

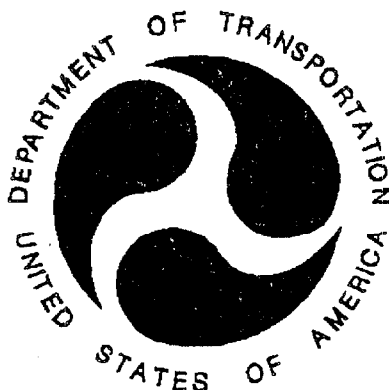
V2969

REPORT NO. KAR-99-03

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

HONDA MOTOR CORP.
1999 HONDA CIVIC DX 4-DOOR
NHTSA NO. MX5300

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



DECEMBER 20, 1998
FINAL REPORT

PREPARED FOR:
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400 SEVENTH STREET, SW, ROOM 5313
WASHINGTON, D.C. 20590

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Prepared by: James E. Gorth
Mr. James E. Gorth, Project Engineer
KARCO Engineering

Date: DECEMBER 20, 1998

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

Date: DECEMBER 20, 1998

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

Date: DECEMBER 20, 1998

FINAL REPORT ACCEPTED BY:

Manager, New Car Assessment Program

Date of Acceptance

COTR, NCAP Frontal Impact Program

Date of Acceptance

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SECTION 1

PURPOSE, TEST PROCEDURE AND SUMMARY OF TEST MX5300

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 was to obtain vehicle crashworthiness, occupant restraint system performance data and lower leg data for frontal barrier impacts. The velocity used in this test was in excess of the current 30 mph (48 km/h) FMVSS 208/212/219/301 requirements.

1.2 TEST PROCEDURE

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

The test was conducted at KARCO Engineering on December 4, 1998, at a speed of 56.0 km/h. The test vehicle was instrumented with eight (8) accelerometers to measure longitudinal axis accelerations. The driver and passenger's restraint systems were instrumented with four (4) seat belt load cells to measure lap and shoulder belt tension. The specified impact velocity range was 55.5 to 57.1 km/h. The frontal barrier impact event was documented by one (1) real-time panning motion picture camera and sixteen (16) 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/right femur load cells, left/right lower leg sensors and left/right foot accelerometers. In addition, chest displacement and neck six-axis load and moment sensors were utilized. The ATDs were positioned in the front outboard seating positions according to the dummy placement procedures specified in the Laboratory Indicant Test Procedure. Ninety-six channels of data were recorded with a PC based (TDAS) on-board data acquisition system. The data was digitally sampled at 10,000 samples per second and processed per section IP11 of the Laboratory Indicant Test Procedure.

The Driver ATD (serial No. 34) and the right-front passenger ATD (serial No.35) were calibrated two tests prior to this NCAP test. Injury criteria were not exceeded by either ATD during this frontal barrier impact test.

1.3 SUMMARY OF FRONTAL BARRIER IMPACT TEST

A immovable barrier was impacted by a 1999 Honda Civic Dx 4-Door at a velocity of 56.0 km/h. The test weight, with two (2) 50th percentile male ATDs, was 1273 kg. Twenty four (24) load cell barrier data channels were obtained in conducting the December 4, 1998 NCAP test. The test vehicle was equipped with a transverse mounted 1.6 liter, 4 cyl. engine and a four speed automatic transmission.

The driver's Head Injury Criteria (HIC) was 423.7, the maximum chest deceleration over three (3) milliseconds was 49.7 g and the left and right femur loads were -4554.7 and -4480.0 Newtons, respectively. Chest deflection for the driver ATD was -33.5 mm. The driver ATD head contacted the the airbag and headrest, its chest and abdomen contacted the airbag, the left and right knees contacted the dashboard.

The right front passenger's HIC was 544.1, maximum chest deceleration over three (3) milliseconds was 47.6 g and the left and right femur loads were -4654.0 and -3990.6 Newtons respectively. Chest deflection for the passenger ATD was -34.0 mm. The passenger ATD head contacted the airbag, the chest and abdomen contacted the airbag and both knees contacted the dashboard.

Seat belt spoolout, measured by on-board pullout potentiometers was 62.8 mm for the driver ATD and 69.5 mm for the passenger ATD. Shoulder belt stretch was .53 mm/cm for the driver ATD and 0.0 mm/cm for the passenger ATD. Channel failed for the passenger, no data available.

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

The test vehicle sustained a maximum static crush of 486 mm at the center of the vehicle. Both the driver side doors and the passenger side doors opened without the aid of tools.

1.4 GENERAL COMMENTS

The 1999 Honda Civic Dx 4-Door 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, vehicle and 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 restraint systems.

SECTION 2.

OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 1999 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA No.: MX5300

Test Program: 1999 35 MPH NCAP FRONTAL IMPACT

Test Date: 12/4/98

CONVERSION FACTORS USED IN THIS REPORT:

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

DATA SHEET NO. 1

CRASH TEST SUMMARY

Test Vehicle: 1999 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA No.: MX5300

Test Program: 1999 35 MPH NCAP FRONTAL IMPACT

Test Date: 12/4/98

VEHICLE REBOUND

Measurements in mm	Left	Center	Right
Vehicle Rebound	708	410	745

VEHICLE REBOUND AND STATIC CRUSH; REBOUND ANGLE = 0°

Measurements in mm	Left	Center	Right
Pre-test Measurements	4012	4439	4014
Post-test Measurements	3727	3953	3760
Static Crush	-285	-486	-254
Average	-342		

DOOR OPENING AND SEAT TRACK INFORMATION

	Driver	Passenger
Door Opening (Front)	OPENED	OPENED
Door Opening (Rear)	OPENED	OPENED
Seat Track Shift (mm of shift)	0	0
Seat Back Failure	NONE	NONE

DUMMY INFORMATION

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

DATA SHEET NO. 2

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 1999 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA No.: MX5300

