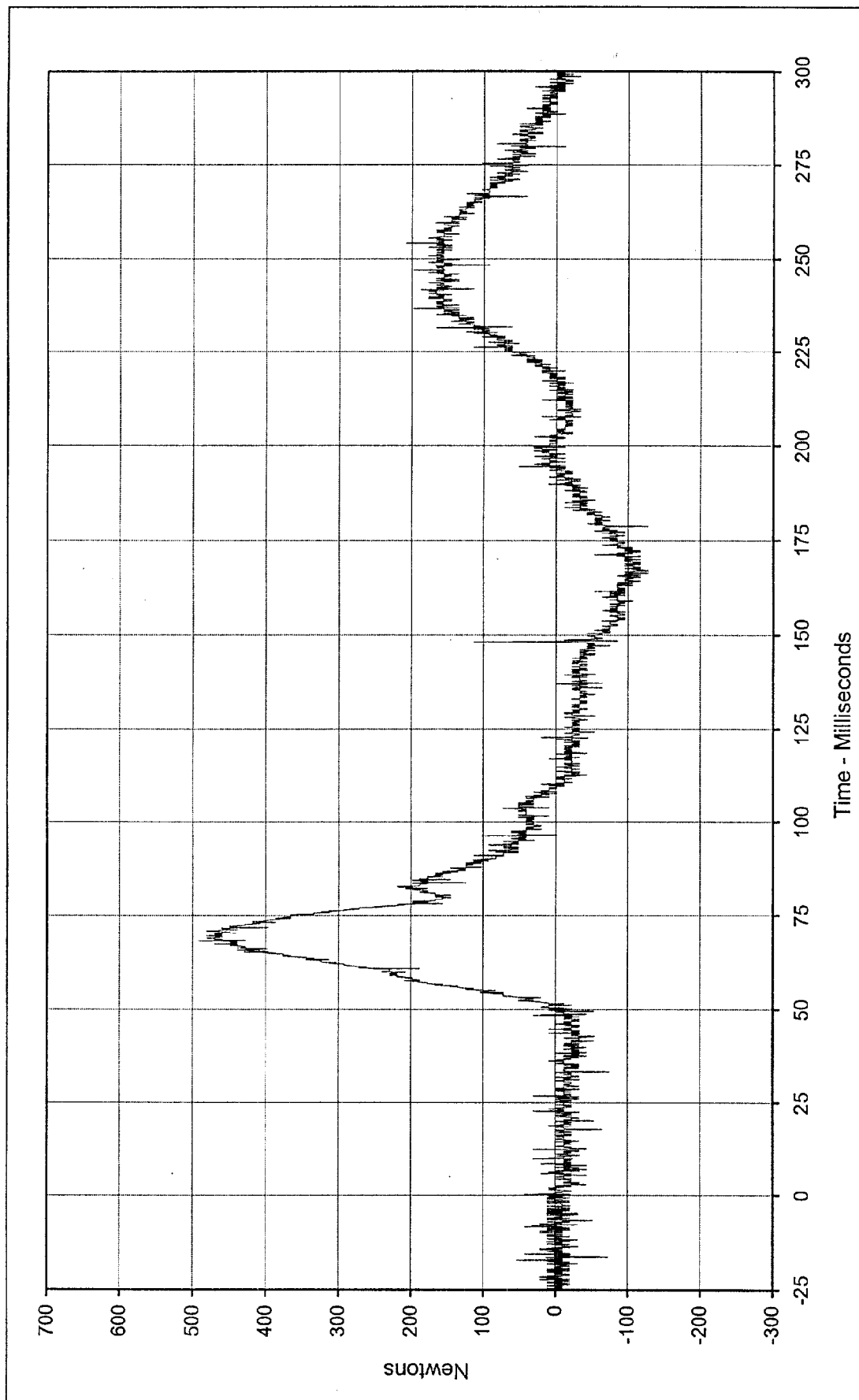
Minimum Value: -132.7 at 267.6 Milliseconds

SAE Filter Class: 1000

Date of Test: 1/28/98

Curve Number: FIL-051

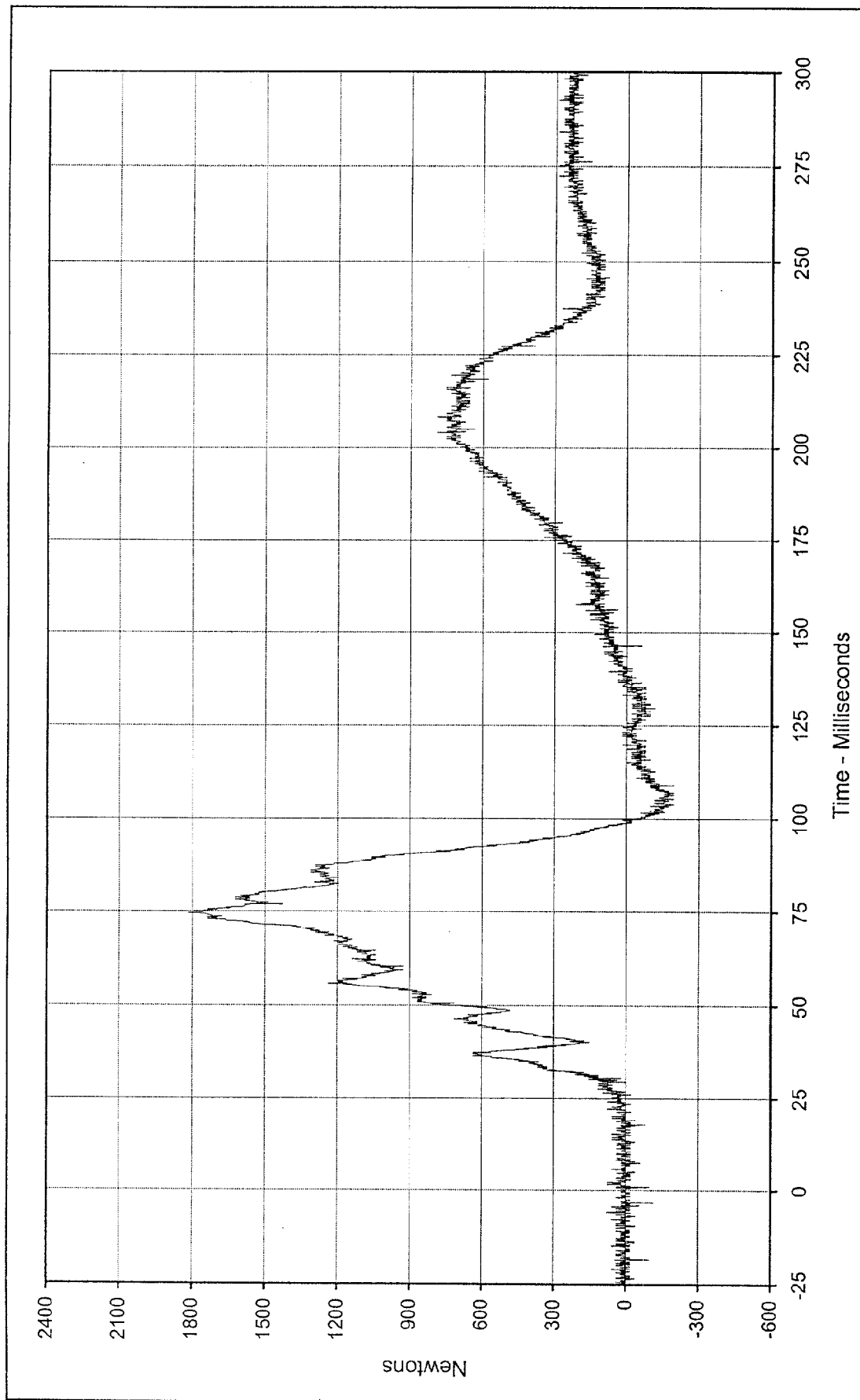




Curve Description: Passenger Neck Force Y
 Maximum Value: 491.3 at 68.1 Milliseconds
 Minimum Value: -127.2 at 166.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: FIL-052

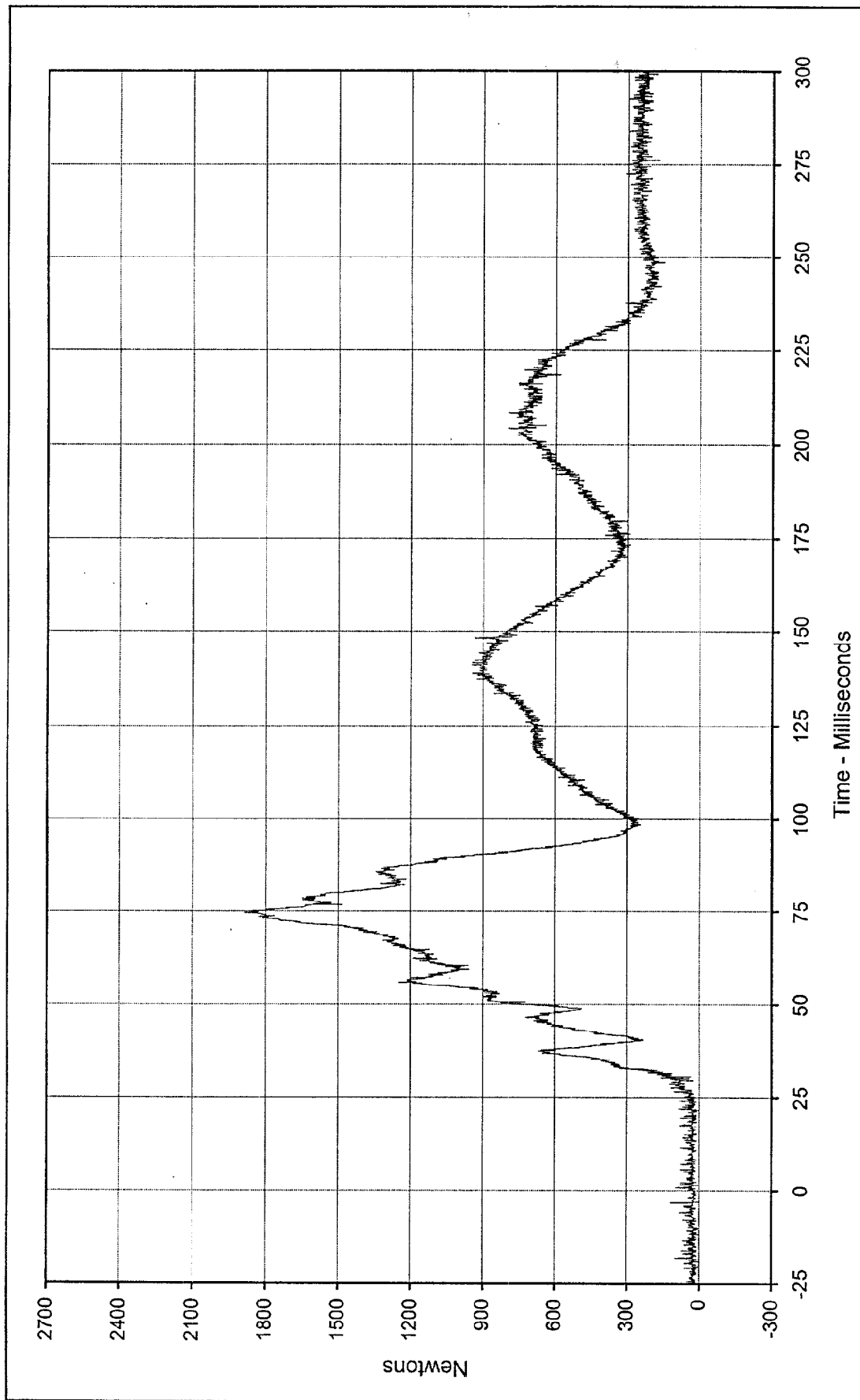
Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description:	Passenger Neck Force Z	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW0303
Maximum Value:	1814.3 at 74.6 Milliseconds	Test Vehicle:	1998 Dodge Dakota SLT Pickup	
Minimum Value:	-194.7 at 103.8 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	1/28/98			
Curve Number:	FIL-053			

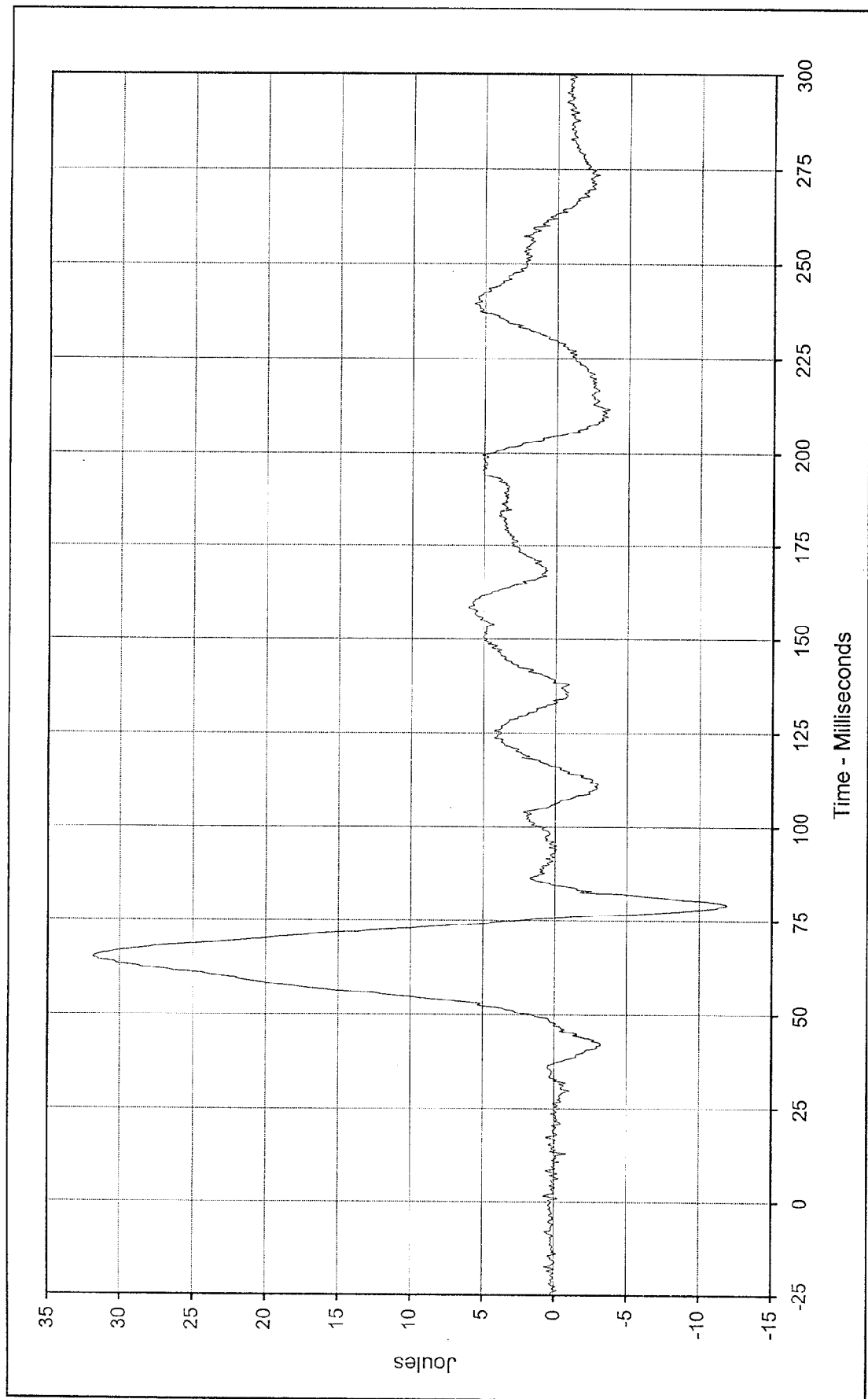




Curve Description: Passenger Neck Force Resultant
 Maximum Value: 1884.5 at 74.6 Milliseconds
 Minimum Value: 2.2 at 1.5 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: RES-051

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Passenger Neck Moment X

Maximum Value: 31.8 at 65.2 Milliseconds

Minimum Value: -11.9 at 79.3 Milliseconds

SAE Filter Class: 600

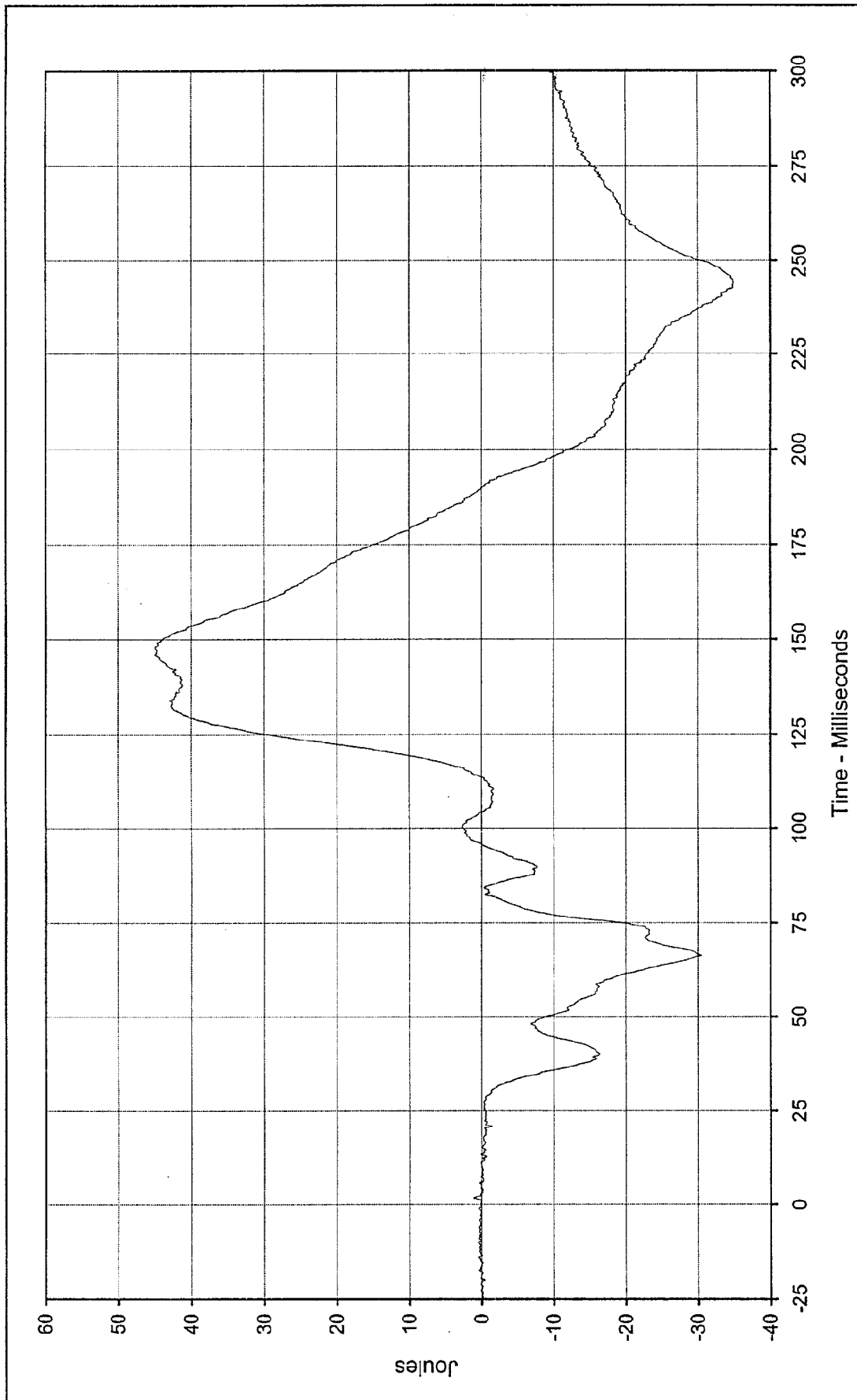
Date of Test: 1/28/98

Curve Number: FIL-054

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup

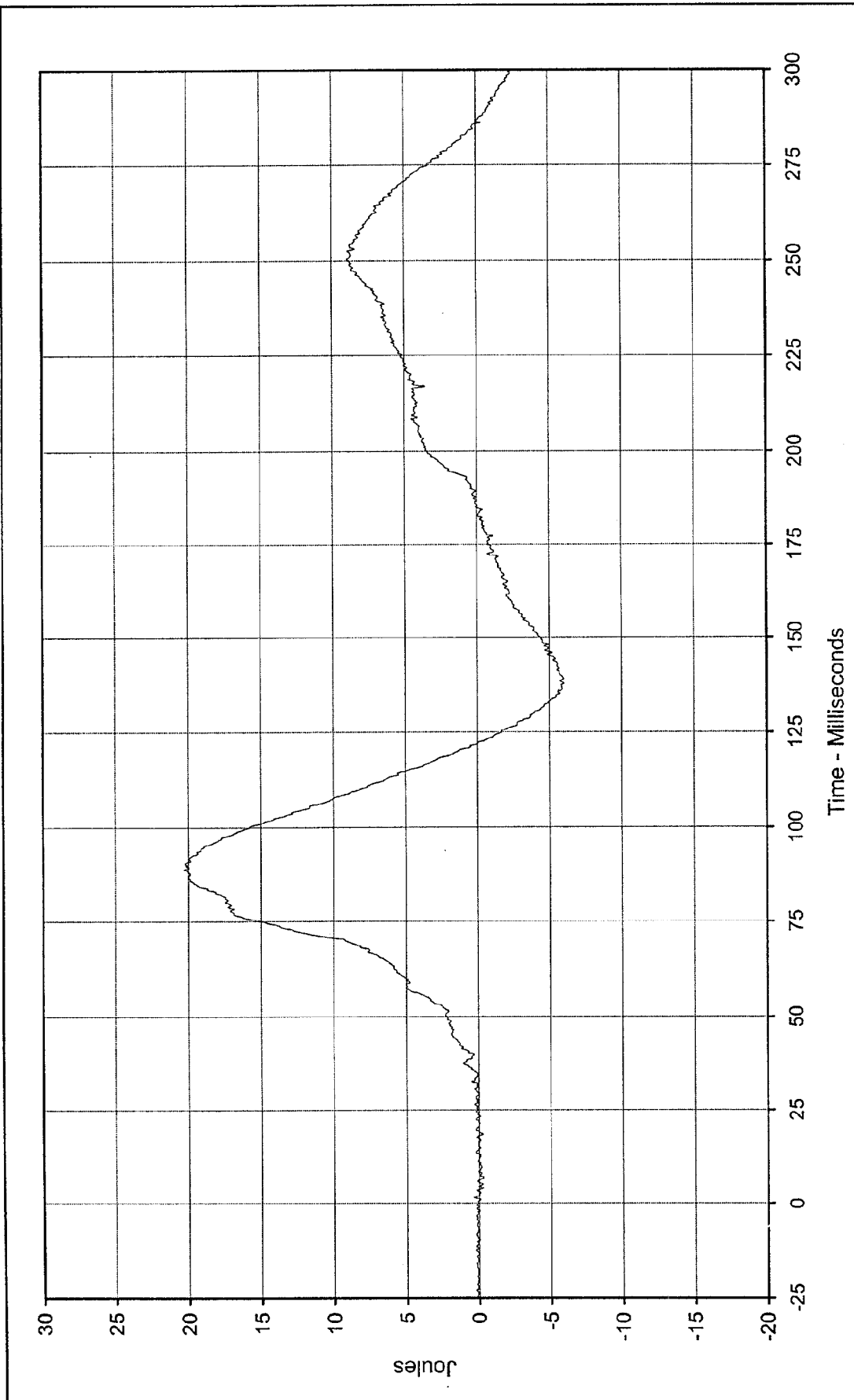




Curve Description: Passenger Neck Moment Y
 Maximum Value: 44.9 at 145.8 Milliseconds
 Minimum Value: -34.9 at 244.1 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/28/98
 Curve Number: FIL-055

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

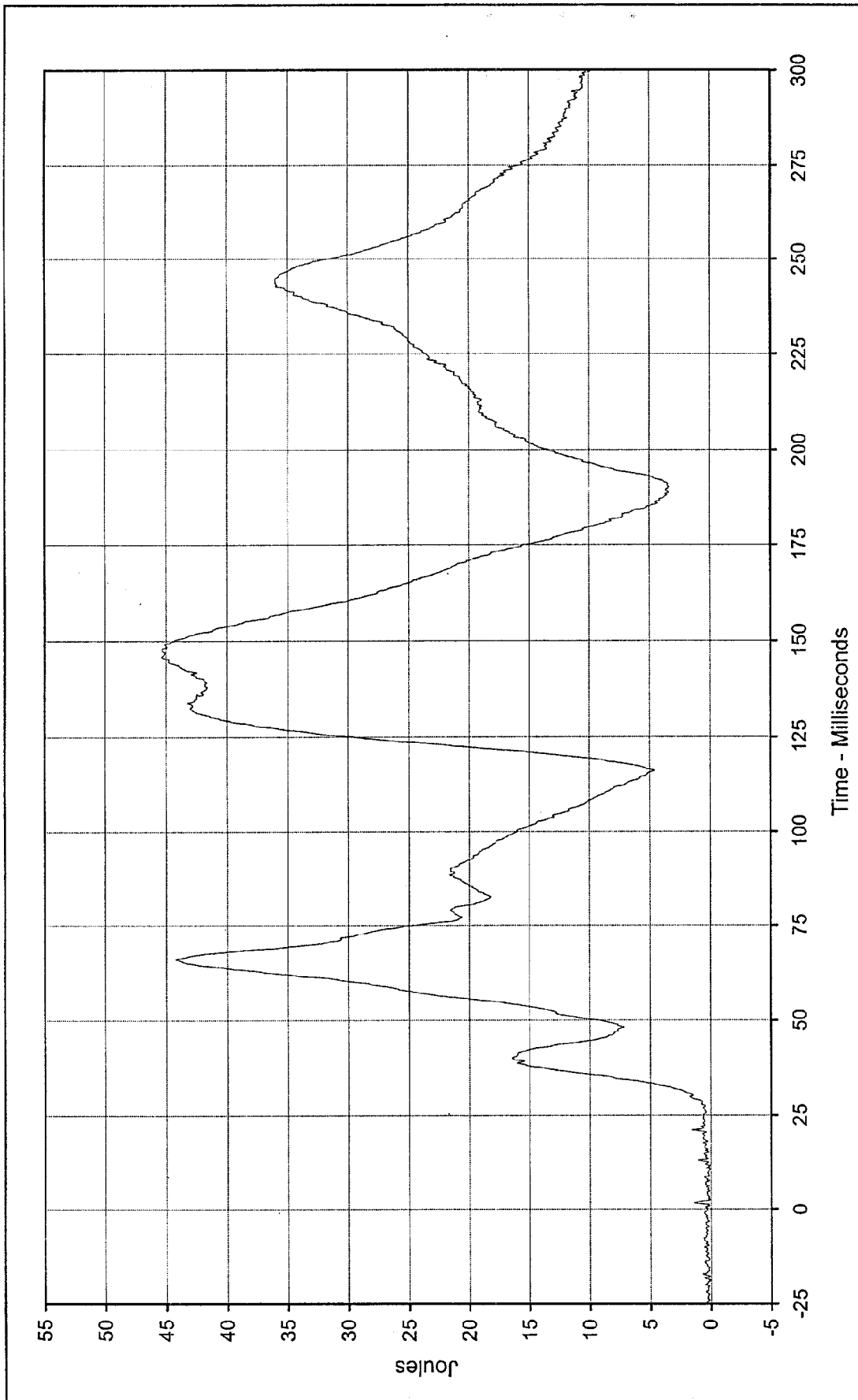




Curve Description: Passenger Neck Moment Z
 Maximum Value: 20.3 at 88.5 Milliseconds
 Minimum Value: -6.0 at 139.1 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/28/98
 Curve Number: FIL-056

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

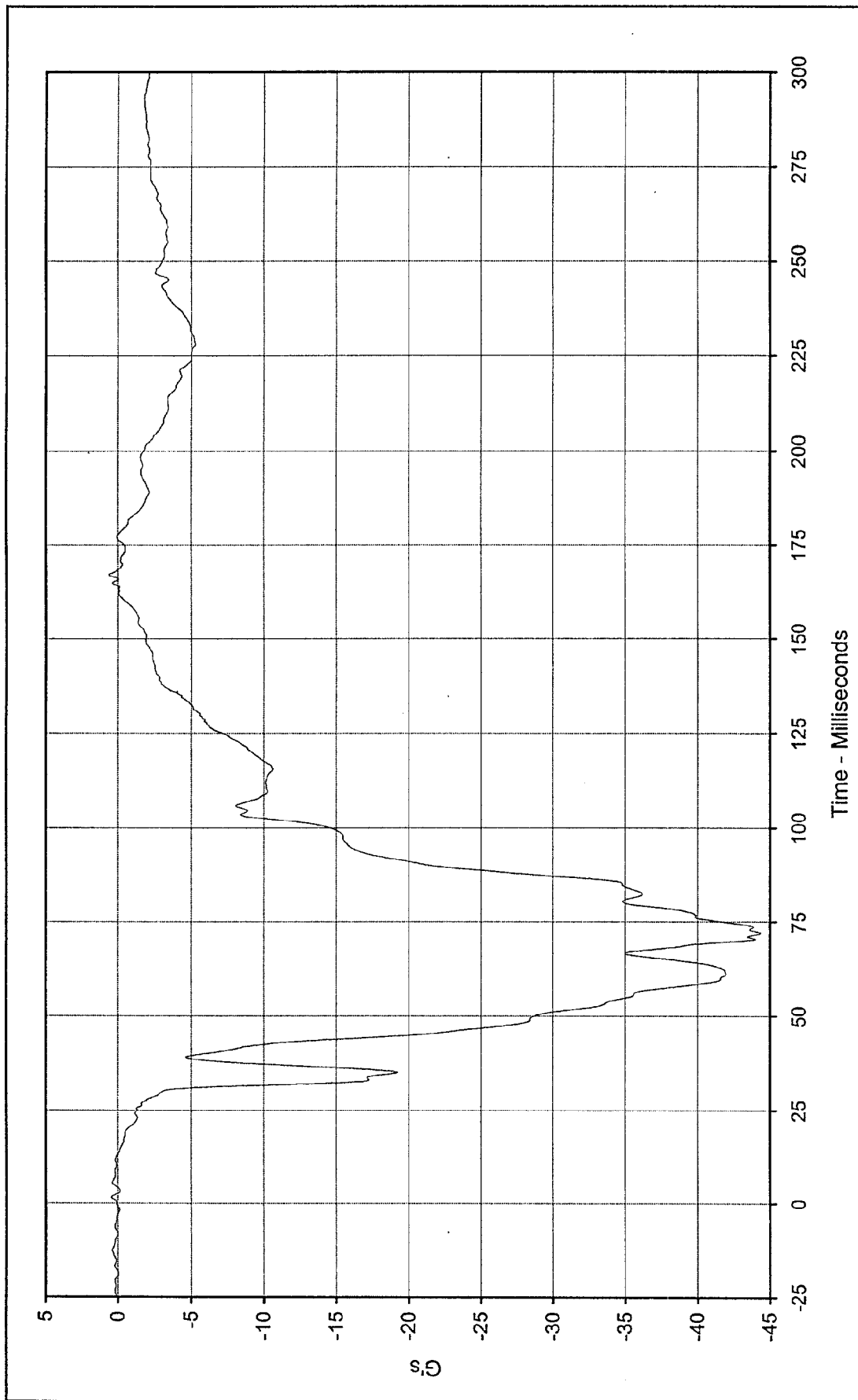




Curve Description: Passenger Neck Moment Resultant
 Maximum Value: 45.4 at 145.8 Milliseconds
 Minimum Value: 0.0 at 10.6 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/28/98
 Curve Number: RES-054

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Passenger Chest Primary X

Maximum Value: 0.7 at 167.1 Milliseconds

Minimum Value: -44.4 at 72.0 Milliseconds

SAE Filter Class: 180

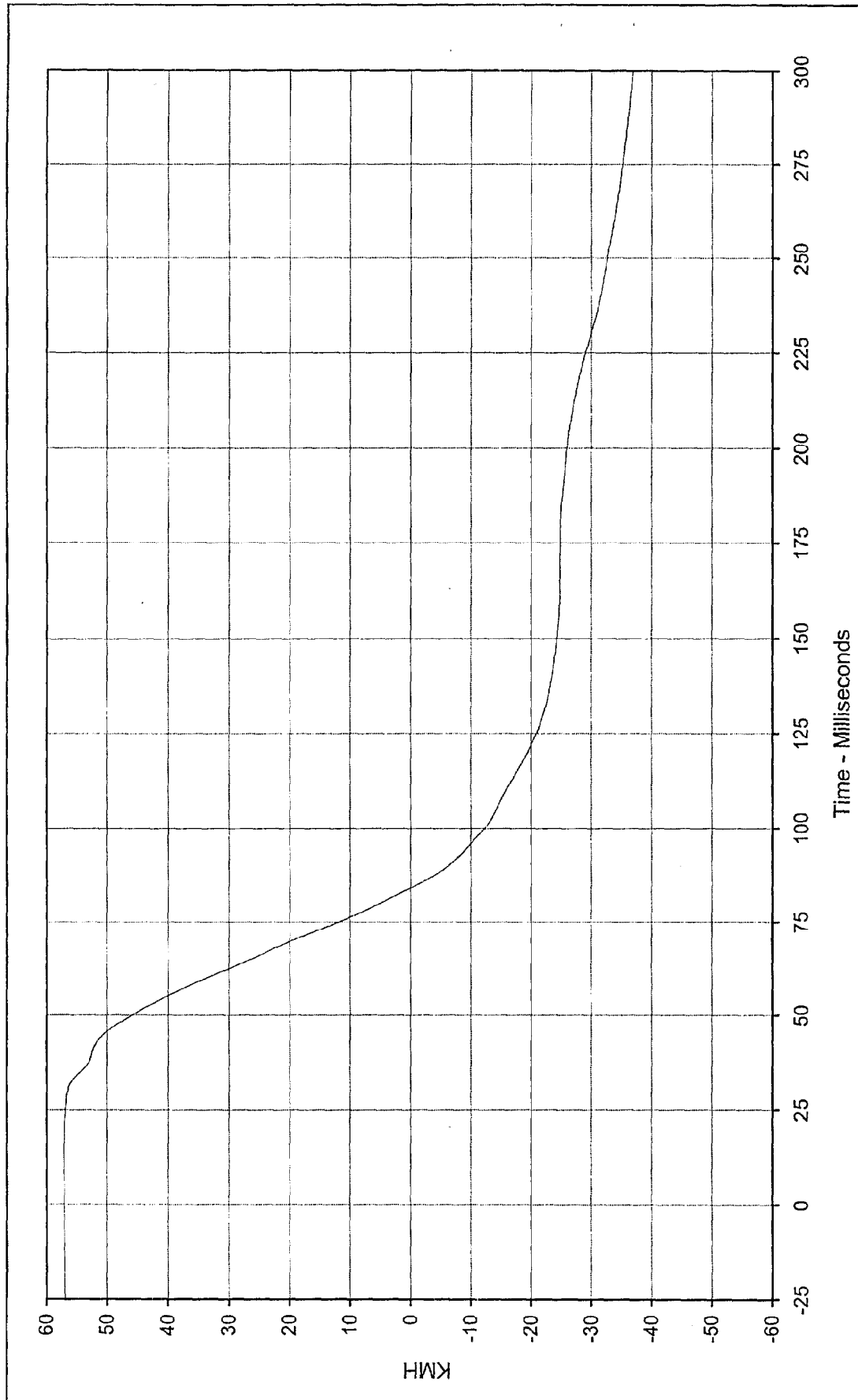
Date of Test: 1/28/98

Curve Number: FIL-057

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup

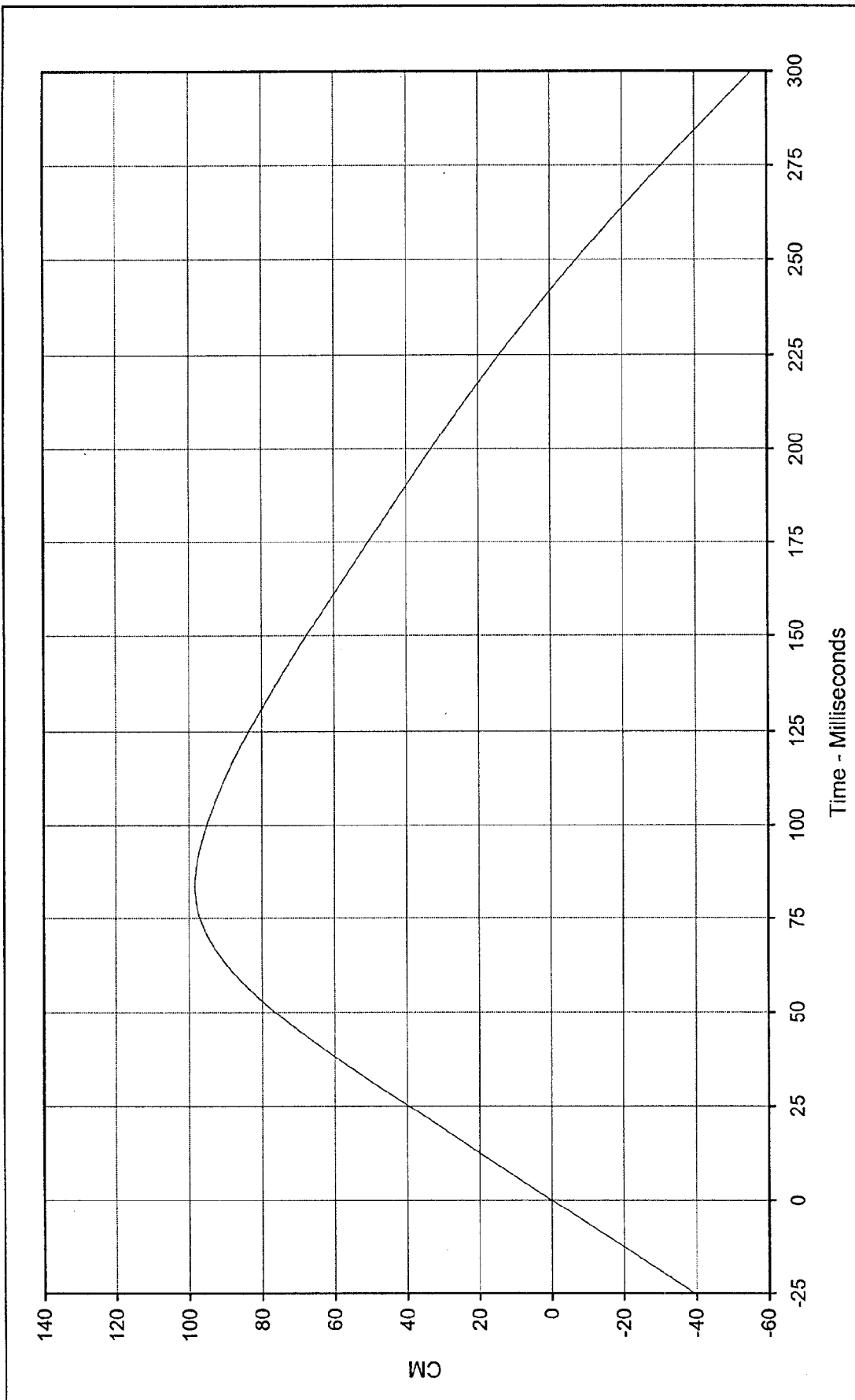




Curve Description: Passenger Chest Primary X Velocity
 Maximum Value: 57.1 at 13.4 Milliseconds
 Minimum Value: -36.9 at 299.9 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: IN1-057

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Passenger Chest Primary X Displ. Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Maximum Value: 98.4 at 84.0 Milliseconds Test Vehicle: 1998 Dodge Dakota SLT Pickup

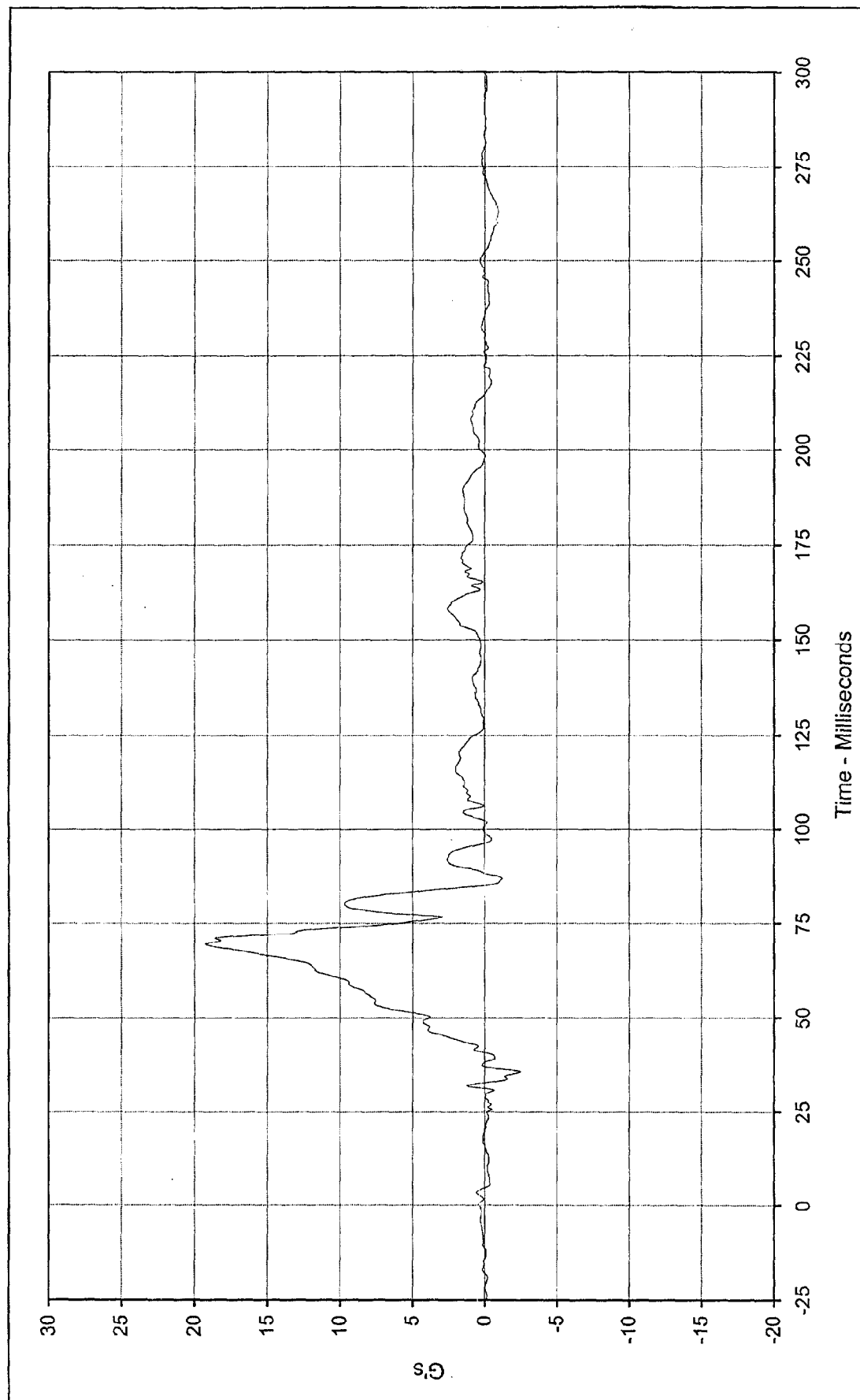
Minimum Value: -55.8 at 299.9 Milliseconds

SAE Filter Class: 180

Date of Test: 1/28/98

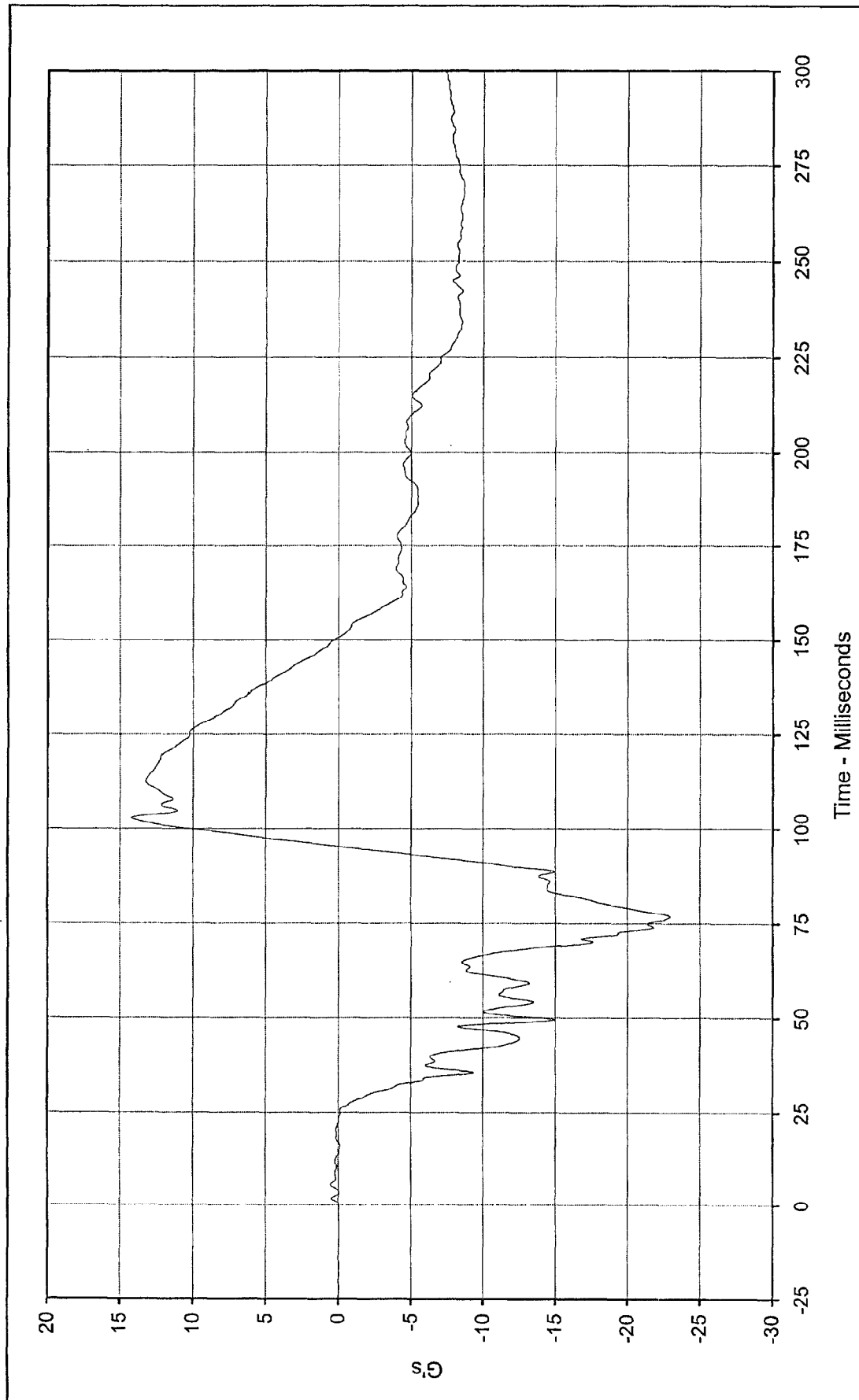
Curve Number: IN2-057





Curve Description:	Passenger Chest Primary Y	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW0303
Maximum Value:	19.2 at 69.3 Milliseconds	Test Vehicle:	1998 Dodge Dakota SLT Pickup	
Minimum Value:	-2.5 at 35.5 Milliseconds			
SAE Filter Class:	180			
Date of Test:	1/28/98			
Curve Number:	FIL-058			





Curve Description: Passenger Chest Primary Z

Maximum Value: 14.2 at 103.0 Milliseconds

Minimum Value: -22.9 at 76.9 Milliseconds

SAE Filter Class: 180

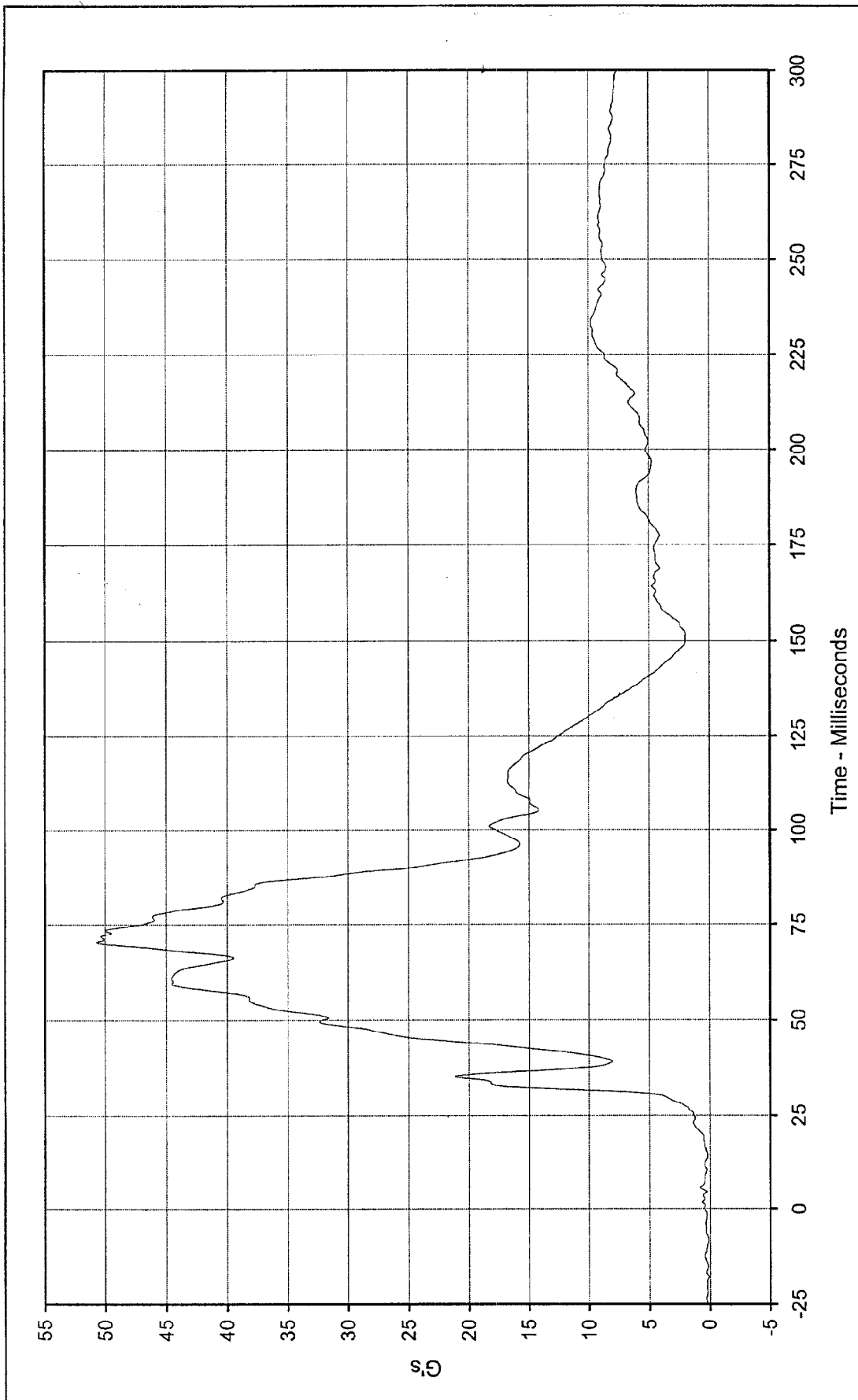
Date of Test: 1/28/98

Curve Number: FIL-059

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup

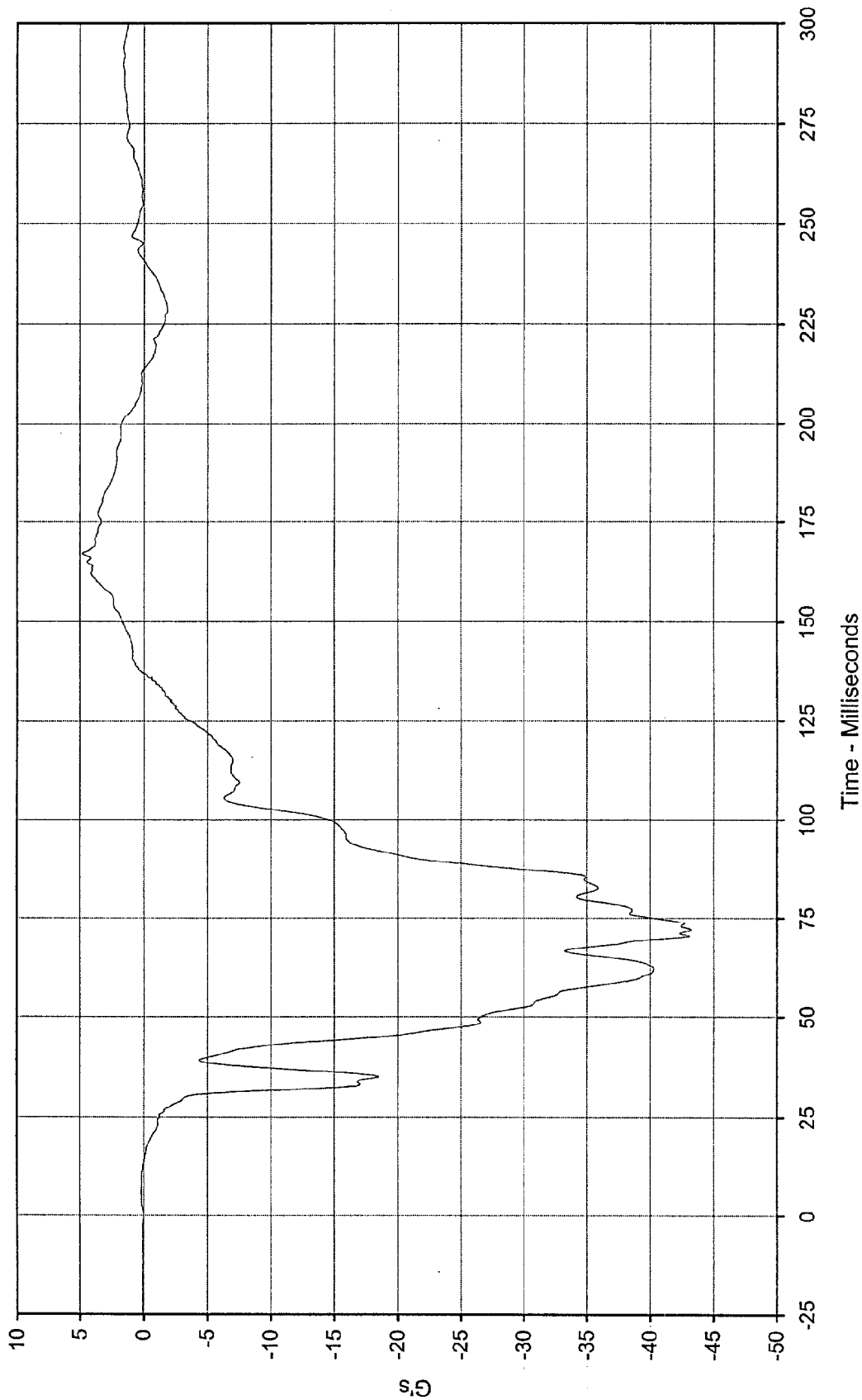




Curve Description: Passenger Chest Resultant Primary
 Maximum Value: 50.7 at 70.3 Milliseconds
 Minimum Value: 0.2 at 14.1 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: RES-057

