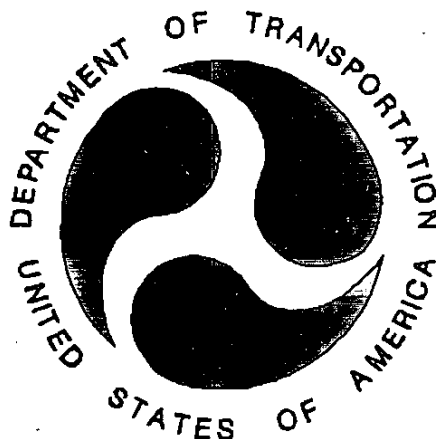


REPORT NUMBER KAR-20-05

NEW CAR ASSESSMENT PROGRAM
FRONTAL BARRIER IMPACT TEST

VOLKSWAGEN DE MEXICO
2000 VOLKSWAGEN JETTA
4-DOOR SEDAN
NHTSA NUMBER: MY5801

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



DECEMBER 20, 1999

FINAL REPORT

PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
SAFETY PERFORMANCE STANDARDS
OFFICE OF CRASHWORTHINESS STANDARDS
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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 Volkswagen Jetta 4-Door Sedan at KARCO Engineering on December 14, 1999. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The impact velocity was 56.96 km/h. The ambient temperature at the barrier face at the time of impact is 8.8 degrees Celcius. The vehicle's maximum post test static crush is 337 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:					
Measurement Description		Units	Threshold	Driver ATD	Passenger ATD
Head Injury Criteria (HIC)		N/A	1000	373.1	307.3
Max. Thorax Accel. (3 msec Clip)		G's	60	41.5	41.9
Left Femur force		Newtons	10009	-2508.1	-5853.4
Right Femur Force		Newtons	10009	-3950.0	-3179.5
17. Key Words 56.3 km/h NCAP Frontal Barrier Impact Test New Car Assessment Program (NCAP) 2000 Volkswagen Jetta 4-Door Sedan NHTSA No. MY5801				18. Distribution Statement Copies of this report are available from: NHTSA Technical Reference Division National Highway Traffic Safety Admin. 400 Seventh St., SW, Room 5108 Washington, DC 20590	
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SECTION 1

PURPOSE, TEST PROCEDURE AND SUMMARY OF TEST MY5801

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 14, 1999 at a speed of 56.96 km/h. The test vehicle was instrumented with eight (8) accelerometers to measure longitudinal accelerations. The driver and passenger's restraint systems were instrumented with four (4) seat belt load cells to measure lap and shoulder belt tension. The specified impact velocity range was 55.5 to 57.1 km/h. The frontal barrier impact event was documented by one (1) real-time panning motion picture camera and eighteen (18) high-speed motion picture cameras. The pre- and post-test conditions were recorded by one (1) real-time motion picture camera. Camera locations and pertinent camera information is documented in the data sheets. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

The test vehicle contained two (2) part 572E 50th percentile adult male anthropomorphic test devices (ATDs). Both ATDs were instrumented with head, chest, and pelvic tri-axial accelerometers, left and right femur load cells, upper and lower tibia sensors, and foot accelerometers. In addition, chest displacement and upper neck six-axis force and moment sensors were utilized. The ATDs were positioned in the front outboard seating positions according to the dummy placement procedures specified in the Laboratory Indicant Test Procedure. Ninety-four (94) channels of data were recorded with a PC based (TDAS) on-board data acquisition system. The data was digitally sampled at 10,000 samples per second and processed per section IP11 of the Laboratory Indicant Test Procedure.

The Driver ATD (Serial No. 35) and the right-front passenger ATD (Serial No. 34) were re-calibrated one test prior to this test. FMVSS 208 "Occupant Crash Protection" injury criteria were not exceeded by either ATD during this frontal barrier impact test.

1.3 SUMMARY OF FRONTAL BARRIER IMPACT TEST

A rigid load cell barrier was impacted by a 2000 VOLKSWAGEN JETTA 4-DOOR SEDAN at a velocity of 56.96 km/h. The test vehicle weight is 1560 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 14, 1999 NCAP test. The test vehicle is equipped with a transversely mounted 2.0-liter, 4-cylinder engine and a 5-speed automatic transmission.

The driver Head Injury Criteria (HIC) is 373.1. The maximum resultant chest deceleration over three (3) milliseconds is 41.5 g's. The left and right femur loads are -2508.1 and -3950.0 Newtons, respectively. Chest deflection for the driver ATD peaked at -28.1mm. 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 and steering column.

The right front passenger's HIC is 307.3. The maximum resultant chest deceleration over three (3) milliseconds is 41.9 g's. The left and right femur loads are -5853.4 and -3179.5 Newtons respectively. Chest deflection for the passenger ATD peaked at -29.0 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 113.9mm for the driver ATD and 133.0 mm for the passenger ATD. The shoulder belt stretch is not measured with pre-tensioner systems.

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

The test vehicle sustained a maximum static crush of 337 mm located at the vehicle centerline. Both the driver and passenger side doors opened without the aid of tools.

1.4 GENERAL COMMENTS

The 2000 VOLKSWAGEN JETTA 4-DOOR SEDAN passed the requirements of FMVSS 208, FMVSS 212, FMVSS 219 and FMVSS 301-75. Data pertaining to these standards are presented in the data sheets.

The vehicle, occupant, camera and measurement data are presented in Section 2. Appendix A contains the still photograph prints. Appendix B contains the dummy and vehicle response data traces. Appendix C contains Load Cell Barrier information. Appendix D contains the instrumentation data channel assignments. Appendix E contains the dummy calibration data and Appendix F contains the owner's manual instructions for the occupant seating and restraint systems.

SECTION 2**OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS**Test Vehicle: 2000 VOLKSWAGEN JETTA 4-DOOR SEDANNHTSA No.: MY5801Test Program: 2000 NHTSA 35 MPH NCAPTest Date: 12/14/99**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	$=(t_f - 32)/1.8$
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf/ft	Nm	1.355

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

**DATA SHEET NO. 1
CRASH TEST SUMMARY**

Test Vehicle: 2000 Volkswagen Jetta 4-Door Sedan
Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY5801
Test Date: 12/14/99

PRIMARY IMPACT DATA

Measured Parameter	Units	Value
Velocity at Impact	km/h	56.96
Test Weight	kg	1560
Impact Angle	degrees	0
Average Rebound	mm	768
Maximum Static Crush	mm	335

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Driver	Passenger
Front Door Opening	Opened	Opened
Rear Door Opening	Opened	Opened
Seat Track Shift (mm)	0	0
Seat Back Failure	None	None

TEST DUMMY INFORMATION

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

16mm MOVIE COVERAGE

High Speed	18
Real Time	1
Total	19

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

DATA SHEET NO. 2
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2000 Volkswagen Jetta 4-Door Sedan

NHTSA No.: MY5801

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 12/14/99

TEST VEHICLE INFORMATION

Manufacturer	Volkswagen De Mexico
Model	Volkswagen Jetta
Body Style	4-Door Sedan
NHTSA NO.	MY5801
VIN	3VWRC29M3YMO15677
Color	White
Delivery Date	11/30/99
Odometer Reading (mile)	76
Dealer	Freeway Lincoln/Mercury, VW
Transmission	Automatic
Final Drive	Front
Number of Cylinders	4
Engine Displacement (L)	2.0
Engine Placement	Transverse

TEST VEHICLE OPTIONS

Driver Airbag	Yes
Passenger Airbag	Yes
Power Windows	No
Power Steering	Yes
Power Door Locks	Yes
Tilt Wheel	Yes
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	Volkswagen De Mexico	GVWR (kg)	1800
Date of Manufacture	July-99	GAWR Front (kg)	960
		GAWR Rear (kg)	950

DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	180	180
Cold Pressure (kPa)	180	180
Recommend Tire Size	195/65/15	195/65/15
Tire Size on Vehicle	195/65/15	195/65/15
Tire Manufacturer	Goodyear	Goodyear

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench	None	
Number of Occupants	2	3	0	5
Capacity Wt. (VCW) (kg)				424
Cargo Weight (RCLW) (kg)				84

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

Test Vehicle: 2000 Volkswagen Jetta 4-Door Sedan
 Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY5801
 Test Date: 12/14/99

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	397	275		420	358	
Right	kg	399	260		432	350	
Ratio	%	59.8	40.2		54.6	45.4	
Totals	kg	796	535	1331	852	708	1560

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1331
Weight of 2 P572 ATD's	kg	152
Rated Cargo/Luggage Weight (RCLW)	kg	84
Calculated Vehicle Target Weight (TVTW)	kg	1567

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	678	675	695	695	1019
As Tested	mm	648	647	657	657	1151

Vehicle Wheel base (mm): 2535
 Weight of Ballast secured in cargo area (kg): 52 *
 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): 54.9
 Usable Capacity Figure Furnished by COTR (L): 55.0
 Actual Test Volume with entire fuel System Filled (L): 51.0
 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 Volkswagen Jetta 4-Door Sedan
Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY5801
Test Date: 12/14/99

SPEED TRAP DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	55.51 to 57.12	56.96
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	57
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	4070	3795	-275
Center	mm	4375	4038	-337
Right Side	mm	4070	3791	-279

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	815
Center	mm	665
Right Side	mm	825
Average	mm	768

DATA SHEET NO. 4
TEST VEHICLE INFORMATION

Test Vehicle: 2000 VOLKSWAGEN JETTA 4-DOOR SEDAN
Test Program: 2000 NHTSA 35 MPH NCAP

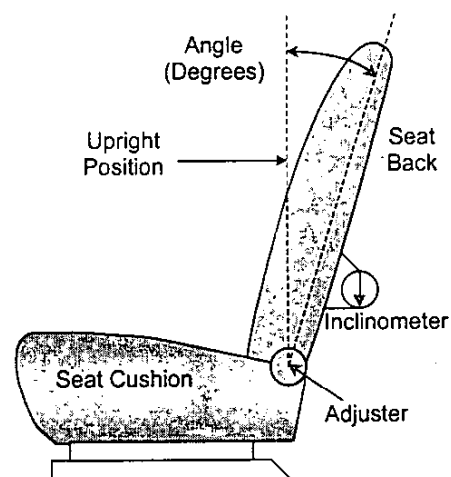
NHTSA No.: MY5801
Test Date: 12/14/99

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: 18.0° with a seated dummy

Passenger seat back angle: 18.0° 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 14 seat positions. The fore/aft position is set at the middle position for both driver and passenger.

Driver seat fore/aft total travel: 14 seat detent positions

Passenger seat fore/aft total travel: 14 seat detent positions

Driver seat fore/aft position: Set at 8th detent position

Passenger seat fore/aft position: Set at 8th detent position

SEAT BELT UPPER ANCHORAGE

The test vehicle is equipped with adjustable anchorages for both driver and passenger seat positions. There are 5 positions or detents. The anchorages were placed in position #3.

DATA SHEET NO. 4...(continued)

TEST VEHICLE INFORMATION

Test Vehicle: 2000 VOLKSWAGEN JETTA 4-DOOR SEDAN

NHTSA No.: MY5801

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 12/14/99

FUEL TANK CAPACITY DATA

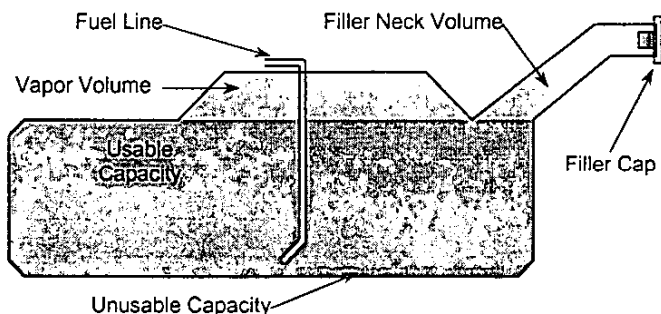
The "Usable Capacity" of the standard equipment fuel tank is: 54.9 liters

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

"Usable Capacity" used for certification tests FMVSS 301 requirements: 50.5 to 51.6 liters

Actual amount of Stoddard solvent added to vehicle for certification test: 51.0 liters

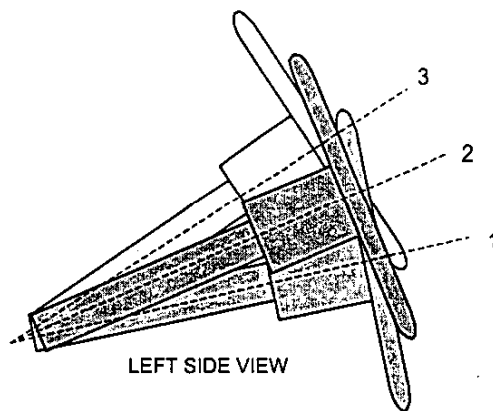
The test vehicle is equipped with an electric fuel pump. The fuel pump operates for 5 seconds after the ignition is turned on. The fuel filler door is located on the right rear fender.



VEHICLE FUEL TANK ASSEMBLY

STEERING COLUMN ADJUSTMENT

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



STEERING COLUMN ASSEMBLY

Lowermost, position 1: 22°

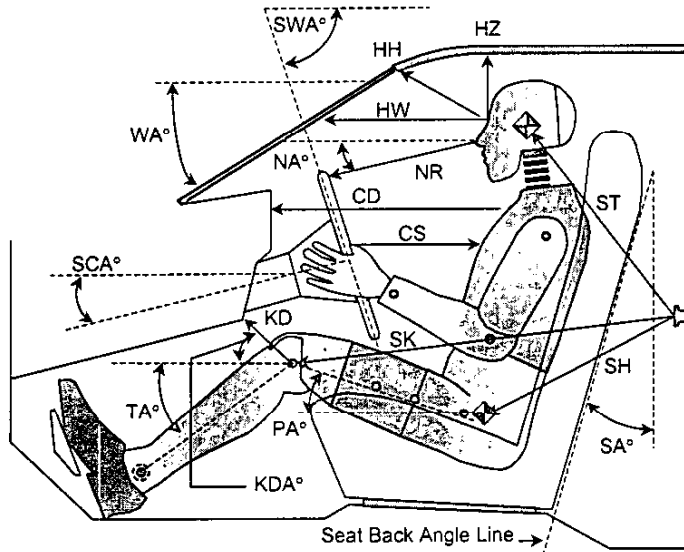
Geometric center, position 2: 24°

Uppermost, position 3: 26°

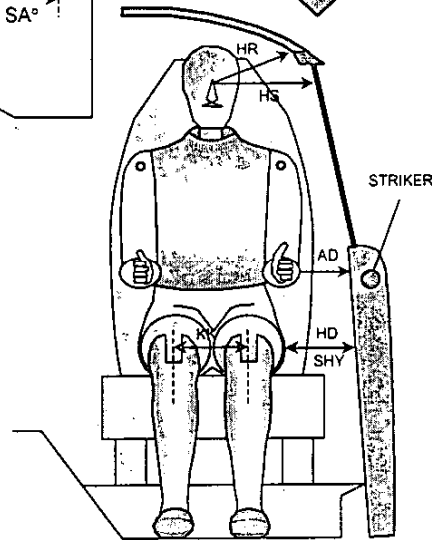
DATA SHEET NO. 5 **DUMMY POSITIONING IN VEHICLE**

Test Vehicle: 2000 VOLKSWAGEN JETTA 4-DOOR SEDAN
 Test Program: 2000 NHTSA 35 MPH NCAP

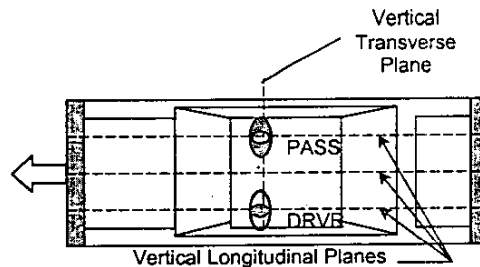
NHTSA No.: MY5801
 Test Date: 12/14/99



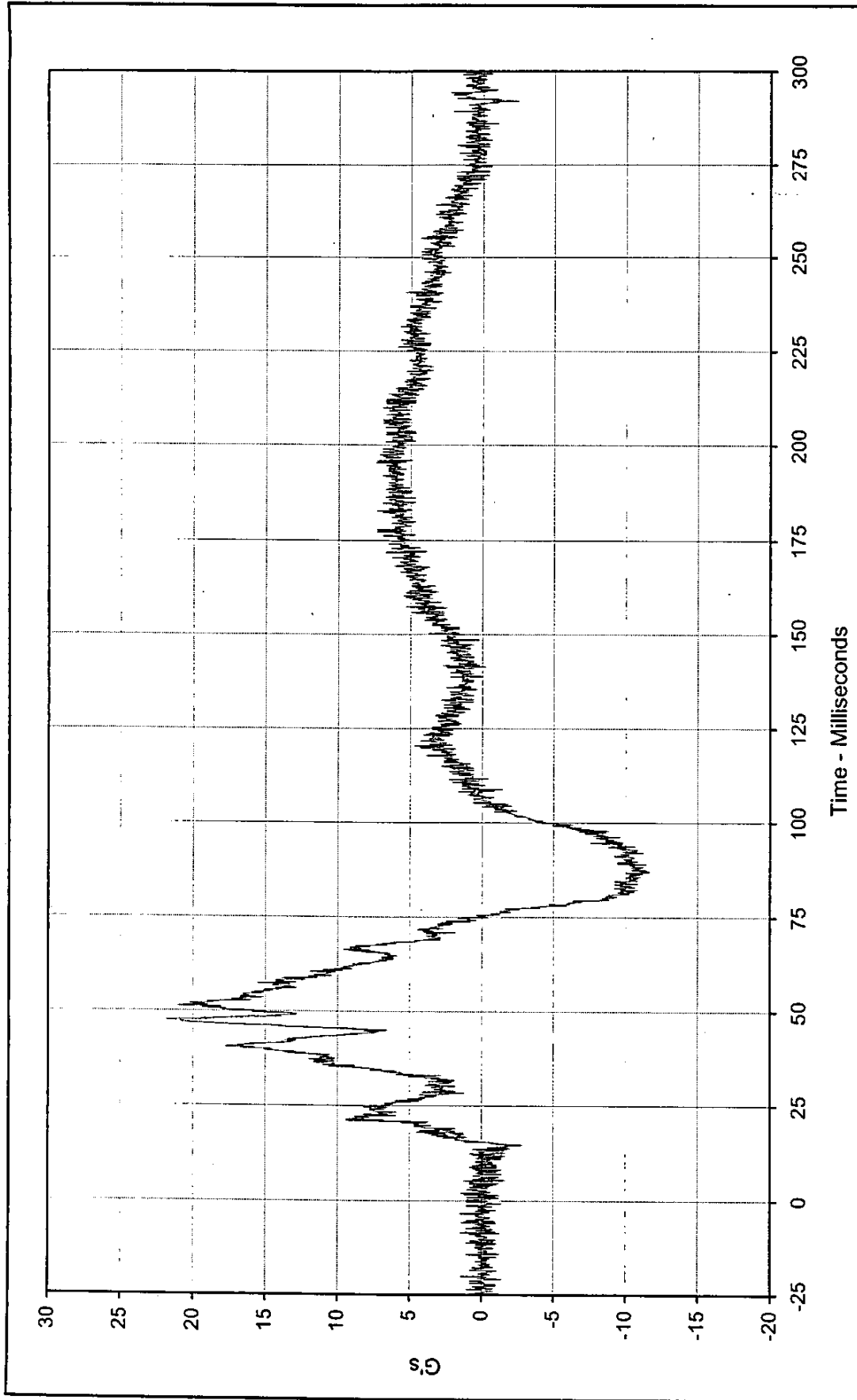
AD Arm to Door
 HD H-Point to Door
 HR Head to Side Header
 HS Head to Side Window
 KK Knee to Knee
 SHY Striker to H-Point
 (Y Axis)



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



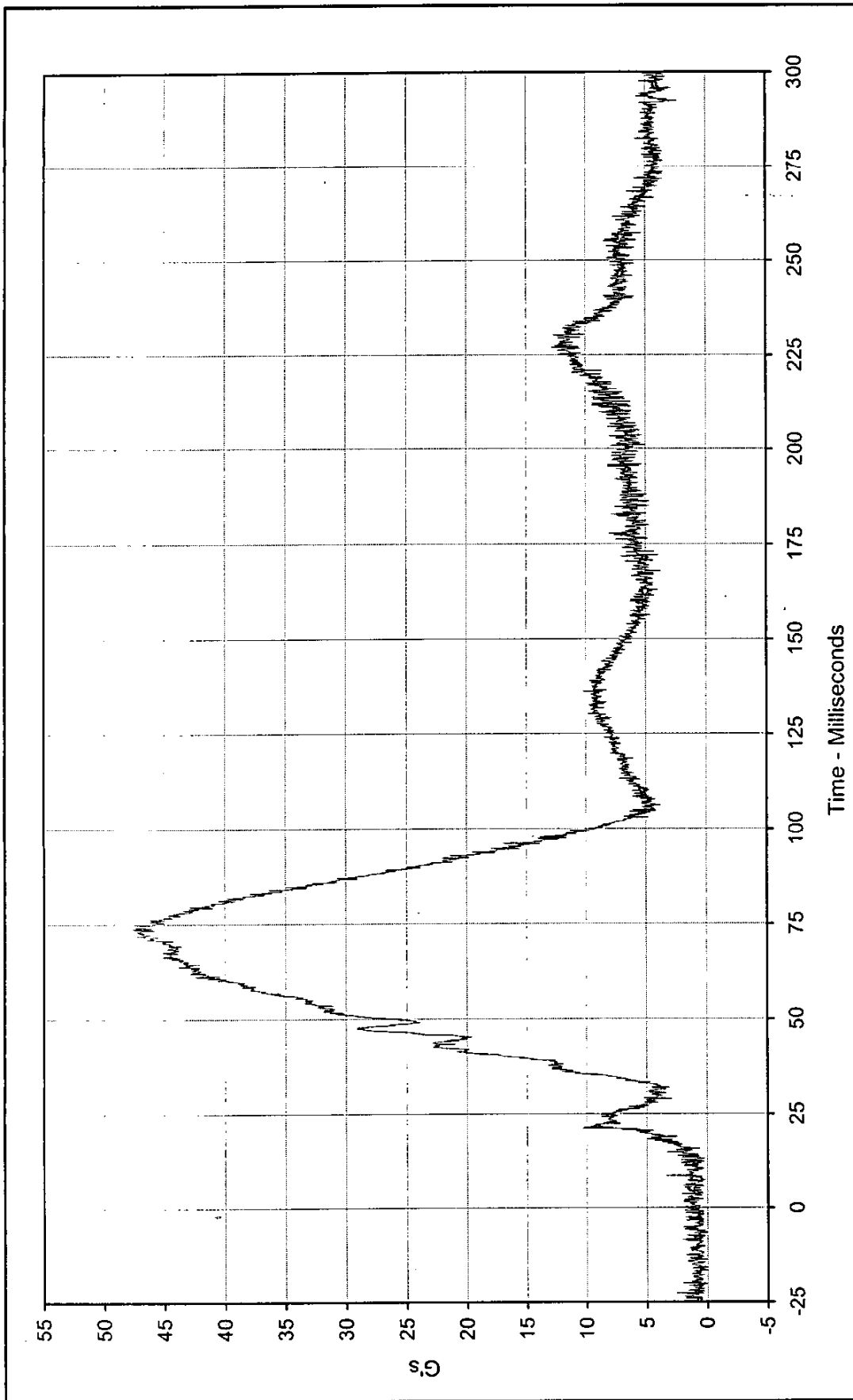
DUMMY MEASUREMENTS FOR FRONT SEAT OCCUPANTS



Curve Description: Driver Head Redundant Z
 Maximum Value: 21.8 at 47.6 Milliseconds
 Minimum Value: -11.7 at 86.9 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/14/99
 Curve Number: FIL-006

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description: Driver Head Resultant Redundant
 Maximum Value: 47.6 at 73.7 Milliseconds
 Minimum Value: 0.2 at 7.3 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/14/99
 Curve Number: RES-004

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan



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

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

NHTSA No.: MY5801

Test Program: 2000 NHTSA 35 mph NCAP

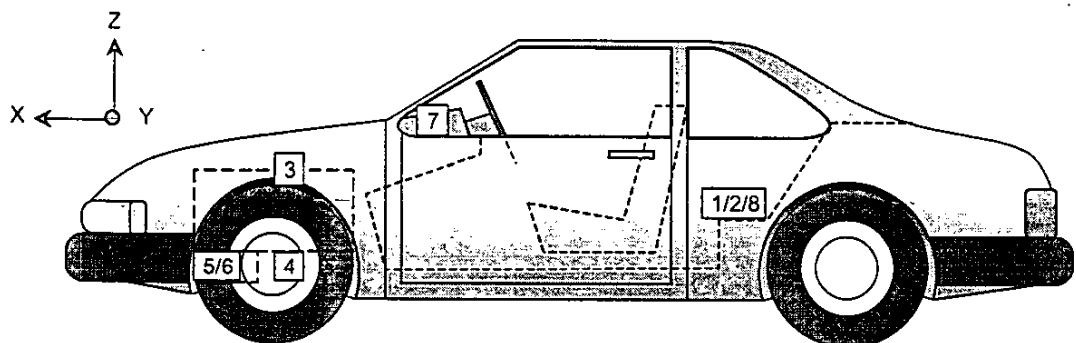
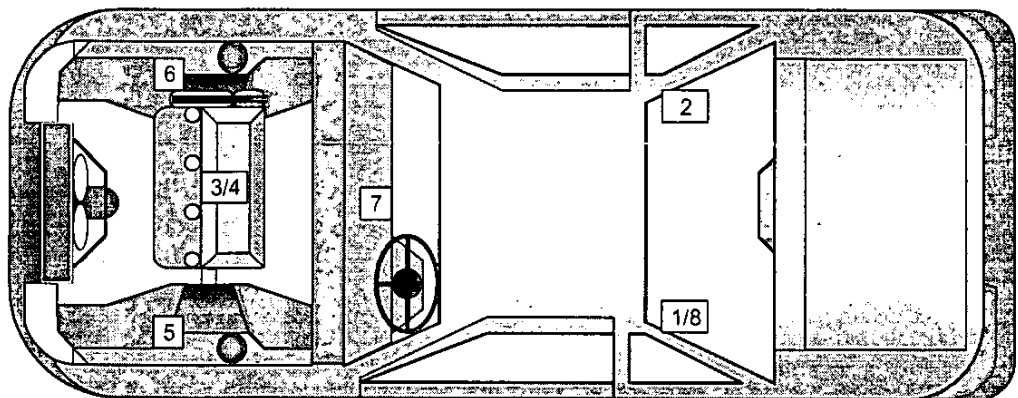
Test Date: 12/14/99

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.)	1669	-627	350	G's	3.0	106.4	-41.3	29.5
2	Right Rear X-Member (Pri.)	1392	604	392	G's	2.8	120.3	-34.7	33.1
3	Engine Top	3509	125	821	G's	92.2	35.5	-170.2	25.7
4	Engine Bottom	3765	325	150	G's	56.6	31.8	-178.0	22.5
5	Left Brake Caliper	3678	-713	279	G's	37.7	54.3	-90.0	34.5
6	Right Brake Caliper	3678	713	279	G's	70.7	57.4	-136.6	36.0
7	Instrument Panel	2859	0	938	G's	6.2	80.4	-75.2	44.3*
8	Left Rear X-Member (Rednt.)	1392	-608	392	G's	2.9	106.4	-41.9	29.5

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

* Channel failed, check plot for time of failure.



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

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

NHTSA No.: MY5801

Test Program: 2000 NHTSA 35 mph NCAP

Test Date: 12/14/99

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	10.5	226.1	-48.1	73.0	6.6	293.9	-35.6	77.8
Head CG	Y	G's	3.1	132.2	-4.7	43.7	2.8	55.7	-5.5	75.2
Head CG	Z	G's	24.2	42.6	-10.5	90.6	32.6	74.7	-2.2	139.3
Head CG Resultant	N/A	G's	48.3	73.0			47.9	76.9		

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	4.2	259.0	-43.8	69.1	1.2	154.3	-41.9	68.2
Chest CG	Y	G's	6.0	85.8	-4.3	33.9	5.0	39.3	-4.6	73.3
Chest CG	Z	G's	10.1	45.8	-6.1	95.3	11.6	76.1	-3.9	113.4
Chest CG Resultant	N/A	G's	43.9	69.1			42.7	68.2		

FEMUR PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Femur	Z	Newtons	849.4	41.9	-2508.1	49.2	285.7	23.1	-5853.4	48.7
Right Femur	Z	Newtons	731.9	40.3	-3950.0	54.0	289.7	64.7	-3179.5	52.6

SEAT BELT SENSOR PEAK VALUES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Lap Belt Force	N/A	Newtons	6798.8	53.3	4.6	0.0	6066.3	51.7	-23.8	109.0
Shoulder Belt Force	N/A	Newtons	4530.5	40.1	-4.7	255.7	4518.4	40.3	-12.8	299.9
Shoulder Belt Pullout	N/A	MM	113.9	88.4	-14.5	50.1	133.0	82.8	0.2	0.0
Shoulder Belt Stretch	N/A	MM/CM	0.000	0.0	0.000	0.0	0.000	0.0	0.000	0.0

* Not Used on vehicle with pre-tensioners.

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	373.1	40.4	51.1	87.0	307.3	37.4	61.9	97.8

CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Primary	41.5	68.1	71.1	41.9	67.4	70.4

DATA SHEET NO. 8...(continued)

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

NHTSA No.: MY5801

Test Program: 2000 NHTSA 35 mph NCAP

Test Date: 12/14/99

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	2.9	209.2	-64.4	47.8	3.5	142.4	-67.3	49.5
Pelvis	Y	G's	6.5	68.0	-9.7	43.7	5.2	44.1	-8.6	54.2
Pelvis	Z	G's	4.6	206.7	-28.1	63.8	2.1	20.8	-20.7	57.9

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	744.9	78.5	-383.3	40.9	494.9	58.9	-619.4	125.0
Neck Force	Y	Newtons	275.9	64.6	-138.0	39.0	178.7	46.5	-146.3	167.3
Neck Force	Z	Newtons	1692.6	51.8	-197.8	97.5	1166.5	72.1	-106.4	12.8
Neck Moment	X	N•m	7.1	133.5	-19.4	50.4	4.8	72.3	-14.0	55.6
Neck Moment	Y	N•m	34.1	54.9	-17.0	41.6	40.8	60.2	-13.6	44.3
Neck Moment	Z	N•m	5.9	63.9	-5.7	292.0	9.5	77.2	-2.1	130.2

FOOT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Foot Aft	X	G's	11.1	73.4	-41.4	31.3	53.9	55.5	-137.1	44.2
Left Foot Aft	Z	G's	4.4	237.9	-69.6	32.4	6.3	55.4	-49.7	37.8
Left Foot Fore	Z	G's	10.0	238.0	-73.5	29.6	55.8	55.4	-92.8	25.2
Right Foot Aft	X	G's	31.7	64.4	-113.5	43.9	15.0	66.8	-104.6	38.3
Right Foot Aft	Z	G's	28.5	60.8	-151.8	43.1	4.7	162.9	-65.6	39.4
Right Foot Fore	Z	G's	38.1	60.8	-147.0	36.7	27.5	29.6	-95.7	36.8

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	15.7	36.3	-71.8	61.0	43.0	64.1	-18.0	44.5
Left Lower Moment	Y	N•m	95.7	72.9	-20.4	31.7	52.2	56.2	-12.5	29.8
Left Lower Force	Z	Newtons	75.7	227.0	-2282.3	32.4	73.1	180.6	-4094.7	63.6
Left Upper Moment	X	N•m	39.4	48.0	-5.0	262.4	3.5	21.9	-51.3	51.9
Left Upper Moment	Y	N•m	11.8	210.6	-89.0	51.7	225.7	44.8	-138.2	63.2
Right Lower Moment	X	N•m	28.9	41.4	-50.2	49.5	18.0	43.7	-61.3	58.0
Right Lower Moment	Y	N•m	133.5	62.3	-40.2	41.5	43.9	65.7	-27.2	37.4
Right Lower Force	Z	Newtons	188.6	143.5	-5351.2	45.1	85.4	129.6	-3304.1	41.5
Right Upper Moment	X	N•m	39.0	42.1	-30.7	49.7	30.5	43.6	-39.6	62.6
Right Upper Moment	Y	N•m	71.4	54.1	-170.2	45.4	17.0	202.9	-136.1	42.3

DATA SHEET NO. 8...(continued)

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

NHTSA No.: MY5801

Test Program: 2000 NHTSA 35 mph NCAP

Test Date: 12/14/99

CHEST PEAK DISPLACEMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	MM	0.2	11.7	-28.1	55.3	0.2	2.6	-29.0	45.3

HEAD REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	11.6	227.0	-47.5	73.7	6.9	296.1	-35.5	78.8
Head CG	Y	G's	4.0	128.4	-6.3	82.9	2.5	54.9	-5.3	75.4
Head CG	Z	G's	21.8	47.6	-11.7	86.9	29.1	75.1	-2.4	15.5
Head CG Resultant	N/A	G's	47.6	73.7			45.3	76.6		

CHEST REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	4.6	259.2	-43.0	69.2	1.1	154.9	-41.4	68.4
Chest CG	Y	G's	5.8	46.1	-4.8	33.9	6.0	39.2	-5.3	73.7
Chest CG	Z	G's	9.7	46.0	-5.2	95.5	11.7	76.2	-3.6	116.1
Chest CG Resultant	N/A	G's	43.3	69.2			42.4	68.5		

REDUNDANT HEAD INJURY CRITERIA (HIC)

Location	Driver				Passenger			
	HIC	Avg G's	T ¹	T ²	HIC	Avg G's	T ¹	T ²
Head CG Redundant	364.4	40.0	51.0	86.9	290.4	36.6	62.1	98.0

REDUNDANT CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Redundant	41.0	68.2	71.2	41.2	67.5	70.5

DATA SHEET NO. 9
SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

Test Vehicle: 2000 VOLKSWAGEN JETTA 4-DOOR SEDAN

NHTSA No.: MY5801

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 12/14/99

SEAT BELT PLACEMENT MEASUREMENTS

Measurement Description	Units	Driver	Passenger
TCI - Dummy centerline to shoulder bolt	mm	260	260
PBU - Top surface of reference to belt upper edge	mm	310	340
PBL - Top surface of reference to belt lower edge	mm	245	260
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	668	668
Shoulder belt length as measured on ATD	mm	890	892
Lap belt length as measured on ATD	mm	892	800
Remainder of belt on reel	mm	875	835
Total belt length for continuous webbing systems	mm	3325	3195

SHOULDER BELT SPOOL-OFF DATA

Measurement Description	Units	Driver	Passenger
As determined mechanically	mm	115.0	160.0
As determined electronically	mm	113.9	133.0

BELT STRETCH DATA

Measurement Description	Units	Driver	Passenger
Electronically from shoulder belt load cell and "D" ring	mm/cm	0.00*	0.00*
Mechanically	mm/cm	1.00	1.00

*Not used on vehicles with pre-tensioners.

DATA SHEET NO. 10
SUMMARY OF FMVSS 212 DATA

Test Vehicle: 2000 VOLKSWAGEN JETTA 4-DOOR SEDAN
 Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY5801
 Test Date: 12/14/99

Windshield Mounting Details:

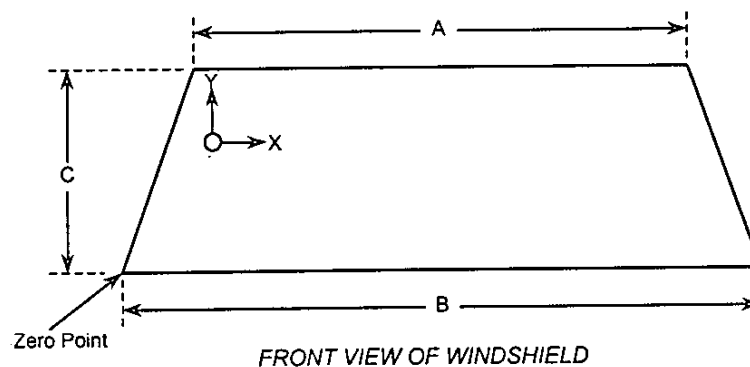
Windshield glass is secured to the vehicle frame with a rubber type adhesive. There is no molding that covers the windshield periphery at any point.

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	2090.0	2090.0	100
Right Side	2090.0	2090.0	100
Total	4180.0	4180.0	100



WINDSHIELD DIMENSIONS

Item	Units	Segment Length	Molding Width
A	mm	1155	5
B	mm	1545	0
C	mm	740	25

DATA SHEET NO. 11

WINDSHIELD ZONE INTRUSION FMVSS 219 (PARTIAL) DATA

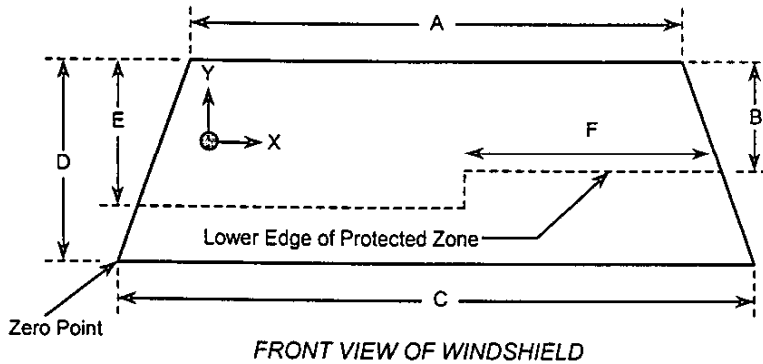
Test Vehicle: 2000 VOLKSWAGEN JETTA 4-DOOR SEDAN

NHTSA No.: MY5801

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 12/14/99

WINDSHIELD AND PROTECTED ZONE



Item	Units	Value
A	mm	1155
B	mm	443
C	mm	1545
D	mm	740
E	mm	493
F	mm	558

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 VOLKSWAGEN JETTA 4-DOOR SEDAN

NHTSA No.: MY5801

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 12/14/99

Test Time: 1:20 PM

Temperature at Time of Impact: 8.8 °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

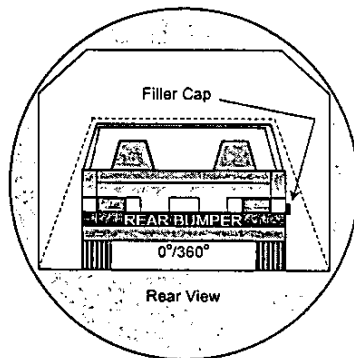
DATA SHEET NO. 13
FMVSS 301 STATIC ROLLOVER DATA SHEET

Test Vehicle: 2000 VOLKSWAGEN JETTA 4-DOOR SEDAN

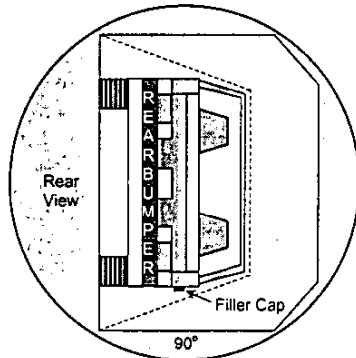
NHTSA No.: MY5801

Test Program: 2000 NHTSA 35 MPH NCAP

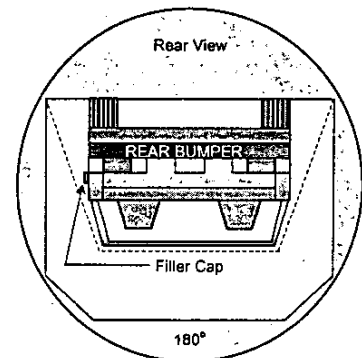
Test Date: 12/14/99



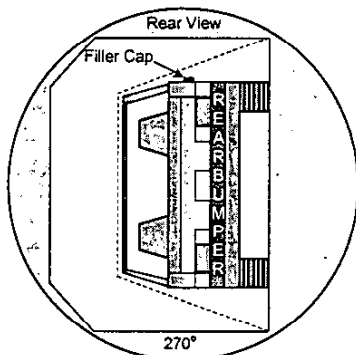
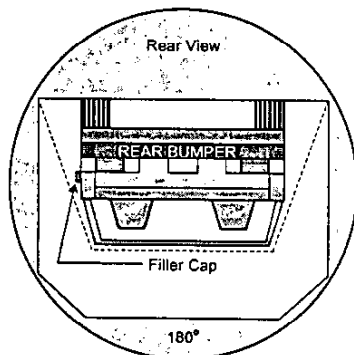
0° TO 90°



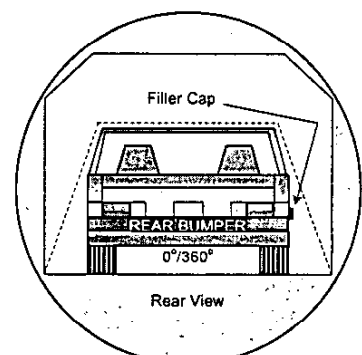
90° TO 180°



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

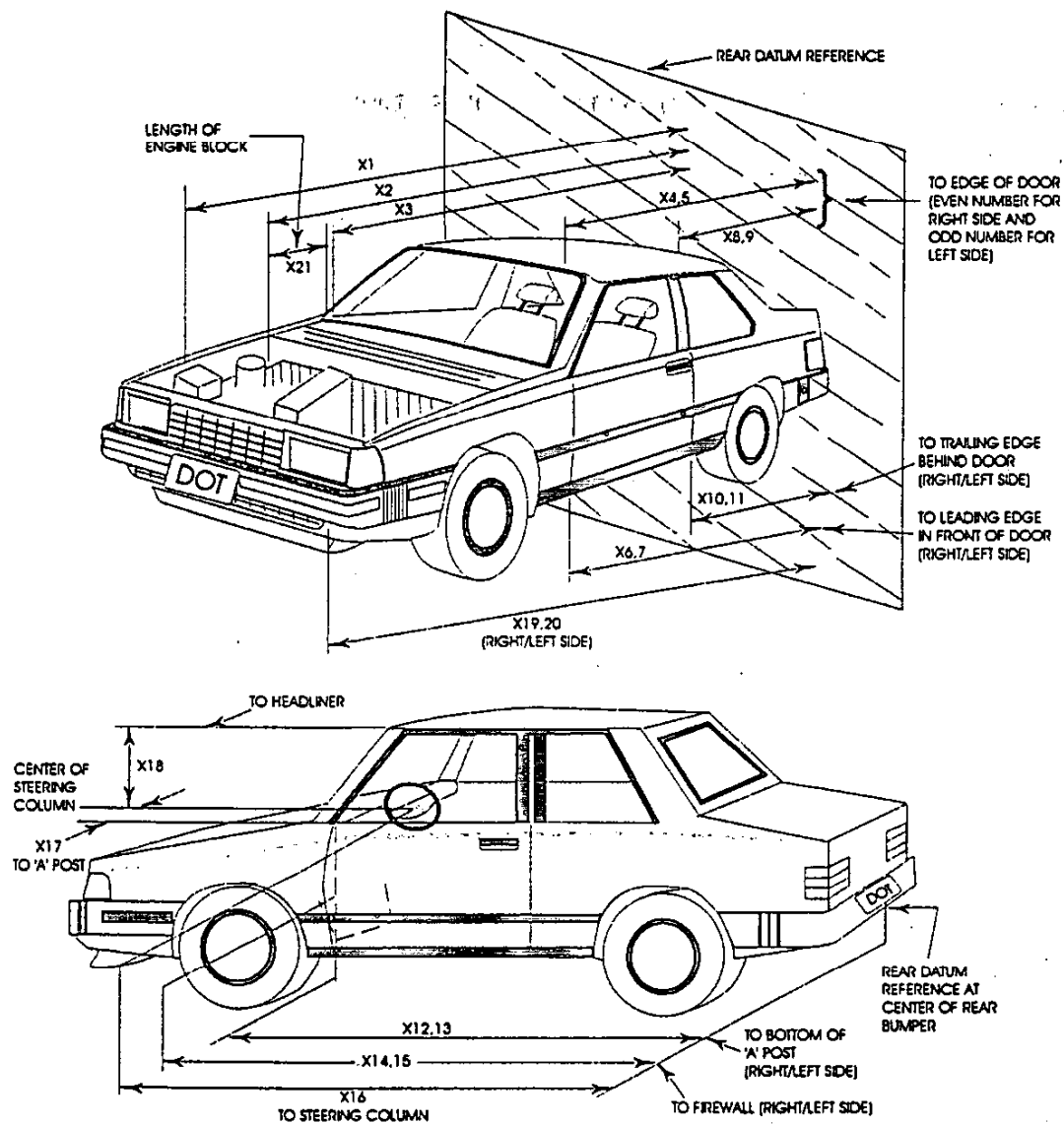
Test Vehicle: 2000 VOLKSWAGEN JETTA 4-DOOR SEDAN

NHTSA No.: MY5801

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 12/14/99

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
1	Total length of vehicle at centerline	mm	4375	4038	-337
2	RSOV to front of engine	mm	3772	3448	-324
3	RSOV to firewall centerline	mm	3380	3266	-114
4	RSOV to leading edge of right door	mm	3064	3057	-7
5	RSOV to leading edge of left door	mm	3070	3073	3
6	RSOV to lower leading edge of right door	mm	3045	3027	-18
7	RSOV to lower leading edge of left door	mm	3050	3040	-10
8	RSOV to upper trailing edge of right door	mm	2006	1995	-11
9	RSOV to upper trailing edge of left door	mm	2009	2015	6
10	RSOV to lower trailing edge of right door	mm	2009	1990	-19
11	RSOV to lower trailing edge of left door	mm	2014	2001	-13
12	RSOV to bottom of right 'A' pillar	mm	2995	2980	-15
13	RSOV to bottom of left 'A' pillar	mm	2995	2985	-10
14	RSOV to firewall on right side	mm	3470	3272	-198
15	RSOV to firewall of left side	mm	3414	3305	-109
16	RSOV to steering column	mm	2600	2605	5
17	Center of steering column to left 'A' pillar	mm	420	420	0
18	Center of steering column to headlining	mm	430	420	-10
19	RSOV to right side of front bumper	mm	4070	3791	-279
20	RSOV to left side of front bumper	mm	4070	3795	-275
21	Length of engine block	mm	220	220	0
RD	RSOV to right side of dash panel	mm	2755	2735	-20
CD	RSOV to center of dash panel	mm	2662	2644	-18
LD	RSOV to left side of dash panel	mm	2744	2740	-4



DATA SHEET NO. 15
CAMERA LOCATIONS

Test Vehicle: 2000 VOLKSWAGEN JETTA 4-DOOR SEDAN

NHTSA No.: MY5801

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 12/14/99

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	2050	8250	1285	2	7750	12	1020
3A	Left Side No. 2	1460	8350	1695	1	7800	35	1010
3B	Left Side No. 3A	1450	9350	1415	1	8850	50	900
4	Left Side No. 3B	8000	10600	2925	7	11900	80	880
5	Left Side, No. 4	1820	8380	3265	16	8120	19	1010
6	Left Side, No. 5	1800	8400	2640	12	8100	19	1020
7	Right Side, No. 1	2100	8300	1032	2	8000	13	930
8A	Right Side, No. 2A	1800	8350	1695	1	10000	35	1020
8B	Right Side, No. 2B	1750	10450	1415	3	8150	50	760
9	Right Side, No. 3	8500	9200	2960	10	11400	80	1010
10	Right Side, No. 4	2500	8150	1297	3	7570	24	990
11	Overhead Overall	700	0	5486	90	N/A	13	1000
12	Front View, Driver	-420	345	2801	38	N/A	13	1000
13	Front View, Passenger	-420	356	2801	45	N/A	13	1000
14	Pit Camera, Engine	650	0	-1810	90	N/A	13	940
15	Pit Camera, Fuel Tank	4300	0	-1470	50	N/A	19	1000
16	Onboard, Driver	3665	270	1540	10	1393	13	1150
17	Onboard, Passenger	3655	270	1540	15	1390	13	740

X - Barrier Face Y - Monorail Centerline Z - Ground

DATA SHEET NO. 16
PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2000 VOLKSWAGEN JETTA 4-DOOR SEDAN

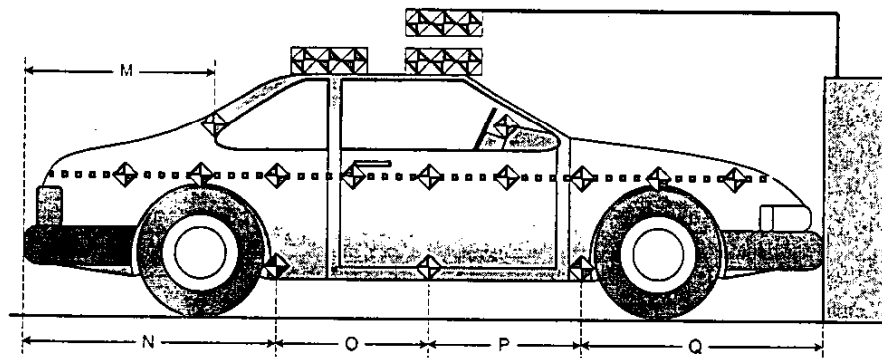
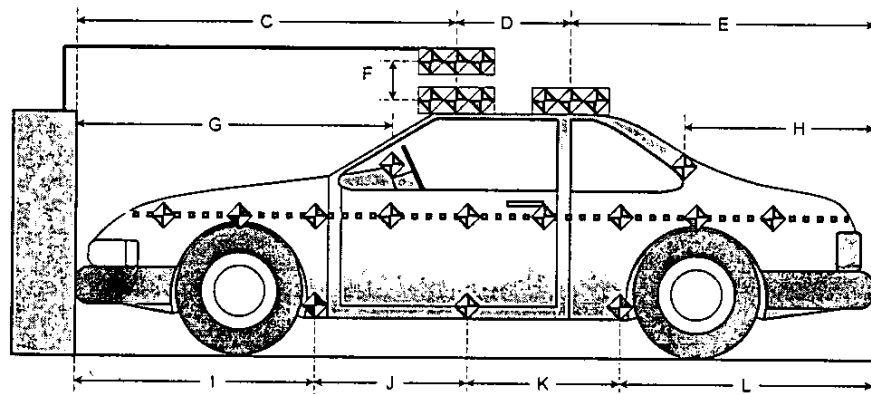
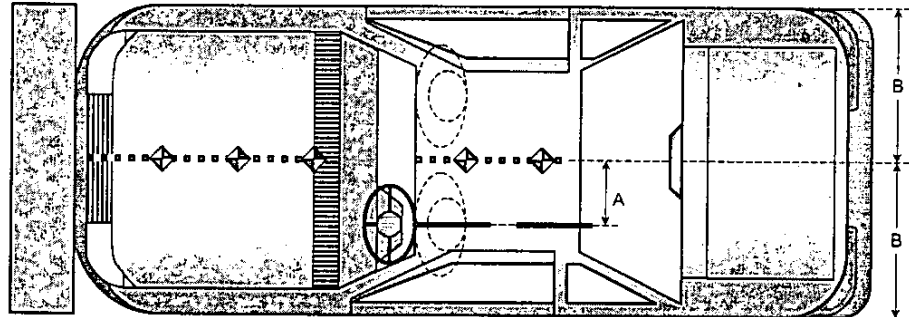
NHTSA No.: MY5801

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 12/14/99

All Dimensions
in mm

Item	Value
A	328
B	862
C	2174
D	608
E	1592
F	155
G	1580
H	1078
I	1310
J	822
K	825
L	1423
M	1074
N	1415
O	821
P	824
Q	1323



DATA SHEET NO. 17
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2000 VOLKSWAGEN JETTA 4-DOOR SEDAN
 Test Program: 2000 NHTSA 35 MPH NCAP

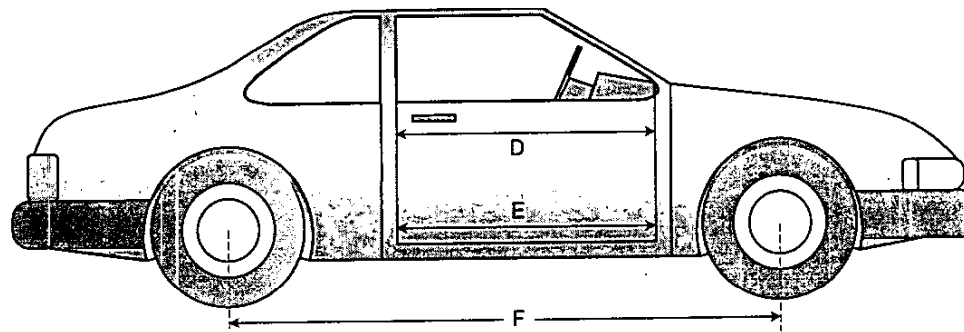
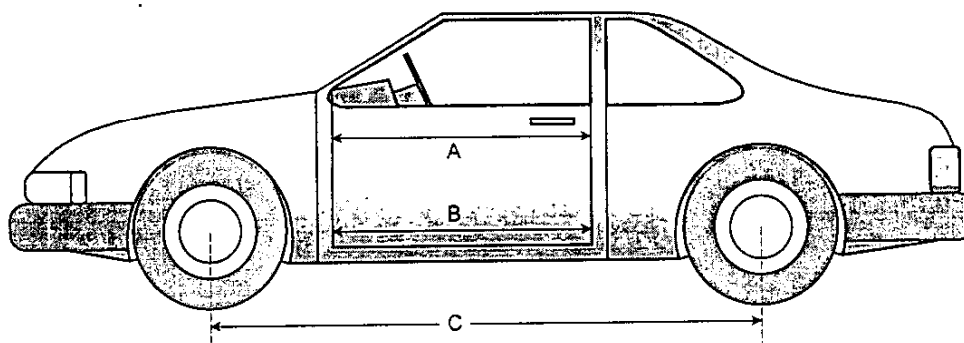
NHTSA No.: MY5801
 Test Date: 12/14/99

DOOR OPENING WIDTH

Item	Description	Units	Pre-Test	Post-Test	Difference
A	Left Side Upper	mm	937	925	-12
B	Left Side Lower	mm	849	839	-10
D	Right Side Upper	mm	936	925	-11
E	Right Side Lower	mm	850	839	-11

WHEELBASE MEASUREMENTS

Item	Description	Units	Pre-Test	Post-Test	Difference
C	Left Side Wheel base	mm	2535	2455	-80
F	Right Side Wheel base	mm	2535	2441	-94



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

Test Vehicle: 2000 VOLKSWAGEN JETTA 4-DOOR SEDAN

NHTSA No.: MY5801

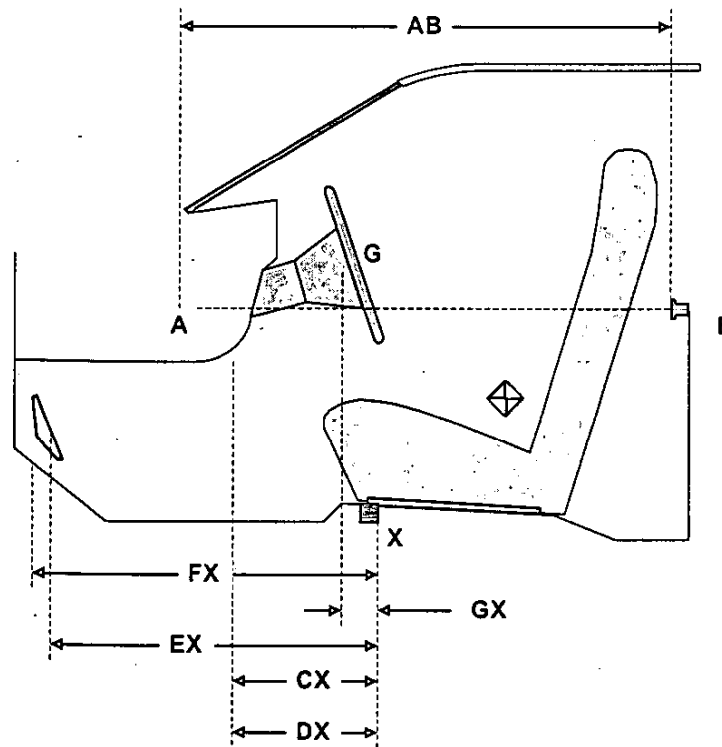
Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 12/14/99

DRIVER COMPARTMENT INTRUSION

Item	Description	Units	Pre-Test	Post-Test	Difference
AB	Door Opening (Inside window jam)	mm	937	925	-12
CX	Left Knee Bolster to X	mm	260	265	5
DX	Right Knee Bolster to X	mm	263	255	-8
EX	Brake Pedal to X	mm	544	505	-39
FX	Foot Rest to X	mm	555	470	-85
GX	Center of Steering Wheel Hub to X	mm	63	90	27

X = Left Front Seat Outboard Anchor Bolt Head



DRIVER COMPARTMENT

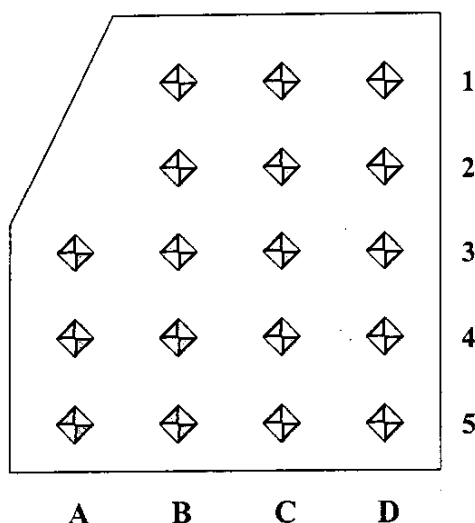
DATA SHEET NO. 17...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2000 VOLKSWAGEN JETTA 4-DOOR SEDAN

NHTSA No.: MY5801

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 12/14/99



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	693	700	682	N/A	567	590	620	N/A	-126	-110	-62
2	N/A	593	600	591	N/A	527	560	557	N/A	-66	-40	-34
3	493	493	500	491	440	452	455	463	-53	-41	-45	-28
4	390	391	398	391	374	373	365	364	-16	-18	-33	-27
5	290	292	299	288	275	275	275	269	-15	-17	-24	-19

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	25	27	24	N/A	77	66	48	15	52	39	24
2	N/A	-55	-53	-64	N/A	-27	-27	-42	-15	28	26	22
3	-80	-85	-75	-75	-80	-90	-60	-69	0	-5	15	6
4	-85	-85	-80	-80	-120	-128	-90	-74	-35	-43	-10	6
5	-85	-85	-83	-85	-112	-121	-115	-100	-27	-36	-32	-15

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

Test Vehicle: 2000 VOLKSWAGEN JETTA 4-DOOR SEDAN

NHTSA No.: MY5801

Test Program: 2000 NHTSA 35 MPH NCAP

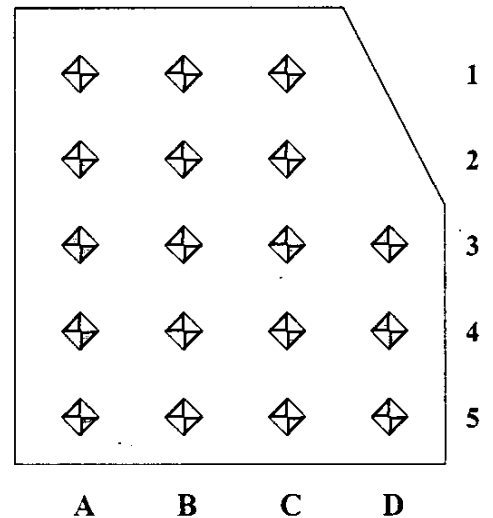
Test Date: 12/14/99

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	719	718	719	N/A	685	675	672	N/A	-34	-43	-47	N/A
2	621	620	620	N/A	613	620	605	N/A	-8	0	-15	N/A
3	521	520	521	518	525	520	522	522	4	0	1	4
4	422	420	421	418	415	420	427	427	-7	0	6	9
5	320	320	320	320	315	322	321	322	-5	2	1	2

PASSENGER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	40	40	40	N/A	77	65	77	N/A	37	25	37	N/A
2	-45	-40	-45	N/A	-25	-40	-25	N/A	20	0	20	N/A
3	-80	-80	-85	-85	-60	-55	-60	-80	20	25	25	5
4	-85	-85	-85	-85	-48	-55	-95	-102	37	30	-10	-17
5	-85	-85	-88	-85	-35	-70	-100	-96	50	15	-12	-11

DATA SHEET NO. 18
FIXED BARRIER TYPE

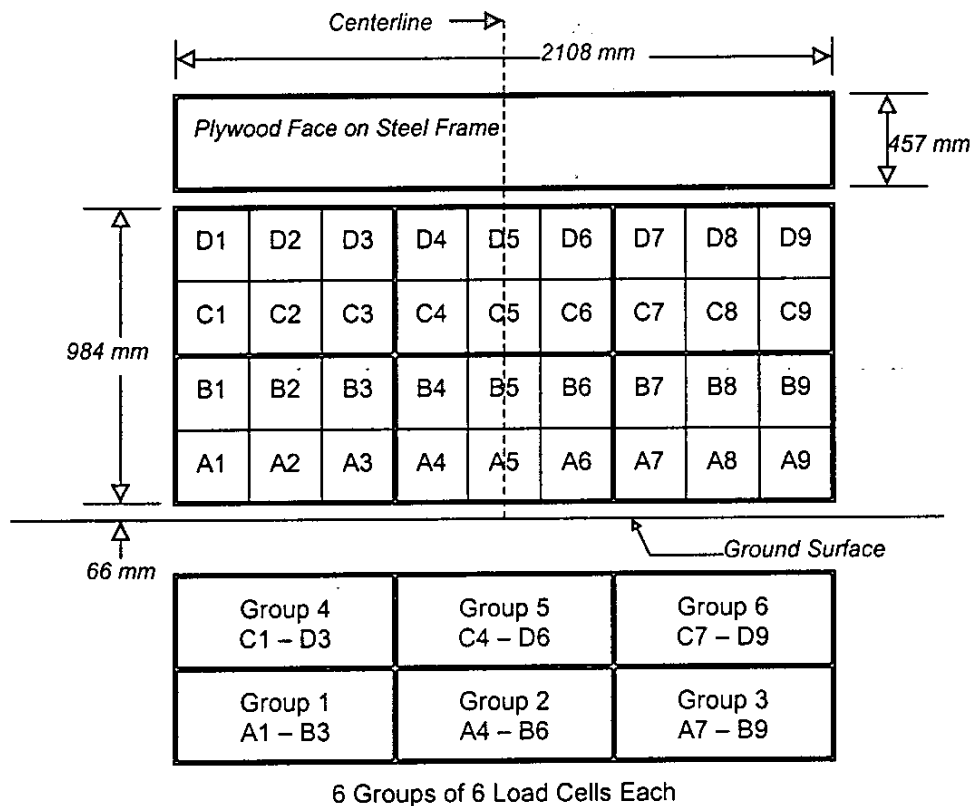
Test Vehicle: 2000 VOLKSWAGEN JETTA 4-DOOR SEDAN

NHTSA No.: MY5801

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 12/14/99

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 Volkswagen Jetta 4-Door Sedan
Test Program: 2000 NHTSA 35 MPH NCAP

NHTSA No.: MY5801
Test Date: 12/14/99

VEHICLE INFORMATION

VIN: 3VWRC29M3YMO15677
Vehicle Size Category: 4-Door Sedan

Wheel base (mm): 2535
Test Weight (kg): 1560

ACCELEROMETER DATA

Accelerometer Location: Left rear floor pan
Cal. Procedure/Interval: 6 months / drop test
Integration Algorithm: NHTSA Standard
Impact Velocity (km/h): 56.96
Velocity Change (km/h): 66.59

Linearity: Good

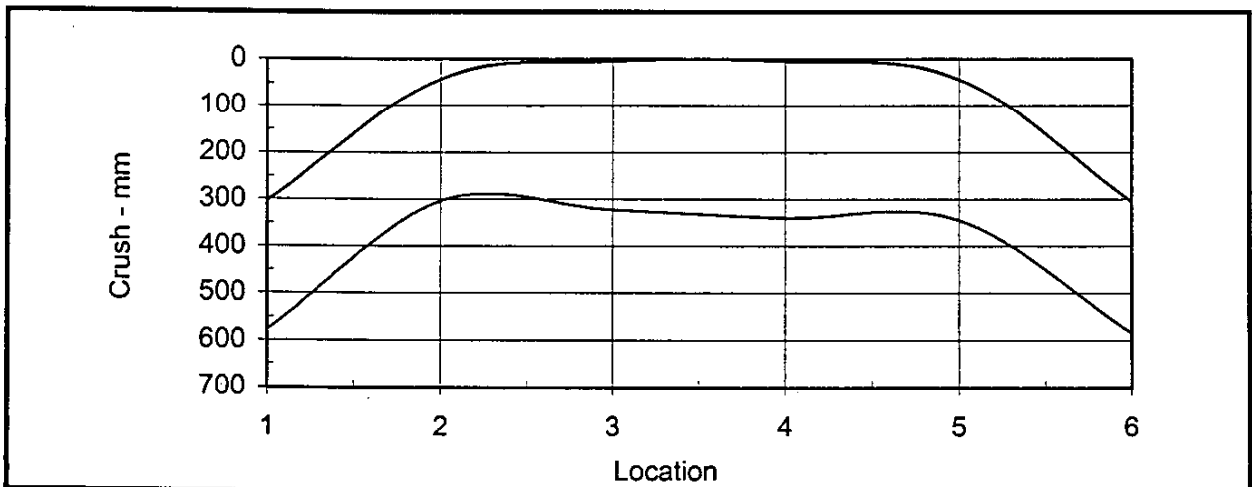
Time of Separation (msec): 68.2

CRUSH PROFILE

Collision Deformation Classification: 12FDEW6
Damage Region Length (mm): 1568

Midpoint of Damage: Vehicle Centerline
Impact Mode: Full Frontal

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	305	580	-275
C2	Crush zone 2 on left side	mm	42	305	-263
C3	Crush zone 3 on left side	mm	5	323	-318
C4	Crush zone 4 on right side	mm	5	340	-335
C5	Crush zone 5 on right side	mm	42	345	-303
C6	Crush zone 6 at right side	mm	305	584	-279



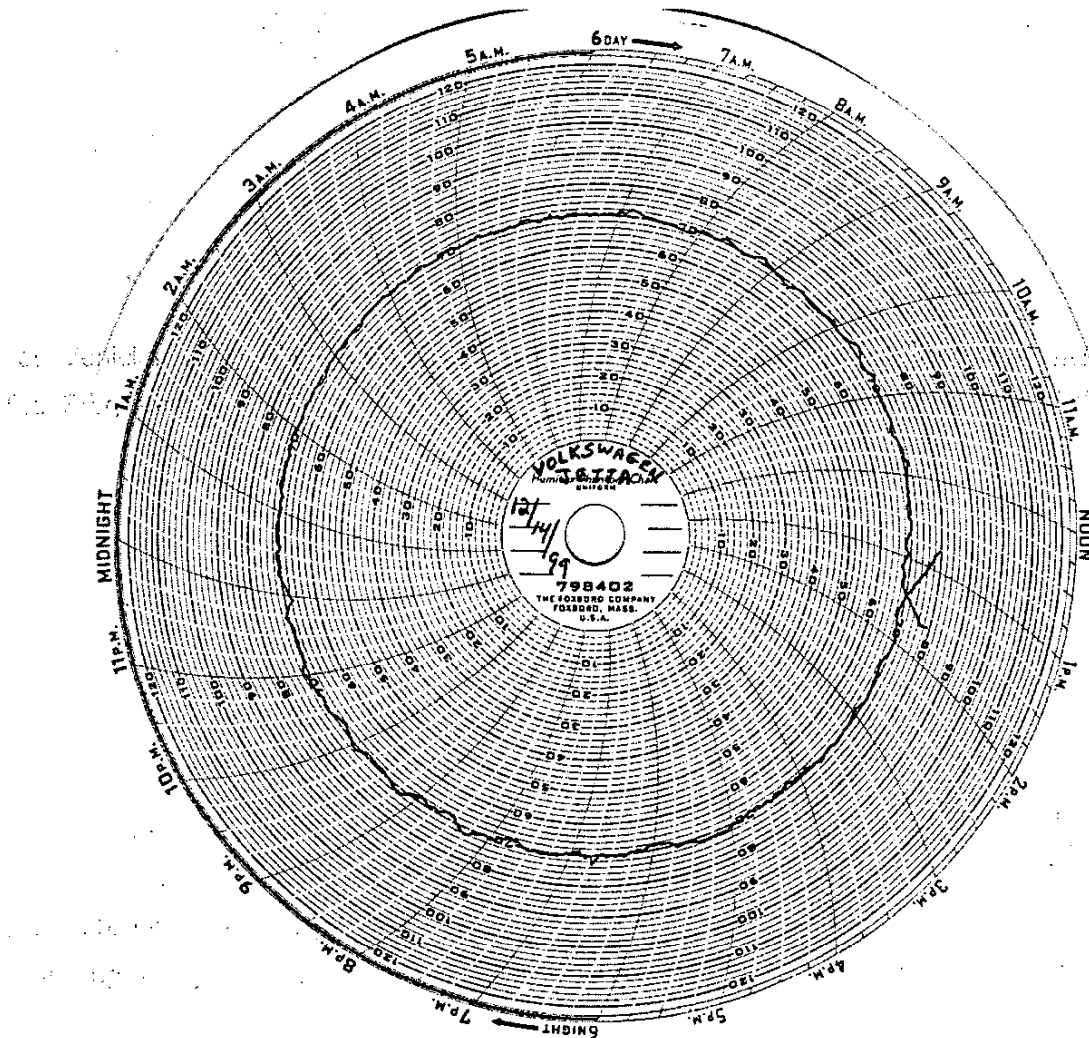
DATA SHEET NO. 20
DUMMY/ VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2000 VOLKSWAGEN JETTA 4-DOOR SEDAN

NHTSA No.: MY5801

Test Program: 2000 NHTSA 35 MPH NCAP

Test Date: 12/14/99



APPENDIX A
PHOTOGRAPHS

KAR200001-05

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FIGURE A-1. RIGHT FRONT AS RECEIVED

KAR20001-05

A-1

KAR20001-05

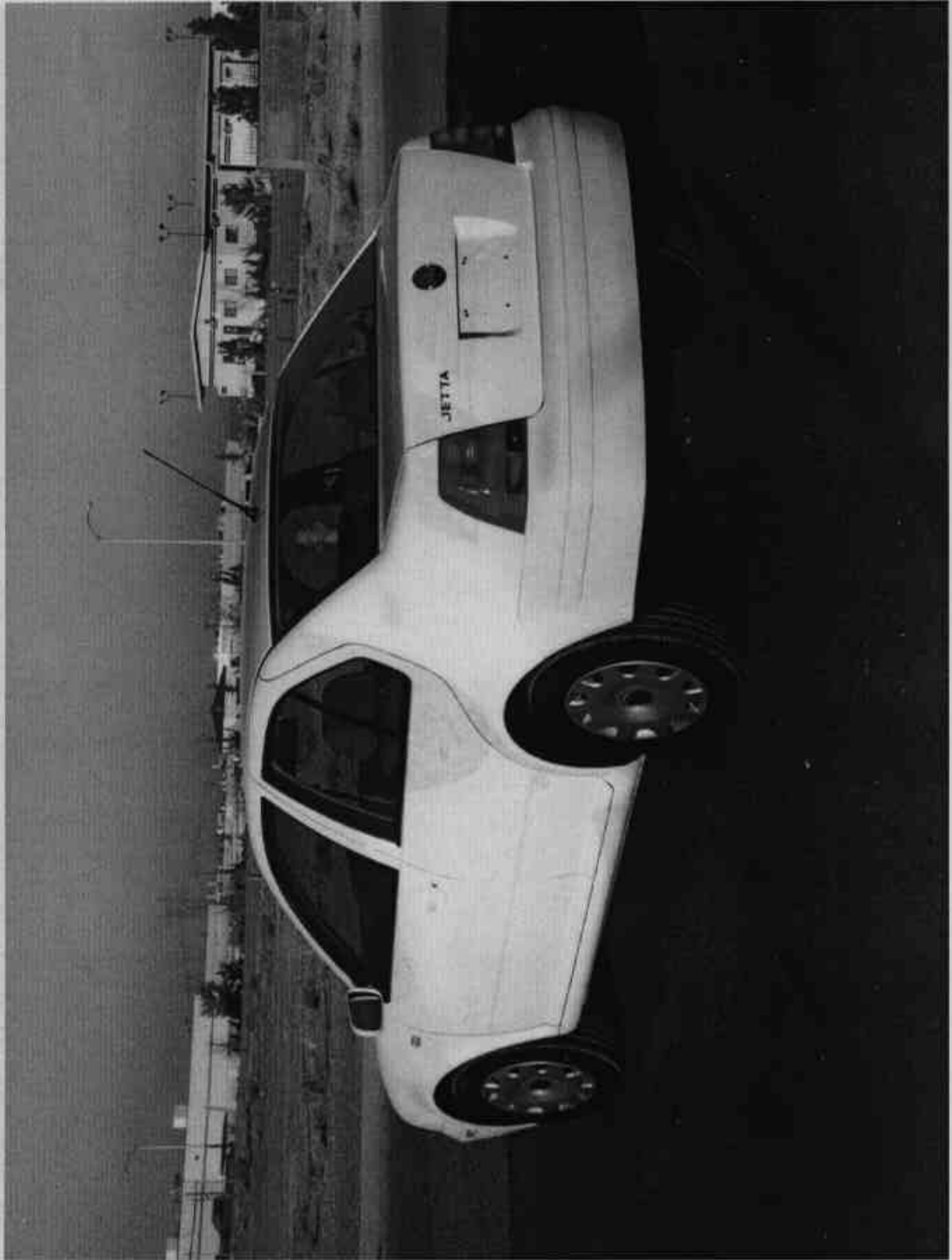


FIGURE A-2. LEFT REAR AS RECEIVED

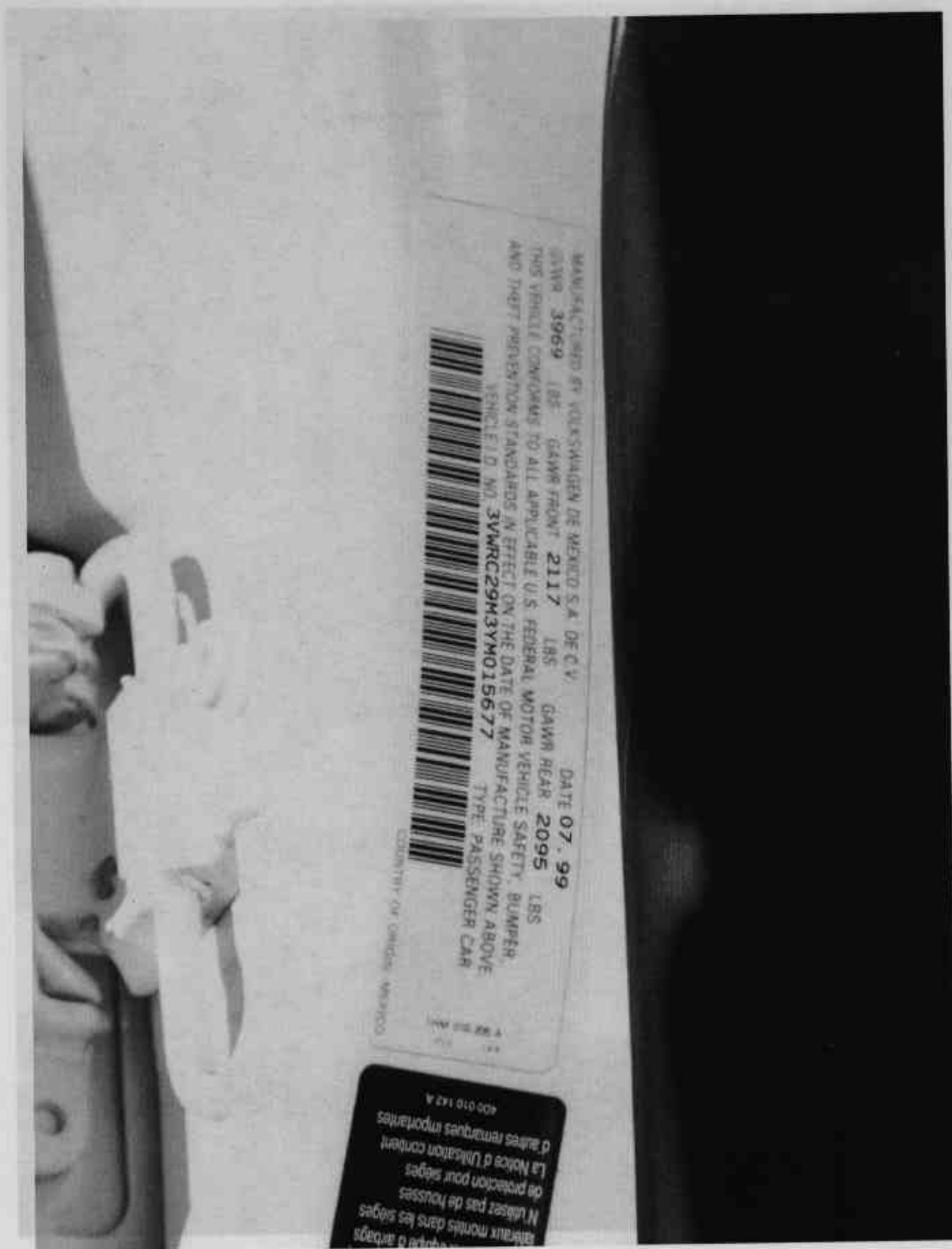


FIGURE A-3. VEHICLE CERTIFICATION LABEL

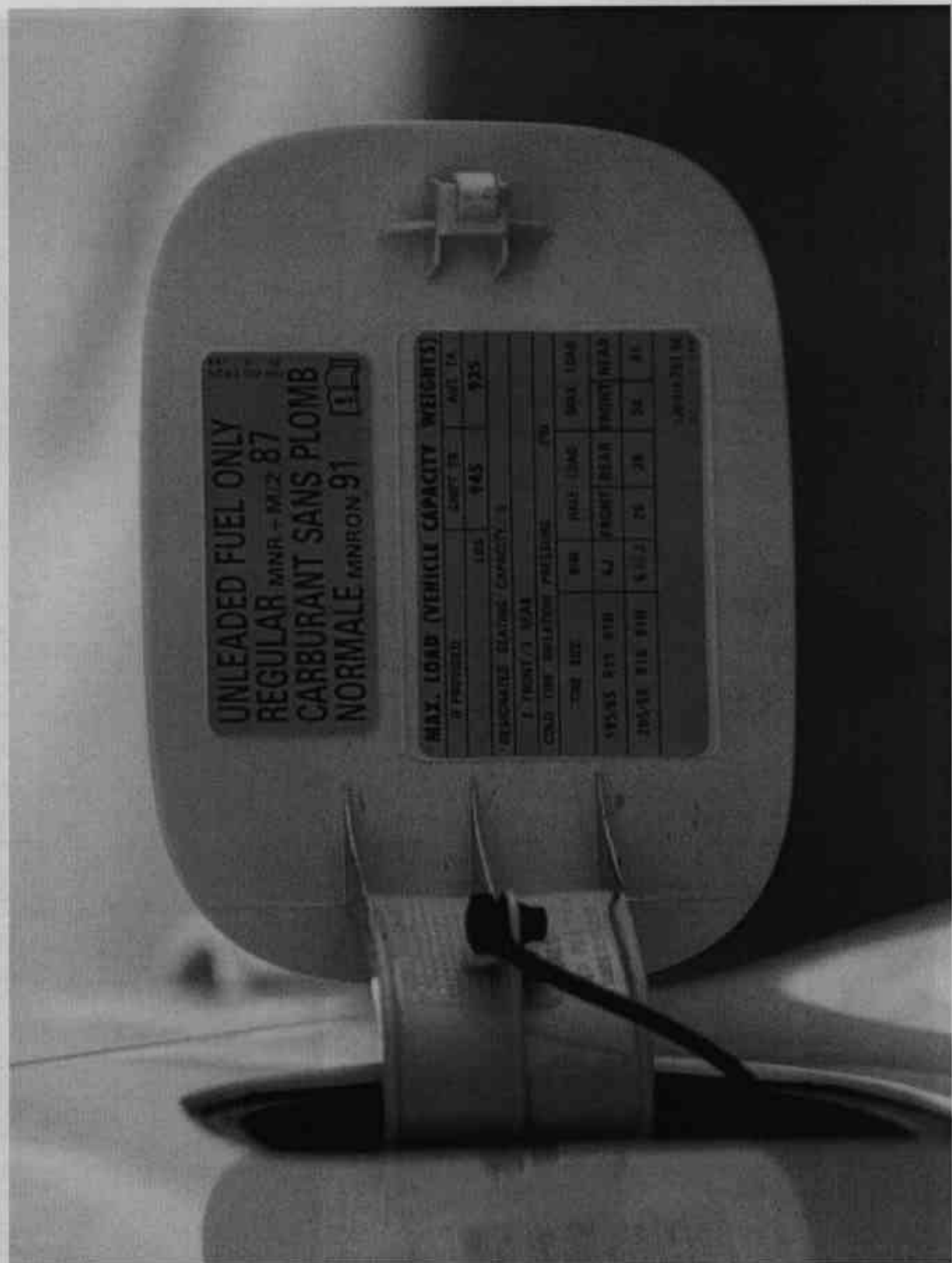


FIGURE A-4. VEHICLE TIRE PLACARD



FIGURE A-5. PRETEST FRONT VIEW

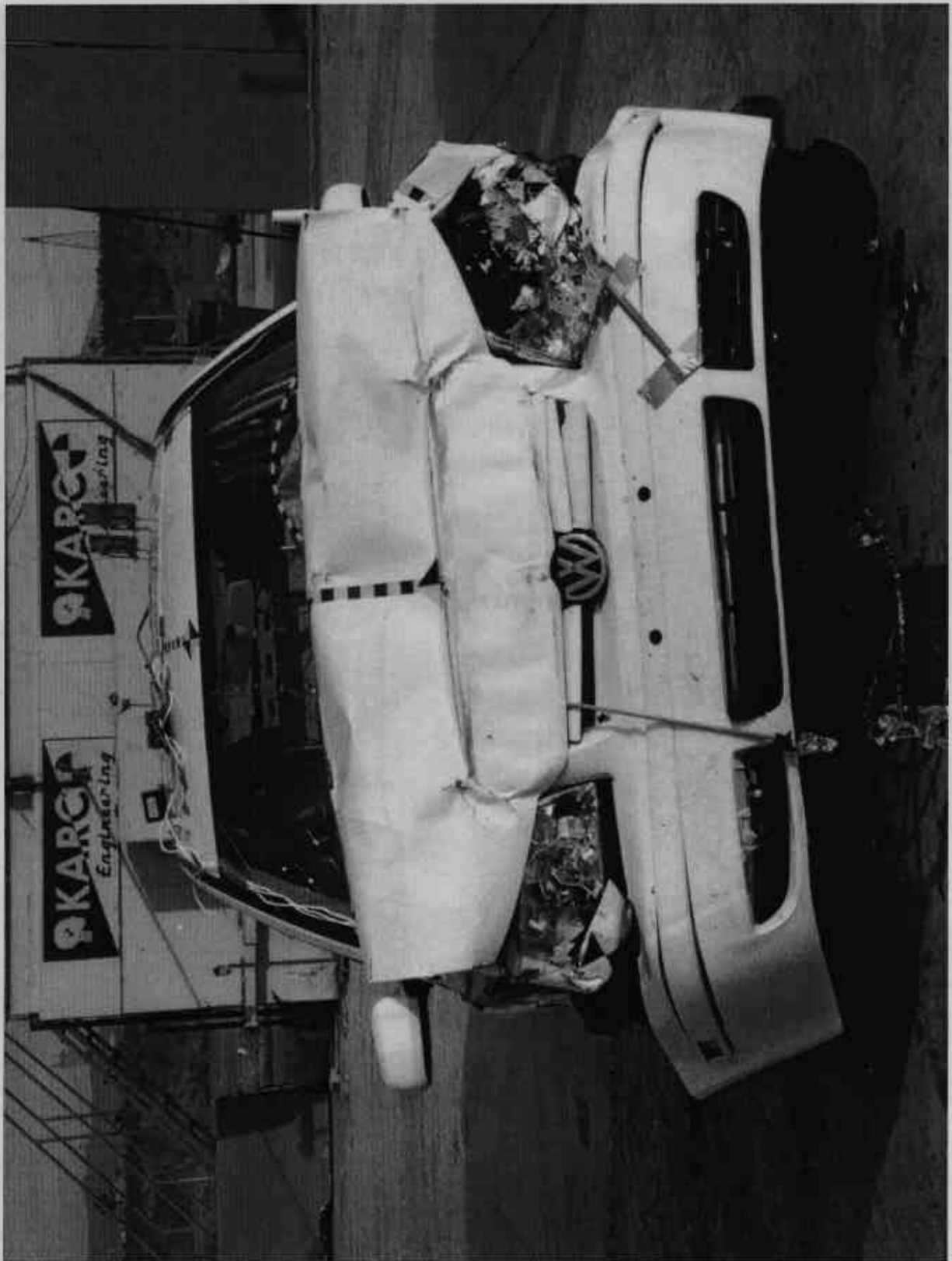


FIGURE A-6. POST TEST FRONT VIEW

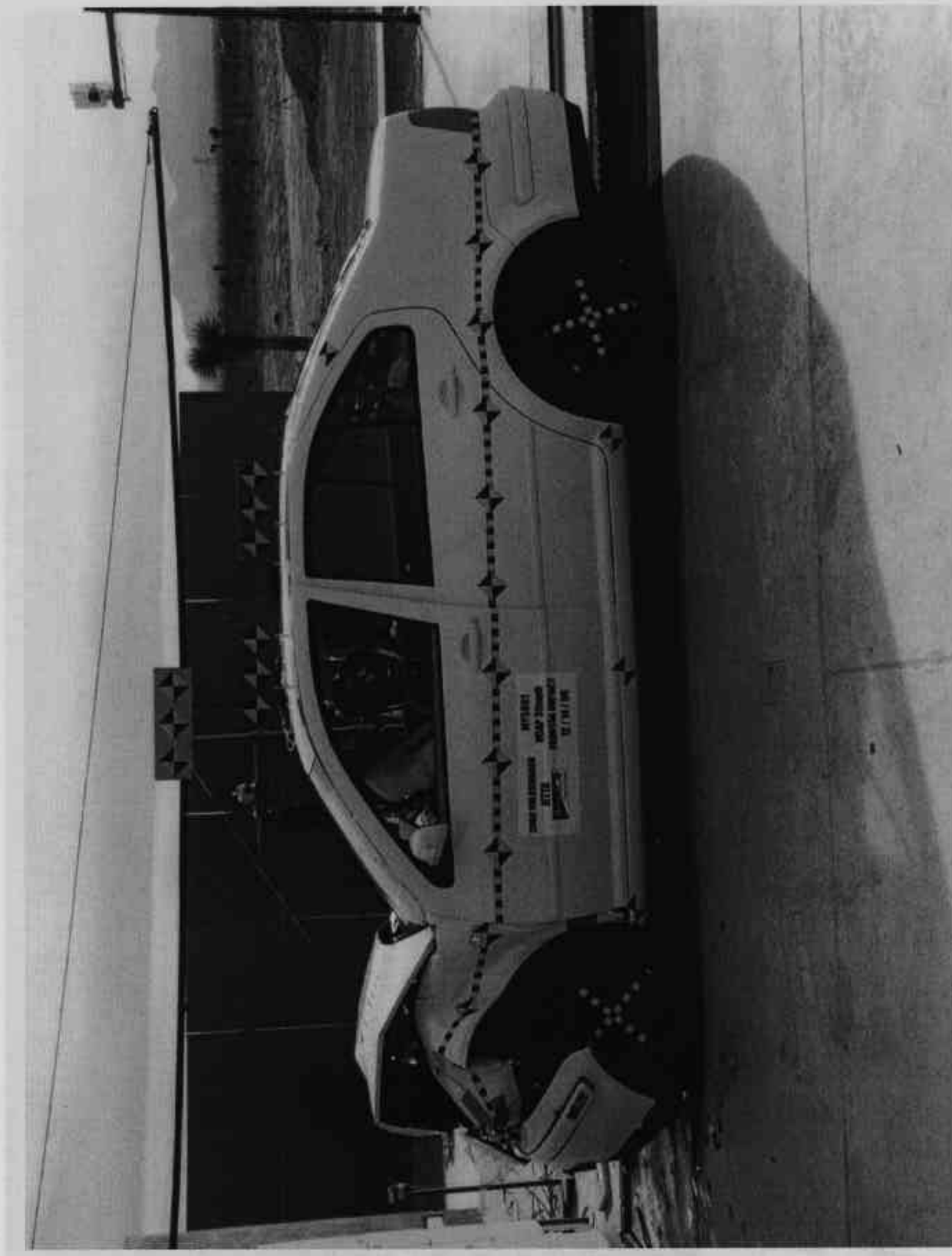


FIGURE A-8. POST TEST LEFT SIDE VIEW

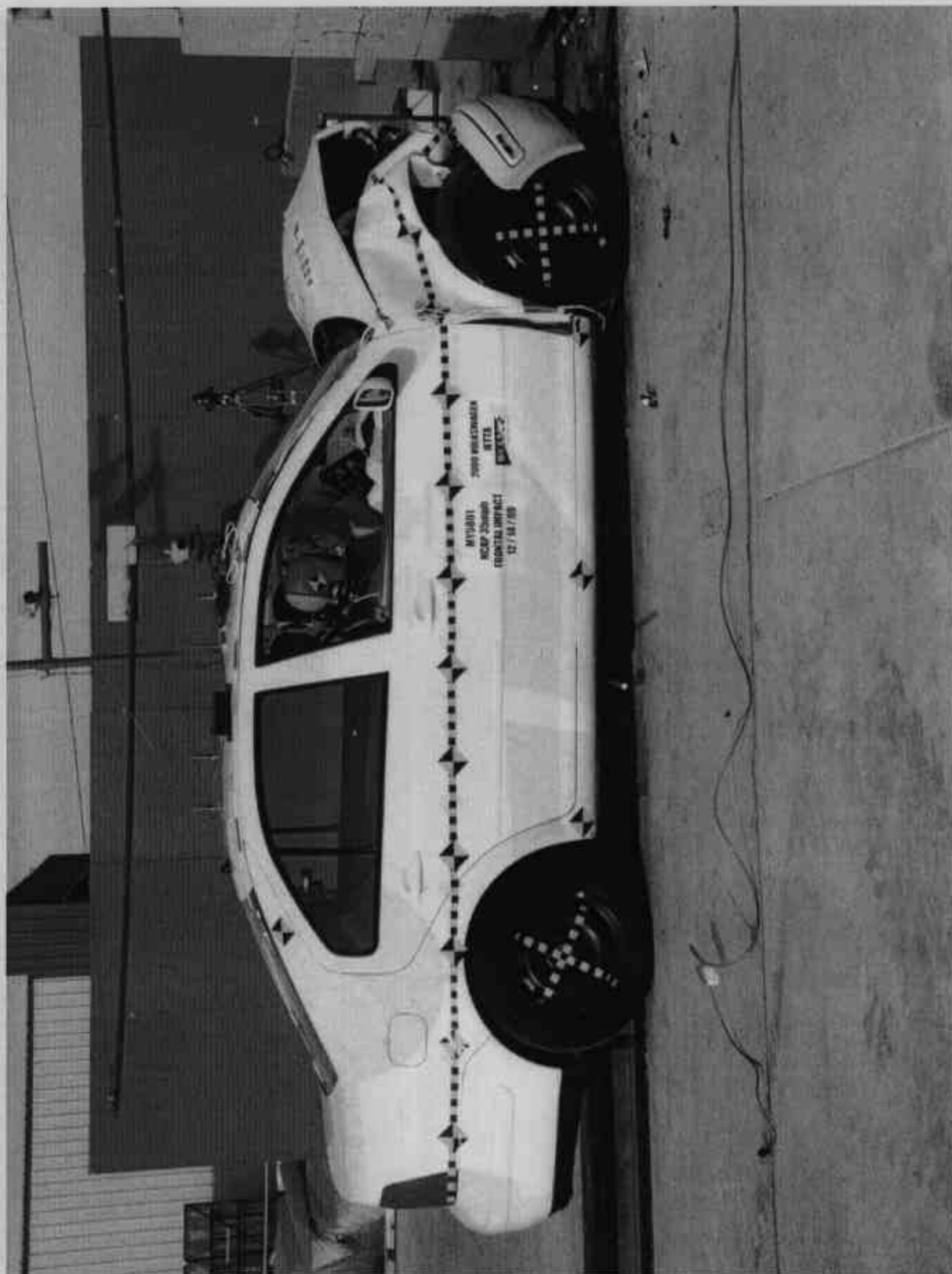


FIGURE A-10. POST TEST RIGHT SIDE VIEW

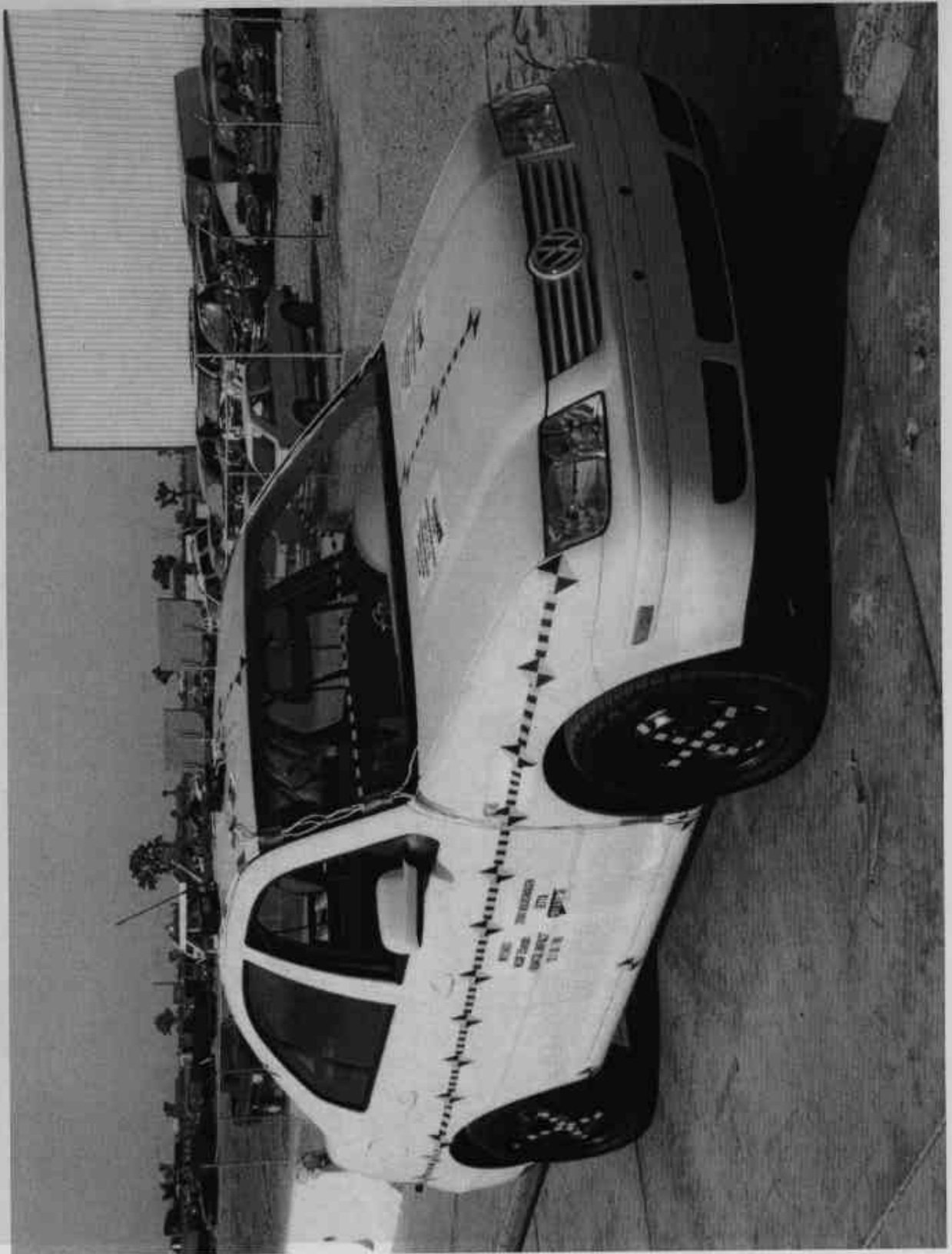


FIGURE A-11. PRETEST RIGHT FRONT VIEW

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FIGURE A-12. POST TEST RIGHT FRONT VIEW



FIGURE A-13. PRETEST LEFT REAR VIEW

KAR20001-05

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KAR20001-05

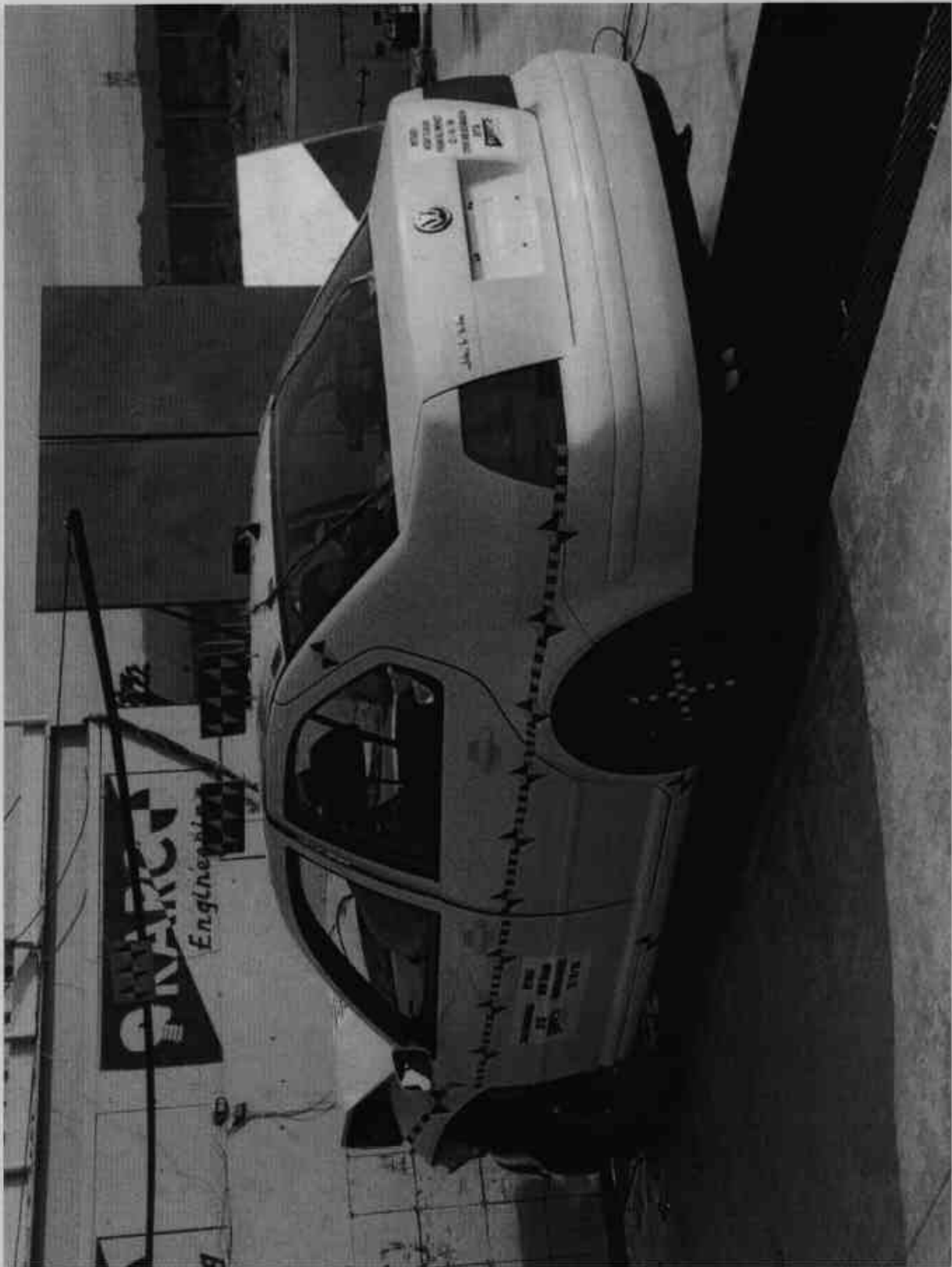


FIGURE A-14. POST TEST LEFT REAR VIEW

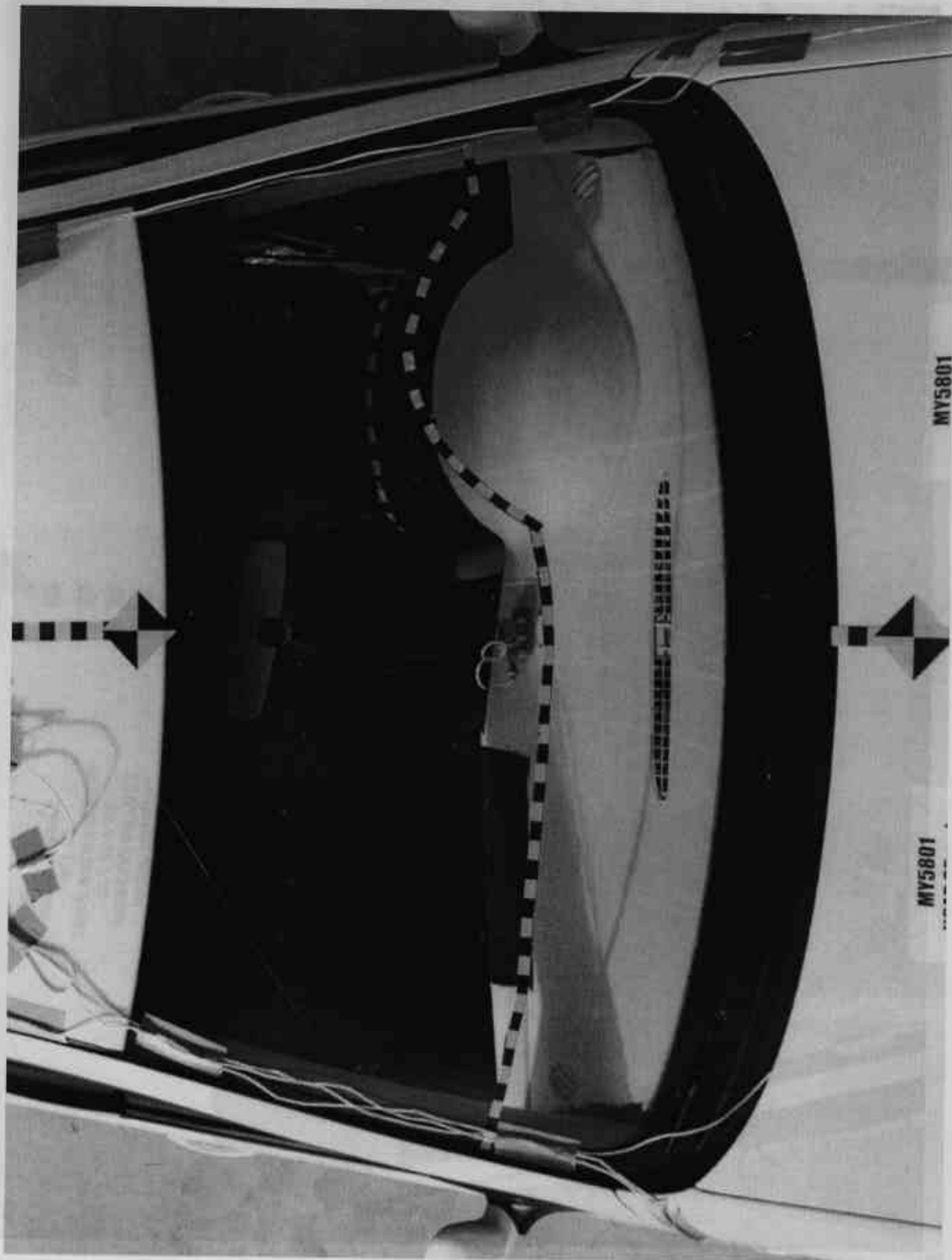


FIGURE A-15. PRETEST WINDSHIELD

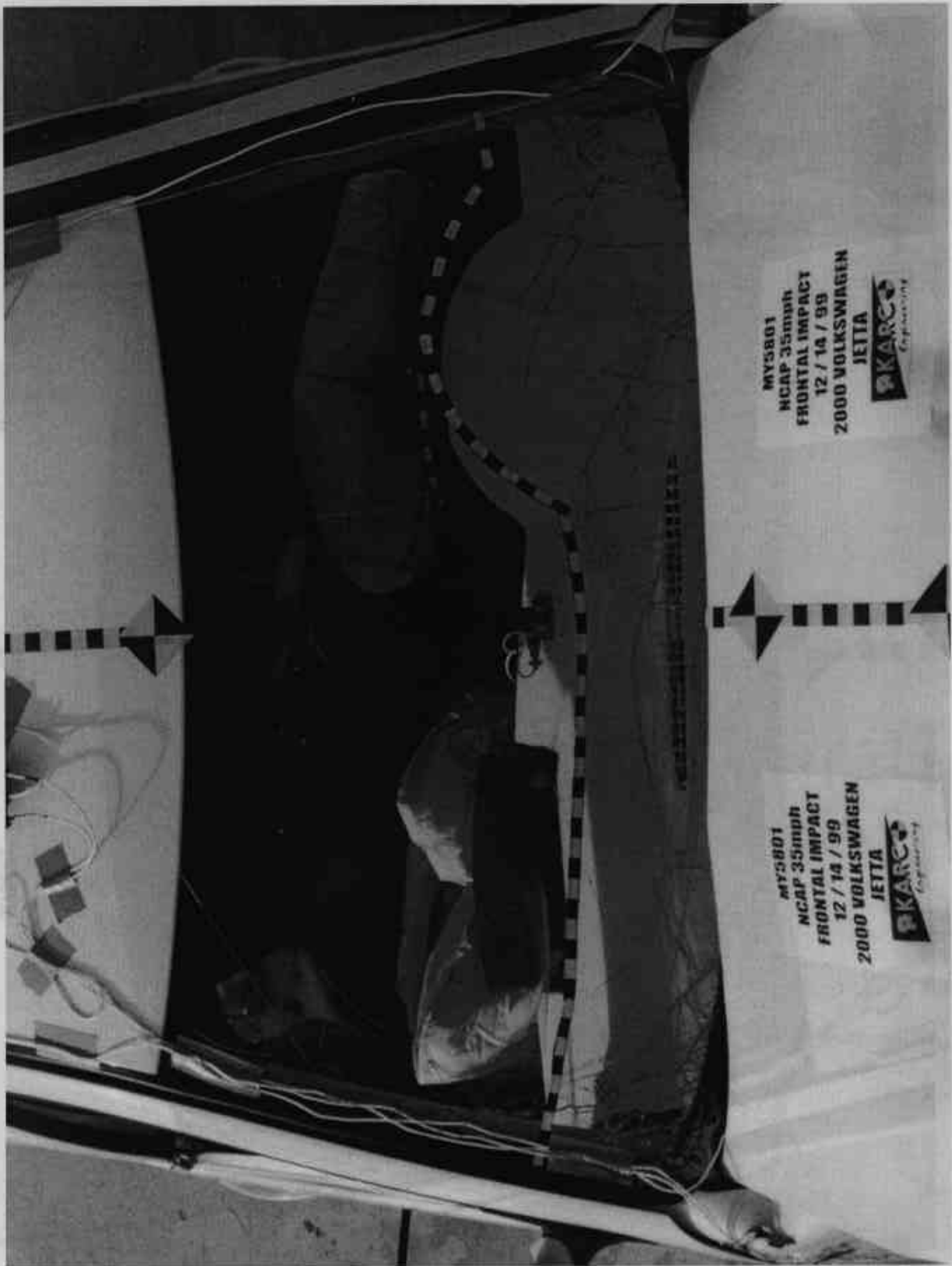


FIGURE A-16. POST TEST WINDSHIELD

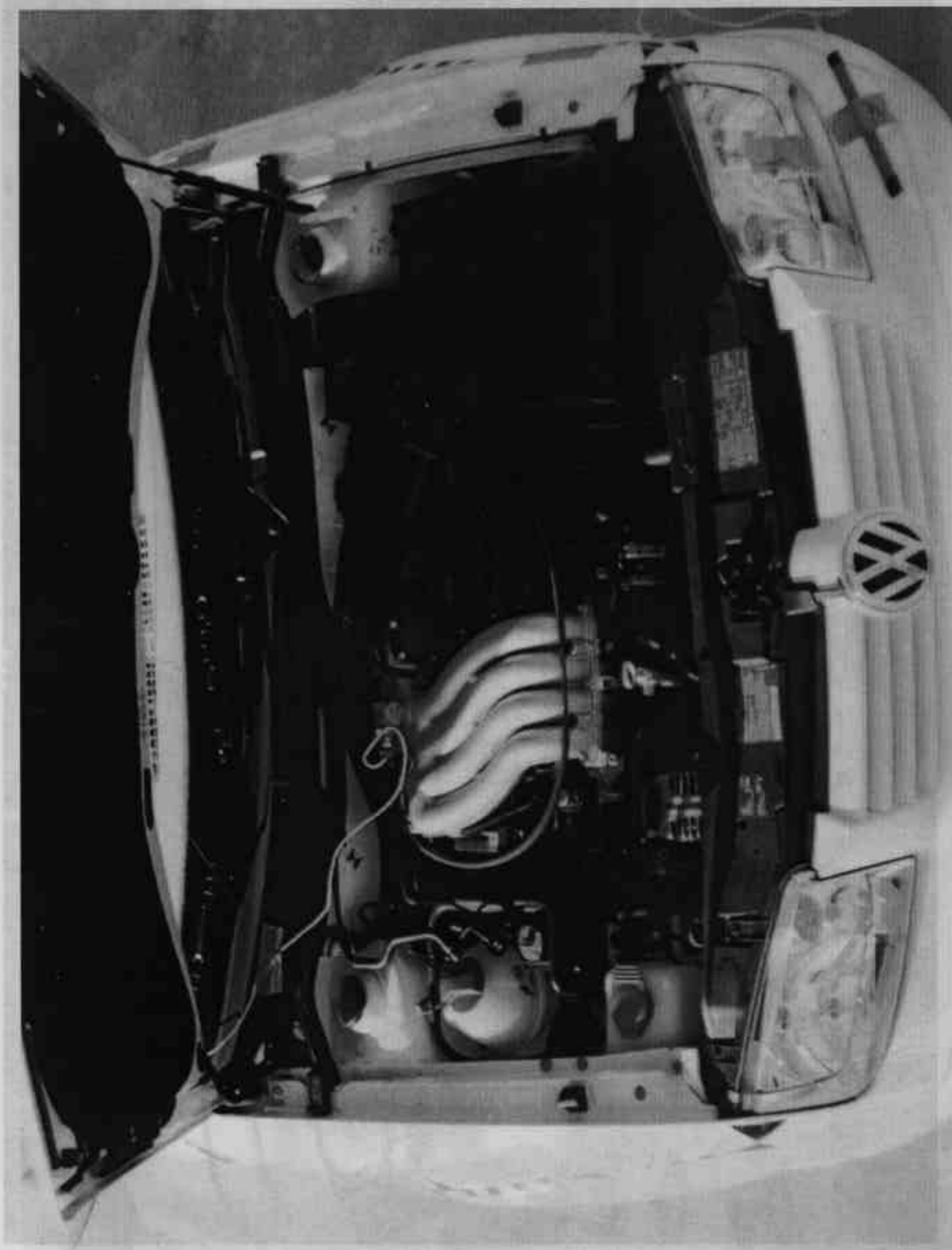


FIGURE A-17. PRETEST ENGINE COMPARTMENT

A-17

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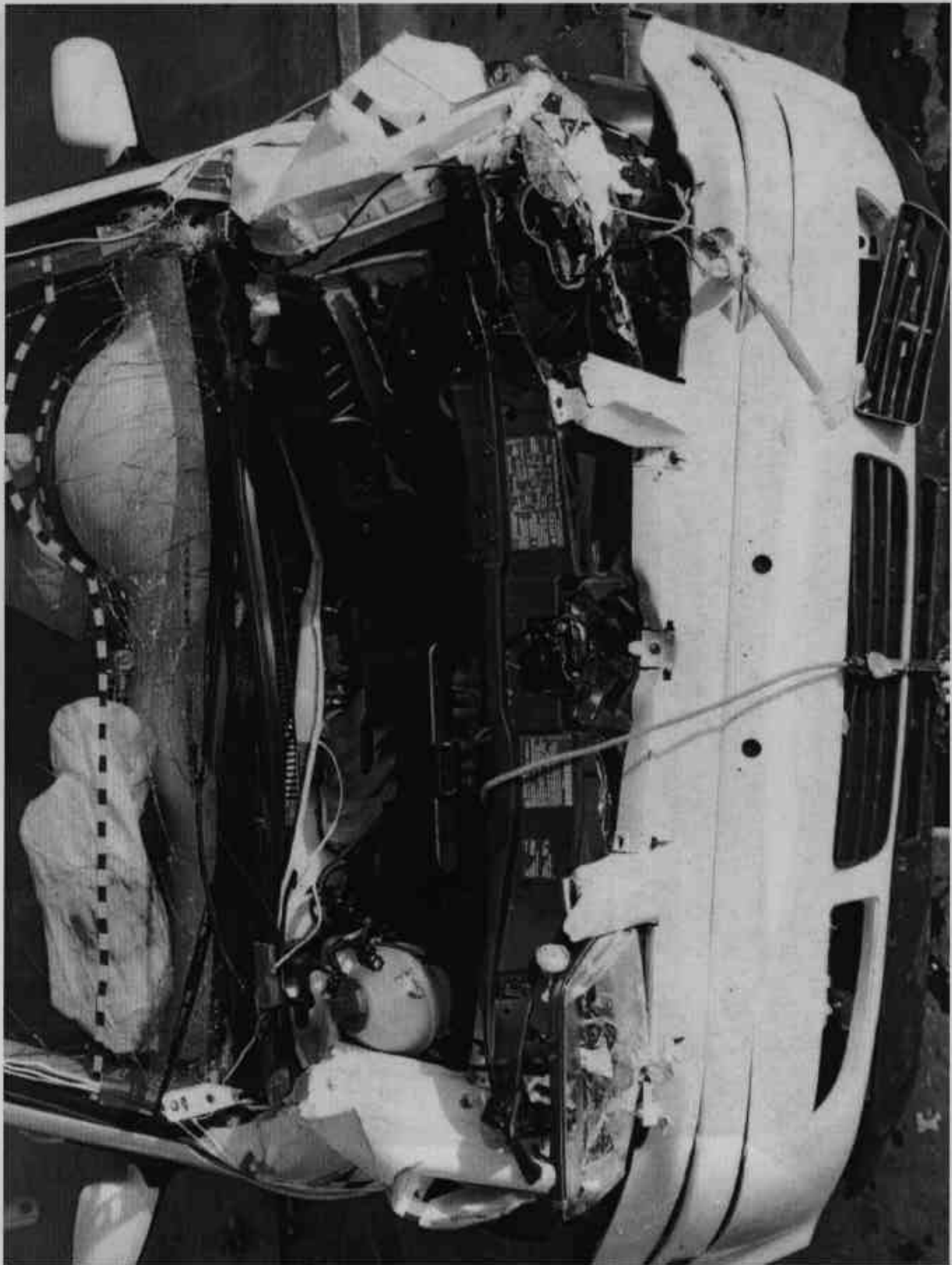


FIGURE A-18. POST TEST ENGINE COMPARTMENT

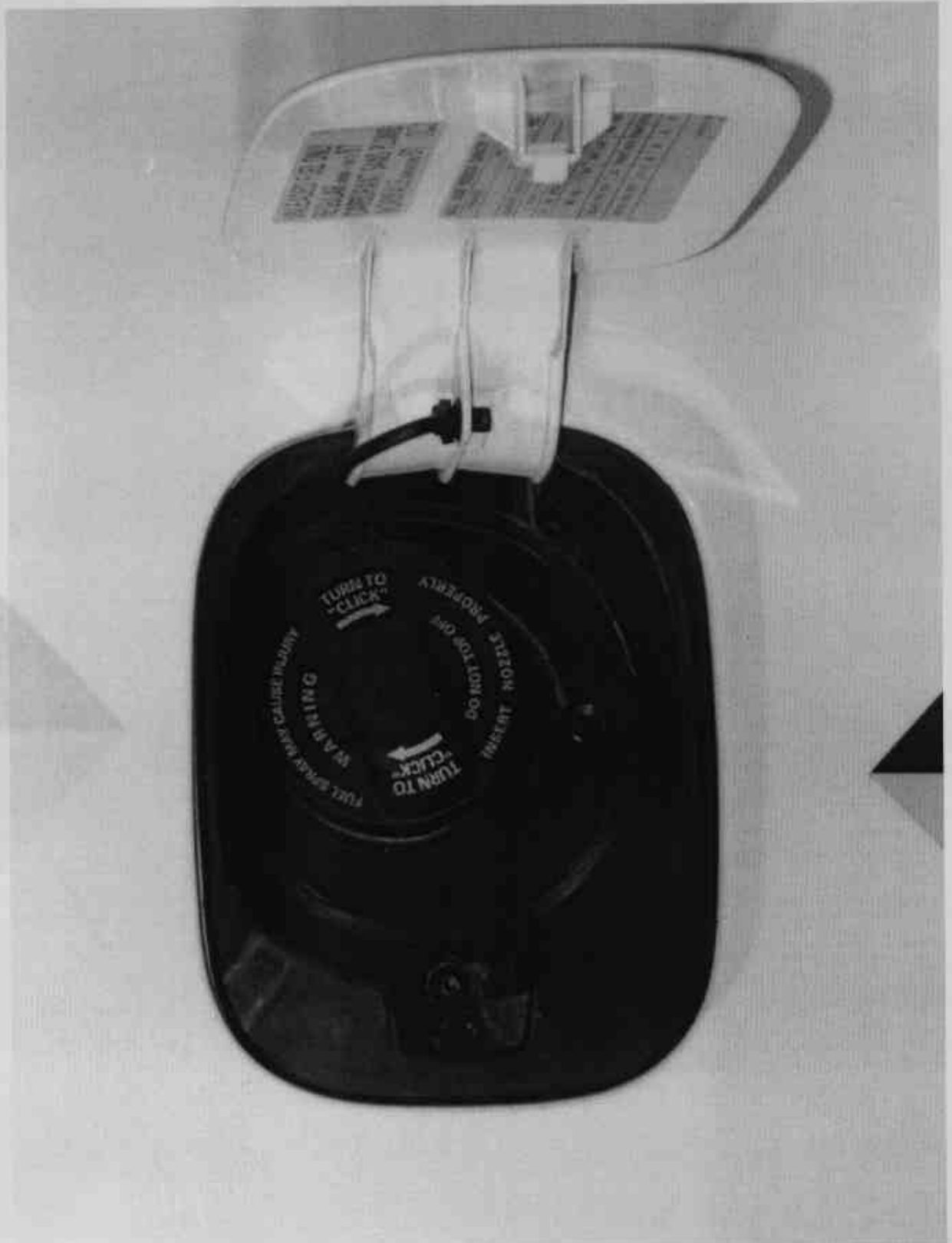


FIGURE A-19. PRETEST FUEL CAP



FIGURE A-20. POST TEST FUEL CAP

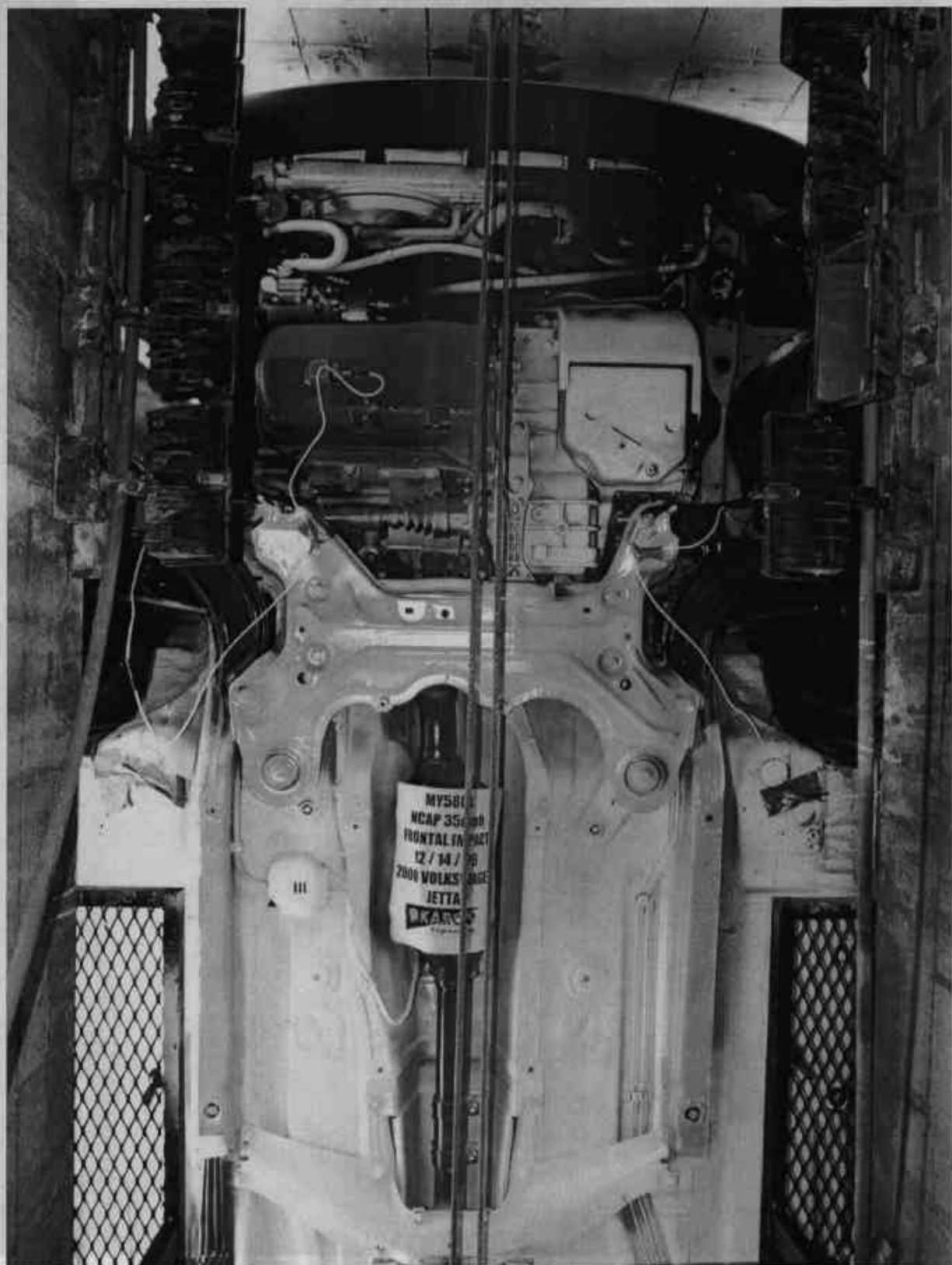


FIGURE A-21. PRETEST FRONT UNDERSIDE

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A-21

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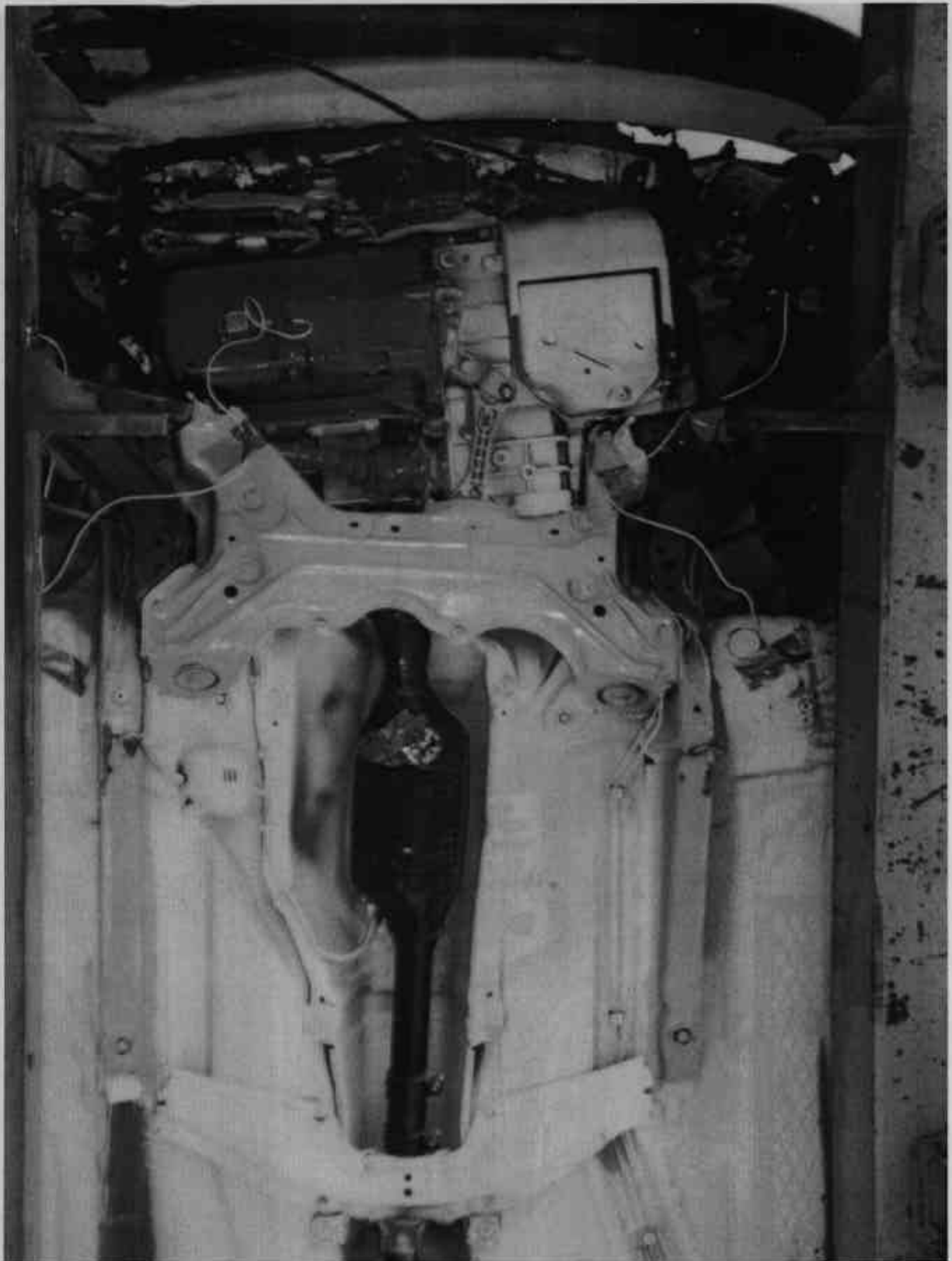


