

REPORT NUMBER KAR-20-01

NEW CAR ASSESSMENT PROGRAM
FRONTAL BARRIER IMPACT TEST

DAIMLER CHRYSLER CORPORATION
2000 DODGE NEON
4 DOOR SEDAN
NHTSA NUMBER: MY0304

PREPARED BY:
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NOVEMBER 22, 1999

FINAL REPORT

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16. Abstract A 35 mph (56.38 km/h) frontal barrier impact was conducted on a 2000 Dodge Neon at KARCO Engineering on November 10, 1999. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The impact velocity was 56.37 km/h. The ambient temperature at the barrier face at the time of impact is 21.7 degrees Celcius. The vehicle's maximum post test static crush is 502 mm located to the right of the vehicle centerline. The test vehicle is equipped with a 3-point continuous belt system and second generation supplemental airbags in both front outboard seating positions. With respect to FMVSS 208 "Occupant Crash Protection", the occupant injury criteria summary is as follows:					
Measurement Description		Units	Threshold	Driver ATD	Passenger ATD
Head Injury Criteria (HIC)		N/A	1000	675.1	877.8
Max. Thorax Accel. (3 msec Clip)		G's	60	54.5	46.7
Left Femur force		Newtons	10009	-4480.0	-4862.9
Right Femur Force		Newtons	10009	-6435.3	-3795.1
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TABLE OF CONTENTS

Section	Page
1 Purpose, Test Procedures and Summary of Test MY0304	1
2 Occupant and Vehicle Information Data Sheets	3
Appendix	
A Photographs	A
B Dummy and Vehicle Response Data Traces	B
C Load Cell Barrier Information	C
D Instrumentation and Data Channel Assignments	D
E Dummy Calibration Data	E
F Vehicle Owner's Manual Occupant Restraint Instructions	F
Data Sheet No.	
1 Crash Test Summary	4
2 General Test and Vehicle Parameter Data	5
3 Post Impact Data	7
4 Test Vehicle Information	8
5 Dummy Positioning in Vehicle	10
6 Seat Belt Positioning Data	12
7 Vehicle Accelerometer Location and Data Summary	13
8 Hybrid III ATD Injury Criteria and Sensor Data	14
9 Seat Belt Assessment Test Data	17
10 Summary of FMVSS 212 Data	18
11 Windshield Zone Intrusion FMVSS 219 Data (Partial)	19
12 FMVSS 301 Fuel System Integrity Post Impact Data	20
13 FMVSS 301 Static Rollover Data	21
14 Vehicle Measurements	22
15 Camera Locations	24
16 Photographic Reference Target Locations	25
17 Vehicle Intrusion Measurements	26
18 Load Cell Locations on Fixed Barrier	30
19 Accident Investigation Division Data	31
20 Dummy/Vehicle Temperature Stabilization Chart	32

SECTION 1

PURPOSE, TEST PROCEDURE AND SUMMARY OF TEST MY0304

1.1 PURPOSE

This 35 mph (56.3 km/h) frontal barrier impact test is part of the FY' 99 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 is to obtain vehicle crashworthiness, occupant restraint system performance, and lower leg data for frontal barrier impacts. The impact velocity used in this test is in excess of the current 30 mph (48.3 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 the 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 November 10, 1999 at a speed of 56.37 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 eighteen (18) 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, chest, and pelvic tri-axial accelerometers, left and right femur load cells, upper and lower tibia sensors, and foot accelerometers. In addition, chest displacement and upper neck six-axis force and moment sensors were utilized. The ATDs were positioned in the front outboard seating positions according to the dummy placement procedures specified in the Laboratory Indicant Test Procedure. Ninety-four (94) 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 re-calibrated prior to this test. FMVSS 208 "Occupant Crash Protection" injury criteria were not exceeded by either ATD during this frontal barrier impact test.

1.3 SUMMARY OF FRONTAL BARRIER IMPACT TEST

A rigid load cell barrier was impacted by a 2000 DODGE NEON at a velocity of 56.38 km/h. The test vehicle weight is 1379 kilograms with two (2) part 572E 50th percentile adult male ATDs. Twenty-four (24) load cell barrier data channels were obtained in conducting the November 10, 1999 NCAP test. The test vehicle is equipped with a transverse mounted 2.0-liter, 4-cylinder engine and a 5-speed manual transmission.

The driver Head Injury Criteria (HIC) is 675.1. The maximum resultant chest deceleration over three (3) milliseconds is 54.5 g's. The left and right femur loads are -4480.0 and -6435.3 Newtons, respectively. Chest deflection for the driver ATD peaked at -26.3mm. The driver ATD head contacted the airbag and headrest, its chest and abdomen contacted the airbag, the left knee contacted the knee bolster and steering column, with the right knee contacting the knee bolster.

The right front passenger's HIC is 877.8. The maximum resultant chest deceleration over three (3) milliseconds is 46.7 g's. The left and right femur loads are -4862.9 and -3795.1 Newtons respectively. Chest deflection for the passenger ATD peaked at -22.2 mm. The passenger ATD head contacted the airbag, visor and headrest, the chest and abdomen contacted the airbag and both knees contacted the glove box.

Maximum seat belt spool out as measured by on-board pullout potentiometers is 207.9 mm for the driver ATD and 320.6 mm for the passenger ATD. The shoulder belt stretch sensors are not used with seat belt pre-tensioner systems.

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

The test vehicle sustained a maximum static crush of 502 mm located to the right of the vehicle centerline. Both the driver and passenger side doors required the aid of tools to open.

1.4 GENERAL COMMENTS

The 2000 DODGE NEON passed the requirements of FMVSS 208, 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 and vehicle response data traces. Appendix C contains Load Cell Barrier information. Appendix D contains the instrumentation data channel assignments. Appendix E contains the dummy calibration data and Appendix F contains the owner's manual instructions for the occupant seating and restraint systems.

SECTION 2
OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2000 DODGE NEON

NHTSA No.: MY0304

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 11/10/99

CONVERSION FACTORS USED IN THIS REPORT*

Quantity	Typical Application	Old Units	Metric Unit	Multiply By
Mass	Vehicle Weight	lb	kg	0.4536
Linear Velocity	Impact Velocity	mile/h	km/h	1.609
Length or Distance	Measurements	in	mm	25.4
Volume	Fuel Systems	gal	liter	3.785
Volume	Small Fluids	oz	ml	29.573
Pressure	Tire Pressures	lb/in ²	kPa	7.0
Volume	Liquid	gal	liter	3.785
Temperature	General Use	°F	°C	$=(t_f - 32)/1.8$
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf/ft	Nm	1.355

* Based on the Recommended Practice in SAE J916, May 85

DATA SHEET NO. 1
CRASH TEST SUMMARY

Test Vehicle: 2000 Dodge Neon
Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0304
Test Date: 11/10/99

PRIMARY IMPACT DATA

Measured Parameter	Units	Value
Velocity at Impact	km/h	56.38
Test Weight	kg	1379
Impact Angle	degrees	0
Average Rebound	mm	732
Maximum Static Crush	mm	502

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Driver	Passenger
Front Door Opening	Opened w/aid of tools	Opened w/aid of tools
Rear Door Opening	Opened	Opened
Seat Track Shift (mm)	0	0
Seat Back Failure	None	None

TEST DUMMY INFORMATION

Description	Driver	Passenger
Dummy Type / Serial No.	50% Male Hybrid III / No. 34	50% Male Hybrid III / No. 35
Head Contact	Airbag/Headrest	Airbag/Headrest/Visor
Chest Contact	Airbag	Airbag
Abdomen Contact	Airbag	Airbag
Left Knee Contact	Knee Bolster/Steering column	Glove Box
Right Knee Contact	Knee Bolster	Glove Box

16mm MOVIE COVERAGE

High Speed	18
Real Time	1
Total	19

Driver ATD Sensors	40
Passenger ATD Sensors	40
Belt Assessment Sensors	8
Vehicle Structure Accelerometers	8
Rigid Barrier Load Cells	24
Total	120

DATA SHEET NO. 2
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2000 Dodge Neon

NHTSA No.: MY0304

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 11/10/99

TEST VEHICLE INFORMATION

Manufacturer	Daimler/Chrysler Corp.
Model	Dodge Neon
Body Style	4 Door Coupe
NHTSA NO.	MY0304
VIN	1B3ES46C5YD576715
Color	SILVER
Delivery Date	11/199
Odometer Reading (miles)	186
Dealer	Glendora Dodge
Transmission	5 Speed Manual
Final Drive	Front
Number of Cylinders	4
Engine Displacement (L)	2
Engine Placement	Transverse

TEST VEHICLE OPTIONS

Driver Airbag	Yes
Passenger Airbag	Yes
Power Windows	No
Power Steering	Yes
Power Door Locks	No
Tilt Wheel	No
Air Conditioning	Yes
Power Brakes	Yes
Disc Brakes, Front	Yes
Disc Brakes, Rear	No
Anti-lock Brakes	No
AM/FM/Cassette	Yes
Anti-Theft System	No
Cruise Control	No

DATA FROM CERTIFICATION LABEL

Manufactured By	Daimler/Chrysler Corp.	GVWR (kg)	1641
Date of Manufacture	June-99	GAWR Front (kg)	898
		GAWR Rear (kg)	765

DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	224	224
Cold Pressure (kPa)	224	224
Recommend Tire Size	185/65/14	185/65/14
Tire Size on Vehicle	185/65/14	185/65/14
Tire Manufacturer	Goodyear	Goodyear

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench	None	
Number of Occupants	2	2	0	5
Capacity Wt. (VCW) (kg)				461
Cargo Weight (RCLW) (kg)				52

DATA SHEET NO. 2...(continued)
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2000 Dodge Neon
Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0304
Test Date: 11/10/99

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	365	222		401	281	
Right	kg	373	220		412	285	
Ratio	%	62.5	37.5		59.0	41.0	
Totals	kg	738	442	1180	813	566	1379

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1180
Weight of 2 P572 ATD's	kg	152
Rated Cargo/Luggage Weight (RCLW)	kg	52
Calculated Vehicle Target Weight (TVTW)	kg	1384

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	670	670	695	690	1093
As Tested	mm	649	649	650	655	1093

Vehicle Wheel base (mm): 2665

Weight of Ballast secured in cargo area (kg): 0 *

Vehicle Components Removed: Side mirrors, jack, tools, spare tire and paneling.

* Ballast weight does not include cameras, instrumentation, and brake abort system.

FUEL SYSTEM DATA

Fuel System Capacity From Owner's Manual (L): 47.3

Usable Capacity Figure Furnished by COTR (L): 47.3

Actual Test Volume with entire fuel System Filled (L): 43.9

Test Fluid Type: Stoddard Solvent ; Specific Gravity: 0.764

Is Vehicle Fuel Pump Electric or Mechanical?: Electric

If electric, does pump operate with ignition switch "ON" & engine "OFF"? Yes

Fuel System Particulars: Automatic fuel pump shut-off after a few seconds

DATA SHEET NO. 3
POST IMPACT DATA

Test Vehicle: 2000 Dodge Neon
Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0304
Test Date: 11/10/99

SPEED TRAP DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	55.51 to 57.12	56.38
Trap No. 1 Entry Distance	mm	< 1524	1524
Trap No. 1 Exit Distance	mm	< 1524	305
Trap No. 2 Velocity (Redundant)	km/h	55.51 to 57.12	56.43
Trap No. 2 Entry Distance	mm	< 1524	1524
Trap No. 2 Exit Distance	mm	< 1524	305

VEHICLE STATIC CRUSH

Measured Parameter	Units	Pre-Test	Post-Test	Difference
Left Side	mm	4153	3815	-338
Center	mm	4415	3923	-492
Right Side	mm	4153	3823	-330

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	760
Center	mm	665
Right Side	mm	770
Average	mm	732

DATA SHEET NO. 4
TEST VEHICLE INFORMATION

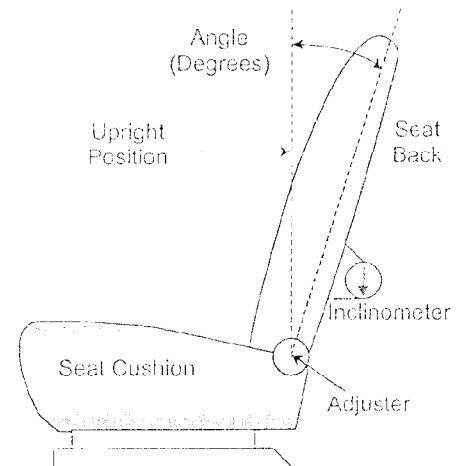
Test Vehicle: 2000 DODGE NEON
Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0304
Test Date: 11/10/99

NOMINAL DESIGN RIDING POSITION

The driver and passenger seat backs are positioned to the manufacturers designated angle. The procedure is as follows: The seat back angle is adjusted so that the distance from the center of the inner sunvisor bracket bolt to the center of the outer headrest mounting hole is per manufacturers specifications. An inclinometer is placed against the flat surface of the tool and the seat back angle is measured directly from the dial face.

Driver seat back angle: 22.5° with a seated dummy
Passenger seat back angle: 22.5° with a seated dummy



SEAT FORE/AFT POSITIONS

Both driver and passenger seats have manually operated seats. The total travel on both the driver and passenger seats is 22 seat positions. The fore/aft position is set at the middle position for both driver and passenger.

Driver seat fore/aft total travel: 22 seat detent positions
Passenger seat fore/aft total travel: 22 seat detent positions
Driver seat fore/aft position: Set at 11th detent position
Passenger seat fore/aft position: Set at 11th detent position

SEAT BELT UPPER ANCHORAGE

The test vehicle is equipped with adjustable anchorages for both driver and passenger seat positions. There are 5 positions or detents. The anchorages were placed in the full up position.

DATA SHEET NO. 4...(continued)

TEST VEHICLE INFORMATION

Test Vehicle: 2000 DODGE NEON

NHTSA No.: MY0304

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 11/10/99

FUEL TANK CAPACITY DATA

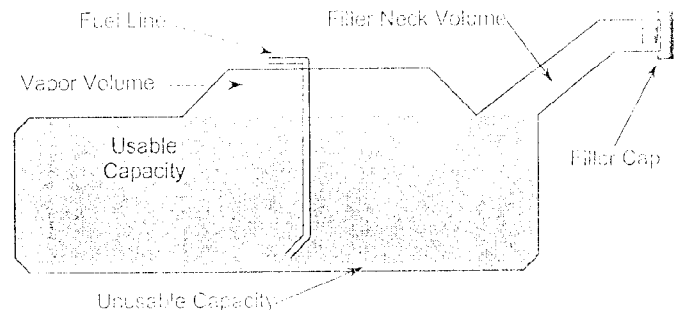
The "Usable Capacity" of the standard equipment fuel tank is: 47.3 liters

The "Usable Capacity" of any optional equipment fuel tank is: N/A liters

"Usable Capacity" used for certification tests FMVSS 301 requirements: 43.5 to 44.4 liters

Actual amount of Stoddard solvent added to vehicle for certification test: 43.9 liters

The test vehicle is equipped with an electric fuel pump. The fuel pump operates for approximately two seconds after the ignition is placed to the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the right rear fender.



VEHICLE FUEL TANK ASSEMBLY

STEERING COLUMN ADJUSTMENT

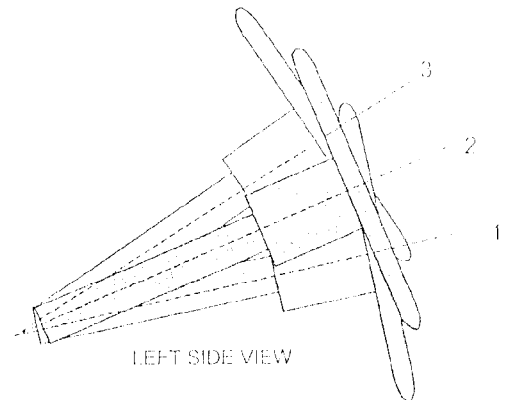
Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes, when it is moved through its full range of motion. An aluminum plate is placed across the rim of the steering wheel, an inclinometer is placed onto the plate and the angle is measured.

Note: Steering column was fixed on this vehicle
At 67°

Lowermost, position 1: n/a°

Geometric center, position 2: n/a°

Uppermost, position 3: n/a

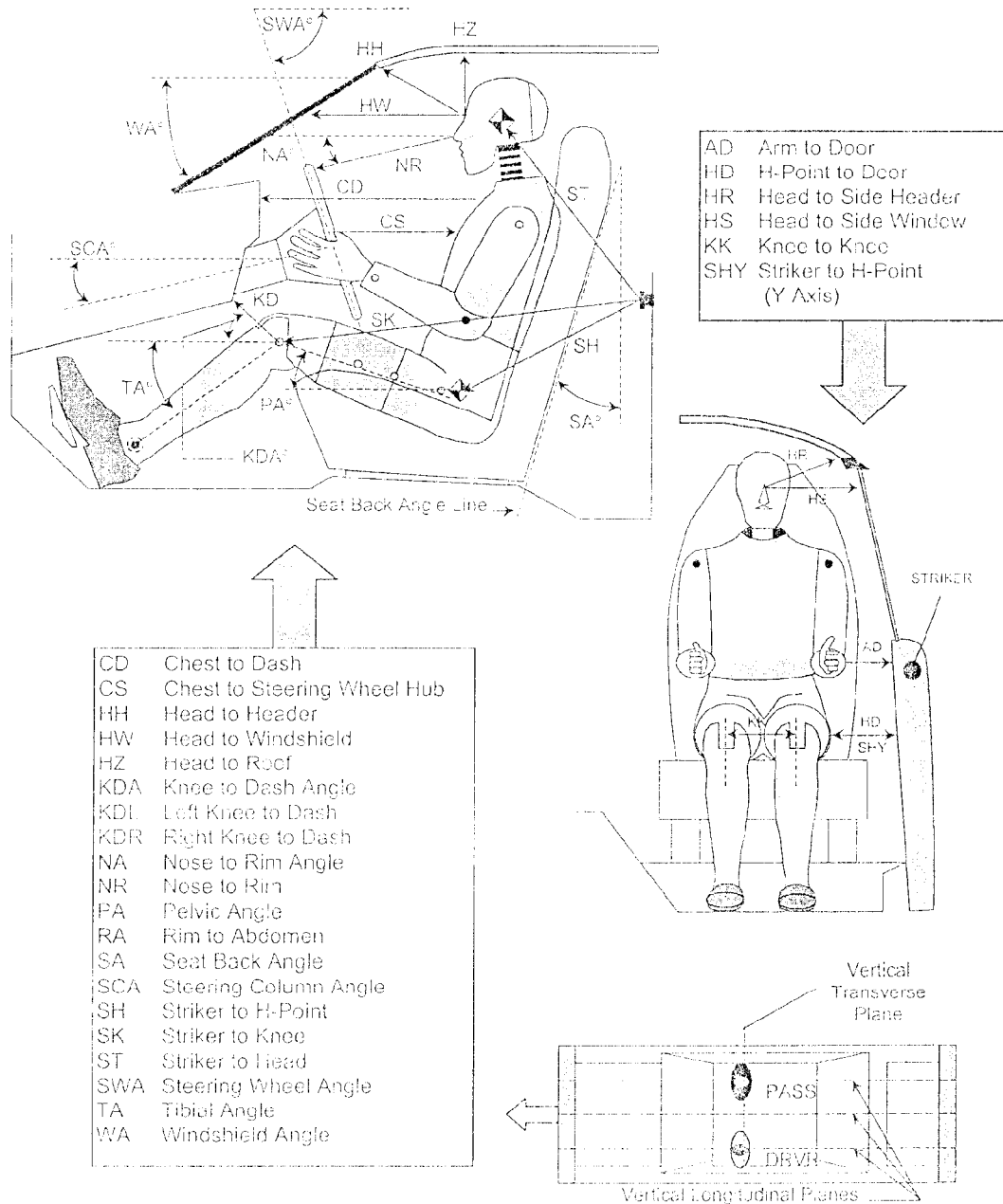


STEERING COLUMN ASSEMBLY

DATA SHEET NO. 5 DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2000 DODGE NEON
Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0304
Test Date: 11/10/99



DUMMY MEASUREMENTS FOR FRONT SEAT OCCUPANTS

DATA SHEET NO. 5...(continued)
DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2000 Dodge Neon
Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0304
Test Date: 11/10/99

TEST DUMMY POSITION MEASUREMENTS

Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA	Windshield Angle		24		
SWA	Steering Wheel Angle		66		
SCA	Steering Column Angle		24		
SA	Seat Back Angle		23		23
HZ	Head to Roof (Z)	190	90	200	90
HH	Head to Header	360	0	365	0
HW	Head to Windshield	622	0	640	0
HR	Head to Side Header (Y)	210		200	
NR	Nose to Rim	415	9		
CD	Chest to Dash	521		526	
CS	Chest to Steering Hub	320	0		
RA	Rim to Abdomen	200	0		
KDL	Left Knee to Dash	175	32	180	
KDR	Right Knee to Dash	170		176	31
PA	Pelvic Angle		21		23
TA	Tibia Angle		35		36
KK	Knee to Knee (Y)	226		172	
SK	Striker to Knee	565	4	566	3
ST	Striker to Head	543	3	552	1
SH	Striker to H-Point	202	42	212	35
SHY	Striker to H-Point (Y)	233		210	
HS	Head to Side Window	308		283	
HD	H-Point to Door (Y)	180		154	
AD	Arm to Door (Y)	90		60	
AA	Ankle to Ankle	229		157	

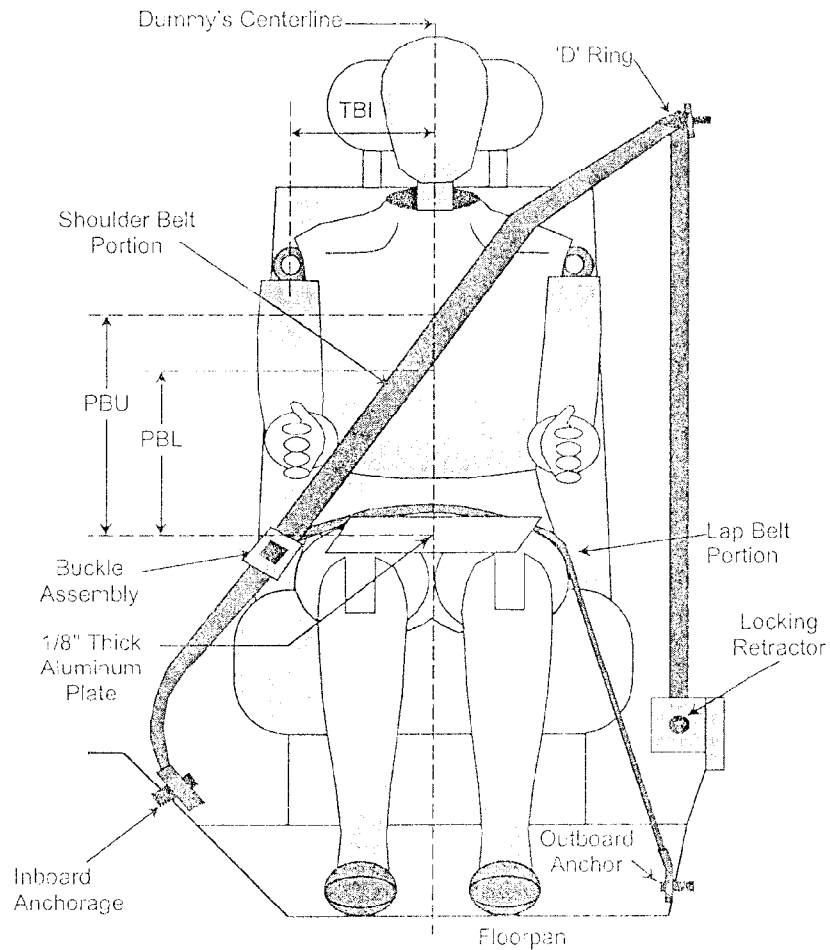
DATA SHEET NO. 6
SEAT BELT POSITIONING DATA

Test Vehicle: 2000 DODGE NEON

NHTSA No.: MY0304

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 11/10/99



SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
TBI - Dummy centerline to shoulder bolt	mm	170	170
PBU - Top surface of reference to belt upper edge	mm	353	343
PBL - Top surface of reference to belt lower edge	mm	260	250
Lap Belt tension	Newtons	10	10
Shoulder Belt tension	N/A	Retractor	Retractor

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

Test Vehicle: 2000 Dodge Neon 4 Door Sedan

NHTSA No.: MY0304

Test Program: 2000 NHTSA 35 mph NCAP

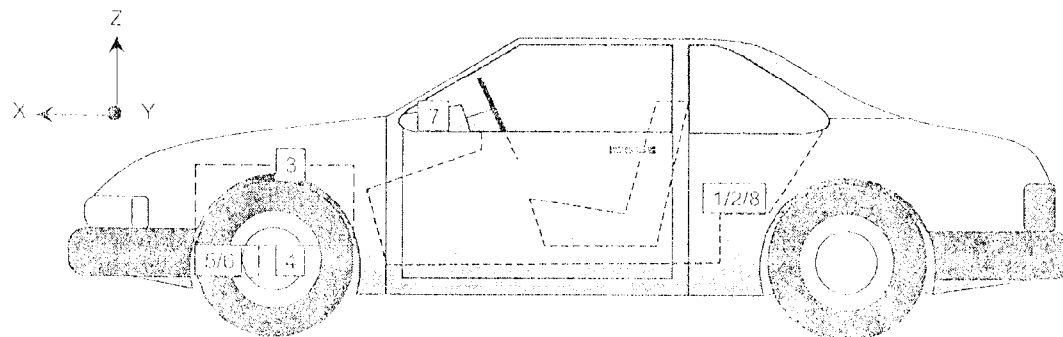
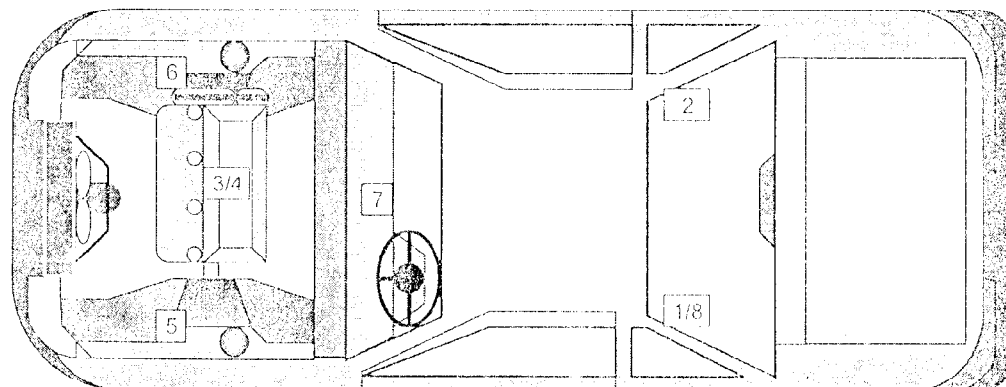
Test Date: 11/10/99

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.)	1500	-665	360	G's	0.0	0.0	0.0	0.0
2	Right Rear X-Member (Pri.)	1530	665	365	G's	4.0	126.6	-36.8	42.9
3	Engine Top	3700	145	770	G's	12.5	48.7	-120.0	29.5
4	Engine Bottom	3725	85	165	G's	8.6	39.1	-141.4	18.9
5	Left Brake Caliper	3620	-795	240	G's	33.0	53.7	-131.0	31.8
6	Right Brake Caliper	3620	795	240	G's	112.2	51.1	-111.0	24.3
7	Instrument Panel	2840	80	860	G's	19.9	20.2	-57.5	41.0
8	Left Rear X-Member (Rednt.)	1440	-665	360	G's	3.4	126.0	-35.0	31.1

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

* Channel Failed. No Data



DATA SHEET NO. 3 - HYBRID III ATD INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2000 Dodge Neon 4 Door Sedan

NHTSA No.: MY0304

Test Program: 2000 NHTSA 35 mph NCAP

Test Date: 11/10/99

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	9.9	213.9	-69.2	69.0	6.5	250.1	-62.5	92.7
Head CG	Y	G's	4.9	202.4	-23.0	78.8	2.4	38.9	-20.3	90.4
Head CG	Z	G's	29.8	46.9	-19.1	89.7	33.7	75.2	-2.8	118.5
Head CG Resultant	N/A	G's	70.1	67.7			70.9	93.0		

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	2.7	268.6	-54.7	71.6	2.0	156.4	-47.8	73.6
Chest CG	Y	G's	10.2	92.4	-7.3	70.9	2.2	40.7	-10.4	91.5
Chest CG	Z	G's	18.5	45.3	-14.2	92.1	13.0	43.8	-7.0	109.3
Chest CG Resultant	N/A	G's	55.3	71.6			48.8	73.8		

FEMUR PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Femur	Z	Newtons	477.5	47.7	-4480.0	42.1	727.3	43.8	-4862.9	38.4
Right Femur	Z	Newtons	558.2	39.5	-6435.3	54.7	484.0	86.5	-3795.1	57.1

SEAT BELT SENSOR PEAK VALUES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Lap Belt Force	N/A	Newtons	7018.4	55.9	-1.0	0.0	6604.4	61.5	0.7	0.0
Shoulder Belt Force	N/A	Newtons	4048.6	62.0	-2.0	177.1	5387.8	81.7	-3.1	219.7
Shoulder Belt Pullout	N/A	MM	207.9	83.0	-0.3	8.2	320.6	87.6	-1.2	145.1
Shoulder Belt Stretch	N/A	MM/CM	0.000	0.0	0.000	0.0	0.000	0.0	0.000	0.0

* Not Installed

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	675.1	53.5	53.3	85.5	877.8	56.9	69.2	105.1

CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Primary	54.5	70.4	73.4	46.7	72.7	75.7

DATA SHEET NO. 8...(continued)

Test Vehicle: 2000 Dodge Neon 4 Door Sedan

NHTSA No.: MY0304

Test Program: 2000 NHTSA 35 mph NCAP

Test Date: 11/10/99

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	4.4	108.5	-77.9	54.8	7.6	43.4	-61.6	57.6
Pelvis	Y	G's	11.1	40.2	-23.2	54.9	15.6	37.0	-11.8	43.6
Pelvis	Z	G's	14.2	44.3	-23.7	84.3	8.9	39.4	-26.9	70.5

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	1166.5	67.3	-274.5	136.0	360.5	86.6	-638.7	125.6
Neck Force	Y	Newtons	467.7	72.1	-372.1	120.0	263.0	75.6	-251.5	97.0
Neck Force	Z	Newtons	1717.3	58.1	-704.5	89.8	1429.5	65.1	-115.9	113.8
Neck Moment	X	N·m	8.3	194.0	-25.1	113.7	7.1	92.3	-9.0	110.8
Neck Moment	Y	N·m	82.2	60.8	-23.1	252.9	44.4	117.3	-39.3	98.0
Neck Moment	Z	N·m	39.0	86.8	-22.2	141.2	8.5	90.4	-5.2	120.2

FOOT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Foot Aft	X	G's	19.9	45.9	-263.6	39.9	65.0	44.8	-155.5	34.3
Left Foot Aft	Z	G's	35.4	33.7	-219.8	41.8	76.4	55.2	-144.2	37.4
Left Foot Fore	Z	G's	77.1	33.9	-239.4	40.5	149.8	45.2	-170.2	39.7
Right Foot Aft	X	G's	54.9	47.2	-166.7	43.2	22.8	60.0	-200.6	34.6
Right Foot Aft	Z	G's	18.7	59.5	-188.9	44.5	23.0	52.3	-113.0	37.7
Right Foot Fore	Z	G's	187.9	42.8	-279.2	38.7	47.8	51.3	-271.8	33.3

UPPER AND LOWER TIBIA PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Lower Moment	X	N·m	103.1	41.1	-206.9	43.8	108.3	38.5	-217.3	45.2
Left Lower Moment	Y	N·m	47.8	45.7	-21.5	81.4	93.0	37.9	-71.9	70.0
Left Lower Force	Z	Newtons	175.4	11.4	-9410.3	42.7	0.0	0.0	0.0	0.0
Left Upper Moment	X	N·m	157.0	41.8	-78.0	44.5	139.4	39.0	-96.3	46.3
Left Upper Moment	Y	N·m	13.1	146.9	-317.5	41.6	19.5	299.1	-266.8	39.5
Right Lower Moment	X	N·m	22.3	39.5	-31.0	46.9	78.2	69.9	-25.7	33.9
Right Lower Moment	Y	N·m	75.9	43.3	-61.8	40.1	180.4	69.6	-42.7	36.8
Right Lower Force	Z	Newtons	160.4	162.4	-10807.4	45.5	67.7	14.8	-6569.8	34.2
Right Upper Moment	X	N·m	45.8	43.0	-45.6	49.6	33.1	77.6	-48.3	36.4
Right Upper Moment	Y	N·m	22.7	136.0	-288.9	45.9	11.7	153.8	-234.1	34.3

* Passenger Channel Failed, No Data

DATA SHEET NO. 8...(continued)

Test Vehicle: 2000 Dodge Neon 4 Door Sedan

NHTSA No.: MY0304

Test Program: 2000 NHTSA 35 mph NCAP

Test Date: 11/10/99

CHEST PEAK DISPLACEMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	MM	0.1	3.7	-26.3	61.6	0.3	1.2	-22.2	96.0

HEAD REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	12.3	214.8	-66.5	69.1	7.1	258.4	-64.4	93.2
Head CG	Y	G's	6.9	225.0	-25.0	80.7	3.1	258.4	-20.3	93.7
Head CG	Z	G's	27.6	58.4	-19.2	89.8	32.2	75.8	-1.5	28.4
Head CG Resultant	N/A	G's	68.3	70.9			73.2	93.2		

CHEST REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	1.7	281.6	-54.0	71.8	2.6	156.5	-47.0	73.5
Chest CG	Y	G's	9.6	92.5	-12.7	71.1	3.4	40.8	-11.7	83.5
Chest CG	Z	G's	16.5	45.4	-14.1	92.3	12.5	43.6	-5.7	108.9
Chest CG Resultant	N/A	G's	55.5	71.6			48.0	73.6		

REDUNDANT HEAD INJURY CRITERIA (HIC)

Location	Driver				Passenger			
	HIC	Avg G's	T ¹	T ²	HIC	Avg G's	T ¹	T ²
Head CG Redundant	653.6	52.6	53.9	86.4	846.0	56.2	69.5	105.1

REDUNDANT CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Redundant	54.8	70.5	73.5	45.7	72.4	75.4

DATA SHEET NO. 9
SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

Test Vehicle: 2000 DODGE NEON

NHTSA No.: MY0304

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 11/10/99

SEAT BELT PLACEMENT MEASUREMENTS

Measurement Description	Units	Driver	Passenger
TCI - Dummy centerline to shoulder bolt	mm	170	170
PBU - Top surface of reference to belt upper edge	mm	353	343
PBL - Top surface of reference to belt lower edge	mm	260	250
Lap Belt tension	Newtons	10	10
Shoulder Belt tension	N/A	Retractor	Retractor

BELT LENGTH DATA

Measurement Description	Units	Driver	Passenger
Retractor reel to 'D' ring	mm	680	680
Shoulder belt length as measured on ATD	mm	760	720
Lap belt length as measured on ATD	mm	650	630
Remainder of belt on reel	mm	700	700
Total belt length for continuous webbing systems	mm	2790	2730

SHOULDER BELT SPOOL-OFF DATA

Measurement Description	Units	Driver	Passenger
As determined mechanically	mm	31.0	355.0
As determined electronically	mm	207.9	320.6

BELT STRETCH DATA

Measurement Description	Units	Driver	Passenger
Electronically from shoulder belt load cell and "D" ring	mm/cm	0.00*	0.00*
Mechanically	mm/cm	2.00	2.00

*Not used with shoulder belt pre-tensioner systems.

DATA SHEET NO. 10
SUMMARY OF FMVSS 212 DATA

Test Vehicle: 2000 DODGE NEON
Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0304
Test Date: 11/10/99

Windshield Mounting Details:

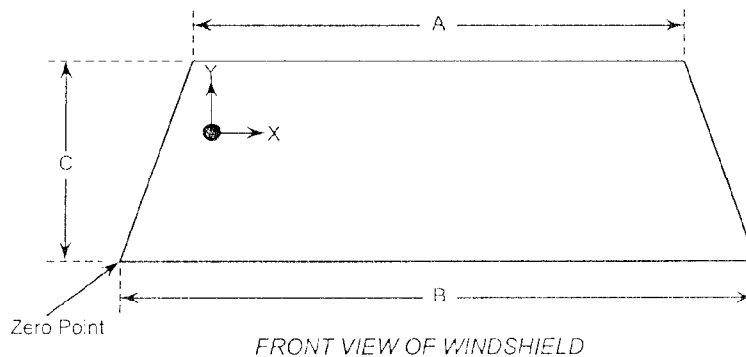
Windshield glass is secured to the vehicle frame with a rubber type adhesive. There is no molding that covers the windshield periphery at any point.

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.

Temperature of windshield molding during test: 21.1 °C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test (mm)	Post-Test (mm)	% of Retention
Left Side	2034.5	2034.5	100
Right Side	2034.5	2034.5	100
Total	4069.0	4069.0	100



WINDSHIELD DIMENSIONS

Item	Units	Segment Length	Molding Width
A	mm	1083	19
B	mm	1456	13
C	mm	765	21

DATA SHEET NO. 11

WINDSHIELD ZONE INTRUSION FMVSS 219 (PARTIAL) DATA

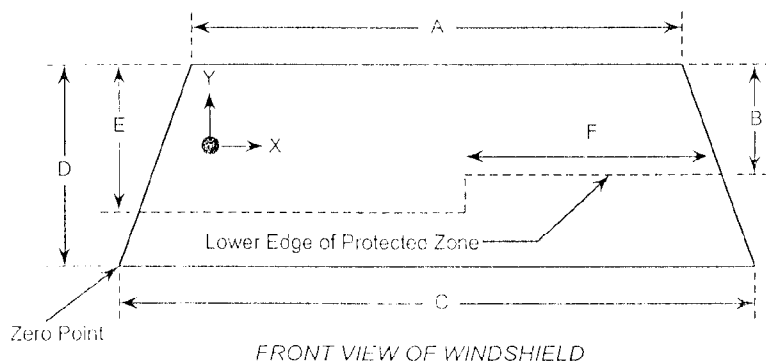
Test Vehicle: 2000 DODGE NEON

NHTSA No.: MY0304

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 11/10/99

WINDSHIELD AND PROTECTED ZONE



Item	Units	Value
A	mm	1083
B	mm	408
C	mm	1456
D	mm	765
E	mm	525
F	mm	669

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 that 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 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: 2000 DODGE NEON

NHTSA No.: MY0304

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 11/10/99

Test Time: 3:28 PM

Temperature at Time of Impact: 21.7 °C

STODDARD SOLVENT SPILLAGE MEASUREMENT

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

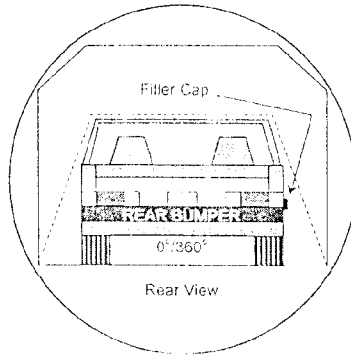
DATA SHEET NO. 13
FMVSS 301 STATIC ROLLOVER DATA SHEET

Test Vehicle: 2000 DODGE NEON

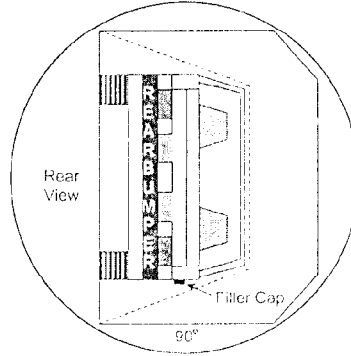
NHTSA No.: MY0304

Test Program: 2000 NHTSA 35 MPH NCAP

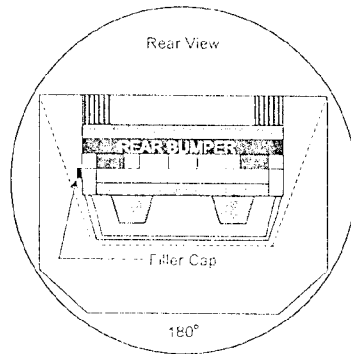
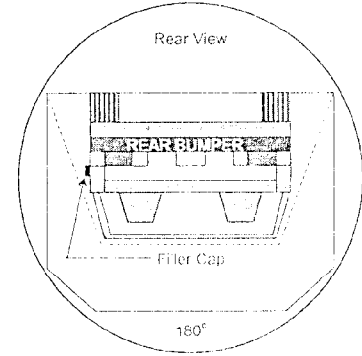
Test Date: 11/10/99



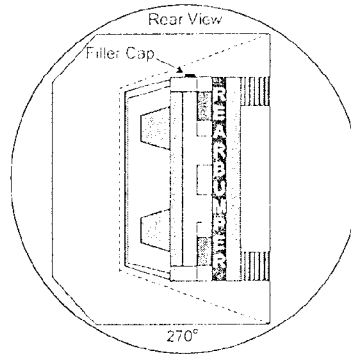
0° TO 90°



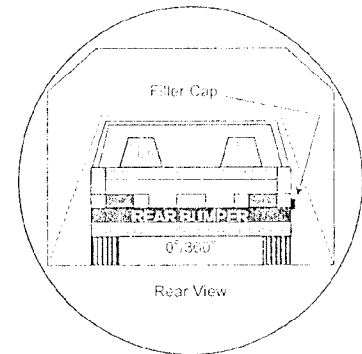
90° TO 180°



180° TO 270°



270° TO 360°



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

TEST PHASE	Rotation Time (sec.)	Hold Time (sec.)	Spillage (oz.)
0° TO 90°	80	300	0.0
90° TO 180°	82	300	0.0
180° TO 270°	79	300	0.0
270° TO 360°	80	300	0.0

DATA SHEET NO. 14
VEHICLE MEASUREMENTS

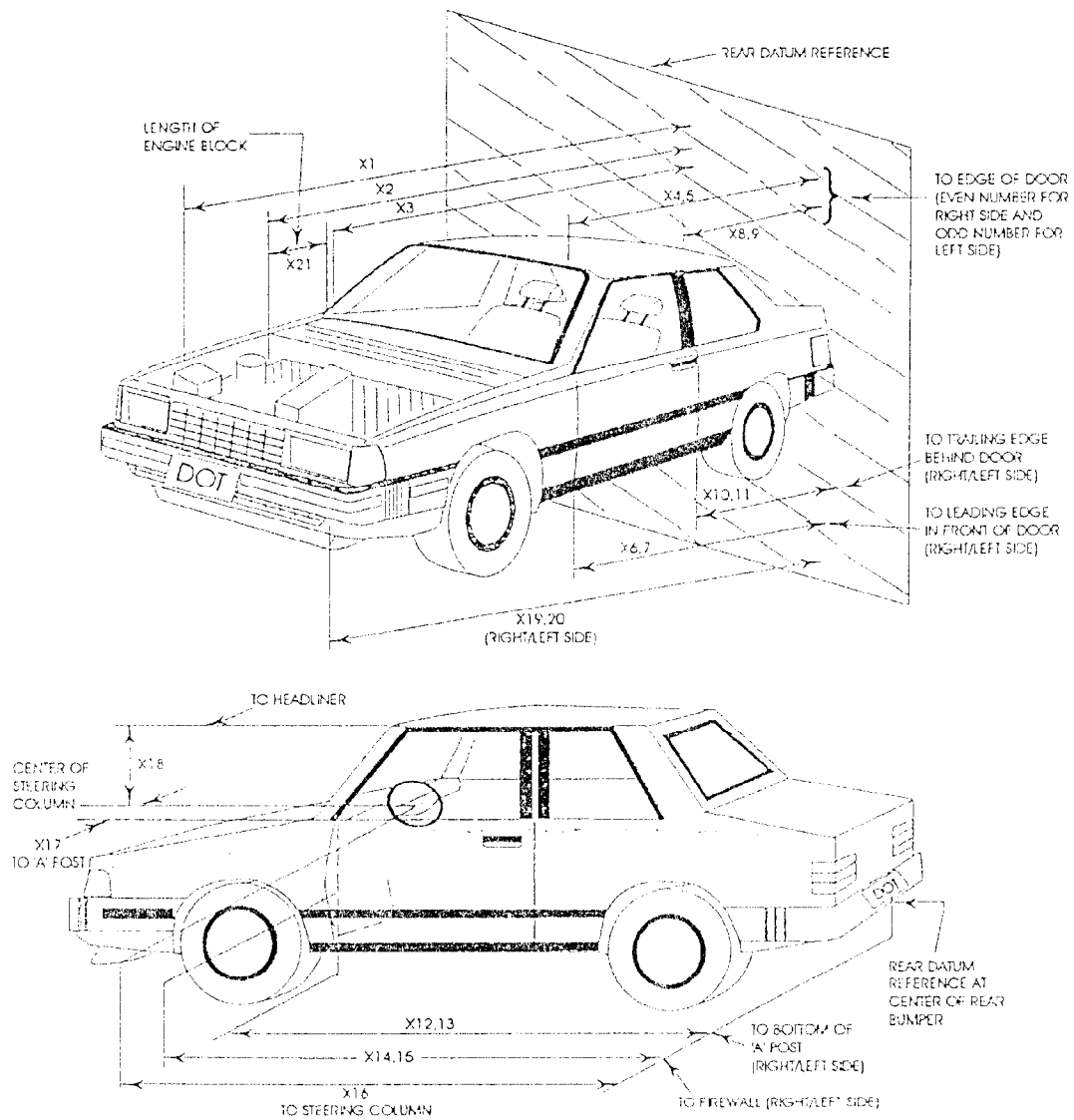
Test Vehicle: 2000 DODGE NEON

NHTSA No.: MY0304

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 11/10/99

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
1	Total length of vehicle at centerline	mm	4415	3923	-492
2	RSOV to front of engine	mm	3813	3684	-129
3	RSOV to firewall centerline	mm	3485	3450	-35
4	RSOV to leading edge of right door	mm	3145	3144	-1
5	RSOV to leading edge of left door	mm	3140	3144	4
6	RSOV to lower leading edge of right door	mm	3095	3080	-15
7	RSOV to lower leading edge of left door	mm	3090	3085	-5
8	RSOV to upper trailing edge of right door	mm	2010	2010	0
9	RSOV to upper trailing edge of left door	mm	2002	2010	8
10	RSOV to lower trailing edge of right door	mm	2008	1995	-13
11	RSOV to lower trailing edge of left door	mm	2000	2003	3
12	RSOV to bottom of right 'A' pillar	mm	3055	3027	-28
13	RSOV to bottom of left 'A' pillar	mm	3052	3035	-17
14	RSOV to firewall on right side	mm	3437	3316	-121
15	RSOV to firewall of left side	mm	3495	3395	-100
16	RSOV to steering column	mm	2584	2595	11
17	Center of steering column to left 'A' pillar	mm	390	395	5
18	Center of steering column to headlining	mm	415	300	-115
19	RSOV to right side of front bumper	mm	4153	3823	-330
20	RSOV to left side of front bumper	mm	4153	3815	-338
21	Length of engine block	mm	300	300	0
RD	RSOV to right side of dash panel	mm	2785	2756	-29
CD	RSOV to center of dash panel	mm	2780	2683	-97
LD	RSOV to left side of dash panel	mm	2765	2734	-31



DATA SHEET NO. 15
CAMERA LOCATIONS

Test Vehicle: 2000 DODGE NEON

NHTSA No.: MY0304

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 11/10/99

No.	Camera View	Location (mm)			Angle (Deg.)	Film Plane to Head	Lens (mm)	Speed (fps)
		X	Y	Z				
1	Right Side, Real Time	3454	10973	1245	0	1651	Zoom	24
2	Left Side, No. 1	2000	8400	1315	1	8100	17	1000
3A	Left Side No. 2A	1450	8300	1145	2	8150	35	980
3B	Left Side No. 2B	1150	9450	1320	1	9150	50	800
4	Left Side No. 3	8050	10650	2910	10	12050	80	990
5	Left Side, No. 4	1850	8450	3240	15	8400	19	1020
6	Left Side, No. 5	1800	8400	2720	13	8300	19	1020
7	Right Side, No. 1	1950	8250	1025	7	7850	13	1000
8A	Right Side, No. 2A	1250	7350	1015	1	7100	35	1020
8B	Right Side, No. 2B	1350	9750	1305	2	9350	50	690
9	Right Side, No. 3	8150	9300	2950	12	10850	80	950
10	Right Side, No. 4	1700	8300	1495	6	7850	24	1000
11	Overhead Overall	750	0	5486	90	N/A	13	1000
12	Front View, Driver	-230	340	2395	50	N/A	13	1010
13	Front View, Passenger	-225	340	2555	54	N/A	13	1020
14	Pit Camera, Engine	550	0	1400	90	N/A	13	970
15	Pit Camera, Fuel Tank	4850	0	-1740	46	N/A	19	1000
16	Onboard, Driver	3130	80	685	5	1070	13	520
17	Onboard, Passenger	3150	160	670	10	1045	13	410

X - Barrier Face Y - Monorail Centerline Z - Ground

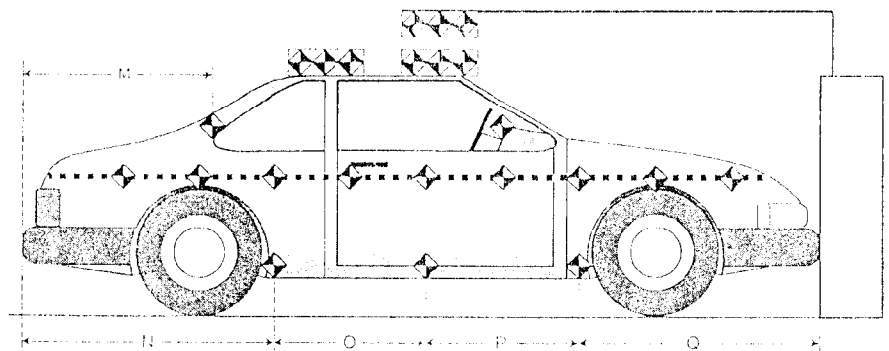
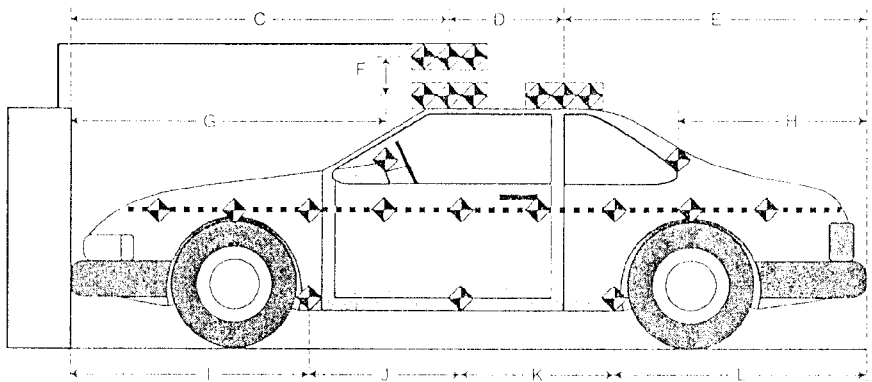
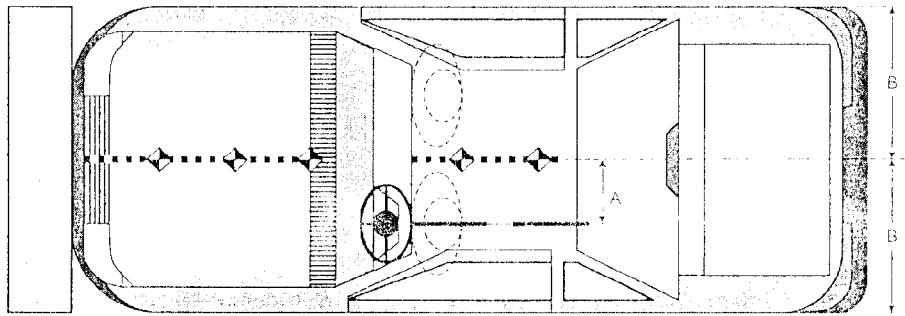
DATA SHEET NO. 16
PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2000 DODGE NEON
Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0304
Test Date: 11/10/99

All Dimensions
in mm

Item	Value
A	338
B	356
C	2150
D	605
E	1669
F	155
G	1646
H	1020
I	1295
J	915
K	905
L	1310
M	1022
N	1300
O	912
P	917
Q	1285



DATA SHEET NO. 17
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2000 DODGE NEON
Test Program: 2000 NHTSA 35 MPH NCAP

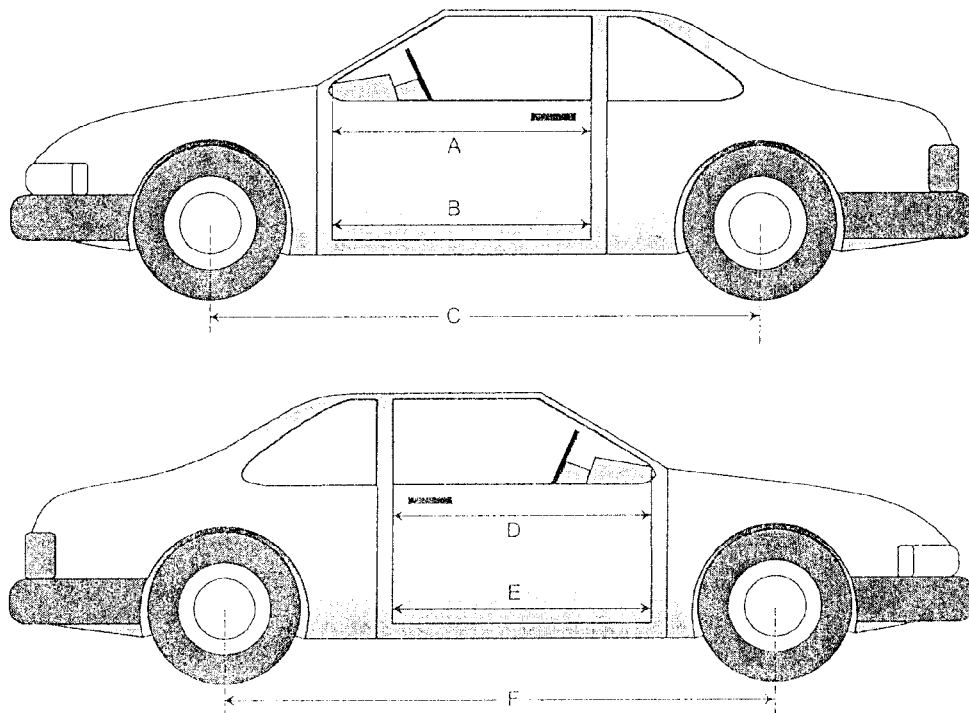
NHTSA No.: MY0304
Test Date: 11/10/99

DOOR OPENING WIDTH

Item	Description	Units	Pre-Test	Post-Test	Difference
A	Left Side Upper	mm	966	946	-20
B	Left Side Lower	mm	905	891	-14
D	Right Side Upper	mm	965	948	-17
E	Right Side Lower	mm	903	893	-10

WHEELBASE MEASUREMENTS

Item	Description	Units	Pre-Test	Post-Test	Difference
C	Left Side Wheel base	mm	2665	2540	-125
F	Right Side Wheel base	mm	2665	2536	-129



DATA SHEET NO. 17...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2000 DODGE NEON

NHTSA No.: MY0304

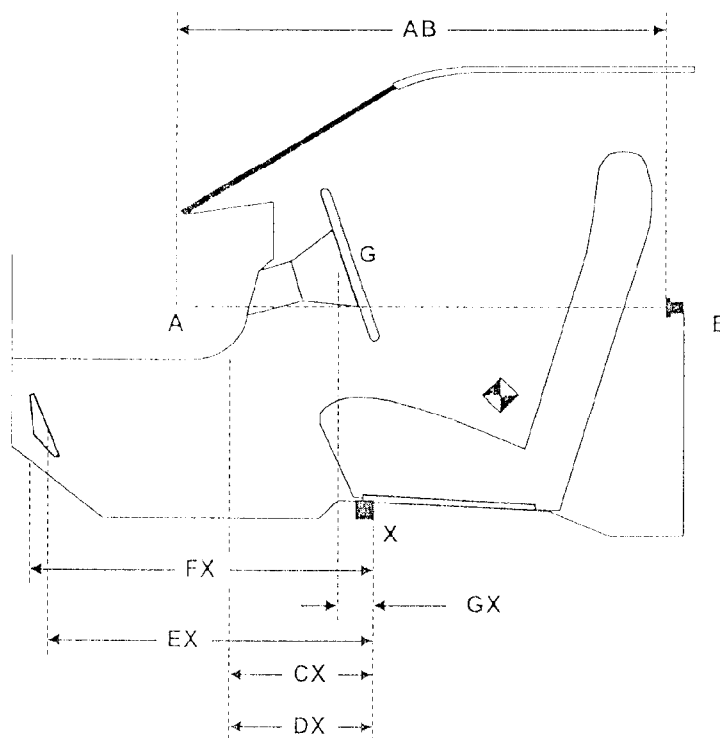
Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 11/10/99

DRIVER COMPARTMENT INTRUSION

Item	Description	Units	Pre-Test	Post-Test	Difference
AB	Door Opening (Inside window jam)	mm	966	946	-20
CX	Left Knee Bolster to X	mm	280	232	-48
DX	Right Knee Bolster to X	mm	305	215	-90
EX	Brake Pedal to X	mm	574	537	-37
FX	Foot Rest to X	mm	650	610	-40
GX	Center of Steering Wheel Hub to X	mm	63	63	0

X = Left Front Seat Outboard Anchor Bolt Head

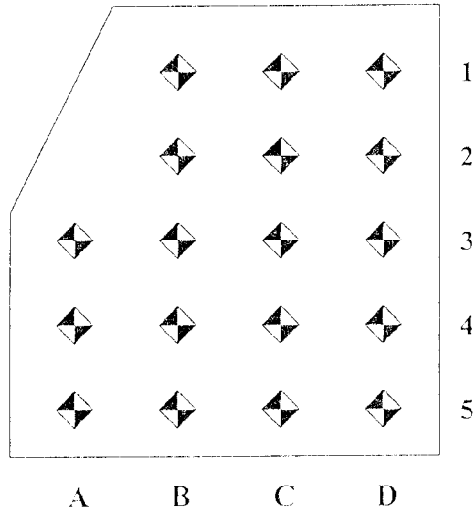


DRIVER COMPARTMENT

DATA SHEET NO. 17...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2000 DODGE NEON
Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0304
Test Date: 11/10/99



Measurement reference point for X and Z axis is the forward outboard seat mounting bolt.

Columns A through D are evenly spaced.

Rows 1 and 2 are on the toe kick portion of the floor pan. Rows 3, 4, and 5 are located on the most level portion of the floor pan.

Row 3 will be at the intersection of the toe kick and the level sections of the floor pan.

DRIVER FLOOR PAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	N/A	742	740	739	N/A	630	608	677	N/A	-112	-132	-62
2	N/A	642	642	639	N/A	551	562	590	N/A	-91	-80	-49
3	547	547	545	539	509	505	502	495	-38	-42	-43	-44
4	447	447	445	439	434	423	413	390	-13	-24	-32	-49
5	344	345	345	340	332	333	318	304	-12	-12	-27	-36

DRIVER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	N/A	73	72	45	N/A	90	108	84	15	17	36	39
2	N/A	-22	-25	-35	N/A	22	-1	-2	-15	44	24	33
3	-60	-60	-60	-60	-78	-77	-77	-54	-18	-17	-17	6
4	-60	-58	-60	-59	-129	-130	-107	-70	-69	-72	-47	-11
5	-60	-60	-60	-33	-128	-147	-150	-108	-68	-87	-90	-75

DATA SHEET NO. 17...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2000 DODGE NEON

NHTSA No.: MY0304

Test Program: 2000 NHTSA 35 MPH NCAP

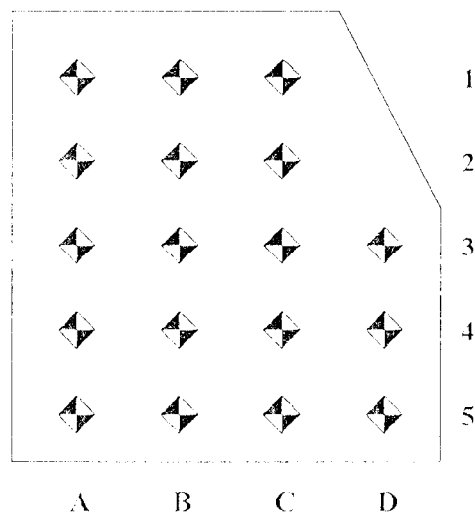
Test Date: 11/10/99

Measurement reference point for X and Z axis is the forward outboard seat mounting bolt.

Columns A through D are evenly spaced.

Rows 1 and 2 are on the toe kick portion of the floor pan. Rows 3, 4, and 5 are located on the most level portion of the floor pan.

Row 3 will be at the intersection of the toe kick and the level sections of the floor pan.



PASSENGER FLOOR PAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	803	803	803	N/A	660	627	643	N/A	-143	-176	-160	N/A
2	683	683	683	N/A	575	558	567	N/A	-108	-125	-116	N/A
3	563	563	563	563	520	510	529	559	-43	-53	-34	-4
4	443	443	443	443	430	412	423	429	-13	-31	-20	-14
5	323	323	323	323	305	305	305	305	-18	-18	-18	-18

PASSENGER FLOOR PAN Z-AXIS

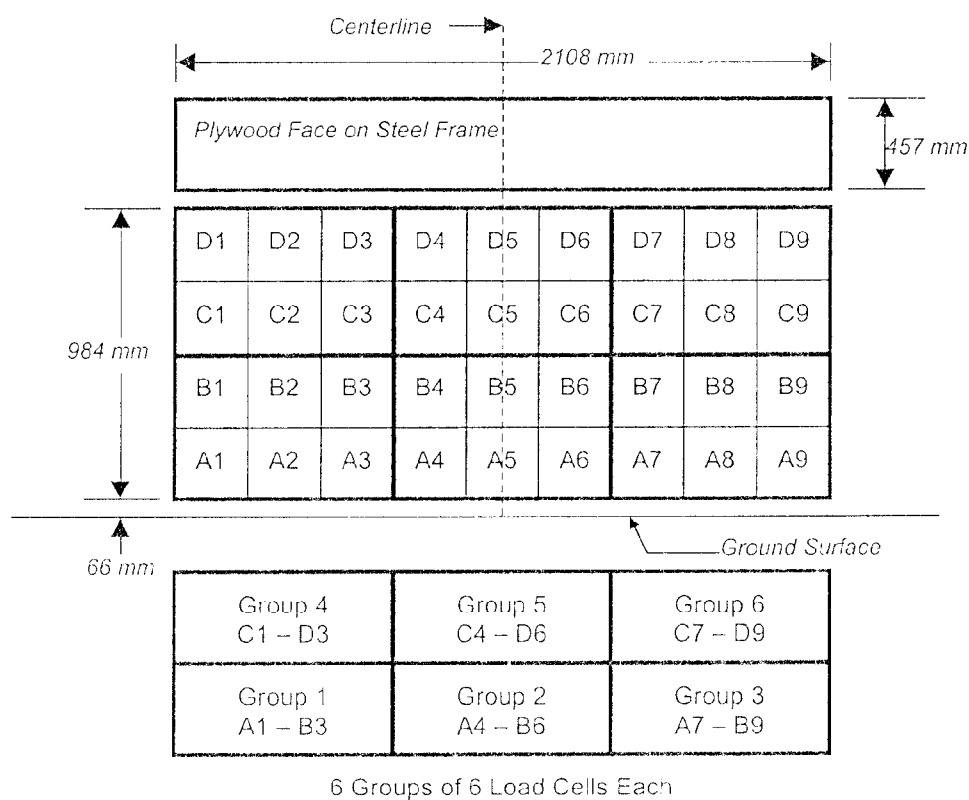
	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	125	135	139	N/A	173	187	195	N/A	48	52	56	N/A
2	16	7	10	N/A	73	80	58	N/A	57	73	48	N/A
3	-62	-61	-60	-60	-57	-50	-56	-66	5	11	4	-6
4	-63	-63	-63	-63	-135	-130	-123	-88	-72	-67	-60	-25
5	-60	-65	-60	-60	-147	-151	-186	-85	-87	-86	-126	-25

DATA SHEET NO. 18
FIXED BARRIER TYPE

Test Vehicle: 2000 DODGE NEON
Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0304
Test Date: 11/10/99

**36 Load Cell Rigid Barrier (NHTSA Standard)
Load Cell Locations on Fixed Barrier**



The Data is presented in Appendix C with the following requirements:

- 1.) Data from 36 individual load cells
- 2.) Sum data from 6 groupings shown above (6 cells/group)
- 3.) Total or sum of all 36 individual load cells
- 4.) Sum of all 36 individual load cells vs. vehicle dynamic crush

**DATA SHEET NO. 19
ACCIDENT INVESTIGATION DATA**

Test Vehicle: 2000 Dodge Neon
Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0304
Test Date: 11/10/99

VEHICLE INFORMATION

VIN: 1B3ES46C5YD576715
Vehicle Size Category: 4-Door Sedan

Wheel base (mm): 2665
Test Weight (kg): 1379

ACCELEROMETER DATA

Accelerometer Location: Left rear floor pan
Cal. Procedure/Interval: 6 months / drop test
Integration Algorithm: NIITSA Standard
Impact Velocity (km/h): 56.38
Velocity Change (km/h): 67.29

Linearity: Good

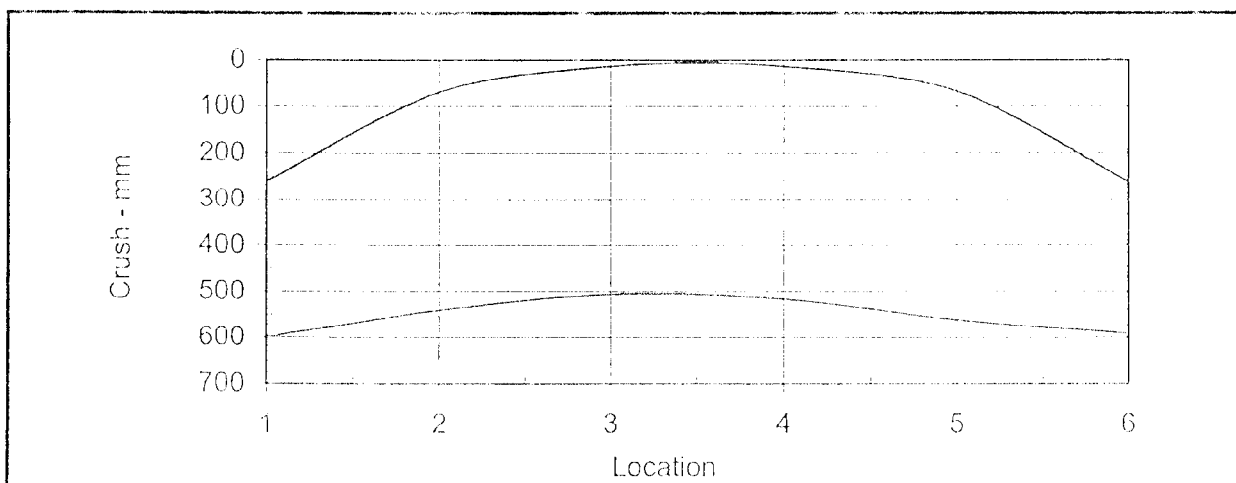
Time of Separation (msec): 70.7

CRUSH PROFILE

Collision Deformation Classification: 12FDEW6
Damage Region Length (mm): 1439

Midpoint of Damage: Vehicle Centerline
Impact Mode: Full Frontal

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	262	600	-338
C2	Crush zone 2 on left side	mm	70	541	-471
C3	Crush zone 3 on left side	mm	14	506	-492
C4	Crush zone 4 on right side	mm	14	516	-502
C5	Crush zone 5 on right side	mm	68	562	-494
C6	Crush zone 6 at right side	mm	262	592	-330



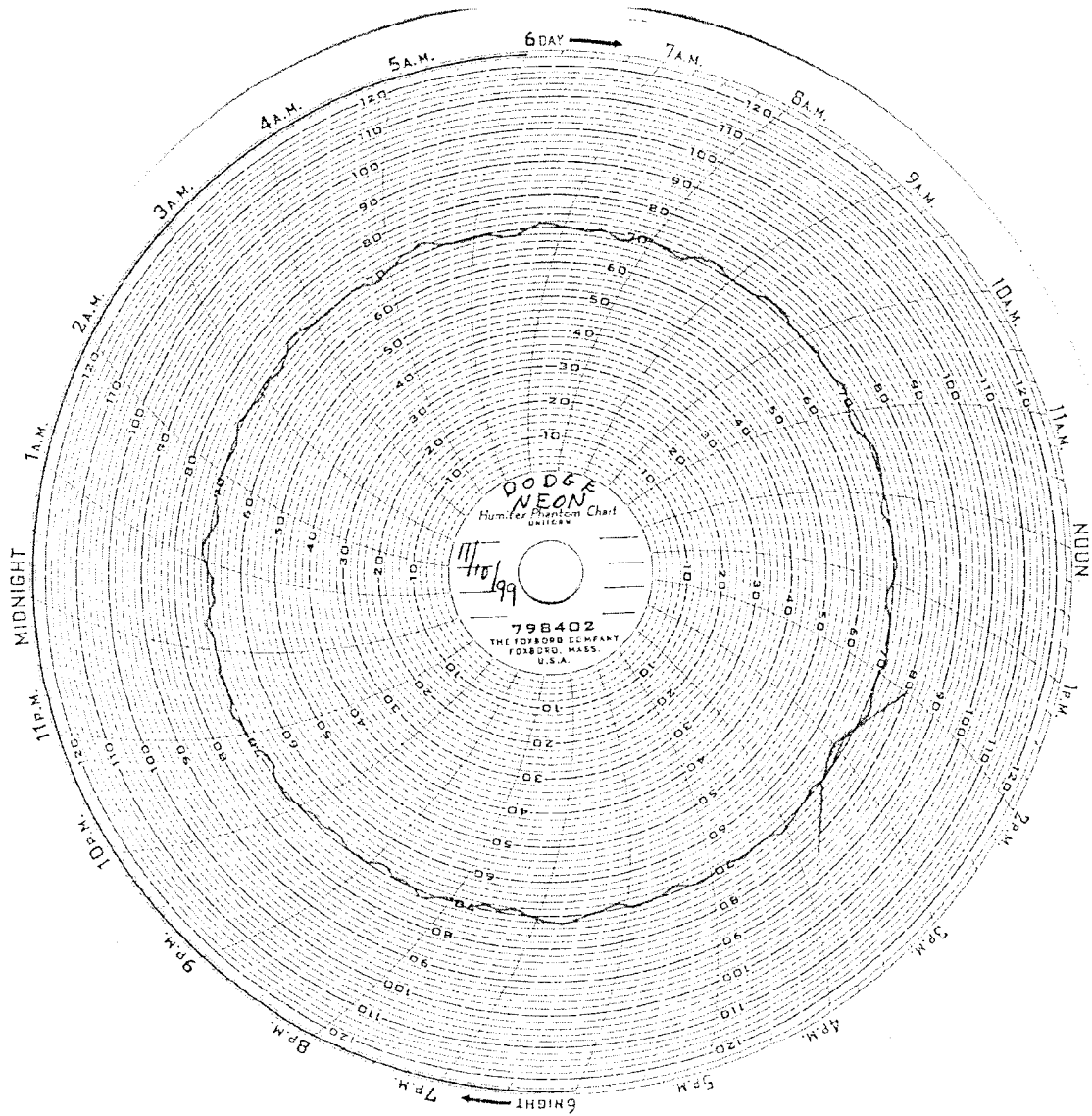
DATA SHEET NO. 20
DUMMY/ VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2000 DODGE NEON

NHTSA No.: MY0304

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 11/10/99



APPENDIX A
PHOTOGRAPHS

KAR200001-01

LIST OF PHOTOGRAPHS

Figure		Page
A-1	Right Front as Received	A-1
A-2	Left Rear as Received	A-2
A-3	Vehicle Certification Label	A-3
A-4	Vehicle Tire Placard	A-4
A-5	Pre-test Front View	A-5
A-6	Post-test Front View	A-6
A-7	Pre-test Left Side View	A-7
A-8	Post-test Left Side View	A-8
A-9	Pre-test Right Side View	A-9
A-10	Post-test Right Side View	A-10
A-11	Pre-test Right Front View	A-11
A-12	Post-test Right Front View	A-12
A-13	Pre-test Left Rear View	A-13
A-14	Post-test Left Rear View	A-14
A-15	Pre-test Windshield	A-15
A-16	Post-test Windshield	A-16
A-17	Pre-test Engine Compartment	A-17
A-18	Post-test Engine Compartment	A-18
A-19	Pre-test Fuel Cap	A-19
A-20	Post-test Fuel Cap	A-20
A-21	Pre-test Front Underside	A-21
A-22	Post-test Front Underside	A-22
A-23	Pre-test Rear Underside	A-23
A-24	Post-test Rear Underside	A-24
A-25	Pre-test Driver Dummy (Front View)	A-25
A-26	Post-test Driver Dummy (Front View)	A-26
A-27	Pre-test Driver Dummy (Through Window)	A-27
A-28	Post-test Driver Dummy (Through Window)	A-28
A-29	Pre-test Driver Dummy (Door Open)	A-29
A-30	Post-test Driver Dummy (Door Open)	A-30
A-31	Pre-test Driver Dummy (90° To Vehicle)	A-31
A-32	Post-test Driver Dummy (90° to Vehicle)	A-32

LIST OF PHOTOGRAPHS...(Continued)

Figure		Page
A-33	Pre-test Driver Dummy Feet	A-33
A-34	Post-test Driver Dummy Feet and Knee Contact	A-34
A-35	Pre-test Driver Side Knee Bolster	A-35
A-36	Post-test Driver Side Knee Bolster	A-36
A-37	Pre-test Driver Side Floor pan	A-37
A-38	Post-test Driver Side Floor pan	A-38
A-39	Post-test Driver Head	A-39
A-40	Post-test Driver Dummy Contact	A-40
A-41	Pre-test Passenger Dummy (Front View)	A-41
A-42	Post-test Passenger Dummy (Front View)	A-42
A-43	Pre-test Passenger Dummy (Through Window)	A-43
A-44	Post-test Passenger Dummy (Through Window)	A-44
A-45	Pre-test Passenger Dummy (Door Open)	A-45
A-46	Post-test Passenger Dummy (Door Open)	A-46
A-47	Pre-test Passenger Dummy (90° to Vehicle)	A-47
A-48	Post-test Passenger Dummy (90° to Vehicle)	A-48
A-49	Pre-test Passenger Dummy Feet	A-49
A-50	Post-test Driver Passenger Feet and Contact Point	A-50
A-51	Pre-test Passenger Side Floor Pan	A-51
A-52	Post-test Passenger Side Floor Pan	A-52
A-53	Pre-test Passenger Side Knee Bolster	A-53
A-54	Post-test Passenger Side Knee Bolster and Dummy Contact	A-54
A-55	Post-test Passenger Head	A-55
A-56	Post-test Passenger Dummy Contact	A-56
A-57	Vehicle on Rollover Device	A-57
A-58	Vehicle During Impact	A-58



FIGURE A-1. RIGHT FRONT AS RECEIVED

KAR20001-01

A-1

KAR20001-01

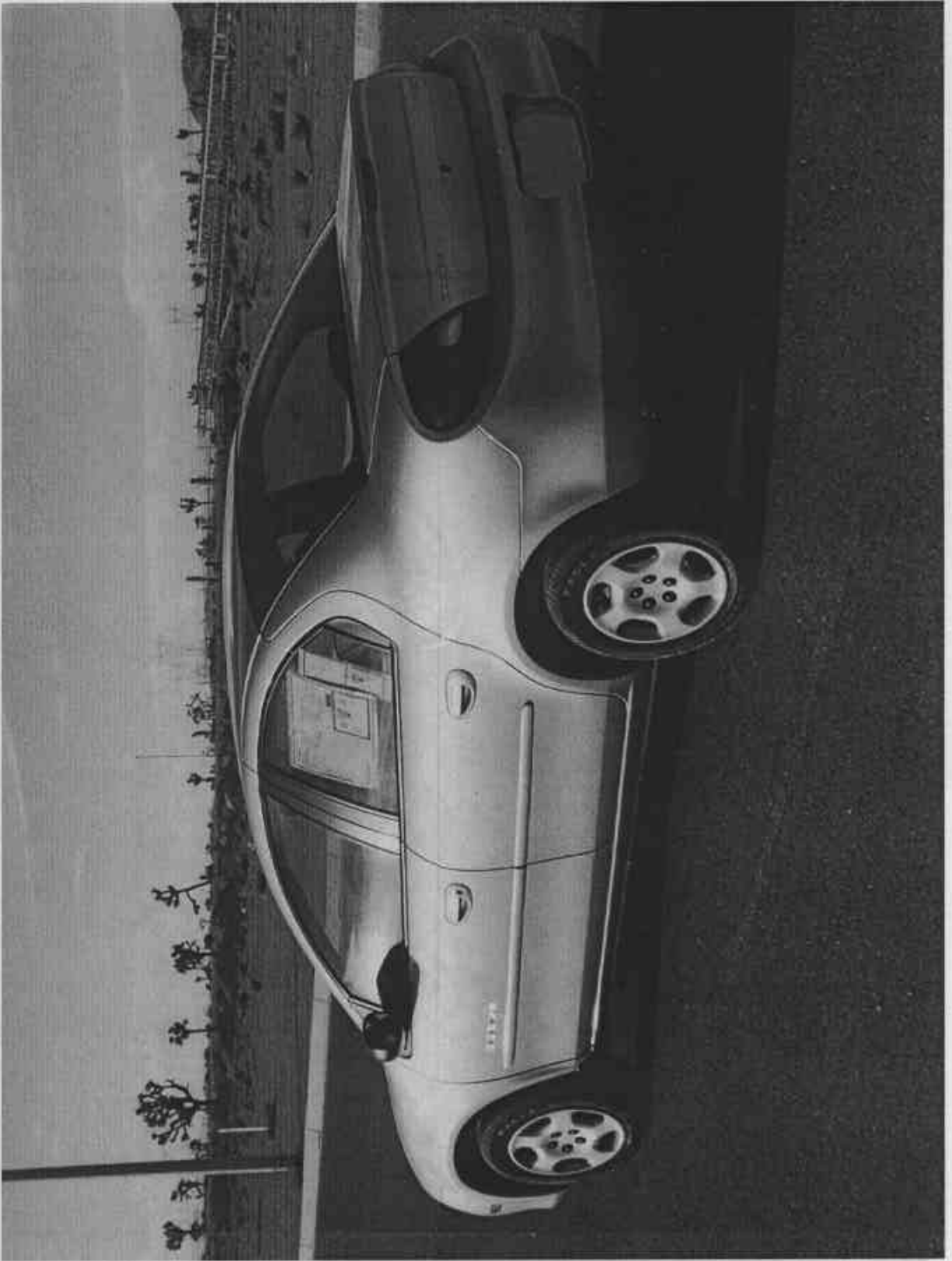


FIGURE A-2. LEFT REAR AS RECEIVED

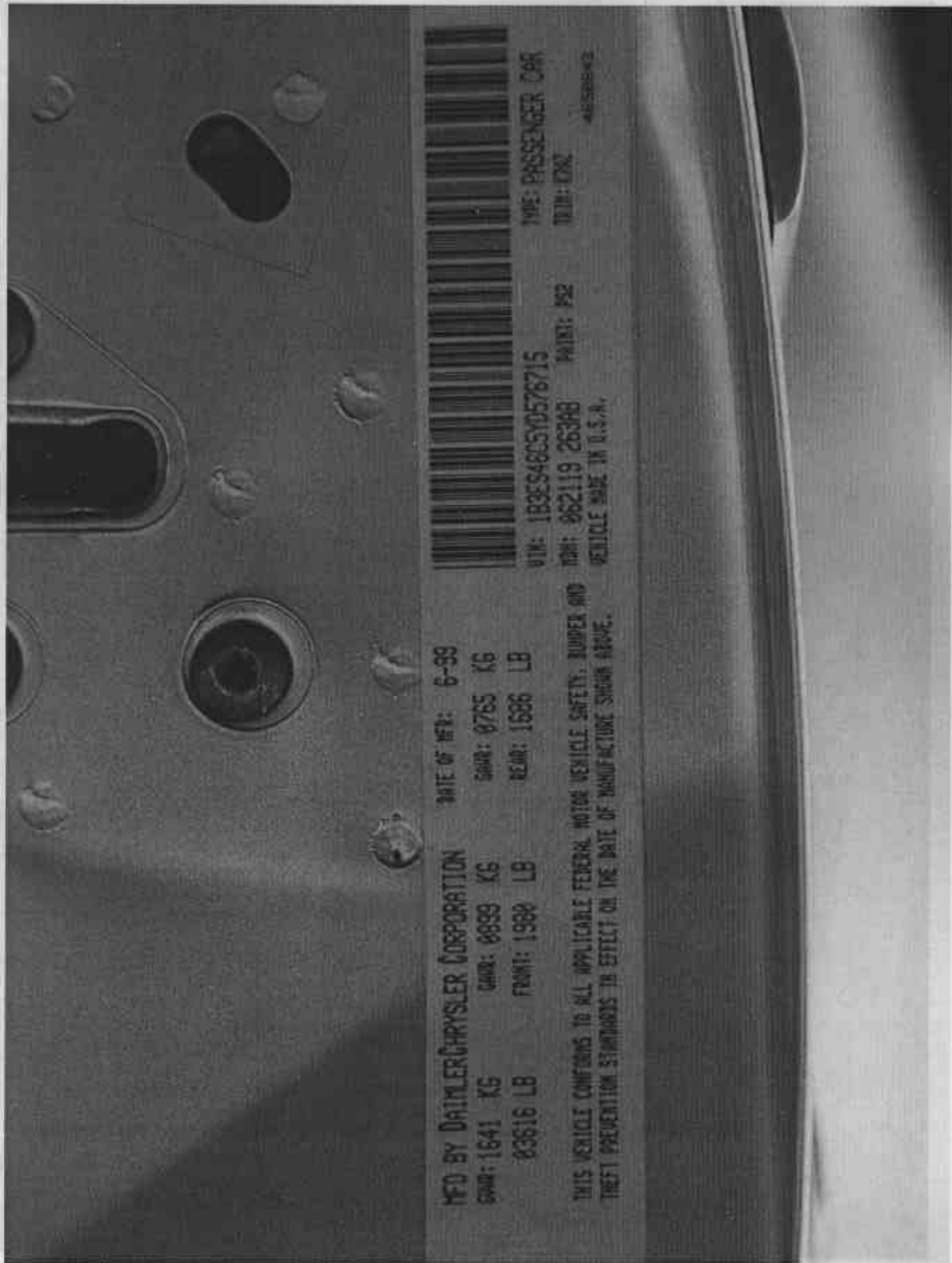


FIGURE A-3. VEHICLE CERTIFICATION LABEL



	VEHICLE CAPACITY OR LESS
1st SEAT	2 PASS
2nd SEAT	3 PASS
LUGGAGE	115 LBS-52 kg
TOTAL	5 PASS
TOTAL WEIGHT	865 LBS-392 kg
TIRE PRESSURE COLD	32 PSI 220 kPa
RECOMMENDED TIRE SIZES	
P185/65R14 STANDARD LOAD	
P185/60R15 STANDARD LOAD	
SEE OWNERS MANUAL FOR ADDITIONAL DATA	
PRINTED IN USA 04656 590AA	

FIGURE A-4. VEHICLE TIRE PLACARD

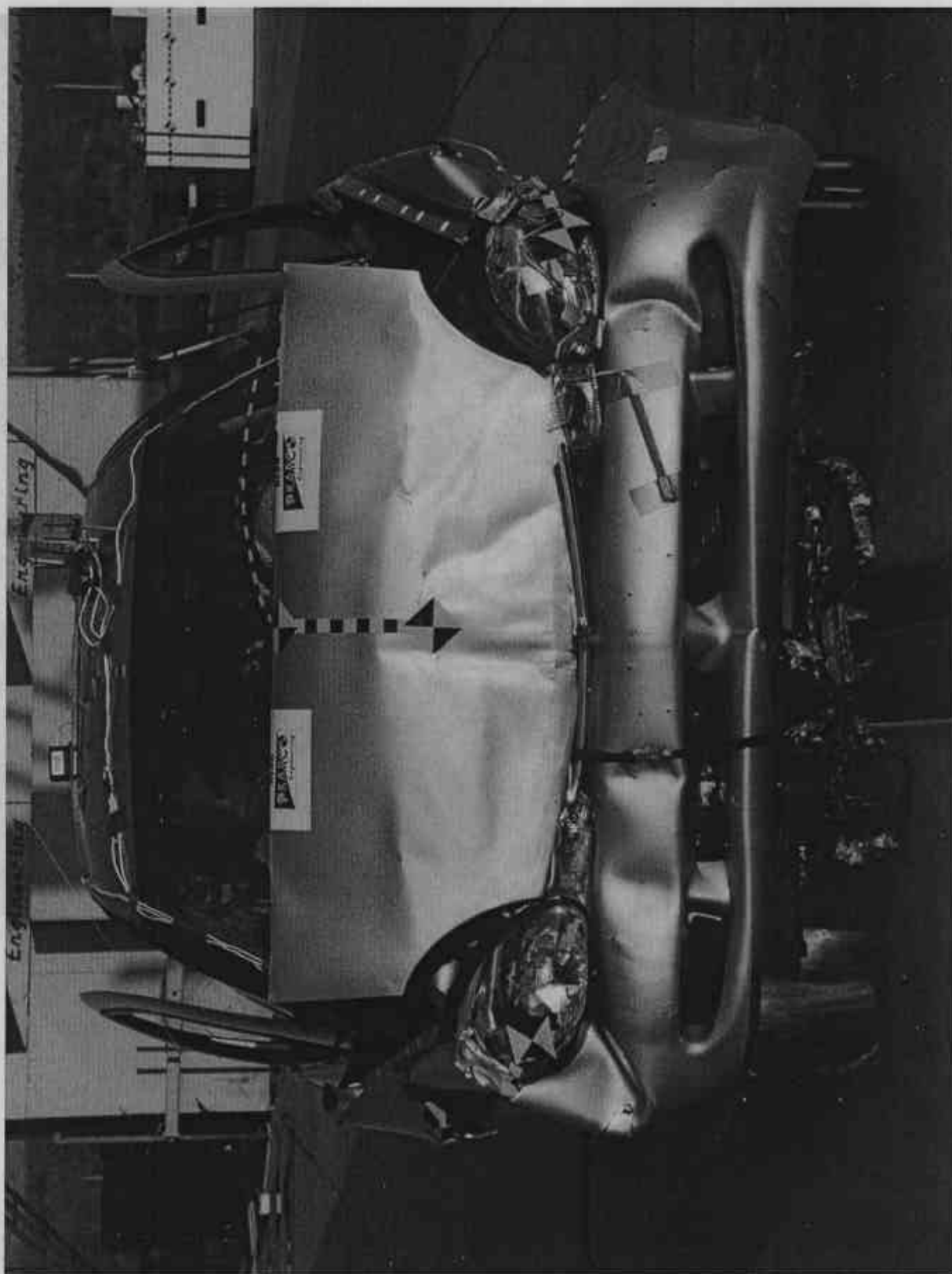


FIGURE A-6. POST TEST FRONT VIEW

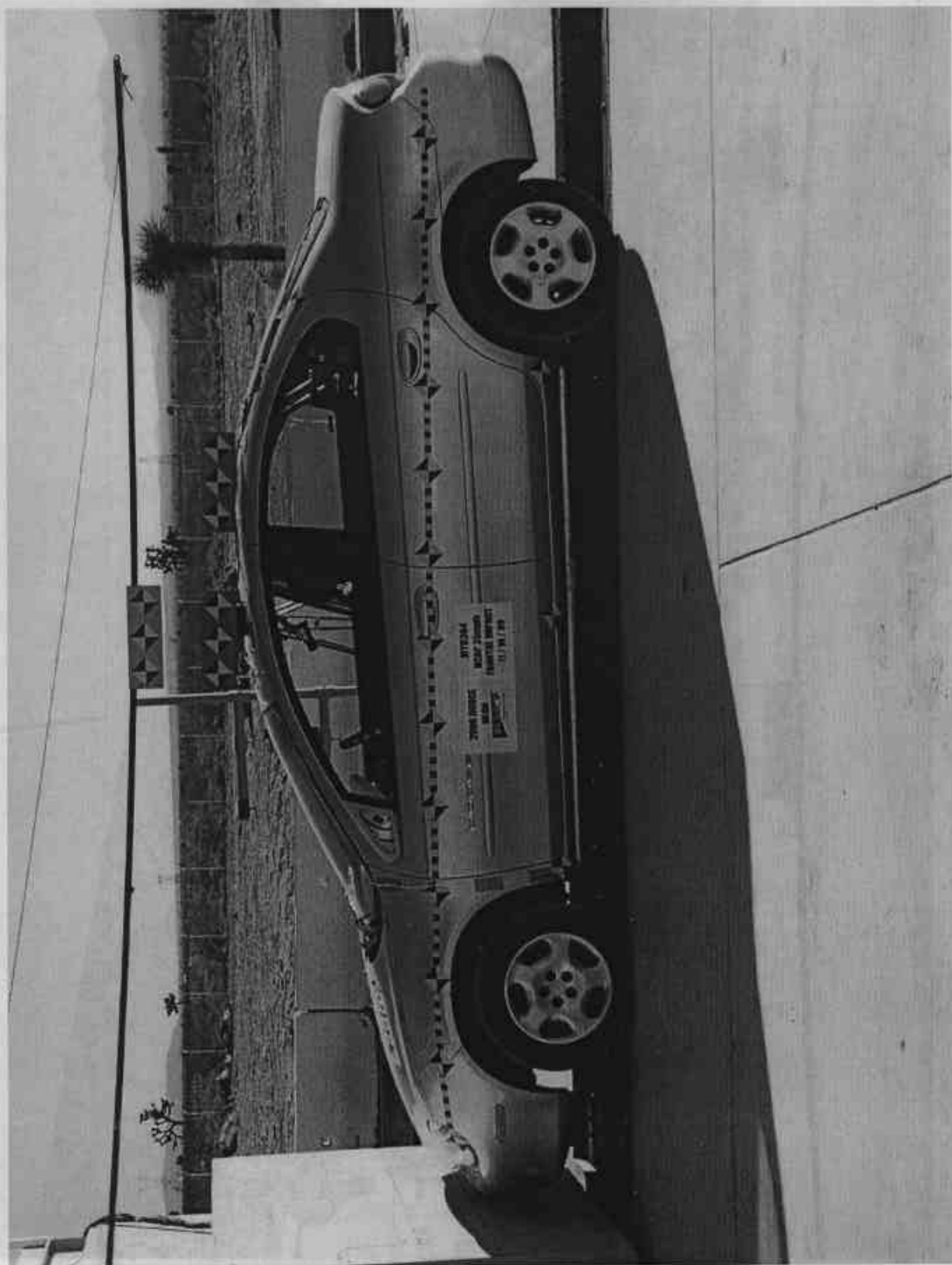


FIGURE A-7. PRETEST LEFT SIDE VIEW

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A-7

KAR20001-01

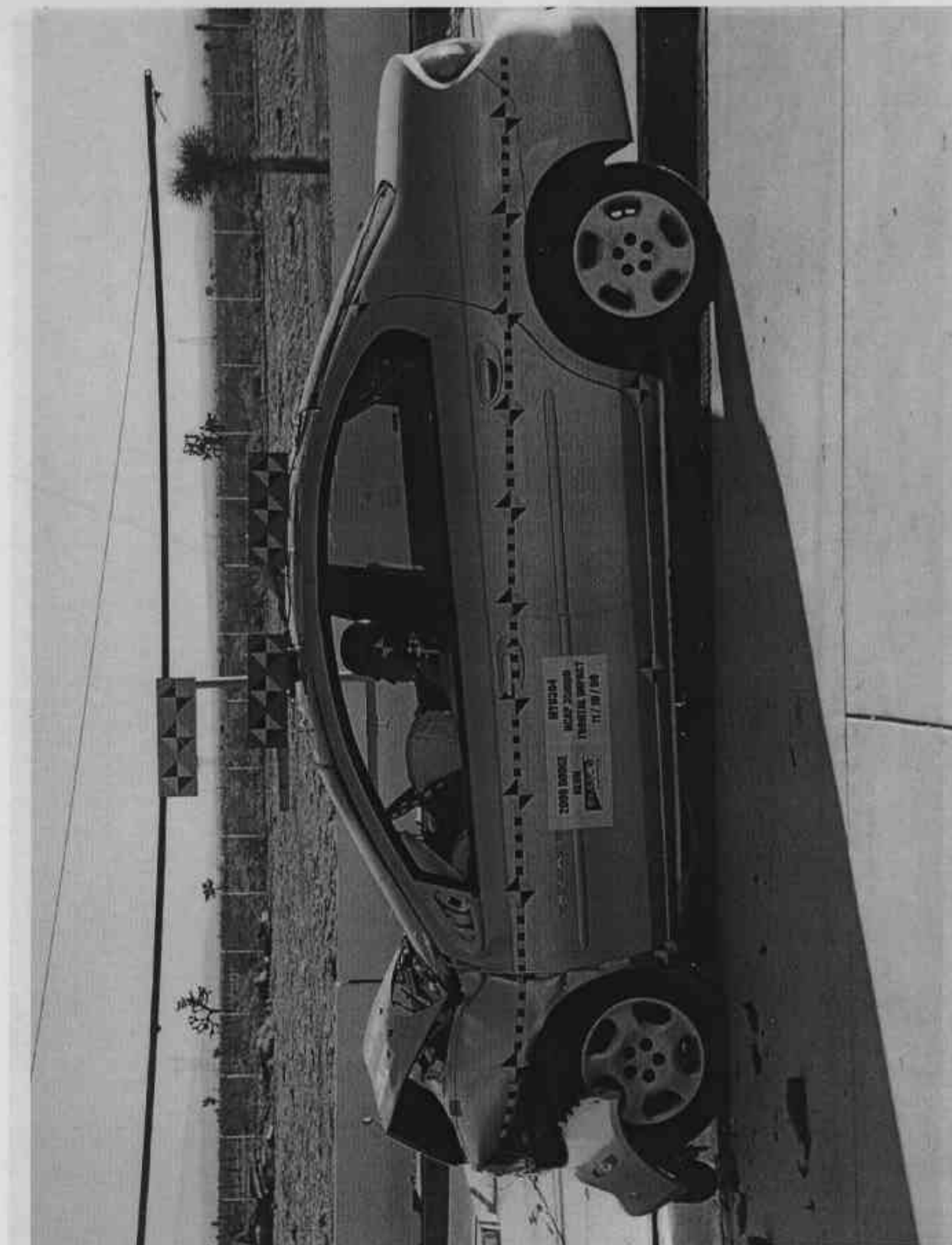


FIGURE A-8. POST TEST LEFT SIDE VIEW

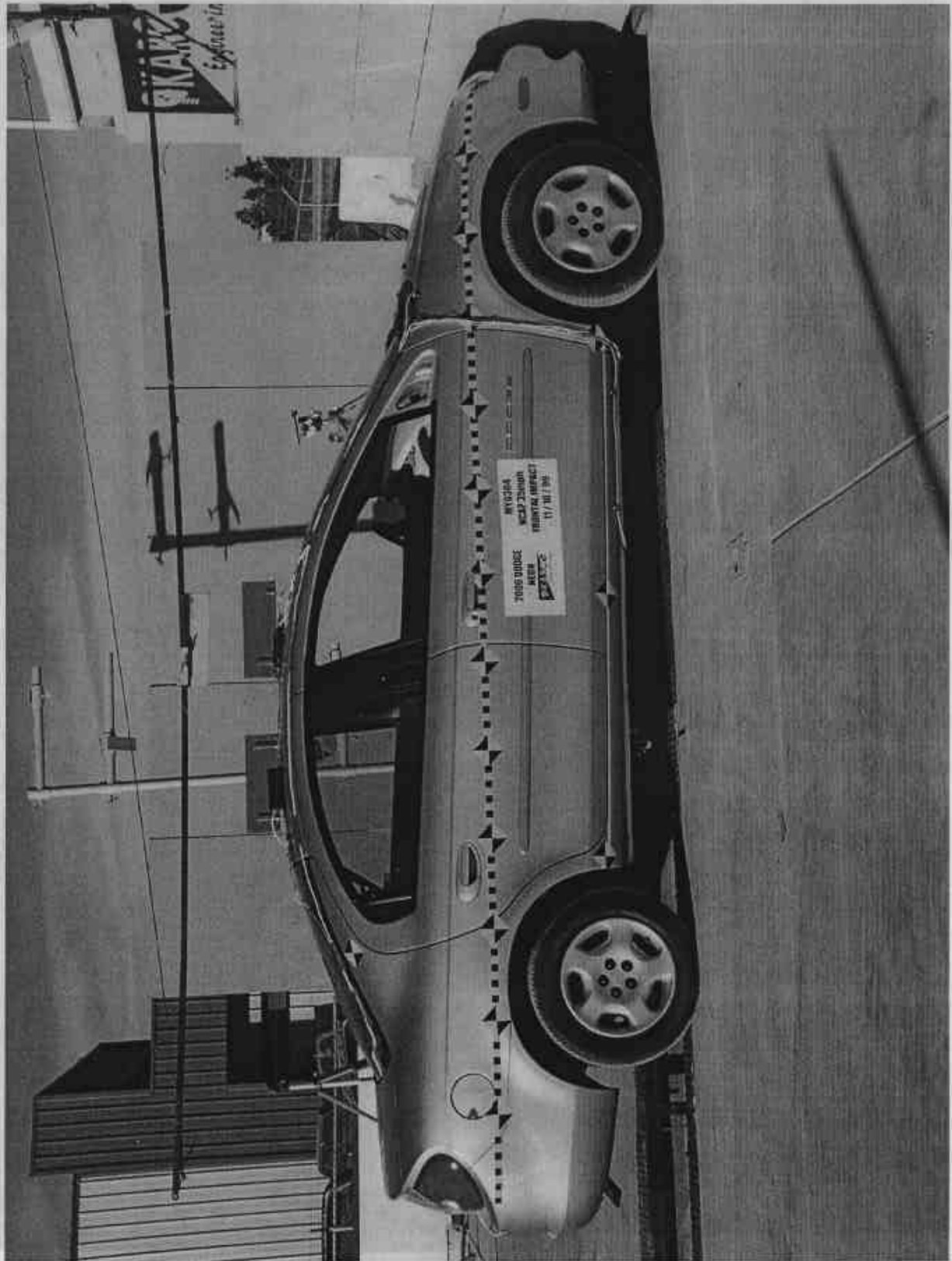


FIGURE A-9. PRETEST RIGHT SIDE VIEW

KAR20001-01

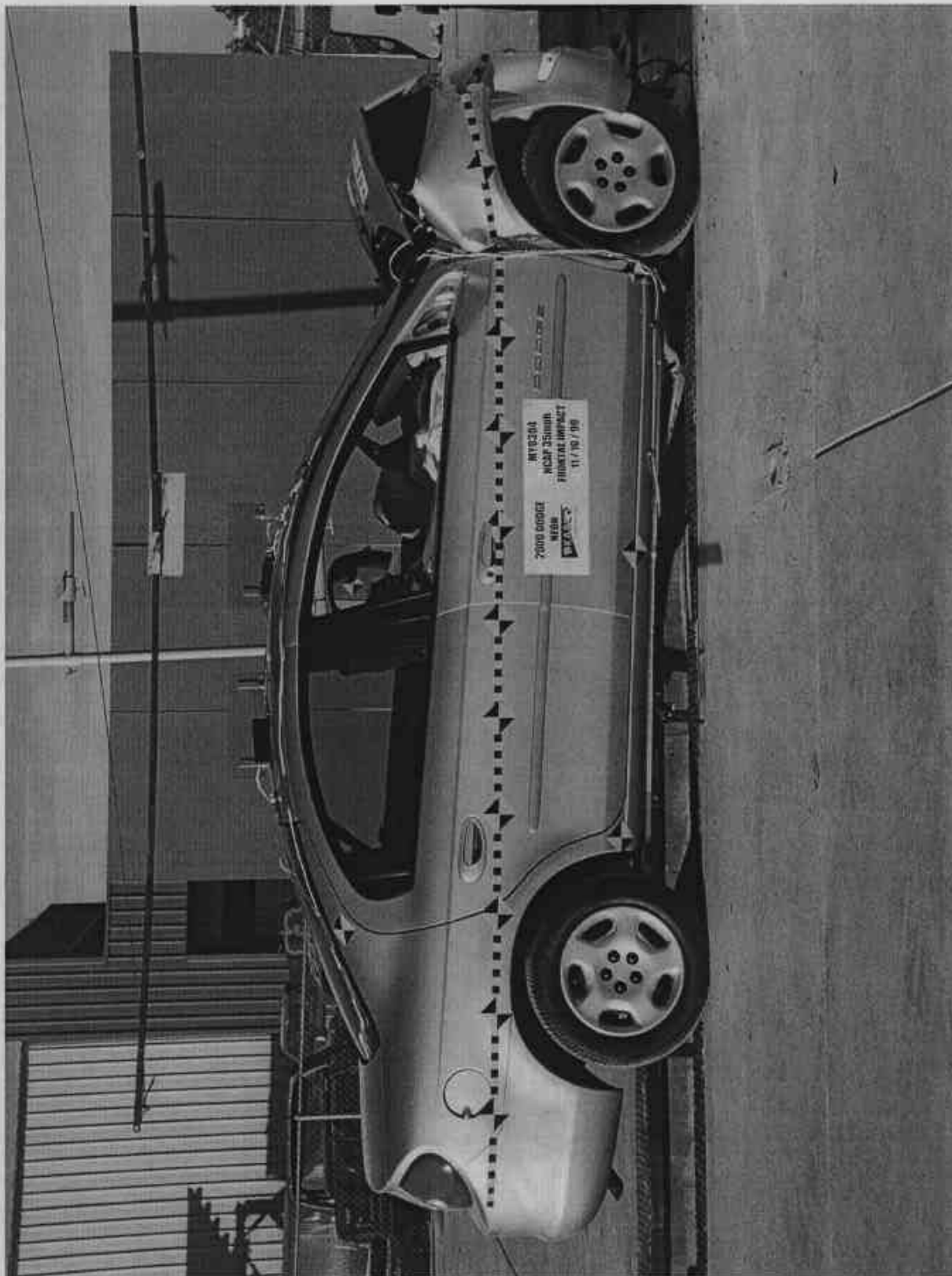


FIGURE A-10. POST TEST RIGHT SIDE VIEW



FIGURE A-11. PRETEST RIGHT FRONT VIEW

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A-11

KAR20001-01

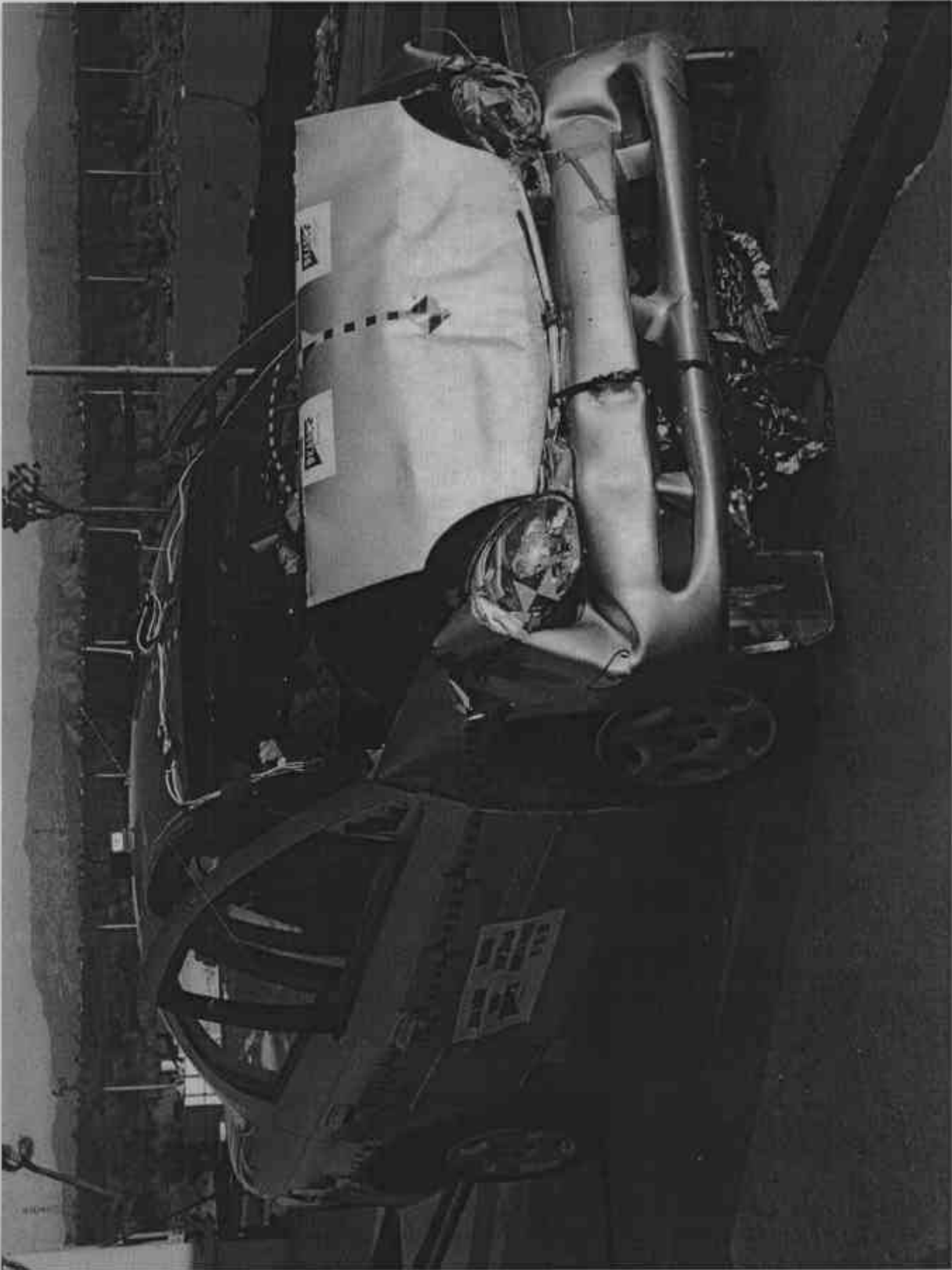


FIGURE A-12. POST TEST RIGHT FRONT VIEW



FIGURE A-13. PRETEST LEFT REAR VIEW

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A-13

KAR20001-01



FIGURE A-14. POST TEST LEFT REAR VIEW

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A-14

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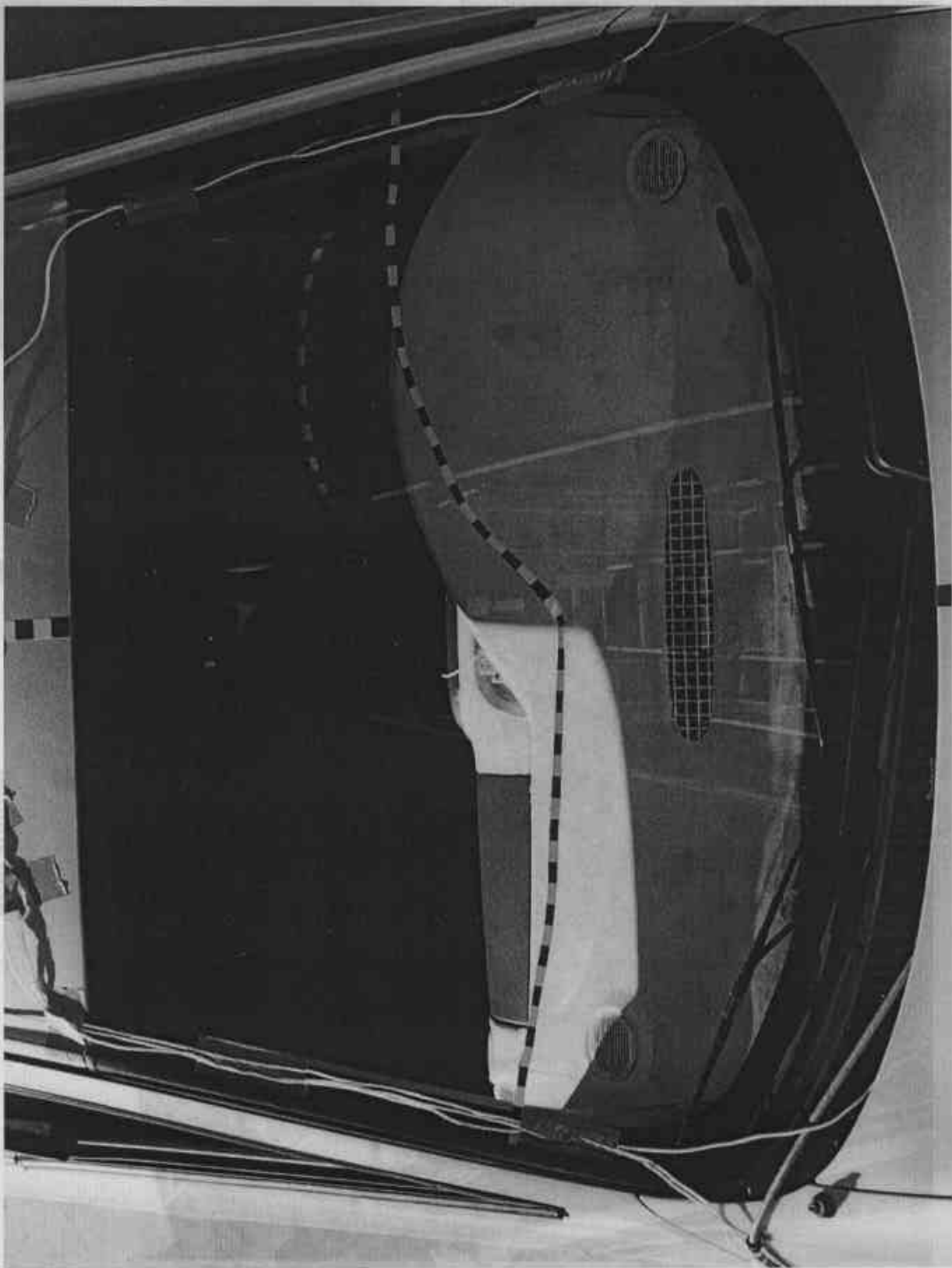


FIGURE A-15. PRETEST WINDSHIELD

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A-15

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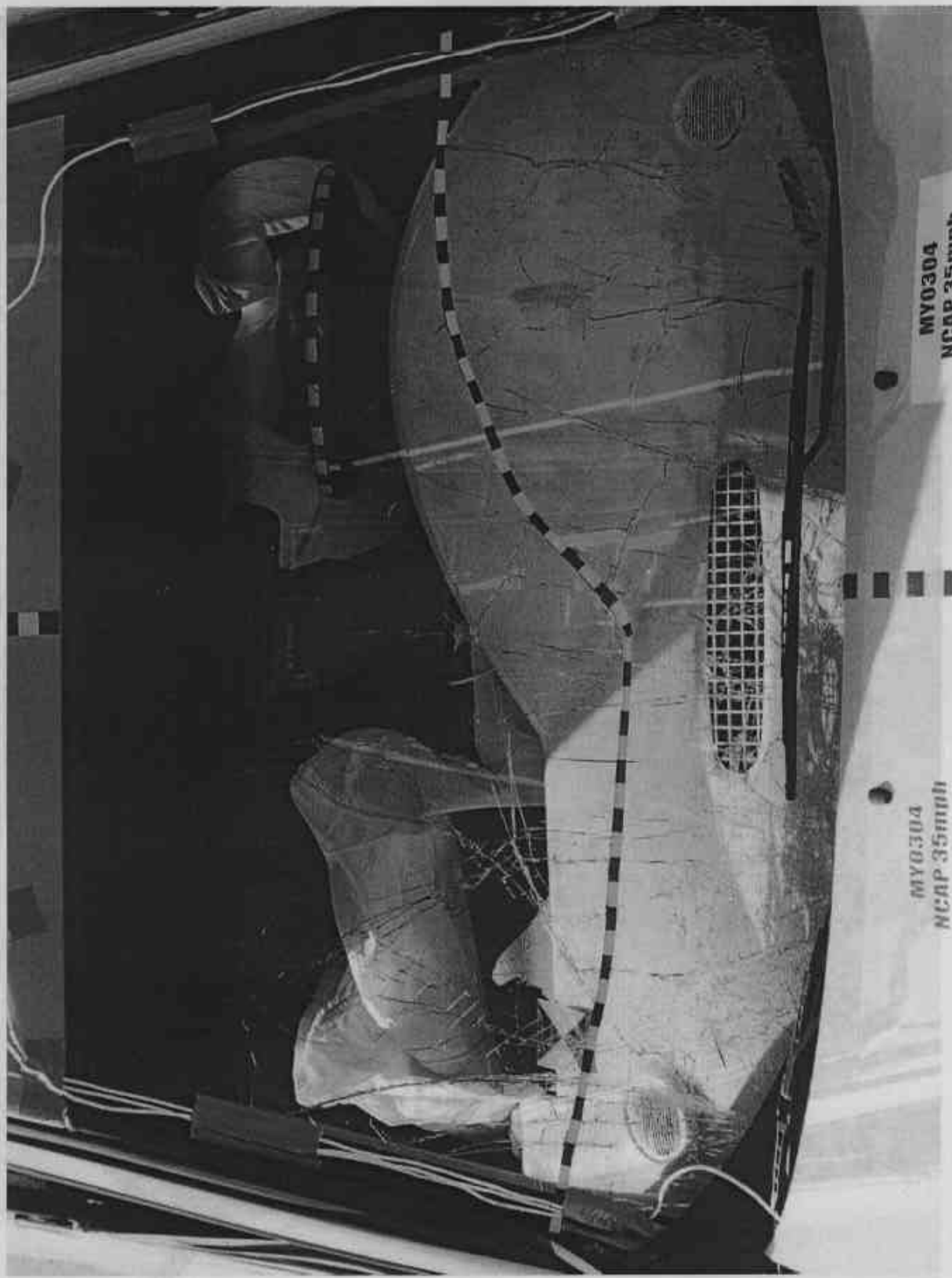


FIGURE A-16. POST TEST WINDSHIELD

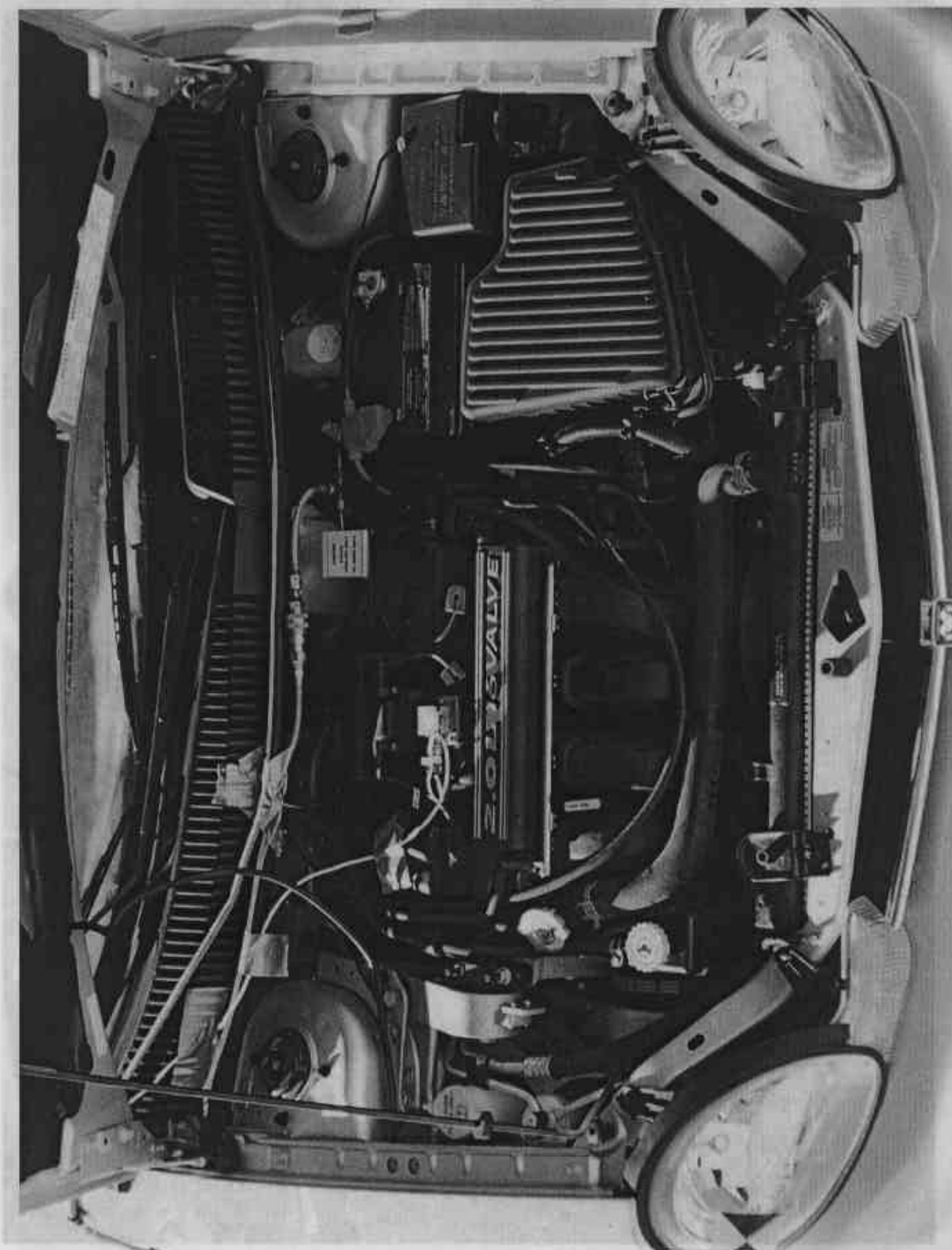


FIGURE A-17. PRETEST ENGINE COMPARTMENT

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A-17

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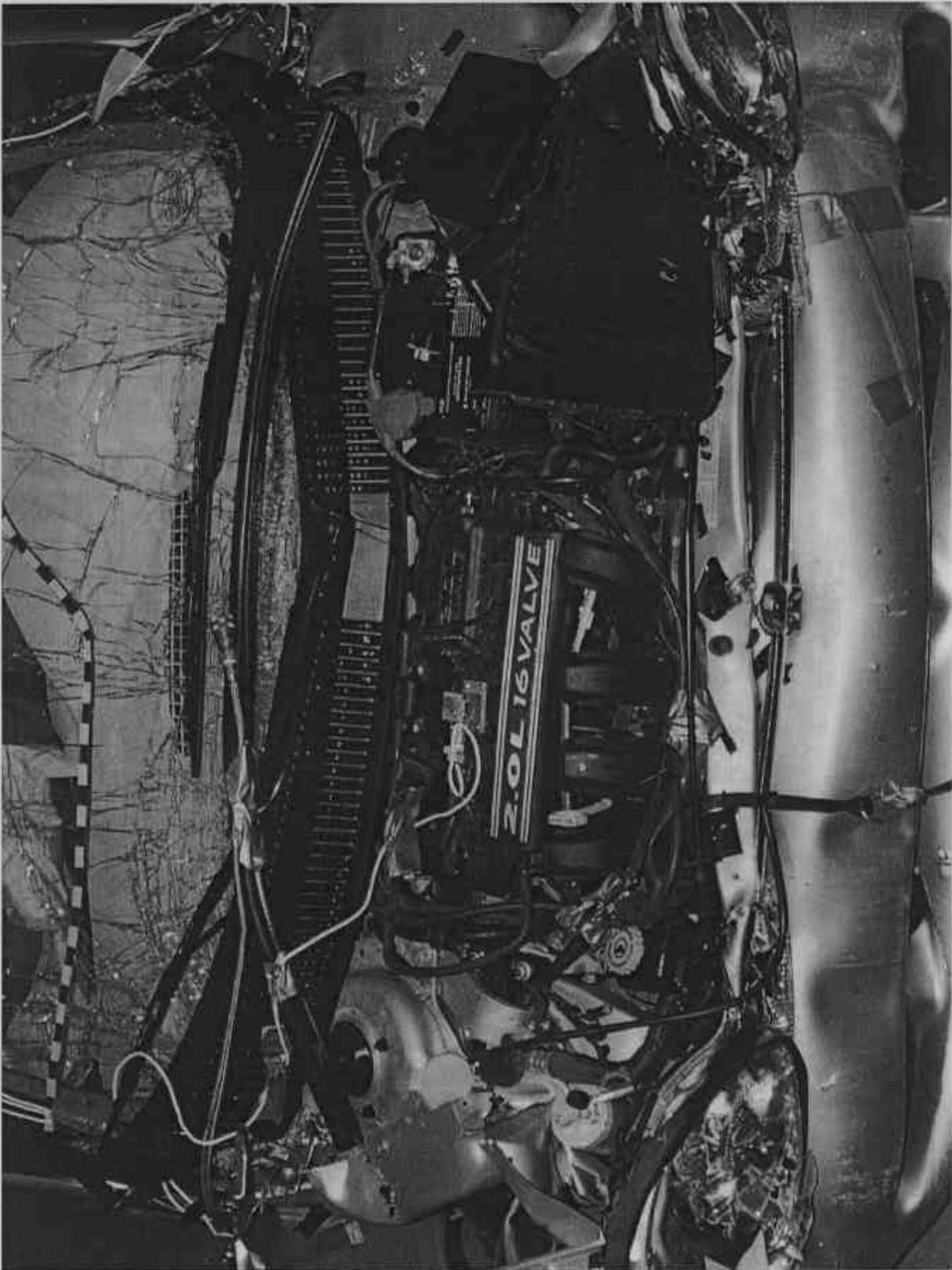


FIGURE A-18. POST TEST ENGINE COMPARTMENT



FIGURE A-19. PRETEST FUEL CAP



FIGURE A-20. POST TEST FUEL CAP

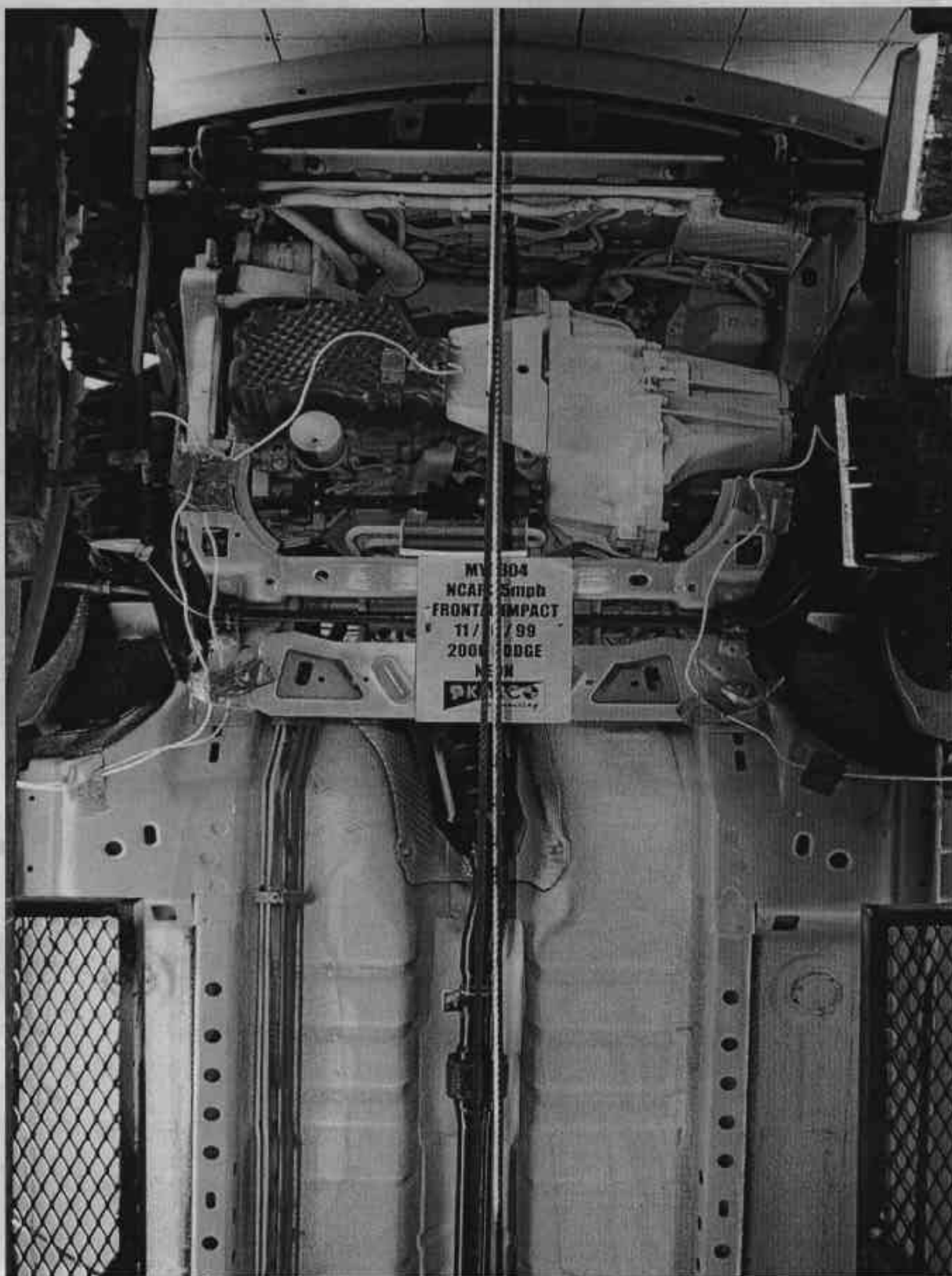


FIGURE A-21. PRETEST FRONT UNDERSIDE

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A-21

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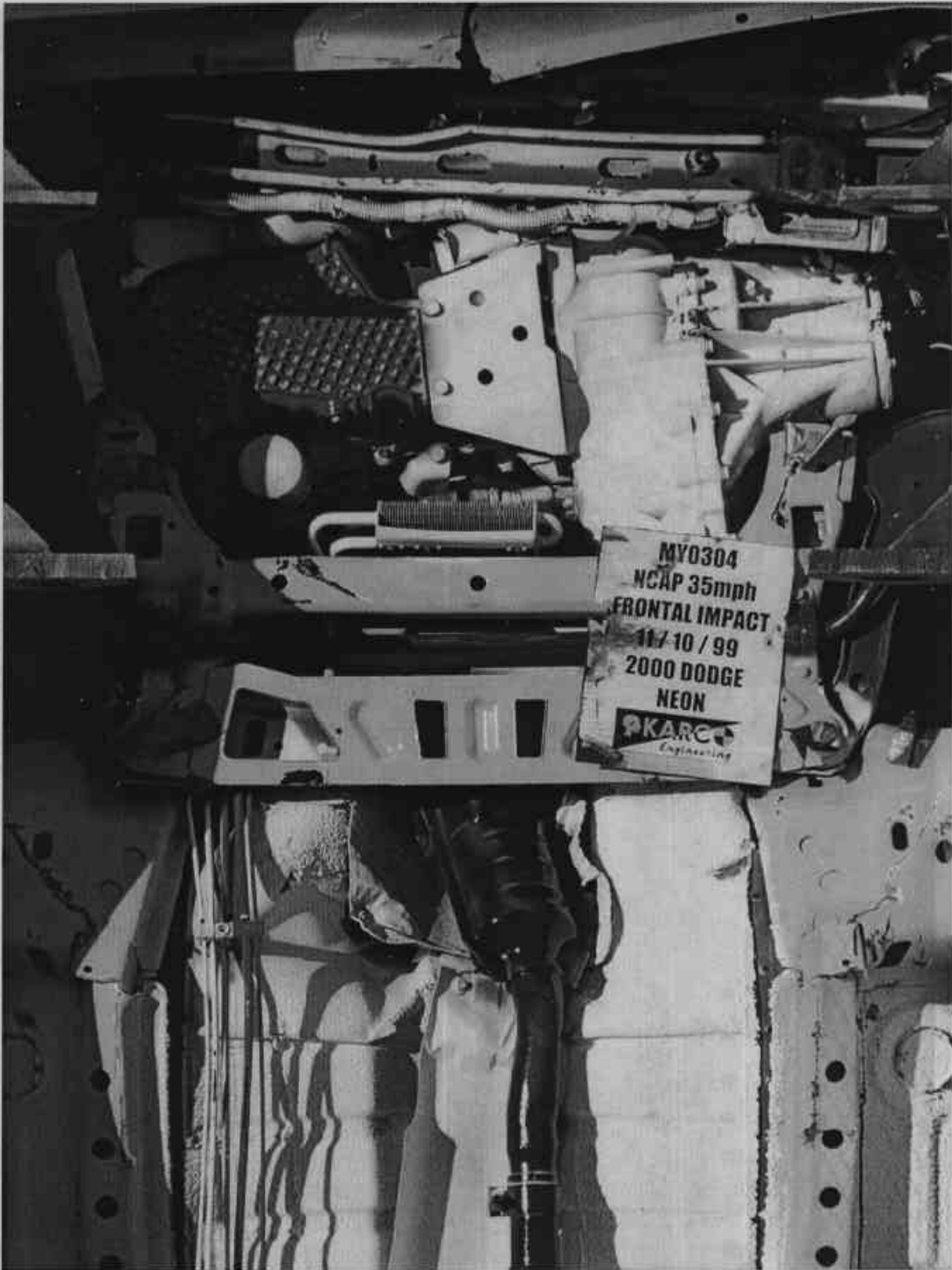