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Passenger Chest Redundant X

Maximum Value: 4.8 at 167.0 Milliseconds

Minimum Value: -43.3 at 71.9 Milliseconds

SAE Filter Class: 180

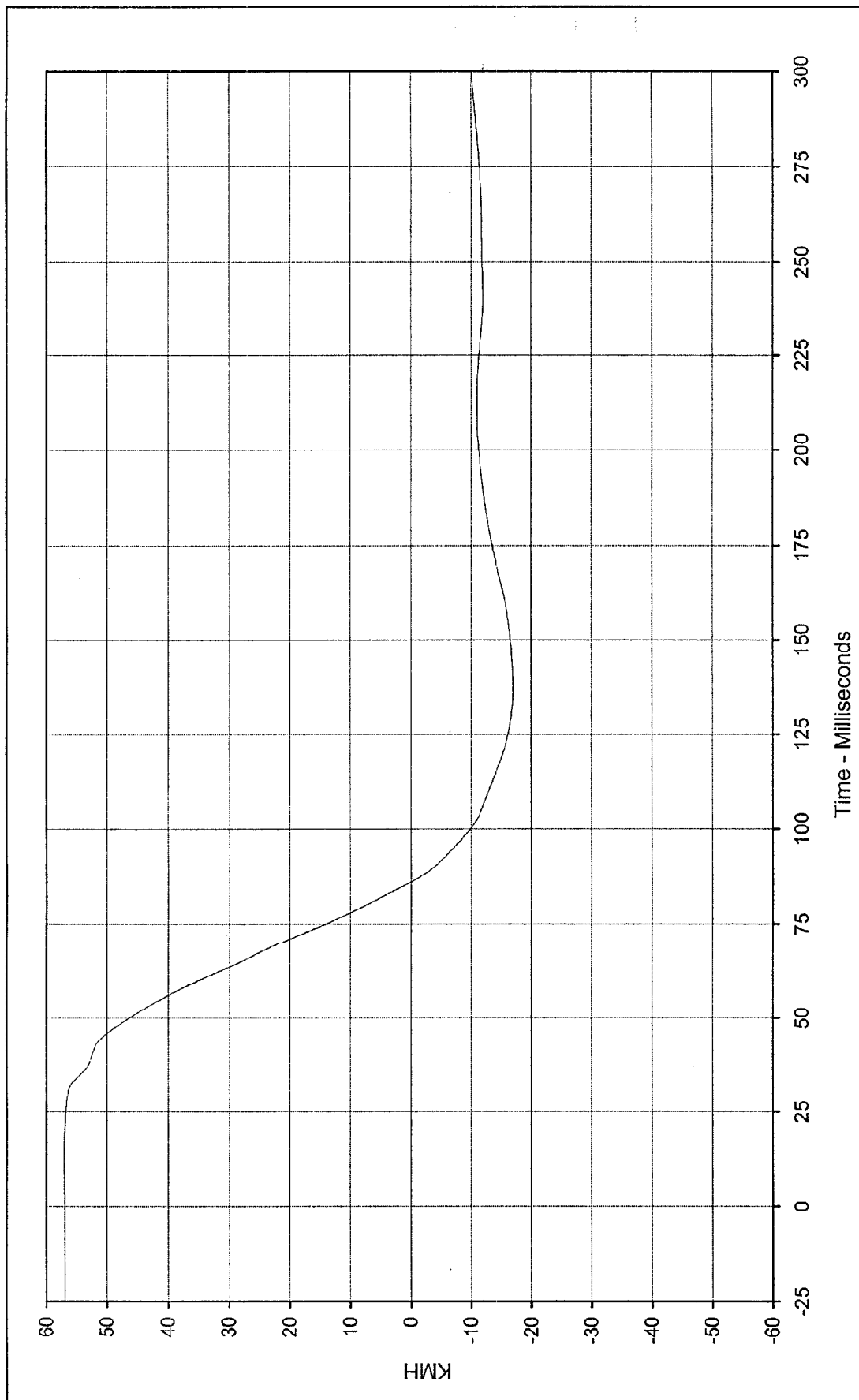
Date of Test: 1/28/98

Curve Number: FIL-060

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup

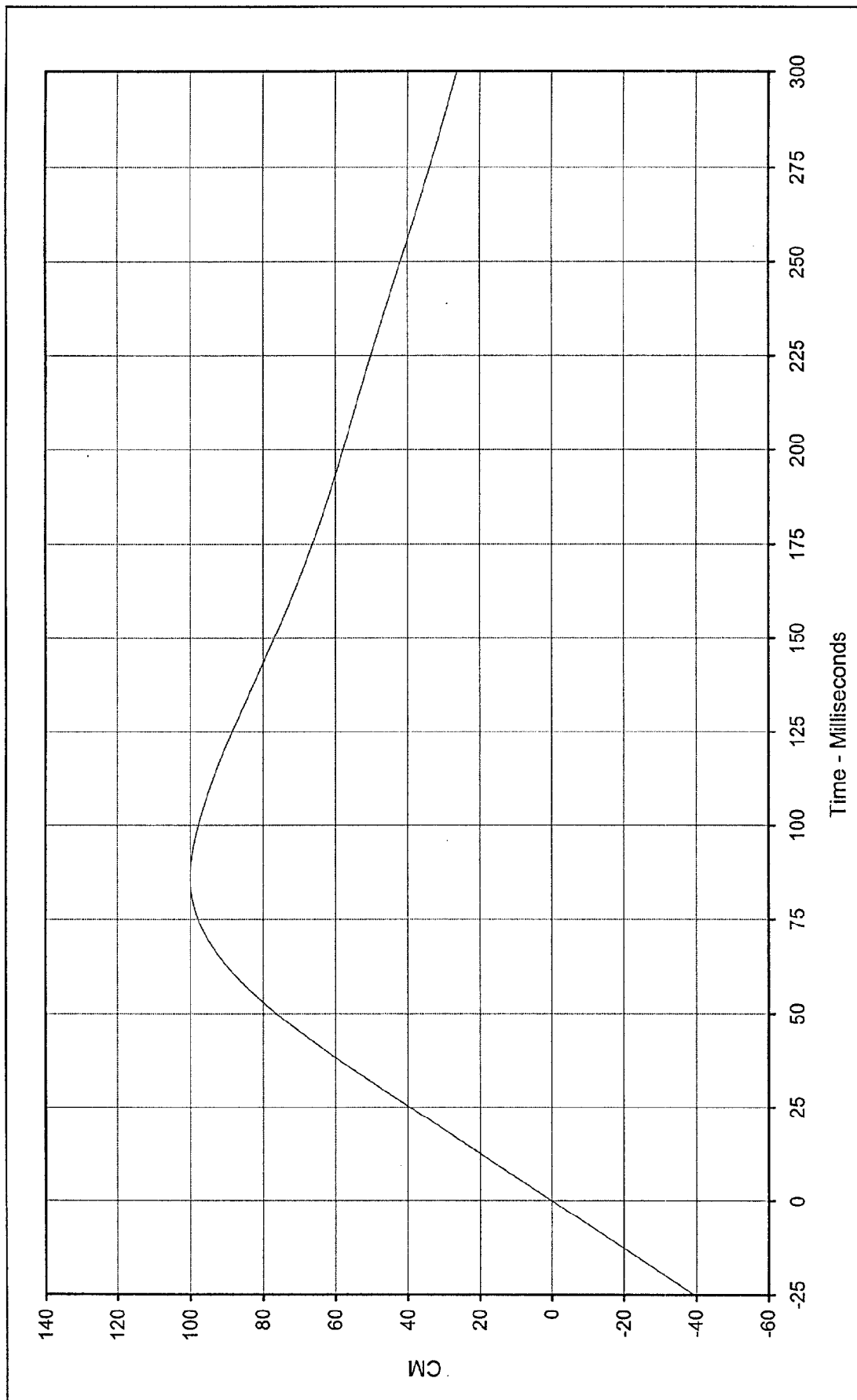




Curve Description: Passenger Chest Redundant X Velocity
 Maximum Value: 57.0 at 13.4 Milliseconds
 Minimum Value: -16.9 at 137.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: IN1-060

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Passenger Chest Redundant X Displ.

Maximum Value: 100.0 at 85.9 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

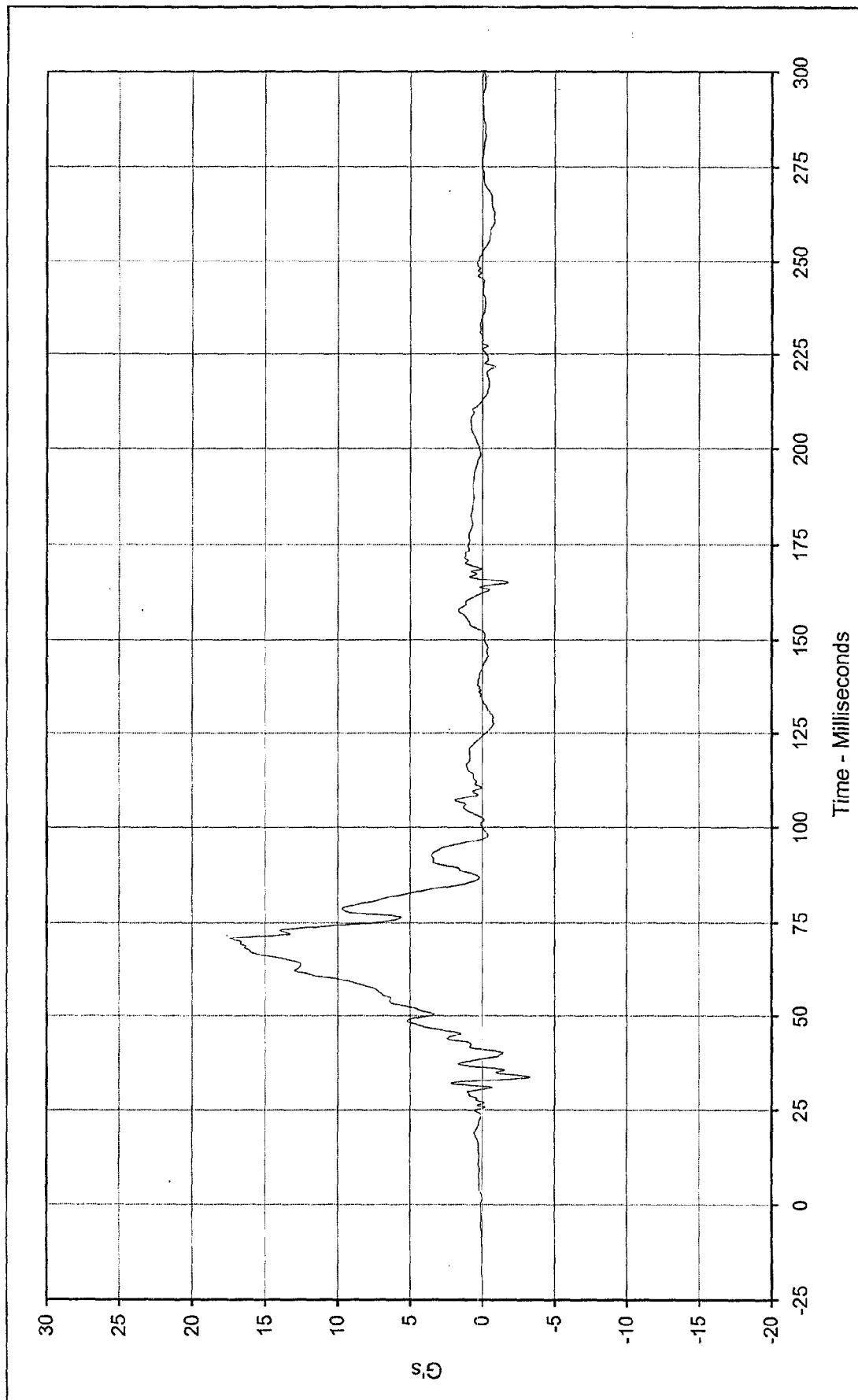
Date of Test: 1/28/98

Curve Number: IN2-060

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup

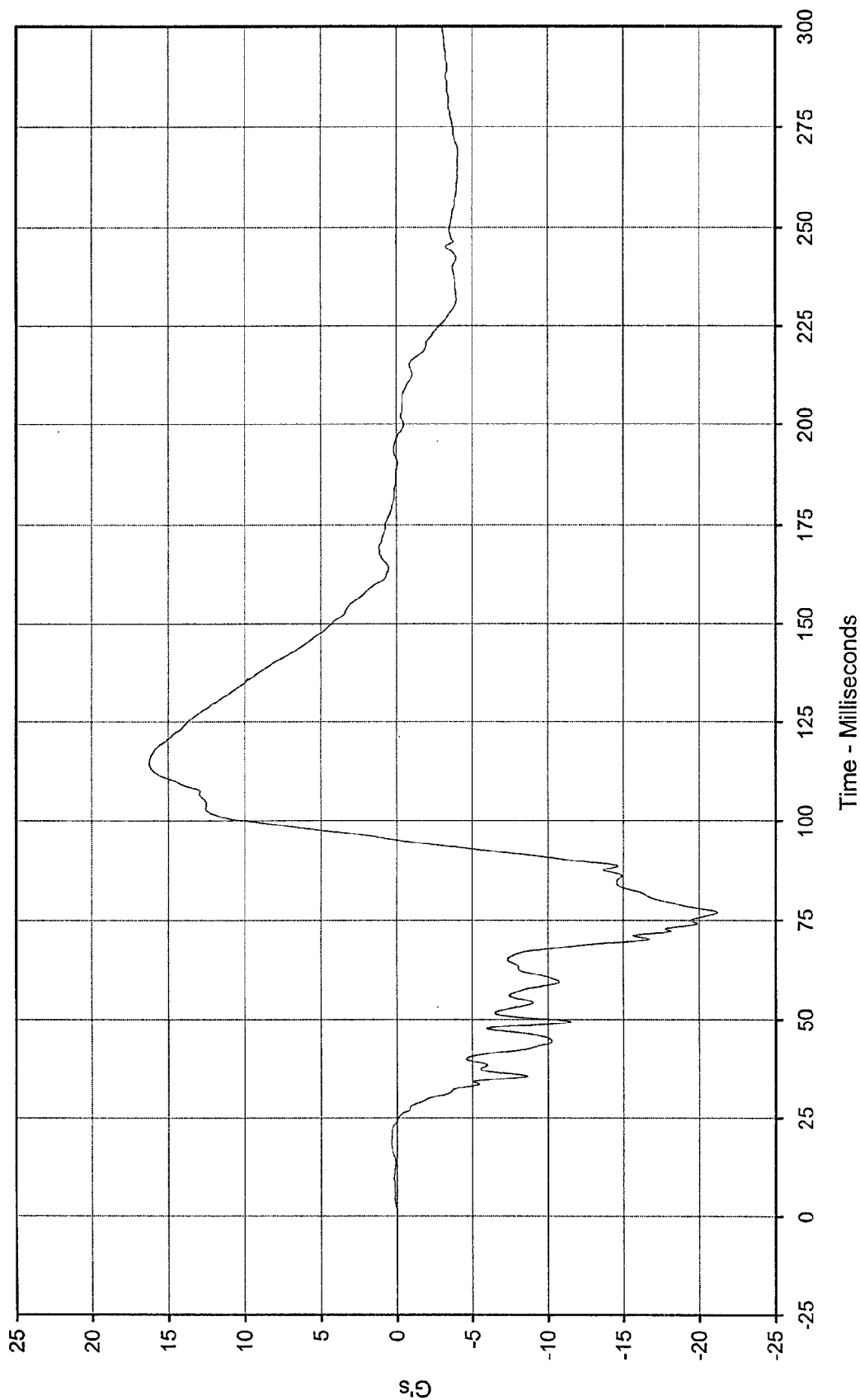




Curve Description: Passenger Chest Redundant Y
 Maximum Value: 17.4 at 70.8 Milliseconds
 Minimum Value: -3.3 at 33.6 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: FIL-061

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Passenger Chest Redundant Z

Maximum Value: 16.2 at 114.8 Milliseconds

Minimum Value: -21.2 at 76.9 Milliseconds

SAE Filter Class: 180

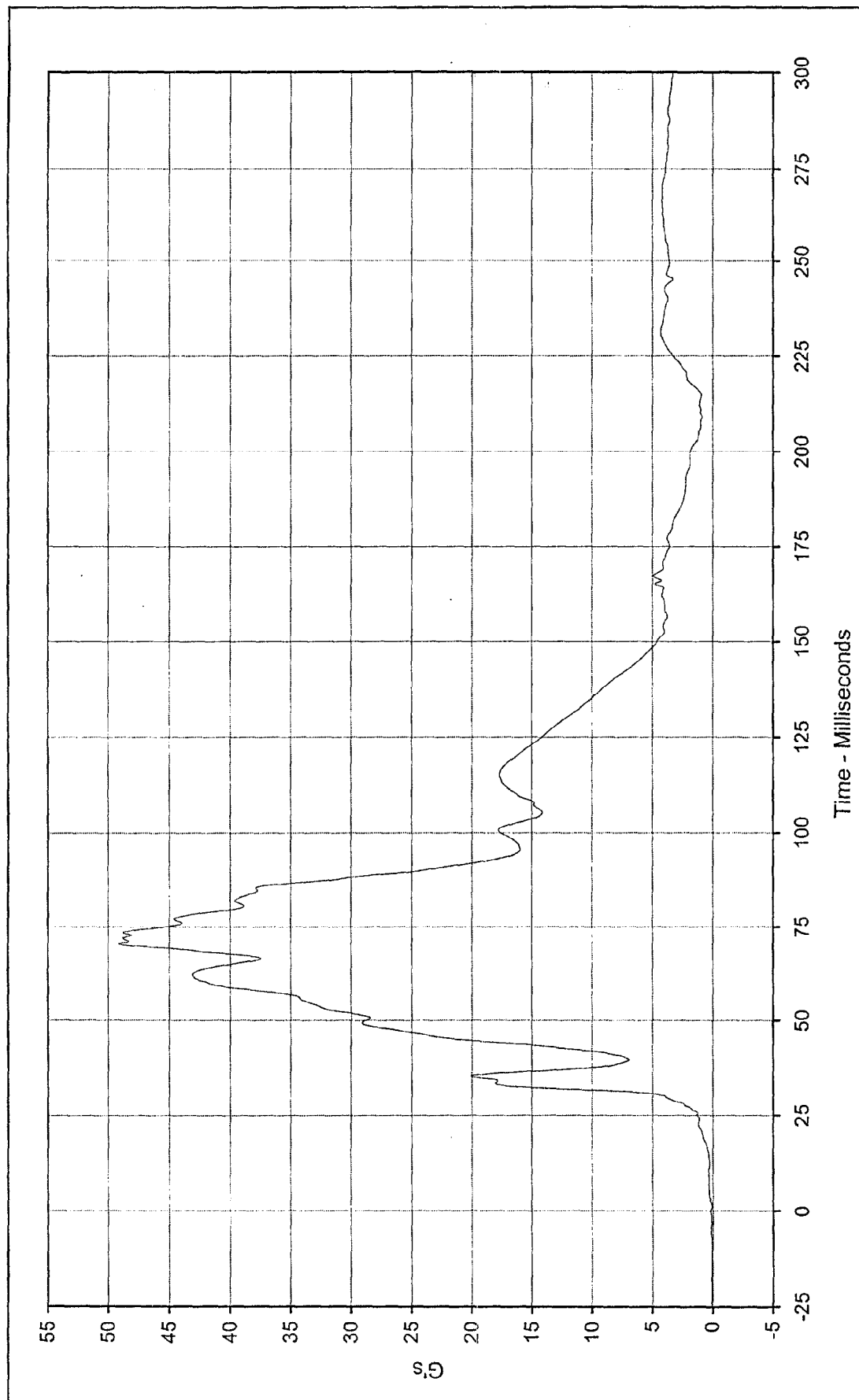
Date of Test: 1/28/98

Curve Number: FIL-062

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup

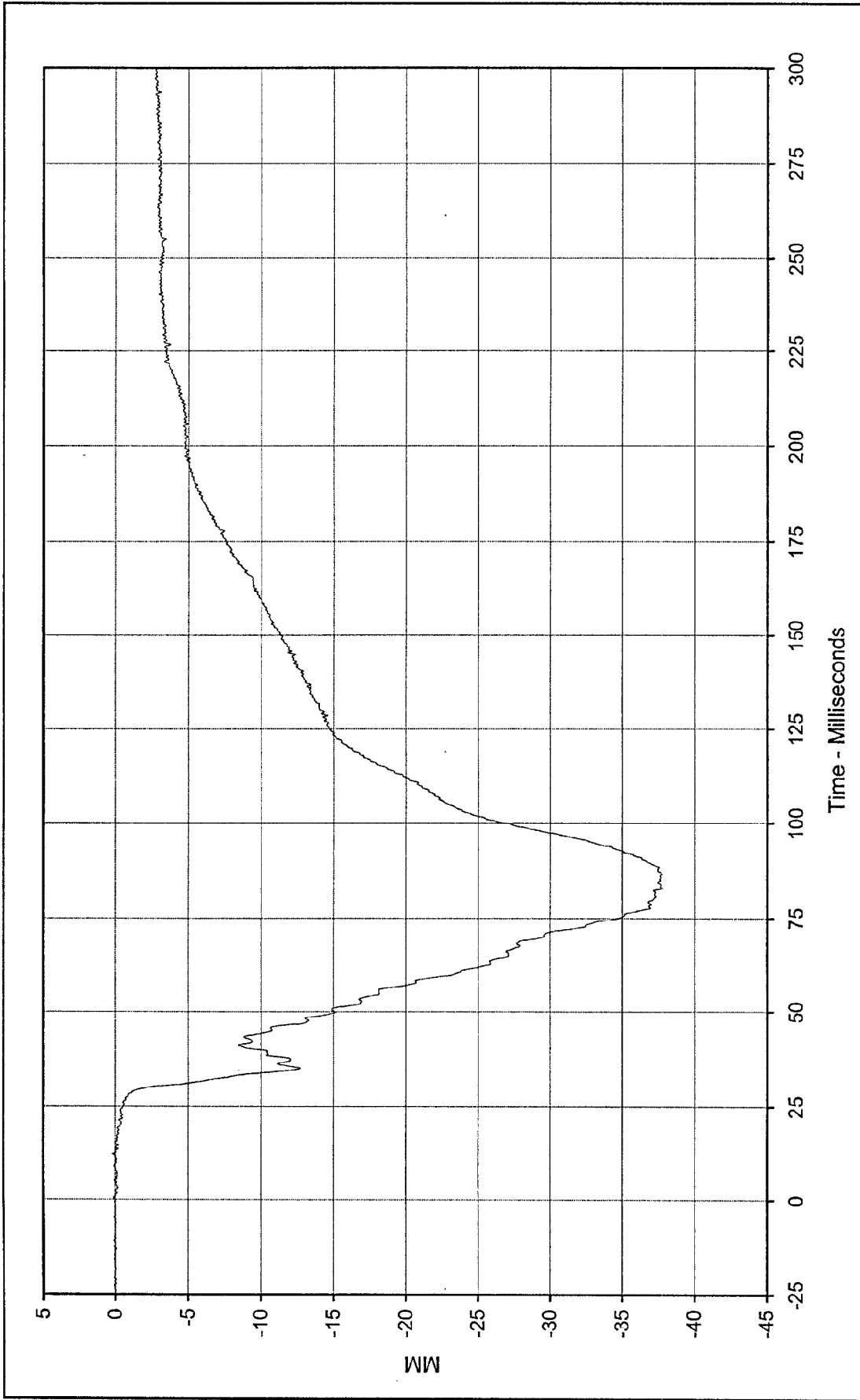




Curve Description: Passenger Chest Resultant Redundant
 Maximum Value: 49.2 at 70.3 Milliseconds
 Minimum Value: 0.0 at 1.3 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: RES-060

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

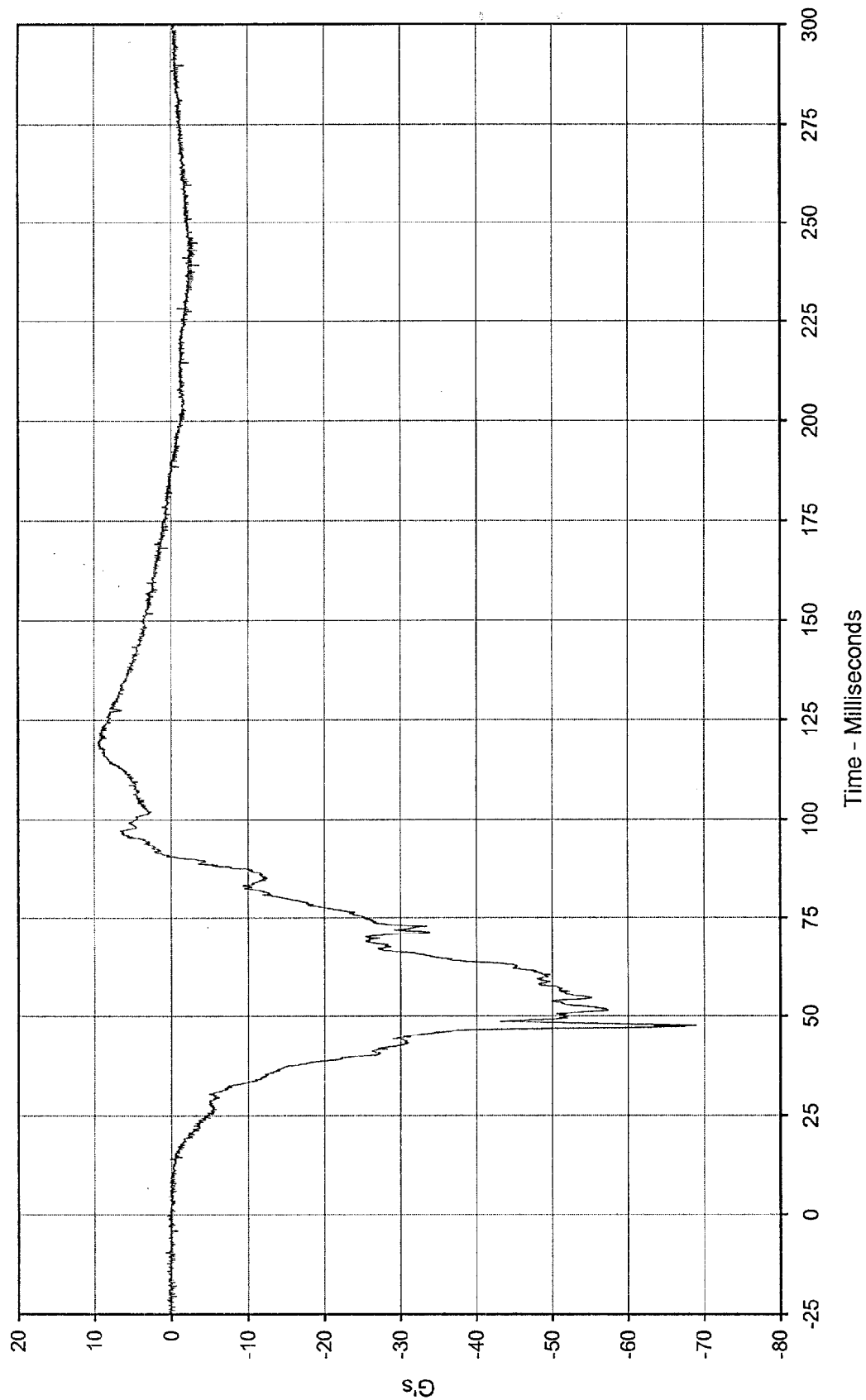




Curve Description: Passenger Chest Displacement X
 Maximum Value: 0.2 at 12.3 Milliseconds
 Minimum Value: -37.8 at 82.8 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/28/98
 Curve Number: FIL-063

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Passenger Pelvis X

Maximum Value: 9.6 at 118.6 Milliseconds

Minimum Value: -68.9 at 47.6 Milliseconds

SAE Filter Class: 1000

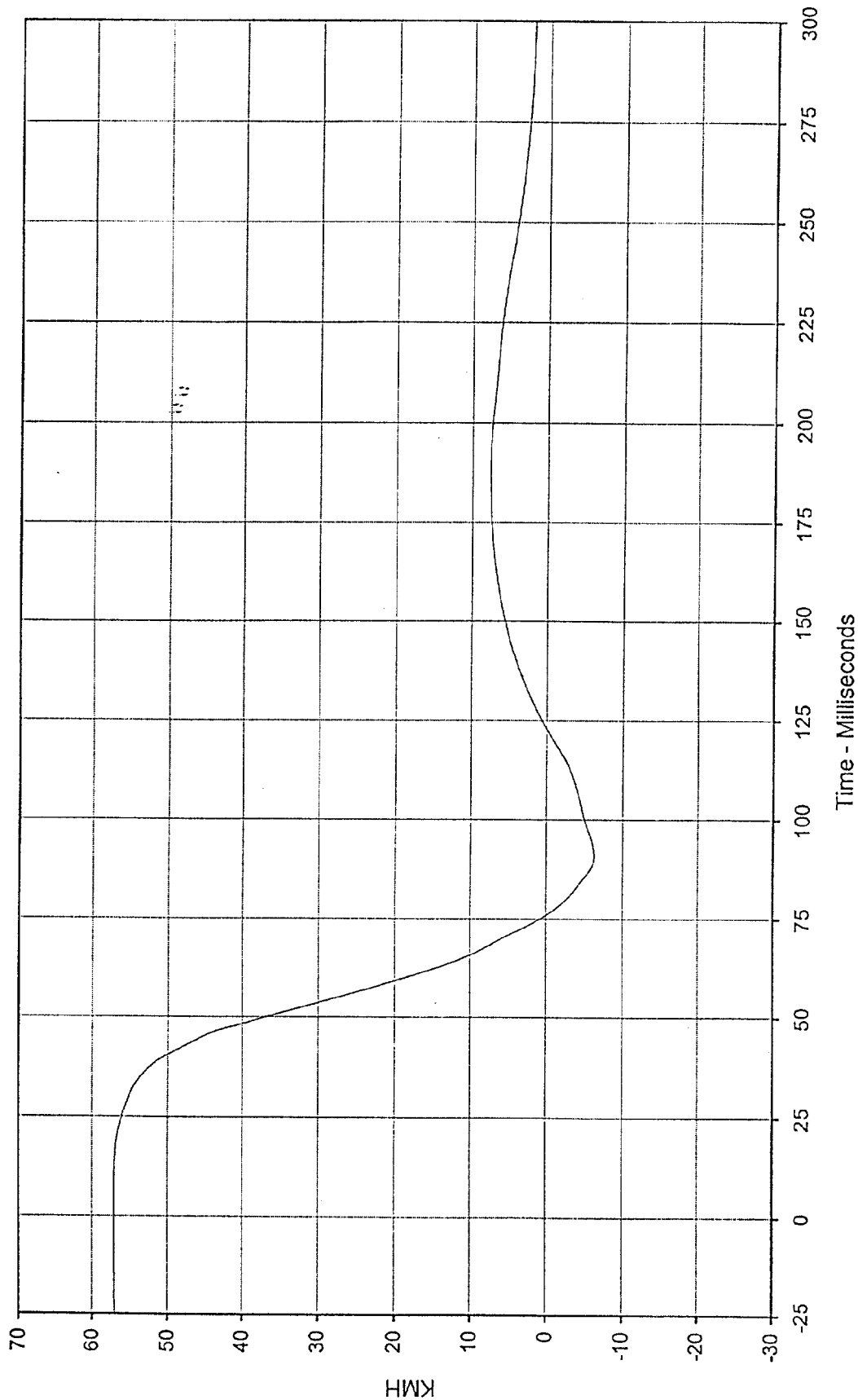
Date of Test: 1/28/98

Curve Number: FIL-064

Testing Program: 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Passenger Pelvis X Velocity

Maximum Value: 57.0 at 1.6 milliseconds

Minimum Value: -6.4 at 90.8 milliseconds

SAE Filter Class: 180

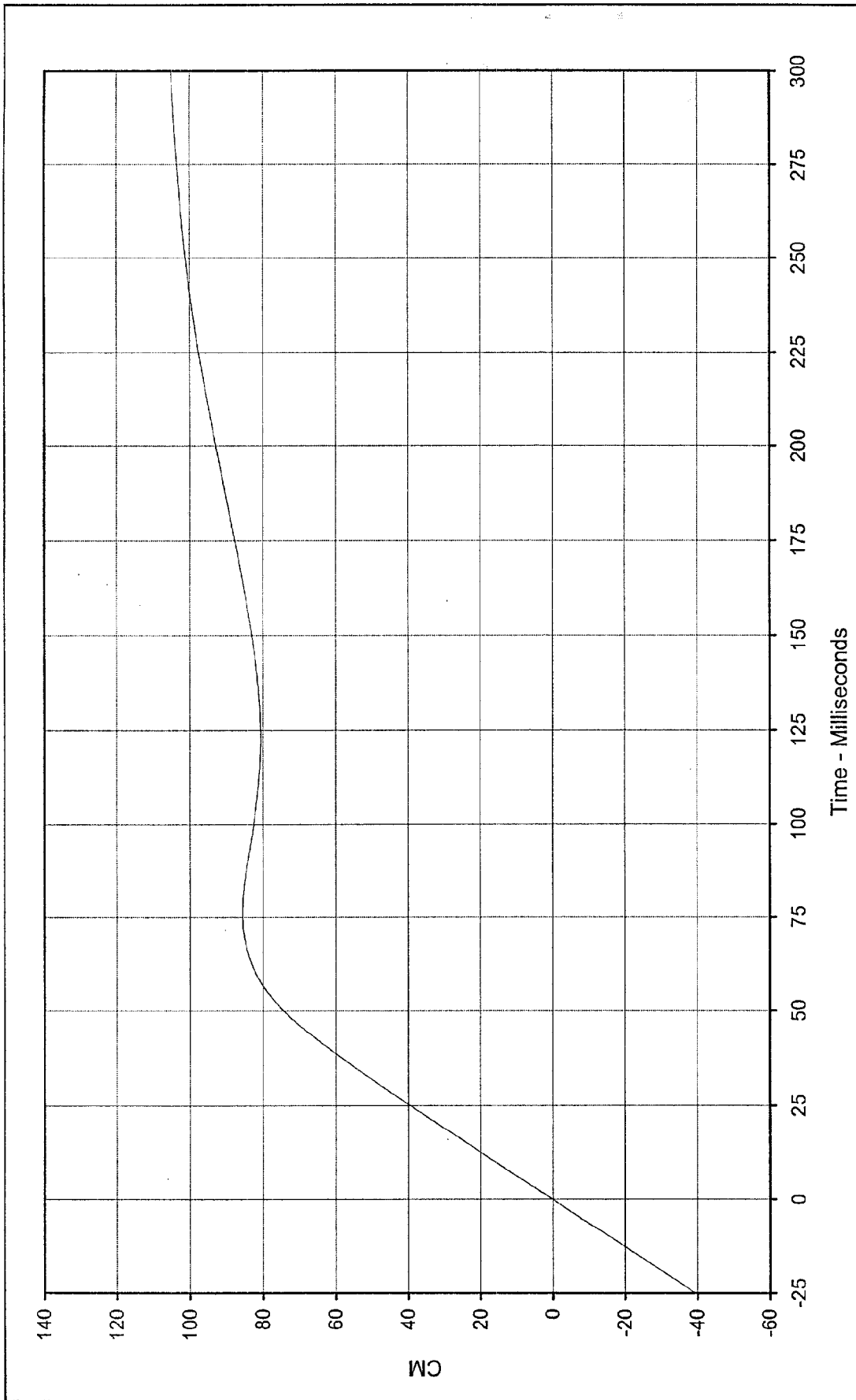
Date of Test: 1/28/98

Curve Number: IN1-064

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup

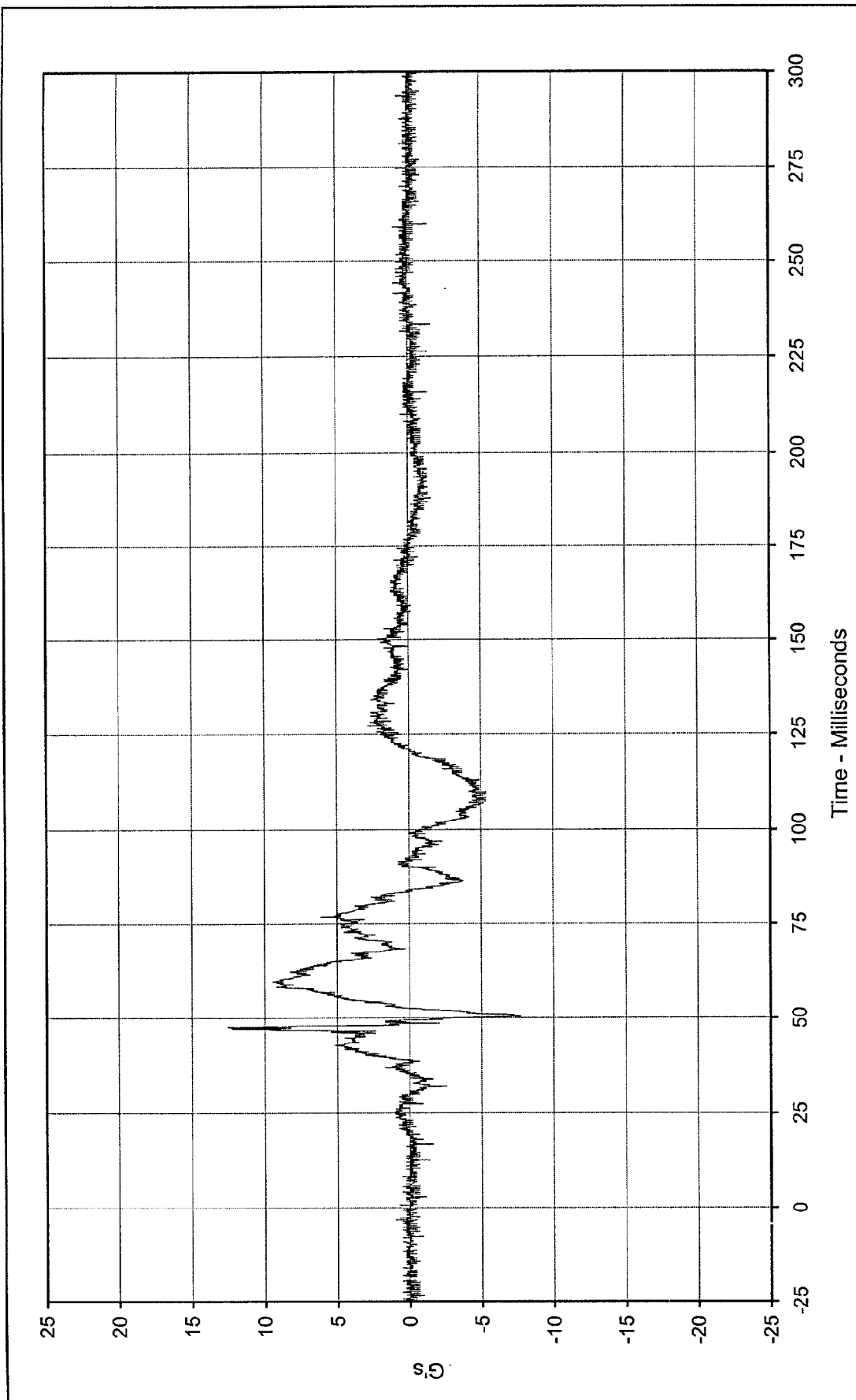




Curve Description: Passenger Pelvis X Displ.
 Maximum Value: 105.1 at 299.9 Milliseconds
 Minimum Value: 0.1 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: IN2-064

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup

Passenger Pelvis Y

Maximum Value: 12.5 at 47.6 Milliseconds

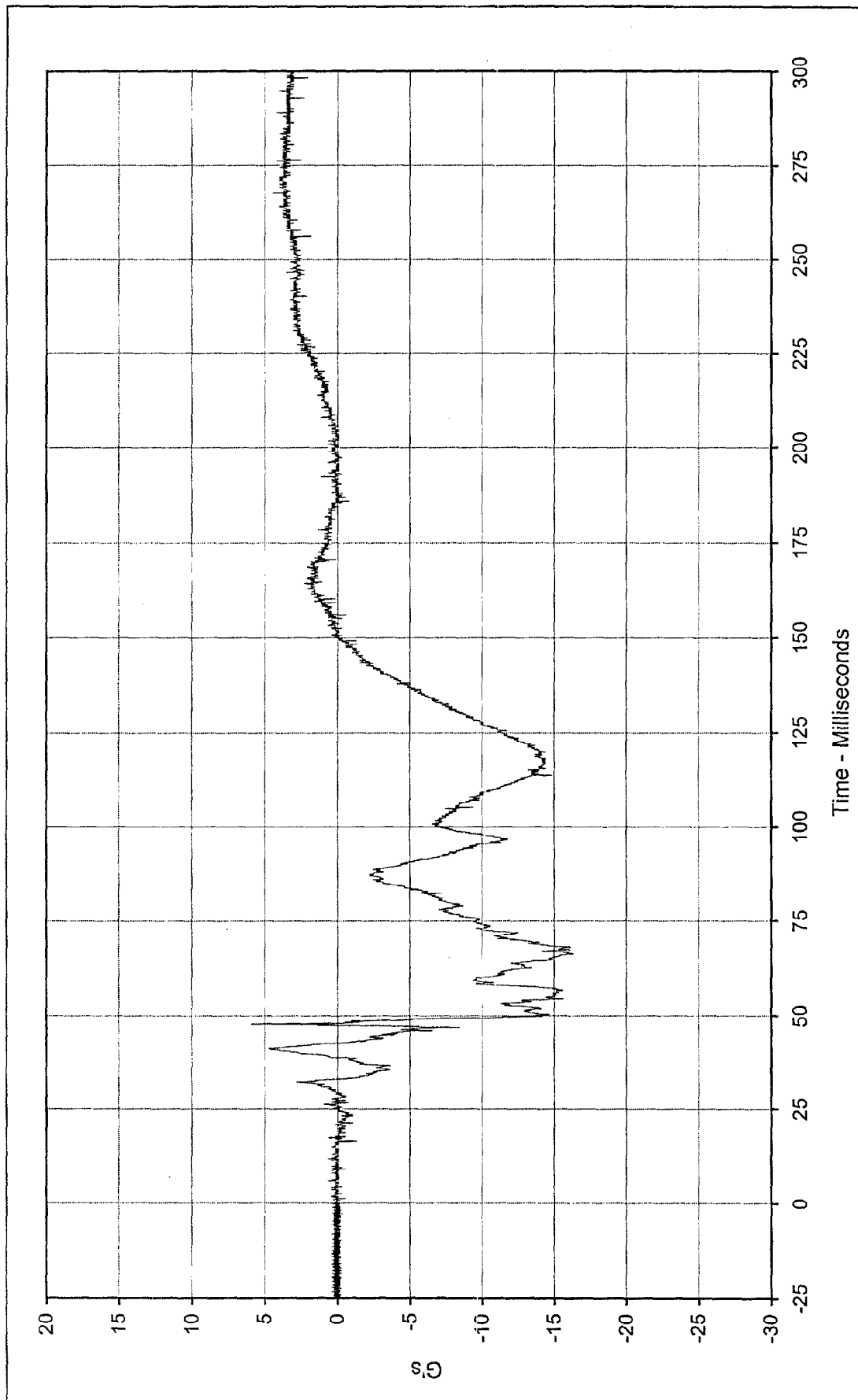
Minimum Value: -7.7 at 50.5 Milliseconds

SAE Filter Class: 1000

Date of Test: 1/28/98

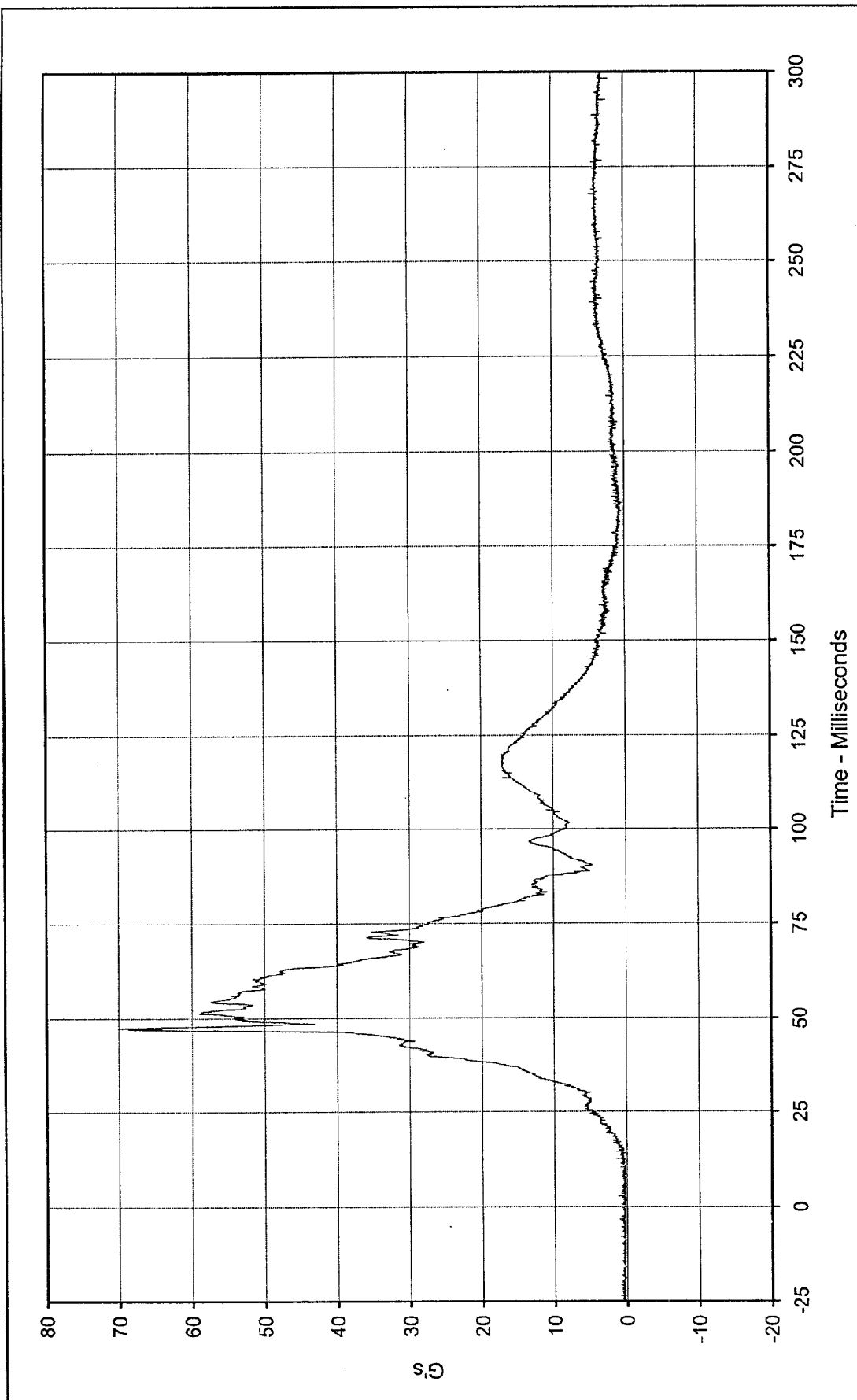
Curve Number: FIL-065





Curve Description:	Passenger Pelvis Z	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW0303
Maximum Value:	5.9 at 47.9 Milliseconds	Test Vehicle:	1998 Dodge Dakota SLT Pickup	
Minimum Value:	-16.3 at 66.1 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	1/28/98			
Curve Number:	FIL-066			





Curve Description: Passenger Pelvis Resultant

Maximum Value: 70.1 at 47.6 Milliseconds

Minimum Value: 0.1 at 1.8 Milliseconds

SAE Filter Class: 1000

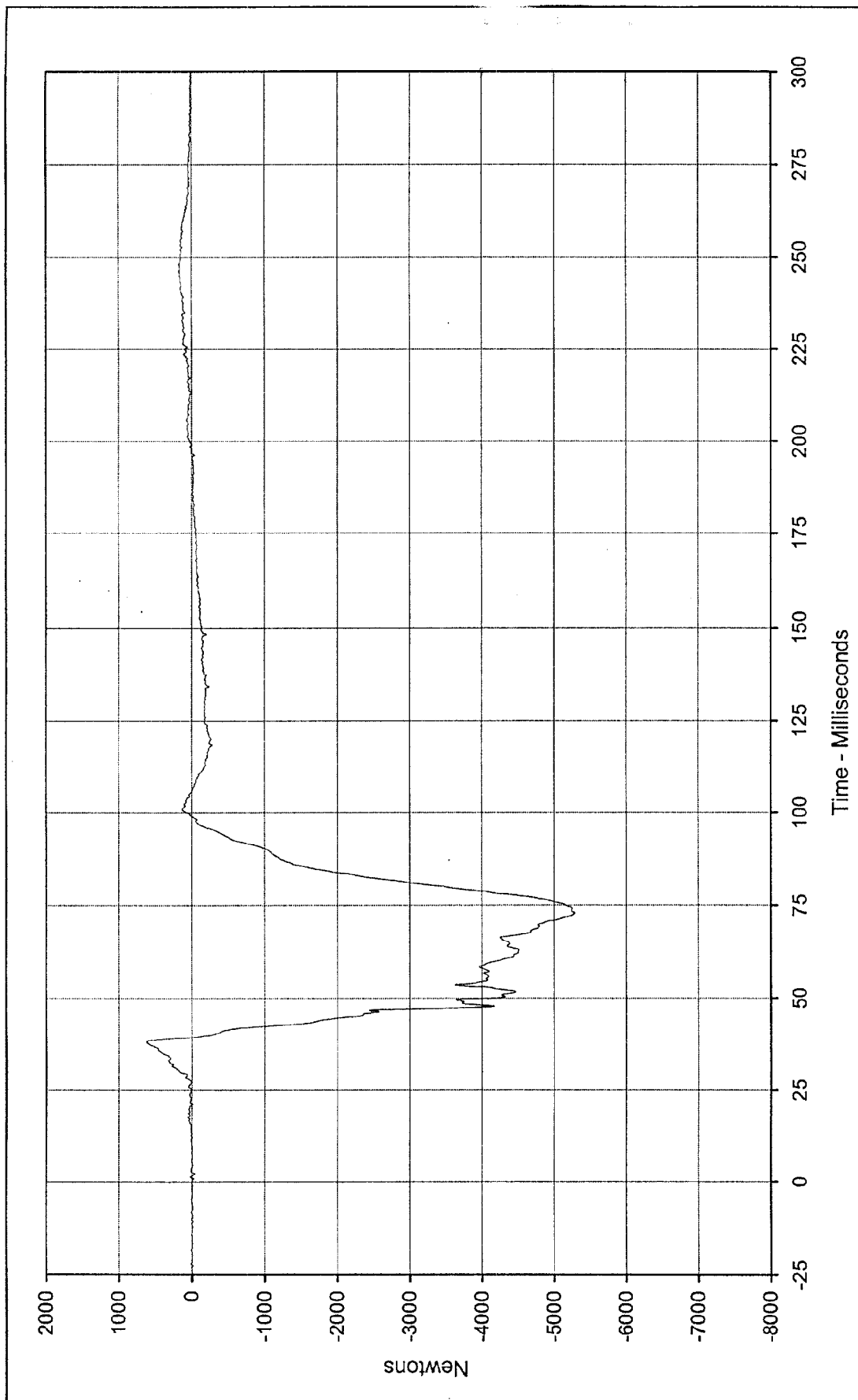
Date of Test: 1/28/98

Curve Number: RES-064

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup

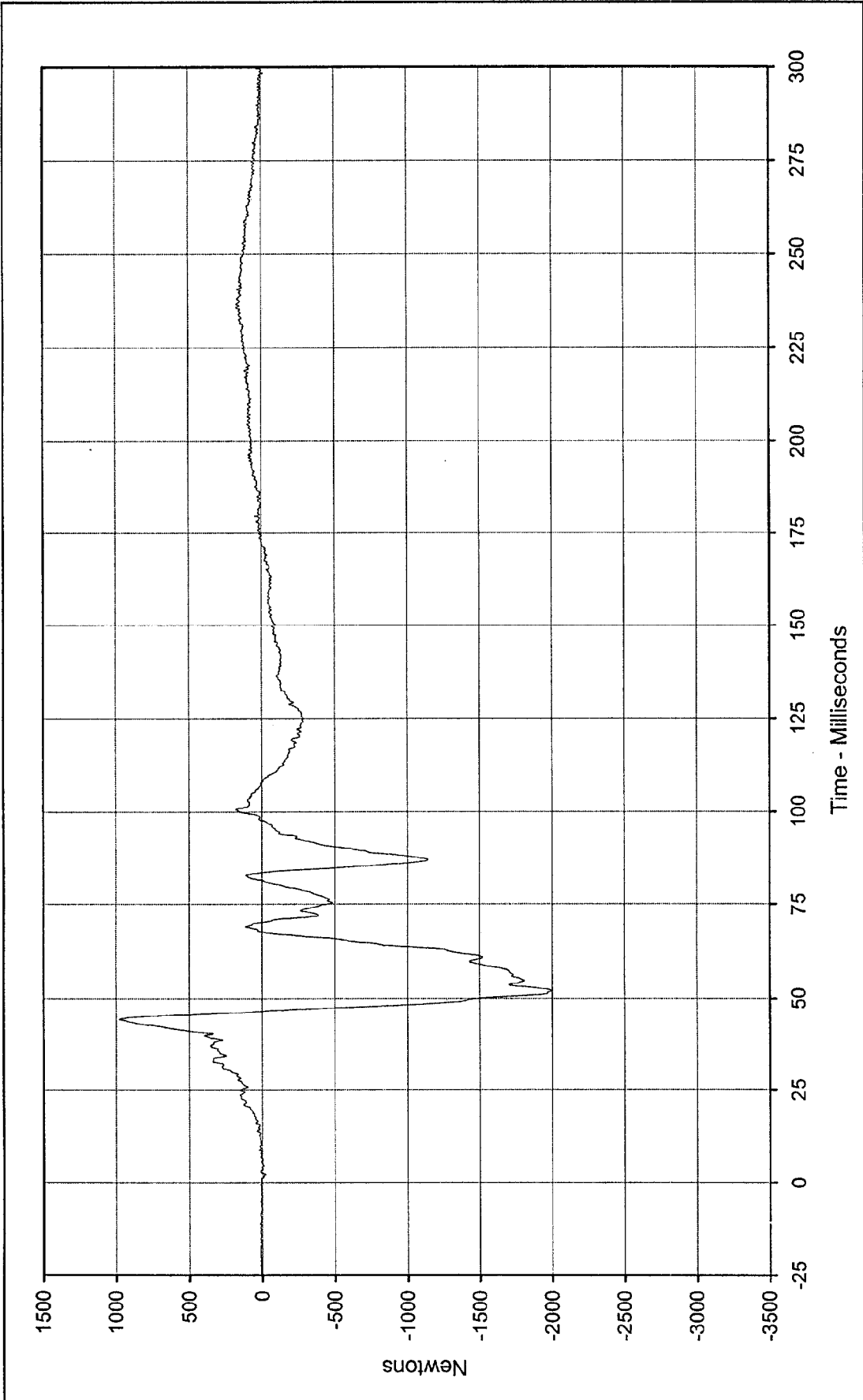




Curve Description: Passenger Left Femur Force
 Maximum Value: 621.5 at 37.9 Milliseconds
 Minimum Value: -5292.3 at 73.0 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/28/98
 Curve Number: FIL-067