FIGURE A-22. POST TEST FRONT UNDERSIDE

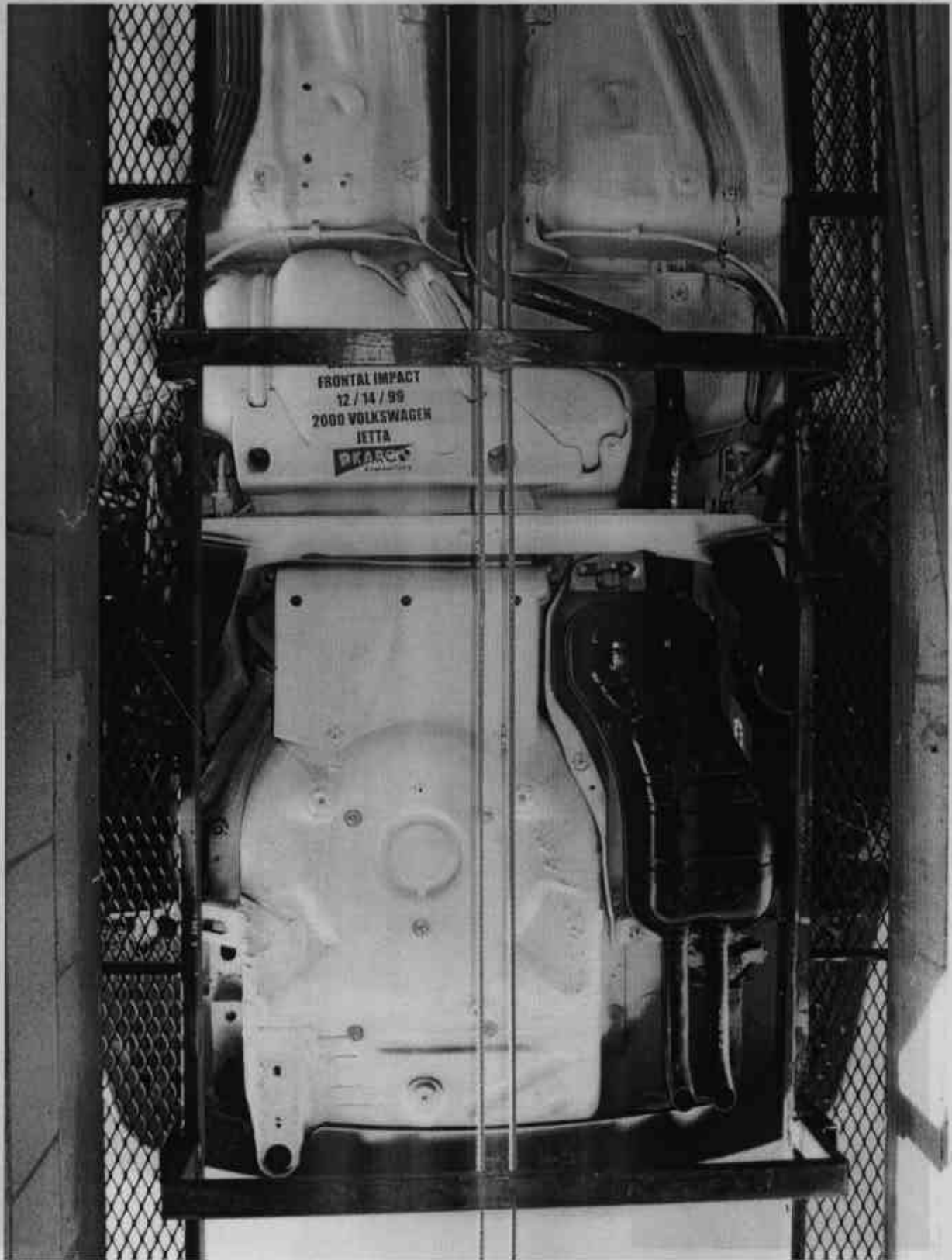


FIGURE A-23. PRETEST REAR UNDERSIDE

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A-23

KAR20001-05

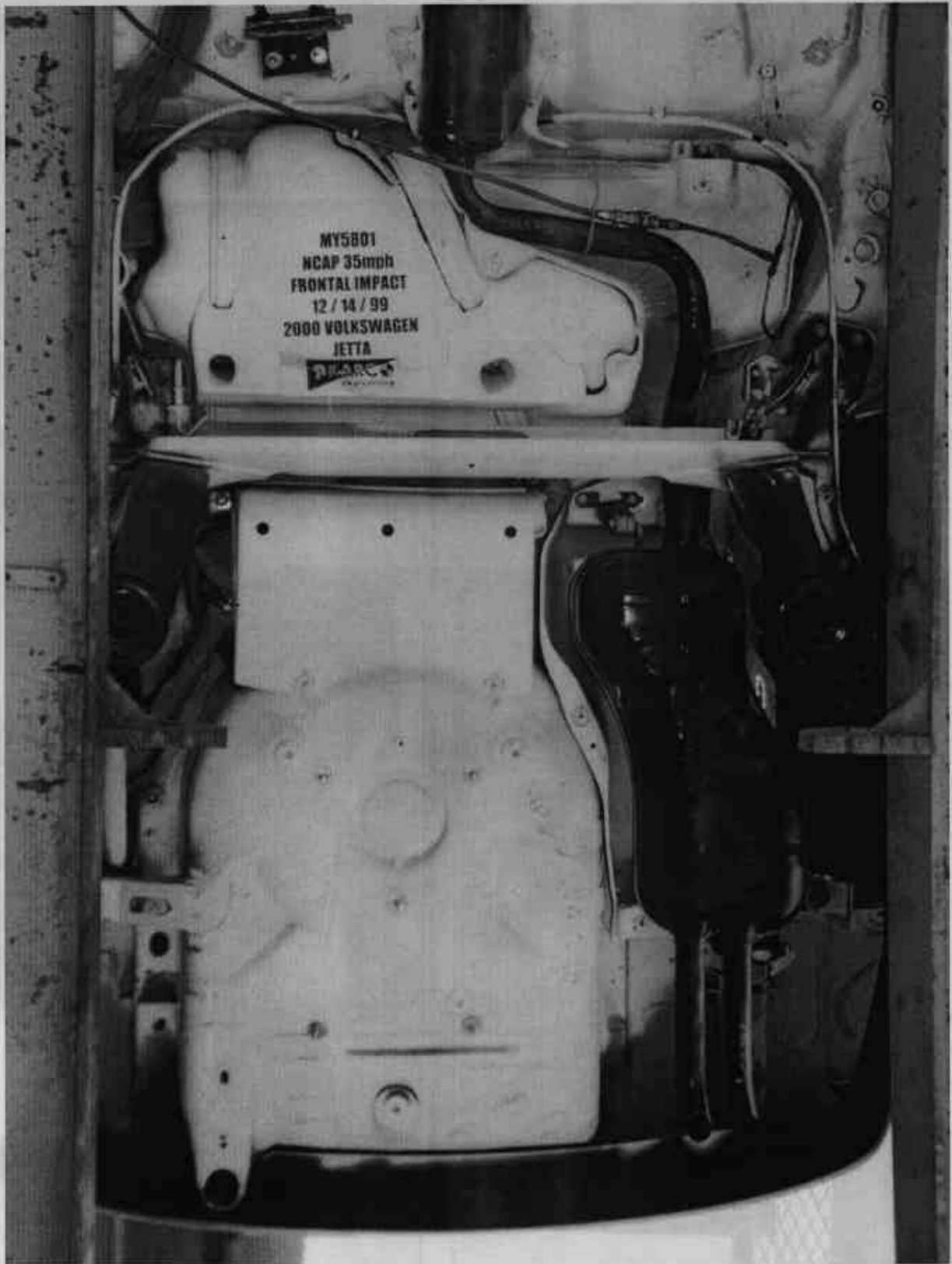


FIGURE A-24. POST TEST REAR UNDERSIDE

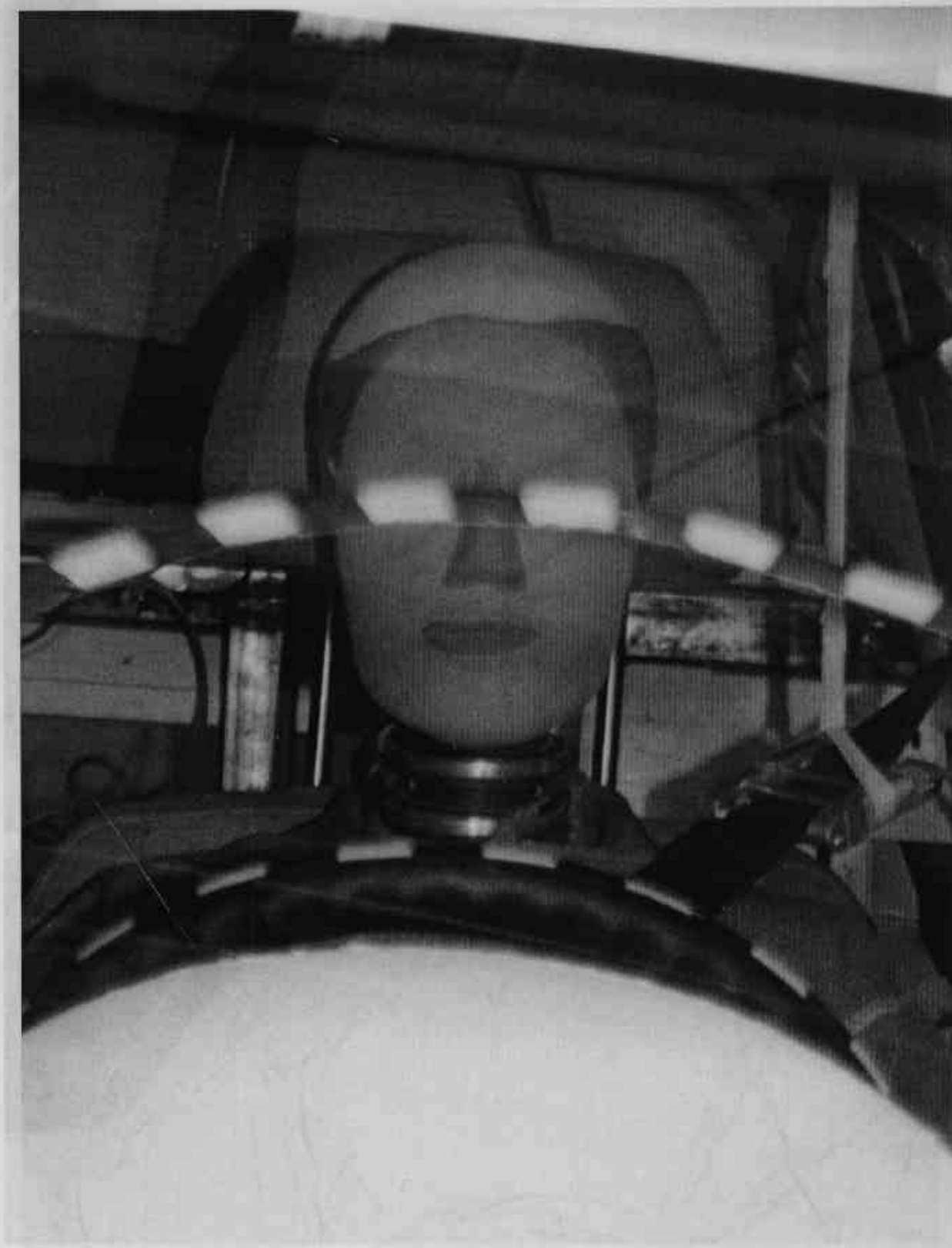


FIGURE A-25. PRETEST DRIVER DUMMY (FRONT VIEW)

KAR20001-05

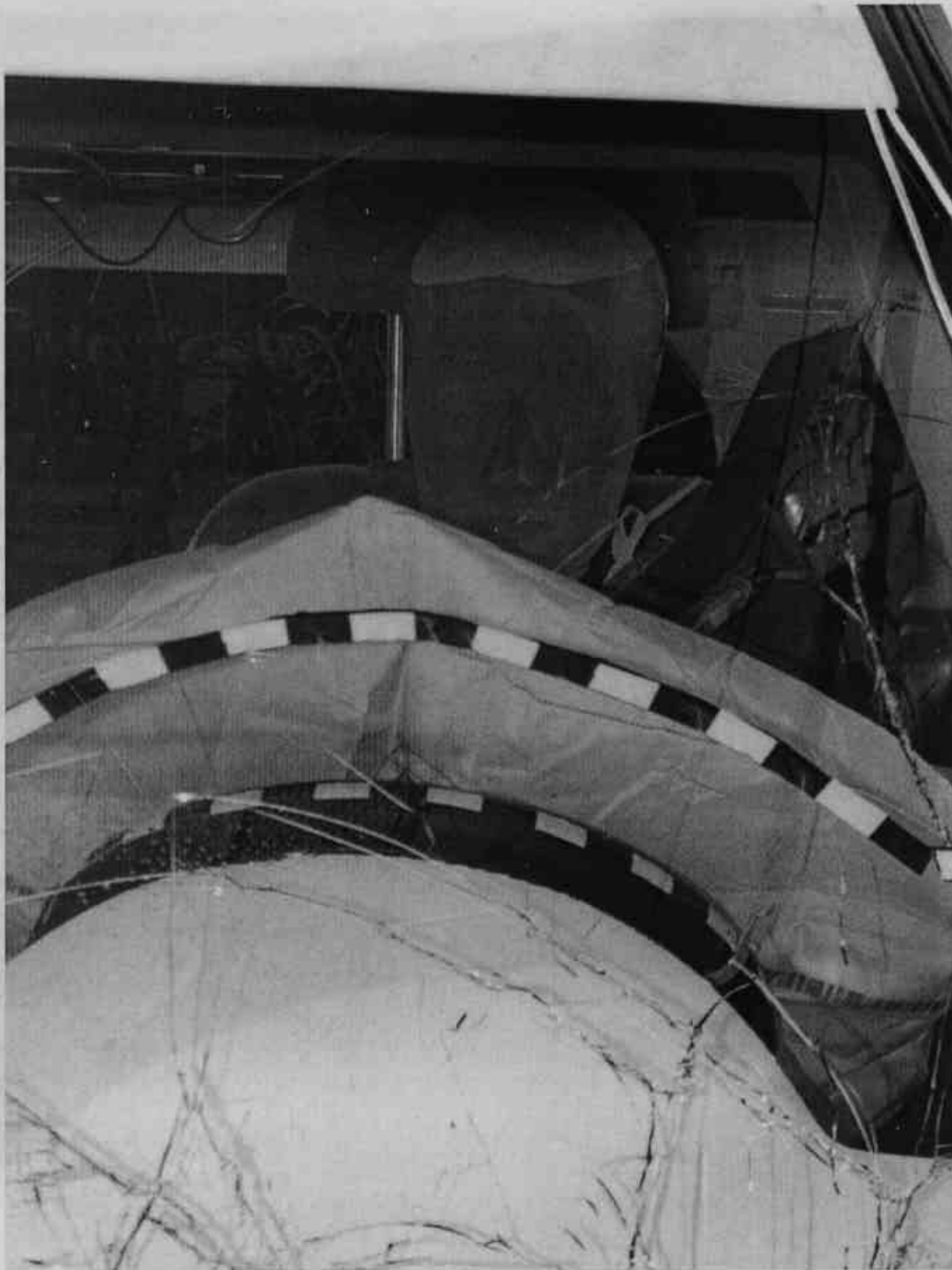


FIGURE A-26. POST TEST DRIVER DUMMY (FRONT VIEW)



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



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



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



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



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

KAR20001-05

A-31

KAR20001-05



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



FIGURE A-33. PRETEST DRIVER DUMMY FEET

KAR20001-05

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KAR20001-05



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



FIGURE A-35. PRE TEST DRIVER KNEE BOLSTER



FIGURE A-36. POST TEST DRIVER KNEE BOLSTER

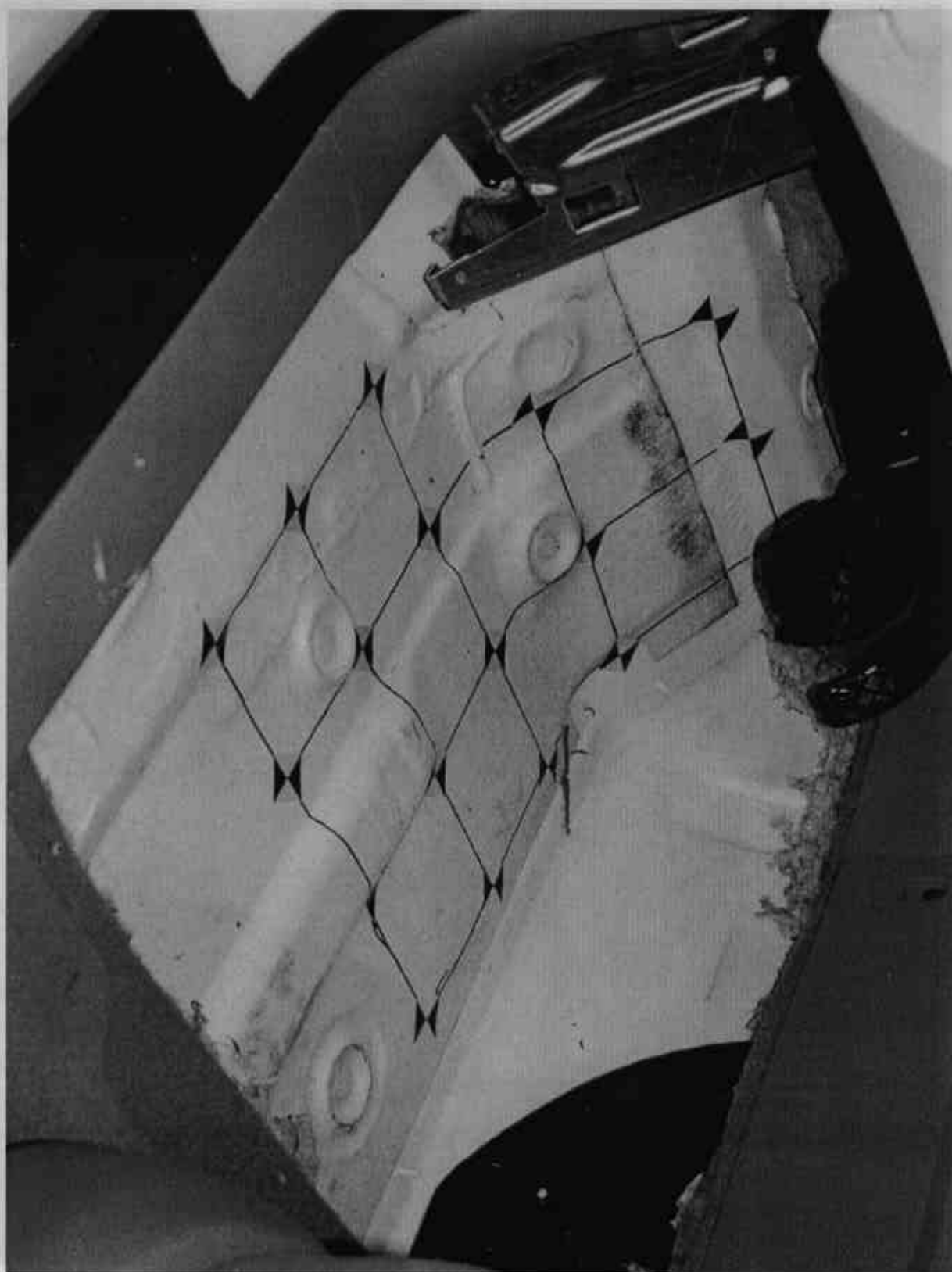


FIGURE A-37. PRE TEST DRIVER SIDE FLOOR PAN

30-10005FAM

A-37

KAR20001-05

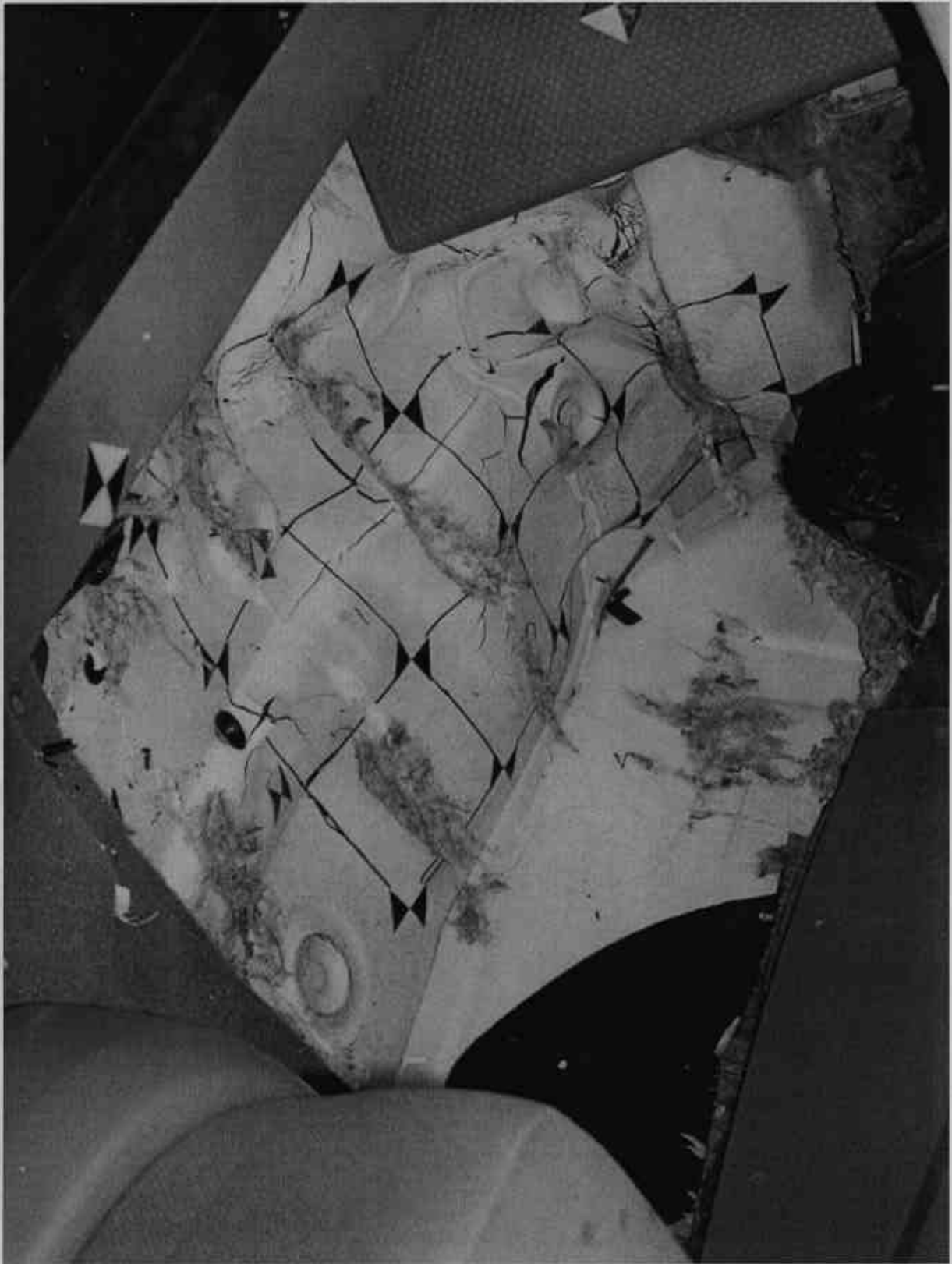


FIGURE A-38. POST TEST DRIVER SIDE FLOOR PAN



FIGURE A-39. POST TEST DRIVER HEAD

A-39

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FIGURE A-40. POST TEST DRIVER DUMMY CONTACT

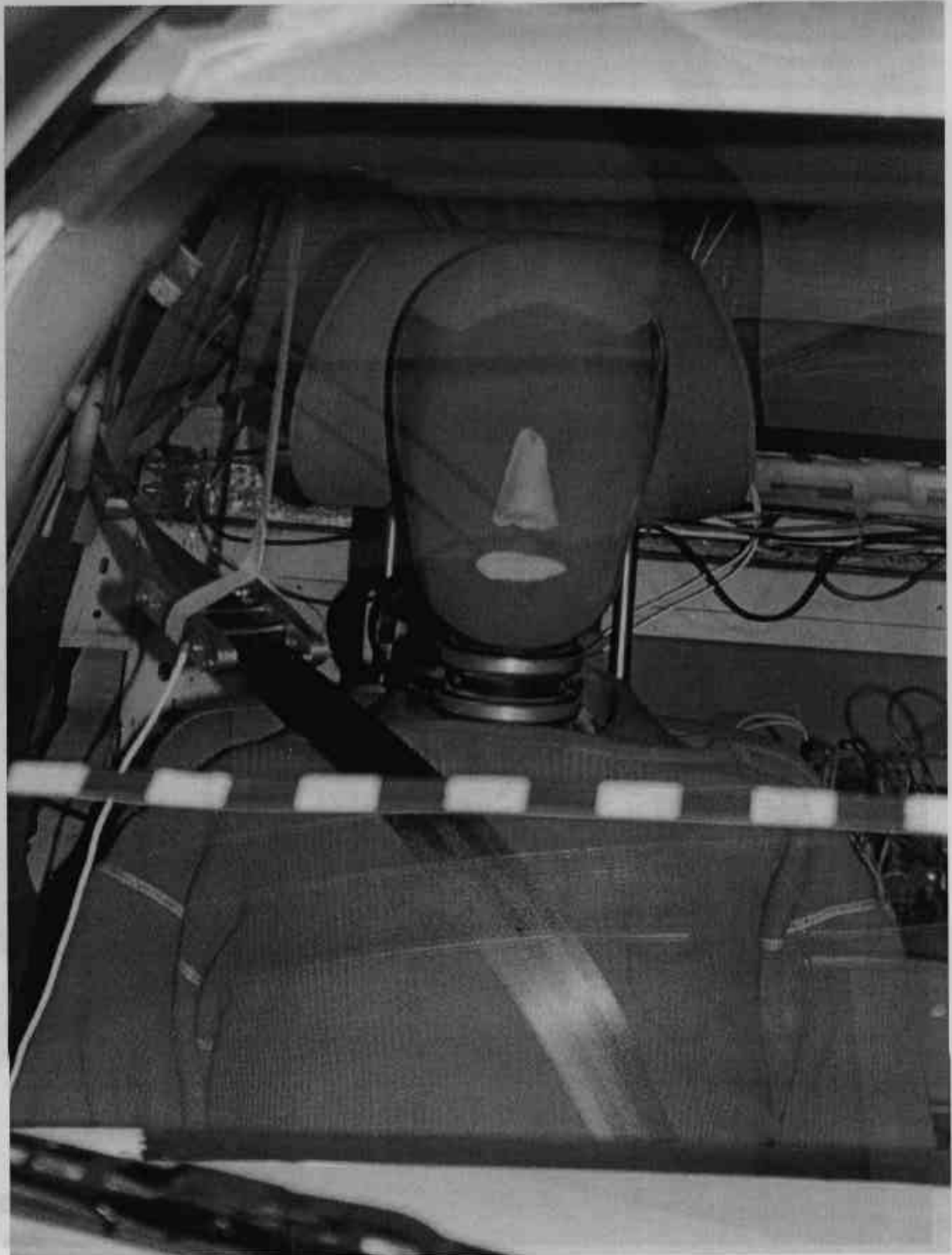


FIGURE A-41. PRE TEST PASSENGER DUMMY (FRONT VIEW)



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

**Photograph Not
Available**

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)



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



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

80-10052FAX

A-47

KAR20001-05



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

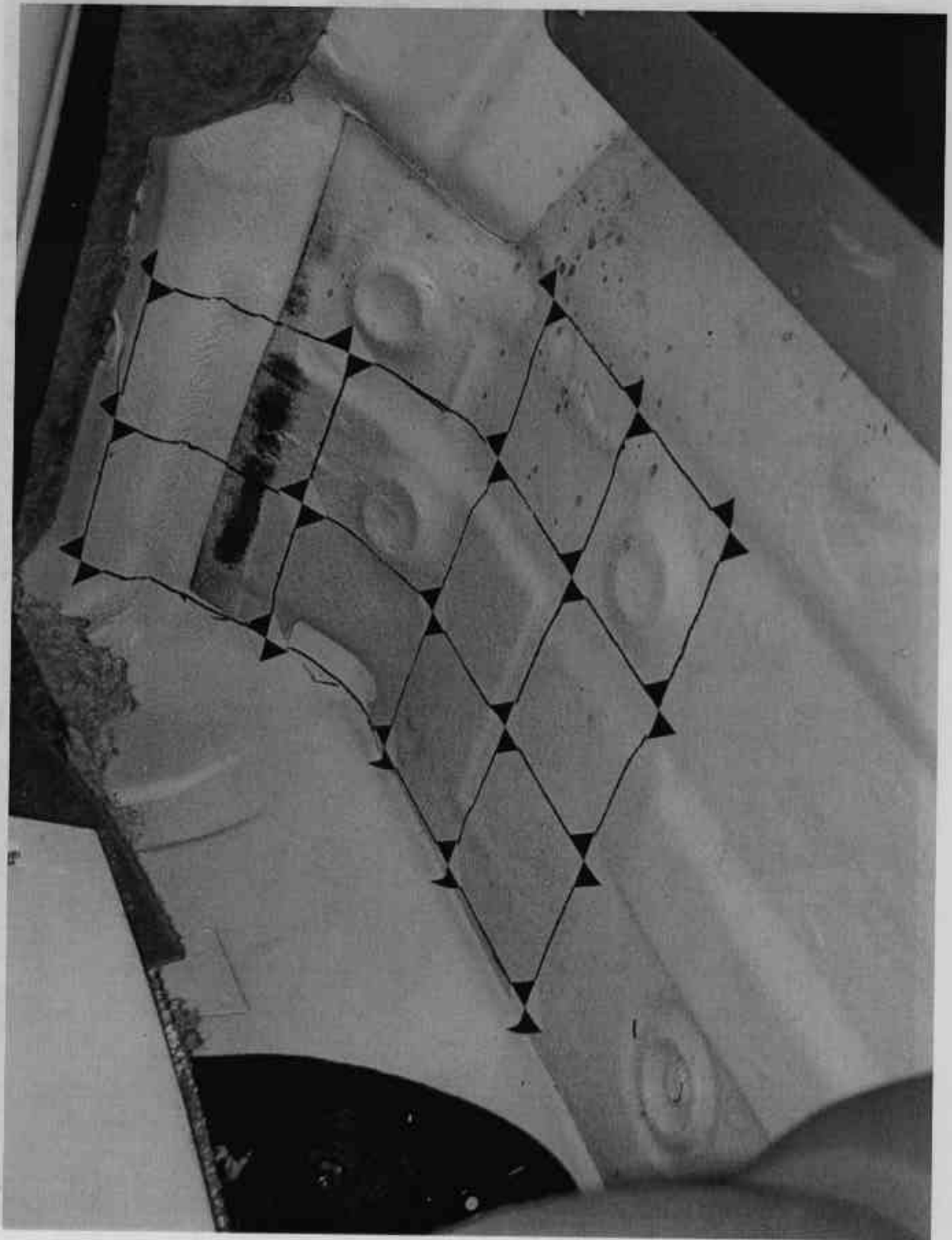


FIGURE A-51. PRETEST PASSENGER SIDE FLOOR PAN

A-51

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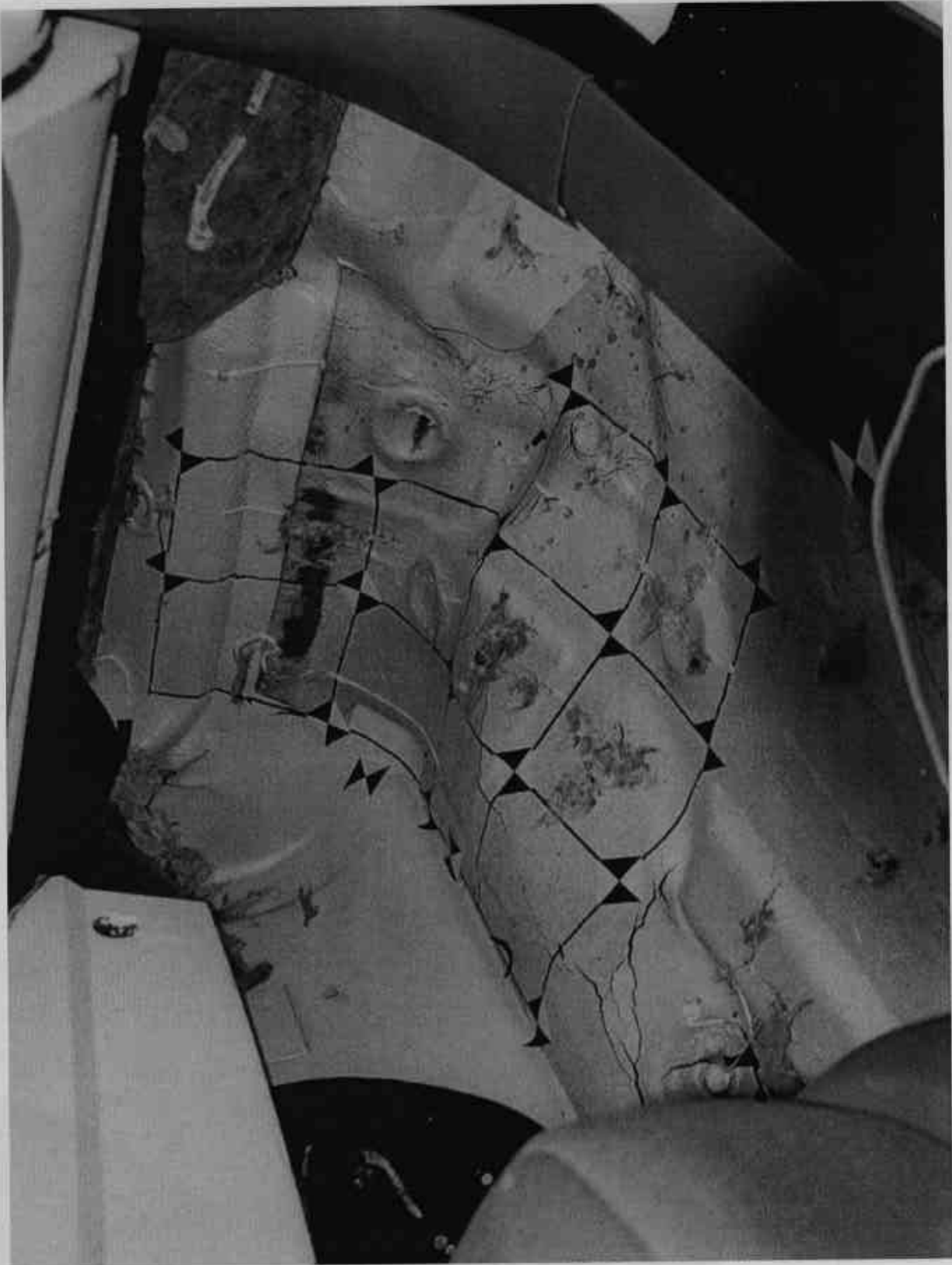


FIGURE A-52. POST TEST PASSENGER SIDE FLOOR PAN

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KAR20001-05



FIGURE A-53. PRE TEST PASSENGER SIDE KNEE BOLSTER

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

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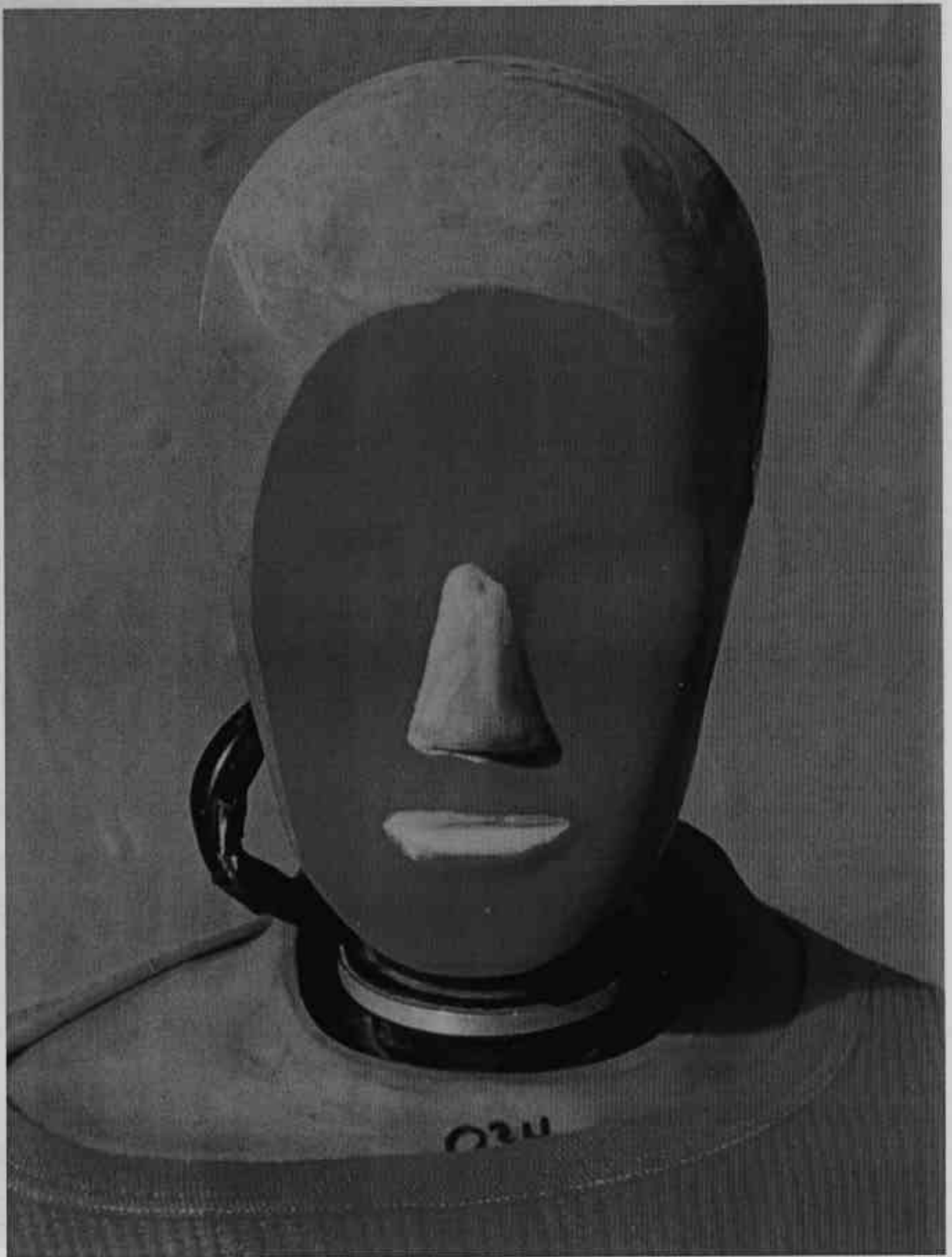


FIGURE A-55. POST TEST PASSENGER HEAD

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A-55

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FIGURE A-56. POST TEST PASSENGER DUMMY CONTACT

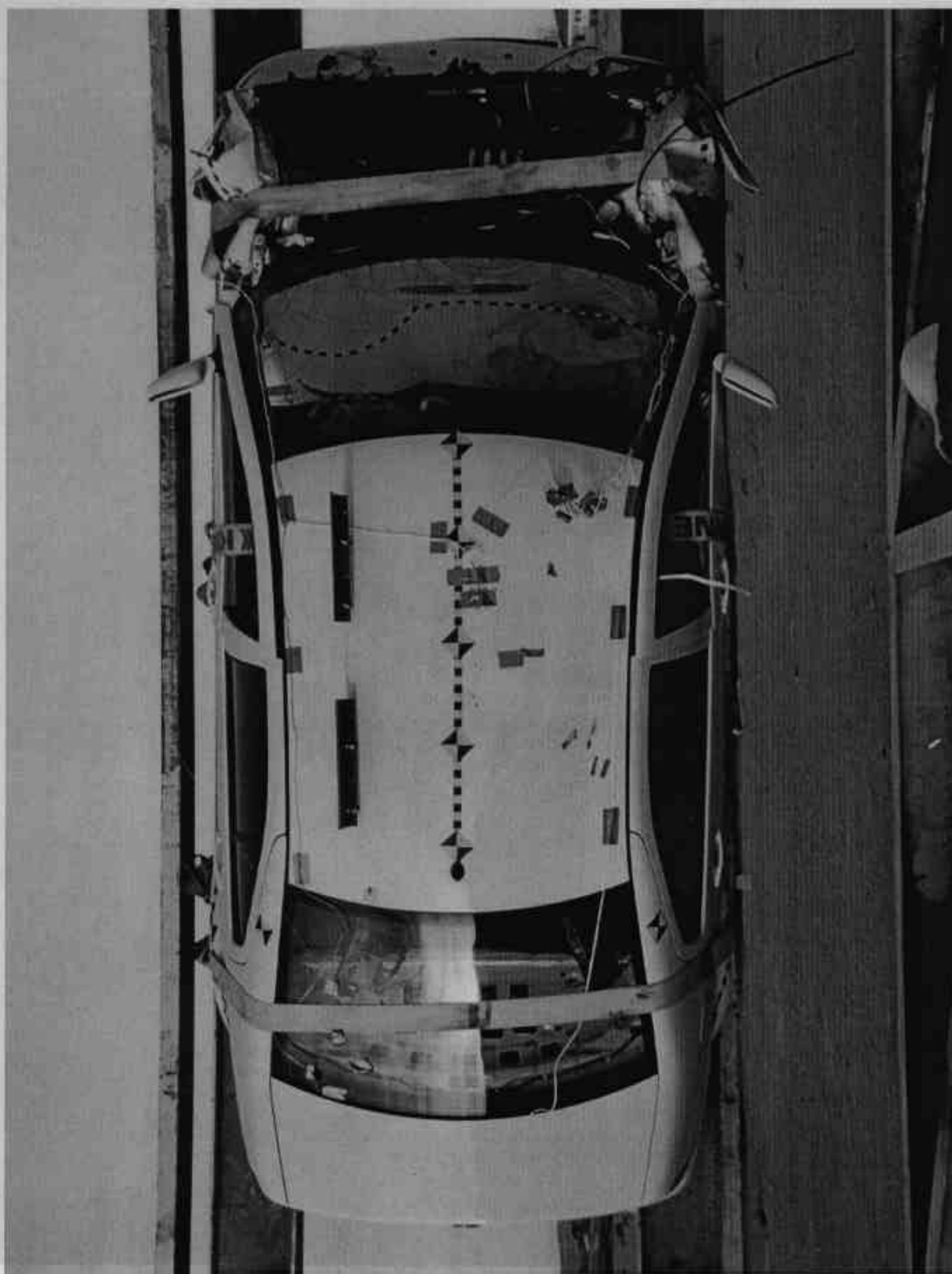


FIGURE A-57. VEHICLE ON ROLLOVER

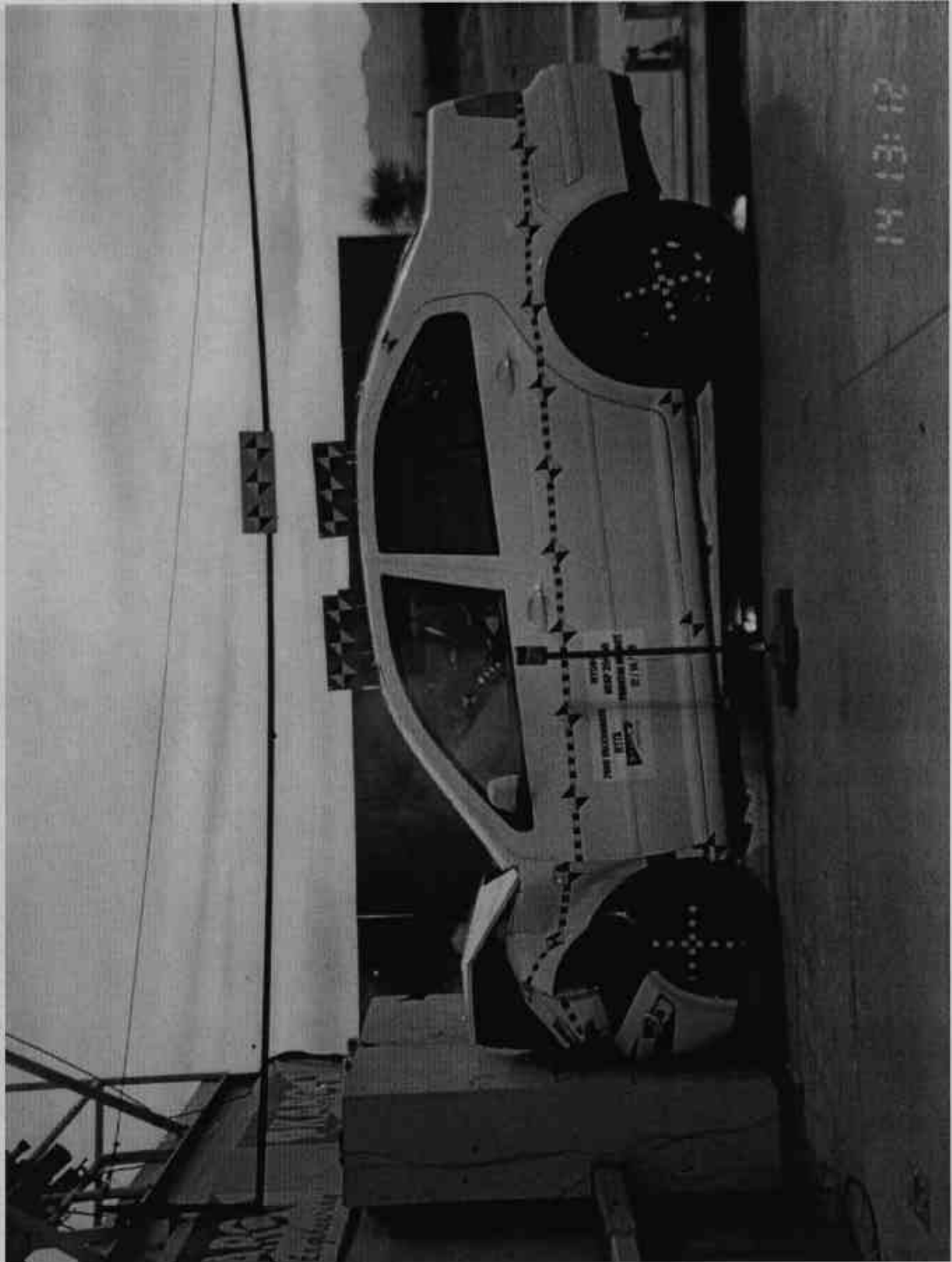


FIGURE A-58. VEHICLE DURING IMPACT

APPENDIX B
DUMMY AND VEHICLE RESPONSE DATA TRACES

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B-3 Driver Head Primary X Displacement	B-3
B-4 Driver Head Primary Y	B-4
B-5 Driver Head Primary Z	B-5
B-6 Driver Head Resultant Primary	B-6
B-7 Driver 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
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B-24 Driver Chest Primary Y	B-24
B-25 Driver Chest Primary Z	B-25
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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)

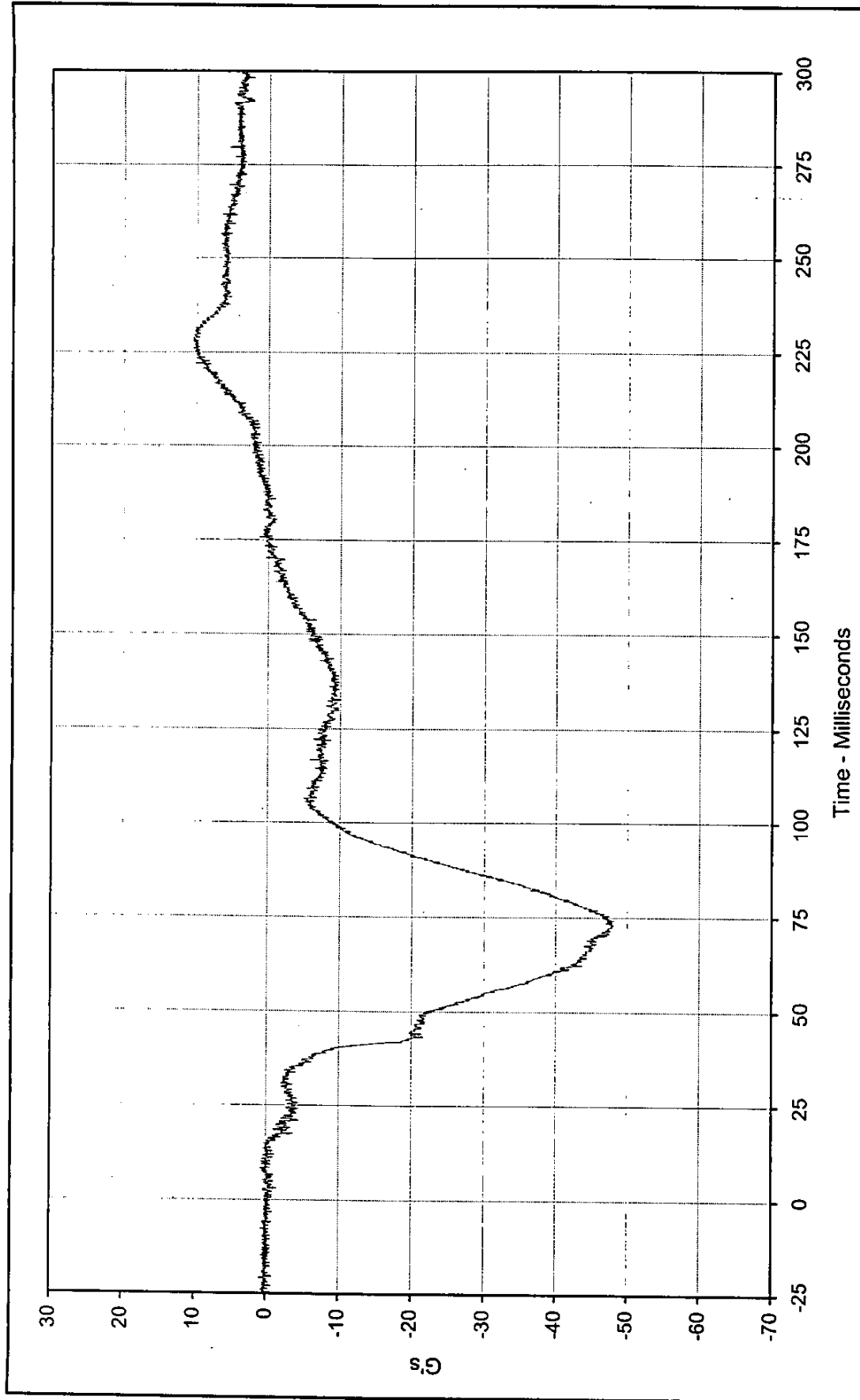
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B-63 Passenger Head Primary X Velocity	B-63
B-64 Passenger Head Primary X Displacement	B-64
B-65 Passenger Head Primary Y	B-65
B-66 Passenger Head Primary Z	B-66
B-67 Passenger Head Resultant Primary	B-67
B-68 Passenger Head Redundant X	B-68
B-69 Passenger Head Redundant X Velocity	B-69
B-70 Passenger Head Redundant X Displacement	B-70
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B-72 Passenger Head Redundant Z	B-72
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B-76 Passenger Neck Force Z	B-76
B-77 Passenger Neck Force Resultant	B-77
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B-93 Passenger Chest Redundant Resultant	B-93
B-94 Passenger Chest Displacement X	B-94

LIST OF DATA PLOTS...(Continued)

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B-96 Passenger Pelvis X Velocity	B-96
B-97 Passenger Pelvis X Displacement	B-97
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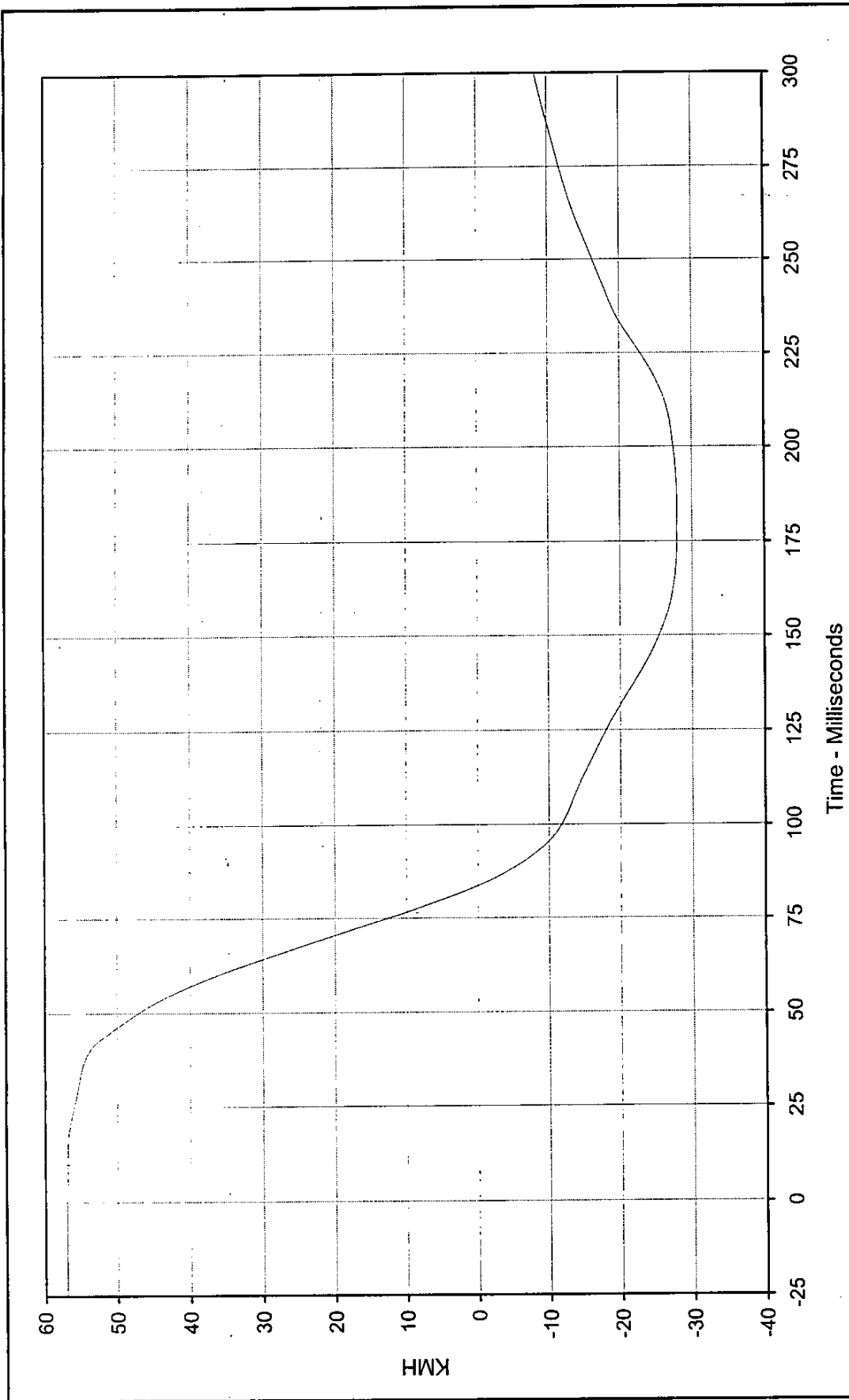
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Curve Description:	Driver Head Primary X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	10.5 at 226.1 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-48.1 at 73.0 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/14/99			
Curve Number:	FIL-001			

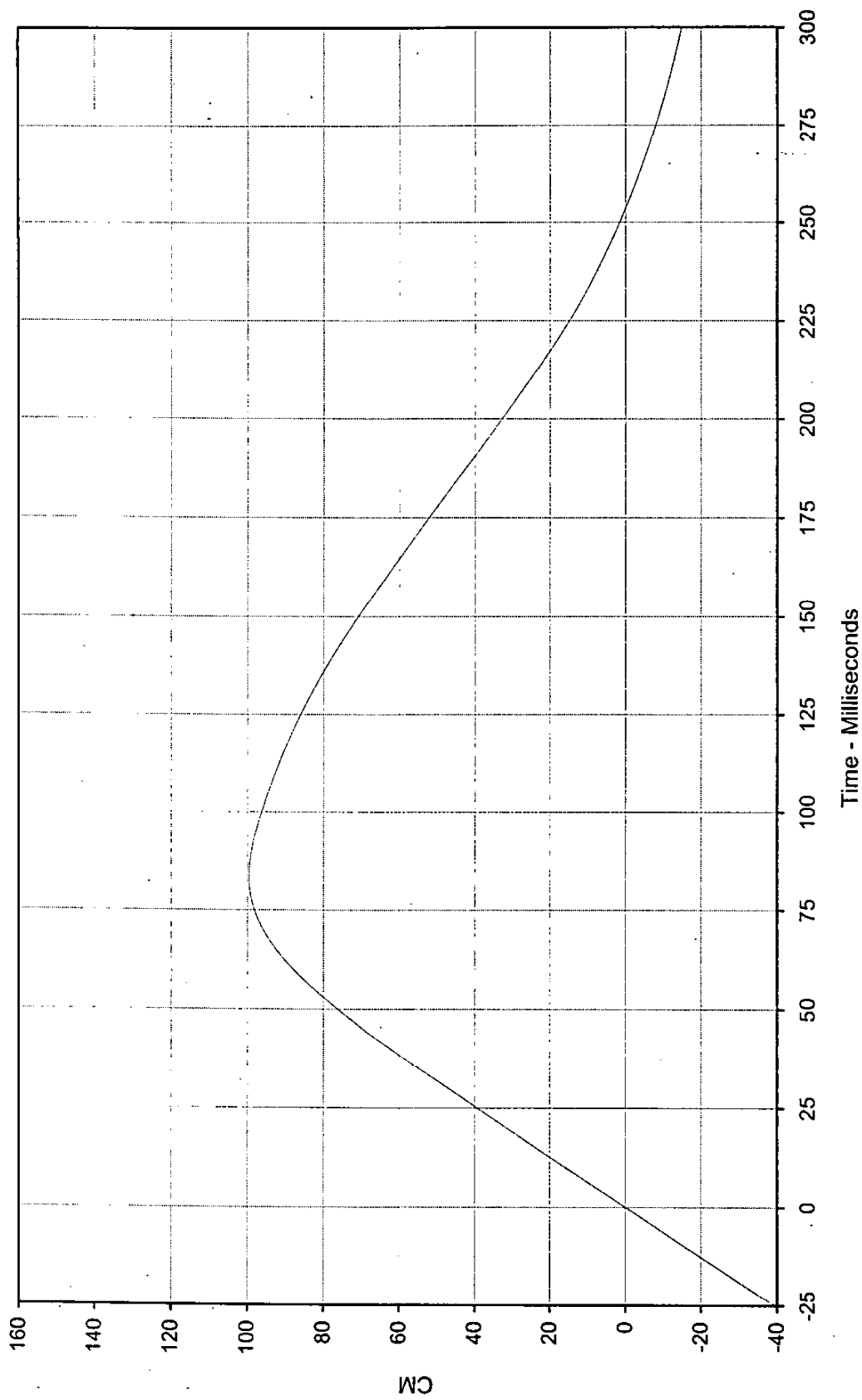




Curve Description: Driver Head Primary X Velocity
 Maximum Value: 57.0 at 0.0 Milliseconds
 Minimum Value: -27.9 at 182.4 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/14/99
 Curve Number: IN1-001

Testing Program 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

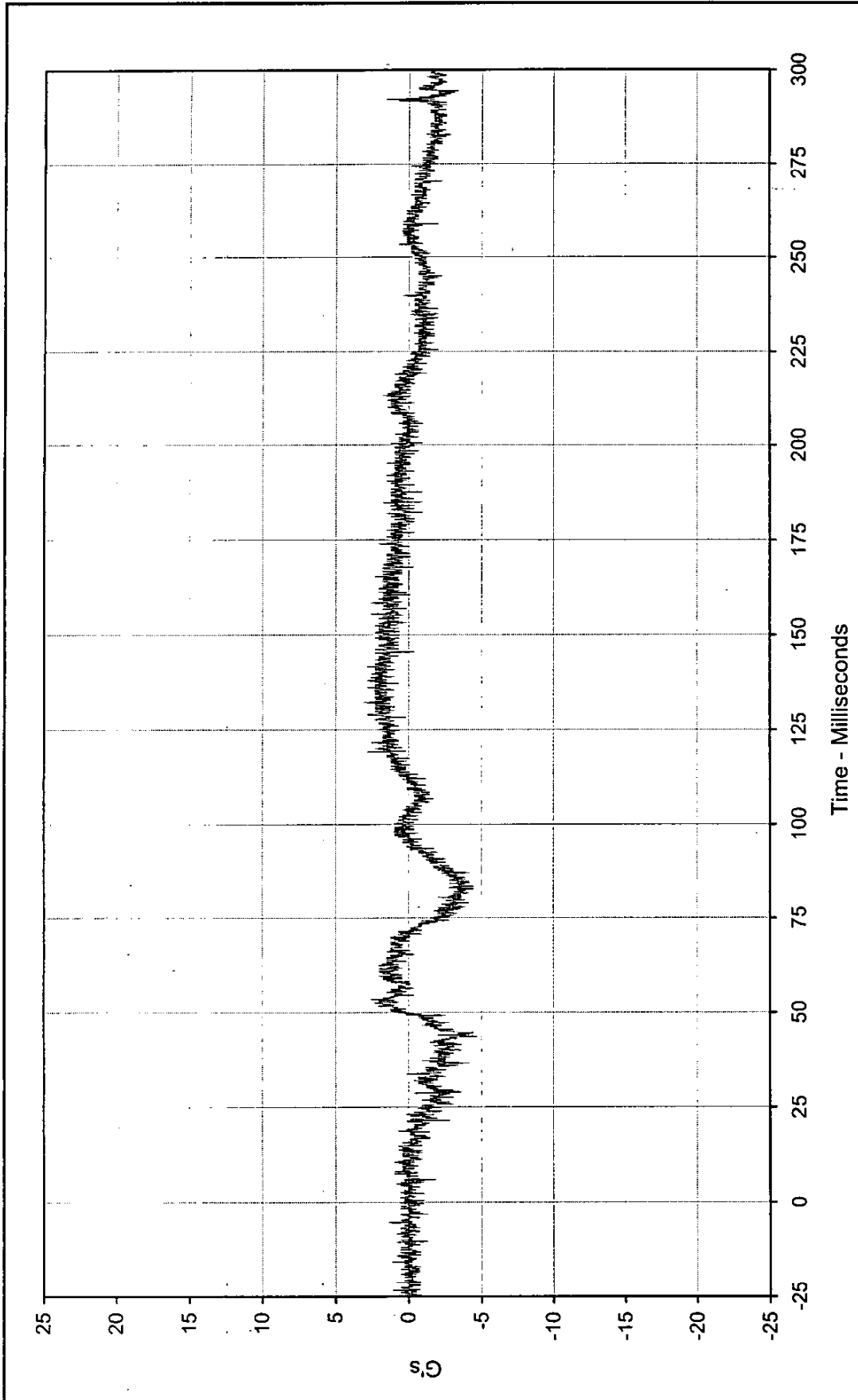




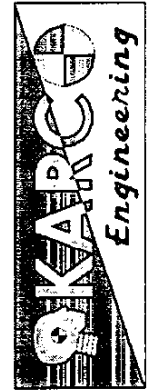
Curve Description: Driver Head Primary X Displ.
 Maximum Value: 99.6 at 83.5 Milliseconds
 Minimum Value: -14.9 at 299.9 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/14/99
 Curve Number: IN2-001

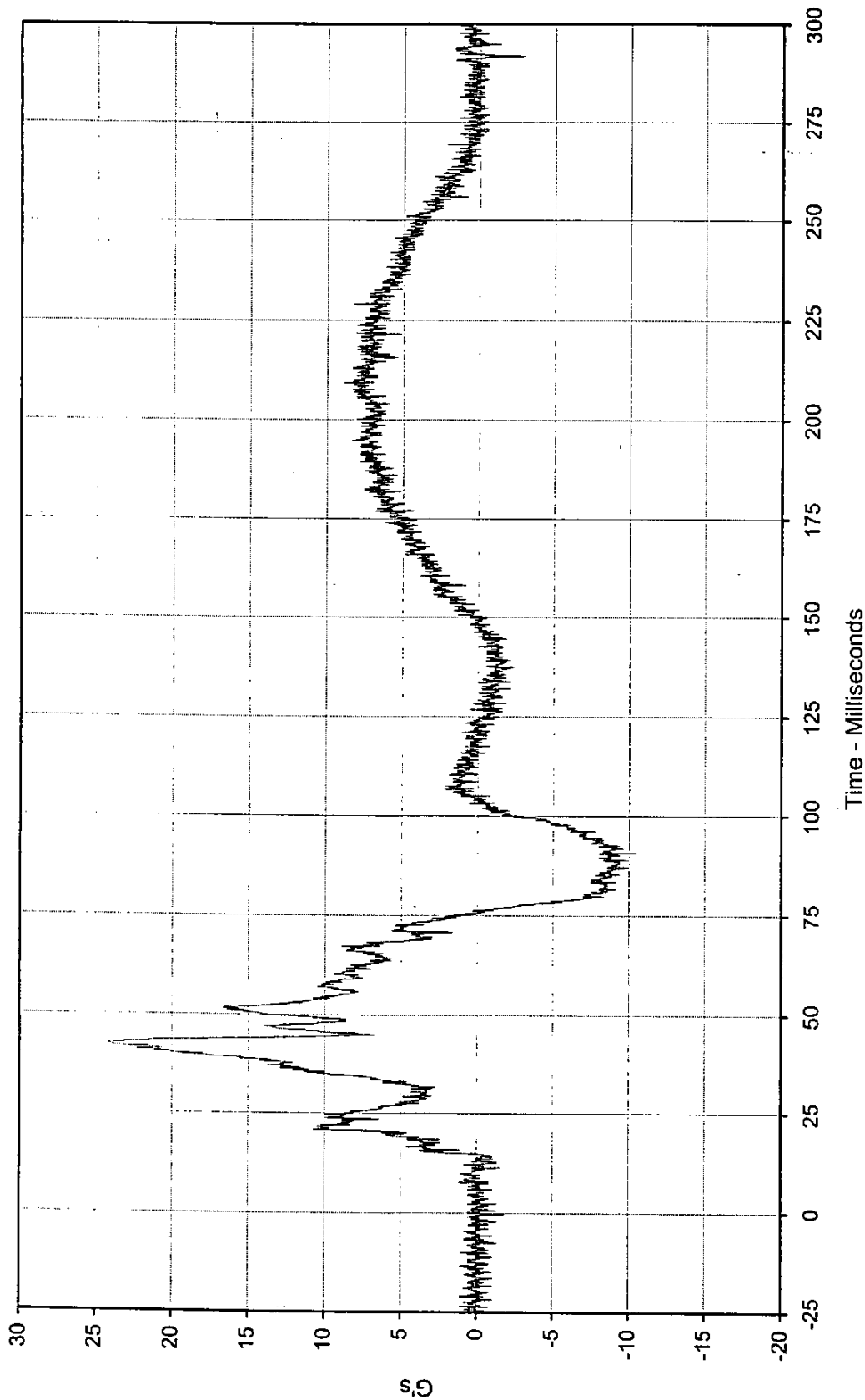
Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:		Driver Head Primary Y		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	3.1	at	132.2	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-4.7	at	43.7			
SAE Filter Class:	1000					
Date of Test:	12/14/99					
Curve Number:	FIL-002					





Curve Description: Driver Head Primary Z

Maximum Value: 24.2 at 42.6 Milliseconds

Minimum Value: -10.5 at 90.6 Milliseconds

SAE Filter Class: 1000

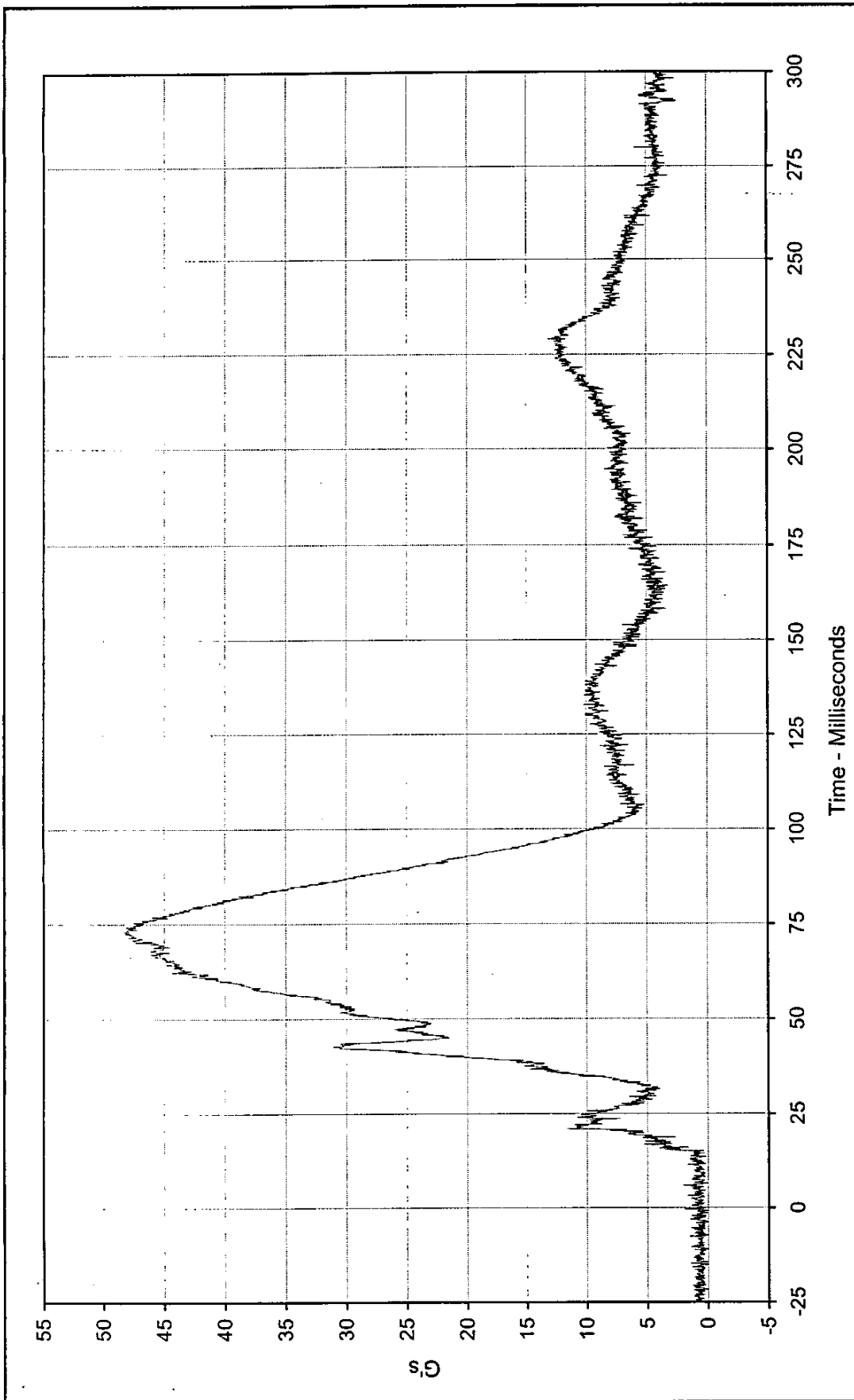
Date of Test: 12/14/99

Curve Number: FIL-003

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

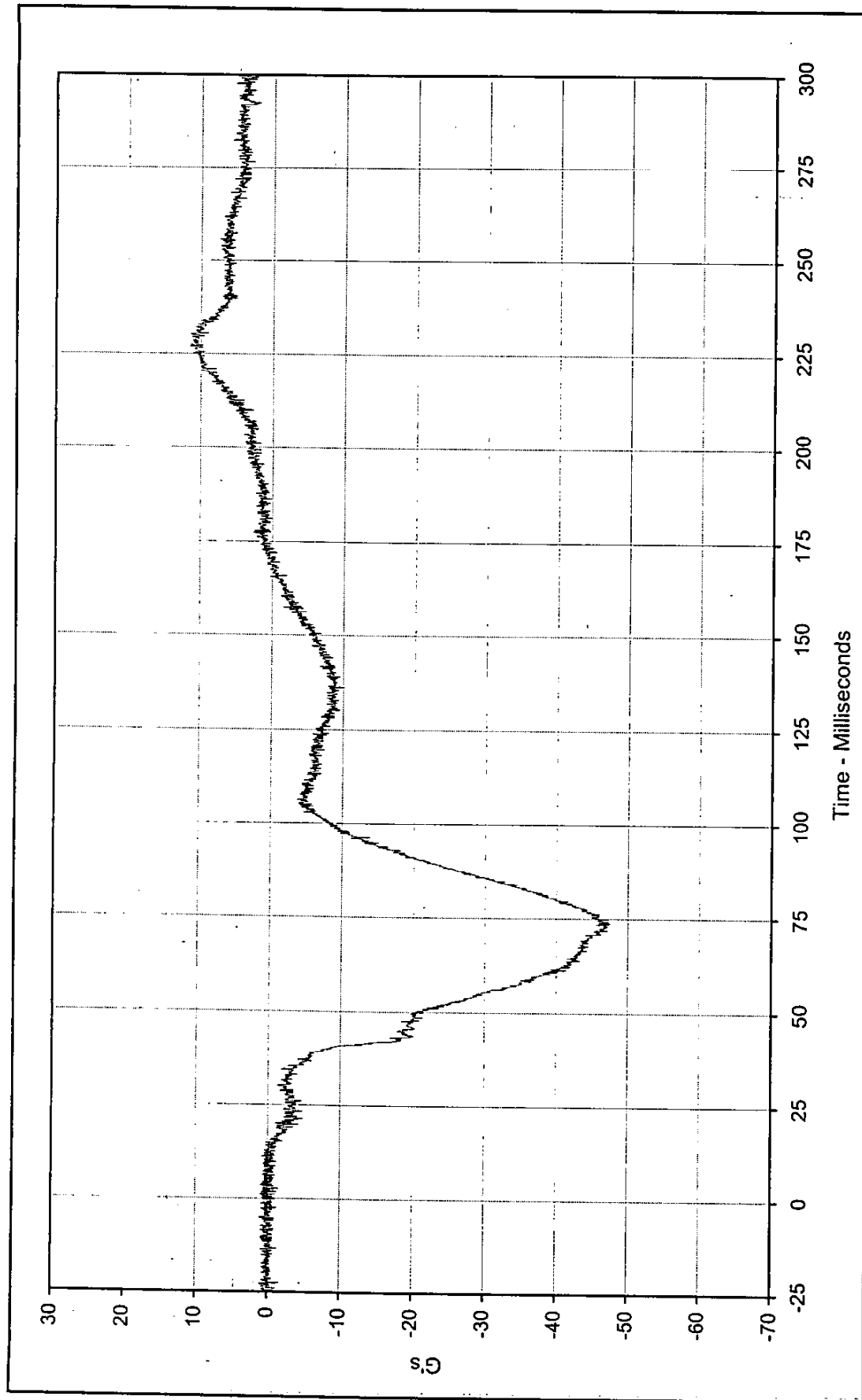
Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





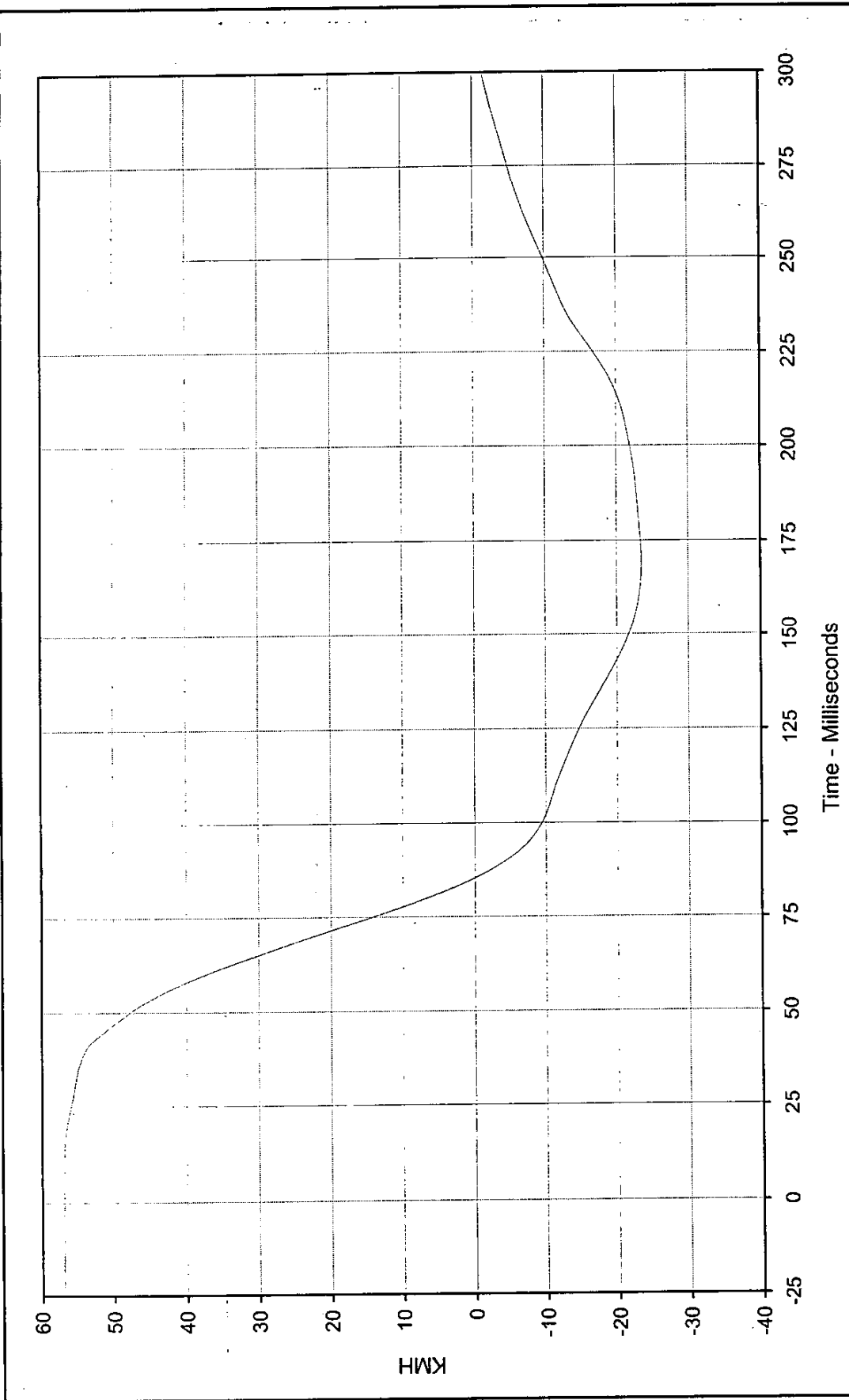
Curve Description:	Driver Head Resultant Primary	Test Program:	2000 NHTSA 35 mph NCAP No.: MY5801
Maximum Value:	48.3 at 73.0 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan
Minimum Value:	0.0 at 6.5 Milliseconds		
SAE Filter Class:	1000		
Date of Test:	12/14/99		
Curve Number:	RES-001		





Curve Description:	Driver Head Redundant X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	11.6 at 227.0 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-47.5 at 73.7 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/14/99			
Curve Number:	FIL-004			



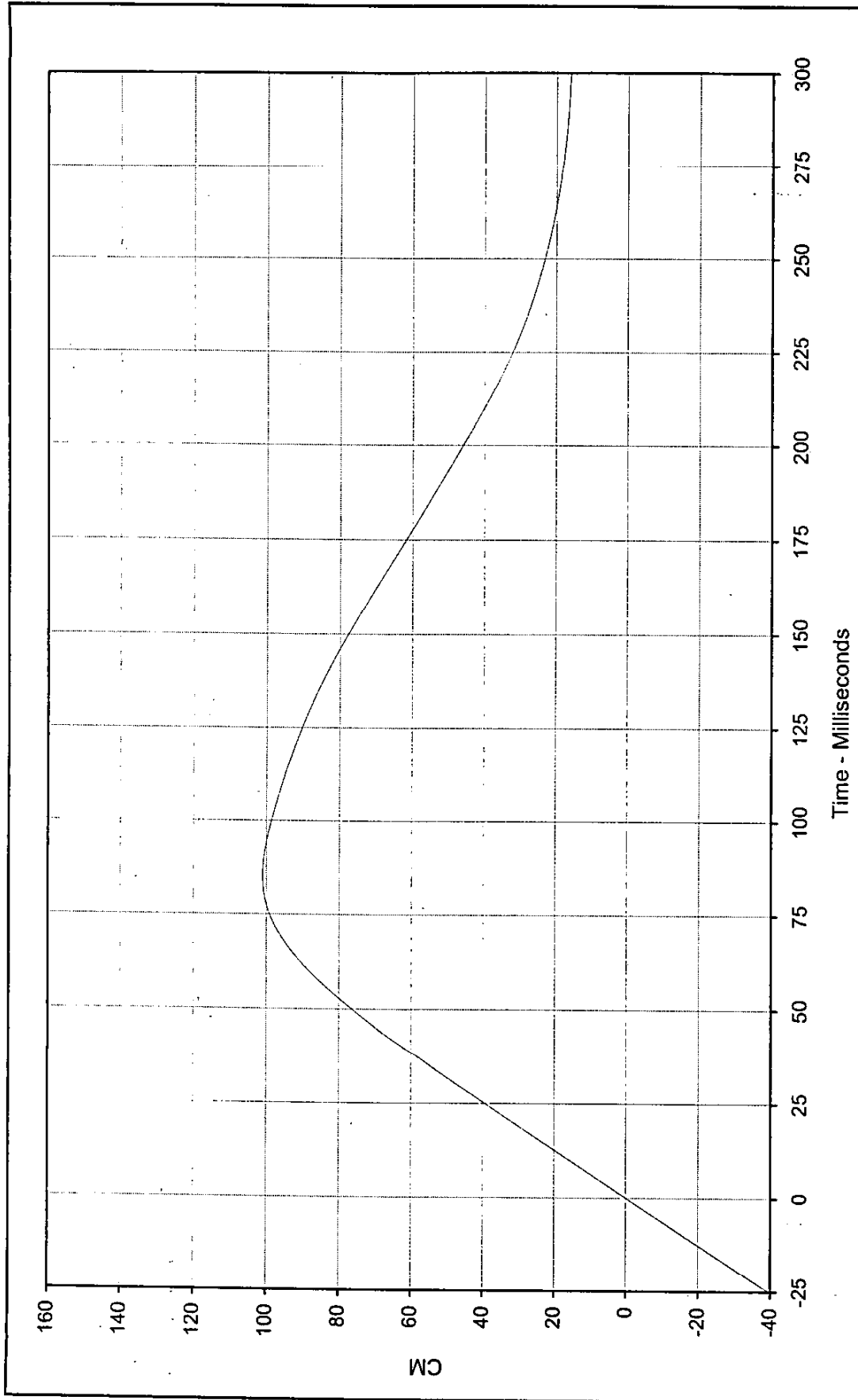


Curve Description: Driver Head Redundant X Velocity
 Maximum Value: 57.0 at 4.2 Milliseconds
 Minimum Value: -23.5 at 170.3 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/14/99
 Curve Number: IN1-004

Testing Program 2000 NHTSA 35 mph NCAP No.: MY5801

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description: Driver Head Redundant X Displ.

Maximum Value: 101.0 at 85.1 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

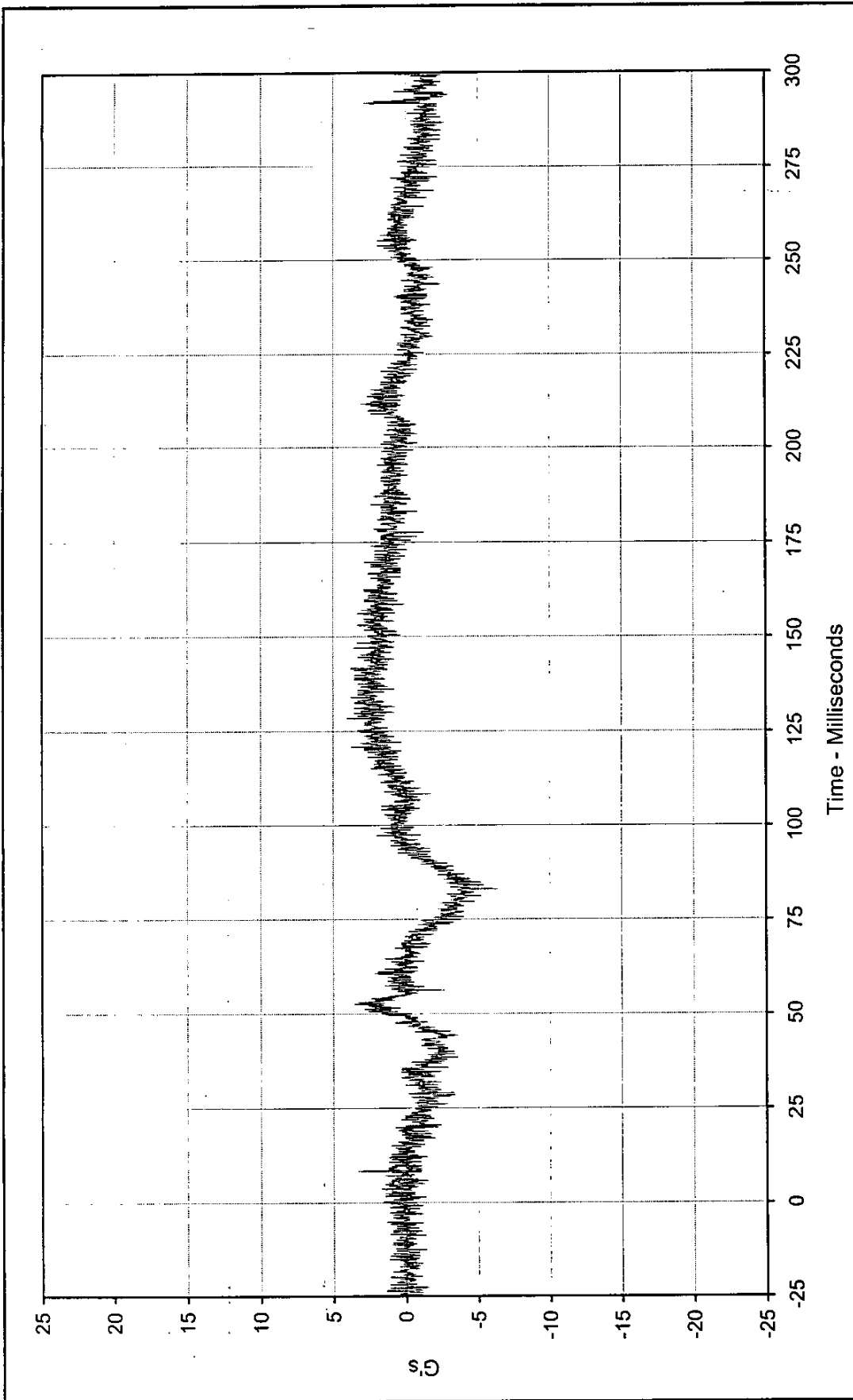
Date of Test: 12/14/99

Curve Number: IN2-004

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

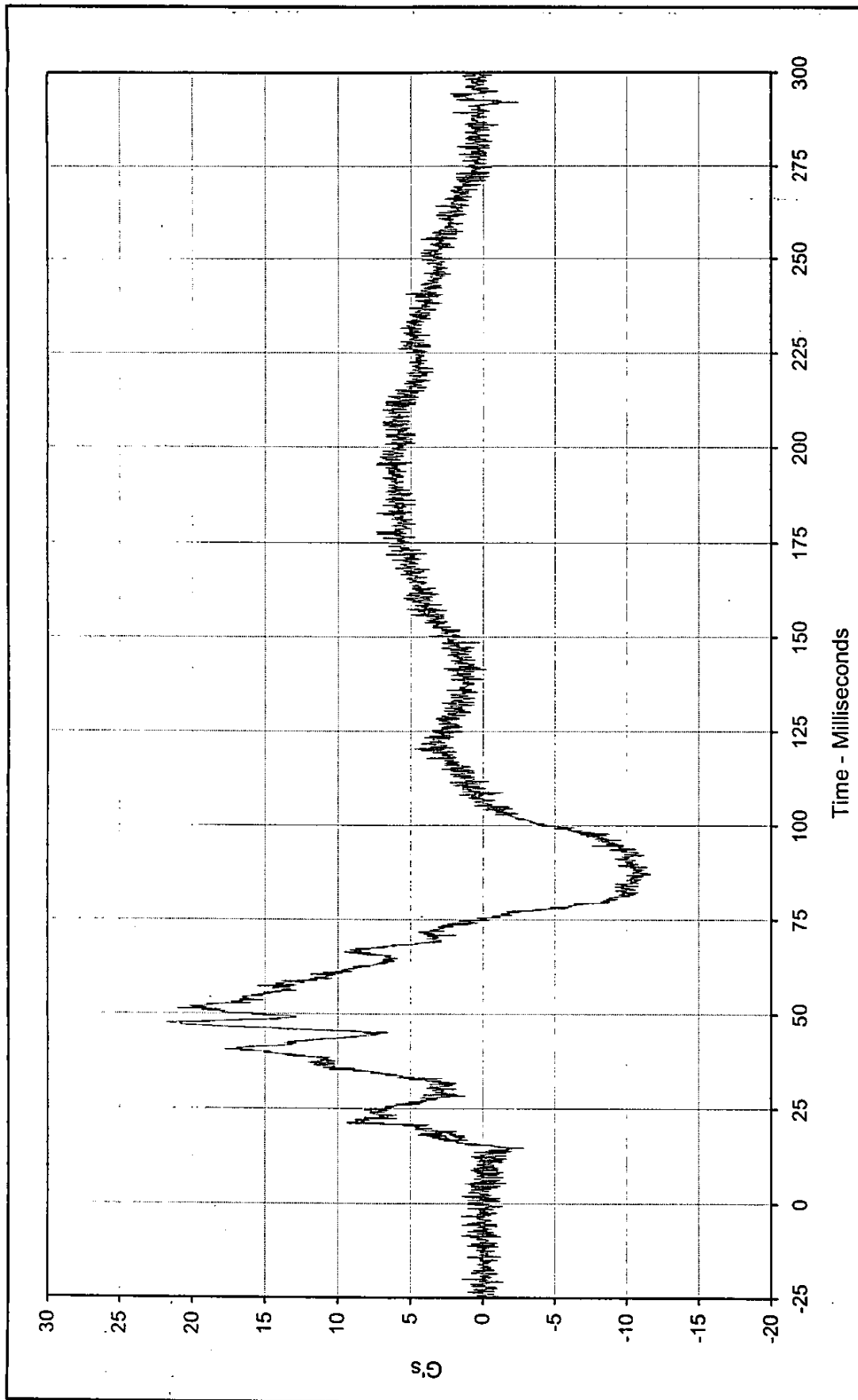
Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Driver Head Redundant Y	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	4.0 at 128.4 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-6.3 at 82.9 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/14/99			
Curve Number:	FIL-005			



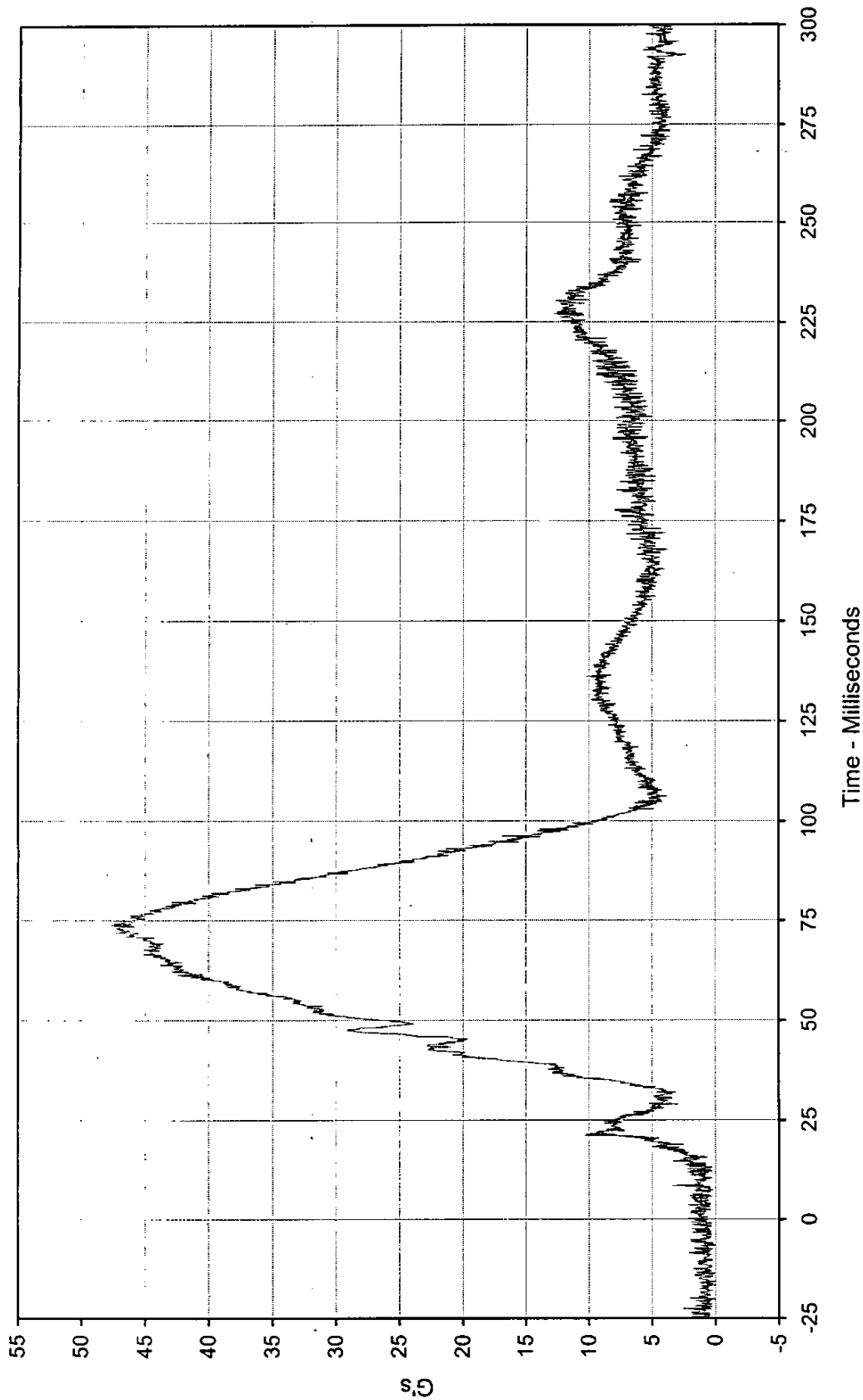


Curve Description:	Driver Head Redundant Z				Test Program:	2000 NHTSA 35 mph NCAP No.: MY5801	
Maximum Value:	21.8	at	47.6	Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-11.7	at	86.9	Milliseconds			
SAE Filter Class:	1000						
Date of Test:	12/14/99						
Curve Number:	FIL-006						



KARCO
Engineering



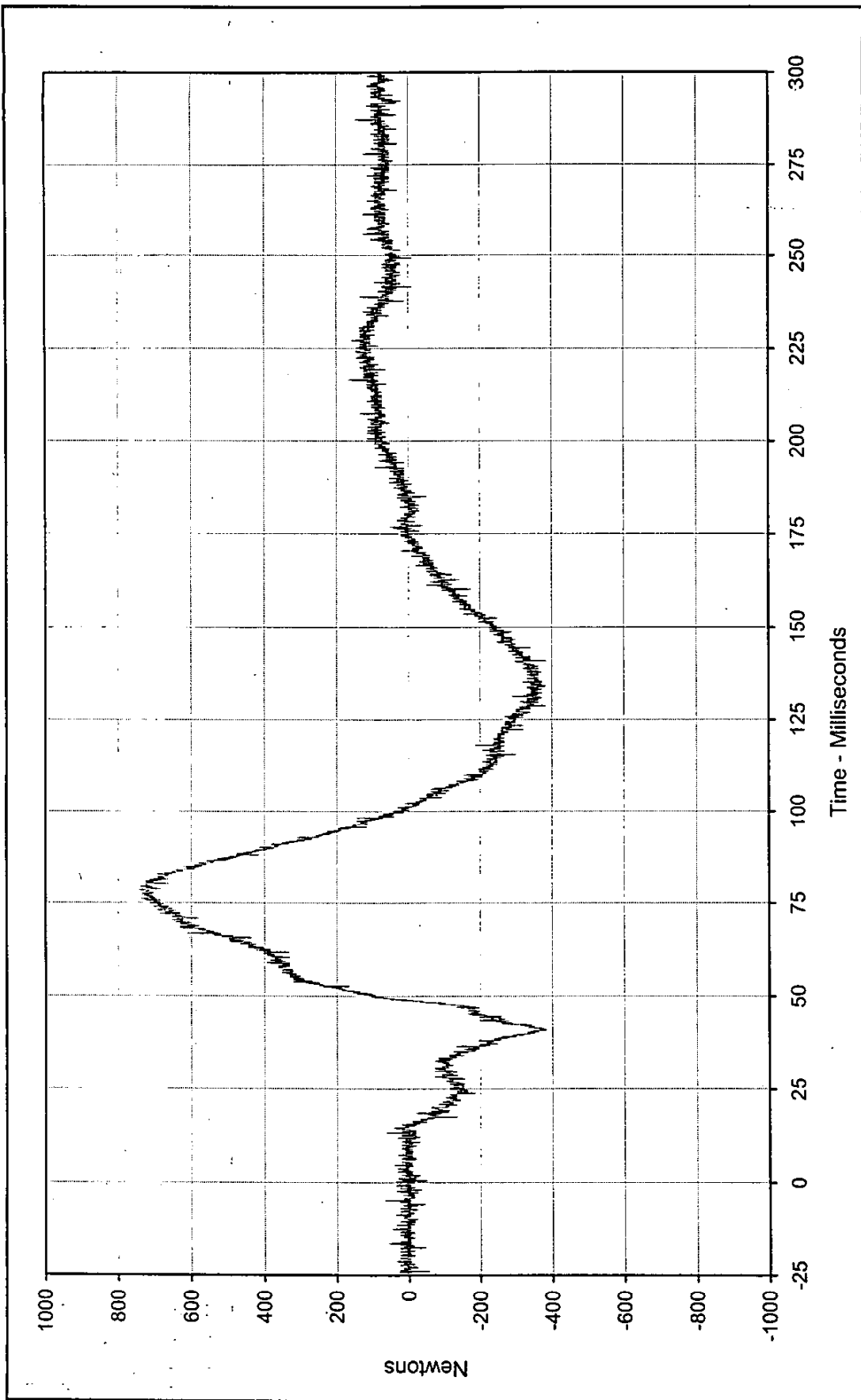


Curve Description: Driver Head Resultant Redundant
 Maximum Value: 47.6 at 73.7 Milliseconds
 Minimum Value: 0.2 at 7.3 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/14/99
 Curve Number: RES-004

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

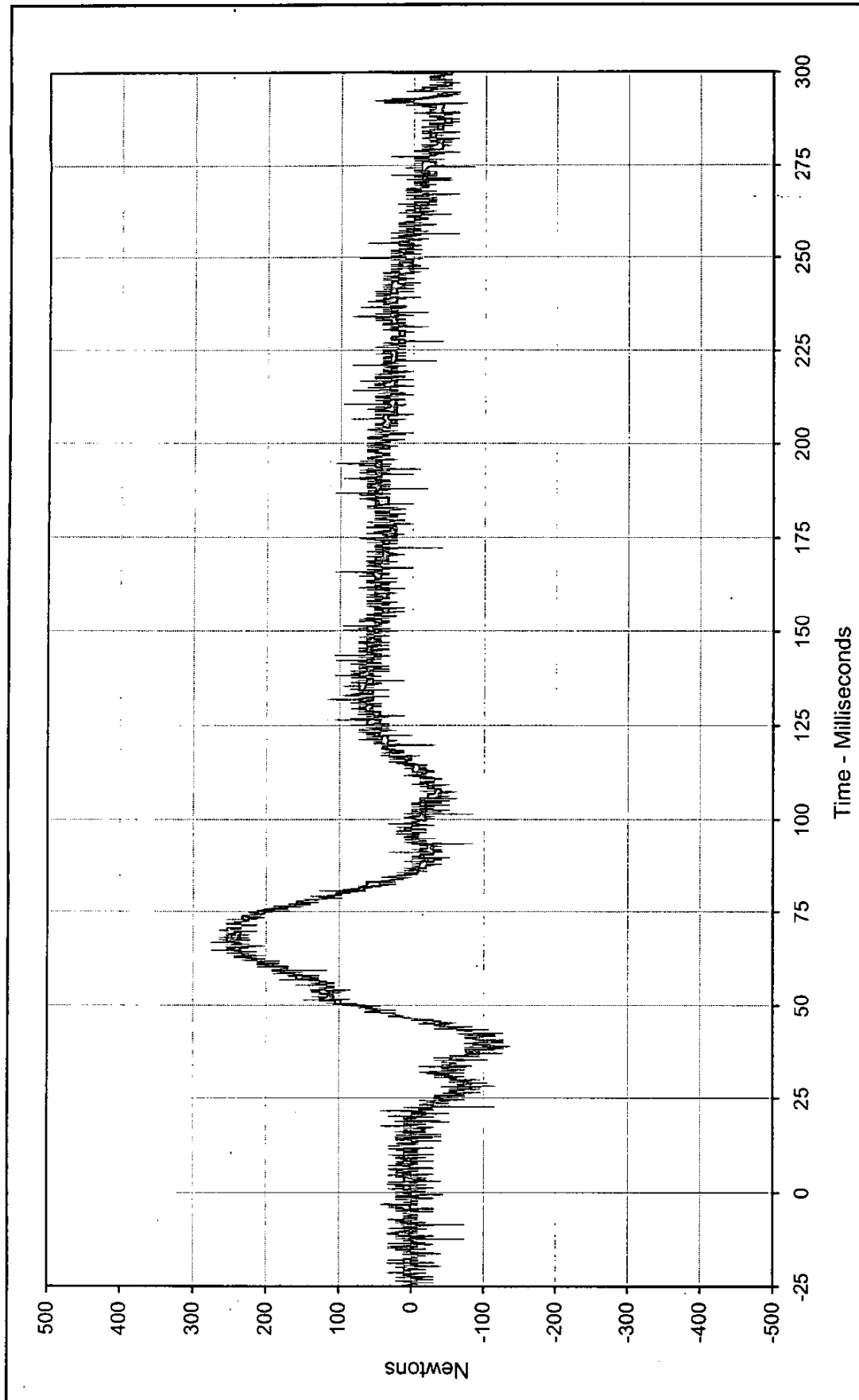




Curve Description: Driver Neck Force X
 Maximum Value: 744.9 at 78.5 Milliseconds
 Minimum Value: -383.3 at 40.9 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/14/99
 Curve Number: FIL-007

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description: Driver Neck Force Y Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Maximum Value: 275.9 at 64.6 Milliseconds

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

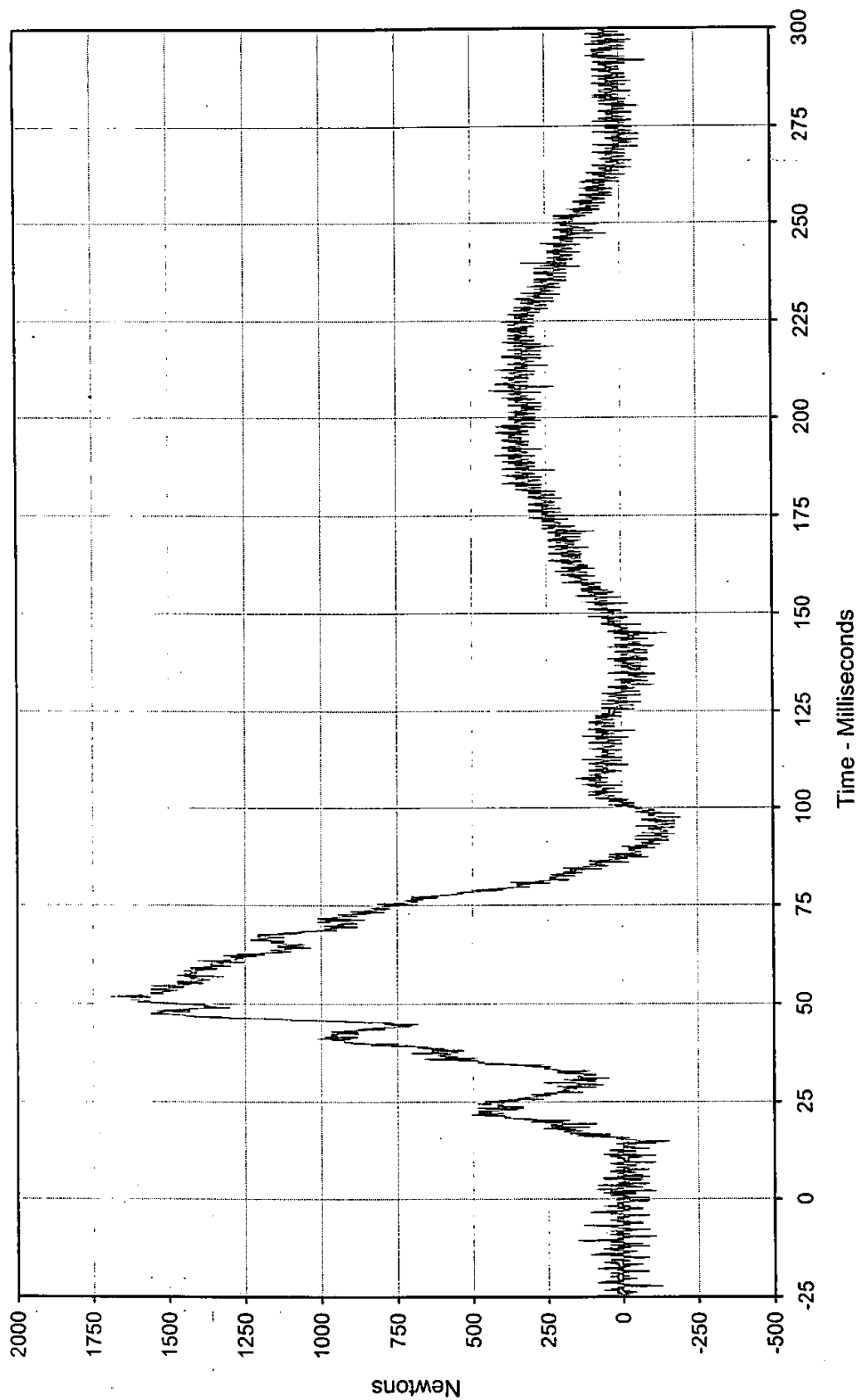
Minimum Value: -138.0 at 39.0 Milliseconds

SAE Filter Class: 1000

Date of Test: 12/14/99

Curve Number: FIL-008





Curve Description: 2000 NHTSA 35 mph NCAP No.: MY5801

Test Program: 2000 Volkswagen Jetta 4 Door Sedan

Maximum Value: 1692.6 at 51.8 Milliseconds

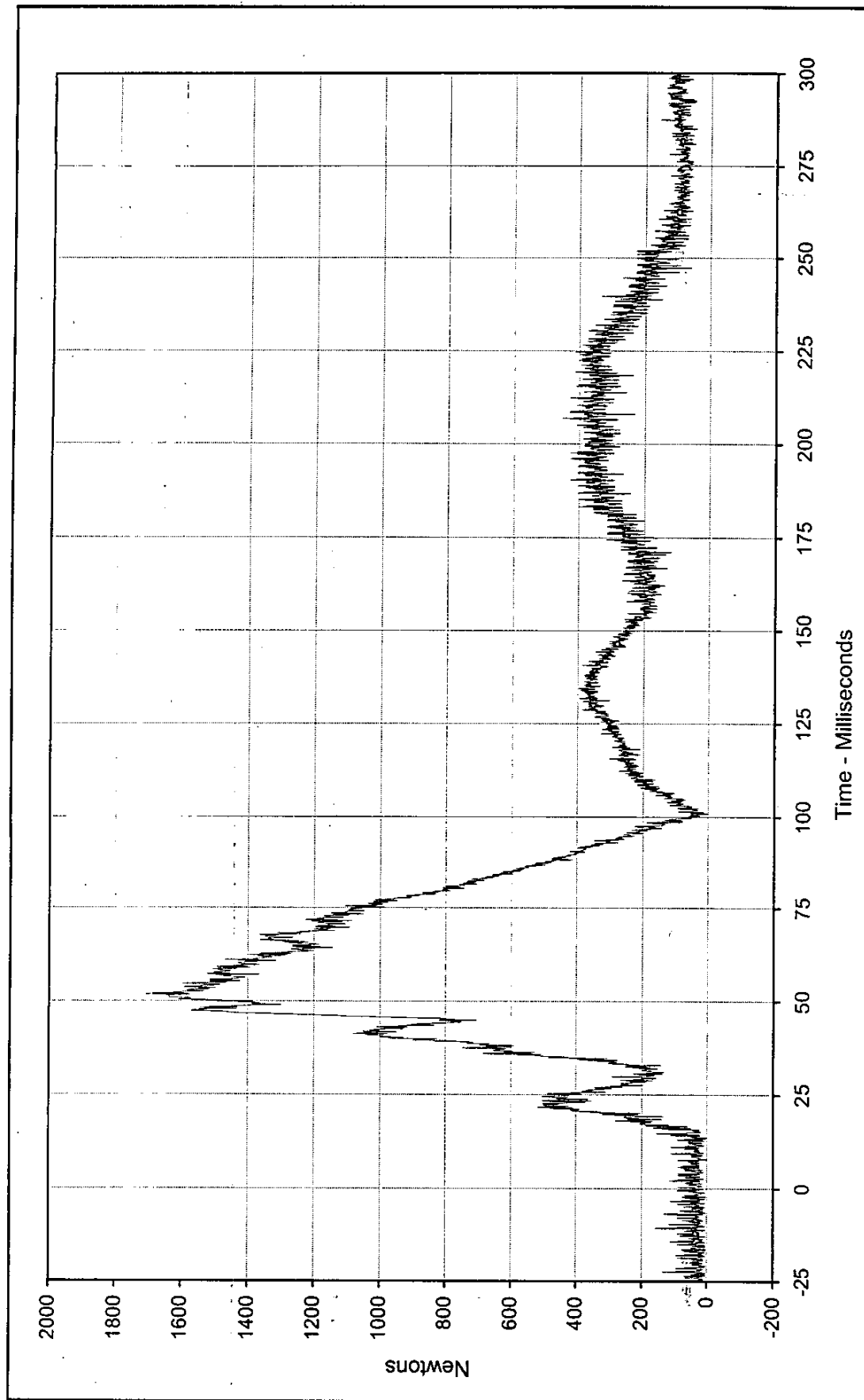
Minimum Value: -197.8 at 97.5 Milliseconds

SAE Filter Class: 1000

Date of Test: 12/14/99

Curve Number: FIL-009



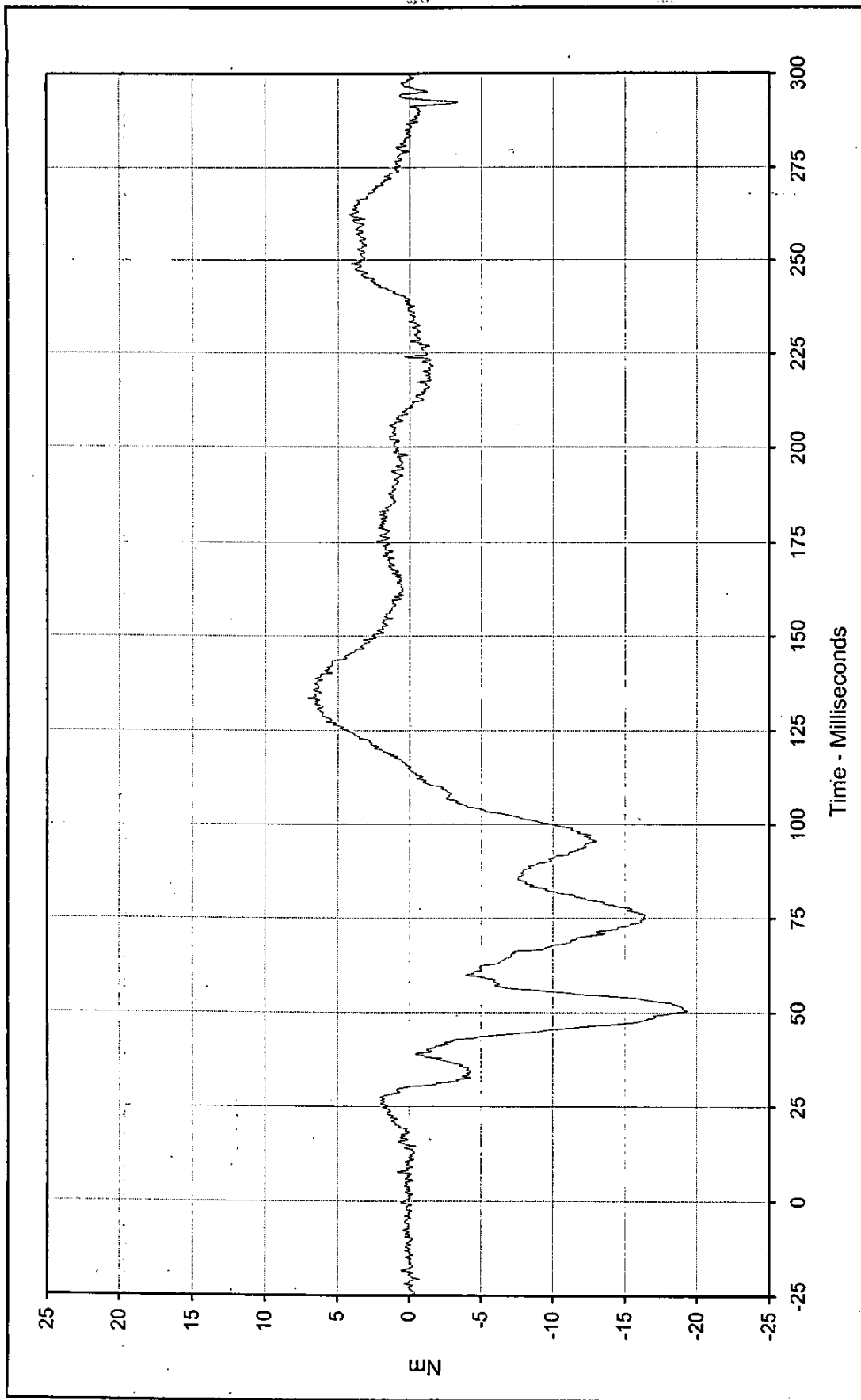


Curve Description: Driver Neck Force Resultant
 Maximum Value: 1706.4 at 51.8 Milliseconds
 Minimum Value: 0.4 at 7.8 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/14/99
 Curve Number: RES-007

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

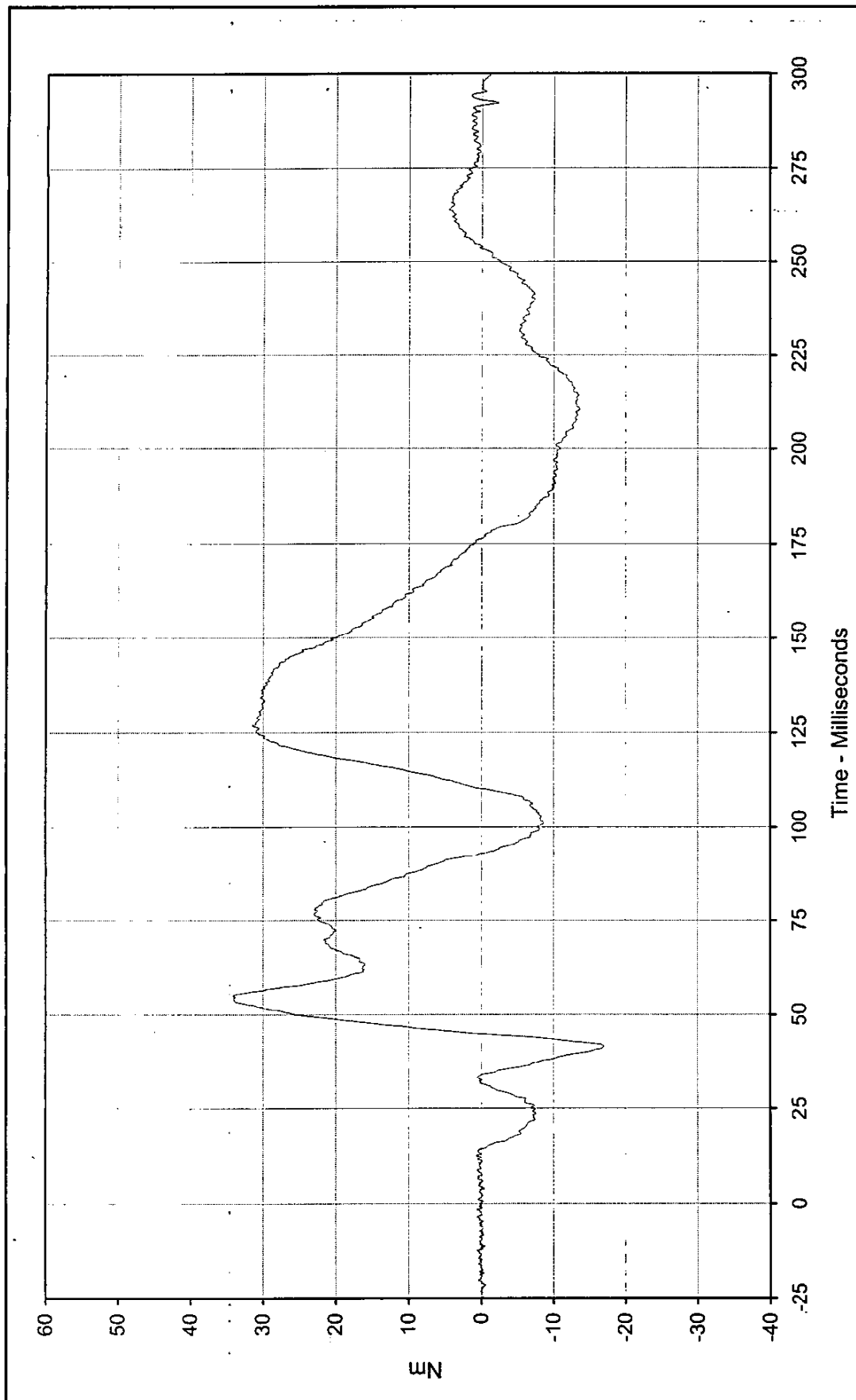
Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Driver Neck Moment X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	7.1	at	133.5	Milliseconds
Minimum Value:	-19.4	at	50.4	Milliseconds
SAE Filter Class:	600	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Date of Test:	12/14/99			
Curve Number:	FIL-010			





Curve Description: 2000 NHTSA 35 mph NCAP No.: MY5801

Test Program: 2000 Volkswagen Jetta 4 Door Sedan

Maximum Value: 34.1 at 54.9 Milliseconds

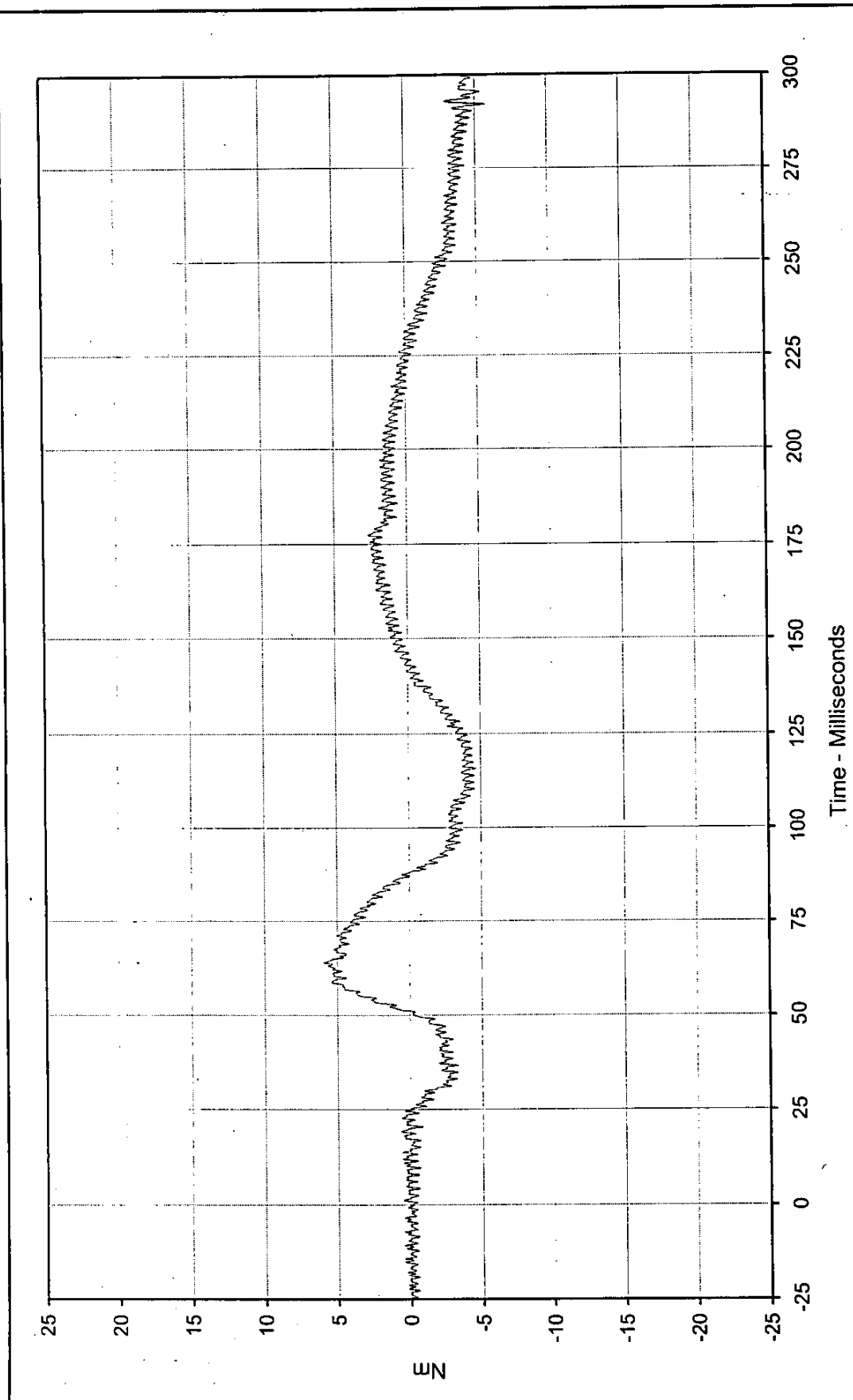
Minimum Value: -17.0 at 41.6 Milliseconds

SAE Filter Class: 600

Date of Test: 12/14/99

Curve Number: FIL-011

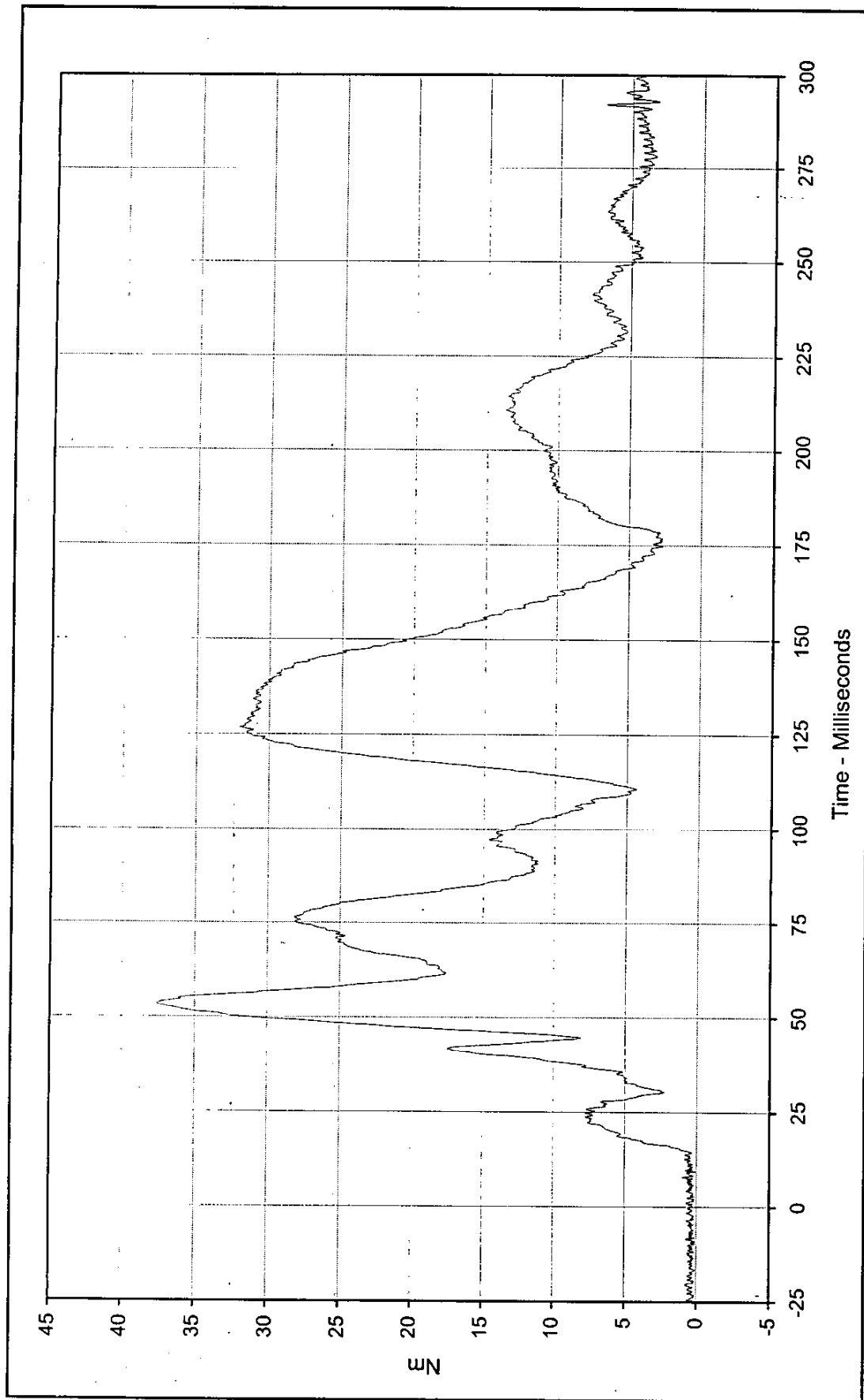




Curve Description: Driver Neck Moment Z
 Maximum Value: 5.9 at 63.9 Milliseconds
 Minimum Value: -5.7 at 292.0 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/14/99
 Curve Number: FIL-012

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description: Driver Neck Moment Resultant

Maximum Value: 37.6 at 37.6 Milliseconds

Minimum Value: 0.1 at 0.1 Milliseconds

SAE Filter Class: 600

Date of Test: 12/14/99

Curve Number: RES-010

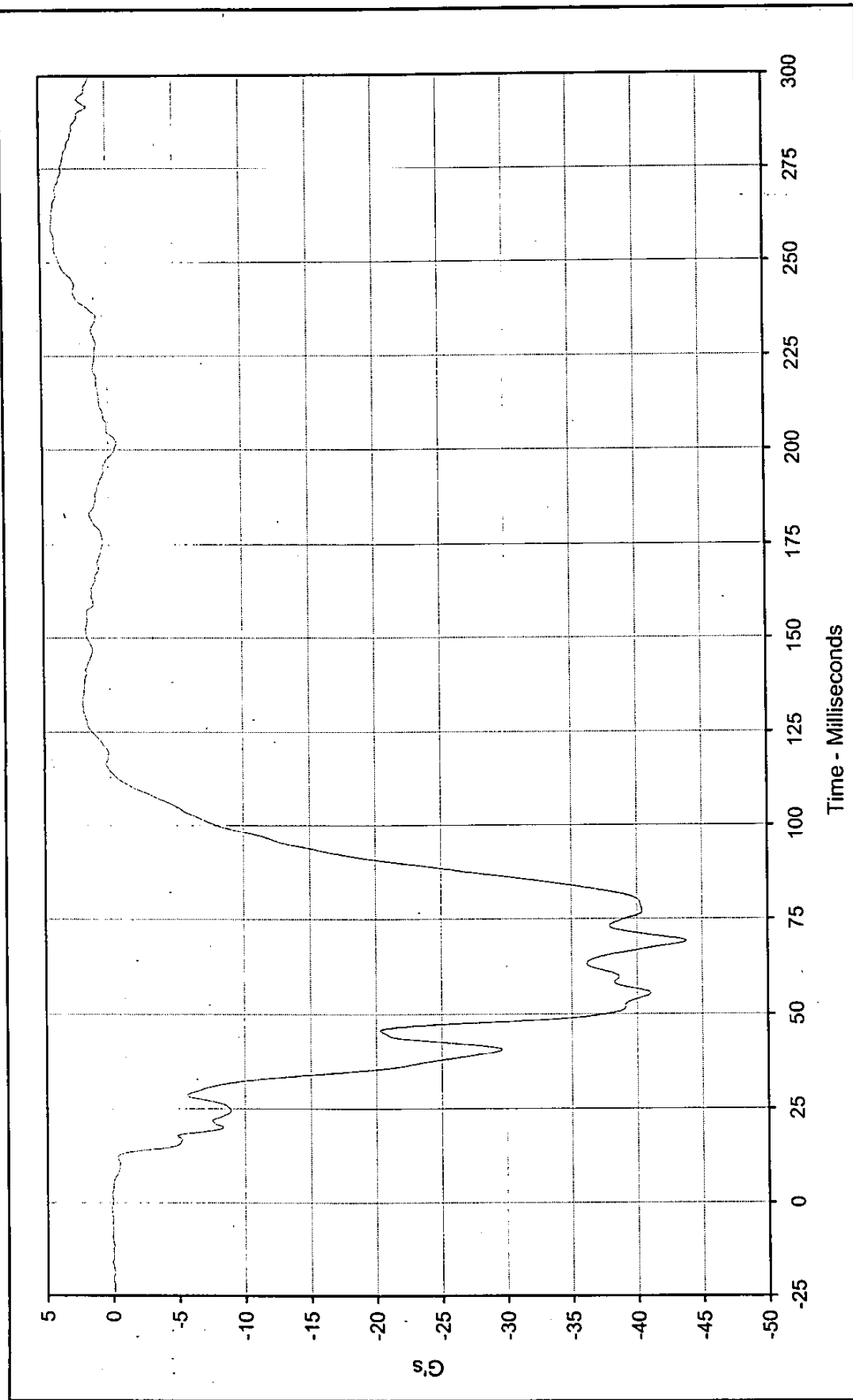
Test Program:

2000 NHTSA 35 mph NCAP No.: MY5801

Test Vehicle:

2000 Volkswagen Jetta 4 Door Sedan

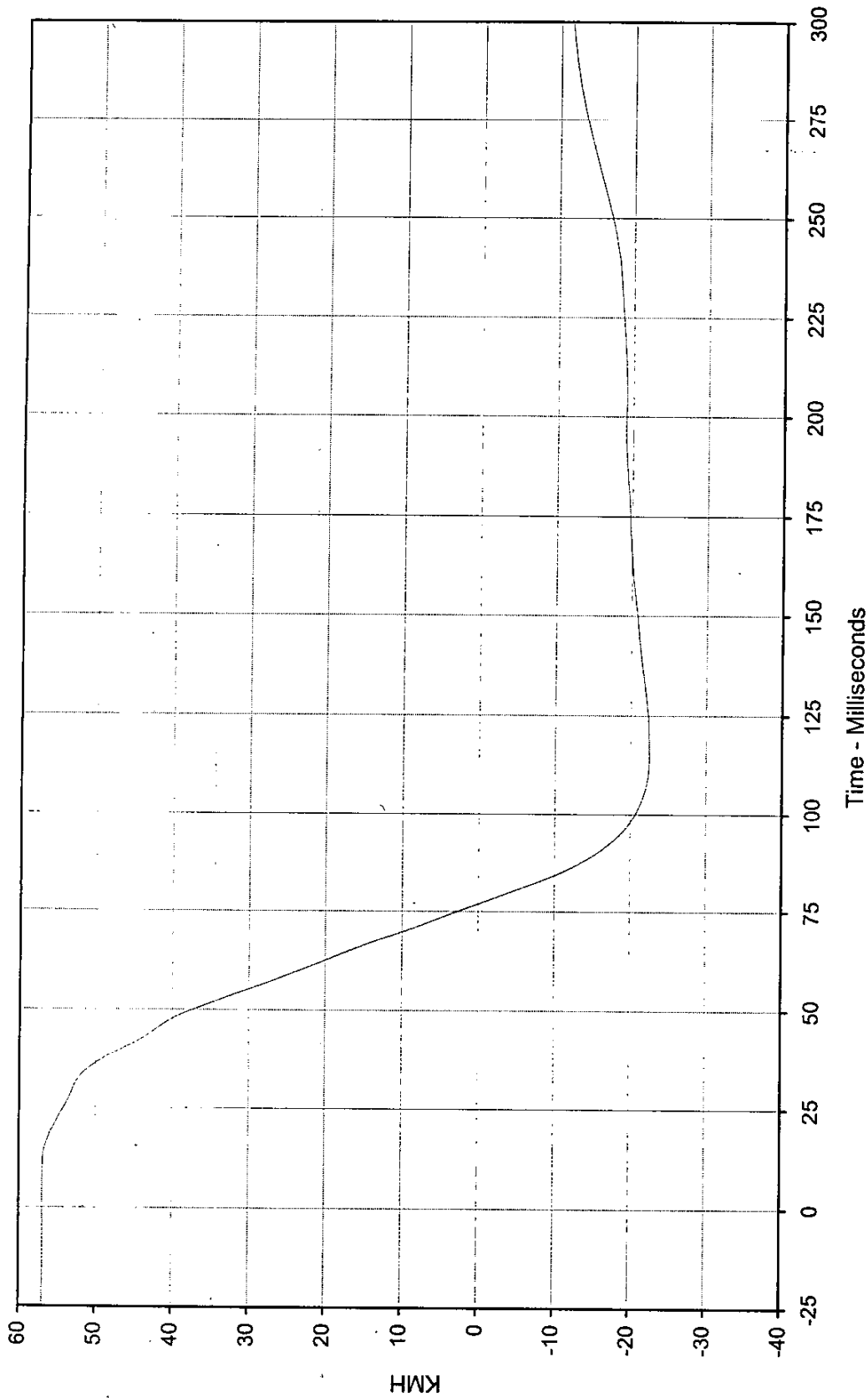




Curve Description: Driver Chest Primary X
 Maximum Value: 4.2 at 259.0 Milliseconds
 Minimum Value: -43.8 at 69.1 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/14/99
 Curve Number: FIL-013

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description: Driver Chest Primary X Velocity

Maximum Value: 56.9 at 3.5 Milliseconds

Minimum Value: -22.5 at 114.4 Milliseconds

SAE Filter Class: 180

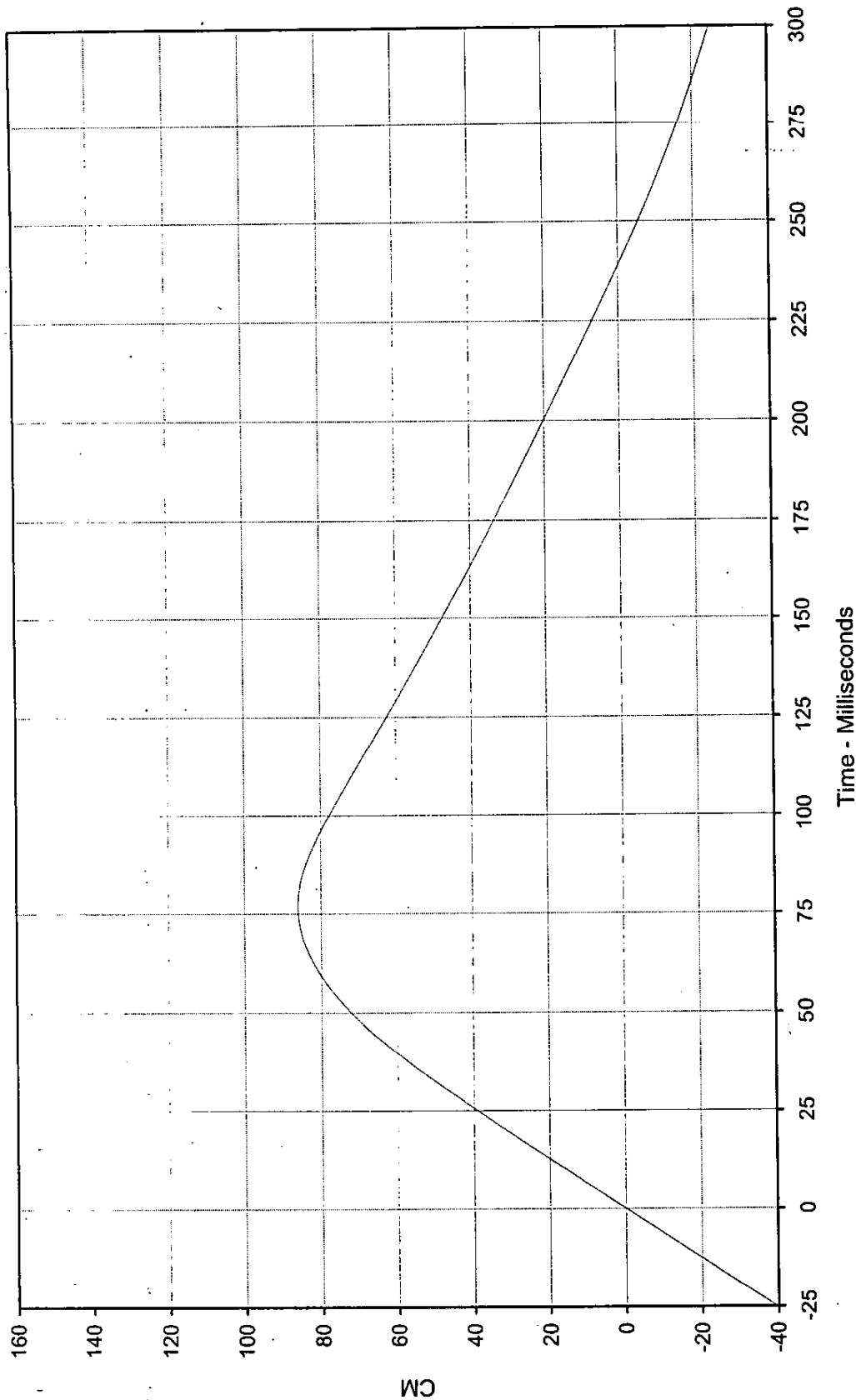
Date of Test: 12/14/99

Curve Number: IN1-013

Testing Program 2000 NHTSA 35 mph NCAP No.: MY5801

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

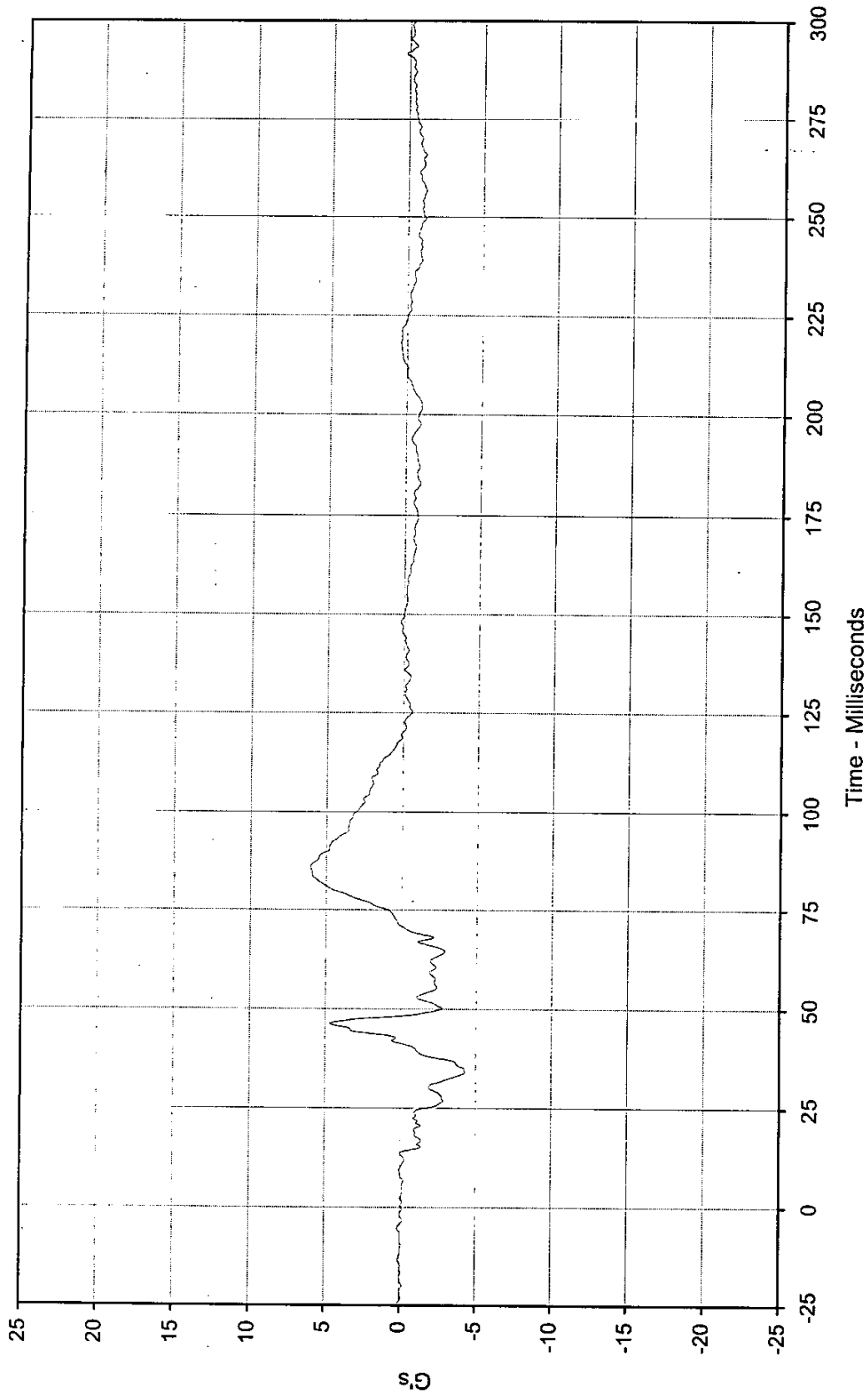




Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

Curve Description: Driver Chest Primary X Displ.
 Maximum Value: 86.0 at 76.9 Milliseconds
 Minimum Value: -24.6 at 299.9 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/14/99
 Curve Number: IN2-013





Curve Description: Driver Chest Primary Y

Maximum Value: 6.0 at 85.8 Milliseconds

Minimum Value: -4.3 at 33.9 Milliseconds

SAE Filter Class: 180

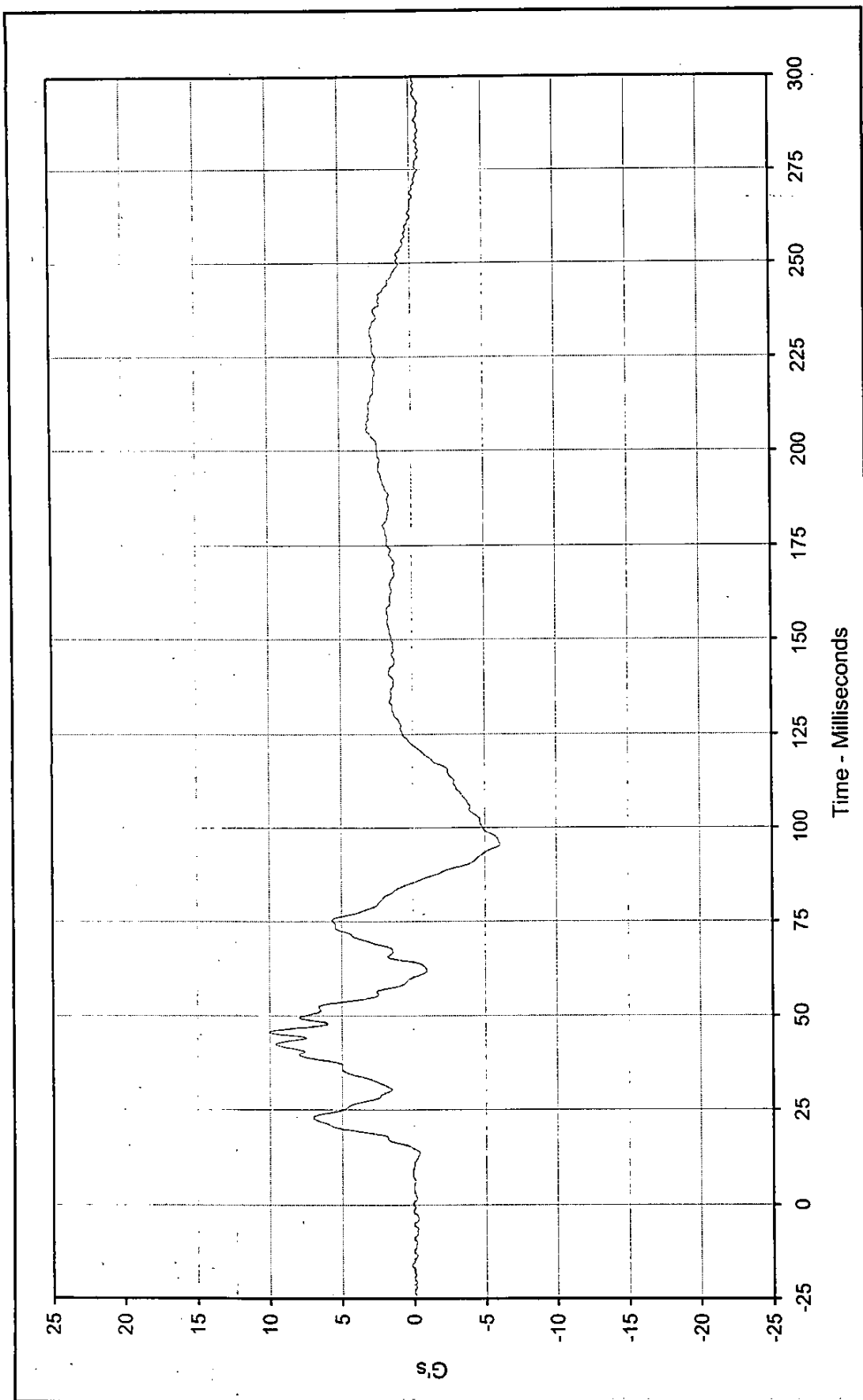
Date of Test: 12/14/99

Curve Number: FIL-014

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

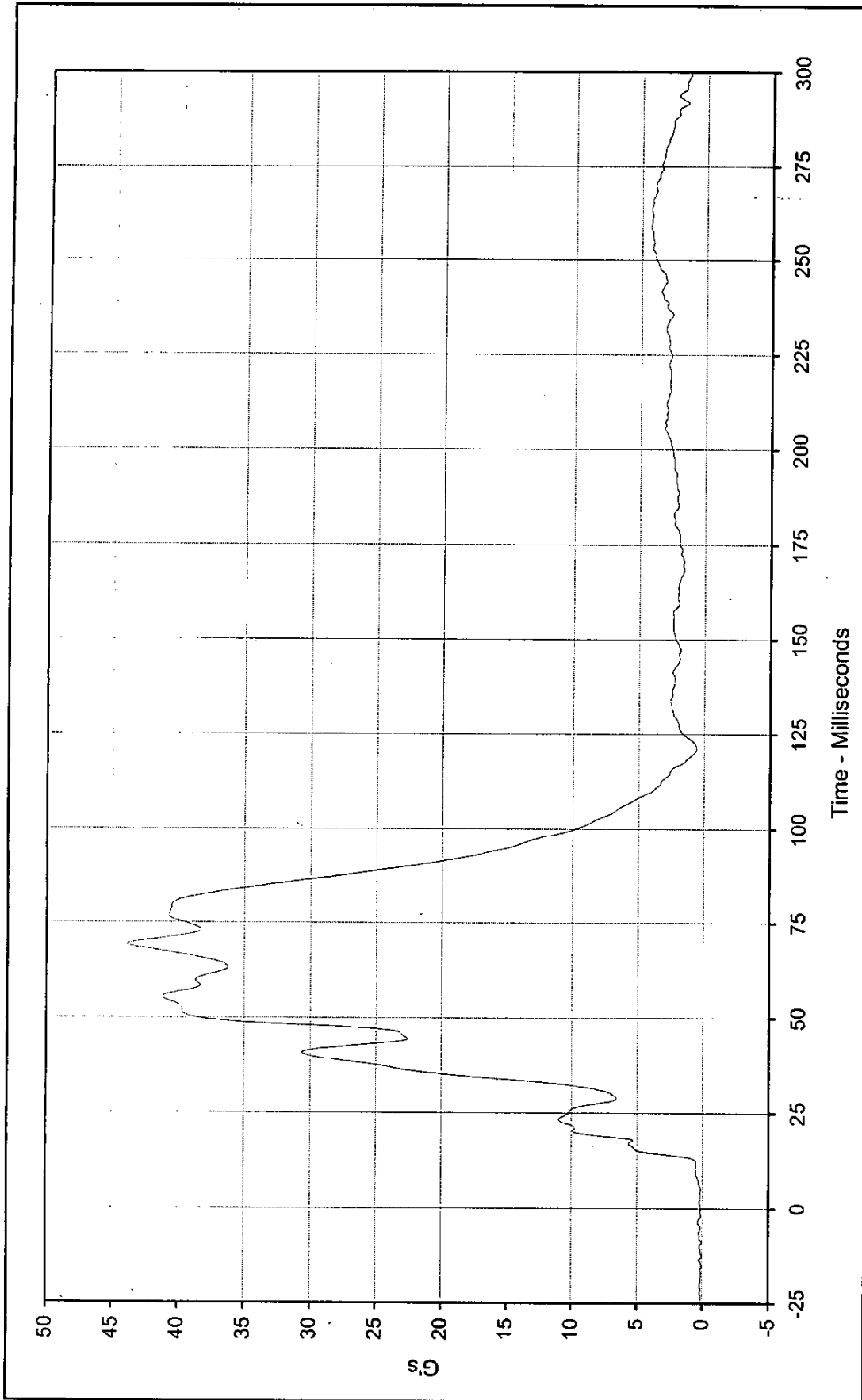




Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

Curve Description: Driver Chest Primary Z
 Maximum Value: 10.1 at 45.8 Milliseconds
 Minimum Value: -6.1 at 95.3 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/14/99
 Curve Number: FIL-015



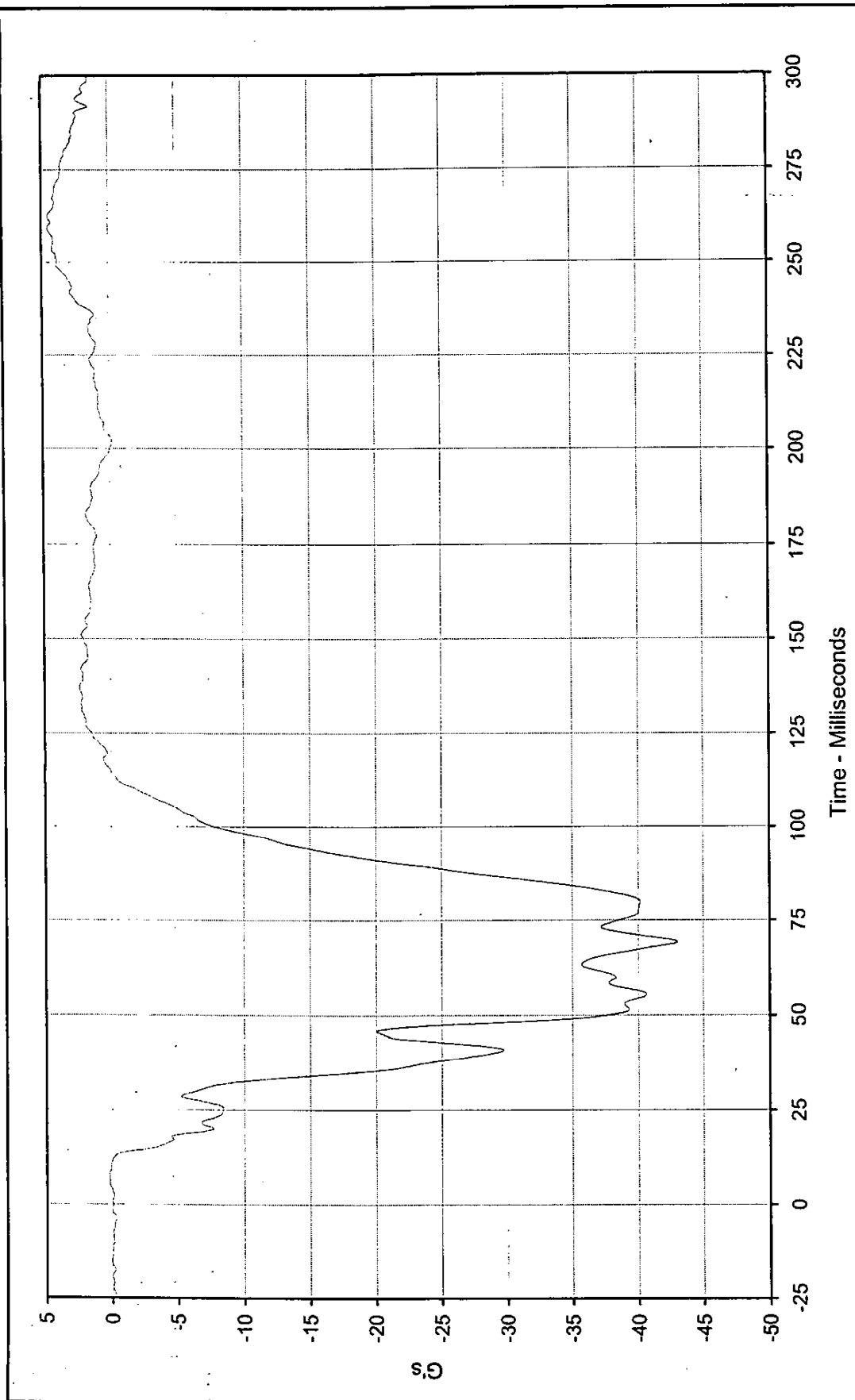


Curve Description: Driver Chest Resultant Primary
 Maximum Value: 43.9 at 69.1 Milliseconds
 Minimum Value: 0.1 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/14/99
 Curve Number: RES-013

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

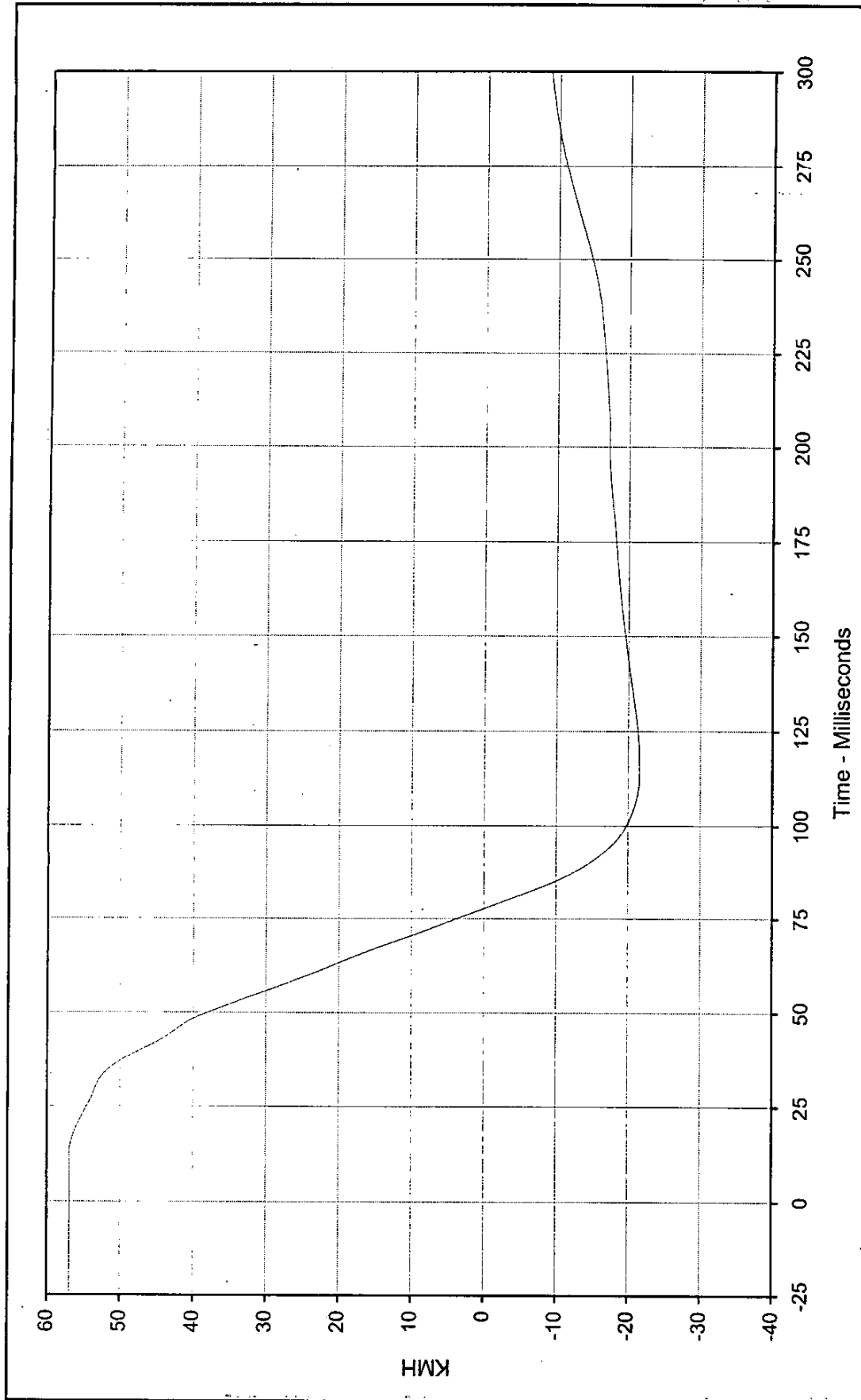




Curve Description: Driver Chest Redundant X
 Maximum Value: 4.6 at 259.2 Milliseconds
 Minimum Value: -43.0 at 69.2 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/14/99
 Curve Number: FIL-016

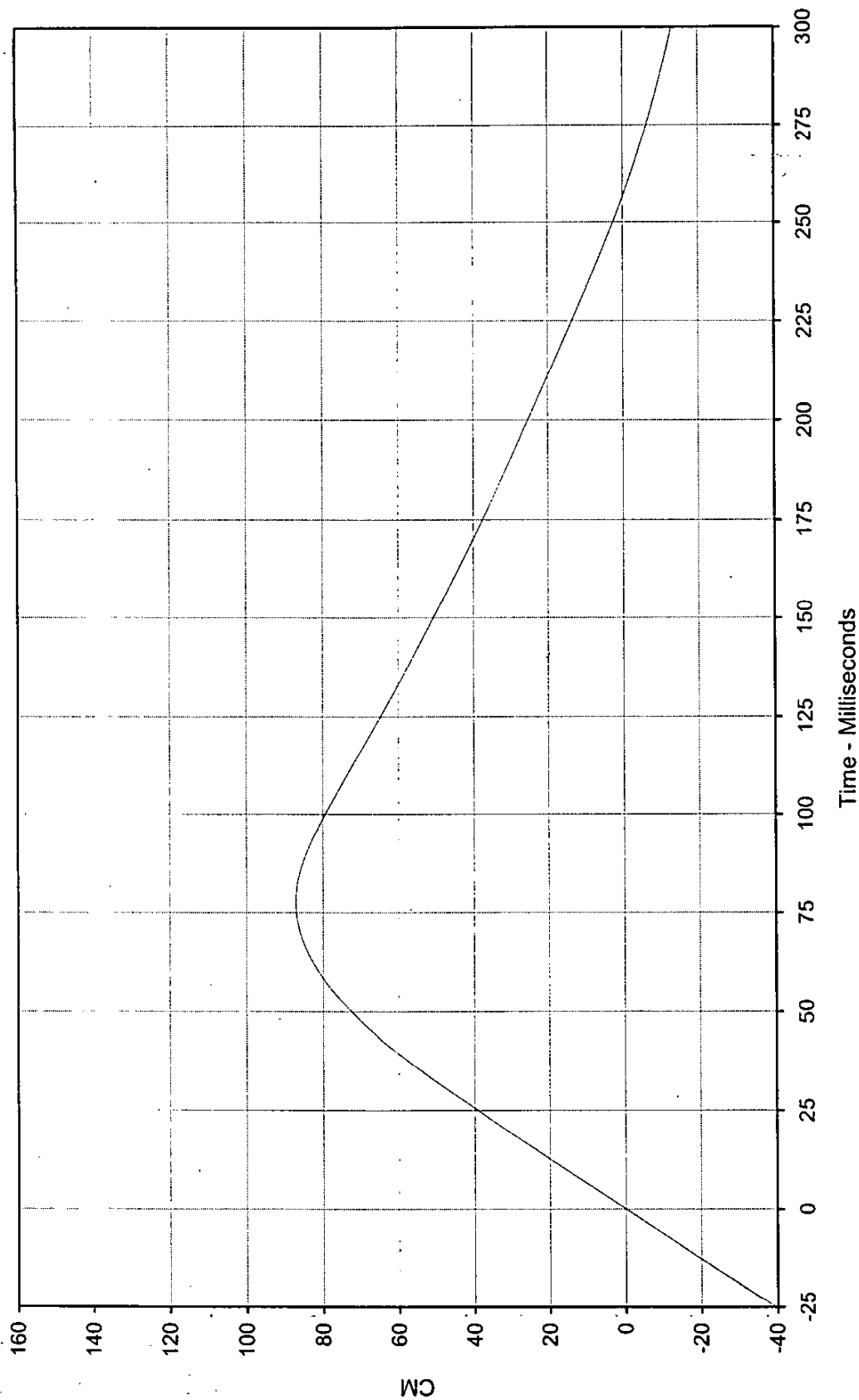
Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Driver Chest Redundant X Velocity	Testing Program	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	56.9	at	11.7	Milliseconds
Minimum Value:	-21.6	at	114.7	Milliseconds
SAE Filter Class:	180			
Date of Test:	12/14/99			
Curve Number:	IN1-016			
Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan			





Curve Description: Driver Chest Redundant X Displ.

Maximum Value: 87.1 at 77.6 Milliseconds

Minimum Value: -13.1 at 299.9 Milliseconds

SAE Filter Class: 180

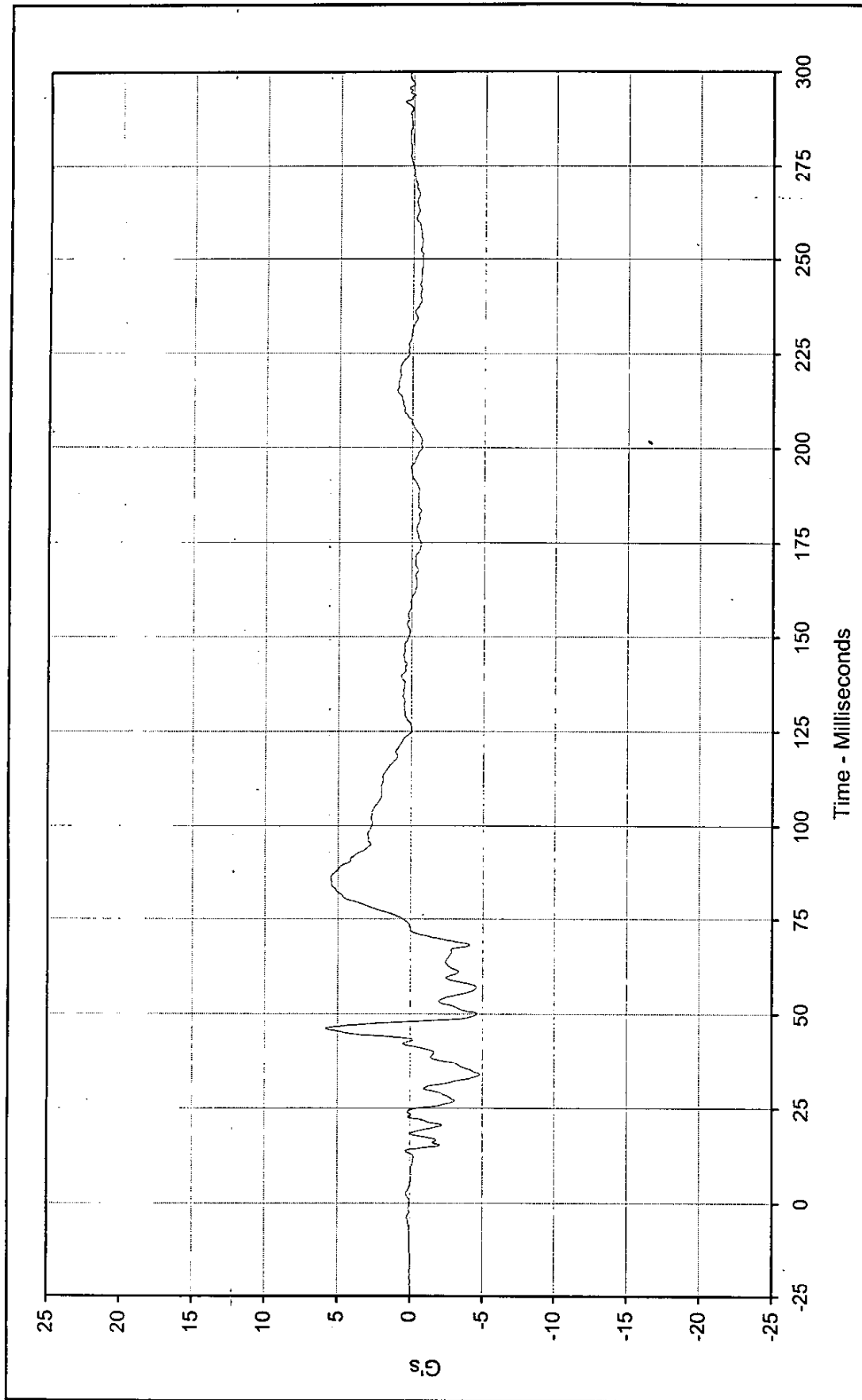
Date of Test: 12/14/99

Curve Number: IN2-016

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

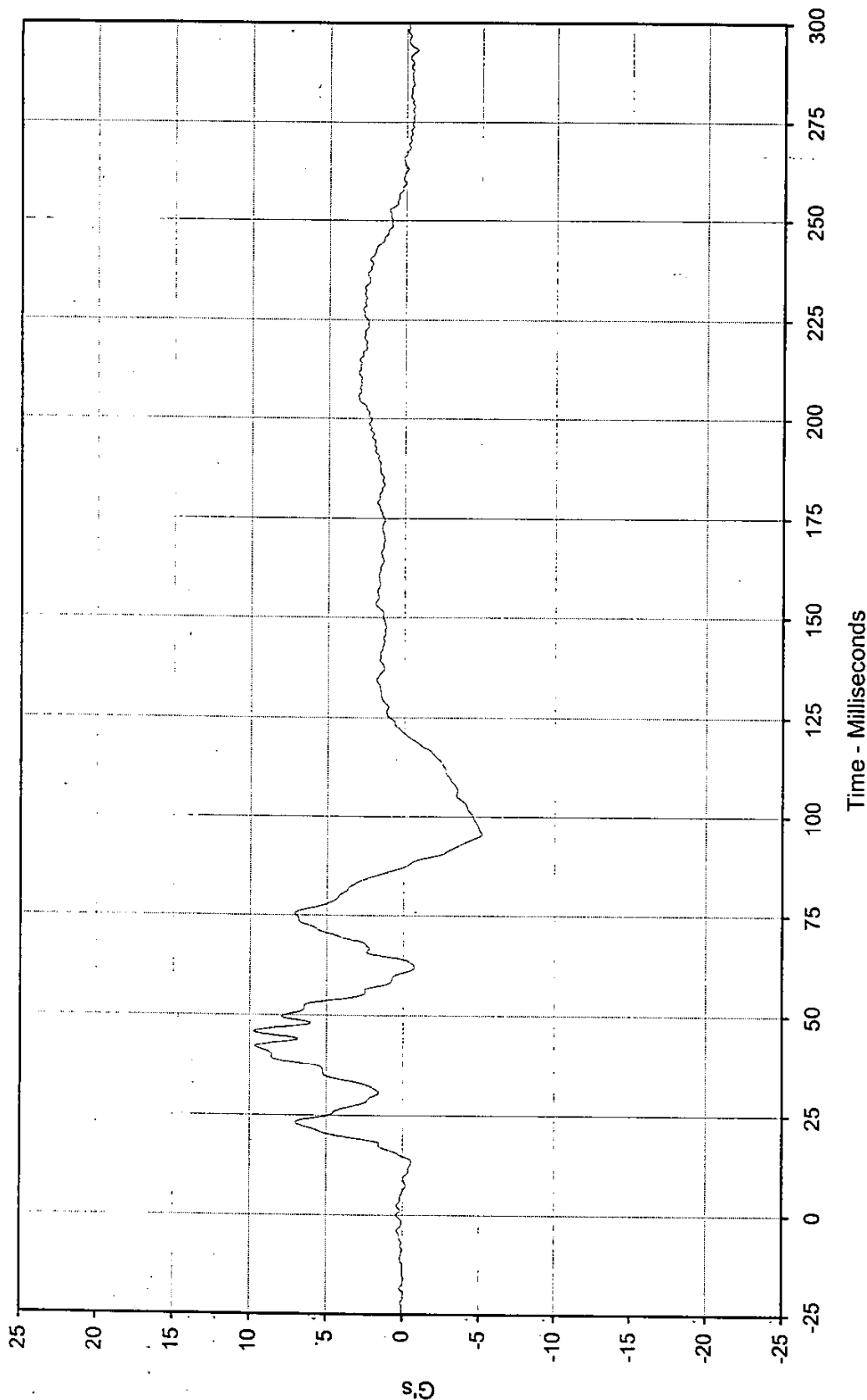
Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Driver Chest Redundant Y		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	5.8	at 46.1	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-4.8	at 33.9			
SAE Filter Class:	180				
Date of Test:	12/14/99				
Curve Number:	FIL-017				





Curve Description: Driver Chest Redundant Z

Maximum Value: 9.7 at 46.0 Milliseconds

Minimum Value: -5.2 at 95.5 Milliseconds

SAE Filter Class: 180

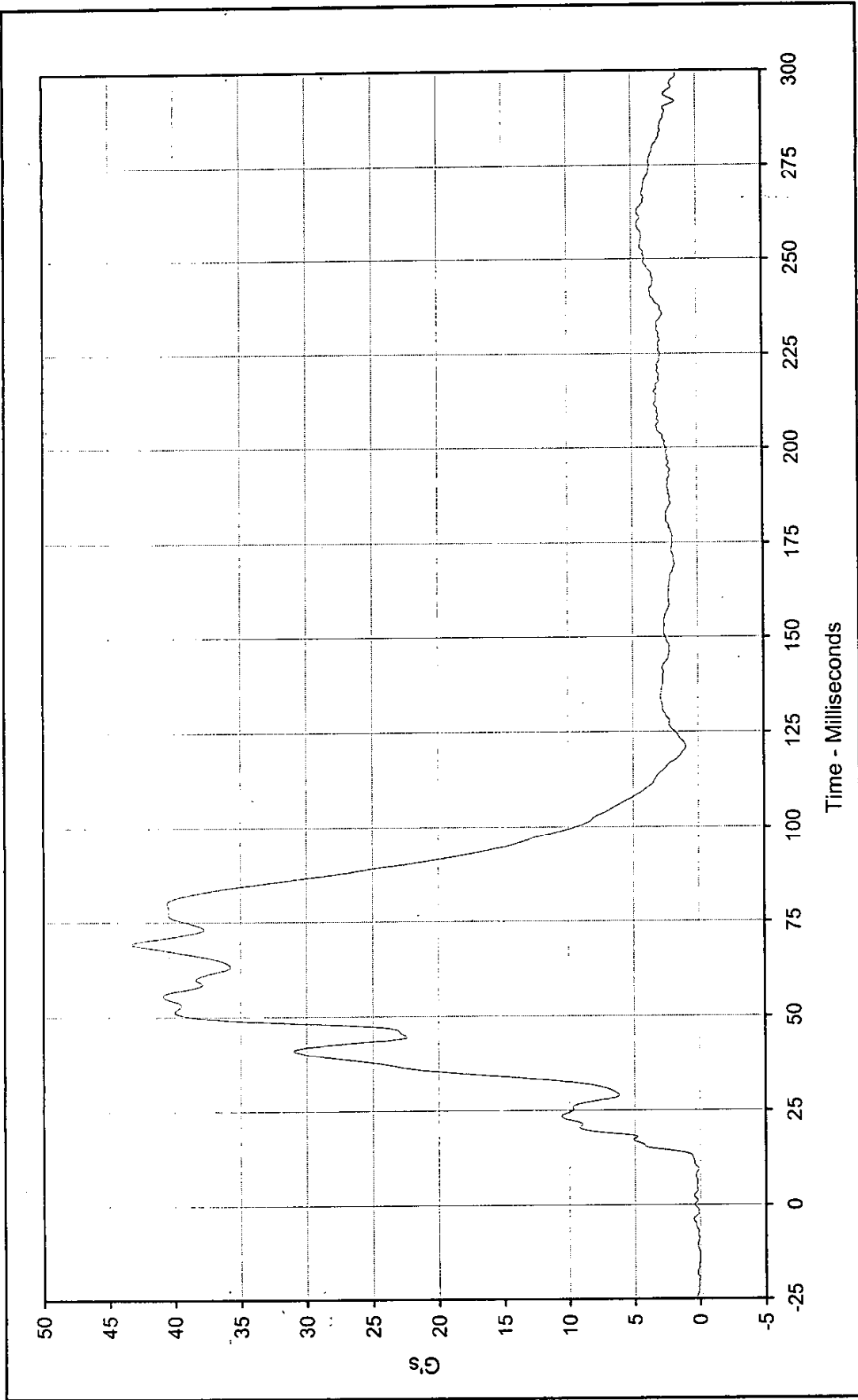
Date of Test: 12/14/99

Curve Number: FIL-018

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

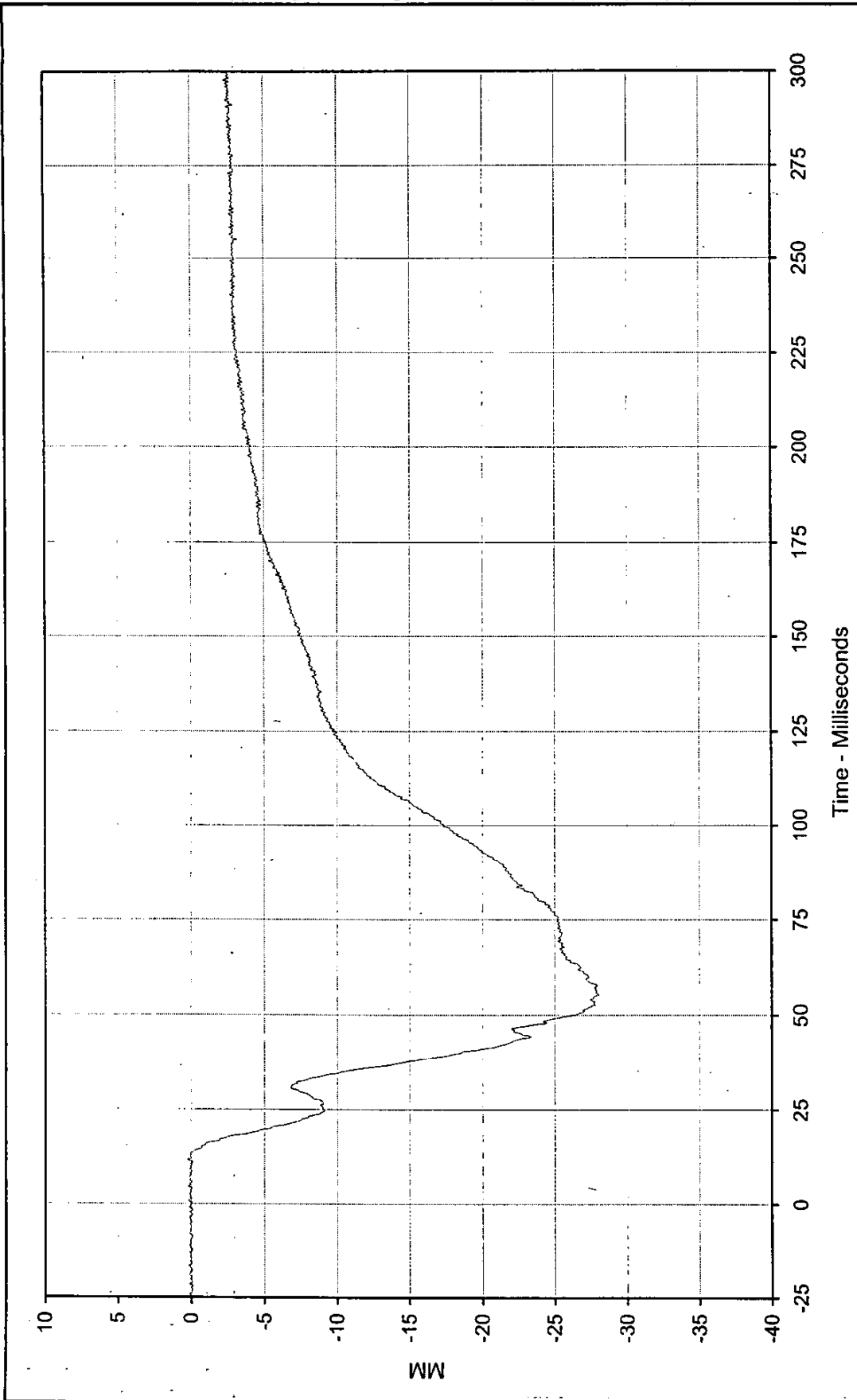
Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





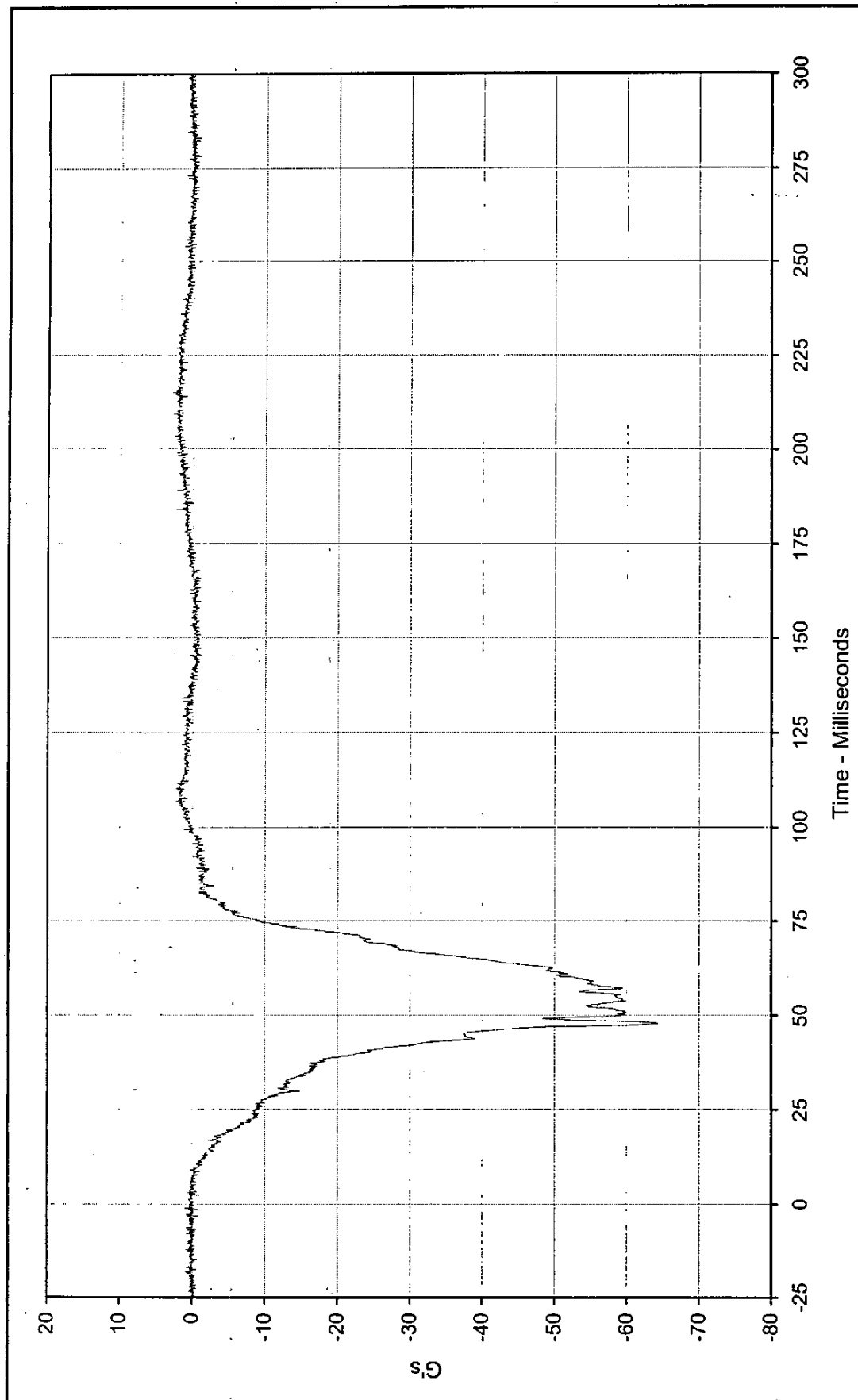
Curve Description:	Driver Chest Resultant Redundant	Test Program:	2000 NHTSA 35 mph NCAP No.: MY5801
Maximum Value:	43.3 at 69.2 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan
Minimum Value:	0.1 at 9.4 Milliseconds		
SAE Filter Class:	180		
Date of Test:	12/14/99		
Curve Number:	RES-016		





Curve Description:	Driver Chest Displacement X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	0.2	at	11.7	Milliseconds
Minimum Value:	-28.1	at	55.3	Milliseconds
SAE Filter Class:	600			
Date of Test:	12/14/99	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Curve Number:	FIL-019			





Curve Description:

Driver Pelvis X

Maximum Value:

2.9

at 209.2

Milliseconds

Minimum Value:

-64.4

at 47.8

Milliseconds

SAE Filter Class:

1000

Date of Test:

12/14/99

Curve Number:

FIL-020

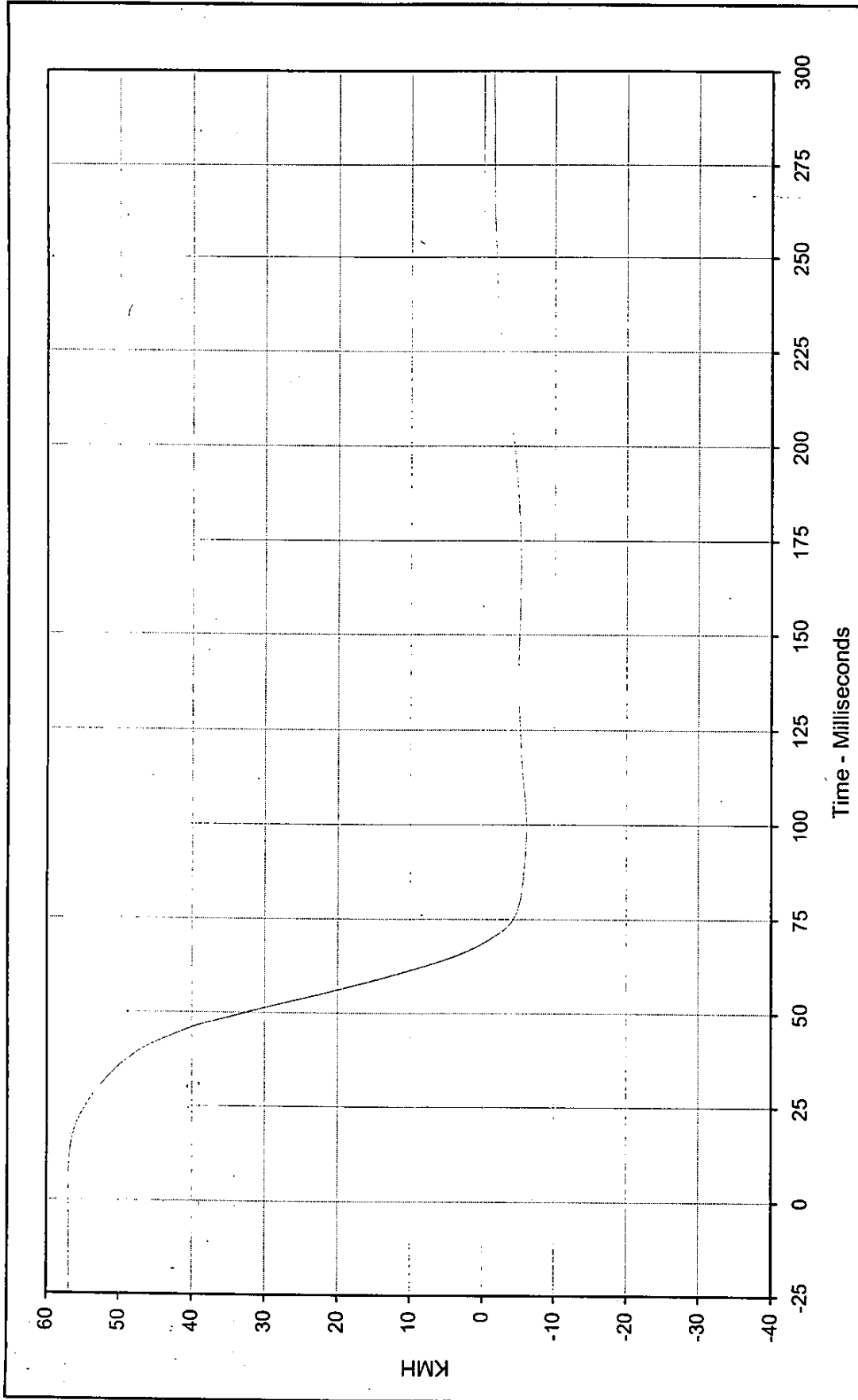
Test Program:

2000 NHTSA 35 mph NCAP No.: MY5801

Test Vehicle:

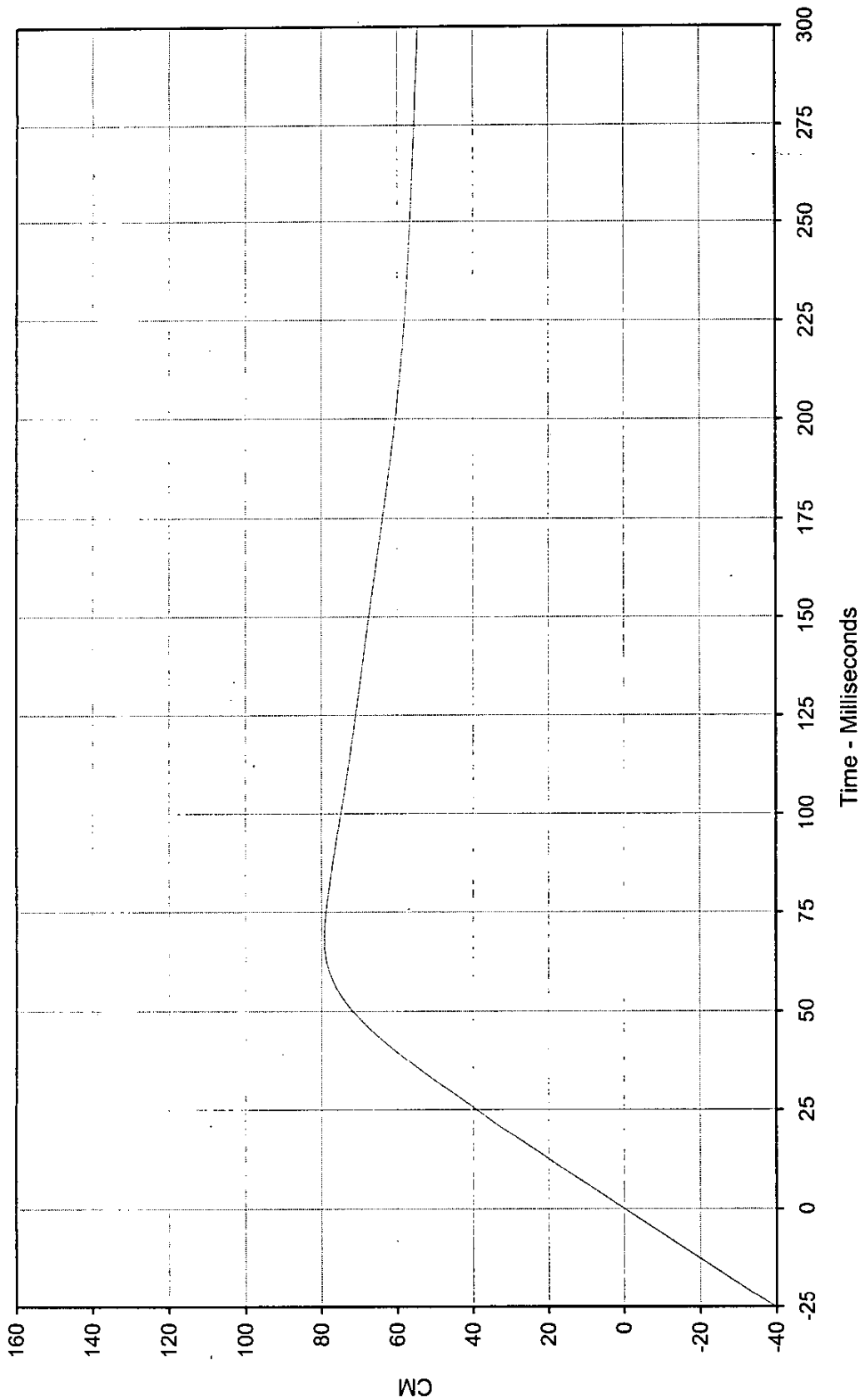
2000 Volkswagen Jetta 4 Door Sedan





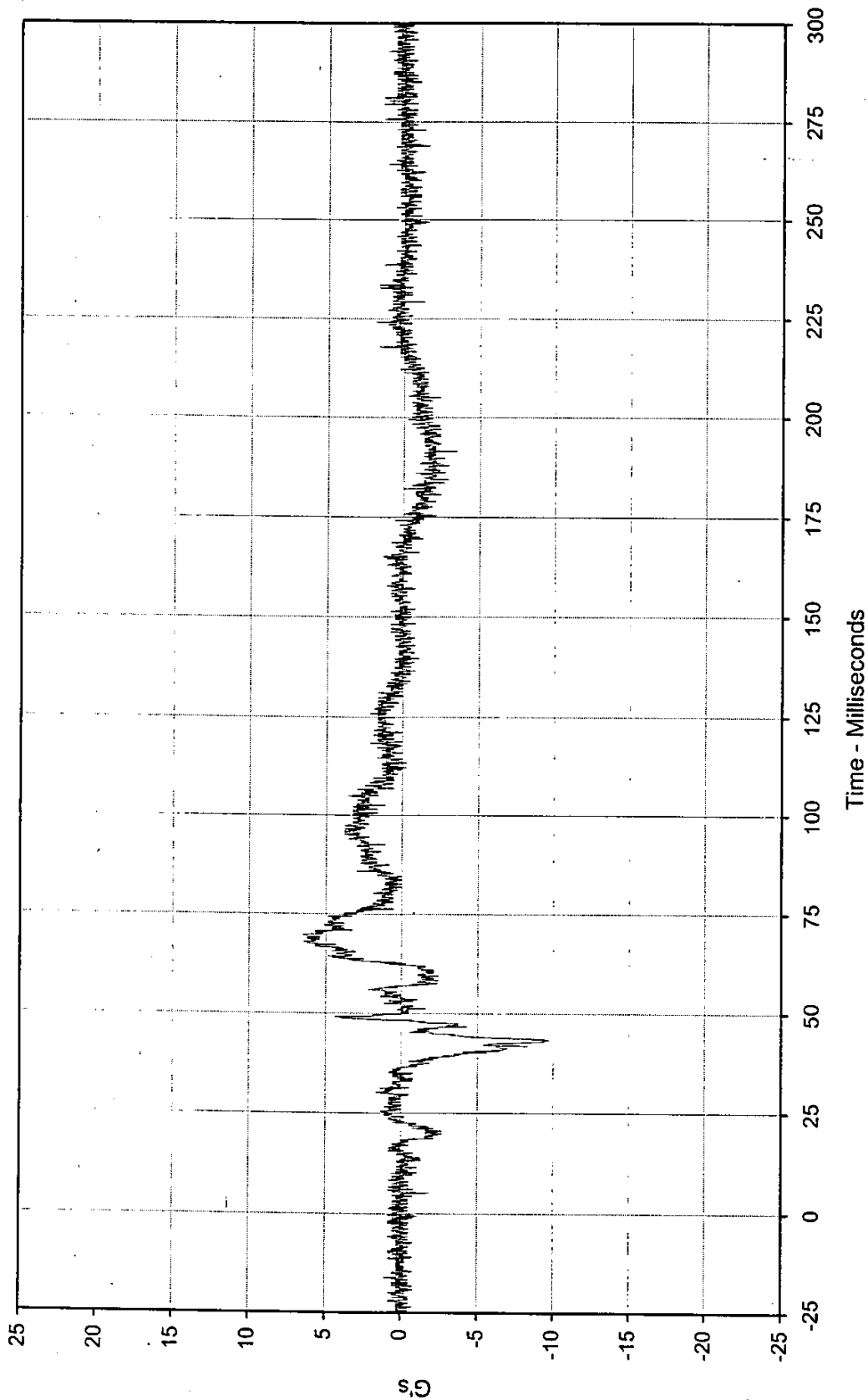
Curve Description:	Driver Pelvis X Velocity	Testing Program	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	57.0 at 3.9 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-6.2 at 98.7 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/14/99			
Curve Number:	IN1-020			





Curve Description:	Driver Pelvis X Displ.	Test Program:	2000 NHTSA 35 mph NCAP No.: MY5801
Maximum Value:	79.3 at 68.5 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan
Minimum Value:	0.0 at 0.0 Milliseconds		
SAE Filter Class:	180		
Date of Test:	12/14/99		
Curve Number:	IN2-020		





Curve Description: Driver Pelvis Y

Maximum Value: 6.5 at 68.0 Milliseconds

Minimum Value: -9.7 at 43.7 Milliseconds

SAE Filter Class: 1000

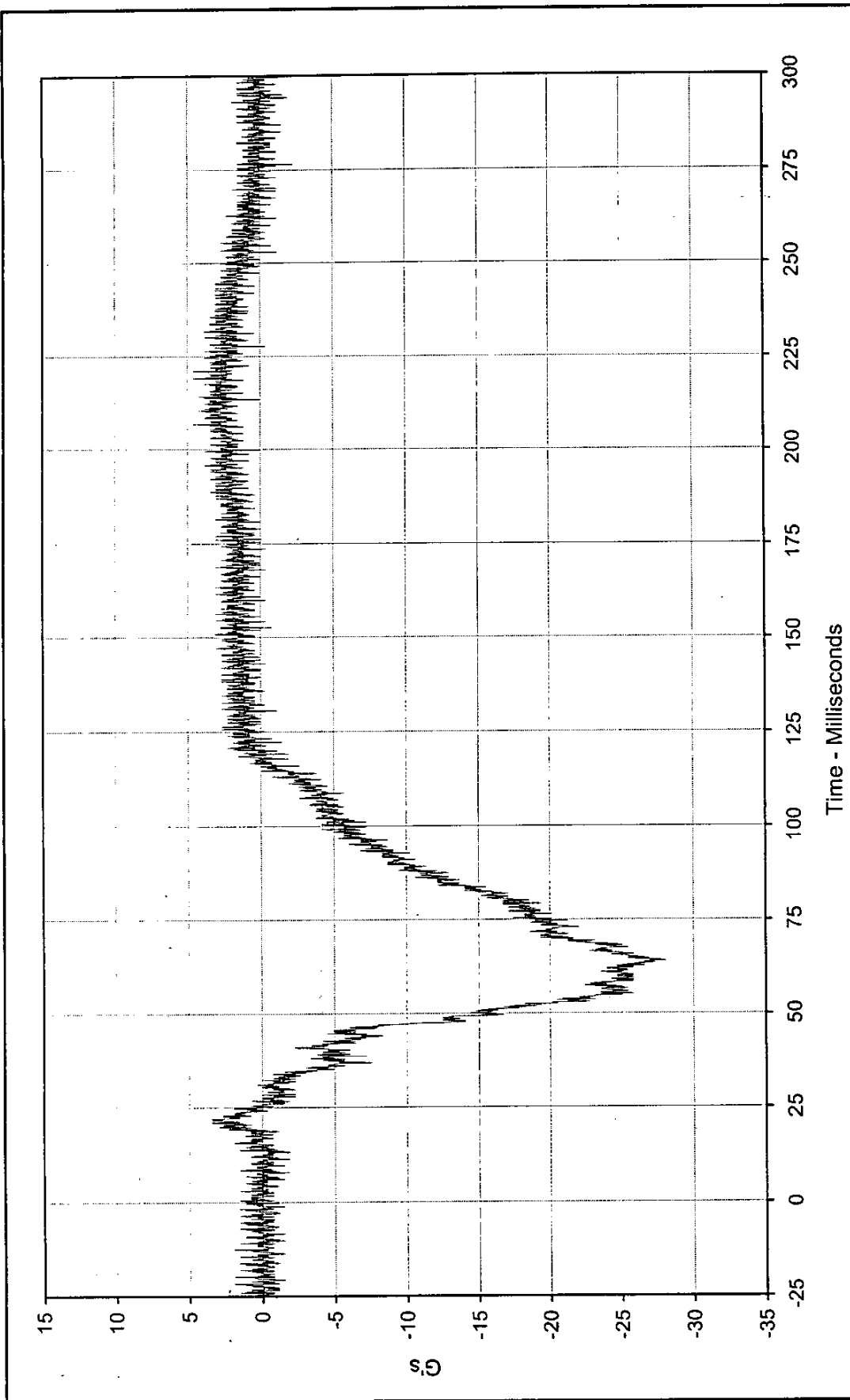
Date of Test: 12/14/99

Curve Number: FIL-021

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

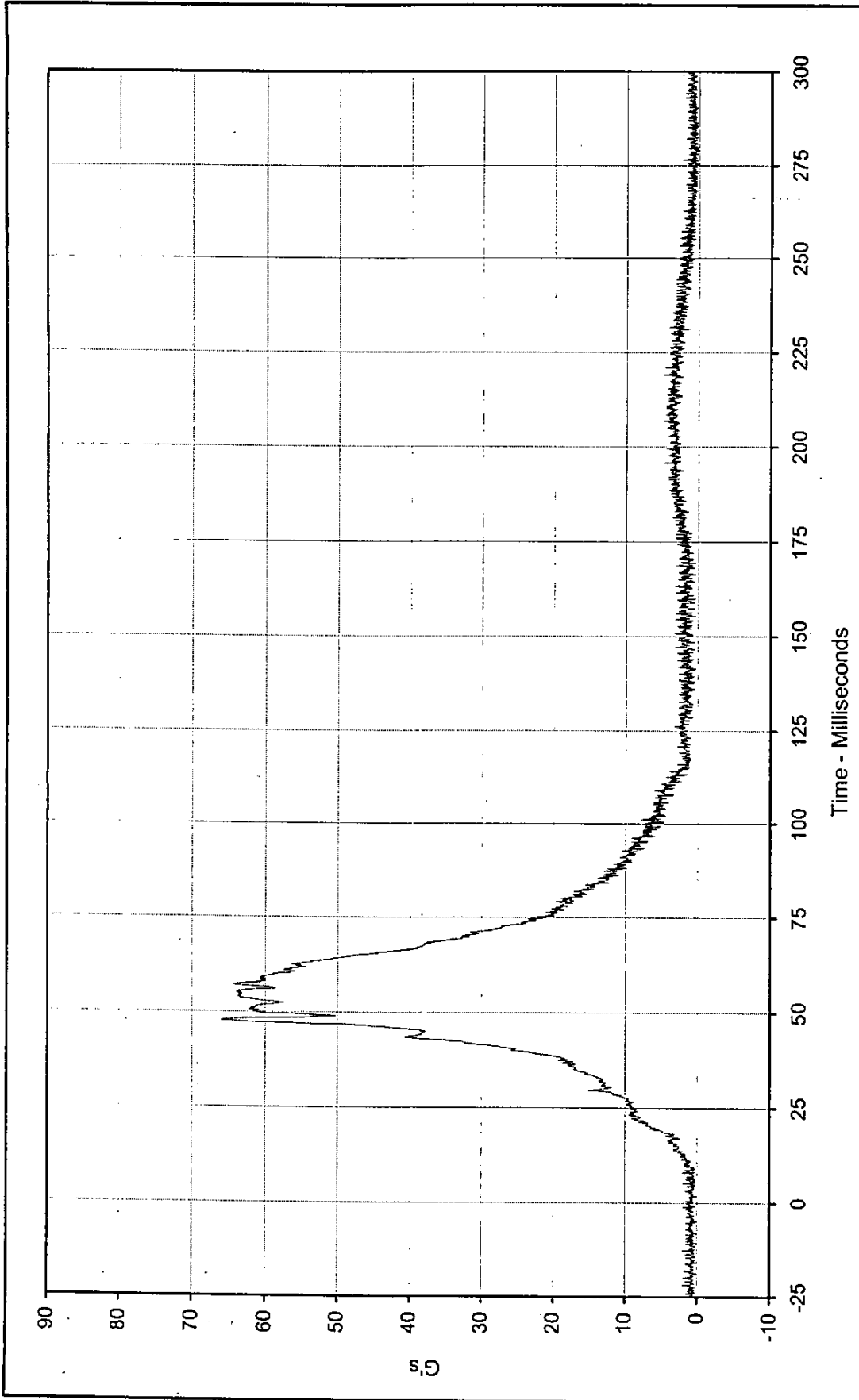




Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

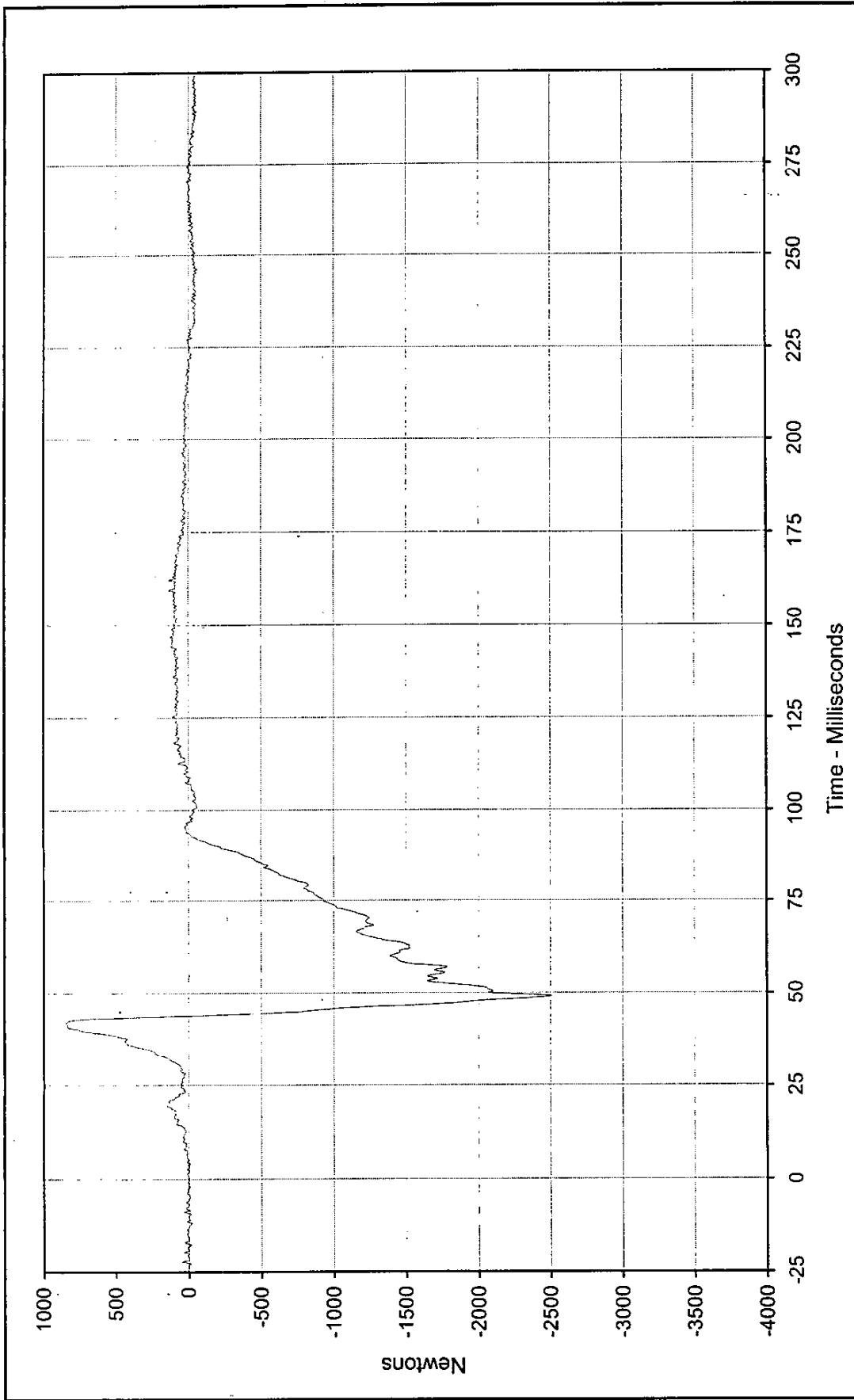
Curve Description: Driver Pelvis Z
 Maximum Value: 4.6 at 206.7 Milliseconds
 Minimum Value: -28.1 at 63.8 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/14/99
 Curve Number: FIL-022





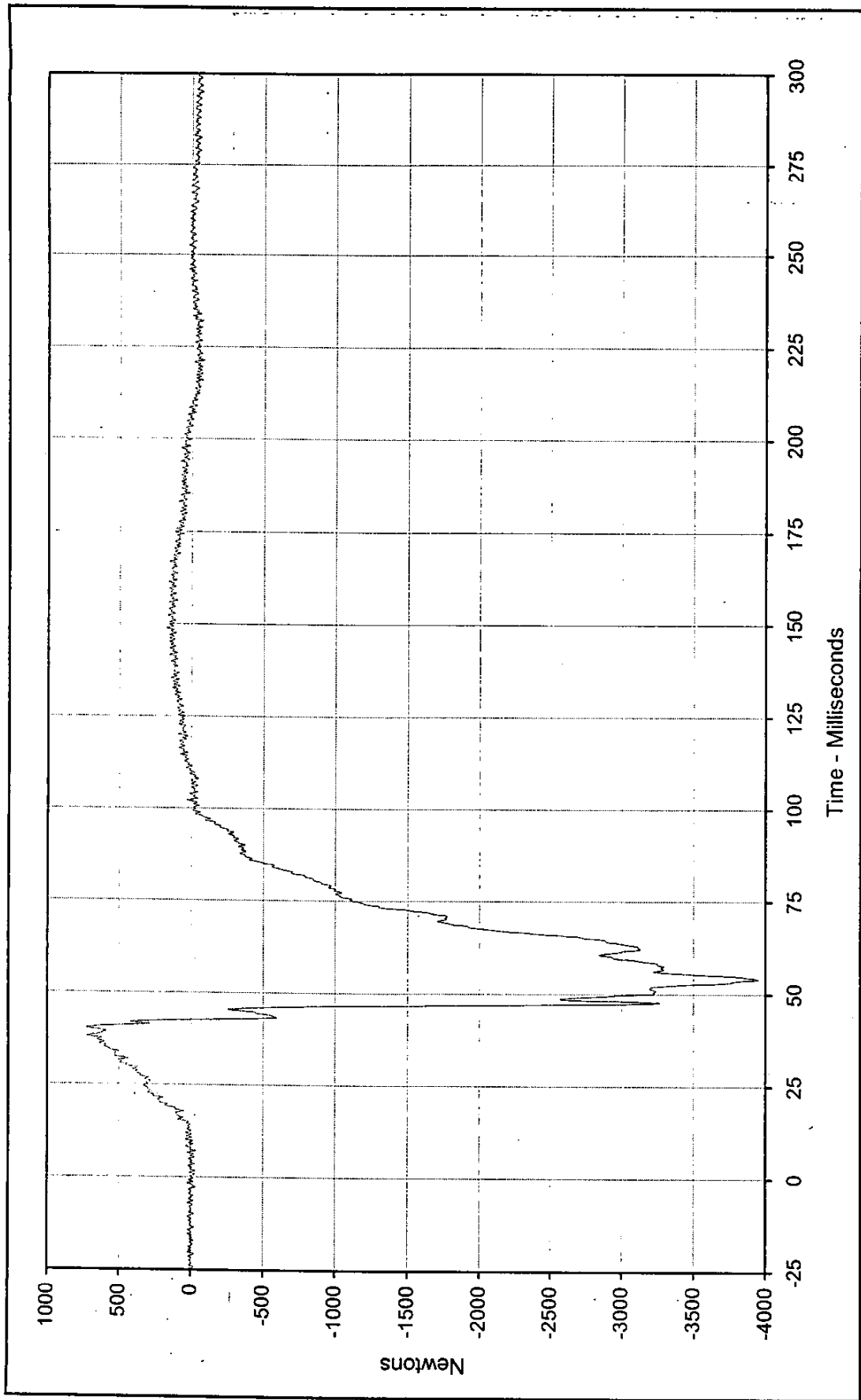
Curve Description:	Driver Pelvis Resultant	Test Program:	2000 NHTSA 35 mph NCAP No.: MY5801
Maximum Value:	66.0 at 47.8 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan
Minimum Value:	0.0 at 1.8 Milliseconds		
SAE Filter Class:	1000		
Date of Test:	12/14/99		
Curve Number:	RES-020		





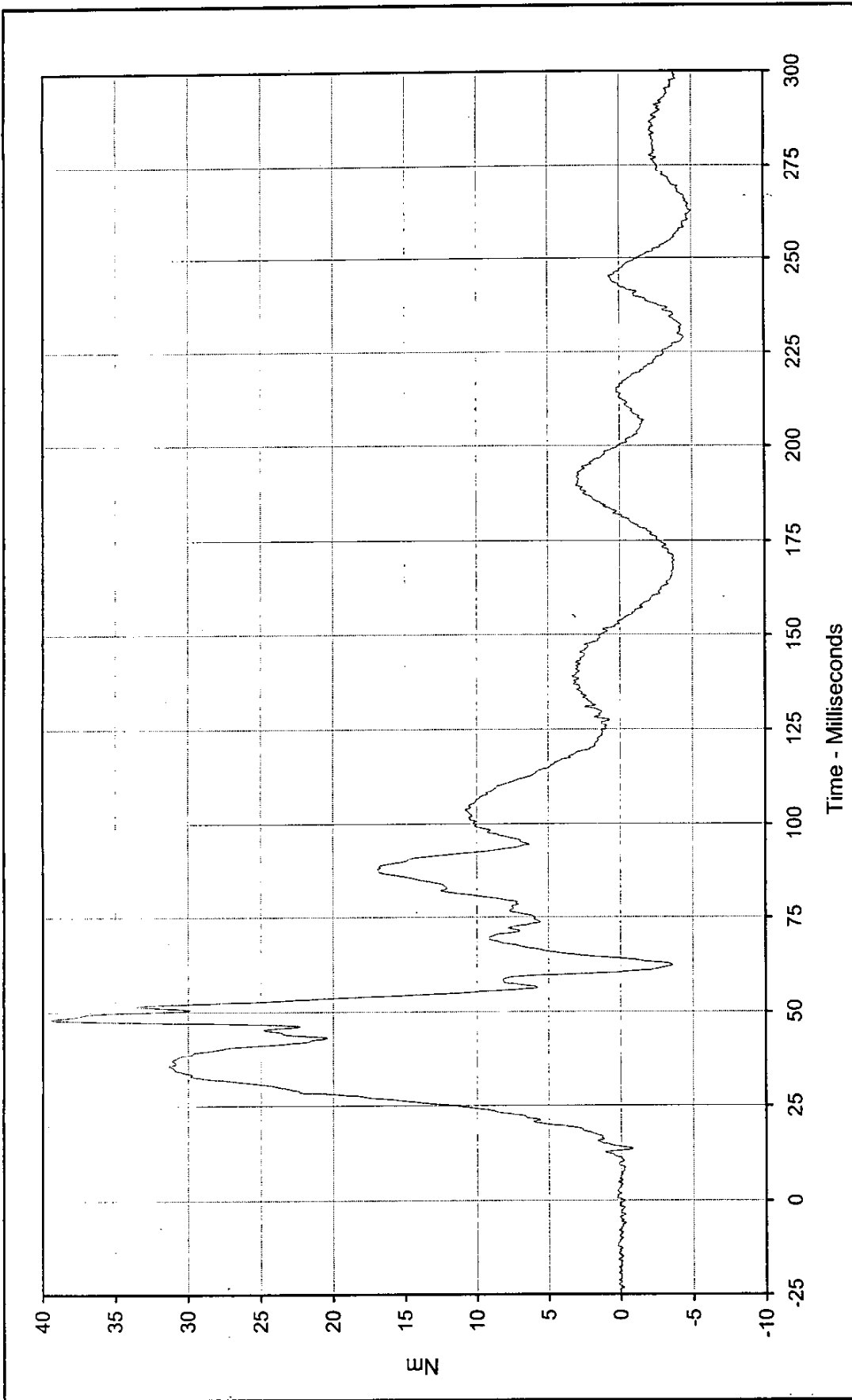
Curve Description:	Driver Left Femur Force	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	849.4 at 41.9 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-2508.1 at 49.2 Milliseconds			
SAE Filter Class:	600			
Date of Test:	12/14/99			
Curve Number:	FIL-023			





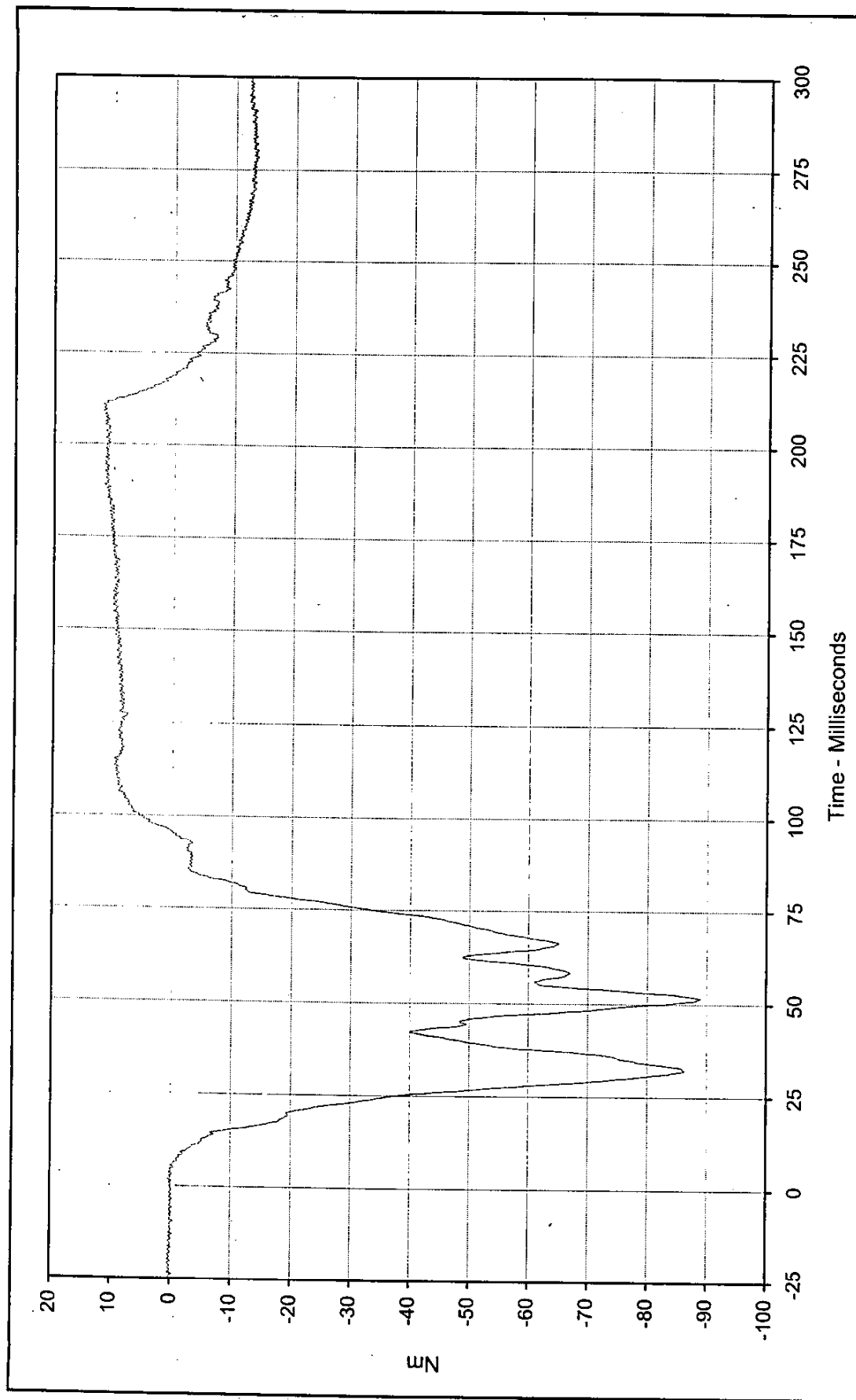
Curve Description:	Driver Right Femur Force	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	731.9 at 40.3 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-3950.0 at 54.0 Milliseconds			
SAE Filter Class:	600			
Date of Test:	12/14/99			
Curve Number:	FIL-024			





Curve Description:	Driver Left Upper Tibia Moment X	Test Program:	2000 NHTSA 35 mph NCAP No.: MY5801
Maximum Value:	39.4 at 48.0 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan
Minimum Value:	-5.0 at 262.4 Milliseconds		
SAE Filter Class:	600		
Date of Test:	12/14/99		
Curve Number:	FIL-025		



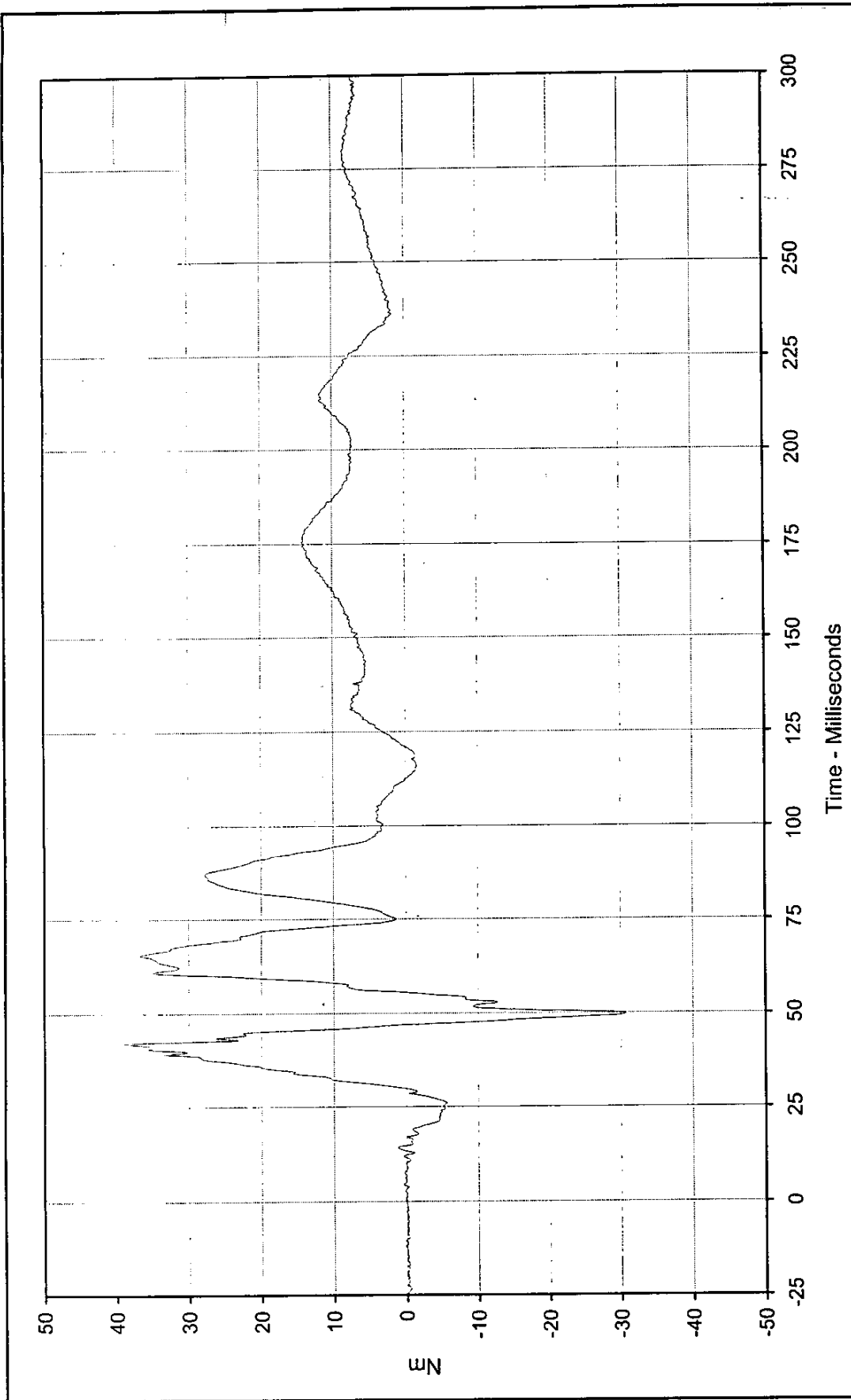


Curve Description: Driver Left Upper Tibia Moment Y
 Maximum Value: 11.8 at 210.6 Milliseconds
 Minimum Value: -89.0 at 51.7 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/14/99
 Curve Number: FIL-026

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

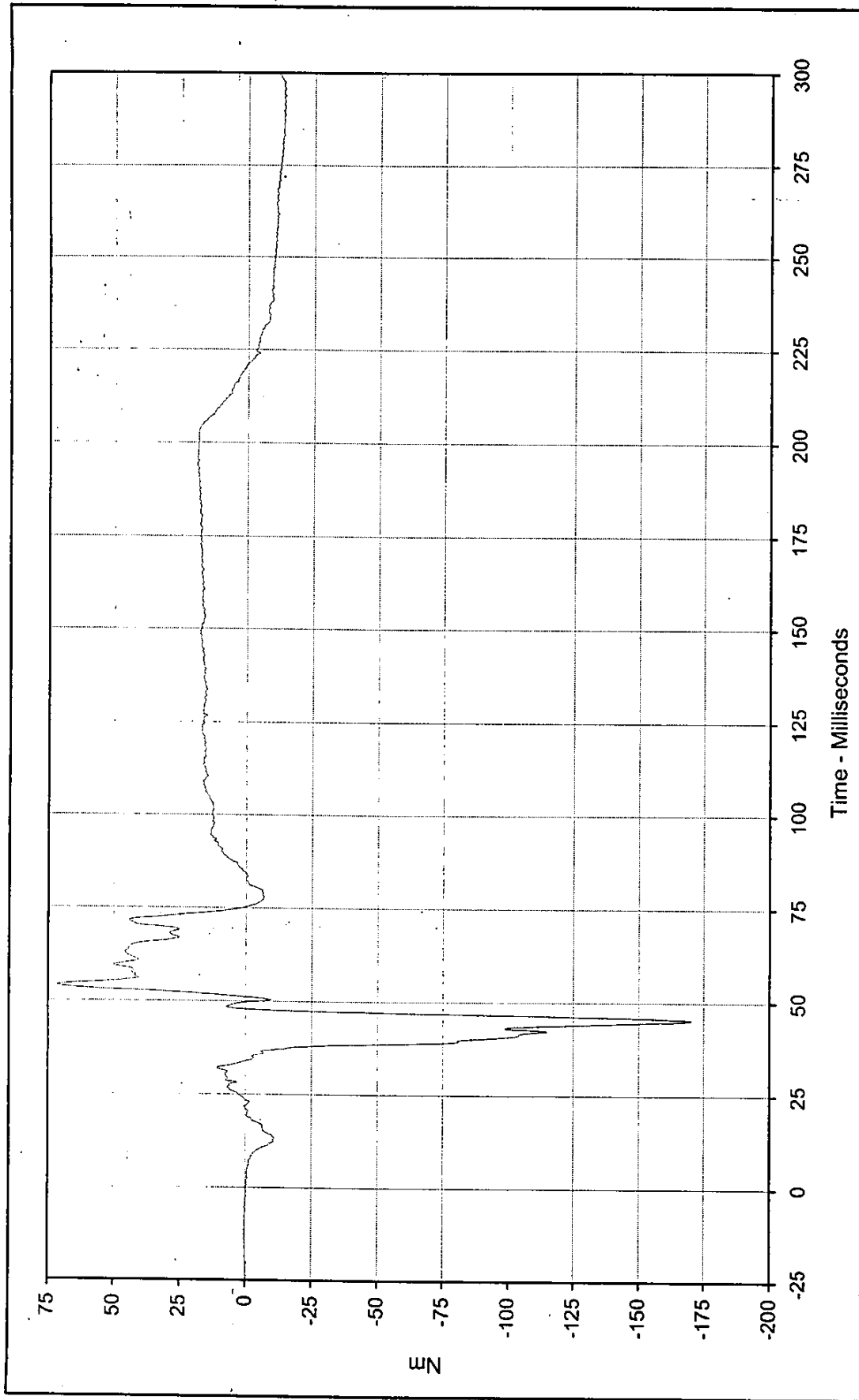
Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Driver Right Upper Tibia Moment X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	39.0 at 42.1 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-30.7 at 49.7 Milliseconds			
SAE Filter Class:	600			
Date of Test:	12/14/99			
Curve Number:	FIL-027			





Curve Description: Driver Right Upper Tibia Moment Y

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Maximum Value: 71.4 at 54.1 Milliseconds

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

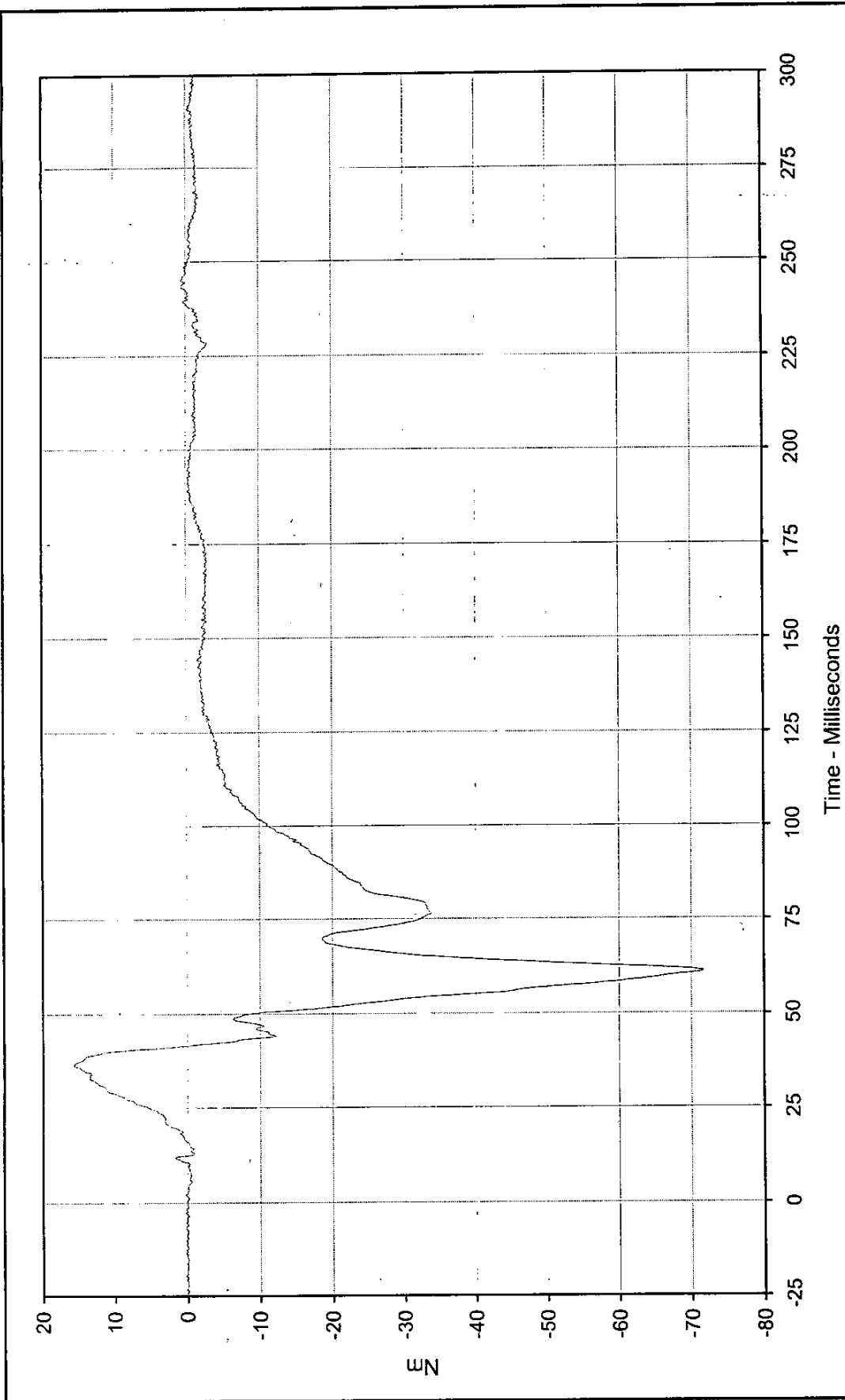
Minimum Value: -170.2 at 45.4 Milliseconds

SAE Filter Class: 600

Date of Test: 12/14/99

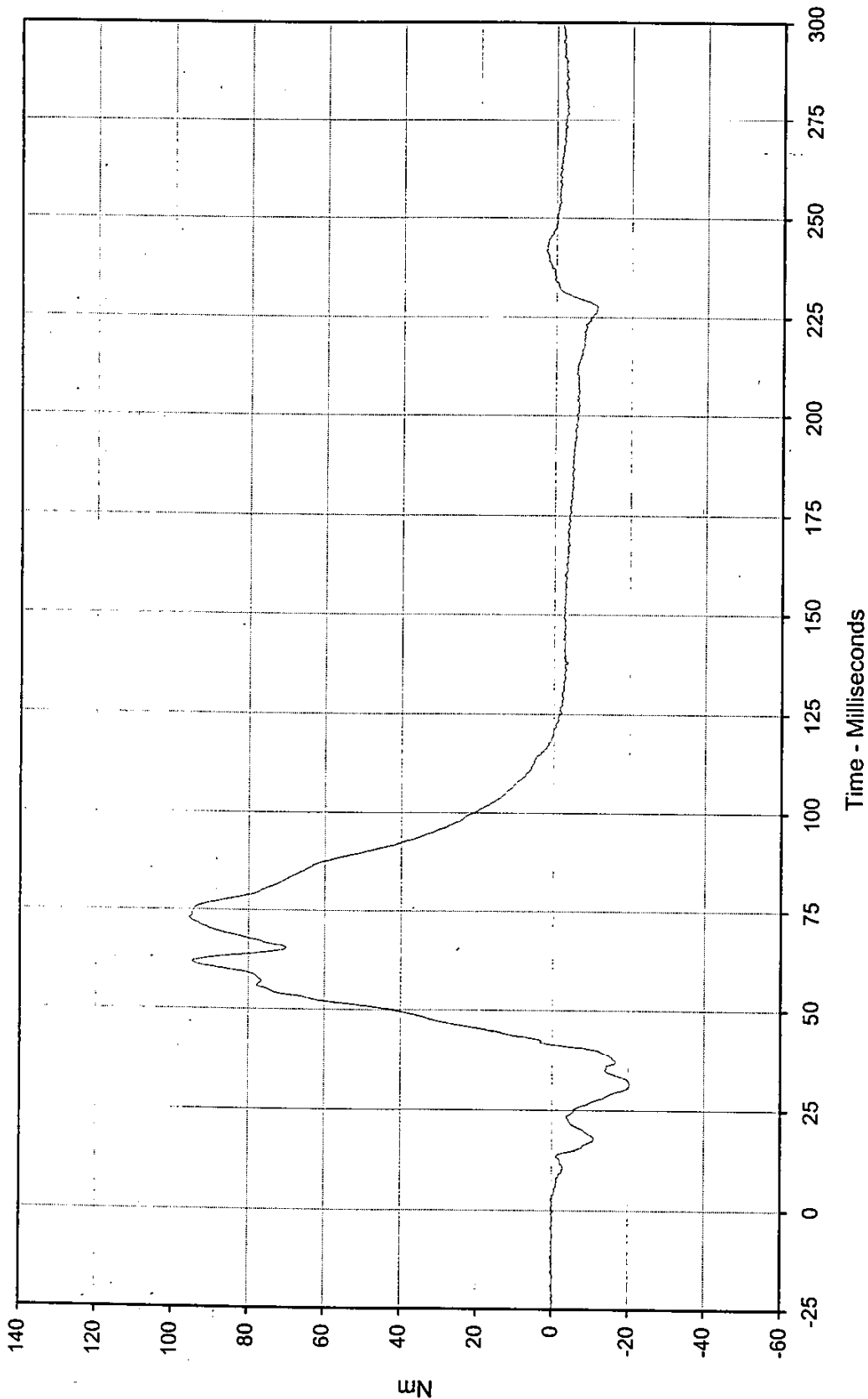
Curve Number: FIL-028





Curve Description:	Driver Left Lower Tibia Moment X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	15.7 at 36.3 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-71.8 at 61.0 Milliseconds			
SAE Filter Class:	600			
Date of Test:	12/14/99			
Curve Number:	FIL-029			





Curve Description: Driver Left Lower Tibia Moment Y

Maximum Value: 95.7 at 72.9 Milliseconds

Minimum Value: -20.4 at 31.7 Milliseconds

SAE Filter Class: 600

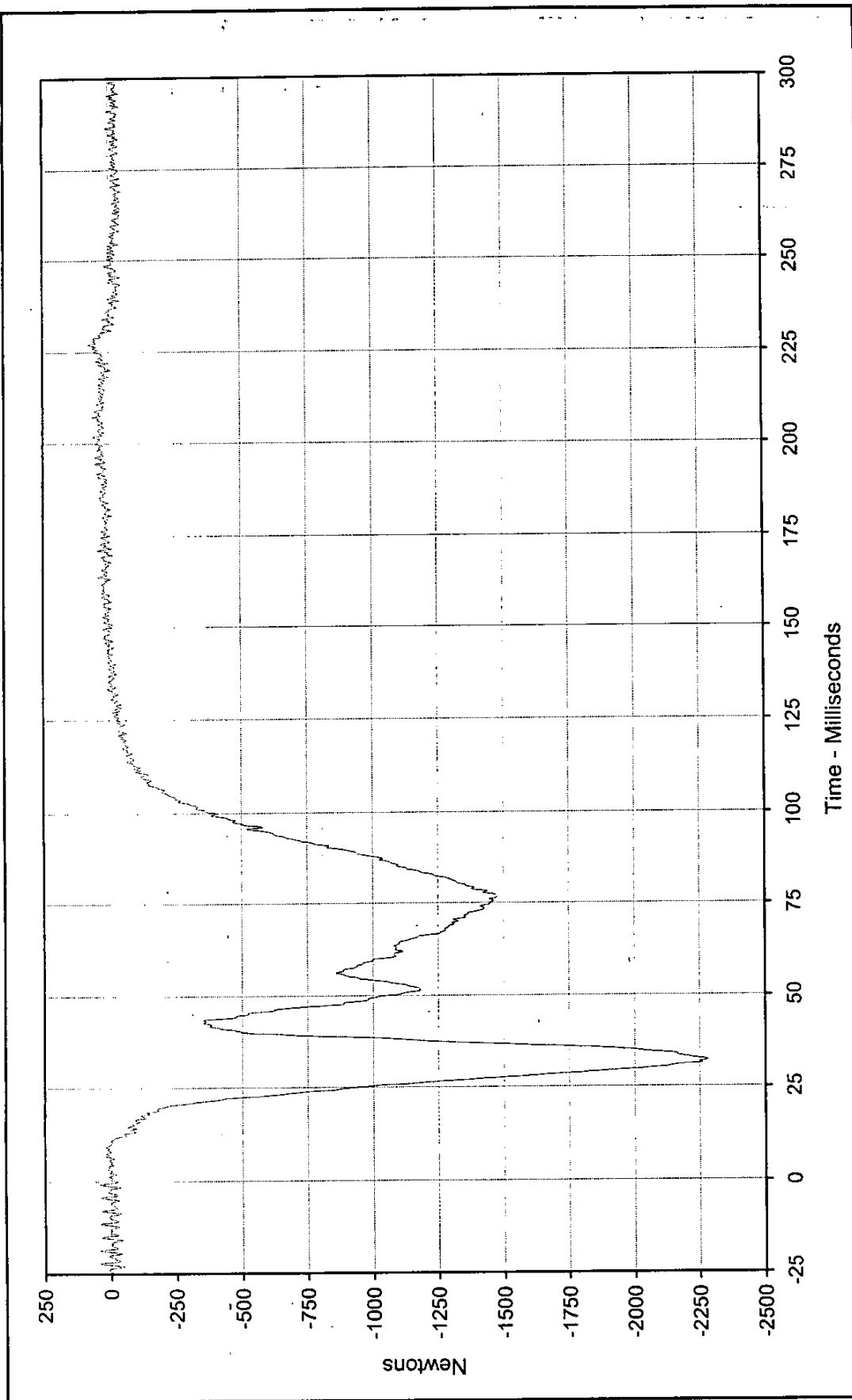
Date of Test: 12/14/99

Curve Number: FIL-030

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description: Driver Left Lower Tibia Force Z

Maximum Value: 75.7 at 227.0 Milliseconds

Minimum Value: -2282.3 at 32.4 Milliseconds

SAE Filter Class: 600

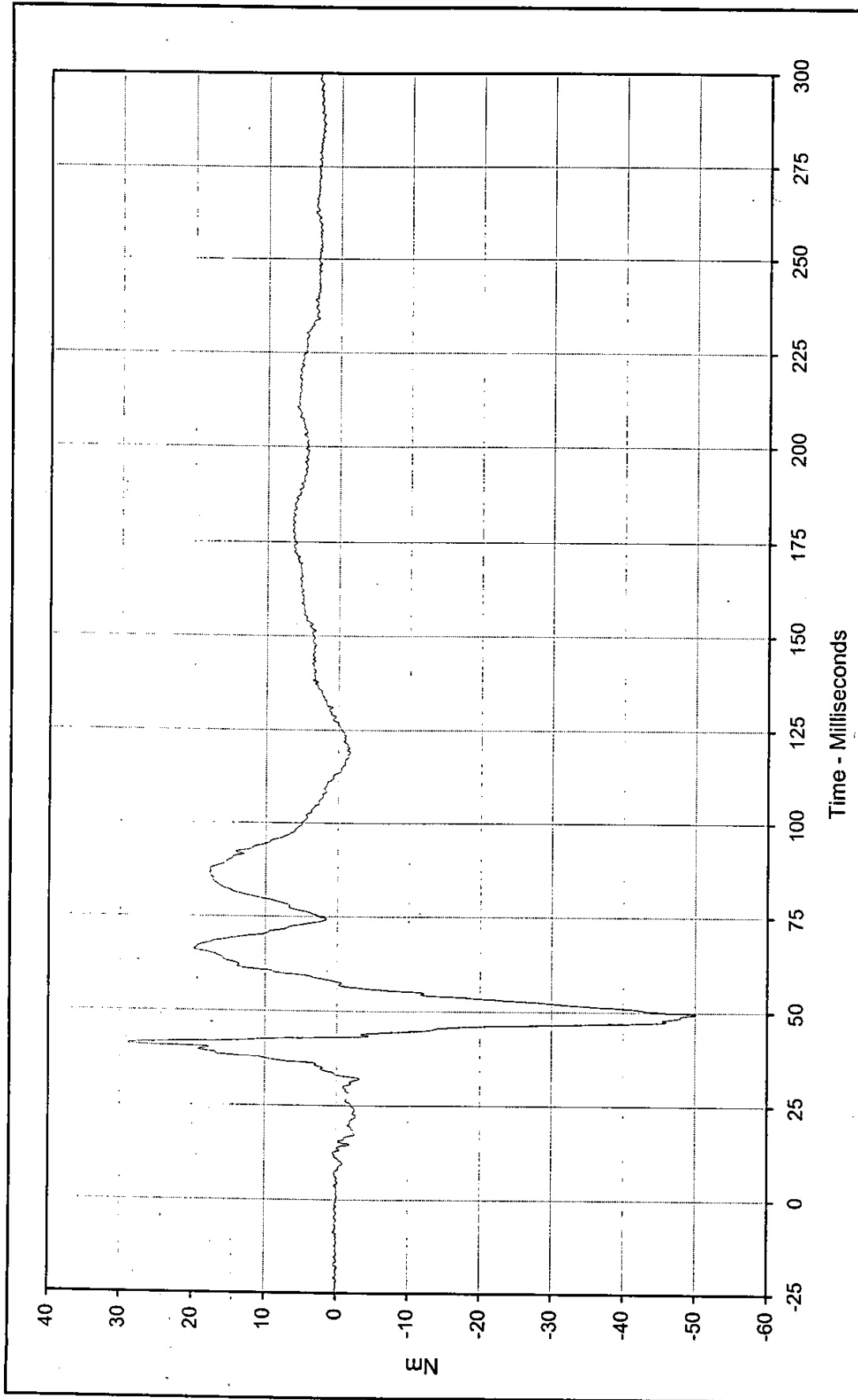
Date of Test: 12/14/99

Curve Number: FIL-031

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

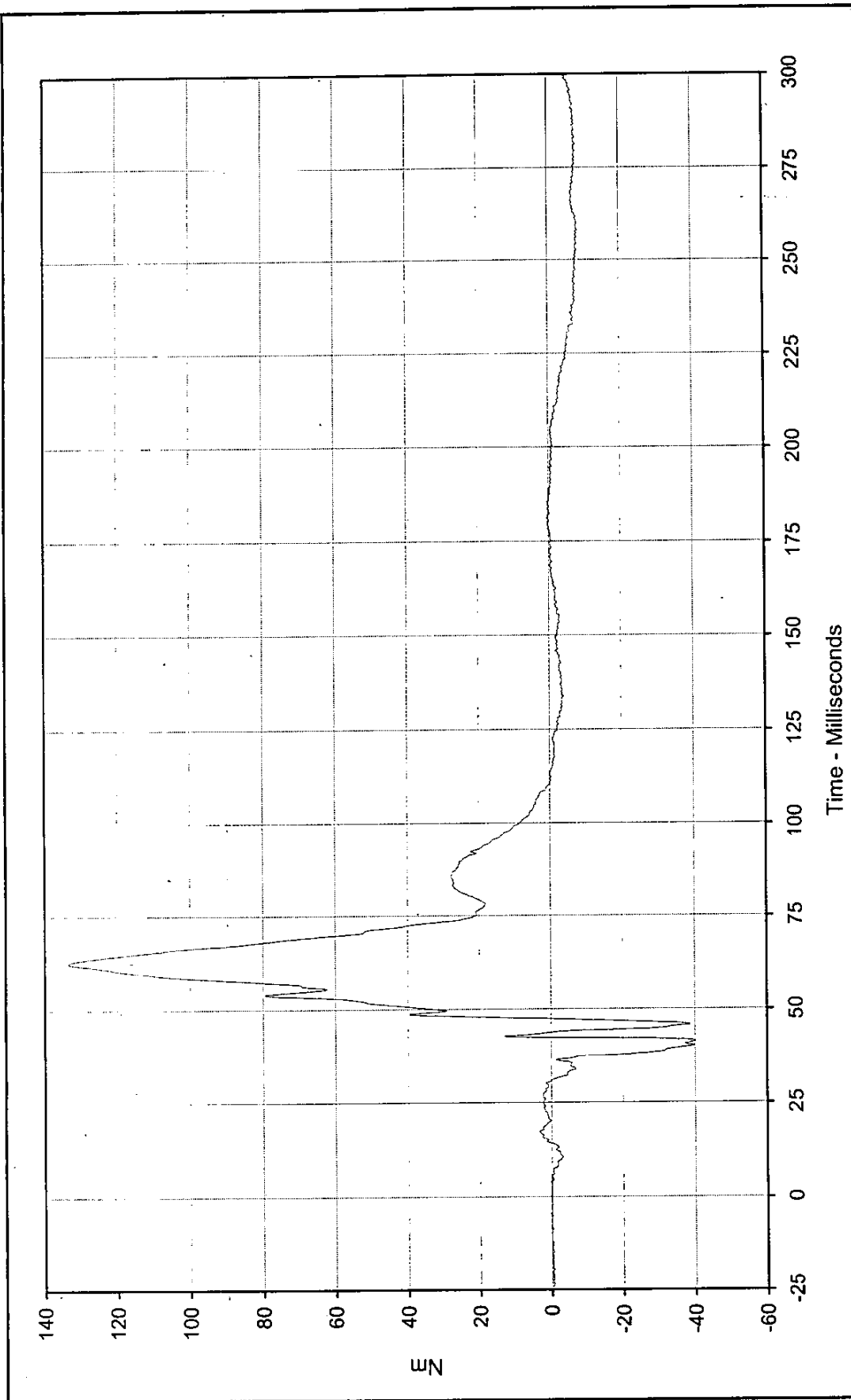
Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Driver Right Lower Tibia Moment X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	28.9 at 41.4 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-50.2 at 49.5 Milliseconds			
SAE Filter Class:	600			
Date of Test:	12/14/99			
Curve Number:	FIL-032			

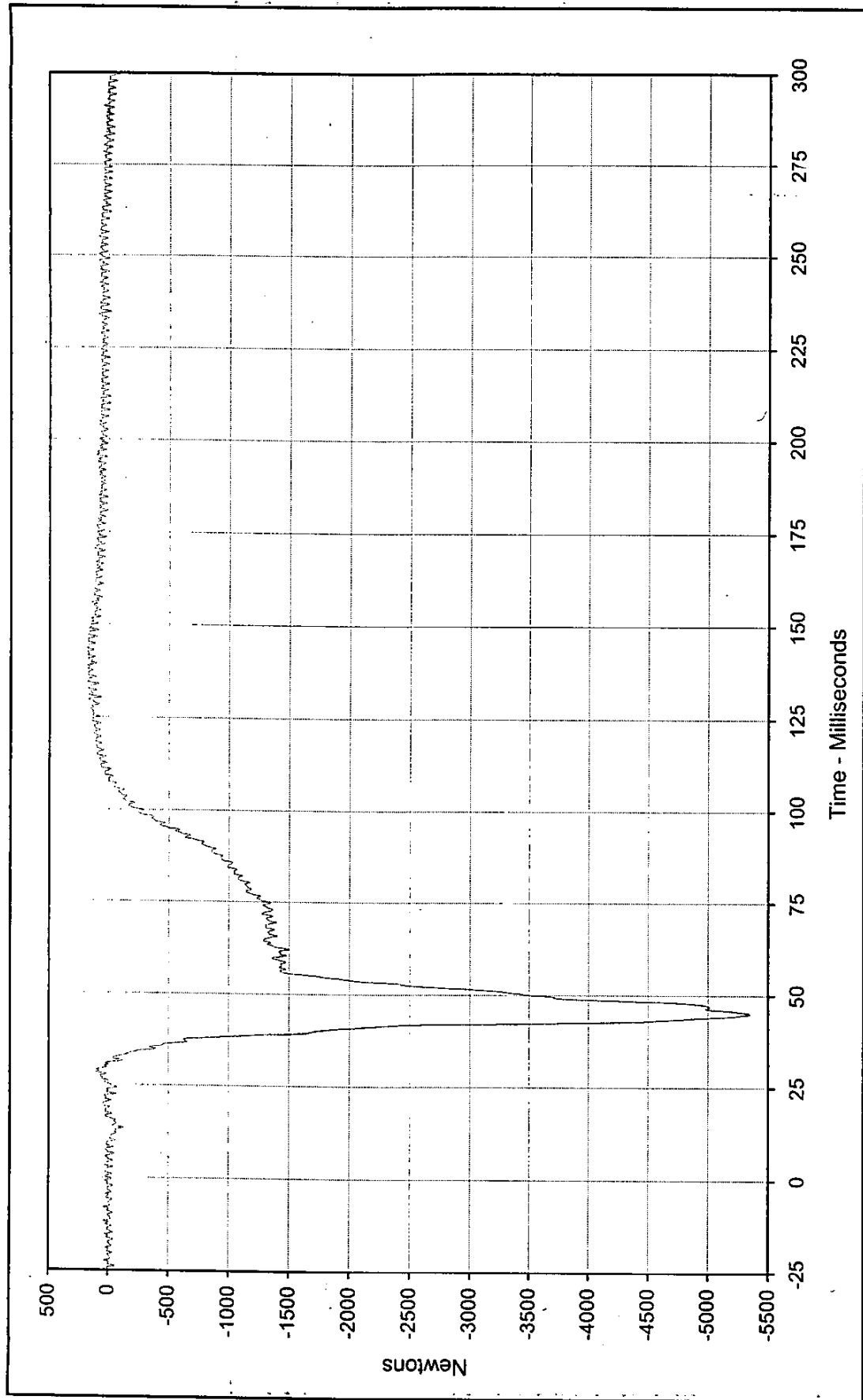




Curve Description: Driver Right Lower Tibia Moment Y
 Maximum Value: 133.5 at 62.3 Milliseconds
 Minimum Value: -40.2 at 41.5 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/14/99
 Curve Number: FIL-033

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

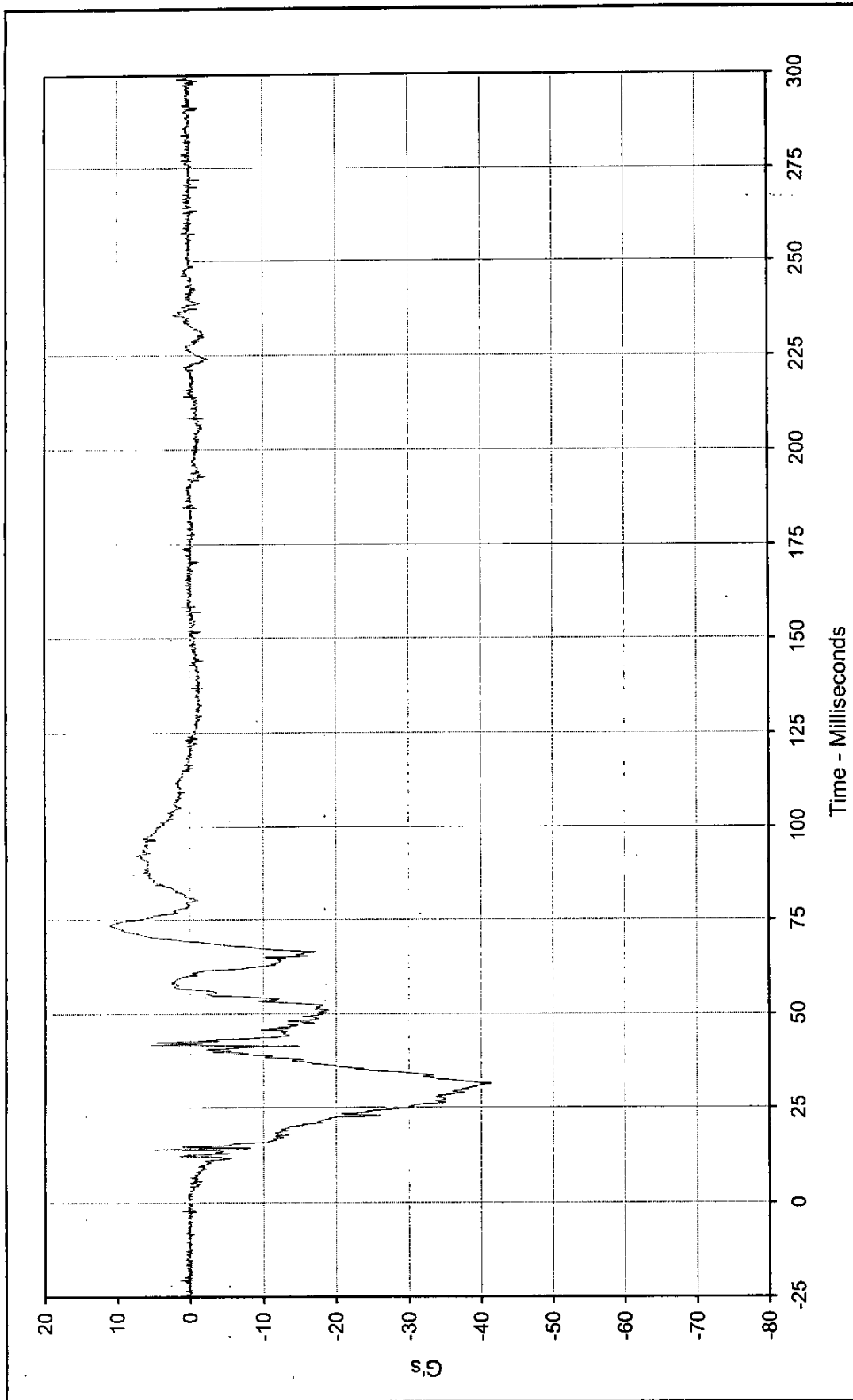




Curve Description:	Driver Right Lower Tibia Force Z	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	188.6 at 143.5 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-5351.2 at 45.1 Milliseconds			

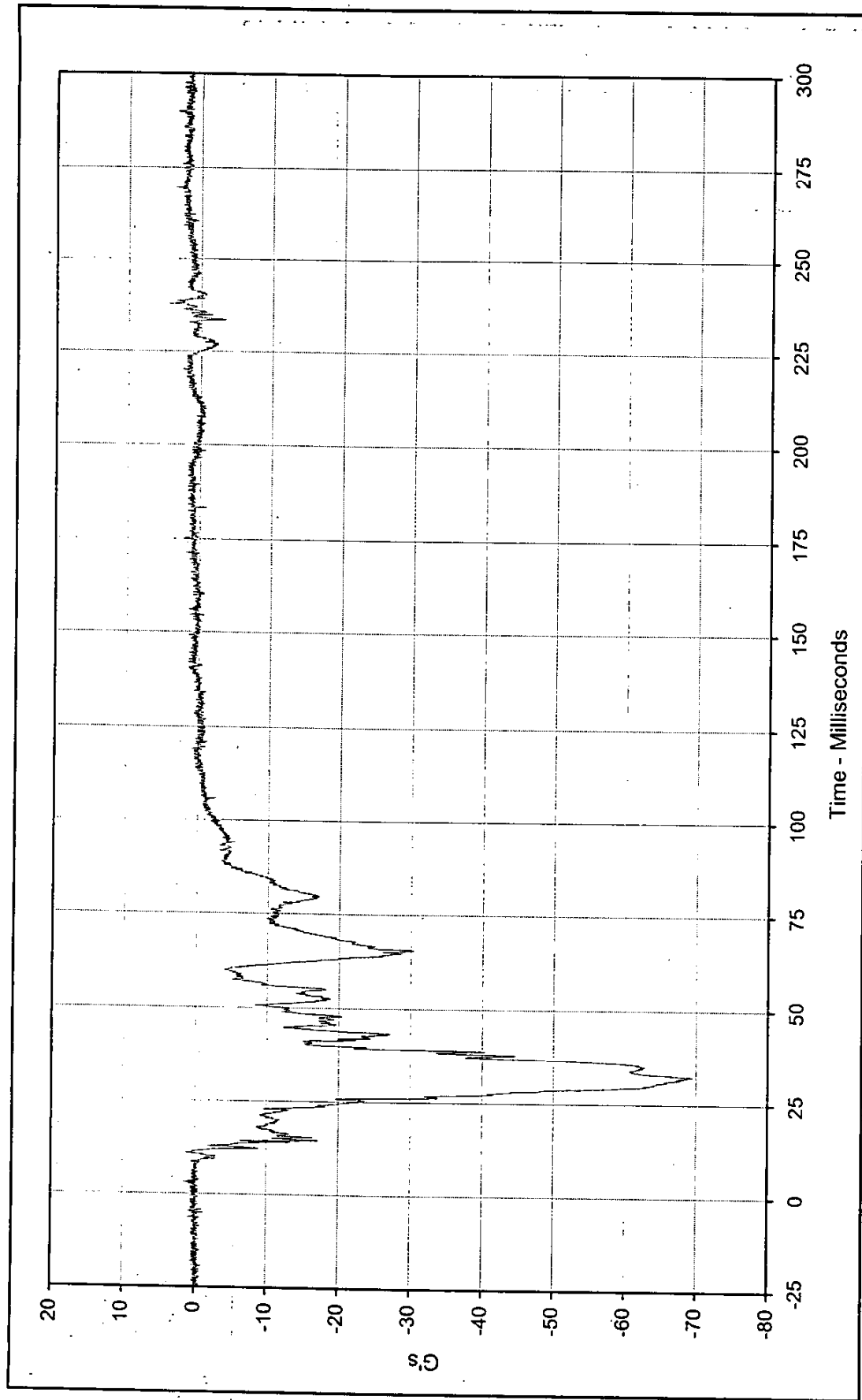


SAE Filter Class:	600
Date of Test:	12/14/99
Curve Number:	FIL-034



Curve Description:	Driver Left Foot Aft X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	11.1 at 73.4 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-41.4 at 31.3 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/14/99			
Curve Number:	FIL-035			





Curve Description:

Maximum Value:

Minimum Value:

SAE Filter Class:

Date of Test:

Curve Number:

Driver Left Foot Aft Z

4.4 at 237.9 Milliseconds

-69.6 at 32.4 Milliseconds

1000

12/14/99

FIL-036

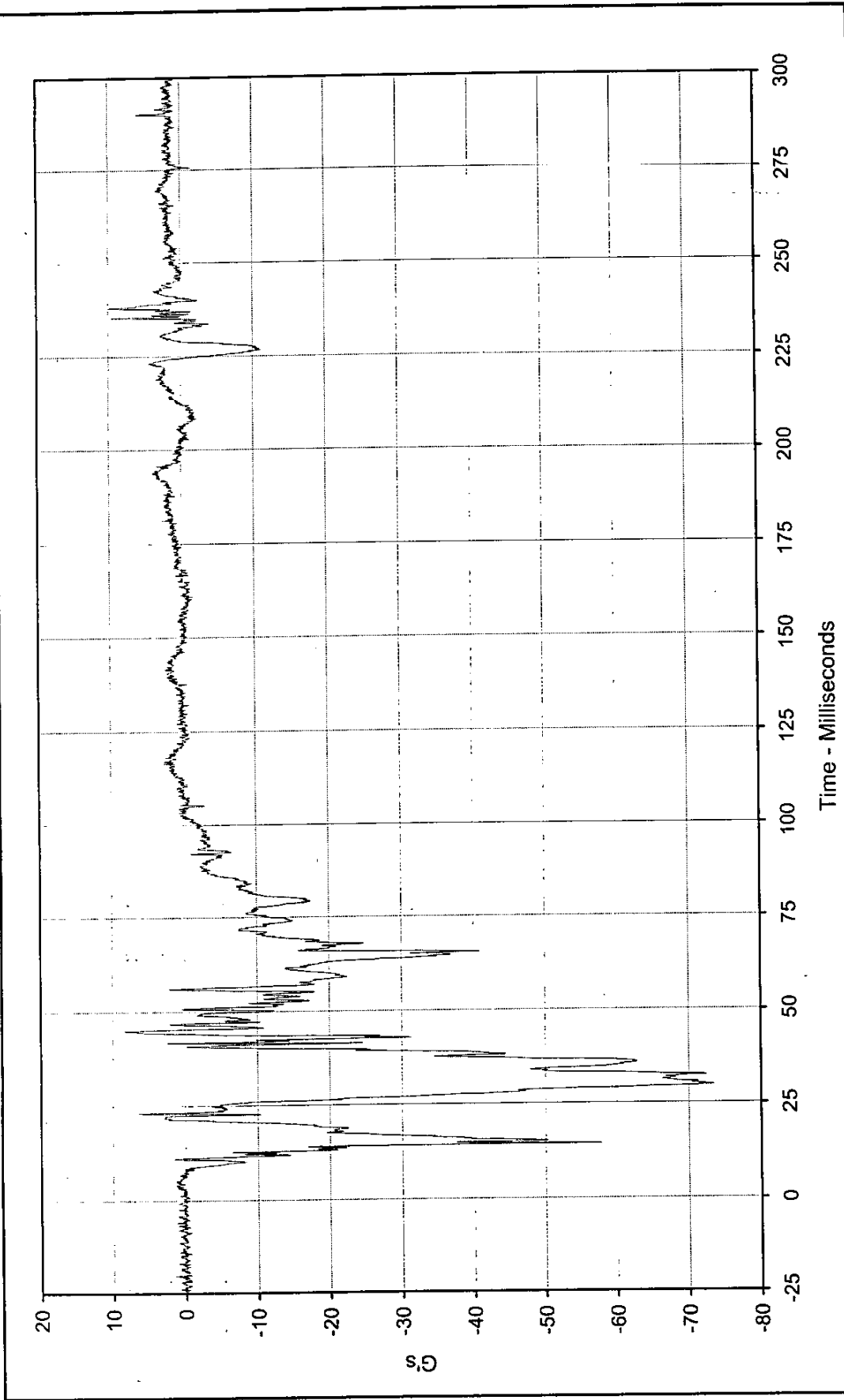
Test Program:

Test Vehicle:

2000 NHTSA 35 mph NCAP No.: MY5801

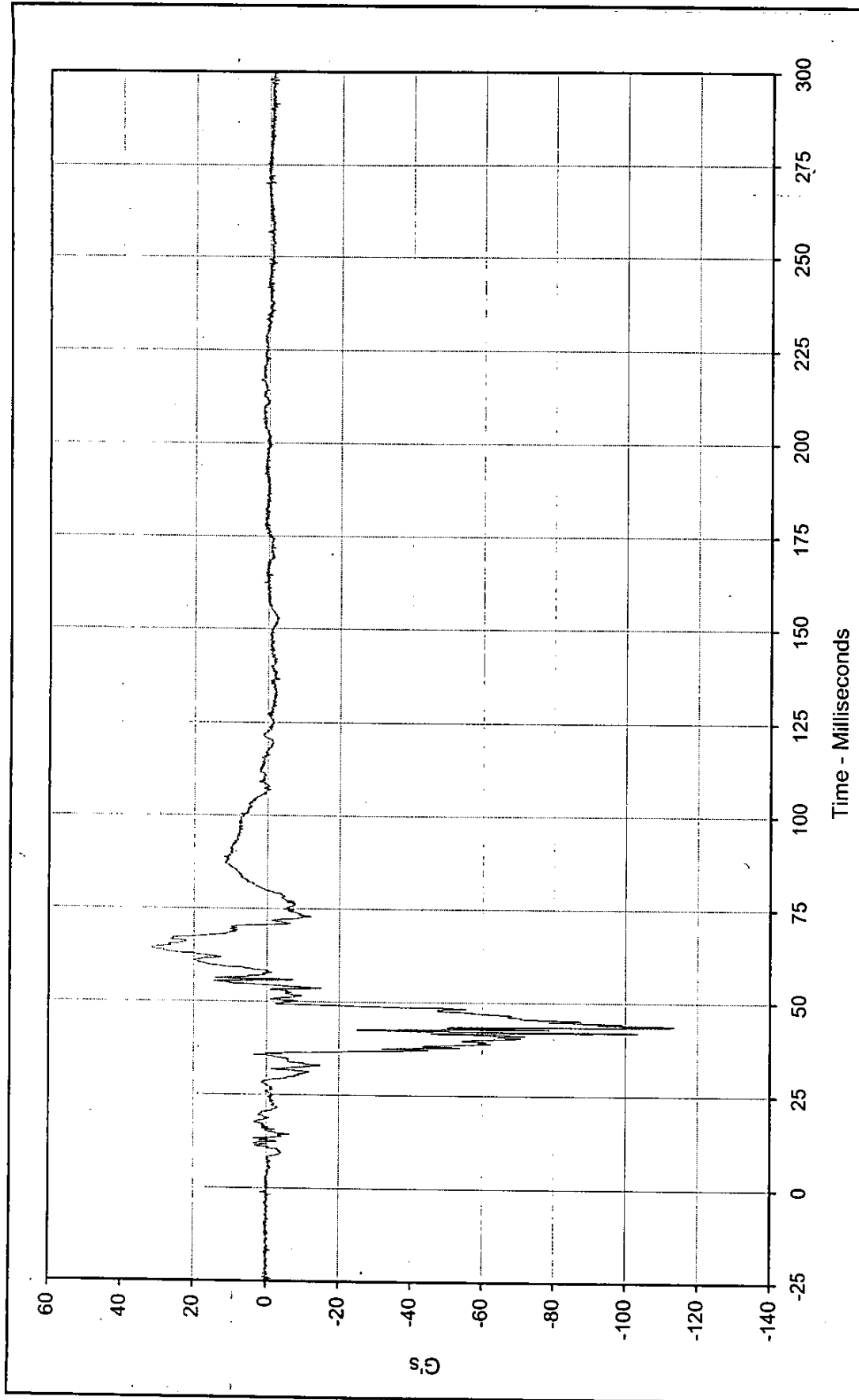
2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Driver Left Foot Fore Z	Test Program:	2000 NHTSA 35 mph NCAP No.: MY5801
Maximum Value:	10.0 at 238.0 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan
Minimum Value:	-73.5 at 29.6 Milliseconds		
SAE Filter Class:	1000		
Date of Test:	12/14/99		
Curve Number:	FIL-037		

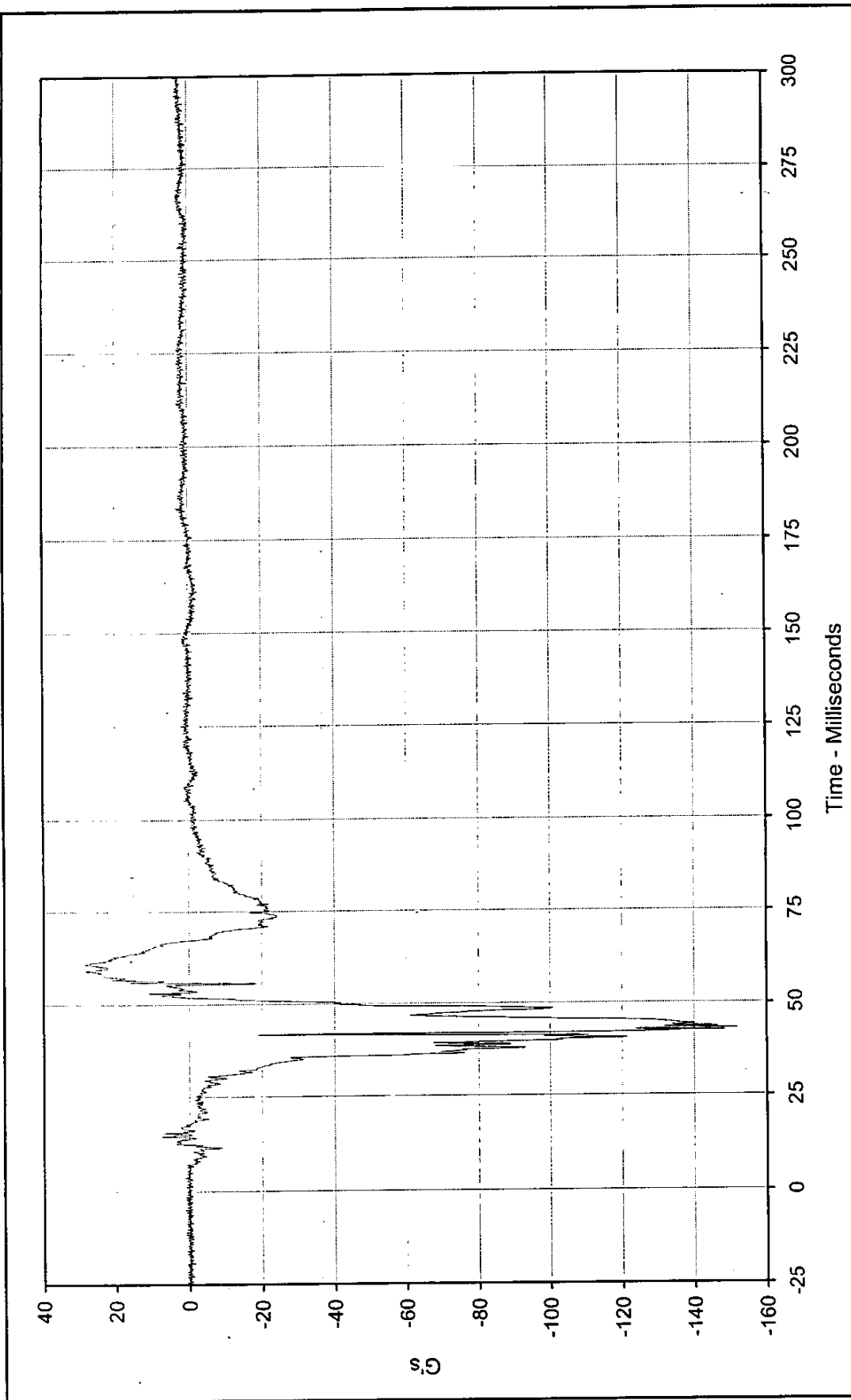




Curve Description: Driver Right Foot Aft X
 Maximum Value: 31.7 at 64.4 Milliseconds
 Minimum Value: -113.5 at 43.9 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/14/99
 Curve Number: FIL-038

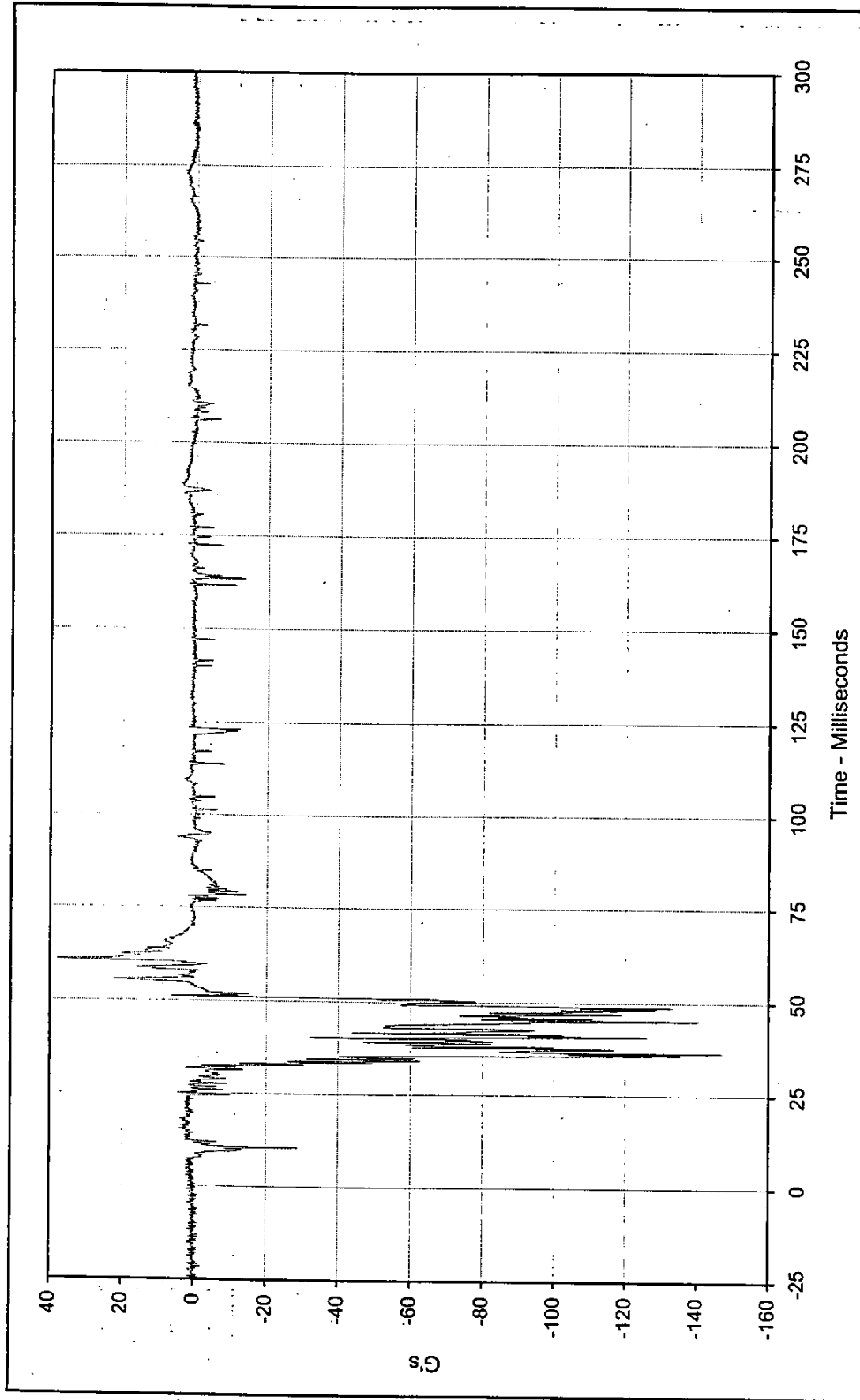
Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





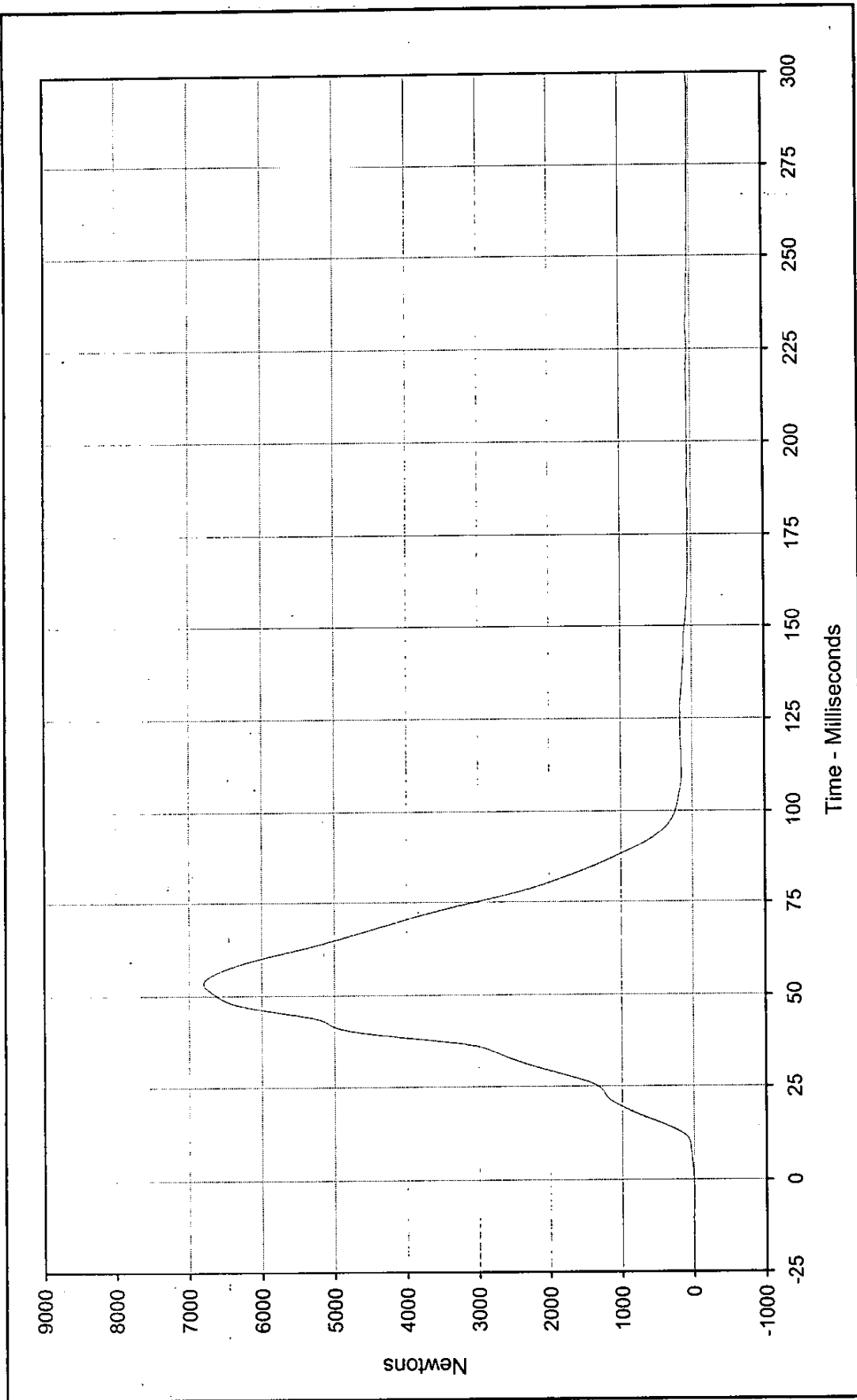
Curve Description:	Driver Right Foot Aft Z	Test Program:	2000 NHTSA 35 mph NCAP No.: MY5801
Maximum Value:	28.5 at 60.8 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan
Minimum Value:	-151.8 at 43.1 Milliseconds		
SAE Filter Class:	1000		
Date of Test:	12/14/99		
Curve Number:	FIL-039		



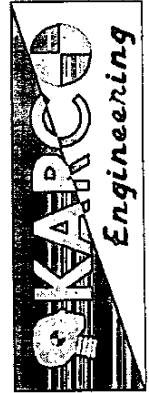


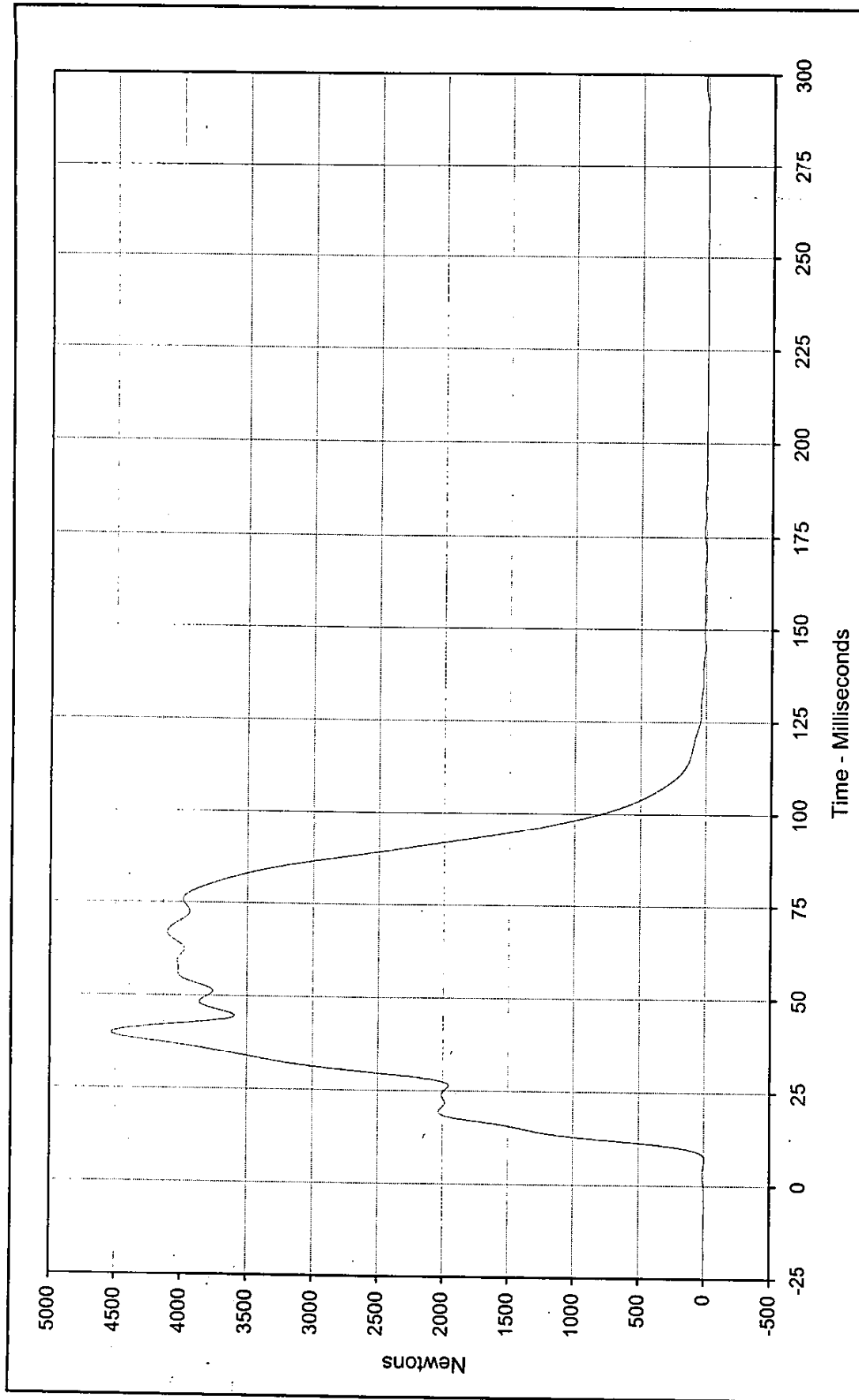
Curve Description:	Driver Right Foot Fore Z	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	38.1 at 60.8 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-147.0 at 36.7 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/14/99			
Curve Number:	FIL-040			





Curve Description:	Driver Lap Belt Force	Test Program:	2000 NHTSA 35 mph NCAP No.: MY5801
Maximum Value:	6798.8 at 53.3 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan
Minimum Value:	4.6 at 0.0 Milliseconds		
SAE Filter Class:	60		
Date of Test:	12/14/99		
Curve Number:	FIL-041		





Curve Description: Driver Shoulder Belt Force Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Maximum Value: 4530.5 at 40.1 Milliseconds Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

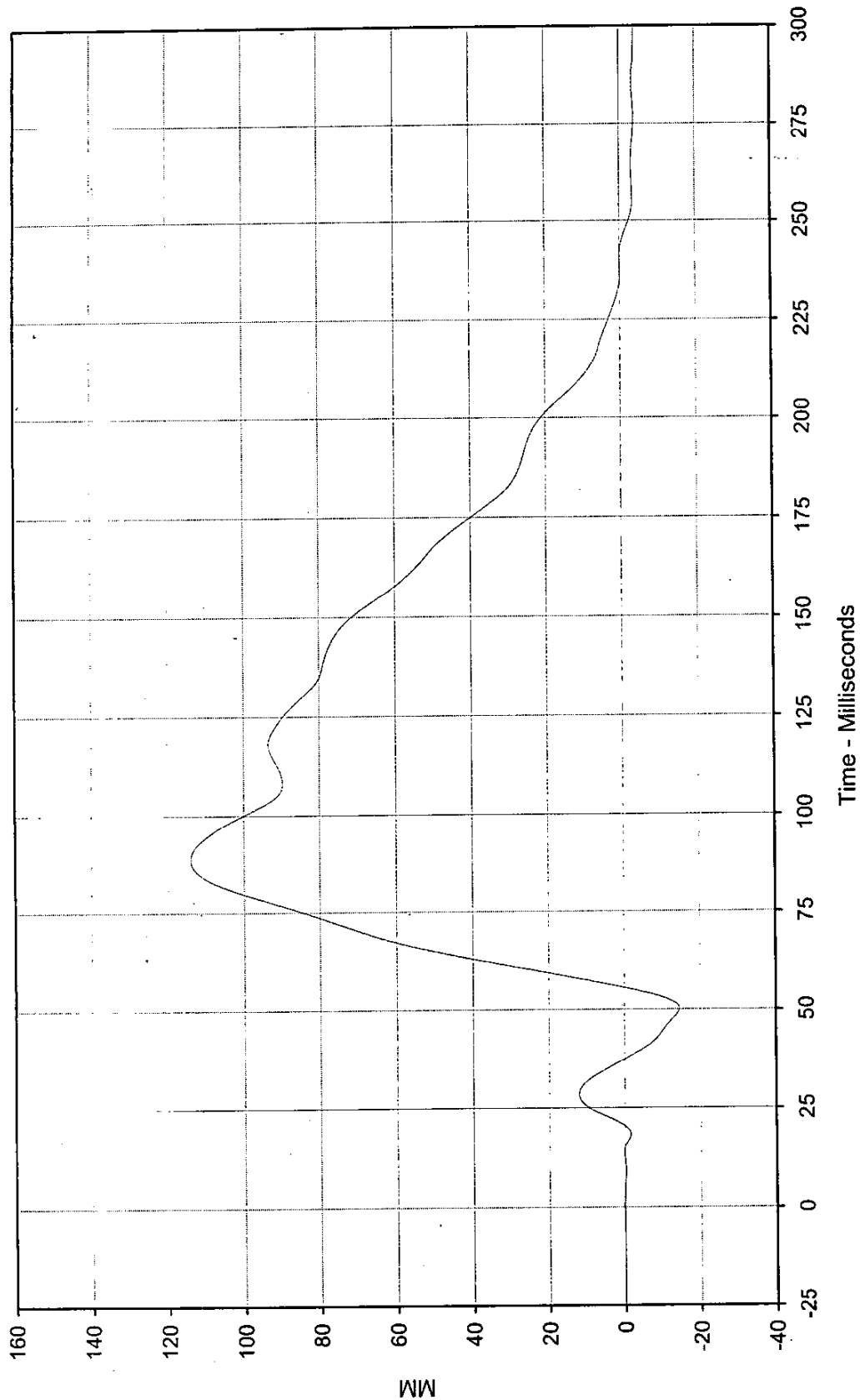
Minimum Value: -4.7 at 255.7 Milliseconds

SAE Filter Class: 60

Date of Test: 12/14/99

Curve Number: FIL-042

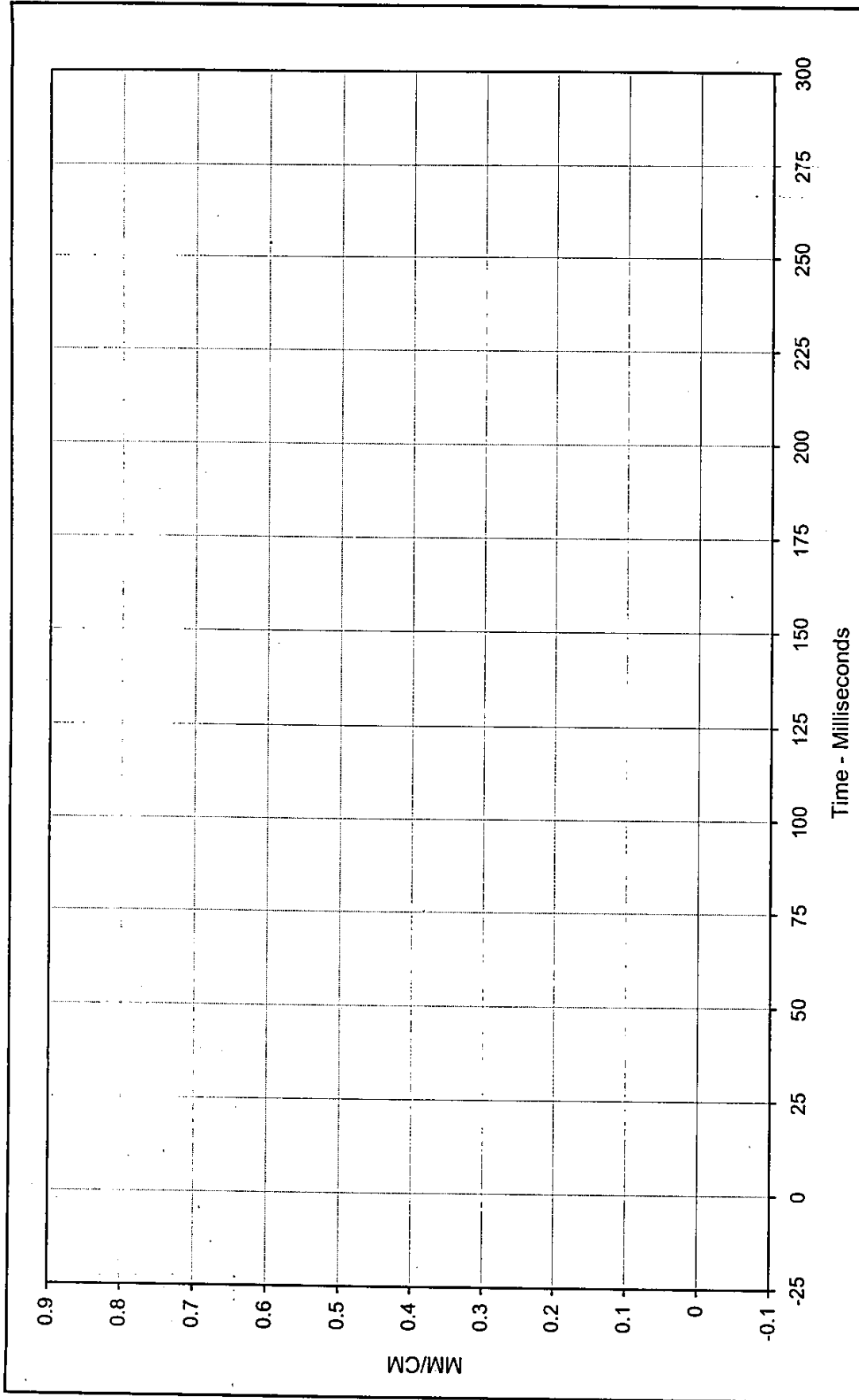




Curve Description: Driver Shoulder Belt Pullout
 Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

Maximum Value: 113.9 at 88.4 Milliseconds
 Minimum Value: -14.5 at 50.1 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/99
 Curve Number: FIL-043





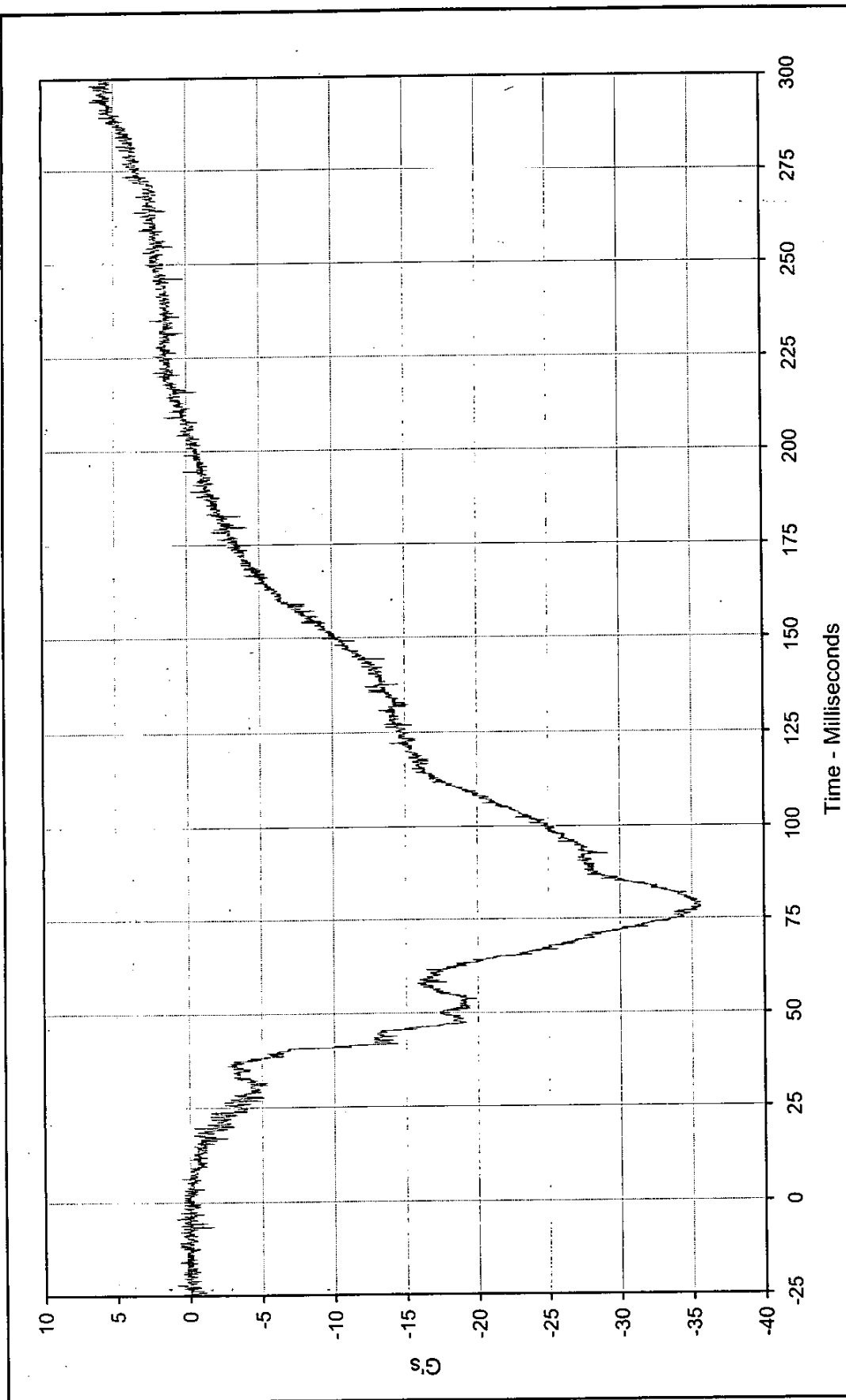
Curve Description: Driver Shoulder Belt Elongation * Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Maximum Value: 0.00 at 0.0 Milliseconds Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan
 Minimum Value: 0.00 at 0.0 Milliseconds
 SAE Filter Class: 60

Date of Test: 12/14/99

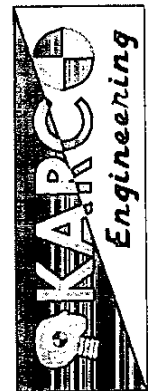
Curve Number: FIL-044

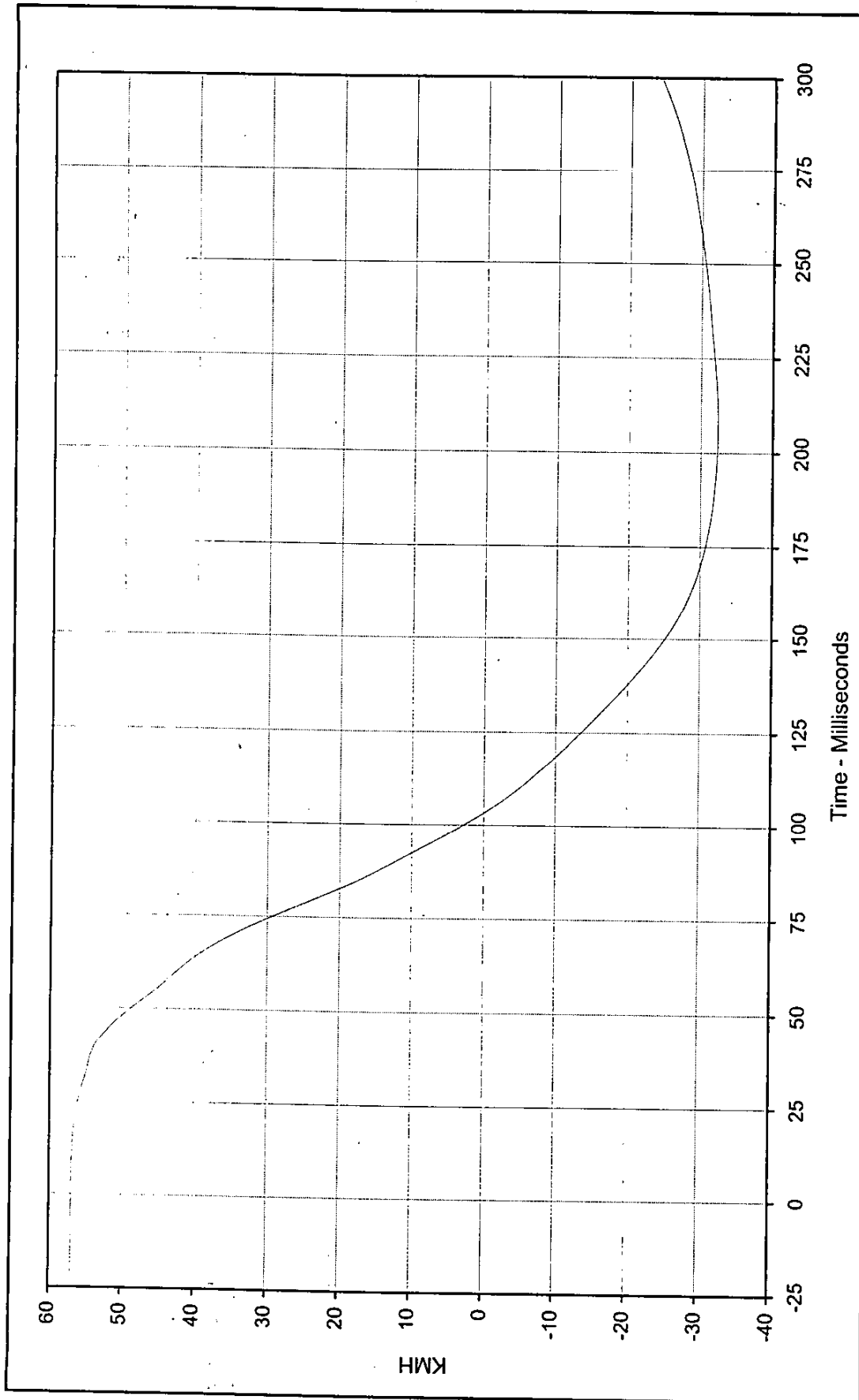
* Not Installed





Curve Description:	Passenger Head Primary X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	6.6 at 293.9 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-35.6 at 77.8 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/14/99			
Curve Number:	FIL-045			



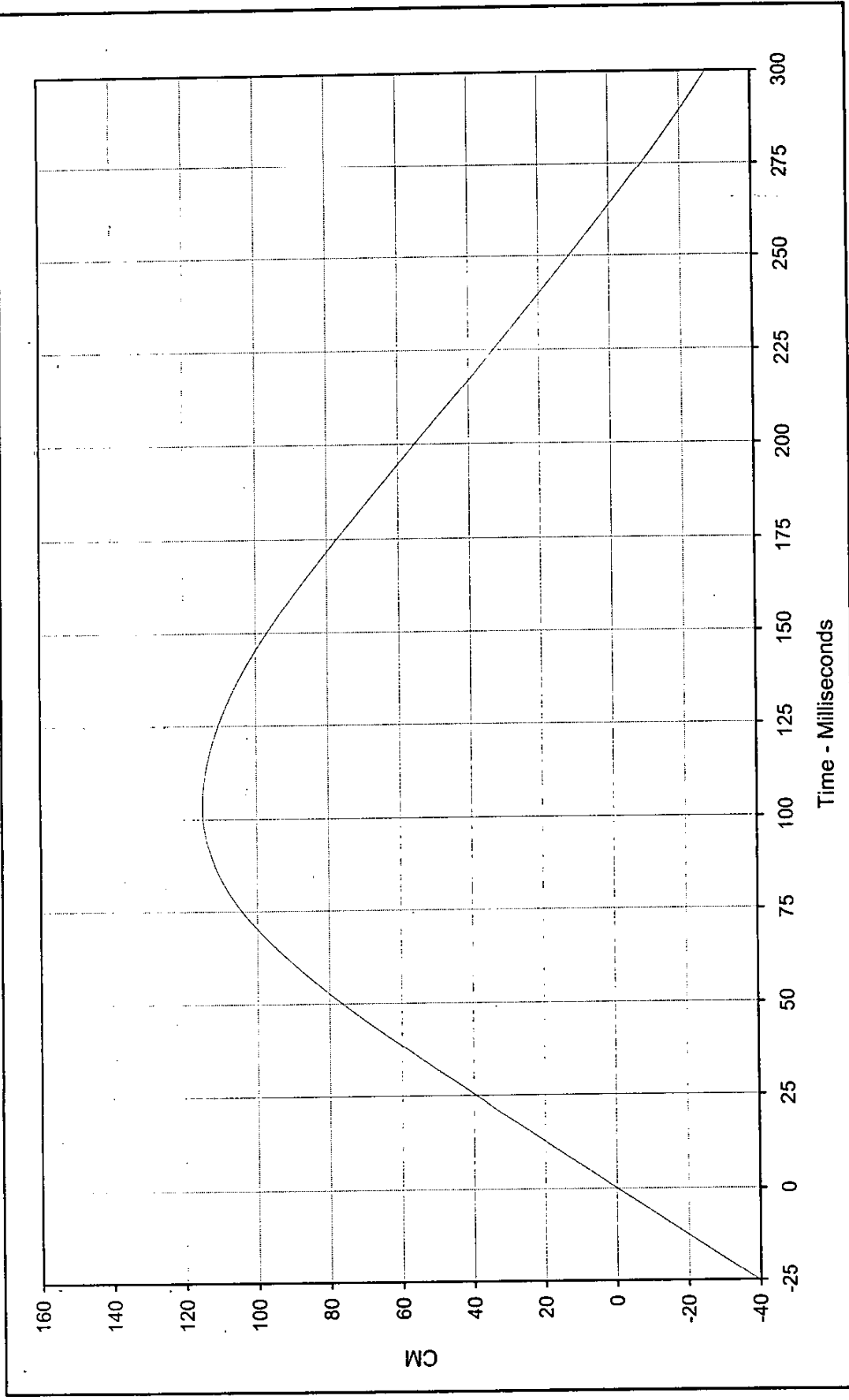


Curve Description: Passenger Head Primary X Velocity
 Maximum Value: 56.9 at 1.4 Milliseconds
 Minimum Value: -32.4 at 208.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/14/99
 Curve Number: IN1-045

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

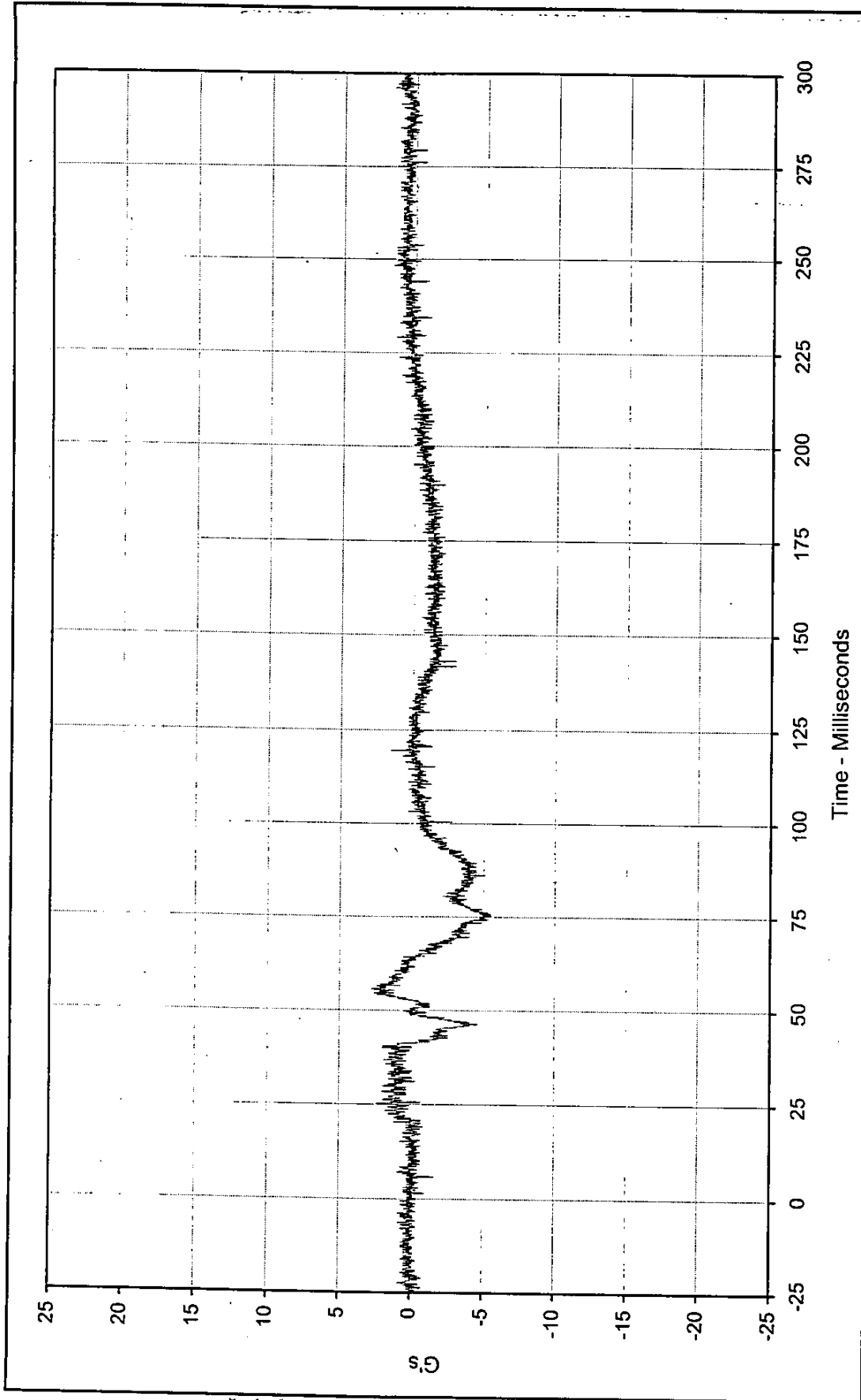
Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Passenger Head Primary X Displ.	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	114.9 at 103.3 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-27.5 at 299.9 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/14/99			
Curve Number:	IN2-045			



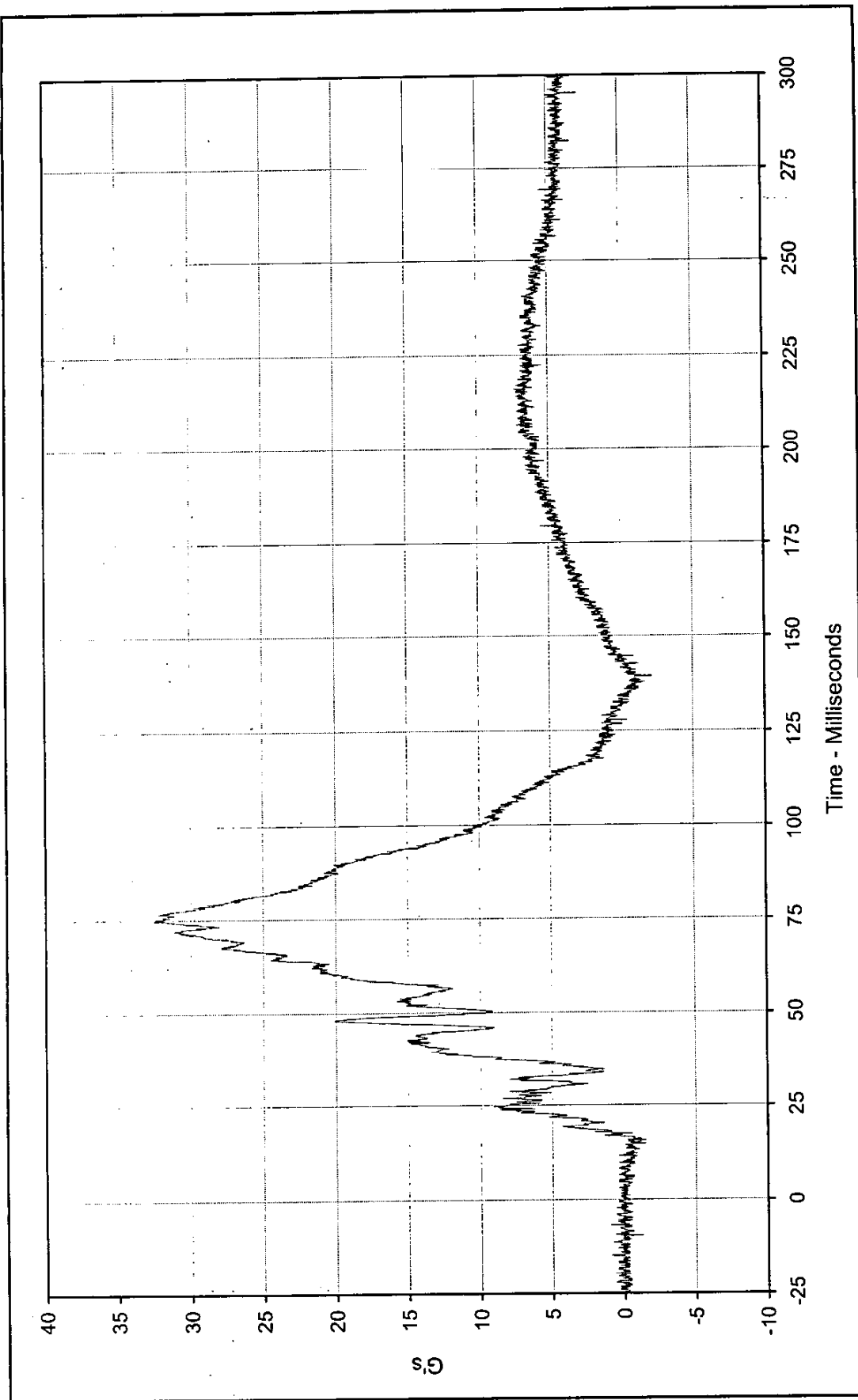


Curve Description: Passenger Head Primary Y
 Maximum Value: 2.8 at 55.7 Milliseconds
 Minimum Value: -5.5 at 75.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/14/99
 Curve Number: FIL-046

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

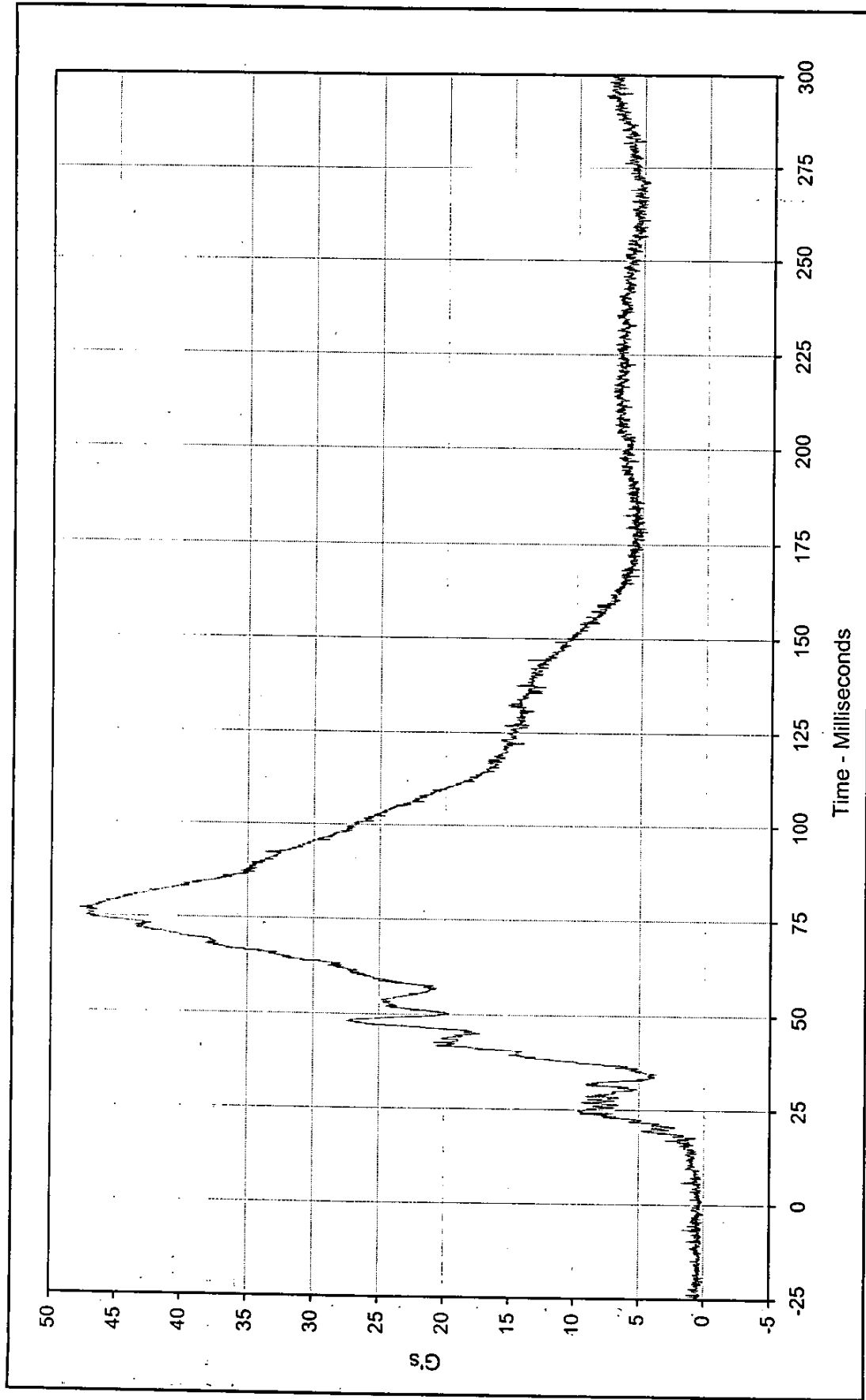
Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Passenger Head Primary Z	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	32.6 at 74.7 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-2.2 at 139.3 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/14/99			
Curve Number:	FIL-047			





Curve Description: Passenger Head Resultant Primary

Maximum Value: 47.9 at 76.9 Milliseconds

Minimum Value: 0.1 at 0.8 Milliseconds

SAE Filter Class: 1000

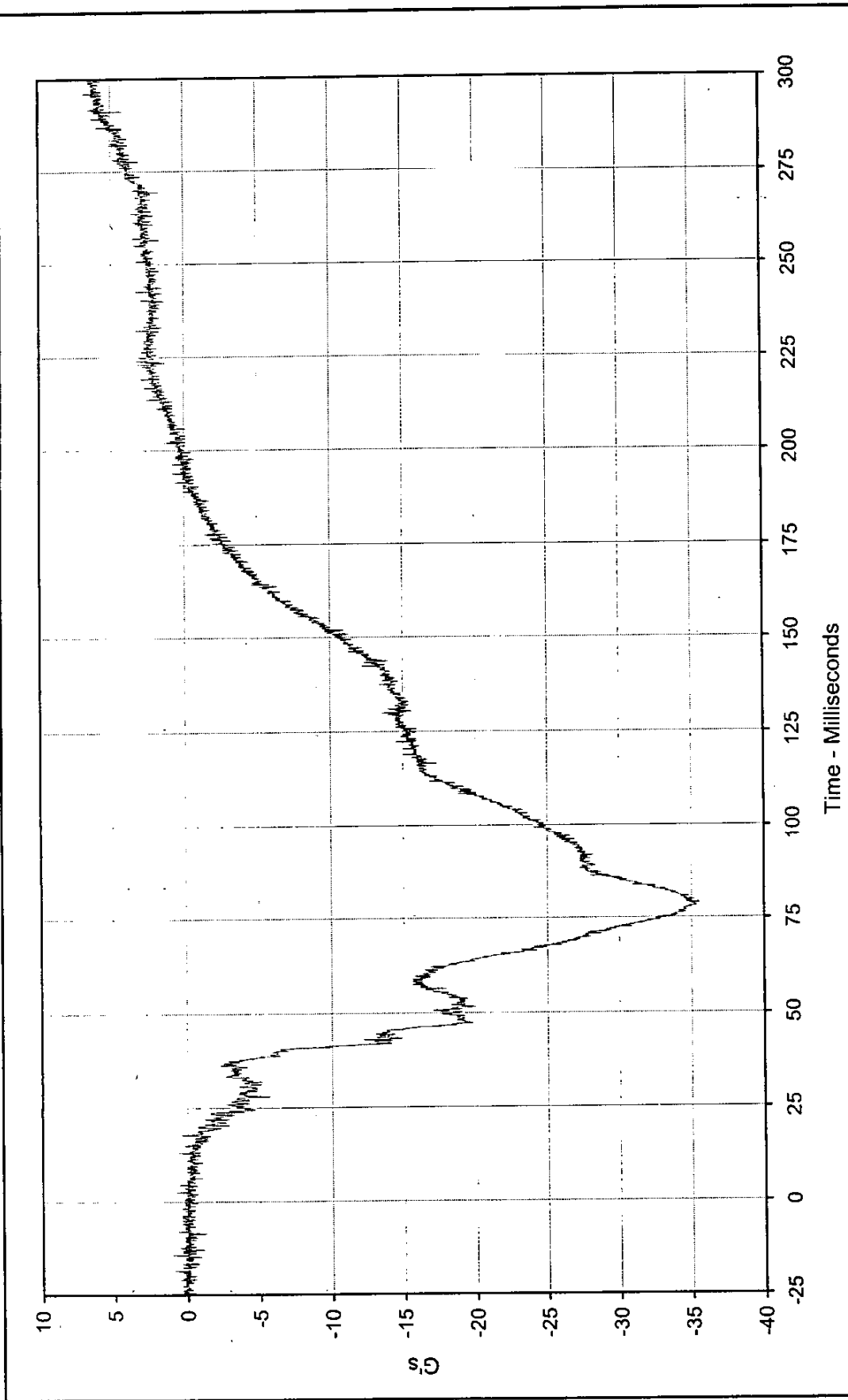
Date of Test: 12/14/99

Curve Number: RES-045

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

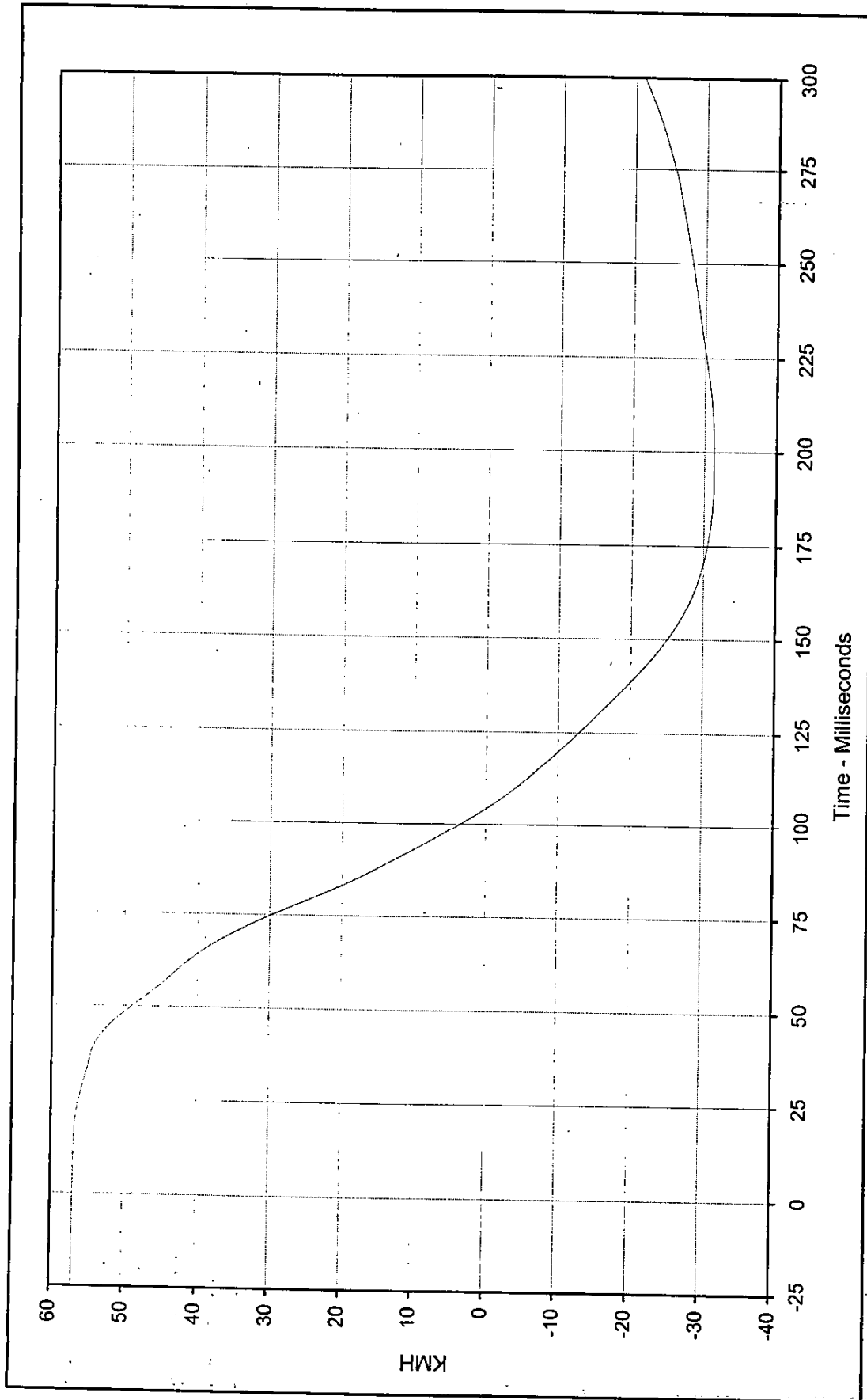
Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Passenger Head Redundant X	Test Program:	2000 NHTSA 35 mph NCAP No.: MY5801
Maximum Value:	6.9 at 296.1 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan
Minimum Value:	-35.5 at 78.8 Milliseconds		
SAE Filter Class:	1000		
Date of Test:	12/14/99		
Curve Number:	FIL-048		





Curve Description: Passenger Head Redundant X Velocity

Maximum Value: 56.9 at 0.0 Milliseconds

Minimum Value: -31.4 at 197.1 Milliseconds

SAE Filter Class: 180

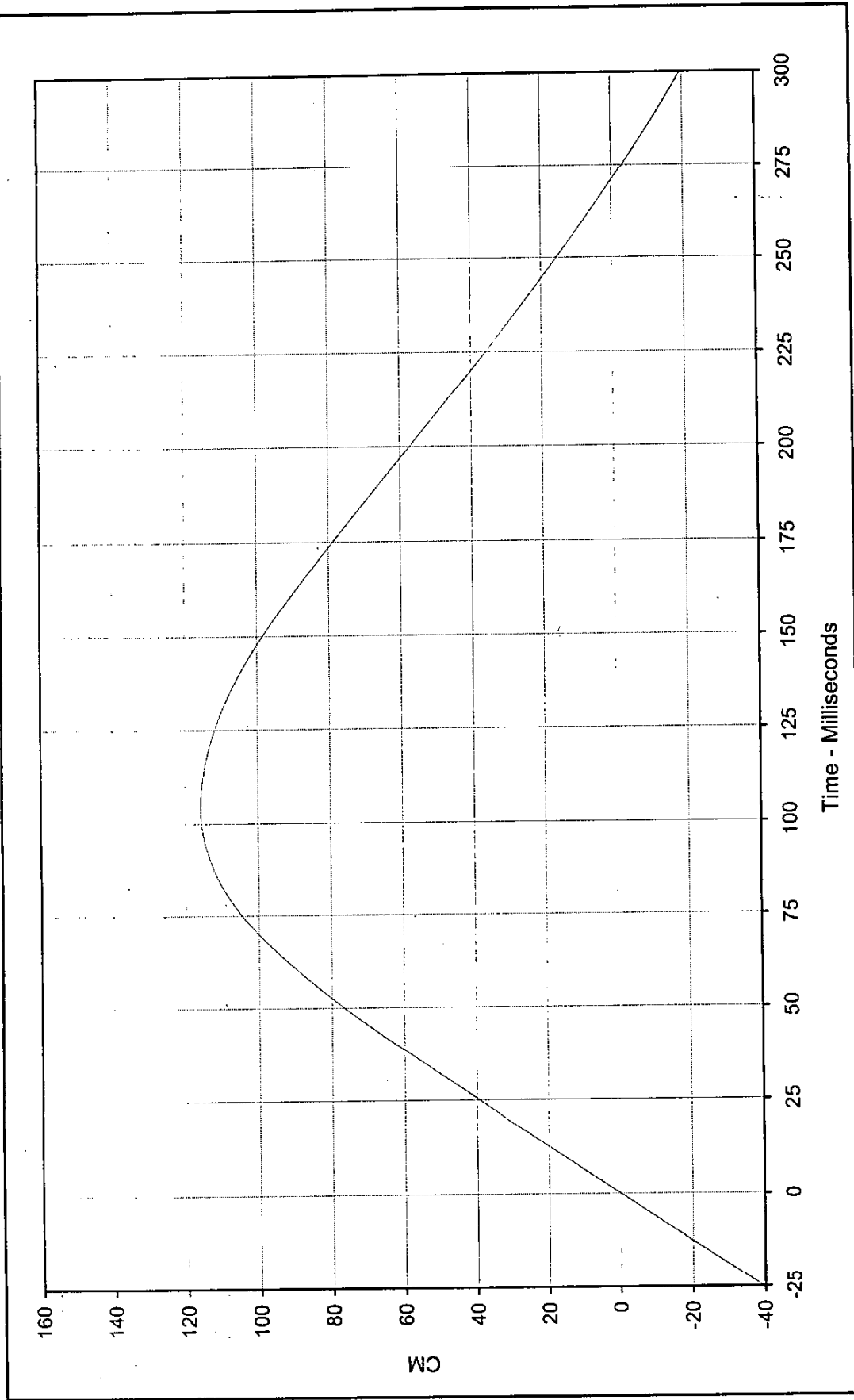
Date of Test: 12/14/99

Curve Number: IN1-048

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

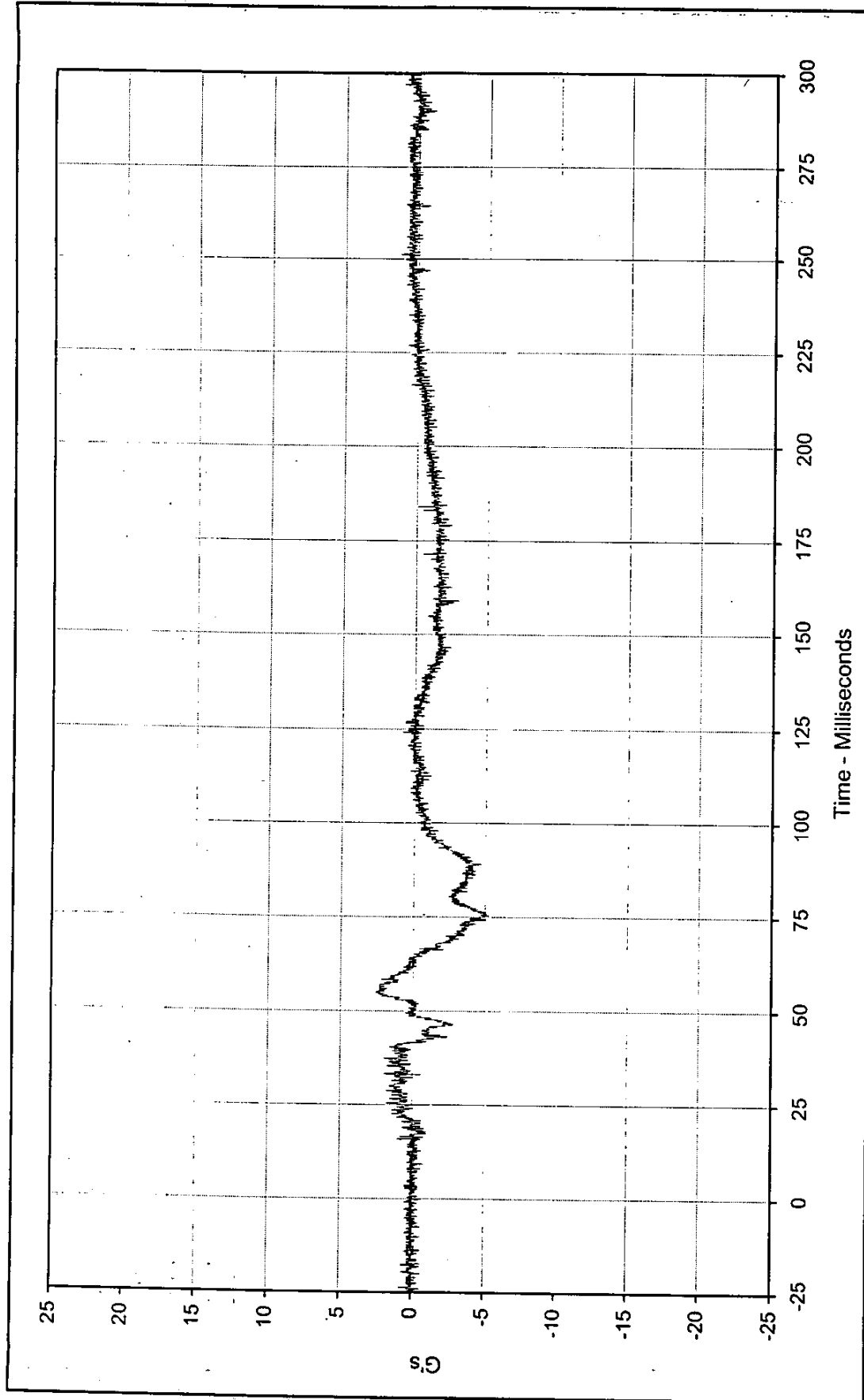
Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description: Passenger Head Redundant X Displ.	Test Program: 2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value: 115.7 at 104.2 Milliseconds	Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value: -19.4 at 299.9 Milliseconds		
SAE Filter Class: 180		
Date of Test: 12/14/99		
Curve Number: IN2-048		



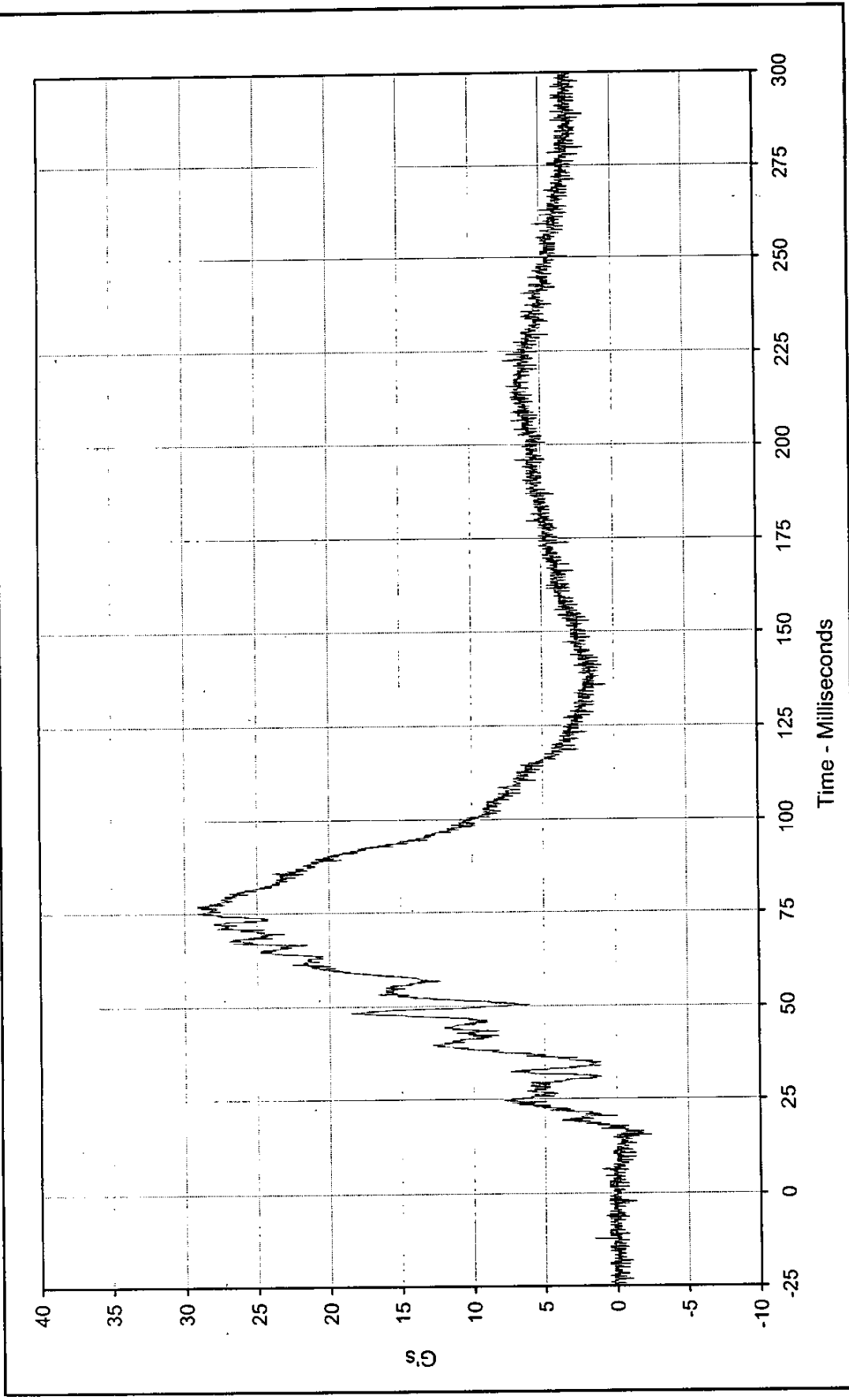


Curve Description: Passenger Head Redundant Y
 Maximum Value: 2.5 at 54.9 Milliseconds
 Minimum Value: -5.3 at 75.4 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/14/99
 Curve Number: FIL-049

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

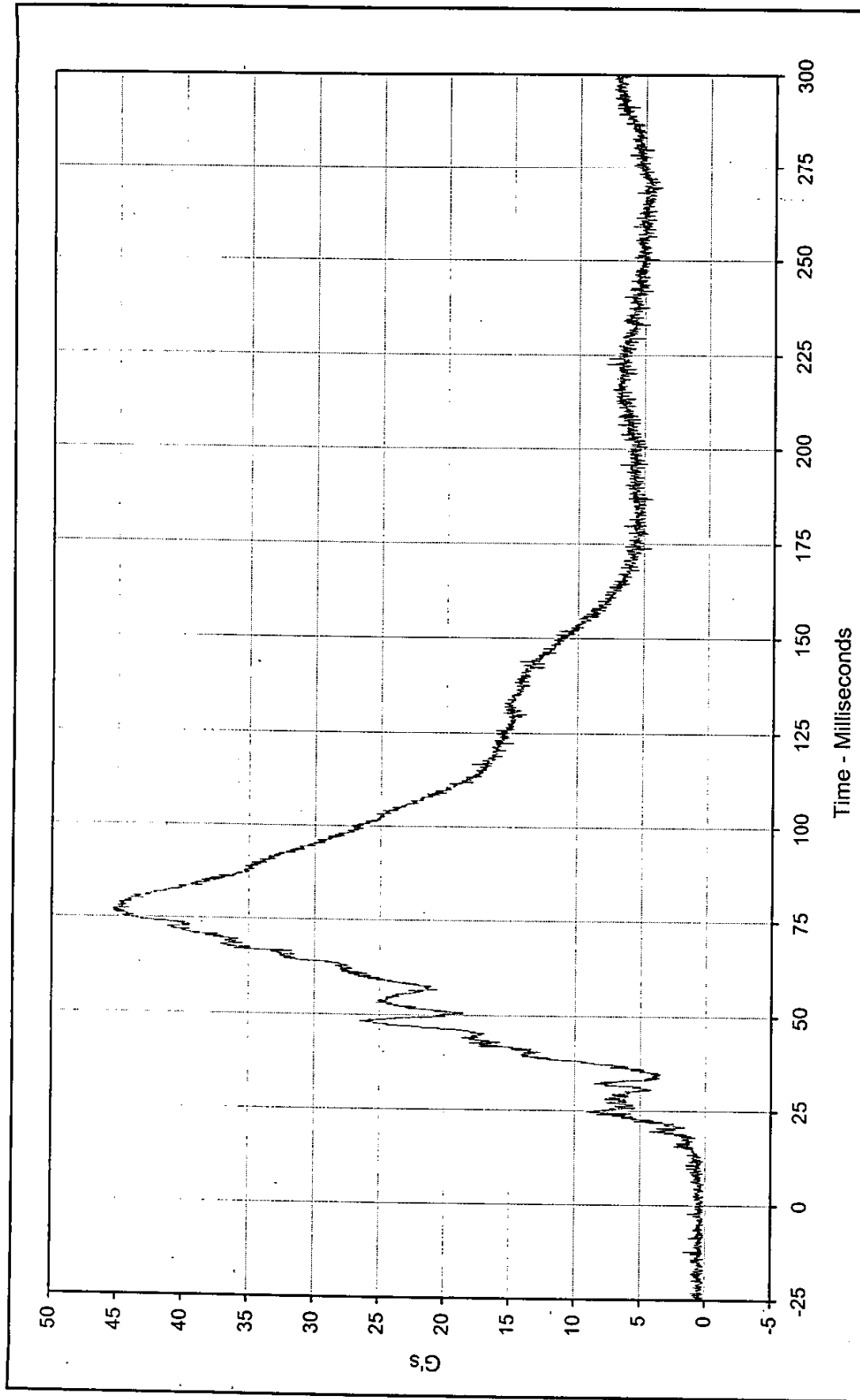
Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Passenger Head Redundant Z	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	29.1 at 75.1 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-2.4 at 15.5 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/14/99			
Curve Number:	FIL-050			





Curve Description: Passenger Head Resultant Redundant

Maximum Value: 45.3 at 76.6 Milliseconds

Minimum Value: 0.1 at 5.7 Milliseconds

SAE Filter Class: 1000

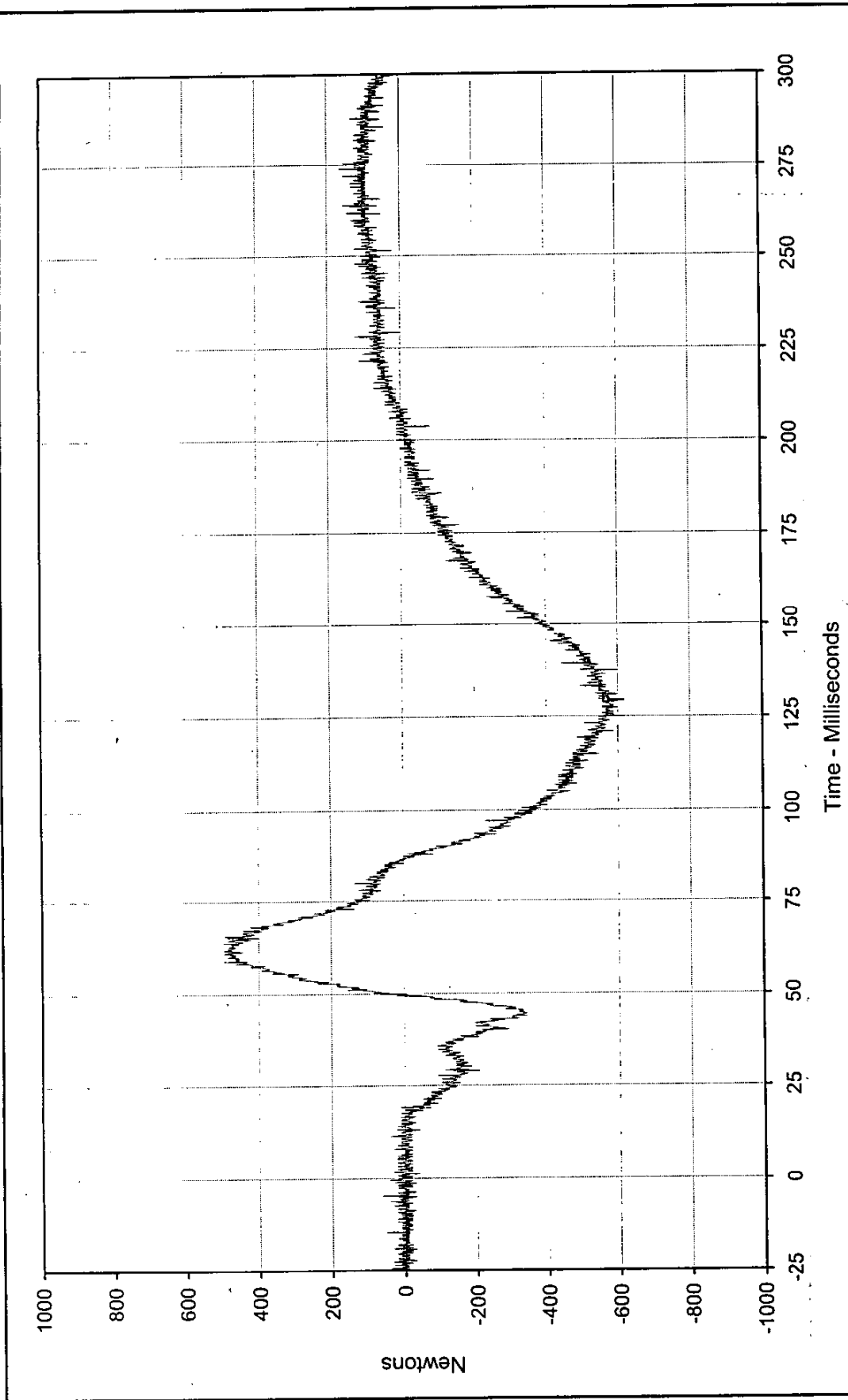
Date of Test: 12/14/99

Curve Number: RES-048

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

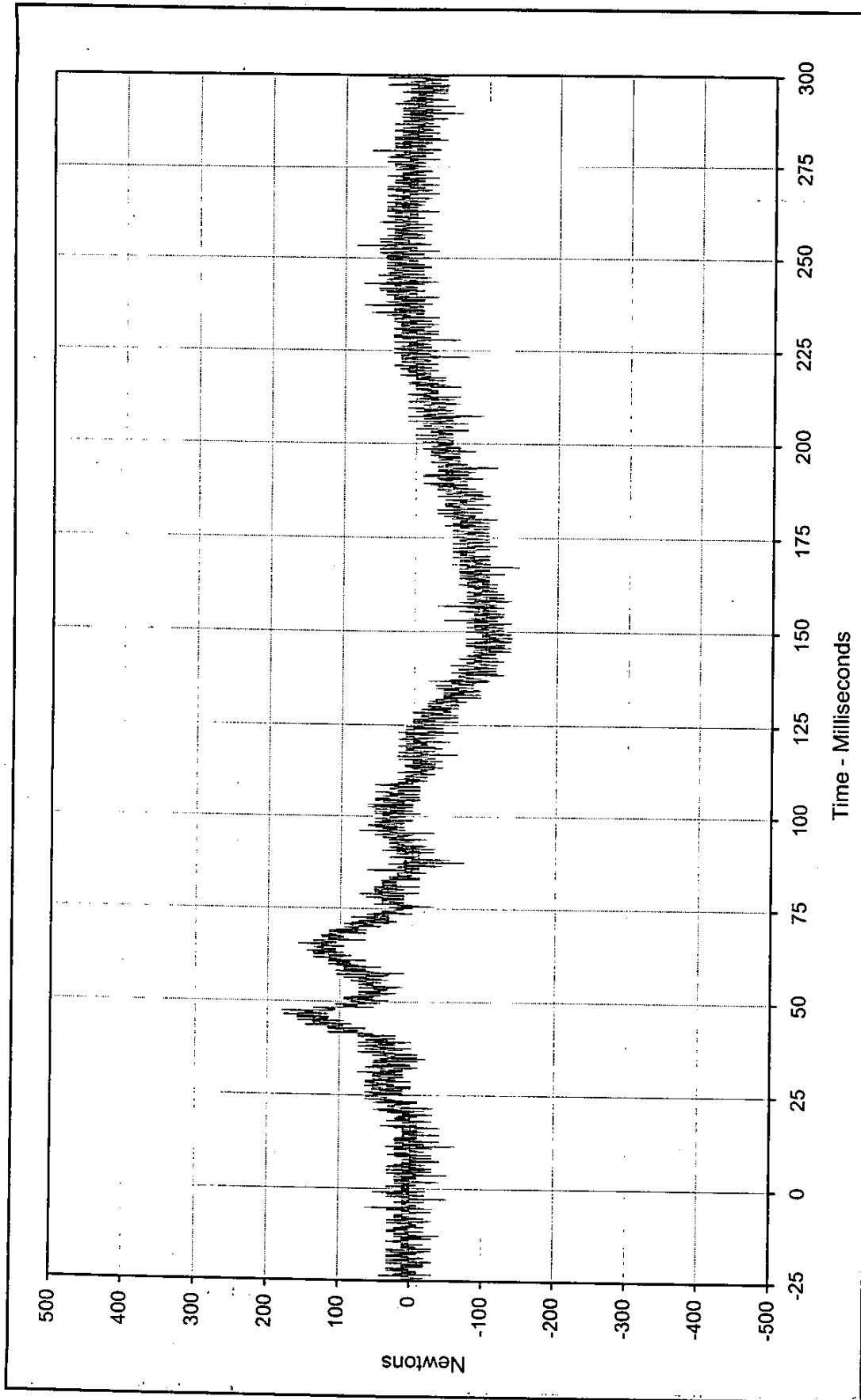
Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Passenger Neck Force X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	494.9 at 58.9 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-619.4 at 125.0 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/14/99			
Curve Number:	FIL-051			





Curve Description: Passenger Neck Force Y Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Maximum Value: 178.7 at 46.5 Milliseconds Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

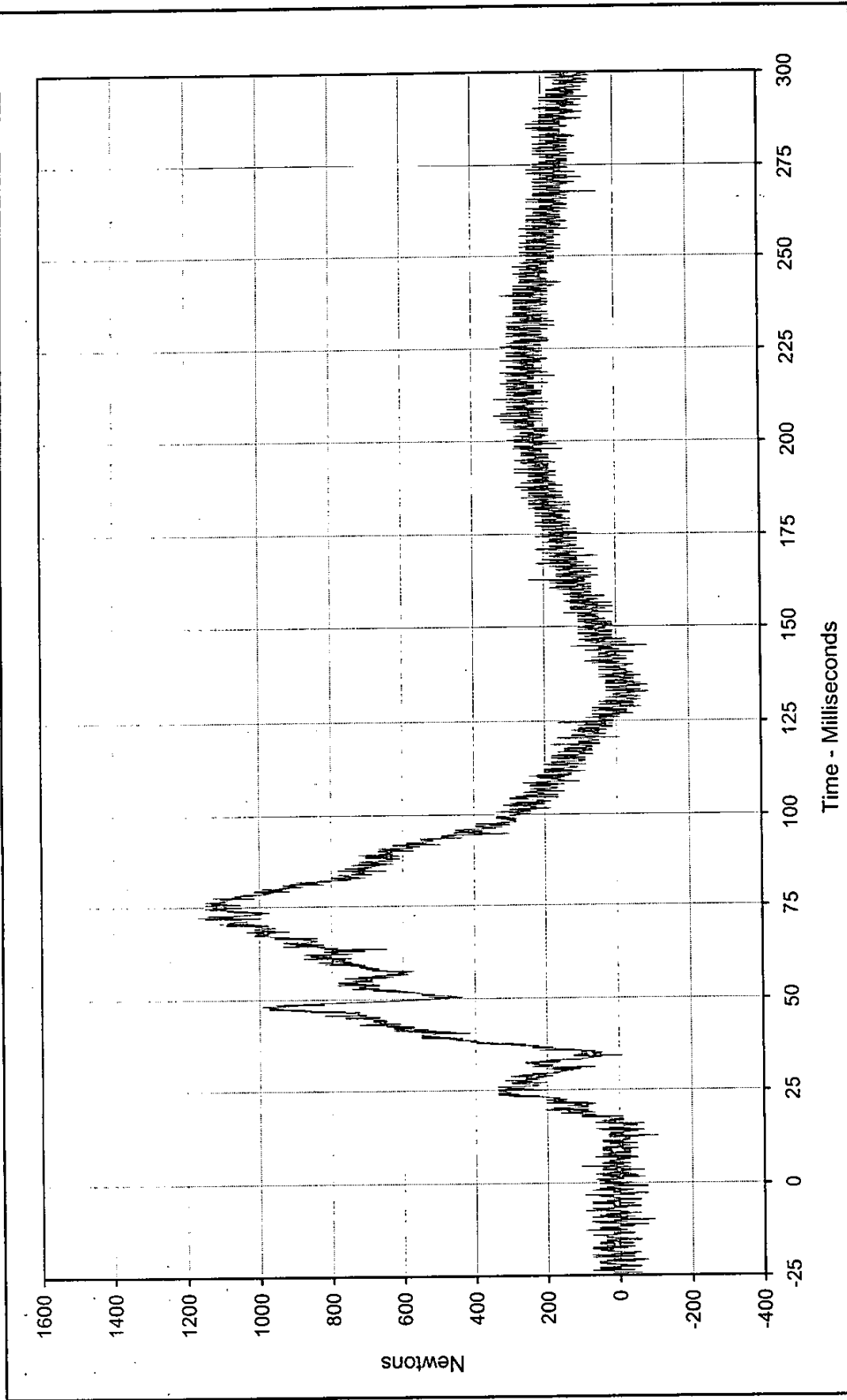
Minimum Value: -146.3 at 167.3 Milliseconds

SAE Filter Class: 1000

Date of Test: 12/14/99

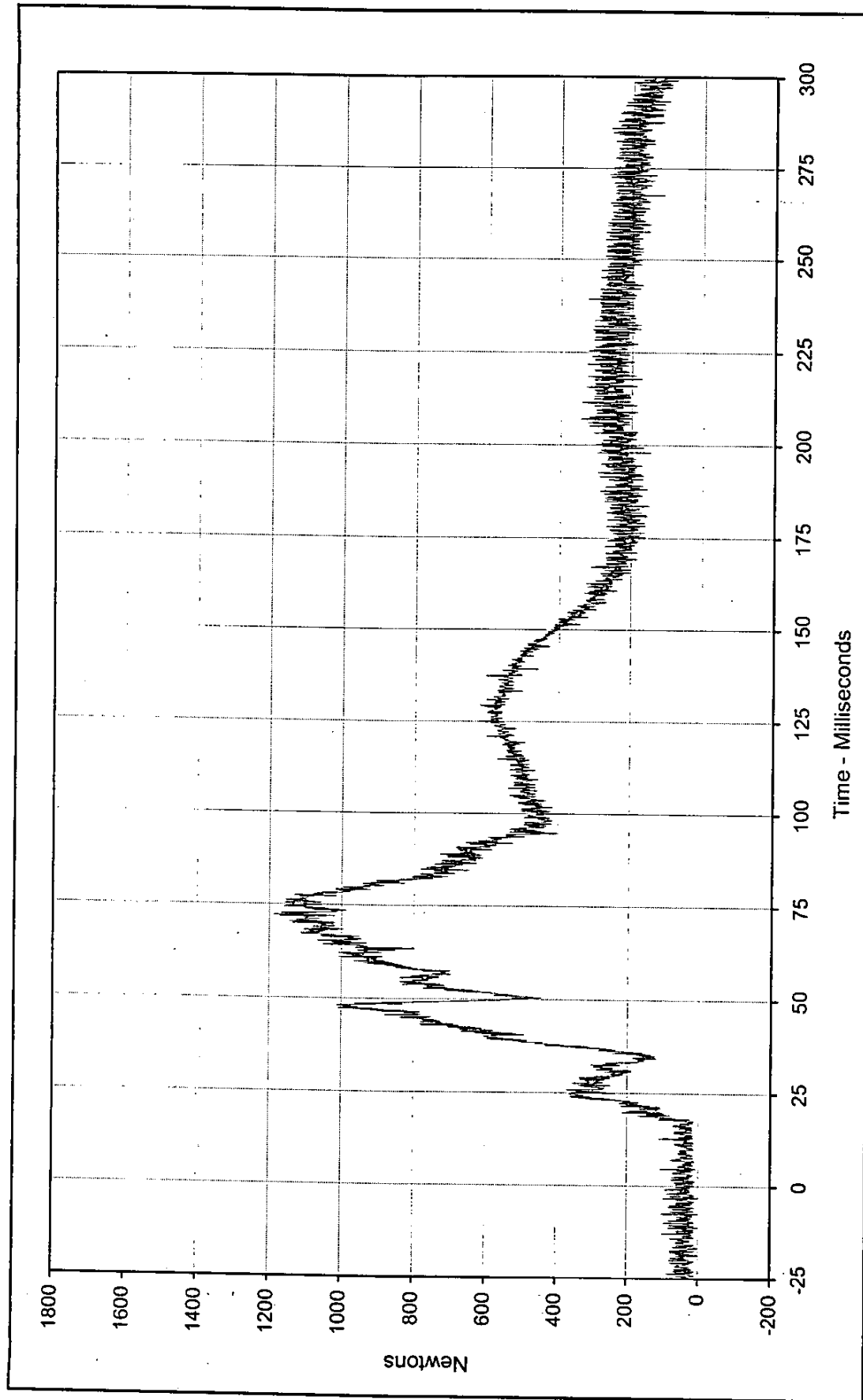
Curve Number: FIL-052





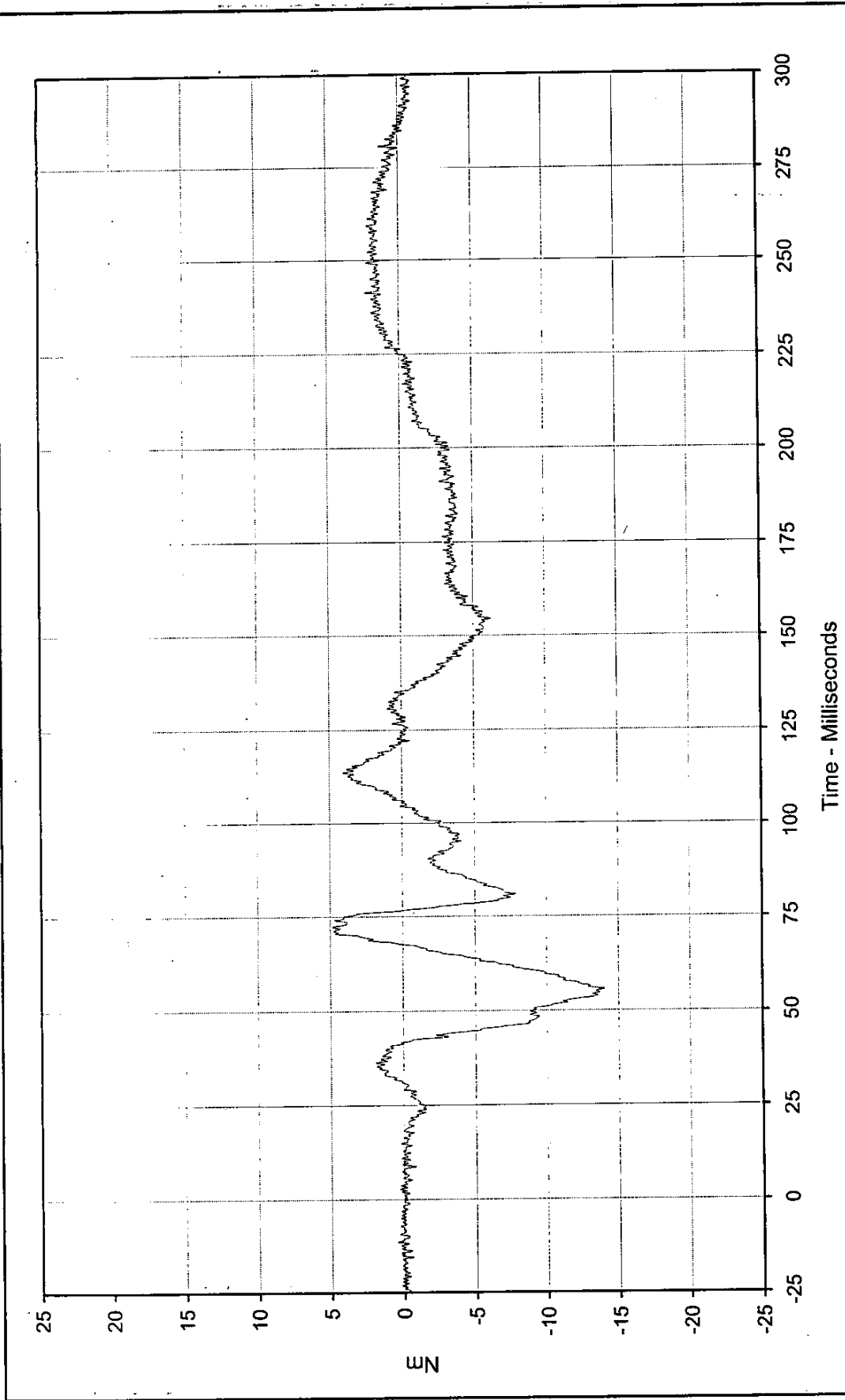
Curve Description:	Passenger Neck Force Z	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	1166.5 at 72.1 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-106.4 at 12.8 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/14/99			
Curve Number:	FIL-053			





Curve Description:	Passenger Neck Force Resultant	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	1185.0 at 72.1 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	9.3 at 1.3 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/14/99			
Curve Number:	RES-051			

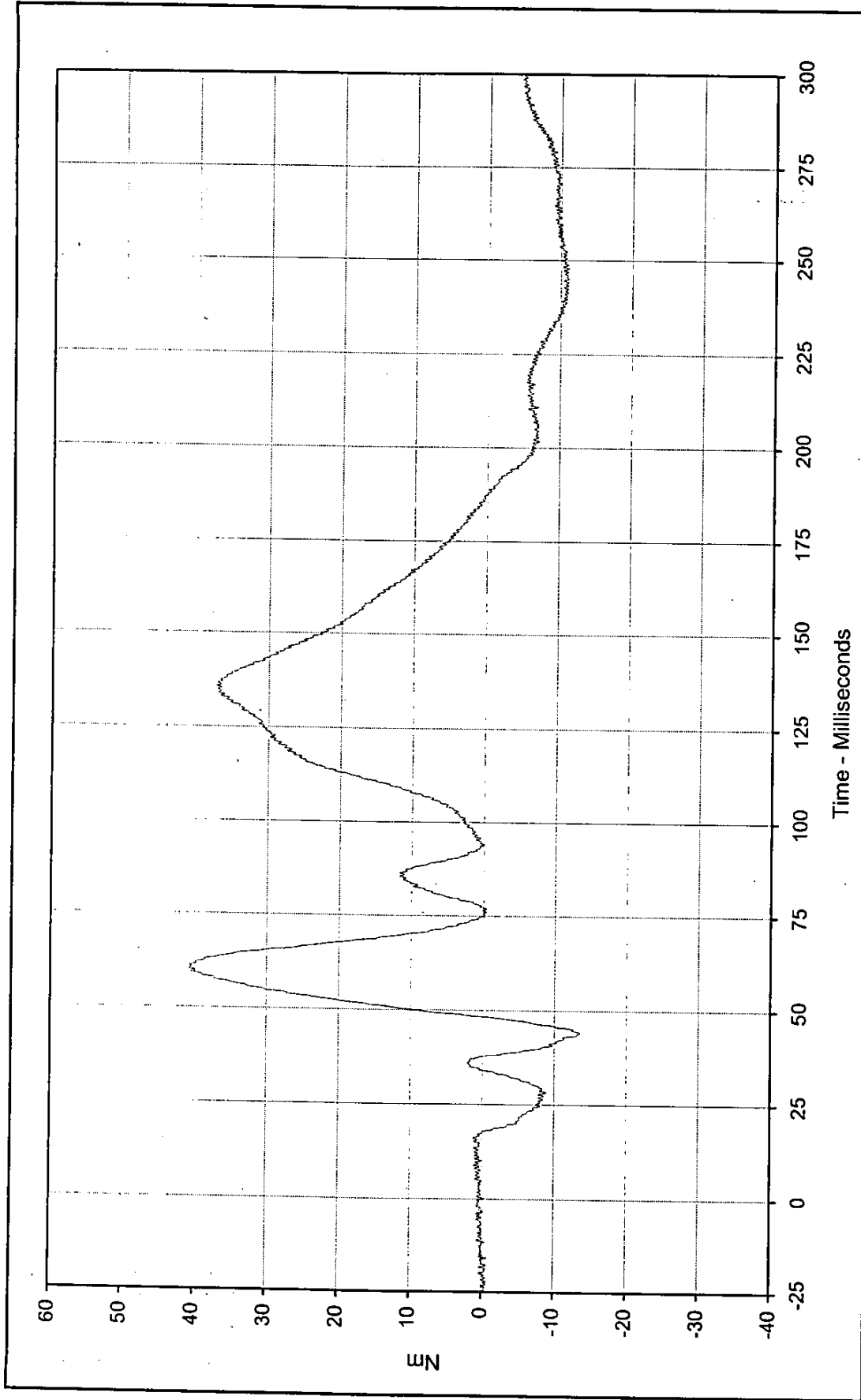




Curve Description: Passenger Neck Moment X
 Maximum Value: 4.8 at 72.3 Milliseconds
 Minimum Value: -14.0 at 55.6 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/14/99
 Curve Number: FIL-054

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description: Passenger Neck Moment Y Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Maximum Value: 40.8 at 60.2 Milliseconds Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

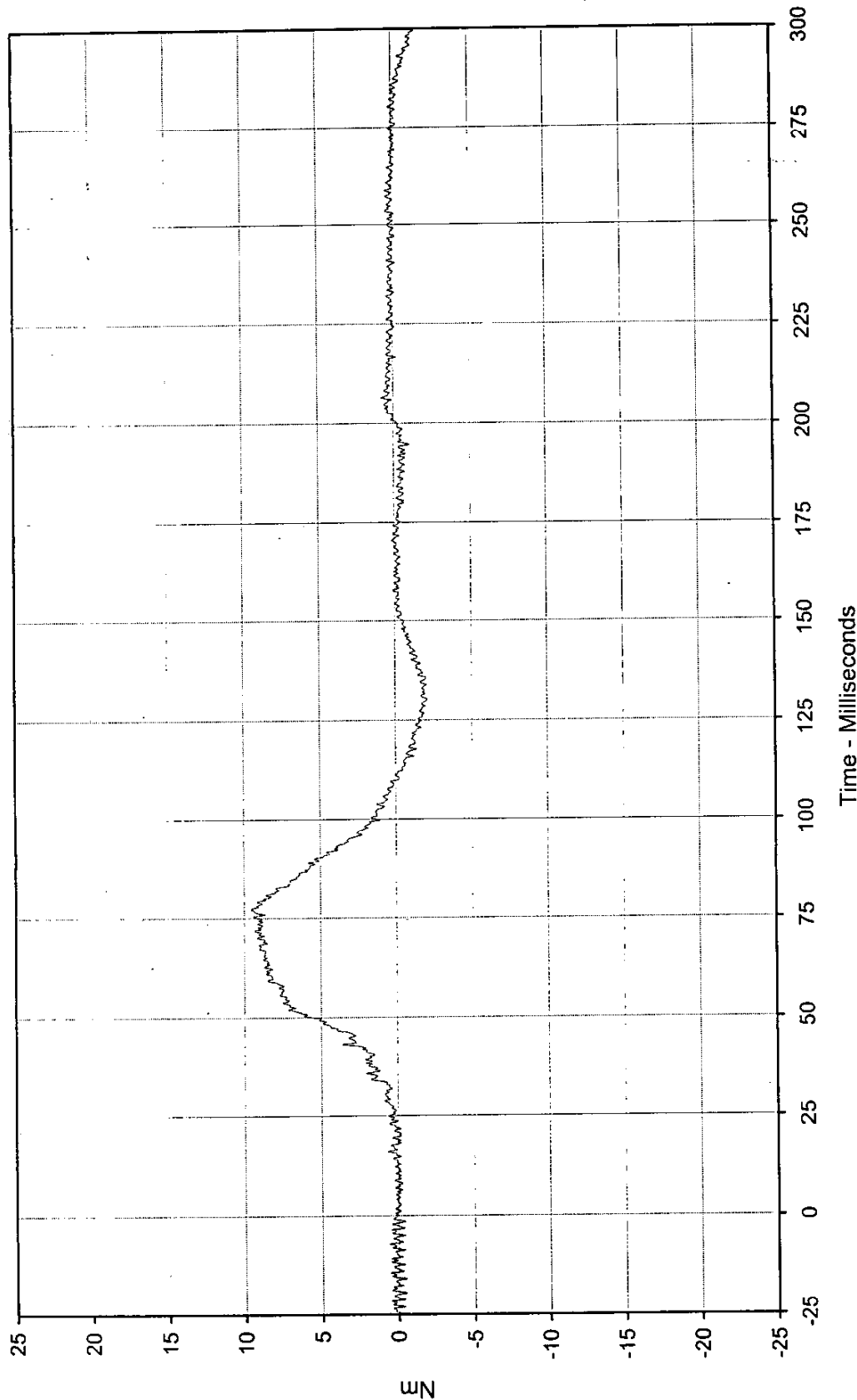
Minimum Value: -13.6 at 44.3 Milliseconds

SAE Filter Class: 600

Date of Test: 12/14/99

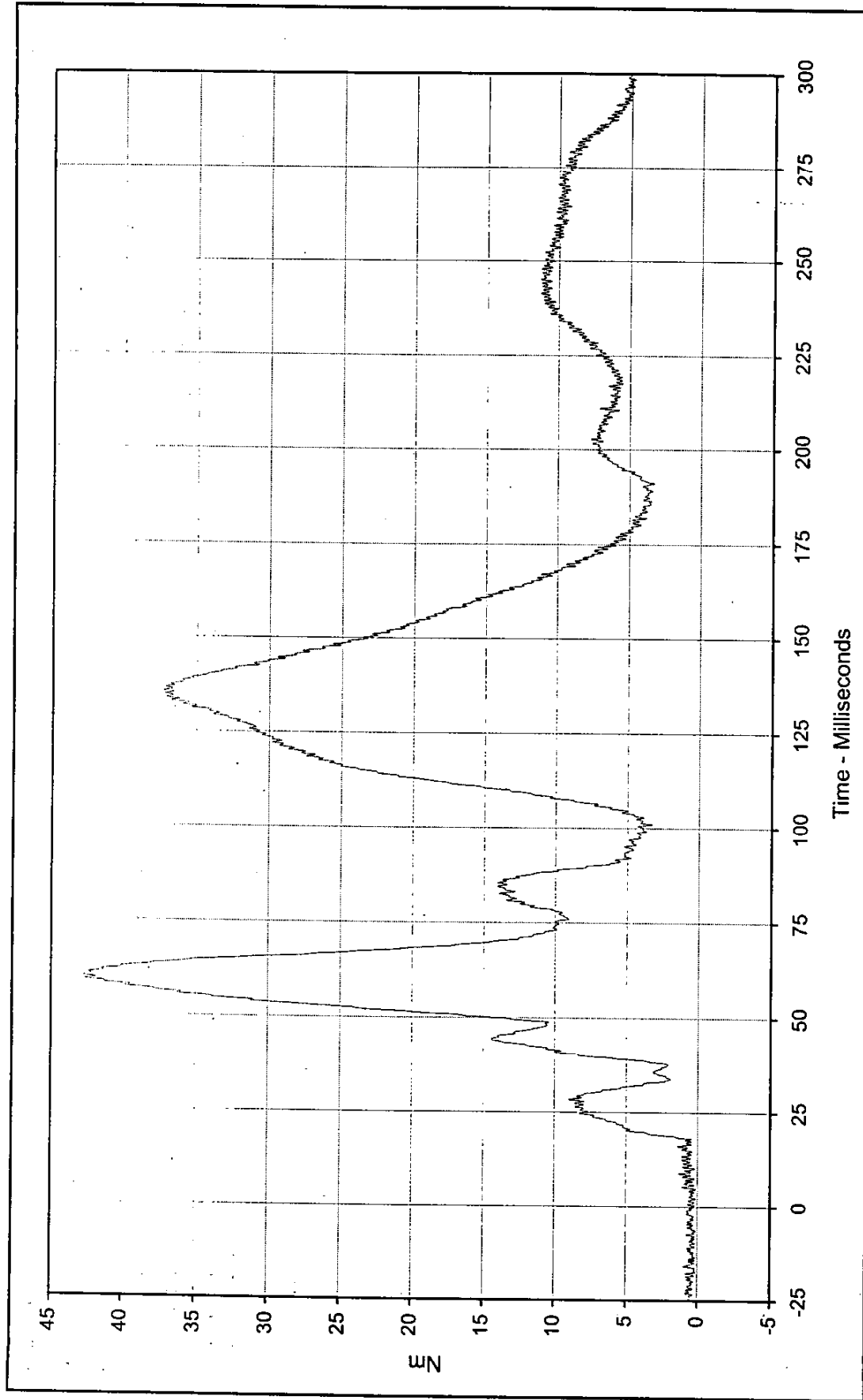
Curve Number: FIL-055





Curve Description:	Passenger Neck Moment Z	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	9.5 at 77.2 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-2.1 at 130.2 Milliseconds			
SAE Filter Class:	600			
Date of Test:	12/14/99			
Curve Number:	FIL-056			





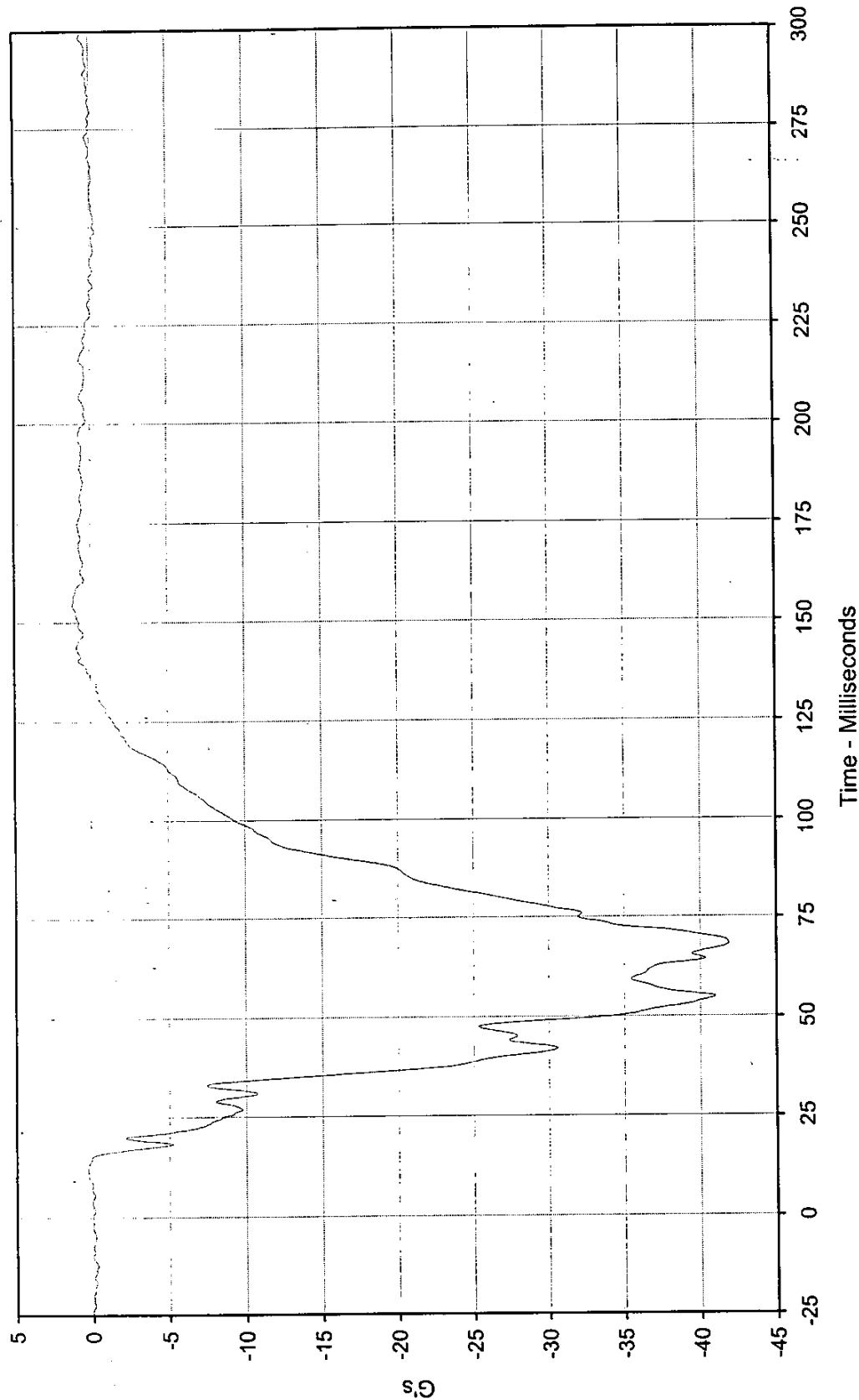
Curve Description: Passenger Neck Moment Resultant

Maximum Value:	42.7	at	60.2	Milliseconds
Minimum Value:	0.1	at	2.2	Milliseconds
SAE Filter Class:	600			
Date of Test:	12/14/99			
Curve Number:	RES-054			

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

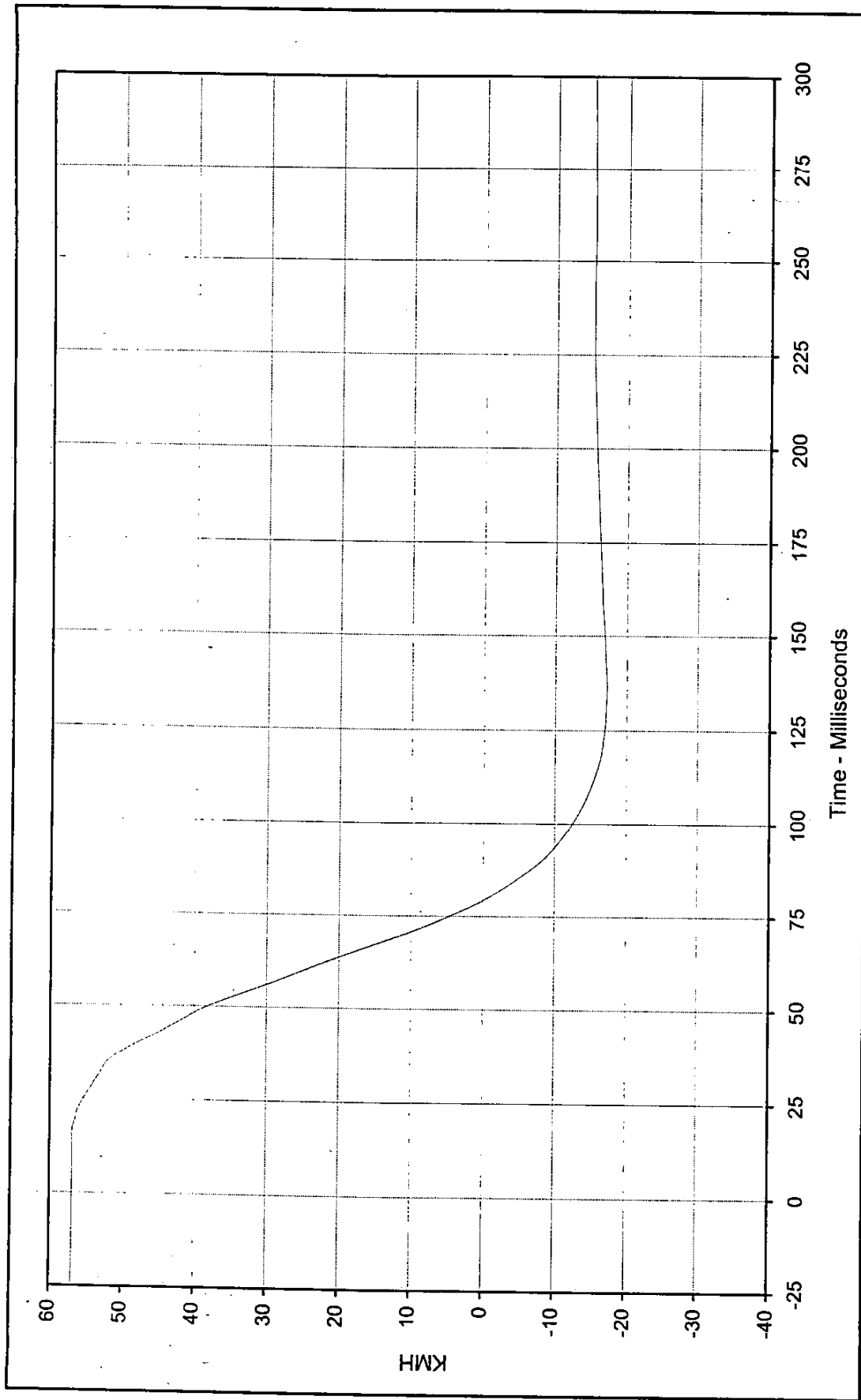
Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





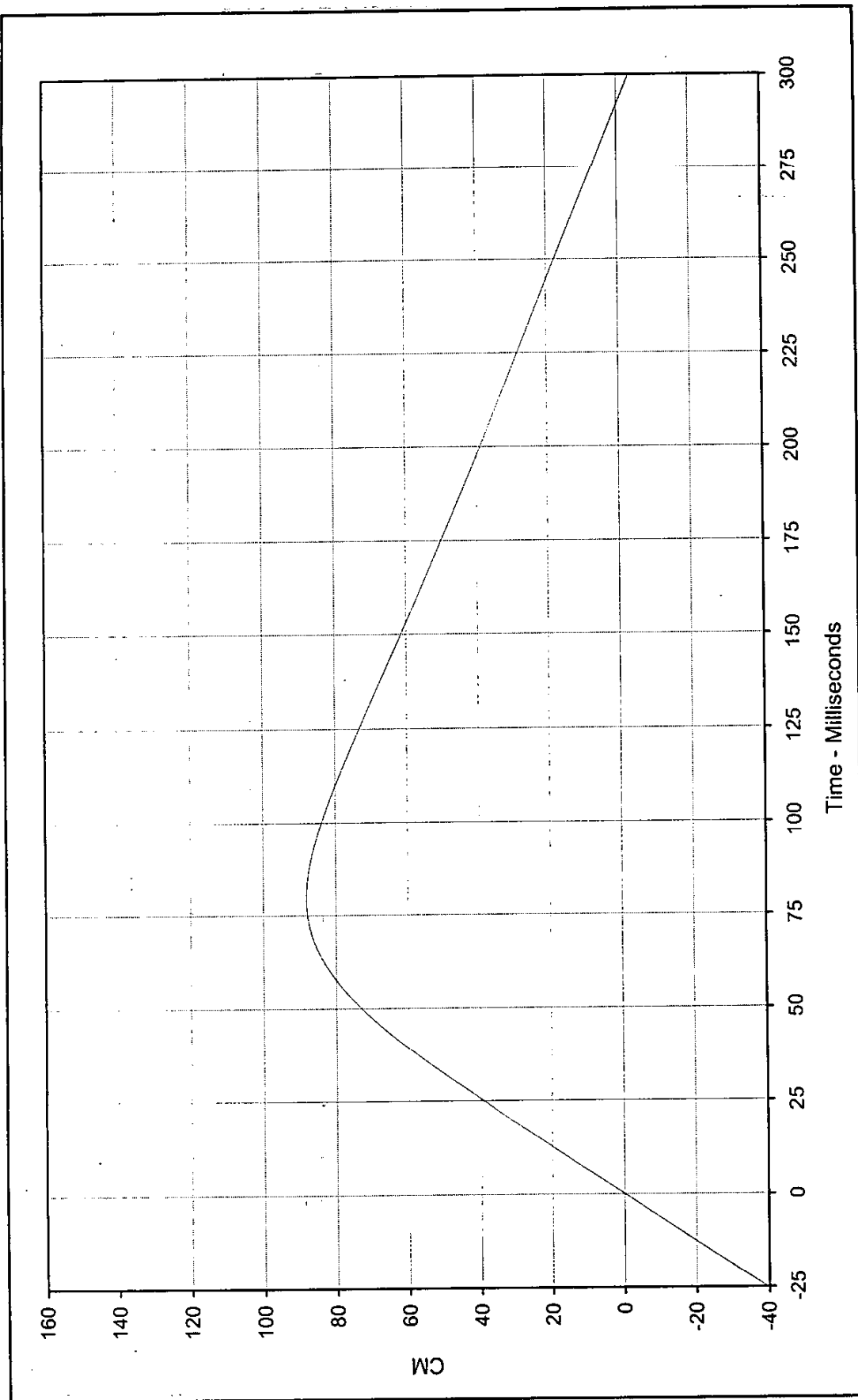
Curve Description:	Passenger Chest Primary X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	1.2 at 154.3 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-41.9 at 68.2 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/14/99			
Curve Number:	FIL-057			





Curve Description:	Passenger Chest Primary X Velocity	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	56.9 at 15.3 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-17.2 at 136.1 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/14/99			
Curve Number:	IN1-057			





Curve Description: Passenger Chest Primary X Displ.