FIGURE A-22. POST TEST FRONT UNDERSIDE

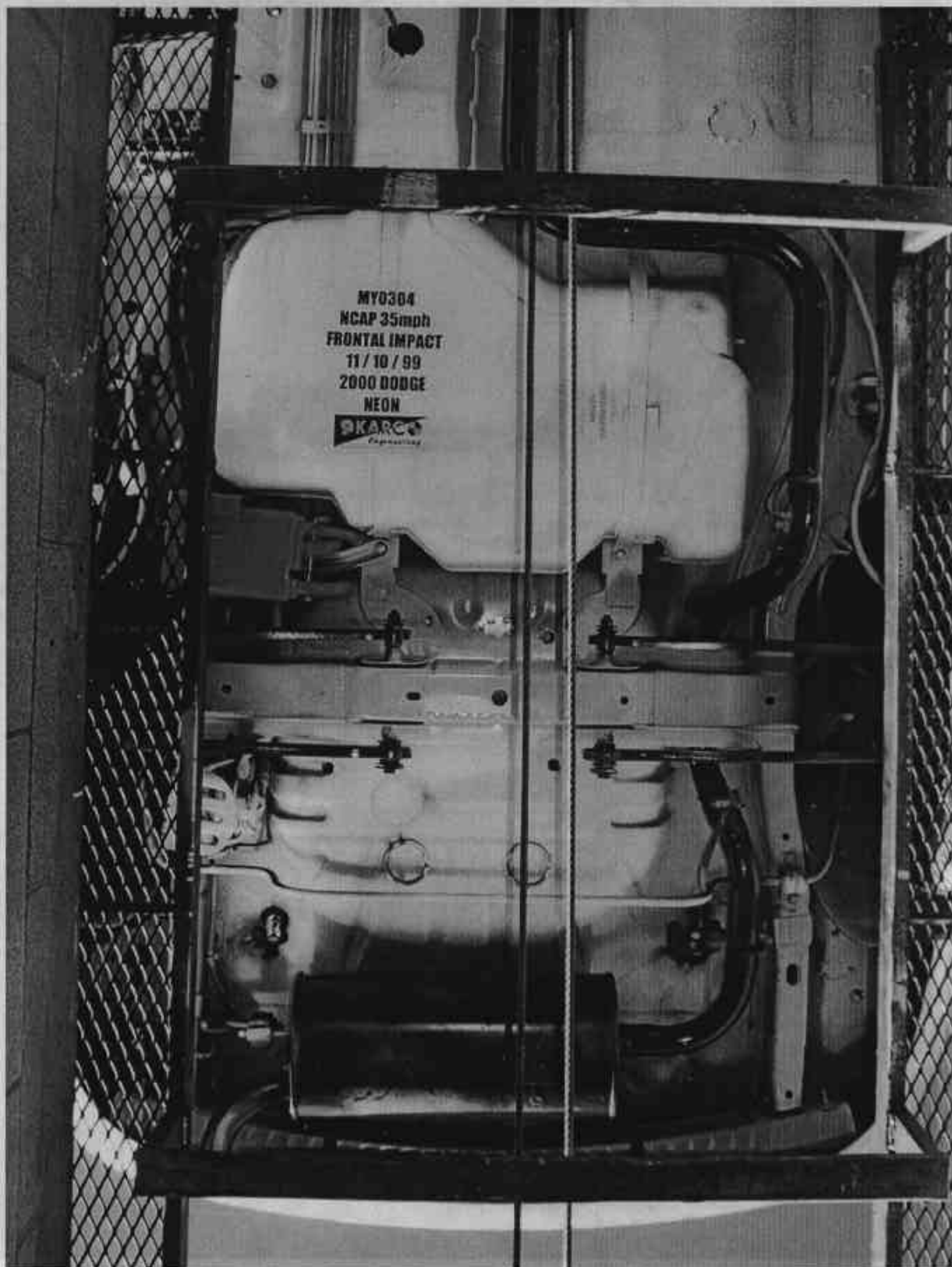


FIGURE A-23. PRETEST REAR UNDERSIDE

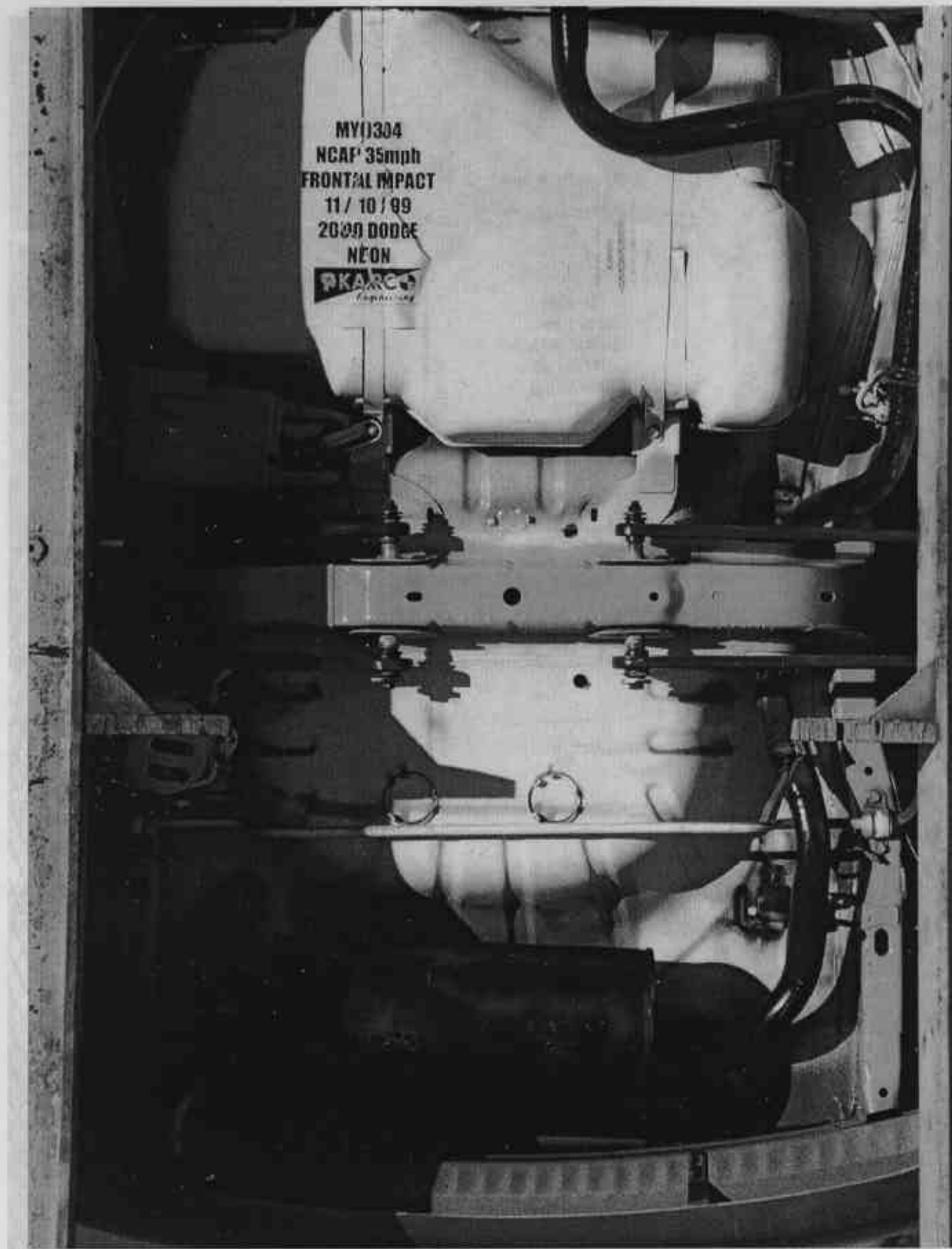


FIGURE A-24. POST TEST REAR UNDERSIDE



FIGURE A-25. PRETEST DRIVER DUMMY (FRONT VIEW)

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A-25

KAR20001-01



FIGURE A-26. POST TEST DRIVER DUMMY (FRONT VIEW)



FIGURE A-27. PRETEST DRIVER DUMMY (THRU WINDOW)



FIGURE A-28. POST TEST DRIVER DUMMY (THRU WINDOW)



FIGURE A-29. PRETEST DRIVER DUMMY (DOOR OPEN)

KAR20001-01



FIGURE A-30. POST TEST DRIVER DUMMY (DOOR OPEN)



(B) FIGURE A-31. PRETEST DRIVER DUMMY (90° TO VEHICLE)



FIGURE A-32. POST TEST DRIVER DUMMY (90° TO VEHICLE)



FIGURE A-33. PRETEST DRIVER DUMMY FEET

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A-33

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FIGURE A-34. POST TEST DRIVER DUMMY FEET AND KNEE CONTACT

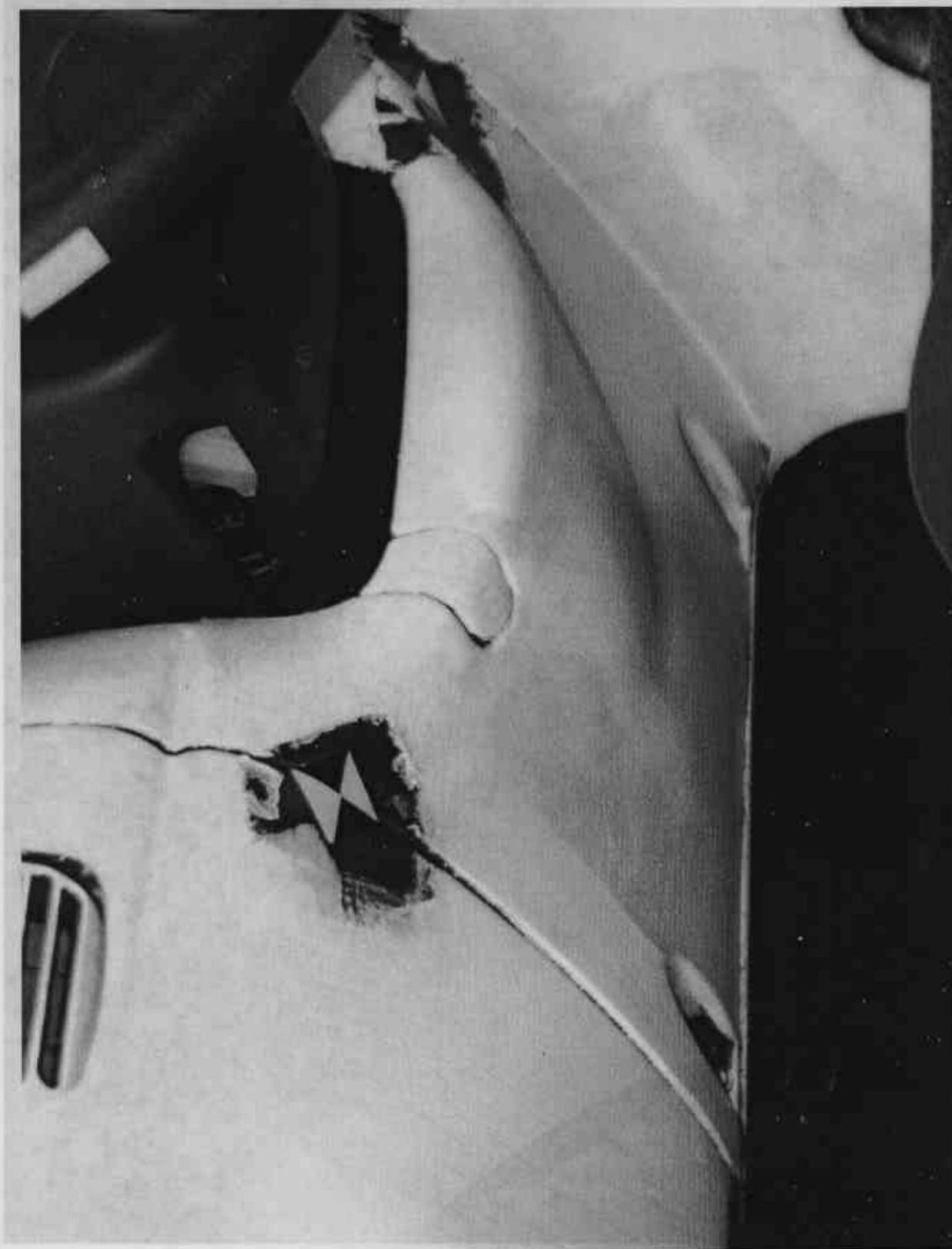


FIGURE A-35. PRE TEST DRIVER KNEE BOLSTER

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A-35

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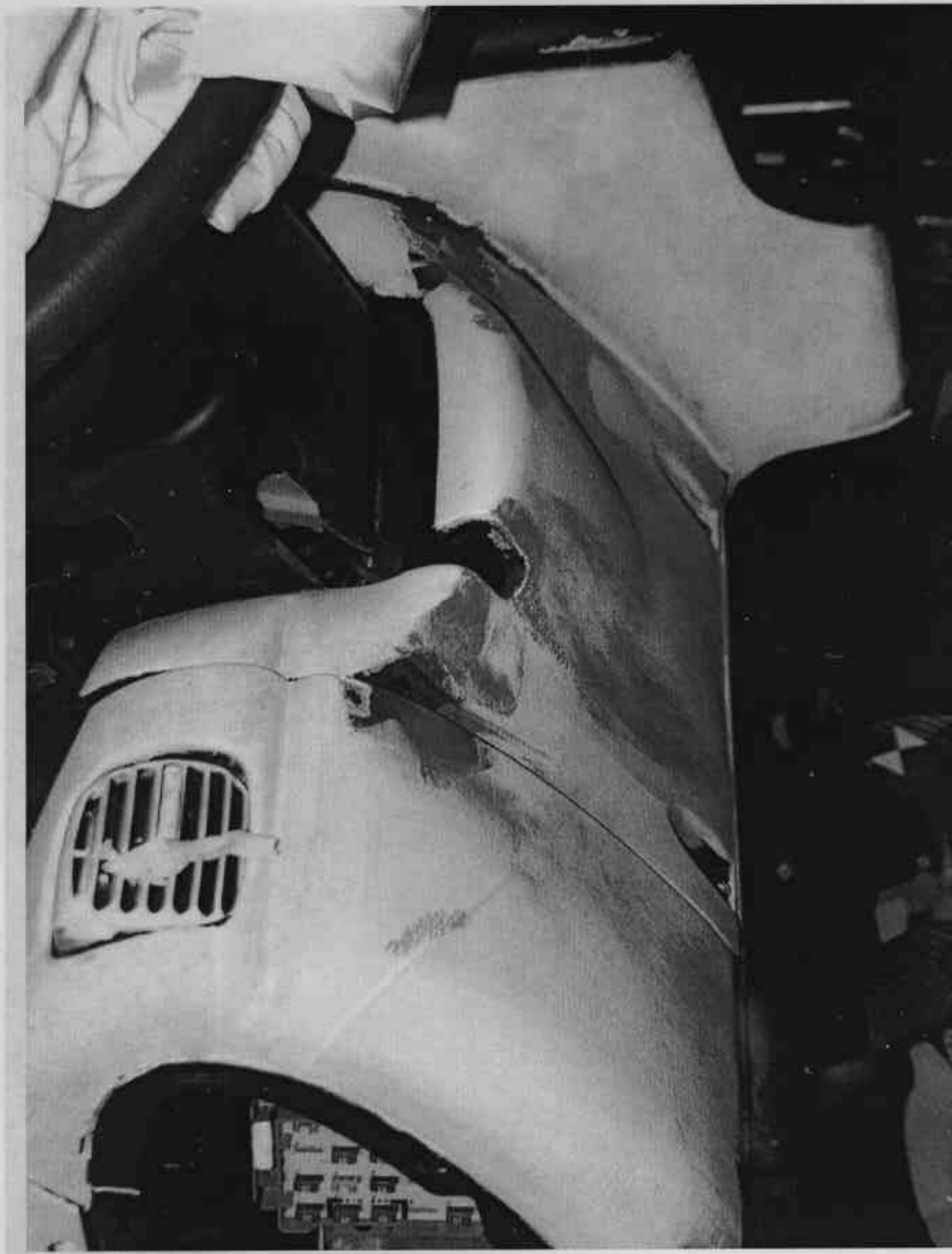


FIGURE A-36. POST TEST DRIVER KNEE BOLSTER

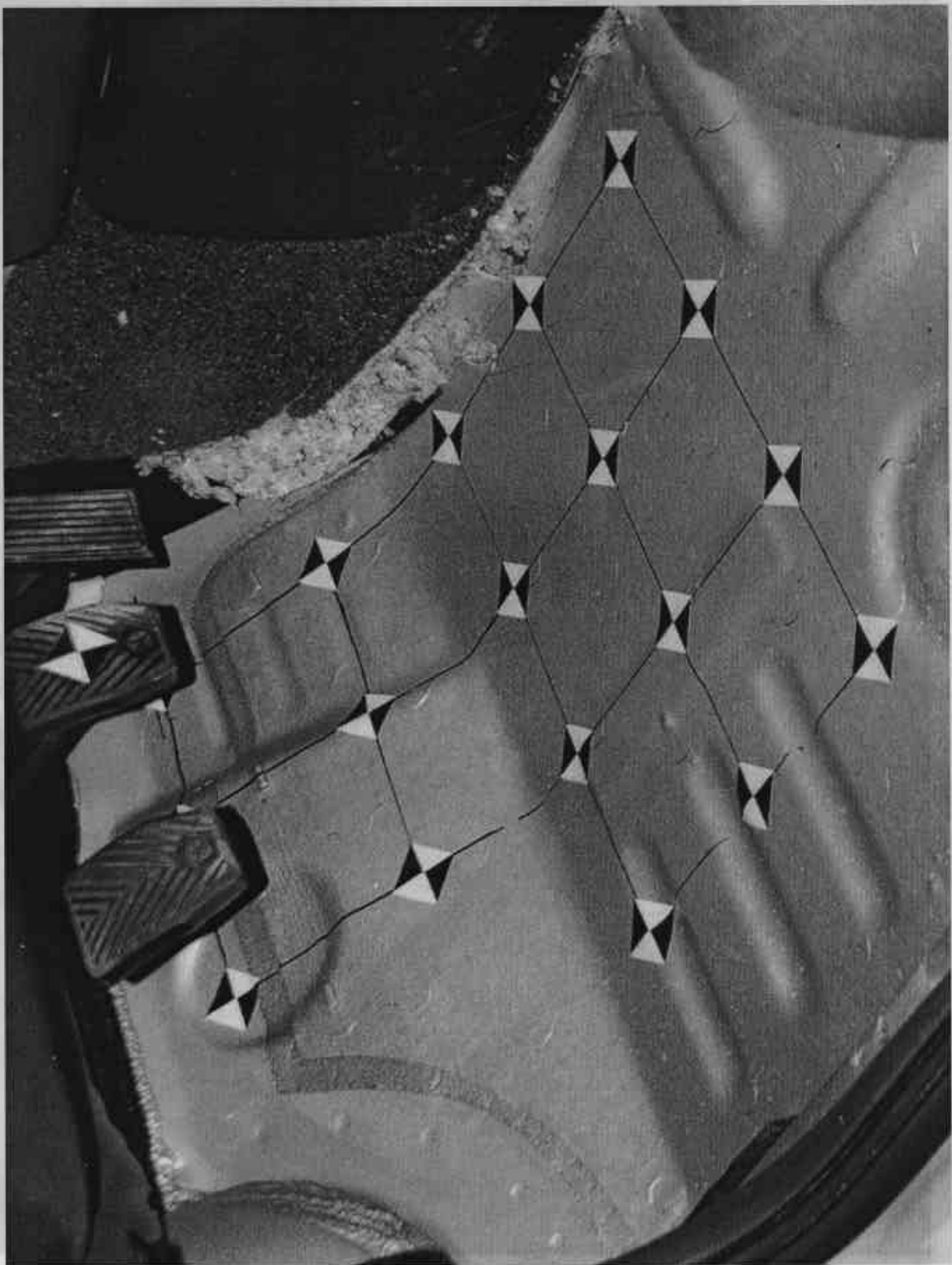


FIGURE A-37. PRE TEST DRIVER SIDE FLOOR PAN

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A-37

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FIGURE A-38. POST TEST DRIVER SIDE FLOOR PAN

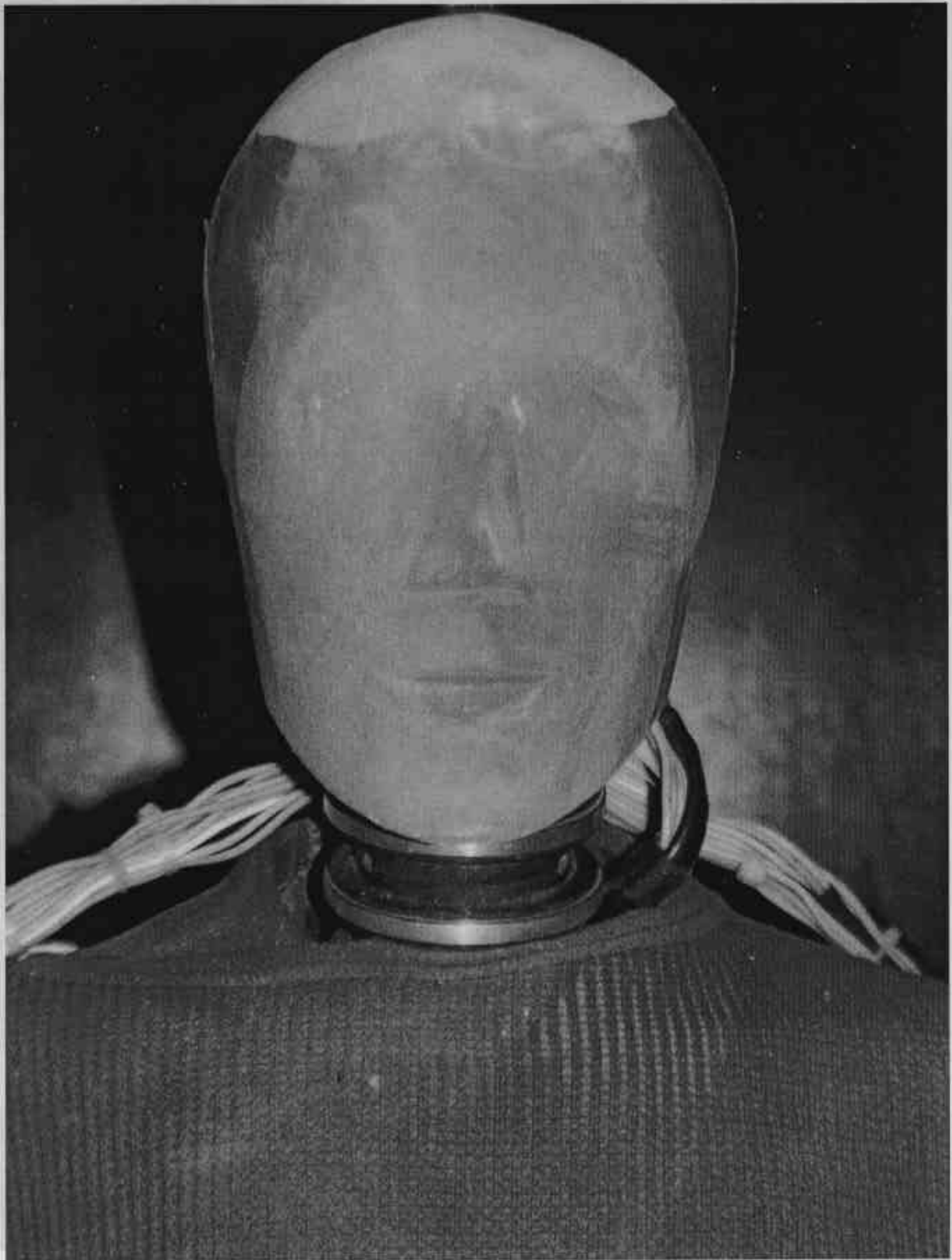


FIGURE A-39. POST TEST DRIVER HEAD

A-39

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FIGURE A-40. POST TEST DRIVER DUMMY CONTACT



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

KAR20001-01

A-41

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FIGURE A-42. POST TEST PASSENGER DUMMY (FRONT VIEW)



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

KAR20001-01



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



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



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



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

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A-47

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FIGURE A-48. POST TEST PASSENGER DUMMY (90° TO VEHICLE)



FIGURE A-49. PRE TEST PASSENGER DUMMY FEET

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A-49

KAR20001-01

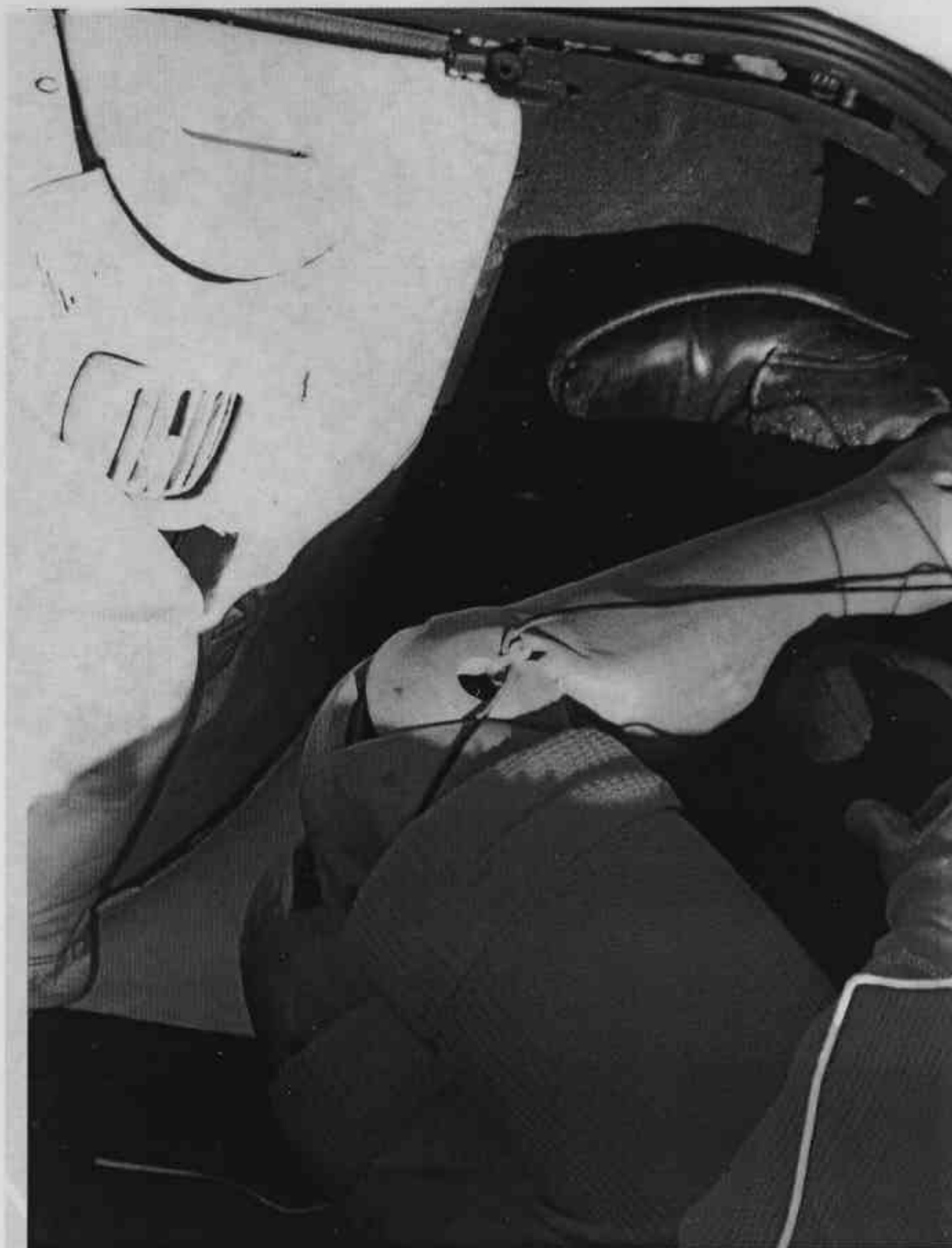


FIGURE A-50. POST TEST PASSENGER DUMMY FEET AND CONTACT POINT



FIGURE A-52. POST TEST PASSENGER SIDE FLOOR PAN

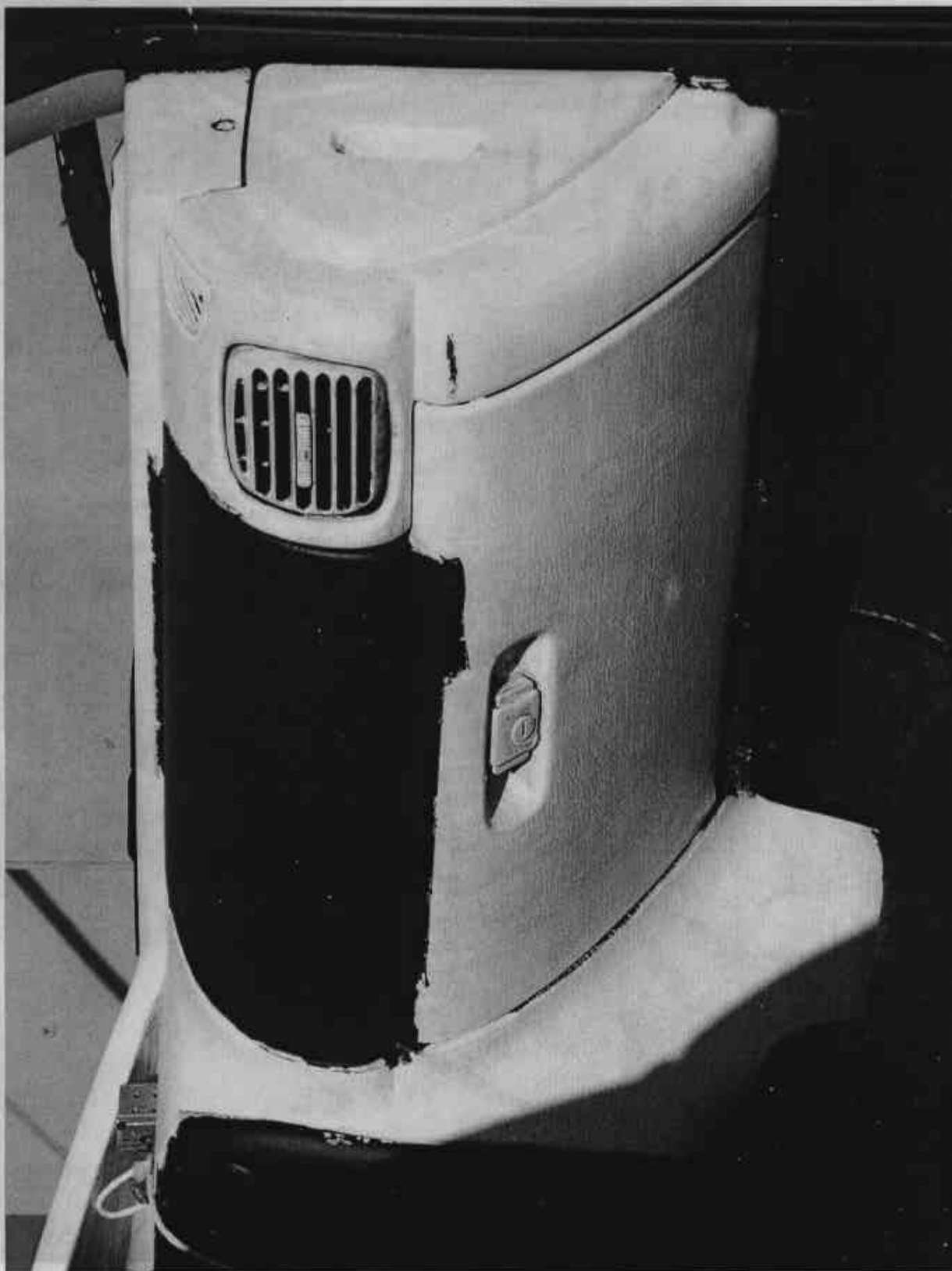


FIGURE A-53. PRE TEST PASSENGER SIDE KNEE BOLSTER



FIGURE A-54. POST TEST PASSENGER SIDE KNEE BOLSTER AND DUMMY CONTACT



FIGURE A-55. POST TEST PASSENGER HEAD

A-55

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FIGURE A-56. POST TEST PASSENGER DUMMY CONTACT

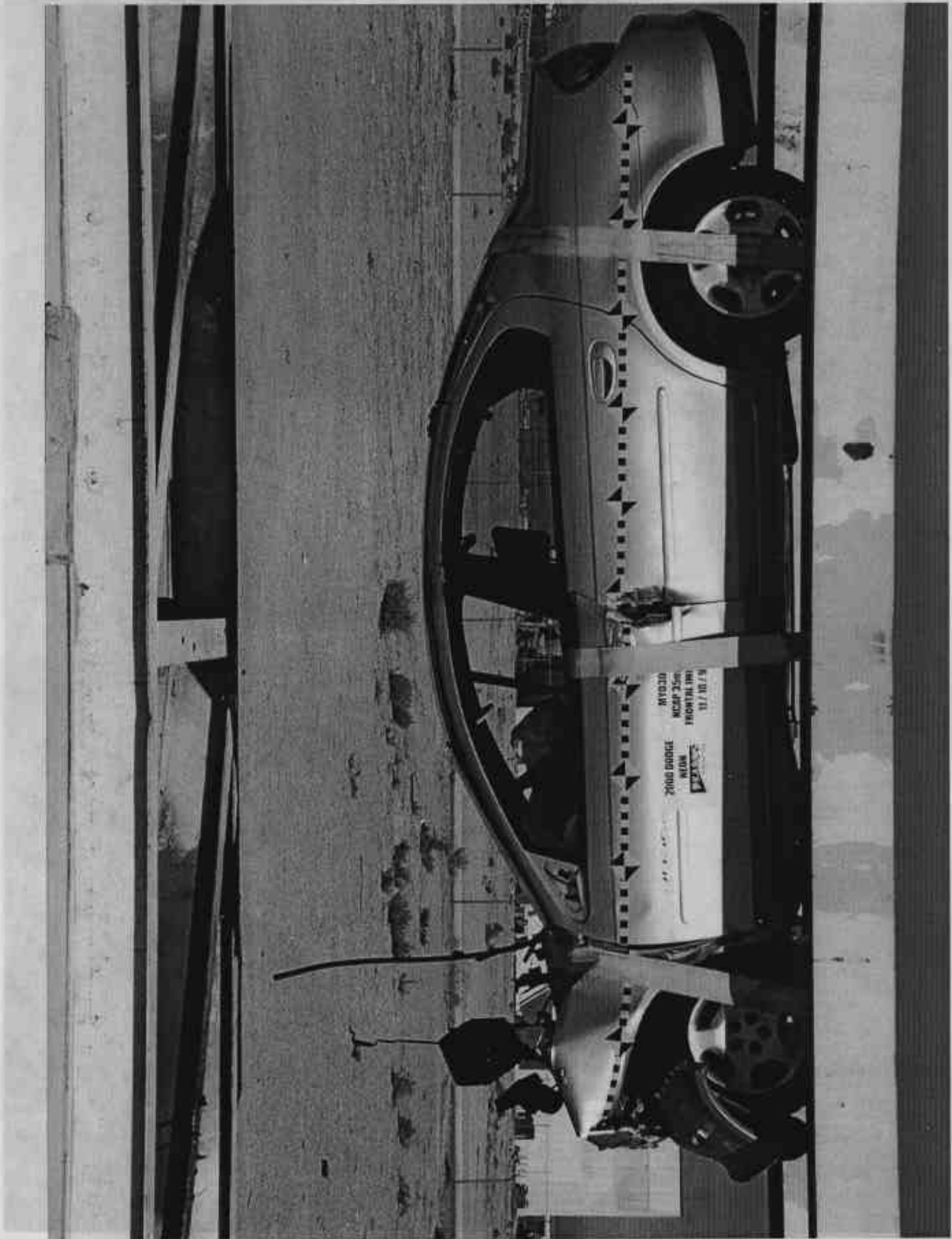


FIGURE A-57. VEHICLE ON ROLLOVER



FIGURE A-58. VEHICLE DURING IMPACT

KAR20001-01

A-58

KAR20001-01

APPENDIX B
DUMMY AND VEHICLE RESPONSE DATA TRACES

LIST OF DATA PLOTS

Data Plot	Page
B-1 Driver Head Primary X	B-1
B-2 Driver Head Primary X Velocity	B-2
B-3 Driver Head Primary X Displacement	B-3
B-4 Driver Head Primary Y	B-4
B-5 Driver Head Primary Z	B-5
B-6 Driver Head Resultant Primary	B-6
B-7 Driver Head Redundant X	B-7
B-8 Driver Head Redundant X Velocity	B-8
B-9 Driver Head Redundant X Displacement	B-9
B-10 Driver Head Redundant Y	B-10
B-11 Driver Head Redundant Z	B-11
B-12 Driver Head Resultant Redundant	B-12
B-13 Driver Neck Force X	B-13
B-14 Driver Neck Force Y	B-14
B-15 Driver Neck Force Z	B-15
B-16 Driver Neck Force Resultant	B-16
B-17 Driver Neck Moment X	B-17
B-18 Driver Neck Moment Y	B-18
B-19 Driver Neck Moment Z	B-19
B-20 Driver Neck Moment Resultant	B-20
B-21 Driver Chest Primary X	B-21
B-22 Driver Chest Primary X Velocity	B-22
B-23 Driver Chest Primary X Displacement	B-23
B-24 Driver Chest Primary Y	B-24
B-25 Driver Chest Primary Z	B-25
B-26 Driver Chest Primary Resultant	B-26
B-27 Driver Chest Redundant X	B-27
B-28 Driver Chest Redundant X Velocity	B-28
B-29 Driver Chest Redundant X Displacement	B-29
B-30 Driver Chest Redundant Y	B-30
B-31 Driver Chest Redundant Z	B-31
B-32 Driver Chest Redundant Resultant	B-32
B-33 Driver Chest Displacement X	B-33

LIST OF DATA PLOTS...(Continued)

Data Plot	Page
B-34 Driver Pelvis X	B-34
B-35 Driver Pelvis X Velocity	B-35
B-36 Driver Pelvis X Displacement	B-36
B-37 Driver Pelvis Y	B-37
B-38 Driver Pelvis Z	B-38
B-39 Driver Pelvis Resultant	B-39
B-40 Driver Left Femur Force	B-40
B-41 Driver Right Femur Force	B-41
B-42 Driver Left Upper Tibia Moment X	B-42
B-43 Driver Left Upper Tibia Moment Y	B-43
B-44 Driver Right Upper Tibia Moment X	B-44
B-45 Driver Right Upper Tibia Moment Y	B-45
B-46 Driver Left Lower Tibia Moment X	B-46
B-47 Driver Left Lower Tibia Moment Y	B-47
B-48 Driver Left Lower Tibia Force Z	B-48
B-49 Driver Right Lower Tibia Moment X	B-49
B-50 Driver Right Lower Tibia Moment Y	B-50
B-51 Driver Right Lower Tibia Force Z	B-51
B-52 Driver Left Foot Aft X	B-52
B-53 Driver Left Foot Aft Z	B-53
B-54 Driver Left Foot Fore Z	B-54
B-55 Driver Right Foot Aft X	B-55
B-56 Driver Right Foot Aft Z	B-56
B-57 Driver Right Foot Fore Z	B-57
B-58 Driver Lap Belt Force	B-58
B-59 Driver Shoulder Belt Force	B-59
B-60 Driver Shoulder Belt Pullout	B-60
B-61 Driver Shoulder Belt Elongation	B-61

LIST OF DATA PLOTS...(Continued)

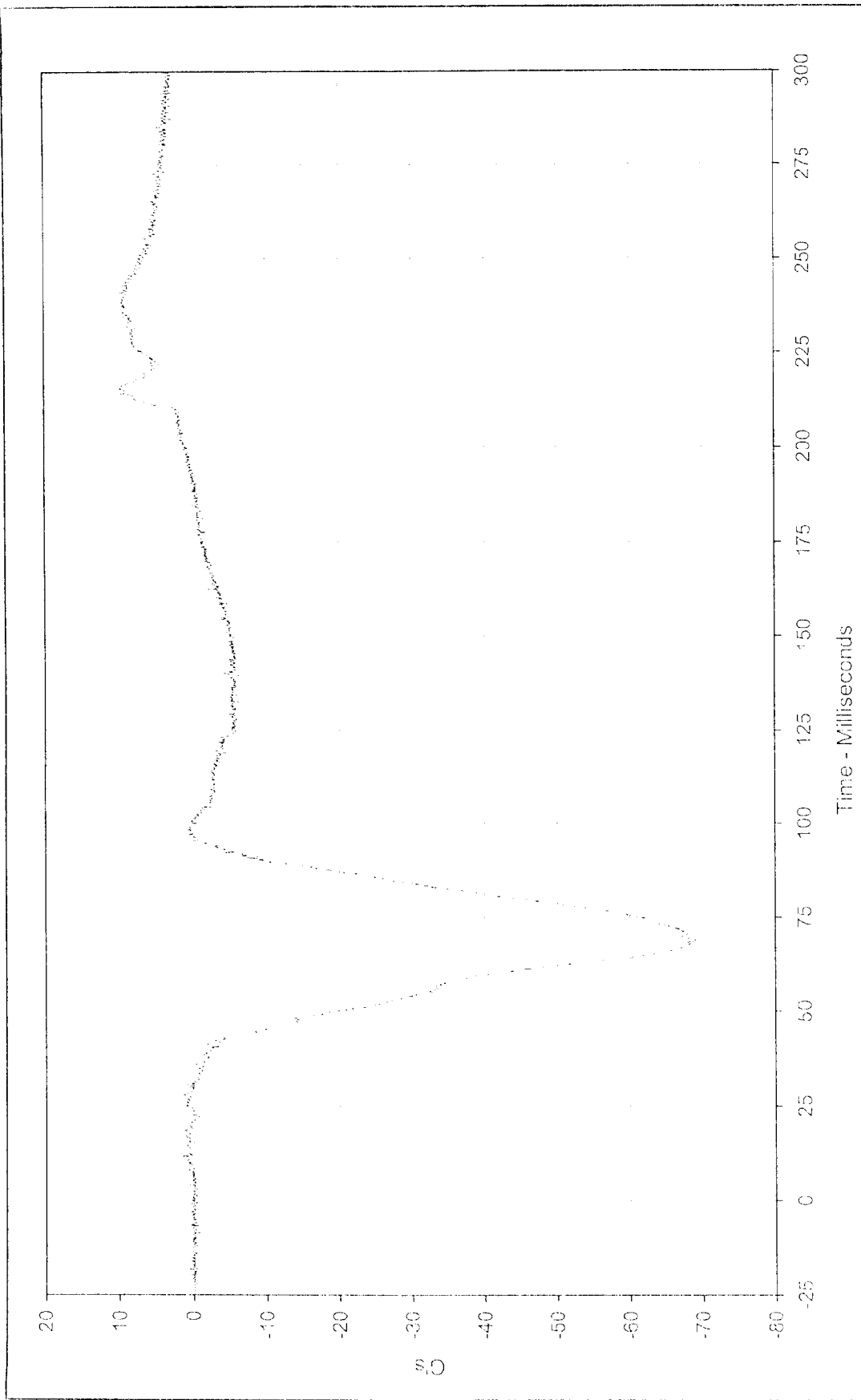
Data Plot	Page
B-62 Passenger Head Primary X	B-62
B-63 Passenger Head Primary X Velocity	B-63
B-64 Passenger Head Primary X Displacement	B-64
B-65 Passenger Head Primary Y	B-65
B-66 Passenger Head Primary Z	B-66
B-67 Passenger Head Resultant Primary	B-67
B-68 Passenger Head Redundant X	B-68
B-69 Passenger Head Redundant X Velocity	B-69
B-70 Passenger Head Redundant X Displacement	B-70
B-71 Passenger Head Redundant Y	B-71
B-72 Passenger Head Redundant Z	B-72
B-73 Passenger Head Resultant Redundant	B-73
B-74 Passenger Neck Force X	B-74
B-75 Passenger Neck Force Y	B-75
B-76 Passenger Neck Force Z	B-76
B-77 Passenger Neck Force Resultant	B-77
B-78 Passenger Neck Moment X	B-78
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
B-83 Passenger Chest Primary X Velocity	B-83
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

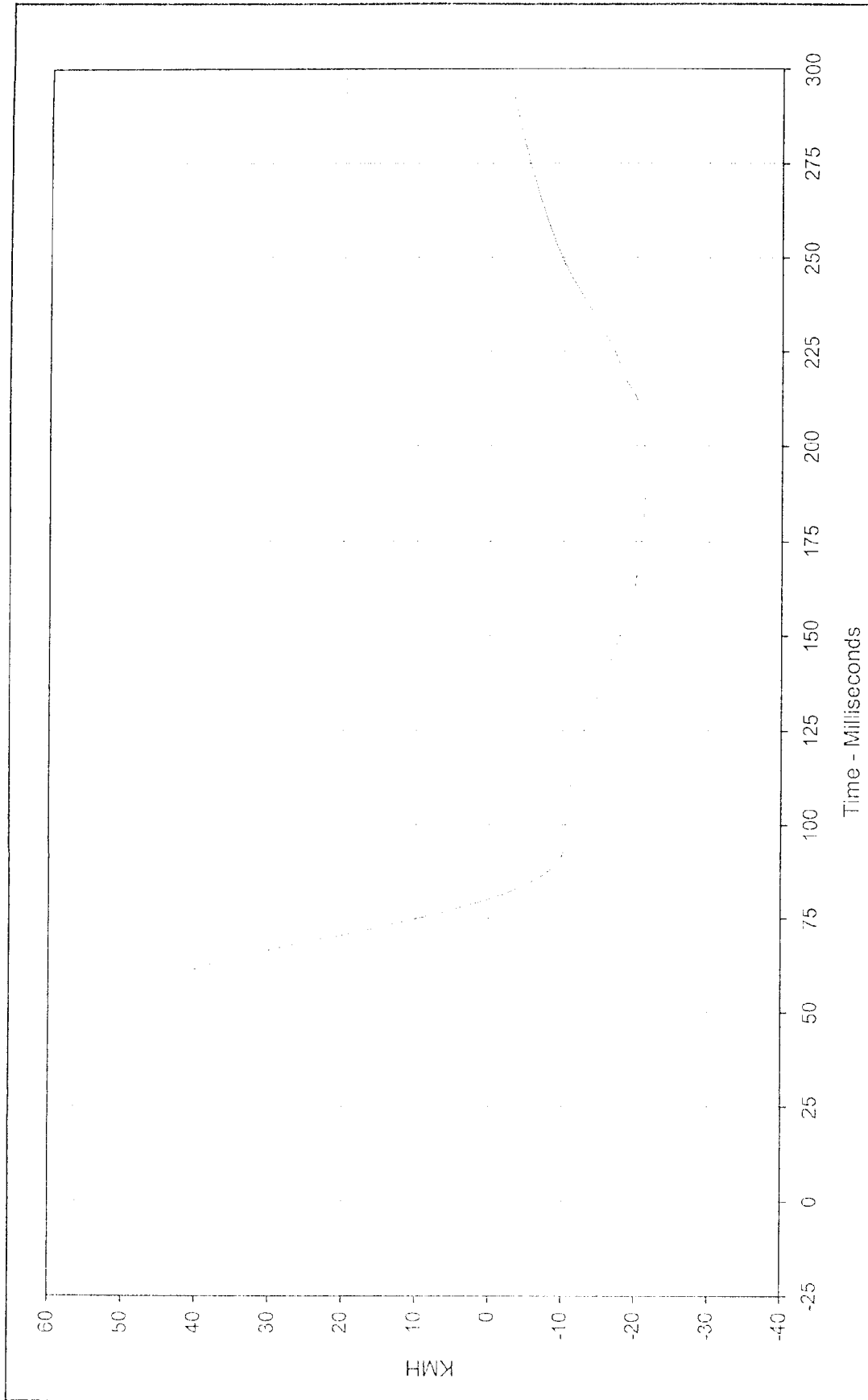
LIST OF DATA PLOTS...(Continued)

Data Plot	Page
B-95 Passenger Pelvis X	B-95
B-96 Passenger Pelvis X Velocity	B-96
B-97 Passenger Pelvis X Displacement	B-97
B-98 Passenger Pelvis Y	B-98
B-99 Passenger Pelvis Z	B-99
B-100 Passenger Pelvis Resultant	B-100
B-101 Passenger Left Femur Force	B-101
B-102 Passenger Right Femur Force	B-102
B-103 Passenger Left Upper Tibia Moment X	B-103
B-104 Passenger Left Upper Tibia Moment Y	B-104
B-105 Passenger Right Upper Tibia Moment X	B-105
B-106 Passenger Right Upper Tibia Moment Y	B-106
B-107 Passenger Left Lower Tibia Moment X	B-107
B-108 Passenger Left Lower Tibia Moment Y	B-108
B-109 Passenger Left Lower Tibia Force Z	B-109
B-110 Passenger Right Lower Tibia Moment X	B-110
B-111 Passenger Right Lower Tibia Moment Y	B-111
B-112 Passenger Right Lower Tibia Force Z	B-112
B-113 Passenger Left Foot Aft X	B-113
B-114 Passenger Left Foot Aft Z	B-114
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

LIST OF DATA PLOTS...(Continued)

Data Plot	Page
B-123 Vehicle Left Rear Primary	B-123
B-124 Vehicle Left Rear Primary Velocity	B-124
B-125 Vehicle Left Rear Primary Displacement	B-125
B-126 Vehicle Right Rear Primary	B-126
B-127 Vehicle Right Rear Primary Velocity	B-127
B-128 Vehicle Right Rear Primary Displacement	B-128
B-129 Vehicle Engine Top	B-129
B-130 Vehicle Engine Top Velocity	B-130
B-131 Vehicle Engine Top Displacement	B-131
B-132 Vehicle Engine Bottom	B-132
B-133 Vehicle Engine Bottom Velocity	B-133
B-134 Vehicle Engine Bottom Displacement	B-134
B-135 Vehicle Left Brake Caliper	B-135
B-136 Vehicle Left Brake Caliper Velocity	B-136
B-137 Vehicle Left Brake Caliper Displacement	B-137
B-138 Vehicle Right Brake Caliper	B-138
B-139 Vehicle Right Brake Caliper Velocity	B-139
B-140 Vehicle Right Brake Caliper Displacement	B-140
B-141 Vehicle Instrument Panel	B-141
B-142 Vehicle Instrument Panel Velocity	B-142
B-143 Vehicle Instrument Panel Displacement	B-143
B-144 Vehicle Left Rear Redundant	B-144
B-145 Vehicle Left Rear Redundant Velocity	B-145
B-146 Vehicle Left Rear Redundant Displacement	B-146





Curve Description: Driver Head Primary X Velocity

Maximum Value: 56.6 at 30.8 Milliseconds

Minimum Value: -21.2 at 192.8 Milliseconds

SAE Filter Class: 180

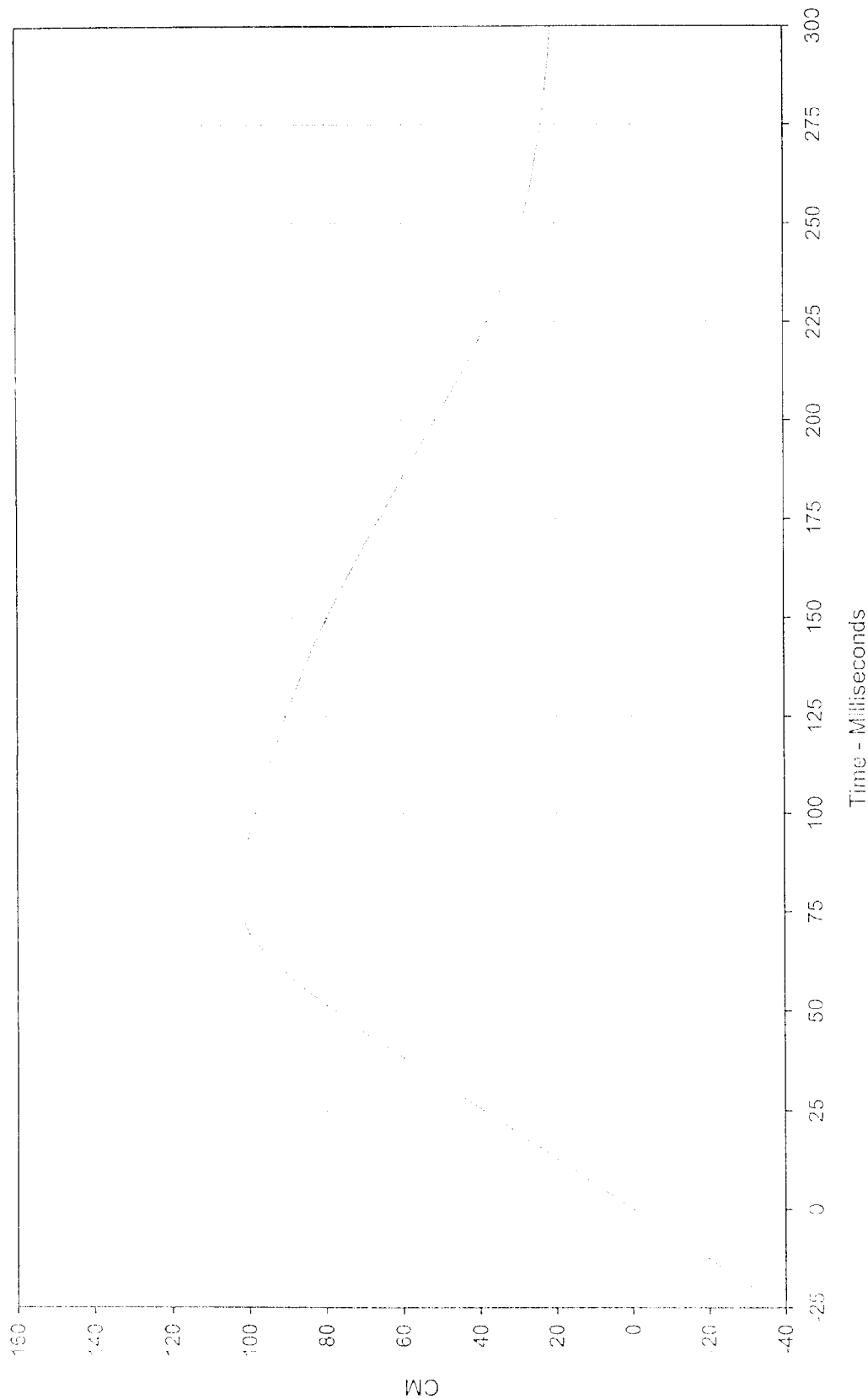
Date of Test: 11/10/99

Curve Number: IN1-001

Testing Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: Driver Head Primary X Displ. Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

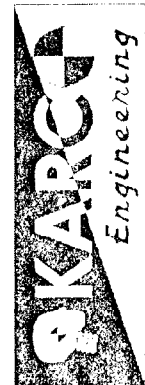
Maximum Value: 102.8 at 80.0 Milliseconds Test Vehicle: 2000 Dodge Neon 4 Door Sedan

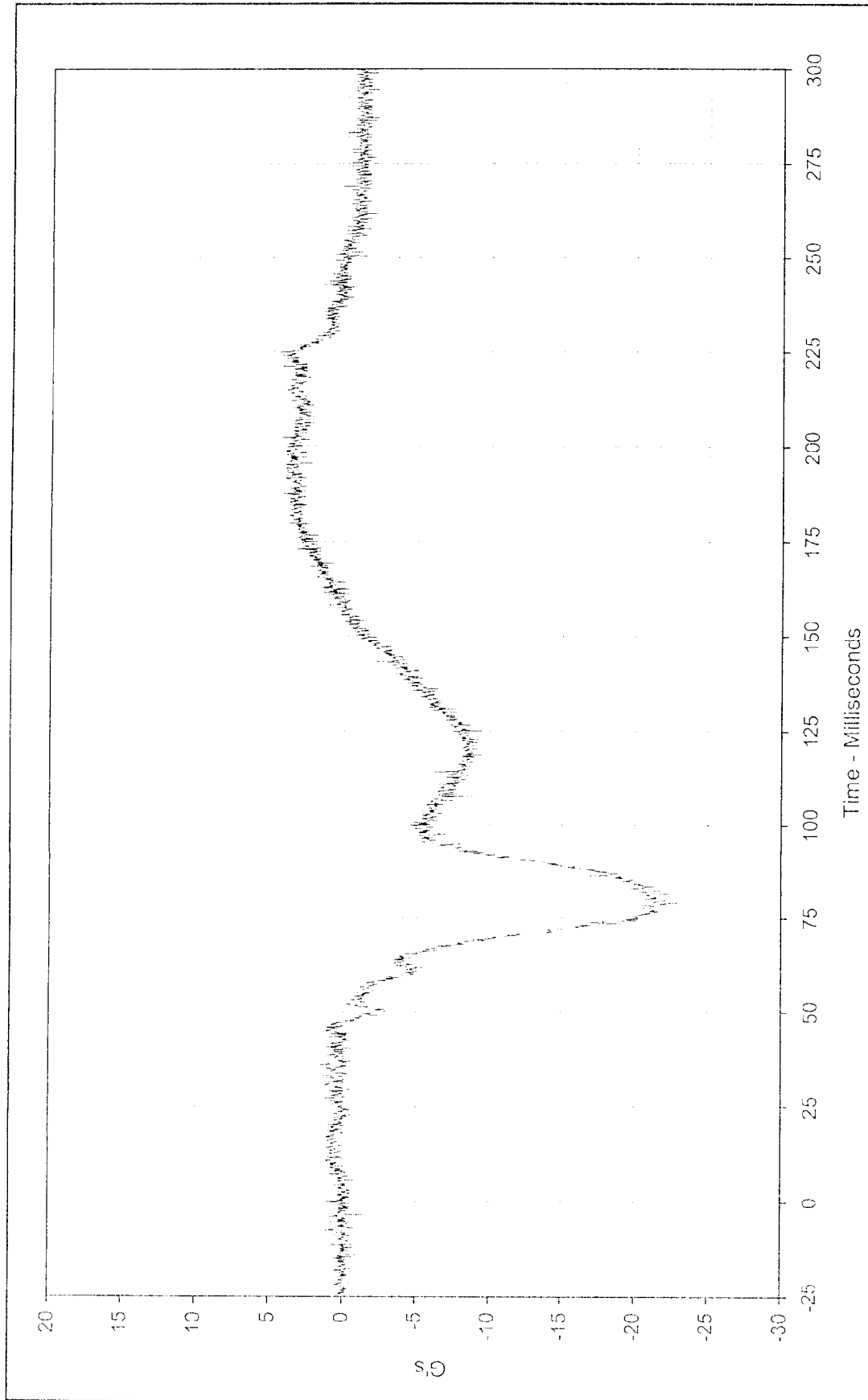
Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 11/10/99

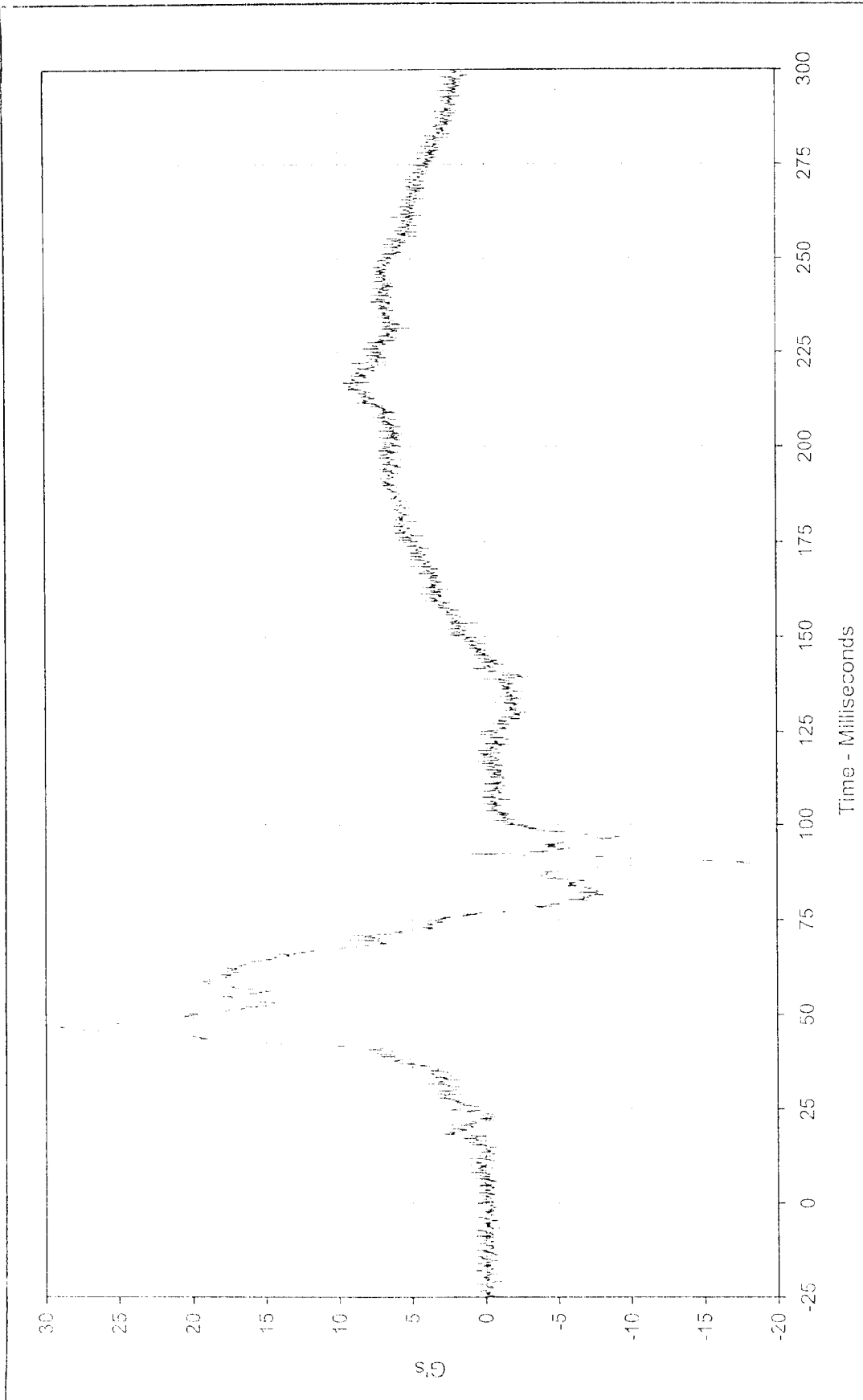
Curve Number: IN2-001



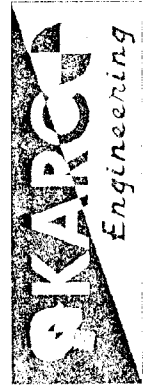


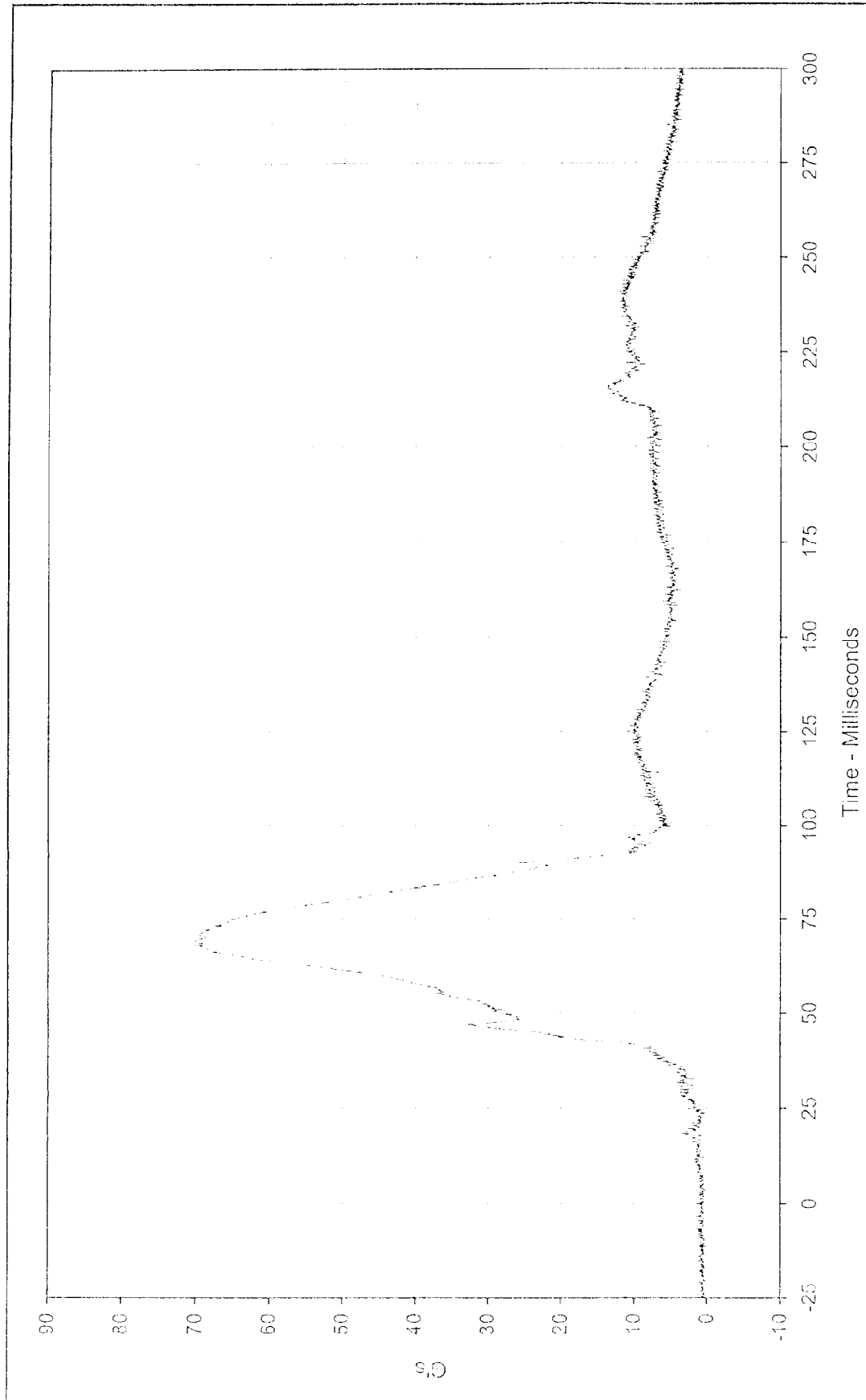
Curve Description:	Driver Head Primary Y	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	4.9	at	202.4	Milliseconds
Minimum Value:	-23.0	at	78.8	Milliseconds
SAE Filter Class:	1000	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Date of Test:	11/10/99			
Curve Number:	FIL-002			





Curve Description:		Driver Head Primary Z		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	29.8	at	46.9	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-19.1	at	99.7			
SAE Filter Class:	1000					
Date of Test:	11/10/99					
Curve Number:	FIL-003					
						

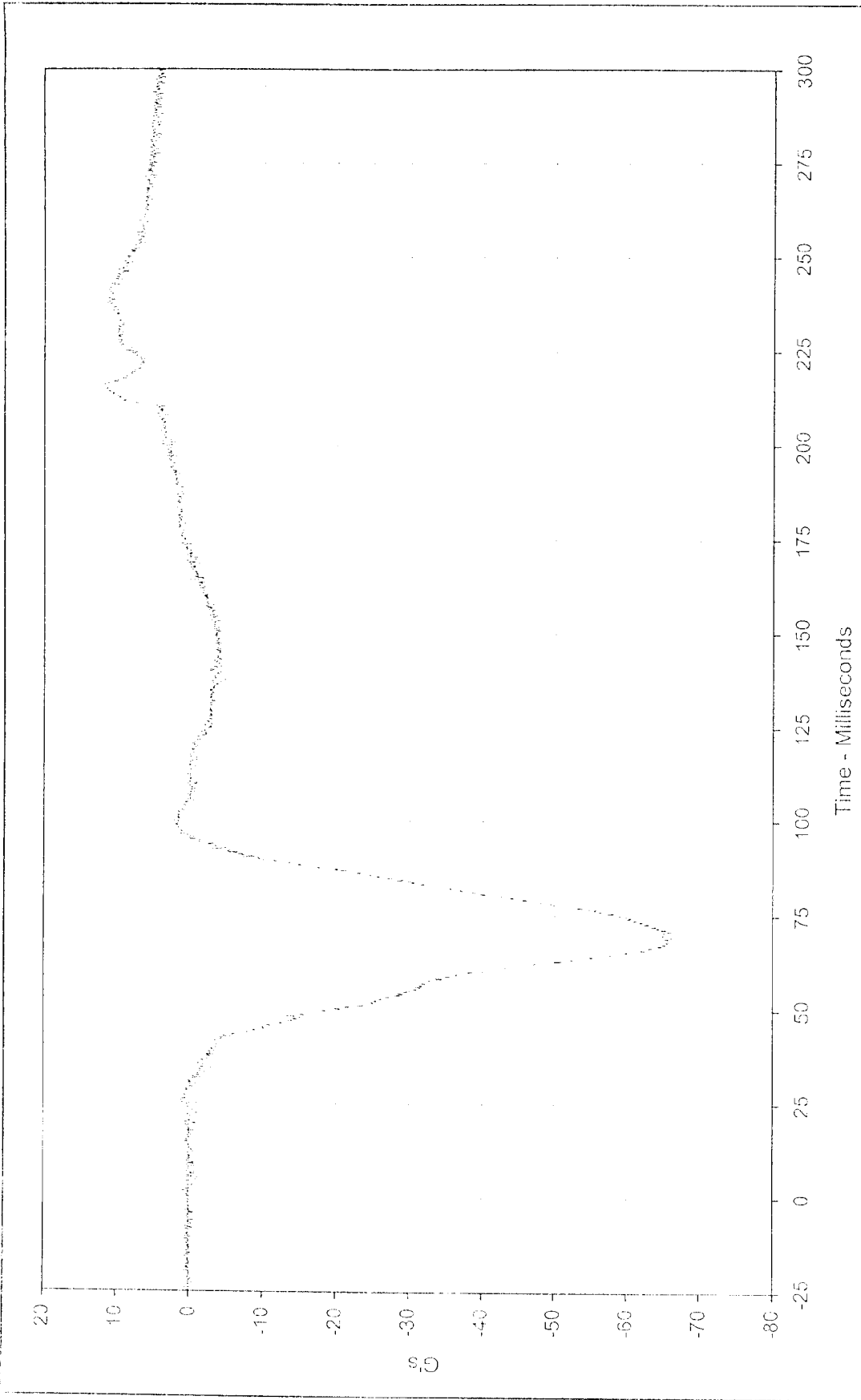




Curve Description:	Driver Head Resultant Primary		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	70.1	at 67.7	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	0.1	at 3.5			
SAE Filter Class:	1000				
Date of Test:	11/10/99				
Curve Number:	RES-001				

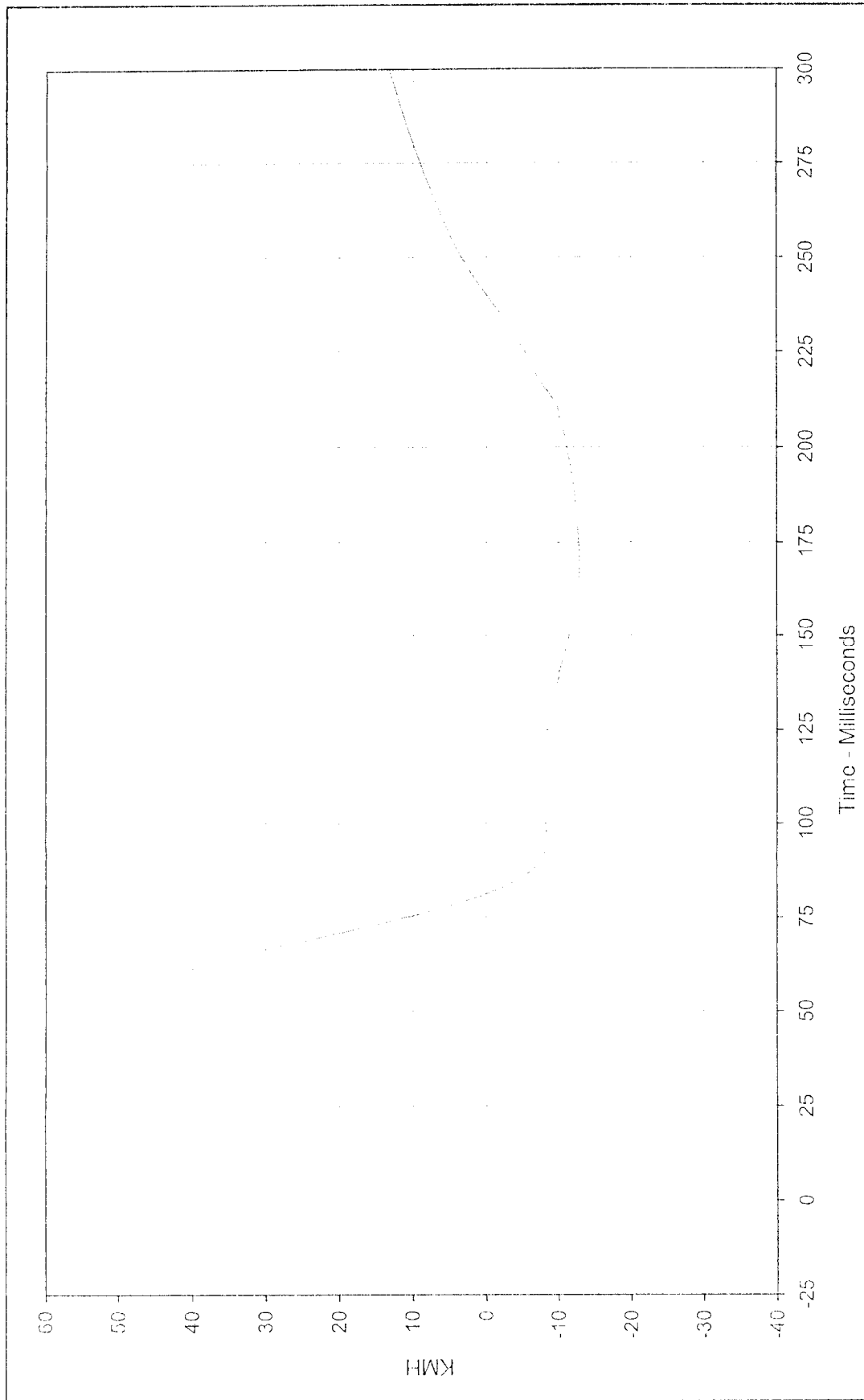






Curve Description:		Driver Head Redundant X		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	12.3	at	214.8	Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan
Minimum Value:	-66.5	at	69.1	Milliseconds		
SAE Filter Class:	1000					
Date of Test:	11/10/99					
Curve Number:	FL-004					





Curve Description: Driver Head Redundant X Velocity Testing Program 2000 NHTSA 35 mph NCAP No.: MY0304

Maximum Value: 56.4 at 3.1 Milliseconds Test Vehicle: 2000 Dodge Neon 4 Door Sedan

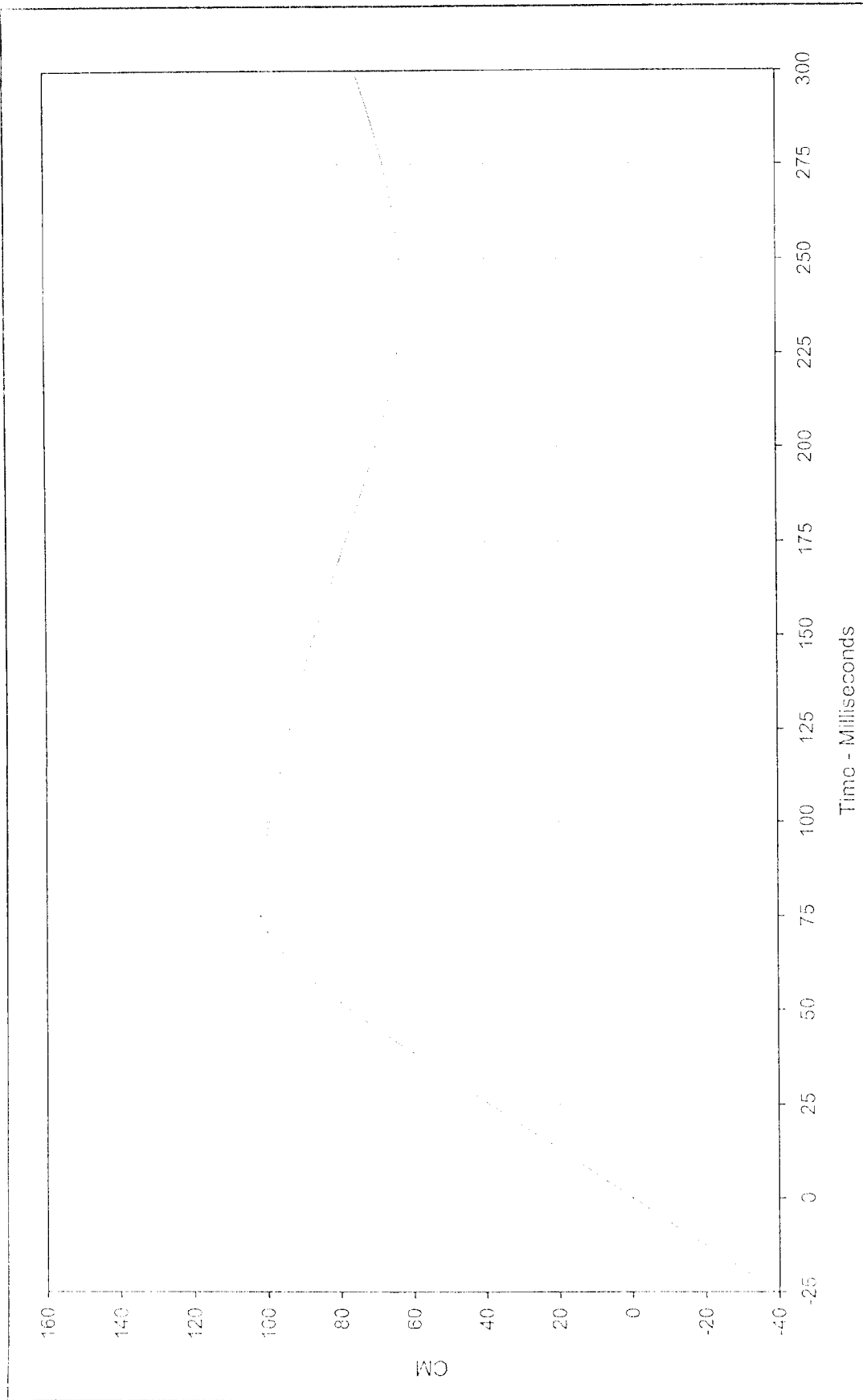
Minimum Value: -12.8 at 170.4 Milliseconds

SAE Filter Class: 180

Date of Test: 11/10/99

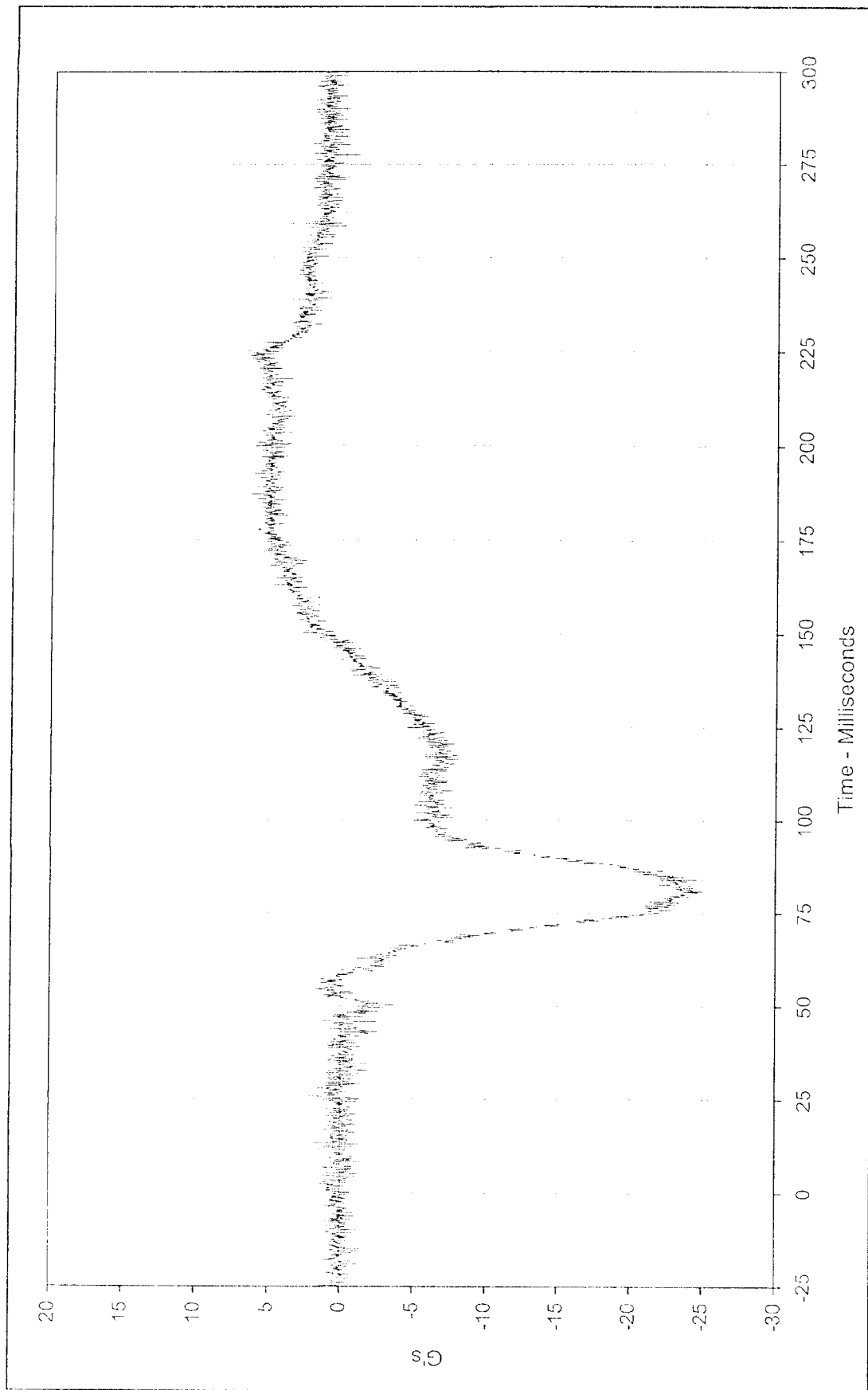
Curve Number: IN1-004





Curve Description:		Driver Head Redundant X Displ.		Test Program:		2000 NHTSA 35 mph NCAP		No.: MY0304	
Maximum Value:		102.8	at	81.1	Milliseconds	Test Vehicle:		2000 Dodge Neon 4 Door Sedan	
Minimum Value:		0.0	at	0.0	Milliseconds				
SAE Filter Class:		180							
Date of Test:		11/10/99							
Curve Number:		IN2-004							
									





Curve Description: Driver Head Redundant Y

Maximum Value: 6.9 at 225.0 Milliseconds

Minimum Value: -25.0 at 80.7 Milliseconds

SAE Filter Class: 1000

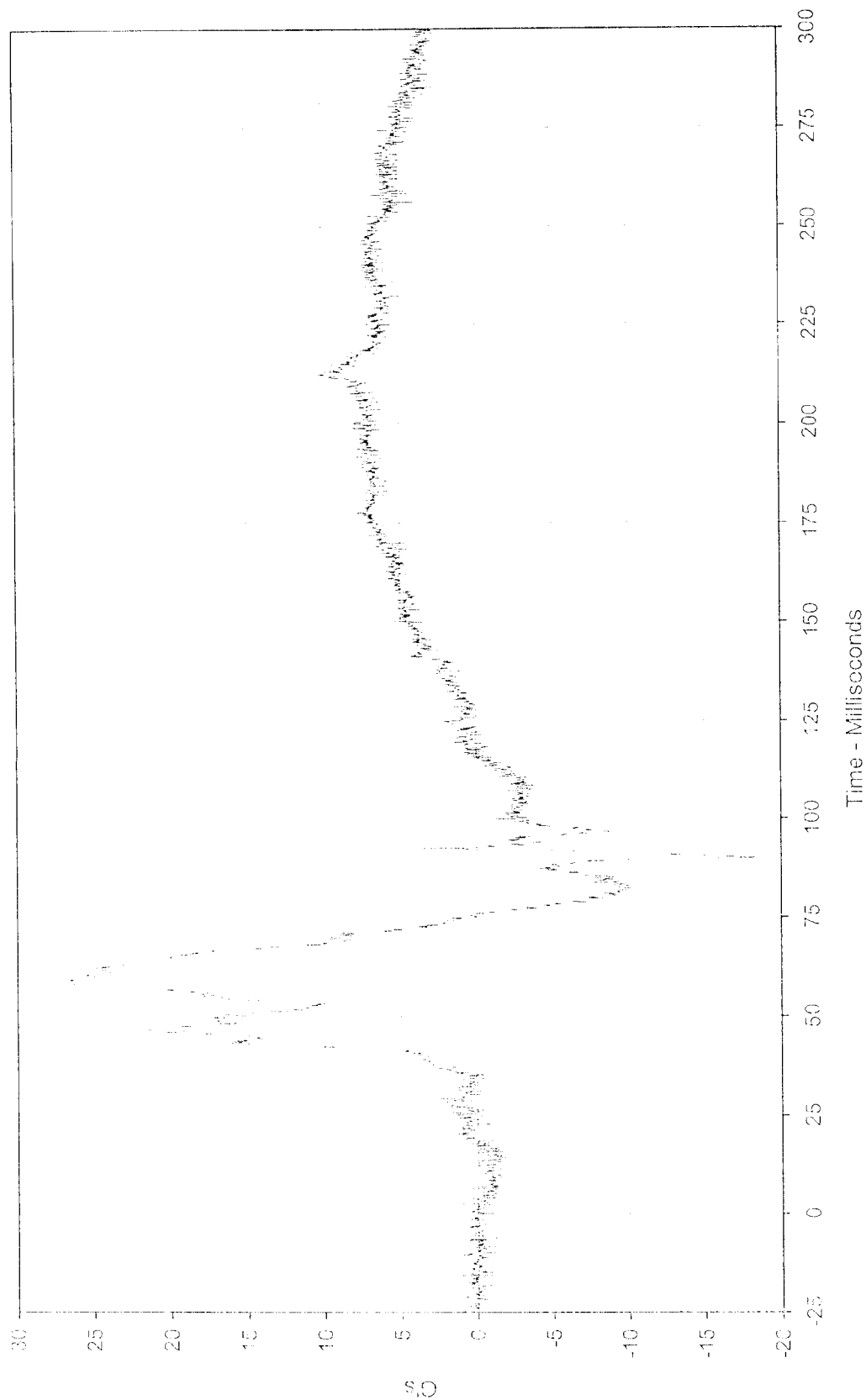
Date of Test: 11/10/99

Curve Number: FIL-005

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Program:

Test Vehicle: 2000 Dodge Neon 4 Door Sedan

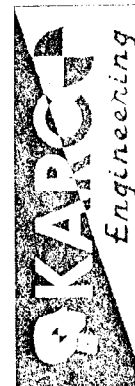
Driver Head Redundant Z
Maximum Value: 27.6 at 58.4 Milliseconds

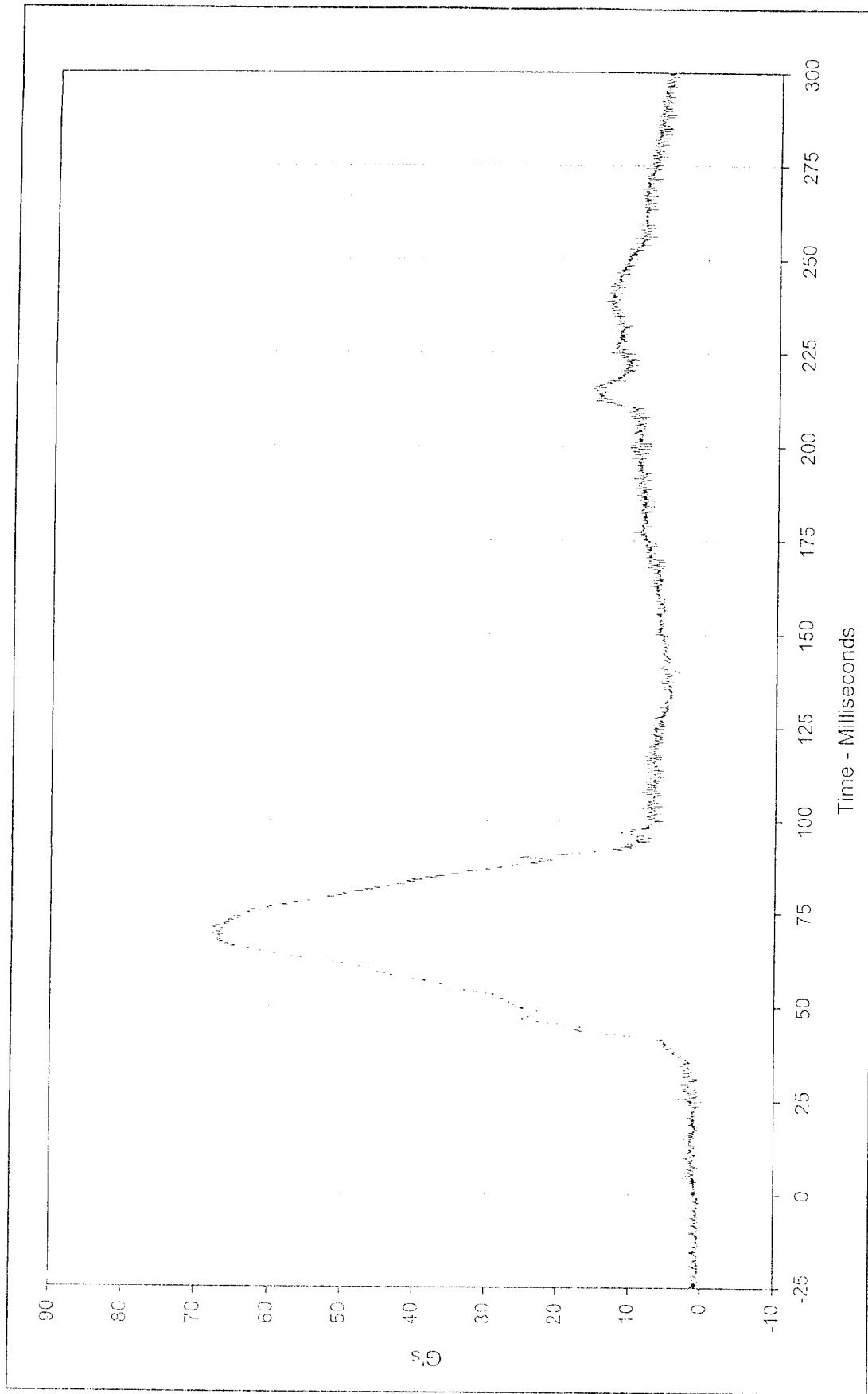
Minimum Value: -19.2 at 89.8 Milliseconds

SAE Filter Class: 1000

Date of Test: 11/10/09

Curve Number: HIC-008



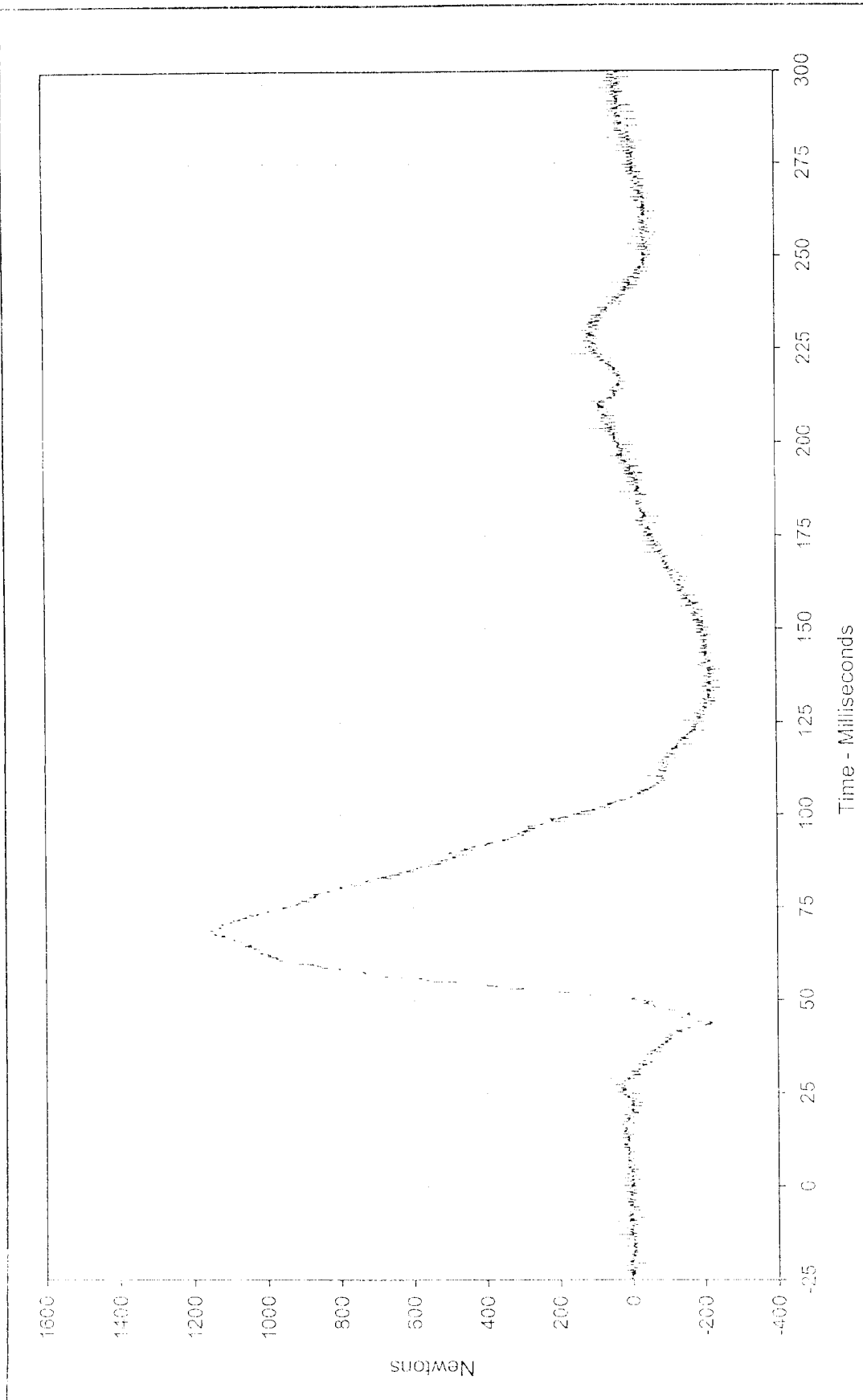


Curve Description: Driver Head Resultant Redundant
 Maximum Value: 68.3 at 70.9 Milliseconds
 Minimum Value: 0.2 at 27.4 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 11/10/99
 Curve Number: RES-004

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

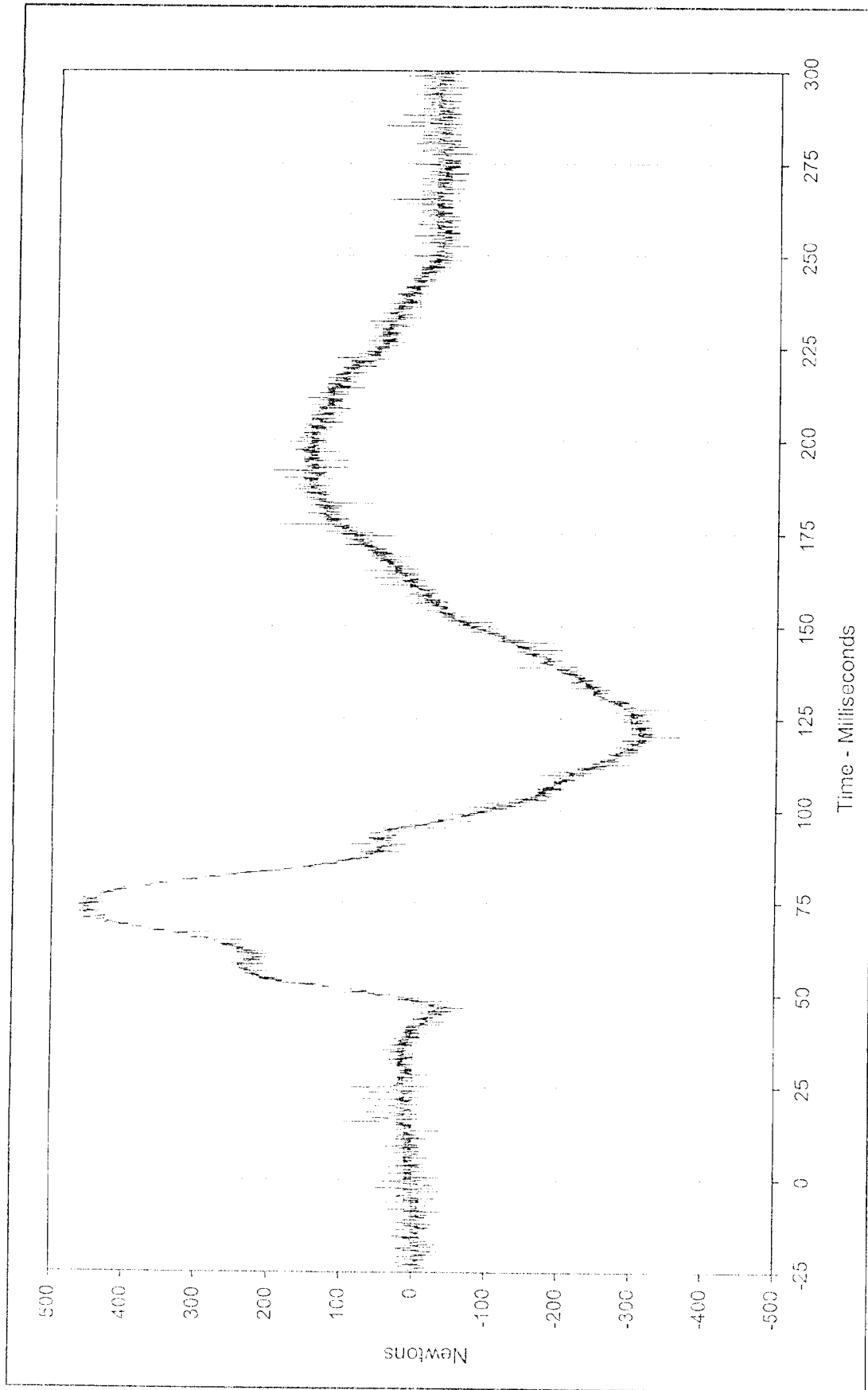
Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description:	Driver Neck Force X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	1166.5 at 67.3 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-274.5 at 136.0 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	11/10/99			
Curve Number:	FIL-007			

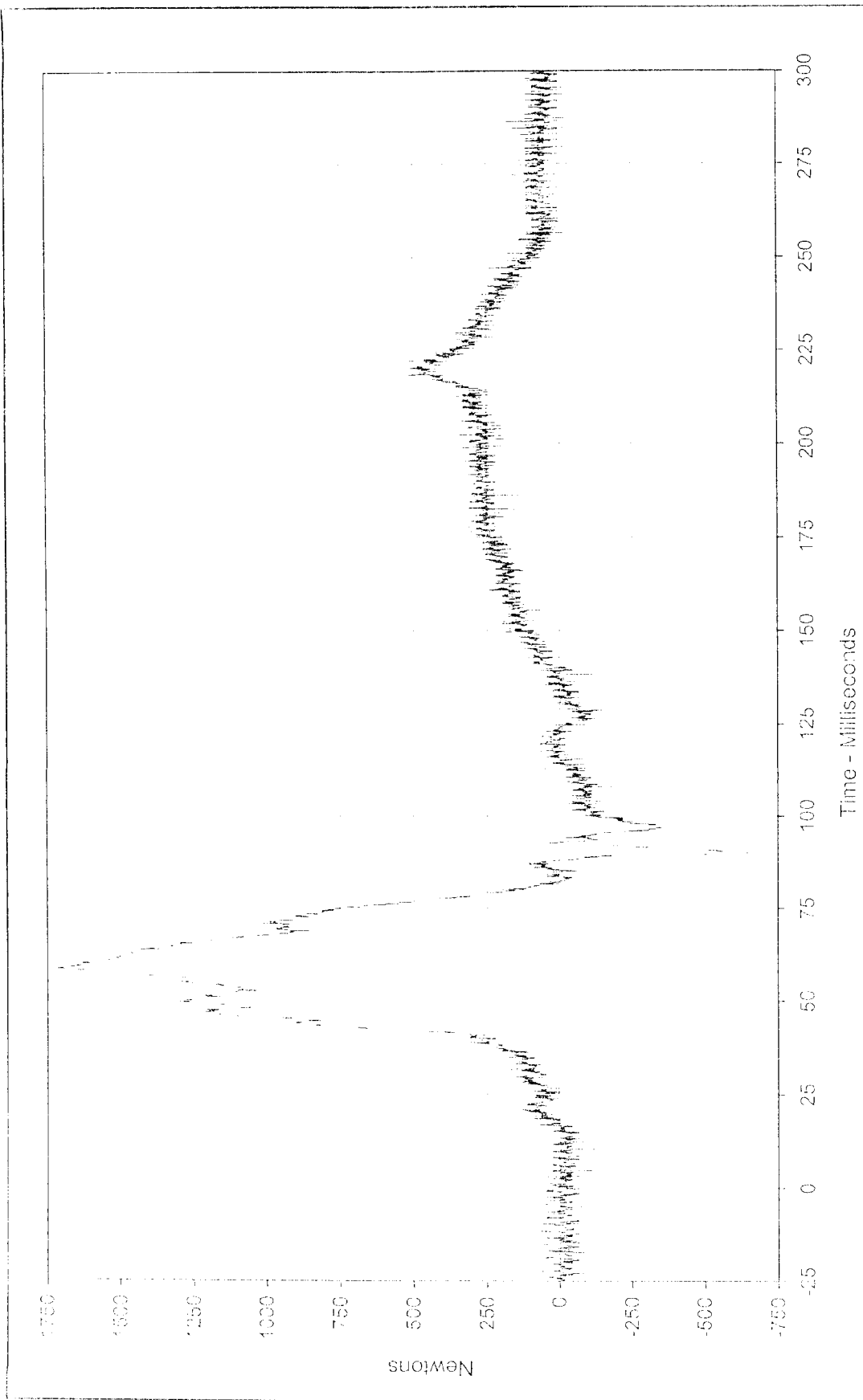




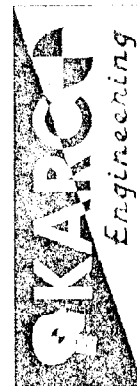
Curve Description:	Driver Neck Force Y		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	457.7	at 72.1	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-372.1	at 120.0			
SAE Filter Class:	1000				
Date of Test:	11/10/99				
Curve Number:	FIL-003				

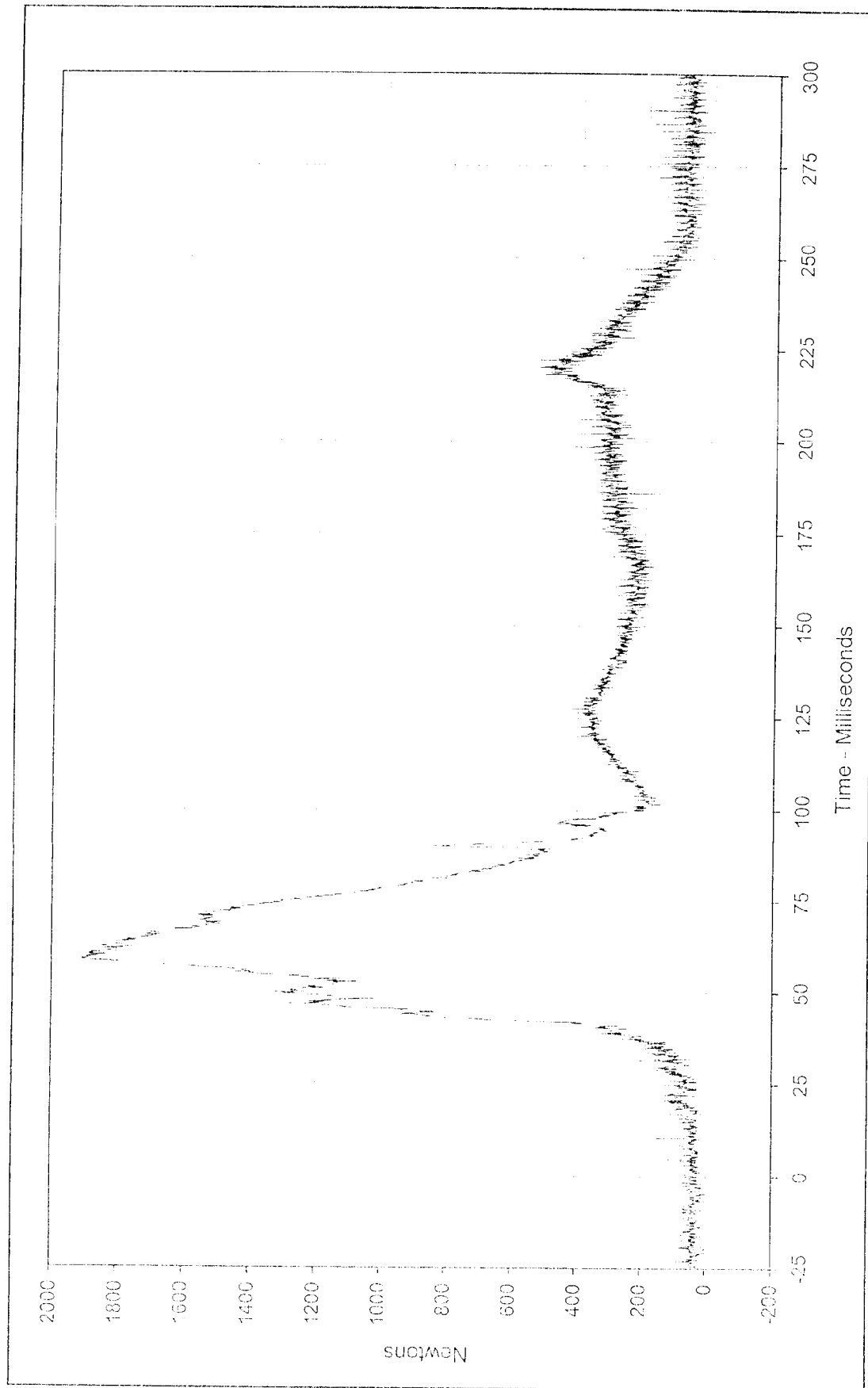
The logo for AKAPCT Engineering. It features the word "AKAPCT" in a large, bold, white sans-serif font, slanted upwards to the right. Below it, the word "Engineering" is written in a smaller, italicized, white sans-serif font. The text is set against a dark, textured background that resembles a close-up of a mechanical surface or a microscopic view.





Curve Description:	Driver Neck Force Z	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	1717.3 at 53.1 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-704.5 at 89.8 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	11/10/99			
Curve Number:	EB-009			

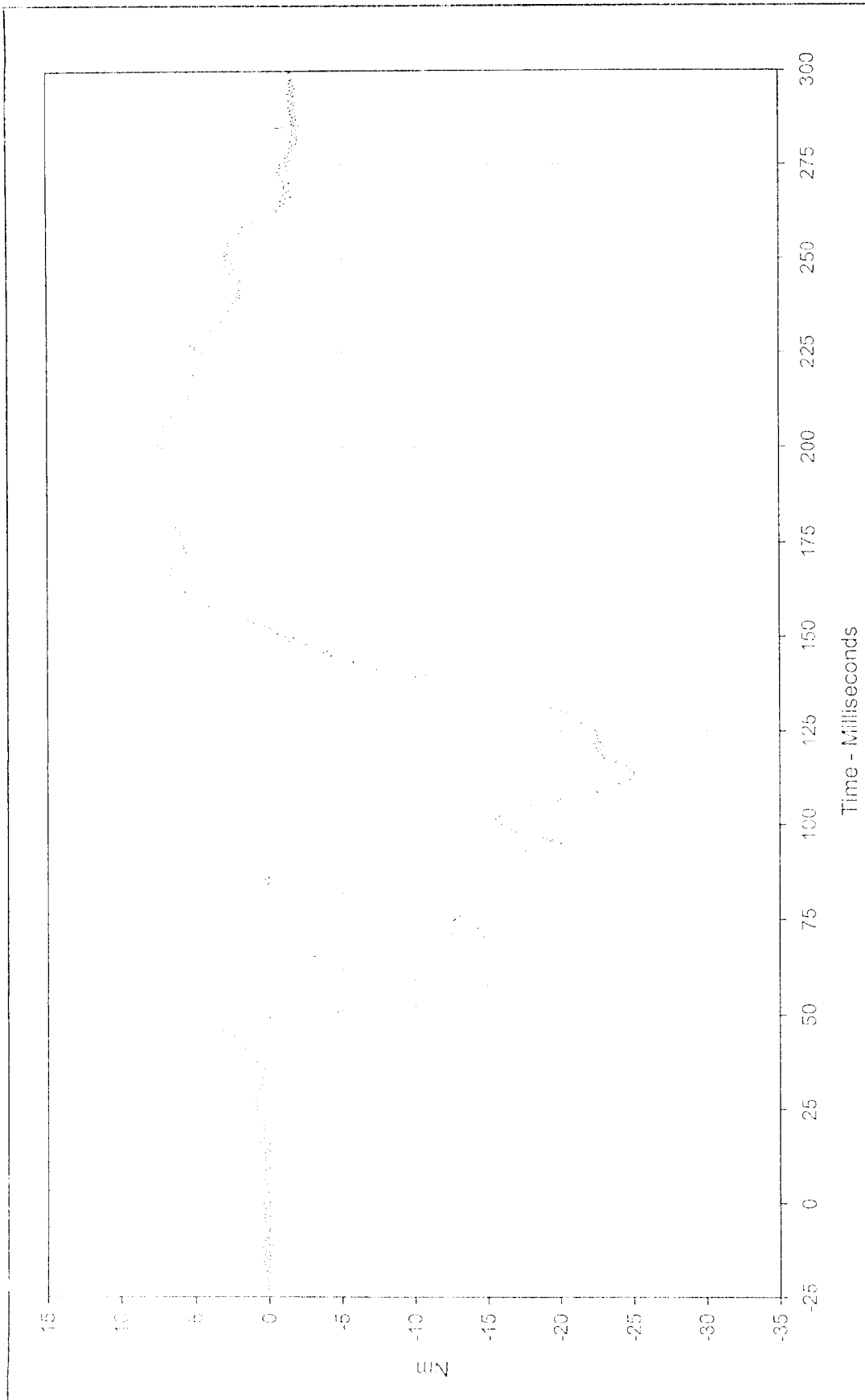




Curve Description:		Driver Neck Force Restulant	
Maximum Value:	1931.5	at	58.7 Milliseconds
Minimum Value:	5.0	at	6.6 Milliseconds
SAE Filter Class:	1000		
Date of Test:	11/10/99		
Curve Number:	RES-C07		

Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Test Vehicle:	2000 Dodge Neon 4 Door Sedan	





Curve Description: 2000 NHTSA 35 mph NCAP No.: MY0304

Driver Neck Moment X

Test Program: 2000 Dodge Neon 4 Door Sedan

Maximum Value: 2.3 at 194.0 Milliseconds

Test Vehicle:

Minimum Value: -25.1 at 113.7 Milliseconds

SAE Filter Class:

600

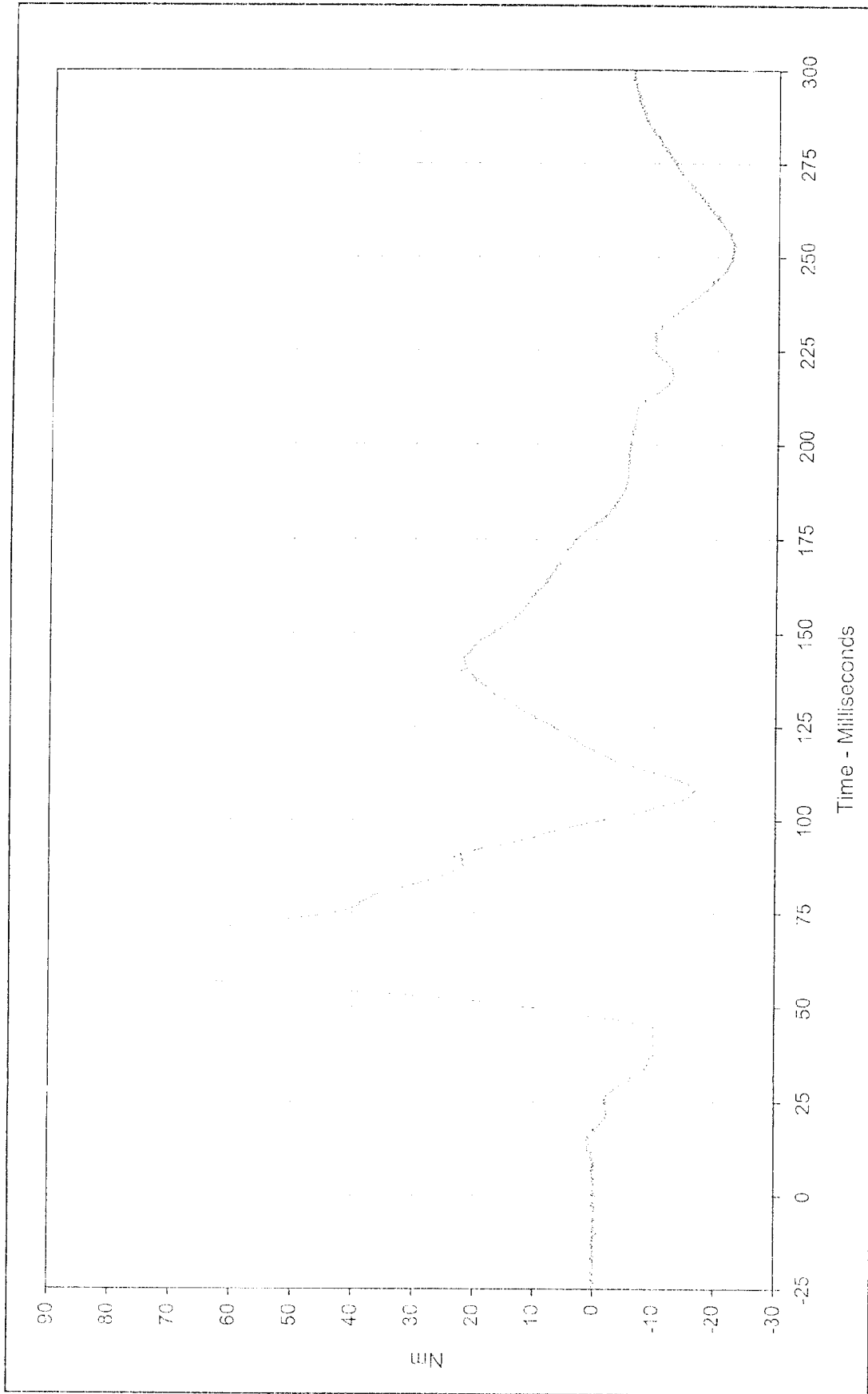
Date of Test:

11/10/99

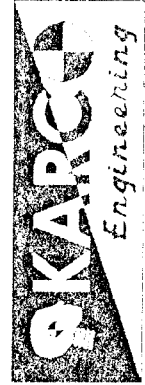
Curve Number:

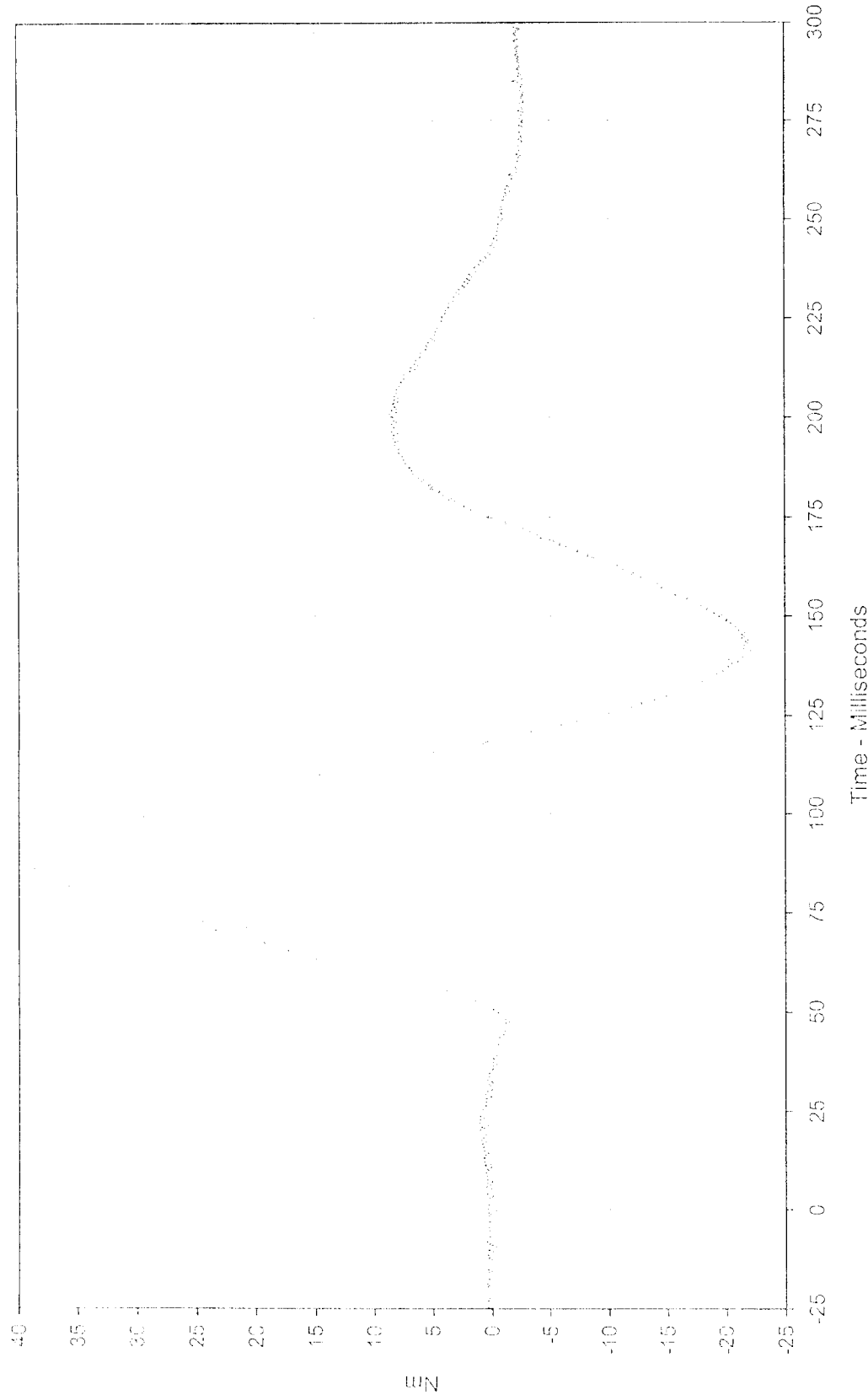
FL-010





Curve Description:	Driver Neck Moment Y	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	82.2	at	60.8	Milliseconds
Minimum Value:	-23.1	at	252.9	Milliseconds
SAE Filter Class:	600	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Date of Test:	11/10/99			
Curve Number:	FIL-011			





Curve Description: Driver Neck Moment Z

Maximum Value: 39.0 at 86.8 Milliseconds

Minimum Value: -22.2 at 141.2 Milliseconds

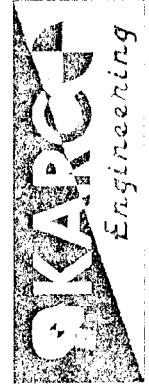
SAE Filter Class: 600

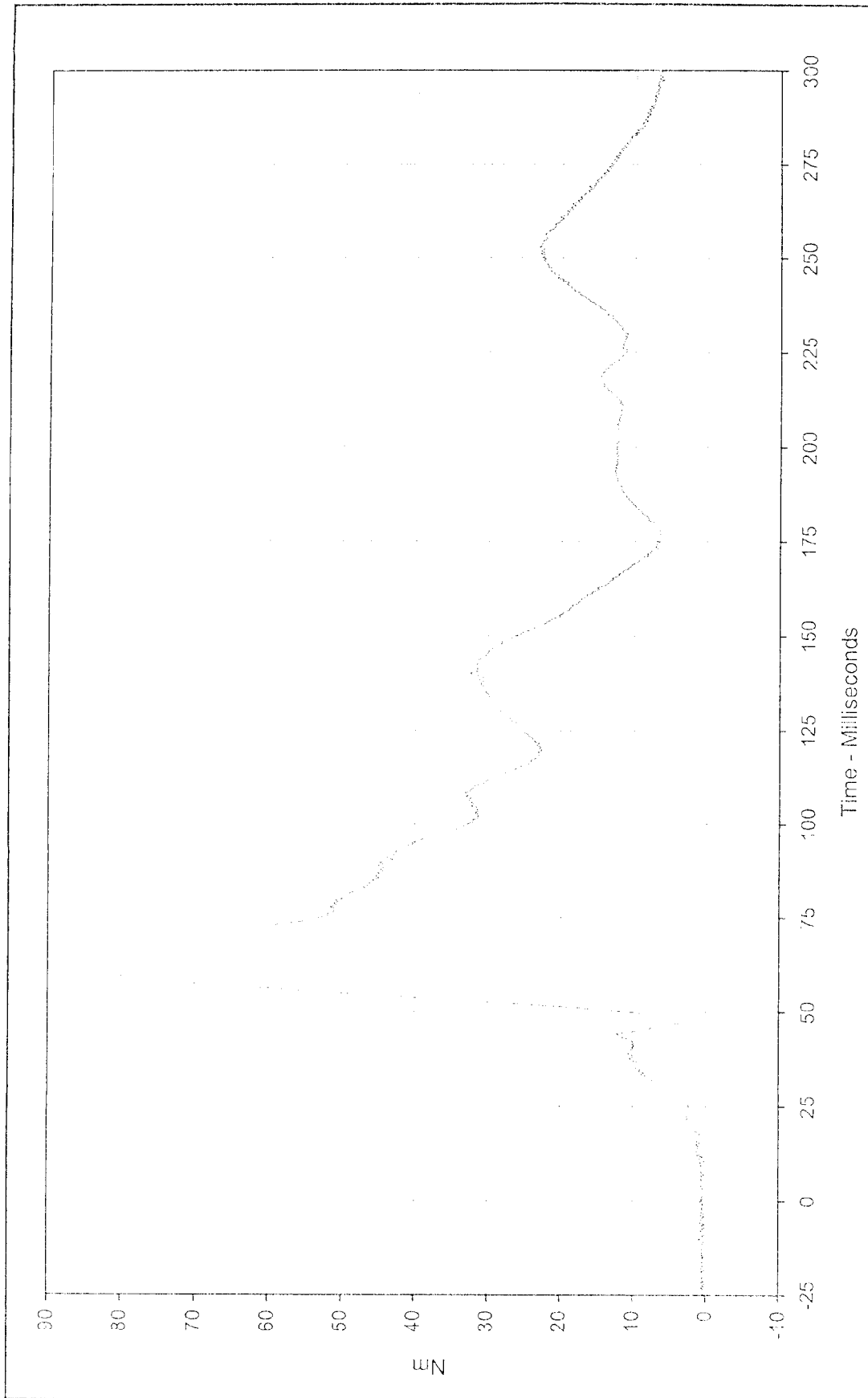
Date of Test: 11/10/99

Curve Number: FIL-012

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan

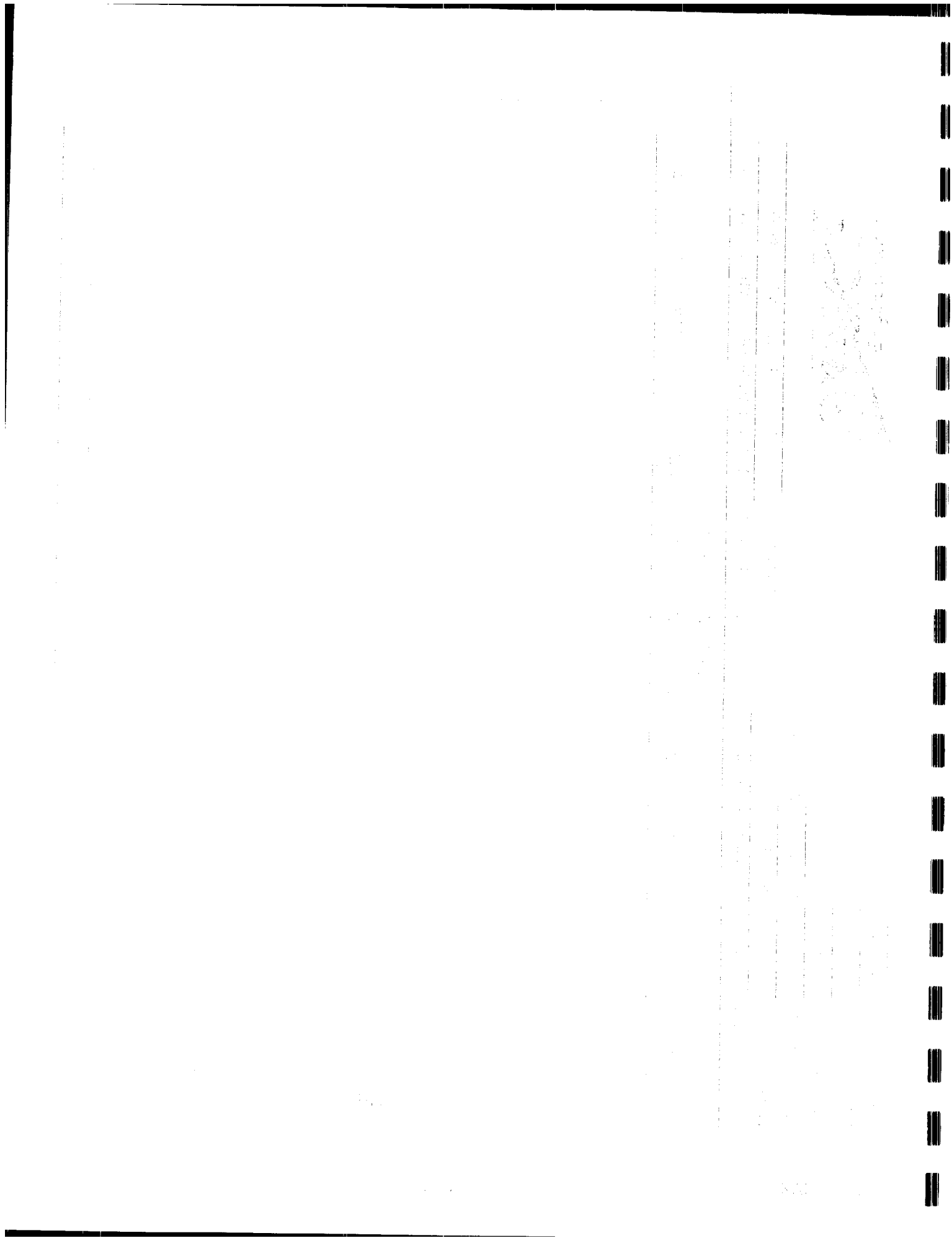


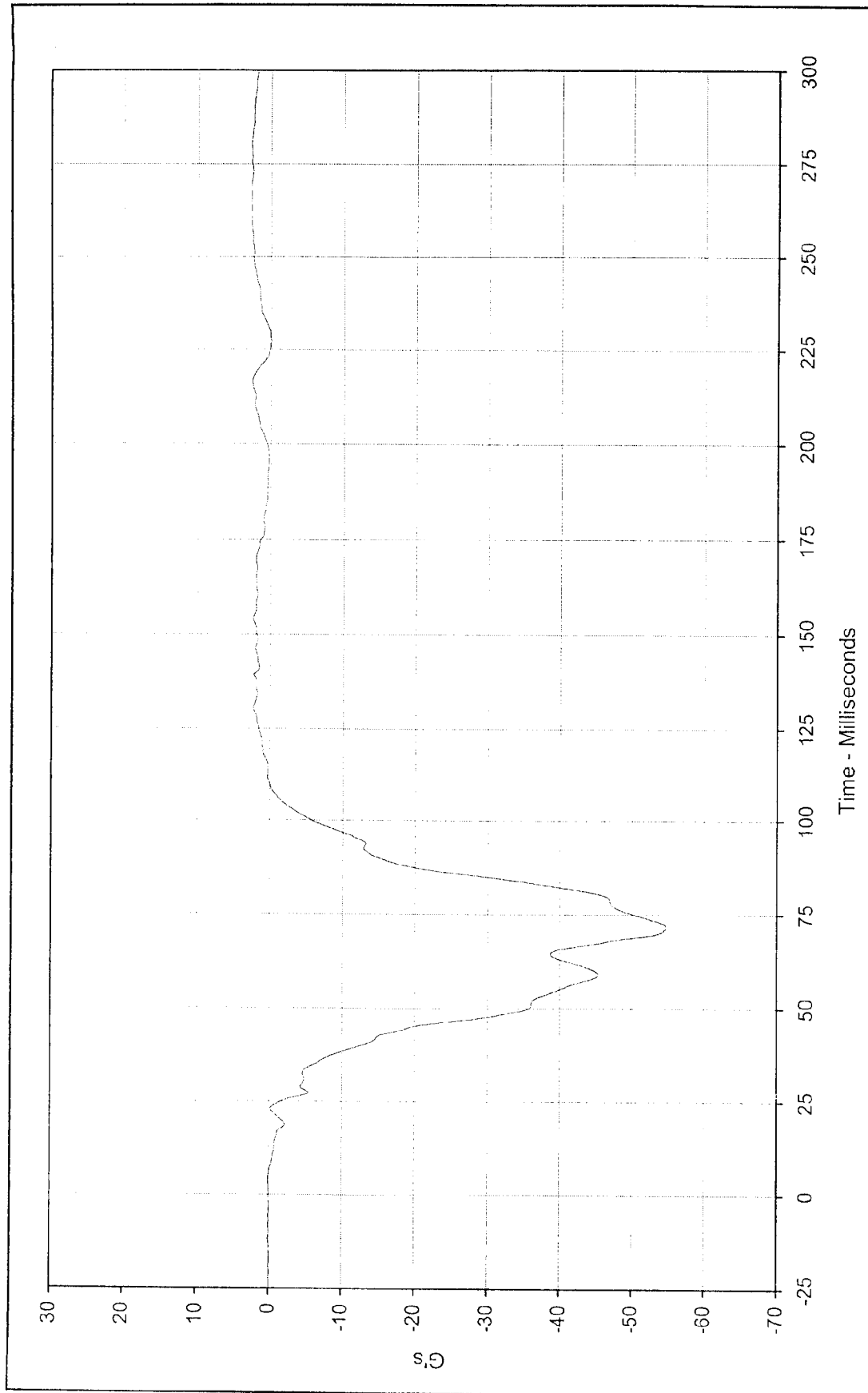


Curve Description:	Driver Neck Moment Resultant		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	83.3	at 60.8	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	0.1	at 10.6			
SAE Filter Class:	600				
Date of Test:	11/10/99				
Curve Number:	RES-010				

The logo for QKARCT Engineering features the company name in a bold, sans-serif font. The 'Q' is stylized with a checkered pattern. The word 'Engineering' is written in a script font below 'QKARCT'. The entire logo is set against a background of a checkered racing flag.