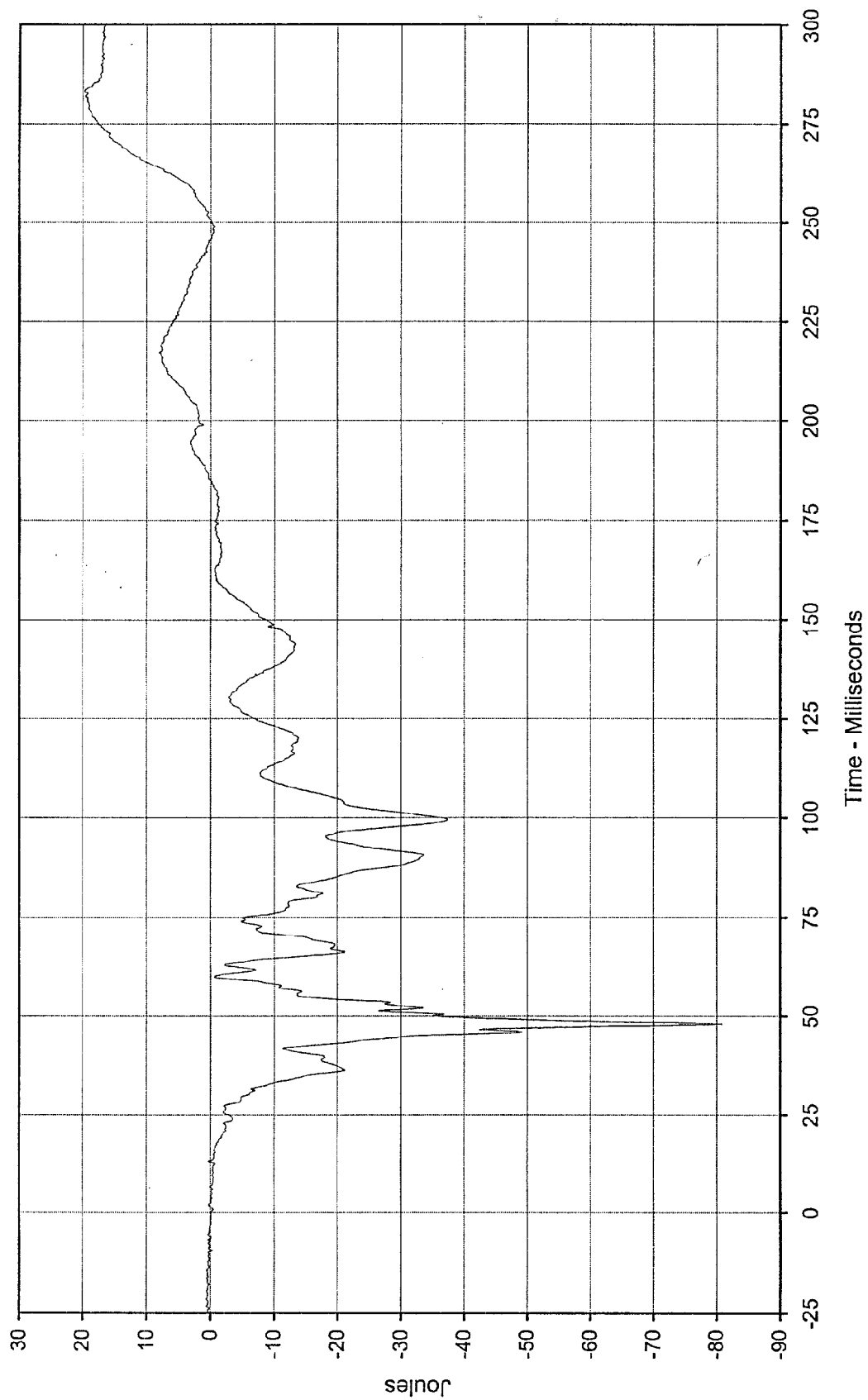
Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description:	Passenger Right Femur Force	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW0303
Maximum Value:	976.4 at 44.2 Milliseconds	Test Vehicle:	1998 Dodge Dakota SLT Pickup	
Minimum Value:	-2002.0 at 52.0 Milliseconds			
SAE Filter Class:	600			
Date of Test:	1/28/98			
Curve Number:	FIL-068			





Curve Description: Passenger Left Upper Tibia Moment X

Maximum Value: 19.7 at 283.3 Milliseconds

Minimum Value: -80.9 at 48.1 Milliseconds

SAE Filter Class: 600

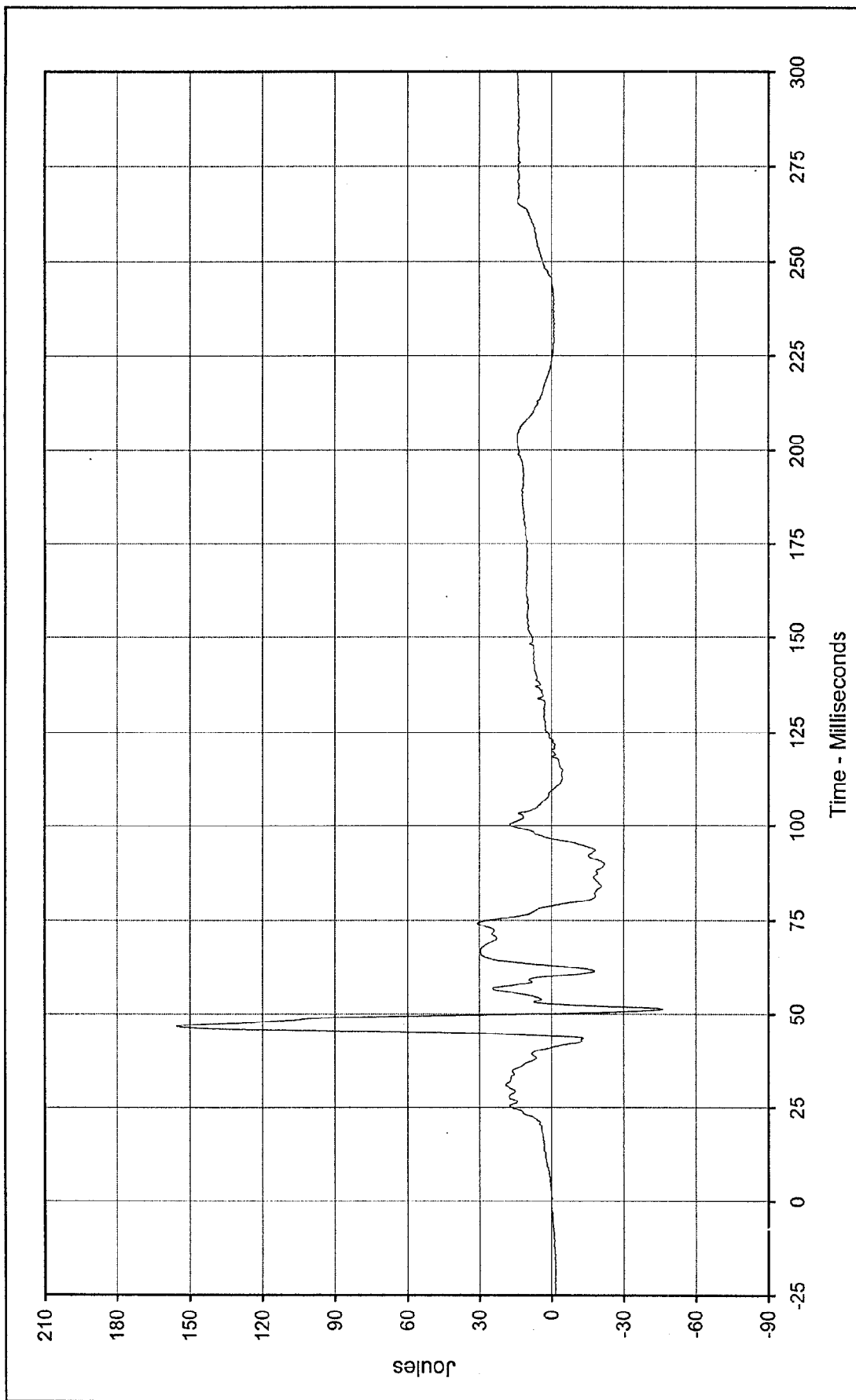
Date of Test: 1/28/98

Curve Number: FIL-069

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup

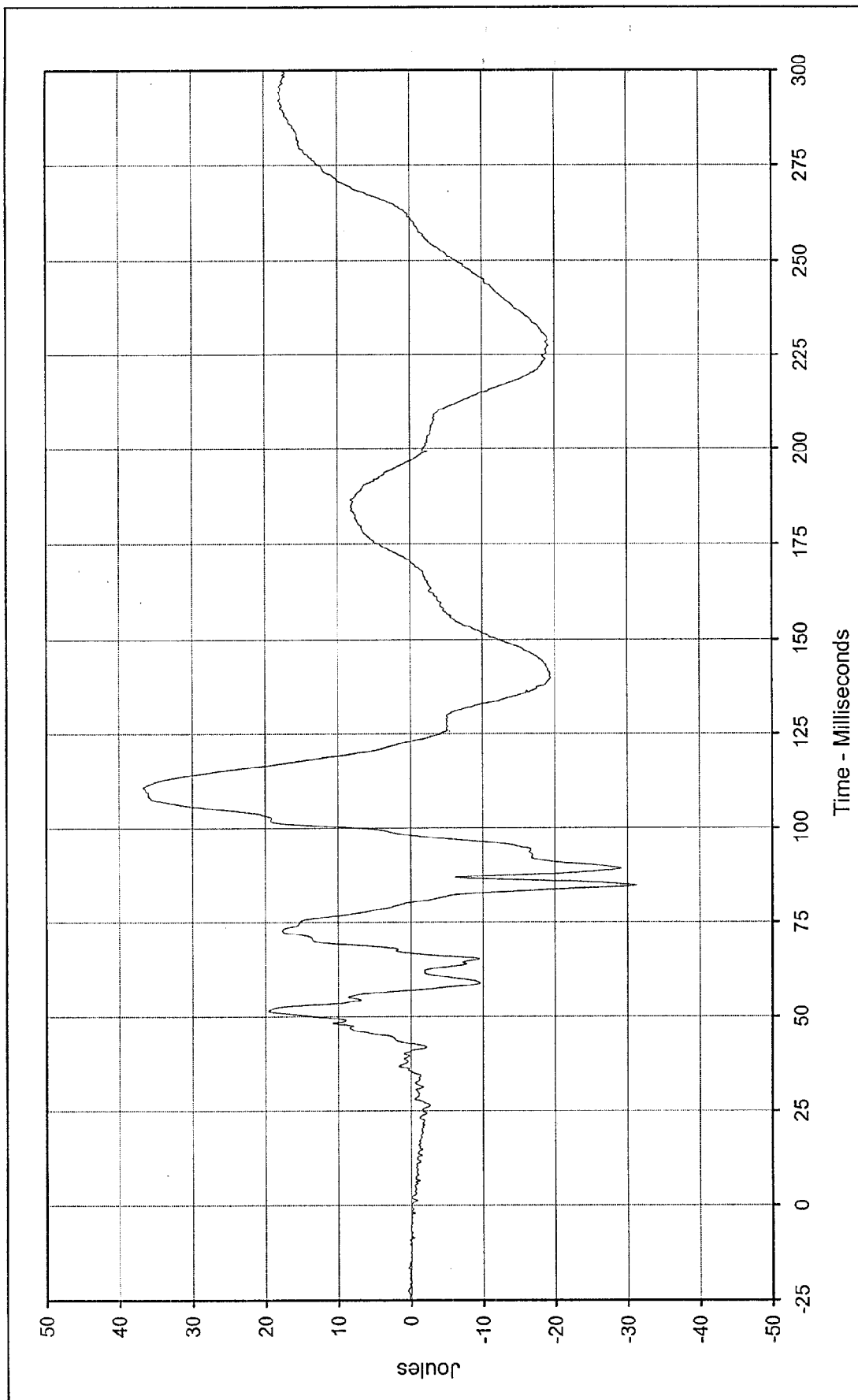




Curve Description: Passenger Left Upper Tibia Moment Y
 Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

Maximum Value: 155.4 at 46.6 Milliseconds
 Minimum Value: -46.2 at 51.3 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/28/98
 Curve Number: FIL-070

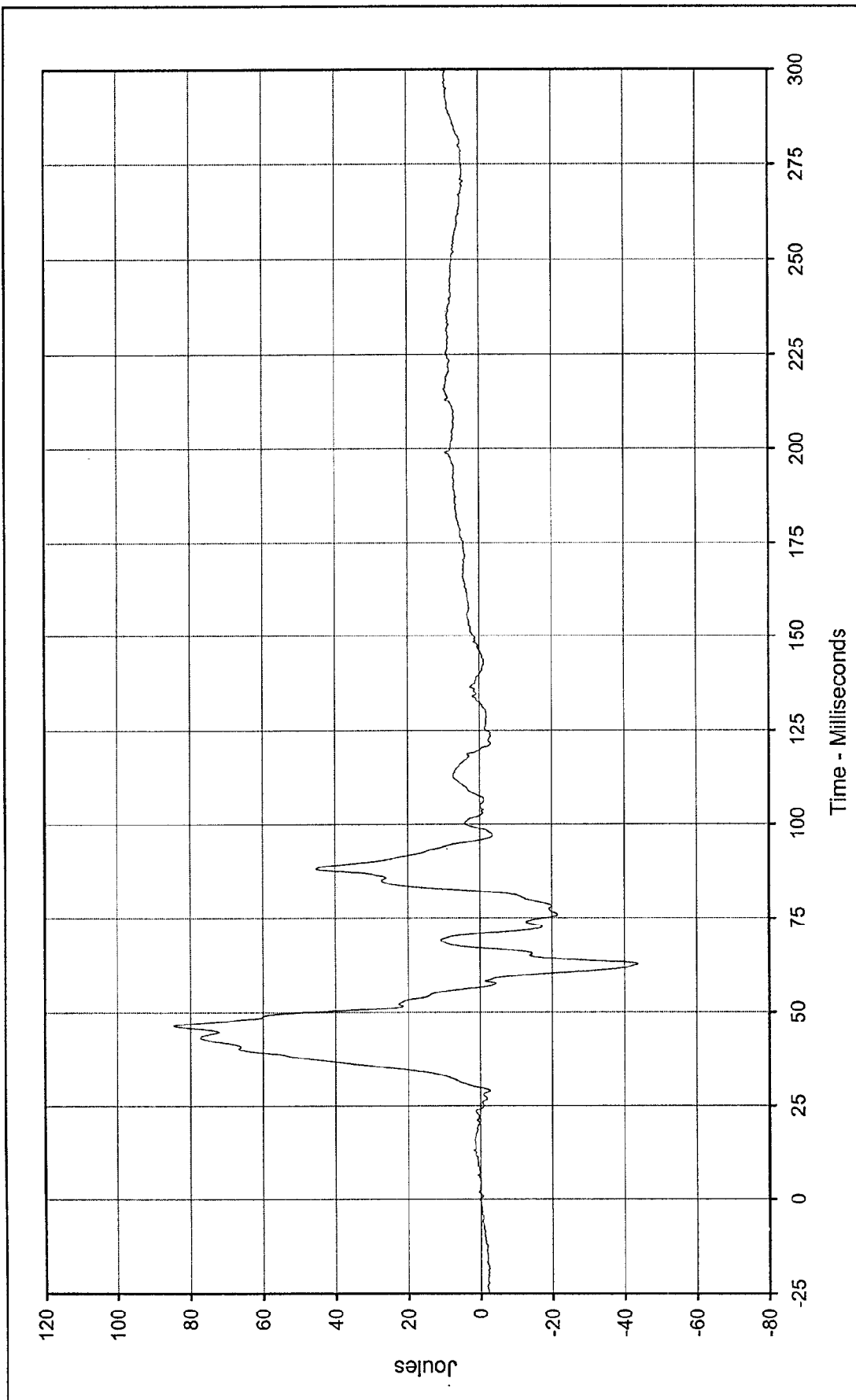




Curve Description: Passenger Right Upper Tibia Moment X
 Maximum Value: 36.7 at 110.6 Milliseconds
 Minimum Value: -31.2 at 84.7 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/28/98
 Curve Number: FIL-071

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Passenger Right Upper Tibia Moment Y Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Maximum Value: 84.5 at 46.4 Milliseconds Test Vehicle: 1998 Dodge Dakota SLT Pickup

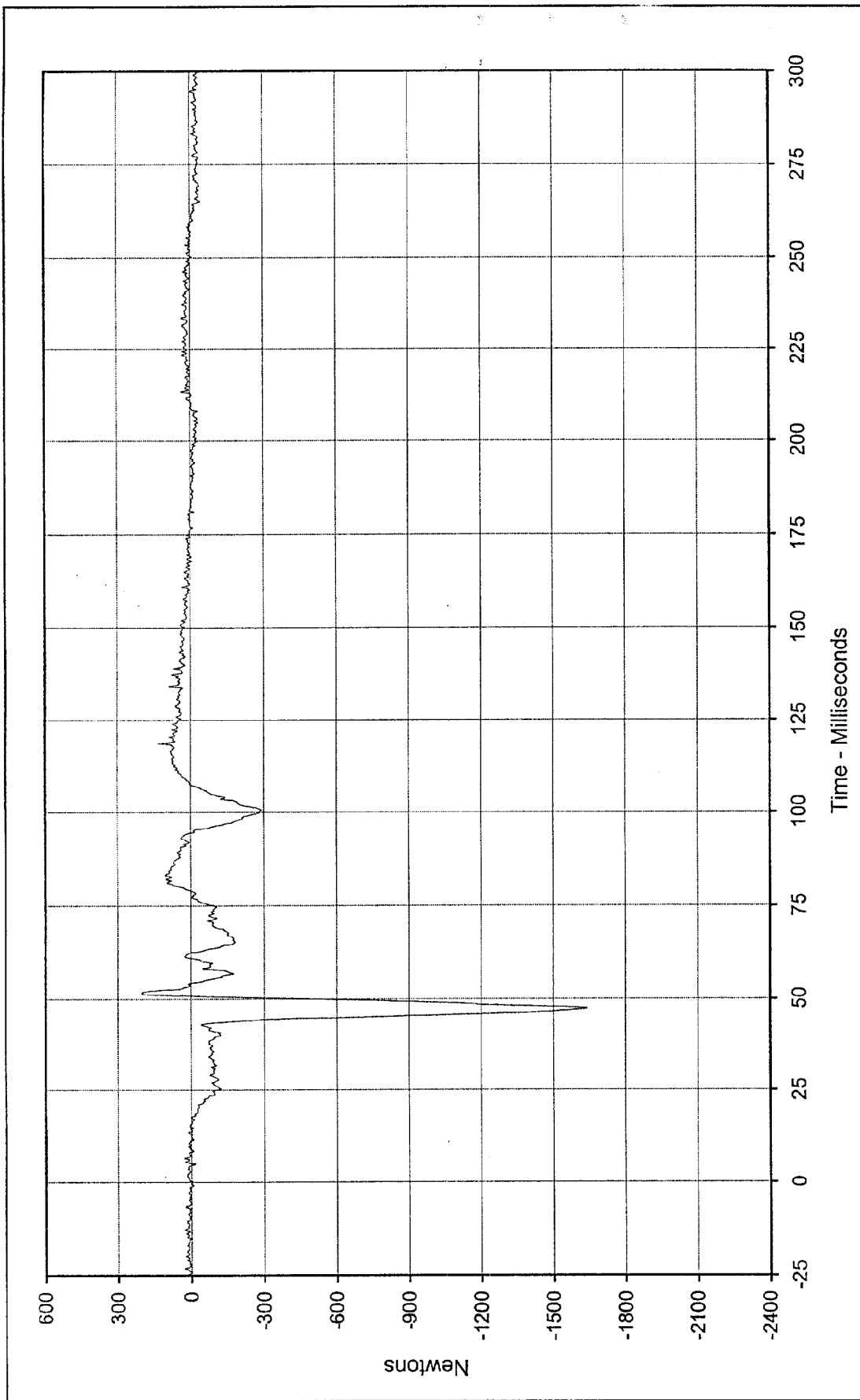
Minimum Value: -43.7 at 62.6 Milliseconds



SAE Filter Class: 600

Date of Test: 1/28/98

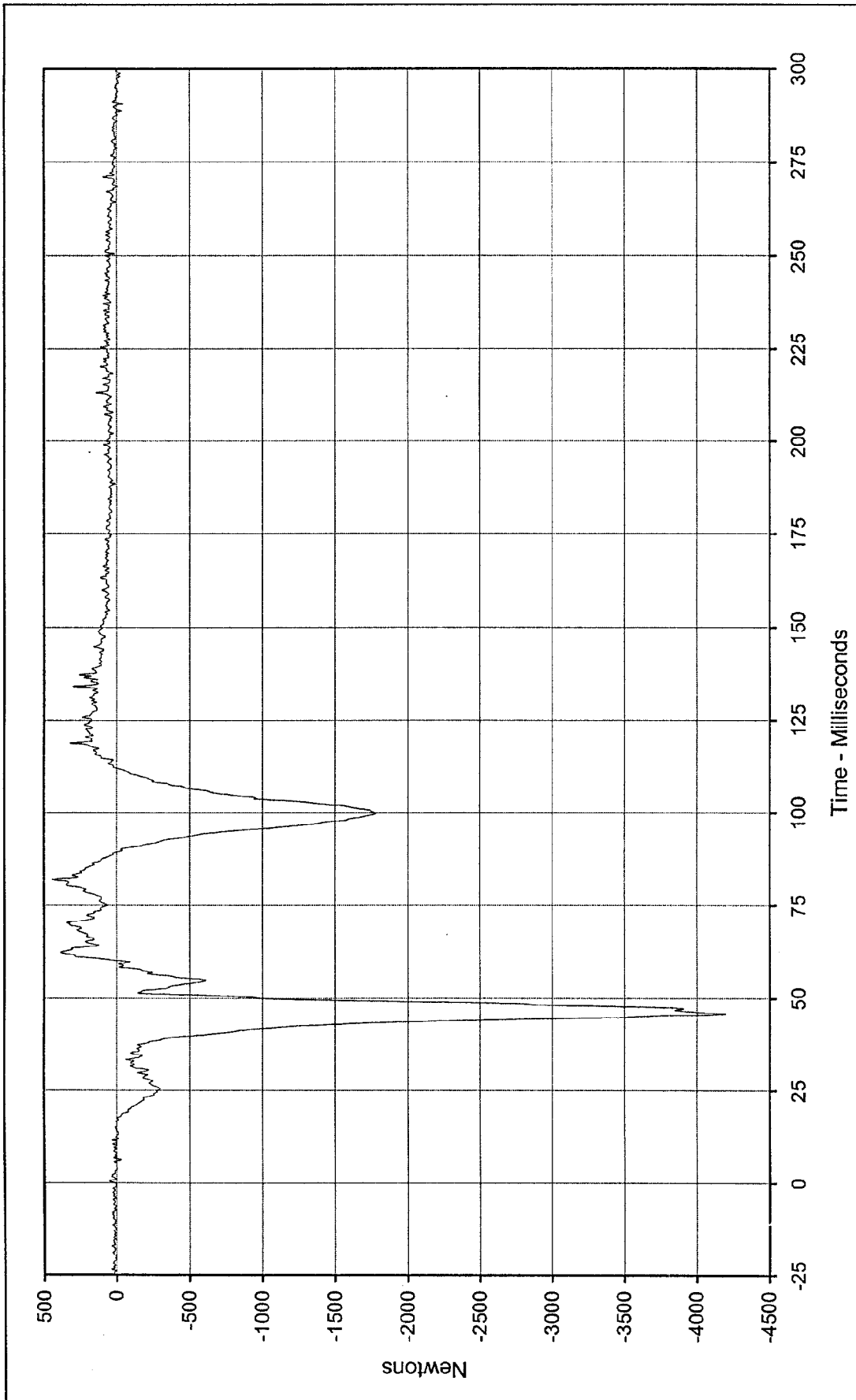
Curve Number: FIL-072



Curve Description: Passenger Left Lower Tibia Force X
 Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

Maximum Value: 203.1 at 51.5 Milliseconds
 Minimum Value: -1639.8 at 47.3 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/28/98
 Curve Number: FIL-073





Curve Description: Passenger Left Lower Tibia Force Z Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Maximum Value: 443.1 at 81.9 Milliseconds Test Vehicle: 1998 Dodge Dakota SLT Pickup

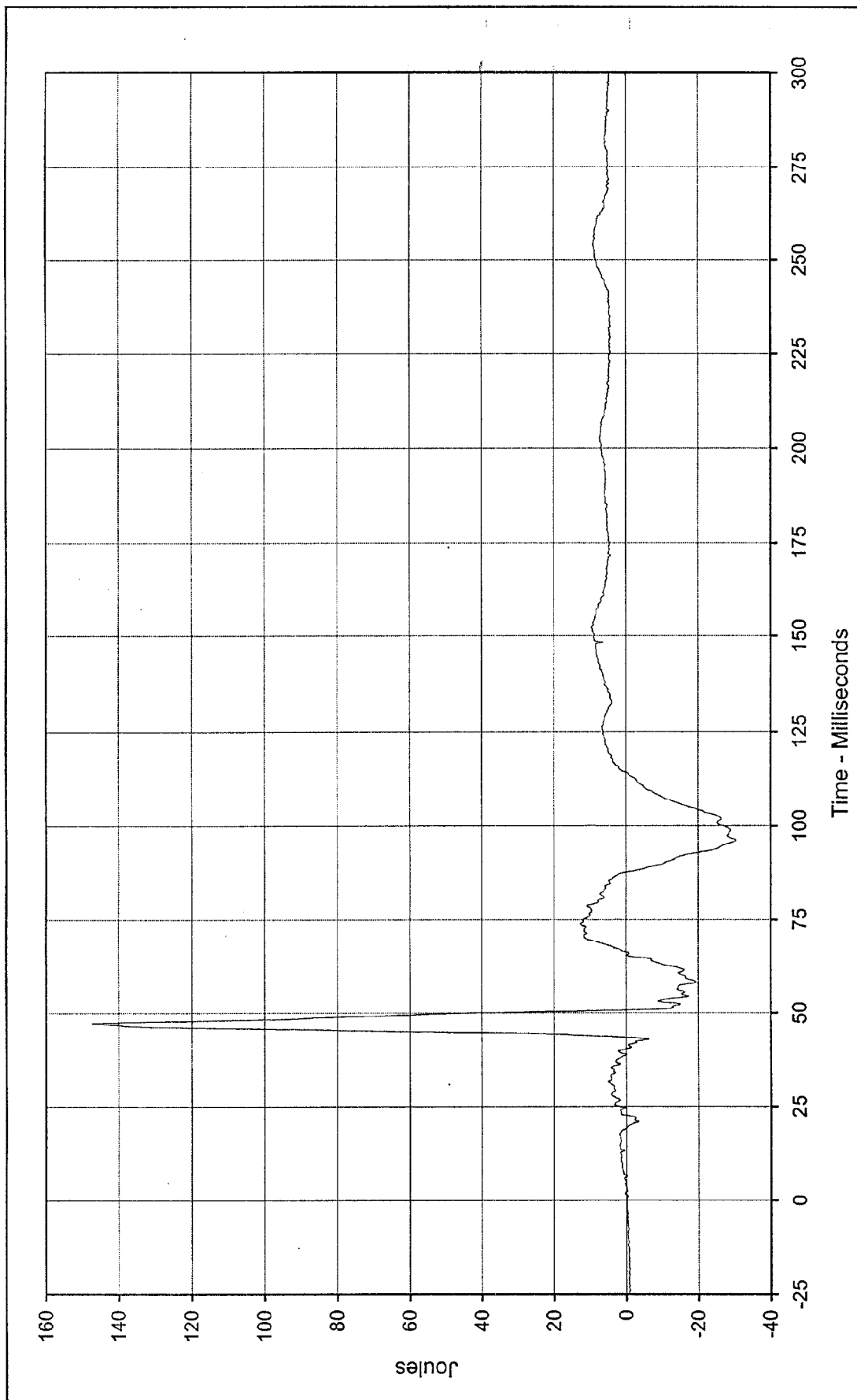
Minimum Value: -4196.2 at 45.8 Milliseconds

SAE Filter Class: 600

Date of Test: 1/28/98

Curve Number: FIL-074

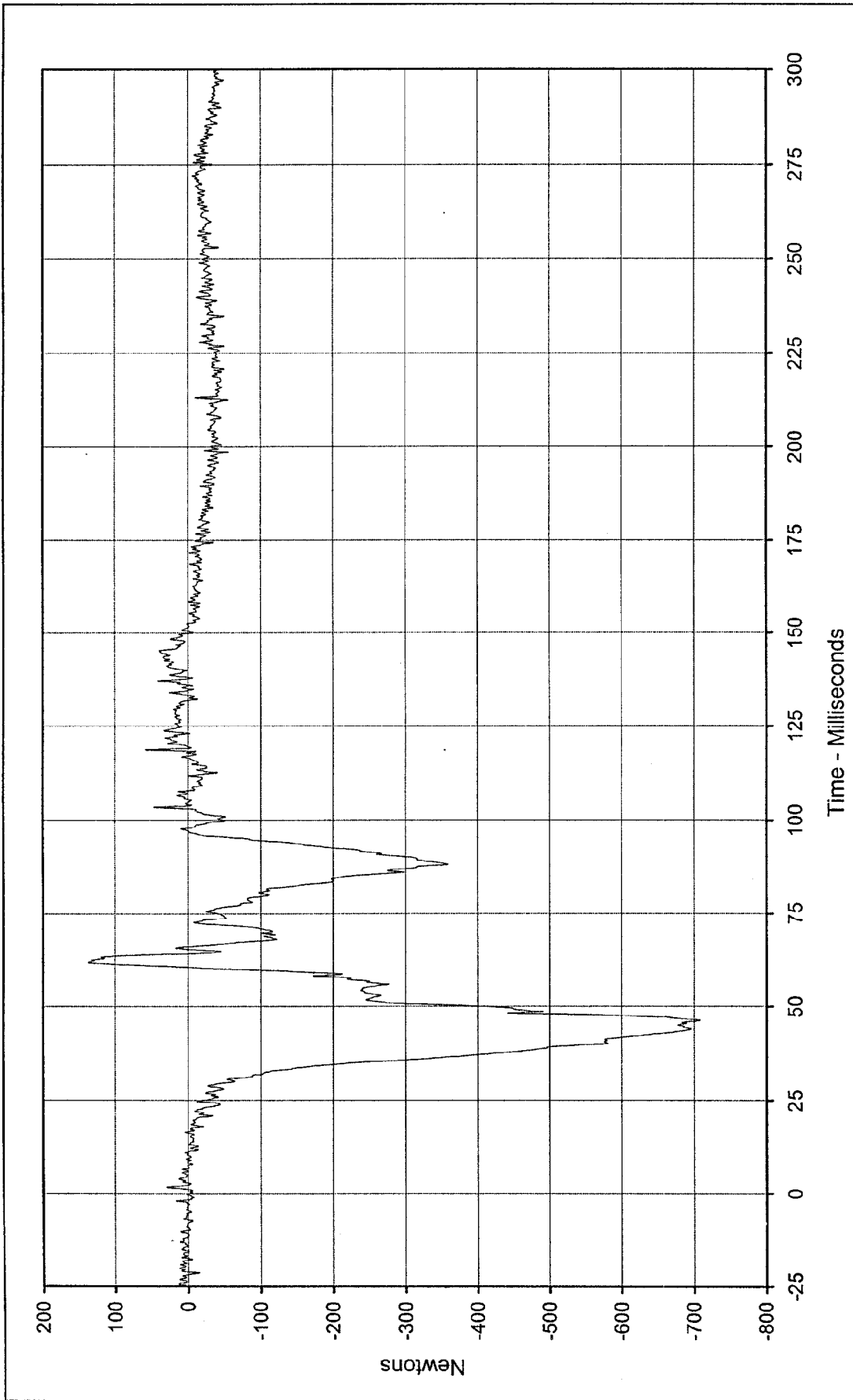




Curve Description: Passenger Left Lower Tibia Moment Y
 Maximum Value: 147.3 at 47.3 Milliseconds
 Minimum Value: -30.3 at 96.2 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/28/98
 Curve Number: FIL-075

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Passenger Right Lower Tibia Force X

Maximum Value: 137.4 at 61.8 Milliseconds

Minimum Value: -708.6 at 46.1 Milliseconds

SAE Filter Class: 600

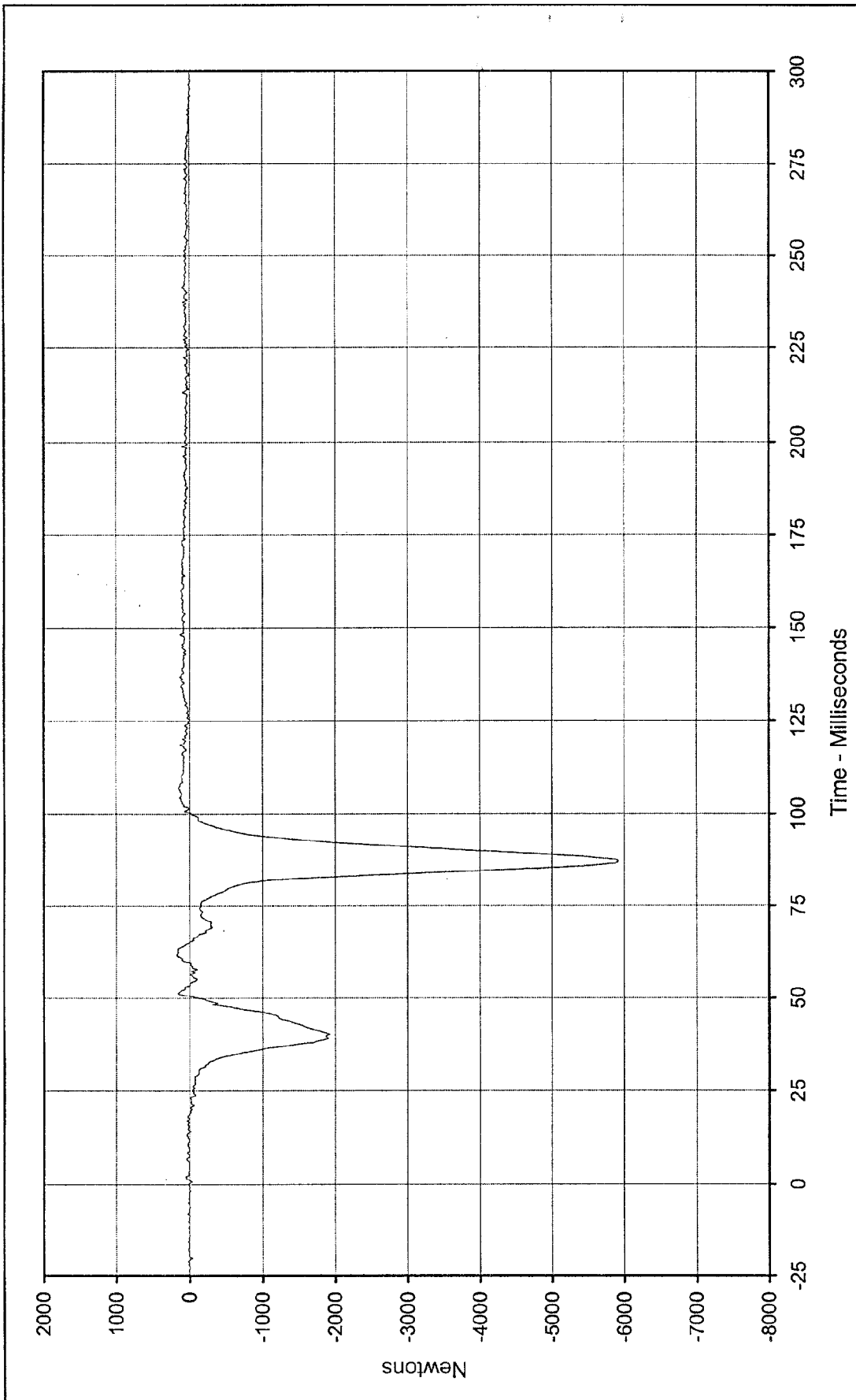
Date of Test: 1/28/98

Curve Number: FIL-076

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Passenger Right Lower Tibia Force Z

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Maximum Value: 172.4 at 61.5 Milliseconds

Test Vehicle: 1998 Dodge Dakota SLT Pickup

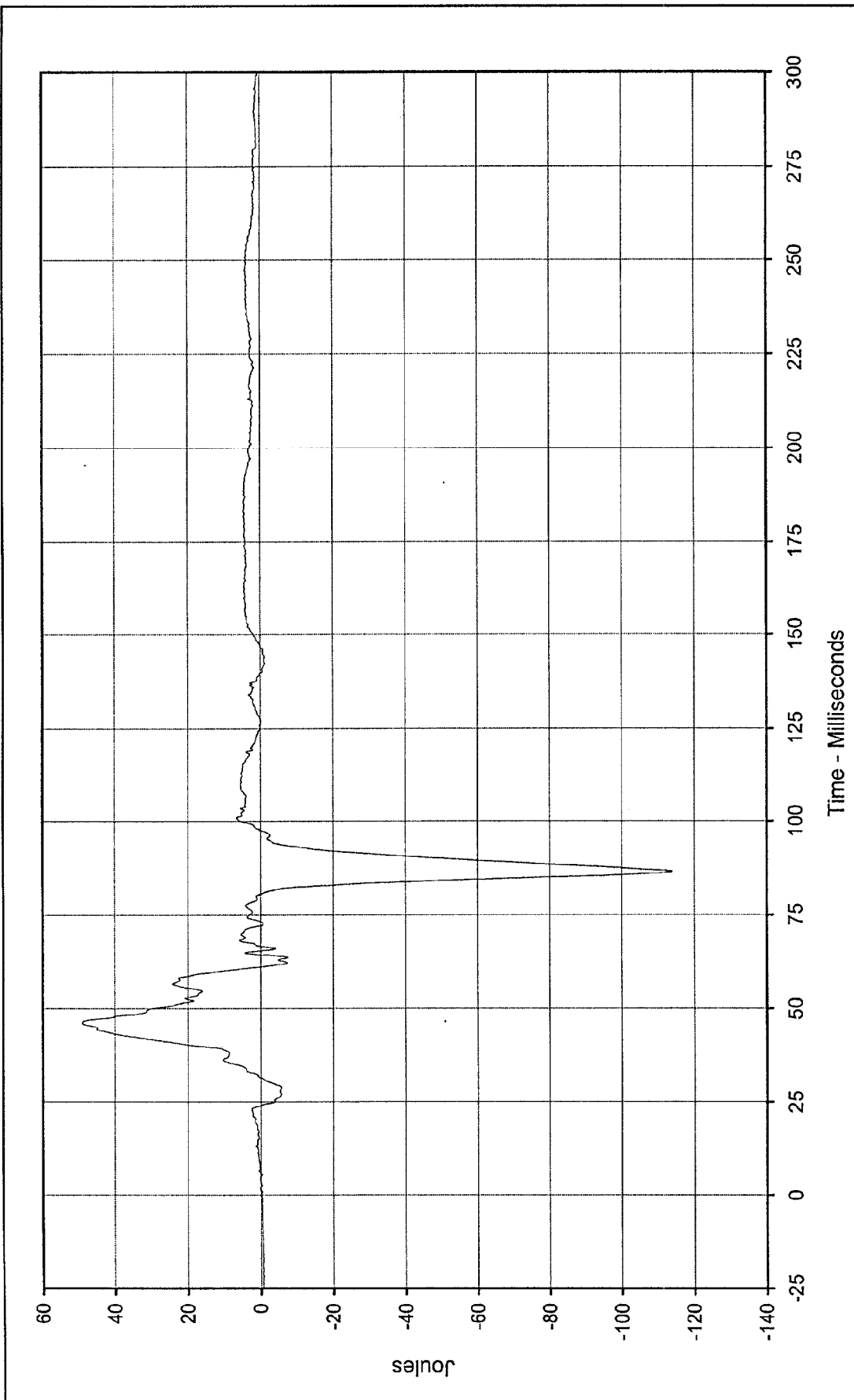
Minimum Value: -5919.8 at 87.3 Milliseconds

SAE Filter Class: 600

Date of Test: 1/28/98

Curve Number: FIL-077





Curve Description: Passenger Right lower Tibia Moment Y

Maximum Value: 49.0 at 46.1 Milliseconds

Minimum Value: -114.0 at 86.3 Milliseconds

SAE Filter Class: 600

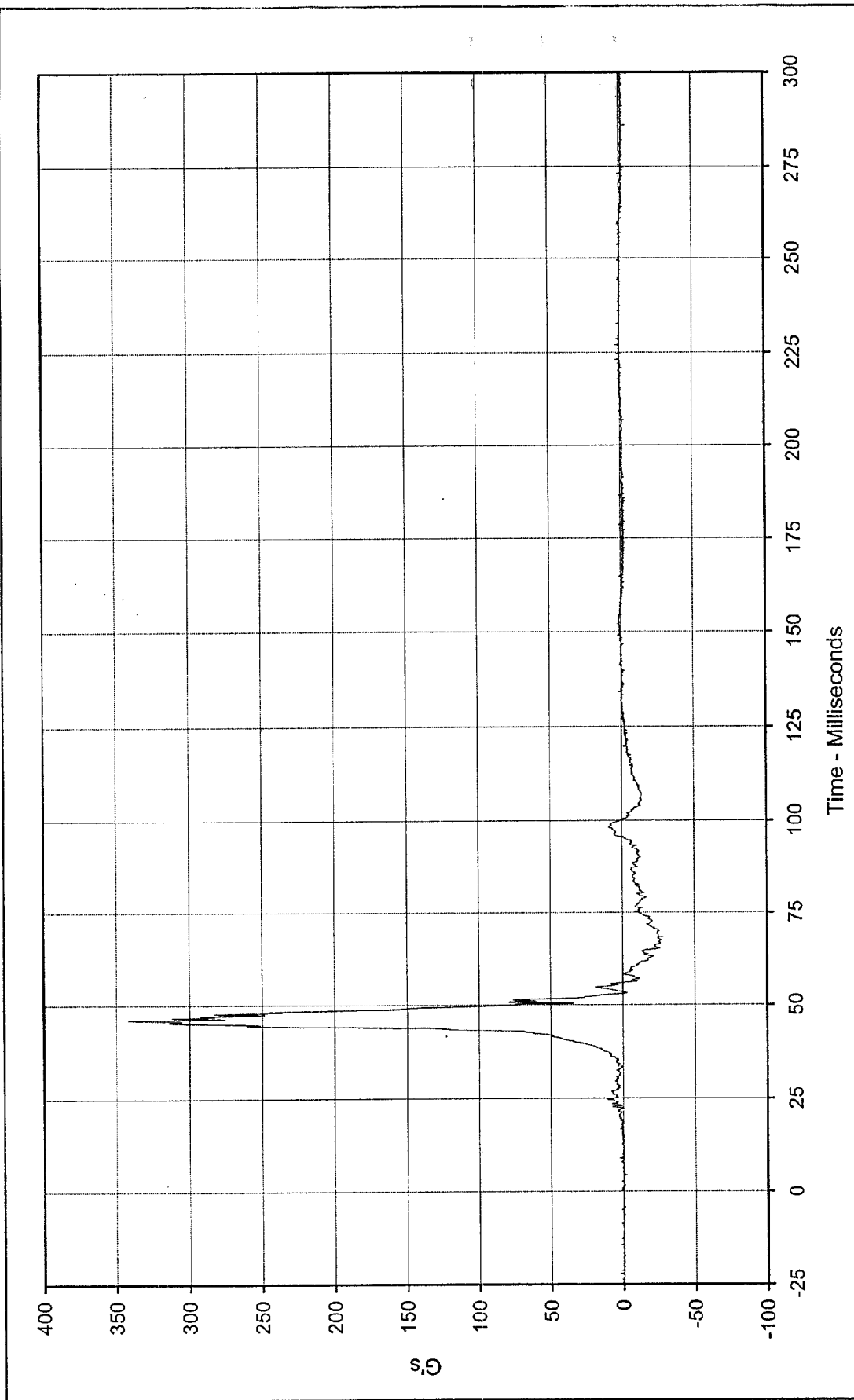
Date of Test: 1/28/98

Curve Number: FIL-078

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup

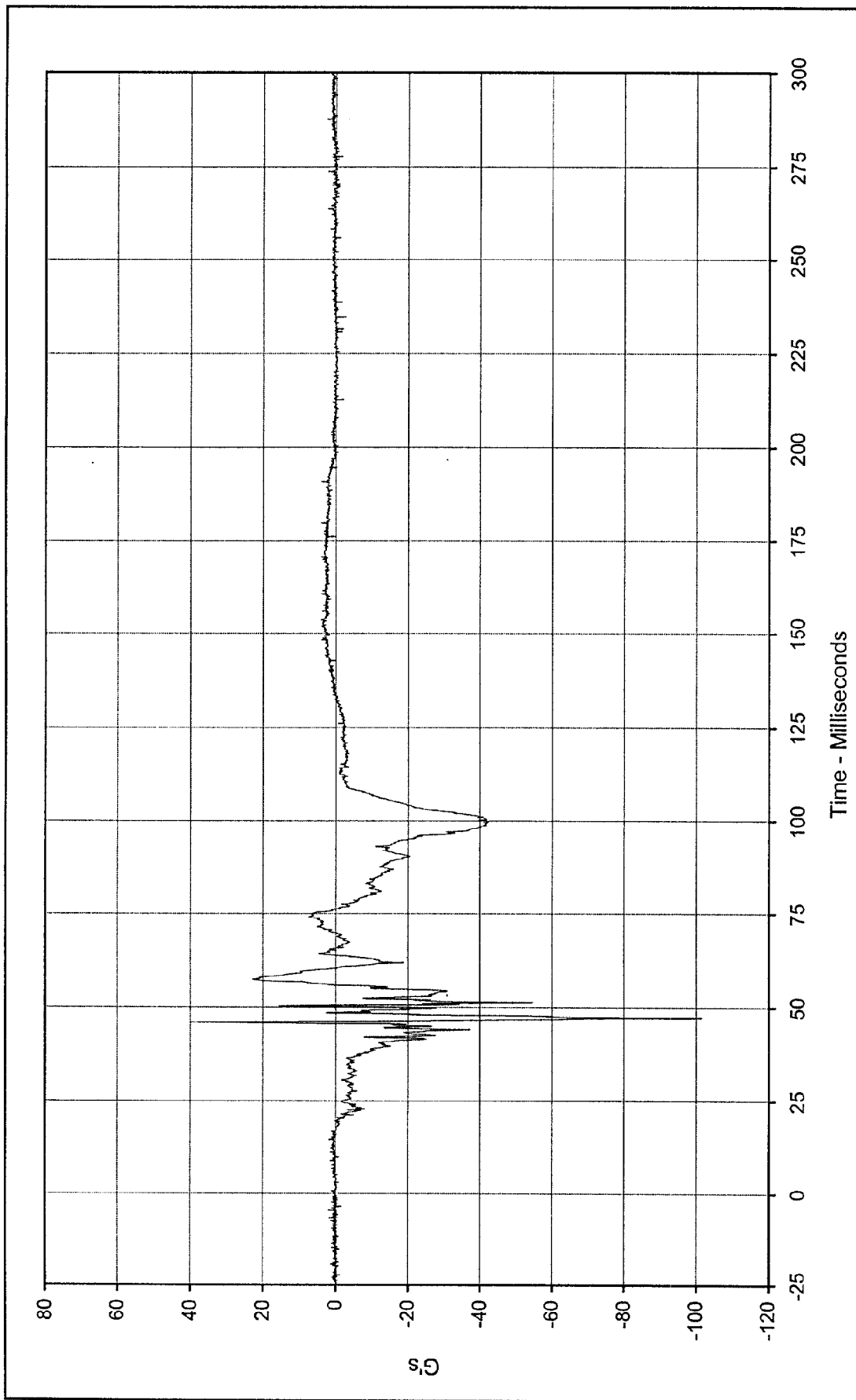




Curve Description: Passenger Left Foot Aft X
 Maximum Value: 341.8 at 46.1 Milliseconds
 Minimum Value: -28.1 at 68.3 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: FIL-079

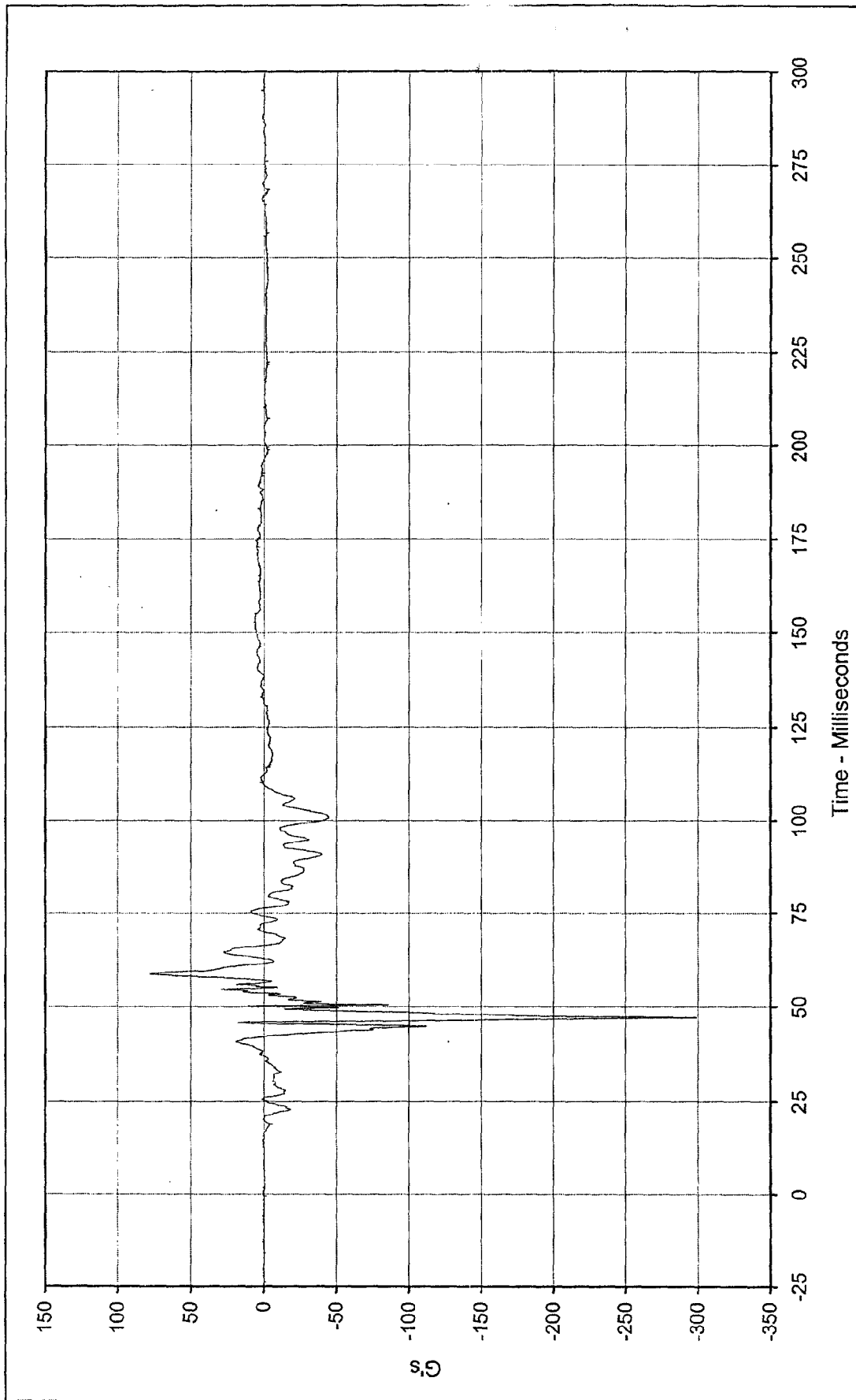
Testing Program: 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description:	Passenger Left Foot Aft Z	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW0303
Maximum Value:	39.9 at 45.9 Milliseconds	Test Vehicle:	1998 Dodge Dakota SLT Pickup	
Minimum Value:	-101.2 at 47.3 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	1/28/98			
Curve Number:	FIL-080			

