

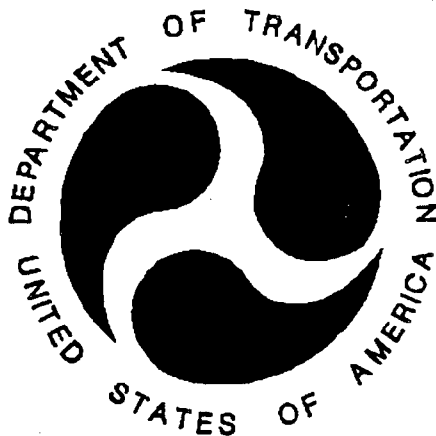
REPORT NUMBER KAR-20-07

NEW CAR ASSESSMENT PROGRAM
FRONTAL BARRIER IMPACT TEST

3252

GENERAL MOTORS CORPORATION
2000 CHEVROLET S-10
PICK-UP
NHTSA NUMBER: MY0106

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



JANUARY 3, 2000

FINAL REPORT

PREPARED FOR:
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NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
SAFETY PERFORMANCE STANDARDS
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Prepared by: James E. Gorth for JEC
Mr. James E. Gorth, Project Engineer
KARCO Engineering

Date: JANUARY 3, 2000

Reviewed by: Jerry L. Kratzke
Mr. Jerry L. Kratzke, Director of Operations
KARCO Engineering

Date: JANUARY 3, 2000

Approved by: Frank D. Richardson
Mr. Frank D. Richardson, Program Manager
KARCO Engineering

Date: JANUARY 3, 2000

FINAL REPORT ACCEPTED BY:

Manager, New Car Assessment Program

Date of Acceptance

COTR, NCAP Frontal Impact Program

Date of Acceptance

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16. Abstract A 35 mph (56.3 km/h) frontal barrier impact was conducted on a 2000 Chevrolet S-10 Pick-up at KARCO Engineering on December 22, 1999. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The impact velocity was 55.69 km/h. The ambient temperature at the barrier face at the time of impact is 11.6 degrees Celcius. The vehicle's maximum post test static crush is 689 mm located at 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: <table border="1"> <thead> <tr> <th>Measurement Description</th> <th>Units</th> <th>Threshold</th> <th>Driver ATD</th> <th>Passenger ATD</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC)</td> <td>N/A</td> <td>1000</td> <td>851.6</td> <td>834.8</td> </tr> <tr> <td>Max. Thorax Accel. (3 msec Clip)</td> <td>G's</td> <td>60</td> <td>61.1</td> <td>60.9</td> </tr> <tr> <td>Left Femur force</td> <td>Newtons</td> <td>10009</td> <td>-7264.9</td> <td>-6087.3</td> </tr> <tr> <td>Right Femur Force</td> <td>Newtons</td> <td>10009</td> <td>-8226.8</td> <td>-2884.3</td> </tr> </tbody> </table>						Measurement Description	Units	Threshold	Driver ATD	Passenger ATD	Head Injury Criteria (HIC)	N/A	1000	851.6	834.8	Max. Thorax Accel. (3 msec Clip)	G's	60	61.1	60.9	Left Femur force	Newtons	10009	-7264.9	-6087.3	Right Femur Force	Newtons	10009	-8226.8	-2884.3
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TABLE OF CONTENTS

Section	Page
1 Purpose, Test Procedures and Summary of Test MY0106	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 Data Traces	C
D Instrumentation and Data Channel Assignments	D
E Dummy Calibration Data Traces and Tables	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 MY0106

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 December 22, 1999 at a speed of 55.69 km/h. The test vehicle was instrumented with eight (8) accelerometers to measure longitudinal axi 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 recalibrated two tests prior to this test. Both the driver and passenger ATD's exceeded the FMVSS 208 "Occupant Crash Protection" injury criteria for chest acceleration. The driver 3msec clip was 61.1g's and the passenger 3msec clip was 60.9g's. The maximum allowable 3msec clip is 60g's

1.3 SUMMARY OF FRONTAL BARRIER IMPACT TEST

A rigid load cell barrier was impacted by a 2000 Chevrolet S-10 Pick-up at a velocity of 55.69 km/h. The test vehicle weight is 1677 kilograms with two (2) part 572E 50th percentile adult male ATDs. Twenty-four (24) load cell barrier data channels were obtained in conducting the December 22, 1999 NCAP test. The test vehicle is equipped with a longitudinally mounted 2.2-liter, 4-cylinder engine and a 5-speed manual transmission.

The driver Head Injury Criteria (HIC) is 851.6. The maximum resultant chest deceleration over three (3) milliseconds is 61.1 g's. The left and right femur loads are -7264.9 and -8226.8 Newtons, respectively. Chest deflection for the driver ATD peaked at -45.7 mm. The driver ATD head contacted the airbag and headrest, its chest and abdomen contacted the airbag, the left and right knees contacted the knee bolster.

The right front passenger's HIC is 834.8. The maximum resultant chest deceleration over three (3) milliseconds is 60.9 g's. The left and right femur loads are -6087.3 and -2884.3 Newtons respectively. Chest deflection for the passenger ATD peaked at -39.7 mm. The passenger ATD head contacted the airbag 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 190.3mm for the driver ATD and 82.6 mm for the passenger ATD. The shoulder belt stretch is 0.159 mm/cm for the driver ATD and 0.499 cm/mm for the passenger ATD.

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 689 mm located at the vehicle centerline. Both the driver and passenger side doors required the aid of tools to open.

1.4 GENERAL COMMENTS

The 2000 Chevrolet S-10 Pick-up passed the requirements of FMVSS 212, FMVSS 219 and FMVSS 301-75. Both the driver ATD and the passenger ATD failed to meet the 3msec clip requirements of FMVSS 208. 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 CHEVROLET S-10 PICK-UP

NHTSA No.: MY0106

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 12/22/99

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	lbf/in ²	kPa	7.0
Volume	Liquid	gal	liter	3.785
Temperature	General Use	°F	°C	$=(tf - 32)/1.8$
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 Chevrolet S-10 Pickup
Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0106
Test Date: 12/22/99

PRIMARY IMPACT DATA

Measured Parameter	Units	Value
Velocity at Impact	km/h	55.69
Test Weight	kg	1677
Impact Angle	degrees	0
Average Rebound	mm	620
Maximum Static Crush	mm	689

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Driver	Passenger
Front Door Opening	Jammed	Jammed
Rear Door Opening	N/A	N/A
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. 35	50% Male Hybrid III / No. 34
Head Contact	Airbag/Headrest	Airbag/Headrest
Chest Contact	Airbag	Airbag
Abdomen Contact	Airbag	Airbag
Left Knee Contact	Knee Bolster	Glove Box
Right Knee Contact	Knee Bolster	Glove Box

16mm MOVIE COVERAGE

High Speed	16
Real Time	1
Total	17

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 Chevrolet S-10 Pickup
 Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0106
 Test Date: 12/22/99

TEST VEHICLE INFORMATION

Manufacturer	General Motors Corp.
Model	Chevrolet S-10
Body Style	Pick-up
NHTSA NO.	MY0106
VIN	1GCCS1443Y8107812
Color	White
Delivery Date	12/14/99
Odometer Reading (mile)	109
Dealer	Rally Palmdale Chevrolet
Transmission	5-Speed Manual
Final Drive	Rear
Number of Cylinders	4
Engine Displacement (L)	2.2
Engine Placement	Longitudinal

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	Yes
AM/FM/Cassette	Yes
Anti-Theft System	No
Cruise Control	No

DATA FROM CERTIFICATION LABEL

Manufactured By	General Motors Corp.	GVWR (kg)	1905
Date of Manufacture	August-99	GAWR Front (kg)	1134
		GAWR Rear (kg)	1043

DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	245	245
Cold Pressure (kPa)	245	245
Recommend Tire Size	205/75/15	205/75/15
Tire Size on Vehicle	205/75/15	205/75/15
Tire Manufacturer	Uniroyal	Uniroyal

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench	None	
Number of Occupants	3	0	0	3
Capacity Wt. (VCW) (kg)				512
Cargo Weight (RCLW) (kg)				136

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

Test Vehicle: 2000 Chevrolet S-10 Pickup
 Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0106
 Test Date: 12/22/99

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	417	299		445	411	
Right	kg	387	290		418	403	
Ratio	%	57.7	42.3		51.5	48.5	
Totals	kg	804	589	1393	863	814	1677

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1393
Weight of 2 P572 ATD's	kg	152
Rated Cargo/Luggage Weight (RCLW)	kg	136
Calculated Vehicle Target Weight (TVTW)	kg	1681

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	772	793	788	799	1165
As Tested	mm	752	768	746	762	1337

Vehicle Wheel base (mm): 2755

Weight of Ballast secured in cargo area (kg): 78 *

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): 70.0

Usable Capacity Figure Furnished by COTR (L): n/a

Actual Test Volume with entire fuel System Filled (L): 65.1

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: Will pump for 5 seconds when ignition is turned on.

**DATA SHEET NO. 3
POST IMPACT DATA**

Test Vehicle: 2000 Chevrolet S-10 Pickup
Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0106
Test Date: 12/22/99

SPEED TRAP DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	55.51 to 57.12	55.69
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	55.74
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	4575	4077	-498
Center	mm	4825	4136	-689
Right Side	mm	4575	4085	-490

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	640
Center	mm	585
Right Side	mm	635
Average	mm	620

DATA SHEET NO. 4
TEST VEHICLE INFORMATION

Test Vehicle: 2000 CHEVROLET S-10 PICK-UP

NHTSA No.: MY0106

Test Program: 2000 NHTSA 35 MPH NCAP

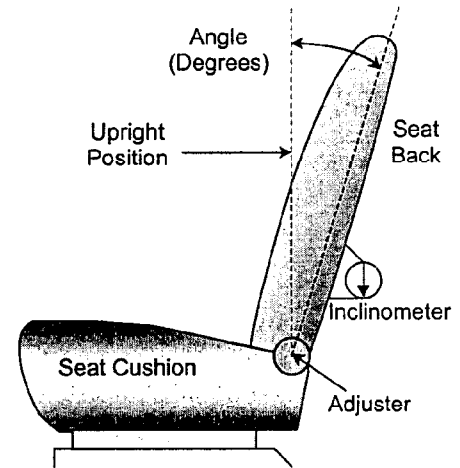
Test Date: 12/22/99

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: 23.0° with a seated dummy

Passenger seat back angle: 23.0° with a seated dummy



FRONT SEAT ASSEMBLY

SEAT FORE/AFT POSITIONS

Both driver and passenger seats have manually operated seats. The total travel on the driver and the passenger is 21 seat positions. The fore/aft position is set at the middle position for both driver and passenger.

Driver seat fore/aft total travel: 21 seat detent positions

Passenger seat fore/aft total travel: 21 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 not equipped with adjustable anchorages for both driver and passenger seats.

DATA SHEET NO. 4...(continued)
TEST VEHICLE INFORMATION

Test Vehicle: 2000 CHEVROLET S-10 PICK-UP

NHTSA No.: MY0106

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 12/22/99

FUEL TANK CAPACITY DATA

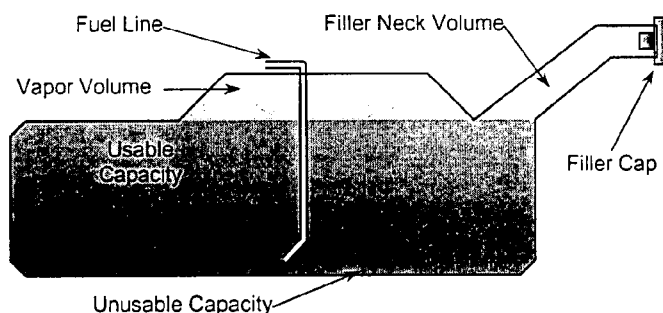
The "Usable Capacity" of the standard equipment fuel tank is: 69.3 liters

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

"Usable Capacity" used for certification tests FMVSS 301 requirements: 64.4 to 65.8 liters

Actual amount of Stoddard solvent added to vehicle for certification test: 65.1 liters

The test vehicle is equipped with an electric fuel pump. The fuel pump operates for 5 seconds after the ignition is turned on. The fuel filler door is located on the left rear fender.



VEHICLE FUEL TANK ASSEMBLY

STEERING COLUMN ADJUSTMENT

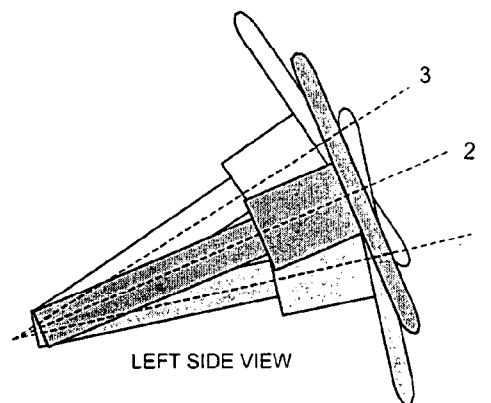
Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes, when it is moved through its full range of motion. An aluminum plate is placed across the rim of the steering wheel. An inclinometer is placed onto the plate and the angle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

Lowermost, position 1: n/a°

Geometric center, position 2: 22°

Uppermost, position 3: n/a°

Note: Steering column is fixed on this vehicle.



STEERING COLUMN ASSEMBLY

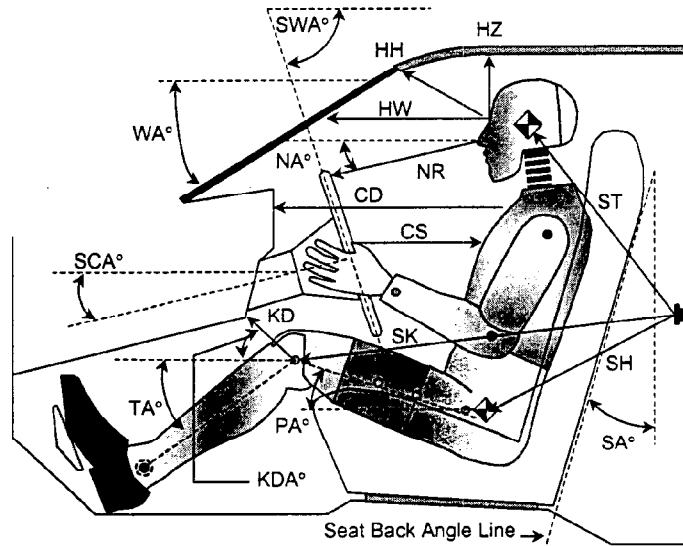
DATA SHEET NO. 5 **DUMMY POSITIONING IN VEHICLE**

Test Vehicle: 2000 CHEVROLET S-10 PICK-UP

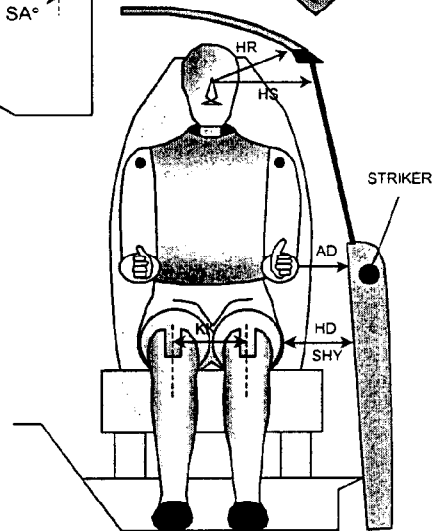
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Test Program: 2000 NHTSA 35 MPH NCAP

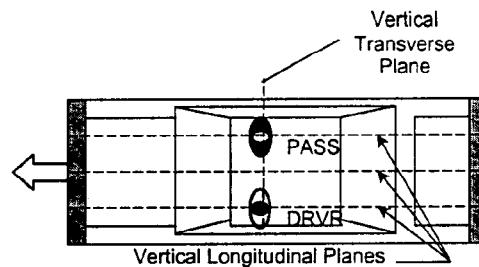
Test Date: 12/22/99



AD Arm to Door
 HD H-Point to Door
 HR Head to Side Header
 HS Head to Side Window
 KK Knee to Knee
 SHY Striker to H-Point
 (Y Axis)



CD Chest to Dash
 CS Chest to Steering Wheel Hub
 HH Head to Header
 HW Head to Windshield
 HZ Head to Roof
 KDA Knee to Dash Angle
 KDL Left Knee to Dash
 KDR Right Knee to Dash
 NA Nose to Rim Angle
 NR Nose to Rim
 PA Pelvic Angle
 RA Rim to Abdomen
 SA Seat Back Angle
 SCA Steering Column Angle
 SH Striker to H-Point
 SK Striker to Knee
 ST Striker to Head
 SWA Steering Wheel Angle
 TA Tibial Angle
 WA Windshield Angle



DUMMY MEASUREMENTS FOR FRONT SEAT OCCUPANTS

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

Test Vehicle: 2000 Chevrolet S-10 Pickup
 Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0106
 Test Date: 12/22/99

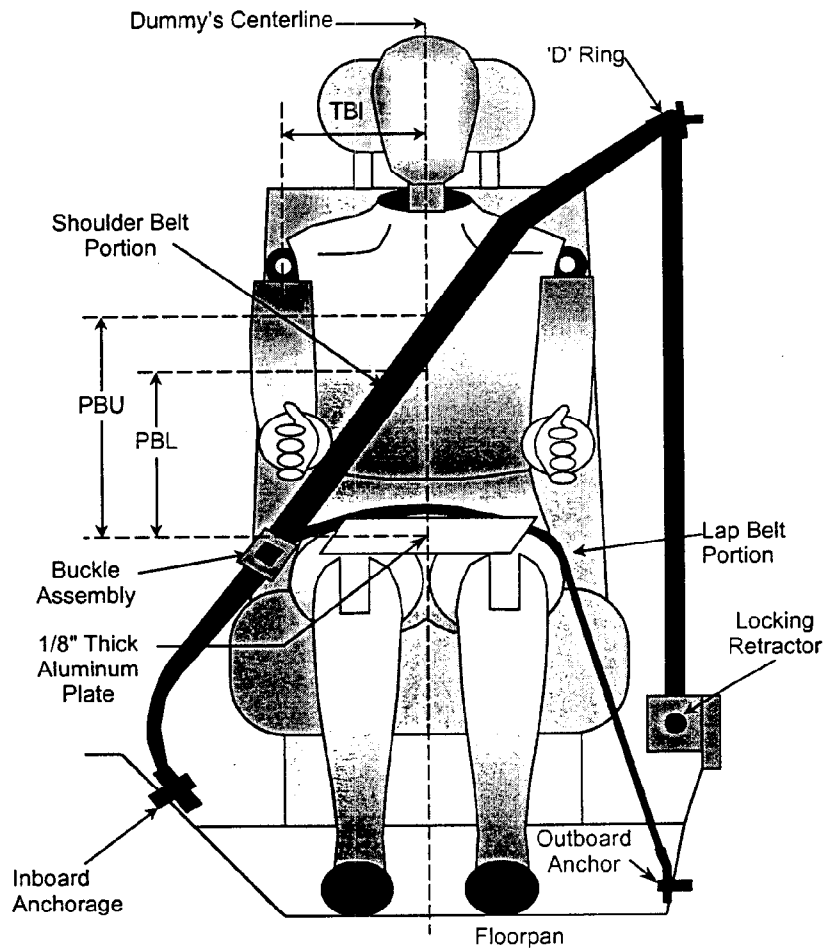
TEST DUMMY POSITION MEASUREMENTS

Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA	Windshield Angle		36		
SWA	Steering Wheel Angle		69		
SCA	Steering Column Angle		22		
SA	Seat Back Angle		23		223
HZ	Head to Roof (Z)	220	90	211	90
HH	Head to Header	470	0	455	0
HW	Head to Windshield	690	0	663	0
HR	Head to Side Header (Y)	275		285	
NR	Nose to Rim	395	9		
CD	Chest to Dash	550		500	
CS	Chest to Steering Hub	320	0		
RA	Rim to Abdomen	175	0		
KDL	Left Knee to Dash	175	335	185	
KDR	Right Knee to Dash	190		185	33
PA	Pelvic Angle		24		23
TA	Tibia Angle		44		37
KK	Knee to Knee (Y)	205		190	
SK	Striker to Knee	700	3	675	2
ST	Striker to Head	615	72	600	12
SH	Striker to H-Point	313	17	295	19
SHY	Striker to H-Point (Y)	210		200	
HS	Head to Side Window	351		345	
HD	H-Point to Door (Y)	129		147	
AD	Arm to Door (Y)	103		32	
AA	Ankle to Ankle	n/a		n/a	

DATA SHEET NO. 6
SEAT BELT POSITIONING DATA

Test Vehicle: 2000 CHEVROLET S-10 PICK-UP
 Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0106
 Test Date: 12/22/99



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	295	300
PBL - Top surface of reference to belt lower edge	mm	210	216
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 Chevrolet S-10 Pickup

NHTSA No.: MY0106

Test Program: 2000 NHTSA 35 mph NCAP

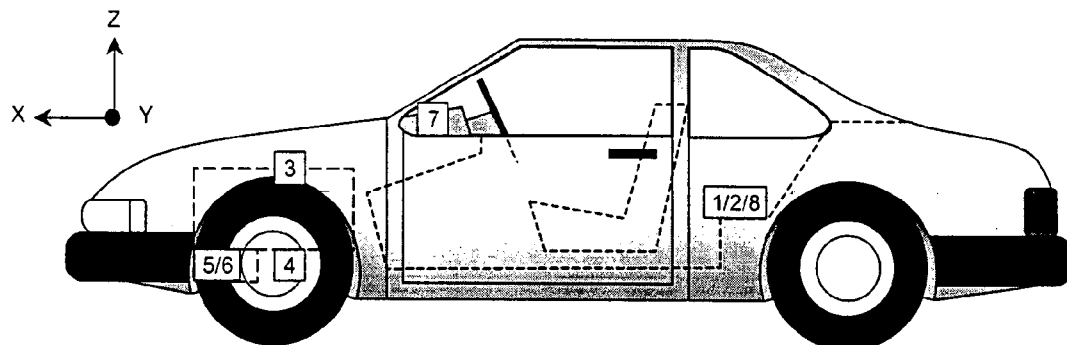
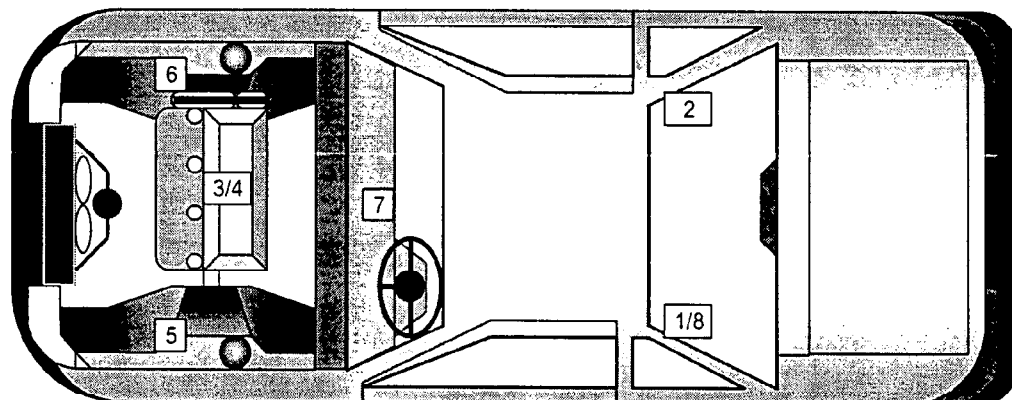
Test Date: 12/22/99

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.)	2385	-616	540	G's	4.9	143.0	-47.1	48.8
2	Right Rear X-Member (Pri.)	2365	382	536	G's	3.4	142.1	-47.1	51.6
3	Engine Top	N/A	N/A	N/A	G's	0.0	0.0	0.0	0.0
4	Engine Bottom	3825	40	239	G's	13.6	66.2	-63.8	51.9
5	Left Brake Caliper	3865	-661	316	G's	41.6	23.8	-136.4	28.3
6	Right Brake Caliper	3865	661	378	G's	53.2	22.3	-109.5	43.9
7	Instrument Panel	3225	-13	1259	G's	37.8	47.9	-66.3	42.0
8	Left Rear X-Member (Rednt.)	2365	-616	540	G's	4.3	143.3	-47.6	48.8

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

* Channel failed, no data.



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

Test Vehicle: 2000 Chevrolet S-10 Pickup

NHTSA No.: MY0106

Test Program: 2000 NHTSA 35 mph NCAP

Test Date: 12/22/99

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	17.5	183.7	-72.2	70.3	23.0	185.5	-61.8	74.2
Head CG	Y	G's	7.4	153.2	-13.4	84.9	30.2	82.8	-4.2	168.4
Head CG	Z	G's	38.1	57.9	-10.0	108.5	39.5	71.3	-7.8	139.0
Head CG Resultant	N/A	G's	76.3	70.3			73.8	71.3		

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	7.2	169.1	-62.7	66.2	7.3	160.0	-59.2	62.7
Chest CG	Y	G's	2.9	60.4	-5.5	80.6	11.1	75.6	-2.4	105.8
Chest CG	Z	G's	21.9	56.2	-11.1	109.1	21.6	70.9	-12.7	115.1
Chest CG Resultant	N/A	G's	64.4	66.3			61.9	62.7		

FEMUR PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Femur	Z	Newtons	394.2	96.9	-7264.9	52.8	307.1	102.7	-6087.3	61.7
Right Femur	Z	Newtons	142.2	38.7	-8226.8	49.7	362.4	37.7	-2884.3	54.7

SEAT BELT SENSOR PEAK VALUES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Lap Belt Force	N/A	Newtons	6224.0	56.3	-54.0	132.3	9154.0	63.1	-14.6	140.7
Shoulder Belt Force	N/A	Newtons	3711.1	78.0	-37.4	205.7	8039.9	74.4	5.9	0.0
Shoulder Belt Pullout	N/A	MM	190.3	76.0	0.0	2.1	82.6	84.7	0.0	1.4
Shoulder Belt Stretch	N/A	MM/CM	0.159	84.5	0.000	28.4	0.499	72.0	-0.060	296.3

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	851.6	56.2	56.6	92.5	834.8	55.7	56.1	92.0

CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Primary	61.1	65.3	68.3	60.9	61.8	64.8

DATA SHEET NO. 8...(continued)

Test Vehicle: 2000 Chevrolet S-10 Pickup

NHTSA No.: MY0106

Test Program: 2000 NHTSA 35 mph NCAP

Test Date: 12/22/99

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	4.6	117.8	-85.6	51.8	4.7	126.6	-69.9	52.4
Pelvis	Y	G's	12.9	58.0	-17.5	44.9	6.1	54.9	-4.8	48.2
Pelvis	Z	G's	21.1	45.3	-19.7	101.5	7.7	42.9	-19.4	108.1

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	968.1	74.1	-389.9	137.6	587.2	77.5	-638.7	129.2
Neck Force	Y	Newtons	271.5	68.2	-85.5	29.3	329.1	107.1	-168.9	157.7
Neck Force	Z	Newtons	2146.6	64.0	-450.1	226.4	2743.7	65.4	-418.2	117.6
Neck Moment	X	N·m	9.6	154.3	-29.0	89.4	28.5	101.3	-11.5	159.7
Neck Moment	Y	N·m	53.0	74.2	-32.3	225.0	40.6	142.3	-26.0	223.7
Neck Moment	Z	N·m	10.1	98.5	-5.8	154.3	14.5	144.0	-28.6	97.7

FOOT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Foot Aft	X	G's	17.5	60.3	-124.2	43.5	23.7	47.1	-93.8	42.0
Left Foot Aft	Z	G's	15.6	63.3	-111.0	45.7	18.4	80.1	-138.3	44.2
Left Foot Fore	Z	G's	53.9	50.9	-152.3	46.2	55.6	46.9	-130.0	45.4
Right Foot Aft	X	G's	38.9	49.6	-174.5	43.9	12.0	96.3	-78.5	41.2
Right Foot Aft	Z	G's	29.1	48.4	-178.2	46.0	14.0	72.5	-103.6	45.1
Right Foot Fore	Z	G's	30.4	55.0	-242.4	41.5	79.4	40.5	-135.6	45.0

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	87.0	52.0	-47.8	45.8	163.2	48.5	-53.9	44.6
Left Lower Moment	Y	N·m	42.0	59.0	-37.8	40.0	60.5	47.7	-23.6	35.8
Left Lower Force	Z	Newtons	0.0	0.0	0.0	0.0	188.8	65.5	-5533.8	44.1*
Left Upper Moment	X	N·m	66.6	45.7	-33.1	90.2	69.6	48.6	-84.6	47.1
Left Upper Moment	Y	N·m	124.8	58.4	-186.7	48.9	7.4	154.6	-169.1	44.0
Right Lower Moment	X	N·m	47.7	46.1	-287.3	49.1	84.1	53.0	-20.0	41.2
Right Lower Moment	Y	N·m	102.7	50.4	-48.6	44.5	42.1	90.9	-21.8	49.6
Right Lower Force	Z	Newtons	0.0	0.0	0.0	0.0	170.7	133.2	-4471.3	42.4*
Right Upper Moment	X	N·m	97.0	48.7	-6.1	50.1	34.4	81.6	-32.4	49.7
Right Upper Moment	Y	N·m	17.8	50.2	-271.7	45.1	10.5	153.2	-189.9	52.7

* Driver channel failed, no data.

DATA SHEET NO. 8...(continued)

Test Vehicle: 2000 Chevrolet S-10 Pickup

NHTSA No.: MY0106

Test Program: 2000 NHTSA 35 mph NCAP

Test Date: 12/22/99

CHEST PEAK DISPLACEMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	MM	0.2	7.0	-45.7	70.6	0.3	2.1	-39.7	73.2

HEAD REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	18.2	181.4	-70.8	70.4	24.6	185.4	-60.7	73.4
Head CG	Y	G's	8.6	153.1	-13.0	86.8	30.5	83.6	-4.1	168.0
Head CG	Z	G's	34.2	58.7	-10.6	108.3	36.9	72.5	-5.7	115.9
Head CG Resultant	N/A	G's	74.3	70.4			72.2	72.5		

CHEST REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	7.6	167.9	-62.7	66.1	7.4	160.5	-58.1	62.4
Chest CG	Y	G's	3.8	60.3	-6.7	82.1	12.2	71.6	-3.9	104.5
Chest CG	Z	G's	18.7	56.2	-13.2	108.6	24.2	71.4	-13.0	115.1
Chest CG Resultant	N/A	G's	64.7	66.2			61.4	66.2		

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	820.1	55.3	56.7	92.6	809.9	55.3	57.2	92.8

REDUNDANT CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Redundant	61.4	65.2	68.2	60.6	64.7	67.7

DATA SHEET NO. 9
SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

Test Vehicle: 2000 CHEVROLET S-10 PICK-UP
 Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0106
 Test Date: 12/22/99

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	295	300
PBL - Top surface of reference to belt lower edge	mm	210	216
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	405	405
Shoulder belt length as measured on ATD	mm	820	840
Lap belt length as measured on ATD	mm	765	745
Remainder of belt on reel	mm	736	676
Total belt length for continuous webbing systems	mm	2726	2666

SHOULDER BELT SPOOL-OFF DATA

Measurement Description	Units	Driver	Passenger
As determined mechanically	mm	235.0	63.0
As determined electronically	mm	190.3	82.6

BELT STRETCH DATA

Measurement Description	Units	Driver	Passenger
Electronically from shoulder belt load cell and "D" ring	mm/cm	0.16	0.50
Mechanically	mm/cm	broke	broke

DATA SHEET NO. 10
SUMMARY OF FMVSS 212 DATA

Test Vehicle: 2000 CHEVROLET S-10 PICK-UP
Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0106
Test Date: 12/22/99

Windshield Mounting Details:

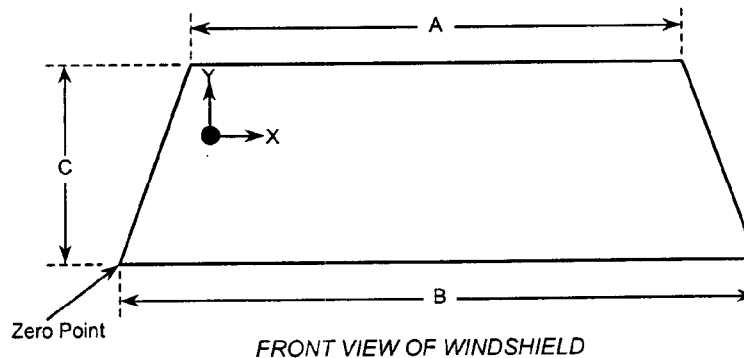
Windshield glass is secured to the vehicle frame with a rubber type adhesive. There is no molding that covers the windshield periphery at any point.

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	2124.5	2124.5	100
Right Side	2124.5	2124.5	100
Total	4249.0	4249.0	100



WINDSHIELD DIMENSIONS

Item	Units	Segment Length	Molding Width
A	mm	1239	18
B	mm	1624	0
C	mm	693	30

DATA SHEET NO. 11

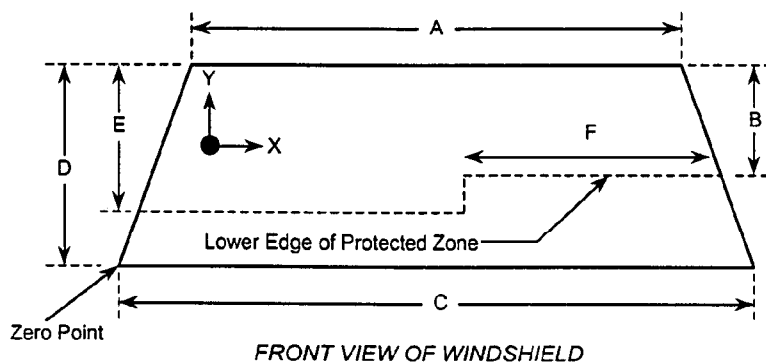
WINDSHIELD ZONE INTRUSION FMVSS 219 (PARTIAL) DATA

Test Vehicle: 2000 CHEVROLET S-10 PICK-UP

NHTSA No.: MY0106

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 12/22/99



WINDSHIELD AND PROTECTED ZONE

Item	Units	Value
A	mm	1239
B	mm	334
C	mm	1624
D	mm	693
E	mm	380
F	mm	765

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 CHEVROLET S-10 PICK-UP
Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0106
Test Date: 12/22/99

Test Time: 12:18 PM Temperature at Time of Impact: 11.6 °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

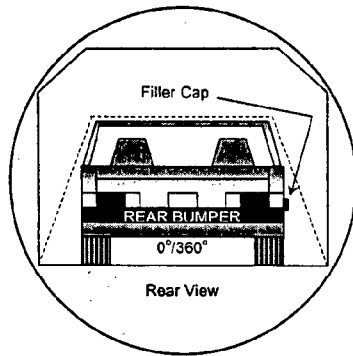
DATA SHEET NO. 13
FMVSS 301 STATIC ROLLOVER DATA SHEET

Test Vehicle: 2000 CHEVROLET S-10 PICK-UP

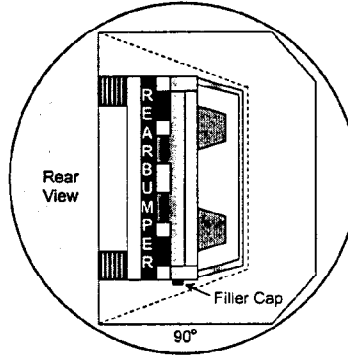
NHTSA No.: MY0106

Test Program: 2000 NHTSA 35 MPH NCAP

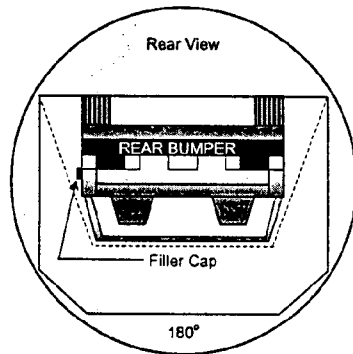
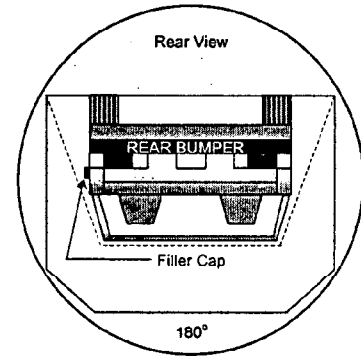
Test Date: 12/22/99



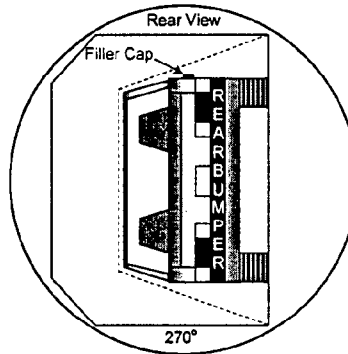
0° TO 90°



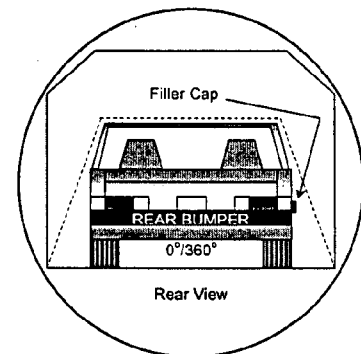
90° TO 180°



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.

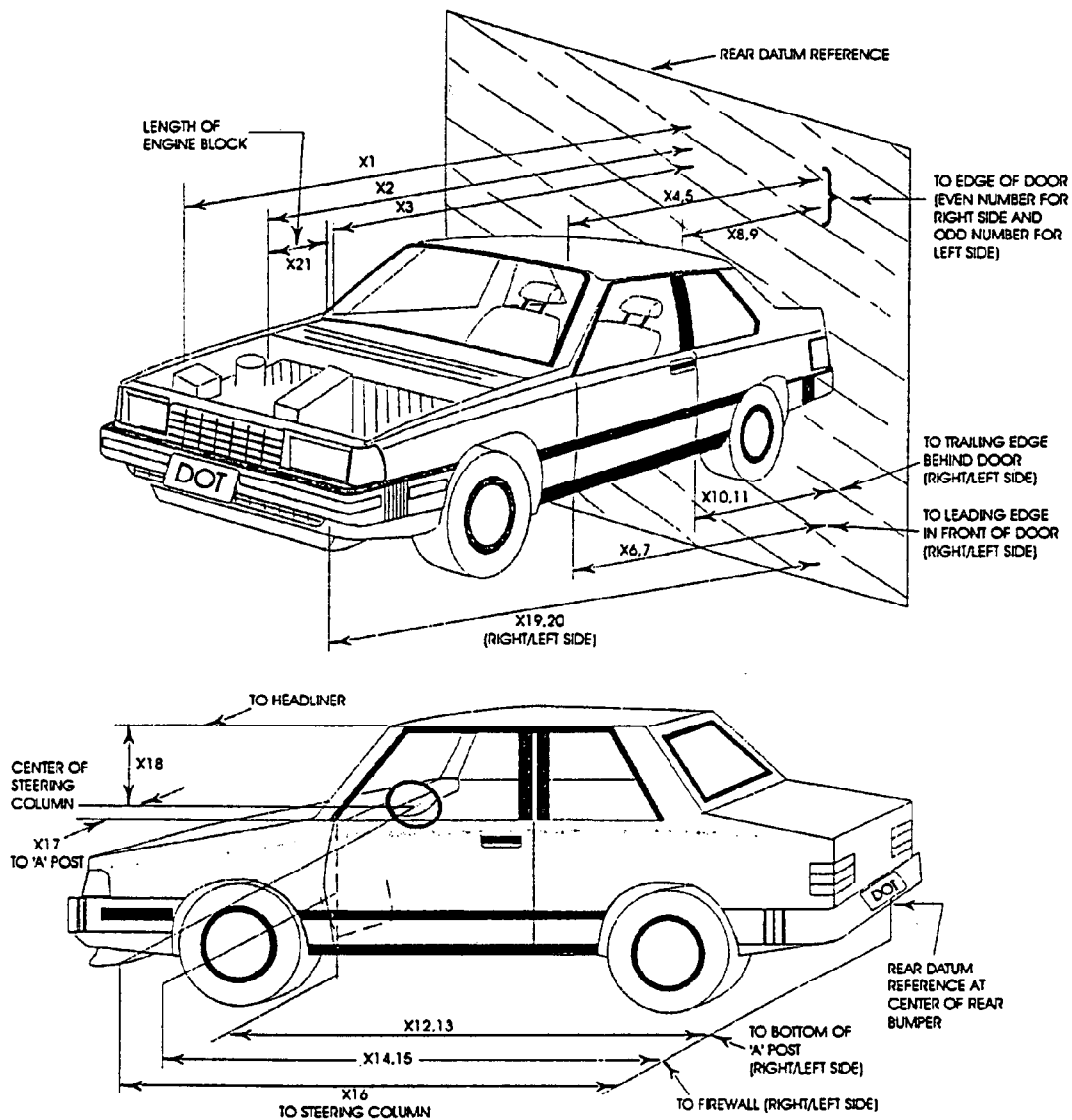
TEST PHASE	Rotation Time (sec.)	Hold Time (sec.)	Spillage (oz.)
0° TO 90°	80	300	0.0
90° TO 180°	82	300	0.0
180° TO 270°	78	300	0.0
270° TO 360°	82	300	0.0

DATA SHEET NO. 14
VEHICLE MEASUREMENTS

Test Vehicle: 2000 CHEVROLET S-10 P/U
Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0106
Test Date: 12/22/99

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
1	Total length of vehicle at centerline	mm	4825	4136	-689
2	RSOV to front of engine	mm	4130	3887	-243
3	RSOV to firewall centerline	mm	3705	3625	-80
4	RSOV to leading edge of right door	mm	3476	3433	-43
5	RSOV to leading edge of left door	mm	3465	3432	-33
6	RSOV to lower leading edge of right door	mm	3421	3380	-41
7	RSOV to lower leading edge of left door	mm	3419	3380	-39
8	RSOV to upper trailing edge of right door	mm	2312	2283	-29
9	RSOV to upper trailing edge of left door	mm	2310	2296	-14
10	RSOV to lower trailing edge of right door	mm	2307	2285	-22
11	RSOV to lower trailing edge of left door	mm	2305	2276	-29
12	RSOV to bottom of right 'A' pillar	mm	3385	3342	-43
13	RSOV to bottom of left 'A' pillar	mm	3385	3345	-40
14	RSOV to firewall on right side	mm	3627	3565	-62
15	RSOV to firewall of left side	mm	3696	3615	-81
16	RSOV to steering column	mm	2958	2965	7
17	Center of steering column to left 'A' pillar	mm	386	380	-6
18	Center of steering column to headlining	mm	465	445	-20
19	RSOV to right side of front bumper	mm	4575	4085	-490
20	RSOV to left side of front bumper	mm	4575	4077	-498
21	Length of engine block	mm	510	510	0
RD	RSOV to right side of dash panel	mm	3145	3090	-55
CD	RSOV to center of dash panel	mm	3102	3080	-22
LD	RSOV to left side of dash panel	mm	3129	3095	-34



DATA SHEET NO. 15
CAMERA LOCATIONS

Test Vehicle: 2000 CHEVROLET S-10 P/U
Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0106
Test Date: 12/22/99

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	8315	1285	1	7970	12	1000
3A	Left Side No. 2	1450	8285	1690	7	7970	35	1000
3B	Left Side No. 3A	1700	9325	1425	1	8970	50	450
4	Left Side No. 3B	8200	10900	2930	9	12220	80	980
5	Left Side, No. 4	1800	8175	2820	17	8200	19	1020
6	Left Side, No. 5	1800	8370	3200	15	8400	19	1020
7	Right Side, No. 1	2100	8317	1030	3	8000	13	960
8A	Right Side, No. 2A	1800	8237	1670	2	7950	35	1030
8B	Right Side, No. 2B	1600	10317	1370	2	10010	50	770
9	Right Side, No. 3	8150	9400	2970	15	11380	80	930
10	Right Side, No. 4	2400	7917	1185	3	7700	24	1000
11	Overhead Overall	530	0	5486	90	N/A	13	1000
12	Front View, Driver	390	300	2605	41	N/A	13	950
13	Front View, Passenger	390	300	2605	41	N/A	13	950
14	Pit Camera, Engine	450	0	1500	90	N/A	13	910
15	Pit Camera, Fuel Tank	4555	0	1800	45	N/A	19	950
16	Onboard, Driver	DID	NOT	USE				
17	Onboard, Passenger	DID	NOT	USE				

X - Barrier Face Y - Monorail Centerline Z - Ground

DATA SHEET NO. 16
PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2000 CHEVROLET S-10 P/U

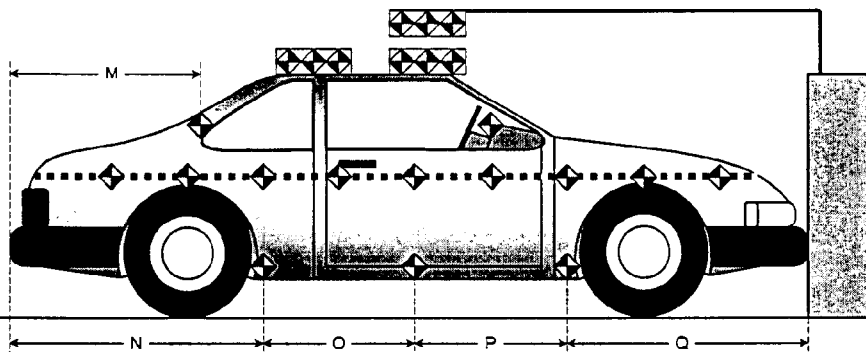
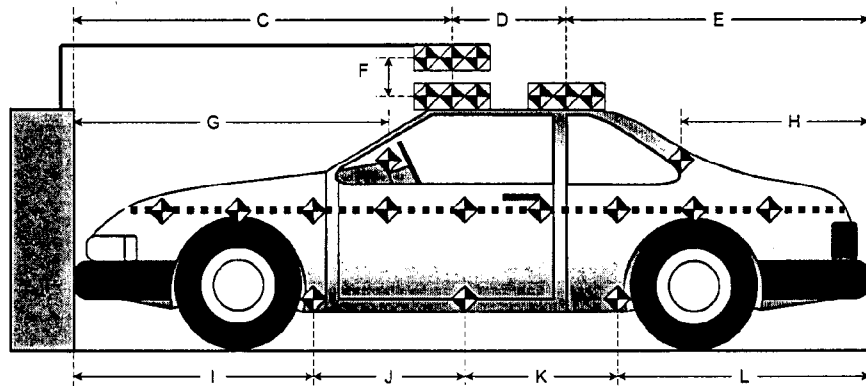
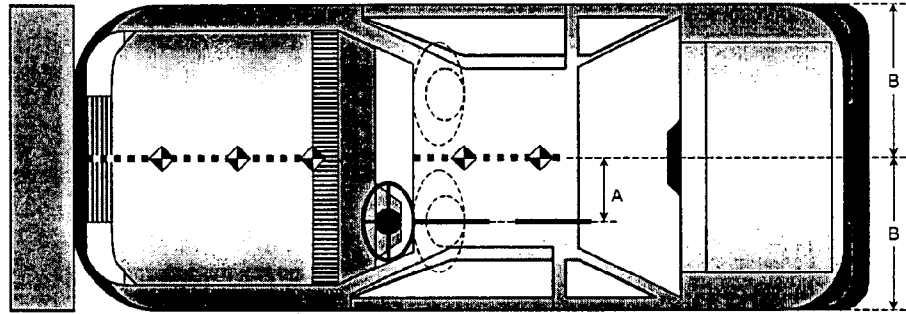
NHTSA No.: MY0106

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 12/22/99

All Dimensions
in mm

Item	Value
A	355
B	862
C	1940
D	609
E	2278
F	153.6
G	1765
H	2268
I	1293
J	900
K	900
L	1673
M	2266
N	1673
O	926
P	918
Q	1318



DATA SHEET NO. 17
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2000 CHEVROLET S-10 PICK-UP
Test Program: 2000 NHTSA 35 MPH NCAP

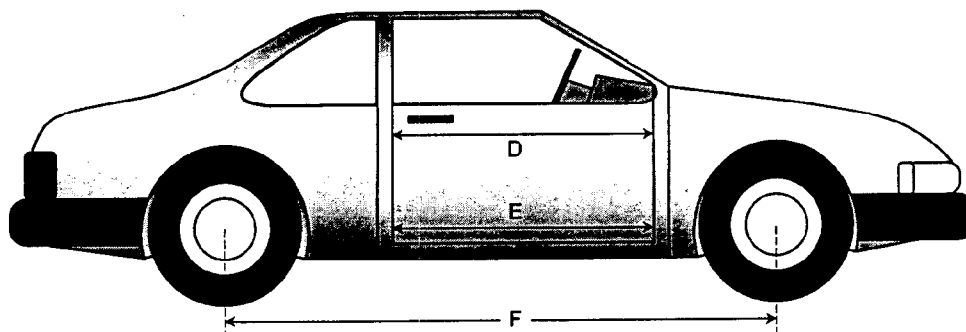
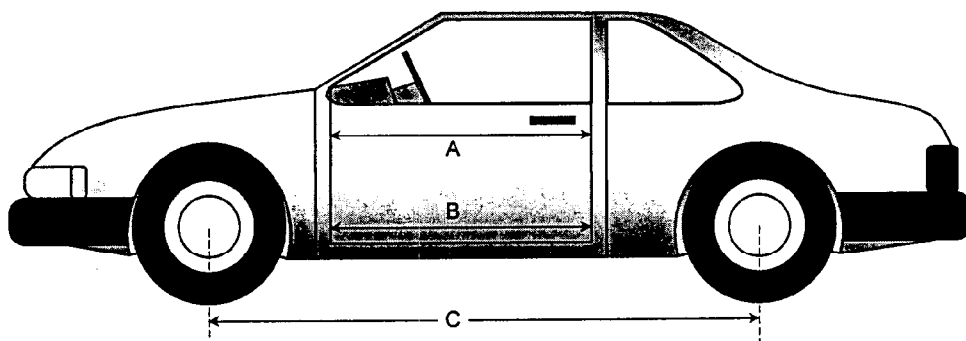
NHTSA No.: MY0106
Test Date: 12/22/99

DOOR OPENING WIDTH

Item	Description	Units	Pre-Test	Post-Test	Difference
A	Left Side Upper	mm	1062	1037	-25
B	Left Side Lower	mm	1070	1047	-23
D	Right Side Upper	mm	1075	1042	-33
E	Right Side Lower	mm	1070	1041	-29

WHEELBASE MEASUREMENTS

Item	Description	Units	Pre-Test	Post-Test	Difference
C	Left Side Wheel base	mm	2755	2595	-160
F	Right Side Wheel base	mm	2755	2540	-215



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

Test Vehicle: 2000 CHEVROLET S-10 PICK-UP

NHTSA No.: MY0106

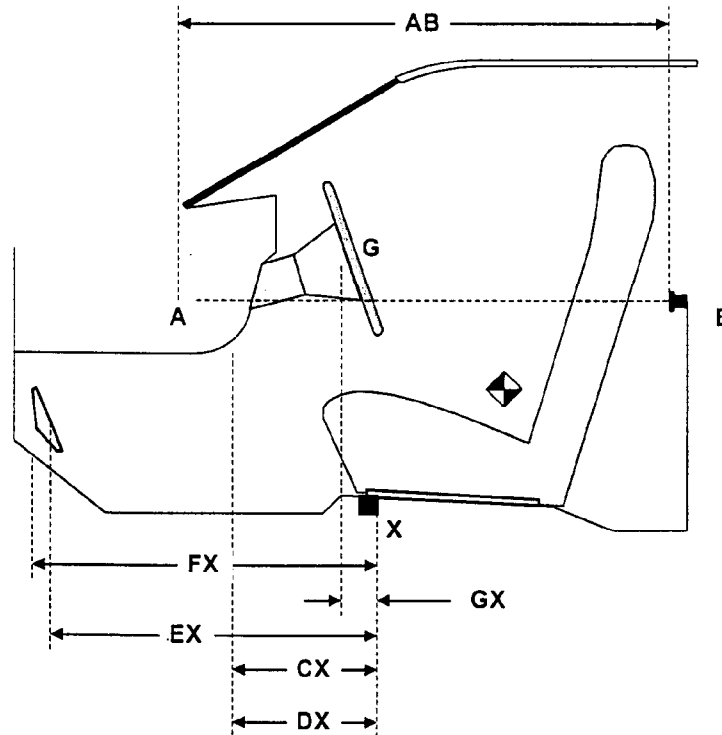
Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 12/22/99

DRIVER COMPARTMENT INTRUSION

Item	Description	Units	Pre-Test	Post-Test	Difference
AB	Door Opening (Inside window jam)	mm	1062	1037	-25
CX	Left Knee Bolster to X	mm	250	230	-20
DX	Right Knee Bolster to X	mm	223	238	15
EX	Brake Pedal to X	mm	512	465	-47
FX	Foot Rest to X	mm	578	592	14
GX	Center of Steering Wheel Hub to X	mm	5	75	70

X = Left Front Seat Outboard Anchor Bolt Head

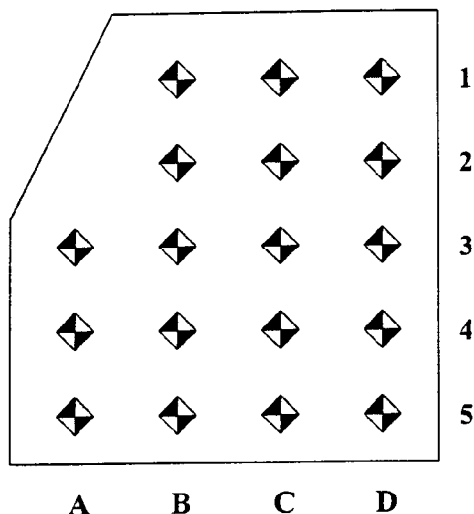


DRIVER COMPARTMENT

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

Test Vehicle: 2000 CHEVROLET S-10 PICK-UP
 Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0106
 Test Date: 12/22/99



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	661	771	750	N/A	605	627	622	N/A	-56	-144	-128
2	N/A	567	571	558	N/A	547	548	547	N/A	-20	-23	-11
3	465	466	466	458	478	472	465	447	13	6	-1	-11
4	367	368	366	363	380	376	365	352	13	8	-1	-11
5	267	268	268	268	280	276	270	260	13	8	2	-8

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	20	1	12	N/A	129	103	104	15	109	102	92
2	N/A	-70	-98	-97	N/A	4	-1	6	-15	74	97	103
3	-115	-120	-121	-118	-60	-78	-55	-43	55	42	66	75
4	-115	-125	-128	-118	-71	-85	-92	-65	44	40	36	53
5	-120	-125	-125	-120	-80	-87	-100	-61	40	38	25	59

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

Test Vehicle: 2000 CHEVROLET S-10 PICK-UP

NHTSA No.: MY0106

Test Program: 2000 NHTSA 35 MPH NCAP

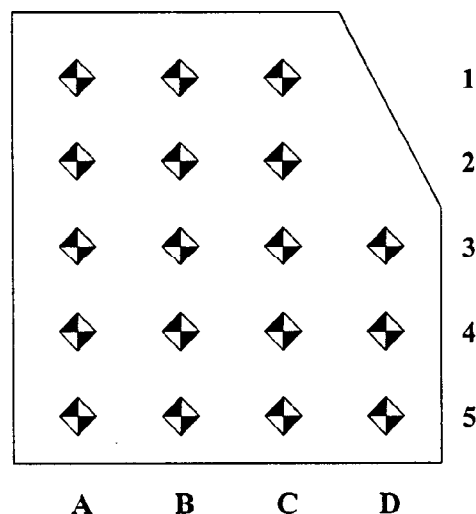
Test Date: 12/22/99

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	628	635	634	N/A	578	595	598	N/A	-50	-40	-36	N/A
2	573	573	580	N/A	536	547	546	N/A	-37	-26	-34	N/A
3	478	473	480	471	450	460	461	466	-28	-13	-19	-5
4	373	375	375	378	360	365	370	374	-13	-10	-5	-4
5	275	275	275	273	255	262	265	275	-20	-13	-10	2

PASSENGER FLOOR PAN Z-AXIS

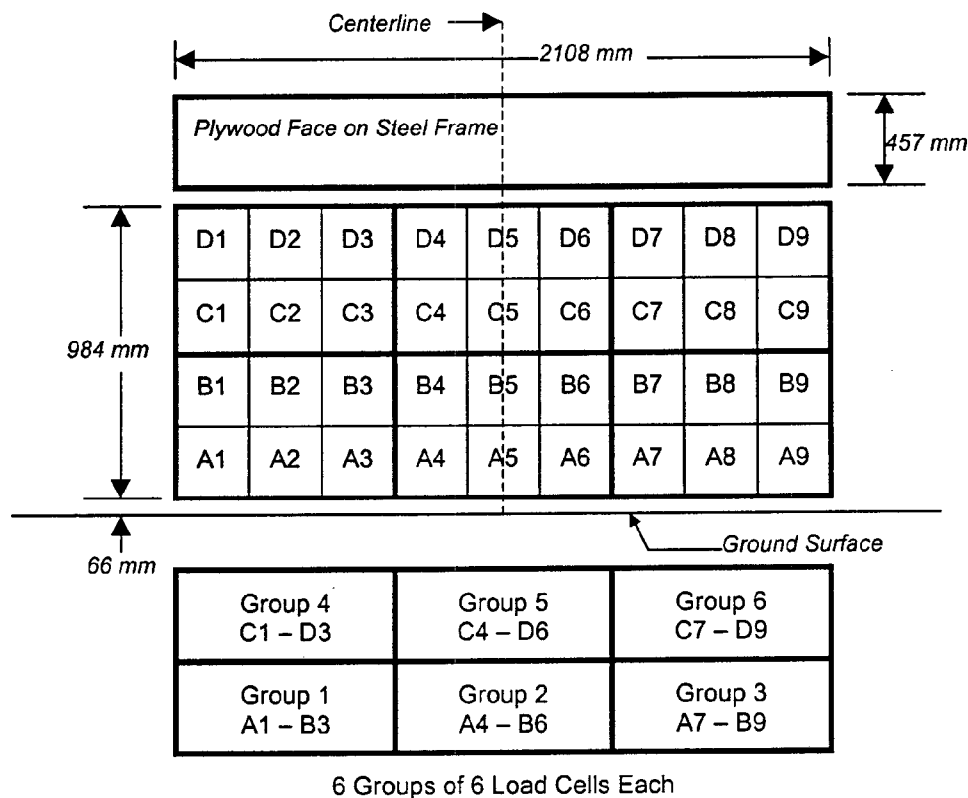
	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	20	30	20	N/A	107	107	105	N/A	87	77	85	N/A
2	-80	-95	-85	N/A	35	33	26	N/A	115	128	111	N/A
3	-110	-112	-110	-105	-10	-27	-34	-29	100	85	76	76
4	-110	-120	-120	-105	-30	-49	-48	-35	80	71	72	70
5	-85	-92	-98	-110	-35	-36	-37	-42	50	56	61	68

DATA SHEET NO. 18
FIXED BARRIER TYPE

Test Vehicle: 2000 CHEVROLET S-10 PICK-UP
 Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0106
 Test Date: 12/22/99

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 Chevrolet S-10 Pickup
Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY0106
Test Date: 12/22/99

VEHICLE INFORMATION

VIN: 1GCCS1443Y8107812
Vehicle Size Category: P/U

Wheel base (mm): 2755
Test Weight (kg): 1677

ACCELEROMETER DATA

Accelerometer Location: Left rear floor pan
Cal. Procedure/Interval: 6 months / drop test
Integration Algorithm: NHTSA Standard
Impact Velocity (km/h): 55.69
Velocity Change (km/h): 61.56

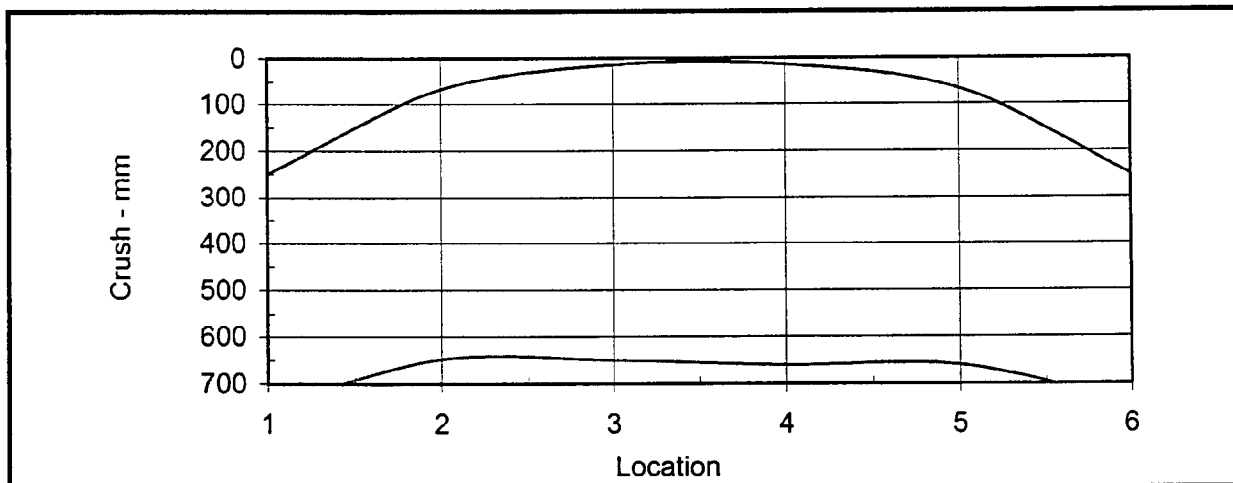
Linearity: Good

Time of Separation (msec): 81.7

CRUSH PROFILE

Collision Deformation Classification: 12FDEW6 Midpoint of Damage: Vehicle Centerline
Damage Region Length (mm): 1559 Impact Mode: Full Frontal

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	250	748	-498
C2	Crush zone 2 on left side	mm	68	649	-581
C3	Crush zone 3 on left side	mm	14	651	-637
C4	Crush zone 4 on right side	mm	13	661	-648
C5	Crush zone 5 on right side	mm	66	661	-595
C6	Crush zone 6 at right side	mm	250	740	-490



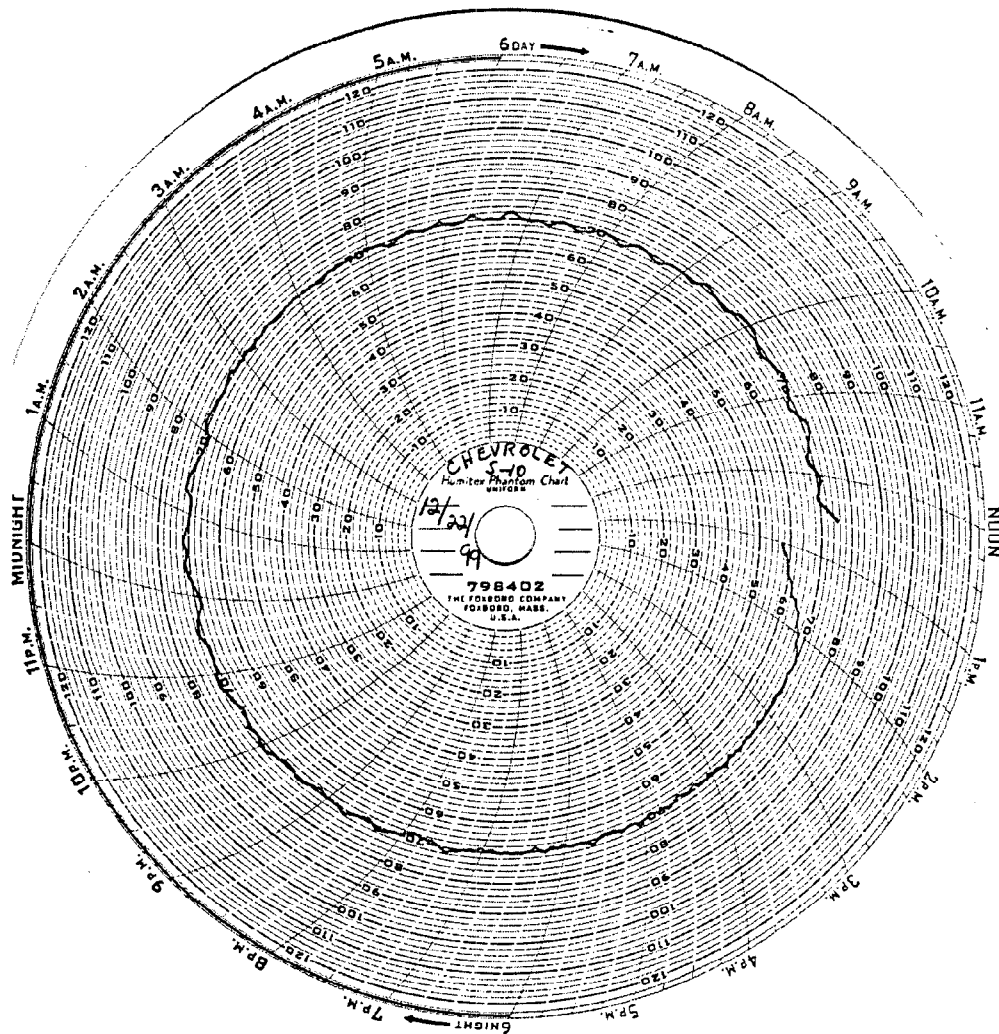
DATA SHEET NO. 20
DUMMY/ VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2000 CHEVROLET S-10 PICK-UP

NHTSA No.: MY0106

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 12/22/99



APPENDIX A
PHOTOGRAPHS

KAR200001-07

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 Dummy Impact	A-58



FIGURE A-1. RIGHT FRONT AS RECEIVED

A-1

KAR20001-07

KAR20001-07



FIGURE A-2. LEFT REAR AS RECEIVED

A-2

KAR20001-07


MFD BY GENERAL MOTORS CORP **08/99**
GVWR **GAWR FRT** **GAWR RR**
1905KG(4200LB) **1134KG(2500LB)** **1043KG(2300LB)**
THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR
VEHICLE SAFETY AND THEFT PREVENTION STANDARDS IN EFFECT ON
THE DATE OF MANUFACTURE SHOWN ABOVE.
1GCCS1443Y8107812 **TYPE: TRUCK**
MODEL: S10603 **PAYLOAD = 1412KG(3112LB)**

SPAX	TIRE SIZE	SPEED RTG	RIM	COLD TIRE PRESSURE
FRT	P205/75R15	S	15X7J	240KPA(35PSI)
RR	P205/75R15	S	15X7J	240KPA(35PSI)
SPA	T155/90D16	M	16X4T	420KPA(60PSI)

SEE OWNER'S MANUAL FOR MORE INFORMATION.

FIGURE A-3. VEHICLE CERTIFICATION LABEL



FIGURE A-5. PRETEST FRONT VIEW

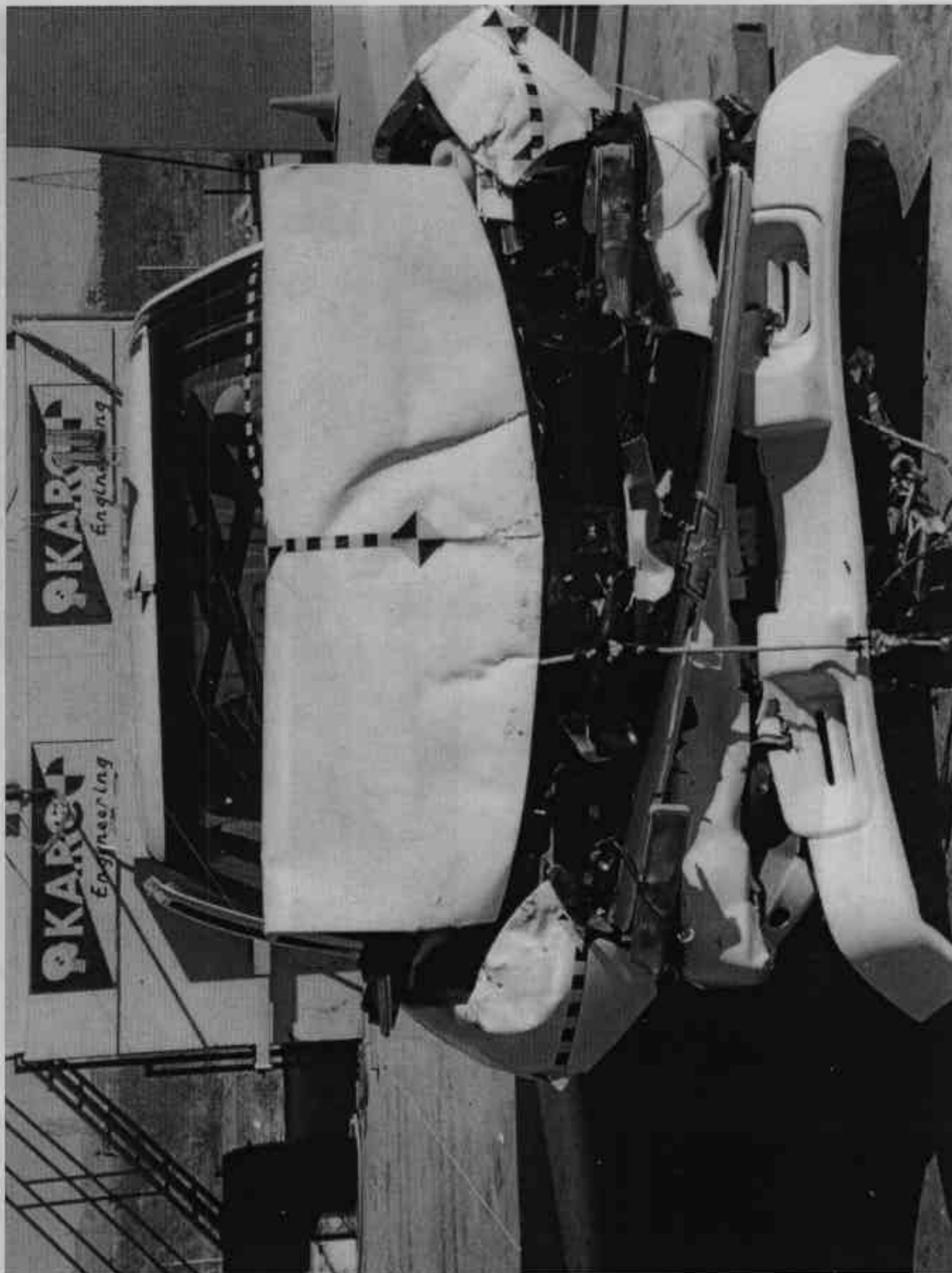


FIGURE A-6. POST TEST FRONT VIEW

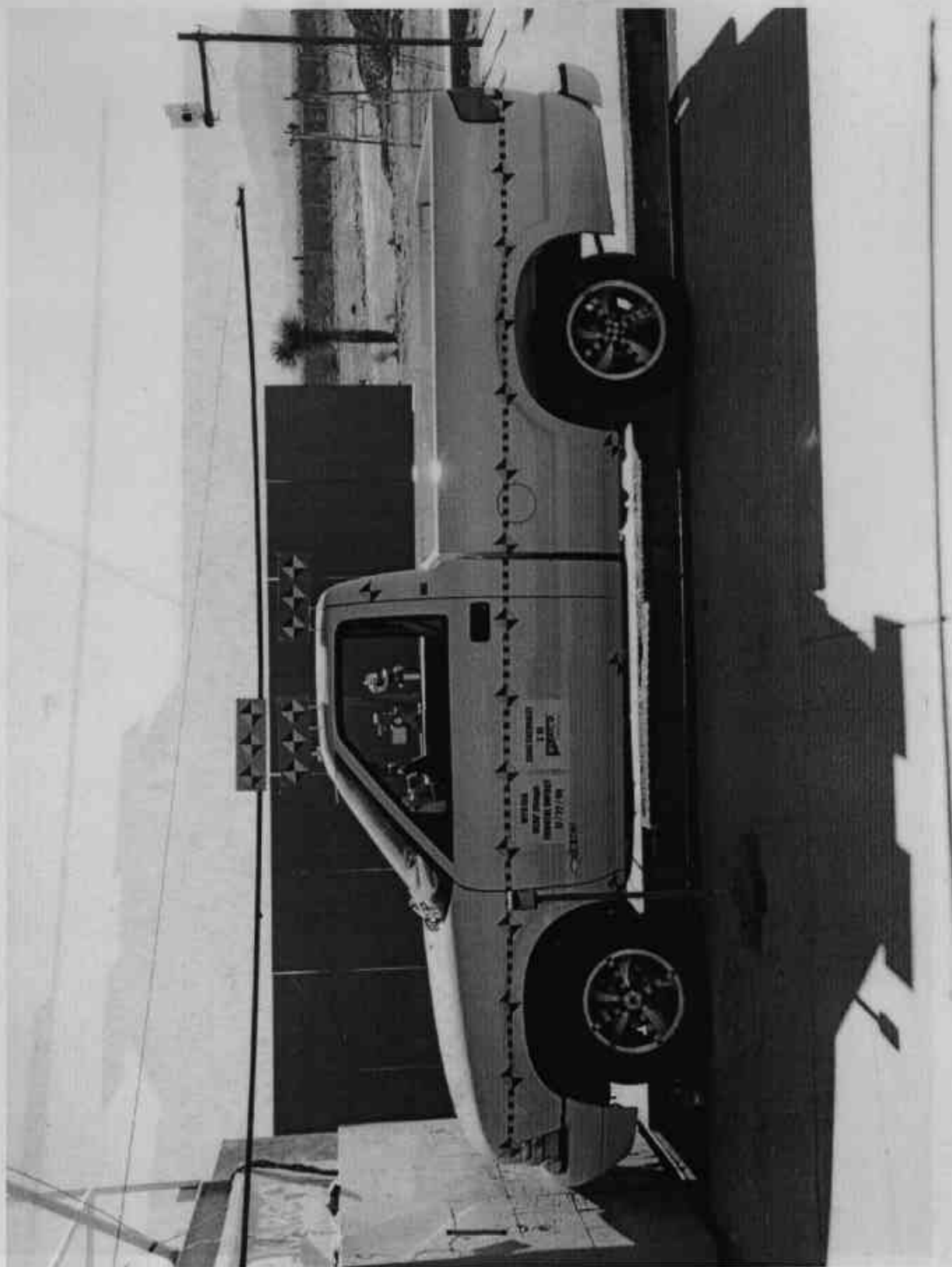


FIGURE A-7. PRETEST LEFT SIDE VIEW

KAR20001-07

A-7

KAR20001-07

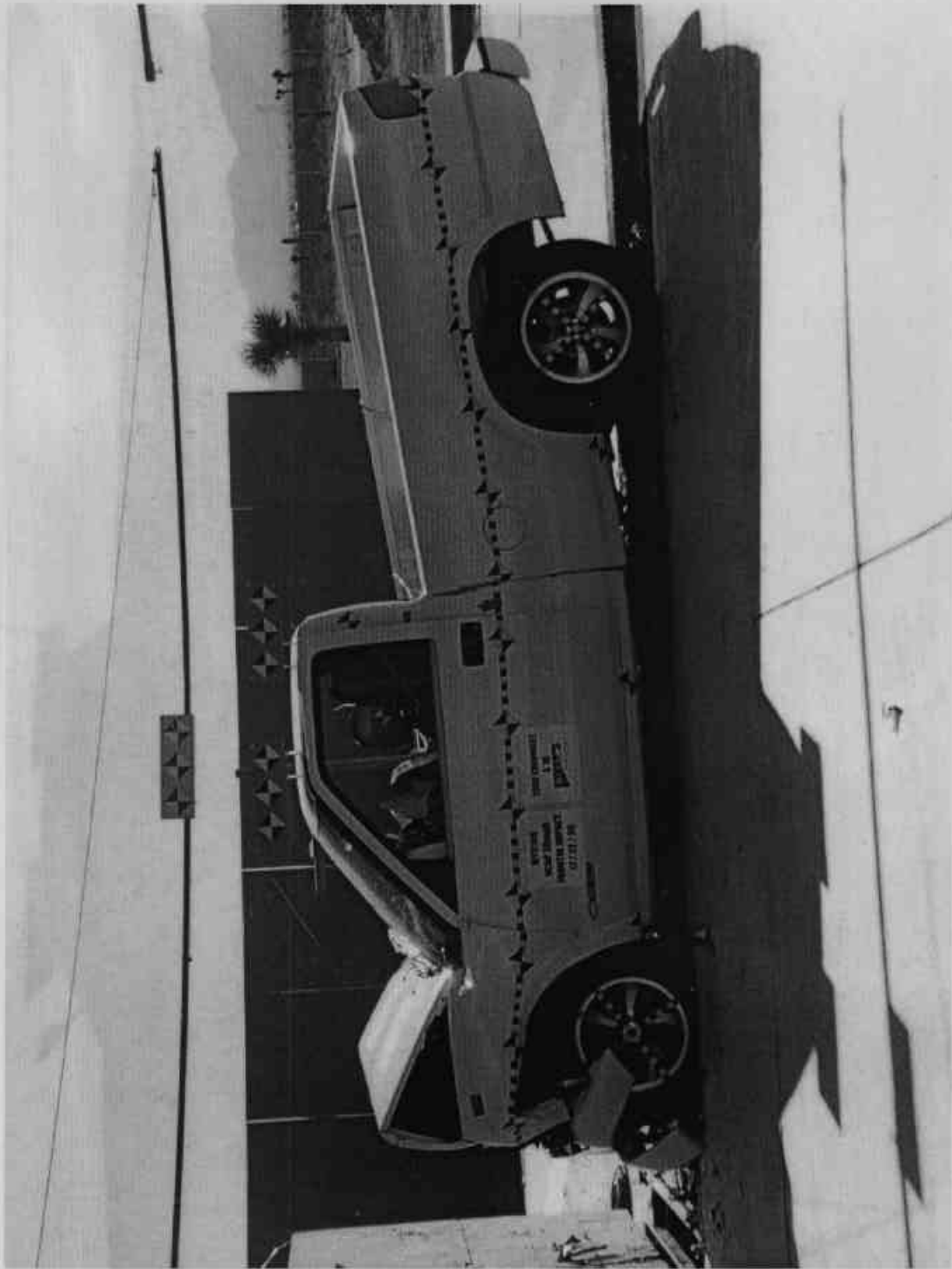


FIGURE A-8. POST TEST LEFT SIDE VIEW

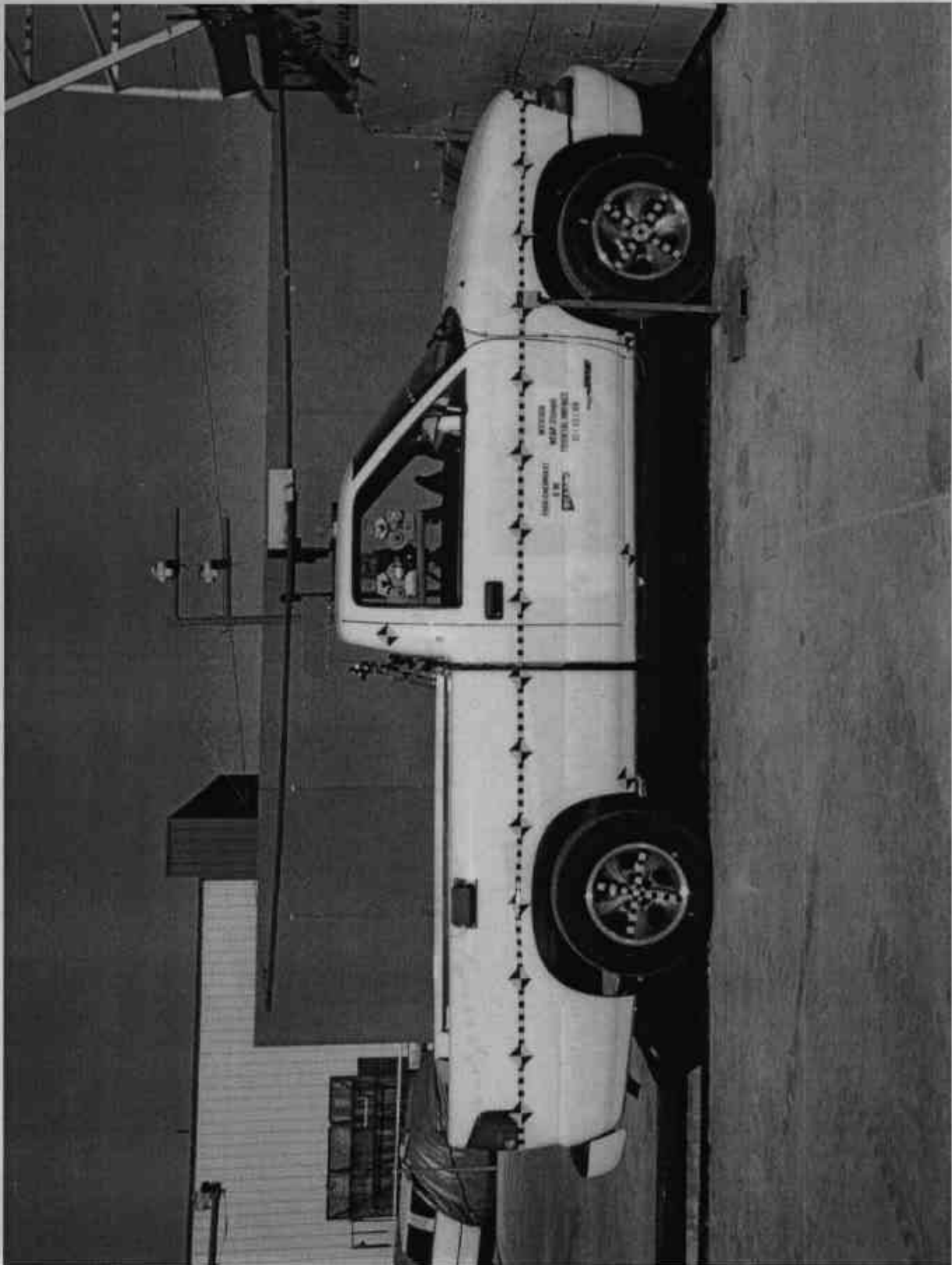


FIGURE A-9. PRETEST RIGHT SIDE VIEW

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A-9

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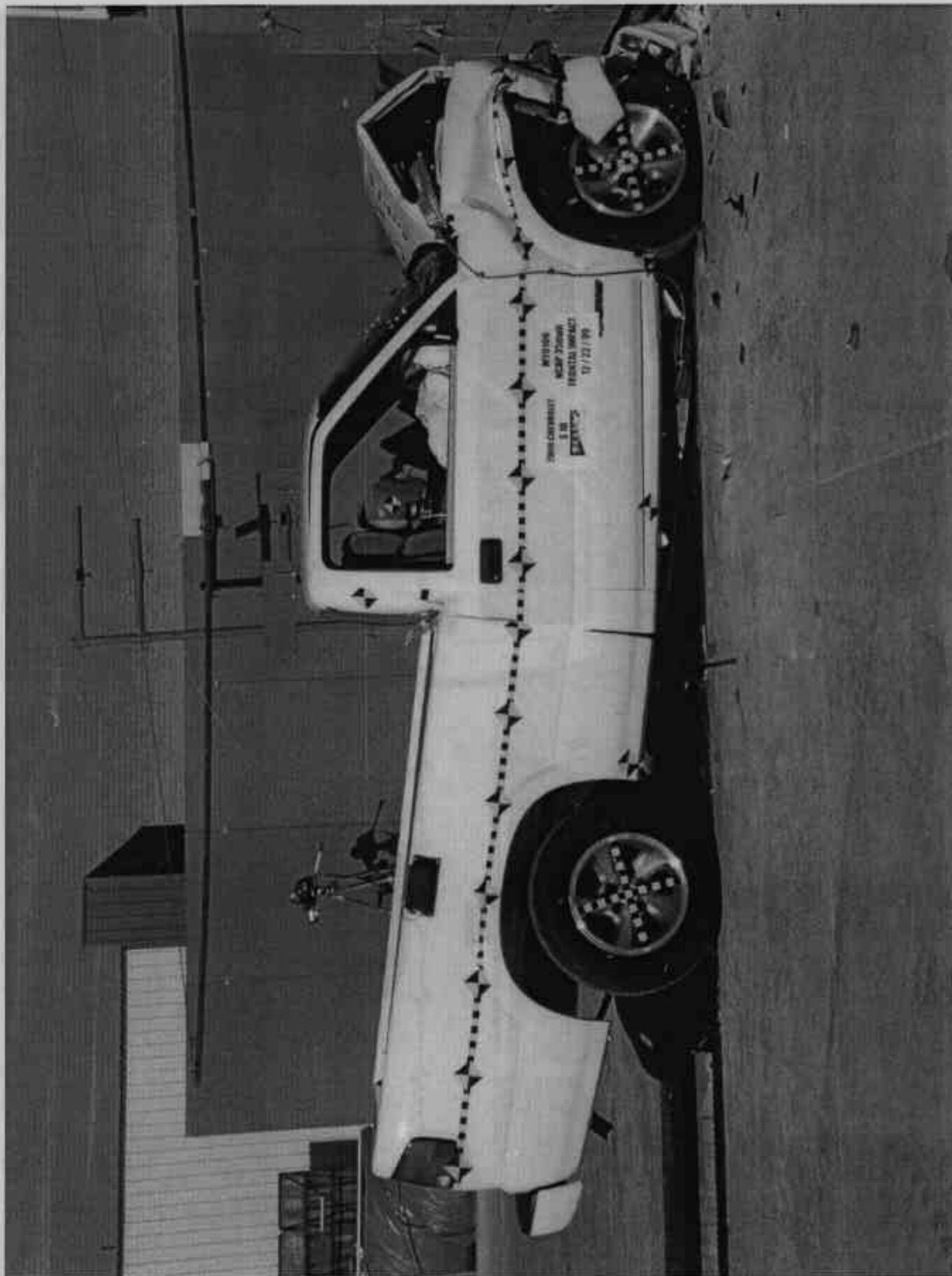


FIGURE A-10. POST TEST RIGHT SIDE VIEW

A-10

KAR20001-07

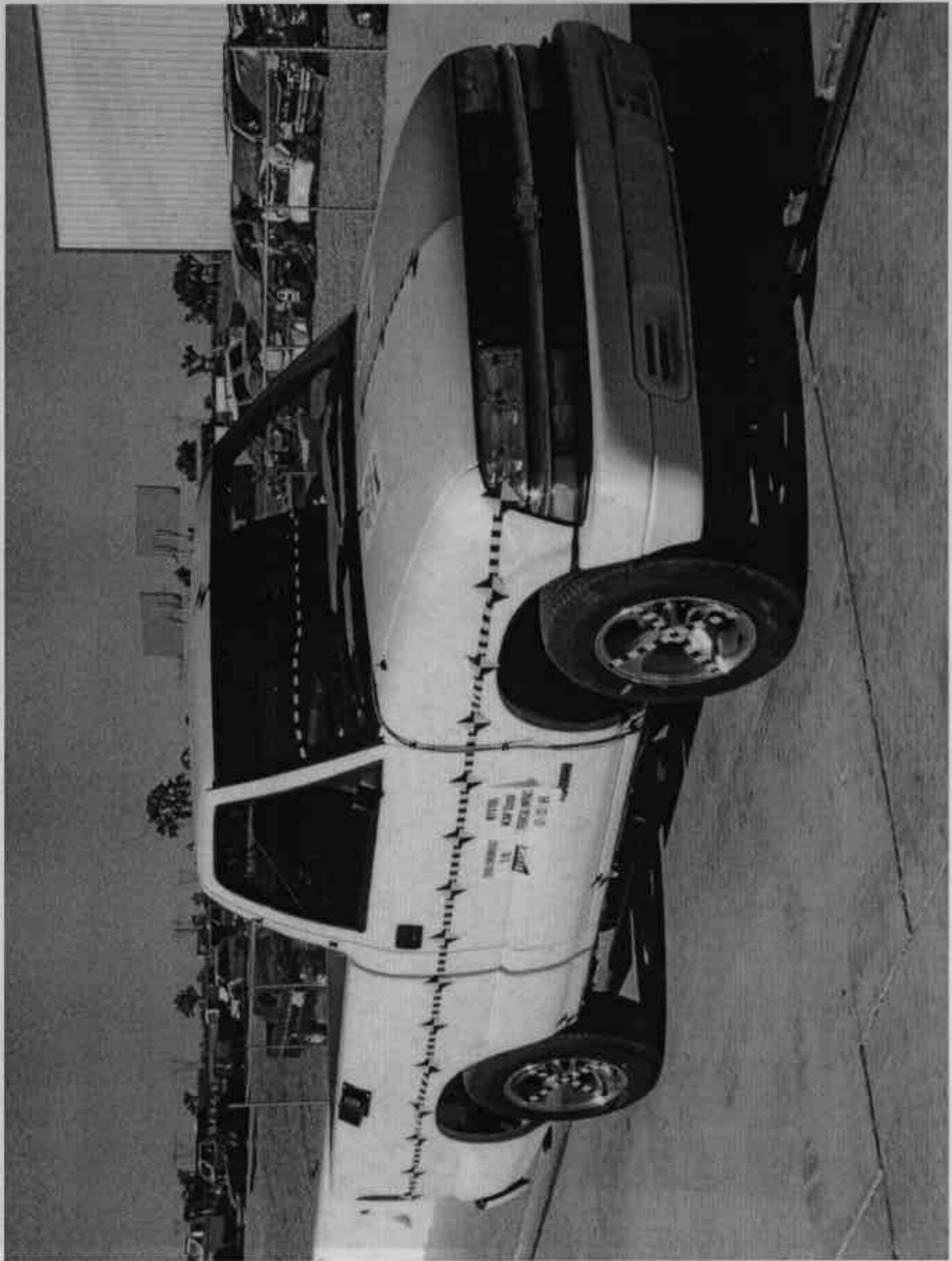


FIGURE A-11. PRETEST RIGHT FRONT VIEW

A-11

KAR20001-07

KAR20001-07



FIGURE A-12. POST TEST RIGHT FRONT VIEW



FIGURE A-13. PRETEST LEFT REAR VIEW

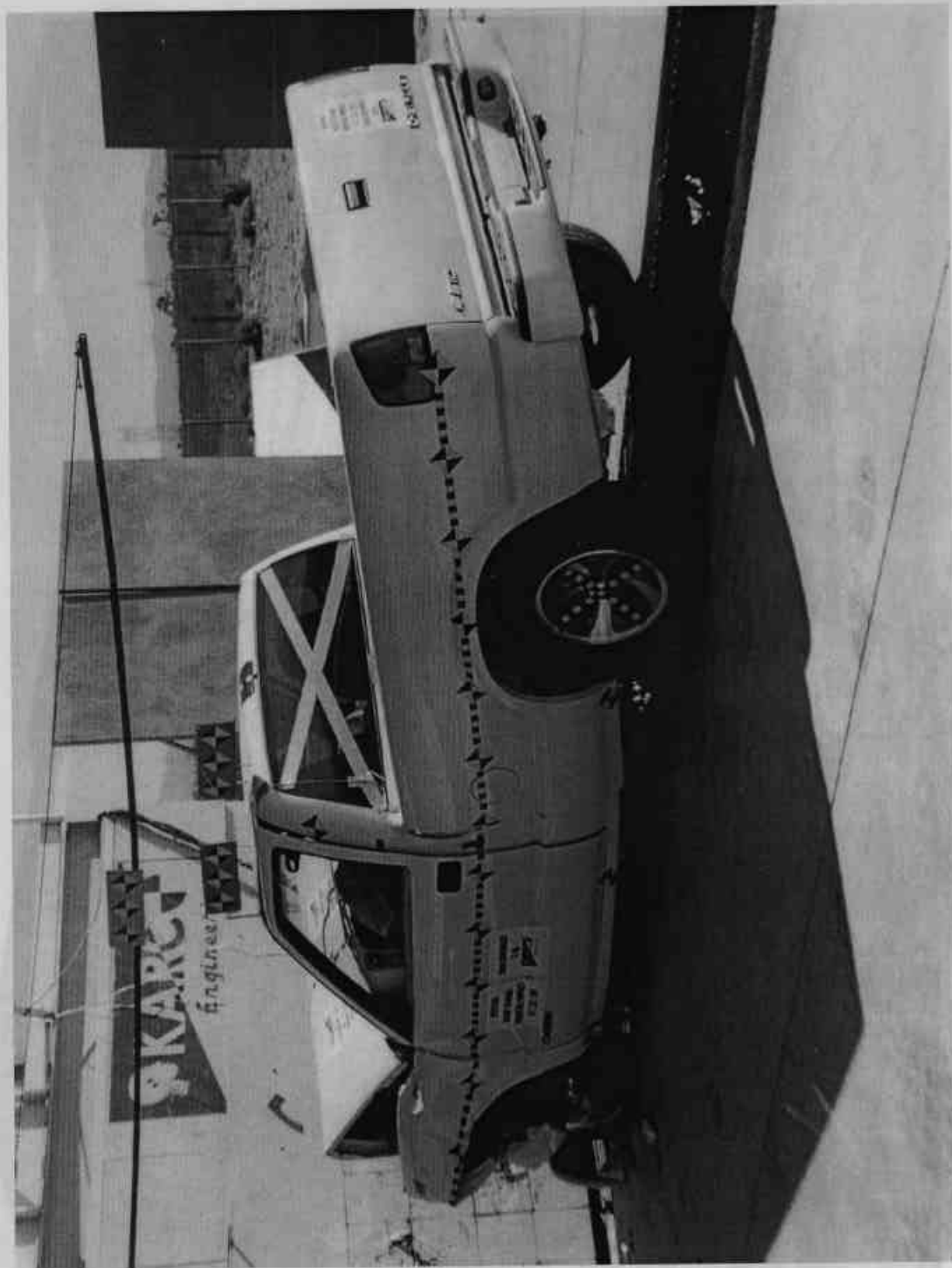


FIGURE A-14. POST TEST LEFT REAR VIEW

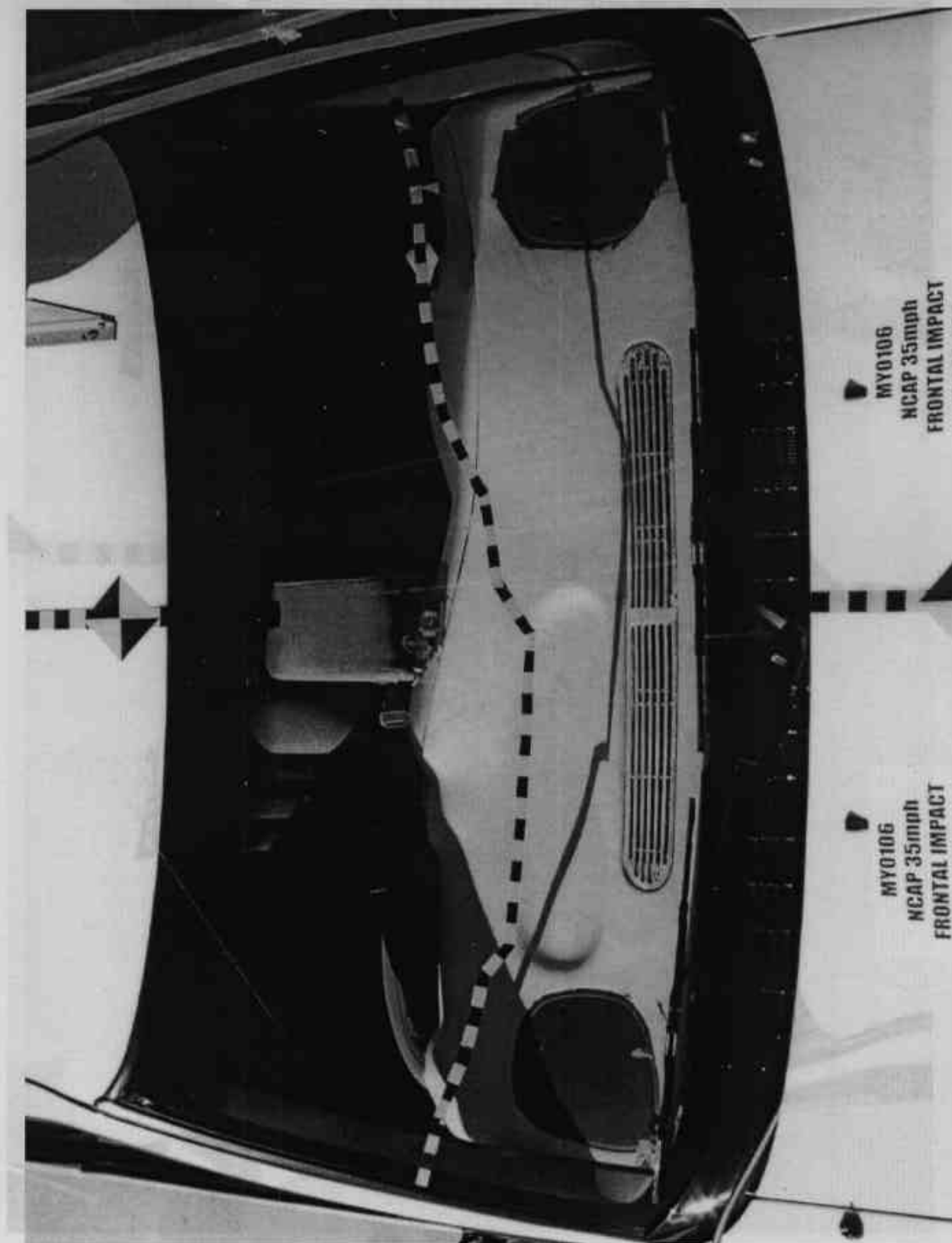


FIGURE A-15. PRETEST WINDSHIELD

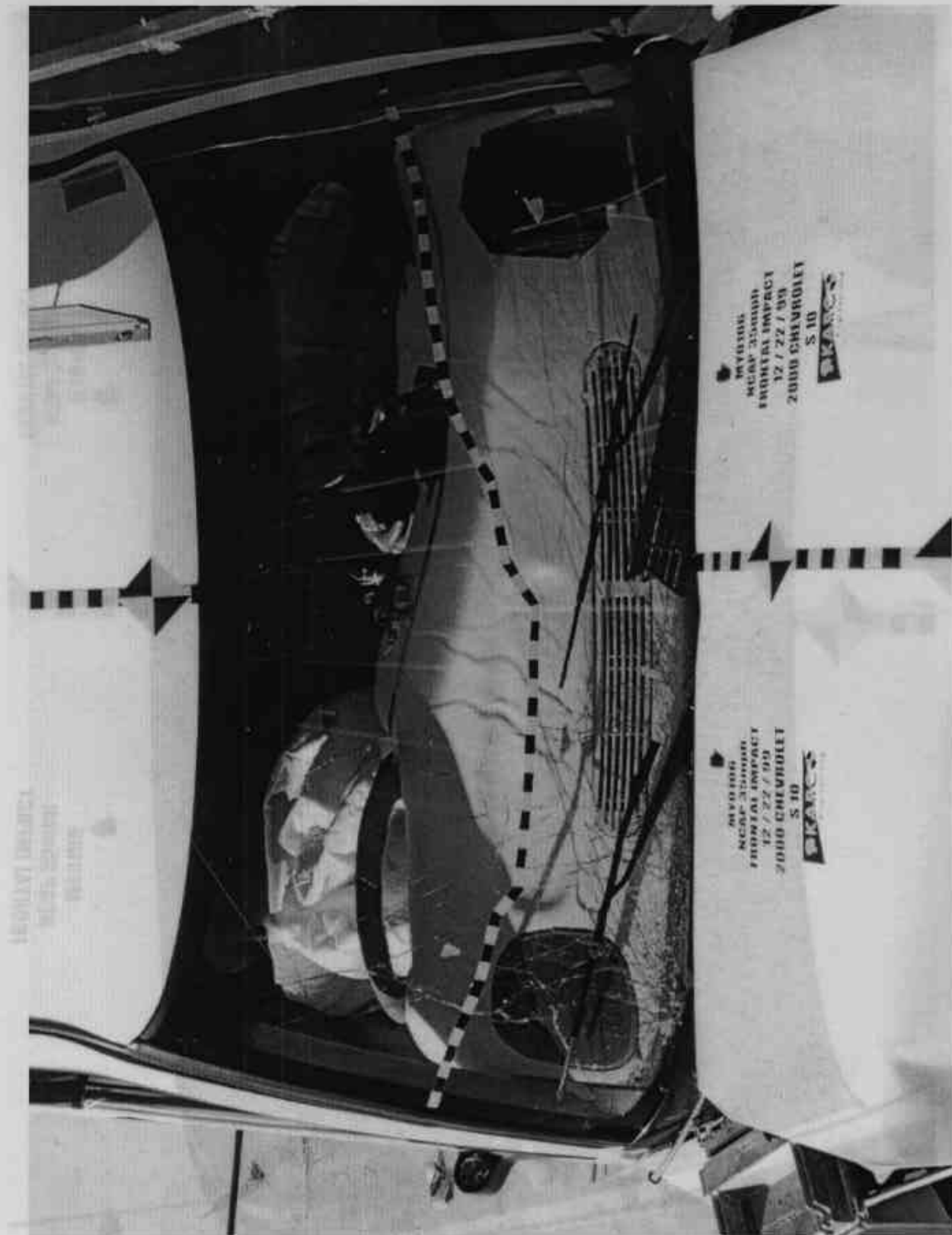


FIGURE A-16. POST TEST WINDSHIELD



FIGURE A-17. PRETEST ENGINE COMPARTMENT

KAR20001-07

A-17

KAR20001-07

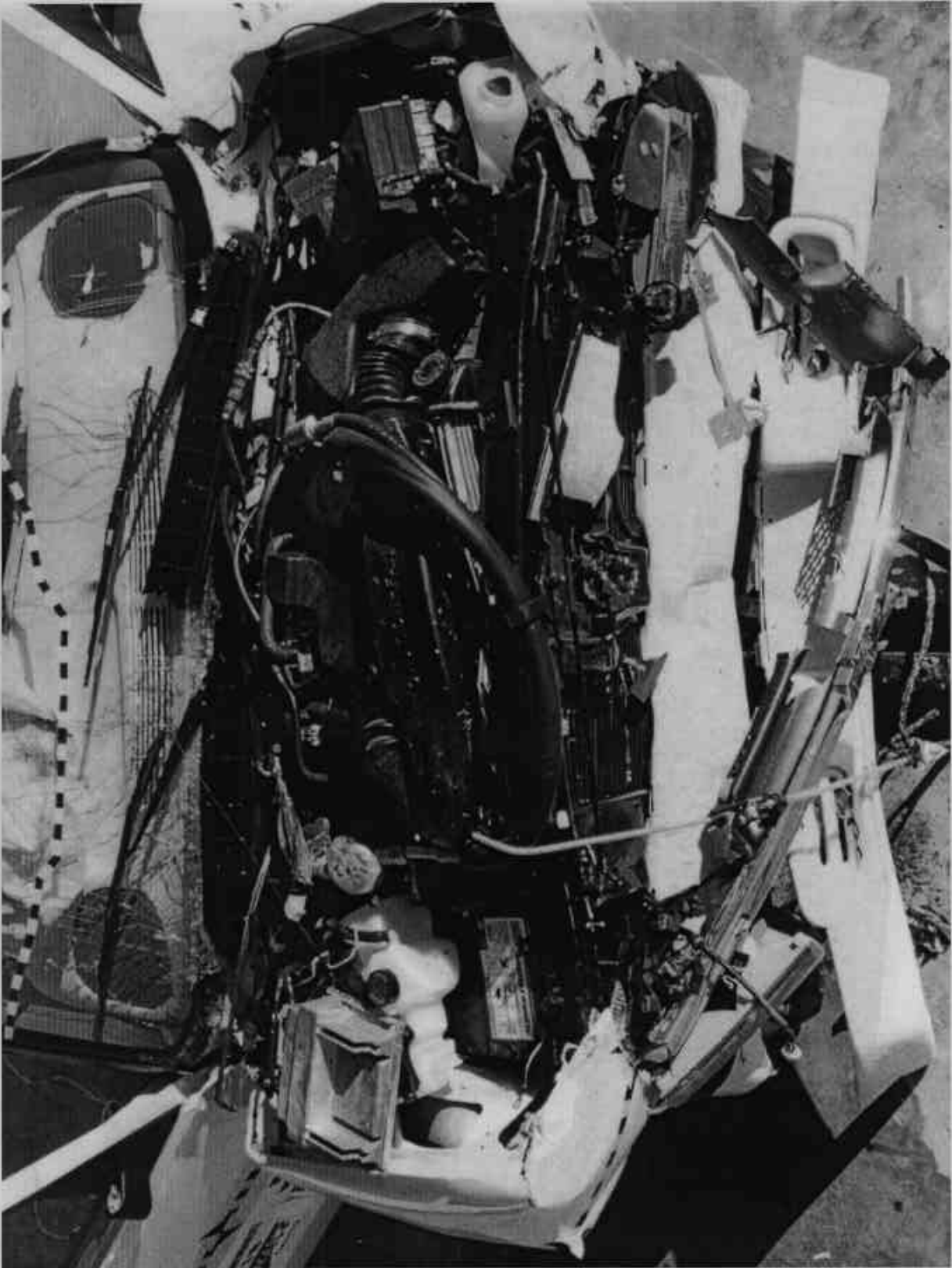


FIGURE A-18. POST TEST ENGINE COMPARTMENT



FIGURE A-19. PRETEST FUEL CAP

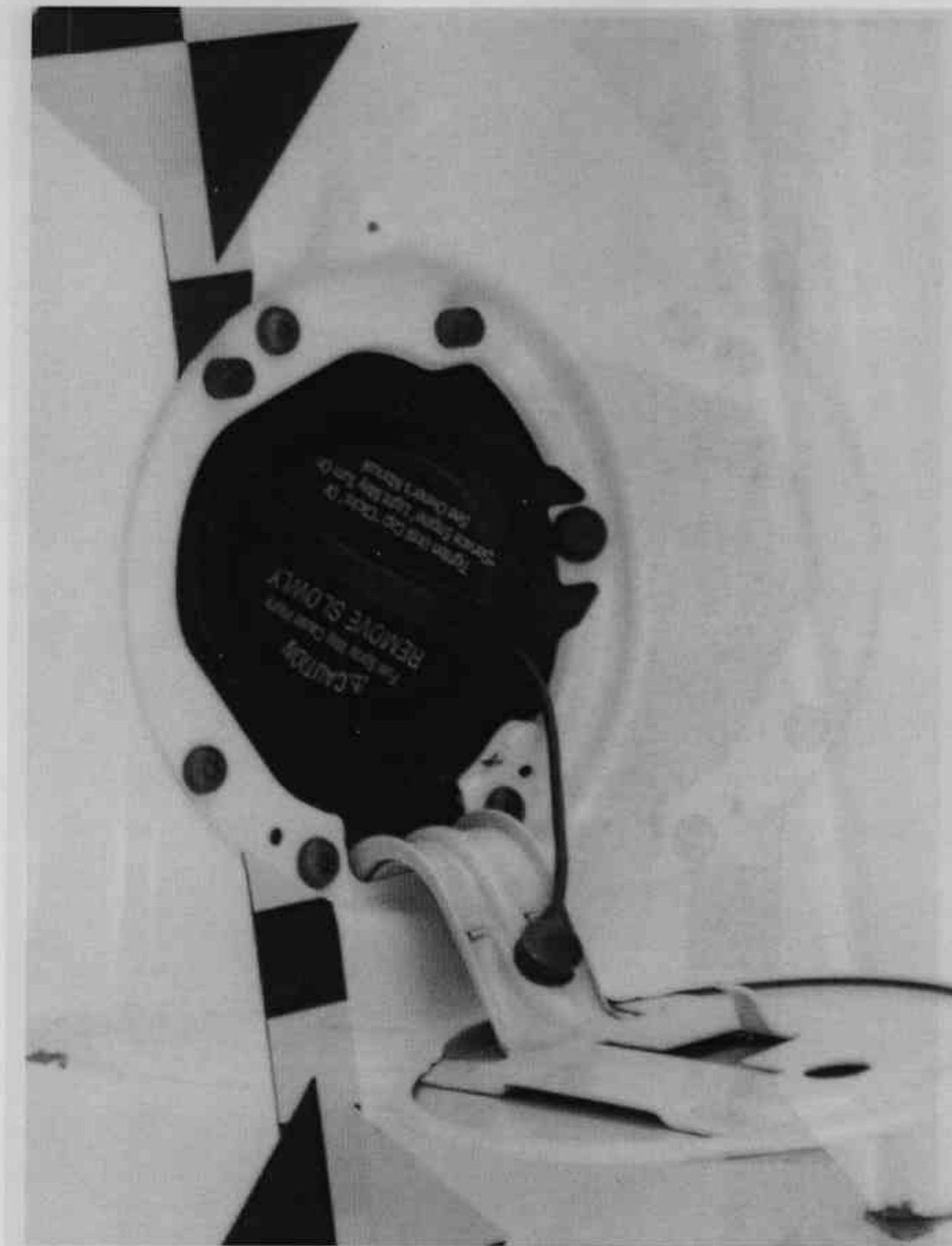


FIGURE A-20. POST TEST FUEL CAP

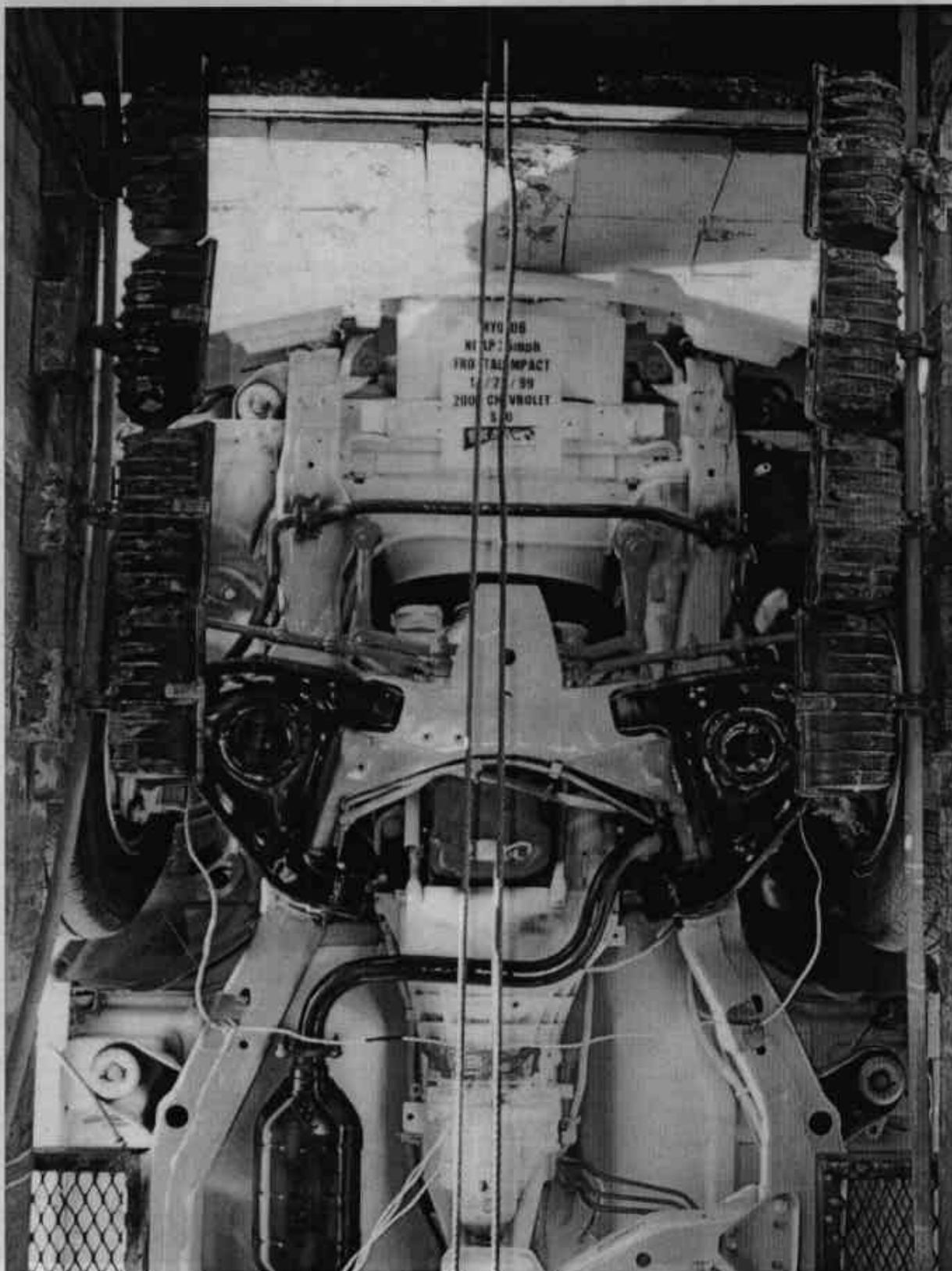


FIGURE A-21. PRETEST FRONT UNDERSIDE

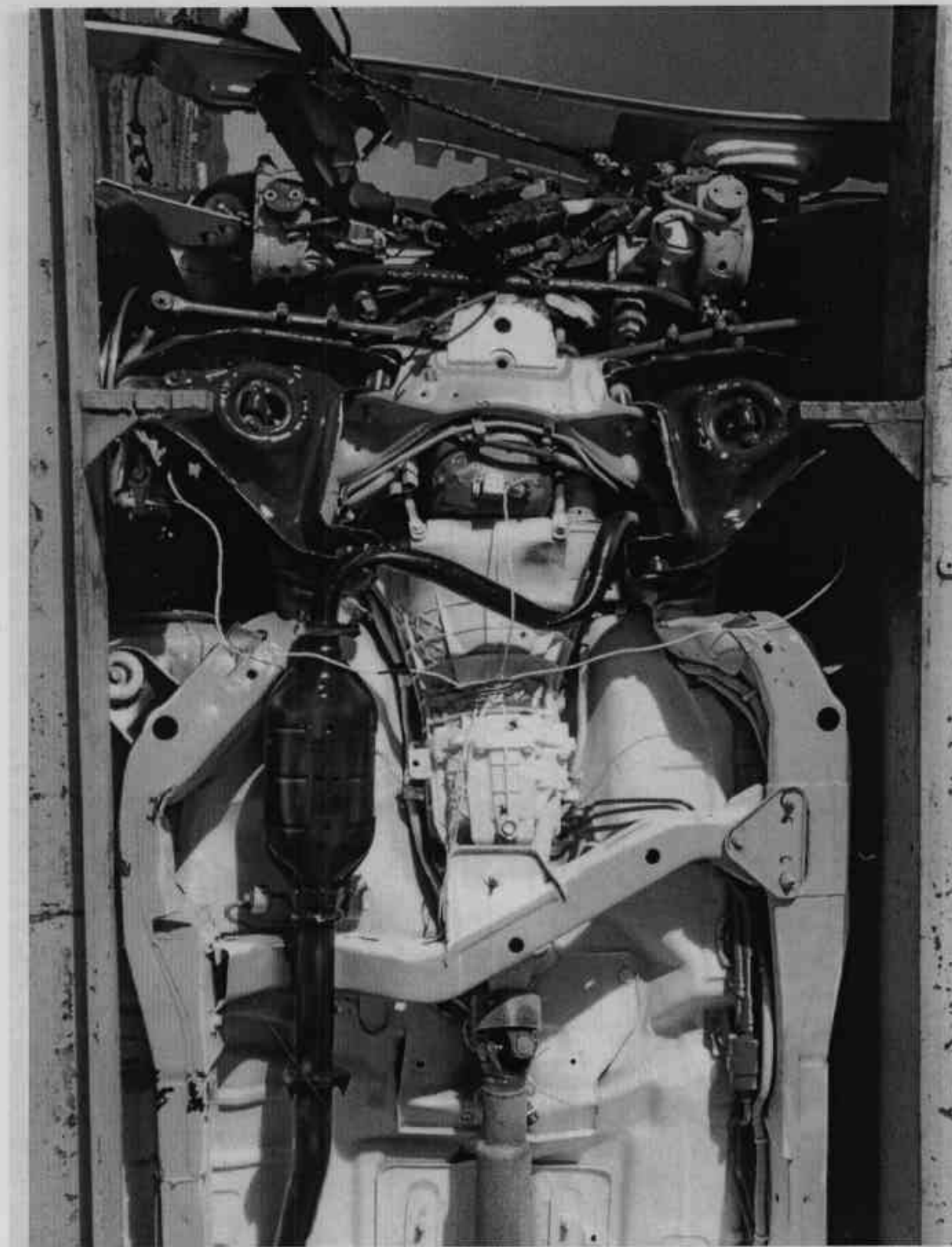


FIGURE A-22. POST TEST FRONT UNDERSIDE

KAR20001-07

A-22

KAR20001-07

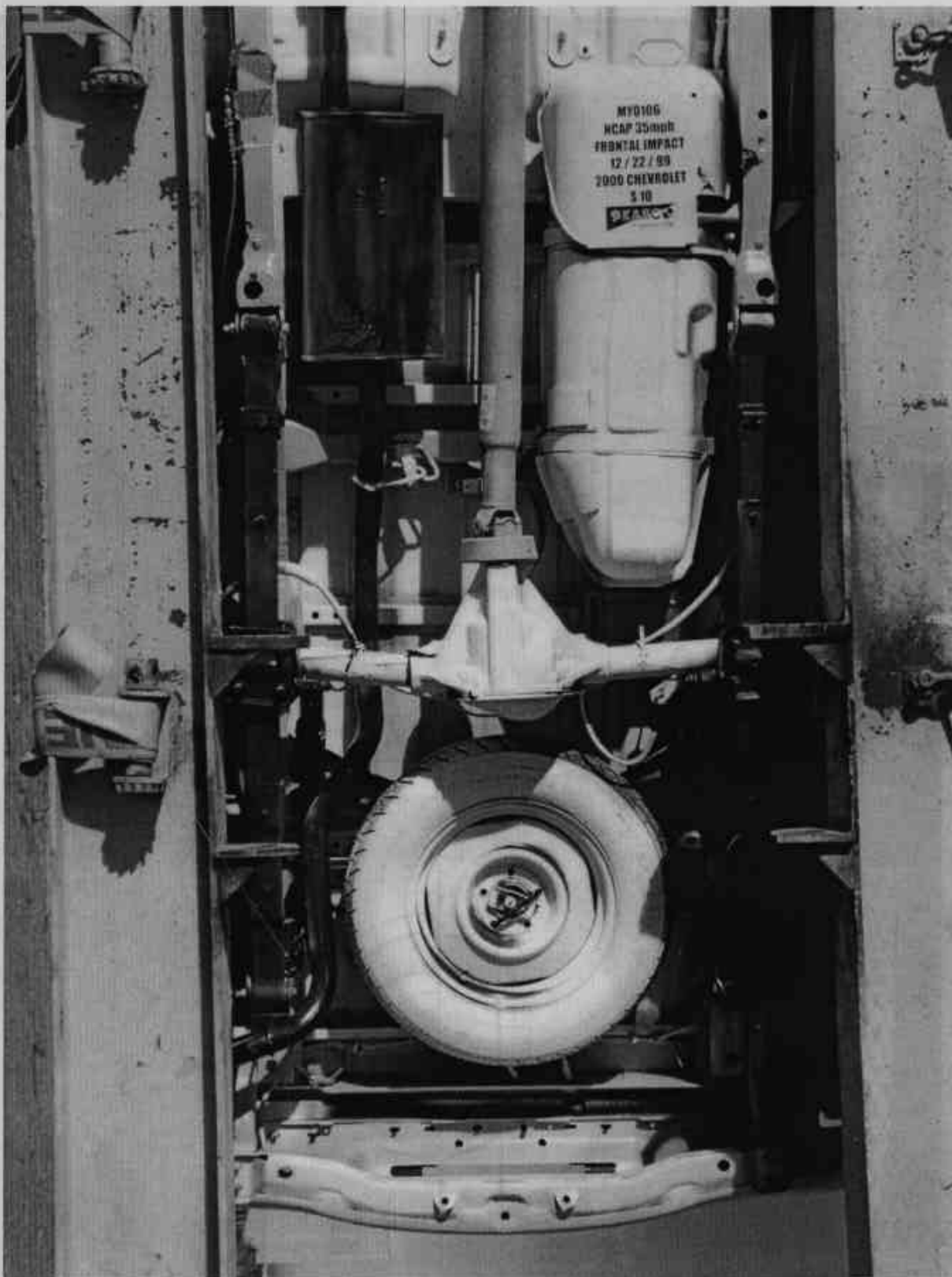


FIGURE A-24. POST TEST REAR UNDERSIDE

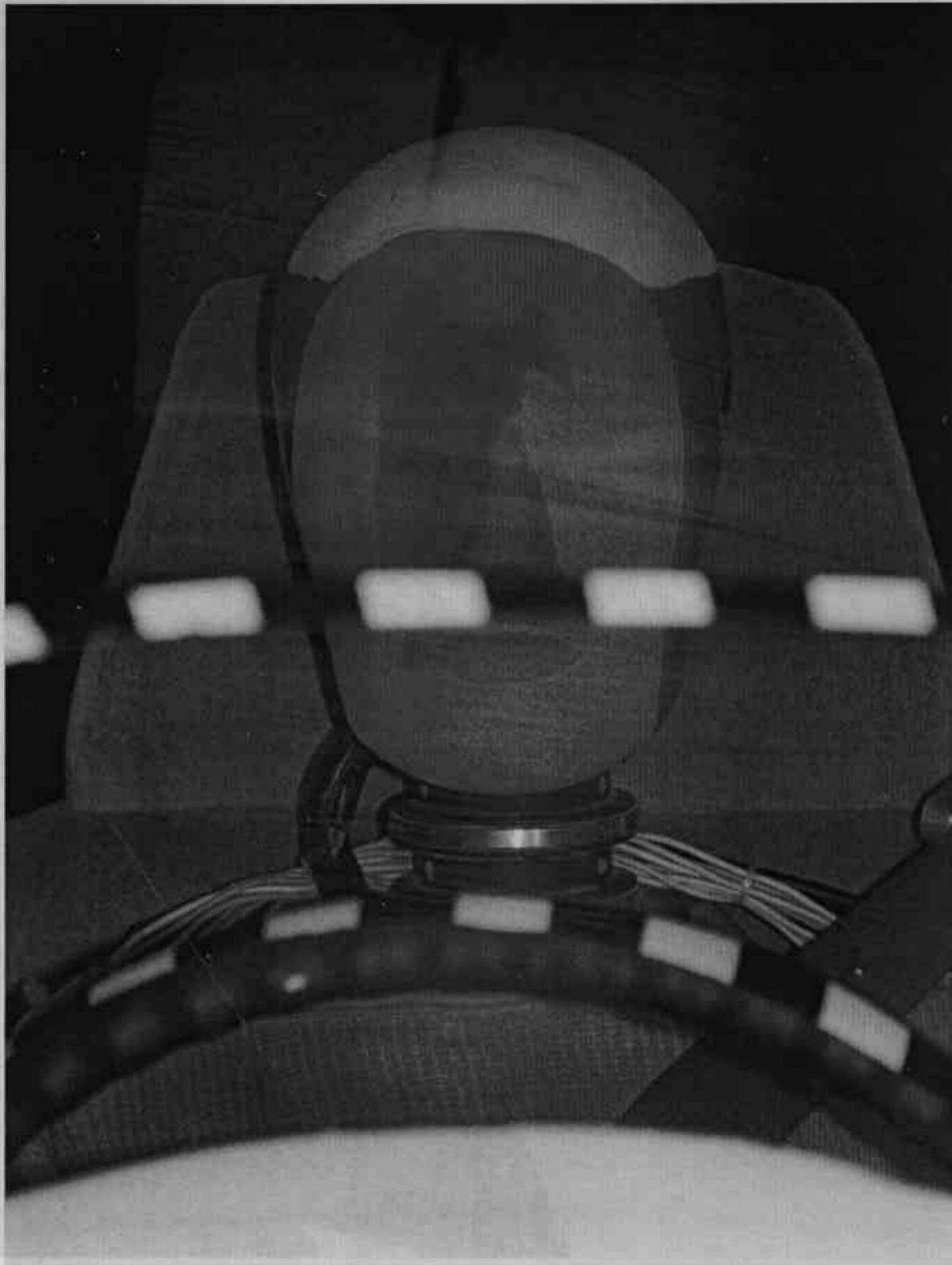


FIGURE A-25. PRETEST DRIVER DUMMY (FRONT VIEW)