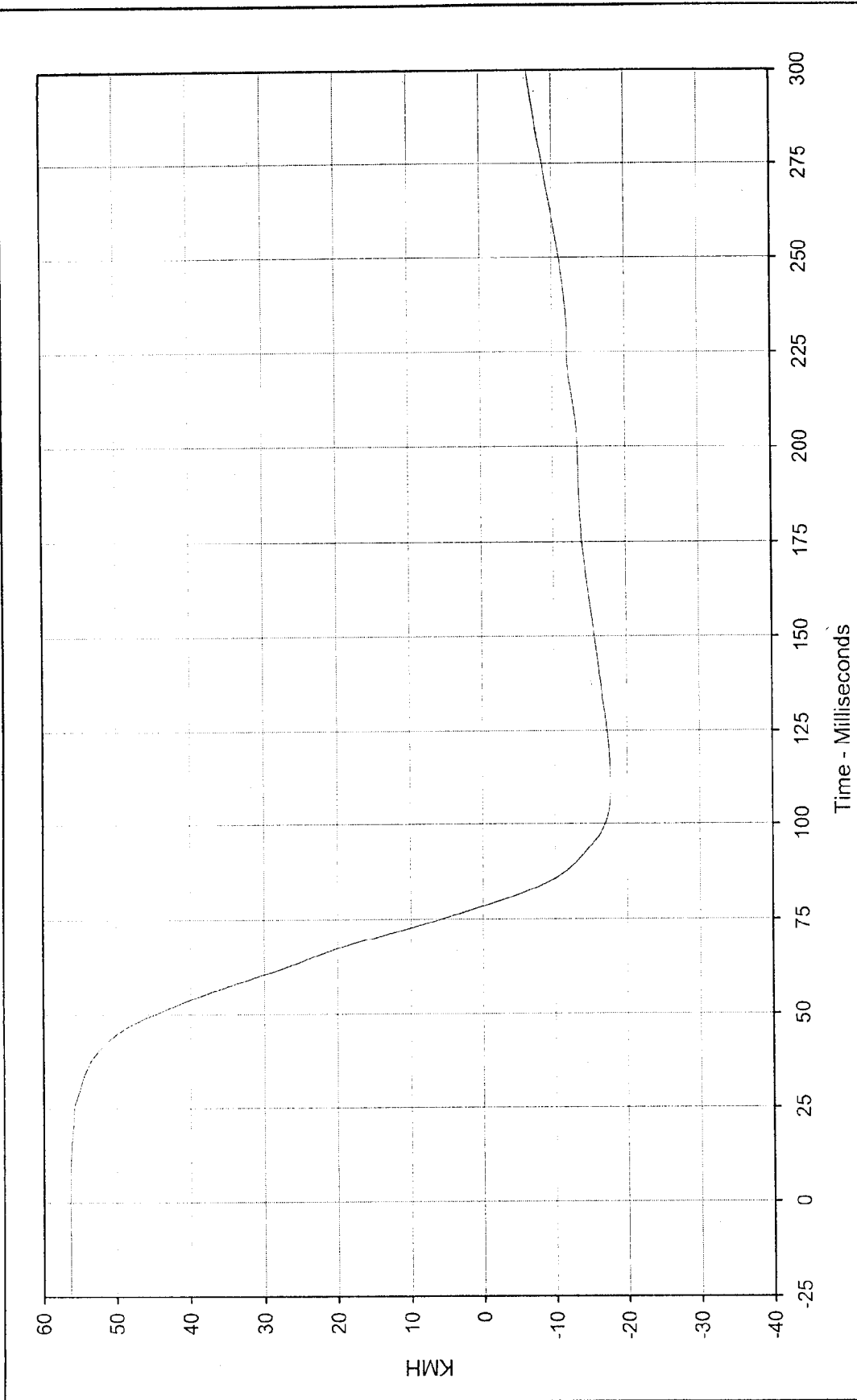






Curve Description:	Driver Chest Primary X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	2.7 at 268.6 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-54.7 at 71.6 Milliseconds			
SAE Filter Class:	180			
Date of Test:	11/10/99			
Curve Number:	FIL-013			





Curve Description: Driver Chest Primary X Velocity

Maximum Value: 56.4 at 5.6 Milliseconds

Minimum Value: -17.7 at 109.7 Milliseconds

SAE Filter Class: 180

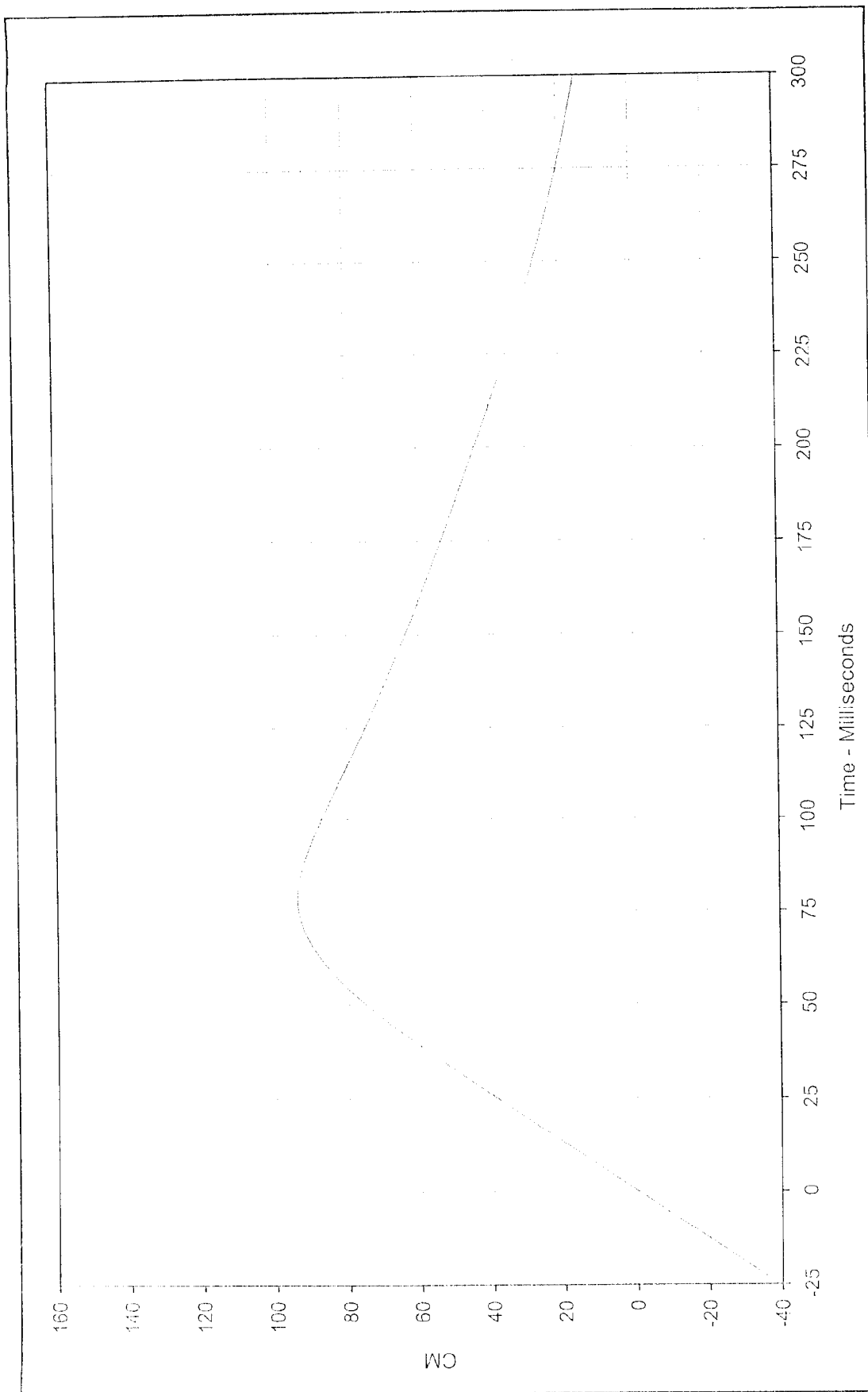
Date of Test: 11/10/99

Curve Number: IN1-013

Testing Program: 2000 NHTSA 35 mph NCAP No.: MY0304

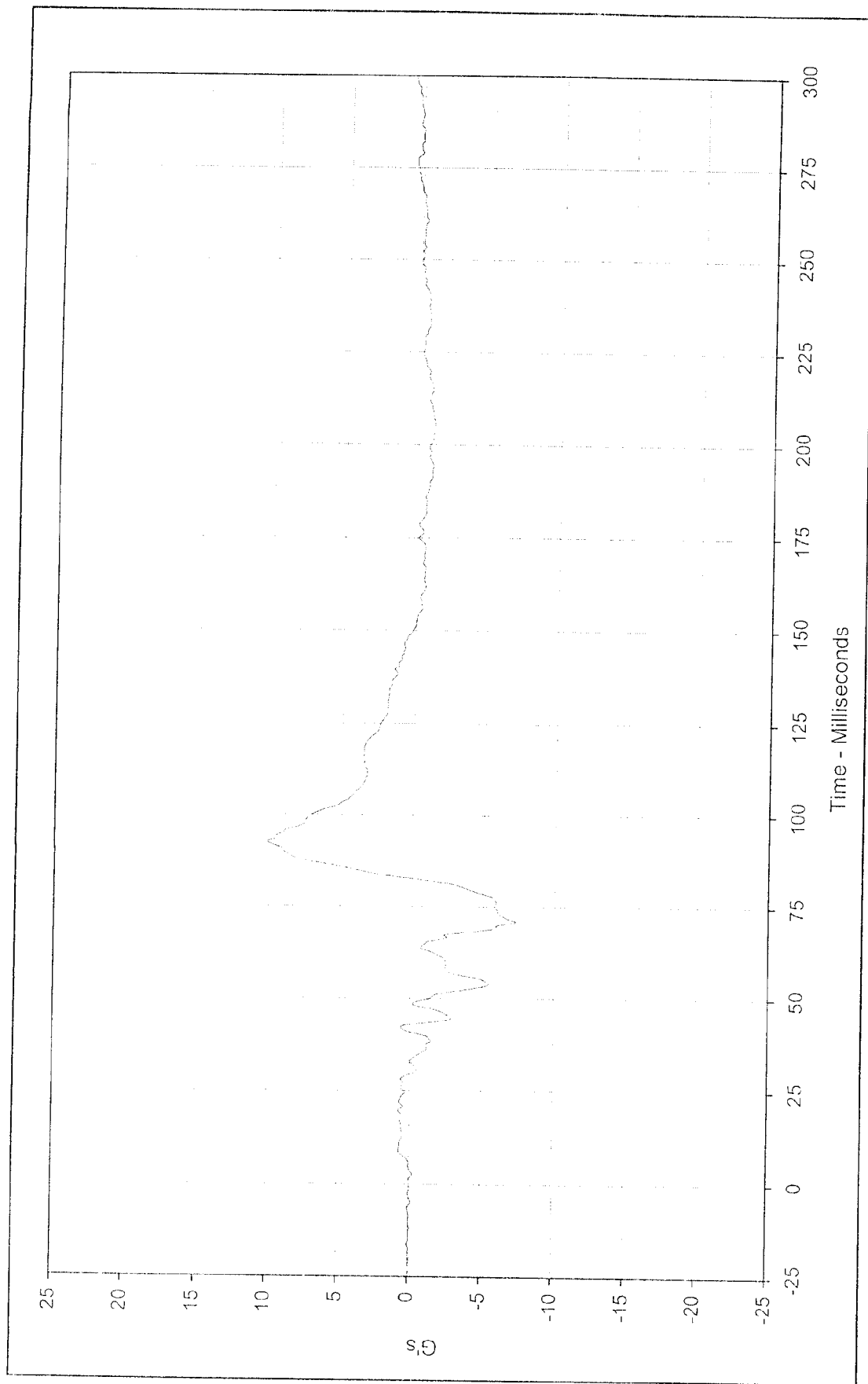
Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description:	Driver Chest Primary X Displ.	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	93.9 at 78.4 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	0.0 at 0.0 Milliseconds			
SAE Filter Class:	180			
Date of Test:	11/10/99			
Curve Number:	IN2-013			

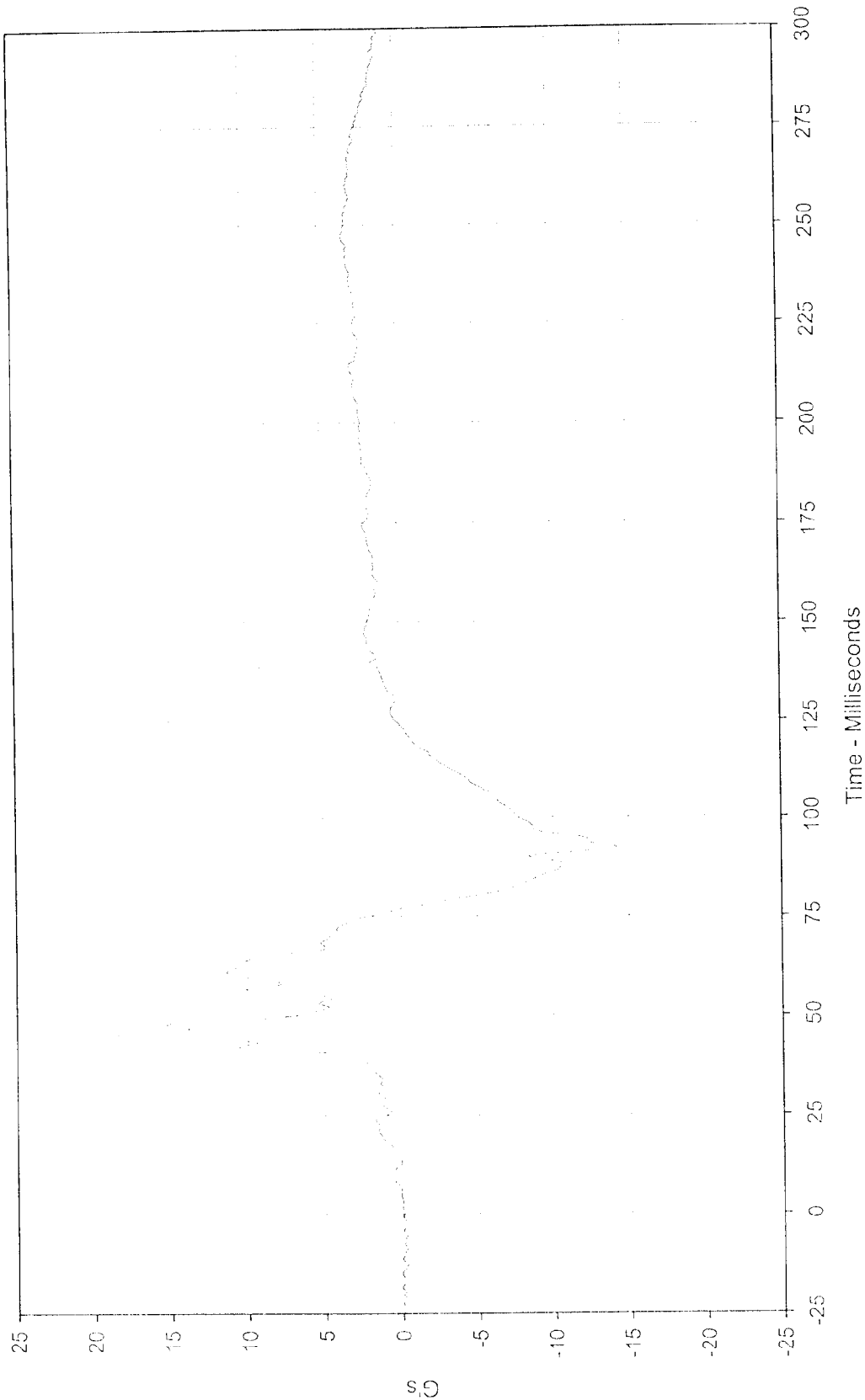




Curve Description: Driver Chest Primary Y
 Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan

Maximum Value: 10.2 at 92.4 Milliseconds
 Minimum Value: -7.3 at 70.9 Milliseconds
 SAE Filter Class: 180
 Date of Test: 11/10/99
 Curve Number: FIL-014





Curve Description: Driver Chest Primary Z

Maximum Value: 18.5 at 45.3 Milliseconds

Minimum Value: -14.2 at 92.1 Milliseconds

SAE Filter Class: 180

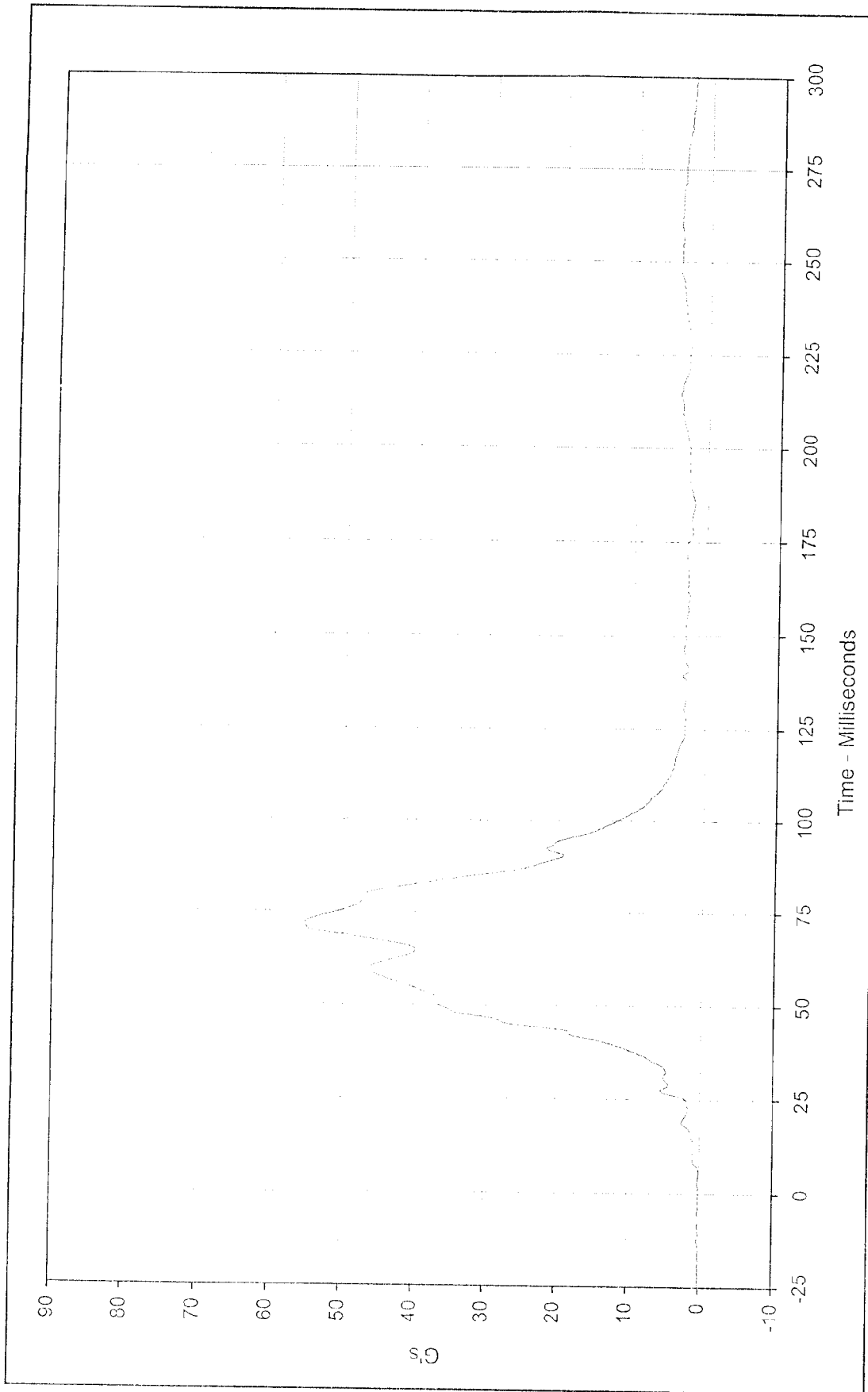
Date of Test: 11/10/99

Curve Number: FIL-015

Test Program: 2000 NHTSA 35 mph NCAP No: MY0304

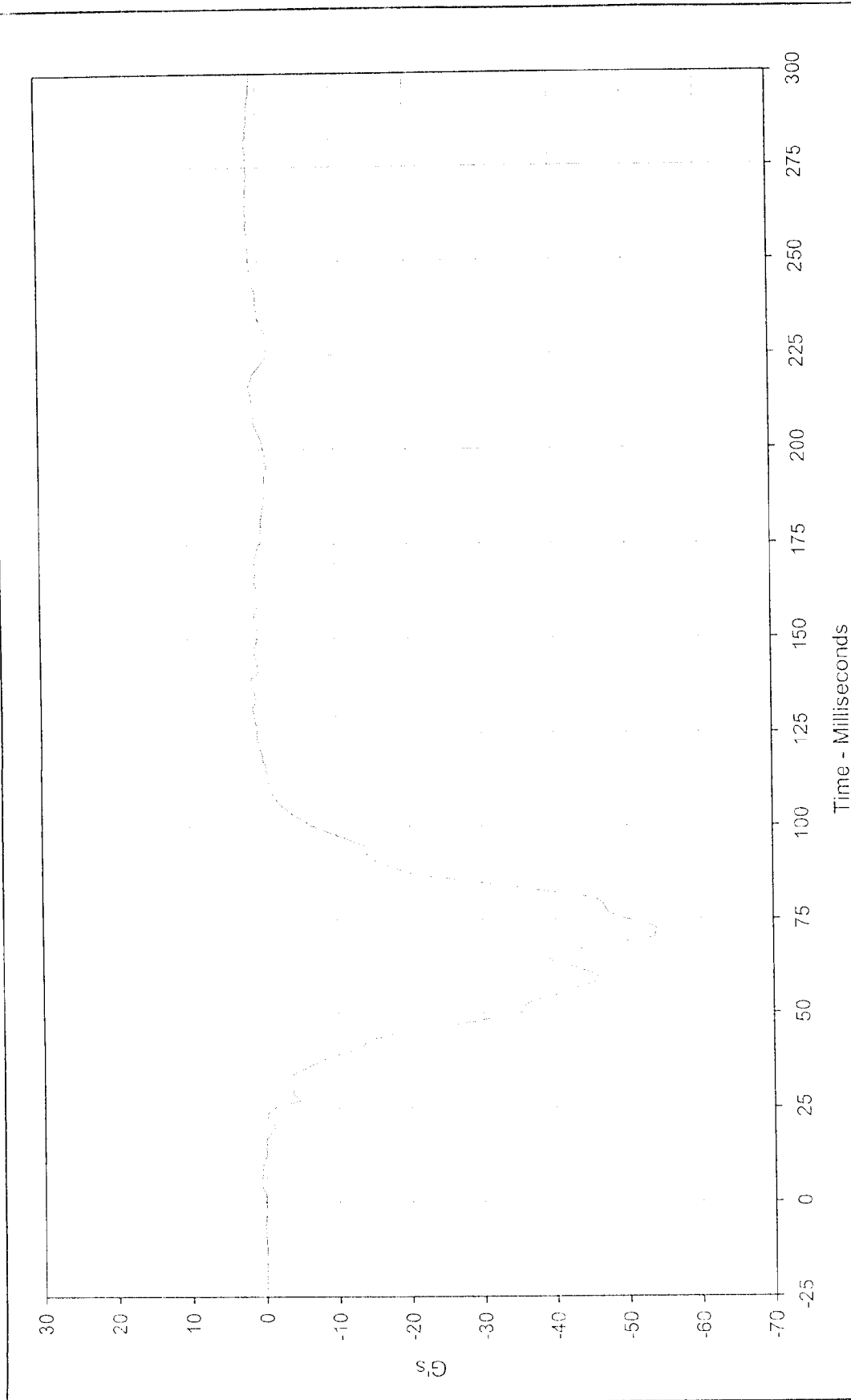
Test Vehicle: 2000 Dodge Neon 4 Door Sedan





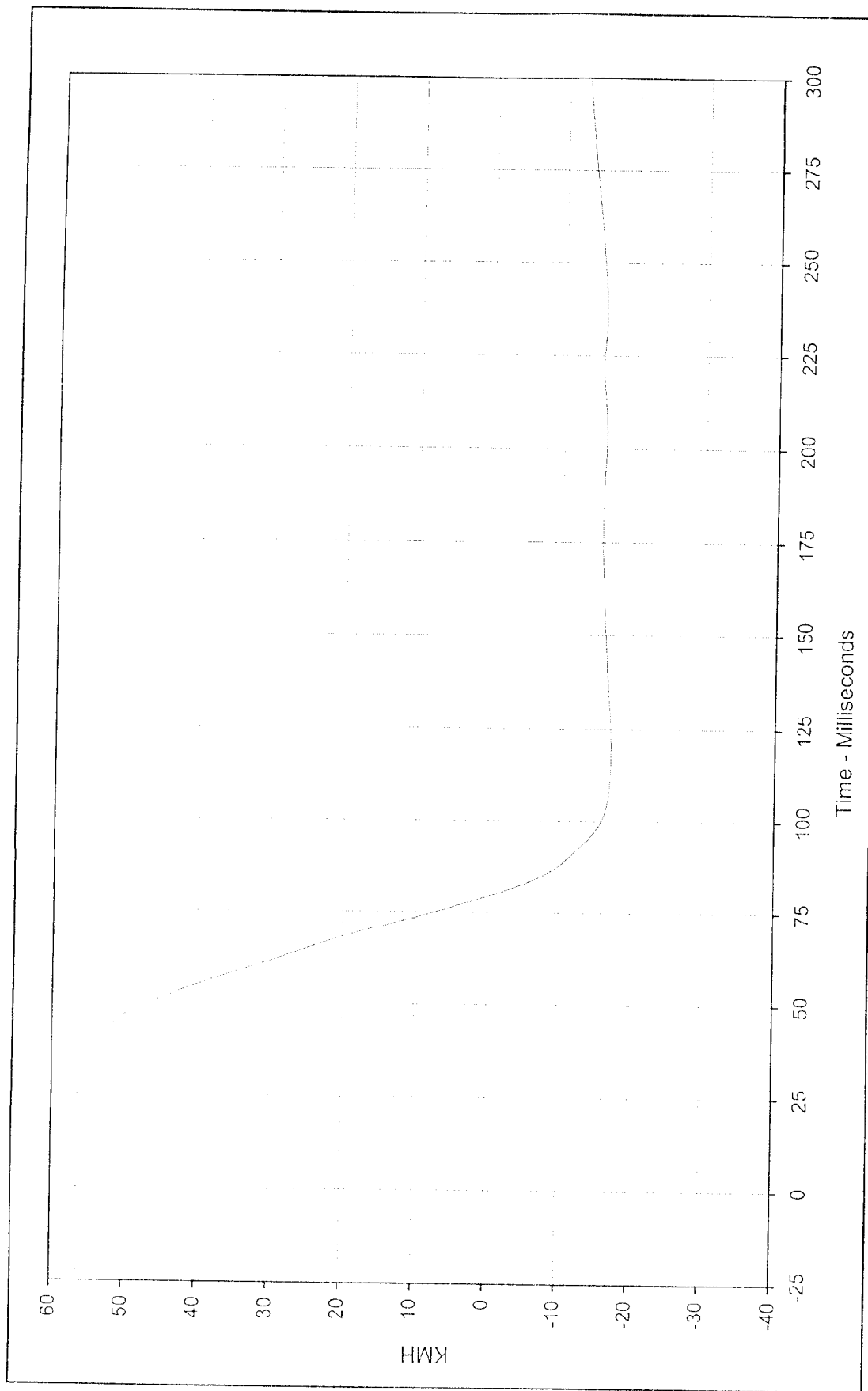
Curve Description:	Driver Chest Resultant Primary	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	55.3 at 71.6 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	0.1 at 5.6 Milliseconds			
SAE Filter Class:	180			
Date of Test:	11/10/99			
Curve Number:	RES-013			





Curve Description:	Driver Chest Redundant X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	1.7 at 281.6 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-54.0 at 71.8 Milliseconds			
SAE Filter Class:	180			
Date of Test:	11/10/99			
Curve Number:	FIL-016			

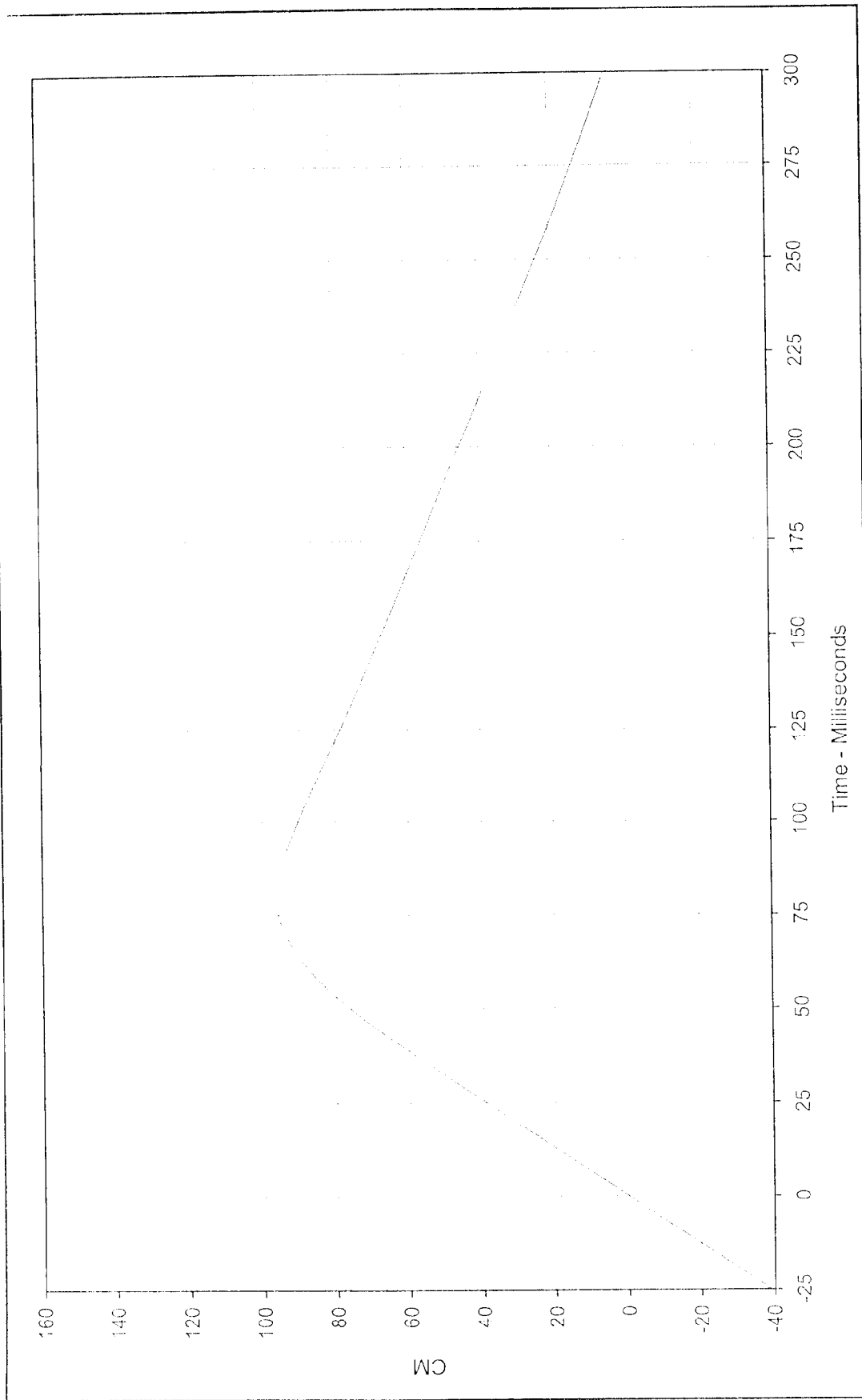




Curve Description: Driver Chest Redundant X Velocity
 Maximum Value: 56.6 at 12.0 Milliseconds
 Minimum Value: -17.1 at 117.8 Milliseconds
 SAE Filter Class: 180
 Date of Test: 11/10/99
 Curve Number: IN1-016

Testing Program 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan

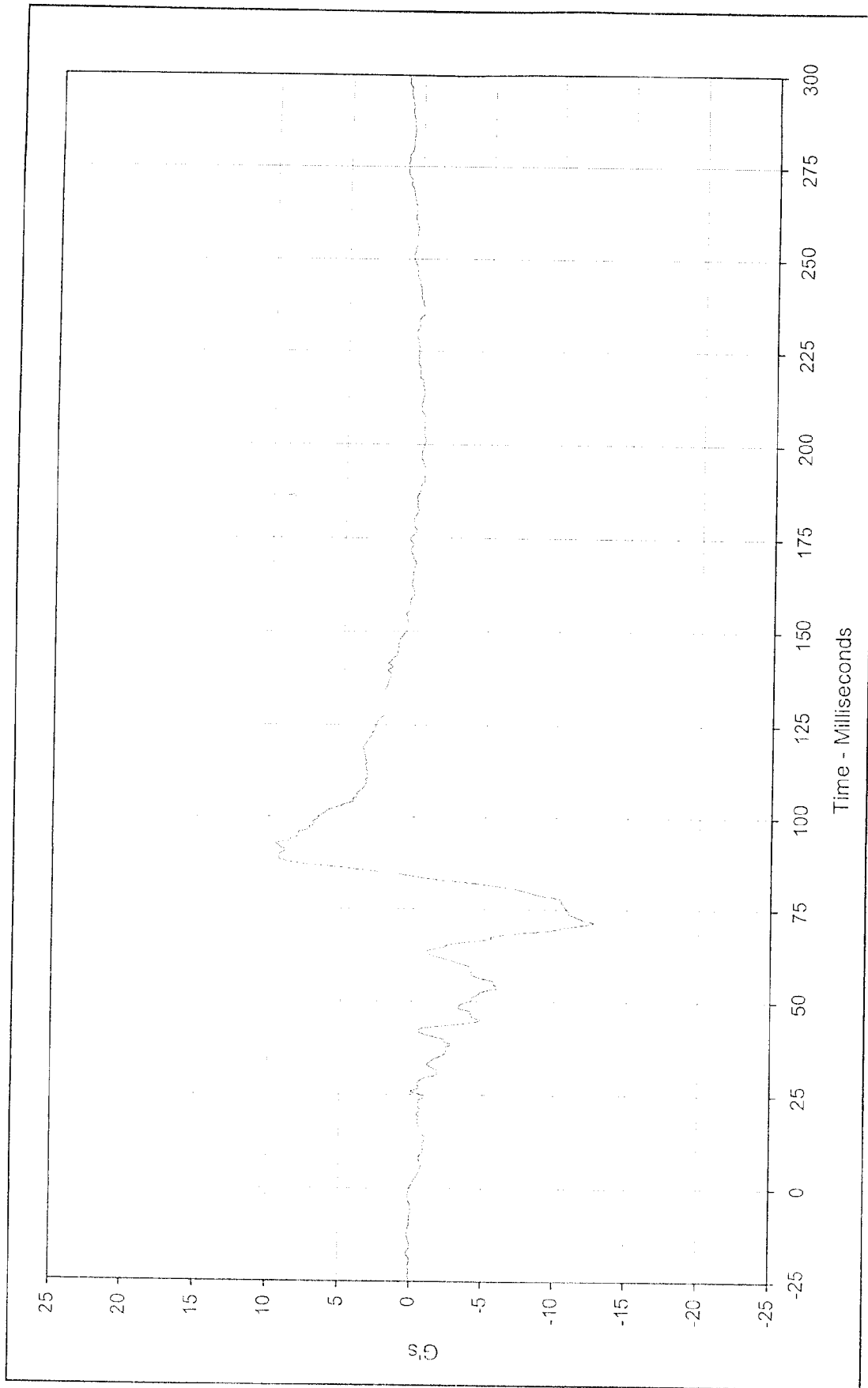




Curve Description: Driver Chest Redundant X Displ.
 Maximum Value: 96.1 at 79.3 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 11/10/99
 Curve Number: IN2-016

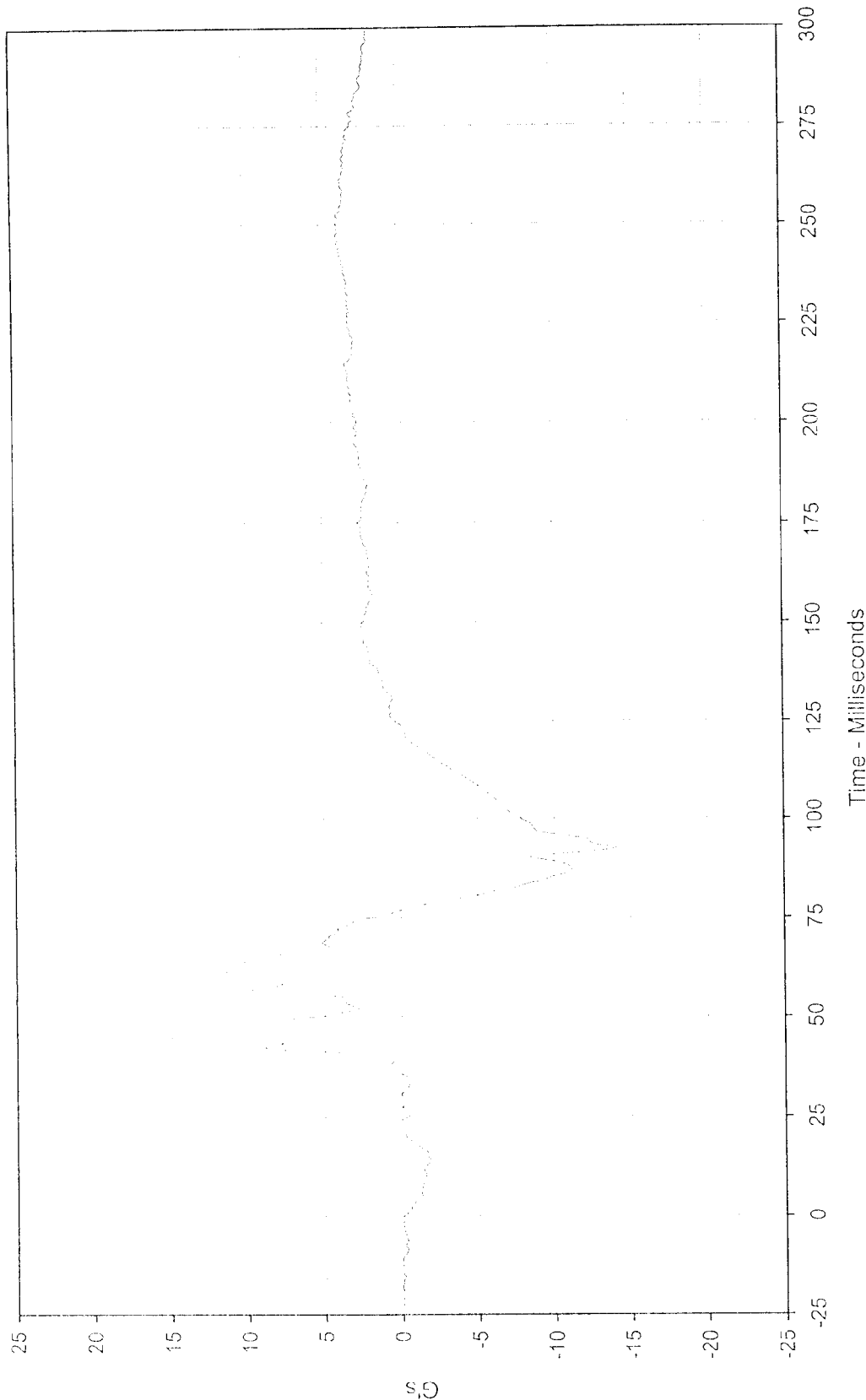
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description:	Driver Chest Redundant Y	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	9.6 at 92.5 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-12.7 at 71.1 Milliseconds			
SAE Filter Class:	180			
Date of Test:	11/10/99			
Curve Number:	FIL-017			





Curve Description: Driver Chest Redundant Z

Maximum Value: 16.5 at 45.4 Milliseconds

Minimum Value: -14.1 at 92.3 Milliseconds

SAE Filter Class: 180

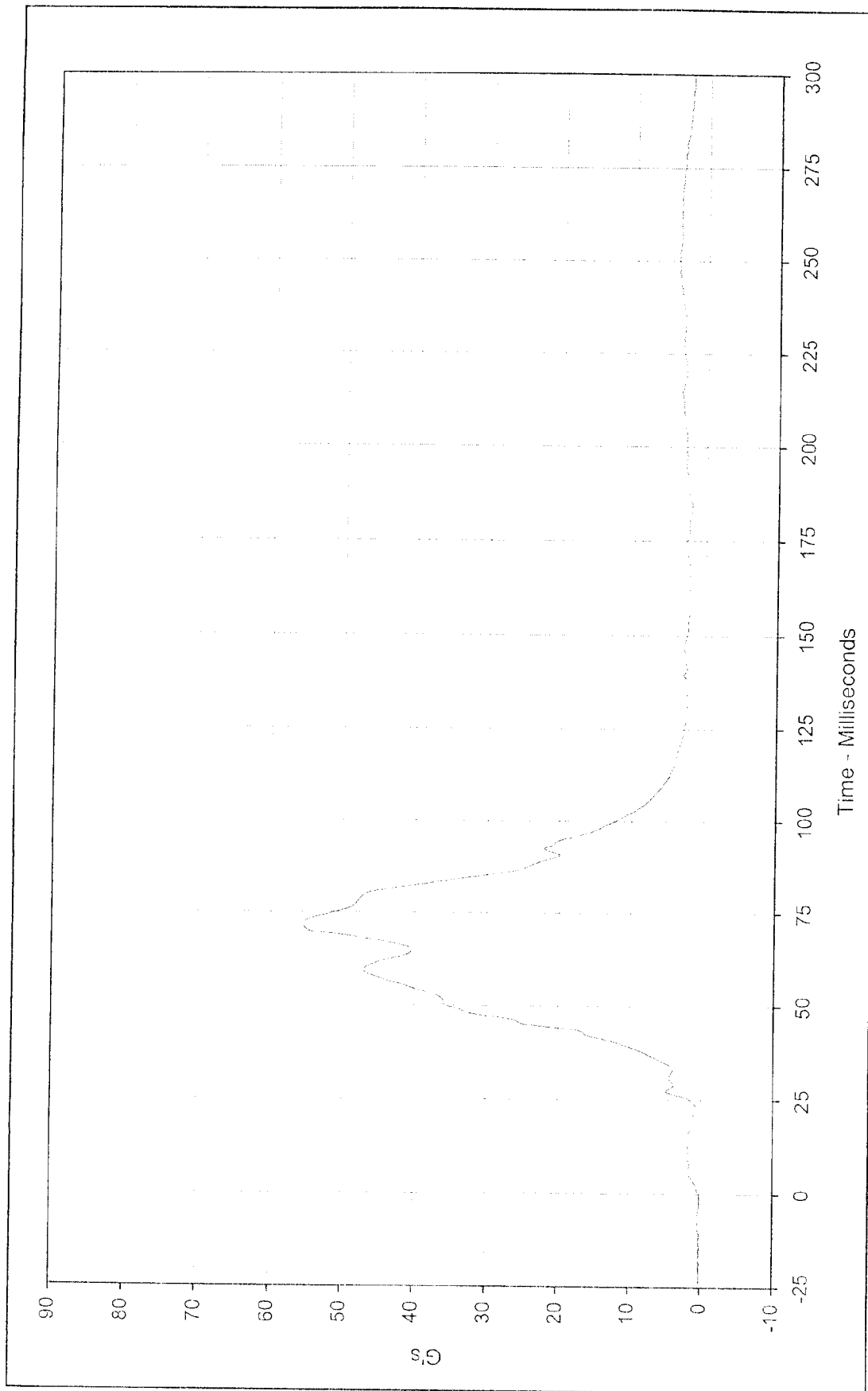
Date of Test: 11/10/99

Curve Number: FIL-018

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan

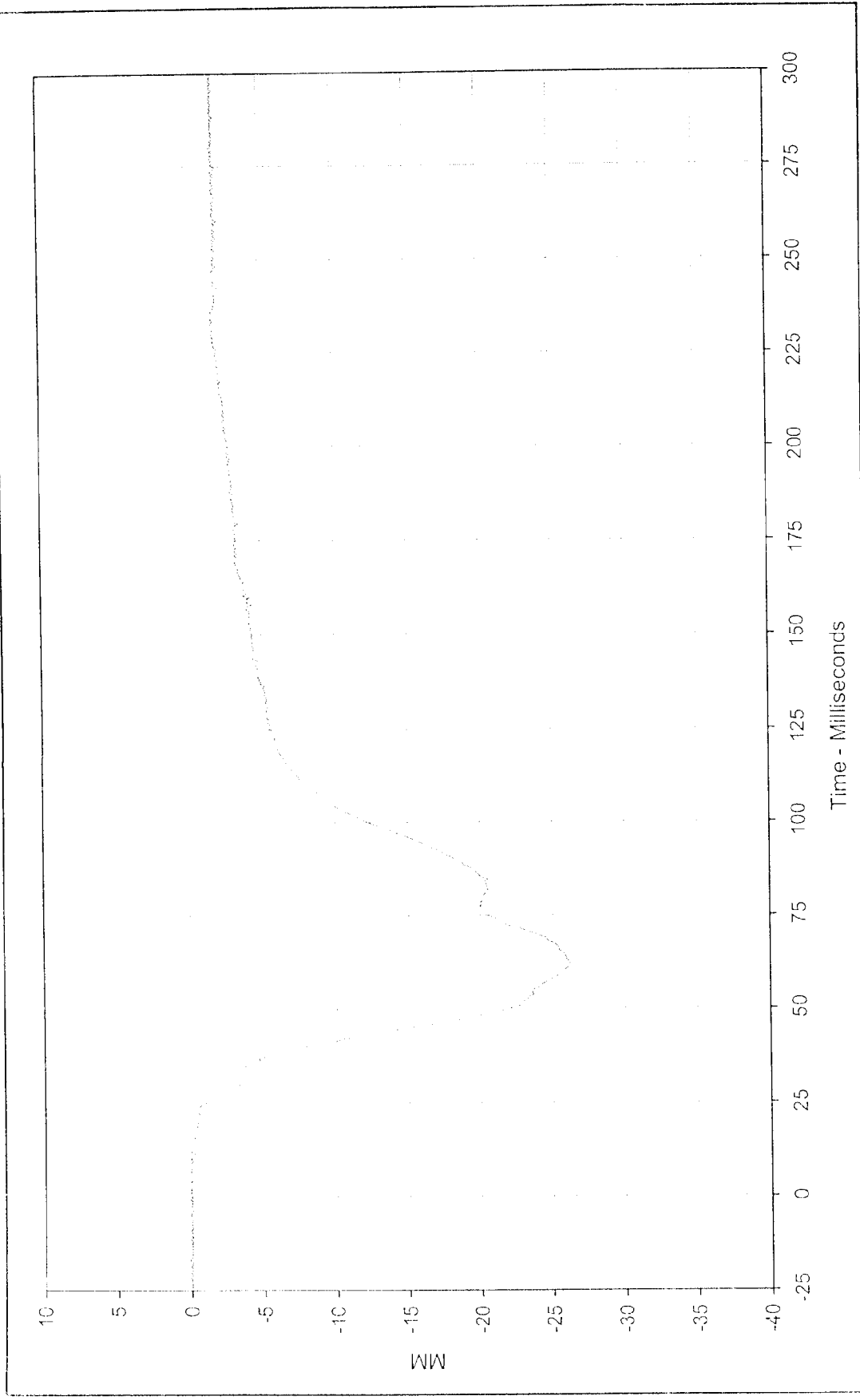




Curve Description: Driver Chest Resultant Redundant
 Maximum Value: 55.5 at 71.6 Milliseconds
 Minimum Value: 0.2 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 11/10/99
 Curve Number: RES-016

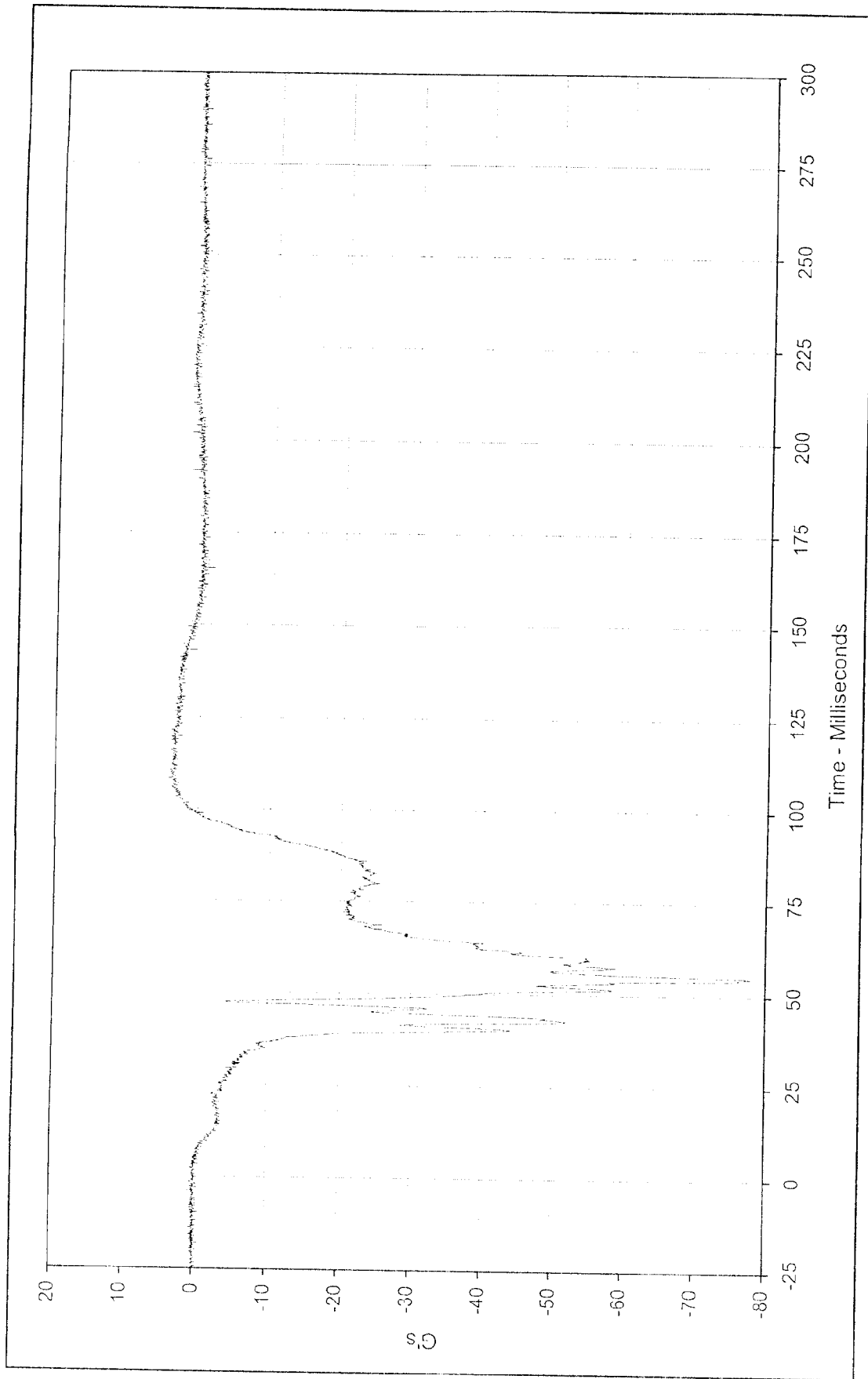
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description:	Driver Chest Displacement X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	0.1 at 3.7 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-26.3 at 61.6 Milliseconds			
SAE Filter Class:	600			
Date of Test:	11/10/99			
Curve Number:	FIL-019			





Curve Description: Driver Pelvis X

Maximum Value: 4.4 at 108.5 Milliseconds

Minimum Value: -77.9 at 54.8 Milliseconds

SAE Filter Class: 1000

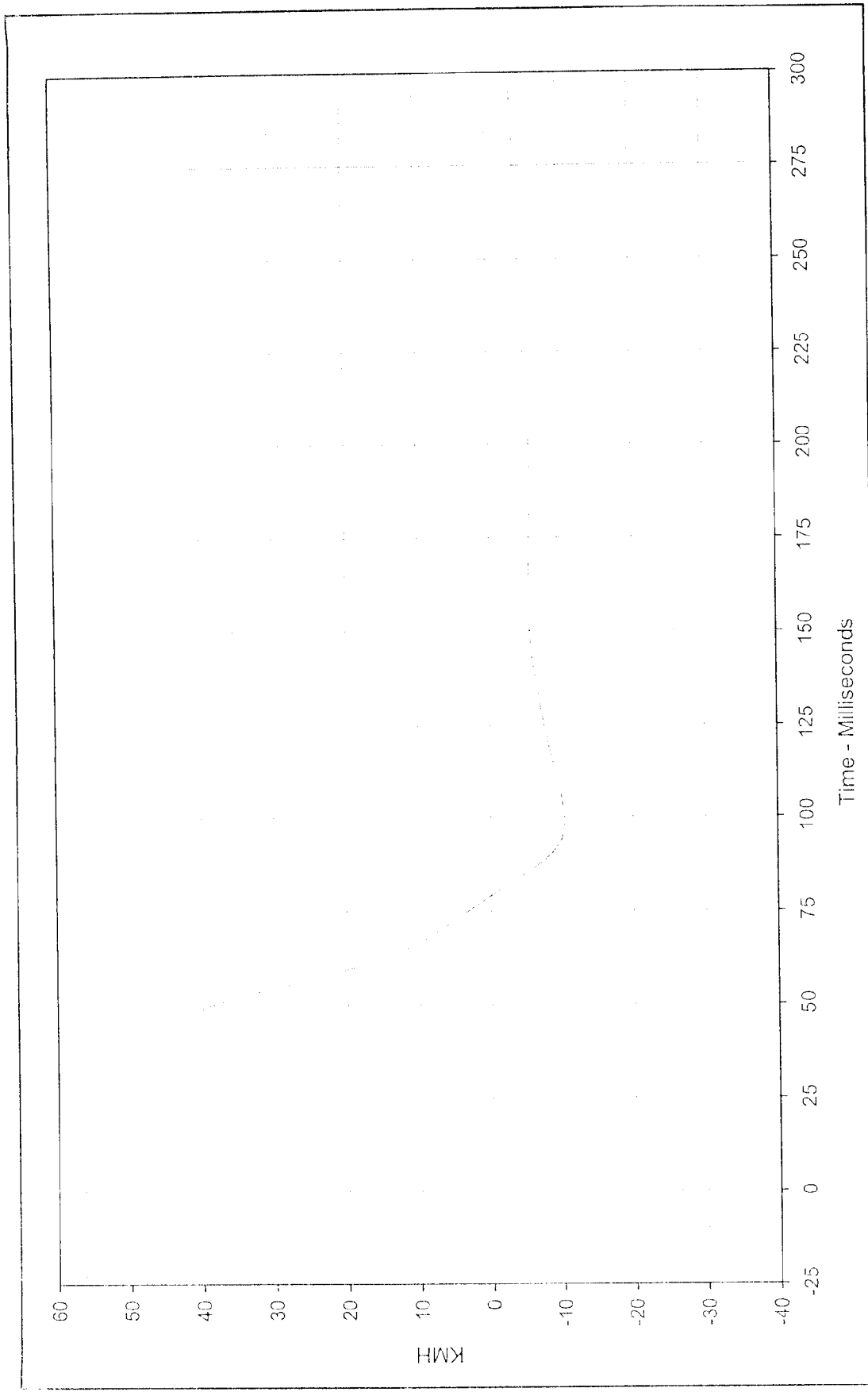
Date of Test: 11/10/99

Curve Number: FIL-020

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan

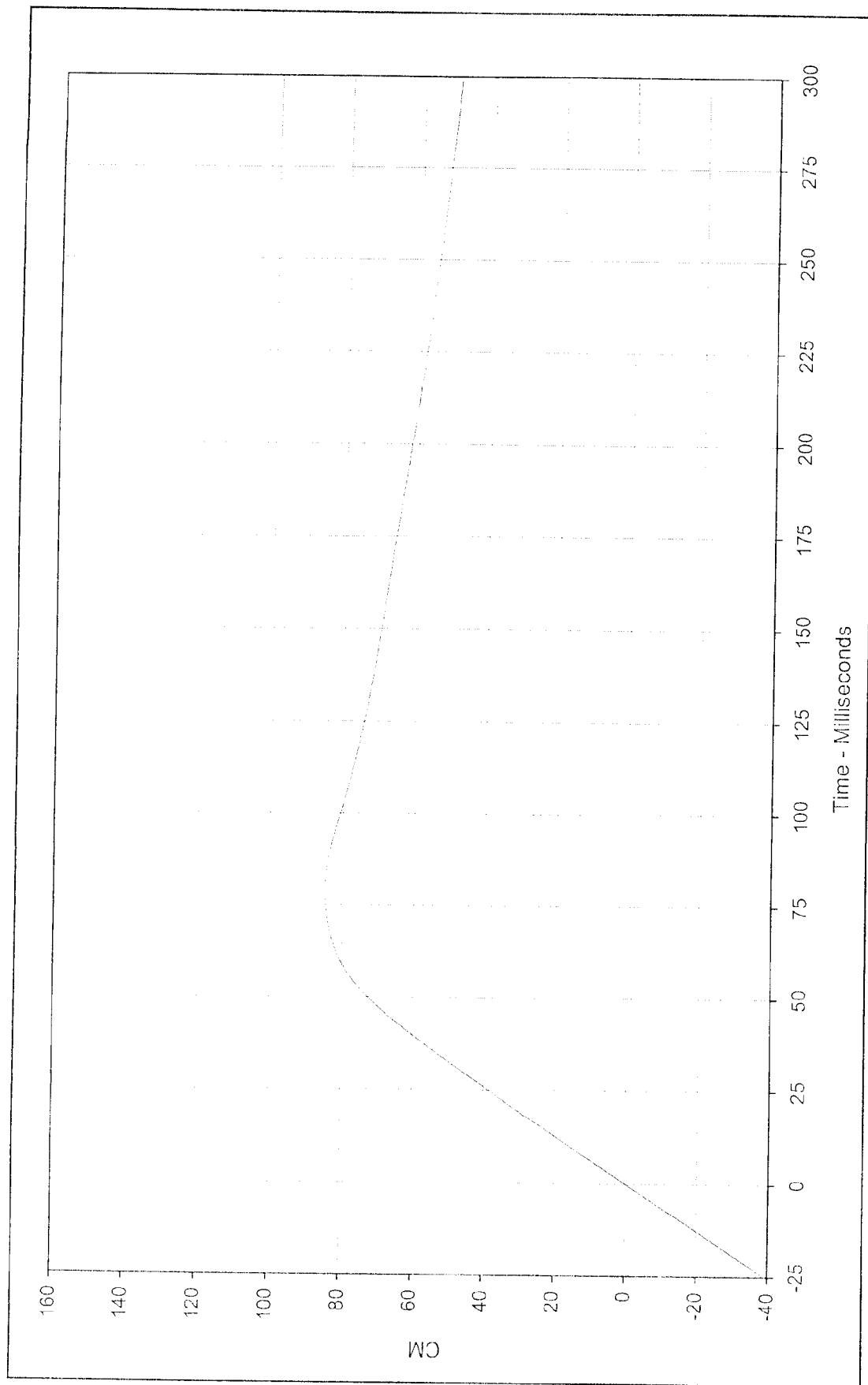




Curve Description: Driver Pelvis X Velocity
Maximum Value: 56.3 at 0.0 Milliseconds
Minimum Value: -10.4 at 98.6 Milliseconds

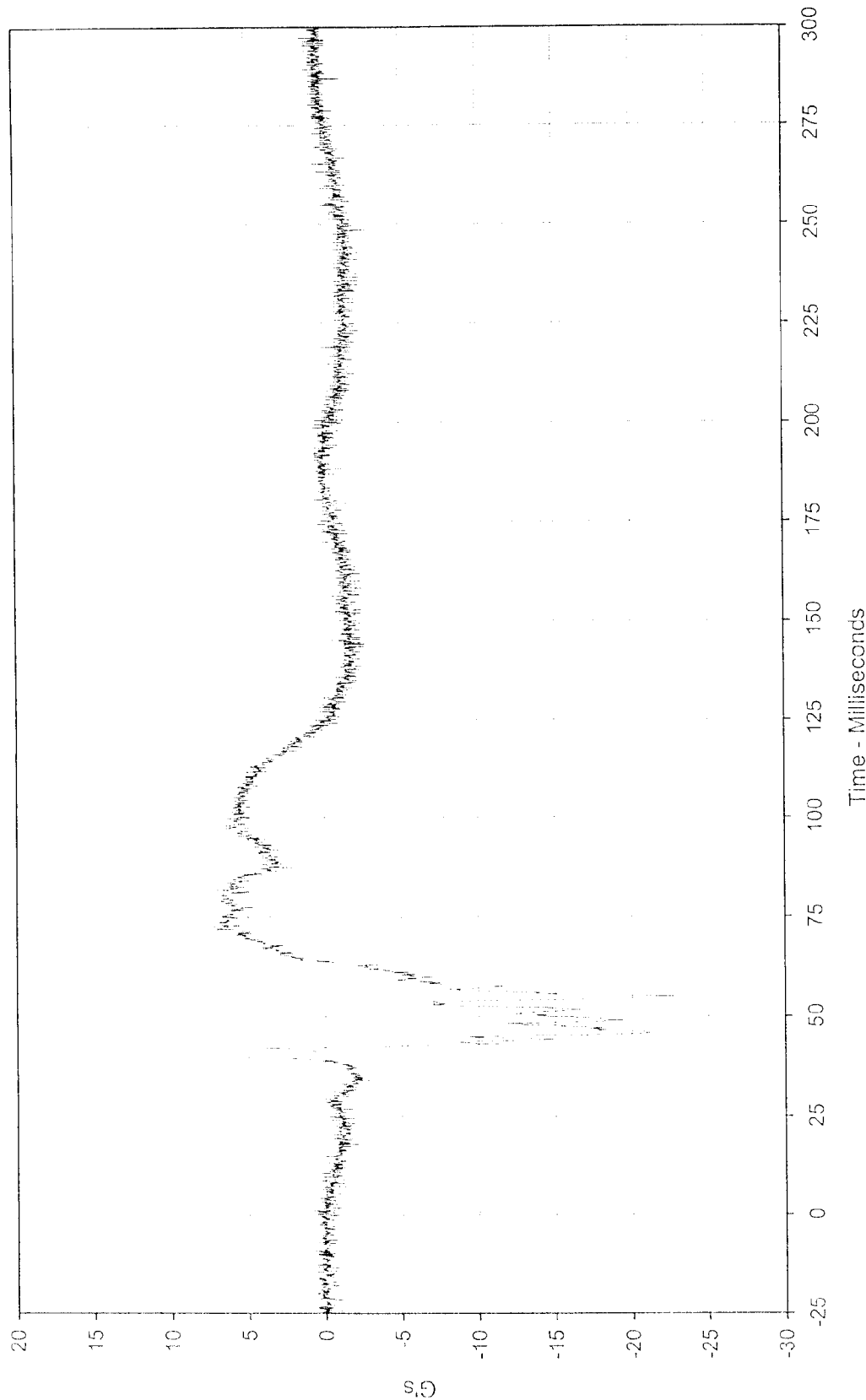
Testing Program 2000 NHTSA 35 mph NCAP No.: MY0304
Test Vehicle: 2000 Dodge Neon 4 Door Sedan
SAE Filter Class: 180
Date of Test: 11/10/99
Curve Number: IN1-020





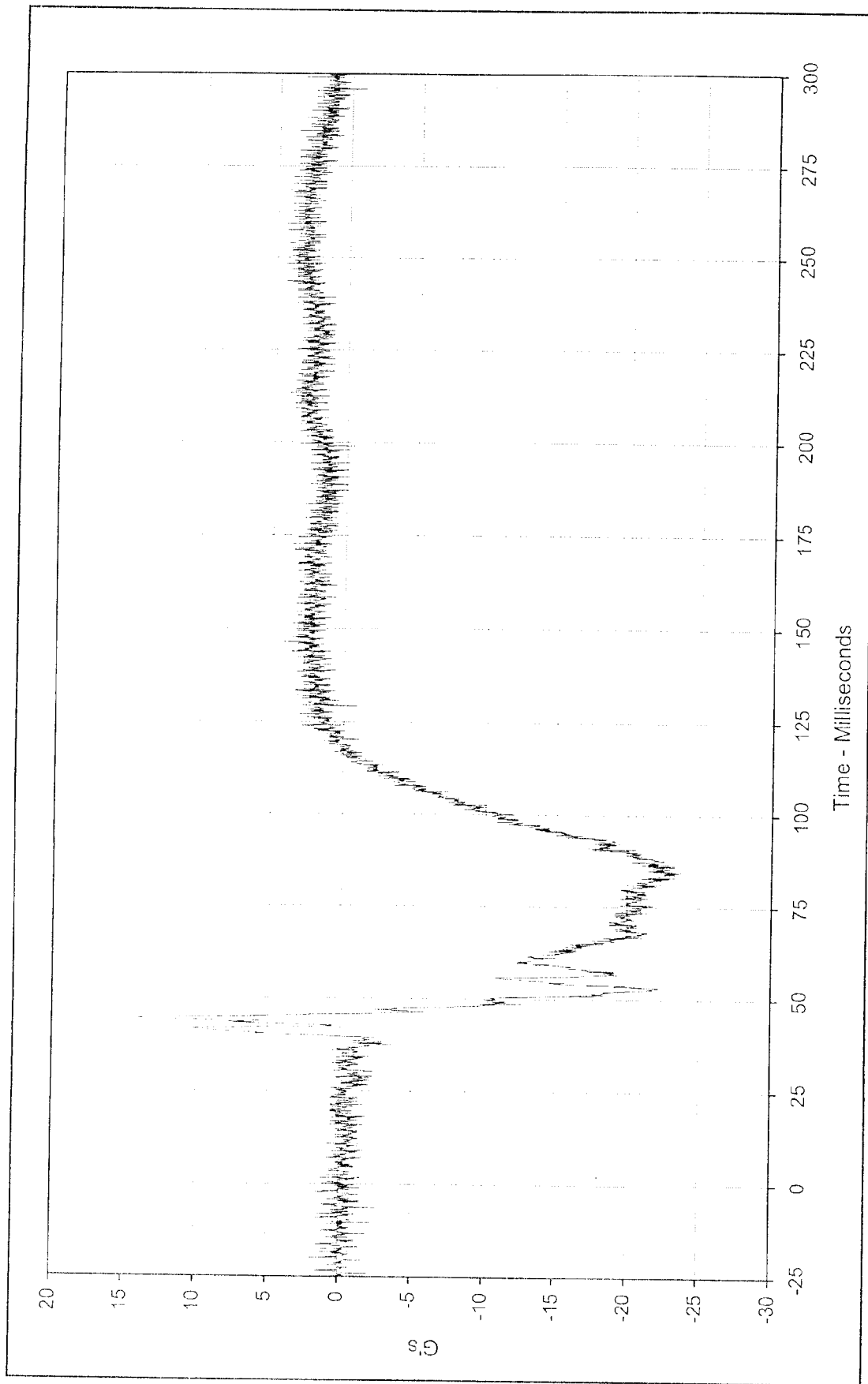
Curve Description:	Driver Pelvis X Displ.	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	84.8 at 79.1 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	0.0 at 0.0 Milliseconds			
SAE Filter Class:	180			
Date of Test:	11/10/99			
Curve Number:	IN2-020			





Curve Description:		Driver Pelvis Y		Test Program:		2000 NHTSA 35 mph NCAP		No.: MY0304	
Maximum Value:		11.1	at	40.2	Test Vehicle:		2000 Dodge Neon 4 Door Sedan		
Minimum Value:		-23.2	at	54.9					
SAE Filter Class:		1000							
Date of Test:		11/10/99							
Curve Number:		FIL-02							
									





Curve Description:

Driver Pelvis Z

Maximum Value:

14.2

at

44.3

Milliseconds

Minimum Value:

-23.7

at

84.3

Milliseconds

SAE Filter Class:

1000

Date of Test:

11/10/99

Curve Number:

FIL-022

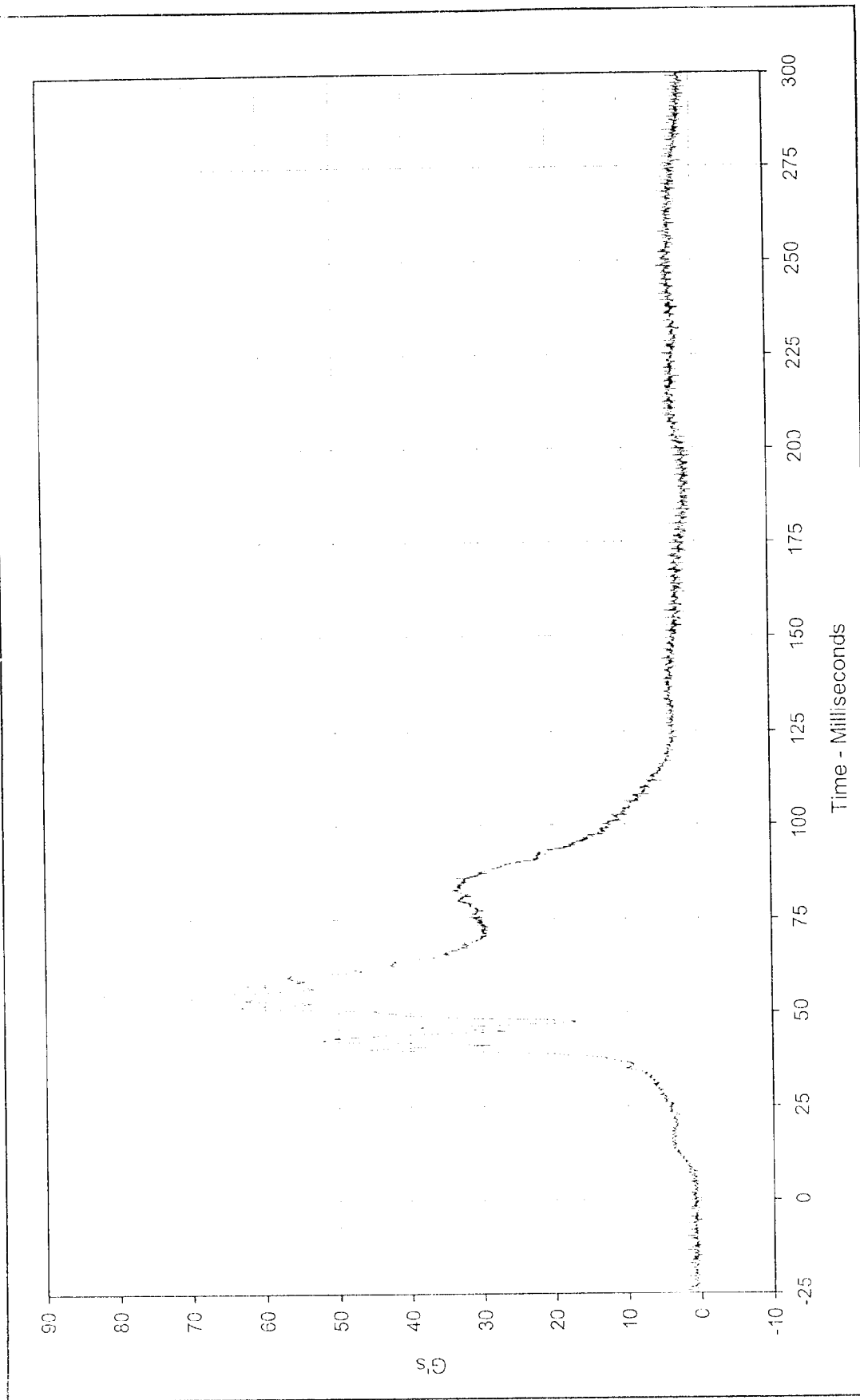
Test Program:

2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle:

2000 Dodge Neon 4 Door Sedan





Curve Description: Driver Pelvis Resultant Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Maximum Value: 82.5 at 54.9 Milliseconds Test Vehicle: 2000 Dodge Neon 4 Door Sedan

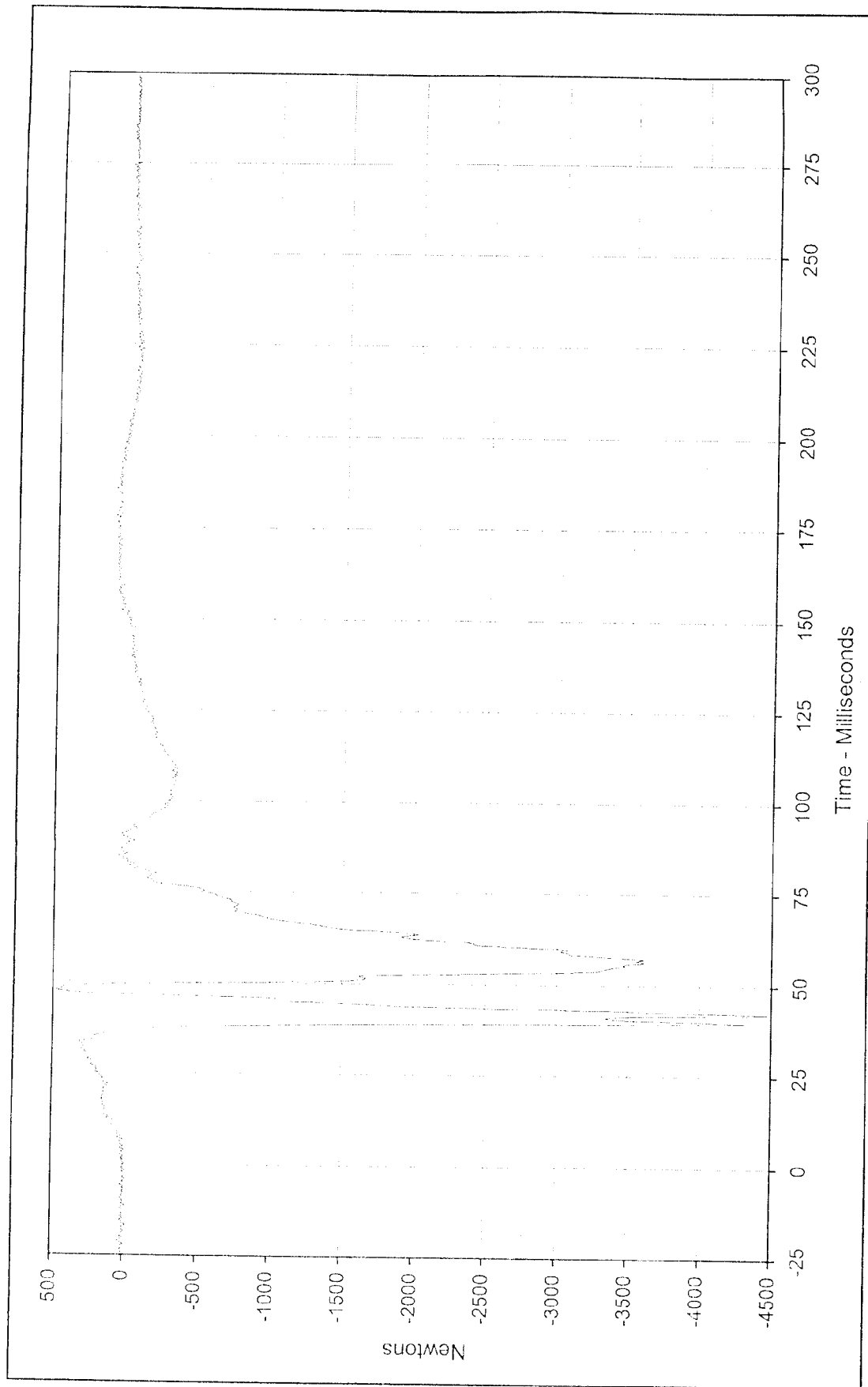
Minimum Value: 0.0 at 0.3 Milliseconds

SAE Filter Class: 1000

Date of Test: 11/10/99

Curve Number: RES-020





Curve Description: Driver Left Femur Force

Maximum Value: 477.5 at 47.7 Milliseconds
 Minimum Value: -4480.0 at 42.1 Milliseconds

SAE Filter Class: 600

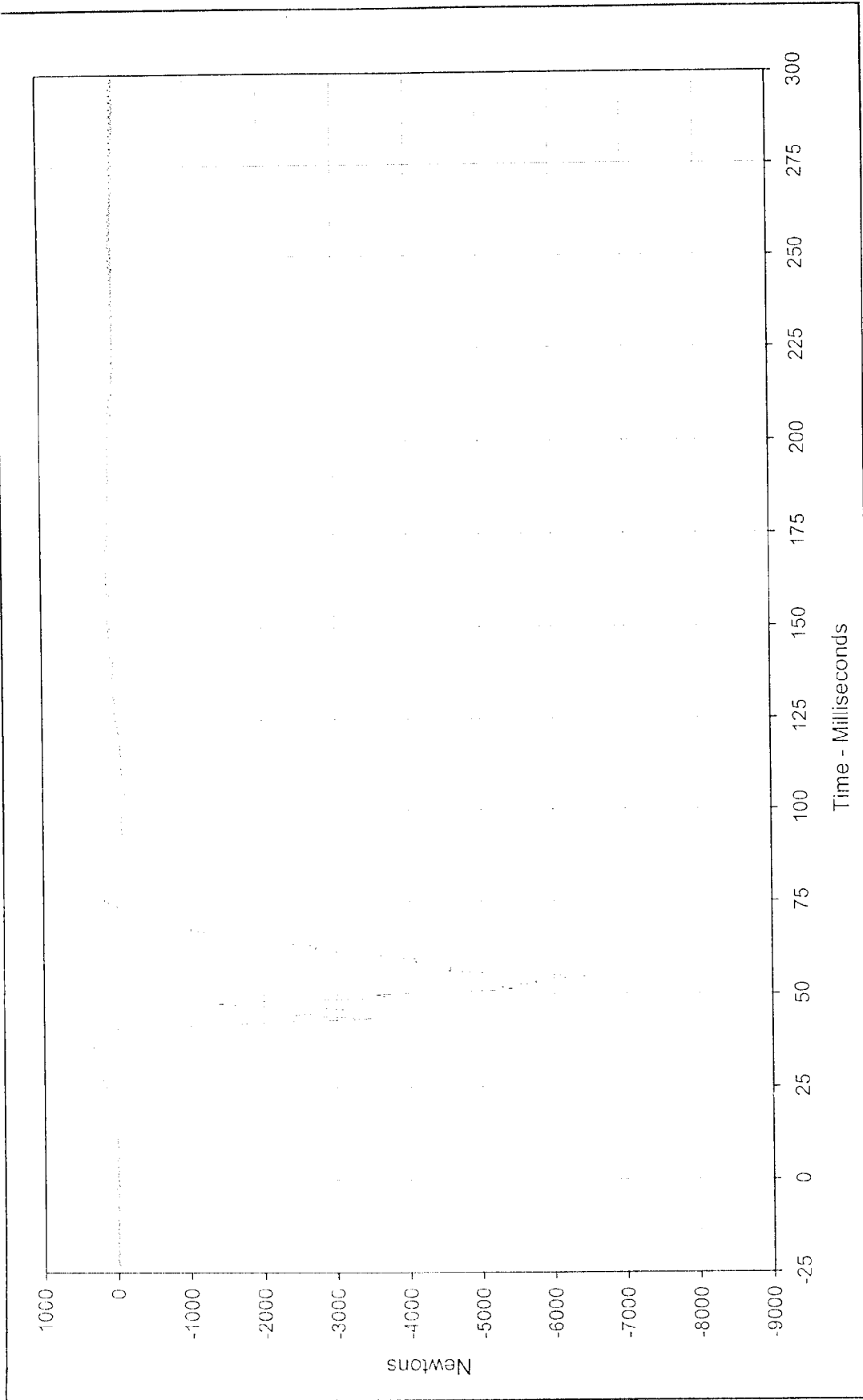
Date of Test: 11/10/99

Curve Number: FIL-023

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan

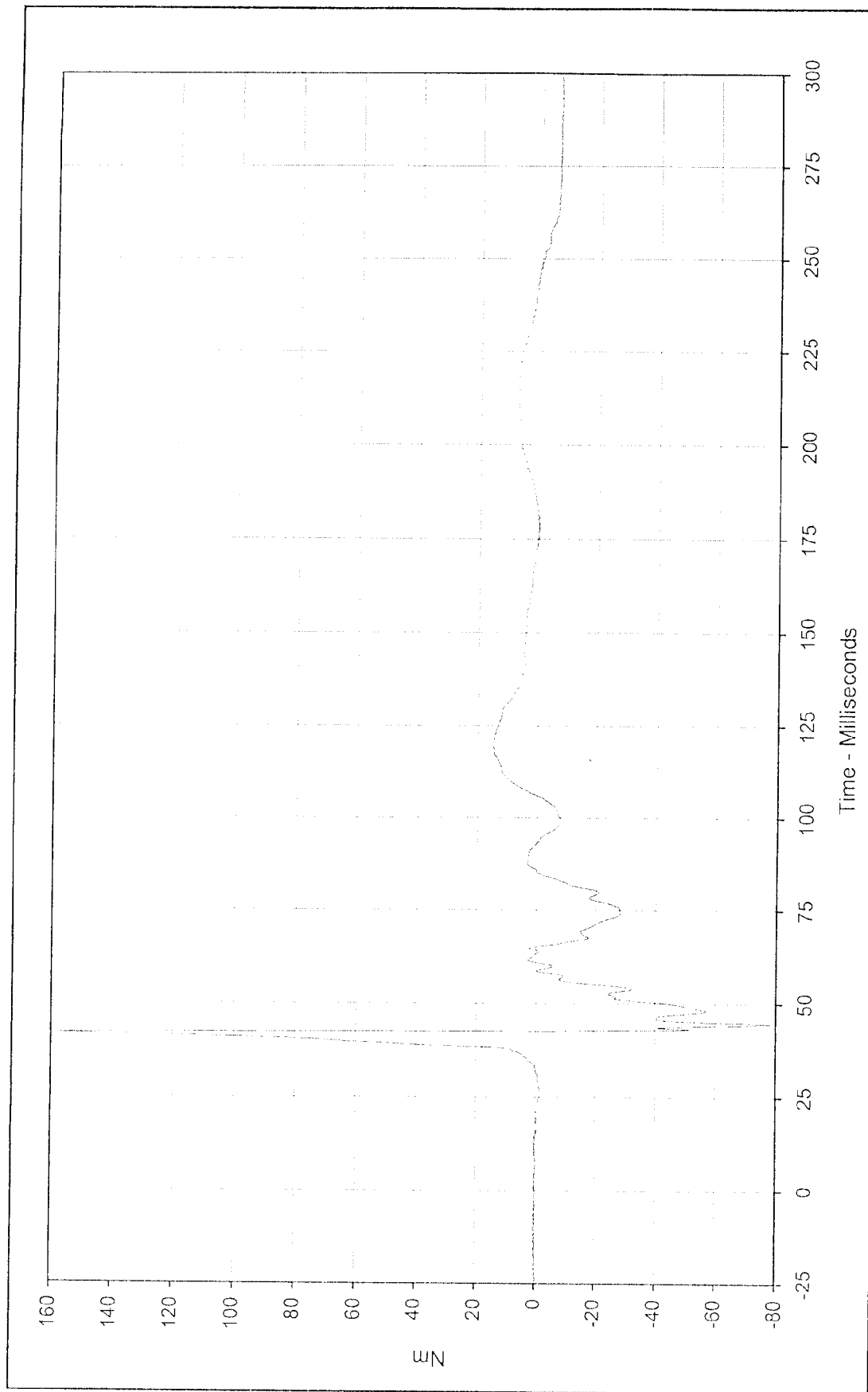




Curve Description: Driver Right Femur Force
 Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Maximum Value: 558.2 at 39.5 Milliseconds
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan
 Minimum Value: -6435.3 at 54.7 Milliseconds

SAE Filter Class: 600
 Date of Test: 11/10/99
 Curve Number: FIL-C24



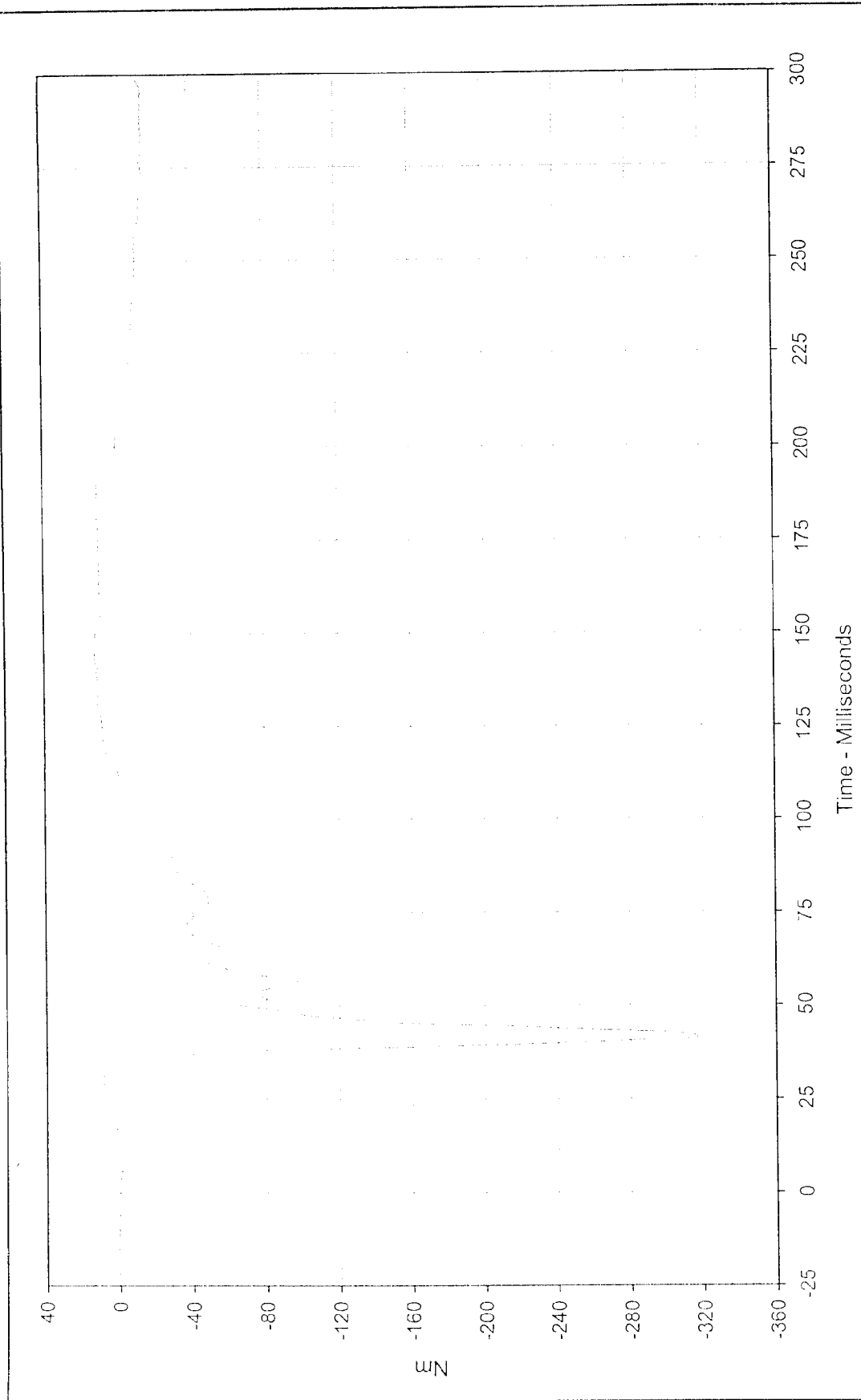


Curve Description: Driver Left Upper Tibia Moment X
 Maximum Value: 157.0 at 41.8 Milliseconds
 Minimum Value: -78.0 at 44.5 Milliseconds
 SAE Filter Class: 600
 Date of Test: 11/10/99
 Curve Number: FIL-025

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

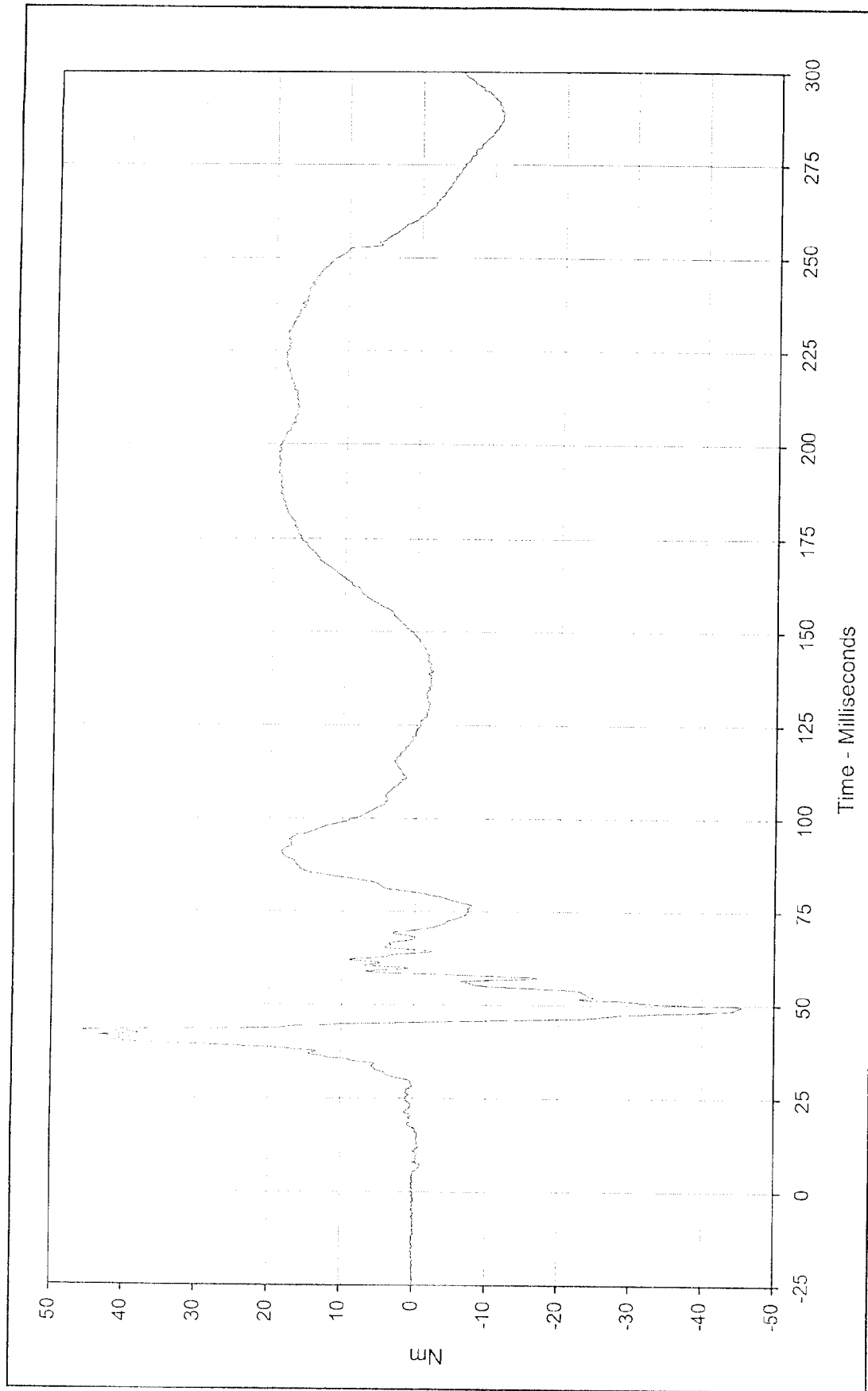
Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description:	Driver Left Upper Tibia Moment Y	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	13.1 at 146.9 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-317.5 at 41.6 Milliseconds			
SAE Filter Class:	600			
Date of Test:	11/10/99			
Curve Number:	FIL-026			

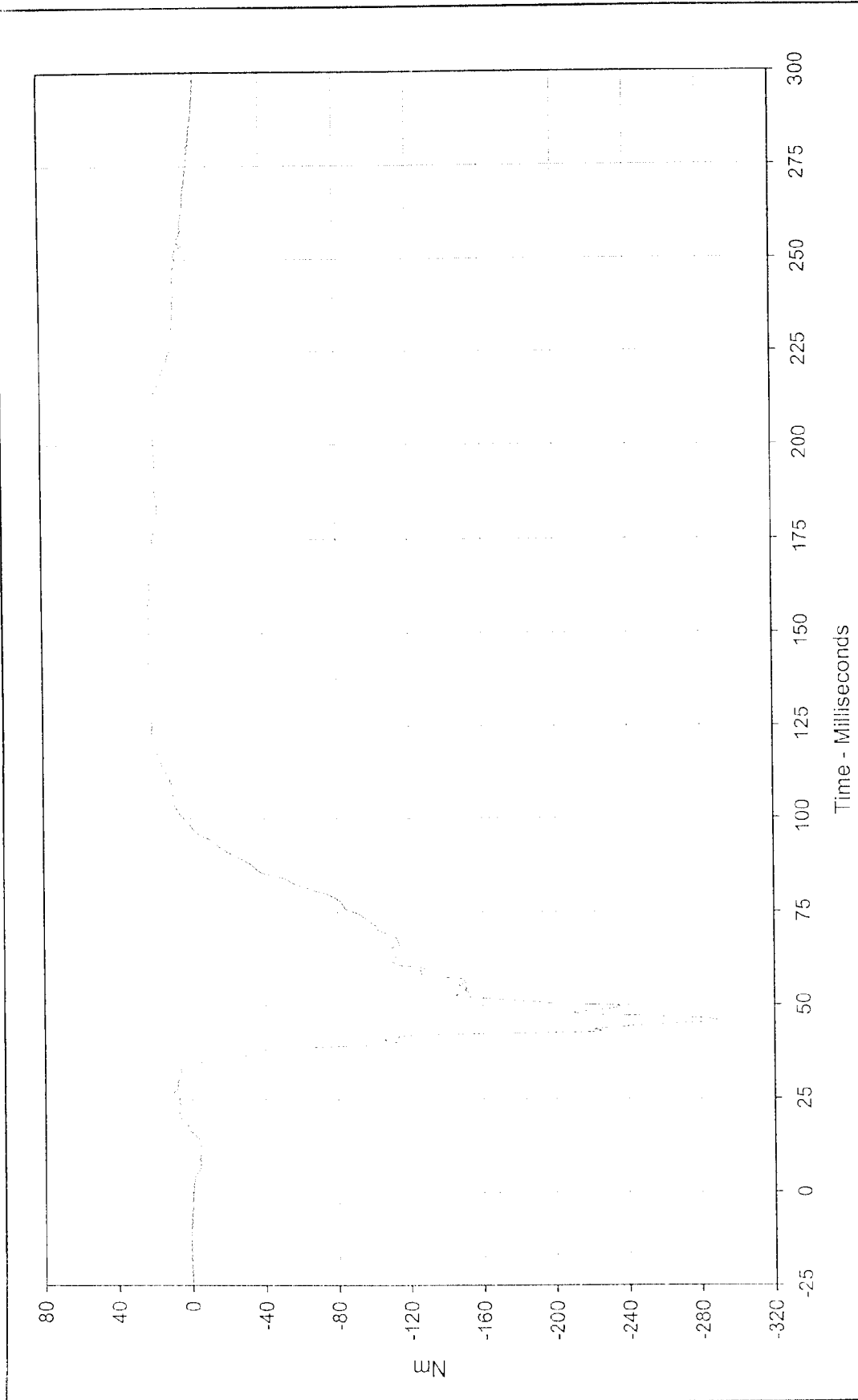




Curve Description: Driver Right Upper Tibia Moment X
 Maximum Value: 45.8 at 43.0 Milliseconds
 Minimum Value: -45.6 at 49.6 Milliseconds
 SAE Filter Class: 600
 Date of Test: 11/10/99
 Curve Number: FIL-027

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: Driver Right Upper Tibia Moment Y

Maximum Value: 22.7 at 136.0 Milliseconds

Minimum Value: -288.9 at 45.9 Milliseconds

SAE Filter Class: 600

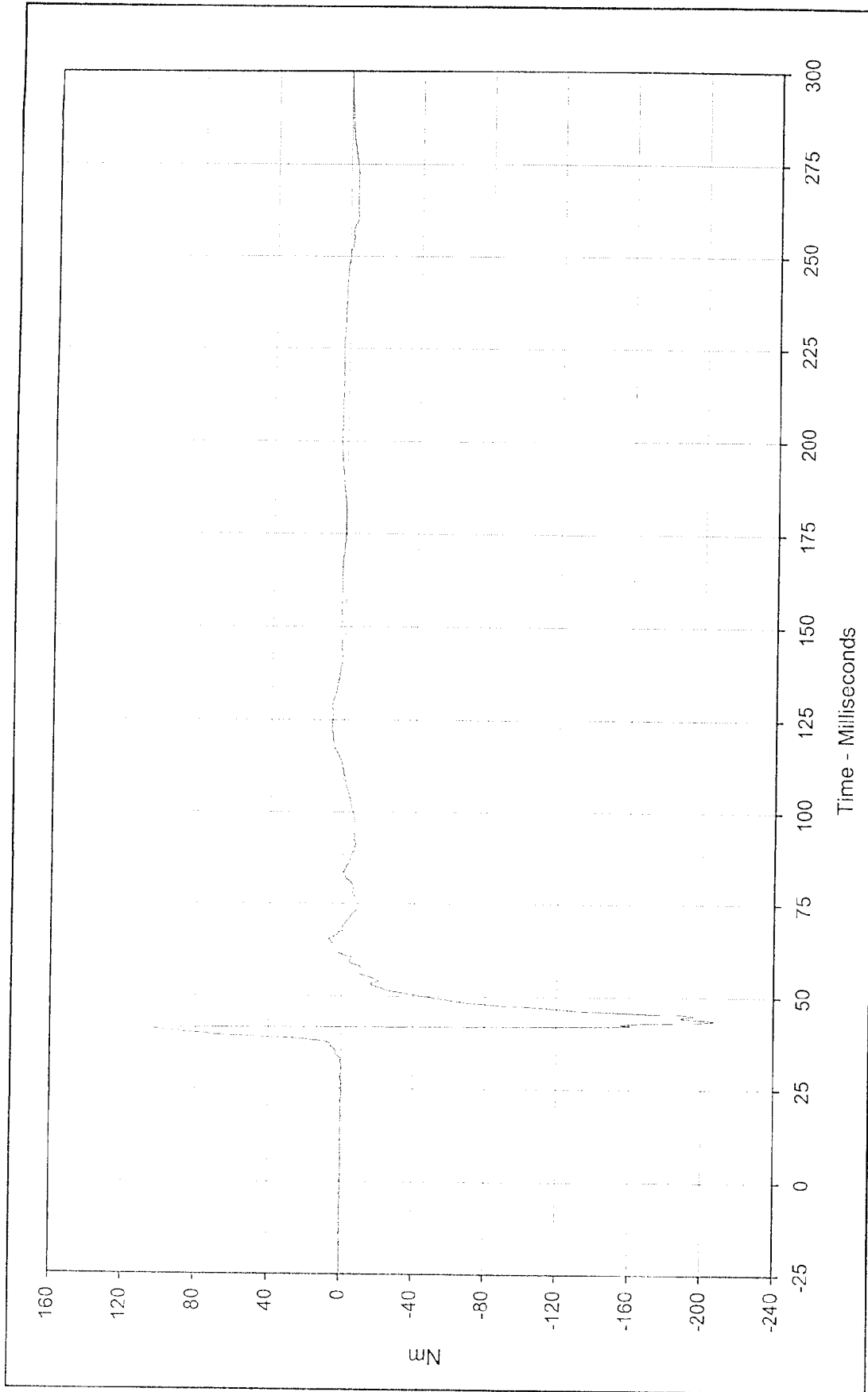
Date of Test: 11/10/99

Curve Number: FIL-028

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan



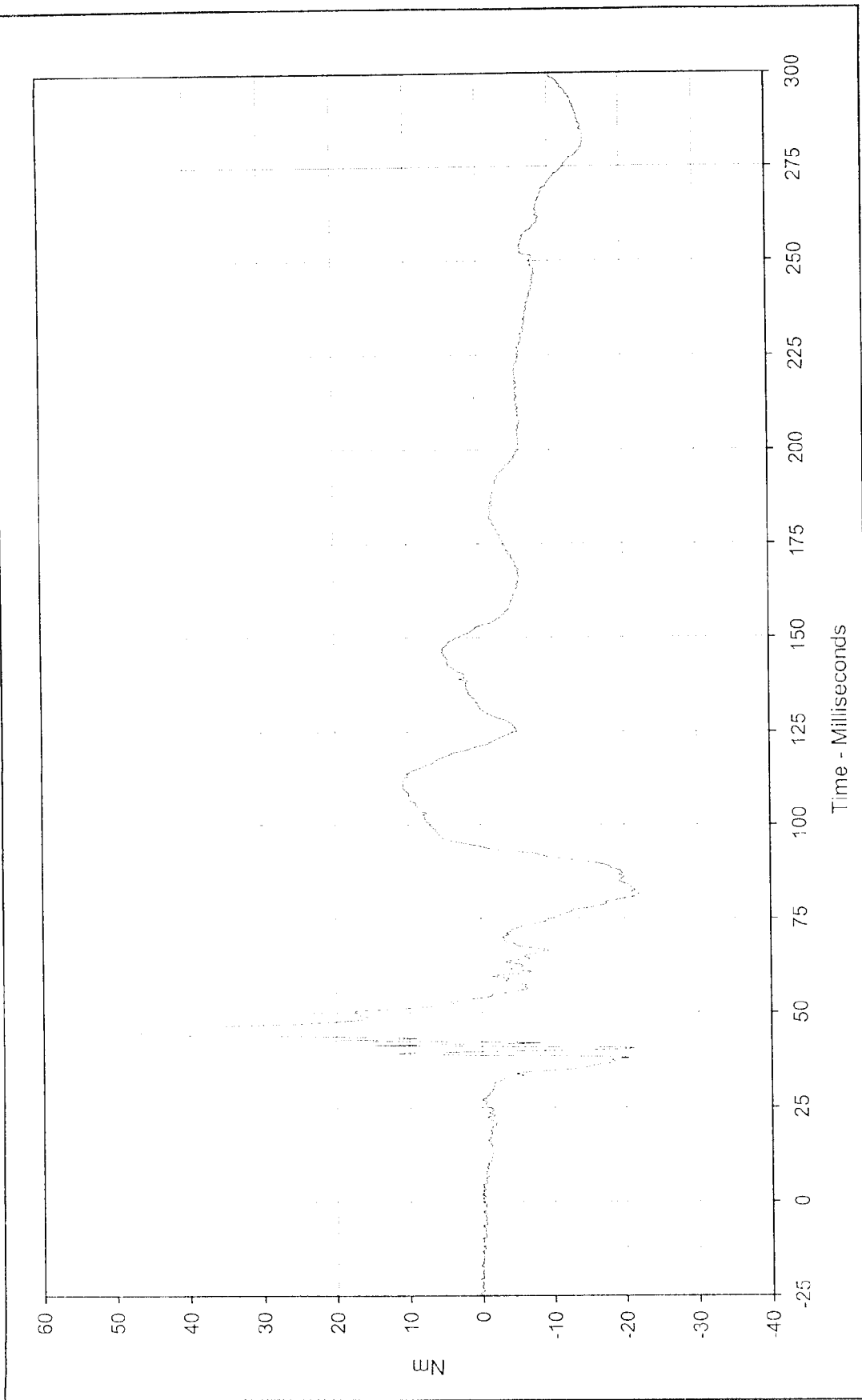


Curve Description: Driver Left Lower Tibia Moment X
Maximum Value: 103.1 at 41.1 Milliseconds
Minimum Value: -206.9 at 43.8 Milliseconds
SAE Filter Class: 600
Date of Test: 11/10/99
Curve Number: FIL-029

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

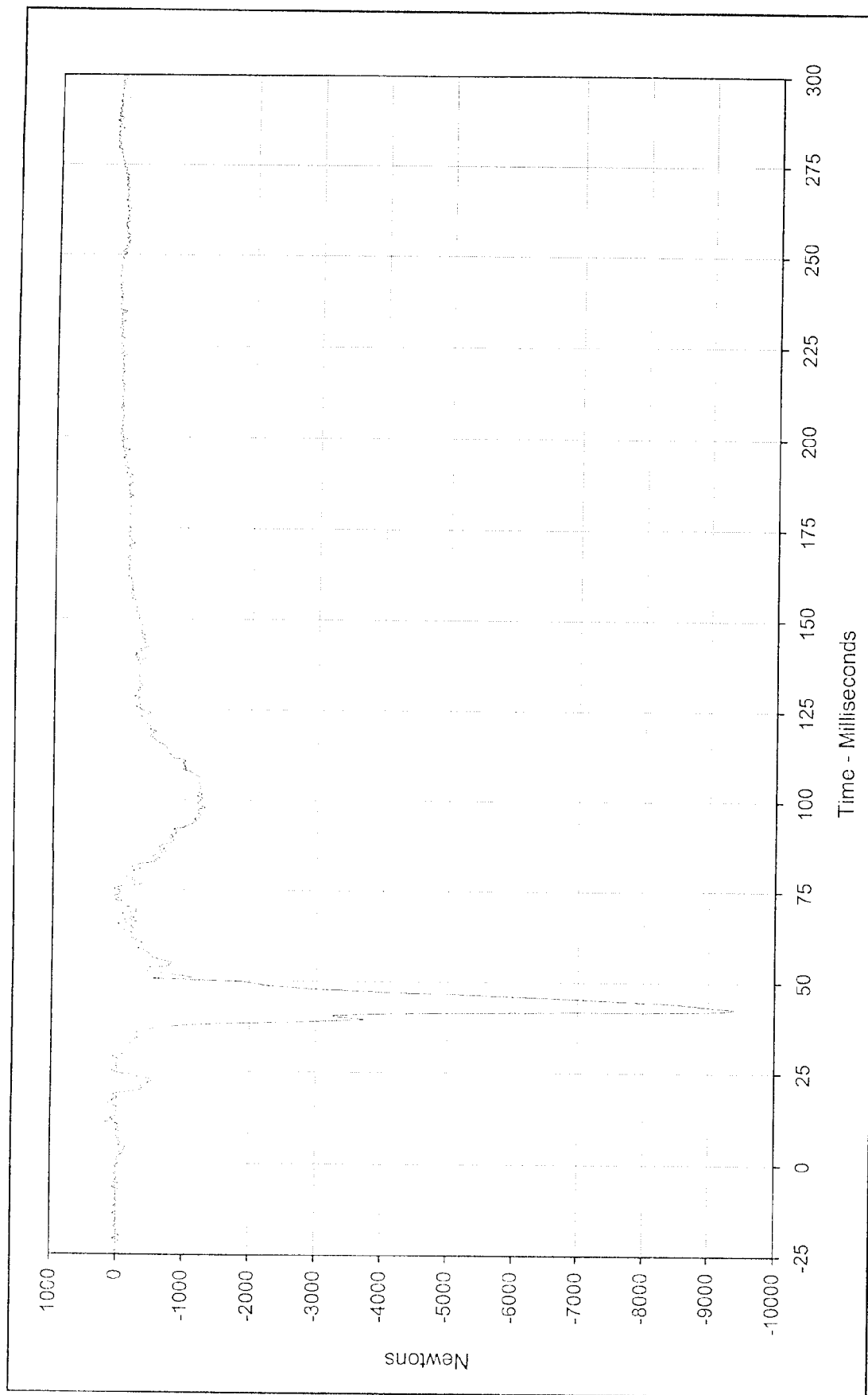
Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description:	Driver Left Lower Tibia Moment Y	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	47.8 at 45.7 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-21.9 at 81.4 Milliseconds			
SAE Filter Class:	600			
Date of Test:	11/10/99			
Curve Number:	FIL-030			



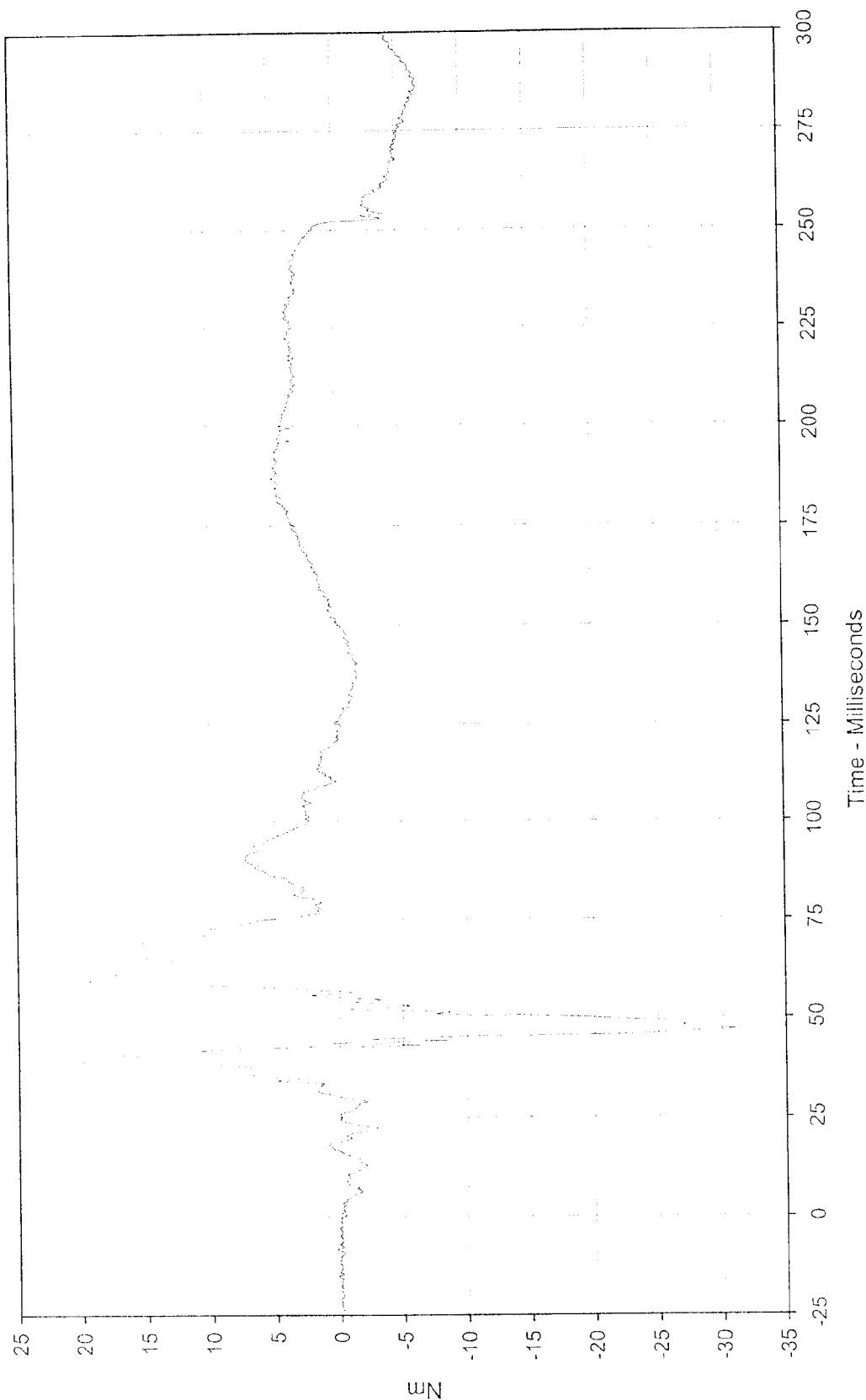


Curve Description: Driver Left Lower Tibia Force Z

Maximum Value:	175.4	at	11.4	Milliseconds
Minimum Value:	-9410.3	at	42.7	Milliseconds
SAE Filter Class:	600			
Date of Test:	11/10/99			
Curve Number:	FIL-031			

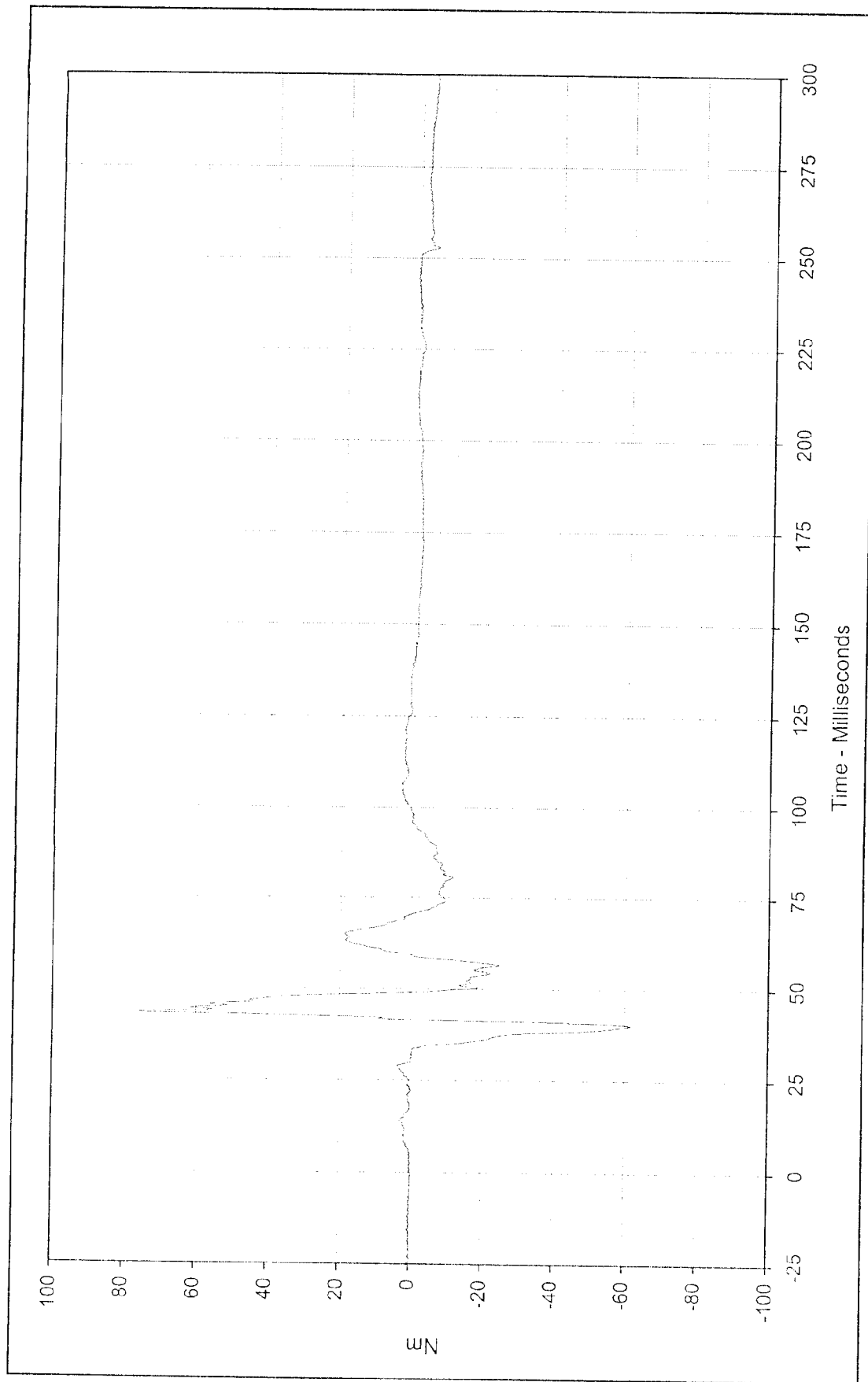
Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Test Vehicle:	2000 Dodge Neon 4 Door Sedan	





Curve Description:	Driver Right Lower Tibia Moment X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	22.3 at 39.5 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-31.0 at 46.9 Milliseconds			
SAE Filter Class:	600			
Date of Test:	11/10/99			
Curve Number:	FIL-032			

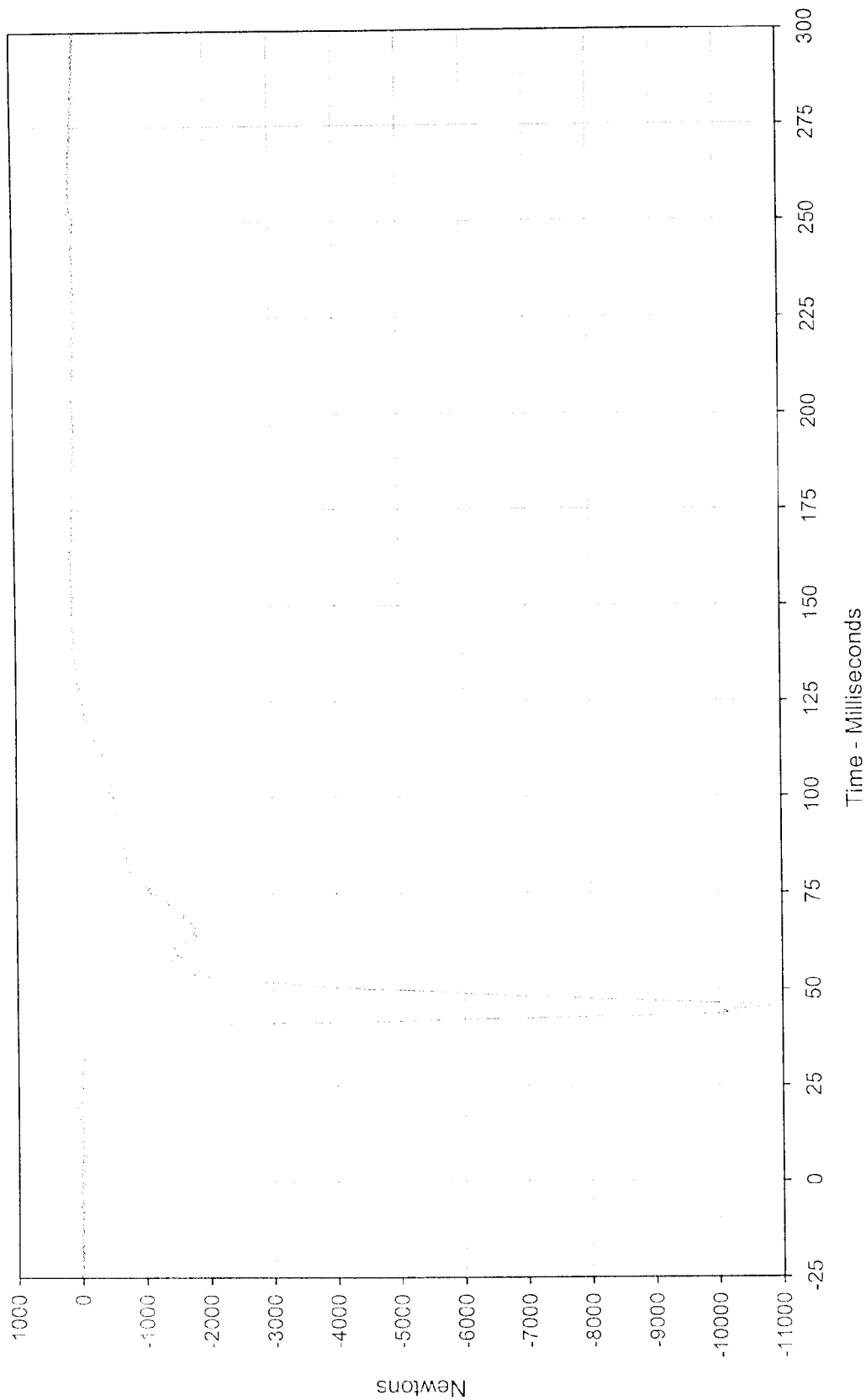




Curve Description: Driver Right Lower Tibia Moment Y
Maximum Value: 75.9 at 43.3 Milliseconds
Minimum Value: -61.8 at 40.1 Milliseconds
SAE Filter Class: 600
Date of Test: 11/10/99
Curve Number: FIL-033