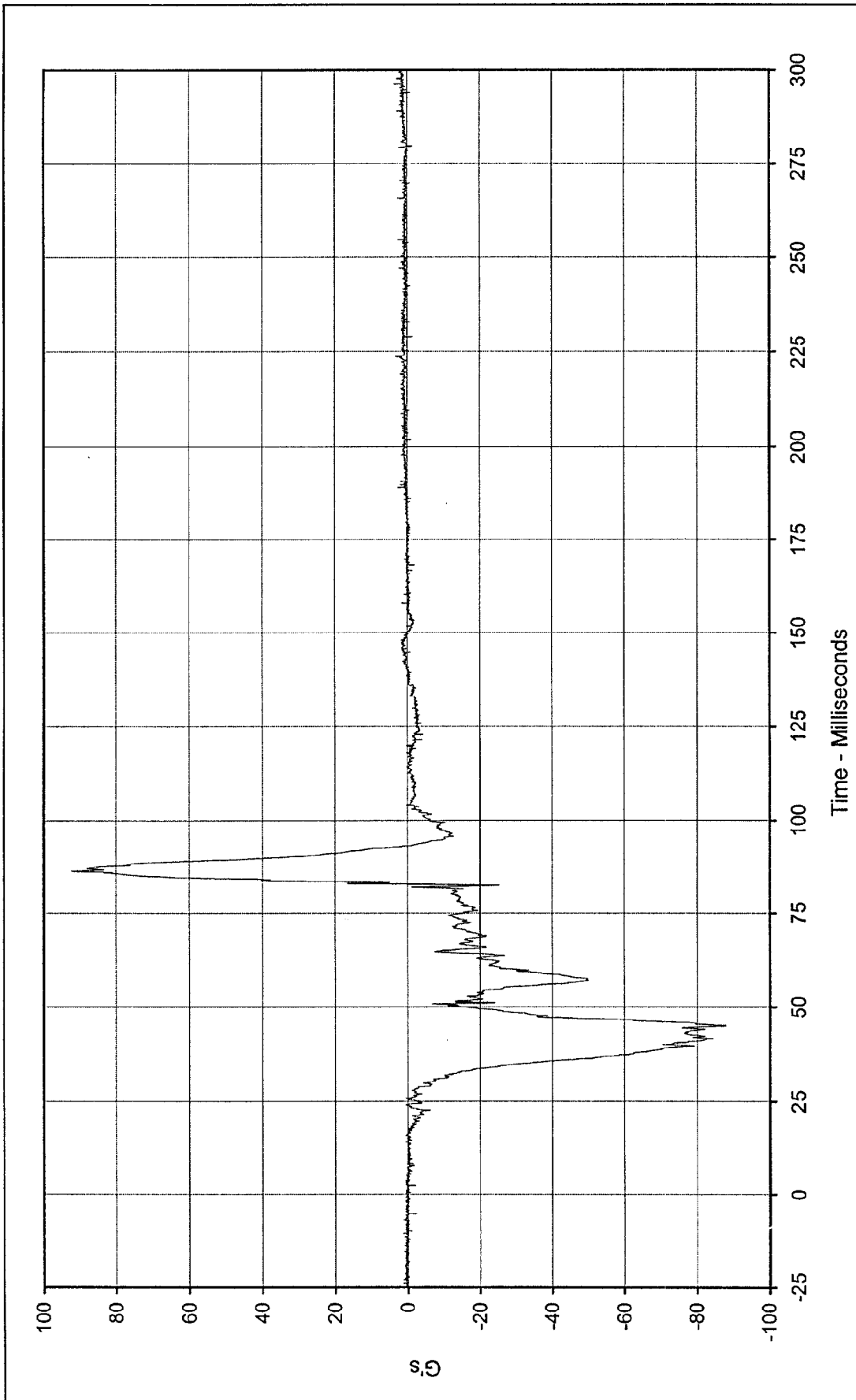




Curve Description: Passenger Left Foot Fore Z
 Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

Maximum Value: 78.0 at 58.6 Milliseconds
 Minimum Value: -299.0 at 47.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: FIL-081

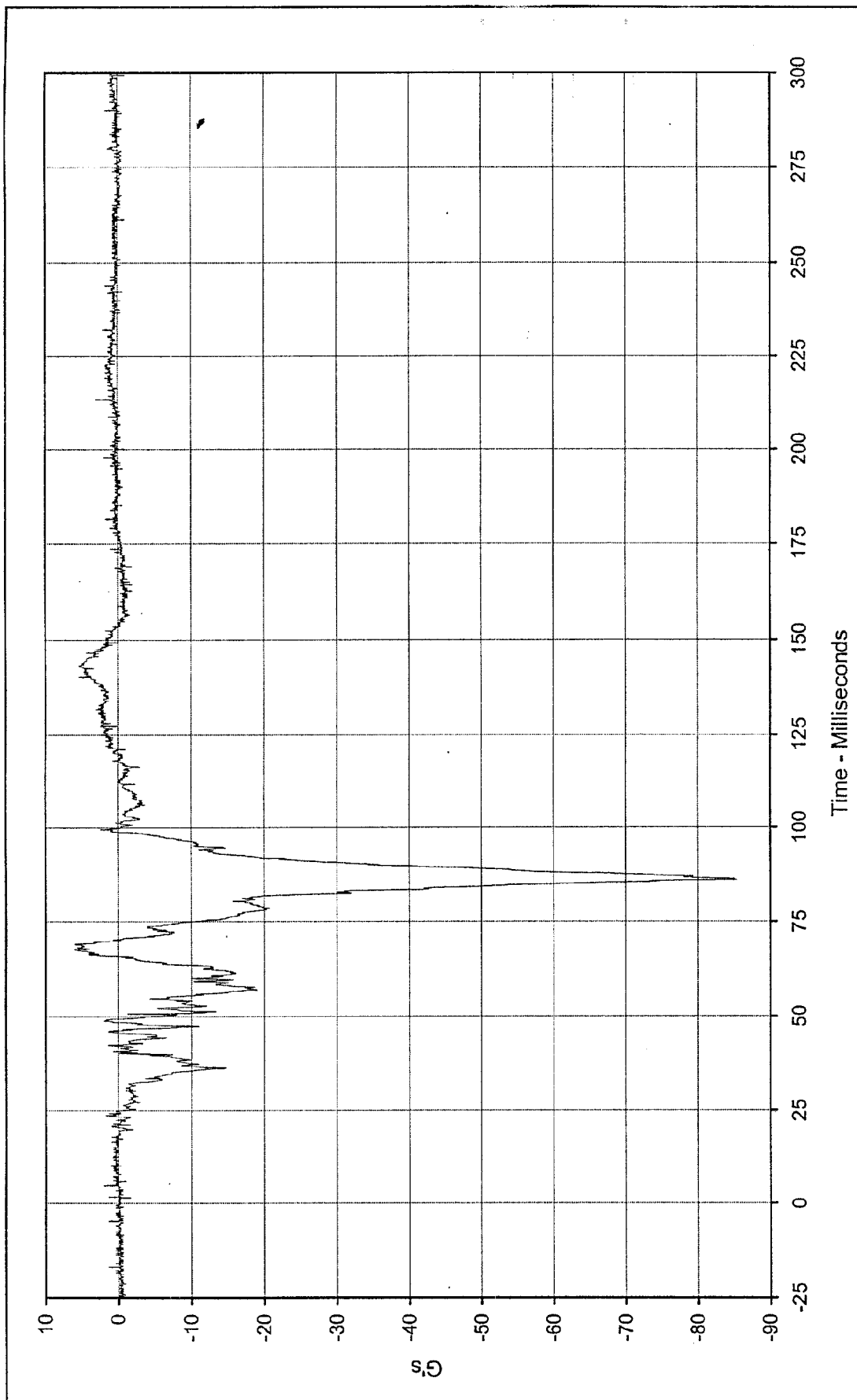




Curve Description: Passenger Right Foot Aft X
 Testing Program: 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

Maximum Value: 92.4 at 86.1 Milliseconds
 Minimum Value: -87.9 at 44.8 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: FIL-082

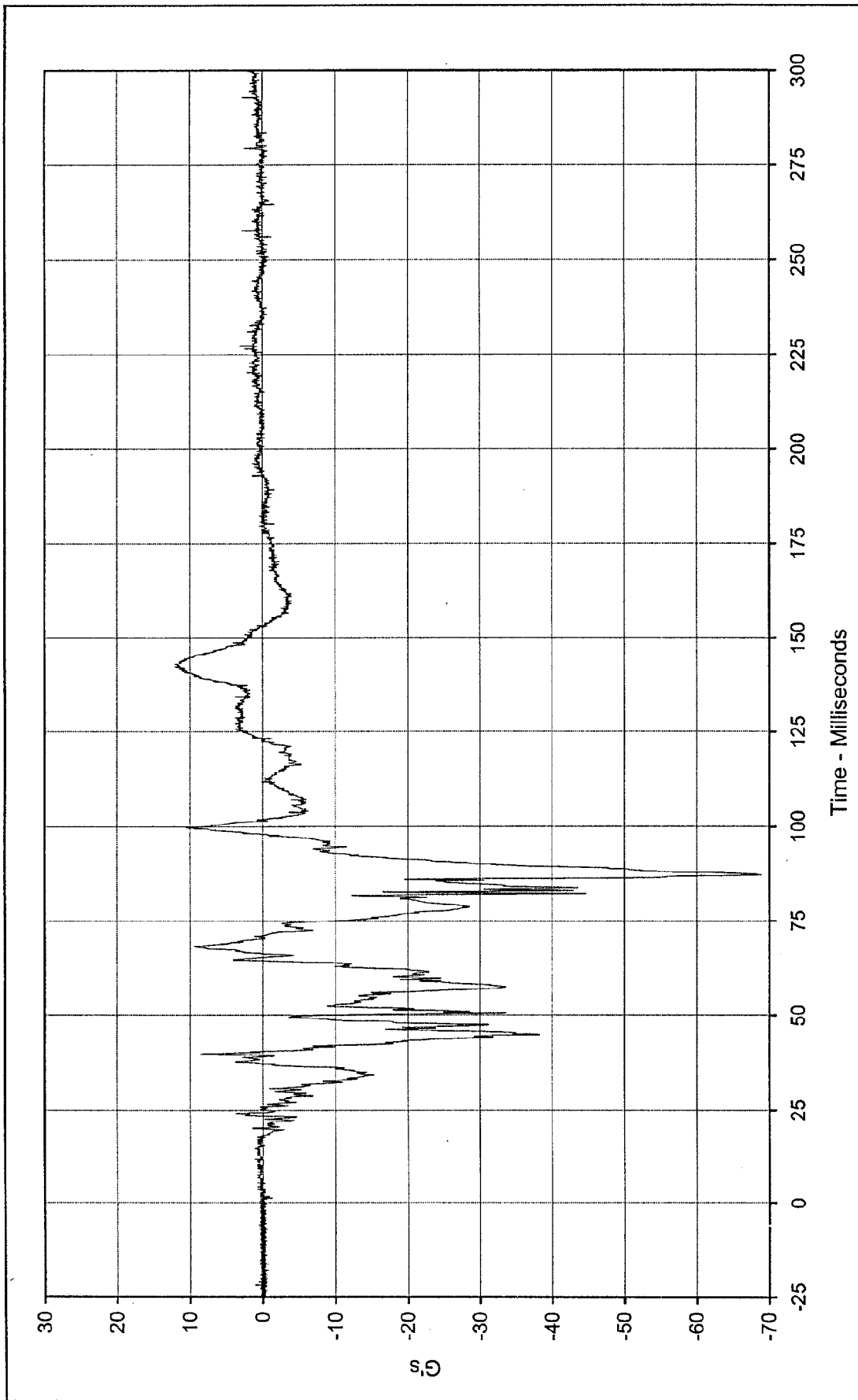




Curve Description: Passenger Right Foot Aft Z
 Maximum Value: 6.0 at 67.6 Milliseconds
 Minimum Value: -85.3 at 85.9 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: FIL-083

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

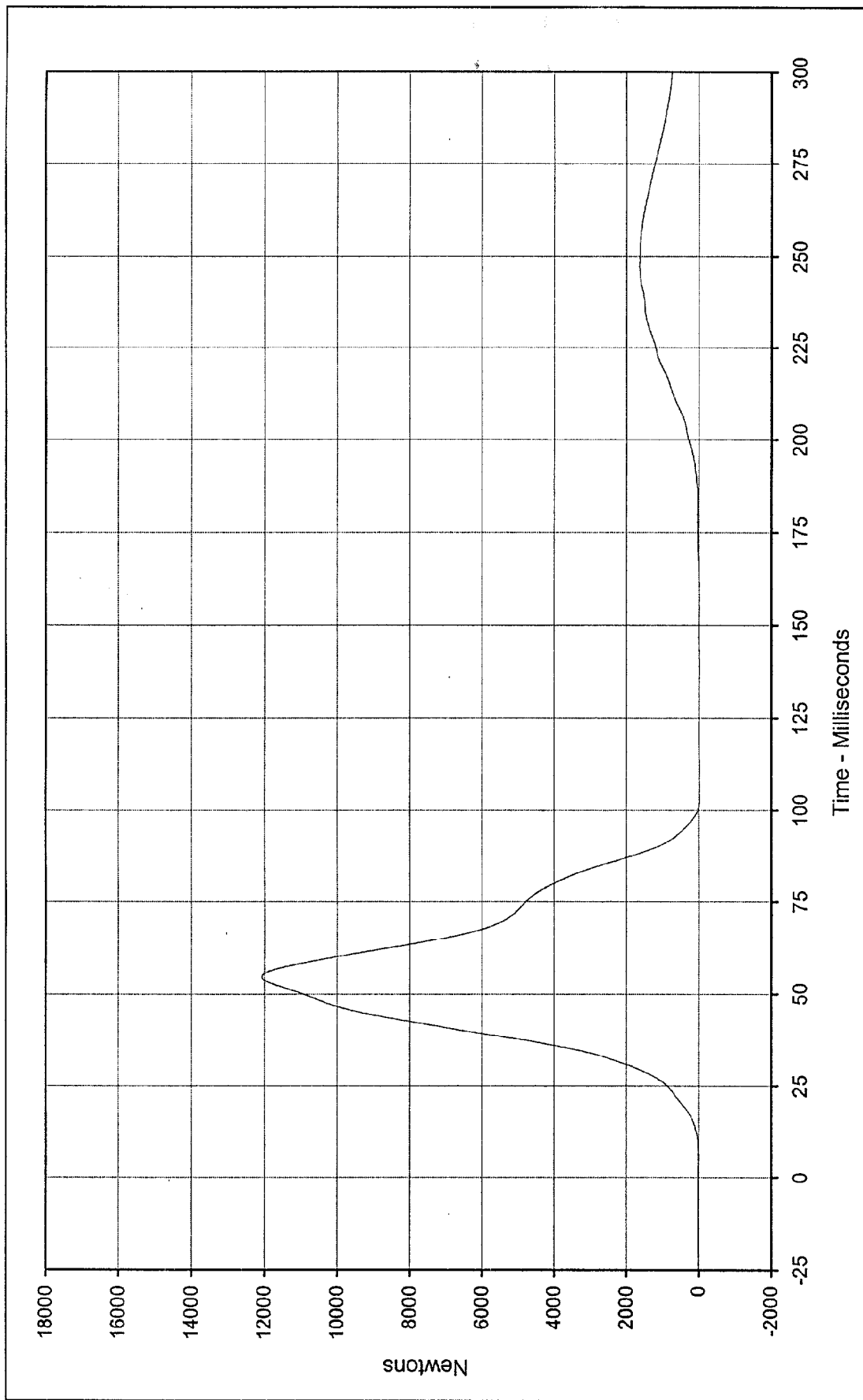




Curve Description: Passenger Right Foot Fore Z
 Maximum Value: 12.1 at 142.3 Milliseconds
 Minimum Value: -68.9 at 87.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/28/98
 Curve Number: FIL-084

Testing Program: 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

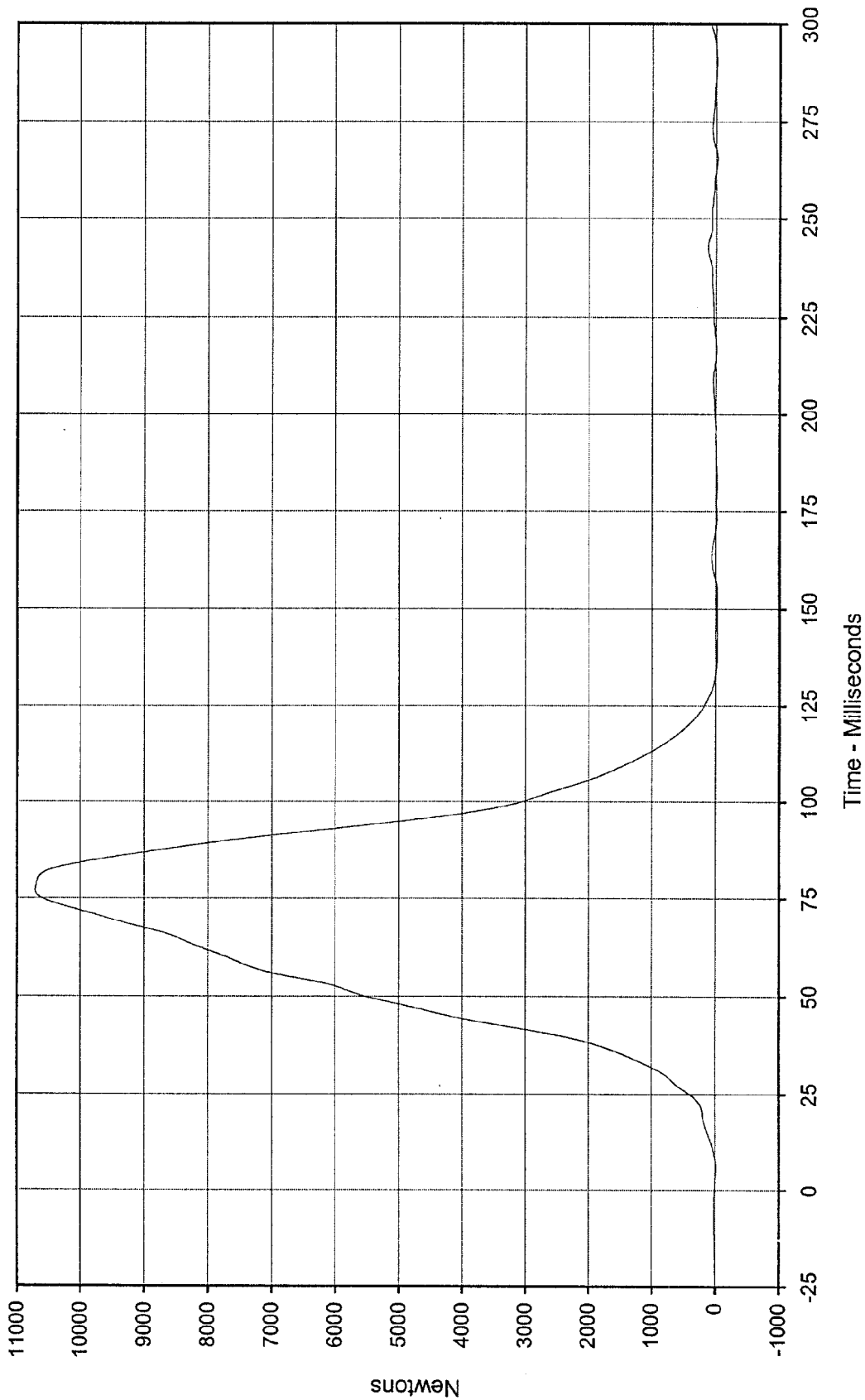




Curve Description: Passenger Lap Belt Force
 Maximum Value: 12072.1 at 54.6 Milliseconds
 Minimum Value: -28.0 at 103.2 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/28/98
 Curve Number: FIL-085

Testing Program: 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Passenger Shoulder Belt Force

Maximum Value: 10712.4 at 77.1 Milliseconds

Minimum Value: -30.1 at 143.0 Milliseconds

SAE Filter Class: 60

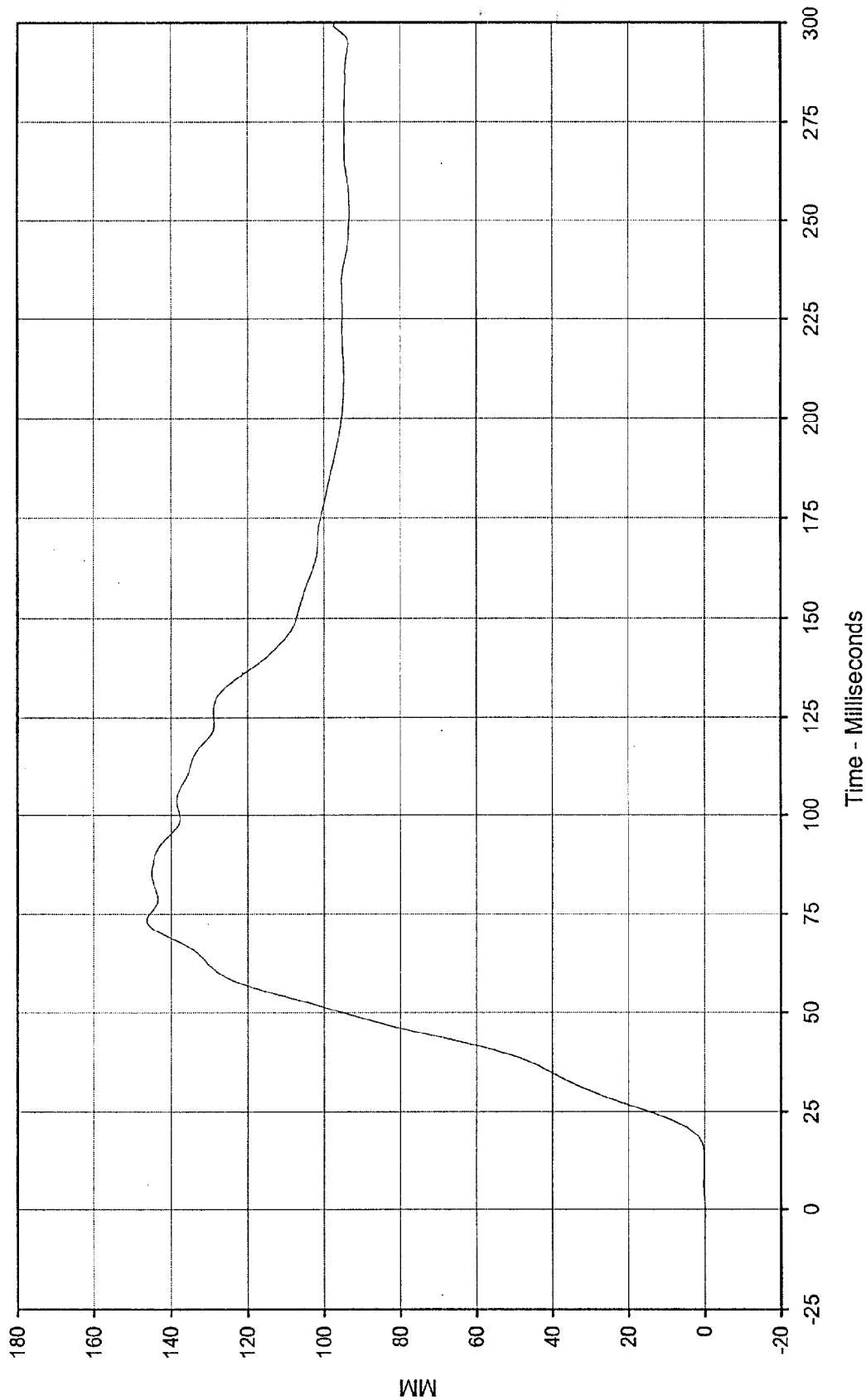
Date of Test: 1/28/98

Curve Number: FIL-086

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Passenger Shoulder Belt Pullout

Maximum Value: 146.2 at 73.4 Milliseconds

Minimum Value: -0.1 at 0.0 Milliseconds

SAE Filter Class: 60

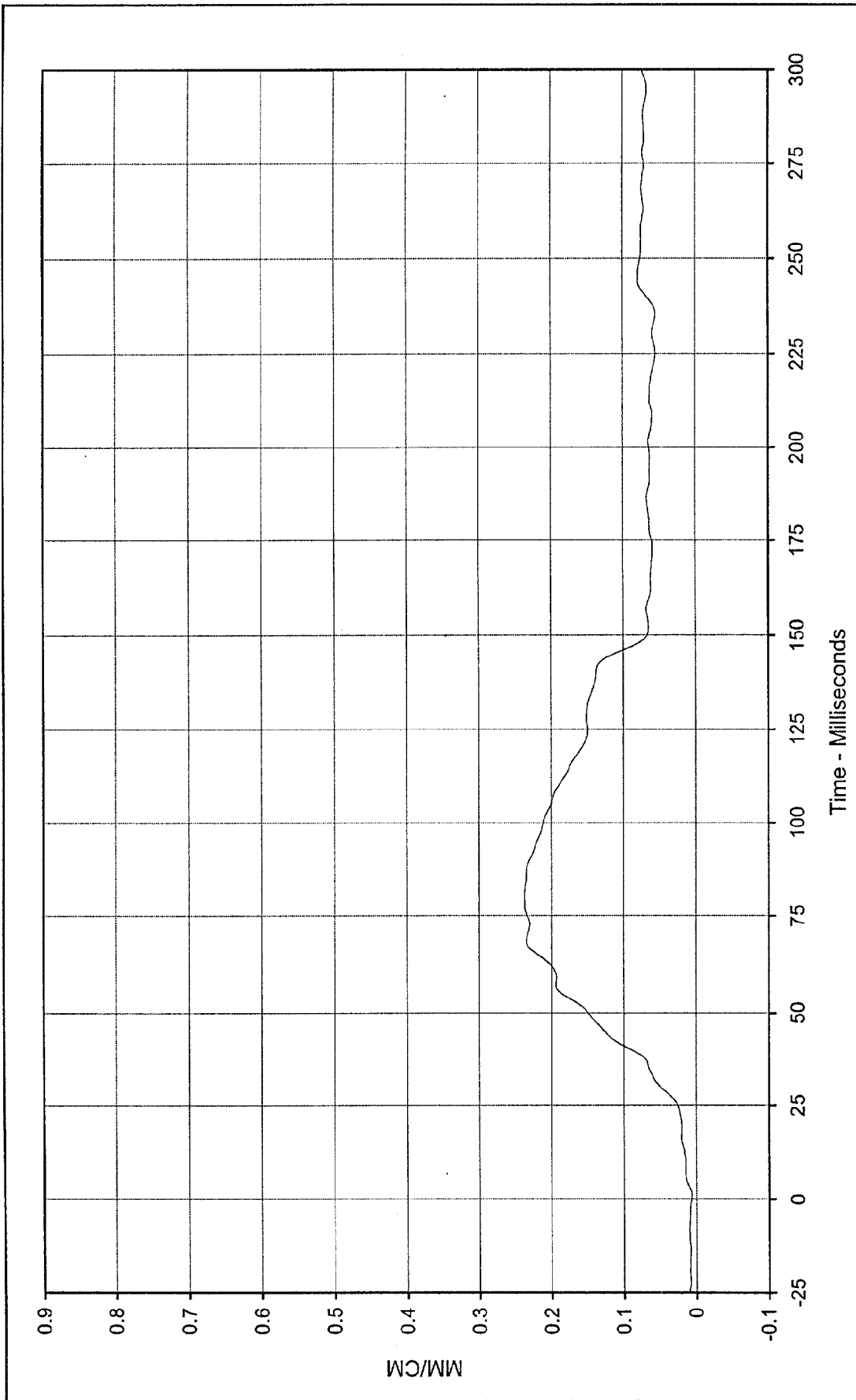
Date of Test: 1/28/98

Curve Number: FIL-087

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup

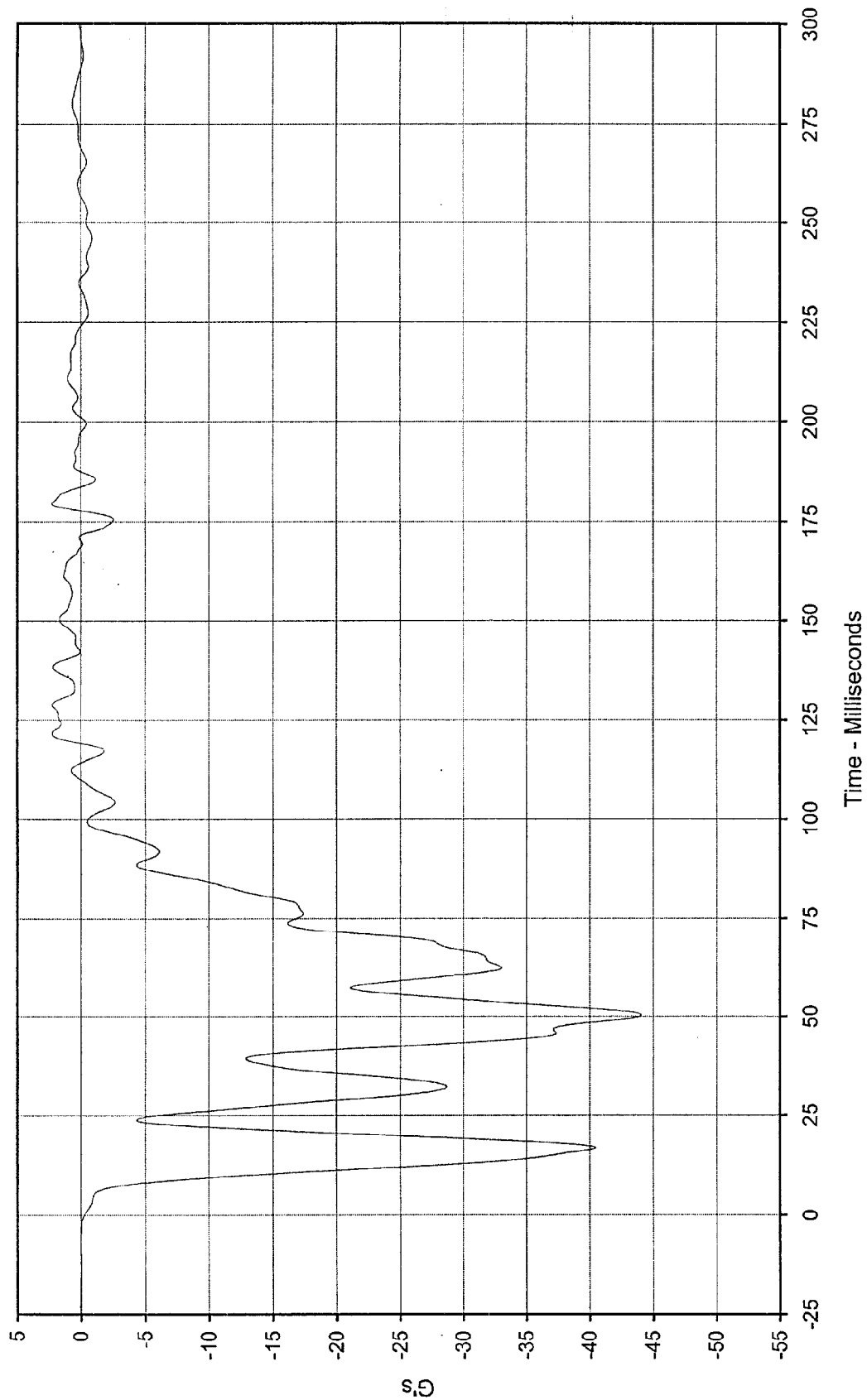




Curve Description: Passenger Shoulder Belt Elongation
 Maximum Value: 0.24 at 24 Milliseconds
 Minimum Value: 0.01 at 1.1 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/28/98
 Curve Number: FIL-088

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Vehicle Left Rear Primary

Maximum Value: 2.3 at 179.6 Milliseconds

Minimum Value: -44.1 at 50.3 Milliseconds

SAE Filter Class: 60

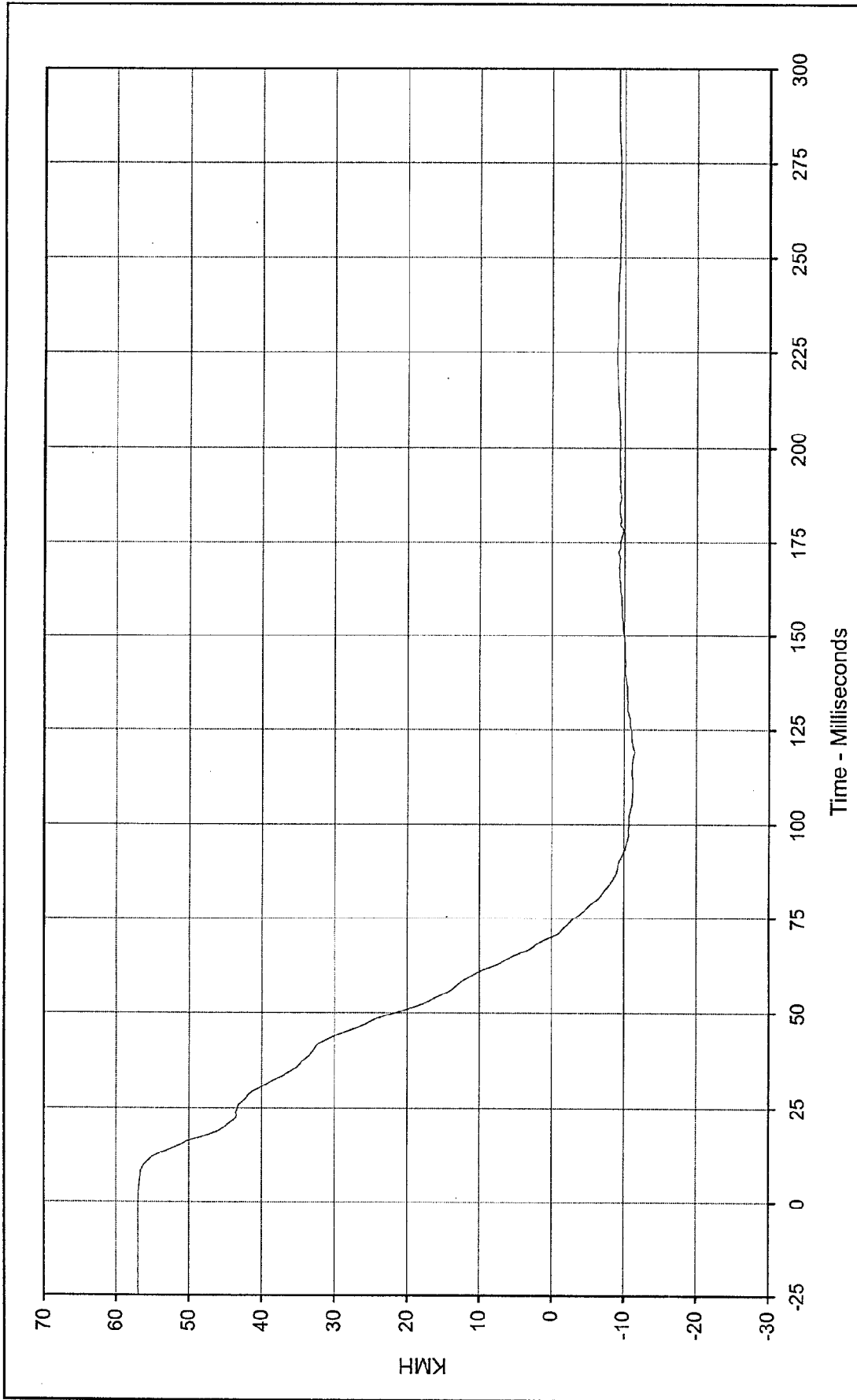
Date of Test: 1/28/98

Curve Number: FIL-089

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Vehicle Left Rear Primary Velocity Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Maximum Value: 56.9 at 0.0 Milliseconds Test Vehicle: 1998 Dodge Dakota SLT Pickup

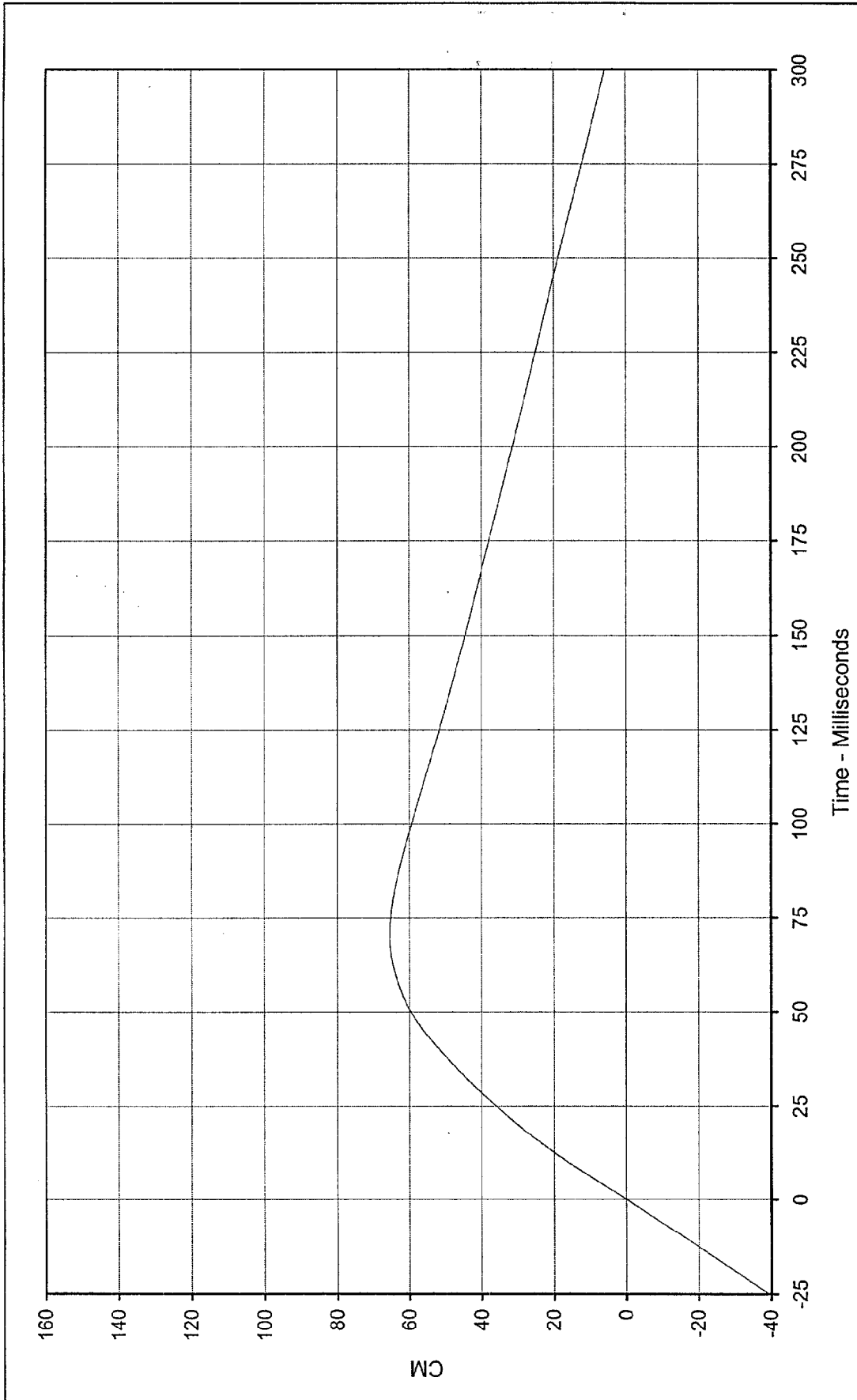
Minimum Value: -11.5 at 119.1 Milliseconds

SAE Filter Class: 180

Date of Test: 1/28/98

Curve Number: IN1-089

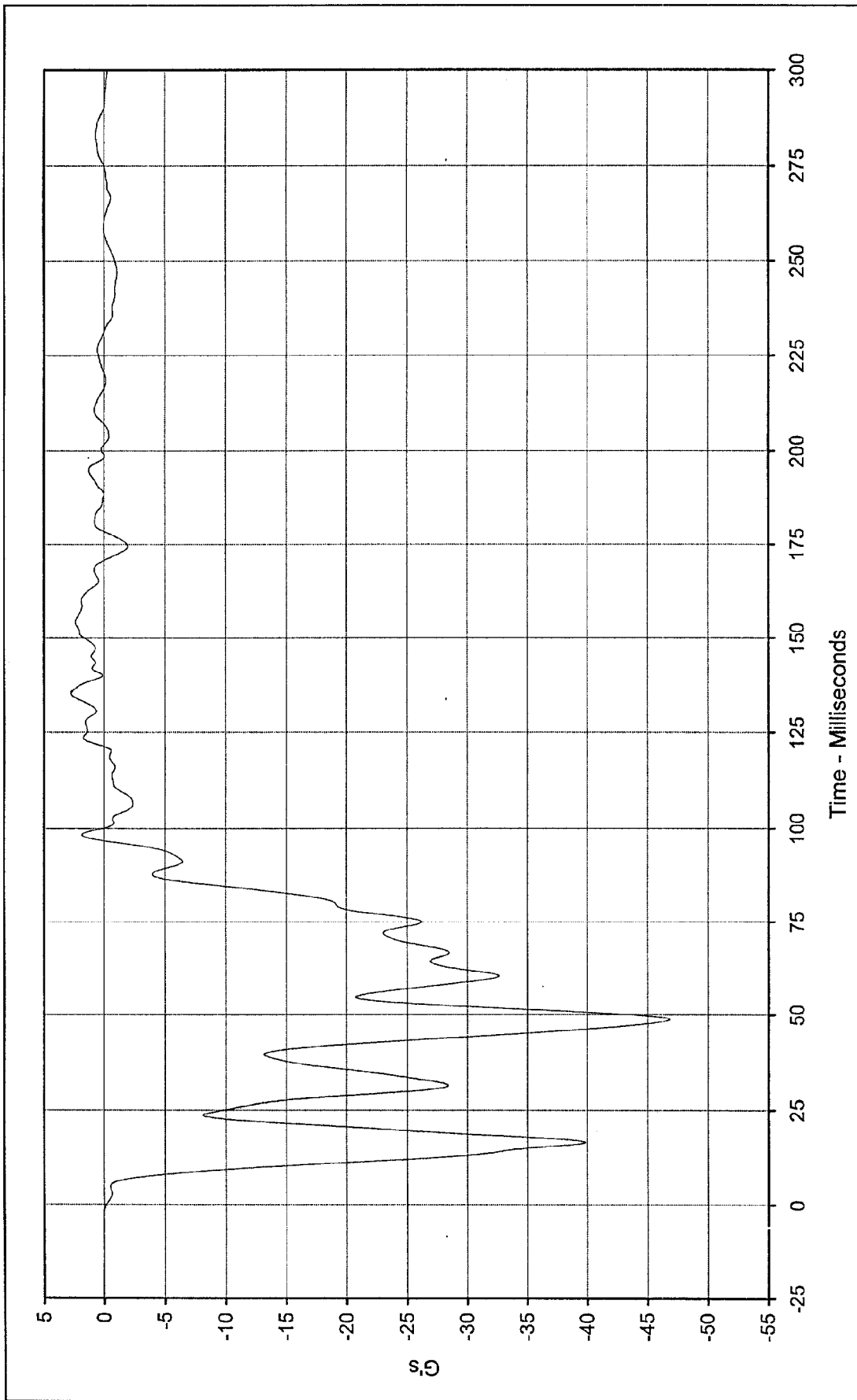




Curve Description: Vehicle Left Rear Primary Displ.
 Maximum Value: 65.4 at 70.0 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: IN2-089

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

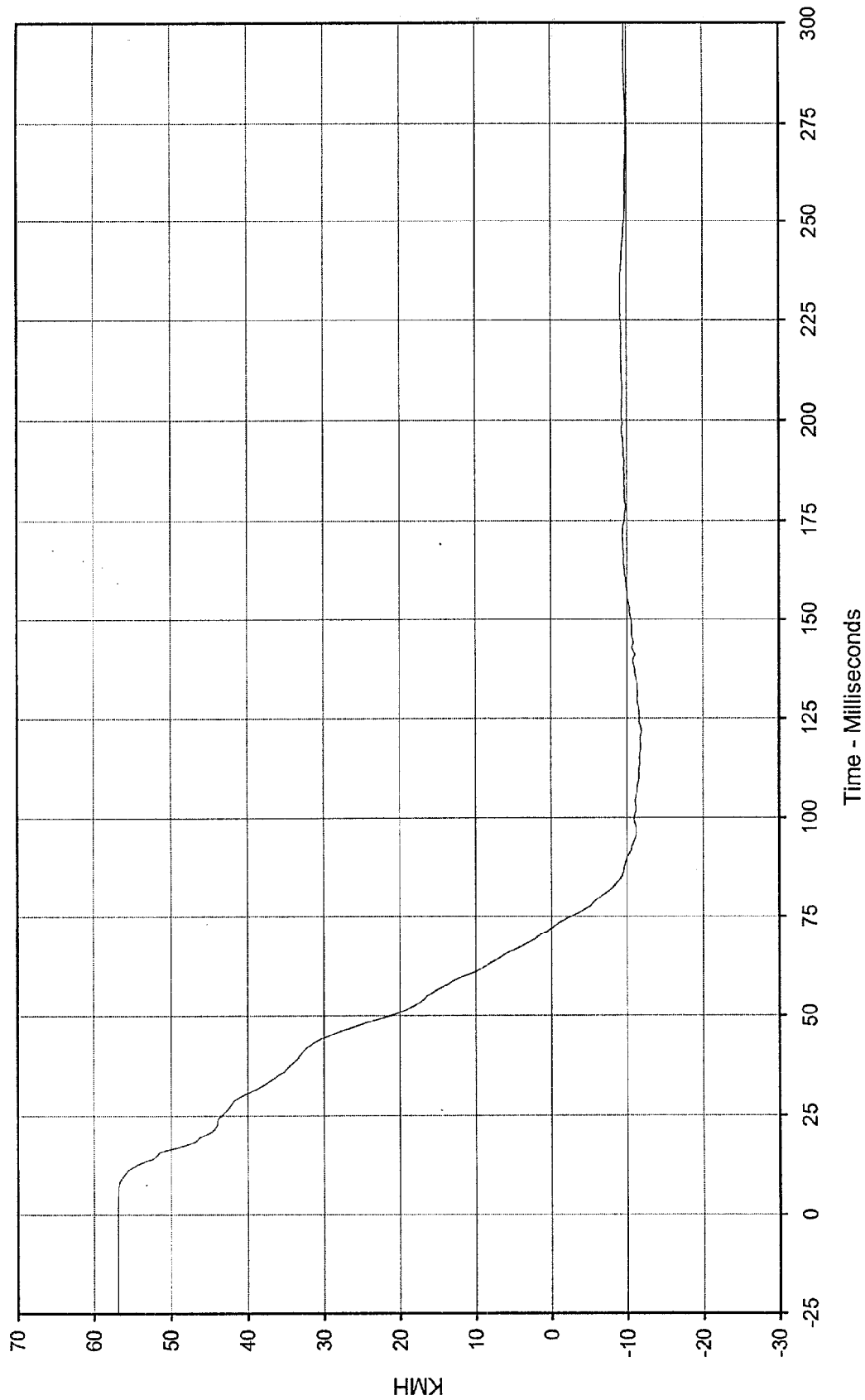




Curve Description: Vehicle Right Rear Primary
 Maximum Value: 2.7 at 135.3 Milliseconds
 Minimum Value: -46.8 at 48.7 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/28/98
 Curve Number: FIL-090

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Vehicle Right Rear Primary Velocity

Maximum Value: 57.0 at 0.0 Milliseconds

Minimum Value: -11.9 at 121.7 Milliseconds

SAE Filter Class: 180

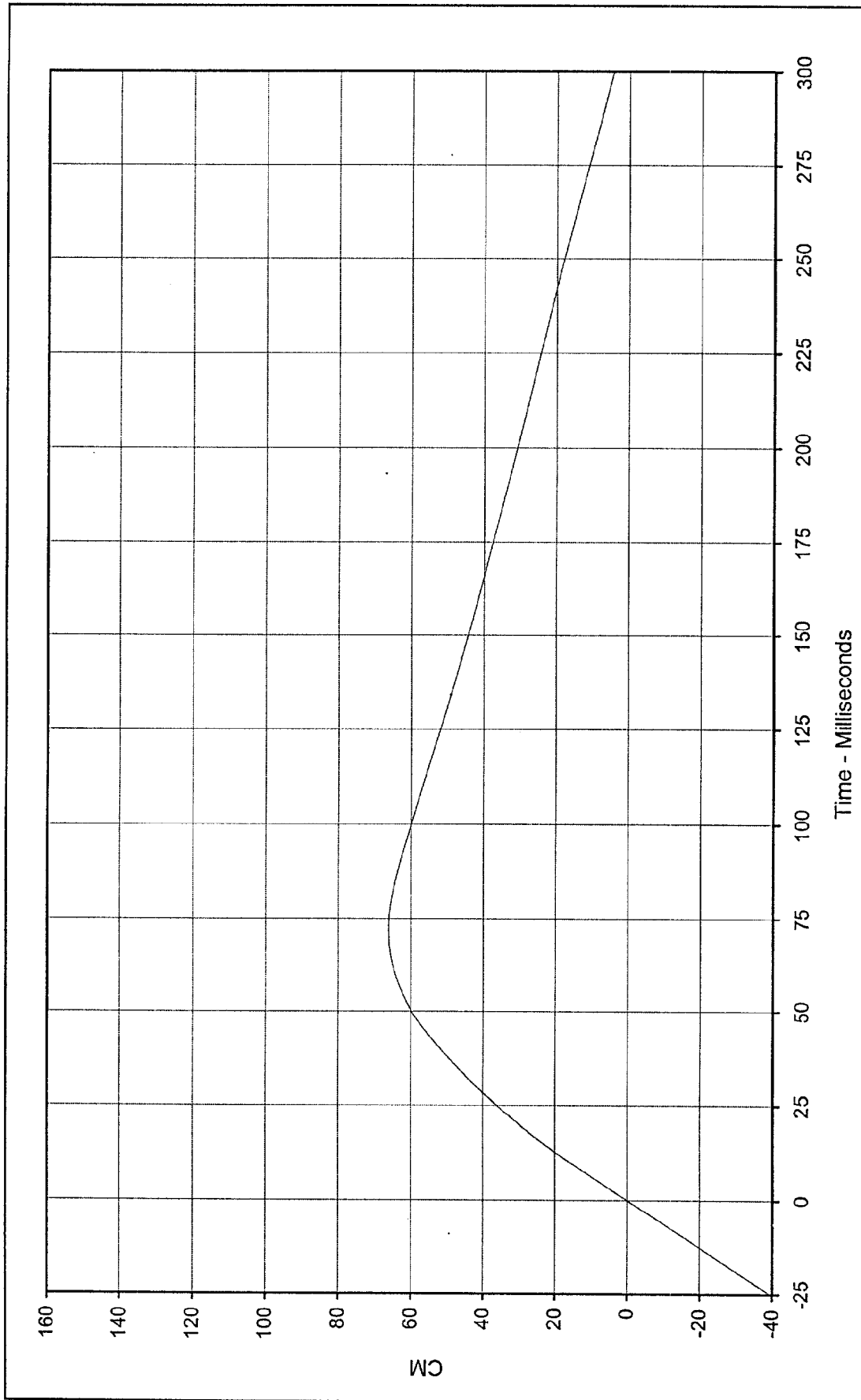
Date of Test: 1/28/98

Curve Number: IN1-090

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup

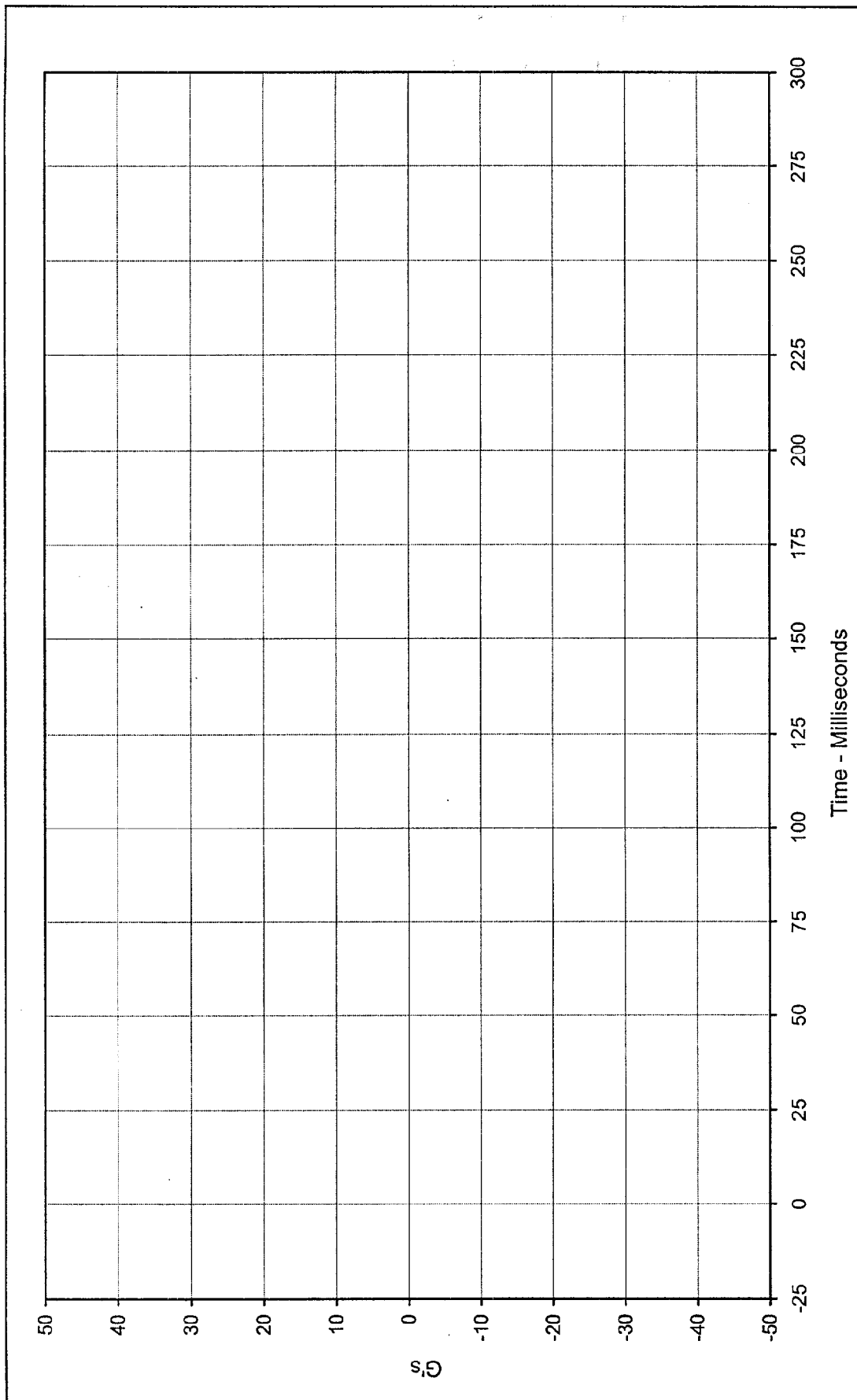




Curve Description: Vehicle Right Rear Primary Displ.
 Maximum Value: 66.2 at 71.8 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: IN2-090