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



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

KAR20001-07



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



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

KAR20001-07



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



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

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



FIGURE A-33. PRETEST DRIVER DUMMY FEET

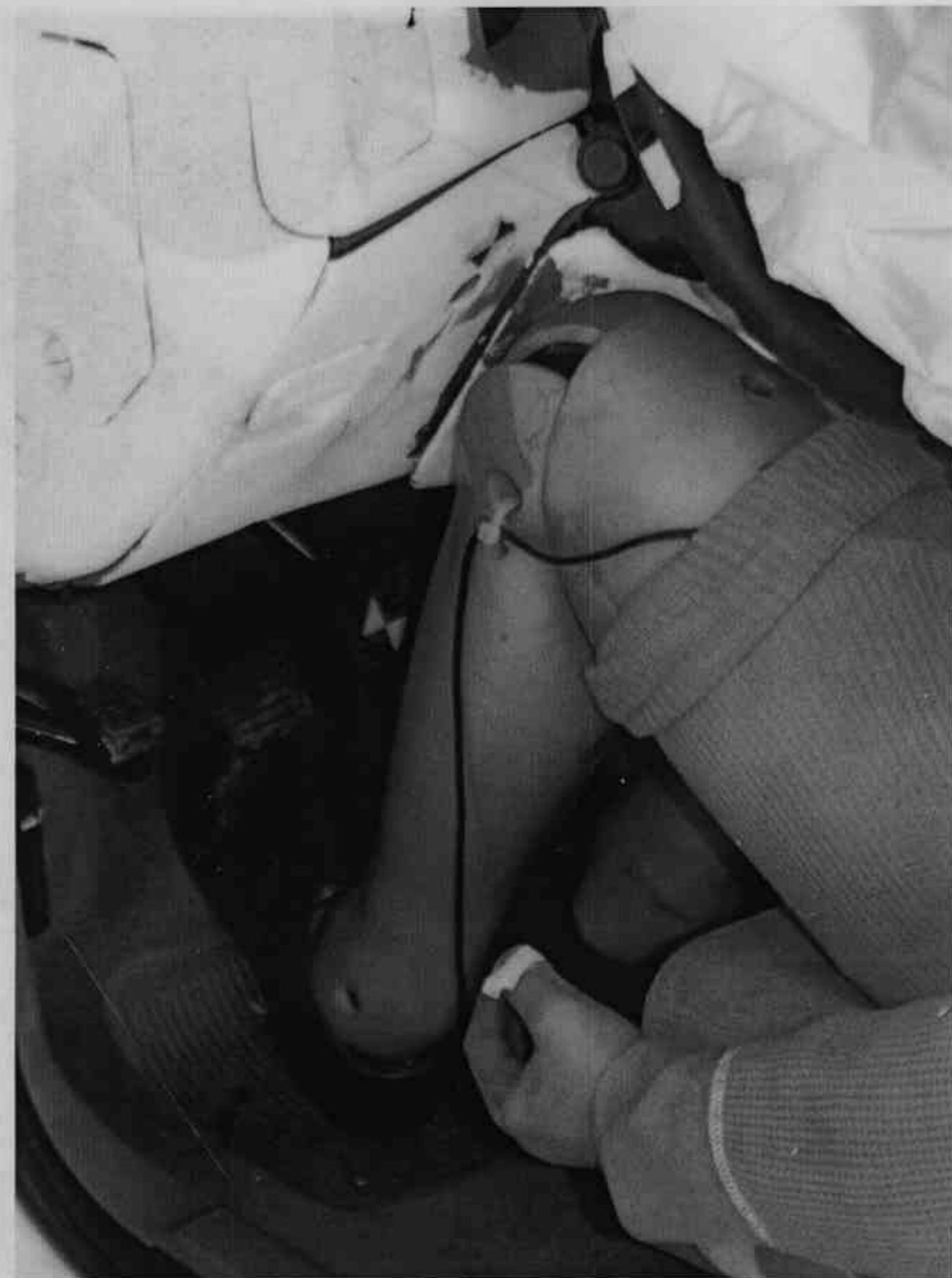


FIGURE A-34. POST TEST DRIVER DUMMY FEET AND KNEE CONTACT

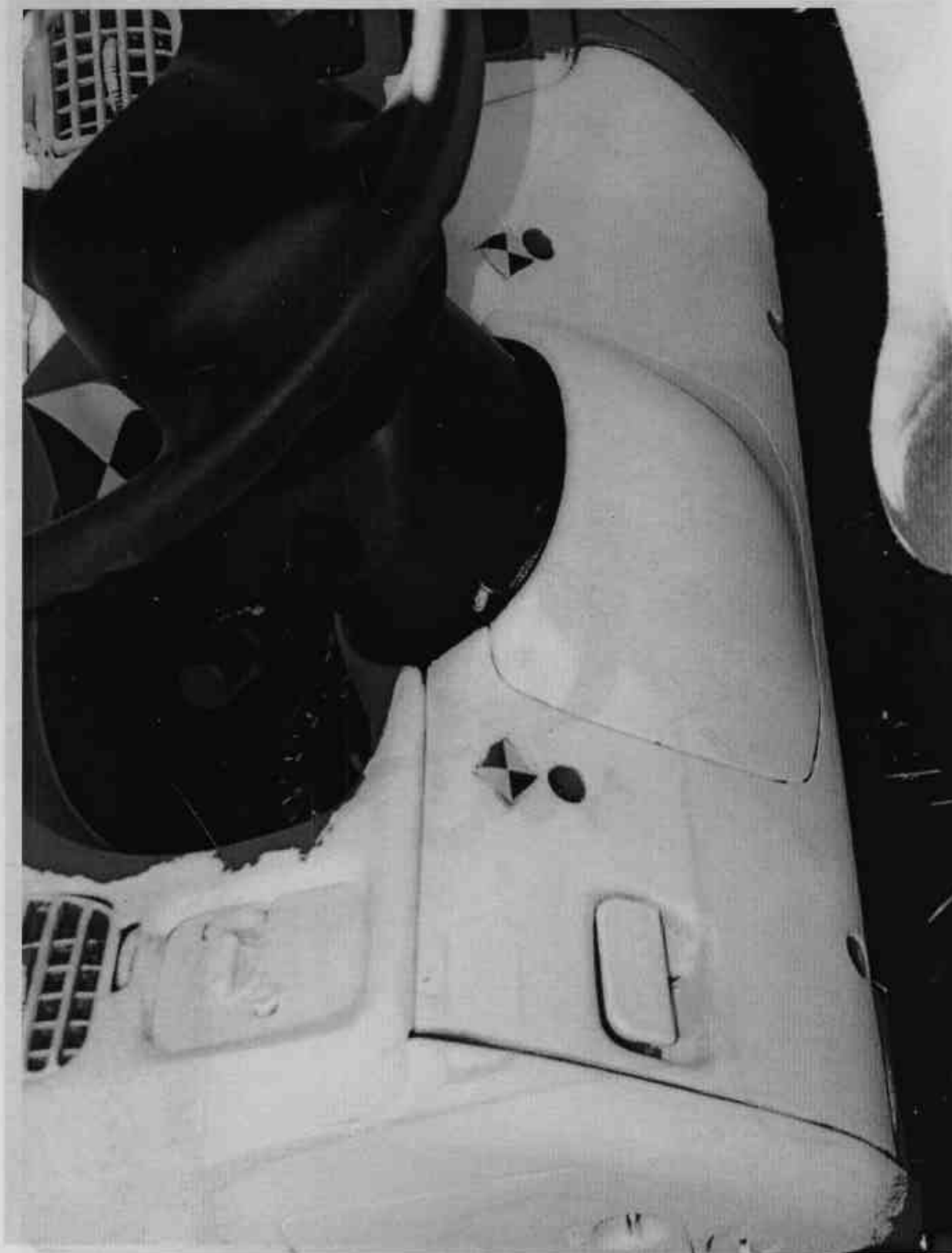


FIGURE A-35. PRE TEST DRIVER KNEE BOLSTER

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A-35

KAR20001-07

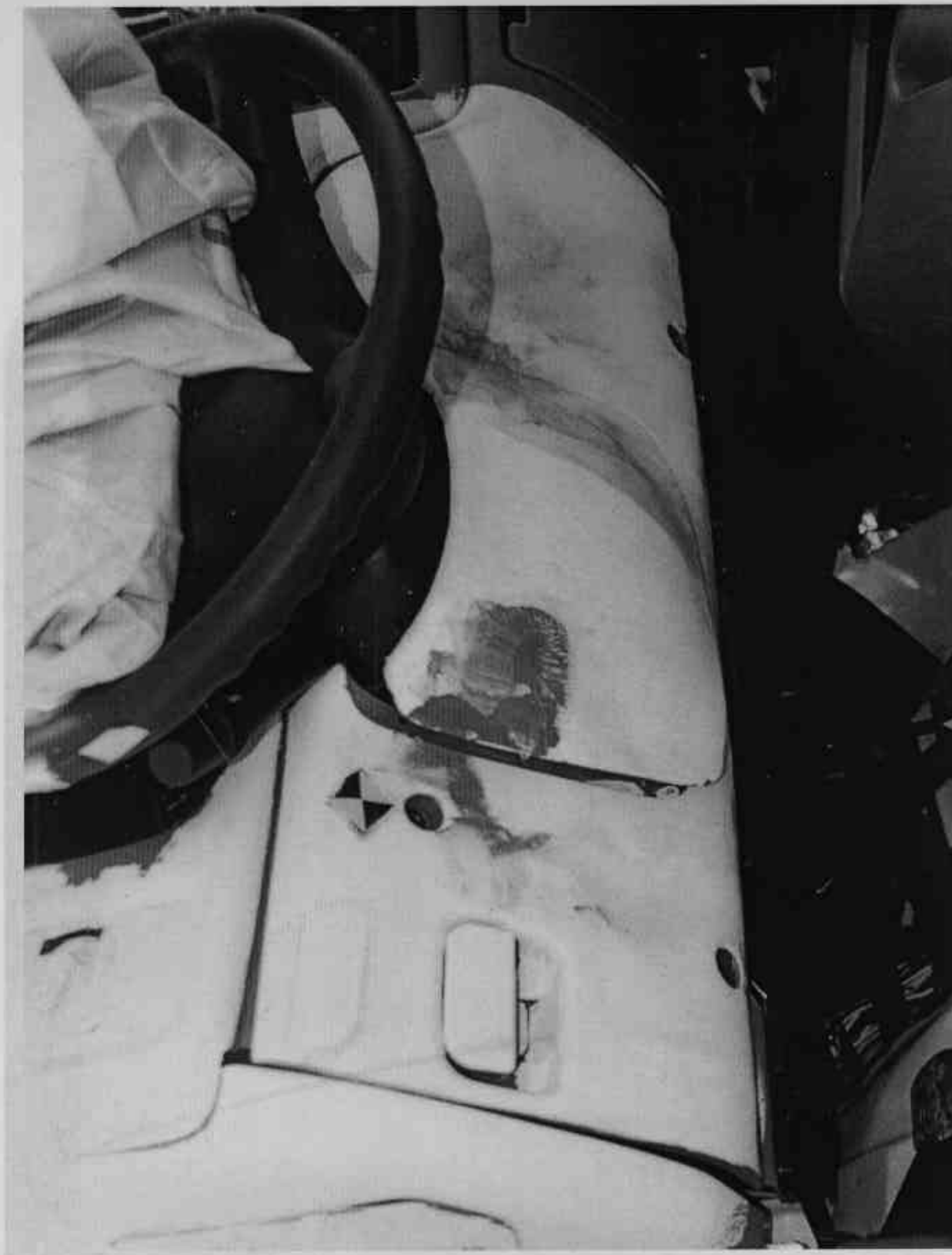


FIGURE A-36. POST TEST DRIVER KNEE BOLSTER

A-36

KAR20001-07

KAR50001-03

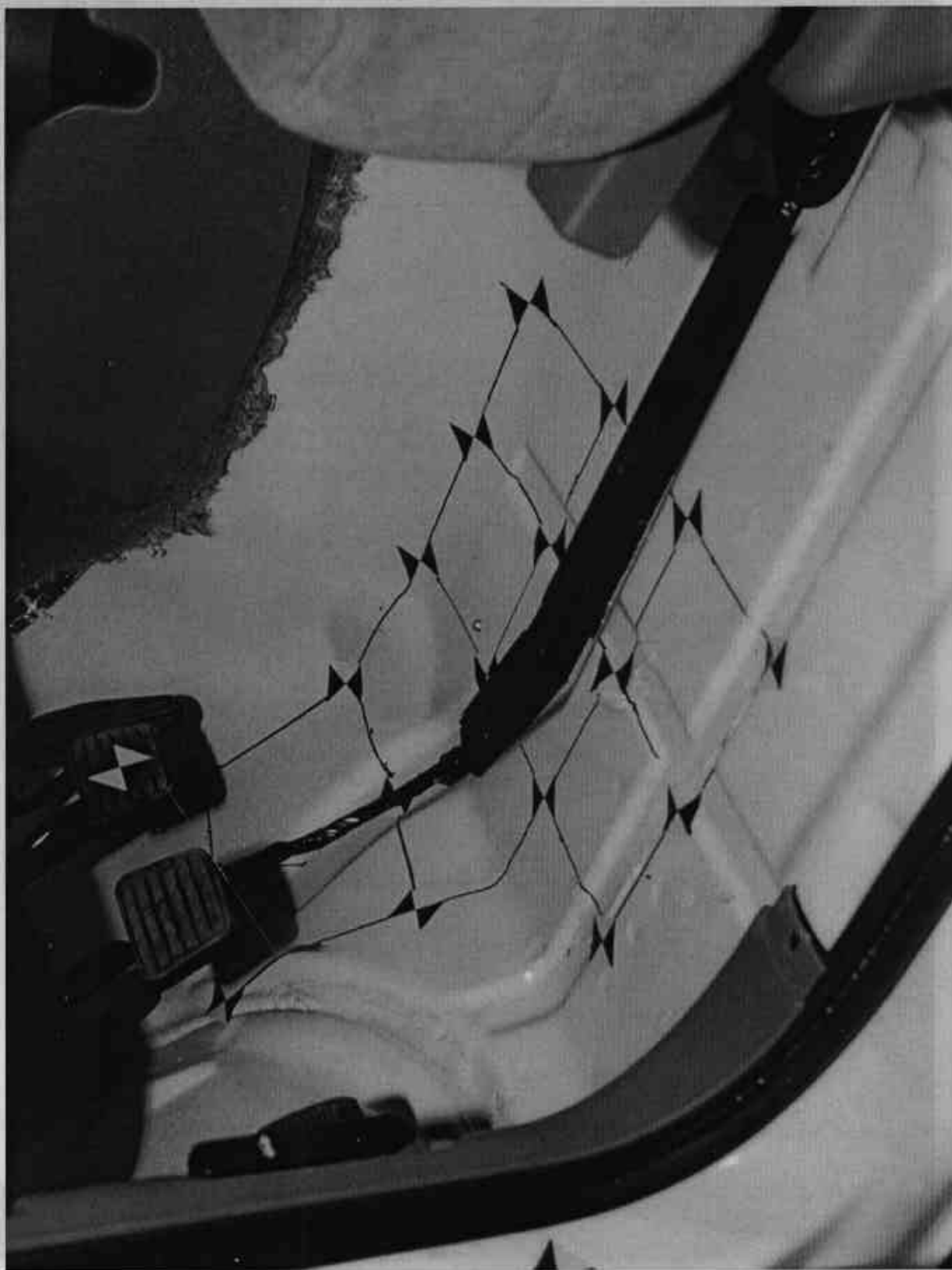


FIGURE A-37. PRE TEST DRIVER SIDE FLOOR PAN

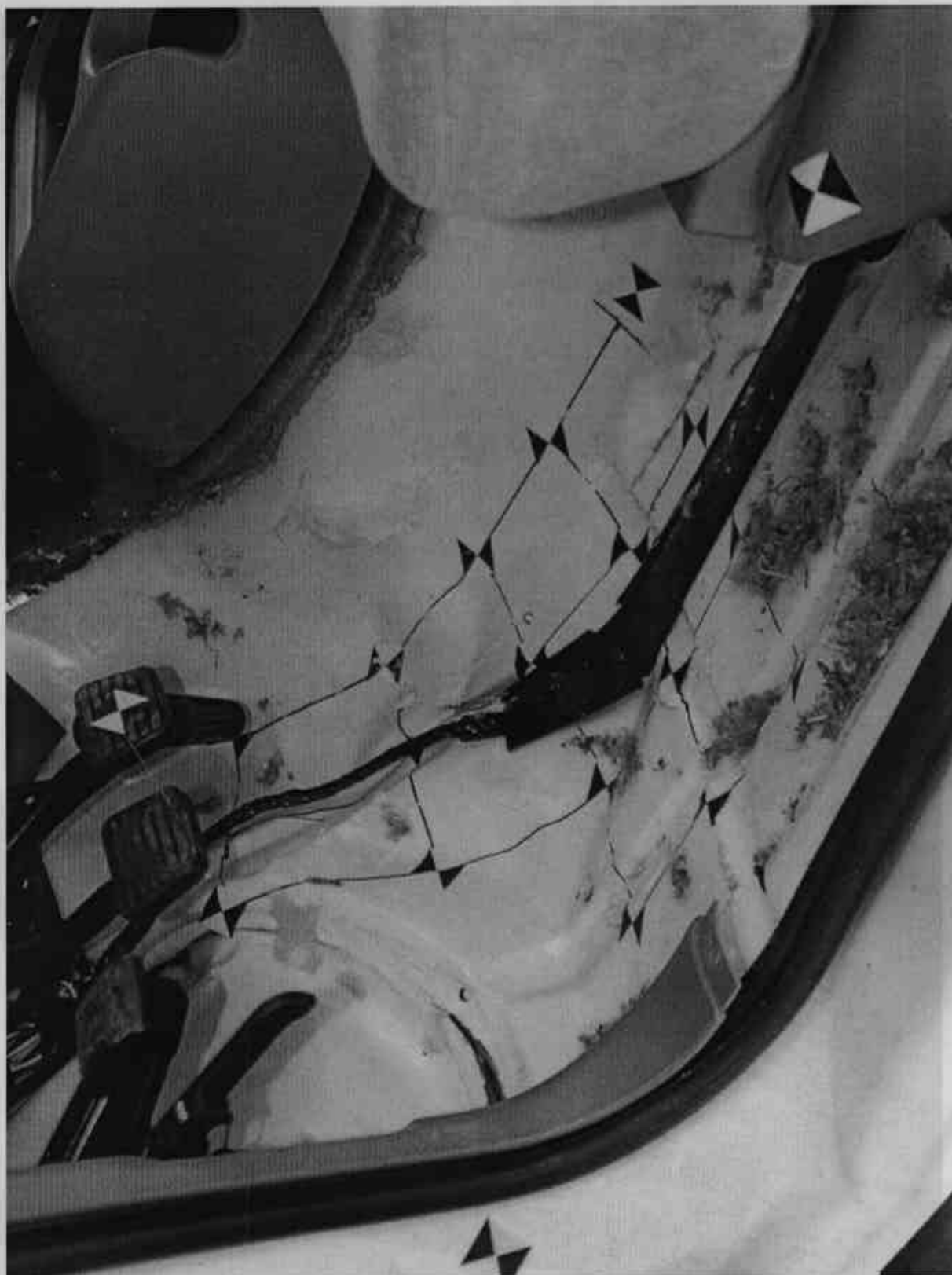


FIGURE A-38. POST TEST DRIVER SIDE FLOOR PAN

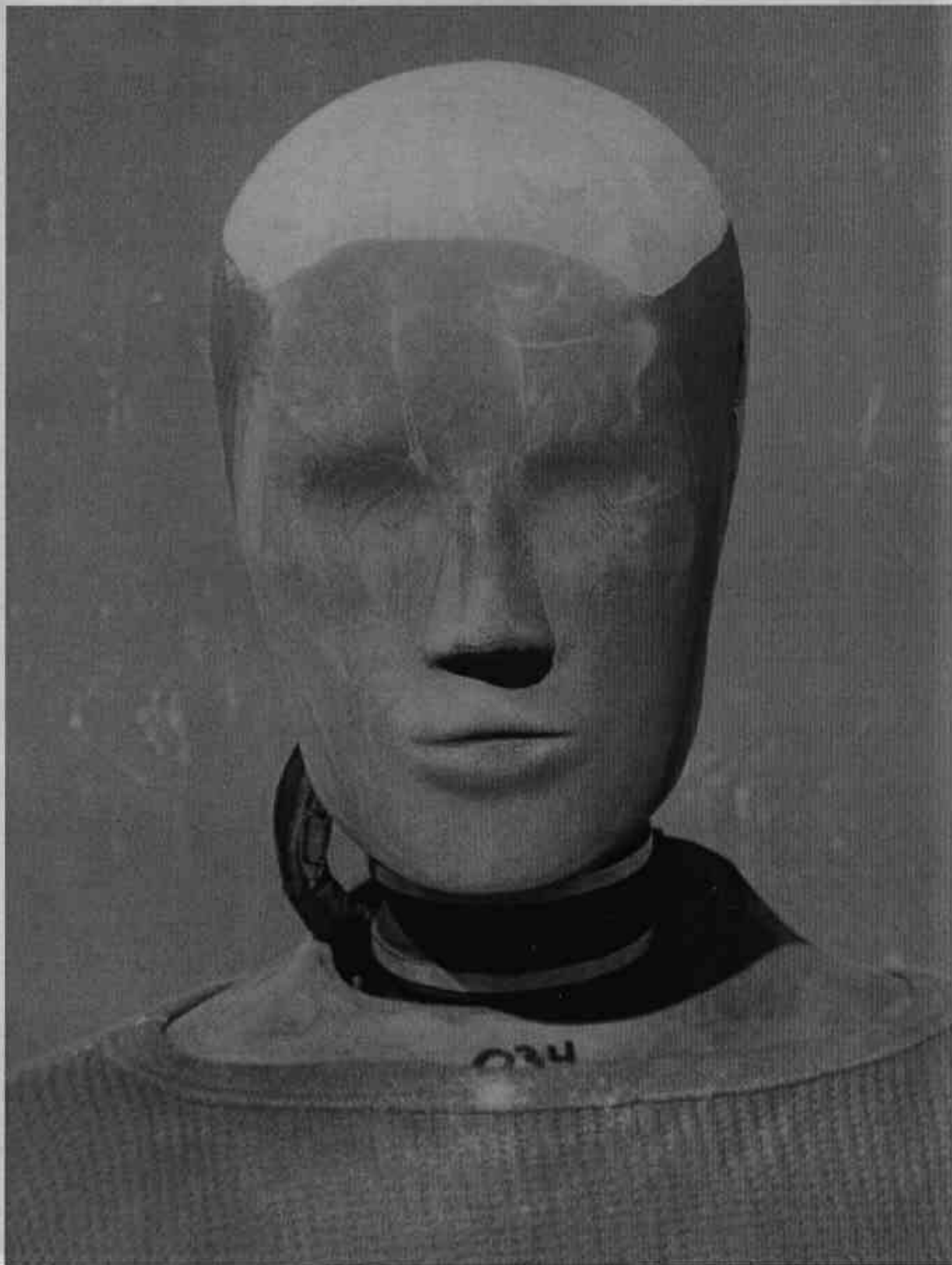


FIGURE A-39. POST TEST DRIVER HEAD

A-39

KAR20001-07



FIGURE A-40. POST TEST DRIVER DUMMY CONTACT



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

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A-41

KAR20001-07



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

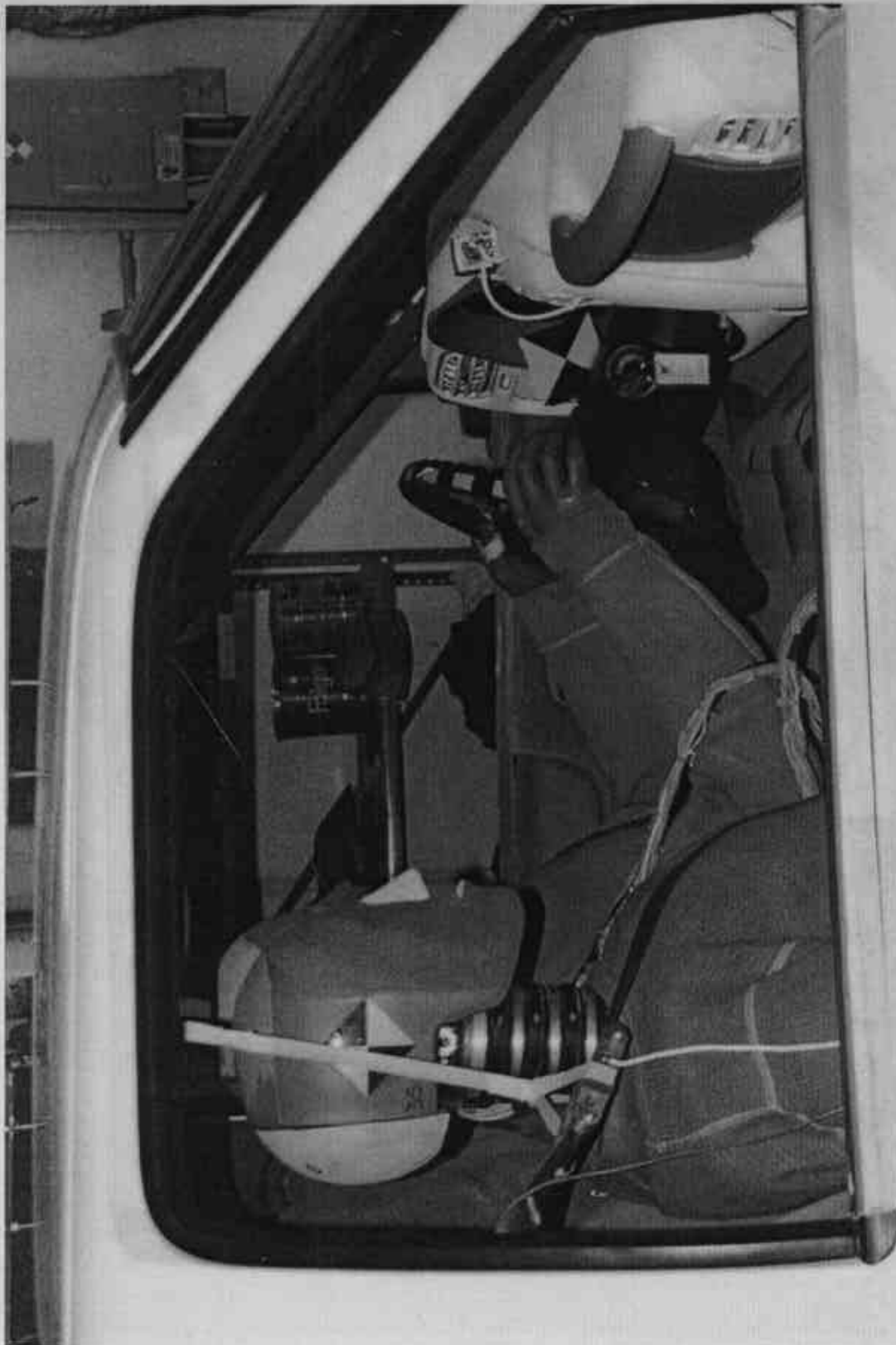


FIGURE A-43. PRE TEST PASSENGER DUMMY (THRU WINDOW)



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



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

KAR20001-07

A-45

KAR20001-07



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

KAR20001-07



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



FIGURE A-49. PRE TEST PASSENGER DUMMY FEET



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

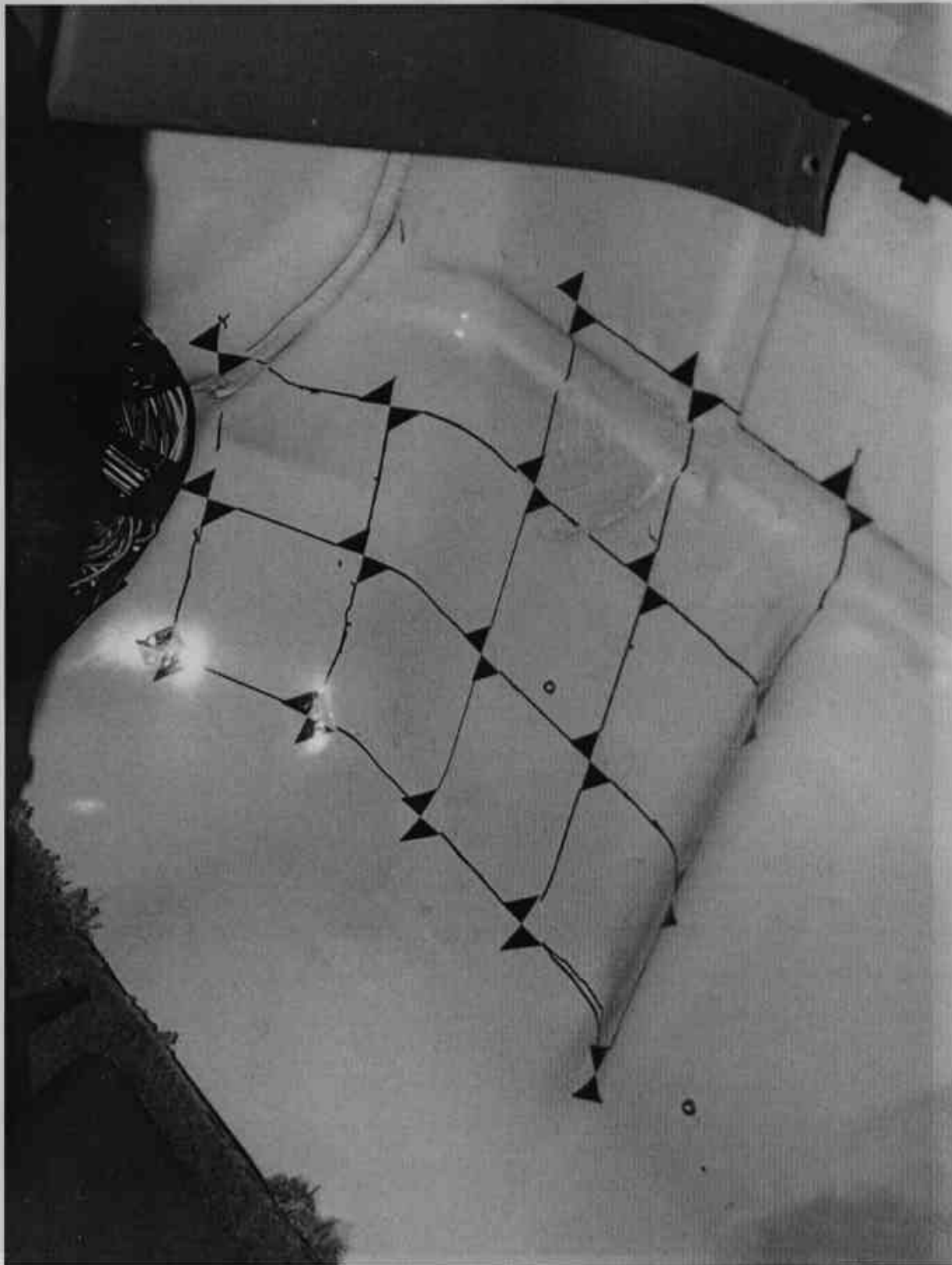


FIGURE A-51. PRETEST PASSENGER SIDE FLOOR PAN

A-51

KAR20001-07



FIGURE A-52. POST TEST PASSENGER SIDE FLOOR PAN

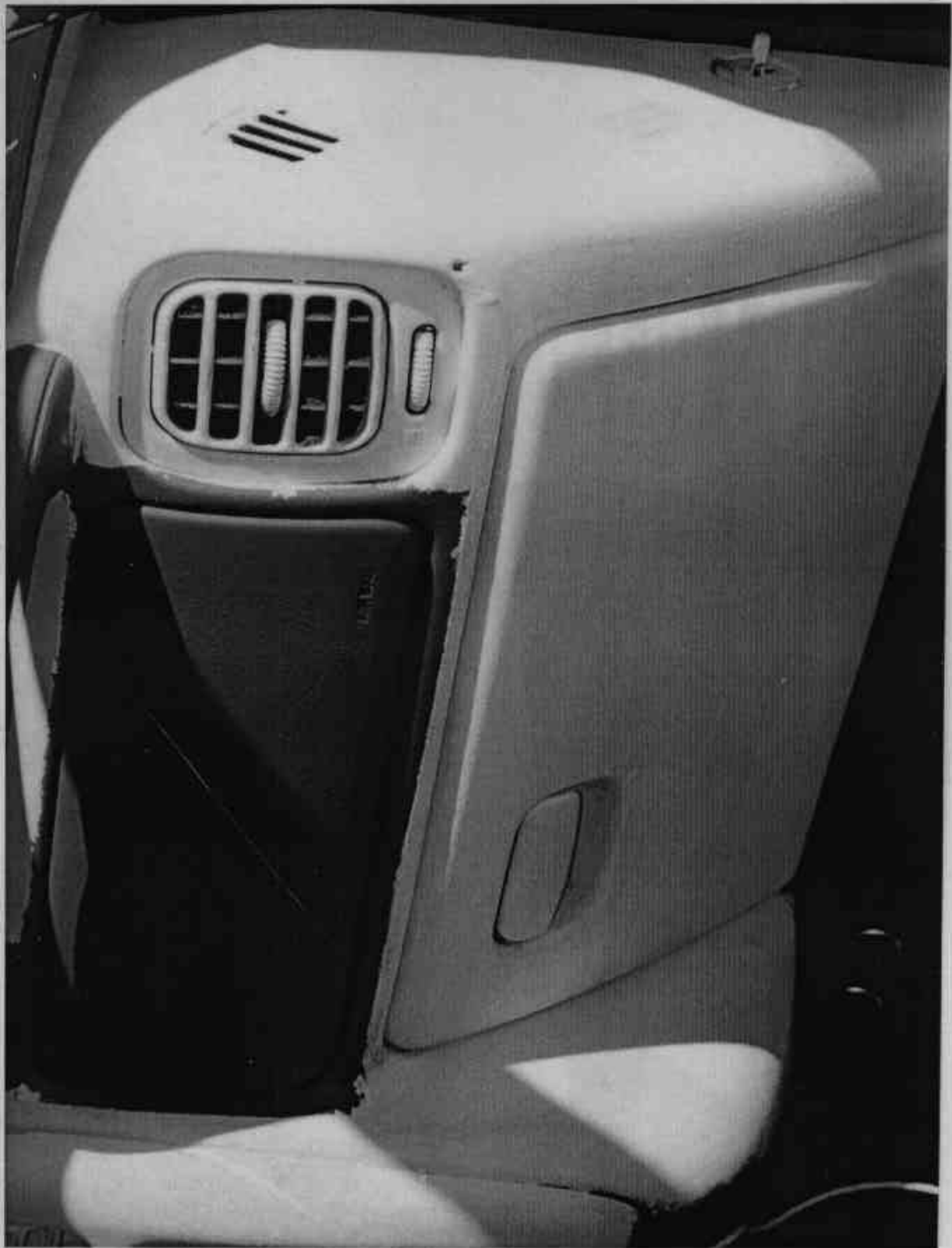


FIGURE A-53. PRE TEST PASSENGER SIDE KNEE BOLSTER

A-53

KAR20001-07



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

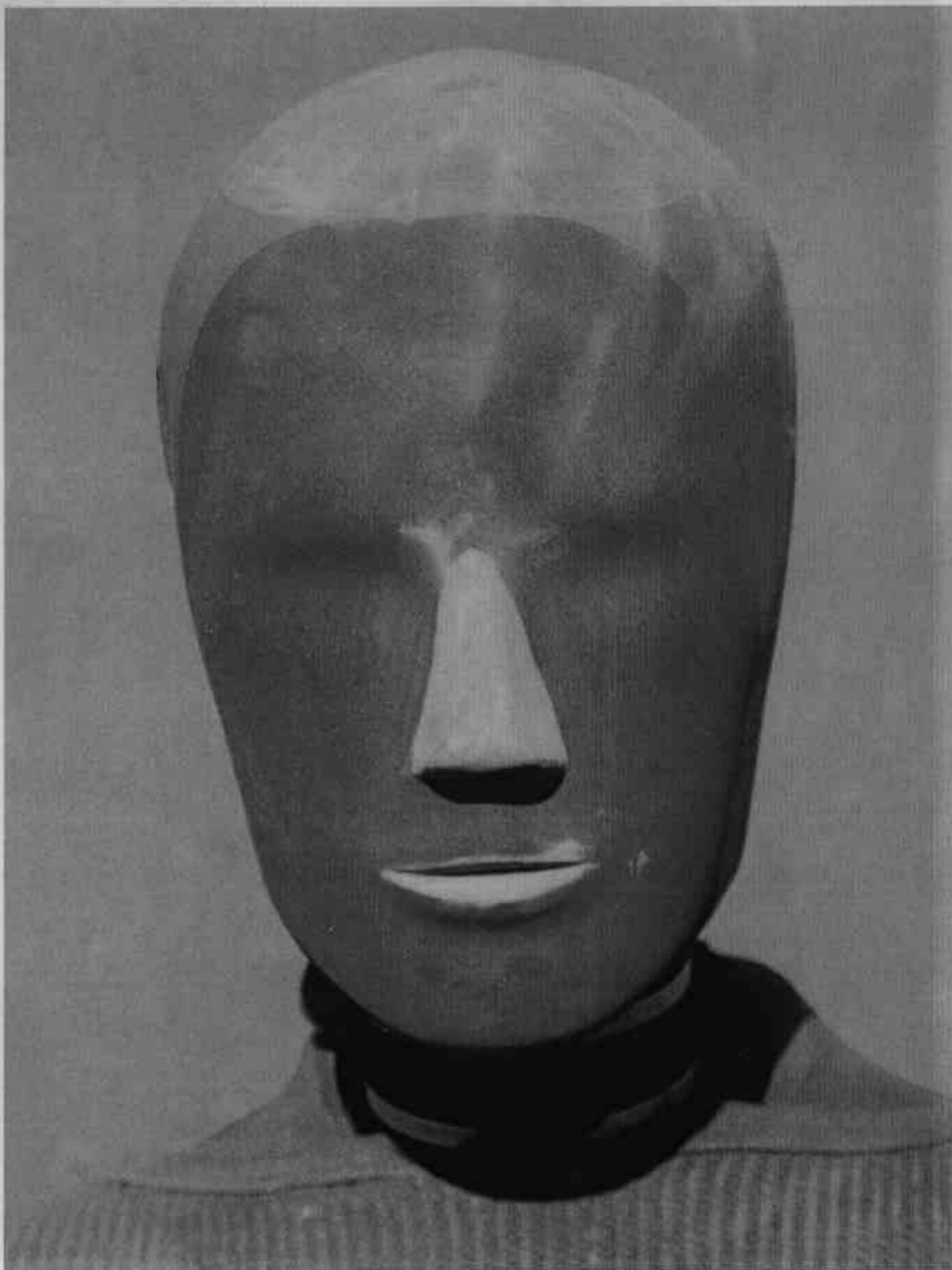


FIGURE A-55. POST TEST PASSENGER HEAD

A-55

KAR20001-07



FIGURE A-56. POST TEST PASSENGER DUMMY CONTACT

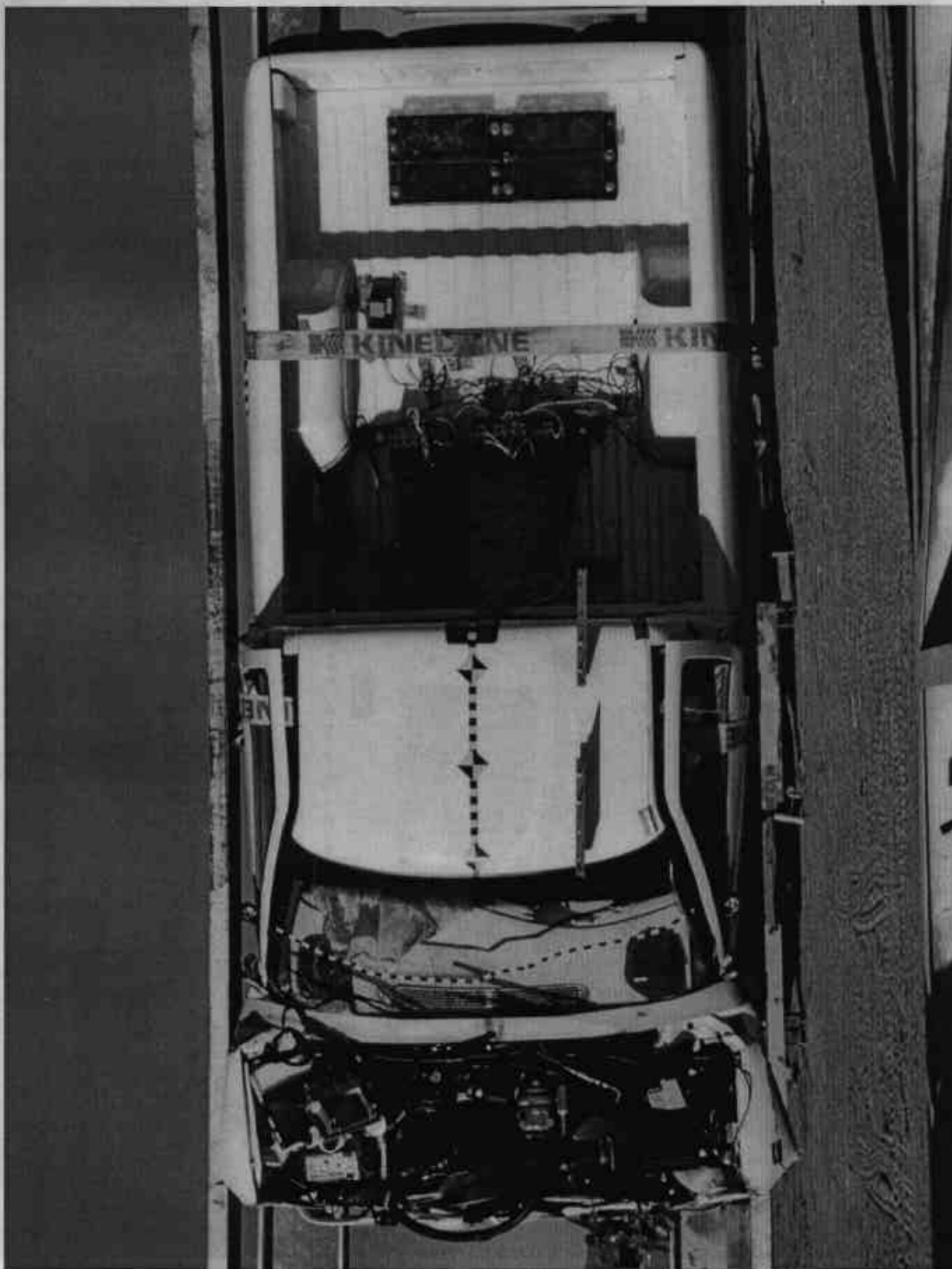


FIGURE A-57. VEHICLE ON ROLLOVER

TD-10005RAH

A-57

KAR20001-07

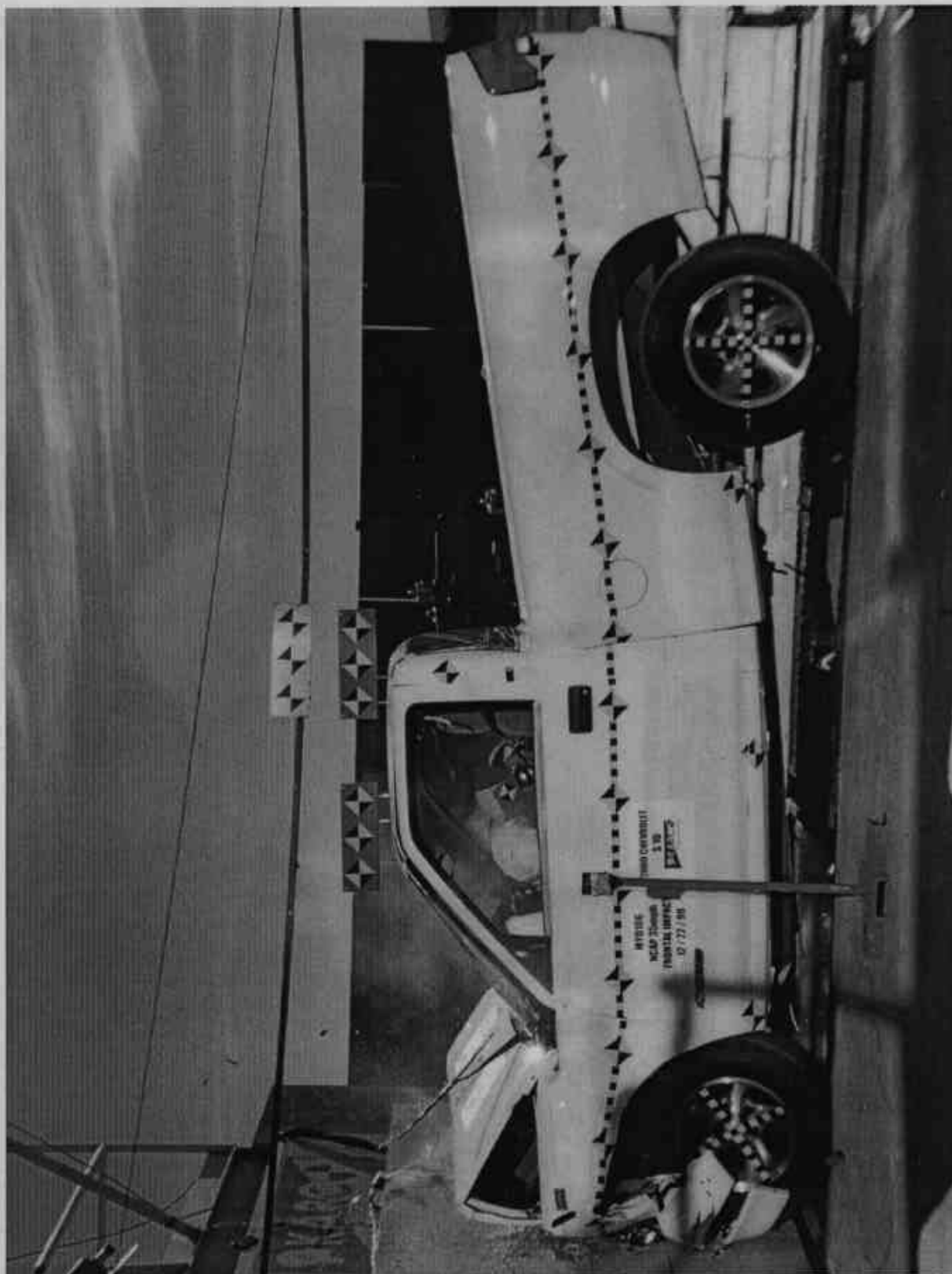


FIGURE A-58. VEHICLE DURING IMPACT

A-58

KAR20001-07

KAR20001-07

APPENDIX B
DUMMY AND VEHICLE RESPONSE DATA TRACES

KAR20001-07

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)

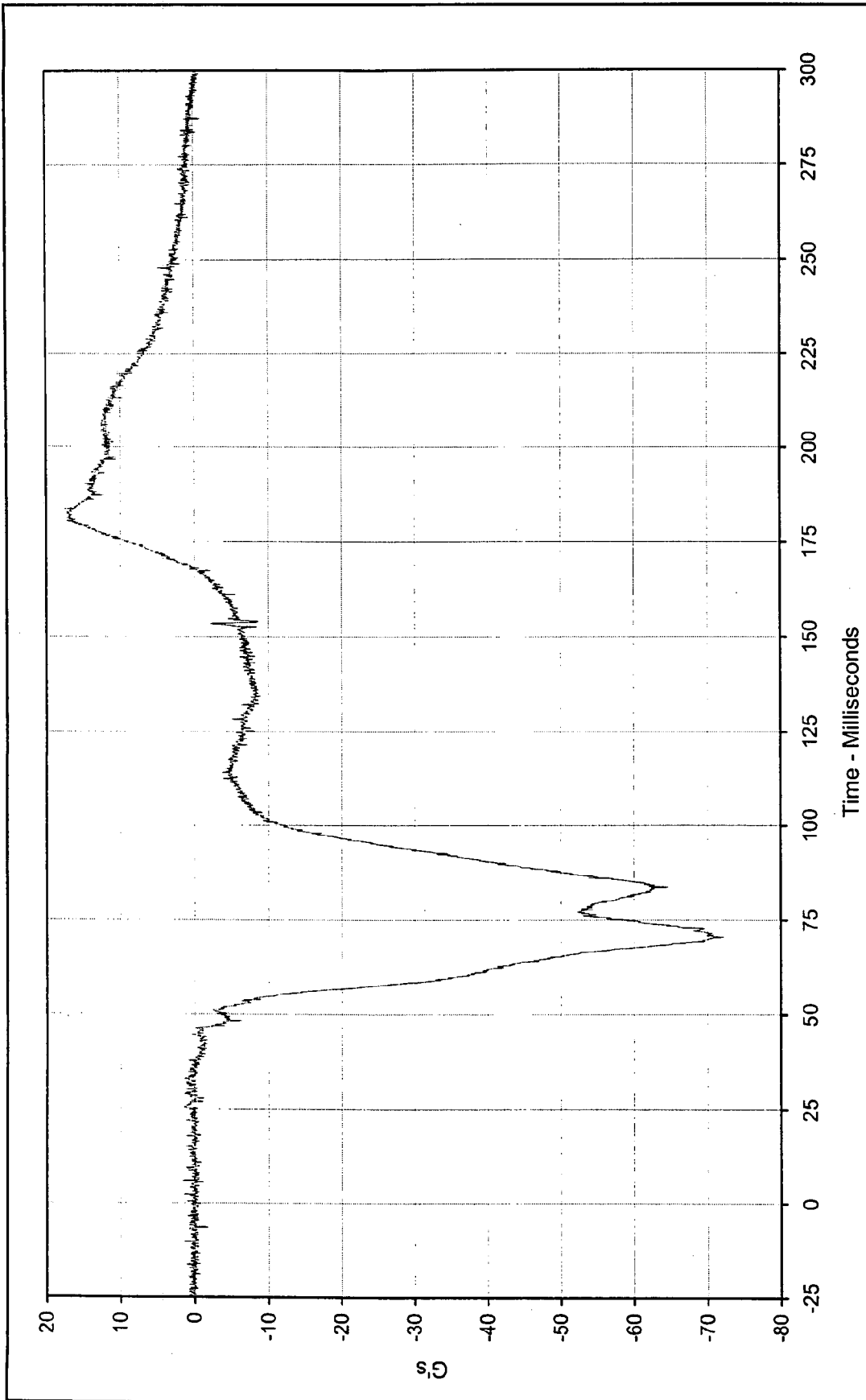
Data Plot	Page
B-62 Passenger Head Primary X	B-62
B-63 Passenger Head Primary X Velocity	B-63
B-64 Passenger Head Primary X Displacement	B-64
B-65 Passenger Head Primary Y	B-65
B-66 Passenger Head Primary Z	B-66
B-67 Passenger Head Resultant Primary	B-67
B-68 Passenger Head Redundant X	B-68
B-69 Passenger 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)

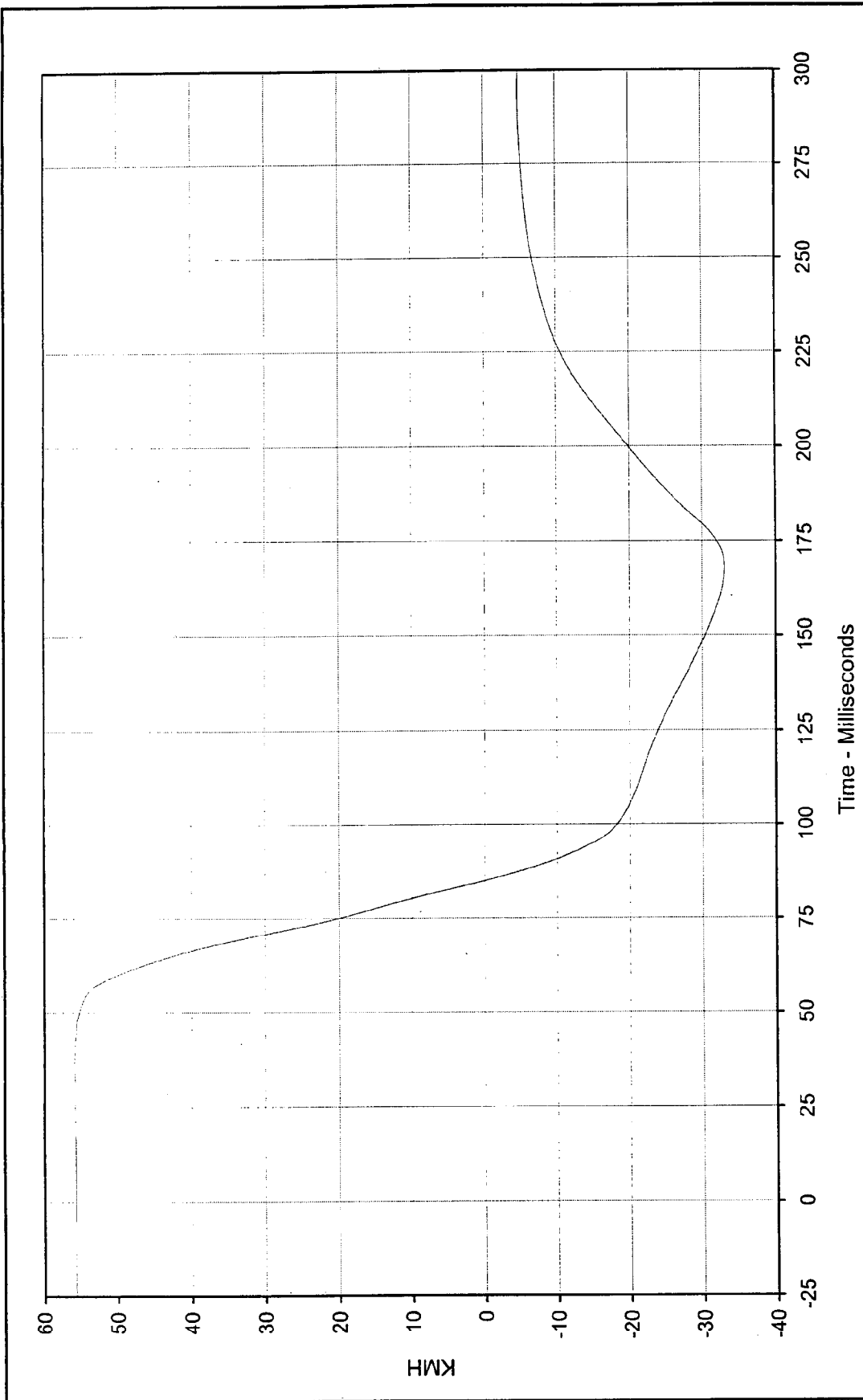
Data Plot	Page
B-123 Vehicle Left Rear Primary	B-123
B-124 Vehicle Left Rear Primary Velocity	B-124
B-125 Vehicle Left Rear Primary Displacement	B-125
B-126 Vehicle Right Rear Primary	B-126
B-127 Vehicle Right Rear Primary Velocity	B-127
B-128 Vehicle Right Rear Primary Displacement	B-128
B-129 Vehicle 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
 Maximum Value: 17.5 at 183.7 Milliseconds
 Minimum Value: -72.2 at 70.3 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/22/99
 Curve Number: FIL-001

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description: Driver Head Primary X Velocity

Maximum Value: 56.0 at 36.3 Milliseconds

Minimum Value: -33.1 at 167.9 Milliseconds

SAE Filter Class: 180

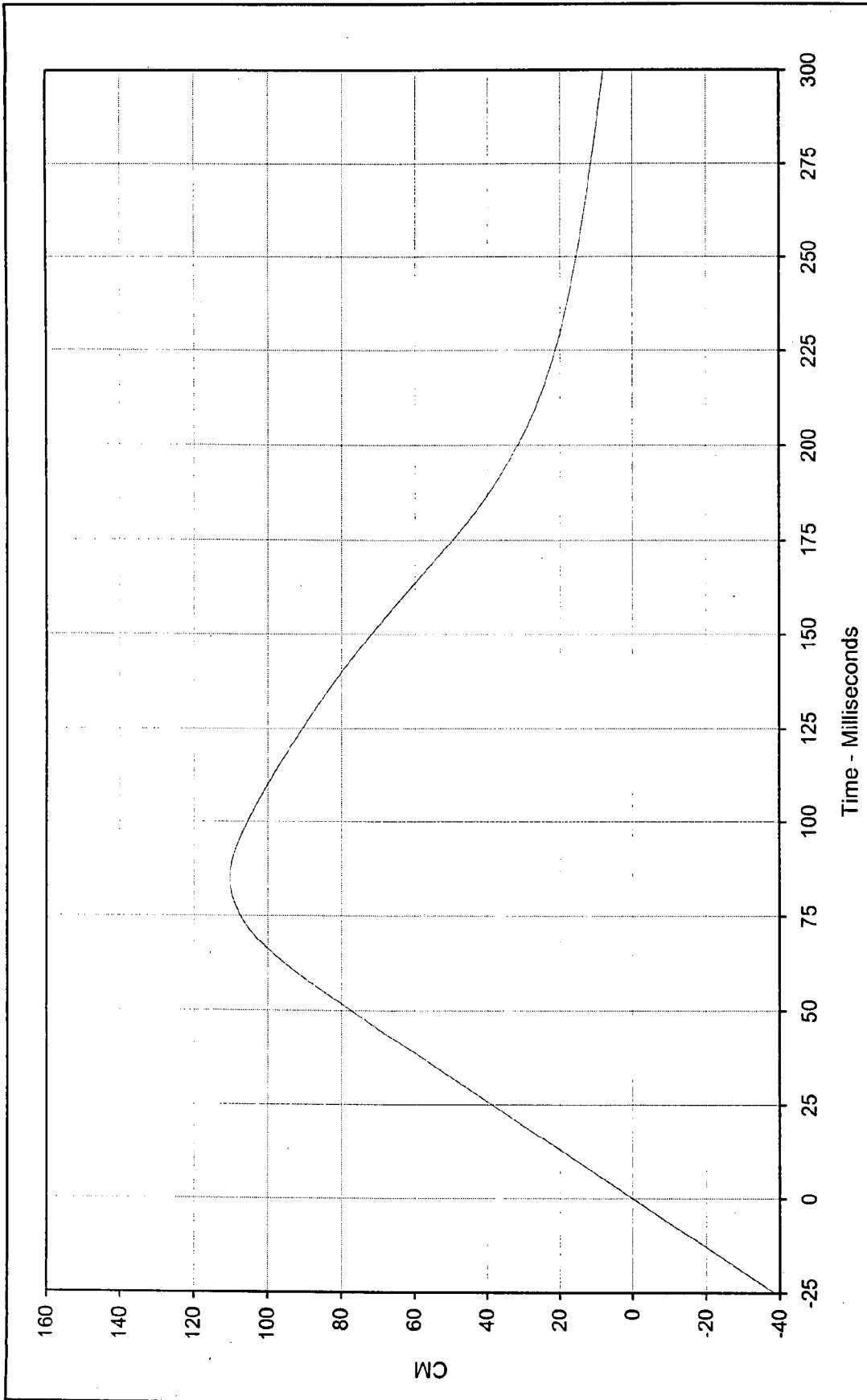
Date of Test: 12/22/99

Curve Number: IN1-001

Testing Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup

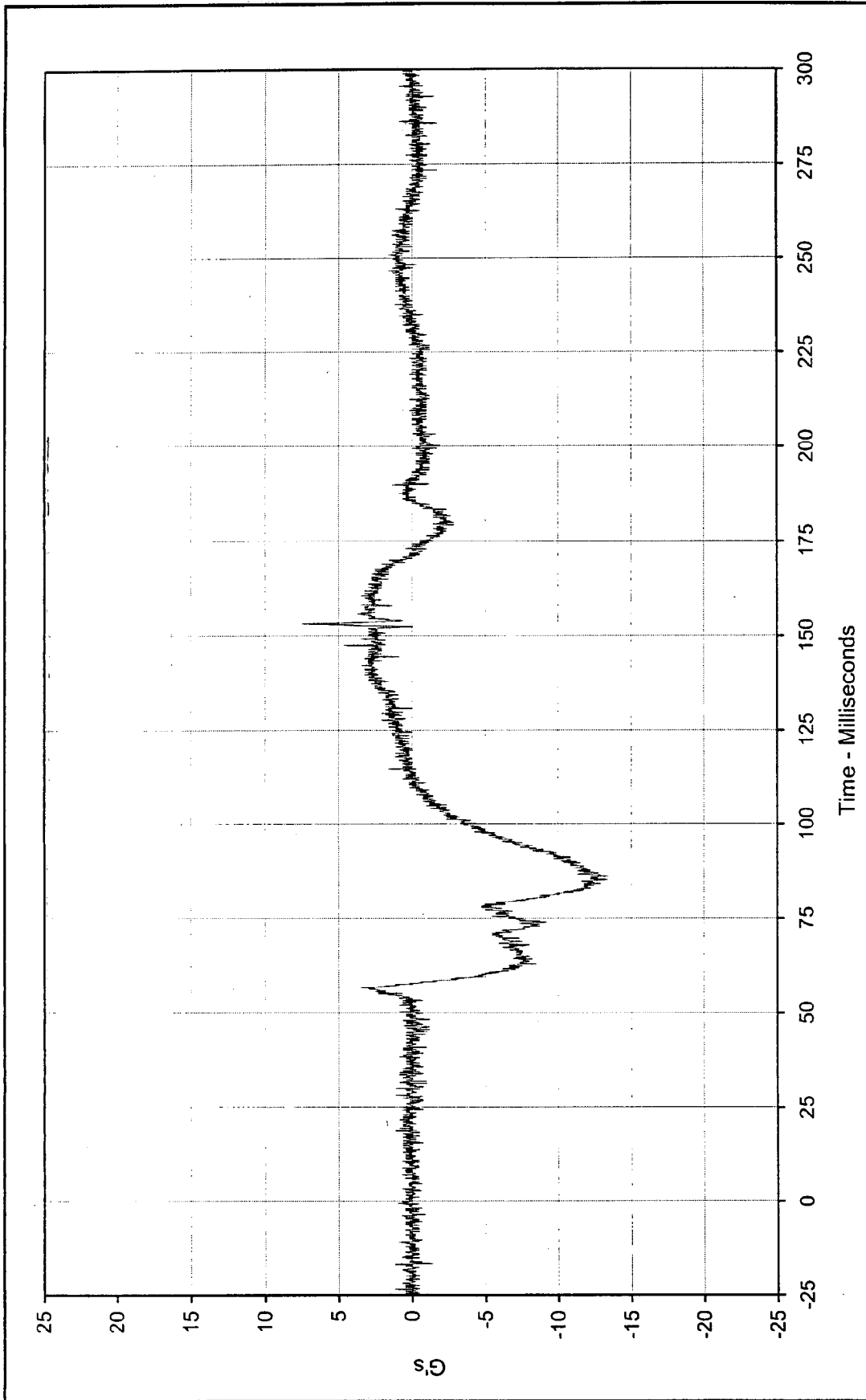




Curve Description: Driver Head Primary X Displ.
 Maximum Value: 110.2 at 84.8 Milliseconds
 Minimum Value: 0.1 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/22/99
 Curve Number: IN2-001

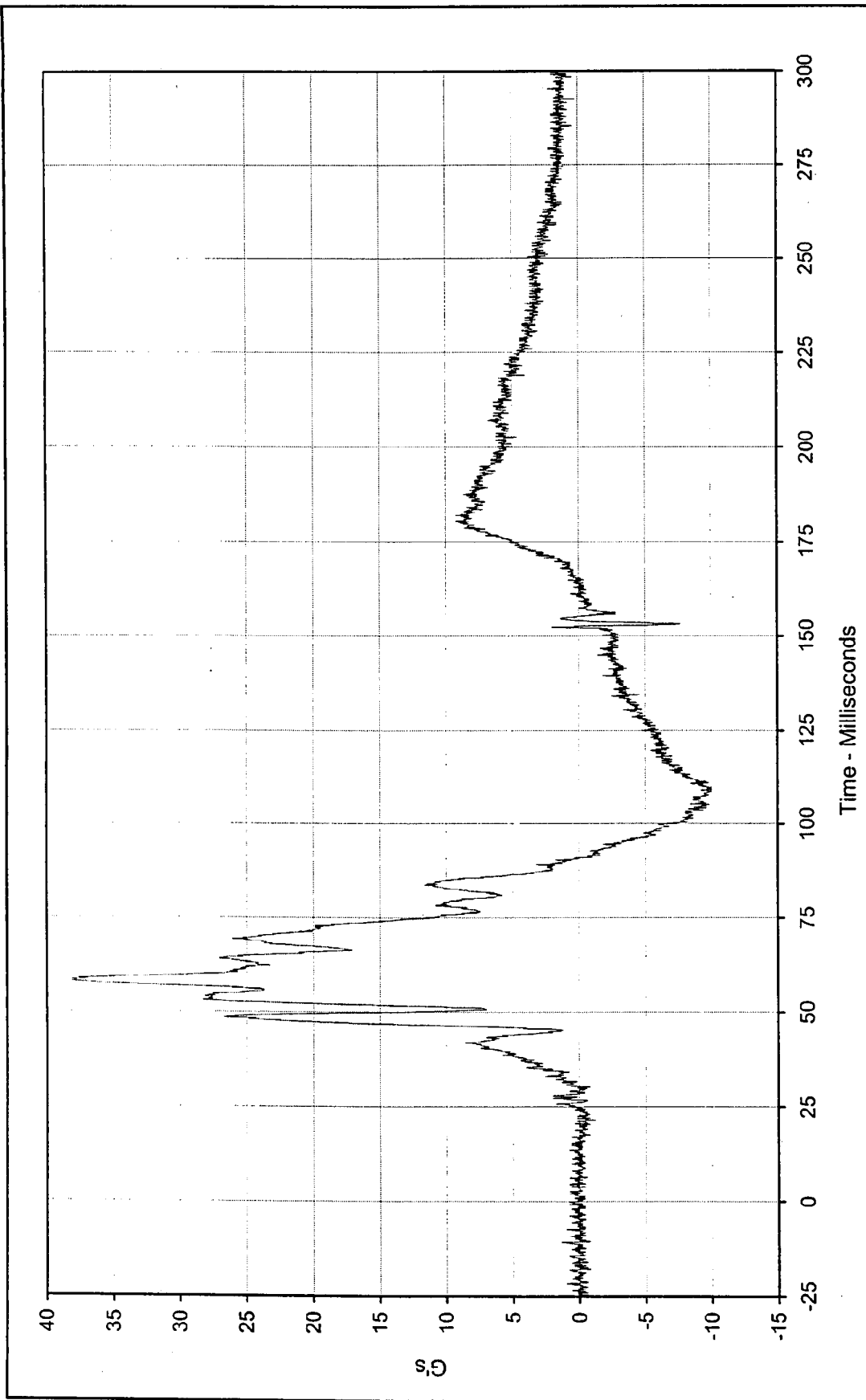
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup





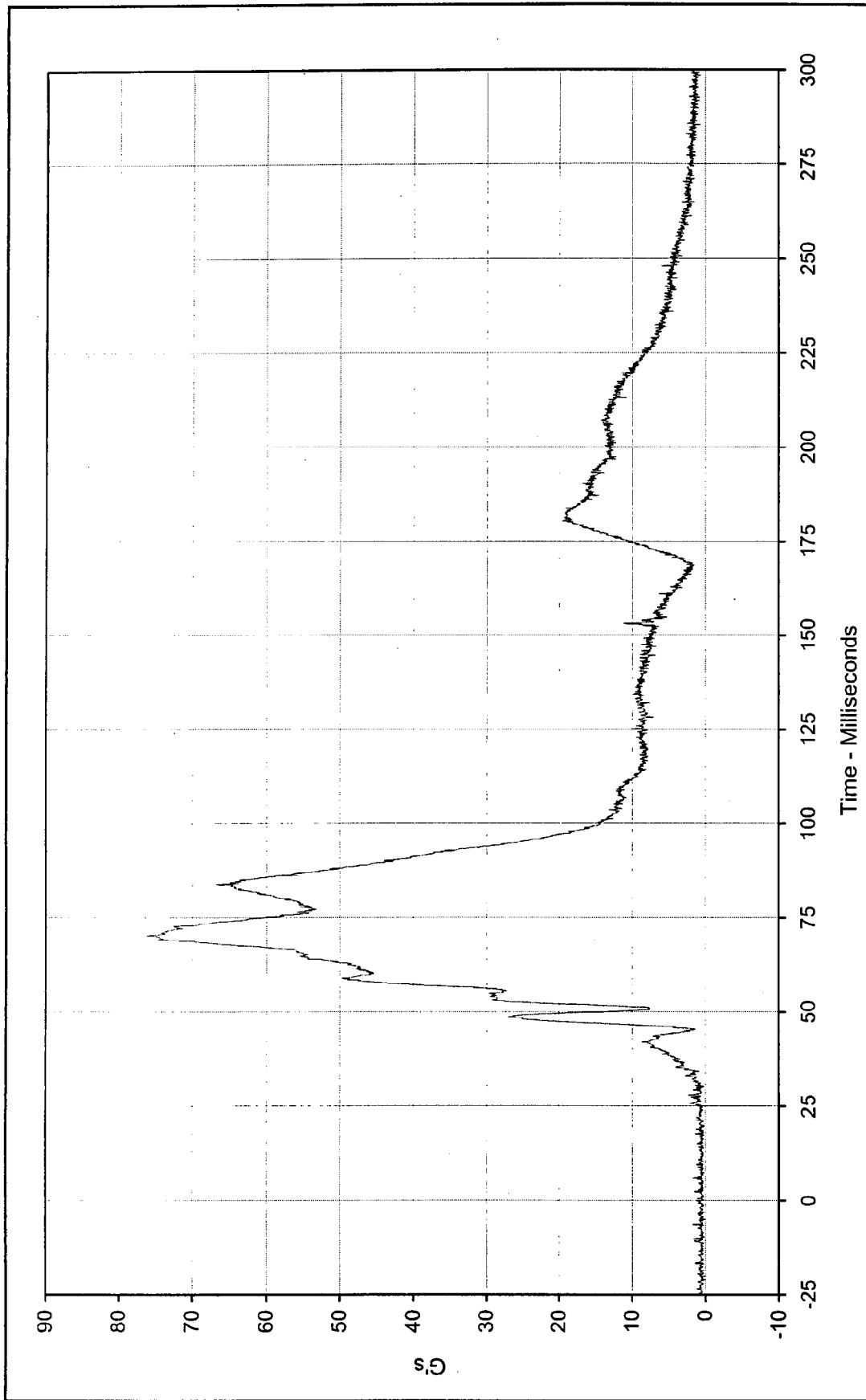
Curve Description:	Driver Head Primary Y	Test Program:	2000 NHTSA 35 mph NCAP No.: MY0106
Maximum Value:	7.4 at 153.2 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup
Minimum Value:	-13.4 at 84.9 Milliseconds		
SAE Filter Class:	1000		
Date of Test:	12/22/99		
Curve Number:	FIL-002		





Curve Description:		Driver Head Primary Z		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	38.1	at	57.9	Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup
Minimum Value:	-10.0	at	108.5	Milliseconds		
SAE Filter Class:	1000					
Date of Test:	12/22/99					
Curve Number:	FIL-003					

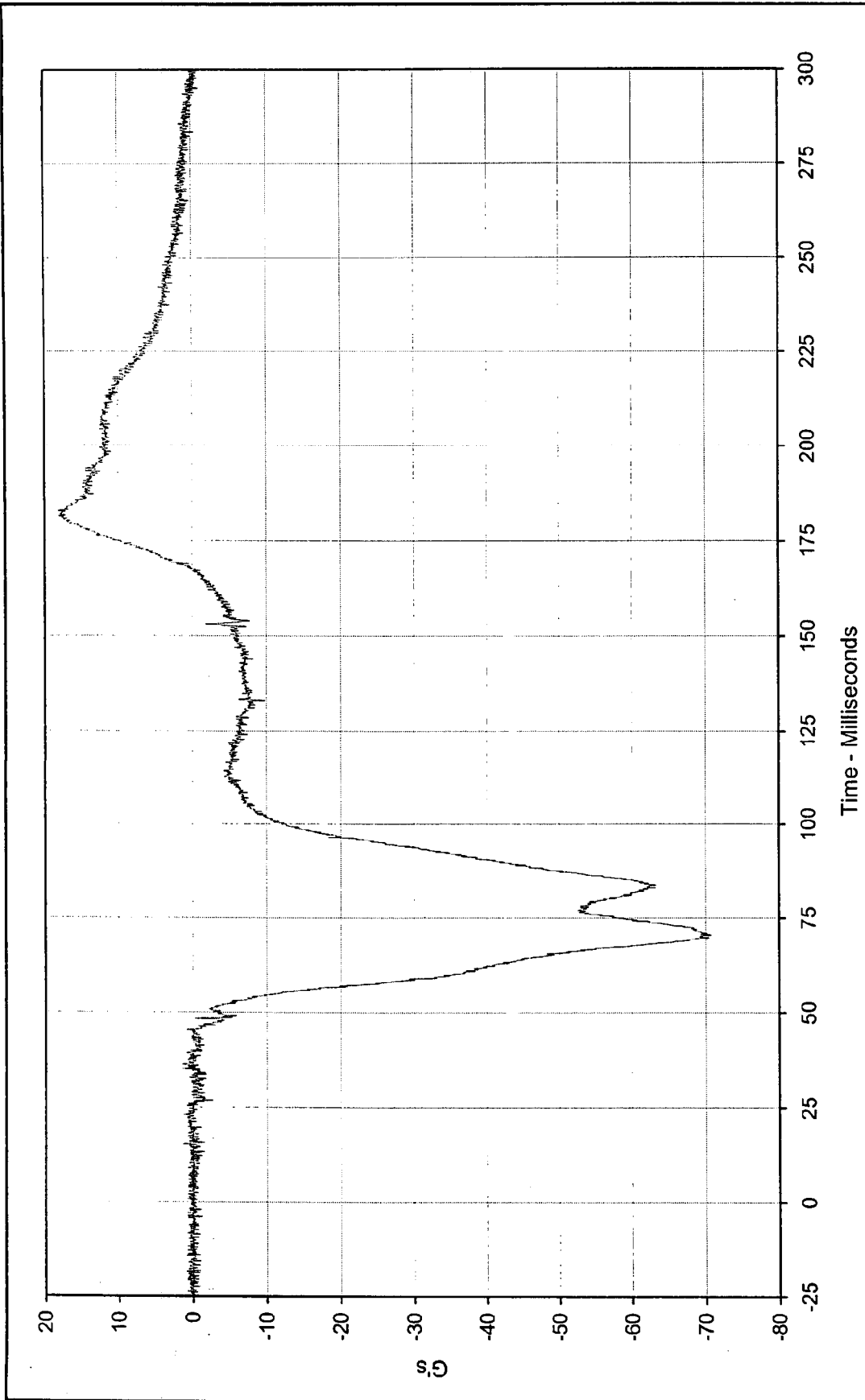




Curve Description:		Driver Head Resultant Primary		Test Program:		2000 NHTSA 35 mph NCAP No.: MY0106	
Maximum Value:	76.3	at	70.3	Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	0.1	at	7.2	Milliseconds			
SAE Filter Class:	1000						
Date of Test:	12/22/99						
Curve Number:	RES-001						







Curve Description: Driver Head Redundant X

Maximum Value: 18.2 at 181.4 Milliseconds

Minimum Value: -70.8 at 70.4 Milliseconds

SAE Filter Class: 1000

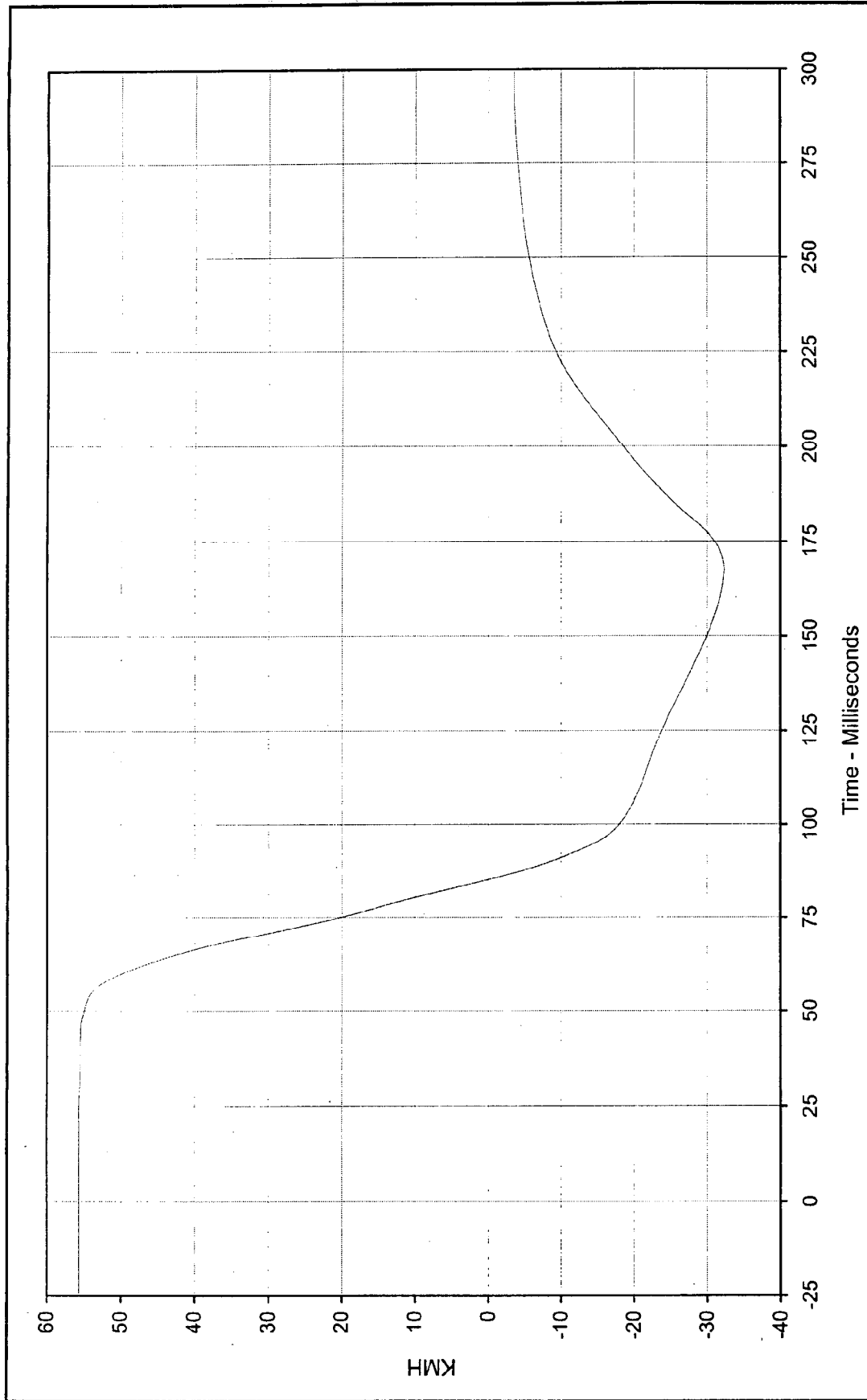
Date of Test: 12/22/99

Curve Number: FIL-004

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description: Driver Head Redundant X Velocity

Maximum Value: 55.7 at 5.0 Milliseconds

Minimum Value: -32.3 at 167.6 Milliseconds

SAE Filter Class: 180

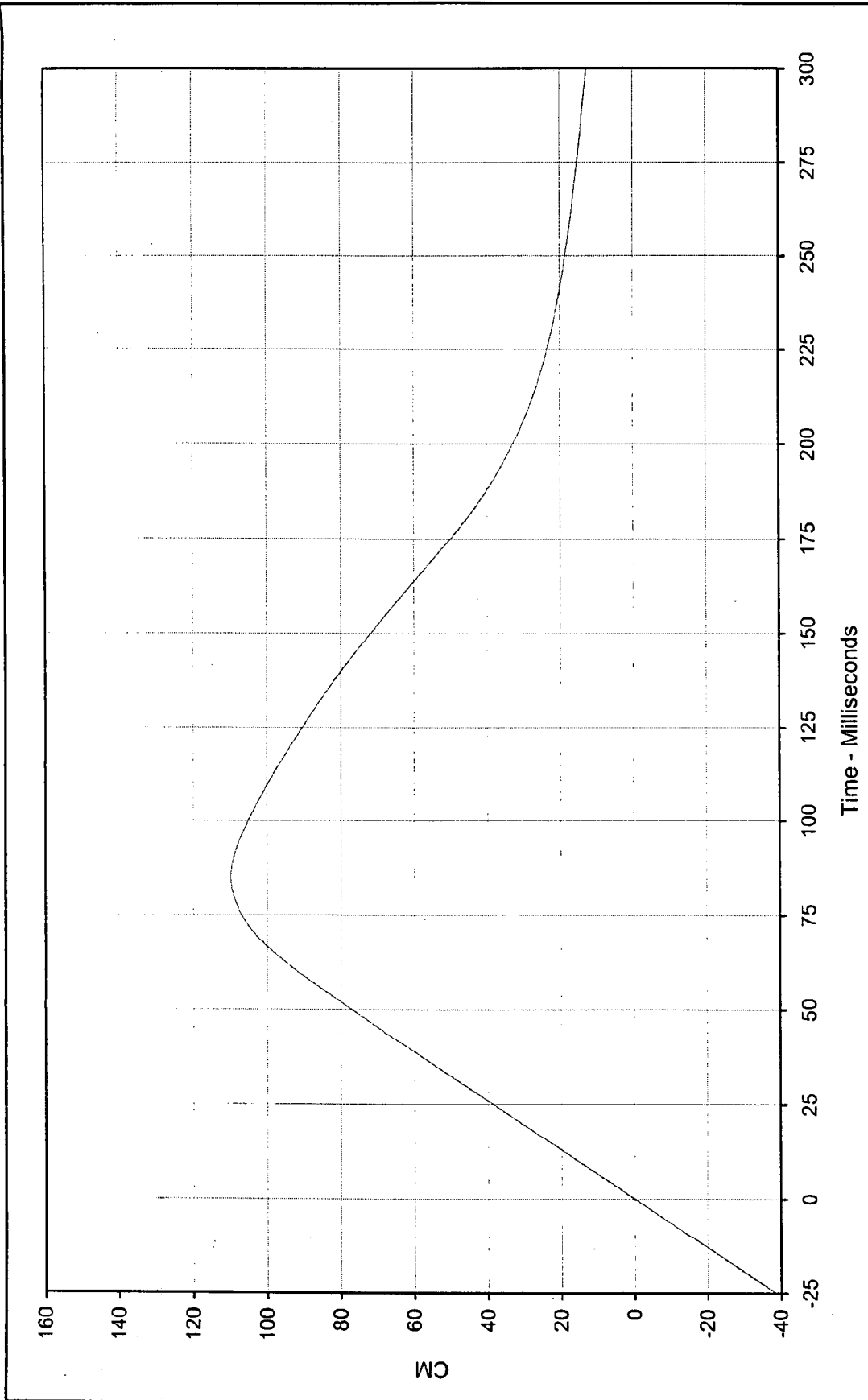
Date of Test: 12/22/99

Curve Number: IN1-004

Testing Program: 2000 NHTSA 35 mph NCAP No.: MY0106

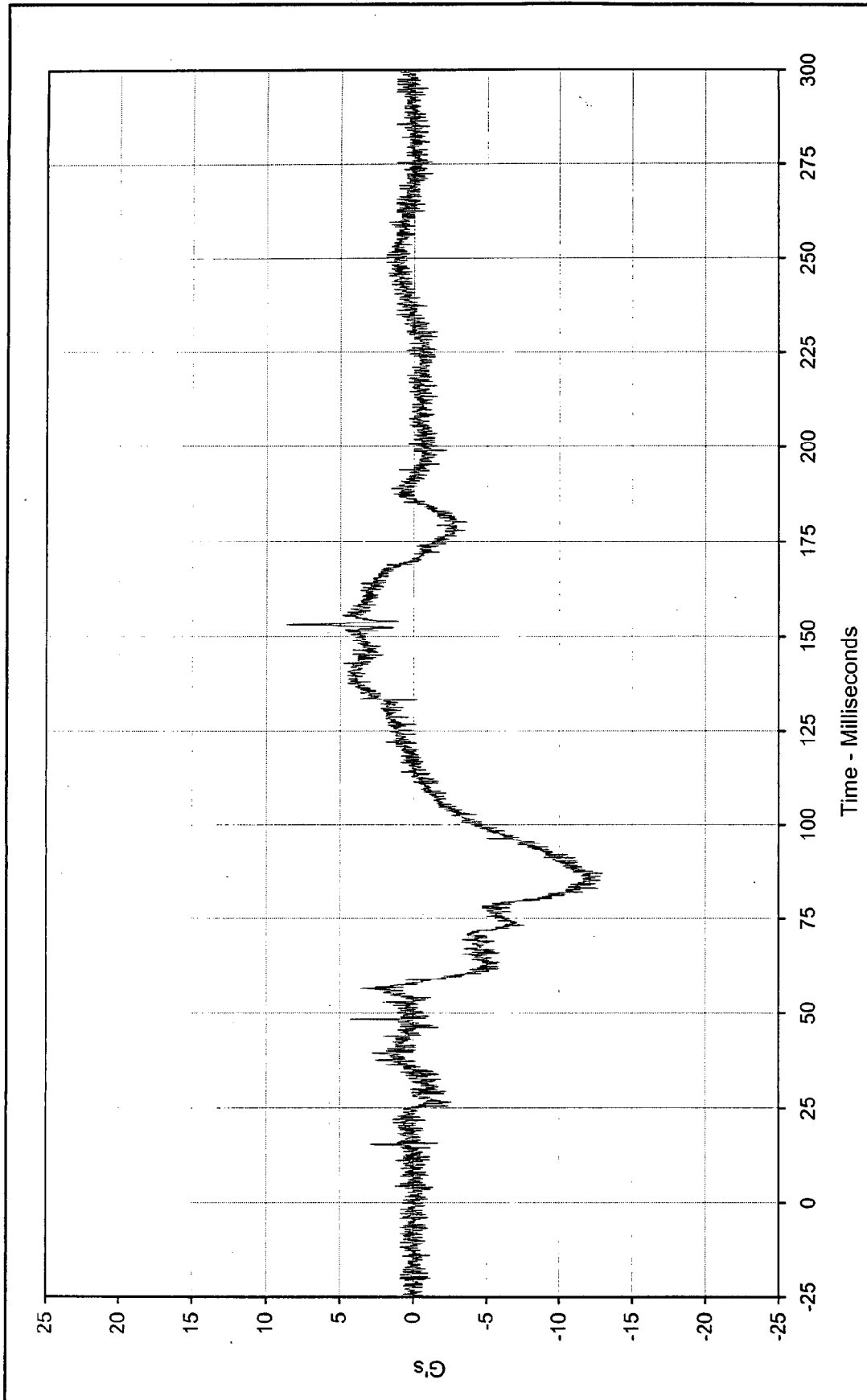
Test Vehicle: 2000 Chevrolet S-10 Pickup





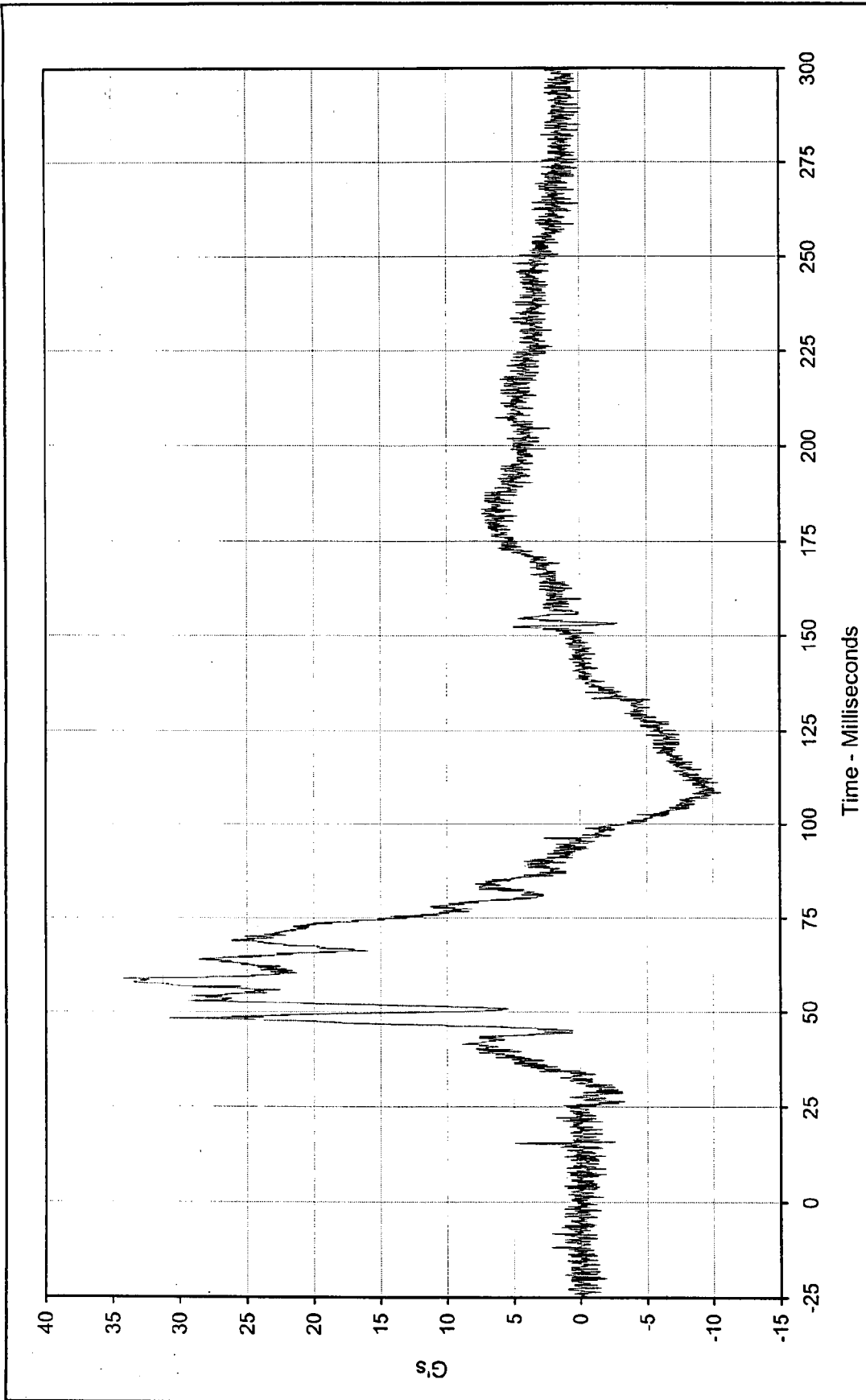
Curve Description:	Driver Head Redundant X Displ.	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	109.8 at 84.9 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	0.0 at 0.0 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/22/99			
Curve Number:	IN2-004			





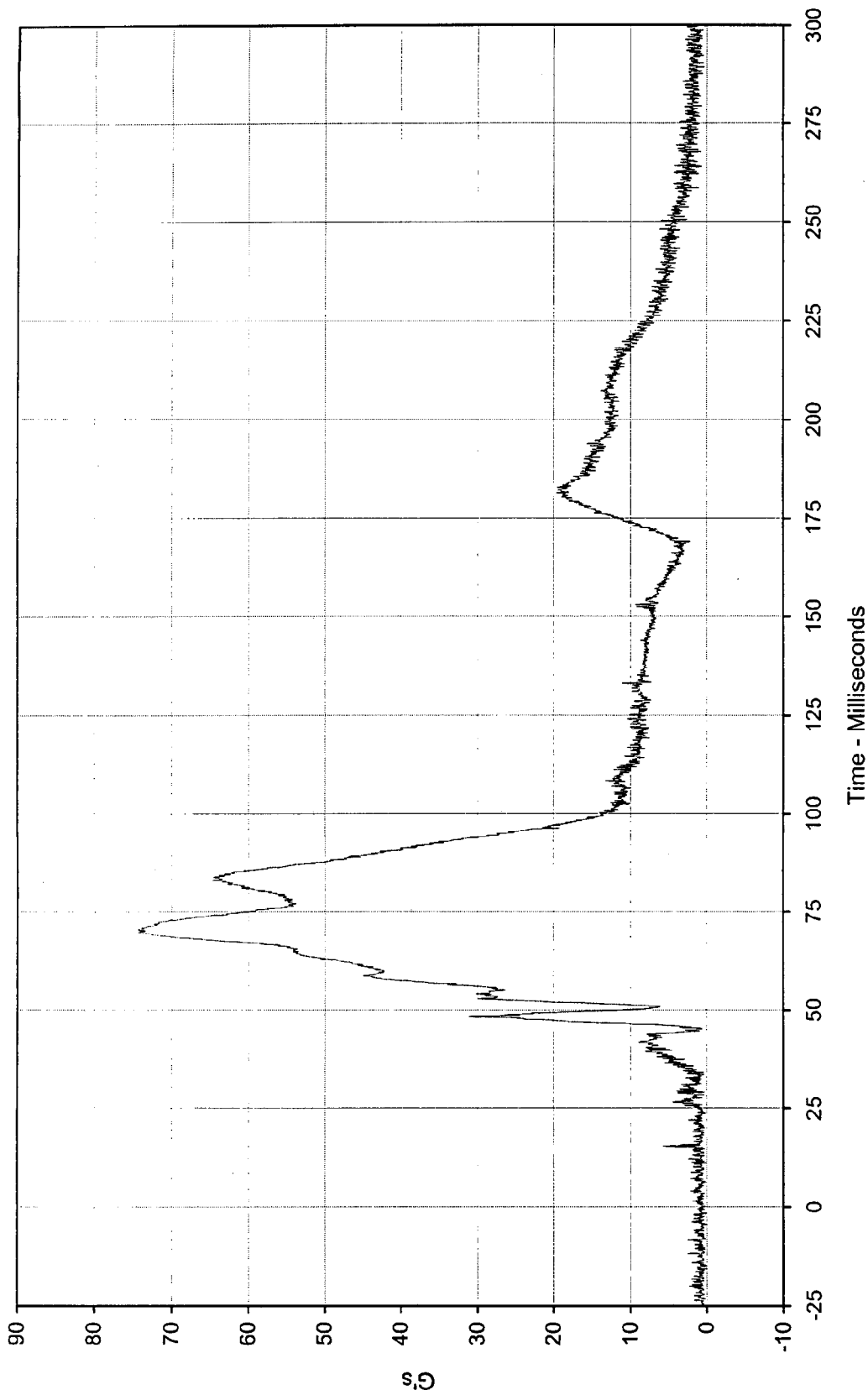
Curve Description:	Driver Head Redundant Y	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	8.6 at 153.1 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-13.0 at 86.8 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/22/99			
Curve Number:	FIL-005			





Curve Description:	Driver Head Redundant Z	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	34.2 at 58.7 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-10.6 at 108.3 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/22/99			
Curve Number:	FIL-006			





Curve Description: Driver Head Resultant Redundant Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Maximum Value: 74.3 at 70.4 Milliseconds Test Vehicle: 2000 Chevrolet S-10 Pickup

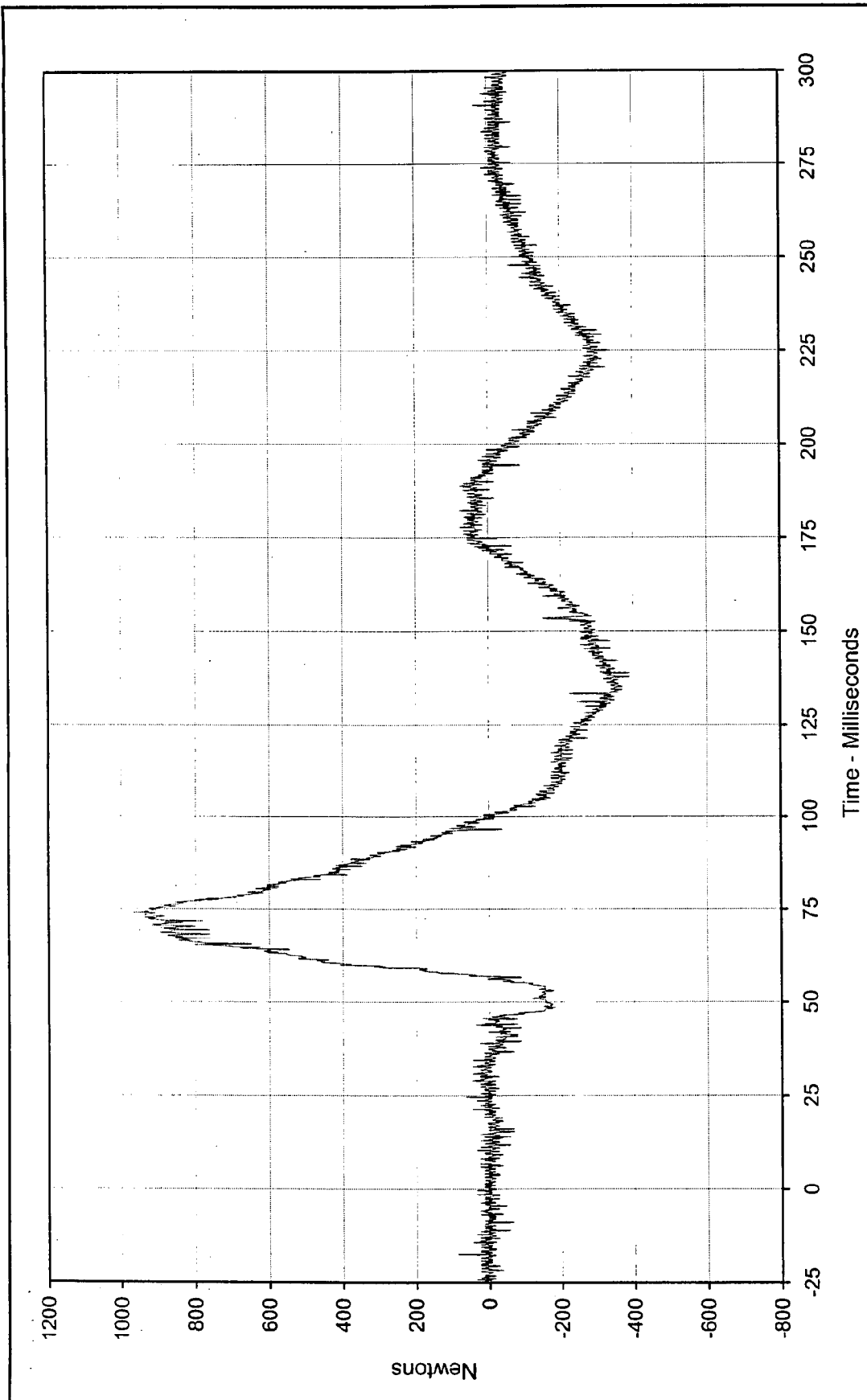
Minimum Value: 0.1 at 6.4 Milliseconds

SAE Filter Class: 1000

Date of Test: 12/22/99

Curve Number: RES-004

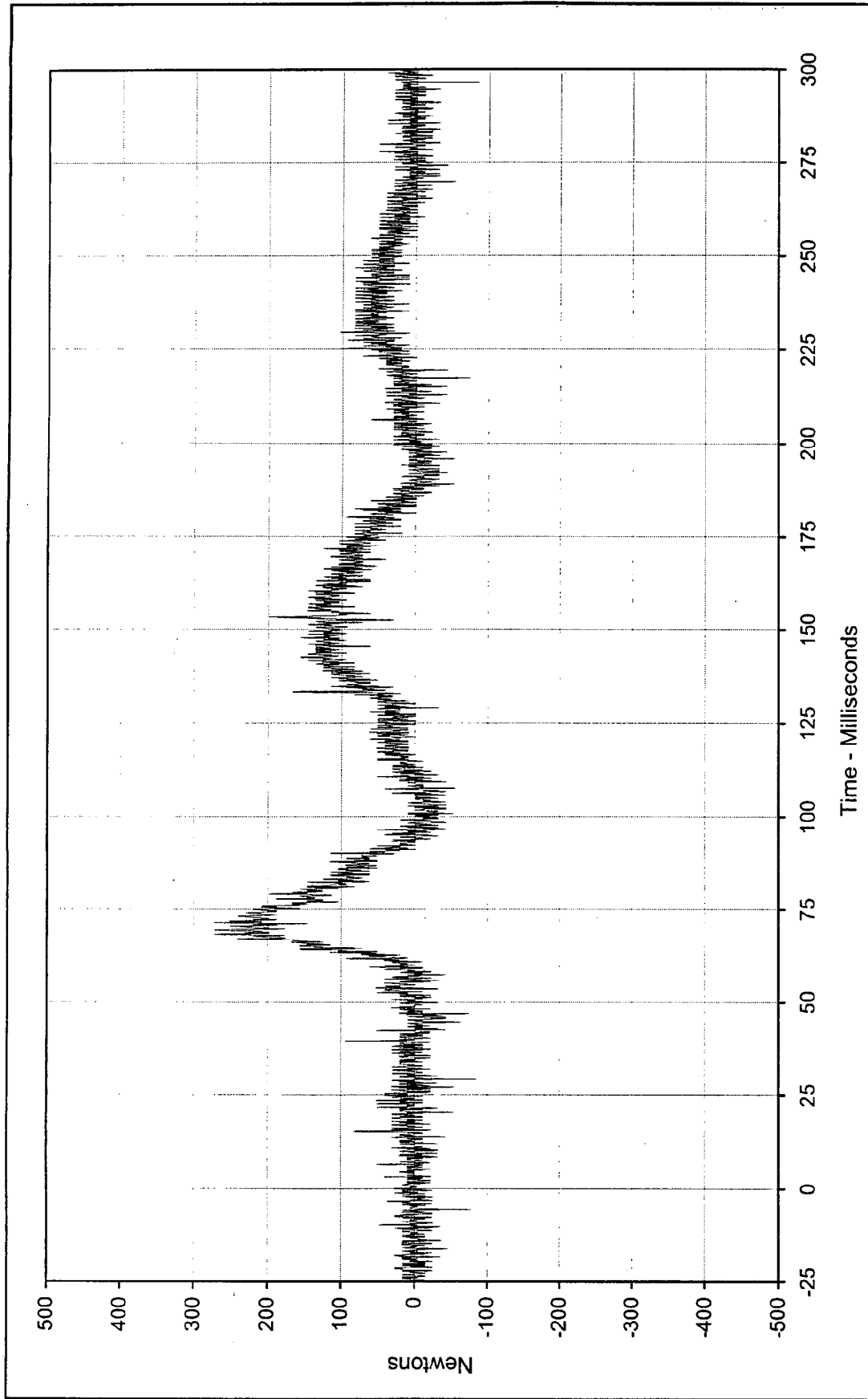




Curve Description: Driver Neck Force X
 Maximum Value: 968.1 at 74.1 Milliseconds
 Minimum Value: -389.9 at 137.6 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/22/99
 Curve Number: FIL-007

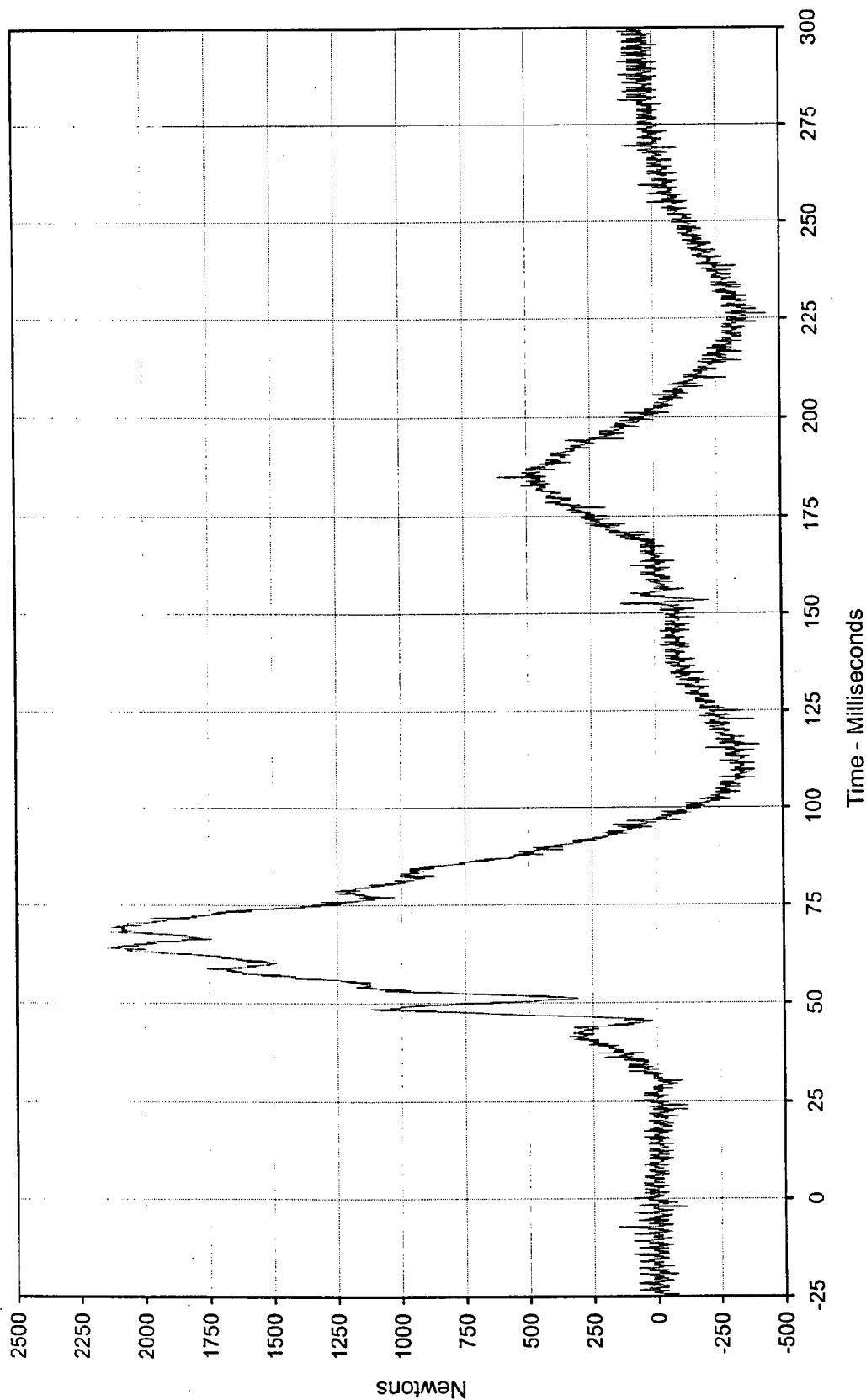
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description:		Driver Neck Force Y		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	271.5	at	68.2	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-85.5	at	29.3			
SAE Filter Class:	1000					
Date of Test:	12/22/99					
Curve Number:	FIL-008					





Curve Description: Driver Neck Force Z

Maximum Value: 2146.6 at 64.0 Milliseconds

Minimum Value: -450.1 at 226.4 Milliseconds

SAE Filter Class: 1000

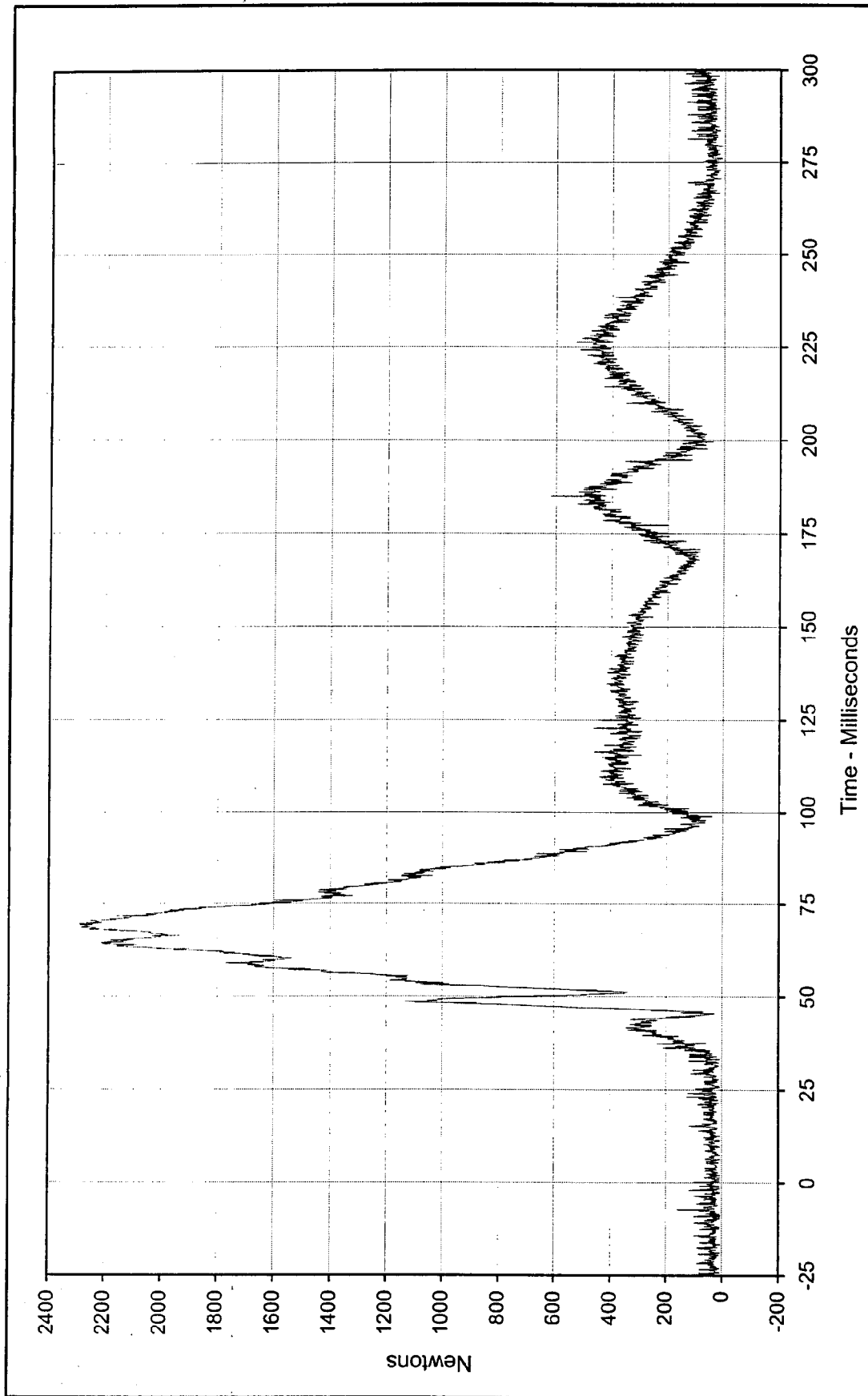
Date of Test: 12/22/99

Curve Number: FIL-009

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

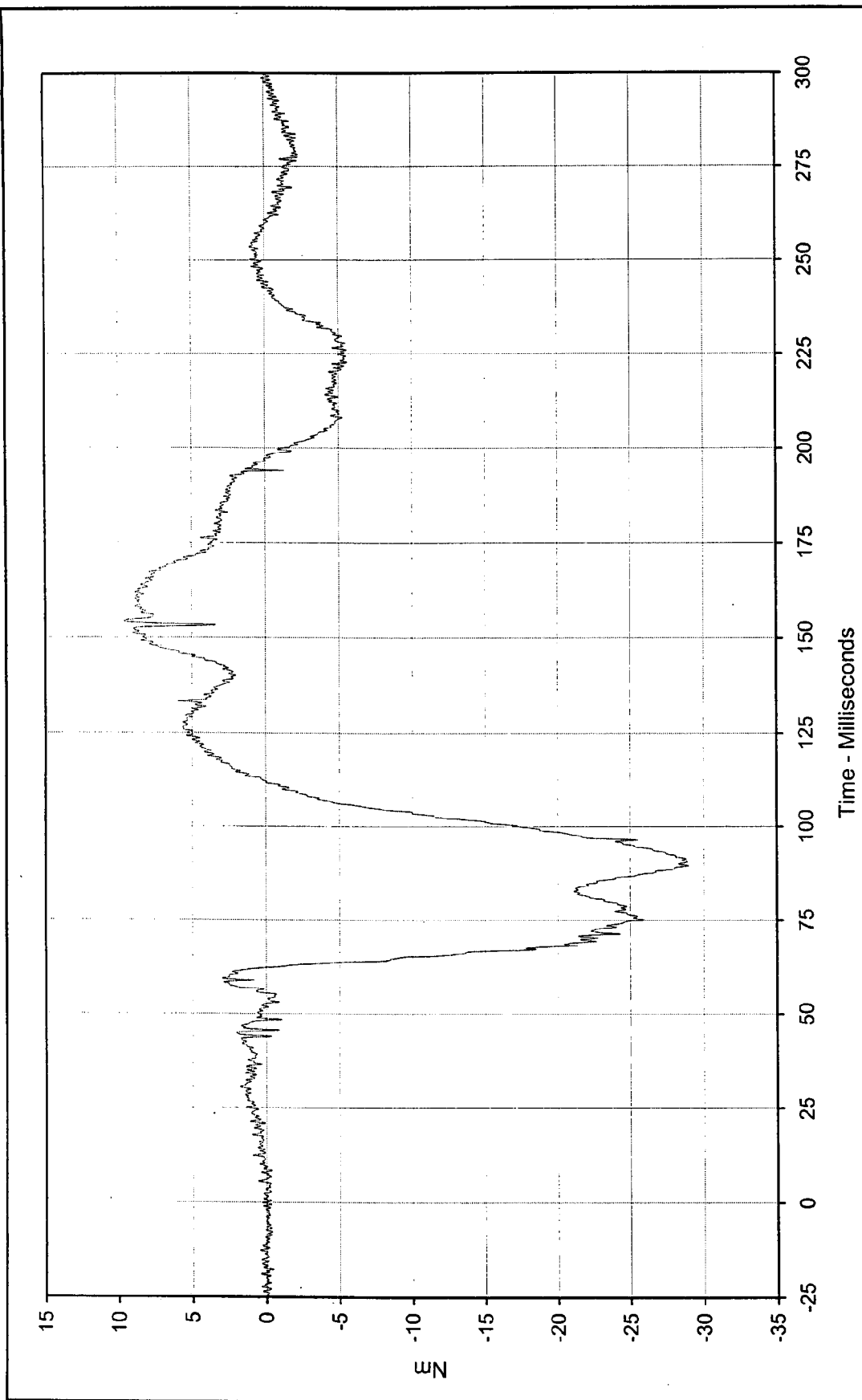
Test Vehicle: 2000 Chevrolet S-10 Pickup





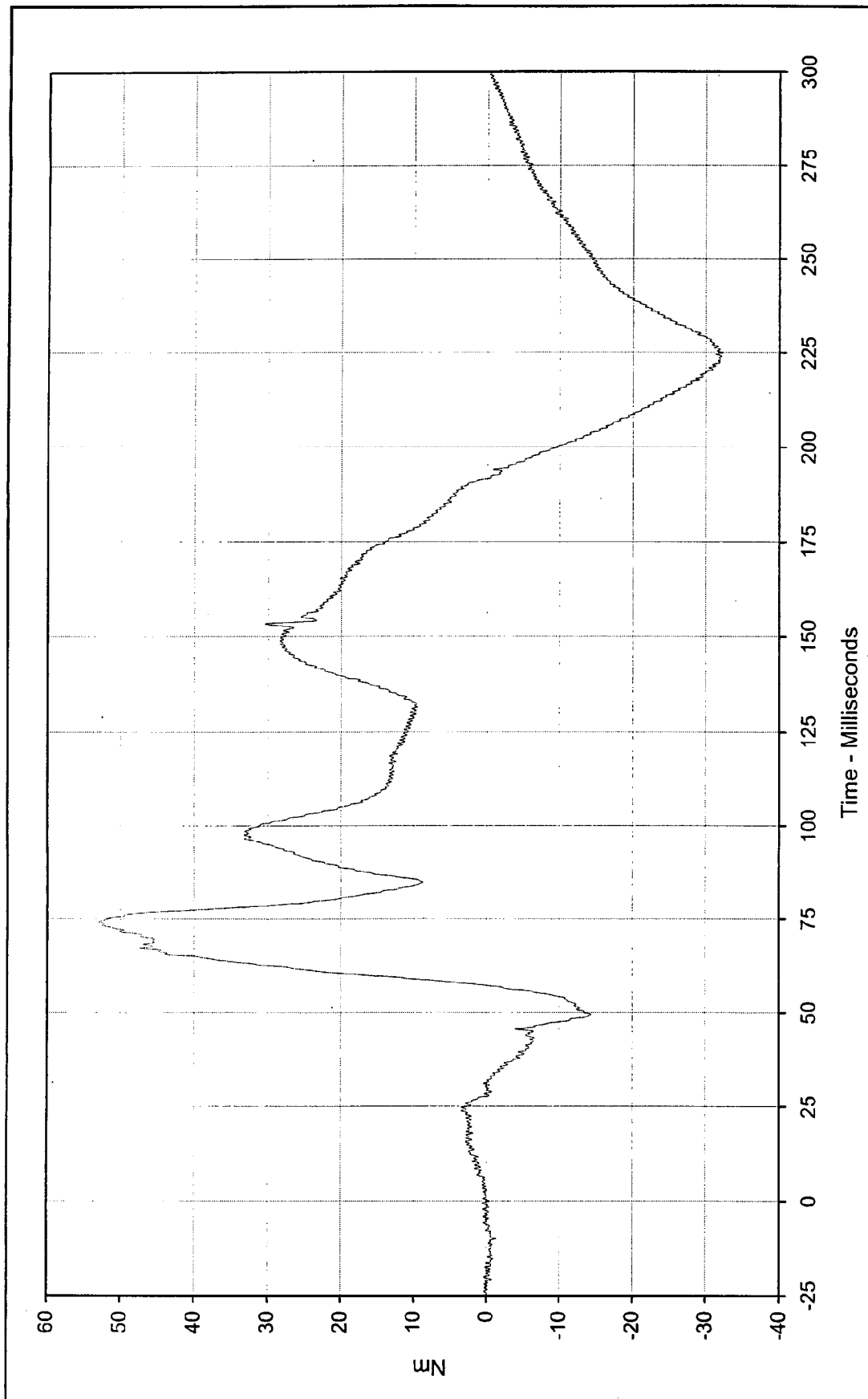
Curve Description:		Driver Neck Force Resultant		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	2289.8	at	69.6	Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup
Minimum Value:	6.1	at	1.4	Milliseconds		
SAE Filter Class:	1000					
Date of Test:	12/22/99					
Curve Number:	RES-007					





Curve Description:	Driver Neck Moment X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	9.6 at 154.3 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-29.0 at 89.4 Milliseconds			
SAE Filter Class:	600			
Date of Test:	12/22/99			
Curve Number:	FIL-010			





Curve Description: Driver Neck Moment Y Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Maximum Value: 53.0 at 74.2 Milliseconds

Minimum Value: -32.3 at 225.0 Milliseconds

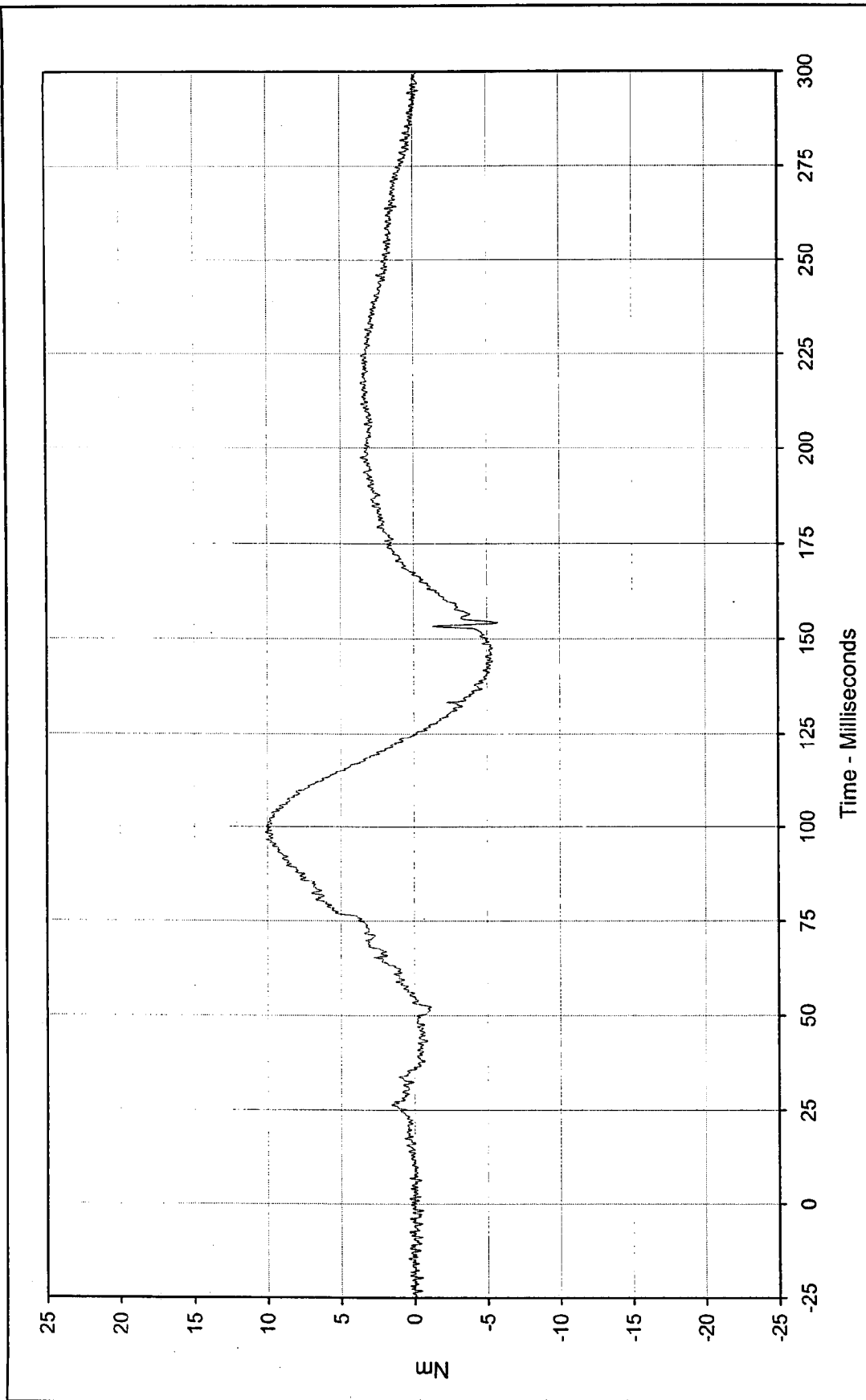
SAE Filter Class: 600

Date of Test: 12/22/99

Curve Number: FIL-011

Test Vehicle: 2000 Chevrolet S-10 Pickup

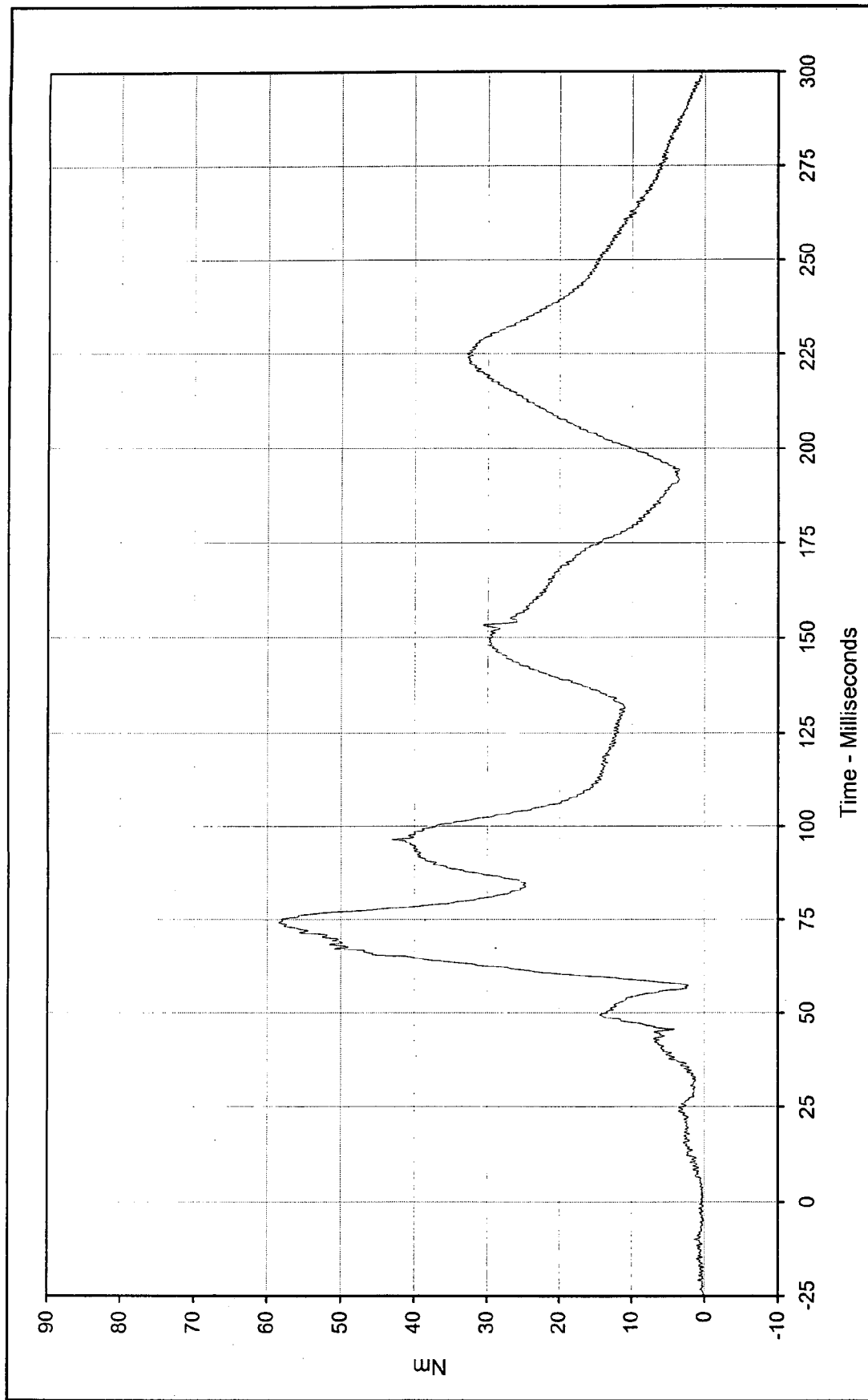




Curve Description: Driver Neck Moment Z
 Maximum Value: 10.1 at 98.5 Milliseconds
 Minimum Value: -5.8 at 154.3 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/22/99
 Curve Number: FIL-012

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup





B-20

Curve Description: Driver Neck Moment Resultant Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Maximum Value: 58.5 at 74.2 Milliseconds Test Vehicle: 2000 Chevrolet S-10 Pickup

Minimum Value: 0.1 at 3.8 Milliseconds

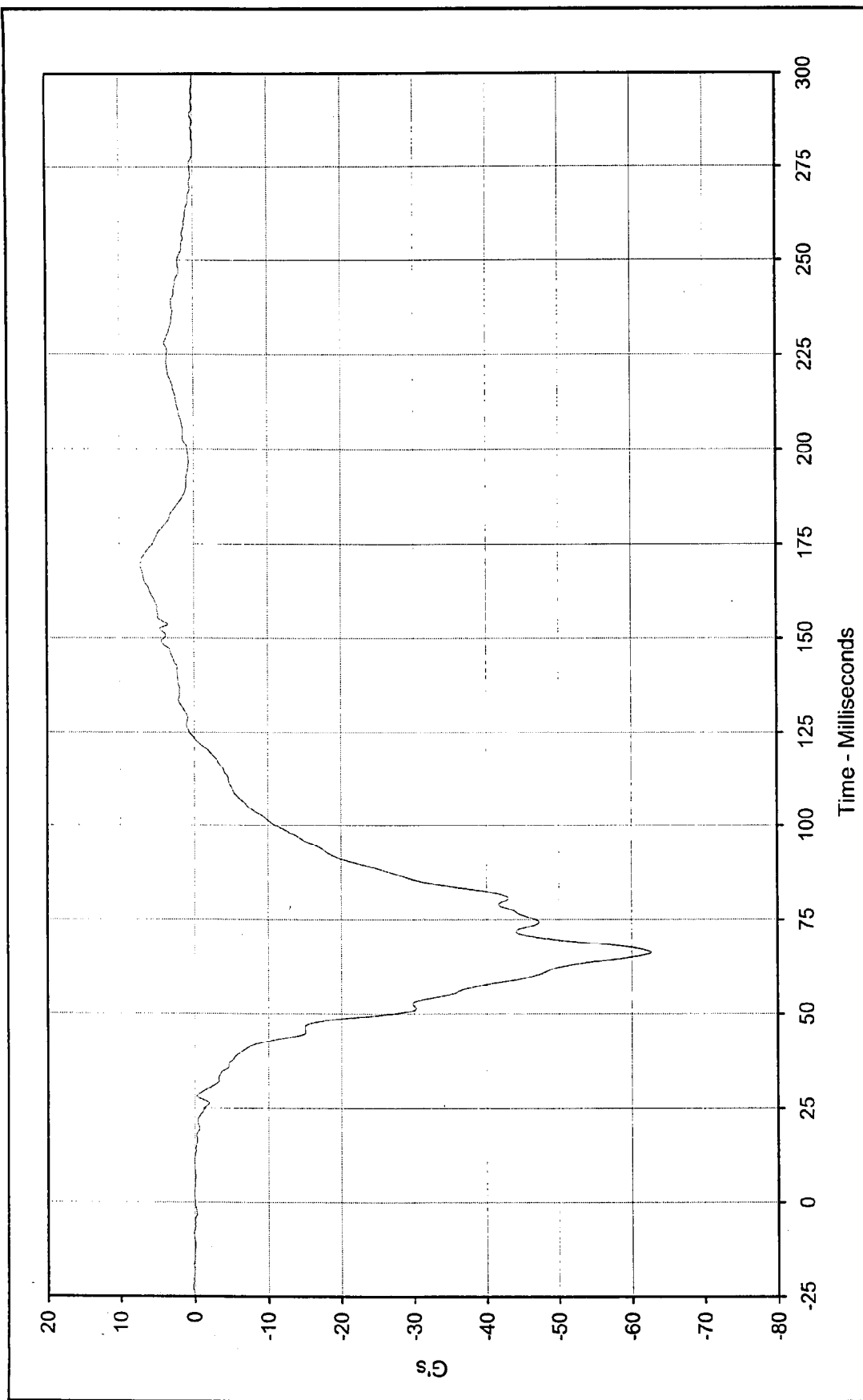
SAE Filter Class: 600

Date of Test: 12/22/99

Curve Number: RES-010



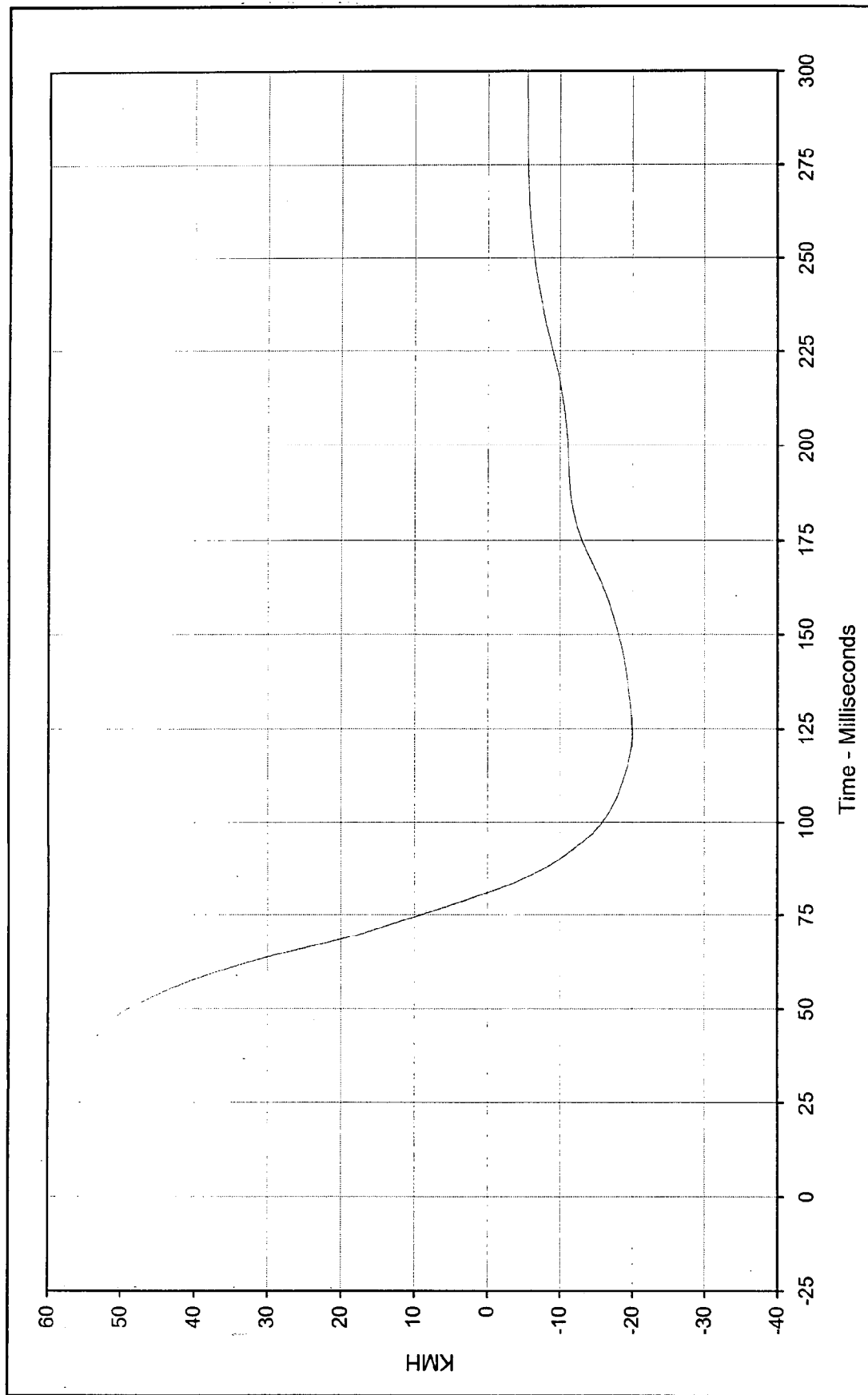
KAR20001-07



Curve Description: Driver Chest Primary X
 Maximum Value: 7.2 at 169.1 Milliseconds
 Minimum Value: -62.7 at 66.2 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/22/99
 Curve Number: FIL-013

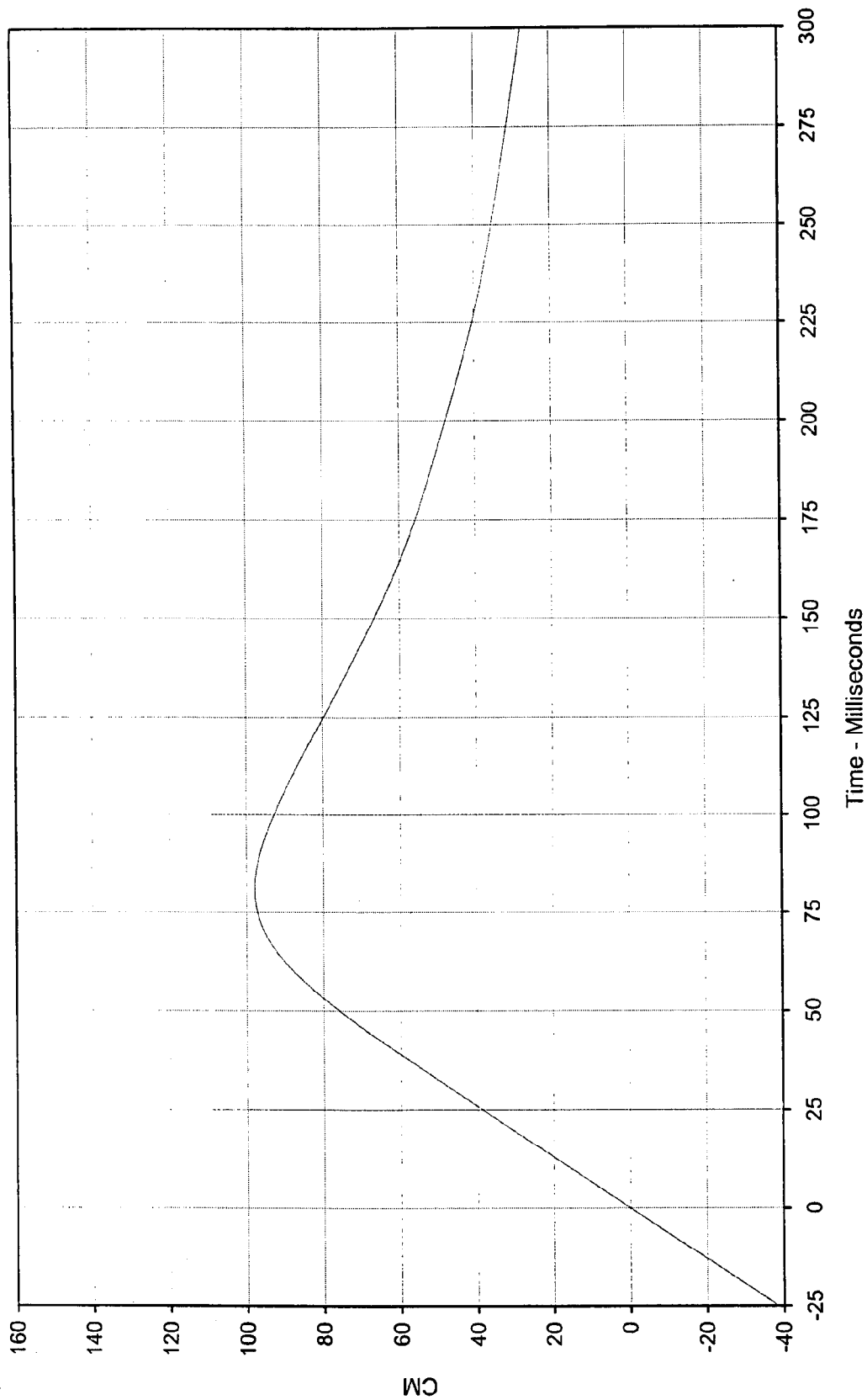
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description:	Driver Chest Primary X Velocity	Testing Program	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	55.8 at 3.8 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-19.9 at 123.6 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/22/99			
Curve Number:	IN1-013			





Curve Description: Driver Chest Primary X Displ.