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: Driver Right Lower Tibia Force Z

Maximum Value: 160.4 at 162.4 Milliseconds

Minimum Value: -10807.4 at 45.5 Milliseconds

SAE Filter Class: 600

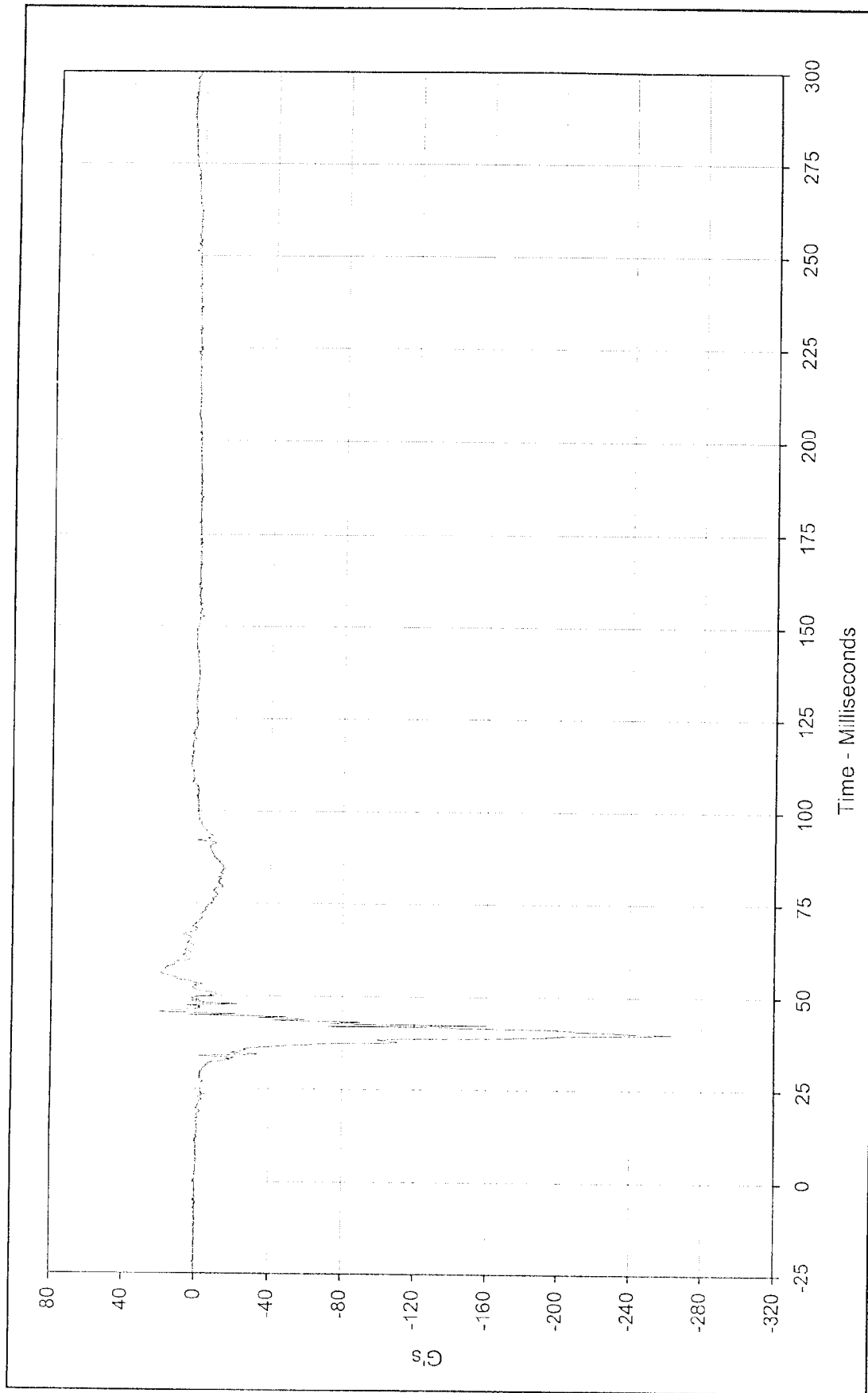
Date of Test: 11/10/99

Curve Number: FIL-034

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

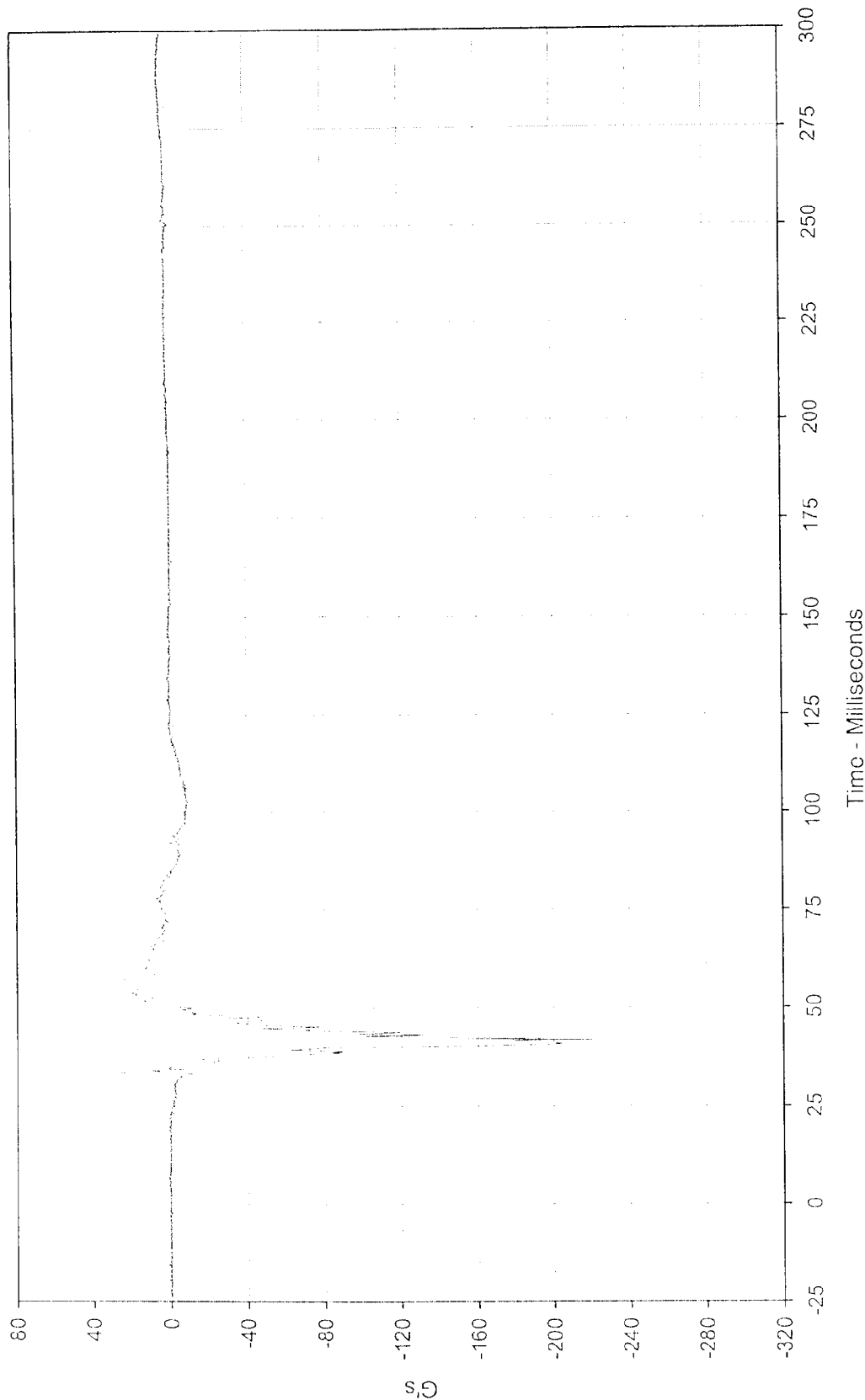
Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description:	Driver Left Foot Aft X		Test Program:	2000 NHTSA 35 mph NCAP No.: MY0304	
Maximum Value:	19.9	at 45.9 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-263.6	at 39.9 Milliseconds			
SAE Filter Class:	1000				
Date of Test:	11/10/99				
Curve Number:	FIL-035				





Curve Description: Driver Left Foot Aft Z

Maximum Value: 35.4 at 33.7 Milliseconds

Minimum Value: -219.8 at 41.8 Milliseconds

SAE Filter Class: 1000

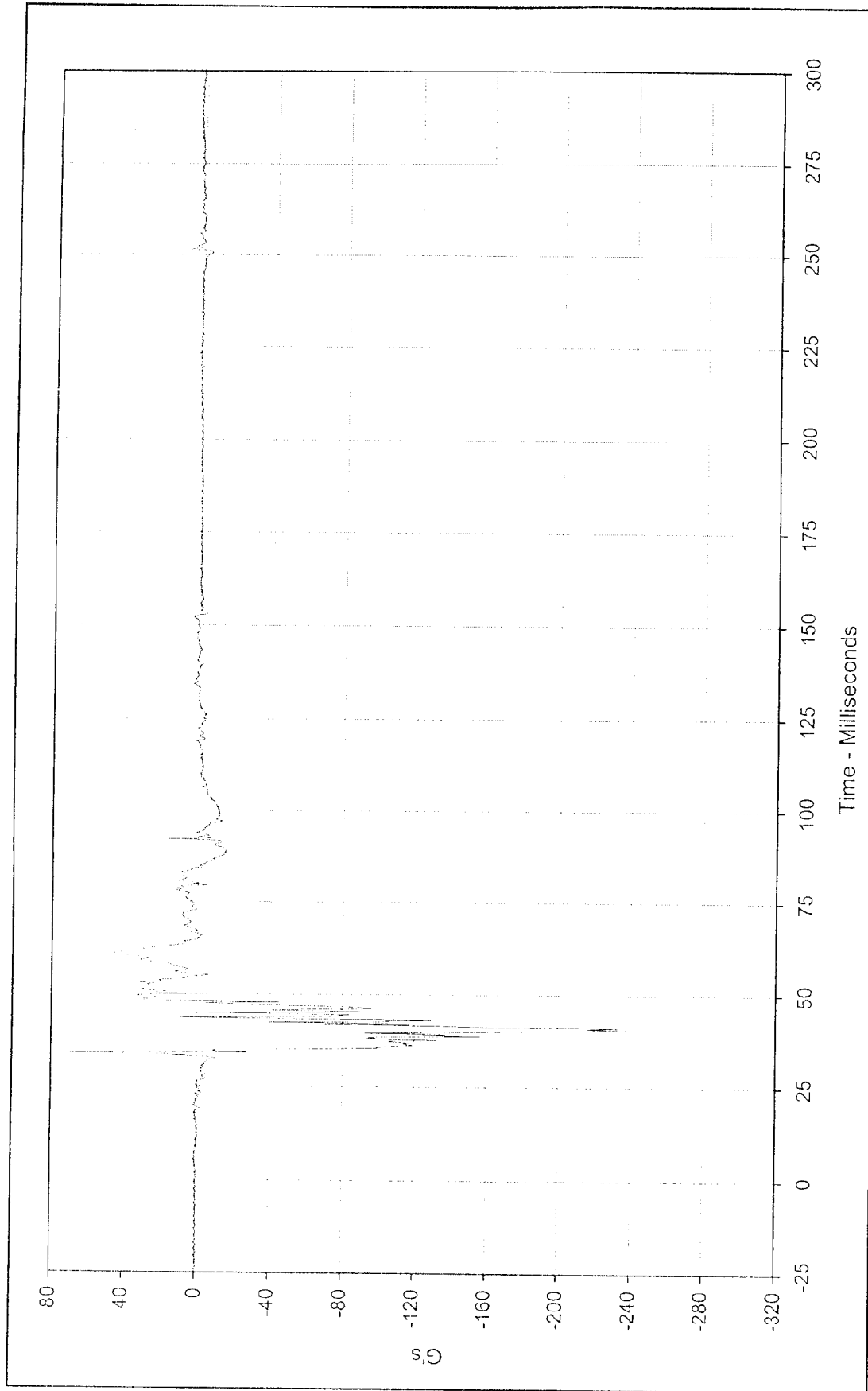
Date of Test: 11/10/99

Curve Number: FIL-036

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

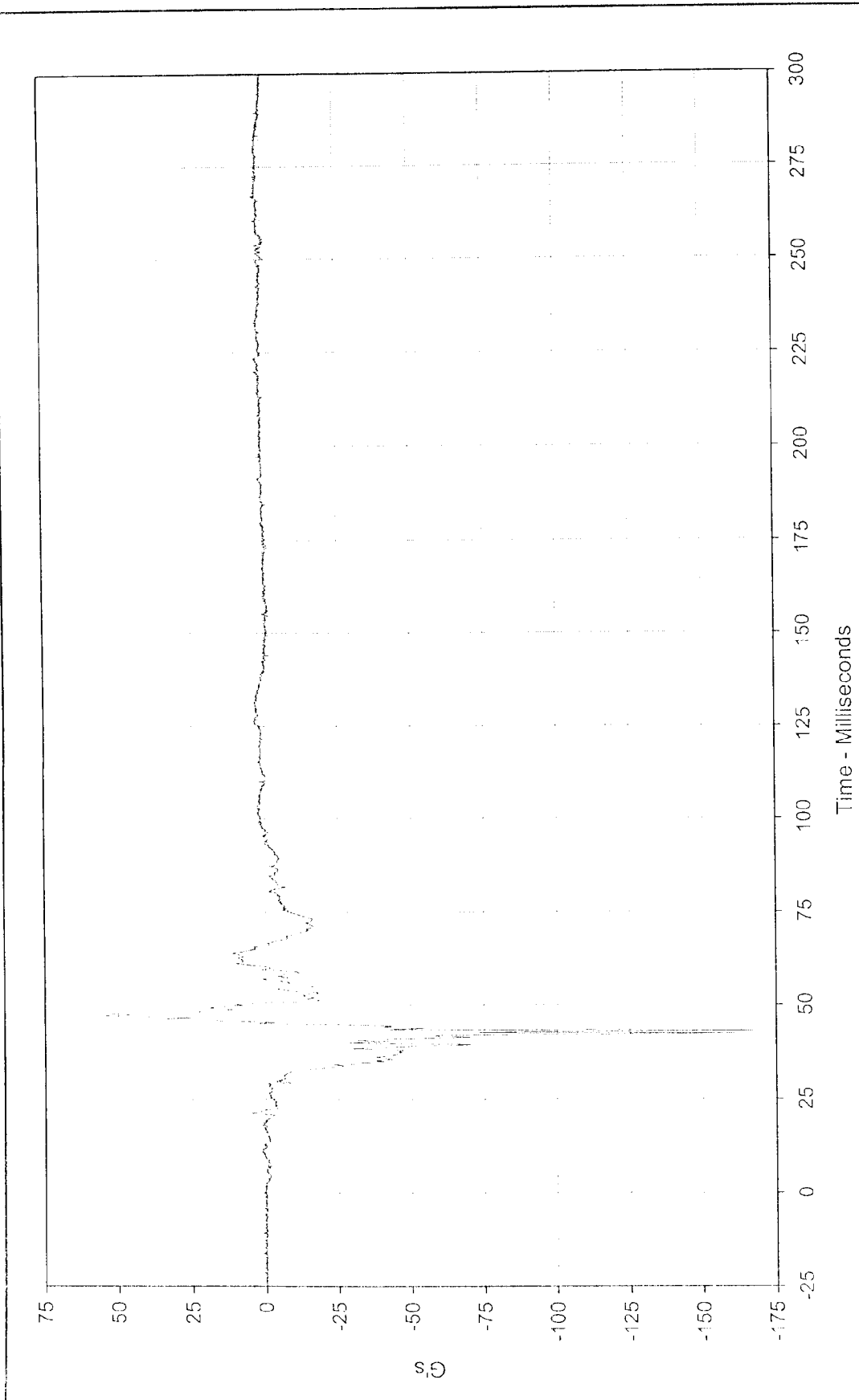
Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description:	Driver Left Foot Fore Z		Test Program:	2000 NHTSA 35 mph NCAP		No.:	MY0304
Maximum Value:	77.1	at 33.9	Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan		
Minimum Value:	-239.4	at 40.5	Milliseconds				
SAE Filter Class:	1000						
Date of Test:	11/10/99						
Curve Number:	FIL-037						





Curve Description: Driver Right Foot Aft X
 Maximum Value: 54.9 at 47.2 Milliseconds
 Minimum Value: -166.7 at 43.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 11/10/99
 Curve Number: FIL-038

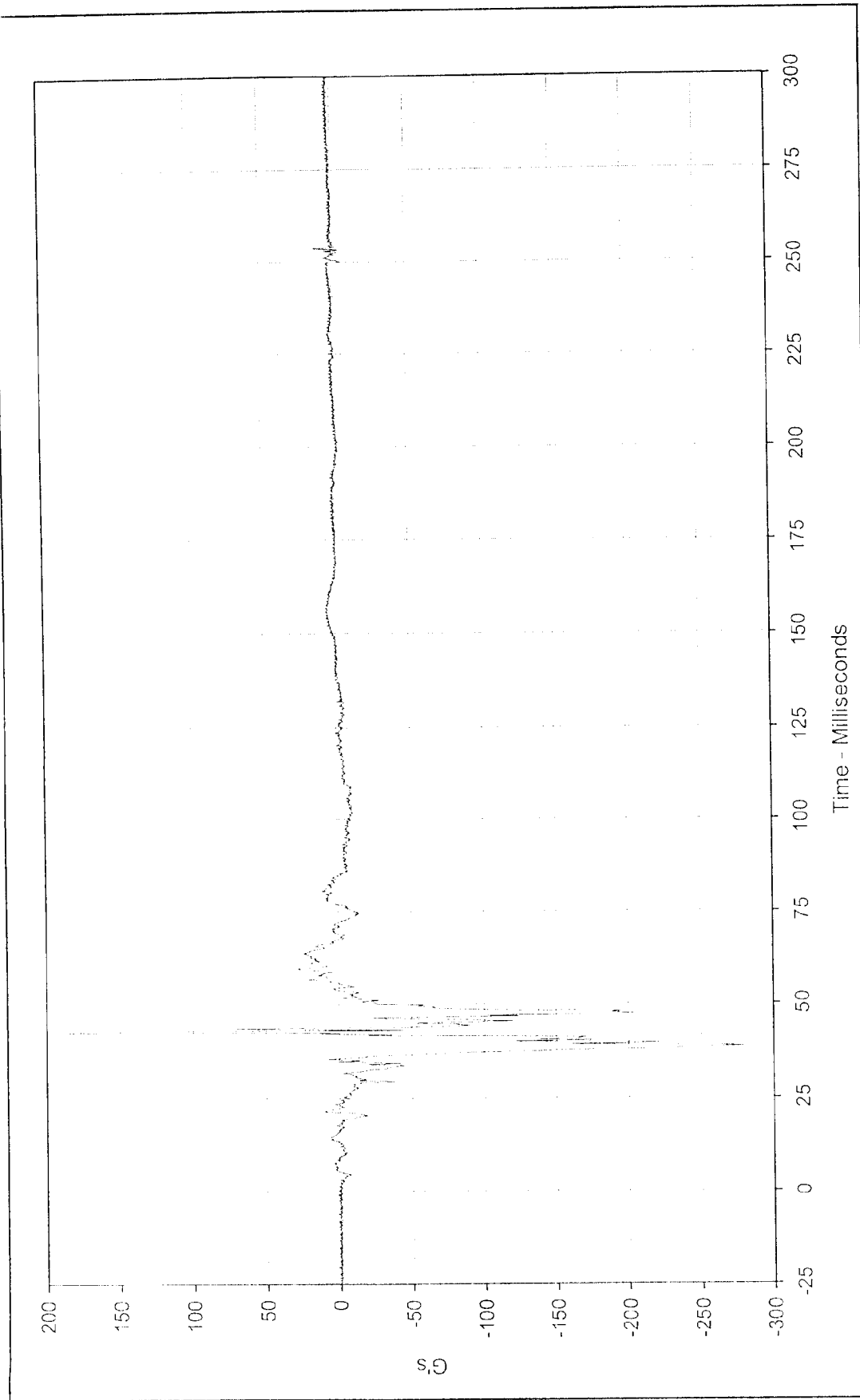
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description:	Driver Right Foot Aft Z		Test Program:	2000 NHTSA 35 mph NCAP No.: MY0304	
Maximum Value:	18.7	at 18.7	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-188.9	at 44.5			
SAE Filter Class:	1000				
Date of Test:	11/10/99				
Curve Number:	FIL-039				



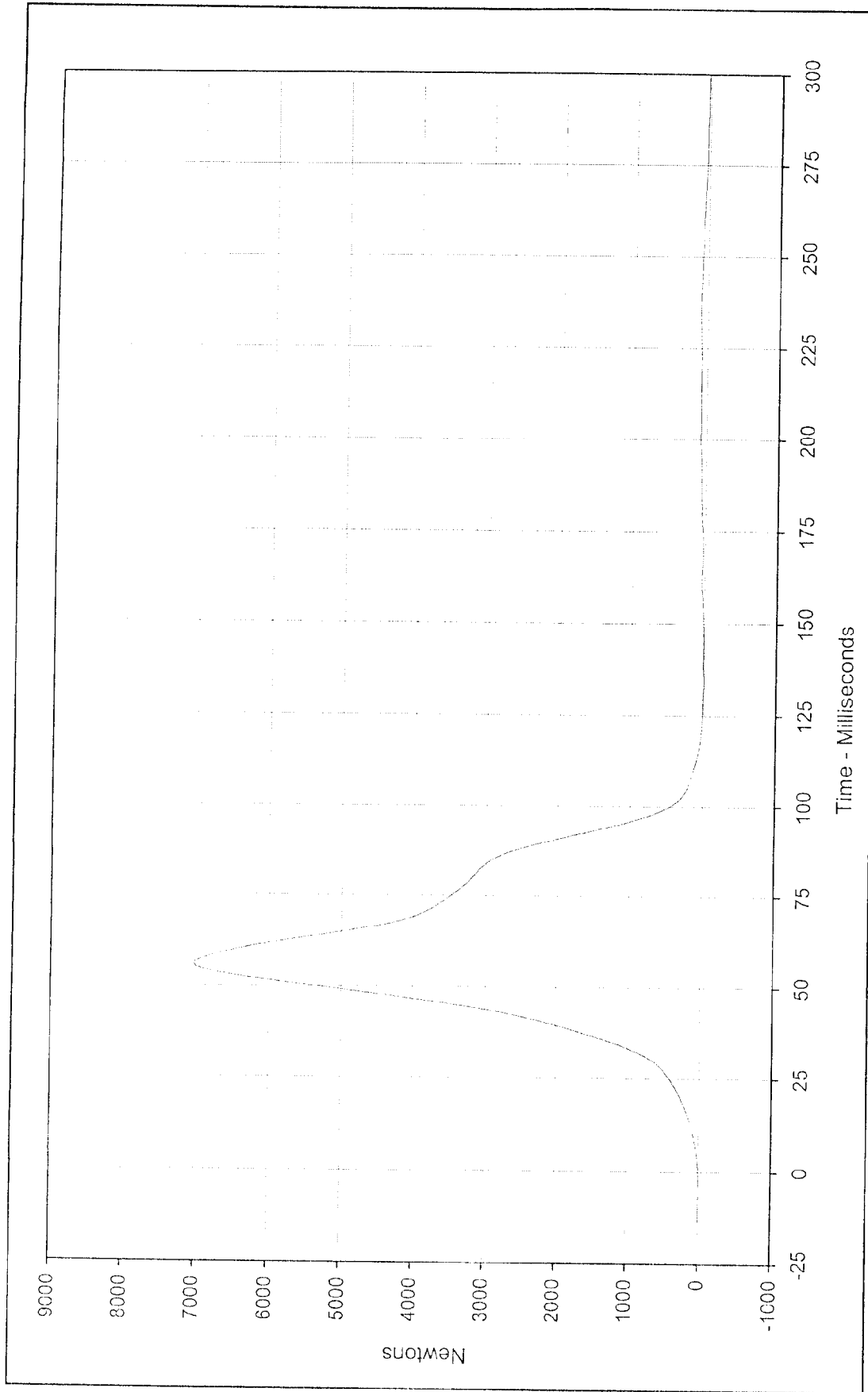


Curve Description: Driver Right Foot Fore Z
 Maximum Value: 187.9 at 42.8 Milliseconds
 Minimum Value: -279.2 at 38.7 Milliseconds

Test Program: 200C NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan

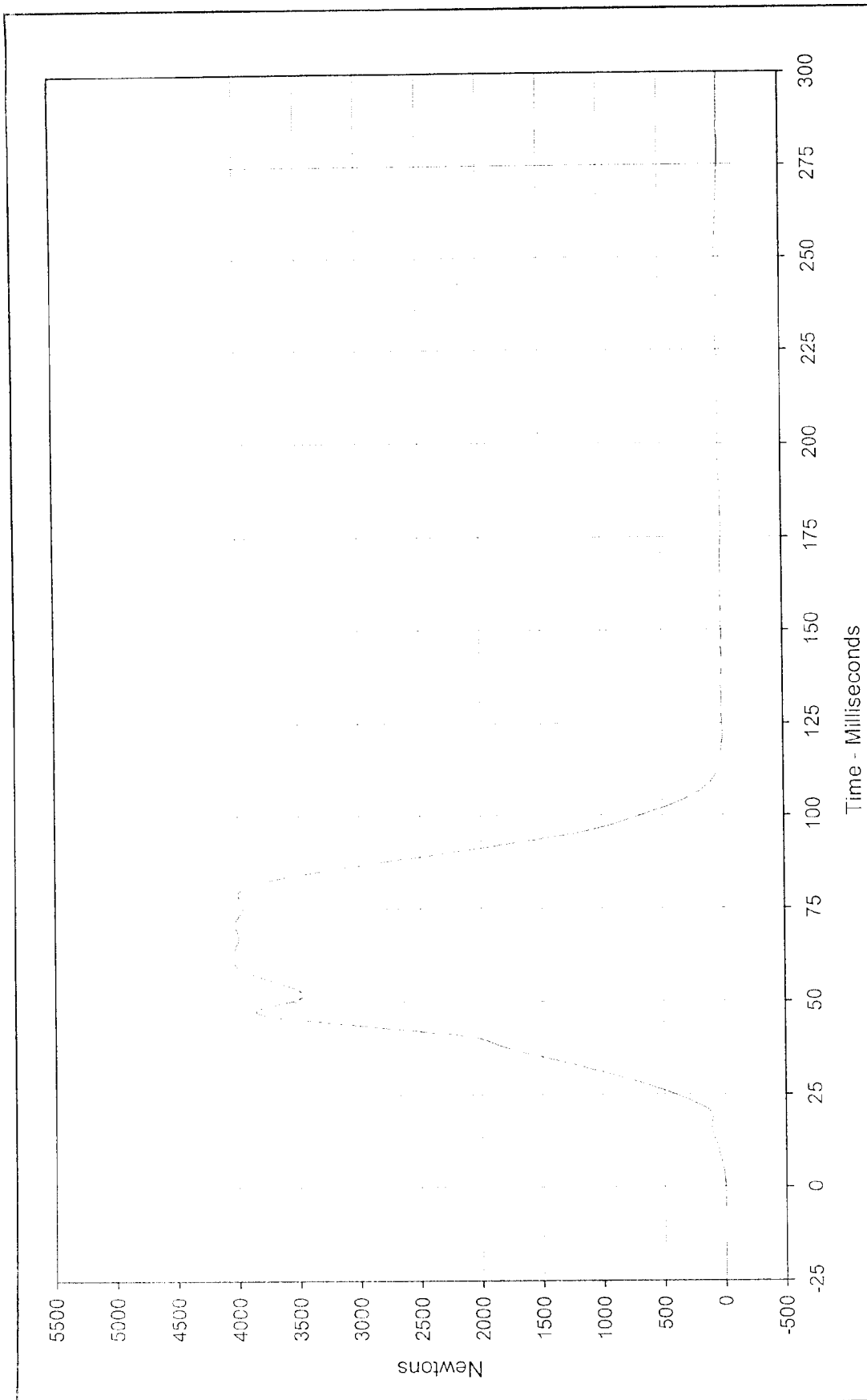


SAE Filter Class: 1000
 Date of Test: 11/10/99
 Curve Number: FIL-040



Curve Description:	Driver Lap Belt Force	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	7018.4 at 55.9 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-1.0 at 0.0 Milliseconds			
SAE Filter Class:	60			
Date of Test:	11/10/99			
Curve Number:	FIL-041			





Curve Description: Driver Shoulder Belt Force

Maximum Value: 4048.6 at 62.0 Milliseconds

Minimum Value: -2.0 at 177.1 Milliseconds

SAE Filter Class: 60

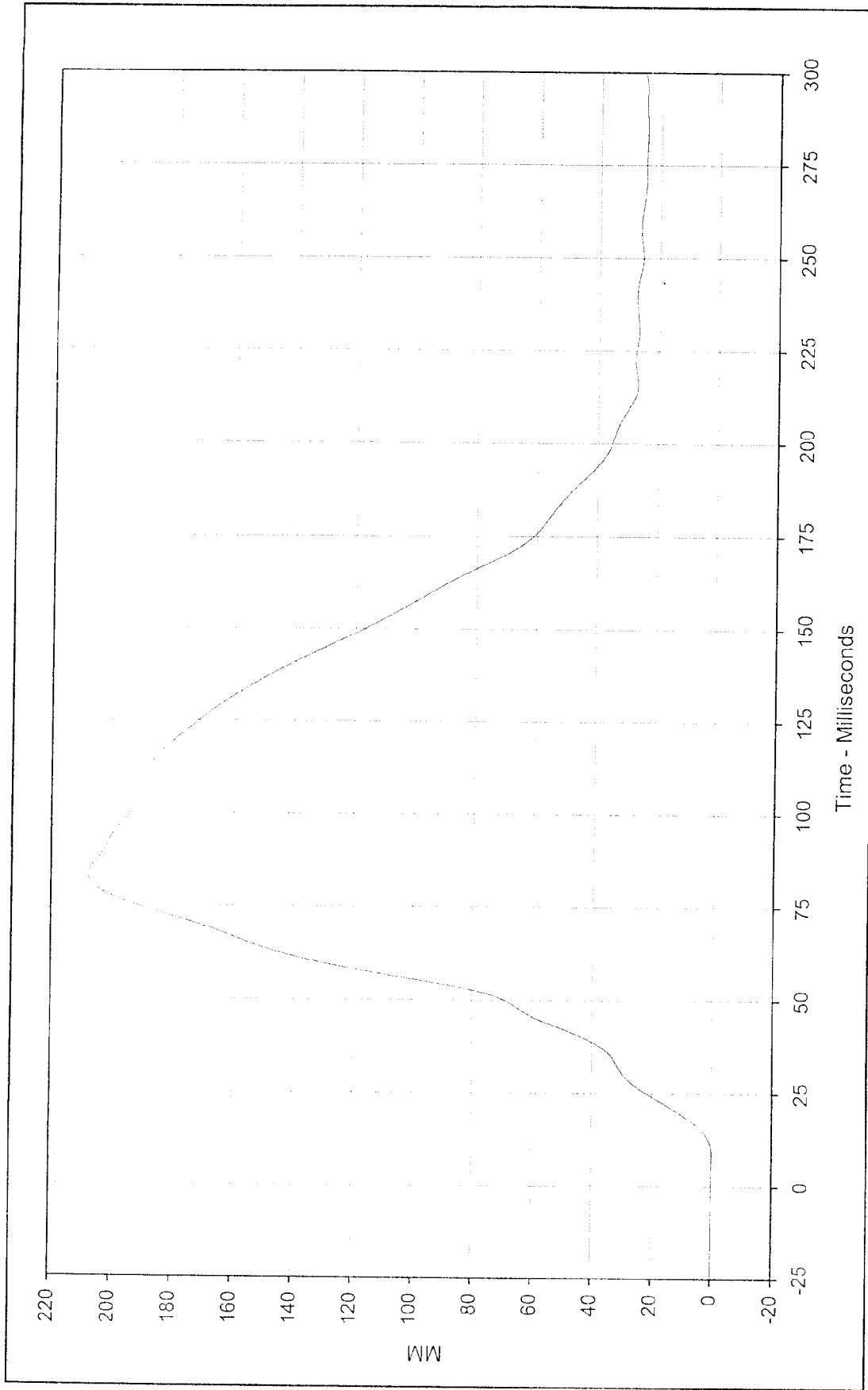
Date of Test: 11/10/99

Curve Number: FIL-042

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: Driver Shoulder Belt Pullout

Maximum Value: 207.9 at 83.0 Milliseconds

Minimum Value: -0.3 at 8.2 Milliseconds

SAE Filter Class: 60

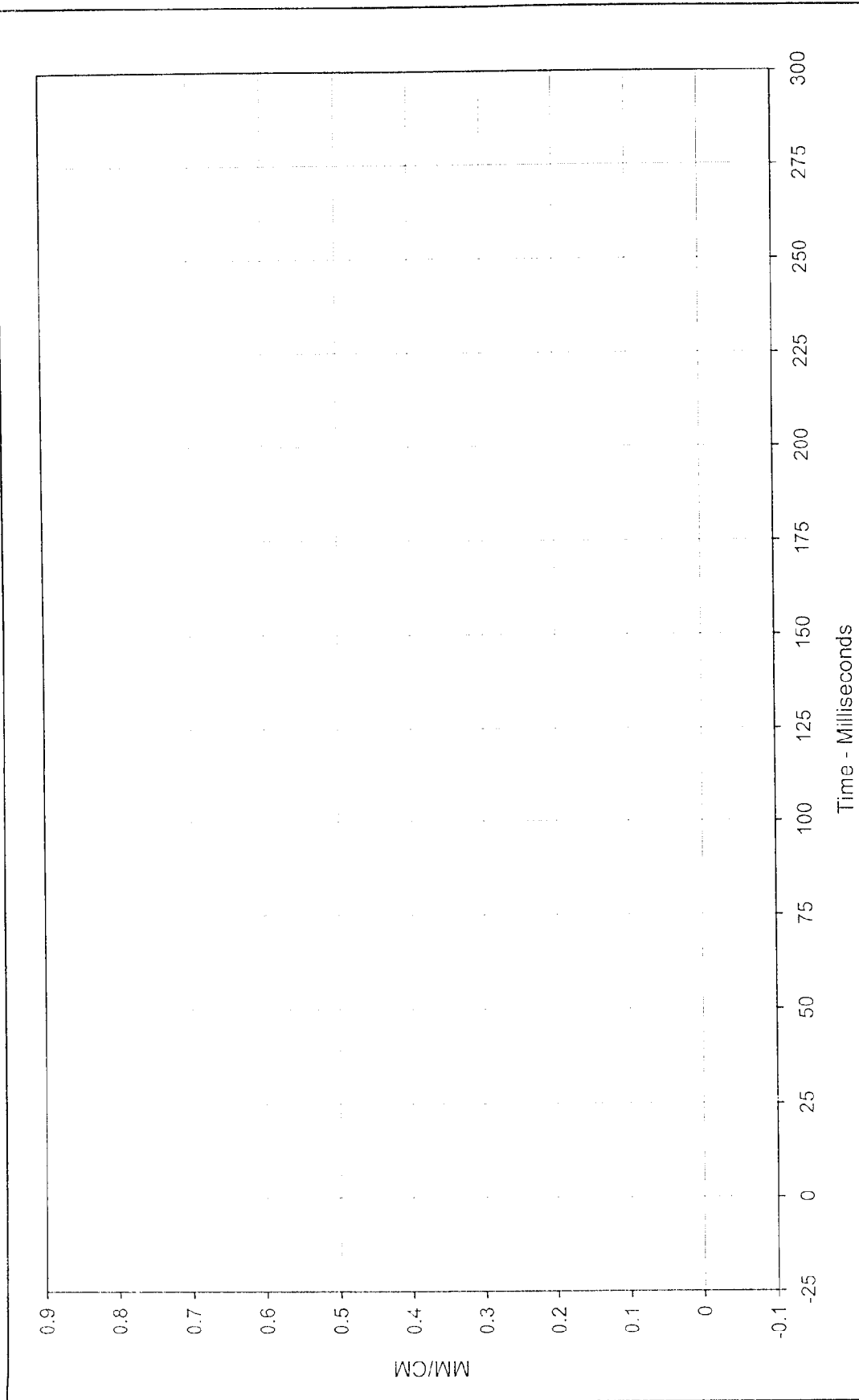
Date of Test: 11/10/99

Curve Number: FIL-043

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan



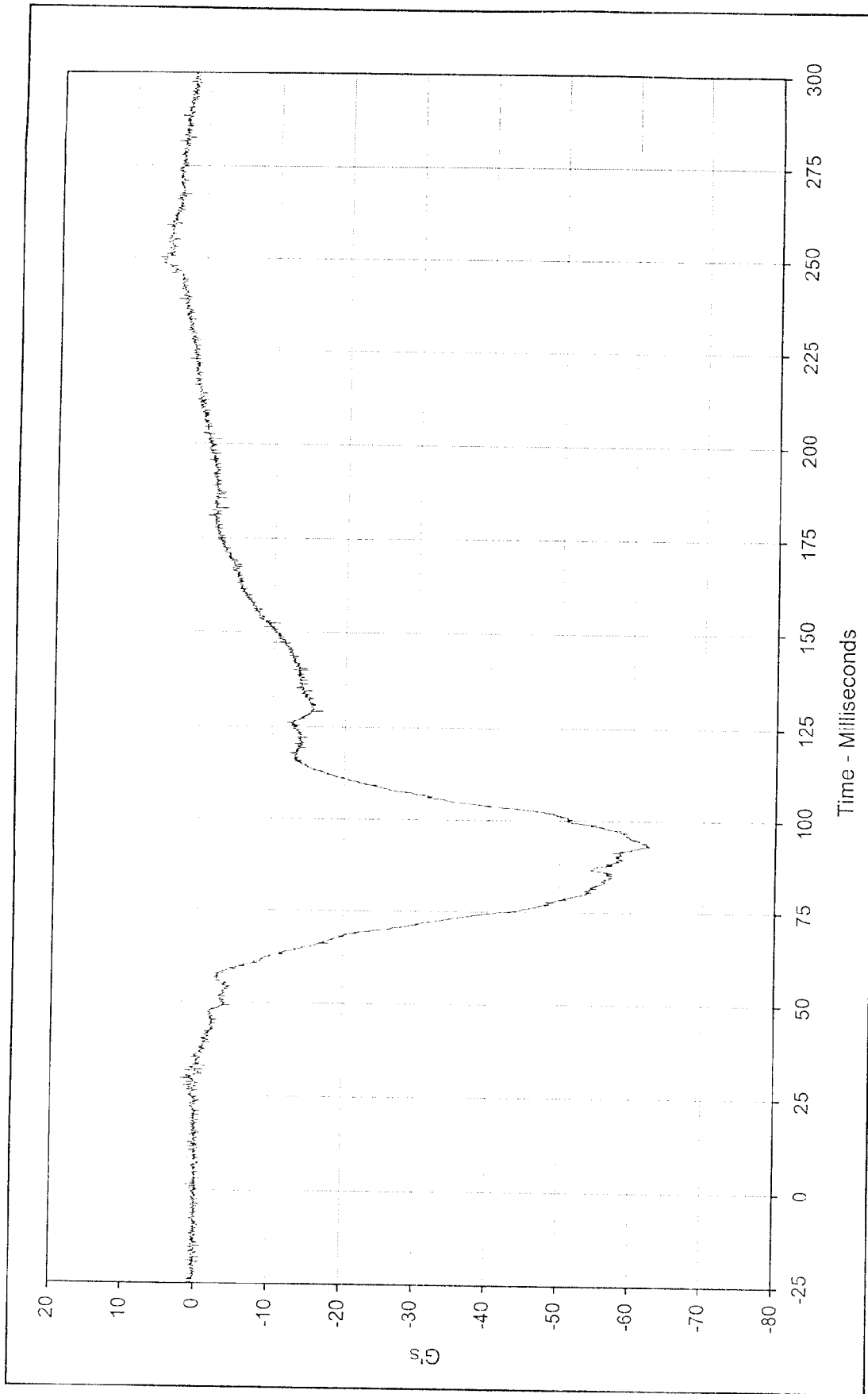


Curve Description: Driver Shoulder Belt Elongation *
 Maximum Value: 0.00 at 0.0 Milliseconds
 Minimum Value: 0.00 at 0.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/10/99
 Curve Number: FIL-C44

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan



*Not Installed

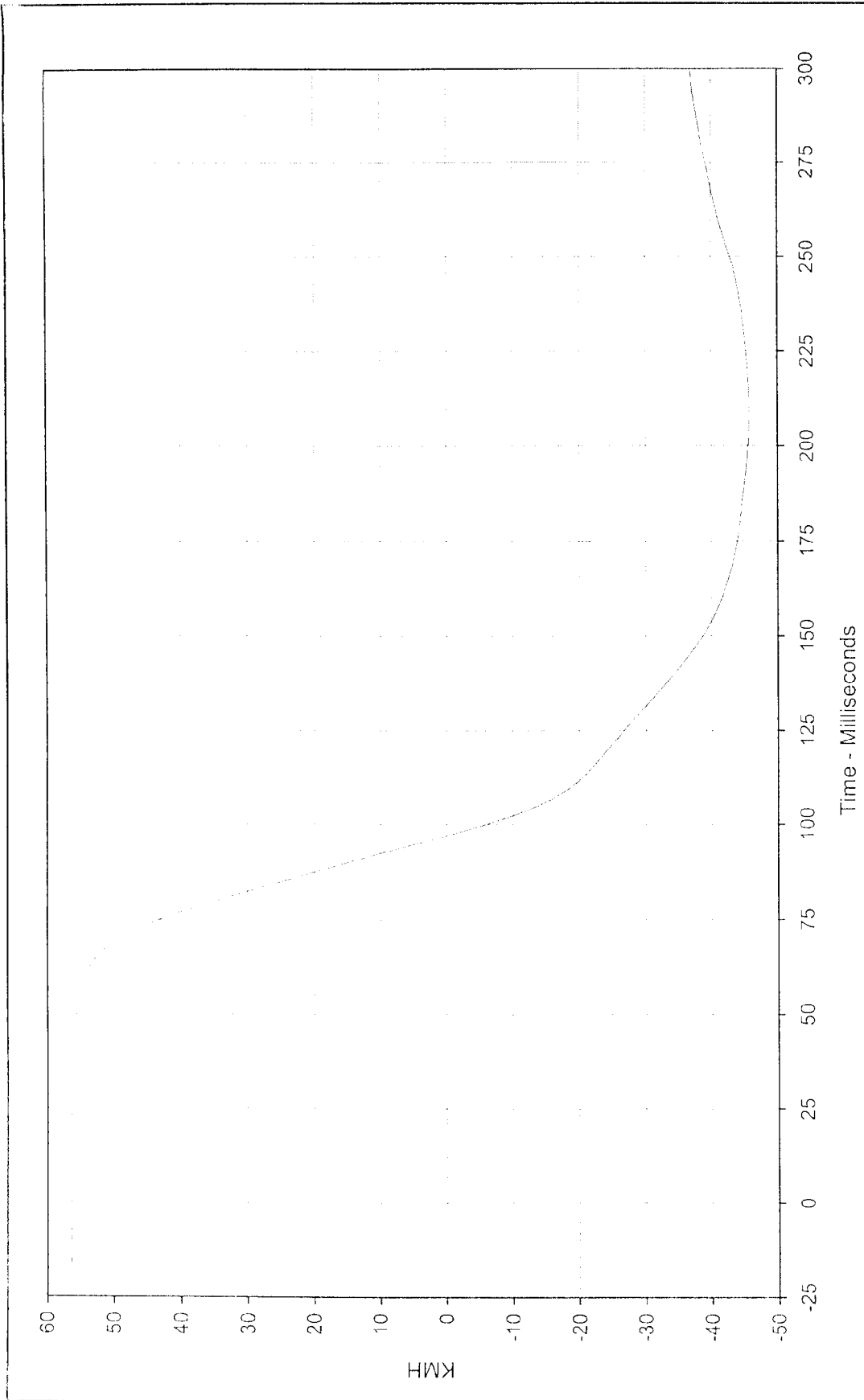


Curve Description: Passenger Head Primary X
 Maximum Value: 6.5 at 250.1 Milliseconds
 Minimum Value: -62.5 at 92.7 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 11/10/99
 Curve Number: FIL-045

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

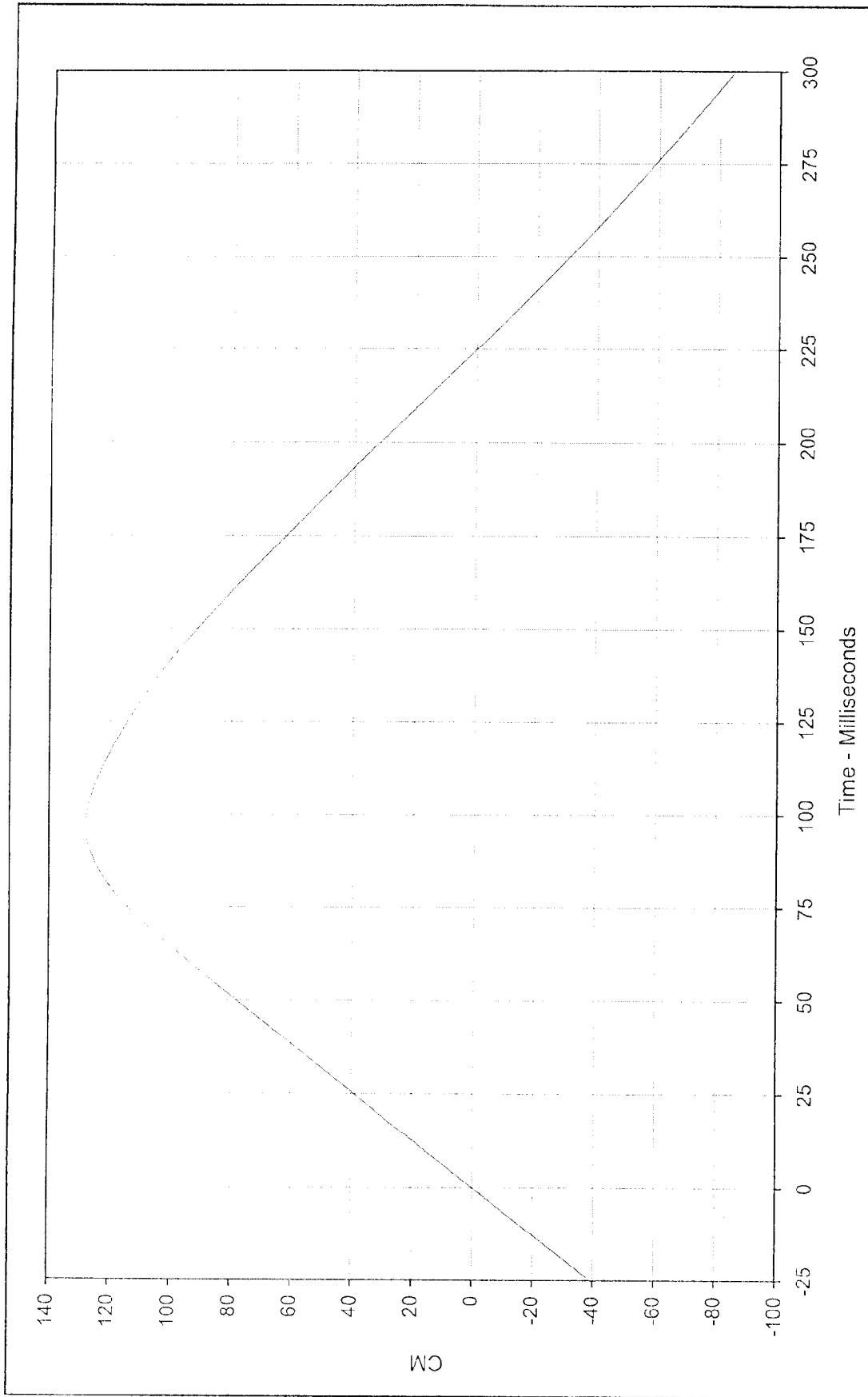
Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description:	Passenger Head Primary X Velocity	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	56.6 at 32.4 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-45.7 at 209.0 Milliseconds			
SAE Filter Class:	180			
Date of Test:	11/10/99			
Curve Number:	IN1-045			





Curve Description: Passenger Head Primary X Displ.

Maximum Value: 127.9 at 96.9 Milliseconds

Minimum Value: -85.1 at 299.9 Milliseconds

SAE Filter Class: 180

Date of Test: 11/10/99

Curve Number: IN2-045

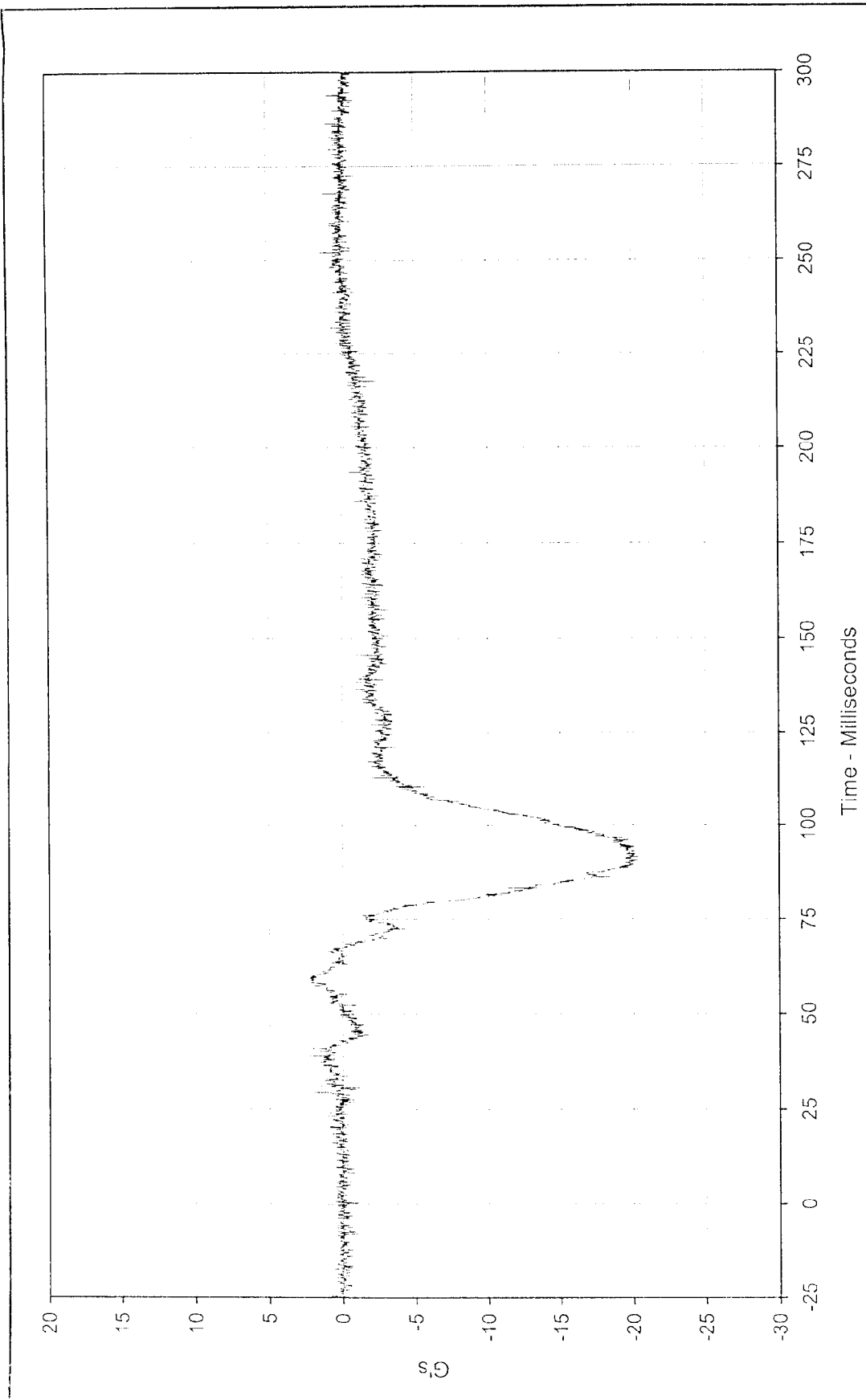
Test Program:

2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle:

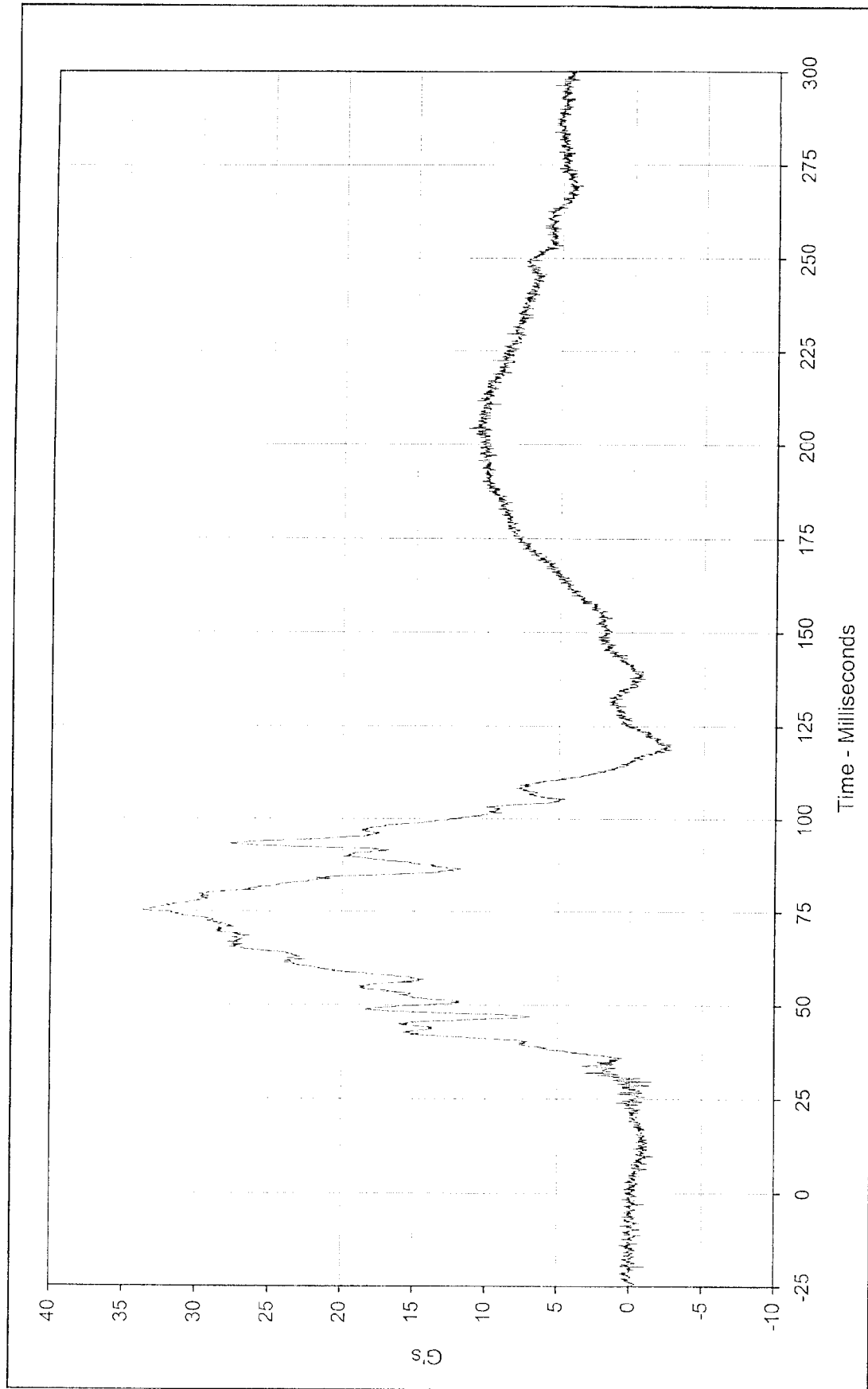
2000 Dodge Neon 4 Door Sedan





Curve Description:	Passenger Head Primary Y		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	2.4	at 38.9 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-20.3	at 90.4 Milliseconds			
SAE Filter Class:	1000				
Date of Test:	11/10/99				
Curve Number:	FIL-046				

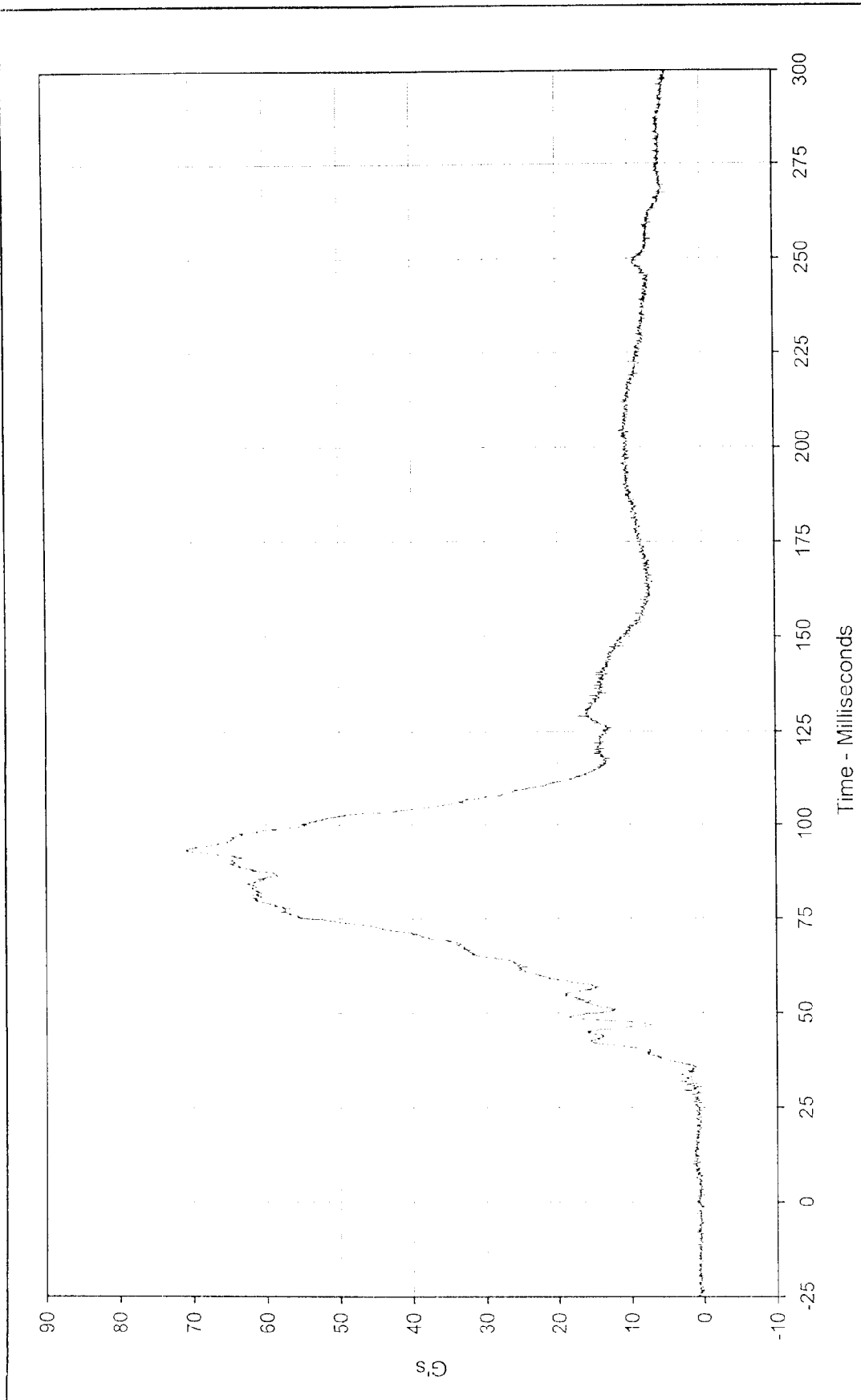




Curve Description: Passenger Head Primary Z
 Maximum Value: 33.7 at 75.2 Milliseconds
 Minimum Value: -2.8 at 118.5 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 11/10/99
 Curve Number: FIL-047

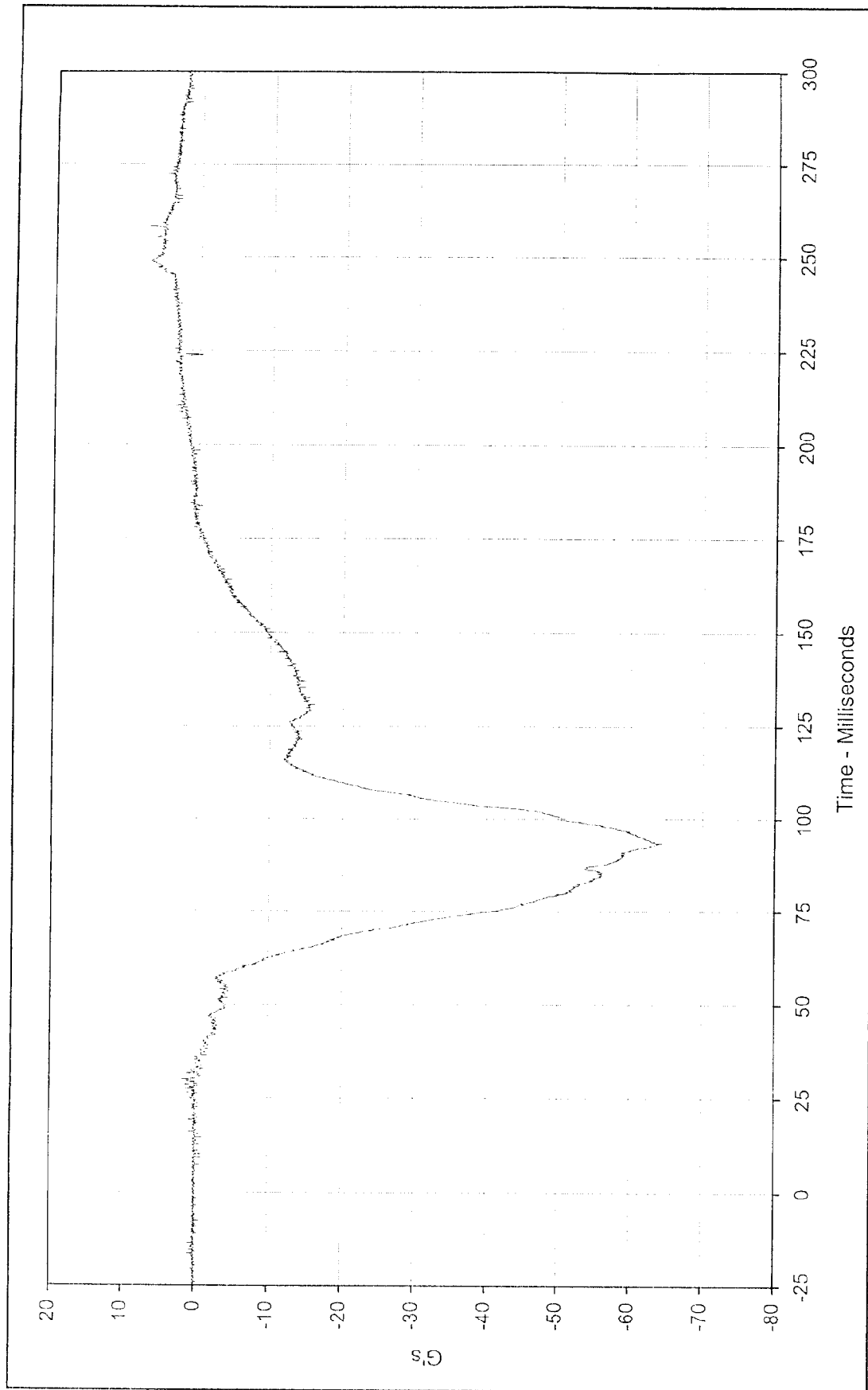
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description:	Passenger Head Resultant Primary	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	70.9 at 93.0 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	0.1 at 1.8 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	11/10/99			
Curve Number:	RES-045			

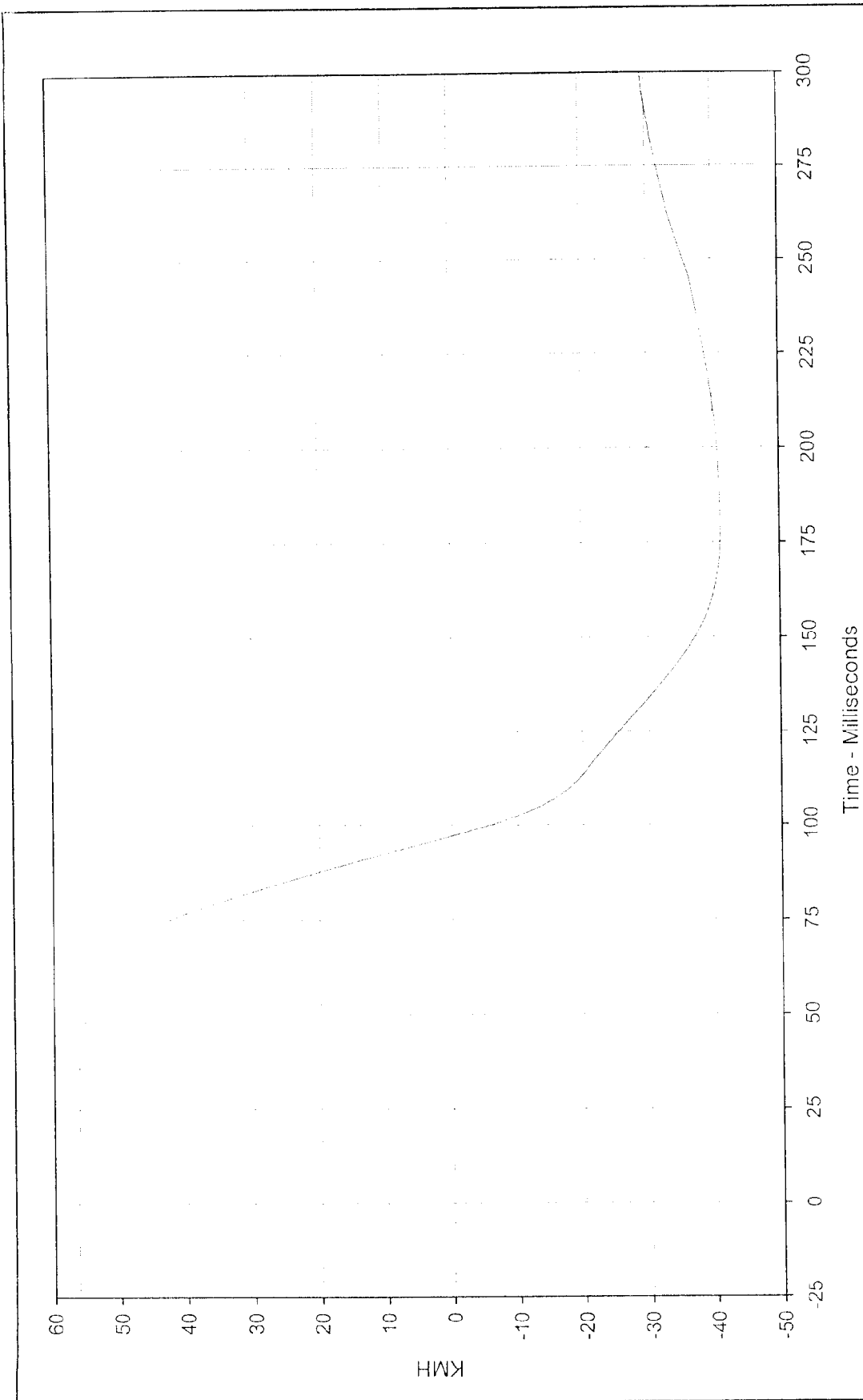




Curve Description: Passenger Head Redundant X
 Maximum Value: 7.1 at 258.4 Milliseconds
 Minimum Value: -64.4 at 93.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 11/10/99
 Curve Number: FIL-048

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan

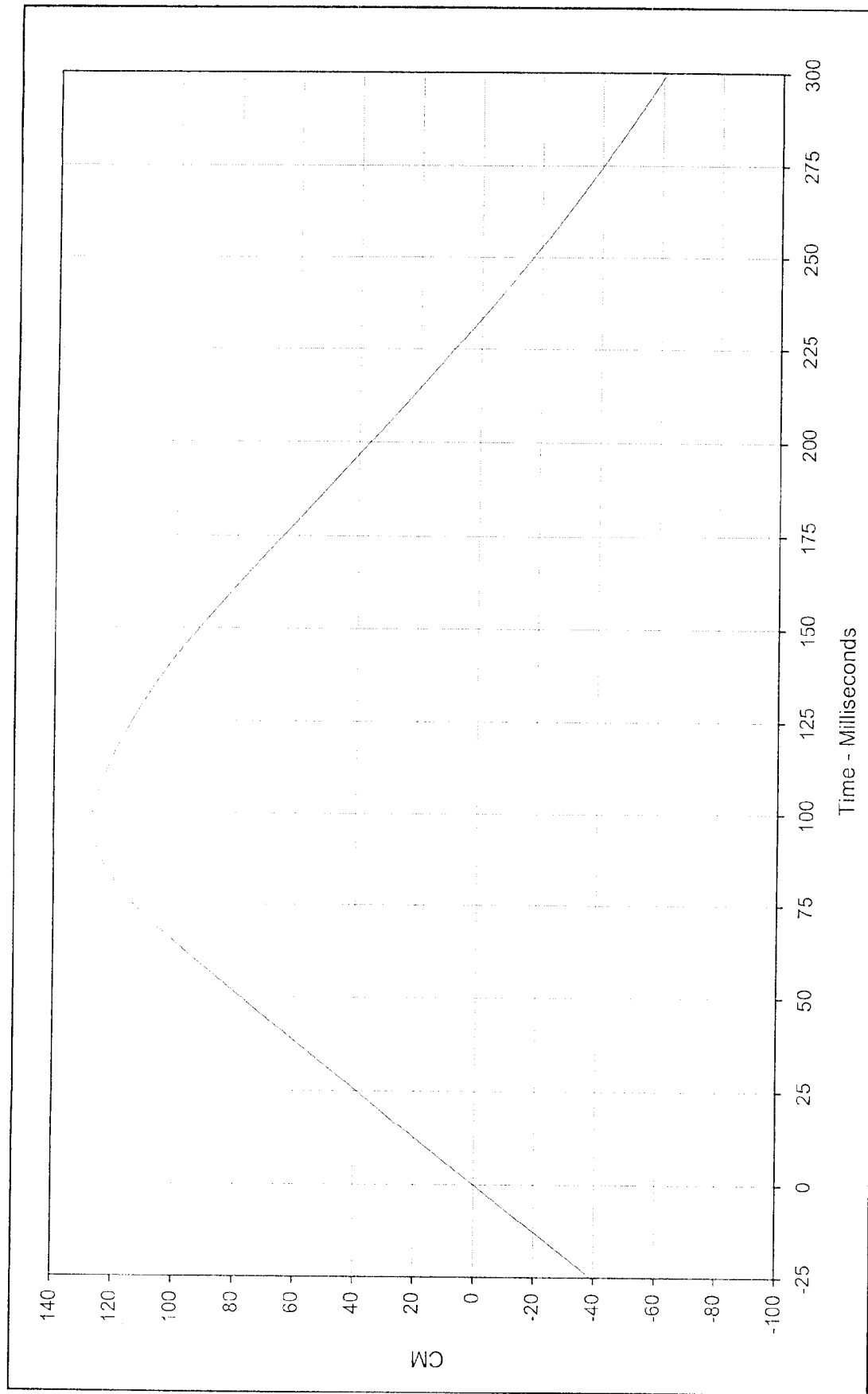




Curve Description: Passenger Head Redundant X Velocity
 Maximum Value: 56.4 at 0.0 Milliseconds
 Minimum Value: -41.1 at 178.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 11/10/99
 Curve Number: IN1-048

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: Passenger Head Redundant X Displ.

Maximum Value: 127.2 at 96.9 Milliseconds

Minimum Value: -61.4 at 299.9 Milliseconds

SAE Filter Class: 180

Date of Test: 11/10/99

Curve Number: IN2-048

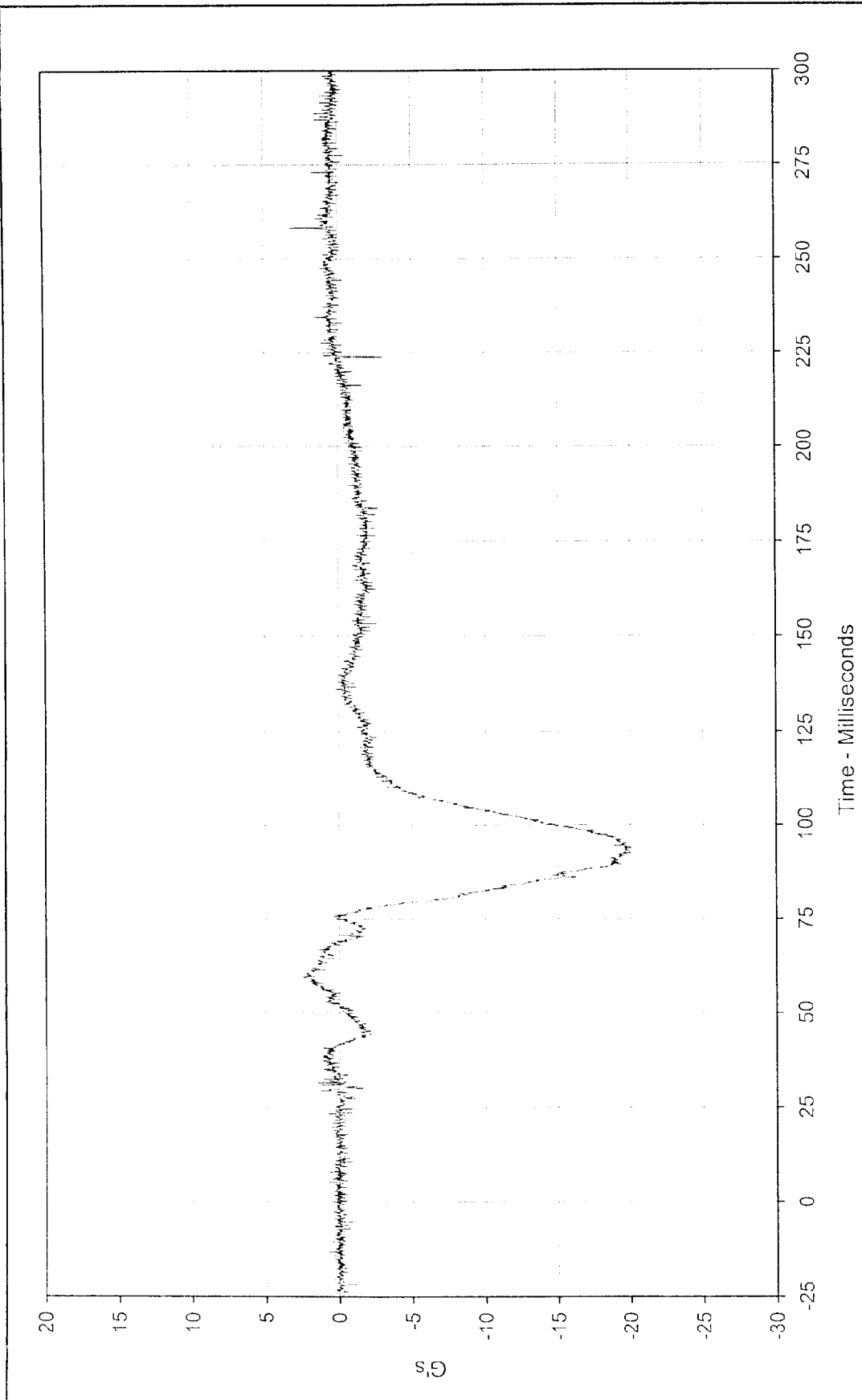
Test Program:

2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle:

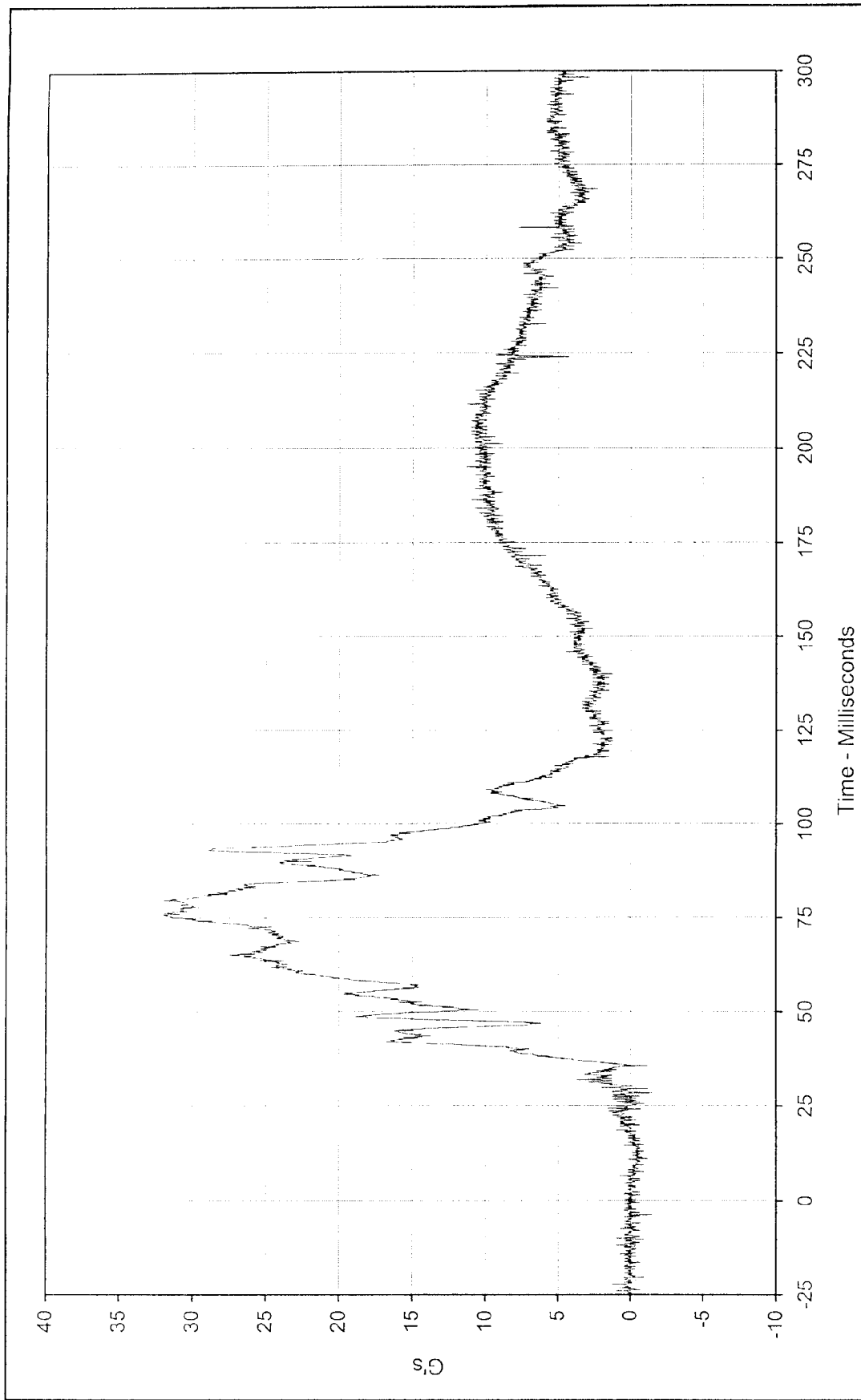
2000 Dodge Neon 4 Door Sedan





Curve Description:	Passenger Head Redundant Y		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	3.1	at 258.4	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-20.3	at 93.7			
SAE Filter Class:	1000				
Date of Test:	11/10/99				
Curve Number:	FIL-049				





Curve Description: Passenger Head Redundant Z Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Maximum Value: 32.2 at 75.8 Milliseconds Test Vehicle: 2000 Dodge Neon 4 Door Sedan

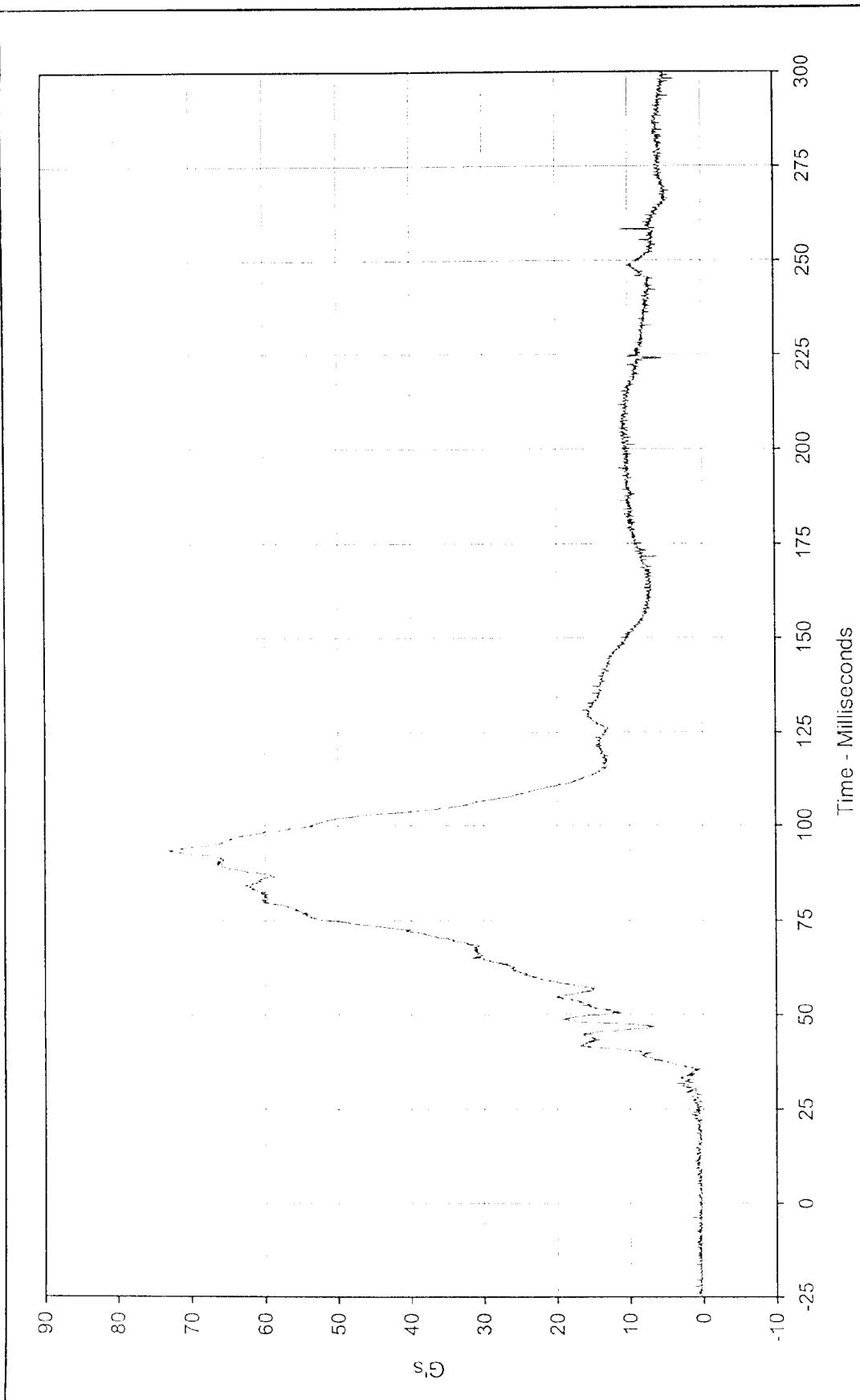
Minimum Value: -1.5 at 28.4 Milliseconds

SAE Filter Class: 1000

Date of Test: 11/10/99

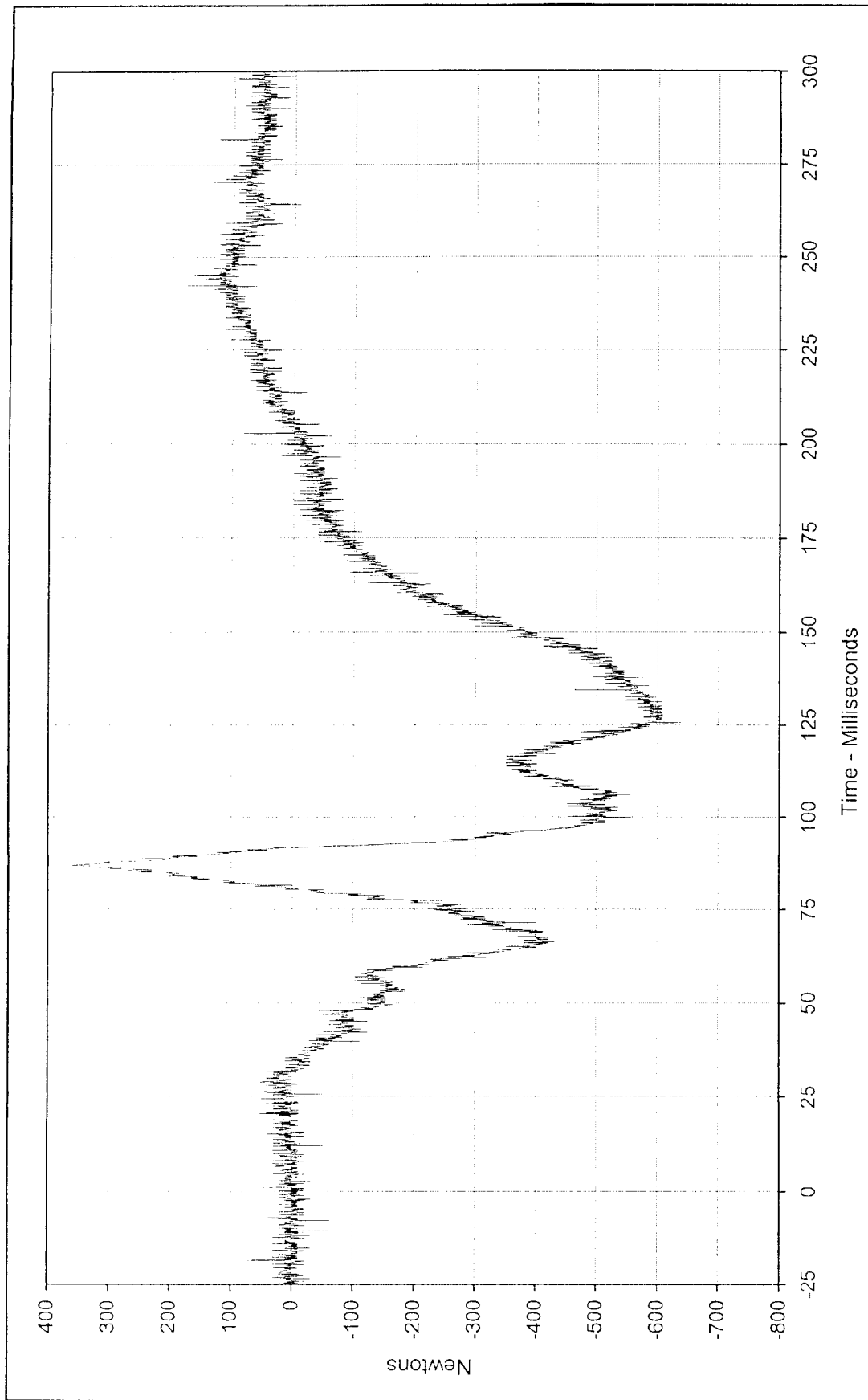
Curve Number: FIL-050





Curve Description: Passenger Head Resultant Redundant		Test Program: 2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value: 73.2	at 93.2	Test Vehicle: 2000 Dodge Neon 4 Door Sedan	
Minimum Value: 0.1	at 2.6		
SAE Filter Class: 1000			
Date of Test: 11/10/99			
Curve Number: RES-048			



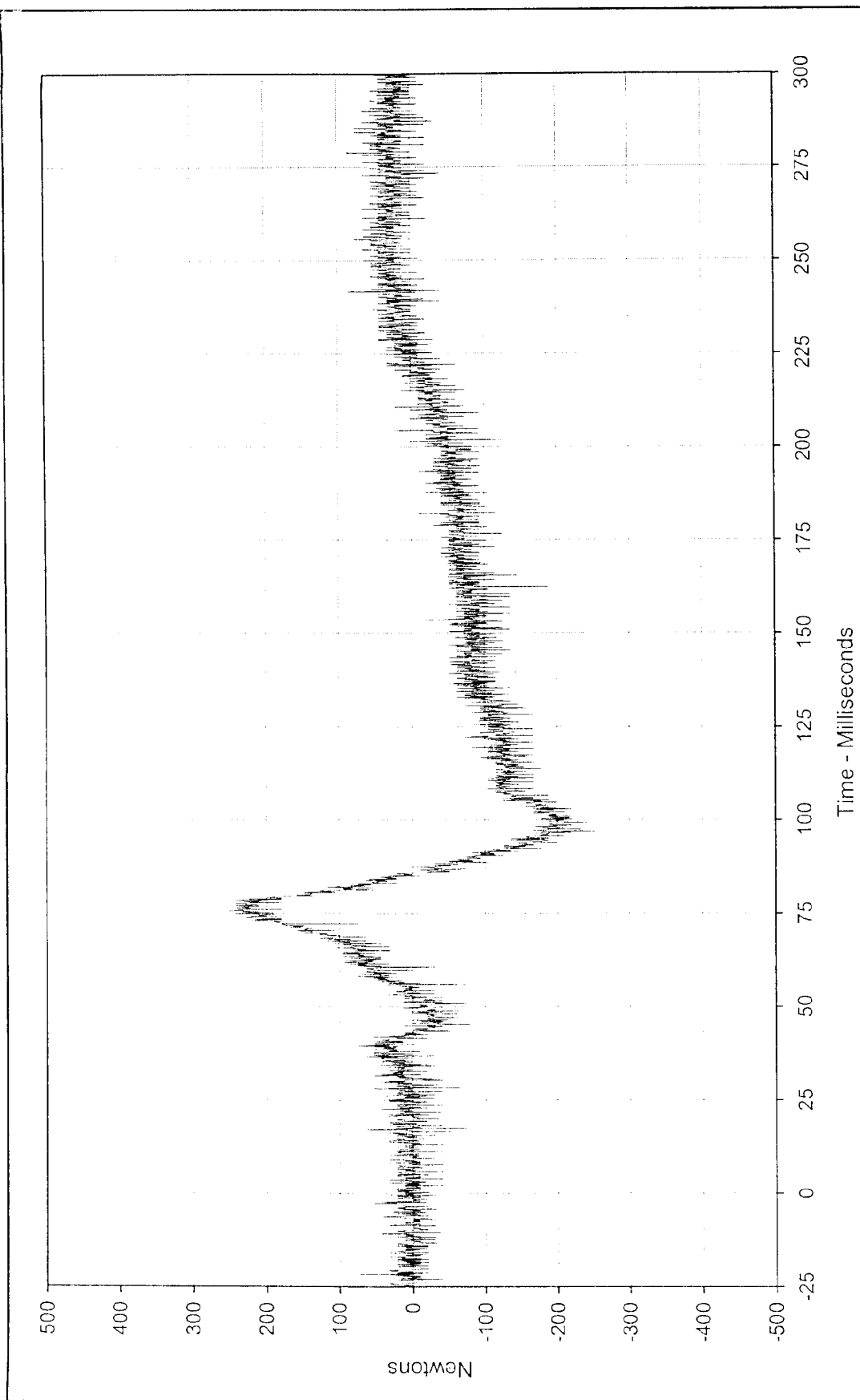


Curve Description:	Passenger Neck Force X		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	360.5	at 86.6	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-638.7	at 125.6			
SAE Filter Class:	1000				
Date of Test:	11/10/99				
Curve Number:	FIL-051				



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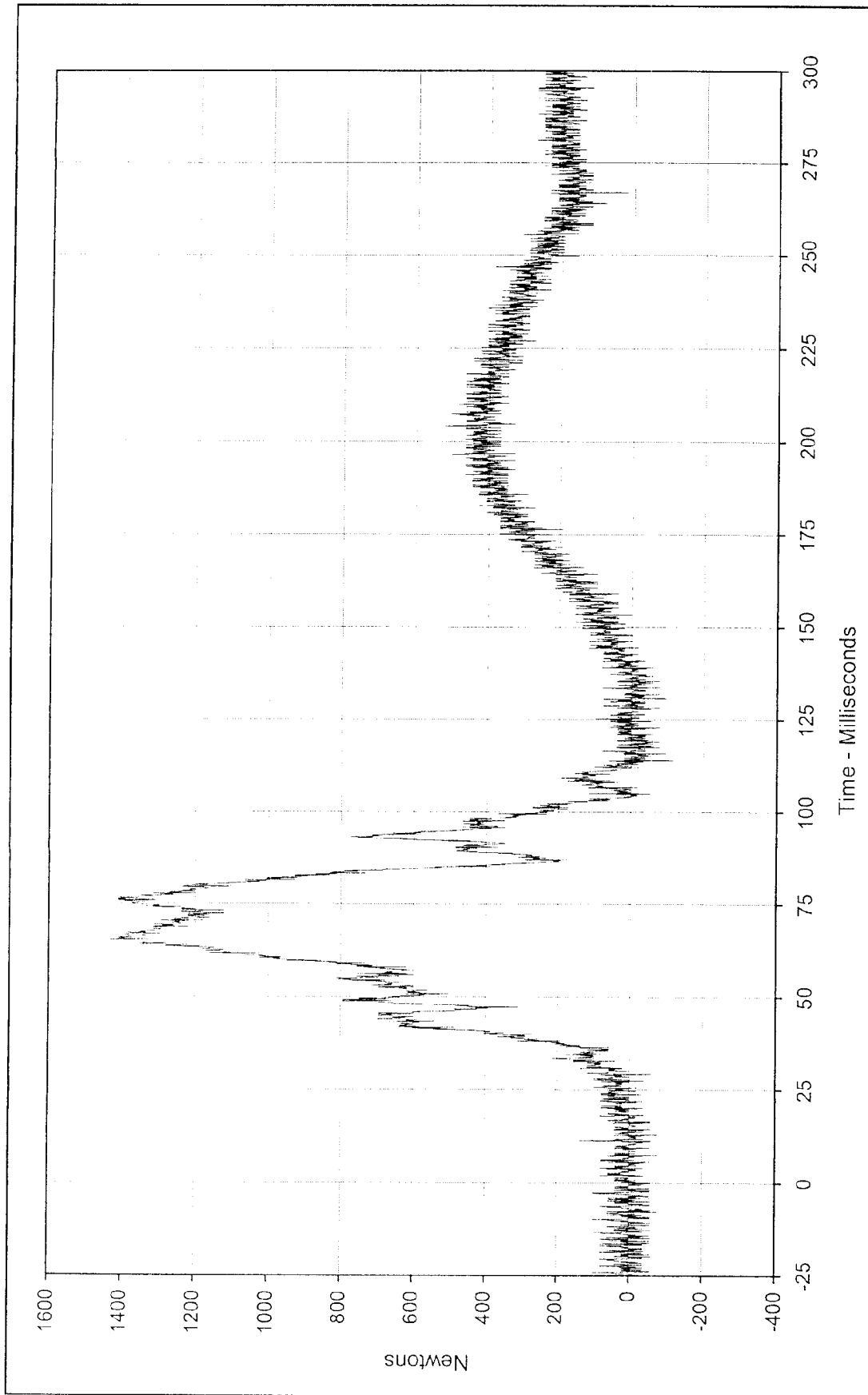




Curve Description:	Passenger Neck Force Y	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	263.0 at 75.6 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-251.5 at 97.0 Milliseconds			



SAE Filter Class:	1000
Date of Test:	11/10/99
Curve Number:	FIL-052

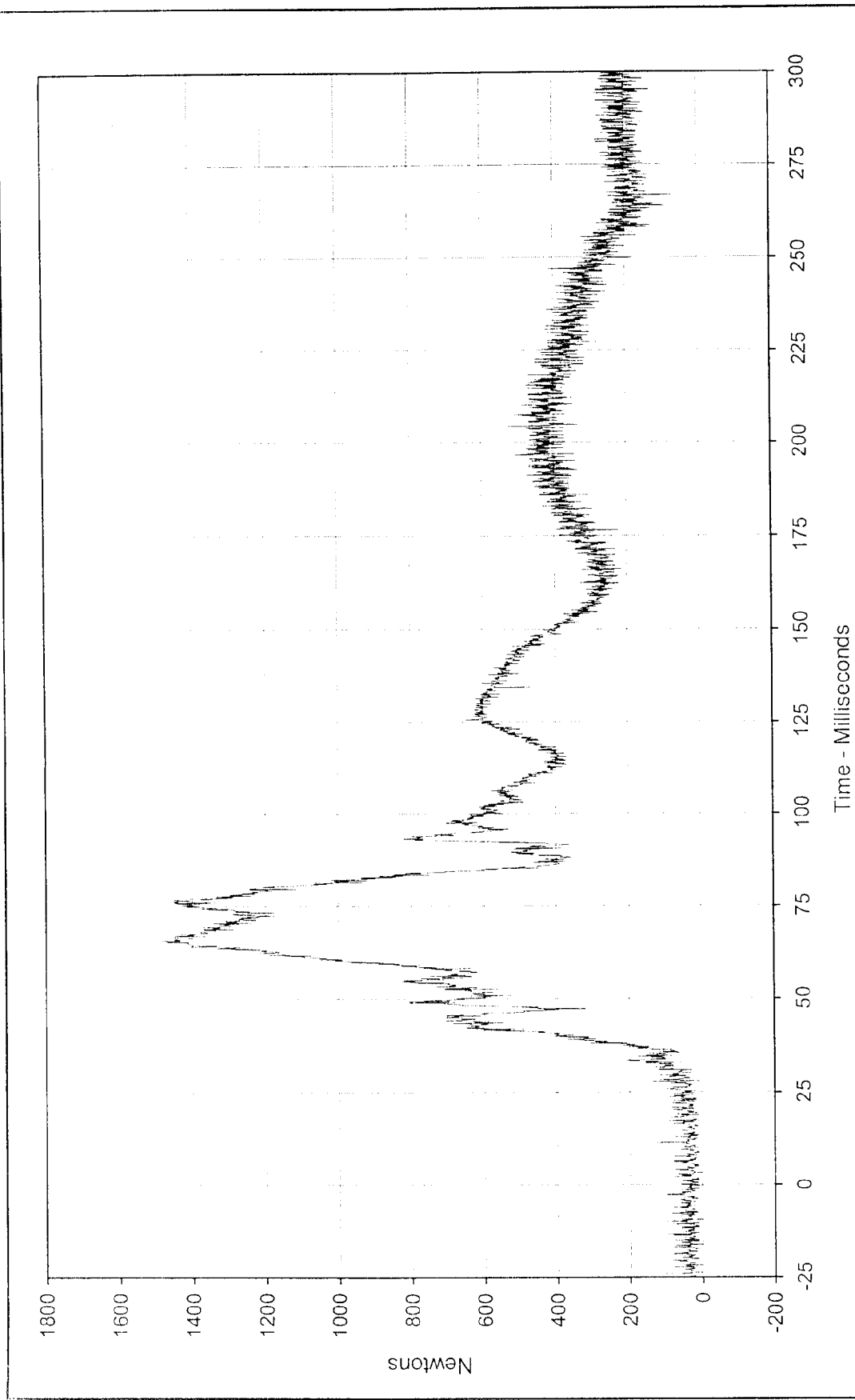


Curve Description: Passenger Neck Force Z
Maximum Value: 1429.5 at 65.1 Milliseconds
Minimum Value: -115.9 at 113.8 Milliseconds
SAE Filter Class: 1000
Date of Test: 11/10/99
Curve Number: FIL-053

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

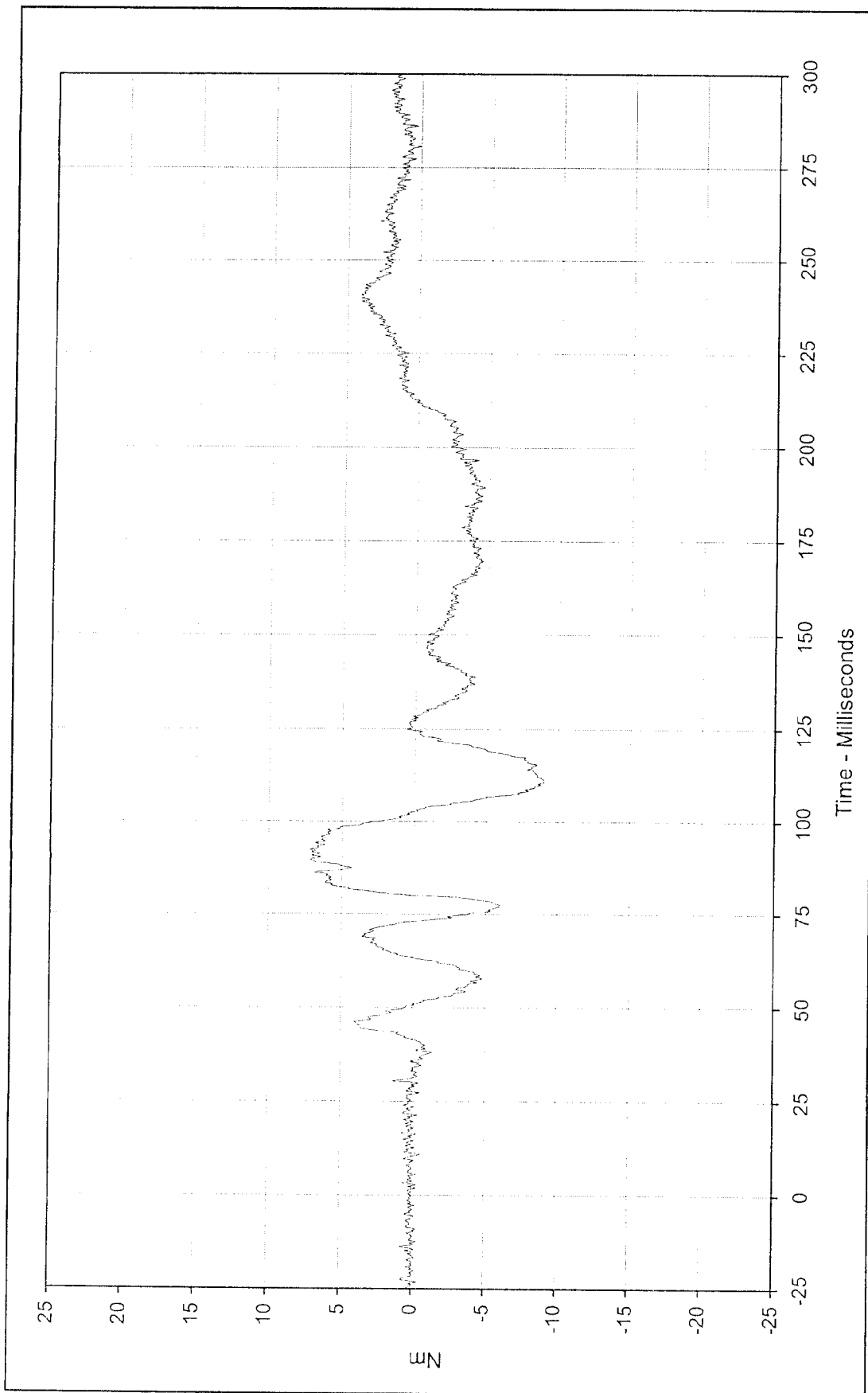
Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description:	Passenger Neck Force Resultant	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	1491.4	at	65.8	Milliseconds
Minimum Value:	0.5	at	3.1	Milliseconds
SAE Filter Class:	1000	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Date of Test:	11/10/99			
Curve Number:	RES-051			

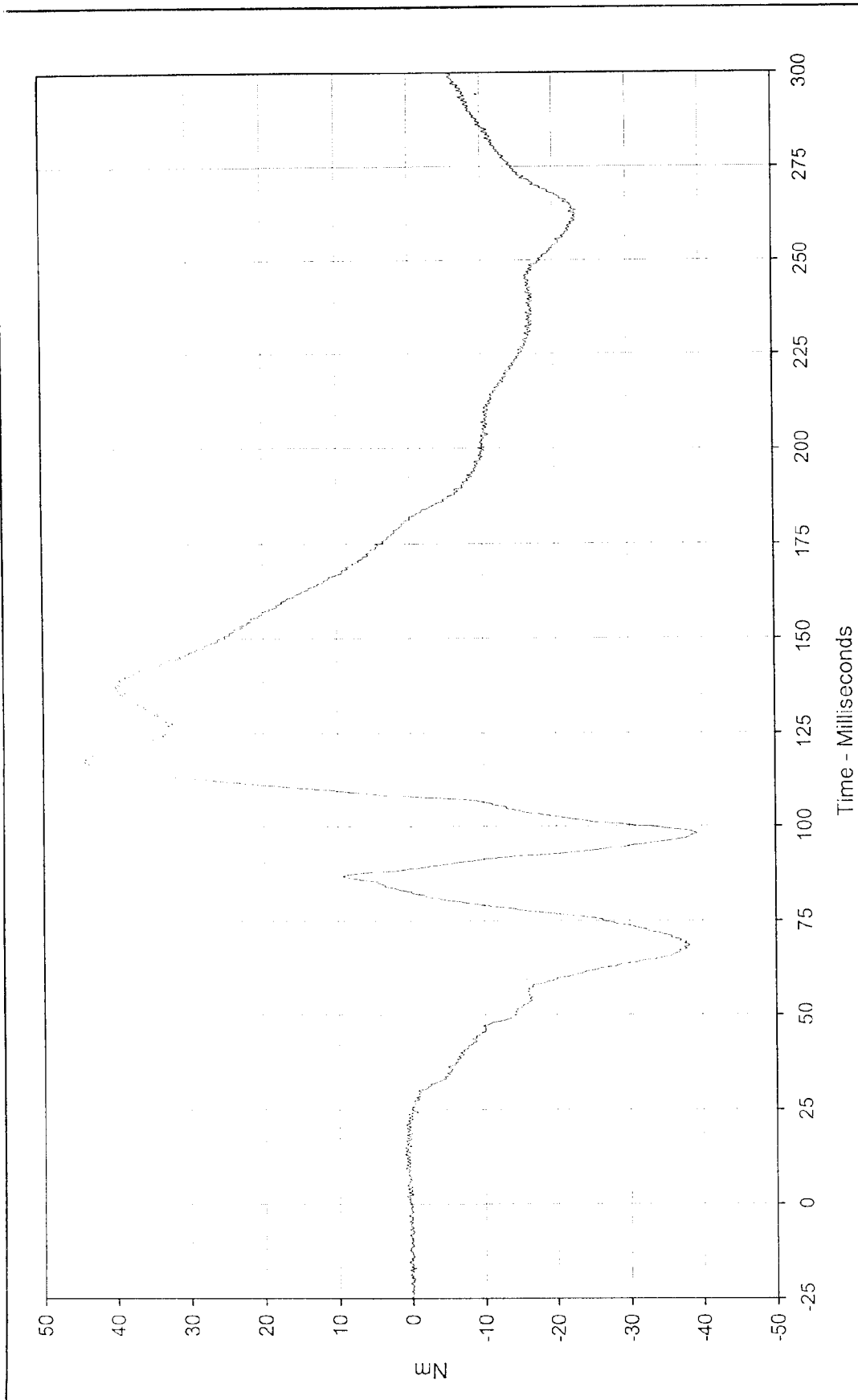




Curve Description: Passenger Neck Moment X
Maximum Value: 7.1 at 92.3 Milliseconds
Minimum Value: -9.0 at 110.8 Milliseconds
SAE Filter Class: 600
Date of Test: 11/10/99
Curve Number: FIL-054

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
Test Vehicle: 2000 Dodge Neon 4 Door Sedan

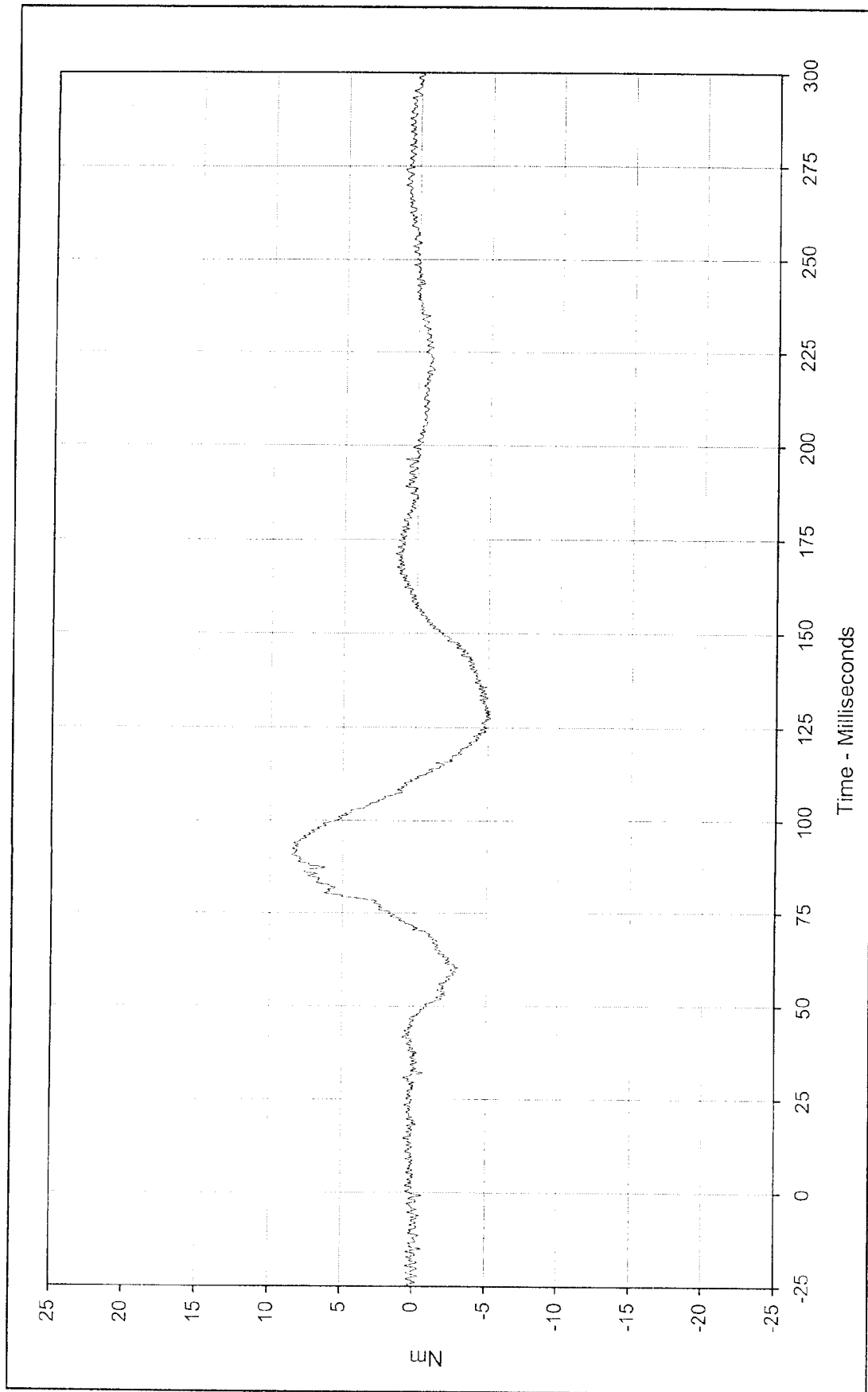




Curve Description: Passenger Neck Moment Y
 Maximum Value: 44.4 at 117.3 Milliseconds
 Minimum Value: -39.3 at 98.0 Milliseconds
 SAE Filter Class: 600
 Date of Test: 11/10/99
 Curve Number: FIL-055

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan

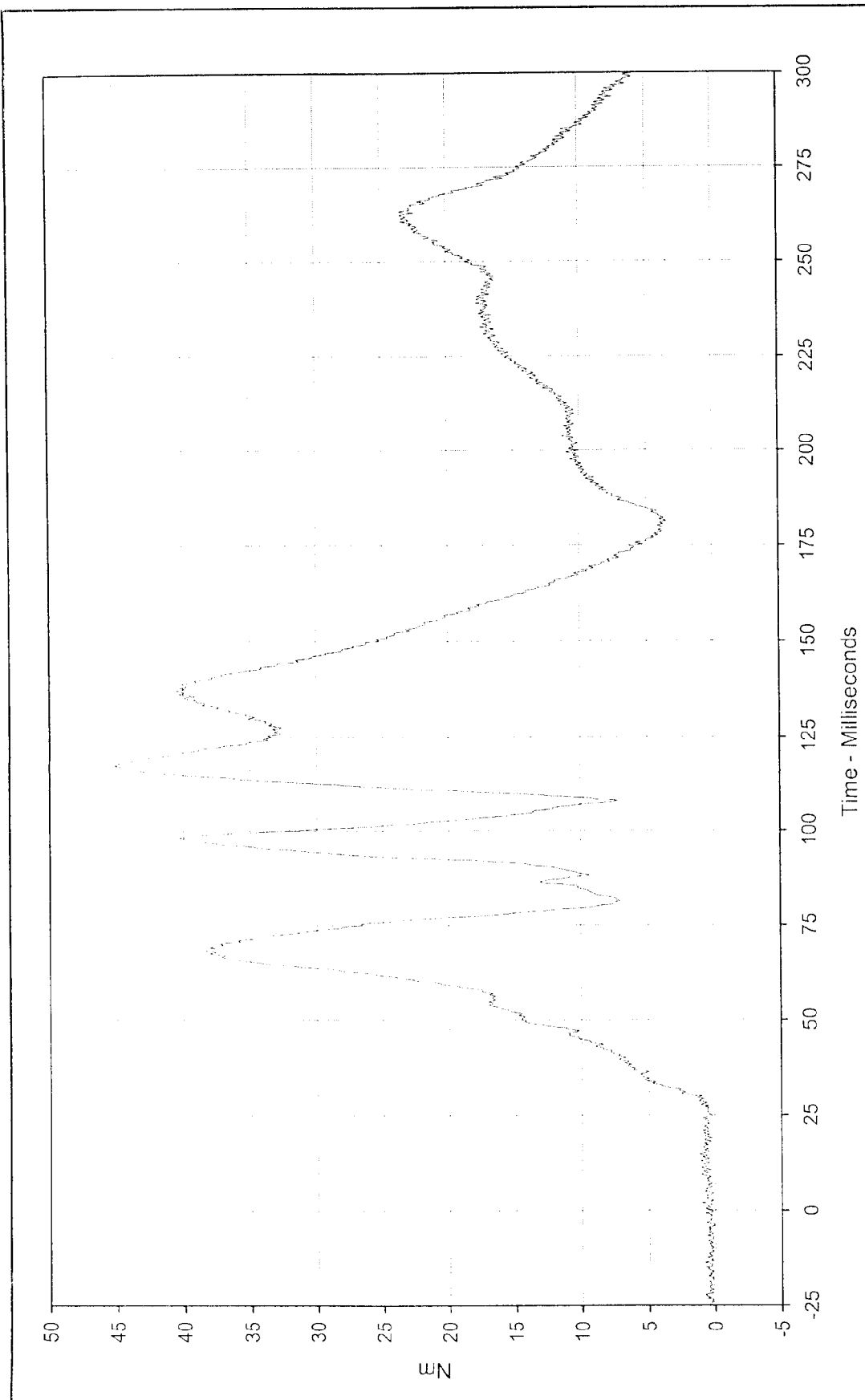




Curve Description: Passenger Neck Moment Z
 Maximum Value: 8.5 at 90.4 Milliseconds
 Minimum Value: -5.2 at 129.2 Milliseconds
 SAE Filter Class: 600
 Date of Test: 11/10/99
 Curve Number: FIL-056

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: Passenger Neck Moment Resultant

Maximum Value: 45.1 at 117.3 Milliseconds

Minimum Value: 0.2 at 4.4 Milliseconds

SAE Filter Class: 600

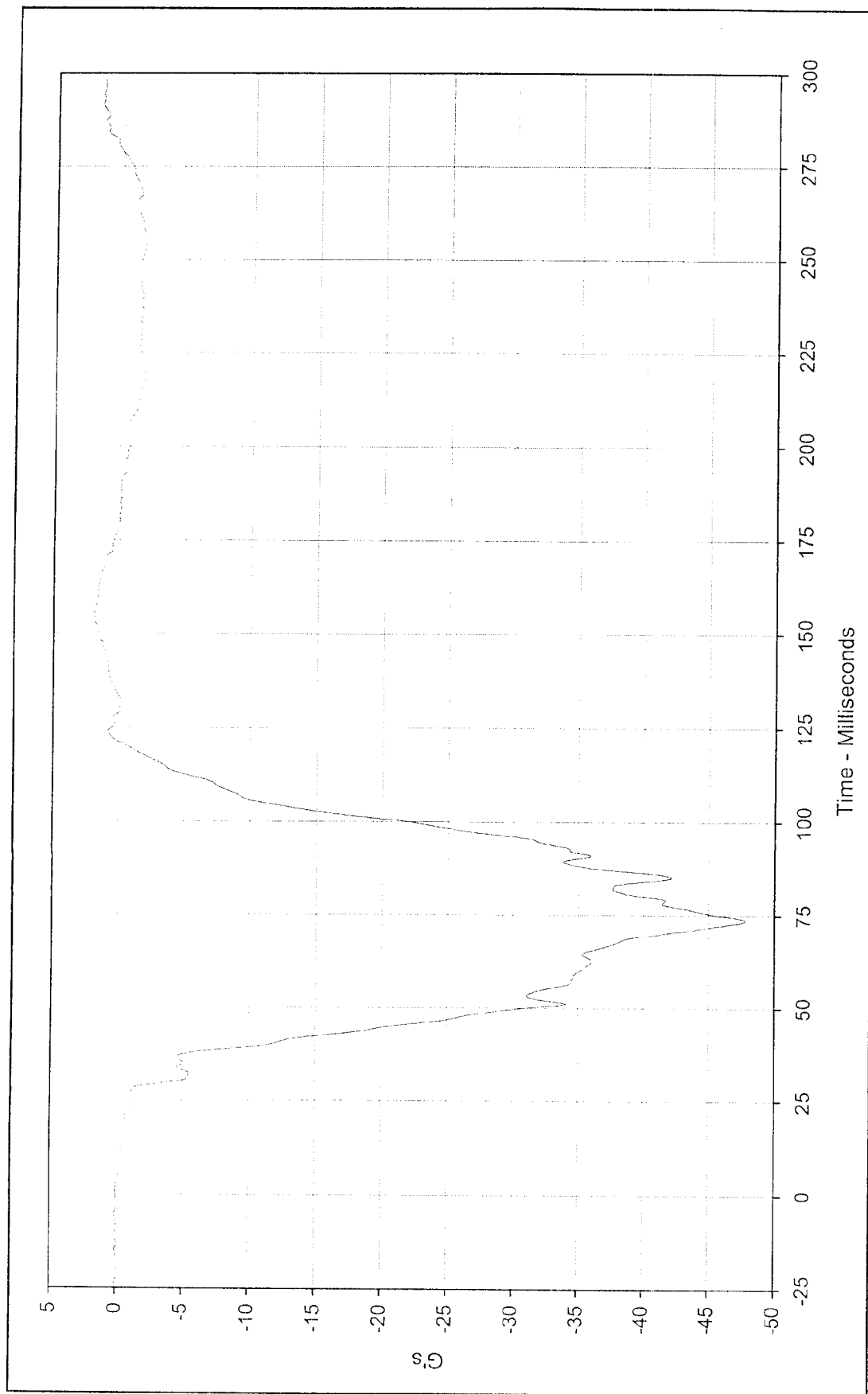
Date of Test: 11/10/99

Curve Number: RES-054

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan



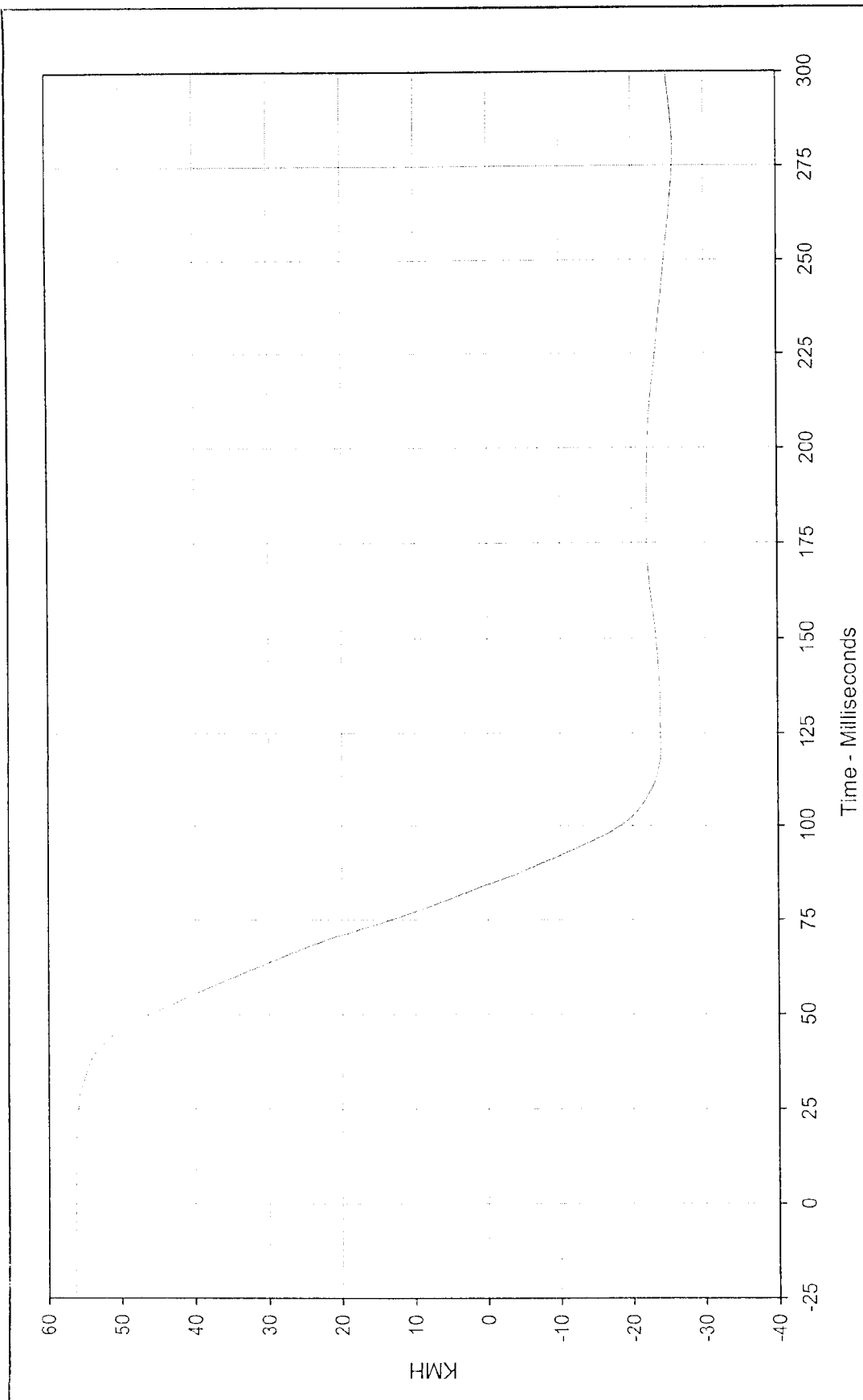


Curve Description: Passenger Chest Primary X
 Maximum Value: 2.0 at 156.4 Milliseconds
 Minimum Value: -47.8 at 73.6 Milliseconds
 SAE Filter Class: 180
 Date of Test: 11/10/99
 Curve Number: FIL-057

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan

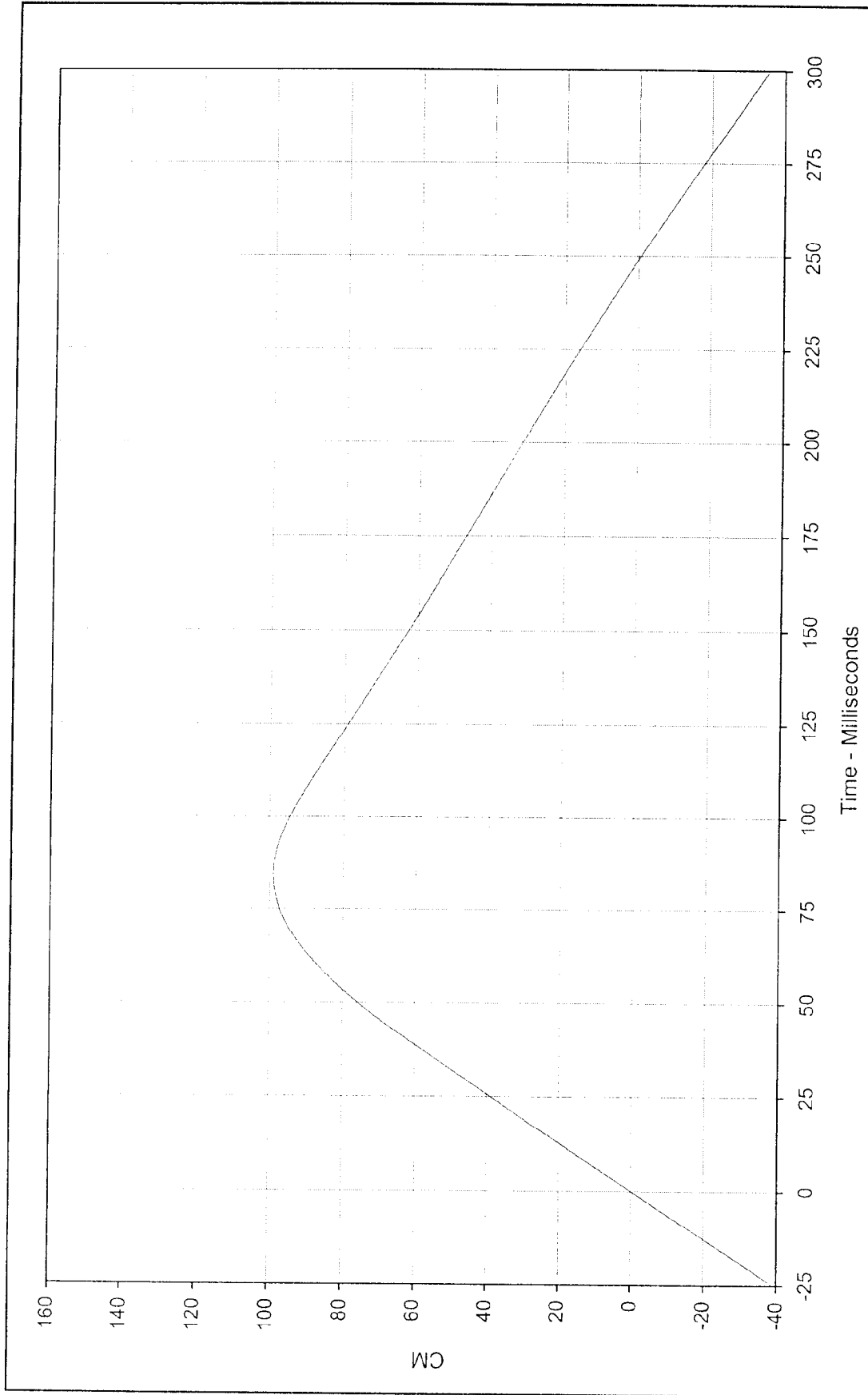




Curve Description: Passenger Chest Primary X Velocity
 Maximum Value: 56.4 at 1.7 Milliseconds
 Minimum Value: -25.8 at 278.9 Milliseconds
 SAE Filter Class: 180
 Date of Test: 11/10/99
 Curve Number: IN1-057

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: Passenger Chest Primary X Displ.