Test Program: 1999 35 MPH NCAP FRONTAL IMPACT

Test Date: 12/4/98

TEST VEHICLE INFORMATION			
Manufacturer	HONDA MOTOR CORP	VIN	2HGEJ6621XH502506
Manufacturing Date	10/98	Delivery Date	11/13/98
Dealer	VALLEY-HI TOYOTA/HONDA	NHTSA NO.	MX5300
Odometer Reading	24 mi	Fuel Type	UNLEADED
Engine Displacement	1.6 Liters	Cylinders	4
Transmission	AUTOMATIC	Final Drive	FRONT
Engine Placement	TRANSVERSE	Color	ICED-TEAL
Tire Press./Max. Cap. Front	210 kpa	Cold Tire Press. Front	210 kpa
Tire Press./Max. Cap. Rear	203 kpa	Cold Tire Press. Rear	203 kpa
Recommend Tire Size	P185/65R14	Type of Spare	T105/80D13
Tire Size on Vehicle	P185/65R14	Manufacturer	FIRESTONE
GVWR	1510 kg	Cargo Capacity	45 kg
GAWR Front	798 kg	GAWR Rear	730 kg
Air Conditioning	YES	Power Steering	YES
Power Brakes	YES	AM/FM/Cassette	NO
Disc Brakes (Front)	YES	Disc Brakes (Rear)	NO
Power Windows	NO	Tilt Steering	YES
Anti-lock Brakes (ABS)	NO	Power Seats	NO
Driver Airbag	YES	Passenger Airbag	YES

VEHICLE CAPACITY DATA: TYPE OF FRONT SEATS BUCKET SEATS

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

WEIGHT OF VEHICLE AS RECEIVED AT KARCO (with maximum fluids): 1081 kg

Data Sheet No. 2... (Continued)

VEHICLE CAPACITY WEIGHT (kg):

Vehicle Capacity Weight 385 kg
 Occupant Weight 340 kg
 Rated Cargo/Luggage Weight (RCLW) 45 kg

	FRONT	REAR	TOTAL
Right	318	207	525
Left	345	211	556
Total	663	418	1081
Percent of Total	61.3	38.7	100%

CALCULATION OF TEST

TARGET WEIGHT (kg):

Total Delivered Weight 1081 kg
 RCLW 45 kg
 Weight of 2 P572 ATDs 152 kg
 TARGET TEST WEIGHT 1278 kg

TEST WEIGHT OF VEHICLE WITH 2 ATDs AND BALLAST

	FRONT	REAR	TOTAL
Right	350	266	616
Left	372	285	657
Total	722	551	1273
Percent of Total	56.7	43.3	100%

Weight of Ballast secured in cargo area: 35 kg Does not include cameras, instrumentation, and brake abort system.

Vehicle Components Removed For Weight Reduction:

Side mirrors, jack, tools, spare tire and paneling.

TEST VEHICLE ATTITUDE (mm)

	LF	RF	LR	RR
As Delivered	643	648	675	683
As Tested	627	630	625	613

Vehicle Wheelbase: 2625 mm

FUEL SYSTEM DATA:

Fuel System Capacity From Owner's Manual = 45.04 liters

Usable Capacity Figure Furnished by COTR = 45.04 liters

Test Volume Range (92 to 94% of Usable Capacity) = 41.45 to 42.35 liters

ACTUAL TEST VOLUME = 41.63 liters (With entire fuel system filled) Note: Tank @ 92.4% capacity

Test Fluid Type = Stoddard Solvent Specific Gravity = 0.764

Kinematic Viscosity = as per ASTM Standard D484-71 Color = Red

Type of Fuel Pump = Electric X Mechanical

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

DETAILS OF FUEL SYSTEM: Key operated w/automatic shutoff after a few seconds.

DATA SHEET NO. 3**POST IMPACT DATA**Test Vehicle: 1999 HONDA CIVIC DX 4-DOOR SEDANNHTSA No.: MX5300Test Program: 1999 35 MPH NCAP FRONTAL IMPACTTest Date: 12/4/98REQUIRED IMPACT VELOCITY RANGE: 55.51 km/h to 57.11 km/h

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

Trap No. 1 = 56.0 km/h Trap No. 2 = 55.9 km/h

Distance from vehicle to barrier - -

A. entering trap = 1524 mmB. leaving trap = 305 mm

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

Vehicle Length	Left	Center	Right
Pre-test Measurements (mm)	4012	4439	4014
Post-test Measurements (mm)	3727	3953	3760
Static Crush (mm)	-285	-486	-254

VEHICLE REBOUND: (from rigid barrier with rotational movement offsets only)

Measurements in mm		Left Front	Right Front	Left Rear	Right Rear
Vehicle Rebound	X axis	N/A	N/A	N/A	N/A
Vehicle Rebound	Y axis	N/A	N/A	N/A	N/A
Average	X axis	N/A			
Average	Y axis	N/A			

DATA SHEET NO. 4

TEST VEHICLE INFORMATION

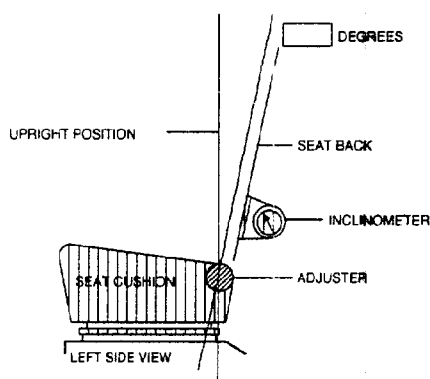
Test Vehicle: 1999 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA No.: MX5300

Test Program: 1999 35 MPH NCAP FRONTAL IMPACT

Test Date: 12/4/98

1. NOMINAL DESIGN RIDING POSITION -



FRONT SEAT ASSEMBLY

For adjustable driver and passenger seat backs. Please describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent if applicable. Indicate, if applicable, how the detents are numbered (Is the first detent "0" or "1"?).