Maximum Value: 97.9 at 80.8 Milliseconds

Minimum Value: 0.1 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 12/22/99

Curve Number: IN2-013

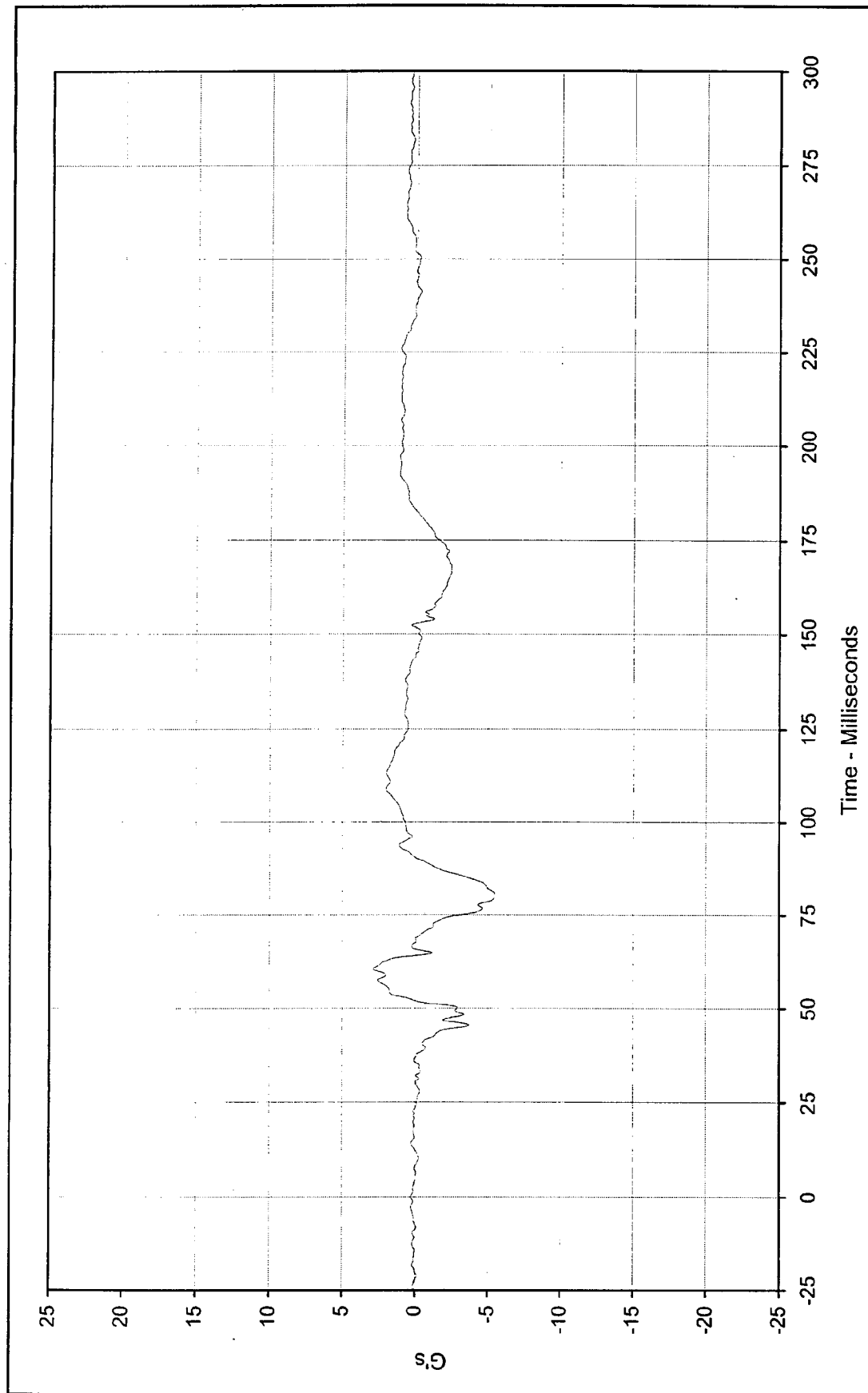
Test Program:

2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle:

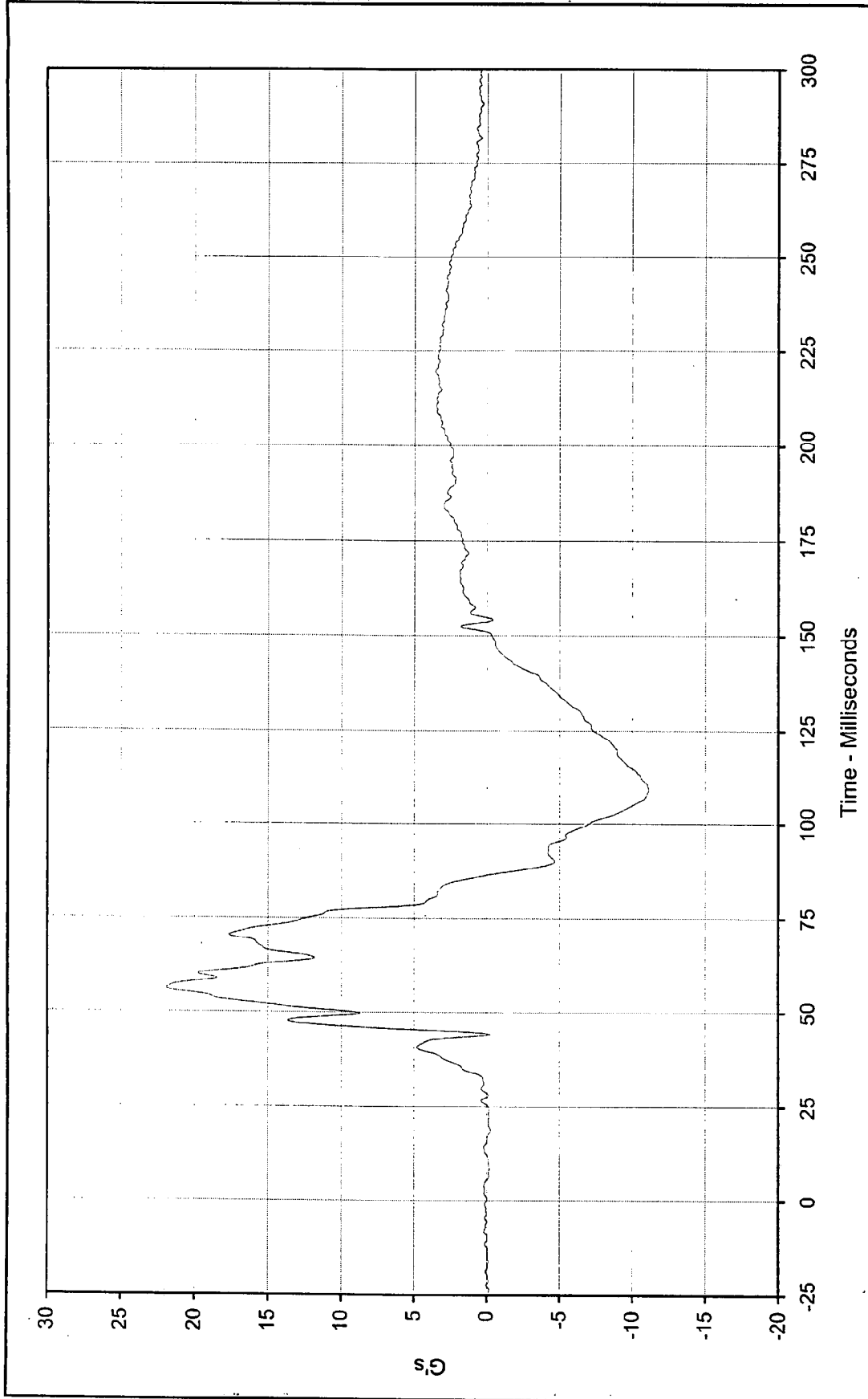
2000 Chevrolet S-10 Pickup





Curve Description:	Driver Chest Primary Y		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	2.9	at 60.4 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-5.5	at 80.6 Milliseconds			
SAE Filter Class:	180				
Date of Test:	12/22/99				
Curve Number:	FIL-014				

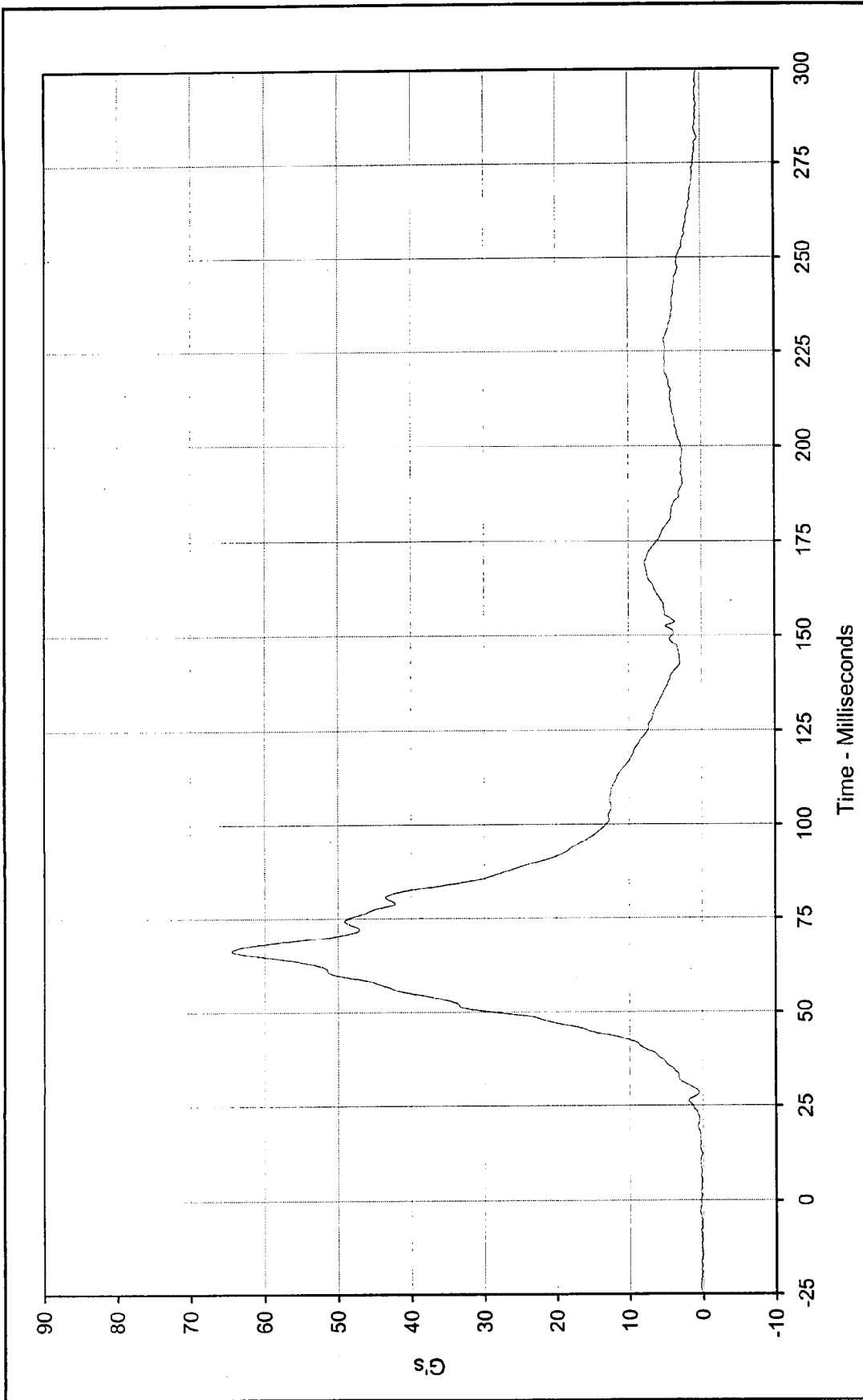




Curve Description:	Driver Chest Primary Z	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	21.9 at 56.2 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-11.1 at 109.1 Milliseconds			

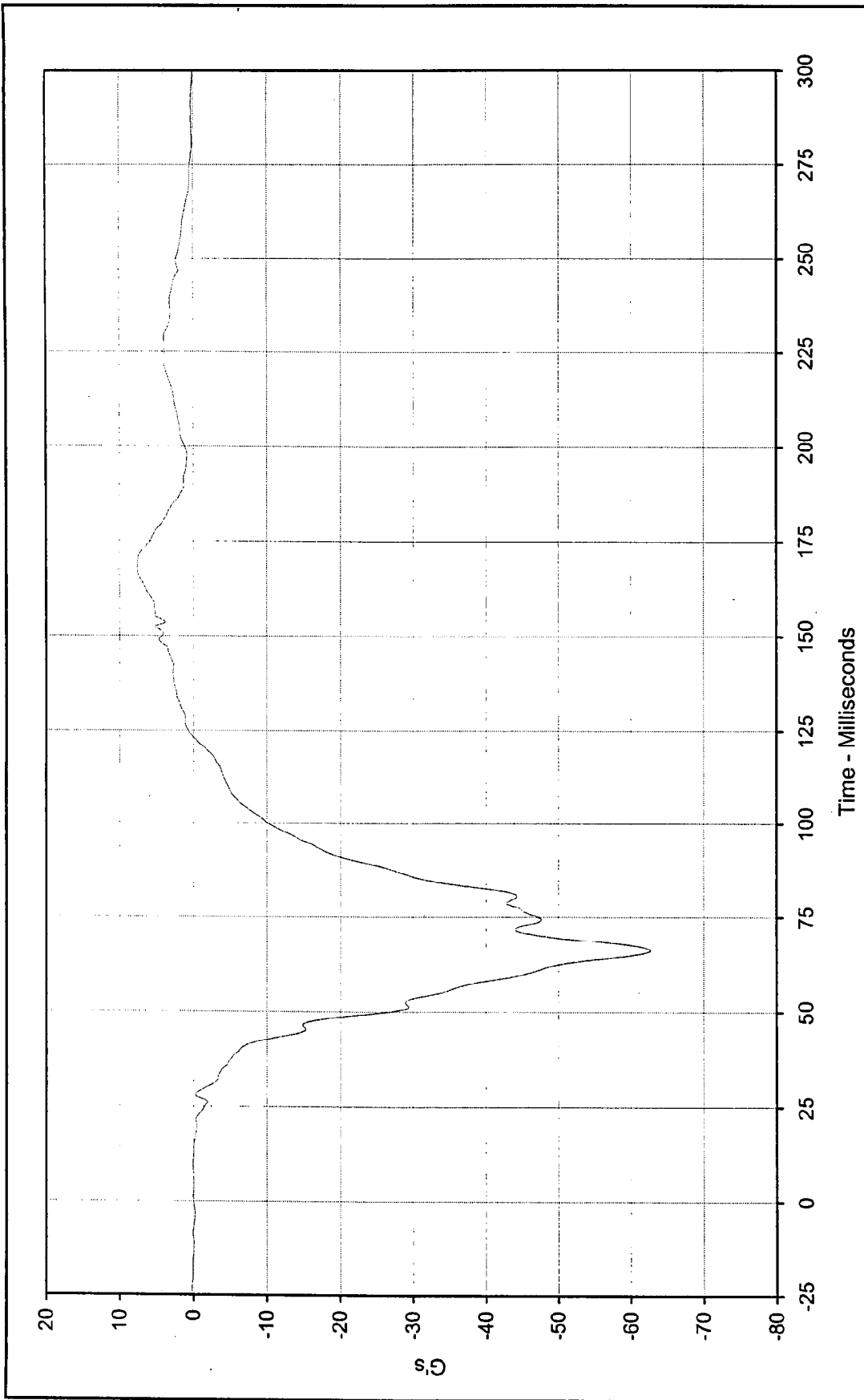


SAE Filter Class:	180
Date of Test:	12/22/99
Curve Number:	FIL-015



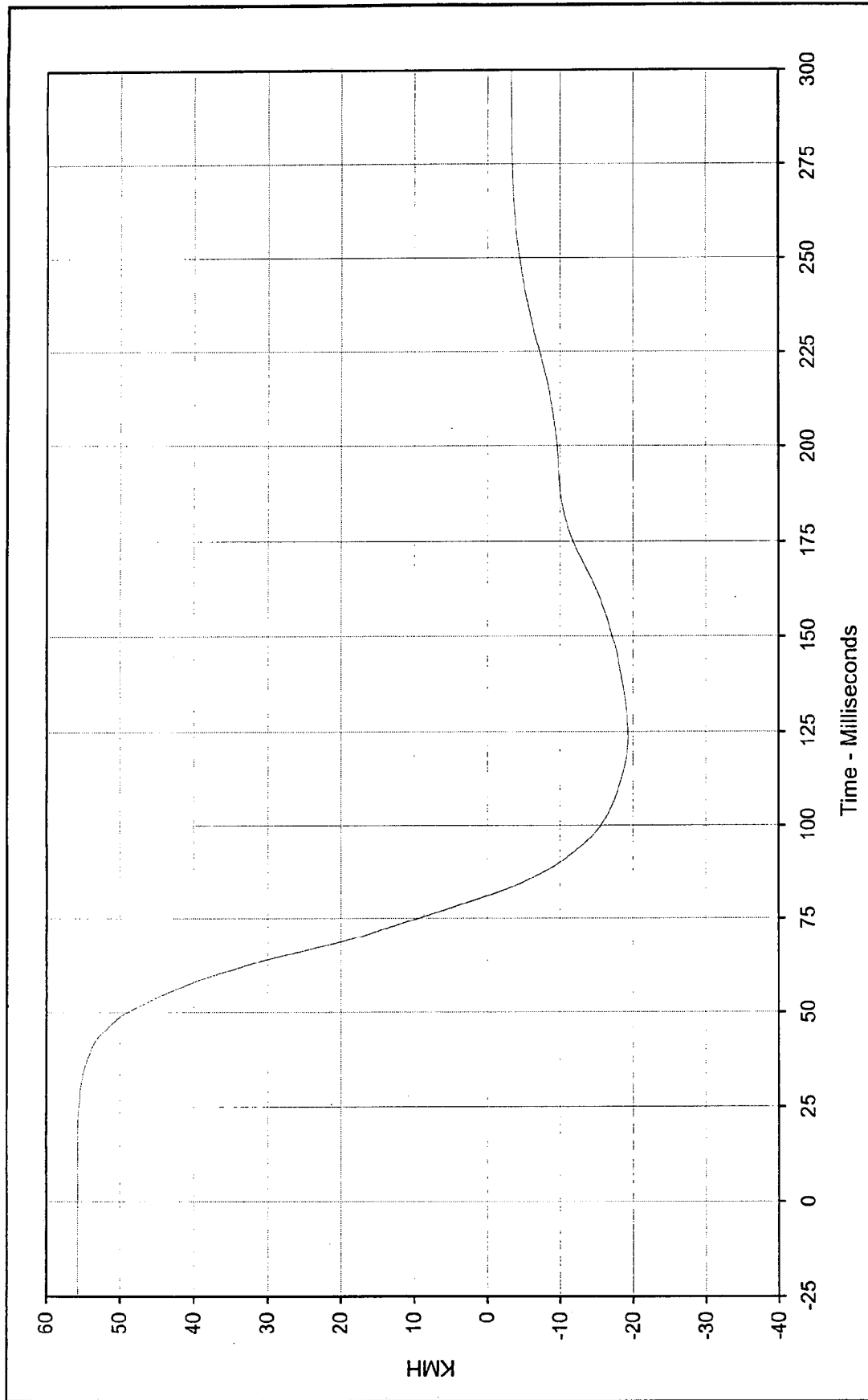
Curve Description:	Driver Chest Resultant Primary	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	64.4 at 66.3 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	0.0 at 12.2 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/22/99			
Curve Number:	RES-013			





Curve Description:	Driver Chest Redundant X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	7.6 at 167.9 milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-62.7 at 66.1 milliseconds			
SAE Filter Class:	180			
Date of Test:	12/22/99			
Curve Number:	FIL-016			





Curve Description: Driver Chest Redundant X Velocity Testing Program 2000 NHTSA 35 mph NCAP No.: MY0106

Maximum Value: 55.7 at 11.5 Milliseconds Test Vehicle: 2000 Chevrolet S-10 Pickup

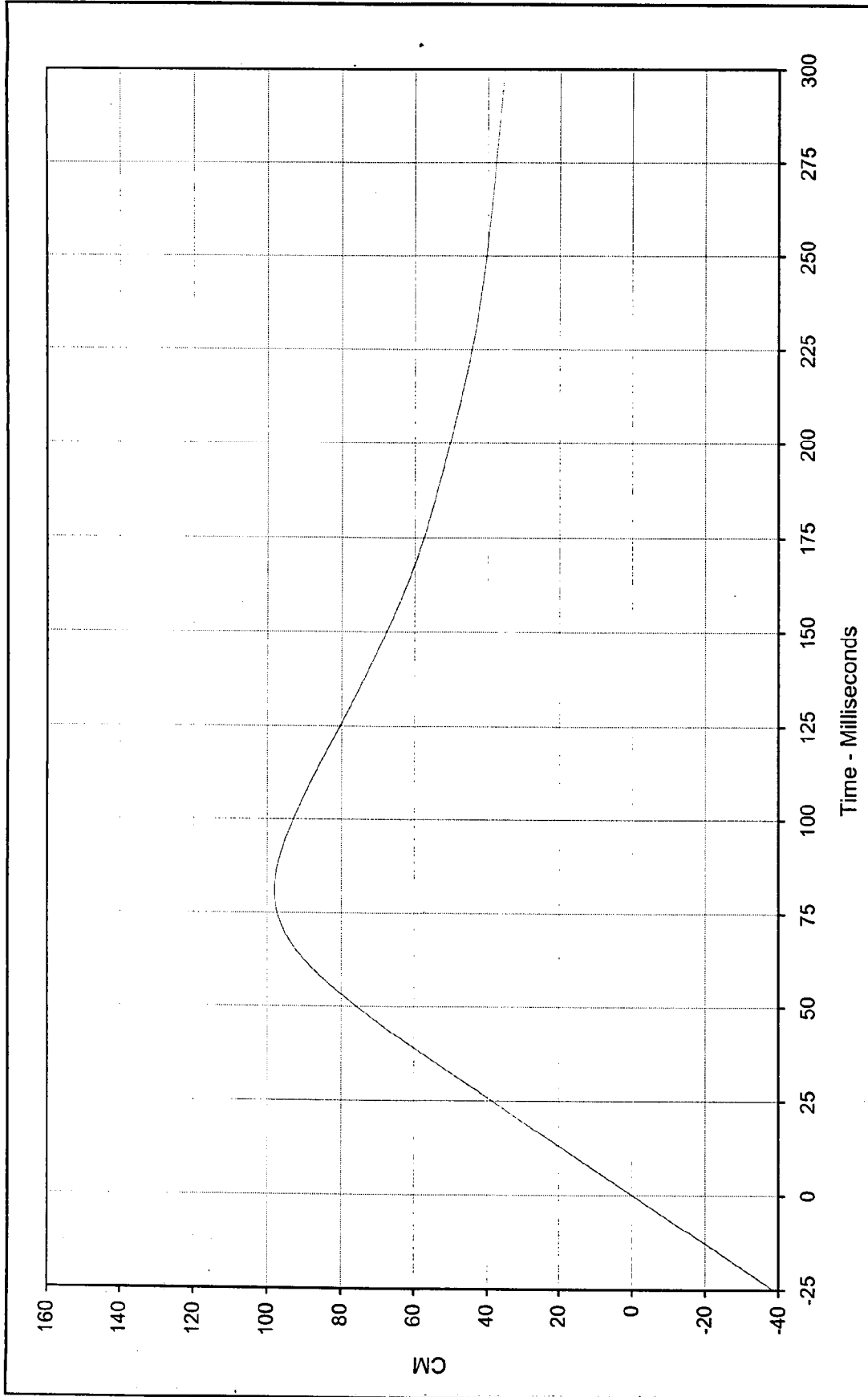
Minimum Value: -19.3 at 123.3 Milliseconds

SAE Filter Class: 180

Date of Test: 12/22/99

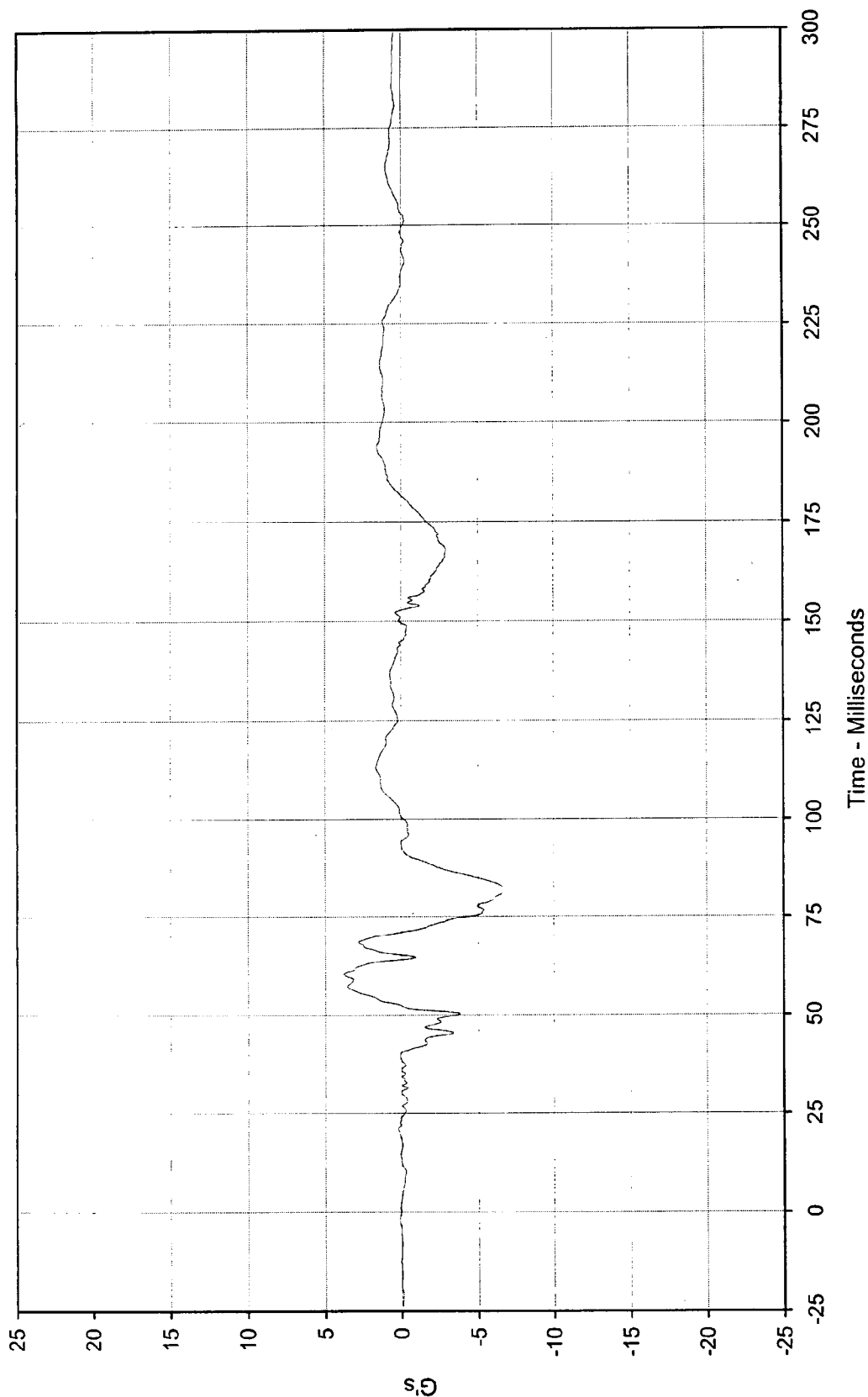
Curve Number: IN1-016





Curve Description:	Driver Chest Redundant X Displ.	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	98.1 at 80.9 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	0.0 at 0.0 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/22/99			
Curve Number:	IN2-016			





Curve Description: Driver Chest Redundant Y

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Maximum Value: 3.8 at 60.3 Milliseconds

Test Vehicle: 2000 Chevrolet S-10 Pickup

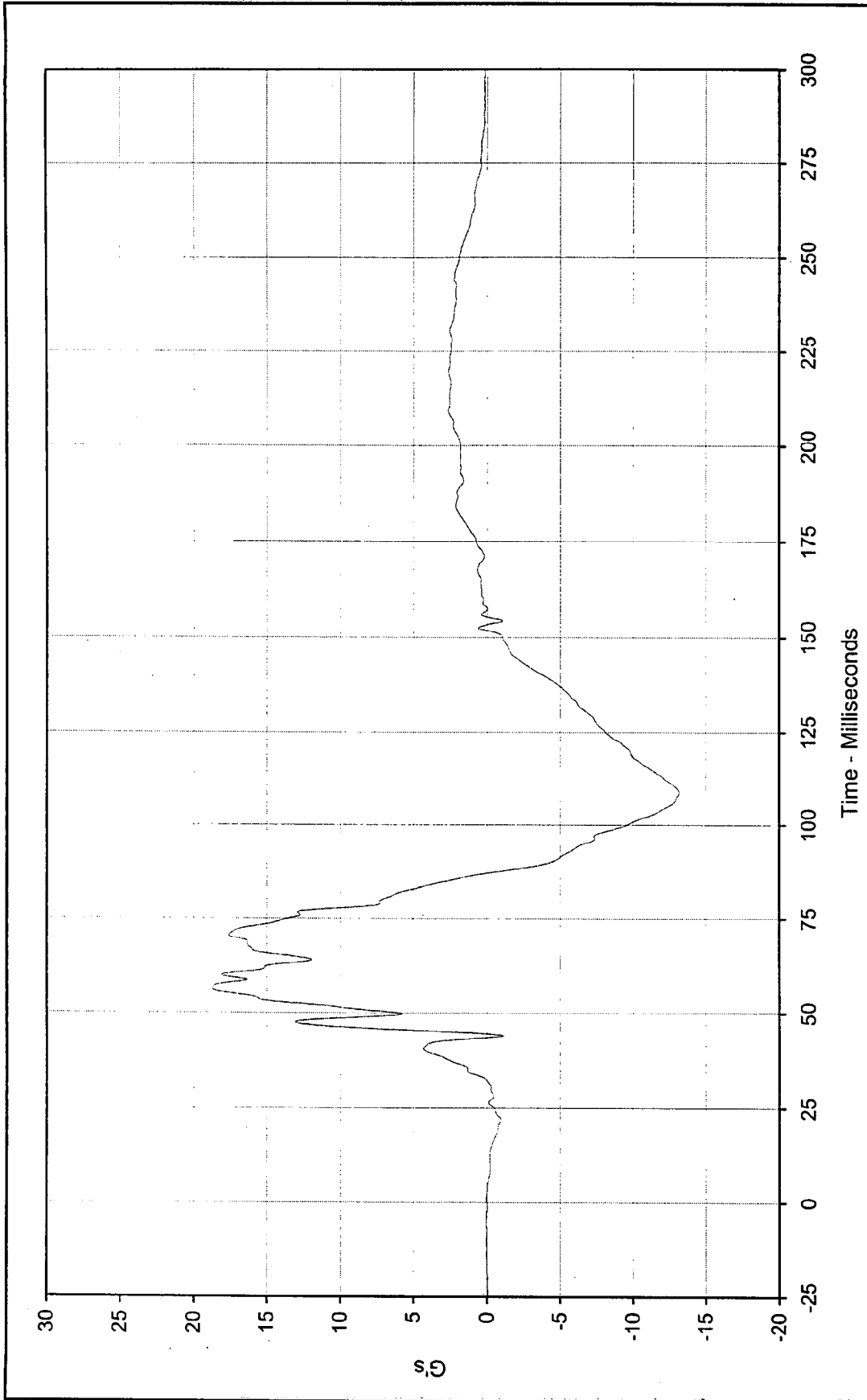
Minimum Value: -6.7 at 82.1 Milliseconds

SAE Filter Class: 180

Date of Test: 12/22/99

Curve Number: FIL-017

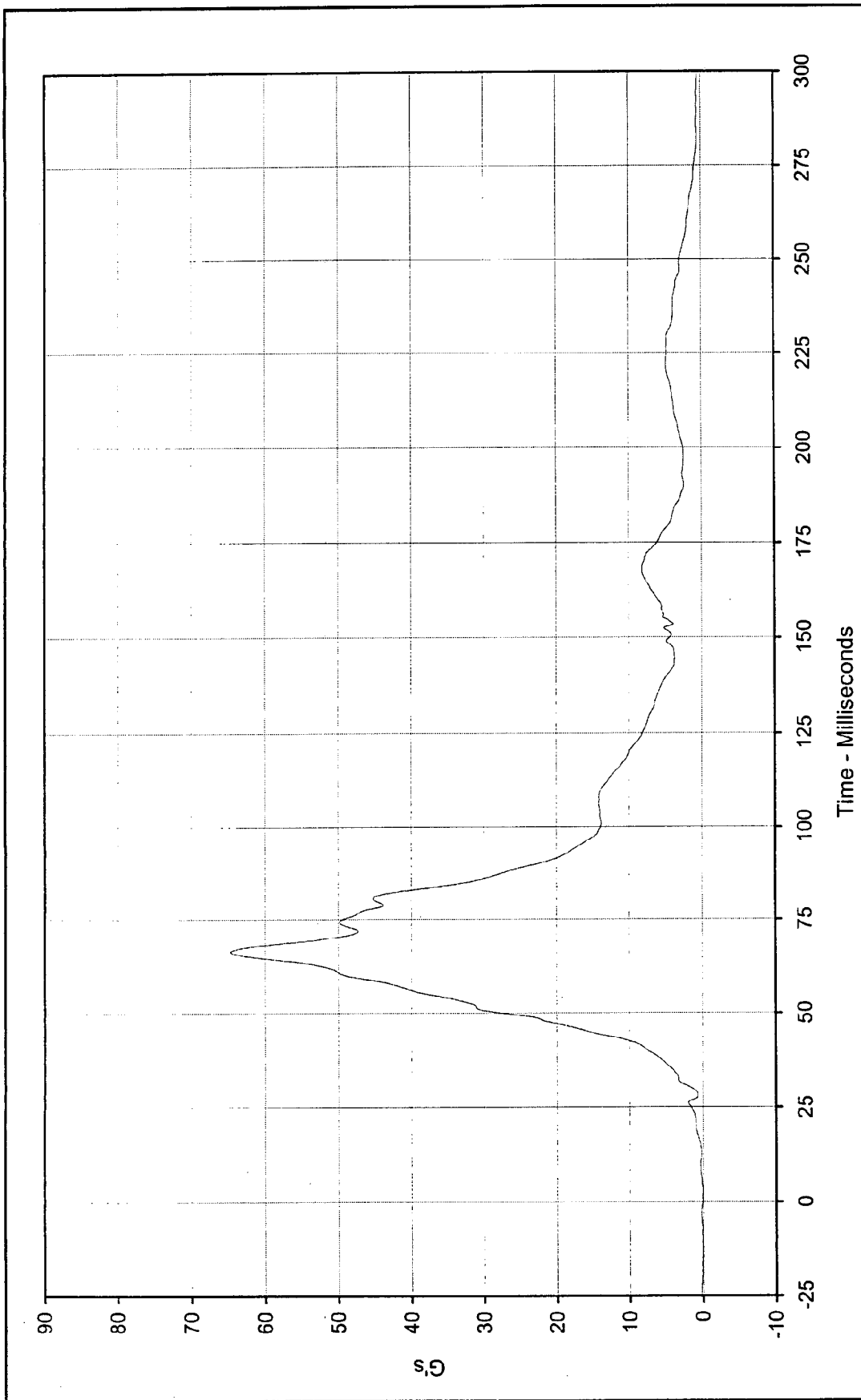




Curve Description: Driver Chest Redundant Z
 Maximum Value: 18.7 at 56.2 Milliseconds
 Minimum Value: -13.2 at 108.6 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/22/99
 Curve Number: FIL-018

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description: Driver Chest Resultant Redundant

Maximum Value: 64.7 at 66.2 Milliseconds

Minimum Value: 0.0 at 2.9 Milliseconds

SAE Filter Class: 180

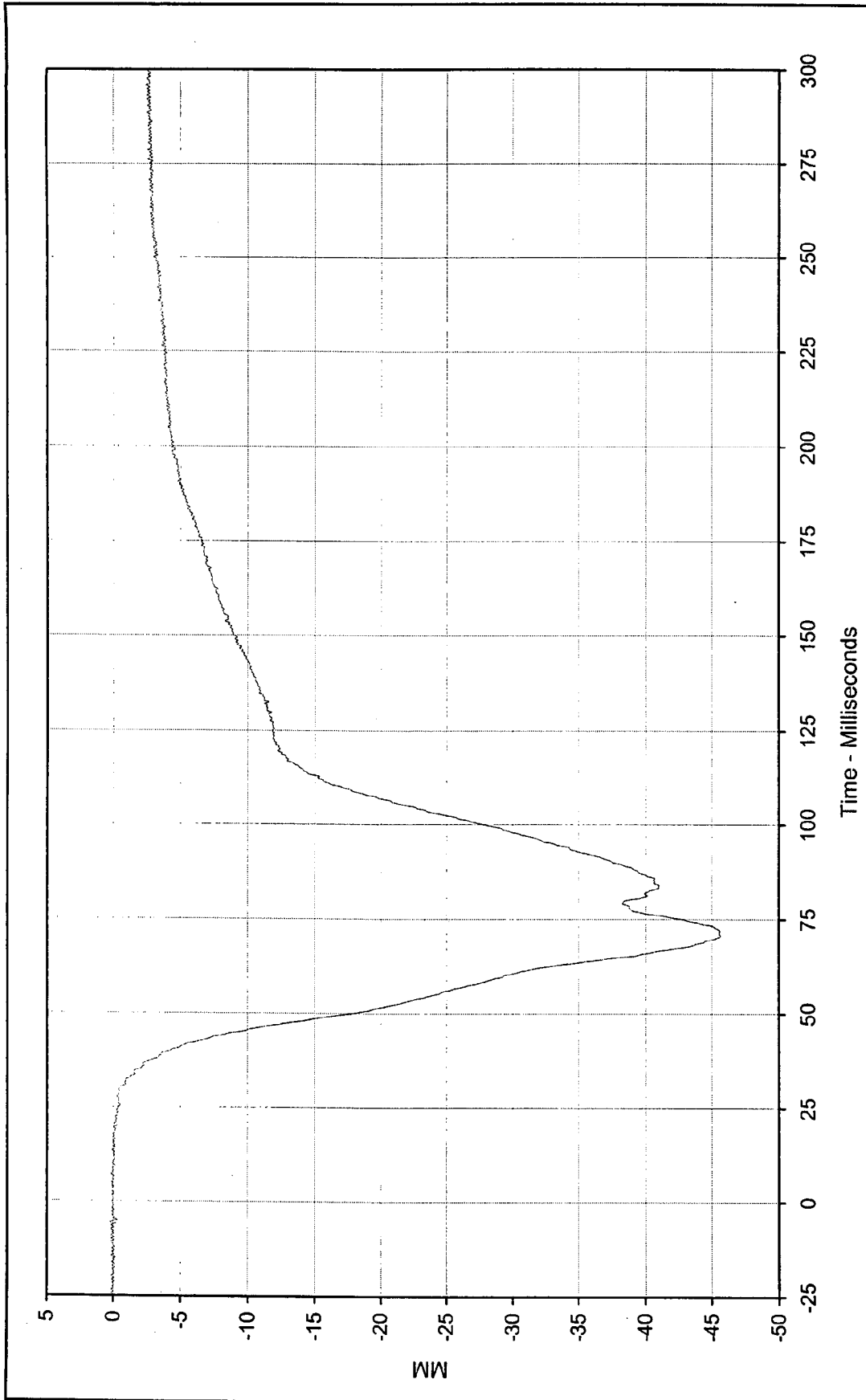
Date of Test: 12/22/99

Curve Number: RES-016

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup





Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup

Curve Description: Driver Chest Displacement X

Maximum Value: 0.2 at 7.0 Milliseconds

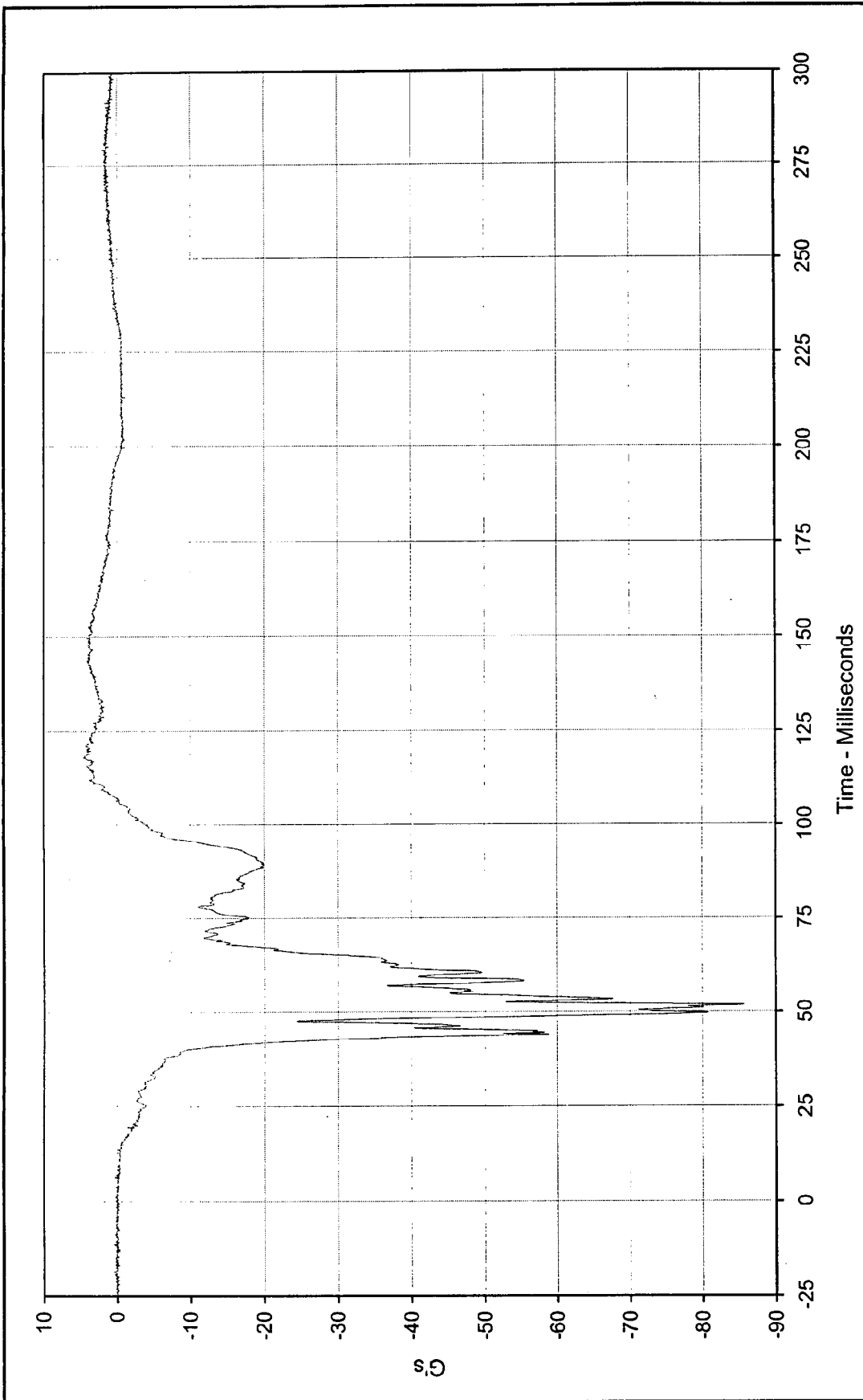
Minimum Value: -45.7 at 70.6 Milliseconds

SAE Filter Class: 600

Date of Test: 12/22/99

Curve Number: FIL-019





Curve Description: Driver Pelvis X

Maximum Value: 4.6 at 117.8 Milliseconds

Minimum Value: -85.6 at 51.8 Milliseconds

SAE Filter Class: 1000

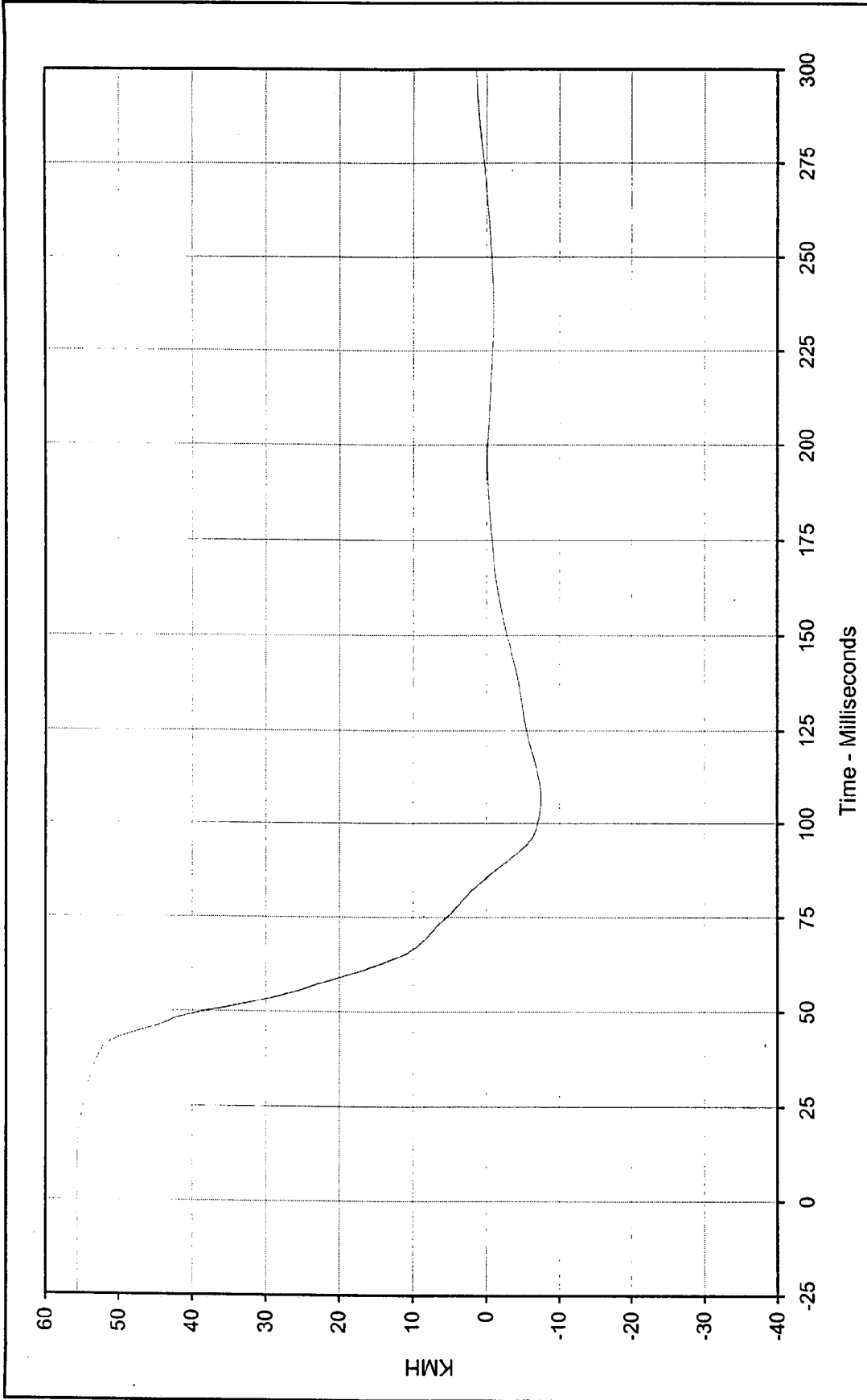
Date of Test: 12/22/99

Curve Number: FIL-020

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

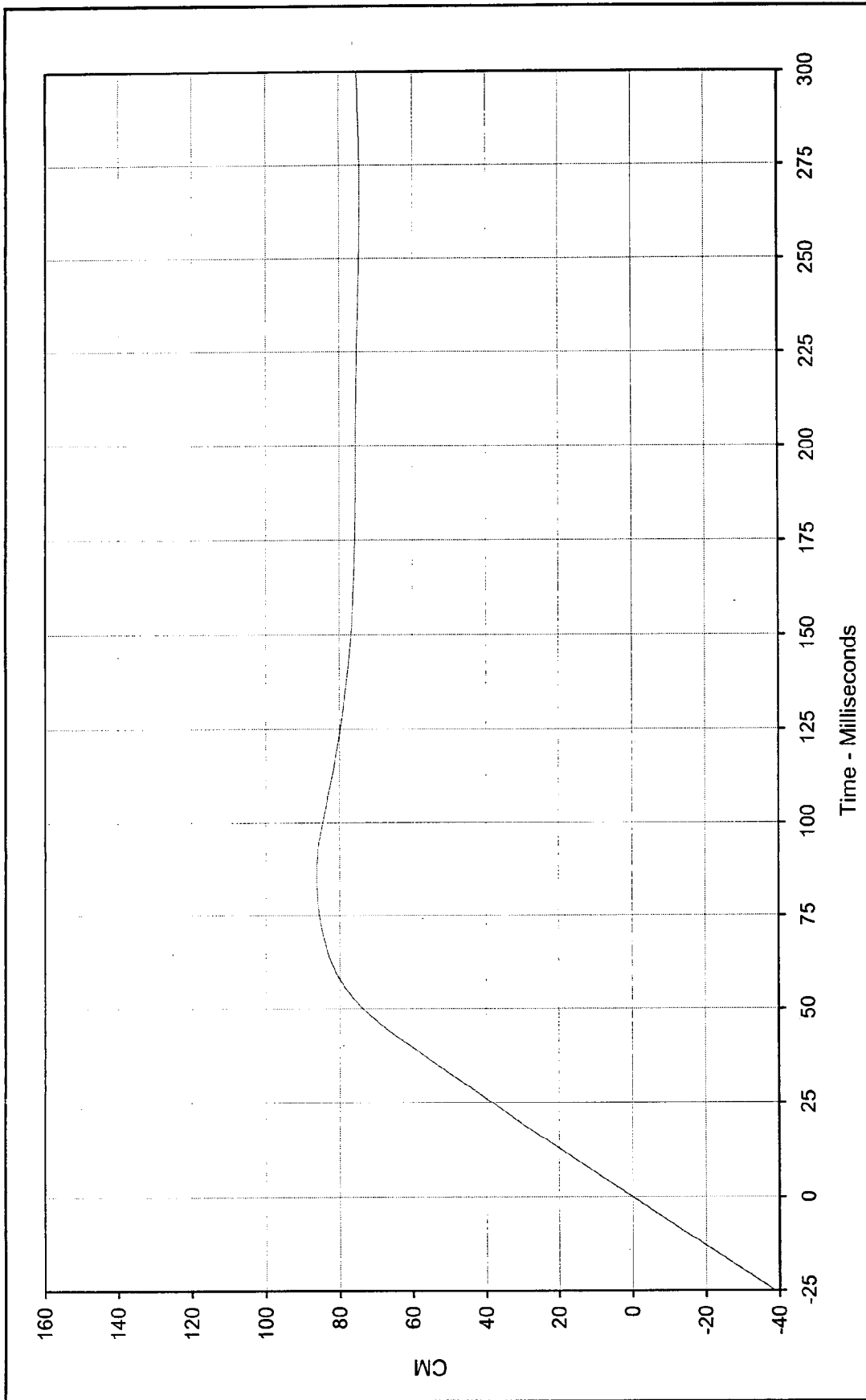
Test Vehicle: 2000 Chevrolet S-10 Pickup





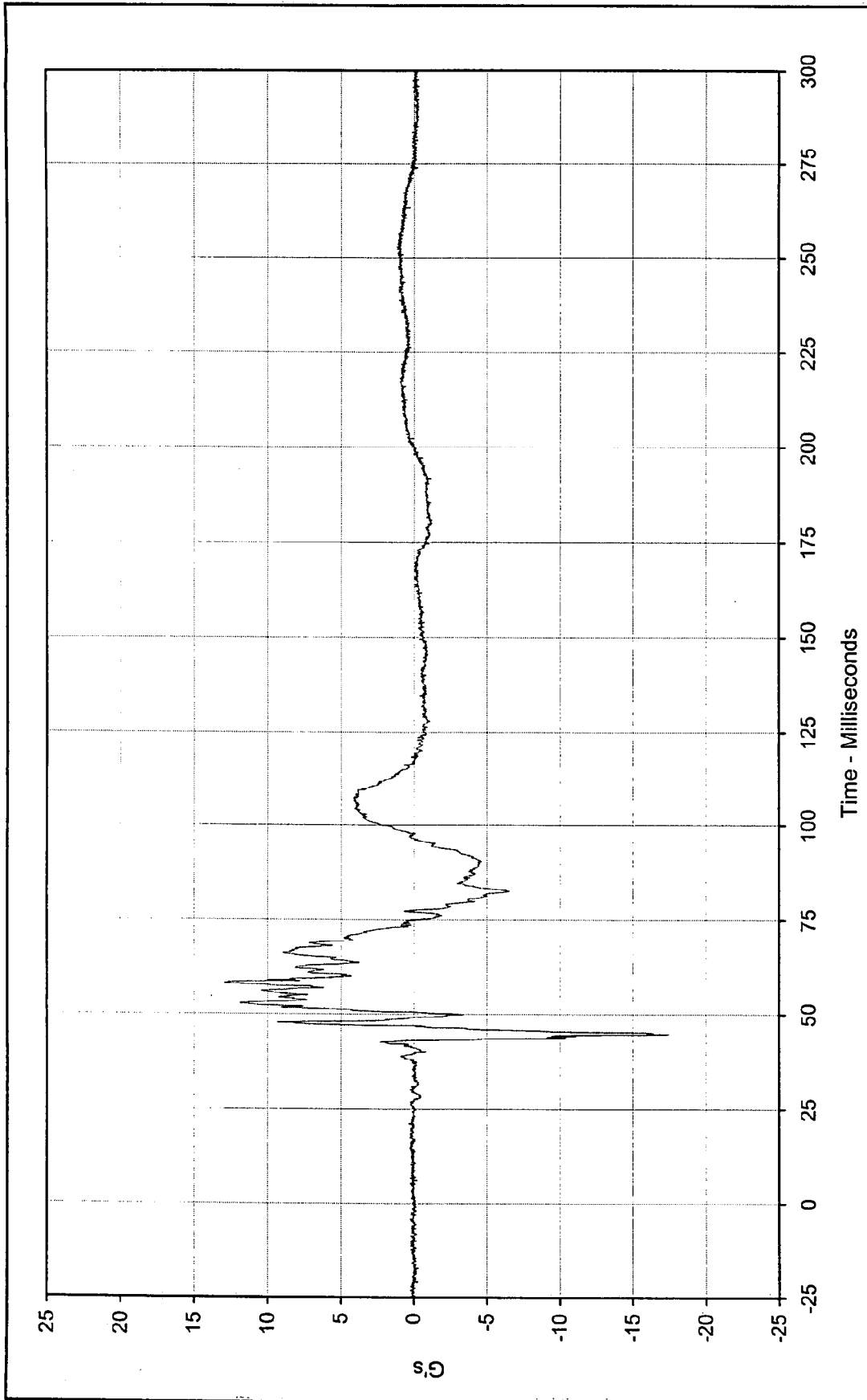
Curve Description:	Driver Pelvis X Velocity	Testing Program	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	55.7 at 2.1 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-7.5 at 107.0 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/22/99			
Curve Number:	IN1-020			





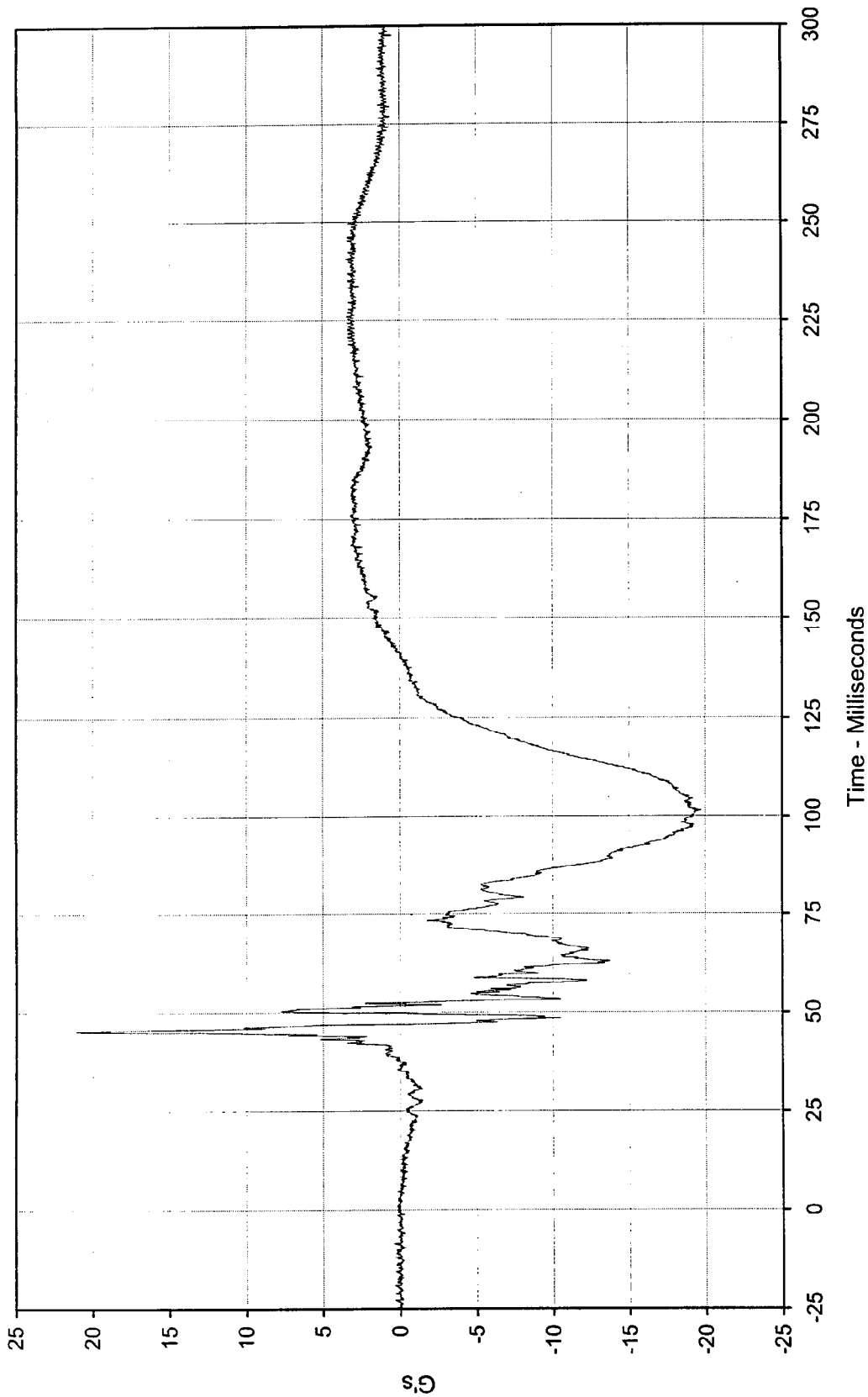
Curve Description:	Driver Pelvis X Displ.	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	86.2 at 85.5 milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	0.0 at 0.0 milliseconds			
SAE Filter Class:	180			
Date of Test:	12/22/99			
Curve Number:	IN2-020			





Curve Description:	Driver Pelvis Y		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	12.9	at 58.0	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-17.5	at 44.9			
SAE Filter Class:	1000				
Date of Test:	12/22/99				
Curve Number:	FIL-021				





Curve Description: Driver Pelvis Z Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Maximum Value: 21.1 at 45.3 Milliseconds

Minimum Value: -19.7 at 101.5 Milliseconds

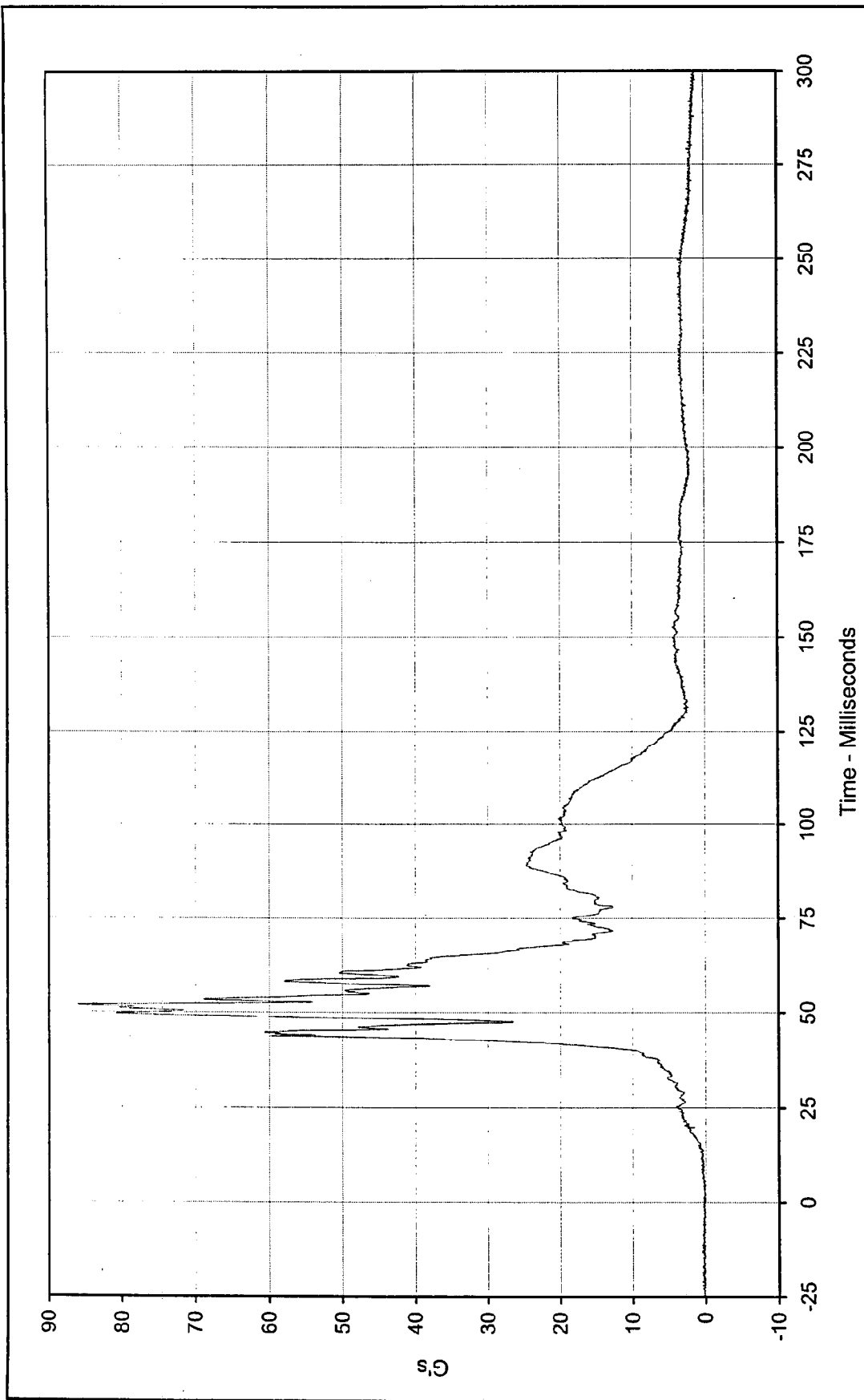
SAE Filter Class: 1000

Date of Test: 12/22/99

Curve Number: FIL-022

Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description: Driver Pelvis Resultant

Maximum Value: 86.0 at 51.8 Milliseconds

Minimum Value: 0.0 at 0.9 Milliseconds

SAE Filter Class: 1000

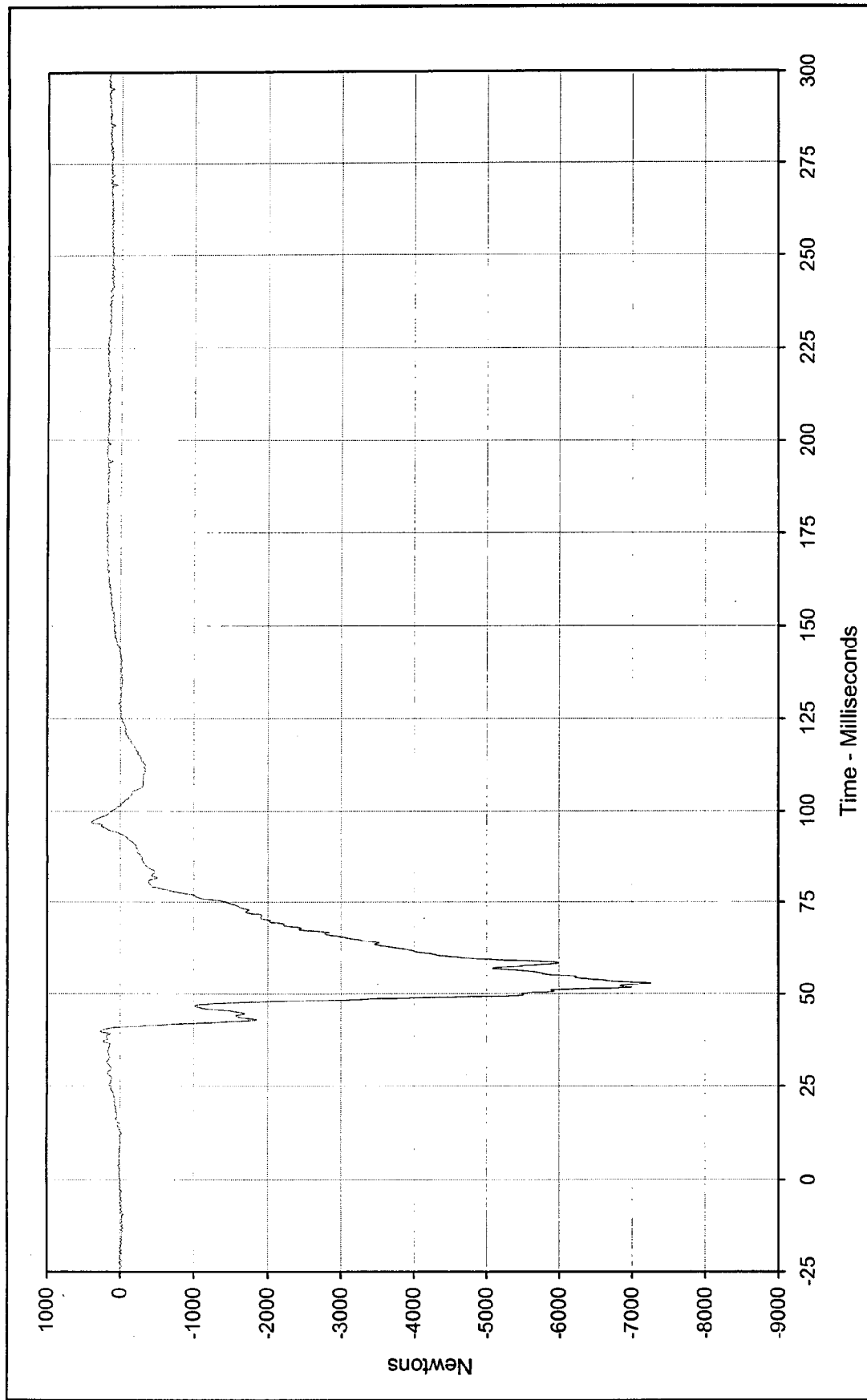
Date of Test: 12/22/99

Curve Number: RES-020

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

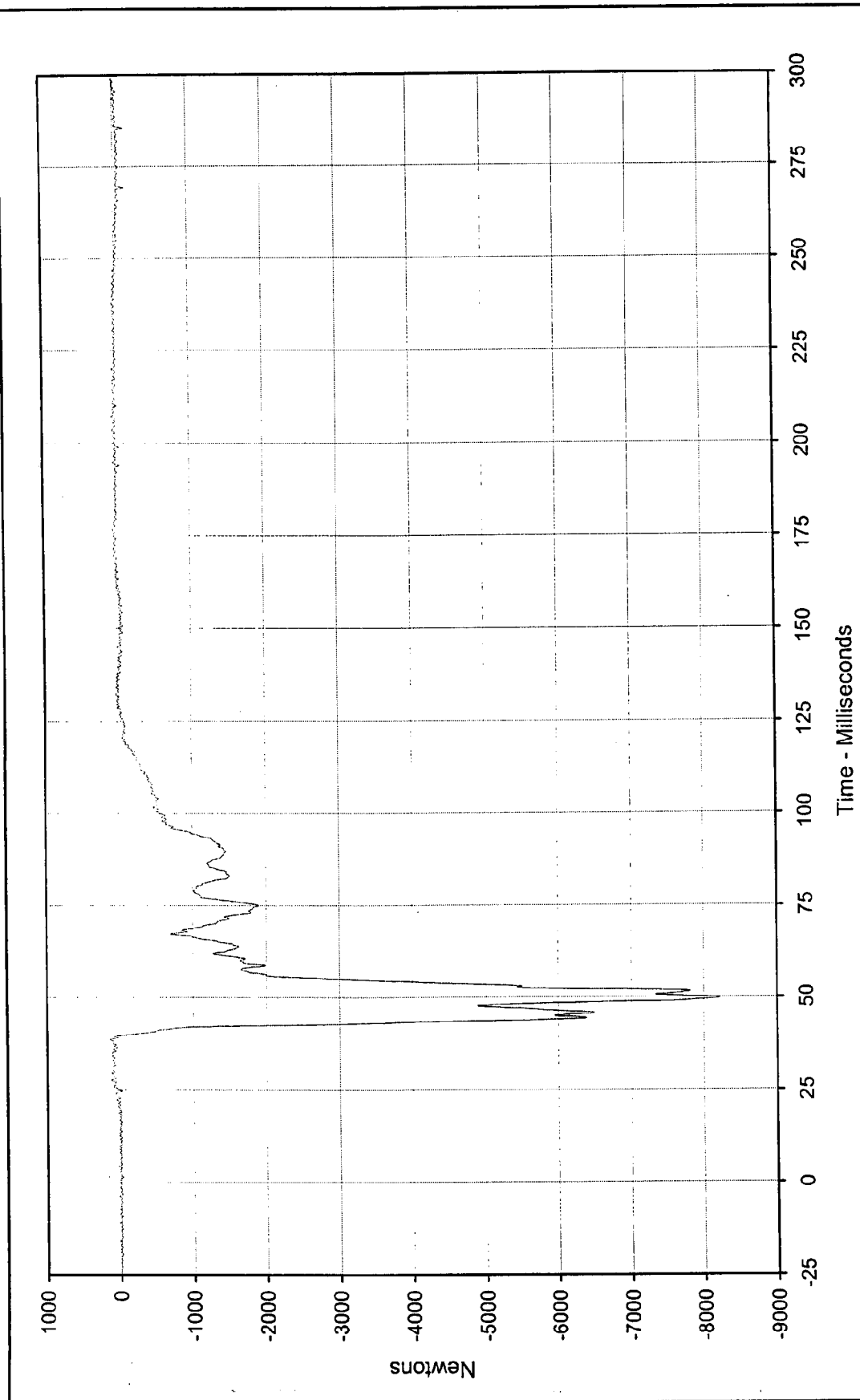
Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description:	Driver Left Femur Force	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	394.2 at 96.9 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-7264.9 at 52.8 Milliseconds			
SAE Filter Class:	600			
Date of Test:	12/22/99			
Curve Number:	FIL-023			





Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup

Curve Description: Driver Right Femur Force

Maximum Value: 142.2 at 38.7 Milliseconds

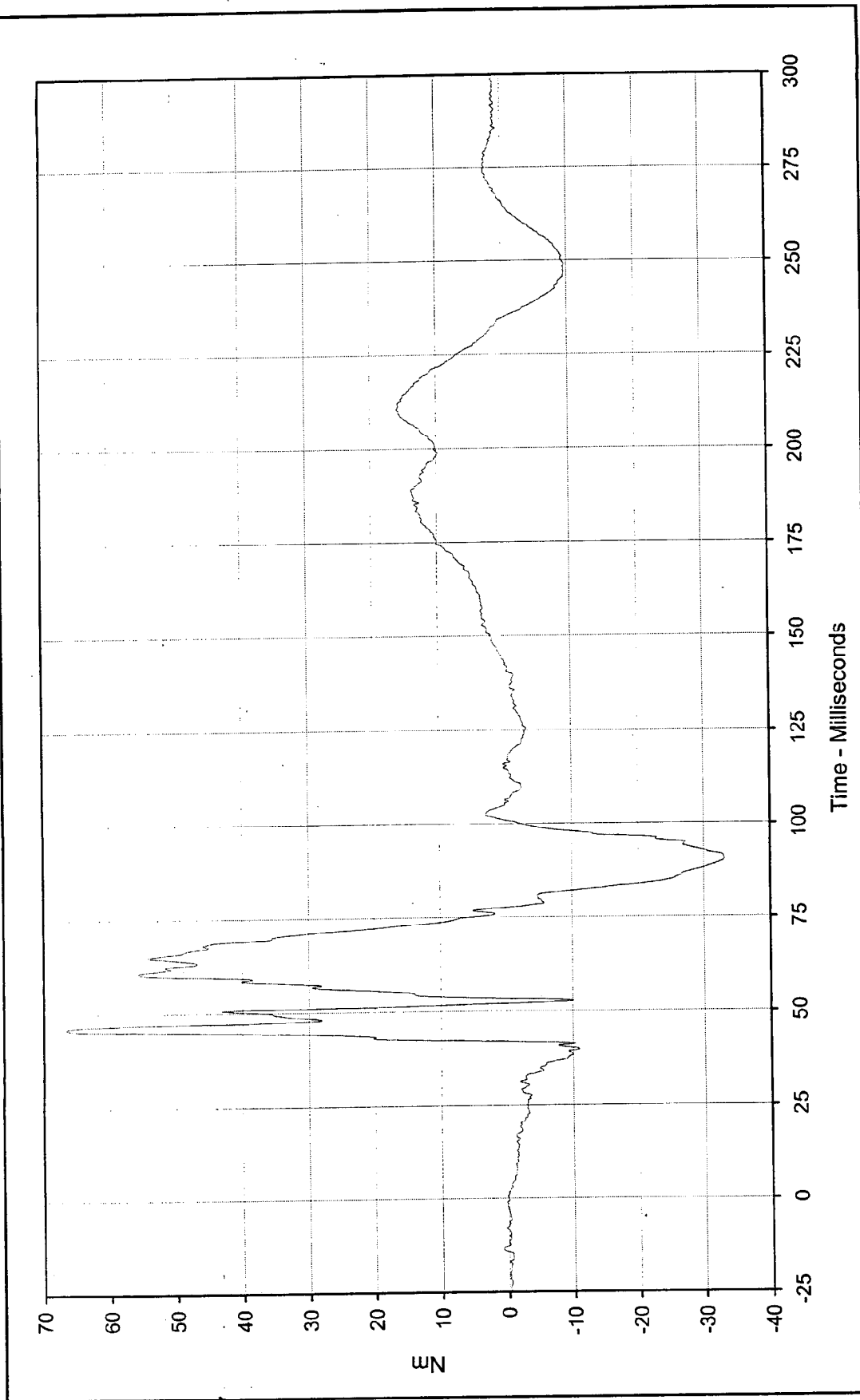
Minimum Value: -8226.8 at 49.7 Milliseconds

SAE Filter Class: 600

Date of Test: 12/22/99

Curve Number: FIL-024

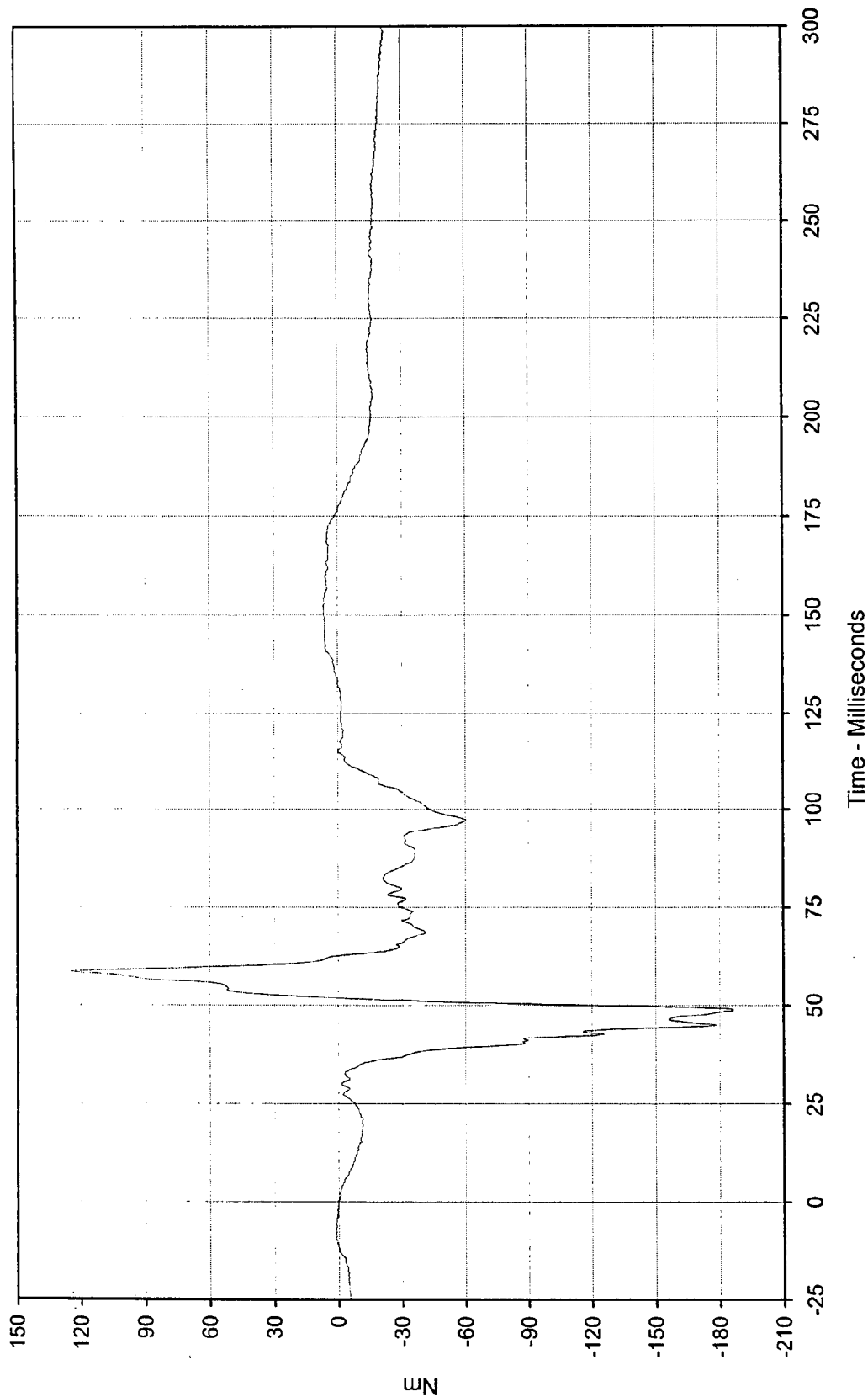




Curve Description: Driver Left Upper Tibia Moment X
Maximum Value: 66.6 at 45.7 Milliseconds
Minimum Value: -33.1 at 90.2 Milliseconds
SAE Filter Class: 600
Date of Test: 12/22/99
Curve Number: FIL-025

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
Test Vehicle: 2000 Chevrolet S-10 Pickup

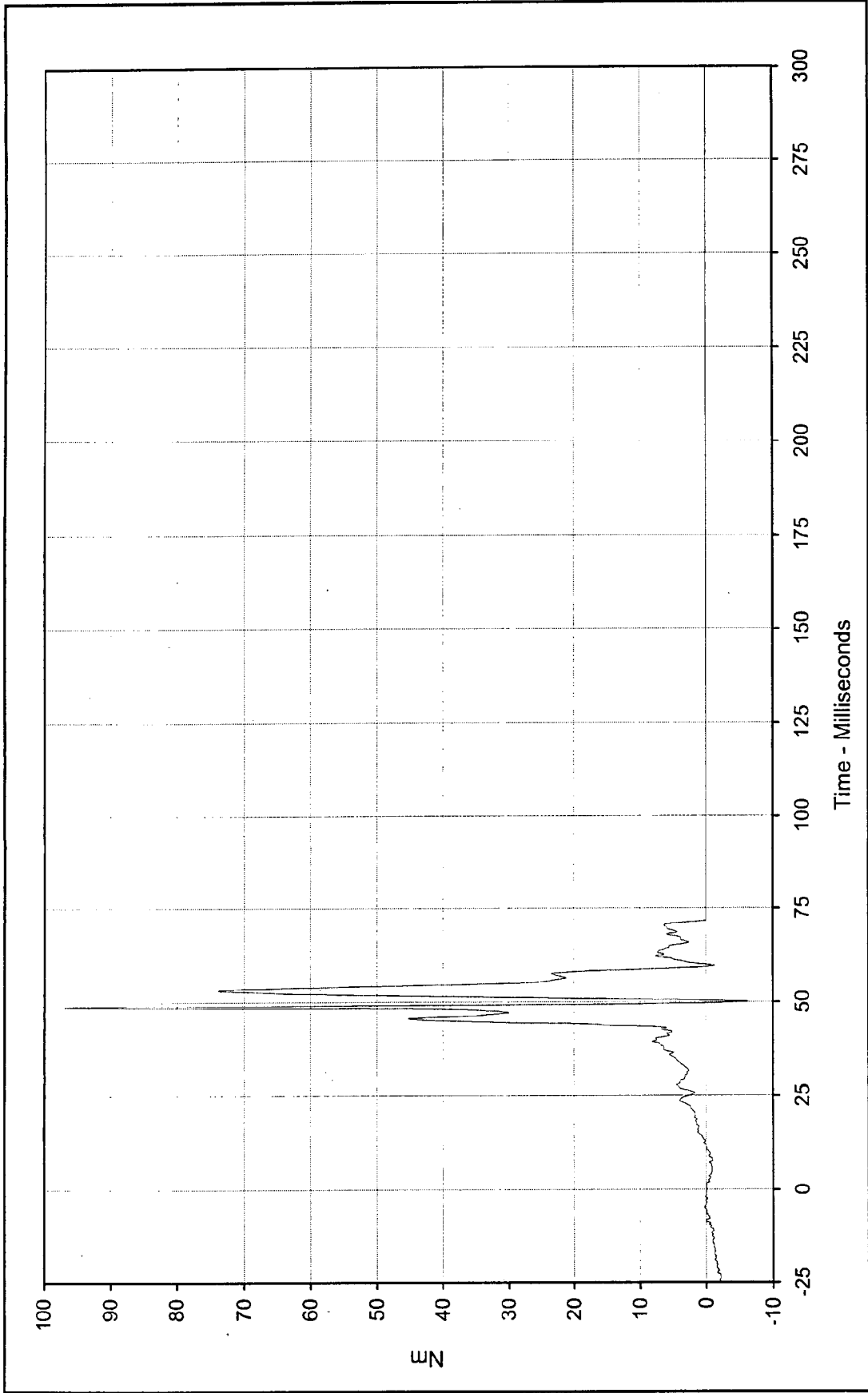




Curve Description: Driver Left Upper Tibia Moment Y
 Maximum Value: 124.8 at 58.4 Milliseconds
 Minimum Value: -186.7 at 48.9 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/22/99
 Curve Number: FIL-026

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup

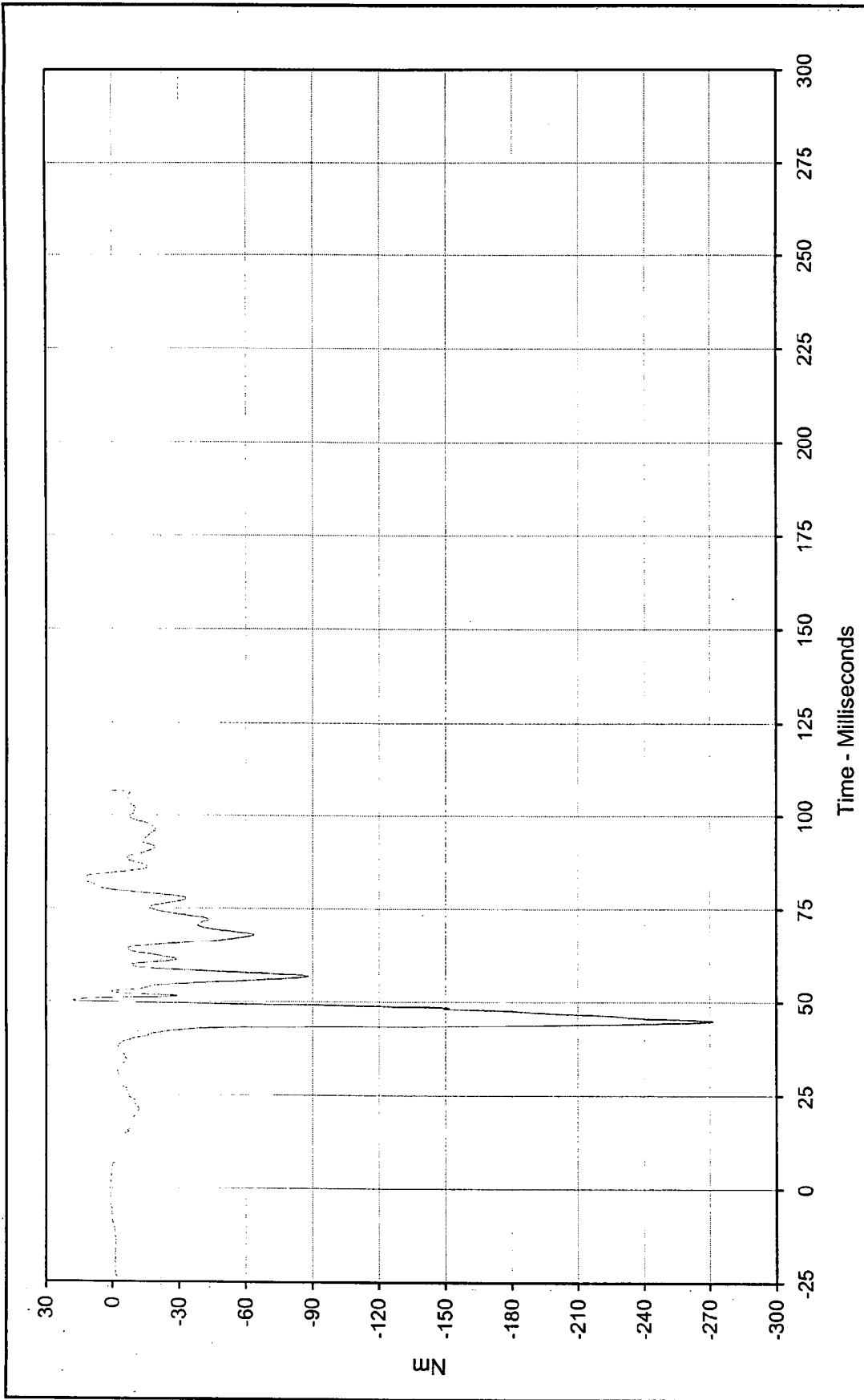




Curve Description:	Driver Right Upper Tibia Moment X *	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	97.0 at 48.7 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-6.1 at 50.1 Milliseconds			
SAE Filter Class:	600			
Date of Test:	12/22/99			
Curve Number:	FIL-027			



* Channel Failed at 71.7 Msec.



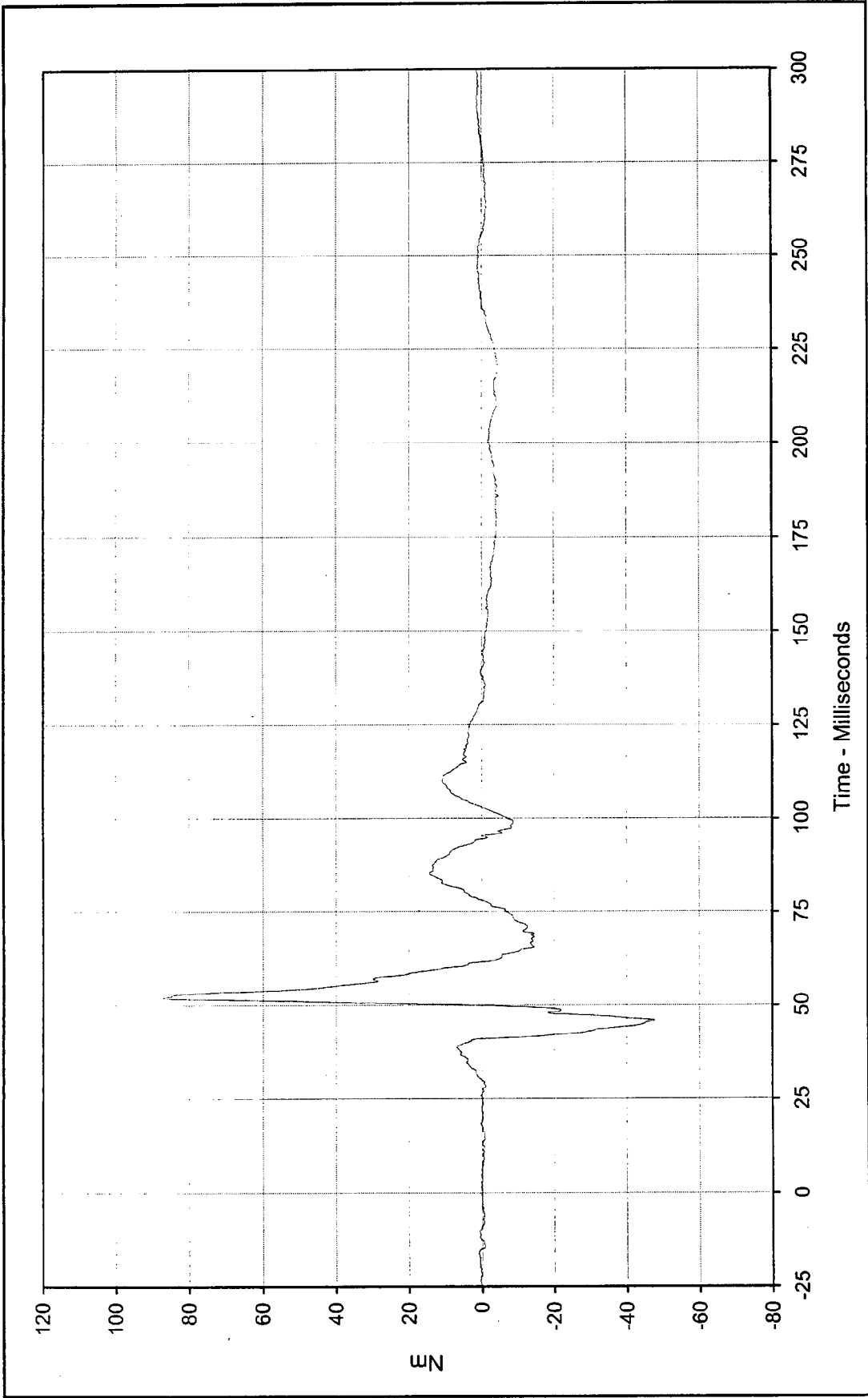
Curve Description: Driver Right Upper Tibia Moment Y *
 Maximum Value: 17.8 at 50.2 Milliseconds
 Minimum Value: -271.7 at 45.1 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/22/99
 Curve Number: FIL-028

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup

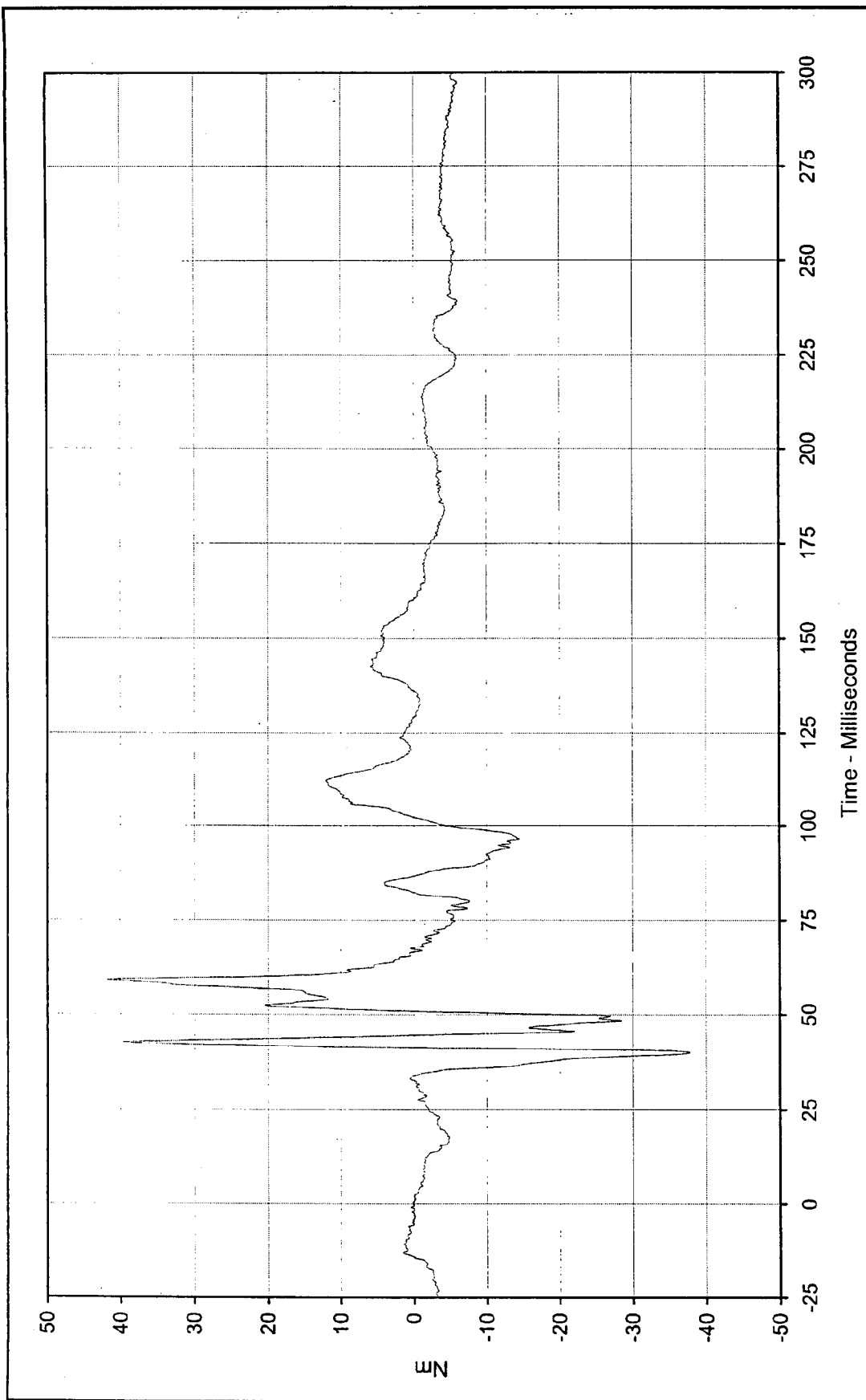


* Channel Failed at 106.5 Msec.



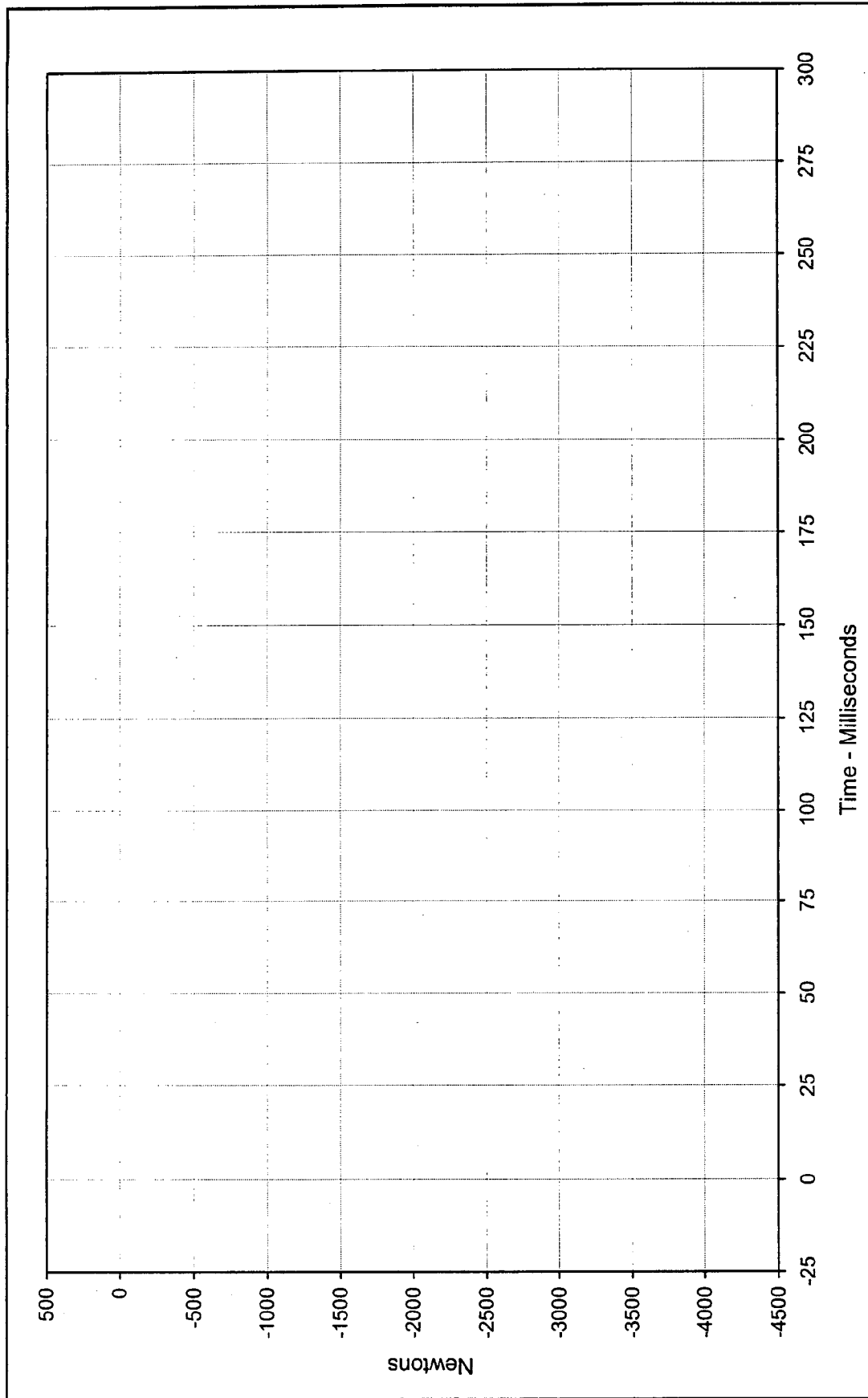
Curve Description:	Driver Left Lower Tibia Moment X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	87.0 at 52.0 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-47.8 at 45.8 Milliseconds			
SAE Filter Class:	600			
Date of Test:	12/22/99			
Curve Number:	FIL-029			





Curve Description:	Driver Left Lower Tibia Moment Y	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	42.0 at 59.0 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-37.8 at 40.0 Milliseconds			
SAE Filter Class:	600			
Date of Test:	12/22/99			
Curve Number:	FIL-030			

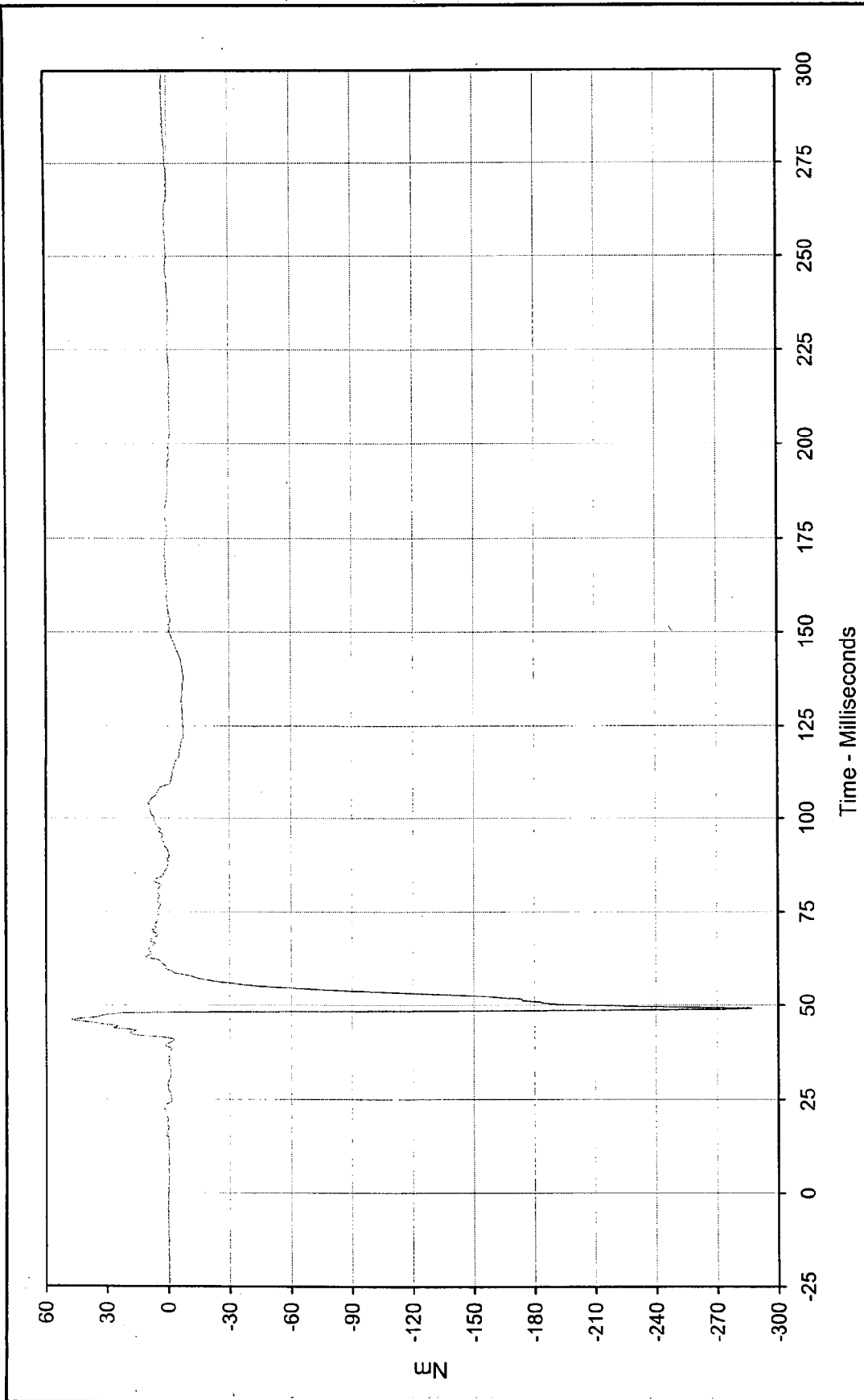




Curve Description:	Driver Left Lower Tibia Force Z *	Test Program:	2000 NHTSA 35 mph NCAP No.: MY0106
Maximum Value:	0.0 at 0.0 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup
Minimum Value:	0.0 at 0.0 Milliseconds		
SAE Filter Class:	600		
Date of Test:	12/22/99		
Curve Number:	FIL-031		



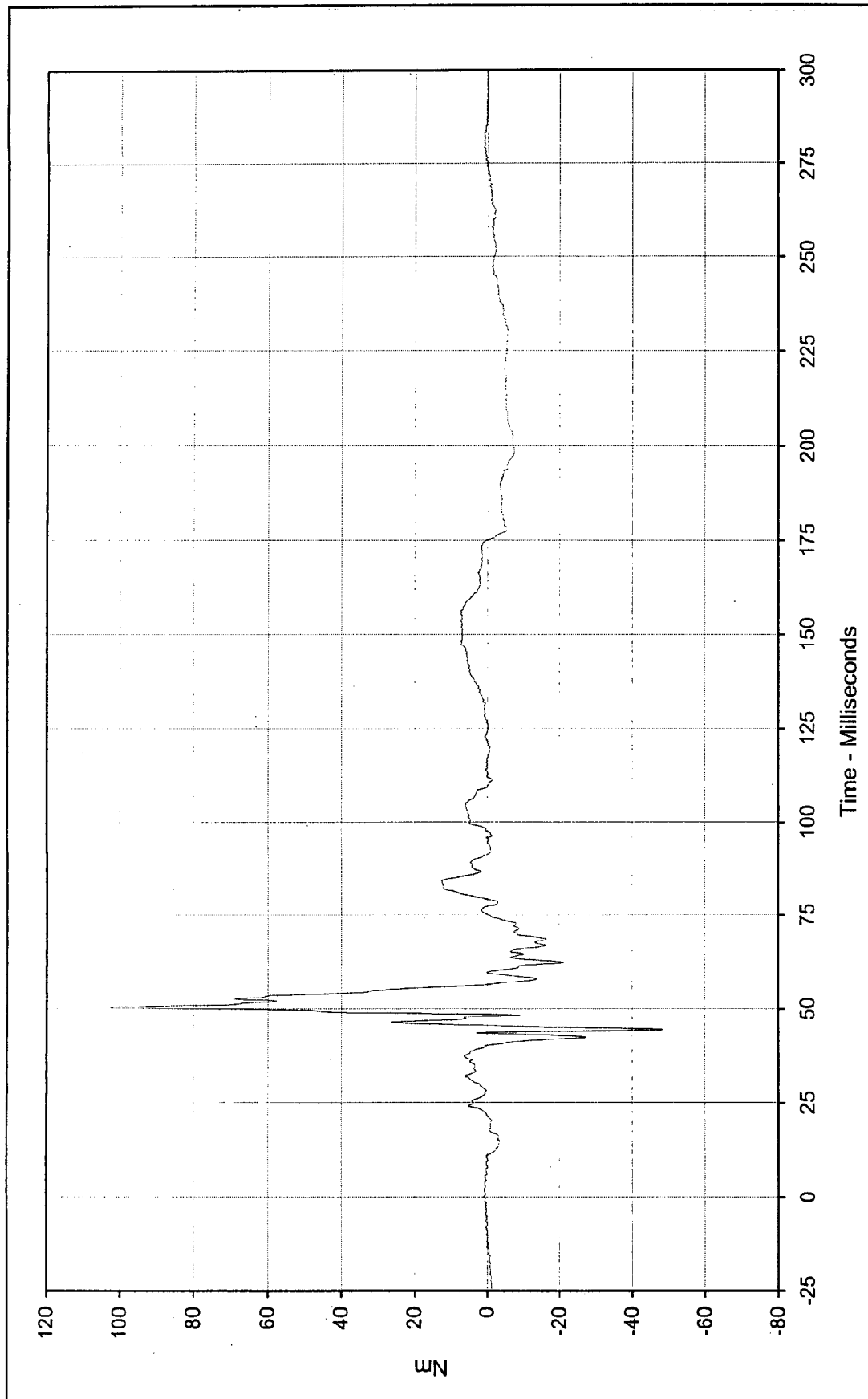
* Channel Failed, No Data



Curve Description: Driver Right Lower Tibia Moment X
 Maximum Value: 47.7 at 46.1 Milliseconds
 Minimum Value: -287.3 at 49.1 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/22/99
 Curve Number: FIL-032

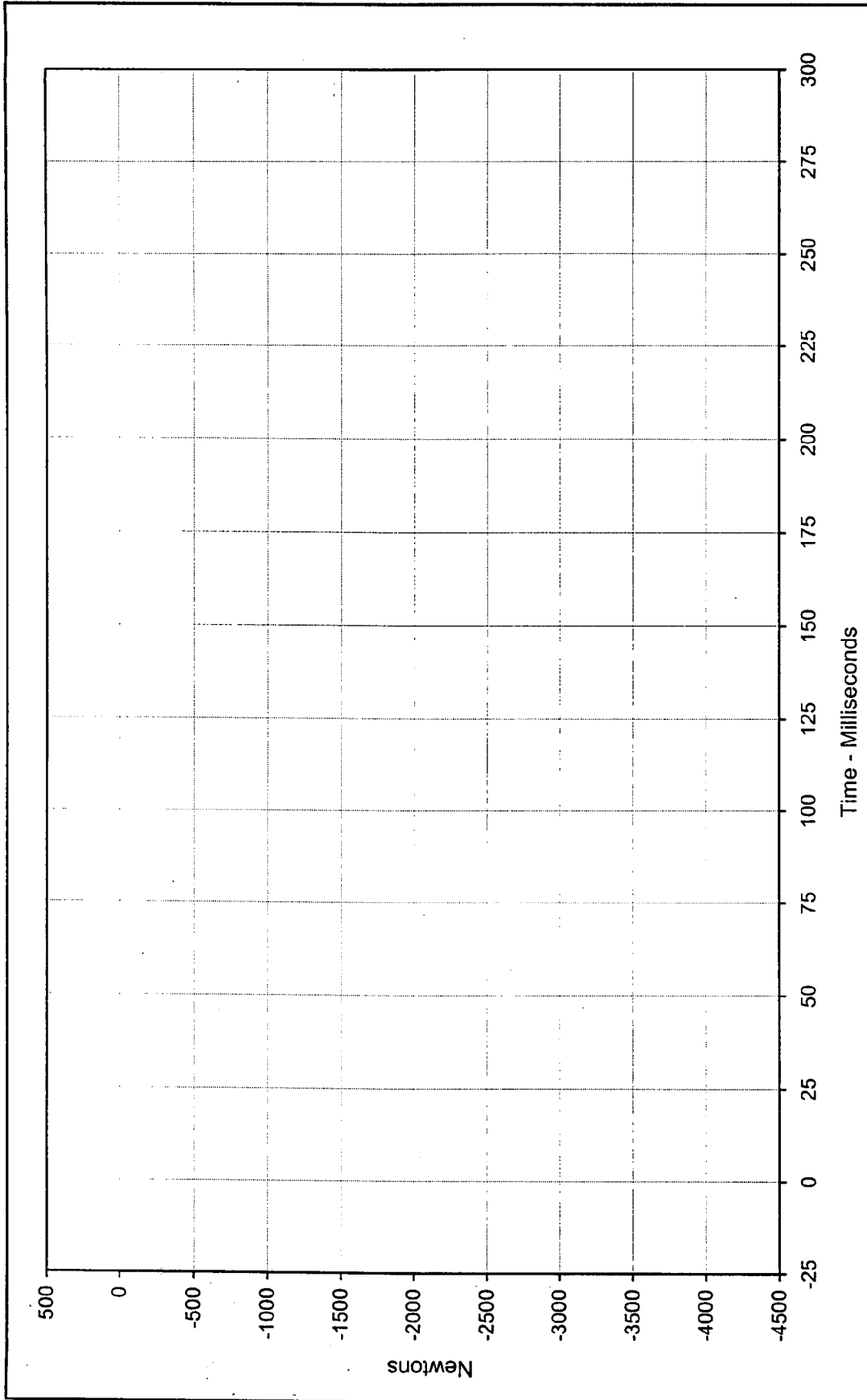
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description: <u>Driver Right Lower Tibia Moment Y</u>		Test Program: <u>2000 NHTSA 35 mph NCAP</u>	No.: <u>MY0106</u>
Maximum Value: <u>102.7</u>	at <u>50.4</u>	Test Vehicle: <u>2000 Chevrolet S-10 Pickup</u>	
Minimum Value: <u>-48.6</u>	at <u>44.5</u>		
SAE Filter Class: <u>600</u>			
Date of Test: <u>12/22/99</u>			
Curve Number: <u>FIL-033</u>			



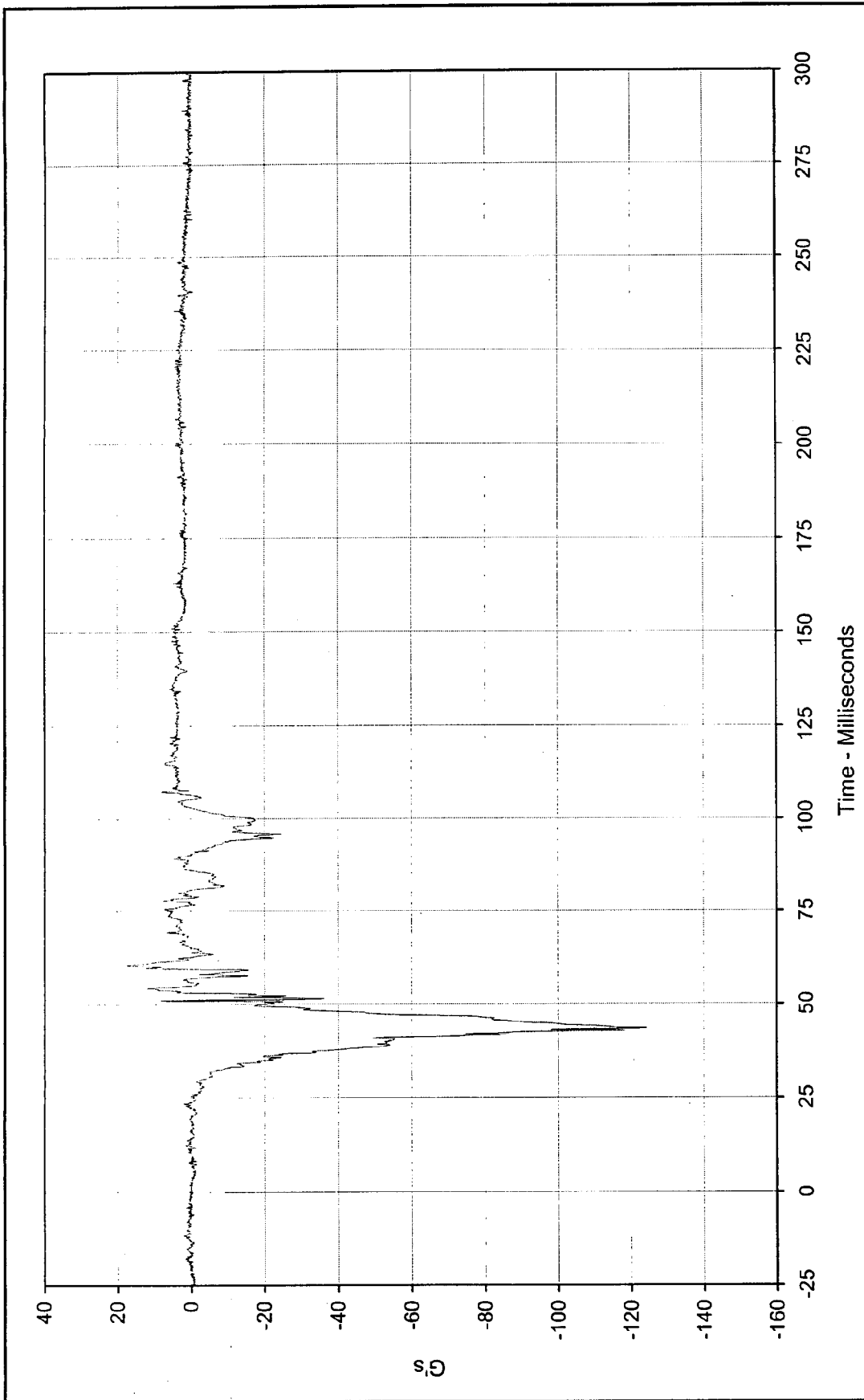


Curve Description: Driver Right Lower Tibia Force Z * Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Maximum Value: 0.0 at 0.0 Milliseconds Test Vehicle: 2000 Chevrolet S-10 Pickup
 Minimum Value: 0.0 at 0.0 Milliseconds



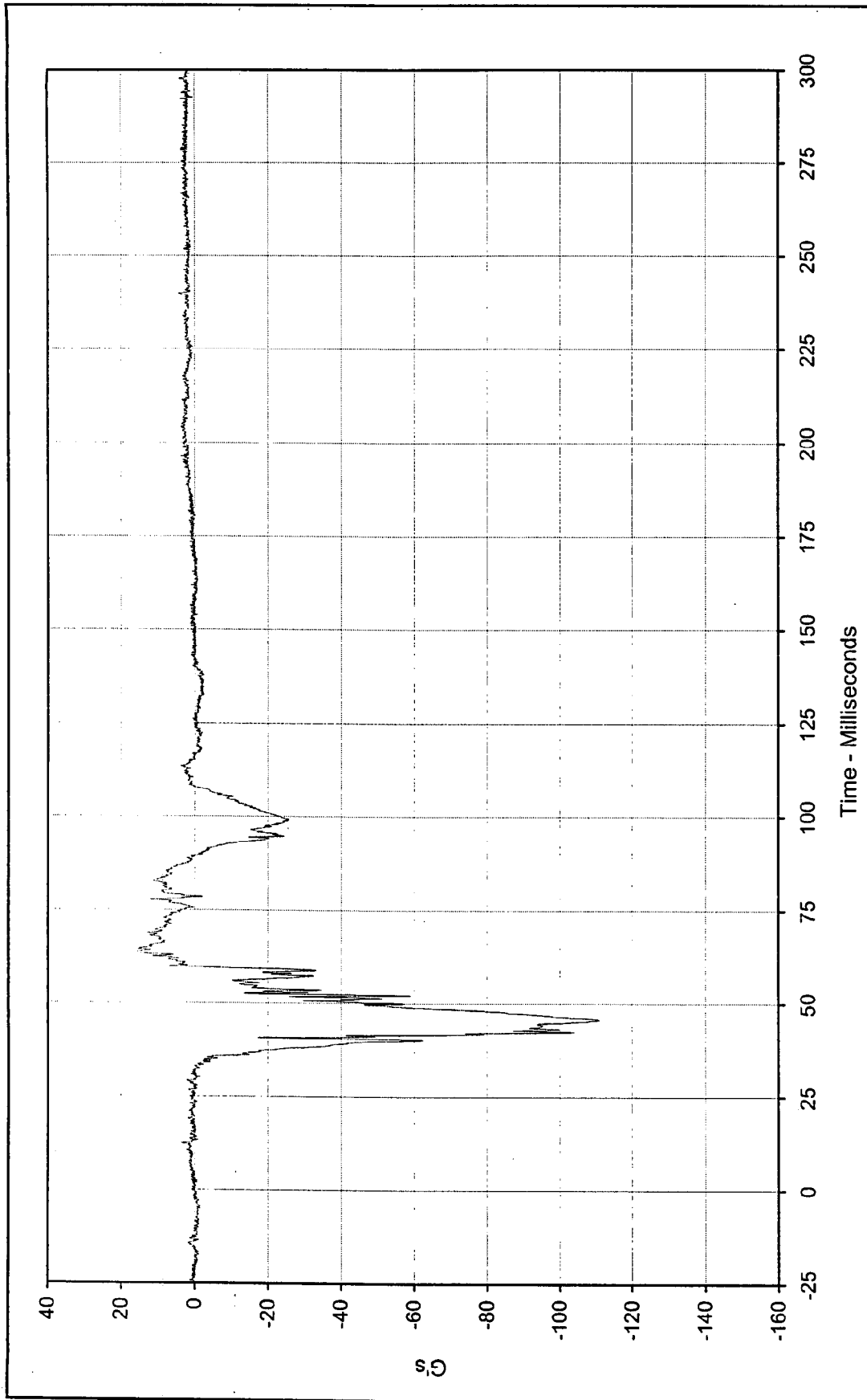
SAE Filter Class: 600
 Date of Test: 12/22/99
 Curve Number: FIL-034

* Channel Failed, No Data



Curve Description:	Driver Left Foot Aft X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	17.5 at 60.3 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-124.2 at 43.5 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/22/99			
Curve Number:	FIL-035			





Curve Description: Driver Left Foot Aft Z

Maximum Value: 15.6 at 63.3 Milliseconds

Minimum Value: -111.0 at 45.7 Milliseconds

SAE Filter Class: 1000

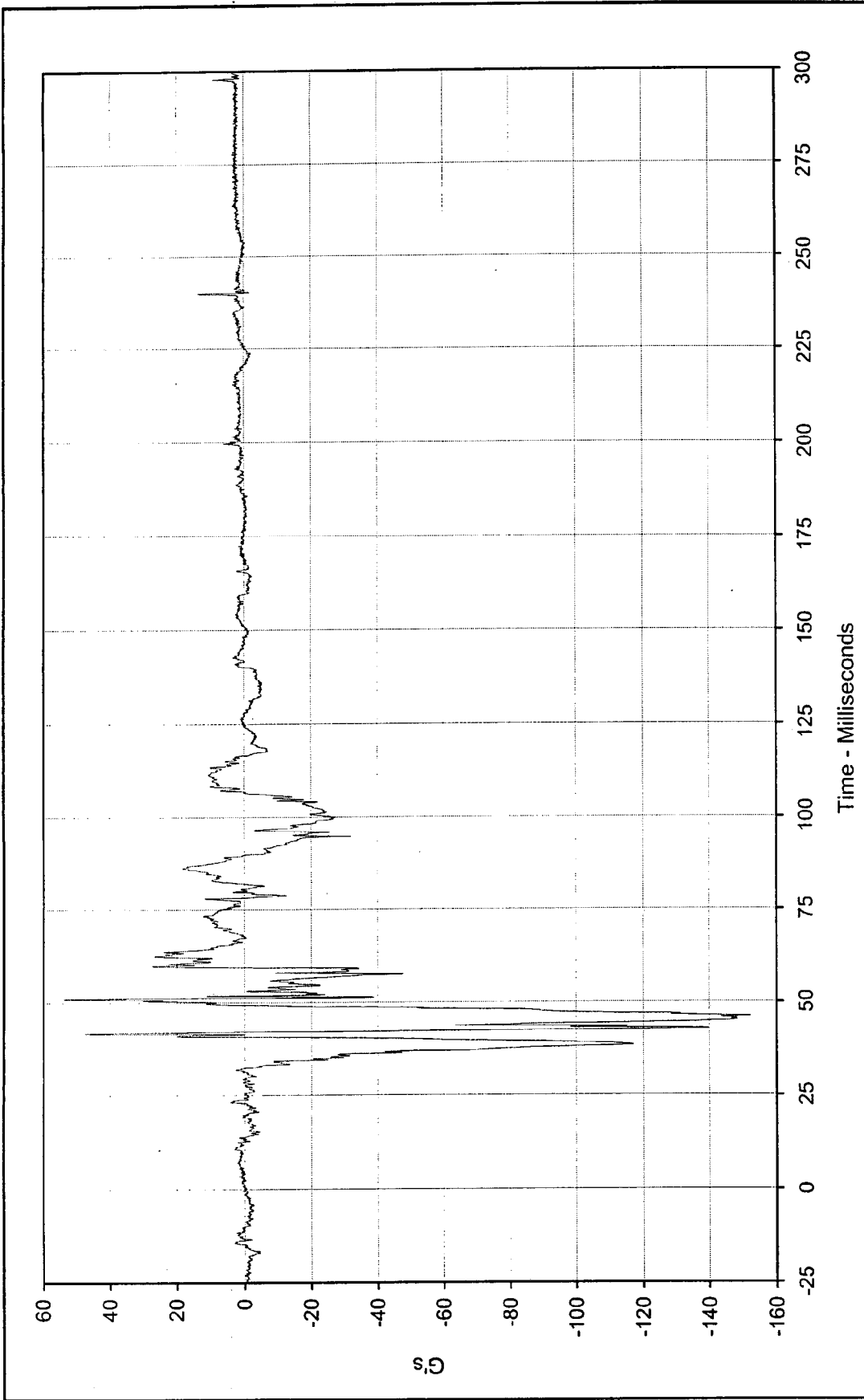
Date of Test: 12/22/99

Curve Number: FIL-036

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

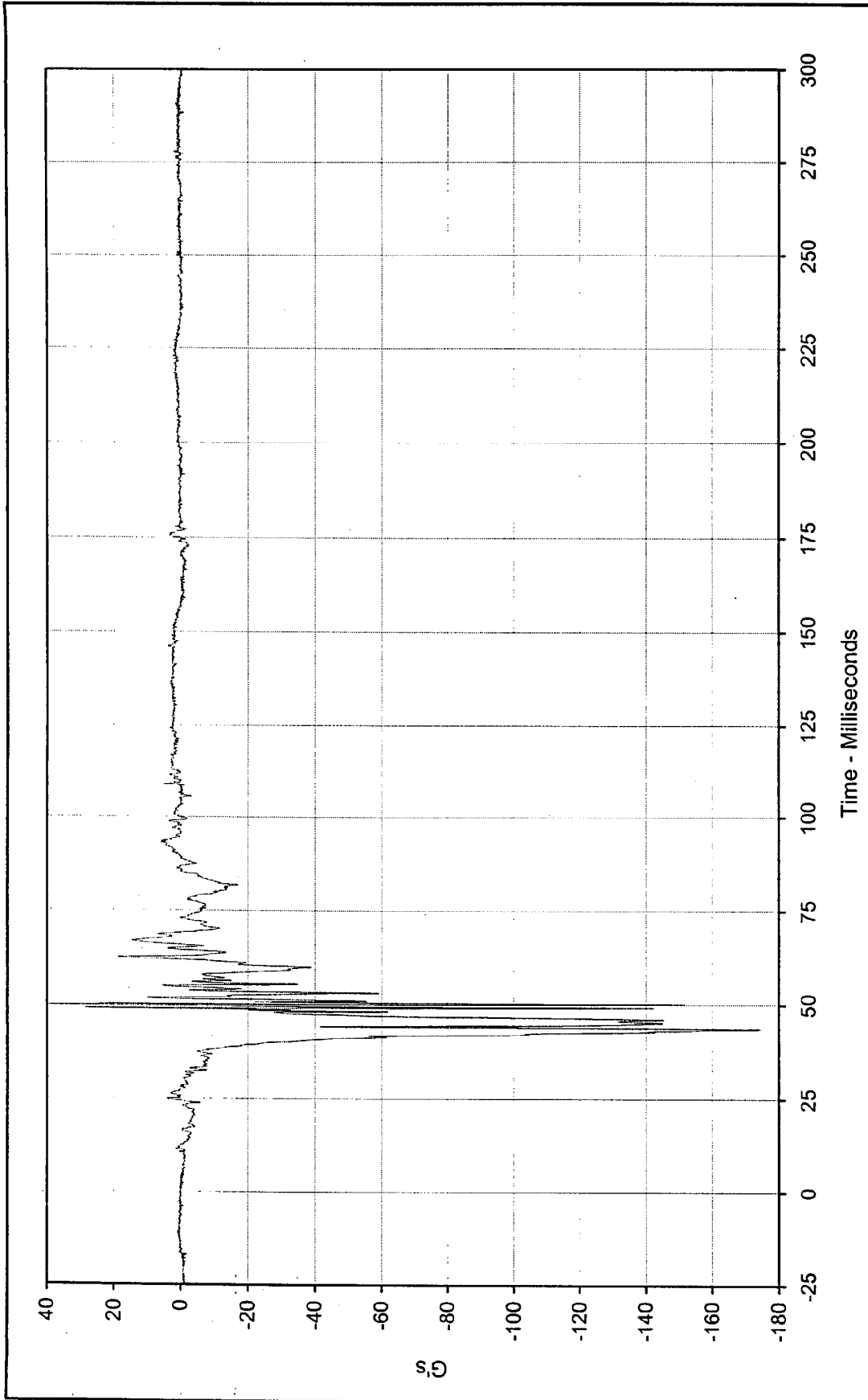
Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description:		Driver Left Foot Fore Z		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	53.9	at	50.9	Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup
Minimum Value:	-152.3	at	46.2	Milliseconds		
SAE Filter Class:	1000					
Date of Test:	12/22/99					
Curve Number:	FIL-037					

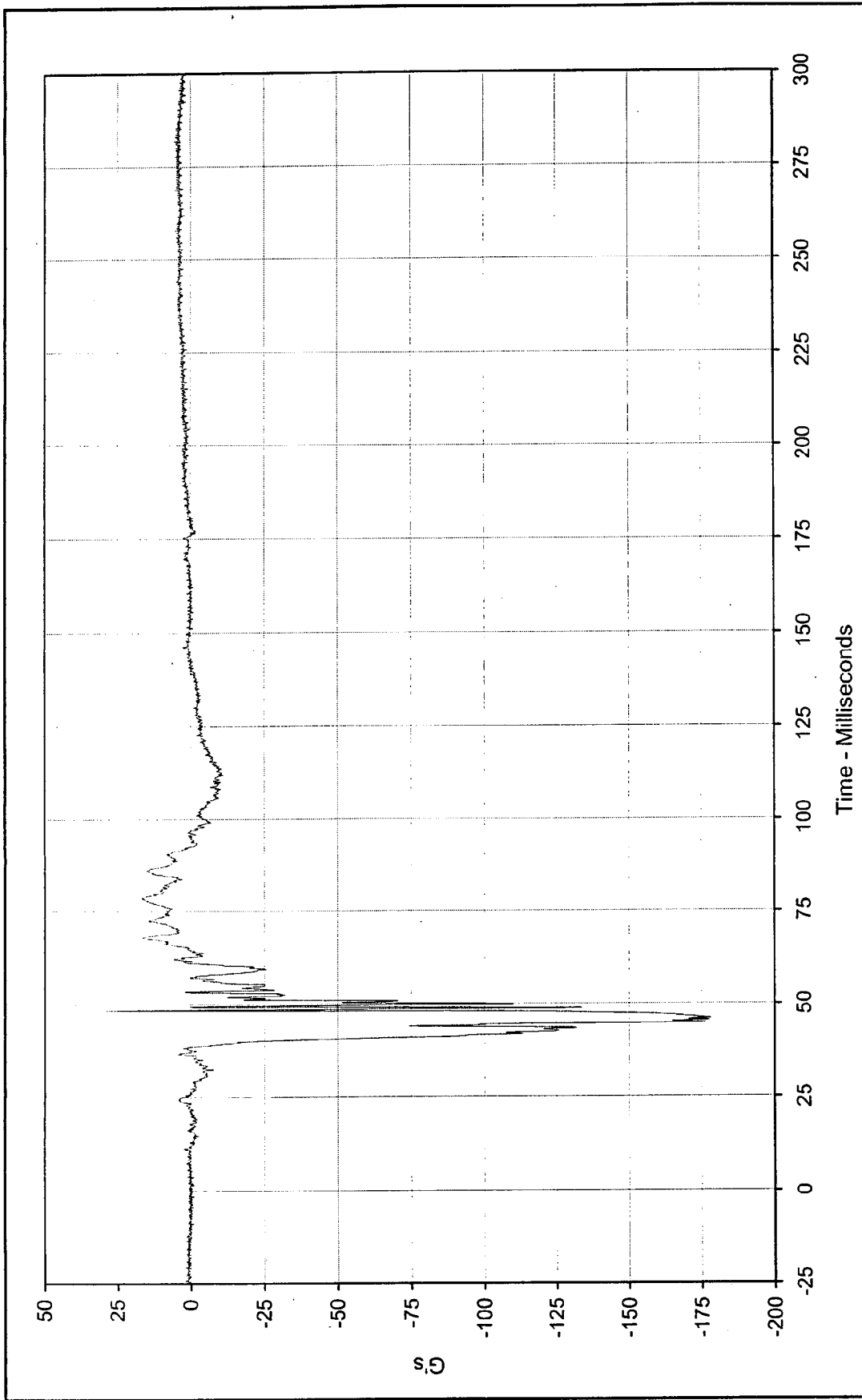




Curve Description: Driver Right Foot Aft X
 Maximum Value: 38.9 at 49.6 Milliseconds
 Minimum Value: -174.5 at 43.9 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/22/99
 Curve Number: FIL-038

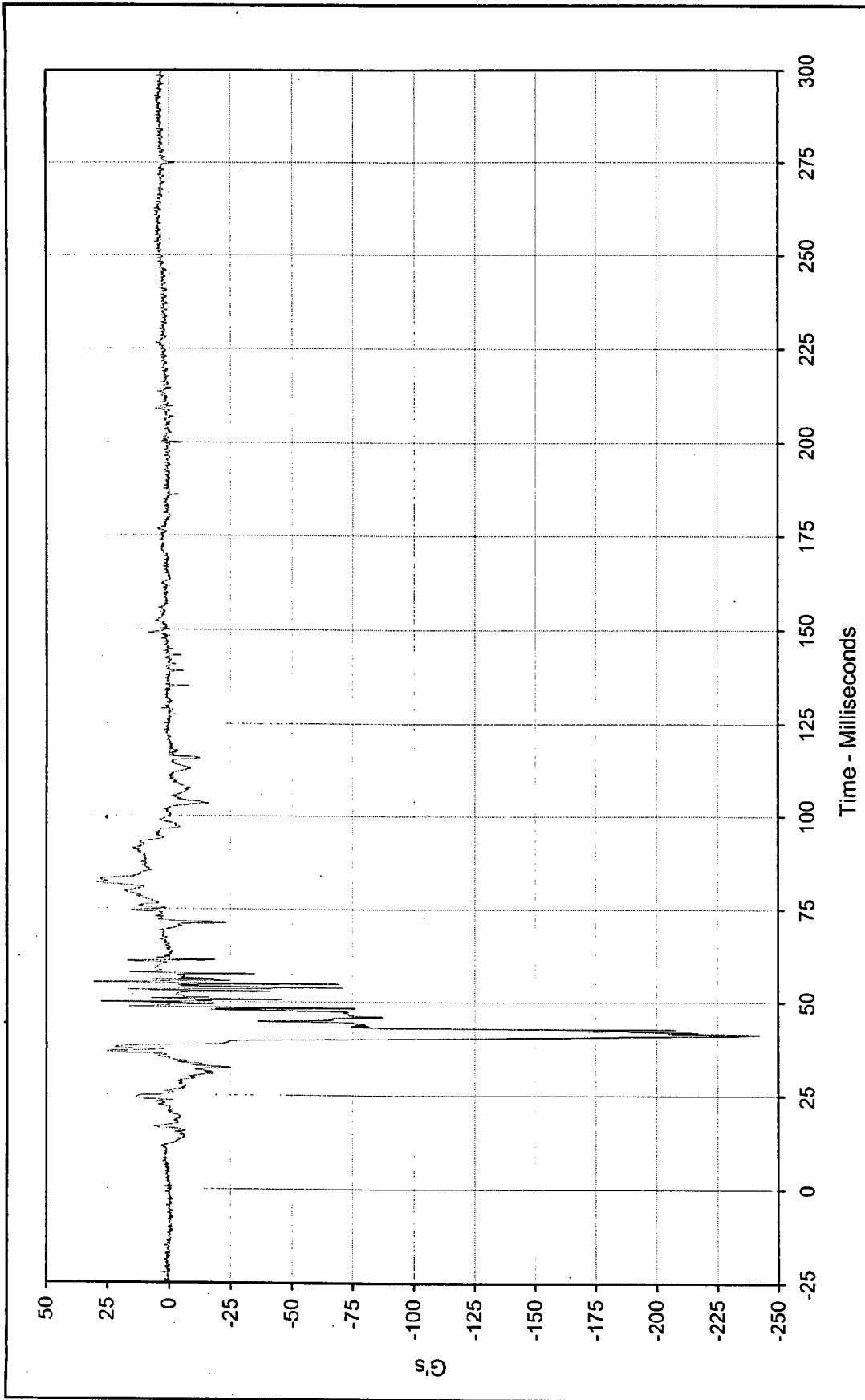
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description:	Driver Right Foot Aft Z		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	29.1	at 48.4	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-178.2	at 46.0			
SAE Filter Class:	1000				
Date of Test:	12/22/99				
Curve Number:	FIL-039				

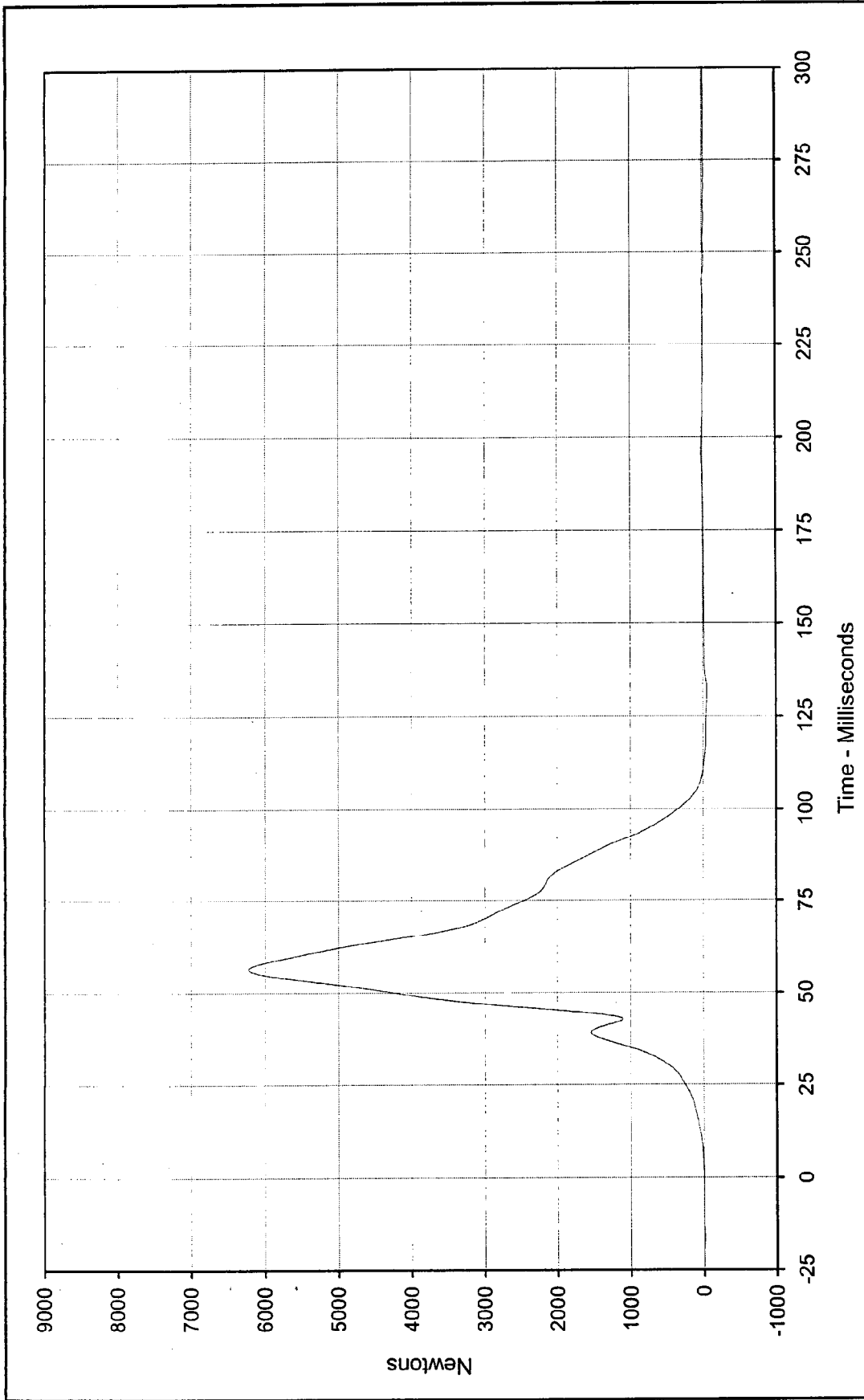




Curve Description:	Driver Right Foot Fore Z	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	30.4 at 55.0 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-242.4 at 41.5 Milliseconds			