Maximum Value: 88.1 at 79.2 Milliseconds

Minimum Value: -3.4 at 299.9 Milliseconds

SAE Filter Class: 180

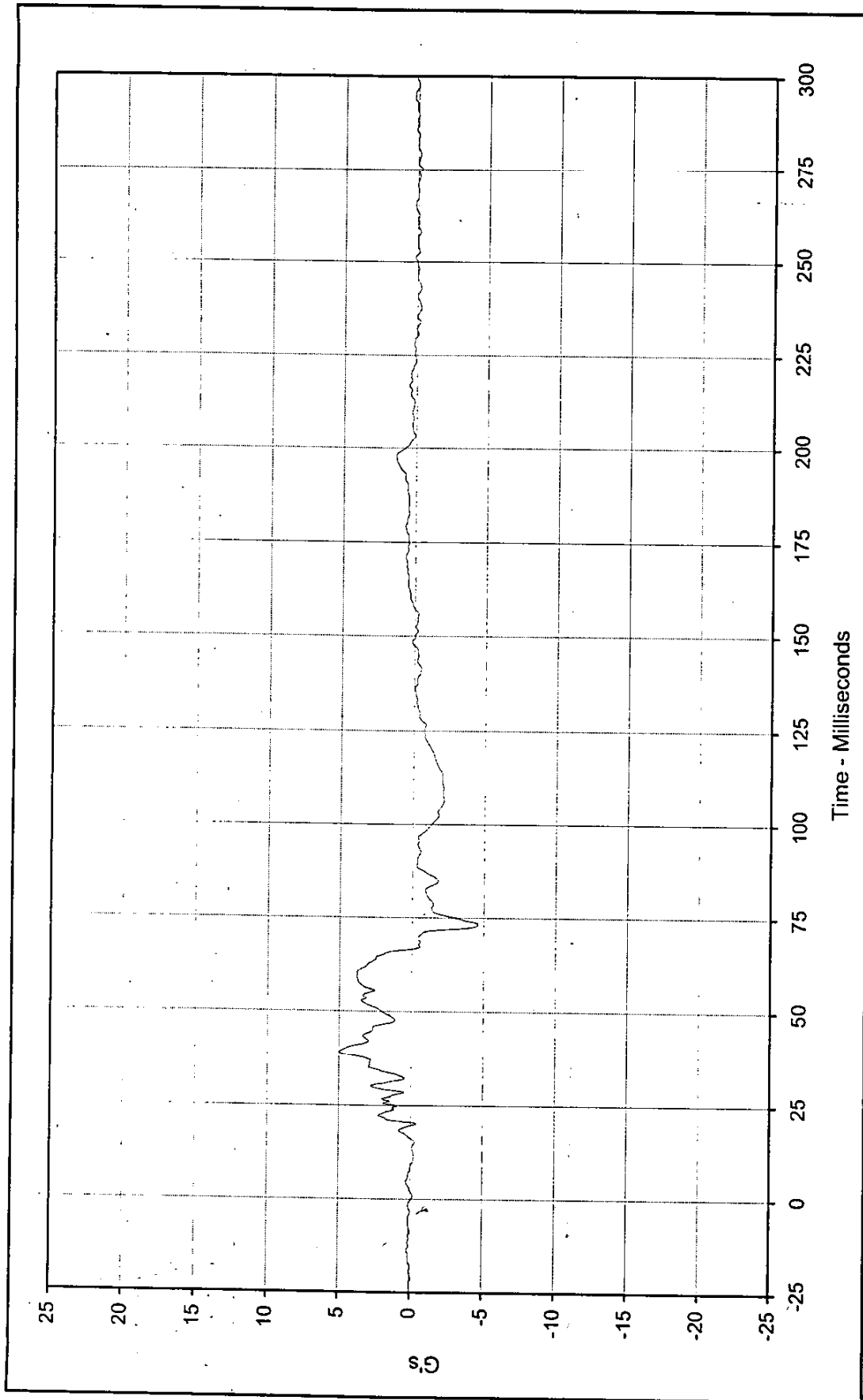
Date of Test: 12/14/99

Curve Number: IN2-057

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

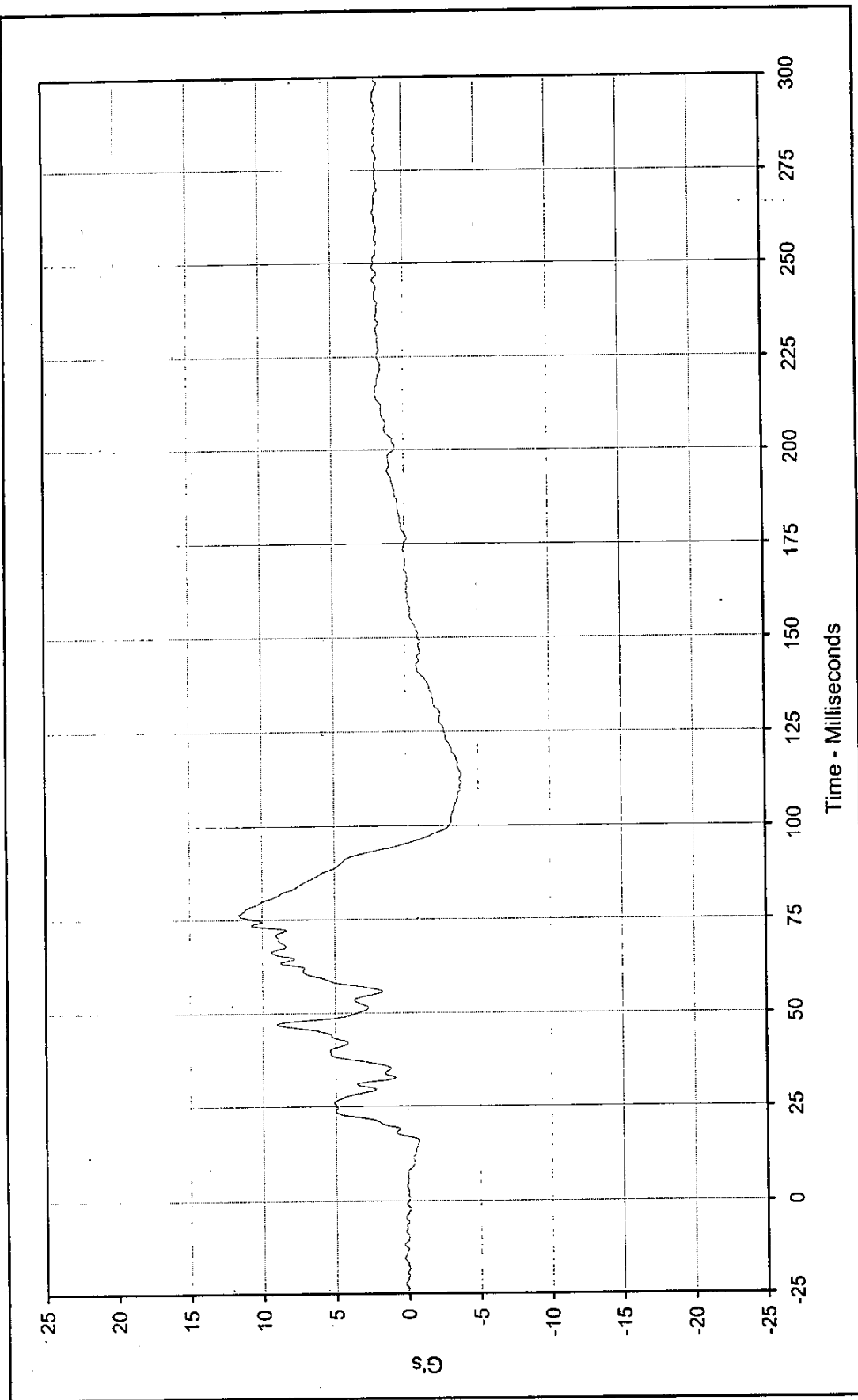
Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





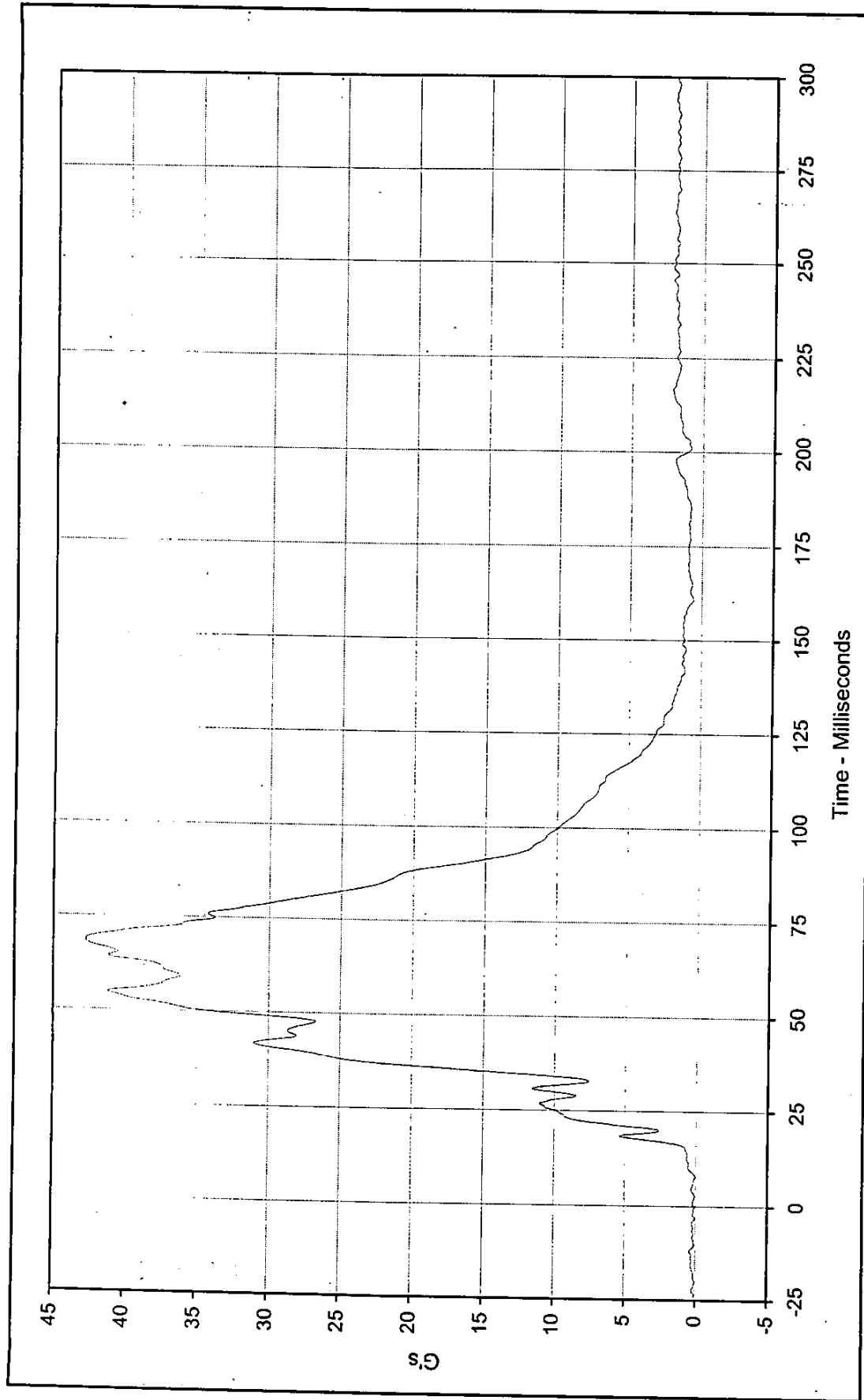
Curve Description:	Passenger Chest Primary Y		Test Program:	2000 NHTSA 35 mph NCAP No.: MY5801	
Maximum Value:	5.0	at 39.3 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-4.6	at 73.3 Milliseconds			
SAE Filter Class:	180				
Date of Test:	12/14/99				
Curve Number:	FIL-058				





Curve Description:	Passenger Chest Primary Z	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	11.6 at 76.1 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-3.9 at 113.4 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/14/99			
Curve Number:	FIL-059			



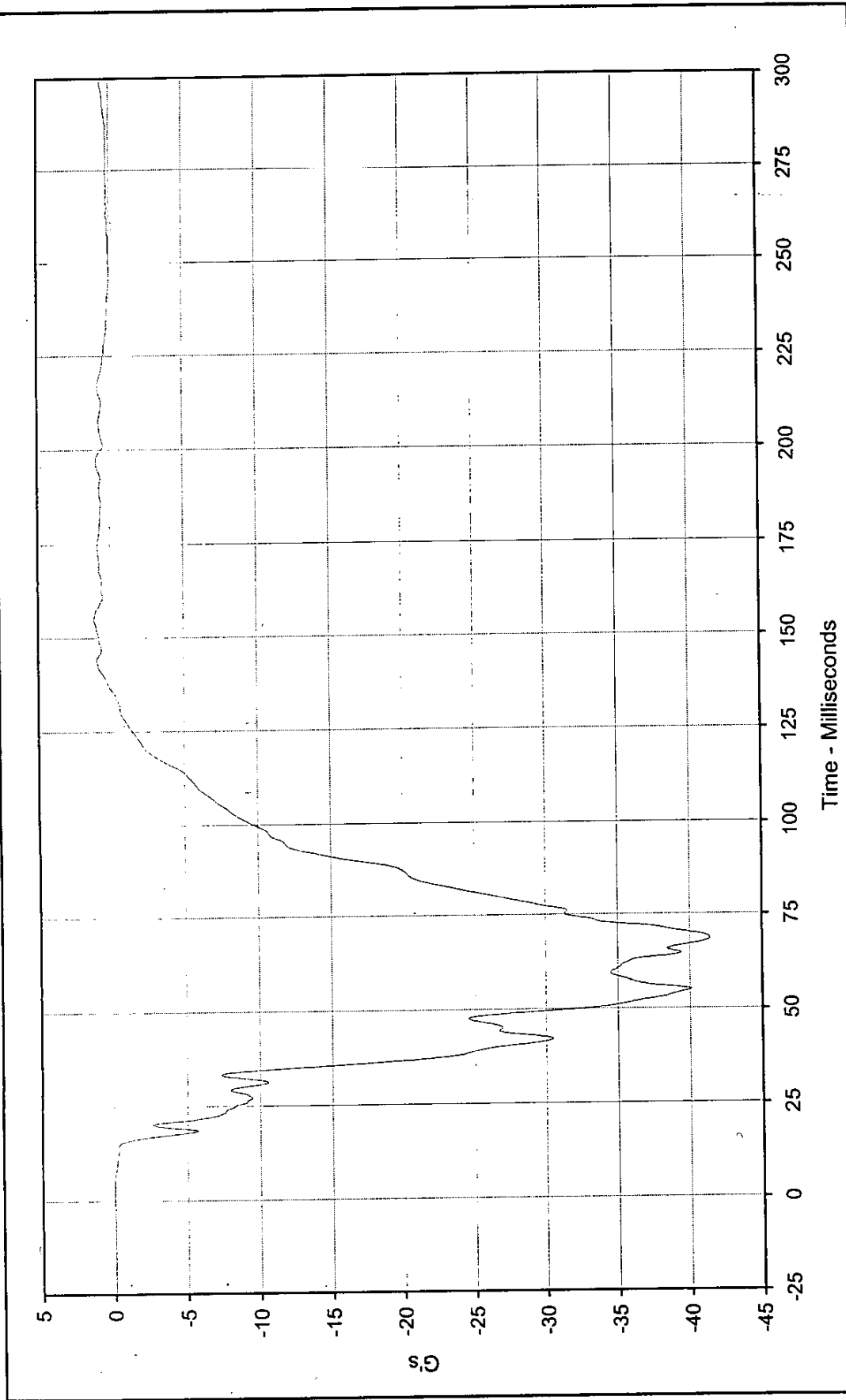


Curve Description: Passenger Chest Resultant Primary
 Maximum Value: 42.7 at 68.2 Milliseconds
 Minimum Value: 0.0 at 7.9 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/14/99
 Curve Number: RES-057

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

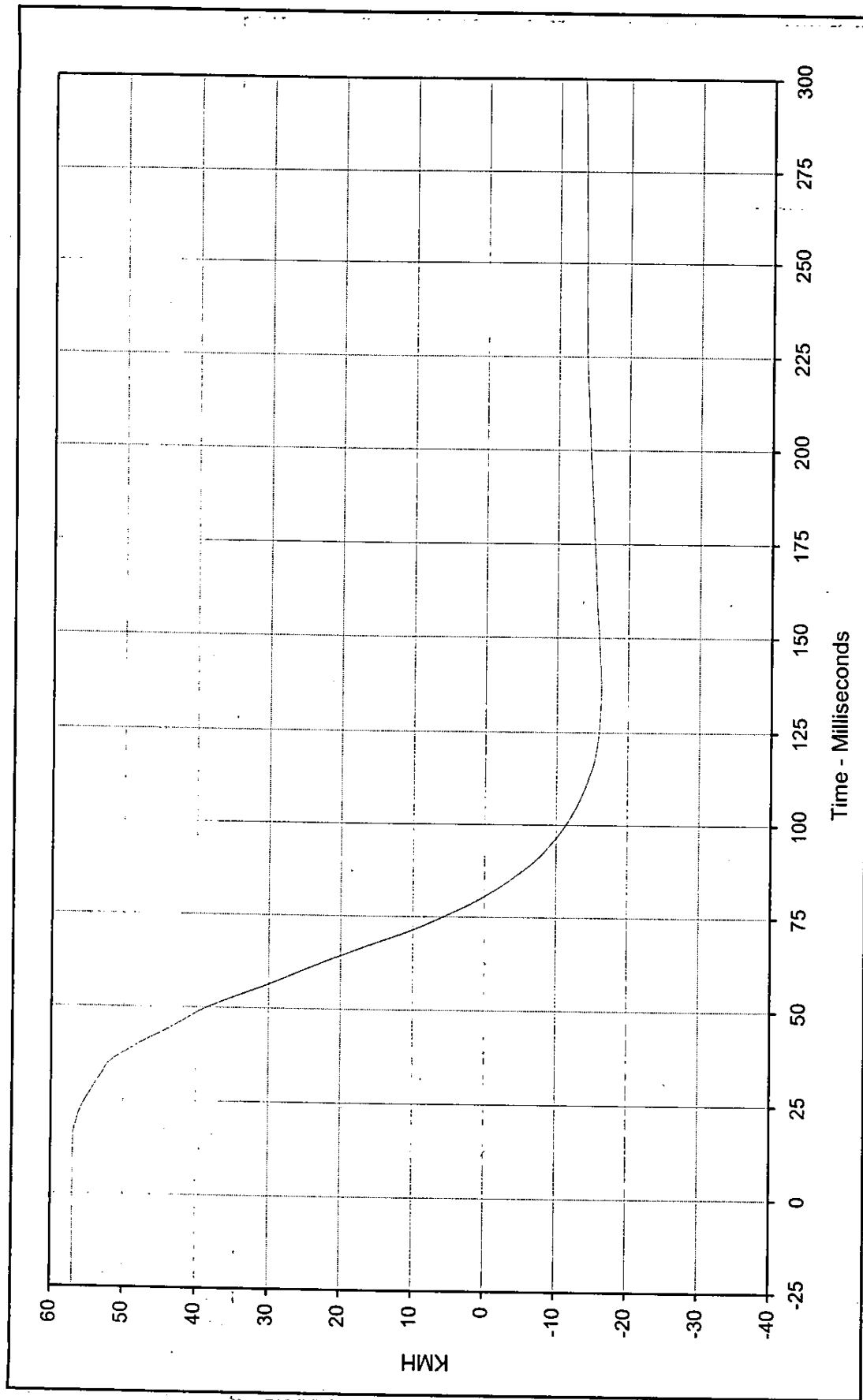
Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Passenger Chest Redundant X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	1.1 at 154.9 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-41.4 at 68.4 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/14/99			
Curve Number:	FIL-060			





Curve Description: Passenger Chest Redundant X Velocity

Maximum Value: 57.0 at 6.0 Milliseconds

Minimum Value: -16.2 at 136.2 Milliseconds

SAE Filter Class: 180

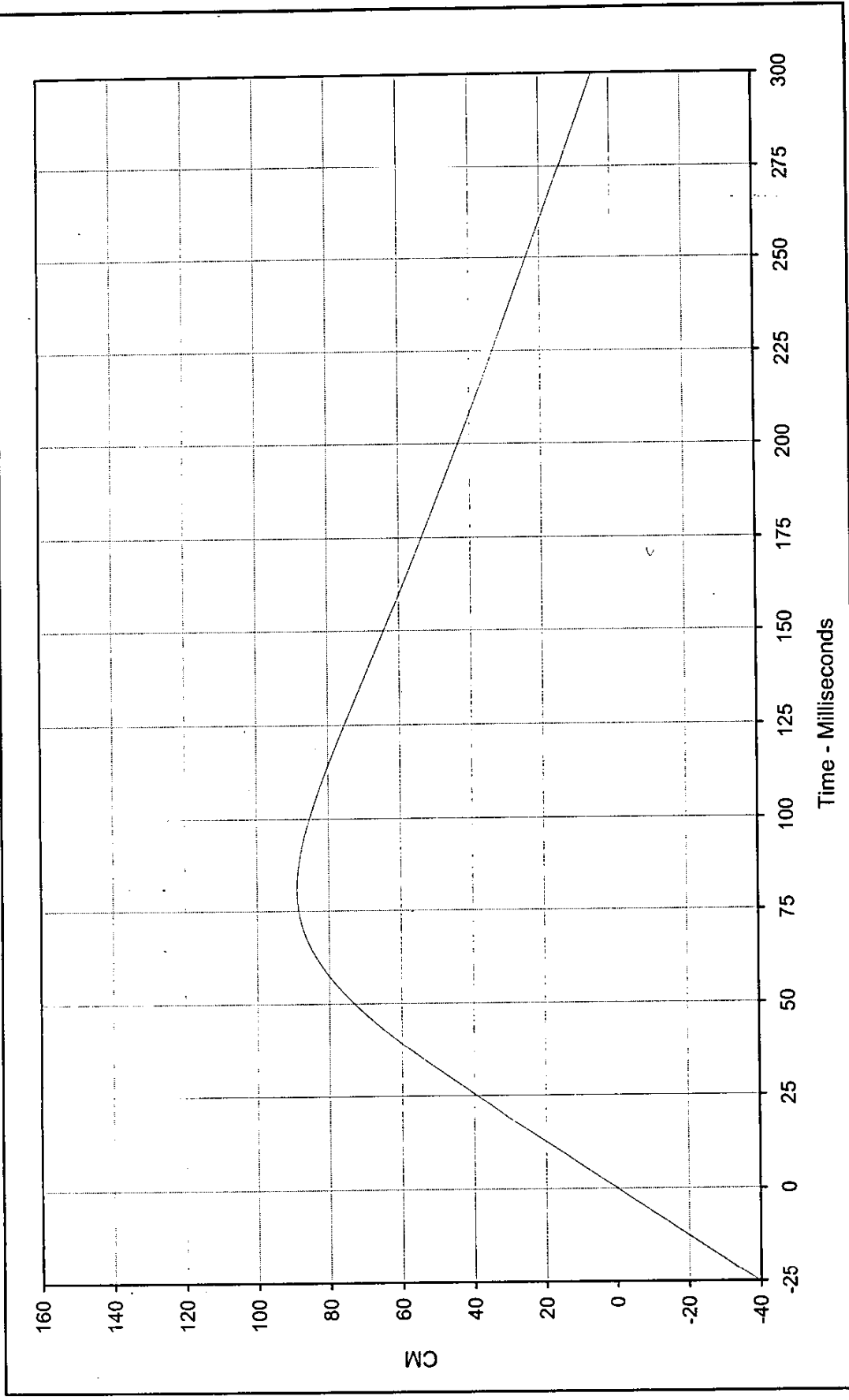
Date of Test: 12/14/99

Curve Number: IN1-060

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

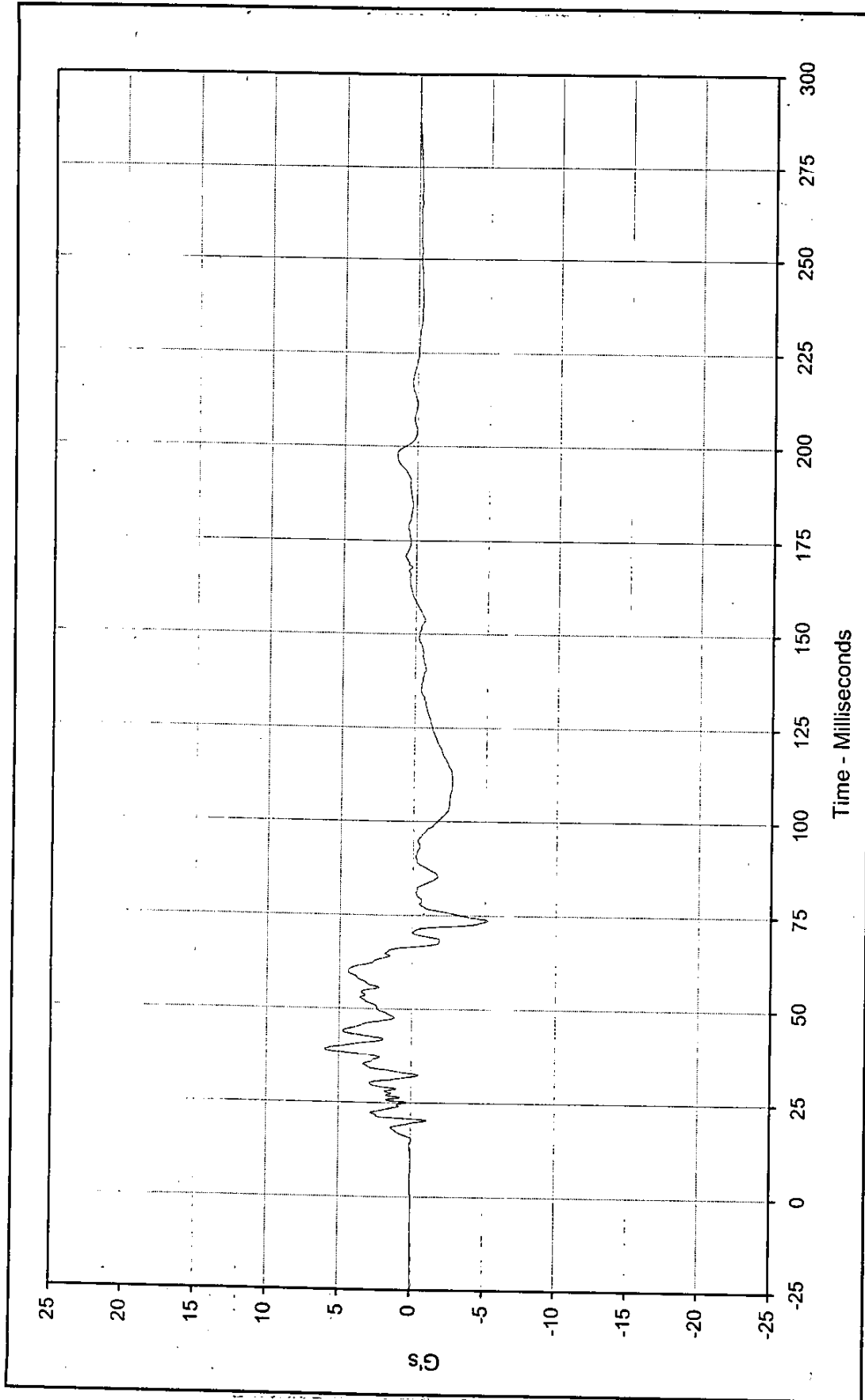
Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





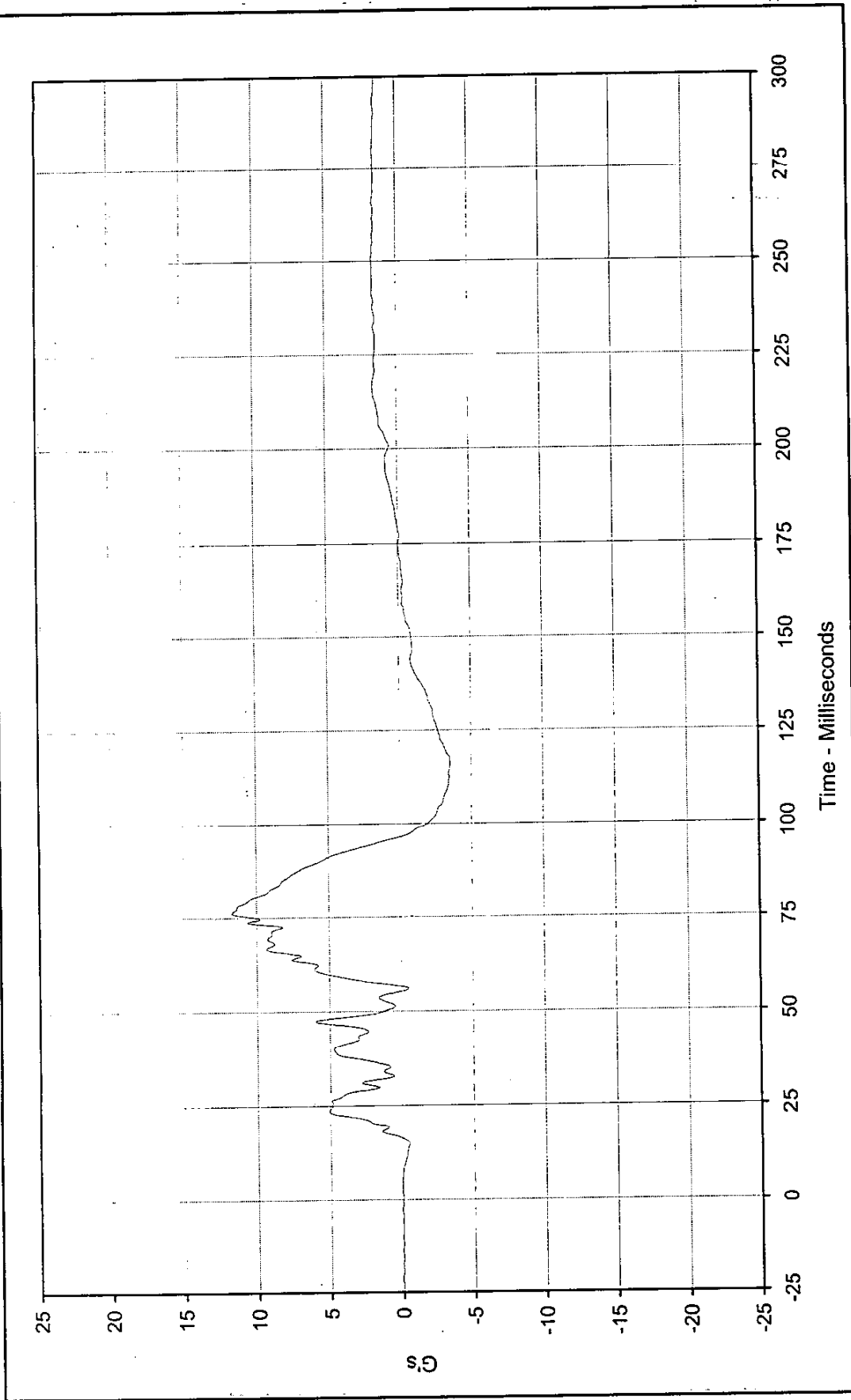
Curve Description:	Passenger Chest Redundant X Displ.		Test Program:	2000 NHTSA 35 mph NCAP No.: MY5801	
Maximum Value:	88.8	at 80.5 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	0.0	at 0.0 Milliseconds			
SAE Filter Class:	180				
Date of Test:	12/14/99				
Curve Number:	IN2-060				





Curve Description:	Passenger Chest Redundant Y	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	6.0 at 39.2 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-5.3 at 73.7 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/14/99			
Curve Number:	FIL-061			

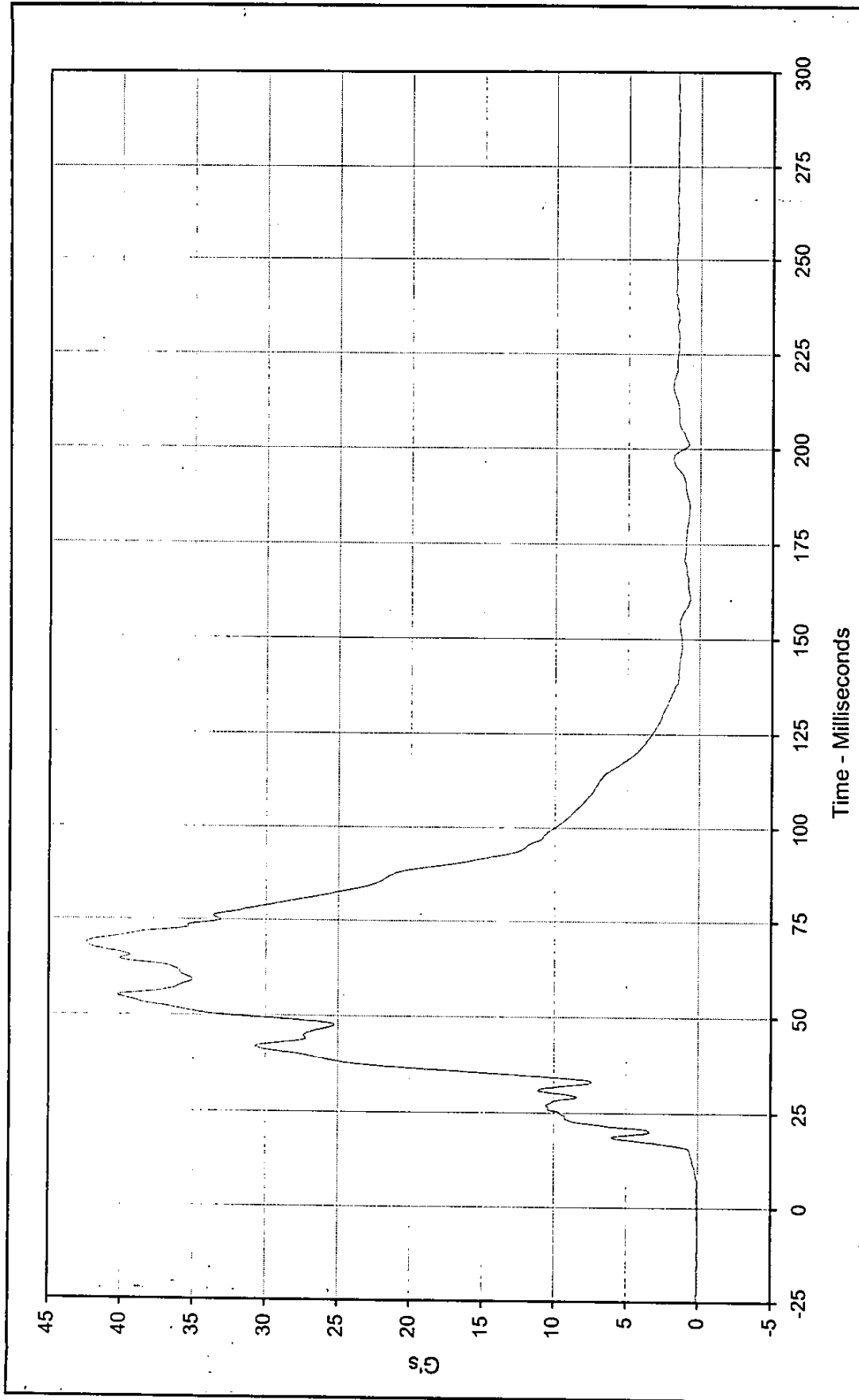




Curve Description: Passenger Chest Redundant Z
 Maximum Value: 11.7 at 76.2 Milliseconds
 Minimum Value: -3.6 at 116.1 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/14/99
 Curve Number: FIL-062

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description: Passenger Chest Resultant Redundant

Maximum Value: 42.4 at 68.5 Milliseconds

Minimum Value: 0.0 at 6.2 Milliseconds

SAE Filter Class: 180

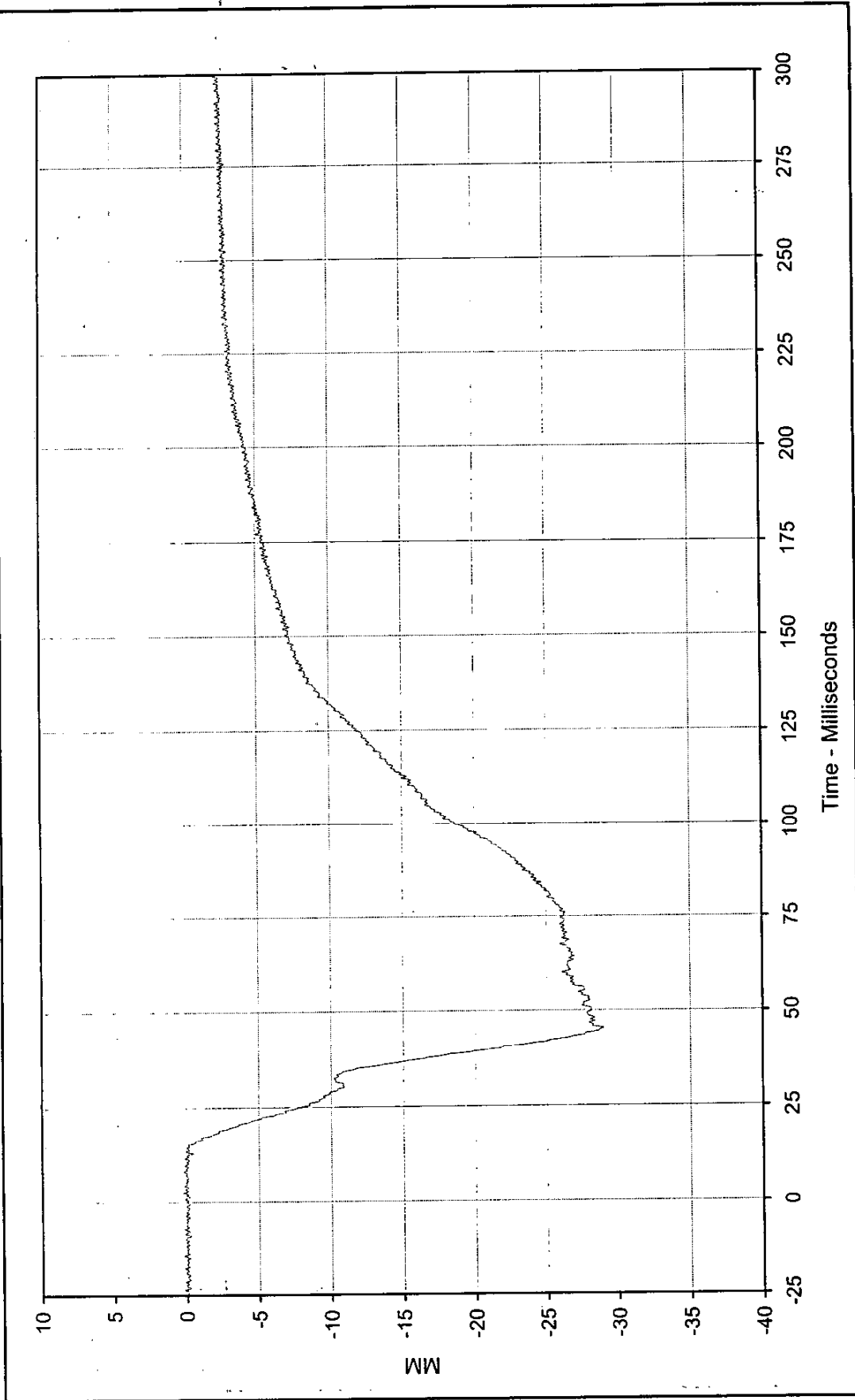
Date of Test: 12/14/99

Curve Number: RES-060

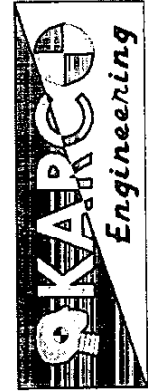
Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

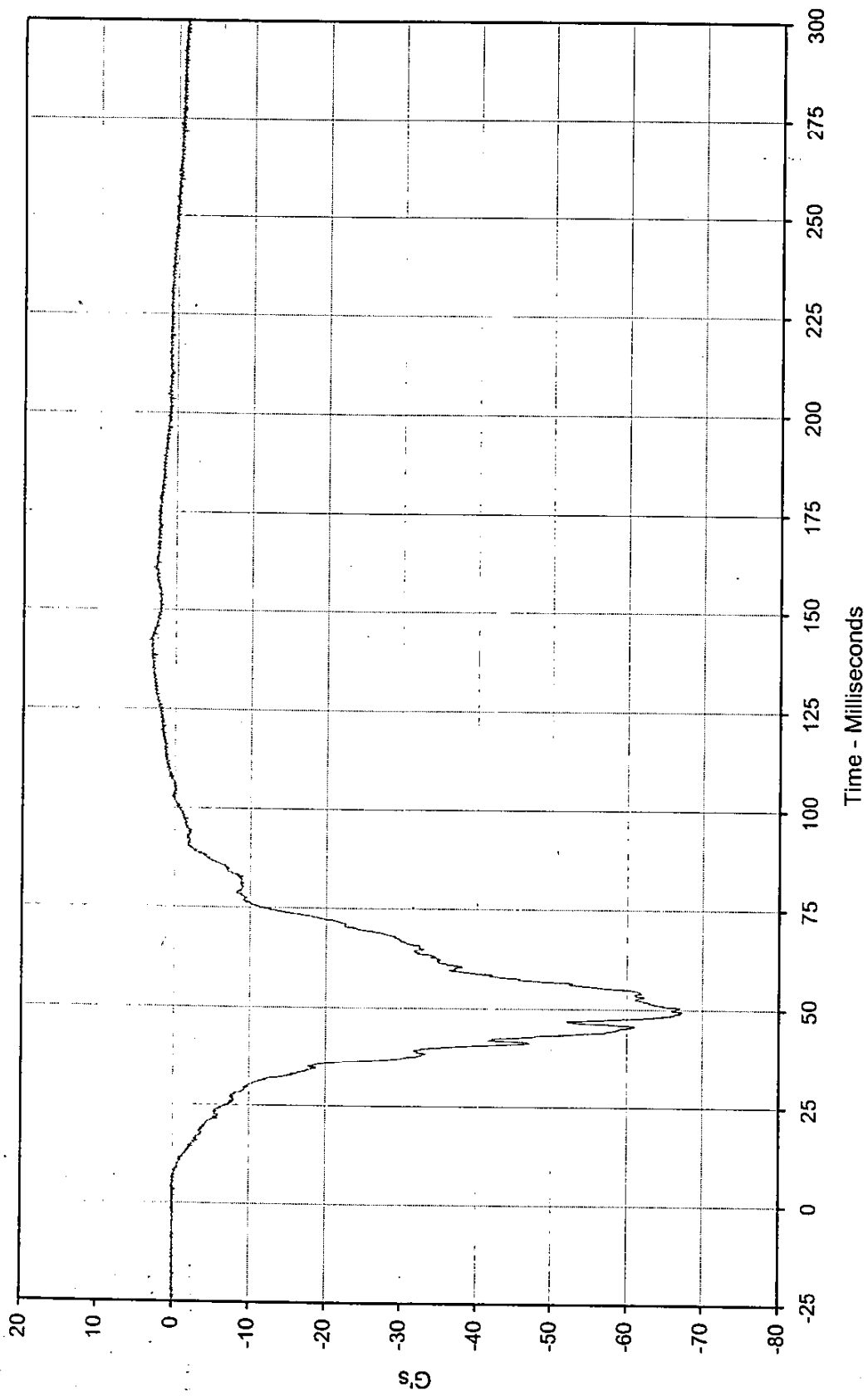
Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





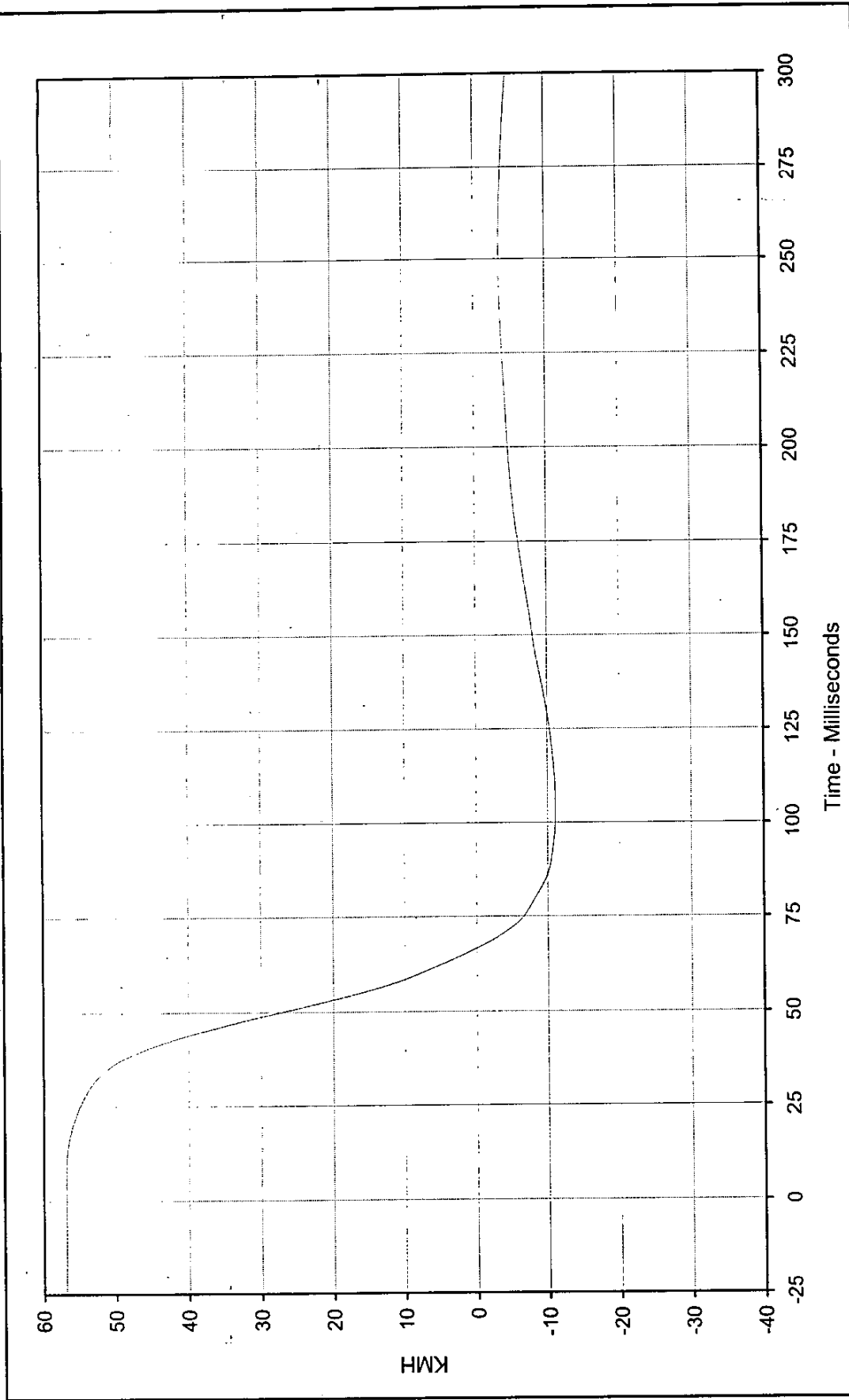
Curve Description:	Passenger Chest Displacement X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	0.2 at 2.6 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-29.0 at 45.3 Milliseconds			
SAE Filter Class:	600			
Date of Test:	12/14/99			
Curve Number:	FIL-063			





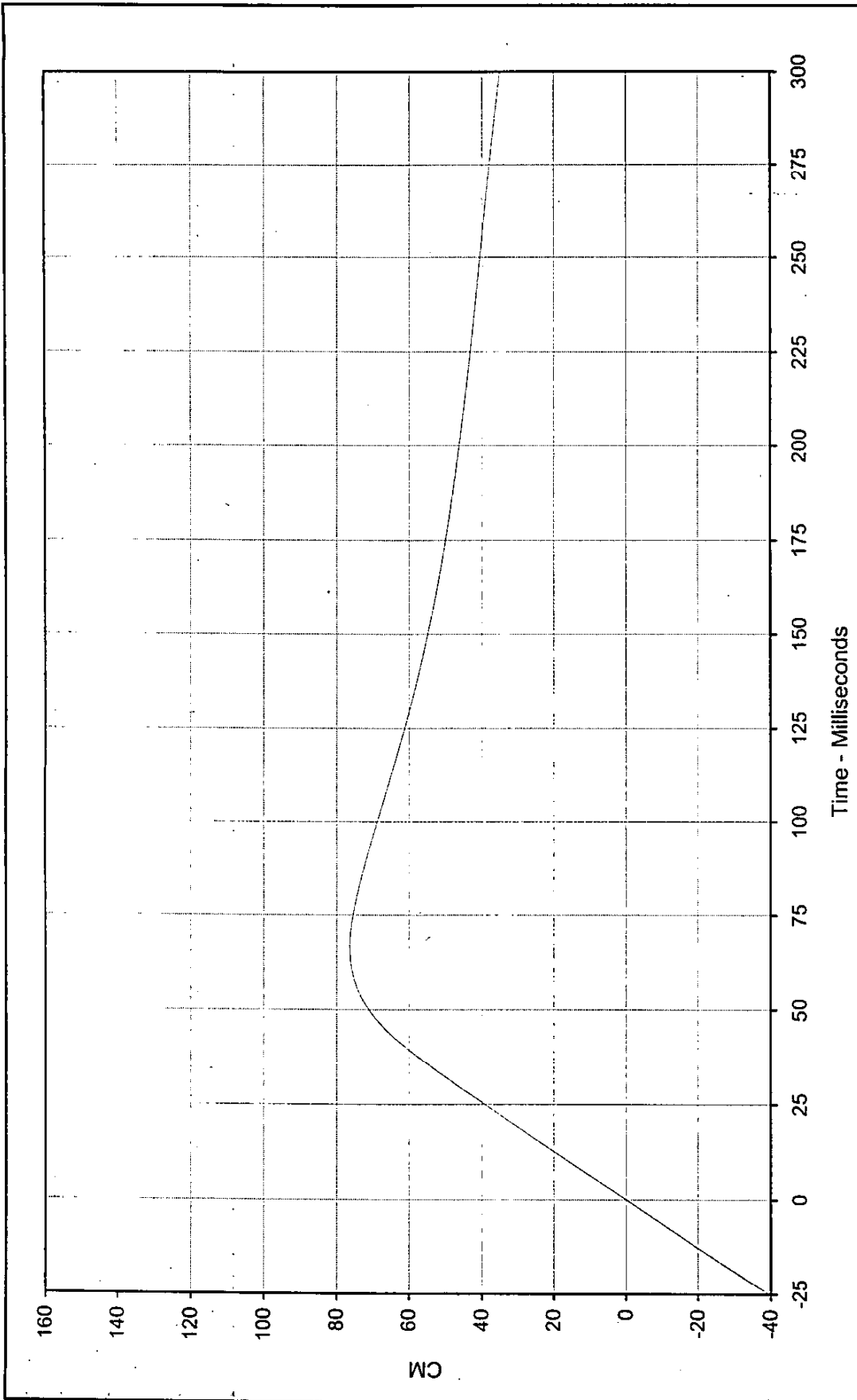
Curve Description:	Passenger Pelvis X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	3.5 at 142.4 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-67.3 at 49.5 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/14/99			
Curve Number:	FIL-064			





Curve Description:	Passenger Pelvis X Velocity	Test Program:	2000 NHTSA 35 mph NCAP No.: MY5801
Maximum Value:	56.9 at 0.7 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan
Minimum Value:	-11.1 at 106.0 Milliseconds		
SAE Filter Class:	180		
Date of Test:	12/14/99		
Curve Number:	IN1-064		

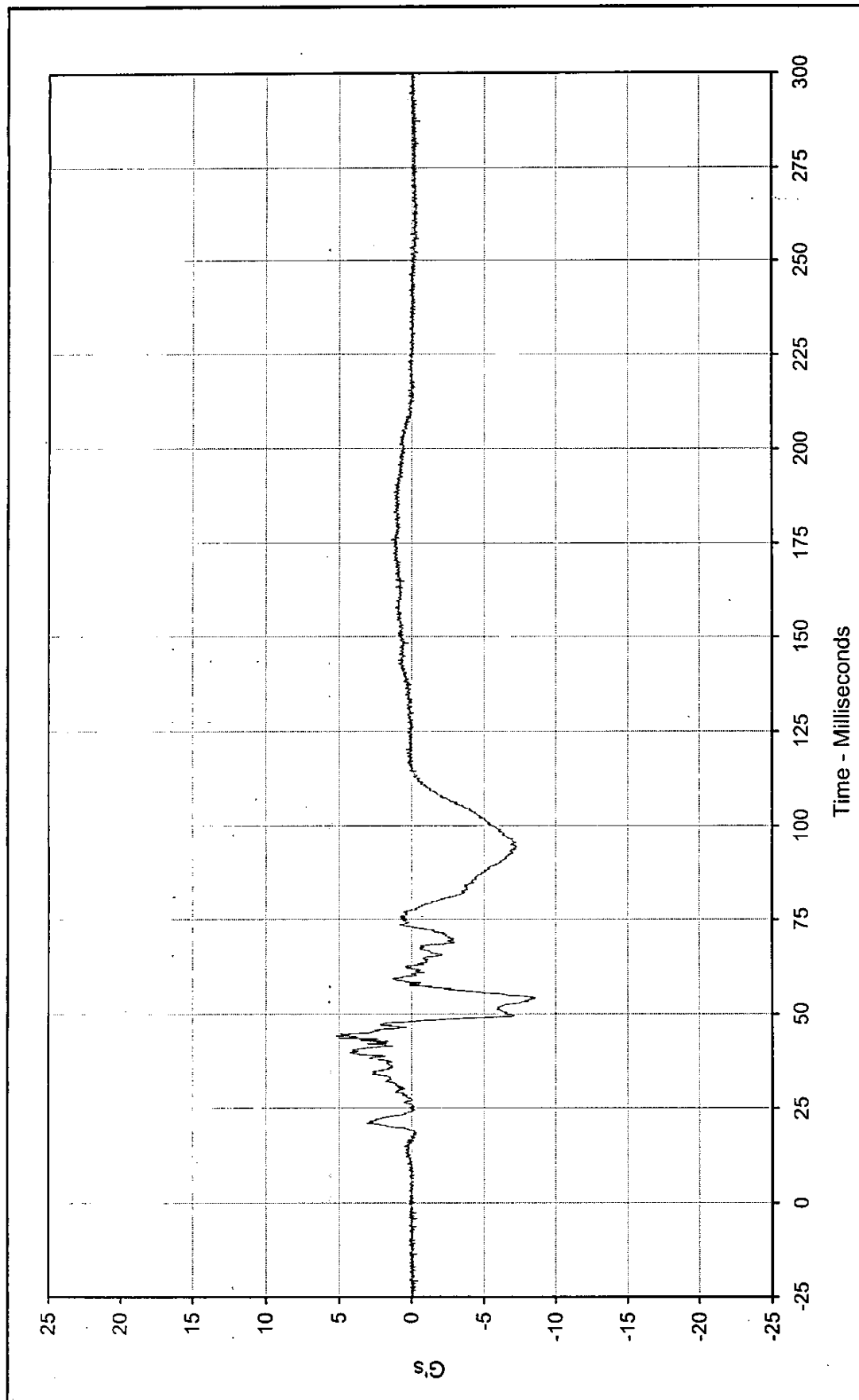




Curve Description: Passenger Pelvis X Displ.
 Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

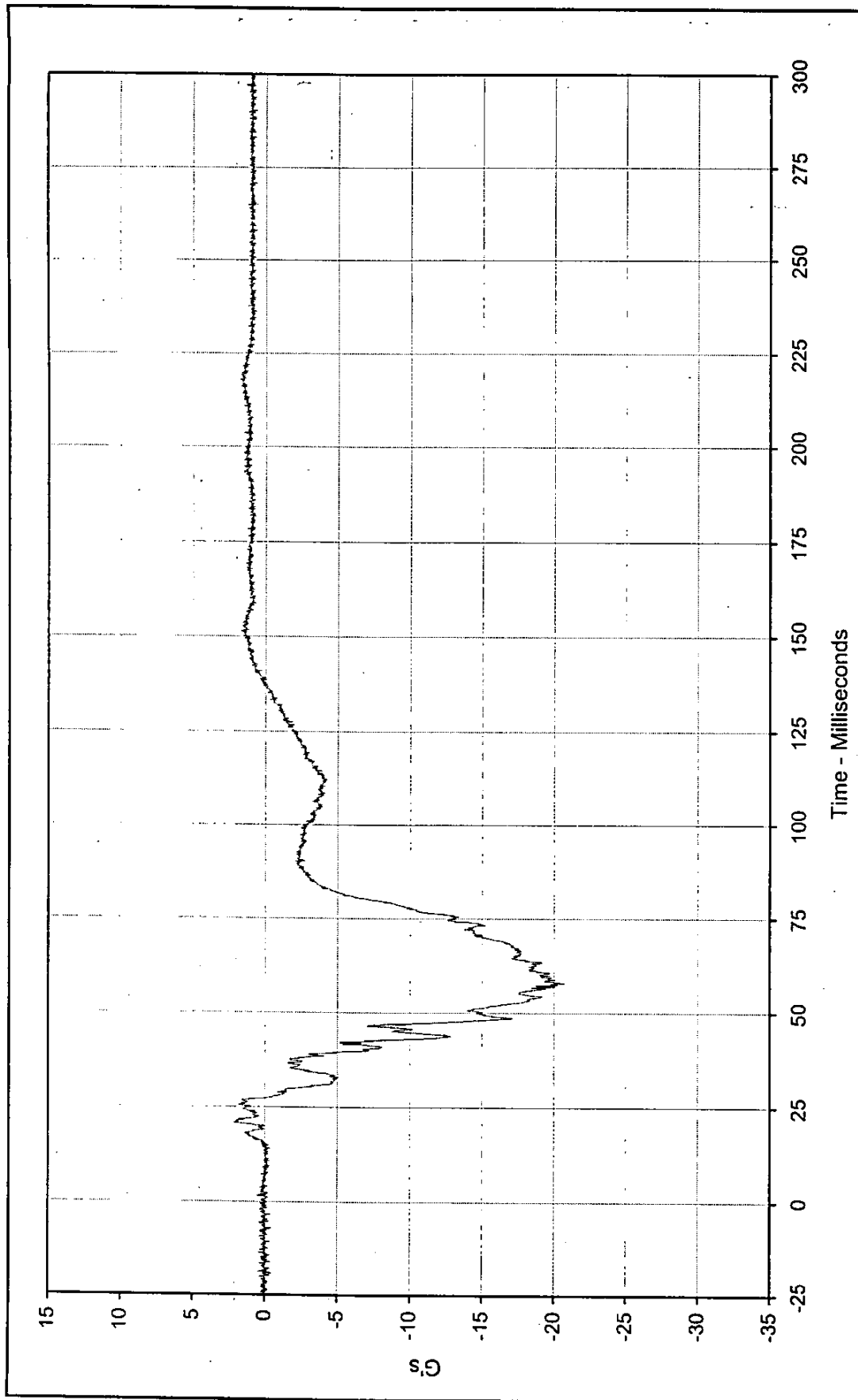
Maximum Value: 76.4 at 66.6 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/14/99
 Curve Number: IN2-064





Curve Description:	Passenger Pelvis Y	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	5.2 at 44.1 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-8.6 at 54.2 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/14/99			
Curve Number:	FIL-065			

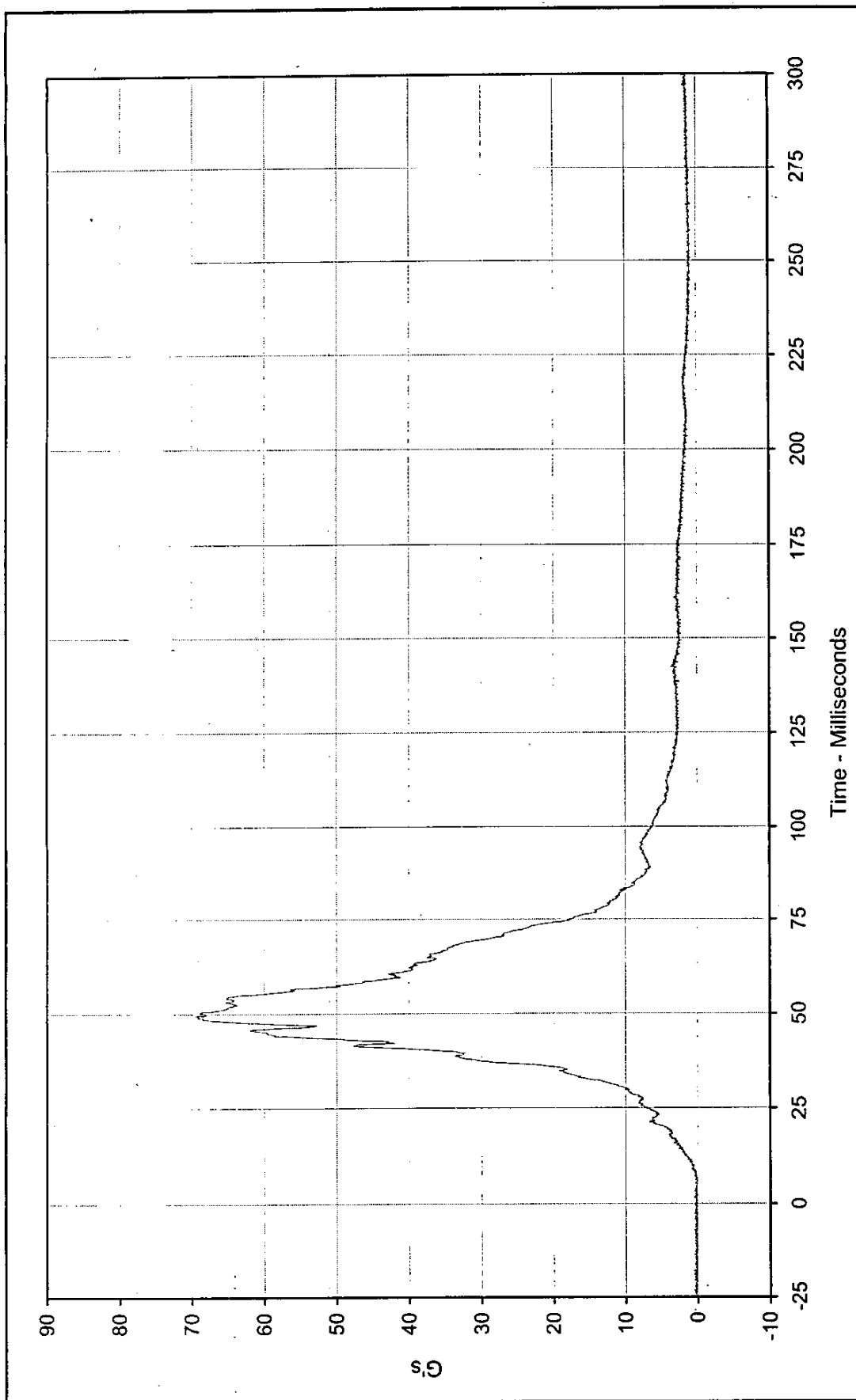




Curve Description: Passenger Pelvis Z
 Maximum Value: 2.1 at 20.8 Milliseconds
 Minimum Value: -20.7 at 57.9 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/14/99
 Curve Number: FIL-066

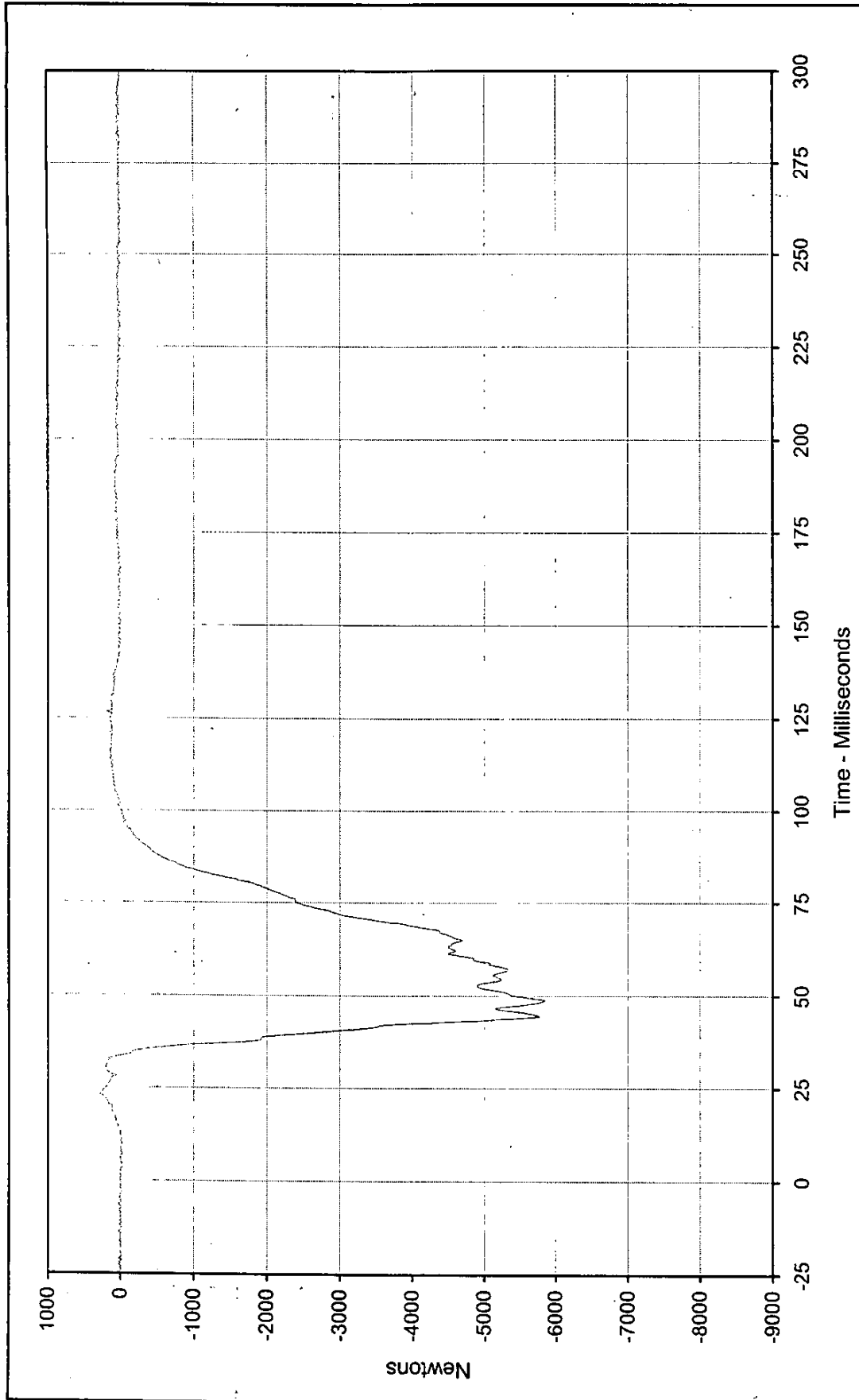
Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Passenger Pelvis Resultant	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	69.4 at 49.5 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	0.0 at 0.8 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/14/99			
Curve Number:	RES-064			

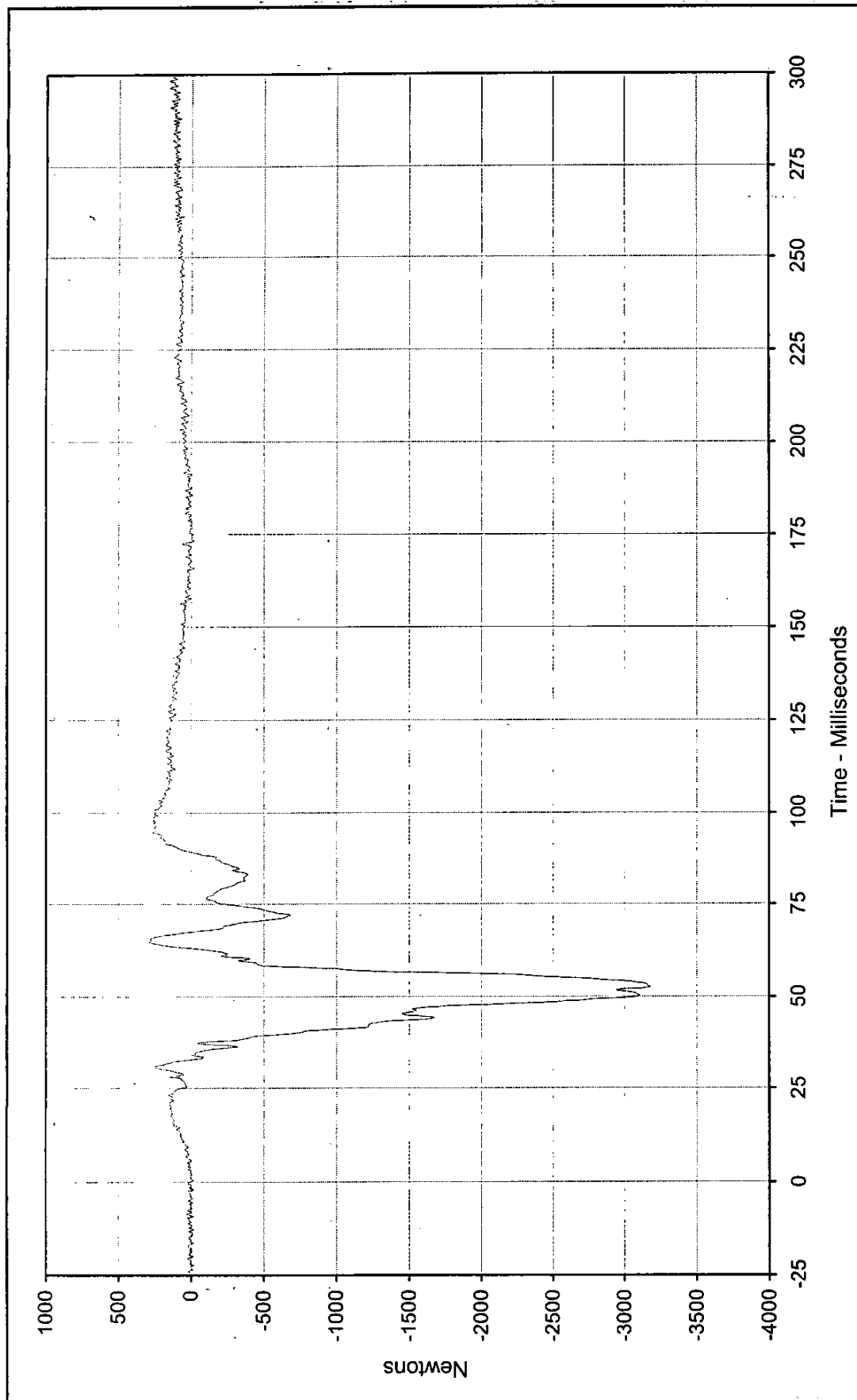




Curve Description: Passenger Left Femur Force
 Maximum Value: 285.7 at 23.1 Milliseconds
 Minimum Value: -5853.4 at 48.7 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/14/99
 Curve Number: FIL-067

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

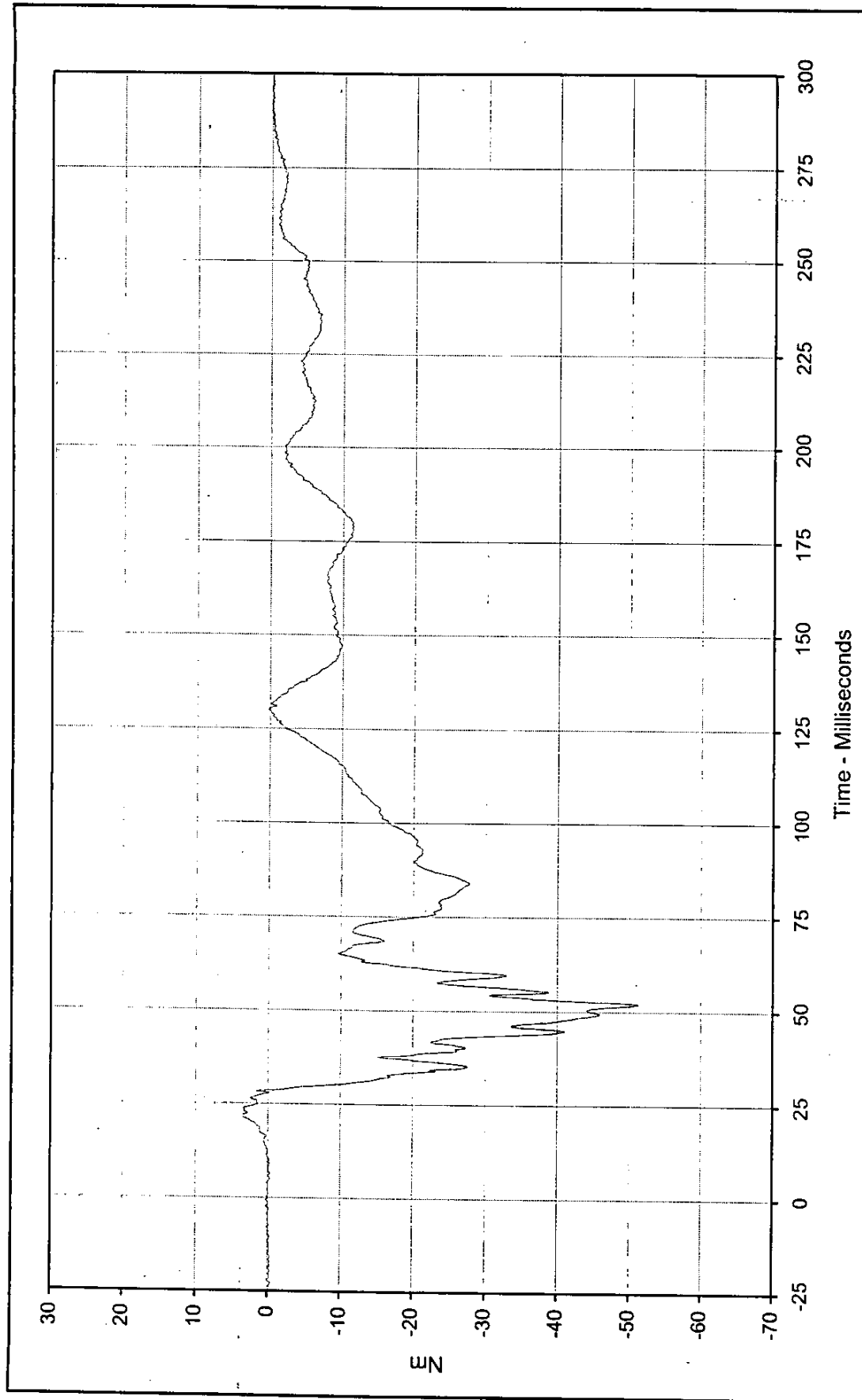




Curve Description: Passenger Right Femur Force
 Maximum Value: 289.7 at 64.7 Milliseconds
 Minimum Value: -3179.5 at 52.6 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/14/99
 Curve Number: FIL-068

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description: Passenger Left Upper Tibia Moment X

Maximum Value: 3.5 at 21.9 Milliseconds

Minimum Value: -51.3 at 51.9 Milliseconds

SAE Filter Class: 600

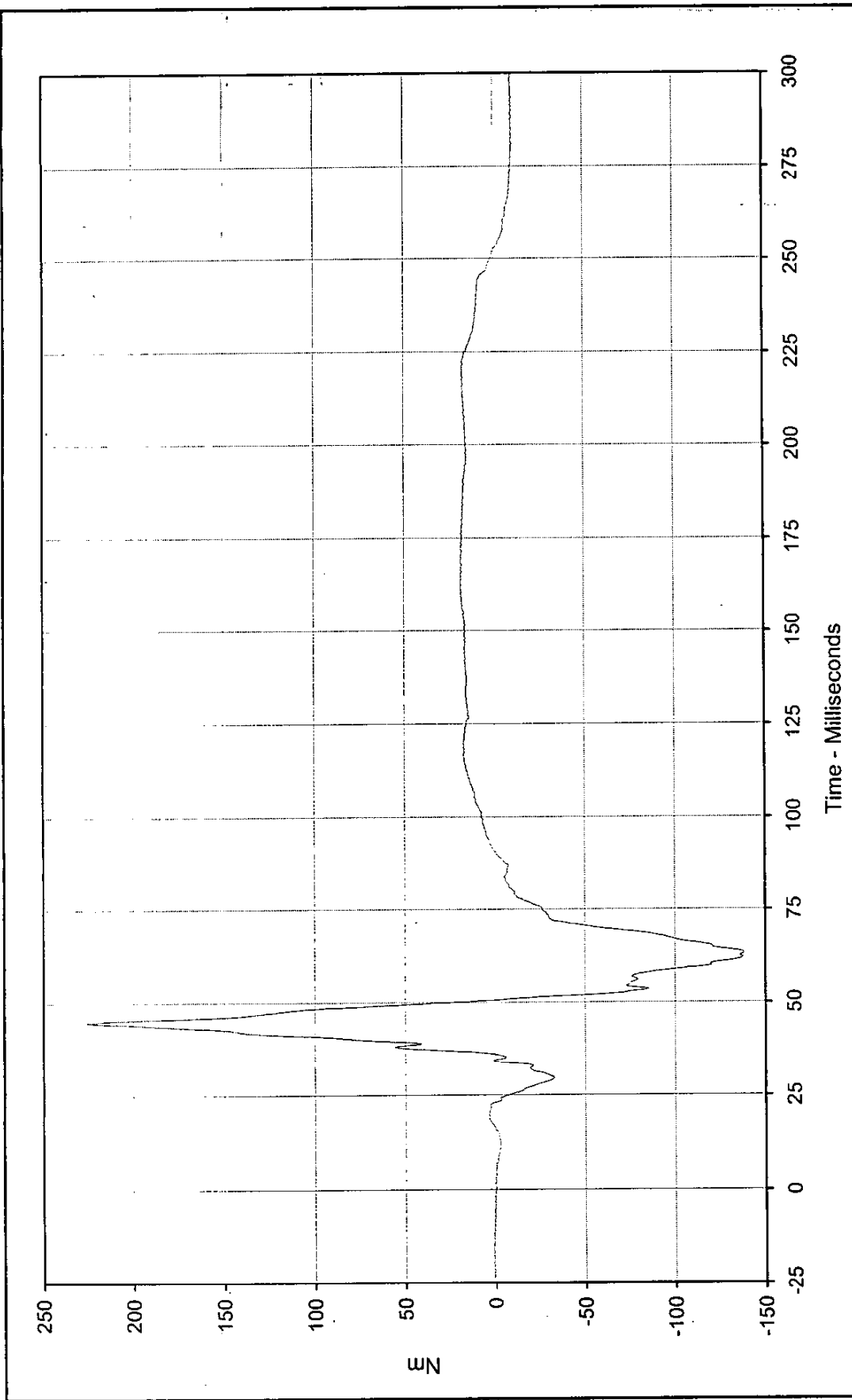
Date of Test: 12/14/99

Curve Number: FIL-069

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description: Passenger Left Upper Tibia Moment Y Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Maximum Value: 225.7 at 44.8 Milliseconds Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

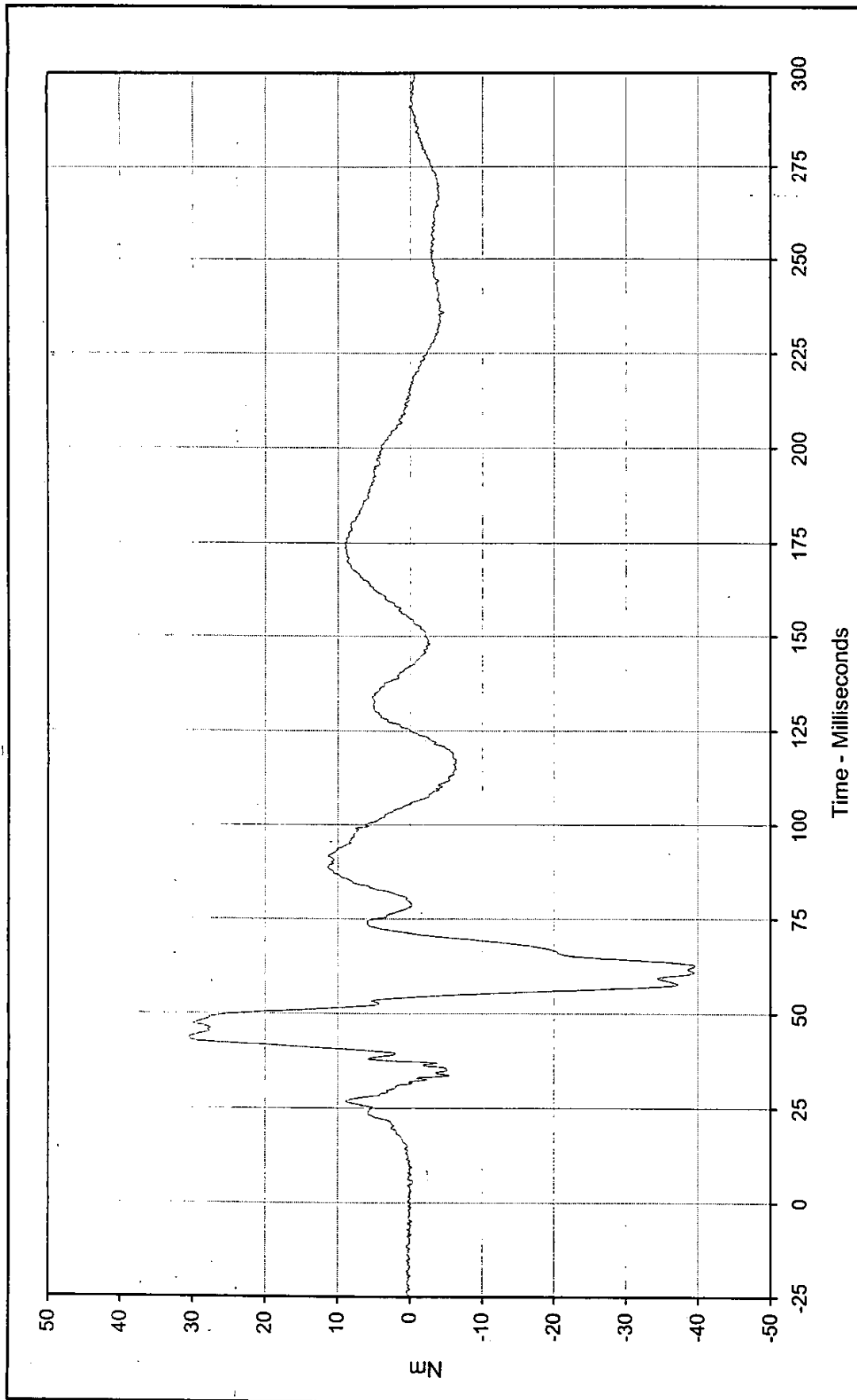
Minimum Value: -138.2 at 63.2 Milliseconds

SAE Filter Class: 600

Date of Test: 12/14/99

Curve Number: FIL-070





Curve Description: Passenger Right Upper Tibia Moment X

Maximum Value: 30.5 at 43.6 Milliseconds

Minimum Value: -39.6 at 62.6 Milliseconds

SAE Filter Class: 600

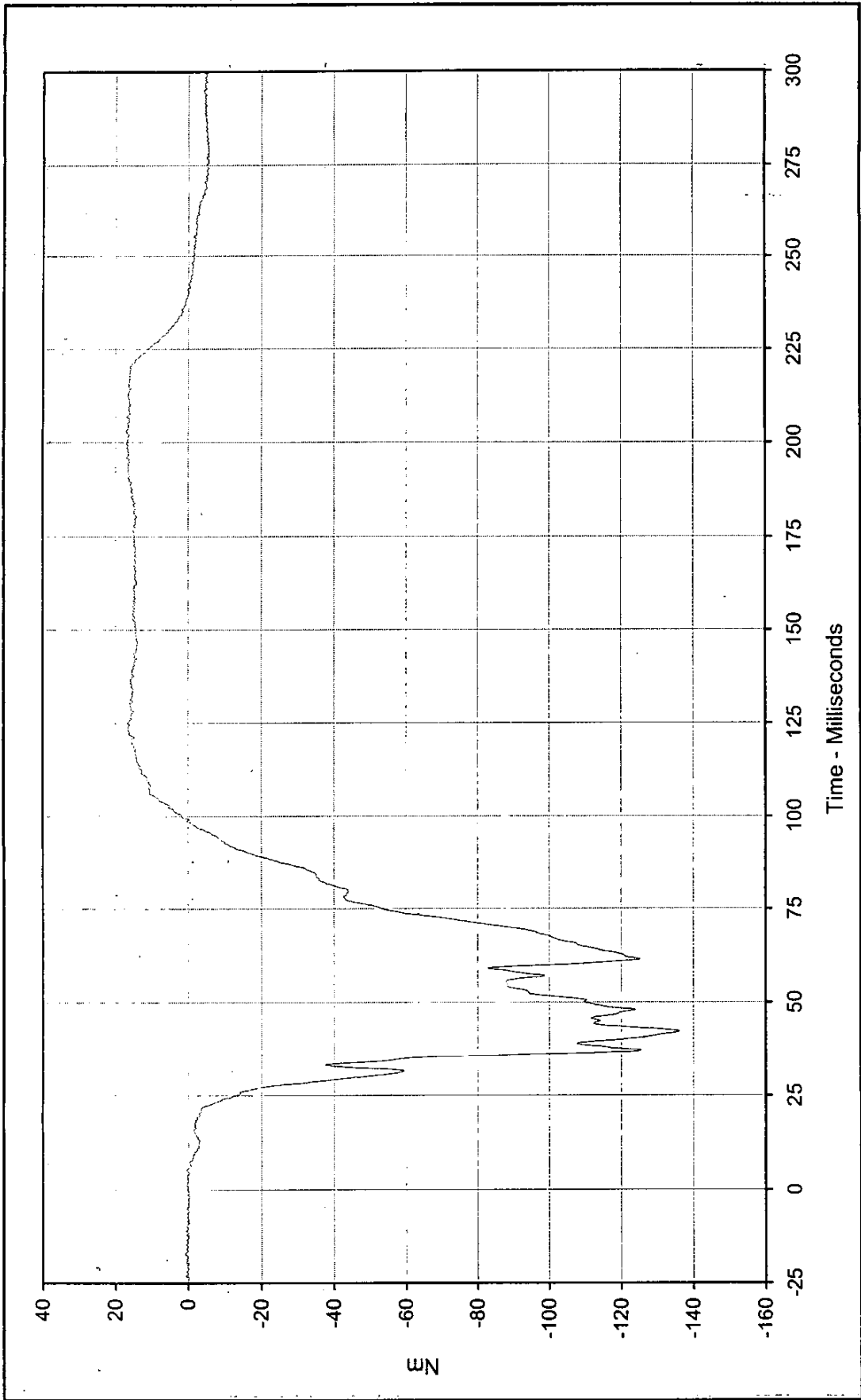
Date of Test: 12/14/99

Curve Number: FIL-071

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description: Passenger Right Upper Tibia Moment Y

Maximum Value: 17.0 at 17.0 Milliseconds

Minimum Value: -136.1 at 42.3 Milliseconds

SAE Filter Class: 600

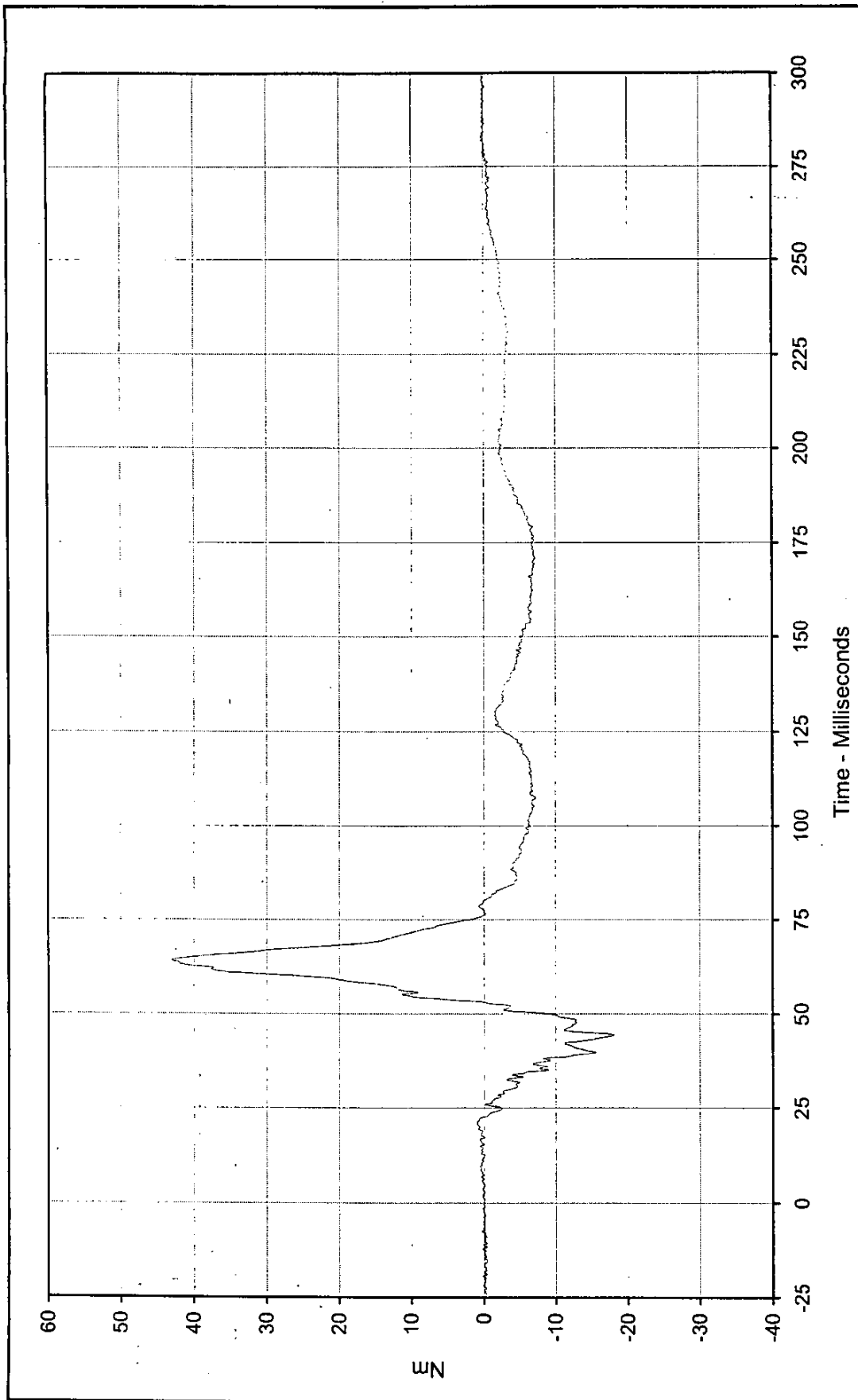
Date of Test: 12/14/99

Curve Number: FIL-072

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description: Passenger Left Lower Tibia Moment X

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

Maximum Value: 43.0 at 64.1 Milliseconds

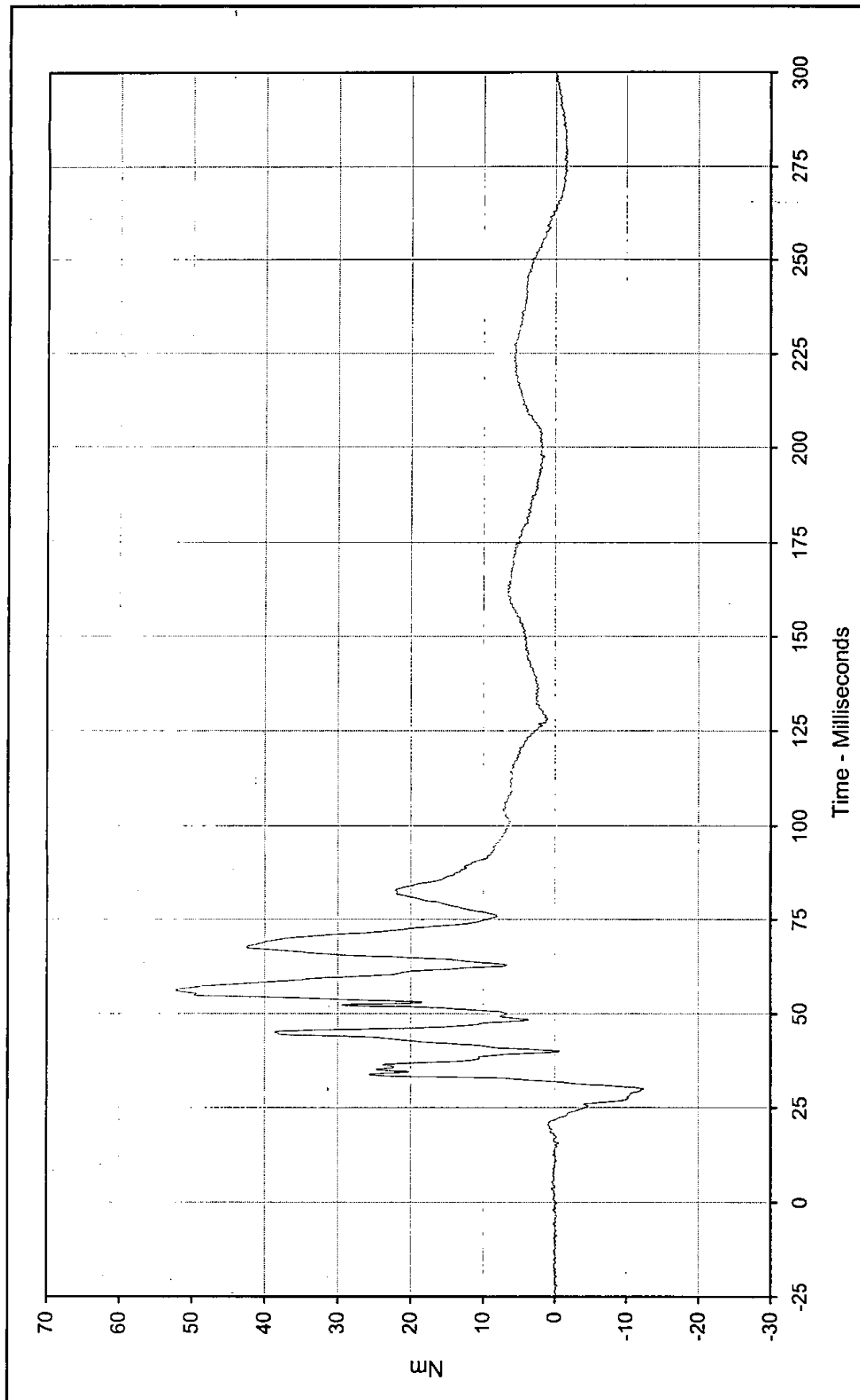
Minimum Value: -18.0 at 44.5 Milliseconds

SAE Filter Class: 600

Date of Test: 12/14/99

Curve Number: FIL-073





Curve Description: Passenger Left Lower Tibia Moment Y Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Maximum Value: 52.2 at 56.2 Milliseconds Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

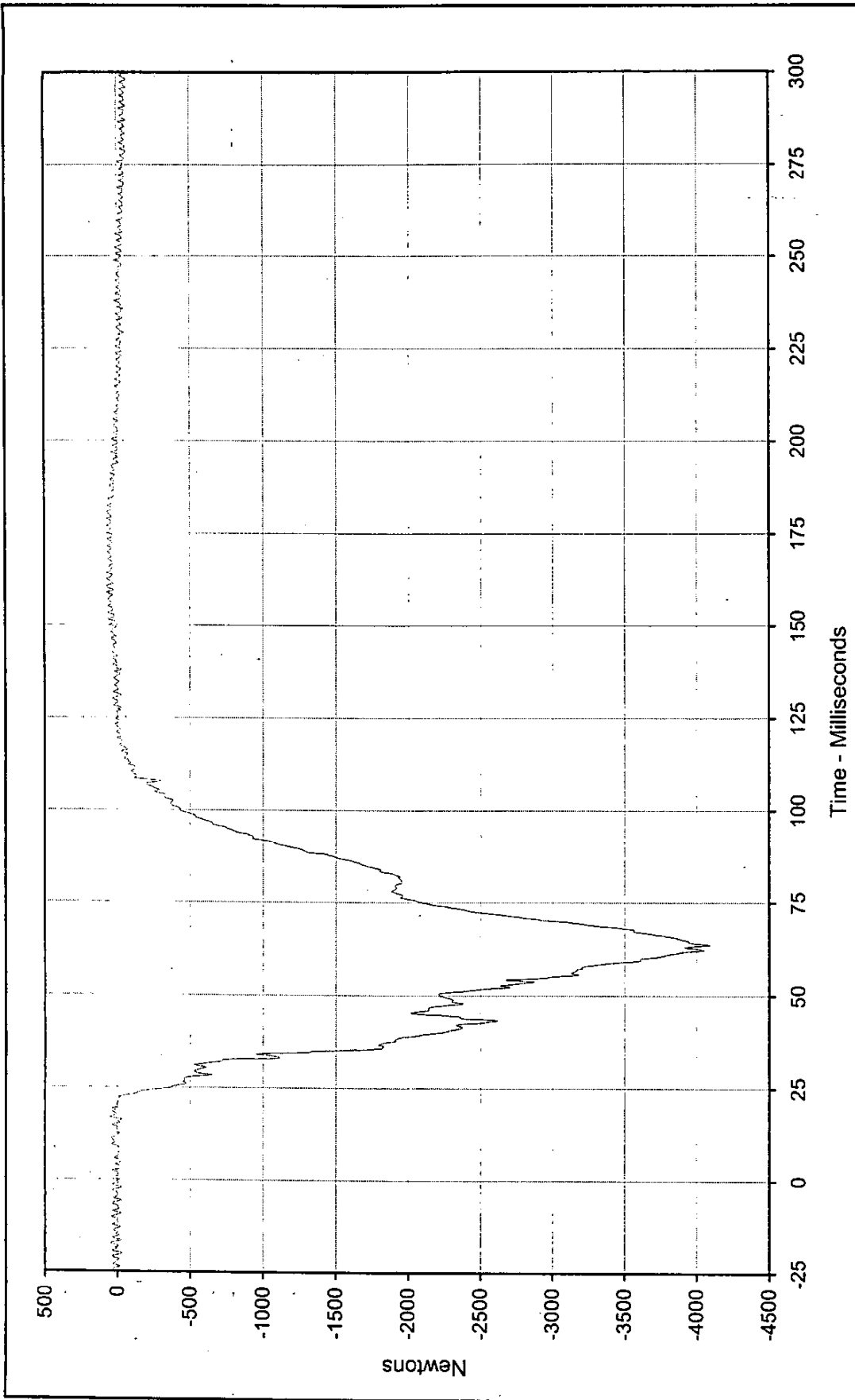
Minimum Value: -12.5 at 29.8 Milliseconds

SAE Filter Class: 600

Date of Test: 12/14/99

Curve Number: FIL-074

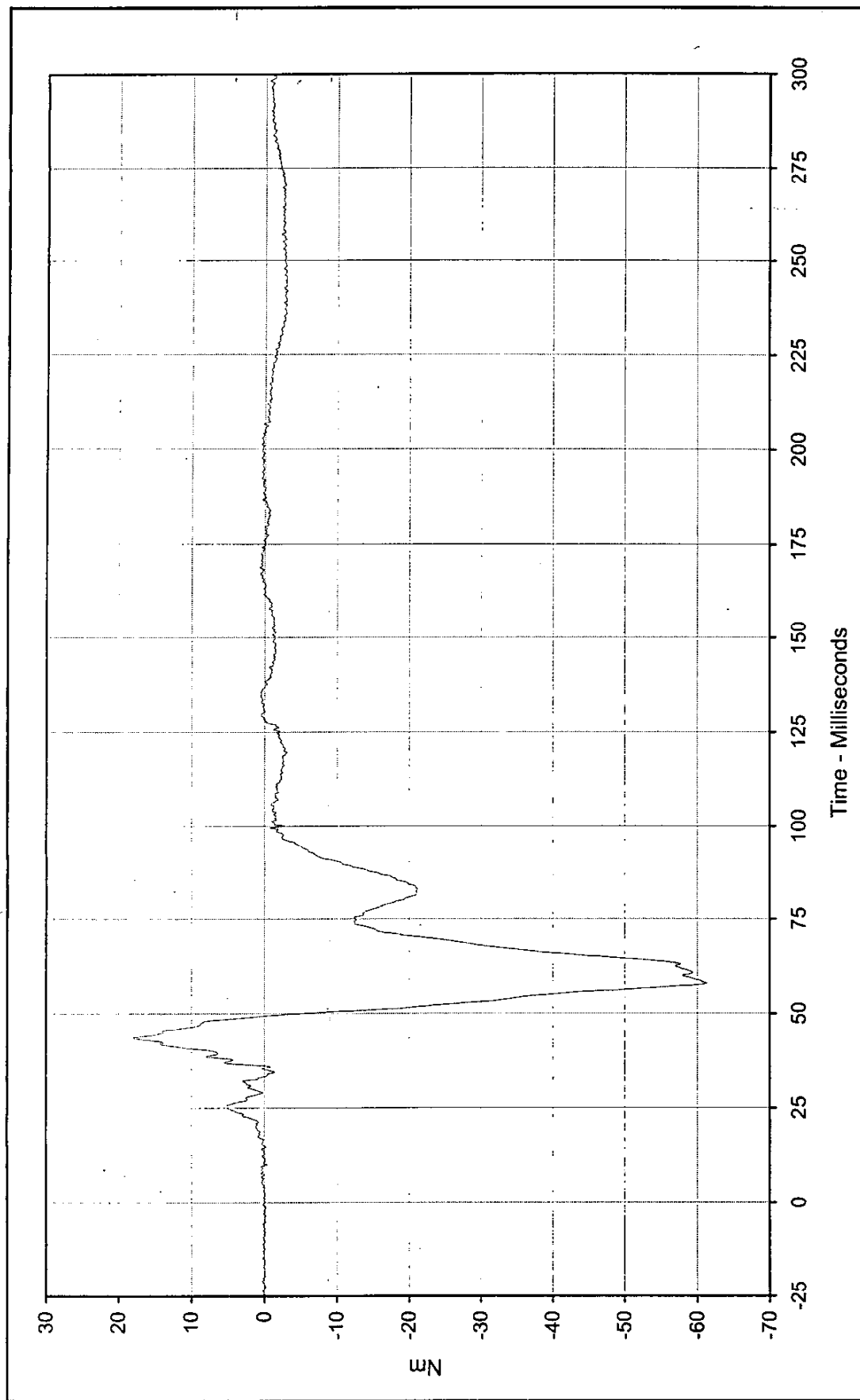




Curve Description: Passenger Left Lower Tibia Force Z
 Maximum Value: 73.1 at 180.6 Milliseconds
 Minimum Value: -4094.7 at 63.6 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/14/99
 Curve Number: FIL-075

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description: Passenger Right Lower Tibia Moment X

Maximum Value: 18.0 at 43.7 Milliseconds

Minimum Value: -61.3 at 58.0 Milliseconds

SAE Filter Class: 600

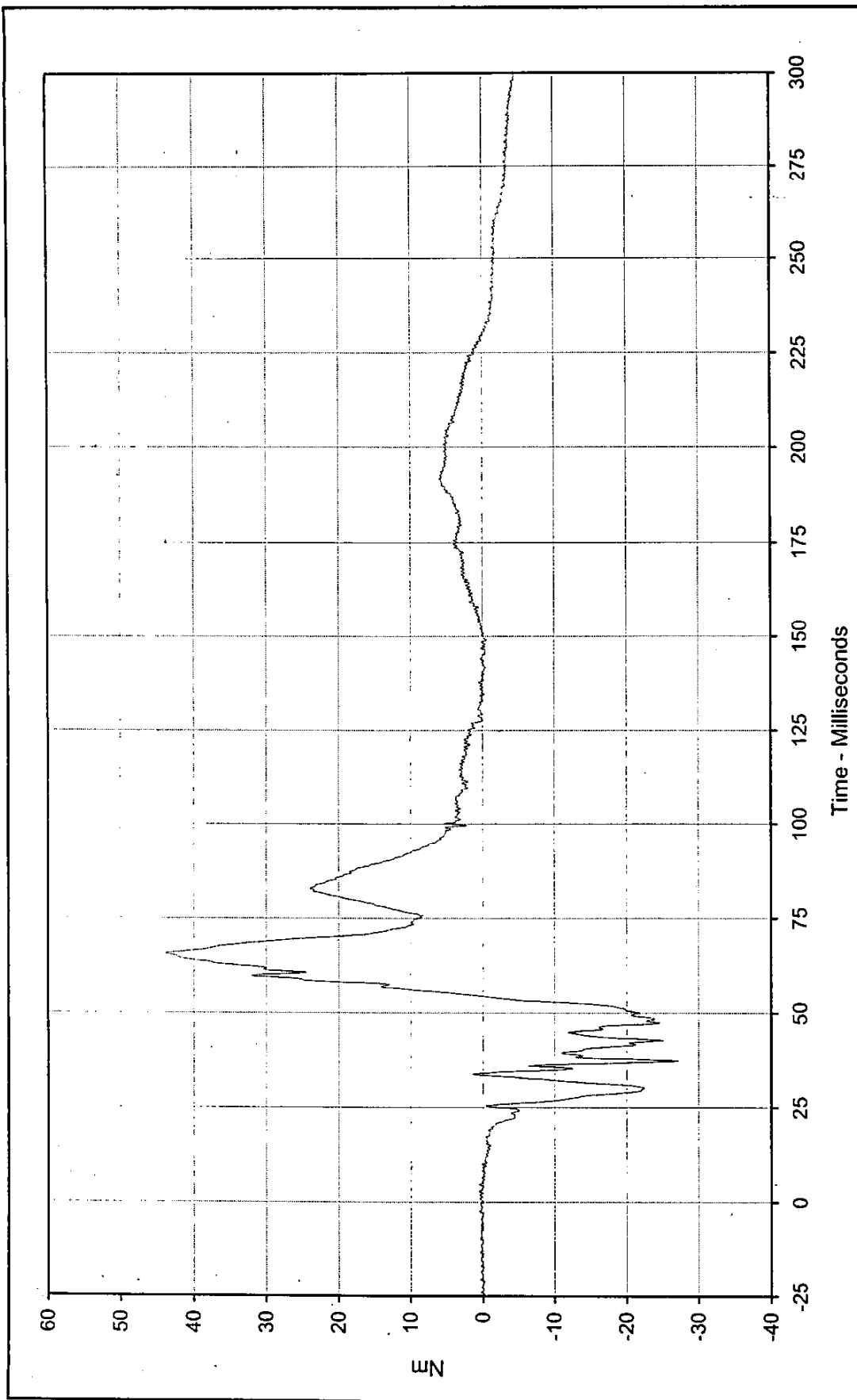
Date of Test: 12/14/99

Curve Number: FIL-076

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description: Passenger Right Lower Tibia Moment Y

Maximum Value: 43.9 at 65.7 Milliseconds

Minimum Value: -27.2 at 37.4 Milliseconds

SAE Filter Class: 600

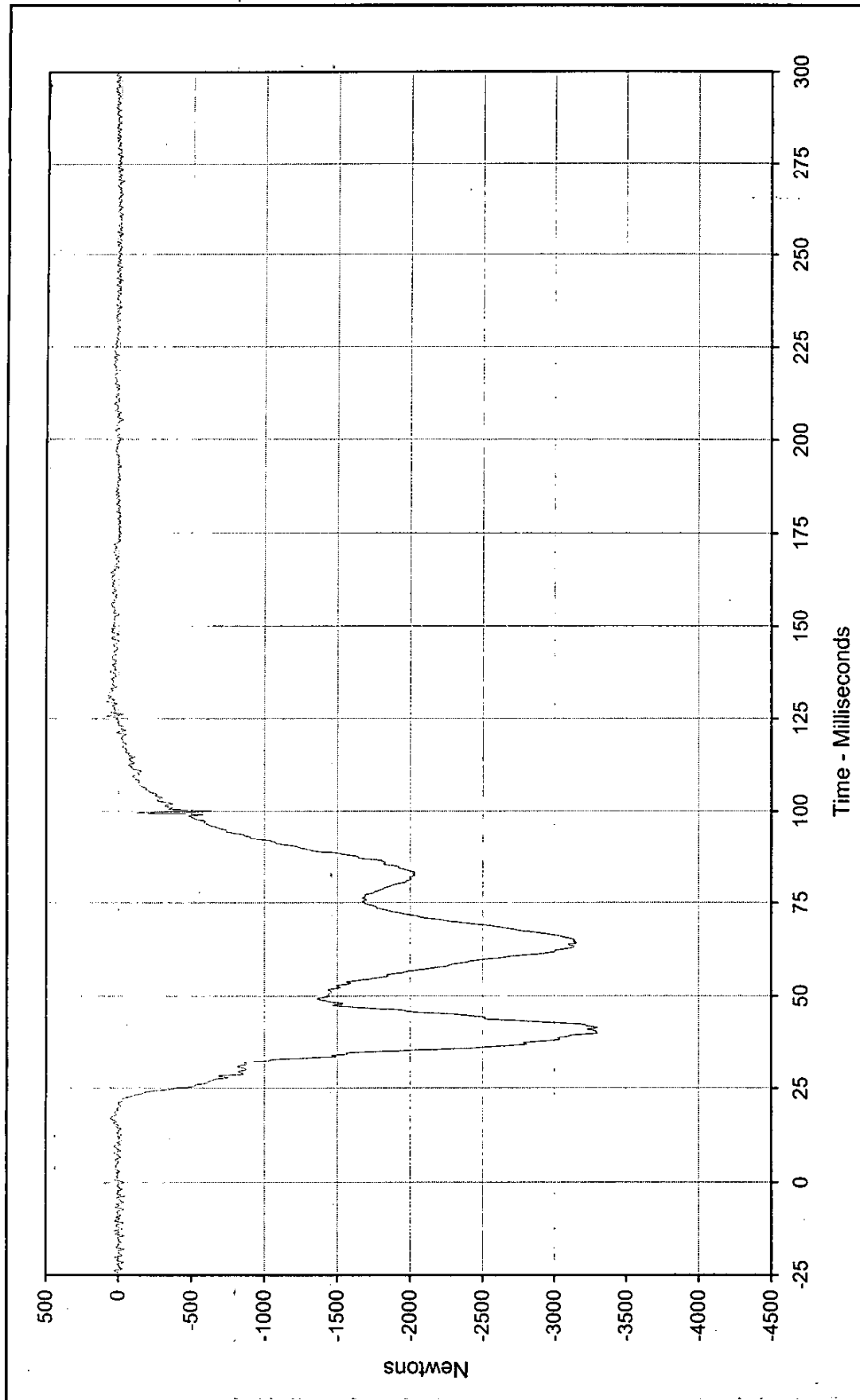
Date of Test: 12/14/99

Curve Number: FIL-077

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

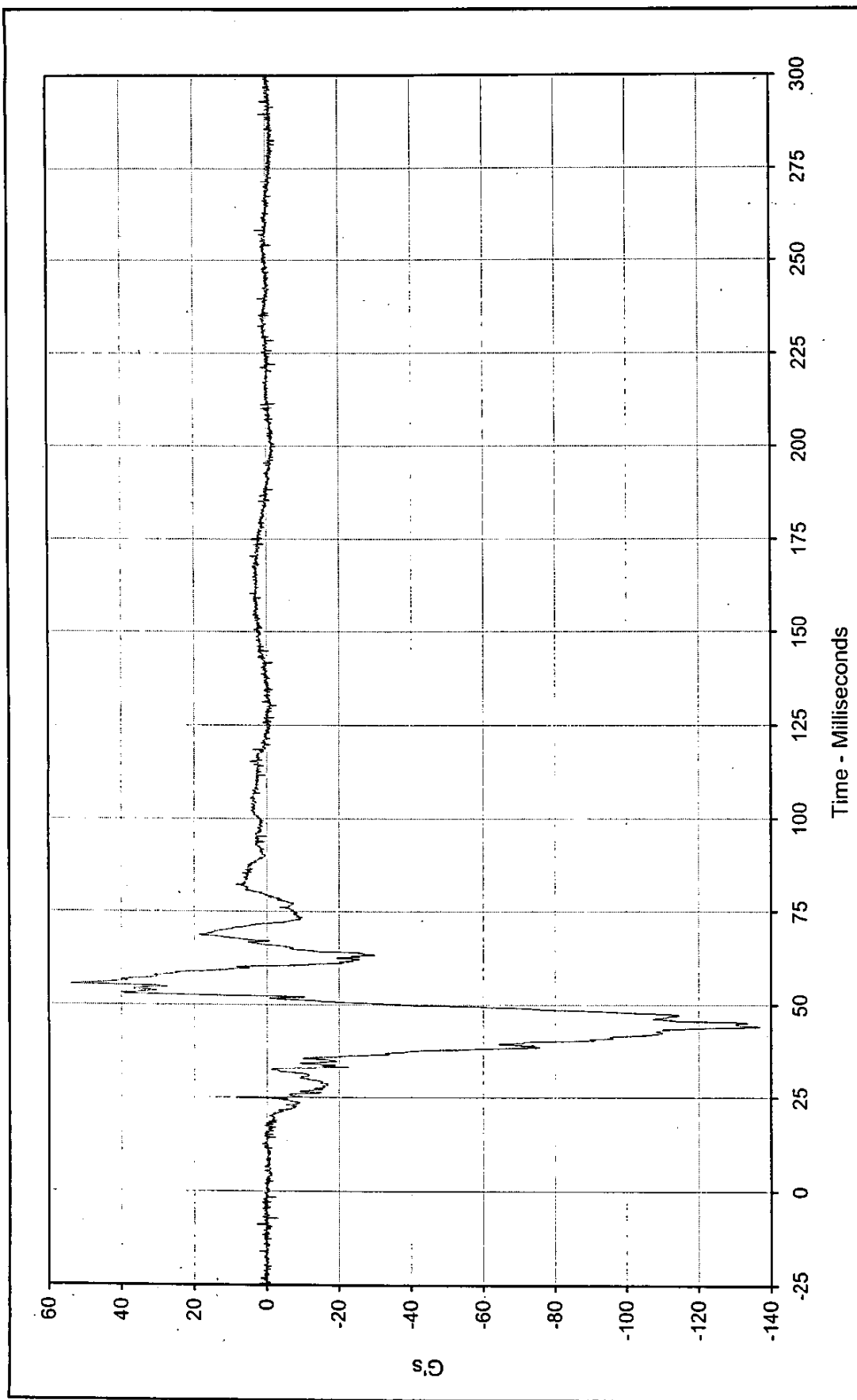




Curve Description: Passenger Right lower Tibia Force Z
 Maximum Value: 85.4 at 129.6 Milliseconds
 Minimum Value: -3304.1 at 41.5 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/14/99
 Curve Number: FIL-078

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

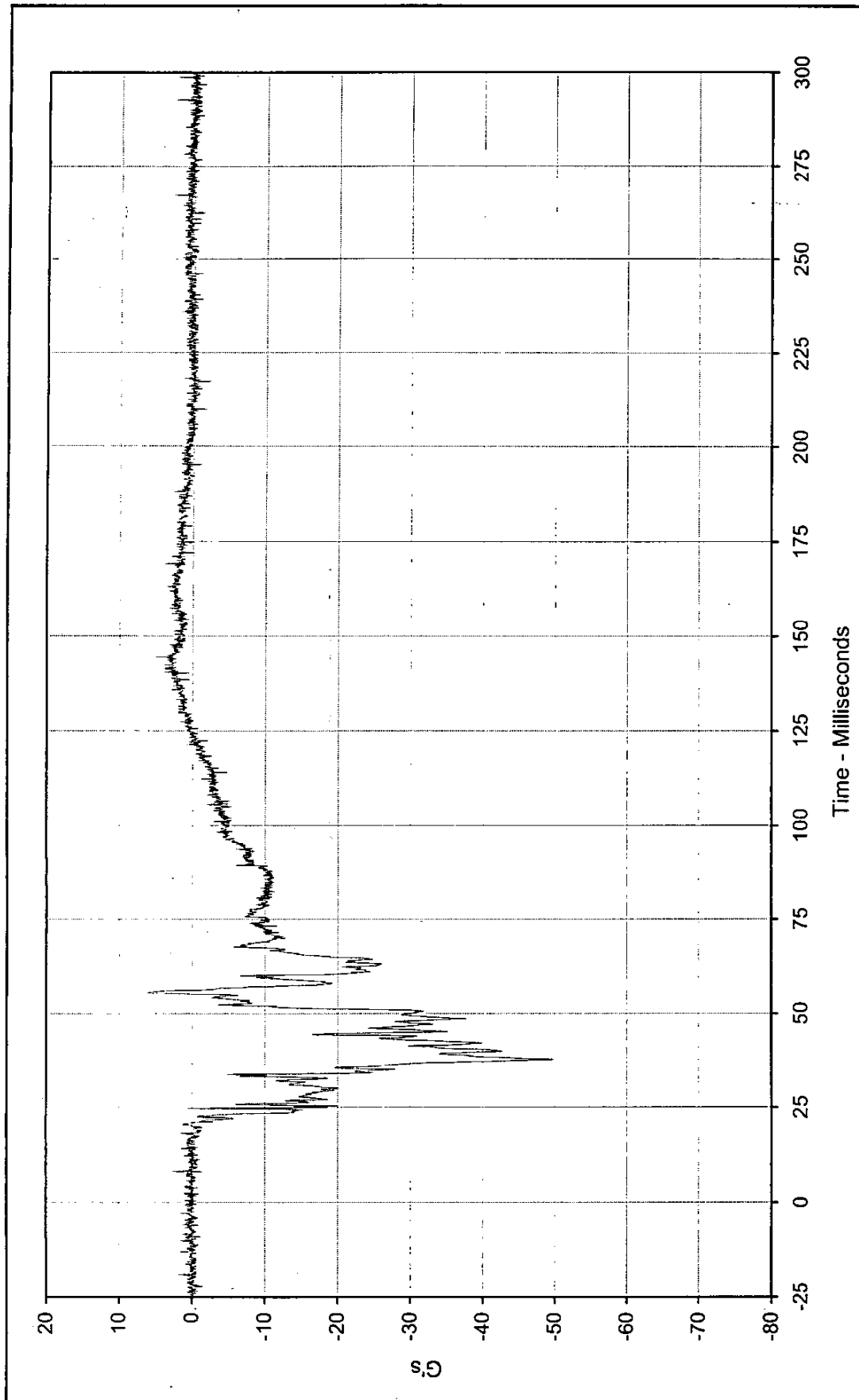




Curve Description:	Passenger Left Foot Aft X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	53.9 at 55.5 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-137.1 at 44.2 Milliseconds			

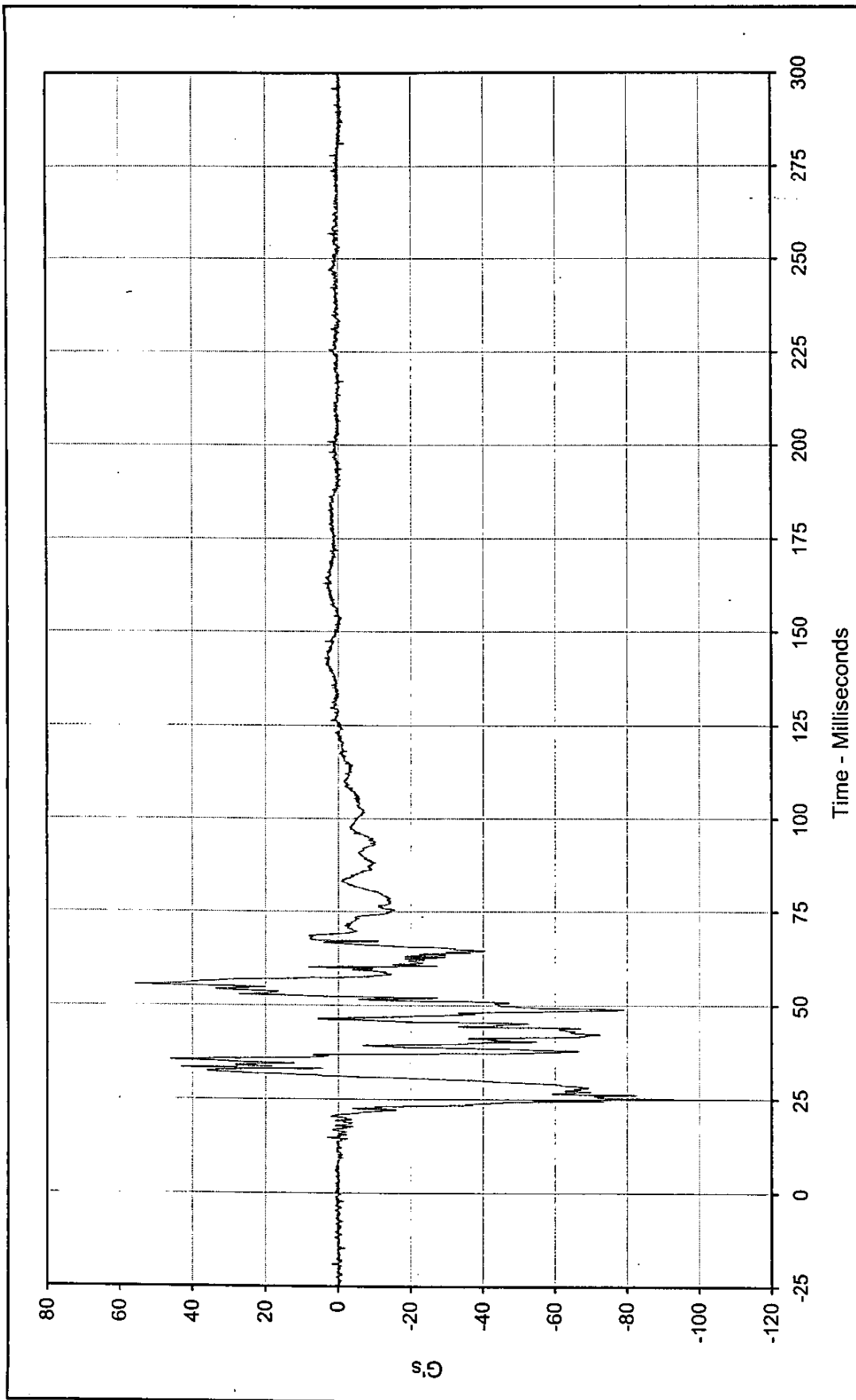


SAE Filter Class:	1000
Date of Test:	12/14/99
Curve Number:	FIL-079



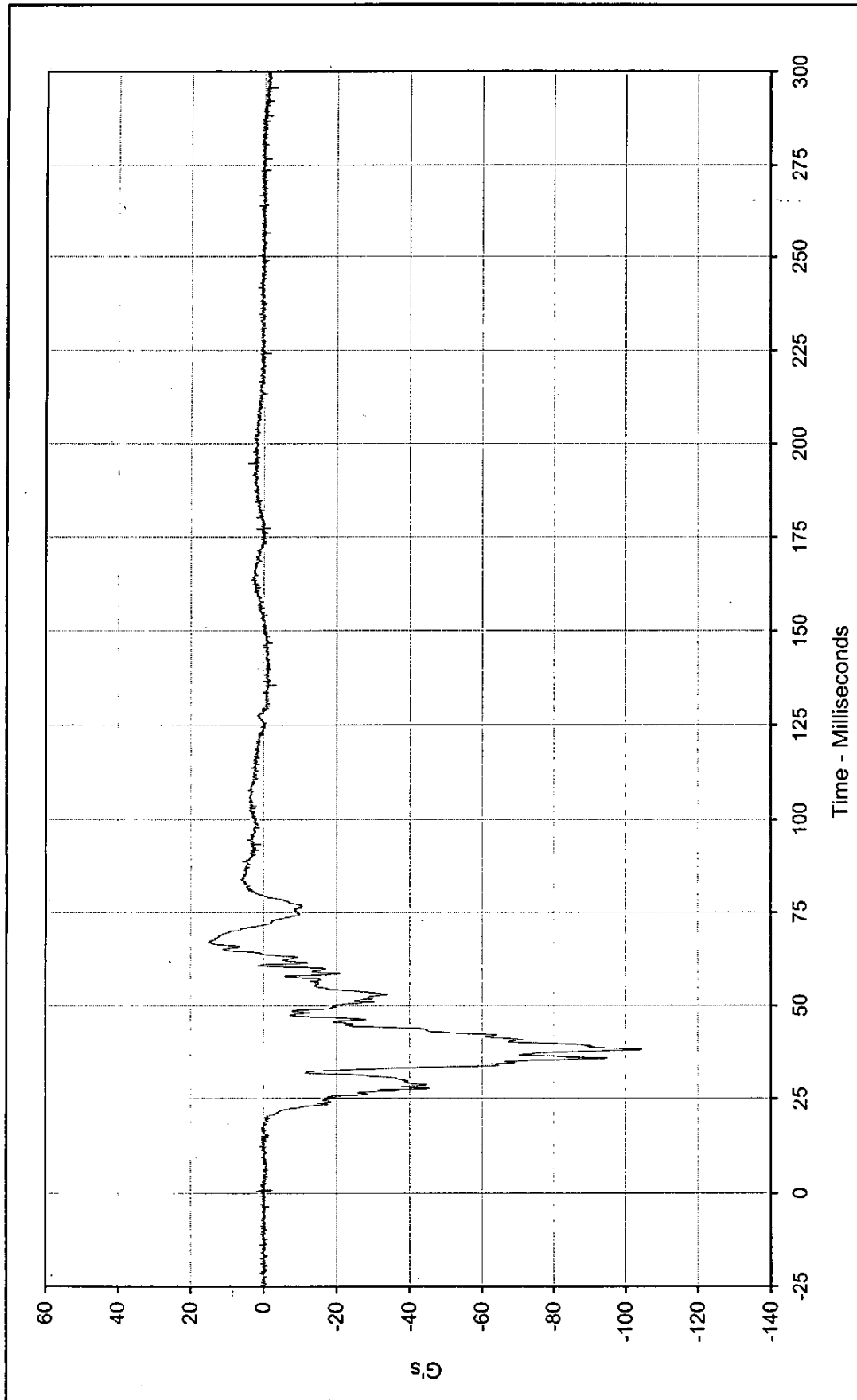
Curve Description:	Passenger Left Foot Aft Z	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	6.3 at 55.4 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-49.7 at 37.8 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/14/99			
Curve Number:	FIL-080			





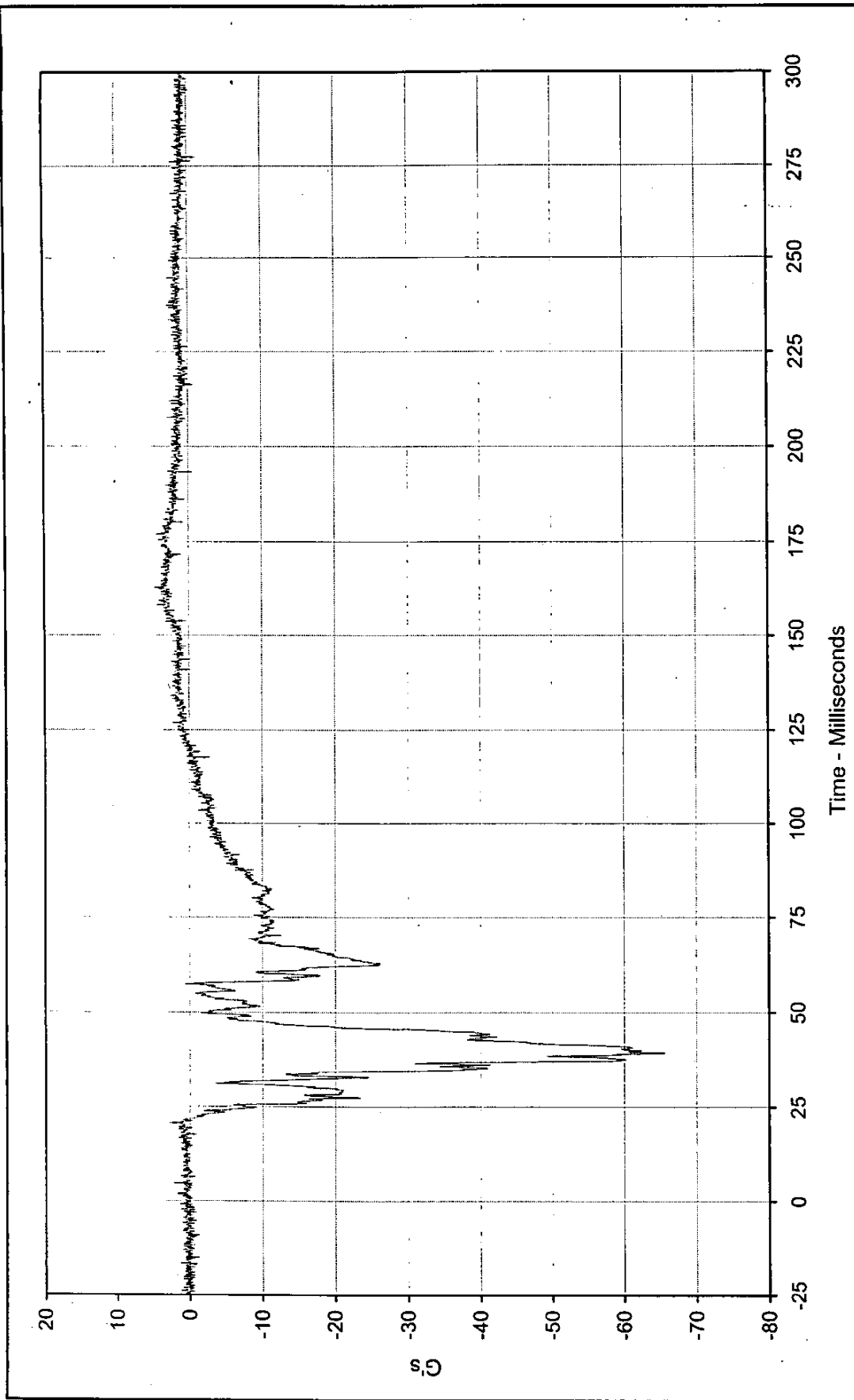
Curve Description:	Passenger Left Foot Fore Z	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	55.8 at 55.4 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-92.8 at 25.2 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/14/99			
Curve Number:	FIL-081			





Curve Description:	Passenger Right Foot Air X	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	15.0 at 66.8 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-104.6 at 38.3 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/14/99			
Curve Number:	FIL-082			

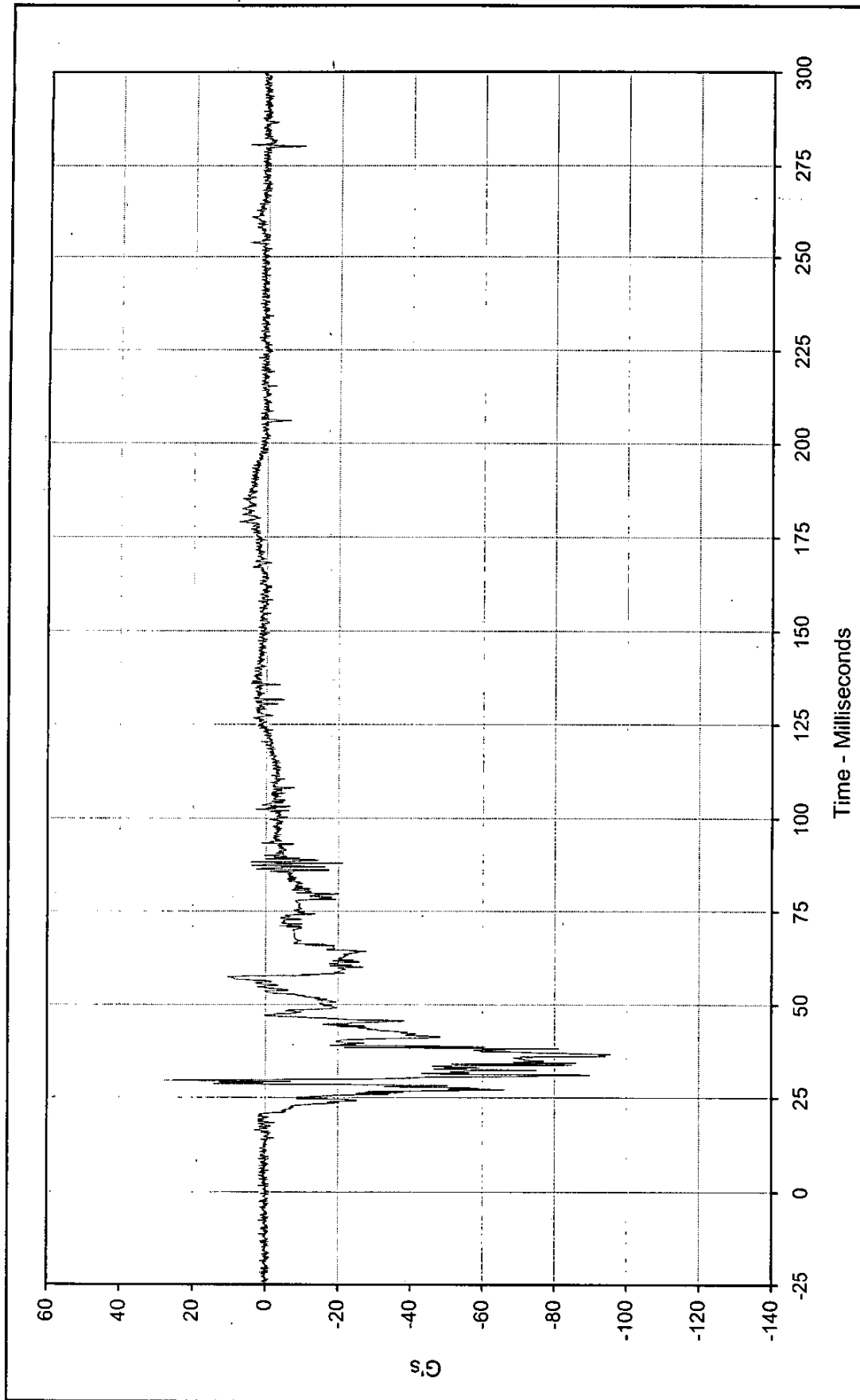




Curve Description: Passenger Right Foot Aft Z
 Maximum Value: 4.7 at 162.9 Milliseconds
 Minimum Value: -65.6 at 39.4 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/14/99
 Curve Number: FIL-083