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

Seat back angle for driver's seat = 25° w/seated dummy

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

Seat back angle for passenger's seat = 25° w/seated dummy

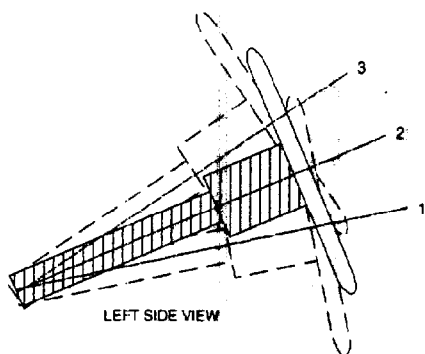
2. SEAT FORE & AFT POSITIONS:

Provide instructions for positioning the driver and front outboard passenger seat(s) in the center of fore and aft travel. For example, provide information to locate the detent in which the seat track is to be locked.

Positioning of the driver's seat: 25 seating positions, set to 13th detent from the front.

Positioning of the passenger's seat (if applicable): 25 seating positions, set to 13th detent from the front.

3. STEERING COLUMN ADJUSTMENTS:



STEERING COLUMN ASSEMBLY

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when it is moved through its full range of driving positions. If the tested vehicle has any of these adjustments, does your company use any specific procedures to determine the geometric center.

Operational Instructions:

Position No. 1 is at 21°

Position No. 2 is at 23.5°

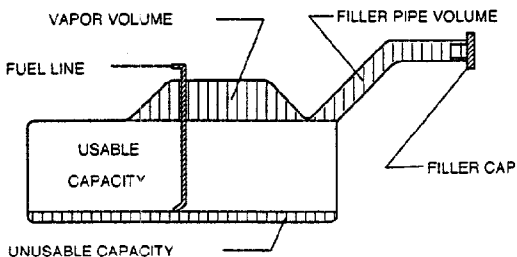
Position No. 3 is at 26°

4. SEAT BELT UPPER ANCHORAGE:

Set to mid position, per manufacturers specifications.

DATA SHEET NO. 4 (continued)

5. FUEL TANK CAPACITY DATA



5.1

A. "Usable Capacity" of standard equipment fuel tank = 45.04 liters.

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

C. "Usable Capacity" of vehicle(s) used for certification testing to requirements of FMVSS 301 = 41.45 to 42.35 liters.

VEHICLE FUEL TANK ASSEMBLY

Operational Instructions:

5.2 Amount of Stoddard solvent added to vehicle(s) used for certification test(s) = 41.63 liters

5.3 Is vehicle equipped with electric fuel pump?

Yes X No

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

Key operated for a few seconds then automatic shutoff kicks in.

DATA SHEET NO. 5

DUMMY POSITIONING IN VEHICLE

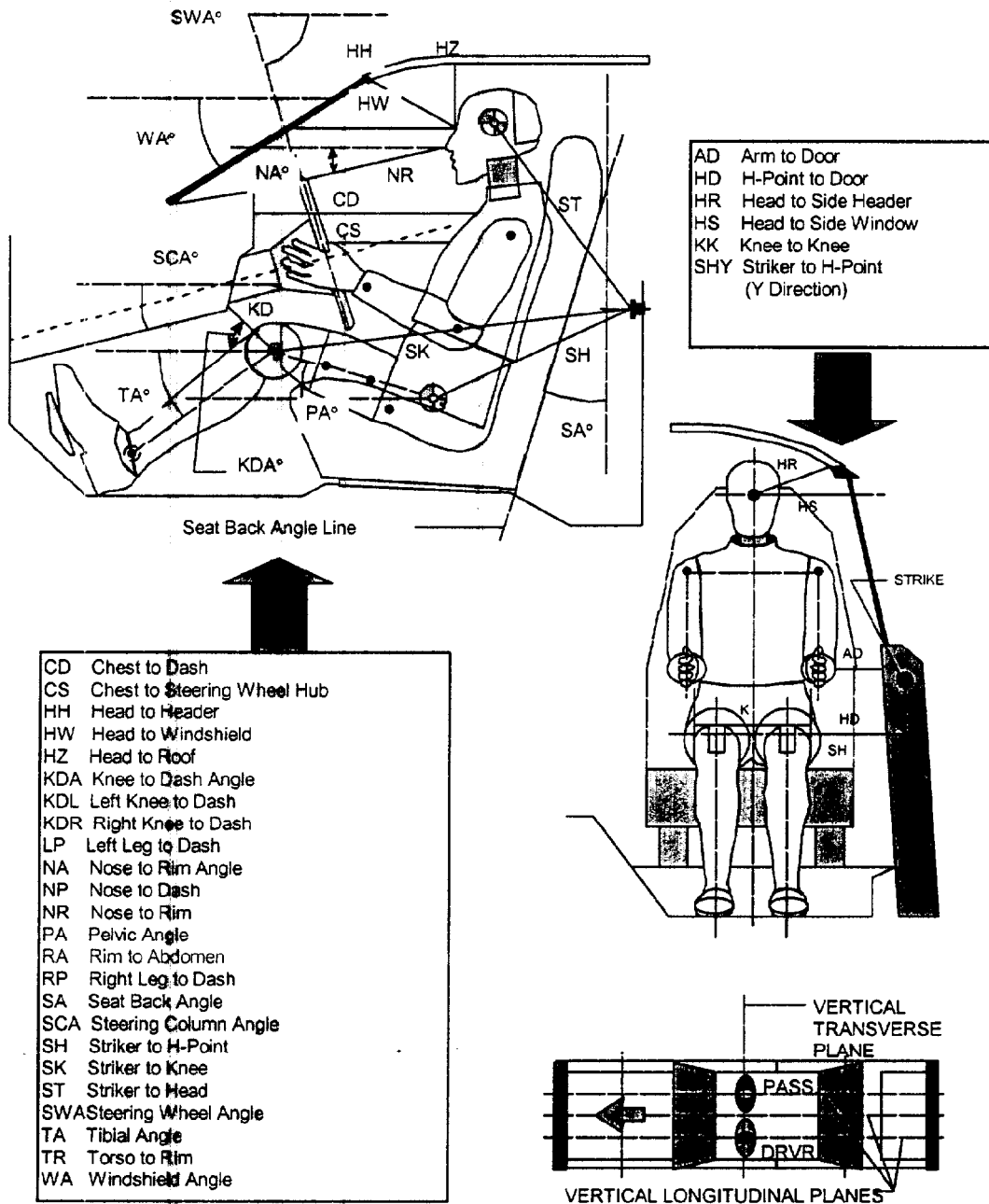
Test Vehicle: 1999 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA No.: MX5300