SAE Filter Class:	1000
Date of Test:	12/22/99
Curve Number:	FIL-040



Curve Description: Driver Lap Belt Force

Maximum Value: 6224.0 at 56.3 Milliseconds

Minimum Value: -54.0 at 132.3 Milliseconds

SAE Filter Class: 60

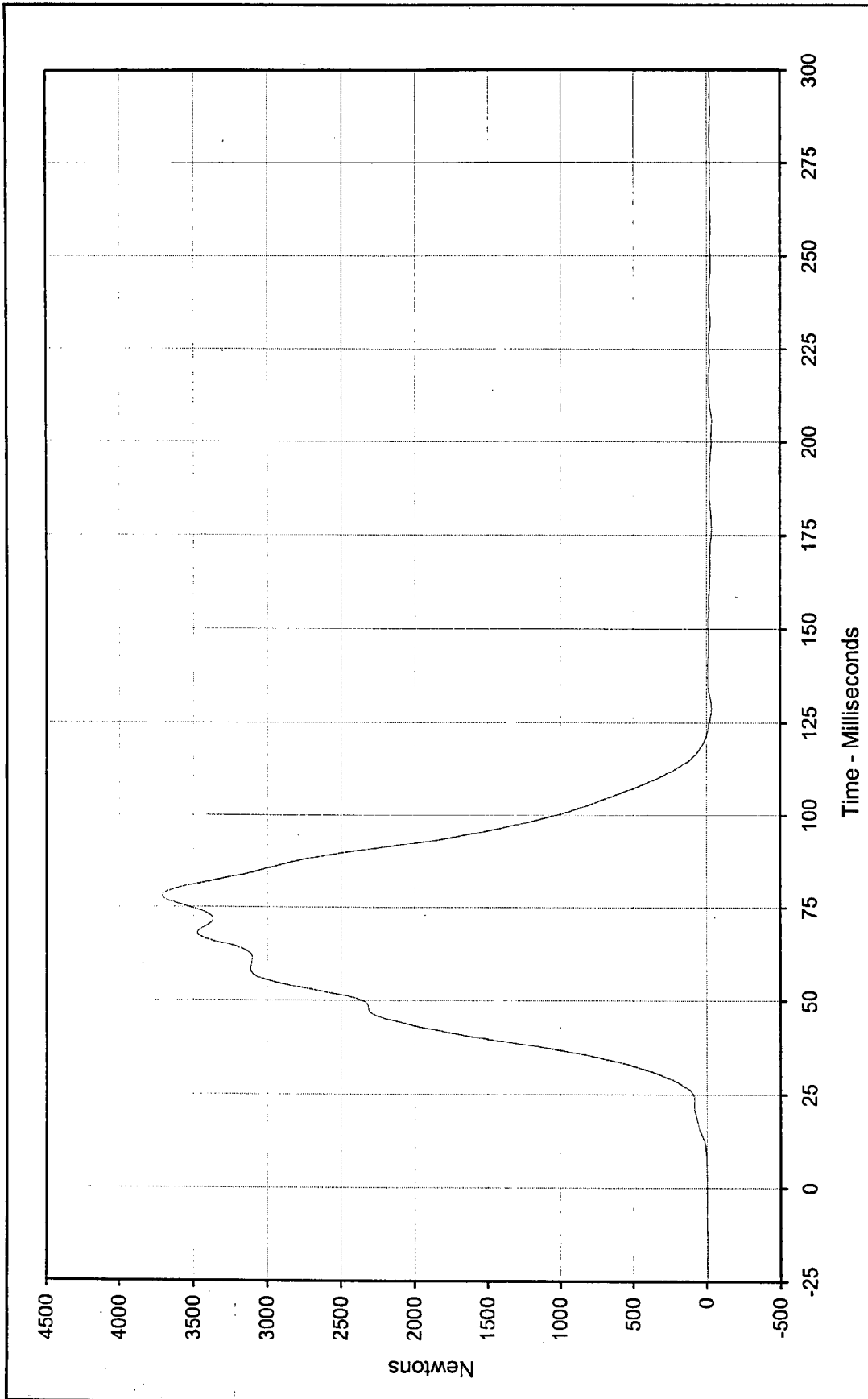
Date of Test: 12/22/99

Curve Number: FIL-041

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup



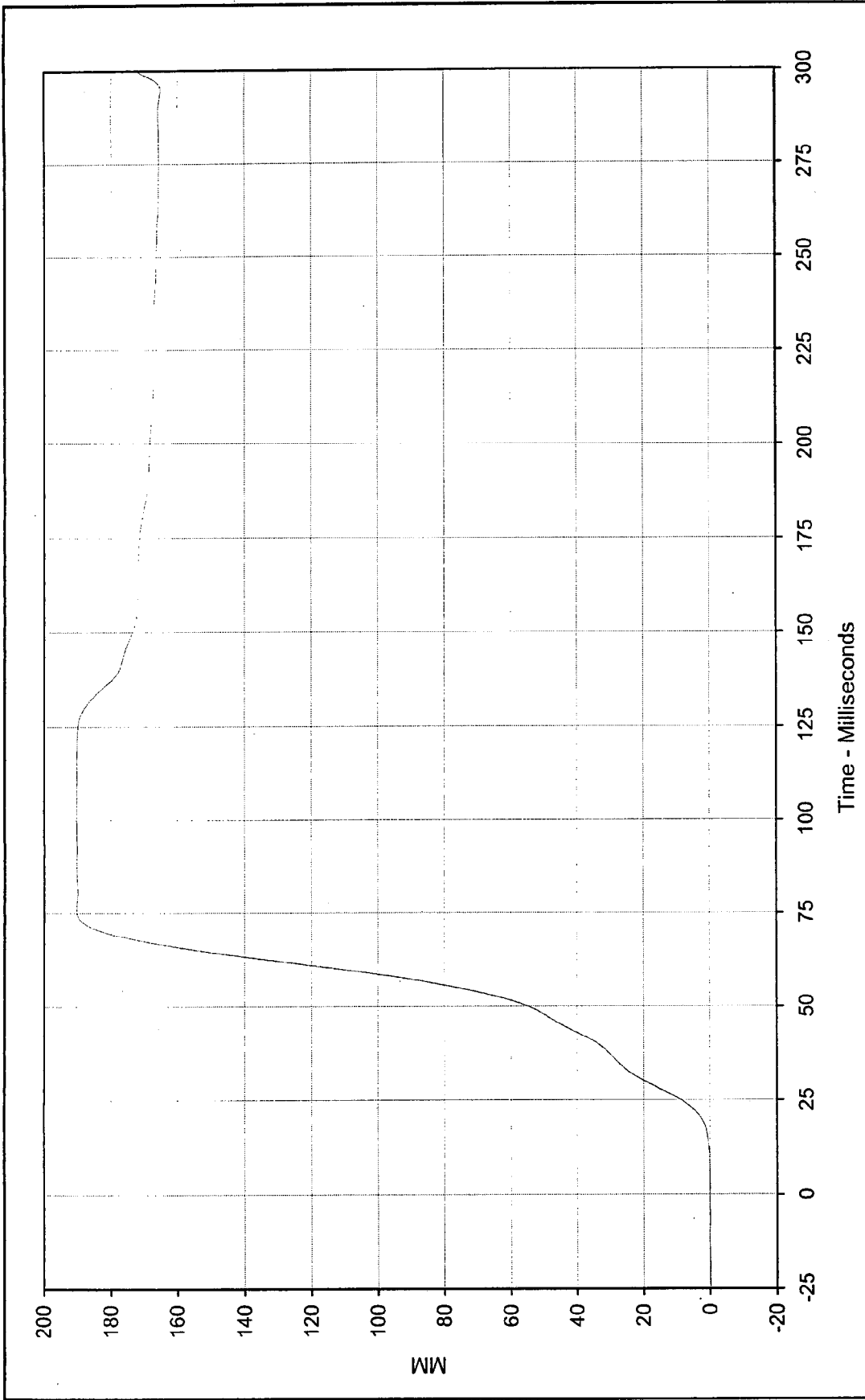


Curve Description: Driver Shoulder Belt Force
 Maximum Value: 3711.1 at 78.0 Milliseconds
 Minimum Value: -37.4 at 205.7 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/22/99
 Curve Number: FIL-042

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description: Driver Shoulder Belt Pullout

Maximum Value: 190.3 at 76.0 Milliseconds

Minimum Value: 0.0 at 2.1 Milliseconds

SAE Filter Class: 60

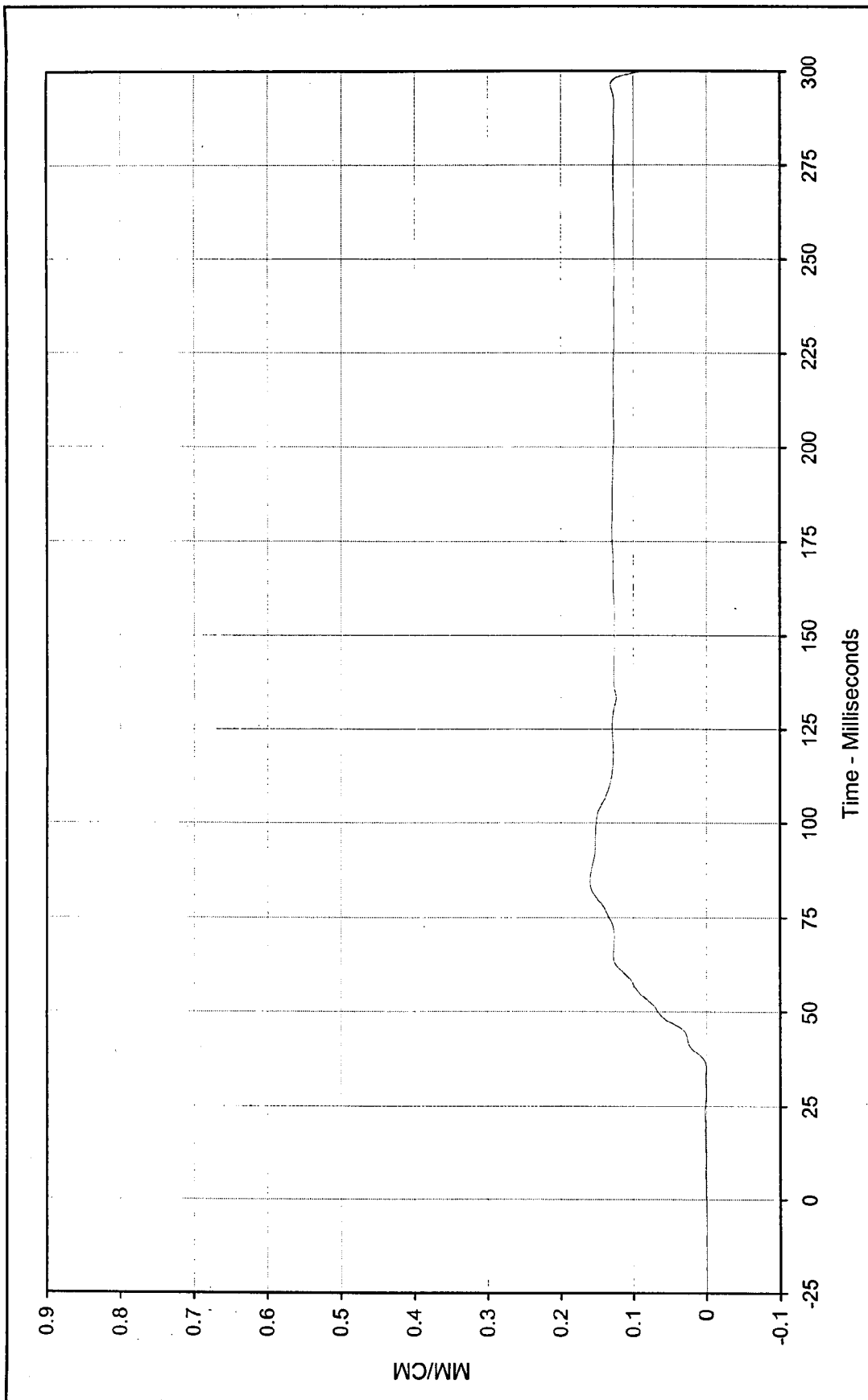
Date of Test: 12/22/99

Curve Number: FIL-043

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

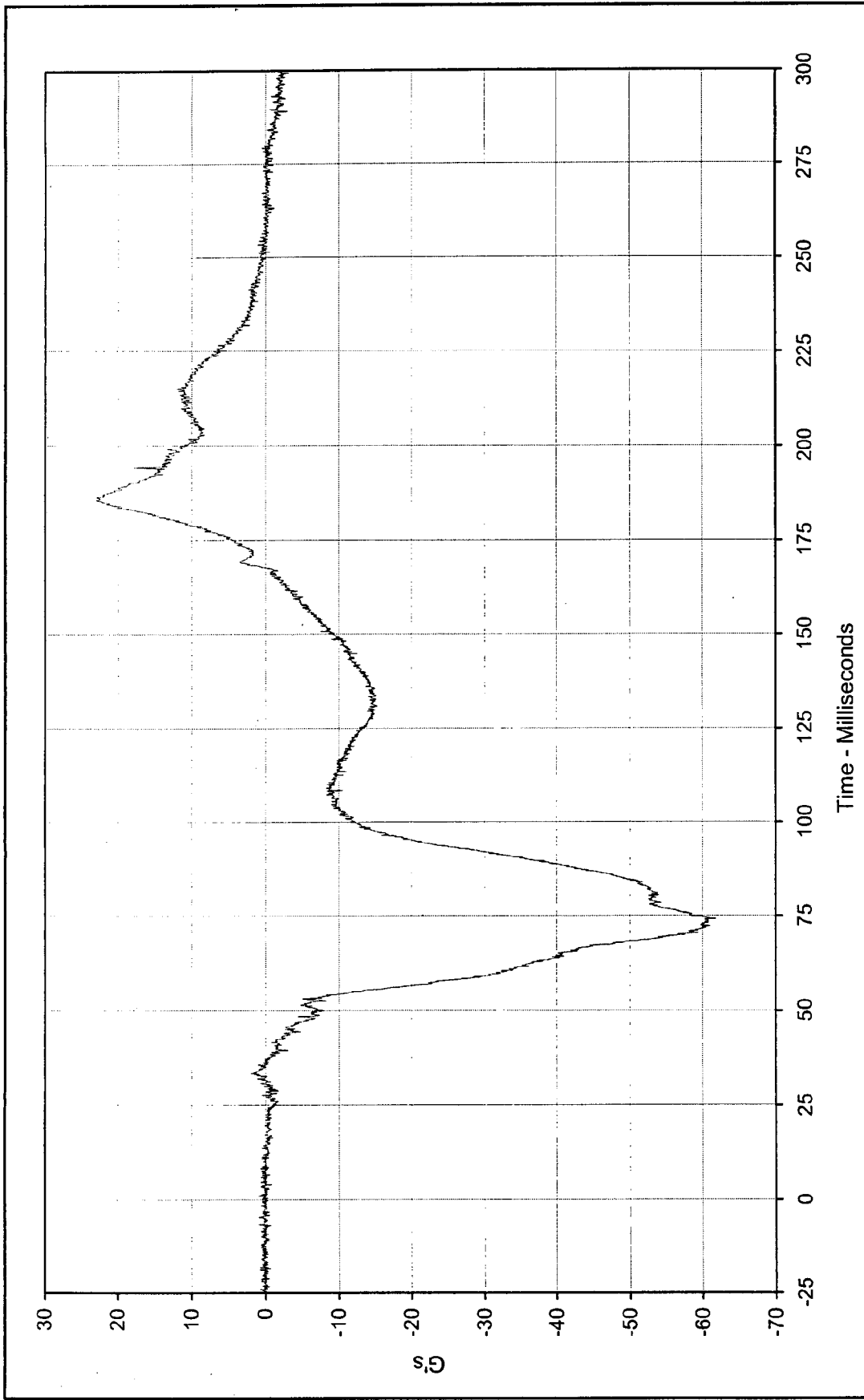
Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description:	Driver Shoulder Belt Elongation	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	0.16 at 84.5 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	0.00 at 28.4 Milliseconds			
SAE Filter Class:	60			
Date of Test:	12/22/99			
Curve Number:	FIL-044			





Curve Description: Passenger Head Primary X

Maximum Value: 23.0 at 185.5 Milliseconds

Minimum Value: -61.8 at 74.2 Milliseconds

SAE Filter Class: 1000

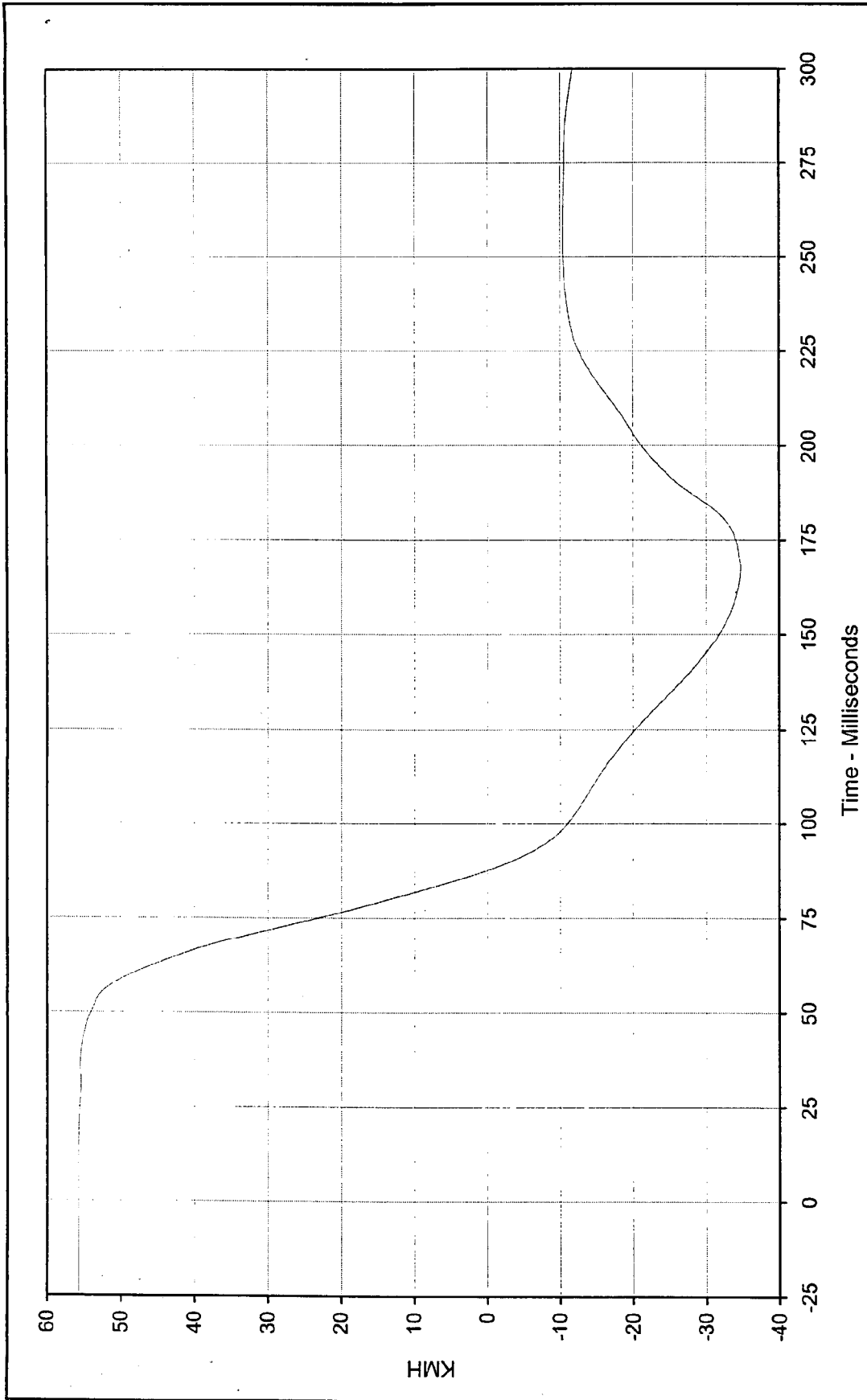
Date of Test: 12/22/99

Curve Number: FIL-045

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description: Passenger Head Primary X Velocity

Maximum Value: 55.8 at 8.2 Milliseconds

Minimum Value: -34.8 at 167.6 Milliseconds

SAE Filter Class: 180

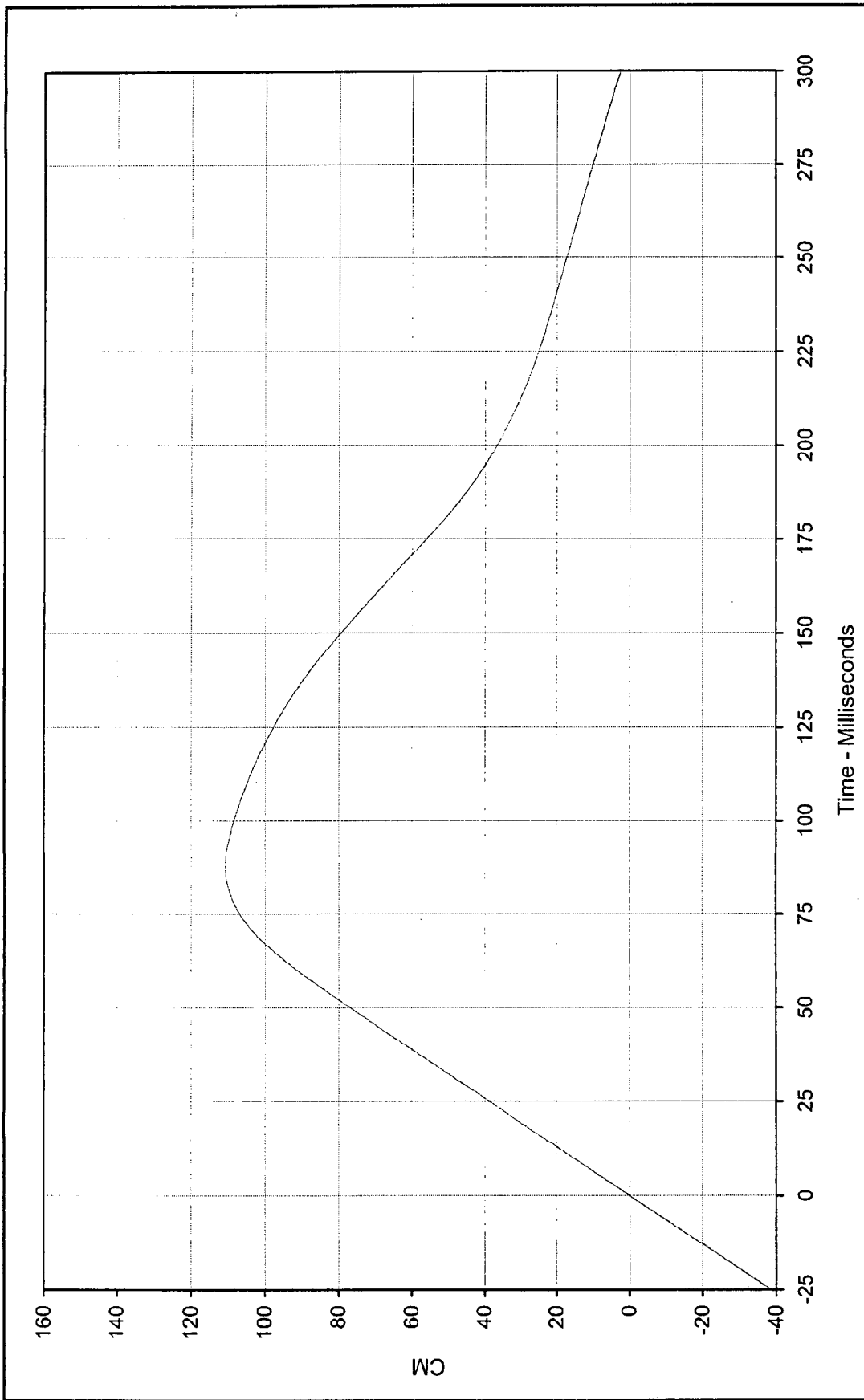
Date of Test: 12/22/99

Curve Number: IN1-045

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description: Passenger Head Primary X Displ.

Maximum Value: 110.7 at 87.6 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

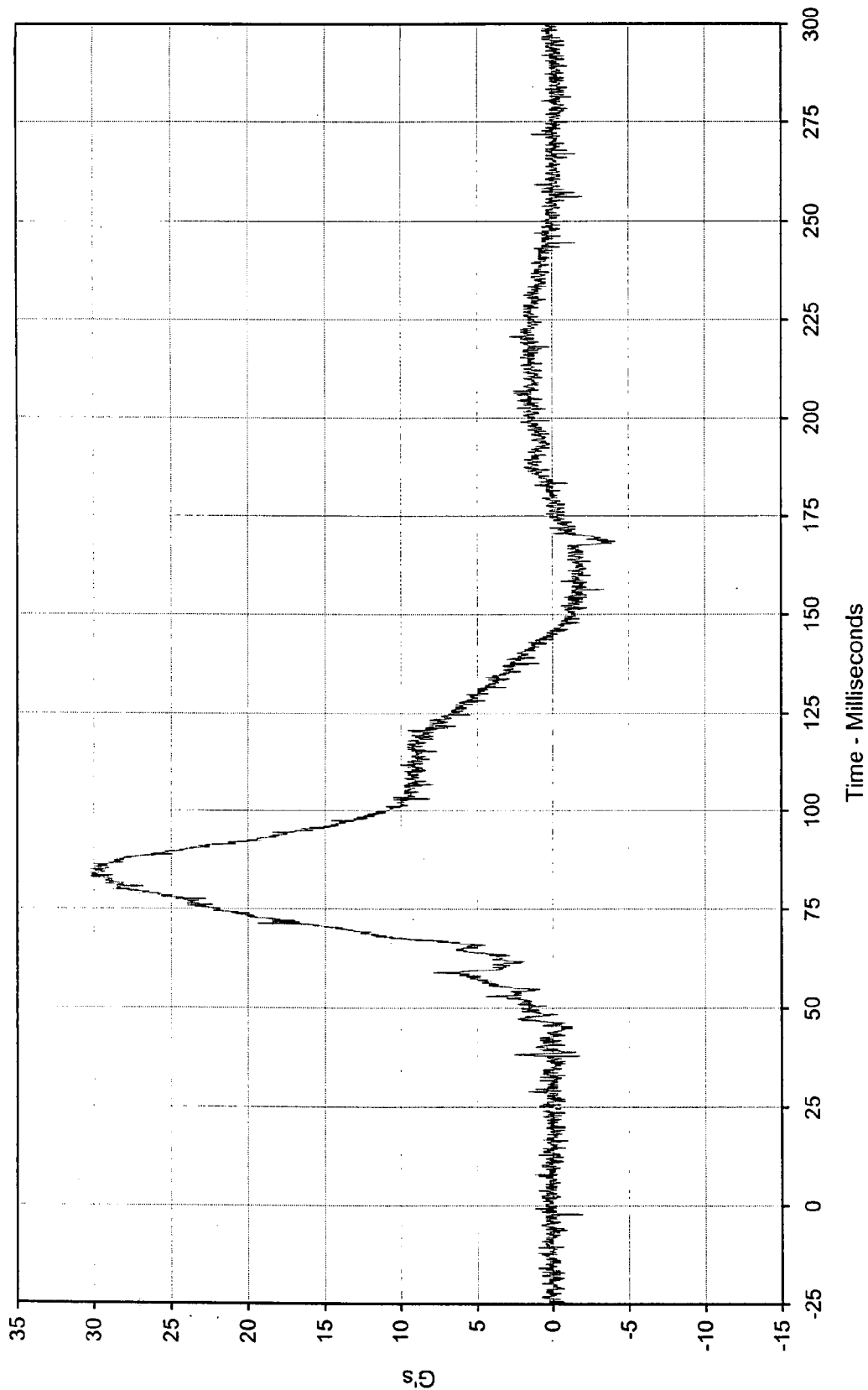
Date of Test: 12/22/99

Curve Number: IN2-045

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description: Passenger Head Primary Y

Maximum Value: 30.2 at 82.8 Milliseconds

Minimum Value: -4.2 at 168.4 Milliseconds

SAE Filter Class: 1000

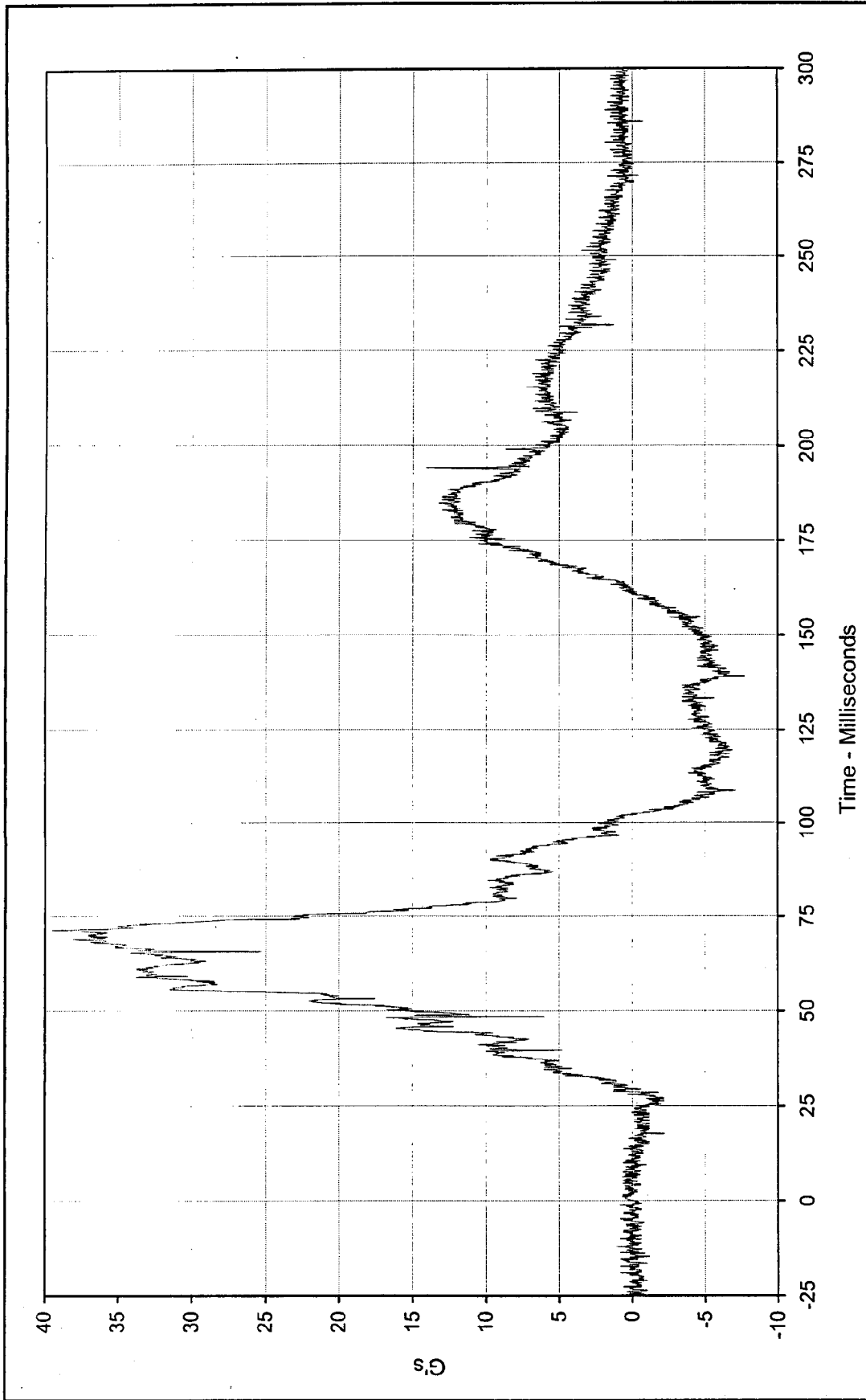
Date of Test: 12/22/99

Curve Number: FIL-046

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup

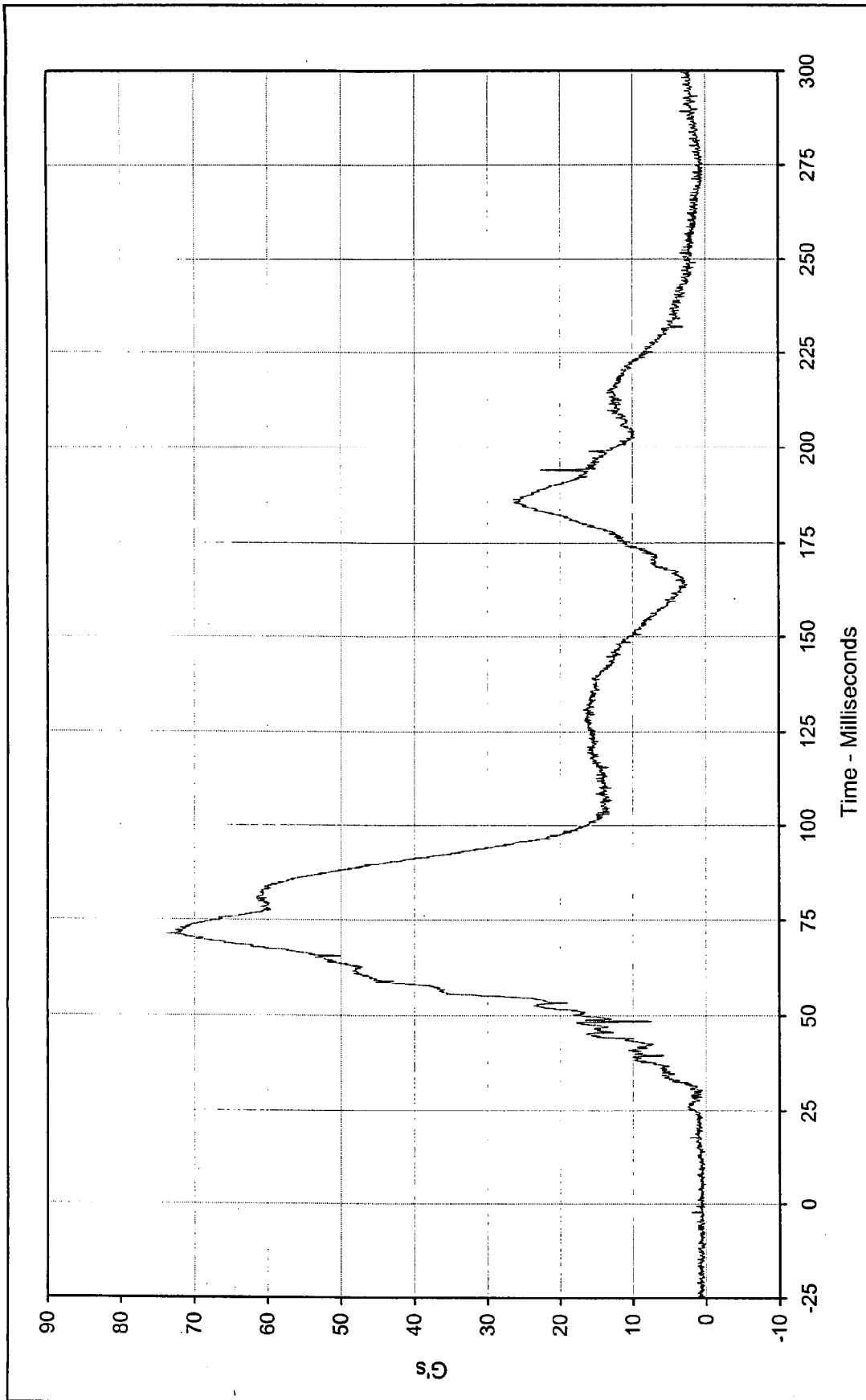




Curve Description: Passenger Head Primary Z Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Maximum Value: 39.5 at 71.3 Milliseconds Test Vehicle: 2000 Chevrolet S-10 Pickup
 Minimum Value: -7.8 at 139.0 Milliseconds



SAE Filter Class: 1000
 Date of Test: 12/22/99
 Curve Number: FIL-047



Curve Description: Passenger Head Resultant Primary

Maximum Value: 73.8 at 71.3 Milliseconds

Minimum Value: 0.1 at 5.3 Milliseconds

SAE Filter Class: 1000

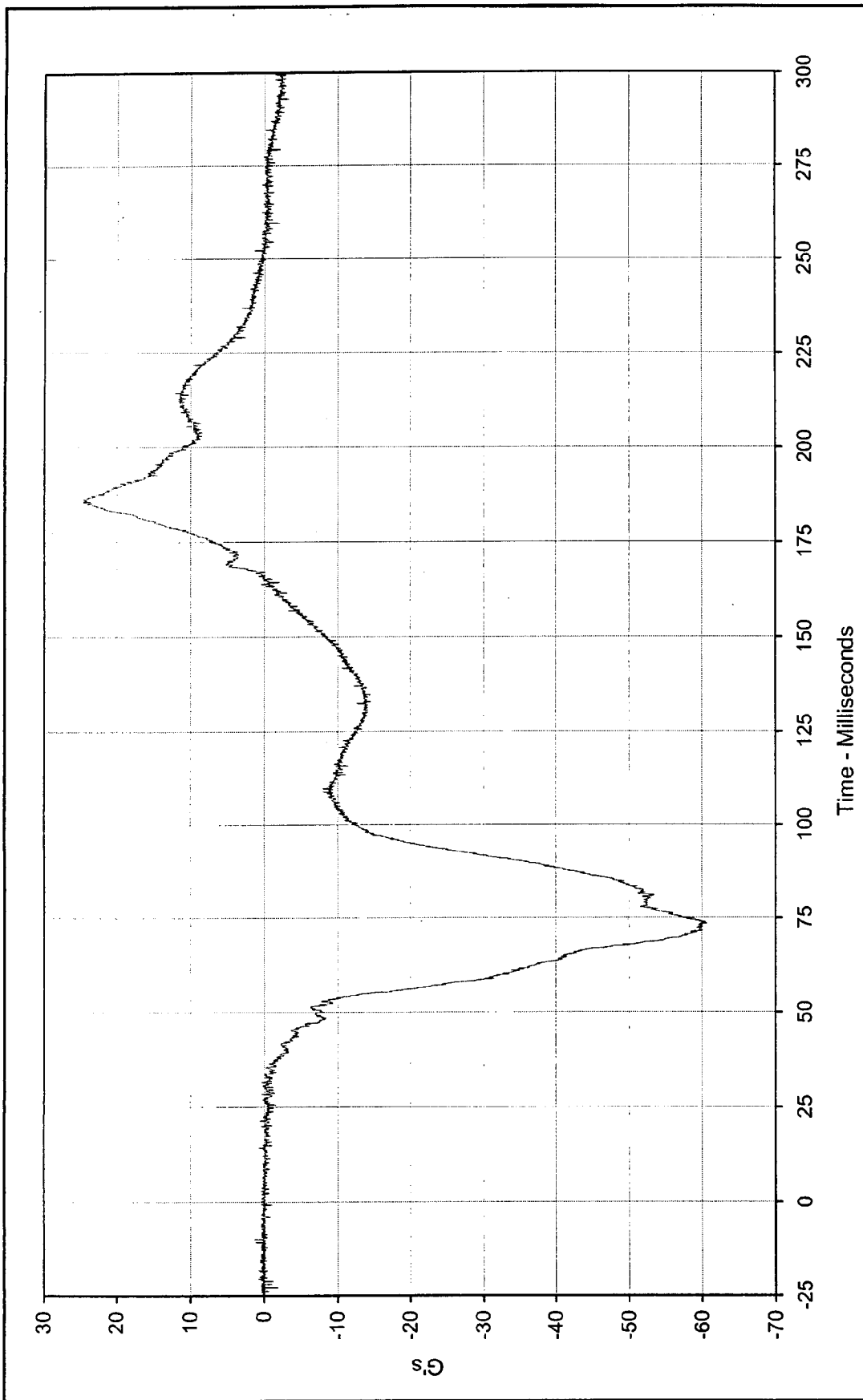
Date of Test: 12/22/99

Curve Number: RES-045

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup

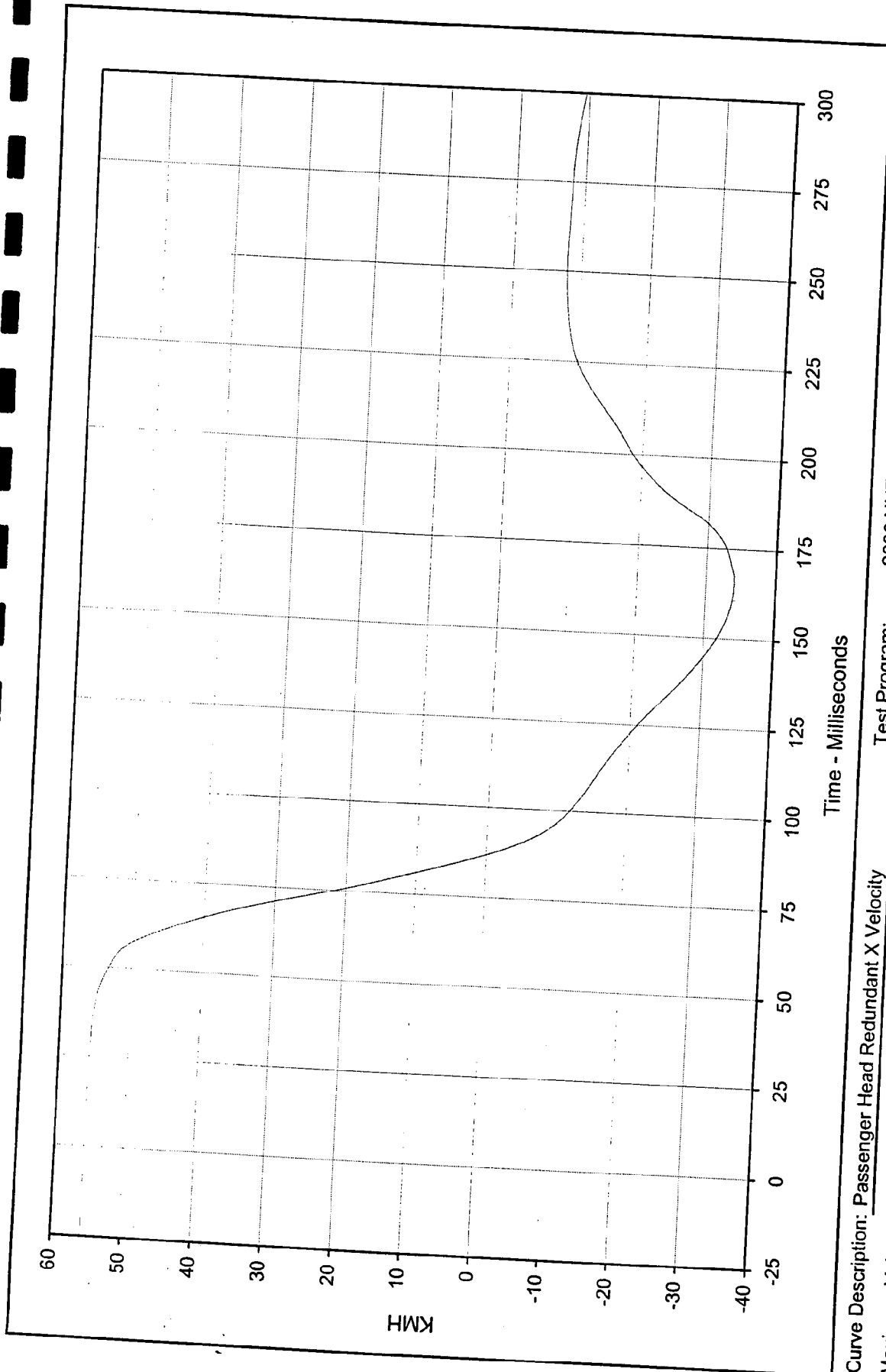




Curve Description:		Passenger Head Redundant X		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	24.6	at	185.4	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-60.7	at	73.4			
SAE Filter Class:	1000					
Date of Test:	12/22/99					
Curve Number:	FIL-048					







Curve Description: Passenger Head Redundant X Velocity

Maximum Value: 55.7 at 3.2 Milliseconds

Minimum Value: -34.0 at 165.6 Milliseconds

SAE Filter Class: 180

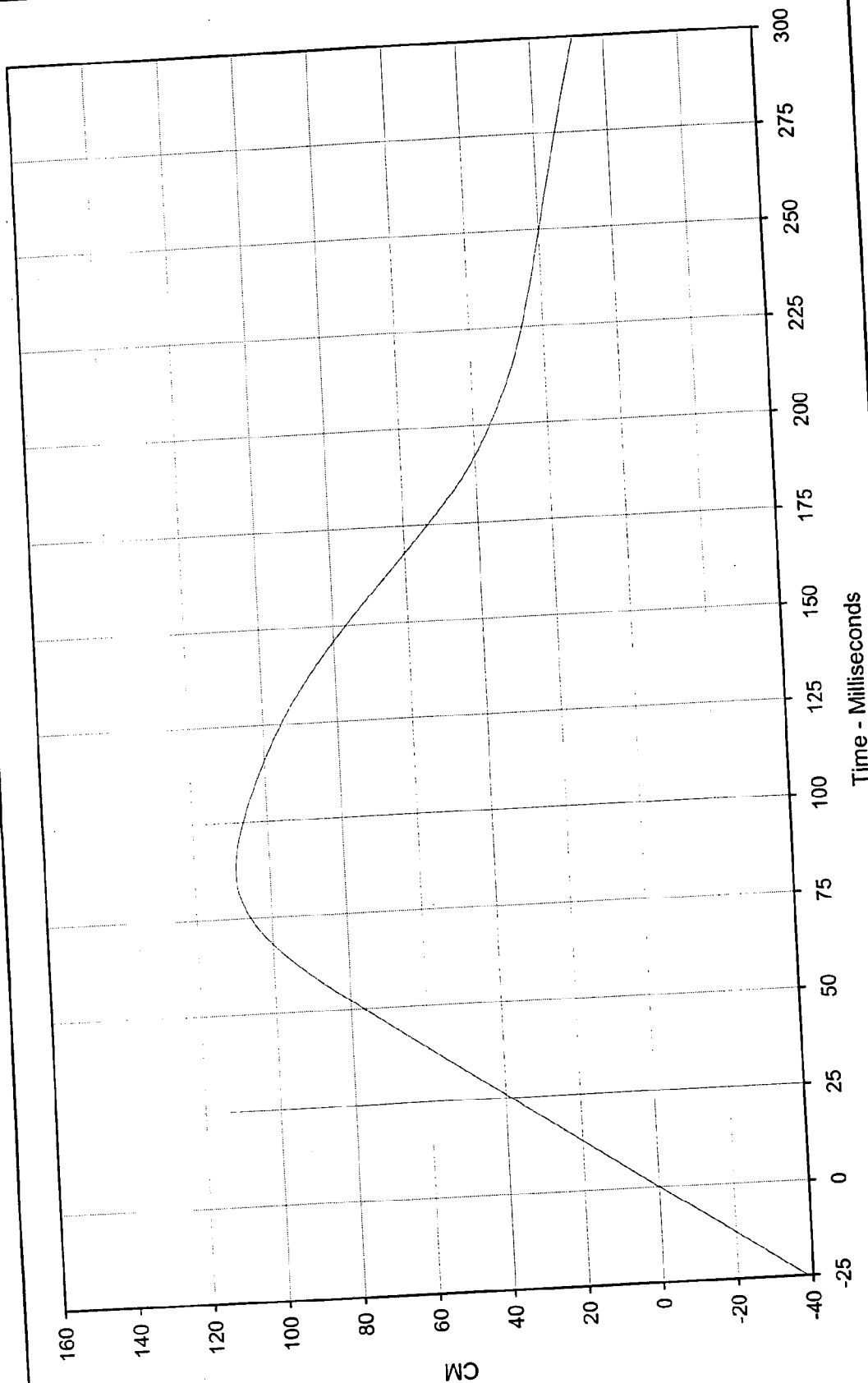
Date of Test: 12/22/99

Curve Number: IN1-048

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup





Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup

Curve Description: Passenger Head Redundant X Displ.

Maximum Value: 109.1 at 86.9 milliseconds

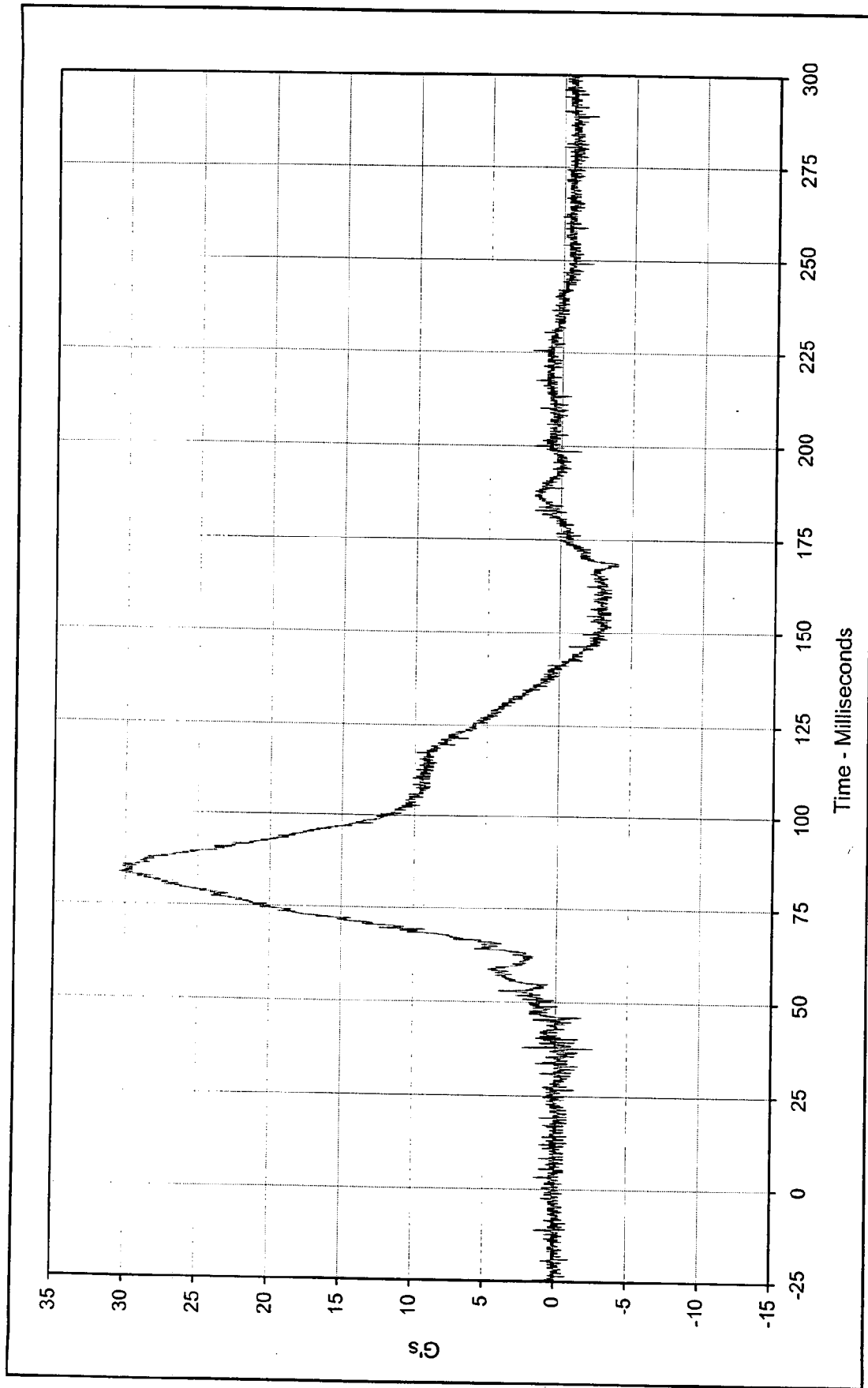
Minimum Value: 0.0 at 0.0 milliseconds

SAE Filter Class: 180

Date of Test: 12/22/99

Curve Number: IN2-048



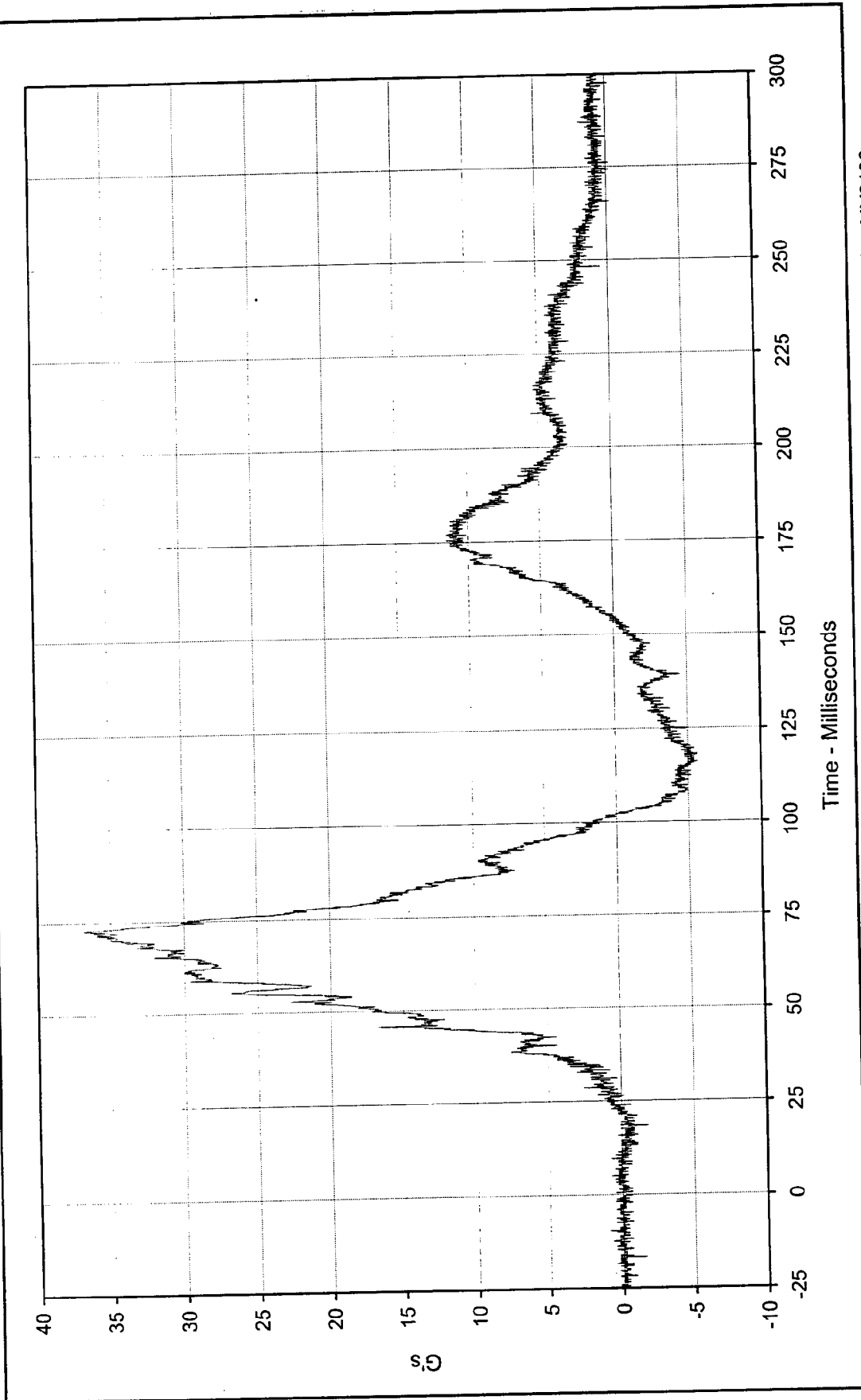


Curve Description: Passenger Head Redundant Y
 Maximum Value: 30.5 at 83.6 Milliseconds
 Minimum Value: -4.1 at 168.0 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/22/99
 Curve Number: FIL-049

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup





Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup

Curve Description: Passenger Head Redundant Z

Maximum Value: 36.9 at 72.5 Milliseconds

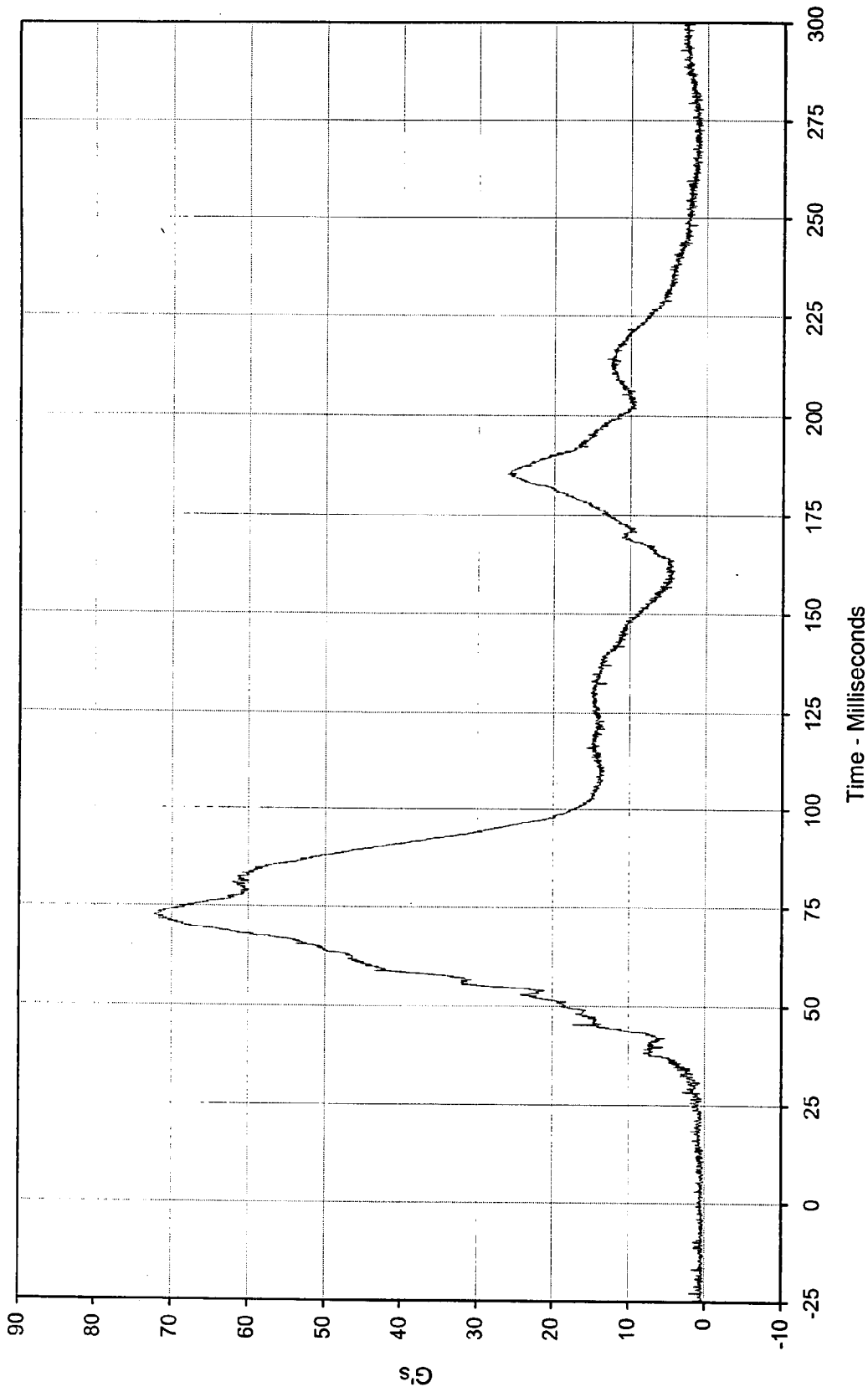
Minimum Value: -5.7 at 115.9 Milliseconds

SAE Filter Class: 1000

Date of Test: 12/22/99

Curve Number: FIL-050

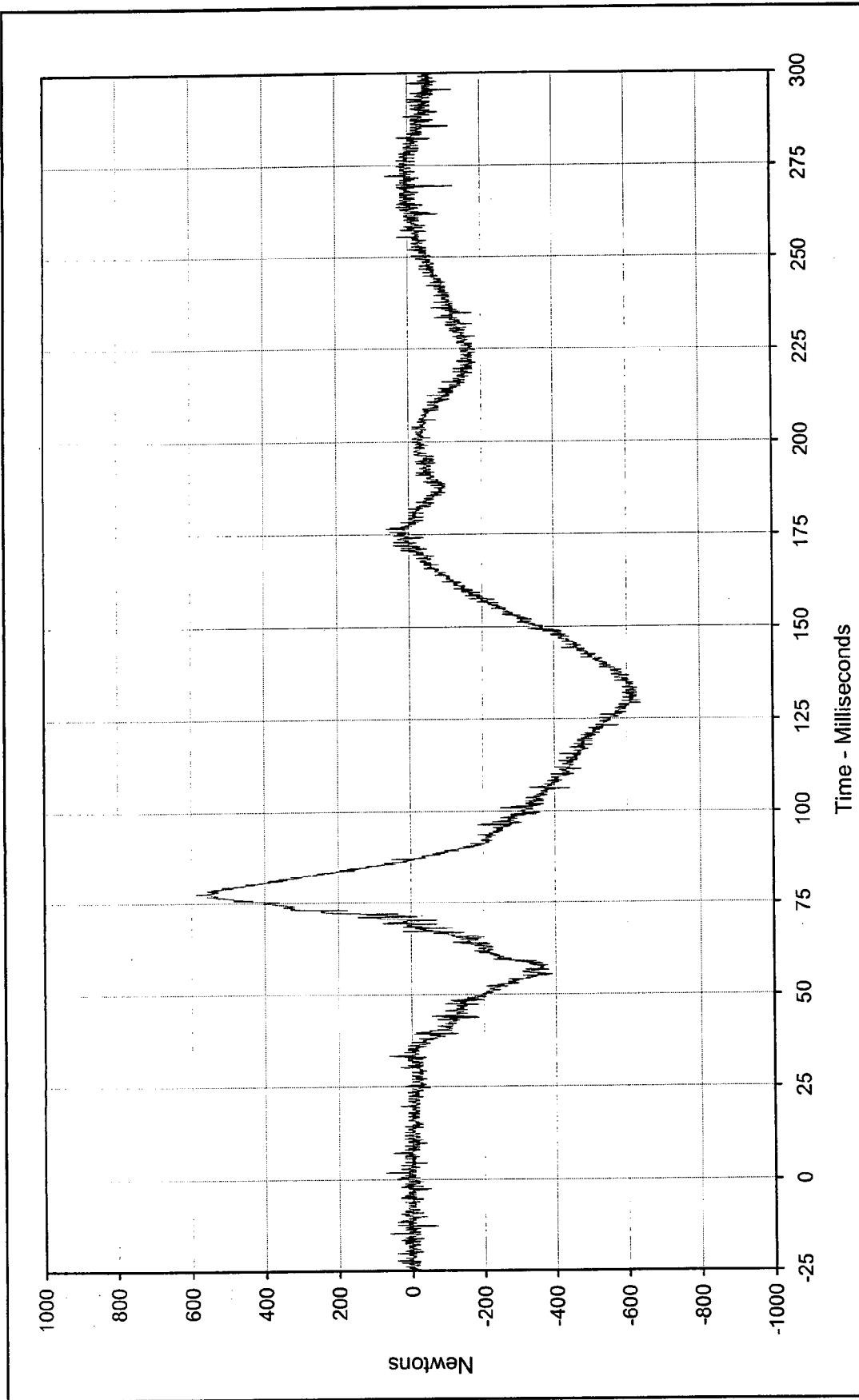




Curve Description: Passenger Head Resultant Redundant
 Maximum Value: 72.2 at 72.5 Milliseconds
 Minimum Value: 0.1 at 5.6 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/22/99
 Curve Number: RES-048

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description: Passenger Neck Force X

Maximum Value: 587.2 at 77.5 Milliseconds

Minimum Value: -638.7 at 129.2 Milliseconds

SAE Filter Class: 1000

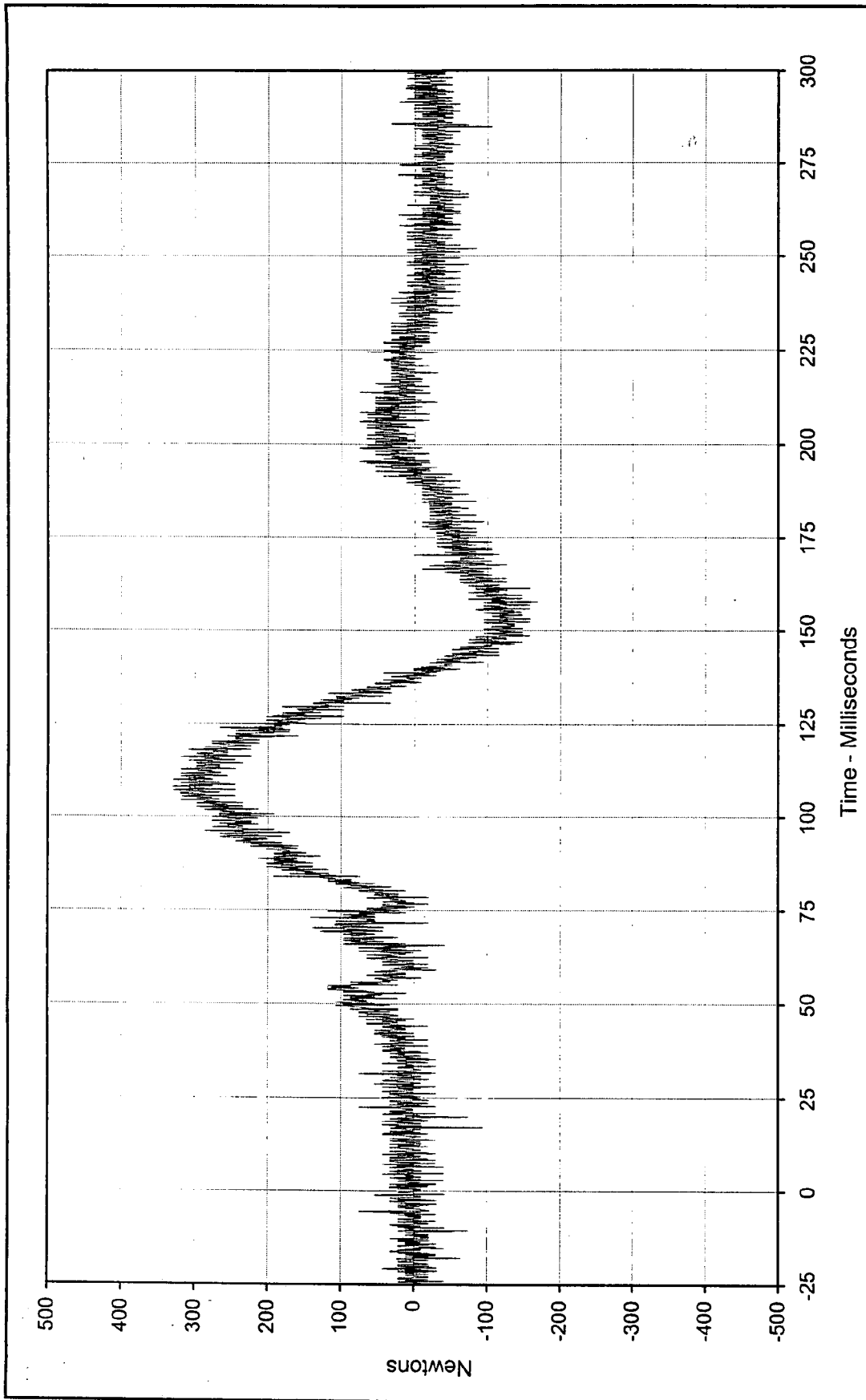
Date of Test: 12/22/99

Curve Number: FIL-051

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

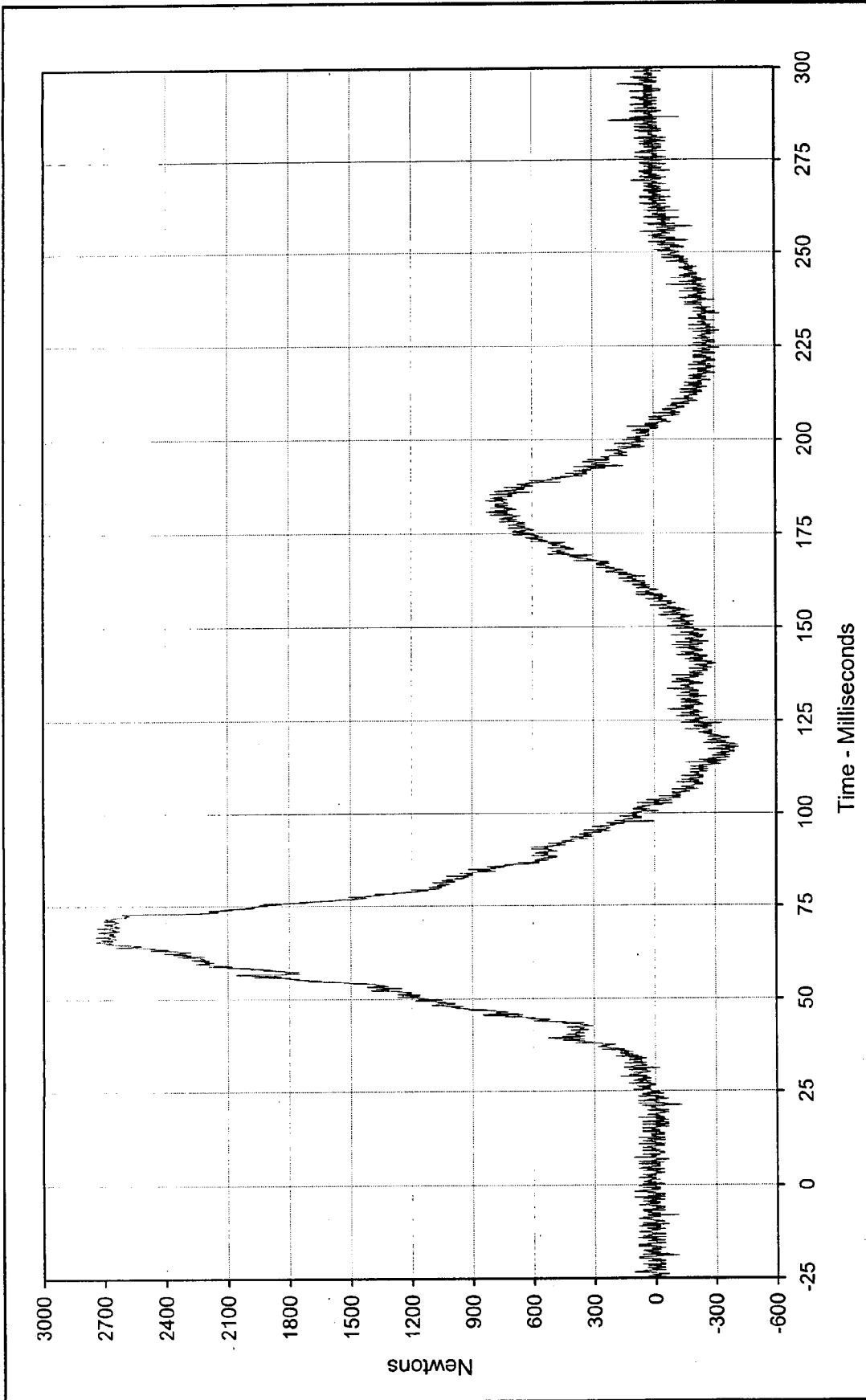
Test Vehicle: 2000 Chevrolet S-10 Pickup





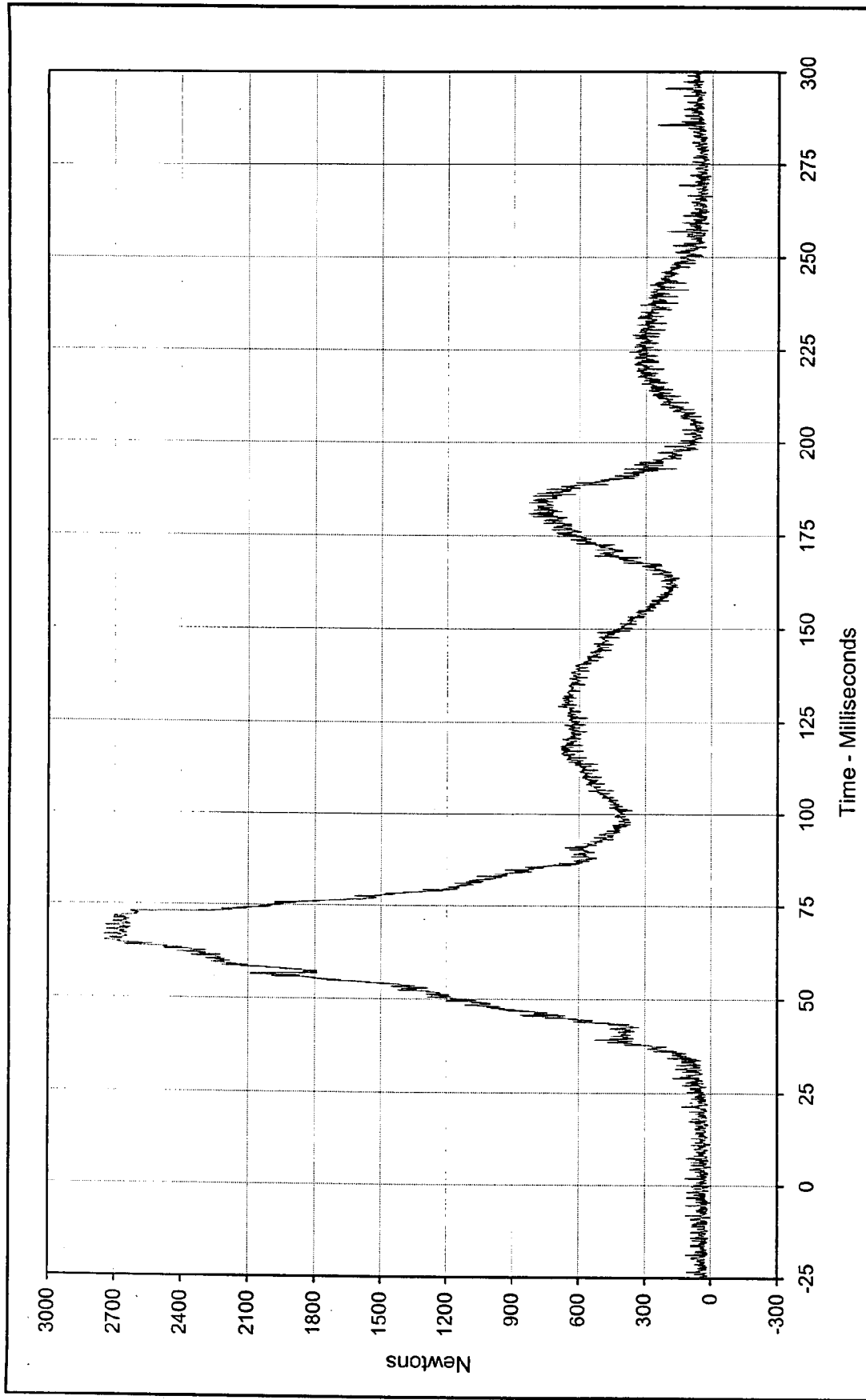
Curve Description:	Passenger Neck Force Y	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	329.1 at 107.1 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-168.9 at 157.7 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/22/99			
Curve Number:	FIL-052			





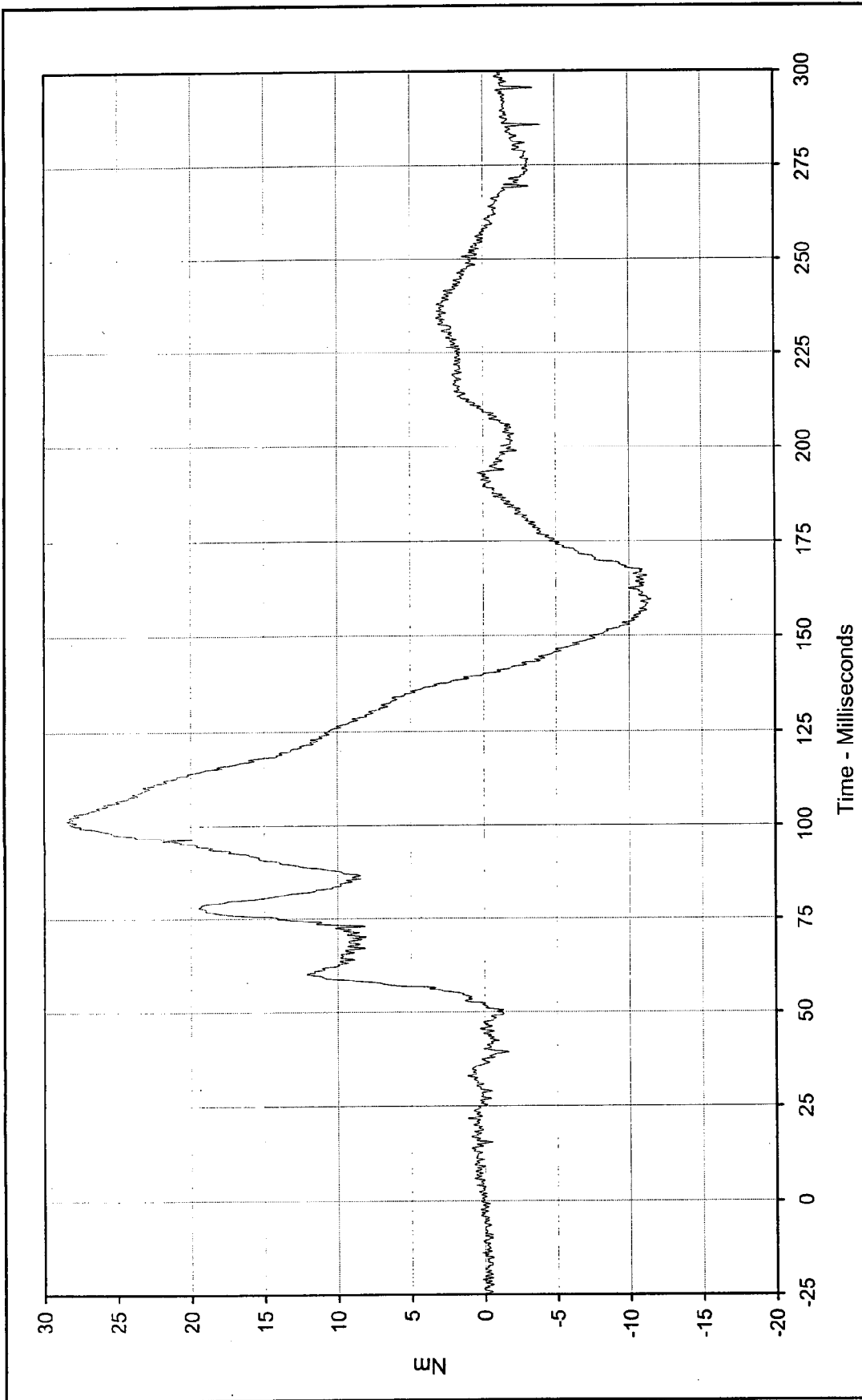
Curve Description:	Passenger Neck Force Z	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	2743.7 at 65.4 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-418.2 at 117.6 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/22/99			
Curve Number:	FIL-053			





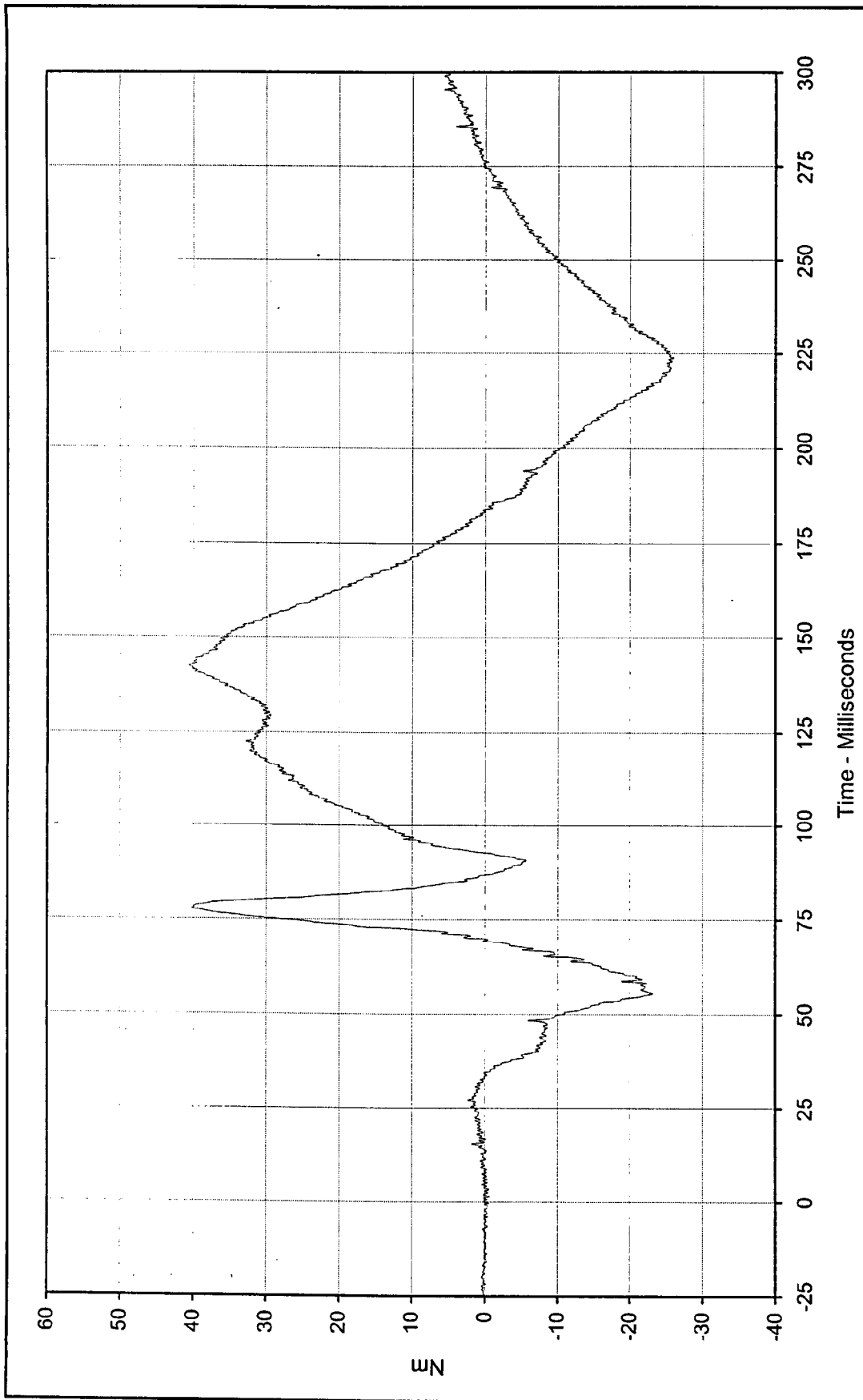
Curve Description:	Passenger Neck Force Resultant	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	2747.6 at 66.9 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	2.0 at 5.1 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/22/99			
Curve Number:	RES-051			





Curve Description:	Passenger Neck Moment X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	28.5 at 101.3 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-11.5 at 159.7 Milliseconds			
SAE Filter Class:	600			
Date of Test:	12/22/99			
Curve Number:	FIL-054			

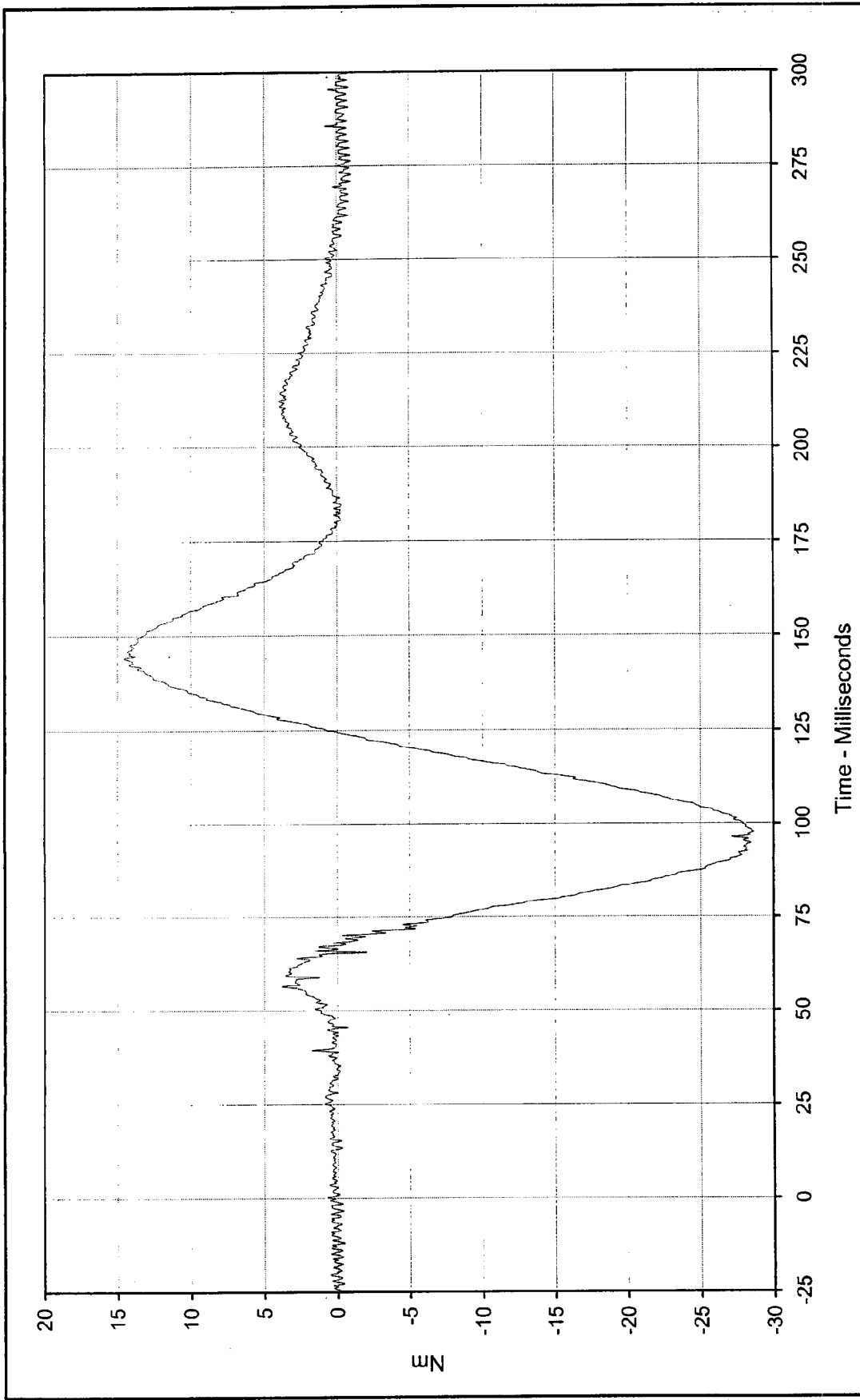




Curve Description: Passenger Neck Moment Y
 Maximum Value: 40.6 at 142.3 Milliseconds
 Minimum Value: -26.0 at 223.7 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/22/99
 Curve Number: FIL-055

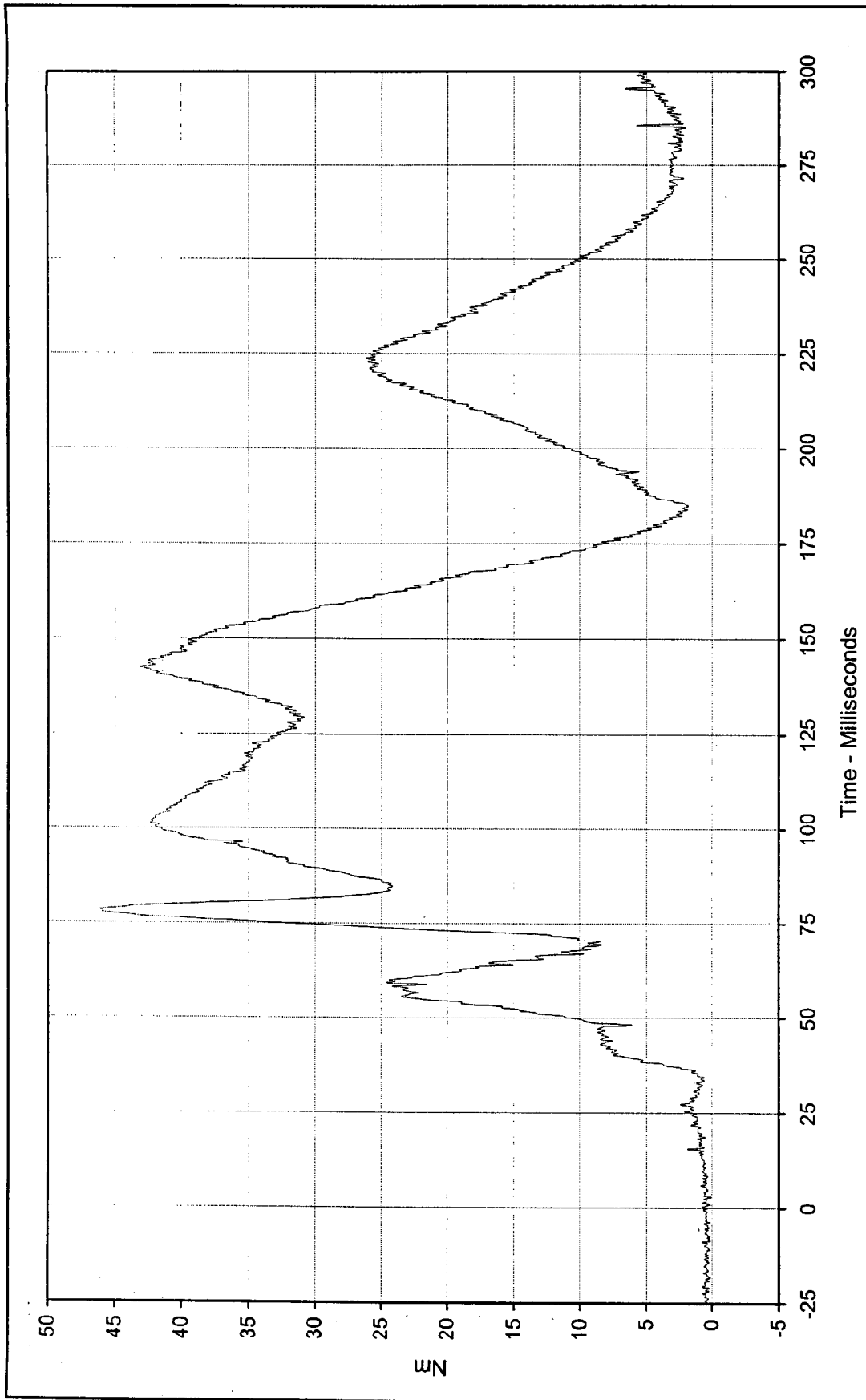
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description:	Passenger Neck Moment Z	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	14.5 at 144.0 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-28.6 at 97.7 Milliseconds			
SAE Filter Class:	600			
Date of Test:	12/22/99			
Curve Number:	FIL-056			

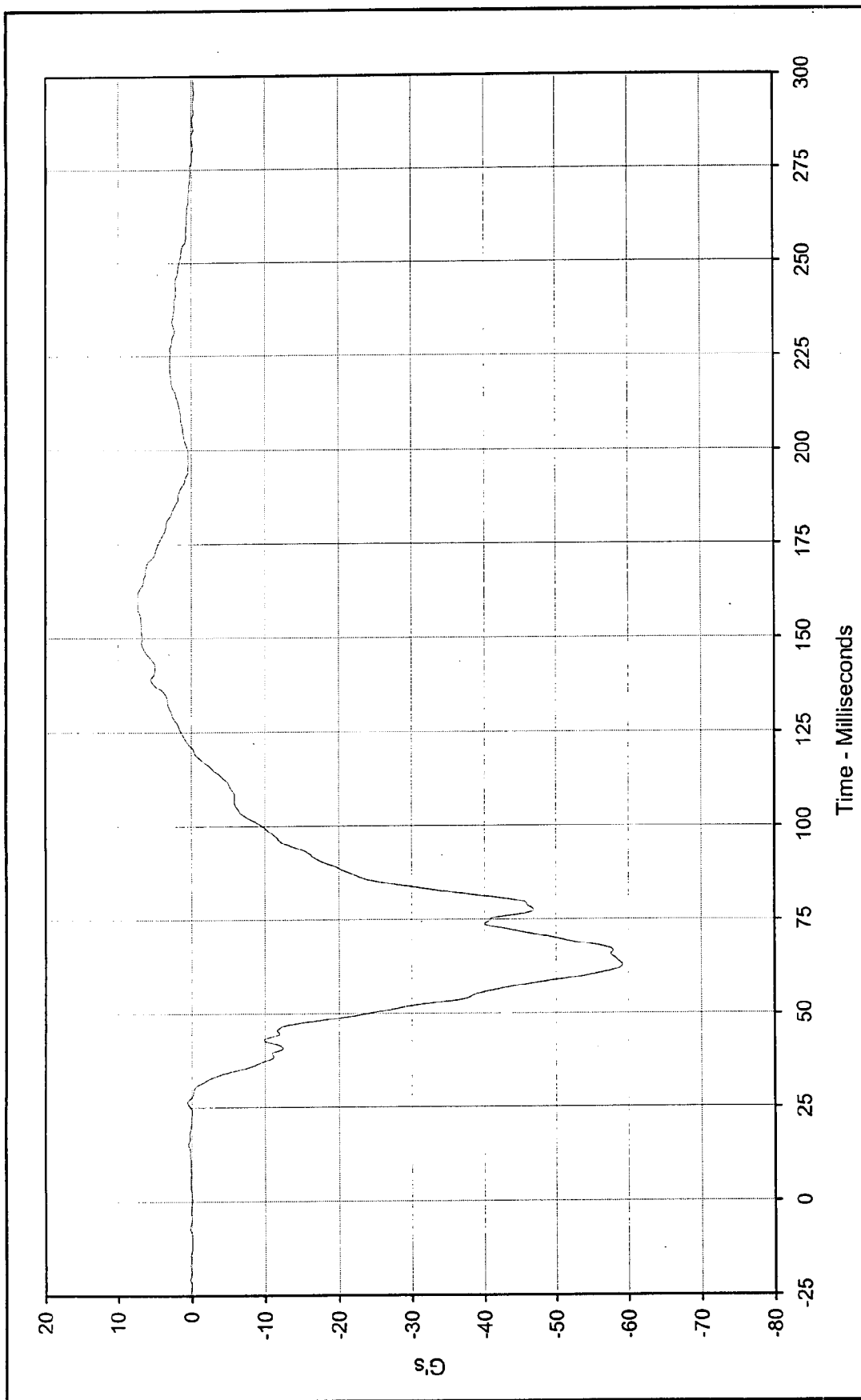




Curve Description: Passenger Neck Moment Resultant
 Maximum Value: 46.1 at 78.3 Milliseconds
 Minimum Value: 0.1 at 2.8 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/22/99
 Curve Number: RES-054

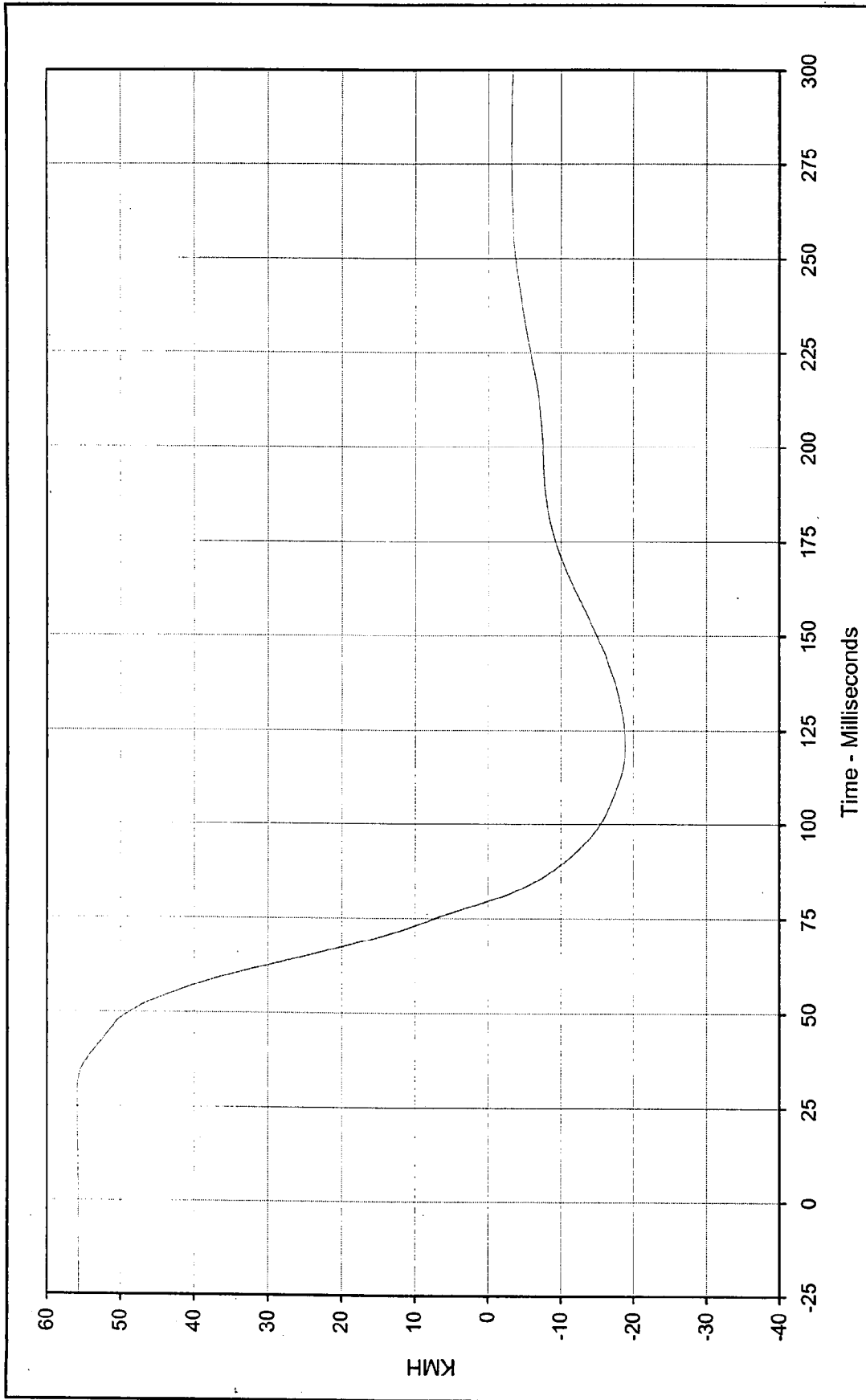
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description:	Passenger Chest Primary X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	7.3 at 160.0 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-59.2 at 62.7 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/22/99			
Curve Number:	FIL-057			

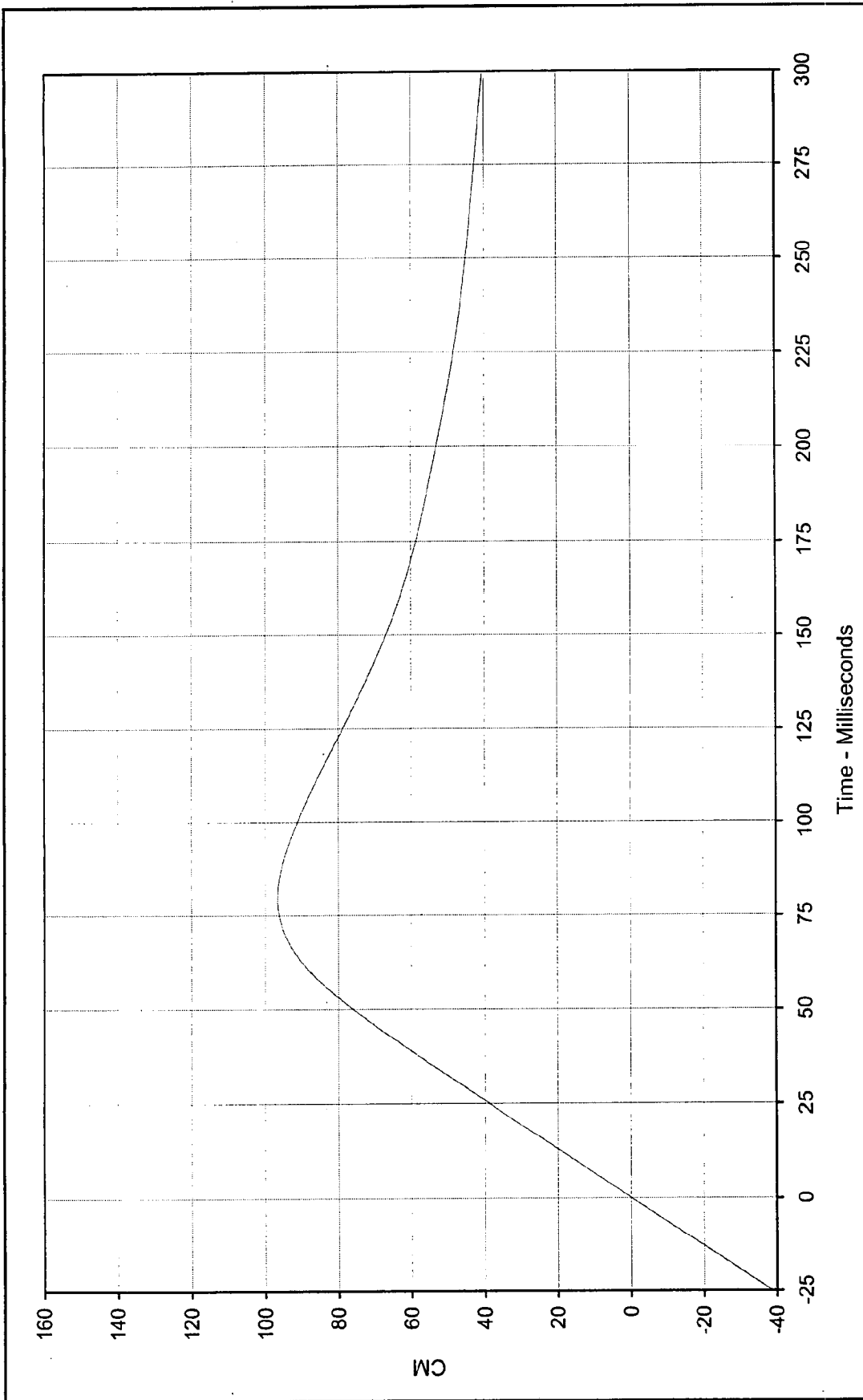




Curve Description: Passenger Chest Primary X Velocity
 Maximum Value: 55.9 at 27.6 Milliseconds
 Minimum Value: -18.9 at 121.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/22/99
 Curve Number: IN1-057

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup



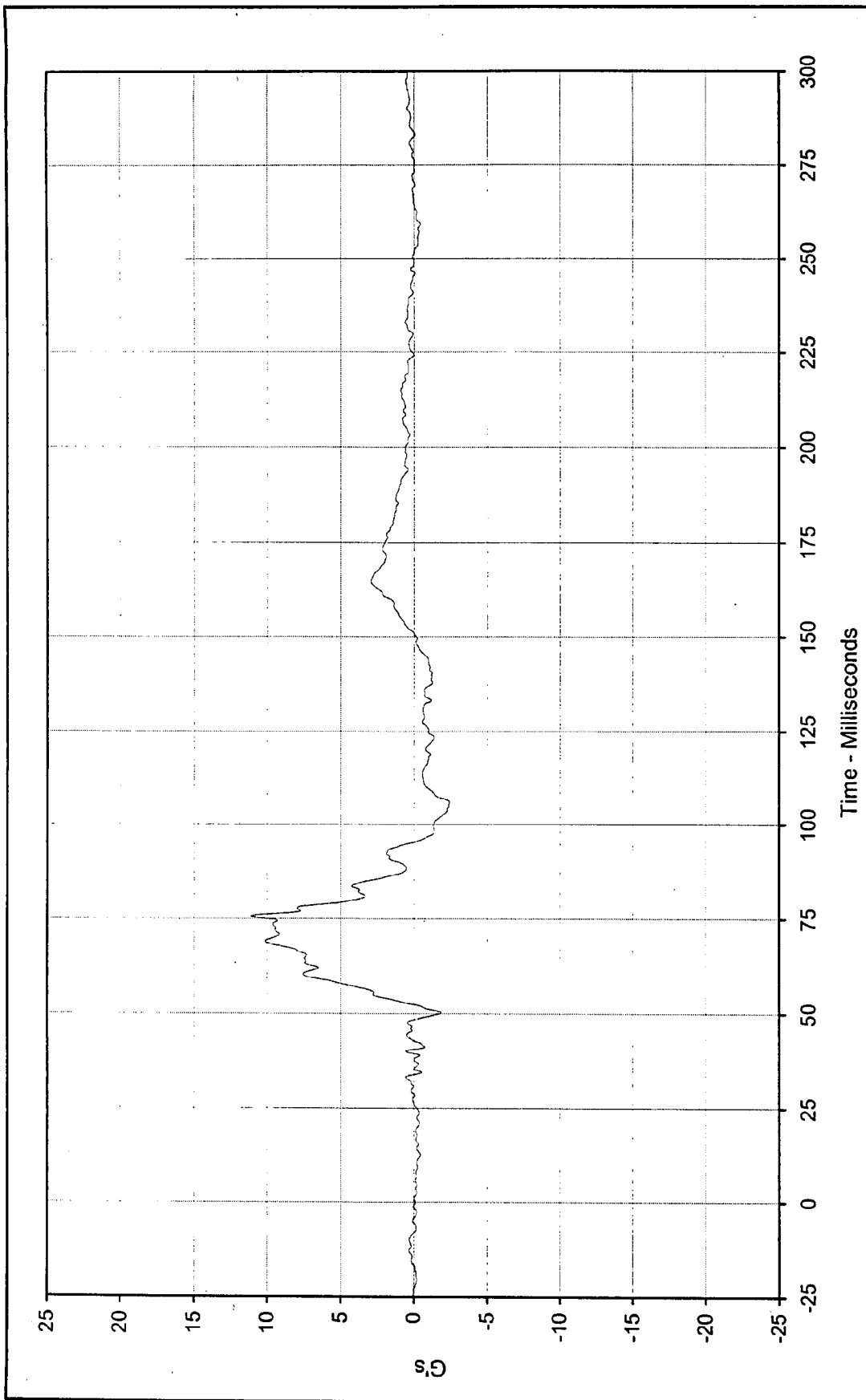


Curve Description: Passenger Chest Primary X Displ.
 Maximum Value: 96.6 at 79.5 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/22/99
 Curve Number: IN2-057

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

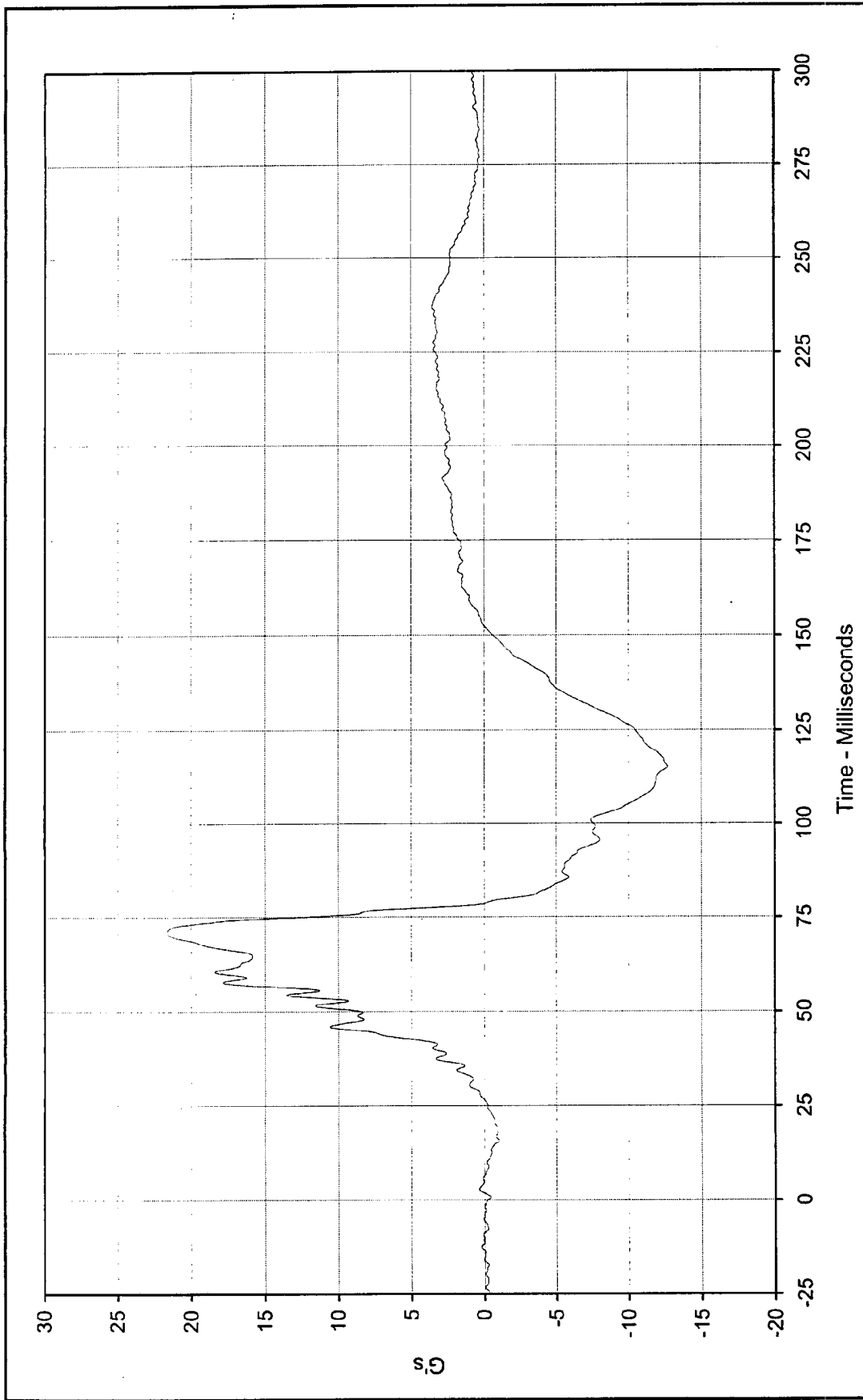
Test Vehicle: 2000 Chevrolet S-10 Pickup





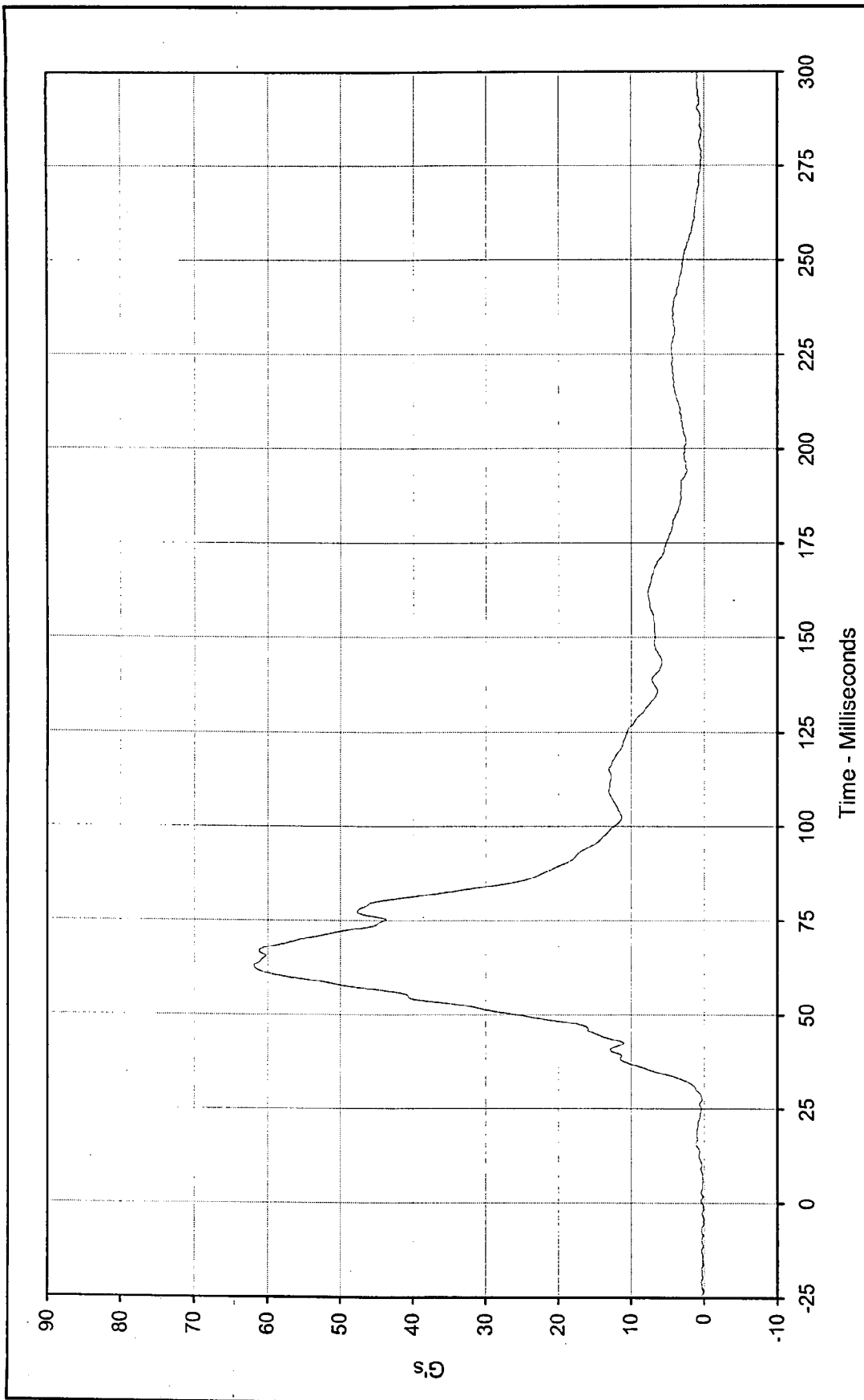
Curve Description:	Passenger Chest Primary Y	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	11.1 at 75.6 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-2.4 at 105.8 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/22/99			
Curve Number:	FIL-058			





Curve Description:	Passenger Chest Primary Z	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	21.6 at 70.9 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-12.7 at 115.1 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/22/99			
Curve Number:	FIL-059			

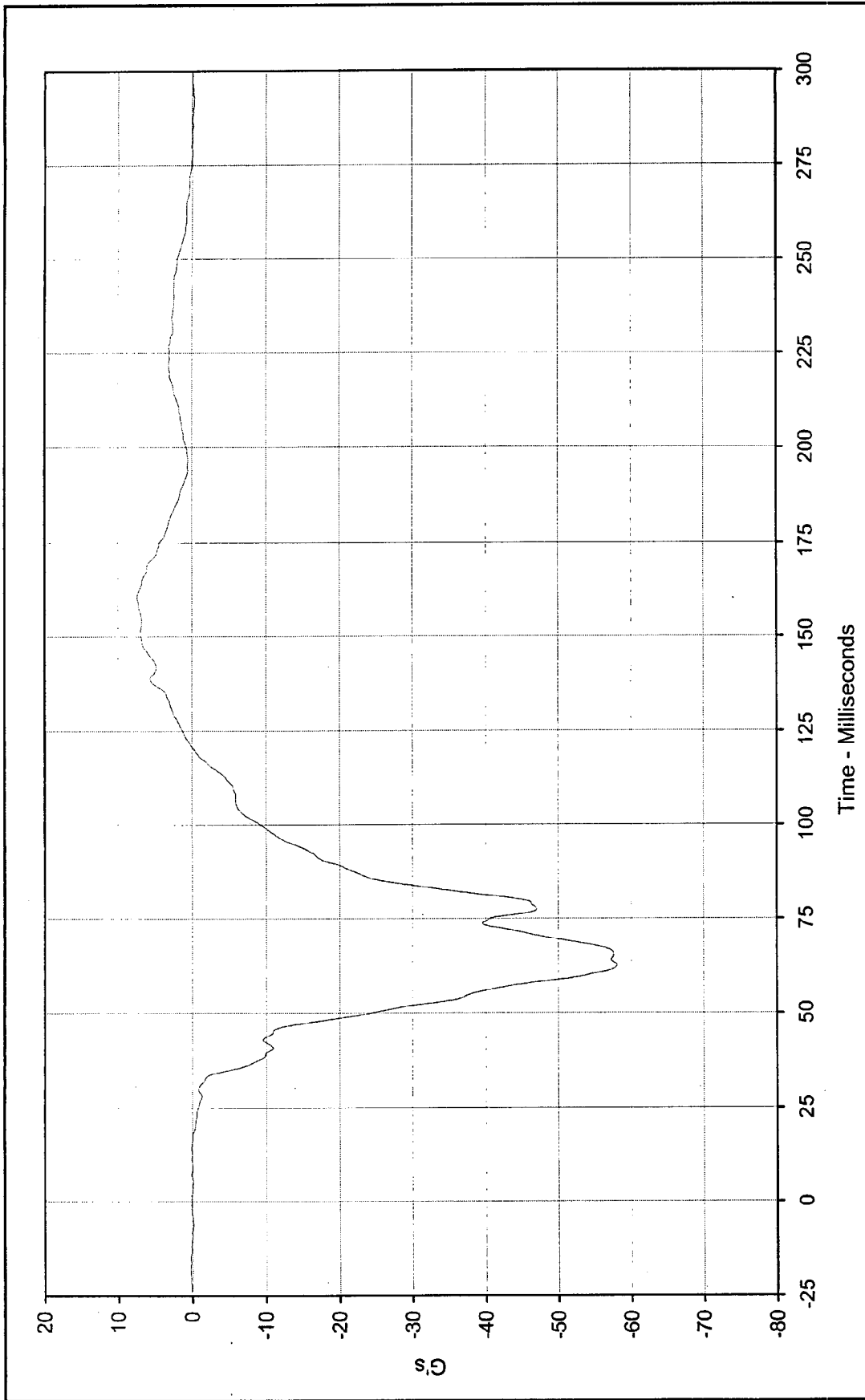




Curve Description: Passenger Chest Resultant Primary
 Maximum Value: 61.9 at 62.7 Milliseconds
 Minimum Value: 0.1 at 1.7 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/22/99
 Curve Number: RES-057

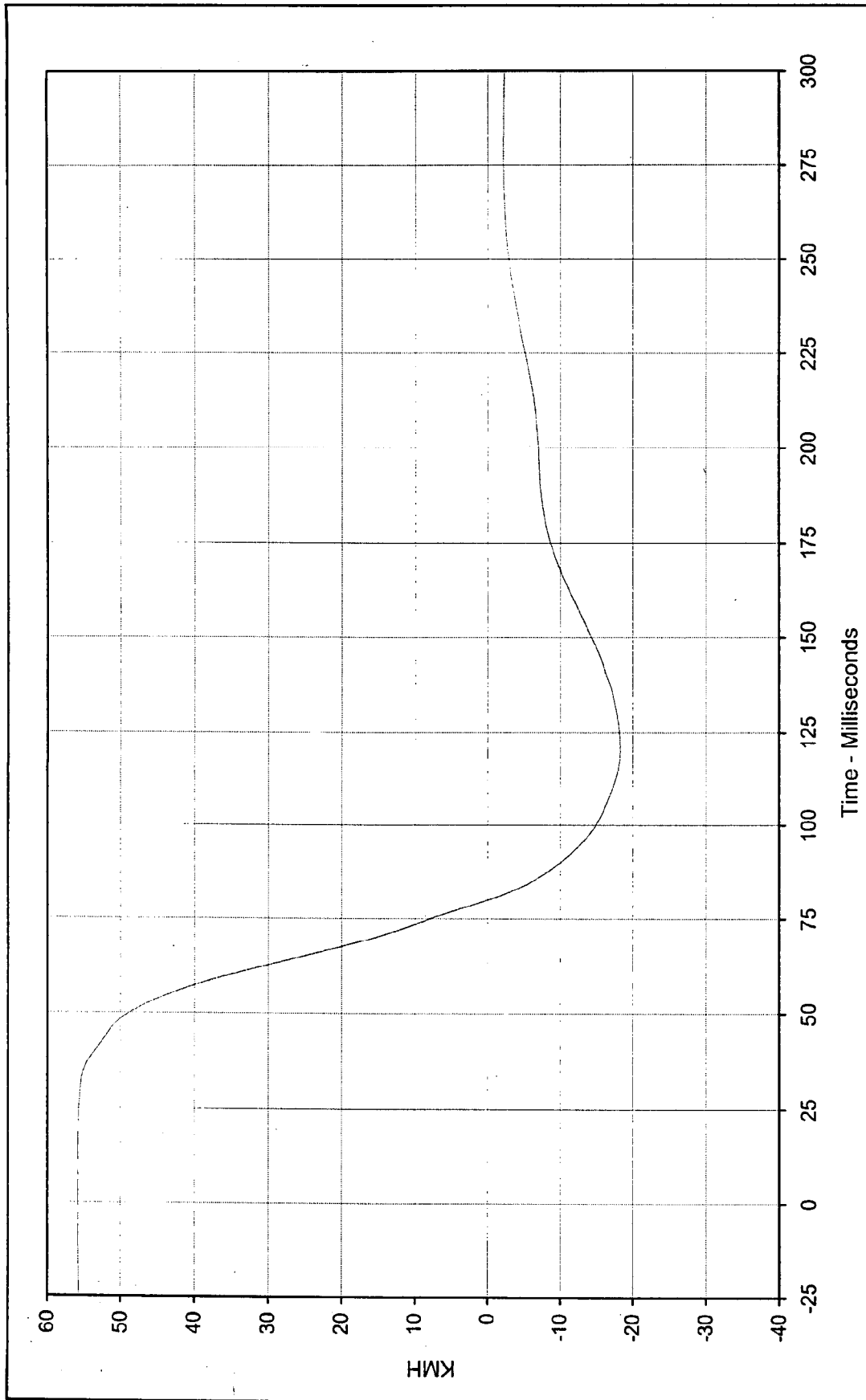
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description:	Passenger Chest Redundant X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	7.4 at 160.5 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-58.1 at 62.4 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/22/99			
Curve Number:	FIL-060			





Curve Description: Passenger Chest Redundant X Velocity

Maximum Value: 55.8 at 2.1 Milliseconds

Minimum Value: -18.2 at 120.6 Milliseconds

SAE Filter Class: 180

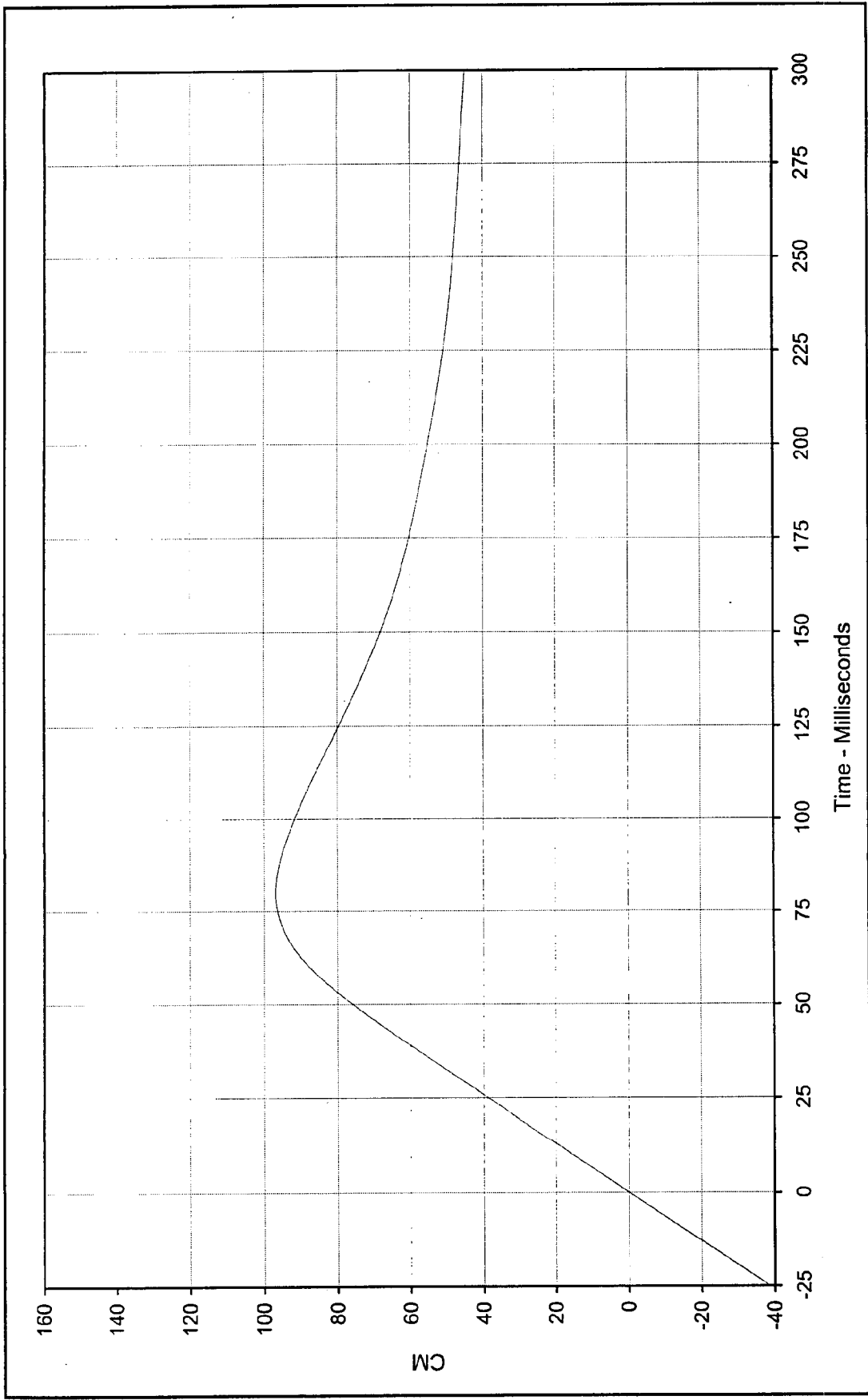
Date of Test: 12/22/99

Curve Number: IN1-060

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup

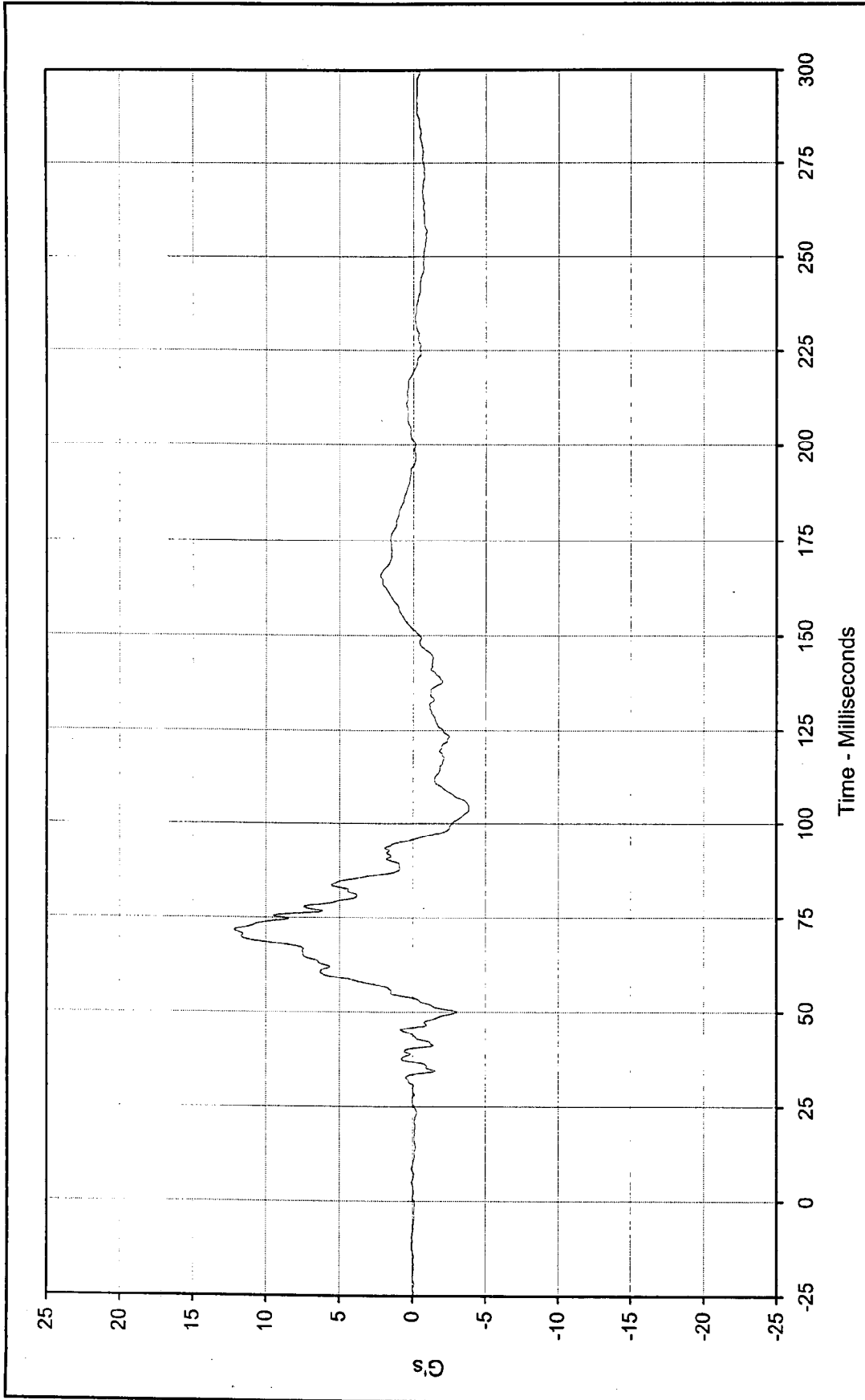




Curve Description: Passenger Chest Redundant X Displ.
Maximum Value: 96.8 at 79.9 Milliseconds
Minimum Value: 0.1 at 0.0 Milliseconds
SAE Filter Class: 180
Date of Test: 12/22/99
Curve Number: IN2-060

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
Test Vehicle: 2000 Chevrolet S-10 Pickup

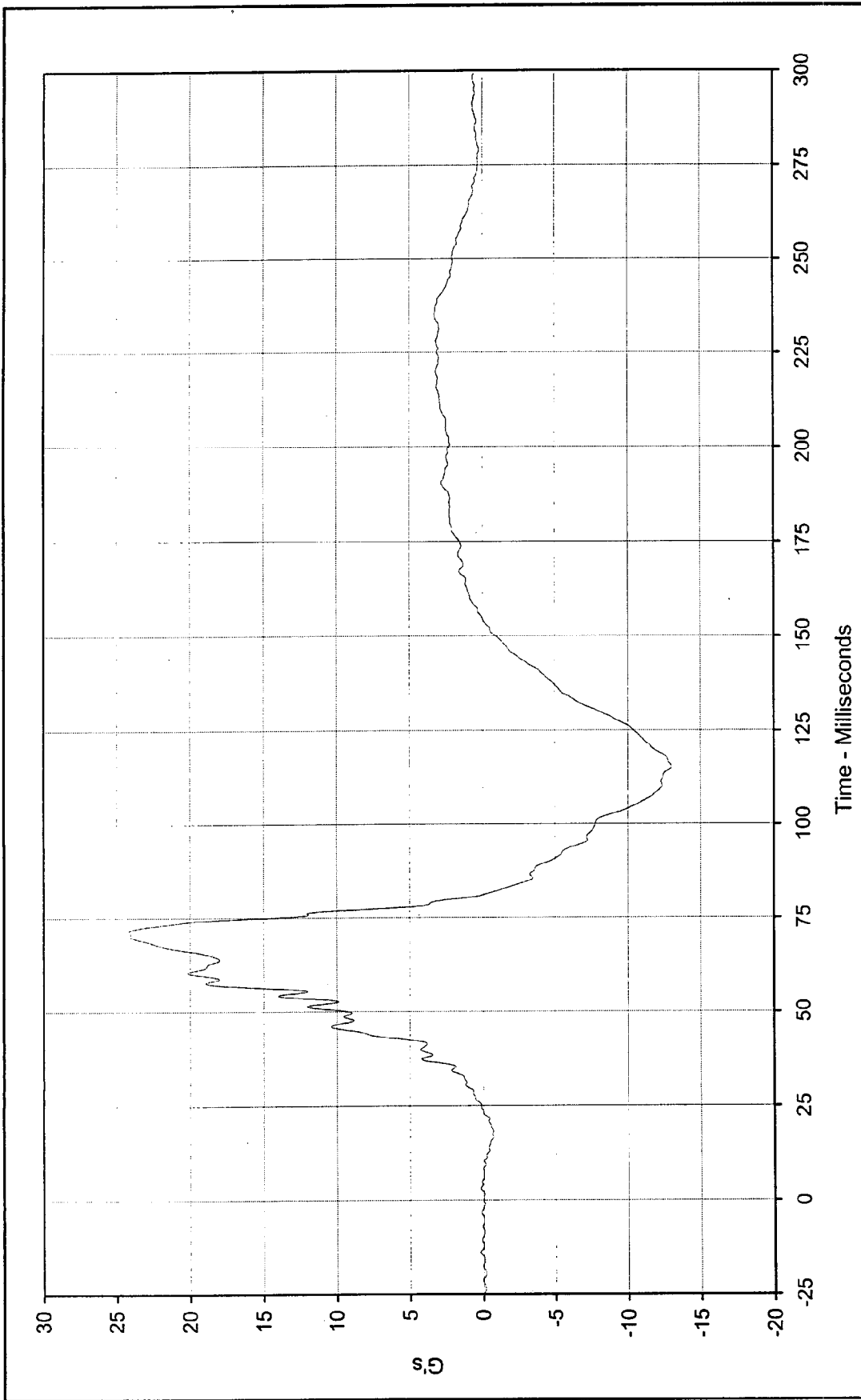




Curve Description: Passenger Chest Redundant Y
 Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup

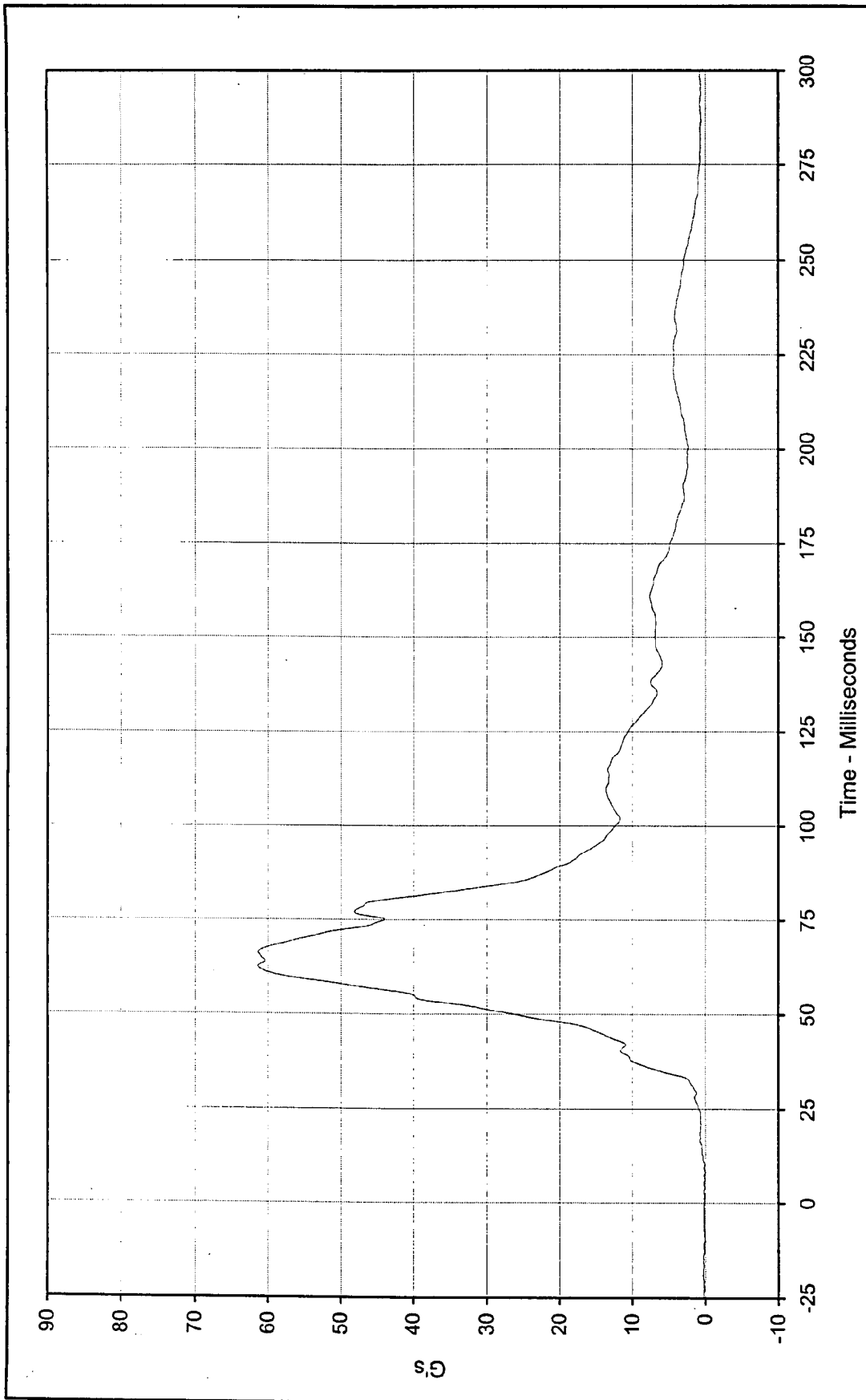
Maximum Value: 12.2 at 12.2 Milliseconds
 Minimum Value: -3.9 at 104.5 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/22/99
 Curve Number: FIL-061





Curve Description:	Passenger Chest Redundant Z	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	24.2 at 71.4 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-13.0 at 115.1 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/22/99			
Curve Number:	FIL-062			

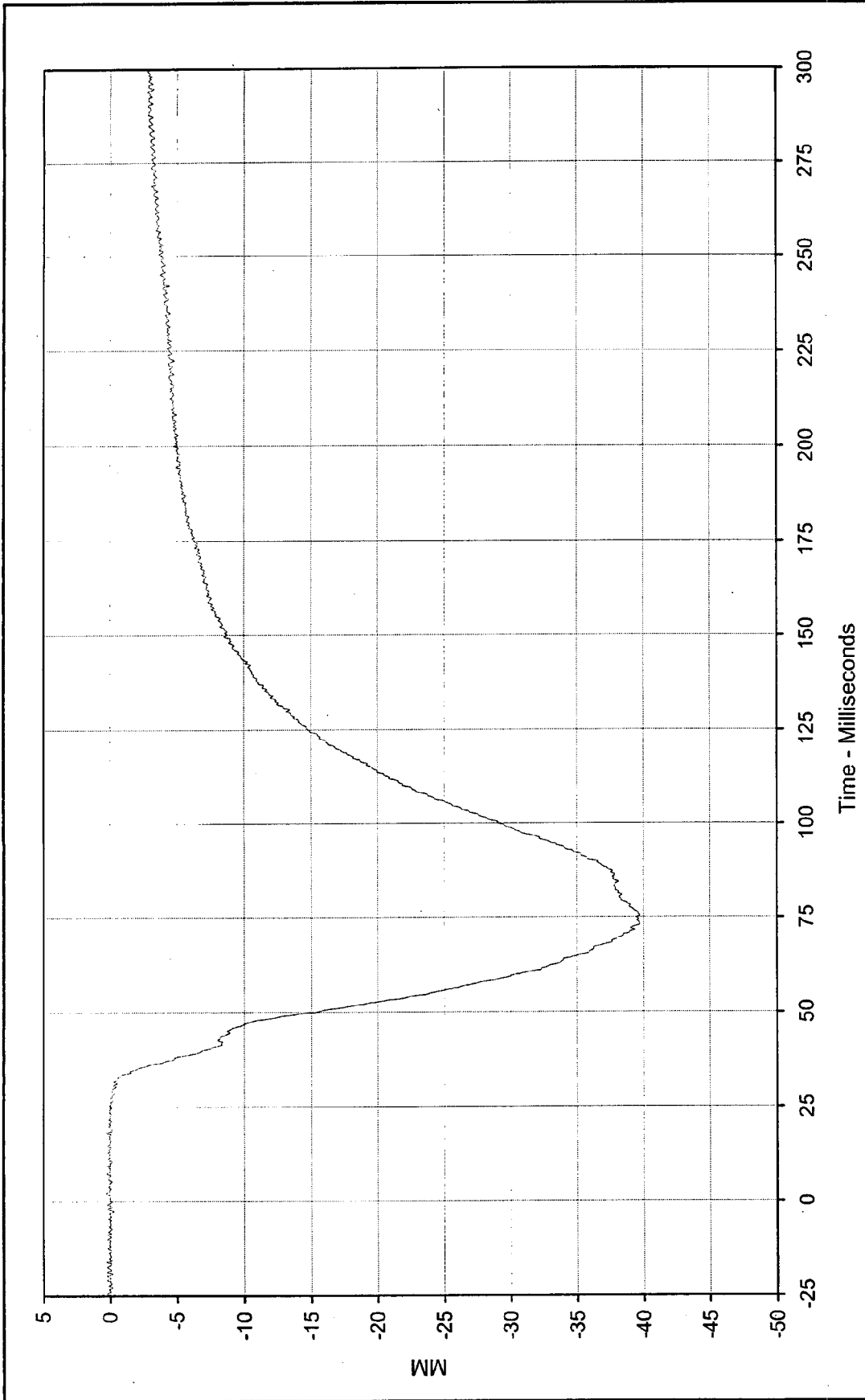




Curve Description: Passenger Chest Resultant Redundant
 Maximum Value: 61.4 at 66.2 Milliseconds
 Minimum Value: 0.0 at 8.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/22/99
 Curve Number: RES-060

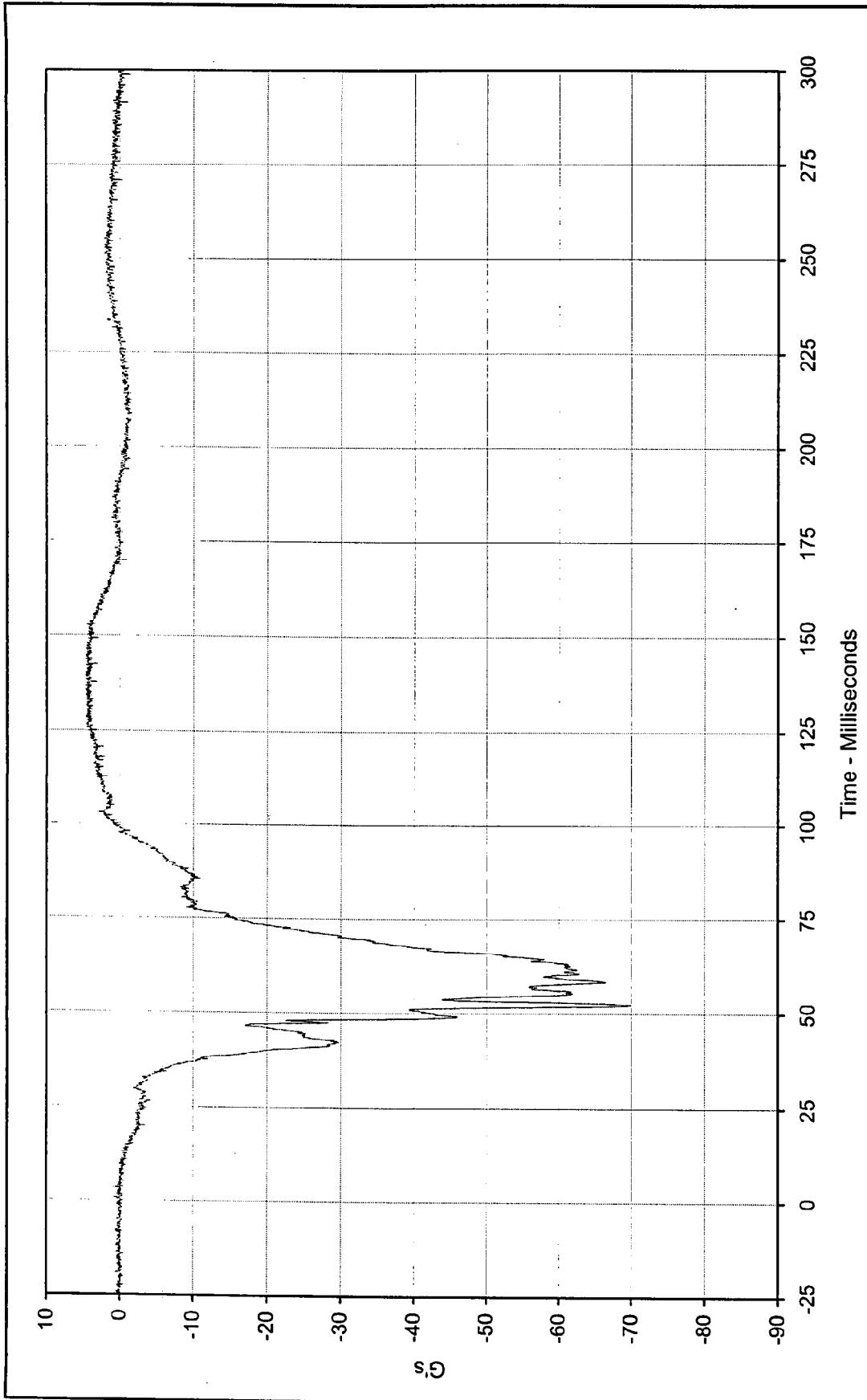
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description:	Passenger Chest Displacement X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	0.3 at 2.1 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-39.7 at 73.2 Milliseconds			
SAE Filter Class:	600			
Date of Test:	12/22/99			
Curve Number:	FIL-063			





Curve Description: Passenger Pelvis X

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Maximum Value: 4.7 at 126.6 Milliseconds

Minimum Value: -69.9 at 52.4 Milliseconds

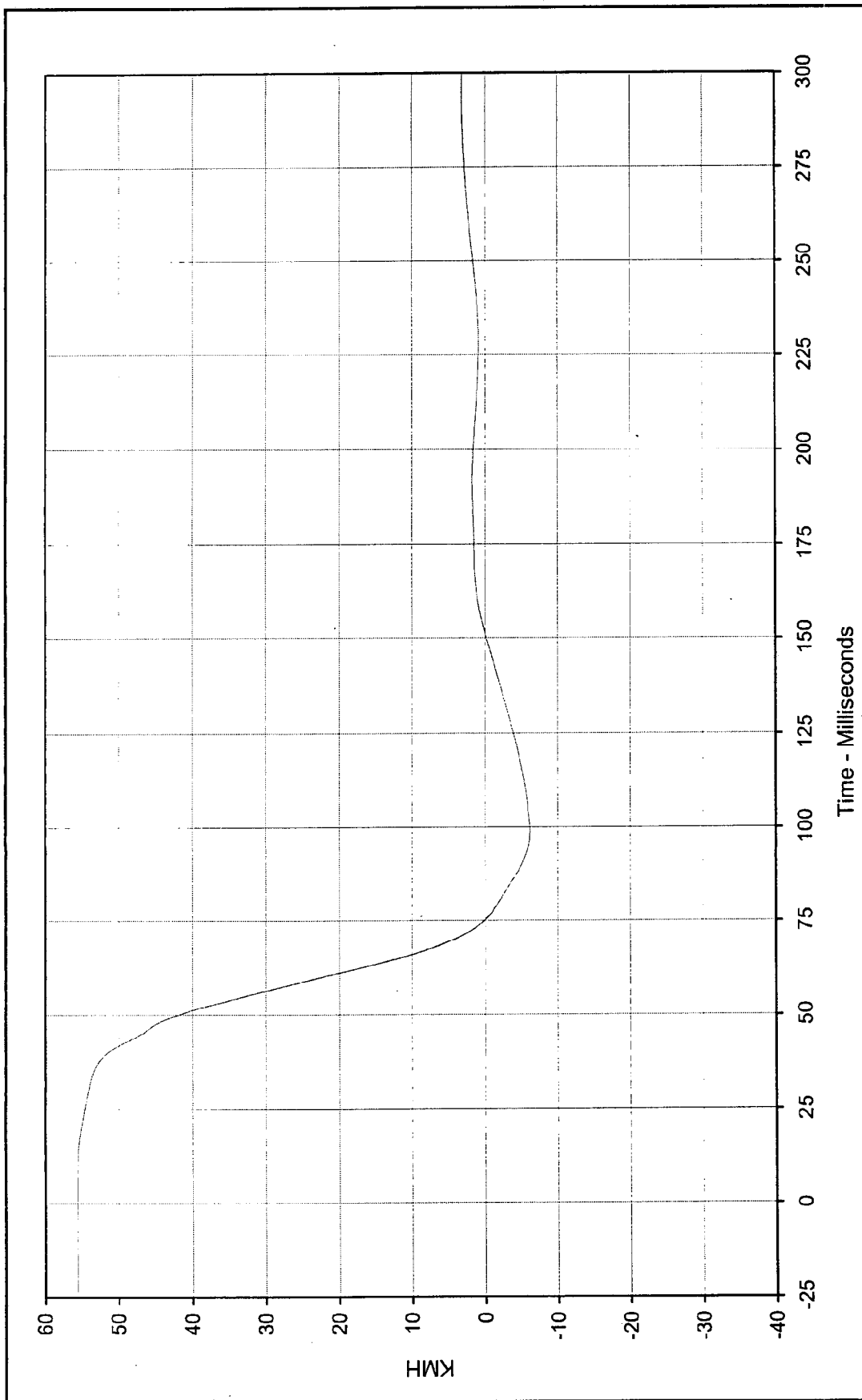
SAE Filter Class: 1000

Date of Test: 12/22/99

Curve Number: FIL-064

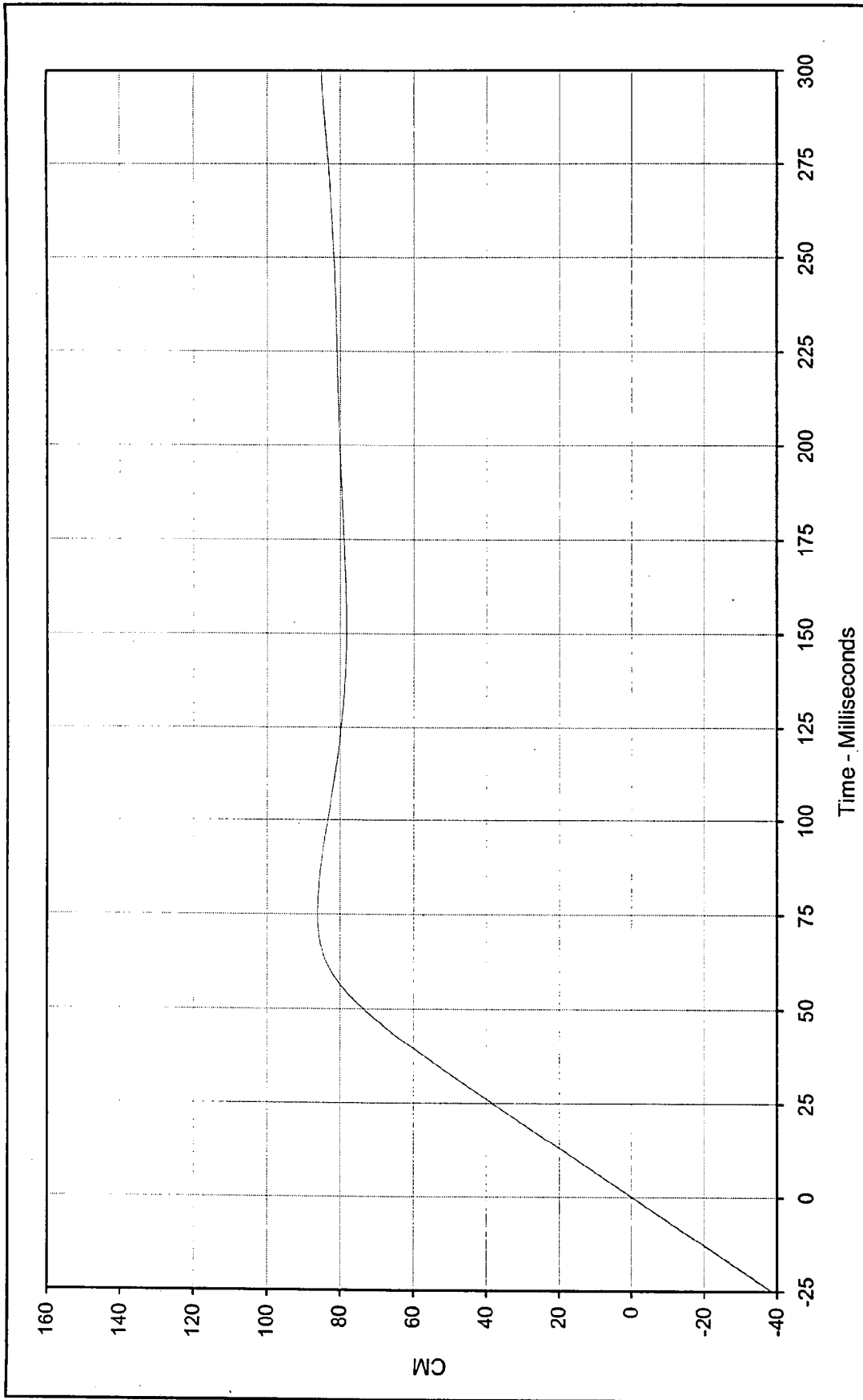
Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description:	Passenger Pelvis X Velocity	Test Program:	2000 NHTSA 35 mph NCAP No.: MY0106
Maximum Value:	55.7 at 0.0 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup
Minimum Value:	-6.2 at 98.9 Milliseconds		
SAE Filter Class:	180		
Date of Test:	12/22/99		
Curve Number:	IN1-064		

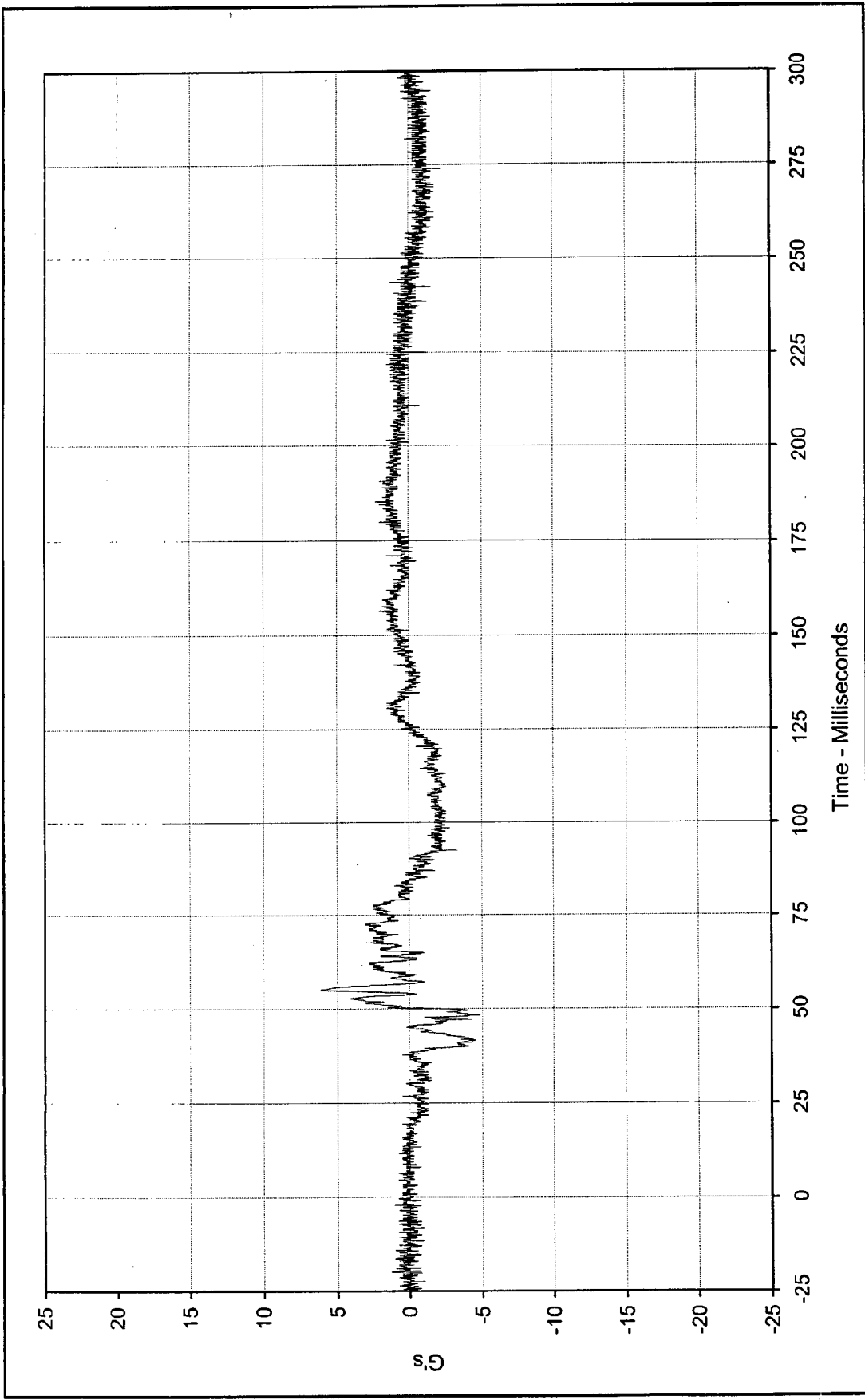




Curve Description:	Passenger Pelvis X Displ.	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	86.2 at 75.2 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	0.0 at 0.0 Milliseconds			

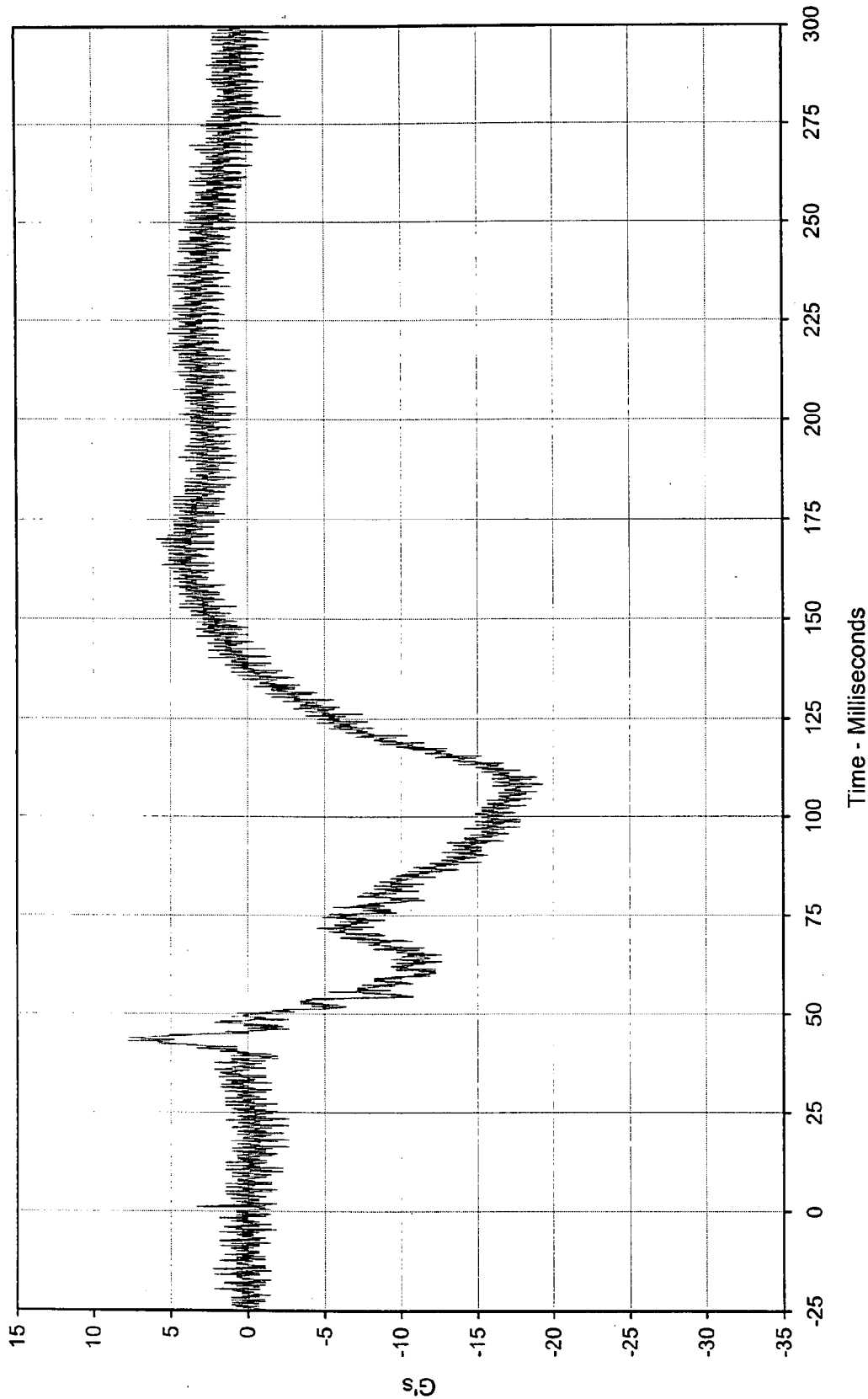


SAE Filter Class:	180
Date of Test:	12/22/99
Curve Number:	IN2-064



Curve Description:	Passenger Pelvis Y	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	6.1 at 54.9 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-4.8 at 48.2 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/22/99			
Curve Number:	FIL-065			





Curve Description: Passenger Pelvis Z

Maximum Value: 7.7 at 42.9 Milliseconds

Minimum Value: -19.4 at 108.1 Milliseconds

SAE Filter Class: 1000

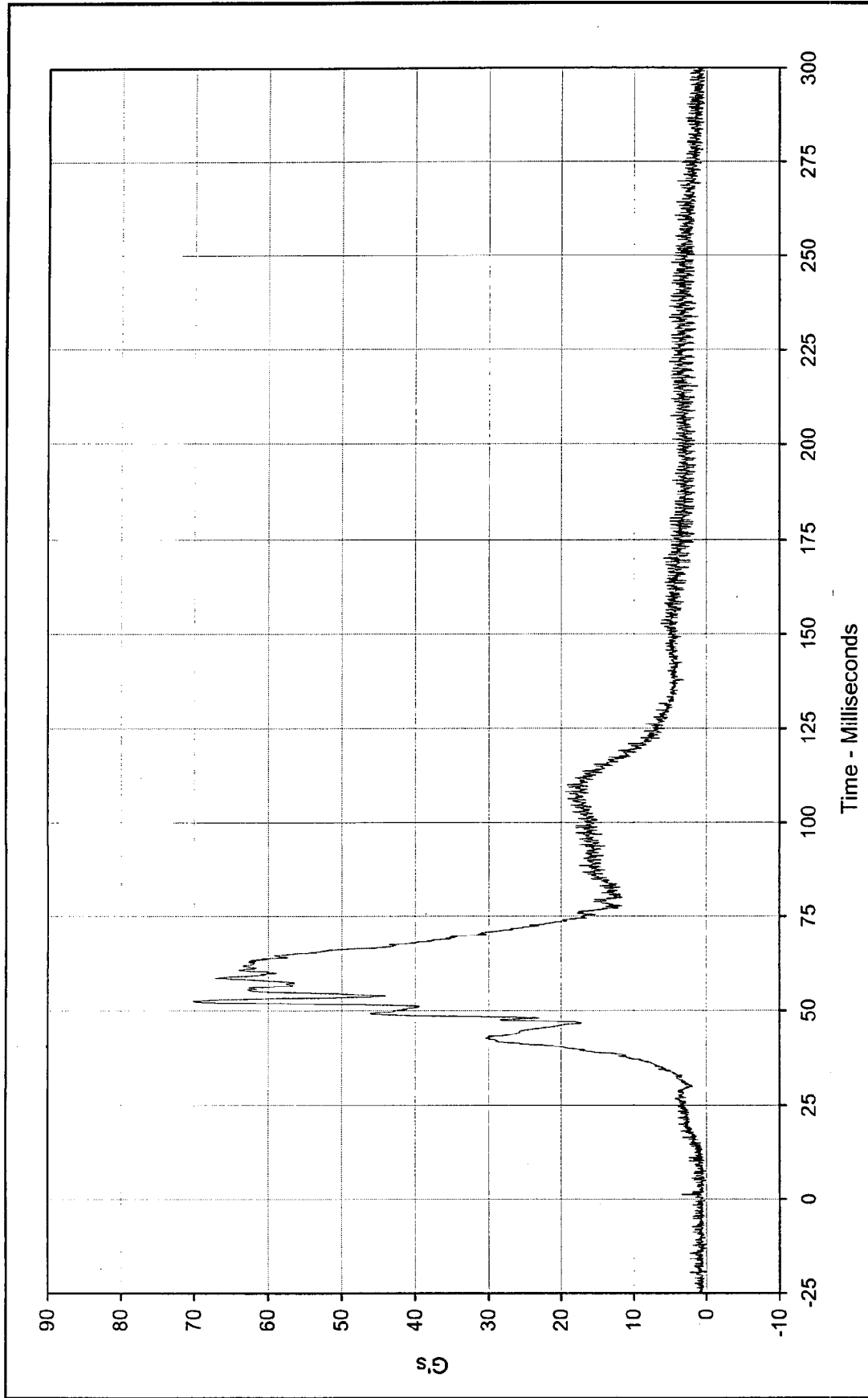
Date of Test: 12/22/99

Curve Number: FIL-066

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description: Passenger Pelvis Resultant

Maximum Value: 70.2 at 52.4 Milliseconds

Minimum Value: 0.1 at 4.9 Milliseconds

SAE Filter Class: 1000

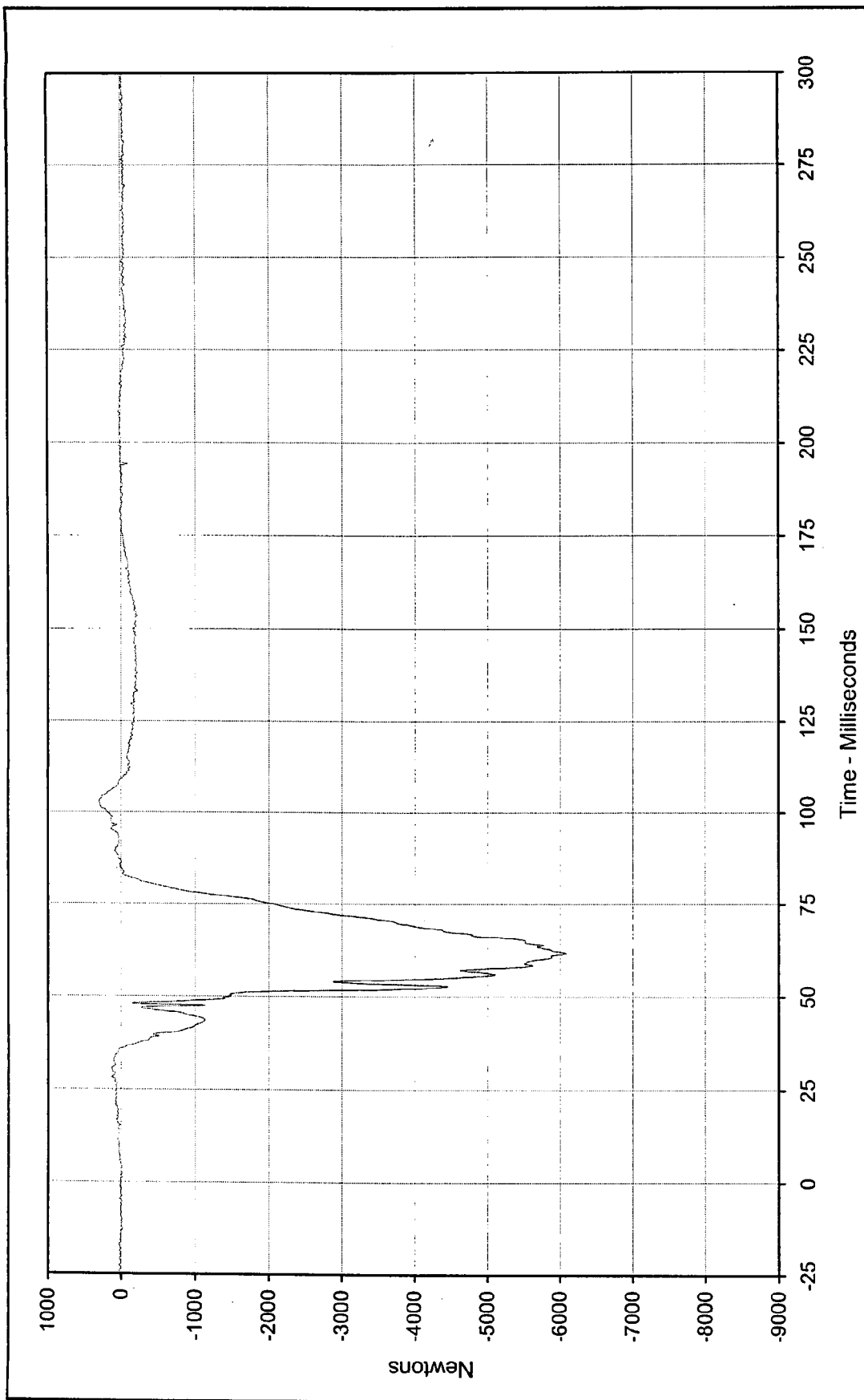
Date of Test: 12/22/99

Curve Number: RES-064

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup

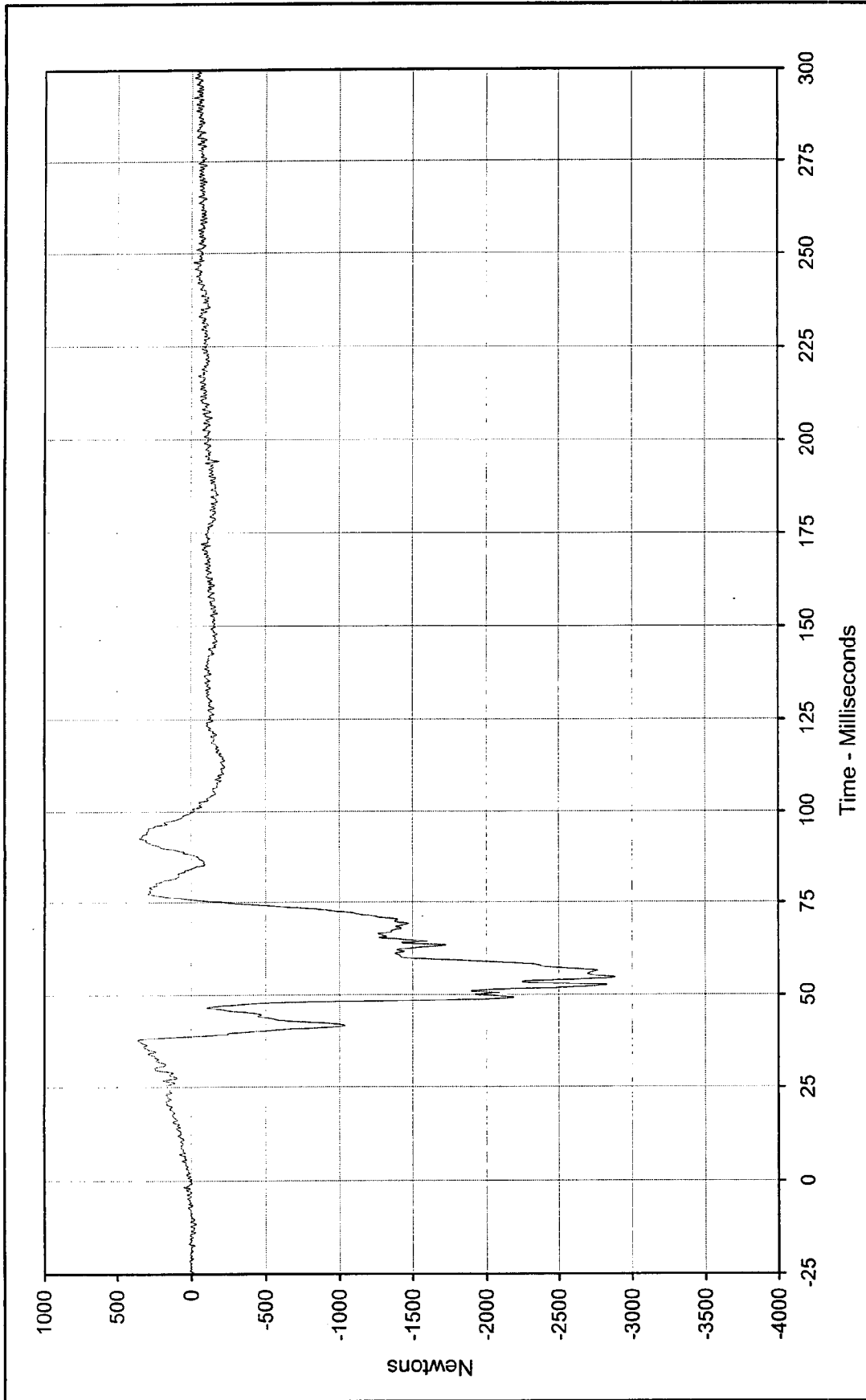




Curve Description: Passenger Left Femur Force
Maximum Value: 307.1 at 102.7 Milliseconds
Minimum Value: -6087.3 at 61.7 Milliseconds
SAE Filter Class: 600
Date of Test: 12/22/99
Curve Number: FIL-067

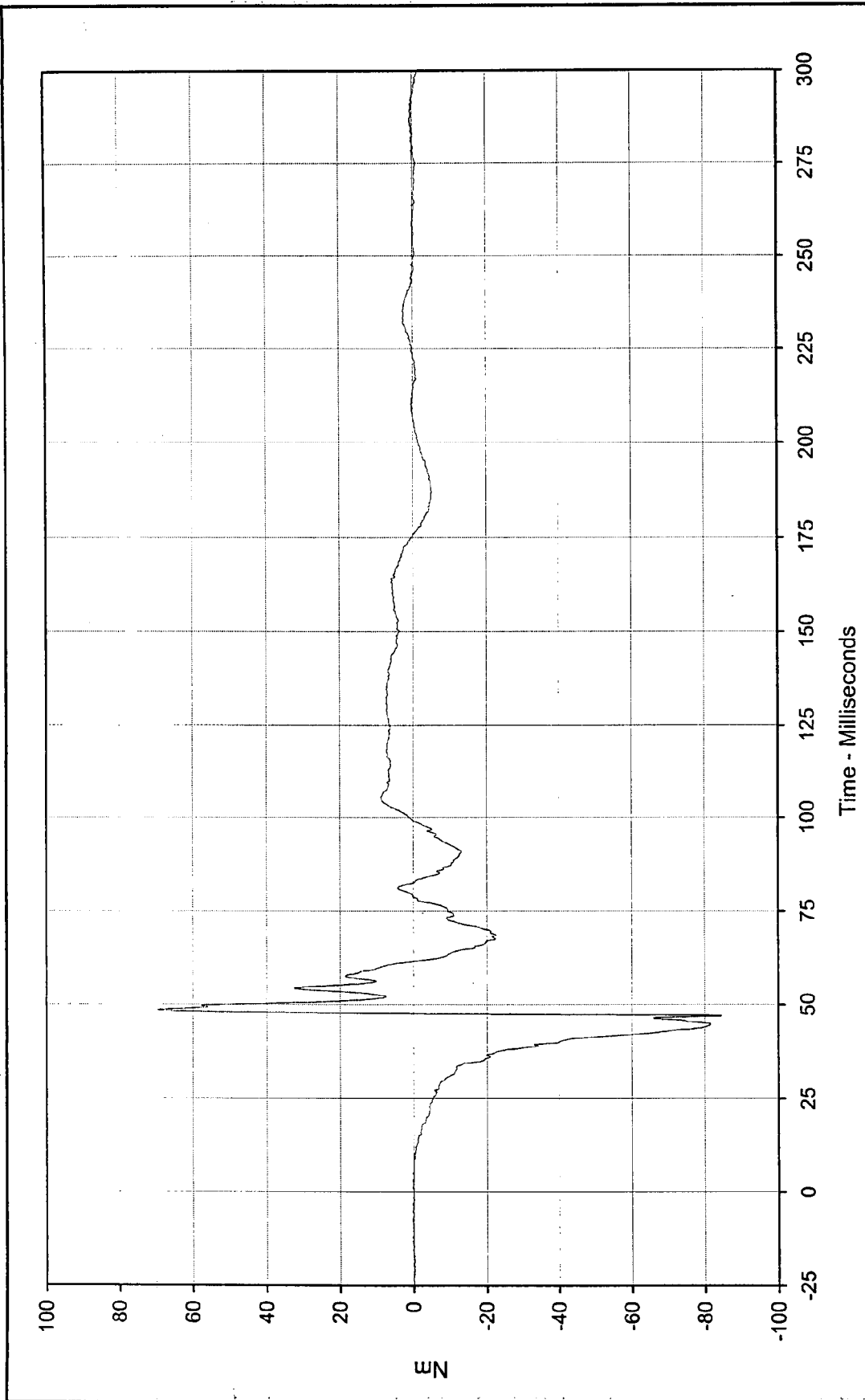
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description:	Passenger Right Femur Force	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	362.4 at 37.7 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-2884.3 at 54.7 Milliseconds			
SAE Filter Class:	600			
Date of Test:	12/22/99			
Curve Number:	FIL-068			





Curve Description: Passenger Left Upper Tibia Moment X

Maximum Value: 69.6 at 48.6 Milliseconds

Minimum Value: -84.6 at 47.1 Milliseconds

SAE Filter Class: 600

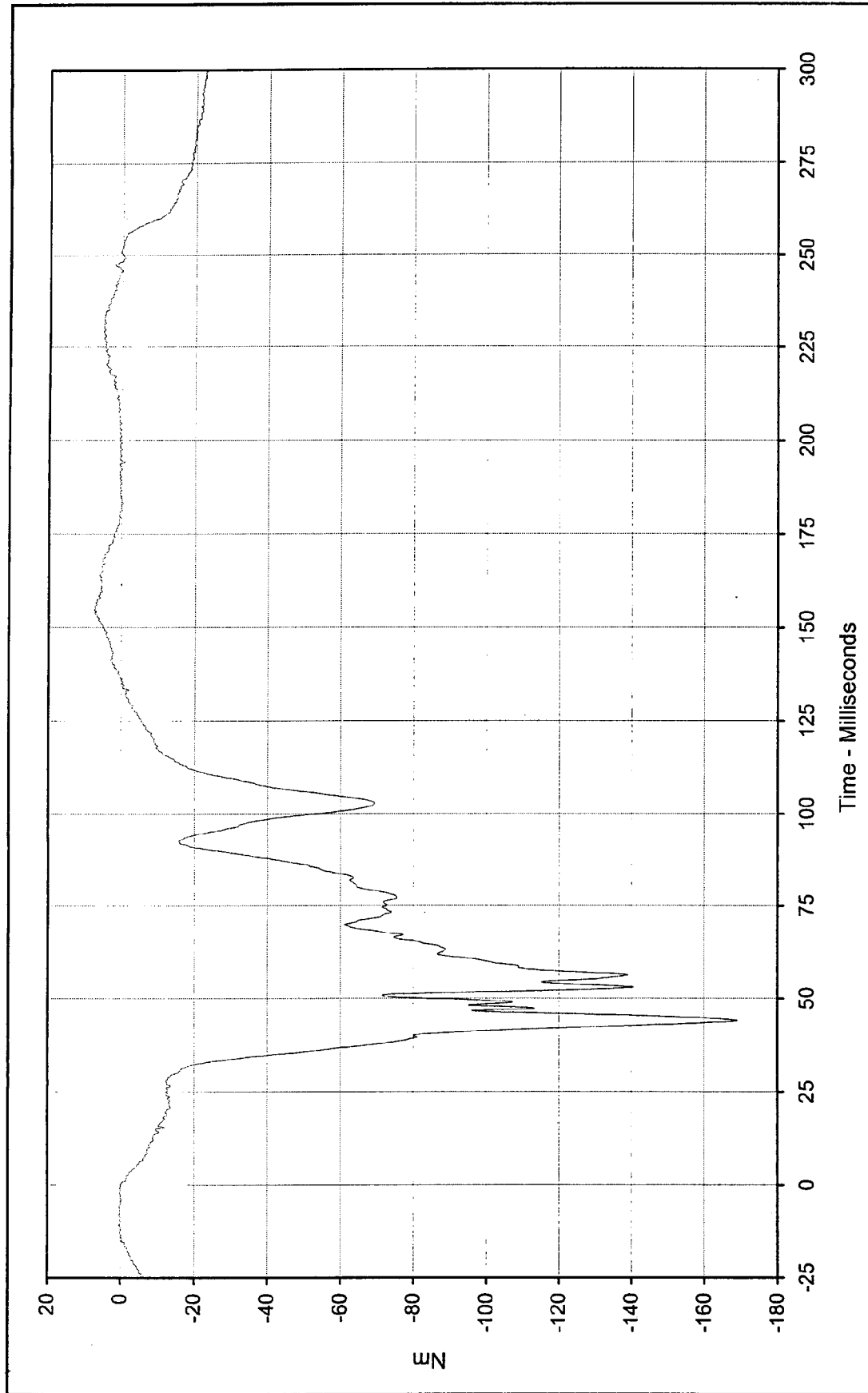
Date of Test: 12/22/99

Curve Number: FIL-069

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description: Passenger Left Upper Tibia Moment Y

Maximum Value: 7.4 at 154.6 Milliseconds

Minimum Value: -169.1 at 44.0 Milliseconds

SAE Filter Class: 600

Date of Test: 12/22/99

Curve Number: FIL-070

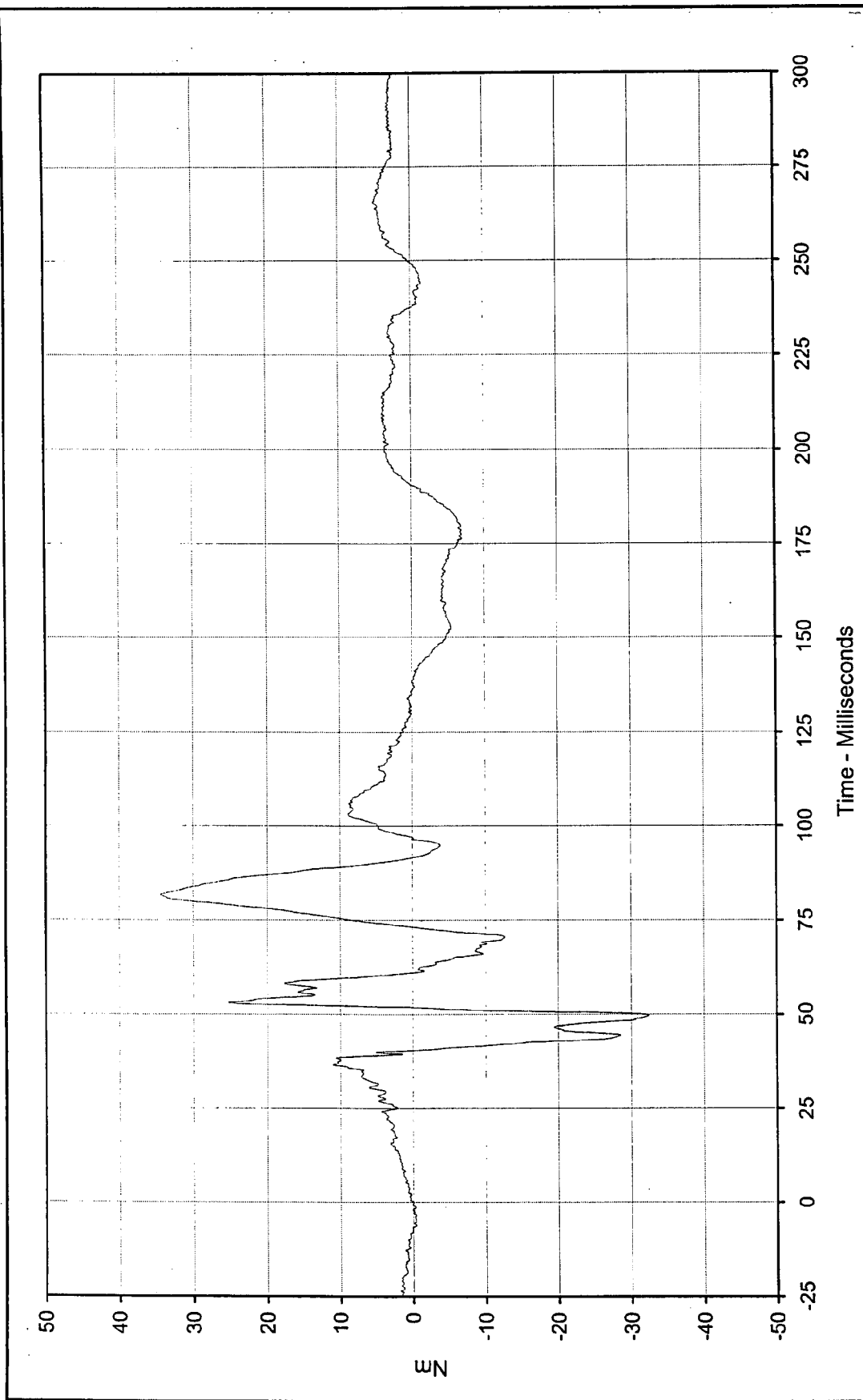
Test Program:

2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle:

2000 Chevrolet S-10 Pickup

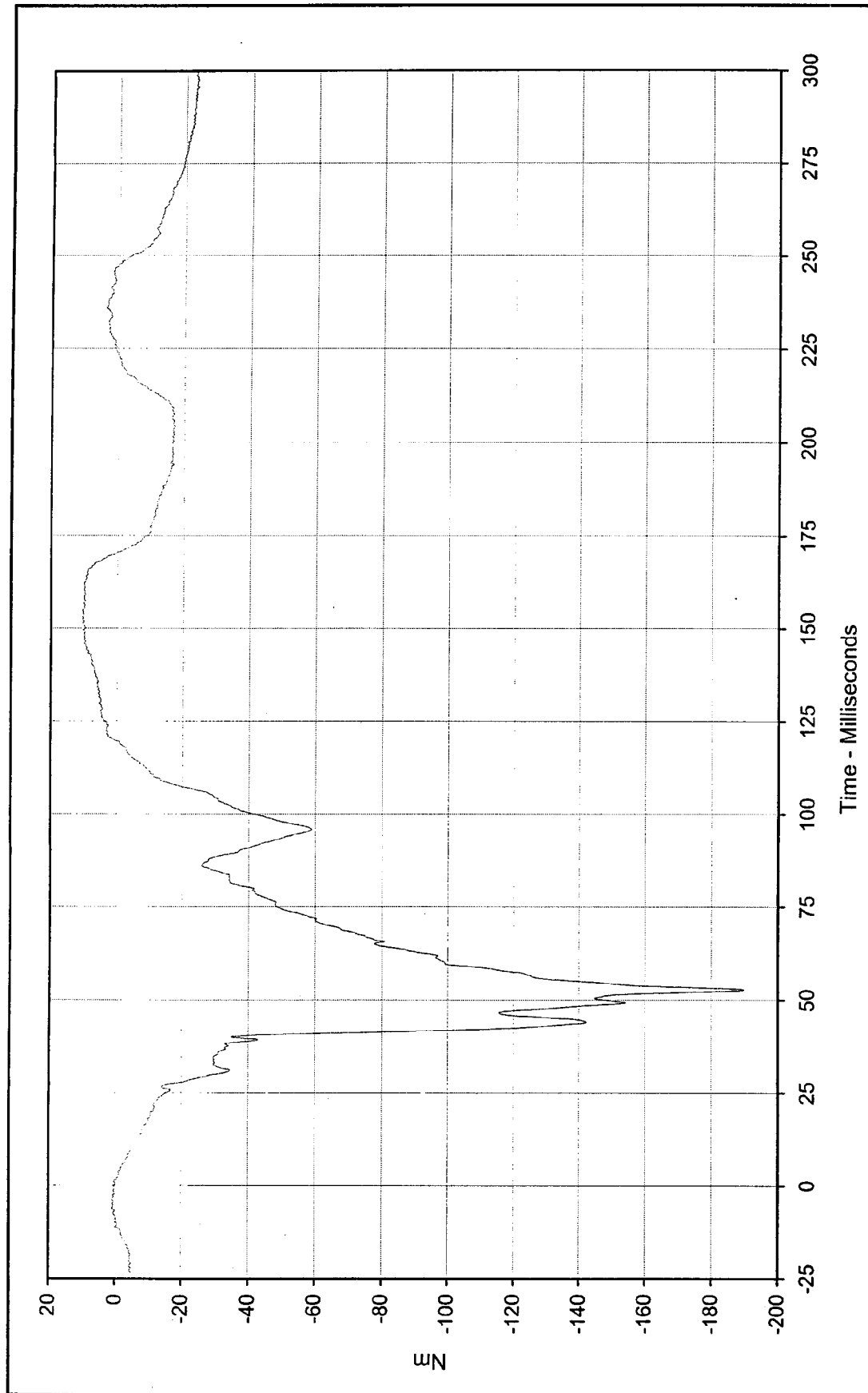




Curve Description: Passenger Right Upper Tibia Moment X
 Maximum Value: 34.4 at 81.6 Milliseconds
 Minimum Value: -32.4 at 49.7 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/22/99
 Curve Number: FIL-071

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description: Passenger Right Upper Tibia Moment Y

Maximum Value: 10.5 at 153.2 Milliseconds

Minimum Value: -189.9 at 52.7 Milliseconds

SAE Filter Class: 600

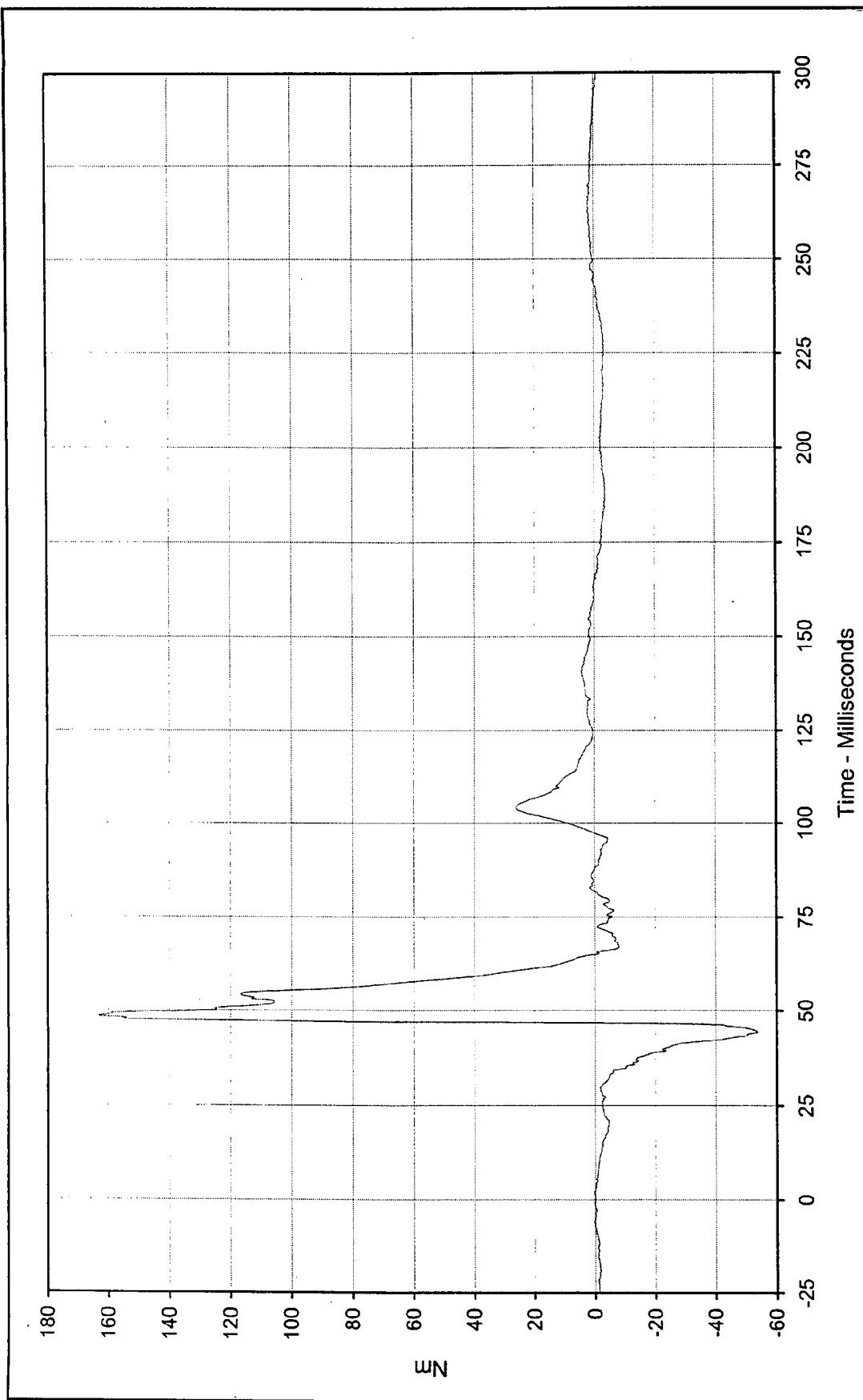
Date of Test: 12/22/99

Curve Number: FIL-072

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup

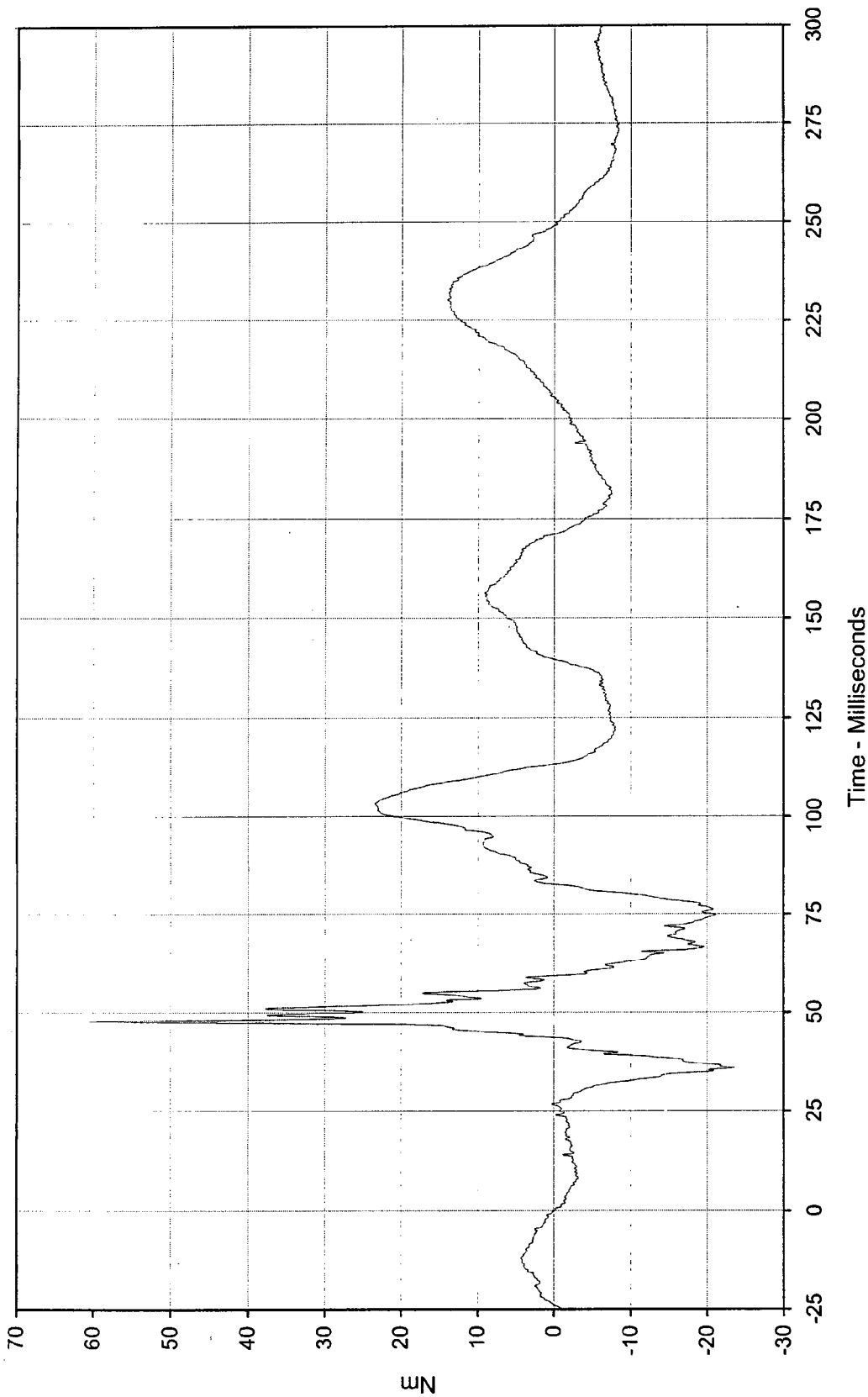




Curve Description: Passenger Left Lower Tibia Moment X
Maximum Value: 163.2 at 48.5 Milliseconds
Minimum Value: -53.9 at 44.6 Milliseconds
SAE Filter Class: 600
Date of Test: 12/22/99
Curve Number: FIL-073

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description: Passenger Left Lower Tibia Moment Y

Maximum Value: 60.5 at 47.7 Milliseconds

Minimum Value: -23.6 at 35.8 Milliseconds

SAE Filter Class: 600

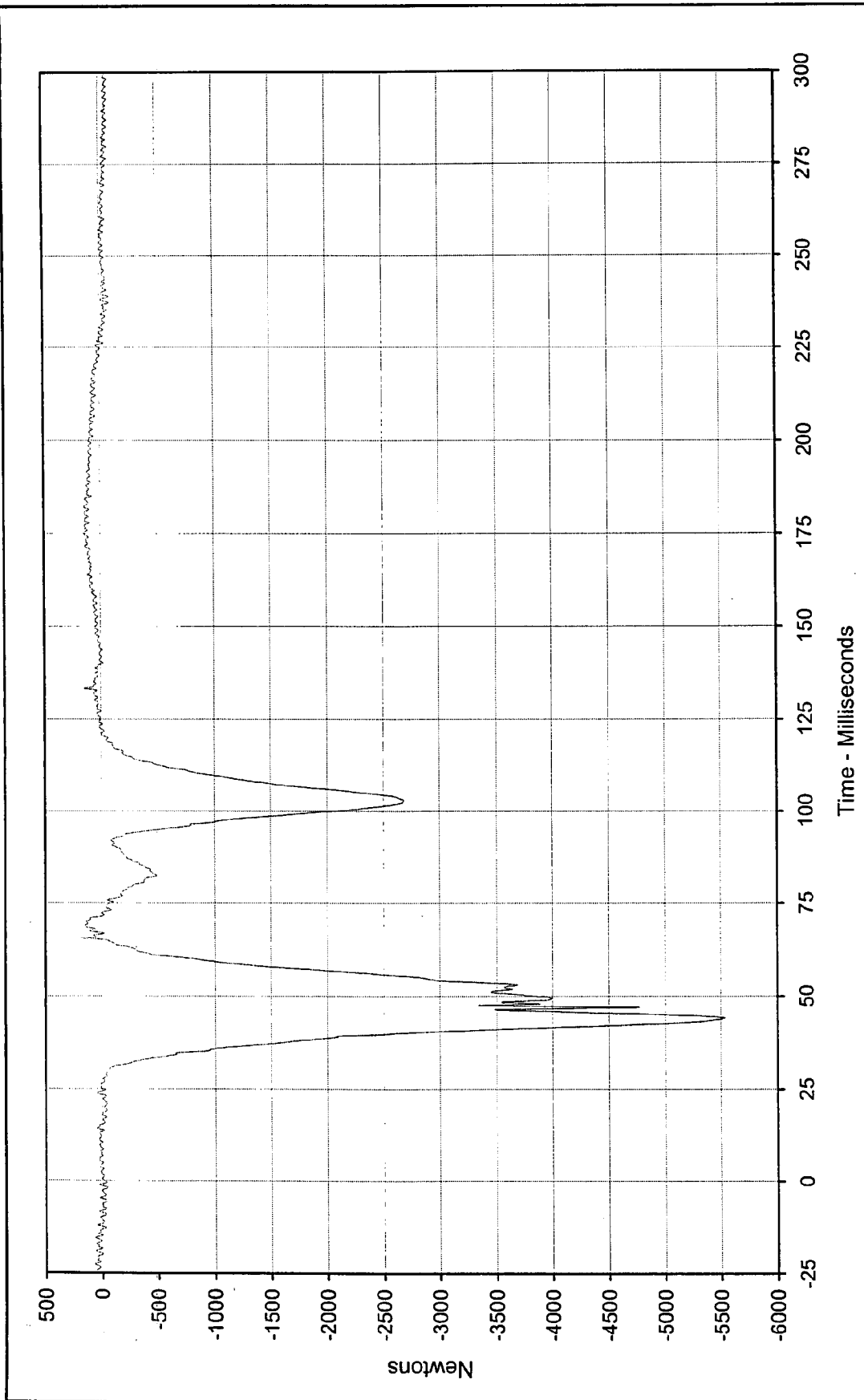
Date of Test: 12/22/99

Curve Number: FIL-074

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup

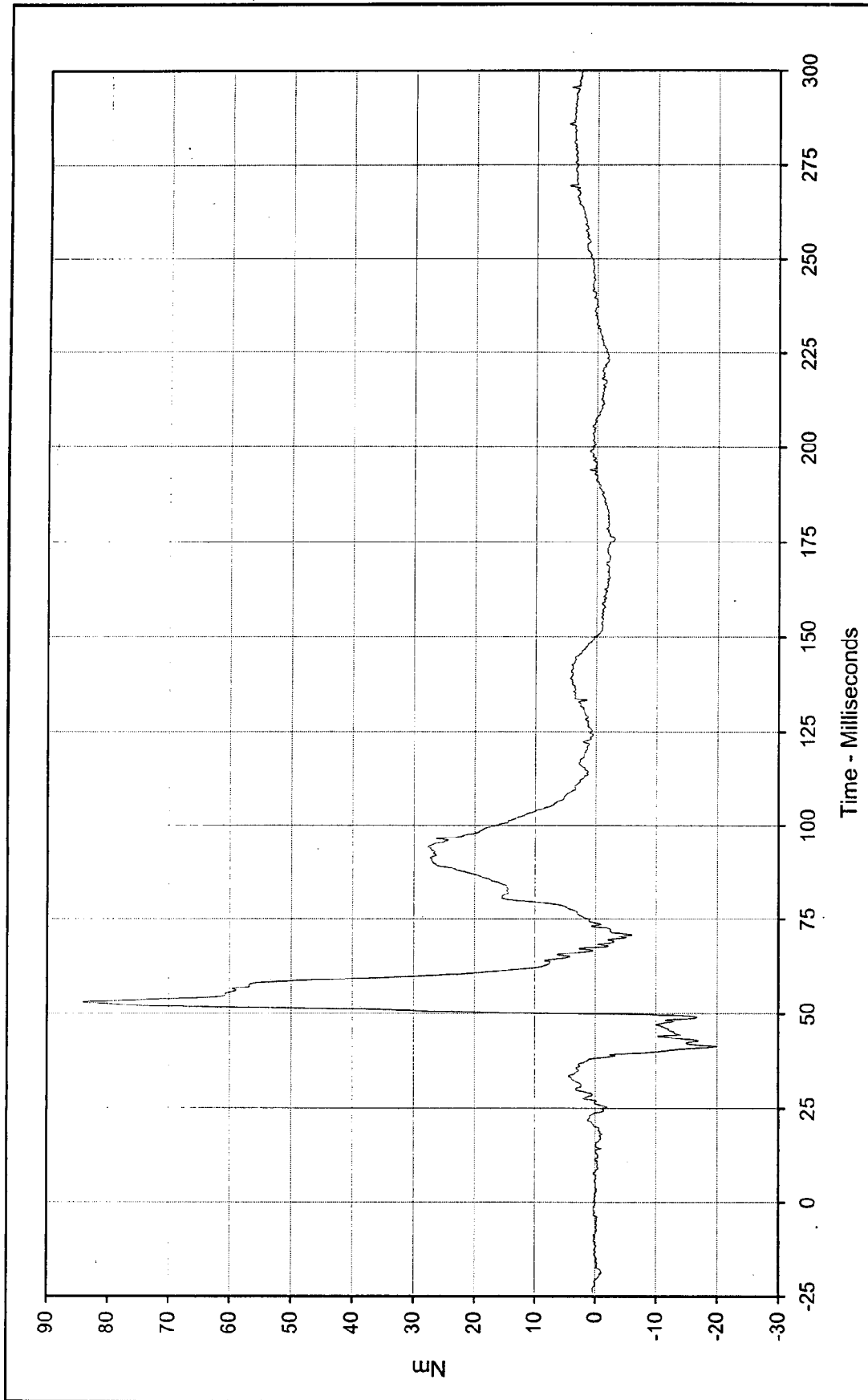




Curve Description: Passenger Left Lower Tibia Force Z
 Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup

Maximum Value: 188.8 at 65.5 Milliseconds
 Minimum Value: -5533.8 at 44.1 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/22/99
 Curve Number: FIL-075





Curve Description: Passenger Right Lower Tibia Moment X

Maximum Value: 84.1 at 53.0 Milliseconds

Minimum Value: -20.0 at 41.2 Milliseconds

SAE Filter Class: 600

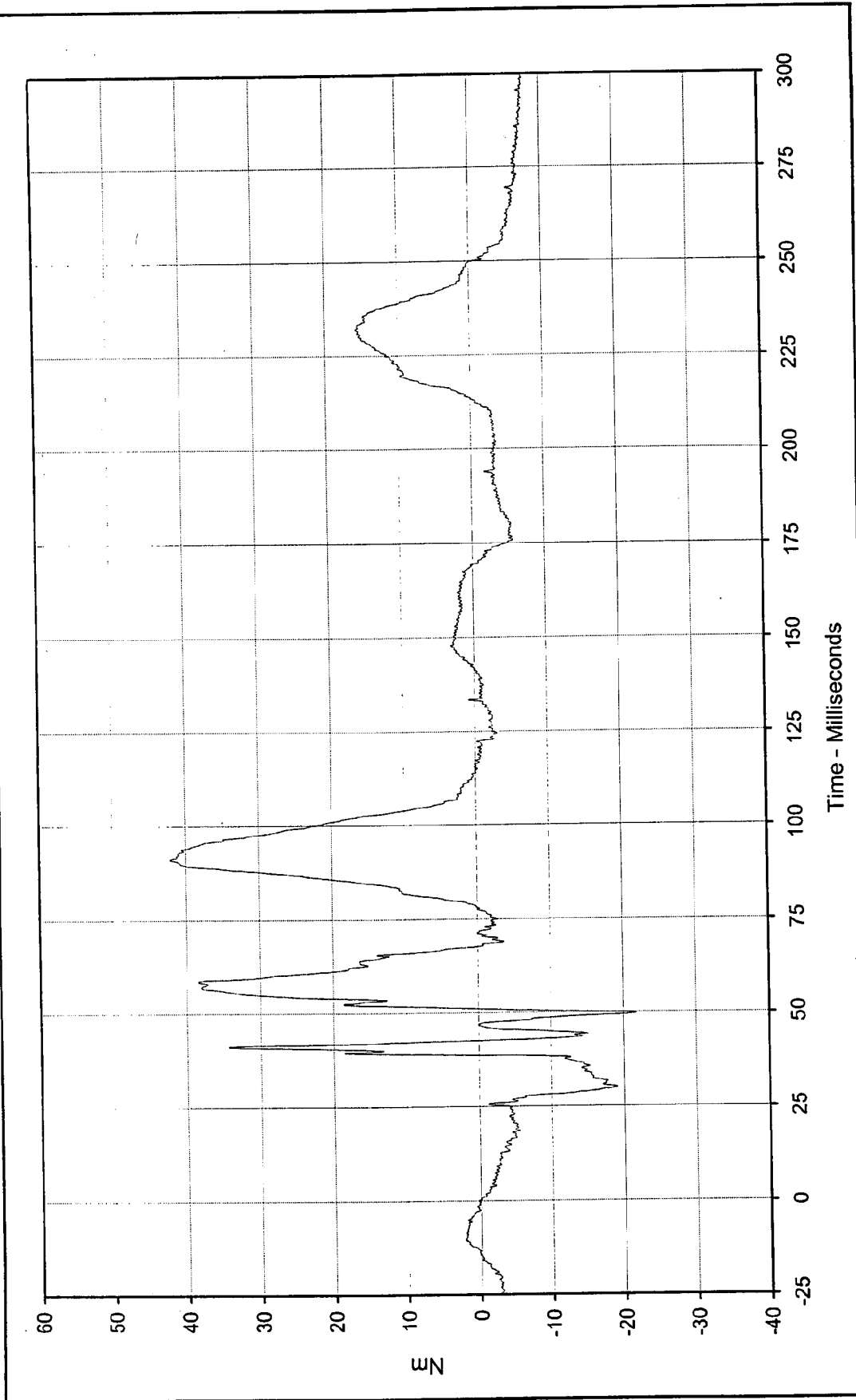
Date of Test: 12/22/99

Curve Number: FIL-076

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup

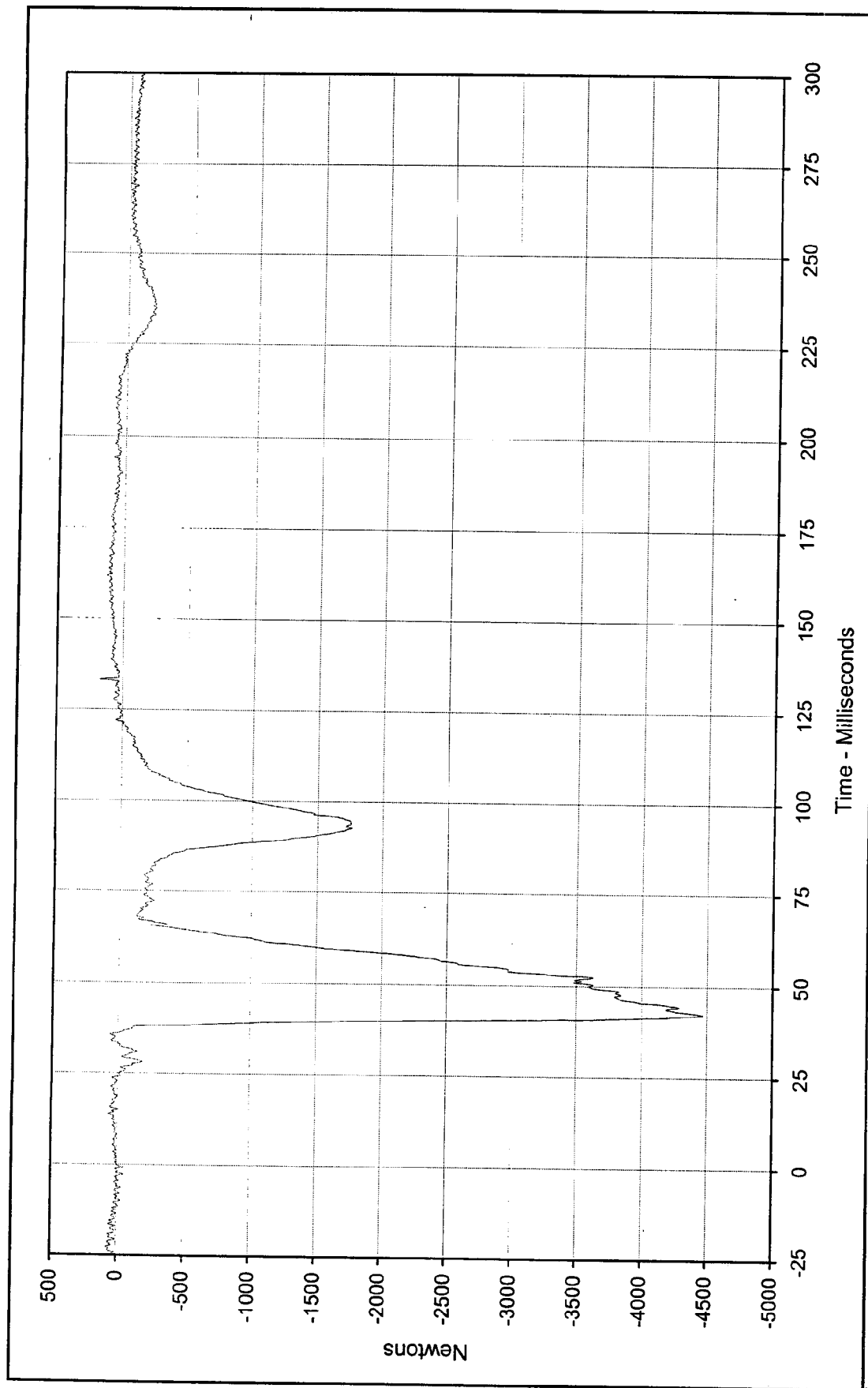




Curve Description: Passenger Right Lower Tibia Moment Y
 Maximum Value: 42.1 at 90.9 Milliseconds
 Minimum Value: -21.8 at 49.6 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/22/99
 Curve Number: FIL-077

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description: Passenger Right lower Tibia Force Z

Maximum Value: 170.7 at 133.2 Milliseconds

Minimum Value: -4471.3 at 42.4 Milliseconds

SAE Filter Class: 600

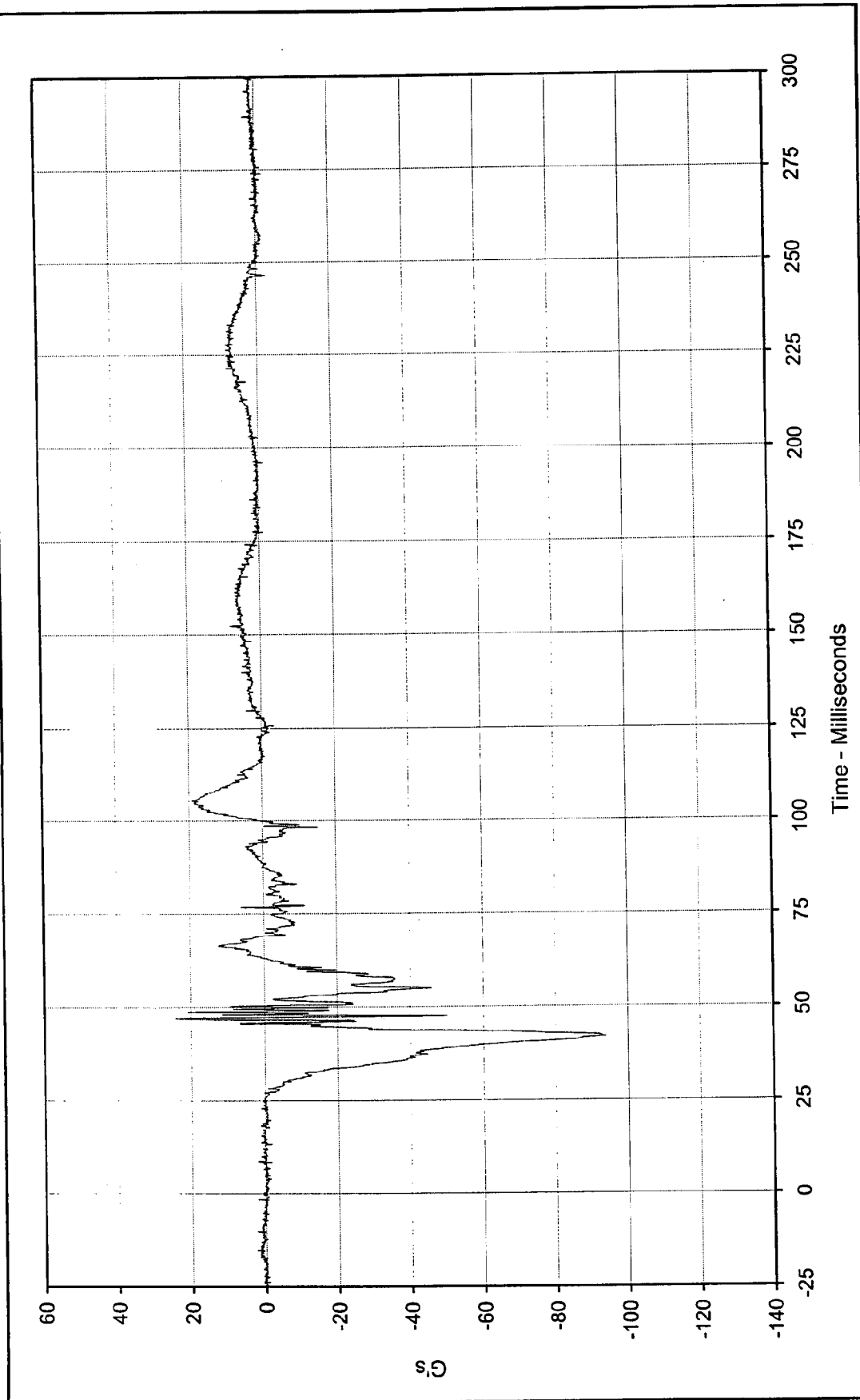
Date of Test: 12/22/99

Curve Number: FIL-078

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup

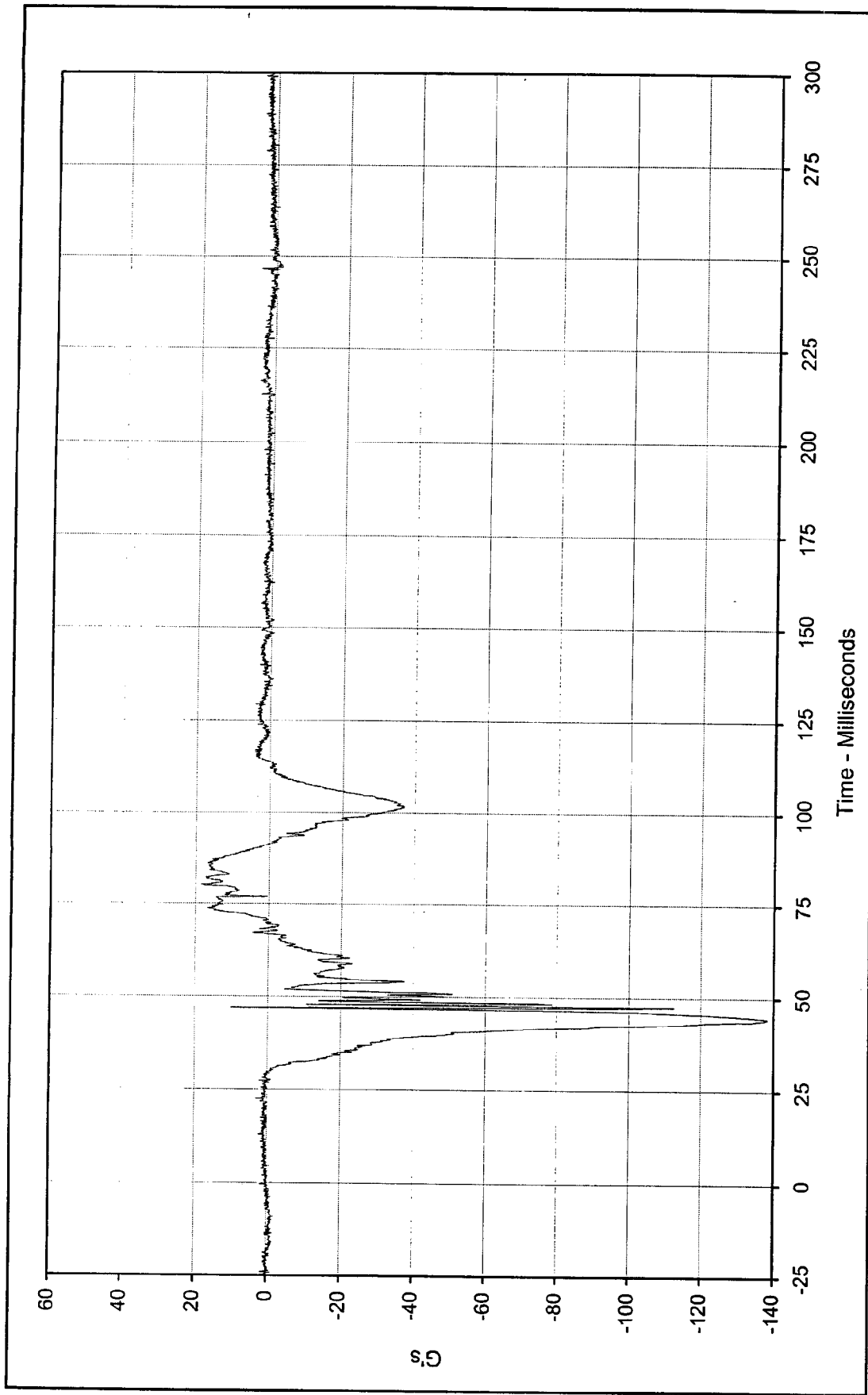




Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup

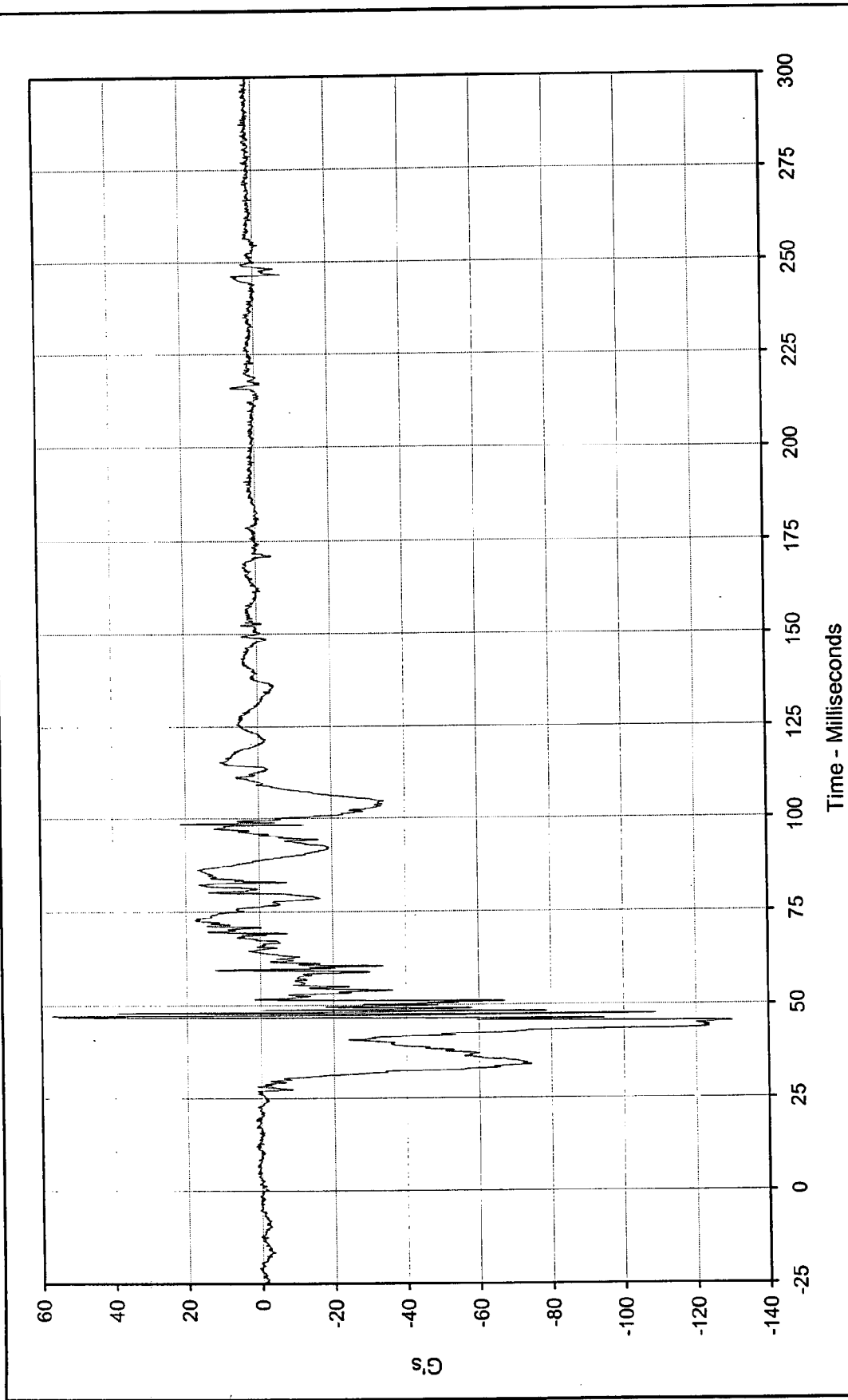
Curve Description: Passenger Left Foot Aft X
 Maximum Value: 23.7 at 47.1 Milliseconds
 Minimum Value: -93.8 at 42.0 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/22/99
 Curve Number: FIL-079





Curve Description:	Passenger Left Foot Aft Z		Test Program:	2000 NHTSA 35 mph NCAP No.: MY0106	
Maximum Value:	18.4	at 80.1 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-138.3	at 44.2 Milliseconds			
SAE Filter Class:	1000				
Date of Test:	12/22/99				
Curve Number:	FIL-080				

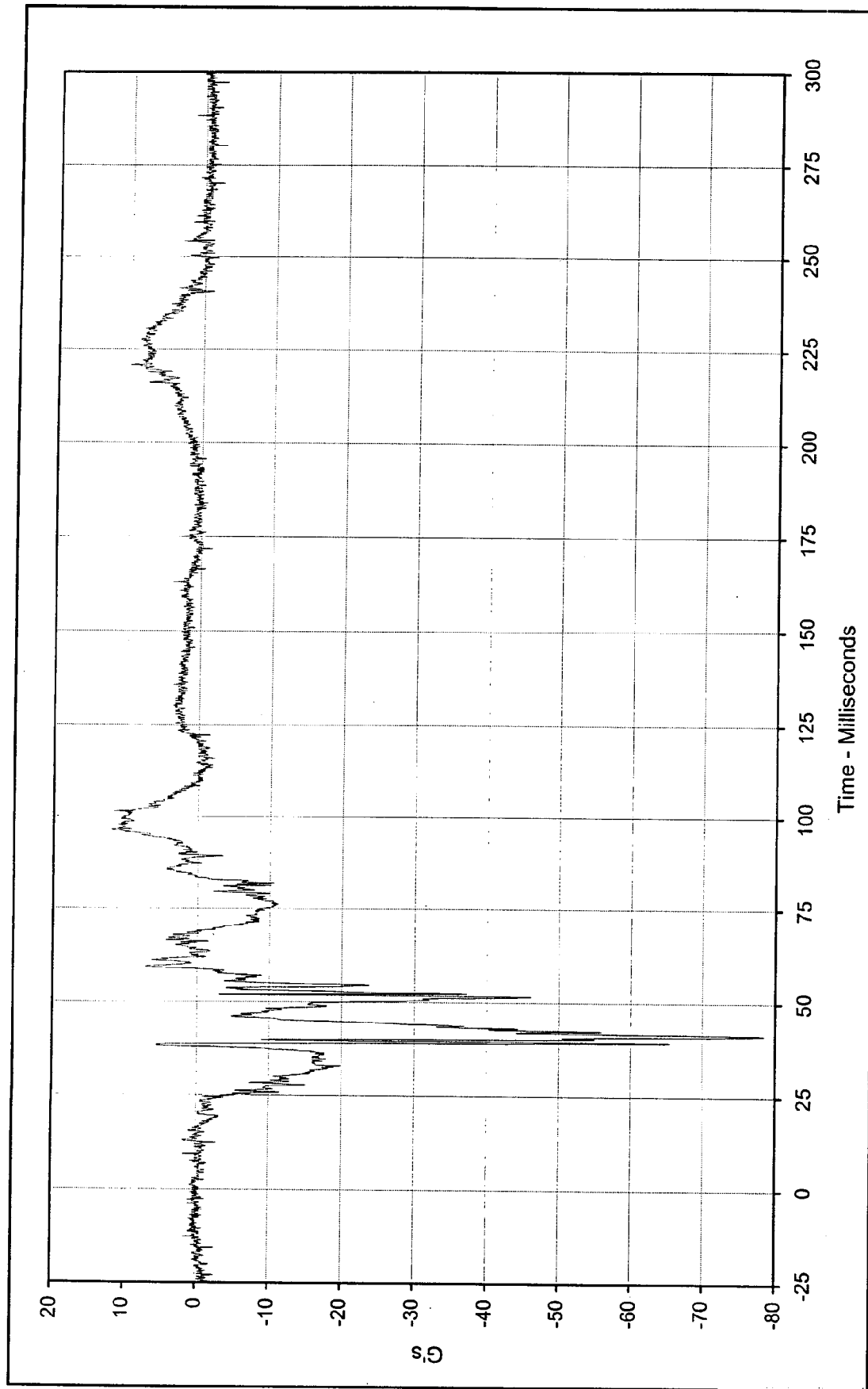




Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup

Curve Description: Passenger Left Foot Fore Z
 Maximum Value: 55.6 at 46.9 Milliseconds
 Minimum Value: -130.0 at 45.4 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/22/99
 Curve Number: FIL-081

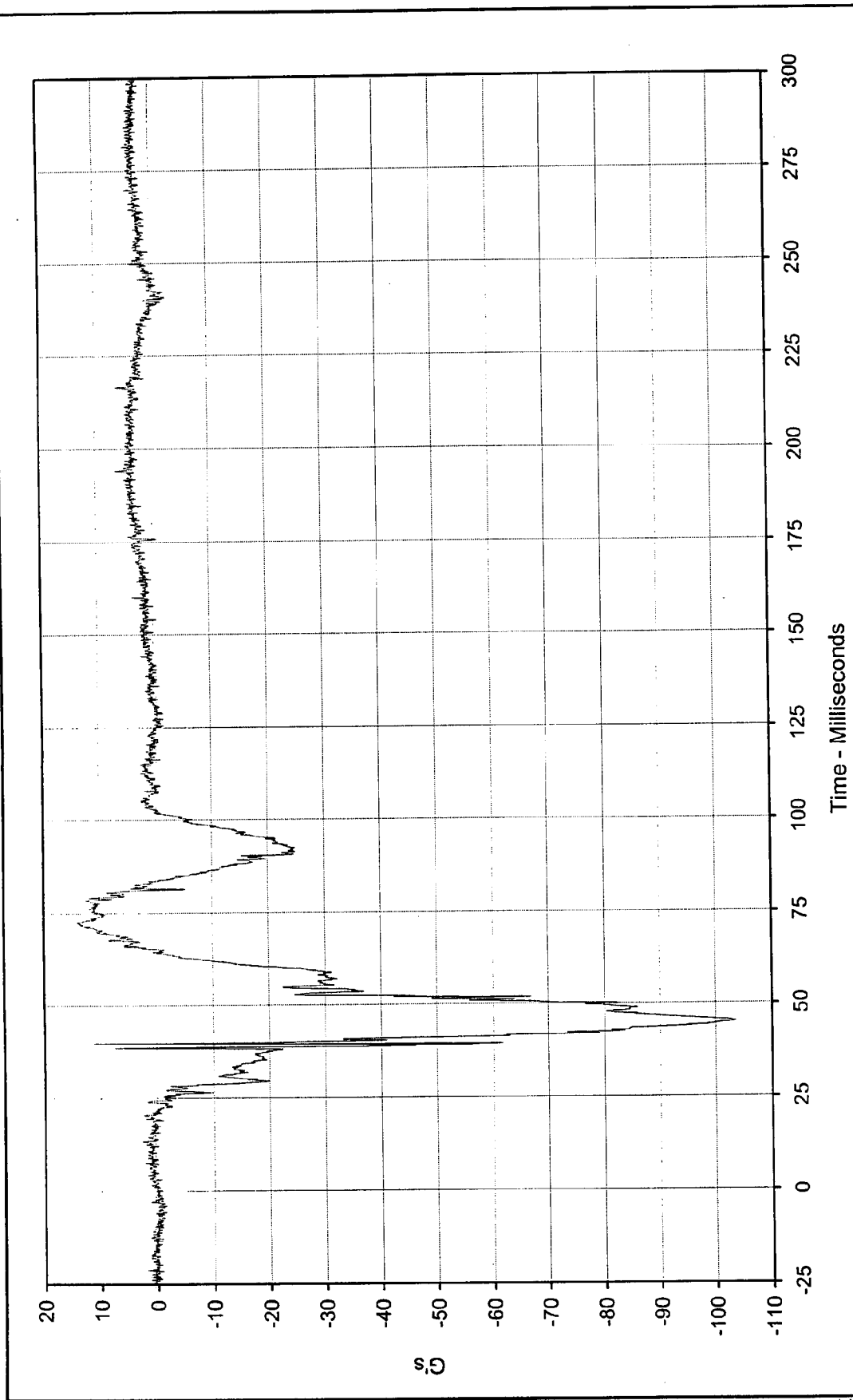




Curve Description: Passenger Right Foot Aft X
 Maximum Value: 12.0 at 96.3 Milliseconds
 Minimum Value: -78.5 at 41.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/22/99
 Curve Number: FIL-082

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup

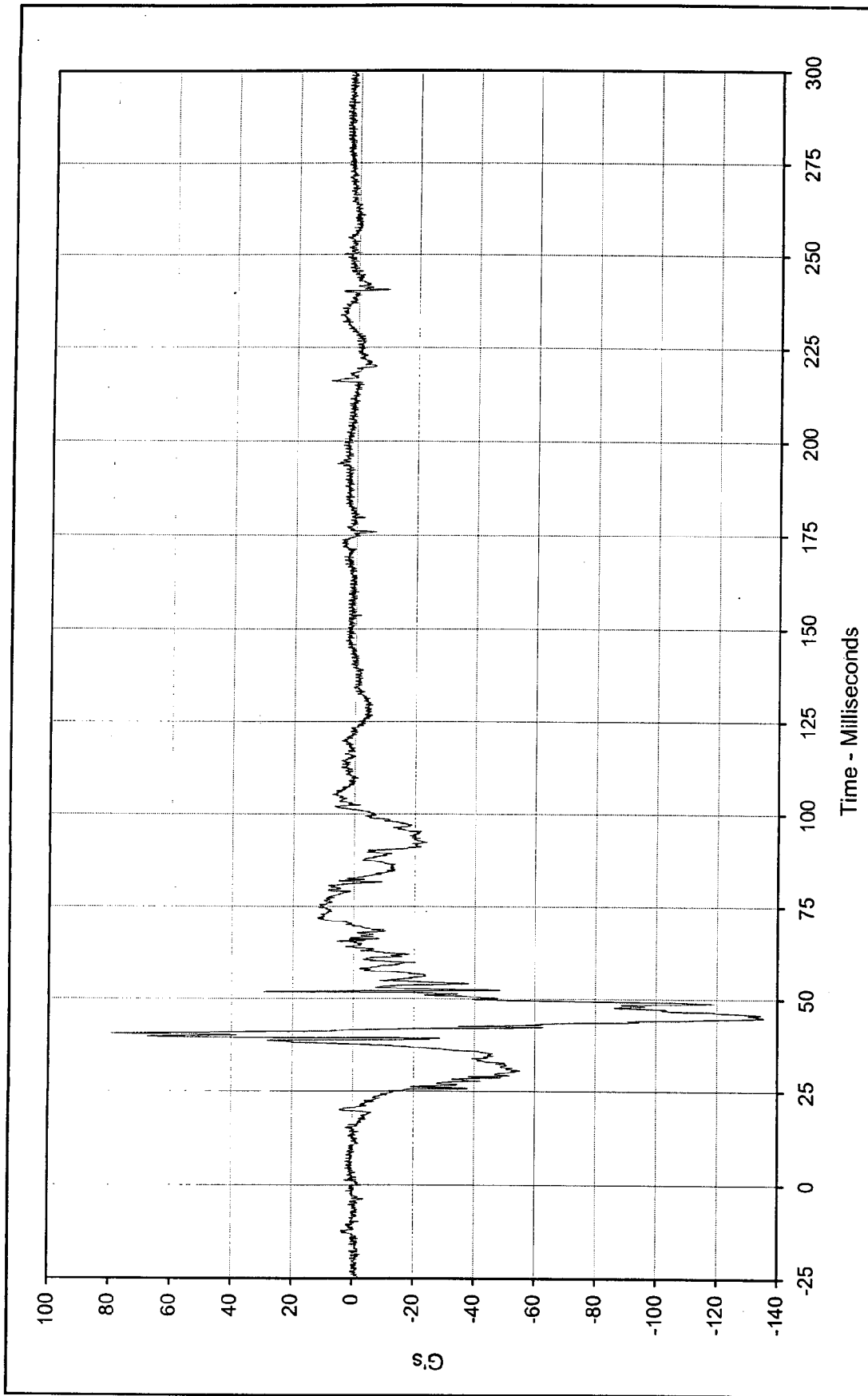




Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup

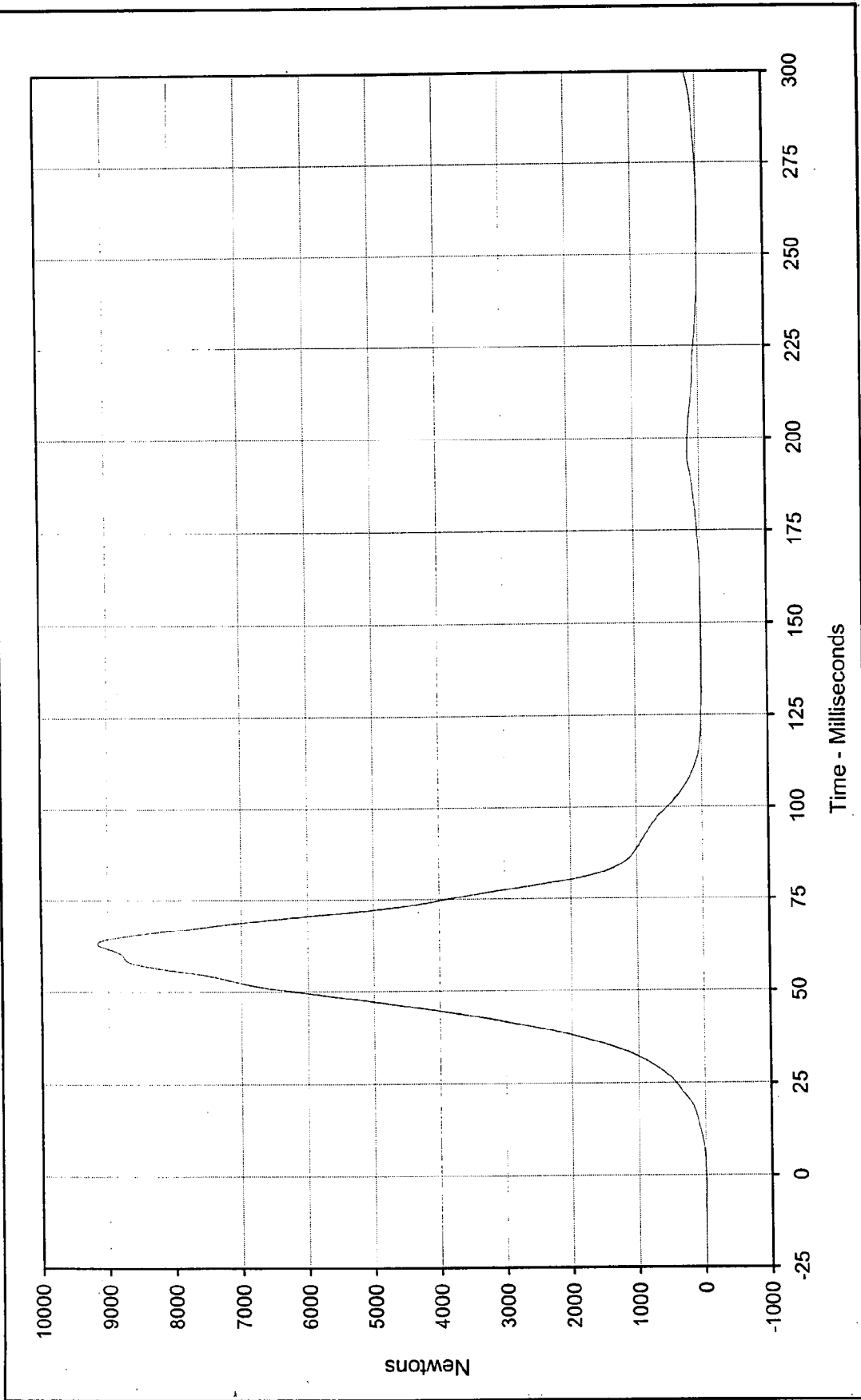
Curve Description: Passenger Right Foot Aft Z
 Maximum Value: 14.0 at 72.5 Milliseconds
 Minimum Value: -103.6 at 45.1 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/22/99
 Curve Number: FIL-083





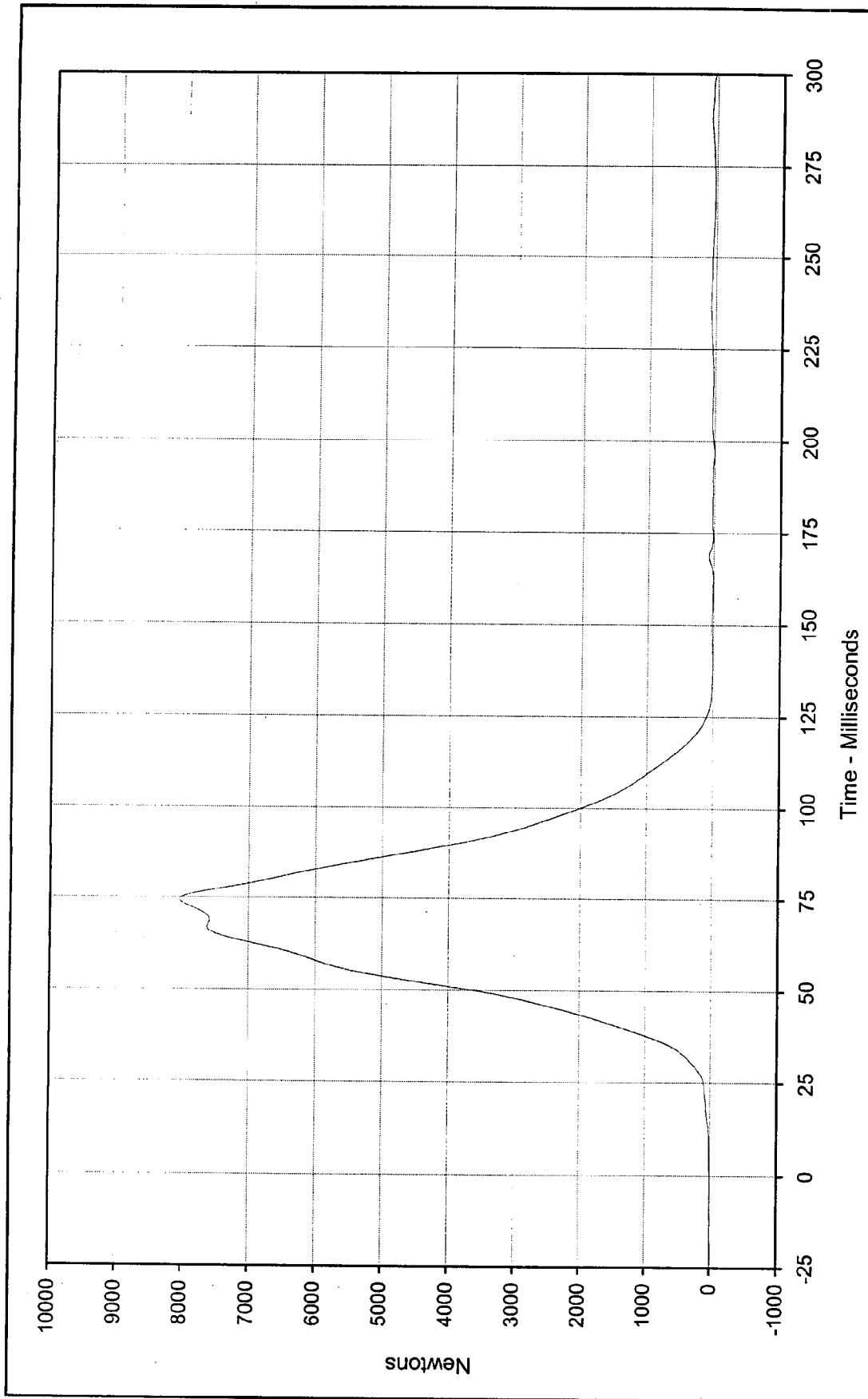
Curve Description:	Passenger Right Foot Fore Z		Test Program:	2000 NHTSA 35 mph NCAP No.: MY0106	
Maximum Value:	79.4	at 40.5 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-135.6	at 45.0 Milliseconds			
SAE Filter Class:	1000				
Date of Test:	12/22/99				
Curve Number:	FIL-084				





Curve Description:	Passenger Lap Belt Force	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	9154.0 at 63.1 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-14.6 at 140.7 Milliseconds			
SAE Filter Class:	60			
Date of Test:	12/22/99			
Curve Number:	FIL-085			



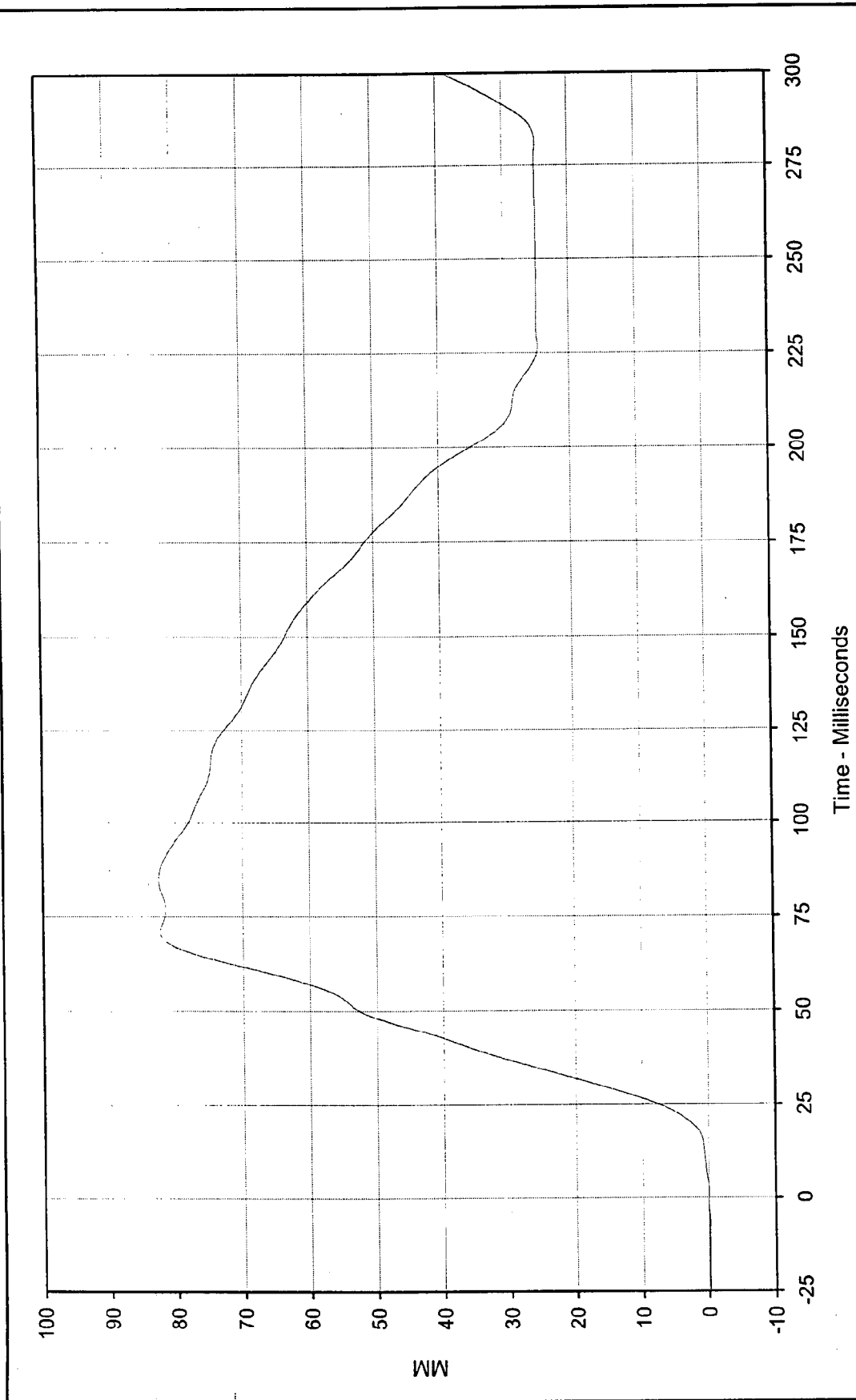


Curve Description: Passenger Shoulder Belt Force
 Maximum Value: 8039.9 at 74.4 Milliseconds
 Minimum Value: 5.9 at 0.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/22/99
 Curve Number: FIL-086

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup

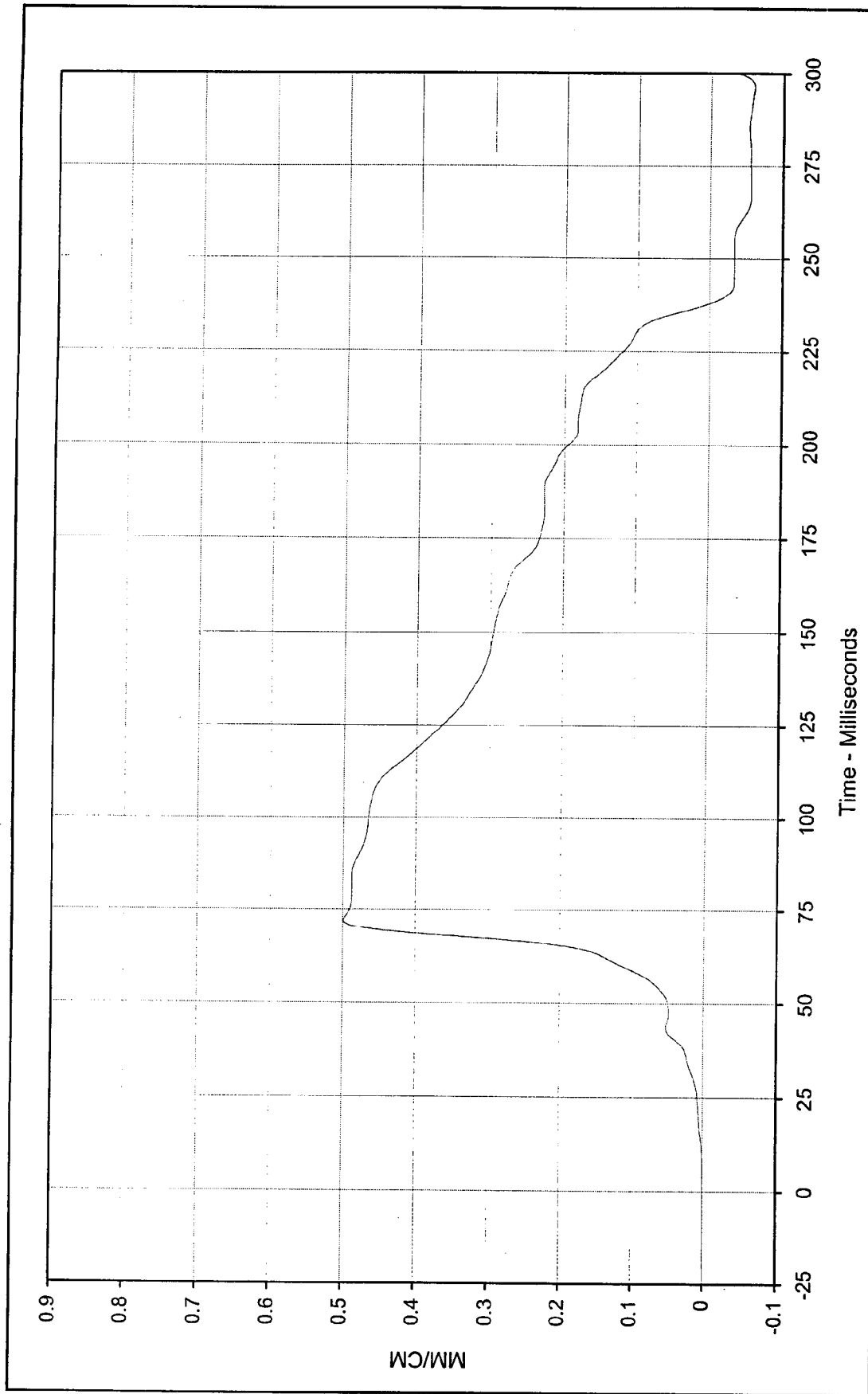




Curve Description: Passenger Shoulder Belt Pullout
 Maximum Value: 82.6 at 84.7 Milliseconds
 Minimum Value: 0.0 at 1.4 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/22/99
 Curve Number: FIL-087

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup

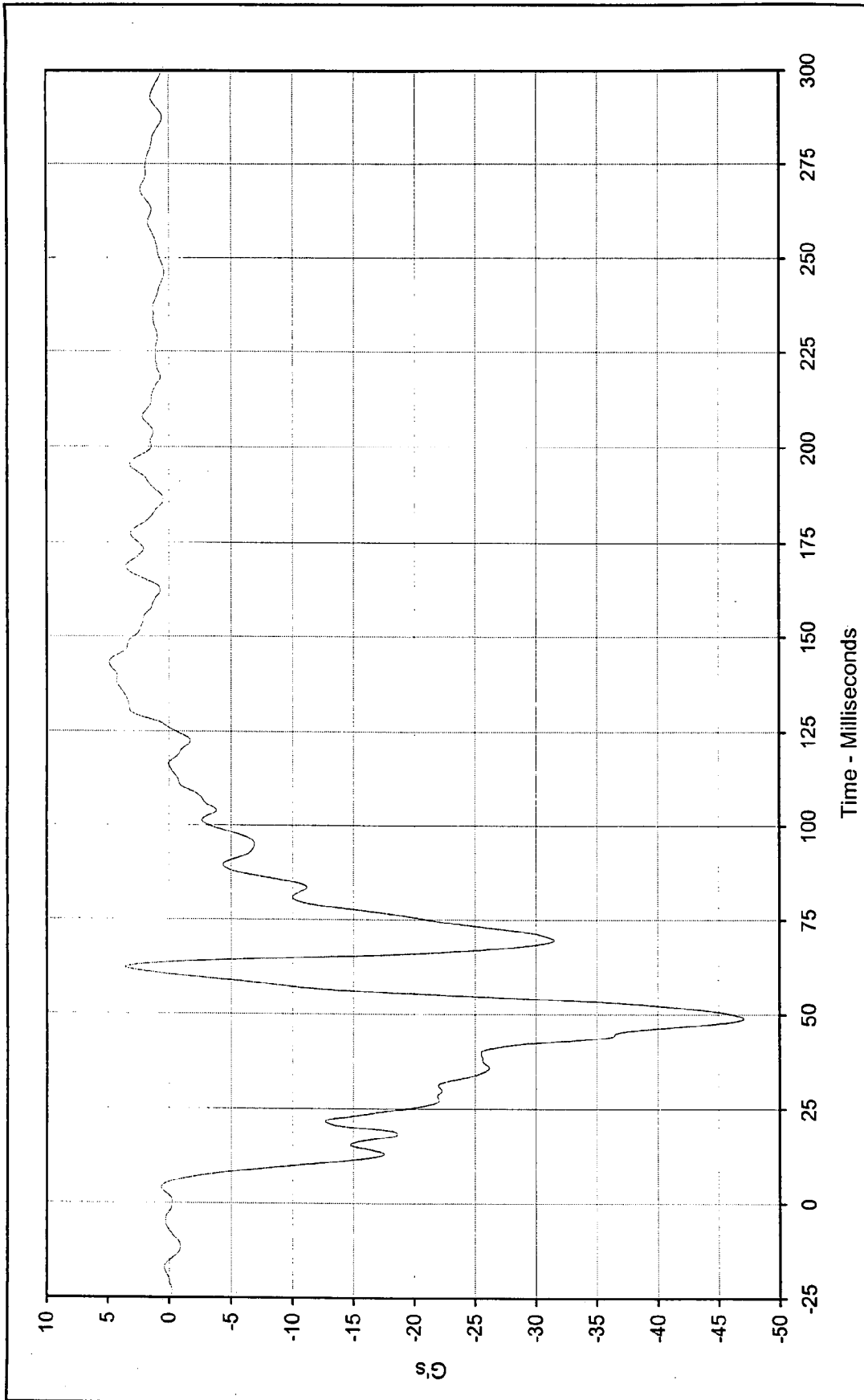




Curve Description: Passenger Shoulder Belt Elongation
 Maximum Value: 0.50 at 72.0 Milliseconds
 Minimum Value: -0.06 at 296.3 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/22/99
 Curve Number: FIL-088

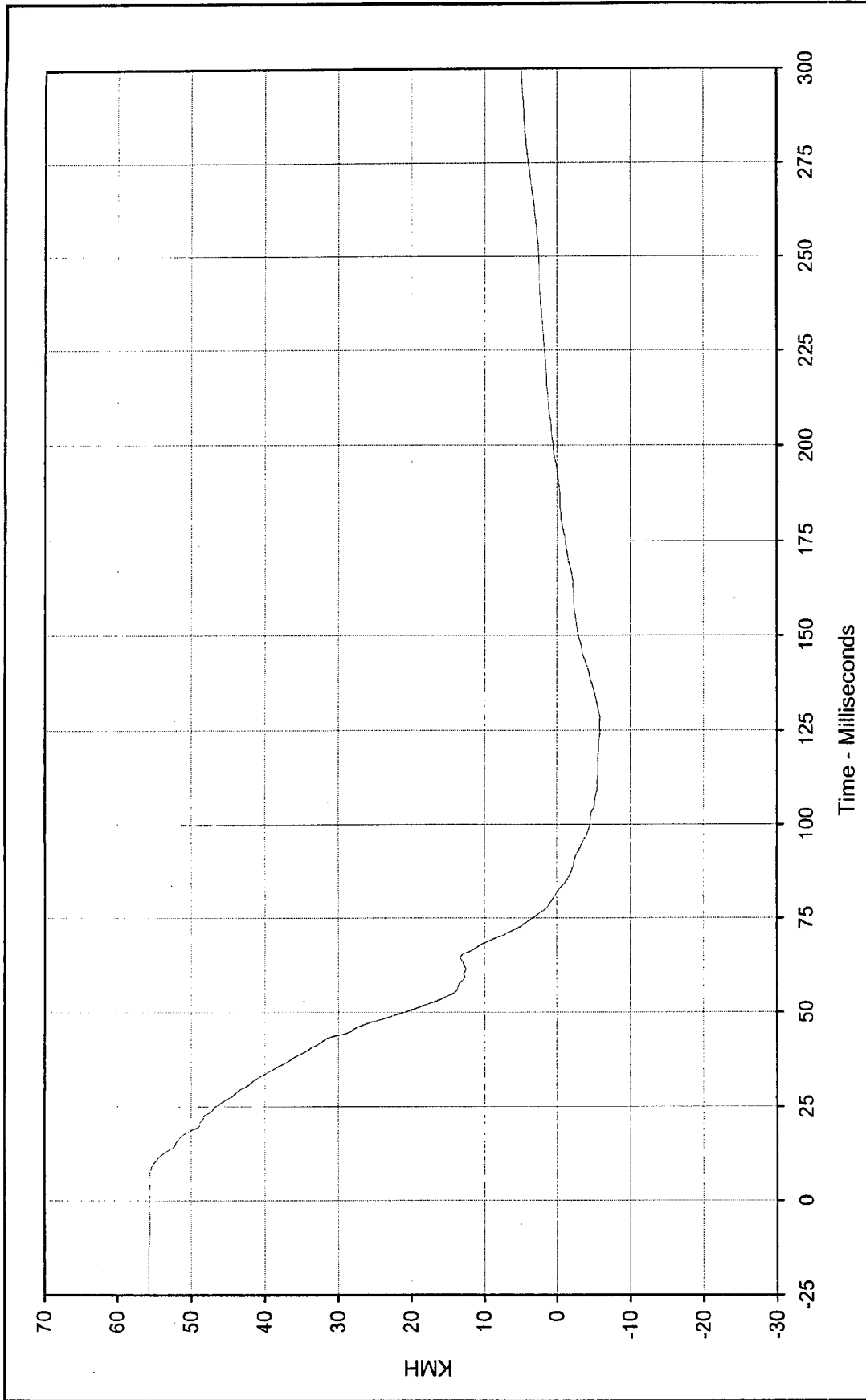
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup





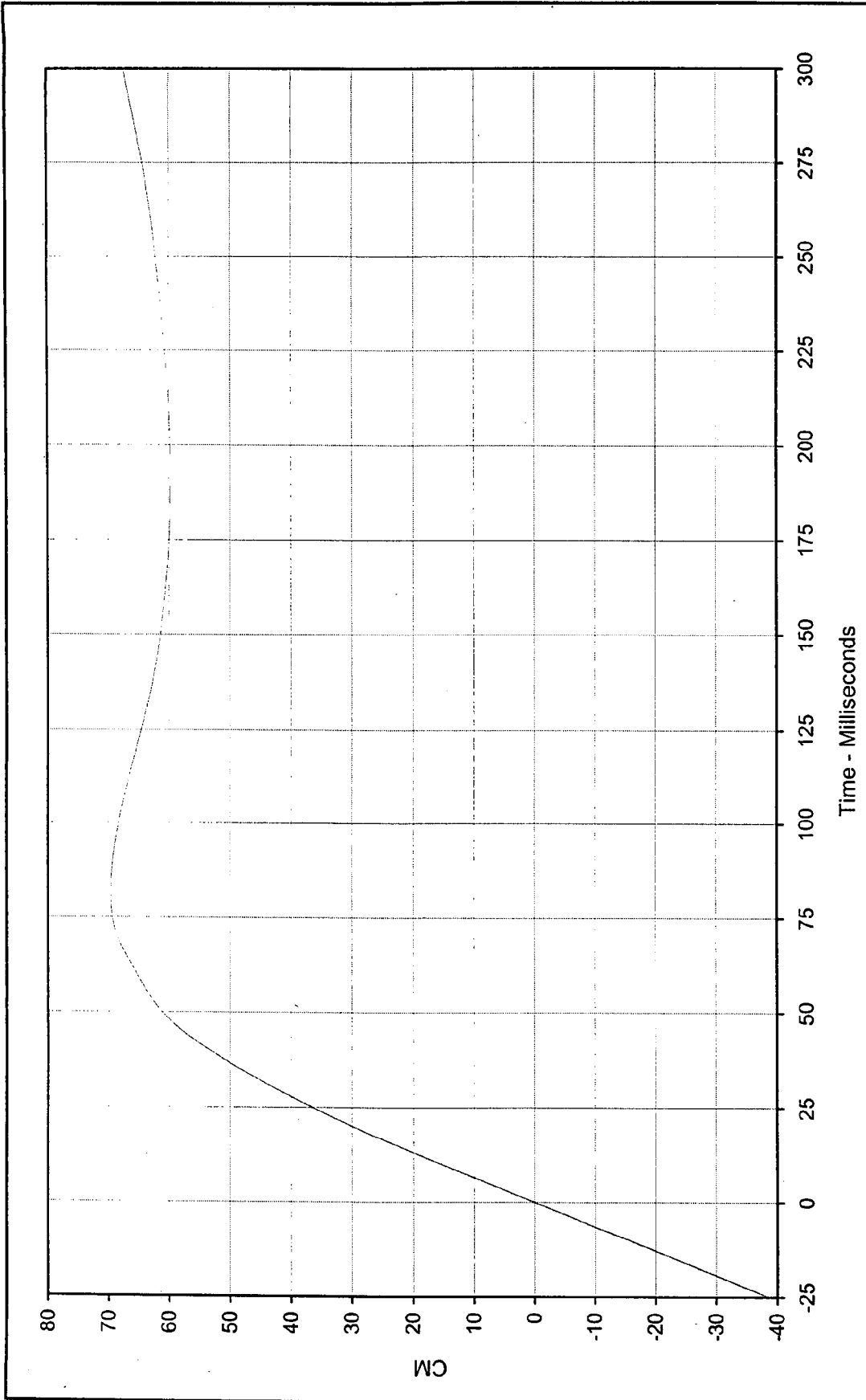
Curve Description:	Vehicle Left Rear Primary	Test Program:	2000 NHTSA 35 mph NCAP No.: MY0106
Maximum Value:	4.9 at 143.0 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup
Minimum Value:	-47.1 at 48.8 Milliseconds		
SAE Filter Class:	60		
Date of Test:	12/22/99		
Curve Number:	FIL-089		





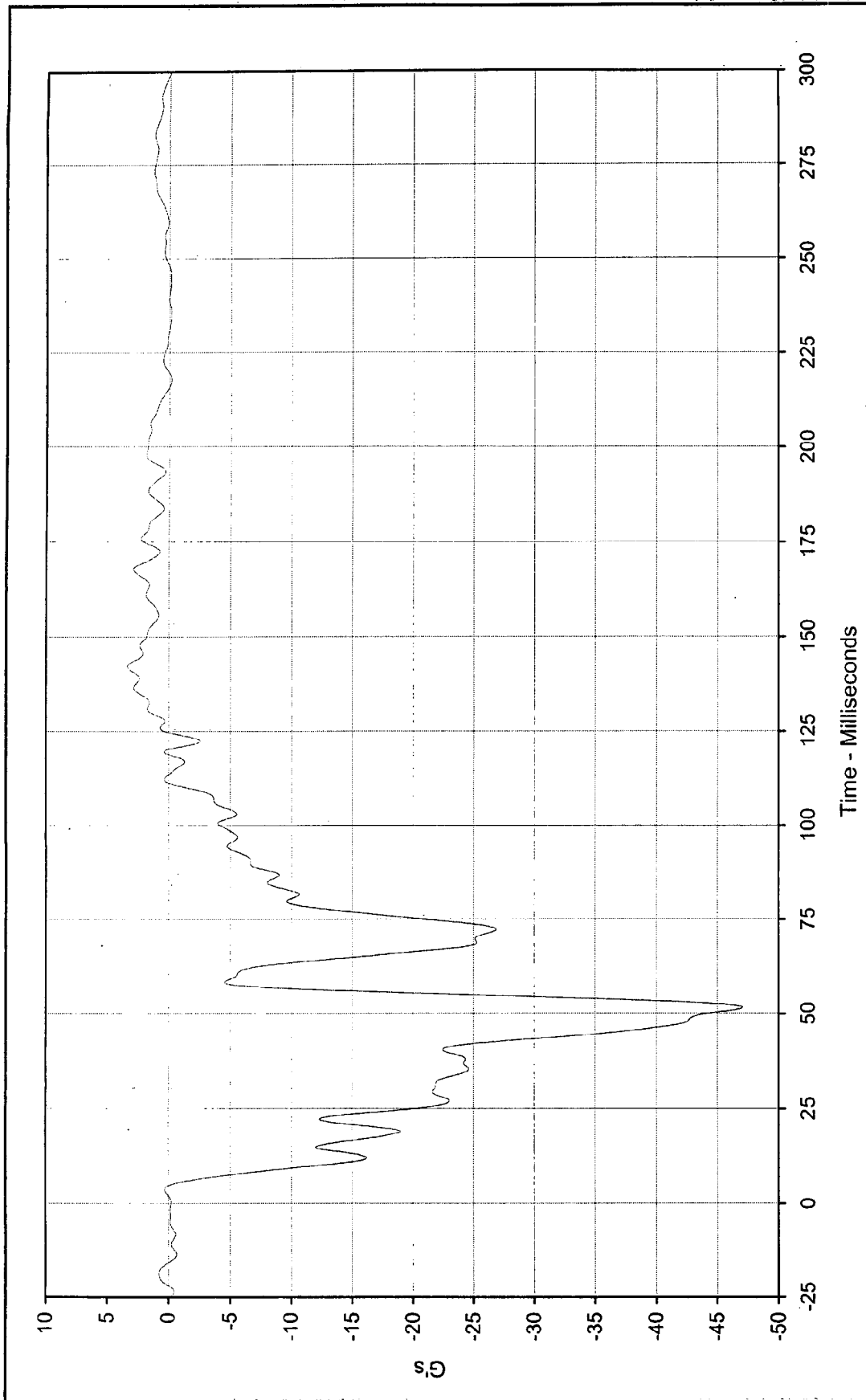
Curve Description:	Vehicle Left Rear Primary Velocity	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	55.6 at 5.6 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-5.9 at 128.2 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/22/99			
Curve Number:	IN1-089			