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup



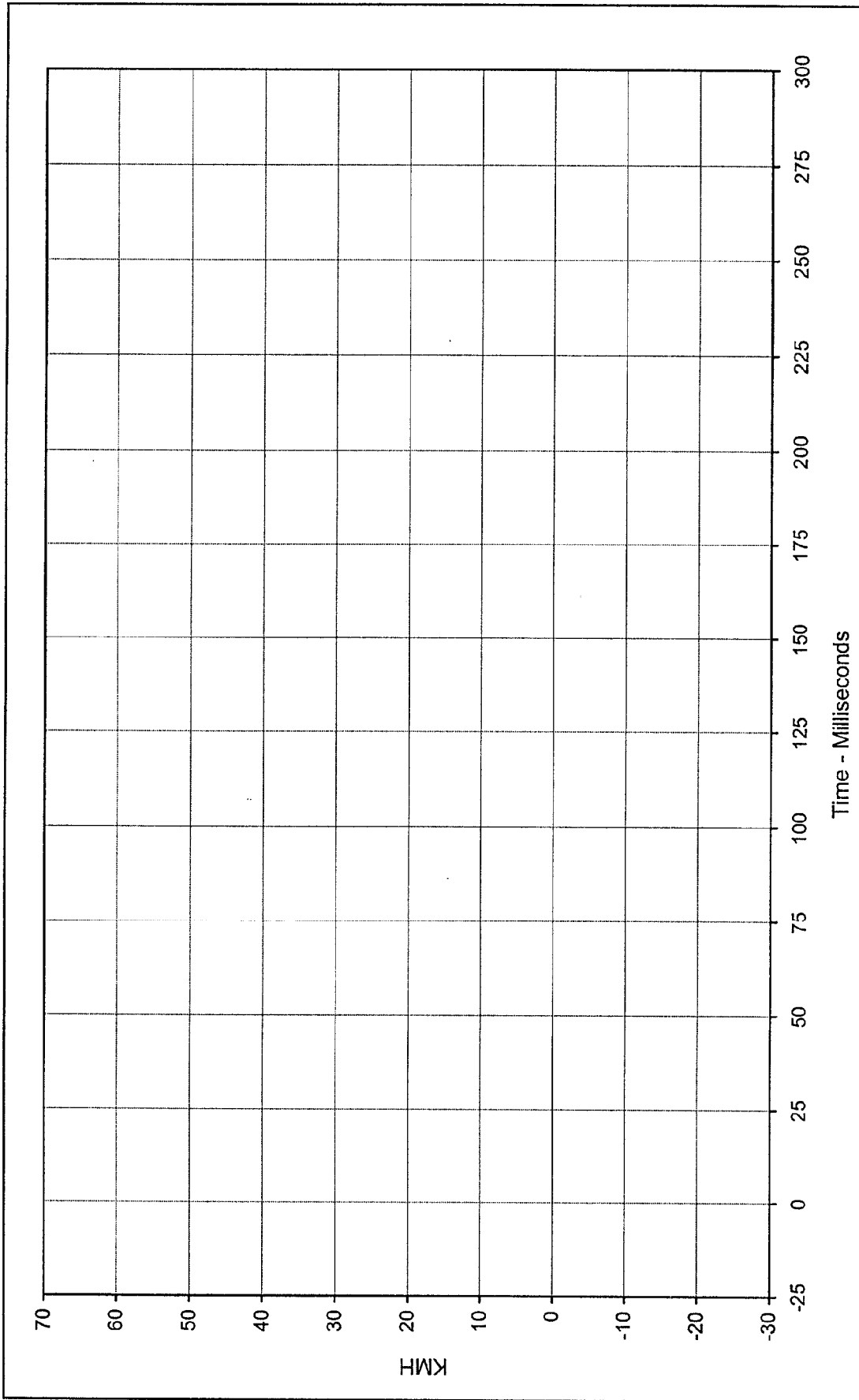


Curve Description: _____ Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Maximum Value: 0.0 at 0.0 Milliseconds Test Vehicle: 1998 Dodge Dakota SLT Pickup
 Minimum Value: 0.0 at 0.0 Milliseconds



SAE Filter Class: 60
 Date of Test: 1/28/98
 Curve Number: FIL-091

* Channel Failed, No Data



Curve Description: _____ Vehicle Engine Top Velocity _____ * Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Maximum Value: 0.0 at 0.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

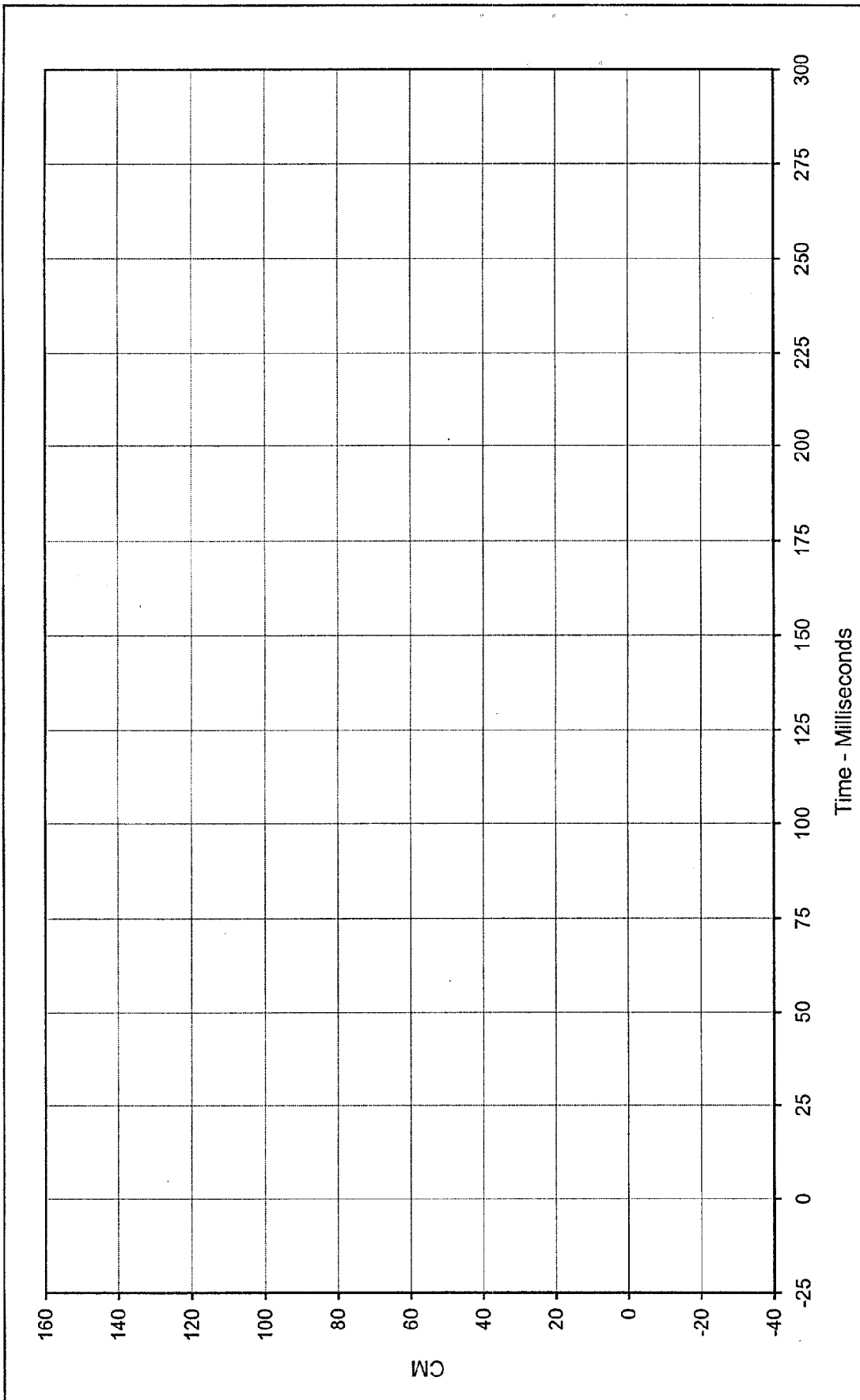
Date of Test: 1/28/98

Curve Number: IN1-091

Test Vehicle: 1998 Dodge Dakota SLT Pickup



* Channel Failed, No Data



Curve Description: _____ Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Maximum Value: 0.0 at 0.0 Milliseconds Test Vehicle: 1998 Dodge Dakota SLT Pickup

Minimum Value: 0.0 at 0.0 Milliseconds

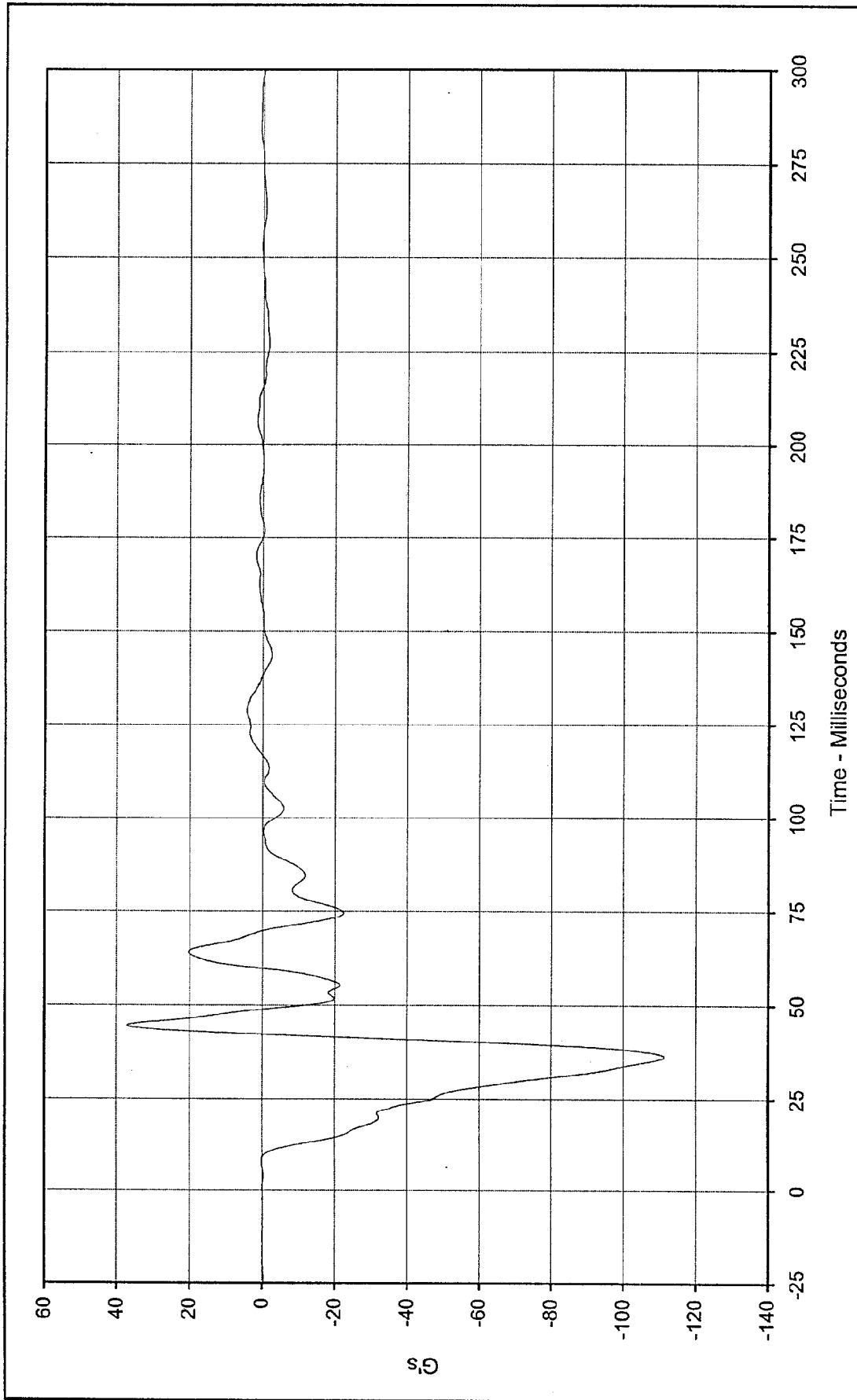
SAE Filter Class: 180

Date of Test: 1/28/98

Curve Number: IN2-091



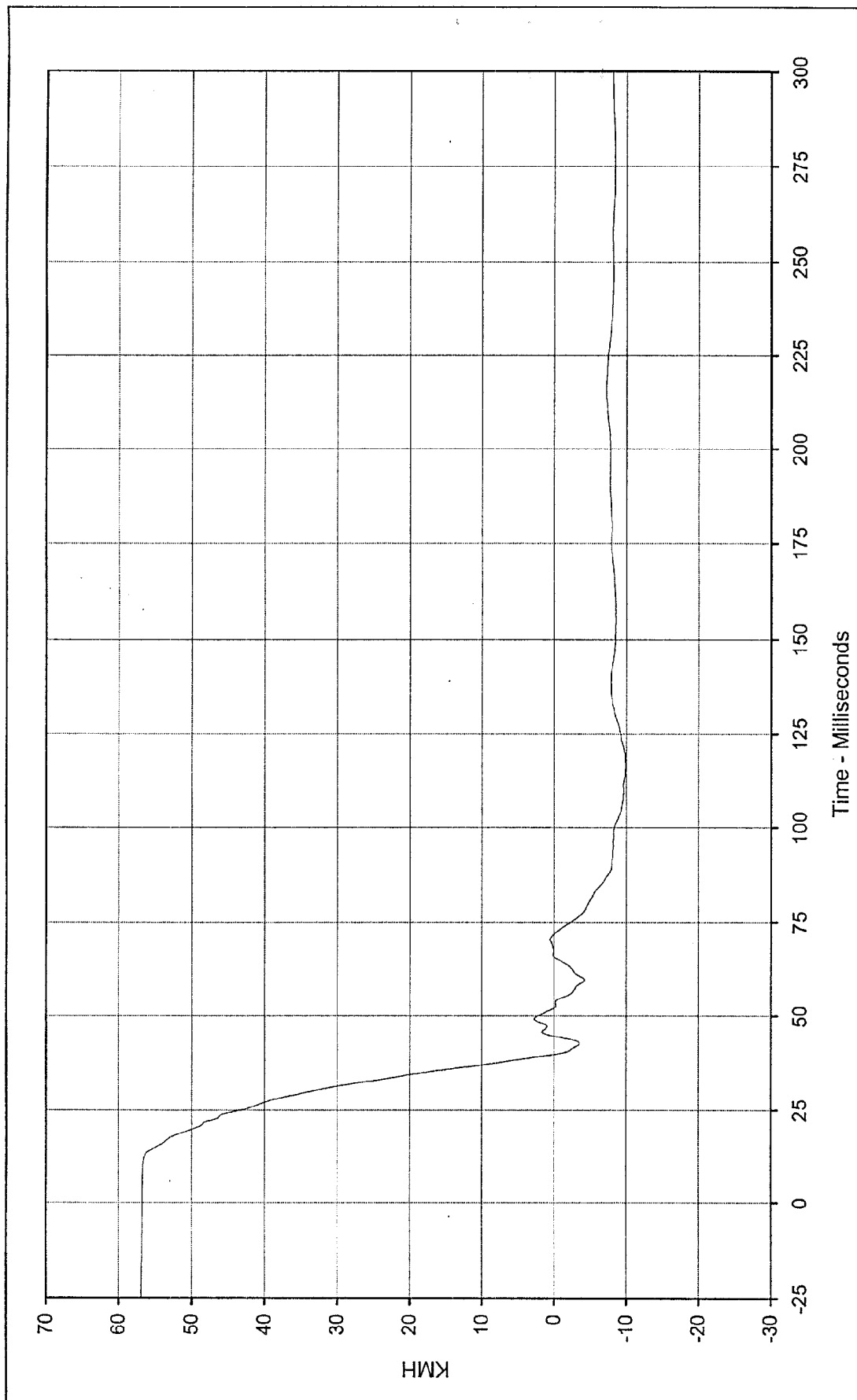
* Channel Failed, No Data



Curve Description:	Vehicle Engine Bottom	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW0303
Maximum Value:	37.2 at 44.5 Milliseconds	Test Vehicle:	1998 Dodge Dakota SLT Pickup	
Minimum Value:	-111.4 at 36.3 Milliseconds			



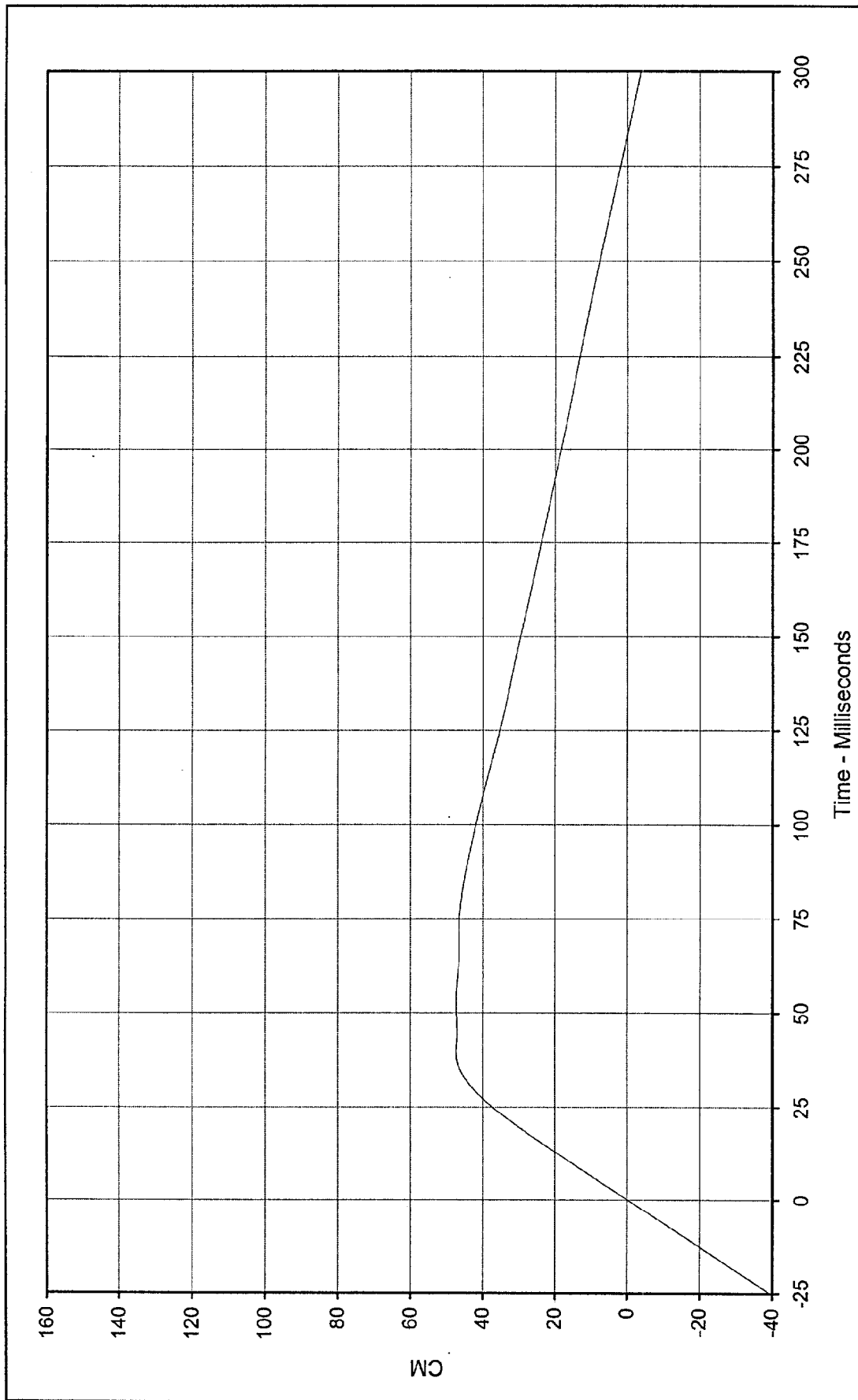
SAE Filter Class:	60
Date of Test:	1/28/98
Curve Number:	FIL-092



Curve Description: Vehicle Engine Bottom Velocity
 Maximum Value: 56.8 at 2.5 Milliseconds
 Minimum Value: -9.9 at 116.4 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: IN1-092

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Vehicle Engine Bottom Displ. Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Maximum Value: 47.3 at 39.6 Milliseconds Test Vehicle: 1998 Dodge Dakota SLT Pickup

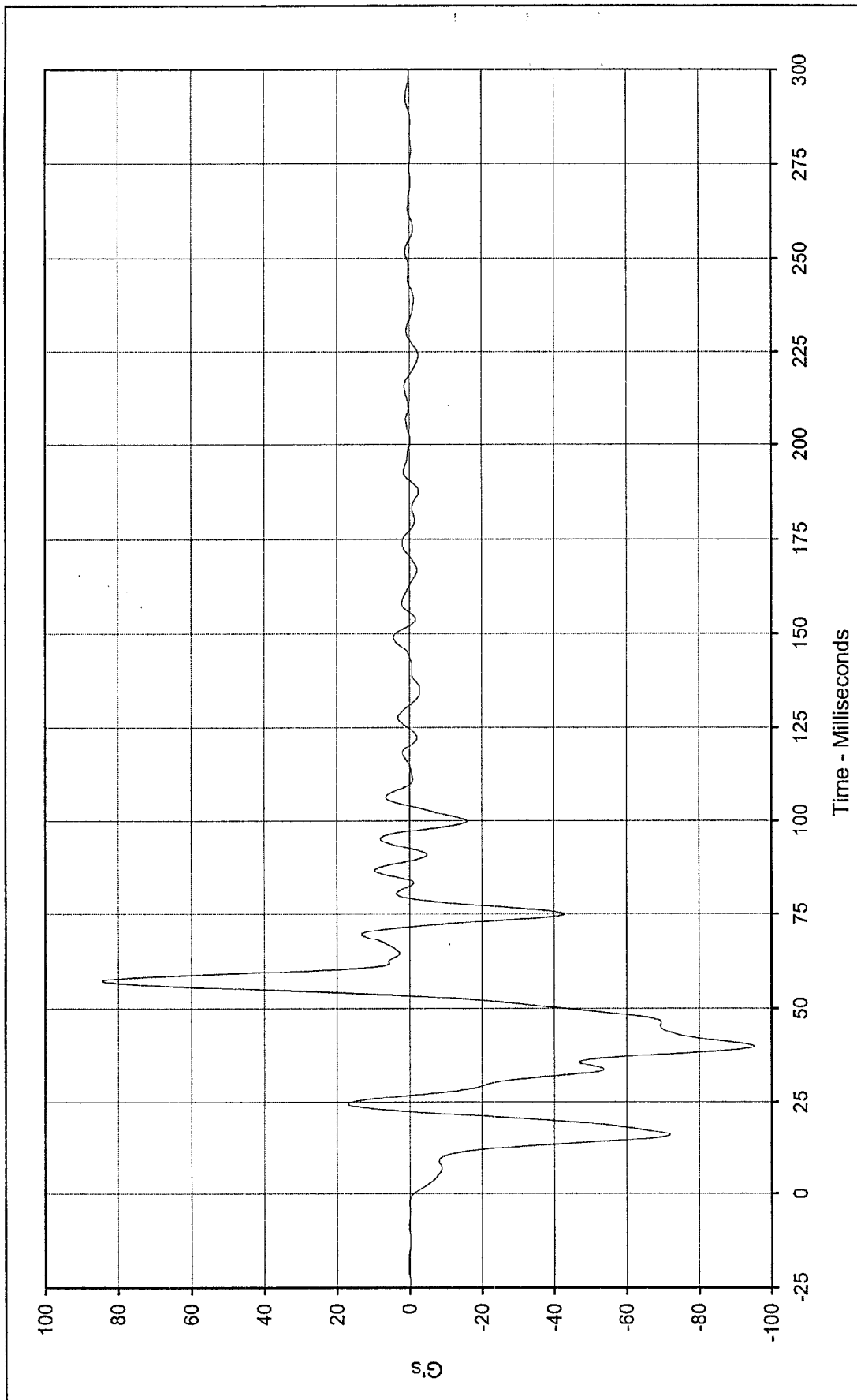
Minimum Value: -3.7 at 299.9 Milliseconds

SAE Filter Class: 180

Date of Test: 1/28/98

Curve Number: IN2-092

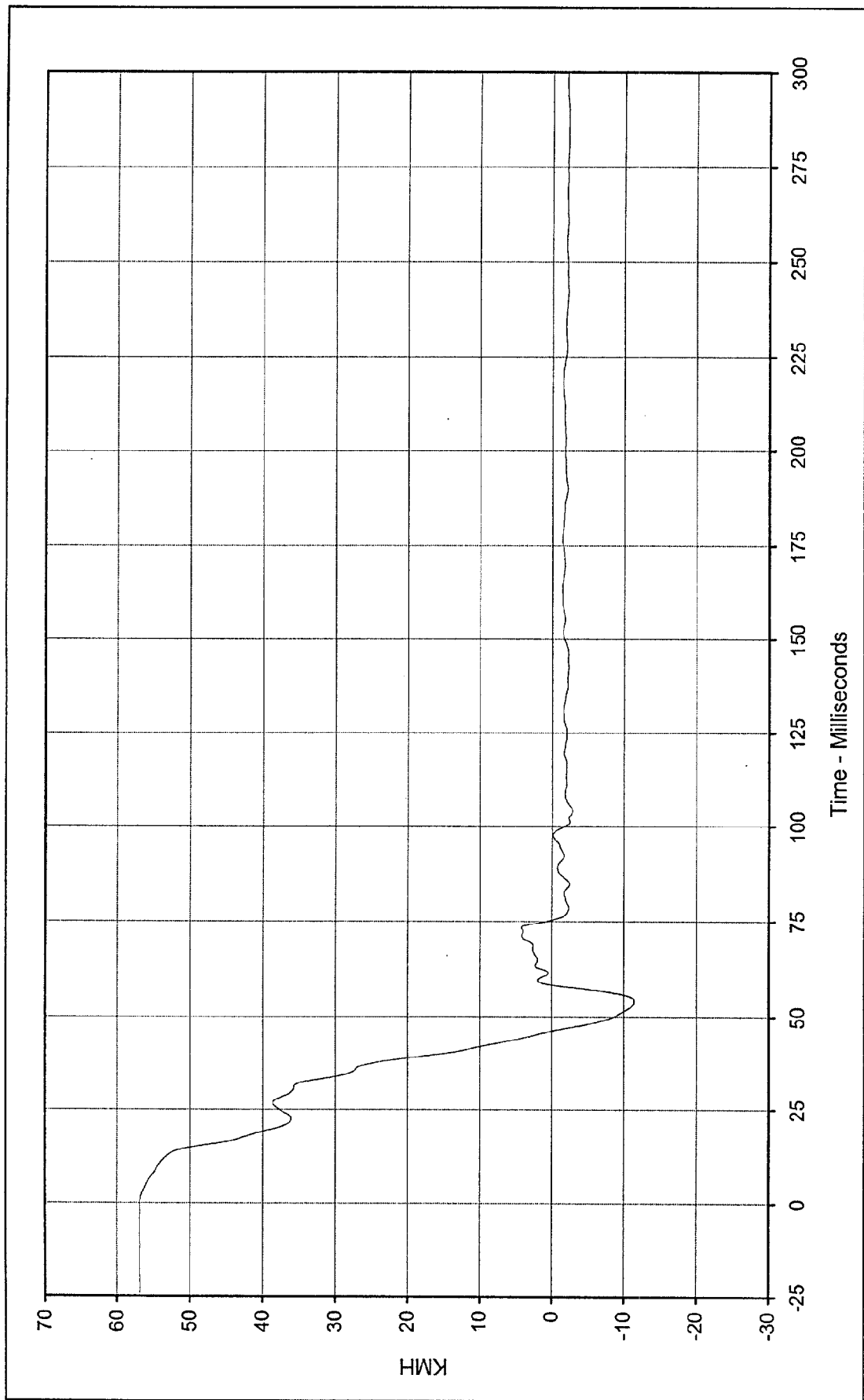




Curve Description: Vehicle Left Brake Caliper
 Maximum Value: 84.4 at 57.2 Milliseconds
 Minimum Value: -95.3 at 39.7 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/28/98
 Curve Number: FIL-093

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

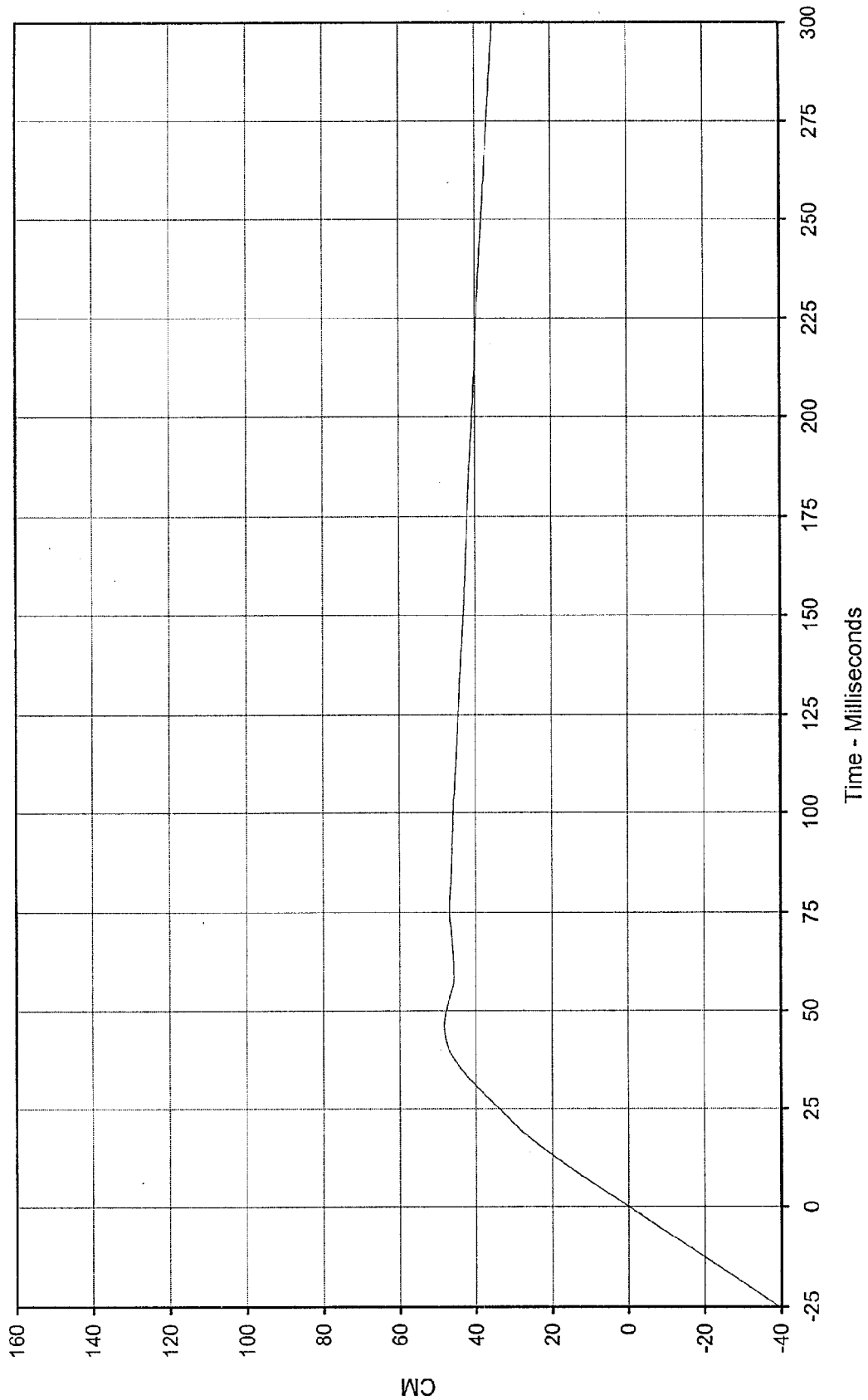




Curve Description: Vehicle Left Brake Caliper Velocity
 Maximum Value: 56.9 at 0.0 Milliseconds
 Minimum Value: -11.5 at 54.2 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: IN1-093

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup

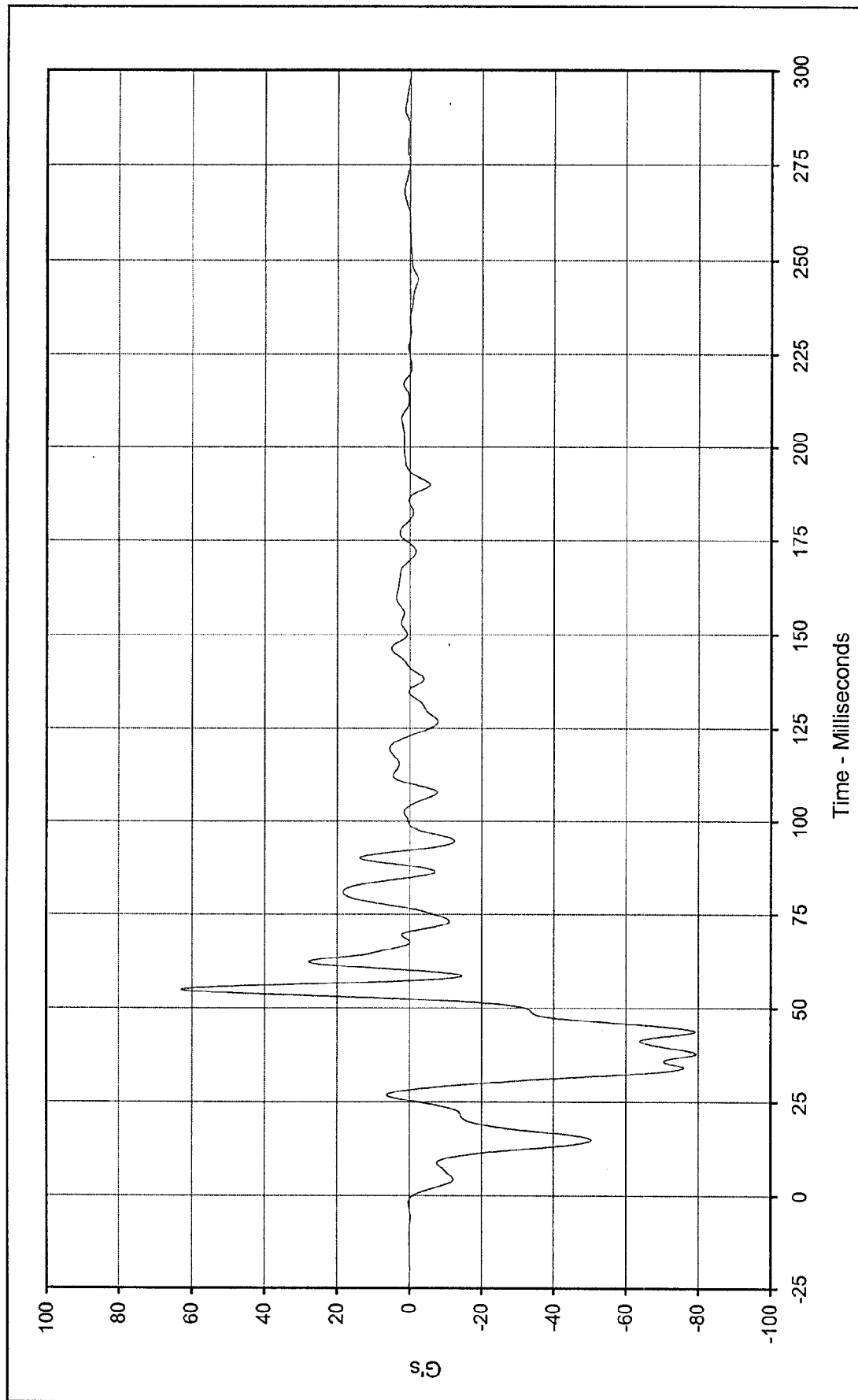




Curve Description: Vehicle Left Brake Caliper Displ.
 Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Maximum Value: 48.3 at 46.3 Milliseconds
 Test Vehicle: 1998 Dodge Dakota SLT Pickup
 Minimum Value: 0.0 at 0.0 Milliseconds



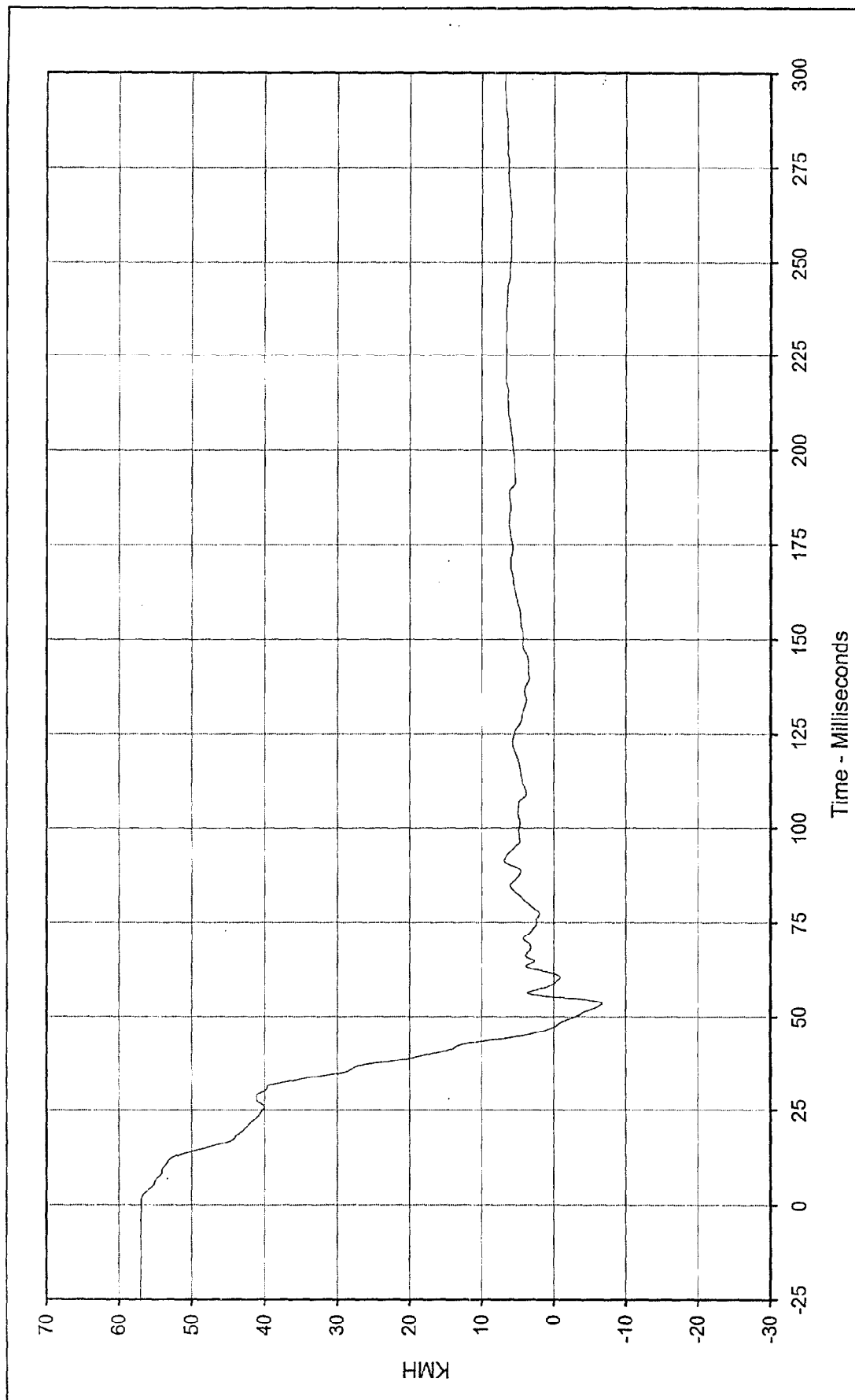
SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: IN2-093



Curve Description: Vehicle Right Brake Caliper
 Testing Program: 1998 NHTSA 35 mph NCAP No.: MW0303
 Maximum Value: 62.9 at 54.9 Milliseconds
 Minimum Value: -79.5 at 37.8 Milliseconds
 Test Vehicle: 1998 Dodge Dakota SLT Pickup



SAE Filter Class: 60
 Date of Test: 1/28/98
 Curve Number: FIL-094



Curve Description: Vehicle Right Brake Caliper Velocity

Maximum Value: 56.9 at 0.4 Milliseconds

Minimum Value: -6.7 at 53.6 Milliseconds

SAE Filter Class: 180

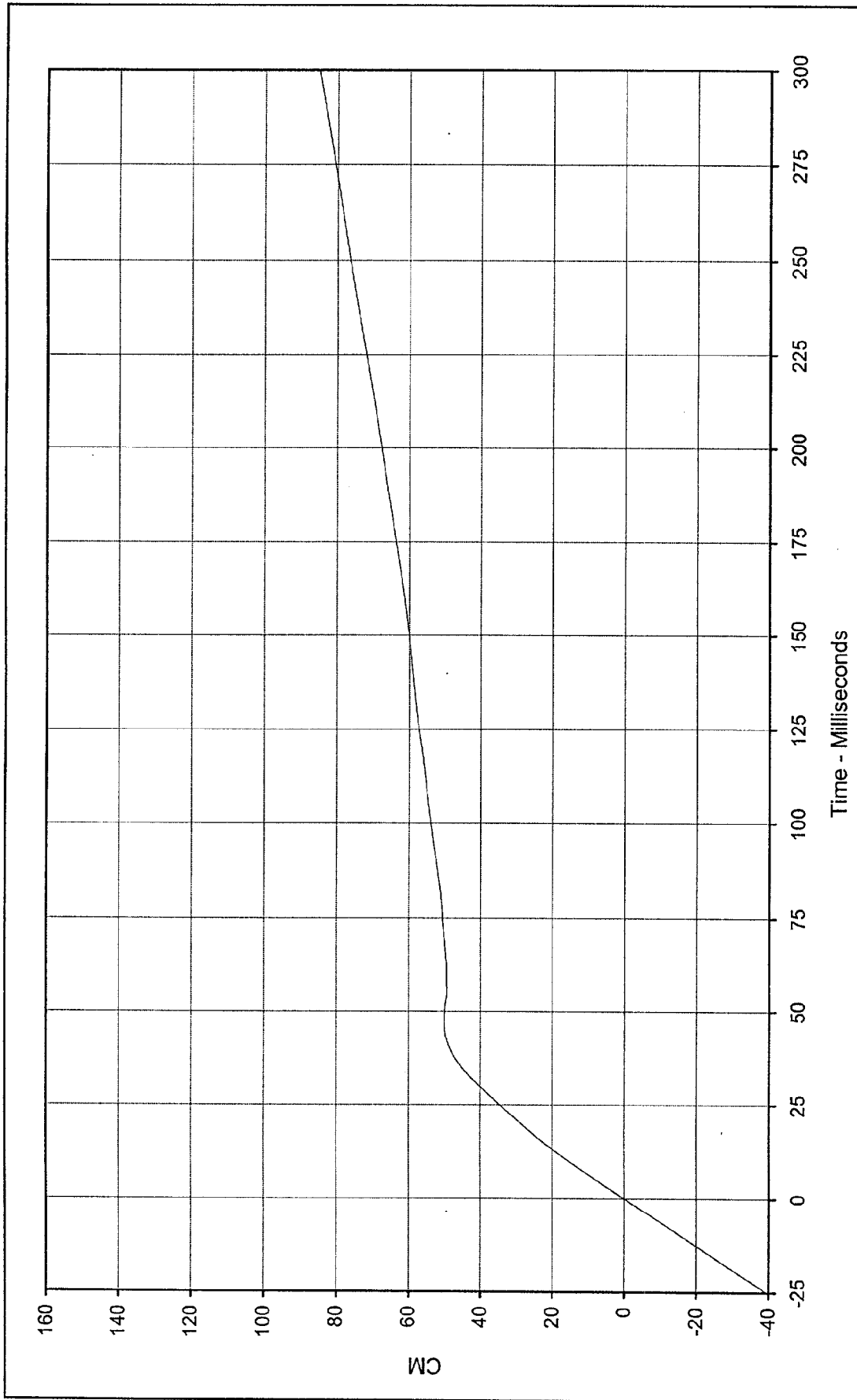
Date of Test: 1/28/98

Curve Number: IN1-094

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Vehicle Right Brake Caliper Displ.