Maximum Value: 98.9 at 84.3 Milliseconds

Minimum Value: -35.6 at 299.9 Milliseconds

SAE Filter Class: 180

Date of Test: 11/10/99

Curve Number: IN2-057

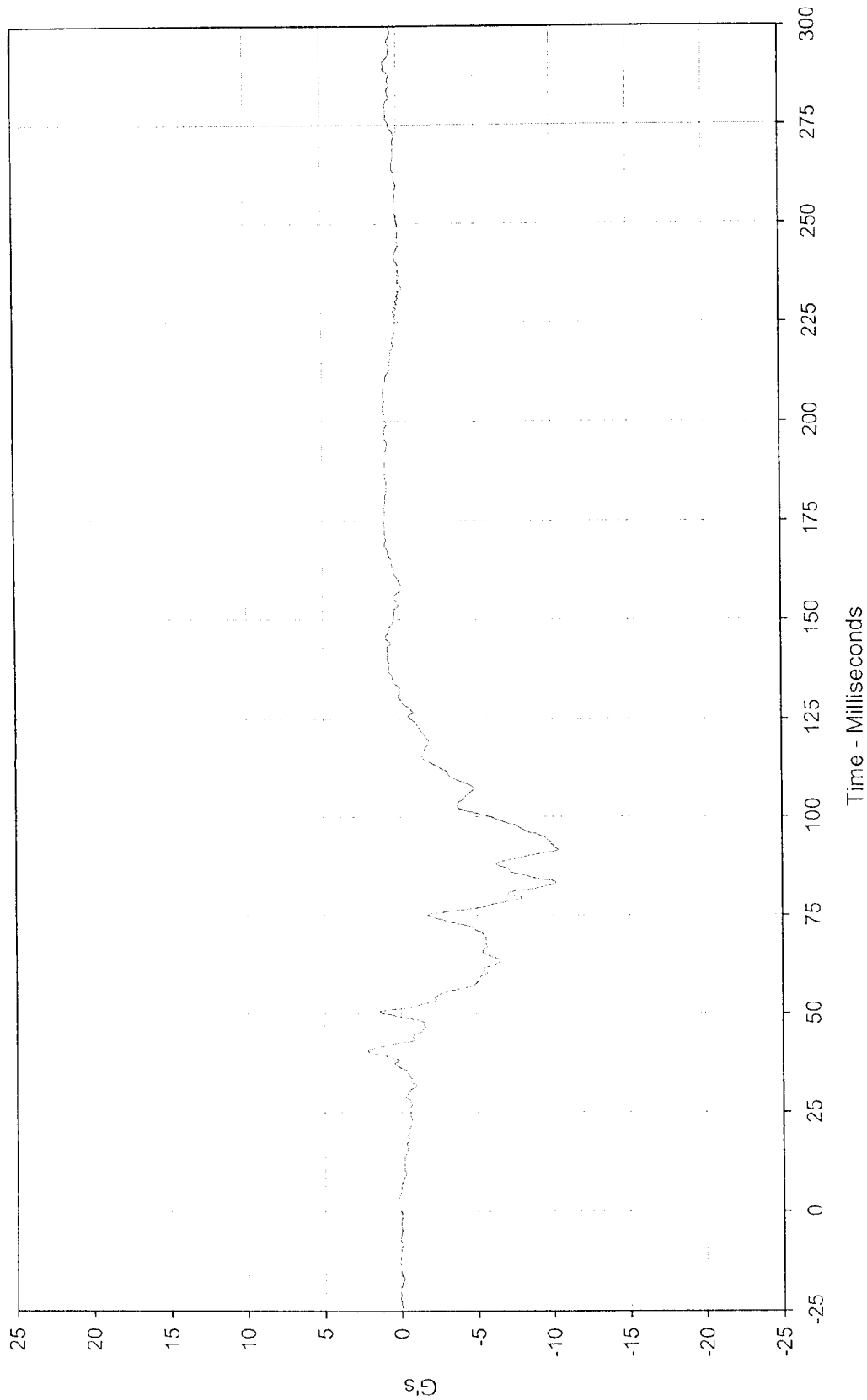
Test Program:

2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle:

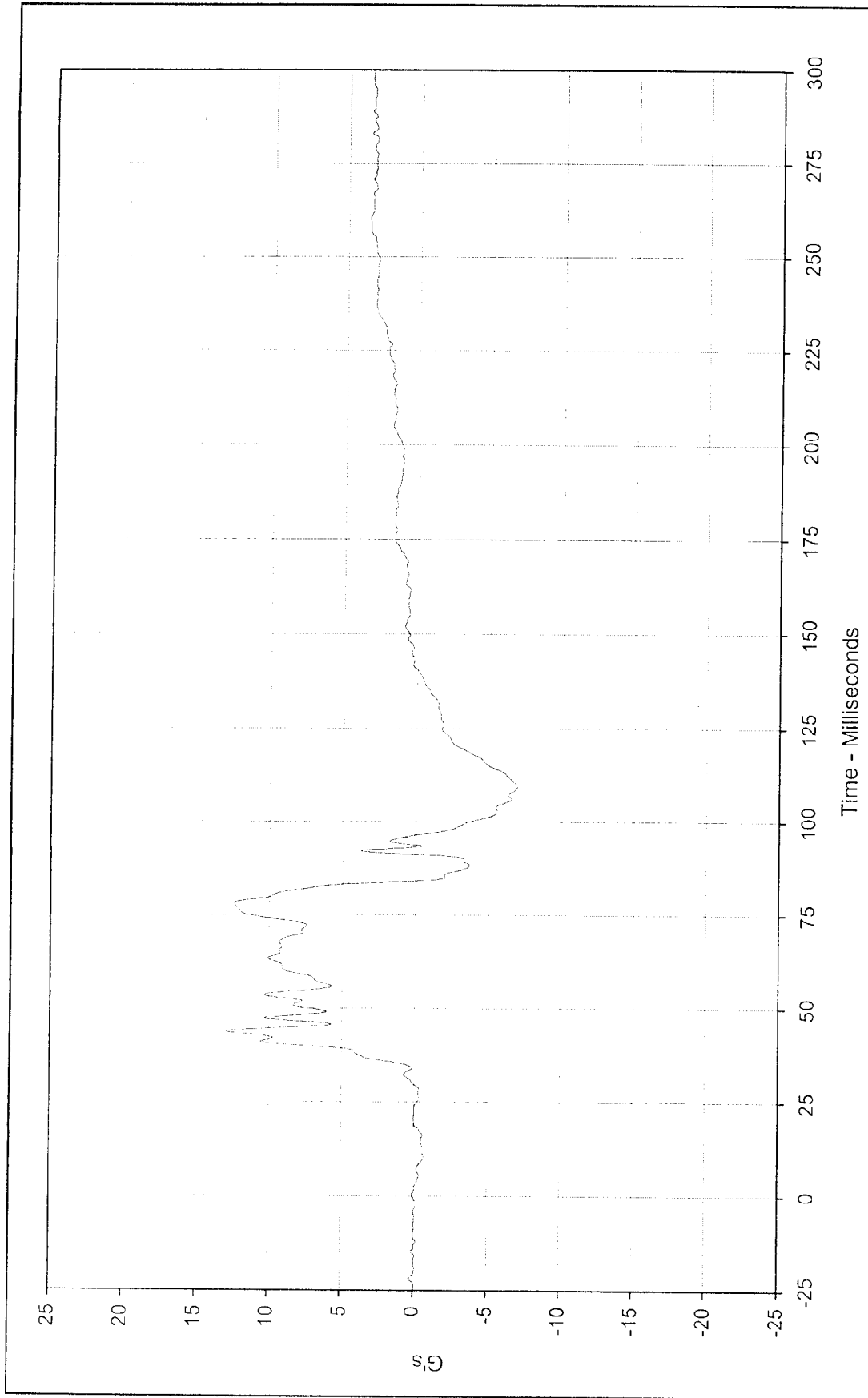
2000 Dodge Neon 4 Door Sedan





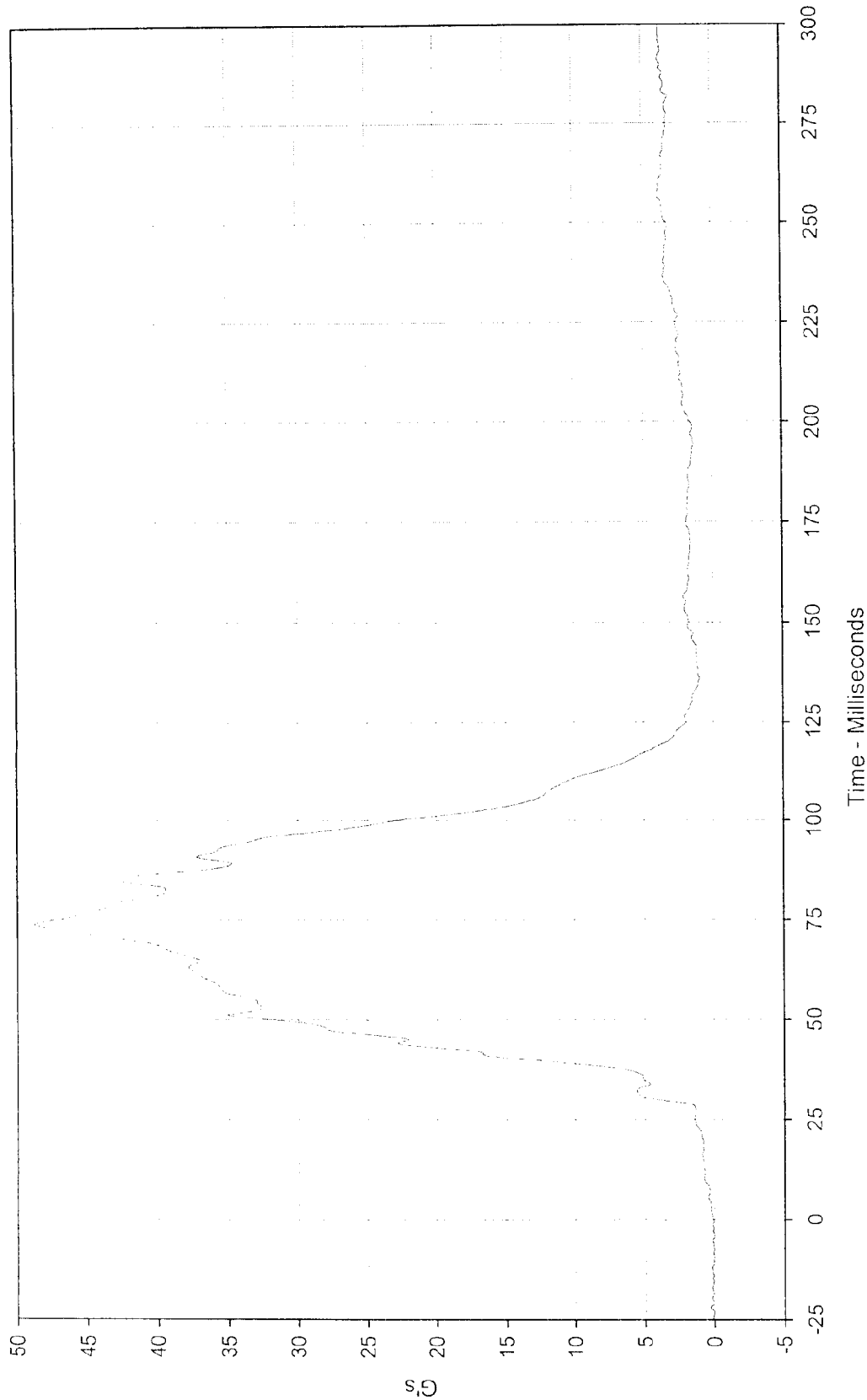
Curve Description:	Passenger Chest Primary Y	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	2.2 at 40.7 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-10.4 at 91.5 Milliseconds			
SAE Filter Class:	180			
Date of Test:	11/10/99			
Curve Number:	FIL-058			





Curve Description:		Passenger Chest Primary Z		Test Program:		2000 NHTSA 35 mph NCAP		No.: MY0304	
Maximum Value:		13.0	at	43.8	Milliseconds	Test Vehicle:		2000 Dodge Neon 4 Door Sedan	
Minimum Value:		-7.0	at	109.3	Milliseconds				
SAE Filter Class:		180							
Date of Test:		11/10/99							
Curve Number:		FIL-059							

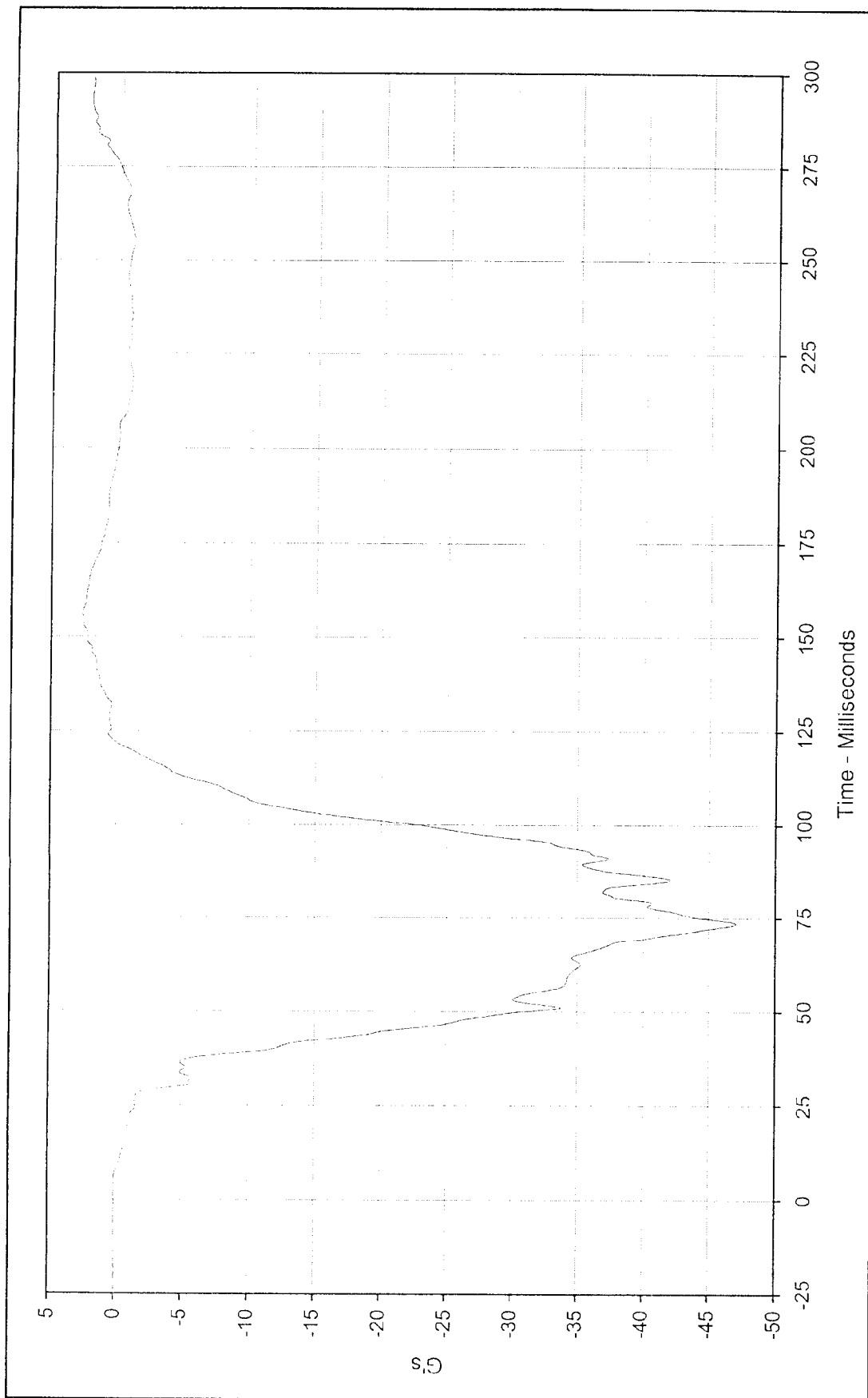




Curve Description: Passenger Chest Resultant Primary
 Maximum Value: 48.8 at 73.8 Milliseconds
 Minimum Value: 0.1 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 11/10/99
 Curve Number: RES-057

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan

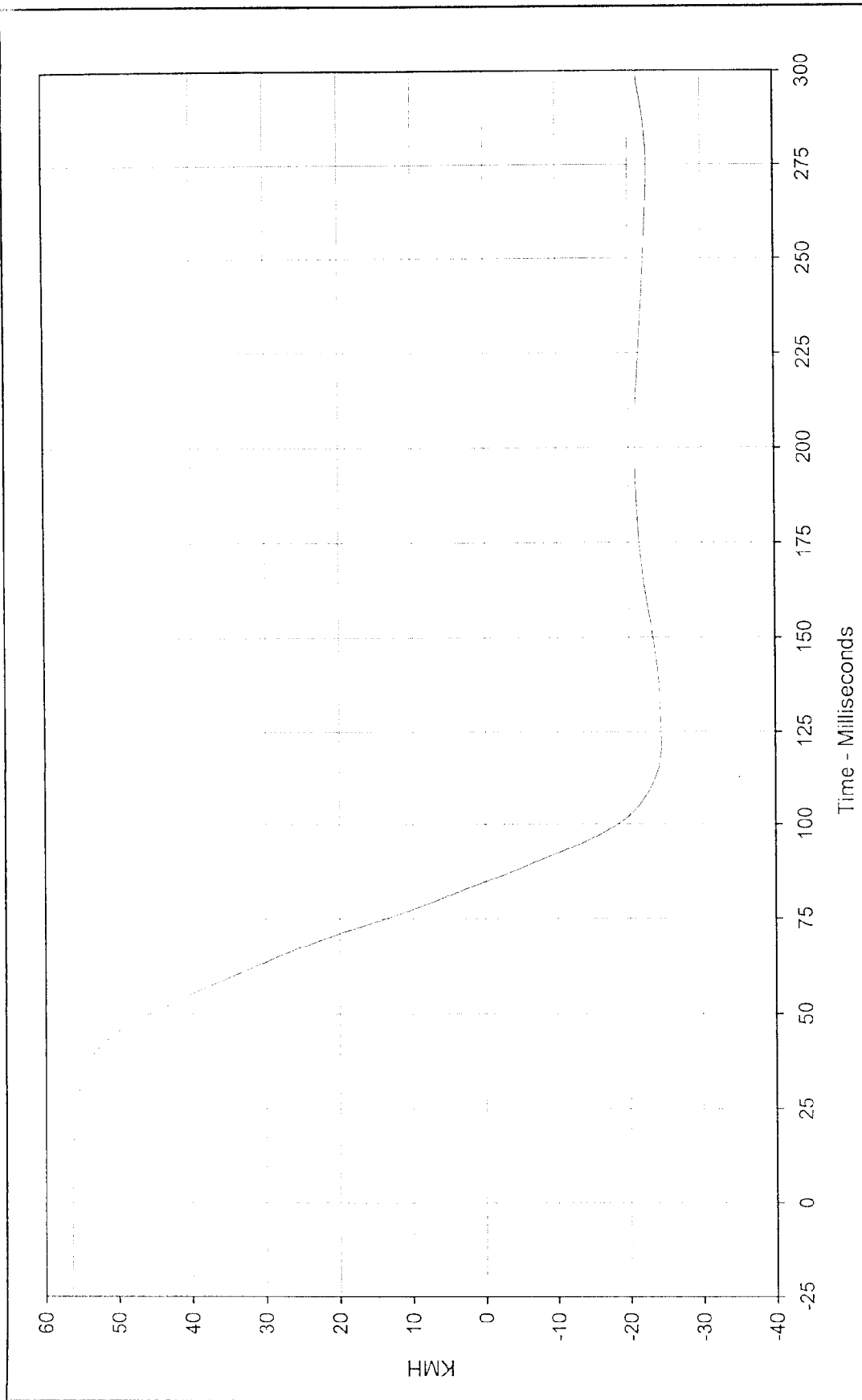




Curve Description: Passenger Chest Redundant X
 Maximum Value: 2.6 at 156.5 Milliseconds
 Minimum Value: -47.0 at 73.5 Milliseconds
 SAE Filter Class: 180
 Date of Test: 11/10/99
 Curve Number: FIL-060

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: Passenger Chest Redundant X Velocity

Maximum Value: 56.4 at 5.0 Milliseconds

Minimum Value: -24.4 at 121.8 Milliseconds

SAE Filter Class: 180

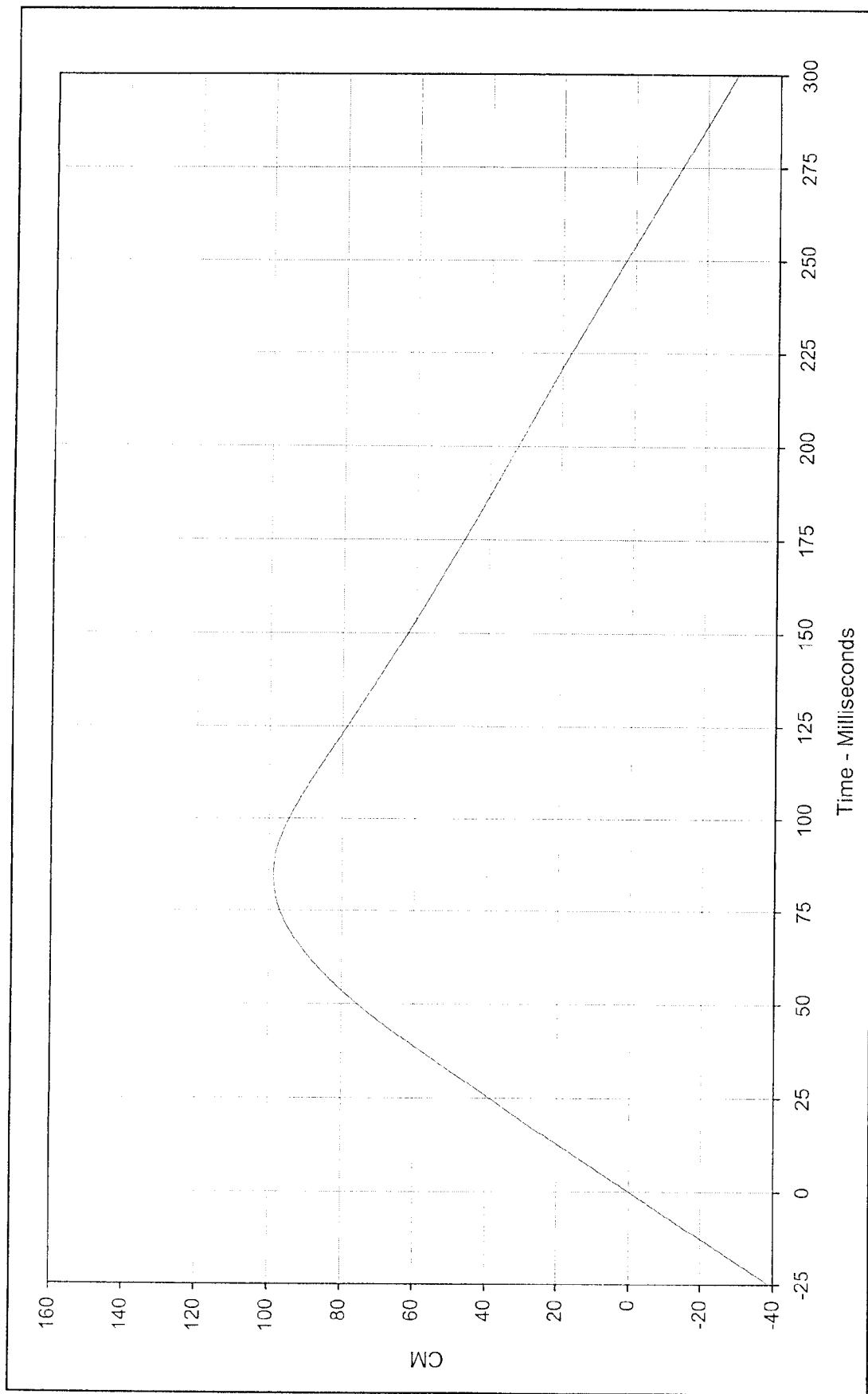
Date of Test: 11/10/99

Curve Number: IN1-060

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: Passenger Chest Redundant X Displ.

Maximum Value: 98.8 at 84.7 Milliseconds

Minimum Value: -28.2 at 299.9 Milliseconds

SAE Filter Class: 180

Date of Test: 11/10/99

Curve Number: IN2-060

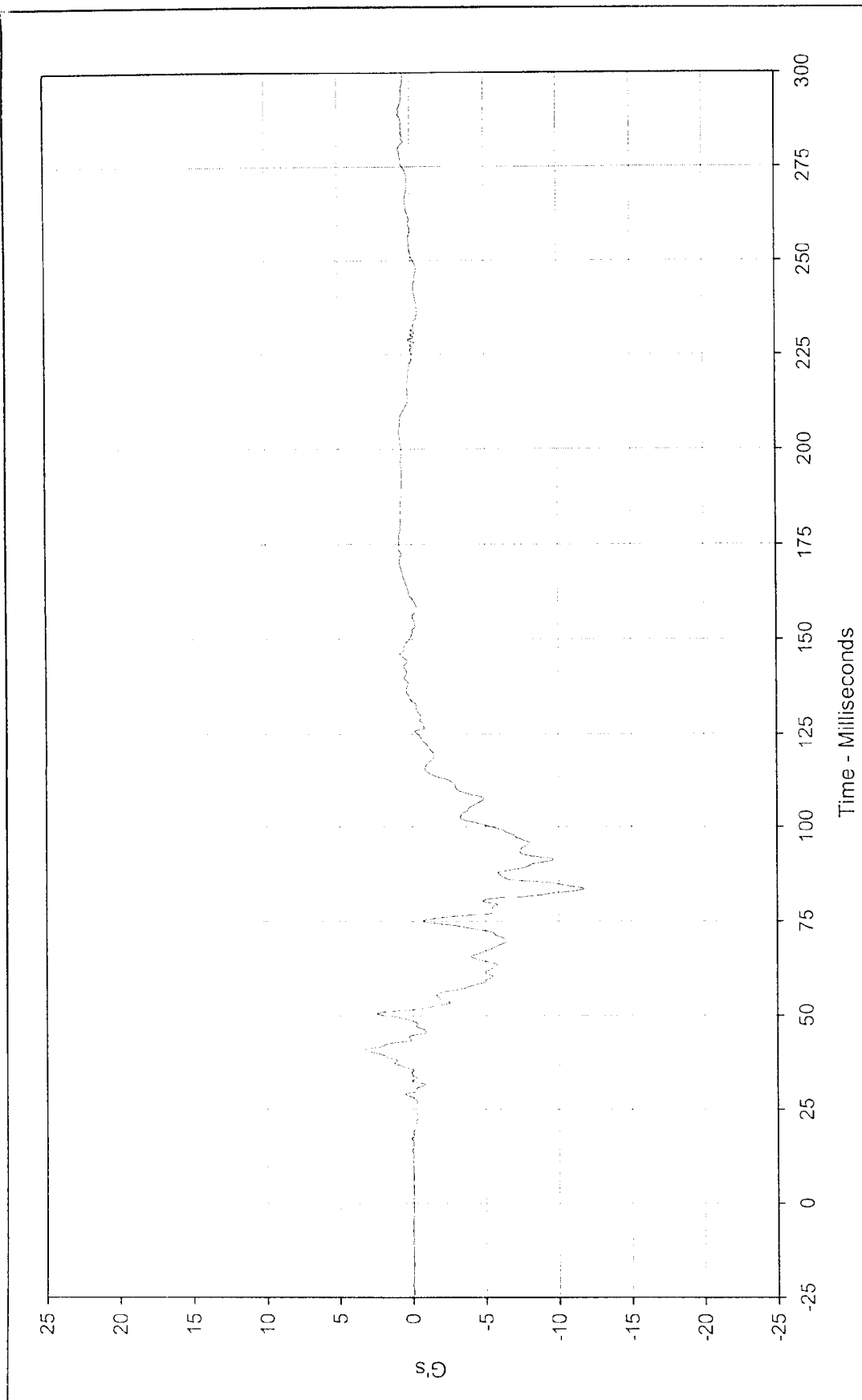
Test Program:

2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle:

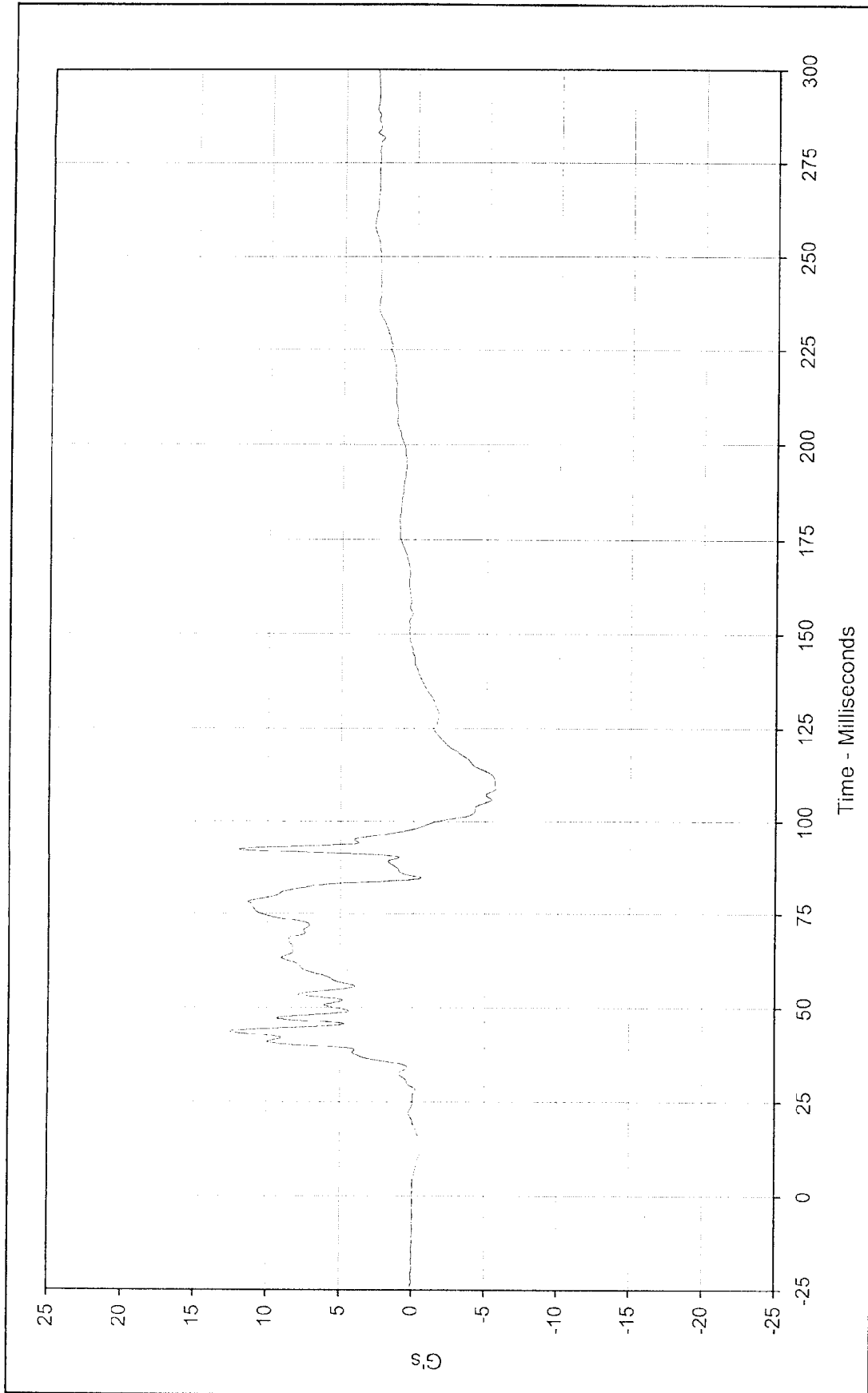
2000 Dodge Neon 4 Door Sedan





Curve Description:	Passenger Chest Redundant Y	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	3.4 at 40.8 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-11.7 at 83.5 Milliseconds			
SAE Filter Class:	180			
Date of Test:	11/10/99			
Curve Number:	FIL-061			

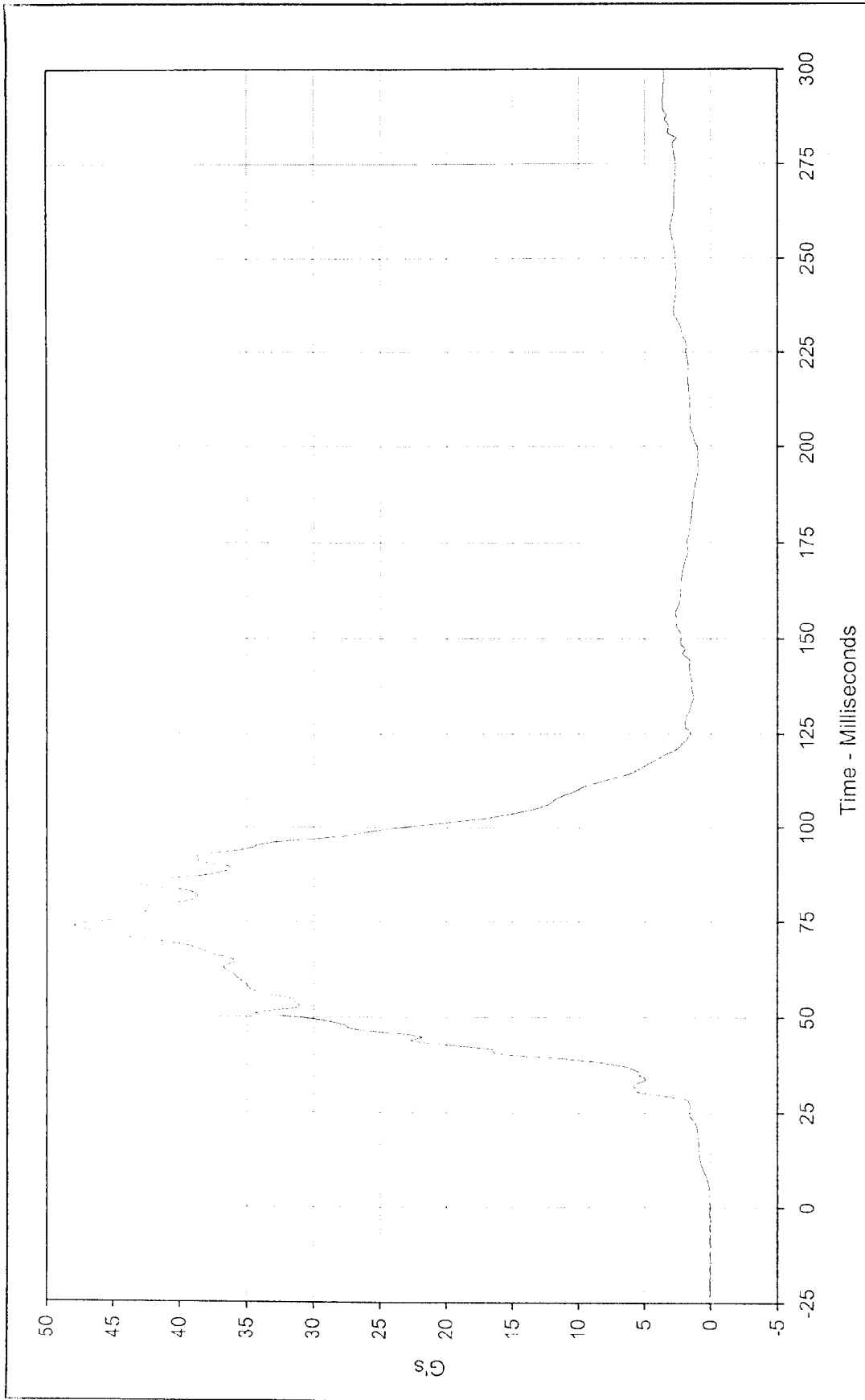




Curve Description: Passenger Chest Redundant Z
Maximum Value: 12.5 at 43.6 Milliseconds
Minimum Value: -5.7 at 108.9 Milliseconds
SAE Filter Class: 180
Date of Test: 11/10/99
Curve Number: FIL-062

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: Passenger Chest Resultant Redundant

Maximum Value: 48.0 at 73.6 Milliseconds

Minimum Value: 0.1 at 0.3 Milliseconds

SAE Filter Class: 180

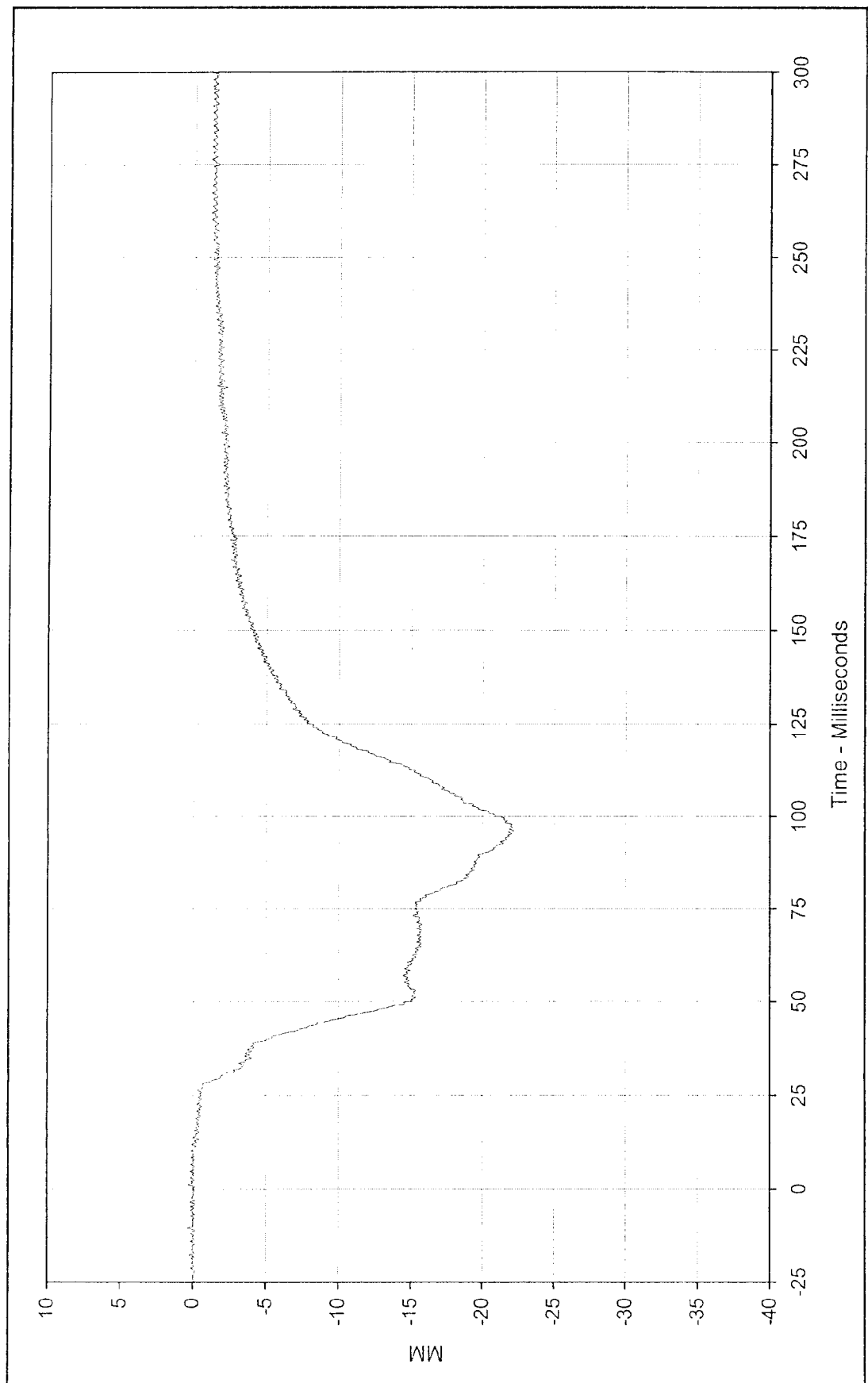
Date of Test: 11/10/99

Curve Number: RES-060

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan

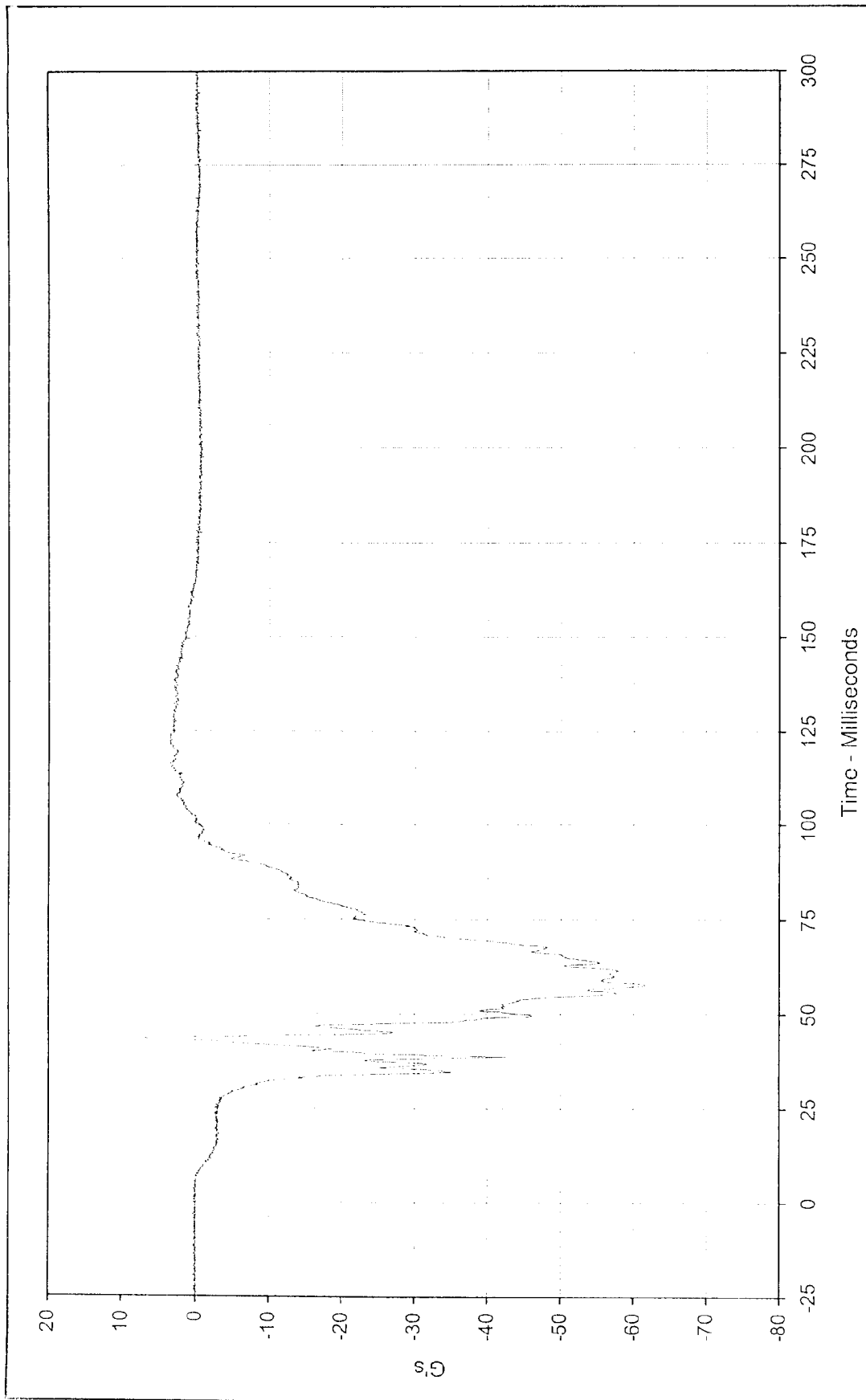




Curve Description: Passenger Chest Displacement X
Maximum Value: 0.3 at 1.2 Milliseconds
Minimum Value: -22.2 at 96.0 Milliseconds
SAE Filter Class: 600
Date of Test: 11/10/99
Curve Number: FIL-063

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
Test Vehicle: 2000 Dodge Neon 4 Door Sedan

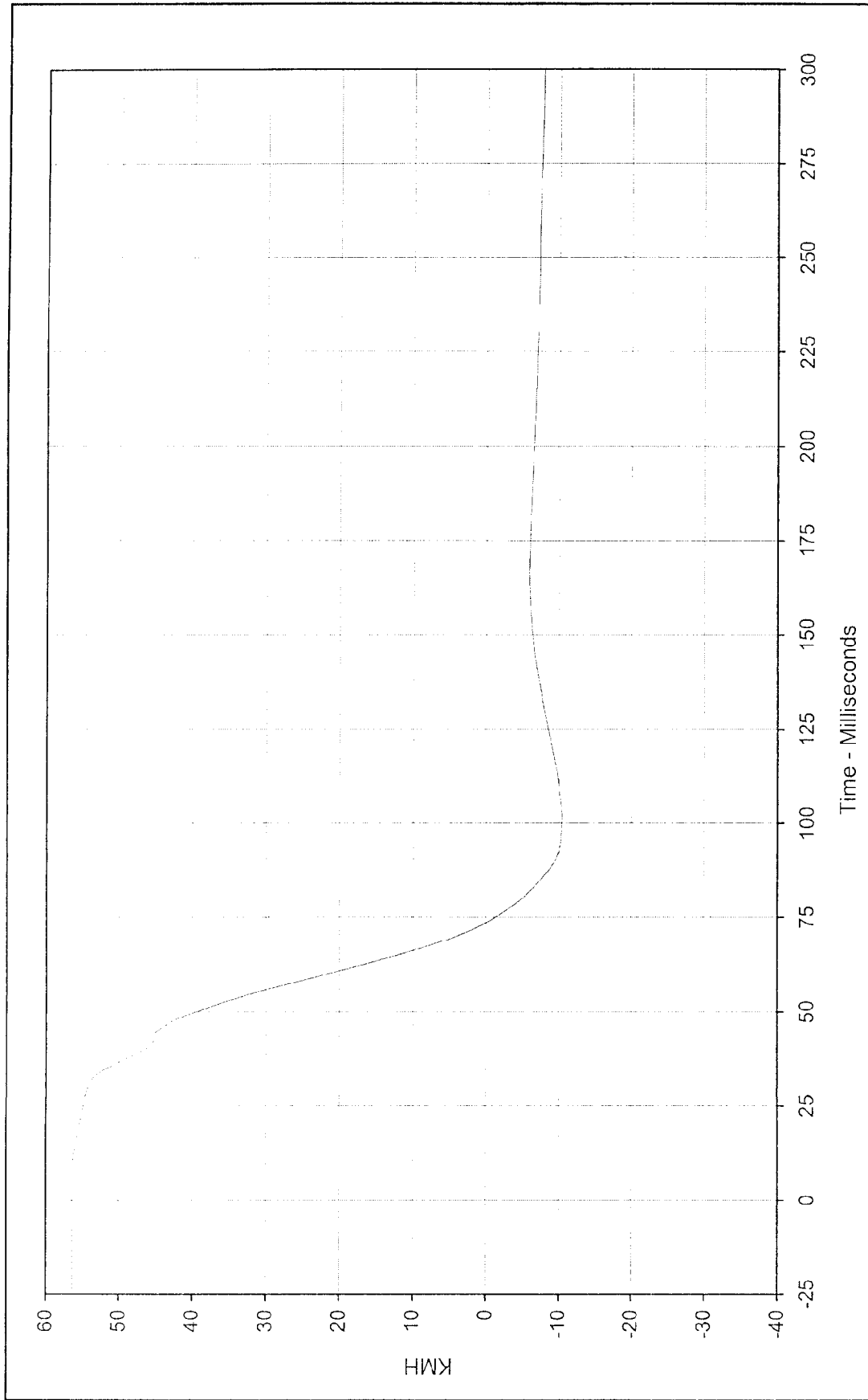




Curve Description: Passenger Pelvis X
 Maximum Value: 7.6 at 43.4 Milliseconds
 Minimum Value: -61.6 at 57.6 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 11/10/99
 Curve Number: FIL-064

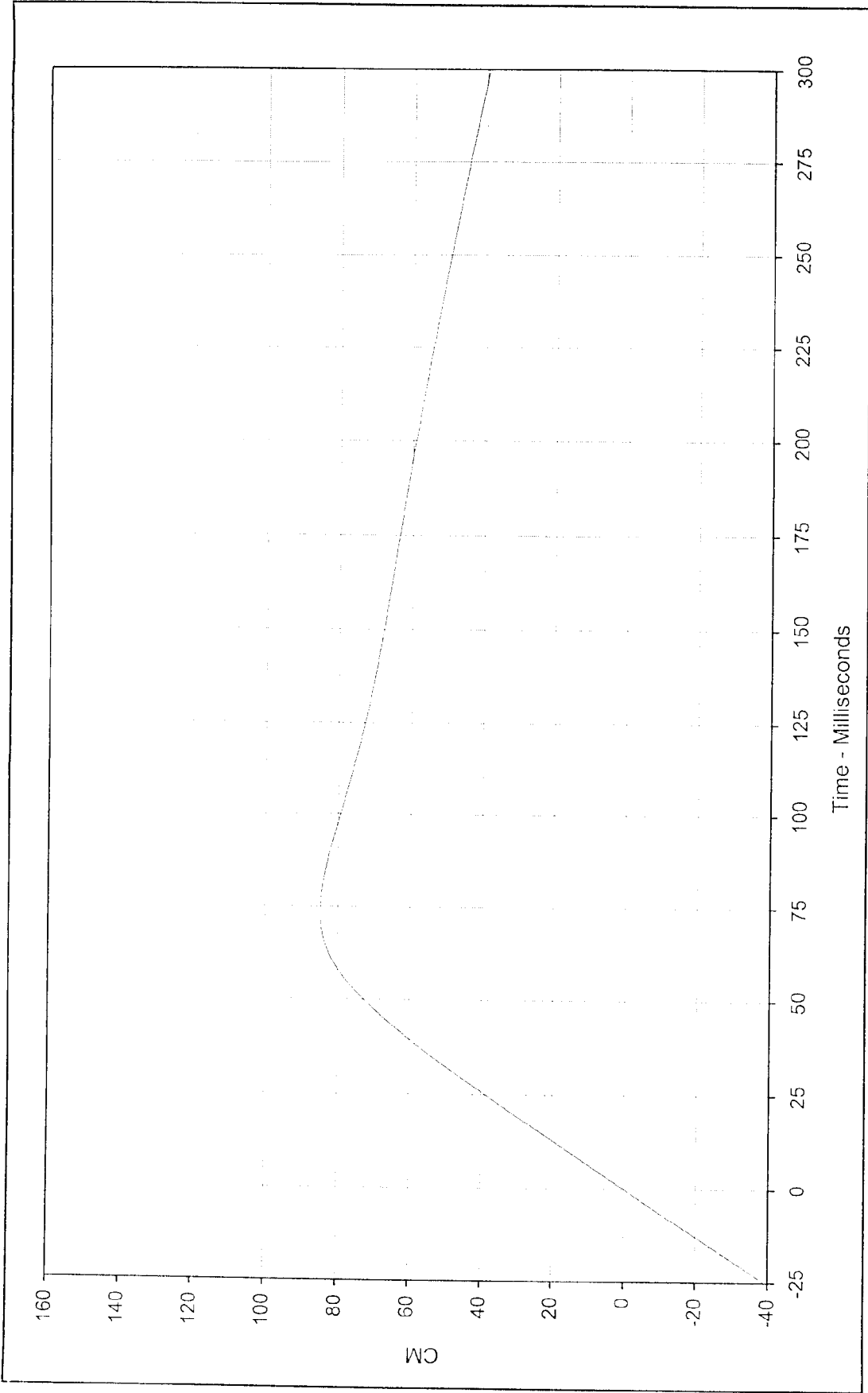
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description:	Passenger Pelvis X Velocity	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	56.4	at	5.0	Milliseconds
Minimum Value:	-10.4	at	101.8	Milliseconds
SAE Filter Class:	180	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Date of Test:	11/10/99			
Curve Number:	IN1-064			

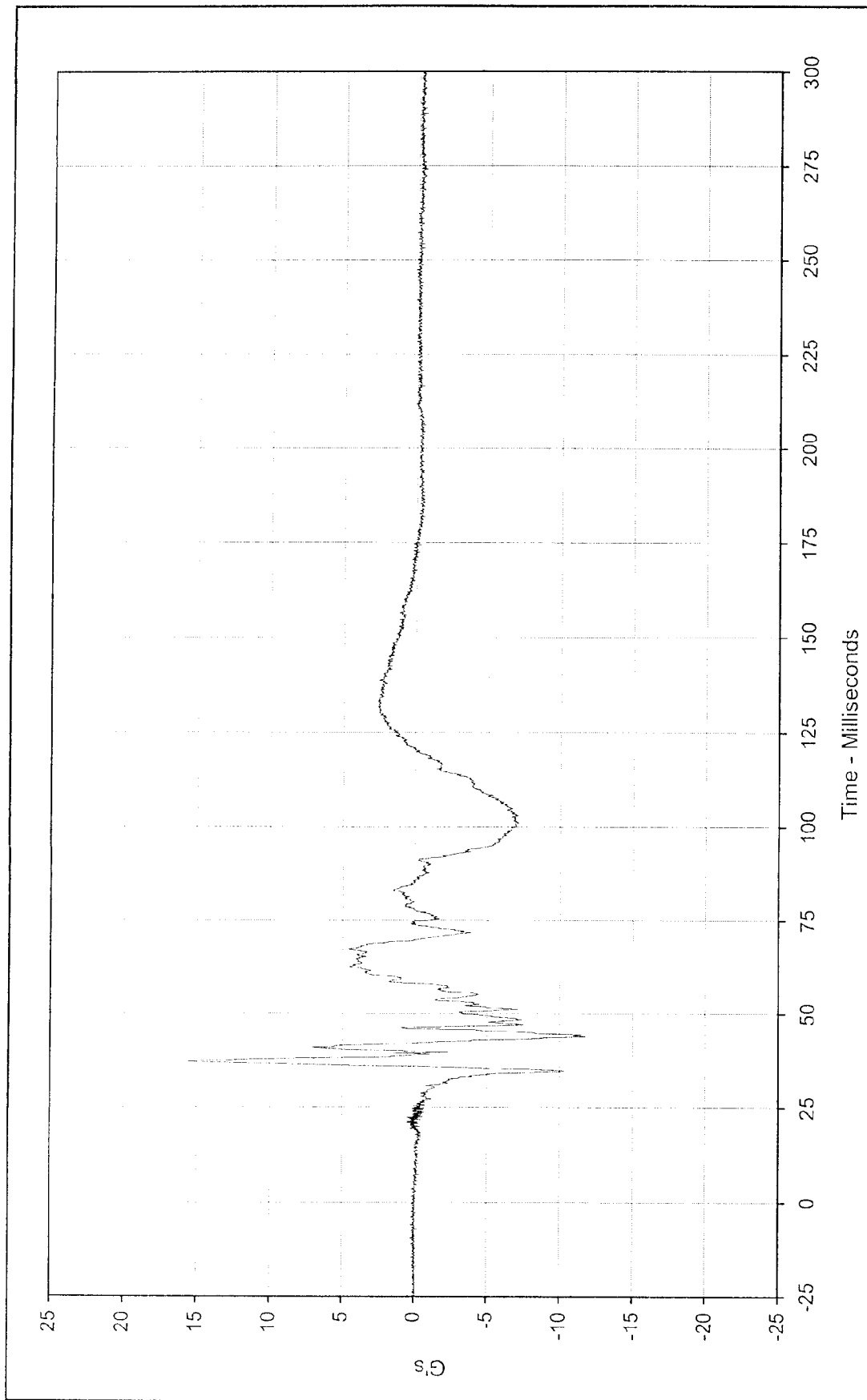




Curve Description: Passenger Pelvis X Displ.
Maximum Value: 84.8 at 73.5 Milliseconds
Minimum Value: 0.0 at 0.0 Milliseconds
SAE Filter Class: 180
Date of Test: 11/10/99
Curve Number: IN2-064

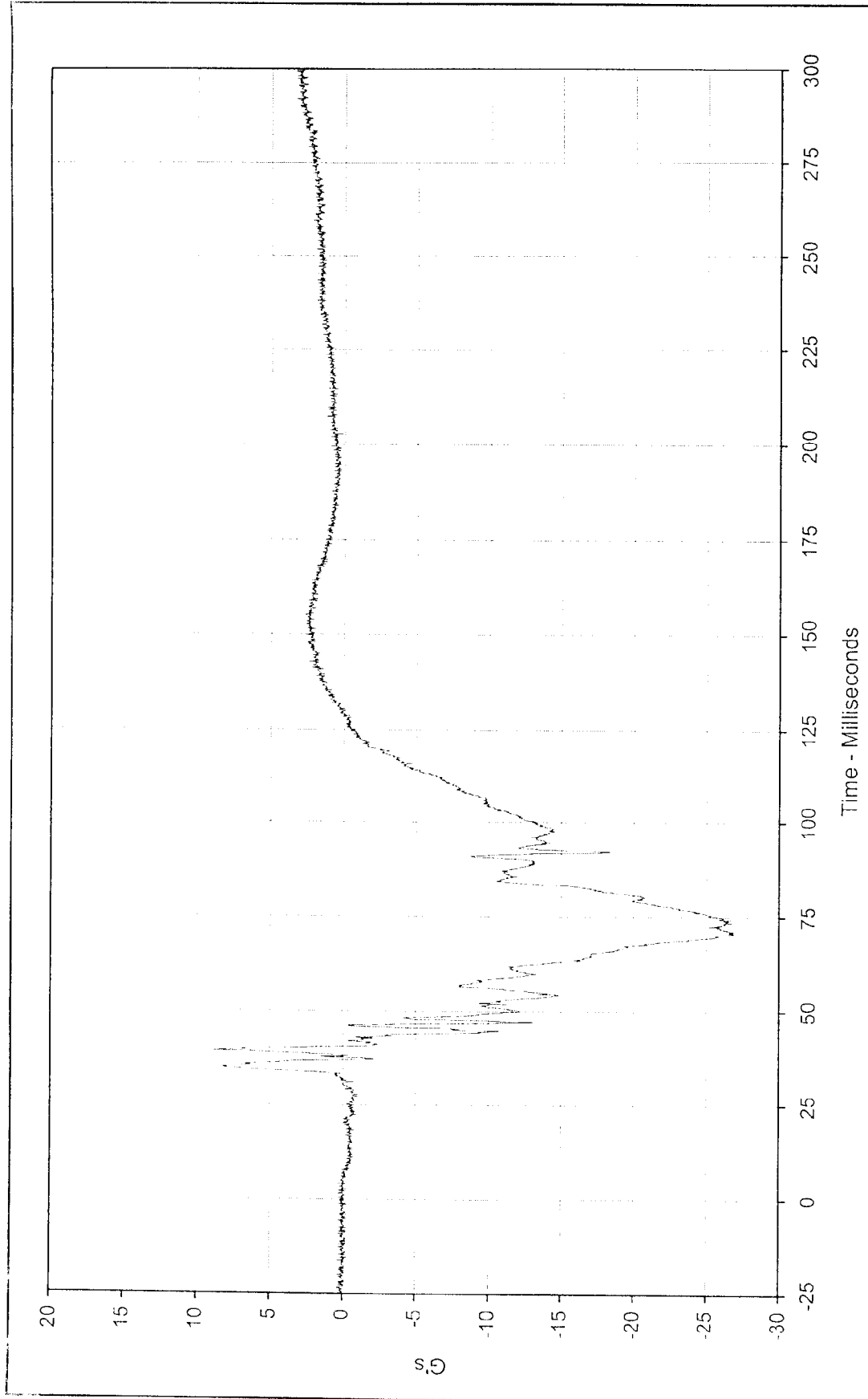
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
Test Vehicle: 2000 Dodge Neon 4 Door Sedan





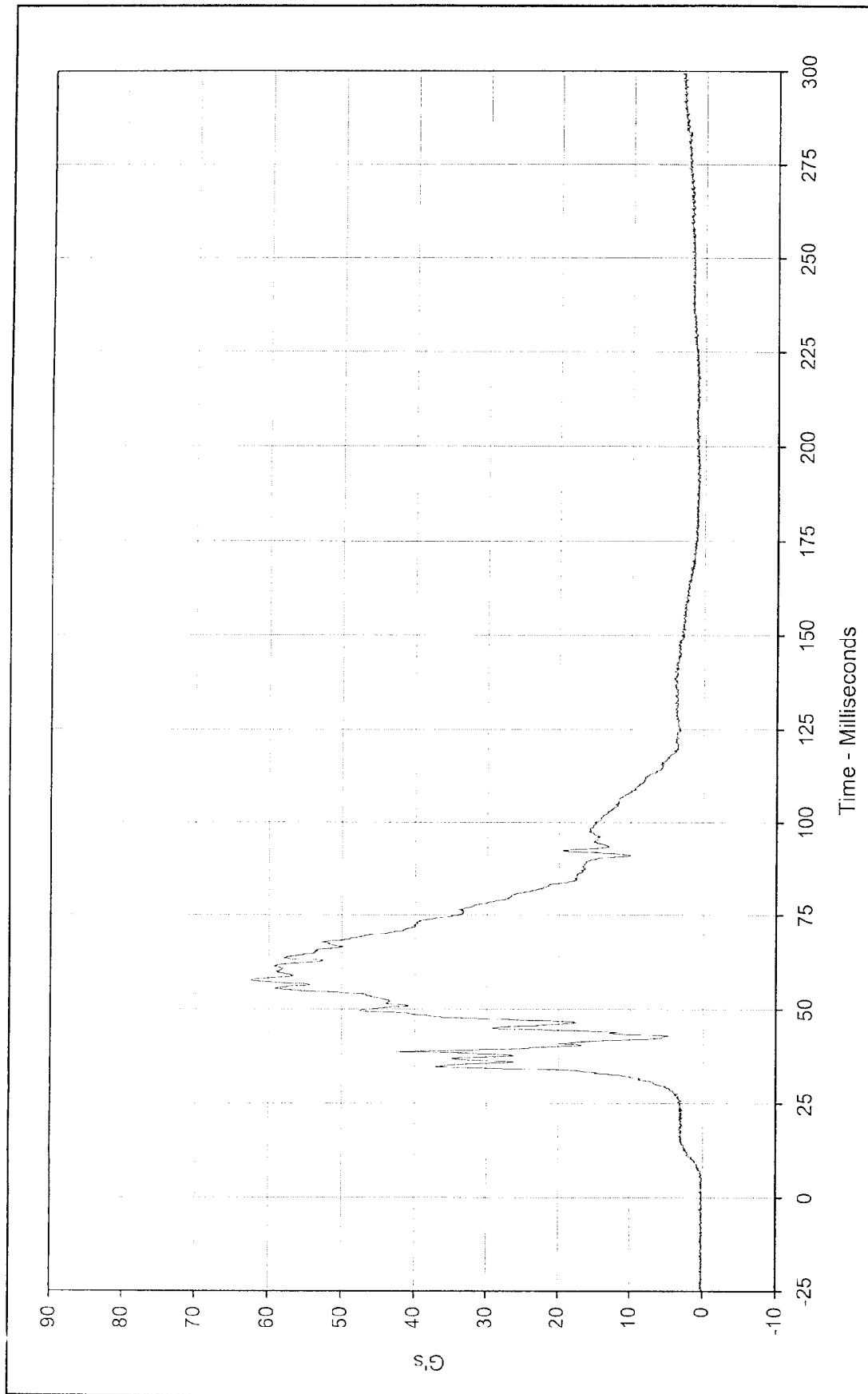
Curve Description:		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	15.6	at	37.0	Milliseconds
Minimum Value:	-11.8	at	43.6	Milliseconds
SAE Filter Class:	1000			
Date of Test:	11/10/99			
Curve Number:	FIL-065			
		Test Vehicle:	2000 Dodge Neon 4 Door Sedan	





Curve Description:		Passenger Pelvis Z		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	8.9	at	39.4	Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan
Minimum Value:	-26.9	at	70.5	Milliseconds		
SAE Filter Class:	1000					
Date of Test:	11/10/99					
Curve Number:	FIL-066					



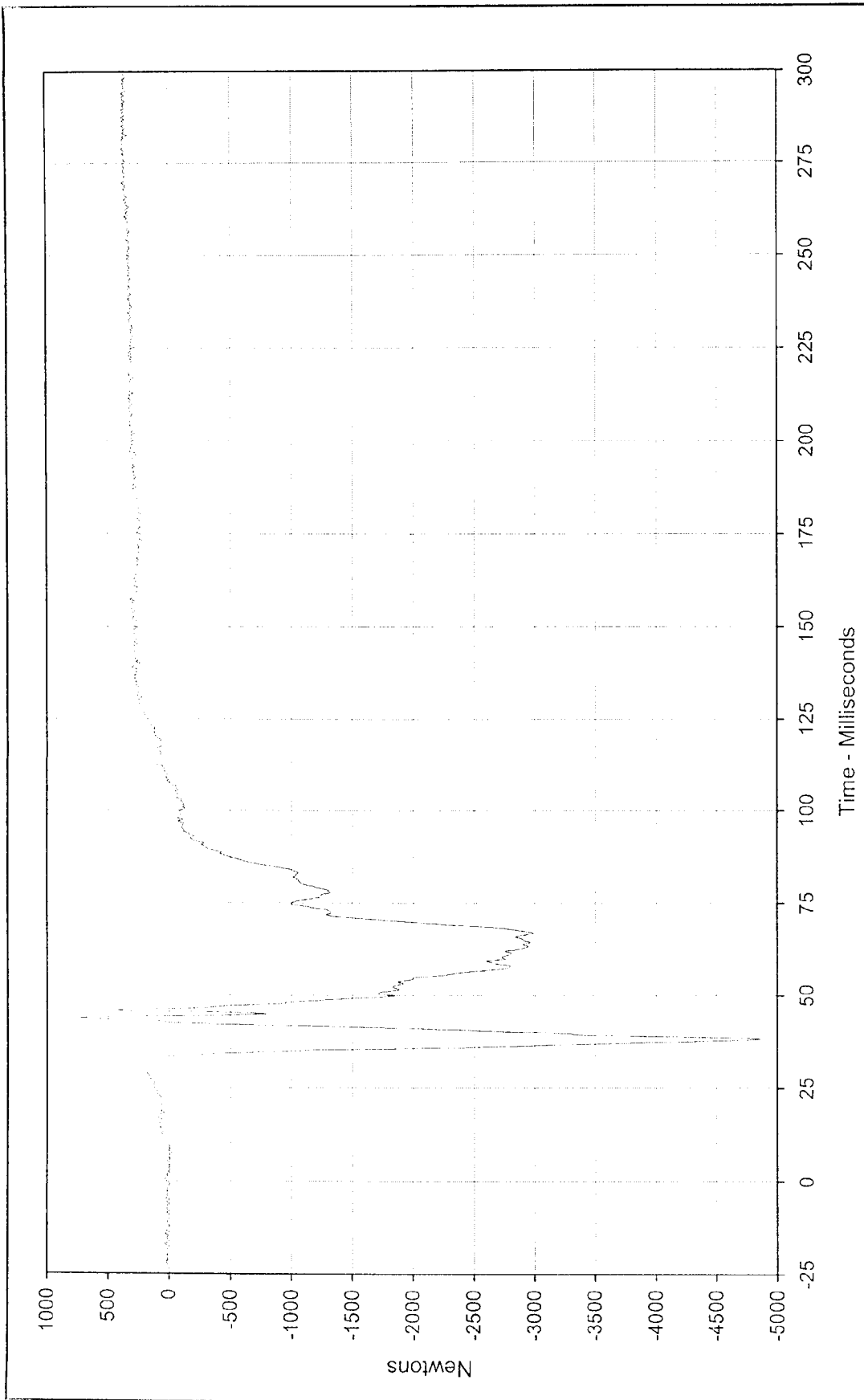


Curve Description: Passenger Pelvis Resultant
 Maximum Value: 62.4 at 57.6 Milliseconds
 Minimum Value: 0.1 at 3.1 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 11/10/99
 Curve Number: RES-064

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

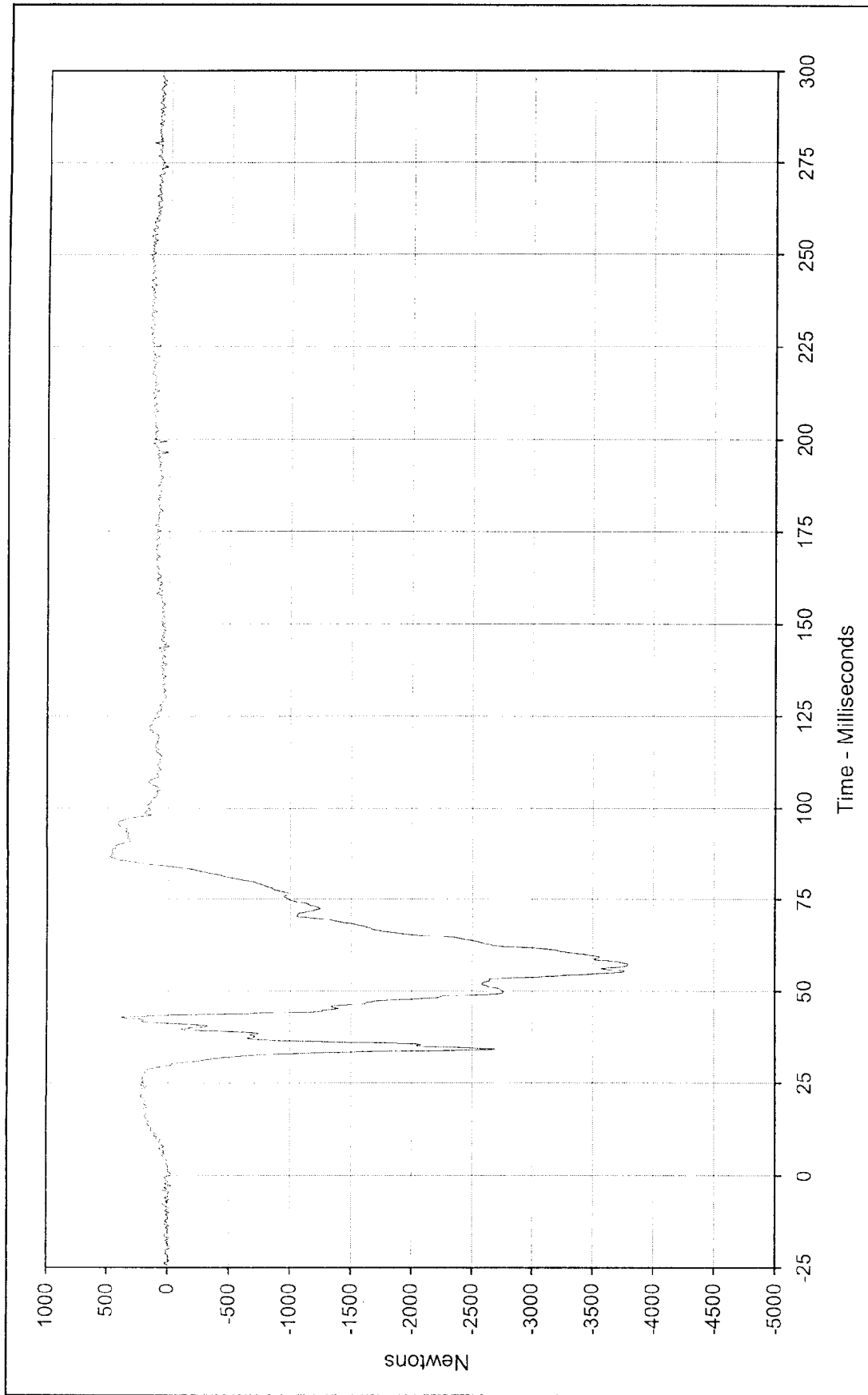
Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description:	Passenger Left Femur Force	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	727.3 at 43.8 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-4862.9 at 38.4 Milliseconds			
SAE Filter Class:	600			
Date of Test:	11/10/99			
Curve Number:	FIL-067			

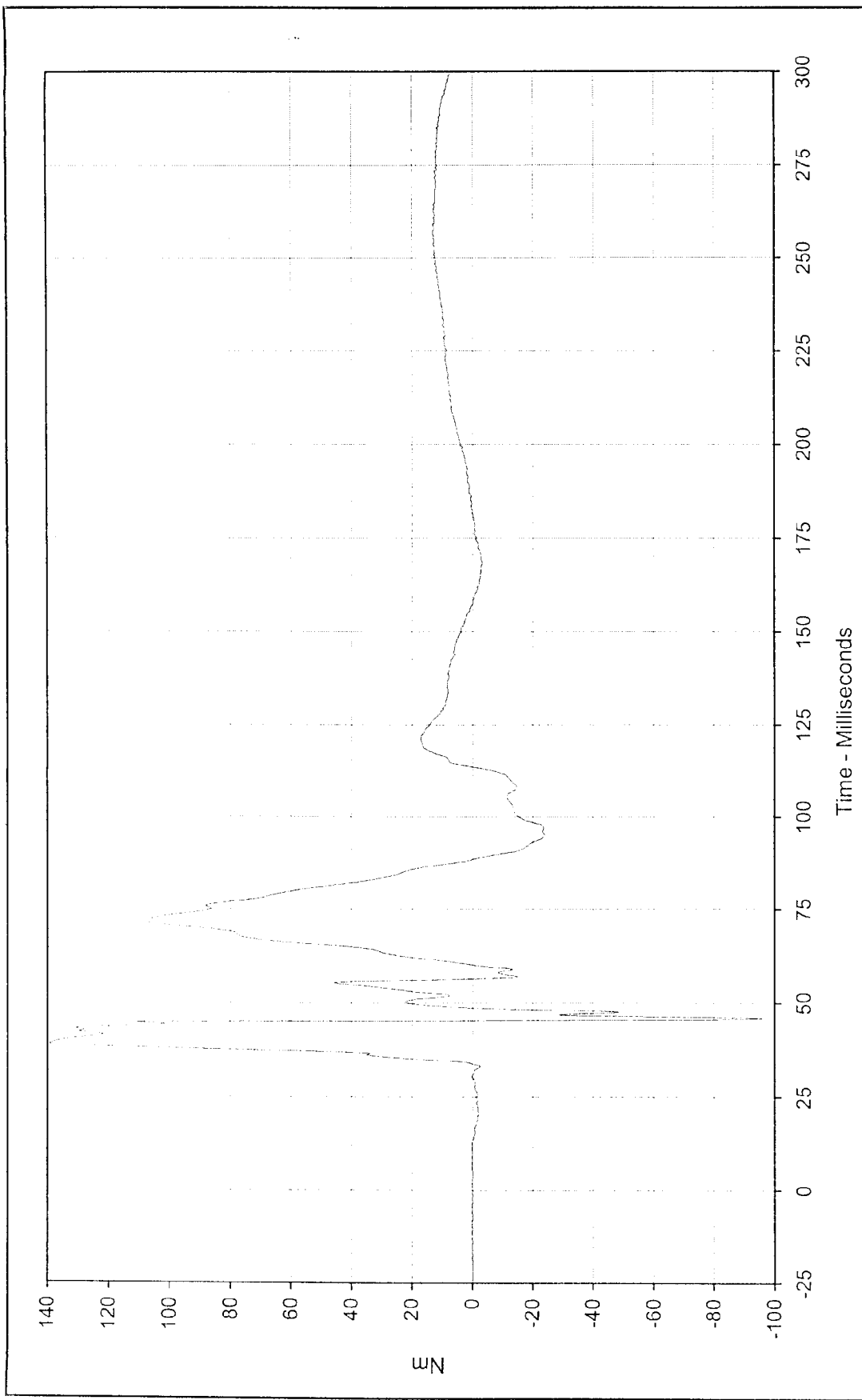




Curve Description: Passenger Right Femur Force
Maximum Value: 484.0 at 25.0 Milliseconds
Minimum Value: -3795.1 at 57.1 Milliseconds
SAE Filter Class: 600
Date of Test: 11/10/99
Curve Number: FIL-068

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: Passenger Left Upper Tibia Moment X

Maximum Value: 139.4 at 39.0 Milliseconds

Minimum Value: -96.3 at 46.0 Milliseconds

SAE Filter Class: 600

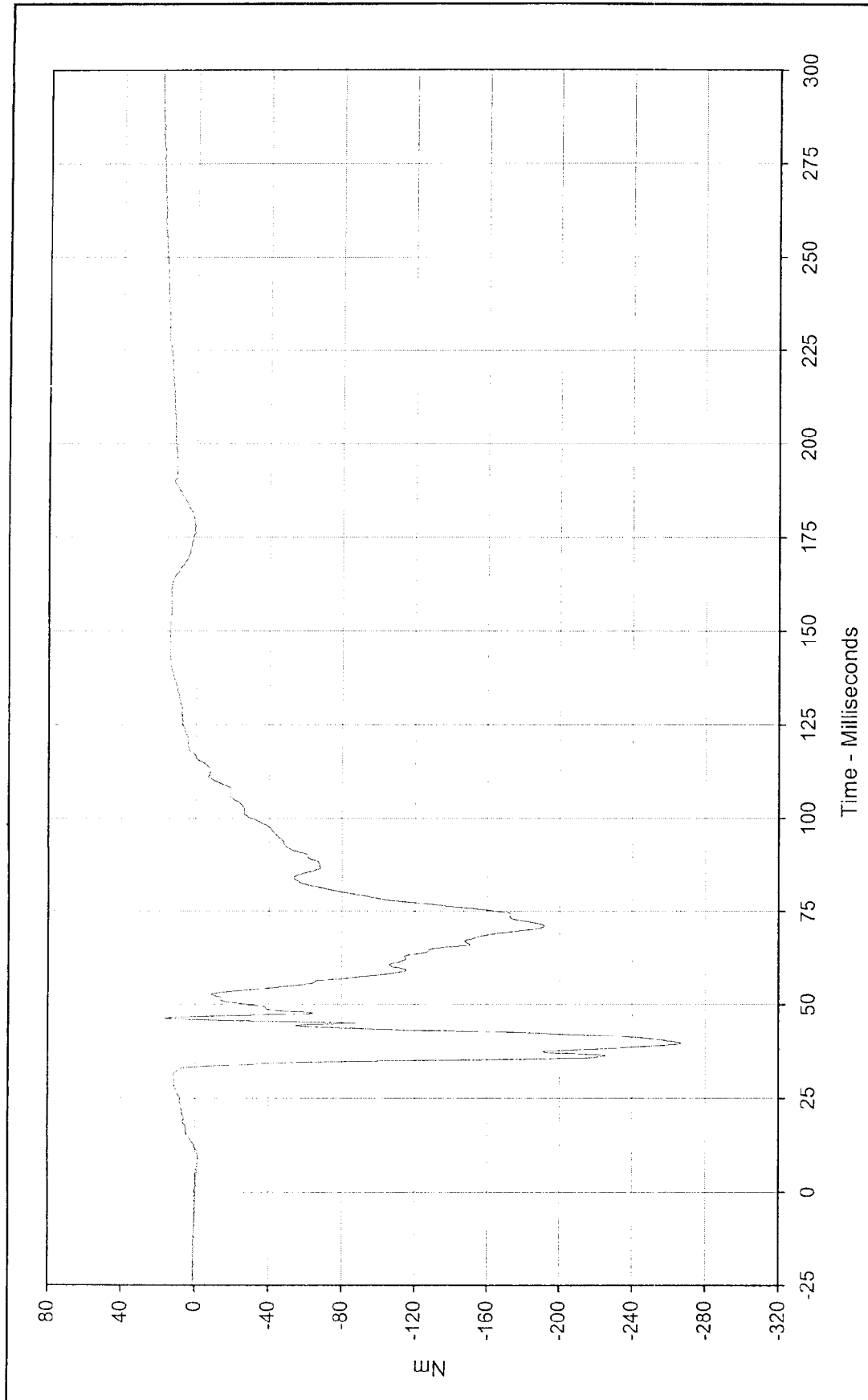
Date of Test: 11/10/99

Curve Number: FIL-069

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: Passenger Left Upper Tibia Moment Y

Maximum Value: 19.5 at 299.1 Milliseconds

Minimum Value: -266.8 at 39.5 Milliseconds

SAE Filter Class: 600

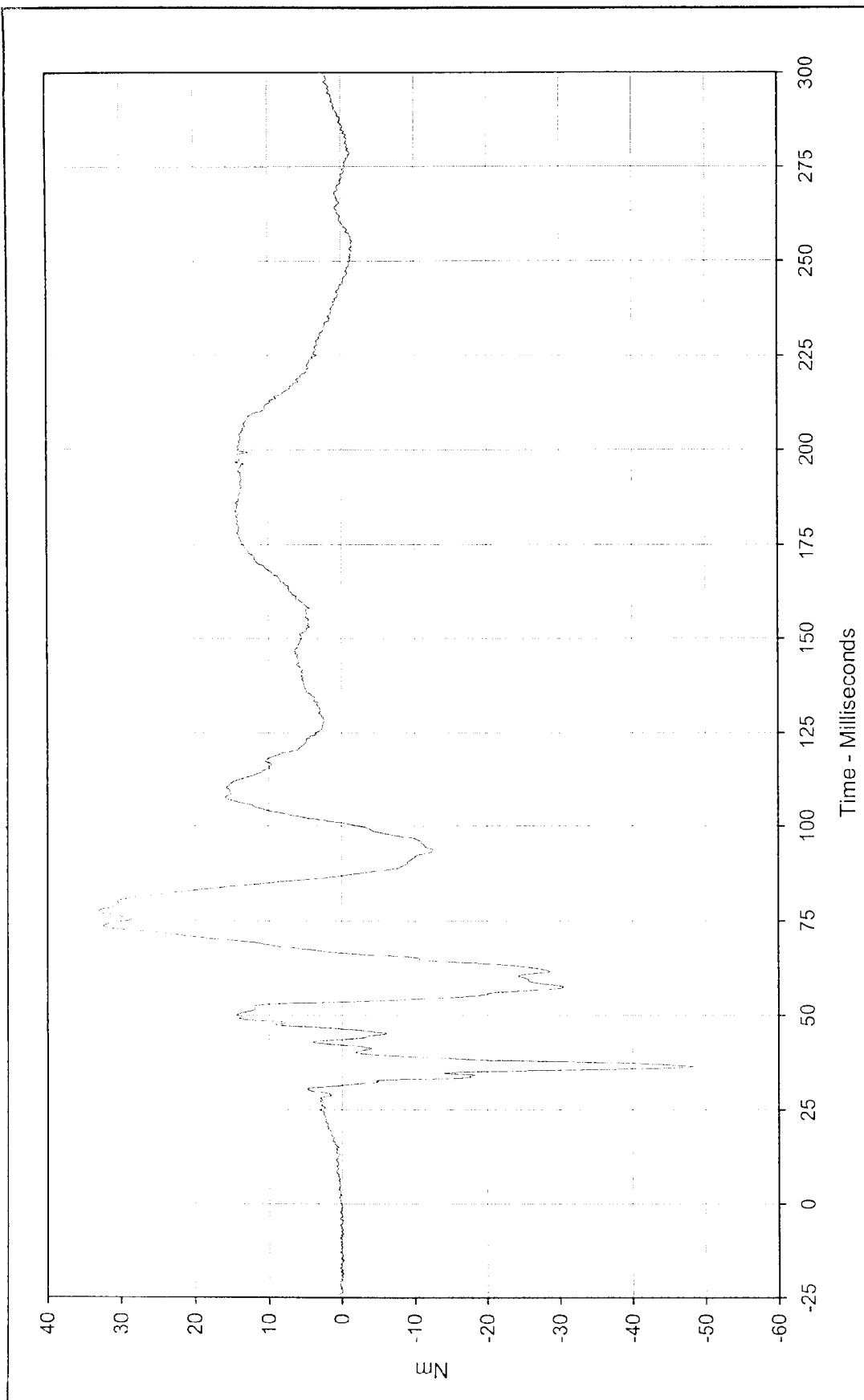
Date of Test: 11/10/99

Curve Number: FIL-070

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: Passenger Right Upper Tibia Moment X

Maximum Value: 33.1 at 77.6 Milliseconds

Minimum Value: -48.3 at 36.4 Milliseconds

SAE Filter Class: 600

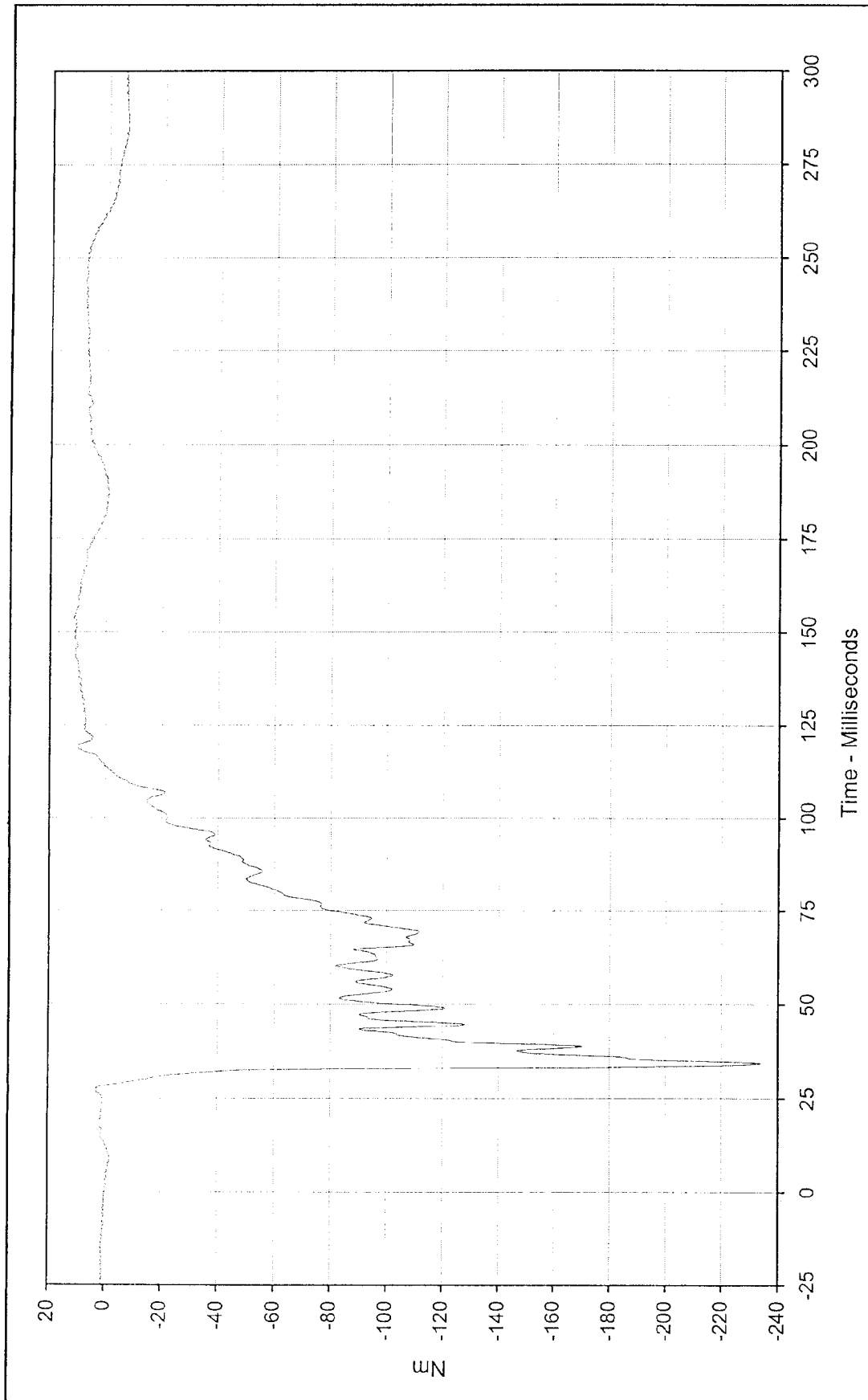
Date of Test: 11/10/99

Curve Number: FIL-071

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: Passenger Right Upper Tibia Moment Y

Maximum Value: 11.7 at 153.8 Milliseconds

Minimum Value: -234.1 at 34.3 Milliseconds

SAE Filter Class: 600

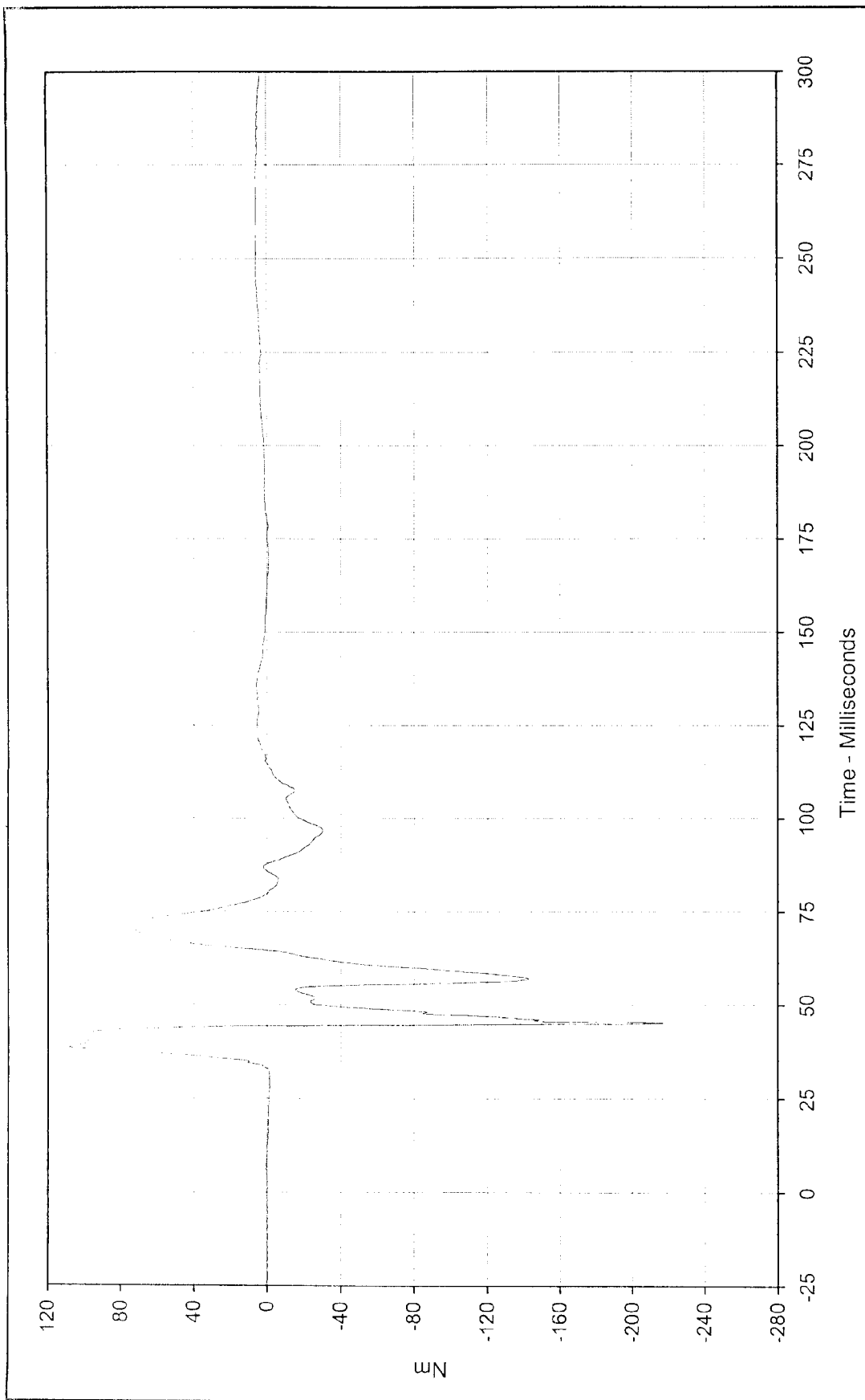
Date of Test: 11/10/99

Curve Number: FIL-072

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

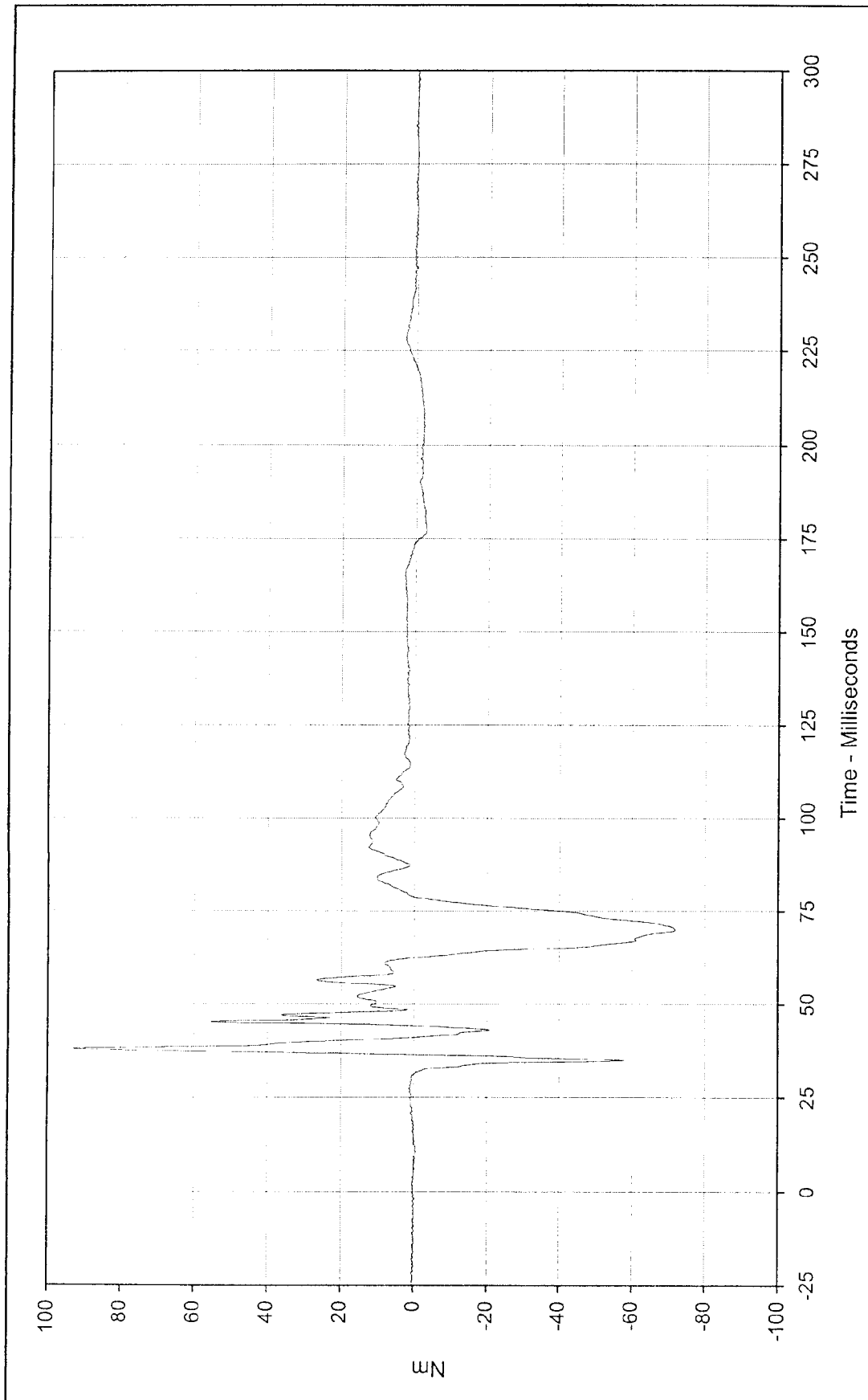
Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: Passenger Left Lower Tibia Moment X	Test Program: 2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value: 108.3 at 38.5 Milliseconds	Test Vehicle: 2000 Dodge Neon 4 Door Sedan	
Minimum Value: -217.3 at 45.2 Milliseconds		
SAE Filter Class: 600		
Date of Test: 11/10/99		
Curve Number: FIL-073		





Curve Description: Passenger Left Lower Tibia Moment Y

Maximum Value: 93.0 at 37.9 Milliseconds

Minimum Value: -71.9 at 70.0 Milliseconds

SAE Filter Class: 600

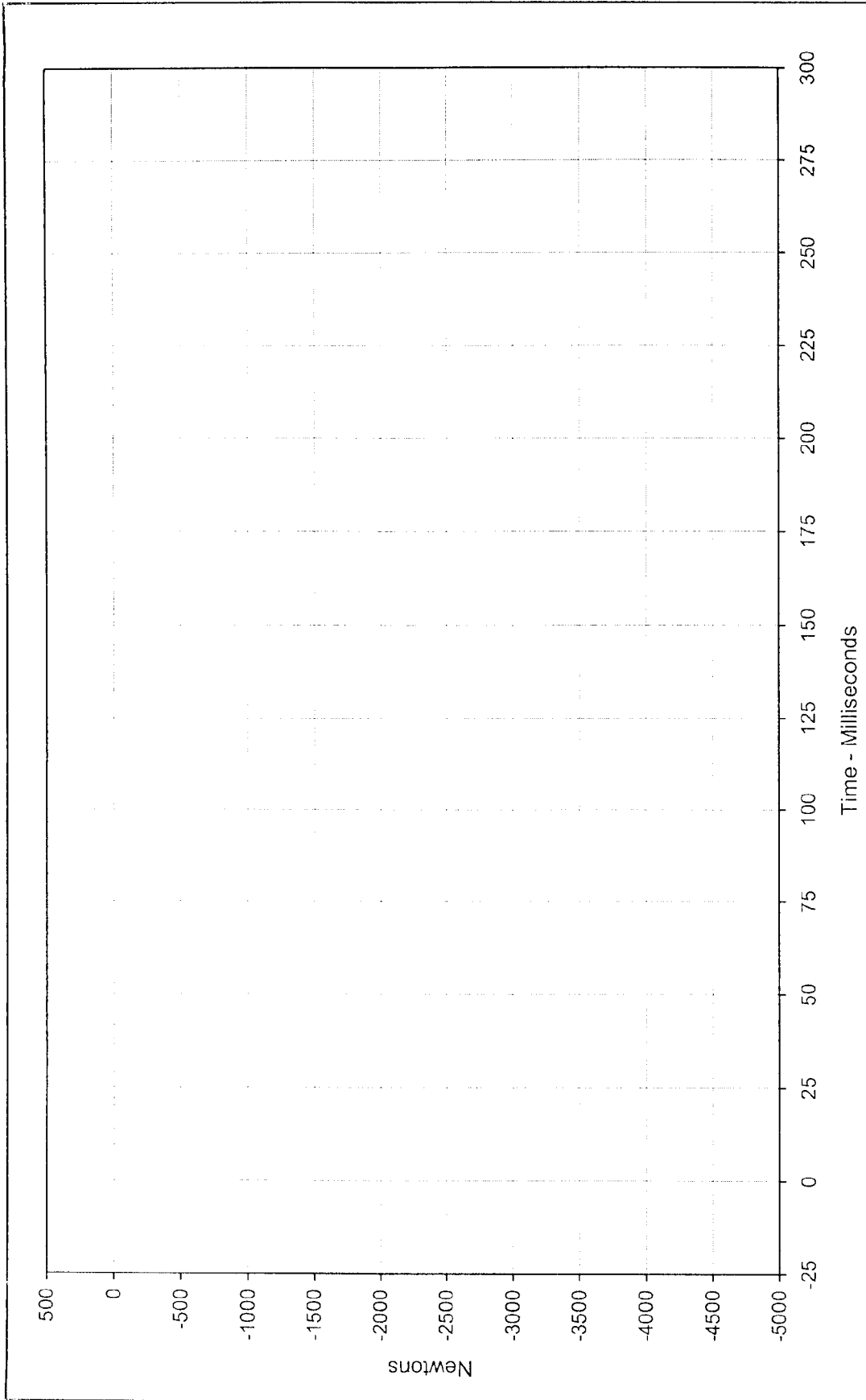
Date of Test: 11/10/99

Curve Number: FIL-074

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: Passenger Left Lower Tibia Force Z * Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Maximum Value: 0.0 at 0.0 Milliseconds Test Vehicle: 2000 Dodge Neon 4 Door Sedan

Minimum Value: 0.0 at 0.0 Milliseconds

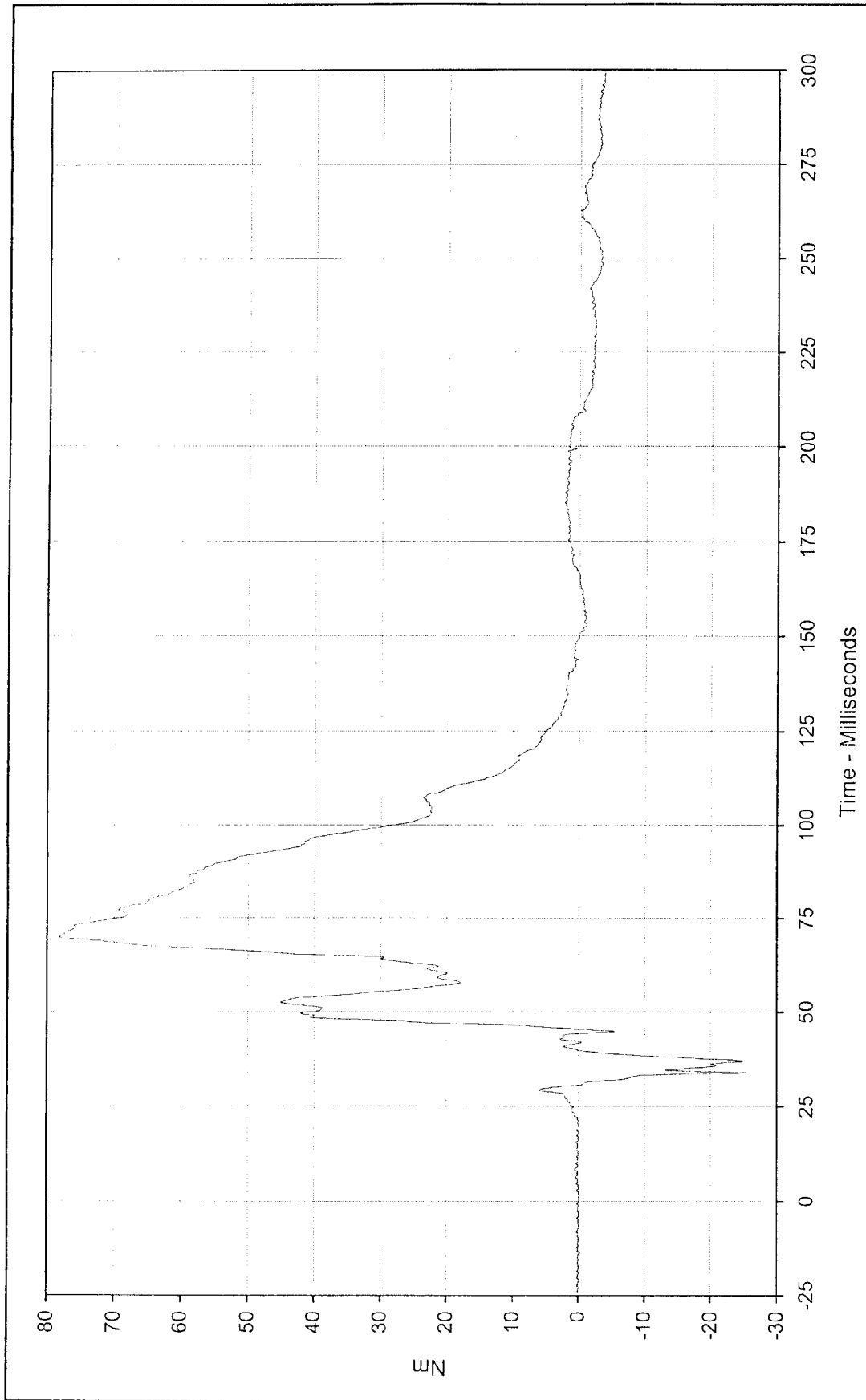


SAE Filter Class: 600

Date of Test: 11/10/99

Curve Number: FIL-075

* Channel Failed, No Data



Curve Description: Passenger Right Lower Tibia Moment X

Maximum Value: 78.2 at 69.9 Milliseconds

Minimum Value: -25.7 at 33.8 Milliseconds

SAE Filter Class: 600

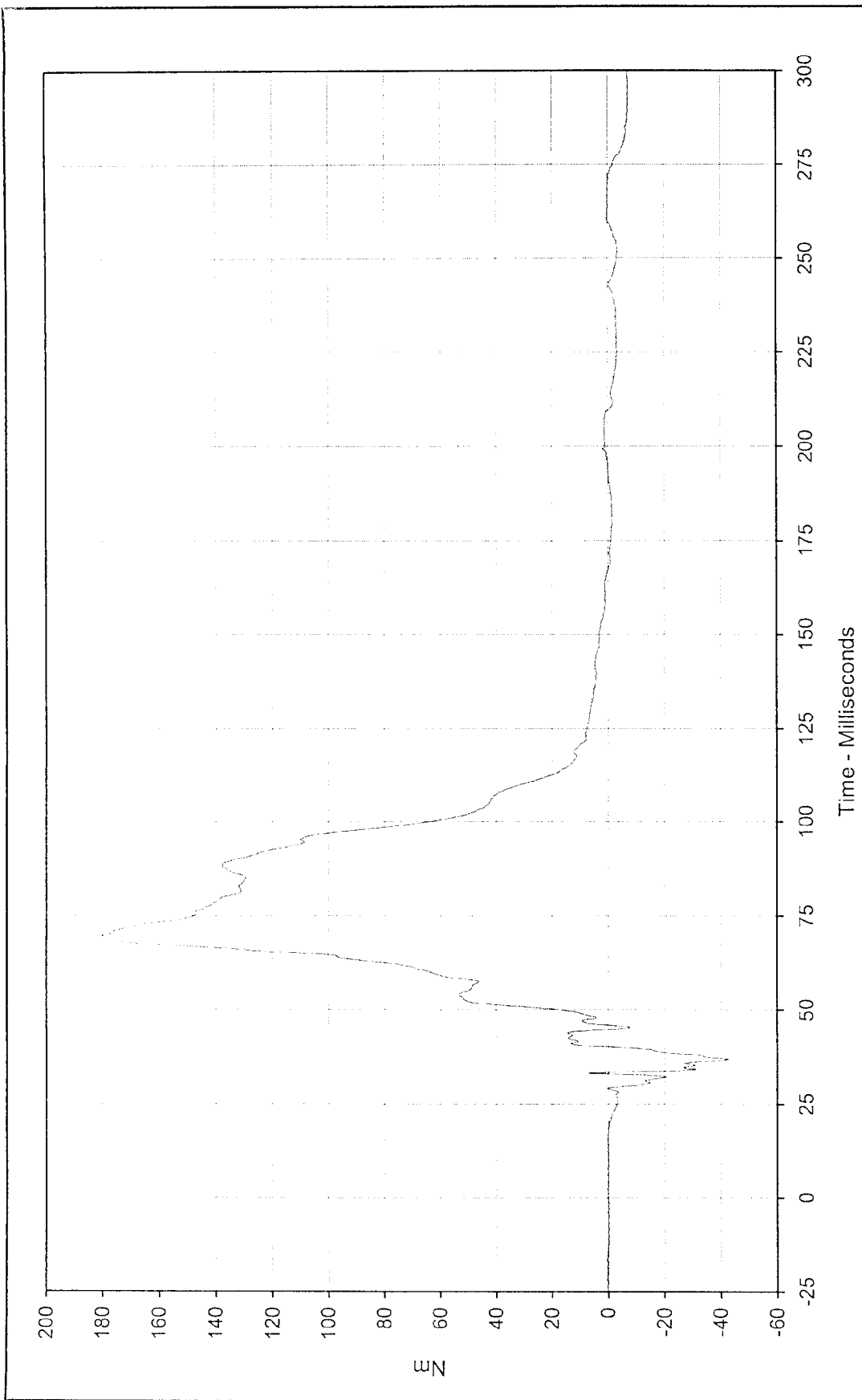
Date of Test: 11/10/99

Curve Number: FIL-076

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

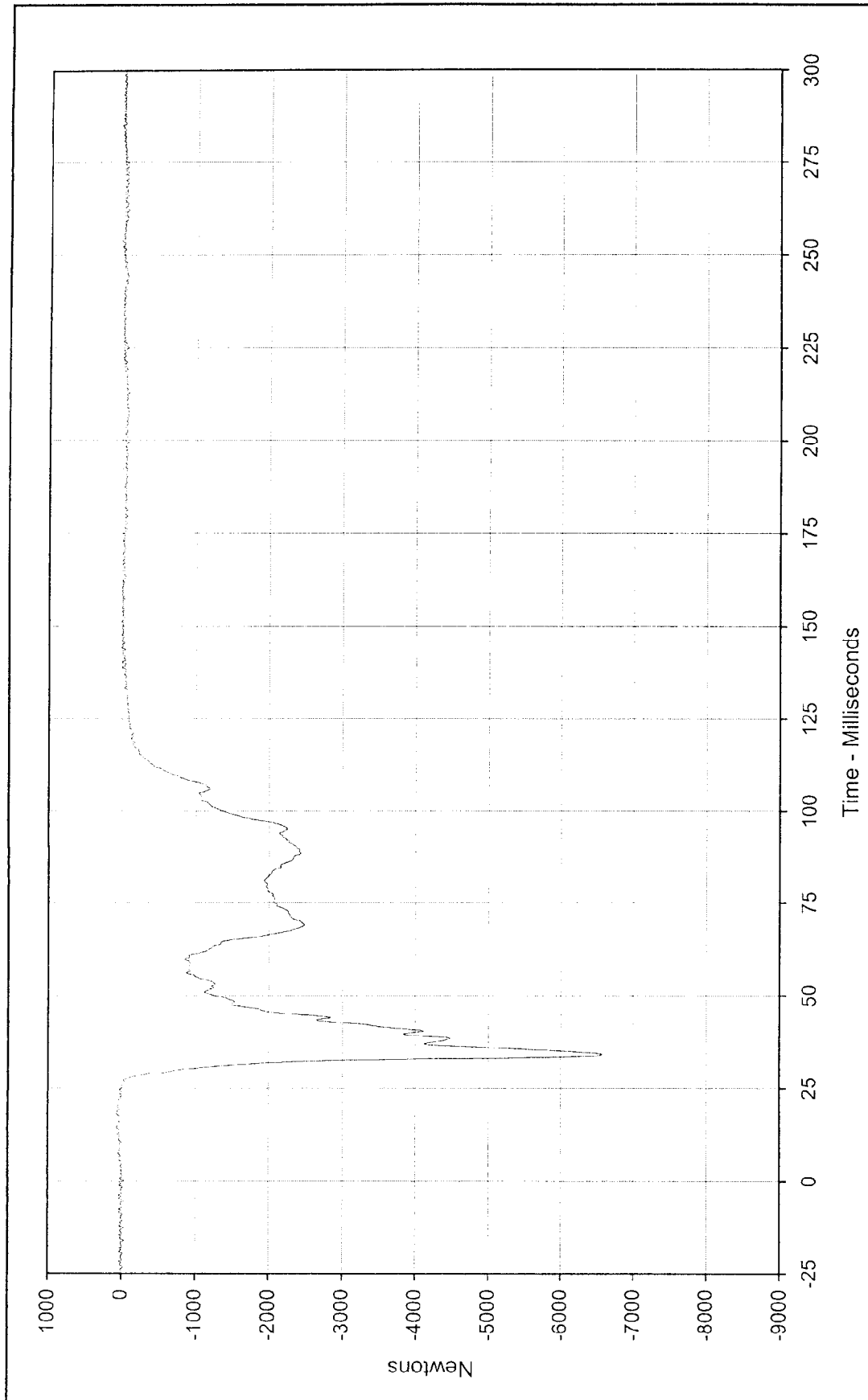
Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: Passenger Right Lower Tibia Moment Y		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	180.4	at	69.6	Milliseconds
Minimum Value:	-42.7	at	36.8	Milliseconds
SAE Filter Class:	600			
Date of Test:	11/10/99			
Curve Number:	FIL-077			
		Test Vehicle:	2000 Dodge Neon 4 Door Sedan	

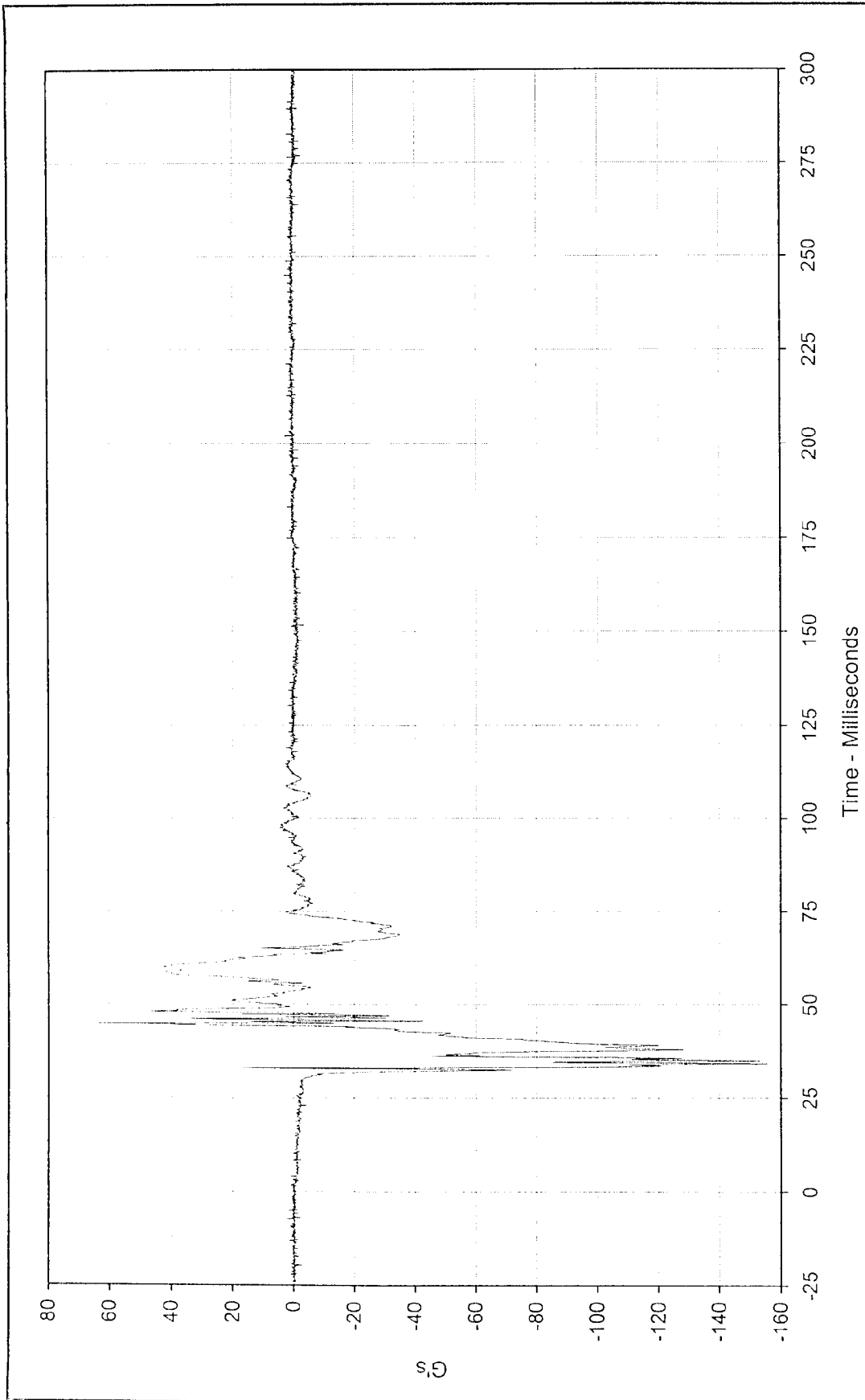




Curve Description: Passenger Right lower Tibia Force Z
Maximum Value: 67.7 at 14.8 Milliseconds
Minimum Value: -6569.8 at 34.2 Milliseconds
SAE Filter Class: 600
Date of Test: 11/10/99
Curve Number: FIL-078

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: Passenger Left Foot Aft X

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Maximum Value: 65.0 at 44.8 Milliseconds

Test Vehicle: 2000 Dodge Neon 4 Door Sedan

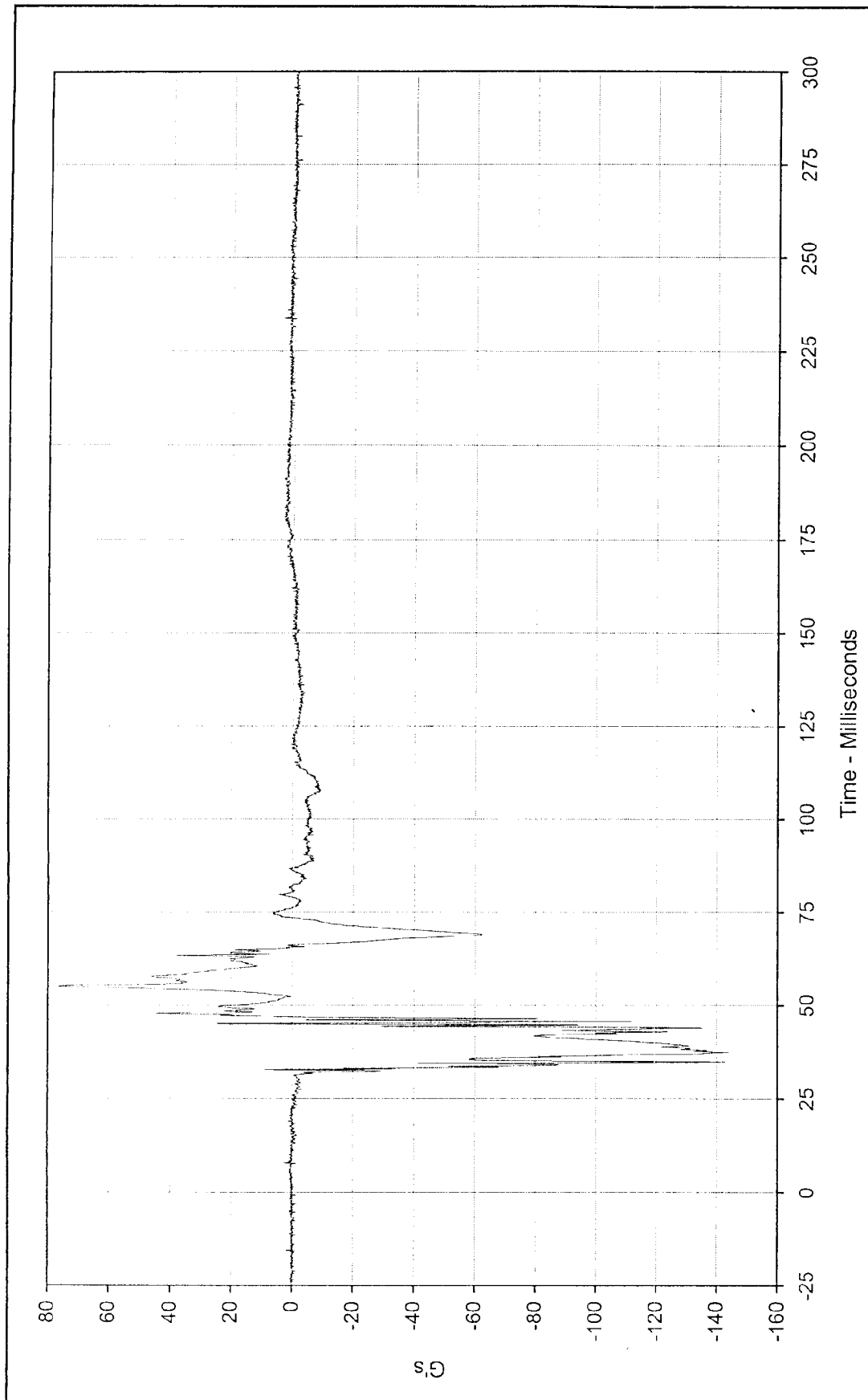
Minimum Value: -155.5 at 34.3 Milliseconds

SAE Filter Class: 1000

Date of Test: 11/10/99

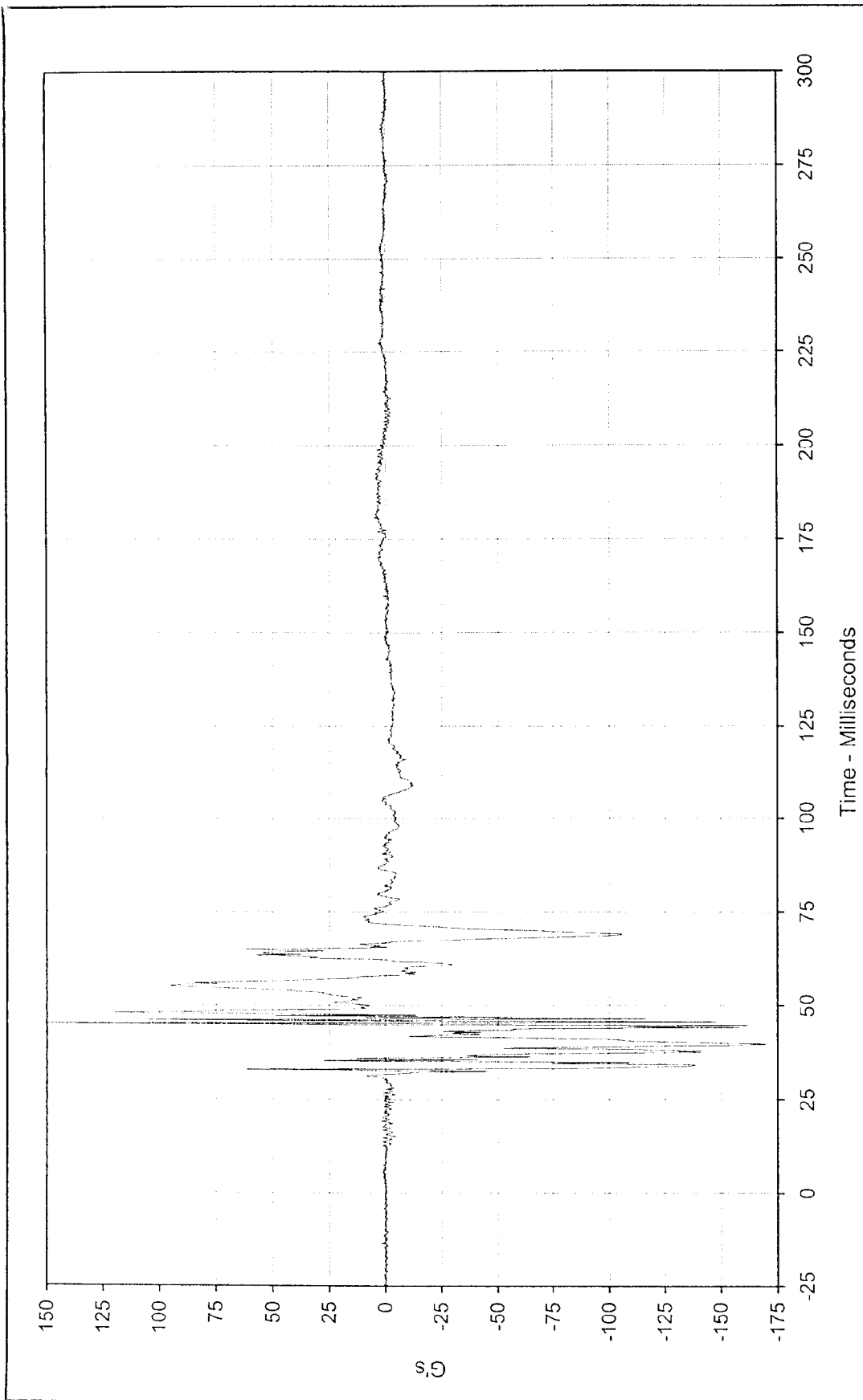
Curve Number: FIL-079





Curve Description:	Passenger Left Foot Aft Z	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	76.4 at 55.2 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-144.2 at 37.4 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	11/10/99			
Curve Number:	FIL-080			