Test Program: 1999 35 MPH NCAP FRONTAL IMPACT

Test Date: 12/4/98

DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS



DATA SHEET NO. 5...(continued)

DUMMY POSITIONING IN VEHICLE

FRONT SEAT MEASUREMENT TABLE

	DRIVER (Serial No. <u>34</u>)		PASS. (Serial No. <u>35</u>)	
	DISTANCE (mm)	ANGLE (°)	DISTANCE (mm)	ANGLE (°)
WA°		31		
SWA°		66.5		
SCA°		22		
SA°		23		23
HZ	200	90	178	90
HH	306	0	276	0
HW	534	0	532	0
HR	224		195	
NR	396	11		
CD	555		497	
CS	278	0		
RA	207	0		
KDL	177	26	161	
KDR	157		188	35
PA°		22		22
TA°		35		33
KK	295		252	
ST	523	8	523	10
SH	156	0	170	0
SHY	248		231	
HS	266		239	
HD	145		126	
AD	108		23	

DATA SHEET NO. 6

SEAT BELT POSITIONING DATA

Test Vehicle: 1999 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA No.: MX5300

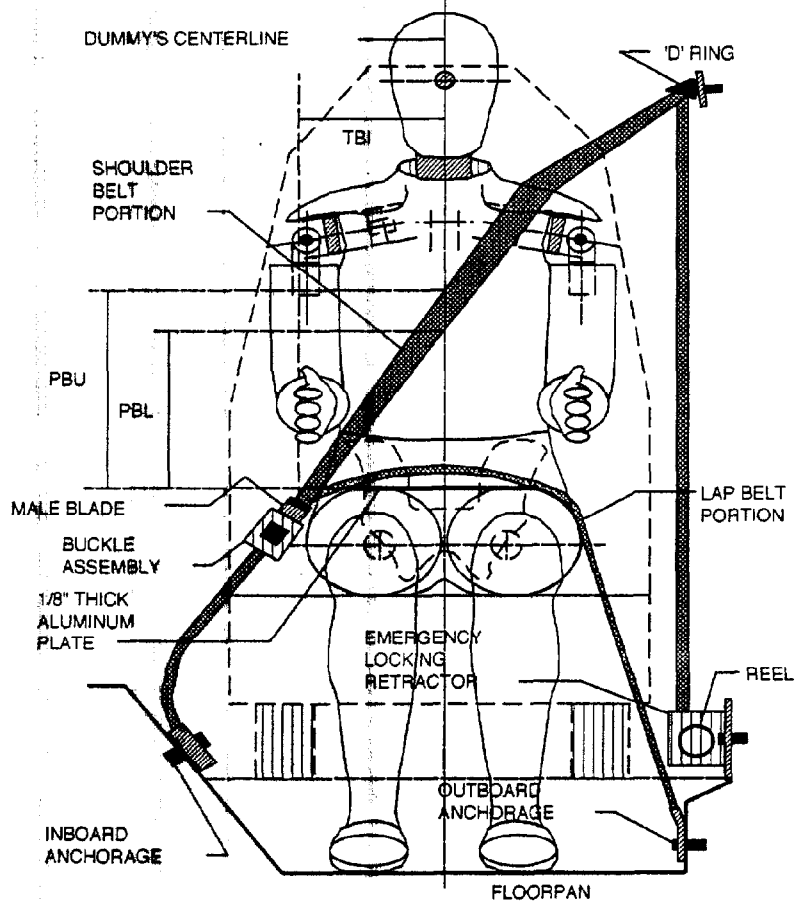
Test Program: 1999 35 MPH NCAP FRONTAL IMPACT

Test Date: 12/4/98

SEAT BELT PLACEMENT MEASUREMENTS

Measurement Description	Units	Driver	Passenger
TCI - Dummy centerline to shoulder bolt	mm	185	195
PBU - Top surface of reference to belt upper edge	mm	310	305
PBL - Top surface of reference to belt lower edge	mm	228	226
Lap Belt tension	Newtons	10	10
Shoulder Belt tension	N/A	Retractor	Retractor

SEAT BELT POSITIONING DATA



FRONT VIEW OF DUMMY

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

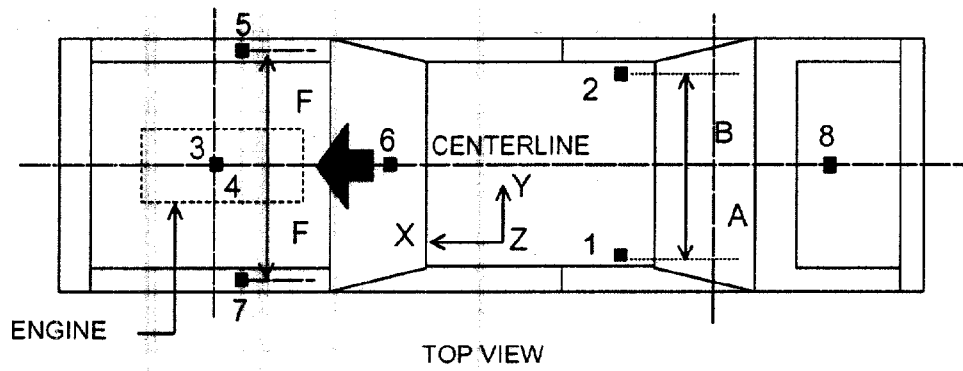
TEST VEHICLE: 1999 HONDA CIVIC DX 4 DOOR SEDAN NHTSA No.: MX5300
 TEST PROGRAM: 1999 NHTSA 35 MPH NCAP TEST DATE: 12/4/98