Maximum Value: 85.1 at 299.9 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

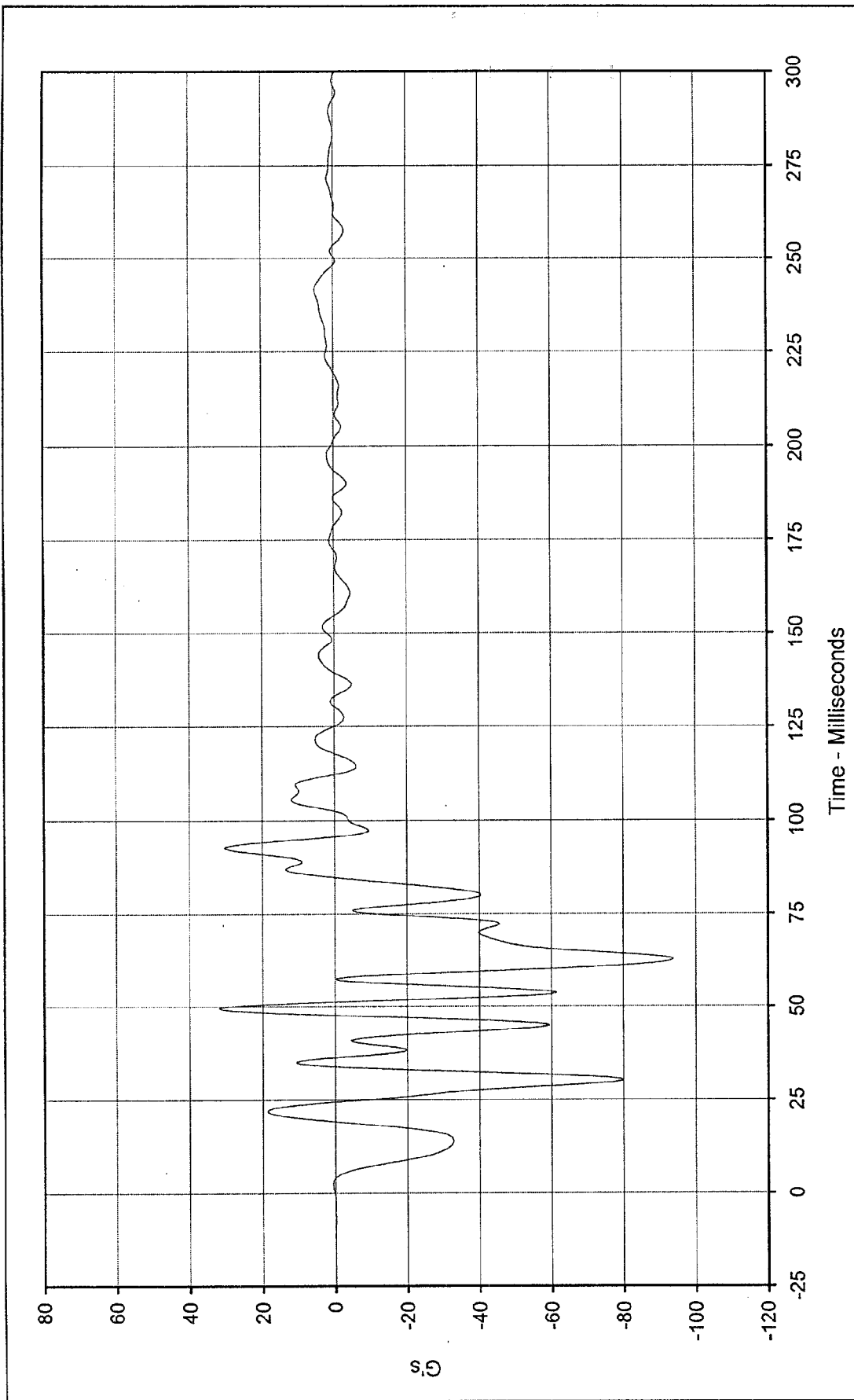
Date of Test: 1/28/98

Curve Number: IN2-094

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Test Vehicle: 1998 Dodge Dakota SLT Pickup

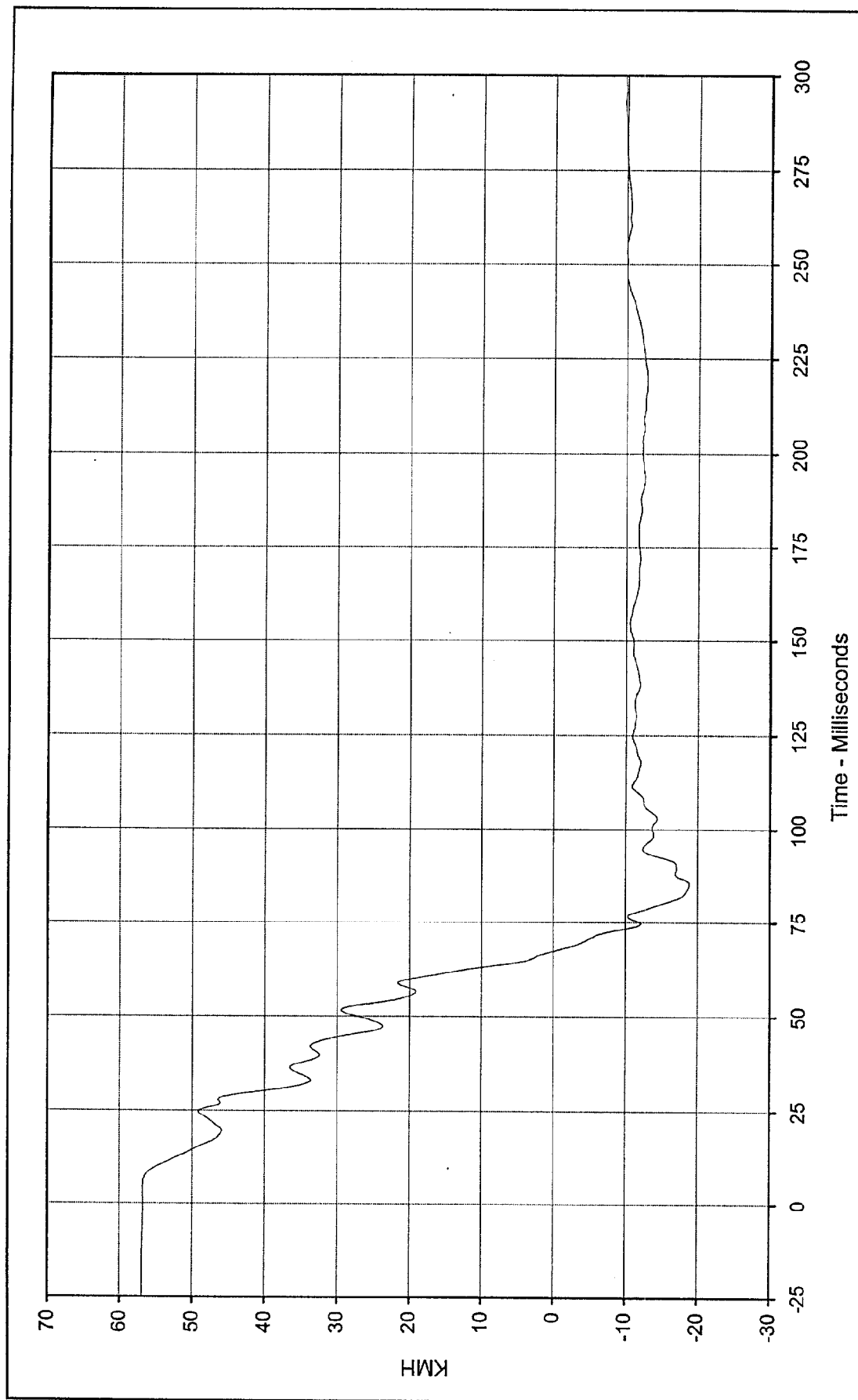




Curve Description: _____ Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Maximum Value: 32.0 at 49.5 Milliseconds
 Minimum Value: -93.8 at 62.7 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/28/98
 Curve Number: FIL-095

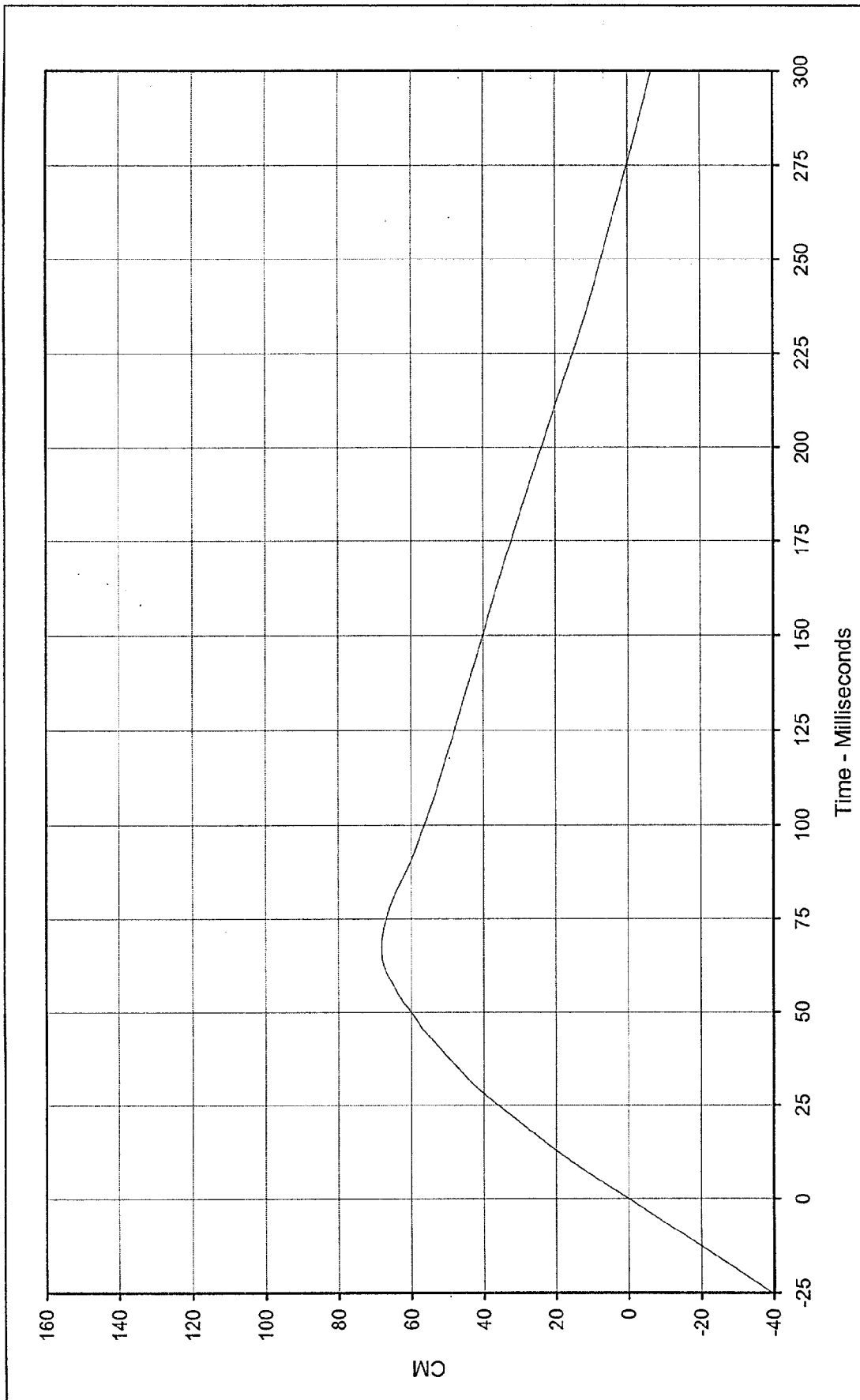
Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description:	Vehicle Instrument Panel Velocity	Testing Program	1998 NHTSA 35 mph NCAP	No.: MW0303
Maximum Value:	56.8	at	3.4	Milliseconds
Minimum Value:	-18.9	at	85.5	Milliseconds
SAE Filter Class:	180	Test Vehicle:	1998 Dodge Dakota SLT Pickup	
Date of Test:	1/28/98			
Curve Number:	IN1-095			





Curve Description: _____ Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Maximum Value: 68.2 at 67.2 Milliseconds Test Vehicle: 1998 Dodge Dakota SLT Pickup

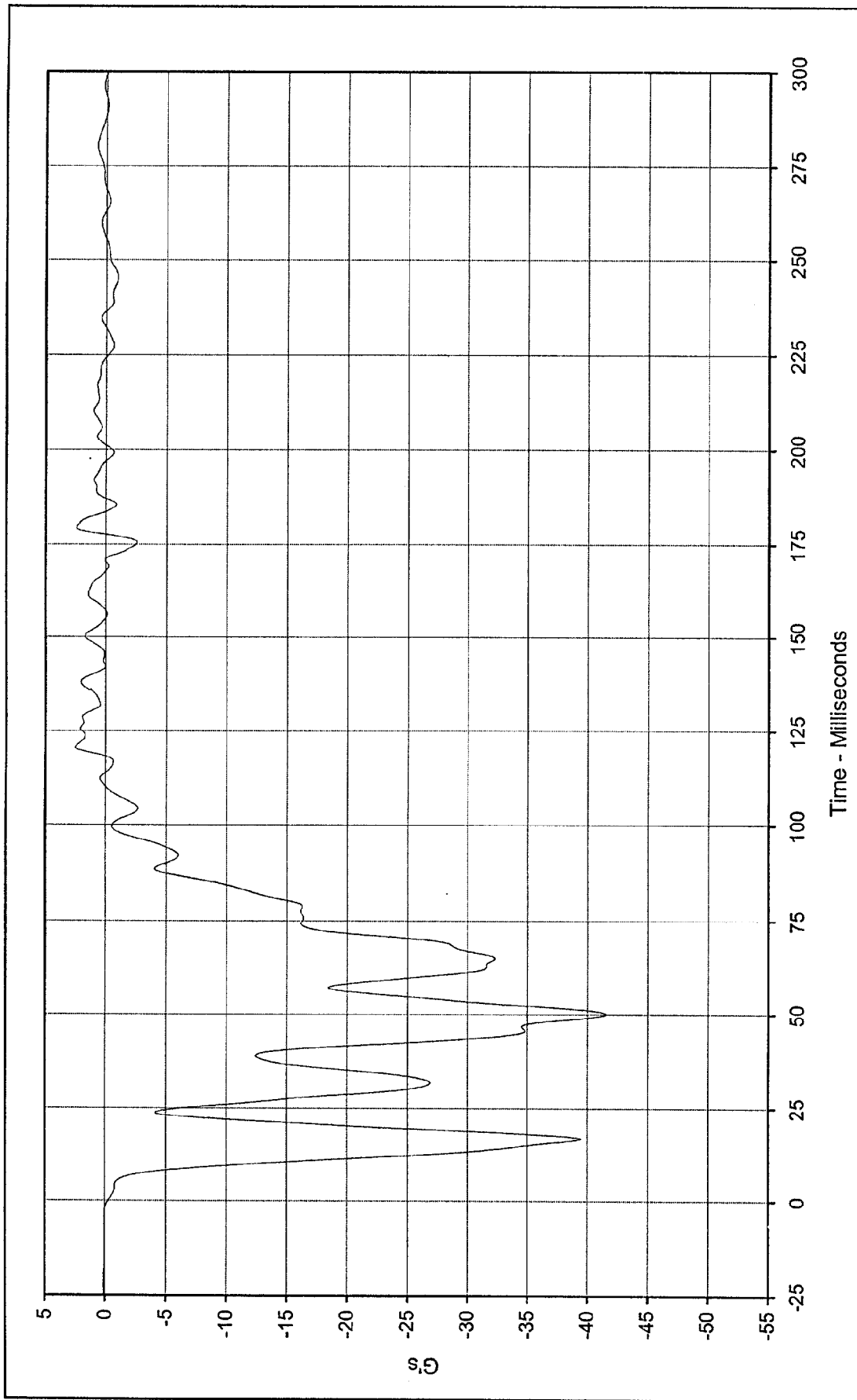
Minimum Value: -6.6 at 299.9 Milliseconds

SAE Filter Class: 180

Date of Test: 1/28/98

Curve Number: IN2-095





Curve Description: Vehicle Left Rear Redundant Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Maximum Value: 2.5 at 120.5 Milliseconds Test Vehicle: 1998 Dodge Dakota SLT Pickup

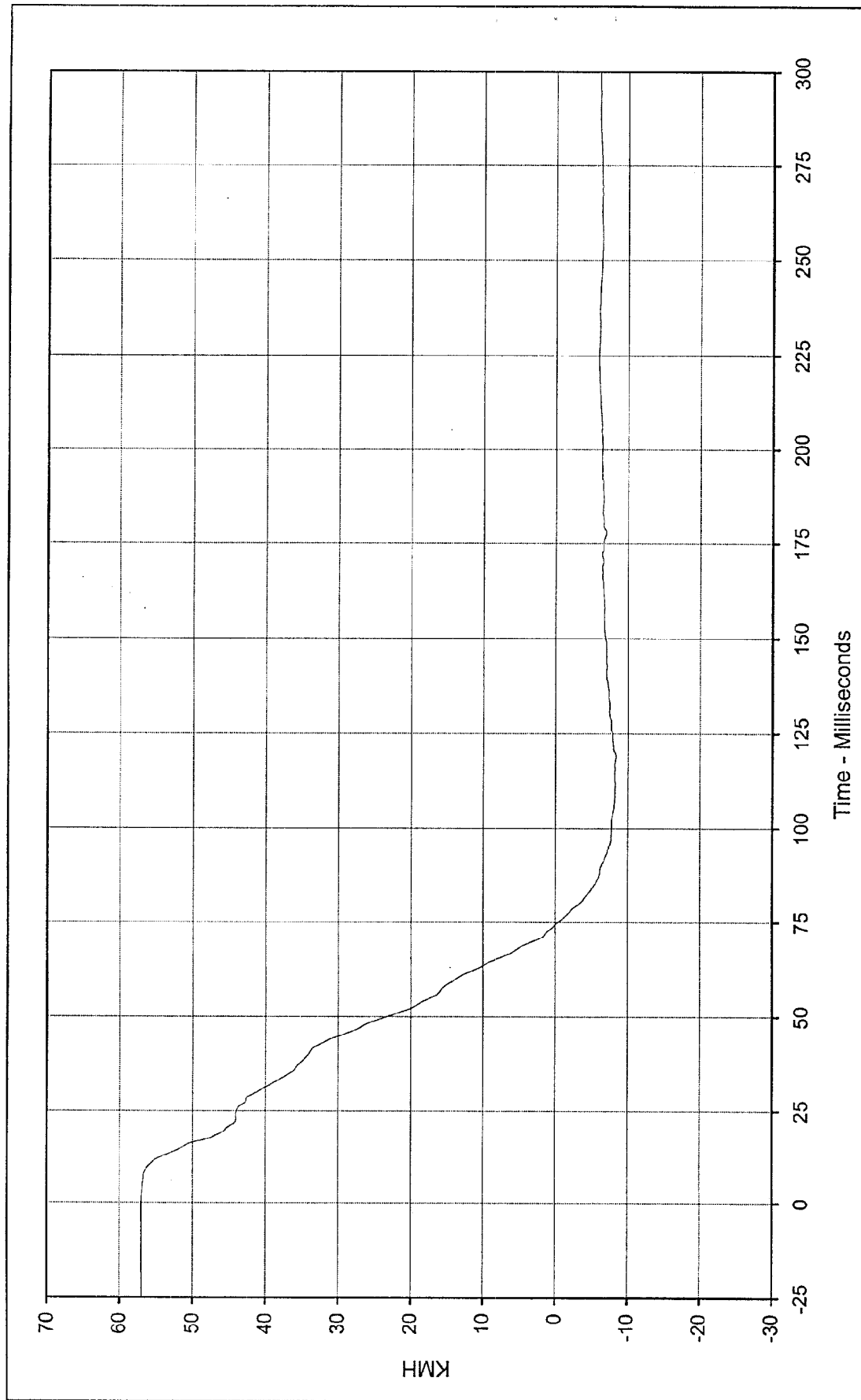
Minimum Value: -41.6 at 50.2 Milliseconds

SAE Filter Class: 60

Date of Test: 1/28/98

Curve Number: FIL-096

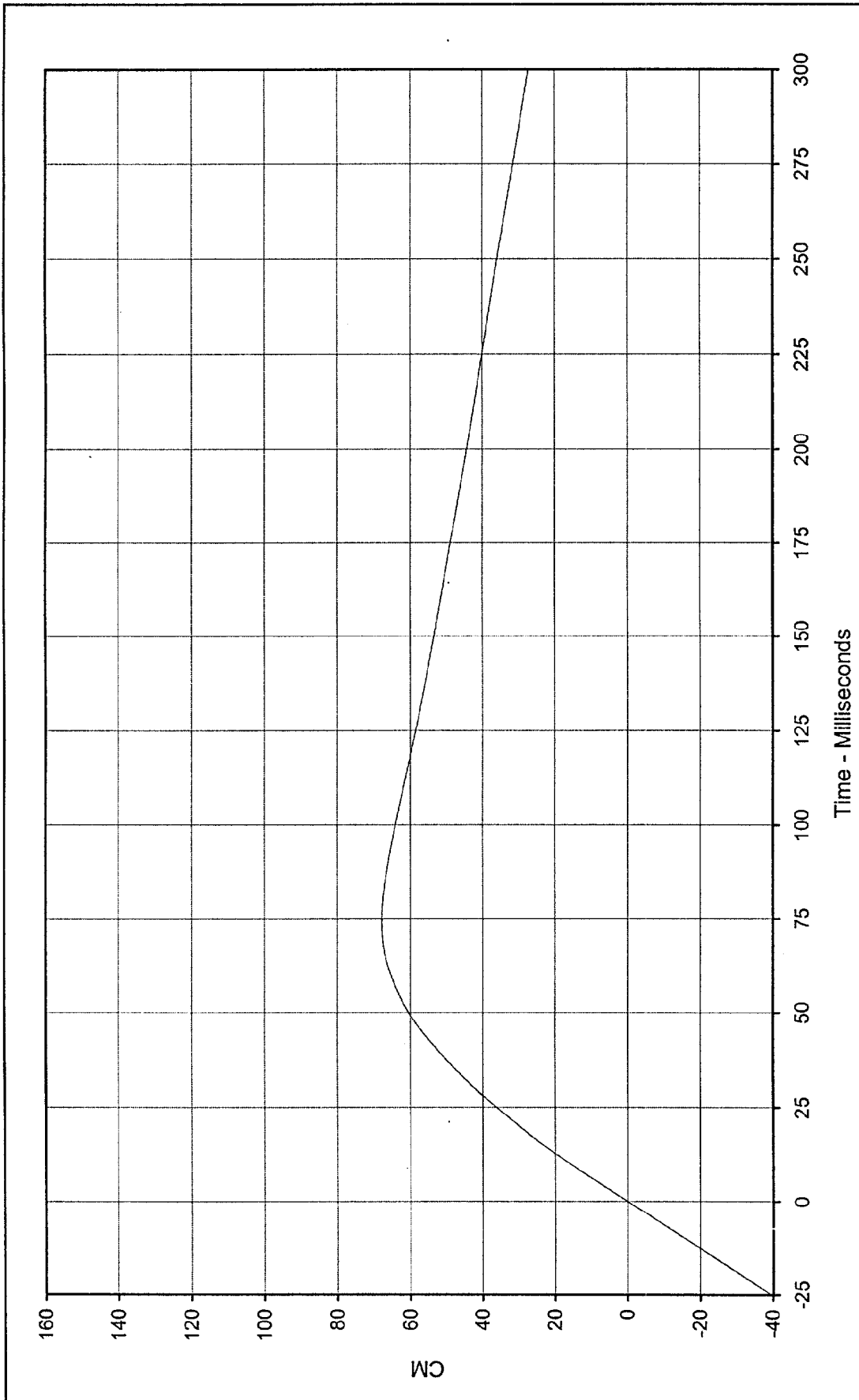




Curve Description: Vehicle Left Rear Redundant Velocity
 Maximum Value: 57.0 at 0.0 Milliseconds
 Minimum Value: -8.4 at 119.1 Milliseconds
 SAE Filter Class: 180
 Date of Test: 1/28/98
 Curve Number: IN1-096

Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303
 Test Vehicle: 1998 Dodge Dakota SLT Pickup





Curve Description: Vehicle Left Rear Redundant Displ. Testing Program 1998 NHTSA 35 mph NCAP No.: MW0303

Maximum Value: 67.8 at 74.3 Milliseconds Test Vehicle: 1998 Dodge Dakota SLT Pickup

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 1/28/98

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 35

Test Date: 1/28/98

Vehicle: 1998 Dodge Dakota

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
1	HEAD, PRIMARY	X	GPAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
2	HEAD, PRIMARY	Y	GPAC002	Accel., 1/2 bridge	Endevco	7264-2000	G
3	HEAD, PRIMARY	Z	GPAC003	Accel., 1/2 bridge	Endevco	7264-2000	G
4	HEAD, REDUNDANT	X	GPAC032	Accel., 1/2 bridge	Endevco	7264-2000	G
5	HEAD, REDUNDANT	Y	GPAC021	Accel., 1/2 bridge	Endevco	7264-2000	G
6	HEAD, REDUNDANT	Z	GPAC026	Accel., 1/2 bridge	Endevco	7264-2000	G
7	NECK FORCE	X	GPUN01FX	Load cell, six axis neck	R. A. Denton	1716A	N
8	NECK FORCE	Y	GPUN01FY	Load cell, six axis neck	R. A. Denton	1716A	N
9	NECK FORCE	Z	GPUN01FZ	Load cell, six axis neck	R. A. Denton	1716A	N
10	NECK MOMENT	X	GPUN01MX	Load cell, six axis neck	R. A. Denton	1716A	N.m
11	NECK MOMENT	Y	GPUN01MY	Load cell, six axis neck	R. A. Denton	1716A	N.m
12	NECK MOMENT	Z	GPUN01MZ	Load cell, six axis neck	R. A. Denton	1716A	N.m
13	CHEST , PRIMARY	X	GPAC005	Accel., 1/2 bridge	Endevco	7264-2000	G
14	CHEST , PRIMARY	Y	GPAC011	Accel., 1/2 bridge	Endevco	7264-2000	G
15	CHEST , PRIMARY	Z	GPAC010	Accel., 1/2 bridge	Endevco	7264-2000	G
16	CHEST , REDUNDANT	X	GPAC034	Accel., 1/2 bridge	Endevco	7264-2000	G
17	CHEST , REDUNDANT	Y	GPAC023	Accel., 1/2 bridge	Endevco	7264-2000	G
18	CHEST , REDUNDANT	Z	GPAC020	Accel., 1/2 bridge	Endevco	7264-2000	G
19	CHEST DISPLACEMENT	X	GPRP001	Potentiometer, Rotary	Servo	14CBI	MM
20	PELVIS, PRIMARY	X	GPAC025	Accel., 1/2 bridge	Endevco	7264-2000	G
21	PELVIS, PRIMARY	Y	GPAC022	Accel., 1/2 bridge	Endevco	7264-2000	G
22	PELVIS, PRIMARY	Z	GPAC019	Accel., 1/2 bridge	Endevco	7264-2000	G
23	LEFT FEMUR FORCE	Z	KEFF001	Load cell, Femur	R.A. Denton	2121	N
24	RIGHT FEMUR FORCE	Z	GPLC001	Load cell, Femur	G.S.E.	2430	N

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

Driver A.T.D Serial Number 35

Test Date: 1/28/98

Vehicle: 1998 Dodge Dakota

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
25	UP. TIBIA LEFT MOM.	X	GPU01MX	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
26	UP. TIBIA LEFT MOM.	Y	GPU01MY	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
27	UP. TIBIA RIGHT MOM.	X	GPU02MX	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
28	UP. TIBIA RIGHT MOM.	Y	GPU02MY	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
29	LWR. TIBIA LEFT FORCE	Y	GPT01FY	3 ch., lower tibia gage	R. A. Denton	1584	N
30	LWR. TIBIA LEFT FORCE	Z	GPT01FZ	3 ch., lower tibia gage	R. A. Denton	1584	N
31	LWR. TIBIA LEFT MOM.	X	GPT01MX	3 ch., lower tibia gage	R. A. Denton	1584	N.m
32	LWR. TIBIA RIGHT FORCE	Y	GPT02FY	3 ch., lower tibia gage	R. A. Denton	1584	N
33	LWR. TIBIA RIGHT FORCE	Z	GPT02FZ	3 ch., lower tibia gage	R. A. Denton	1584	N
34	LWR. TIBIA RIGHT MOM.	X	GPT02MX	3 ch., lower tibia gage	R. A. Denton	1584	N.m
35	FOOT LEFT	X	KEIC002X	Accel., Foot Triax	I.C. Sensor	3031-500	G
36	FOOT LEFT	Y	KEIC002Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
37	FOOT LEFT	Z	KEIC002Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
38	FOOT RIGHT	X	KEIC001X	Accel., Foot Triax	I.C. Sensor	3031-500	G
39	FOOT RIGHT	Y	KEIC001Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
40	FOOT RIGHT	Z	KEIC001Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
41	LAP BELT FORCE	X	KELC001	Load cell, Seat belt	Lebow	3371	N
42	SHOULDER BELT FORCE	X	KELC002	Load cell, Seat belt	Lebow	3371	N
43	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	MM
44	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

Ncap Test With Hybrid III Male 50th Percentile ATD

Instrumentation Data Channel Assignments

Passenger A.T.D Serial Number 34

Test Date: 1/28/98

Vehicle: 1998 Dodge Dakota

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
45	HEAD, PRIMARY	X	KEAC039	Accel., 1/2 bridge	Endevco	7264-2000	G
46	HEAD, PRIMARY	Y	KEAC038	Accel., 1/2 bridge	Endevco	7264-2000	G
47	HEAD, PRIMARY	Z	KEAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
48	HEAD, REDUNDANT	X	KEAC031	Accel., 1/2 bridge	Endevco	7264-2000	G
49	HEAD, REDUNDANT	Y	KEAC032	Accel., 1/2 bridge	Endevco	7264-2000	G
50	HEAD, REDUNDANT	Z	KEAC026	Accel., 1/2 bridge	Endevco	7264-2000	G
51	NECK FORCE	X	GPUN02FX	Load cell, six axis neck	R. A. Denton	1716A	N
52	NECK FORCE	Y	GPUN02FY	Load cell, six axis neck	R. A. Denton	1716A	N
53	NECK FORCE	Z	GPUN02FZ	Load cell, six axis neck	R. A. Denton	1716A	N
54	NECK MOMENT	X	GPUN02MX	Load cell, six axis neck	R. A. Denton	1716A	N.m
55	NECK MOMENT	Y	GPUN02MY	Load cell, six axis neck	R. A. Denton	1716A	N.m
56	NECK MOMENT	Z	GPUN02MZ	Load cell, six axis neck	R. A. Denton	1716A	N.m
57	CHEST , PRIMARY	X	GPAC031	Accel., 1/2 bridge	Endevco	7264-2000	G
58	CHEST , PRIMARY	Y	GPAC024	Accel., 1/2 bridge	Endevco	7264-2000	G
59	CHEST , PRIMARY	Z	GPAC029	Accel., 1/2 bridge	Endevco	7264-2000	G
60	CHEST , REDUNDANT	X	KEAC023	Accel., 1/2 bridge	Endevco	7264-200	G
61	CHEST , REDUNDANT	Y	KEAC022	Accel., 1/2 bridge	Endevco	7264-200	G
62	CHEST , REDUNDANT	Z	KEAC024	Accel., 1/2 bridge	Endevco	7264-200	G
63	CHEST DISPLACEMENT	X	GRP002	Potentiometer, Rotary	Servo	14CBI	MM
64	PELVIS, PRIMARY	X	GPAC009	Accel., 1/2 bridge	Endevco	7264-2000	G
65	PELVIS, PRIMARY	Y	GPAC017	Accel., 1/2 bridge	Endevco	7264-2000	G
66	PELVIS, PRIMARY	Z	GPAC018	Accel., 1/2 bridge	Endevco	7264-2000	G
67	LEFT FEMUR FORCE	Z	KEFF003	Load cell, Femur	R.A. Denton	2121	N
68	RIGHT FEMUR FORCE	Z	KEFF002	Load cell, Femur	R.A. Denton	2121	N

Ncap Test With Hybrid III Male 50th Percentile ATD

Instrumentation Data Channel Assignments

Passenger A.T.D Serial Number 34

Test Date: 1/28/98

Vehicle: 1998 Dodge Dakota

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
69	UP. TIBIA LEFT MOM.	X	GPUT03MX	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
70	UP. TIBIA LEFT MOM.	Y	GPUT03MY	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
71	UP. TIBIA RIGHT MOM.	X	GPUT04MX	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
72	UP. TIBIA RIGHT MOM.	Y	GPUT04MY	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
73	LWR. TIBIA LEFT FORCE	Y	GPUT03FY	3 ch., lower tibia gage	R. A. Denton	1584	N
74	LWR. TIBIA LEFT FORCE	Z	GPUT03FZ	3 ch., lower tibia gage	R. A. Denton	1584	N
75	LWR. TIBIA LEFT MOM.	X	GPUT03MX	3 ch., lower tibia gage	R. A. Denton	1584	N.m
76	LWR. TIBIA RIGHT FORCE	Y	GPUT04FY	3 ch., lower tibia gage	R. A. Denton	1584	N
77	LWR. TIBIA RIGHT FORCE	Z	GPUT04FZ	3 ch., lower tibia gage	R. A. Denton	1584	N
78	LWR. TIBIA RIGHT MOM.	X	GPUT04MX	3 ch., lower tibia gage	R. A. Denton	1584	N.m
79	FOOT LEFT	X	KEIC003X	Accel., Foot Triax	I.C. Sensor	3031-500	G
80	FOOT LEFT	Y	KEIC003Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
81	FOOT LEFT	Z	KEIC003Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
82	FOOT RIGHT	X	KEIC004X	Accel., Foot Triax	I.C. Sensor	3031-500	G
83	FOOT RIGHT	Y	KEIC004Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
84	FOOT RIGHT	Z	KEIC004Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
85	LAP BELT FORCE	X	KELC003	Load cell, Seat belt	Lebow	3371	N
86	SHOULDER BELT FORCE	X	KELC004	Load cell, Seat belt	Lebow	3371	N
87	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	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: 1/28/98

Vehicle: 1998 Dodge Dakota

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
89	LEFT REAR PRIMARY	X	KEVA005	Accel., Vehicle block	I.C. Sensor	3031-500	G
90	RIGHT REAR PRIMARY	X	KEVA006	Accel., Vehicle block	I.C. Sensor	3031-200	G
91	ENGINE TOP	X	KEVA001	Accel., Vehicle block	I.C. Sensor	3031-500	G
92	ENGINE BOTTOM	X	KEVA002	Accel., Vehicle block	I.C. Sensor	3031-500	G
93	LEFT BRAKE CALIPER	X	KEVA010	Accel., Vehicle block	I.C. Sensor	3031-500	G
94	RIGHT BRAKE CALIPER	X	KEVA004	Accel., Vehicle block	I.C. Sensor	3031-500	G
95	INSTUMENT PANEL	X	KEVA007	Accel., Vehicle block	I.C. Sensor	3031-200	G
96	LEFT REAR REDUNDANT	X	KEVA011	Accel., Vehicle block	I.C. Sensor	3031-200	G

APPENDIX E
DUMMY CALIBRATION DATA

KAR-98-R98050-08



Hybrid III Calibration Data Sheet

50TH Percentile Male

Left Knee Impact Test

ATD Serial No.: 034

Part Serial No.: n/a

Test I.D.: MK001

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	31	Pass
Probe Velocity	m/s	2.073 to 2.134	2.119	Pass
Peak Probe Force	Newtons	4715 to 5782	5185.0	Pass
Overall Test Results				Pass

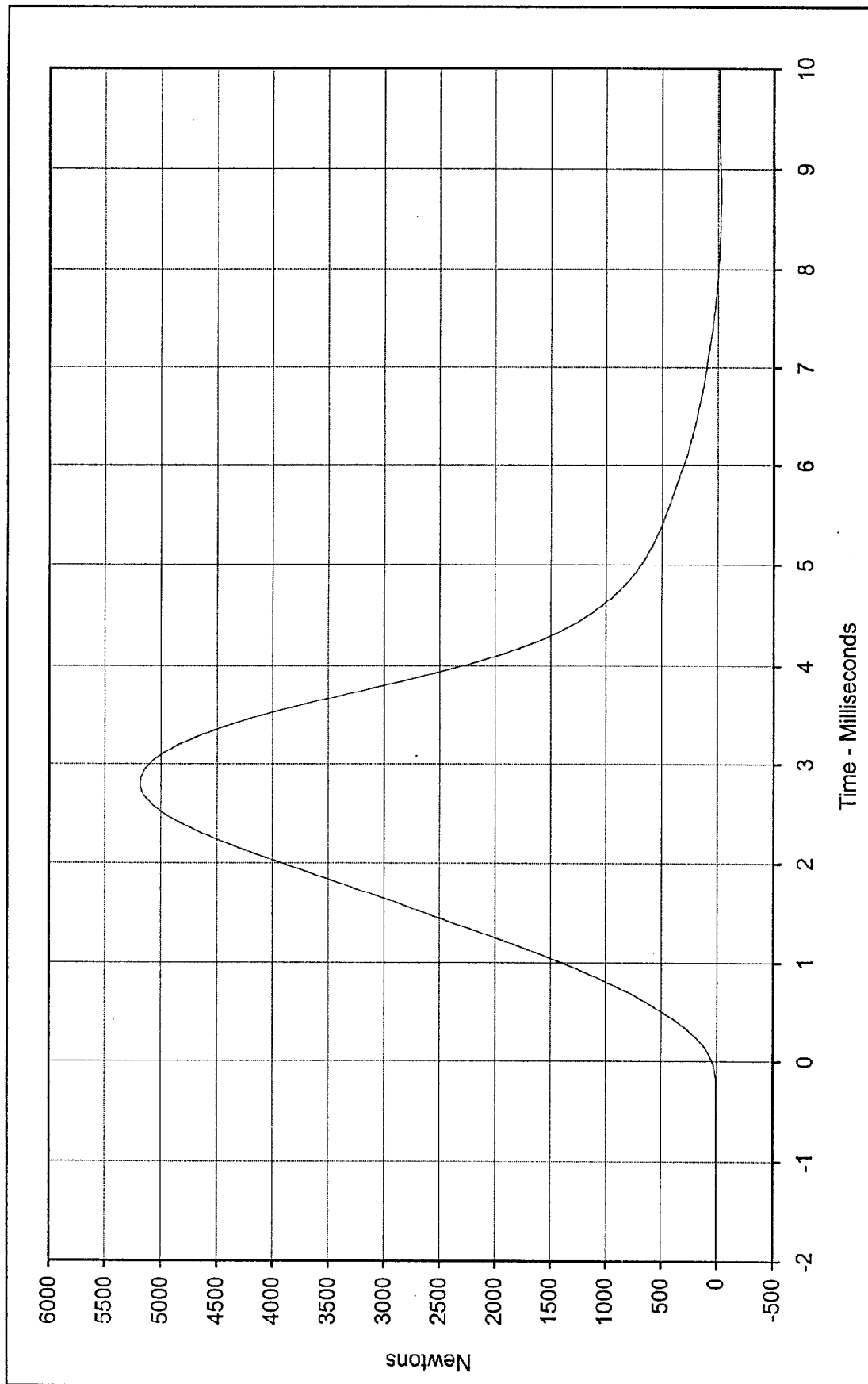
N 208p
Laboratory Technician

J. D. K. L. S. S. S.
Approved By

January 16, 1998

Test Date

1/16/98
Date



Testing Program: Hybrid III Left Knee Impact Test
 Test Information: Part S/N: n/a Test I.D.: MK001



Curve Description: Probe Force
 Maximum Value: 5185.0 at 2.8 Milliseconds
 Minimum Value: -3.8 at 8.0 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/16/98
 ATD Serial No.: 034



Hybrid III Calibration Data Sheet

50TH Percentile Male

Right Knee Impact Test

ATD Serial No.: 034

Part Serial No.: n/a

Test I.D.: MK002

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	2.073 to 2.134	2.119	Pass
Peak Probe Force	Newtons	4715 to 5782	5434.3	Pass
Overall Test Results				Pass

N 2009
Laboratory Technician

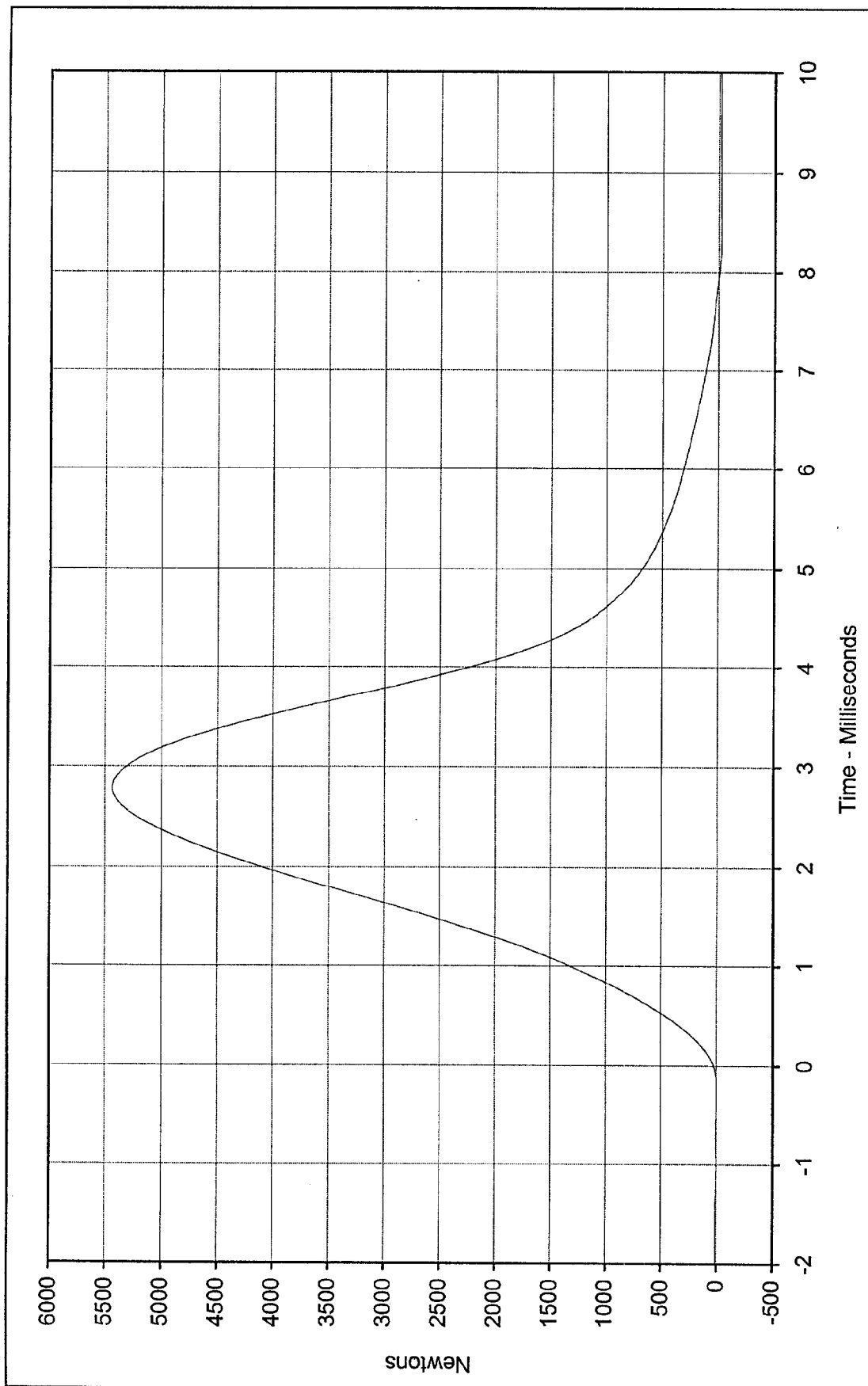
J. P. Hansen
Approved By

January 16, 1998

Test Date

1/16/98

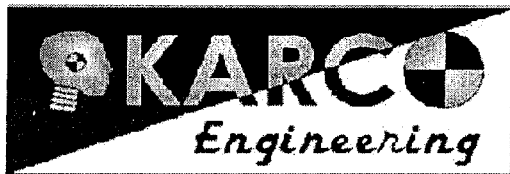
Date



Testing Program: Hybrid III Right Knee Impact Test
 Test Information: Part S/N: n/a Test I.D.: MK002



Curve Description: Probe Force
 Maximum Value: 5434.3 at 2.8 Milliseconds
 Minimum Value: -7.6 at 8.0 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/16/98
 ATD Serial No.: 034



Hybrid III Calibration Data Sheet

50TH Percentile Male

Head Drop Calibration

ATD Serial No.: 034

Part Serial No.: n/a

Test I.D.: HD050

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	39	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	236.2	Pass
Peak Lateral Acceleration	G's	≤15.0	6.7	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

N 209p
Laboratory Technician

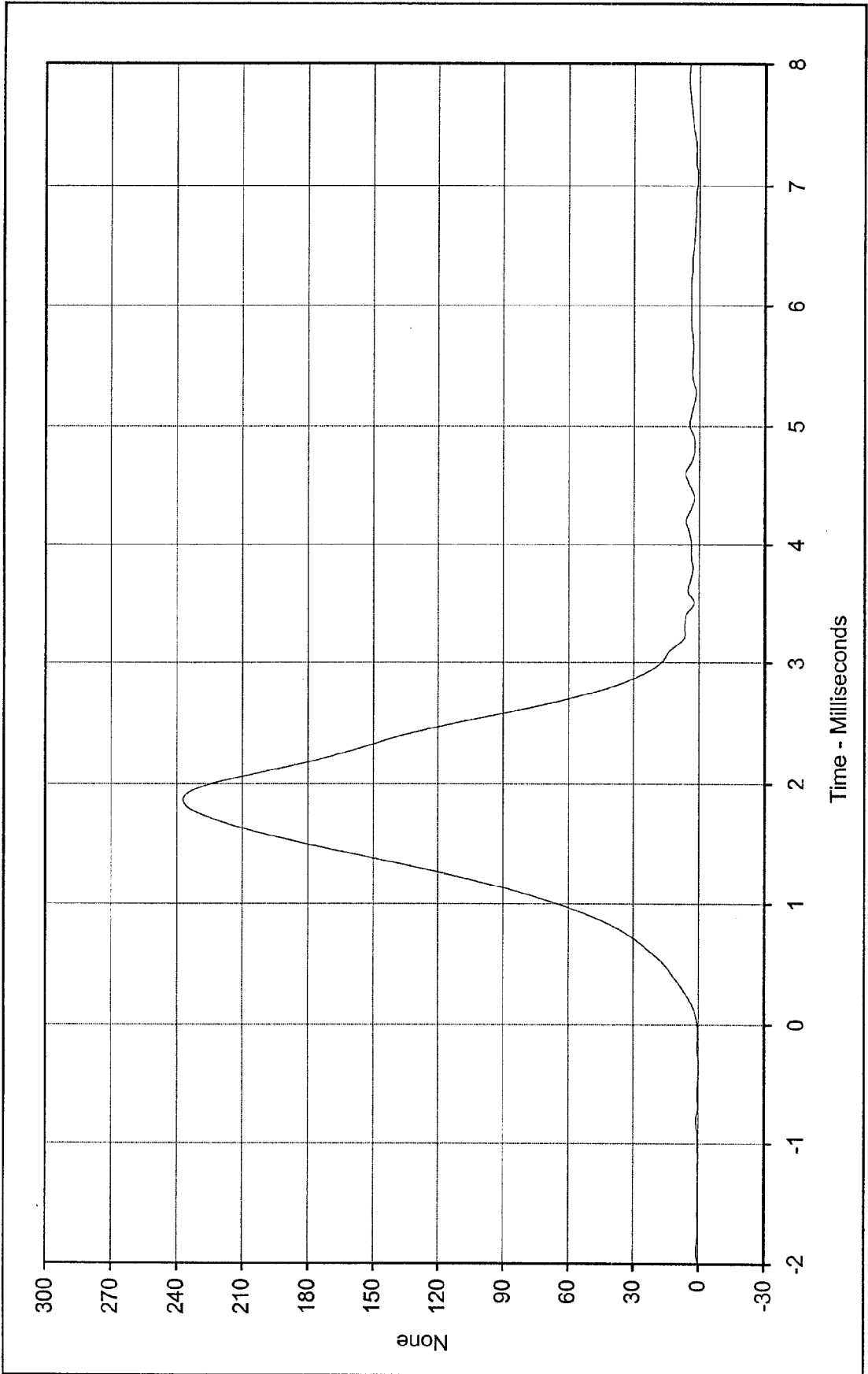
J. D. Rutledge
Approved By

January 16, 1998

Test Date

1/16/98

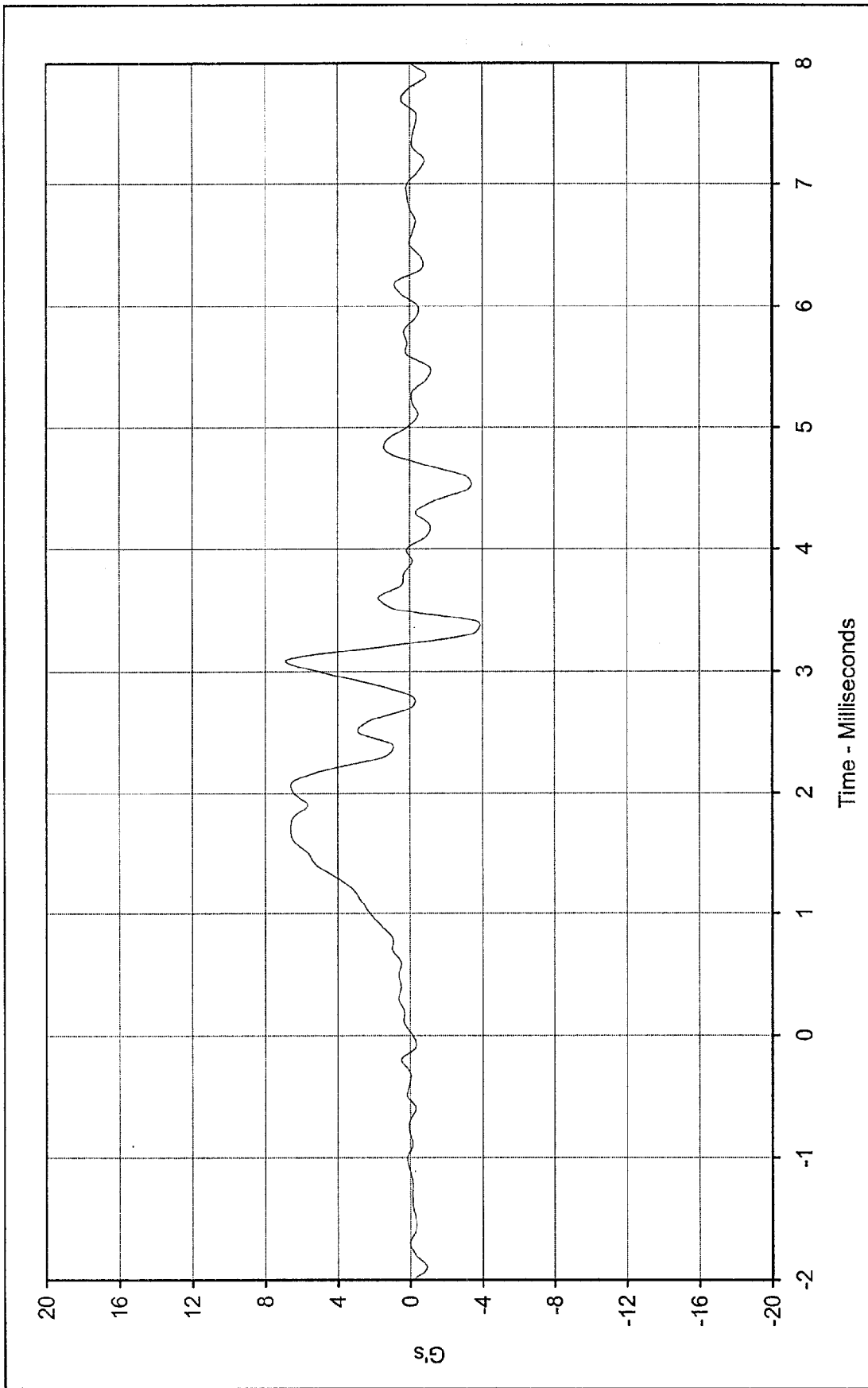
Date



Testing Program Hybrid III Head Drop Calibration (Male)
 Test Information: S/N of Part: n/a Test I.D.: HD050

Curve Description: Head Resultant Acceleration
 Maximum Value: 236.2 at 1.9 Milliseconds
 Minimum Value: 0.1 at -0.3 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/16/98
 ATD Serial No.: 034





Curve Description: Head Acceleration Y Axis
 Maximum Value: 6.7 at 3.1 Milliseconds
 Minimum Value: -3.7 at 3.4 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/16/98
 ATD Serial No.: 034

Testing Program Hybrid III Head Drop Calibration (Male)
 Test Information: S/N of Part: n/a Test I.D.: HD050





Hybrid III Calibration Data Sheet

50TH Percentile Male

Thorax Impact Test

ATD Serial No.: 034

Part Serial No.: n/a

Test I.D.: C5000

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	39	Pass
Probe Velocity	m/s	6.58 to 6.82	6.68	Pass
Peak Probe Force	Newtons	5159 to 5893	5436	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.54	Pass
Internal Hysteresis	%	69 to 85	75.0	Pass
Overall Test Results				Pass

N 208
Laboratory Technician

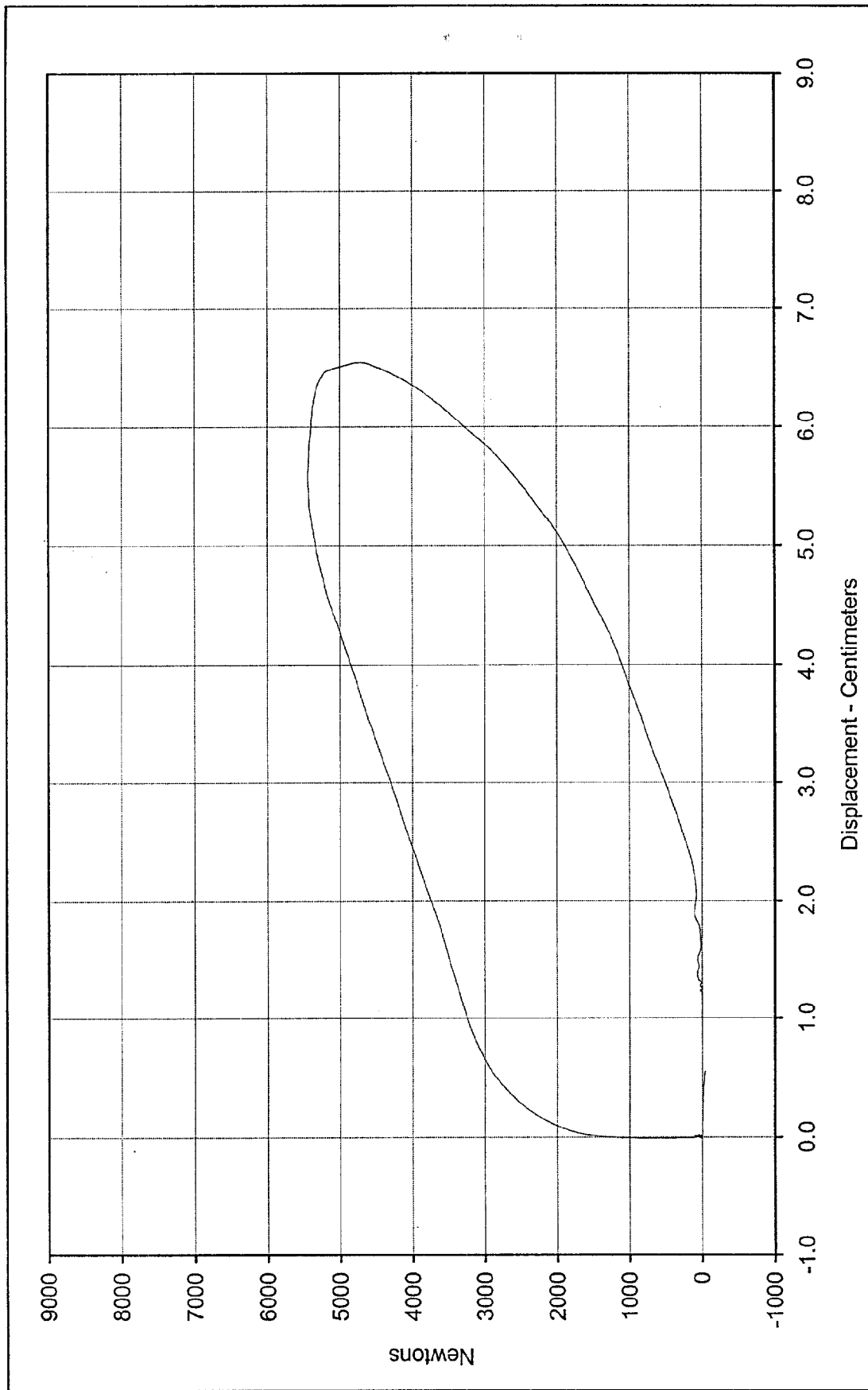
Frank W. Kunkle
Approved By

January 19, 1998

Test Date

1/19/98

Date



Curve Description:	Probe Force vs. Chest Displacement	Testing Program	Hybrid III Thorax Impact Test
Probe Force:	5436.3 Newtons	Test Information:	S/N of Part: n/a Test I.D.: C5000

Chest Displ.:	6.54 Centimeters
SAE Filter Class:	180
Date of Test:	1/19/98
ATD Serial No.:	034





Hybrid III Calibration Data Sheet

50TH Percentile Male

Neck Flexion Test

ATD Serial No.: 034

Part Serial No.: n/a

Test I.D.: NK100

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.	G's	22.5 to 27.5	23.0	Pass
	20 Msec.	G's	17.6 to 22.6	20.8	Pass
	30 Msec.	G's	12.5 to 18.5	17.5	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	17.5	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	38.1	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	74.8	Pass
	Time	Msec.	57.0 to 64.0	60.9	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	121.3	Pass
Moment About Occipital Condyle	Maximum	N • m	84.1 to 108.5	86.4	Pass
	Time	Msec.	47.0 to 58.0	53.3	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	102.8	Pass
Overall Test Results				Pass	