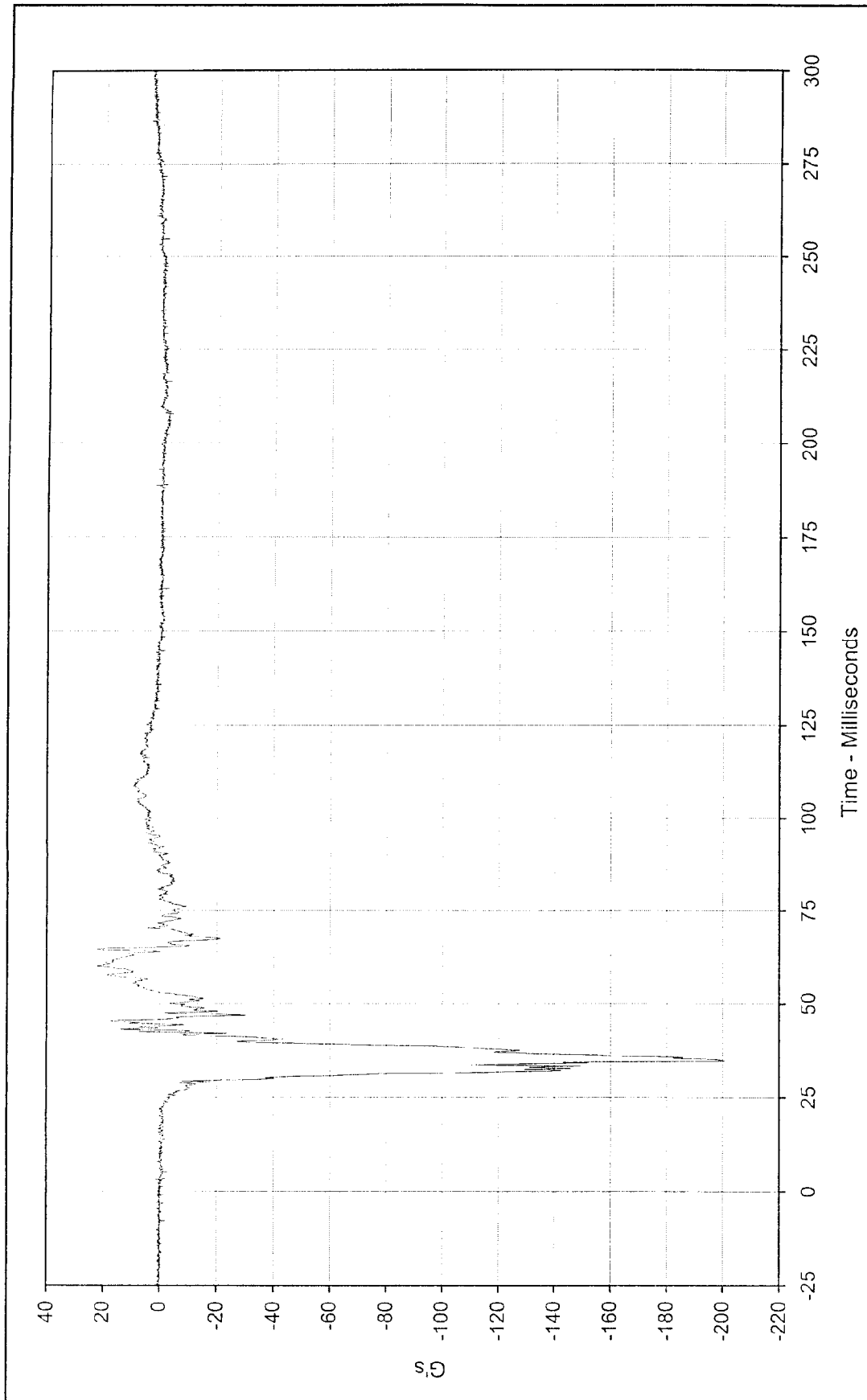




Time - Milliseconds

Curve Description:	Passenger Left Foot Fore Z	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	149.8 at 45.2 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-170.2 at 39.7 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	11/10/99			
Curve Number:	FIL-081			

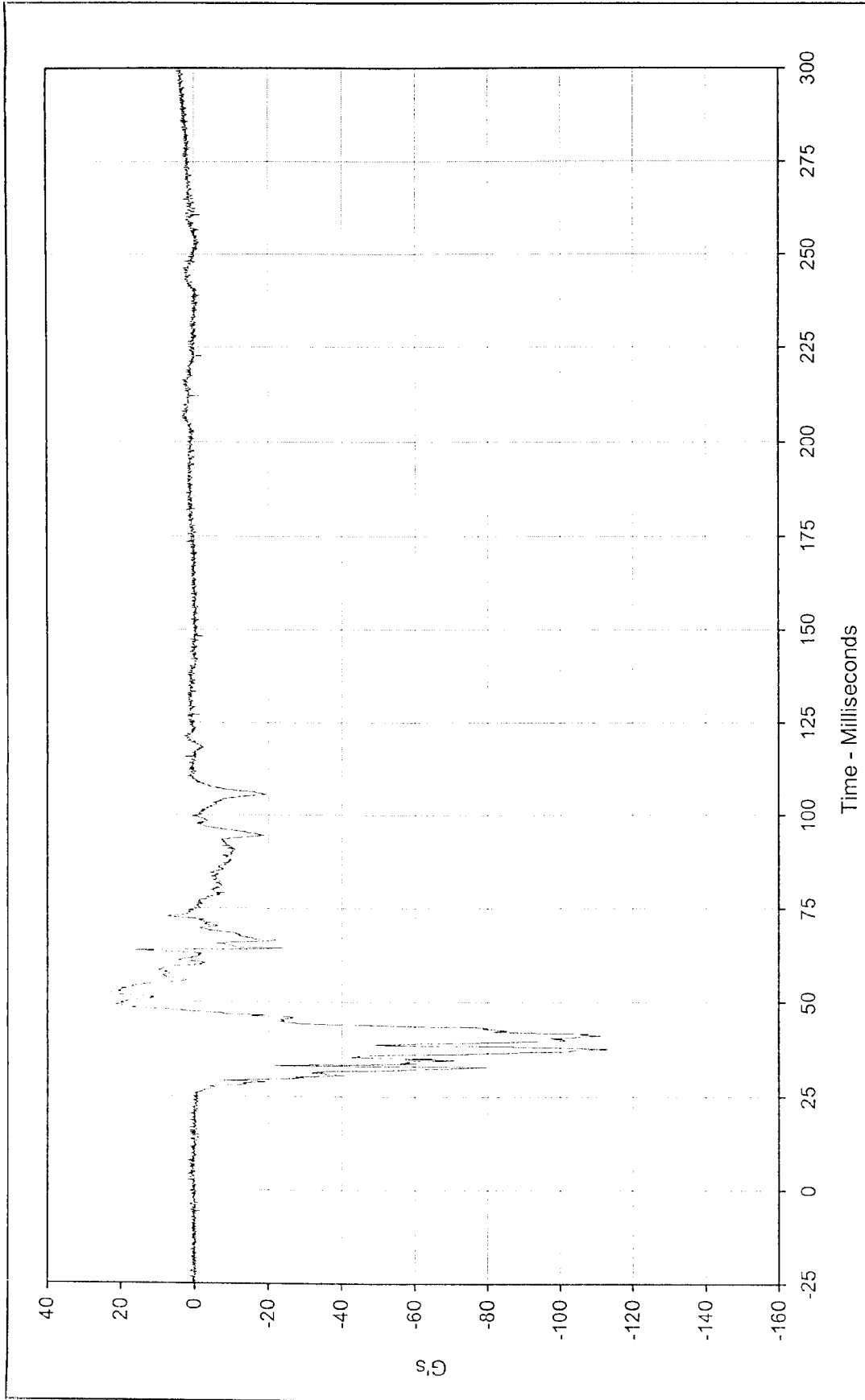




Curve Description: Passenger Right Foot Aft X
 Maximum Value: 22.8 at 60.0 Milliseconds
 Minimum Value: -200.6 at 34.6 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 11/10/99
 Curve Number: FIL-082

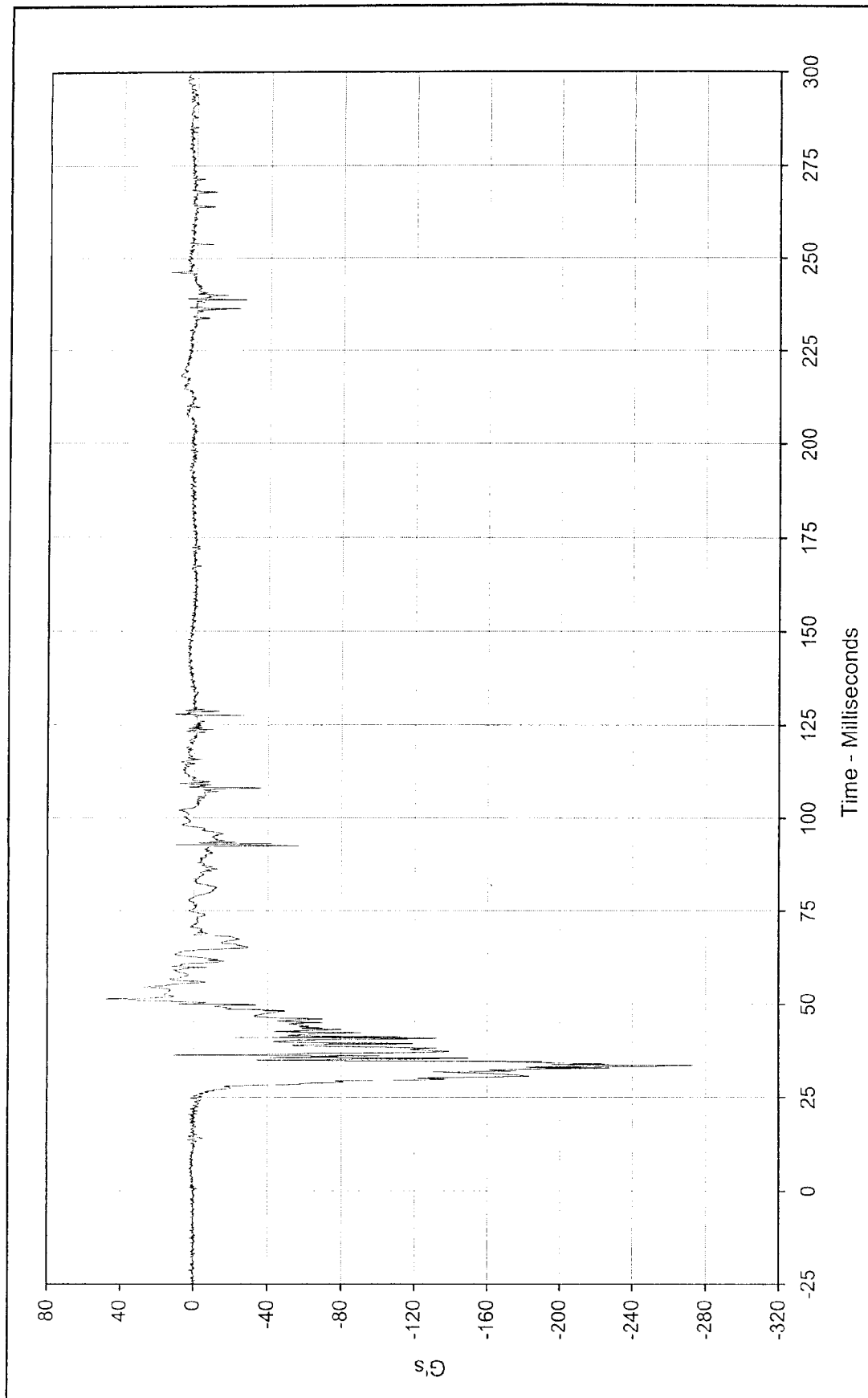
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description:	Passenger Right Foot Aft Z	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	23.0 at 23.3 milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-113.0 at 113.7 milliseconds			
SAE Filter Class:	1000			
Date of Test:	11/10/99			
Curve Number:	FIL-083			

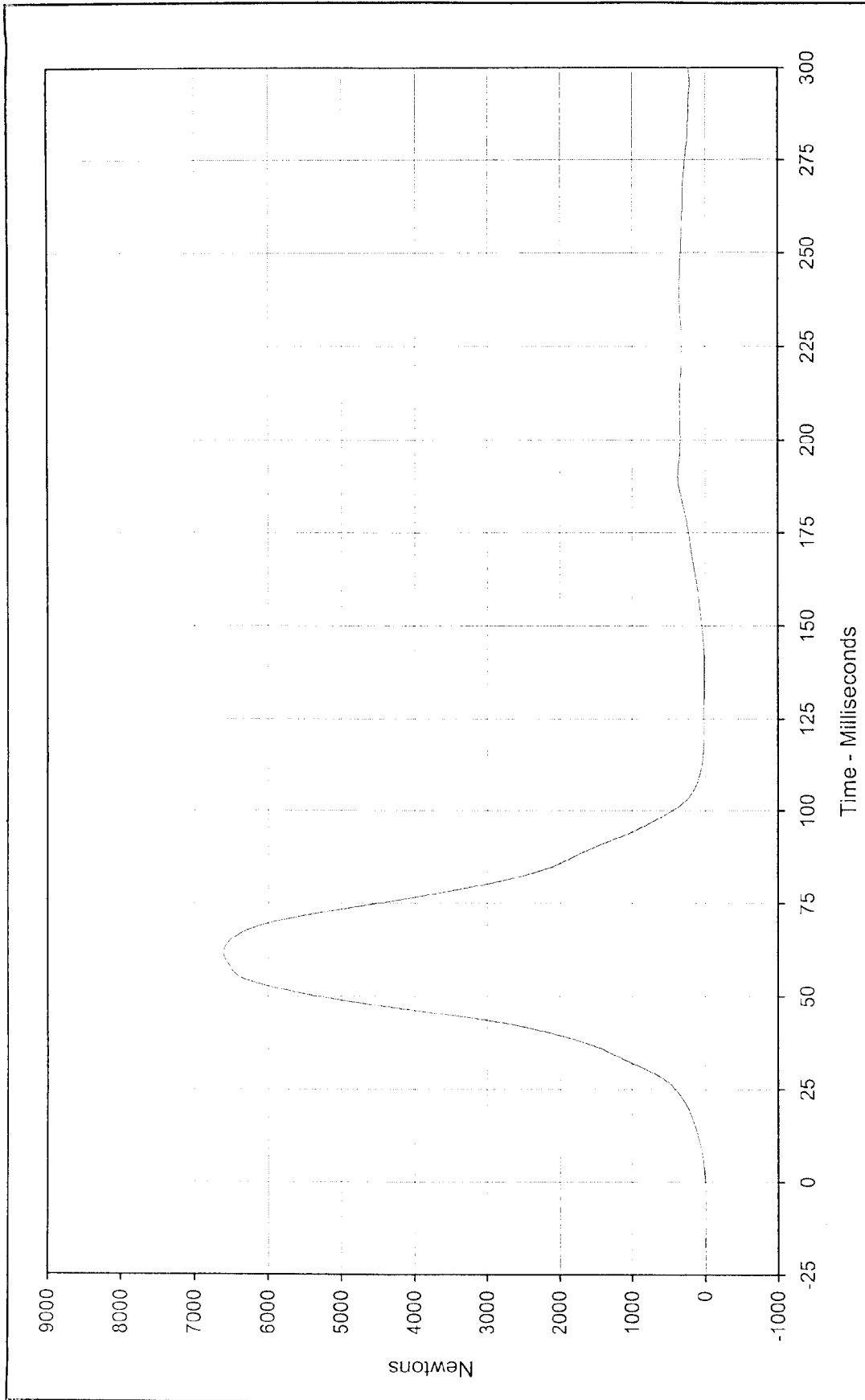




Curve Description:	Passenger Right Foot Fore Z	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	47.8 at 51.3 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-271.8 at 33.5 Milliseconds			

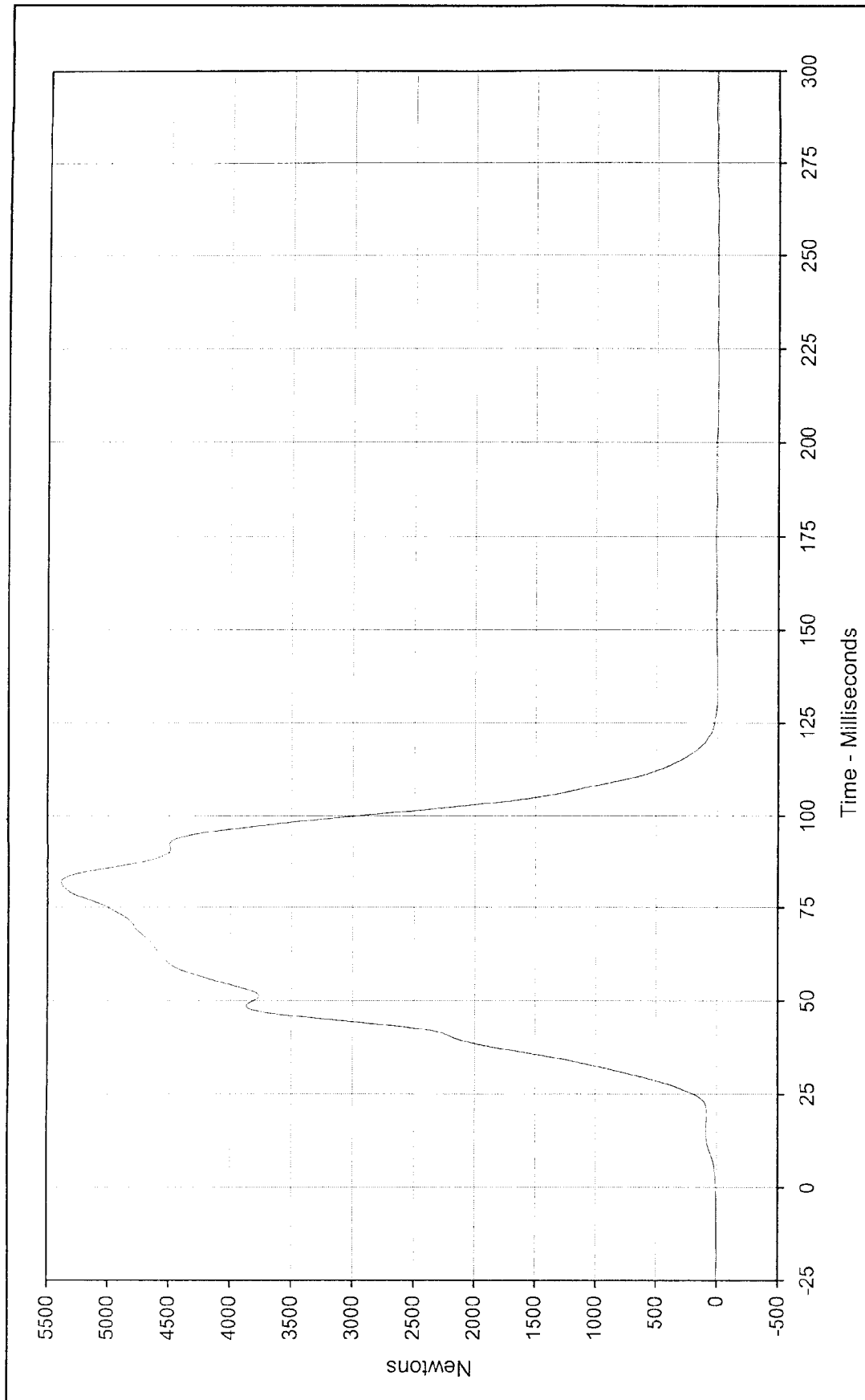


SAE Filter Class:	1000
Date of Test:	11/10/99
Curve Number:	FIL-084



Curve Description:	Passenger Lap Belt Force	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	6604.4 at 61.5 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	0.7 at 0.0 Milliseconds			
SAE Filter Class:	60			
Date of Test:	11/10/99			
Curve Number:	FIL-085			

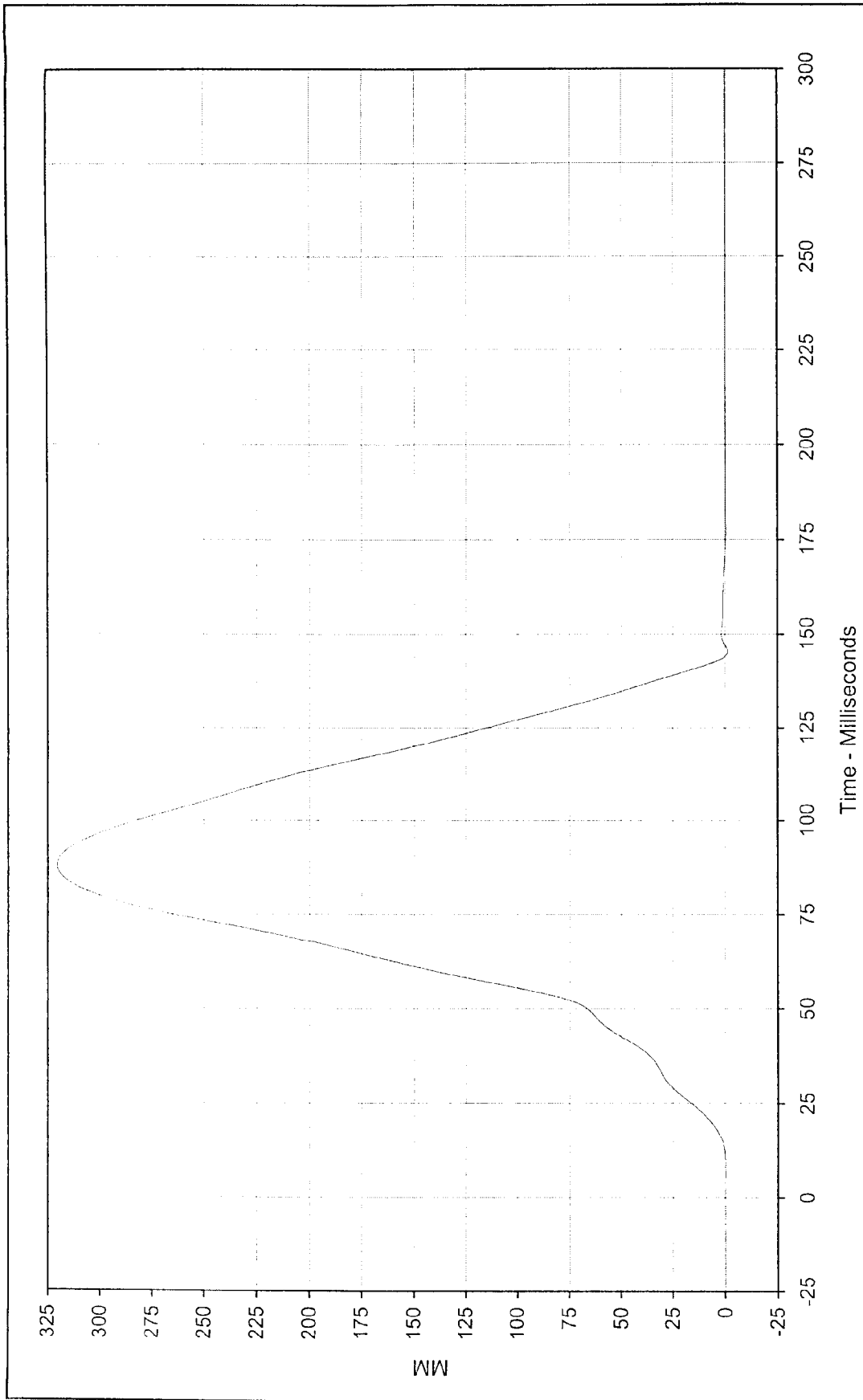




Curve Description: Passenger Shoulder Belt Force
Maximum Value: 5387.8 at 81.7 Milliseconds
Minimum Value: -3.1 at 219.7 Milliseconds
SAE Filter Class: 60
Date of Test: 11/10/99
Curve Number: FIL-086

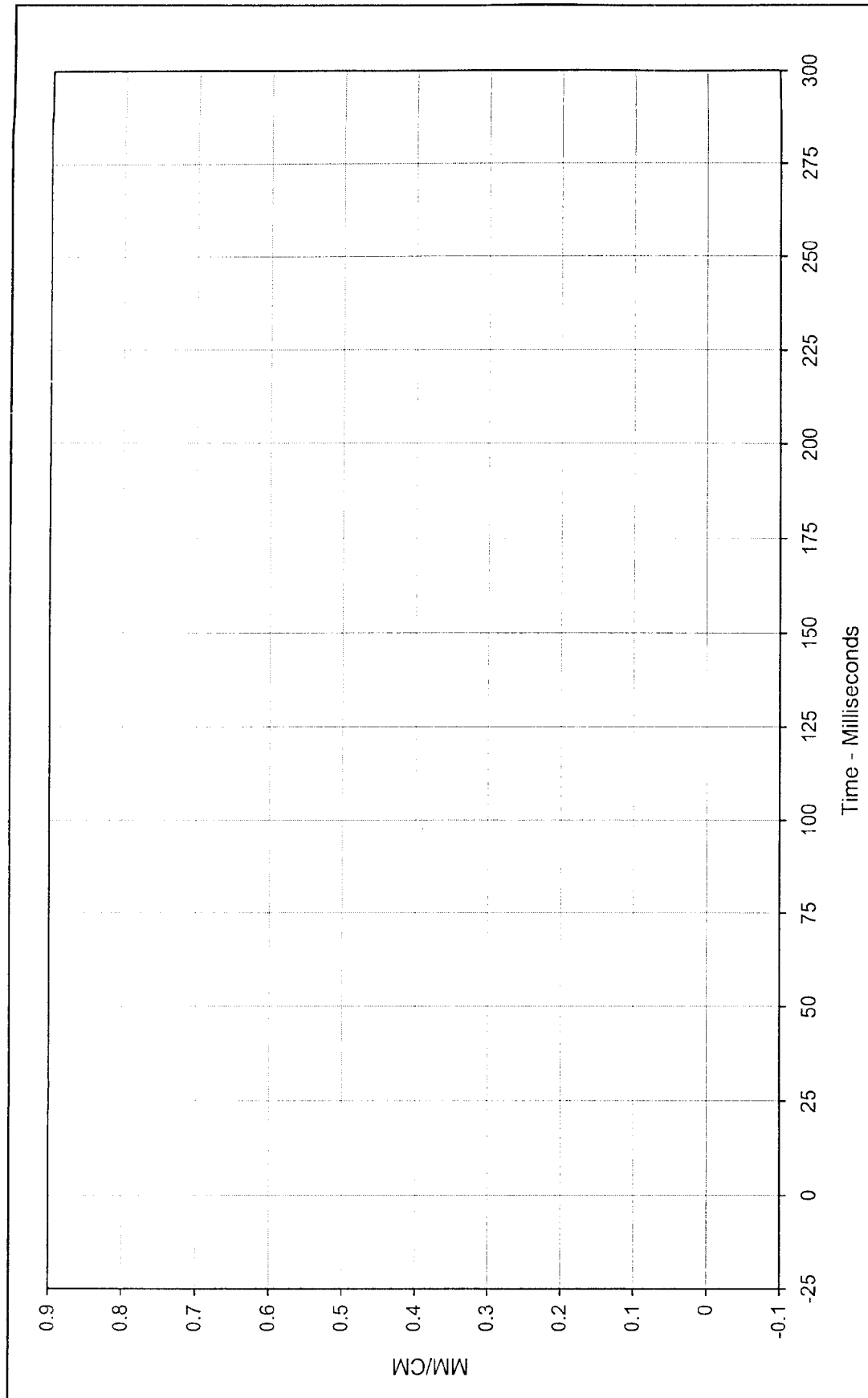
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description:	Passenger Shoulder Belt Pullout	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	320.6	at	87.6	Milliseconds
Minimum Value:	-1.2	at	145.1	Milliseconds
SAE Filter Class:	60	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Date of Test:	11/10/99			
Curve Number:	FIL-087			





Curve Description: Passenger Shoulder Belt Elongation *

Maximum Value: 0.00 at 0.0 Milliseconds

Minimum Value: 0.00 at 0.0 Milliseconds

SAE Filter Class: 60

Date of Test: 11/10/99

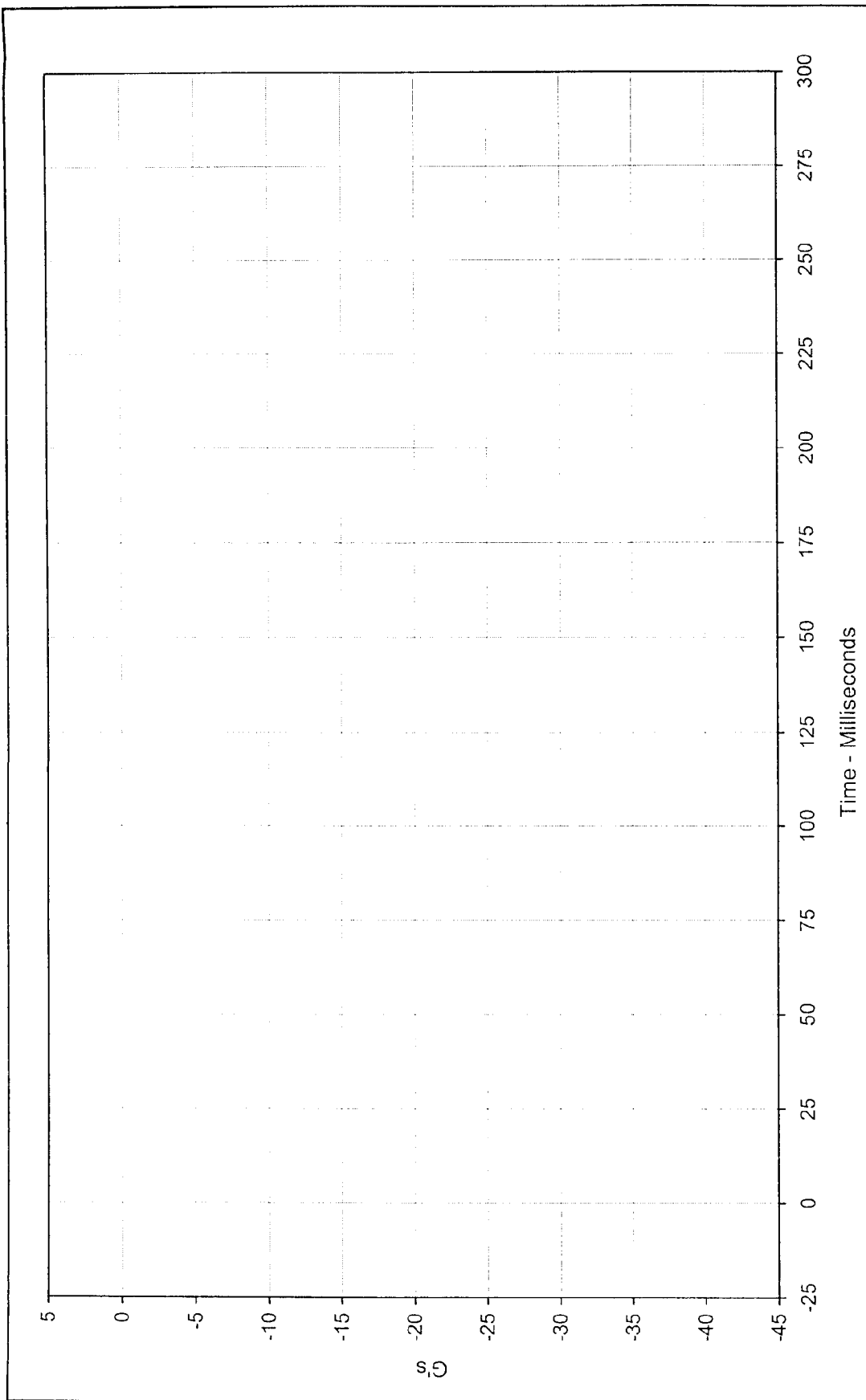
Curve Number: FIL-088

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan



*Not Installed



Curve Description: Vehicle Left Rear Primary * Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Maximum Value: 0.0 at 0.0 Milliseconds Test Vehicle: 2000 Dodge Neon 4 Door Sedan

Minimum Value: 0.0 at 0.0 Milliseconds

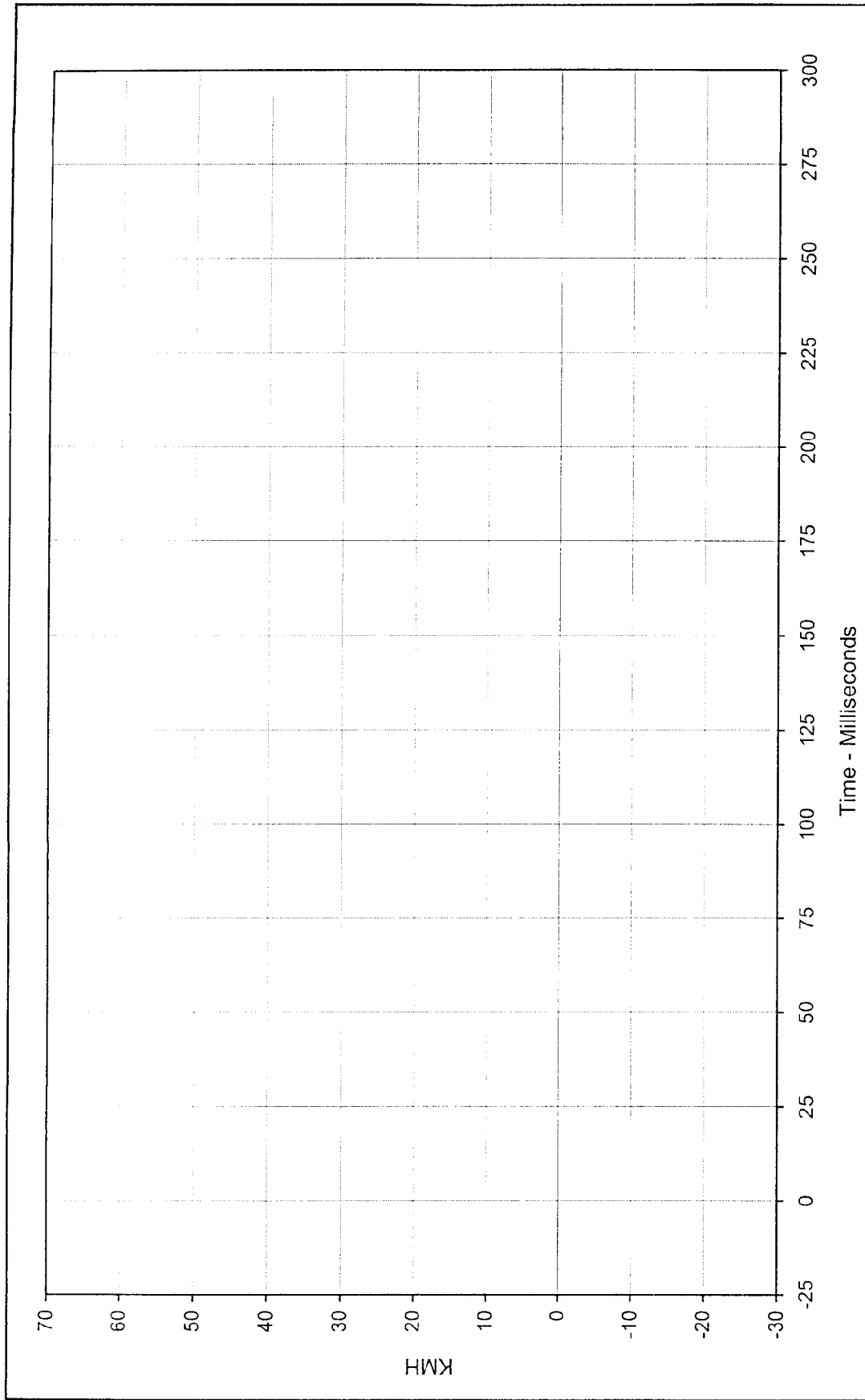


SAE Filter Class: 60

Date of Test: 11/10/99

Curve Number: FIL-089

* Channel Failed, No Data

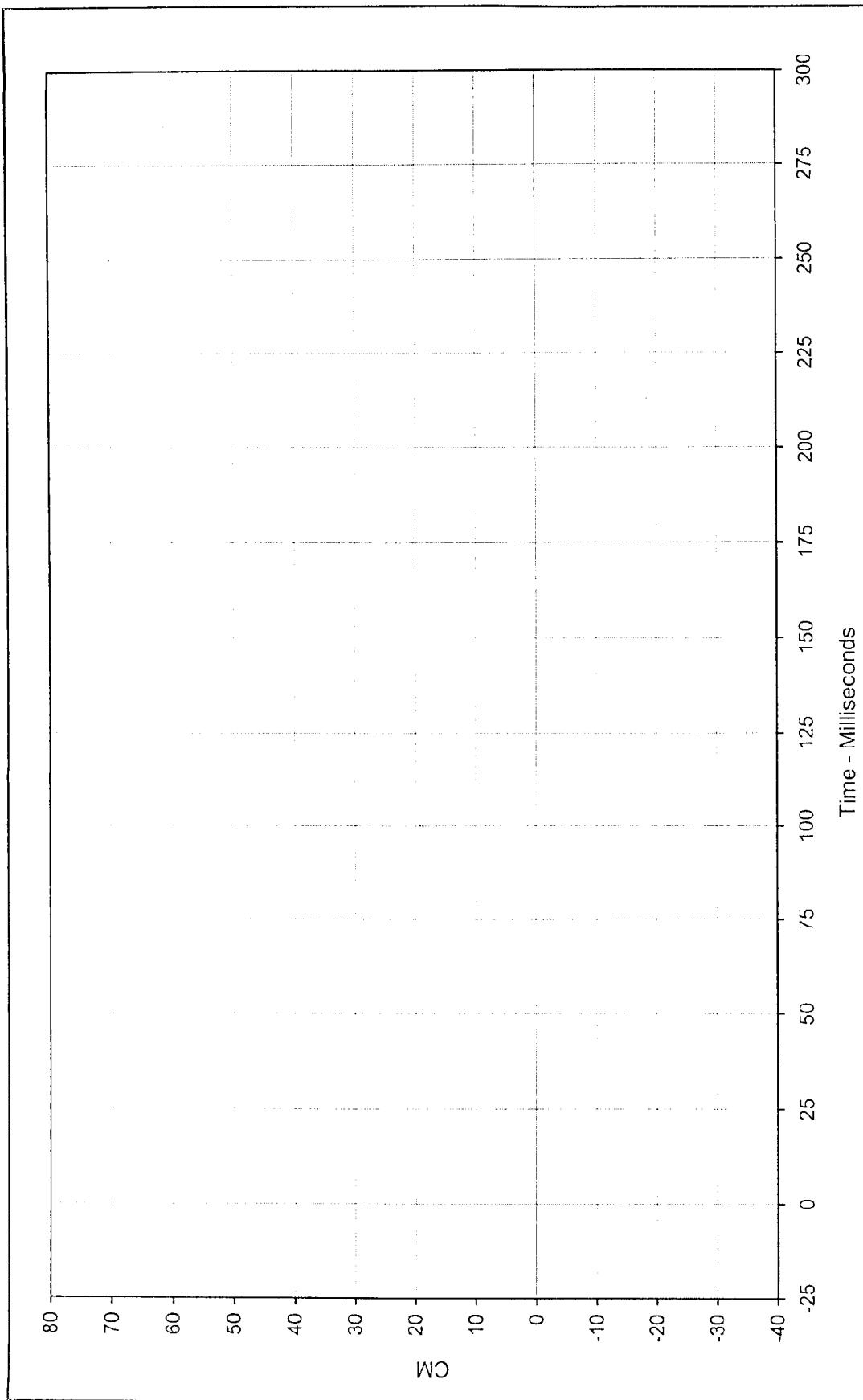


Curve Description: Vehicle Left Rear Primary Velocity * Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Maximum Value: 0.0 at 0.0 Milliseconds Test Vehicle: 2000 Dodge Neon 4 Door Sedan
 Minimum Value: 0.0 at 0.0 Milliseconds



SAE Filter Class: 180
 Date of Test: 11/10/99
 Curve Number: IN1-089

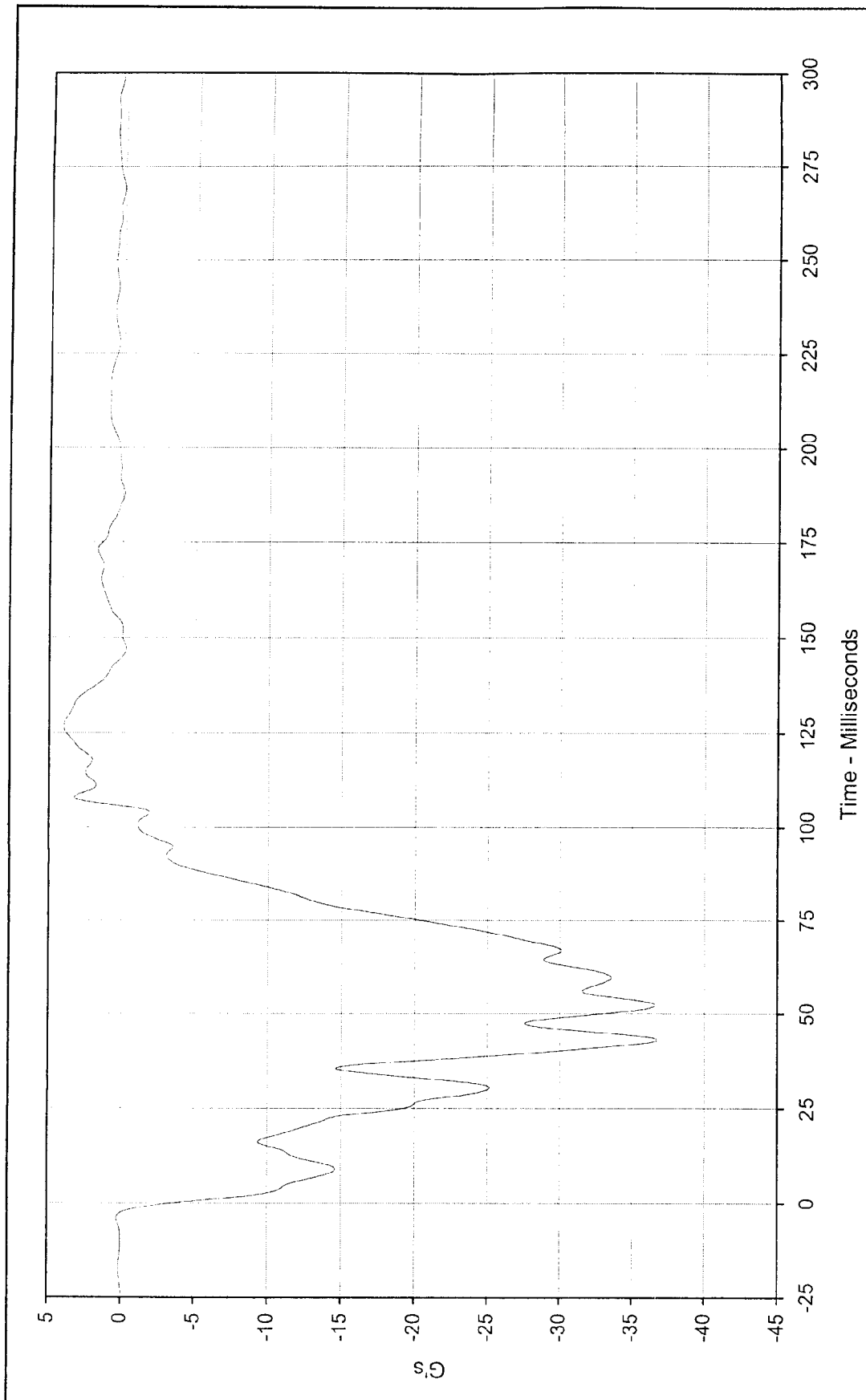
* Channel failed, No Data



Curve Description:	Vehicle Left Rear Primary Displ.	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	0.0 at 0.0 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	0.0 at 0.0 Milliseconds			
SAE Filter Class:	180			
Date of Test:	11/10/99			
Curve Number:	IN2-089			



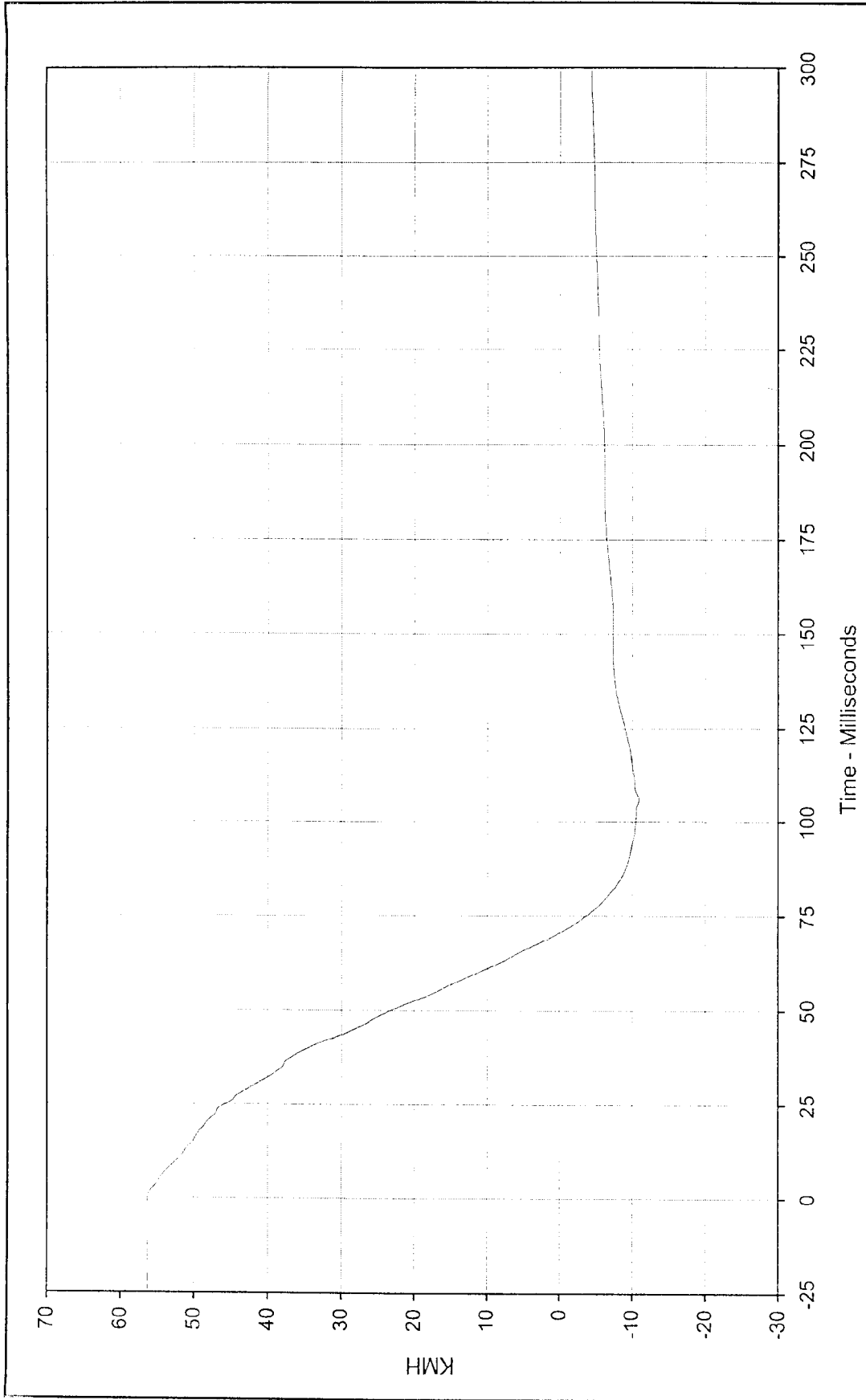
*Channel Failed, No Data



Curve Description: Vehicle Right Rear Primary
 Maximum Value: 4.0 at 126.6 Milliseconds
 Minimum Value: -36.8 at 42.9 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/10/99
 Curve Number: FIL-090

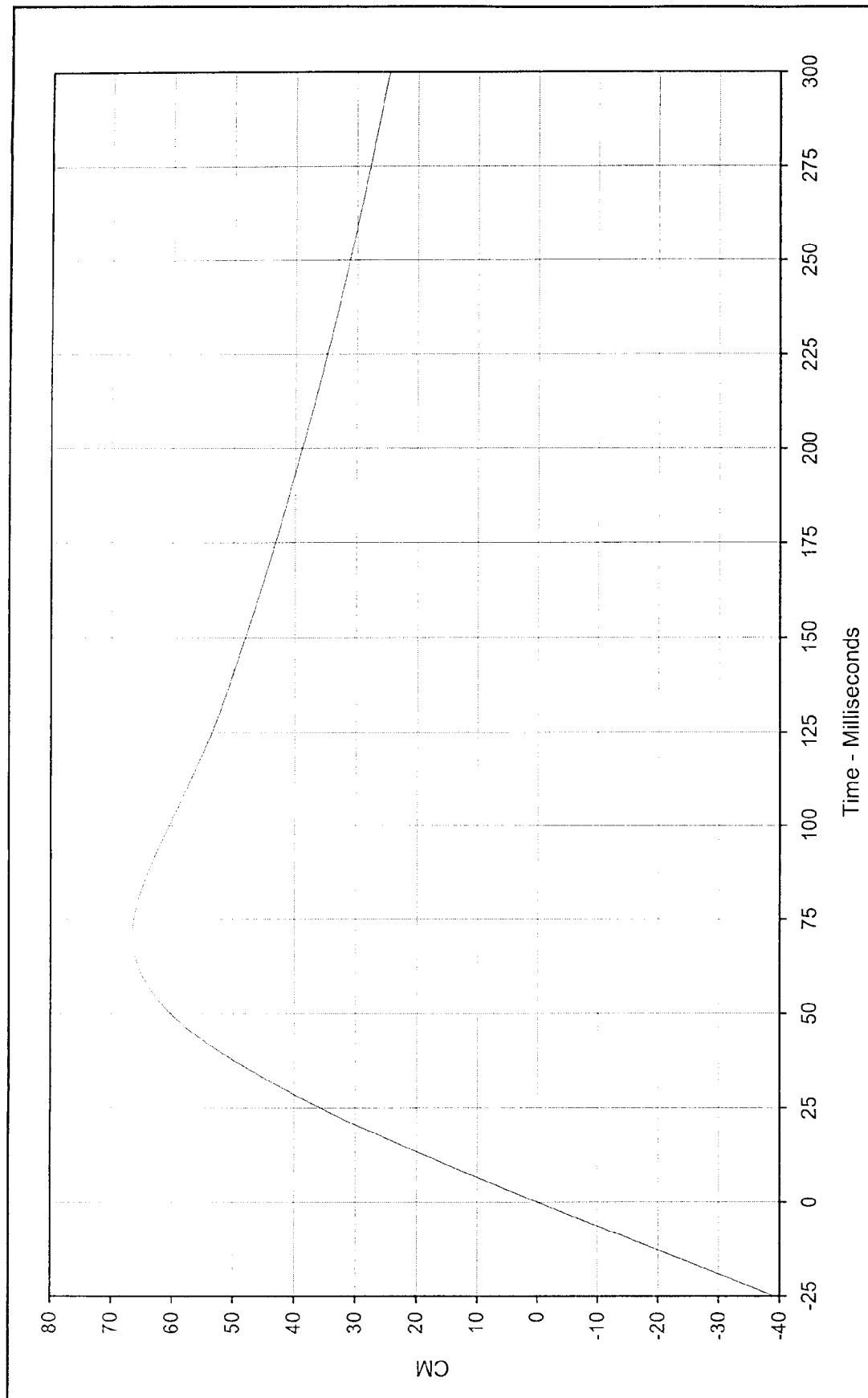
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description:	Vehicle Right Rear Primary Velocity	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	56.4 at 0.0 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-10.9 at 105.8 Milliseconds			
SAE Filter Class:	180			
Date of Test:	11/10/99			
Curve Number:	IN1-090			





Curve Description: Vehicle Right Rear Primary Displ.

Maximum Value: 66.6 at 70.7 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

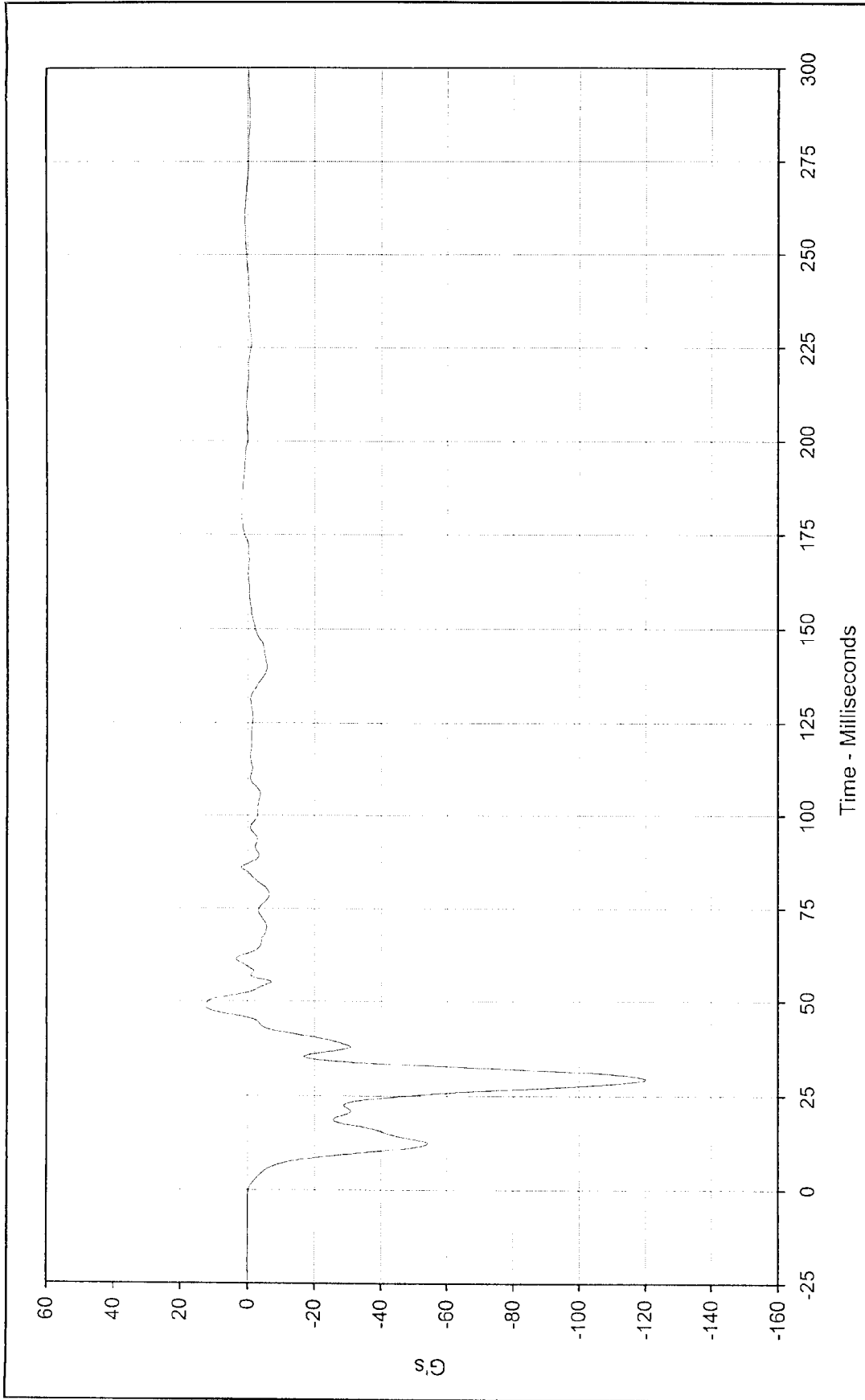
Date of Test: 11/10/99

Curve Number: IN2-090

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan

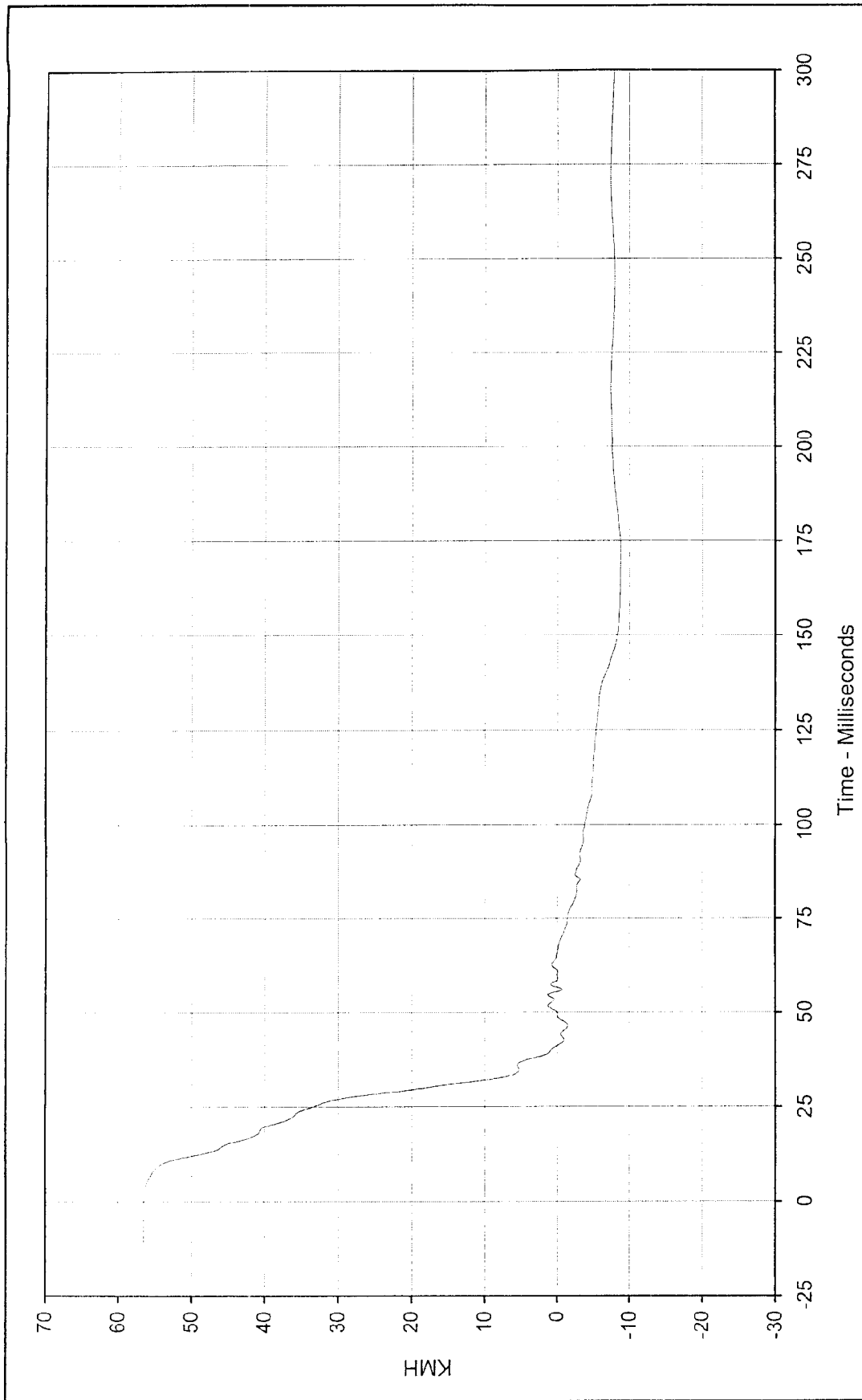




Curve Description:		Vehicle Engine Top		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	12.5	at	48.7	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-120.0	at	29.5			
SAE Filter Class:	60					
Date of Test:	11/10/99					
Curve Number:	FIL-091					



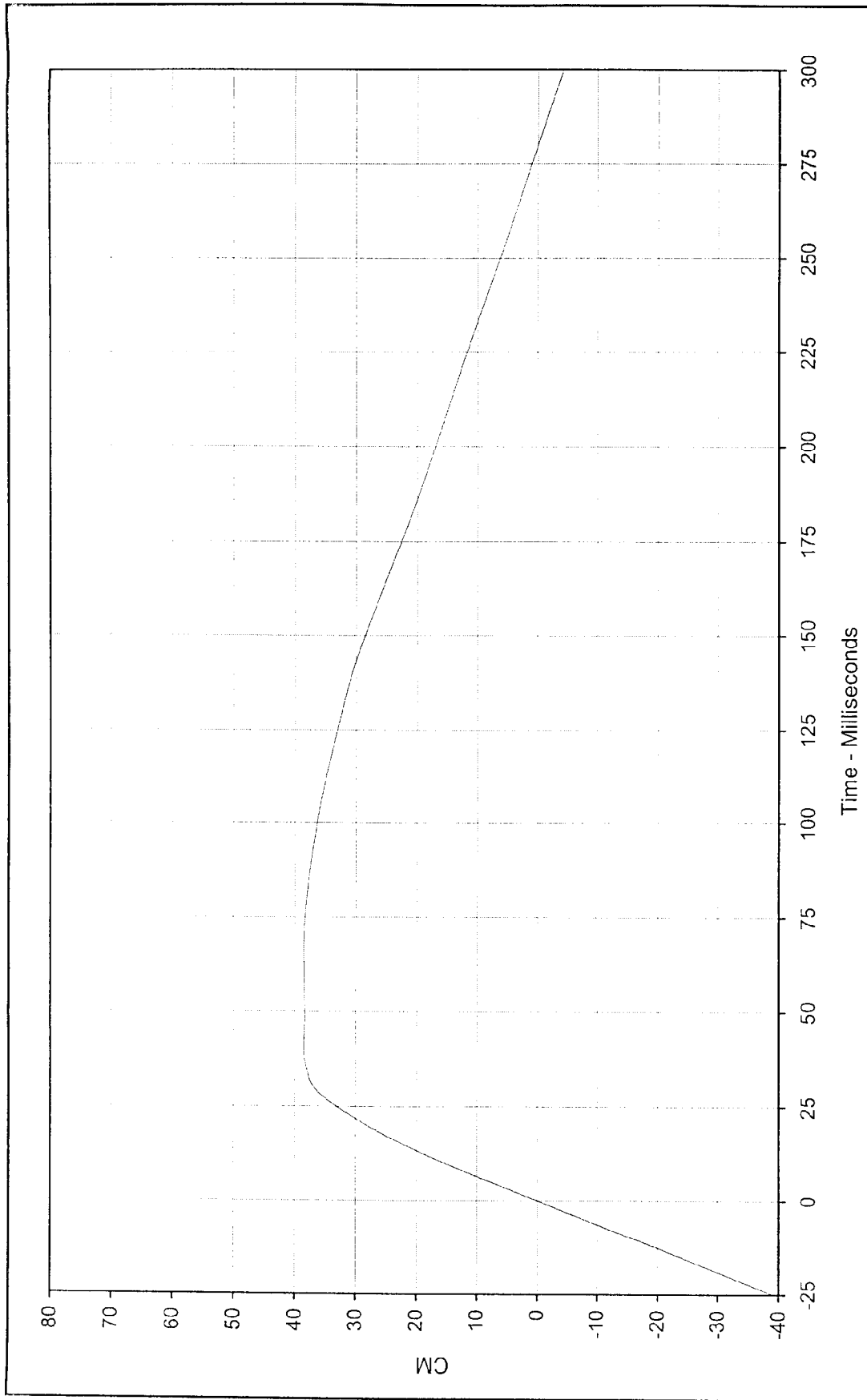




Curve Description: Vehicle Engine Top Velocity
 Maximum Value: 56.5 at 0.0 Milliseconds
 Minimum Value: -8.8 at 173.2 Milliseconds
 SAE Filter Class: 180
 Date of Test: 11/10/99
 Curve Number: IN1-091

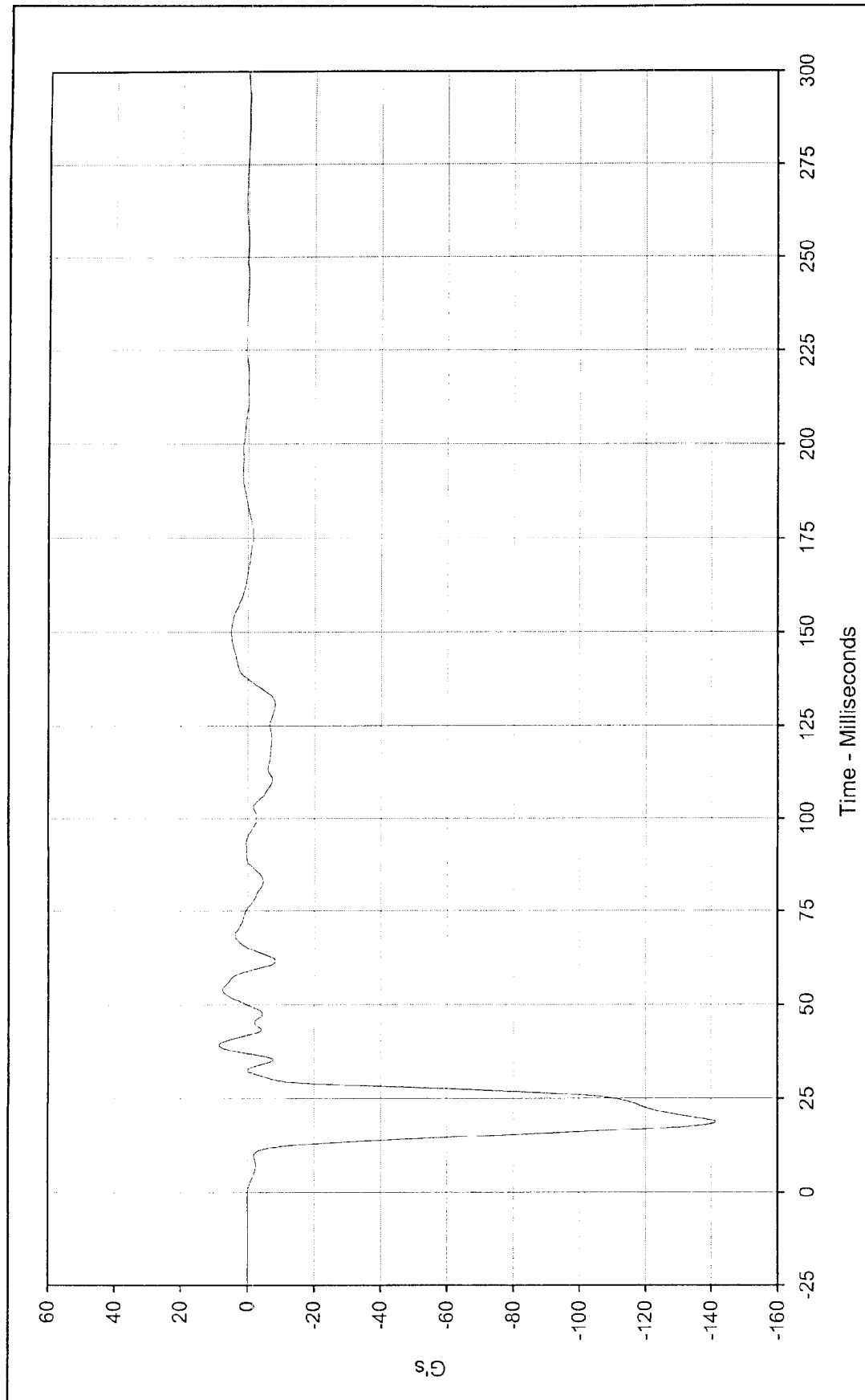
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan





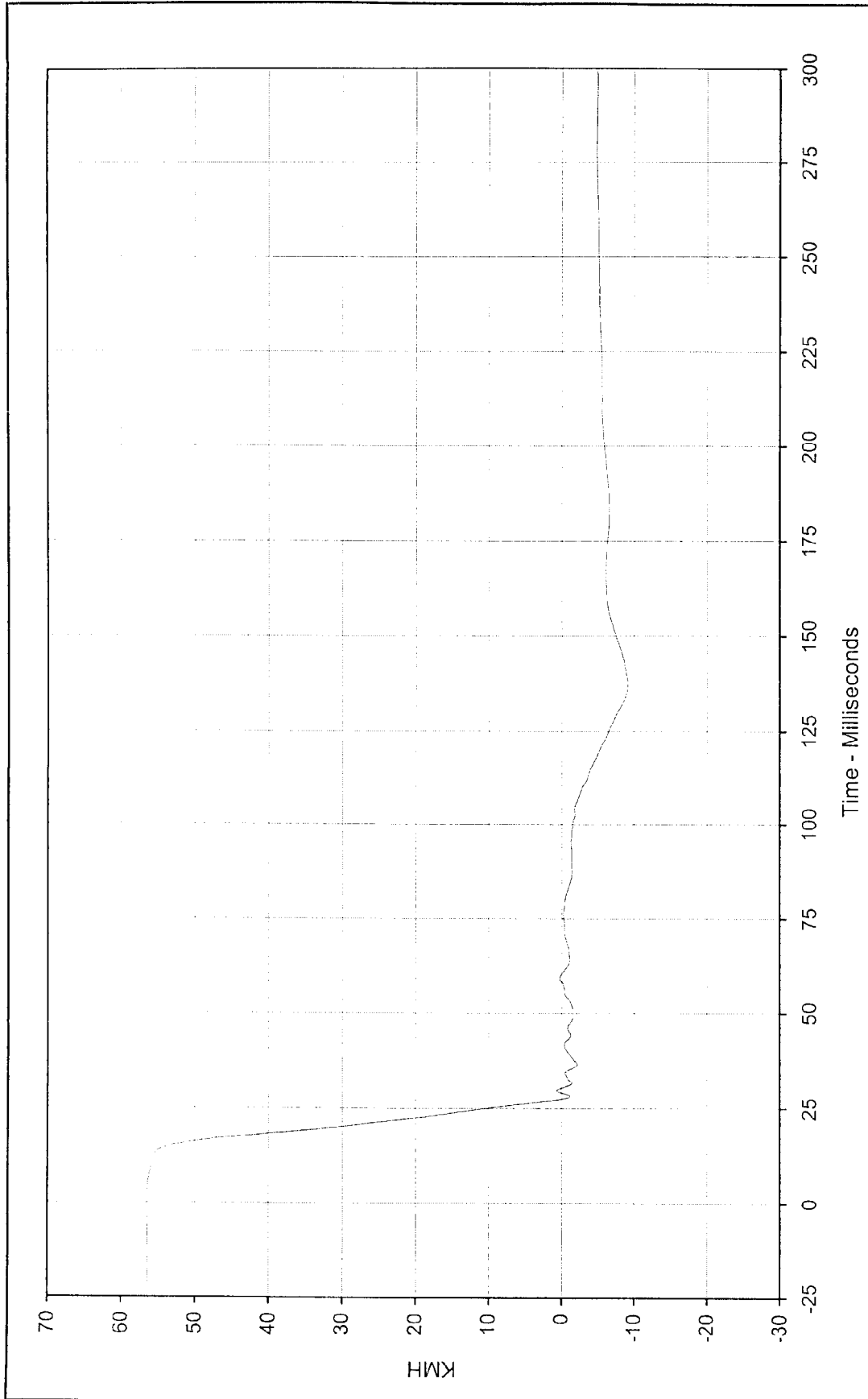
Curve Description:	Vehicle Engine Top Displ.	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	38.5 at 41.0 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-4.2 at 299.9 Milliseconds			
SAE Filter Class:	180			
Date of Test:	11/10/99			
Curve Number:	IN2-091			





Curve Description:	Vehicle Engine Bottom	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	8.6	at	39.1	Milliseconds
Minimum Value:	-141.4	at	18.9	Milliseconds
SAE Filter Class:	60	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Date of Test:	11/10/99			
Curve Number:	FIL-092			





Curve Description: Vehicle Engine Bottom Velocity

Maximum Value: 56.5 at 0.9 Milliseconds

Minimum Value: -9.1 at 137.5 Milliseconds

SAE Filter Class: 180

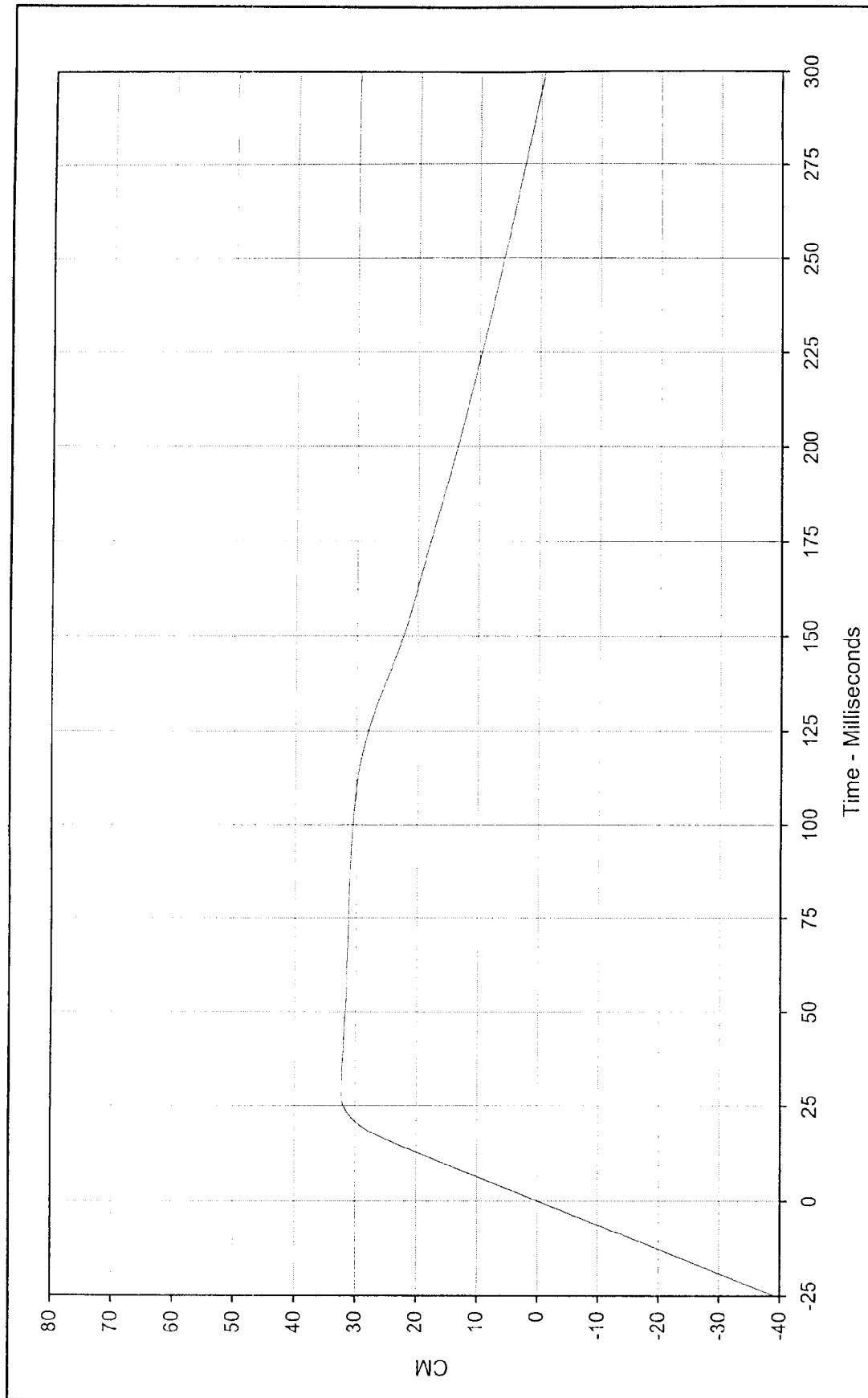
Date of Test: 11/10/99

Curve Number: IN1-092

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan

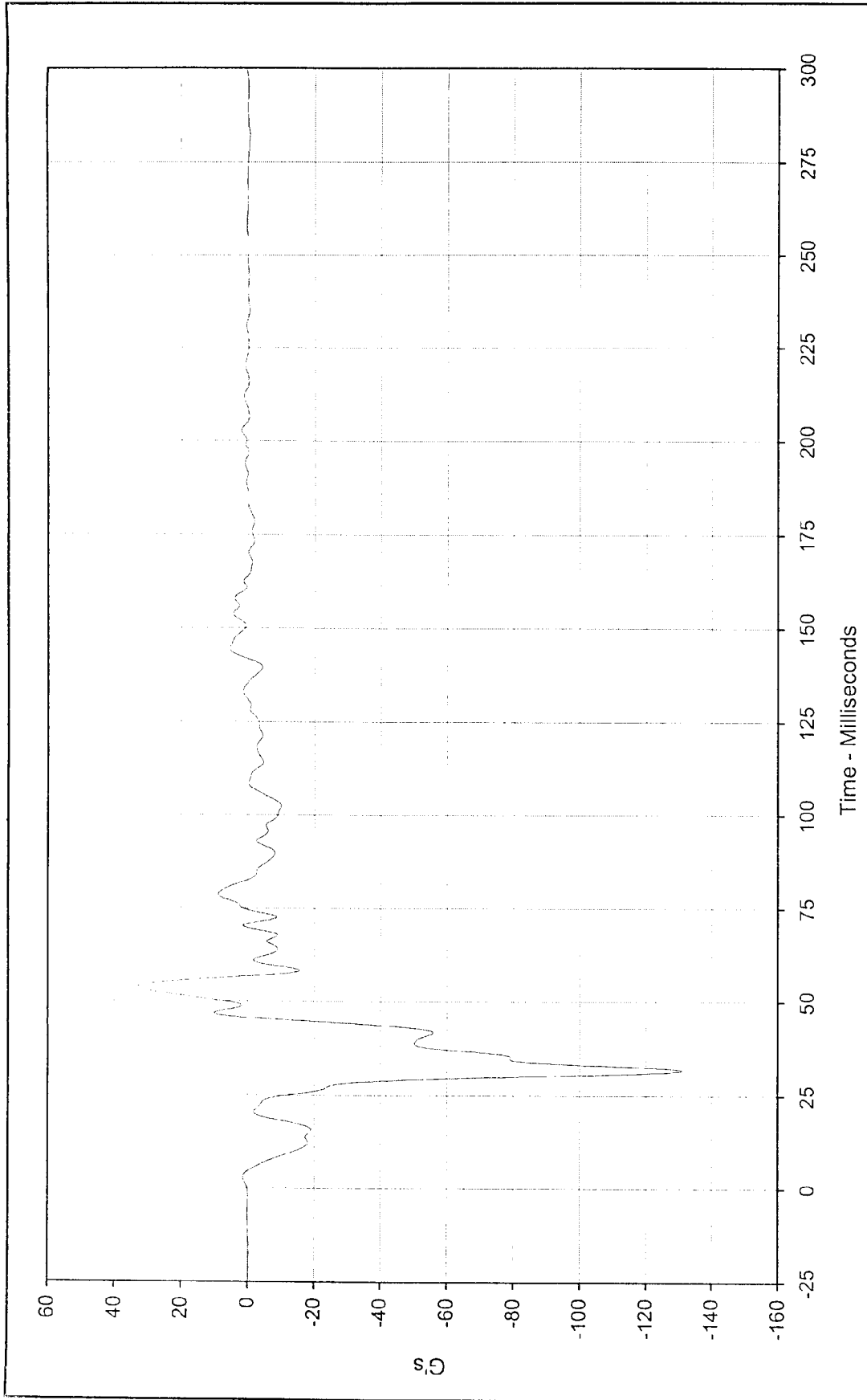




Curve Description: Vehicle Engine Bottom Displ.
Maximum Value: 32.3 at 27.5 Milliseconds
Minimum Value: -0.7 at 299.9 Milliseconds
SAE Filter Class: 180
Date of Test: 11/10/99
Curve Number: IN2-092

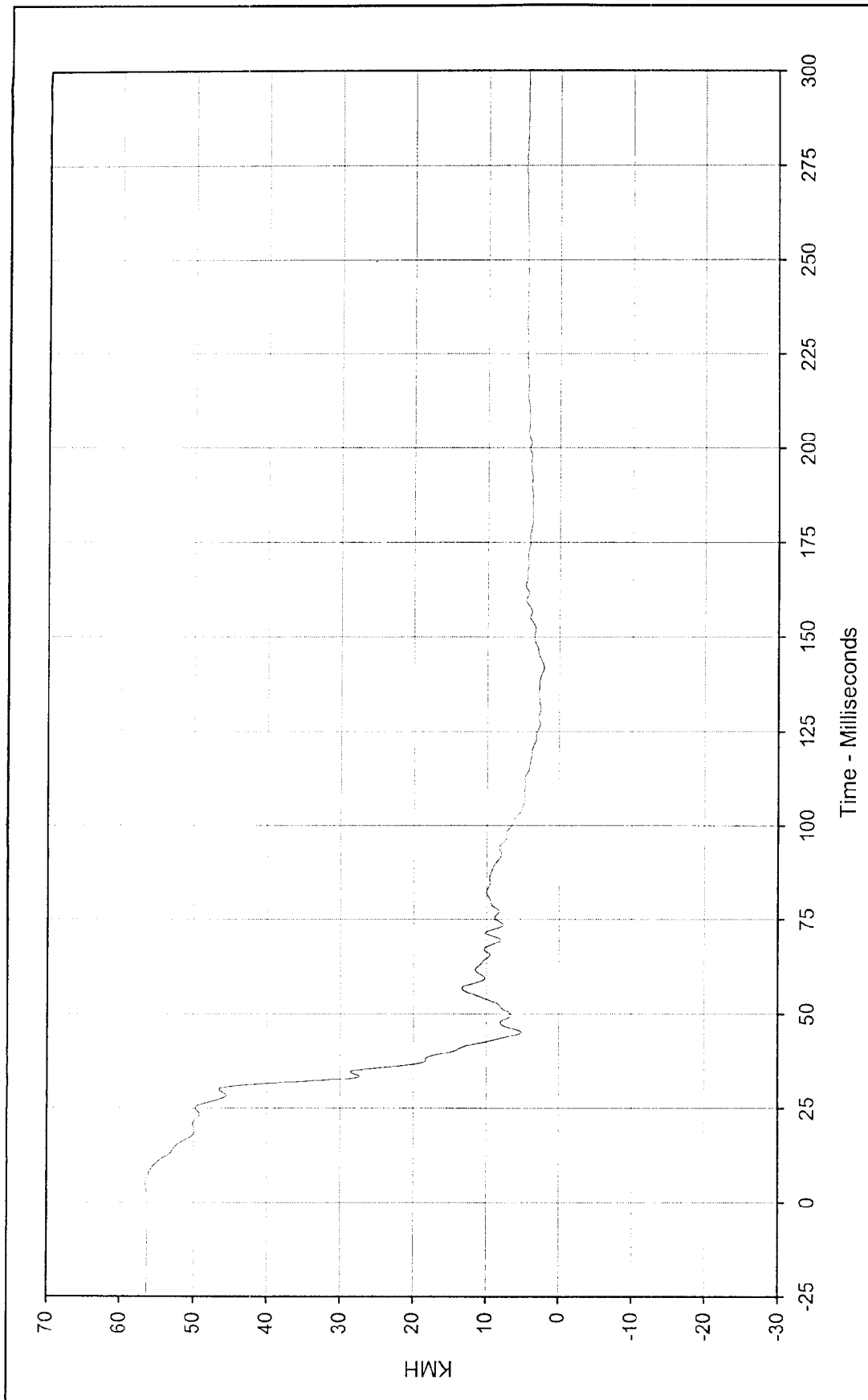
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description:	Vehicle Left Brake Caliper	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	33.0 at 53.7 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-131.0 at 31.8 Milliseconds			
SAE Filter Class:	60			
Date of Test:	11/10/99			
Curve Number:	FIL-093			





Curve Description: Vehicle Left Brake Caliper Velocity

Maximum Value: 56.5 at 5.1 Milliseconds

Minimum Value: 2.1 at 141.7 Milliseconds

SAE Filter Class: 180

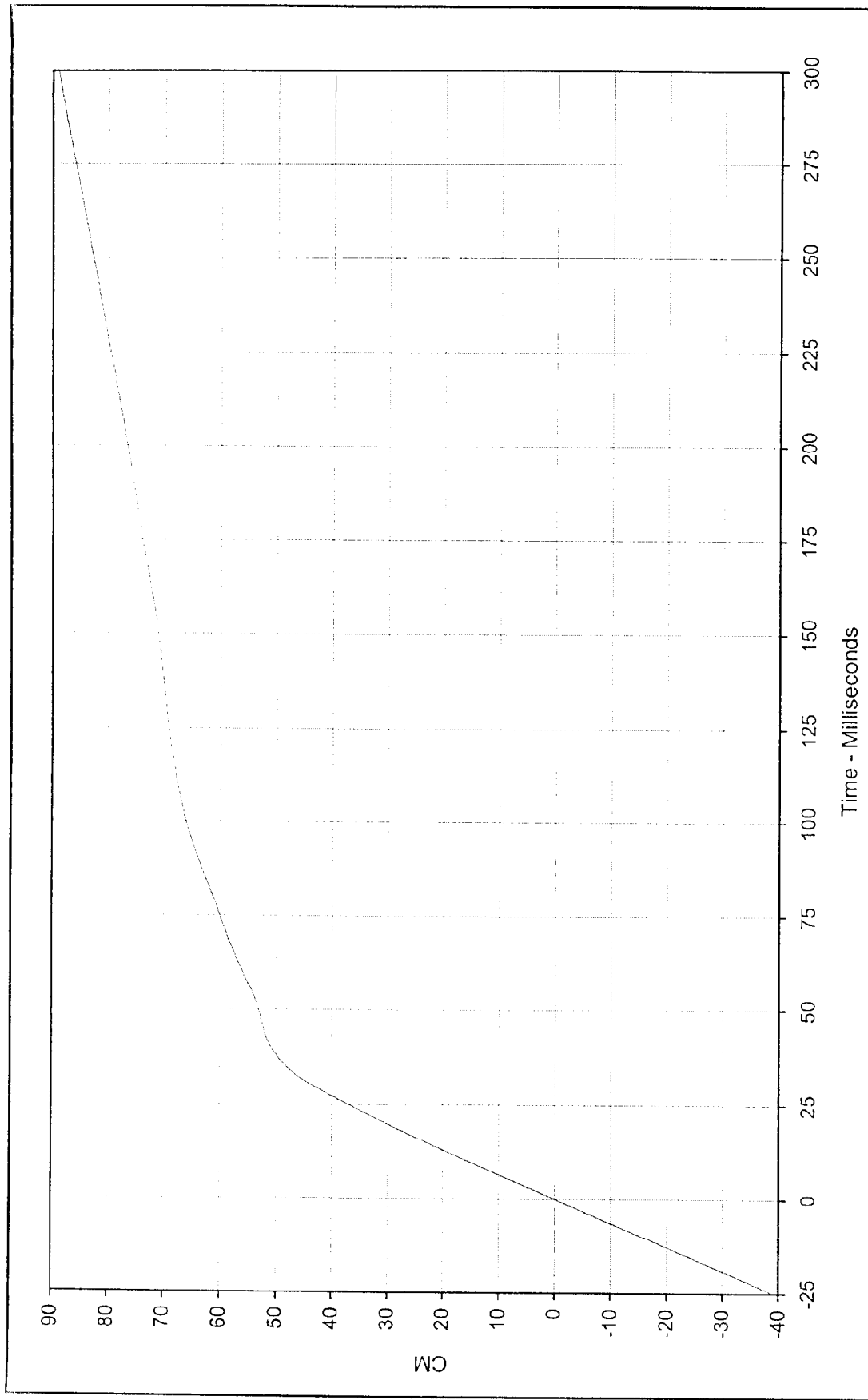
Date of Test: 11/10/99

Curve Number: IN1-093

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

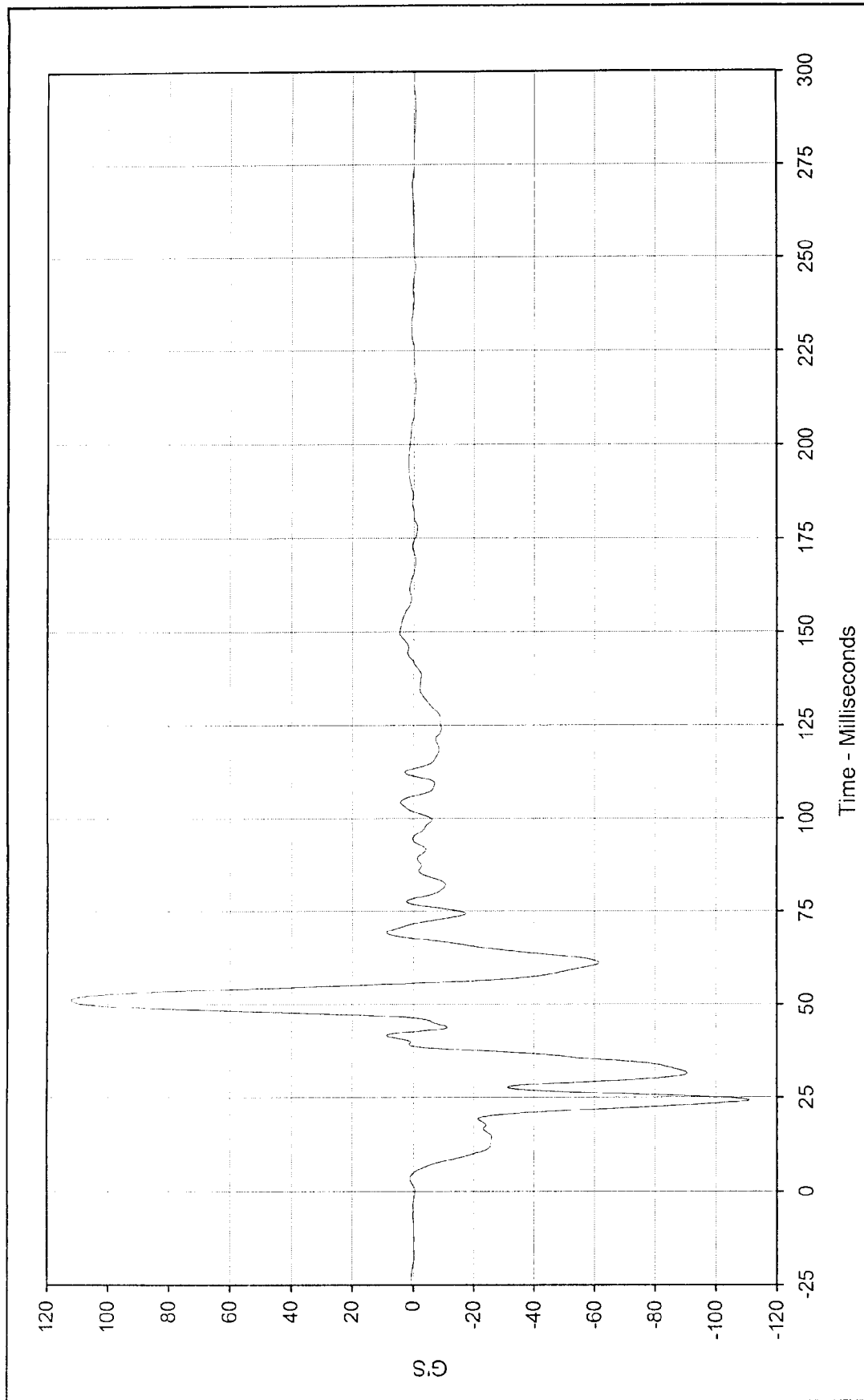
Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description:	Vehicle Left Brake Caliper Displ.	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	89.0 at 299.9 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	0.0 at 0.0 Milliseconds			
SAE Filter Class:	180			
Date of Test:	11/10/99			
Curve Number:	IN2-093			

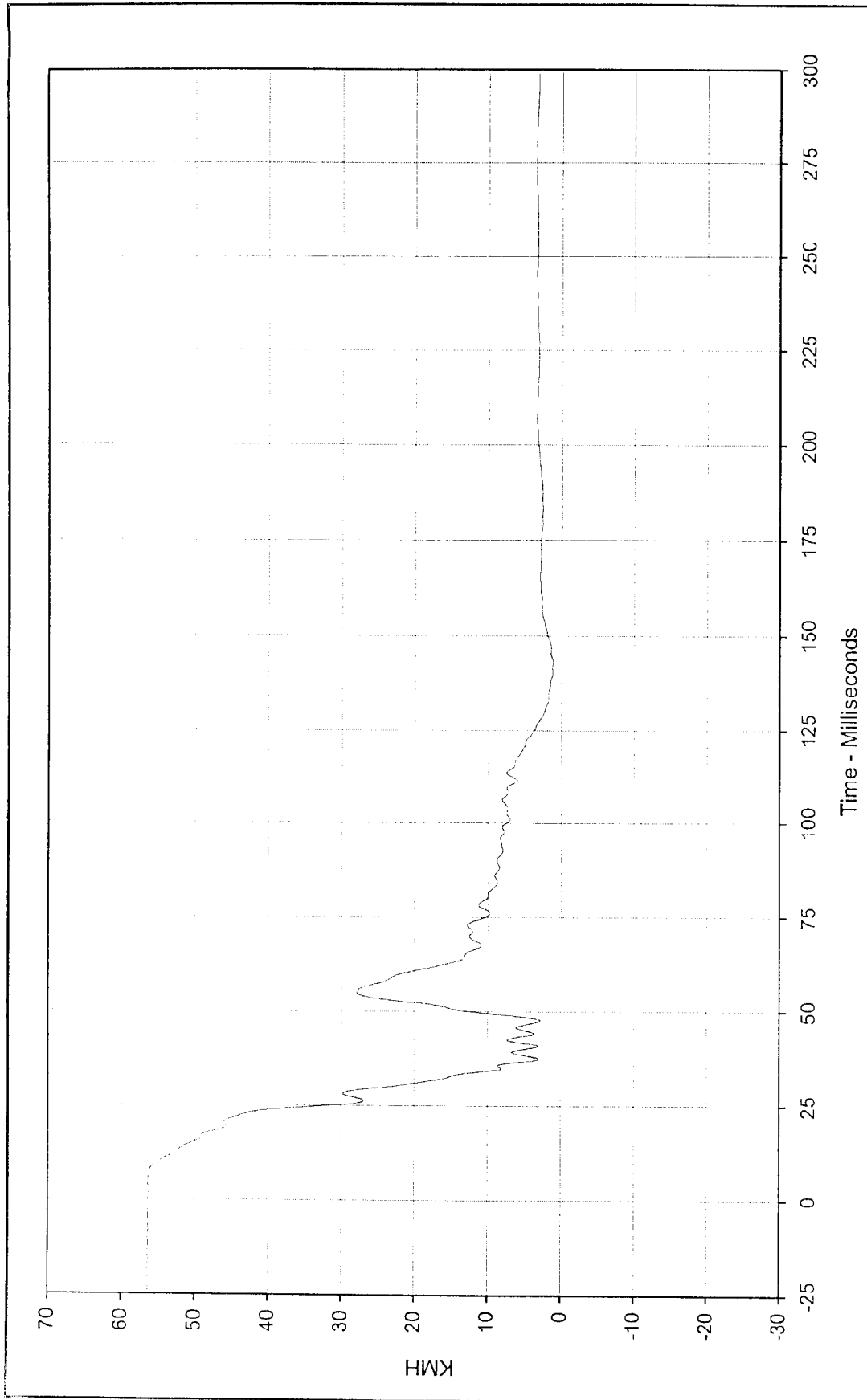




Curve Description: Vehicle Right Brake Caliper
 Maximum Value: 112.2 at 51.1 Milliseconds
 Minimum Value: -111.0 at 24.3 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/10/99
 Curve Number: FIL-094

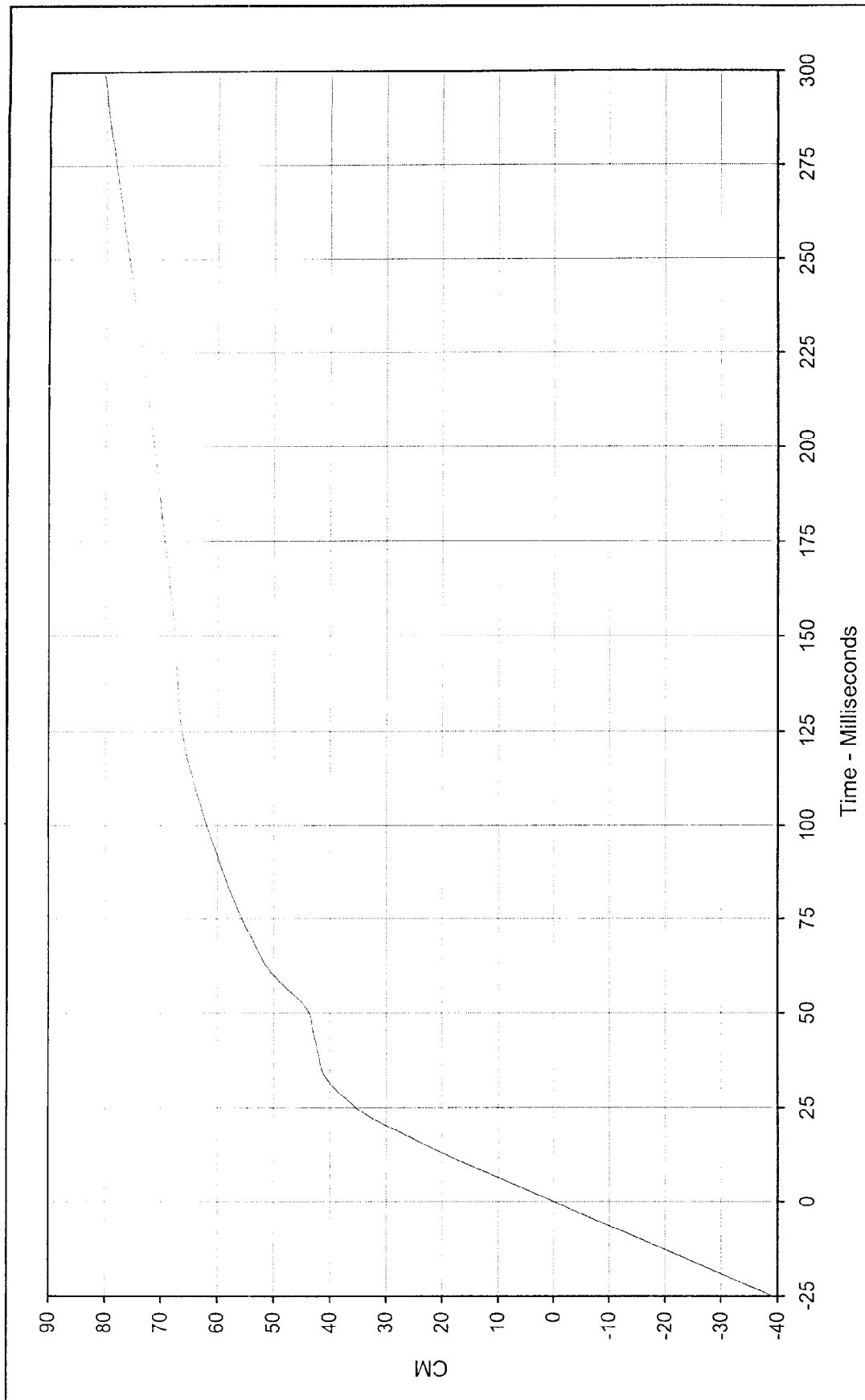
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description:	Vehicle Right Brake Caliper Velocity		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	56.4	at 4.8 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	1.1	at 142.9 Milliseconds			
SAE Filter Class:	180				
Date of Test:	11/10/99				
Curve Number:	IN1-094				

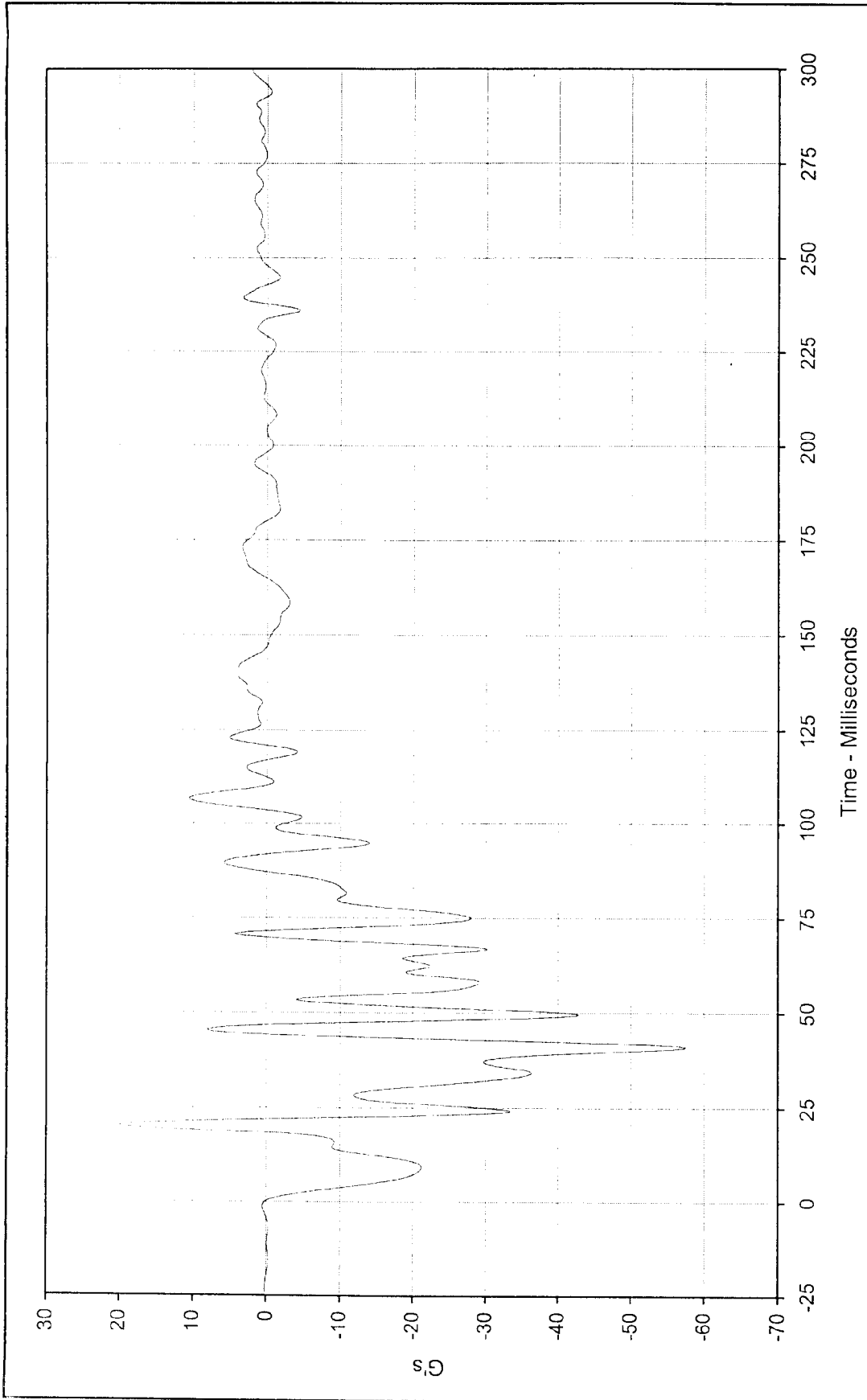




Curve Description: Vehicle Right Brake Caliper Displ.
 Maximum Value: 80.5 at 299.9 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 11/10/99
 Curve Number: IN2-094

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan

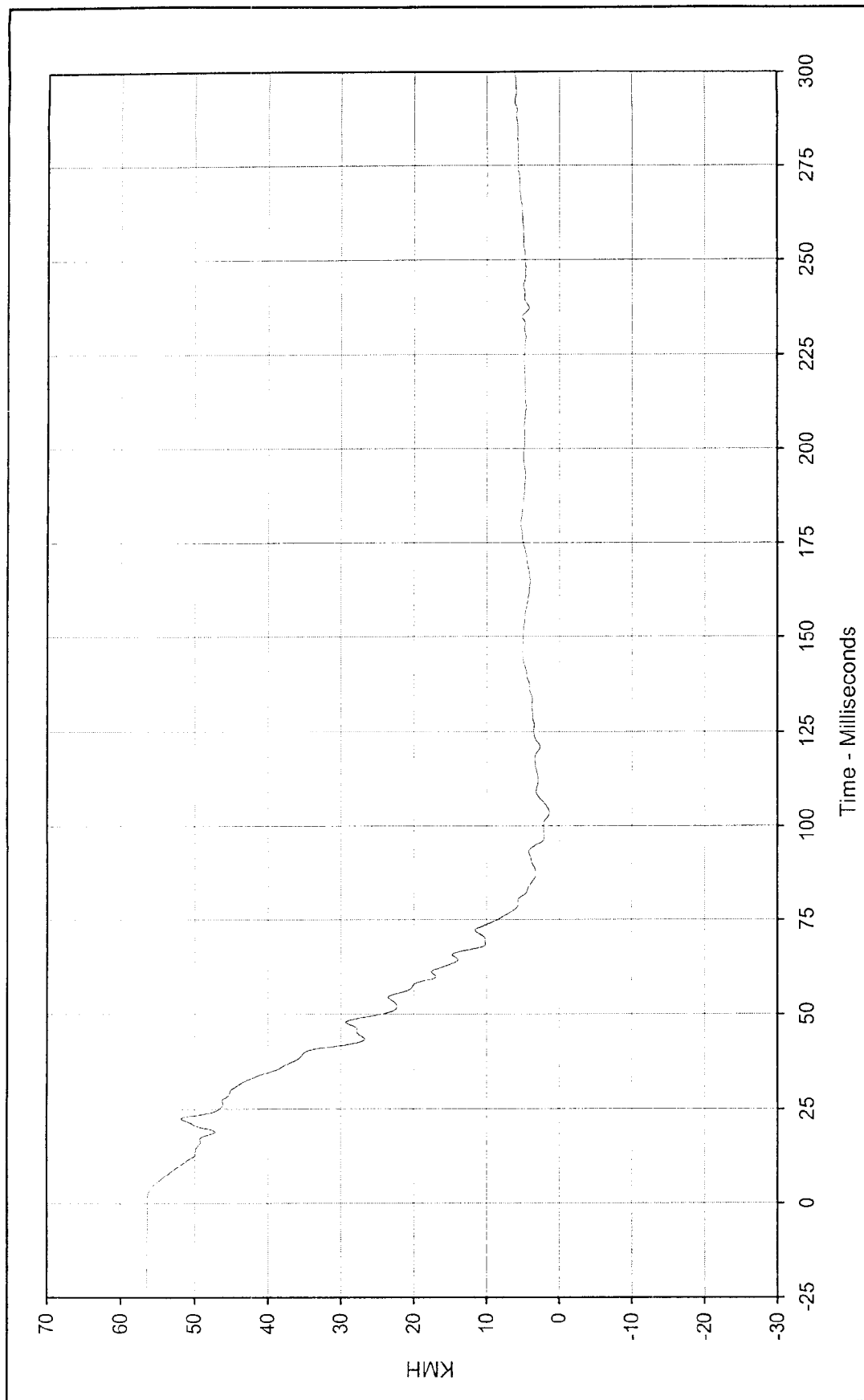




Curve Description: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Program: 2000 Dodge Neon 4 Door Sedan
 Test Vehicle:

Vehicle Instrument Panel
 Maximum Value: 19.9 at 20.2 Milliseconds
 Minimum Value: -57.5 at 41.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/10/99
 Curve Number: FIL-095

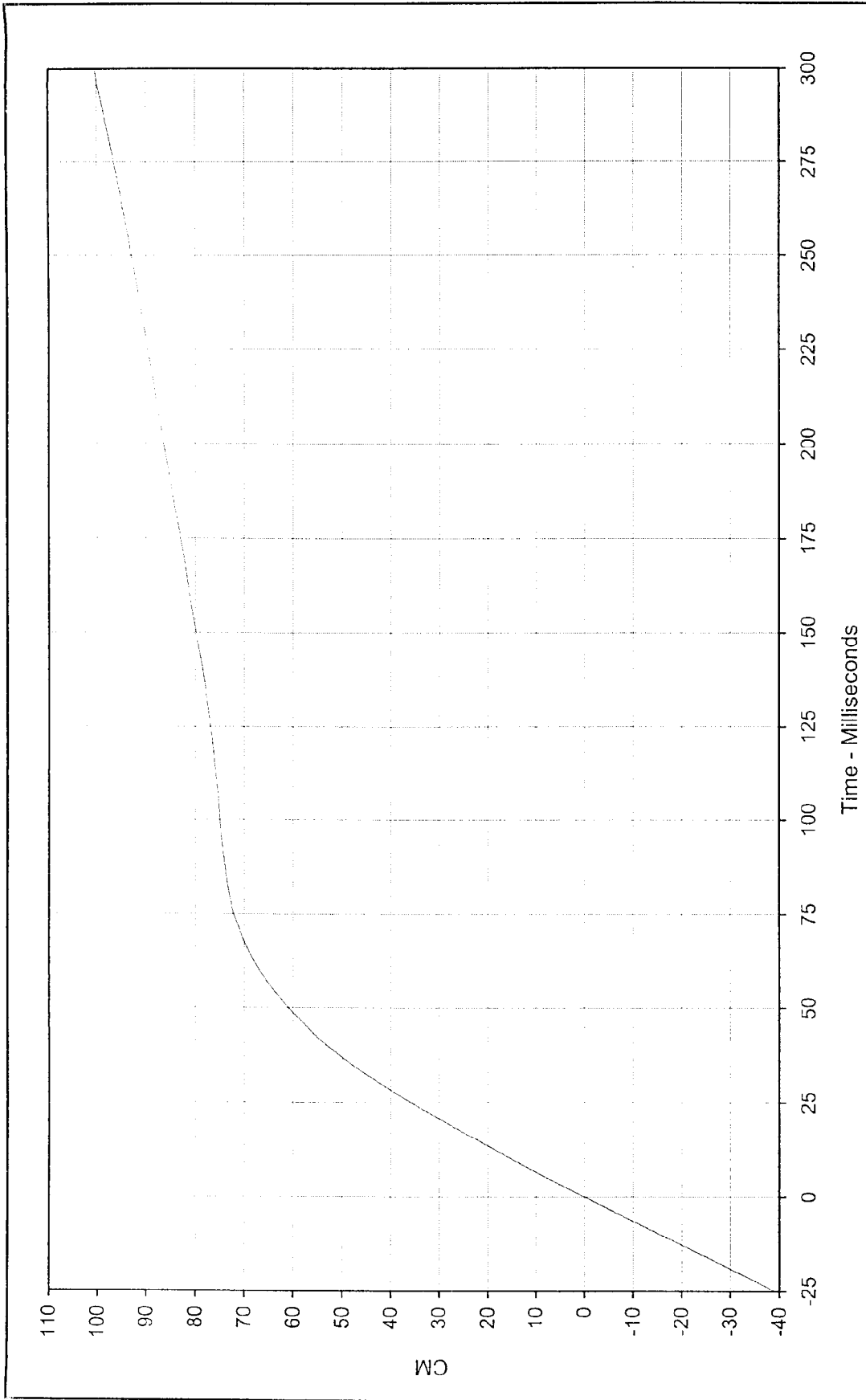




Curve Description: Vehicle Instrument Panel Velocity
 Maximum Value: 56.4 at 1.0 Milliseconds
 Minimum Value: 1.4 at 103.5 Milliseconds
 SAE Filter Class: 180
 Date of Test: 11/10/99
 Curve Number: IN1-095

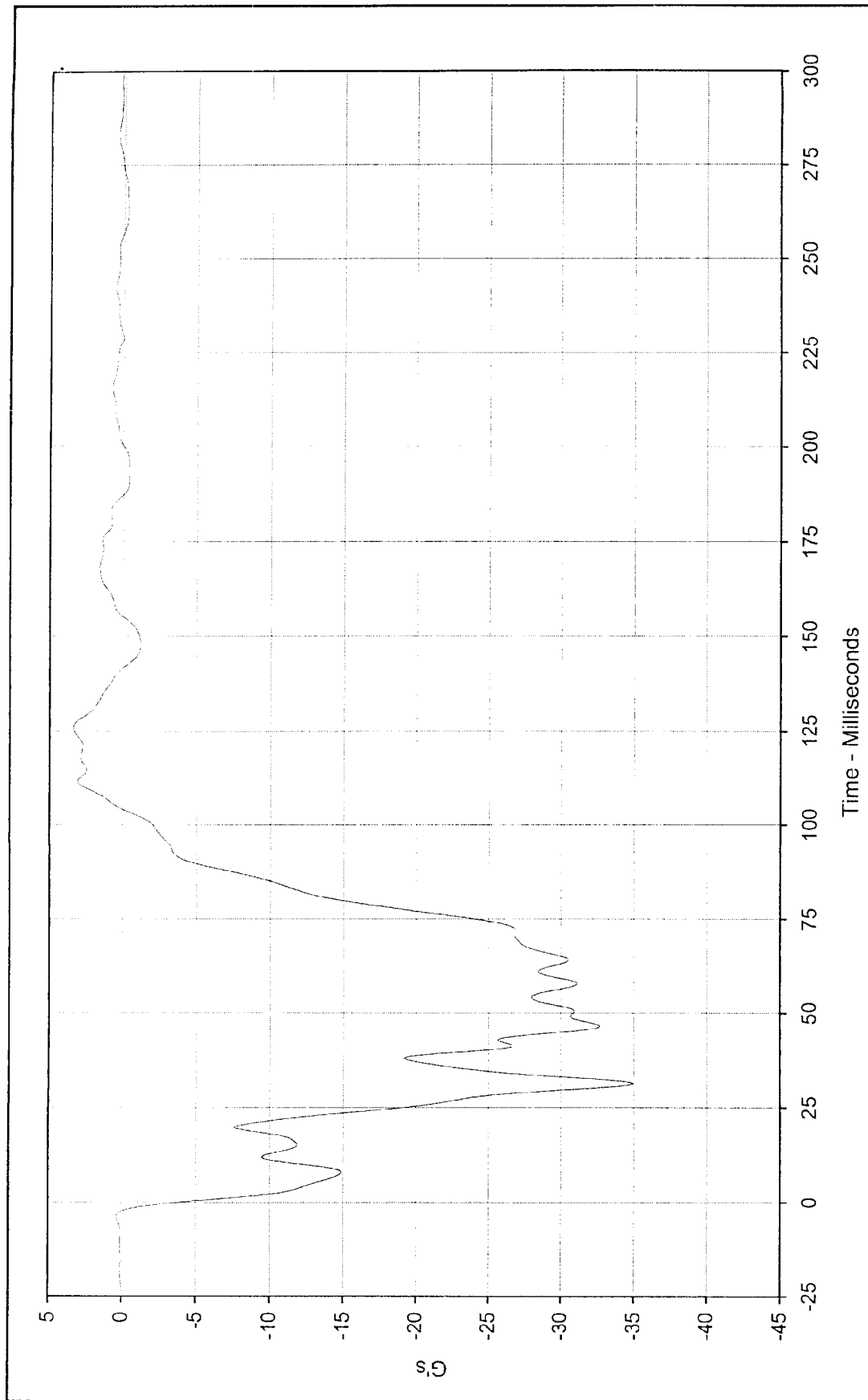
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description:	Vehicle Instrument Panel Displ.	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	100.5 at 299.9 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	0.0 at 0.0 Milliseconds			
SAE Filter Class:	180			
Date of Test:	11/10/99			
Curve Number:	IN2-095			

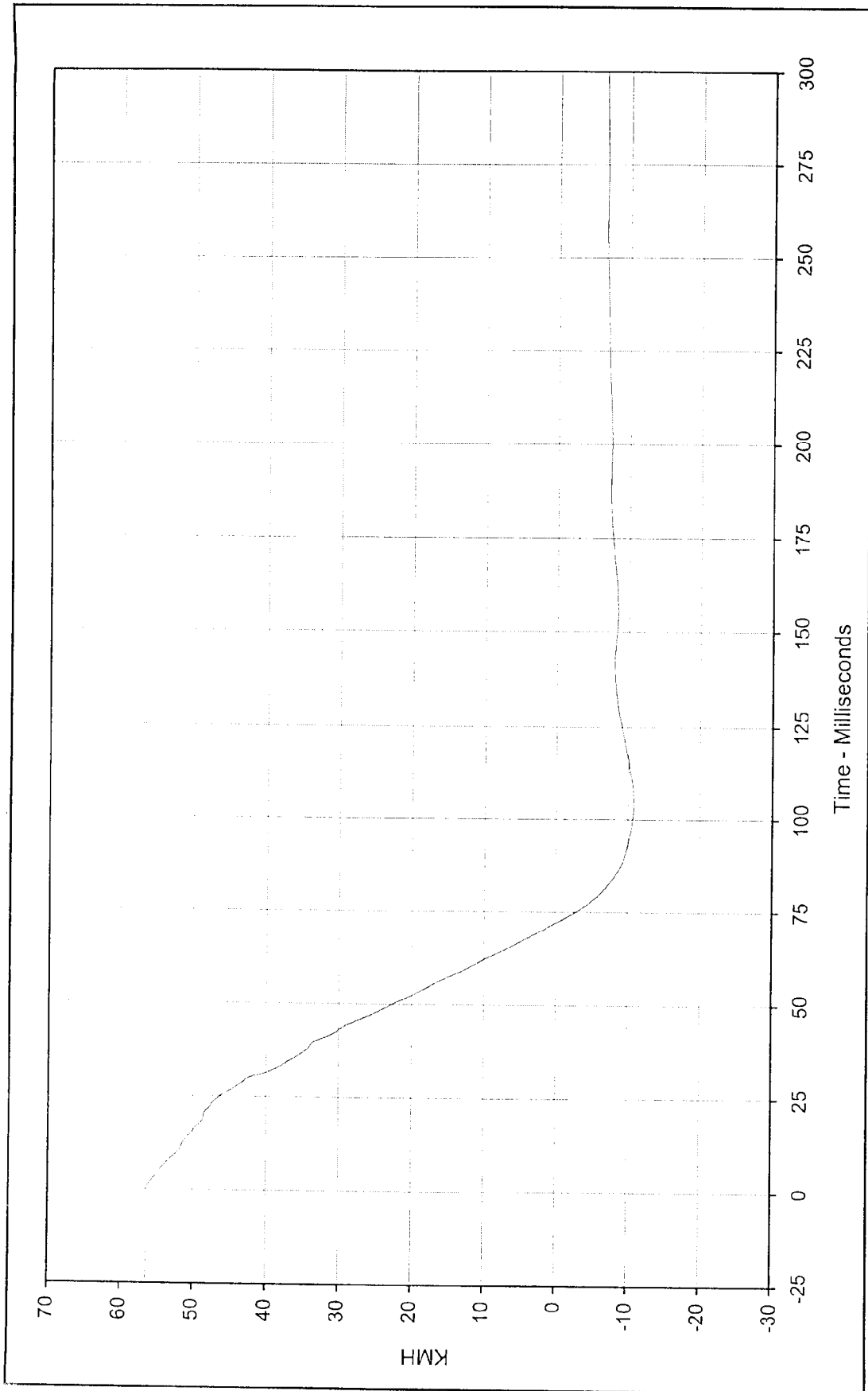




Curve Description: Vehicle Left Rear Redundant
Maximum Value: 3.4 at 126.0 Milliseconds
Minimum Value: -35.0 at 31.1 Milliseconds
SAE Filter Class: 60
Date of Test: 11/10/99
Curve Number: FIL-096

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: Vehicle Left Rear Redundant Velocity

Maximum Value: 56.4 at 0.0 Milliseconds

Minimum Value: -10.8 at 103.7 Milliseconds

SAE Filter Class: 180

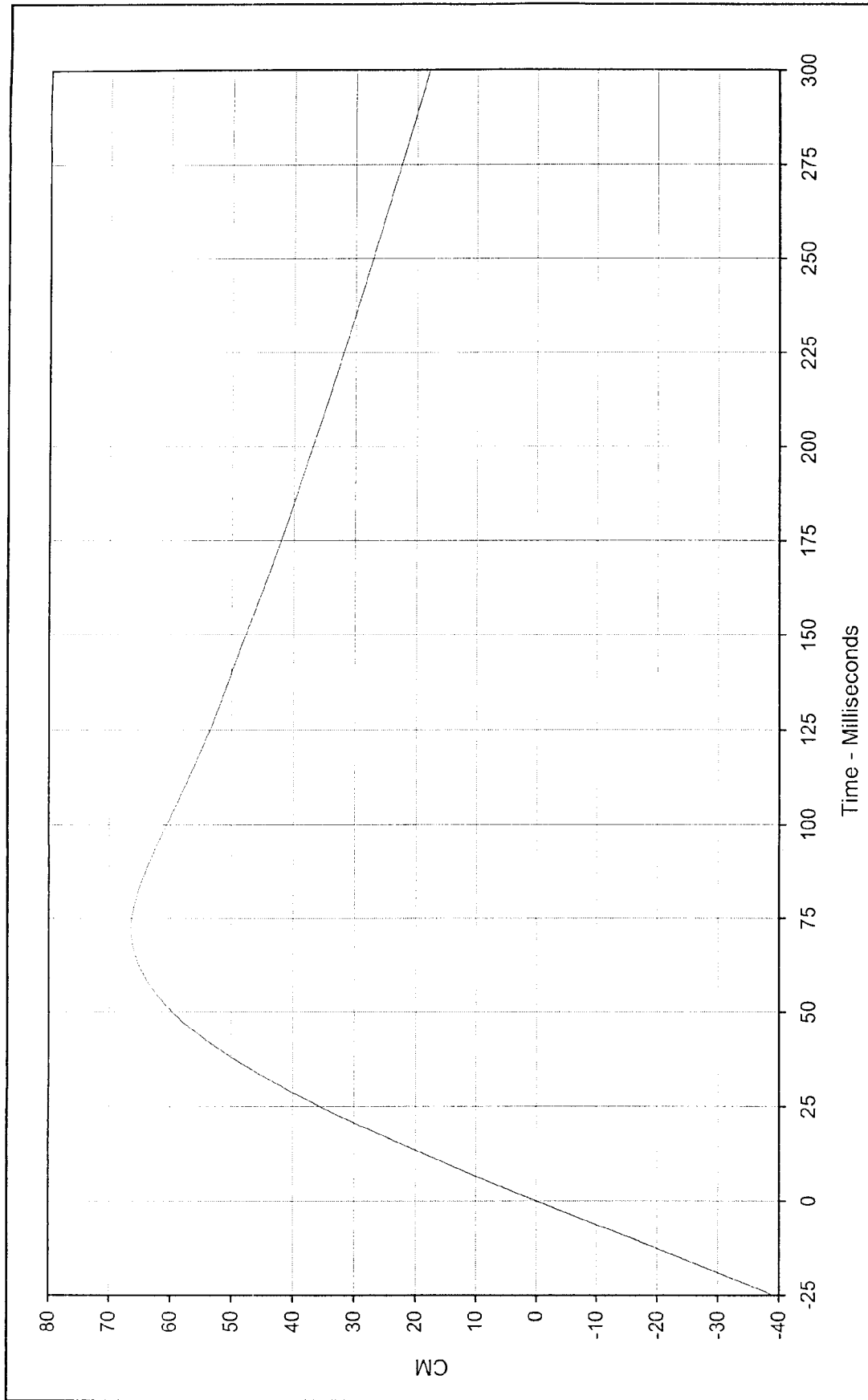
Date of Test: 11/10/99

Curve Number: IN1-096

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: Vehicle Left Rear Redundant Displ.