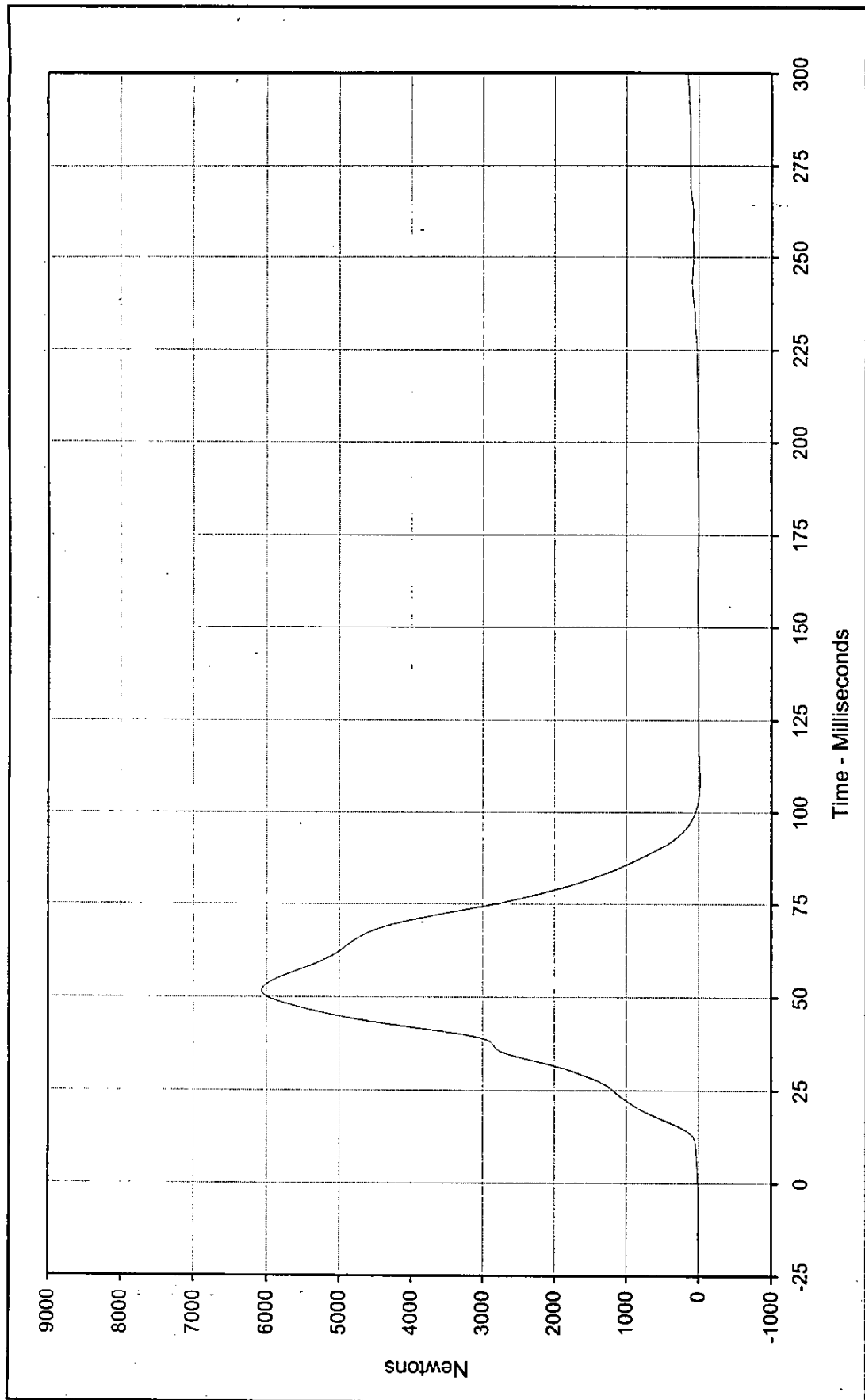
Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Passenger Right Foot Fore Z				Test Program:	2000 NHTSA 35 mph NCAP No.: MY5801	
Maximum Value:	27.5	at	29.6	Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-95.7	at	36.8	Milliseconds			
SAE Filter Class:	1000						
Date of Test:	12/14/99						
Curve Number:	FIL-084						

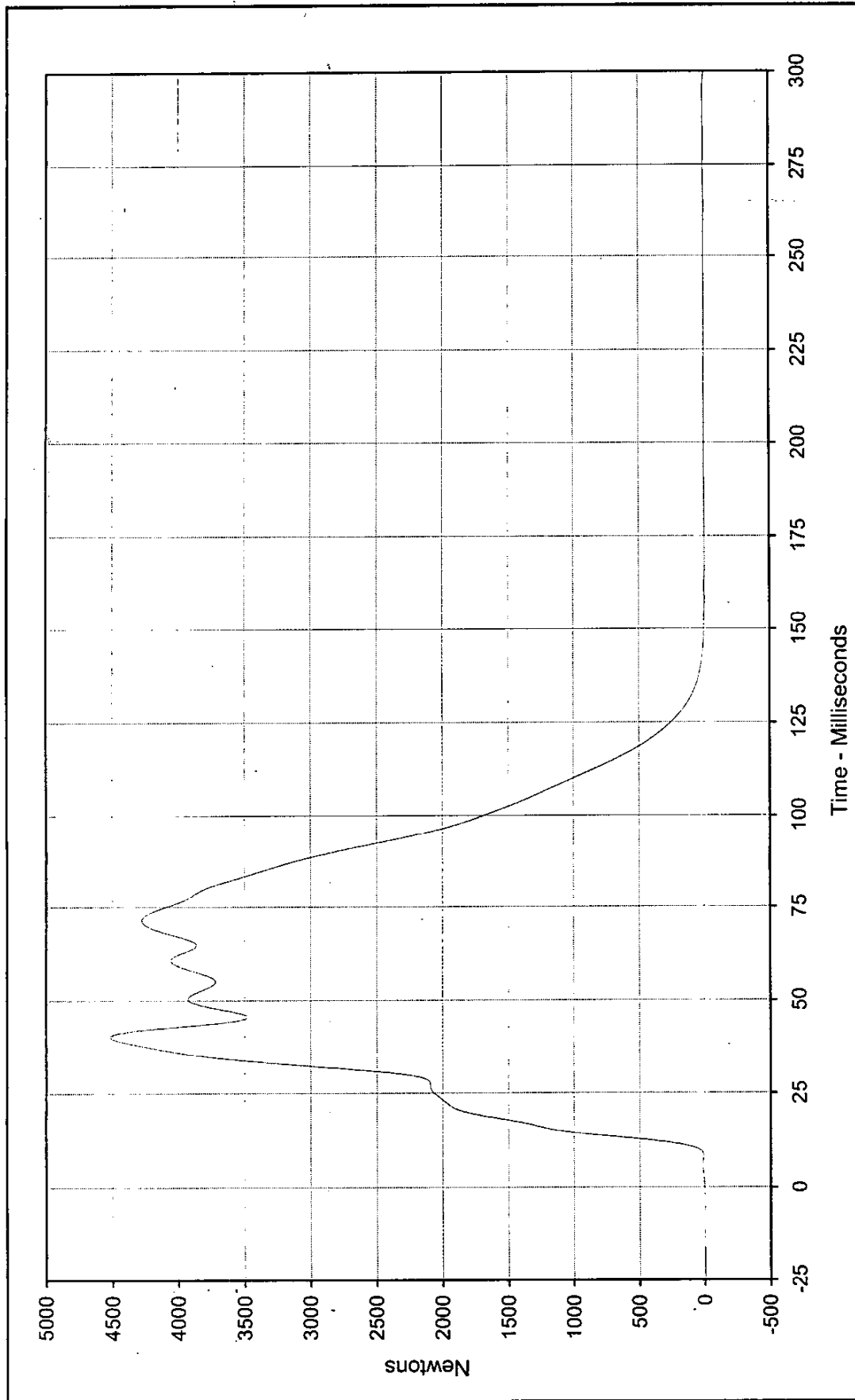




Curve Description: Passenger Lap Belt Force
 Maximum Value: 6066.3 at 51.7 Milliseconds
 Minimum Value: -23.8 at 109.0 Milliseconds

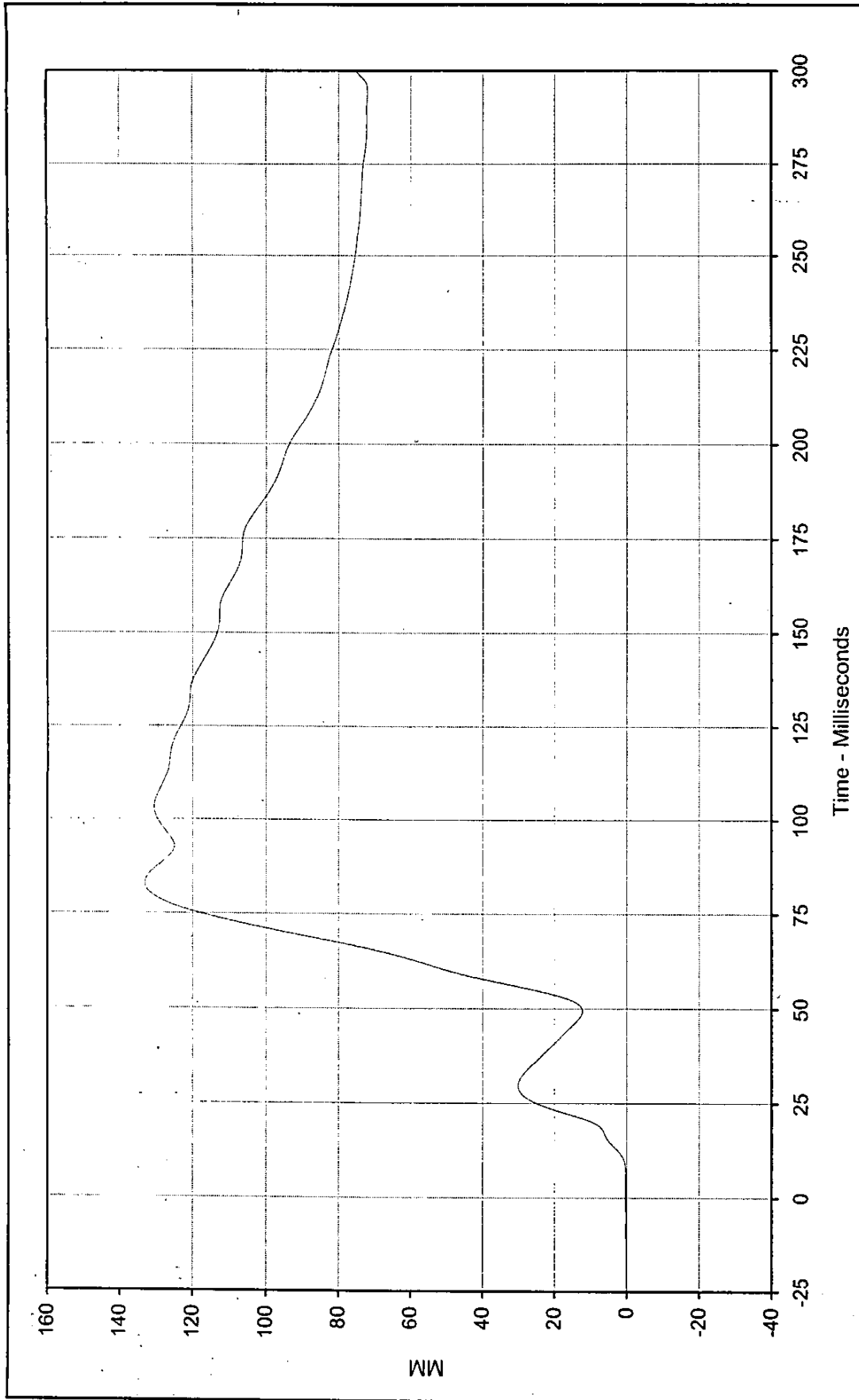
Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan
 SAE Filter Class: 60
 Date of Test: 12/14/99
 Curve Number: FIL-085





Curve Description:	Passenger Shoulder Belt Force	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801		
Maximum Value:	4518.4	at	40.3	Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan
Minimum Value:	-12.8	at	299.9	Milliseconds		
SAE Filter Class:	60					
Date of Test:	12/14/99					
Curve Number:	FIL-086					

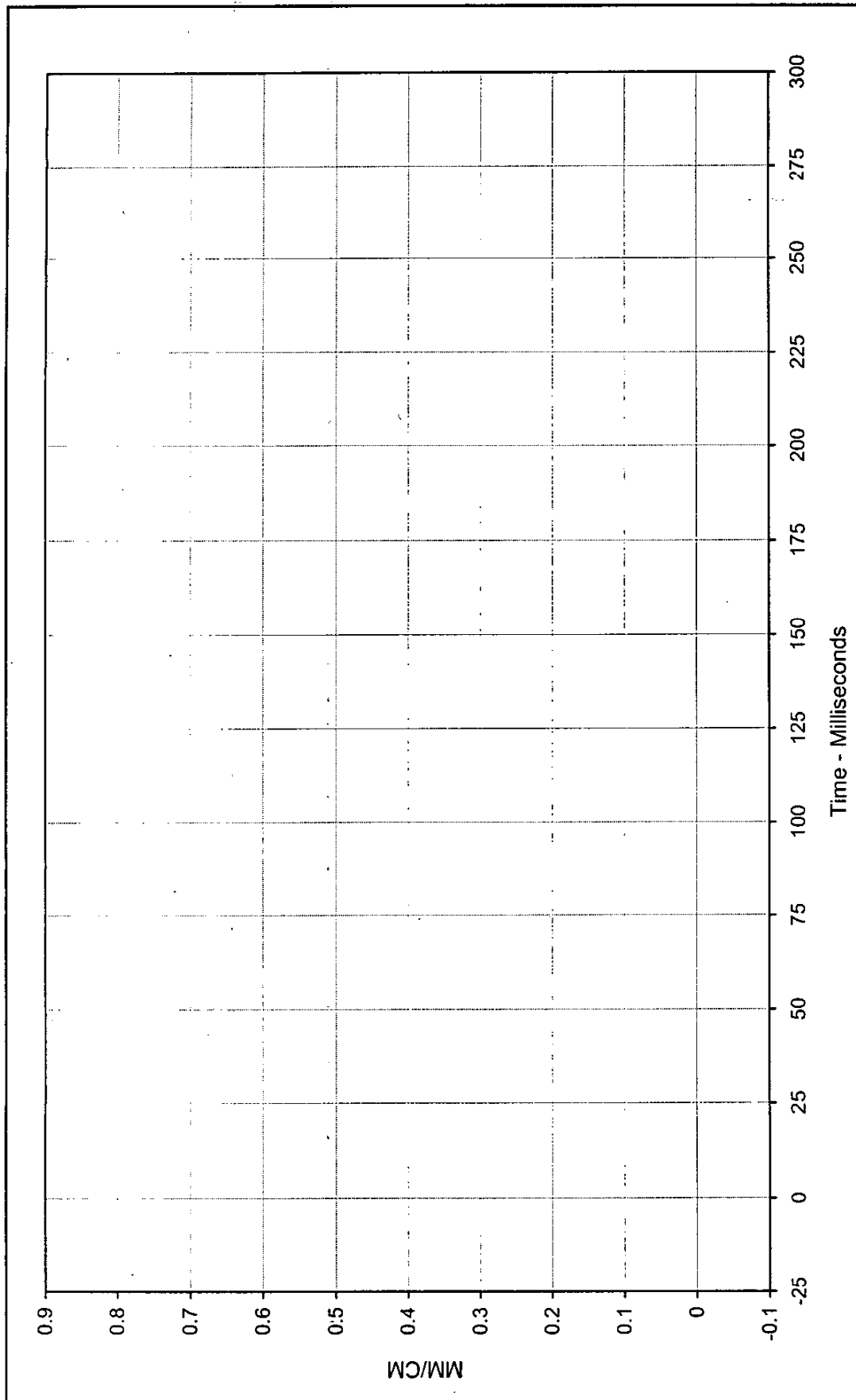




Curve Description: Passenger Shoulder Belt Pultout
 Maximum Value: 133.0 at 82.8 Milliseconds
 Minimum Value: 0.2 at 0.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/99
 Curve Number: FIL-087

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description: Passenger Shoulder Belt Elongation * Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Maximum Value: 0.00 at 0.0 Milliseconds Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

Minimum Value: 0.00 at 0.0 Milliseconds

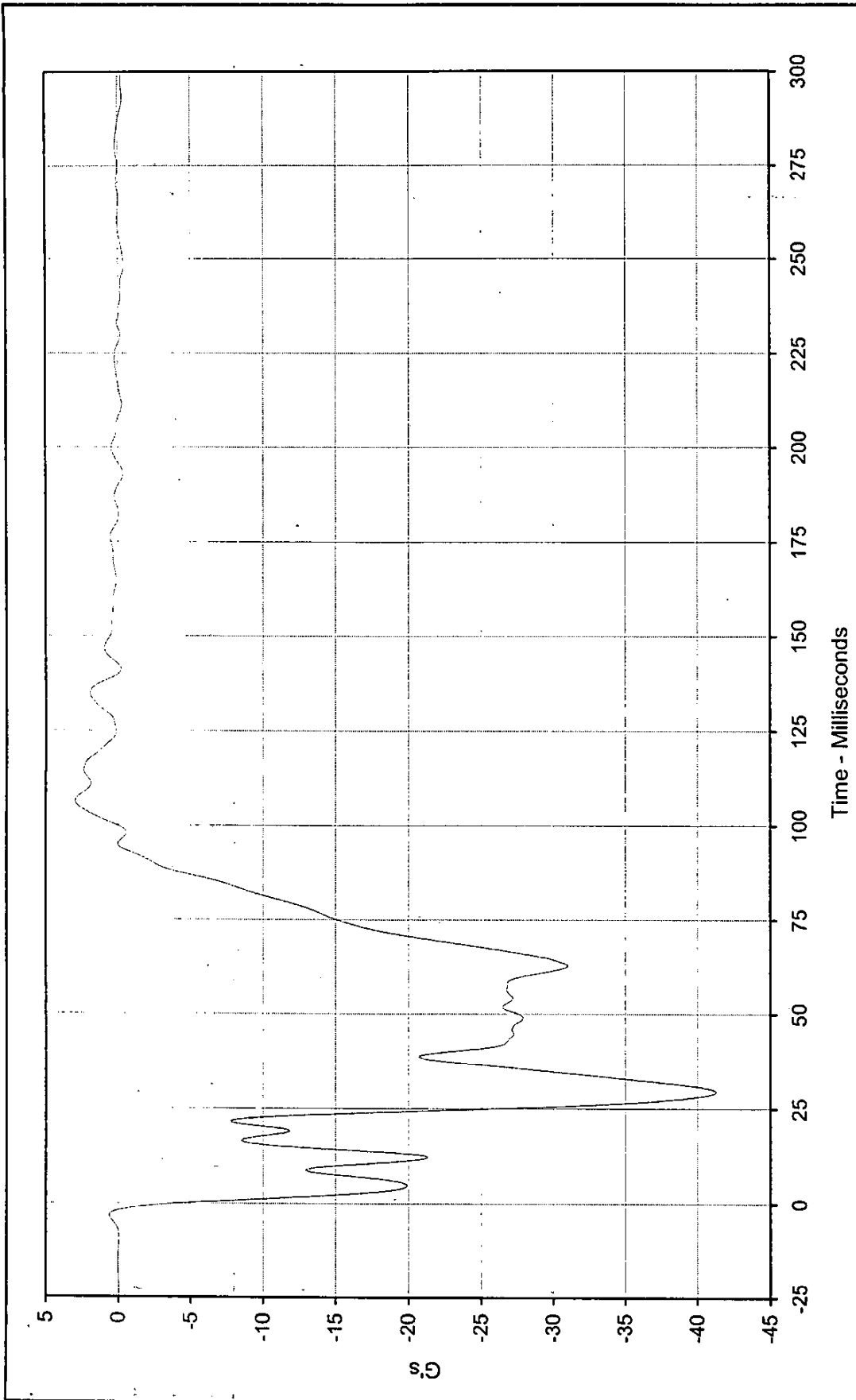
SAE Filter Class: 60

Date of Test: 12/14/99

Curve Number: FIL-088



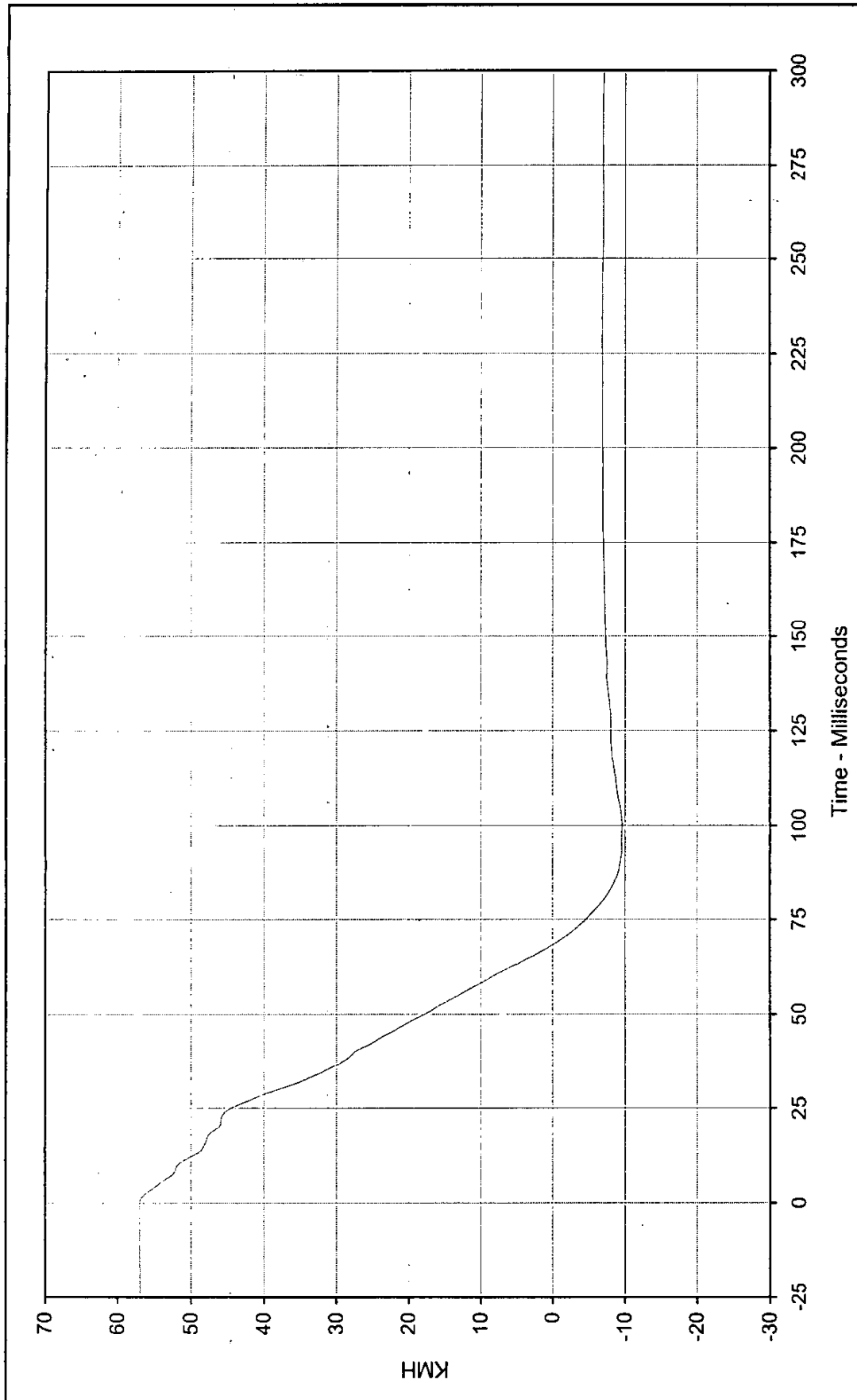
* Not Installed



Curve Description: Vehicle Left Rear Primary
 Maximum Value: 3.0 at 106.4 Milliseconds
 Minimum Value: -41.3 at 29.5 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/99
 Curve Number: FIL-089

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description: Vehicle Left Rear Primary Velocity

Maximum Value: 57.0 at 0.0 Milliseconds

Minimum Value: -9.6 at 100.1 Milliseconds

SAE Filter Class: 180

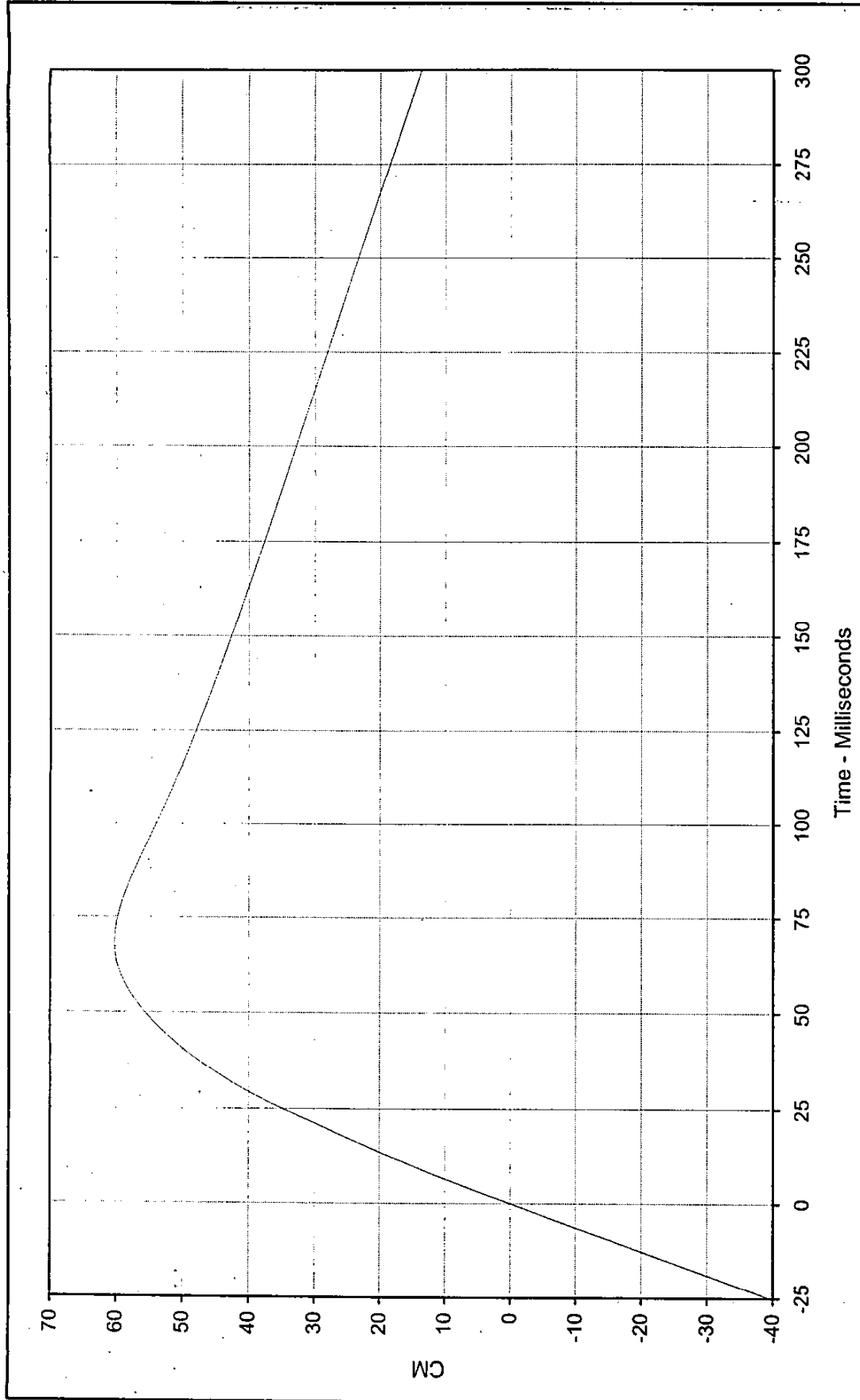
Date of Test: 12/14/99

Curve Number: IN1-089

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

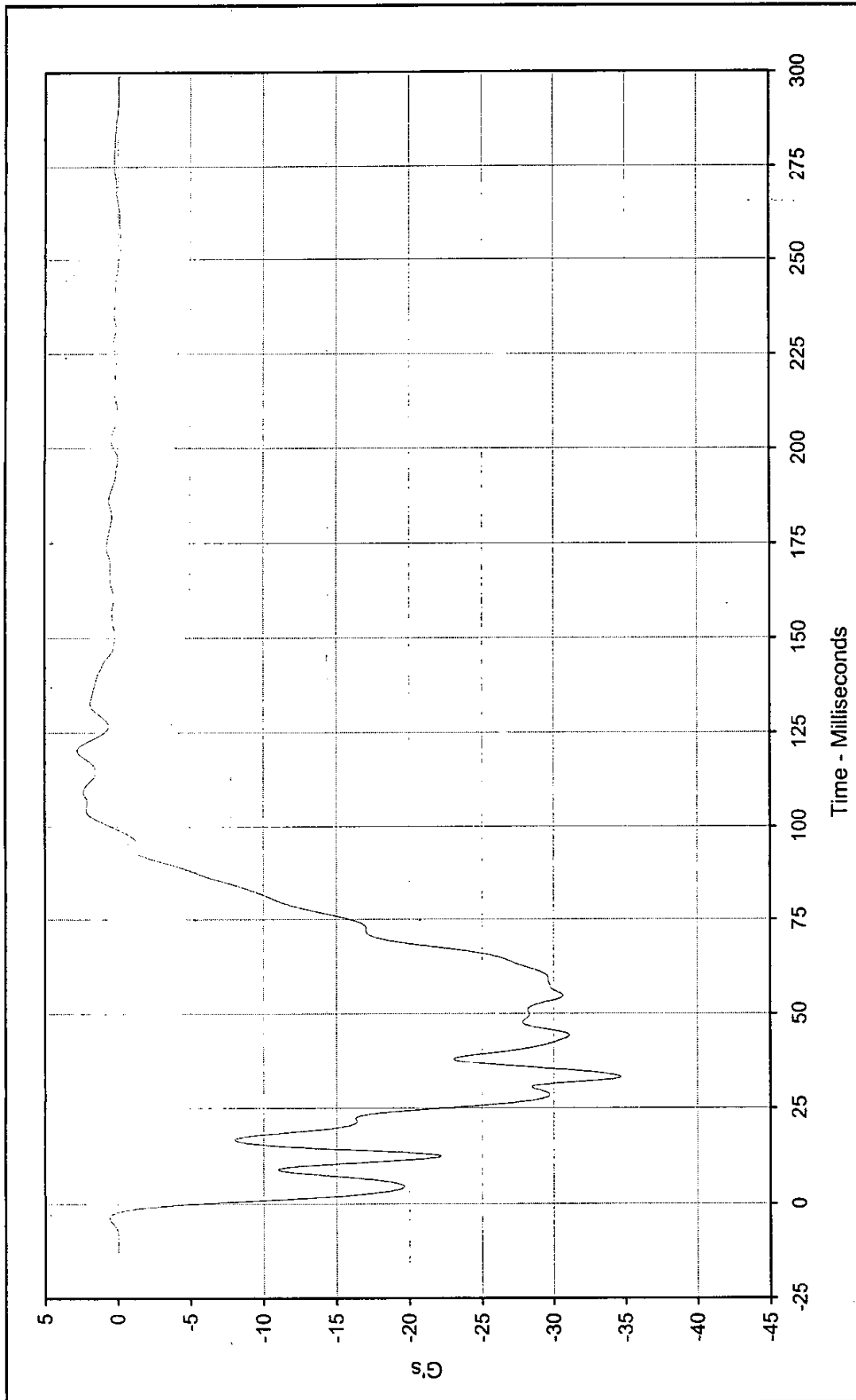




Curve Description: Vehicle Left Rear Primary Displ.
 Maximum Value: 60.2 at 68.2 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/14/99
 Curve Number: IN2-089

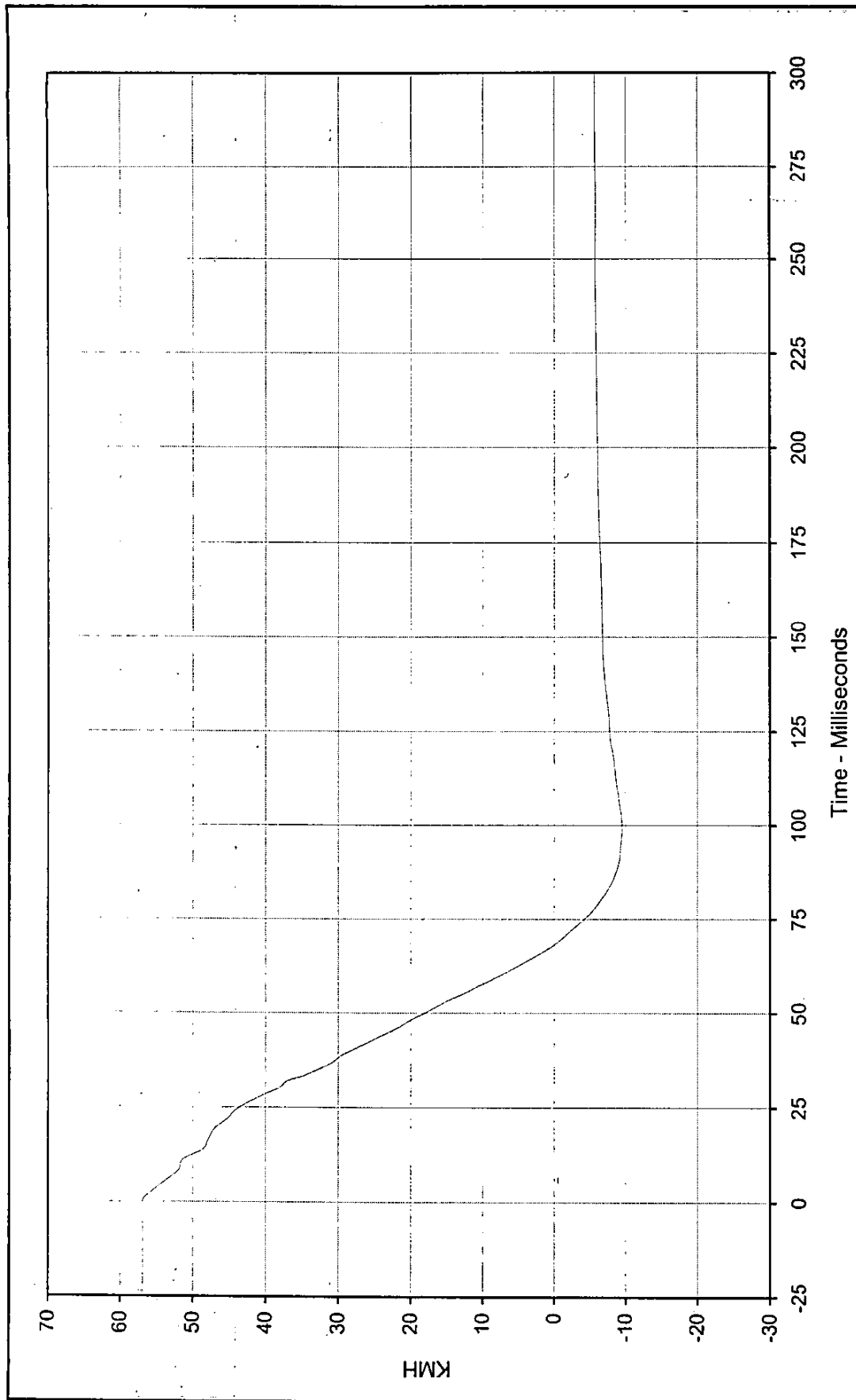
Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Vehicle Right Rear Primary		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	2.8	at 120.3 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-34.7	at 33.1 Milliseconds			
SAE Filter Class:	60				
Date of Test:	12/14/99				
Curve Number:	FIL-090				

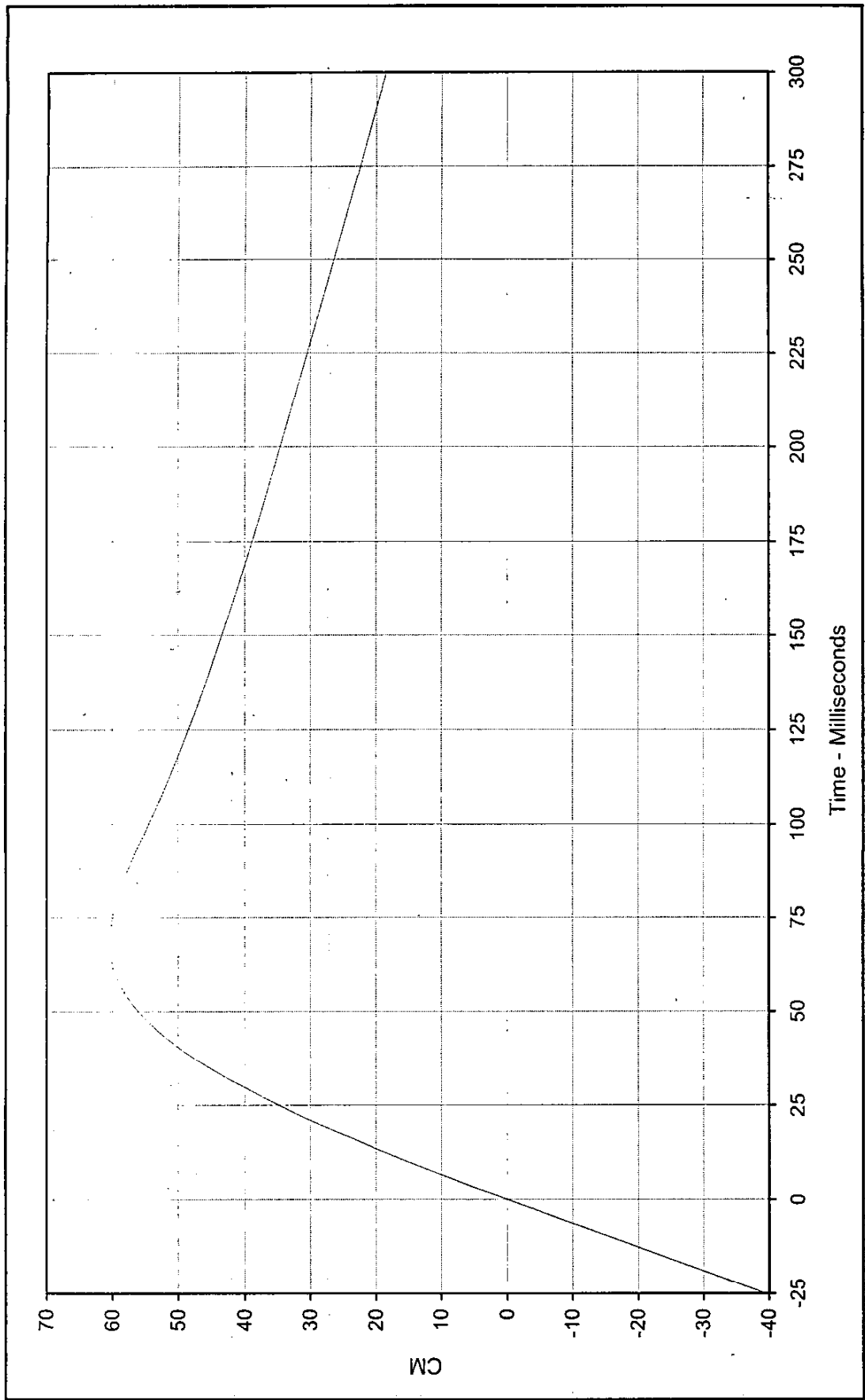




Curve Description: Vehicle Right Rear Primary Velocity
 Maximum Value: 56.9 at 0.0 Milliseconds
 Minimum Value: -9.5 at 98.8 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/14/99
 Curve Number: IN1-090

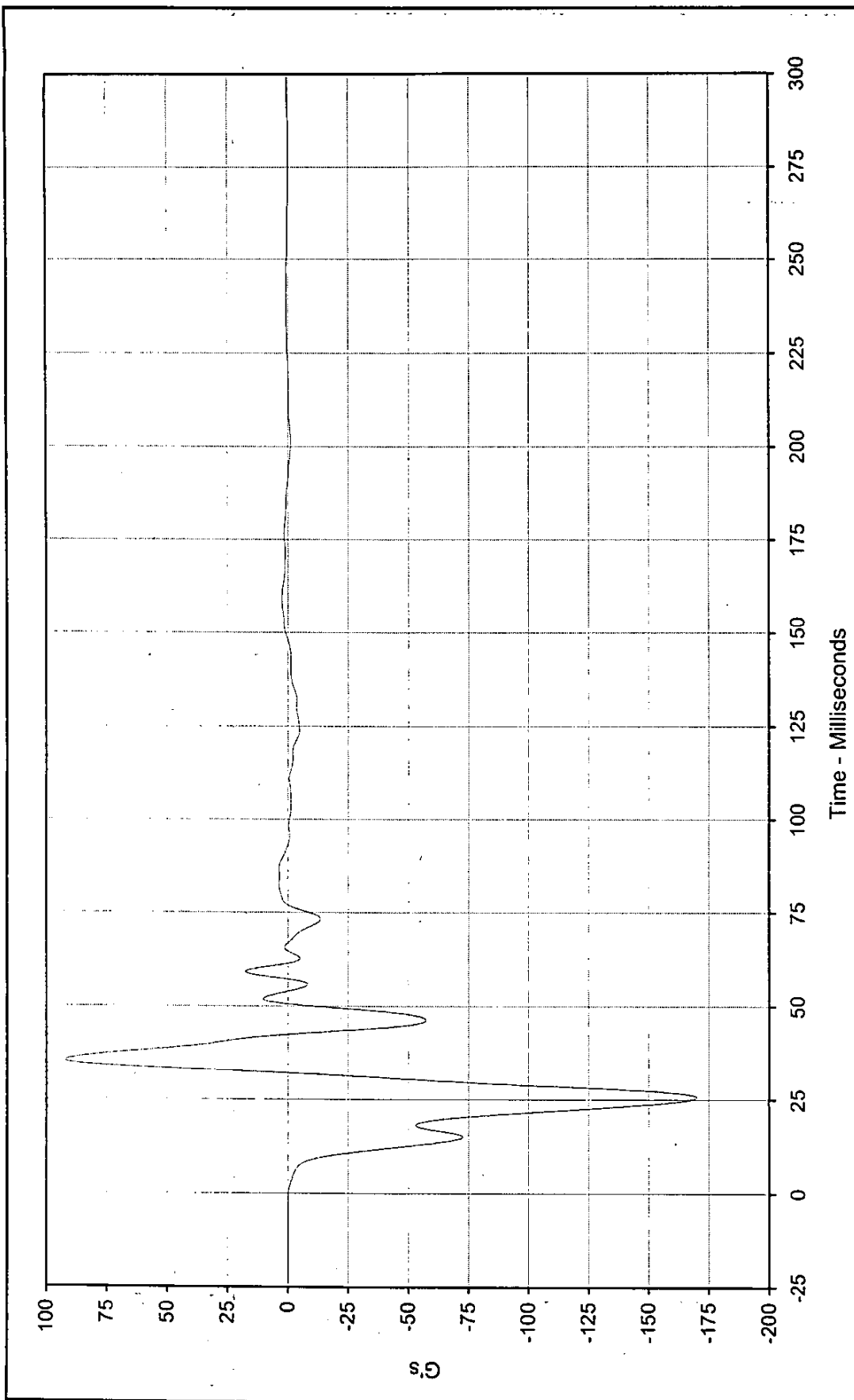
Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Vehicle Right Rear Primary Displ.	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	60.4	at	68.1	Milliseconds
Minimum Value:	0.0	at	0.0	Milliseconds
SAE Filter Class:	180	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Date of Test:	12/14/99			
Curve Number:	IN2-090			

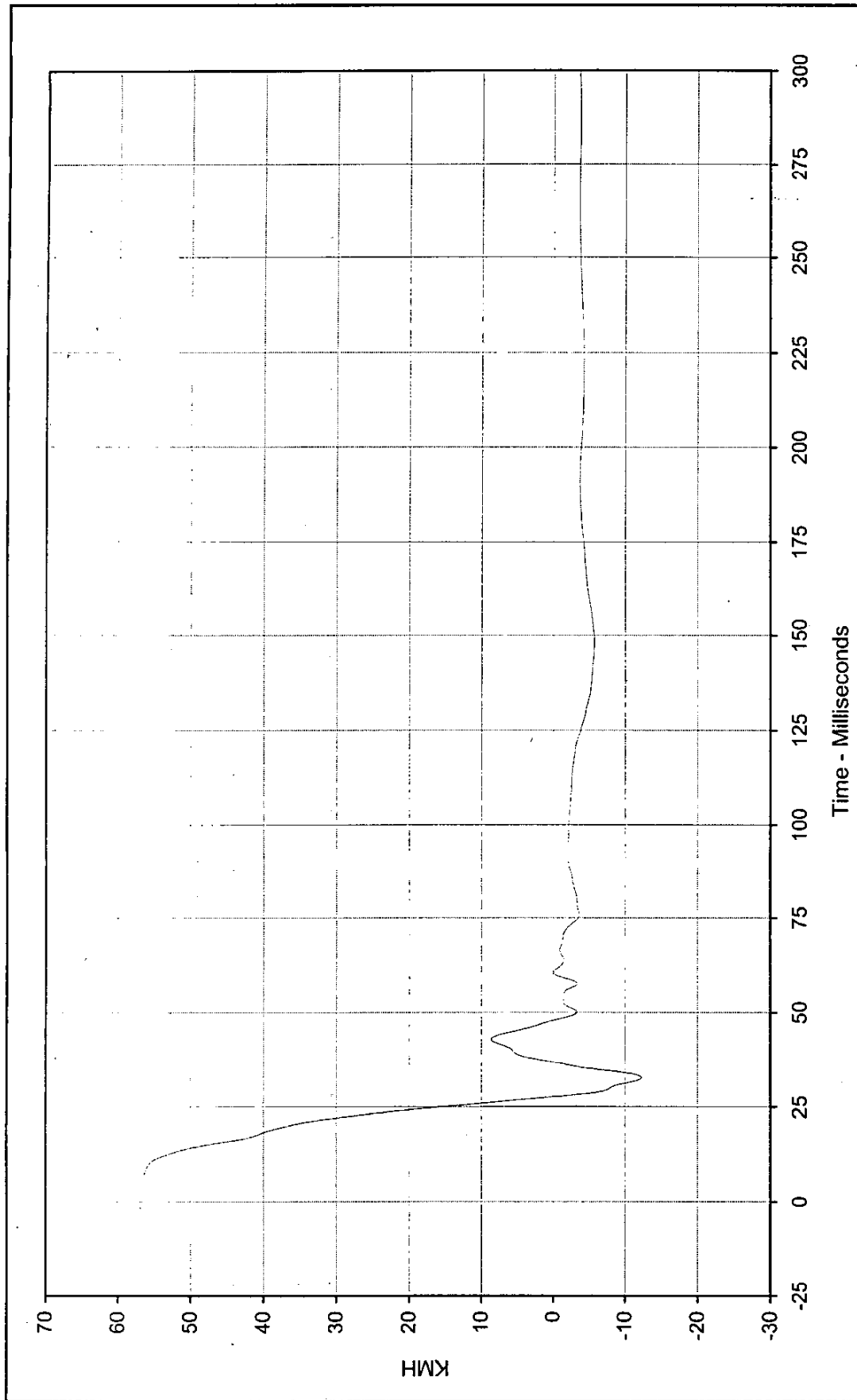




Curve Description: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Program: 2000 Volkswagen Jetta 4 Door Sedan
 Test Vehicle:

Vehicle Engine Top
 Maximum Value: 92.2 at 35.5 Milliseconds
 Minimum Value: -170.2 at 25.7 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/99
 Curve Number: FIL-091





Curve Description: Vehicle Engine Top Velocity

Maximum Value: 56.9 at 0.0 Milliseconds

Minimum Value: -12.3 at 32.7 Milliseconds

SAE Filter Class: 180

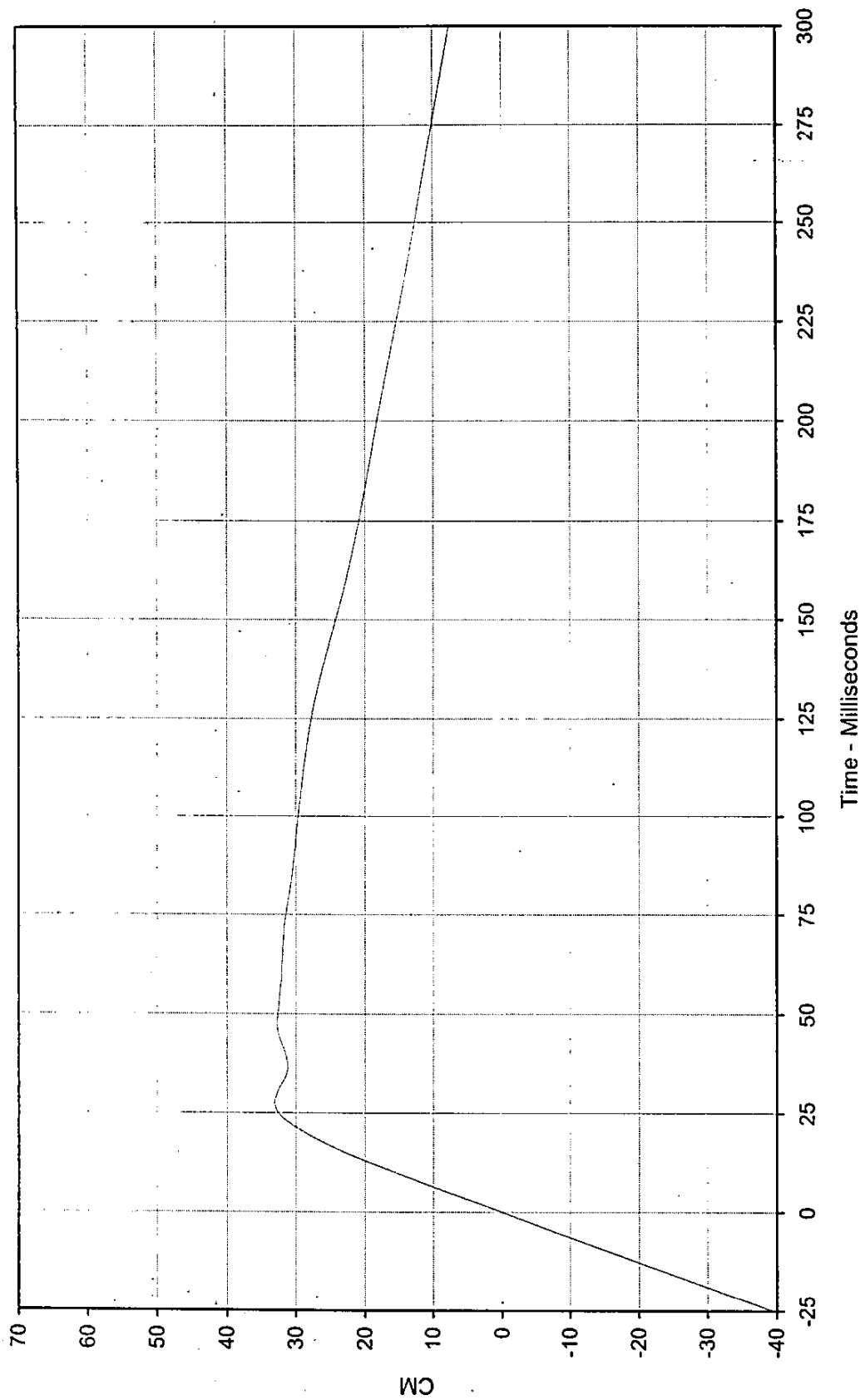
Date of Test: 12/14/99

Curve Number: IN1-091

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

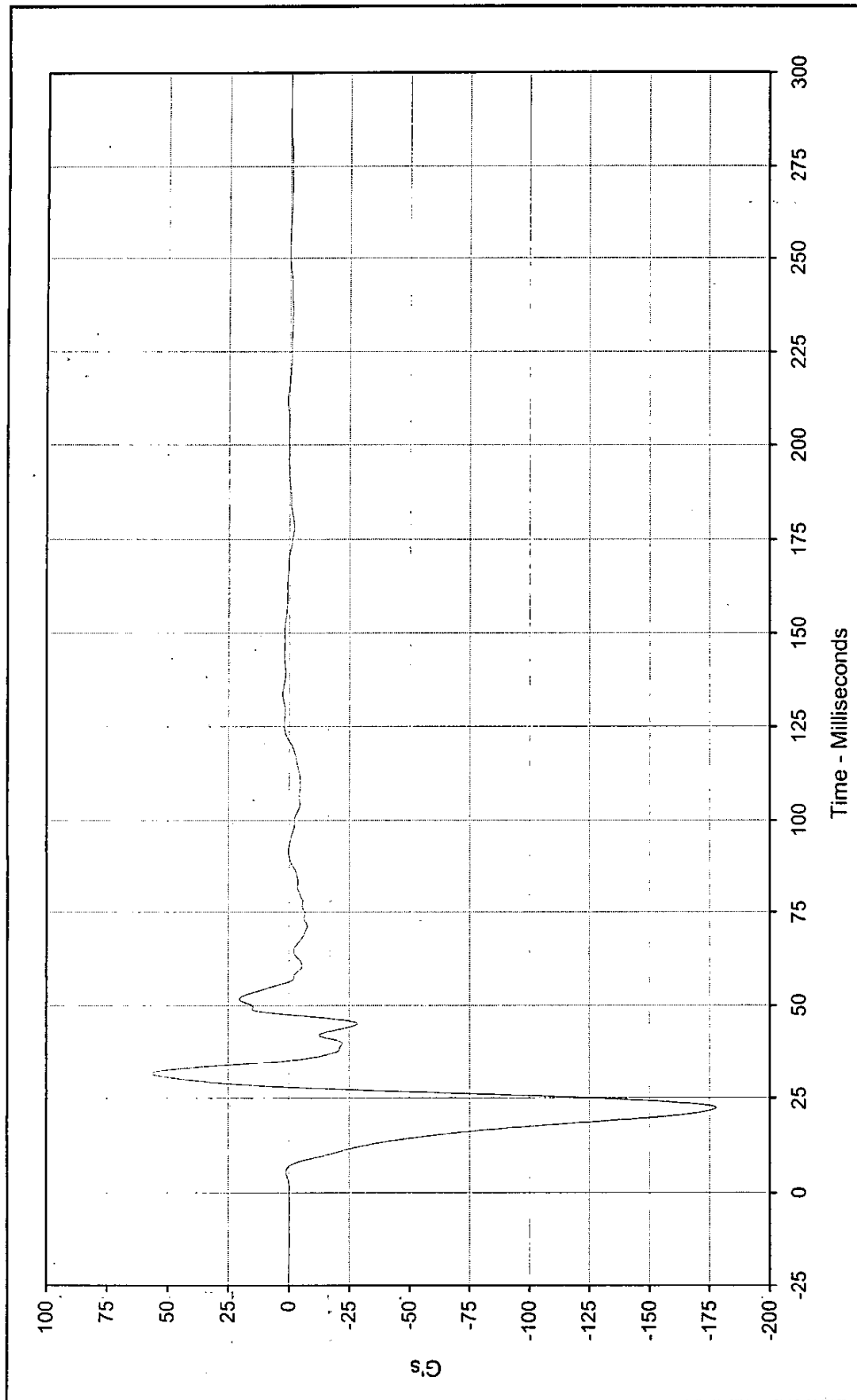




Curve Description: Vehicle Engine Top Displ.
 Maximum Value: 33.1 at 27.5 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/14/99
 Curve Number: IN2-091

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

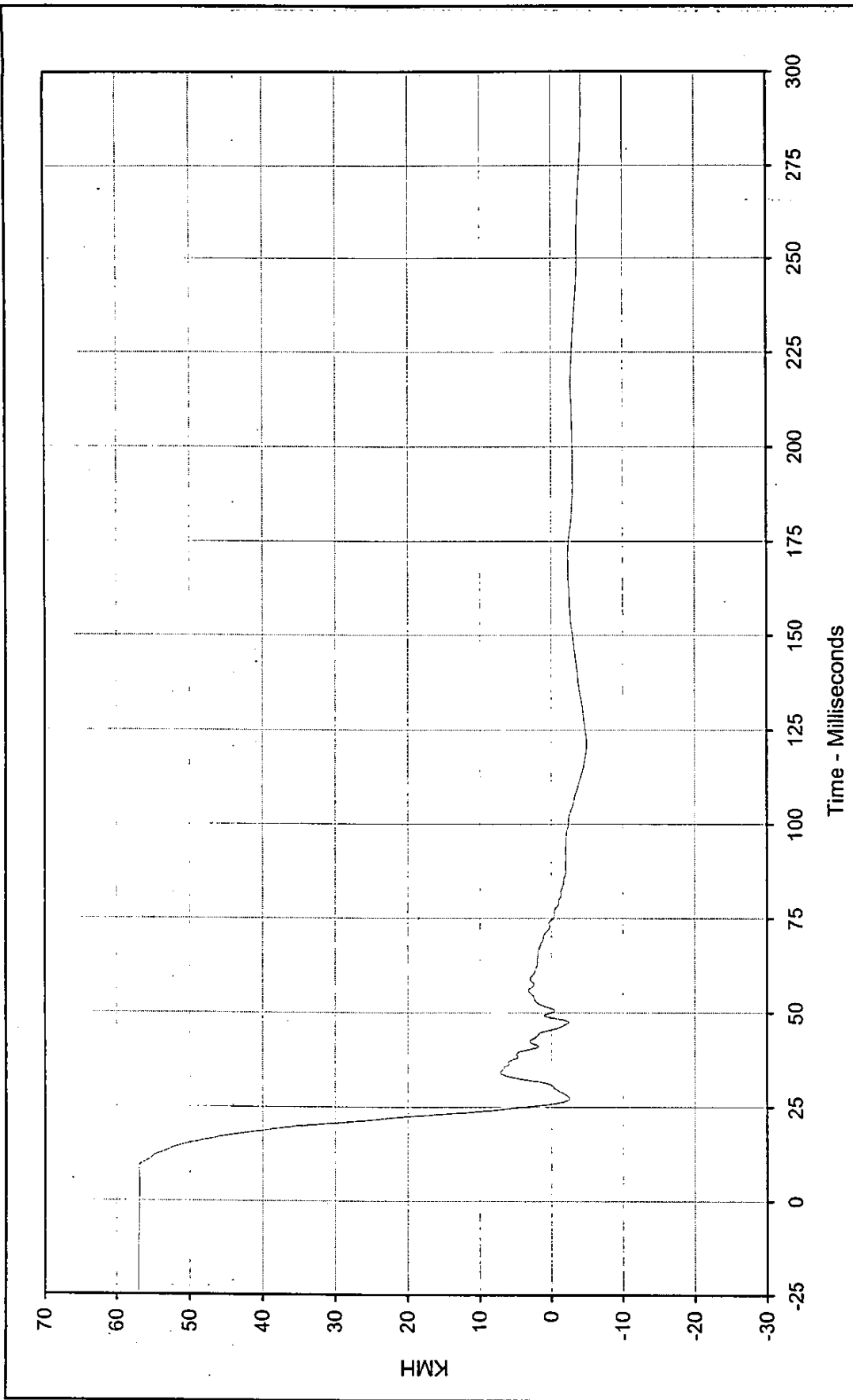




Curve Description: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Program: 2000 Volkswagen Jetta 4 Door Sedan
 Test Vehicle:

Vehicle Engine Bottom
 Maximum Value: 56.6 at 31.8 Milliseconds
 Minimum Value: -178.0 at 22.5 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/99
 Curve Number: FIL-092

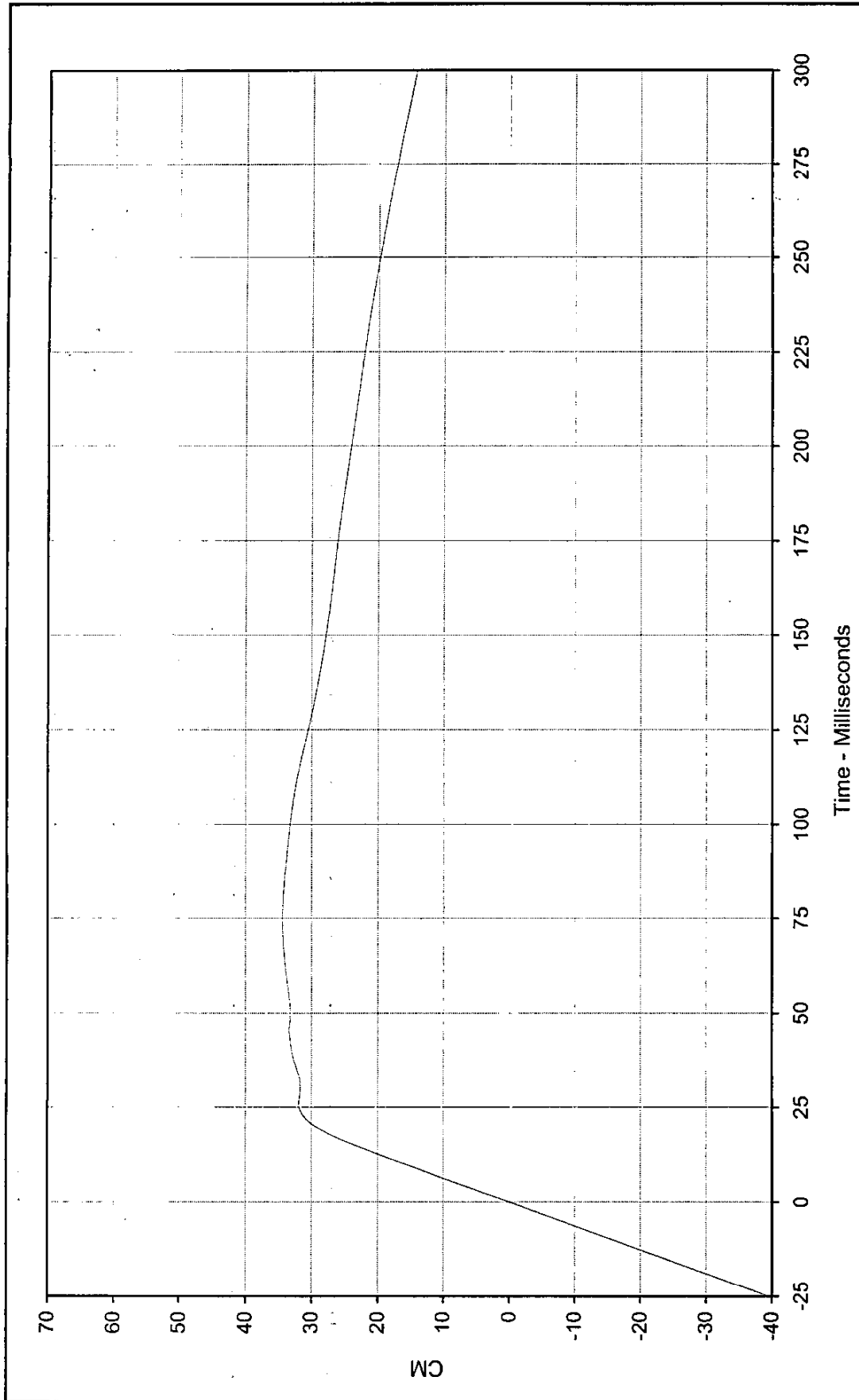




Curve Description: Vehicle Engine Bottom Velocity
 Maximum Value: 57.0 at 8.8 Milliseconds
 Minimum Value: -4.9 at 121.2 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/14/99
 Curve Number: IN1-092

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

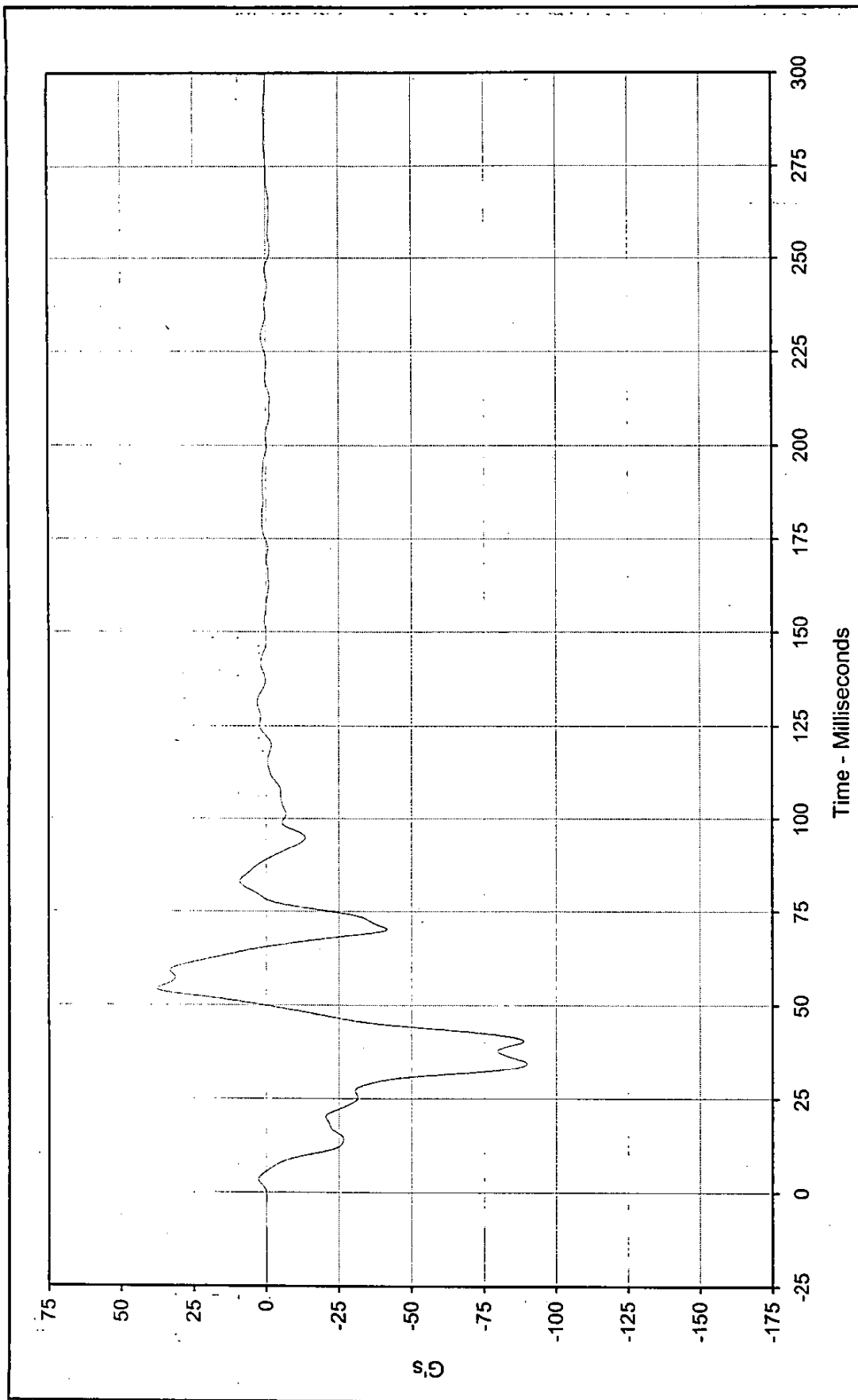




Curve Description: Vehicle Engine Bottom Displ.
 Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

Maximum Value: 34.4 at 74.6 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/14/99
 Curve Number: IN2-092

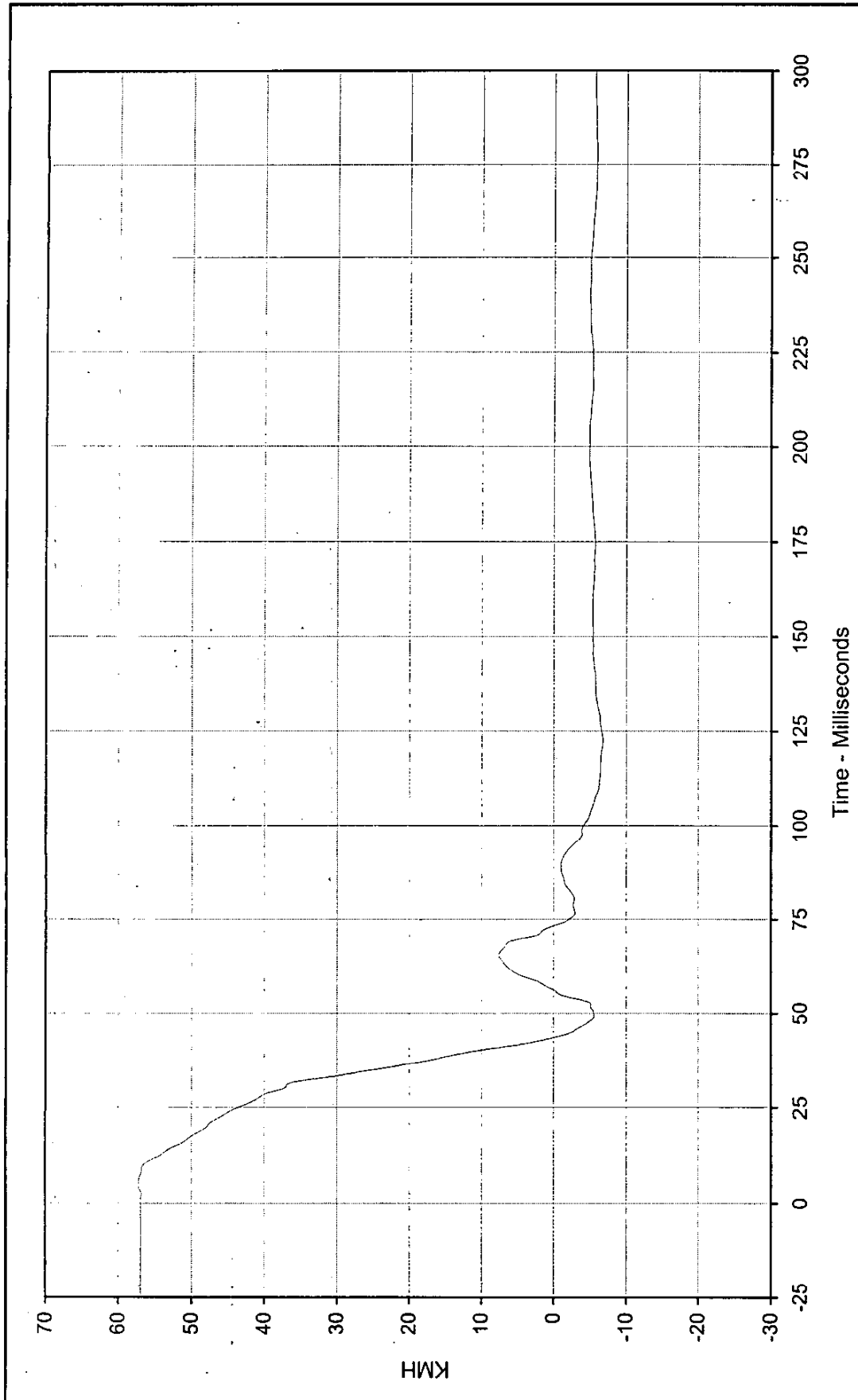




Curve Description:	Vehicle Left Brake Caliper	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	37.7 at 54.3 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-90.0 at 34.5 Milliseconds			

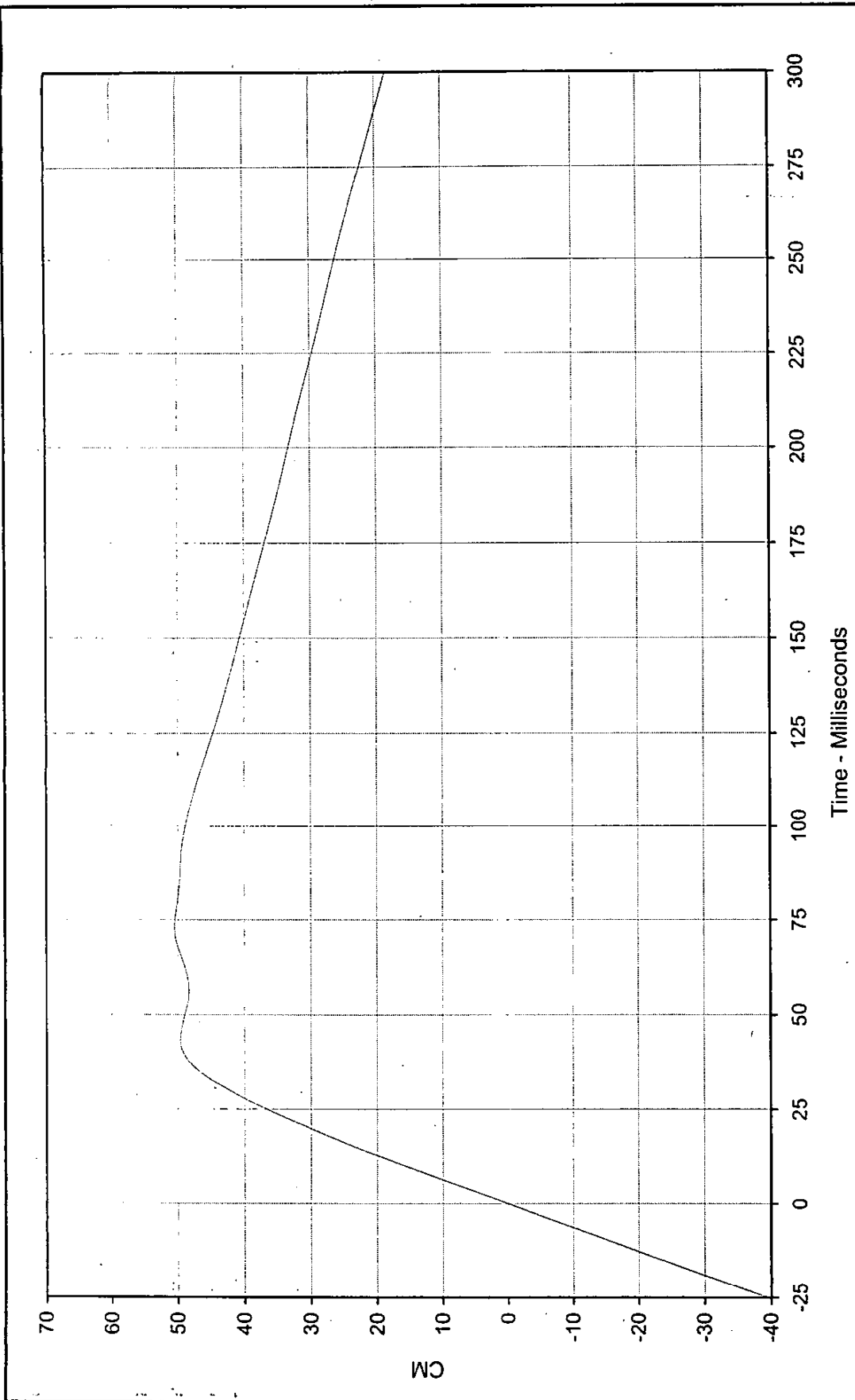


SAE Filter Class:	60
Date of Test:	12/14/99
Curve Number:	FIL-093



Curve Description:	Vehicle Left Brake Caliper Velocity	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	57.2	at	4.5	Milliseconds
Minimum Value:	-6.8	at	122.6	Milliseconds
SAE Filter Class:	180	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Date of Test:	12/14/99			
Curve Number:	IN1-093			





Curve Description: Vehicle Left Brake Caliper Displ.

Maximum Value: 50.5 at 73.3 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

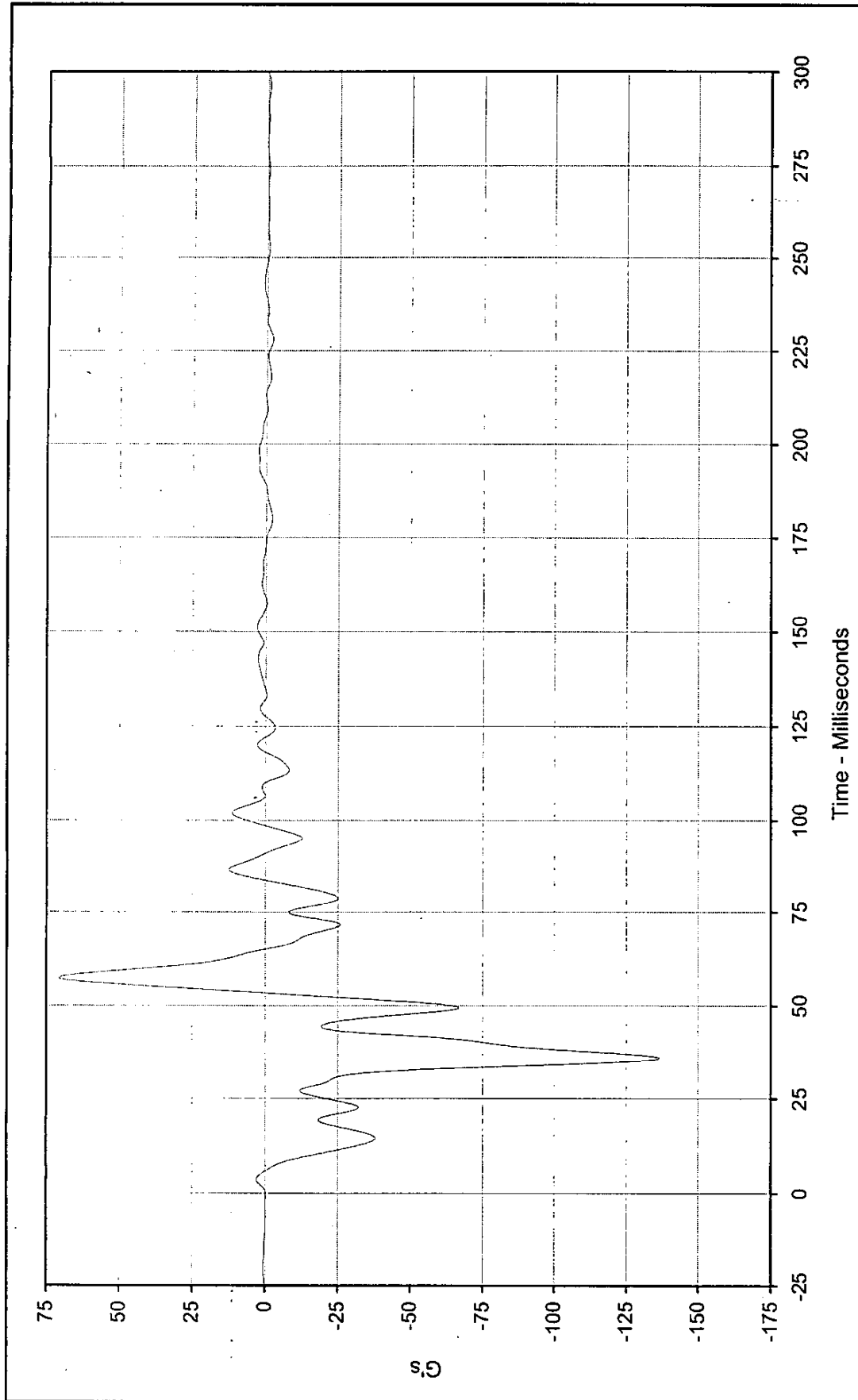
Date of Test: 12/14/99

Curve Number: IN2-093

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

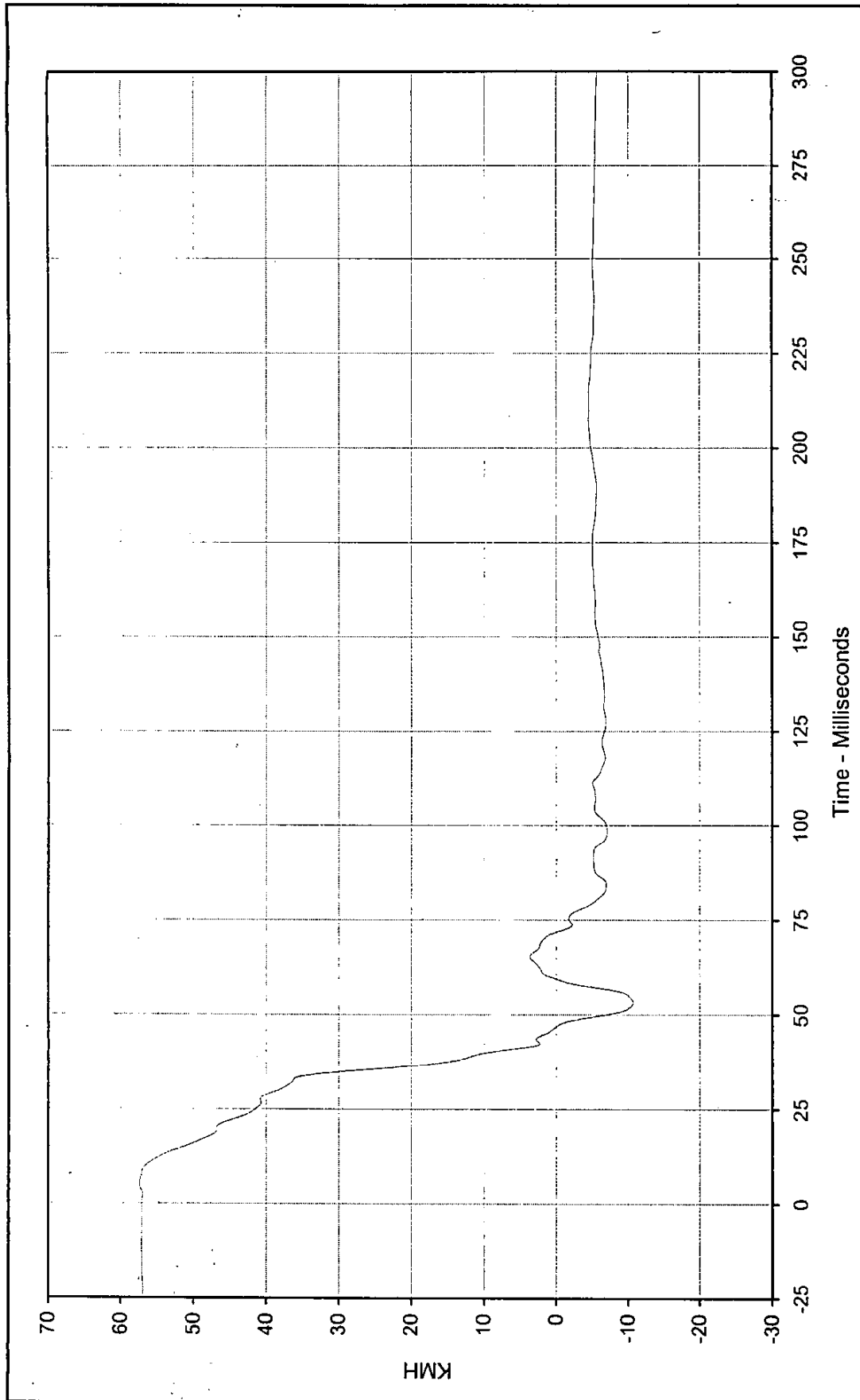
Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Vehicle Right Brake Caliper	Test Program:	2000 NHTSA 35 mph NCAP No.: MY5801
Maximum Value:	70.7 at 57.4 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan
Minimum Value:	-136.6 at 36.0 Milliseconds		
SAE Filter Class:	60		
Date of Test:	12/14/99		
Curve Number:	FIL-094		





Curve Description: Vehicle Right Brake Caliper Velocity

Maximum Value: 57.5 at 5.2 Milliseconds

Minimum Value: -10.7 at 53.3 Milliseconds

SAE Filter Class: 180

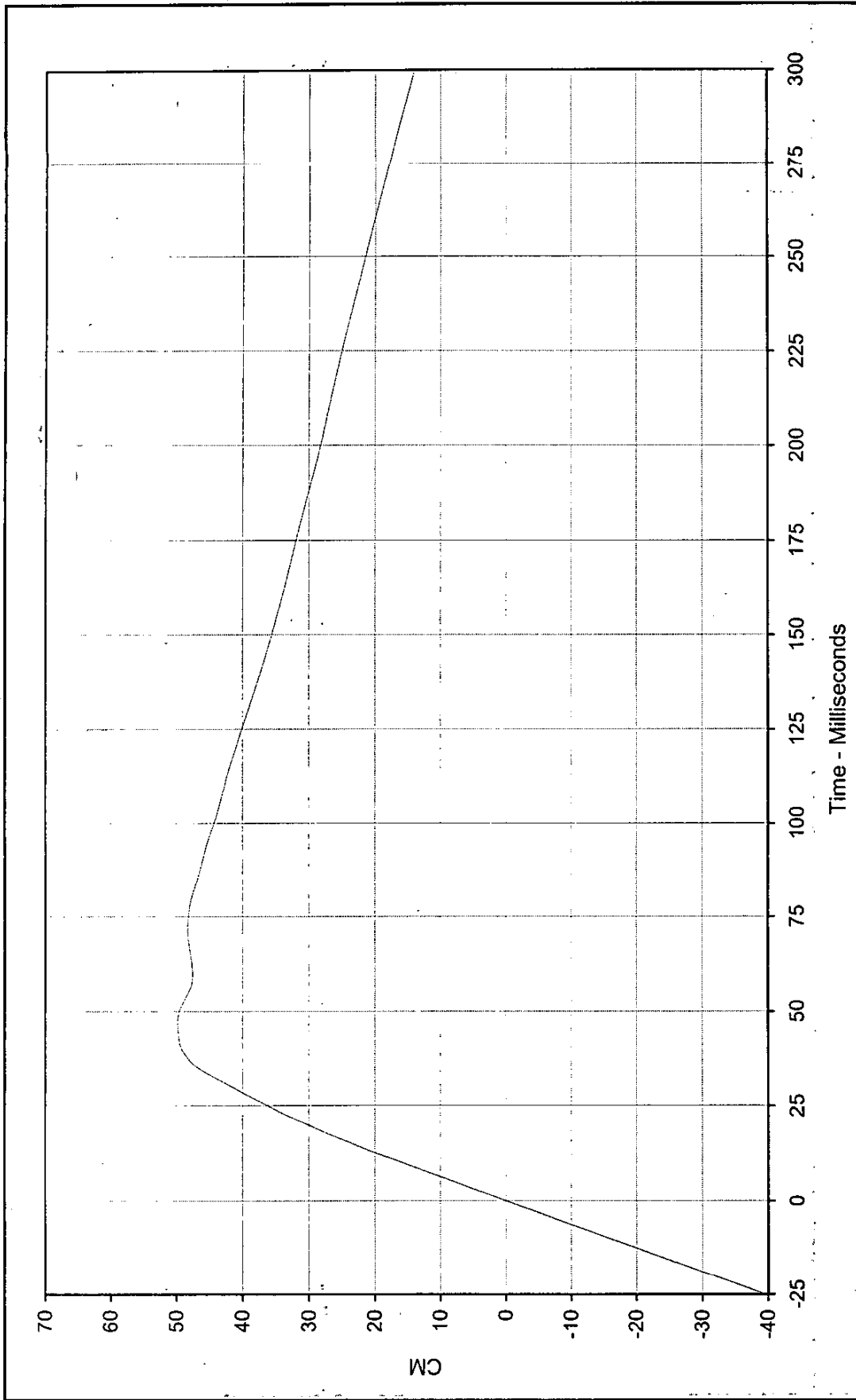
Date of Test: 12/14/99

Curve Number: IN1-094

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

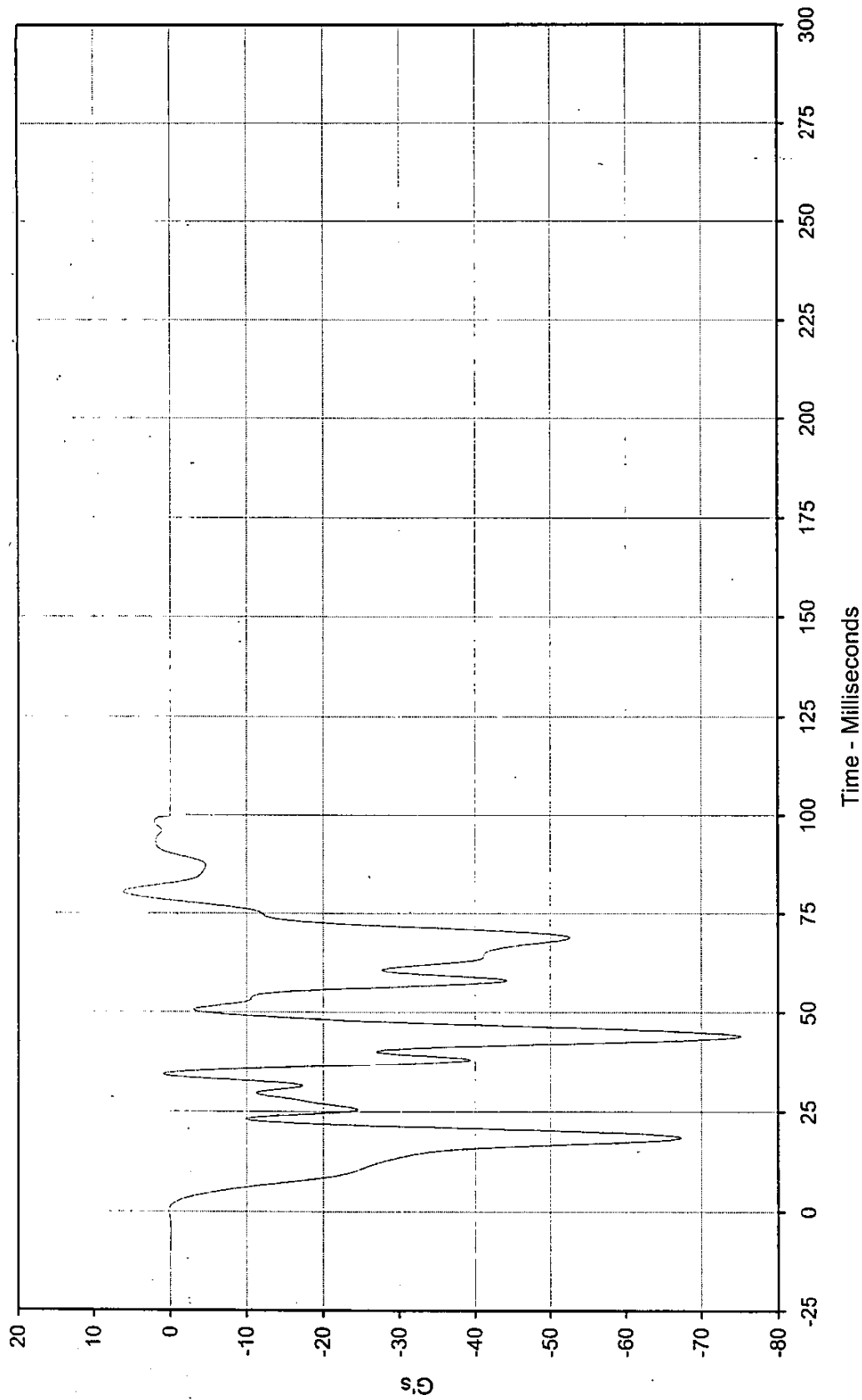
Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Vehicle Right Brake Caliper Displ.	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	49.8	at	46.9	Milliseconds
Minimum Value:	0.0	at	0.0	Milliseconds
SAE Filter Class:	180	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Date of Test:	12/14/99			
Curve Number:	IN2-094			

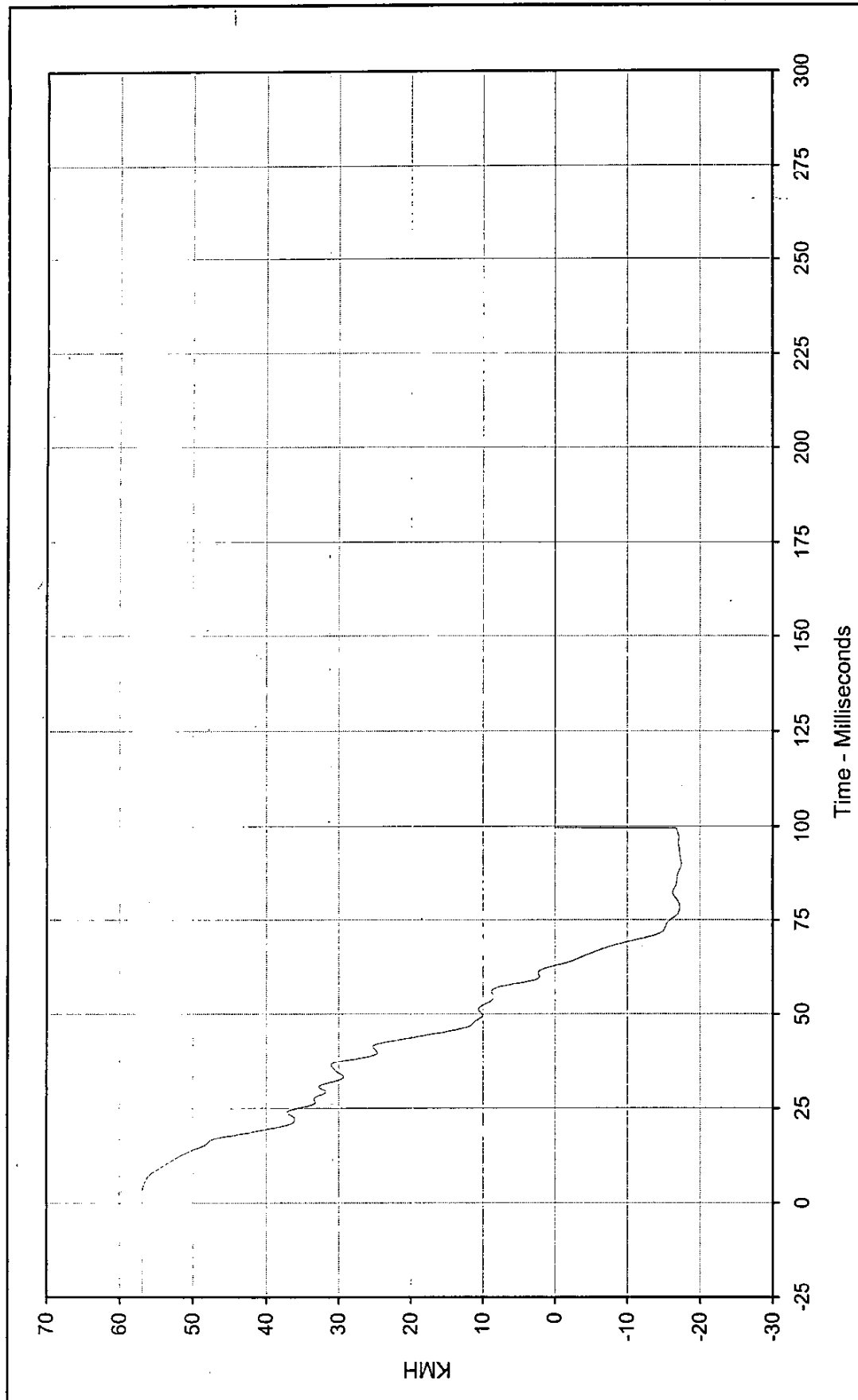




Curve Description:	Vehicle Instrument Panel		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	6.2	at 80.4	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-75.2	at 44.3			
SAE Filter Class:	60				
Date of Test:	12/14/99				
Curve Number:	FIL-095				



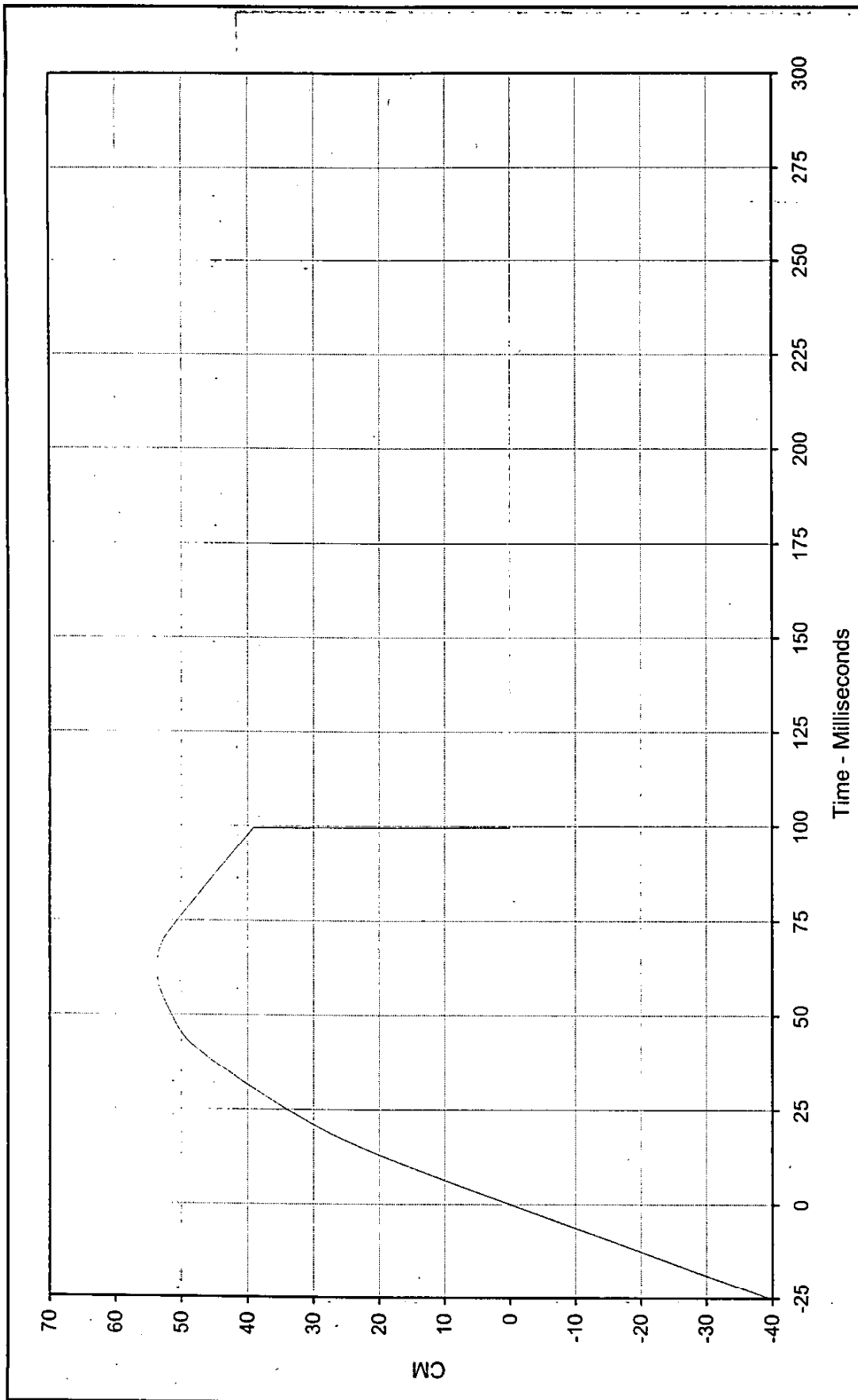
* Channel Failed at 99.6 Msec.



Curve Description:	Vehicle Instrument Panel Velocity *	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	56.9 at 1.8 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-17.5 at 89.5 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/14/99			
Curve Number:	IN1-095			



* Channel Failed at 99.6 Msec.

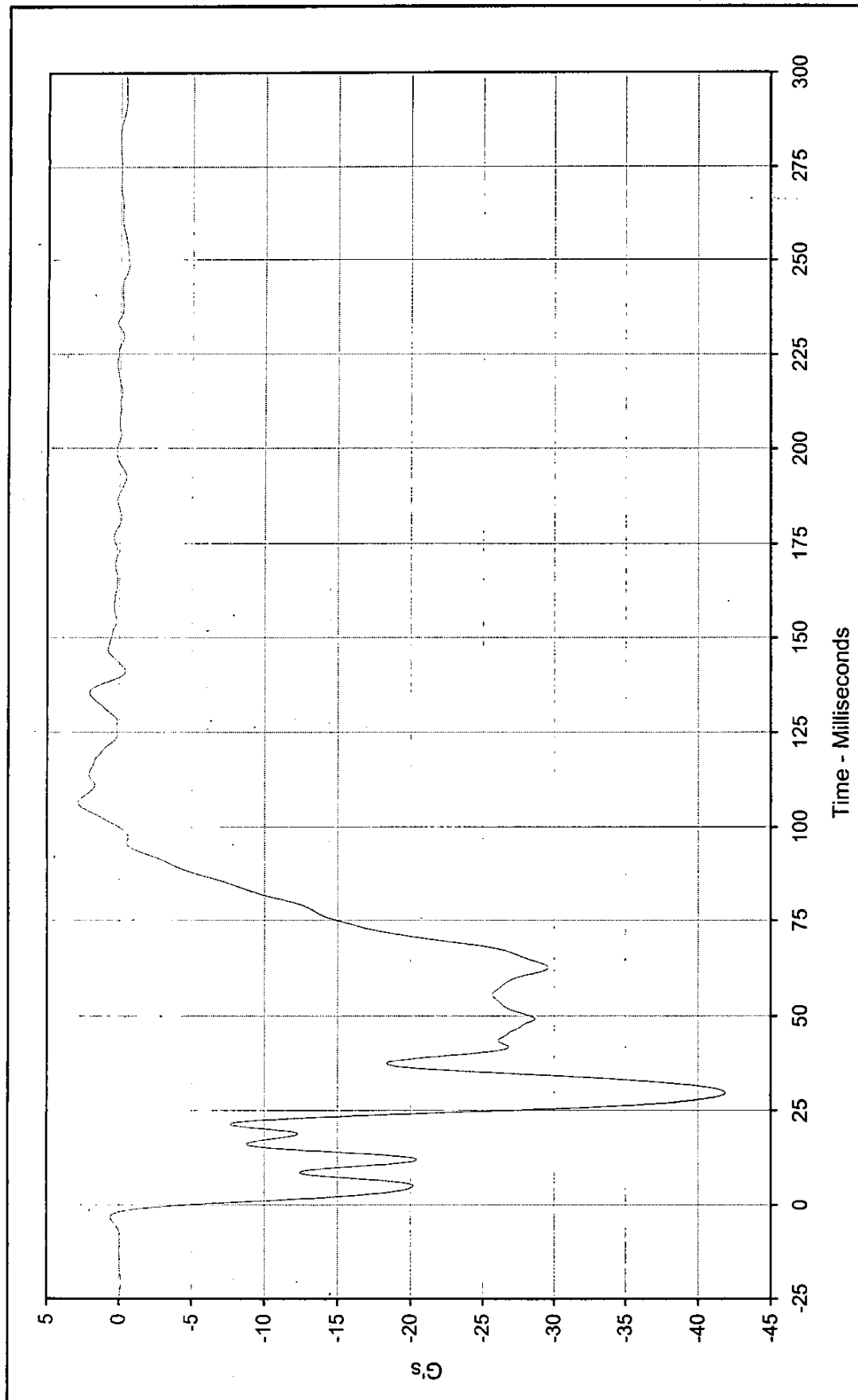


Curve Description: Vehicle Instrument Panel Displ. * Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Maximum Value: 53.8 at 62.8 Milliseconds Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan
 Minimum Value: 0.0 at 0.0 Milliseconds



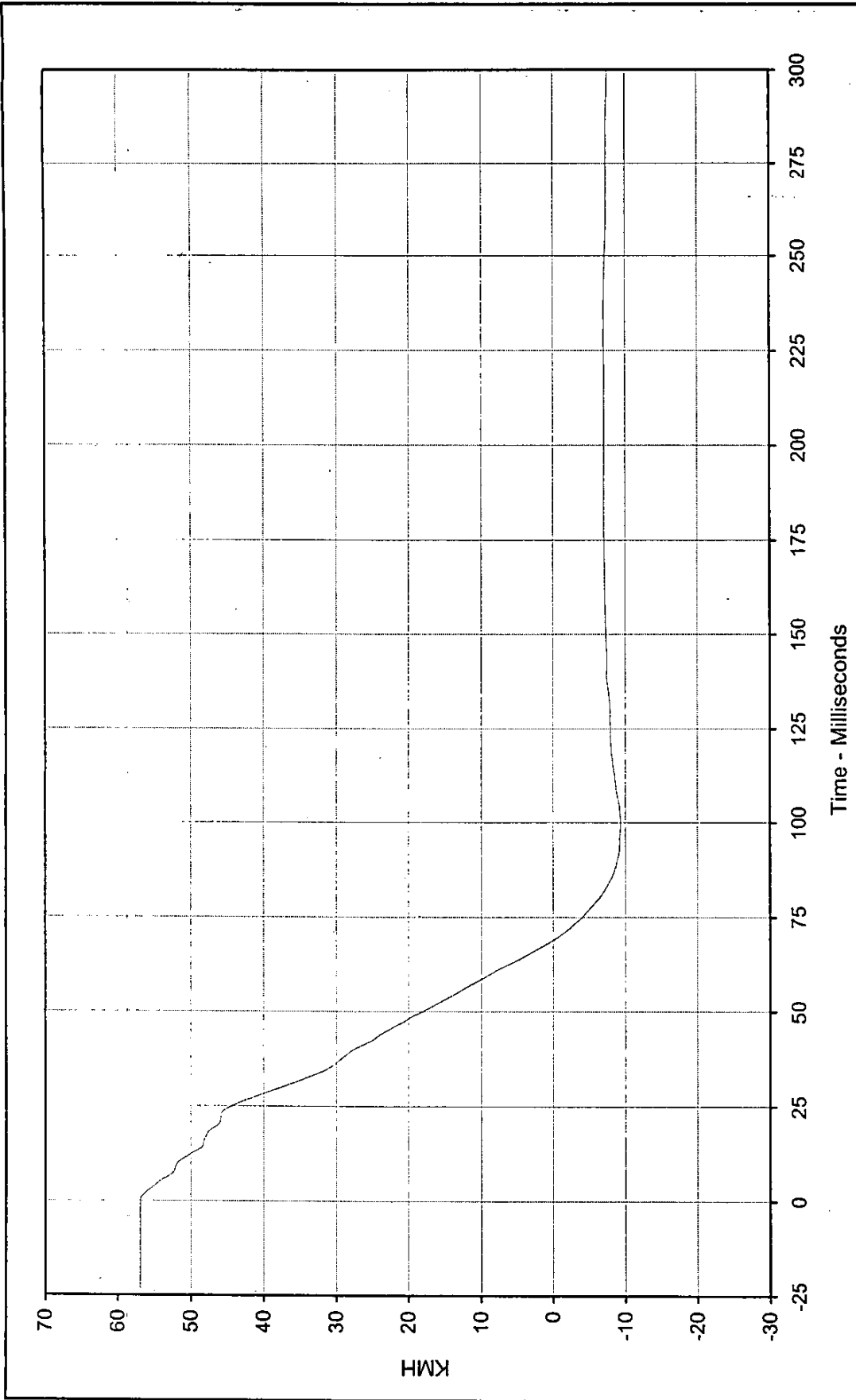
SAE Filter Class: 180
 Date of Test: 12/14/99
 Curve Number: IN2-095

* Channel Failed at 99.6 Msec.



Curve Description:	Vehicle Left Rear Redundant	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	2.9 at 106.4 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-41.9 at 29.5 Milliseconds			
SAE Filter Class:	60			
Date of Test:	12/14/99			
Curve Number:	FIL-096			

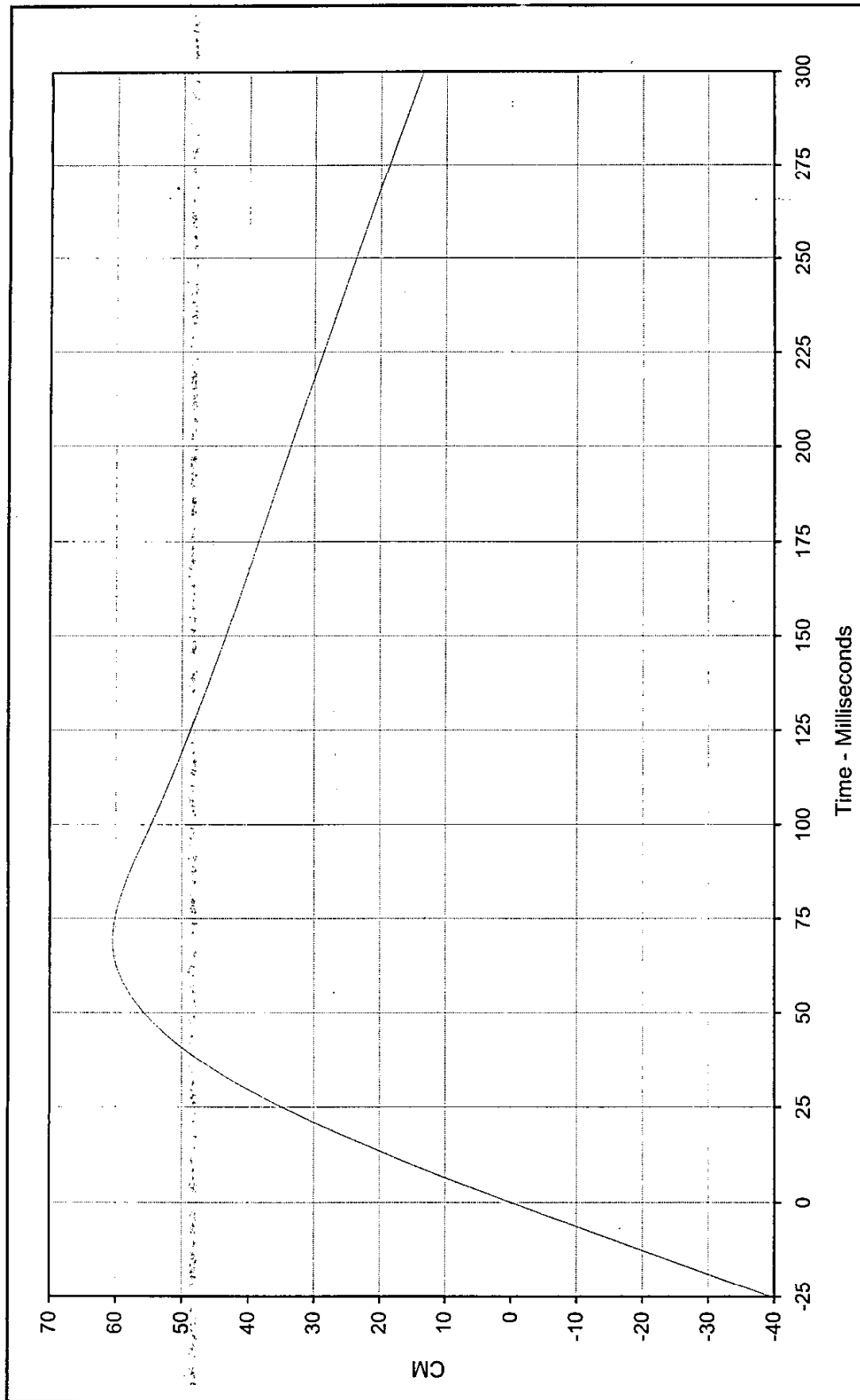




Curve Description: Vehicle Left Rear Redundant Velocity
 Maximum Value: 56.9 at 0.0 Milliseconds
 Minimum Value: -9.3 at 100.3 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/14/99
 Curve Number: IN1-096

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description: Vehicle Left Rear Redundant Displ.