Curve Description:	Vehicle Left Rear Primary Displ.	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	69.6 at 81.7 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	0.0 at 0.0 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/22/99			
Curve Number:	IN2-089			

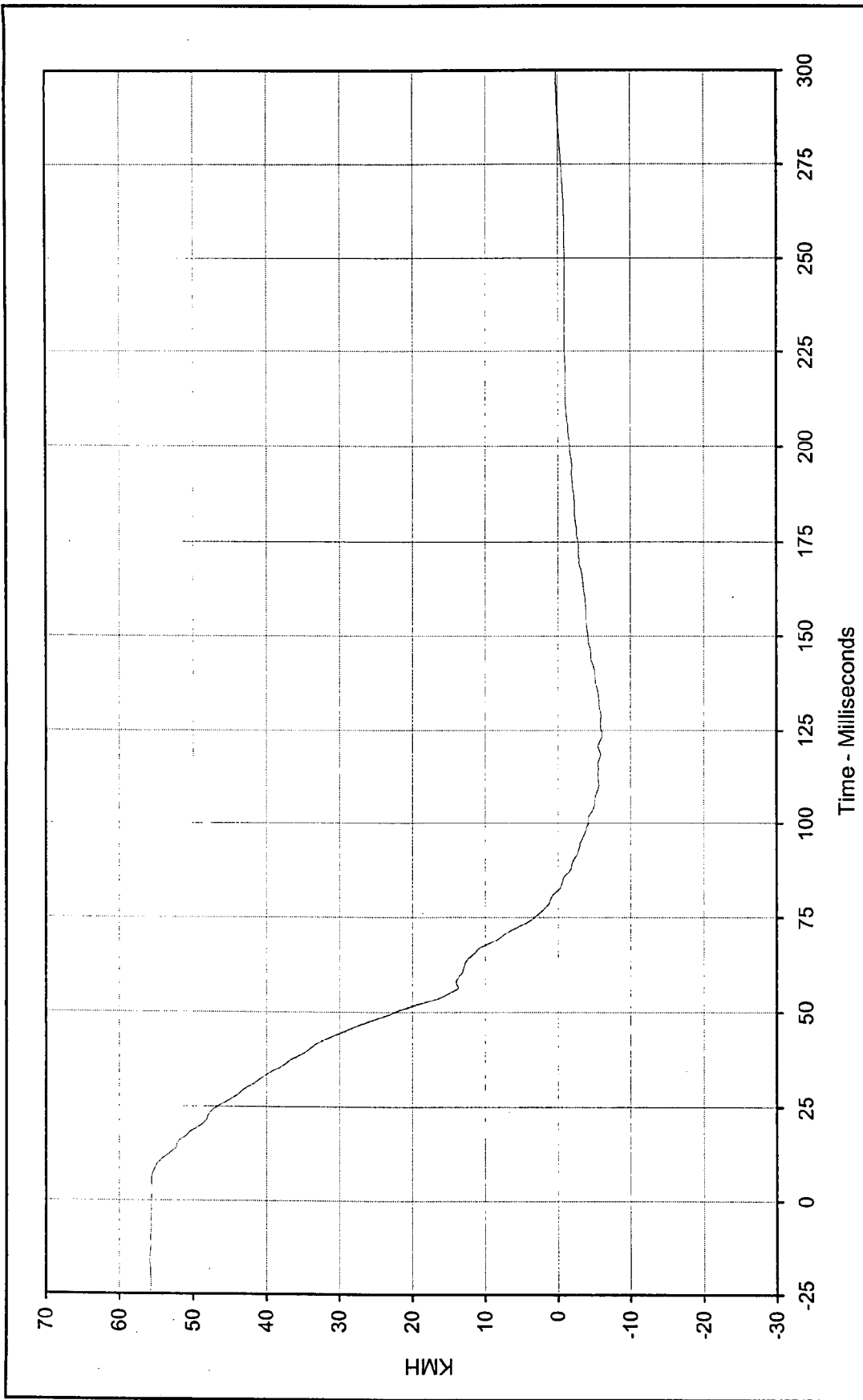




Curve Description: Vehicle Right Rear Primary
 Maximum Value: 3.4 at 142.1 Milliseconds
 Minimum Value: -47.1 at 51.6 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/22/99
 Curve Number: FIL-090

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup

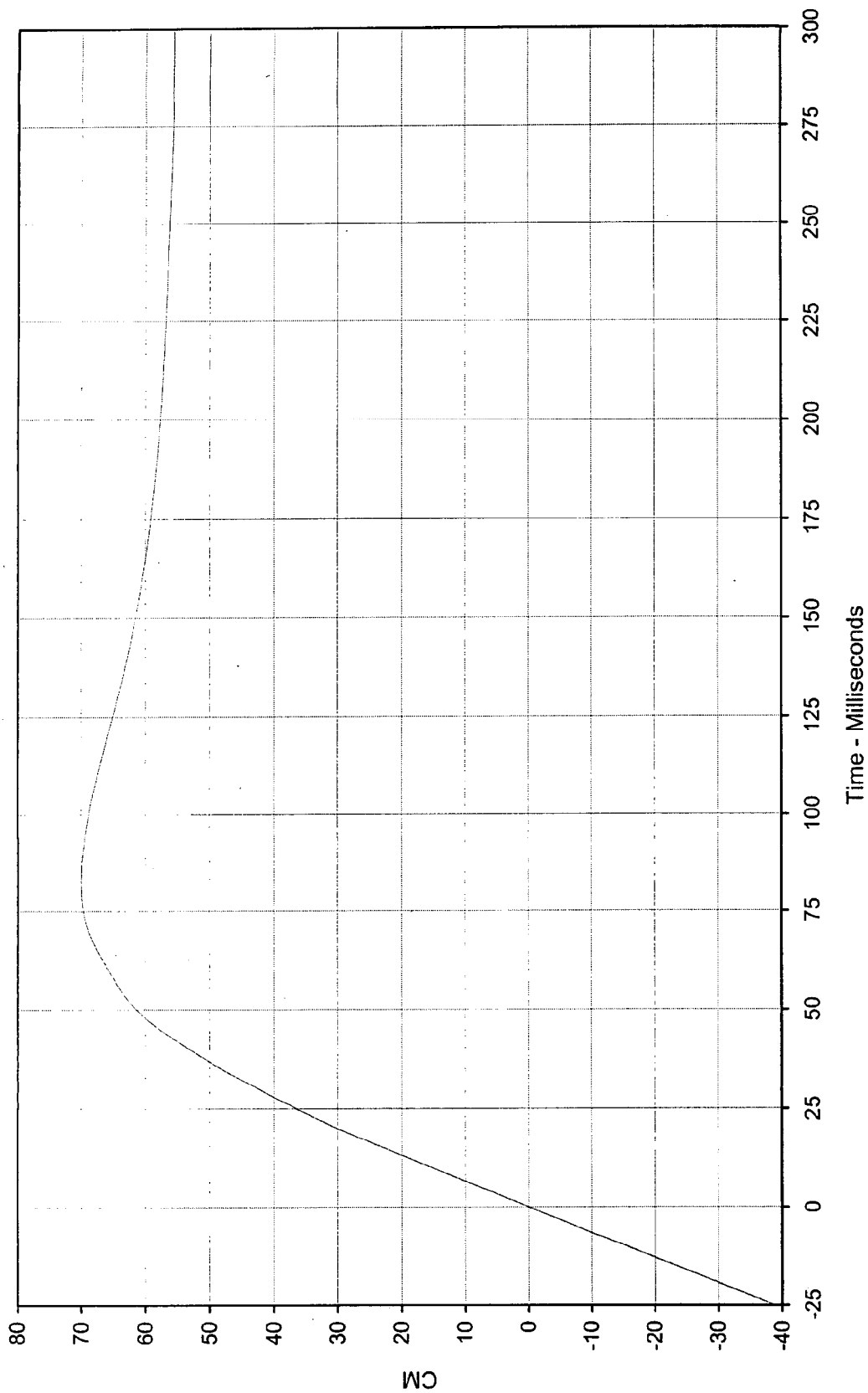




Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup

Curve Description: Vehicle Right Rear Primary Velocity
 Maximum Value: 55.7 at 0.0 Milliseconds
 Minimum Value: -6.0 at 123.9 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/22/99
 Curve Number: IN1-090



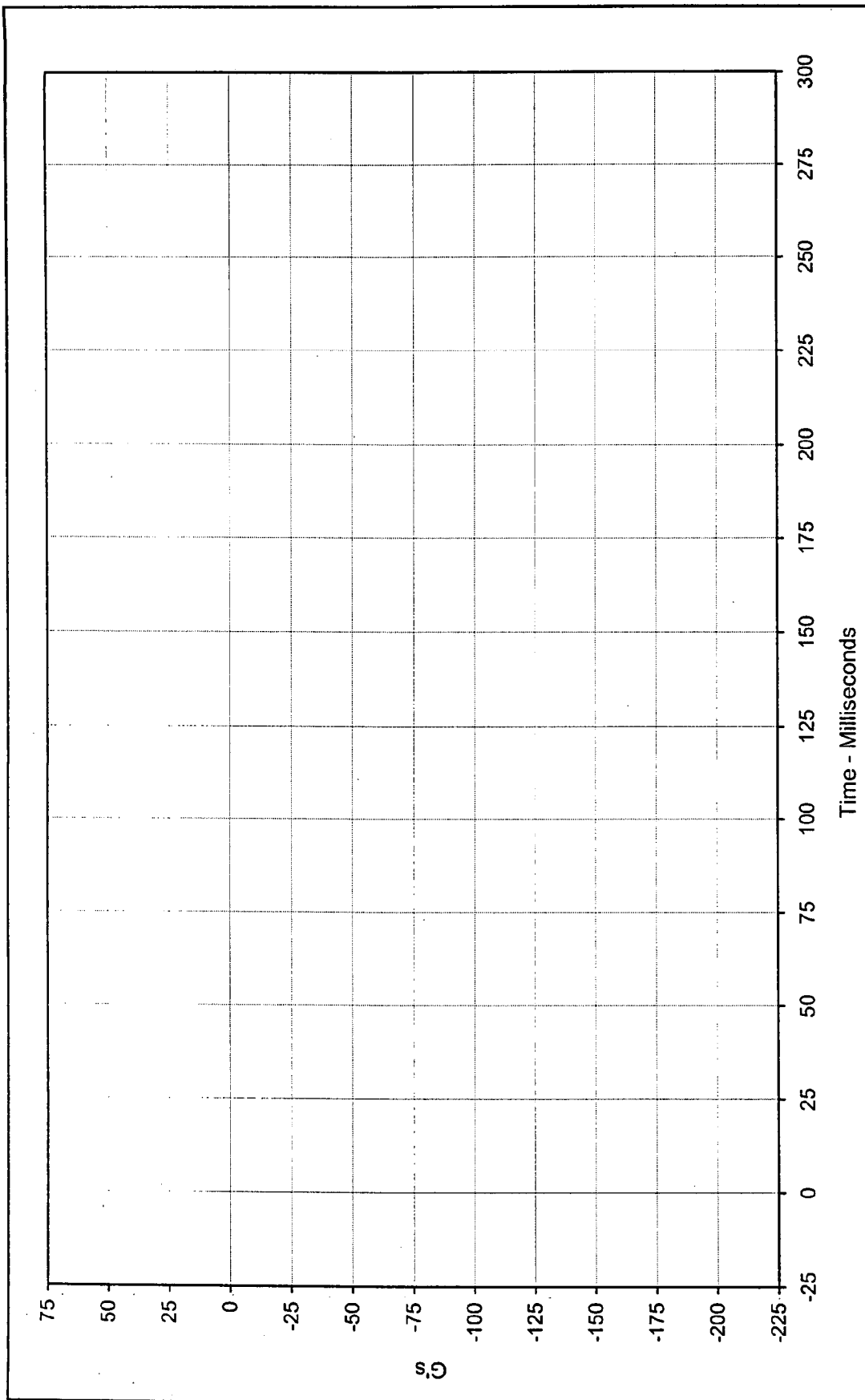


Curve Description: Vehicle Right Rear Primary Displ.
 Maximum Value: 70.0 at 82.1 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/22/99
 Curve Number: IN2-090

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup



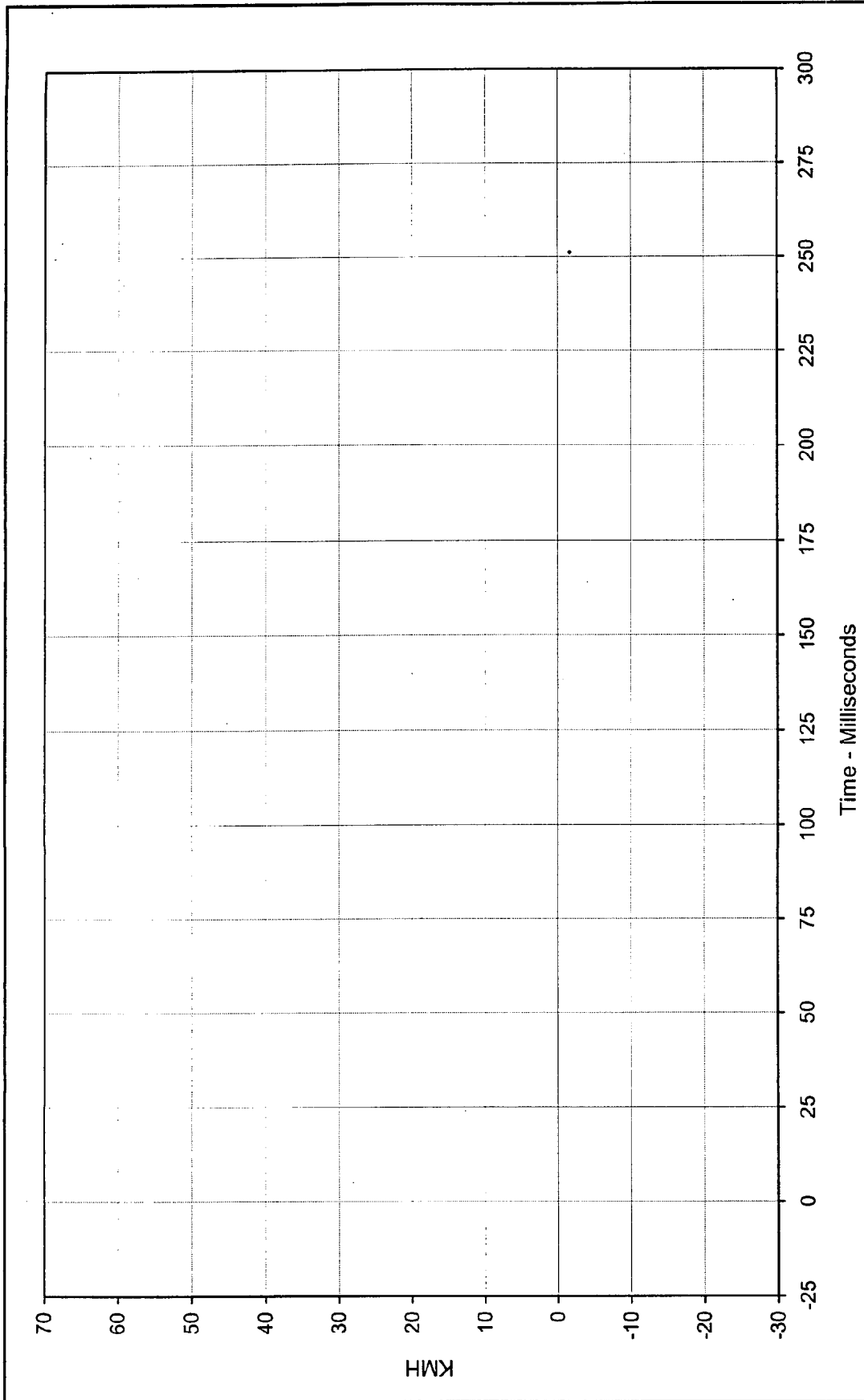


Curve Description: _____ Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Maximum Value: 0.0 at 0.0 Milliseconds Test Vehicle: 2000 Chevrolet S-10 Pickup
 Minimum Value: 0.0 at 0.0 Milliseconds



SAE Filter Class: 60
 Date of Test: 12/22/99
 Curve Number: FIL-091

* Channel Failed, No Data

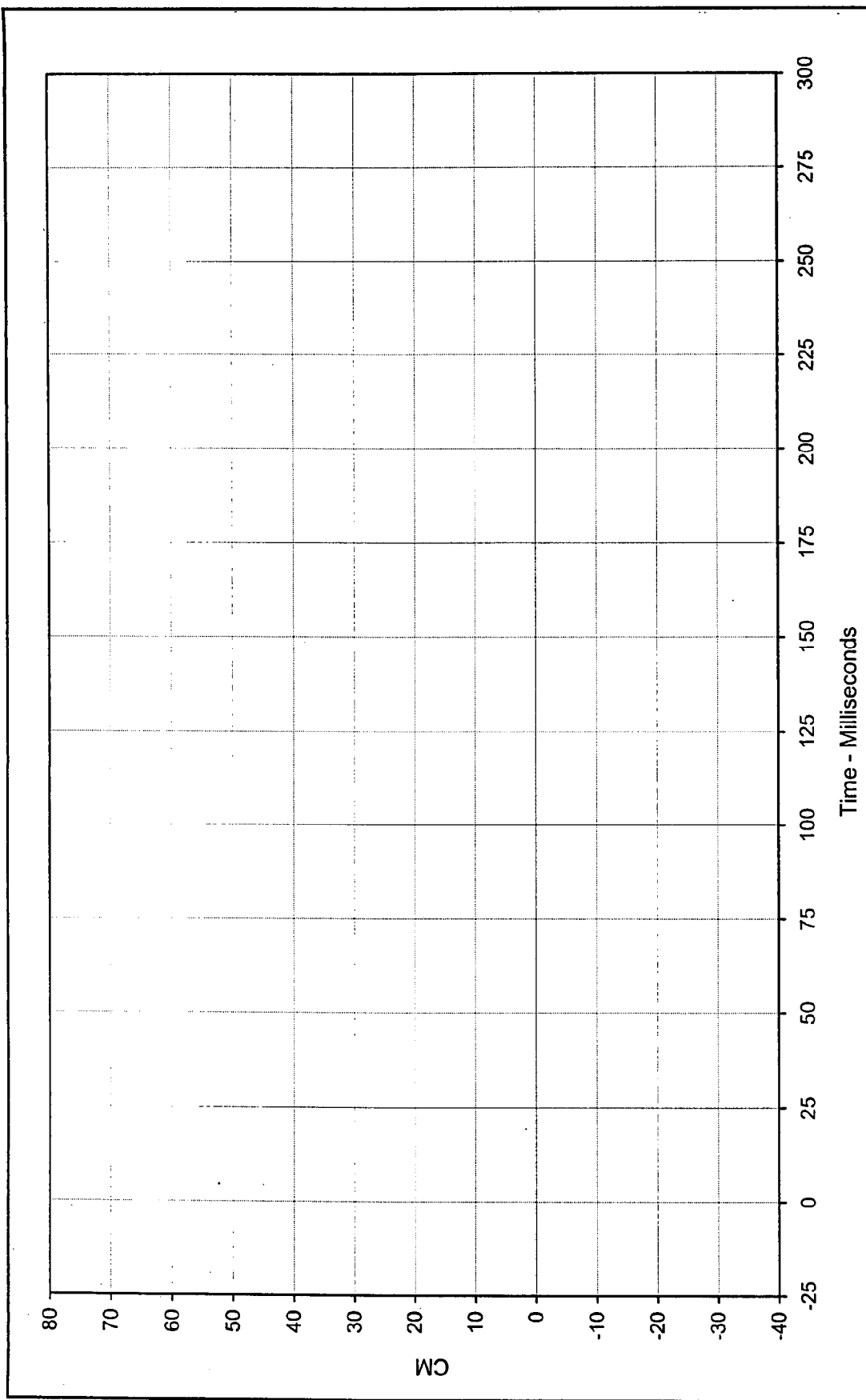


Time - Milliseconds

Curve Description:	Vehicle Engine Top Velocity	*	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	0.0	at 0.0	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	0.0	at 0.0			
SAE Filter Class:	180				
Date of Test:	12/22/99				
Curve Number:	IN1-091				



* Channel Failed, No Data

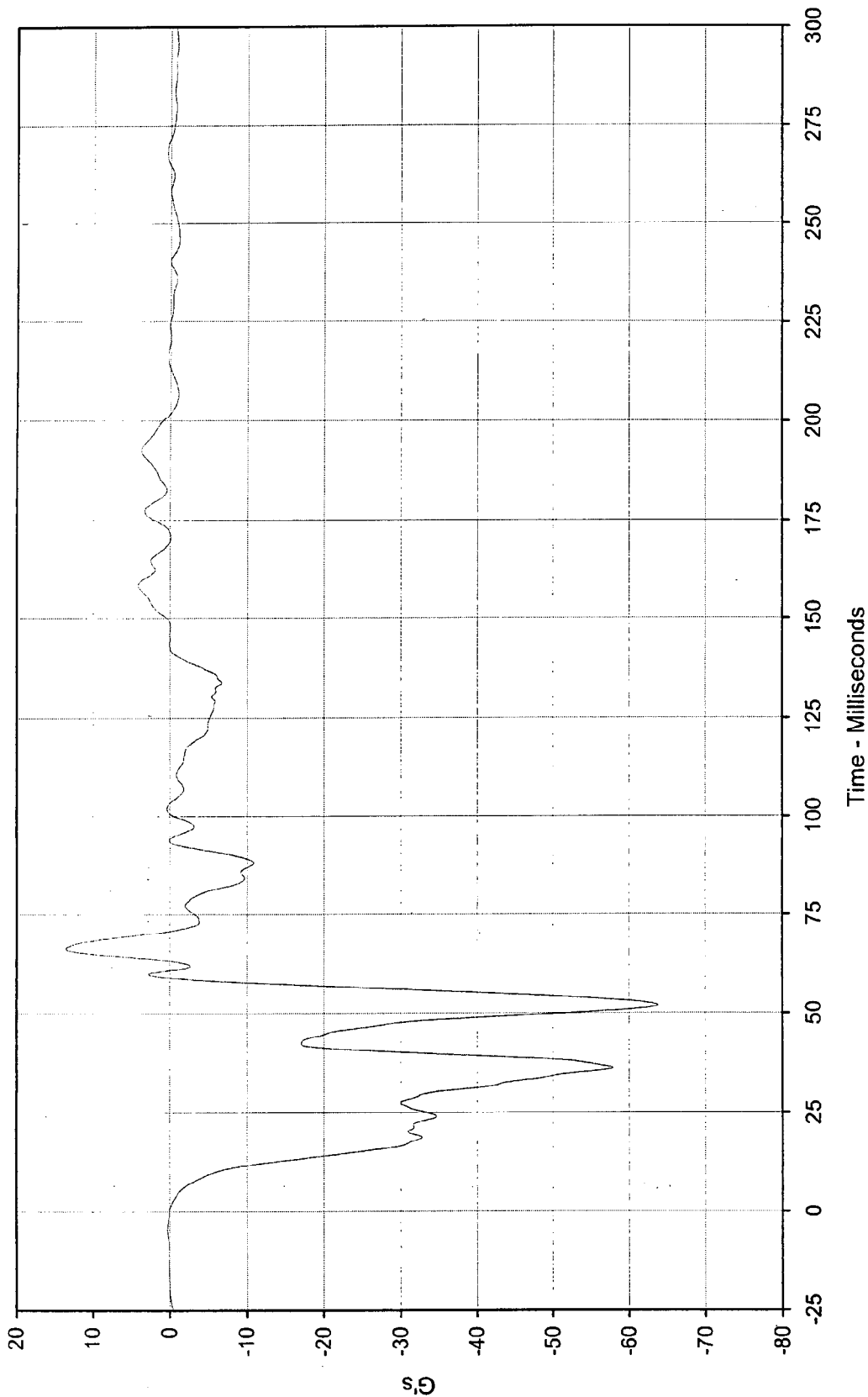


Curve Description: Vehicle Engine Top Displacement * Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Maximum Value: 0.0 at 0.0 Milliseconds Test Vehicle: 2000 Chevrolet S-10 Pickup
 Minimum Value: 0.0 at 0.0 Milliseconds



SAE Filter Class: 180
 Date of Test: 12/22/99
 Curve Number: IN2-091

* Channel Failed, No Data



Curve Description: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Program:

Test Vehicle: 2000 Chevrolet S-10 Pickup

Maximum Value: 13.6 at 66.2 Milliseconds

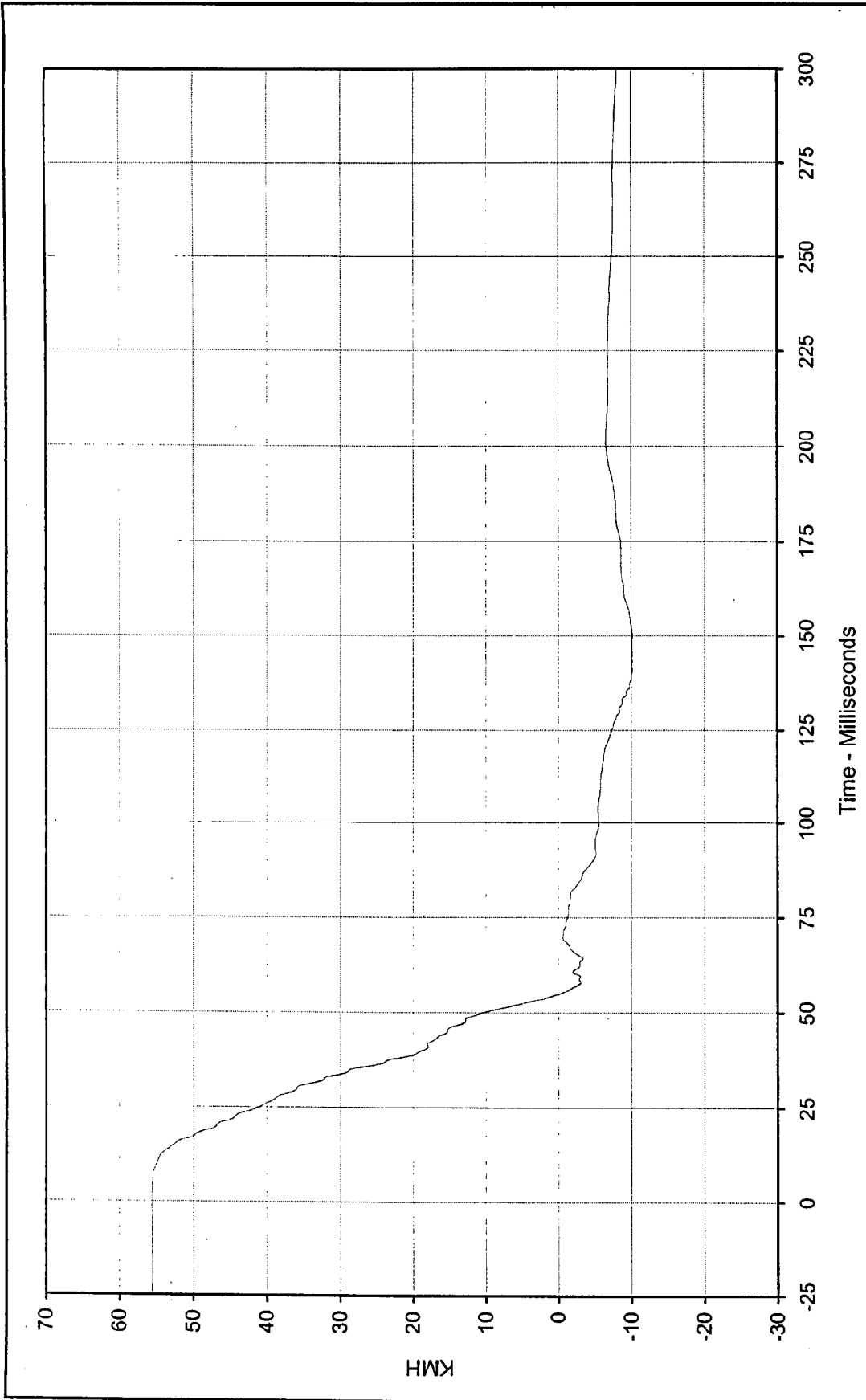
Minimum Value: -63.8 at 51.9 Milliseconds

SAE Filter Class: 60

Date of Test: 12/22/99

Curve Number: FIL-092





Curve Description: Vehicle Engine Bottom Velocity

Maximum Value: 55.6 at 1.1 Milliseconds

Minimum Value: -10.2 at 140.8 Milliseconds

SAE Filter Class: 180

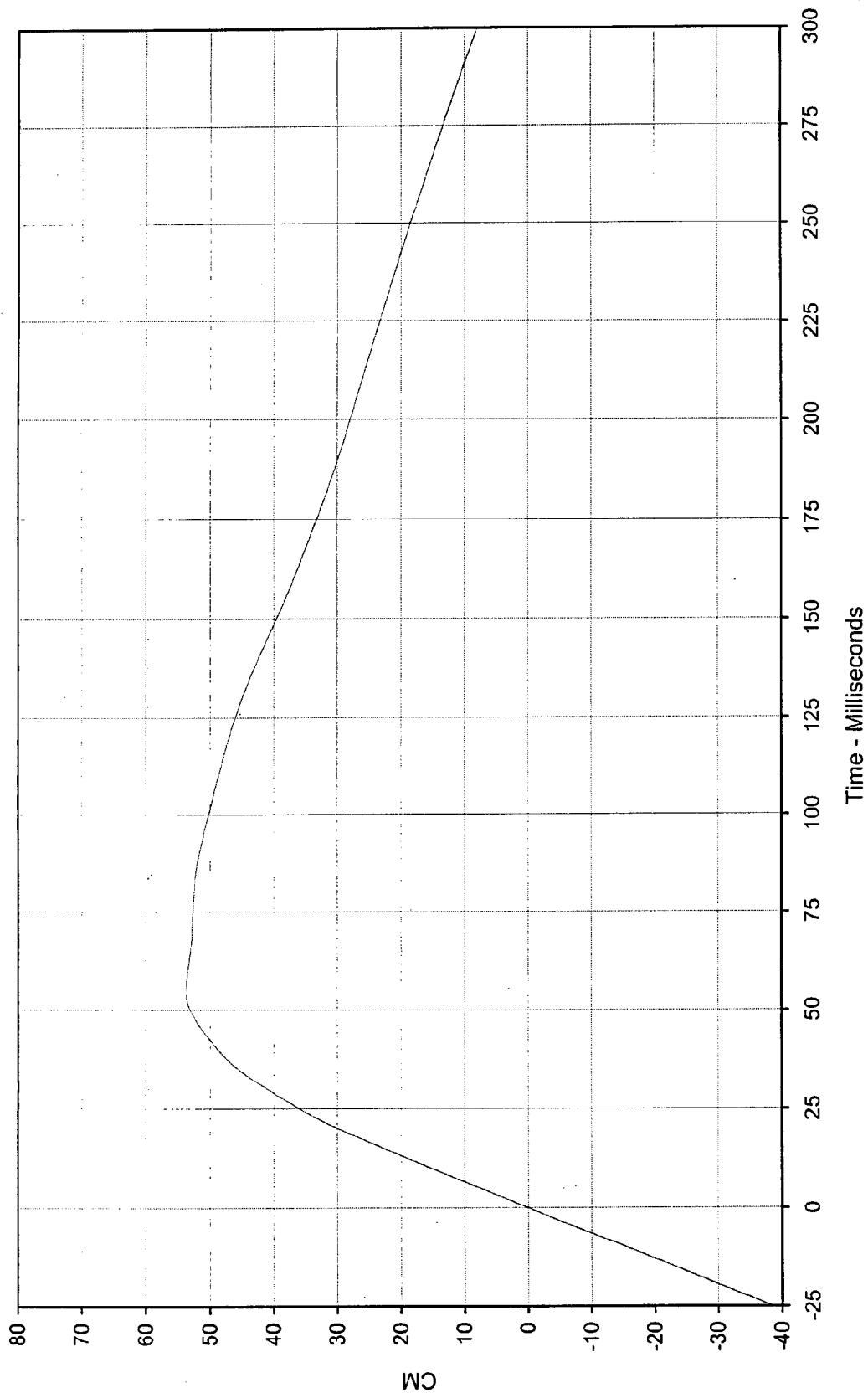
Date of Test: 12/22/99

Curve Number: IN1-092

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description: Vehicle Engine Bottom Displacement

Maximum Value: 53.7 at 54.8 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

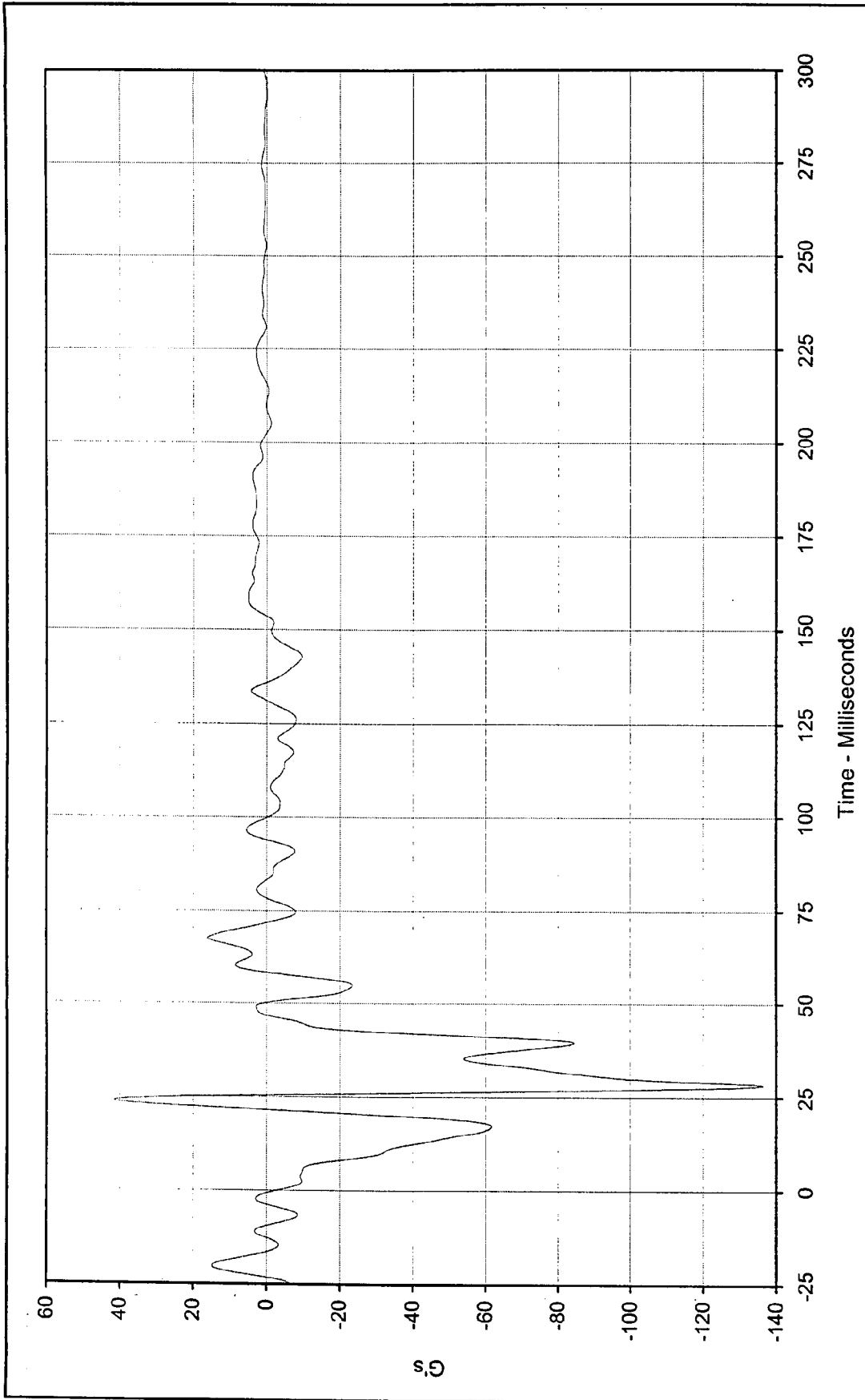
Date of Test: 12/22/99

Curve Number: IN2-092

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description: Vehicle Left Brake Caliper

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Maximum Value: 41.6 at 23.8 Milliseconds

Test Vehicle: 2000 Chevrolet S-10 Pickup

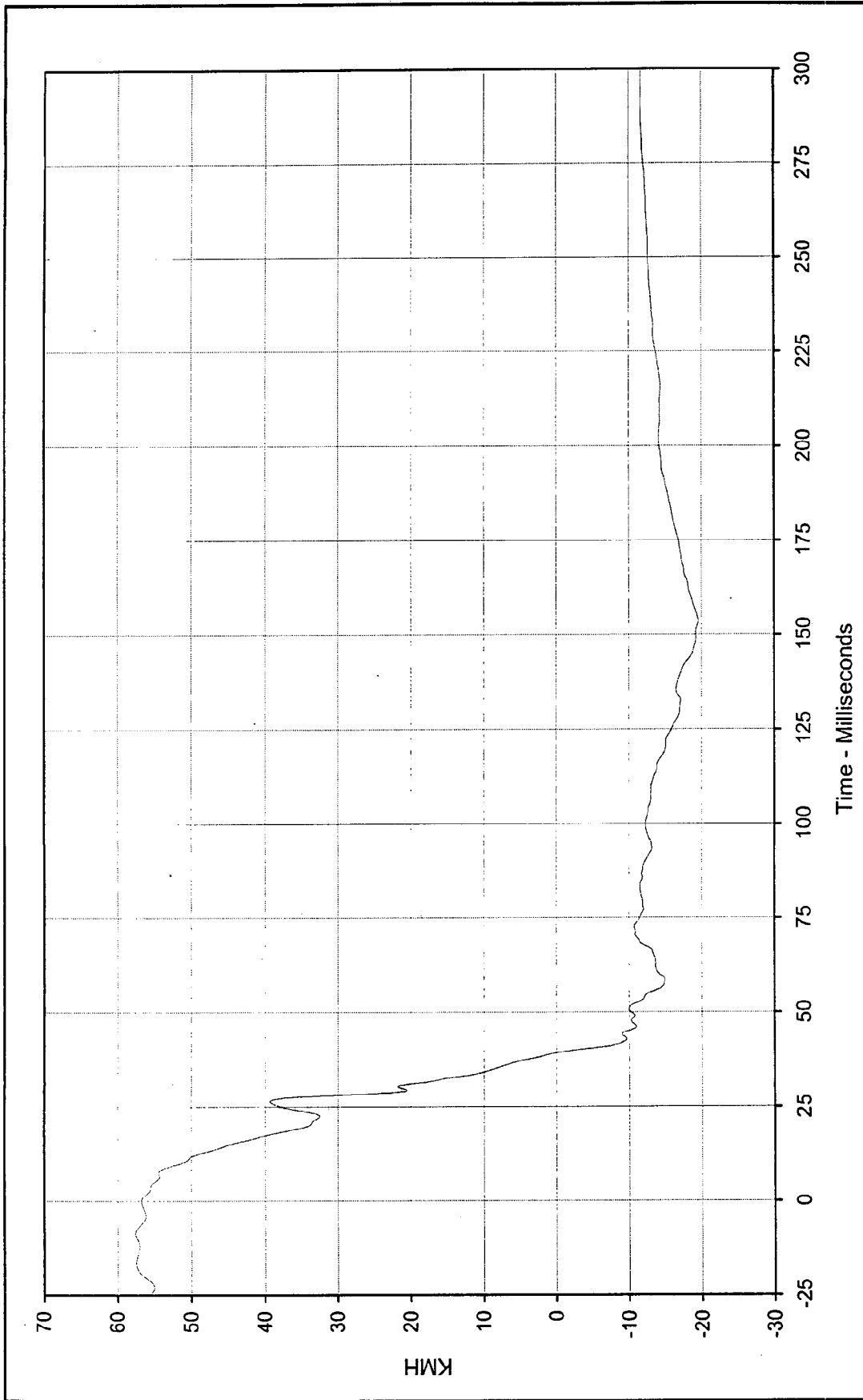
Minimum Value: -136.4 at 28.3 Milliseconds

SAE Filter Class: 60

Date of Test: 12/22/99

Curve Number: FIL-093

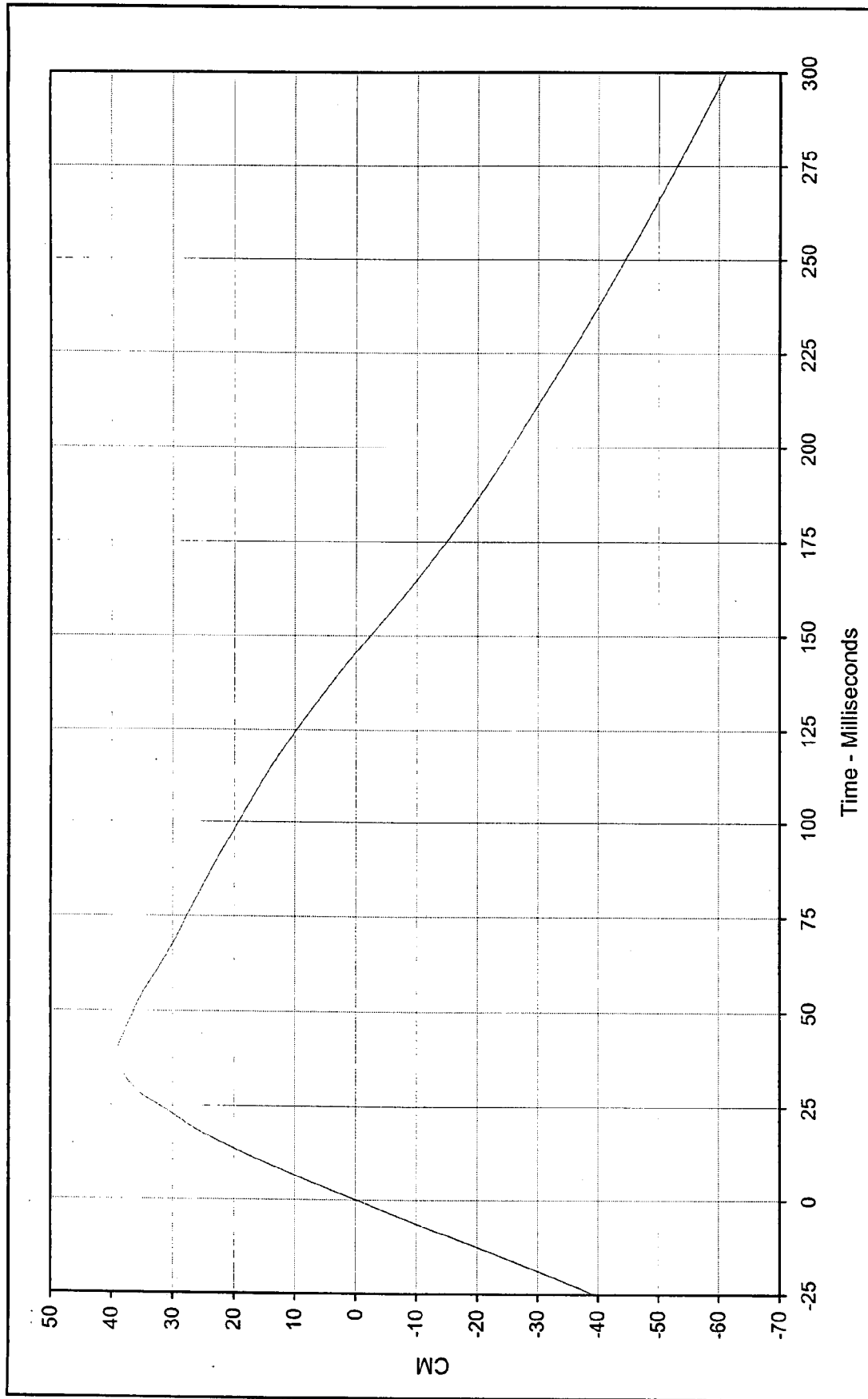




Curve Description: Vehicle Left Brake Caliper Velocity
 Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup

Maximum Value: 56.8 at 0.0 Milliseconds
 Minimum Value: -19.5 at 153.5 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/22/99
 Curve Number: IN1-093





Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup

Curve Description: Vehicle Left Brake Caliper Displ.

Maximum Value: 39.0 at 39.1 Milliseconds

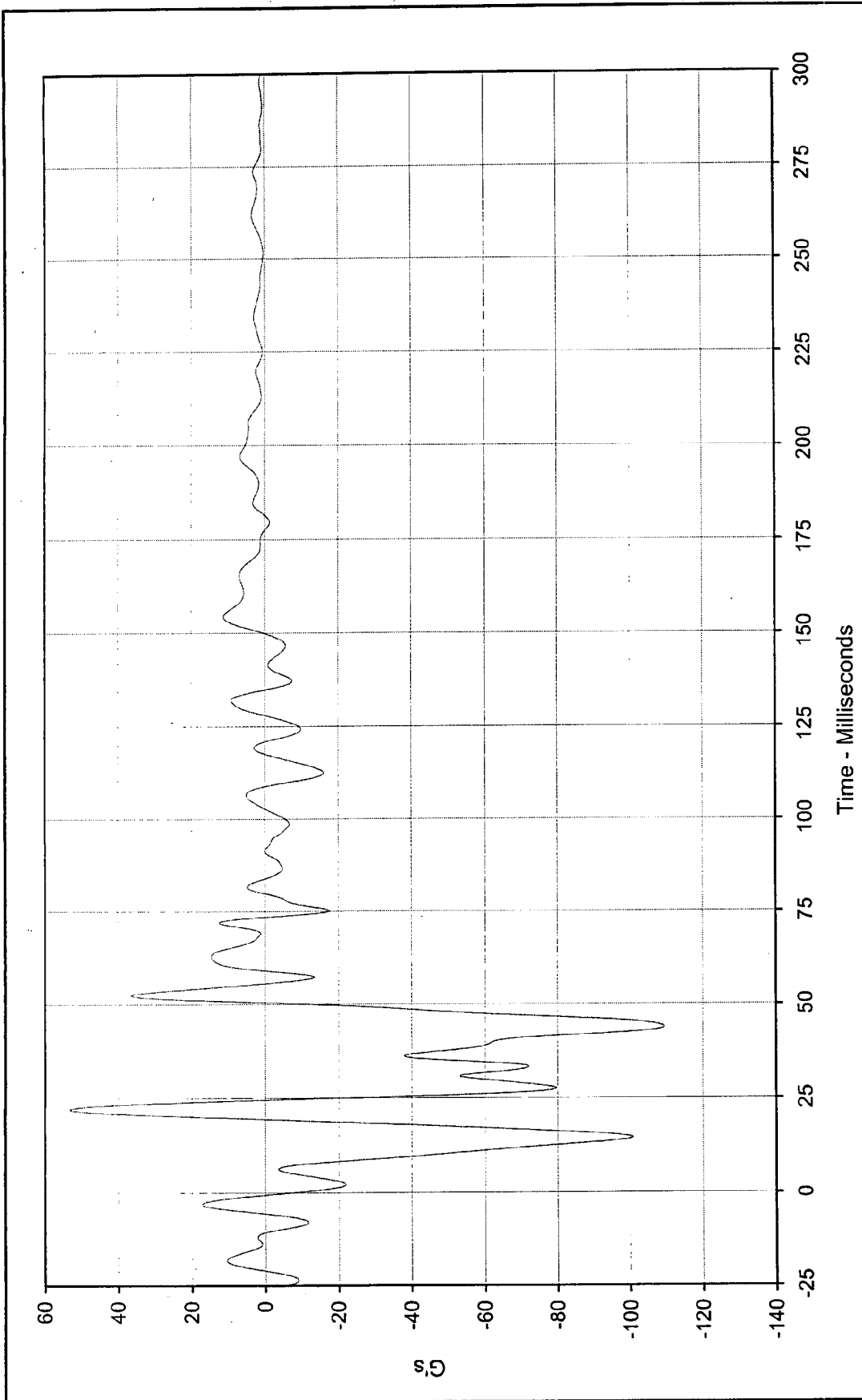
Minimum Value: -61.1 at 299.9 Milliseconds

SAE Filter Class: 180

Date of Test: 12/22/99

Curve Number: IN2-093





Curve Description: Vehicle Right Brake Caliper Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Maximum Value: 53.2 at 22.3 Milliseconds Test Vehicle: 2000 Chevrolet S-10 Pickup

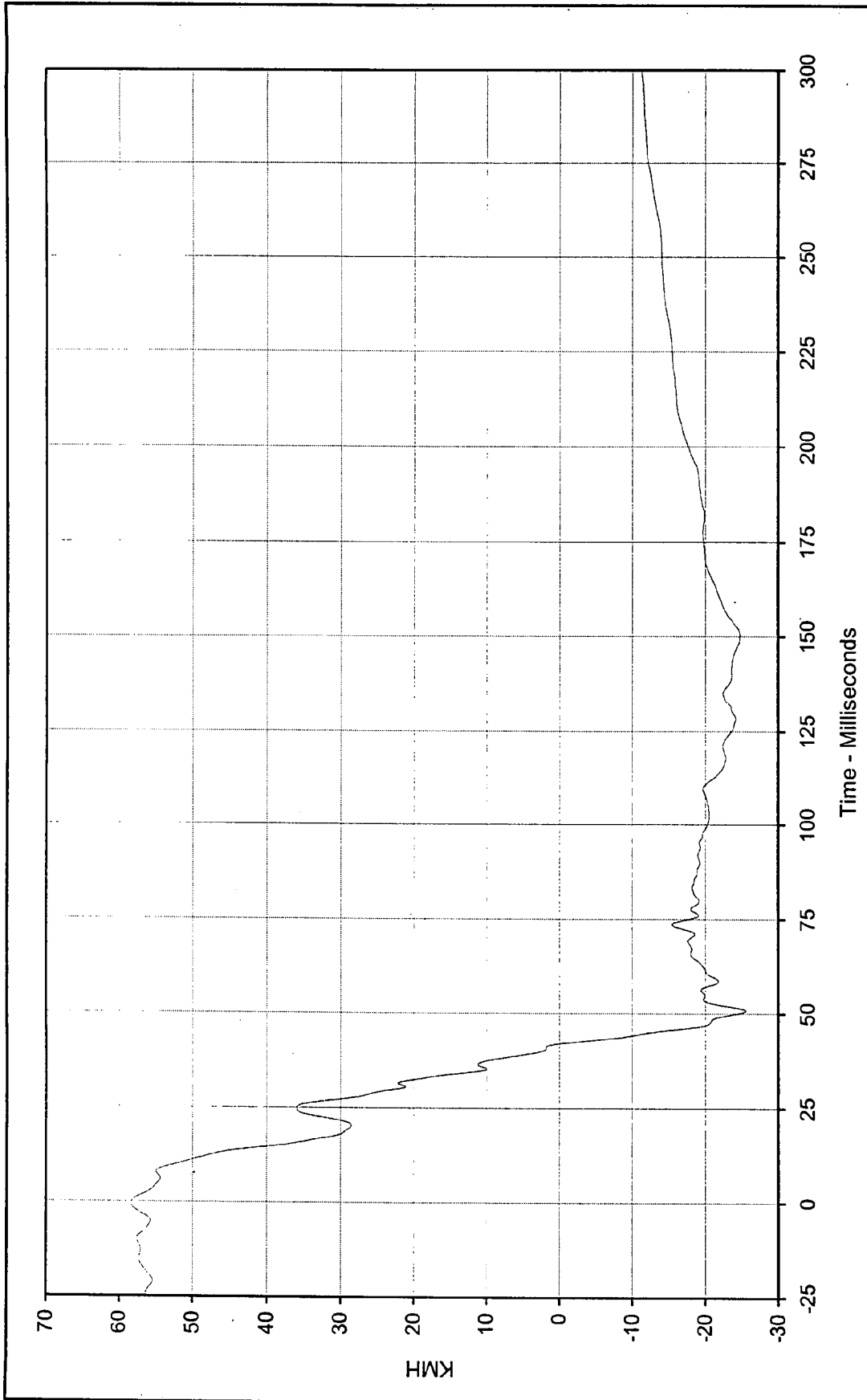
Minimum Value: -109.5 at 43.9 Milliseconds

SAE Filter Class: 60

Date of Test: 12/22/99

Curve Number: FIL-094





Curve Description: Vehicle Right Brake Caliper Velocity

Maximum Value: 58.3 at 0.0 Milliseconds

Minimum Value: -25.6 at 50.7 Milliseconds

SAE Filter Class: 180

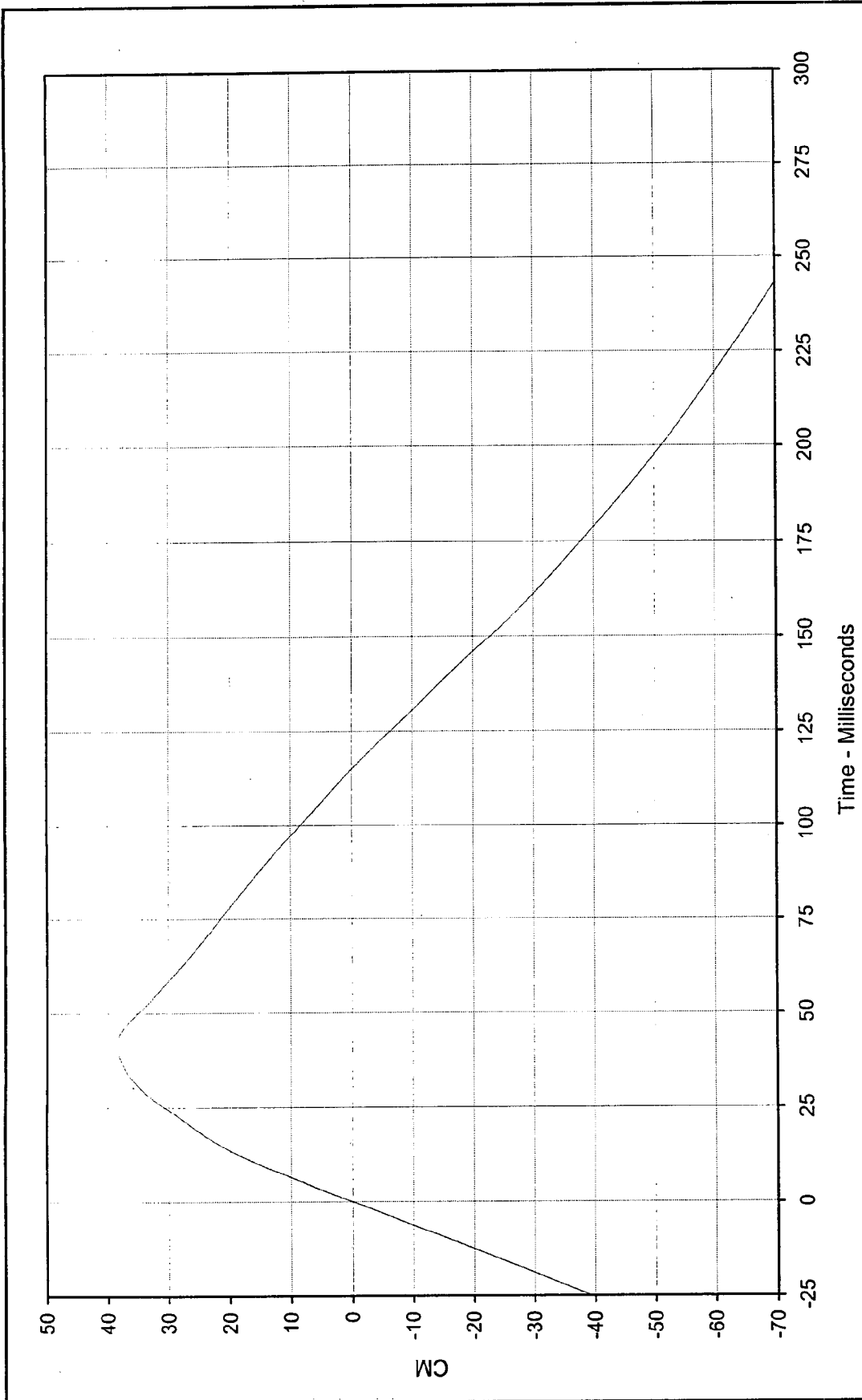
Date of Test: 12/22/99

Curve Number: IN1-094

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description: Vehicle Right Brake Caliper Displ. Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Maximum Value: 38.4 at 41.9 Milliseconds Test Vehicle: 2000 Chevrolet S-10 Pickup

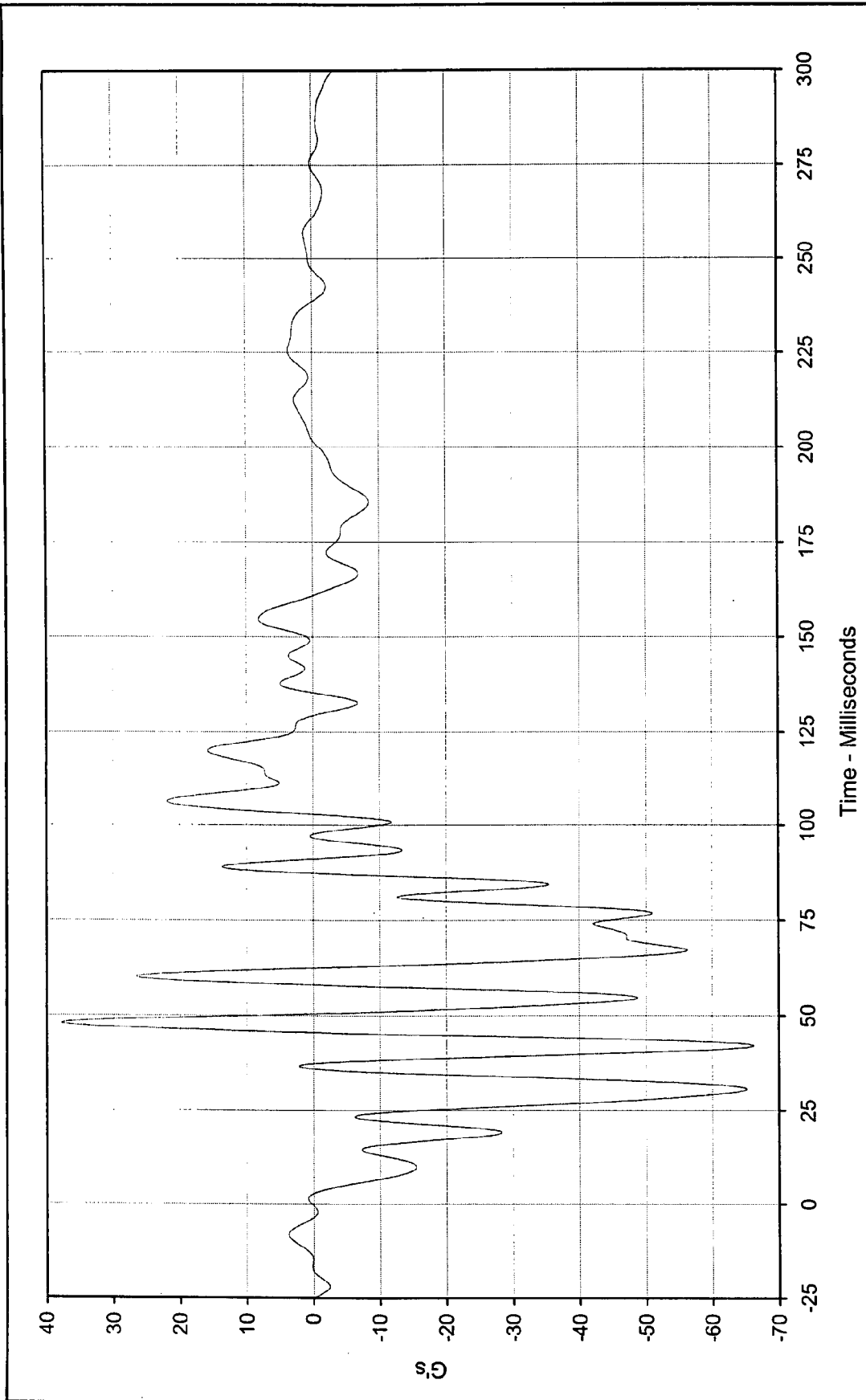
Minimum Value: -89.9 at 299.9 Milliseconds

SAE Filter Class: 180

Date of Test: 12/22/99

Curve Number: IN2-094

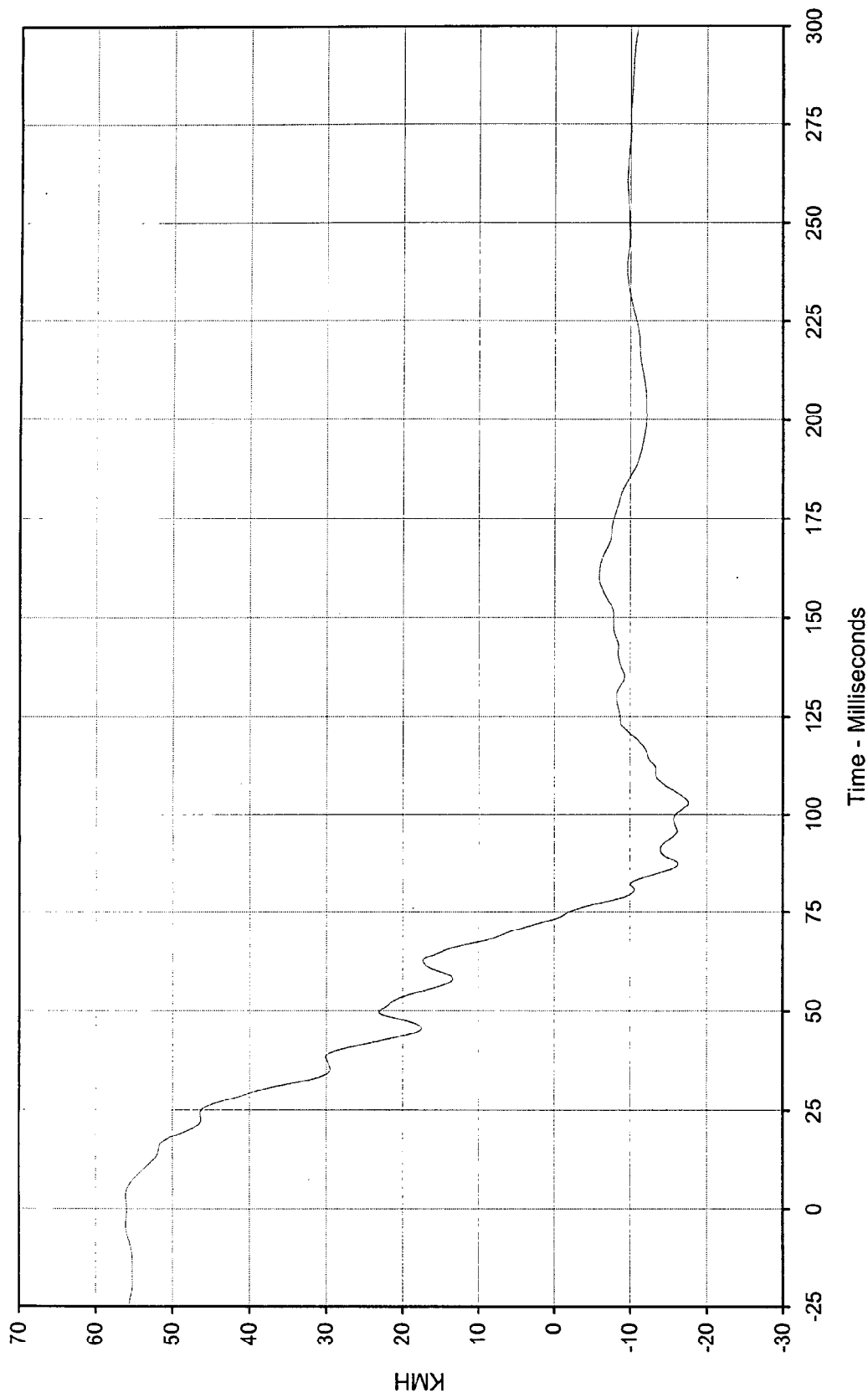




Curve Description: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Program:
 Test Vehicle: 2000 Chevrolet S-10 Pickup

Vehicle Instrument Panel
 Maximum Value: 37.8 at 47.9 Milliseconds
 Minimum Value: -66.3 at 42.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/22/99
 Curve Number: FIL-095





Curve Description: Vehicle Instrument Panel Velocity

Maximum Value: 56.1 at 3.3 Milliseconds

Minimum Value: -17.6 at 102.9 Milliseconds

SAE Filter Class: 180

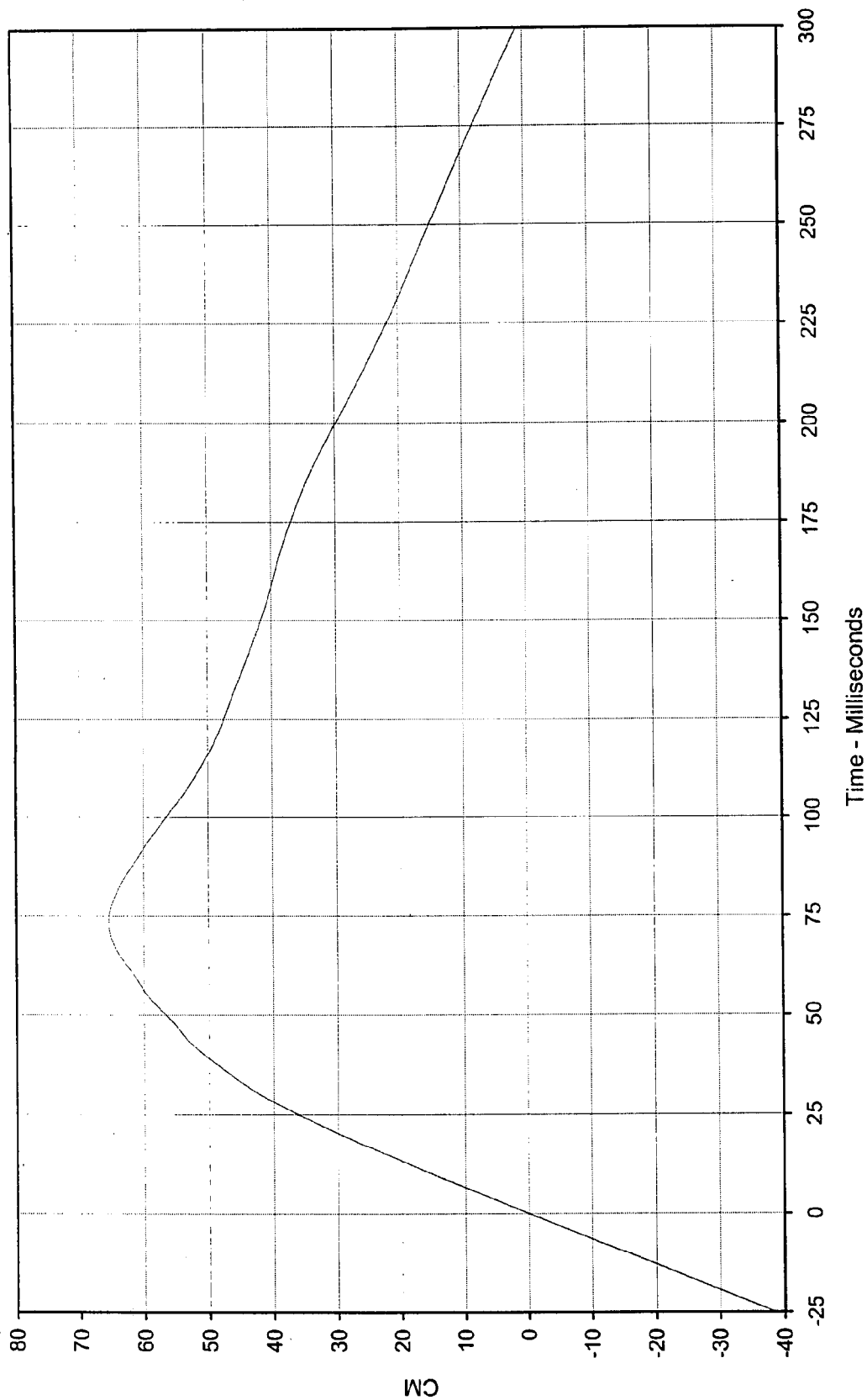
Date of Test: 12/22/99

Curve Number: IN1-095

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description: Vehicle Instrument Panel Displacement

Maximum Value: 65.4 at 73.1 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

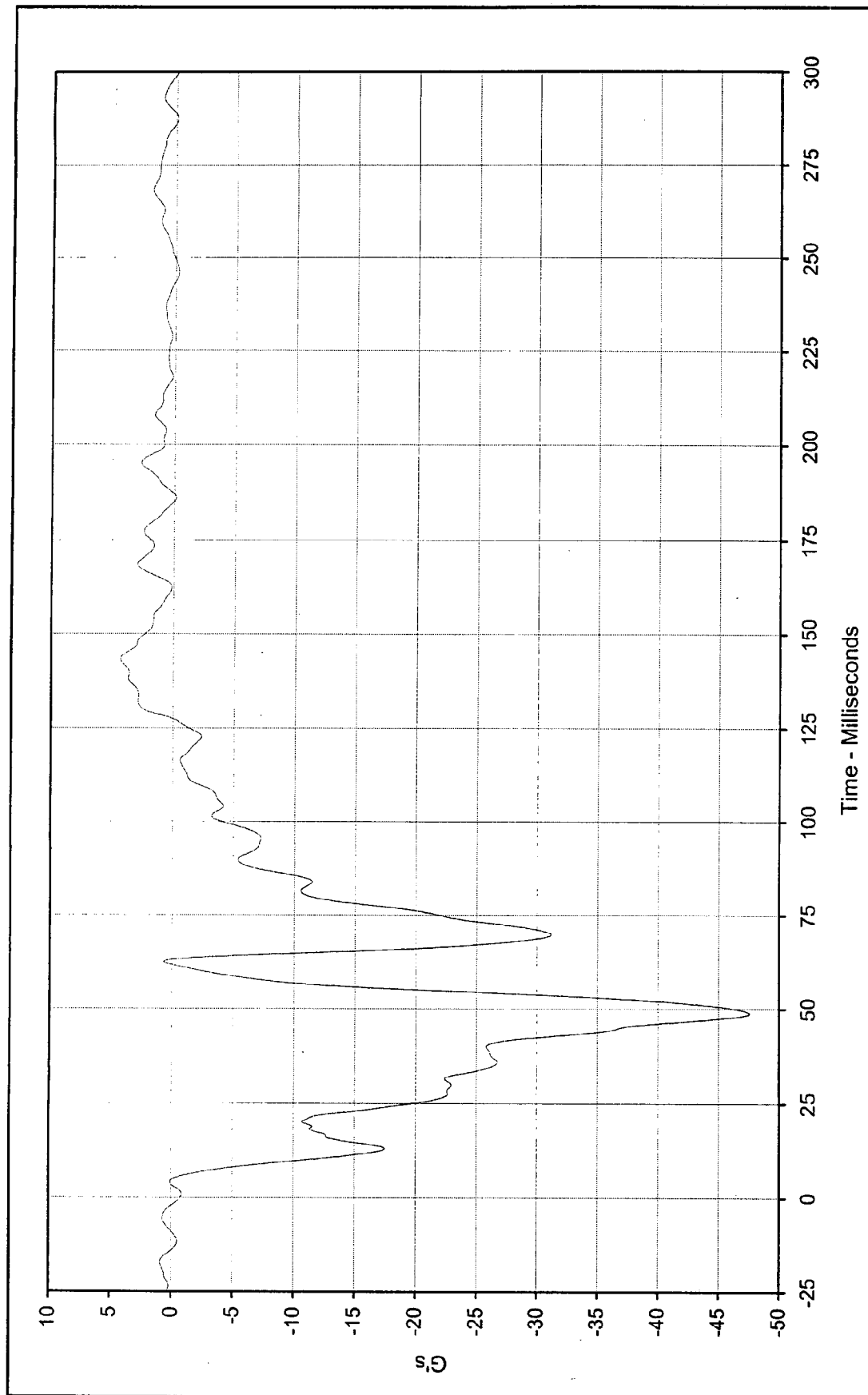
Date of Test: 12/22/99

Curve Number: IN2-095

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup

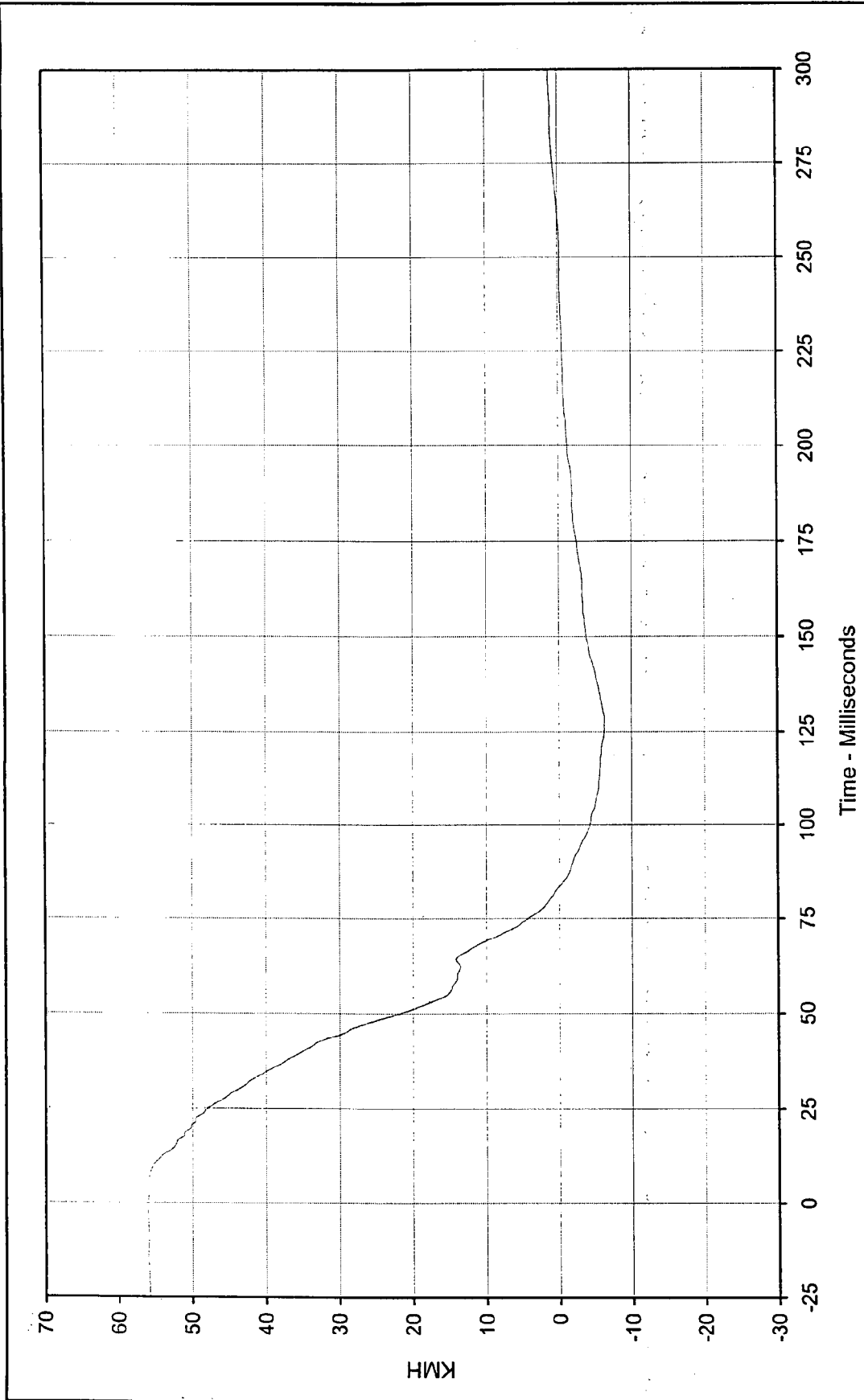




Curve Description:	Vehicle Left Rear Redundant				Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	4.3	at	143.3	Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-47.6	at	48.8	Milliseconds			
SAE Filter Class:	60						
Date of Test:	12/22/99						
Curve Number:	FIL-096						

The logo for OKARCO Engineering. It features a stylized lightbulb with a gear inside, followed by the word "OKARCO" in a bold, sans-serif font. Below this, the word "Engineering" is written in a script font. The entire logo is set against a black background with a white diagonal line.





Curve Description: Vehicle Left Rear Redundant Velocity

Maximum Value: 56.0 at 0.0 Milliseconds

Minimum Value: -6.3 at 128.3 Milliseconds

SAE Filter Class: 180

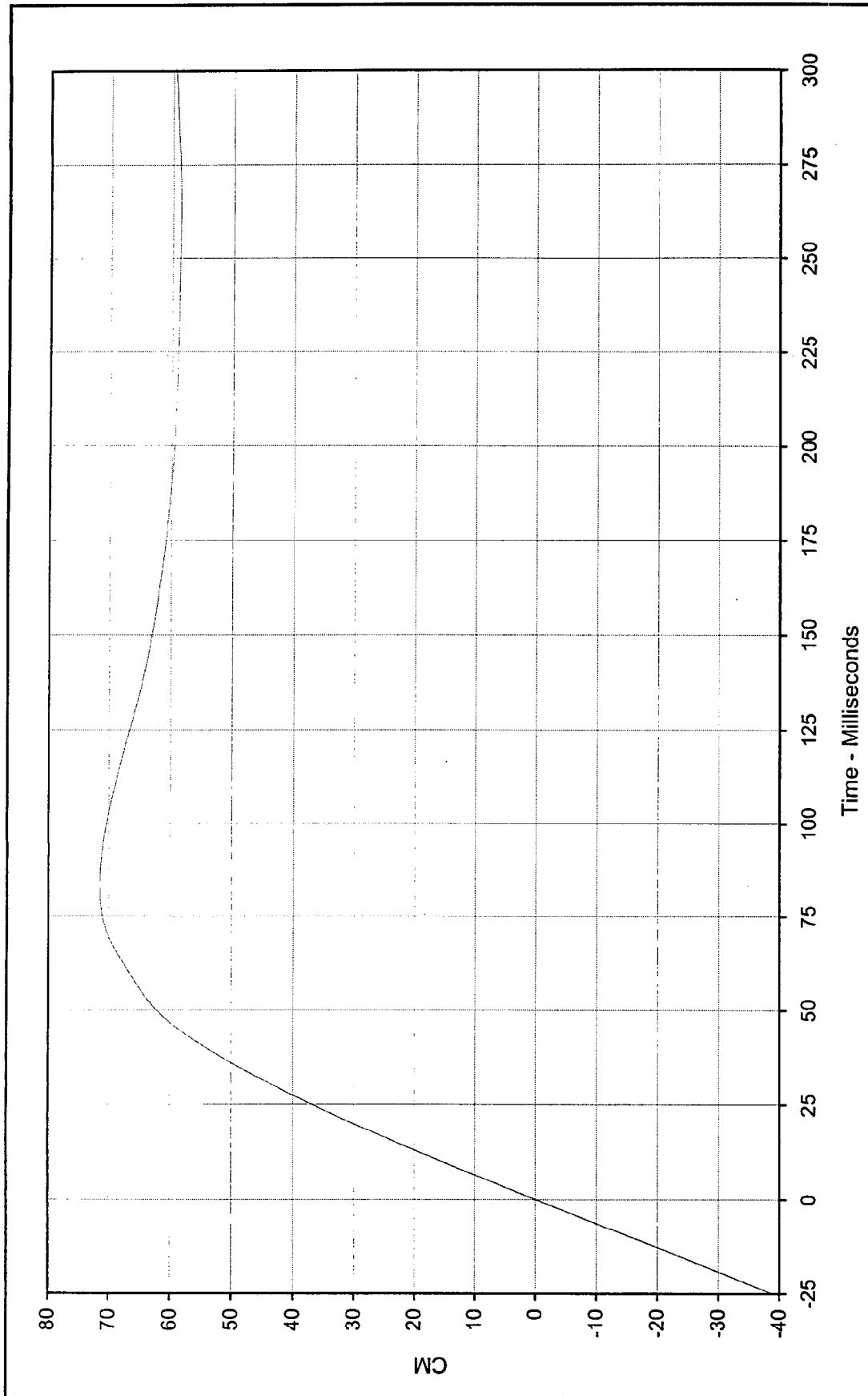
Date of Test: 12/22/99

Curve Number: IN1-096

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description: Vehicle Left Rear Redundant Displ.

Maximum Value: 71.5 at 83.5 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 12/22/99

Curve Number: IN2-096

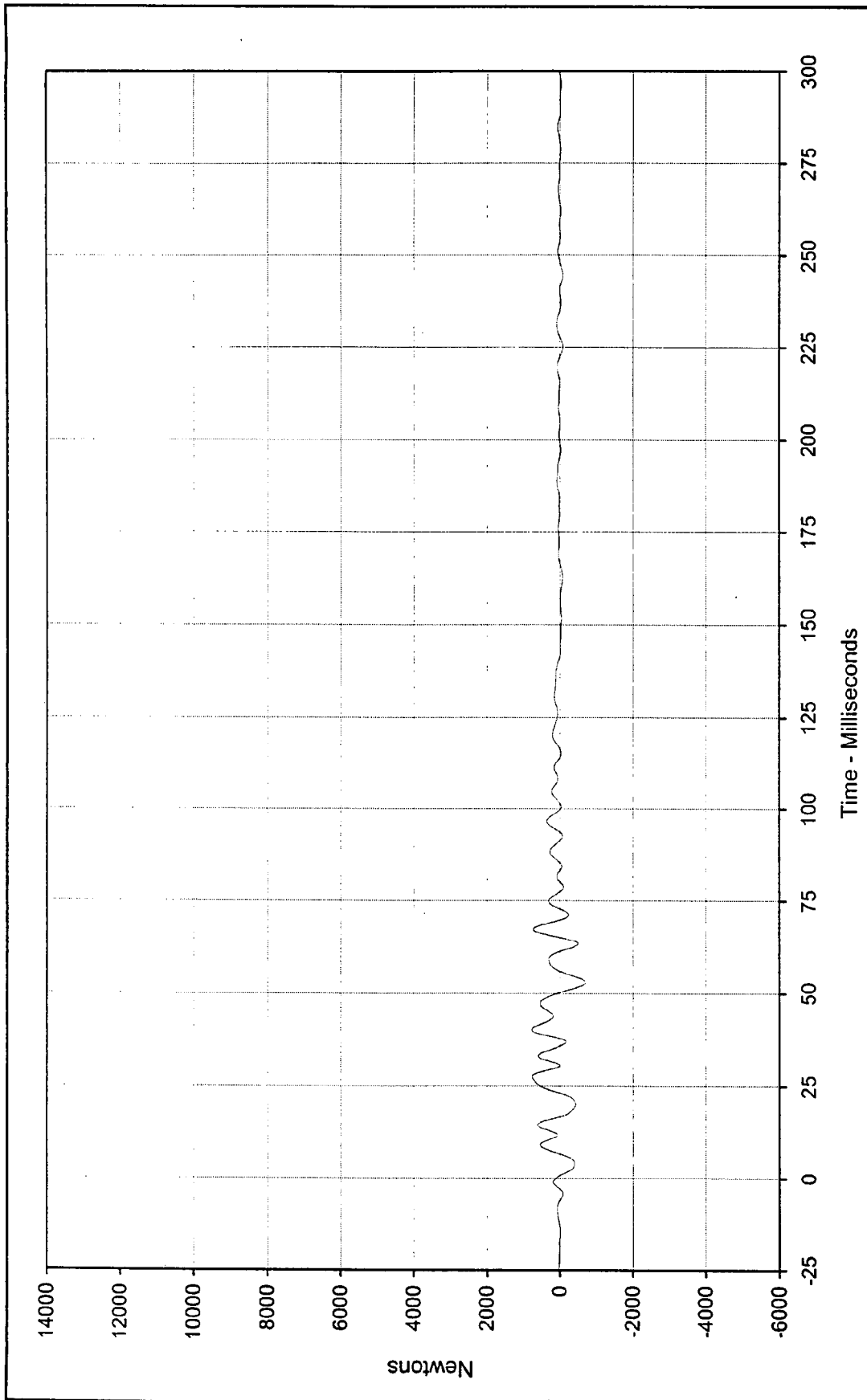
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup



APPENDIX C
LOAD CELL BARRIER INFORMATION

KAR20001-07



Curve Description: Barrier Force A2 Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Maximum Value: 778.0 at 40.4 Milliseconds Test Vehicle: 2000 Chevrolet S-10 Pickup

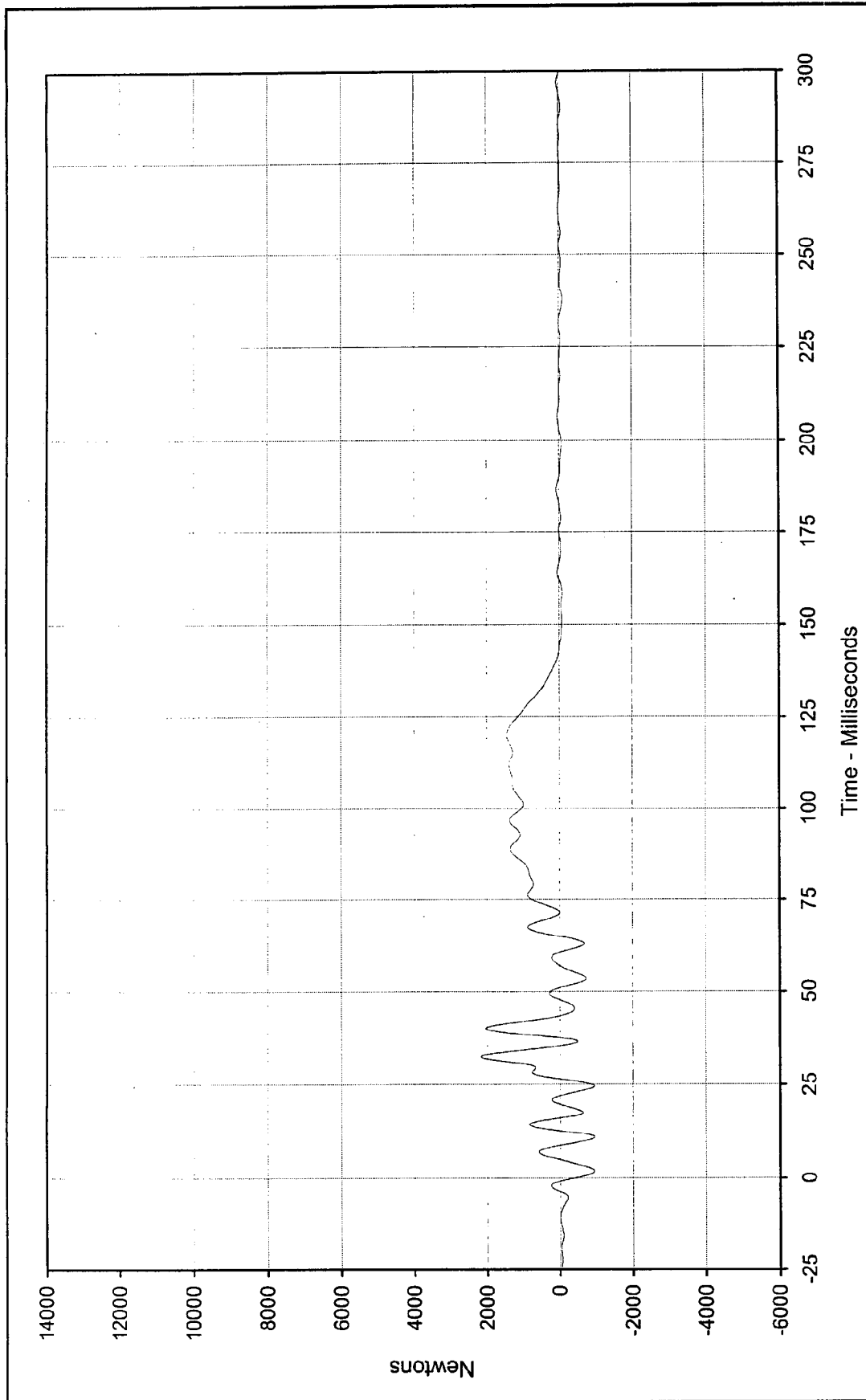
Minimum Value: -712.9 at 52.9 Milliseconds

SAE Filter Class: 60

Date of Test: 12/22/99

Curve Number: FIL-099

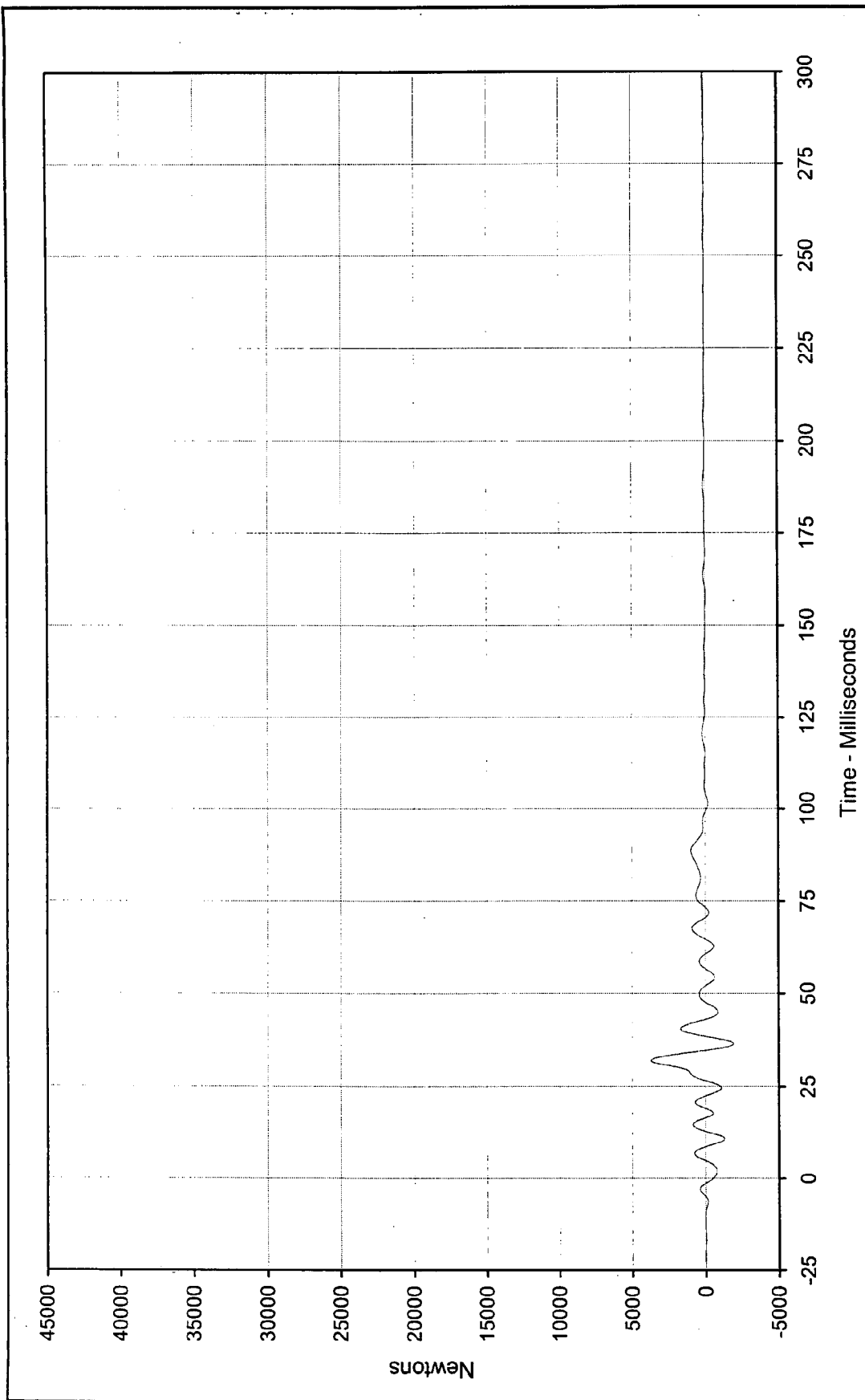




Curve Description: Barrier Force A3
 Maximum Value: 2173.3 at 32.5 Milliseconds
 Minimum Value: -951.9 at 11.1 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/22/99
 Curve Number: FIL-100

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup

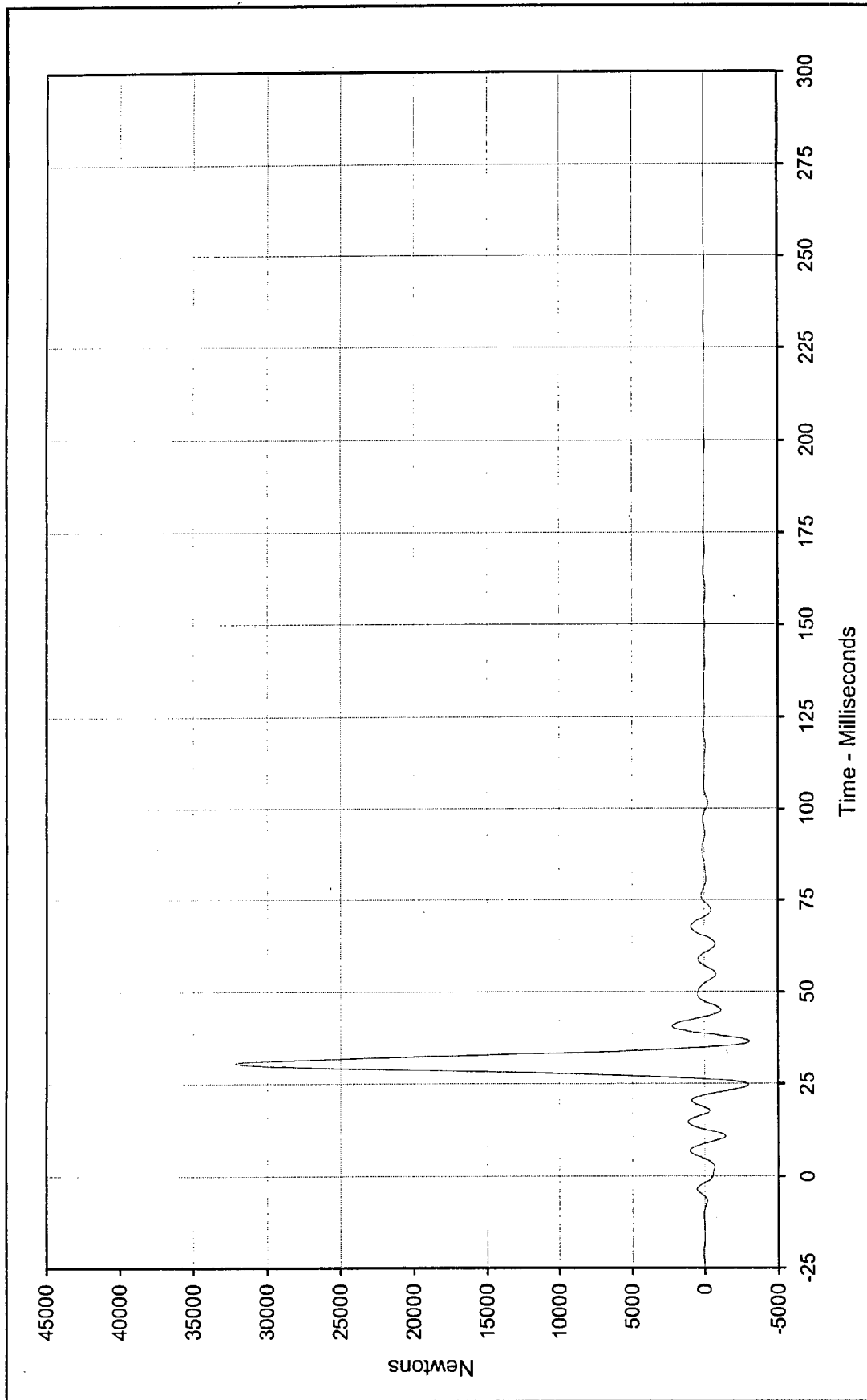




Curve Description: Barrier Force A4
 Maximum Value: 3727.5 at 32.0 Milliseconds
 Minimum Value: -1953.1 at 36.6 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/22/99
 Curve Number: FIL-101

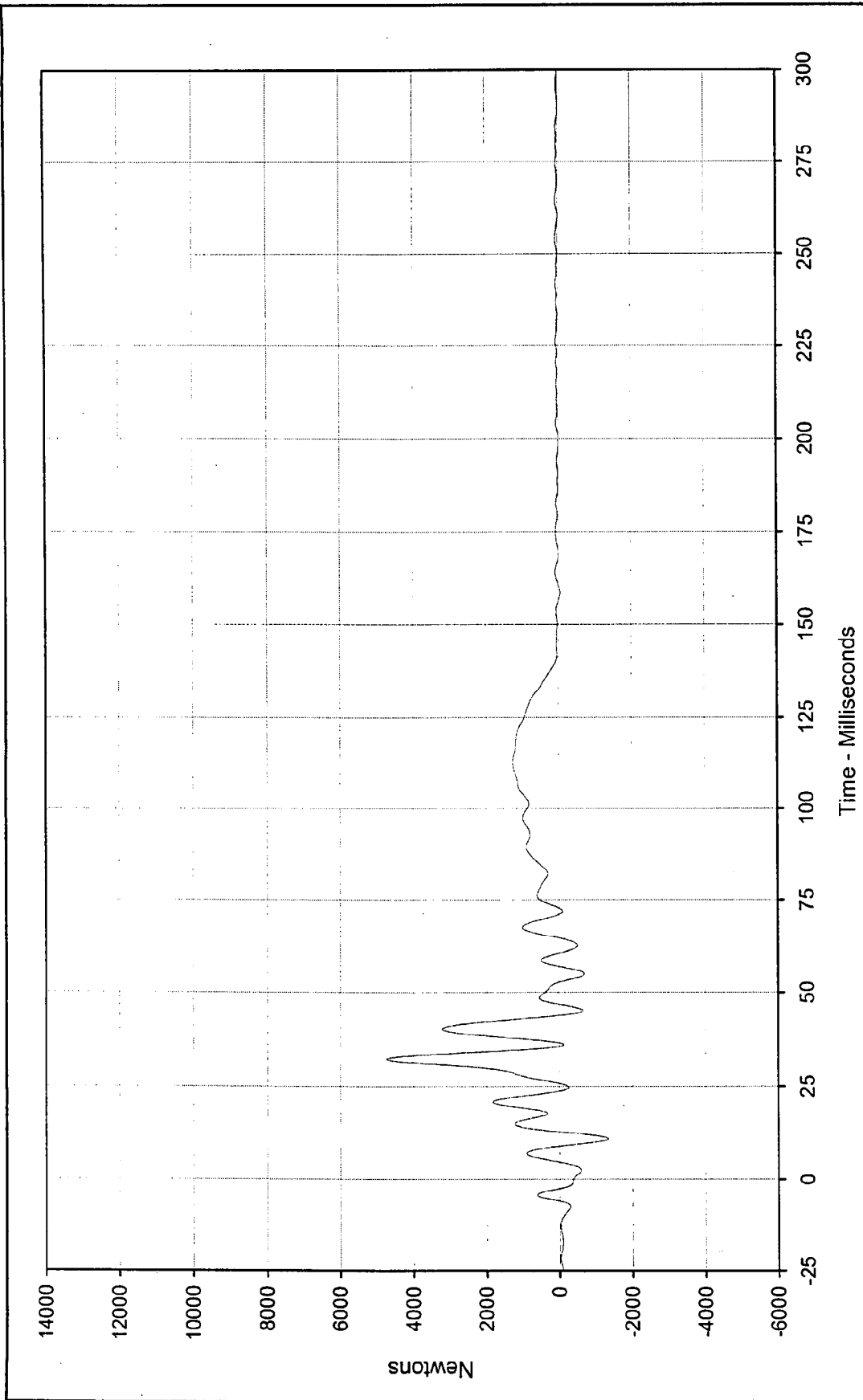
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description:		Barrier Force A5		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	32167.6	at	30.5	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-3071.0	at	36.3			
SAE Filter Class:	60					
Date of Test:	12/22/99					
Curve Number:	FIL-102					

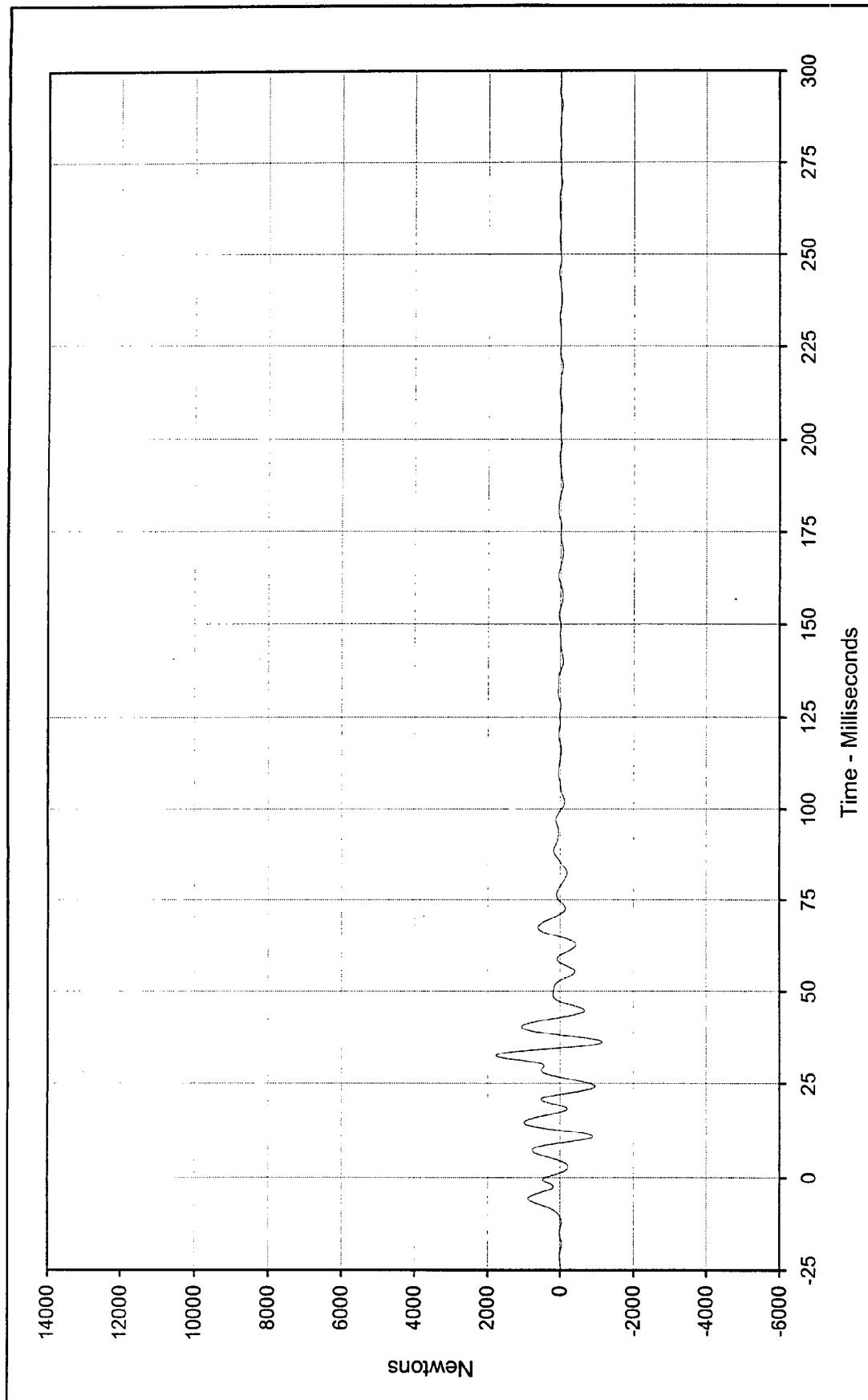




Curve Description: Barrier Force A6
 Maximum Value: 4740.6 at 32.2 Milliseconds
 Minimum Value: -1330.3 at 11.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/22/99
 Curve Number: FIL-103

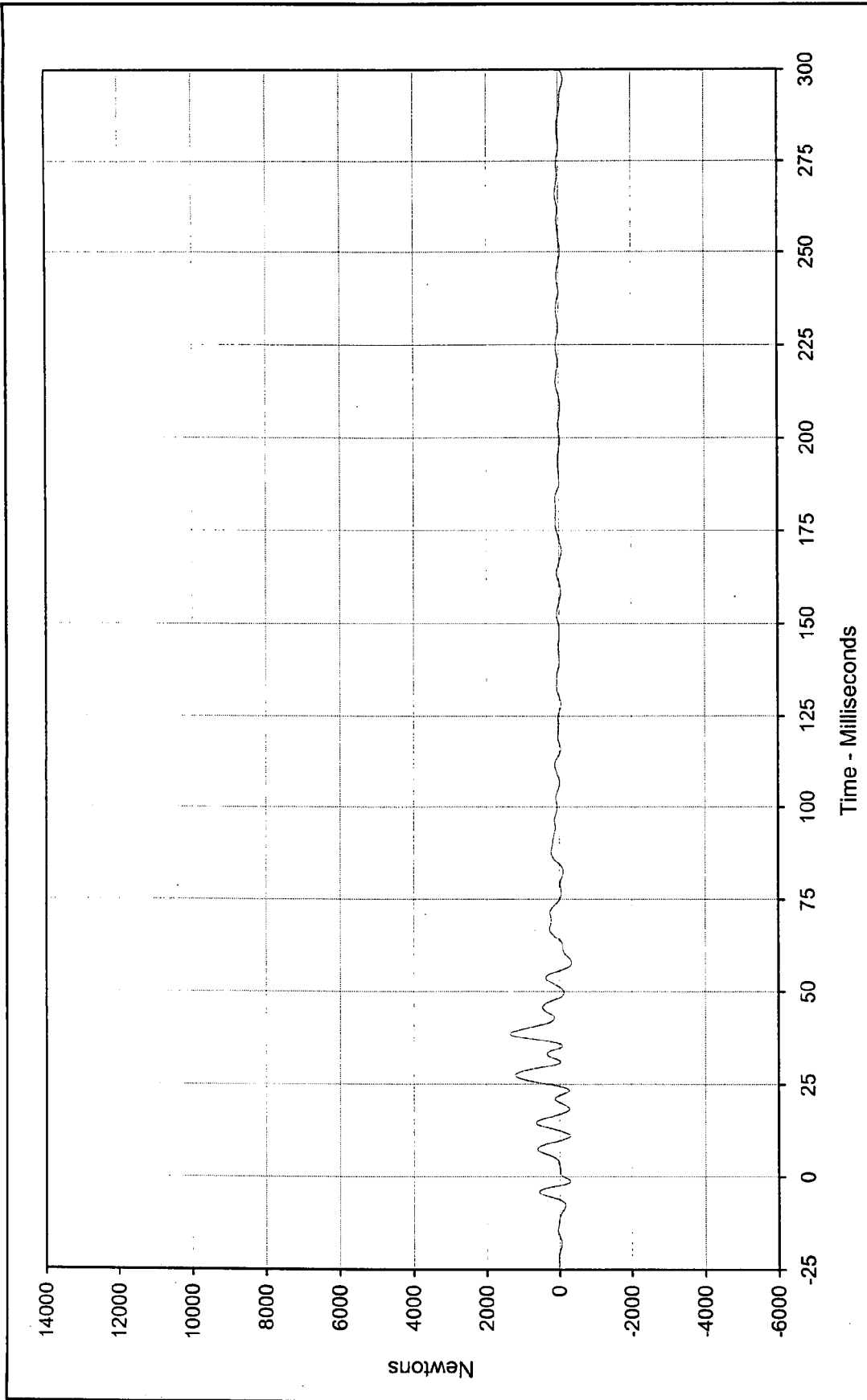
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description:	Barrier Force A7	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	1776.8 at 32.5 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-1147.6 at 36.1 Milliseconds			
SAE Filter Class:	60			
Date of Test:	12/22/99			
Curve Number:	FIL-104			





Curve Description: Barrier Force A8

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Maximum Value: 1374.4 at 38.8 Milliseconds

Test Vehicle: 2000 Chevrolet S-10 Pickup

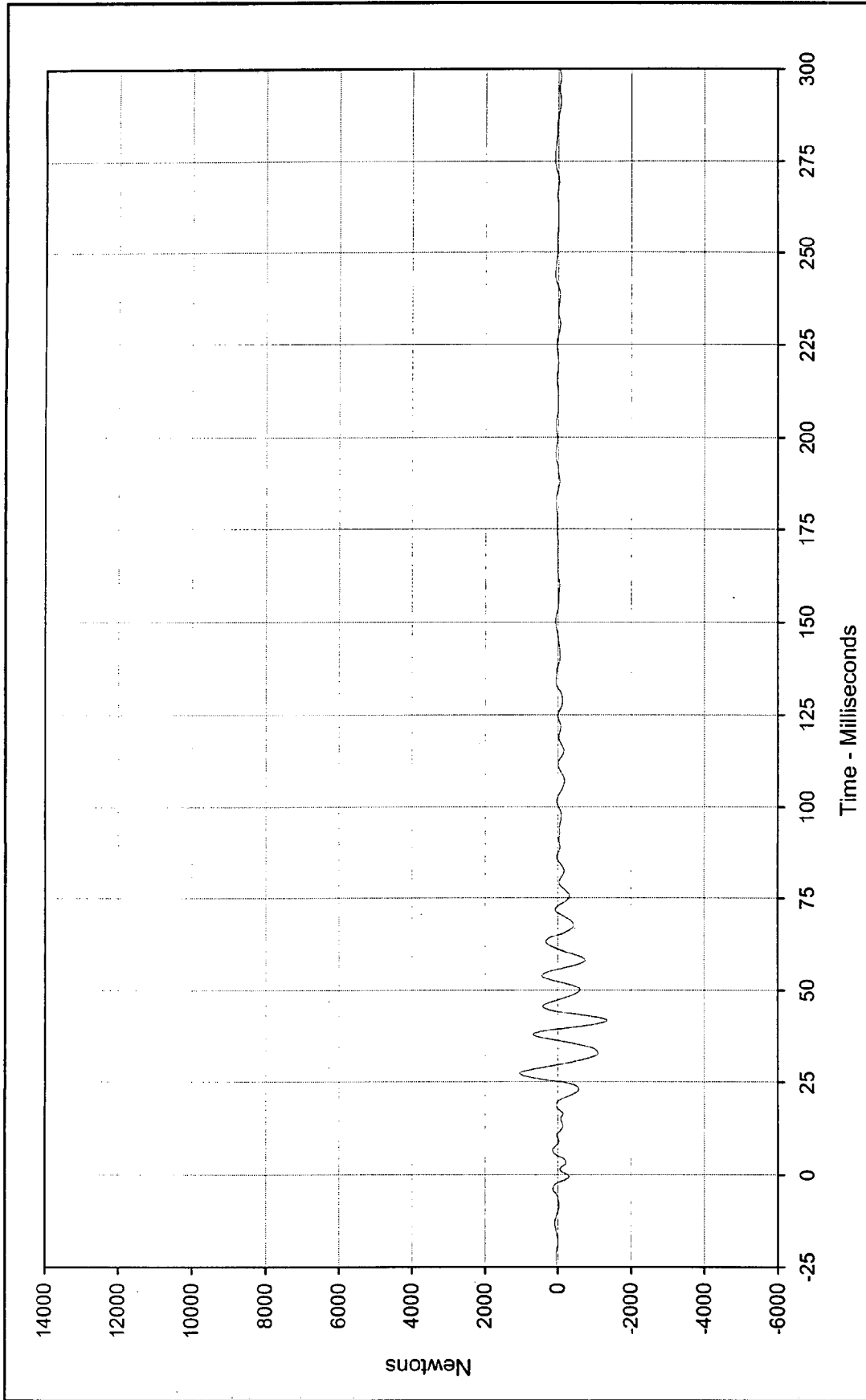
Minimum Value: -342.9 at 57.7 Milliseconds

SAE Filter Class: 60

Date of Test: 12/22/99

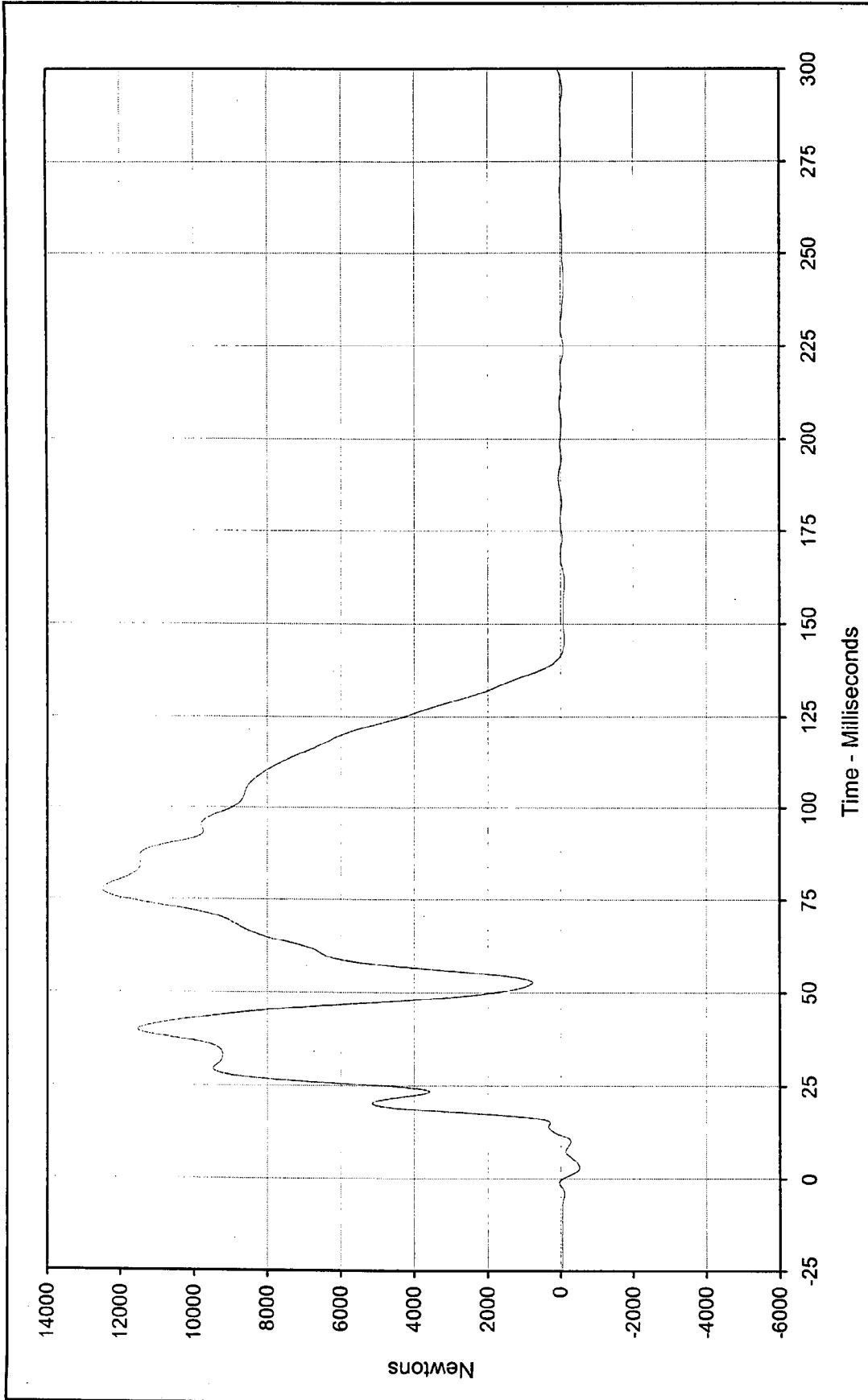
Curve Number: FIL-105





Curve Description:		Barrier Force A9		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	1044.3	at	27.3	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-1336.2	at	41.9			
SAE Filter Class:	60					
Date of Test:	12/22/99					
Curve Number:	FIL-106					

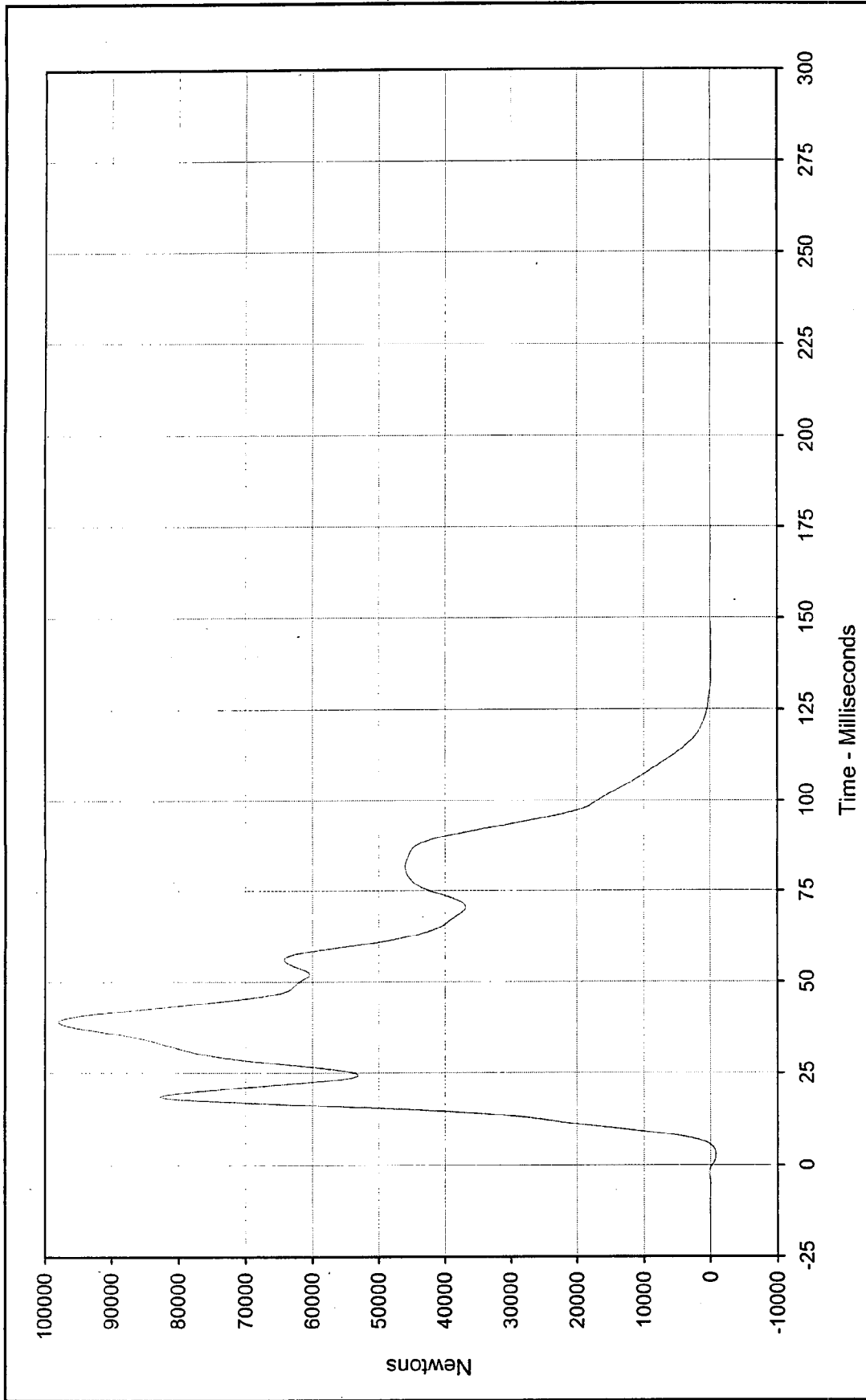




Curve Description: Barrier Force B2
 Maximum Value: 12495.4 at 77.5 Milliseconds
 Minimum Value: -515.8 at 3.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/22/99
 Curve Number: FIL-108

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup

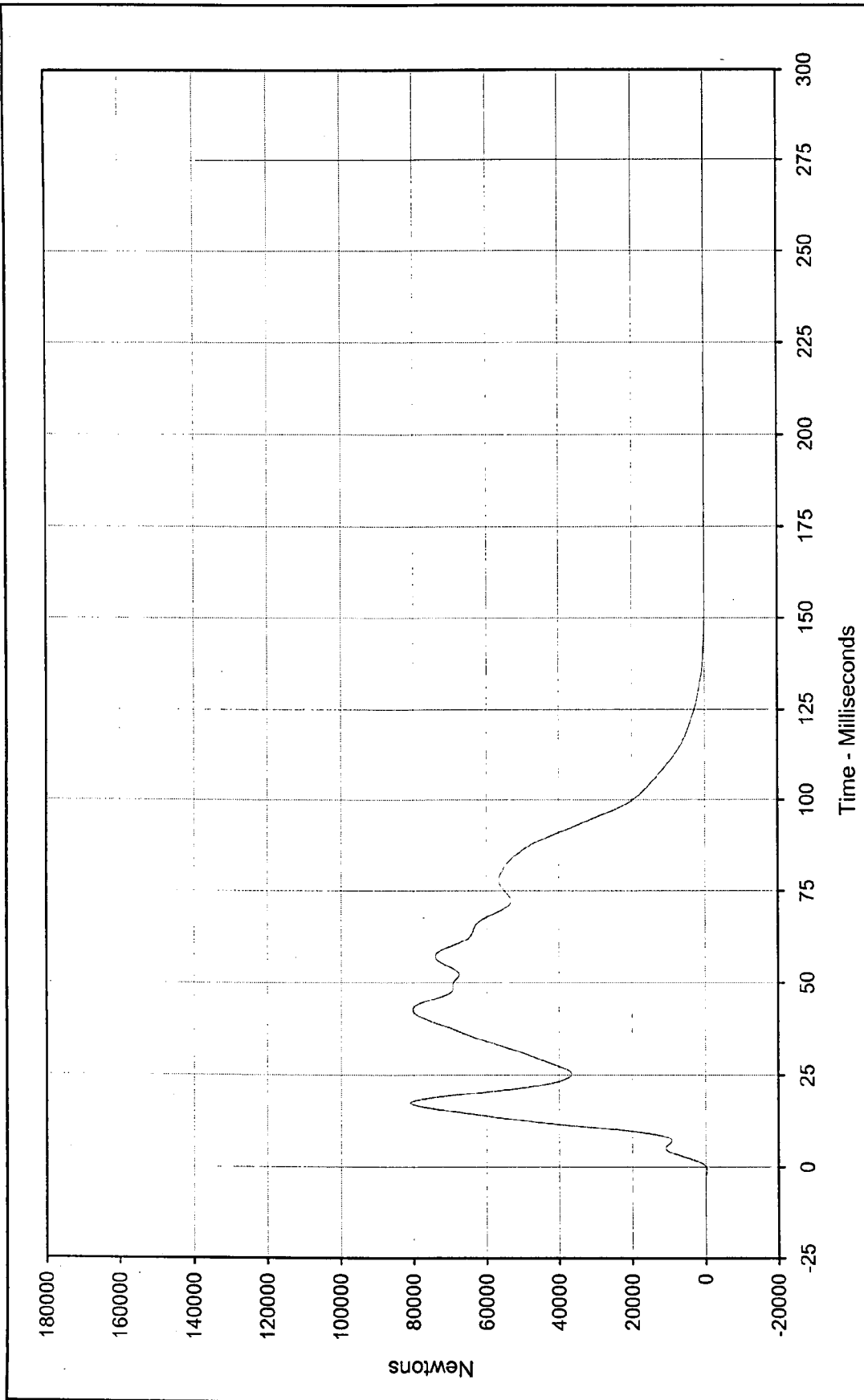




Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup

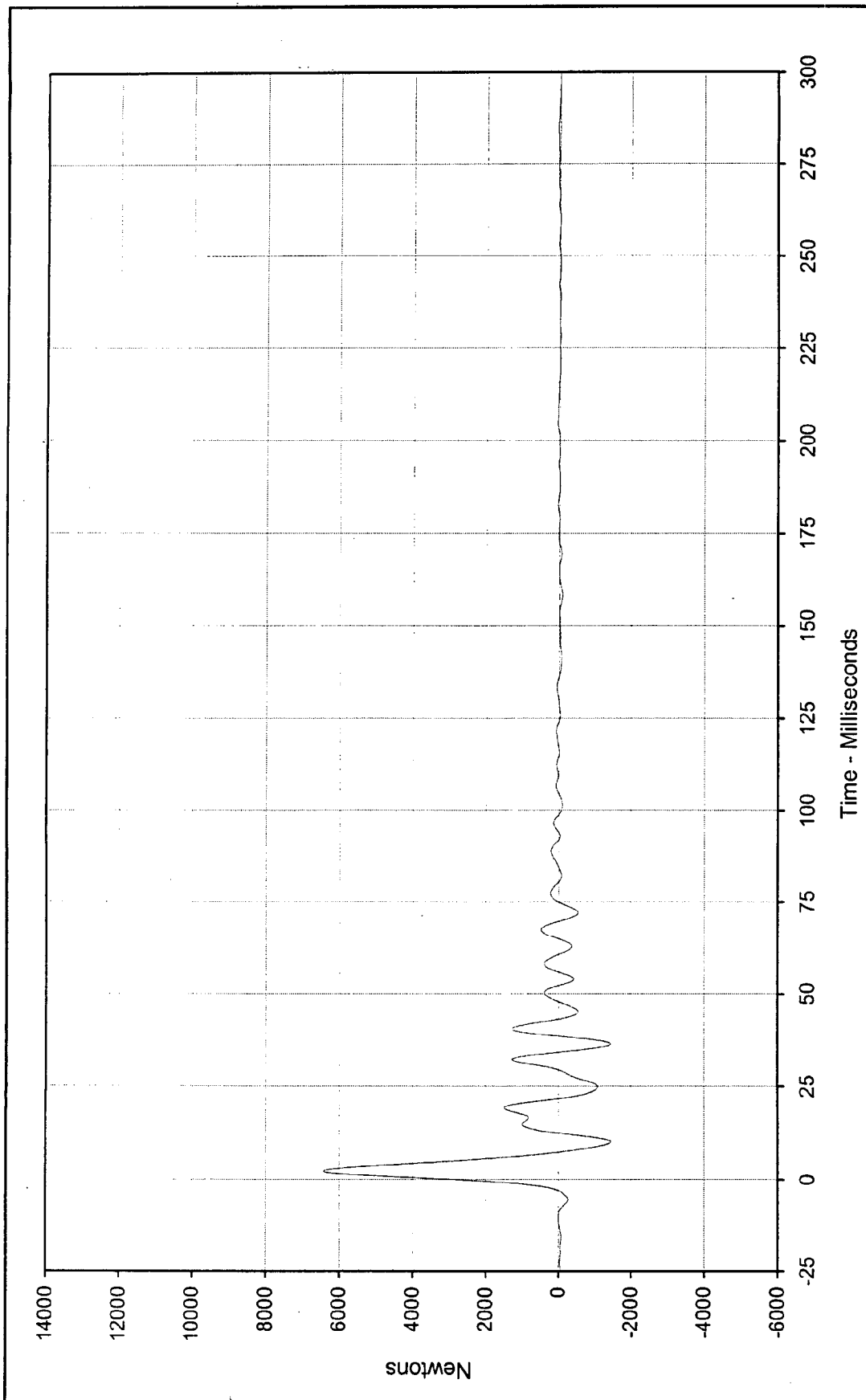


Curve Description: Barrier Force B3
 Maximum Value: 97993.5 at 39.1 Milliseconds
 Minimum Value: -763.0 at 2.5 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/22/99
 Curve Number: FIL-109



Curve Description:	Barrier Force B4	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	80851.6 at 17.6 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-127.8 at 0.0 Milliseconds			
SAE Filter Class:	60			
Date of Test:	12/22/99			
Curve Number:	FIL-110			

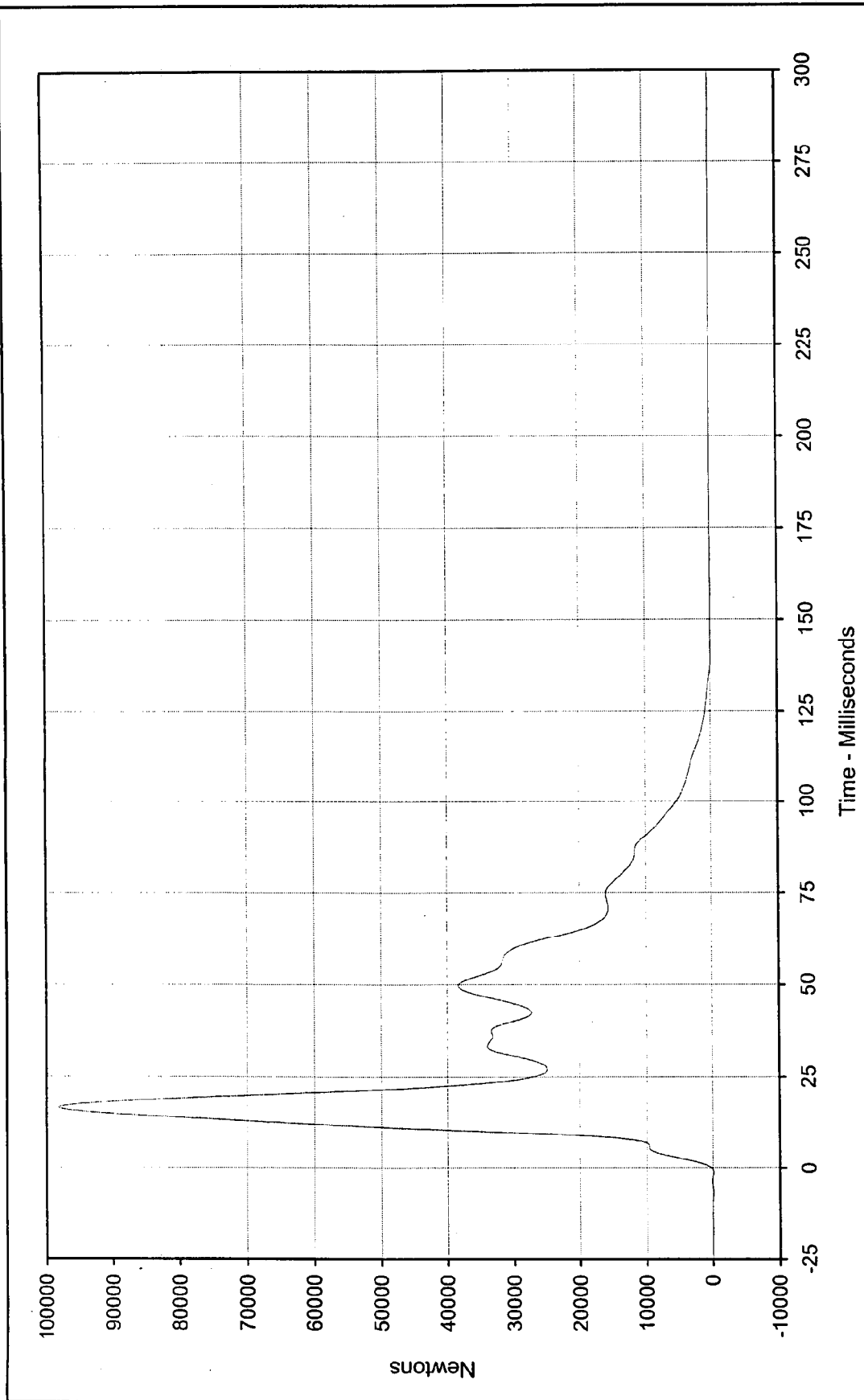




Curve Description: Barrier Force B5 Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Maximum Value: 6426.1 at 2.3 Milliseconds Test Vehicle: 2000 Chevrolet S-10 Pickup
 Minimum Value: -1439.6 at 10.1 Milliseconds



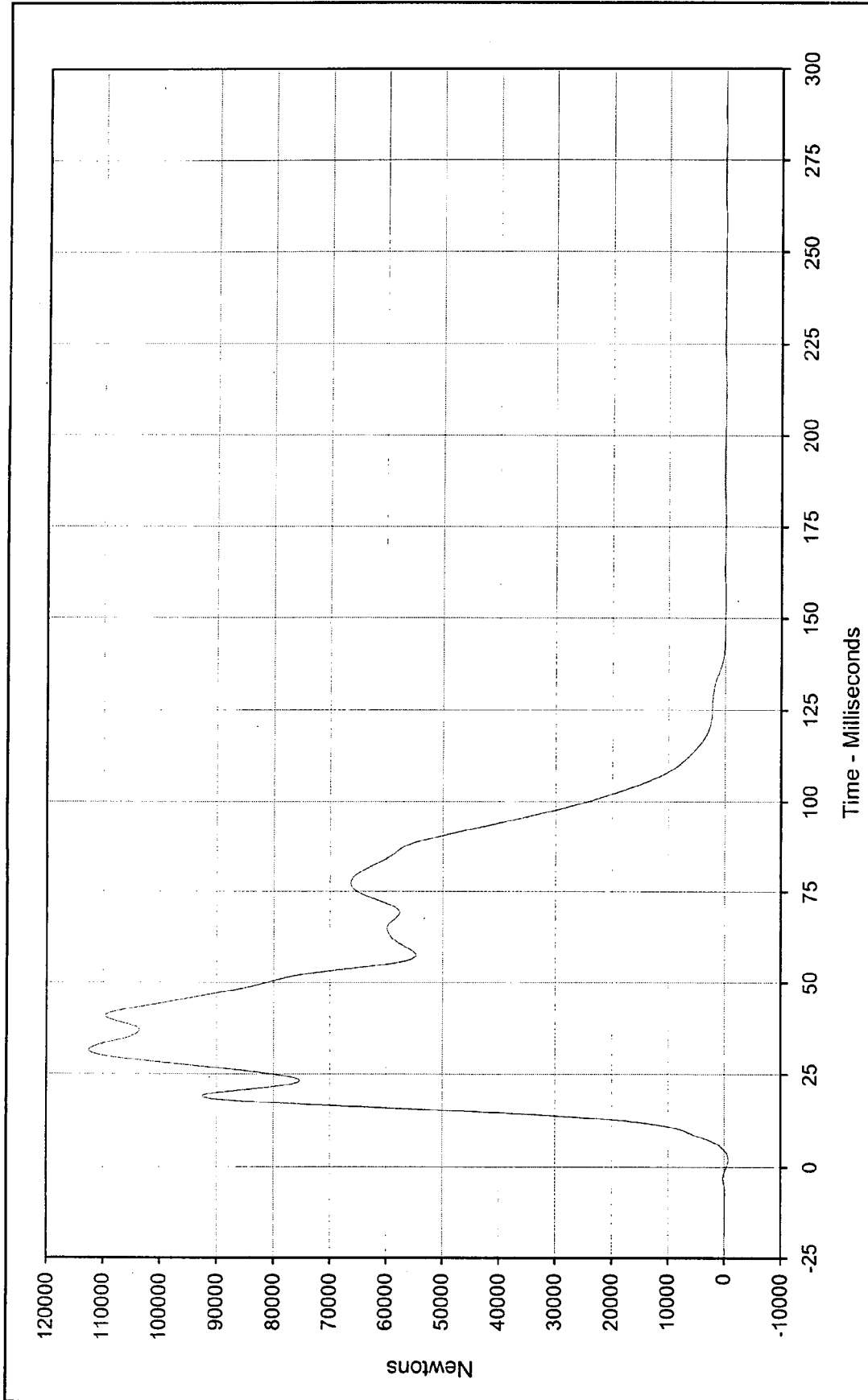
SAE Filter Class: 60
 Date of Test: 12/22/99
 Curve Number: FIL-111