Maximum Value: 66.4 at 72.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 11/10/99

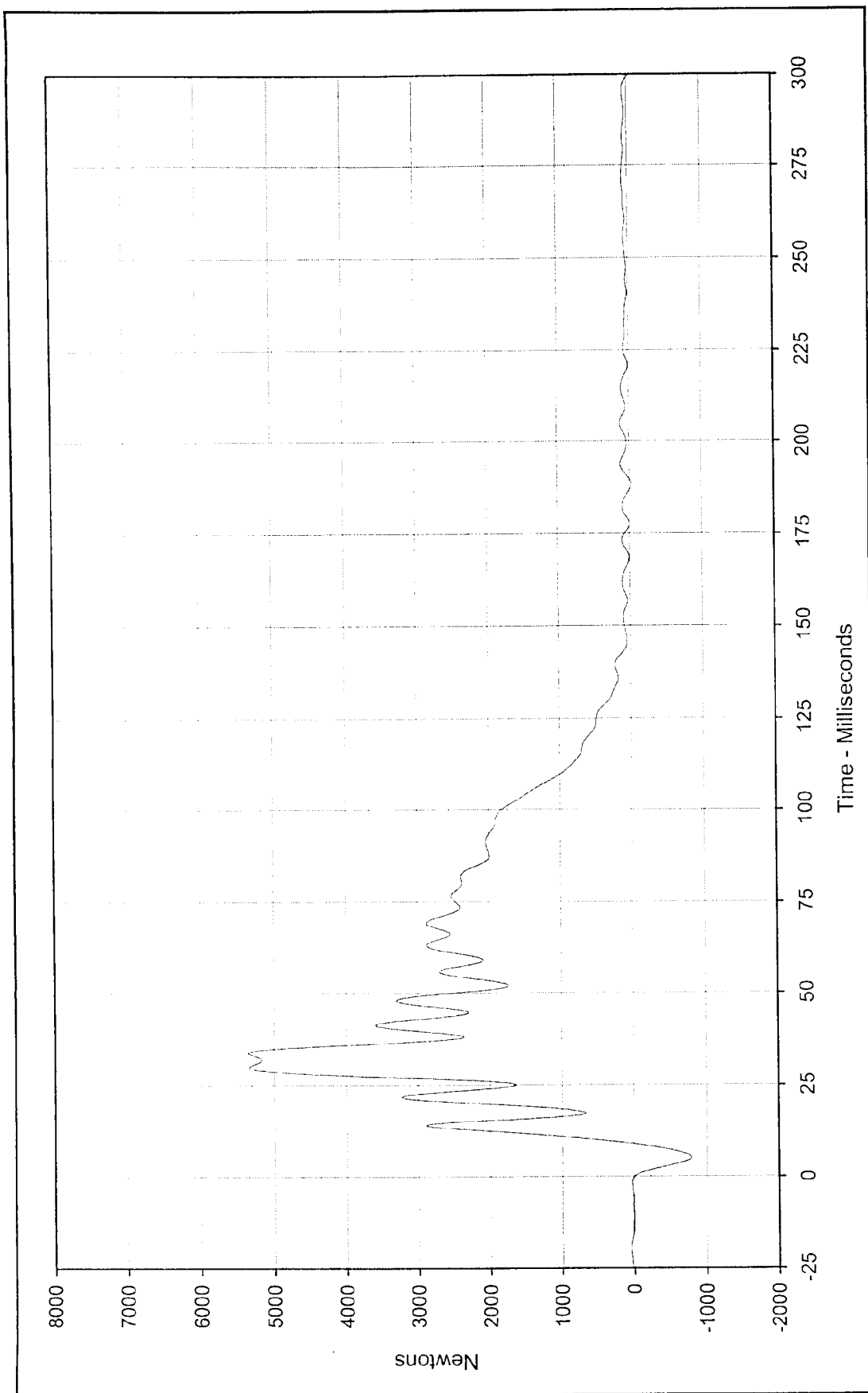
Curve Number: IN2-096

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan



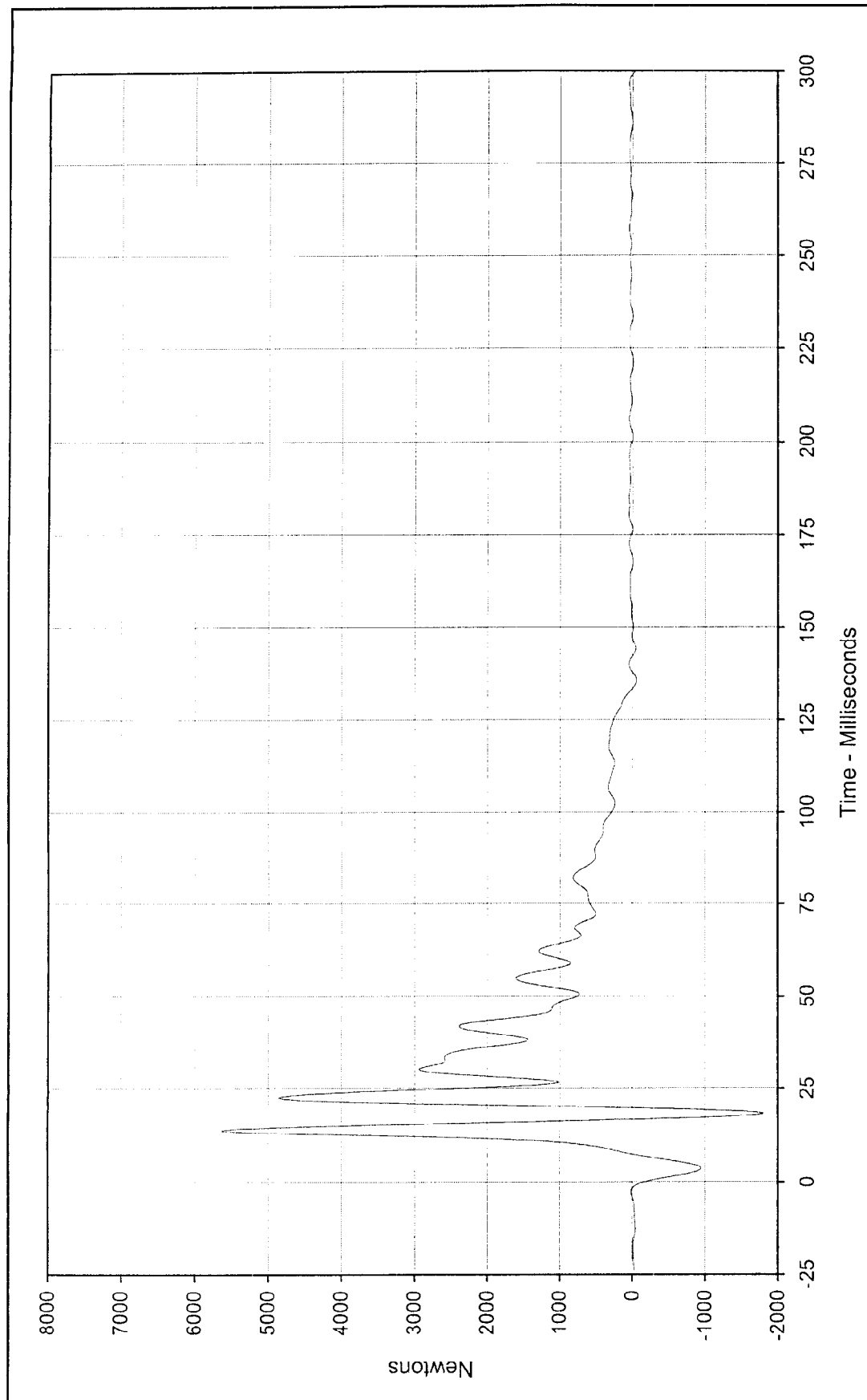
APPENDIX C
LOAD CELL BARRIER INFORMATION



Curve Description: Barrier Force A2
 Maximum Value: 5356.4 at 33.9 Milliseconds
 Minimum Value: -790.4 at 5.1 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/10/99
 Curve Number: FIL-099

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: Barrier Force A3

Maximum Value: 5625.8 at 14.0 Milliseconds

Minimum Value: -1803.2 at 18.4 Milliseconds

SAE Filter Class: 60

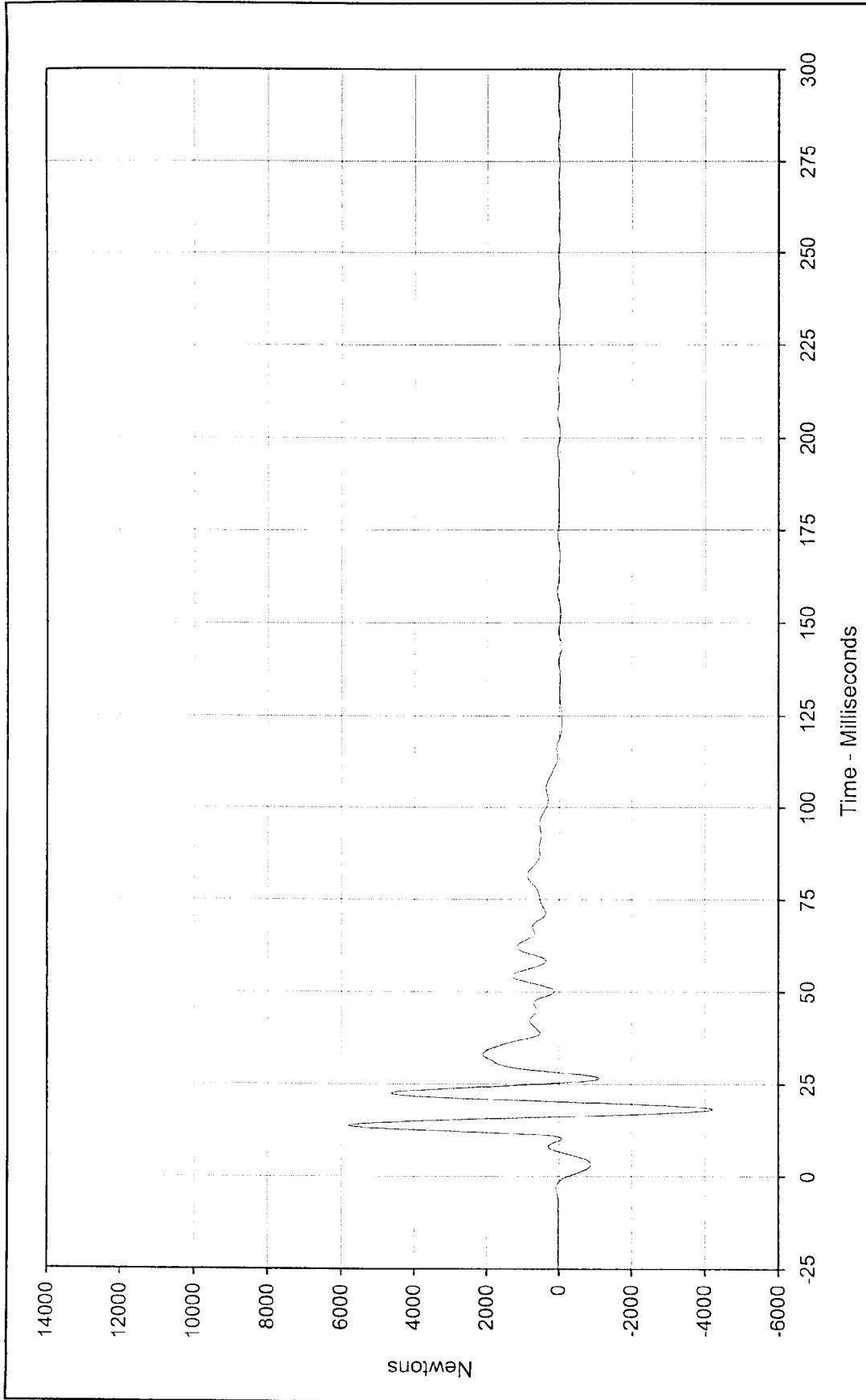
Date of Test: 11/10/99

Curve Number: FIL-100

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan

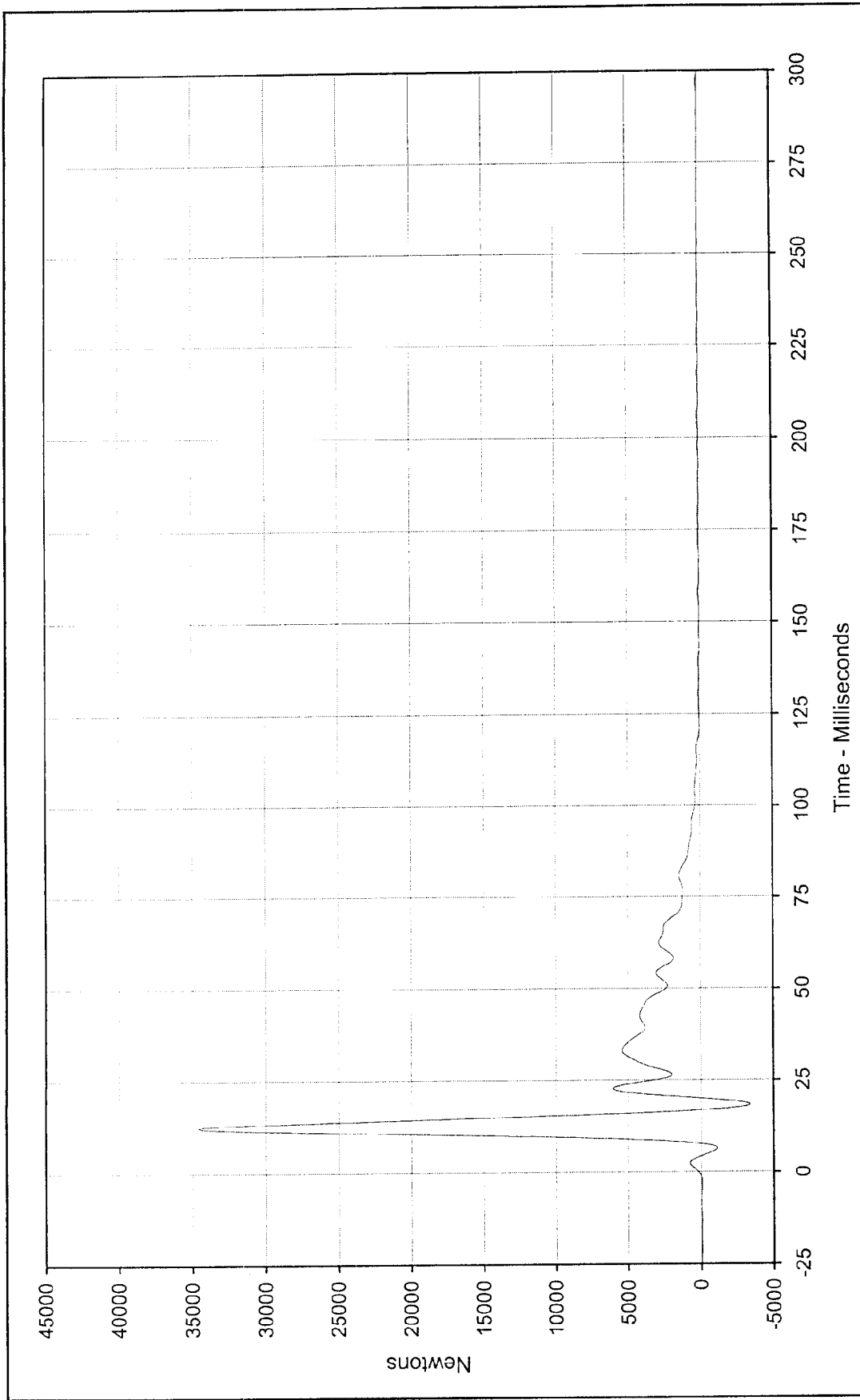




Curve Description: Barrier Force A4
 Maximum Value: 5805.1 at 13.8 Milliseconds
 Minimum Value: -4224.5 at 18.3 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/10/99
 Curve Number: FIL-101

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan

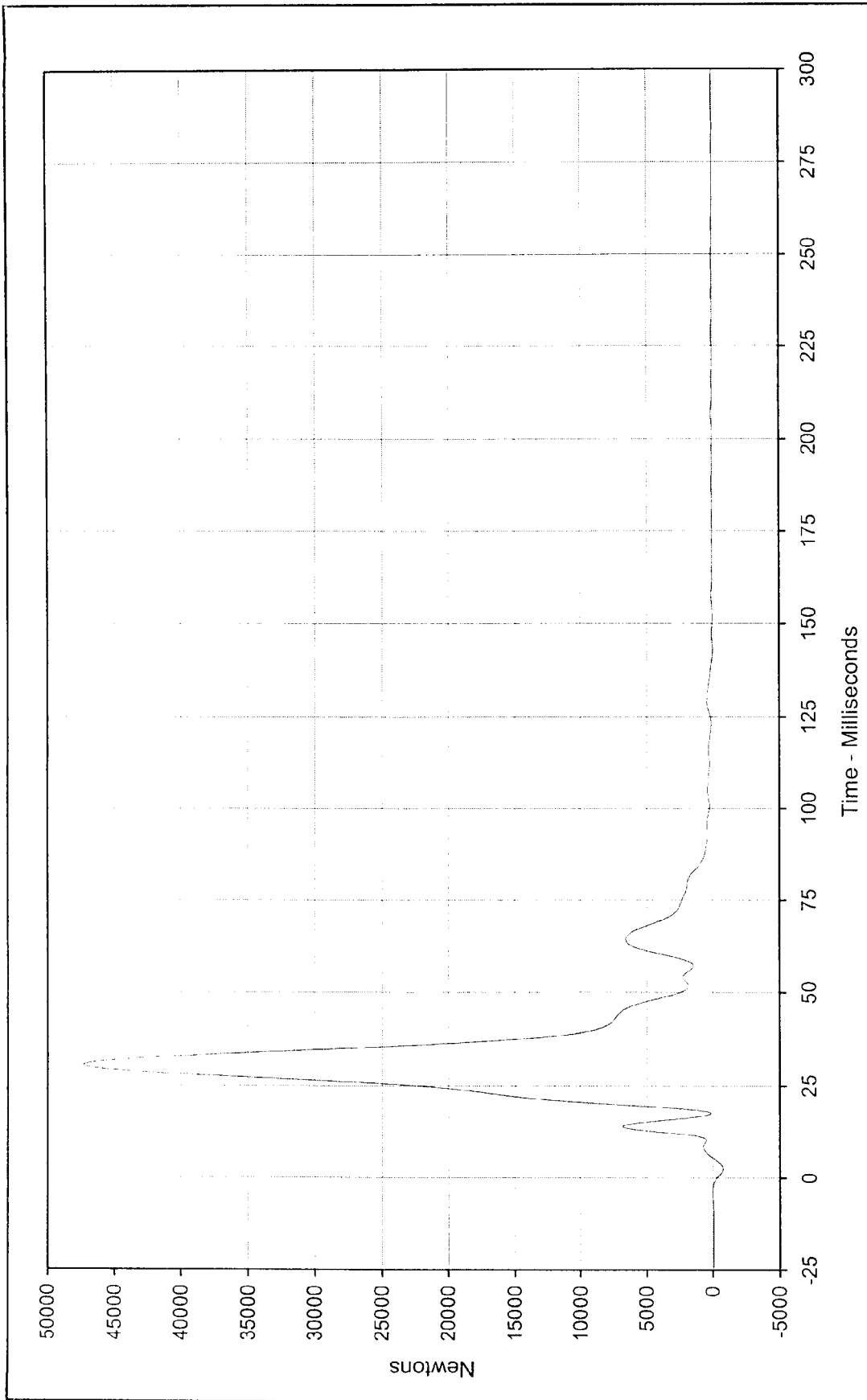




Curve Description: Barrier Force A5
 Maximum Value: 34591.9 at 12.5 Milliseconds
 Minimum Value: -3399.6 at 18.5 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/10/99
 Curve Number: FIL-102

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan

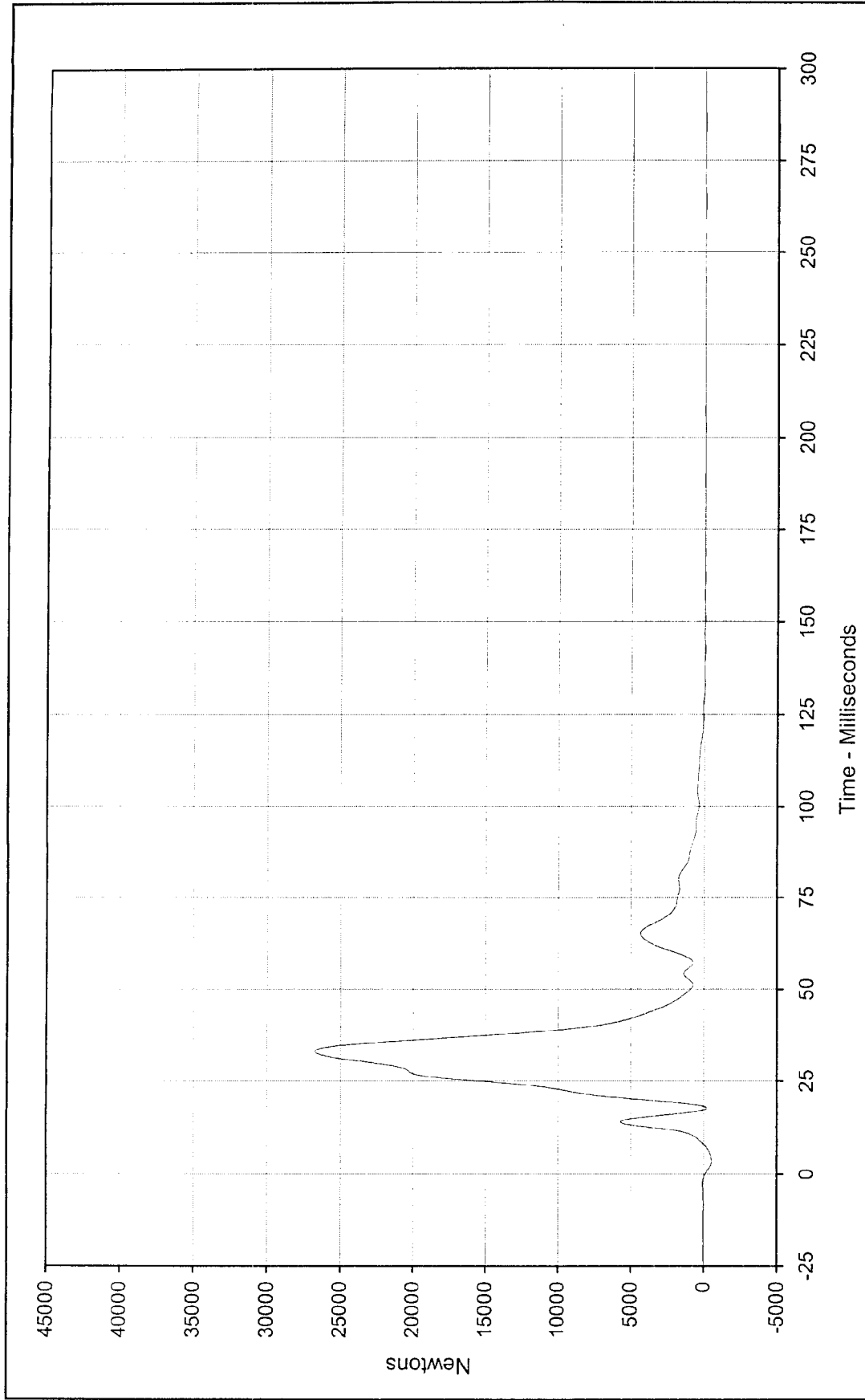




Curve Description: Barrier Force A6
 Maximum Value: 47353.0 at 30.5 Milliseconds
 Minimum Value: -7616.6 at 2.4 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/10/99
 Curve Number: FIL-103

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan

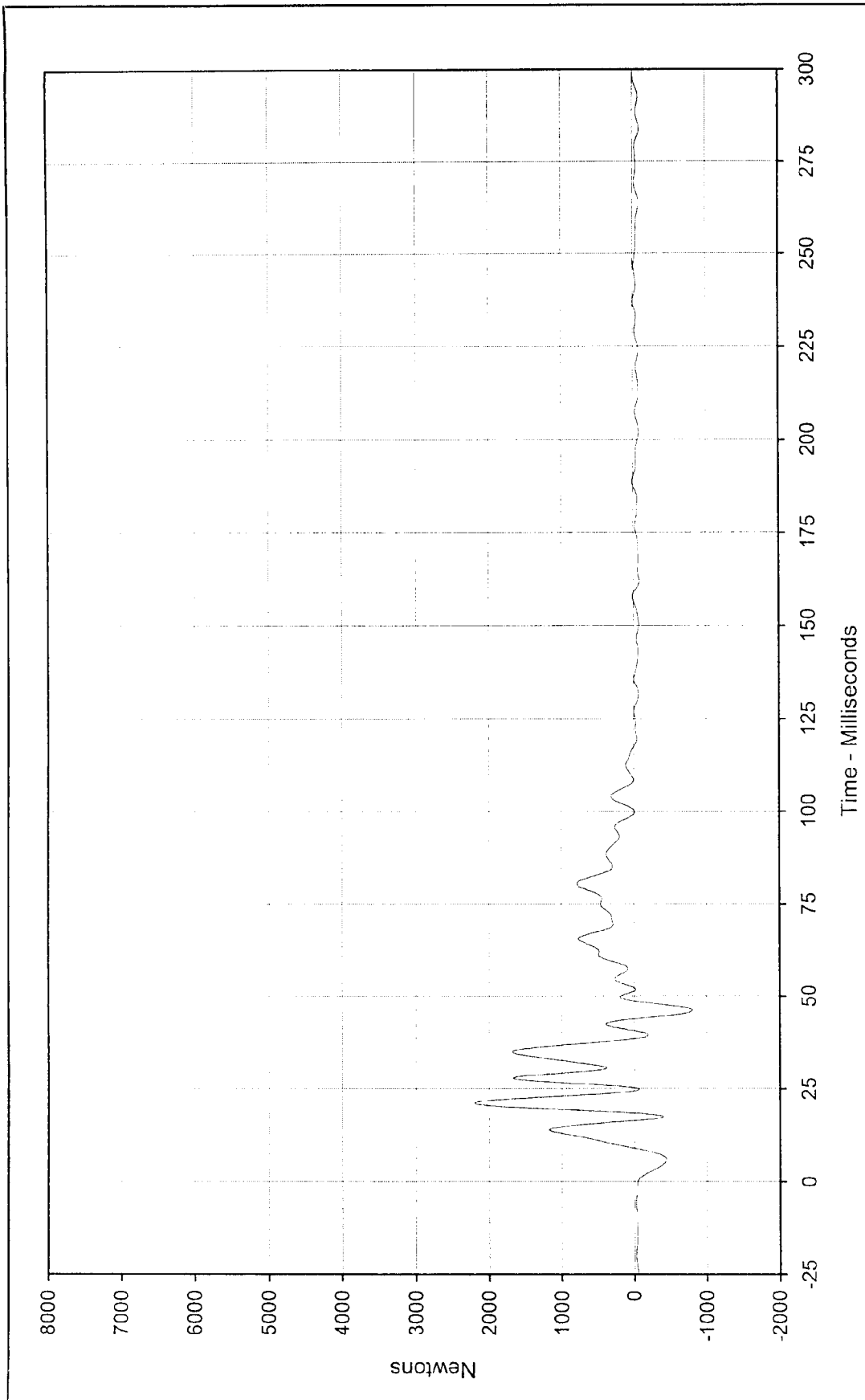




Curve Description: Barrier Force A7
 Maximum Value: 26734.9 at 33.0 Milliseconds
 Minimum Value: -554.6 at 3.3 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/10/99
 Curve Number: FIL-104

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan

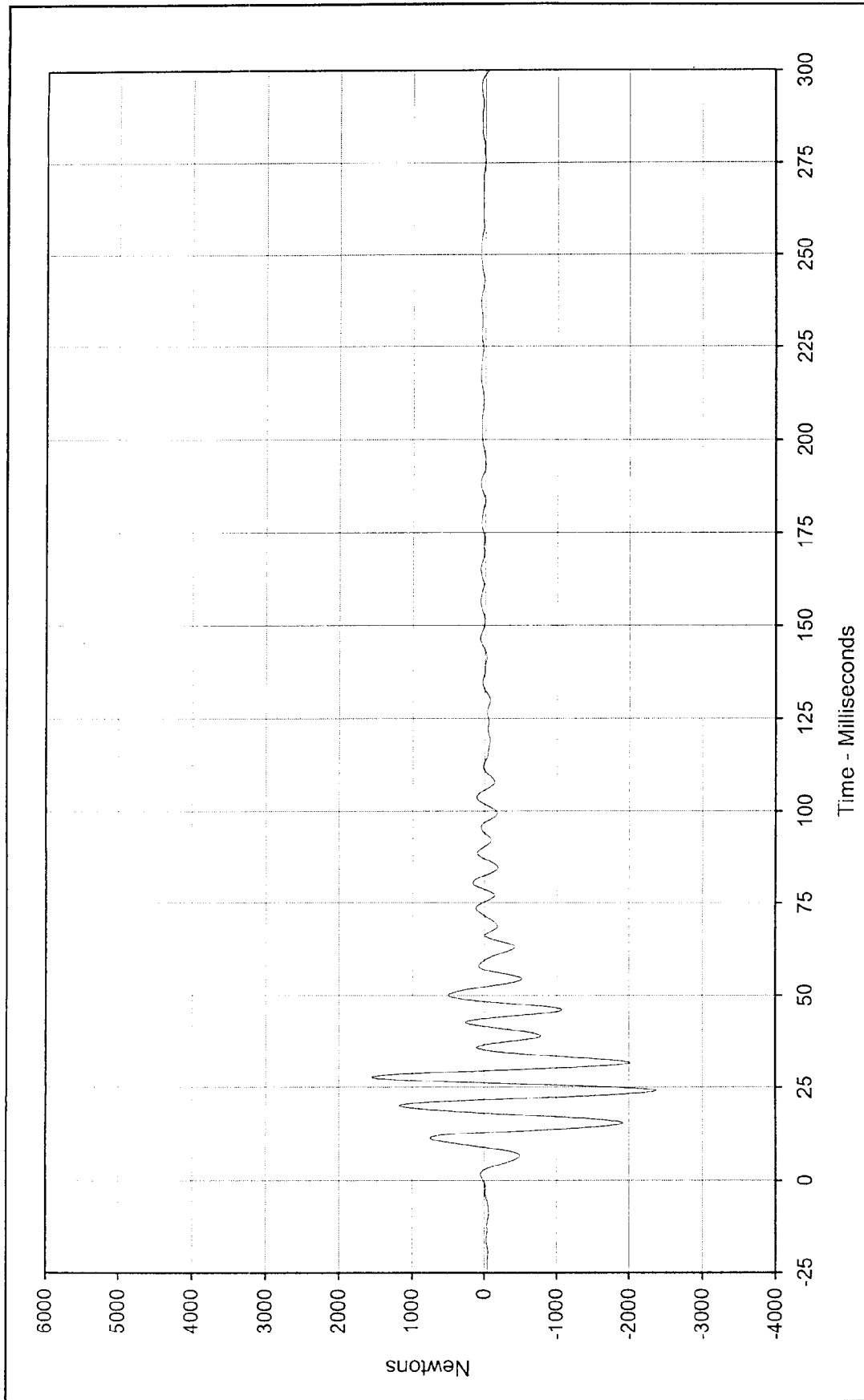




Curve Description: Barrier Force A8
 Maximum Value: 2198.8 at 21.2 Milliseconds
 Minimum Value: -805.9 at 46.1 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/10/99
 Curve Number: FIL-105

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: Barrier Force A9

Maximum Value: 1552.8 at 27.8 Milliseconds

Minimum Value: -2374.0 at 24.1 Milliseconds

SAE Filter Class: 60

Date of Test: 11/10/99

Curve Number: FIL-106

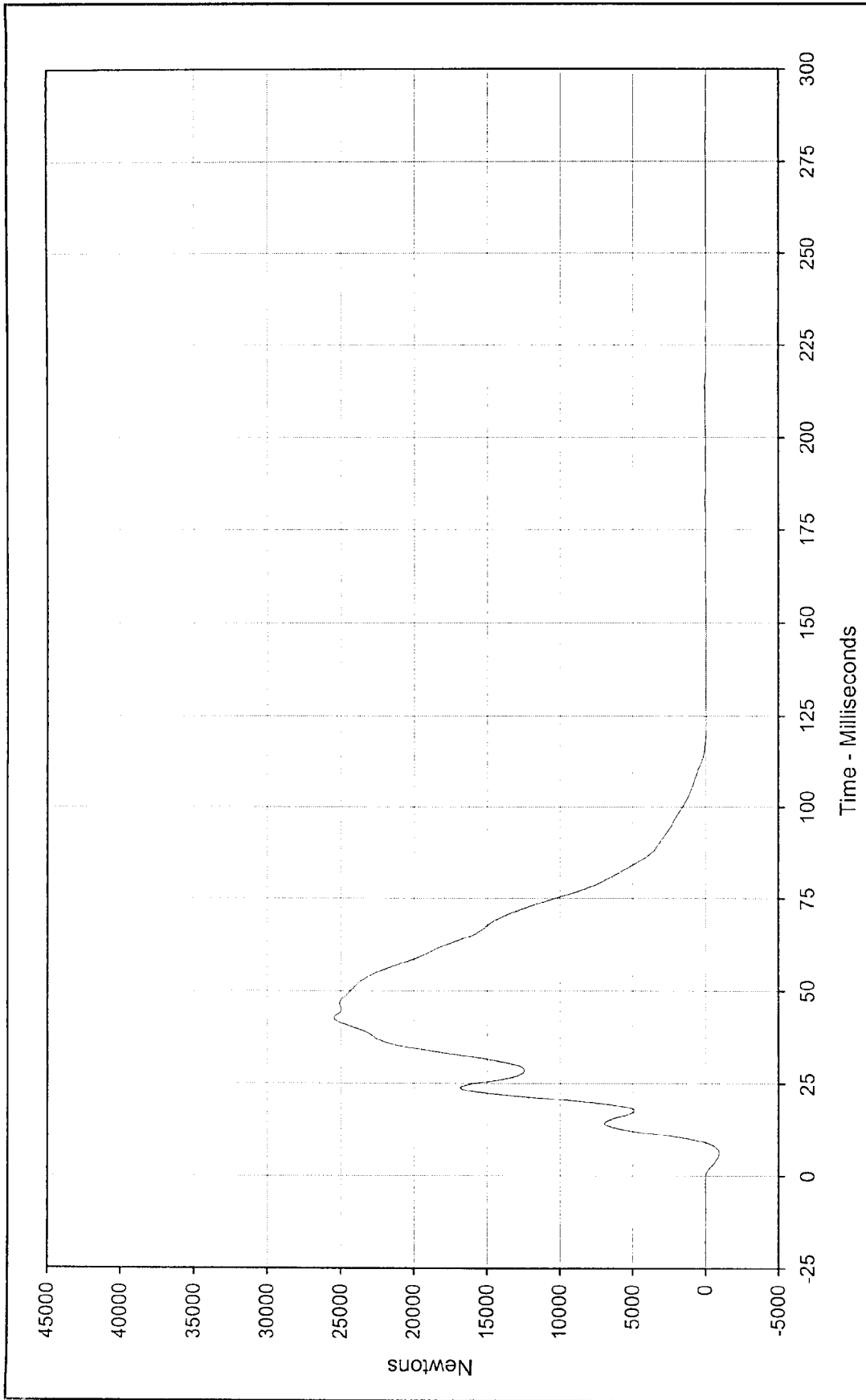
Test Program:

Test Vehicle:

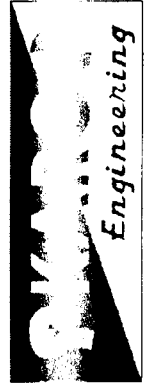
2000 NHTSA 35 mph NCAP No.: MY0304

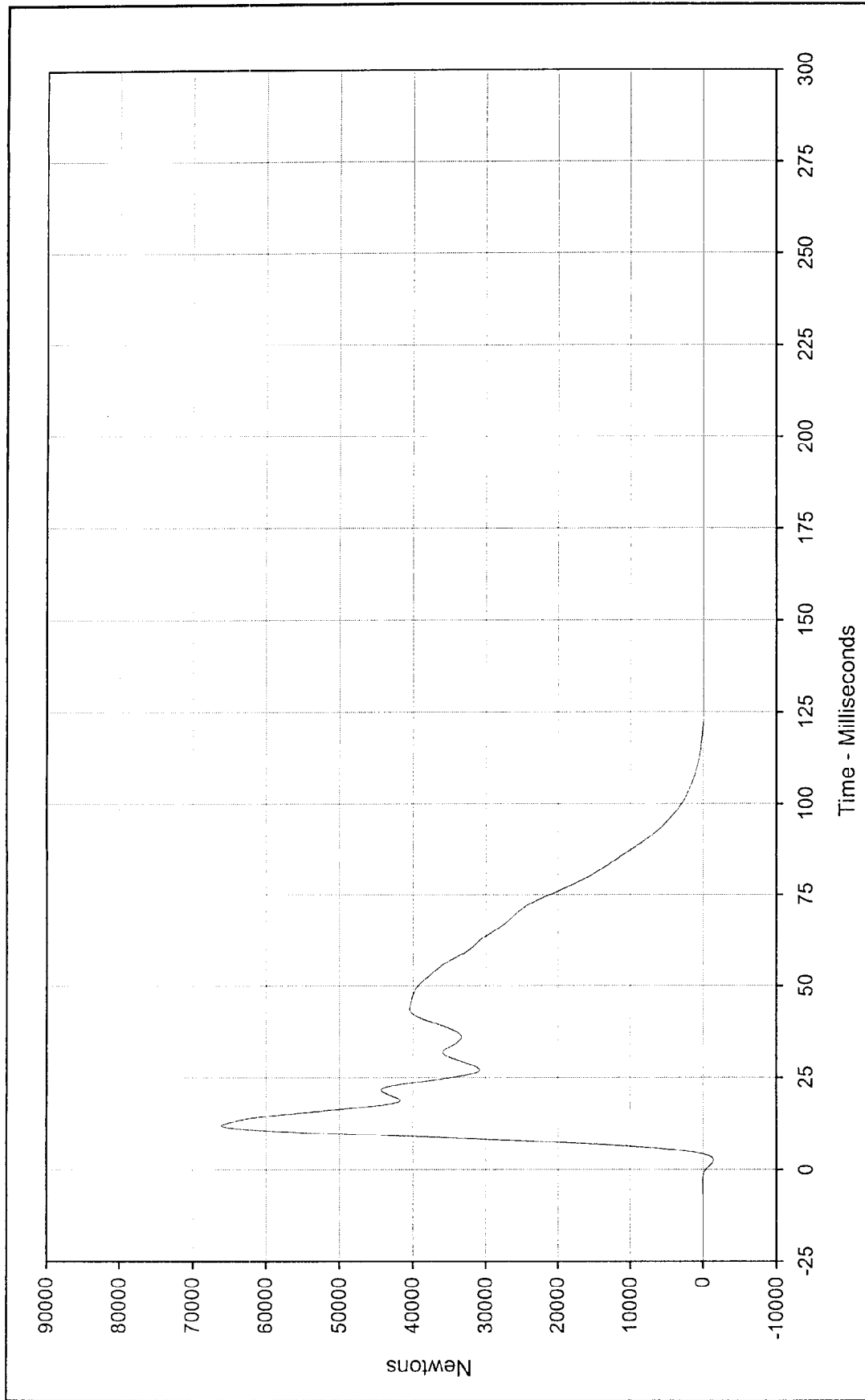
2000 Dodge Neon 4 Door Sedan





Curve Description:		Barrier Force B2		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	25475.4	at	42.7	Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan
Minimum Value:	-931.8	at	6.2	Milliseconds		
SAE Filter Class:	60					
Date of Test:	11/10/99					
Curve Number:	FIL-108					





Curve Description: Barrier Force B3

Maximum Value: 66059.7 at 12.2 Milliseconds

Minimum Value: -1469.8 at 2.7 Milliseconds

SAE Filter Class: 60

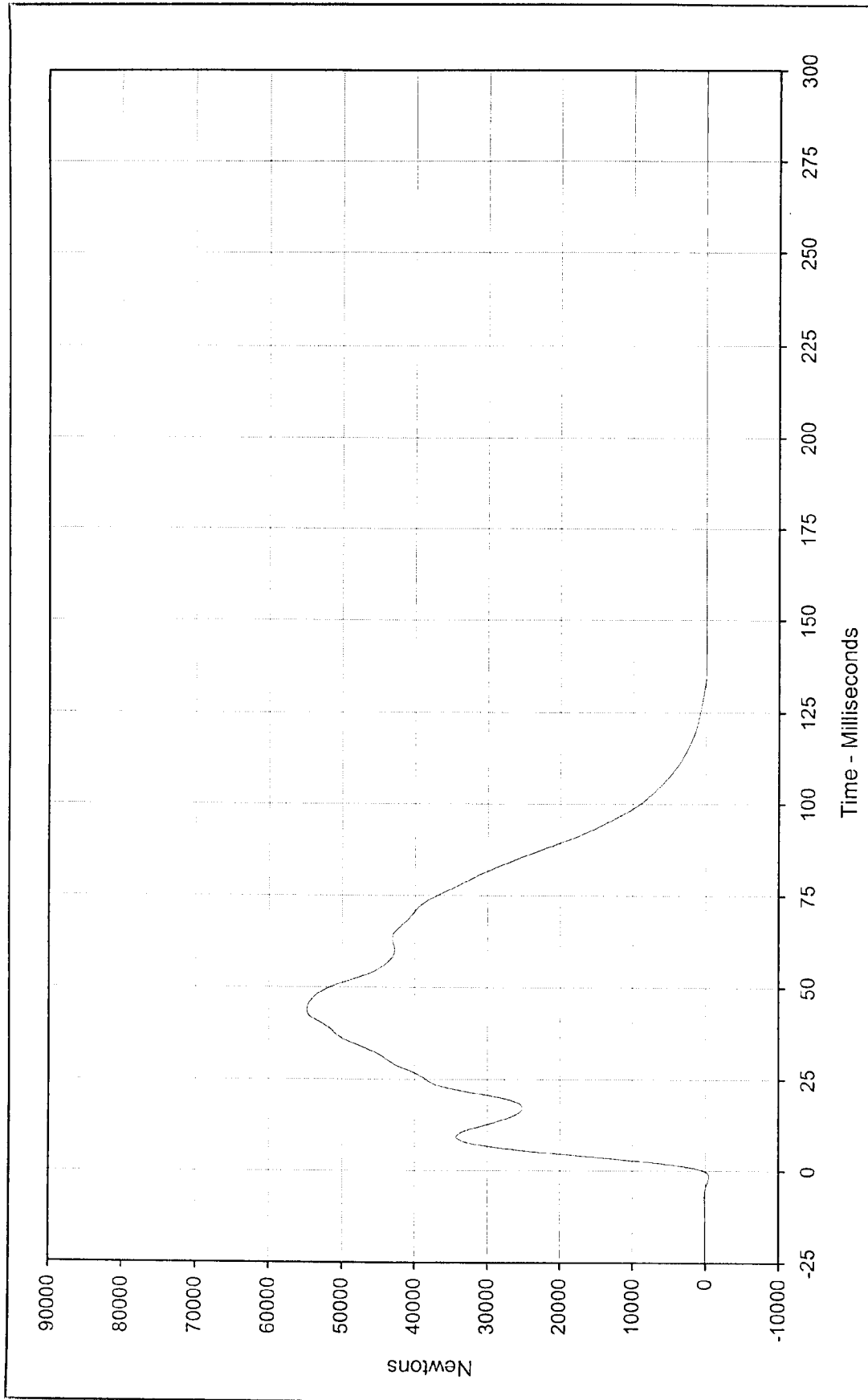
Date of Test: 11/10/99

Curve Number: FIL-109

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

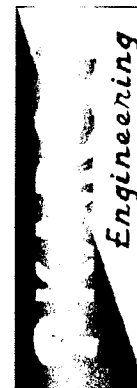
Test Vehicle: 2000 Dodge Neon 4 Door Sedan

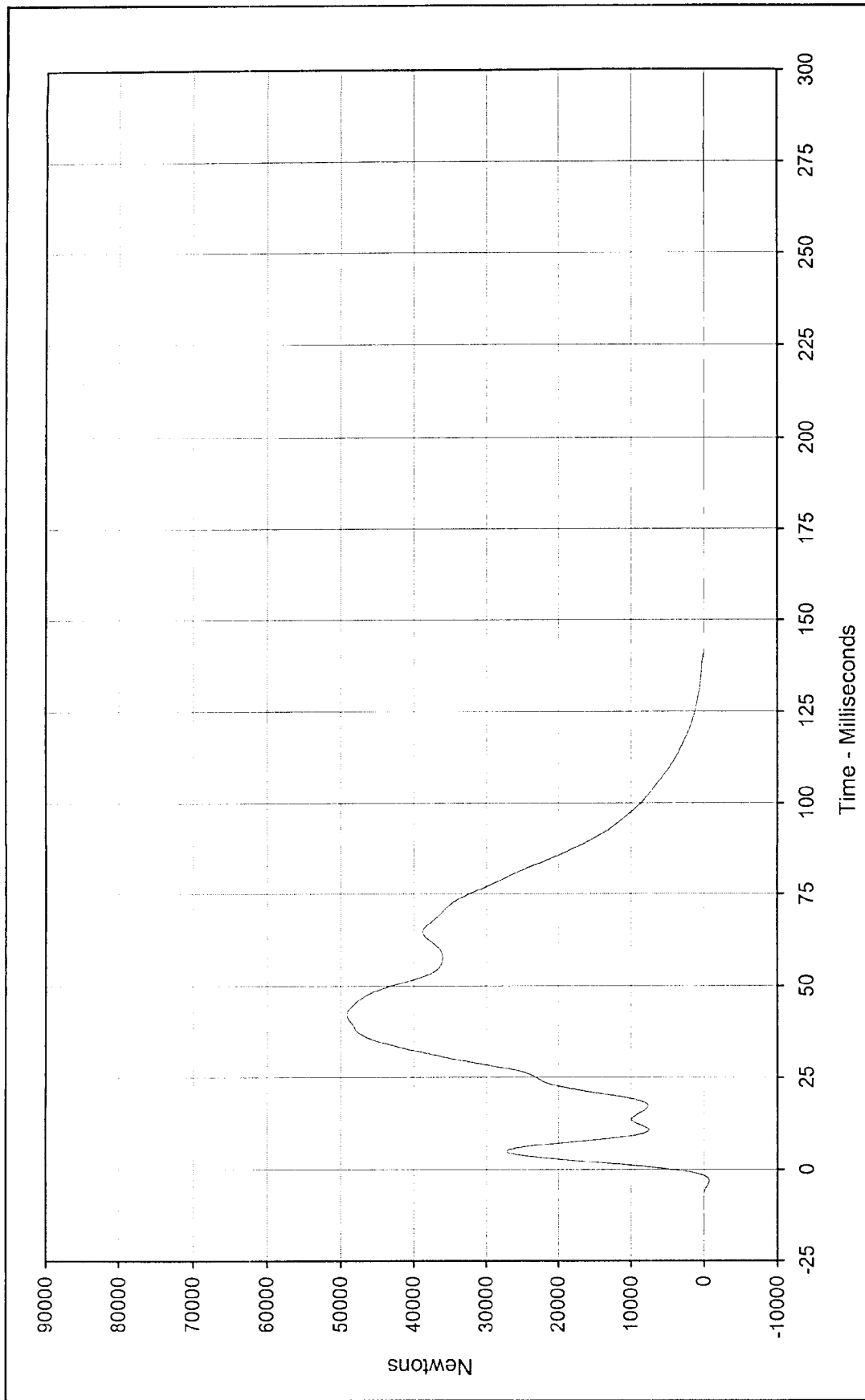




Curve Description: Barrier Force B4
 Maximum Value: 54853.3 at 43.7 Milliseconds
 Minimum Value: -107.3 at 143.7 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/10/99
 Curve Number: FIL-110

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan

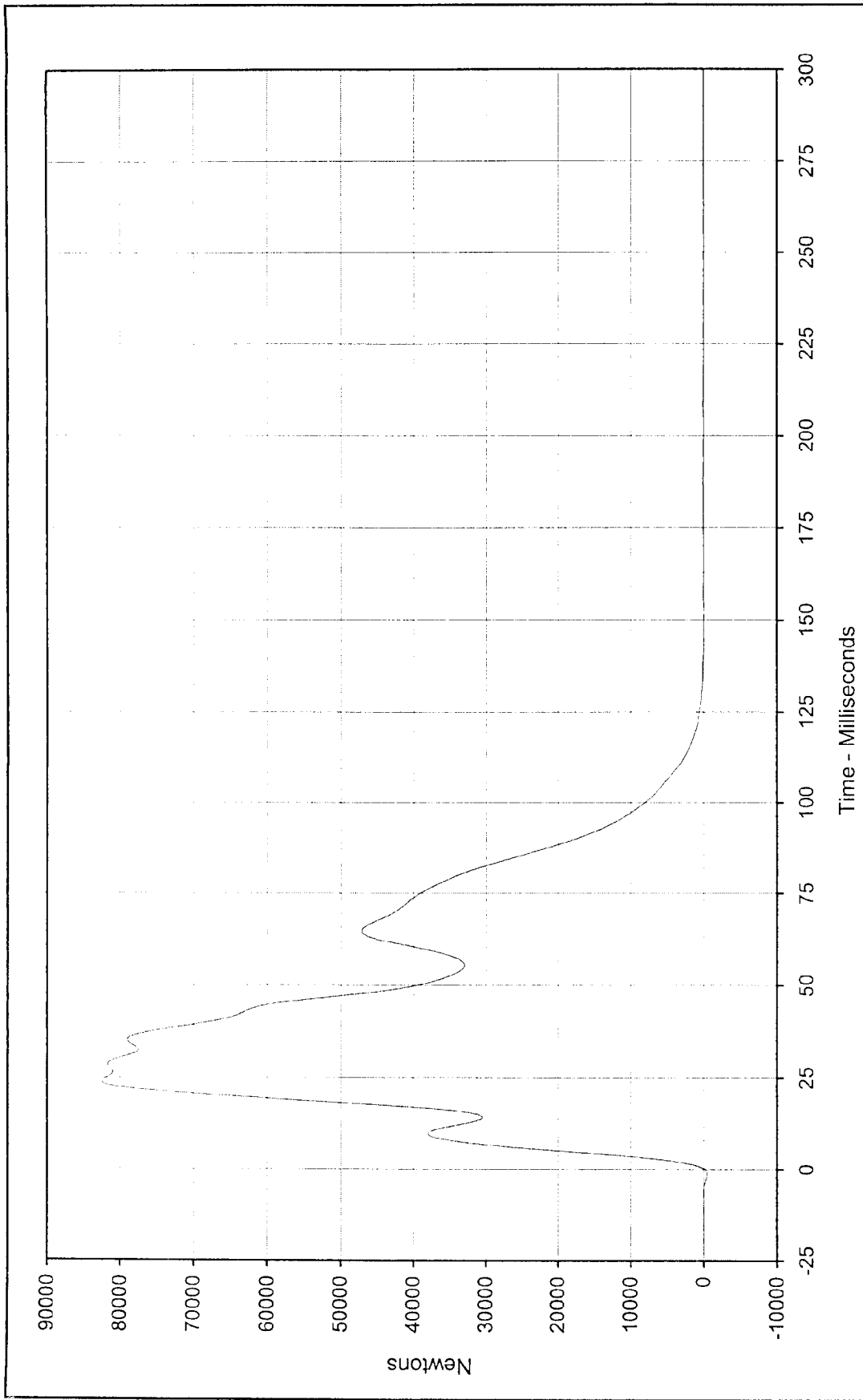




Curve Description: Barrier Force B5
 Maximum Value: 49183.8 at 42.2 Milliseconds
 Minimum Value: -43.9 at 152.8 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/10/99
 Curve Number: FIL-111

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan

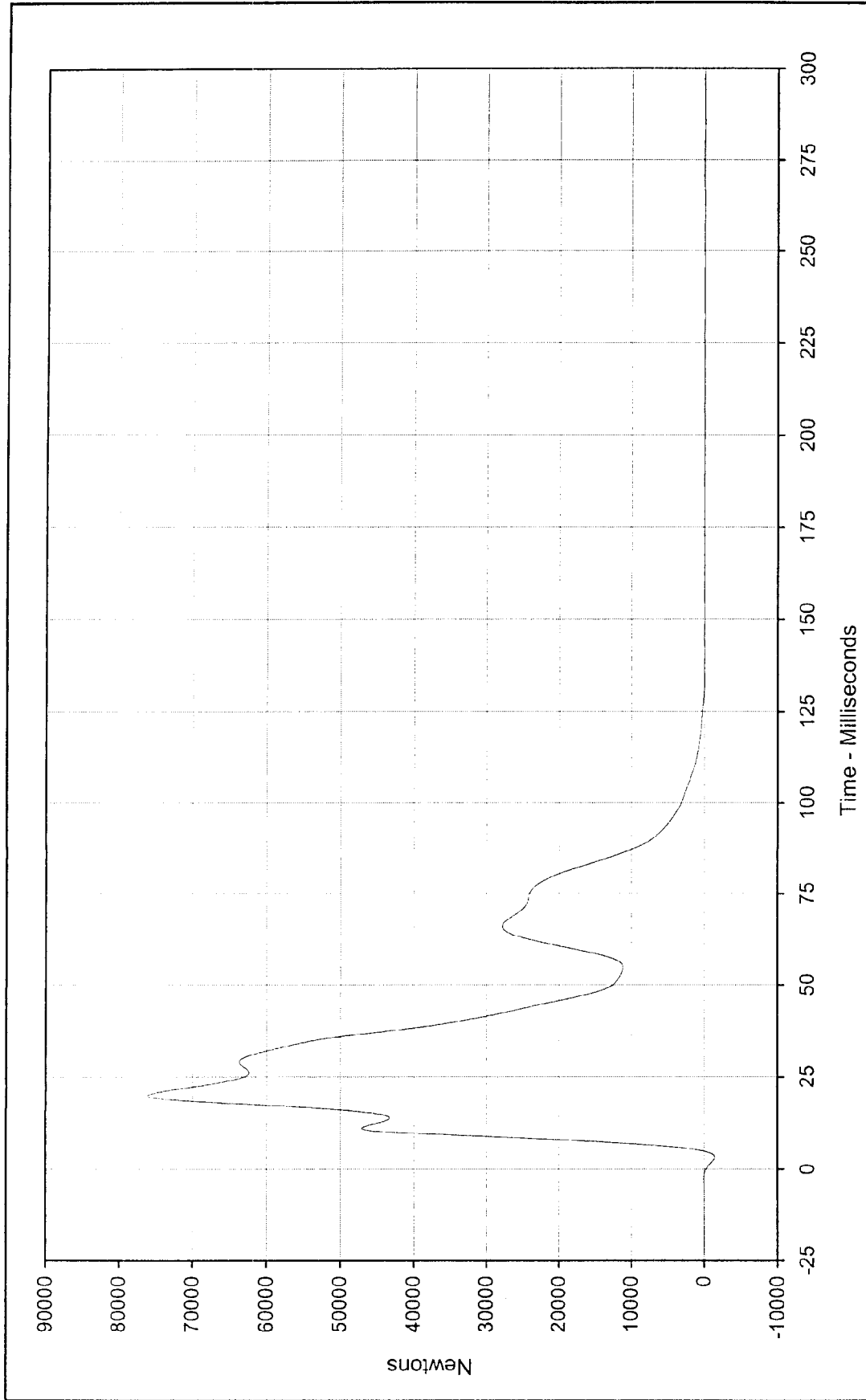




Curve Description:	Barrier Force B6		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	82578.7	at 23.9 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-126.3	at 0.0 Milliseconds			
SAE Filter Class:	60				
Date of Test:	11/10/99				
Curve Number:	FIL-112				

The logo for KARCO Engineering. It features the word "KARCO" in a large, bold, sans-serif font. To the left of the letters "A" and "R" is a stylized graphic of a car's front end, including a headlight and grille. To the right of "KARCO" is the word "Engineering" in a smaller, italicized, sans-serif font. The entire logo is set against a black background with a white diagonal stripe running from the bottom left to the top right.





Curve Description: Barrier Force B7

Maximum Value: 76117.4 at 19.9 Milliseconds

Minimum Value: -1460.4 at 3.2 Milliseconds

SAE Filter Class: 60

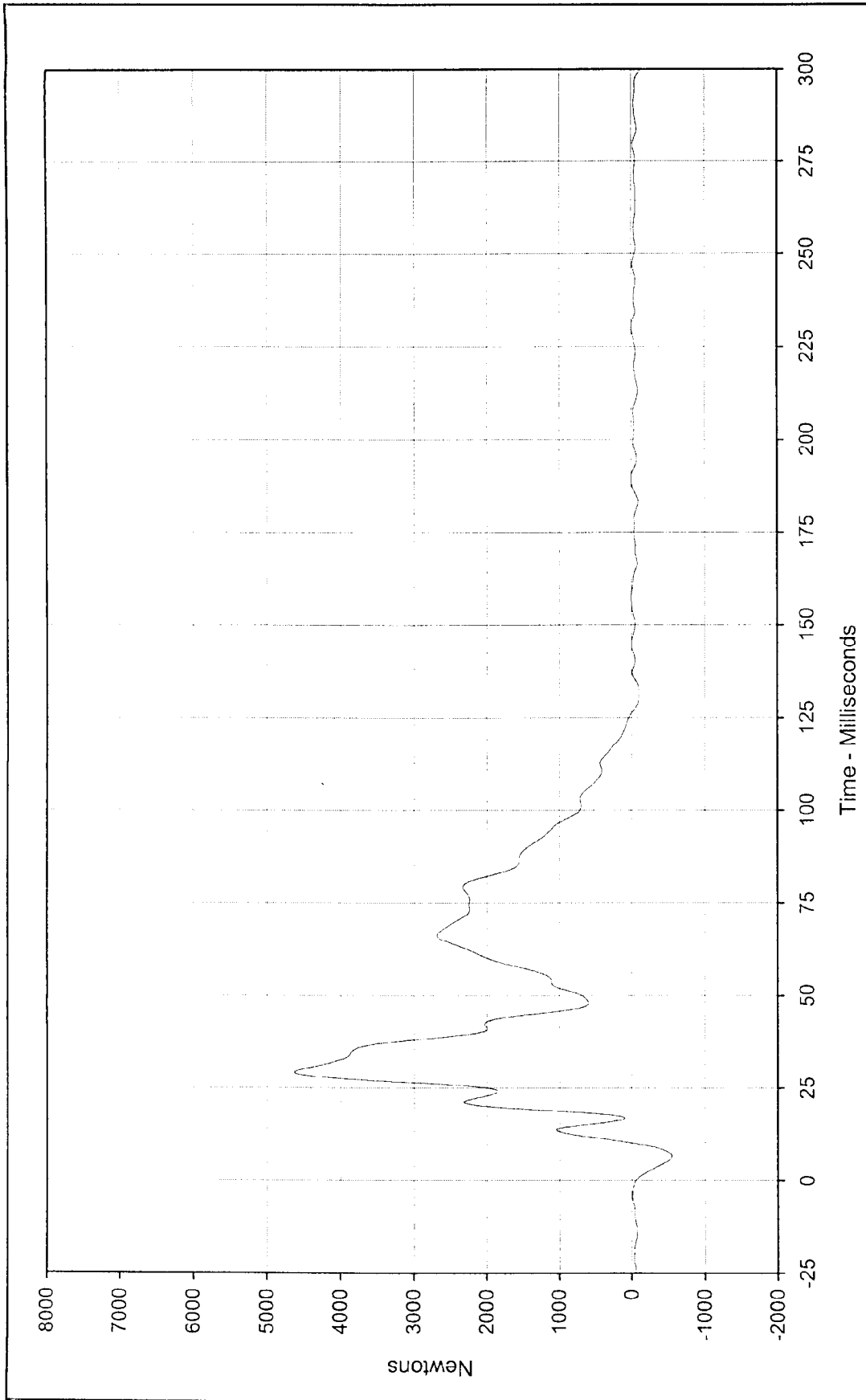
Date of Test: 11/10/99

Curve Number: FIL-113



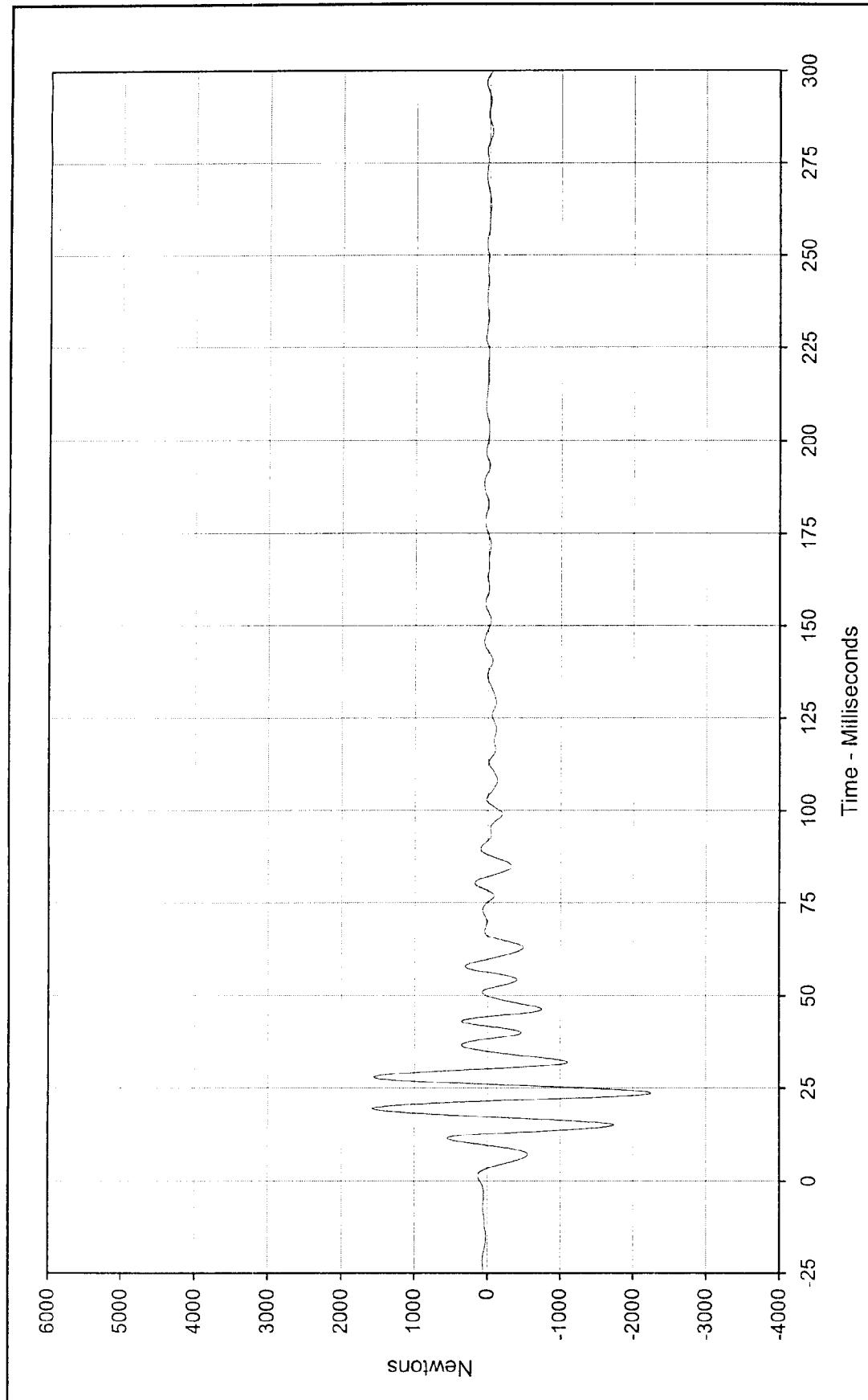
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan



Curve Description:	Barrier Force B8	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	4633.3 at 29.2 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-546.5 at 6.4 Milliseconds			
SAE Filter Class:	60			
Date of Test:	11/10/99			
Curve Number:	FIL-114			





Curve Description: Barrier Force B9

Maximum Value: 1576.4 at 19.7 Milliseconds

Minimum Value: -2250.3 at 23.7 Milliseconds

SAE Filter Class: 60

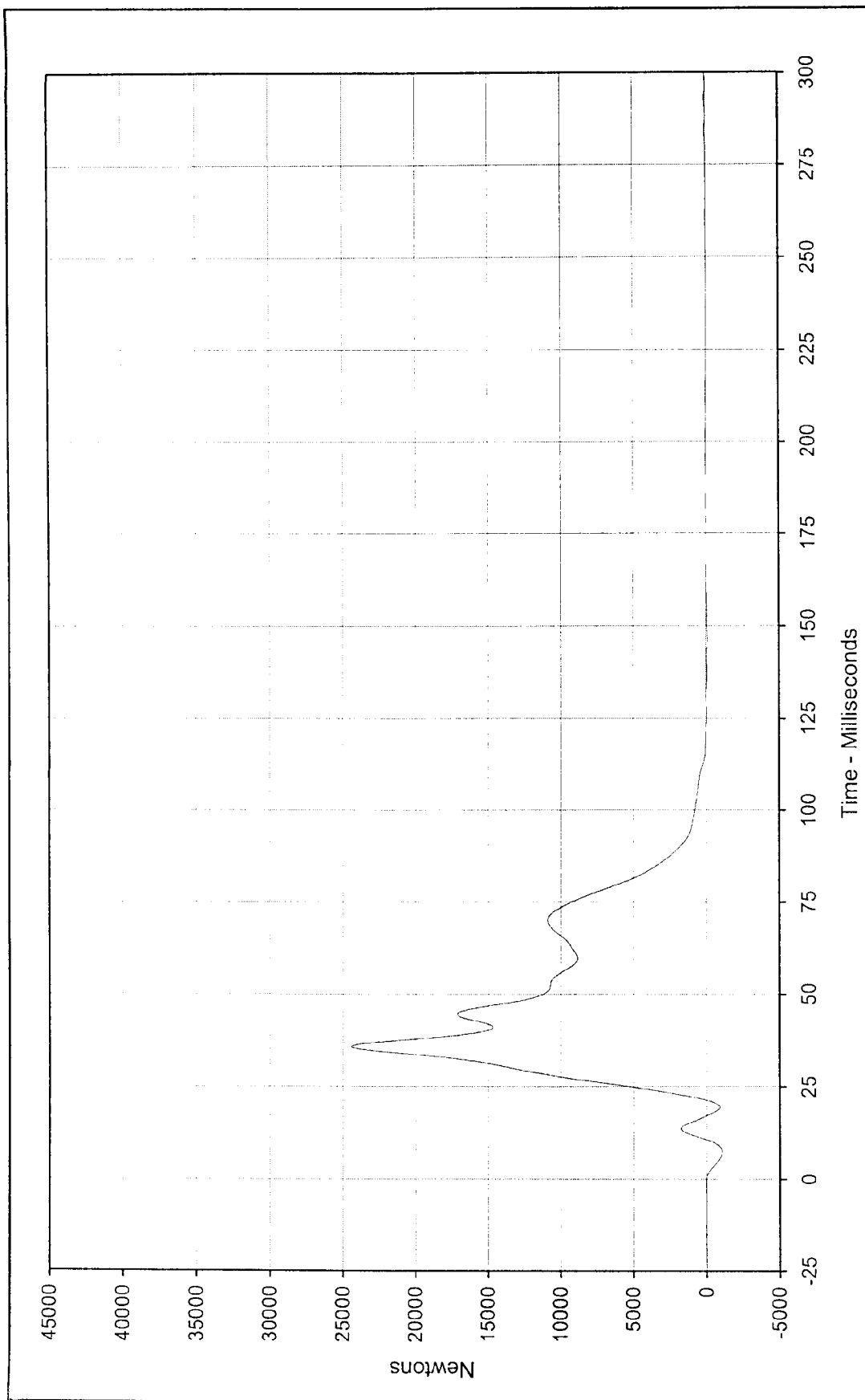
Date of Test: 11/10/99

Curve Number: FIL-115

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan

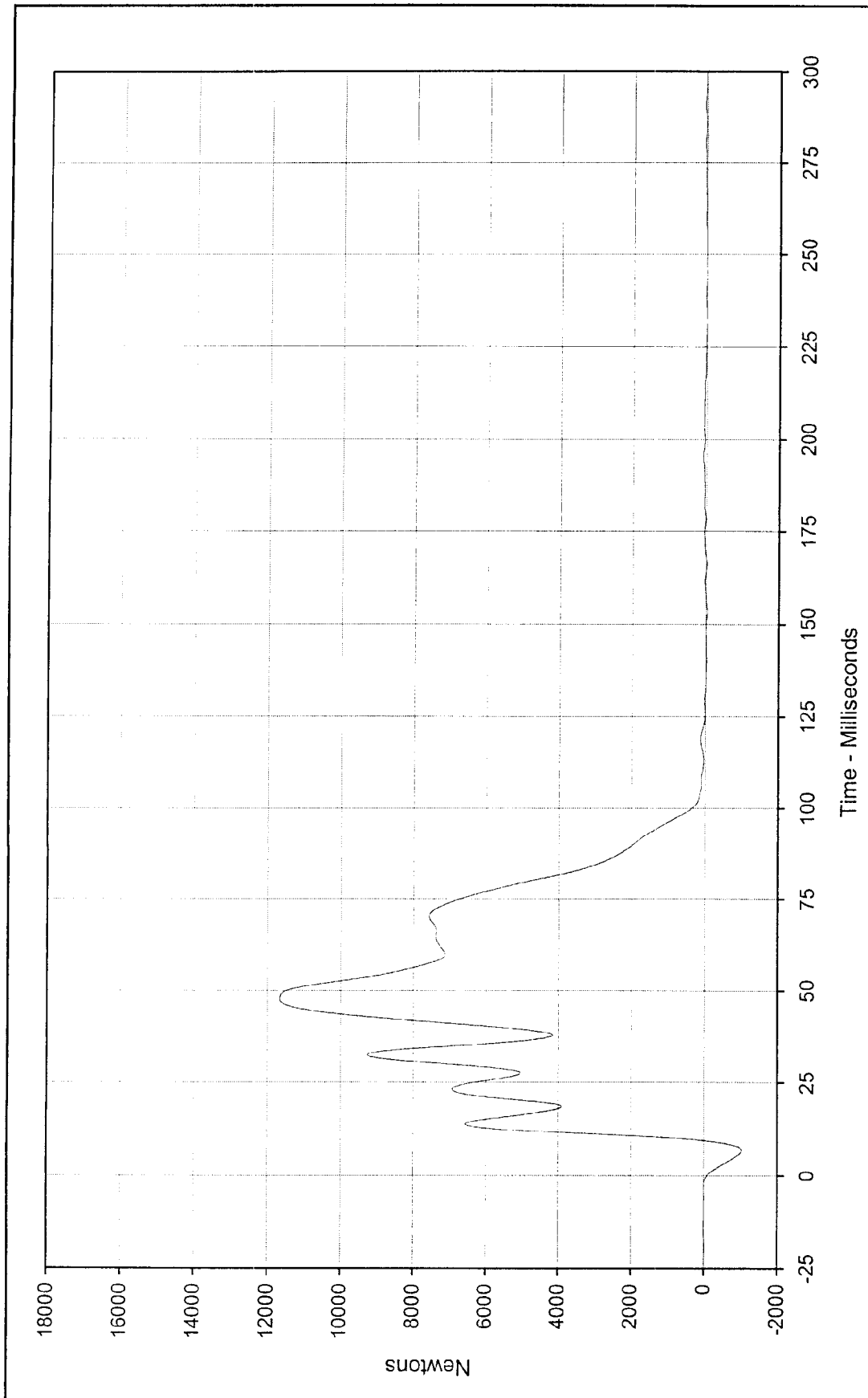




Curve Description: Barrier Force C2
 Maximum Value: 24428.8 at 35.9 Milliseconds
 Minimum Value: -1044.4 at 7.3 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/10/99
 Curve Number: FIL-117

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan

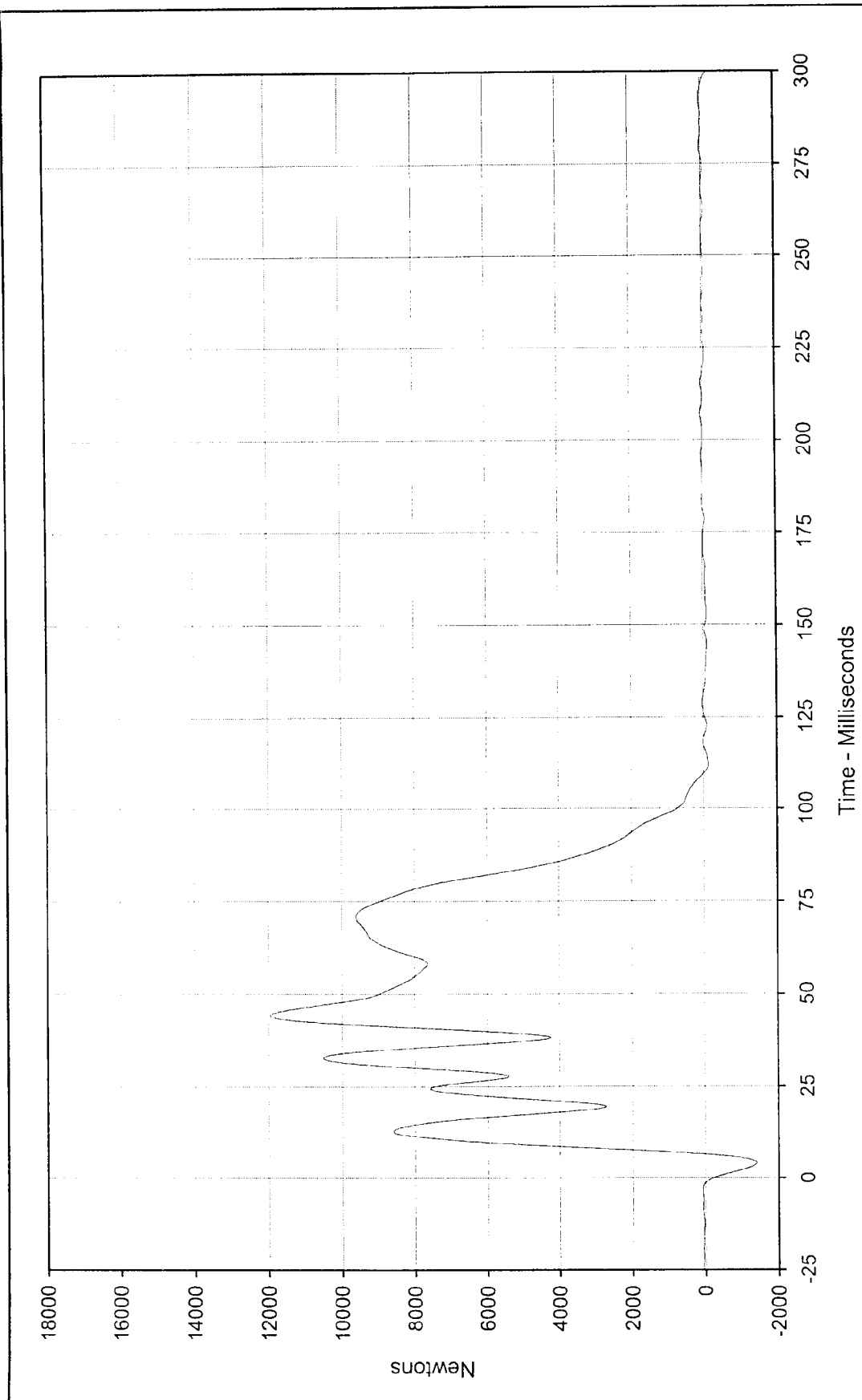




Curve Description: Barrier Force C3
 Maximum Value: 11675.3 at 47.7 Milliseconds
 Minimum Value: -1025.4 at 6.9 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/10/99
 Curve Number: FIL-118

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan

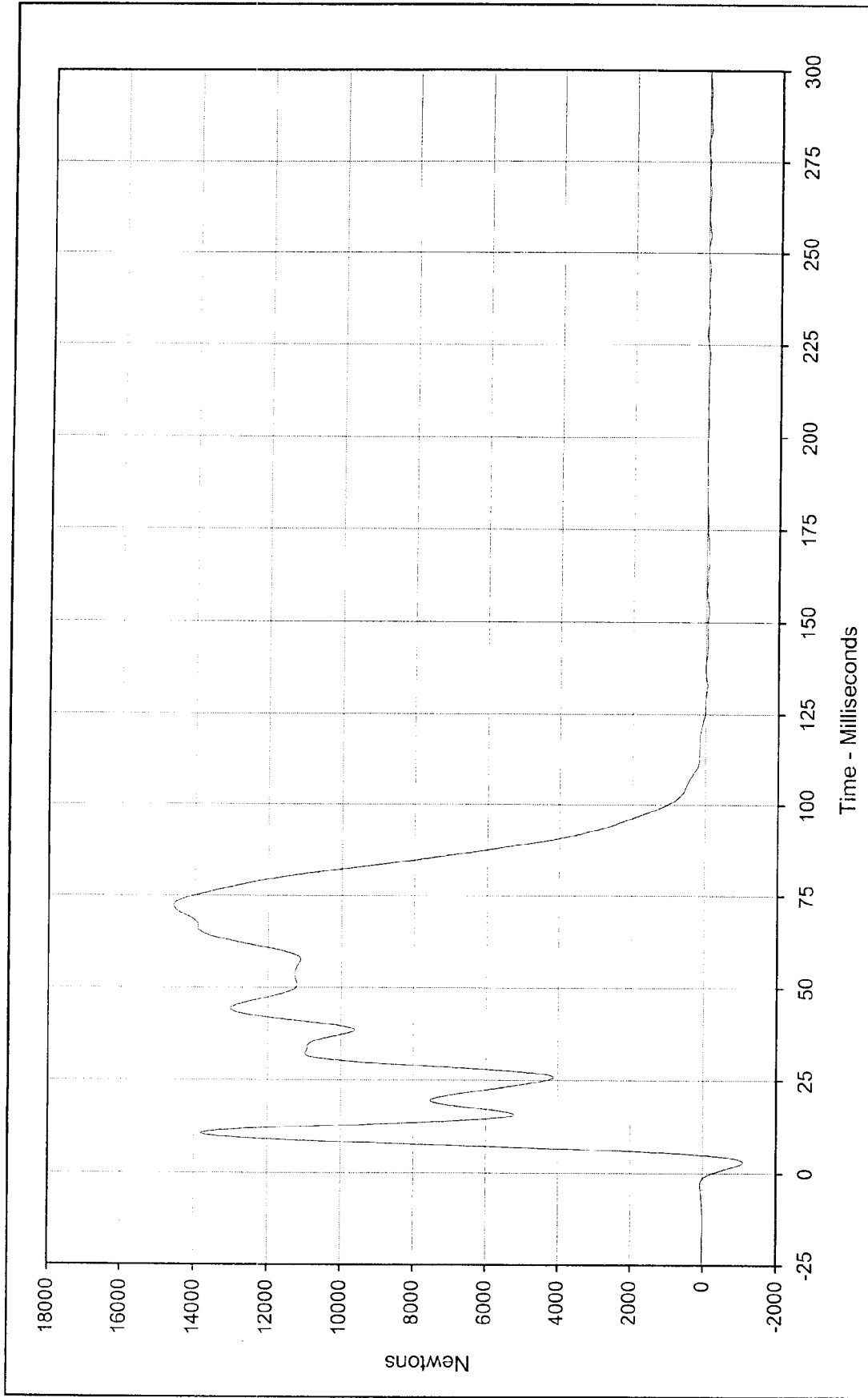




Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan

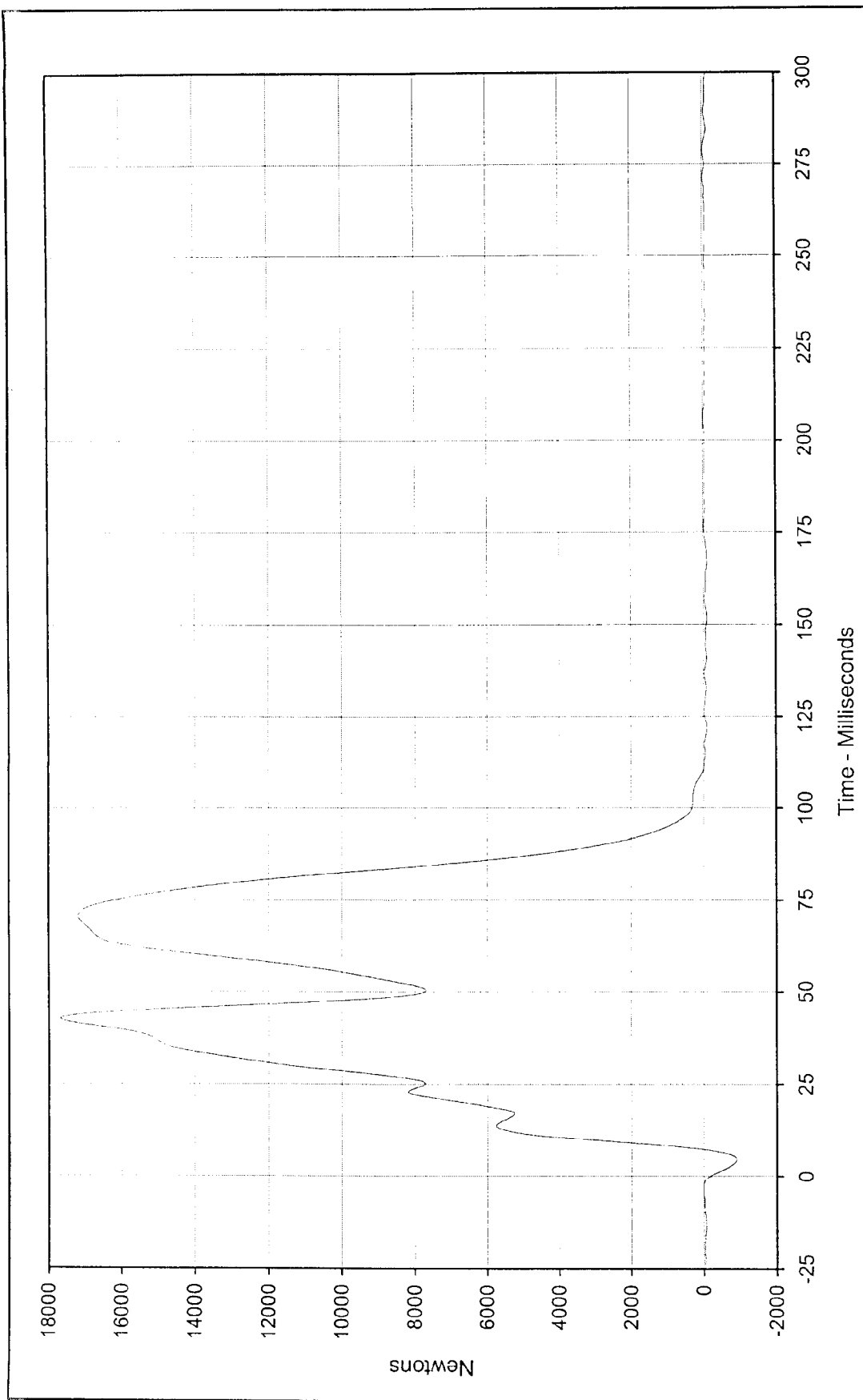
Curve Description: Barrier Force C4
 Maximum Value: 11960.5 at 44.3 Milliseconds
 Minimum Value: -1398.8 at 4.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/10/99
 Curve Number: FIL-119



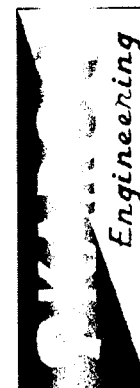


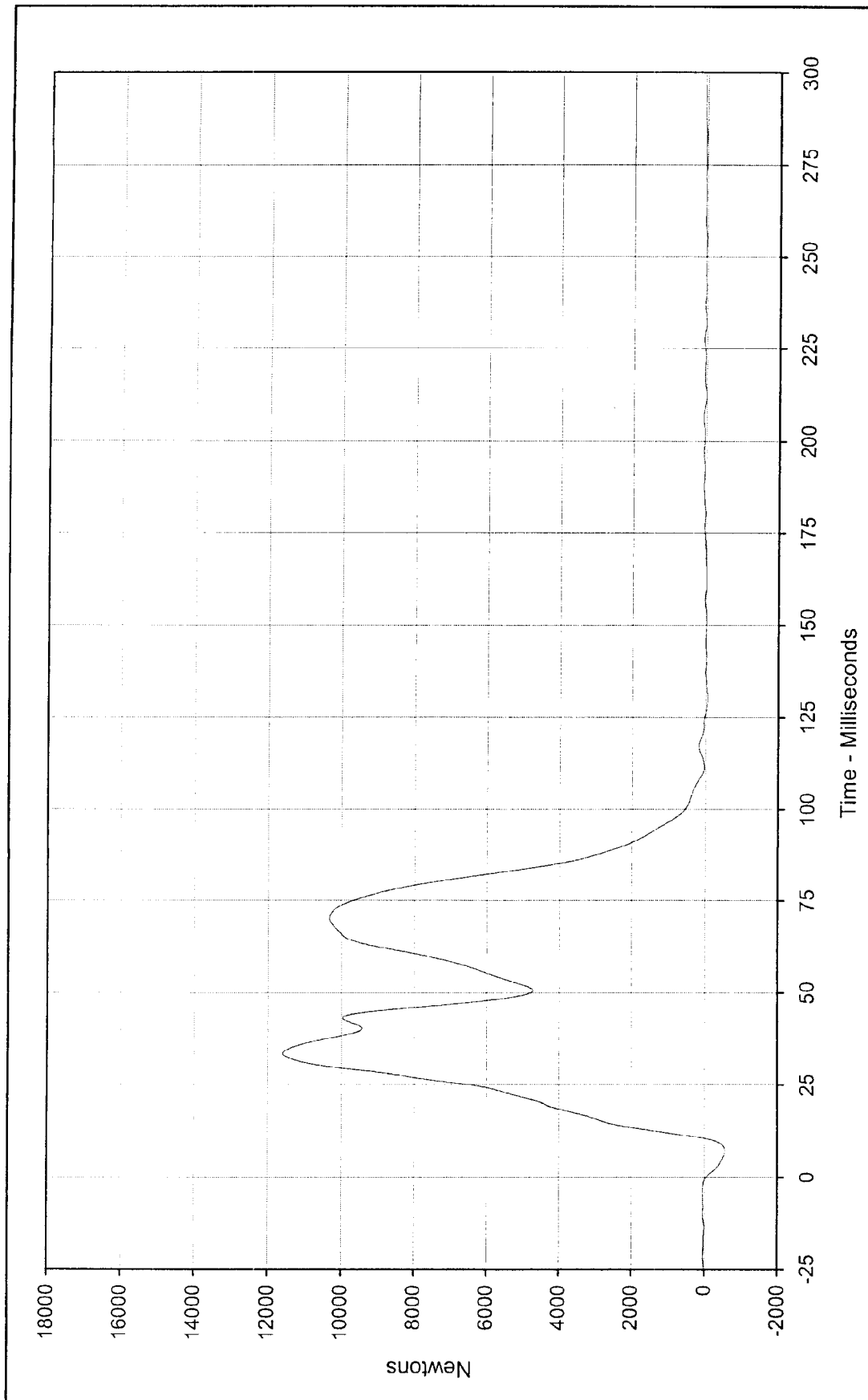
Curve Description:	Barrier Force C5	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	14589.2 at 72.2 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-1094.8 at 3.0 Milliseconds			
SAE Filter Class:	60			
Date of Test:	11/10/99			
Curve Number:	FIL-120			





Curve Description:	Barrier Force C6	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	17678.1 at 42.7 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-896.4 at 4.5 Milliseconds			
SAE Filter Class:	60			
Date of Test:	11/10/99			
Curve Number:	FIL-121			





Curve Description: Barrier Force C7

Maximum Value: 11595.3 at 33.4 Milliseconds

Minimum Value: -567.8 at 7.1 Milliseconds

SAE Filter Class: 60

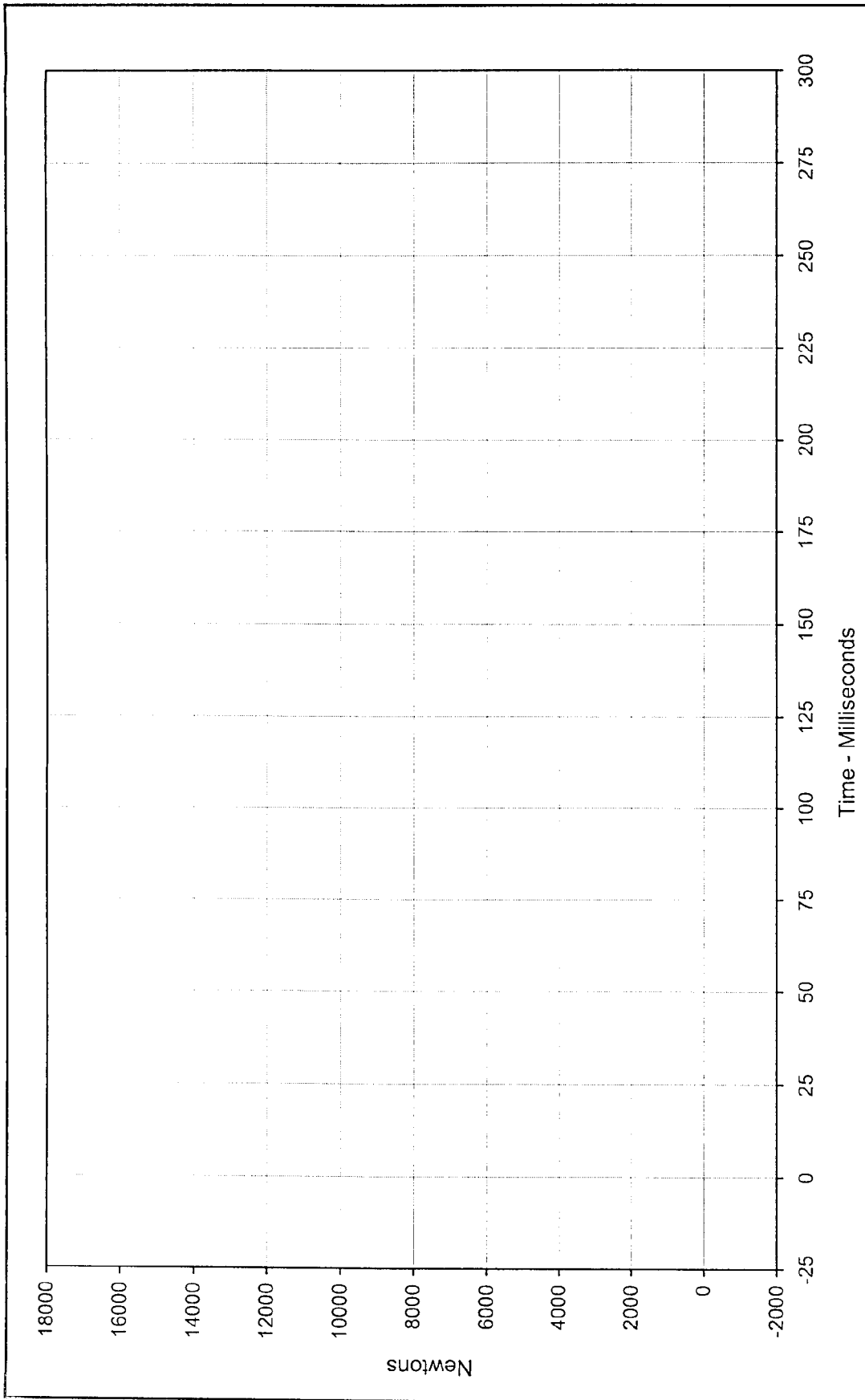
Date of Test: 11/10/99

Curve Number: FIL-122

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Vehicle: 2000 Dodge Neon 4 Door Sedan

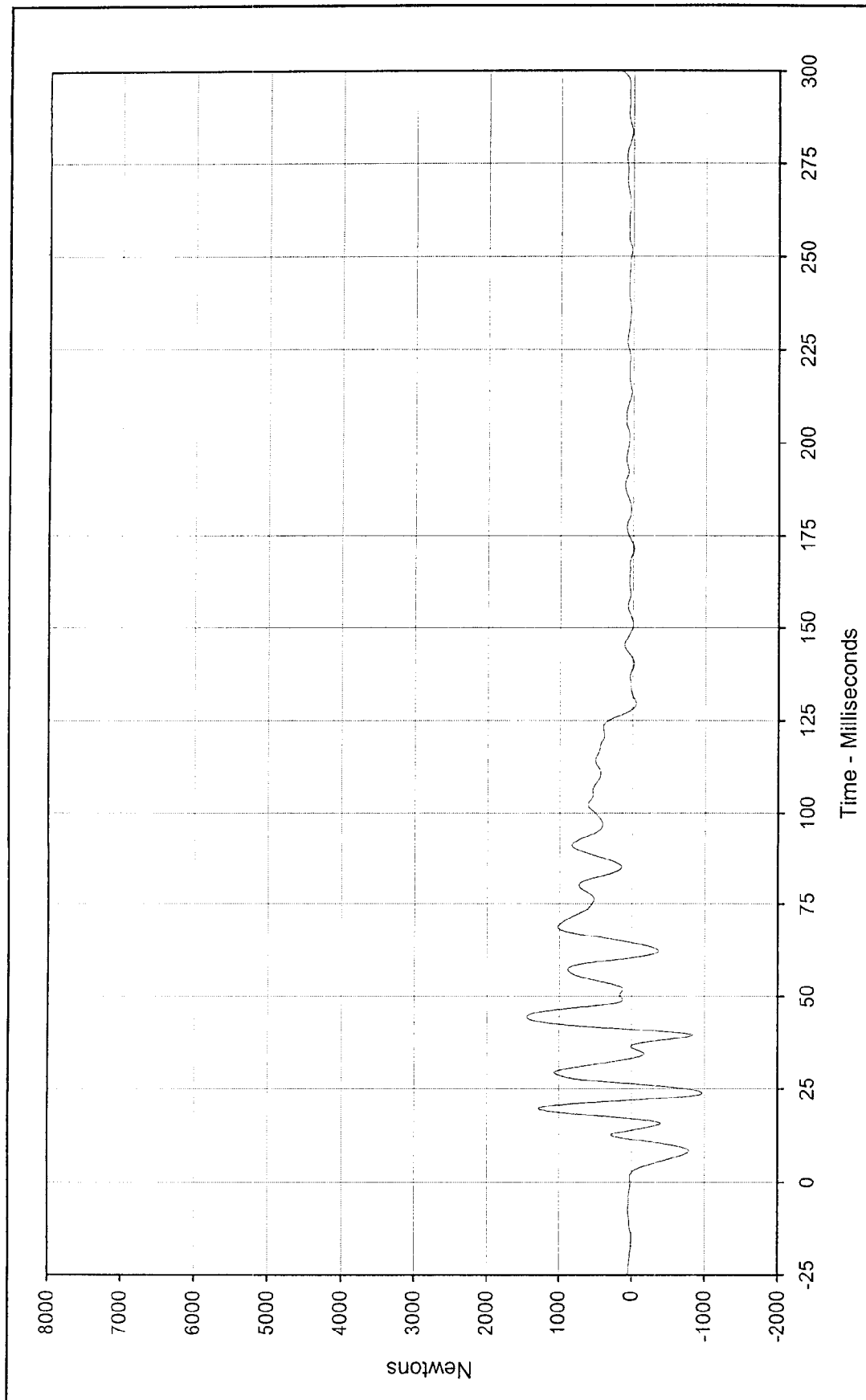




Curve Description:	Barrier Force C8		*	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	0.0	at 0.0	Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	0.0	at 0.0	Milliseconds			
SAE Filter Class:	60					
Date of Test:	11/10/99					
Curve Number:	FIL-123					



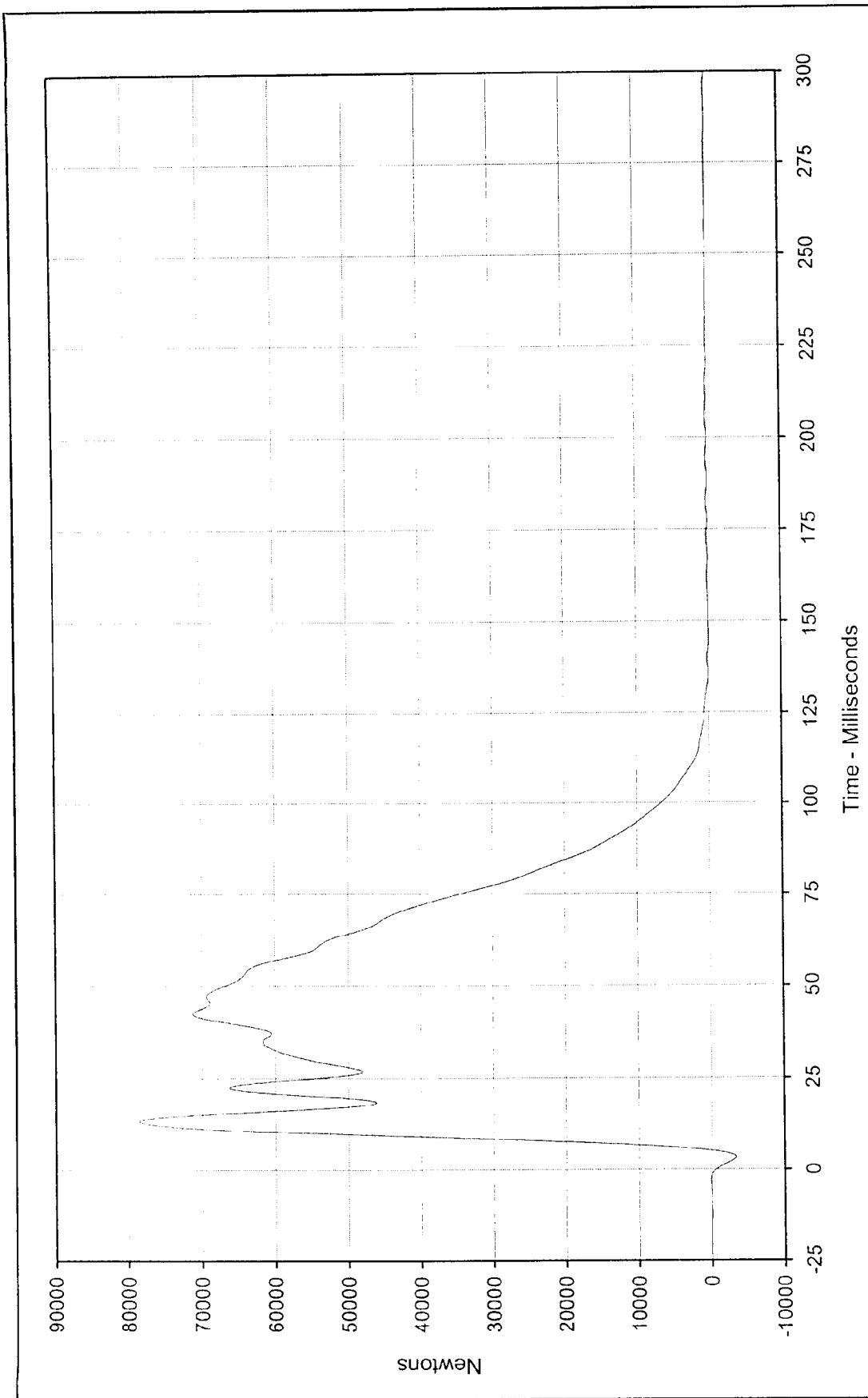
*Channel Failed. No Data



Curve Description: Barrier Force C9
Maximum Value: 1448.5 at 44.5 Milliseconds
Minimum Value: -972.9 at 23.9 Milliseconds
SAE Filter Class: 60
Date of Test: 11/10/99
Curve Number: FIL-124

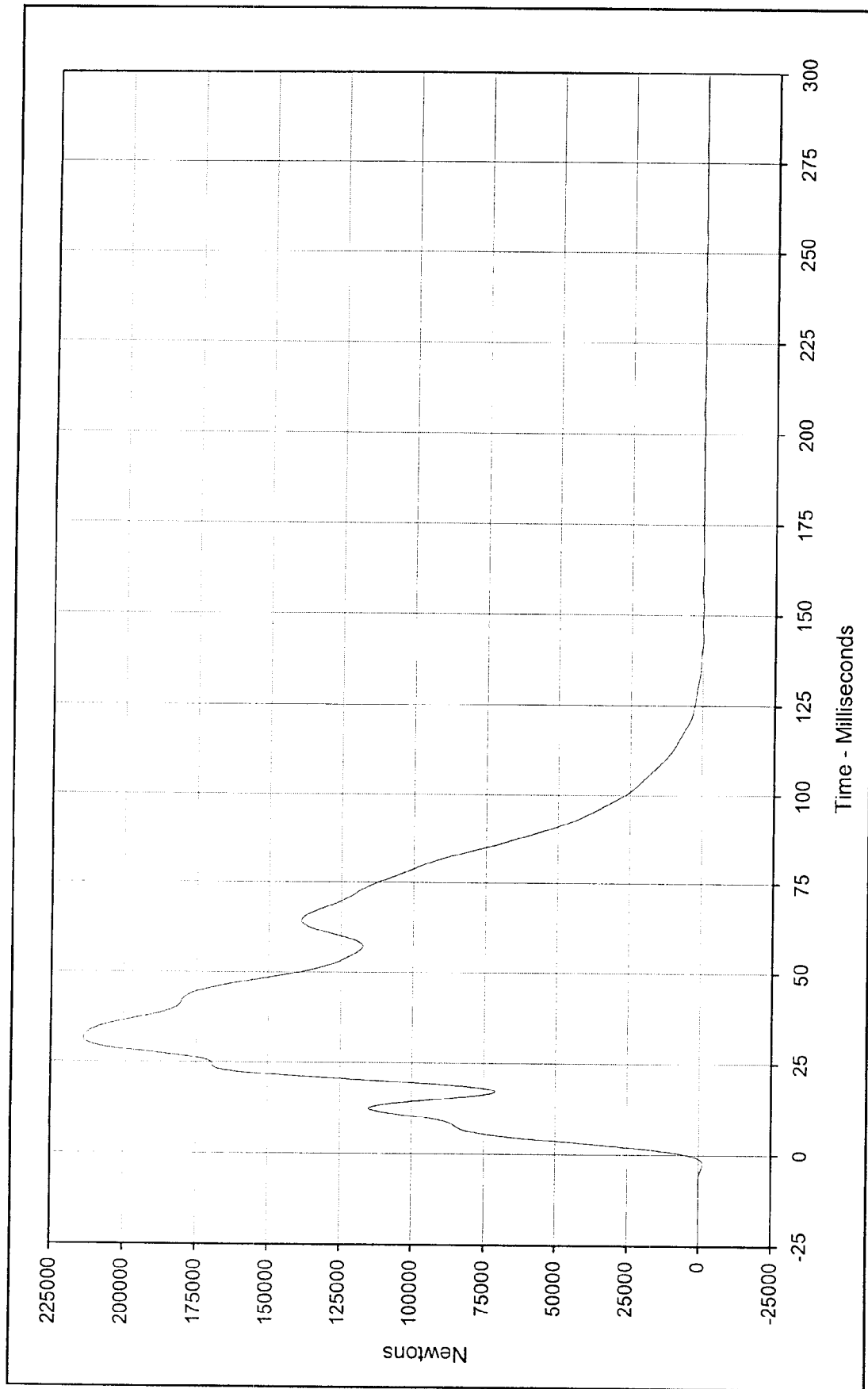
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description:	Driver Barrier Force Sum Group 1	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0304
Maximum Value:	78591.5 at 13.4 Milliseconds	Test Vehicle:	2000 Dodge Neon 4 Door Sedan	
Minimum Value:	-3336.9 at 3.2 Milliseconds			
SAE Filter Class:	60			
Date of Test:	11/10/99			
Curve Number:	SUM-001			

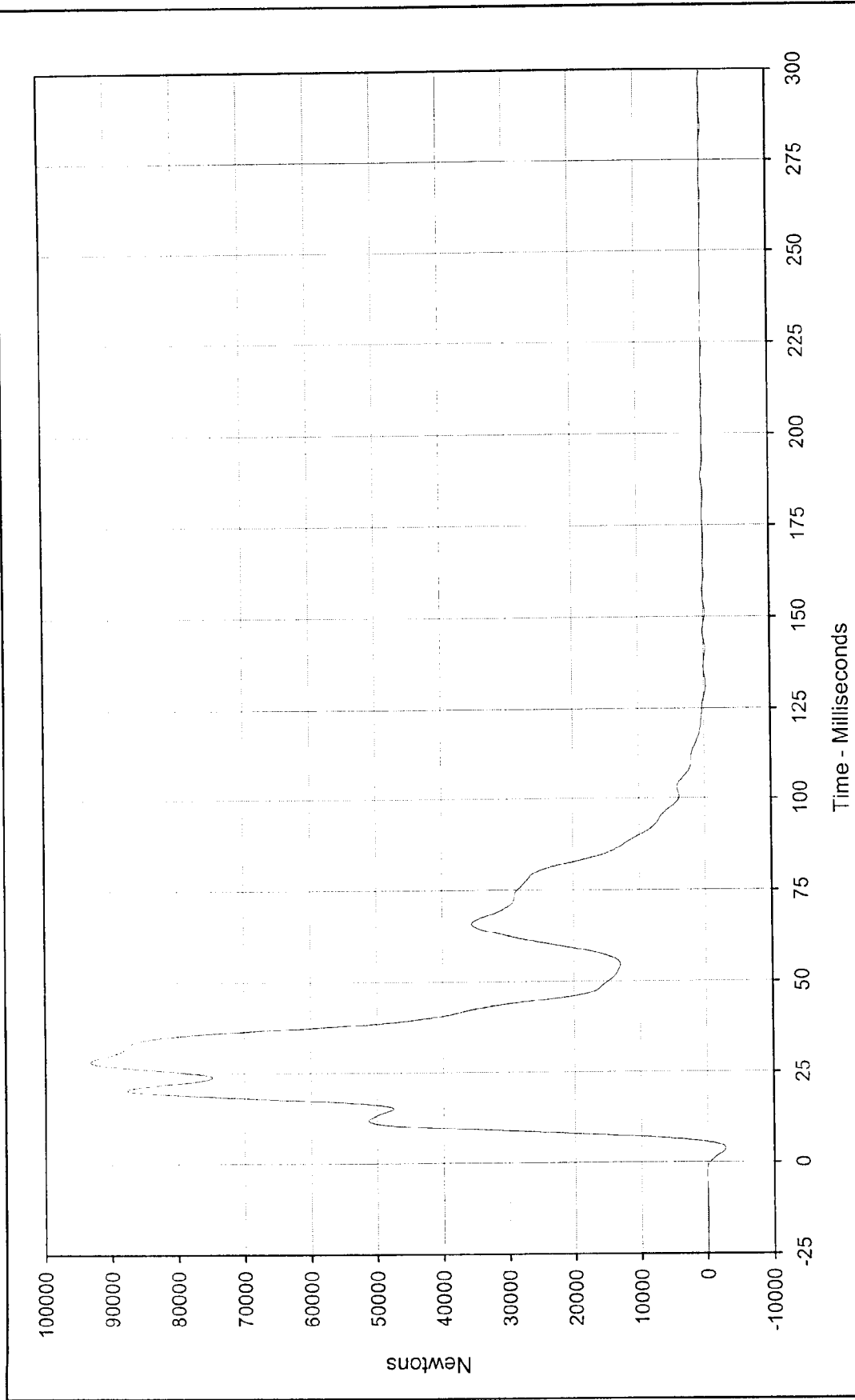




Curve Description: Driver Barrier Force Sum Group 2
 Maximum Value: 213815.9 at 31.5 Milliseconds
 Minimum Value: -227.5 at 143.3 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/10/99
 Curve Number: SUM-002

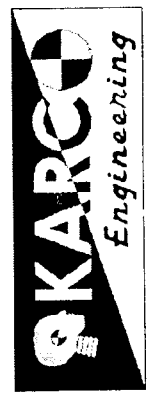
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan

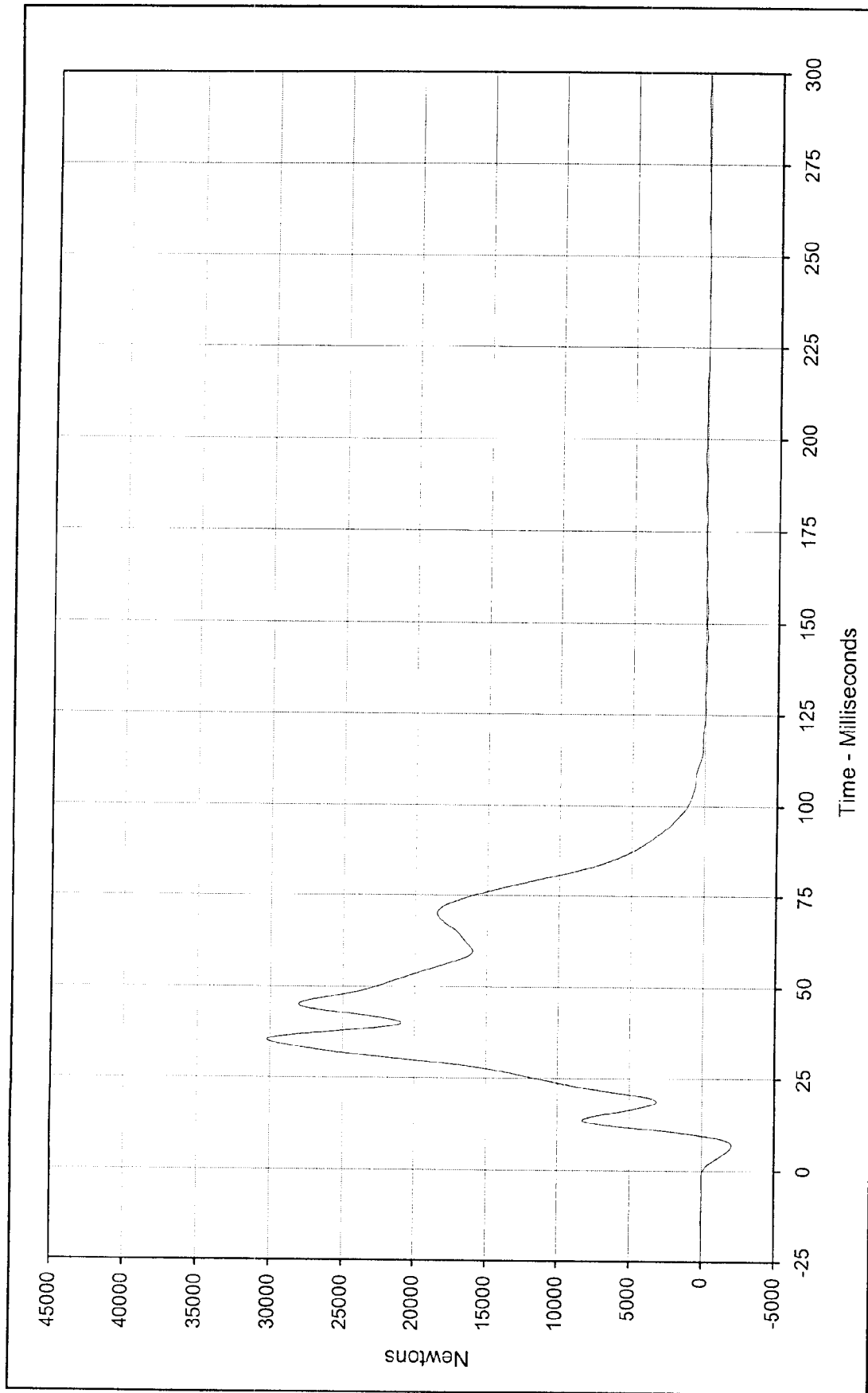




Curve Description: Driver Barrier Force Sum Group 3
 Maximum Value: 93149.8 at 28.4 Milliseconds
 Minimum Value: -2745.3 at 3.8 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/10/99
 Curve Number: SUM-003

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan

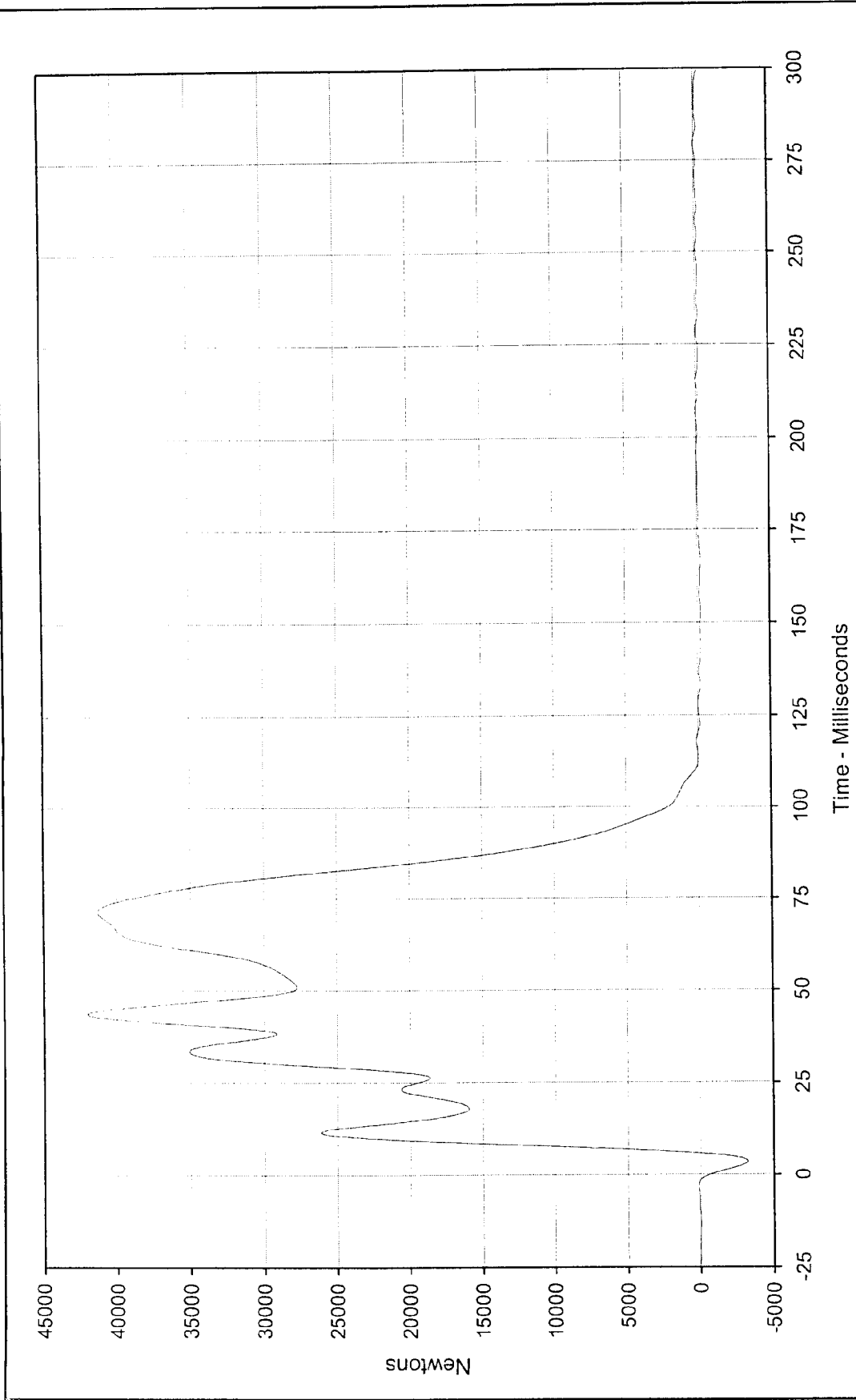




Curve Description: Driver Barrier Force Sum Group 4
 Maximum Value: 30198.5 at 35.3 Milliseconds
 Minimum Value: -2063.5 at 7.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/10/99
 Curve Number: SUM-004

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan

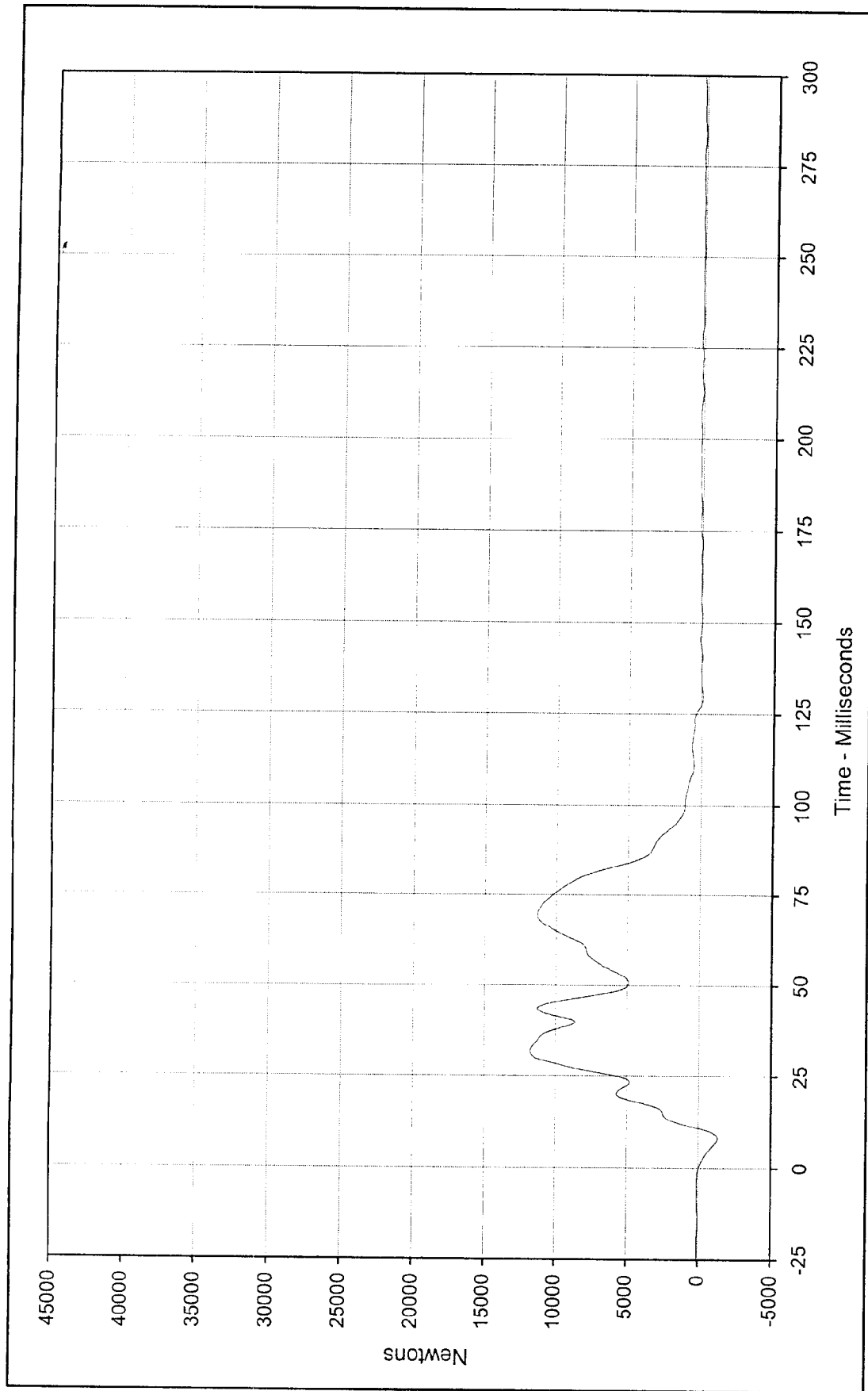




Curve Description: Driver Barrier Force Sum Group 5
 Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan

Maximum Value: 42049.3 at 43.6 Milliseconds
 Minimum Value: -3244.9 at 3.5 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/10/99
 Curve Number: SUM-005

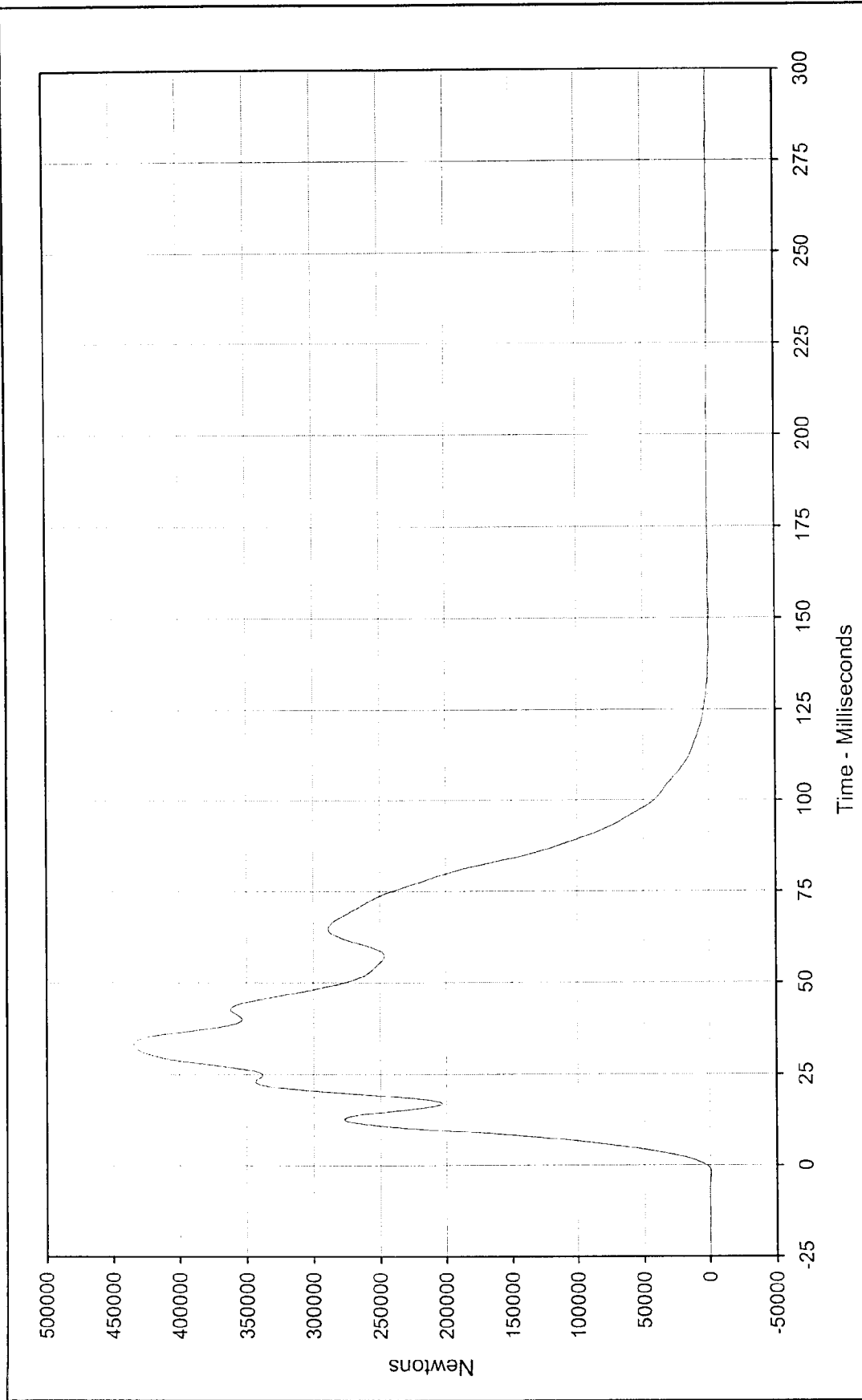




Curve Description: Driver Barrier Force Sum Group 6
 Maximum Value: 11768.5 at 31.8 Milliseconds
 Minimum Value: -1317.4 at 8.1 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/10/99
 Curve Number: SUM-006

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan





Curve Description: 2000 NHTSA 35 mph NCAP No.: MY0304

Test Program: 2000 Dodge Neon 4 Door Sedan

Driver Barrier Force Sum Total

Maximum Value: 434615.3 at 33.3 Milliseconds

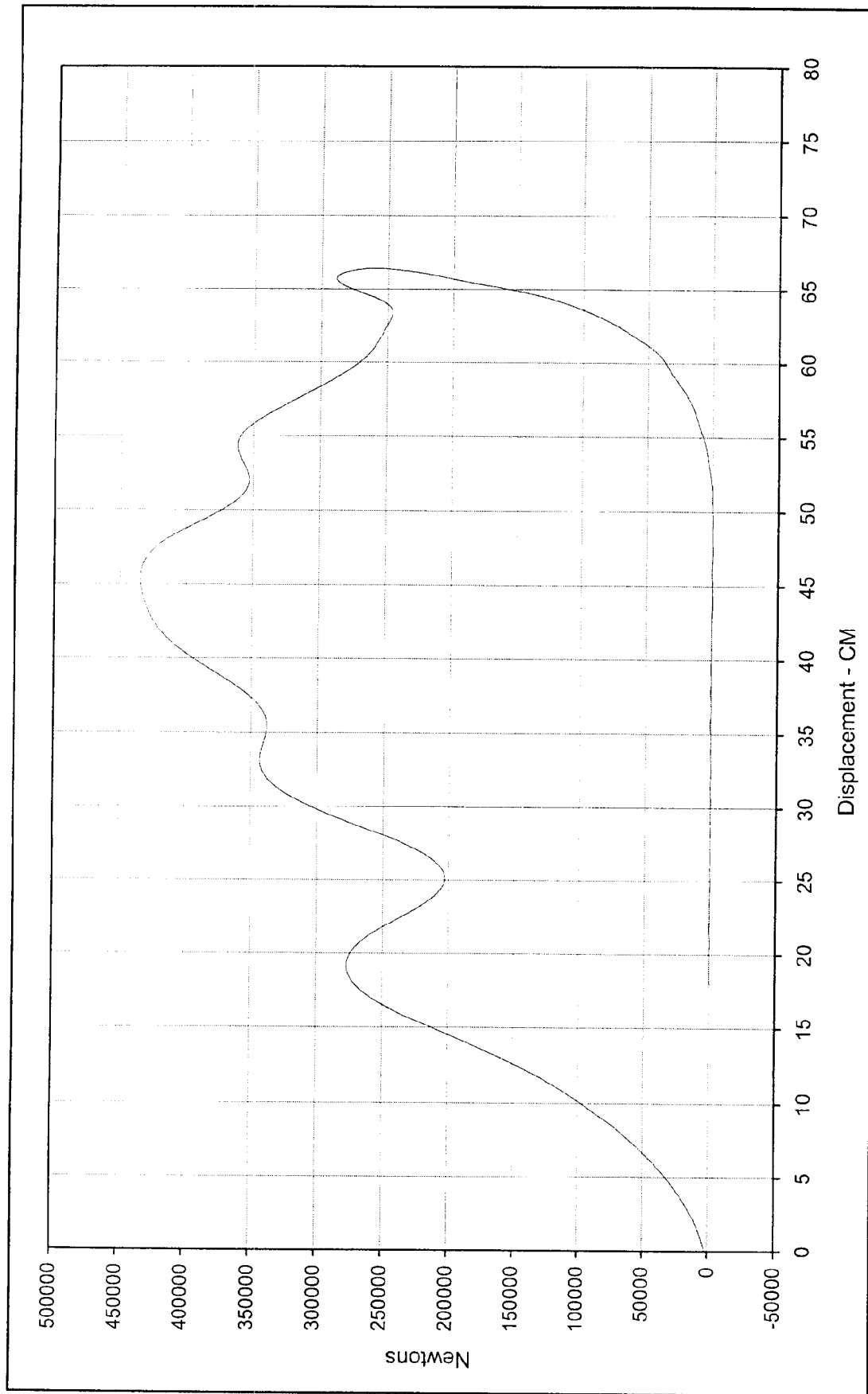
Minimum Value: -820.7 at 151.9 Milliseconds

SAE Filter Class: 60

Date of Test: 11/10/99

Curve Number: SUM-007





Curve Description: Sum Force Total vs. Dynamic Crush
 Maximum Displ.: 66.4 at 72.0 Milliseconds
 Maximum Force: 434615.3 at 33.3 Milliseconds
 Measured Energy: 167,256 joules
 Date of Test: 11/10/99
 Curve Number: XYY-001

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0304
 Test Vehicle: 2000 Dodge Neon 4 Door Sedan



BARRIER LOAD CELL SUMMARY DATA

Test Vehicle: 2000 Dodge Neon 4 Door Sedan

NHTSA No.: MY0304

Test Program: 2000 NHTSA 35 mph NCAP

Test Date: 11/10/99

BARRIER LOAD CELL PEAK FORCES

Location	Units	Max	Time	Min	Time
Barrier Force A2	Newtons	5356.4	33.9	-790.4	5.1
Barrier Force A3	Newtons	5625.8	14.0	-1803.2	18.4
Barrier Force A4	Newtons	5805.1	13.8	-4224.5	18.3
Barrier Force A5	Newtons	34591.9	12.5	-3399.6	18.5
Barrier Force A6	Newtons	47353.0	30.5	-761.6	2.4
Barrier Force A7	Newtons	26734.9	33.0	-554.6	3.3
Barrier Force A8	Newtons	2198.8	21.2	-805.9	46.1
Barrier Force A9	Newtons	1552.8	27.8	-2374.0	24.1
Barrier Force B2	Newtons	25475.4	42.7	-931.8	6.2
Barrier Force B3	Newtons	66059.7	12.2	-1469.8	2.7
Barrier Force B4	Newtons	54853.3	43.7	-107.3	143.7
Barrier Force B5	Newtons	49183.8	42.2	-43.9	152.8
Barrier Force B6	Newtons	82578.7	23.9	-126.3	0.0
Barrier Force B7	Newtons	76117.4	19.9	-1460.4	3.2
Barrier Force B8	Newtons	4633.3	29.2	-546.5	6.4
Barrier Force B9	Newtons	1576.4	19.7	-2250.3	23.7
Barrier Force C2	Newtons	24428.8	35.9	-1044.4	7.3
Barrier Force C3	Newtons	11675.3	47.7	-1025.4	6.9
Barrier Force C4	Newtons	11960.5	44.3	-1398.8	4.0
Barrier Force C5	Newtons	14589.2	72.2	-1094.8	3.0
Barrier Force C6	Newtons	17678.1	42.7	-896.4	4.5
Barrier Force C7	Newtons	11595.3	33.4	-567.8	7.1
Barrier Force C8	Newtons	0.0	0.0	0.0	0.0 *
Barrier Force C9	Newtons	1448.5	44.5	-972.9	23.9
Barrier Force Sum Group 1	Newtons	78591.5	13.4	-3336.9	3.2
Barrier Force Sum Group 2	Newtons	213815.9	31.5	-227.5	143.3
Barrier Force Sum Group 3	Newtons	93149.8	28.4	-2745.3	3.8
Barrier Force Sum Group 4	Newtons	30198.5	35.3	-2063.5	7.0
Barrier Force Sum Group 5	Newtons	42049.3	43.6	-3244.9	3.5
Barrier Force Sum Group 6	Newtons	11768.5	31.8	-1317.4	8.1
Barrier Force Sum Total	Newtons	434615.3	33.3	-820.7	151.9

* Channel Failed, No Data

Barrier Load cells A1,B1,C1, and D1 through D9 (12 locations) were not recorded.