N 2029

Laboratory Technician

John A. Wilson

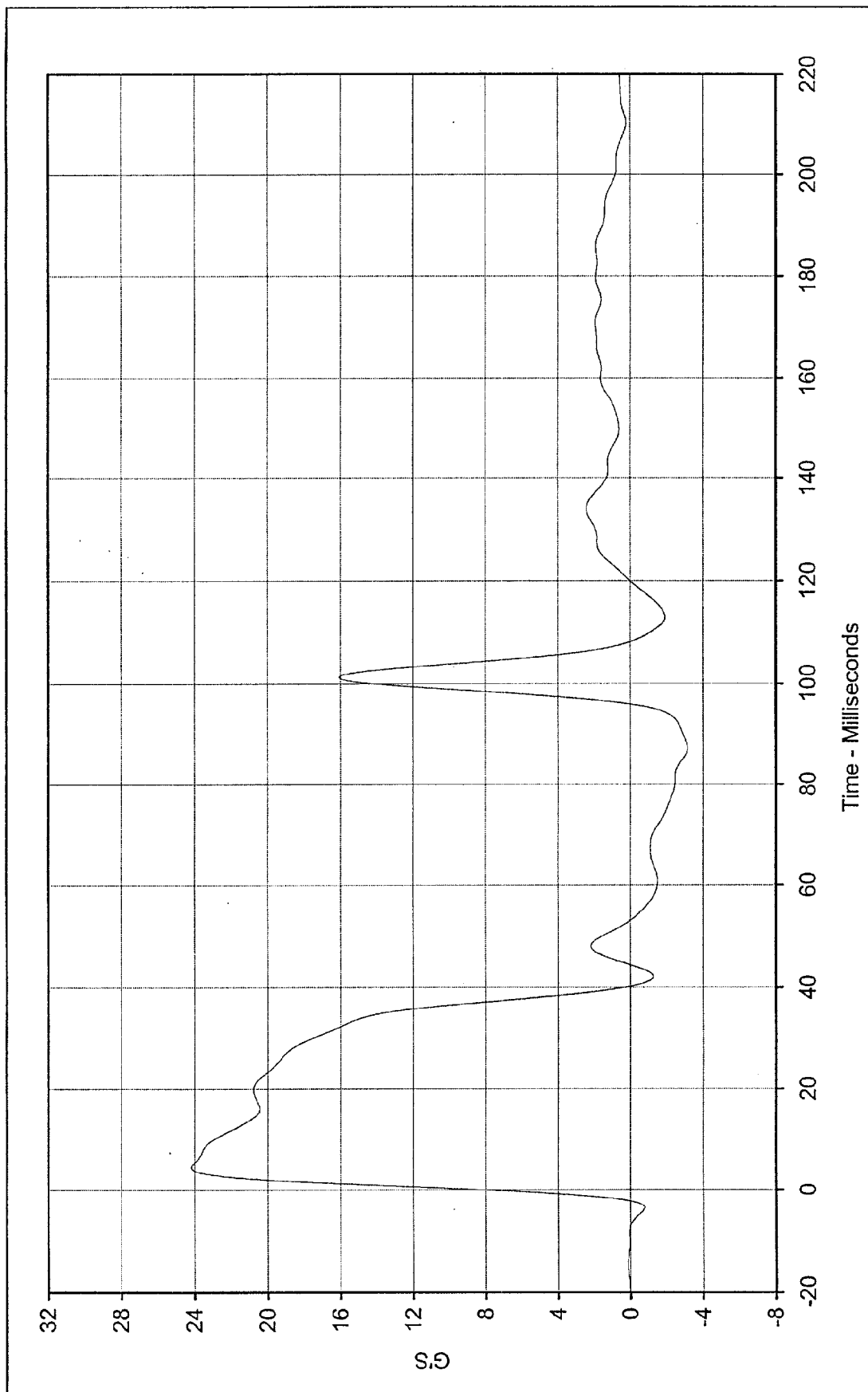
Approved By

January 17, 1998

Test Date

1/17/98

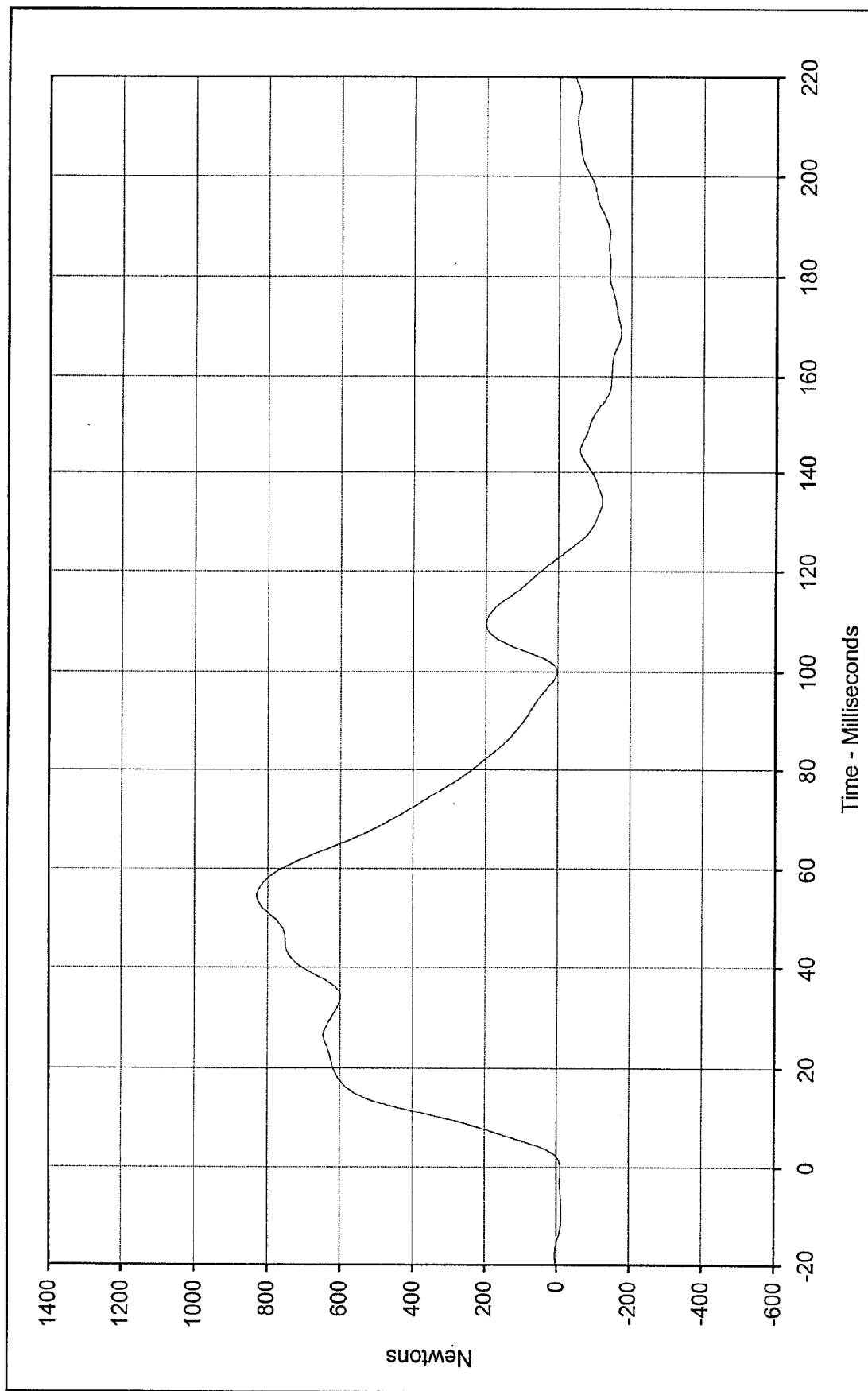
Date



Curve Description: Pendulum Deceleration
 Maximum Value: 24.2 at 4.4 Milliseconds
 Minimum Value: -3.2 at 87.1 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/17/98
 ATD Serial No.: 034

Testing Program: Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NK100

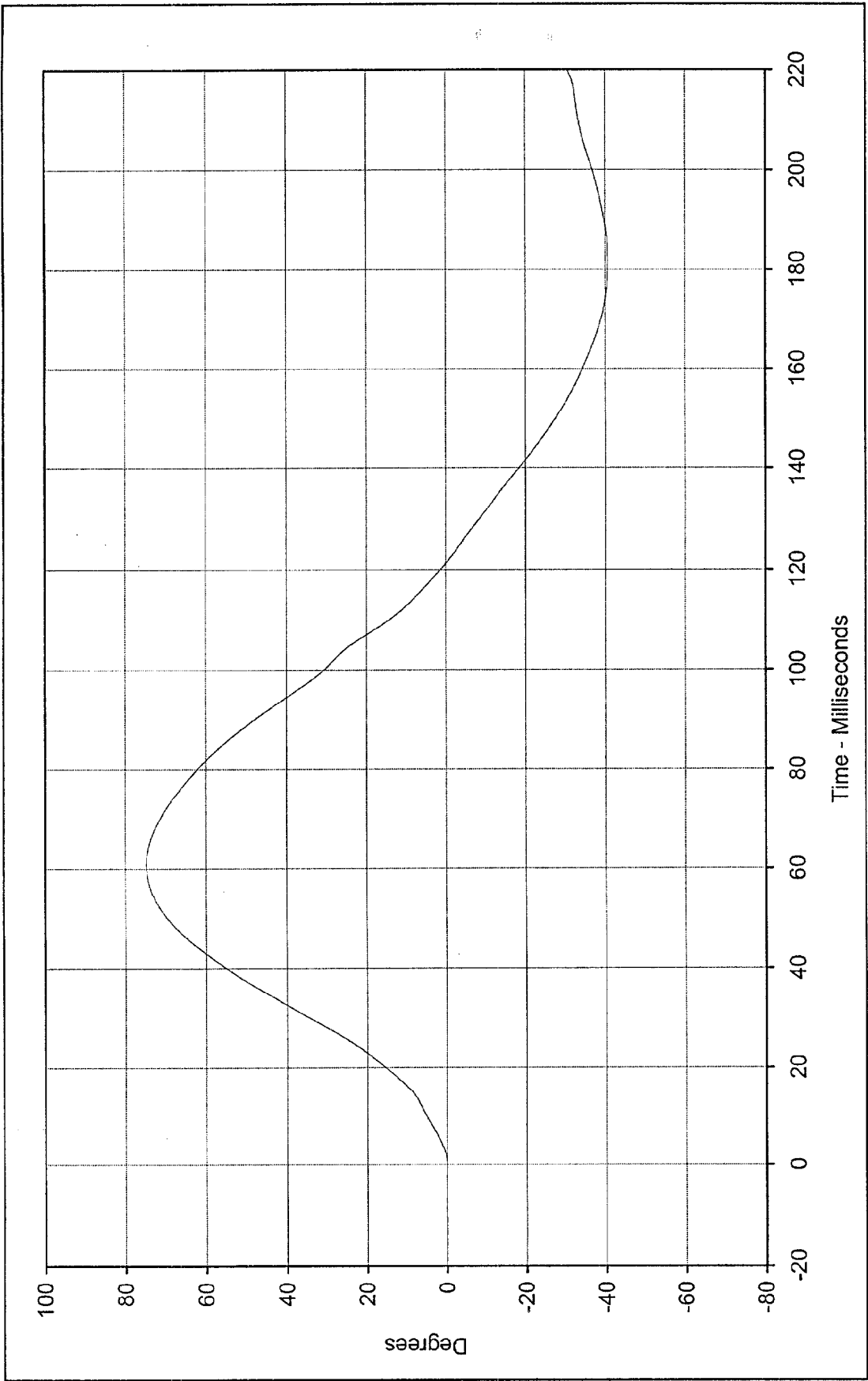




Curve Description: Neck Force X
 Maximum Value: 829.4 at 54.6 Milliseconds
 Minimum Value: -171.5 at 168.8 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/17/98
 ATD Serial No.: 034

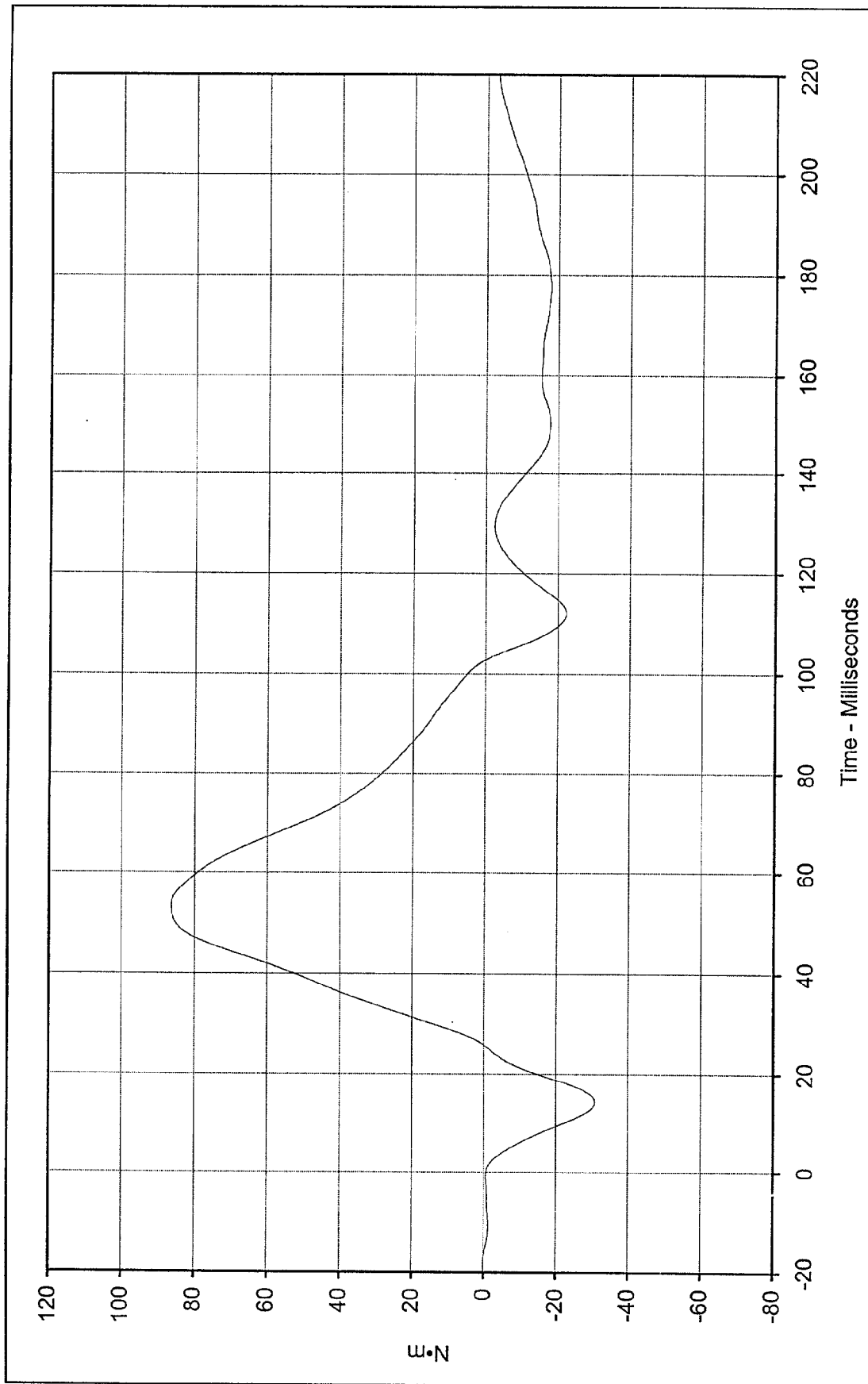
Testing Program: Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NK100





Curve Description: _____ Testing Program Hybrid III Neck Flexion Test (Male)
 Maximum Value: 74.8 at 60.9 Milliseconds
 Minimum Value: -40.6 at 181.9 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/17/98
 ATD Serial No.: 034





Curve Description: Moment About Occipital Condyles

Maximum Value: 86.4 at 53.3 Milliseconds

Minimum Value: -30.9 at 14.3 Milliseconds

SAE Filter Class: 60

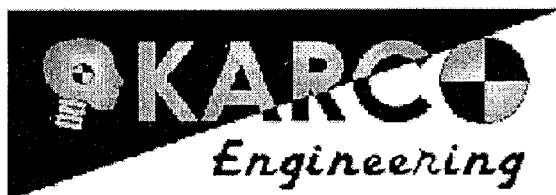
Date of Test: 1/17/98

ATD Serial No.: 034

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NK100





Hybrid III Calibration Data Sheet

50TH Percentile Male

Neck Extension Test

ATD Serial No.: 034

Part Serial No.: n/a

Test I.D.: NE600

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	6.11	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.9	Pass
	20 Msec.	G's	14.0 to 19.0	16.4	Pass
	30 Msec.	G's	11.0 to 16.0	15.3	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.3	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	101.5	Pass
	Time	Msec.	72.0 to 82.0	80.1	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	158.7	Pass
Moment About Occipital Condyle	Maximum	N • m	-52.9 to- 79.9	-79.1	Pass
	Time	Msec.	65.0 to 79.0	66.8	Pass
Negative Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	145.1	Pass
Overall Test Results					Pass

N 2080

Laboratory Technician

J. A. Robinson

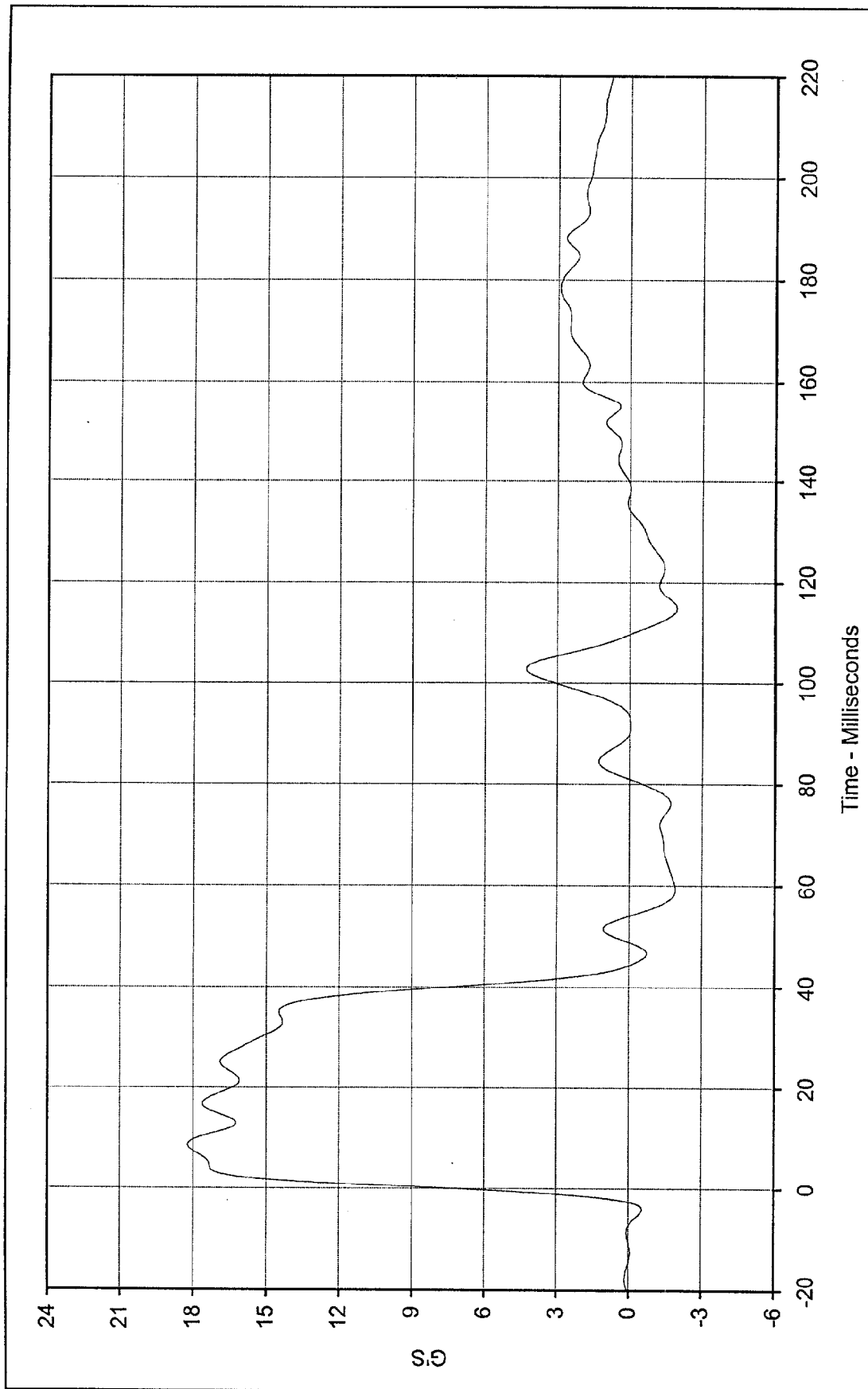
Approved By

January 17, 1998

Test Date

1/17/98

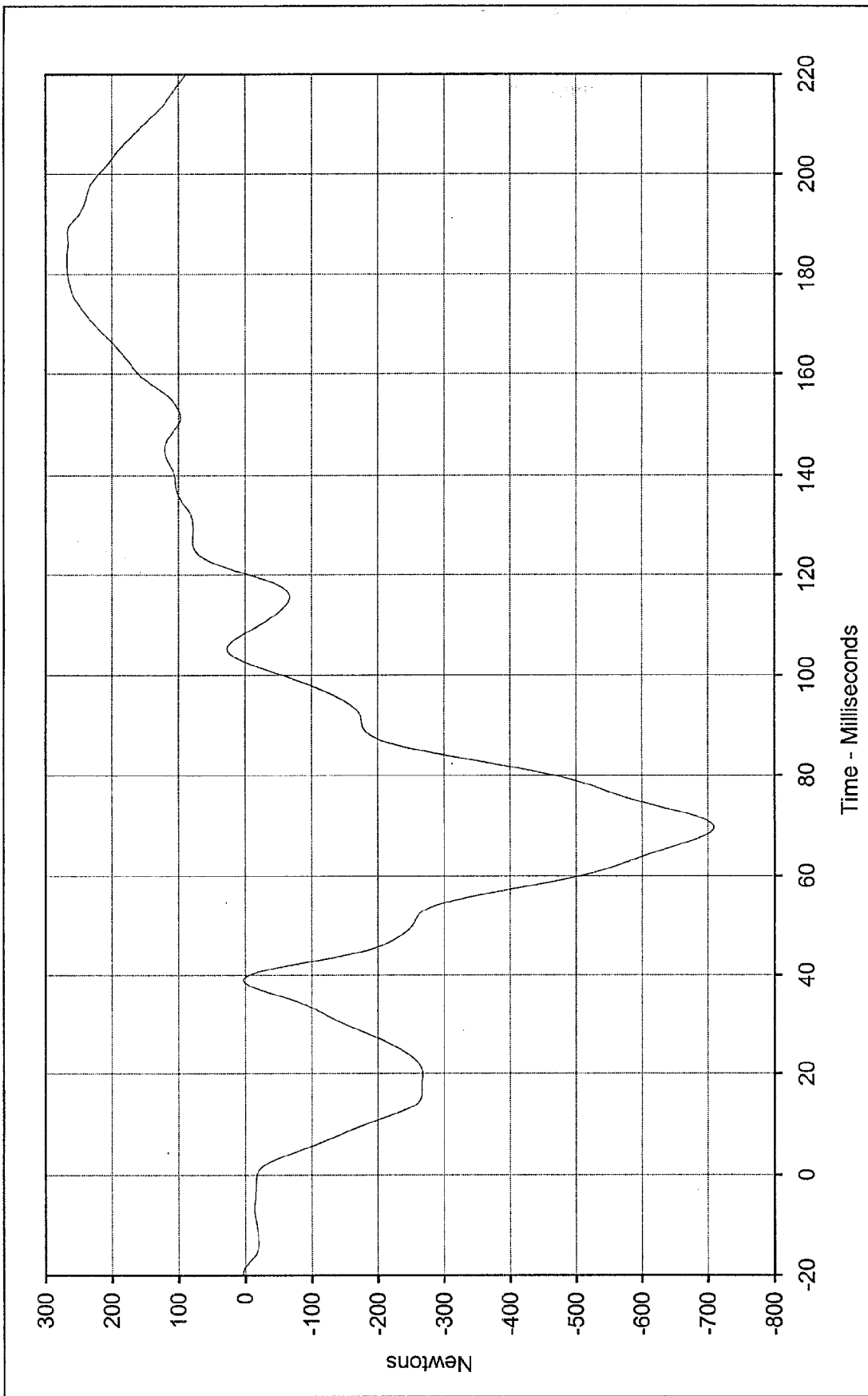
Date



Curve Description: Hybrid III Neck Extension Test (Male)
 Testing Program: S/N of Part: n/a Test I.D.: NE600

Pendulum Deceleration
 Maximum Value: 18.2 at 8.7 Milliseconds
 Minimum Value: -1.9 at 114.7 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/17/98
 ATD Serial No.: 034

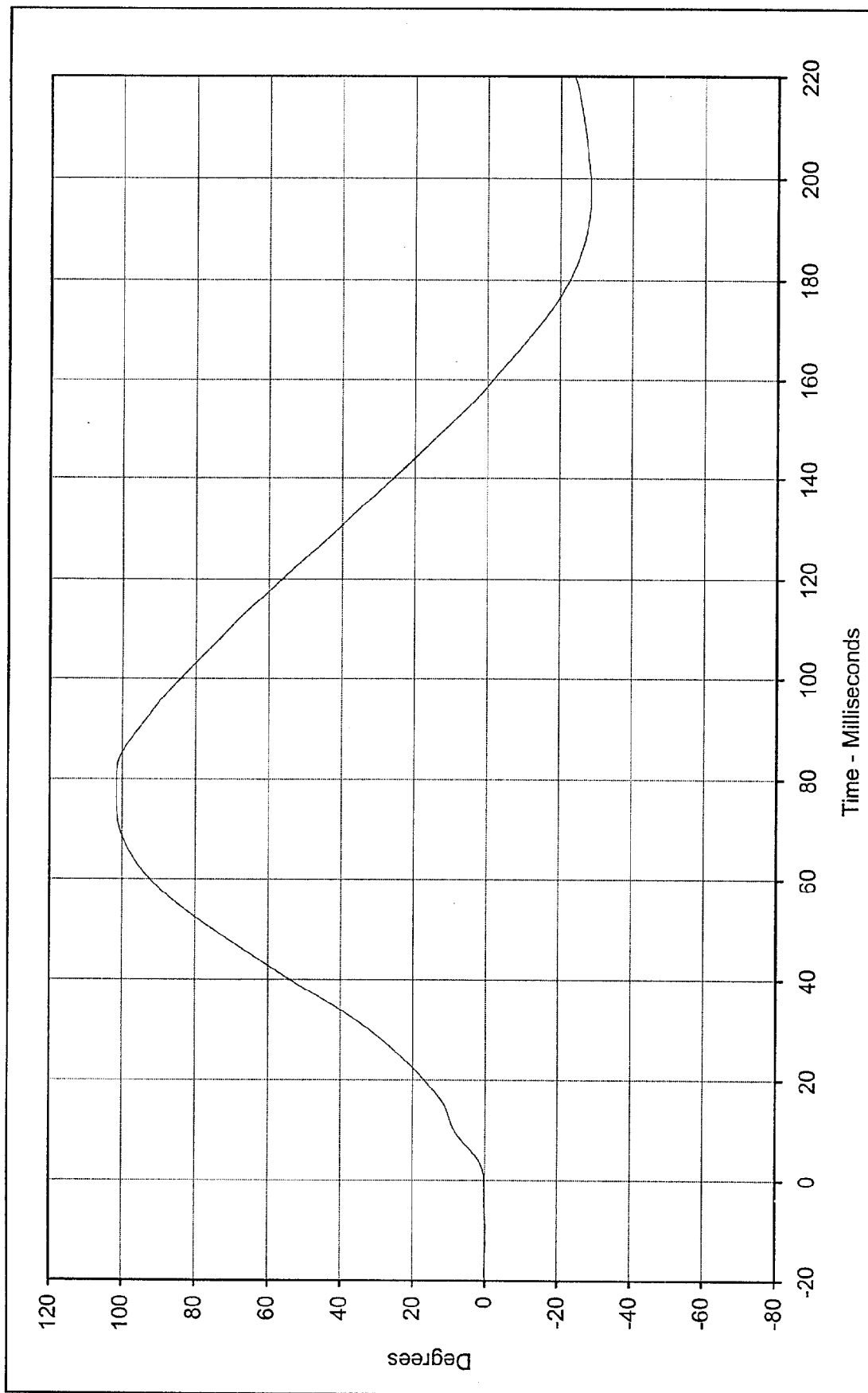




Testing Program Hybrid III Neck Extension Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NE600

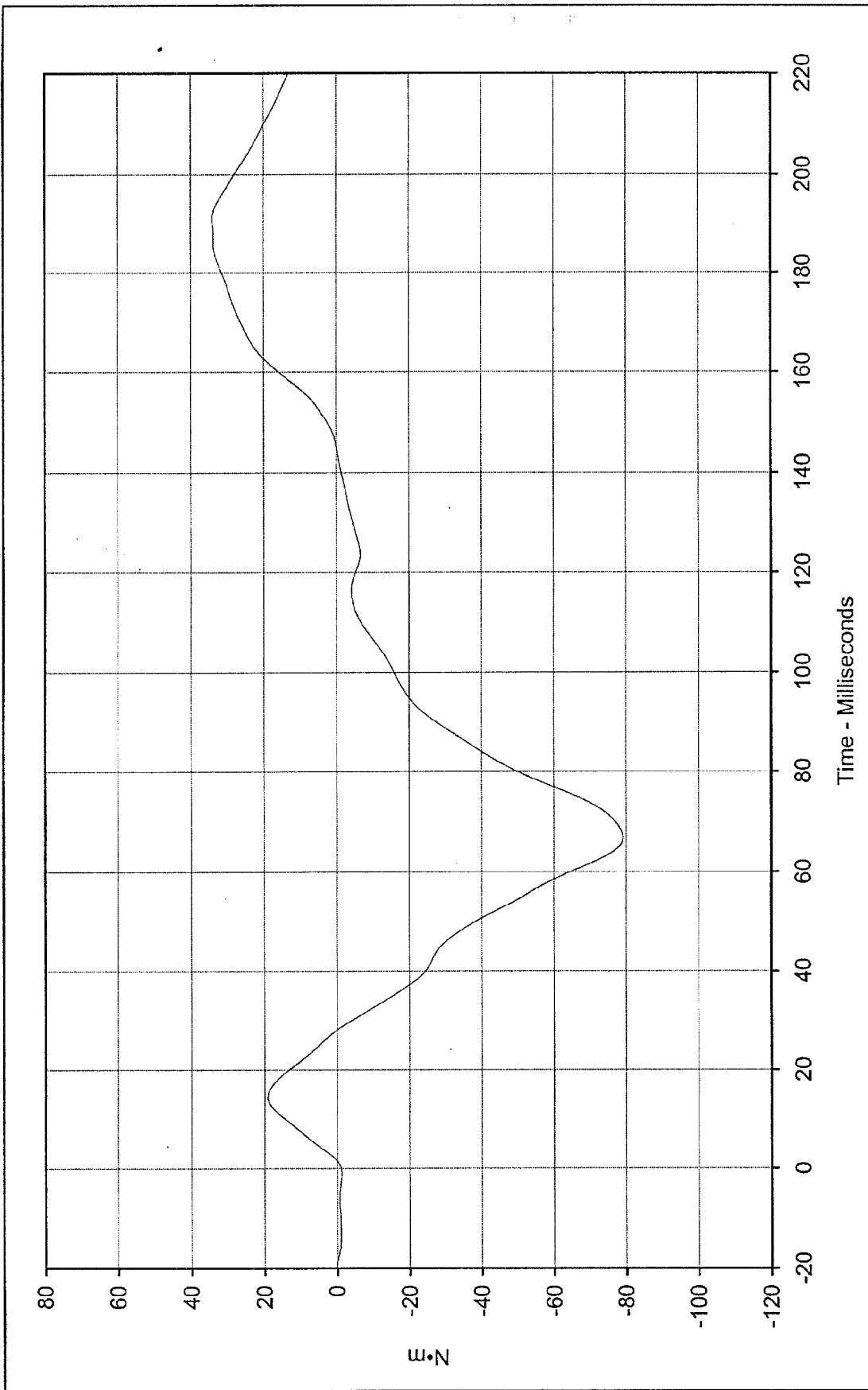
Curve Description: Neck Force X
 Maximum Value: 267.4 at 182.9 Milliseconds
 Minimum Value: -708.4 at 69.6 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/17/98
 ATD Serial No.: 034





Curve Description:	"D" Plane Rotation	Testing Program	Hybrid III Neck Extension Test (Male)
Maximum Value:	101.5 at 80.1 Milliseconds	Test Information:	S/N of Part: n/a Test I.D.: NE600
Minimum Value:	-28.4 at 197.2 Milliseconds		
SAE Filter Class:	60		
Date of Test:	1/17/98		
ATD Serial No.:	034		





Testing Program Hybrid III Neck Extension Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NE600

Curve Description: Moment About Occipital Condyles
 Maximum Value: 34.0 at 191.1 Milliseconds
 Minimum Value: -79.1 at 66.8 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/17/98
 ATD Serial No.: 034





Hybrid III Calibration Data Sheet

50TH Percentile Male

External Measurements

ATD Serial No.: 034

Part Serial No.: N/A

Test I.D.: N/A

External Measurement Data				
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory temperature	°C	20.4 to 22.1	20.9	Pass
Laboratory relative humidity	%	10 to 70	43.0	Pass
A - Total sitting height	mm	878.8 to 889.0	883.0	Pass
B - Shoulder pivot height	mm	505.5 to 520.7	516.0	Pass
C - "H" point height	mm	83.8 to 88.9	87.0	Pass
D - "H" point from seat back	mm	134.6 to 139.7	137.0	Pass
E - Shoulder pivot from back	mm	83.8 to 94.0	86.0	Pass
F - Thigh clearance	mm	139.7 to 154.9	151.0	Pass
G - Elbow back to wrist pivot	mm	289.6 to 304.8	301.0	Pass
H - Skull cap to back line	mm	40.6 to 45.7	45.0	Pass
I - Shoulder to elbow length	mm	330.2 to 345.4	344.0	Pass
J - Elbow rest height	mm	190.5 to 210.8	208.0	Pass
K - Buttock to knee length	mm	579.1 to 604.5	591.0	Pass
L - Popliteal length	mm	429.3 to 454.7	441.0	Pass
M - Knee pivot height	mm	485.1 to 500.4	495.0	Pass
N - Buttock popliteal length	mm	452.1 to 477.5	470.0	Pass
O - Chest depth	mm	213.4 to 228.6	220.0	Pass
P - Foot length	mm	251.5 to 266.7	261.0	Pass
V - Shoulder breadth	mm	421.6 to 436.9	435.0	Pass
W - Foot breadth	mm	91.4 to 106.7	100.0	Pass
Y - Chest circumference	mm	970.3 to 1000.8	1000.0	Pass
Z - Waist circumference	mm	835.7 to 866.1	865.0	Pass
AA - Location for chest circumference	mm	429.3 to 434.3	431.0	Pass
BB - Location for waist circumference	mm	226.1 to 231.1	230.0	Pass
Overall Test Results				Pass

N 2088
Laboratory Technician

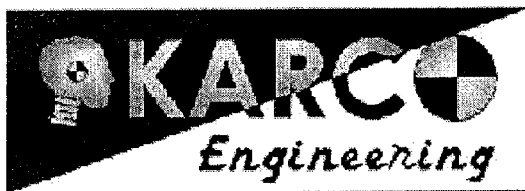
J. P. L. L.
Approved By

January 19, 1998

Test Date

1/19/98

Date



Hybrid III Calibration Data Sheet

50TH Percentile Male

Left Knee Impact Test

ATD Serial No.: 035

Part Serial No.: n/a

Test I.D.: H3K01

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	31	Pass
Probe Velocity	m/s	2.073 to 2.134	2.118	Pass
Peak Probe Force	Newtons	4715 to 5782	5733.8	Pass
Overall Test Results				Pass

N20fp
Laboratory Technician

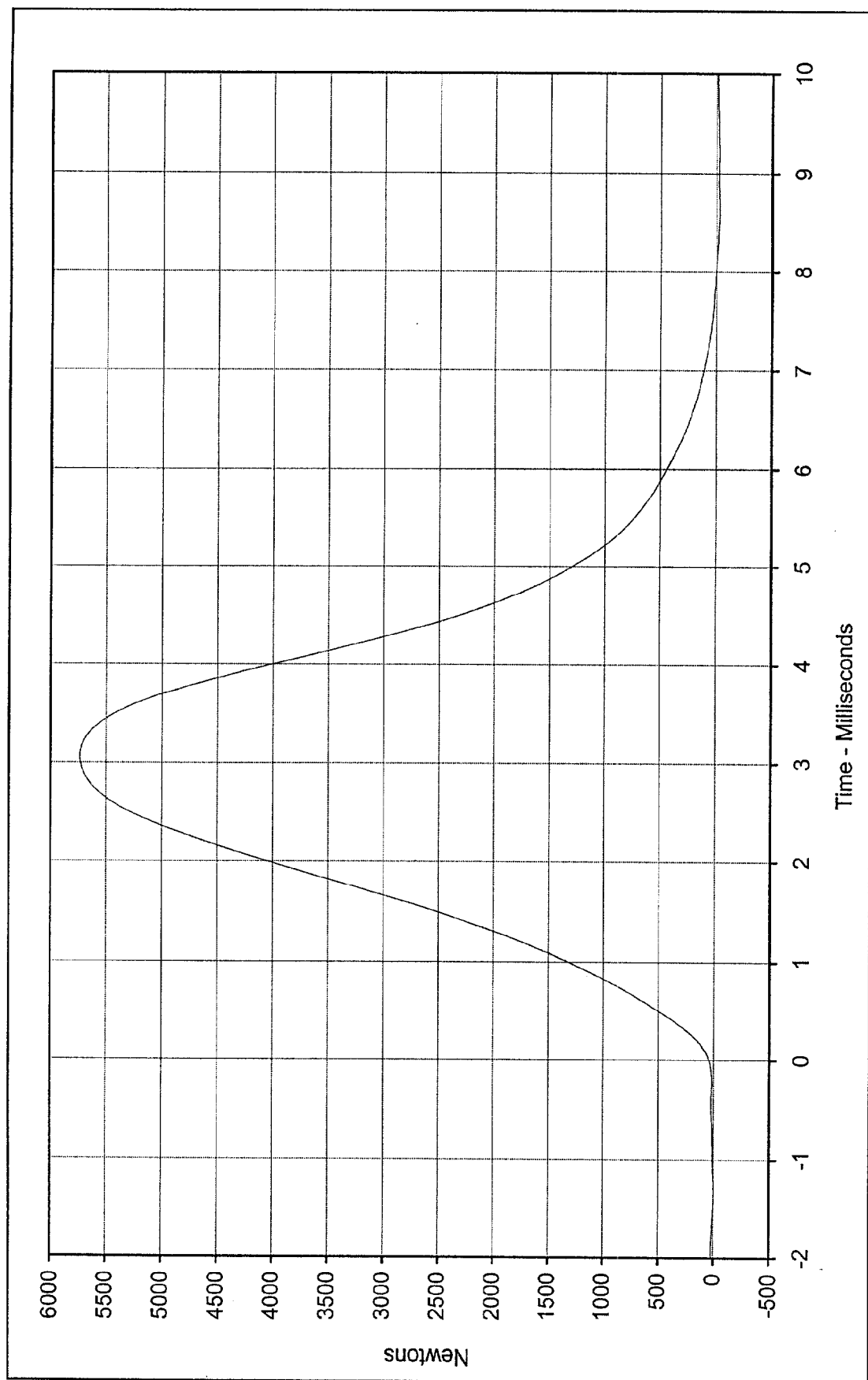
J. P. Richardson
Approved By

January 16, 1998

Test Date

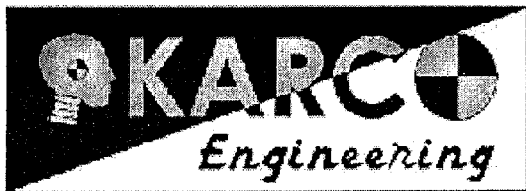
1/16/98

Date



Curve Description: _____ Testing Program: Hybrid III Left Knee Impact Test
 Maximum Value: 5733.8 at 3.1 Milliseconds
 Minimum Value: -1.3 at -1.4 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/16/98
 ATD Serial No.: 035





Hybrid III Calibration Data Sheet

50TH Percentile Male

Right Knee Impact Test

ATD Serial No.: 035

Part Serial No.: n/a

Test I.D.: H3K02

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	2.073 to 2.134	2.132	Pass
Peak Probe Force	Newtons	4715 to 5782	5683.4	Pass
Overall Test Results				Pass

A handwritten signature in black ink, appearing to read "N 208", written over a horizontal line.

Laboratory Technician

A handwritten signature in black ink, appearing to read "J. A. Richardson", written over a horizontal line.

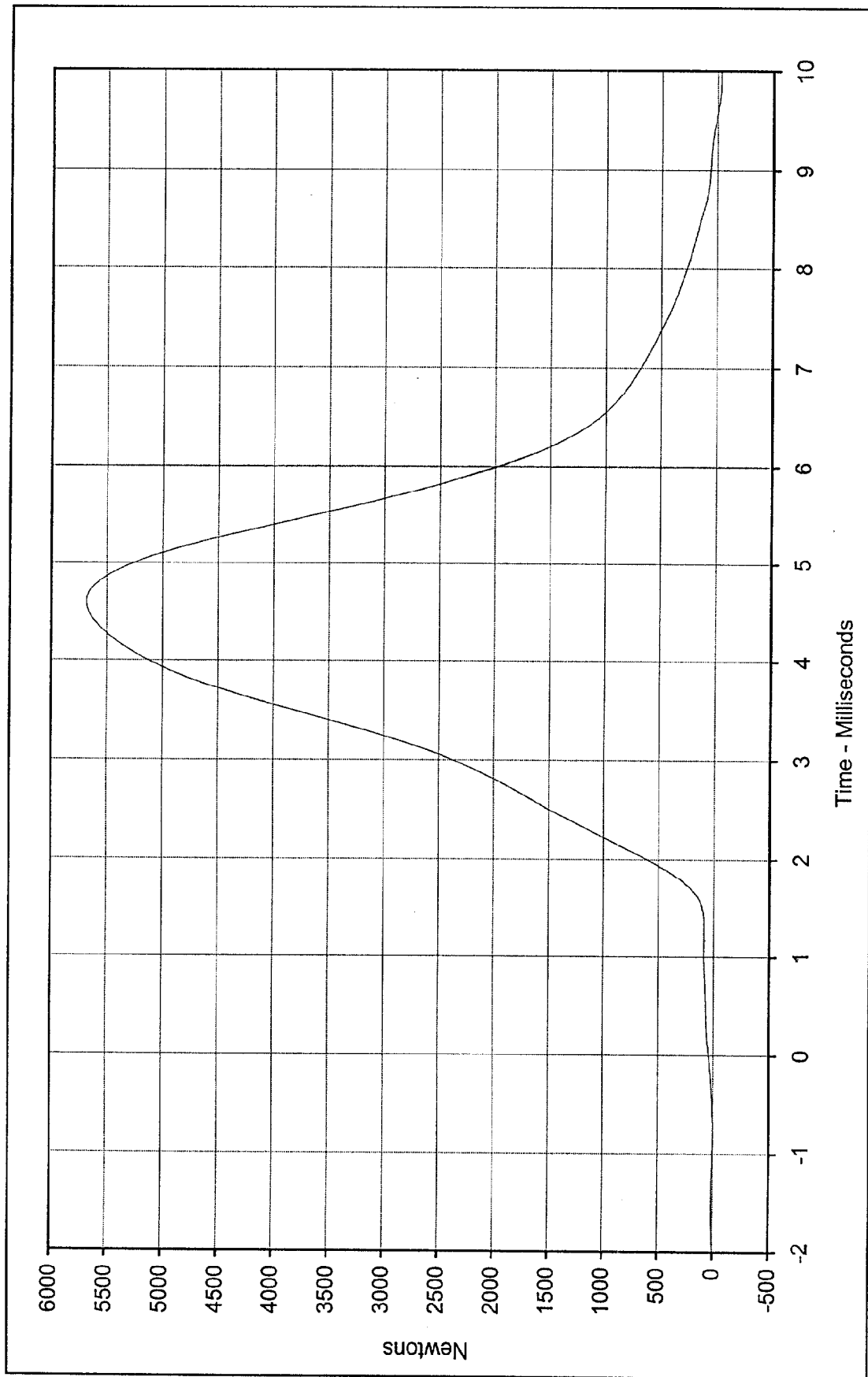
Approved By

January 16, 1998

Test Date

A handwritten date "1/16/98" in black ink, written over a horizontal line.

Date



Curve Description: Hybrid III Right Knee Impact Test
 Maximum Value: 5683.4 at 4.6 Milliseconds
 Minimum Value: -0.6 at -0.8 Milliseconds
 SAE Filter Class: 600
 Date of Test: 1/16/98
 ATD Serial No.: 035





Hybrid III Calibration Data Sheet

50TH Percentile Male

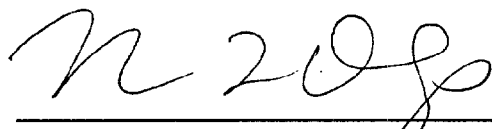
Head Drop Calibration

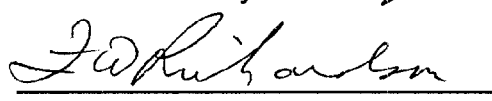
ATD Serial No.: 035

Part Serial No.: n/a

Test I.D.: HD051

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	39	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	246.1	Pass
Peak Lateral Acceleration	G's	≤15.0	5.6	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass


Laboratory Technician

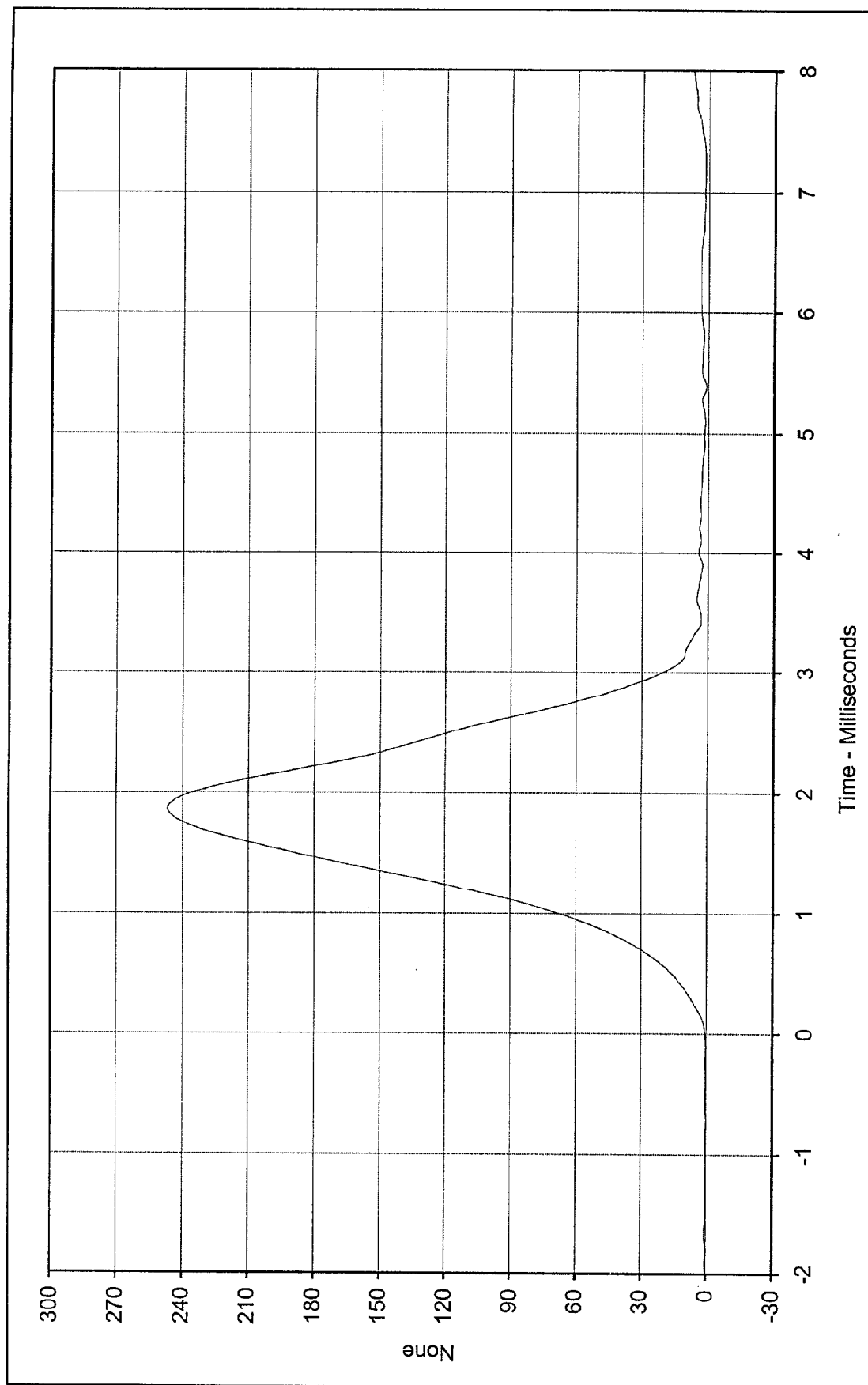

Approved By

January 16, 1998

Test Date

1/16/98

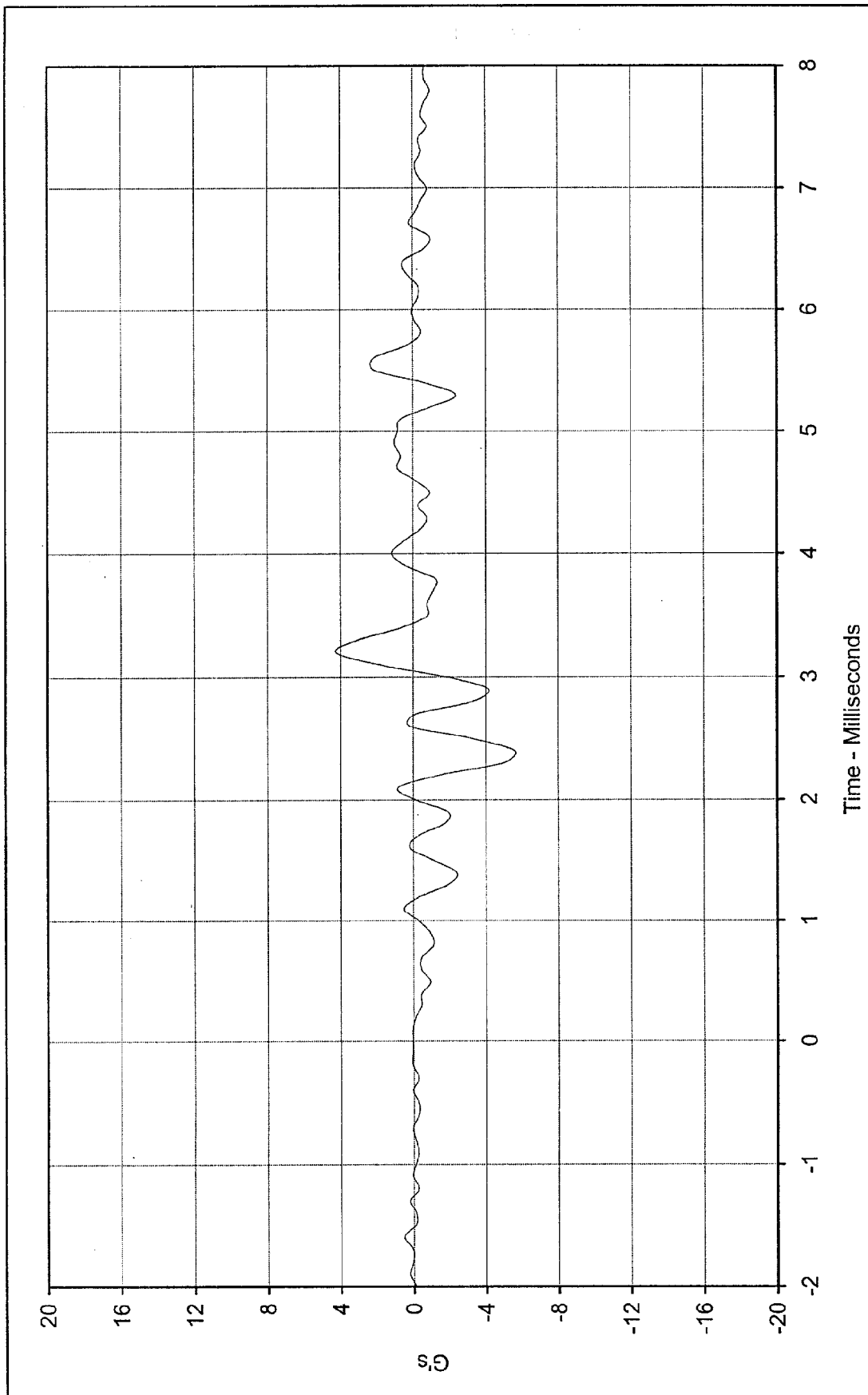
Date



Curve Description: Head Resultant Acceleration
 Testing Program Hybrid III Head Drop Calibration (Male)
 Test Information: S/N of Part: n/a Test I.D.: HD051

Maximum Value: 246.1 at 1.9 Milliseconds
 Minimum Value: 0.1 at -1.8 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 1/16/98
 ATD Serial No.: 035





Curve Description: Hybrid III Head Drop Calibration (Male)
 Testing Program: S/N of Part: n/a Test I.D.: HD051

Maximum Value: 4.2 at 3.2 Milliseconds

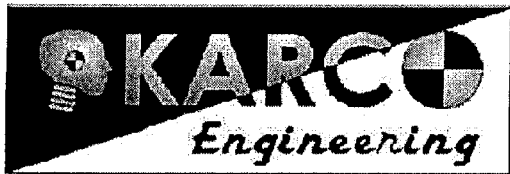
Minimum Value: -5.6 at 2.4 Milliseconds

SAE Filter Class: 1000

Date of Test: 1/16/98

ATD Serial No.: 035





Hybrid III Calibration Data Sheet

50TH Percentile Male

Thorax Impact Test

ATD Serial No.: 035

Part Serial No.: n/a

Test I.D.: C6000

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	39	Pass
Probe Velocity	m/s	6.58 to 6.82	6.68	Pass
Peak Probe Force	Newtons	5159 to 5893	5427	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	7.15	Pass
Internal Hysteresis	%	69 to 85	73.4	Pass
Overall Test Results				Pass