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

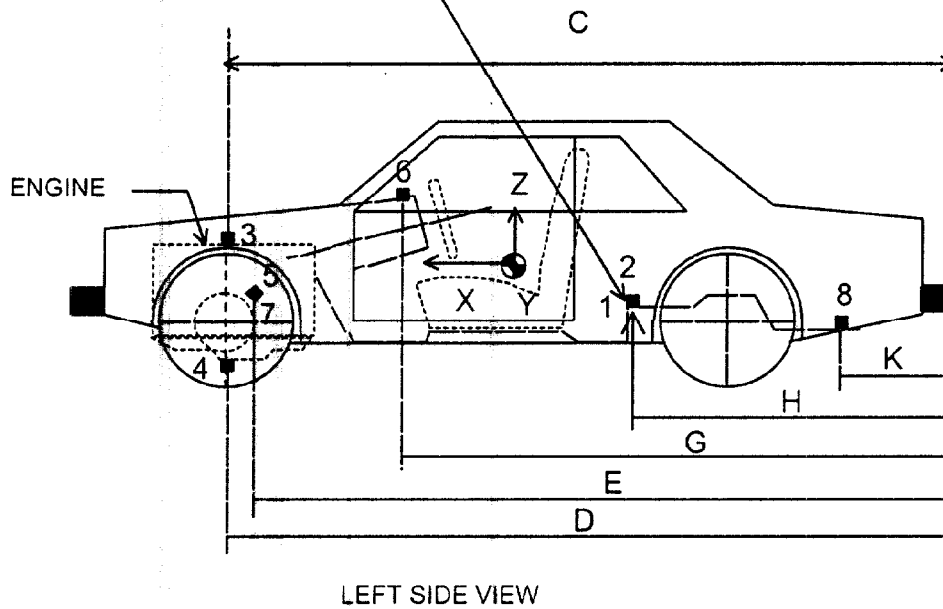
No.	Accelerometer Location	Measurements (mm)			Peak Values				
		X	Y	Z	Units	Max	Time	Min	Time
1	Left Rear X-Member (Pri.)	1495	-594	388	G's	4.6	109.2	-35.2	57.4
2	Right Rear X-Member (Pri.)	1504	578	395	G's	3.9	112.4	-30.1	49.3
3	Engine Top	3766	-36	789	G's	44.9	39.8	-142.1	29.4
4	Engine Bottom	3758	-240	154	G's	60.2	36.9	-177.0	28.4
5	Left Brake Caliper	3694	-651	252	G's	76.1	58.2	-126.9	42.1
6	Right Brake Caliper	3694	651	250	G's	70.7	60.3	-118.0	41.5
7	Instrument Panel	2860	-15	902	G's	67.4	33.2	-61.8	66.0
8	Left Rear X-Member (Rednt.)	1410	-598	402	G's	5.8	109.9	-34.5	50.5

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

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



REAR SEAT CUSHION
ASSY. FRONT ATTACHMENT
BRACKET SUPPORT



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

TEST VEHICLE: 1999 HONDA CIVIC DX 4 DOOR SEDAN NHTSA No.: MX5300
 TEST PROGRAM: 1999 NHTSA 35 MPH NCAP TEST DATE: 12/4/98

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	59.5	208.6	54.6	75.2	15.5	223.0	-54.8	75.5
Head CG	Y	G's	24.1	208.2	-8.8	204.3	9.8	26.9	-9.2	83.1
Head CG	Z	G's	39.2	208.5	-3.8	105.1	32.1	61.3	-8.6	26.5
Head CG Resultant	N/A	G's	74.9	208.6			61.1	74.9		

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	4.0	218.3	-50.7	73.4	3.7	137.9	-48.1	67.5
Chest CG	Y	G's	4.8	113.5	-7.8	56.8	6.6	57.0	-6.6	84.2
Chest CG	Z	G's	10.1	47.4	-8.7	103.6	14.5	42.5	-9.9	102.2
Chest CG Resultant	N/A	G's	50.7	73.4			48.3	67.5		

FEMUR PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Femur	Z	Newtons	158.9	30.3	-4554.7	52.5	239.7	21.6	-4654.0	50.7
Right Femur	Z	Newtons	332.7	246.1	-4480.0	54.9	241.2	22.3	-3990.6	40.0

SEAT BELT SENSOR PEAK VALUES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Lap Belt Force	N/A	Newtons	4600.3	49.2	-4.6	147.1	4531.2	53.8	5.7	5.8
Shoulder Belt Force	N/A	Newtons	7178.3	73.2	3.6	0.0	8922.5	72.5	1.0	174.5
Shoulder Belt Spoolout	N/A	MM	62.8	86.5	-0.1	11.3	69.5	64.9	0.1	0.0
Shoulder Belt Stretch	N/A	MM/CM	0.530	203.2	0.000	19.4	0.000	0.0	0.000	0.0*

* No data collected on passenger belt stretch

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	423.7	42.5	53.5	89.4	544.1	47.0	55.8	91.7

CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Primary	49.7	66.1	69.1	47.6	66.4	69.4

DATA SHEET NO. 8...(continued)

TEST VEHICLE: 1999 HONDA CIVIC DX 4 DOOR SEDAN

NHTSA No.: MX5300

TEST PROGRAM: 1999 NHTSA 35 MPH NCAP

TEST DATE: 12/4/98

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	5.3	97.6	-63.0	55.4	3.9	107.4	-50.2	51.2
Pelvis	Y	G's	12.5	61.0	-9.1	47.4	10.2	50.0	-9.8	90.9
Pelvis	Z	G's	5.5	203.9	-23.9	59.8	12.8	39.4	-23.9	82.0

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	145.3	205.2	-496.5	125.7	303.7	227.0	-510.1	101.1
Neck Force	Y	Newtons	257.9	226.4	-204.8	105.4	116.4	231.2	-328.0	82.2
Neck Force	Z	Newtons	1620.2	69.0	-1049.8	204.7	1882.3	61.4	-712.9	233.5
Neck Moment	X	N-m	12.2	205.3	-14.1	92.6	14.0	32.3	-12.9	233.9
Neck Moment	Y	N-m	32.6	127.6	-36.6	220.0	27.1	125.6	-17.4	247.2
Neck Moment	Z	N-m	9.9	86.7	-9.5	139.2	13.4	96.3	-8.2	41.3