APPENDIX D
INSTRUMENTATION DATA CHANNEL ASSIGNMENTS

35 mph Frontal Impact
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 35
11/10/99
2000 Dodge Neon 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO	DESCRIPTION	MFR	MODEL	UNITS
1	HEAD, PRIMARY	X	GPAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
2	HEAD, PRIMARY	Y	GPAC002	Accel., 1/2 bridge	Endevco	7264-2000	G
3	HEAD, PRIMARY	Z	GPAC003	Accel., 1/2 bridge	Endevco	7264-2000	G
4	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	Nm
11	NECK MOMENT	Y	GPUN01MY	Load cell, six axis neck	R. A. Denton	1716A	Nm
12	NECK MOMENT	Z	GPUN01MZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
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	GPCP002	Rotary Pot Chest	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	KEFF003	Load cell, Femur	R.A. Denton	2121	N
24	RIGHT FEMUR FORCE	Z	KEFF004	Load cell, Femur	R.A. Denton	2121	N

35 mph Frontal Impact
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 35
11/10/99
2000 Dodge Neon 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
25	UP. TIBIA LEFT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
26	UP. TIBIA LEFT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
27	UP. TIBIA RIGHT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
28	UP. TIBIA RIGHT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
29	LWR. TIBIA LEFT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
30	LWR. TIBIA LEFT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
31	LWR. TIBIA LEFT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
32	LWR. TIBIA RIGHT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
33	LWR. TIBIA RIGHT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
34	LWR. TIBIA RIGHT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
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	KELC003	Load cell, Seat belt	Lebow	3371	N
42	SHOULDER BELT FORCE	X	KELC004	Load cell, Seat belt	Lebow	3371	N
43	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	MM
44	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

35 mph Frontal Impact
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 34
11/10/99
2000 Dodge Neon 4 Door Sedan

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	Nm
55	NECK MOMENT	Y	GPUN02MY	Load cell, six axis neck	R. A. Denton	1716A	Nm
56	NECK MOMENT	Z	GPUN02MZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
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	GPCP001	Rotary Pot Chest	Servo	14CBI	MM
64	PELVIS, PRIMARY	X	KEAC019	Accel., 1/2 bridge	Endevco	7264-200	G
65	PELVIS, PRIMARY	Y	KEAC020	Accel., 1/2 bridge	Endevco	7264-200	G
66	PELVIS, PRIMARY	Z	KEAC021	Accel., 1/2 bridge	Endevco	7264-200	G
67	LEFT FEMUR FORCE	Z	KEFF001	Load cell, Femur	R.A. Denton	2121	N
68	RIGHT FEMUR FORCE	Z	KEFF002	Load cell, Femur	R.A. Denton	2121	N

35 mph Frontal Impact
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 34
11/10/99
2000 Dodge Neon 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
69	UP. TIBIA LEFT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
70	UP. TIBIA LEFT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
71	UP. TIBIA RIGHT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
72	UP. TIBIA RIGHT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
73	LWR. TIBIA LEFT MOM.	X	GPUT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
74	LWR. TIBIA LEFT MOM.	Y	GPUT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
75	LWR. TIBIA LEFT FORCE	Z	GPUT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
76	LWR. TIBIA RIGHT MOM.	X	GPUT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
77	LWR. TIBIA RIGHT MOM.	Y	GPUT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
78	LWR. TIBIA RIGHT FORCE	Z	GPUT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
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	KELC001	Load cell, Seat belt	Lebow	3371	N
86	SHOULDER BELT FORCE	X	KELC002	Load cell, Seat belt	Lebow	3371	N
87	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celeco	PTX101-0030	CM
88	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

35 mph Frontal Impact
Instrumentation Data Channel Assignments
Vehicle Accelerometers and Reference Channel
11/10/99
2000 Dodge Neon 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
89	Left Rear X-Member (Pri.)	X	KEVA002	Accel., Pre-Amp	I.C. S/Karco	3031-500	G
90	Right Rear X-Member (Pri.)	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	KEVA007	Accel., Vehicle block	I.C. Sensor	3031-500	G
93	Left Brake Caliper	X	KEVA008	Accel., Vehicle block	I.C. Sensor	3031-500	G
94	Right Brake Caliper	X	KEVA003	Accel., Vehicle block	I.C. Sensor	3031-500	G
95	Instrument Panel	X	KEVA005	Accel., Vehicle block	I.C. Sensor	3031-500	G
96	Left Rear X-Member (Rednt.)	X	KEVA011	Accel., Vehicle block	I.C. Sensor	3031-200	G
97	ZERO REFERENCE	N/A	N/A	N/A	N/A	N/A	N/A

35 mph Frontal Impact
Instrumentation Data Channel Assignments
Rigid Load Cell Barrier
11/10/99
2000 Dodge Neon 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
98	BARRIER FORCE A1	X	BARRIER	Not Used	N/A	N/A	N/A
99	BARRIER FORCE A2	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
100	BARRIER FORCE A3	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
101	BARRIER FORCE A4	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
102	BARRIER FORCE A5	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
103	BARRIER FORCE A6	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
104	BARRIER FORCE A7	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
105	BARRIER FORCE A8	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
106	BARRIER FORCE A9	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
107	BARRIER FORCE B1	X	BARRIER	Not Used	N/A	N/A	N/A
108	BARRIER FORCE B2	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
109	BARRIER FORCE B3	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
110	BARRIER FORCE B4	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
111	BARRIER FORCE B5	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
112	BARRIER FORCE B6	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
113	BARRIER FORCE B7	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
114	BARRIER FORCE B8	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
115	BARRIER FORCE B9	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N

35 mph Frontal Impact
Instrumentation Data Channel Assignments
Rigid Load Cell Barrier
11/10/99
2000 Dodge Neon 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
116	BARRIER FORCE C1	X	BARRIER	Not Used	N/A	N/A	N/A
117	BARRIER FORCE C2	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
118	BARRIER FORCE C3	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
119	BARRIER FORCE C4	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
120	BARRIER FORCE C5	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
121	BARRIER FORCE C6	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
122	BARRIER FORCE C7	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
123	BARRIER FORCE C8	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
124	BARRIER FORCE C9	X	BARRIER	Load Cell, LCB	Lebow	1220-FS	N
125	BARRIER FORCE D1	X	BARRIER	Not Used	N/A	N/A	N/A
126	BARRIER FORCE D2	X	BARRIER	Not Used	N/A	N/A	N/A
127	BARRIER FORCE D3	X	BARRIER	Not Used	N/A	N/A	N/A
128	BARRIER FORCE D4	X	BARRIER	Not Used	N/A	N/A	N/A
129	BARRIER FORCE D5	X	BARRIER	Not Used	N/A	N/A	N/A
130	BARRIER FORCE D6	X	BARRIER	Not Used	N/A	N/A	N/A
131	BARRIER FORCE D7	X	BARRIER	Not Used	N/A	N/A	N/A
132	BARRIER FORCE D8	X	BARRIER	Not Used	N/A	N/A	N/A
133	BARRIER FORCE D9	X	BARRIER	Not Used	N/A	N/A	N/A

APPENDIX E
DUMMY CALIBRATION DATA



Hybrid III Calibration Data Sheet

50TH Percentile Male

Left Knee Impact Test

ATD Serial No.: 034

Part Serial No.: n/a

Test I.D.: RK09B

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	2.073 to 2.134	2.092	Pass
Peak Probe Force	Newtons	4715 to 5782	5684.1	Pass
Overall Test Results				Pass

Laboratory Technician

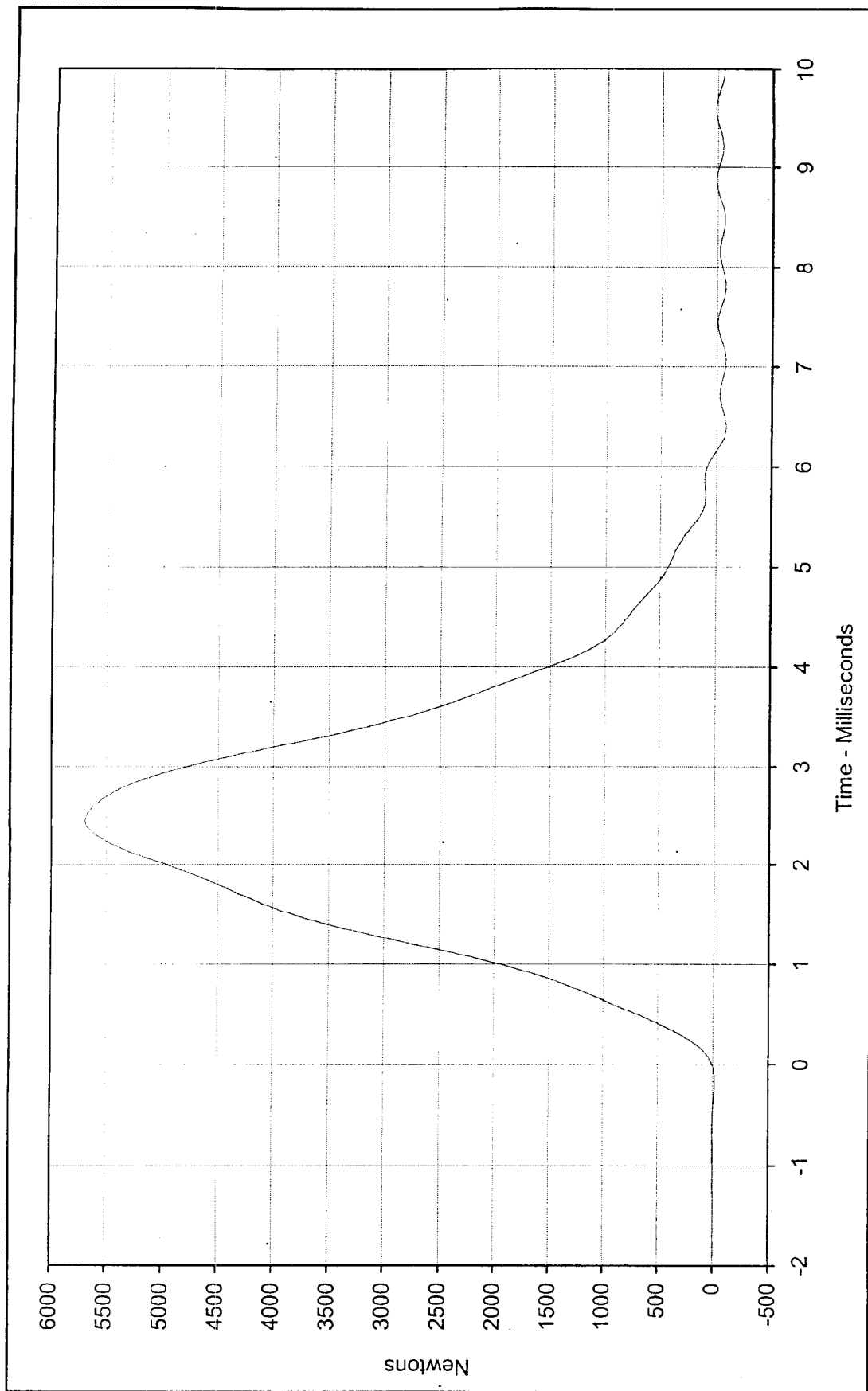
Approved By

September 28, 1999

Test Date

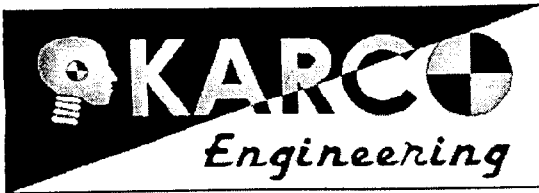
9/29/99

Date



Curve Description:	Testing Program	Hybrid III Left Knee Impact Test
Maximum Value: 5684.1	Part S/N: n/a	Test I.D.: RK09B
Minimum Value: -87.7		
SAE Filter Class: 600		
Date of Test: 9/28/99		
ATD Serial No.: 034		





Hybrid III Calibration Data Sheet

50TH Percentile Male

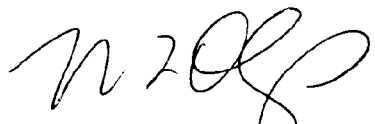
Right Knee Impact Test

ATD Serial No.: 034

Part Serial No.: n/a

Test I.D.: LK09A

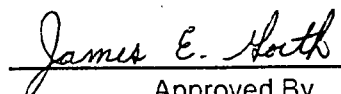
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	2.073 to 2.134	2.097	Pass
Peak Probe Force	Newtons	4715 to 5782	5611.8	Pass
Overall Test Results				Pass



Laboratory Technician

September 28, 1999

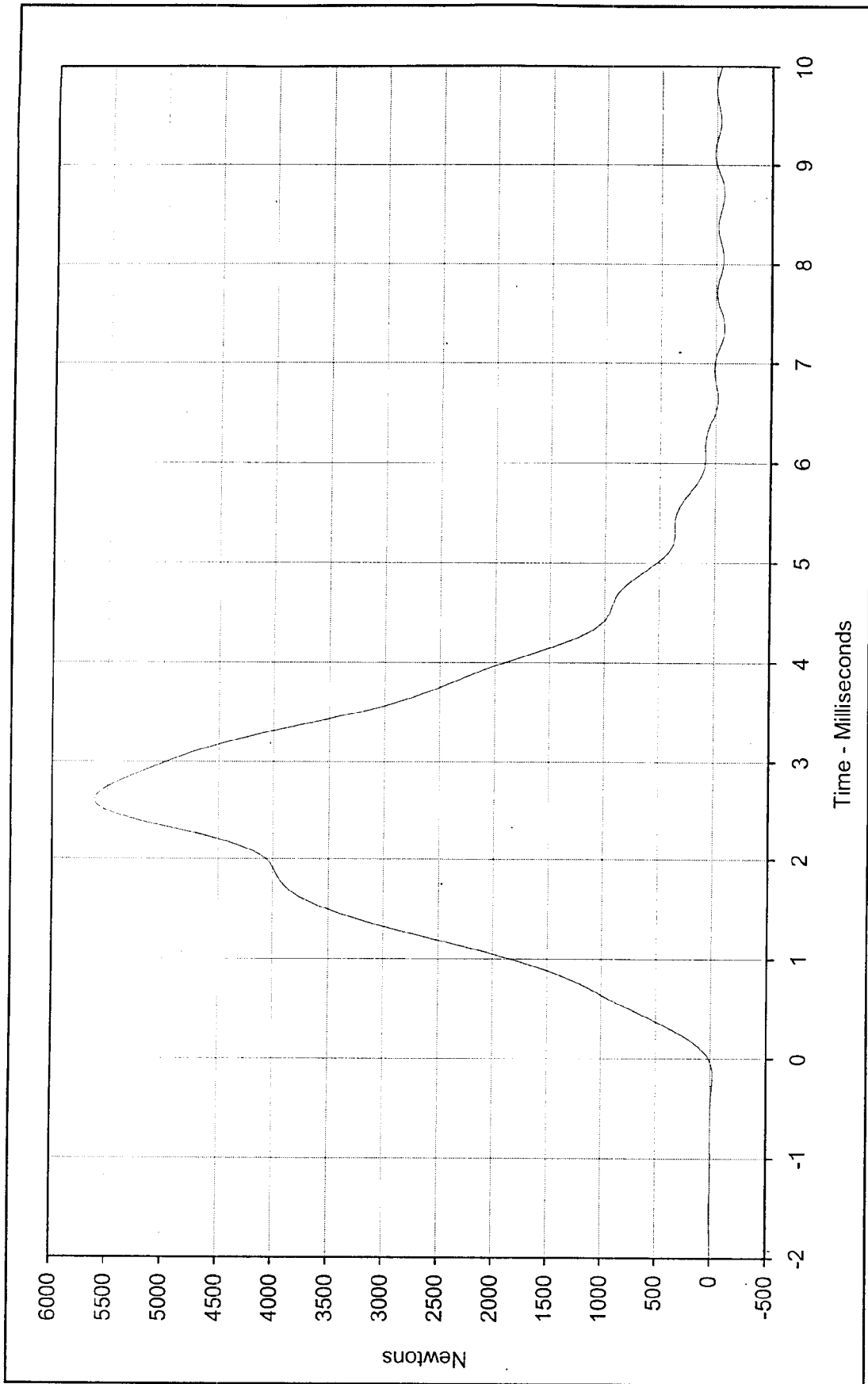
Test Date



Approved By

9/29/99

Date



Curve Description: Hybrid III Right Knee Impact Test
 Testing Program: Part S/N: n/a Test I.D.: LK09A

Probe Force
 Maximum Value: 5611.8 at 2.6 Milliseconds
 Minimum Value: -72.8 at 7.4 Milliseconds
 SAE Filter Class: 600
 Date of Test: 9/28/99
 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.: HD09A

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	259.2	Pass
Peak Lateral Acceleration	G's	≤15.0	8.4	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

Laboratory Technician

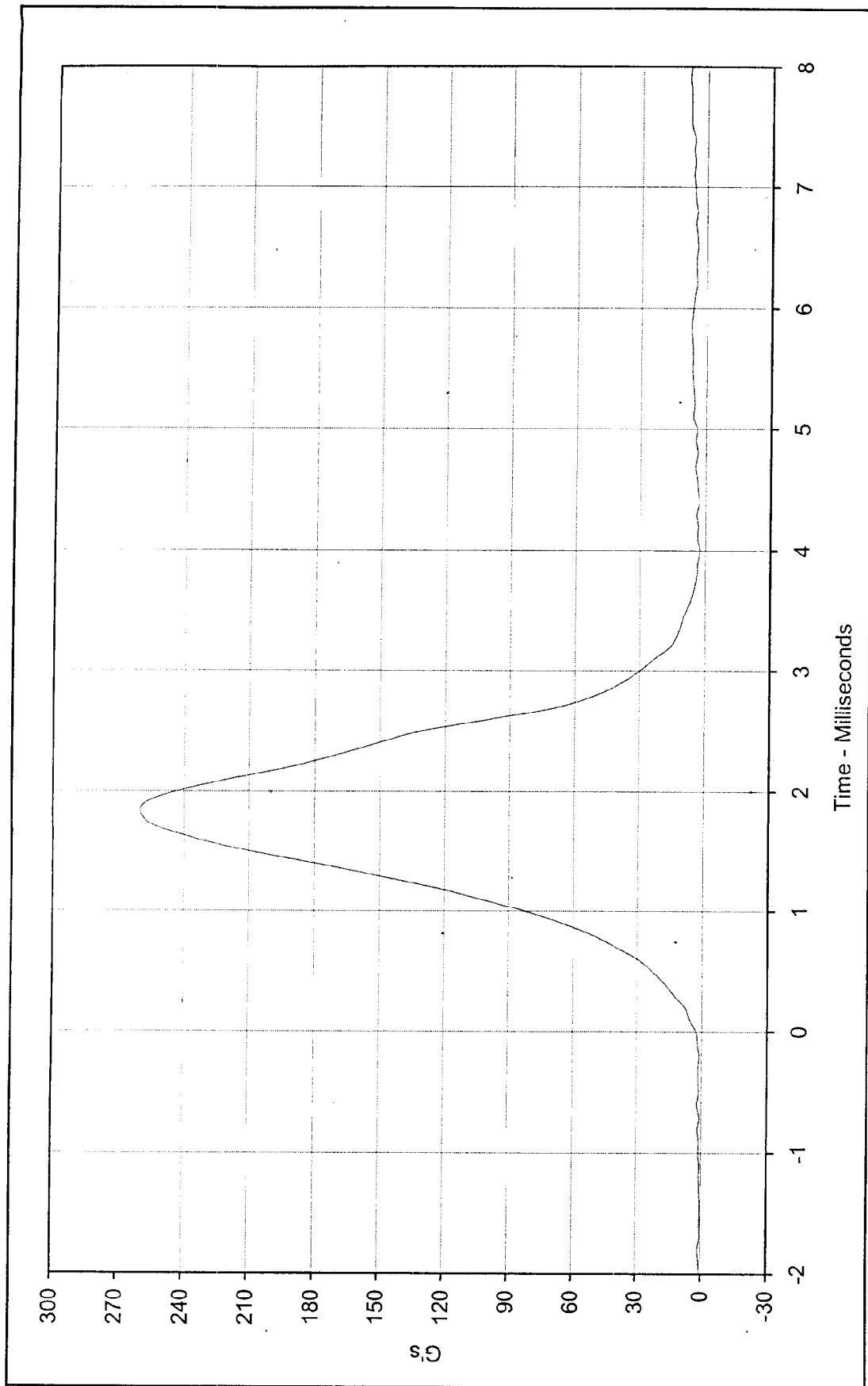
October 1, 1999

Test Date

Approved By

10/2/99

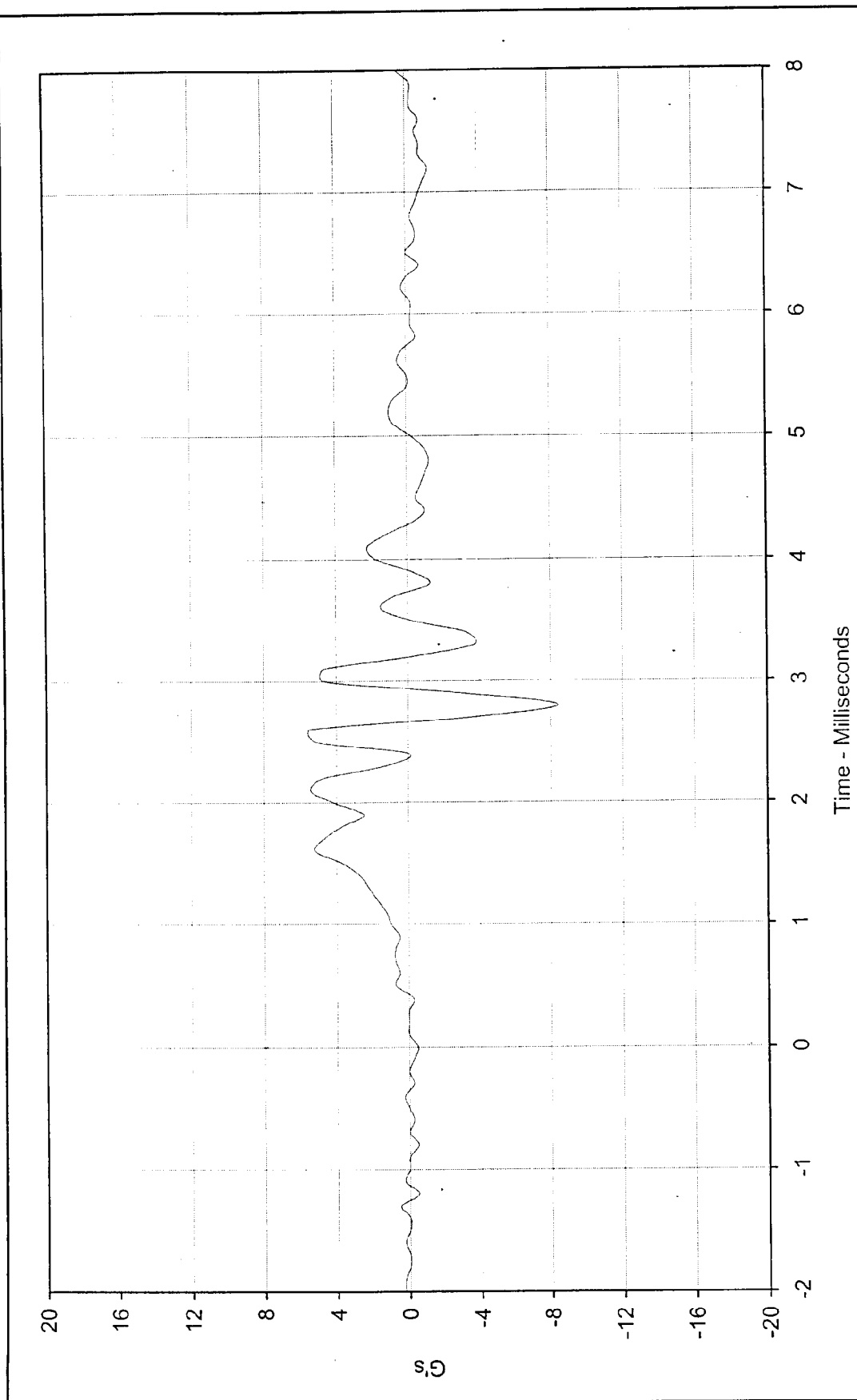
Date



Testing Program: Hybrid III Head Drop Calibration (Male)
 Test Information: S/N of Part: n/a Test I.D.: HD09A



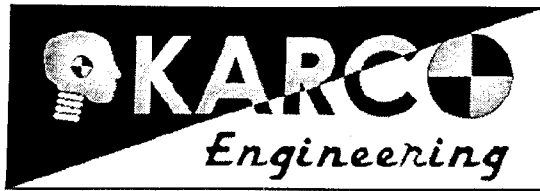
Curve Description: Head Resultant Acceleration
 Maximum Value: 259.2 at 1.8 Milliseconds
 Minimum Value: 0.6 at -1.7 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 10/1/99
 ATD Serial No.: 034



Testing Program Hybrid III Head Drop Calibration (Male)
 Test Information: S/N of Part: n/a Test I.D.: HD09A



Curve Description: Head Acceleration Y Axis
 Maximum Value: 5.4 at 2.1 Milliseconds
 Minimum Value: -8.4 at 2.8 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 10/1/99
 ATD Serial No.: 034



Hybrid III Calibration Data Sheet

50TH Percentile Male

Thorax Impact Test

ATD Serial No.: 034

Part Serial No.: N/A

Test I.D.: CH01C

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	20.9	Pass
Laboratory Relative Humidity	%	10 to 70	33	Pass
Probe Velocity	m/s	6.58 to 6.82	6.75	Pass
Peak Probe Force	Newtons	5159 to 5893	5275	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	7.10	Pass
Internal Hysteresis	%	69 to 85	75.7	Pass
Overall Test Results				Pass

Laboratory Technician

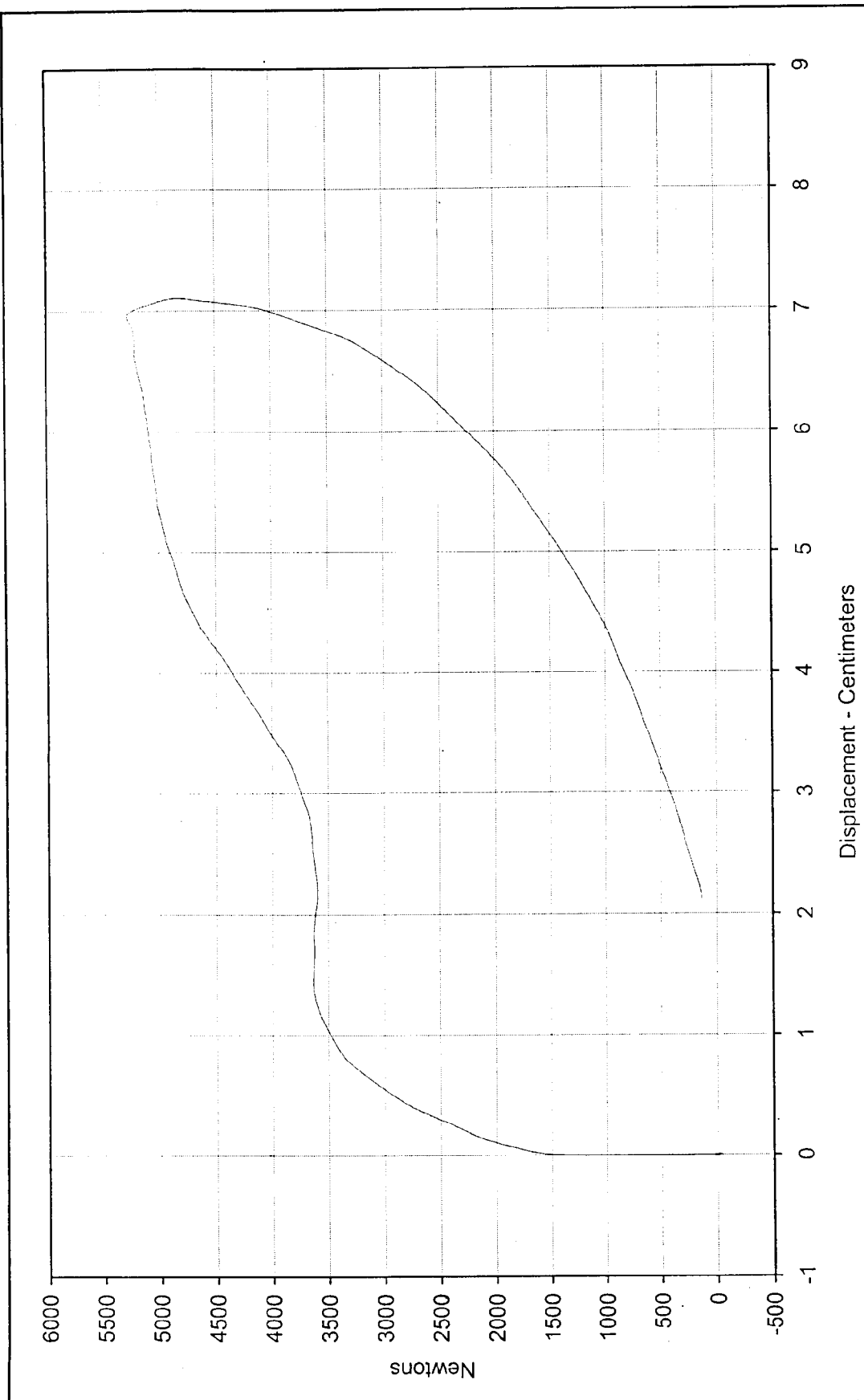
October 6, 1999

Test Date

Approved By

10/7/99

Date



Curve Description: Probe Force vs. Chest Displacement
 Testing Program: Hybrid III Thorax Impact Test
 Probe Force: 5275.1 Newtons
 Test Information: S/N of Part: N/A Test I.D.: CH01C
 Chest Displ.: 7.10 Centimeters

SAE Filter Class: 180
 Date of Test: 10/6/99
 ATD Serial No.: 034





Hybrid III Calibration Data Sheet

50TH Percentile Male

Neck Flexion Test

ATD Serial No.: 034Part Serial No.: n/aTest I.D.: NF09A

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity		%	10 to 70	40	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.94	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.6	Pass
	20 Msec.	G's	17.6 to 22.6	21.0	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	39.6	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	74.2	Pass
	Time	Msec.	57.0 to 64.0	61.9	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	121.9	Pass
Moment About Occipital Condyle	Maximum	N • m	84.1 to 108.5	86.4	Pass
	Time	Msec.	47.0 to 58.0	57.8	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	101.8	Pass
Overall Test Results					Pass

Laboratory Technician

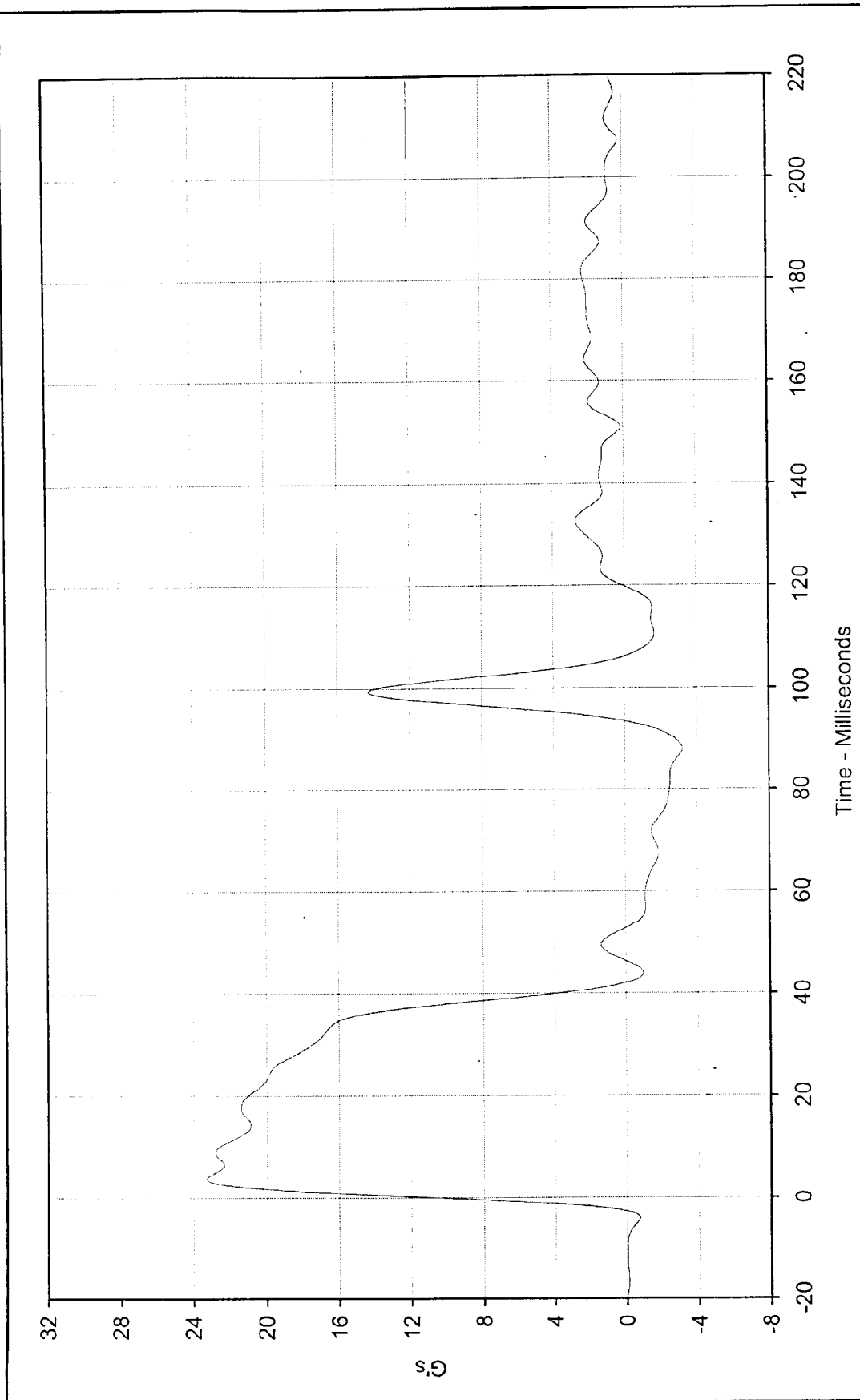
September 29, 1999

Test Date

Approved By

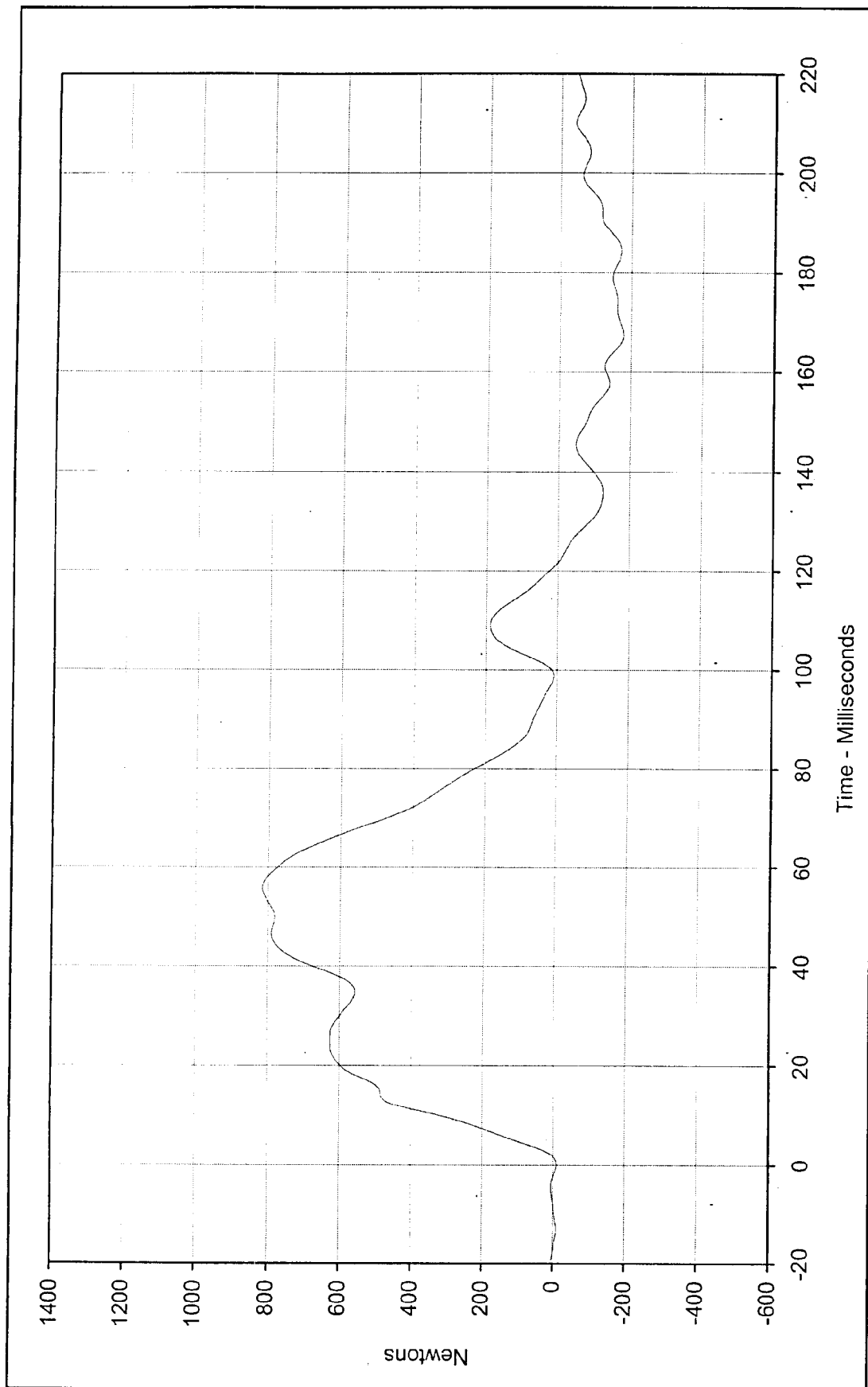
9/30/99

Date



Curve Description: Hybrid III Neck Flexion Test (Male)
 Maximum Value: 23.3 at 3.6 Milliseconds
 Minimum Value: -3.2 at 88.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 9/29/99
 ATD Serial No.: 034





Curve Description: Neck Force X

Maximum Value: 816.3 at 55.8 Milliseconds

Minimum Value: -178.8 at 167.3 Milliseconds

SAE Filter Class: 60

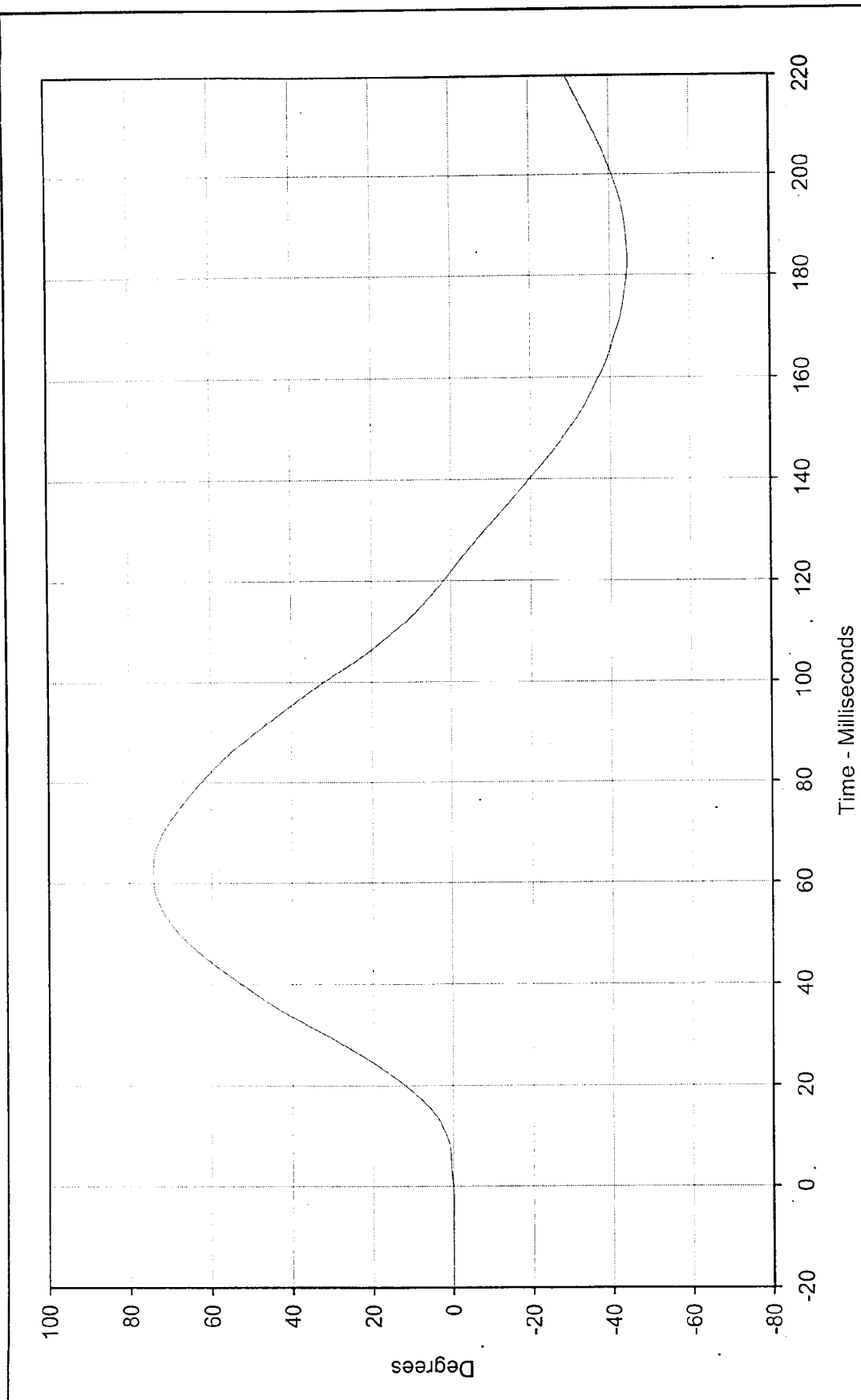
Date of Test: 9/29/99

ATD Serial No.: 034

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NF09A

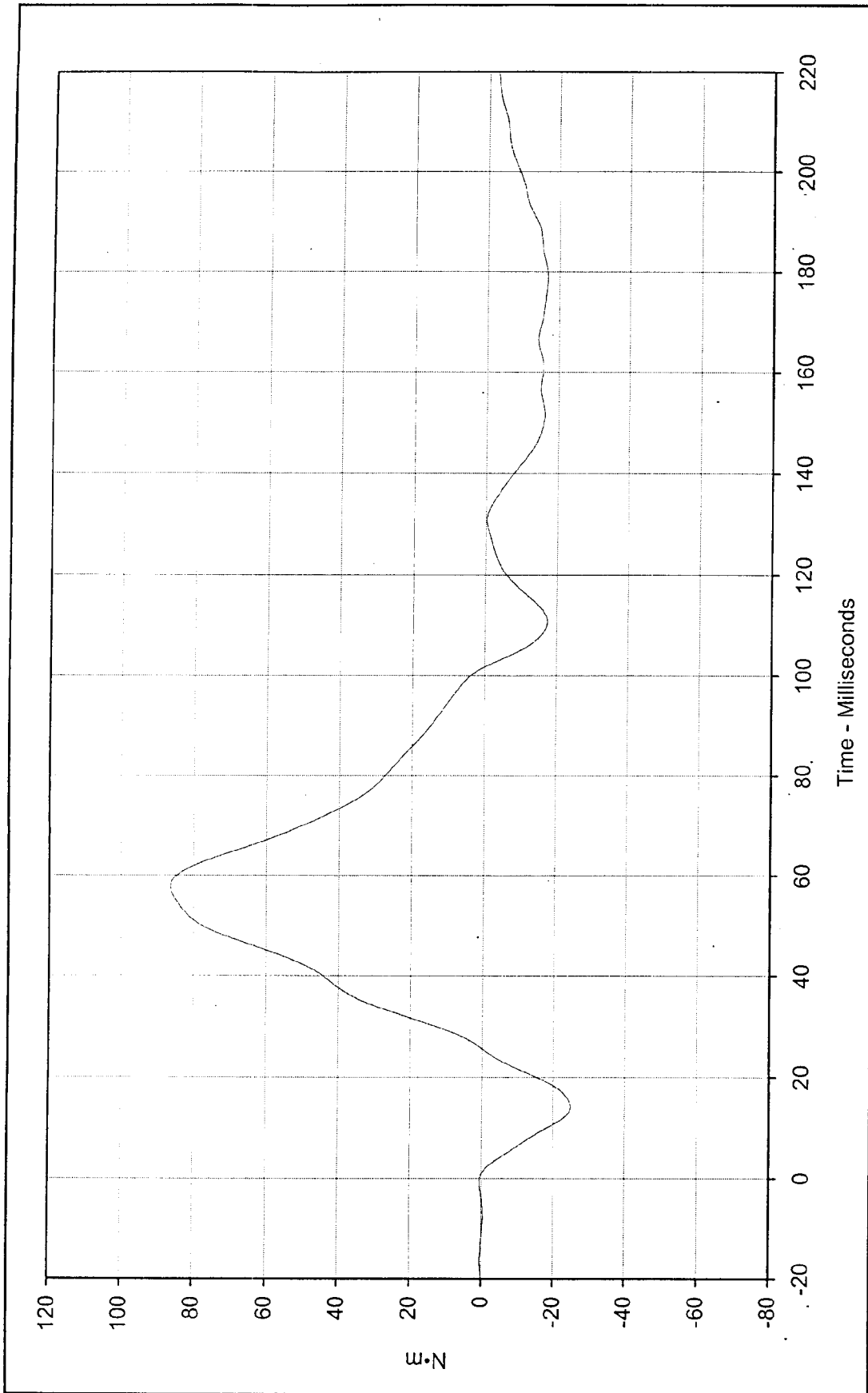




Testing Program: Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NF09A

Curve Description: "D" Plane Rotation
 Maximum Value: 74.2 at 61.9 Milliseconds
 Minimum Value: -44.4 at 182.9 Milliseconds
 SAE Filter Class: 60
 Date of Test: 9/29/99
 ATD Serial No.: 034





Curve Description: Moment About Occipital Condyles

Maximum Value: 86.4 at 57.8 Milliseconds

Minimum Value: -24.9 at 14.0 Milliseconds

SAE Filter Class: 60

Date of Test: 9/29/99

ATD Serial No.: 034

Testing Program Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NF09A





Hybrid III Calibration Data Sheet

50TH Percentile Male

Neck Extension Test

ATD Serial No.: 034Part Serial No.: n/aTest I.D.: NE09A

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity		%	10 to 70	36	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.13	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	20.1	Pass
	20 Msec.	G's	14.0 to 19.0	18.4	Pass
	30 Msec.	G's	11.0 to 16.0	15.9	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.9	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	45.4	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	96.4	Pass
	Time	Msec.	72.0 to 82.0	73.4	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	155.0	Pass
Moment About Occipital Condyle	Maximum	N • m	-52.9 to- 79.9	-70.9	Pass
	Time	Msec.	65.0 to 79.0	67.7	Pass
Negative Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	141.3	Pass
Overall Test Results					Pass

Laboratory Technician

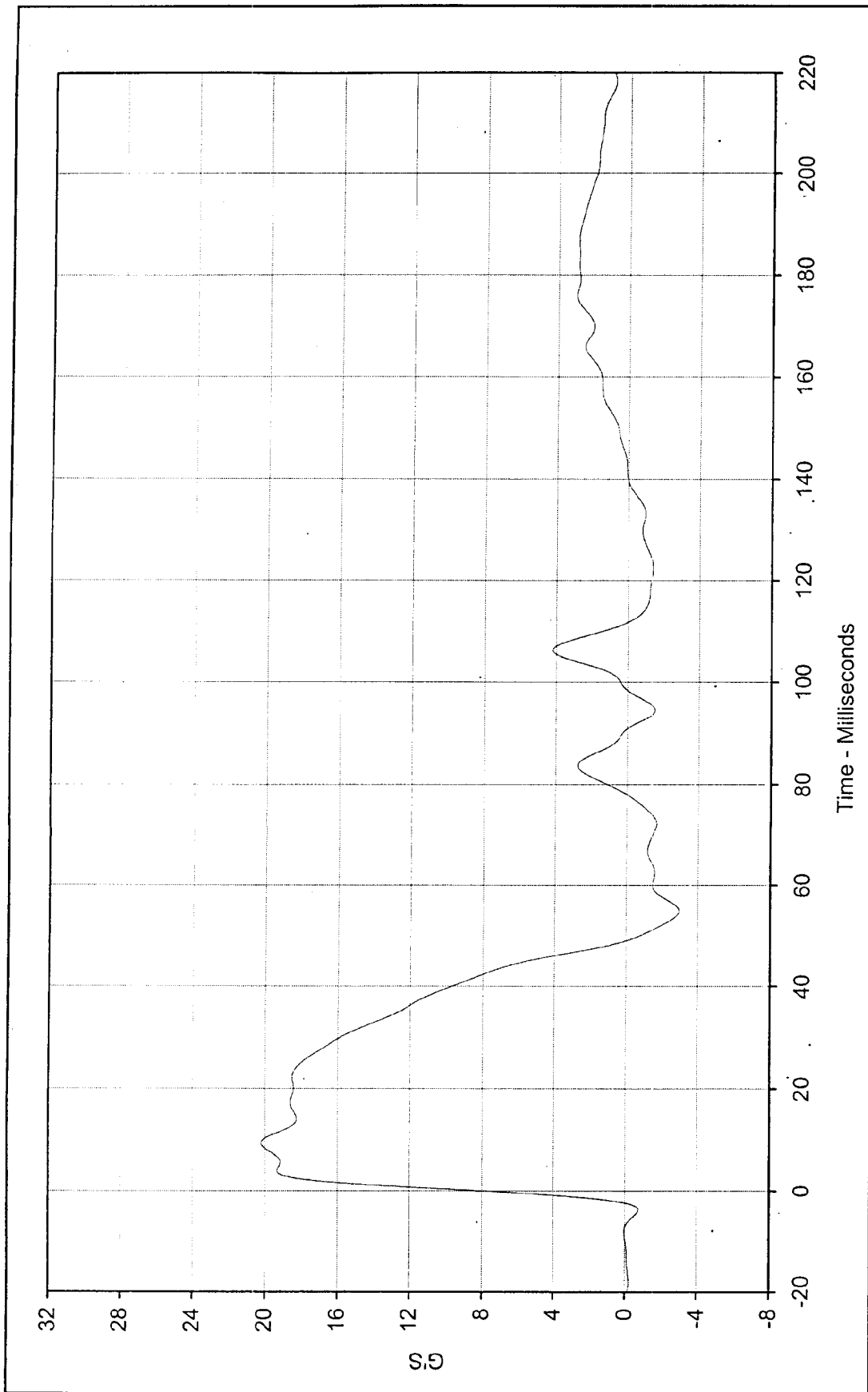
September 28, 1999

Test Date

Approved By

9/29/99

Date



Curve Description: Pendulum Deceleration

Maximum Value: 20.2 at 9.3 Milliseconds

Minimum Value: -3.0 at 54.8 Milliseconds

SAE Filter Class: 60

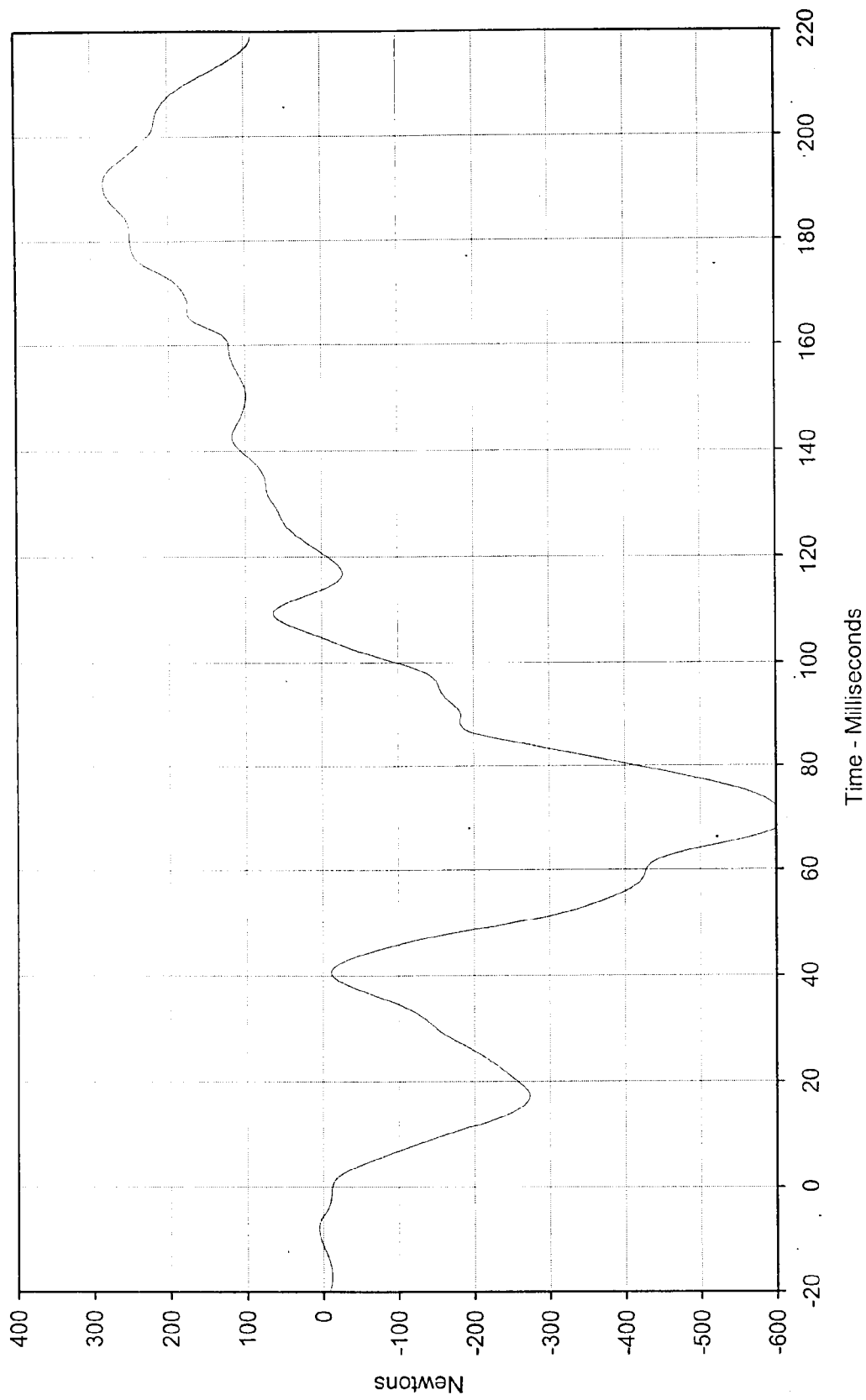
Date of Test: 9/28/99

ATD Serial No.: 034

Testing Program: Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NE09A





Testing Program Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NE09A

Curve Description: Neck Force X
Maximum Value: 283.6 at 190.9 Milliseconds

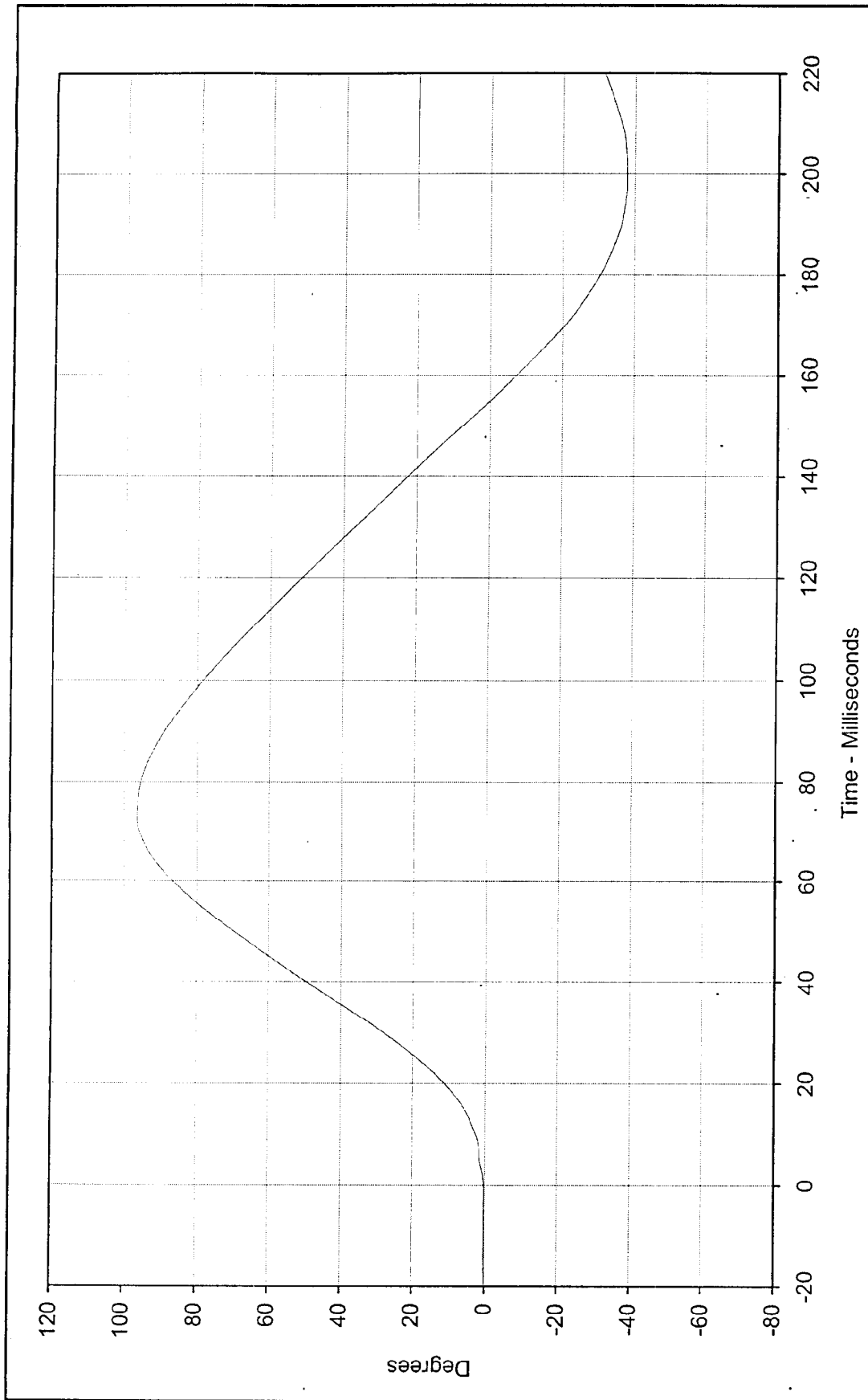
Minimum Value: -614.7 at 69.8 Milliseconds

SAE Filter Class: 60

Date of Test: 9/28/99

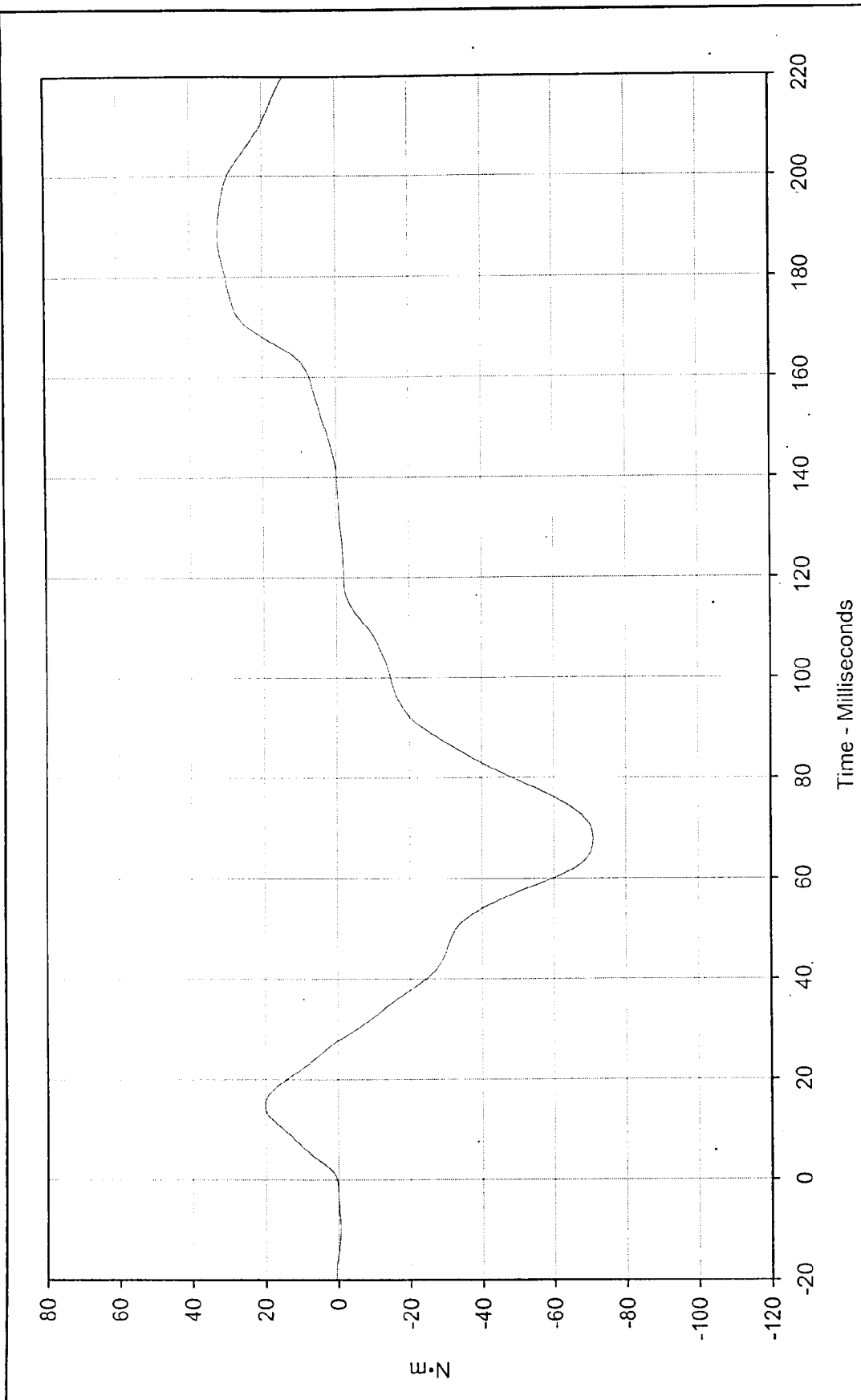
ATD Serial No.: 034





Curve Description:	"D" Plane Rotation	Testing Program:	Hybrid III Neck Extension Test (Male)
Maximum Value:	96.4 at 73.4 Milliseconds	Test Information:	S/N of Part: n/a Test I.D.: NE09A
Minimum Value:	-37.8 at 198.9 Milliseconds		
SAE Filter Class:	60		
Date of Test:	9/28/99		
ATD Serial No.:	034		





Curve Description: Moment About Occipital Condyles

Maximum Value: 32.3 at 188.5 Milliseconds

Minimum Value: -70.9 at 67.7 Milliseconds

SAE Filter Class: 60

Date of Test: 9/28/99

ATD Serial No.: 034

Testing Program Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NE09A





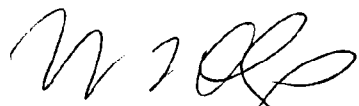
Hybrid III Calibration Data Sheet

50TH Percentile Male

External Measurements

ATD Serial No.: 034Part Serial No.: N/ATest I.D.: N/A

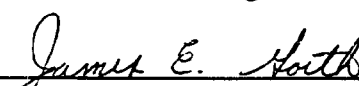
External Measurement Data				
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory temperature	°C	20.4 to 22.1	20.9	Pass
Laboratory relative humidity	%	10 to 70	43	Pass
A - Total sitting height	mm	878.8 to 889.0	880.0	Pass
B - Shoulder pivot height	mm	505.5 to 520.7	515.0	Pass
C - "H" point height	mm	83.8 to 88.9	87.1	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	92.0	Pass
F - Thigh clearance	mm	139.7 to 154.9	153.0	Pass
G - Elbow back to wrist pivot	mm	289.6 to 304.8	300.5	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	335.0	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	603.1	Pass
L - Popliteal length	mm	429.3 to 454.7	451.0	Pass
M - Knee pivot height	mm	485.1 to 500.4	490.0	Pass
N - Buttock popliteal length	mm	452.1 to 477.5	476.0	Pass
O - Chest depth	mm	213.4 to 228.6	225.0	Pass
P - Foot length	mm	251.5 to 266.7	255.0	Pass
V - Shoulder breadth	mm	421.6 to 436.9	430.0	Pass
W - Foot breadth	mm	91.4 to 106.7	103.2	Pass
Y - Chest circumference	mm	970.3 to 1000.8	980.3	Pass
Z - Waist circumference	mm	835.7 to 866.1	851.0	Pass
AA - Location for chest circumference	mm	429.3 to 434.3	430.0	Pass
BB - Location for waist circumference	mm	226.1 to 231.1	229.0	Pass
Overall Test Results				Pass



Laboratory Technician

October 9, 1999

Test Date



Approved By

10/10/99

Date



Hybrid III Calibration Data Sheet

50TH Percentile Male

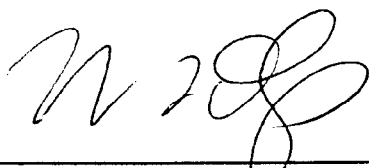
Left Knee Impact Test

ATD Serial No.: 035

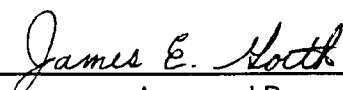
Part Serial No.: n/a

Test I.D.: LK09C

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	2.073 to 2.134	2.094	Pass
Peak Probe Force	Newtons	4715 to 5782	5523.6	Pass
Overall Test Results				Pass



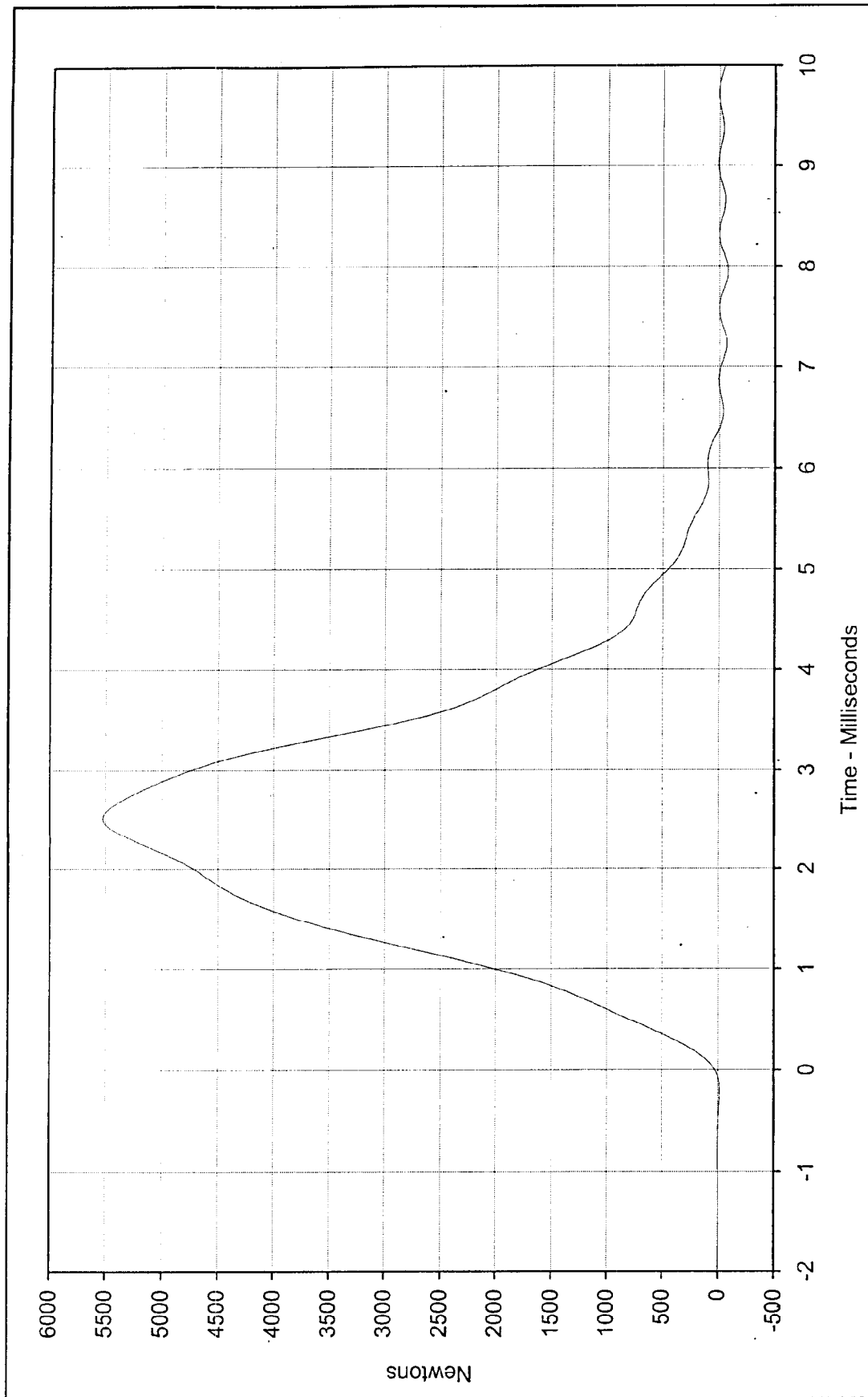
Laboratory Technician



Approved By

September 28, 1999
Test Date

9/29/99
Date



Curve Description: Testing Program Hybrid III Left Knee Impact Test
Maximum Value: 5523.6 at 2.5 Milliseconds
Minimum Value: -75.9 at 7.9 Milliseconds
SAE Filter Class: 600
Date of Test: 9/28/99
ATD Serial No.: 035





Hybrid III Calibration Data Sheet

50TH Percentile Male

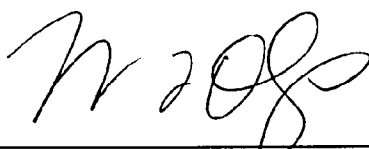
Right Knee Impact Test

ATD Serial No.: 035

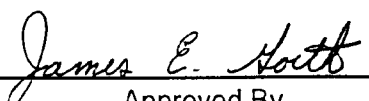
Part Serial No.: n/a

Test I.D.: LK09E

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	2.073 to 2.134	2.091	Pass
Peak Probe Force	Newtons	4715 to 5782	4966.7	Pass
Overall Test Results				Pass



Laboratory Technician



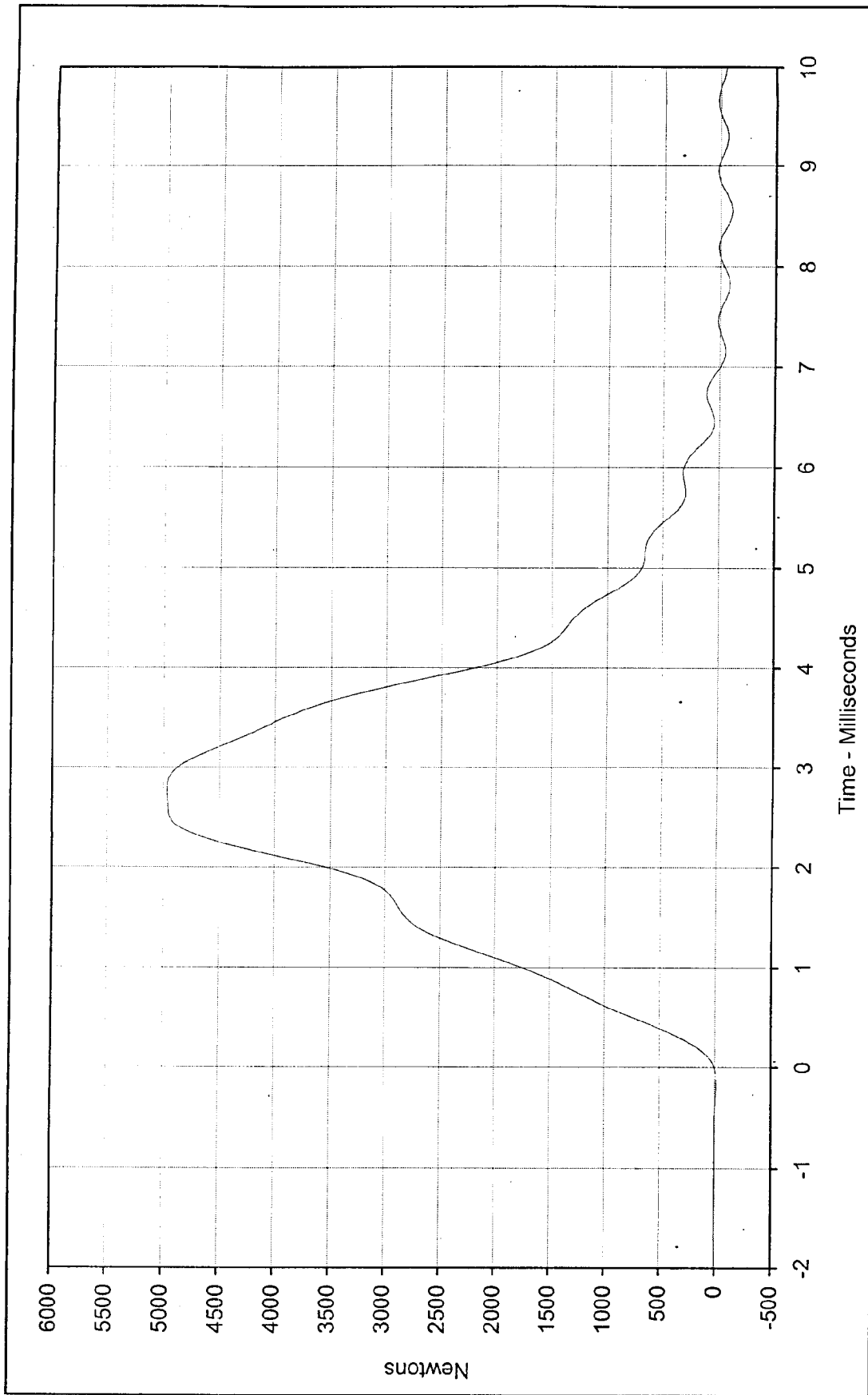
Approved By

September 28, 1999

Test Date

9/29/99

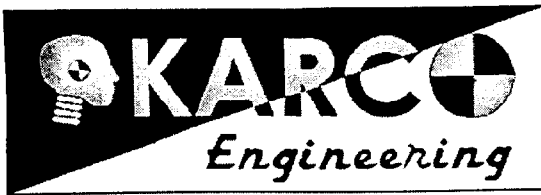
Date



Curve Description:	Probe Force
Maximum Value:	4966.7 at 2.8 Milliseconds
Minimum Value:	-85.5 at 7.8 Milliseconds
SAE Filter Class:	600
Date of Test:	9/28/99
ATD Serial No.:	035

Testing Program	Hybrid III Right Knee Impact Test
Test Information:	Part S/N: n/a Test I.D.: LK09E





Hybrid III Calibration Data Sheet

50TH Percentile Male

Head Drop Calibration

ATD Serial No.: 035

Part Serial No.: n/a

Test I.D.: HD09C

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	263.7	Pass
Peak Lateral Acceleration	G's	≤15.0	5.9	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

Laboratory Technician

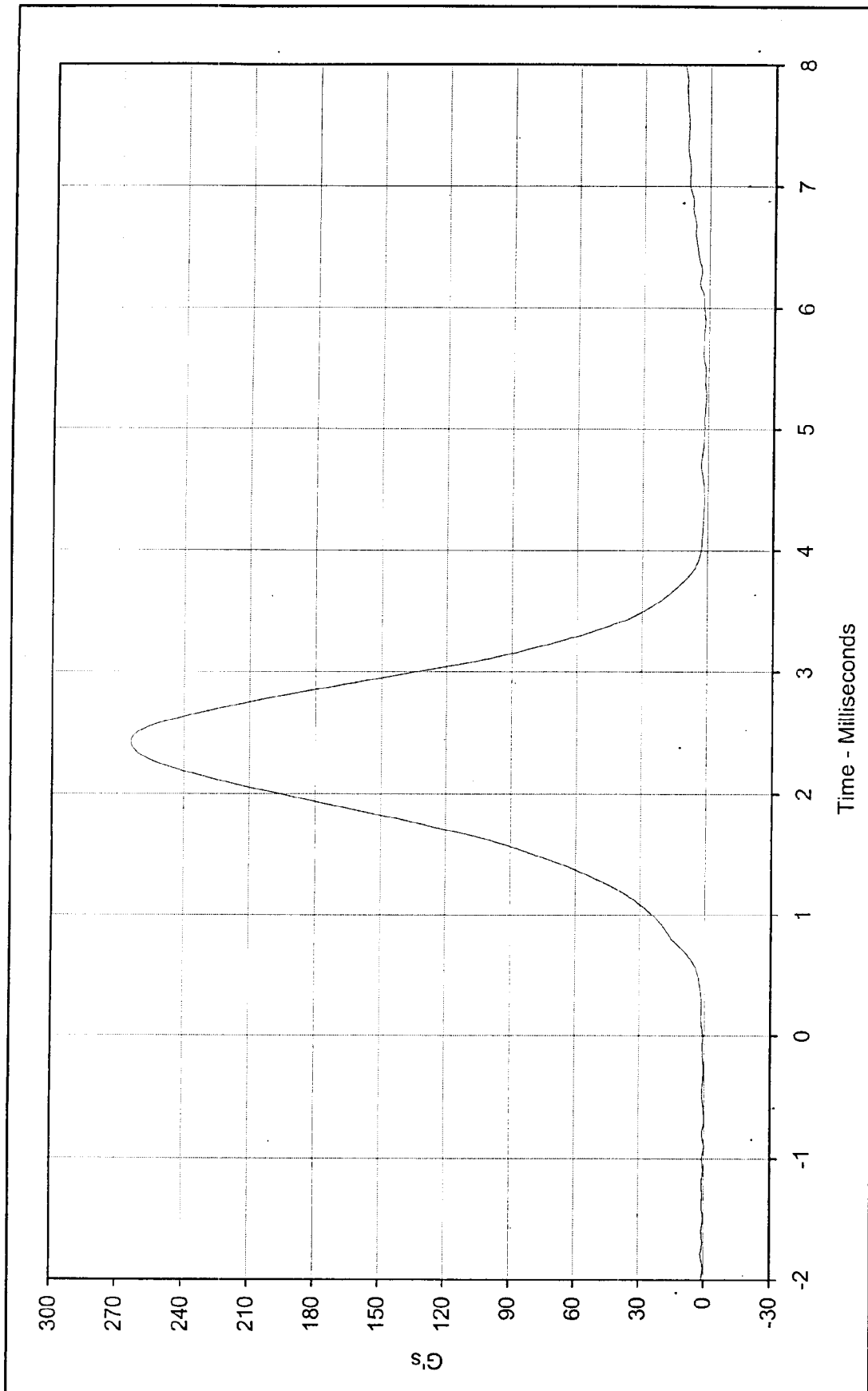
Approved By

October 1, 1999

Test Date

10/2/99

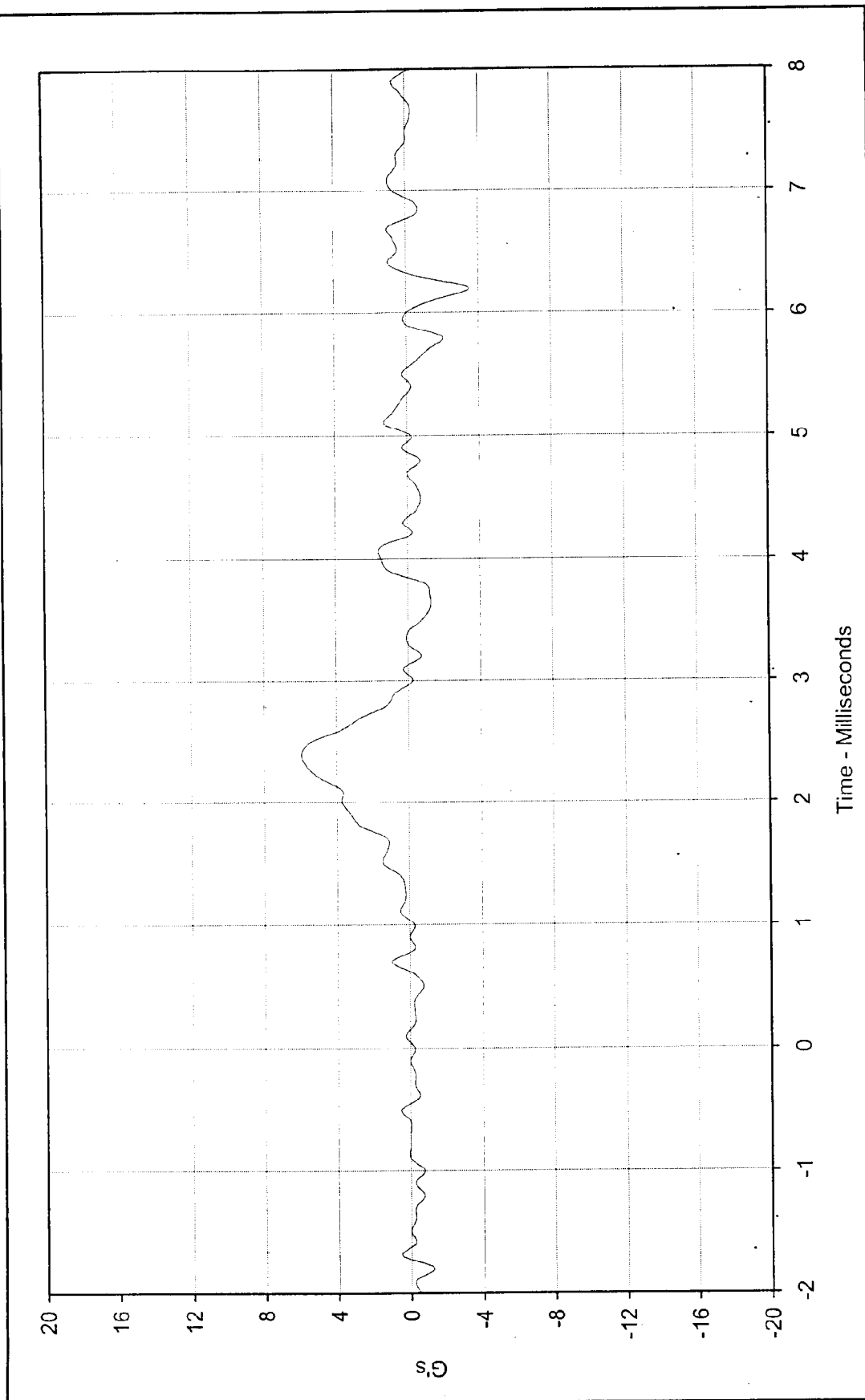
Date



Curve Description: Head Resultant Acceleration
 Maximum Value: 263.7 at 2.4 Milliseconds
 Minimum Value: 0.0 at -0.9 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 10/1/99
 ATD Serial No.: 035

Testing Program: Hybrid III Head Drop Calibration (Male)
 Test Information: S/N of Part: n/a Test I.D.: HD09C





Testing Program Hybrid III Head Drop Calibration (Male)
 Test Information: S/N of Part: n/a Test I.D.: HD09C

Curve Description: Head Acceleration Y Axis
 Maximum Value: 5.9 at 2.4 Milliseconds
 Minimum Value: -3.5 at 6.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 10/1/99
 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.: CH10B

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	6.80	Pass
Peak Probe Force	Newtons	5159 to 5893	5515	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.61	Pass
Internal Hysteresis	%	69 to 85	74.6	Pass
Overall Test Results				Pass

Laboratory Technician

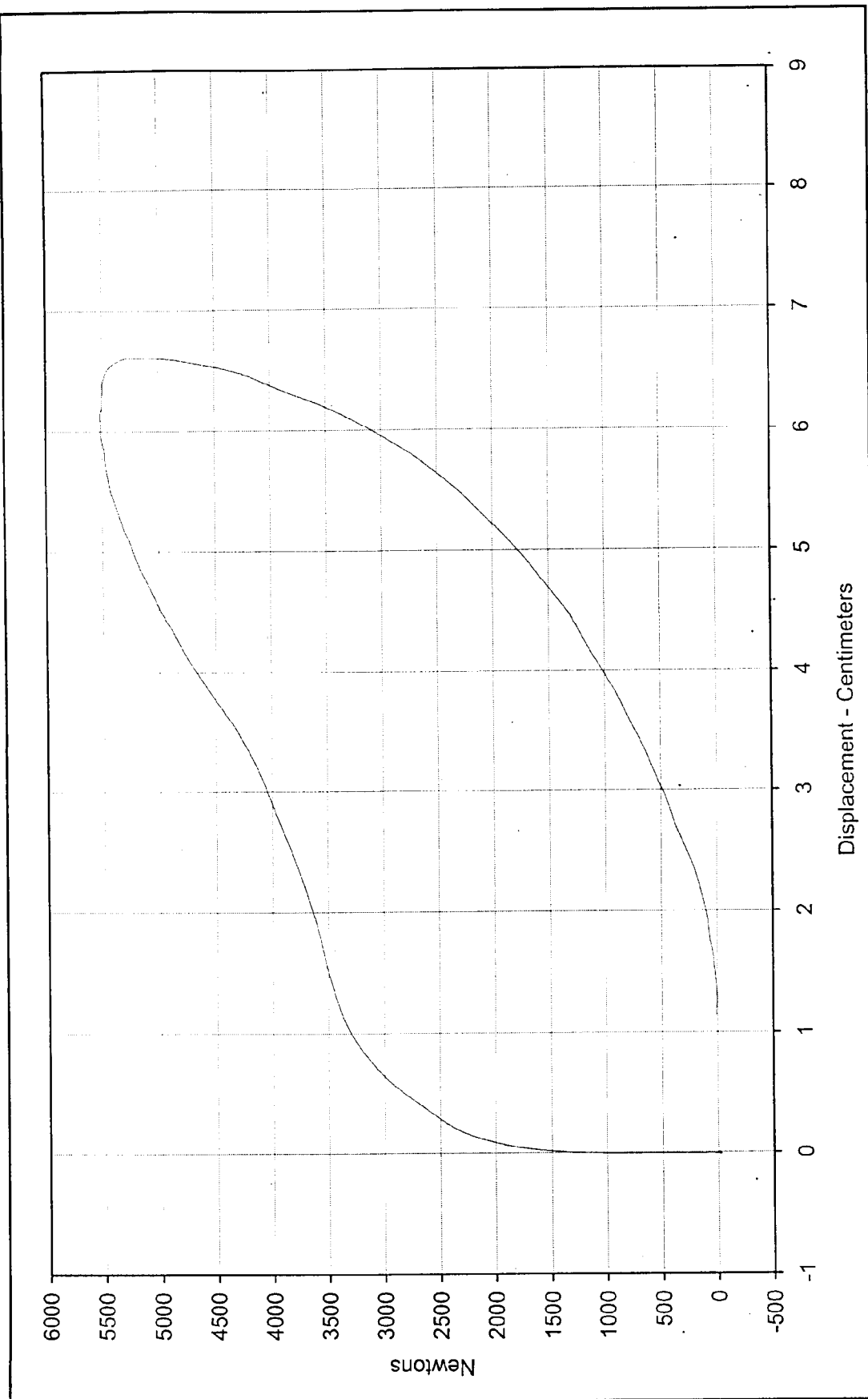
Approved By

October 6, 1999

Test Date

10/7/99

Date



Curve Description: Probe Force vs. Chest Displacement
 Testing Program: Hybrid III Thorax Impact Test
 Test Information: S/N of Part: N/A Test I.D.: CH10B

Probe Force: 5515.2 Newtons
 Chest Displ.: 6.61 Centimeters
 SAE Filter Class: 180
 Date of Test: 10/6/99
 ATD Serial No.: 035





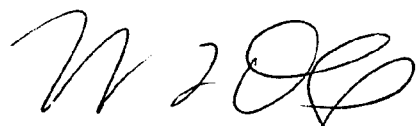
Hybrid III Calibration Data Sheet

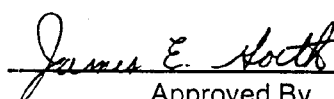
50TH Percentile Male

Neck Flexion Test

ATD Serial No.: 035Part Serial No.: n/aTest I.D.: NF09B

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity		%	10 to 70	40	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.96	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.7	Pass
	20 Msec.	G's	17.6 to 22.6	21.3	Pass
	30 Msec.	G's	12.5 to 18.5	18.5	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	18.5	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	40.8	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	66.8	Pass
	Time	Msec.	57.0 to 64.0	58.9	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	114.6	Pass
Moment About Occipital Condyle	Maximum	N • m	84.1 to 108.5	92.5	Pass
	Time	Msec.	47.0 to 58.0	53.0	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	98.8	Pass
Overall Test Results					Pass


Laboratory Technician

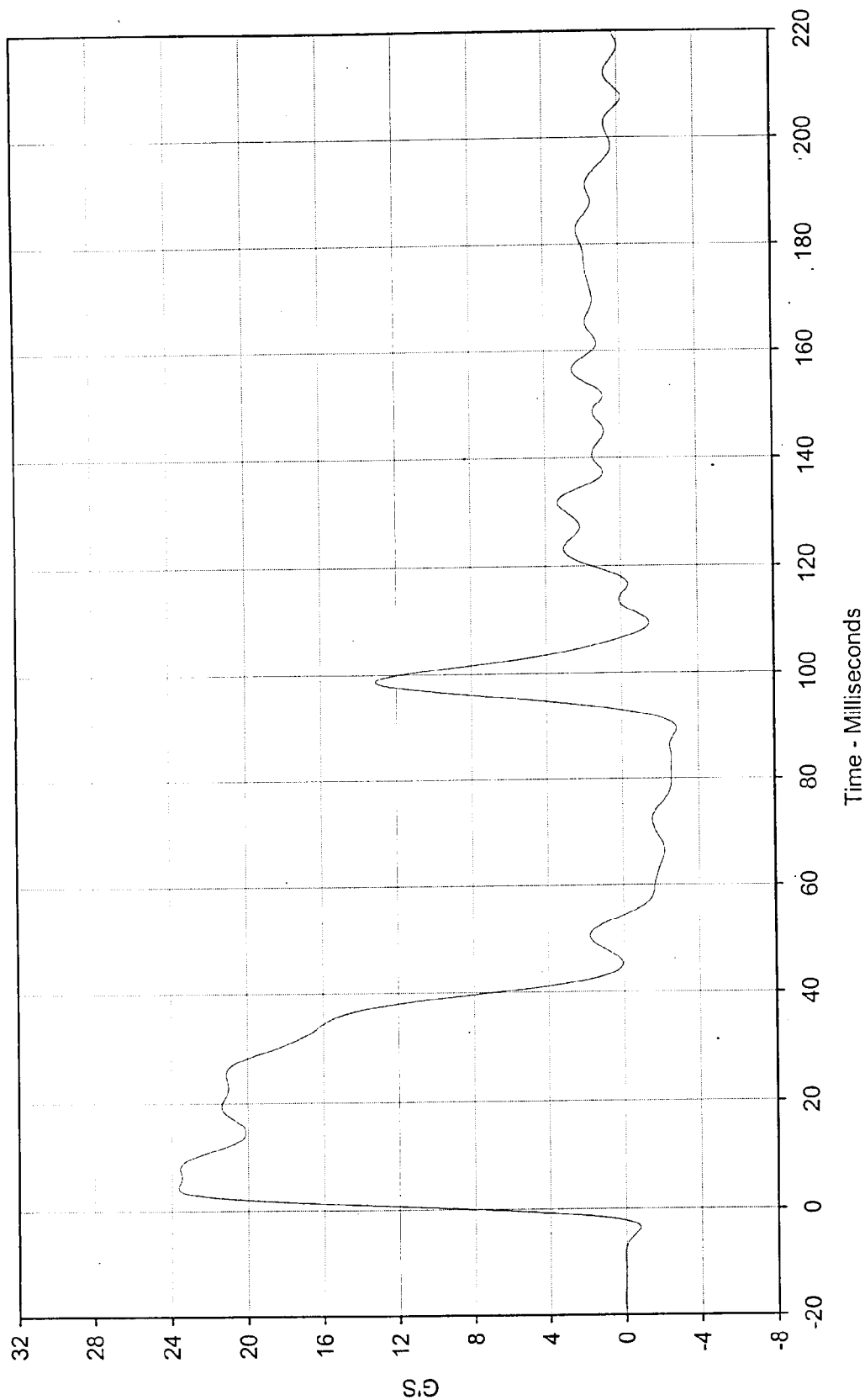

Approved By

October 1, 1999

Test Date

10/2/99

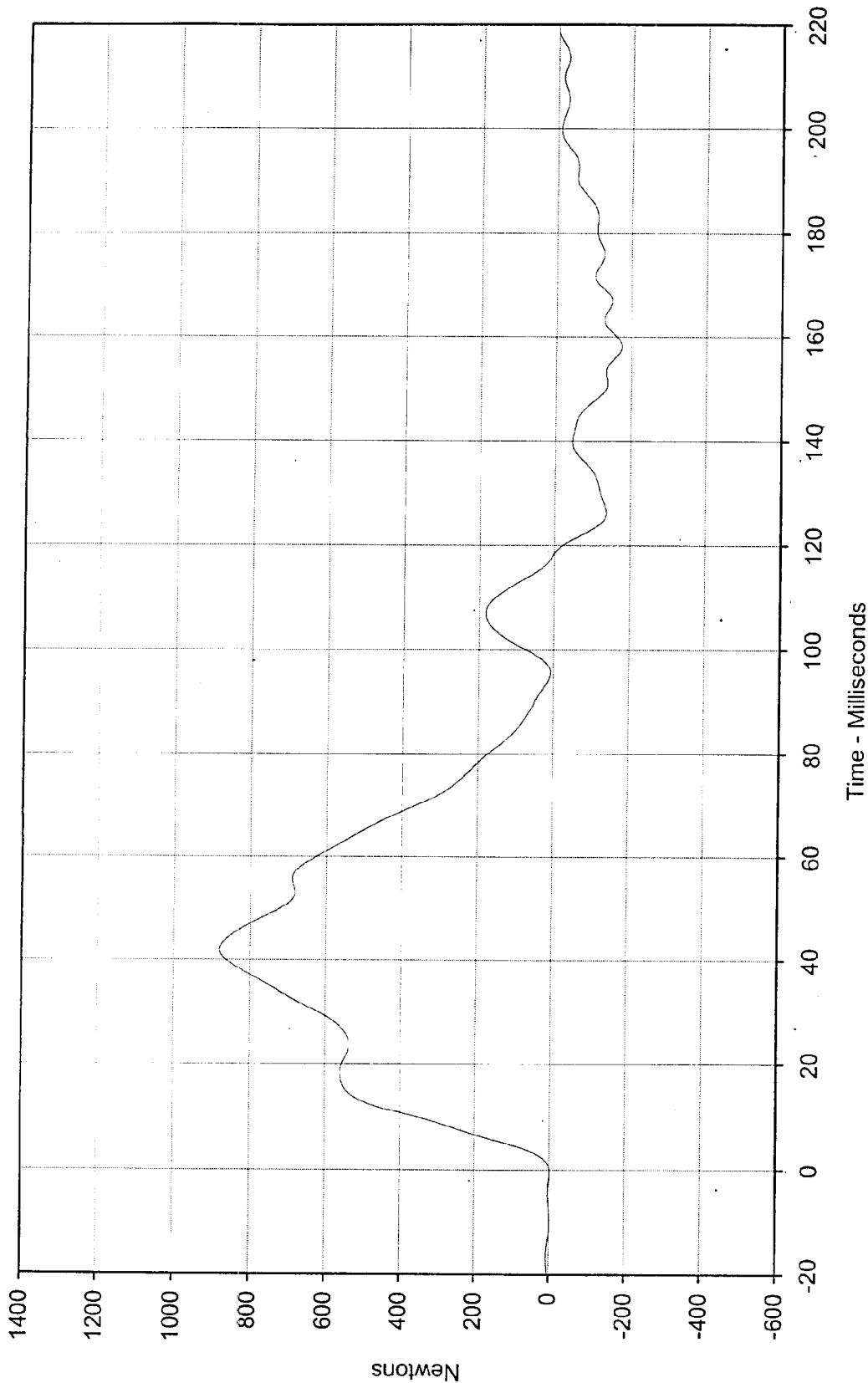
Date



Testing Program Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NF09B

Curve Description: Pendulum Deceleration
 Maximum Value: 23.6 at 4.3 Milliseconds
 Minimum Value: -2.9 at 89.5 Milliseconds
 SAE Filter Class: 60
 Date of Test: 10/1/99
 ATD Serial No.: 035





Curve Description:

Maximum Value: 879.8 at 41.9 Milliseconds

Minimum Value: -174.5 at 158.2 Milliseconds

SAE Filter Class: 60

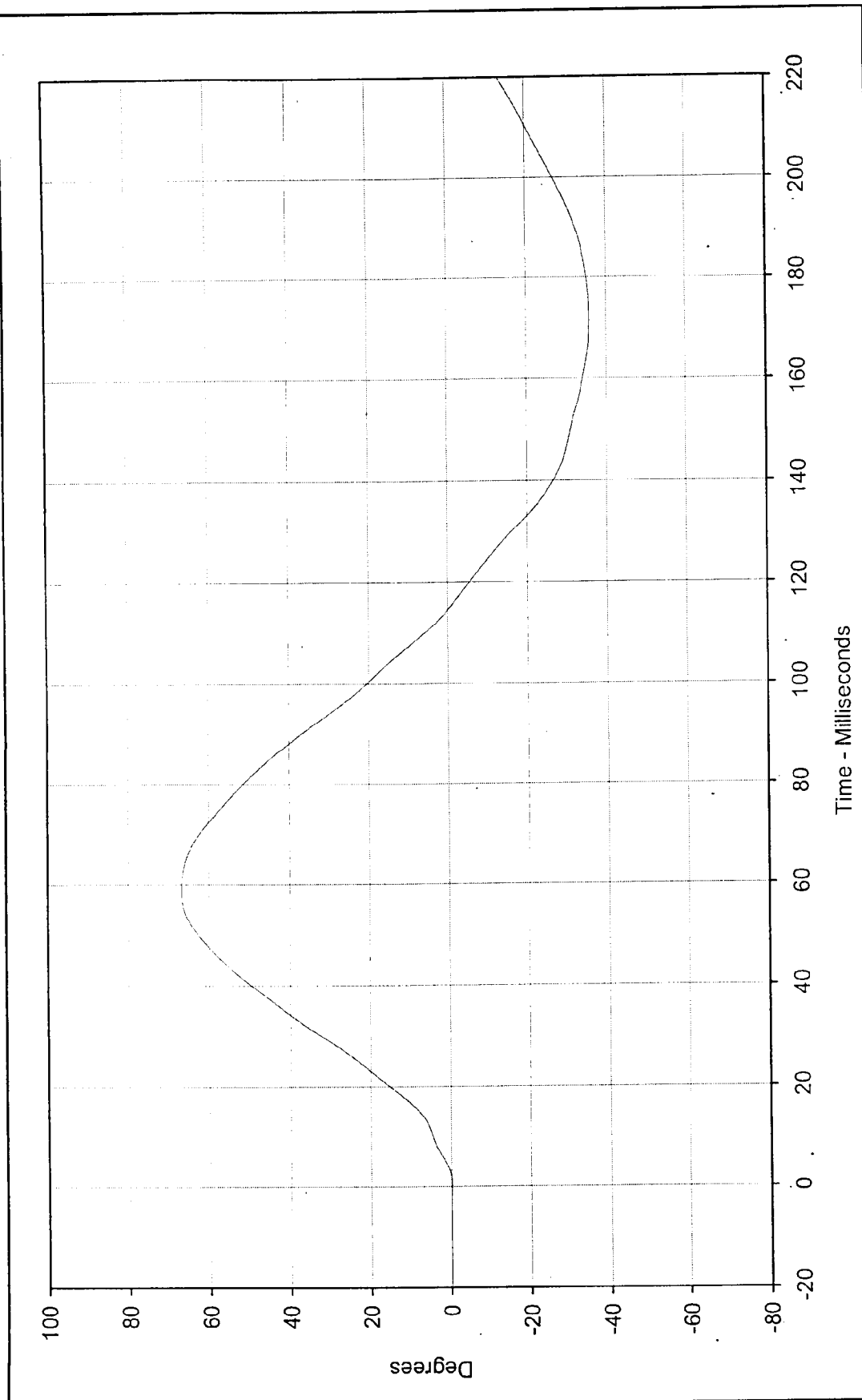
Date of Test: 10/1/99

ATD Serial No.: 035

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NF09B

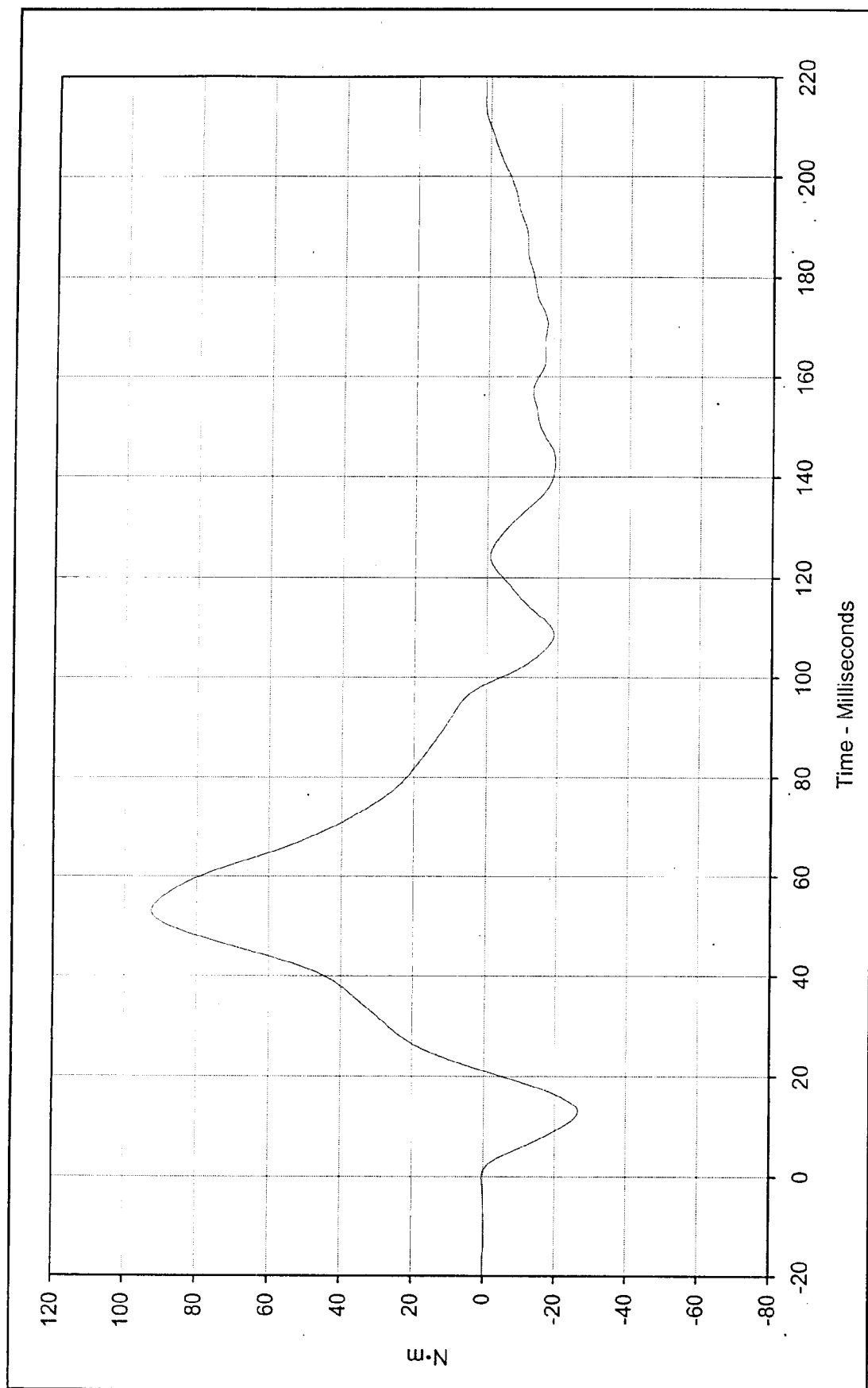




Curve Description: _____
 Maximum Value: 66.8 at 58.9 Milliseconds
 Minimum Value: -35.7 at 172.4 Milliseconds
 SAE Filter Class: 60
 Date of Test: 10/1/99
 ATD Serial No.: 035

Testing Program: Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NF09B





Curve Description: Moment About Occipital Condyles

Maximum Value: 92.5 at 53.0 Milliseconds

Minimum Value: -26.5 at 13.0 Milliseconds

SAE Filter Class: 60

Date of Test: 10/1/99

ATD Serial No.: 035

Testing Program

Hybrid III Neck Flexion Test (Male)

Test Information:

S/N of Part: n/a Test I.D.: NF09B





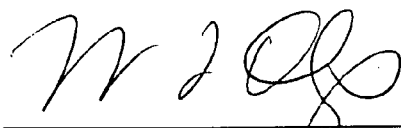
Hybrid III Calibration Data Sheet

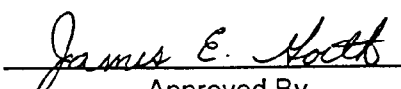
50TH Percentile Male

Neck Extension Test

ATD Serial No.: 035Part Serial No.: n/aTest I.D.: NE09B

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	6.10	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.5	Pass
	20 Msec.	G's	14.0 to 19.0	17.0	Pass
	30 Msec.	G's	11.0 to 16.0	13.0	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	13.0	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	45.1	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	89.8	Pass
	Time	Msec.	72.0 to 82.0	74.8	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	155.9	Pass
Moment About Occipital Condyle	Maximum	N • m	-52.9 to- 79.9	-69.2	Pass
	Time	Msec.	65.0 to 79.0	67.9	Pass
Negative Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	136.3	Pass
Overall Test Results					Pass


Laboratory Technician

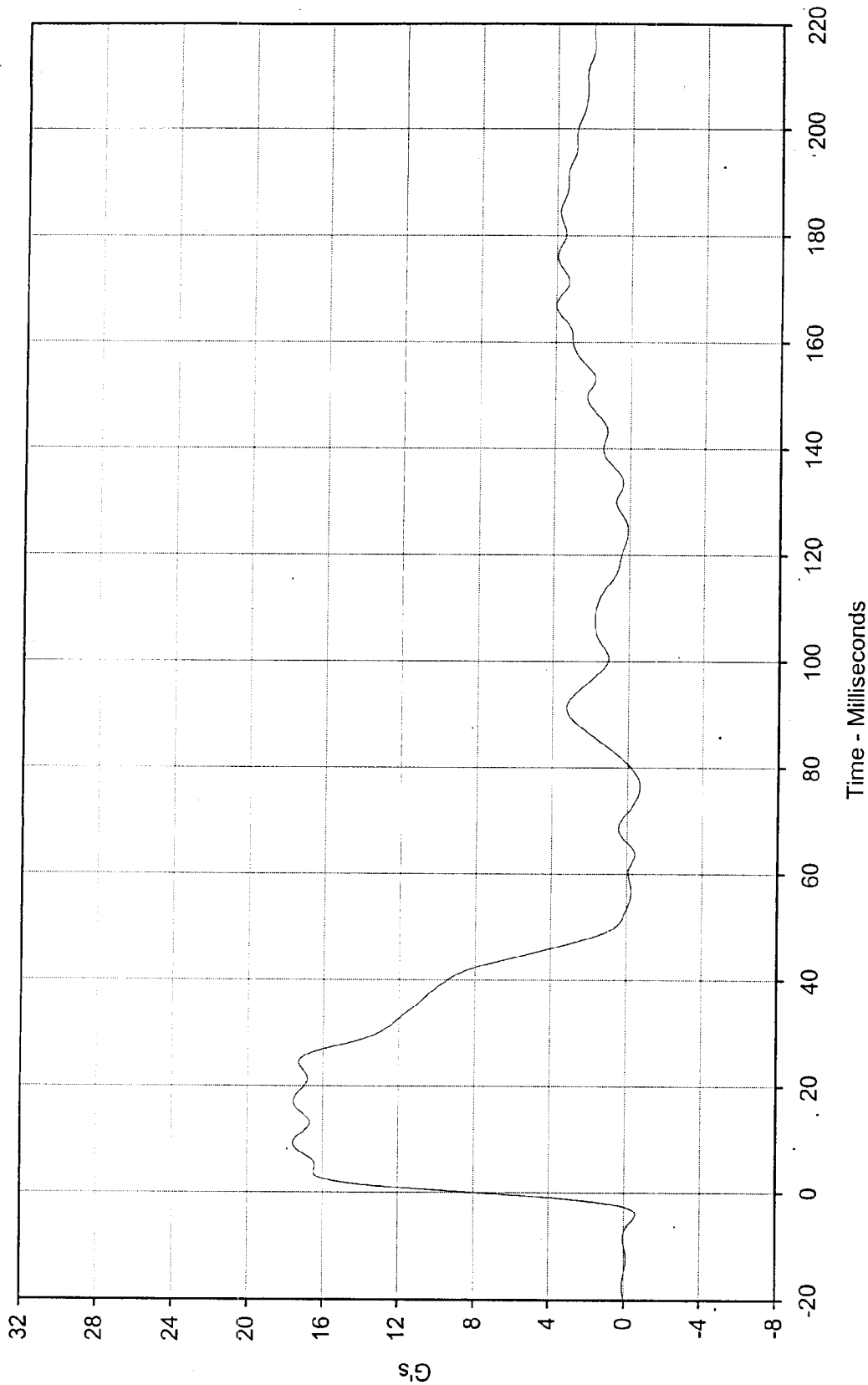

Approved By

October 1, 1999

Test Date

10/2/99

Date

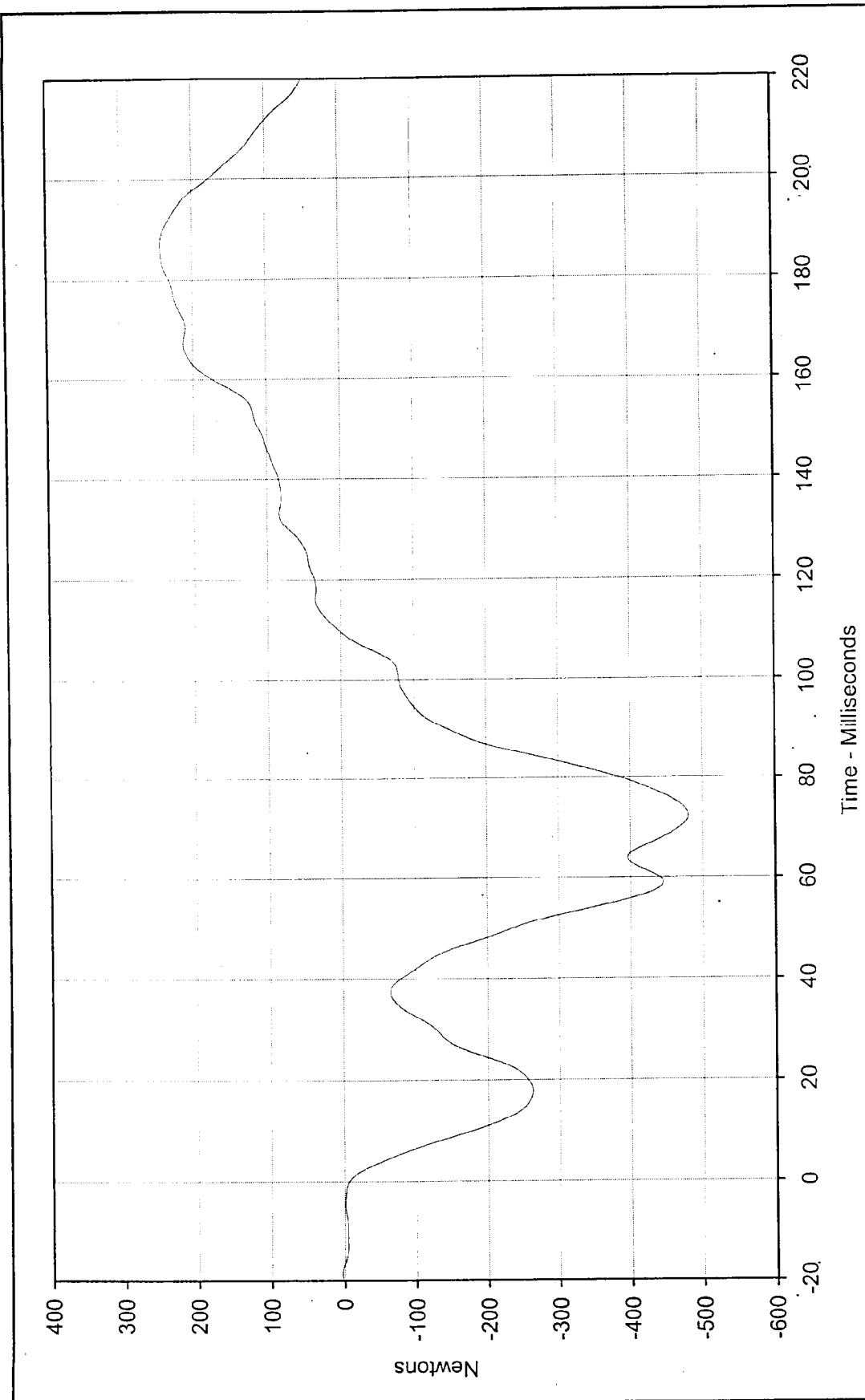


E-36

Curve Description:		Pendulum Deceleration		Testing Program		Hybrid III Neck Extension Test (Male)	
Maximum Value:	17.6	at	9.3	Milliseconds	Test Information:	S/N of Part:	n/a
Minimum Value:	-0.6	at	76.5	Milliseconds		Test I.D.:	NE09B
SAE Filter Class:	60						
Date of Test:	10/1/99						
ATD Serial No.:	035						



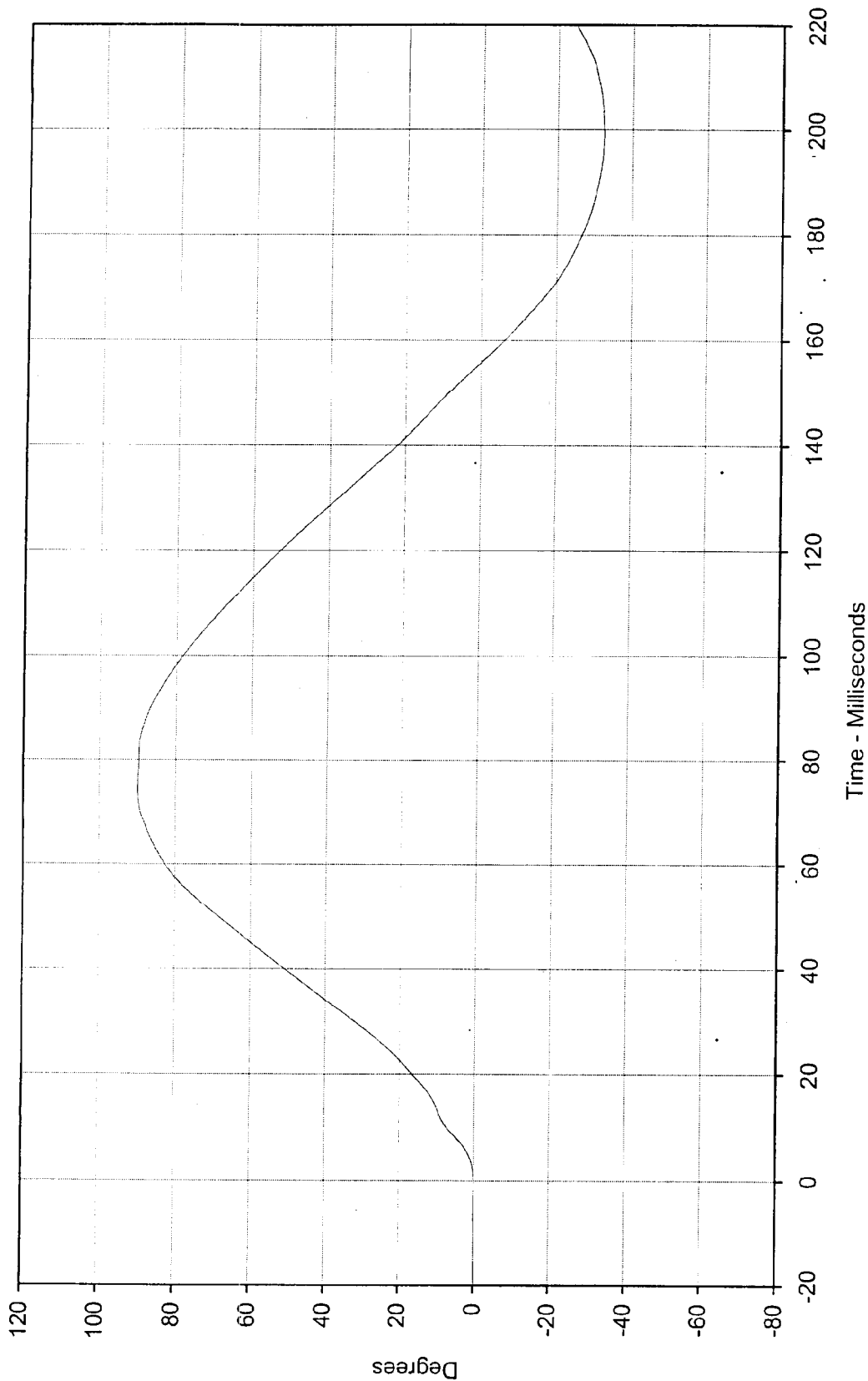
KAR20001-01



Testing Program: Hybrid III Neck Extension Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NE09B

Curve Description: Neck Force X
 Maximum Value: 243.8 at 187.0 Milliseconds
 Minimum Value: -480.0 at 72.3 Milliseconds
 SAE Filter Class: 60
 Date of Test: 10/1/99
 ATD Serial No.: 035

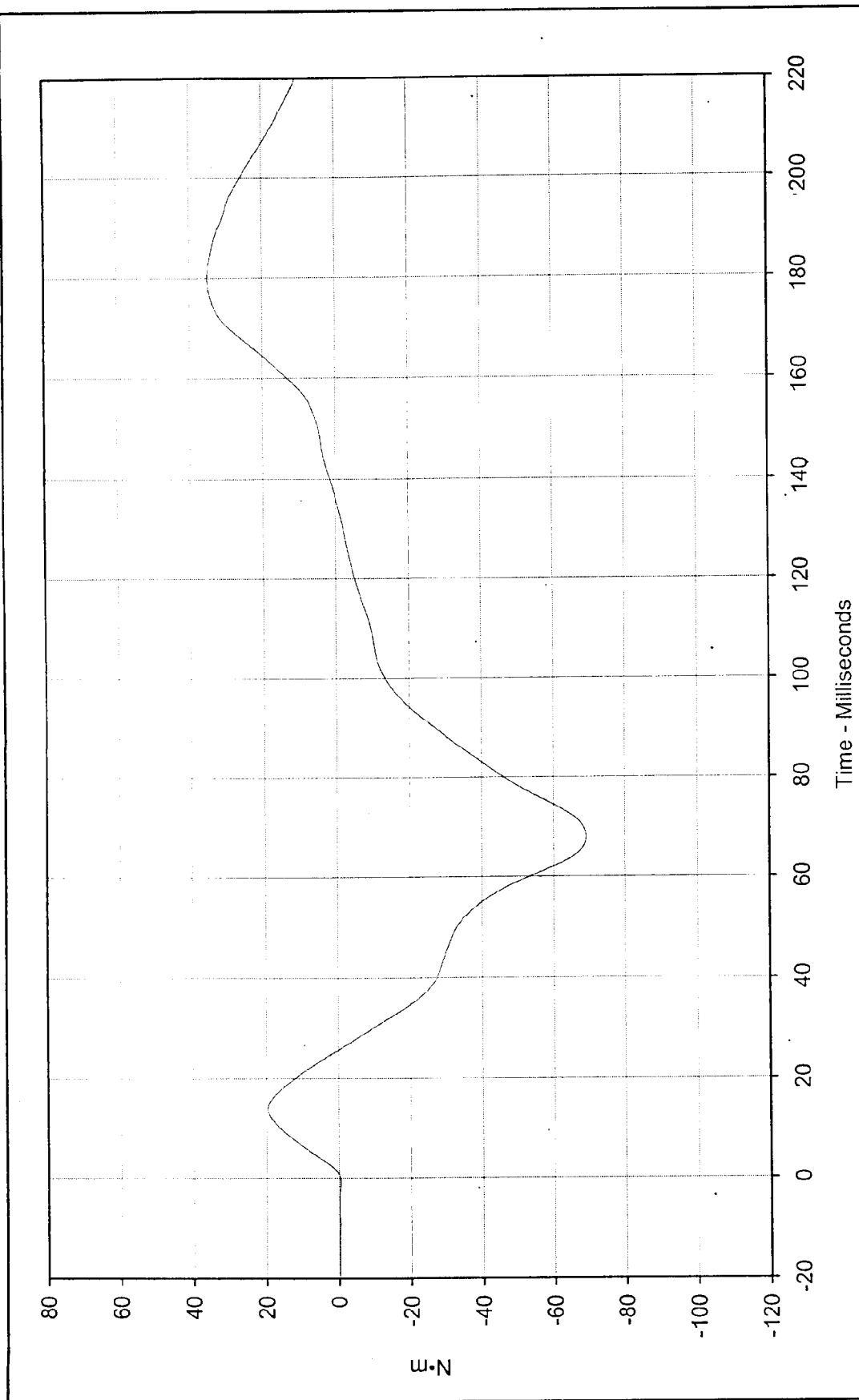




Curve Description: "D" Plane Rotation
 Maximum Value: 89.8 at 74.8 Milliseconds
 Minimum Value: -32.3 at 199.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 10/1/99
 ATD Serial No.: 035

Testing Program: Hybrid III Neck Extension Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NE09B





Curve Description: Moment About Occipital Condyles
 Maximum Value: 35.0 at 180.0 Milliseconds
 Minimum Value: -69.2 at 67.9 Milliseconds
 SAE Filter Class: 60
 Date of Test: 10/1/99
 ATD Serial No.: 035

Testing Program: Hybrid III Neck Extension Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NE09B





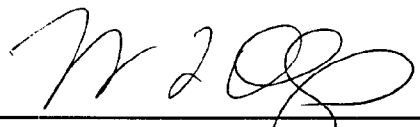
Hybrid III Calibration Data Sheet

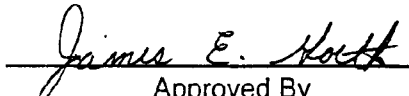
50TH Percentile Male

External Measurements

ATD Serial No.: 035Part Serial No.: N/ATest I.D.: N/A

External Measurement Data				
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory temperature	°C	20.4 to 22.1	20.9	Pass
Laboratory relative humidity	%	10 to 70	43	Pass
A - Total sitting height	mm	878.8 to 889.0	888.1	Pass
B - Shoulder pivot height	mm	505.5 to 520.7	506.0	Pass
C - "H" point height	mm	83.8 to 88.9	87.1	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	90.0	Pass
F - Thigh clearance	mm	139.7 to 154.9	153.0	Pass
G - Elbow back to wrist pivot	mm	289.6 to 304.8	300.4	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	335.0	Pass
J - Elbow rest height	mm	190.5 to 210.8	207.0	Pass
K - Buttock to knee length	mm	579.1 to 604.5	603.1	Pass
L - Popliteal length	mm	429.3 to 454.7	451.0	Pass
M - Knee pivot height	mm	485.1 to 500.4	500.0	Pass
N - Buttock popliteal length	mm	452.1 to 477.5	476.0	Pass
O - Chest depth	mm	213.4 to 228.6	225.0	Pass
P - Foot length	mm	251.5 to 266.7	255.0	Pass
V - Shoulder breadth	mm	421.6 to 436.9	429.0	Pass
W - Foot breadth	mm	91.4 to 106.7	103.2	Pass
Y - Chest circumference	mm	970.3 to 1000.8	980.3	Pass
Z - Waist circumference	mm	835.7 to 866.1	865.0	Pass
AA - Location for chest circumference	mm	429.3 to 434.3	430.0	Pass
BB - Location for waist circumference	mm	226.1 to 231.1	229.0	Pass
Overall Test Results				Pass


Laboratory Technician


Approved By

October 9, 1999

Test Date

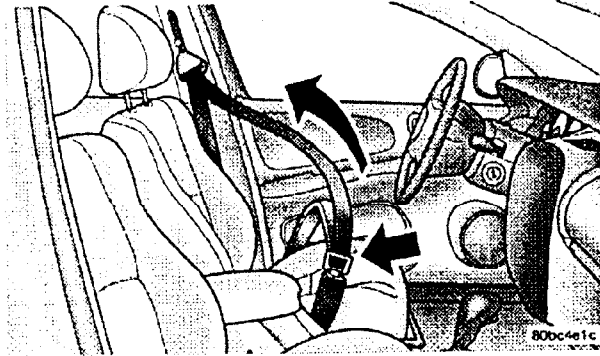
10/10/99

Date

APPENDIX F
VEHICLE OWNER'S MANUAL
OCCUPANT RESTRAINT INSTRUCTIONS

KAR20001-01

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



WARNING

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

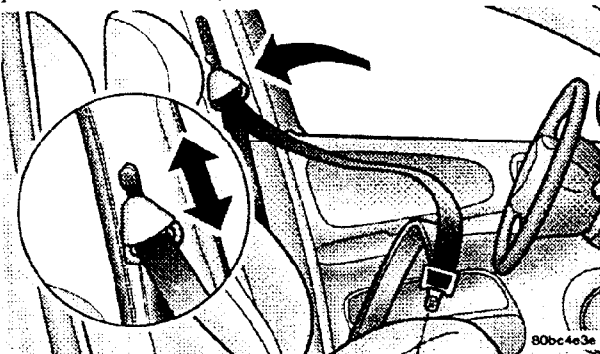
2

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

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

Adjustable Upper Shoulder Belt Anchorage

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



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

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

Lap/Shoulder Belt Untwisting Procedure

Use the following procedure to untwist a twisted lap/shoulder belt.