N 2 Ogo
Laboratory Technician

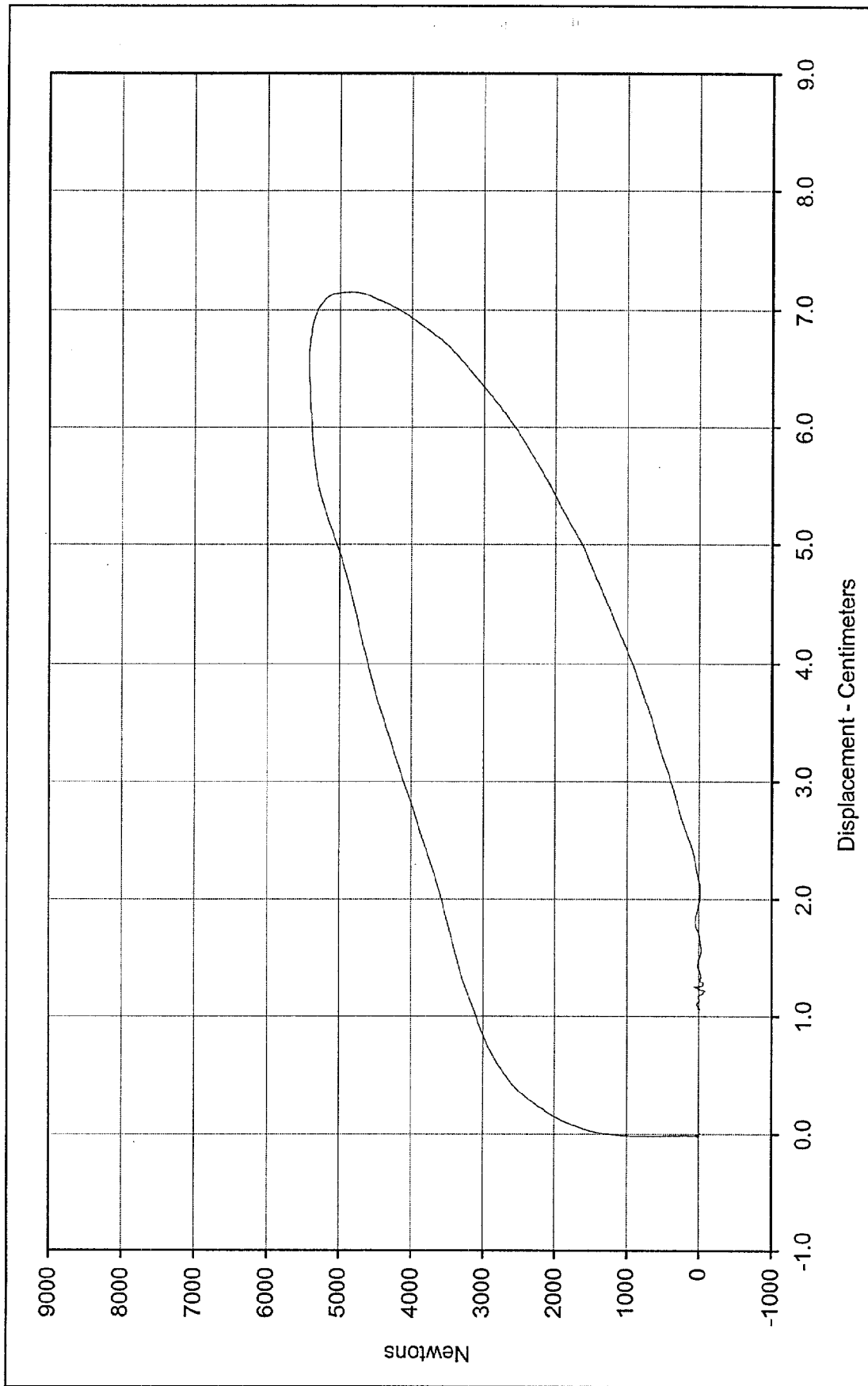
J. A. Kibonson
Approved By

January 19, 1998

Test Date

1/19/98

Date



Curve Description: Probe Force vs. Chest Displacement Testing Program Hybrid III Thorax Impact Test
 Probe Force: 5426.9 Newtons Test Information: S/N of Part: n/a Test I.D.: C6000
 Chest Displ.: 7.15 Centimeters



SAE Filter Class: 180
 Date of Test: 1/19/98
 ATD Serial No.: 035



Hybrid III Calibration Data Sheet

50TH Percentile Male

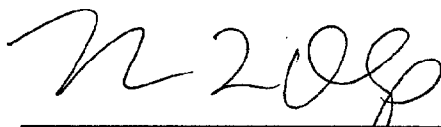
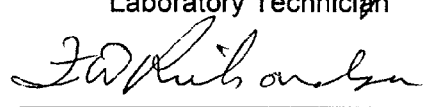
Neck Flexion Test

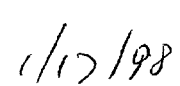
ATD Serial No.: 035

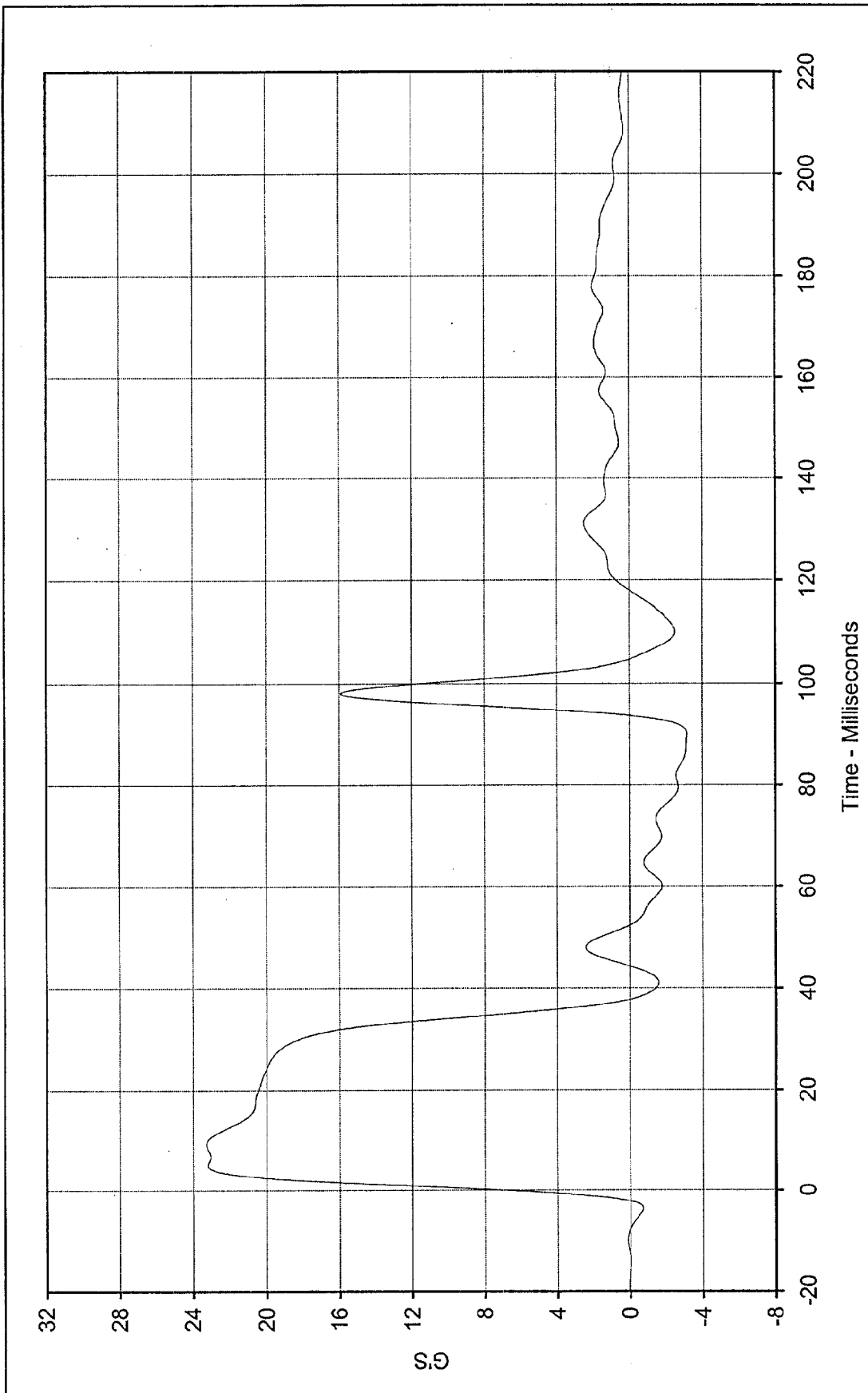
Part Serial No.: n/a

Test I.D.: NF500

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	36	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.93	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	23.2	Pass
	20 Msec.	G's	17.6 to 22.6	20.4	Pass
	30 Msec.	G's	12.5 to 18.5	18.3	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	18.3	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	35.5	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	74.3	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	120.5	Pass
Moment About Occipital Condyle	Maximum	N • m	84.1 to 108.5	87.2	Pass
	Time	Msec.	47.0 to 58.0	48.4	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	101.2	Pass
Overall Test Results				Pass	


 Laboratory Technician

 Approved By

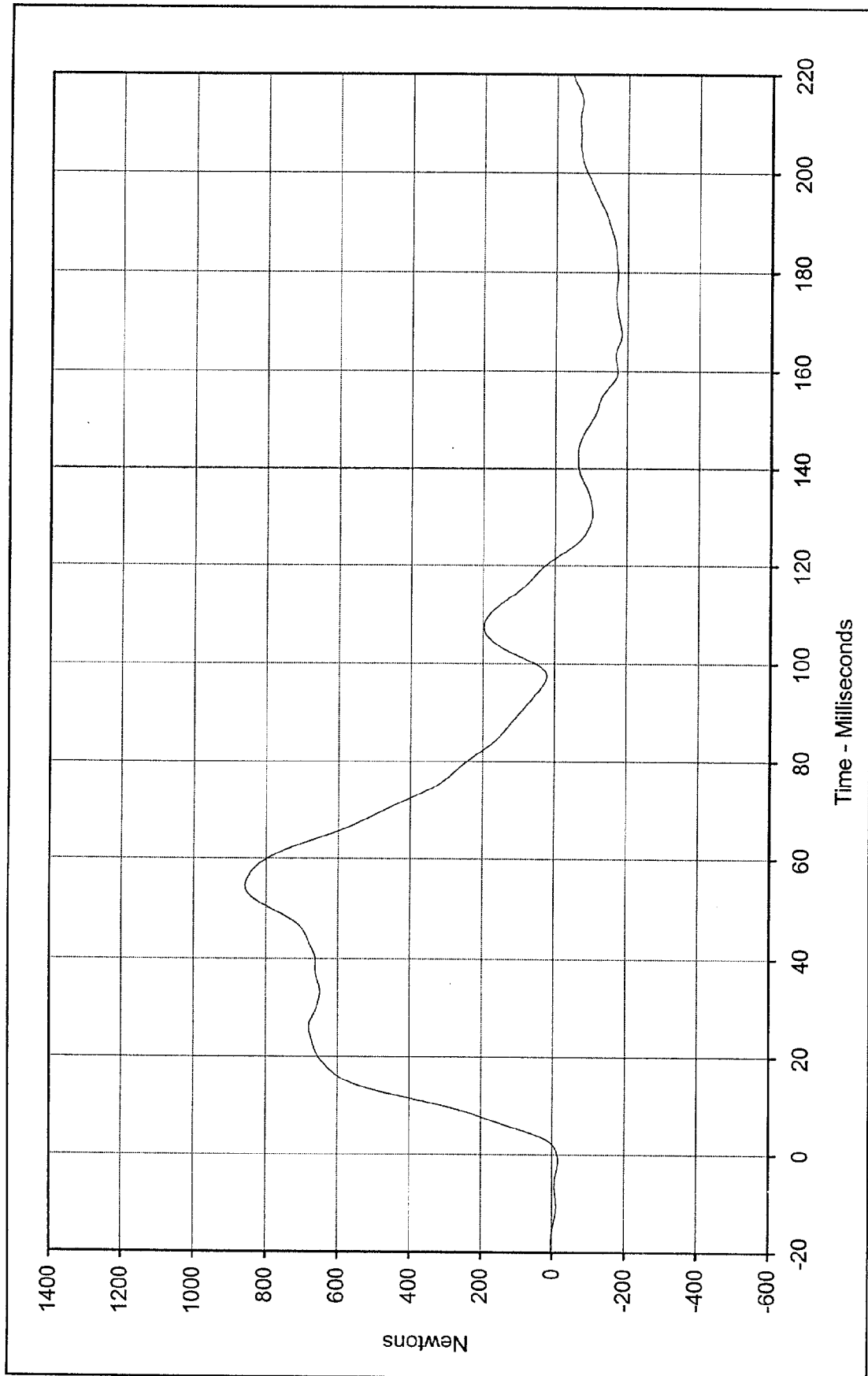
January 17, 1998
 Test Date

 Date



Curve Description: Pendulum Deceleration Testing Program Hybrid III Neck Flexion Test (Male)
Maximum Value: 23.3 at 9.2 Milliseconds Test Information: S/N of Part: n/a Test I.D.: NF500
Minimum Value: -3.2 at 89.8 Milliseconds



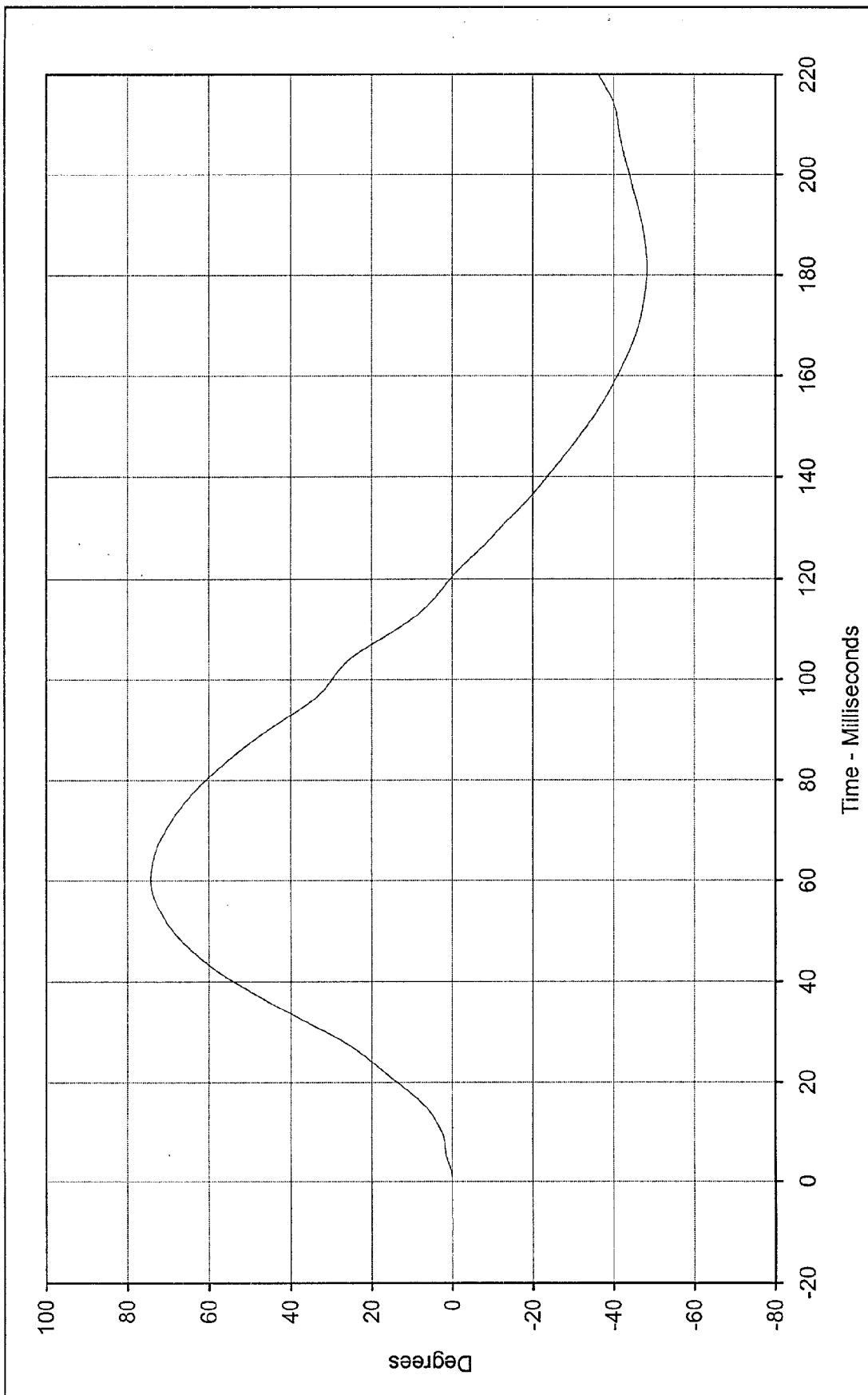
SAE Filter Class: 60
Date of Test: 1/17/98
ATD Serial No.: 035



Curve Description: Neck Force X
 Maximum Value: 857.7 at 54.6 Milliseconds
 Minimum Value: -183.5 at 167.4 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/17/98
 ATD Serial No.: 035

Testing Program Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NF500

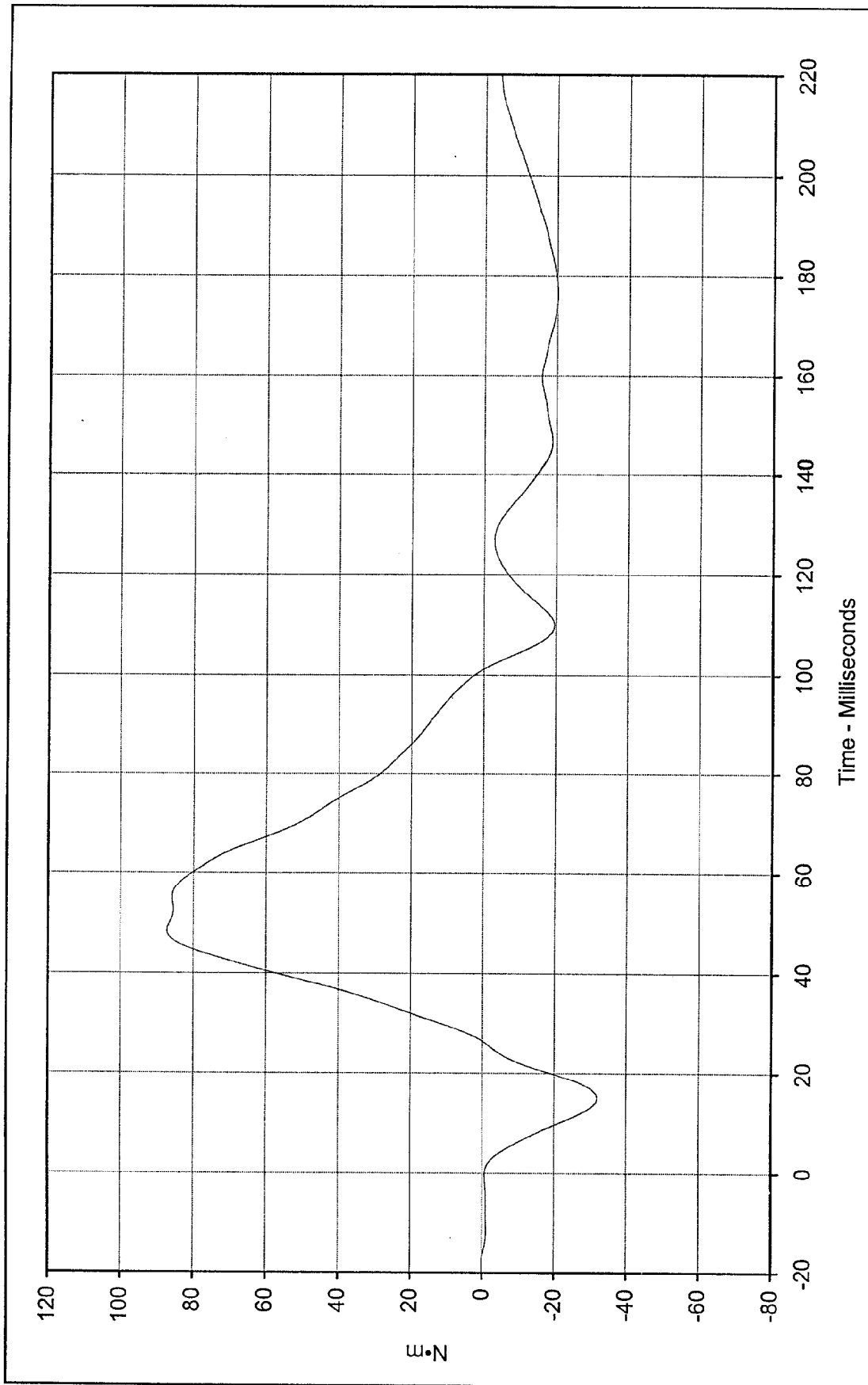




Testing Program Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NF500



Curve Description: "D" Plane Rotation
 Maximum Value: 74.3 at 60.3 Milliseconds
 Minimum Value: -48.2 at 181.3 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/17/98
 ATD Serial No.: 035



Curve Description: Moment About Occipital Condyles
 Maximum Value: 87.2 at 48.4 Milliseconds
 Minimum Value: -31.9 at 15.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/17/98
 ATD Serial No.: 035

Testing Program Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NF500





Hybrid III Calibration Data Sheet

50TH Percentile Male

Neck Extension Test

ATD Serial No.: 035

Part Serial No.: n/a

Test I.D.: NE700

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	6.15	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.5	Pass
	20 Msec.	G's	14.0 to 19.0	16.8	Pass
	30 Msec.	G's	11.0 to 16.0	15.4	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.4	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	42.0	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	97.1	Pass
	Time	Msec.	72.0 to 82.0	77.2	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	158.4	Pass
Moment About Occipital Condyle	Maximum	N • m	-52.9 to- 79.9	-72.4	Pass
	Time	Msec.	65.0 to 79.0	66.5	Pass
Negative Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	145.6	Pass
Overall Test Results					Pass

N 208p
Laboratory Technician

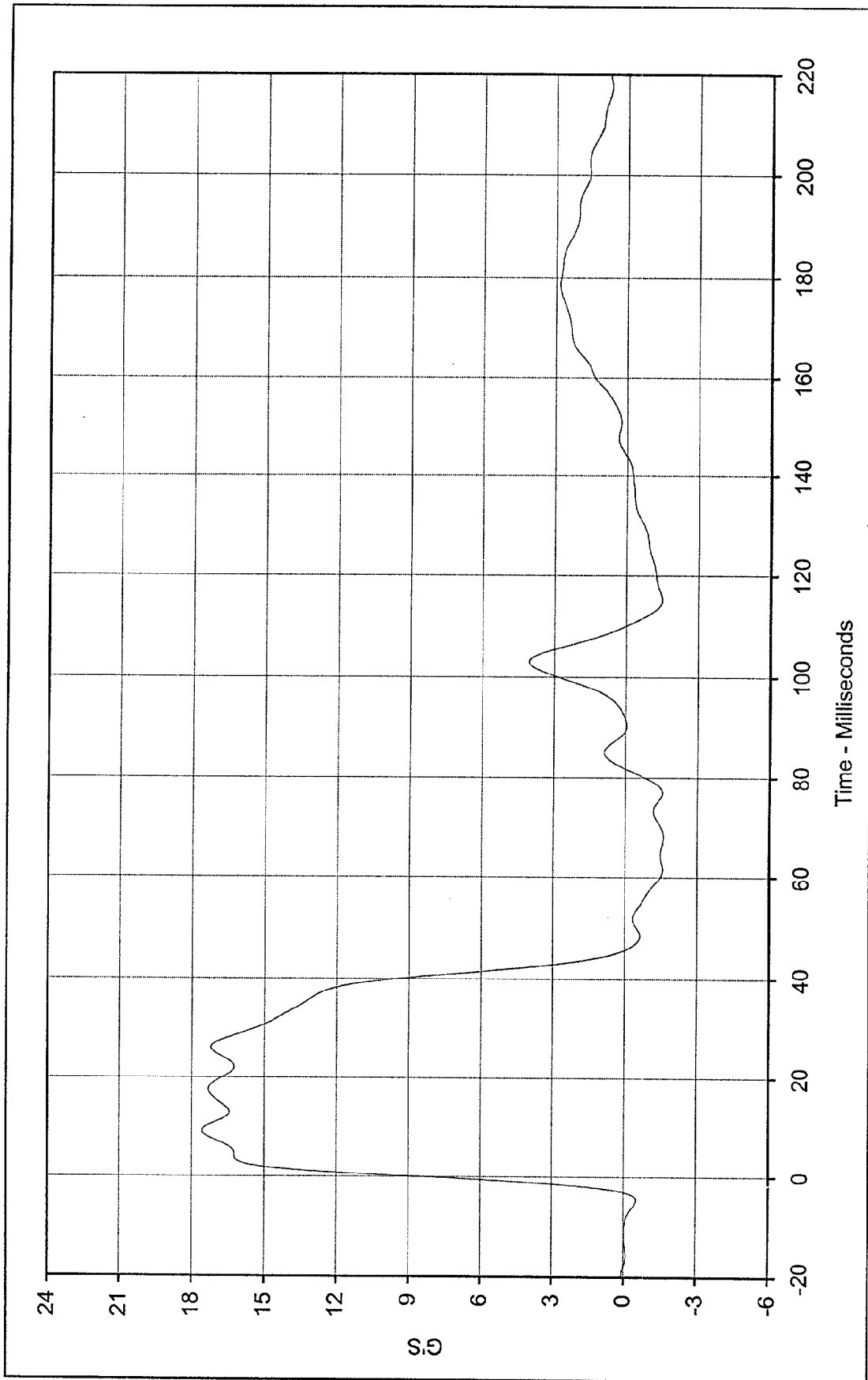
John R. Hanson
Approved By

January 17, 1998

Test Date

1/17/98

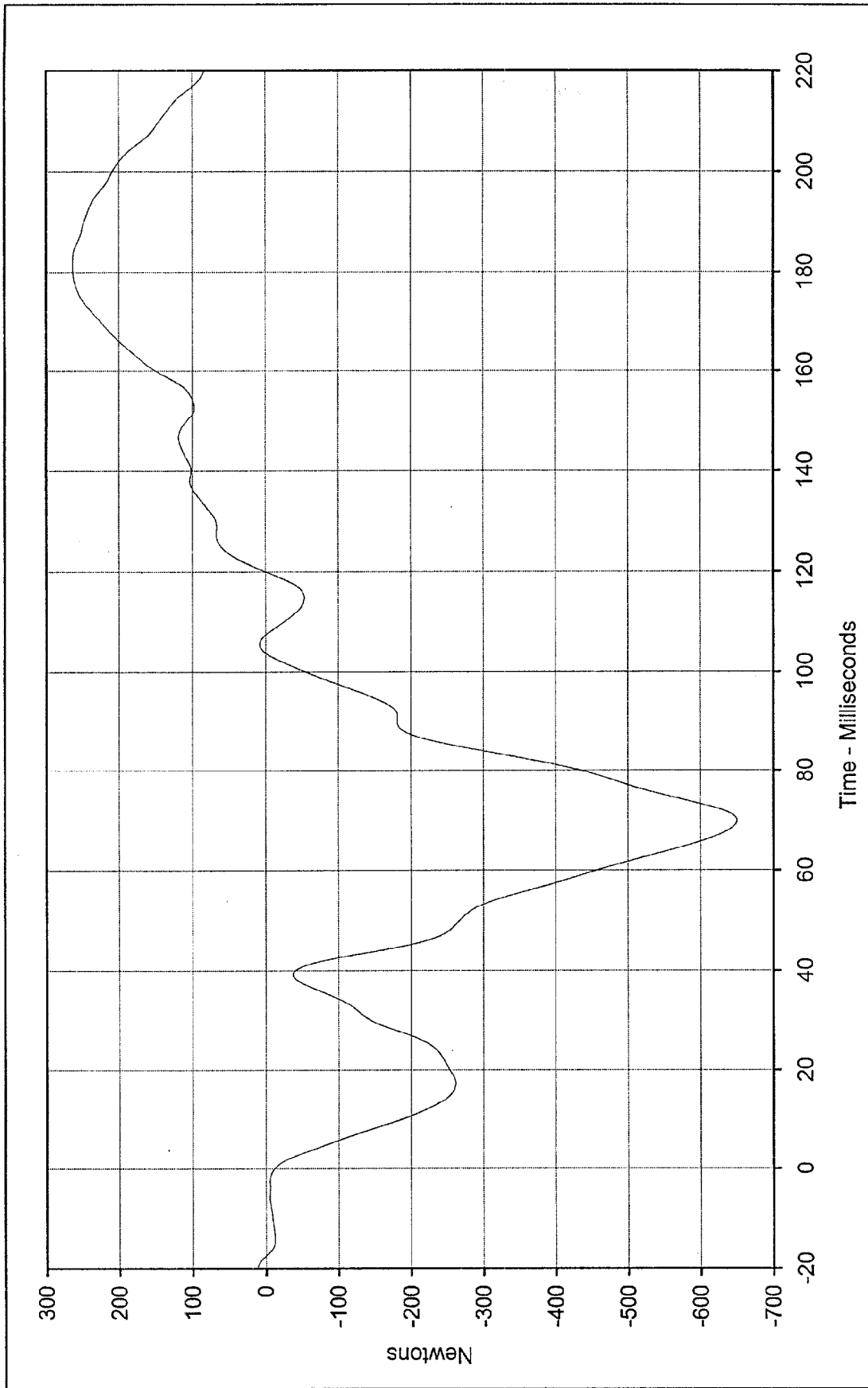
Date



Curve Description: Hybrid III Neck Extension Test (Male)
 Testing Program: S/N of Part: n/a Test I.D.: NE700
 Test Information:

Pendulum Deceleration
 Maximum Value: 17.6 at 9.3 Milliseconds
 Minimum Value: -1.6 at 68.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/17/98
 ATD Serial No.: 035

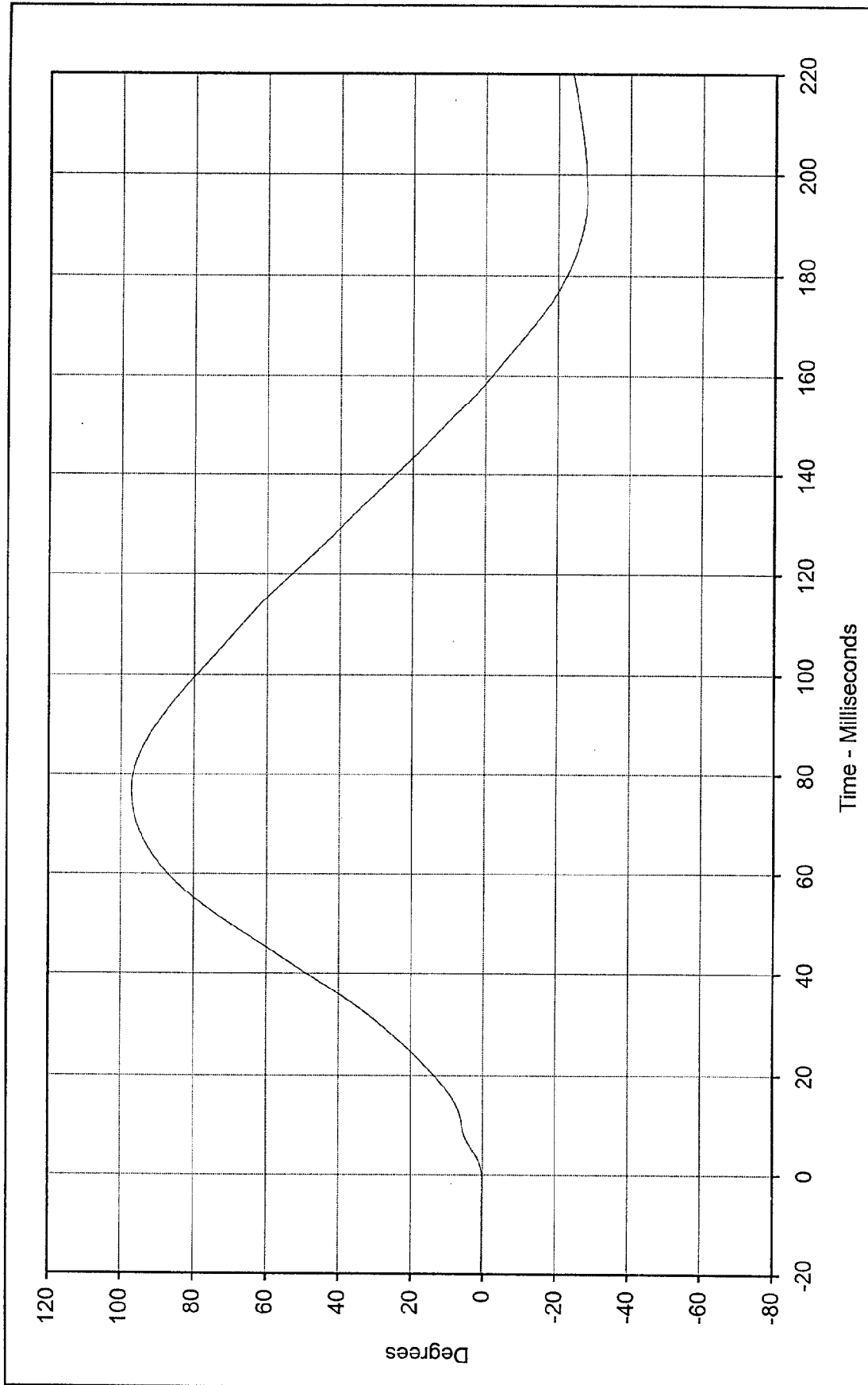




Curve Description: Neck Force X Testing Program Hybrid III Neck Extension Test (Male)
Maximum Value: 263.3 at 181.1 Milliseconds Test Information: S/N of Part: n/a Test I.D.: NE700
Minimum Value: -650.4 at 69.7 Milliseconds



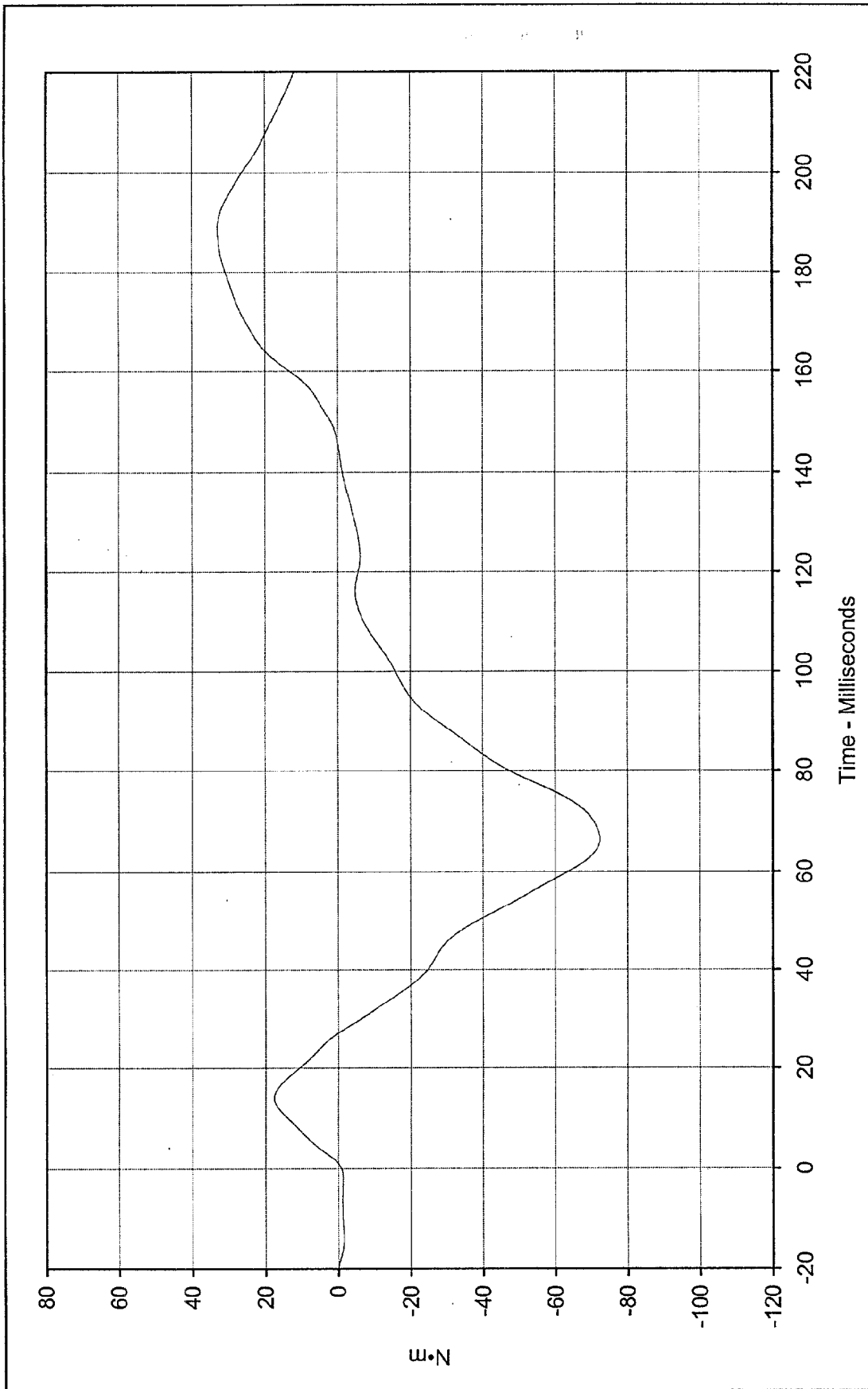
SAE Filter Class: 60
Date of Test: 1/17/98
ATD Serial No.: 035



Curve Description: Hybrid III Neck Extension Test (Male)
 Testing Program: Hybrid III Neck Extension Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NE700

"D" Plane Rotation
 Maximum Value: 97.1 at 77.2 Milliseconds
 Minimum Value: -28.0 at 195.7 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/17/98
 ATD Serial No.: 035





Testing Program: Hybrid III Neck Extension Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NE700

Curve Description: Moment About Occipital Condyles
 Maximum Value: 32.9 at 188.7 Milliseconds
 Minimum Value: -72.4 at 66.5 Milliseconds
 SAE Filter Class: 60
 Date of Test: 1/17/98
 ATD Serial No.: 035





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	884.0	Pass
B - Shoulder pivot height	mm	505.5 to 520.7	516.0	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	138.0	Pass
E - Shoulder pivot from back	mm	83.8 to 94.0	86.0	Pass
F - Thigh clearance	mm	139.7 to 154.9	151.0	Pass
G - Elbow back to wrist pivot	mm	289.6 to 304.8	302.0	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	330.0	Pass
J - Elbow rest height	mm	190.5 to 210.8	209.0	Pass
K - Buttock to knee length	mm	579.1 to 604.5	600.0	Pass
L - Popliteal length	mm	429.3 to 454.7	450.0	Pass
M - Knee pivot height	mm	485.1 to 500.4	486.0	Pass
N - Buttock popliteal length	mm	452.1 to 477.5	475.0	Pass
O - Chest depth	mm	213.4 to 228.6	225.0	Pass
P - Foot length	mm	251.5 to 266.7	265.0	Pass
V - Shoulder breadth	mm	421.6 to 436.9	434.0	Pass
W - Foot breadth	mm	91.4 to 106.7	105.0	Pass
Y - Chest circumference	mm	970.3 to 1000.8	980.0	Pass
Z - Waist circumference	mm	835.7 to 866.1	860.0	Pass
AA - Location for chest circumference	mm	429.3 to 434.3	433.0	Pass
BB - Location for waist circumference	mm	226.1 to 231.1	229.0	Pass
Overall Test Results				Pass

M 2 QGP
Laboratory Technician

J. Kilbourne
Approved By

January 19, 1998

Test Date

1/19/98

Date

APPENDIX F
VEHICLE OWNER'S MANUAL
OCCUPANT RESTRAINT INSTRUCTIONS

ILLUMINATED ENTRY

Vehicles Equipped With Power Door Locks

All interior lights will illuminate in the vehicle when the doors are unlocked using the Keyless Entry transmitter or when a door is opened. These lights will stay on for about 30 seconds, after the last door is closed, or until the ignition is turned to the ON position.

There is also a battery saver feature that will turn the interior lights off after 15 minutes if a door is left open.

Vehicles Equipped With Manual Door Locks

The key cylinder halo light will remain illuminated for 30 seconds after the driver's door is closed, or until the ignition is turned to the ON position.

OCCUPANT RESTRAINTS

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

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

2

WARNING!

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

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

Research has shown that seat belts save lives. And they can reduce the seriousness of injuries in a collision. Some of the worst injuries happen when people are thrown from the vehicle. Seat belts provide protection against

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that, and they reduce the risk of injury caused by striking the inside of the vehicle. Everyone in a motor vehicle needs to be buckled up all the time.

Unibelts

The outboard front and rear seats of your vehicle have combination lap/ shoulder belts, or unbelt. The retractor is designed to lock during very sudden stops or impacts. This feature allows the shoulder part of the belt to move freely with you under normal conditions. But in a collision, the belt will lock and reduce the risk of your striking the inside of the vehicle or being thrown out.

WARNING!

It is extremely dangerous to ride in a cargo area, inside or outside of a vehicle. In a collision, people riding in these areas are more likely to be seriously injured or killed.

Do not allow people to ride in any area of your vehicle that is not equipped with seats and seat belts.

Be sure everyone in your vehicle is in a seat and using a seat belt properly.

WARNING!

Wearing a seat belt incorrectly is dangerous. Seat belts are designed to go around the large bones of your body. These are the strongest parts of your body and can take the forces of a collision the best. Wearing your belt in the wrong place could make your injuries in a collision much worse. You might suffer internal injuries, or you could even slide out of part of the belt. Follow these instructions to wear your seat belt safely and to keep your passengers safe, too.

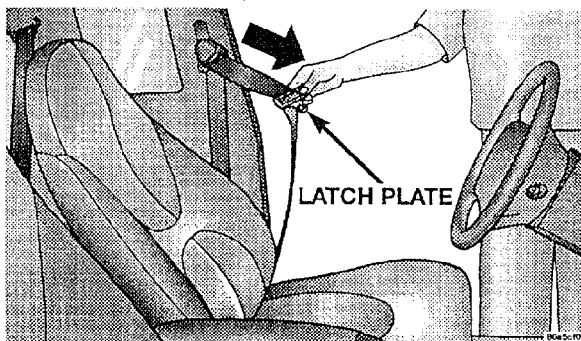
THINGS TO KNOW BEFORE STARTING YOUR VEHICLE 1

Unibelt Operating Instructions

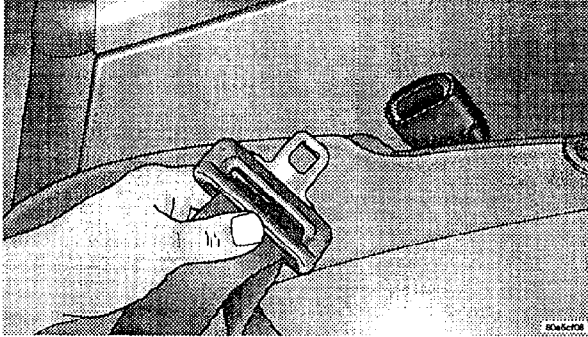
1. Enter the vehicle and close the door. Sit back and adjust the seat.

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

2



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



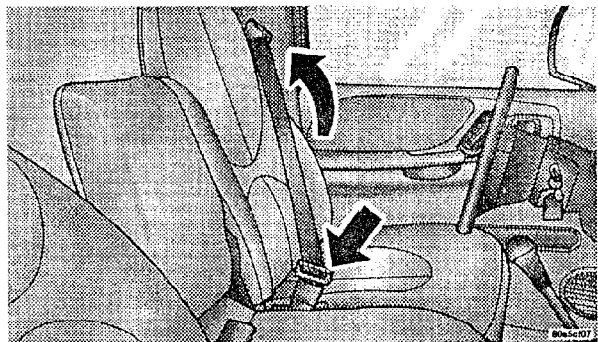
WARNING!

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

4. Position the lap belt across your thigh, below your abdomen. If you need the lap portion tighter, pull up a bit on the shoulder part, as shown. A snug belt reduces the risk of sliding under the belt in a collision.

WARNING!

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



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

WARNING!

A twisted belt can't do its job as well. In a collision it could even cut into you. Be sure your belt is straight. If you can't straighten a belt in your vehicle take it to your dealer and have it fixed.

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6. To release the belt, push the red button marked "Press" on the buckle. The belt will automatically retract to its stowed position.

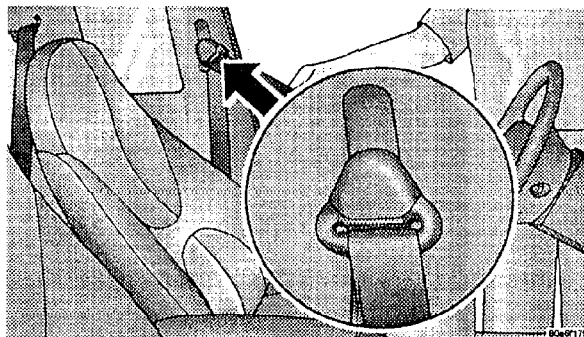
If necessary, slide the latch plate down the webbing to allow the belt to retract fully.

WARNING!

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

Adjustable Upper Shoulder Belt Anchorage

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



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

THINGS TO KNOW BEFORE STARTING YOUR VEHICLE 2

Center Lap Belts

The center seating positions have a lap belt only.

To fasten the lap belt, slip the latch plate into the buckle.

To lengthen the lap belt, tilt the latch plate and pull. To shorten the belt, pull the loose end of the webbing.

Wear the lap belt snug against the hips. Sit back and erect in the seat, then adjust the belt as tightly as is comfortable.

WARNING!

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

WARNING!

Belting two people into one seat belt can lead to greater injury. People belted together can crash into one another in an accident, hurting one another badly. Never use a belt for more than one person, no matter what their size.

2

Seat Belts and Pregnant Women

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

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

Seat Belt Extender

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

WARNING!

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

Child Restraint

When we say that everyone in your vehicle needs to be buckled up all the time, we mean babies and children, too.

WARNING!

In a collision, an unrestrained child, even a tiny baby, can become a missile inside the vehicle. The force required to hold even an infant on your lap can become so great that you could not hold the child, no matter how strong you are. The child and others could be badly injured. Any child riding in your vehicle should be in a proper restraint for the child's size.

Every state in the United States and all Canadian provinces require small children to ride in proper restraint systems. This is the law, and you can be prosecuted for ignoring it.

Infants and Small Children

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

Two different child restraint systems are generally available.

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

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

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

- Before buying any restraint system, make sure that it has a label certifying that it meets Motor Vehicle Safety Standard 213. We also recommend that before you buy a child restraint, you try it in the vehicle in the seats where you will use it.
- The restraint must be appropriate for your child's weight and height. Check the label on the restraint for this, too.
- If possible, install the restraint in the rear seat. According to accident statistics, children are safer when properly restrained in the rear seats rather than in the front.

- Carefully follow the instructions that come with the restraint. If you install the restraint improperly it may not work when you need it.

WARNING!

- Improper installation can lead to failure of an infant or child restraint. It could come loose in a collision. The child could be badly injured or killed. Follow the manufacturer's directions exactly when installing an infant or child restraint.

- Infant and child restraints are secured in vehicle seats by the lap belt or the lap part of the lap/shoulder belt.
- Buckle the child into the seat exactly as the seat manufacturer's directions tell you. The cinching latch plate will keep the belt tight.
- When your infant carrier or child seat is not in use, secure it with the seat belt or remove it from the vehicle. Don't leave it loose in the vehicle. In a sudden stop or collision it could strike occupants and injure them.

Children Too Large for Child Seats

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

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

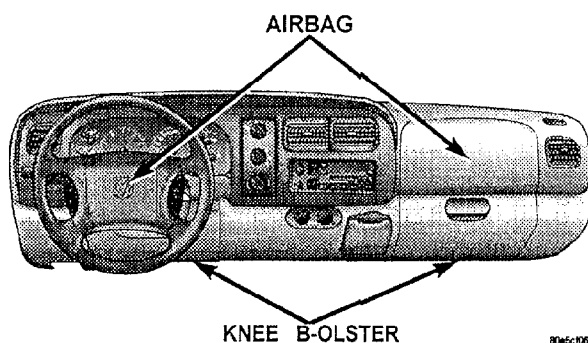
If the shoulder belt contacts the face or neck, move the child closer to the middle of the vehicle. If this doesn't solve the problem, move the child to the front center seat and use the lap belt.

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

Driver And Right Front Passenger Supplemental Restraint System-Airbag

This airbag is certified to the new Federal regulations that allow less forceful airbags.

This vehicle has air bags for the driver and the right front passenger as a supplement to the seat belt restraint system. The driver's air bag is mounted in the steering wheel. The passenger side air bag is mounted in the instrument panel, above the glove compartment. These air bags inflate in higher speed impacts. They work with the instrument panel knee bolsters and the seat belts to provide improved protection for the driver and right front passenger.

**WARNING!**

- Relying on the air bags alone could lead to more severe injuries. Wear your seat belt even though you have an air bag.
- Ignoring the AIR BAG light in your instrument panel could mean you won't have the air bags to protect you in a collision. If the light does not come on, stays on more than 6 to 8 seconds after you start the vehicle, or if it comes on as you drive, have the air bag system checked right away.
- The seat belt is designed to protect you in many types of collisions. The air bags deploy only in frontal collisions. And will not deploy in collisions at slow speed. But even in collisions where the air bags do work, you need the seat belt to keep you in the right position for the air bags to protect you properly.

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

1. Infants in a rear facing child safety seats designed for children up to one year or 20 pounds (9 kg) should **NEVER** ride in the front seat of a vehicle with a passenger side airbag unless the Airbag Switch is turned **OFF**. See the paragraph on Passenger Side Airbag Shut Off Switch.

Children up to 60 pounds (27 kg) should be secured in child seats or booster seats. Older children who do not use child safety seats or booster seats should ride properly buckled up.

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

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

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

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

Passenger Side Airbag Shut Off Switch

The shut off switch is to be used only when a rear facing infant restraint is used in a front passenger seat position. If the airbag is turned off when there is any other occupant at that position, the supplemental restraint provided by the airbag will not be available.

To turn off the passenger side airbag, use the shut off switch located on the instrument panel.

Using the ignition key turn the switch to the AIRBAG OFF position and remove the key. Make sure that the switch stays in the new position. The AIRBAG OFF light will illuminate when the ignition switch is turned On.

To turn On the passenger side airbag, reverse the above procedure. The AIRBAG OFF light will turn Off.

WARNING!

The air bag may malfunction and serious injury could result if key is left in the switch. Always remove the key.

Airbag System Components

The air bag system consists of the following:

- Crash Sensor Control Module
- AIR BAG Light
- Air bag / Inflator Units
- Unique Steering Wheel and Column
- Interconnecting Wiring
- Knee Impact Bolsters
- Passenger Side Air bag Shut-Off Switch

How The Air bag System Works

- The Crash Sensor Control Module monitors the readiness of the electronic parts of the system whenever the ignition switch is in the START or RUN position. These include all of the items listed above except the knee bolster and the steering wheel and column. The Control Module also turns on the AIR BAG light in the instrument panel for 6 to 8 seconds when the ignition is first turned on, then turns the light off. If it detects a

malfunction in any part of the system, it turns on the light either momentarily or continuously.

- The Air bag/Inflator Unit is in the center of the steering wheel and in the instrument panel. When the Control Module detects an impact requiring the air bag, they signal the inflator unit. A large quantity of non-toxic nitrogen gas is generated to inflate the air bag. The steering wheel hub trim cover separates and folds out of the way as the bag inflates to its full size. The bag fully inflates in about 50 milliseconds. This is about half of the time it takes to blink your eyes. It then quickly deflates by venting the nitrogen gas through holes in the air bag toward the instrument panel. In this way the bag does not interfere with your control of the vehicle.

If A Deployment Occurs

The air bag system is designed to deploy when the impact sensors detect a moderate-to-severe frontal collision, and then immediately deflate.

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

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

- The nylon air bag material may sometimes cause abrasions and/ or skin reddening to the occupants as the air bag deploys and unfolds itself from the steering wheel.

The abrasions are similar to friction rope burns or those you might get sliding along a carpet or gymnasium floor. They are not caused by contact with chemicals. They are not permanent and normally heal quickly. However, if you haven't healed significantly within a few days, or if you have any blistering, see your doctor immediately.

- As the air bags deflate you may see some smoke-like particles. The particles are a normal by-product of the process that generates the non-toxic nitrogen gas used for air bag inflation. These airborne particles may

irritate the skin, eyes, nose, or throat. If you have skin or eye irritation, rinse the area with cool water. For nose or throat irritation, move to fresh air. If the irritation continues, see your doctor.

If these particles settle on your clothing, follow the garment manufacturer's instructions for cleaning.

- Your vehicle may be safely drivable after the air bags deploy. If so, you can tuck the deployed air bags inside the opening in the steering wheel hub trim cover to make driving somewhat easier. You may tuck the passenger side air bag under the trim cover in the right side of the instrument panel.

WARNING!

- Do not put anything on or around the air bag covers or attempt to manually open them. You may damage the air bags and you could be injured because the air bags are not there to protect you. The protective covers for the air bag cushions are designed to open only when the air bags are inflating.
- Being too close to the steering wheel or instrument panel during air bag deployment could cause serious injury. Air bags need room to inflate. Sit back, comfortably extending your arms to reach the steering wheel or instrument panel.
- A deployed air bag can't protect you in another collision. Have the air bags replaced by an authorized dealer as soon as possible.

Enhanced Accident Response System

If the air bags deploy after an impact and the electrical system remains functional, vehicles equipped with power door locks will unlock automatically. In addition, after the vehicle has stopped moving for approximately

THINGS TO KNOW BEFORE STARTING YOUR VEHICLE 2

10 seconds, the interior lights will illuminate until the ignition switch is turned off.

Maintaining Your Air bag System

WARNING!

- Modifications to any part of the air bag system could cause it to fail when you need it. You could be injured because the air bags are not there to protect you. Do not modify the components or wiring, including adding any kind of badges or stickers to the steering wheel hub trim cover or the upper right side of the instrument panel. Do not modify the front bumper, vehicle body structure, or frame.
- You need proper knee impact protection in a collision. Do not mount or locate any aftermarket equipment on or behind the knee bolster.
- It is dangerous to try to repair any part of the air bag system yourself. Be sure to tell anyone who works on your vehicle that it has air bags.

Air bag Light

You will want to have the air bags ready to inflate for your protection in an impact. While the air bag system is designed to be maintenance free, if any of the following occurs, have an authorized dealer service the system promptly:

- The AIR BAG light does not come on or flickers during the 6 to 8 seconds when the ignition switch is first turned on.
- The light remains on or flickers after the 6 to 8 second interval.
- The light flickers or comes on and remains on while driving.

NOTE: If the Speedometer, Tachometer and Engine Gauges are not working the Air bag Module may also be disabled. The air bag may not be ready to inflate for your protection. Promptly check fuse numbers 18 and 19 in the fuse block. See your dealer if the fuse is good.

ENGINE BREAK-IN RECOMMENDATIONS

A long break-in period is not required for the engine in your new vehicle. Drive moderately during the first 300 miles (500 km). After the initial 60 miles (100 km), speeds up to 50 or 55 mph (80 or 90 km/h) are desirable. While cruising, brief full-throttle acceleration, within the limits of local traffic laws, contributes to a good break-in.

Avoid wide open throttle acceleration in low gear.

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

NON-DETERGENT OR STRAIGHT MINERAL OILS MUST NEVER BE USED.

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