FOOT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Foot Aft	X	G's	52.8	49.6	-56.3	37.8	52.1	58.6	-193.8	37.2
Left Foot Aft	Z	G's	3.4	123.8	-71.6	36.8	39.0	40.0	-169.5	38.4
Left Foot Fore	Z	G's	44.8	47.9	-93.8	40.3	98.2	59.4	-197.2	34.2
Right Foot Aft	X	G's	249.2	52.6	-114.4	41.2	74.9	54.9	-219.9	39.8
Right Foot Aft	Z	G's	168.9	53.3	-120.8	40.6	59.2	59.4	-167.2	39.4
Right Foot Fore	Z	G's	310.6	53.9	-185.8	40.5	247.0	59.3	-252.8	39.4

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	21.2	37.4	-117.4	47.1	132.5	40.4	-70.2	37.9
Left Lower Moment	Y	N-m	160.6	53.3	-17.2	37.7	95.9	64.3	-21.4	39.6
Left Lower Force	Z	Newtons	2351.3	45.7	-288.9	231.7	115.8	170.1	-8392.9	37.5
Left Upper Moment	X	N-m	58.3	47.4	-36.9	38.2	42.0	41.3	-105.9	38.3
Left Upper Moment	Y	N-m	19.6	124.0	-73.8	39.7	75.4	66.4	-225.1	38.6
Right Lower Moment	X	N-m	126.3	52.8	-55.4	45.4	44.7	60.4	-37.8	41.6
Right Lower Moment	Y	N-m	410.7	54.7	-48.4	44.7	163.0	63.8	-37.6	41.4
Right Lower Force	Z	Newtons	212.0	135.1	-4155.8	41.0	386.7	54.8	-9815.2	40.2
Right Upper Moment	X	N-m	74.6	54.5	-125.8	45.4	13.4	37.8	-46.1	41.2
Right Upper Moment	Y	N-m	86.9	54.4	-179.5	45.1	139.1	49.8	-284.0	40.8

DATA SHEET NO. 8...(continued)

TEST VEHICLE: 1999 HONDA CIVIC DX 4 DOOR SEDAN NHTSA No.: MX5300

TEST PROGRAM: 1999 NHTSA 35 MPH NCAP TEST DATE: 12/4/98

CHEST PEAK DISPLACEMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	MM	0.1	1.8	-33.5	76.0	0.2	1.9	-34.0	78.6

HEAD REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	60.6	203.2	-53.6	75.4	14.2	222.3	-54.3	78.4
Head CG	Y	G's	23.2	208.2	-11.7	204.4	9.1	26.9	-6.8	84.0
Head CG	Z	G's	27.3	201.6	-8.3	206.2	30.5	61.4	-8.0	26.1
Head CG Resultant	N/A	G's	66.1	208.5			60.4	74.9		

CHEST REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	3.9	218.9	-50.1	73.5	4.2	137.7	-48.0	67.4
Chest CG	Y	G's	4.8	106.0	-7.8	51.0	8.2	57.2	-6.5	84.1
Chest CG	Z	G's	9.8	47.4	-7.9	103.5	14.5	42.2	-9.4	102.1
Chest CG Resultant	N/A	G's	50.2	73.5			48.2	67.5		

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	398.3	41.5	53.6	89.5	512.4	46.1	58.9	94.4

REDUNDANT CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Redundant	48.7	66.1	69.1	47.4	66.6	69.6

DATA SHEET NO. 9**SEAT BELT PERFORMANCE ASSESSMENT TEST DATA**Test Vehicle: 1999 HONDA CIVIC DX 4-DOOR SEDANNHTSA No.: MX5300Test Program: 1999 35 MPH NCAP FRONTAL IMPACTTest Date: 12/4/98**BELT LENGTH DATA**

Measurement Description	Units	Driver	Passenger
Retractor reel to 'D' ring	mm	758	760
Shoulder belt length as measured on ATD	mm	898	896
Lap belt length as measured on ATD	mm	846	840
Remainder of belt on reel	mm	569	570
Total belt length for continuous webbing systems	mm	3071	3066

SHOULDER BELT SPOOL-OFF DATA

Measurement Description	Units	Driver	Passenger
As determined mechanically	mm	51.0	49.0
As determined electronically	mm	62.8	69.5

BELT STRETCH DATA

Measurement Description	Units	Driver	Passenger
Electronically from shoulder belt load cell and "D" ring	mm/cm	0.53	no data
Mechanically	mm/cm	12.00	0.00

DATA SHEET NO. 10

SUMMARY OF FMVSS 212 DATA

Test Vehicle: 1999 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA No.: MX5300

Test Program: 1999 35 MPH NCAP FRONTAL IMPACT

Test Date: 12/4/98

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

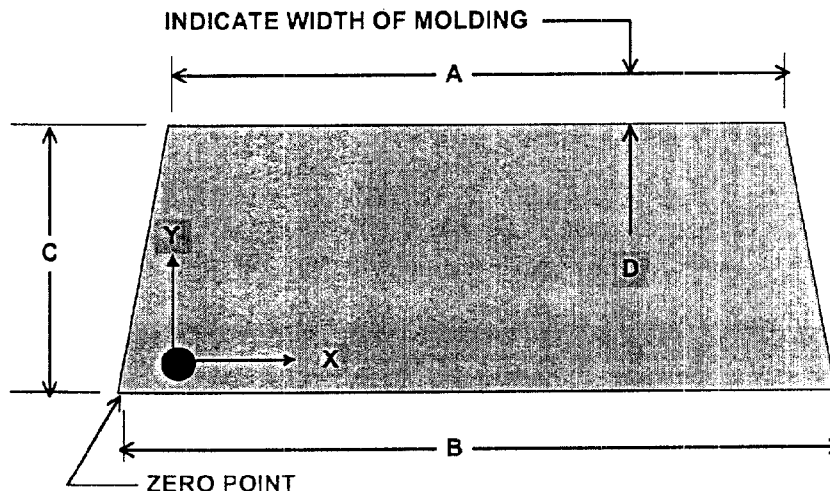
Windshield glass is secured to the vehicle frame with a rubber type adhesive, with rubber molding along the top and sides with rubber and plastic molding along the bottom.