Curve Description: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Program:
 Test Vehicle: 2000 Chevrolet S-10 Pickup

Barrier Force B6
 Maximum Value: 98250.7 at 16.6 Milliseconds
 Minimum Value: -73.1 at 158.6 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/22/99
 Curve Number: FIL-112

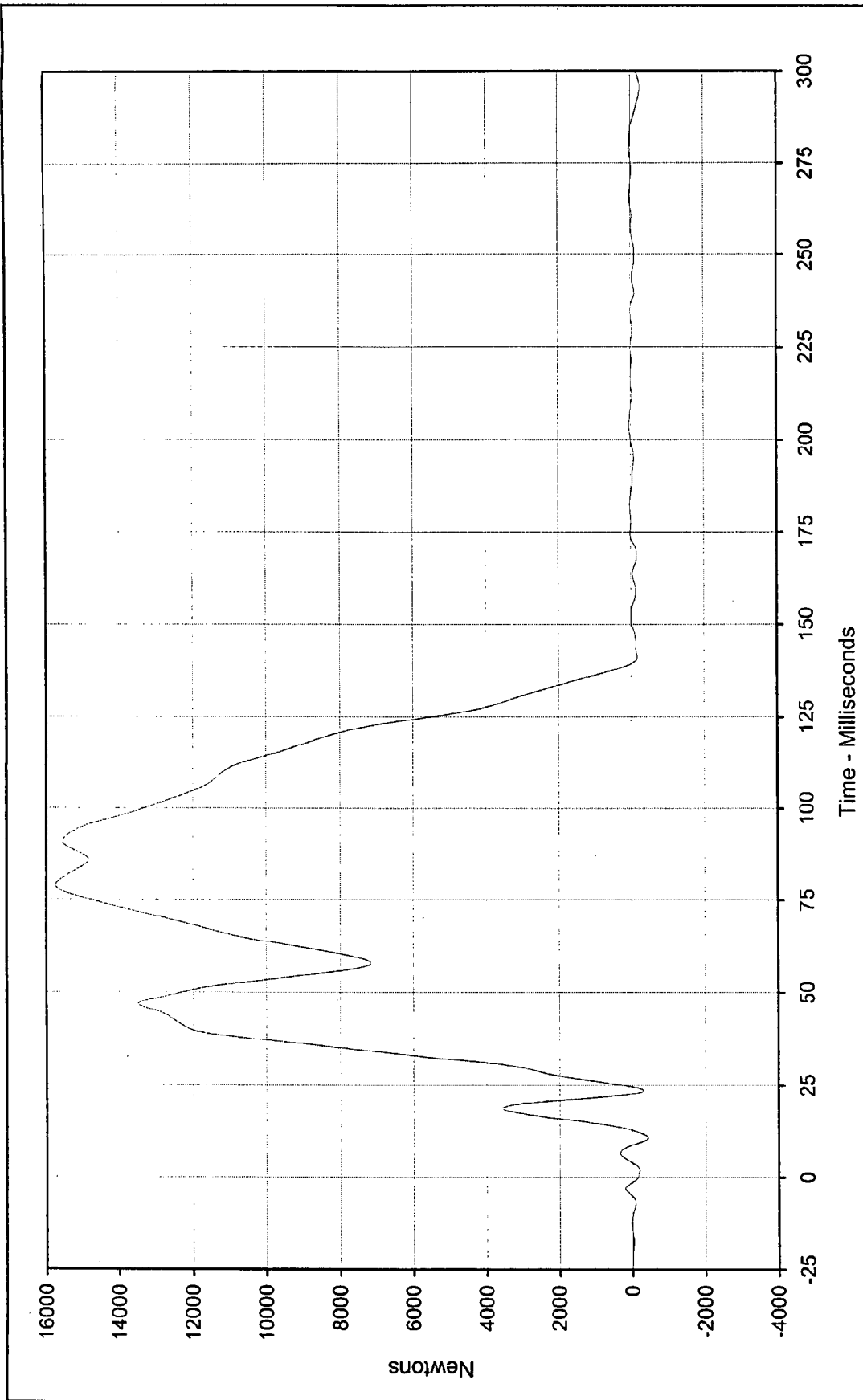




Curve Description: Barrier Force B7
 Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup

Maximum Value: 112527.4 at 31.4 Milliseconds
 Minimum Value: -678.2 at 1.9 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/22/99
 Curve Number: FIL-113





Curve Description: Barrier Force B8 Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Maximum Value: 15743.7 at 78.9 Milliseconds Test Vehicle: 2000 Chevrolet S-10 Pickup

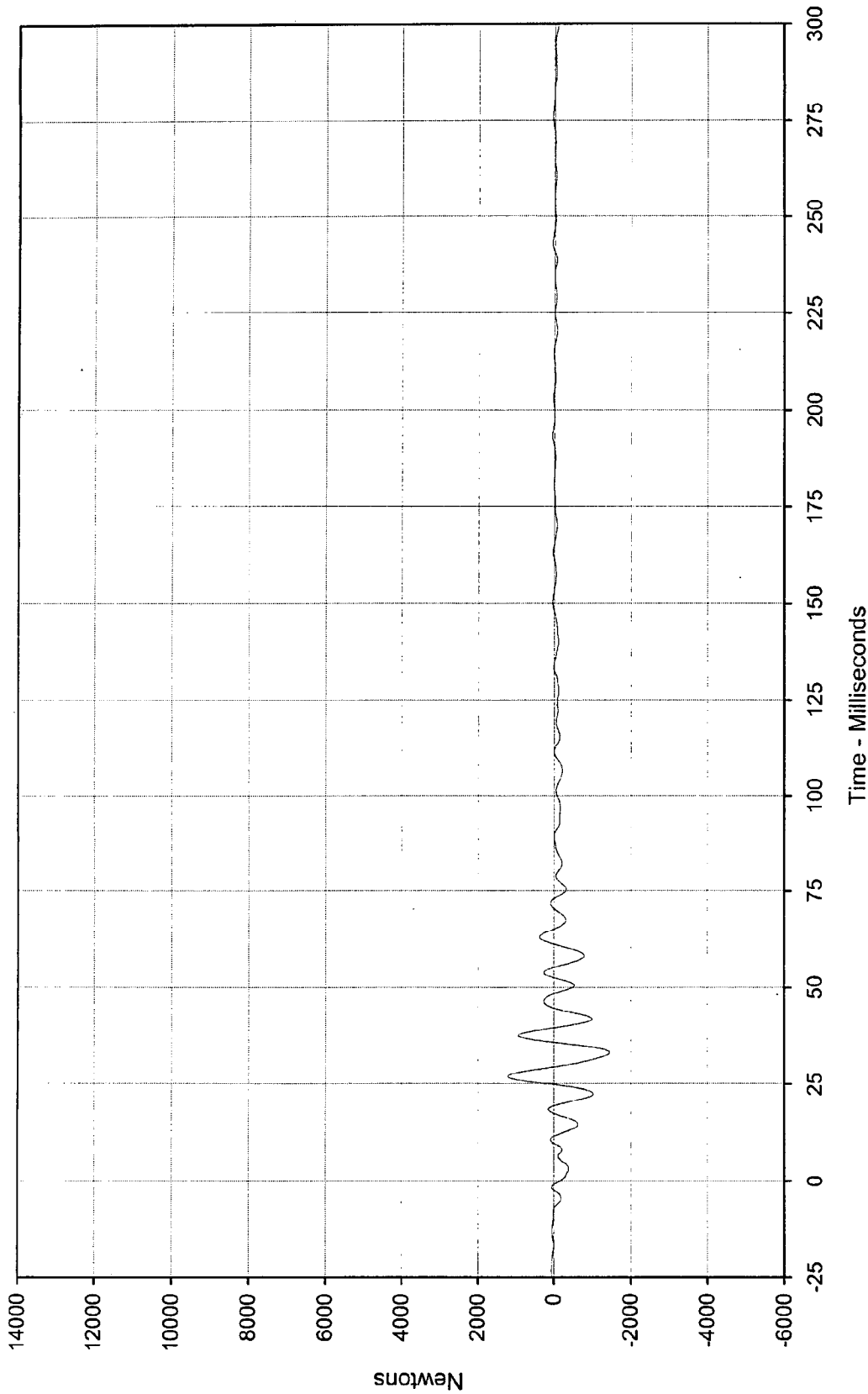
Minimum Value: -444.1 at 10.7 Milliseconds

SAE Filter Class: 60

Date of Test: 12/22/99

Curve Number: FIL-114





Curve Description: Barrier Force B9 Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Maximum Value: 1207.3 at 27.0 Milliseconds Test Vehicle: 2000 Chevrolet S-10 Pickup

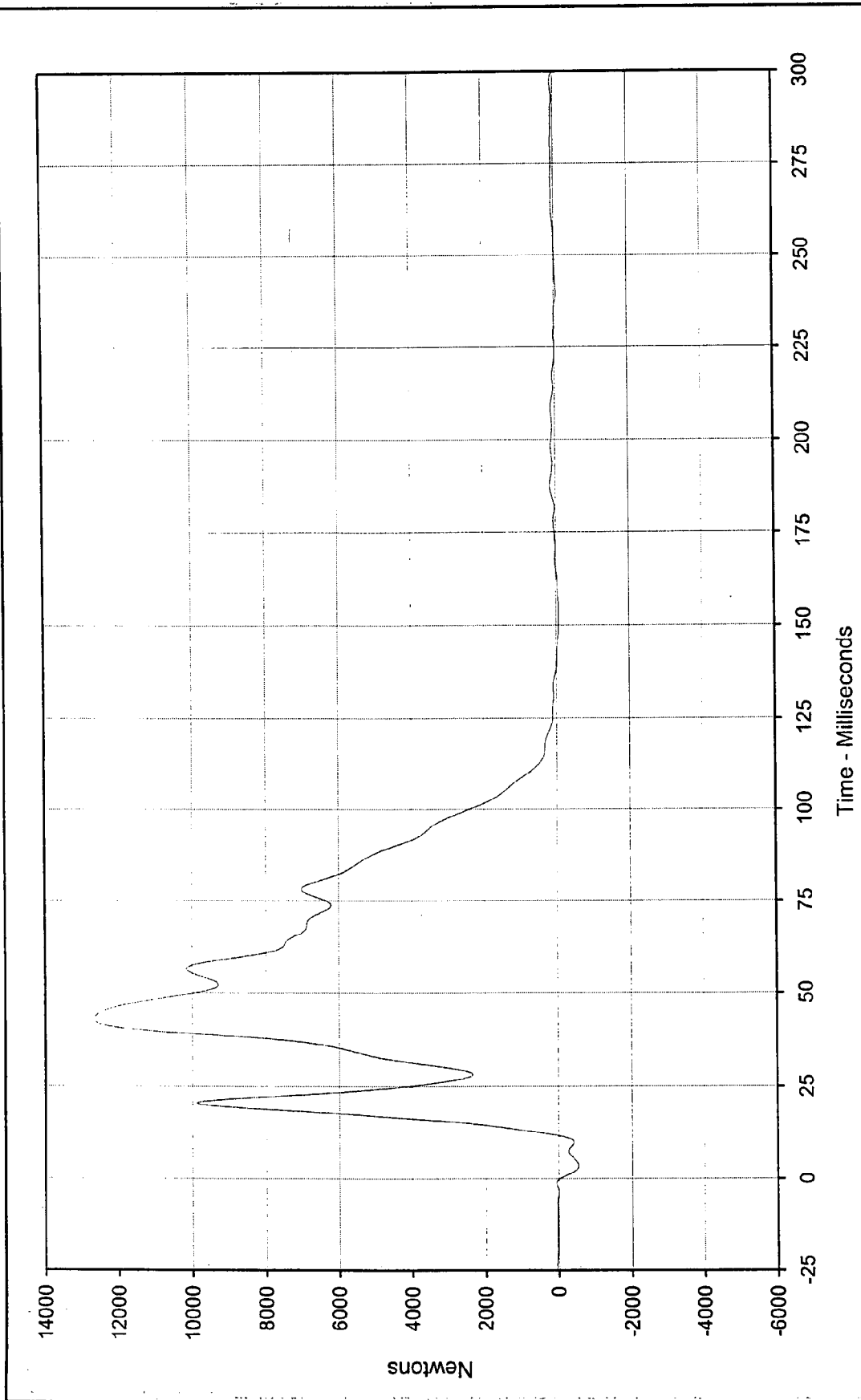
Minimum Value: -1449.3 at 33.1 Milliseconds

SAE Filter Class: 60

Date of Test: 12/22/99

Curve Number: FIL-115





Curve Description: Barrier Force C2

Maximum Value: 12665.0 at 42.8 Milliseconds

Minimum Value: -537.1 at 3.4 Milliseconds

SAE Filter Class: 60

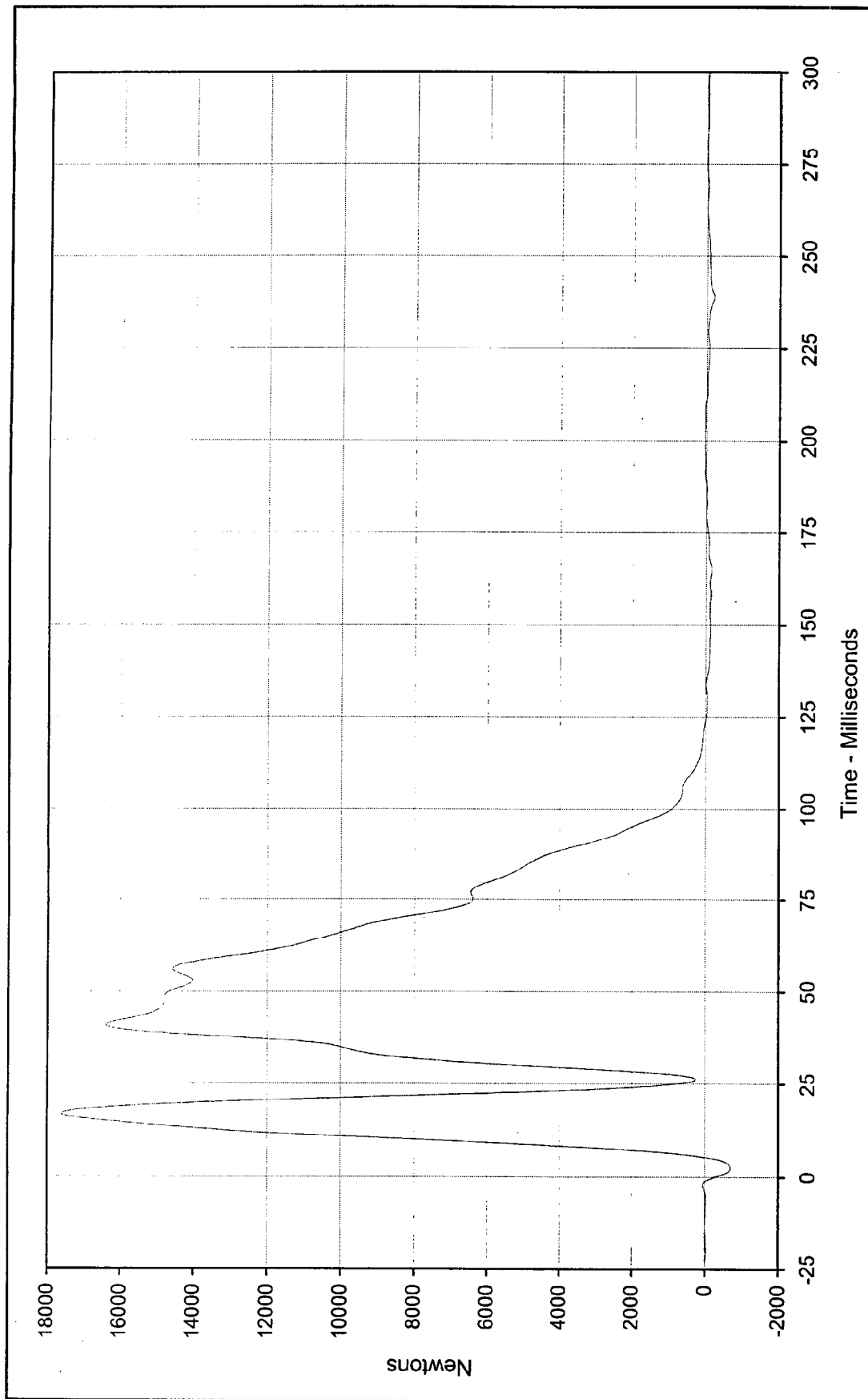
Date of Test: 12/22/99

Curve Number: FIL-117

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description: Barrier Force C3

Maximum Value: 17612.1 at 16.9 Milliseconds

Minimum Value: -710.1 at 2.5 Milliseconds

SAE Filter Class: 60

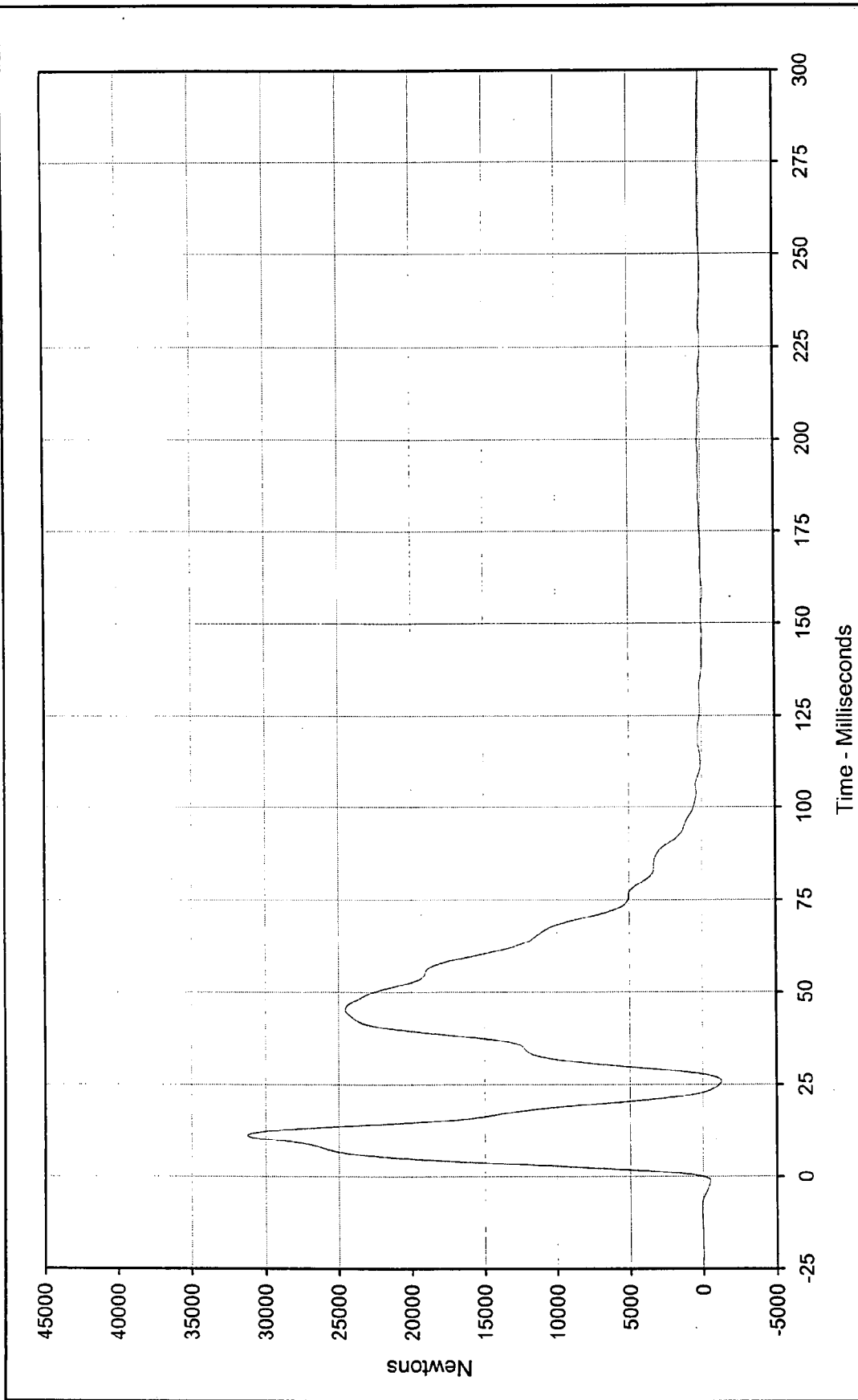
Date of Test: 12/22/99

Curve Number: FIL-118

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106

Test Vehicle: 2000 Chevrolet S-10 Pickup

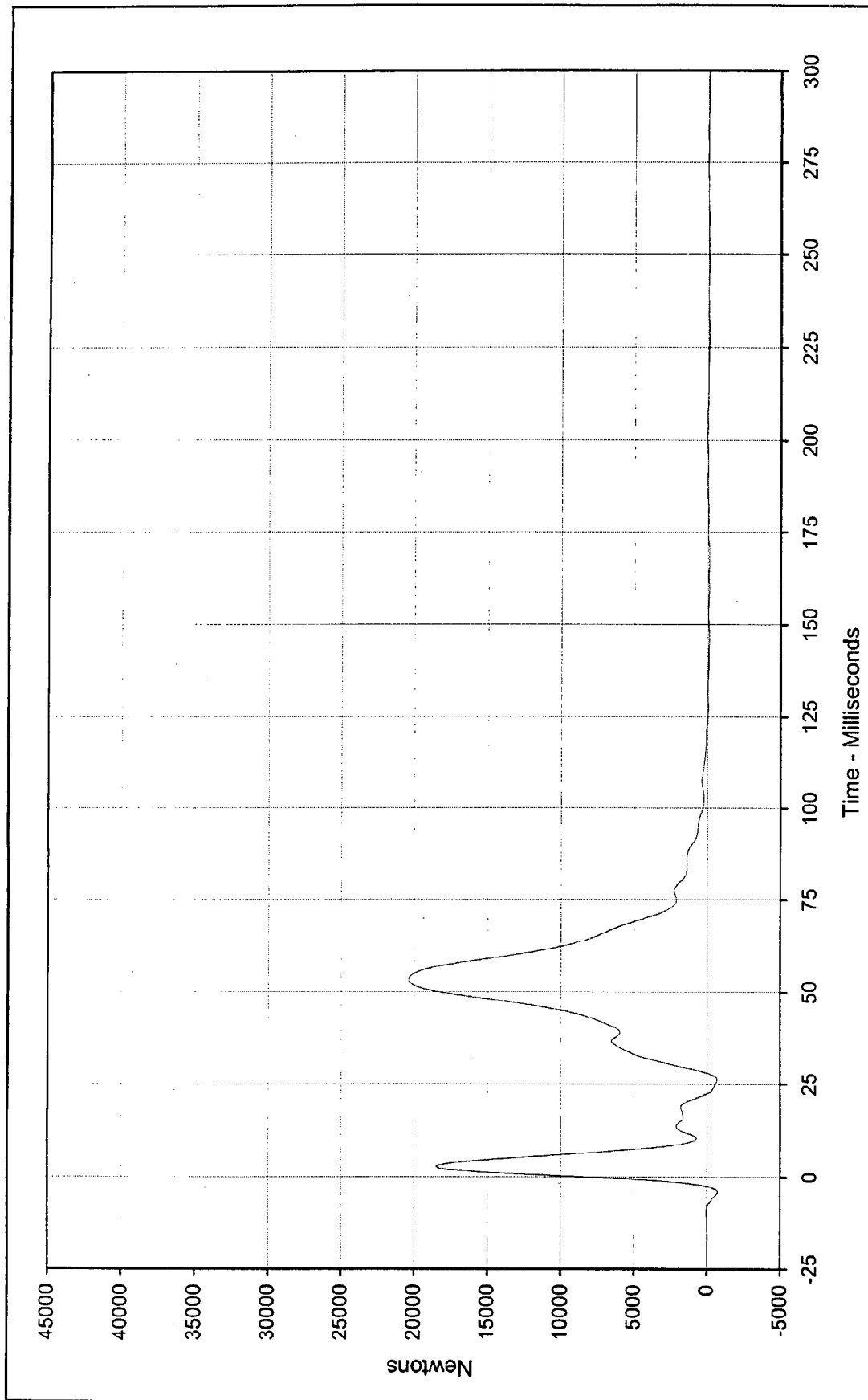




Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup

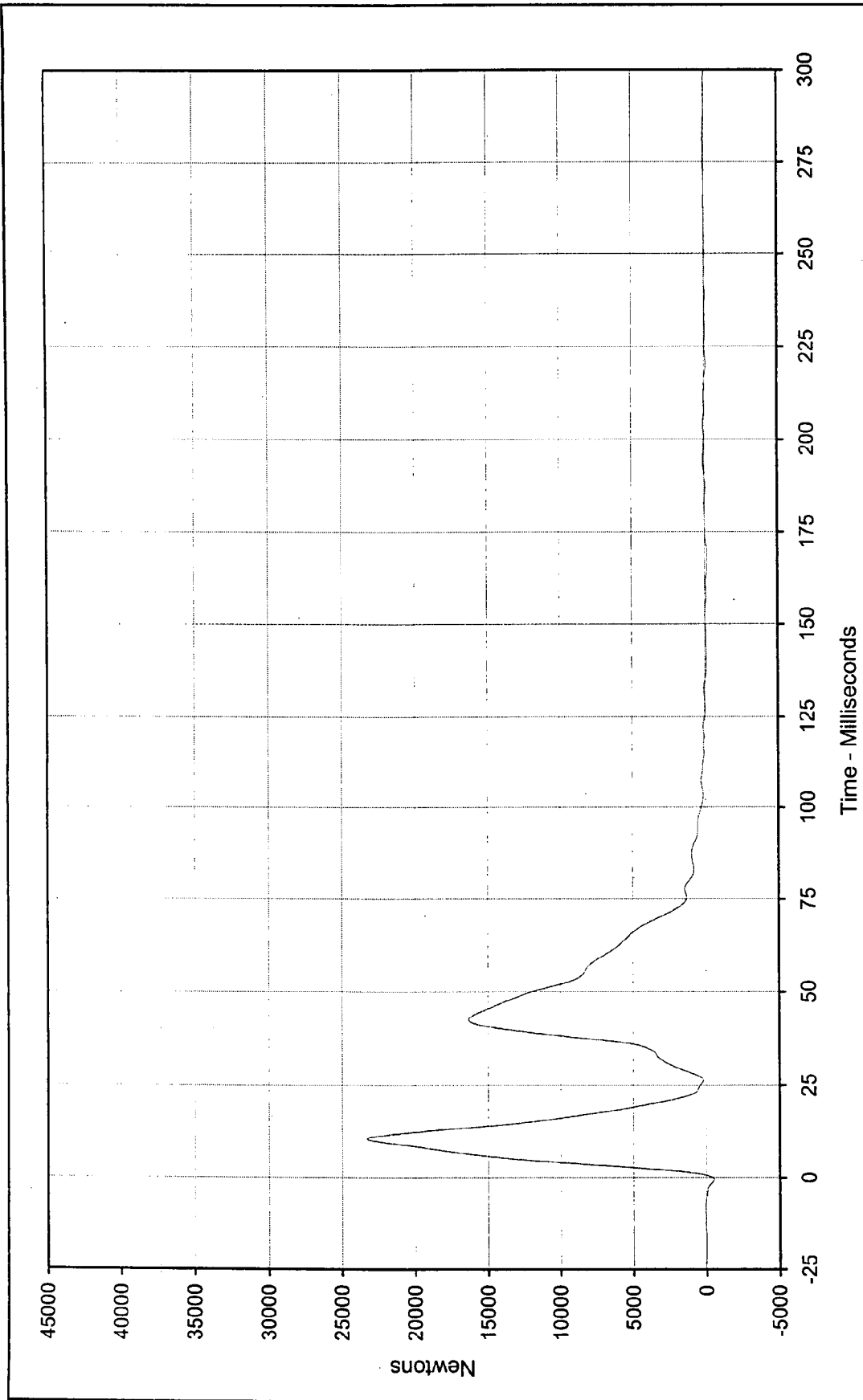
Curve Description: Barrier Force C4
 Maximum Value: 31244.3 at 11.2 Milliseconds
 Minimum Value: -1291.9 at 25.8 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/22/99
 Curve Number: FIL-119





Curve Description:	Barrier Force C5	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	20370.5 at 53.3 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-702.7 at 26.2 Milliseconds			
SAE Filter Class:	60			
Date of Test:	12/22/99			
Curve Number:	FIL-120			

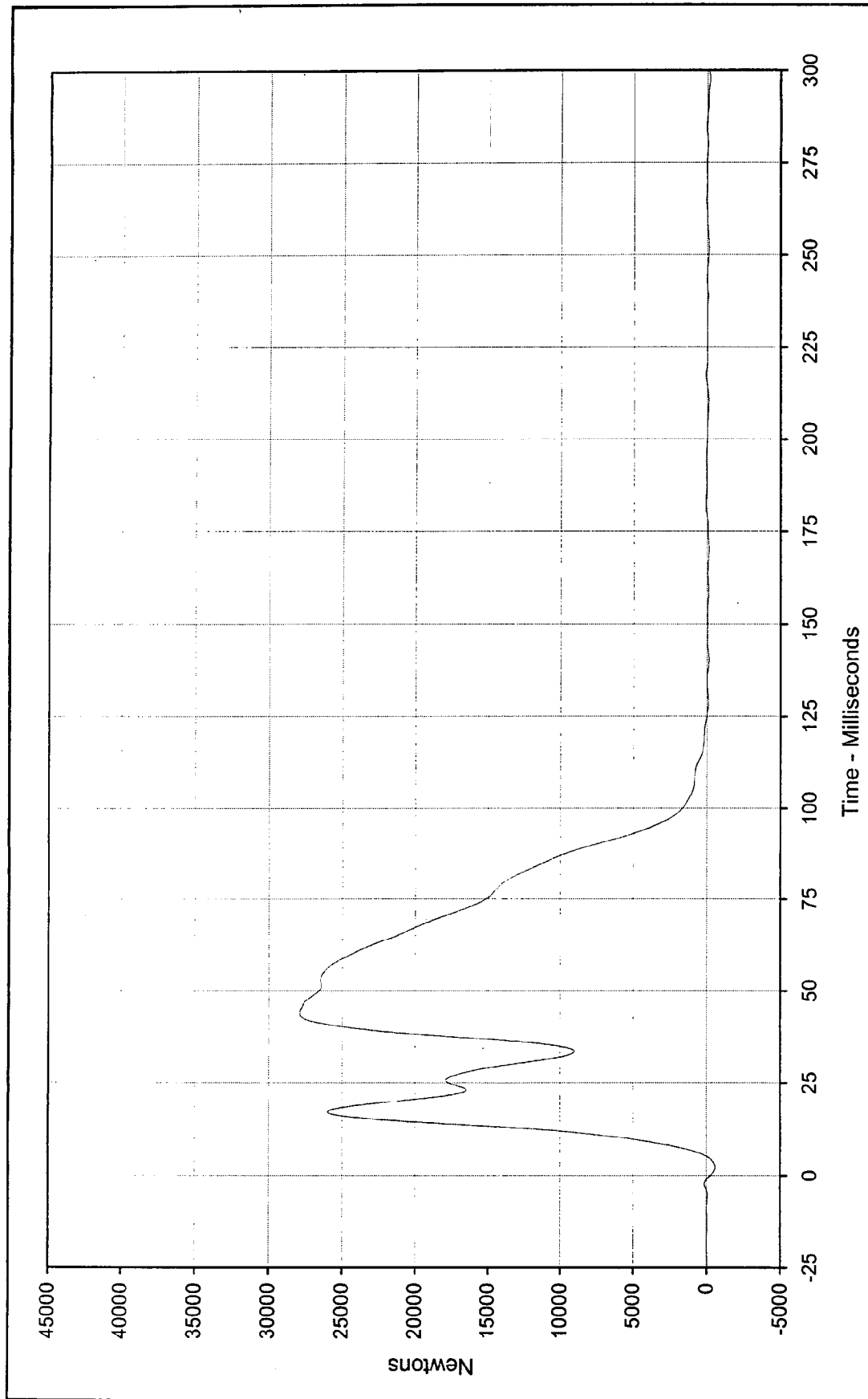




Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup

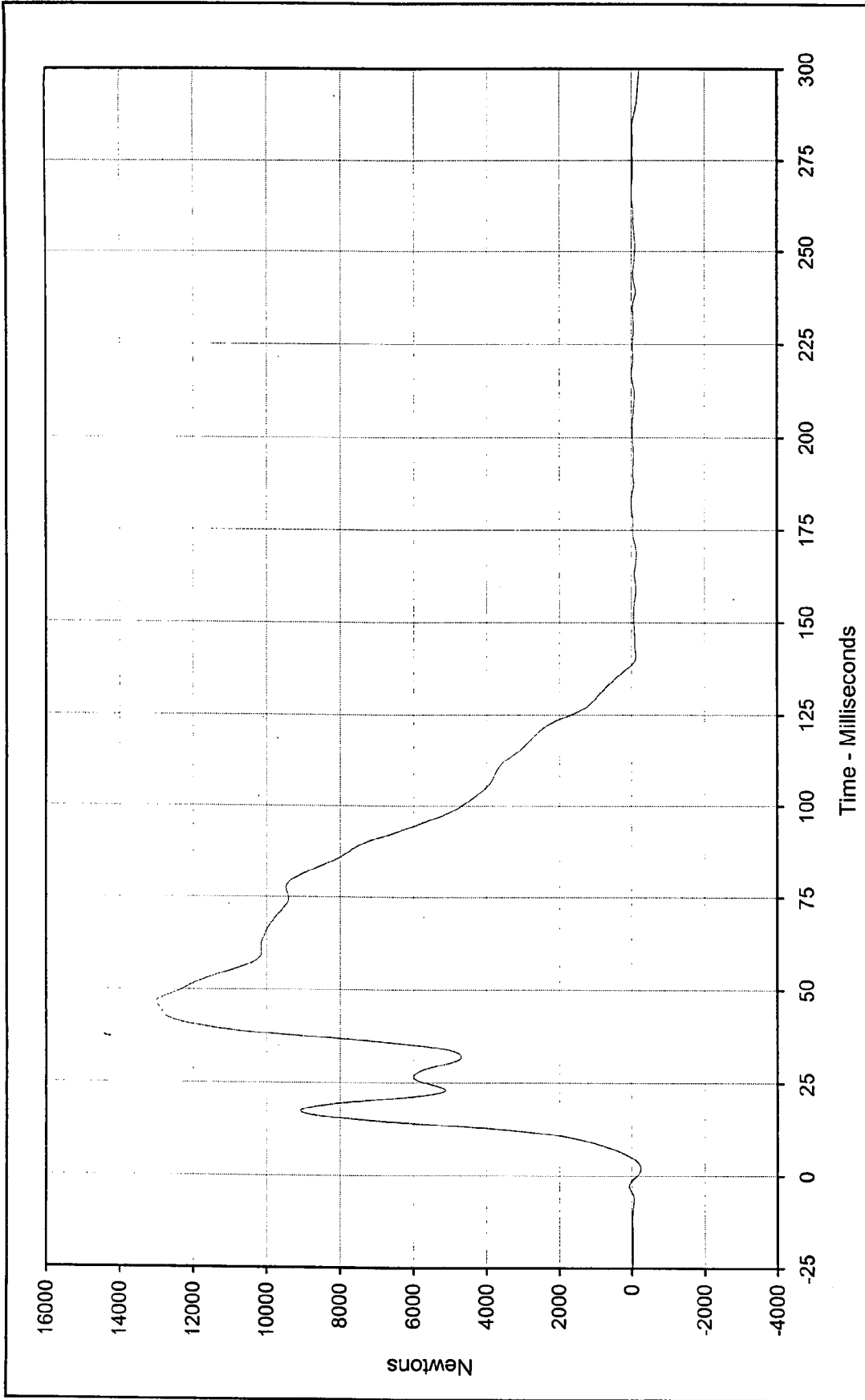
Curve Description: Barrier Force C6
 Maximum Value: 23287.6 at 10.5 Milliseconds
 Minimum Value: -412.3 at 0.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/22/99
 Curve Number: FIL-121





Curve Description:	Barrier Force C7	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	27895.2 at 43.9 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-594.7 at 2.1 Milliseconds			
SAE Filter Class:	60			
Date of Test:	12/22/99			
Curve Number:	FIL-122			





Curve Description: 2000 NHTSA 35 mph NCAP No.: MY0106

Maximum Value: 13002.8 at 46.5 Milliseconds

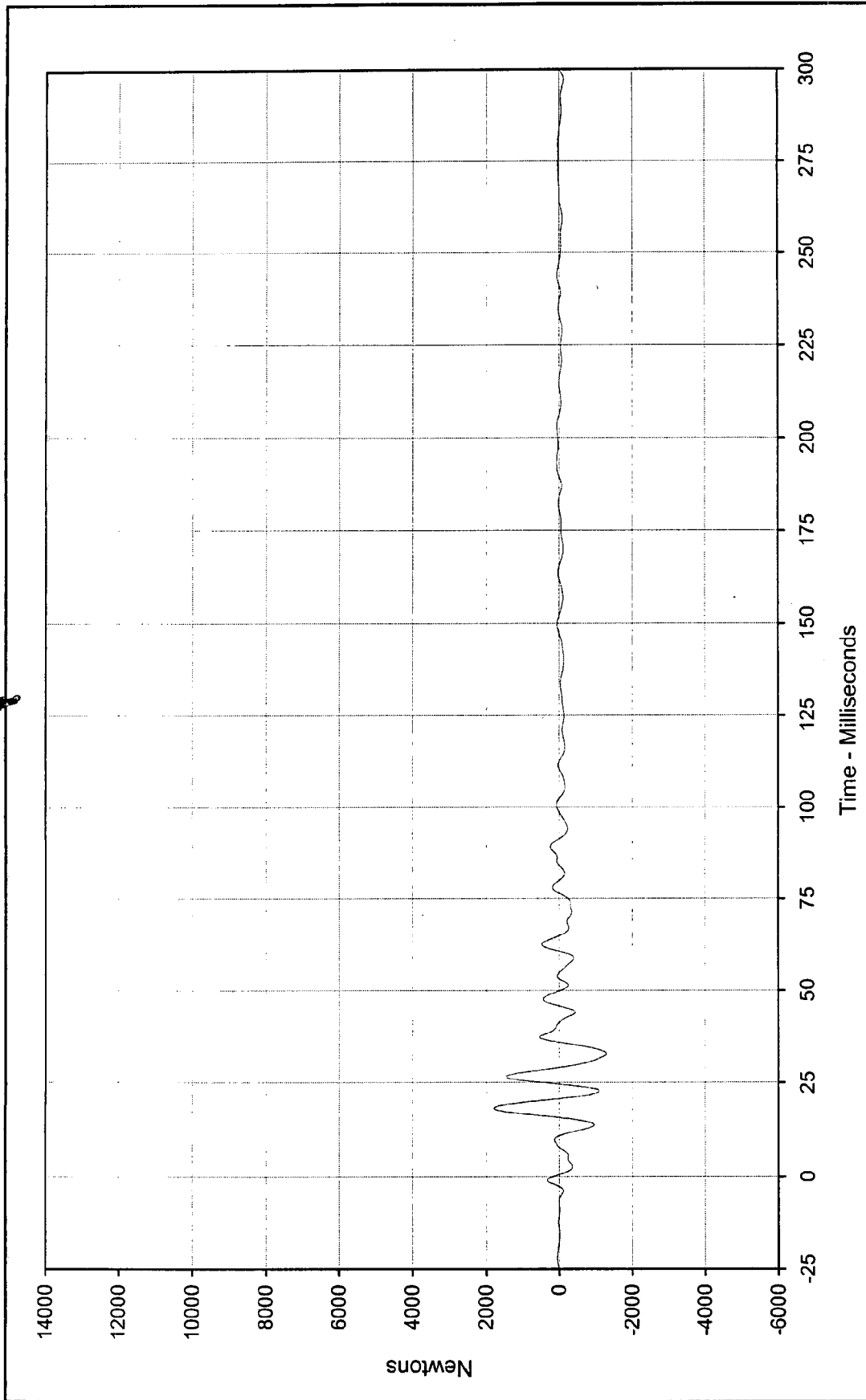
Minimum Value: -248.7 at 2.0 Milliseconds

SAE Filter Class: 60

Date of Test: 12/22/99

Curve Number: FIL-123

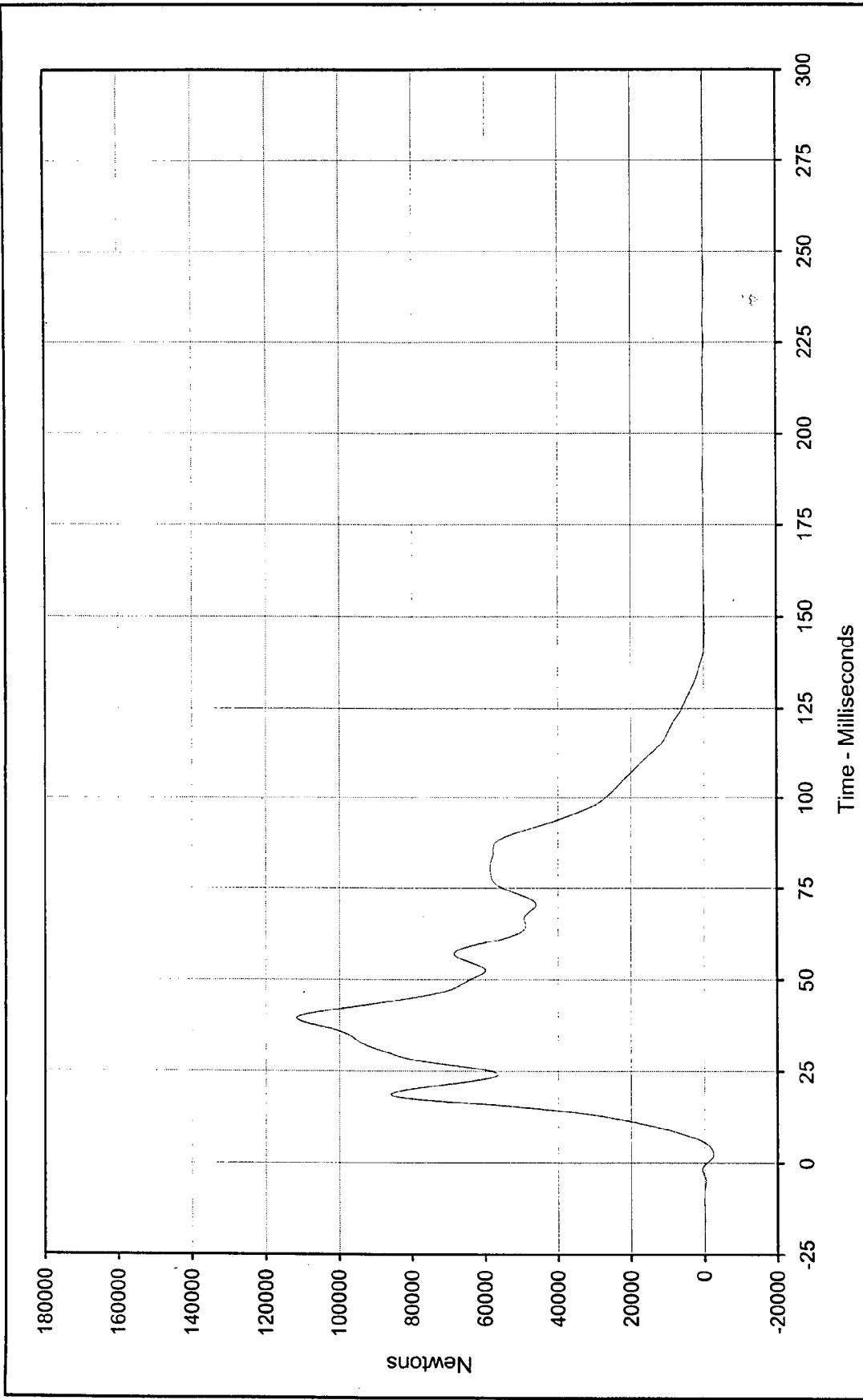




Curve Description: Barrier Force C9
 Maximum Value: 1801.7 at 18.3 Milliseconds
 Minimum Value: -1288.4 at 32.9 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/22/99
 Curve Number: FIL-124

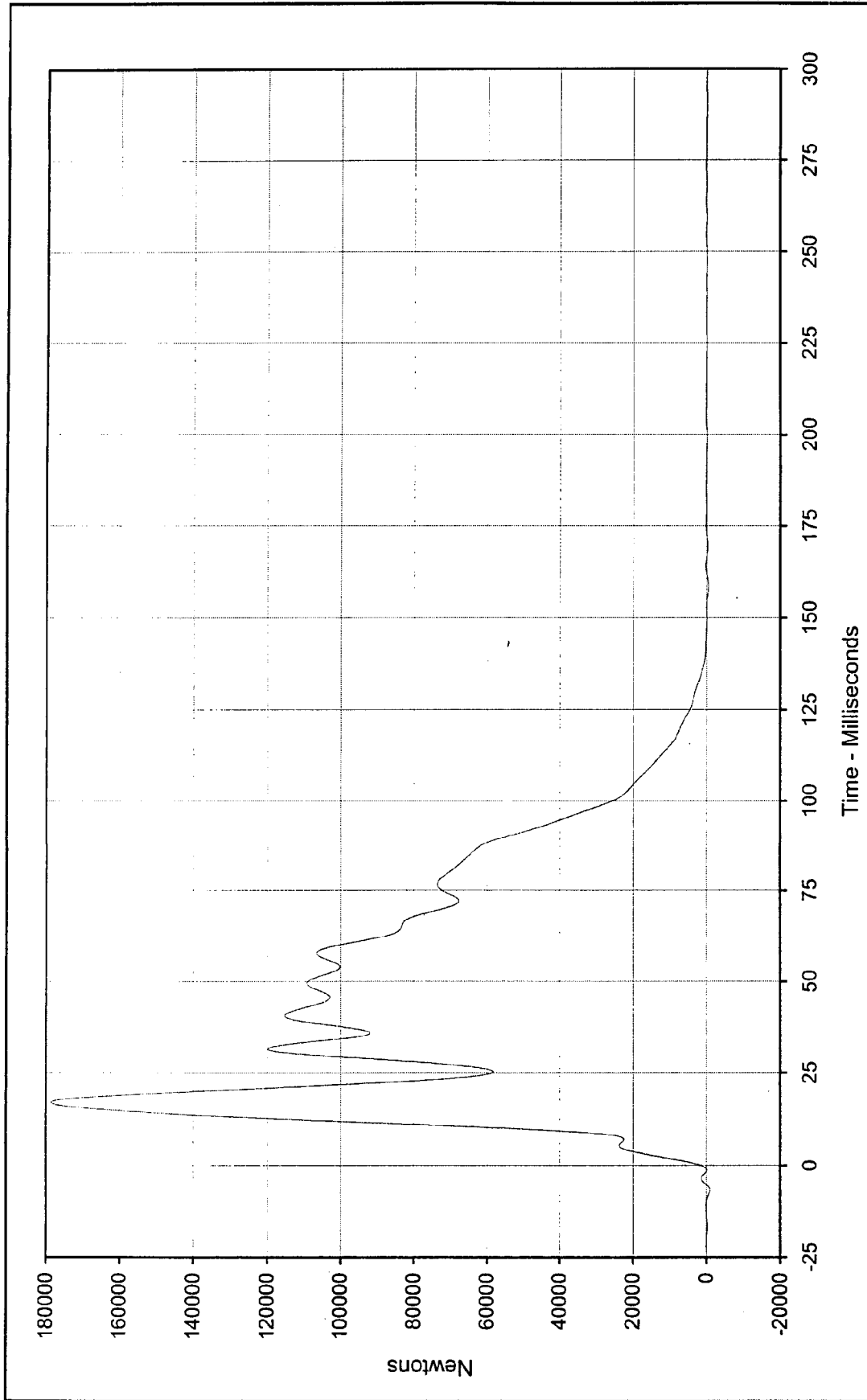
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup





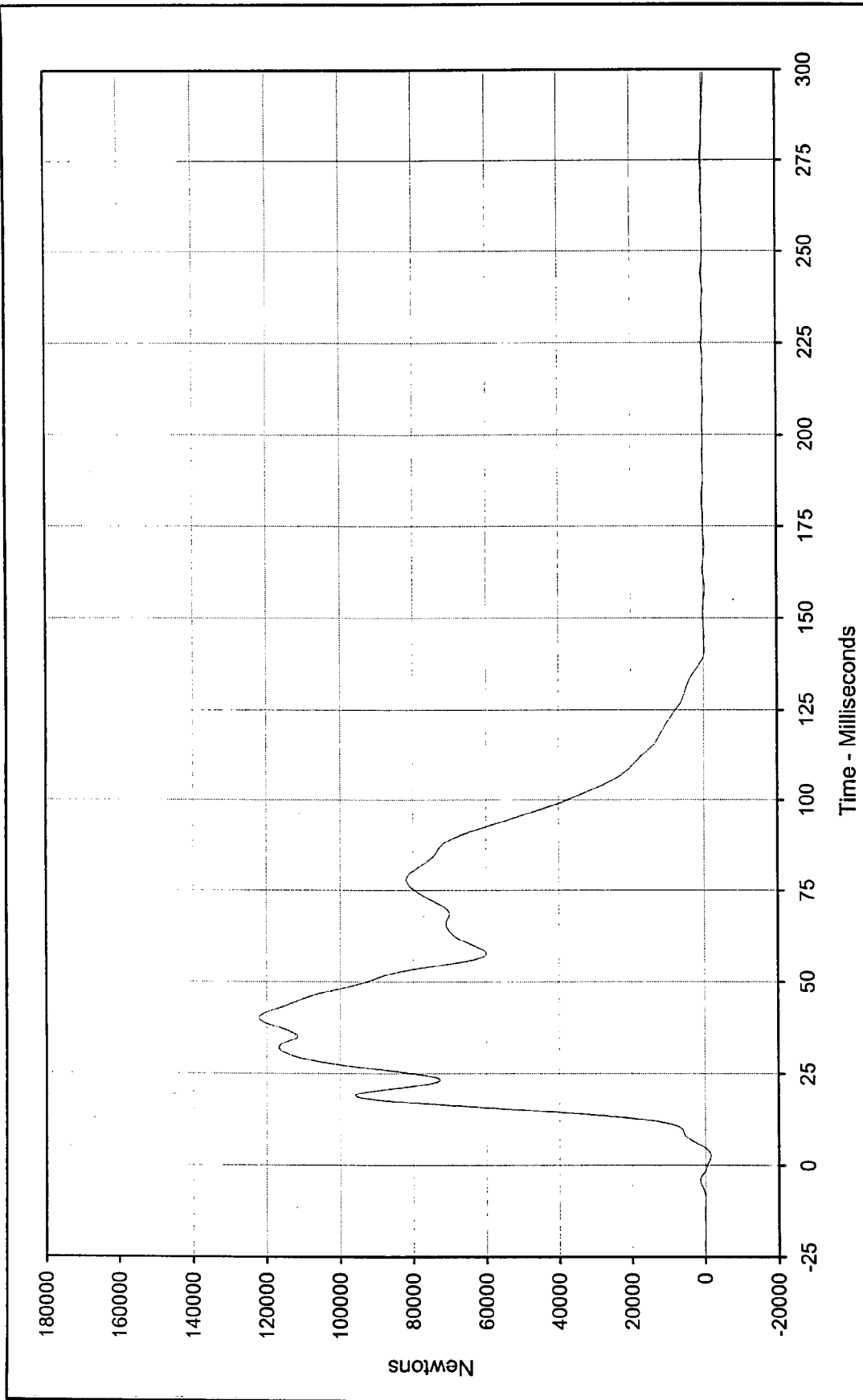
Curve Description:	Barrier Force Sum Group 1	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	111738.2 at 39.6 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-2469.6 at 2.4 Milliseconds			
SAE Filter Class:	60			
Date of Test:	12/22/99			
Curve Number:	SUM-001			





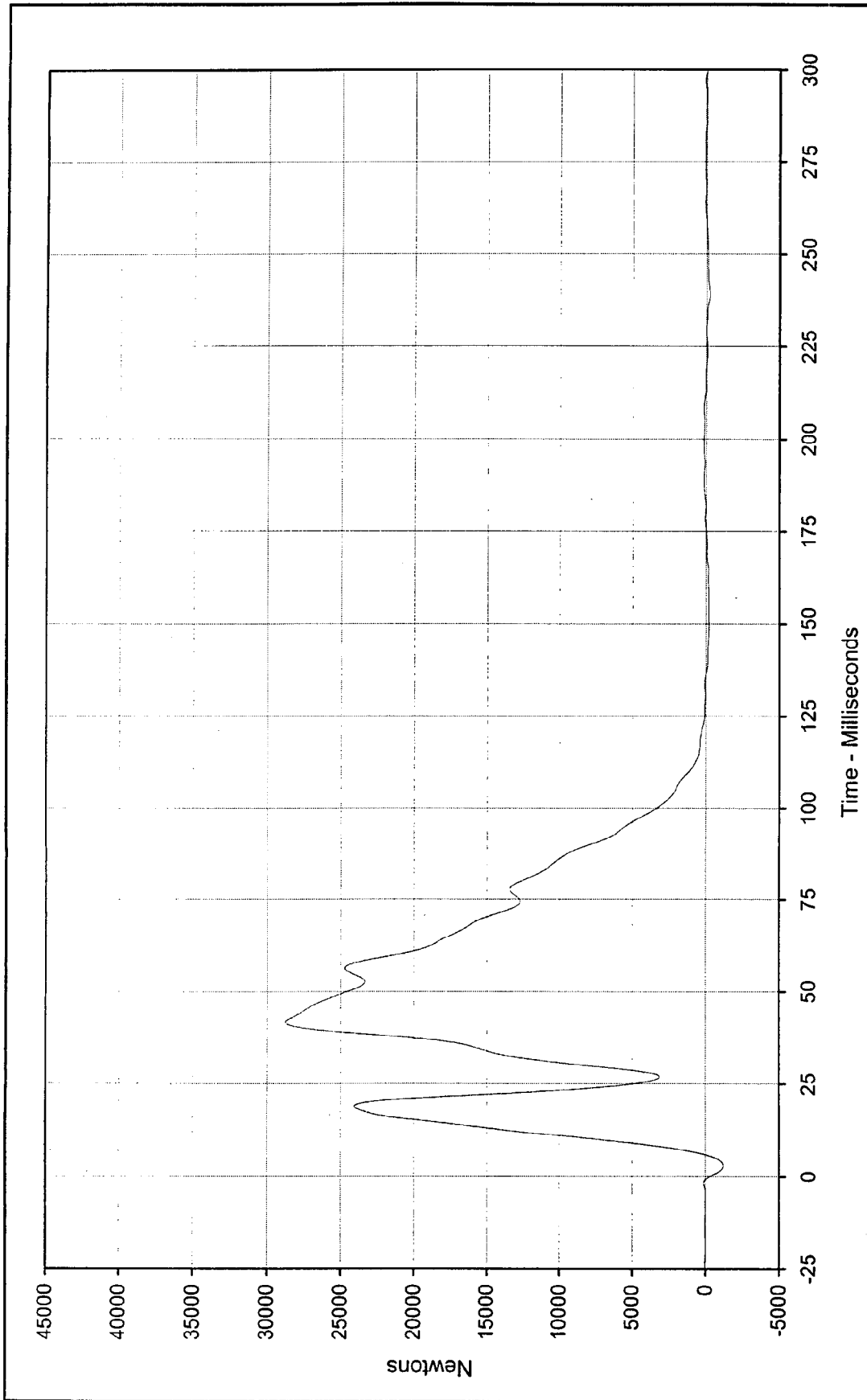
Curve Description:	Barrier Force Sum Group 2	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	178656.8 at 17.0 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-484.4 at 158.5 Milliseconds			
SAE Filter Class:	60			
Date of Test:	12/22/99			
Curve Number:	SUM-002			





Curve Description:	Barrier Force Sum Group 3	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	122137.3 at 40.2 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-1547.0 at 2.5 Milliseconds			
SAE Filter Class:	60			
Date of Test:	12/22/99			
Curve Number:	SUM-003			

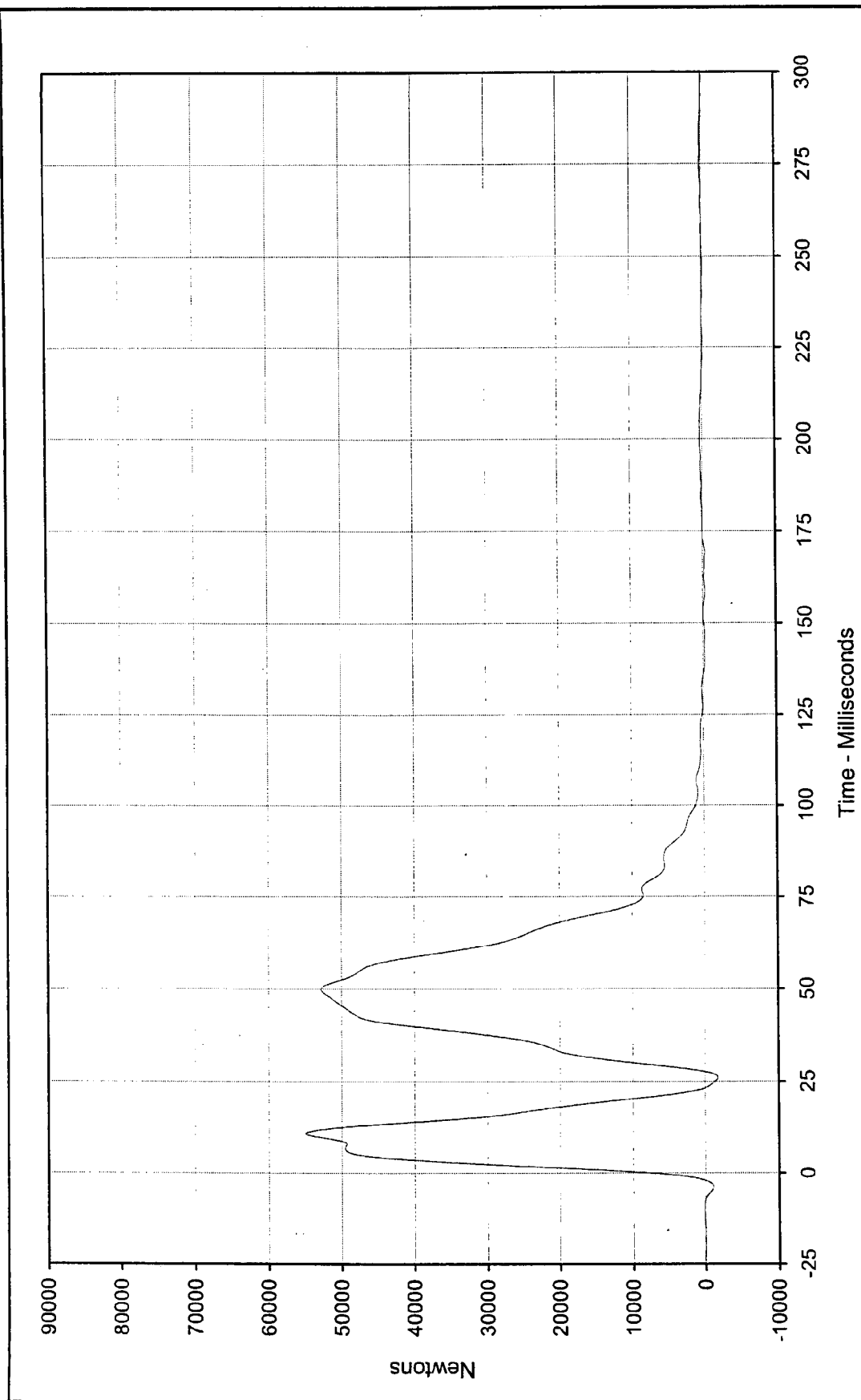




Curve Description: Barrier Force Sum Group 4
Maximum Value: 28753.8 at 41.7 Milliseconds
Minimum Value: -1228.8 at 3.0 Milliseconds
SAE Filter Class: 60
Date of Test: 12/22/99
Curve Number: SUM-004

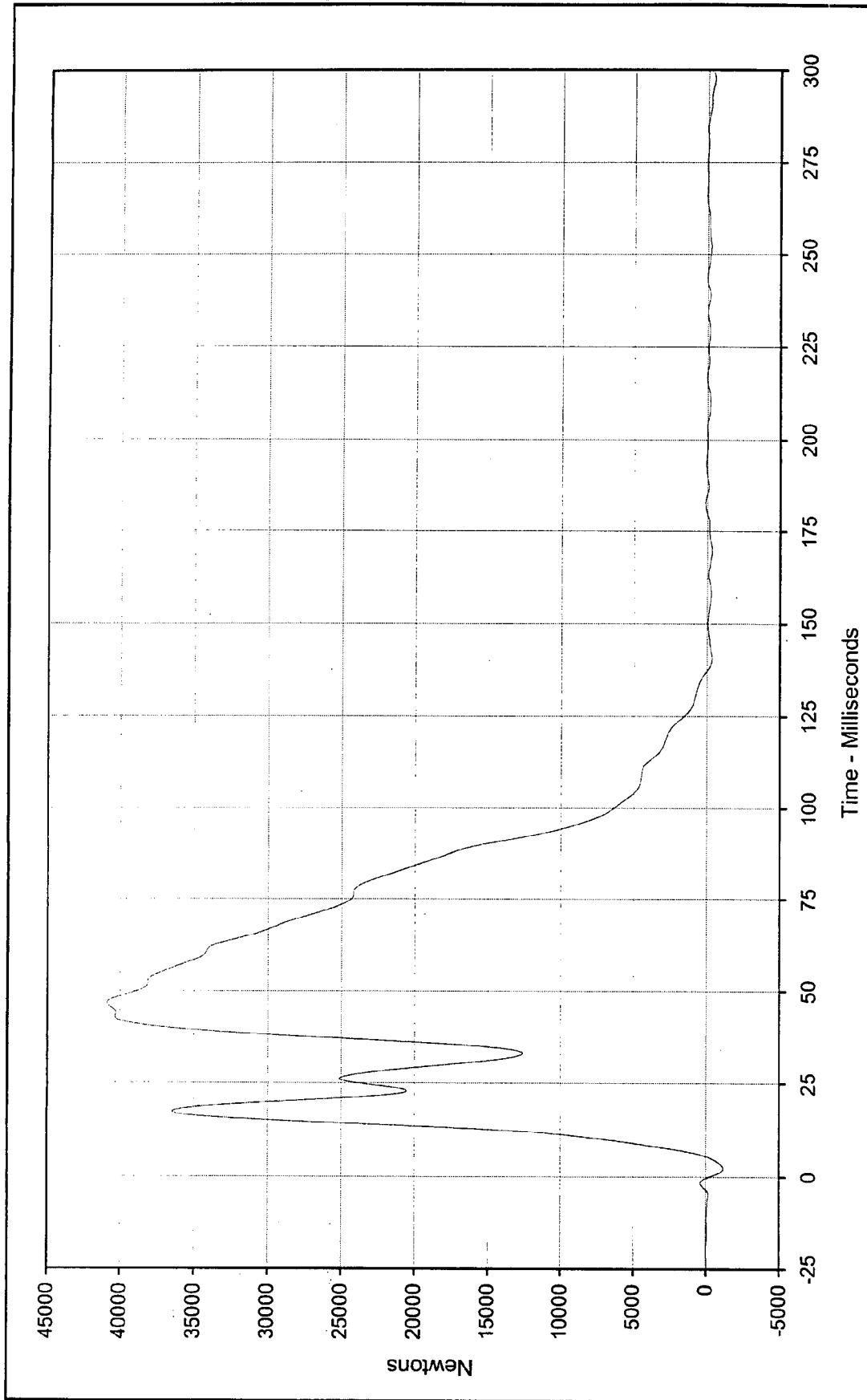
Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description:	Barrier Force Sum Group 5	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Value:	54945.6 at 11.0 Milliseconds	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Minimum Value:	-1760.4 at 26.1 Milliseconds			
SAE Filter Class:	60			
Date of Test:	12/22/99			
Curve Number:	SUM-005			

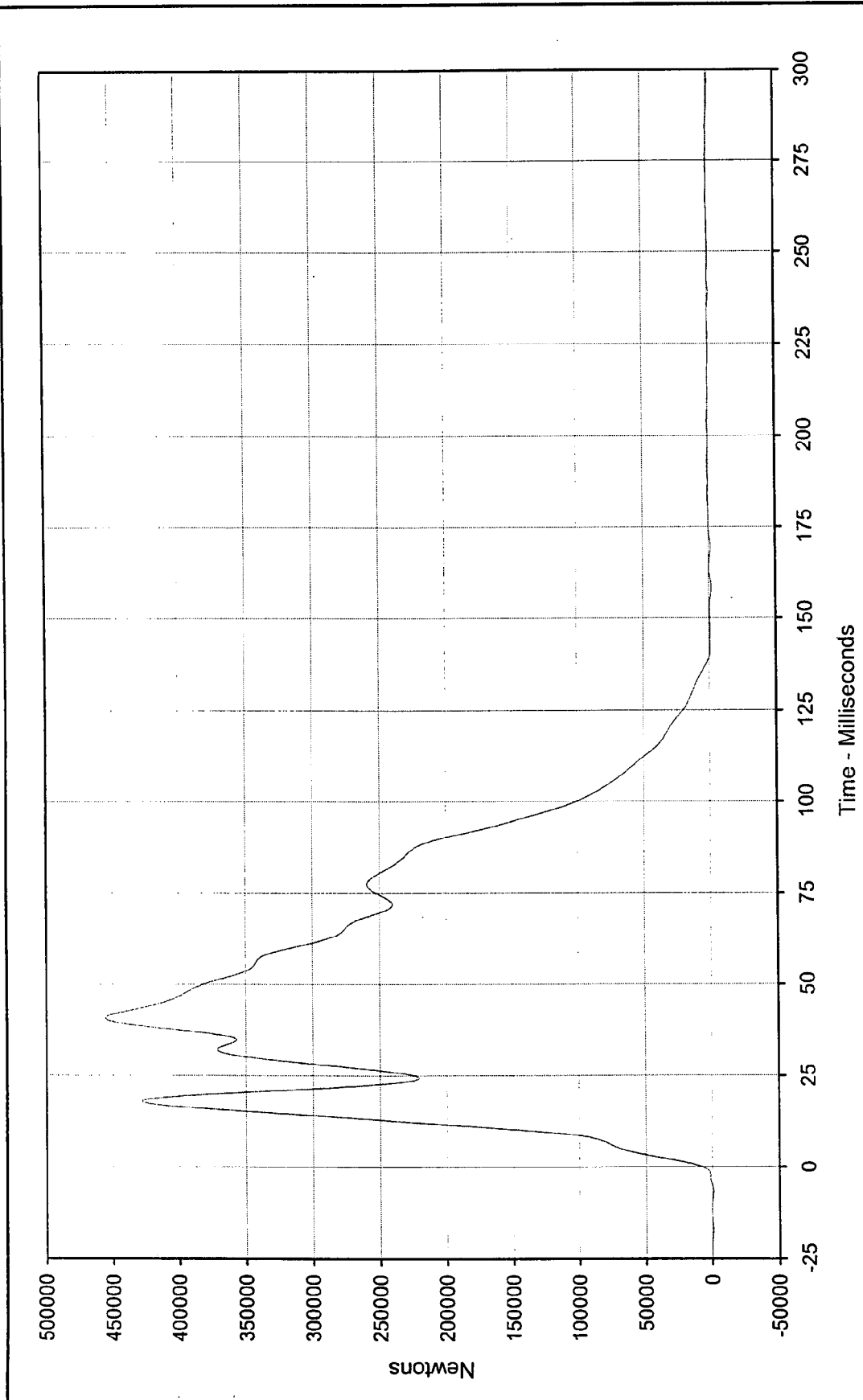




Curve Description: Barrier Force Sum Group 6 Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
Maximum Value: 40912.4 at 46.8 Milliseconds Test Vehicle: 2000 Chevrolet S-10 Pickup
Minimum Value: -1192.2 at 2.2 Milliseconds



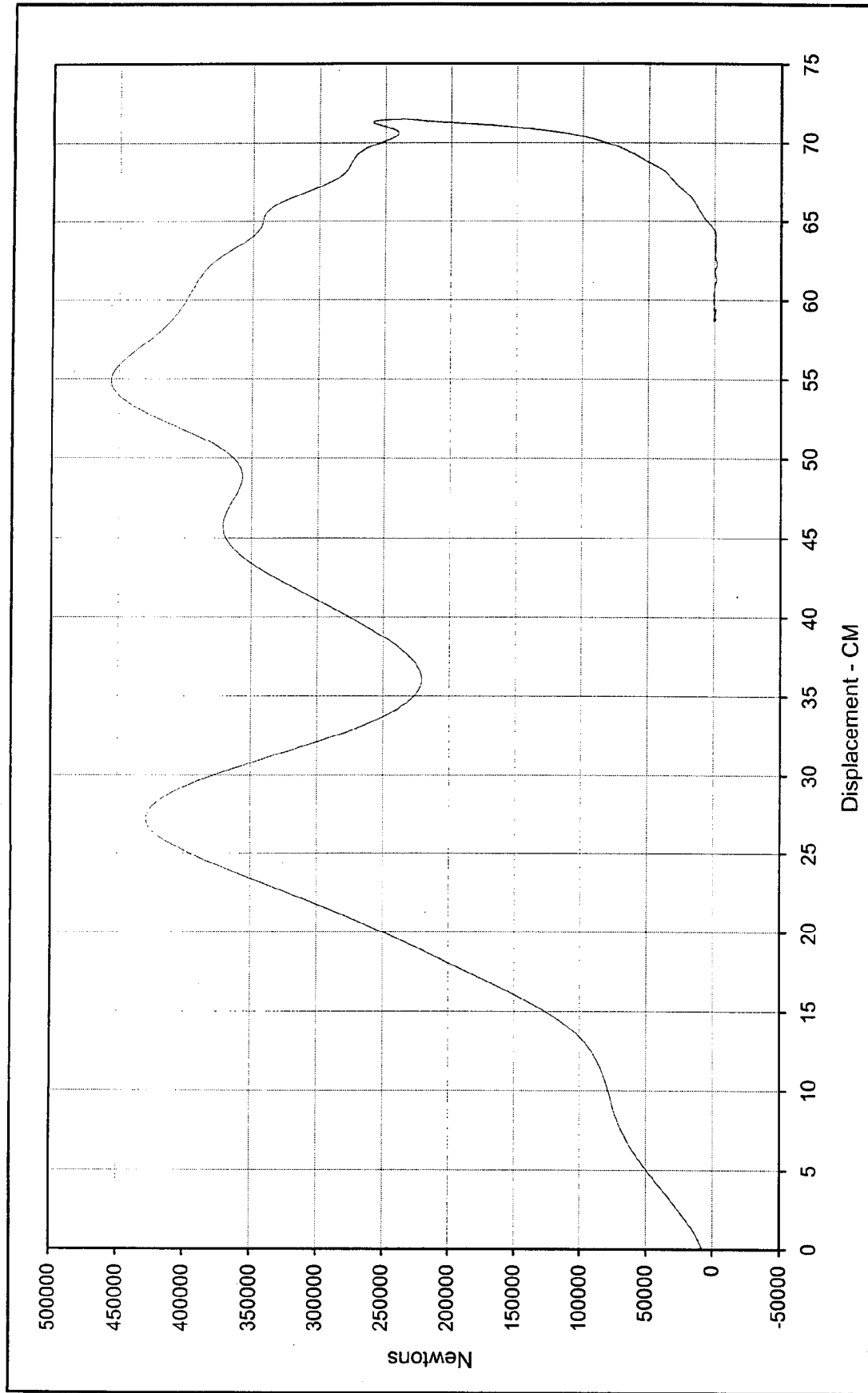
SAE Filter Class: 60
Date of Test: 12/22/99
Curve Number: SUM-006



Curve Description: Barrier Force Sum Total
 Maximum Value: 455720.7 at 40.8 Milliseconds
 Minimum Value: -1802.2 at 158.4 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/22/99
 Curve Number: SUM-007

Test Program: 2000 NHTSA 35 mph NCAP No.: MY0106
 Test Vehicle: 2000 Chevrolet S-10 Pickup





Curve Description:	Sum Force Total vs. Dynamic Crush		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY0106
Maximum Displ.:	71.5	at 83.5	Test Vehicle:	2000 Chevrolet S-10 Pickup	
Maximum Force:	455720.7	at 40.8			
Measured Energy:	192,468	joules			
Date of Test:	12/22/99				
Curve Number:	XVY-001				

The logo for KARCO Engineering features a stylized lightbulb with a gear inside, positioned to the left of the word "KARCO" in a large, bold, sans-serif font. Below "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.



BARRIER LOAD CELL SUMMARY DATATest Vehicle: 2000 Chevrolet S-10 PickupNHTSA No.: MY0106Test Program: 2000 NHTSA 35 mph NCAPTest Date: 12/22/99**BARRIER LOAD CELL PEAK FORCES**

Location	Units	Max	Time	Min	Time
Barrier Force A2	Newtons	778.0	40.4	-712.9	52.9
Barrier Force A3	Newtons	2173.3	32.5	-951.9	11.1
Barrier Force A4	Newtons	3727.5	32.0	-1953.1	36.6
Barrier Force A5	Newtons	32167.6	30.5	-3071.0	36.3
Barrier Force A6	Newtons	4740.6	32.2	-1330.3	11.0
Barrier Force A7	Newtons	1776.8	32.5	-1147.6	36.1
Barrier Force A8	Newtons	1374.4	38.8	-342.9	57.7
Barrier Force A9	Newtons	1044.3	27.3	-1336.2	41.9
Barrier Force B2	Newtons	12495.4	77.5	-515.8	3.0
Barrier Force B3	Newtons	97993.5	39.1	-763.0	2.5
Barrier Force B4	Newtons	80851.6	17.6	-127.8	0.0
Barrier Force B5	Newtons	6426.1	2.3	-1439.6	10.1
Barrier Force B6	Newtons	98250.7	16.6	-73.1	158.6
Barrier Force B7	Newtons	112527.4	31.4	-678.2	1.9
Barrier Force B8	Newtons	15743.7	78.9	-444.1	10.7
Barrier Force B9	Newtons	1207.3	27.0	-1449.3	33.1
Barrier Force C2	Newtons	12665.0	42.8	-537.1	3.4
Barrier Force C3	Newtons	17612.1	16.9	-710.1	2.5
Barrier Force C4	Newtons	31244.3	11.2	-1291.9	25.8
Barrier Force C5	Newtons	20370.5	53.3	-702.7	26.2
Barrier Force C6	Newtons	23287.6	10.5	-412.3	0.0
Barrier Force C7	Newtons	27895.2	43.9	-594.7	2.1
Barrier Force C8	Newtons	13002.8	46.5	-248.7	2.0
Barrier Force C9	Newtons	1801.7	18.3	-1288.4	32.9
Barrier Force Sum Group 1	Newtons	111738.2	39.6	-2469.6	2.4
Barrier Force Sum Group 2	Newtons	178656.8	17.0	-484.4	158.5
Barrier Force Sum Group 3	Newtons	122137.3	40.2	-1547.0	2.5
Barrier Force Sum Group 4	Newtons	28753.8	41.7	-1228.8	3.0
Barrier Force Sum Group 5	Newtons	54945.6	11.0	-1760.4	26.1
Barrier Force Sum Group 6	Newtons	40912.4	46.8	-1192.2	2.2
Barrier Force Sum Total	Newtons	455720.7	40.8	-1802.2	158.4

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

APPENDIX D
INSTRUMENTATION DATA CHANNEL ASSIGNMENTS

KAR20001-07

2000 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 34
12/22/99
2000 Chevrolet S-10 Pickup

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
1	HEAD, PRIMARY	X	KEAC039	Accel., 1/2 bridge	Endevco	7264-2000	G
2	HEAD, PRIMARY	Y	KEAC038	Accel., 1/2 bridge	Endevco	7264-2000	G
3	HEAD, PRIMARY	Z	KEAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
4	HEAD, REDUNDANT	X	KEAC031	Accel., 1/2 bridge	Endevco	7264-2000	G
5	HEAD, REDUNDANT	Y	KEAC032	Accel., 1/2 bridge	Endevco	7264-2000	G
6	HEAD, REDUNDANT	Z	KEAC026	Accel., 1/2 bridge	Endevco	7264-2000	G
7	NECK FORCE	X	GPUN02FX	Load cell, six axis neck	R. A. Denton	1716A	N
8	NECK FORCE	Y	GPUN02FY	Load cell, six axis neck	R. A. Denton	1716A	N
9	NECK FORCE	Z	GPUN02FZ	Load cell, six axis neck	R. A. Denton	1716A	N
10	NECK MOMENT	X	GPUN02MX	Load cell, six axis neck	R. A. Denton	1716A	Nm
11	NECK MOMENT	Y	GPUN02MY	Load cell, six axis neck	R. A. Denton	1716A	Nm
12	NECK MOMENT	Z	GPUN02MZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
13	CHEST, PRIMARY	X	GPAC031	Accel., 1/2 bridge	Endevco	7264-2000	G
14	CHEST, PRIMARY	Y	GPAC024	Accel., 1/2 bridge	Endevco	7264-2000	G
15	CHEST, PRIMARY	Z	GPAC029	Accel., 1/2 bridge	Endevco	7264-2000	G
16	CHEST, REDUNDANT	X	KEAC023	Accel., 1/2 bridge	Endevco	7264-200	G
17	CHEST, REDUNDANT	Y	KEAC022	Accel., 1/2 bridge	Endevco	7264-200	G
18	CHEST, REDUNDANT	Z	KEAC024	Accel., 1/2 bridge	Endevco	7264-200	G
19	CHEST DISPLACEMENT	X	GPCP001	Rotary Pot Chest	Servo	14CBI	MM
20	PELVIS, PRIMARY	X	KEAC019	Accel., 1/2 bridge	Endevco	7264-200	G
21	PELVIS, PRIMARY	Y	KEAC020	Accel., 1/2 bridge	Endevco	7264-200	G
22	PELVIS, PRIMARY	Z	KEAC021	Accel., 1/2 bridge	Endevco	7264-200	G
23	LEFT FEMUR FORCE	Z	KEFF001	Load cell, Femur	R.A. Denton	2121	N
24	RIGHT FEMUR FORCE	Z	KEFF002	Load cell, Femur	R.A. Denton	2121	N

2000 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 34
12/22/99
2000 Chevrolet S-10 Pickup

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
25	UP. TIBIA LEFT MOM.	X	GPU09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
26	UP. TIBIA LEFT MOM.	Y	GPU09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
27	UP. TIBIA RIGHT MOM.	X	GPU09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
28	UP. TIBIA RIGHT MOM.	Y	GPU09MY	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	KEIC003X	Accel., Foot Triax	I.C. Sensor	3031-500	G
36	FOOT LEFT	Y	KEIC003Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
37	FOOT LEFT	Z	KEIC003Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
38	FOOT RIGHT	X	KEIC004X	Accel., Foot Triax	I.C. Sensor	3031-500	G
39	FOOT RIGHT	Y	KEIC004Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
40	FOOT RIGHT	Z	KEIC004Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
41	LAP BELT FORCE	X	KELC001	Load cell, Seat belt	Lebow	3371	N
42	SHOULDER BELT FORCE	X	KELC002	Load cell, Seat belt	Lebow	3371	N
43	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	MM
44	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

2000 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 35
12/22/99
2000 Chevrolet S-10 Pickup

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
45	HEAD, PRIMARY	X	GPAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
46	HEAD, PRIMARY	Y	GPAC002	Accel., 1/2 bridge	Endevco	7264-2000	G
47	HEAD, PRIMARY	Z	GPAC003	Accel., 1/2 bridge	Endevco	7264-2000	G
48	HEAD, REDUNDANT	X	GPAC032	Accel., 1/2 bridge	Endevco	7264-2000	G
49	HEAD, REDUNDANT	Y	GPAC021	Accel., 1/2 bridge	Endevco	7264-2000	G
50	HEAD, REDUNDANT	Z	GPAC026	Accel., 1/2 bridge	Endevco	7264-2000	G
51	NECK FORCE	X	GPUN01FX	Load cell, six axis neck	R. A. Denton	1716A	N
52	NECK FORCE	Y	GPUN01FY	Load cell, six axis neck	R. A. Denton	1716A	N
53	NECK FORCE	Z	GPUN01FZ	Load cell, six axis neck	R. A. Denton	1716A	N
54	NECK MOMENT	X	GPUN01MX	Load cell, six axis neck	R. A. Denton	1716A	Nm
55	NECK MOMENT	Y	GPUN01MY	Load cell, six axis neck	R. A. Denton	1716A	Nm
56	NECK MOMENT	Z	GPUN01MZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
57	CHEST, PRIMARY	X	GPAC005	Accel., 1/2 bridge	Endevco	7264-2000	G
58	CHEST, PRIMARY	Y	GPAC011	Accel., 1/2 bridge	Endevco	7264-2000	G
59	CHEST, PRIMARY	Z	GPAC010	Accel., 1/2 bridge	Endevco	7264-2000	G
60	CHEST, REDUNDANT	X	GPAC034	Accel., 1/2 bridge	Endevco	7264-2000	G
61	CHEST, REDUNDANT	Y	GPAC023	Accel., 1/2 bridge	Endevco	7264-2000	G
62	CHEST, REDUNDANT	Z	GPAC020	Accel., 1/2 bridge	Endevco	7264-2000	G
63	CHEST DISPLACEMENT	X	GPCP002	Rotary Pot Chest	Servo	14CBI	MM
64	PELVIS, PRIMARY	X	GPAC025	Accel., 1/2 bridge	Endevco	7264-2000	G
65	PELVIS, PRIMARY	Y	GPAC022	Accel., 1/2 bridge	Endevco	7264-2000	G
66	PELVIS, PRIMARY	Z	GPAC019	Accel., 1/2 bridge	Endevco	7264-2000	G
67	LEFT FEMUR FORCE	Z	KEFF003	Load cell, Femur	R.A. Denton	2121	N
68	RIGHT FEMUR FORCE	Z	KEFF004	Load cell, Femur	R.A. Denton	2121	N

2000 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 35
12/22/99
2000 Chevrolet S-10 Pickup

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
69	UP. TIBIA LEFT MOM.	X	GPU09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
70	UP. TIBIA LEFT MOM.	Y	GPU09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
71	UP. TIBIA RIGHT MOM.	X	GPU09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
72	UP. TIBIA RIGHT MOM.	Y	GPU09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
73	LWR. TIBIA LEFT MOM.	X	GPT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
74	LWR. TIBIA LEFT MOM.	Y	GPT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
75	LWR. TIBIA LEFT FORCE	Z	GPT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
76	LWR. TIBIA RIGHT MOM.	X	GPT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
77	LWR. TIBIA RIGHT MOM.	Y	GPT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
78	LWR. TIBIA RIGHT FORCE	Z	GPT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
79	FOOT LEFT	X	KEIC002X	Accel., Foot Triax	I.C. Sensor	3031-500	G
80	FOOT LEFT	Y	KEIC002Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
81	FOOT LEFT	Z	KEIC002Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
82	FOOT RIGHT	X	KEIC001X	Accel., Foot Triax	I.C. Sensor	3031-500	G
83	FOOT RIGHT	Y	KEIC001Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
84	FOOT RIGHT	Z	KEIC001Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
85	LAP BELT FORCE	X	KELC003	Load cell, Seat belt	Lebow	3371	N
86	SHOULDER BELT FORCE	X	KELC004	Load cell, Seat belt	Lebow	3371	N
87	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	CM
88	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

2000 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Vehicle Accelerometers and Reference Channel
12/22/99
2000 Chevrolet S-10 Pickup

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

2000 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Rigid Load Cell Barrier
12/22/99
2000 Chevrolet S-10 Pickup

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

2000 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Rigid Load Cell Barrier
12/22/99
2000 Chevrolet S-10 Pickup

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

KAR20001-07



Hybrid III Calibration Data Sheet

50TH Percentile Male

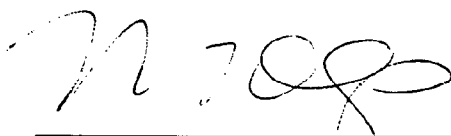
Left Knee Impact Test

ATD Serial No.: 34

Part Serial No.: n/a

Test I.D.: LK12A

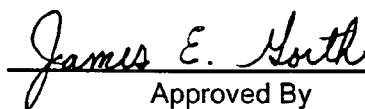
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	28	Pass
Probe Velocity	m/s	2.073 to 2.134	2.088	Pass
Peak Probe Force	Newtons	4715 to 5782	5204.9	Pass
Overall Test Results				Pass



Laboratory Technician

December 14, 1999

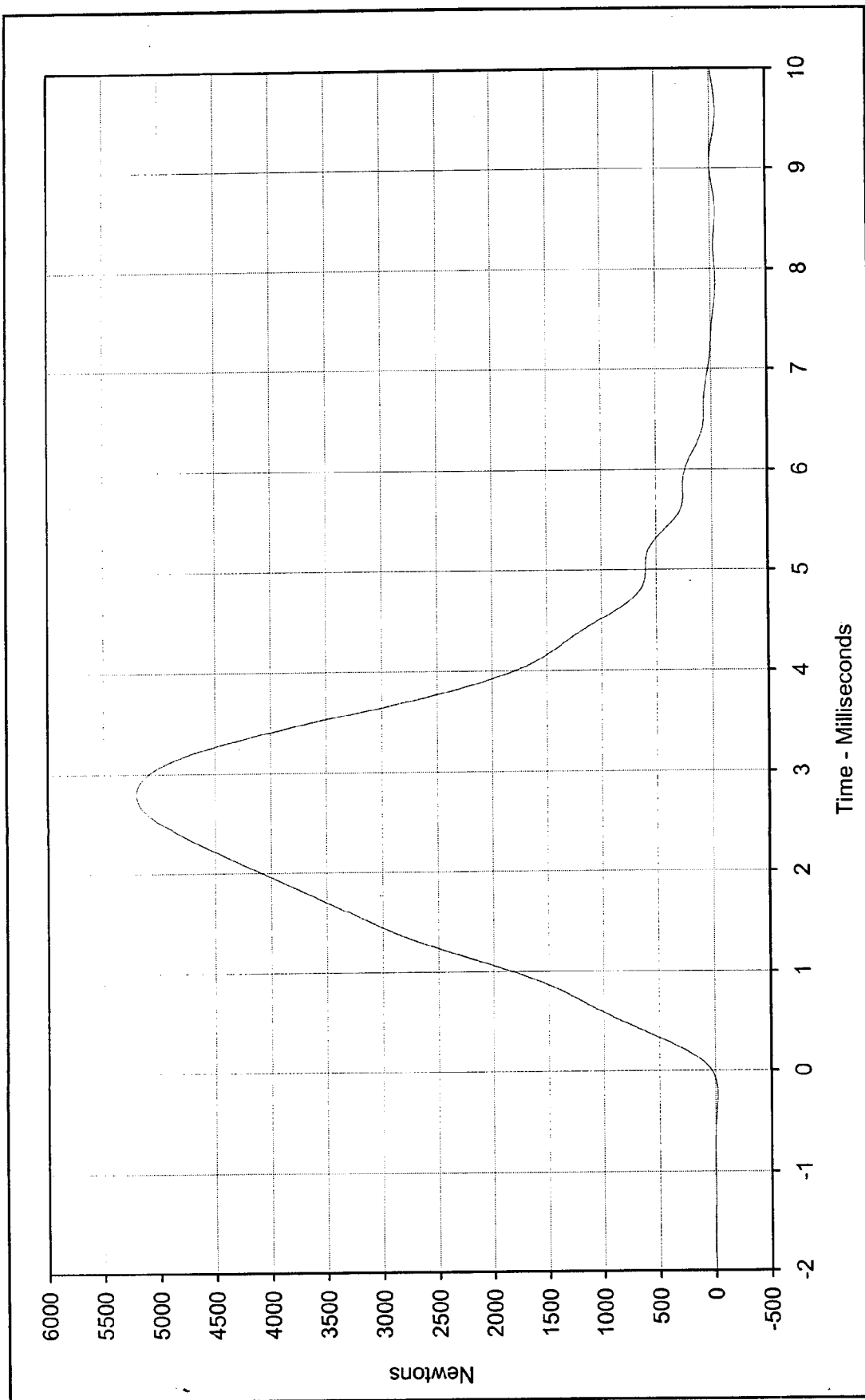
Test Date



Approved By

12/14/99

Date



Curve Description: _____ Testing Program: Hybrid III Left Knee Impact Test
 Maximum Value: 5204.9 at 2.8 Milliseconds
 Minimum Value: -46.8 at 7.9 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/14/99
 ATD Serial No.: 34





Hybrid III Calibration Data Sheet

50TH Percentile Male

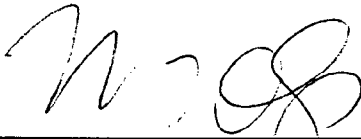
Right Knee Impact Test

ATD Serial No.: 34

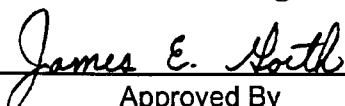
Part Serial No.: n/a

Test I.D.: RK12A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	28	Pass
Probe Velocity	m/s	2.073 to 2.134	2.112	Pass
Peak Probe Force	Newtons	4715 to 5782	5570.5	Pass
Overall Test Results				Pass



Laboratory Technician



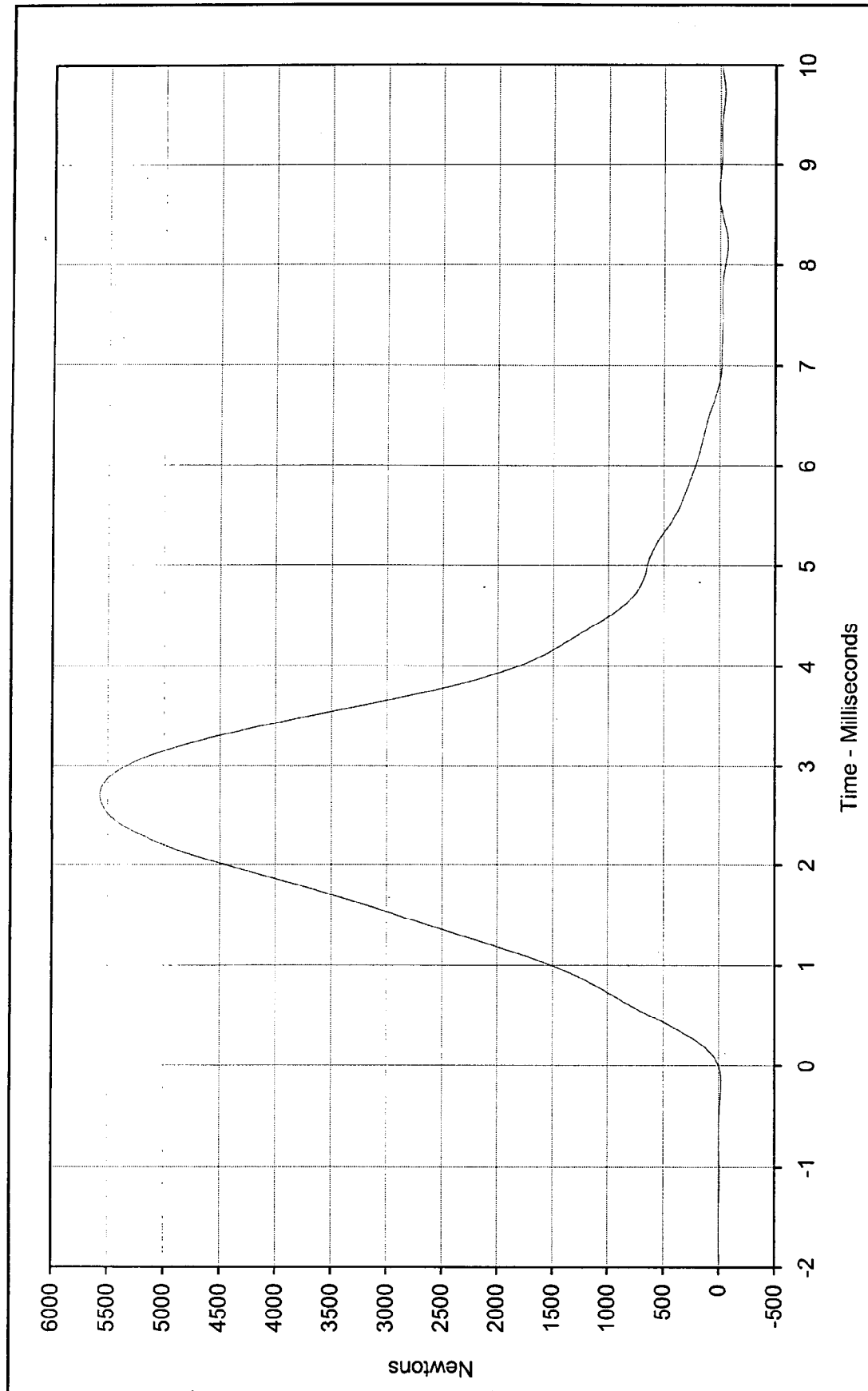
Approved By

December 14, 1999

Test Date

12/14/99

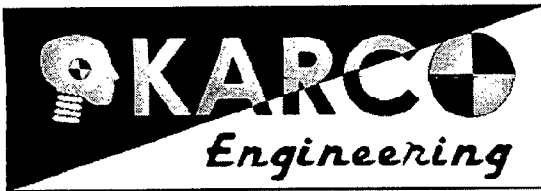
Date



Curve Description: Hybrid III Right Knee Impact Test
 Testing Program: Part S/N: n/a Test I.D.: RK12A

Maximum Value: 5570.5 at 2.7 Milliseconds
 Minimum Value: -49.6 at 8.0 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/14/99
 ATD Serial No.: 34





Hybrid III Calibration Data Sheet

50TH Percentile Male

Head Drop Calibration

ATD Serial No.: 034

Part Serial No.: n/a

Test I.D.: HD12A

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	234.9	Pass
Peak Lateral Acceleration	G's	≤15.0	1.9	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

77.7 E
Laboratory Technician

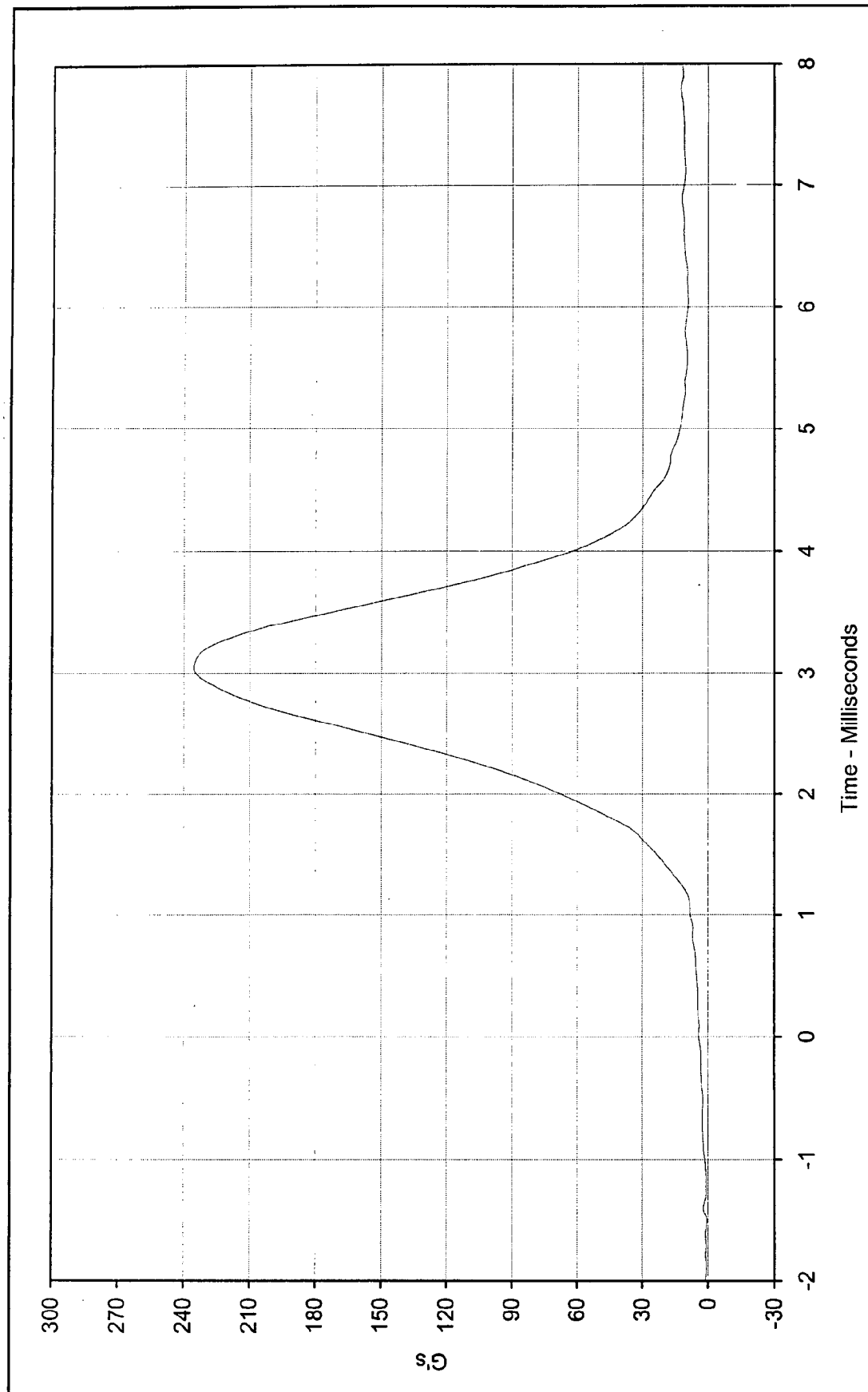
James E. Smith
Approved By

December 14, 1999

Test Date

12/14/99

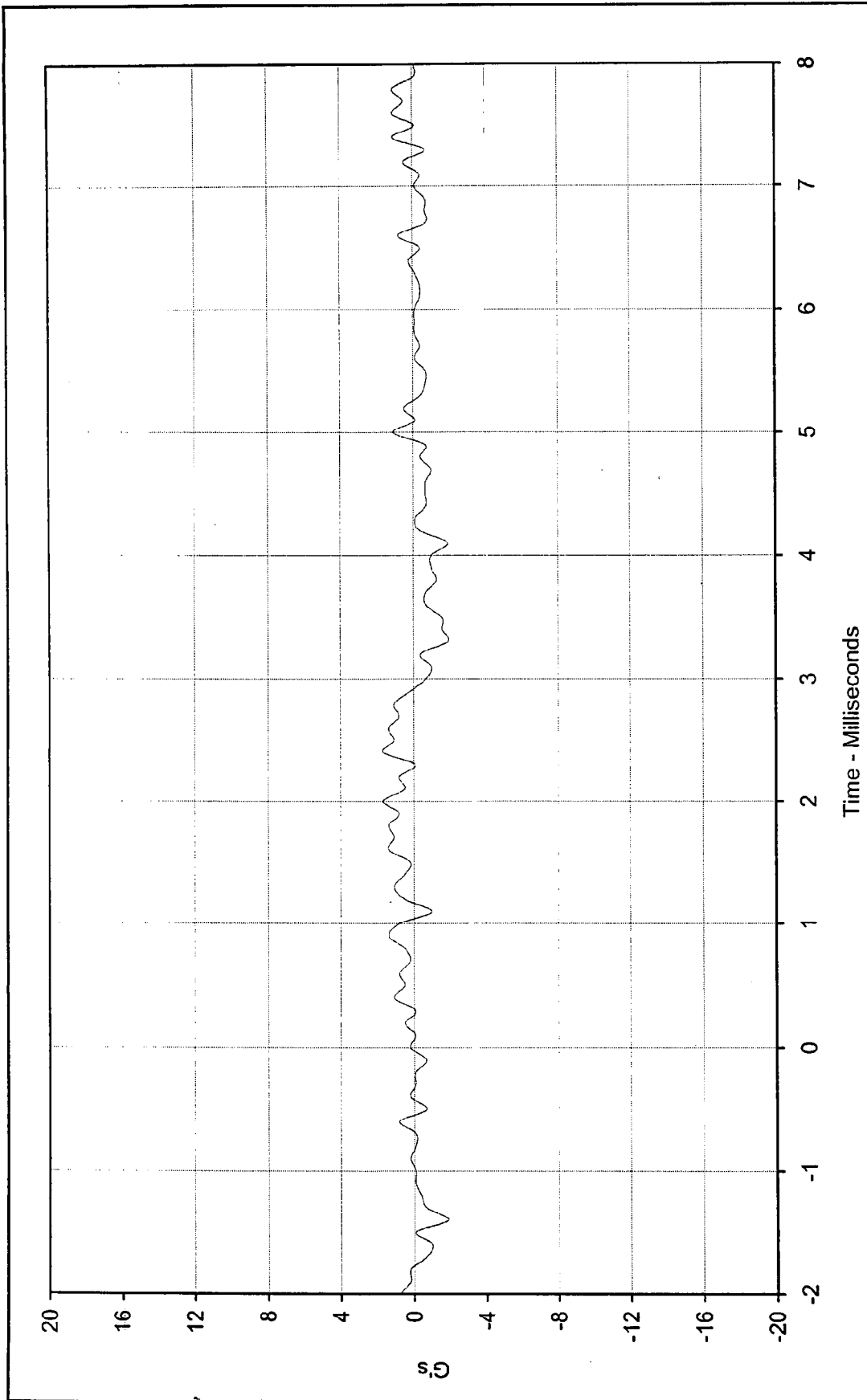
Date



Testing Program: Hybrid III Head Drop Calibration (Male)
 Test Information: S/N of Part: n/a Test I.D.: HD12A



Curve Description: Head Resultant Acceleration
 Maximum Value: 234.9 at 3.1 Milliseconds
 Minimum Value: 0.5 at -1.5 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/14/99
 ATD Serial No.: 034



Testing Program: Hybrid III Head Drop Calibration (Male)
 Test Information: S/N of Part: n/a Test I.D.: HD12A



Curve Description: Head Acceleration Y Axis
 Maximum Value: 1.7 at 2.0 Milliseconds
 Minimum Value: -1.9 at -1.4 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/14/99
 ATD Serial No.: 034



Hybrid III Calibration Data Sheet

50TH Percentile Male

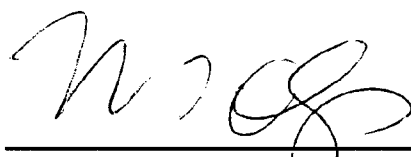
Thorax Impact Test

ATD Serial No.: 034

Part Serial No.: N/A

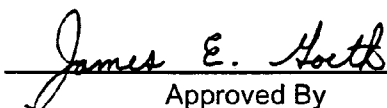
Test I.D.: CH12D

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	39	Pass
Probe Velocity	m/s	6.58 to 6.82	6.64	Pass
Peak Probe Force	Newtons	5159 to 5893	5272	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.56	Pass
Internal Hysteresis	%	69 to 85	76.5	Pass
Overall Test Results				Pass


Laboratory Technician

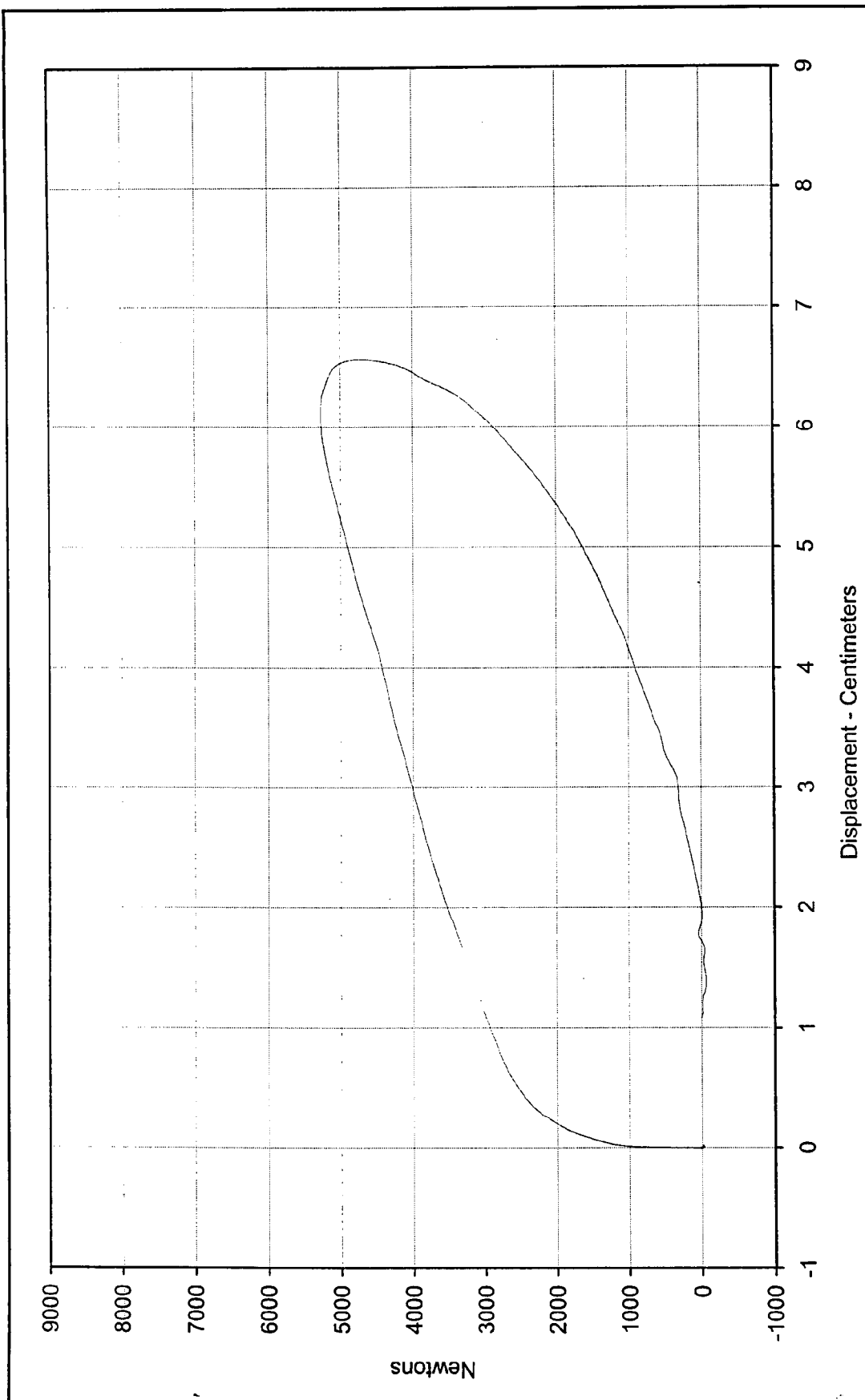
December 14, 1999

Test Date


Approved By

12/14/99

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.: CH12D

Probe Force: 5272.4 Newtons
 Chest Displ.: 6.56 Centimeters
 SAE Filter Class: 180
 Date of Test: 12/14/99
 ATD Serial No.: 034





Hybrid III Calibration Data Sheet

50TH Percentile Male

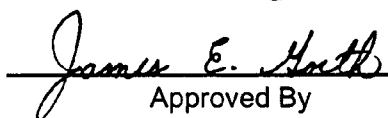
Neck Flexion Test

ATD Serial No.: 34Part Serial No.: n/aTest I.D.: NF12B

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	7.01	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	23.1	Pass
	20 Msec.	G's	17.6 to 22.6	20.4	Pass
	30 Msec.	G's	12.5 to 18.5	18.2	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	18.2	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	36.1	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	76.8	Pass
	Time	Msec.	57.0 to 64.0	58.2	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	113.2	Pass
Moment About Occipital Condyle	Maximum	N • m	84.1 to 108.5	99.3	Pass
	Time	Msec.	47.0 to 58.0	54.4	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	98.0	Pass
Overall Test Results					Pass



Laboratory Technician



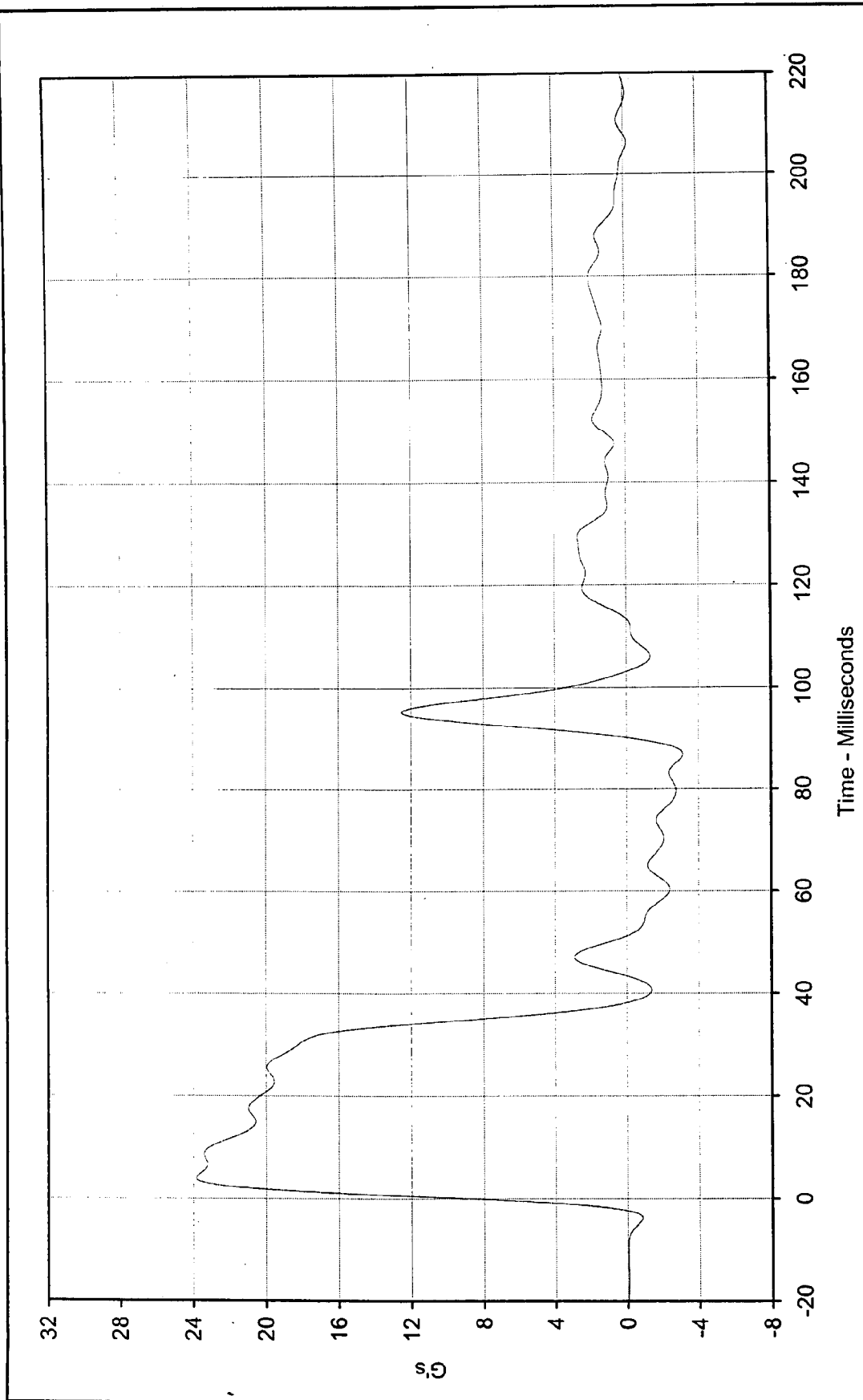
Approved By

December 15, 1999

Test Date

12/15/99

Date

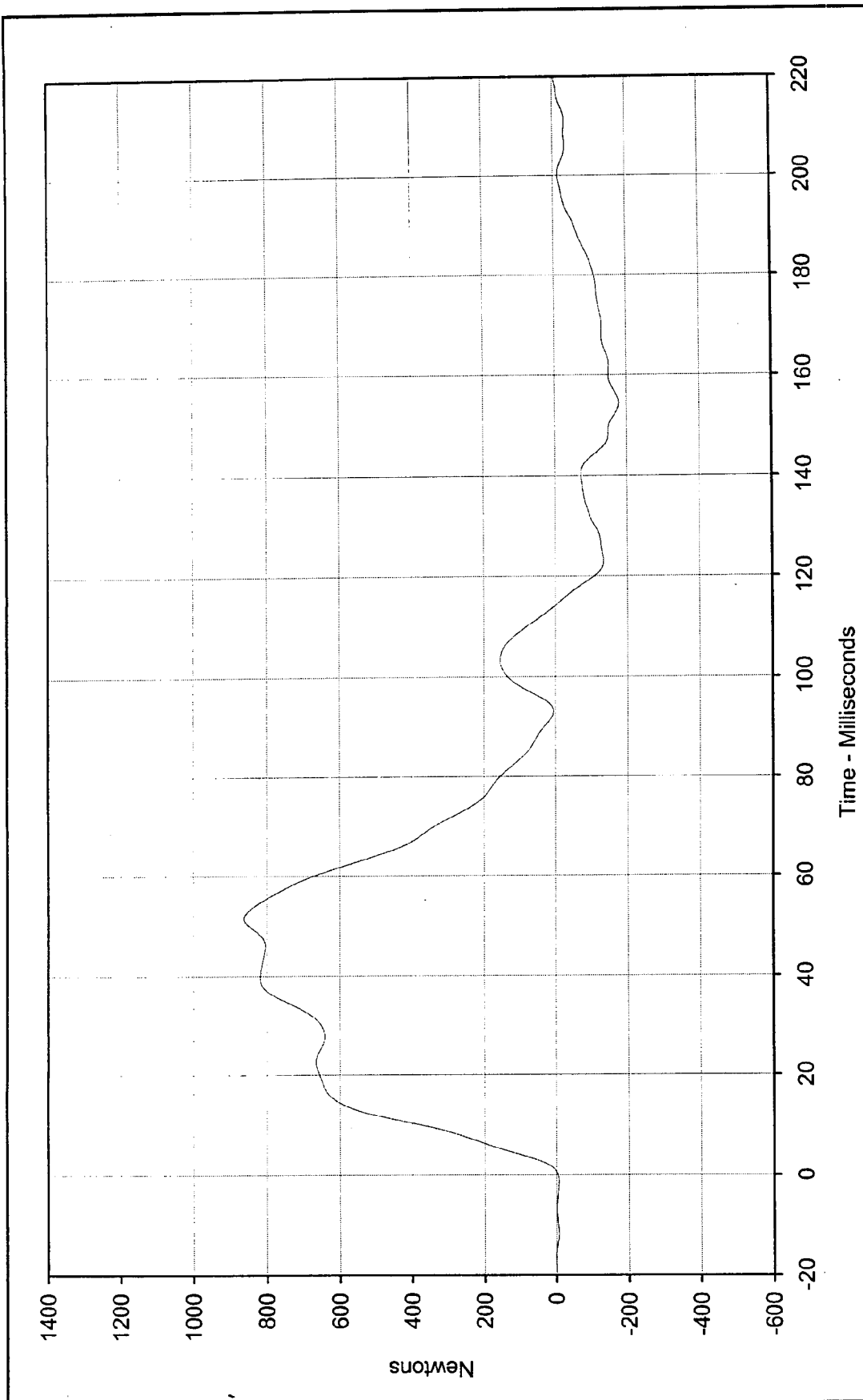


E-11

Curve Description:	Pendulum Deceleration		Testing Program:	Hybrid III Neck Flexion Test (Male)
Maximum Value:	23.8	at 3.9 Milliseconds	Test Information:	S/N of Part: n/a Test I.D.: NF12B
Minimum Value:	-3.1	at 86.8 Milliseconds		
SAE Filter Class:	60			
Date of Test:	12/15/99			
ATD Serial No.:	34			



KAR20001-07



Curve Description: Neck Force X

Testing Program: Hybrid III Neck Flexion Test (Male)

Maximum Value: 862.8 at 51.5 Milliseconds

Test Information: S/N of Part: n/a Test I.D.: NF12B

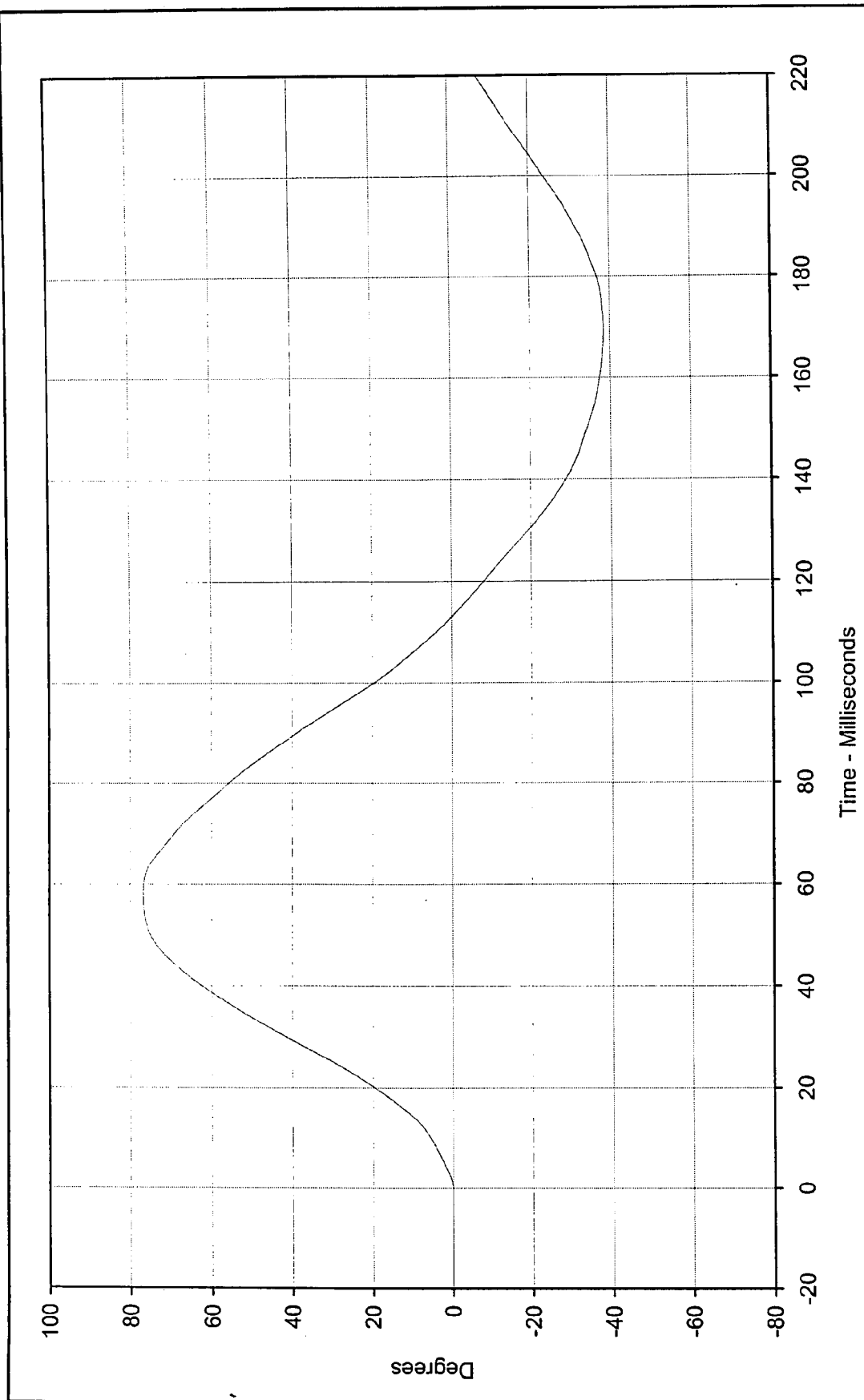
Minimum Value: -179.0 at 154.5 Milliseconds

SAE Filter Class: 60

Date of Test: 12/15/99

ATD Serial No.: 34

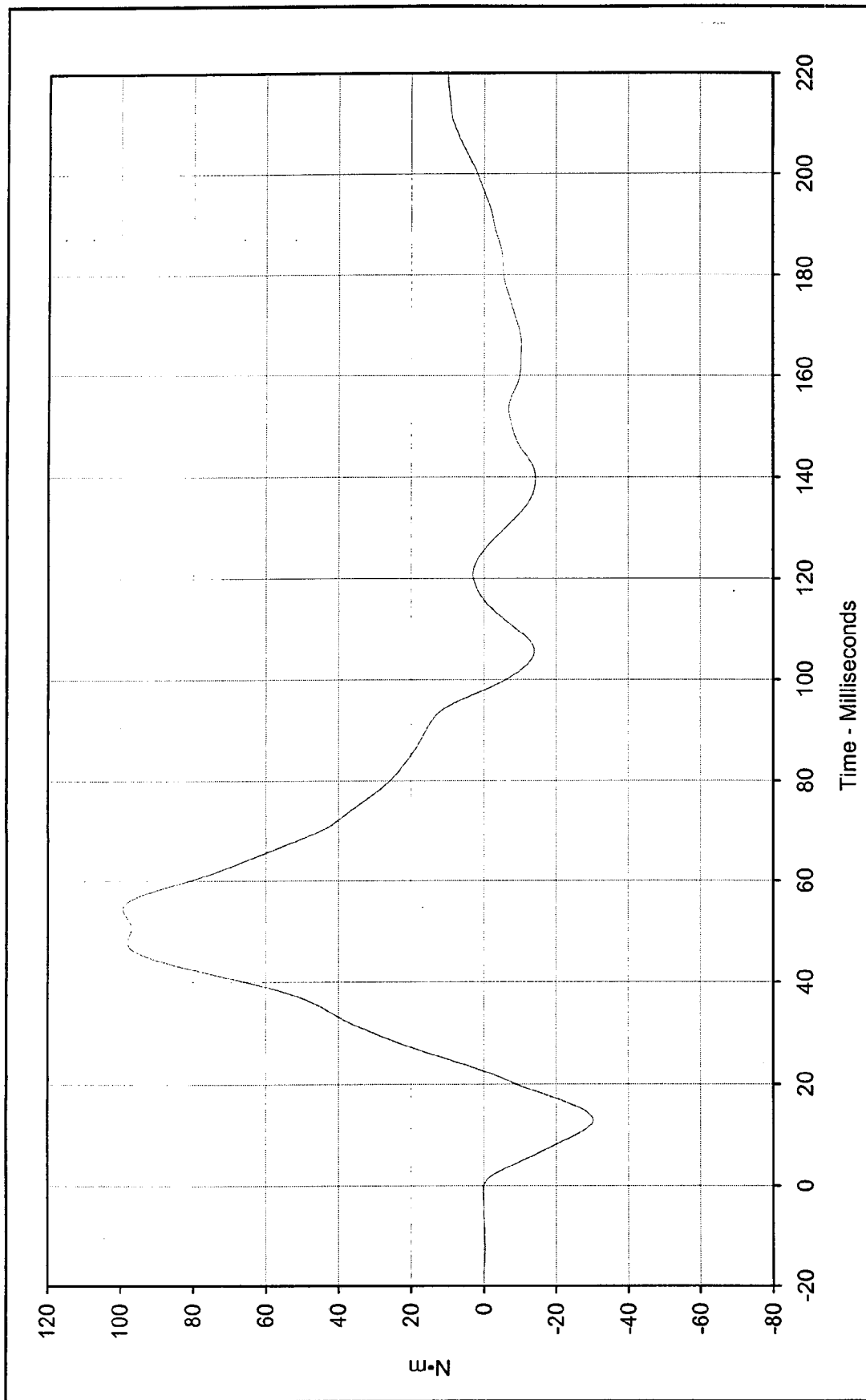




Testing Program: Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NF12B



Curve Description: "D" Plane Rotation
 Maximum Value: 76.8 at 58.2 Milliseconds
 Minimum Value: -38.5 at 169.6 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/15/99
 ATD Serial No.: 34



Curve Description: Moment About Occipital Condyles
 Testing Program: Hybrid III Neck Flexion Test (Male)
 Maximum Value: 99.3 at 54.4 Milliseconds
 Test Information: S/N of Part: n/a Test I.D.: NF12B
 Minimum Value: -30.2 at 13.1 Milliseconds



SAE Filter Class: 60
 Date of Test: 12/15/99
 ATD Serial No.: 34



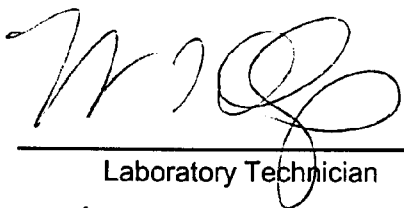
Hybrid III Calibration Data Sheet

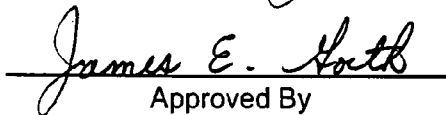
50TH Percentile Male

Neck Extension Test

ATD Serial No.: 034Part Serial No.: n/aTest I.D.: NE12B

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	6.00	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.8	Pass
	20 Msec.	G's	14.0 to 19.0	16.2	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	43.6	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	98.1	Pass
	Time	Msec.	72.0 to 82.0	78.8	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	150.8	Pass
Moment About Occipital Condyle	Maximum	N • m	-52.9 to- 79.9	-70.7	Pass
	Time	Msec.	65.0 to 79.0	69.0	Pass
Negative Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	139.5	Pass
Overall Test Results					Pass


Laboratory Technician

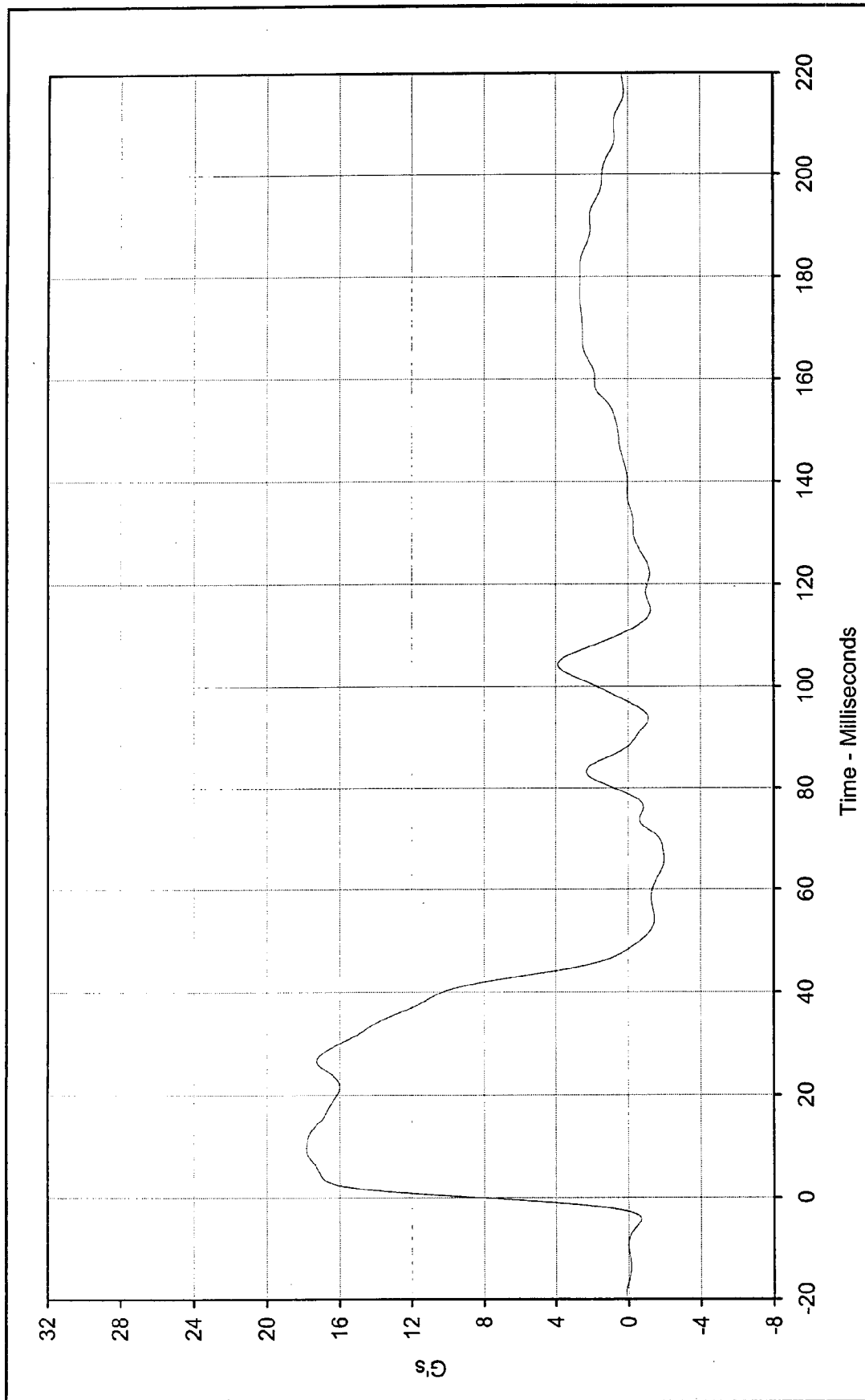

Approved By

December 15, 1999

Test Date

12/15/99

Date

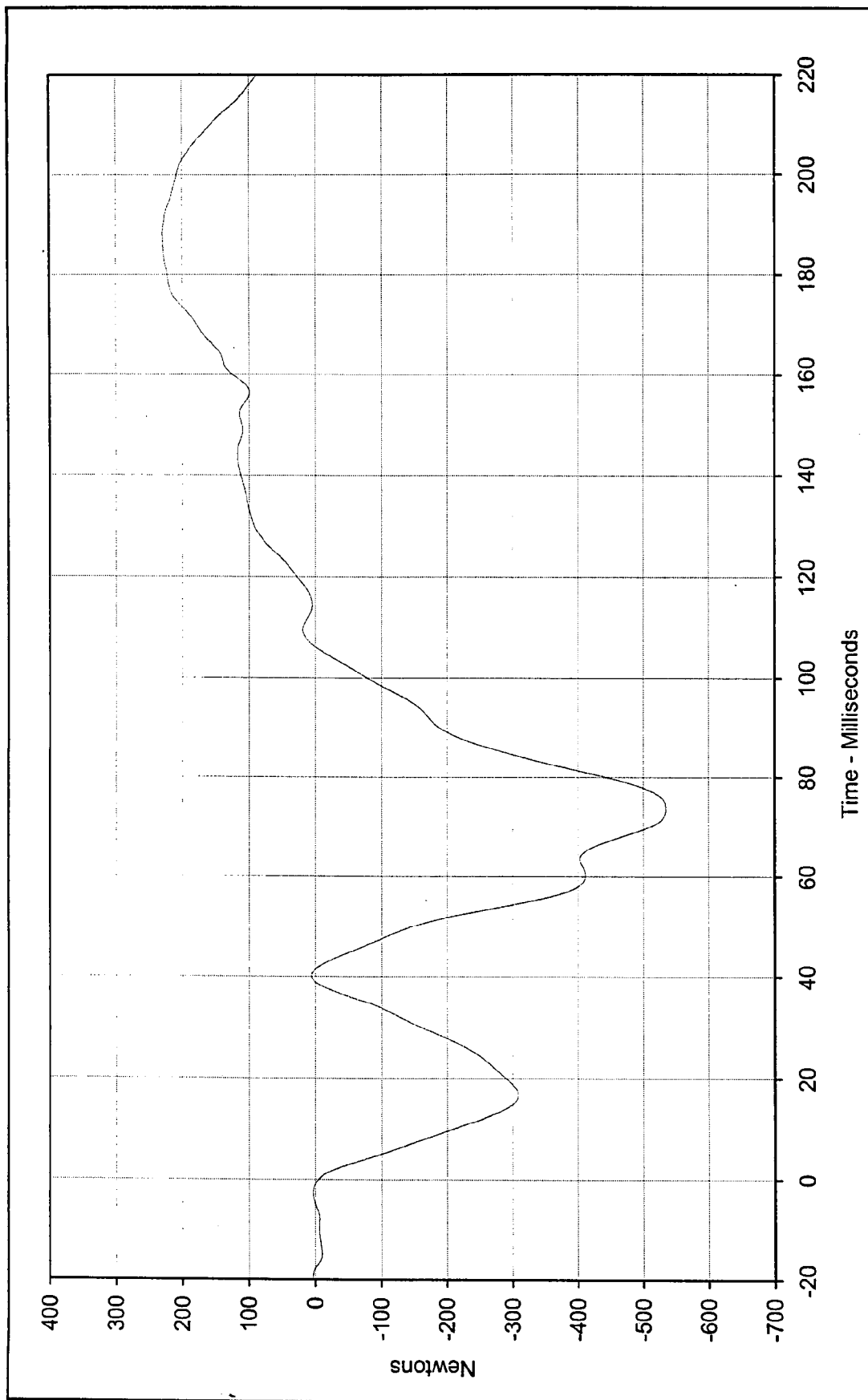


E-16

Curve Description:		Pendulum Deceleration		Testing Program	Hybrid III Neck Extension Test (Male)
Maximum Value:	17.8	at	9.4	Test Information:	S/N of Part: n/a Test I.D.: NE12B
Minimum Value:	-2.0	at	65.7		
SAE Filter Class:	60				
Date of Test:	12/15/99				
ATD Serial No.:	034				