Maximum Value: 60.5 at 68.8 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 12/14/99

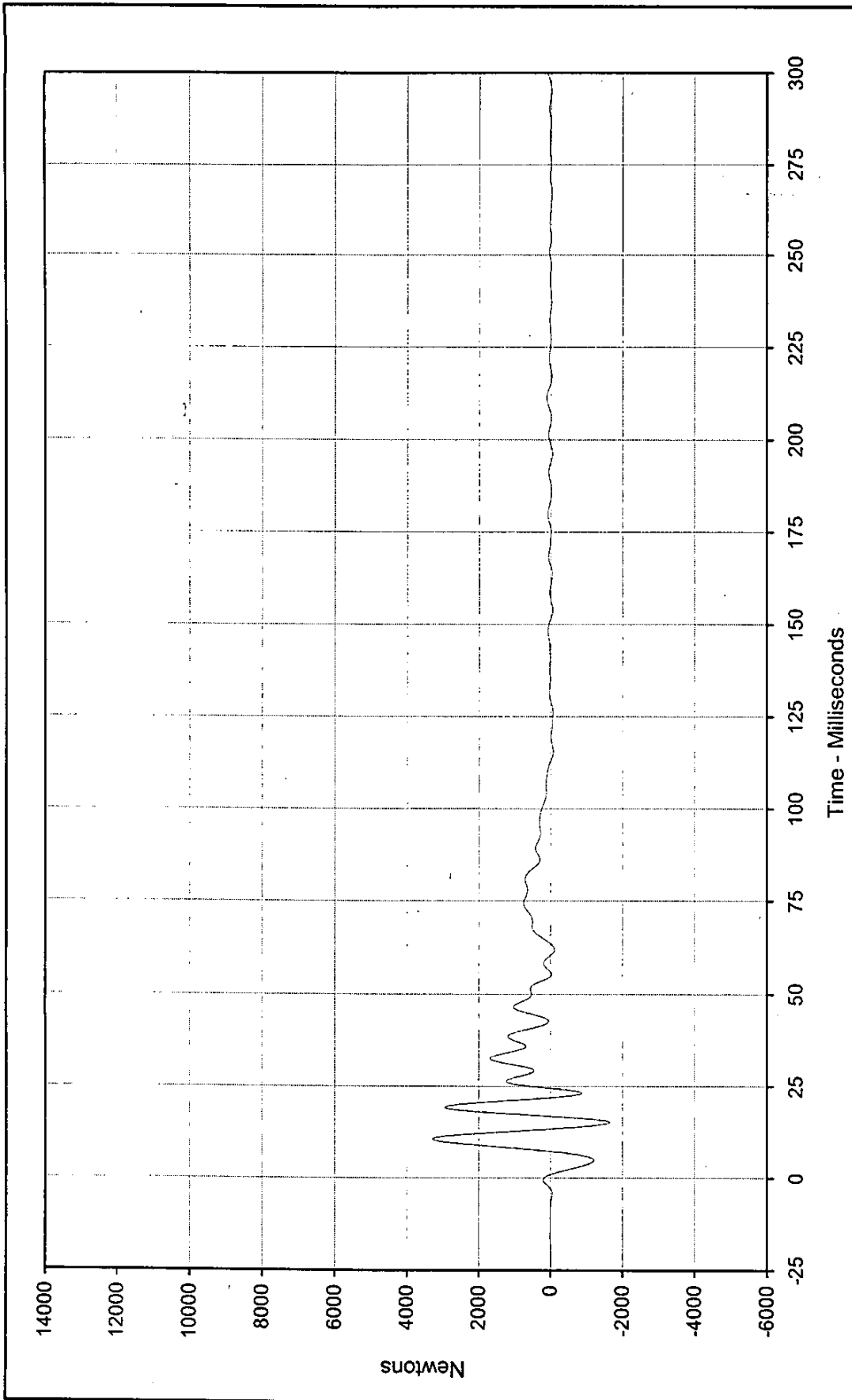
Curve Number: IN2-096

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan



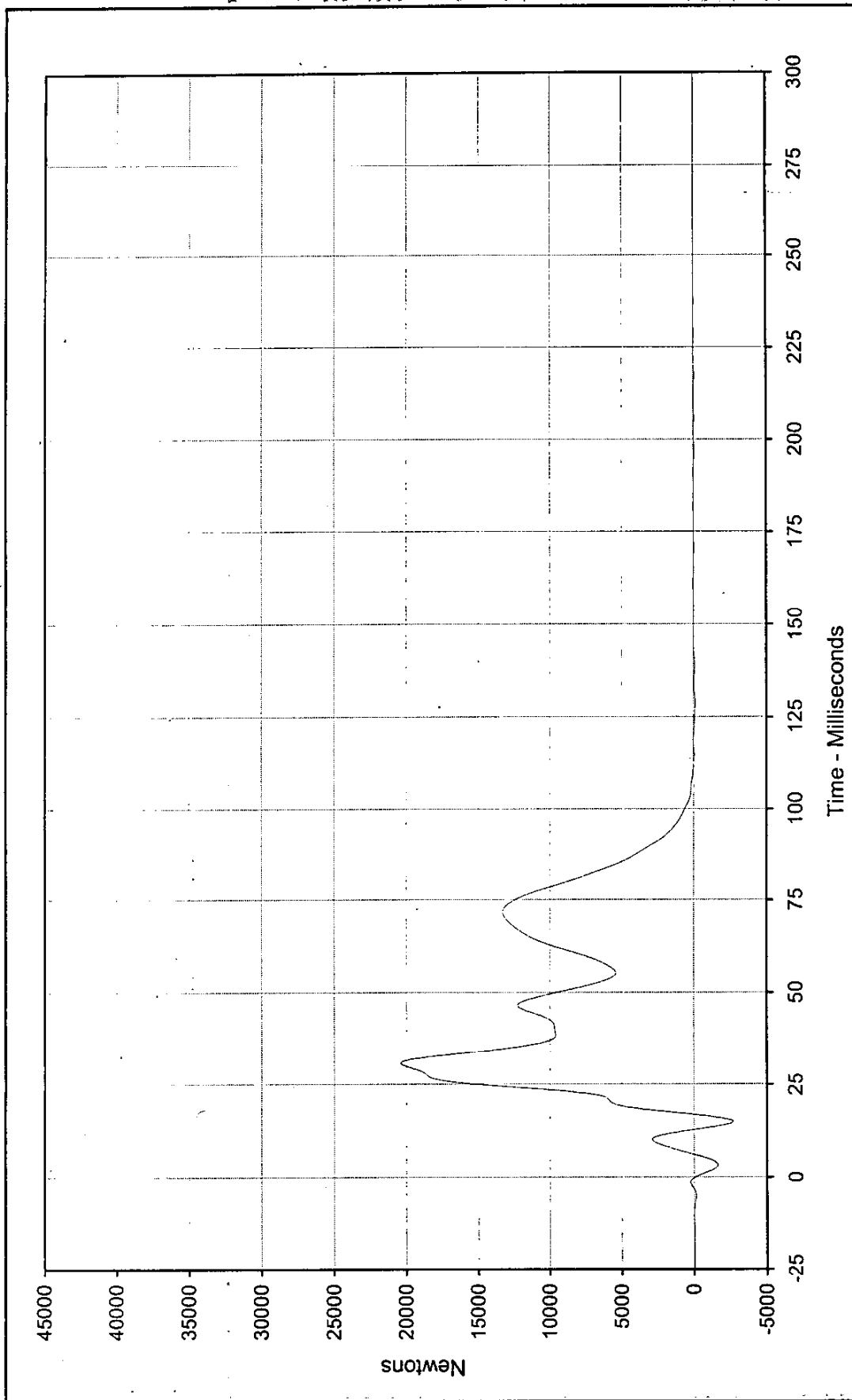
APPENDIX C
LOAD CELL BARRIER INFORMATION



Curve Description: Barrier Force A2
 Maximum Value: 3274.5 at 10.6 Milliseconds
 Minimum Value: -1651.9 at 15.2 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/99
 Curve Number: FIL-099

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan



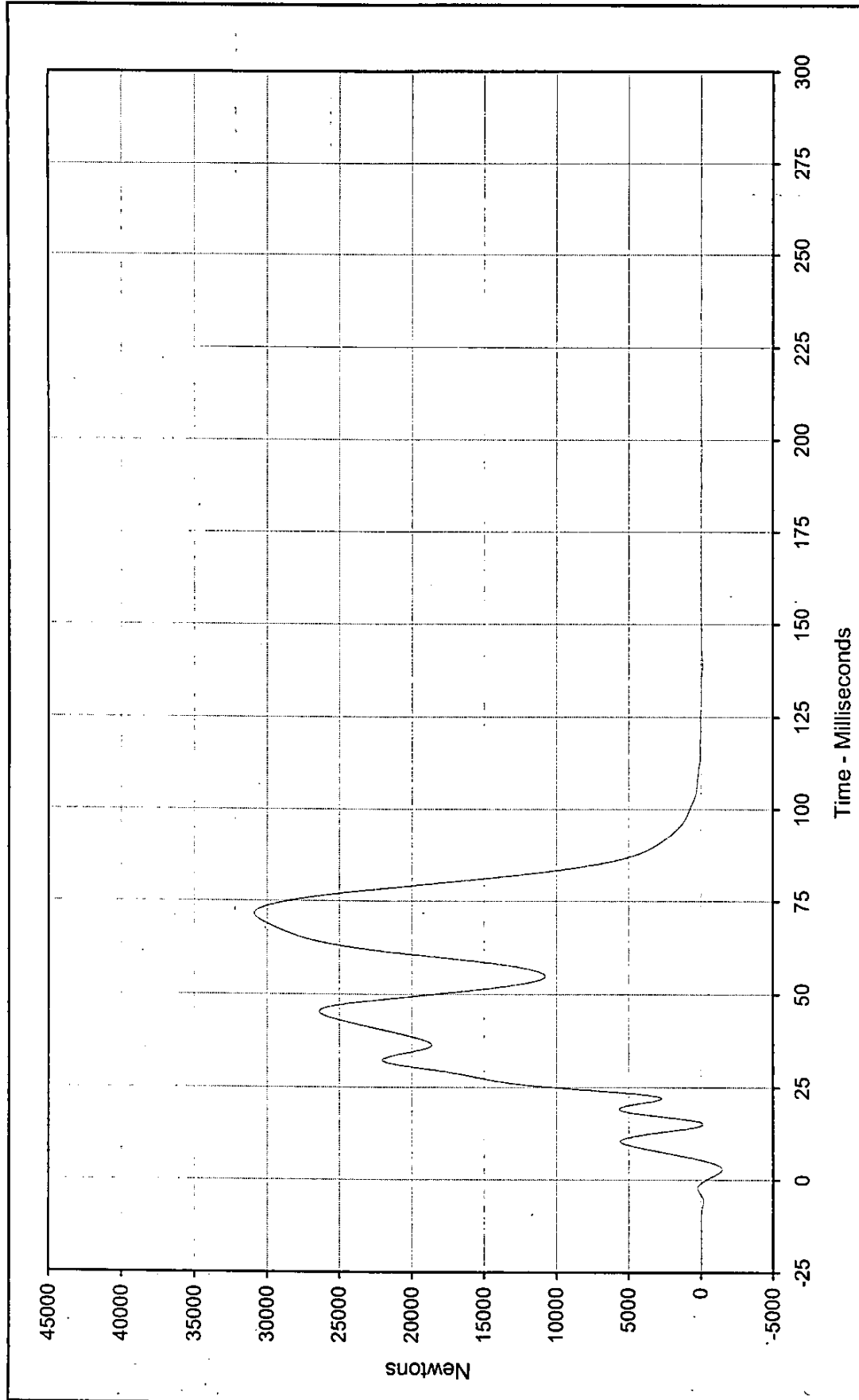


Curve Description: Barrier Force A3
 Maximum Value: 20378.6 at 30.9 Milliseconds
 Minimum Value: -2679.0 at 15.2 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/99
 Curve Number: FIL-100

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

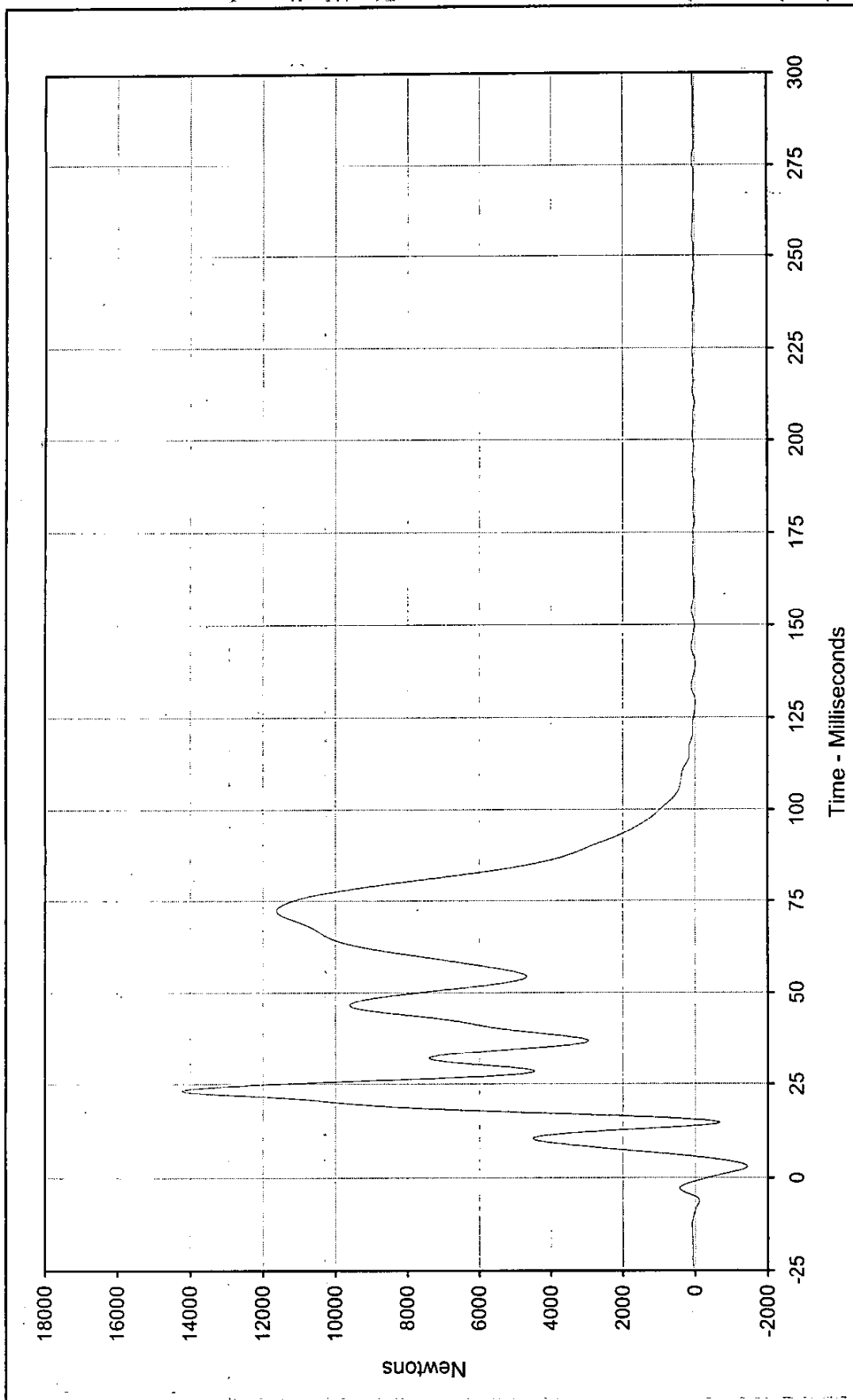




Curve Description: Barrier Force A4
 Maximum Value: 30866.2 at 71.5 Milliseconds
 Minimum Value: -1498.6 at 2.9 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/99
 Curve Number: FIL-101

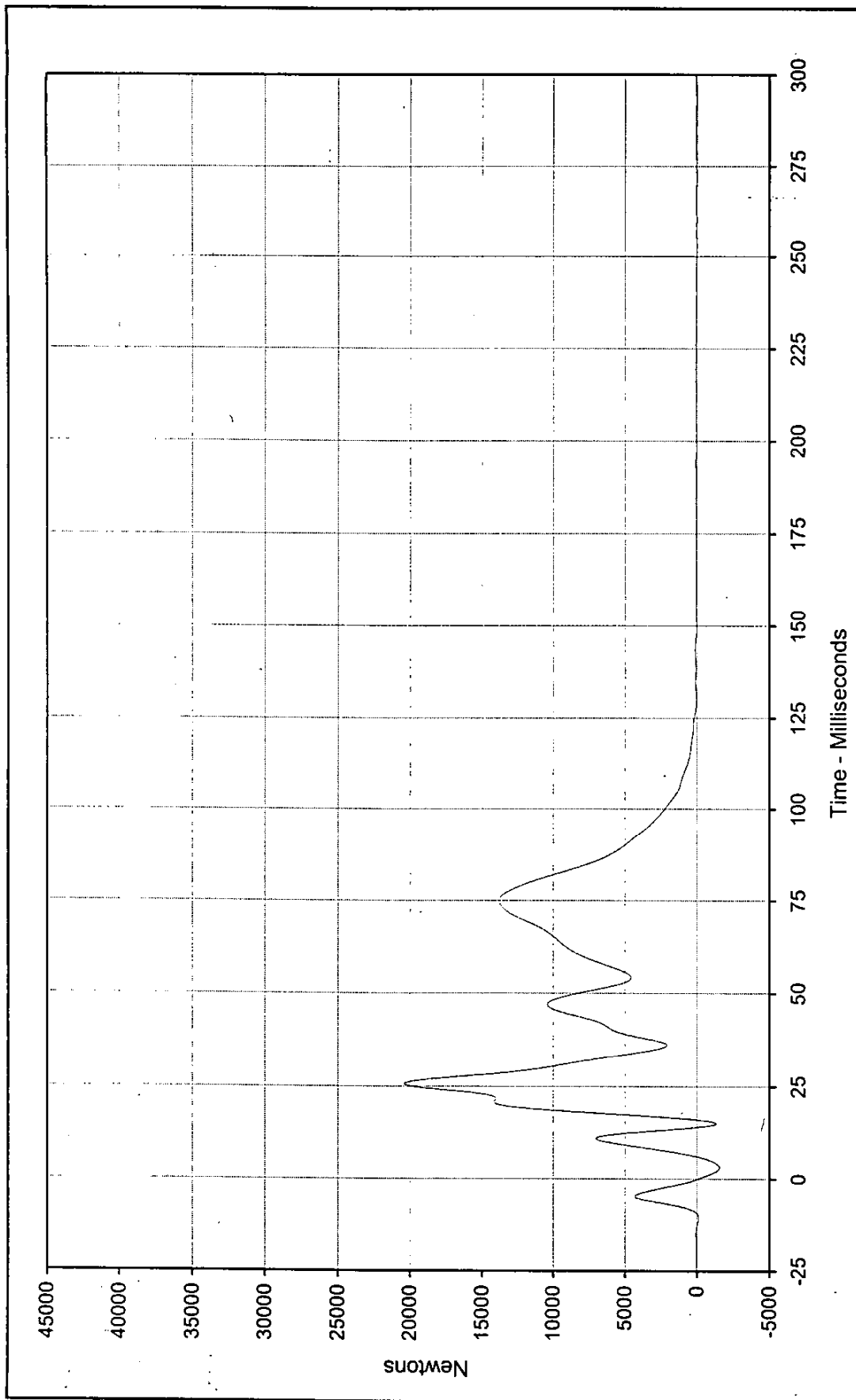
Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Barrier Force A5	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	14223.9	at	23.3	Milliseconds
Minimum Value:	-1438.6	at	3.1	Milliseconds
SAE Filter Class:	60	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Date of Test:	12/14/99			
Curve Number:	FIL-102			

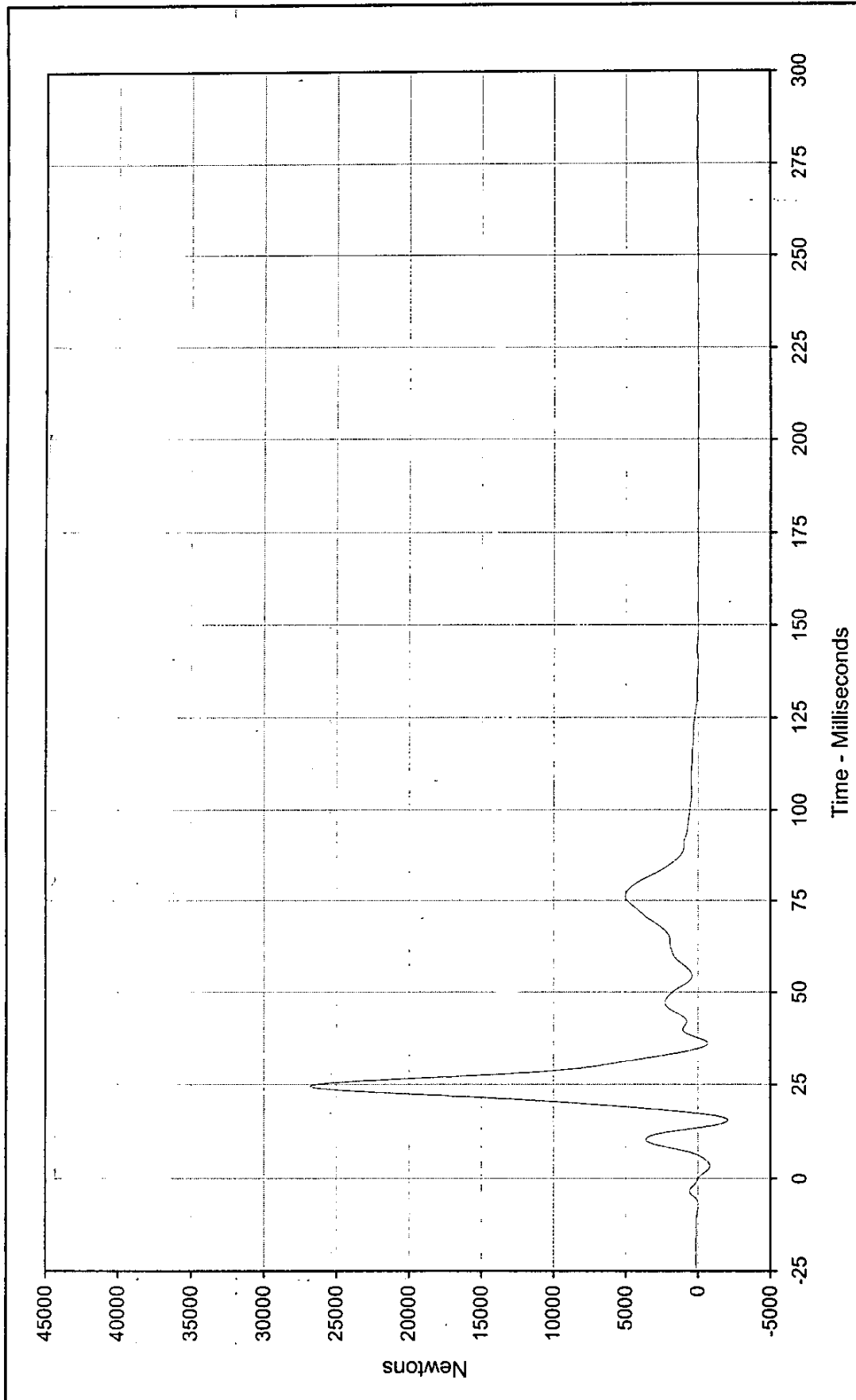




Curve Description:	Barrier Force A6	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	20390.0 at 25.7 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-1570.7 at 3.0 Milliseconds			



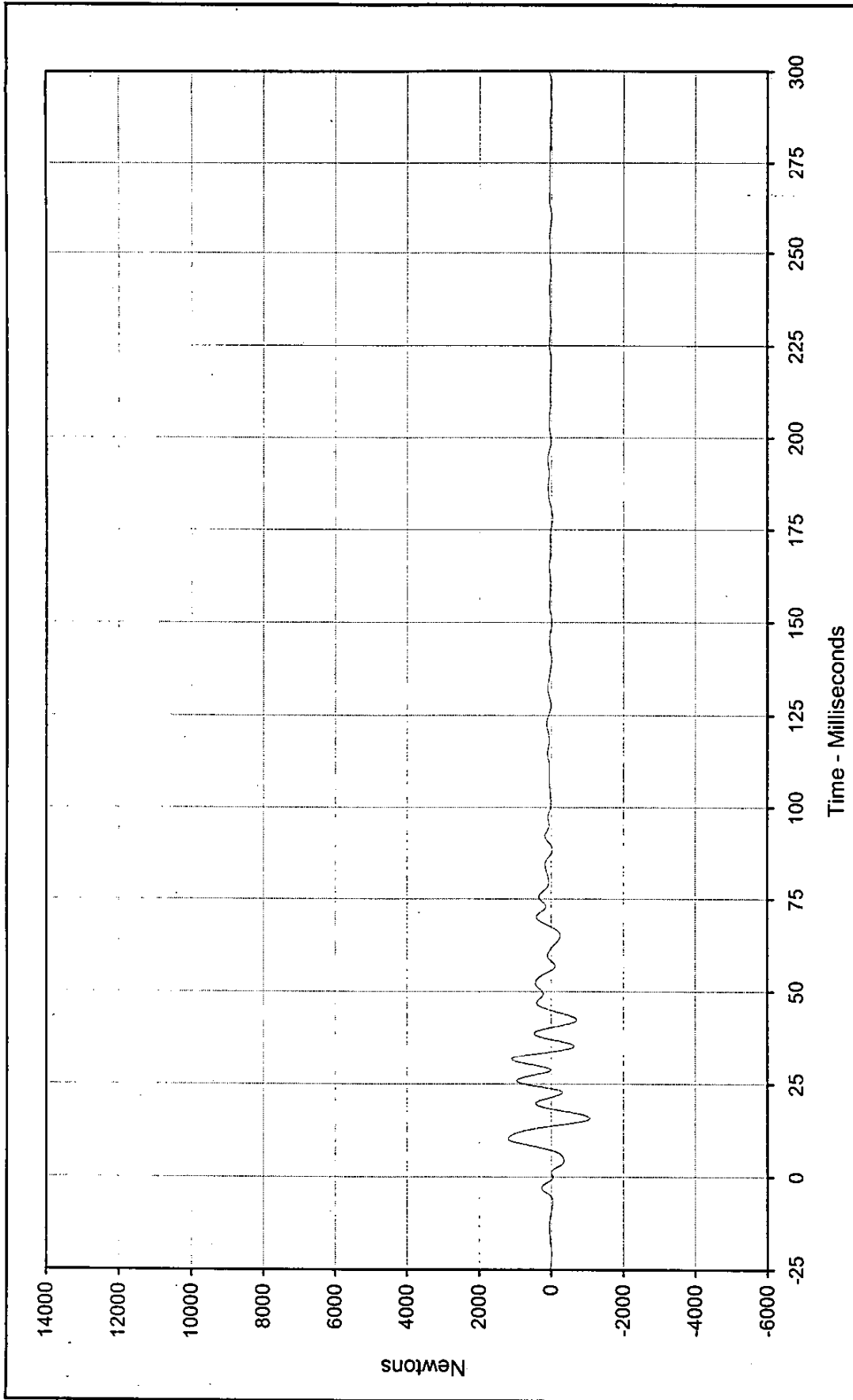
SAE Filter Class:	60
Date of Test:	12/14/99
Curve Number:	FIL-103



Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan



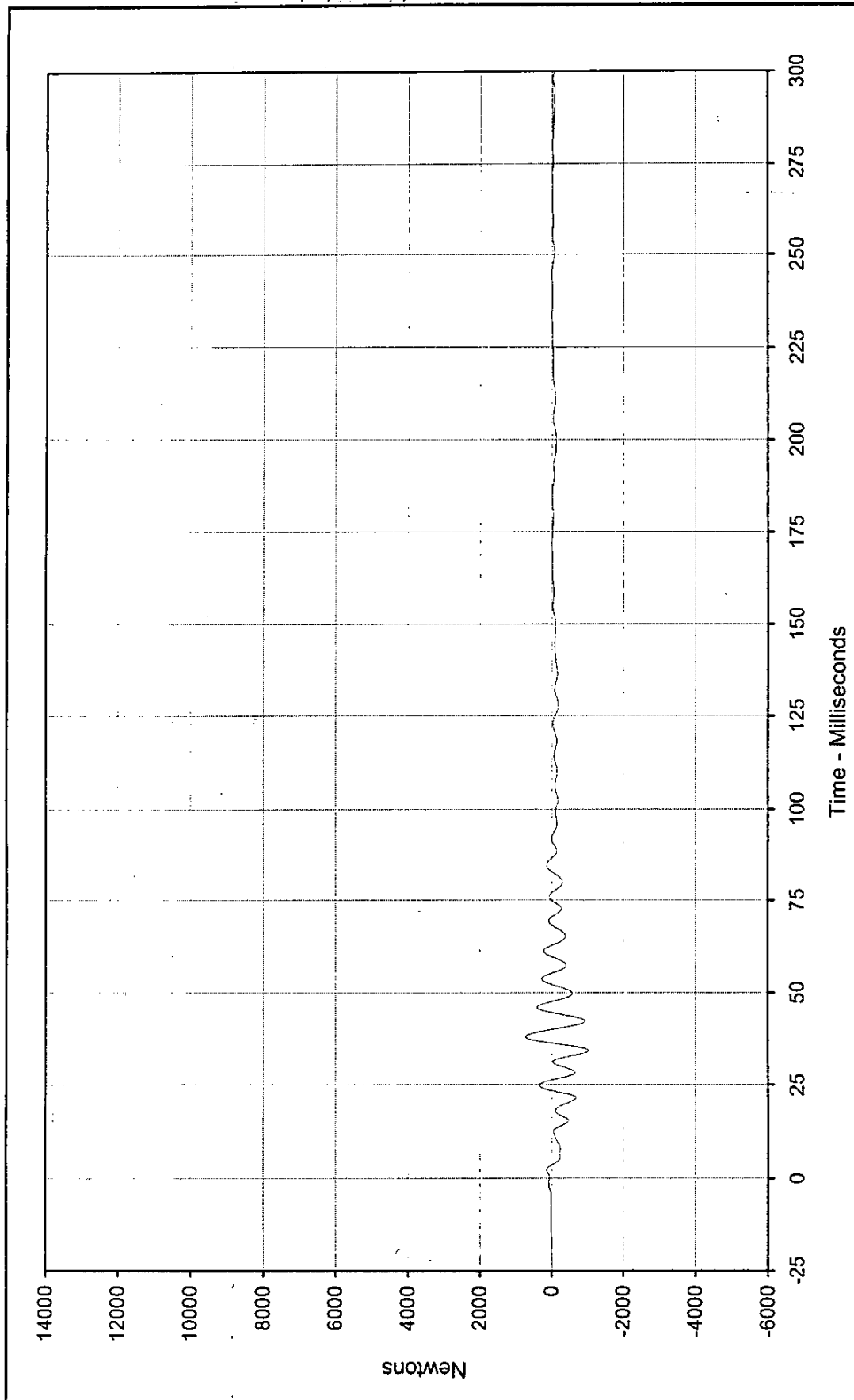
Curve Description: Barrier Force A7
 Maximum Value: 26803.1 at 24.5 Milliseconds
 Minimum Value: -2071.3 at 15.6 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/99
 Curve Number: FIL-104



Curve Description: Barrier Force A8
Maximum Value: 1195.4 at 10.3 Milliseconds
Minimum Value: -1069.0 at 15.7 Milliseconds
SAE Filter Class: 60
Date of Test: 12/14/99
Curve Number: FIL-105

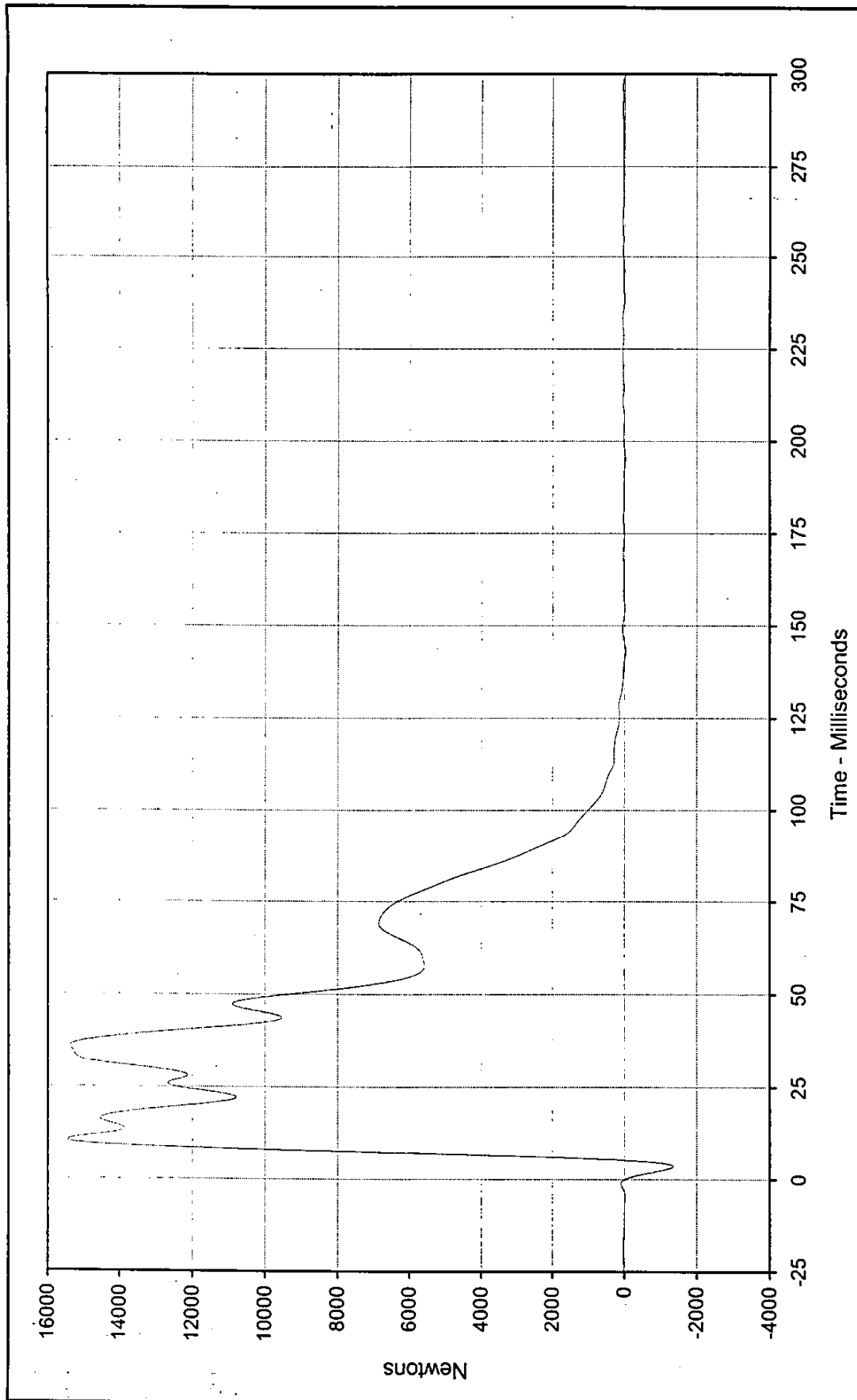
Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:		Barrier Force A9		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	727.6	at	38.1	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-1031.2	at	34.4			
SAE Filter Class:	60					
Date of Test:	12/14/99					
Curve Number:	FIL-106					

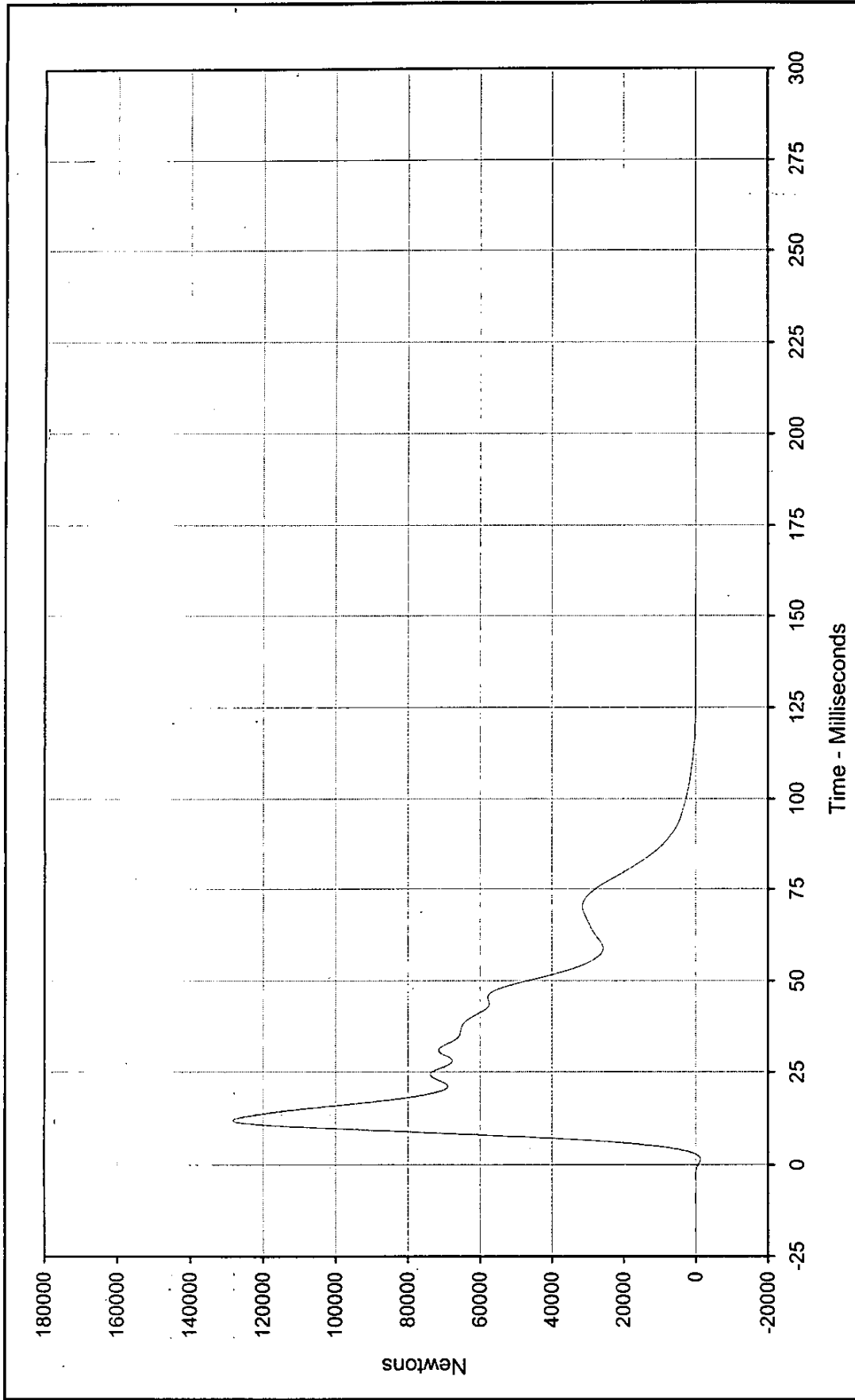




Curve Description: Barrier Force B2
 Maximum Value: 15452.9 at 10.4 Milliseconds
 Minimum Value: -1356.9 at 3.6 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/99
 Curve Number: FIL-108

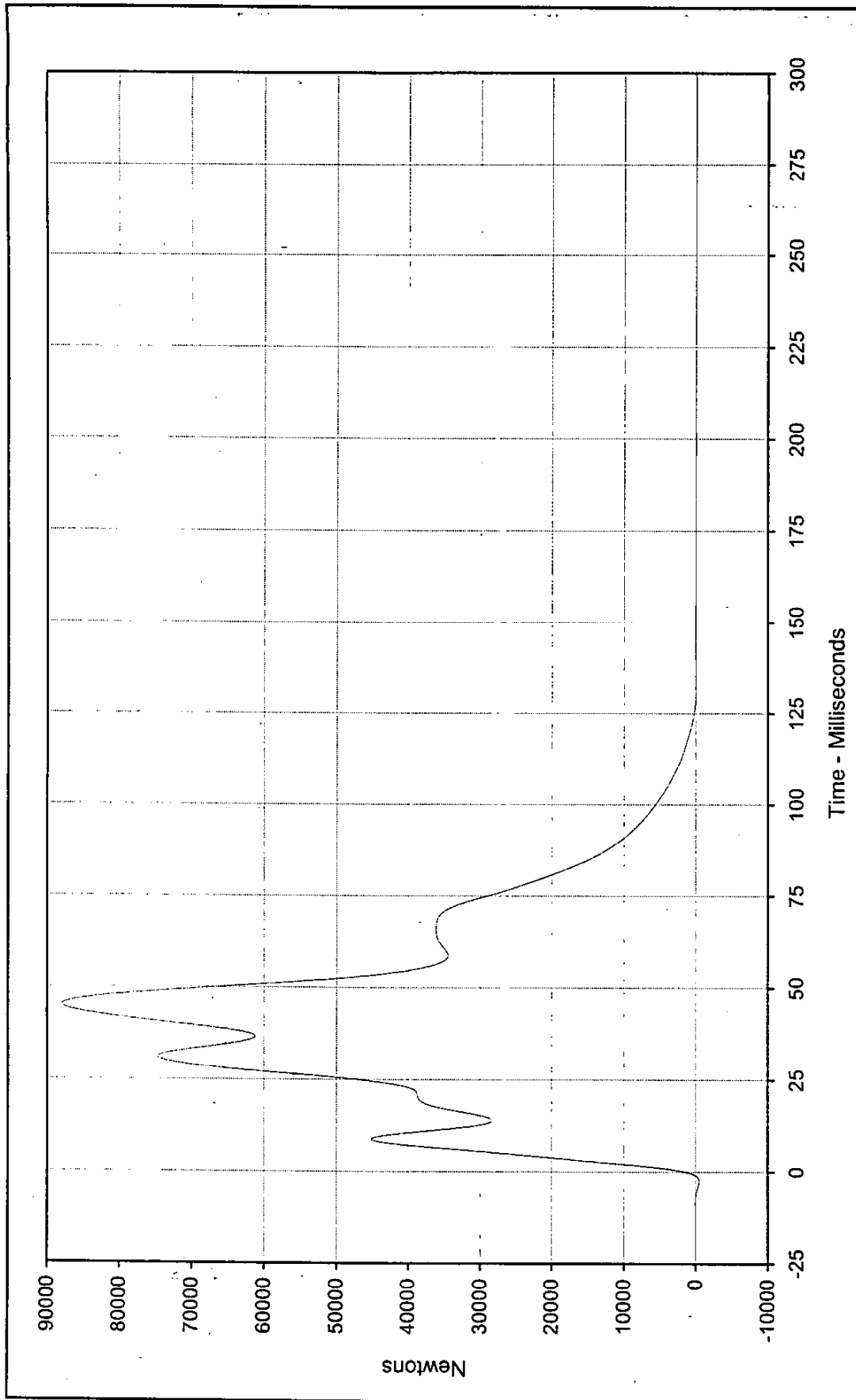
Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Barrier Force B3	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	128340.0 at 12.3 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-1299.8 at 1.5 Milliseconds			
SAE Filter Class:	60			
Date of Test:	12/14/99			
Curve Number:	FIL-109			

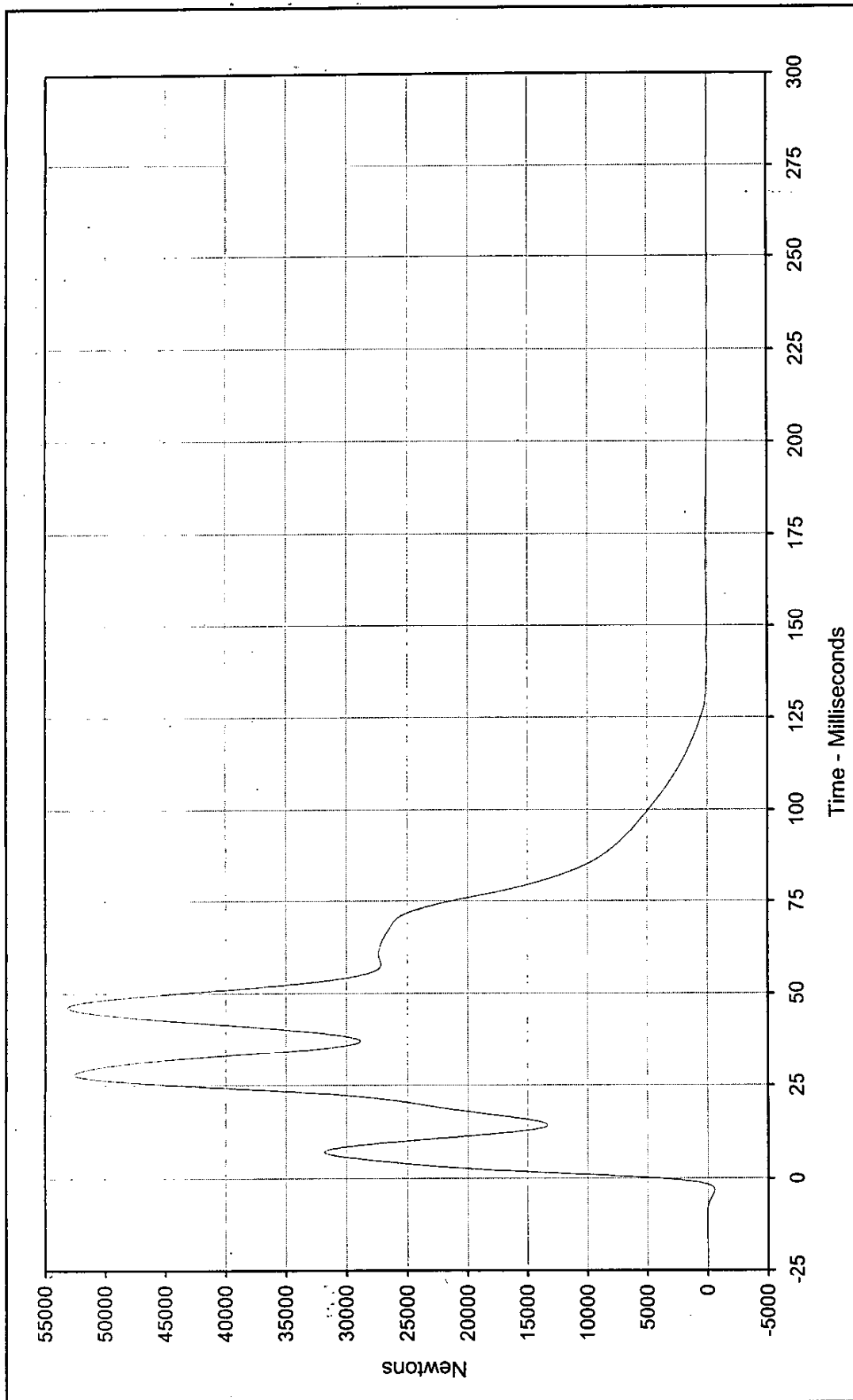




Curve Description: Barrier Force B4
 Maximum Value: 87946.1 at 45.1 Milliseconds
 Minimum Value: -65.6 at 199.4 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/99
 Curve Number: FIL-110

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:

Barrier Force B5

Maximum Value: 53127.5 at 46.3 Milliseconds

Minimum Value: -97.8 at 239.4 Milliseconds

SAE Filter Class: 60

Date of Test: 12/14/99

Curve Number: FIL-111

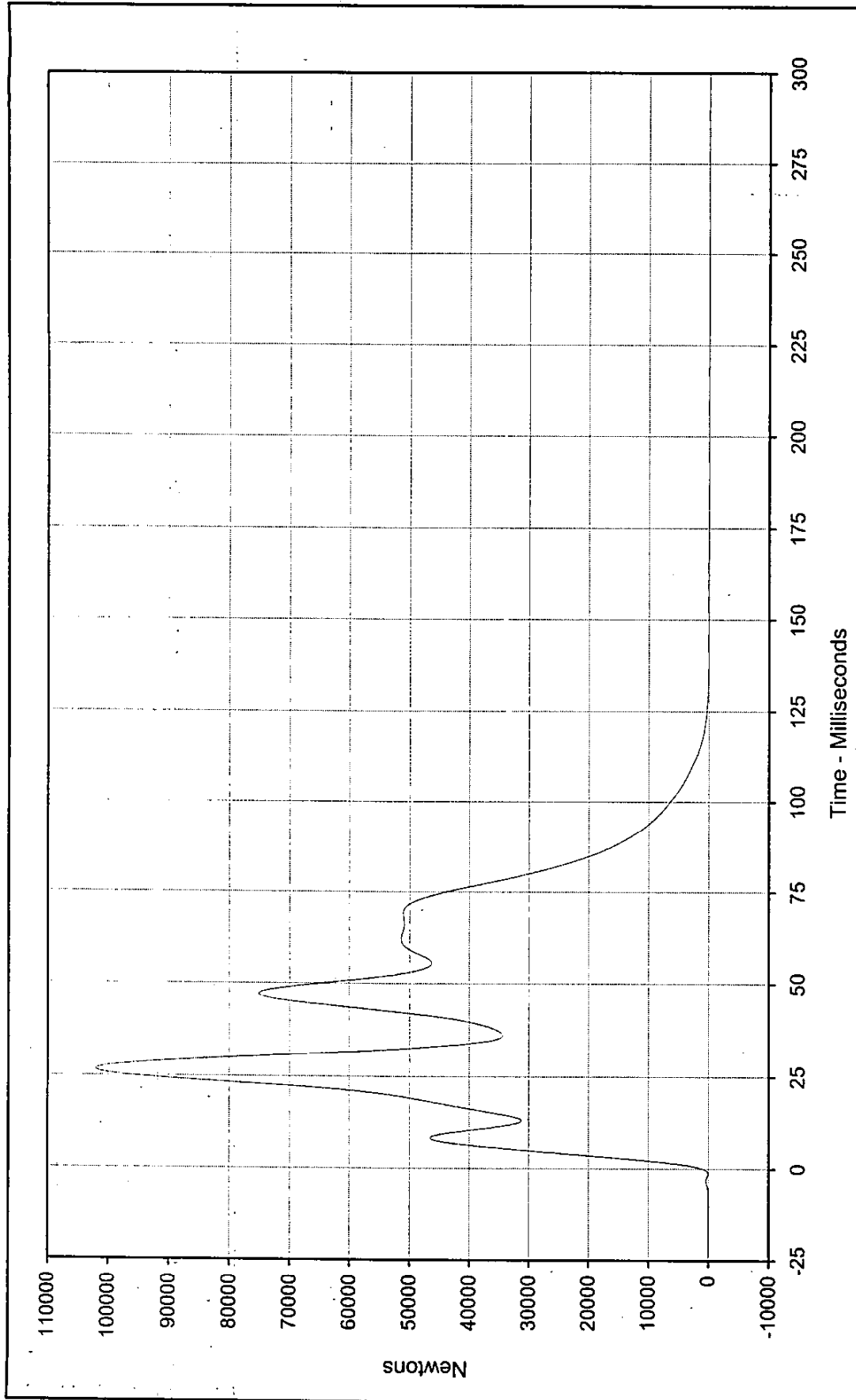
Test Program:

2000 NHTSA 35 mph NCAP No.: MY5801

Test Vehicle:

2000 Volkswagen Jetta 4 Door Sedan

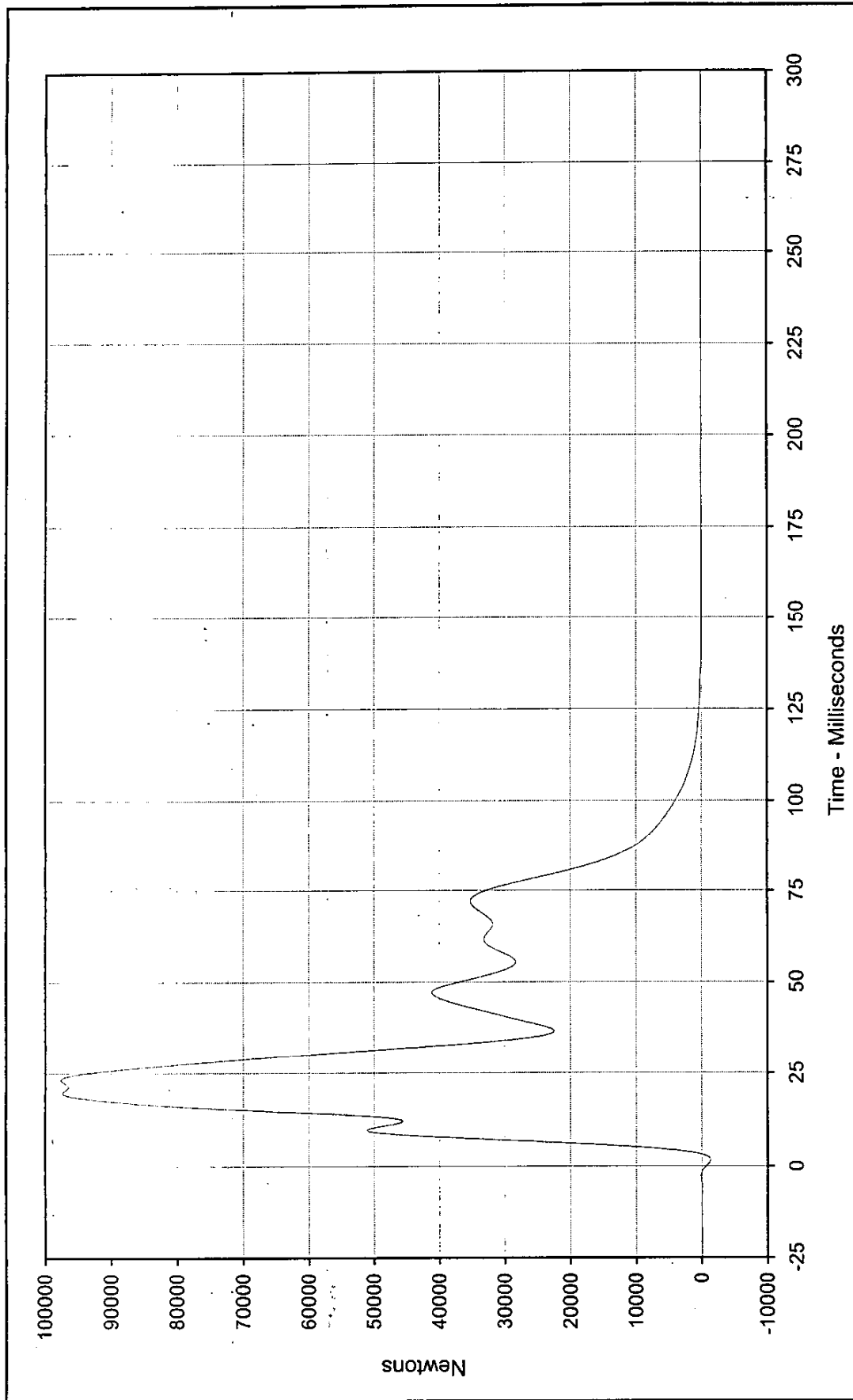




Curve Description: Barrier Force B6
 Maximum Value: 102037.0 at 26.7 Milliseconds
 Minimum Value: -27.5 at 299.9 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/99
 Curve Number: FIL-112

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan



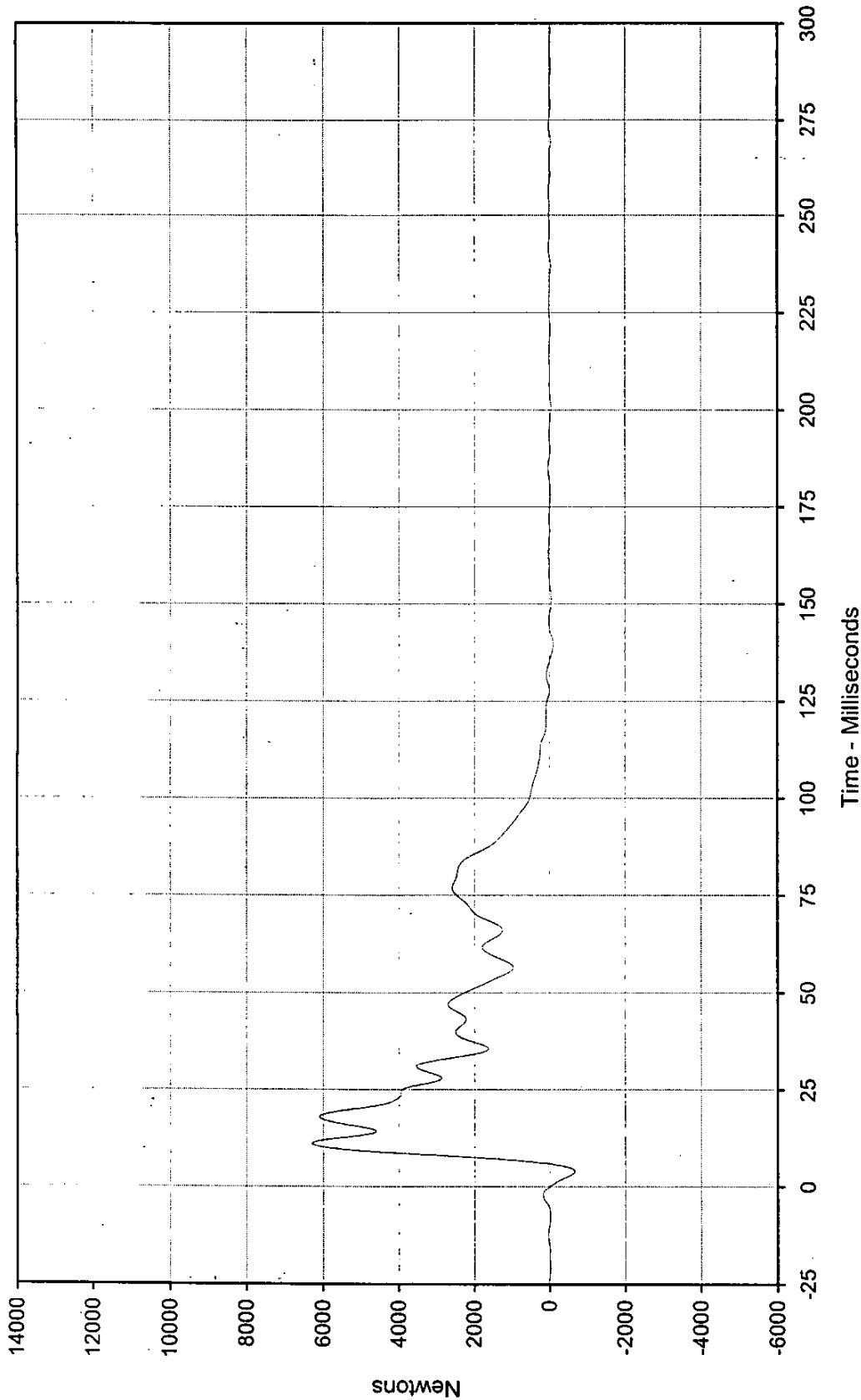


Curve Description:	Barrier Force B7			Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	97624.9	at	23.3	Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan
Minimum Value:	-1310.3	at	1.6	Milliseconds		
SAE Filter Class:	60					
Date of Test:	12/14/99					
Curve Number:	FIL-113					



OKAPCO
Engineering

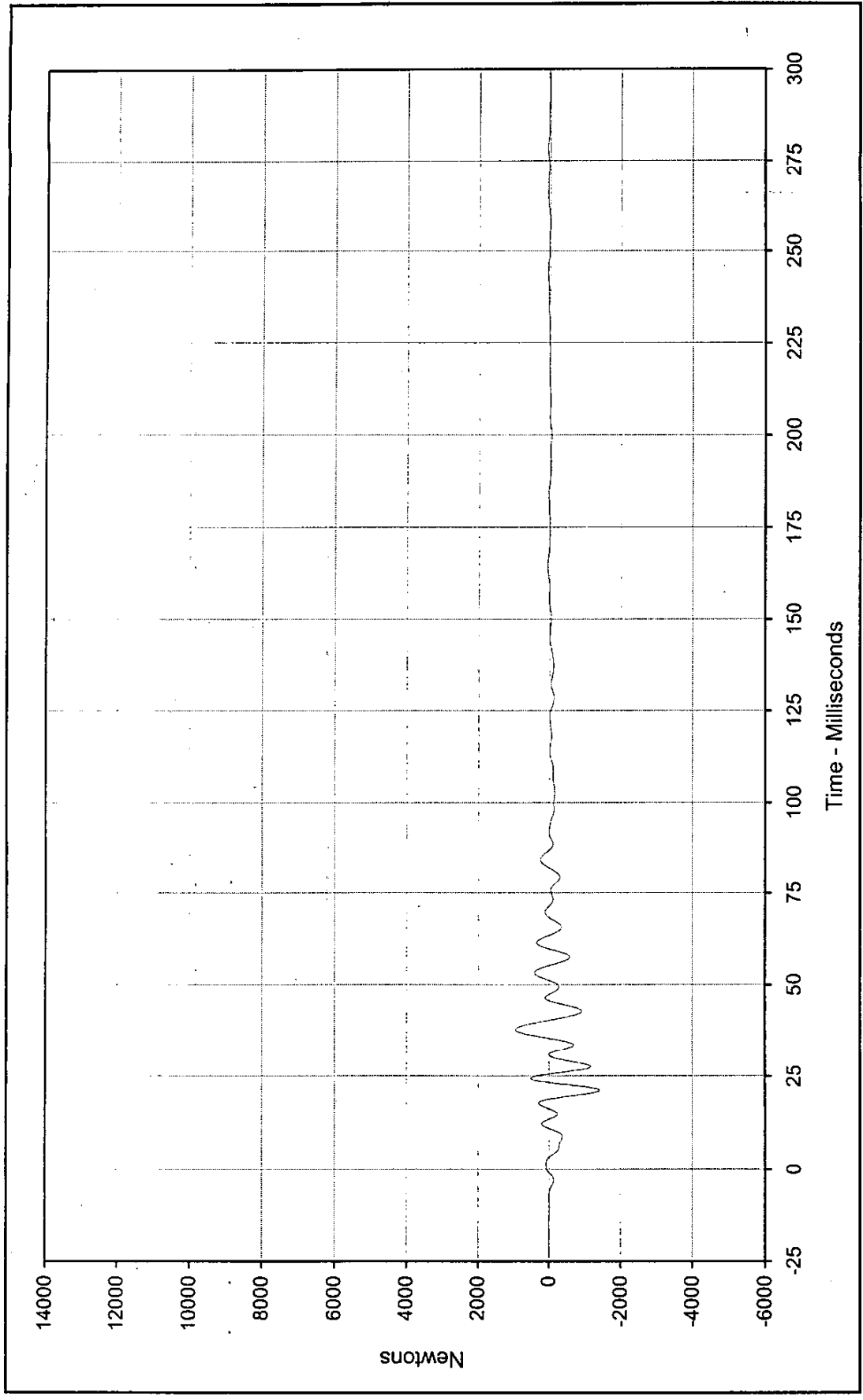




Curve Description: Barrier Force B8
 Maximum Value: 6292.8 at 11.0 Milliseconds
 Minimum Value: -672.0 at 3.9 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/99
 Curve Number: FIL-114

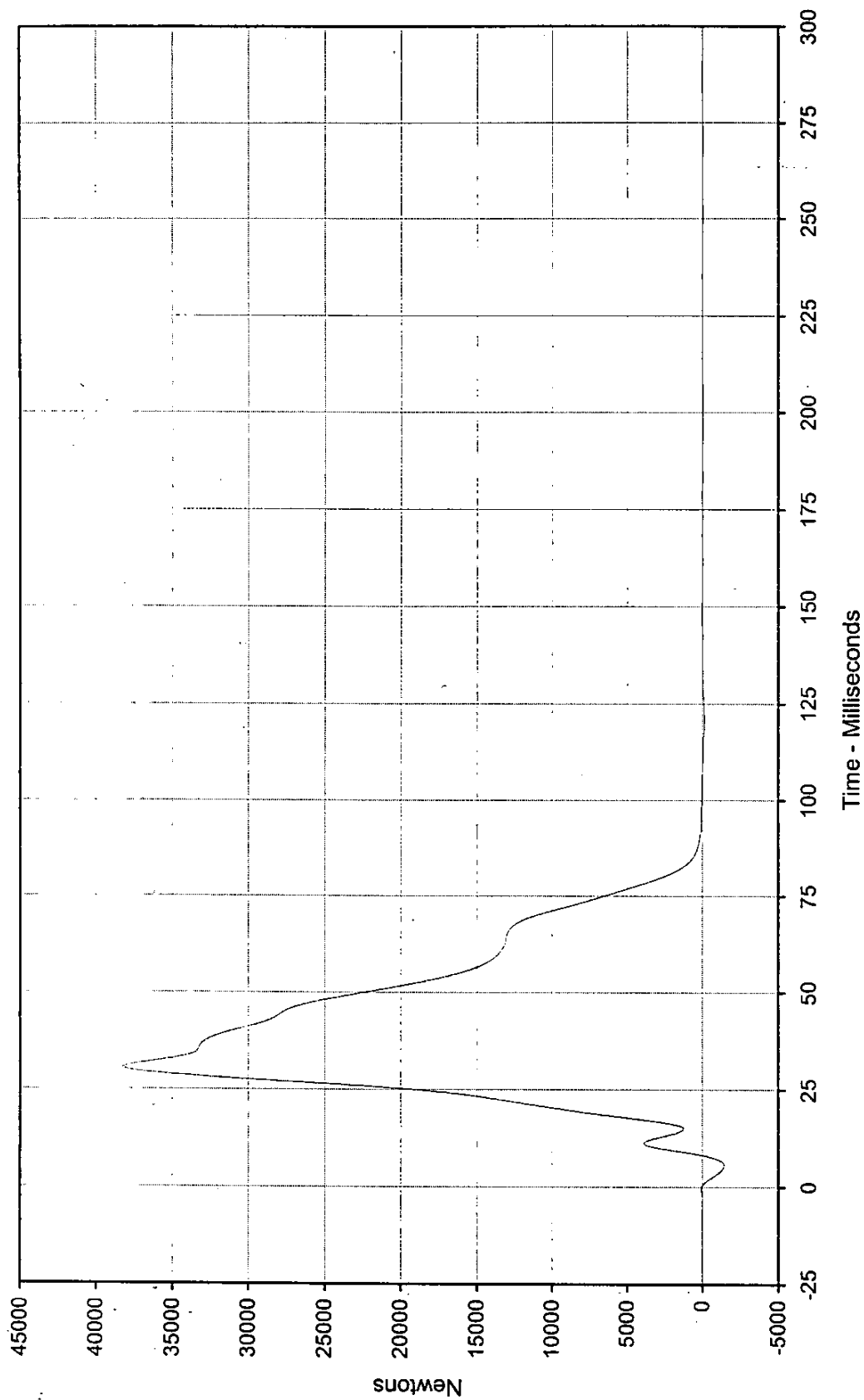
Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Barrier Force B9		Test Program:	2000 NHTSA 35 mph NCAP No.: MY5801	
Maximum Value:	938.9	at 37.8 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-1413.1	at 21.1 Milliseconds			
SAE Filter Class:	60				
Date of Test:	12/14/99				
Curve Number:	FIL-115				



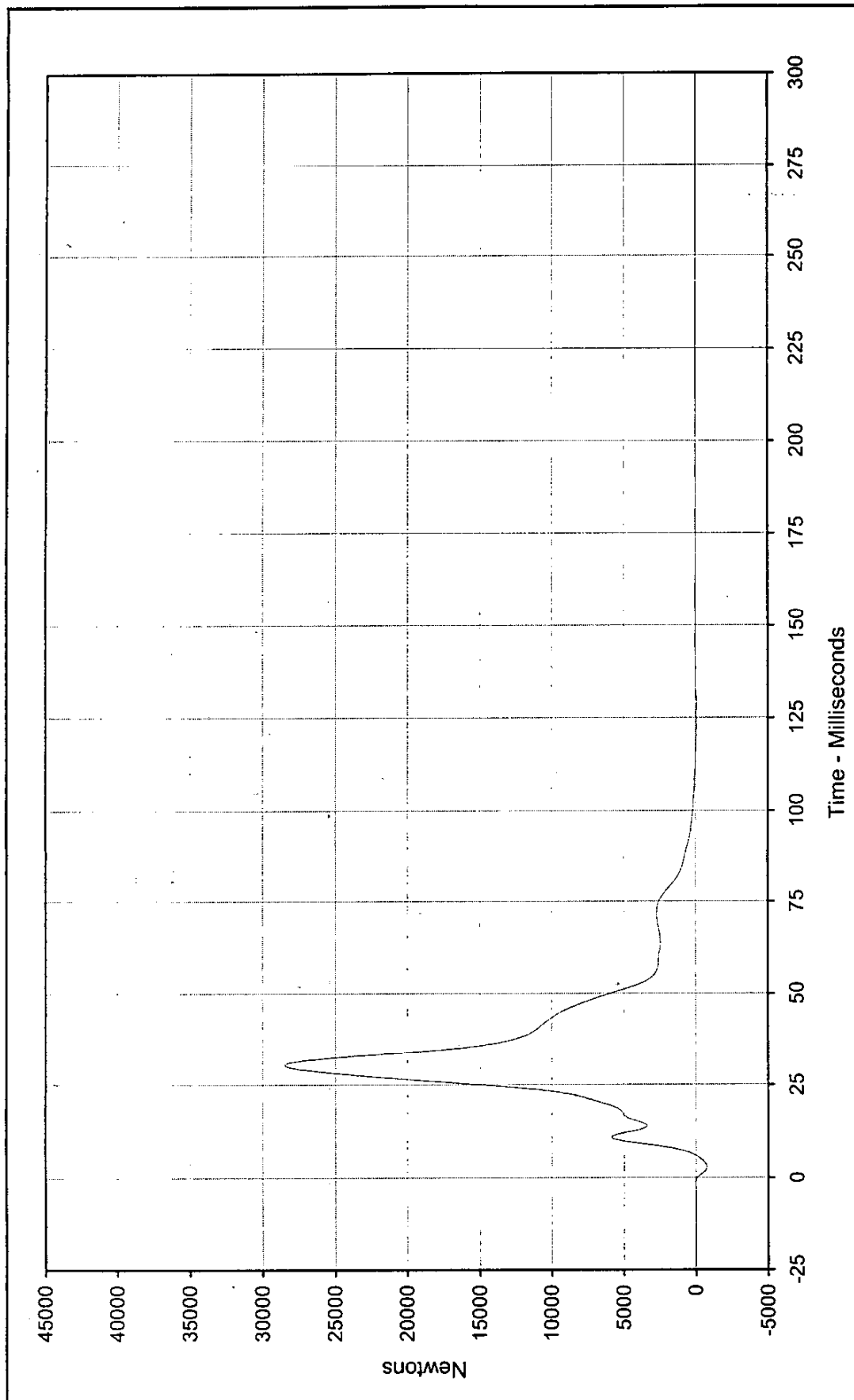


Curve Description: Barrier Force C2
 Maximum Value: 38259.2 at 30.6 Milliseconds
 Minimum Value: -1444.6 at 5.5 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/99
 Curve Number: FIL-117

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

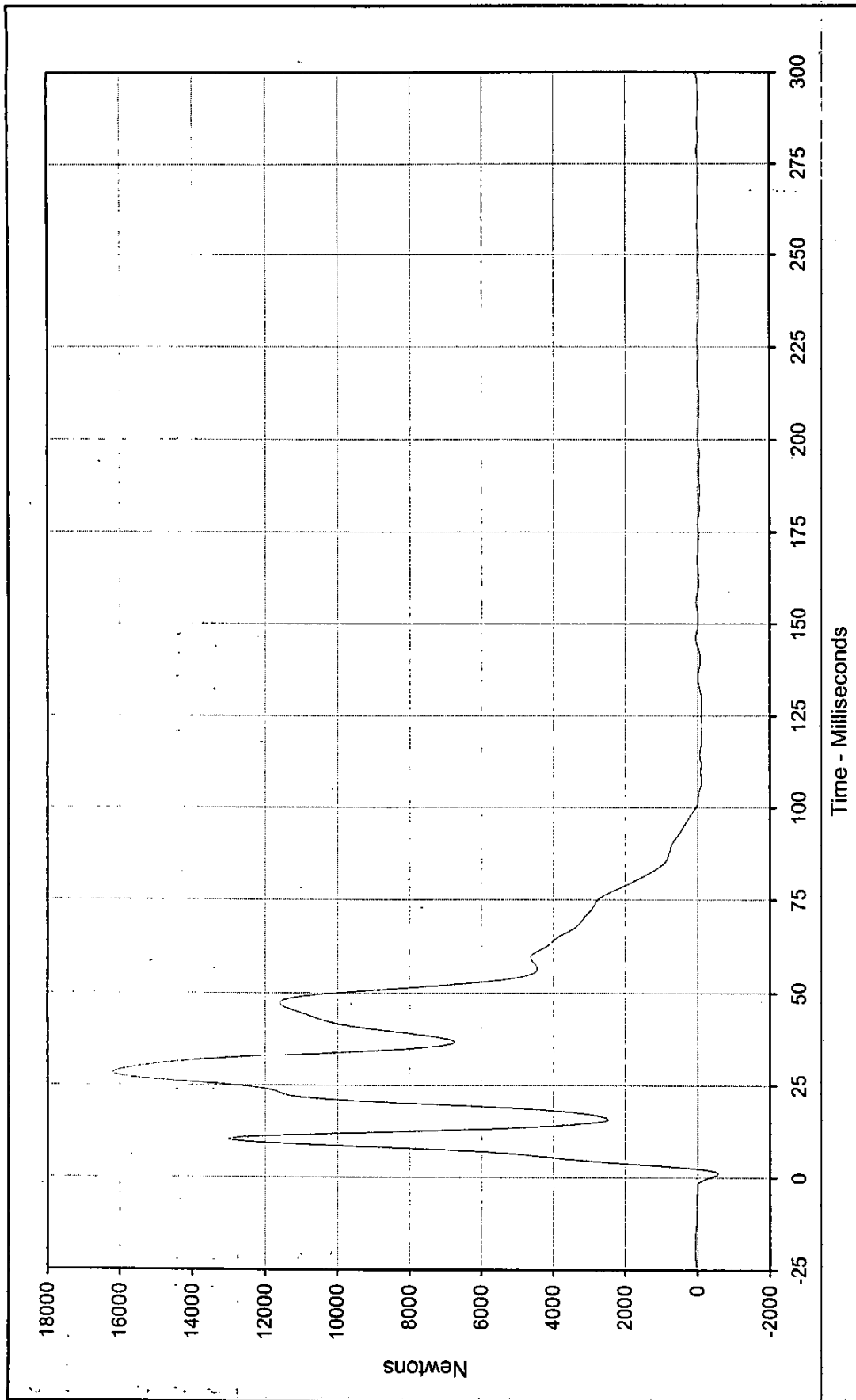
Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Barrier Force C3	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	28477.0 at 30.5 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-763.6 at 2.9 Milliseconds			
SAE Filter Class:	60			
Date of Test:	12/14/99			
Curve Number:	FIL-118			

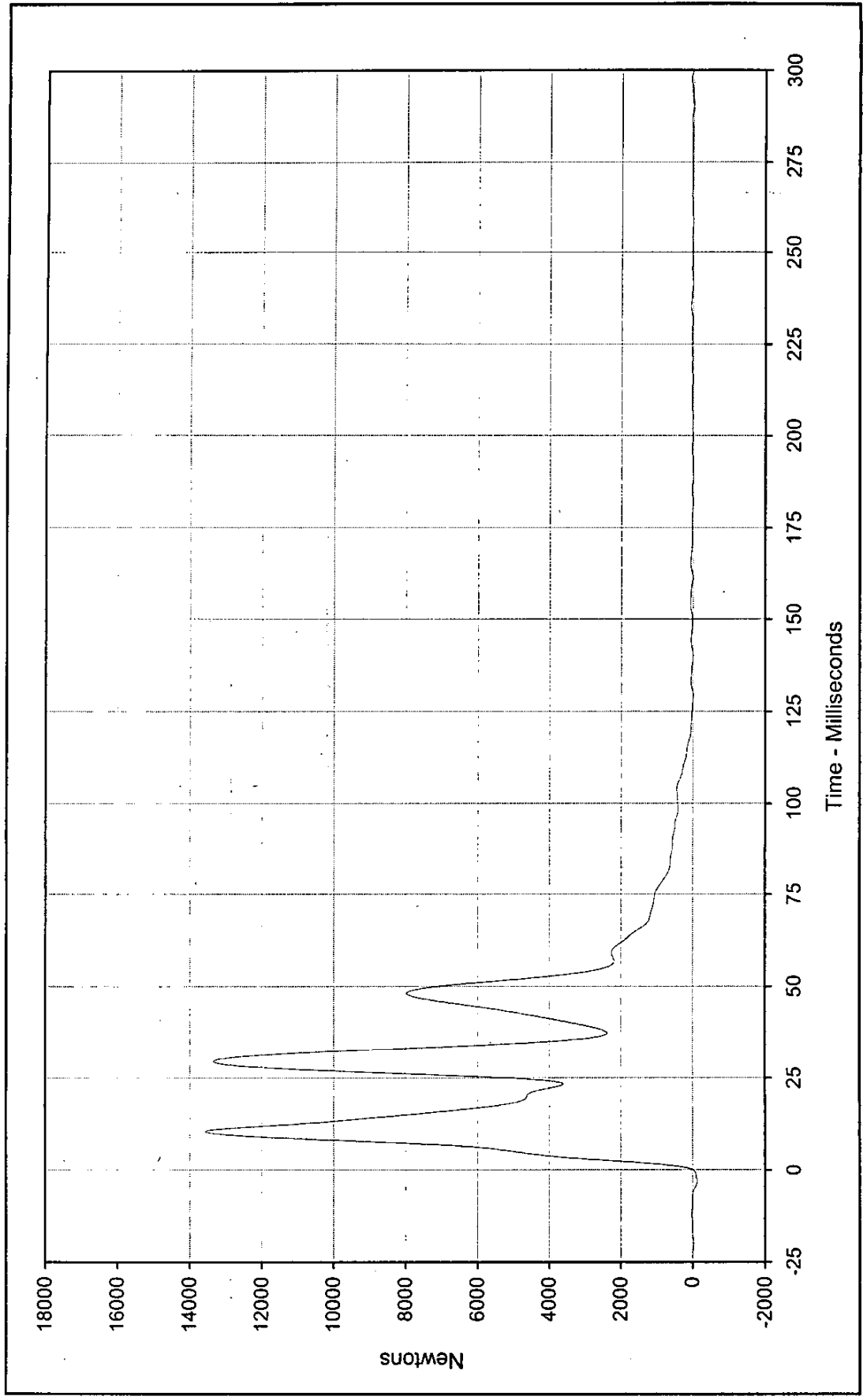




Curve Description: Barrier Force C4
 Maximum Value: 16197.8 at 28.4 Milliseconds
 Minimum Value: -572.7 at 1.1 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/99
 Curve Number: FIL-119

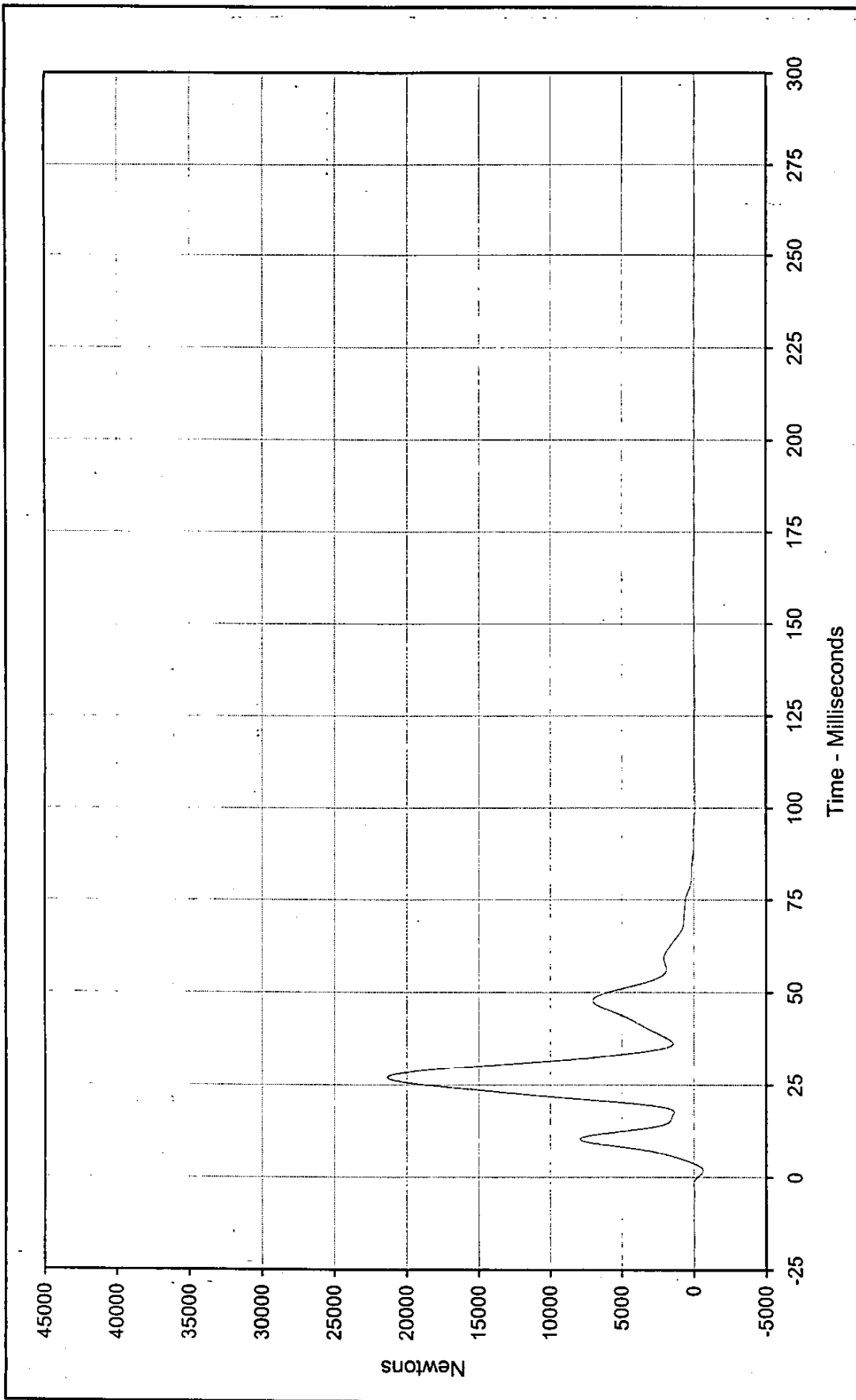
Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description:	Barrier Force C5	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	13569.1	at	10.5	Milliseconds
Minimum Value:	-14.1	at	129.2	Milliseconds
SAE Filter Class:	60	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Date of Test:	12/14/99			
Curve Number:	FIL-120			





Curve Description: Barrier Force C6

Maximum Value: 2139.2 at 27.1 Milliseconds

Minimum Value: -646.3 at 1.9 Milliseconds

SAE Filter Class: 60

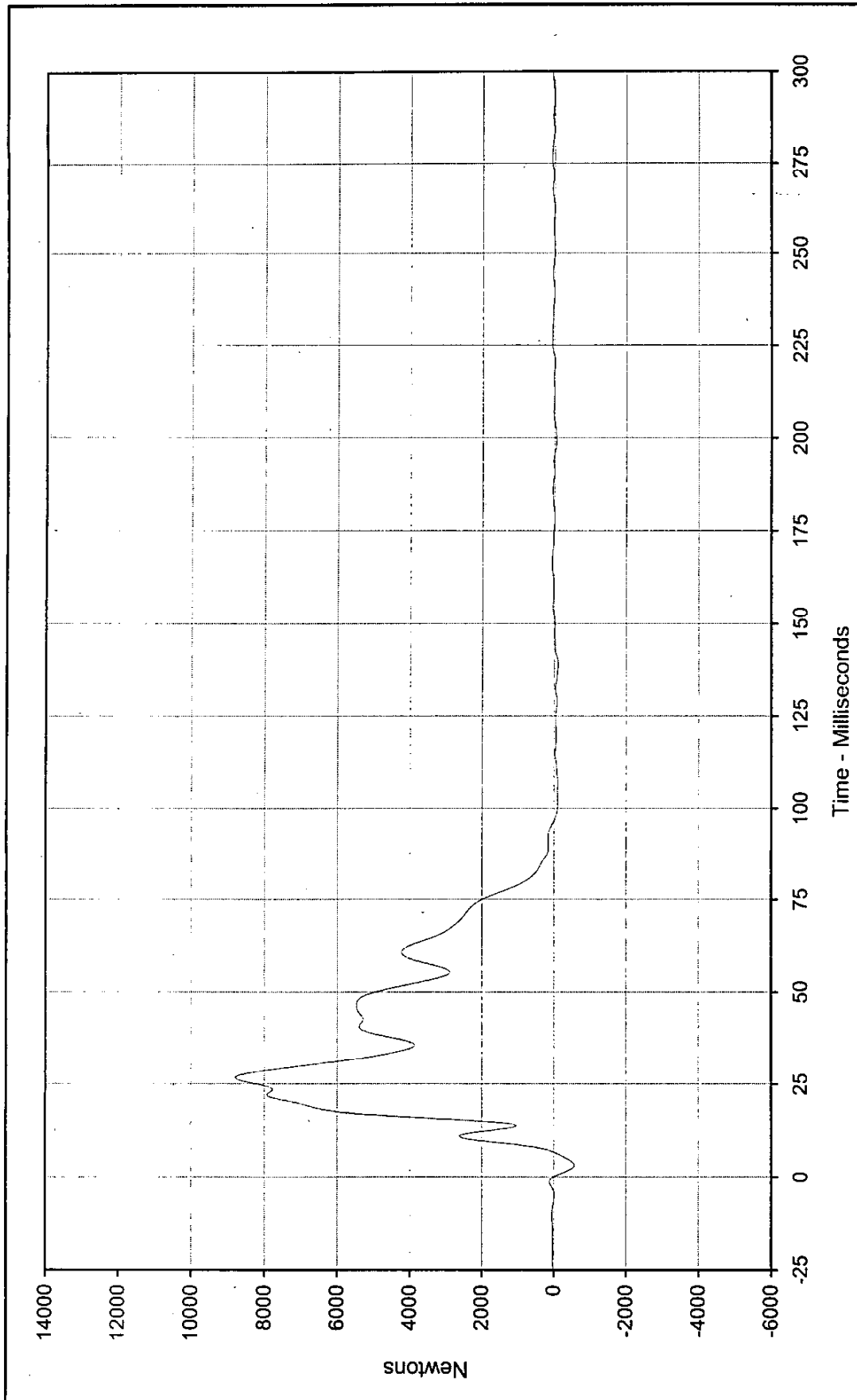
Date of Test: 12/14/99

Curve Number: FIL-121

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

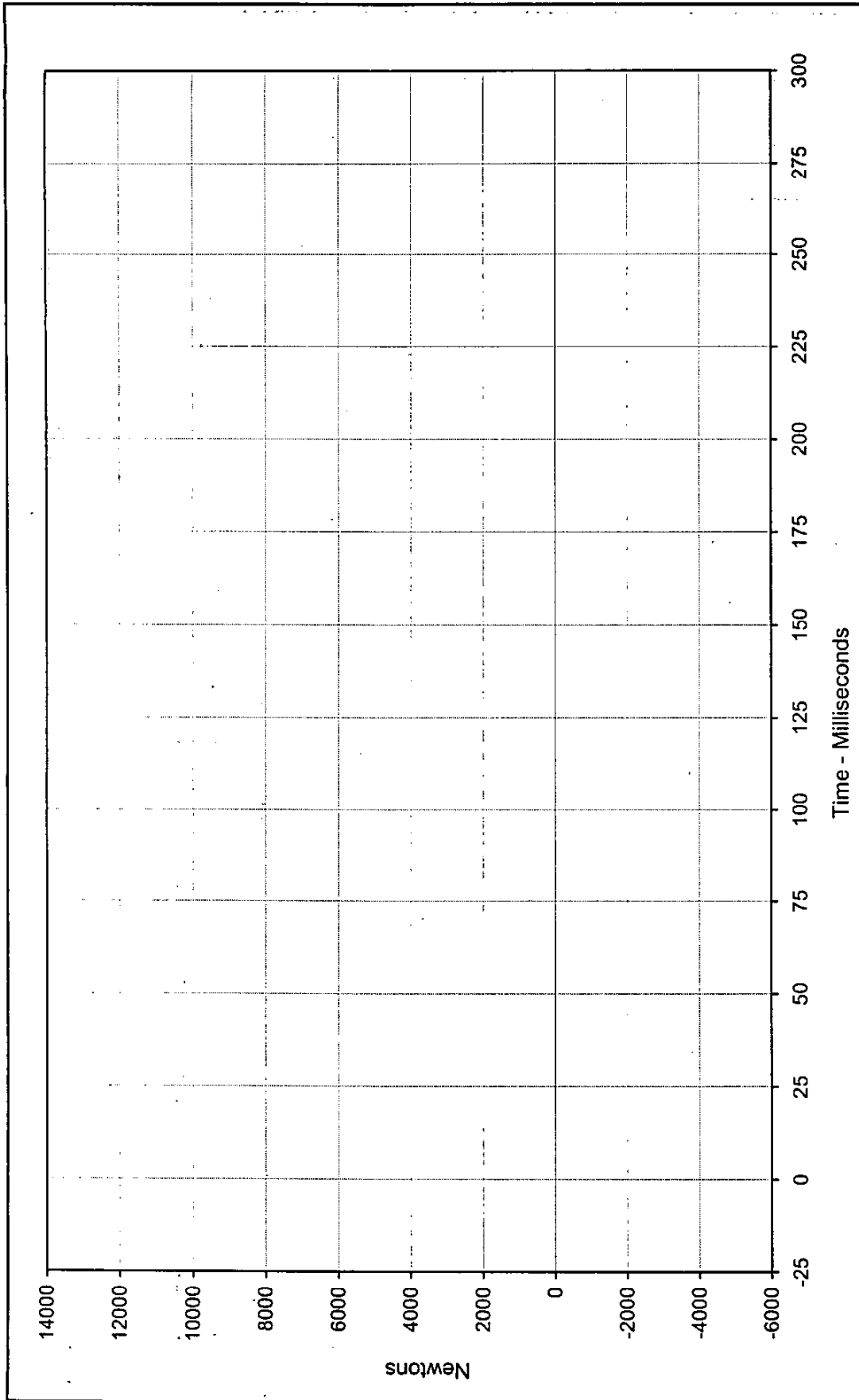
Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description: Barrier Force C7
 Maximum Value: 8795.6 at 26.7 Milliseconds
 Minimum Value: -571.6 at 3.1 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/99
 Curve Number: FIL-122



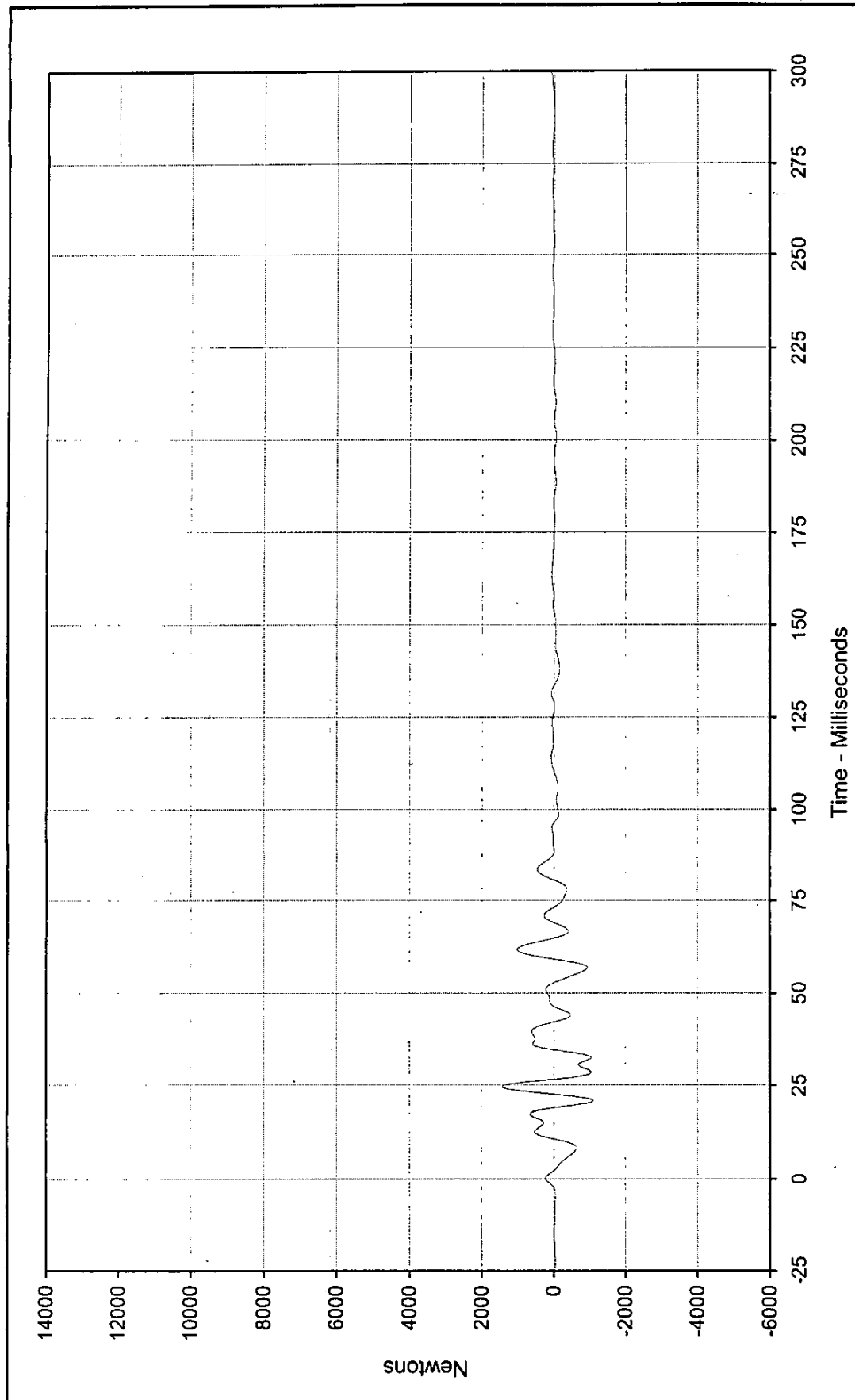


Curve Description: Barrier Force C8 * Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Maximum Value: 0.0 at 0.0 Milliseconds Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan
 Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 60
 Date of Test: 12/14/99
 Curve Number: FIL-123

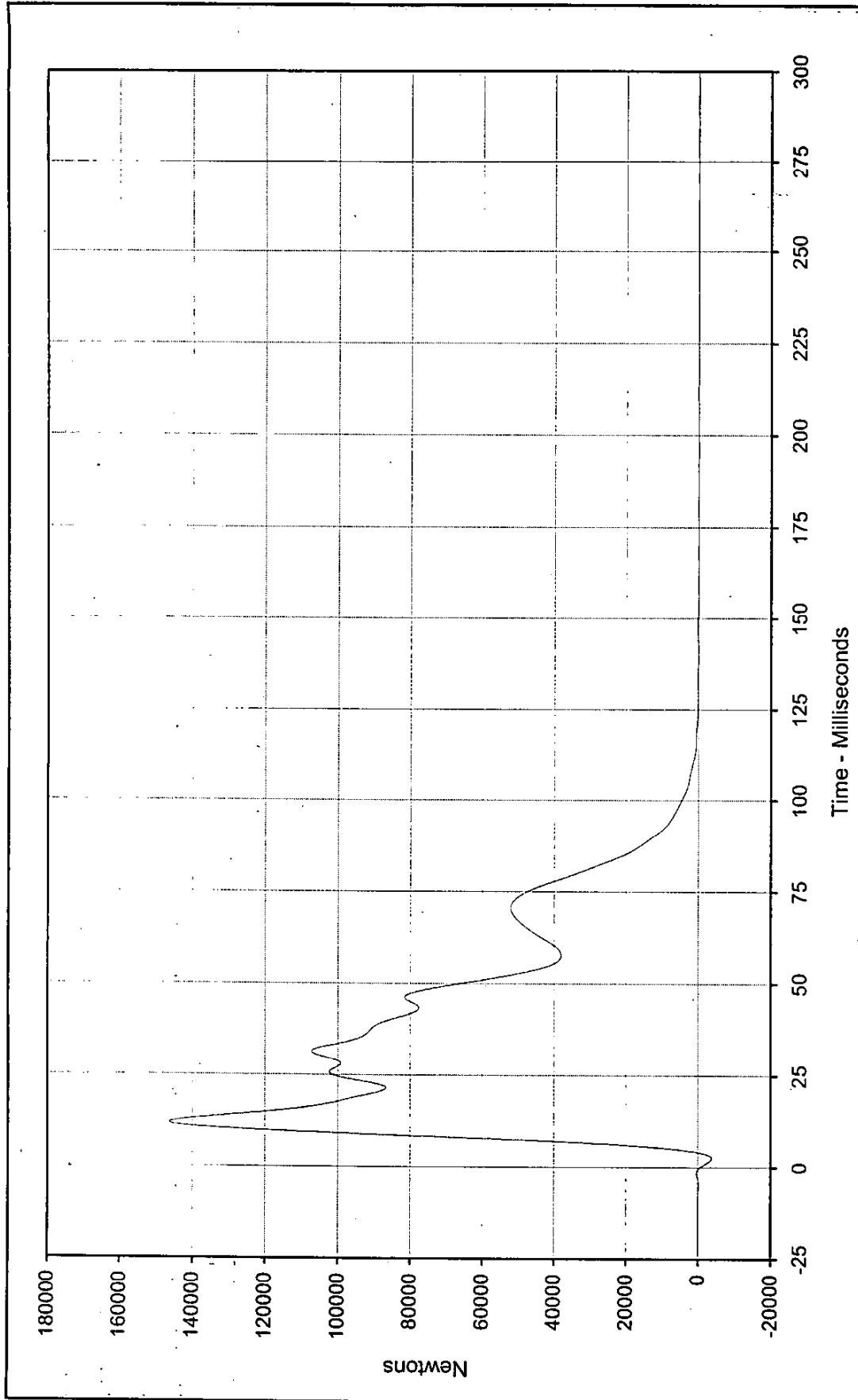


* Channel Failed, No Data



Curve Description:	Barrier Force C9		Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	1435.7	at 24.5 Milliseconds	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Minimum Value:	-1103.4	at 20.8 Milliseconds			
SAE Filter Class:	60				
Date of Test:	12/14/99				
Curve Number:	FIL-124				





Curve Description: Driver Barrier Force Sum Group 1

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Maximum Value: 146249.4 at 11.9 Milliseconds

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

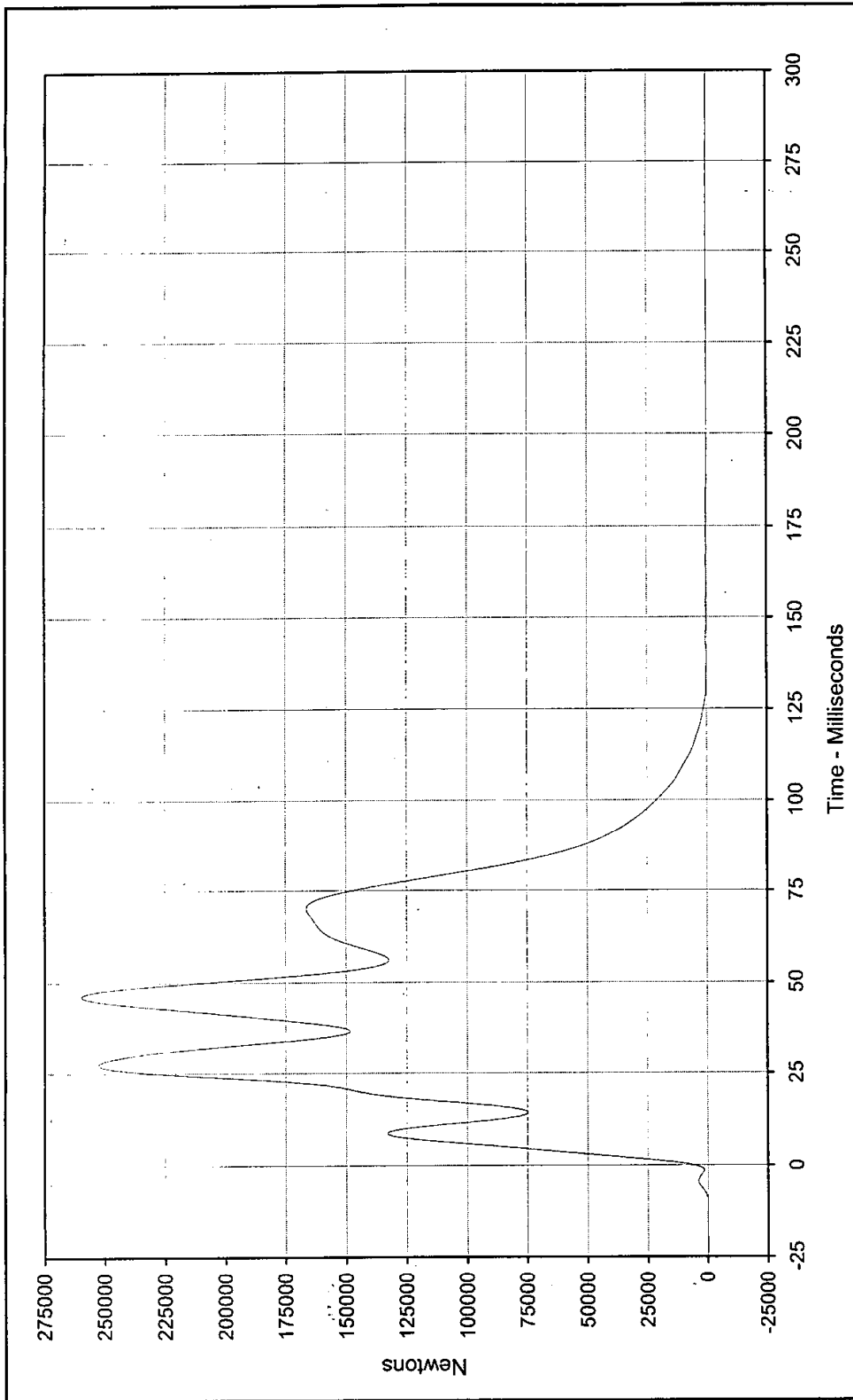
Minimum Value: -3826.5 at 2.5 Milliseconds

SAE Filter Class: 60

Date of Test: 12/14/99

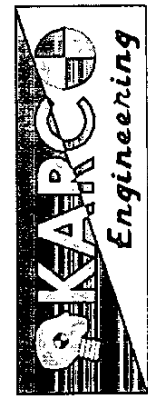
Curve Number: SUM-001

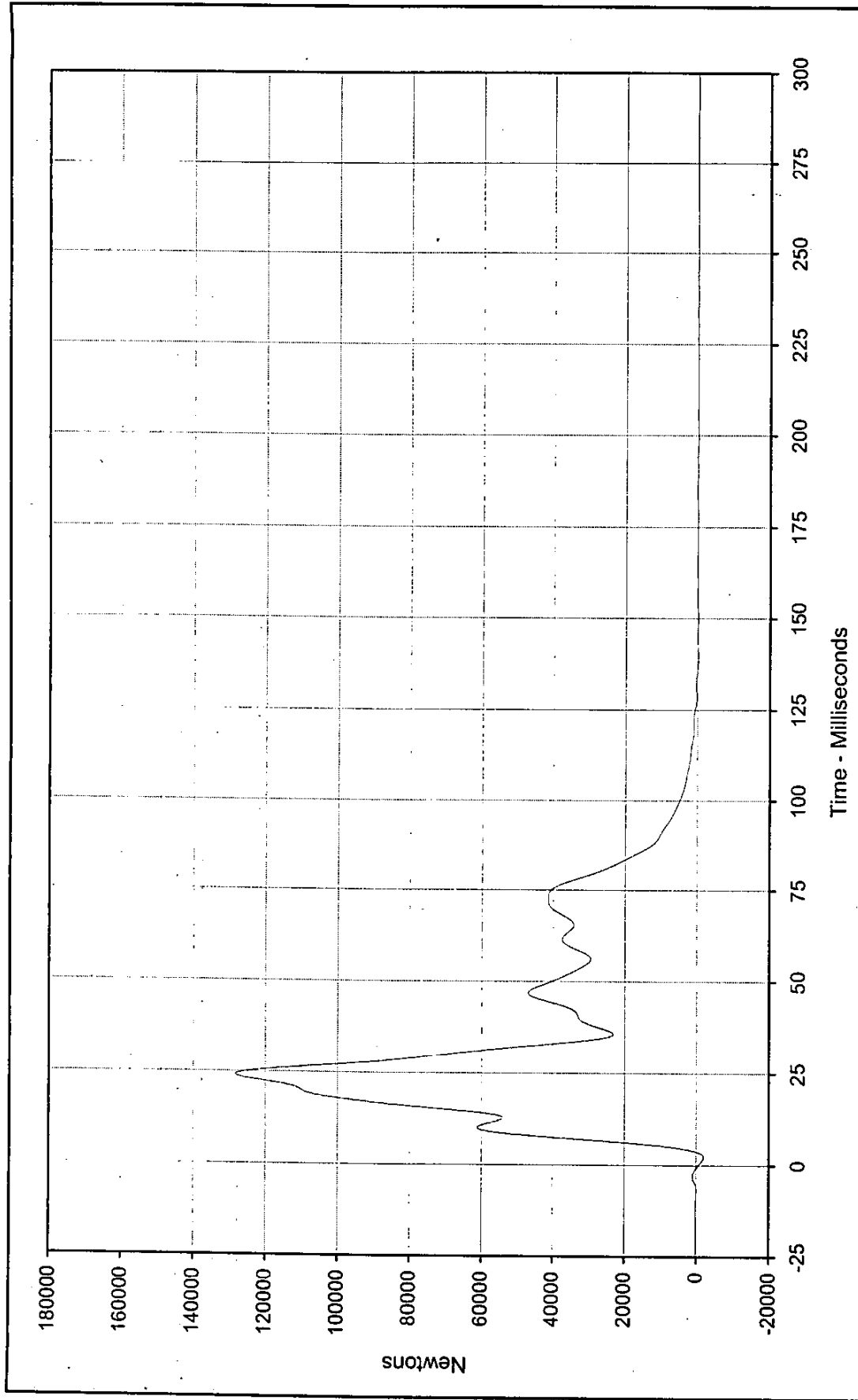




Curve Description: Driver Barrier Force Sum Group 2
 Maximum Value: 259808.6 at 46.3 Milliseconds
 Minimum Value: -129.2 at 139.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/99
 Curve Number: SUM-002

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

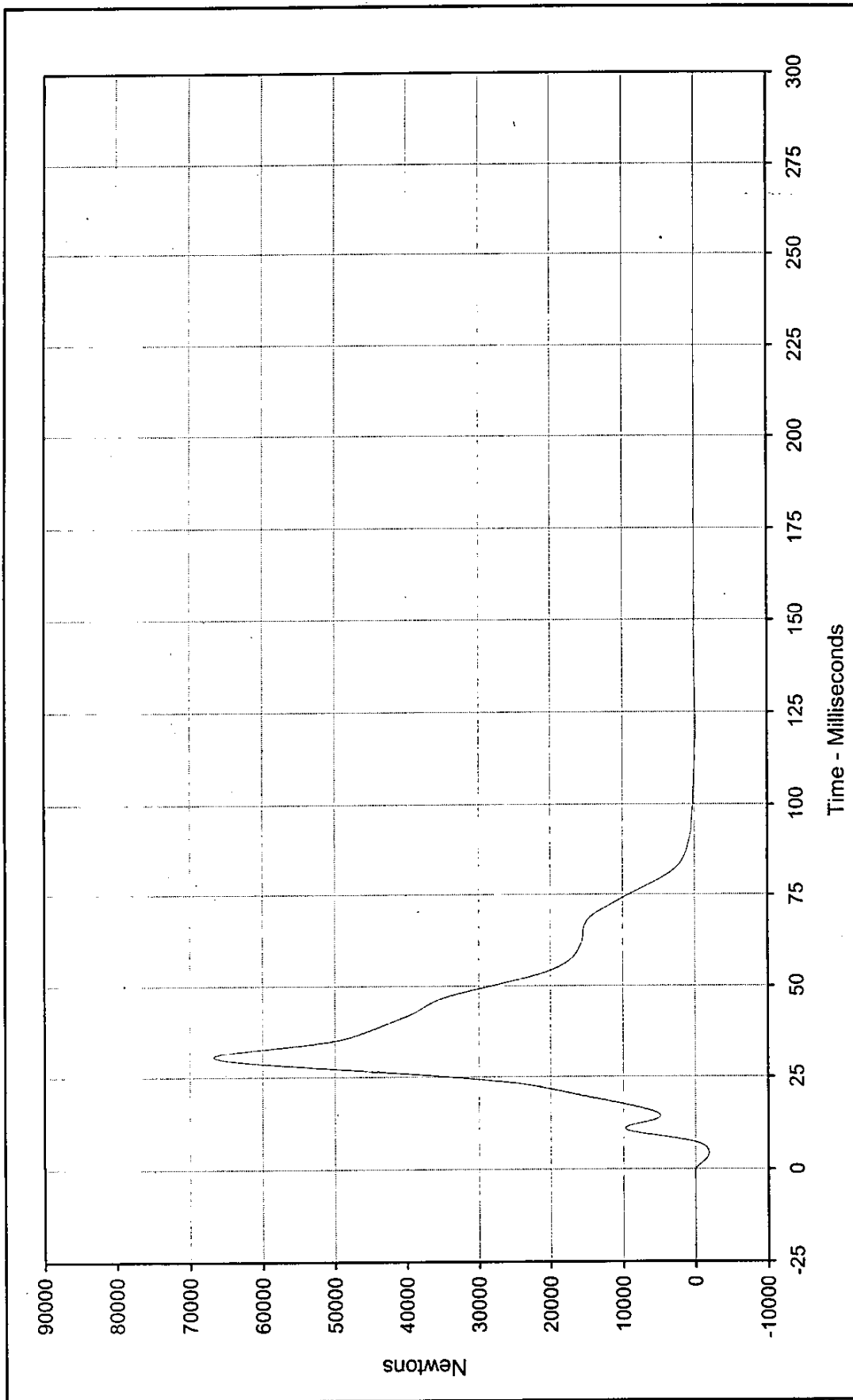




Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan



Curve Description: Driver Barrier Force Sum Group 3
 Maximum Value: 128333.5 at 24.2 Milliseconds
 Minimum Value: -2100.6 at 2.3 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/99
 Curve Number: SUM-003



Curve Description: Driver Barrier Force Sum Group 4 Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801

Maximum Value: 66728.1 at 30.6 Milliseconds Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

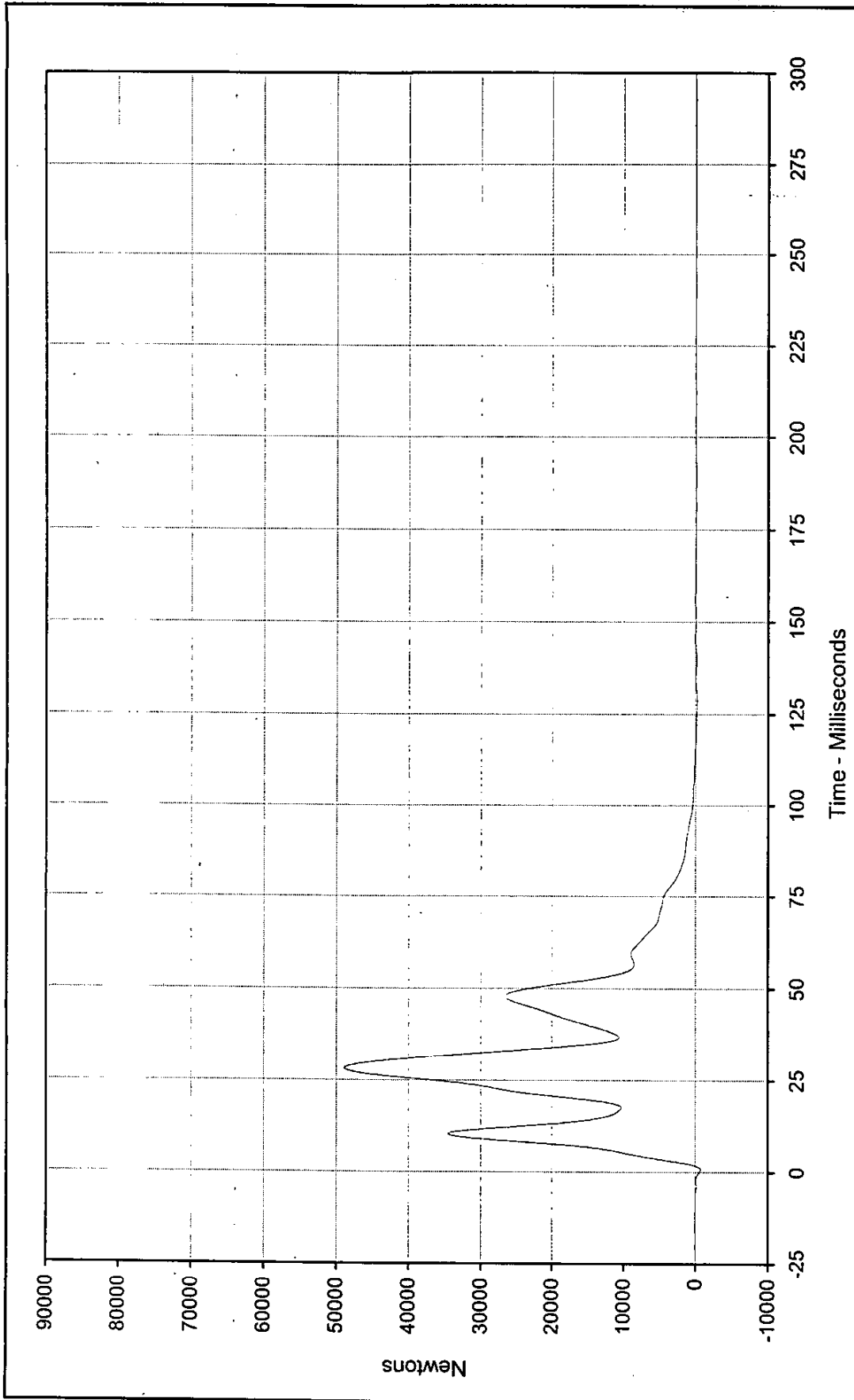
Minimum Value: -1841.7 at 4.5 Milliseconds

SAE Filter Class: 60

Date of Test: 12/14/99

Curve Number: SUM-004





Curve Description: Driver Barrier Force Sum Group 5

Test Program: 2000 NHTSA 35 mph NCAP

Maximum Value: 48903.5 at 28.2 Milliseconds

Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan

Test Program: 2000 NHTSA 35 mph NCAP

Minimum Value: -763.8 at 0.7 Milliseconds

SAE Filter Class: 60

Test Program: 2000 NHTSA 35 mph NCAP

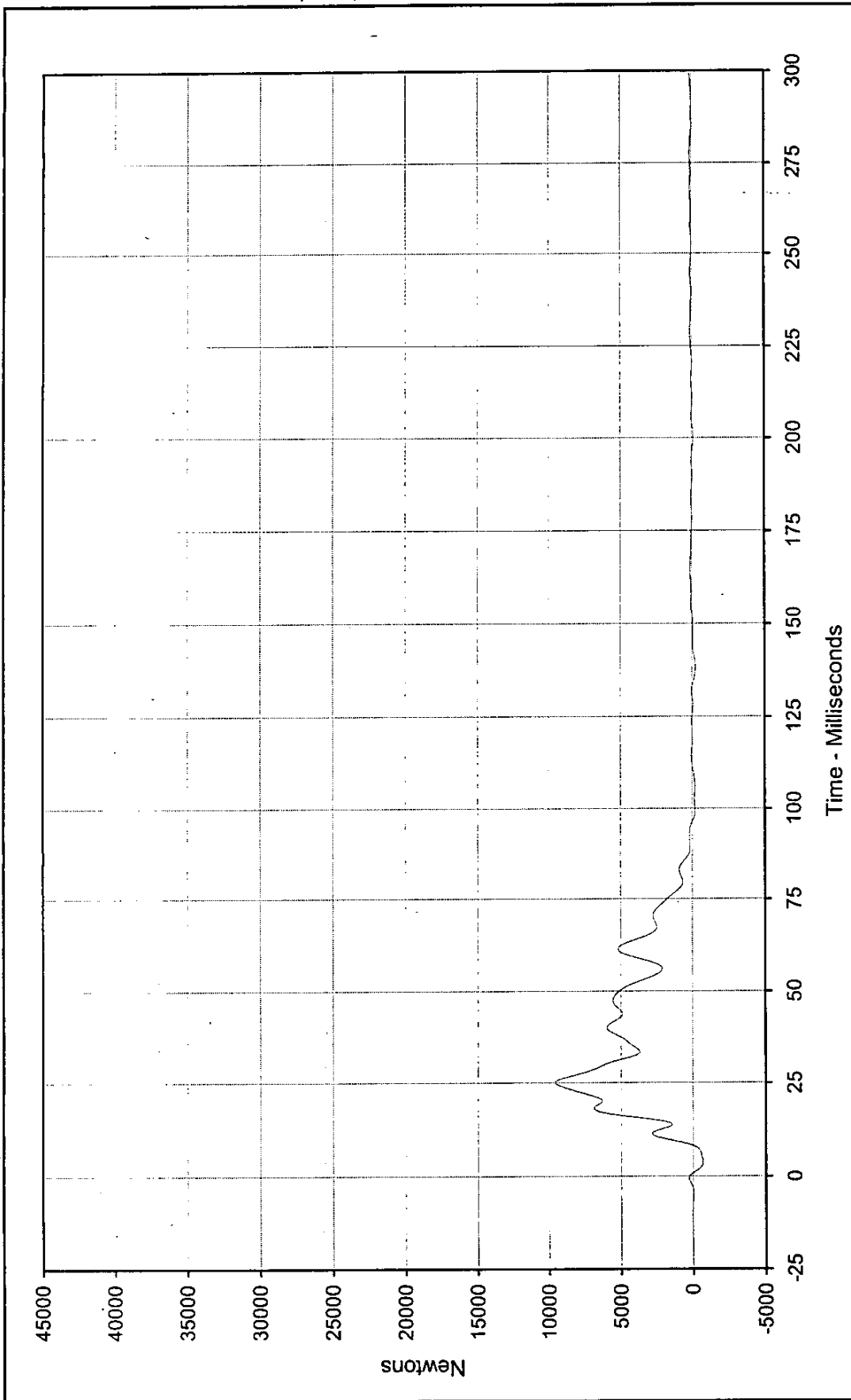
Date of Test: 12/14/99

Curve Number: SUM-005

Test Program: 2000 NHTSA 35 mph NCAP

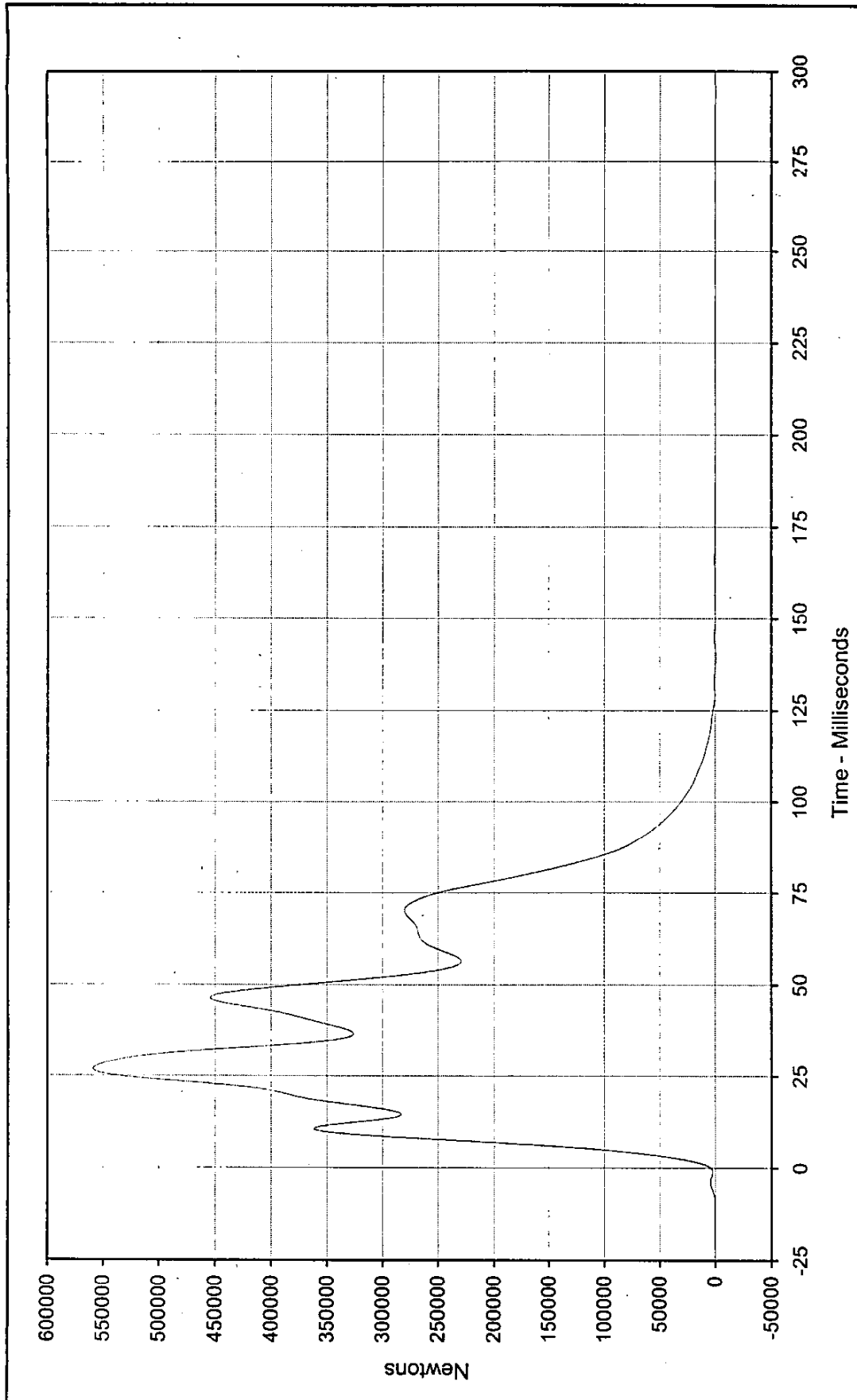
Curve Number: SUM-005





Curve Description:	Driver Barrier Force Sum Group 6	Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5801
Maximum Value:	9585.0	at	25.1	Milliseconds
Minimum Value:	-678.9	at	3.6	Milliseconds
SAE Filter Class:	60	Test Vehicle:	2000 Volkswagen Jetta 4 Door Sedan	
Date of Test:	12/14/99			
Curve Number:	SUM-006			

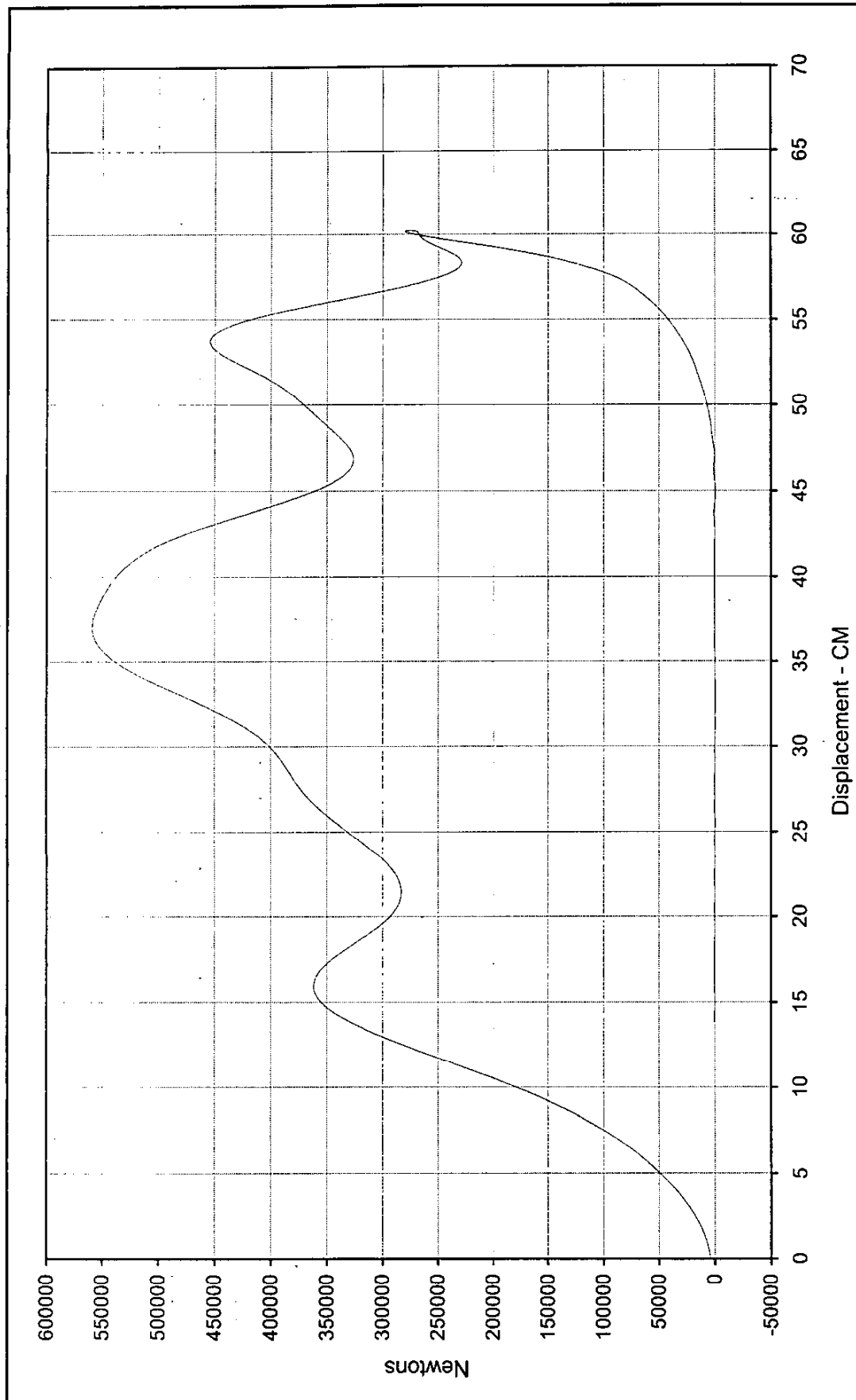




Curve Description: Driver Barrier Force Sum Total
 Maximum Value: 558992.6 at 26.8 Milliseconds
 Minimum Value: -809.8 at 139.3 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/14/99
 Curve Number: SUM-007

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan





Curve Description: Sum Force Total vs. Dynamic Crush
 Maximum Displ.: 60.2 at 68.2 Milliseconds
 Maximum Force: 558992.6 at 26.8 Milliseconds
 Measured Energy: 190,099 joules
 Date of Test: 12/14/99
 Curve Number: XVY-001

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5801
 Test Vehicle: 2000 Volkswagen Jetta 4 Door Sedan



BARRIER LOAD CELL SUMMARY DATATest Vehicle: 2000 Volkswagen Jetta 4 Door SedanNHTSA No.: MY5801Test Program: 2000 NHTSA 35 mph NCAPTest Date: 12/14/99**BARRIER LOAD CELL PEAK FORCES**

Location	Units	Max	Time	Min	Time
Barrier Force A2	Newtons	3274.5	10.6	-1651.9	15.2
Barrier Force A3	Newtons	20378.6	30.9	-2679.0	15.2
Barrier Force A4	Newtons	30866.2	71.5	-1498.6	2.9
Barrier Force A5	Newtons	14223.9	23.3	-1438.6	3.1
Barrier Force A6	Newtons	20390.0	25.7	-1570.7	3.0
Barrier Force A7	Newtons	26803.1	24.5	-2071.3	15.6
Barrier Force A8	Newtons	1195.4	10.3	-1069.0	15.7
Barrier Force A9	Newtons	727.6	38.1	-1031.2	34.4
Barrier Force B2	Newtons	15452.9	10.4	-1356.9	3.6
Barrier Force B3	Newtons	128340.0	12.3	-1299.8	1.5
Barrier Force B4	Newtons	87946.1	45.1	-65.6	199.4
Barrier Force B5	Newtons	53127.5	46.3	-97.8	239.4
Barrier Force B6	Newtons	102037.0	26.7	-27.5	299.9
Barrier Force B7	Newtons	97624.9	23.3	-1310.3	1.6
Barrier Force B8	Newtons	6292.8	11.0	-672.0	3.9
Barrier Force B9	Newtons	938.9	37.8	-1413.1	21.1
Barrier Force C2	Newtons	38259.2	30.6	-1444.6	5.5
Barrier Force C3	Newtons	28477.0	30.5	-763.6	2.9
Barrier Force C4	Newtons	16197.8	28.4	-572.7	1.1
Barrier Force C5	Newtons	13569.1	10.5	-14.1	129.2
Barrier Force C6	Newtons	21339.2	27.1	-646.3	1.9
Barrier Force C7	Newtons	8795.6	26.7	-571.6	3.1
Barrier Force C8	Newtons	0.0	0.0	0.0	0.0 *
Barrier Force C9	Newtons	1435.7	24.5	-1103.4	20.8
Barrier Force Sum Group 1	Newtons	146249.4	11.9	-3826.5	2.5
Barrier Force Sum Group 2	Newtons	259808.6	46.3	-129.2	139.0
Barrier Force Sum Group 3	Newtons	128333.5	24.2	-2100.6	2.3
Barrier Force Sum Group 4	Newtons	66728.1	30.6	-1841.7	4.5
Barrier Force Sum Group 5	Newtons	48903.5	28.2	-763.8	0.7
Barrier Force Sum Group 6	Newtons	9585.0	25.1	-678.9	3.6
Barrier Force Sum Total	Newtons	558992.6	26.8	-809.8	139.3

* Channel Failed, No Data

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

APPENDIX D
INSTRUMENTATION DATA CHANNEL ASSIGNMENTS

2000 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 35
12/14/99
2000 Volkswagen Jetta 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
1	HEAD, PRIMARY	X	GPAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
2	HEAD, PRIMARY	Y	GPAC002	Accel., 1/2 bridge	Endevco	7264-2000	G
3	HEAD, PRIMARY	Z	GPAC003	Accel., 1/2 bridge	Endevco	7264-2000	G
4	HEAD, REDUNDANT	X	GPAC032	Accel., 1/2 bridge	Endevco	7264-2000	G
5	HEAD, REDUNDANT	Y	GPAC021	Accel., 1/2 bridge	Endevco	7264-2000	G
6	HEAD, REDUNDANT	Z	GPAC026	Accel., 1/2 bridge	Endevco	7264-2000	G
7	NECK FORCE	X	GPUN01FX	Load cell, six axis neck	R. A. Denton	1716A	N
8	NECK FORCE	Y	GPUN01FY	Load cell, six axis neck	R. A. Denton	1716A	N
9	NECK FORCE	Z	GPUN01FZ	Load cell, six axis neck	R. A. Denton	1716A	N
10	NECK MOMENT	X	GPUN01MX	Load cell, six axis neck	R. A. Denton	1716A	Nm
11	NECK MOMENT	Y	GPUN01MY	Load cell, six axis neck	R. A. Denton	1716A	Nm
12	NECK MOMENT	Z	GPUN01MZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
13	CHEST , PRIMARY	X	GPAC005	Accel., 1/2 bridge	Endevco	7264-2000	G
14	CHEST , PRIMARY	Y	GPAC011	Accel., 1/2 bridge	Endevco	7264-2000	G
15	CHEST , PRIMARY	Z	GPAC010	Accel., 1/2 bridge	Endevco	7264-2000	G
16	CHEST , REDUNDANT	X	GPAC034	Accel., 1/2 bridge	Endevco	7264-2000	G
17	CHEST , REDUNDANT	Y	GPAC023	Accel., 1/2 bridge	Endevco	7264-2000	G
18	CHEST , REDUNDANT	Z	GPAC020	Accel., 1/2 bridge	Endevco	7264-2000	G
19	CHEST DISPLACEMENT	X	GPCP002	Rotary Pot Chest	Servo	14CBI	MM
20	PELVIS, PRIMARY	X	GPAC025	Accel., 1/2 bridge	Endevco	7264-2000	G
21	PELVIS, PRIMARY	Y	GPAC022	Accel., 1/2 bridge	Endevco	7264-2000	G
22	PELVIS, PRIMARY	Z	GPAC019	Accel., 1/2 bridge	Endevco	7264-2000	G
23	LEFT FEMUR FORCE	Z	KEFF003	Load cell, Femur	R.A. Denton	2121	N
24	RIGHT FEMUR FORCE	Z	KEFF004	Load cell, Femur	R.A. Denton	2121	N

2000 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 35
12/14/99
2000 Volkswagen Jetta 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
25	UP. TIBIA LEFT MOM.	X	GPOT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
26	UP. TIBIA LEFT MOM.	Y	GPOT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
27	UP. TIBIA RIGHT MOM.	X	GPOT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
28	UP. TIBIA RIGHT MOM.	Y	GPOT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
29	LWR. TIBIA LEFT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
30	LWR. TIBIA LEFT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
31	LWR. TIBIA LEFT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
32	LWR. TIBIA RIGHT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
33	LWR. TIBIA RIGHT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
34	LWR. TIBIA RIGHT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
35	FOOT LEFT	X	KEIC002X	Accel., Foot Triax	I.C. Sensor	3031-500	G
36	FOOT LEFT	Y	KEIC002Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
37	FOOT LEFT	Z	KEIC002Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
38	FOOT RIGHT	X	KEIC001X	Accel., Foot Triax	I.C. Sensor	3031-500	G
39	FOOT RIGHT	Y	KEIC001Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
40	FOOT RIGHT	Z	KEIC001Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
41	LAP BELT FORCE	X	KELC003	Load cell, Seat belt	Lebow	3371	N
42	SHOULDER BELT FORCE	X	KELC004	Load cell, Seat belt	Lebow	3371	N
43	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	MM
44	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

2000 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 34
12/14/99
2000 Volkswagen Jetta 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
45	HEAD, PRIMARY	X	KEAC039	Accel., 1/2 bridge	Endevco	7264-2000	G
46	HEAD, PRIMARY	Y	KEAC038	Accel., 1/2 bridge	Endevco	7264-2000	G
47	HEAD, PRIMARY	Z	KEAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
48	HEAD, REDUNDANT	X	KEAC031	Accel., 1/2 bridge	Endevco	7264-2000	G
49	HEAD, REDUNDANT	Y	KEAC032	Accel., 1/2 bridge	Endevco	7264-2000	G
50	HEAD, REDUNDANT	Z	KEAC026	Accel., 1/2 bridge	Endevco	7264-2000	G
51	NECK FORCE	X	GPUN02FX	Load cell, six axis neck	R. A. Denton	1716A	N
52	NECK FORCE	Y	GPUN02FY	Load cell, six axis neck	R. A. Denton	1716A	N
53	NECK FORCE	Z	GPUN02FZ	Load cell, six axis neck	R. A. Denton	1716A	N
54	NECK MOMENT	X	GPUN02MX	Load cell, six axis neck	R. A. Denton	1716A	Nm
55	NECK MOMENT	Y	GPUN02MY	Load cell, six axis neck	R. A. Denton	1716A	Nm
56	NECK MOMENT	Z	GPUN02MZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
57	CHEST, PRIMARY	X	GPAC031	Accel., 1/2 bridge	Endevco	7264-2000	G
58	CHEST, PRIMARY	Y	GPAC024	Accel., 1/2 bridge	Endevco	7264-2000	G
59	CHEST, PRIMARY	Z	GPAC029	Accel., 1/2 bridge	Endevco	7264-2000	G
60	CHEST, REDUNDANT	X	KEAC023	Accel., 1/2 bridge	Endevco	7264-200	G
61	CHEST, REDUNDANT	Y	KEAC022	Accel., 1/2 bridge	Endevco	7264-200	G
62	CHEST, REDUNDANT	Z	KEAC024	Accel., 1/2 bridge	Endevco	7264-200	G
63	CHEST DISPLACEMENT	X	GPCP001	Rotary Pot Chest	Servo	14CBI	MM
64	PELVIS, PRIMARY	X	KEAC019	Accel., 1/2 bridge	Endevco	7264-200	G
65	PELVIS, PRIMARY	Y	KEAC020	Accel., 1/2 bridge	Endevco	7264-200	G
66	PELVIS, PRIMARY	Z	KEAC021	Accel., 1/2 bridge	Endevco	7264-200	G
67	LEFT FEMUR FORCE	Z	KEFF001	Load cell, Femur	R.A. Denton	2121	N
68	RIGHT FEMUR FORCE	Z	KEFF002	Load cell, Femur	R.A. Denton	2121	N

2000 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 34
12/14/99

2000 Volkswagen Jetta 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
69	UP. TIBIA LEFT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
70	UP. TIBIA LEFT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
71	UP. TIBIA RIGHT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
72	UP. TIBIA RIGHT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
73	LWR. TIBIA LEFT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
74	LWR. TIBIA LEFT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
75	LWR. TIBIA LEFT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
76	LWR. TIBIA RIGHT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
77	LWR. TIBIA RIGHT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
78	LWR. TIBIA RIGHT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
79	FOOT LEFT	X	KEIC003X	Accel., Foot Triax	I.C. Sensor	3031-500	G
80	FOOT LEFT	Y	KEIC003Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
81	FOOT LEFT	Z	KEIC003Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
82	FOOT RIGHT	X	KEIC004X	Accel., Foot Triax	I.C. Sensor	3031-500	G
83	FOOT RIGHT	Y	KEIC004Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
84	FOOT RIGHT	Z	KEIC004Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
85	LAP BELT FORCE	X	KELC001	Load cell, Seat belt	Lebow	3371	N
86	SHOULDER BELT FORCE	X	KELC002	Load cell, Seat belt	Lebow	3371	N
87	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celco	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
12/14/99
2000 Volkswagen Jetta 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
89	Left Rear X-Member (Pri.)	X	KEVA002	Accel., Pre-Amp	I.C. S/Karco	3031-500	G
90	Right Rear X-Member (Pri.)	X	KEVA006	Accel., Vehicle block	I.C. Sensor	3031-200	G
91	Engine Top	X	KEVA001	Accel., Vehicle block	I.C. Sensor	3031-500	G
92	Engine Bottom	X	KEVA007	Accel., Vehicle block	I.C. Sensor	3031-500	G
93	Left Brake Caliper	X	KEVA008	Accel., Vehicle block	I.C. Sensor	3031-500	G
94	Right Brake Caliper	X	KEVA003	Accel., Vehicle block	I.C. Sensor	3031-500	G
95	Instrument Panel	X	KEVA005	Accel., Vehicle block	I.C. Sensor	3031-500	G
96	Left Rear X-Member (Rednt.)	X	KEVA011	Accel., Vehicle block	I.C. Sensor	3031-200	G
97	ZERO REFERENCE	N/A	N/A	N/A	N/A	N/A	N/A

2000 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Rigid Load Cell Barrier
12/14/99
2000 Volkswagen Jetta 4 Door Sedan

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

2000 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Rigid Load Cell Barrier
12/14/99
2000 Volkswagen Jetta 4 Door Sedan

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

APPENDIX E
DUMMY CALIBRATION DATA



Hybrid III Calibration Data Sheet

50TH Percentile Male

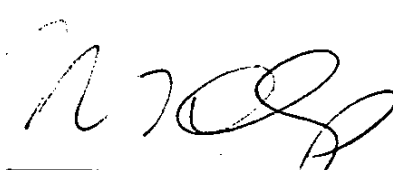
Left Knee Impact Test

ATD Serial No.: 34

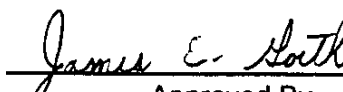
Part Serial No.: n/a

Test I.D.: LK11A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	2.073 to 2.134	2.091	Pass
Peak Probe Force	Newtons	4715 to 5782	5368.1	Pass
Overall Test Results				Pass



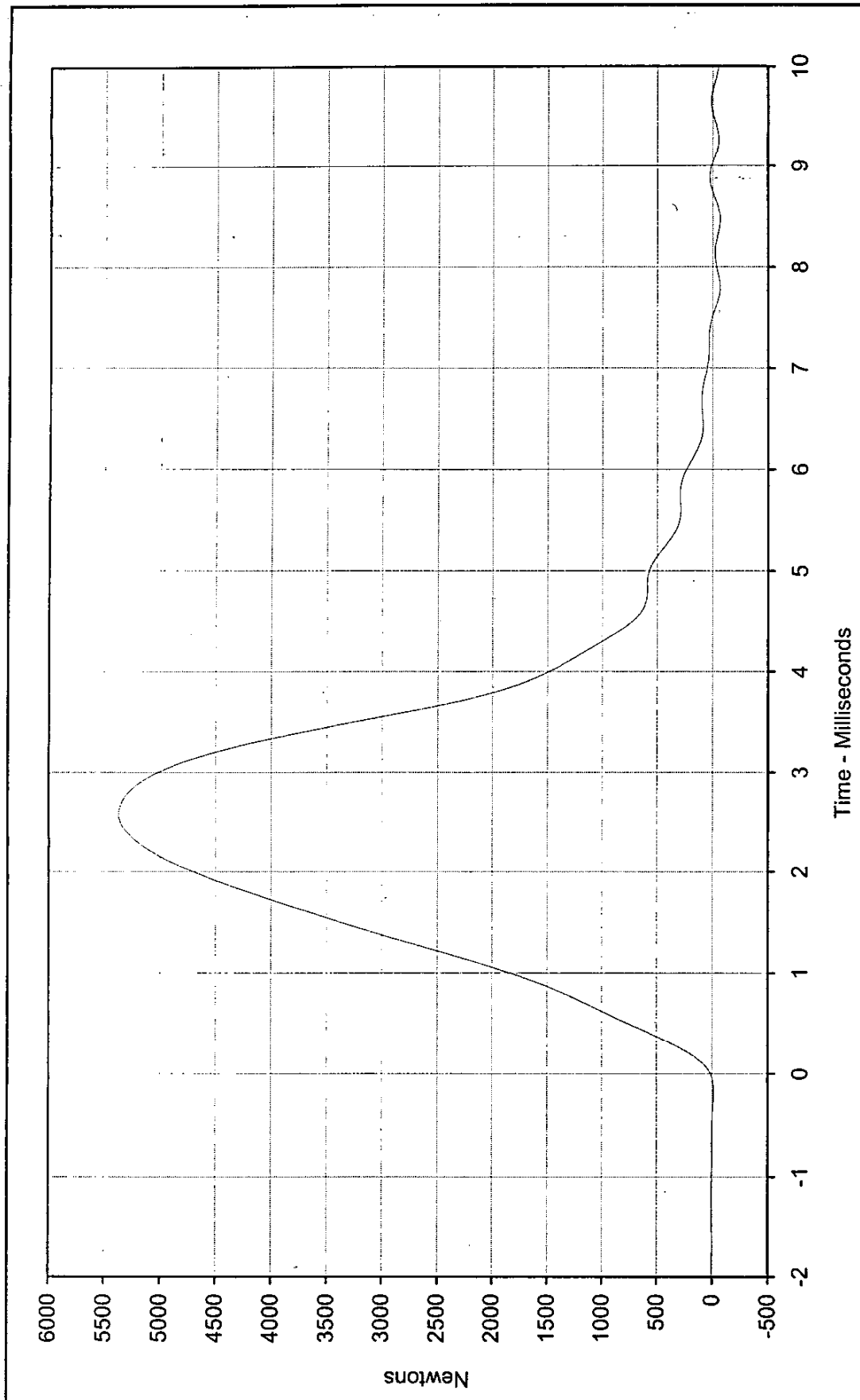
Laboratory Technician



Approved By

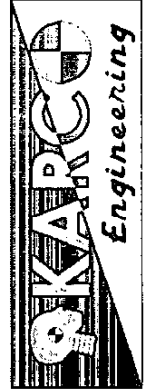
November 19, 1999
Test Date

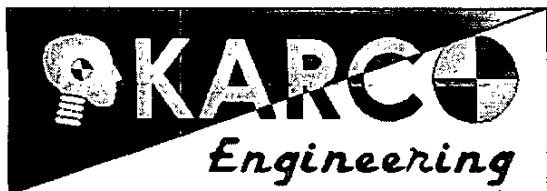
11/19/99
Date



Curve Description: Hybrid III Left Knee Impact Test
 Testing Program: Part S/N: n/a Test I.D.: LK11A

Probe Force
 Maximum Value: 5368.1 at 2.6 Milliseconds
 Minimum Value: -66.5 at 7.8 Milliseconds
 SAE Filter Class: 600
 Date of Test: 11/19/99
 ATD Serial No.: 34





Hybrid III Calibration Data Sheet

50TH Percentile Male

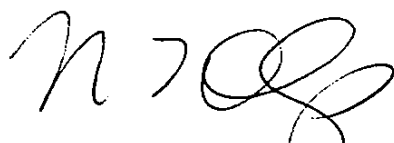
Right Knee Impact Test

ATD Serial No.: 34

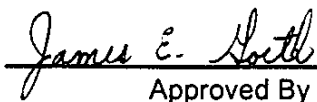
Part Serial No.: n/a

Test I.D.: RK11A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	2.073 to 2.134	2.092	Pass
Peak Probe Force	Newtons	4715 to 5782	5448.0	Pass
Overall Test Results				Pass