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

WINDSHIELD PERIPHERY MEASUREMENTS

	Units	Left Side	Right Side	Total
Pre-Test	mm	2054.5	2054.5	100%
Post-Test	mm	2054.5	2054.5	100%
Percent of retention	Percent	100%	100%	

Indicate area of retention failure.



FRONT VIEW OF WINDSHIELD

Width of molding: Top: 21 mm, Sides: 24 mm, Bottom: N/A mm

Temperature of windshield molding during test: 21.1 °C

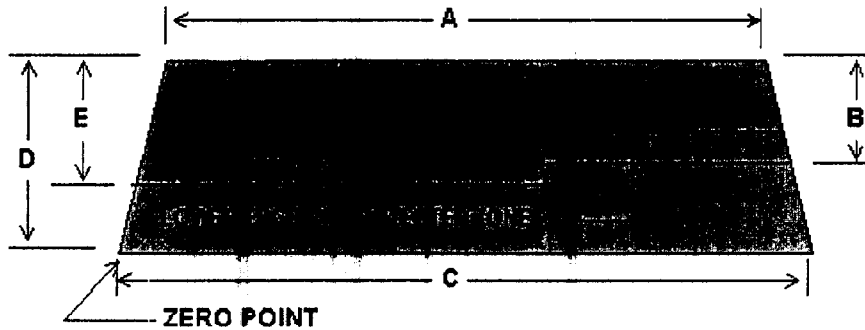
DATA SHEET NO. 11
WINDSHIELD ZONE INTRUSION FMVSS 219 (PARTIAL) DATA

Test Vehicle: 1999 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA No.: MX5300

Test Program: 1999 35 MPH NCAP FRONTAL IMPACT

Test Date: 12/4/98



FRONT VIEW OF WINDSHIELD

Item	Units	Value
A	mm	1080
B	mm	480
C	mm	1445
D	mm	807
E	mm	475
F	mm	545

Provide all dimensions necessary to reproduce the protected area.

AREA OF PROTECTED ZONE FAILURES

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

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

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

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

DATA SHEET NO. 12

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Test Vehicle: 1999 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA No.: MX5300

Test Program: 1999 35 MPH NCAP FRONTAL IMPACT

Test Date: 12/4/98

Test Time: 1:10 PM

Temperature at Time of Impact: 11.6 C

STODDARD SOLVENT SPILLAGE MEASUREMENT:

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

DATA SHEET NO. 13

FMVSS 301 STATIC ROLLOVER DATA SHEET

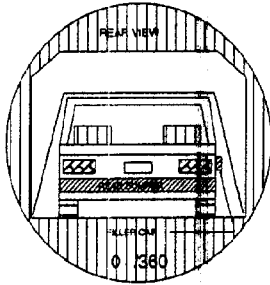
Test Vehicle: 1999 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA No.: MX5300

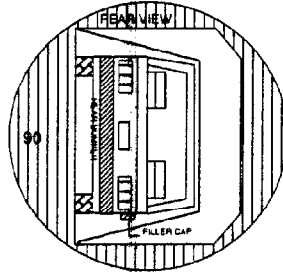
Test Program: 1999 35 MPH NCAP FRONTAL IMPACT

Test Date: 12/4/98

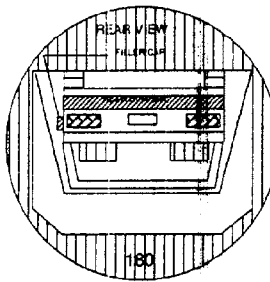
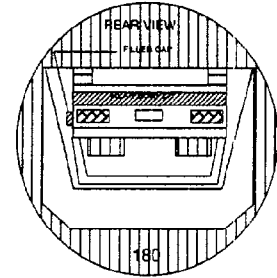
Time: 1:10 PM Temperature: 11.6 °C



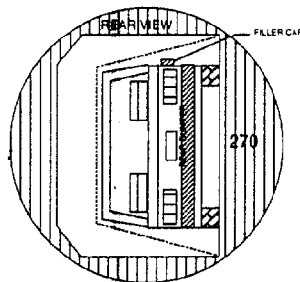
0° TO 90°



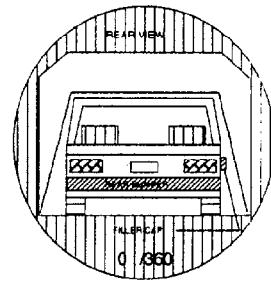
90° TO 180°



180° TO 270°



270° TO 360°



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

TEST PHASE	Rotation Time (sec.)	Hold Time (sec.)	Spillage (oz.)
0° TO 90°	81	300	0.0
90° TO 180°	82	300	0.0
180° TO 270°	79	300	0.0
270° TO 360°	80	300	0.0