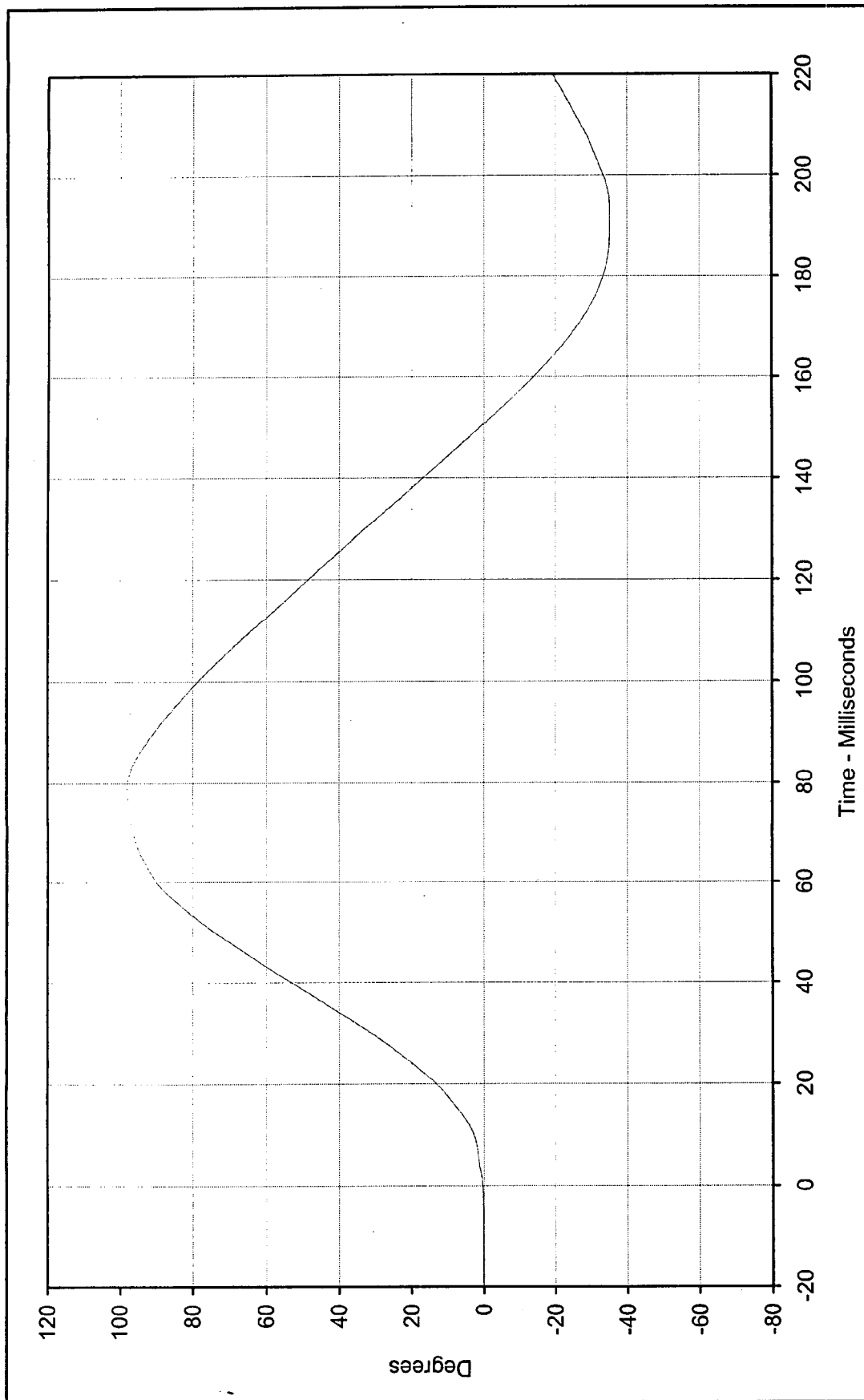
KAR20001-07



Testing Program: Hybrid III Neck Extension Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NE12B



Curve Description: Neck Force X
 Maximum Value: 229.3 at 188.4 Milliseconds
 Minimum Value: -534.8 at 73.8 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/15/99
 ATD Serial No.: 034



Curve Description: Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NE12B

"D" Plane Rotation

Maximum Value: 98.1 at 78.8 Milliseconds

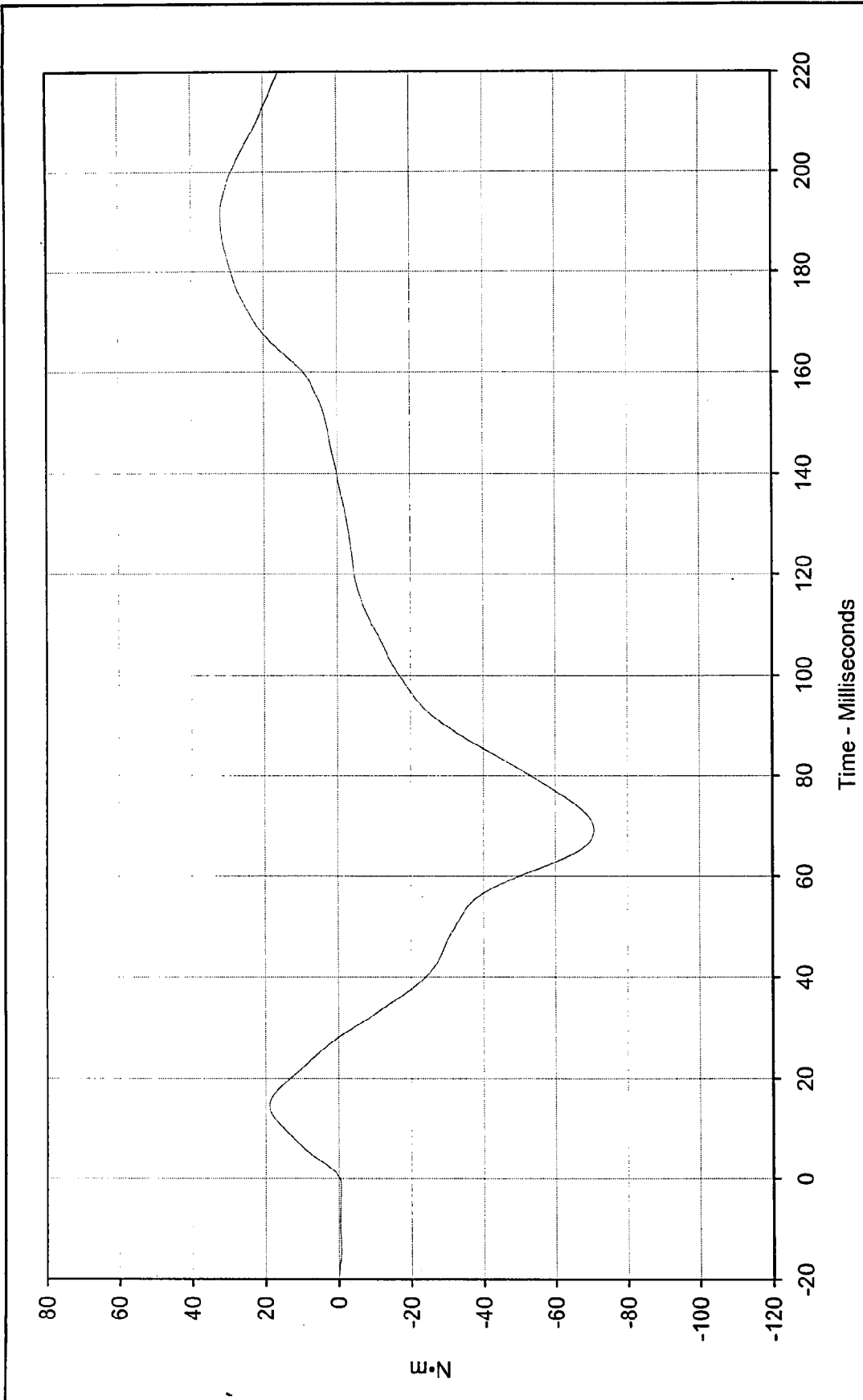
Minimum Value: -35.2 at 189.6 Milliseconds

SAE Filter Class: 60

Date of Test: 12/15/99

ATD Serial No.: 034





Testing Program: Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NE12B

Curve Description: Moment About Occipital Condyles

Maximum Value: 31.8 at 191.7 Milliseconds

Minimum Value: -70.7 at 69.0 Milliseconds

SAE Filter Class: 60

Date of Test: 12/15/99

ATD Serial No.: 034





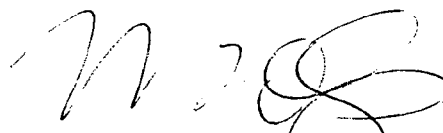
Hybrid III Calibration Data Sheet

50TH Percentile Male

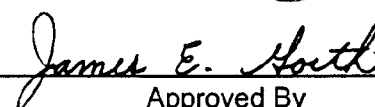
External Measurements

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	888.1	Pass
B - Shoulder pivot height	mm	505.5 to 520.7	50.0	Pass
C - "H" point height	mm	83.8 to 88.9	88.0	Pass
D - "H" point from seat back	mm	134.6 to 139.7	136.0	Pass
E - Shoulder pivot from back	mm	83.8 to 94.0	91.0	Pass
F - Thigh clearance	mm	139.7 to 154.9	152.0	Pass
G - Elbow back to wrist pivot	mm	289.6 to 304.8	301.0	Pass
H - Skull cap to back line	mm	40.6 to 45.7	44.0	Pass
I - Shoulder to elbow length	mm	330.2 to 345.4	332.0	Pass
J - Elbow rest height	mm	190.5 to 210.8	205.0	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	470.0	Pass
O - Chest depth	mm	213.4 to 228.6	226.0	Pass
P - Foot length	mm	251.5 to 266.7	260.0	Pass
V - Shoulder breadth	mm	421.6 to 436.9	430.0	Pass
W - Foot breadth	mm	91.4 to 106.7	101.0	Pass
Y - Chest circumference	mm	970.3 to 1000.8	999.0	Pass
Z - Waist circumference	mm	835.7 to 866.1	864.0	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

December 15, 1999

Test Date

12/15/99

Date



Hybrid III Calibration Data Sheet

50TH Percentile Male

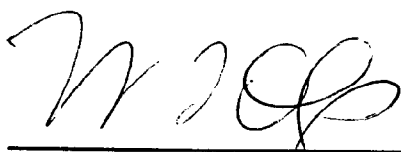
Left Knee Impact Test

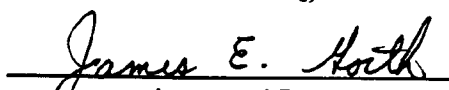
ATD Serial No.: 35

Part Serial No.: n/a

Test I.D.: LK12B

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	28	Pass
Probe Velocity	m/s	2.073 to 2.134	2.088	Pass
Peak Probe Force	Newtons	4715 to 5782	5391.7	Pass
Overall Test Results				Pass


Laboratory Technician

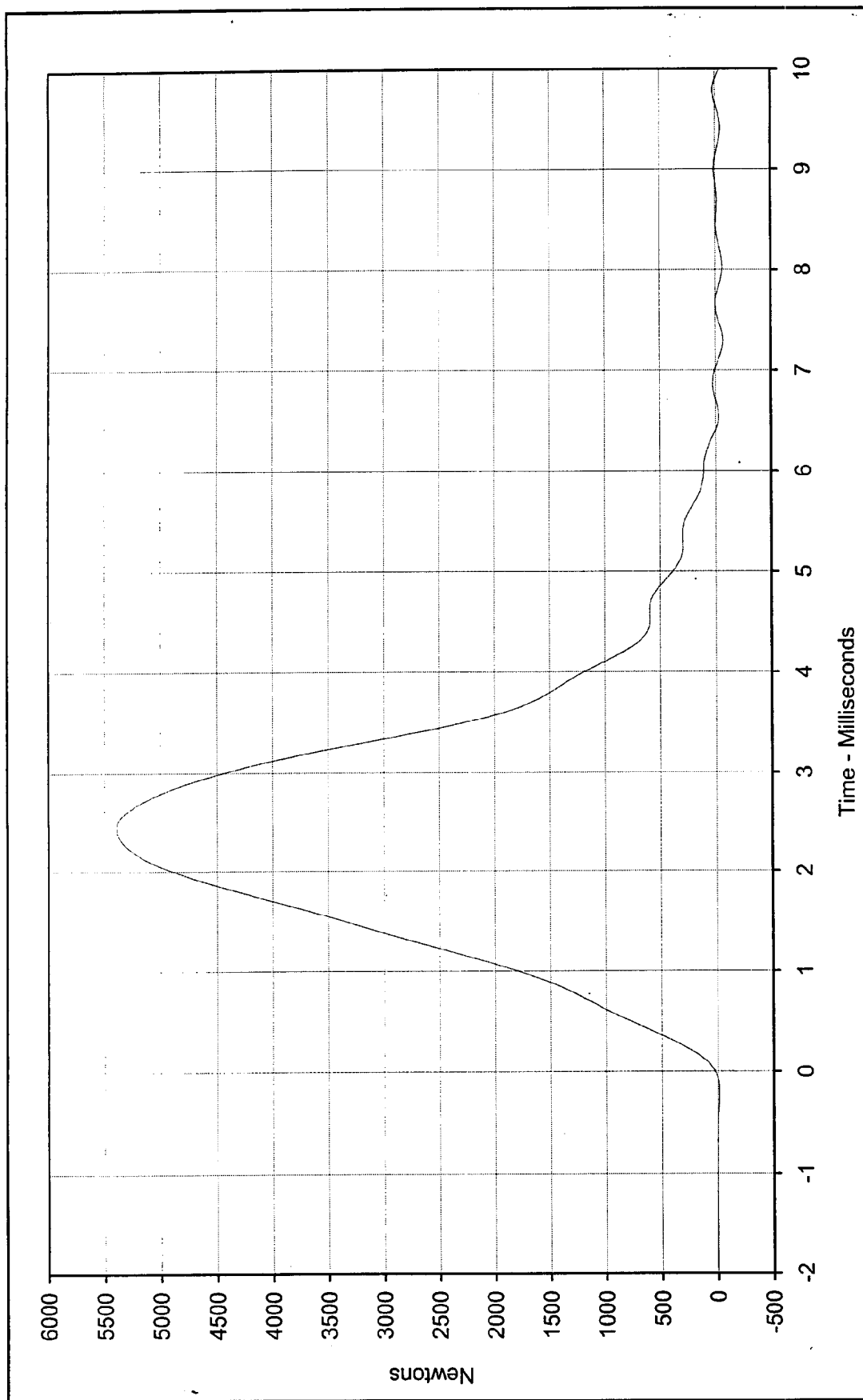

Approved By

December 14, 1999

Test Date

12/14/99

Date



Testing Program: Hybrid III Left Knee Impact Test

Test Information: Part S/N: n/a Test I.D.: LK12B



Curve Description: Probe Force

Maximum Value: 5391.7 at 2.4 Milliseconds

Minimum Value: -69.9 at 7.3 Milliseconds

SAE Filter Class: 600

Date of Test: 12/14/99

ATD Serial No.: 35



Hybrid III Calibration Data Sheet

50TH Percentile Male

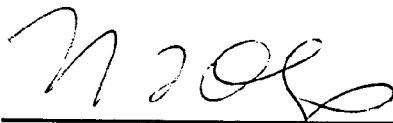
Right Knee Impact Test

ATD Serial No.: 35

Part Serial No.: n/a

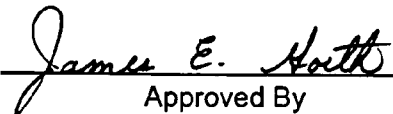
Test I.D.: RK12B

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	28	Pass
Probe Velocity	m/s	2.073 to 2.134	2.106	Pass
Peak Probe Force	Newtons	4715 to 5782	5336.0	Pass
Overall Test Results				Pass


Laboratory Technician

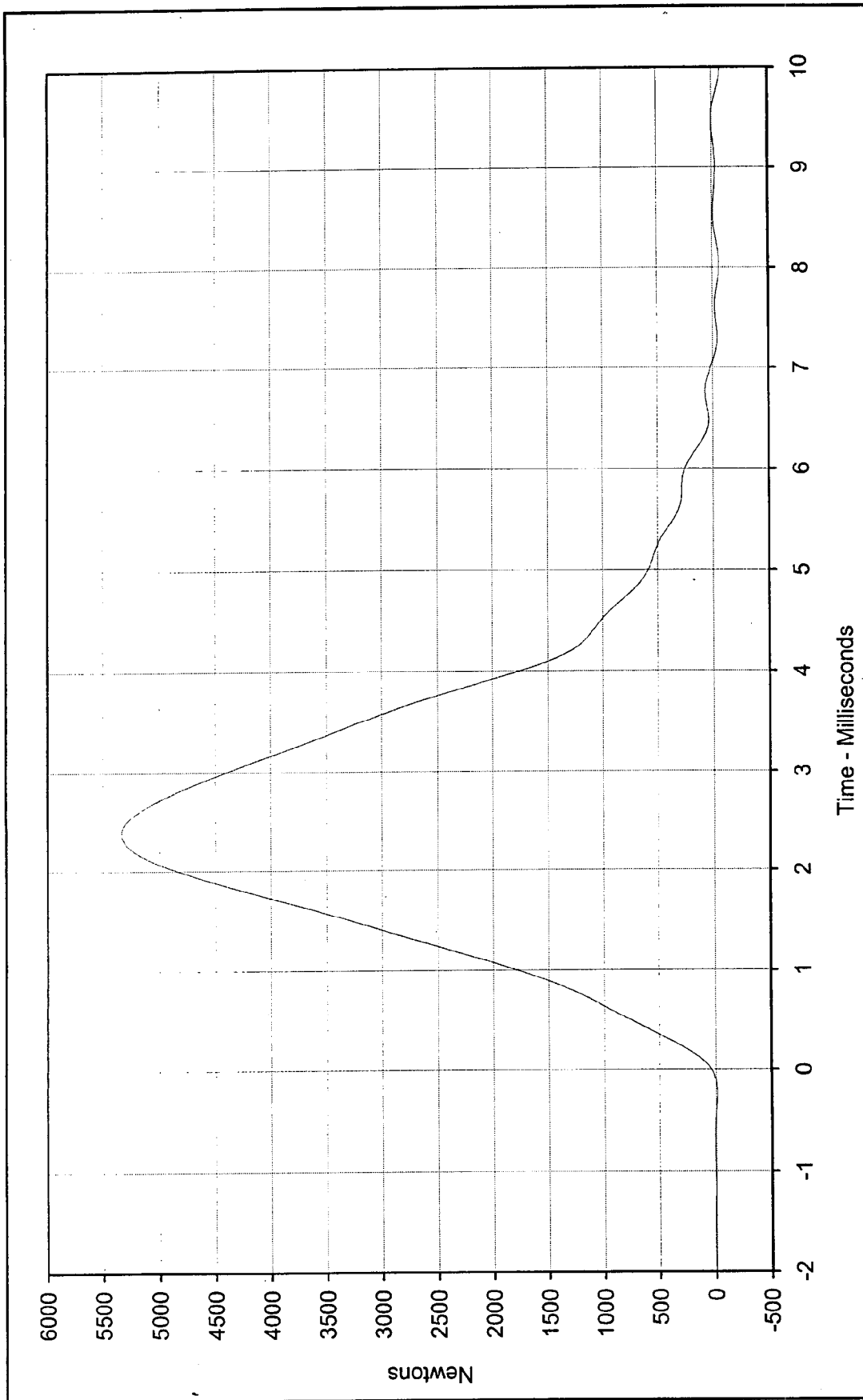
December 14, 1999

Test Date


Approved By

12/14/99

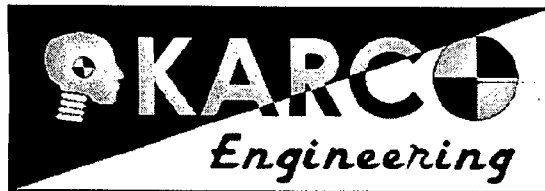
Date



Testing Program: Hybrid III Right Knee Impact Test
 Test Information: Part S/N: n/a Test I.D.: RK12B



Curve Description: Probe Force
 Maximum Value: 5336.0 at 2.4 Milliseconds
 Minimum Value: -60.2 at 8.0 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/14/99
 ATD Serial No.: 35



Hybrid III Calibration Data Sheet

50TH Percentile Male

Head Drop Calibration

ATD Serial No.: 035

Part Serial No.: n/a

Test I.D.: HD12B

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	233.0	Pass
Peak Lateral Acceleration	G's	≤15.0	3.5	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

Laboratory Technician

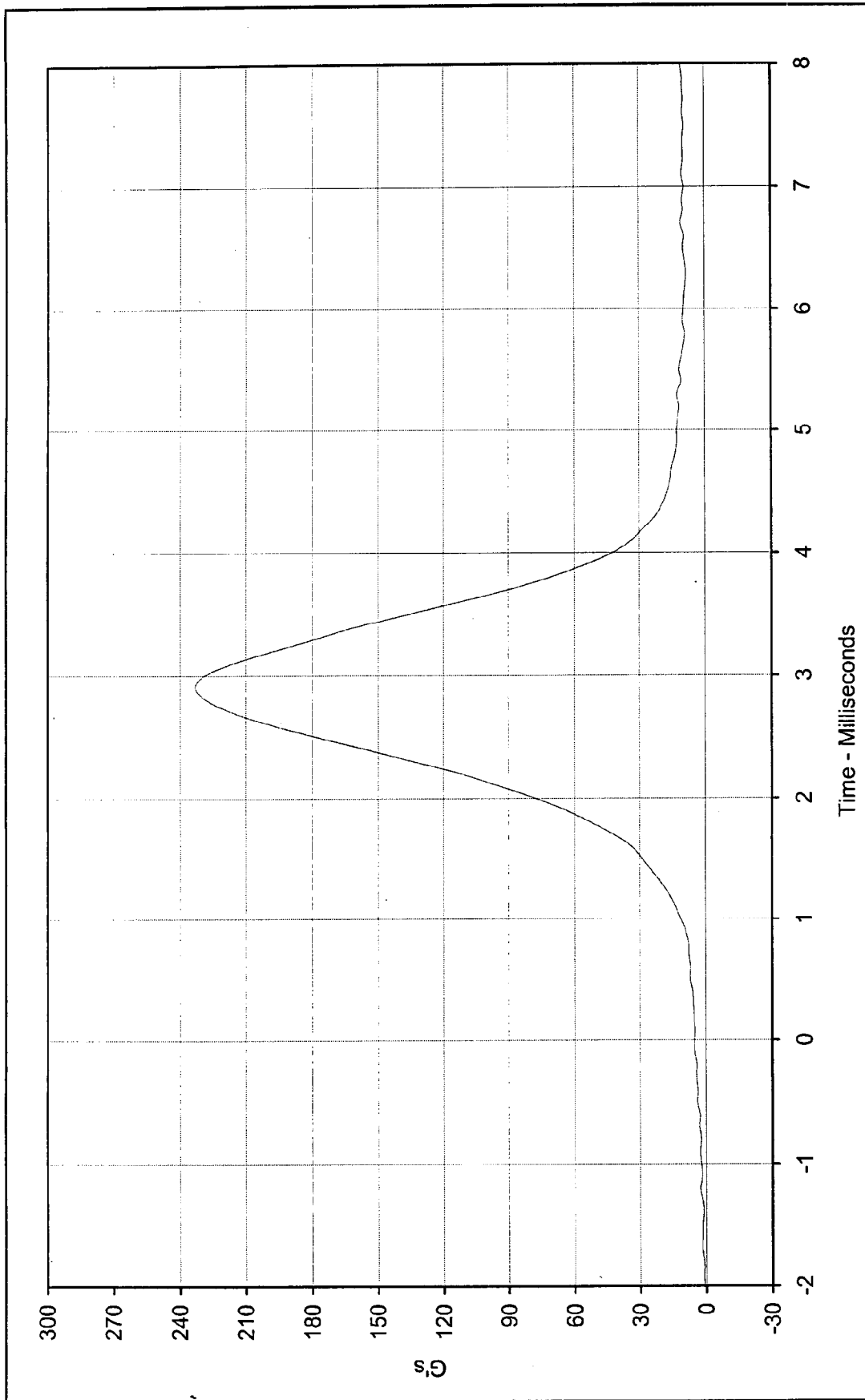
December 14, 1999

Test Date

Approved By

12/14/99

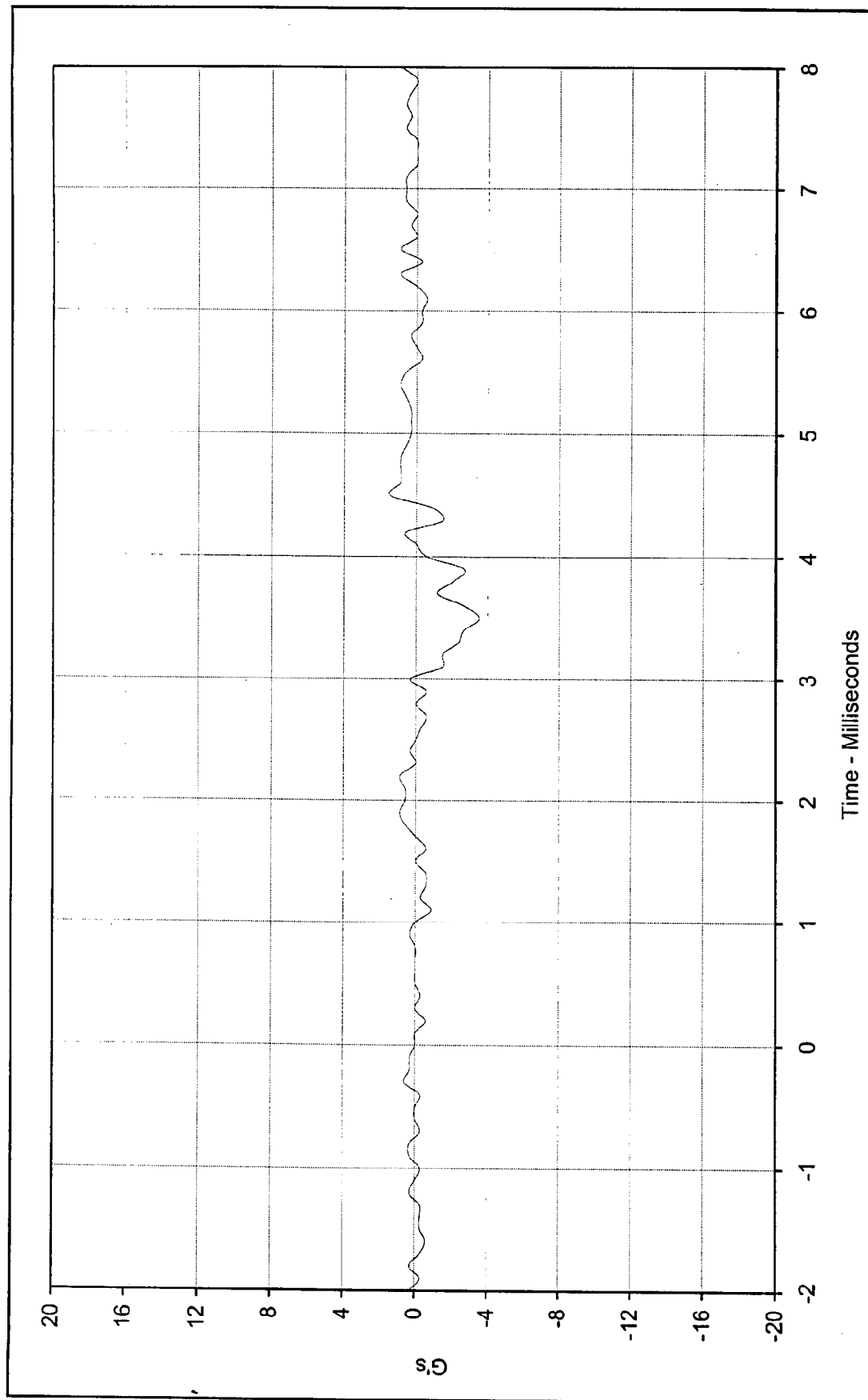
Date



Testing Program: Hybrid III Head Drop Calibration (Male)
 Test Information: S/N of Part: n/a Test I.D.: HD12B



Curve Description: Head Resultant Acceleration
 Maximum Value: 233.0 at 2.9 Milliseconds
 Minimum Value: 0.8 at -2.0 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/14/99
 ATD Serial No.: 035



Testing Program: Hybrid III Head Drop Calibration (Male)
 Test Information: S/N of Part: n/a Test I.D.: HD12B

Curve Description: Head Acceleration Y Axis
 Maximum Value: 1.5 at 4.5 Milliseconds
 Minimum Value: -3.5 at 3.5 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/14/99
 ATD Serial No.: 035





Hybrid III Calibration Data Sheet

50TH Percentile Male

Thorax Impact Test

ATD Serial No.: 35

Part Serial No.: N/A

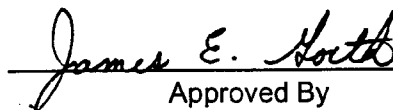
Test I.D.: CH12A

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	6.75	Pass
Peak Probe Force	Newtons	5159 to 5893	5828	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.65	Pass
Internal Hysteresis	%	69 to 85	75.6	Pass
Overall Test Results				Pass


Laboratory Technician

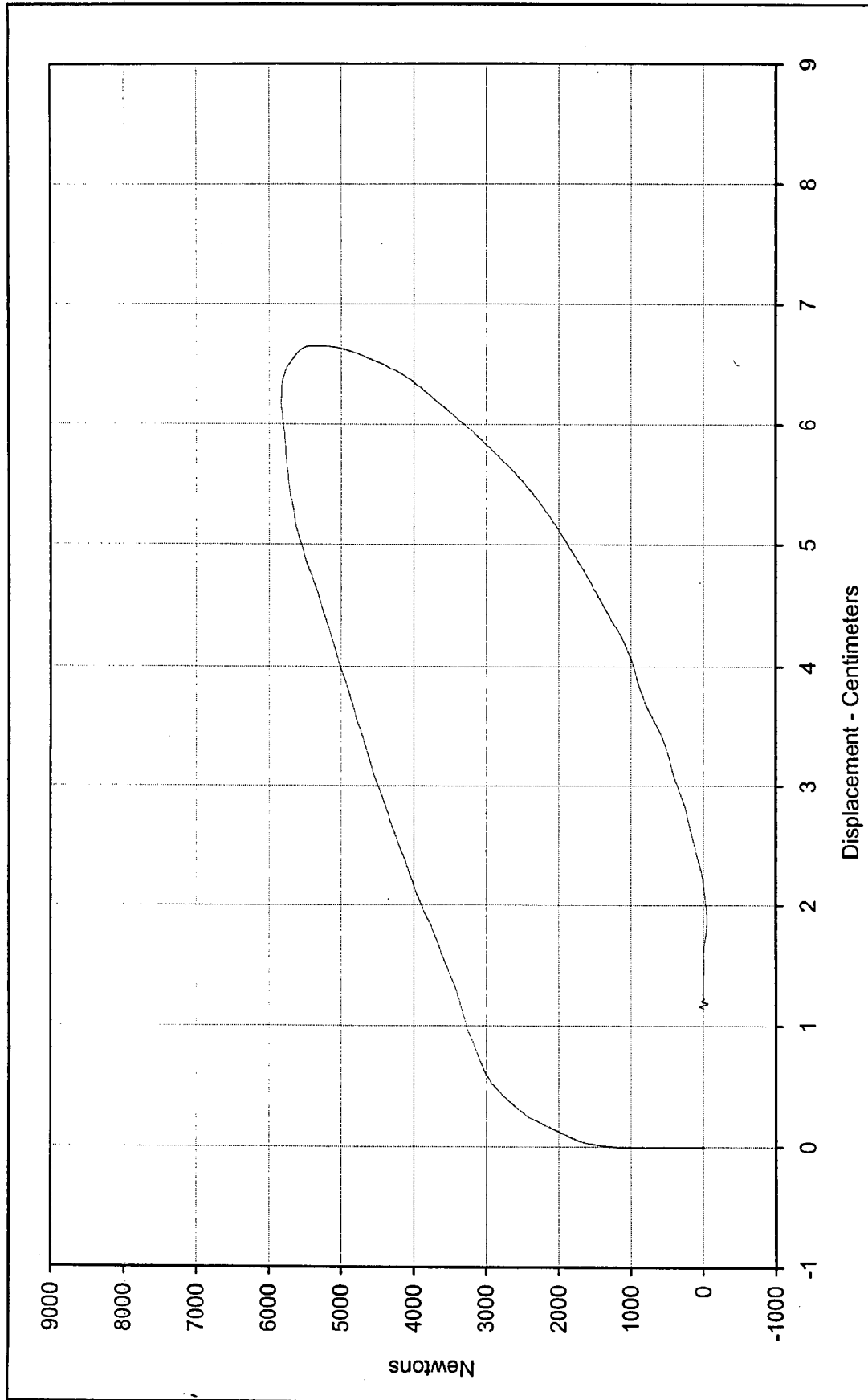
December 14, 1999

Test Date


Approved By

12/14/99

Date



Curve Description:	Probe Force vs. Chest Displacement	Testing Program:	Hybrid III Thorax Impact Test
Probe Force:	5828.0 Newtons	Test Information:	S/N of Part: N/A Test I.D.: CH12A

Chest Displ.: 6.65 Centimeters

SAE Filter Class: 180

Date of Test: 12/14/99

ATD Serial No.: 35





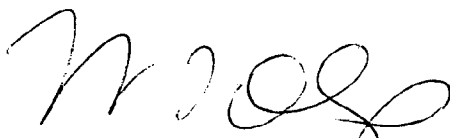
Hybrid III Calibration Data Sheet

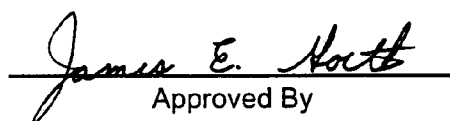
50TH Percentile Male

Neck Flexion Test

ATD Serial No.: 35Part Serial No.: n/aTest I.D.: NF12A

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	6.99	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	23.5	Pass
	20 Msec.	G's	17.6 to 22.6	19.8	Pass
	30 Msec.	G's	12.5 to 18.5	17.7	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	17.7	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	36.9	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	70.7	Pass
	Time	Msec.	57.0 to 64.0	59.3	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	117.6	Pass
Moment About Occipital Condyle	Maximum	N • m	84.1 to 108.5	89.2	Pass
	Time	Msec.	47.0 to 58.0	54.8	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	100.4	Pass
Overall Test Results					Pass


Laboratory Technician

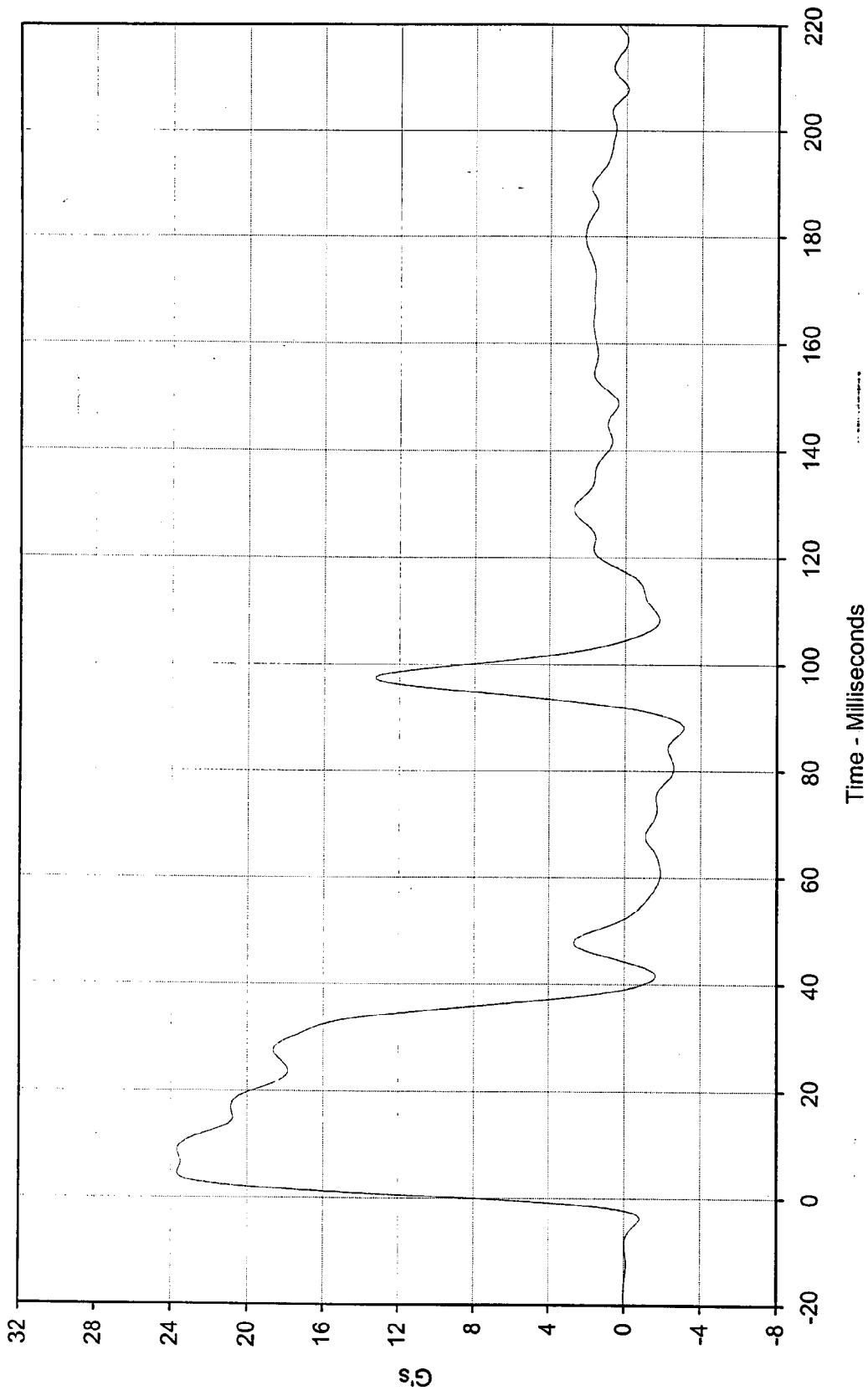

Approved By

December 15, 1999

Test Date



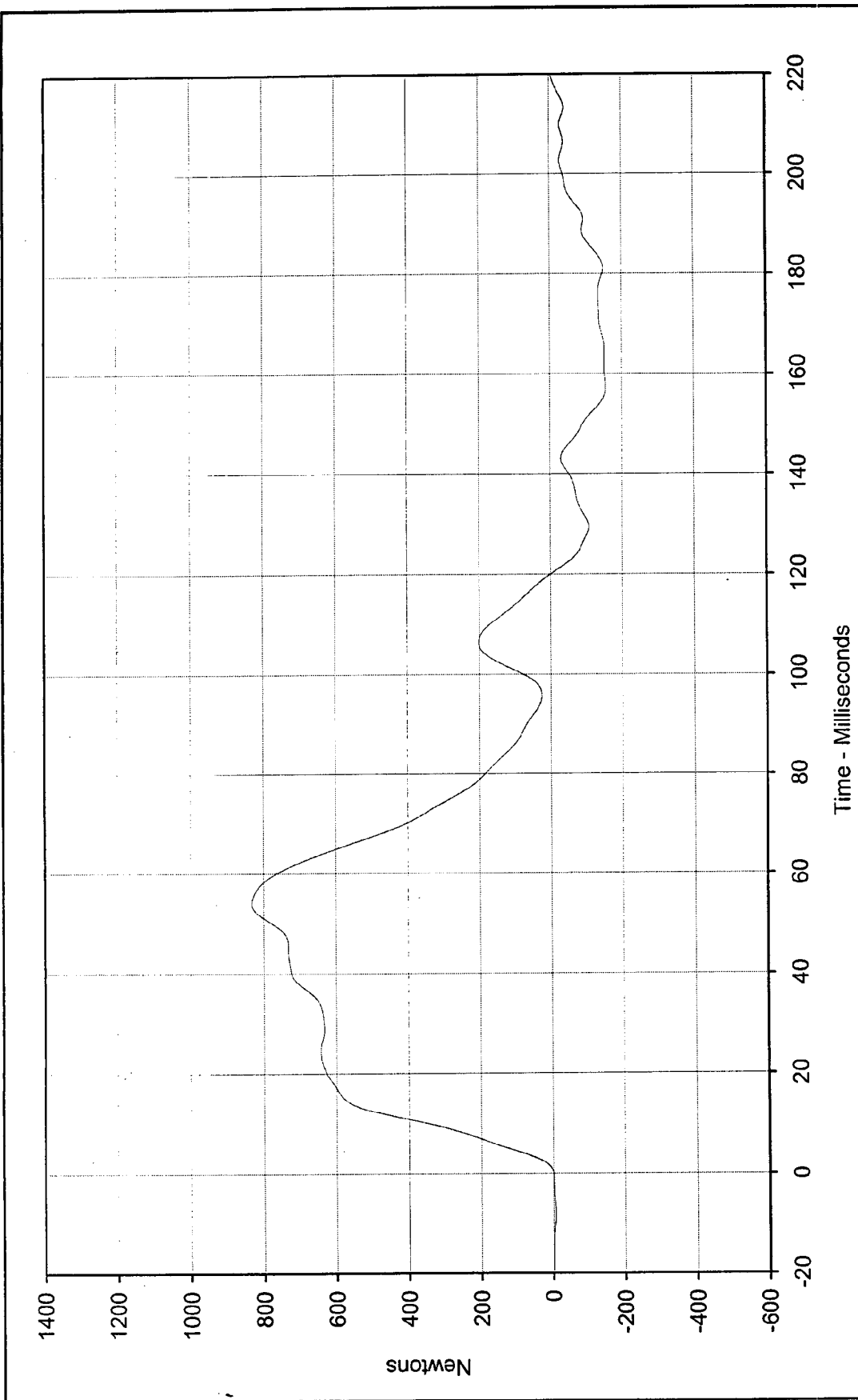
Date



Curve Description: Hybrid III Neck Flexion Test (Male)
 Testing Program: S/N of Part: n/a Test I.D.: NF12A
 Test Information:

Curve Description: Pendulum Deceleration
 Maximum Value: 23.7 at 8.7 Milliseconds
 Minimum Value: -3.1 at 88.1 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/15/99
 ATD Serial No.: 35



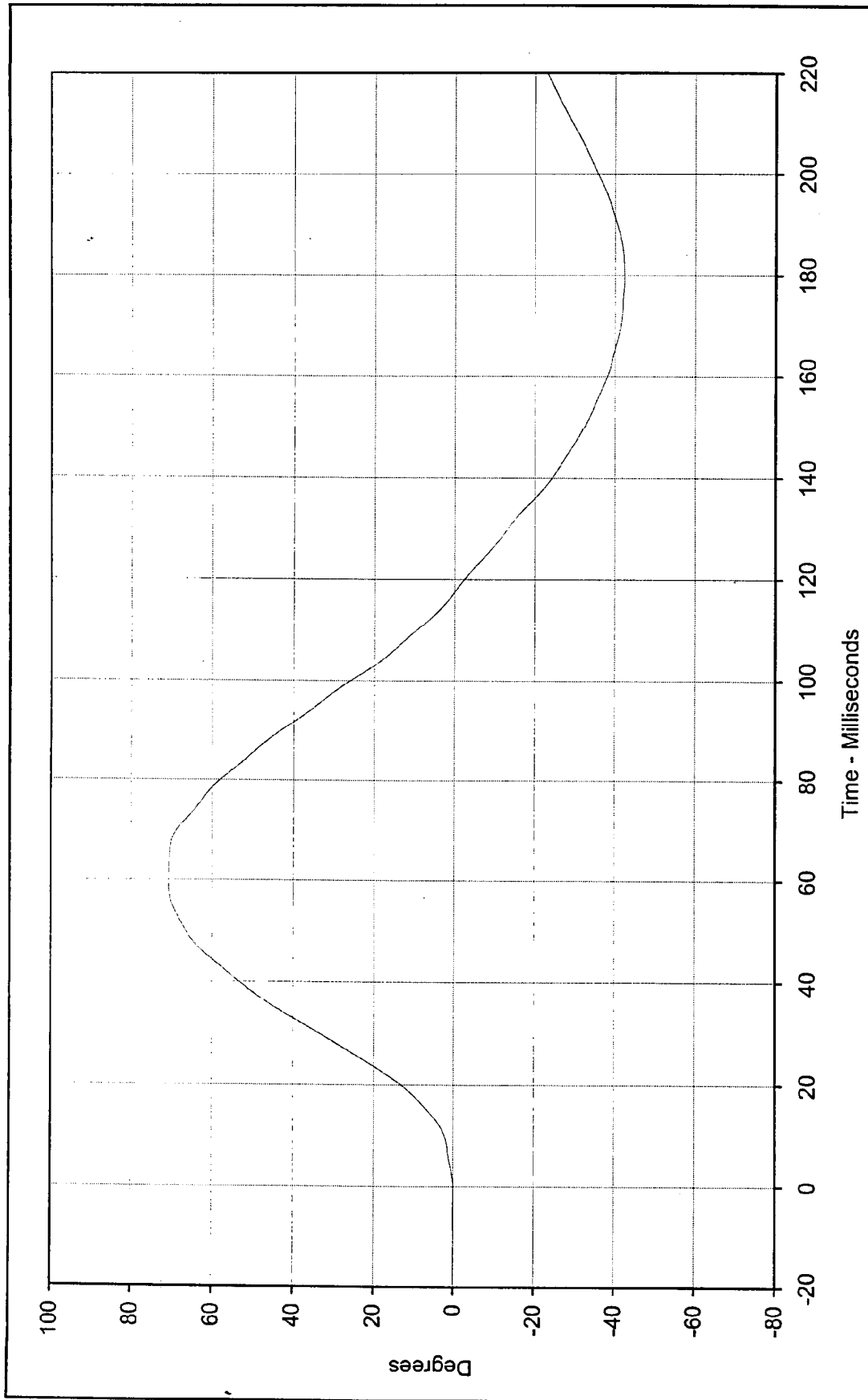


Curve Description: Neck Force X
 Maximum Value: 832.0 at 54.1 Milliseconds
 Minimum Value: -154.7 at 157.3 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/15/99
 ATD Serial No.: 35

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NF12A

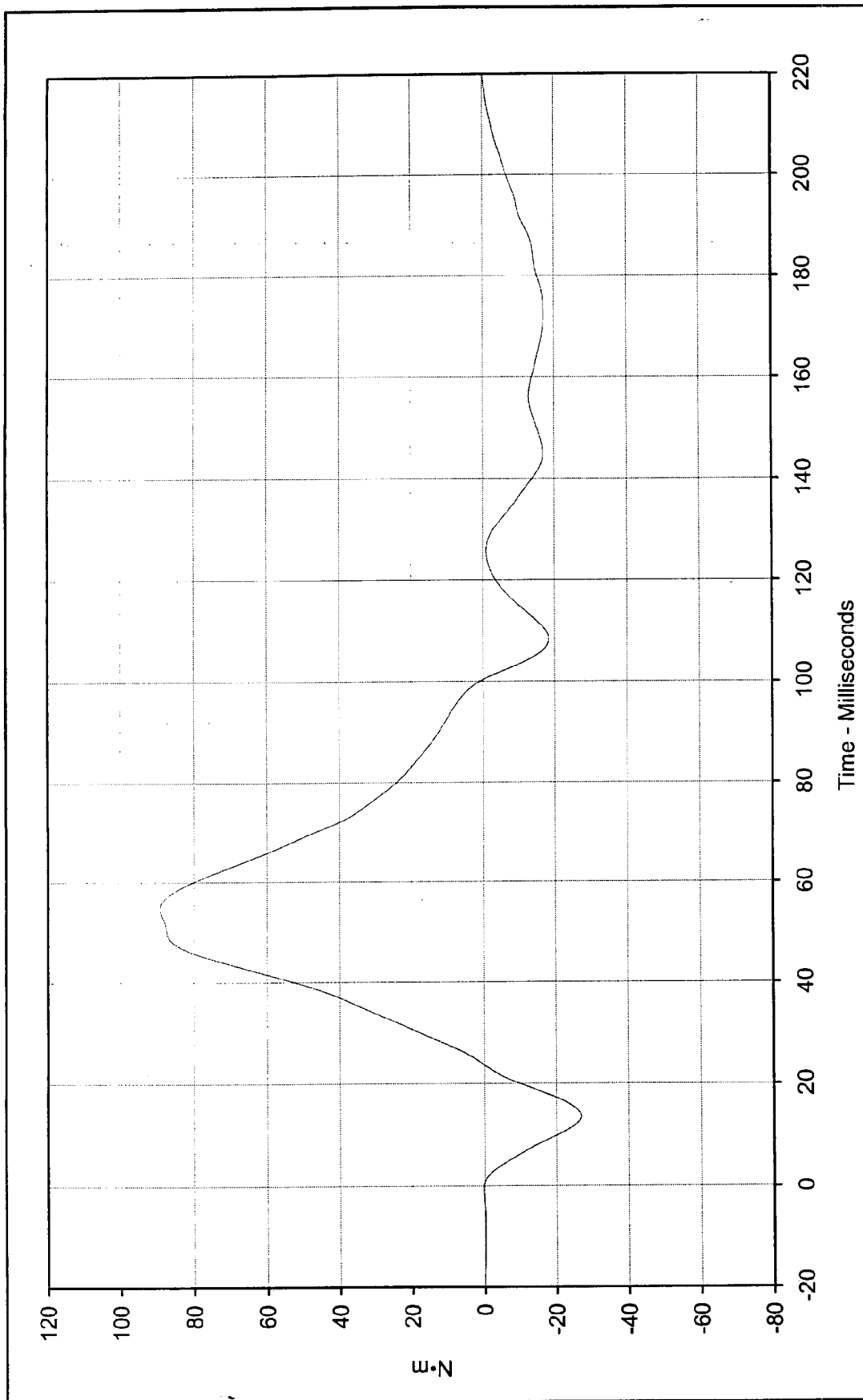




Testing Program: Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NF12A



Curve Description: "D" Plane Rotation
 Maximum Value: 70.7 at 59.3 Milliseconds
 Minimum Value: -42.4 at 179.5 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/15/99
 ATD Serial No.: 35



E-34

Curve Description: Moment About Occipital Condyles
 Maximum Value: 89.2 at 54.8 Milliseconds
 Minimum Value: -26.9 at 13.6 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/15/99
 ATD Serial No.: 35

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NF12A



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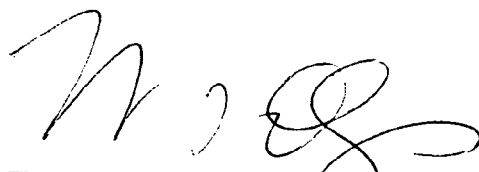
Hybrid III Calibration Data Sheet

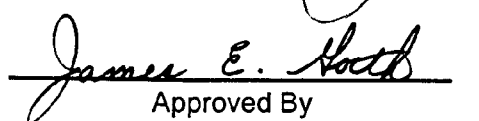
50TH Percentile Male

Neck Extension Test

ATD Serial No.: 035Part Serial No.: n/aTest I.D.: NE12A

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	6.09	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.9	Pass
	20 Msec.	G's	14.0 to 19.0	18.0	Pass
	30 Msec.	G's	11.0 to 16.0	15.6	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.6	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	43.6	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	94.6	Pass
	Time	Msec.	72.0 to 82.0	78.9	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	157.9	Pass
Moment About Occipital Condyle	Maximum	N • m	-52.9 to- 79.9	-68.0	Pass
	Time	Msec.	65.0 to 79.0	71.1	Pass
Negative Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	140.2	Pass
Overall Test Results					Pass


Laboratory Technician

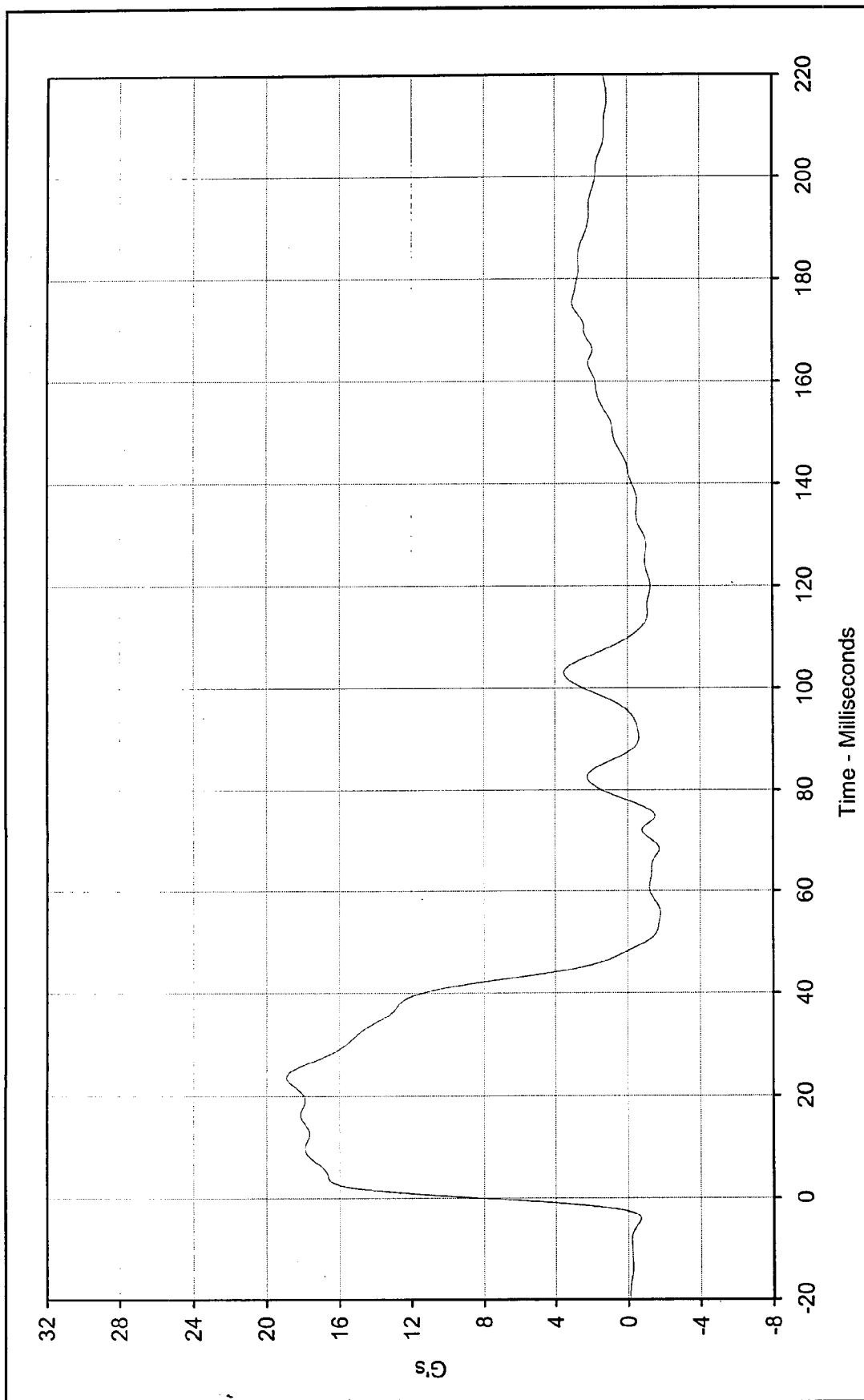

Approved By

December 15, 1999

Test Date

12/15/99

Date



Testing Program: Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NE12A

Curve Description: Pendulum Deceleration

Maximum Value: 18.9 at 23.5 Milliseconds

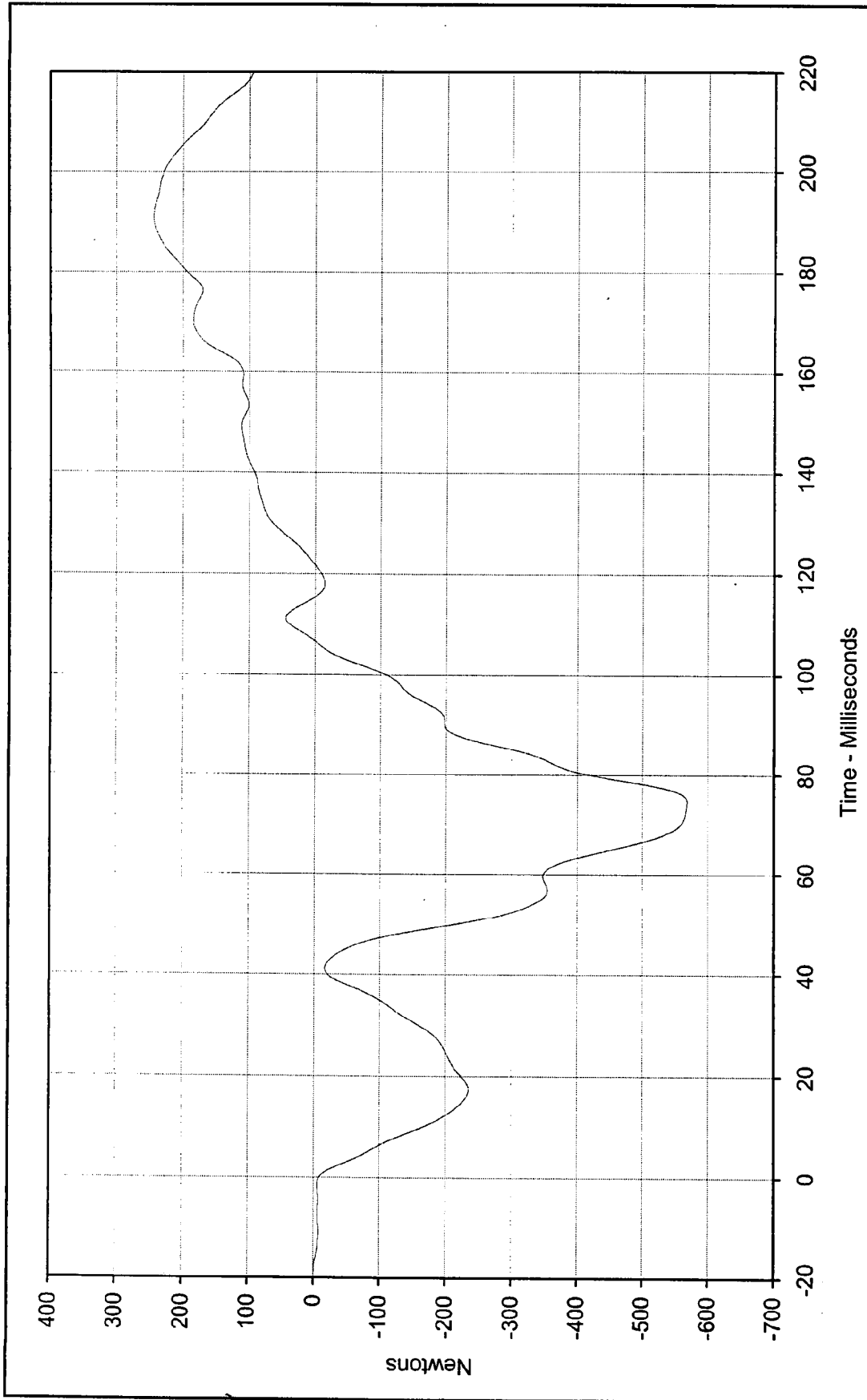
Minimum Value: -1.8 at 55.6 Milliseconds

SAE Filter Class: 60

Date of Test: 12/15/99

ATD Serial No.: 035





Curve Description: Hybrid III Neck Extension Test (Male)

Testing Program: S/N of Part: n/a Test I.D.: NE12A

Maximum Value: 244.2 at 191.1 Milliseconds

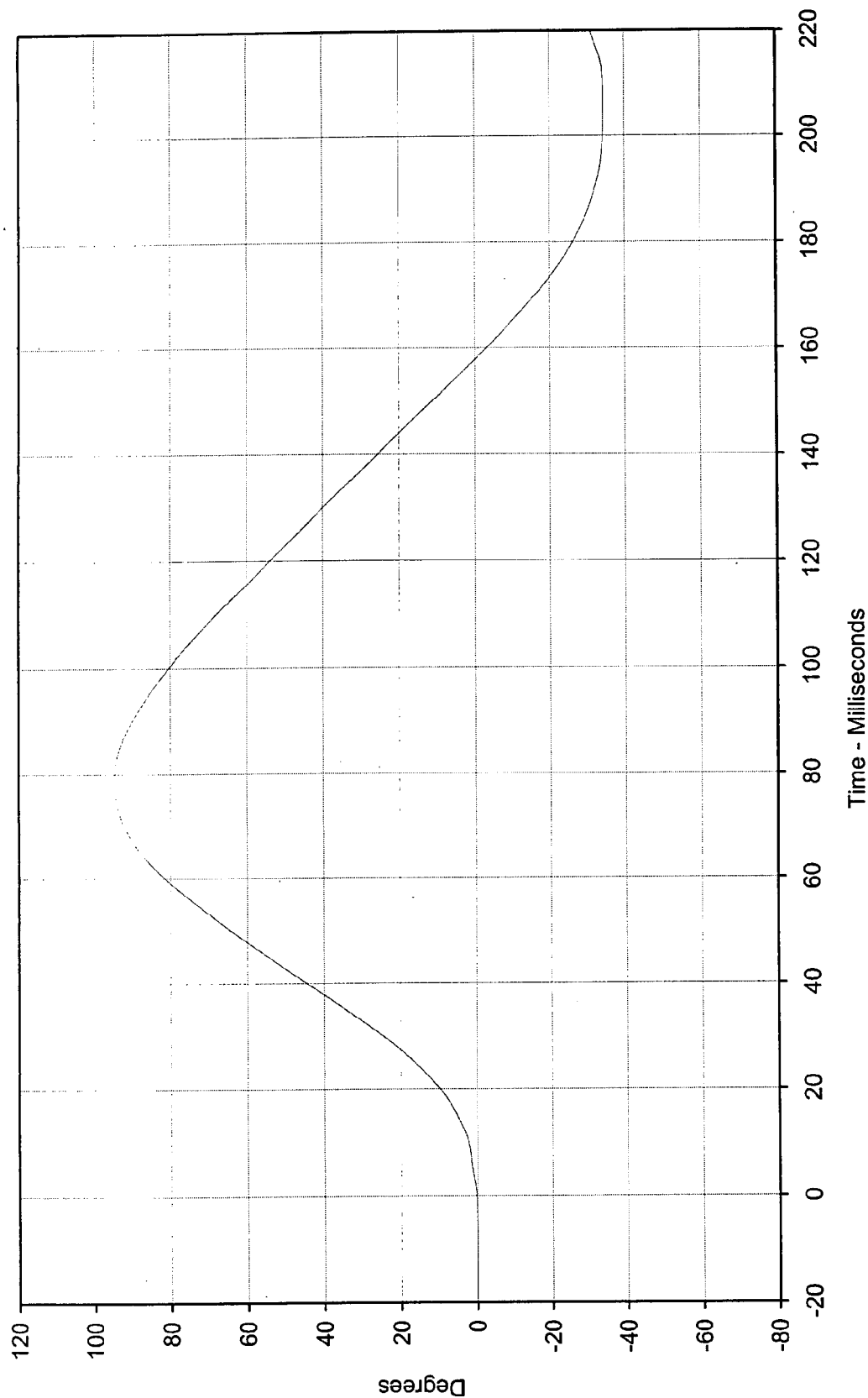
Minimum Value: -568.3 at 74.6 Milliseconds

SAE Filter Class: 60

Date of Test: 12/15/99

ATD Serial No.: 035





Testing Program: Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NE12A

Curve Description: "D" Plane Rotation

Maximum Value: 94.6 at 78.9 Milliseconds

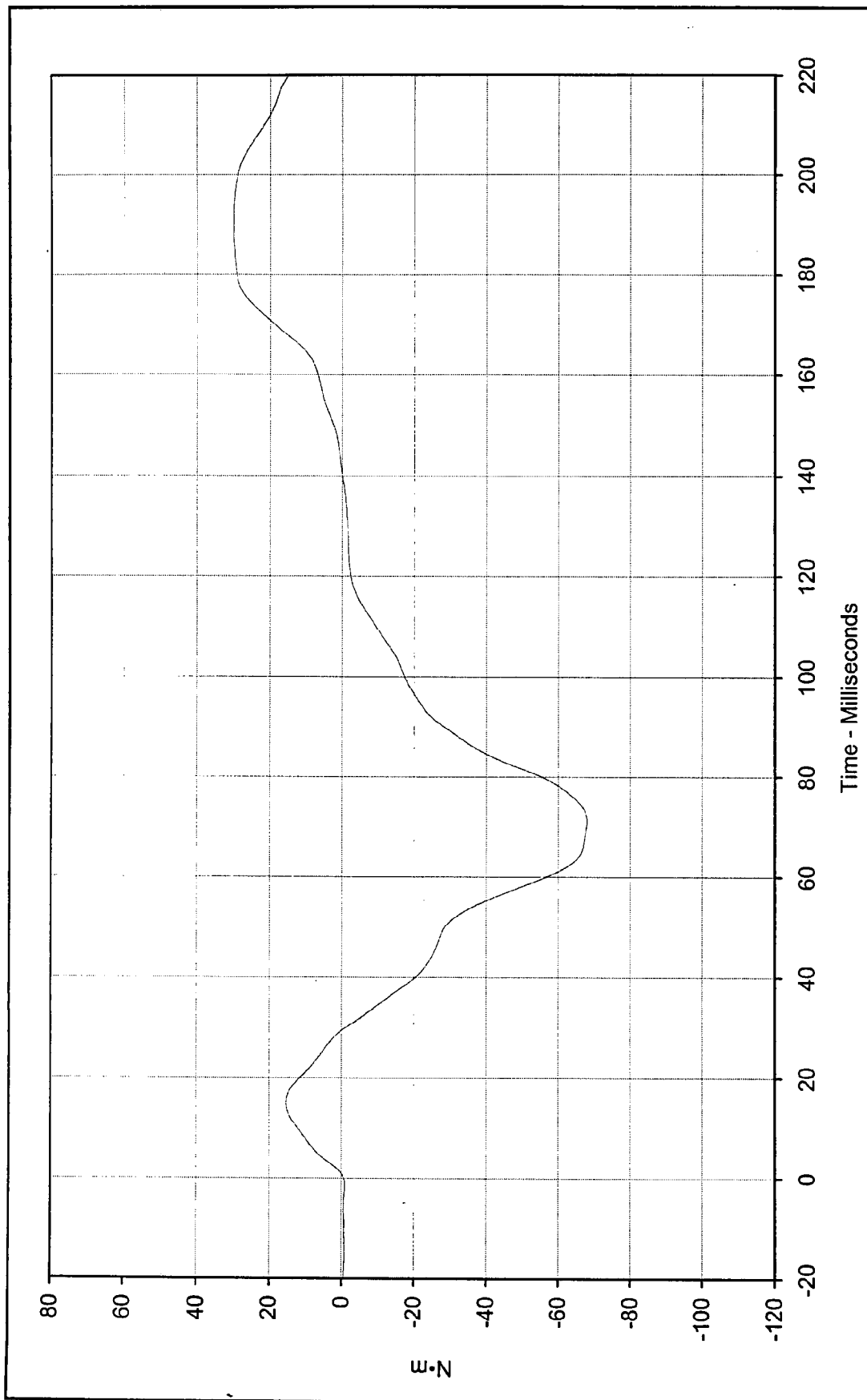
Minimum Value: -34.4 at 207.6 Milliseconds

SAE Filter Class: 60

Date of Test: 12/15/99

ATD Serial No.: 035





Curve Description: Moment About Occipital Condyles
 Maximum Value: 30.1 at 188.9 Milliseconds
 Minimum Value: -68.0 at 71.1 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/15/99
 ATD Serial No.: 035

Testing Program: Hybrid III Neck Extension Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NE12A





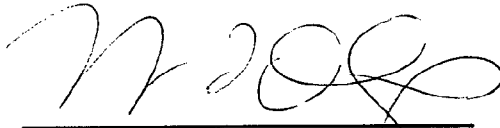
Hybrid III Calibration Data Sheet

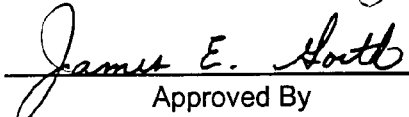
50TH Percentile Male

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	50.0	Pass
C - "H" point height	mm	83.8 to 88.9	88.0	Pass
D - "H" point from seat back	mm	134.6 to 139.7	136.0	Pass
E - Shoulder pivot from back	mm	83.8 to 94.0	92.0	Pass
F - Thigh clearance	mm	139.7 to 154.9	152.0	Pass
G - Elbow back to wrist pivot	mm	289.6 to 304.8	301.0	Pass
H - Skull cap to back line	mm	40.6 to 45.7	43.0	Pass
I - Shoulder to elbow length	mm	330.2 to 345.4	332.0	Pass
J - Elbow rest height	mm	190.5 to 210.8	205.0	Pass
K - Buttock to knee length	mm	579.1 to 604.5	586.0	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	470.0	Pass
O - Chest depth	mm	213.4 to 228.6	226.0	Pass
P - Foot length	mm	251.5 to 266.7	260.0	Pass
V - Shoulder breadth	mm	421.6 to 436.9	431.0	Pass
W - Foot breadth	mm	91.4 to 106.7	101.0	Pass
Y - Chest circumference	mm	970.3 to 1000.8	998.0	Pass
Z - Waist circumference	mm	835.7 to 866.1	840.0	Pass
AA - Location for chest circumference	mm	429.3 to 434.3	431.0	Pass
BB - Location for waist circumference	mm	226.1 to 231.1	228.0	Pass
Overall Test Results				Pass


Laboratory Technician


Approved By

December 15, 1999

Test Date

12/15/99

Date

APPENDIX F
VEHICLE OWNER'S MANUAL
OCCUPANT RESTRAINT INSTRUCTIONS

KAR20001-07

Table of Contents



Seats and Restraint Systems

- ▷ Seats and Seat Controls
- ▷ Safety Belts
- ▷ Air Bag Systems
- ▷ Child Restraints



Features and Controls

- ▷ Keys and Door Locks
- ▷ Remote Keyless Entry (RKE) System
- ▷ Tailgate
- ▷ Automatic Transmission (If Equipped)
- ▷ Manual Transmission Operation (If Equipped)
- ▷ Four-Wheel Drive Operation (If Equipped)
- ▷ Parking Brake
- ▷ Windows
- ▷ Tilt Wheel
- ▷ Turn Signal/Multifunction Lever
- ▷ Windshield Wipers
- ▷ Cruise Control
- ▷ Interior and Exterior Lamps
- ▷ Mirrors
- ▷ Storage Compartments
- ▷ Accessory Power Outlets
- ▷ Instrument Panel, Warning Lights and Gages

ii

Safety Belts: They're for Everyone

This part of the manual tells you how to use safety belts properly. It also tells you some things you should not do with safety belts.

And it explains the air bag system

CAUTION:

Don't let anyone ride where he or she can't wear a safety belt properly. If you are in a crash and you're not wearing a safety belt, your injuries can be much worse. You can hit things inside the vehicle or be ejected from it. You can be seriously injured or killed. In the same crash, you might not be if you are buckled up. Always fasten your safety belt, and check that your passengers' belts are fastened properly too.

CAUTION:

It is extremely dangerous to ride in a cargo area, inside or outside of a vehicle. In a collision, people riding in these areas are more likely to be seriously injured or killed. Do not allow people to ride in any area of your vehicle that is not equipped with seats and safety belts. Be sure everyone in your vehicle is in a seat and using a safety belt properly.



Your vehicle has a light that comes on as a reminder to buckle up. (See "Safety Belt Reminder Light" in the Index.)

In most states and Canadian provinces, the law says to wear safety belts. Here's why: *They work*

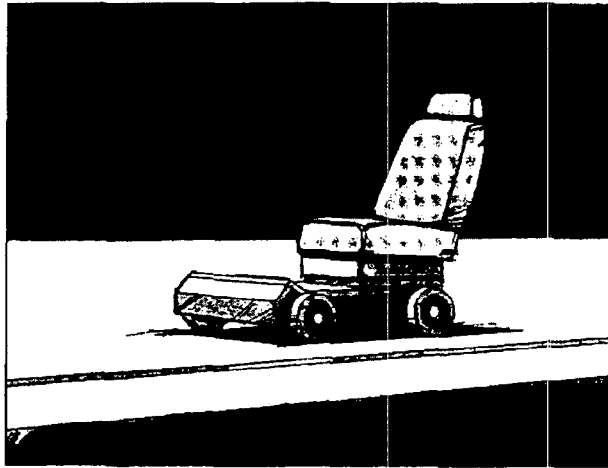
You never know if you'll be in a crash. If you do have a crash, you don't know if it will be a bad one.

A few crashes are mild, and some crashes can be so serious that even buckled up a person wouldn't survive. But most crashes are in between. In many of them, people who buckle up can survive and sometimes walk away. Without belts they could have been badly hurt or killed.

After more than 30 years of safety belts in vehicles, the facts are clear. In most crashes buckling up does matter ... a lot!

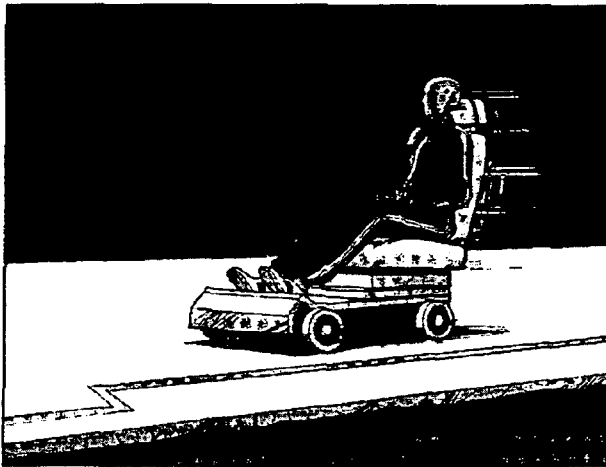
Why Safety Belts Work

When you ride in or on anything, you go as fast as it goes.

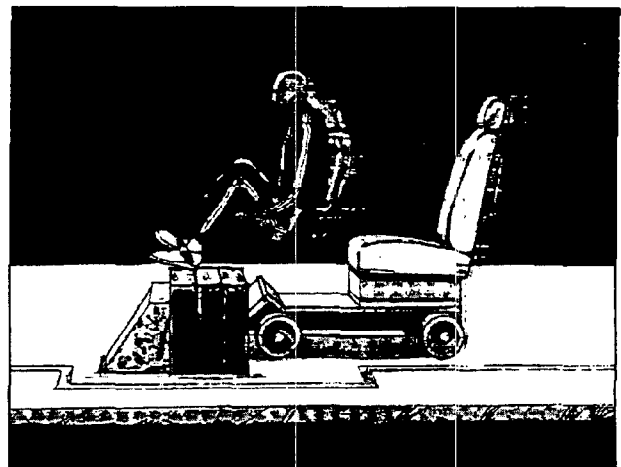


Take the simplest vehicle. Suppose it's just a seat on wheels.

1-8

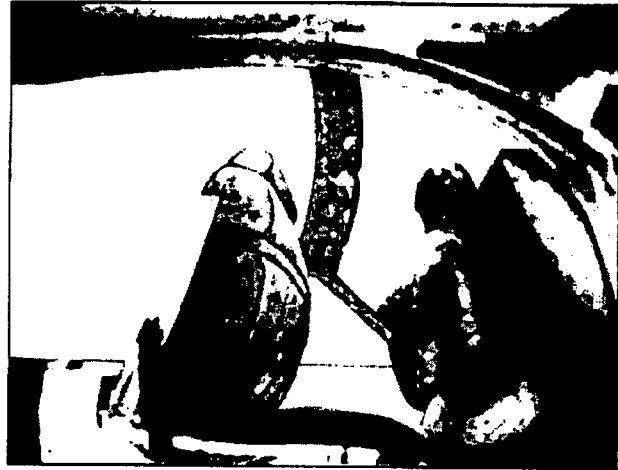


Put someone on it.



Get it up to speed. Then stop the vehicle. The rider doesn't stop.

1-9



The person keeps going until stopped by something.
In a real vehicle, it could be the windshield

or the instrument panel



or the safety belts!

With safety belts, you slow down as the vehicle does. You get more time to stop. You stop over more distance, and your strongest bones take the forces. That's why safety belts make such good sense.

Here Are Questions Many People Ask About Safety Belts -- and the Answers

Q: Won't I be trapped in the vehicle after an accident if I'm wearing a safety belt?

A: You *could* be -- whether you're wearing a safety belt or not. But you can unbuckle a safety belt, even if you're upside down. And your chance of being conscious during and after an accident, so you *can* unbuckle and get out, is much greater if you are belted.

Q: If my vehicle has air bags, why should I have to wear safety belts?

A: Air bags are in many vehicles today and will be in most of them in the future. But they are supplemental systems only; so they work *with* safety belts -- not instead of them. Every air bag system ever offered for sale has required the use of safety belts. Even if you're in a vehicle that has air bags, you still have to buckle up to get the most protection. That's true not only in frontal collisions, but especially in side and other collisions.

Q: If I'm a good driver, and I never drive far from home, why should I wear safety belts?

A: You may be an excellent driver, but if you're in an accident -- even one that isn't your fault -- you and your passengers can be hurt. Being a good driver doesn't protect you from things beyond your control, such as bad drivers.

Most accidents occur within 25 miles (40 km) of home. And the greatest number of serious injuries and deaths occur at speeds of less than 40 mph (65 km/h).

Safety belts are for everyone.

How to Wear Safety Belts Properly

Adults

This part is only for people of adult size.

Be aware that there are special things to know about safety belts and children. And there are different rules for smaller children and babies. If a child will be riding in your vehicle, see the part of this manual called "Children." Follow those rules for everyone's protection.

First, you'll want to know which restraint systems your vehicle has.

We'll start with the driver position.

Driver Position

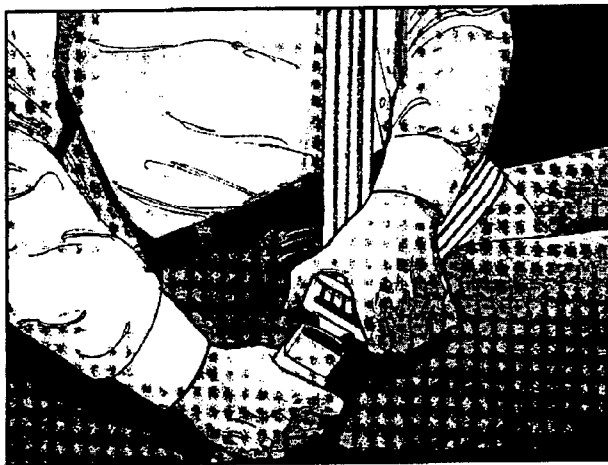
This part describes the driver's restraint system.

Lap-Shoulder Belt

The driver has a lap-shoulder belt. Here's how to wear it properly.

1. Close and lock the door.
2. Adjust the seat (to see how, see "Seats" in the Index) so you can sit up straight.

1-12



3. Pick up the latch plate and pull the belt across you. Don't let it get twisted.

The shoulder belt may lock if you pull the belt across you very quickly. If this happens, let the belt go back slightly to unlock it. Then pull the belt across you more slowly.

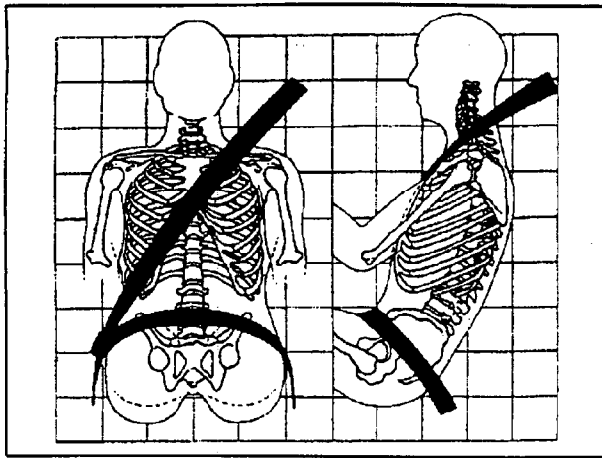
4. Push the latch plate into the buckle until it clicks. Pull up on the latch plate to make sure it is secure. If the belt isn't long enough, see "Safety Belt Extender" at the end of this section.

Make sure the release button on the buckle is positioned so you would be able to unbuckle the safety belt quickly if you ever had to.



5. To make the lap part tight, pull down on the buckle end of the belt as you pull up on the shoulder belt.

1-13

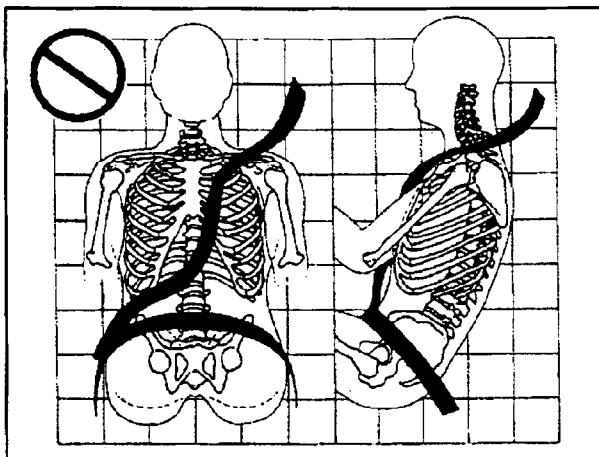


The lap part of the belt should be worn low and snug on the hips, just touching the thighs. In a crash, this applies force to the strong pelvic bones. And you'd be less likely to slide under the lap belt. If you slid under it, the belt would apply force at your abdomen. This could cause serious or even fatal injuries. The shoulder belt should go over the shoulder and across the chest. These parts of the body are best able to take belt restraining forces.

The safety belt locks if there's a sudden stop or crash, or if you pull the belt very quickly out of the retractor.

1-14

Q: What's wrong with this?



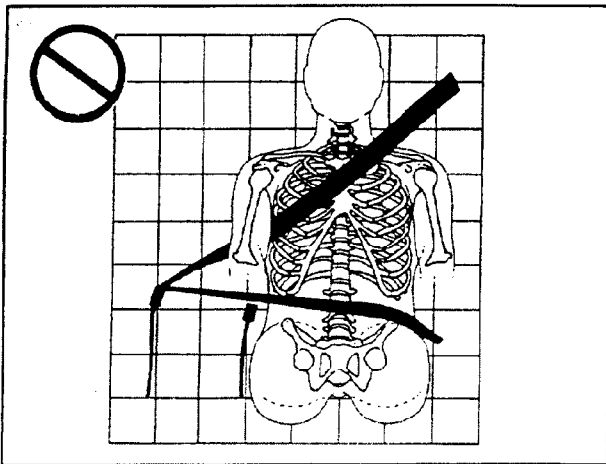
⚠ CAUTION:

You can be seriously hurt if your shoulder belt is too loose. In a crash, you would move forward too much, which could increase injury. The shoulder belt should fit against your body.

A: The shoulder belt is too loose. It won't give nearly as much protection this way.

1-15

Q: What's wrong with this?



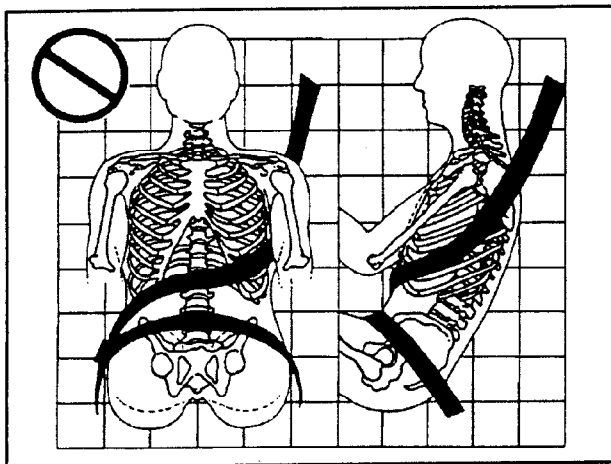
⚠ CAUTION:

You can be seriously injured if your belt is buckled in the wrong place like this. In a crash, the belt would go up over your abdomen. The belt forces would be there, not at the pelvic bones. This could cause serious internal injuries. Always buckle your belt into the buckle nearest you.

A: The belt is buckled in the wrong place.

1-16

Q: What's wrong with this?



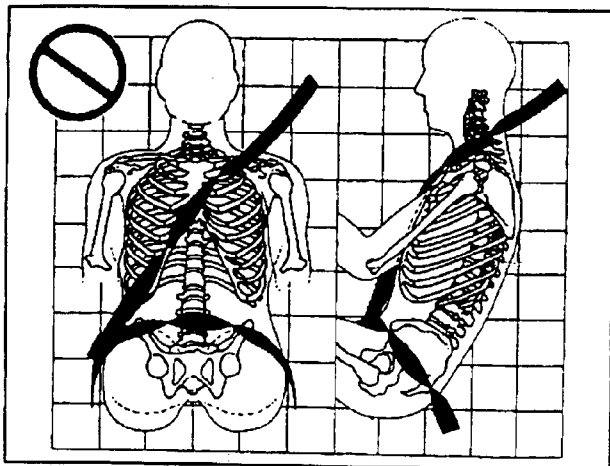
⚠ CAUTION:

You can be seriously injured if you wear the shoulder belt under your arm. In a crash, your body would move too far forward, which would increase the chance of head and neck injury. Also, the belt would apply too much force to the ribs, which aren't as strong as shoulder bones. You could also severely injure internal organs like your liver or spleen.

A: The shoulder belt is worn under the arm. It should be worn over the shoulder at all times.

1-17

Q: What's wrong with this?

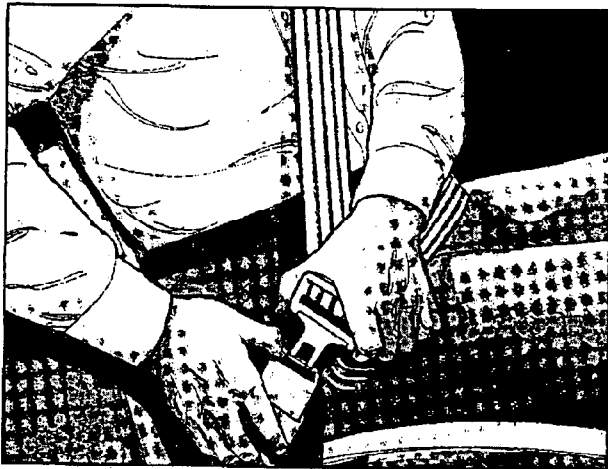


⚠ CAUTION:

You can be seriously injured by a twisted belt. In a crash, you wouldn't have the full width of the belt to spread impact forces. If a belt is twisted, make it straight so it can work properly, or ask your dealer to fix it.

A: The belt is twisted across the body.

1-18

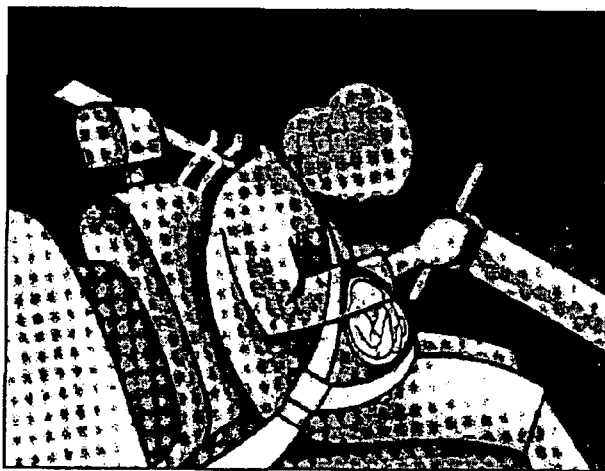


To unlatch the belt, just push the button on the buckle. The belt should go back out of the way.

Before you close the door, be sure the belt is out of the way. If you slam the door on it, you can damage both the belt and your vehicle.

Safety Belt Use During Pregnancy

Safety belts work for everyone, including pregnant women. Like all occupants, they are more likely to be seriously injured if they don't wear safety belts.



A pregnant woman should wear a lap-shoulder belt, and the lap portion should be worn as low as possible, below the rounding, throughout the pregnancy.

1-19

The best way to protect the fetus is to protect the mother. When a safety belt is worn properly, it's more likely that the fetus won't be hurt in a crash. For pregnant women, as for anyone, the key to making safety belts effective is wearing them properly.

Right Front Passenger Position

To learn how to wear the right front passenger's safety belt properly, see "Driver Position" earlier in this section.

The right front passenger's safety belt works the same way as the driver's safety belt -- except for one thing. If you ever pull the shoulder portion of the belt out all the way, you will engage the child restraint locking feature. If this happens, just let the belt go back all the way and start again.

Air Bag System

This part explains the air bag system.

Your vehicle has air bags -- one air bag for the driver and another air bag for the right front passenger.

Frontal air bags are designed to help reduce the risk of injury from the force of an inflating air bag. But these air bags must inflate very quickly to do their job and comply with federal regulations.

Here are the most important things to know about the air bag system:

CAUTION:

You can be severely injured or killed in a crash if you aren't wearing your safety belt -- even if you have air bags. Wearing your safety belt during a crash helps reduce your chance of hitting things inside the vehicle or being ejected from it. Air bags are "supplemental restraints" to the safety belts. All air bags are designed to work with safety belts, but don't replace them. Air bags are designed to work only in moderate to severe crashes where the front of your vehicle hits something. They aren't designed to inflate at all in rollover, rear, side or low-speed frontal crashes. And, for unrestrained occupants, air bags may provide less protection in frontal crashes than more forceful air bags have provided in the past. Everyone in your vehicle should wear a safety belt properly -- whether or not there's an air bag for that person.

CAUTION:

Air bags inflate with great force, faster than the blink of an eye. If you're too close to an inflating air bag, as you would be if you were leaning forward, it could seriously injure you. Safety belts help keep you in position before and during a crash. Always wear your safety belt, even with air bags. The driver should sit as far back as possible while still maintaining control of the vehicle.

⚠ CAUTION:

Anyone who is up against, or very close to, any air bag when it inflates can be seriously injured or killed. Air bags plus lap-shoulder belts offer the best protection for adults, but not for young children and infants. Neither the vehicle's safety belt system nor its air bag system is designed for them. Young children and infants need the protection that a child restraint system can provide. Always secure children properly in your vehicle. To read how, see the part of this manual called "Children."



There is an air bag readiness light on the instrument panel, which shows the air bag symbol.

The system checks the air bag electrical system for malfunctions. The light tells you if there is an electrical problem. See "Air Bag Readiness Light" in the Index for more information.

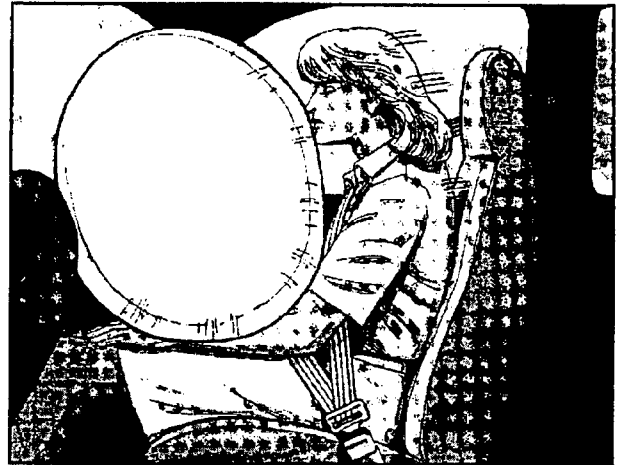
1-22

How the Air Bag System Works



Where are the air bags?

The driver's air bag is in the middle of the steering wheel.



The right front passenger's air bag is in the instrument panel on the passenger's side.

1-23

CAUTION:

If something is between an occupant and an air bag, the bag might not inflate properly or it might force the object into that person. The path of an inflating air bag must be kept clear. Don't put anything between an occupant and an air bag, and don't attach or put anything on the steering wheel hub or on or near any other air bag covering.

When should an air bag inflate?

An air bag is designed to inflate in a moderate to severe frontal or near-frontal crash. The air bag will inflate only if the impact speed is above the system's designed "threshold level." If your vehicle goes straight into a wall that doesn't move or deform, the threshold level is about 14 to 18 mph (23 to 29 km/h). The threshold level can vary, however, with specific vehicle design, so that it can be somewhat above or below this range. If your vehicle strikes something that will move or deform, such as a parked car, the threshold level will be higher.

The air bag is not designed to inflate in rollovers, side impacts or rear impacts, because inflation would not help the occupant.

In any particular crash, no one can say whether an air bag should have inflated simply because of the damage to a vehicle or because of what the repair costs were. Inflation is determined by the angle of the impact and how quickly the vehicle slows down in frontal or near-frontal impacts.

The air bag system is designed to work properly under a wide range of conditions, including off-road usage. Observe safe driving speeds, especially on rough terrain. As always, wear your safety belt. See "Off-Road Driving" in the Index for more tips on off-road driving.

What makes an air bag inflate?

In an impact of sufficient severity, the air bag sensing system detects that the vehicle is in a crash. The sensing system triggers a release of gas from the inflator, which inflates the air bag. The inflator, air bag and related hardware are all part of the air bag modules inside the steering wheel and in the instrument panel in front of the right front passenger.

How does an air bag restrain?

In moderate to severe frontal or near-frontal collisions, even belted occupants can contact the steering wheel or the instrument panel. Air bags supplement the protection provided by safety belts. Air bags distribute the force of the impact more evenly over the occupant's upper body, stopping the occupant more gradually. But air bags would not help you in many types of collisions, including rollovers, rear impacts and side impacts, primarily because an occupant's motion is not toward those air bags. Air bags should never be regarded as anything more than a supplement to safety belts, and then only in moderate to severe frontal or near-frontal collisions.

What will you see after an air bag inflates?

After an air bag inflates, it quickly deflates, so quickly that some people may not even realize the air bag inflated. Some components of the air bag module -- the steering wheel hub for the driver's air bag, or the instrument panel for the right front passenger's bag -- will be hot for a short time. The parts of the bag that come into contact with you may be warm, but not too hot to touch. There will be some smoke and dust coming from vents in the deflated air bags. Air bag inflation doesn't prevent the driver from seeing or from being able to steer the vehicle, nor does it stop people from leaving the vehicle.

CAUTION:

When an air bag inflates, there is dust in the air. This dust could cause breathing problems for people with a history of asthma or other breathing trouble. To avoid this, everyone in the vehicle should get out as soon as it is safe to do so. If you have breathing problems but can't get out of the vehicle after an air bag inflates, then get fresh air by opening a window or door.

- Air bags are designed to inflate only once. After they inflate, you'll need some new parts for your air bag system. If you don't get them, the air bag system won't be there to help protect you in another crash. A new system will include air bag modules and possibly other parts. The service manual for your vehicle covers the need to replace other parts.
- Your vehicle is equipped with a diagnostic module, which records information about the air bag system. The module records information about the readiness of the system, when the system commands air bag inflation and driver's safety belt usage at deployment.

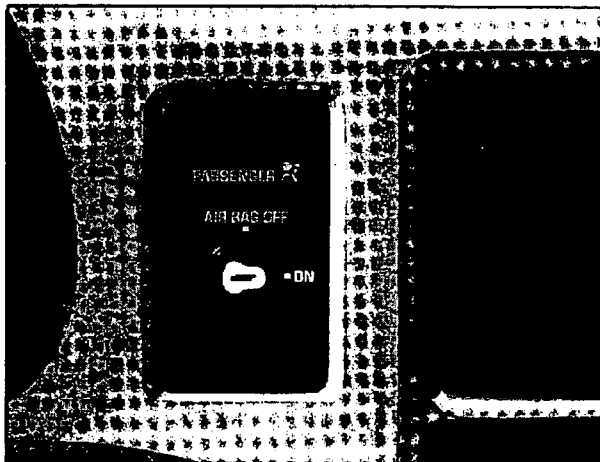
- Let only qualified technicians work on your air bag system. Improper service can mean that your air bag system won't work properly. See your dealer for service.

NOTICE:

If you damage the covering for the driver's or the right front passenger's air bag, the bag may not work properly. You may have to replace the air bag module in the steering wheel or both the air bag module and the instrument panel for the right front passenger's air bag. Do not open or break the air bag coverings.

AIR BAG OFF Switch

Your vehicle has a switch on the instrument panel that you can use to turn off the right front passenger's air bag.



This switch should only be turned to AIR BAG OFF if the person in the right front passenger's position is a member of a passenger risk group identified by the national government as follows:

1-26

Infant. An infant (less than 1 year old) must ride in the front seat because:

- my vehicle has no rear seat;
- my vehicle has a rear seat too small to accommodate a rear-facing infant seat; or
- the infant has a medical condition which, according to the infant's physician, makes it necessary for the infant to ride in the front seat so that the driver can constantly monitor the child's condition.

Child age 1 to 12. A child age 1 to 12 must ride in the front seat because:

- my vehicle has no rear seat;
- although children ages 1 to 12 ride in the rear seat(s) whenever possible, children ages 1 to 12 sometimes must ride in the front because no space is available in the rear seat(s) of my vehicle; or
- the child has a medical condition which, according to the child's physician, makes it necessary for the child to ride in the front seat so that the driver can constantly monitor the child's condition.

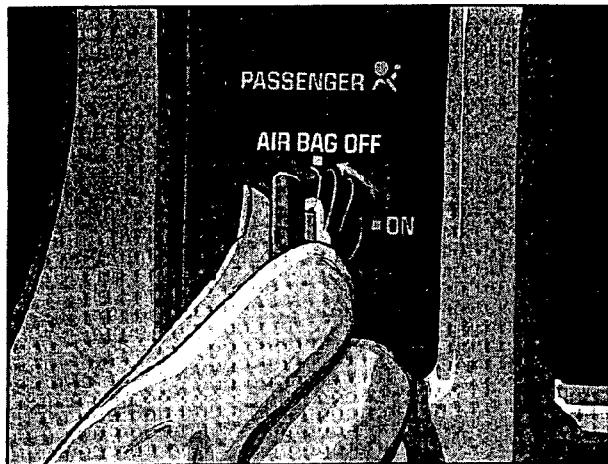
Medical Condition. A passenger has a medical condition which, according to his or her physician:

- causes the passenger air bag to pose a special risk for the passenger; and
- makes the potential harm from the passenger air bag in a crash greater than the potential harm from turning off the air bag and allowing the passenger, even if belted, to hit the dashboard or windshield in a crash.

⚠ CAUTION:

If the right front passenger's air bag is turned off for a person who isn't in a risk group identified by the national government, that person won't have the extra protection of an air bag. In a crash, the air bag wouldn't be able to inflate and help protect the person sitting there. Don't turn off the passenger's air bag unless the person sitting there is in a risk group.

1-27



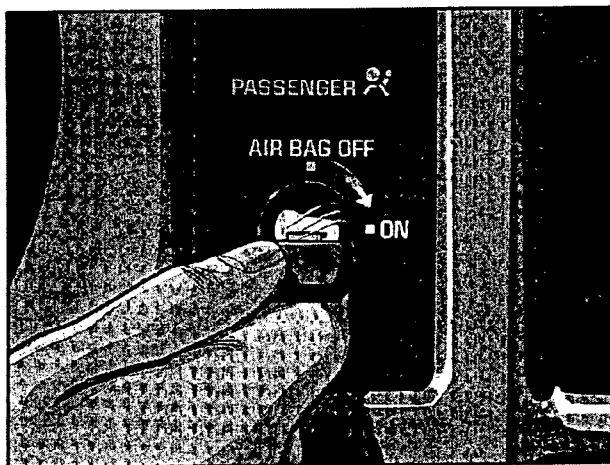
To turn off the right front passenger's air bag, insert your ignition key into the switch, push in, and move the switch to AIR BAG OFF.

The AIR BAG OFF light will come on to let you know that the right front passenger's air bag is off. The right front passenger's air bag will remain off until you turn it back on again, and the AIR BAG OFF light will stay on to remind you that the air bag is off.

⚠ CAUTION:

If the air bag readiness light ever comes on when you have turned off the air bag, it means that something may be wrong with the air bag system. The right front passenger's air bag could inflate even though the switch is off. If this ever happens, don't let anyone whom the national government has identified as a member of a passenger air bag risk group sit in the right front passenger's position (for example, don't secure a rear-facing child restraint in your vehicle) until you have your vehicle serviced.

1-28



To turn the right front passenger's air bag on again, insert your ignition key into the switch, push in, and move the switch to the ON position.

Servicing Your Air Bag-Equipped Vehicle

Air bags affect how your vehicle should be serviced. There are parts of the air bag system in several places around your vehicle. You don't want the system to inflate while someone is working on your vehicle. Your dealer and the service manual have information about servicing your vehicle and the air bag system. To purchase a service manual, see "Service and Owner Publications" in the Index.

⚠ CAUTION:

For up to two minutes after the ignition key is turned off and the battery is disconnected, an air bag can still inflate during improper service. You can be injured if you are close to an air bag when it inflates. Avoid wires wrapped with yellow tape or yellow connectors. They are probably part of the air bag system. Be sure to follow proper service procedures, and make sure the person performing work for you is qualified to do so.

The air bag system does not need regular maintenance.

1-29

Adding Equipment to Your Air Bag-Equipped Vehicle

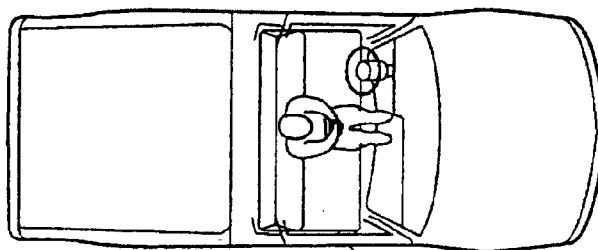
Q: If I add a push bumper or a bicycle rack to the front of my vehicle, will it keep the air bags from working properly?

A: As long as the push bumper or bicycle rack is attached to your vehicle so that the vehicle's basic structure isn't changed, it's not likely to keep the air bags from working properly in a crash.

Q: Is there anything I might add to the front of the vehicle that could keep the air bags from working properly?

A: Yes. If you add things that change your vehicle's frame, bumper system, front end sheet metal or height, they may keep the air bag system from working properly. Also, the air bag system may not work properly if you relocate any of the air bag sensors. If you have any questions about this, you should contact Customer Assistance before you modify your vehicle. (The phone numbers and addresses for Customer Assistance are in Step Two of the Customer Satisfaction Procedure in this manual. See "Customer Satisfaction Procedure" in the Index.)

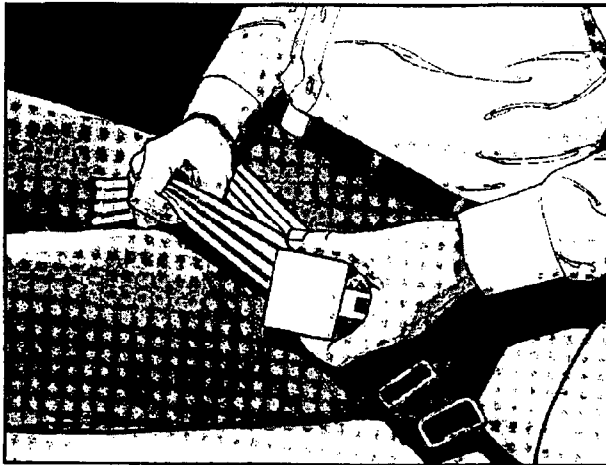
Center Passenger Position



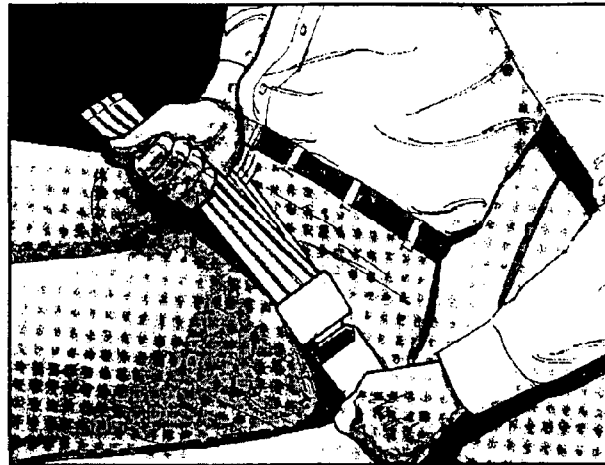
Lap Belt

If your vehicle has a bench seat, someone can sit in the center position.

1-30



When you sit in a center seating position, you have a lap safety belt, which has no retractor. To make the belt longer, tilt the latch plate and pull it along the belt.



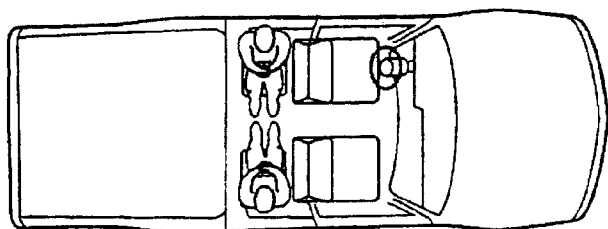
To make the belt shorter, pull its free end as shown until the belt is snug.

Buckle, position and release it the same way as the lap part of a lap-shoulder belt. If the belt isn't long enough, see "Safety Belt Extender" at the end of this section.

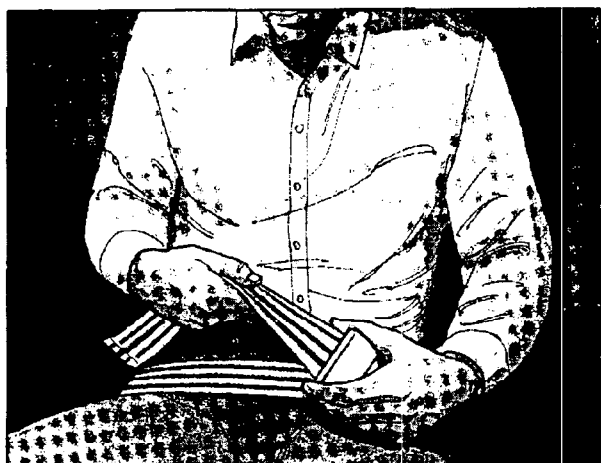
Make sure the release button on the buckle is positioned so you would be able to unbuckle the safety belt quickly if you ever had to.

1-31

Rear Seat Passengers (Extended Cab Jump Seats)



Rear passengers who aren't safety belted can be thrown out of the vehicle in a crash. And they can strike others in the vehicle who are wearing safety belts.



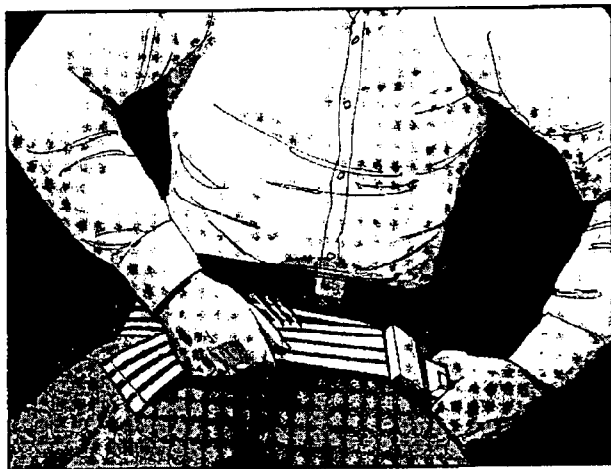
Lap Belt

These are reserve seating positions equipped with lap belts only. (If your extended cab pickup has the optional side access panel, there's only one reserve seating position.)

It's very important for rear seat passengers to buckle up! Accident statistics show that unbelted people in the rear seat are hurt more often in crashes than those who are wearing safety belts.

Each jump seat has a lap belt with no retractor. To make the belt longer, tilt the latch plate and pull it along the belt.

1-32



To make it shorter, pull the belt as shown until it is snug. Buckle and position it the same way as the lap part of the driver's safety belt (see "Driver Position" in the Index). Make sure the release button on the buckle is positioned so you would be able to unbuckle the safety belt quickly if you ever had to. To unlatch the belt, just push the button on the buckle.

Don't use child restraints on these seats. They won't work properly.

Children

Everyone in a vehicle needs protection! That includes infants and all children smaller than adult size. Neither the distance traveled nor the age and size of the traveler changes the need, for everyone, to use safety restraints. In fact, the law in every state in the United States and in every Canadian province says children up to some age must be restrained while in a vehicle.

Smaller Children and Babies

CAUTION:

Children who are up against, or very close to, any air bag when it inflates can be seriously injured or killed. Air bags plus lap-shoulder belts offer the best protection for adults, but not for young children and infants. Neither the vehicle's safety belt system nor its air bag system is designed for them. Young children and infants need the protection that a child restraint system can provide. Always secure children properly in your vehicle.

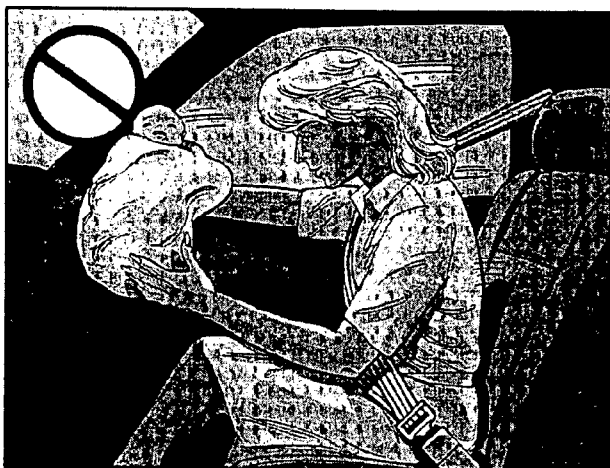
1-33

⚠ CAUTION:

Smaller children and babies should always be restrained in a child or infant restraint. The instructions for the restraint will say whether it is the right type and size for your child. A very young child's hip bones are so small that a regular belt might not stay low on the hips, as it should. Instead, the belt will likely be over the child's abdomen. In a crash, the belt would apply force right on the child's abdomen, which could cause serious or fatal injuries. So, be sure that any child small enough for one is always properly restrained in a child or infant restraint.

Infants need complete support, including support for the head and neck. This is necessary because an infant's neck is weak and its head weighs so much compared with the rest of its body. In a frontal crash, an infant in a rear-facing restraint settles into the restraint, so the crash forces can be distributed across the strongest part of the infant's body, the back and shoulders. A baby should be secured in an appropriate infant restraint. This is so important that many hospitals today won't release a newborn infant to its parents unless there is an infant restraint available for the baby's first trip in a motor vehicle.

1-34



⚠ CAUTION:

Never hold a baby in your arms while riding in a vehicle. A baby doesn't weigh much -- until a crash. During a crash a baby will become so heavy you can't hold it. For example, in a crash at only 25 mph (40 km/h), a 12-lb. (5.5 kg) baby will suddenly become a 240-lb. (110 kg) force on your arms. The baby would be almost impossible to hold.

Secure the baby in an infant restraint, but be sure to turn off the passenger's air bag. See "Air Bag Off Switch" and "Securing a Child Restraint in the Right Front Seat Position" in the Index for more on this, including important safety information.

1-35



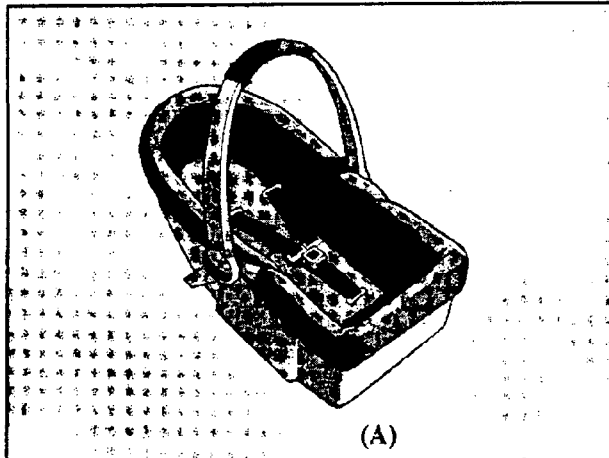
Child Restraints

Every time infants and young children ride in vehicles, they should have protection provided by appropriate restraints.

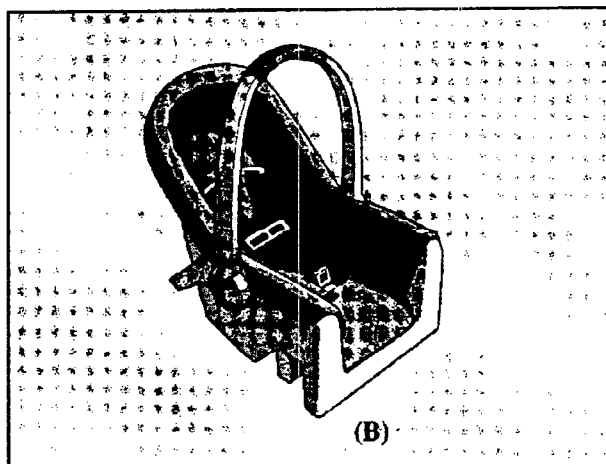
Q: What are the different types of add-on child restraints?

A: Add-on child restraints are available in four basic types. When selecting a child restraint, take into consideration not only the child's weight and size, but also whether or not the restraint will be compatible with the motor vehicle in which it will be used.

1-36

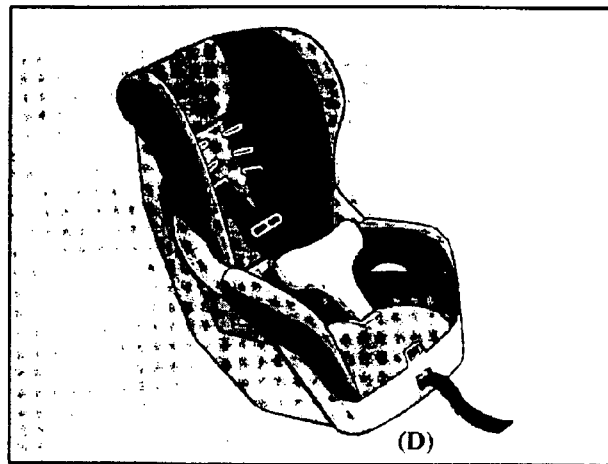
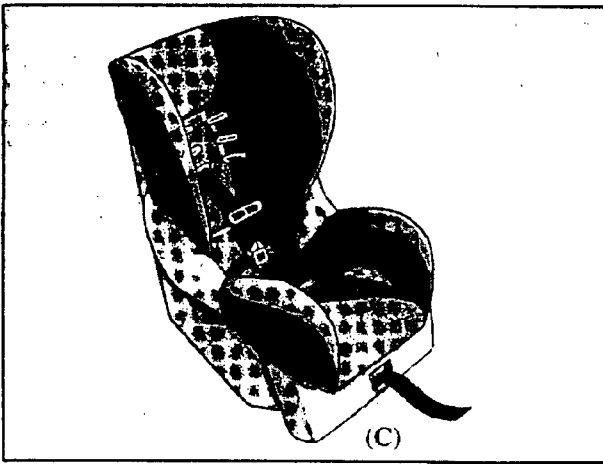


An infant car bed (A) is a special bed made for use in a motor vehicle. It's an infant restraint system designed to restrain or position a child on a continuous flat surface. With an infant car bed, make sure that the infant's head rests toward the center of the vehicle.

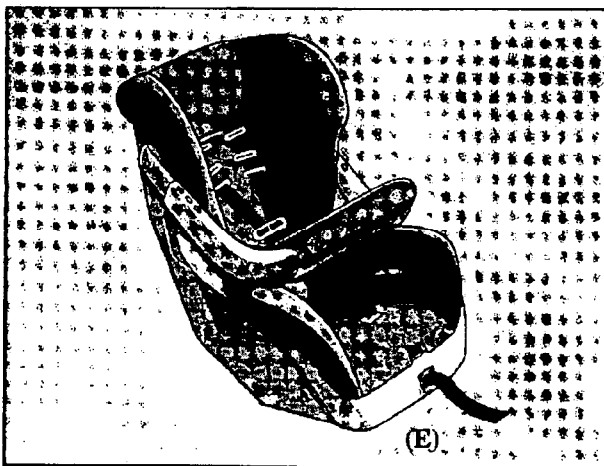


A rear-facing infant restraint (B) positions an infant to face the rear of the vehicle. Rear-facing infant restraints are designed for infants of up to about 20 lbs. (9 kg) and about one year of age. This type of restraint faces the rear so that the infant's head, neck and body can have the support they need in a frontal crash. Some infant seats come in two parts -- the base stays secured in the vehicle and the seat part is removable.

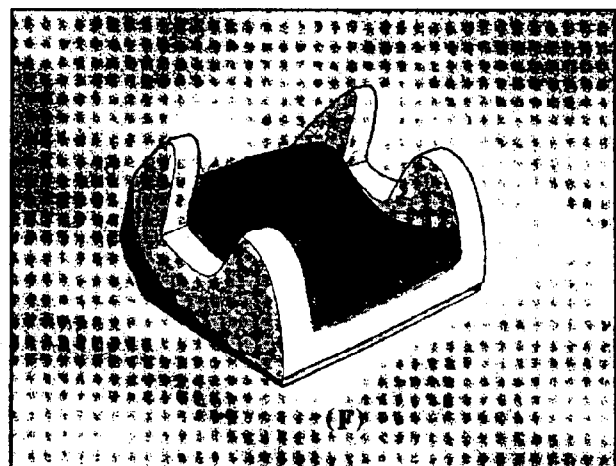
1-37



1-38



A forward-facing child restraint (C-E) positions a child upright to face forward in the vehicle. These forward-facing restraints are designed to help protect children who are from 20 to 40 lbs. (9 to 18 kg) and about 26 to 40 inches (66 to 102 cm) in height, or up to around four years of age. One type, a convertible restraint, is designed to be used either as a rear-facing infant seat or a forward-facing child seat.



A booster seat (F) is designed for children who are about 40 to 60 lbs., or even up to 80 lbs. (18 to 27 kg, or even up to 36 kg), and about four to eight years of age. A booster seat is designed to improve the fit of the vehicle's safety belt system. Booster seats with shields use lap-only belts; however, booster seats without shields use lap-shoulder belts. Booster seats can also help a child to see out the window.

1-39

When choosing a child restraint, be sure the child restraint is designed to be used in a vehicle. If it is, it will have a label saying that it meets federal motor vehicle safety standards.

Then follow the instructions for the restraint. You may find these instructions on the restraint itself or in a booklet, or both. These restraints use the belt system in your vehicle, but the child also has to be secured within the restraint to help reduce the chance of personal injury. The instructions that come with the infant or child restraint will show you how to do that. Both the owner's manual and the child restraint instructions are important, so if either one of these is not available, obtain a replacement copy from the manufacturer.

The child restraint must be secured properly in the right front passenger seat. If you want to secure a rear-facing child restraint in the right front passenger's seat, turn off the passenger's air bag. See "AIR BAG OFF Switch" and "Securing a Child Restraint in the Right Front Seat Position" in the Index for more on this, including important safety information.

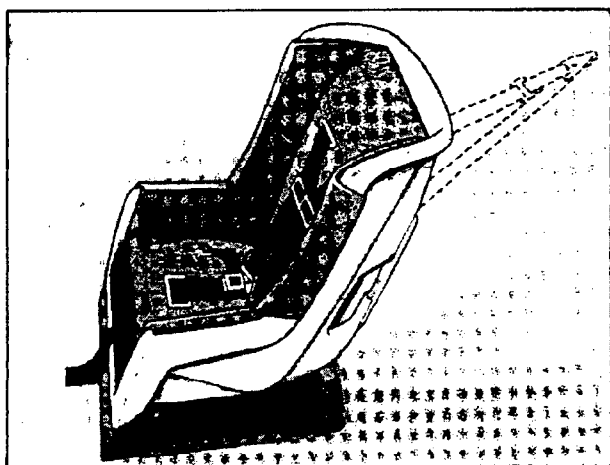
CAUTION:

A child in a rear-facing child restraint can be seriously injured or killed if the right front passenger's air bag inflates. This is because the back of the rear-facing child restraint would be very close to the inflating air bag. Be sure to turn off the air bag before using a rear-facing child restraint in the right front seat position.

Keep in mind that an unsecured child restraint can move around in a collision or sudden stop and injure people in the vehicle. Be sure to properly secure any child restraint in your vehicle -- even when no child is in it.

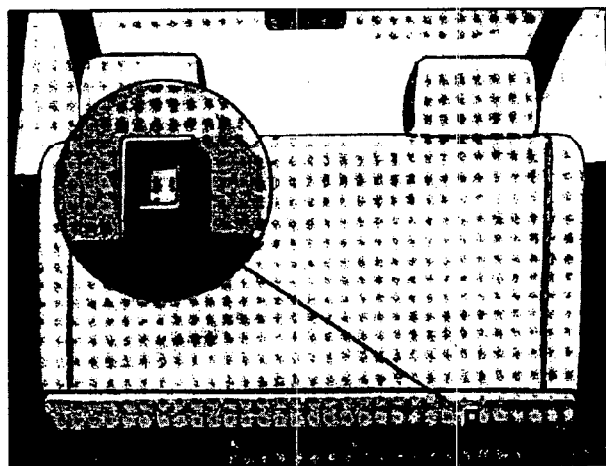
1-40

Top Strap

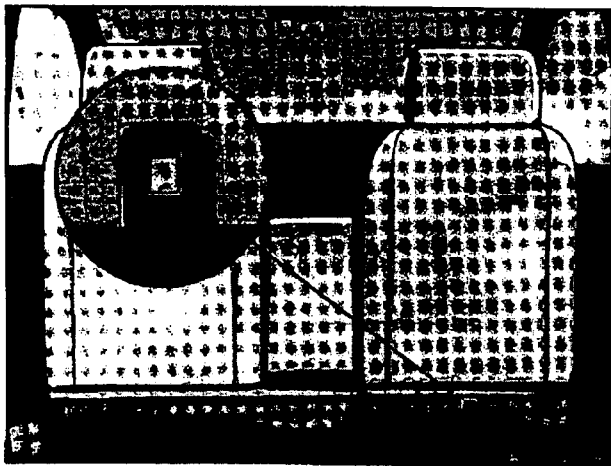


In Canada, the law requires that forward-facing child restraints have a top strap, and that the strap be anchored. In the United States, some child restraints also have a top strap. If your child restraint has a top strap, it should be anchored.

An anchor bracket for a top strap is located at the rear of the seat cushion on the right front passenger's seat.

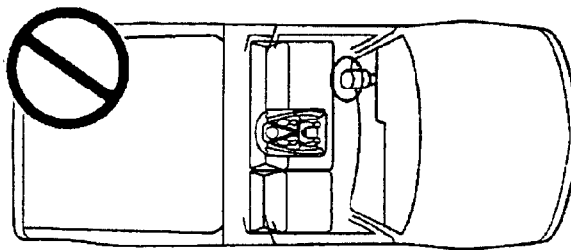


1-41



Anchor the top strap to this bracket. Once you have the top strap anchored, you'll be ready to secure the child restraint itself.

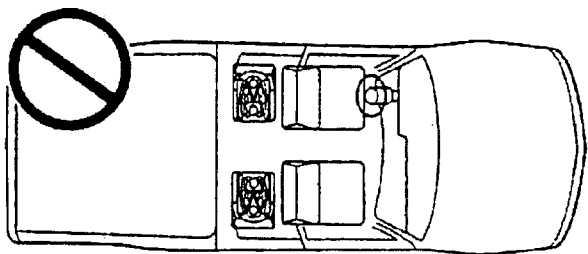
Securing a Child Restraint in the Center Front Seat Position



Don't use child restraints in this position. The restraints won't work properly.

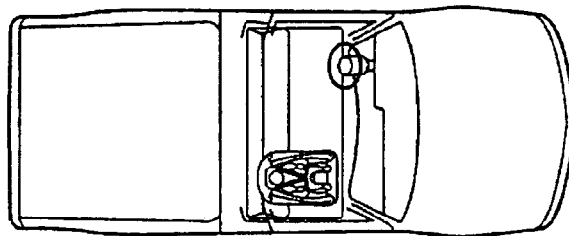
1-42

Jump Seats (Extended Cab)

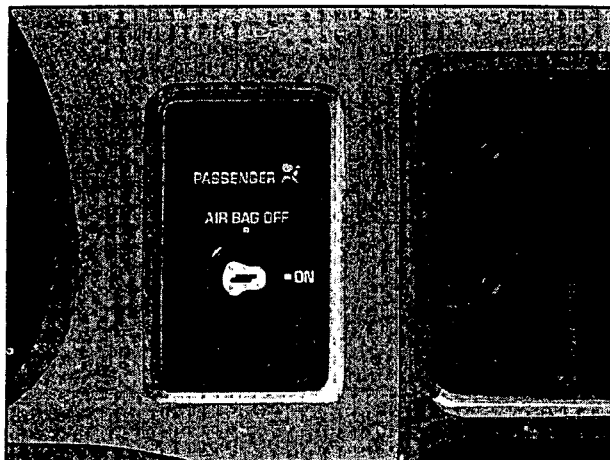


Don't use child restraints in these positions. The restraints won't work properly.

Securing a Child Restraint in the Right Front Seat Position



Your vehicle has a right front passenger air bag. There's a switch on the instrument panel that you can use to turn off the right front passenger's air bag when you want to secure a rear-facing child restraint at the right front passenger's position. See "AIR BAG OFF Switch" in the Index for more on this, including important safety information.



⚠ CAUTION:

A child in a rear-facing child restraint can be seriously injured or killed if the right front passenger's air bag inflates. This is because the back of the rear-facing child restraint would be very close to the inflating air bag. Be sure to turn off the air bag before using a rear-facing child restraint in the right front seat position. If a forward-facing child restraint is suitable for your child, always move the passenger seat as far back as it will go.

1-44

⚠ CAUTION:

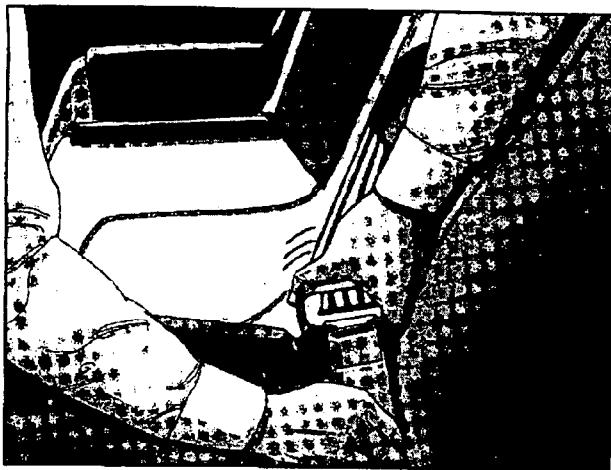
If the air bag readiness light ever comes on when you have turned off the air bag, it means that something may be wrong with the air bag system. The right front passenger's air bag could inflate even though the switch is off. If this ever happens, don't let anyone whom the national government has identified as a member of a passenger air bag risk group sit in the right front passenger's position (for example, don't secure a rear-facing child restraint in your vehicle) until you have your vehicle serviced. See "AIR BAG OFF Switch" in the Index.

You'll be using the lap-shoulder belt. See the earlier part about the top strap if the child restraint has one. Be sure to follow the instructions that came with the child restraint. Secure the child in the child restraint when and as the instructions say.

1. Your vehicle has a right front passenger's air bag. If you are using a rear-facing child restraint in this seat, make sure the air bag is turned off. (See "AIR BAG OFF Switch" in the Index.) If your child restraint is forward-facing, always move the seat as far back as it will go before securing it in this seat. (See "Seats" in the Index.)
2. Put the restraint on the seat.
3. Pick up the latch plate, and run the lap and shoulder portions of the vehicle's safety belt through or around the restraint. The child restraint instructions will show you how.

If the shoulder belt goes in front of the child's face or neck, put it behind the child restraint.

1-45

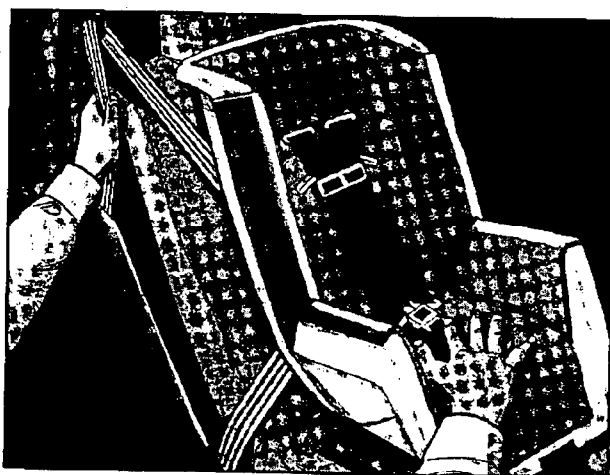


4. Buckle the belt. Make sure the release button is positioned so you would be able to unbuckle the safety belt quickly if you ever had to.



5. Pull the rest of the shoulder belt all the way out of the retractor to set the lock.

1-46



6. To tighten the belt, feed the shoulder belt back into the retractor while you push down on the child restraint. If you're using a forward-facing child restraint, you may find it helpful to use your knee to push down on the child restraint as you tighten the belt.
7. Push and pull the child restraint in different directions to be sure it is secure.

To remove the child restraint, just unbuckle the vehicle's safety belt and let it go back all the way. The safety belt will move freely again and be ready to work for an adult or larger child passenger.

If you were using a rear-facing child restraint, turn on the right front passenger's air bag when you remove the rear-facing child restraint from the vehicle unless the person who will be sitting there is a member of a passenger air bag risk group. See "AIR BAG OFF Switch" in the Index.

CAUTION:

If the right front passenger's air bag is turned off for a person who isn't in a risk group identified by the national government, that person won't have the extra protection of an air bag. In a crash, the air bag wouldn't be able to inflate and help protect the person sitting there. Don't turn off the passenger's air bag unless the person sitting there is in a risk group. See "AIR BAG OFF Switch" in the Index for more on this, including important safety information.

1-47

Larger Children



Children who have outgrown child restraints should wear the vehicle's safety belts.

If you have the choice, a child should sit next to a window so the child can wear a lap-shoulder belt and get the additional restraint a shoulder belt can provide.

- Children who aren't buckled up can be thrown out in a crash.

- Children who aren't buckled up can strike other people who are.

CAUTION:

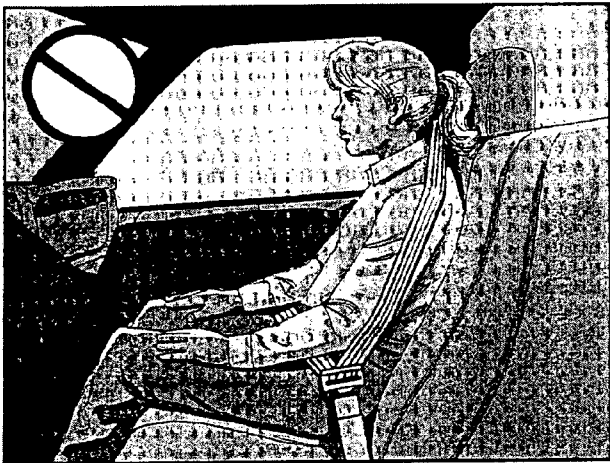
Never do this.

Here two children are wearing the same belt. The belt can't properly spread the impact forces. In a crash, the two children can be crushed together and seriously injured. A belt must be used by only one person at a time.

Q: What if a child is wearing a lap-shoulder belt, but the child is so small that the shoulder belt is very close to the child's face or neck?

A: Move the child toward the center of the vehicle, but be sure that the shoulder belt still is on the child's shoulder, so that in a crash the child's upper body would have the restraint that belts provide. If the child is so small that the shoulder belt is still very close to the child's face or neck, you might want to place the child in a seat that has a lap belt, if your vehicle has one.

1-48



CAUTION:

Never do this.

Here a child is sitting in a seat that has a lap-shoulder belt, but the shoulder part is behind the child. If the child wears the belt in this way, in a crash the child might slide under the belt. The belt's force would then be applied right on the child's abdomen. That could cause serious or fatal injuries.

Wherever the child sits, the lap portion of the belt should be worn low and snug on the hips, just touching the child's thighs. This applies belt force to the child's pelvic bones in a crash.

Safety Belt Extender

If the vehicle's safety belt will fasten around you, you should use it.

But if a safety belt isn't long enough to fasten, your dealer will order you an extender. It's free. When you go in to order it, take the heaviest coat you will wear, so the extender will be long enough for you. The extender will be just for you, and just for the seat in your vehicle that you choose. Don't let someone else use it, and use it only for the seat it is made to fit. To wear it, just attach it to the regular safety belt.

Checking Your Restraint Systems

Now and then, make sure the safety belt reminder light and all your belts, buckles, latch plates, retractors and anchorages are working properly. Look for any other loose or damaged safety belt system parts. If you see anything that might keep a safety belt system from doing its job, have it repaired.

Torn or frayed safety belts may not protect you in a crash. They can rip apart under impact forces. If a belt is torn or frayed, get a new one right away.

Also look for any opened or broken air bag covers, and have them repaired or replaced. (The air bag system does not need regular maintenance.)

Replacing Restraint System Parts After a Crash

If you've had a crash, do you need new belts?

After a very minor collision, nothing may be necessary. But if the belts were stretched, as they would be if worn during a more severe crash, then you need new belts.



If you ever see a label on the driver's safety belt that says to replace the belt, be sure to do so. Then the new belt will be there to help protect you in a collision. You would see this label on the belt near the door opening.

If belts are cut or damaged, replace them. Collision damage also may mean you will need to have safety belt or seat parts repaired or replaced. New parts and repairs may be necessary even if the belt wasn't being used at the time of the collision.

If an air bag inflates, you'll need to replace air bag system parts. See the part on the air bag system earlier in this section.



MFD BY GENERAL MOTORS CORP 08/99

GVWR

GAWR FRT

GAWR RR

1905KG(4200LB)

1134KG(2500LB)

1043KG(2300LB)

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

1GCCS1443Y8107812

TYPE: TRUCK

MODEL: S10603 PAYLOAD = 1412KG(3112LB)

SPAX TIRE SIZE SPEED RTG RIM

FRT P205/75R15 S 15X7J

RR P205/75R15 S 15X7J

SPA T155/90D16 M 16X4T

COLD TIRE PRESSURE

240KPA(35PSI)

240KPA(35PSI)

420KPA(60PSI)

SEE OWNER'S MANUAL FOR MORE INFORMATION.

FIGURE A-4. VEHICLE TIRE PLACARD