Laboratory Technician



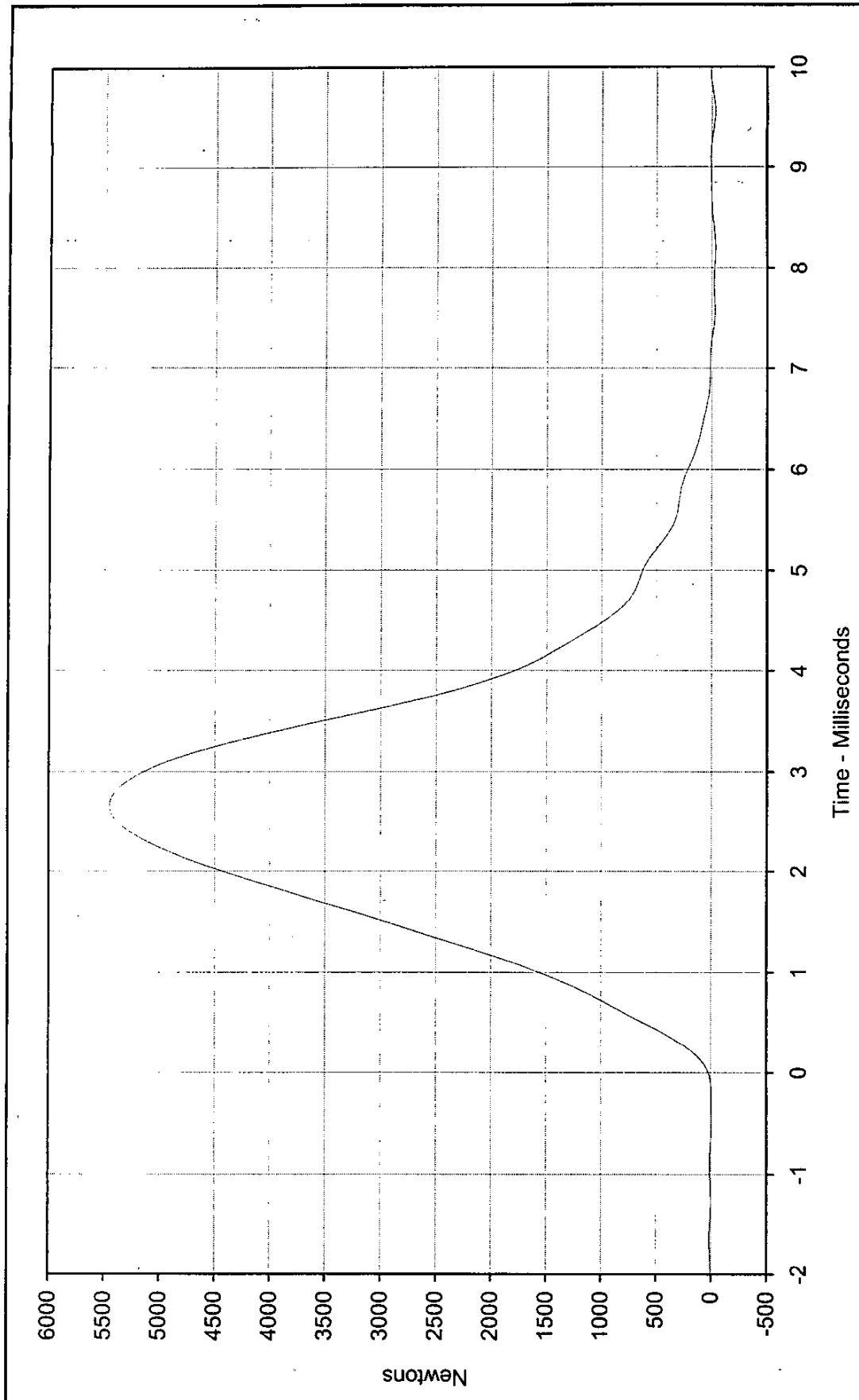
Approved By

November 19, 1999

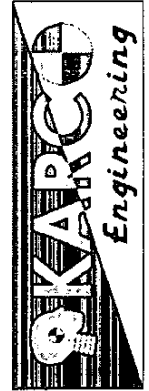
Test Date

11/19/99

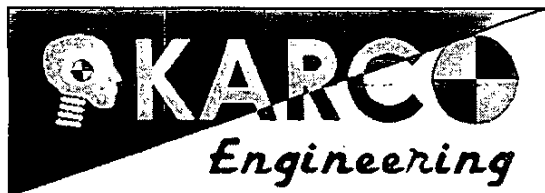
Date



Testing Program: Hybrid III Right Knee Impact Test
 Test Information: Part S/N: n/a Test I.D.: RK11A



Curve Description: Probe Force
 Maximum Value: 5448.0 at 2.7 Milliseconds
 Minimum Value: -29.7 at 7.6 Milliseconds
 SAE Filter Class: 600
 Date of Test: 11/19/99
 ATD Serial No.: 34



Hybrid III Calibration Data Sheet

50TH Percentile Male

Head Drop Calibration

ATD Serial No.: 034

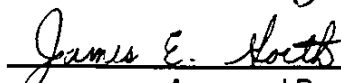
Part Serial No.: n/a

Test I.D.: HD11B

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	25	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	269.6	Pass
Peak Lateral Acceleration	G's	≤15.0	9.4	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass



Laboratory Technician



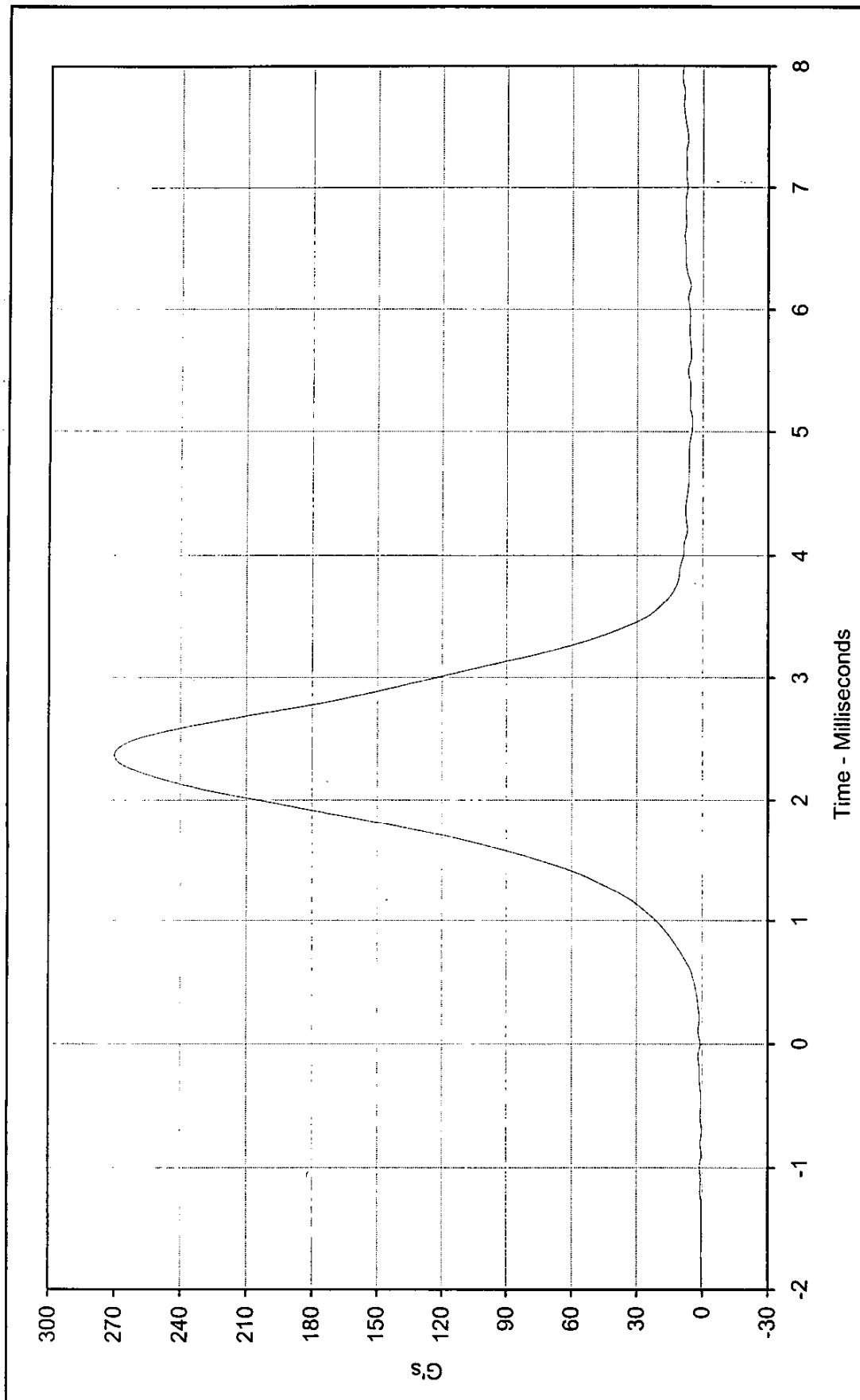
Approved By

November 18, 1999

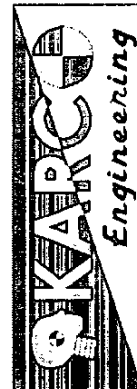
Test Date

11/17/99

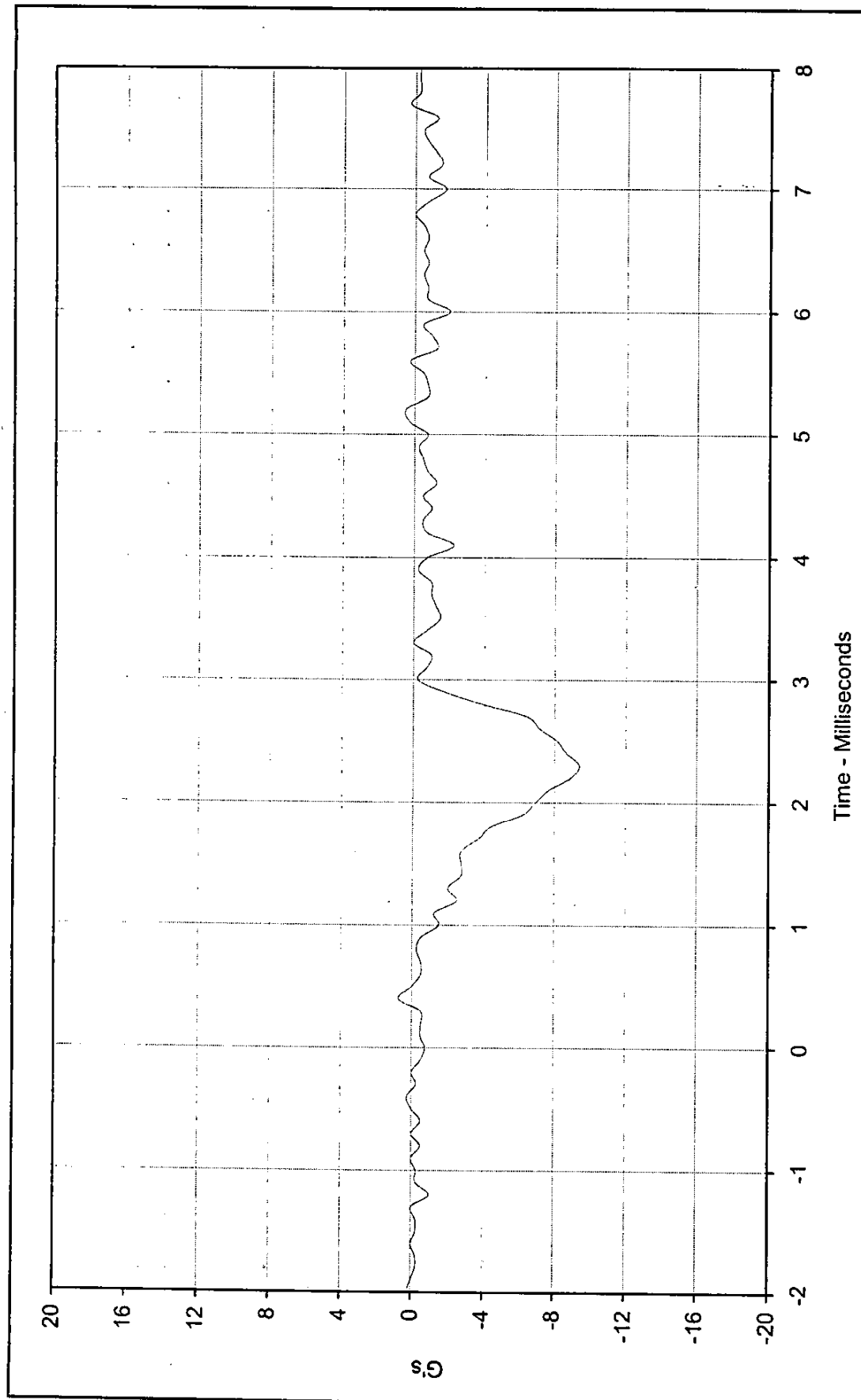
Date



Testing Program: Hybrid III Head Drop Calibration (Male)
 Test Information: S/N of Part: n/a Test I.D.: HD11B



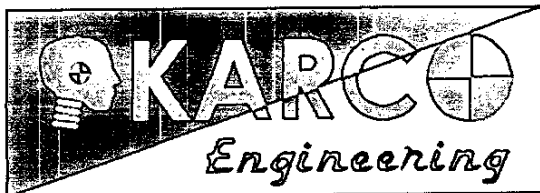
Curve Description: Head Resultant Acceleration
 Maximum Value: 269.6 at 2.4 Milliseconds
 Minimum Value: 0.3 at -1.6 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 11/18/99
 ATD Serial No.: 034



Curve Description: Hybrid III Head Drop Calibration (Male)
 Testing Program: S/N of Part: n/a Test I.D.: HD11B

Head Acceleration Y Axis
 Maximum Value: 0.7 at 0.4 Milliseconds
 Minimum Value: -9.4 at 2.3 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 11/18/99
 ATD Serial No.: 034





Hybrid III Calibration Data Sheet

50TH Percentile Male

Thorax Impact Test

ATD Serial No.: 34

Part Serial No.: N/A

Test I.D.: CH11B

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	6.74	Pass
Peak Probe Force	Newtons	5159 to 5893	5760	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.55	Pass
Internal Hysteresis	%	69 to 85	79.1	Pass
Overall Test Results				Pass

N 708
Laboratory Technician

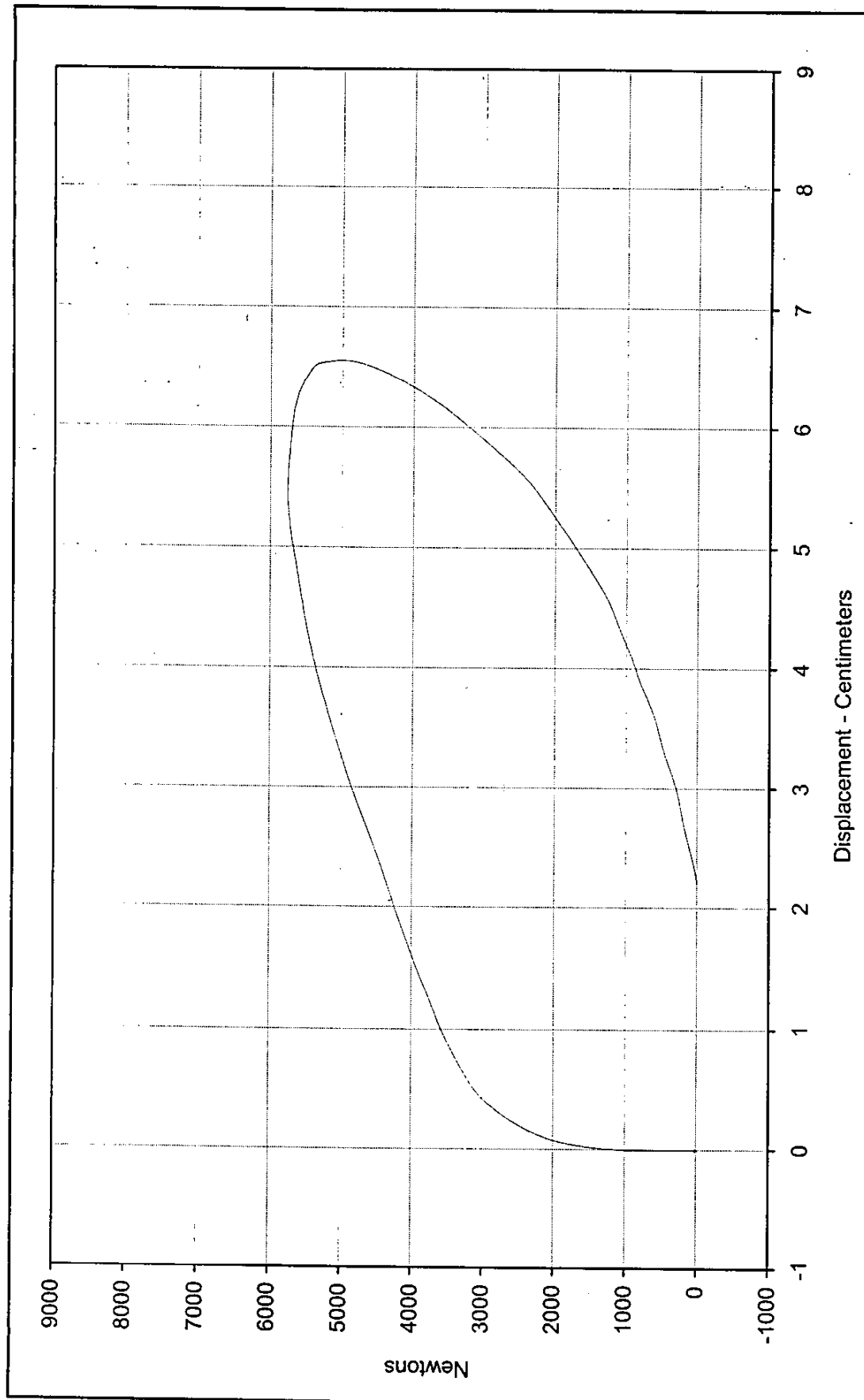
November 22, 1999

Test Date

James E. Holt
Approved By

11/22/99

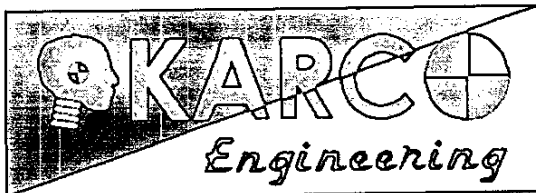
Date



Curve Description: Probe Force vs. Chest Displacement Testing Program: Hybrid III Thorax Impact Test
 Probe Force: 5759.5 Newtons Test Information: S/N of Part: N/A Test I.D.: CH11B
 Chest Displ.: 6.55 Centimeters



SAE Filter Class: 180
 Date of Test: 11/22/99
 ATD Serial No.: 34



Hybrid III Calibration Data Sheet

50TH Percentile Male

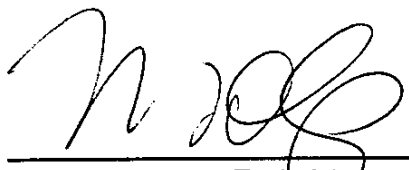
Neck Flexion Test

ATD Serial No.: 34

Part Serial No.: n/a

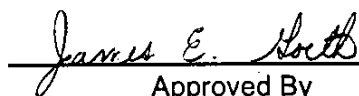
Test I.D.: NF11B

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	7.00	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	23.7	Pass
	20 Msec.	G's	17.6 to 22.6	20.6	Pass
	30 Msec.	G's	12.5 to 18.5	18.3	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	18.3	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	38.5	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	76.2	Pass
	Time	Msec.	57.0 to 64.0	62.2	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	125.6	Pass
Moment About Occipital Condyle	Maximum	N • m	84.1 to 108.5	89.9	Pass
	Time	Msec.	47.0 to 58.0	57.5	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	101.6	Pass
Overall Test Results					Pass

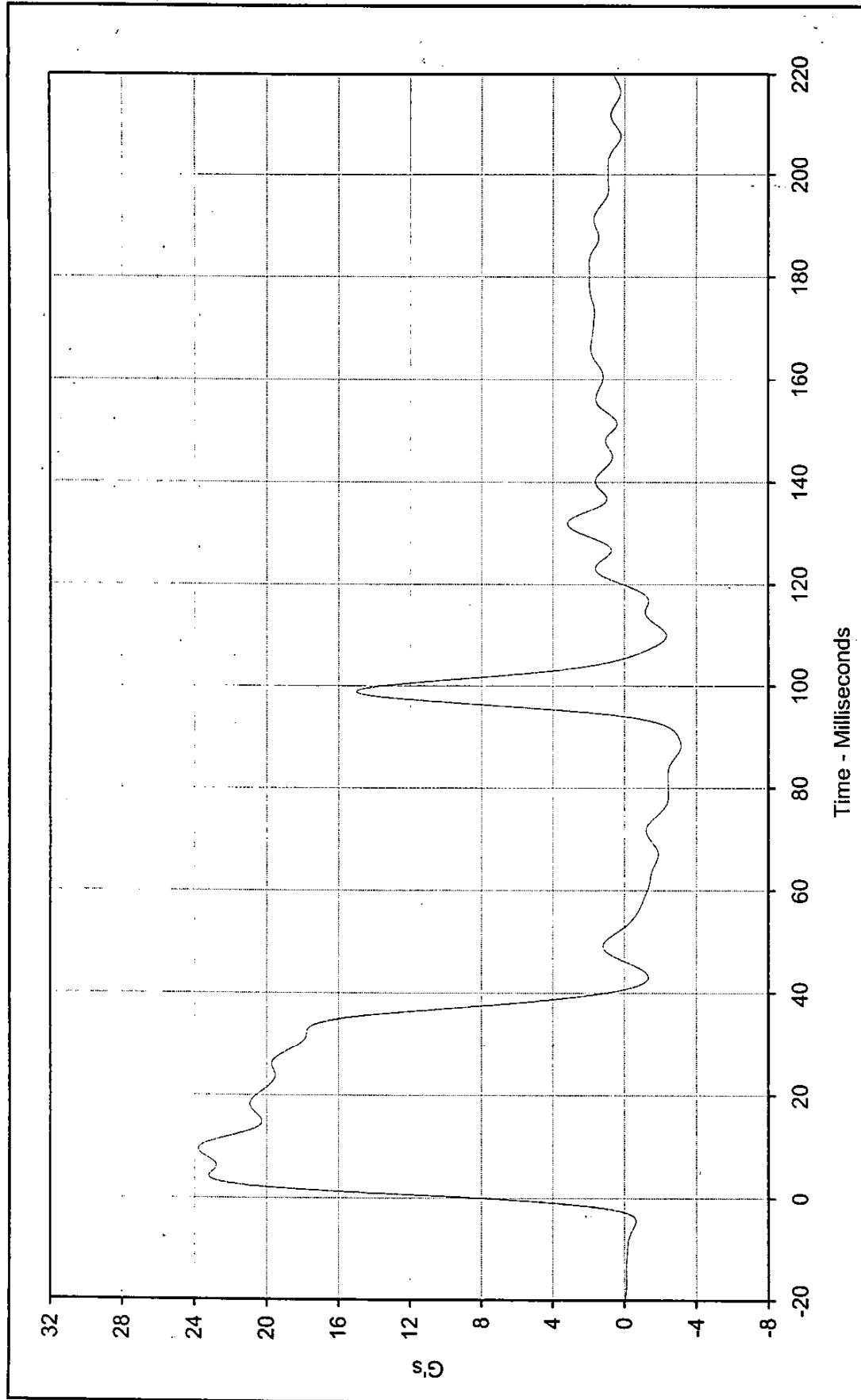

 Laboratory Technician

November 19, 1999

Test Date


 Approved By

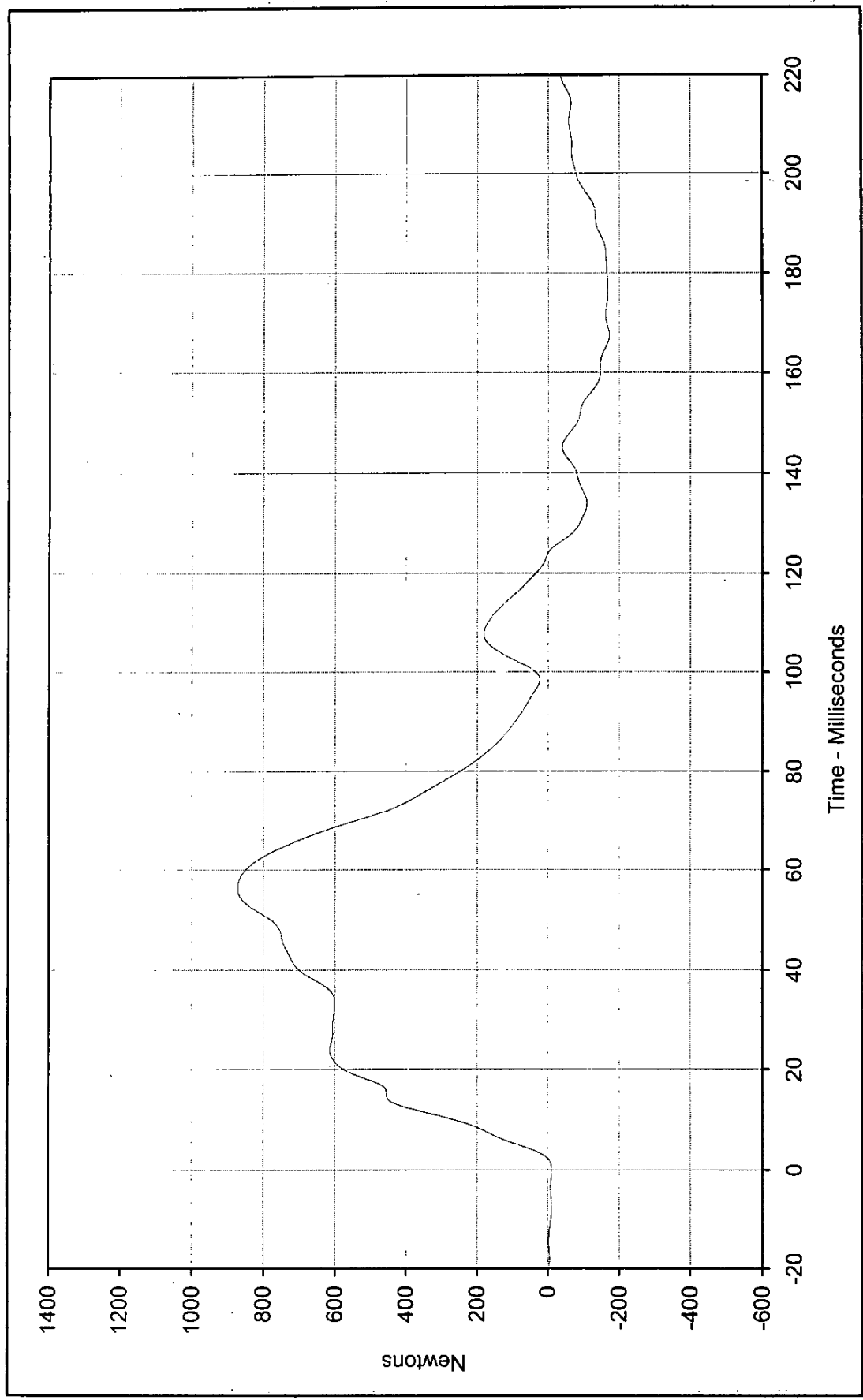
11/19/99
 Date



Curve Description: Hybrid III Neck Flexion Test (Male)
 Testing Program: Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NF11B

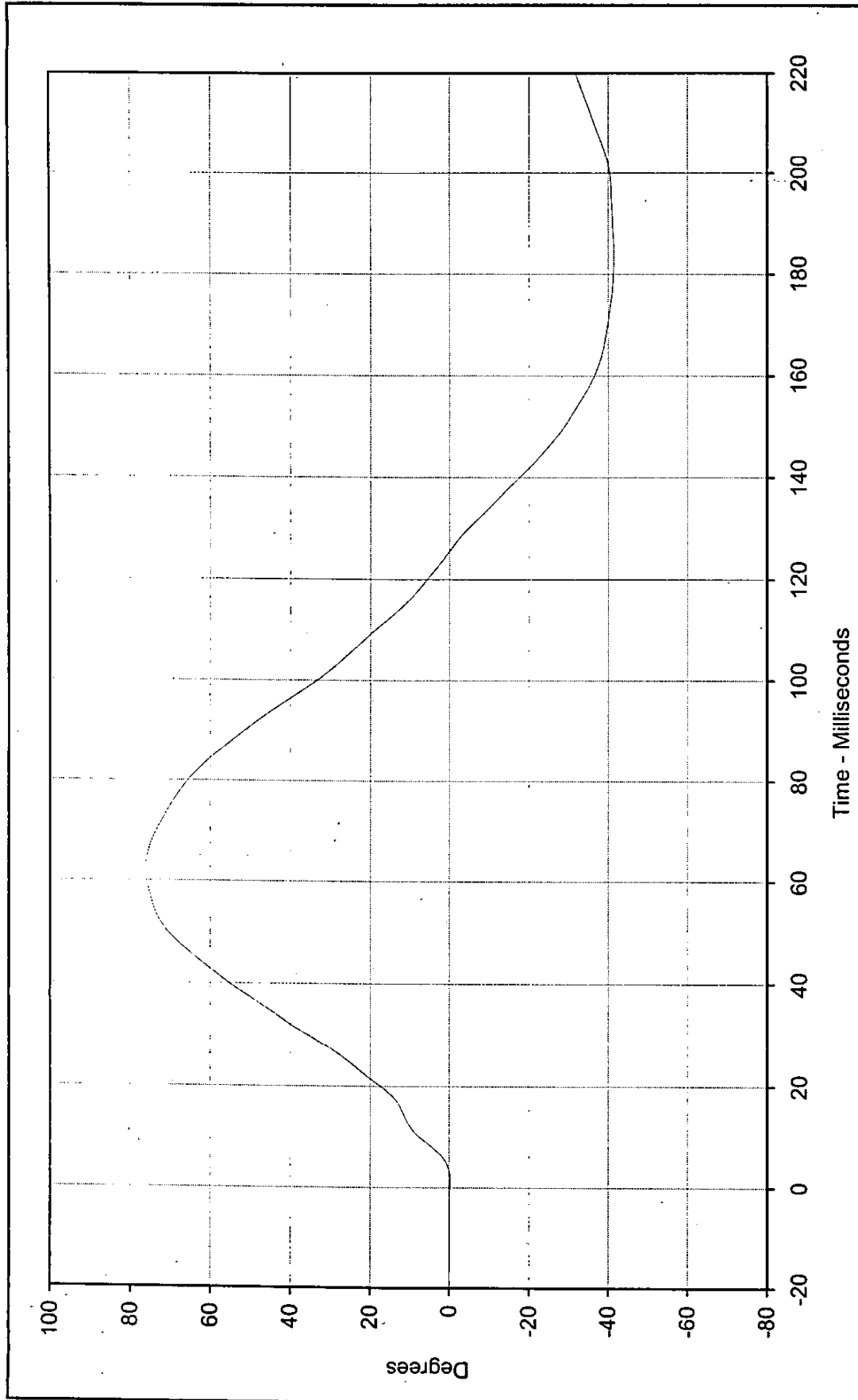
Curve Description: Pendulum Deceleration
 Maximum Value: 23.8 at 9.5 Milliseconds
 Minimum Value: -3.1 at 88.3 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/19/99
 ATD Serial No.: 34





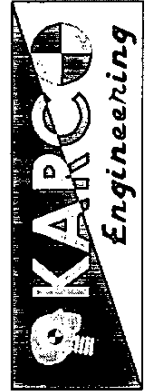
Curve Description:	Neck Force X	Testing Program	Hybrid III Neck Flexion Test (Male)
Maximum Value:	870.7 at 56.2 Milliseconds	Test Information:	S/N of Part: n/a Test I.D.: NF11B
Minimum Value:	-171.1 at 167.6 Milliseconds		
SAE Filter Class:	60		
Date of Test:	11/19/99		
ATD Serial No.:	34		

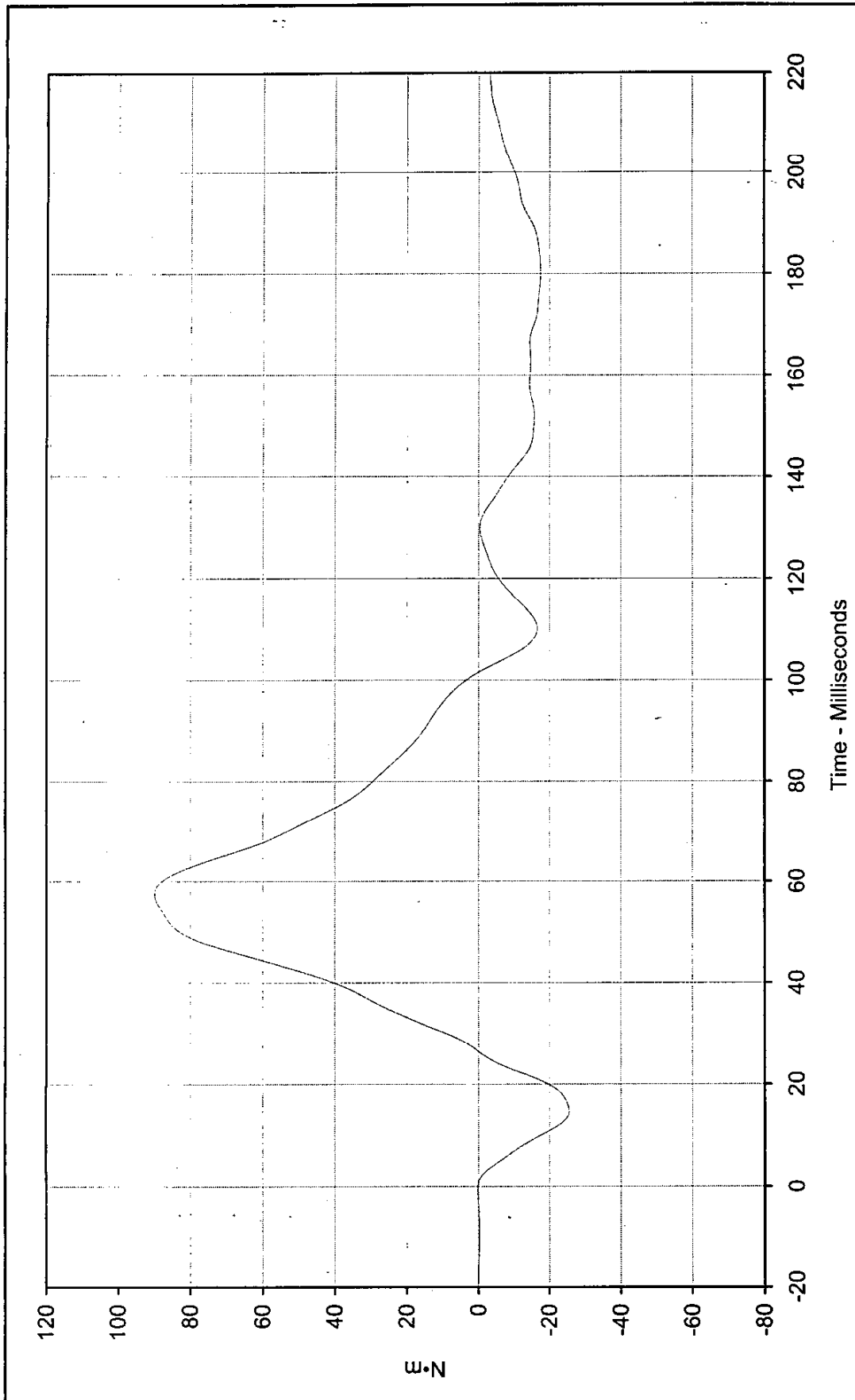




Testing Program: Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NF11B

Curve Description: "D" Plane Rotation
 Maximum Value: 76.2 at 62.2 Milliseconds
 Minimum Value: -41.4 at 184.5 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/19/99
 ATD Serial No.: 34

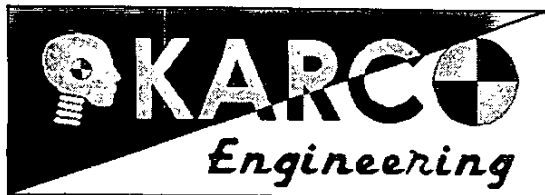




Testing Program: Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NF11B

Curve Description: Moment About Occipital Condyles
 Maximum Value: 89.9 at 57.5 Milliseconds
 Minimum Value: -25.5 at 14.9 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/19/99
 ATD Serial No.: 34





Hybrid III Calibration Data Sheet

50TH Percentile Male

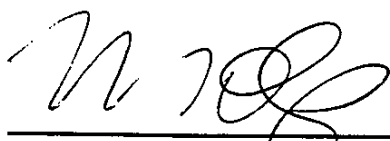
Neck Extension Test

ATD Serial No.: 34

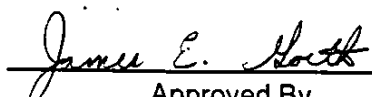
Part Serial No.: n/a

Test I.D.: NE11A

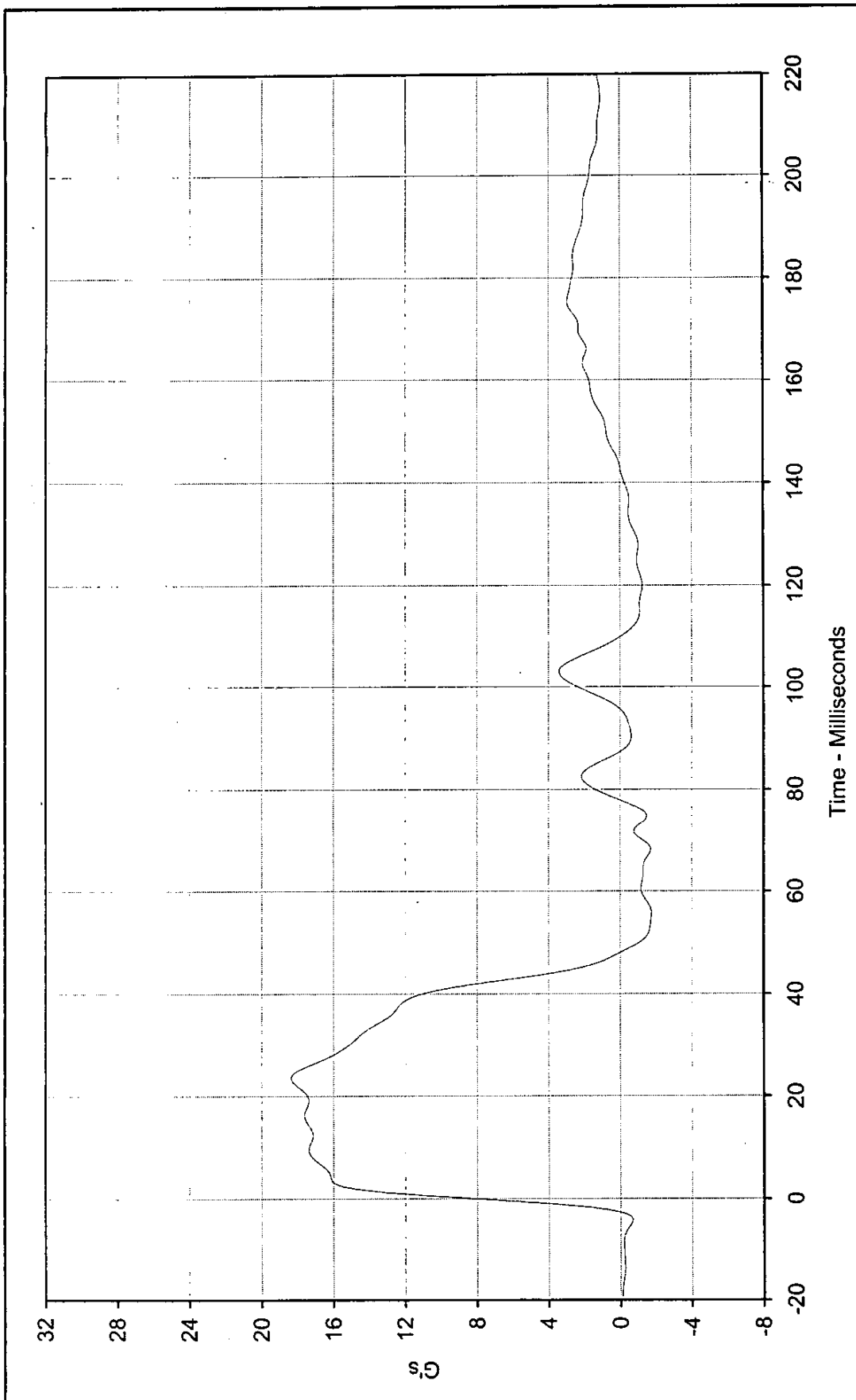
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	36	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.10	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.4	Pass
	20 Msec.	G's	14.0 to 19.0	17.4	Pass
	30 Msec.	G's	11.0 to 16.0	15.1	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.1	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	43.5	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	102.3	Pass
	Time	Msec.	72.0 to 82.0	75.8	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	158.7	Pass
Moment About Occipital Condyle	Maximum	N • m	-52.9 to- 79.9	-77.0	Pass
	Time	Msec.	65.0 to 79.0	70.0	Pass
Negative Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	136.5	Pass
Overall Test Results					Pass


 Laboratory Technician

November 19, 1999
 Test Date


 Approved By

11/19/99
 Date



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

Maximum Value: 18.4 at 23.5 Milliseconds Test Information: S/N of Part: n/a Test I.D.: NE11A

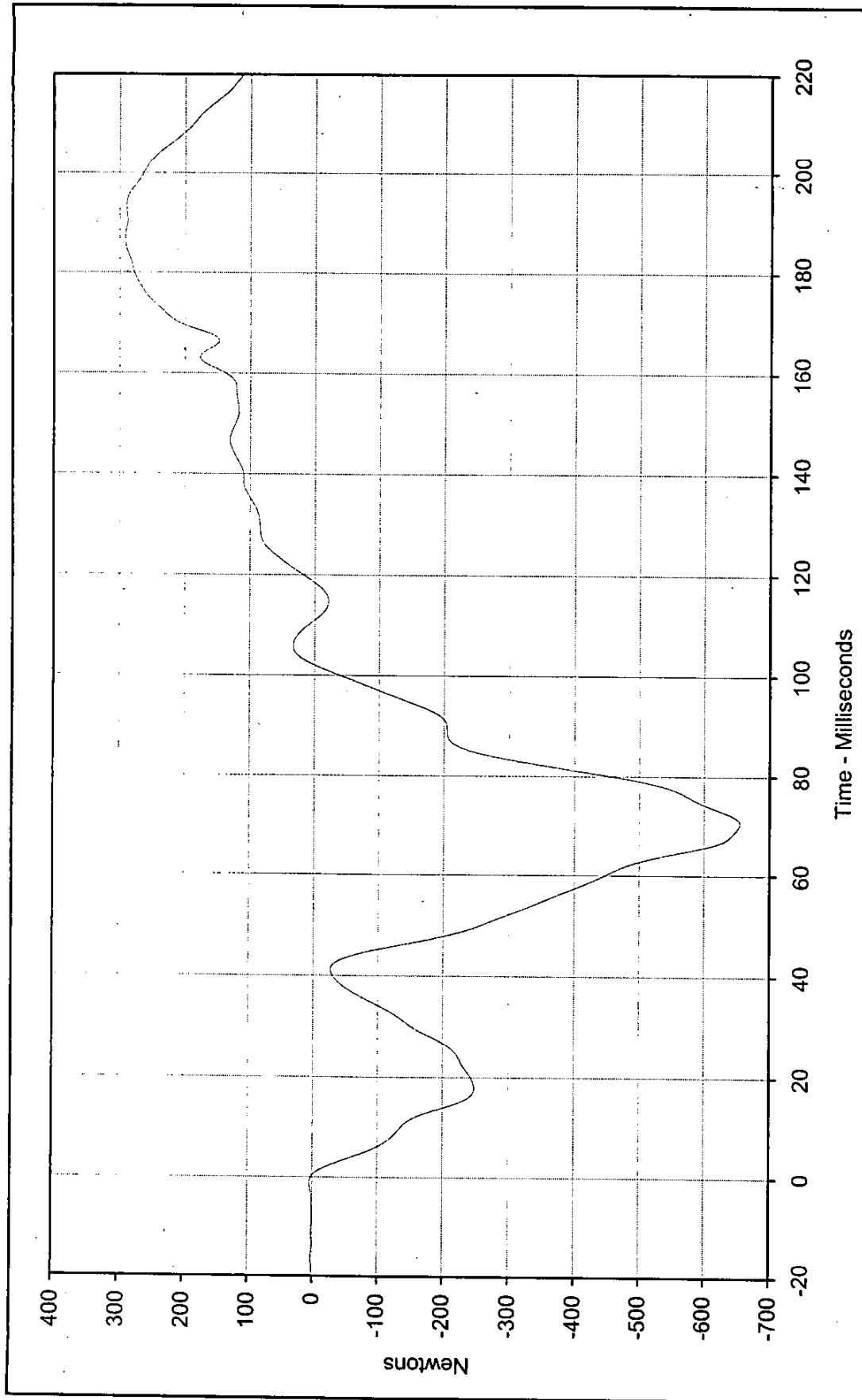
Minimum Value: -1.7 at 55.6 Milliseconds

SAE Filter Class: 60

Date of Test: 11/19/99

ATD Serial No.: 34





Curve Description: Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NE11A

Maximum Value: 291.6 at 187.1 Milliseconds

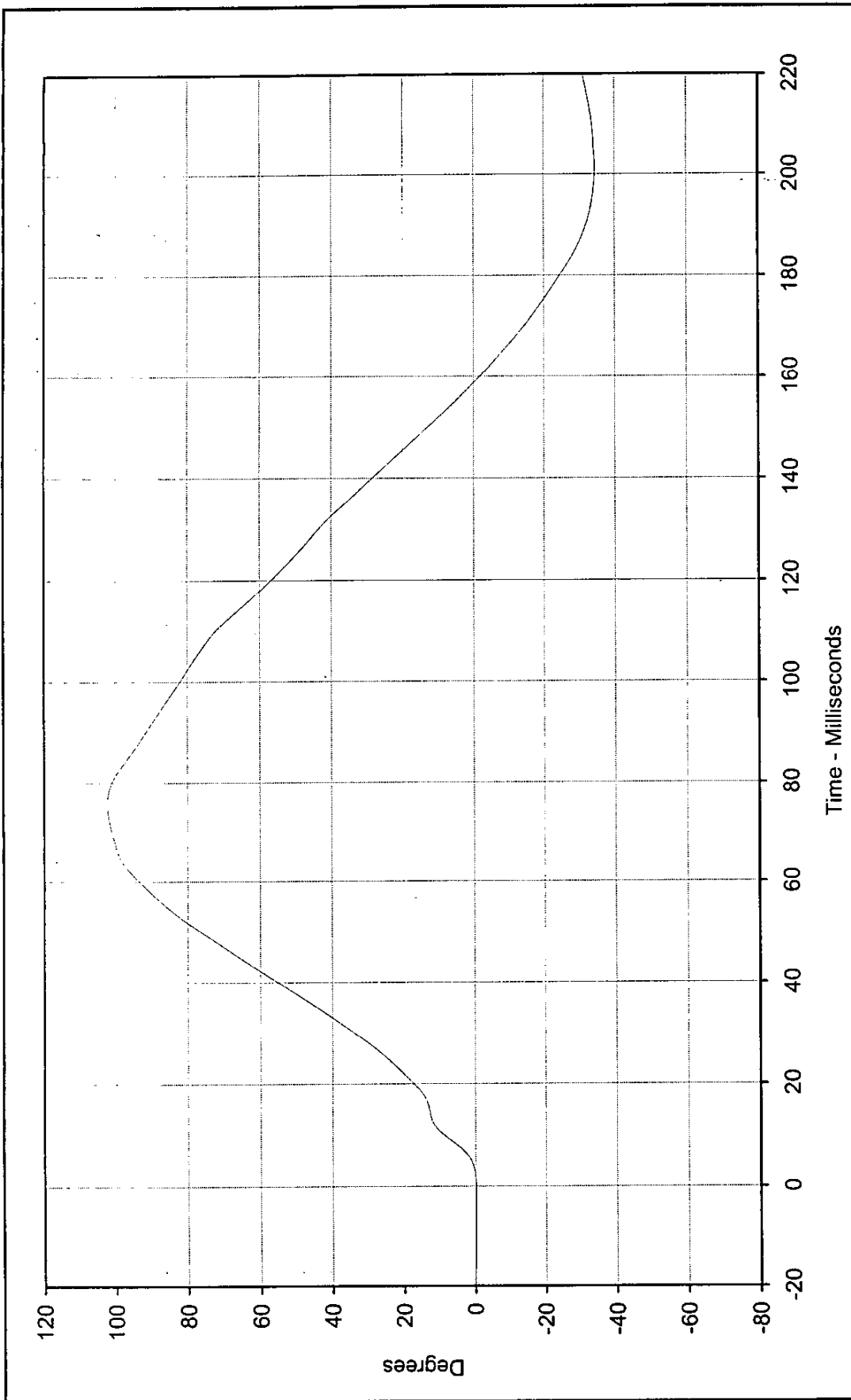
Minimum Value: -654.8 at 70.6 Milliseconds

SAE Filter Class: 60

Date of Test: 11/19/99

ATD Serial No.: 34

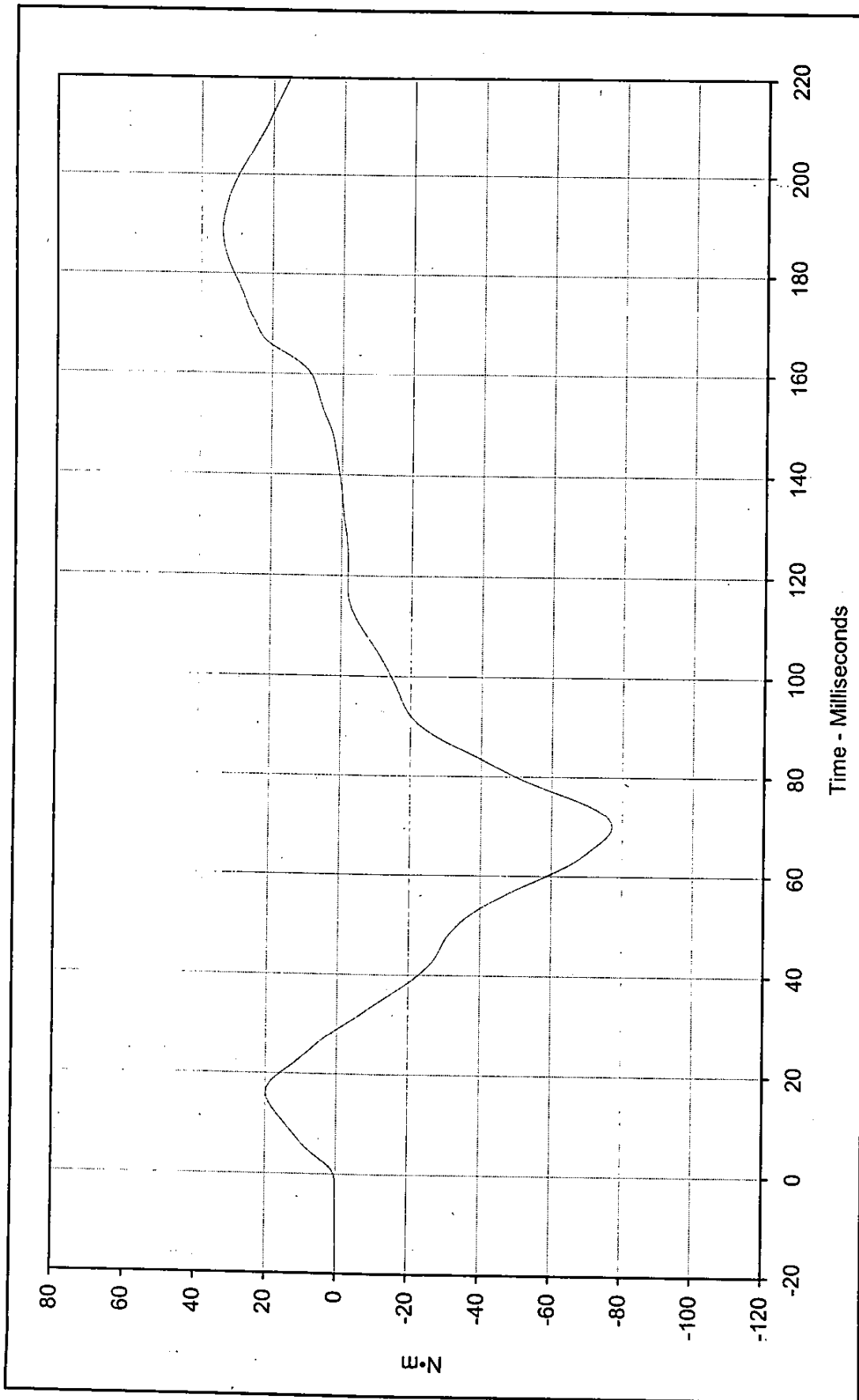




Testing Program: Hybrid III Neck Extension Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NE11A

Curve Description: "D" Plane Rotation
 Maximum Value: 102.3 at 75.8 Milliseconds
 Minimum Value: -34.4 at 201.2 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/19/99
 ATD Serial No.: 34

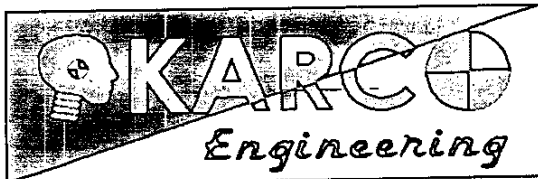




Curve Description: Moment About Occipital Condyles
 Maximum Value: 34.1 at 188.6 Milliseconds
 Minimum Value: -77.0 at 70.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/19/99
 ATD Serial No.: 34

Testing Program: Hybrid III Neck Extension Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NE11A





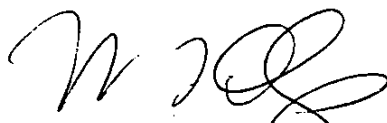
Hybrid III Calibration Data Sheet

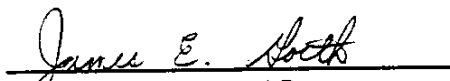
50TH Percentile Male

External Measurements

ATD Serial No.: 34Part 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	888.5	Pass
B - Shoulder pivot height	mm	505.5 to 520.7	507.0	Pass
C - "H" point height	mm	83.8 to 88.9	88.2	Pass
D - "H" point from seat back	mm	134.6 to 139.7	136.5	Pass
E - Shoulder pivot from back	mm	83.8 to 94.0	93.0	Pass
F - Thigh clearance	mm	139.7 to 154.9	151.0	Pass
G - Elbow back to wrist pivot	mm	289.6 to 304.8	300.4	Pass
H - Skull cap to back line	mm	40.6 to 45.7	44.0	Pass
I - Shoulder to elbow length	mm	330.2 to 345.4	340.0	Pass
J - Elbow rest height	mm	190.5 to 210.8	208.0	Pass
K - Buttock to knee length	mm	579.1 to 604.5	603.1	Pass
L - Popliteal length	mm	429.3 to 454.7	451.0	Pass
M - Knee pivot height	mm	485.1 to 500.4	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	225.0	Pass
P - Foot length	mm	251.5 to 266.7	255.0	Pass
V - Shoulder breadth	mm	421.6 to 436.9	429.0	Pass
W - Foot breadth	mm	91.4 to 106.7	103.2	Pass
Y - Chest circumference	mm	970.3 to 1000.8	980.3	Pass
Z - Waist circumference	mm	835.7 to 866.1	865.0	Pass
AA - Location for chest circumference	mm	429.3 to 434.3	430.0	Pass
BB - Location for waist circumference	mm	226.1 to 231.1	230.0	Pass
Overall Test Results				Pass


Laboratory Technician


Approved By

November 22, 1999

Test Date

11/22/99

Date



Hybrid III Calibration Data Sheet

50TH Percentile Male

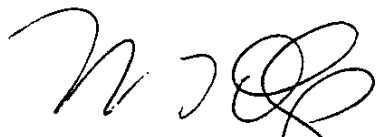
Left Knee Impact Test

ATD Serial No.: 35

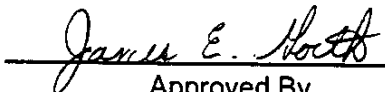
Part Serial No.: n/a

Test I.D.: LK11B

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	2.073 to 2.134	2.092	Pass
Peak Probe Force	Newtons	4715 to 5782	5565.1	Pass
Overall Test Results				Pass



Laboratory Technician

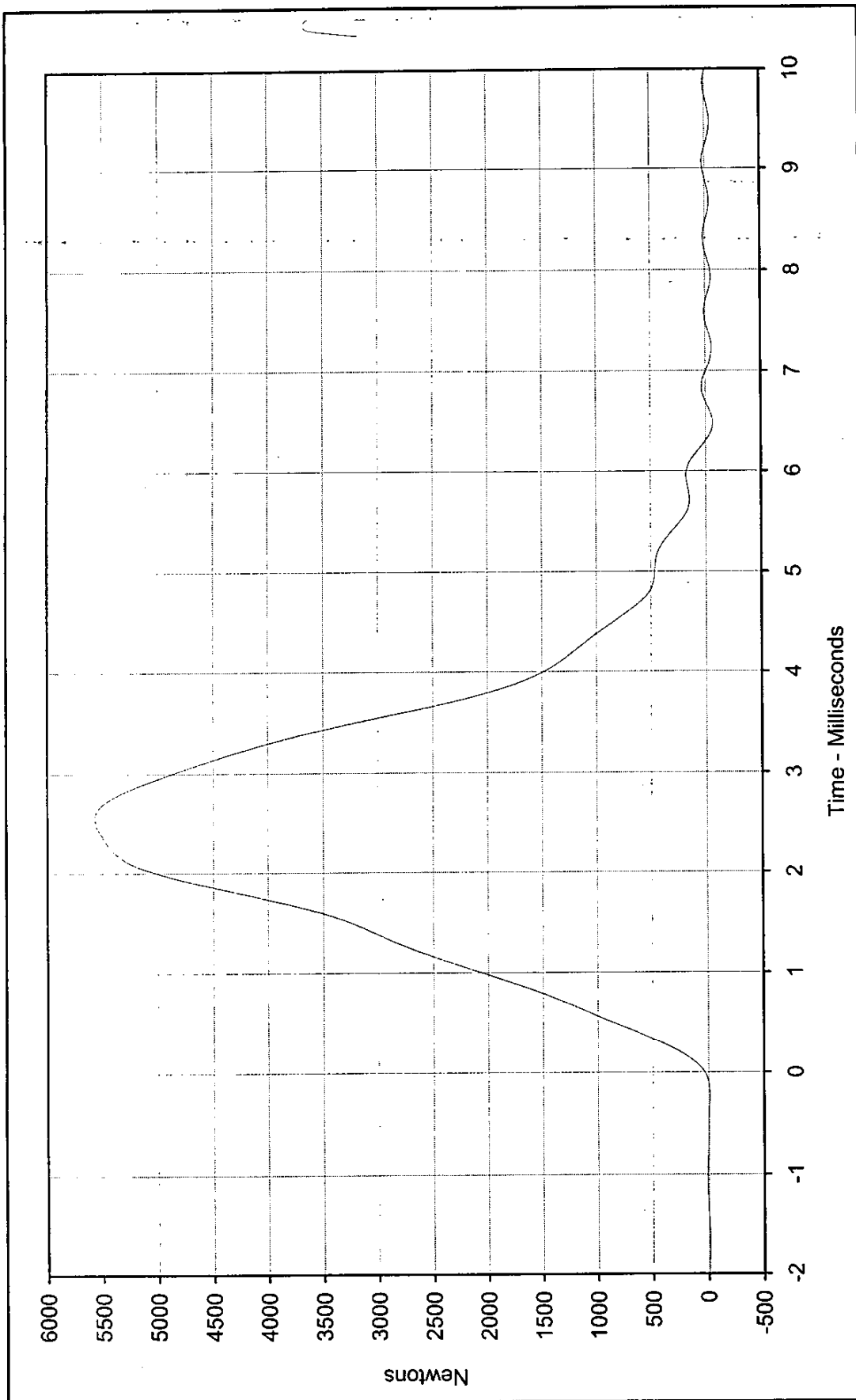


Approved By

November 19, 1999

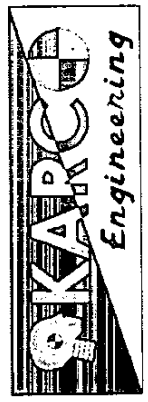
Test Date

11/19/99
Date



Testing Program: Hybrid III Left Knee Impact Test
 Test Information: Part S/N: n/a Test I.D.: LK11B

Curve Description: Probe Force
 Maximum Value: 5565.1 at 2.6 Milliseconds
 Minimum Value: -64.1 at 6.5 Milliseconds
 SAE Filter Class: 600
 Date of Test: 11/19/99
 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.: RK11B

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	2.073 to 2.134	2.096	Pass
Peak Probe Force	Newtons	4715 to 5782	5357.5	Pass
Overall Test Results				Pass

Laboratory Technician

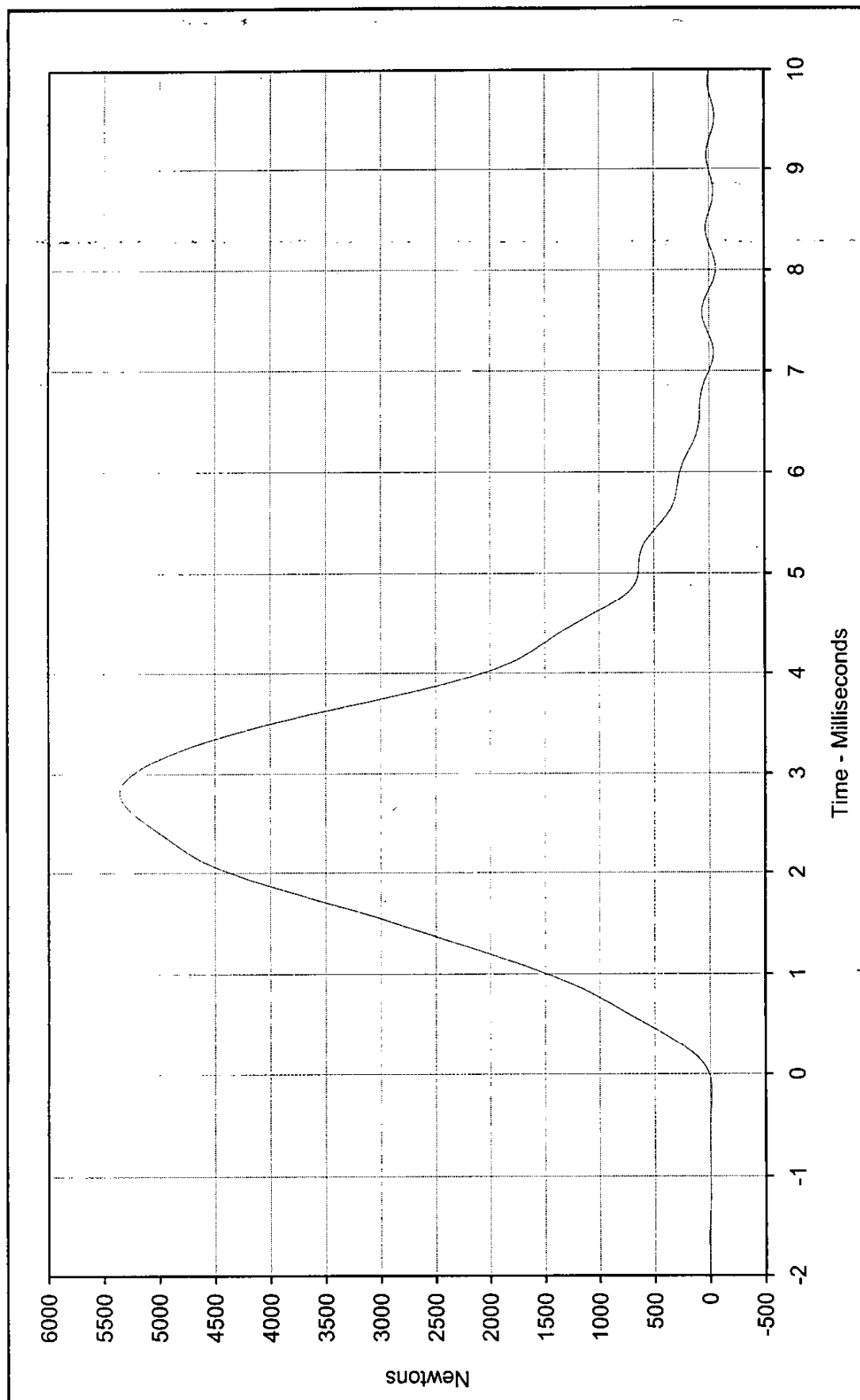
November 19, 1999

Test Date

Approved By

11/19/99

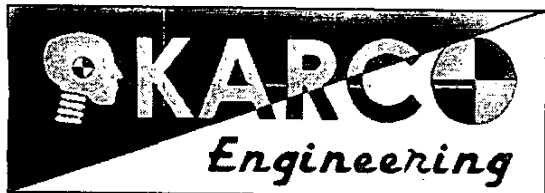
Date



Testing Program: Hybrid III Right Knee Impact Test
 Test Information: Part S/N: n/a Test I.D.: RK11B



Curve Description: Probe Force
 Maximum Value: 5357.5 at 2.8 Milliseconds
 Minimum Value: -61.9 at 8.0 Milliseconds
 SAE Filter Class: 600
 Date of Test: 11/19/99
 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.: HD11A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	25	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	255.8	Pass
Peak Lateral Acceleration	G's	≤15.0	5.5	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

Laboratory Technician

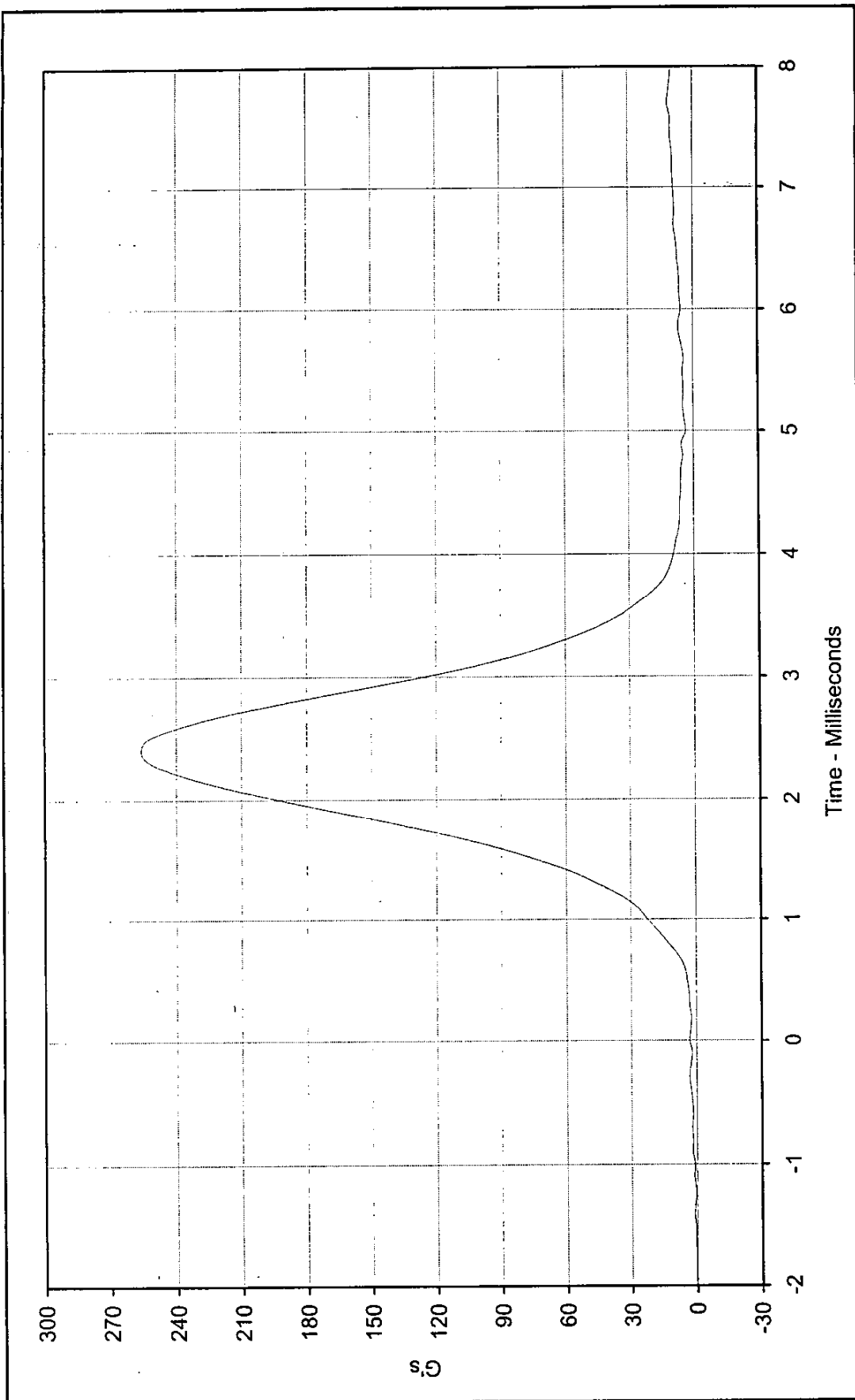
Approved By

November 18, 1999

Test Date

11/18/99

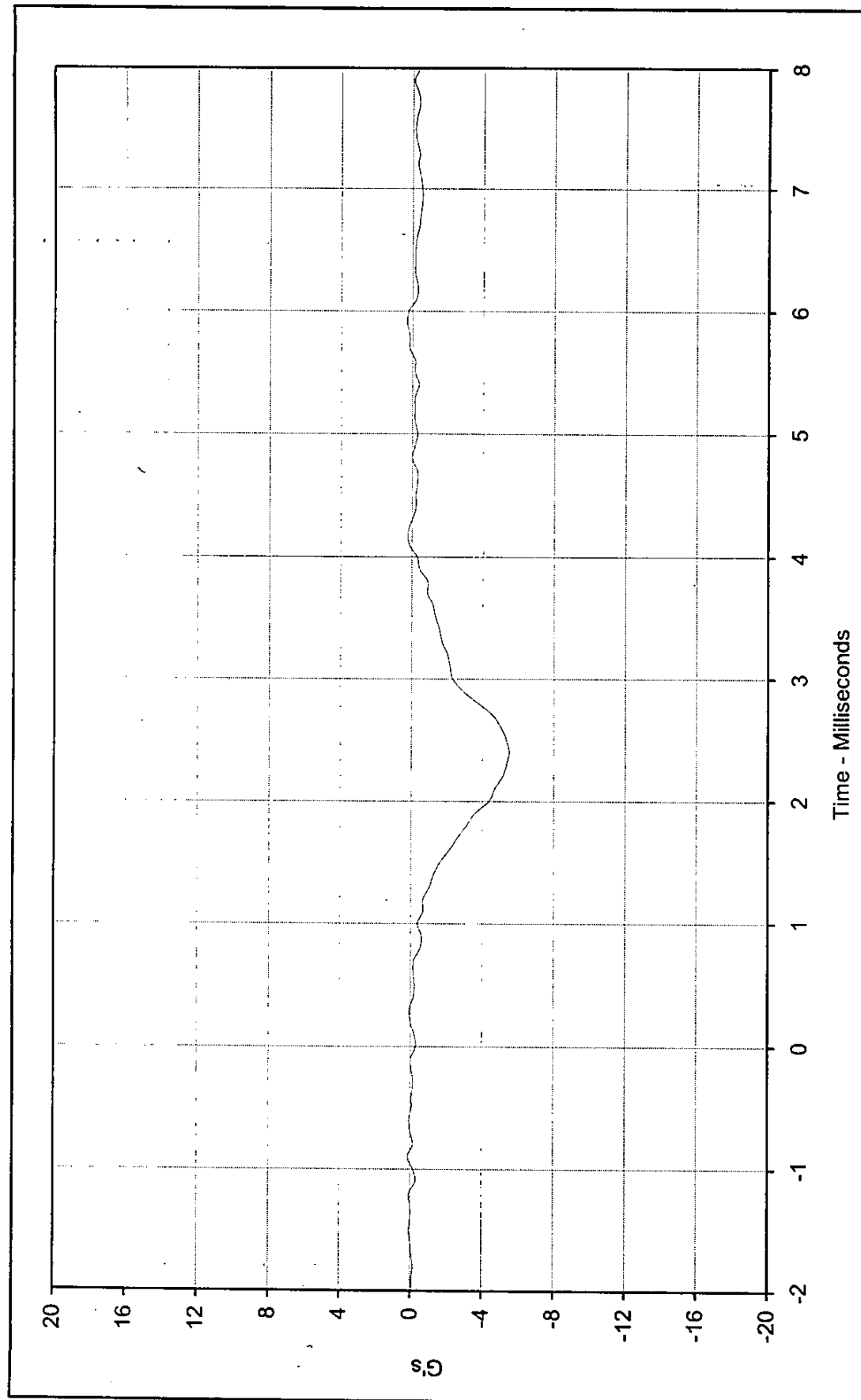
Date



Testing Program Hybrid III Head Drop Calibration (Male)
 Test Information: S/N of Part: n/a Test I.D.: HD11A

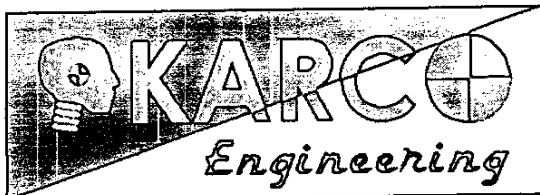


Curve Description: Head Resultant Acceleration
 Maximum Value: 255.8 at 2.4 Milliseconds
 Minimum Value: 0.3 at 1.8 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 11/18/99
 ATD Serial No.: 035



Curve Description: Hybrid III Head Drop Calibration (Male)
 Maximum Value: 0.3 at 5.9 Milliseconds
 Minimum Value: -5.5 at 2.4 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 11/18/99
 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.: CH11A

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	6.69	Pass
Peak Probe Force	Newtons	5159 to 5893	5423	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.45	Pass
Internal Hysteresis	%	69 to 85	77.4	Pass
Overall Test Results				Pass

Laboratory Technician

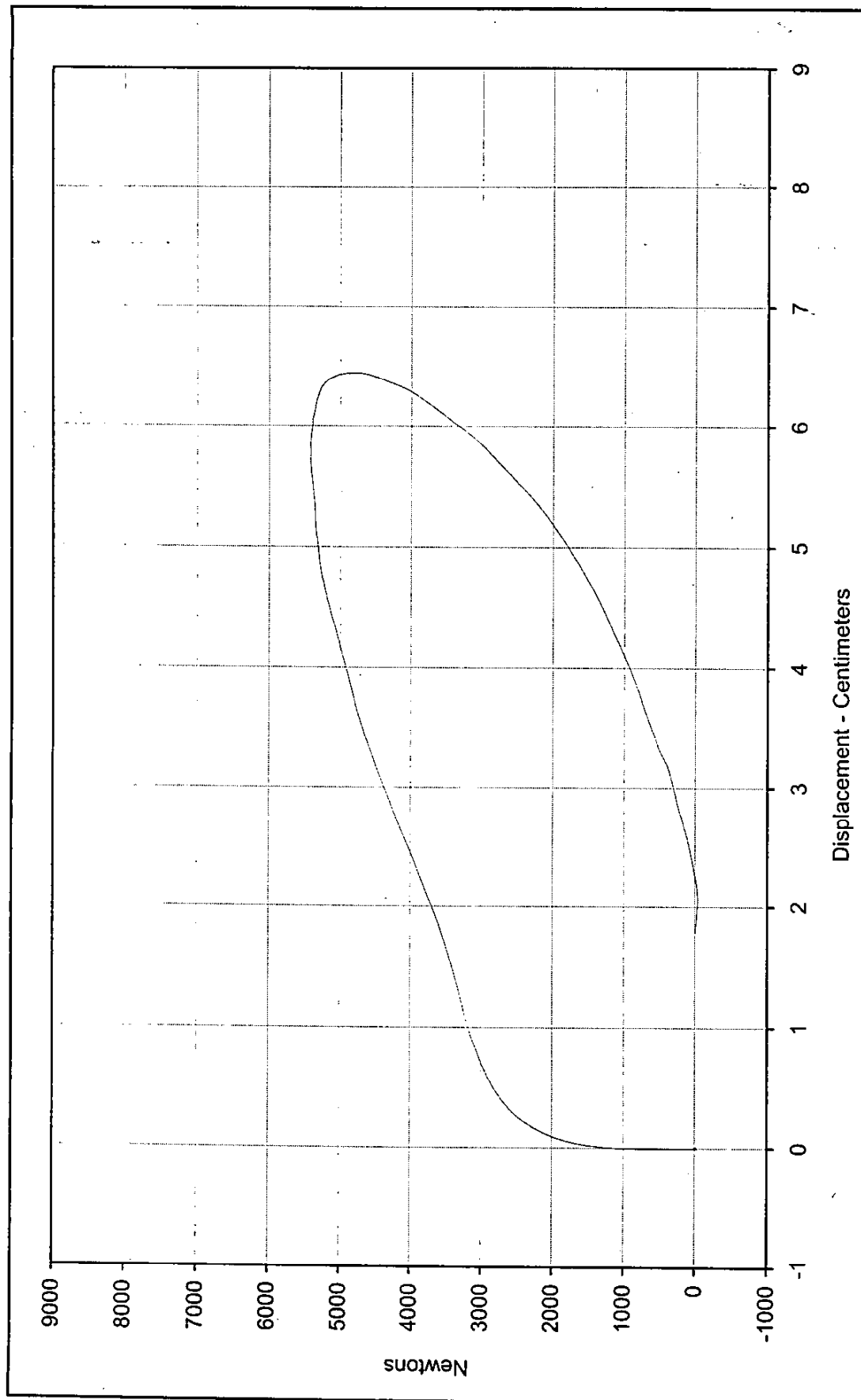
November 22, 1999

Test Date

Approved By

11/22/99

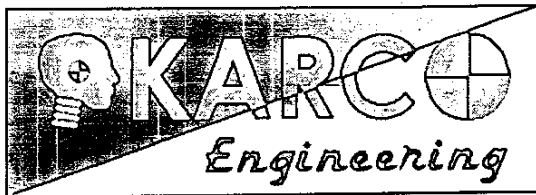
Date



Curve Description: Probe Force vs. Chest Displacement Testing Program: Hybrid III Thorax Impact Test
 Probe Force: 5422.8 Newtons Test Information: S/N of Part: N/A Test I.D.: CH11A

Chest Displ.: 6.45 Centimeters
 SAE Filter Class: 180
 Date of Test: 11/22/99
 ATD Serial No.: 35





Hybrid III Calibration Data Sheet

50TH Percentile Male

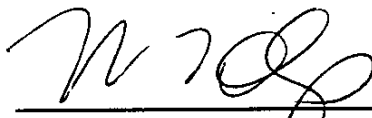
Neck Flexion Test

ATD Serial No.: 35

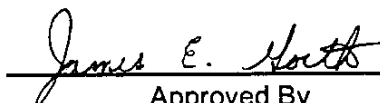
Part Serial No.: n/a

Test I.D.: NF11A

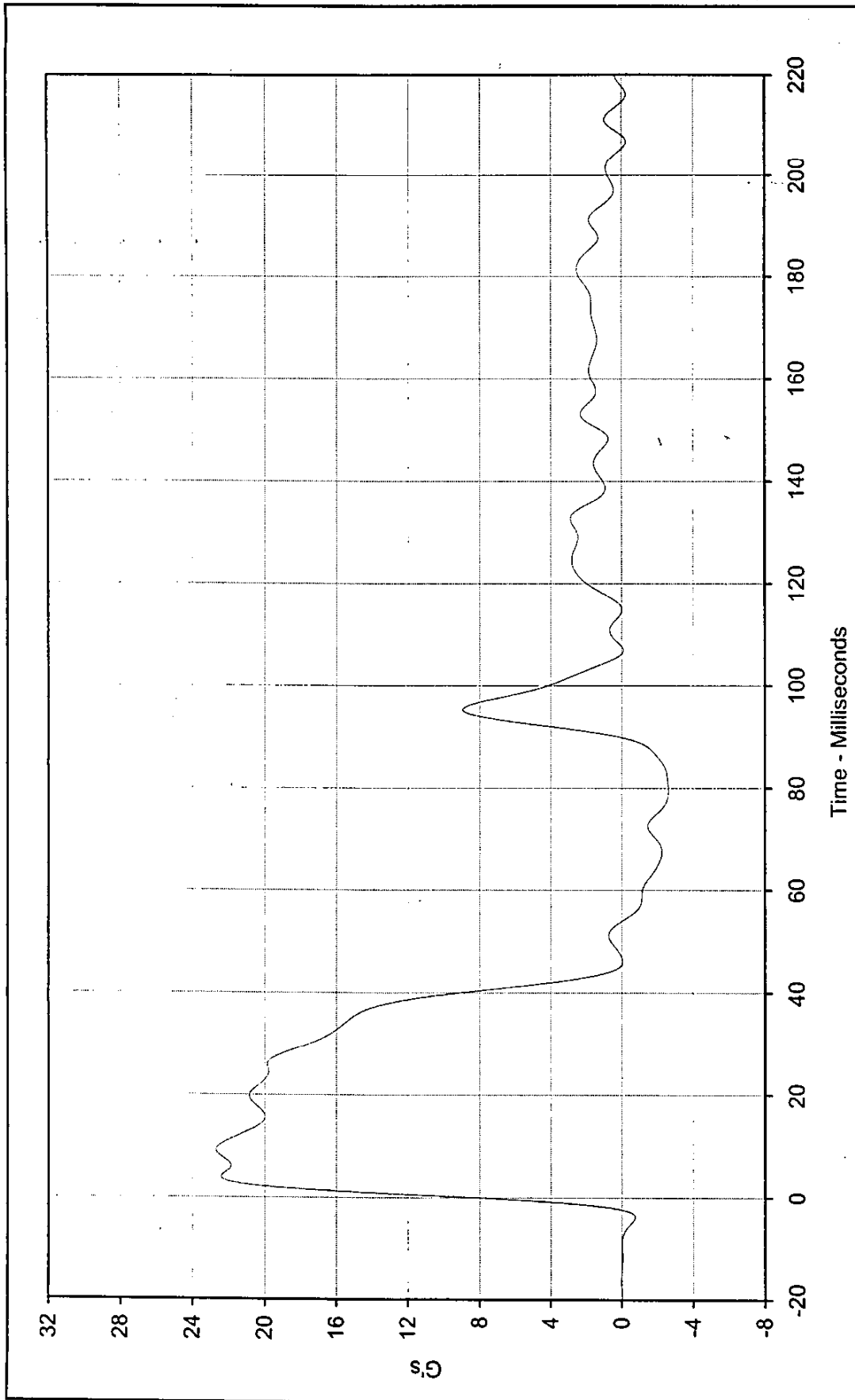
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity		%	10 to 70	40	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.00	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.5	Pass
	20 Msec.	G's	17.6 to 22.6	20.9	Pass
	30 Msec.	G's	12.5 to 18.5	17.6	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	17.6	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	41.6	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	66.6	Pass
	Time	Msec.	57.0 to 64.0	59.1	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	114.9	Pass
Moment About Occipital Condyle	Maximum	N • m	84.1 to 108.5	89.8	Pass
	Time	Msec.	47.0 to 58.0	54.5	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	99.8	Pass
Overall Test Results					Pass


 Laboratory Technician

November 19, 1999
 Test Date


 Approved By

11/19/99
 Date



Curve Description: Pendulum Deceleration

Maximum Value: 22.7 at 9.2 Milliseconds

Minimum Value: -2.6 at 79.4 Milliseconds

SAE Filter Class: 60

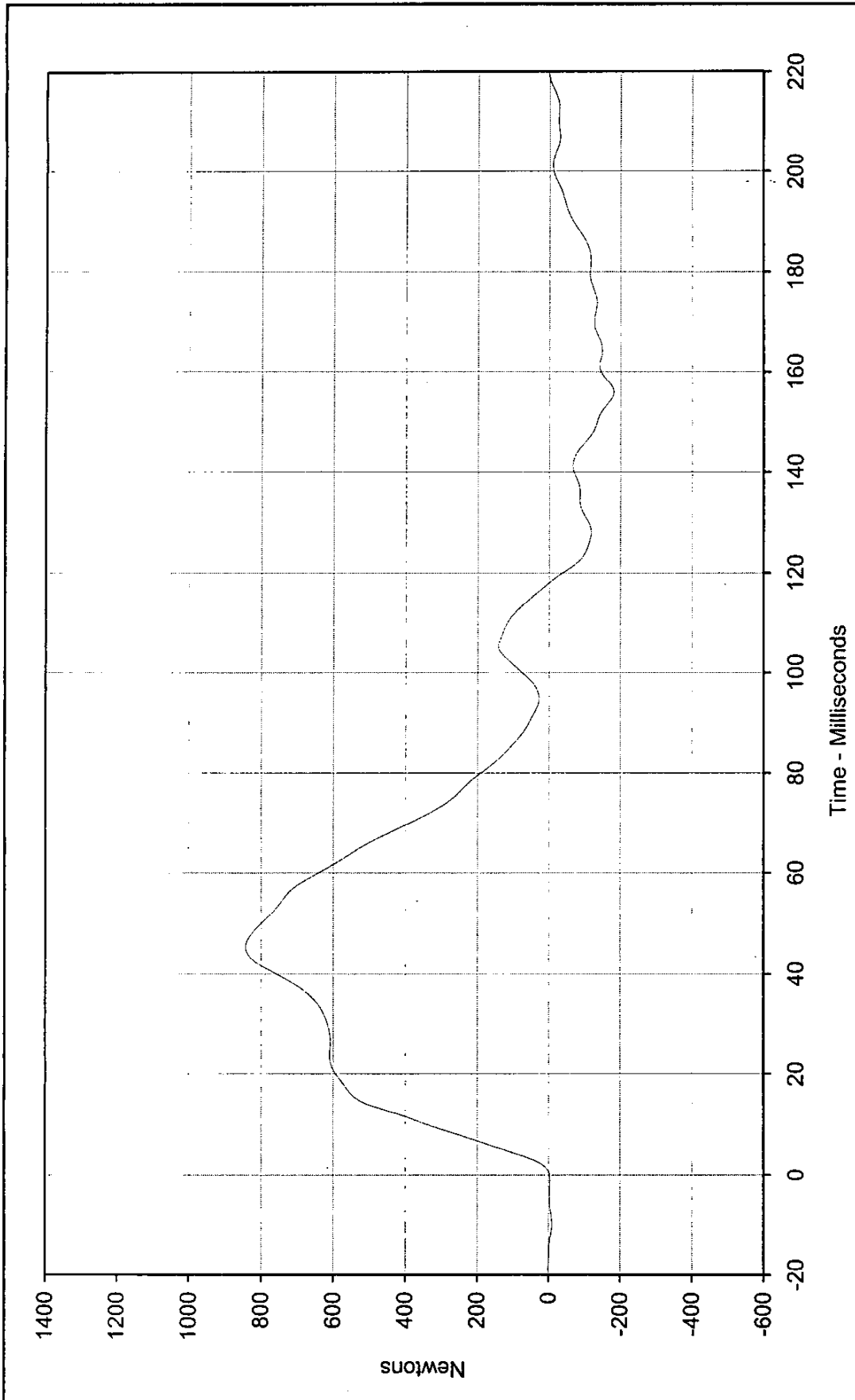
Date of Test: 11/19/99

ATD Serial No.: 35

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NF11A

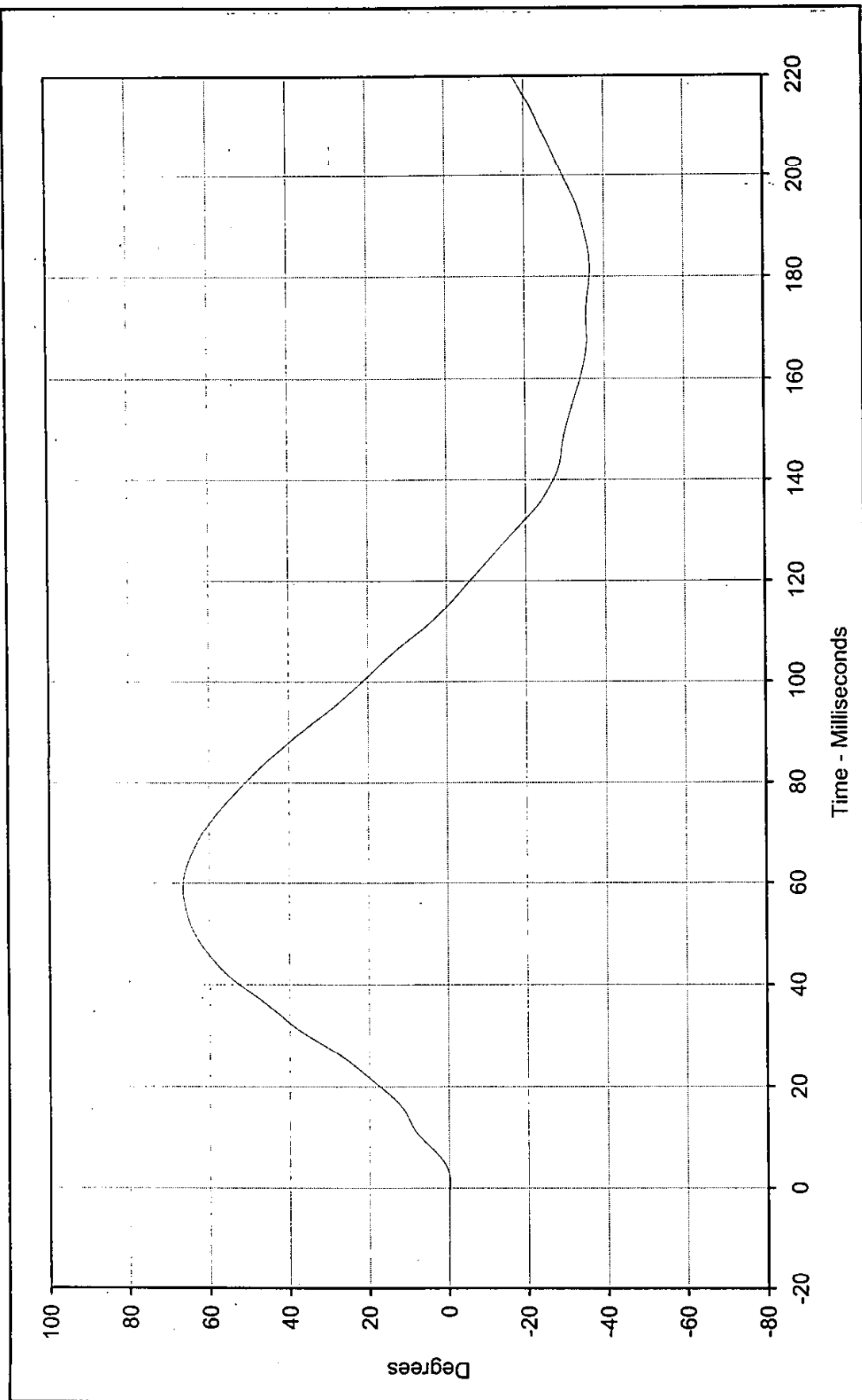




Curve Description: Neck Force X
 Testing Program: Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NF11A

Maximum Value: 842.9 at 45.2 Milliseconds
 Minimum Value: -180.3 at 155.9 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/19/99
 ATD Serial No.: 35

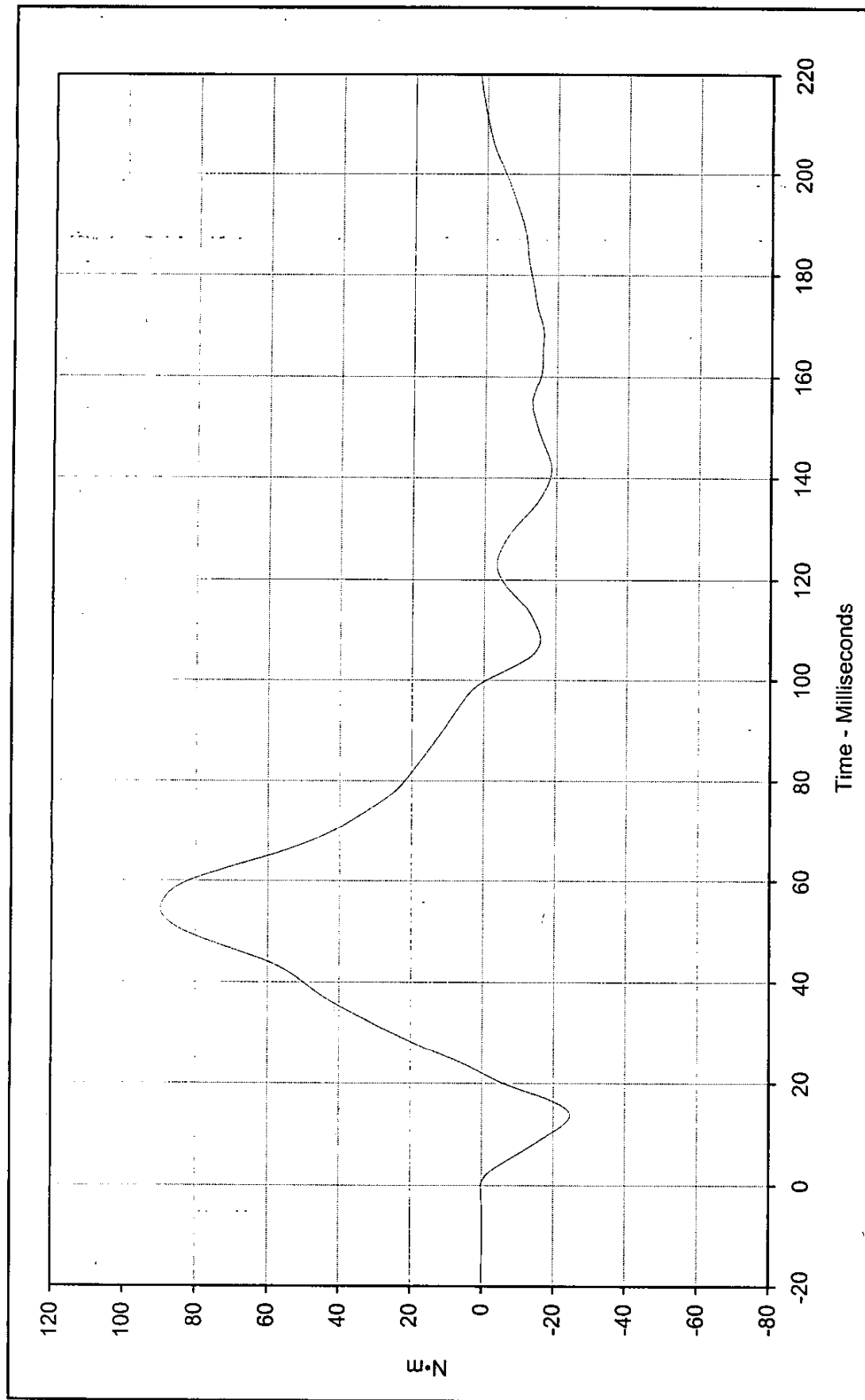




Testing Program: Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NF11A

Curve Description: "D" Plane Rotation
 Maximum Value: 66.6 at 59.1 Milliseconds
 Minimum Value: -36.4 at 181.5 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/19/99
 ATD Serial No.: 35





Curve Description: Moment About Occipital Condyles

Maximum Value: 89.8 at 54.5 Milliseconds

Minimum Value: -24.6 at 13.9 Milliseconds

SAE Filter Class: 60

Date of Test: 11/19/99

ATD Serial No.: 35

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NF11A





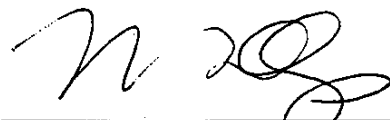
Hybrid III Calibration Data Sheet

50TH Percentile Male

Neck Extension Test

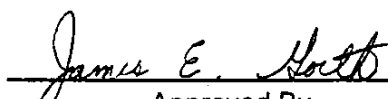
ATD Serial No.: 35Part Serial No.: n/aTest I.D.: NE11B

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	6.17	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	18.2	Pass
	20 Msec.	G's	14.0 to 19.0	18.3	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	43.7	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	92.6	Pass
	Time	Msec.	72.0 to 82.0	78.7	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	156.9	Pass
Moment About Occipital Condyle	Maximum	N • m	-52.9 to- 79.9	-62.5	Pass
	Time	Msec.	65.0 to 79.0	68.9	Pass
Negative Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	137.8	Pass
Overall Test Results					Pass


Laboratory Technician

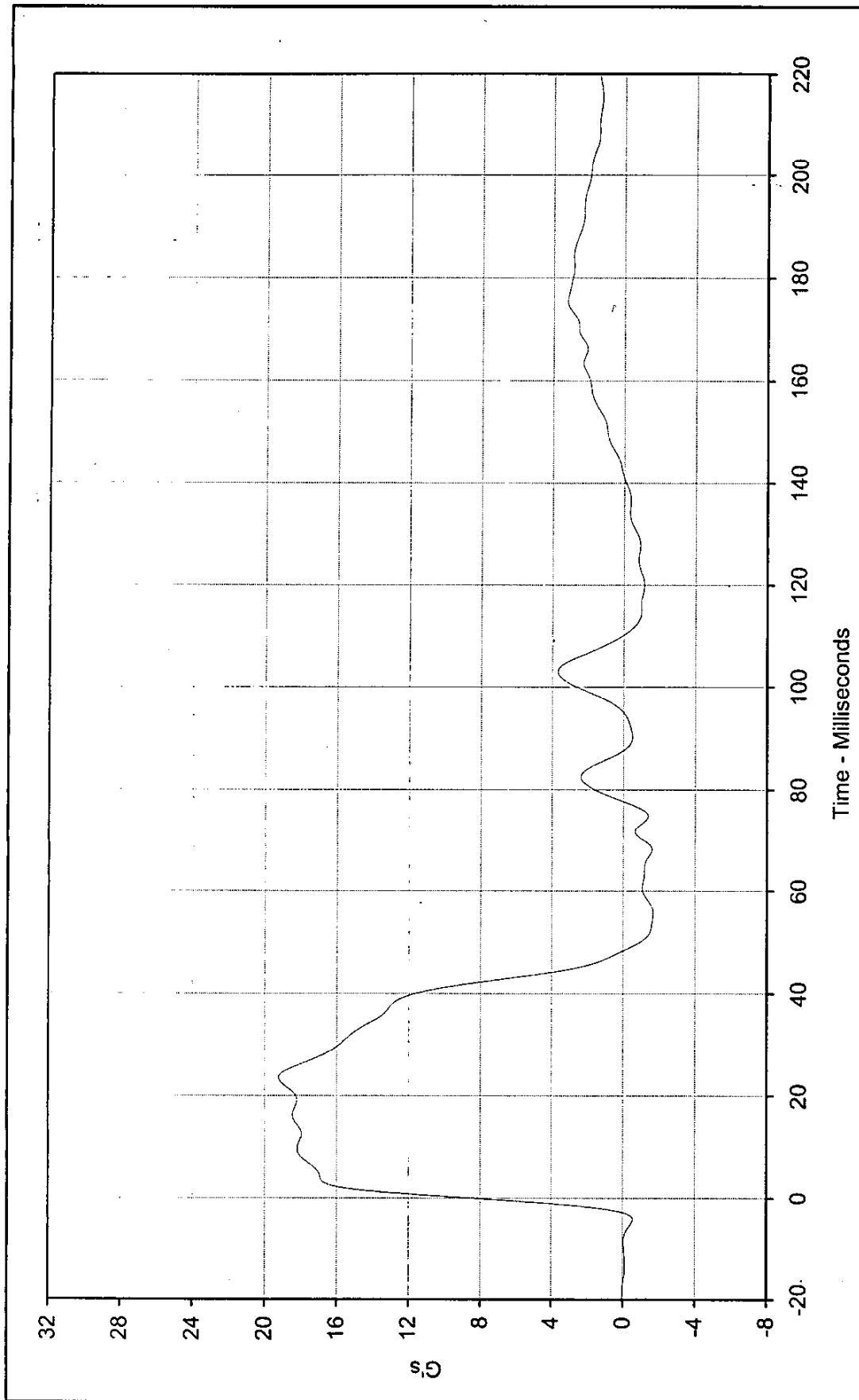
November 19, 1999

Test Date


Approved By

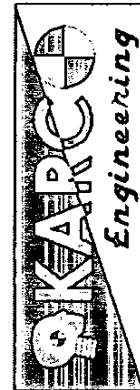
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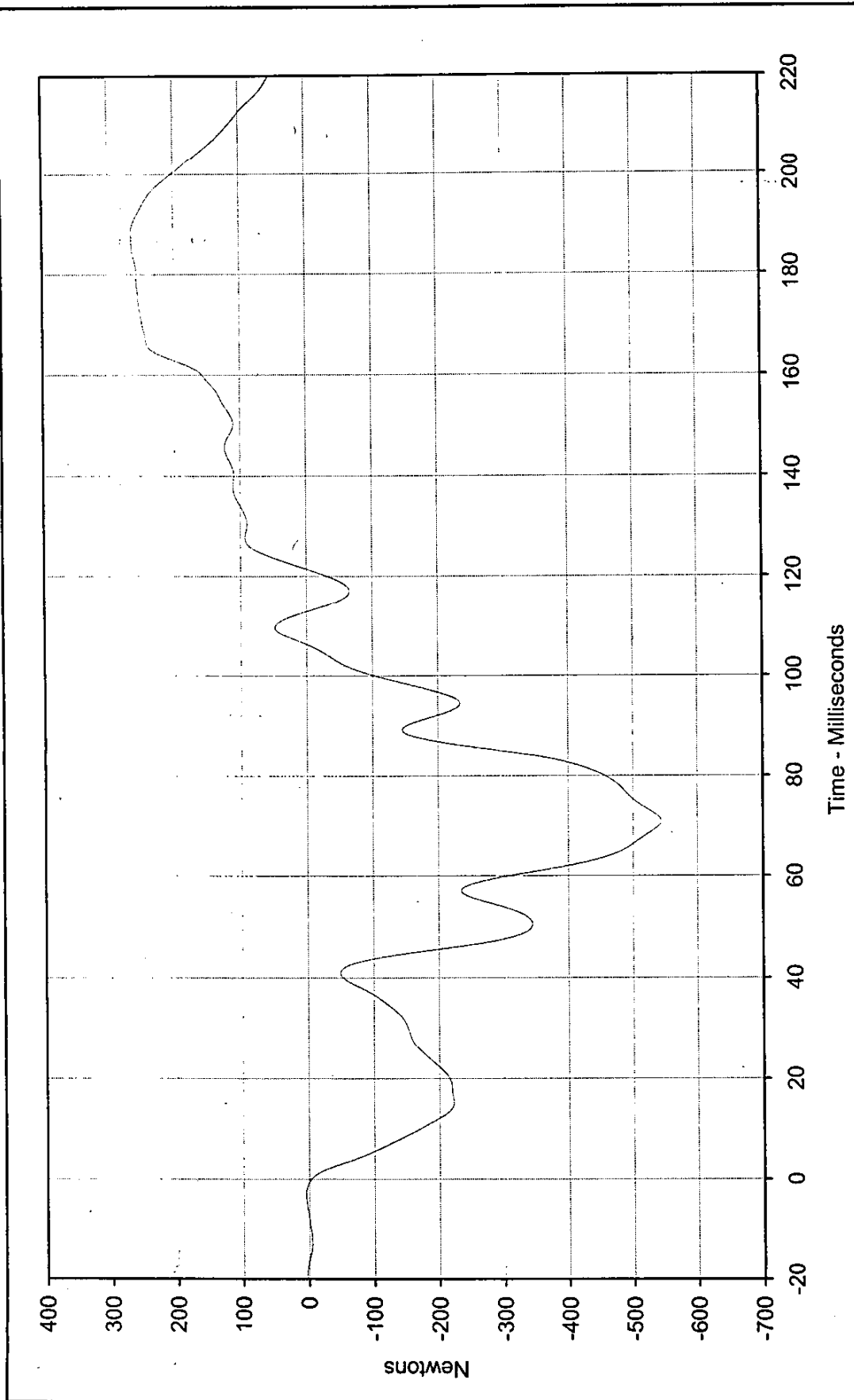
Date



Curve Description: Hybrid III Neck Extension Test (Male)
 Testing Program: NE11B
 Test Information: S/N of Part: n/a

Pendulum Deceleration
 Maximum Value: 19.2 at 23.5 Milliseconds
 Minimum Value: -1.7 at 55.6 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/19/99
 ATD Serial No.: 35

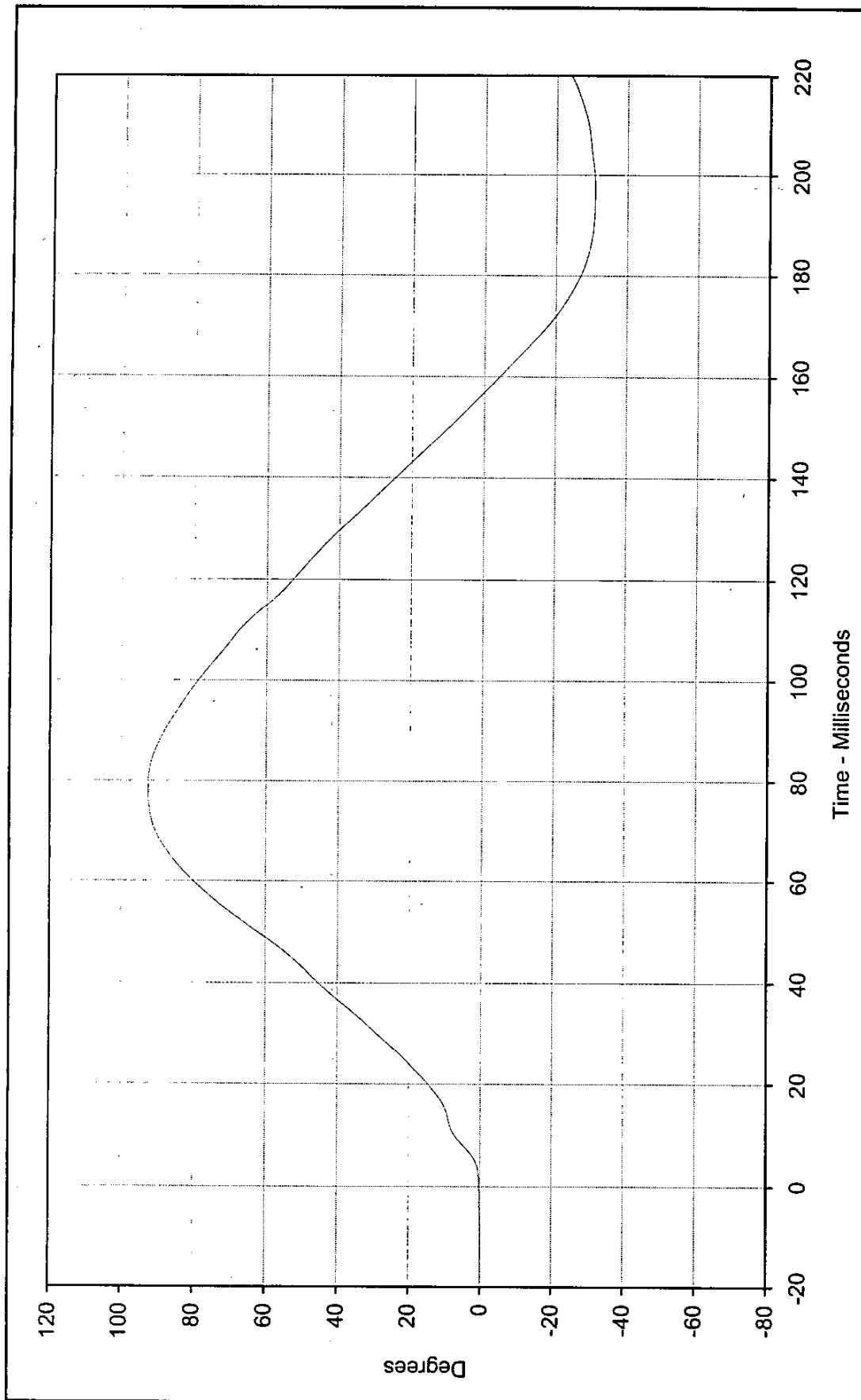




Testing Program: Hybrid III Neck Extension Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NE11B

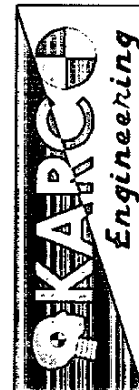


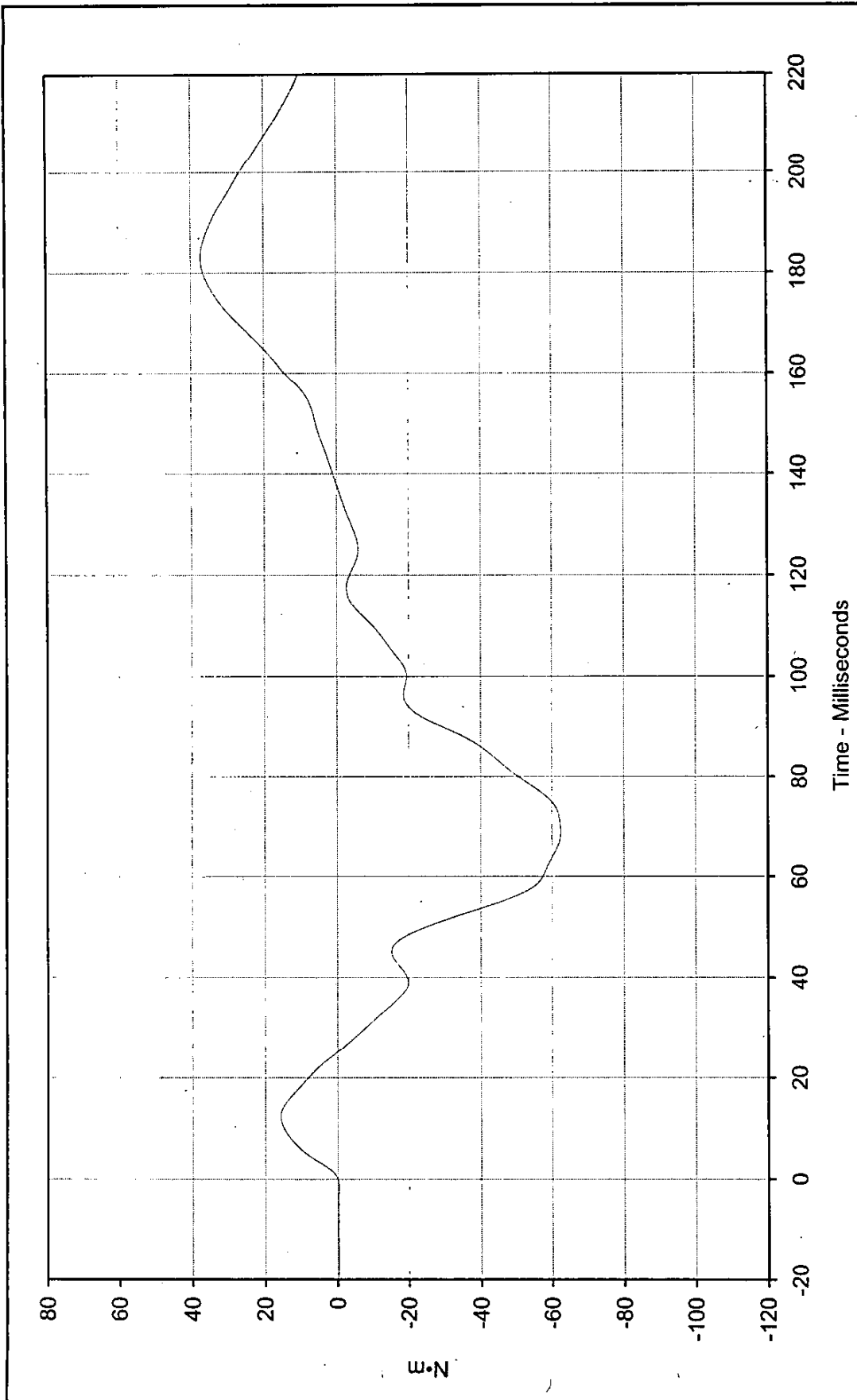
Curve Description: Neck Force X
 Maximum Value: 264.2 at 188.0 Milliseconds
 Minimum Value: -544.2 at 70.9 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/19/99
 ATD Serial No.: 35



Curve Description: Hybrid III Neck Extension Test (Male)
 Testing Program: Hybrid III Neck Extension Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NE11B

"D" Plane Rotation
 Maximum Value: 92.6 at 78.7 Milliseconds
 Minimum Value: -30.8 at 197.1 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/19/99
 ATD Serial No.: 35

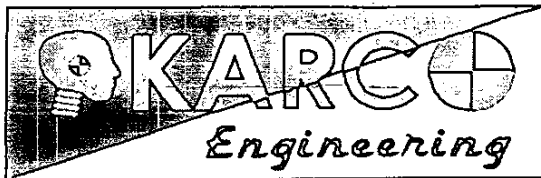




Testing Program: Hybrid III Neck Extension Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NE11B

Curve Description: Moment About Occipital Condyles
 Maximum Value: 37.2 at 183.0 Milliseconds
 Minimum Value: -62.5 at 68.9 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/19/99
 ATD Serial No.: 35





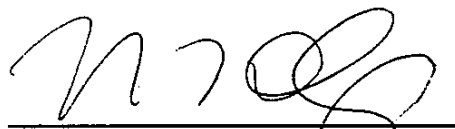
Hybrid III Calibration Data Sheet

50TH Percentile Male

External Measurements

ATD Serial No.: 35Part Serial No.: N/ATest I.D.: N/A

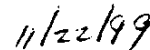
External Measurement Data				
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory temperature	°C	20.4 to 22.1	20.9	Pass
Laboratory relative humidity	%	10 to 70	43	Pass
A - Total sitting height	mm	878.8 to 889.0	888.1	Pass
B - Shoulder pivot height	mm	505.5 to 520.7	506.0	Pass
C - "H" point height	mm	83.8 to 88.9	87.1	Pass
D - "H" point from seat back	mm	134.6 to 139.7	137.0	Pass
E - Shoulder pivot from back	mm	83.8 to 94.0	92.0	Pass
F - Thigh clearance	mm	139.7 to 154.9	152.8	Pass
G - Elbow back to wrist pivot	mm	289.6 to 304.8	300.4	Pass
H - Skull cap to back line	mm	40.6 to 45.7	44.0	Pass
I - Shoulder to elbow length	mm	330.2 to 345.4	340.0	Pass
J - Elbow rest height	mm	190.5 to 210.8	207.0	Pass
K - Buttock to knee length	mm	579.1 to 604.5	603.1	Pass
L - Popliteal length	mm	429.3 to 454.7	451.0	Pass
M - Knee pivot height	mm	485.1 to 500.4	500.0	Pass
N - Buttock popliteal length	mm	452.1 to 477.5	476.0	Pass
O - Chest depth	mm	213.4 to 228.6	225.0	Pass
P - Foot length	mm	251.5 to 266.7	255.0	Pass
V - Shoulder breadth	mm	421.6 to 436.9	429.0	Pass
W - Foot breadth	mm	91.4 to 106.7	103.2	Pass
Y - Chest circumference	mm	970.3 to 1000.8	980.3	Pass
Z - Waist circumference	mm	835.7 to 866.1	865.0	Pass
AA - Location for chest circumference	mm	429.3 to 434.3	430.0	Pass
BB - Location for waist circumference	mm	226.1 to 231.1	229.0	Pass
Overall Test Results				Pass


Laboratory Technician


Approved By

November 22, 1999

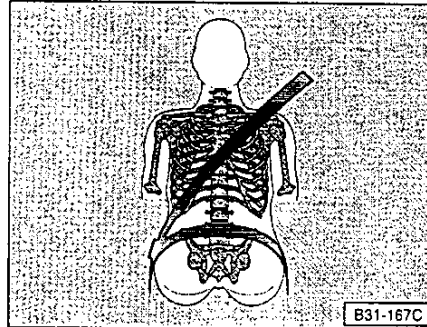
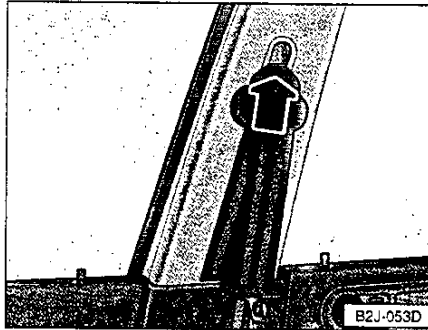
Test Date



Date

APPENDIX F
VEHICLE OWNER'S MANUAL
OCCUPANT RESTRAINT INSTRUCTIONS

SAFETY FIRST



Safety belt height adjusters on the front seats can be used to adjust the height of the shoulder portion of the safety belt. This feature will help you properly position the shoulder portion of the safety belt across your shoulder.

- Press the handle slowly up or down so that the shoulder portion of the safety belt is positioned midway over the shoulder.
- Pull on the shoulder belt to check whether the belt anchor is securely locked in place.

The shoulder belt must be positioned over the shoulder.

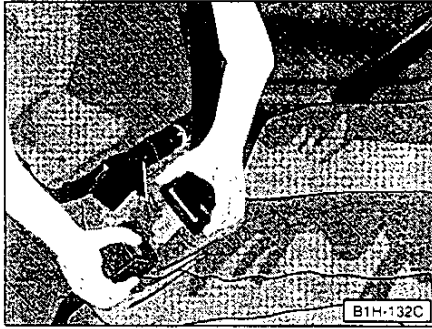
It must never rest against the neck and must fit against your body. The lap belt must be worn low and tight across the pelvis.

See illustration above. Pull belt tight.



WARNING

Always heed WARNINGS on next page.



Unfastening the safety belt

- Push the orange release button on the buckle. The belt tongue will spring out of the buckle.
- Let the belt to wind up on the retractor as you guide belt tongue to its stowed position.

Belt tensioner

The retractors for the front three-point safety belts and for the rear outboard three-point safety belts are equipped with belt tensioners.

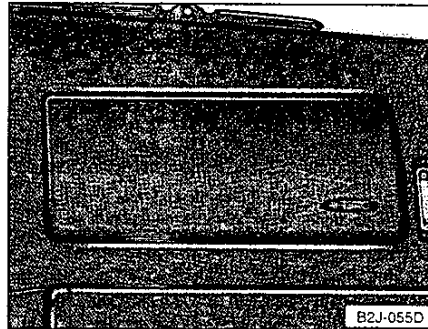
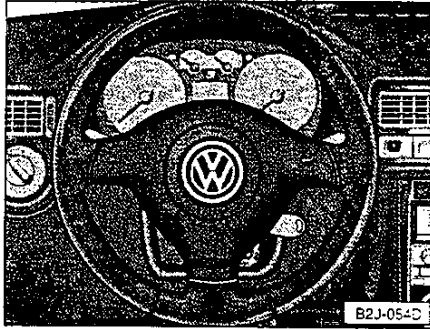
Sensors activate the belt tensioners in frontal collisions when deceleration is high enough. This tightens the belt and takes up belt slack. Taking up the slack helps to reduce forward occupant movement during a collision.

The belt tensioner can only be activated once. The belt tensioner will not be activated if the safety belt is not in use.

Never let the belt remain over a rear seat back that has been folded forward. The rear belt tensioner will be activated unnecessarily in an accident and then have to be replaced.

The belt tensioner will not activate in a light frontal collision insufficient to actuate the tensioner or in any side, rollover, or rear-end collision.}

Airbag system



Your vehicle has **two front and two side airbags**, one front and one side airbag for each front seat occupant.

Front airbag

The airbag for the driver is located in the steering wheel hub and is marked "AIRBAG." The airbag for the front passenger's seat is located in the instrument panel above the glove compartment and is also marked with "AIRBAG." See illustration.

It is very important to remember that **front airbags** only supplement the three point safety belts in some frontal accidents in which the vehicle deceleration is high enough to activate the airbags.

Front airbags are not activated...

- if the ignition is switched off
- in side collisions
- in rear-end collisions
- in rollovers.

Front airbags may not inflate in certain frontal collisions. Vehicle damage, repair costs or even the lack of vehicle damage is not necessarily an indication of proper airbag operation.

The front airbags can only provide additional protection for the chest and face of the driver and the front seat passenger when...

- safety belts are worn properly,
- the seats have been positioned so that the occupant is properly seated as far as possible from the airbag
- and the head restraints have been properly adjusted.

Airbags do not protect the lower part of the body.

Safety belts are important to help keep front seat occupants in the proper seated position so that airbags can unfold properly and provide added protection as intended.

For more details see next pages.

Importance of proper seating position

In a collision airbags must inflate within a blink of an eye and with considerable force. The supplemental airbags could injure you if you are not seated properly. Therefore in order to help the airbag to do its job, it is important, both as a driver and as a passenger to sit properly at all times. By keeping room between your body and the front of the passenger compartment, the airbag can inflate fully and completely and provide supplemental protection in certain frontal collisions. See page 42 for information on the adjustment of the front seats and also "Front seats" → **booklet 3.1**, for details on the operation of the seat adjustment controls. It's especially important that children be properly restrained. See chapter "Child safety", page 30.

**WARNING**

- o Sitting too close to the steering wheel or instrument panel will decrease the effectiveness of the airbags and will increase the risk of personal injury in an accident.
- o If you are unrestrained, leaning forward, sitting sideways or out of position in any way, your risk of injury is much higher. You will also receive serious or fatal injuries from the airbag if you are up against it or too close to it when it inflates.

**WARNING continued**

- o To reduce the risk of injury when an airbag inflates, always wear safety belts properly. See "How to wear the safety belts properly" in this booklet.
- o Children age 12 or younger should always ride in the rear seat. If children are not properly restrained, they may be severely injured or killed when an airbag inflates. Never let children ride unrestrained or improperly restrained in the vehicle.
- o Adjust the front seats properly.
- Never ride with the backrest reclined.
- Always sit as far as possible from the the steering wheel or the instrument panel.
- Always sit upright with your back against the backrest of your seat.
- Never place your feet on the instrument panel or on the seat. Always keep both feet on the floor in front of the seat to help prevent serious injuries to the legs and hips if the airbag inflates.

Adjusting the steering wheel

For detailed steps for adjusting the steering wheel please see "Adjustable steering column" → **booklet 3.1**.

Adjust the steering wheel so that the steering wheel and airbag cover points at your chest and not at your face. The steering wheel should be adjusted so that you can hold the outer rim of the steering wheel comfortably with your hands at the 3 o'clock and 9 o'clock positions.

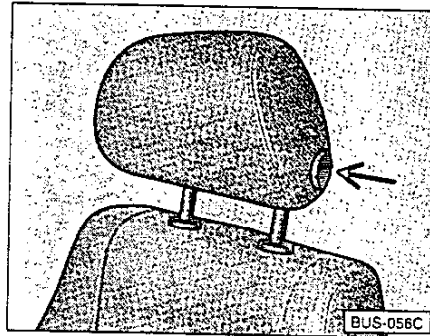
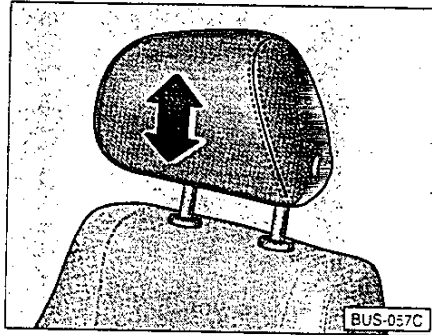


WARNING

- o Pointing the steering wheel toward your face decreases the ability of the supplemental driver's airbag to protect you in an accident.
- o Holding the steering wheel the wrong way can cause serious injuries to the hands, arms and head if the driver's airbag inflates.
- o Never hold the steering wheel at the 12 o'clock position or with your hands at other positions inside the steering wheel rim or on the steering wheel hub.

SAFETY FIRST

Head restraints



Front head restraints

The padded head restraints are adjustable. Position the head restraints according to the occupant's height. Properly positioned head restraints, with the use of safety belts, help to offer effective protection in most accident situations.

Height adjustment

- For height adjustment, grasp firmly with both hands and pull up. To push down press the button (see arrow in right illustration).
- For maximum protection, the upper edge should be at least at eye level or higher.

Removing and reinstalling

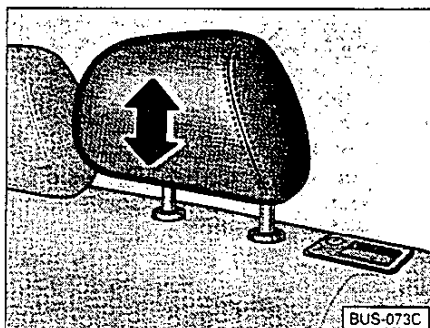
To remove the head restraints, pull the head restraint upward until it stops. Then press the button (arrow). While doing this, pull the head restraint upward and remove.

To reinstall, push the two rods of the headrest into the guides and press the button (arrow) until you hear them lock into place.



WARNING

Head restraints are designed to help reduce injuries in an accident. Do not drive the vehicle without the head restraints in place and properly adjusted.

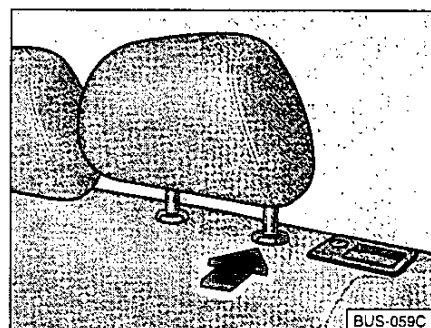


Rear head restraints

The padded head restraints are adjustable. Position the head restraints according to the occupant's height. Properly positioned head restraints, with the use of safety belts, help to offer effective protection in most accident situations.

Height adjustment

- For height adjustment, grasp firmly with both hands and pull up or push down.
- For maximum protection, the upper edge should be at least at eye level or higher.



Removing and installing

To remove the head restraints, pull the head restraint upward until it stops. Then press the button (arrow). While doing this, pull the head restraint upward and remove.

To reinstall, push the two rods of the headrest into the guides until you hear them lock into place.

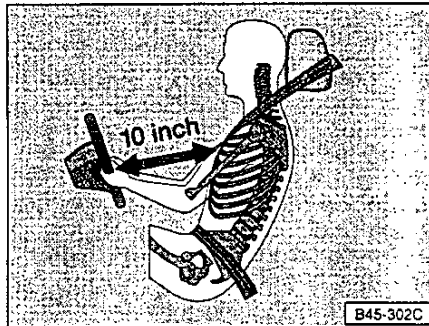
Note:

To remove the rear head restraints, slightly fold the rear seat back forward.



WARNING

Head restraints are designed to help reduce injuries in an accident. Do not drive the vehicle without the head restraints in place and properly adjusted.



Driver's seat

To avoid contact with the airbag while it is unfolding, the driver must not sit any closer to the steering wheel than necessary and always properly wear the three point safety belt provided.

We recommend that you adjust the driver's seat as follows:

- adjust the seat in fore and aft direction so that you can easily push the pedals all the way while keeping your knee slightly bent.
 - adjust the seatback so that when you sit with your back against the seatback, you can still grasp the top of the steering wheel.
 - adjust the steering wheel so that the distance from the center of your breastbone to the center of the airbag cover on the steering wheel must be **at least** 10 inches (25 cm) or more.
- See illustration above and chapter "Front seats" → **booklet 3.1**.

WARNING

- o Never sit closer than 10 inches (25 cm) to the steering wheel.
- o If you cannot sit more than 10 inches (25 cm) from the steering wheel, we recommend that you investigate whether adaptive equipment may be available to help you reach the pedals and increase your seating distance from the steering wheel.
- o If it is impossible for you to sit at least 10 inches (25 cm) or more from the steering wheel, the National Highway Traffic Safety Administration (NHTSA) may permit you to have an on/off switch for the airbag installed. For address and telephone number of NHTSA - see page 20



Always heed all WARNINGS on next page.

SAFETY FIRST

Front passenger's seat

To avoid contact with the airbag while it is unfolding, the adult front seat passenger must not sit any closer to the instrument panel than necessary and always properly wear available three point belts.

We recommend that you adjust the passenger's seat as follows:

- backrest upright (**never** reclined)
- place your feet on the floor in front of the passenger's seat
- adjust the passenger's seat as far as possible to the rear of the fore and aft adjustment range.



WARNING

- o Always keep both feet on the floor in front of the seat.
- o Never place your feet on the instrument panel or on the seat. If the airbag inflates and your feet are on the instrument panel or on the seat, you could receive serious personal injuries.

For safety information on transporting children on the front passenger seat see page 30.



WARNING

o To reduce the risk of personal injury in an accident, front seat passengers must never ride in a moving vehicle with the seatback reclined. Safety belts offer protection only when the seatback is upright and belts are properly positioned on the body. The more the seatback is reclined, the greater the risk of personal injury from an out-of-position safety belt.

o For driver's and passenger's protection, make sure front seats and seatbacks are securely locked in place.

o Never store items under the seats. Loose objects can interfere with the seat latching mechanism and can also cause personal injury in an accident.