DATA SHEET NO. 14

VEHICLE MEASUREMENTS

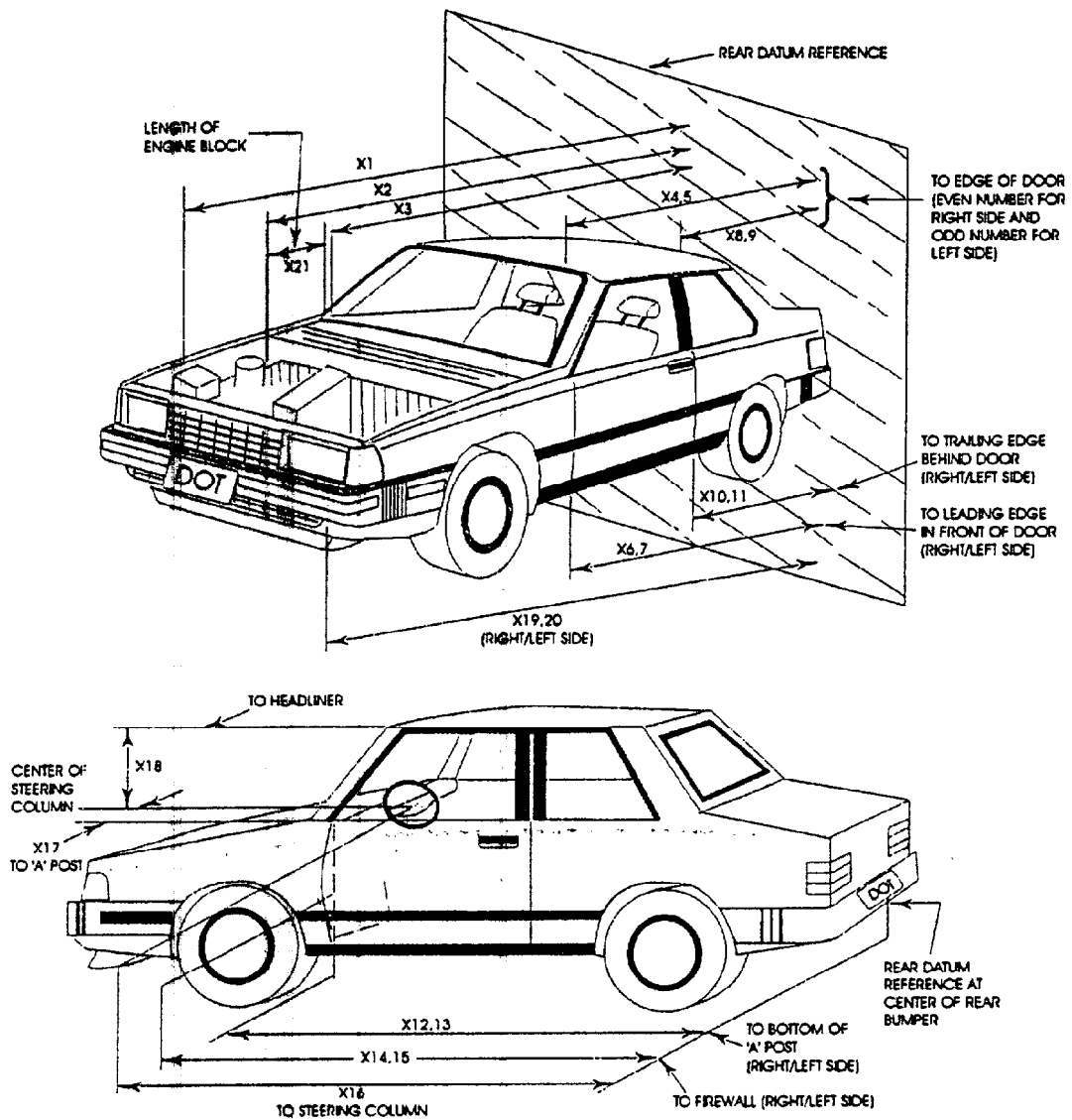
Test Vehicle: 1999 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA No.: MX5300

Test Program: 1999 35 MPH NCAP FRONTAL IMPACT

Test Date: 12/4/98

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
1	Total length of vehicle at centerline	mm	4439	3953	-486
2	RSOV to front of engine	mm	3605	3608	3
3	RSOV to firewall centerline	mm	3432	3250	-182
4	RSOV to leading edge of right door	mm	3016	3020	4
5	RSOV to leading edge of left door	mm	3020	3025	5
6	RSOV to lower leading edge of right door	mm	3019	3015	-4
7	RSOV to lower leading edge of left door	mm	3024	3020	-4
8	RSOV to upper trailing edge of right door	mm	2004	2000	-4
9	RSOV to upper trailing edge of left door	mm	2009	2005	-4
10	RSOV to lower trailing edge of right door	mm	2010	2010	0
11	RSOV to lower trailing edge of left door	mm	2023	2015	-8
12	RSOV to bottom of right 'A' pillar	mm	3009	3010	1
13	RSOV to bottom of left 'A' pillar	mm	3013	3016	3
14	RSOV to firewall on right side	mm	3300	3239	-61
15	RSOV to firewall of left side	mm	3318	3214	-104
16	RSOV to steering column	mm	2772	2574	-198
17	Center of steering column to left 'A' pillar	mm	375	375	0
18	Center of steering column to headlining	mm	462	420	-42
19	RSOV to right side of front bumper	mm	4014	3760	-254
20	RSOV to left side of front bumper	mm	4012	3727	-285
21	Length of engine block	mm	176	176	0
RD	RSOV to right side of dash panel	mm	2736	2735	-1
CD	RSOV to center of dash panel	mm	2780	2765	-15
LD	RSOV to left side of dash panel	mm	2745	2748	3



DATA SHEET NO. 15
CAMERA LOCATIONS

Test Vehicle: 1999 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA No.: MX5300

Test Program: 1999 35 MPH NCAP FRONTAL IMPACT

Test Date: 12/4/98

No.	Camera View	Location (mm)			Angle (°)	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	2032	8255	1194	3	7696	13	1020
3	Left Side, No. 2	1270	7087	1473	2	6706	25	1100
4	Left Side, No. 3	3150	3099	2083	15	2870	19	1010
5	Left Side, No. 4	2032	8280	3073	15	8026	19	1000
6	Left Side, No. 5	2032	8255	2616	10	7976	19	1000
7	Right Side, No. 1	1854	8334	876	0	7798	19	980
8	Right Side, No. 2	1575	8306	1524	2	7950	40	920
9	Right Side, No. 3	3454	3200	2095	18	3073	19	1000
10	Right Side, No. 4	2337	7925	1156	0	7366	35	980
11	Overhead Overall	914	0	5791	90	N/A	13	800
12	Front View Driver	229	406	2616	48	N/A	13	1020
13	Front View, Passenger	229	406	2616	54	N/A	LATE	START
14	Pit Camera, Engine	686	0	-1575	90	N/A	10	850
15	Pit Camera, Fuel Tank	4369	0	-1803	50	N/A	12	950
16	Onboard, Driver	1219	203	1041	8	1219	13	560
17	Onboard, Passenger	1219	203	1041	5	1219	13	410

* X - Barrier Face Y - Monorail Centerline Z - Ground

**DATA SHEET NO. 16
REFERENCE PHOTOGRAPH TARGETS**

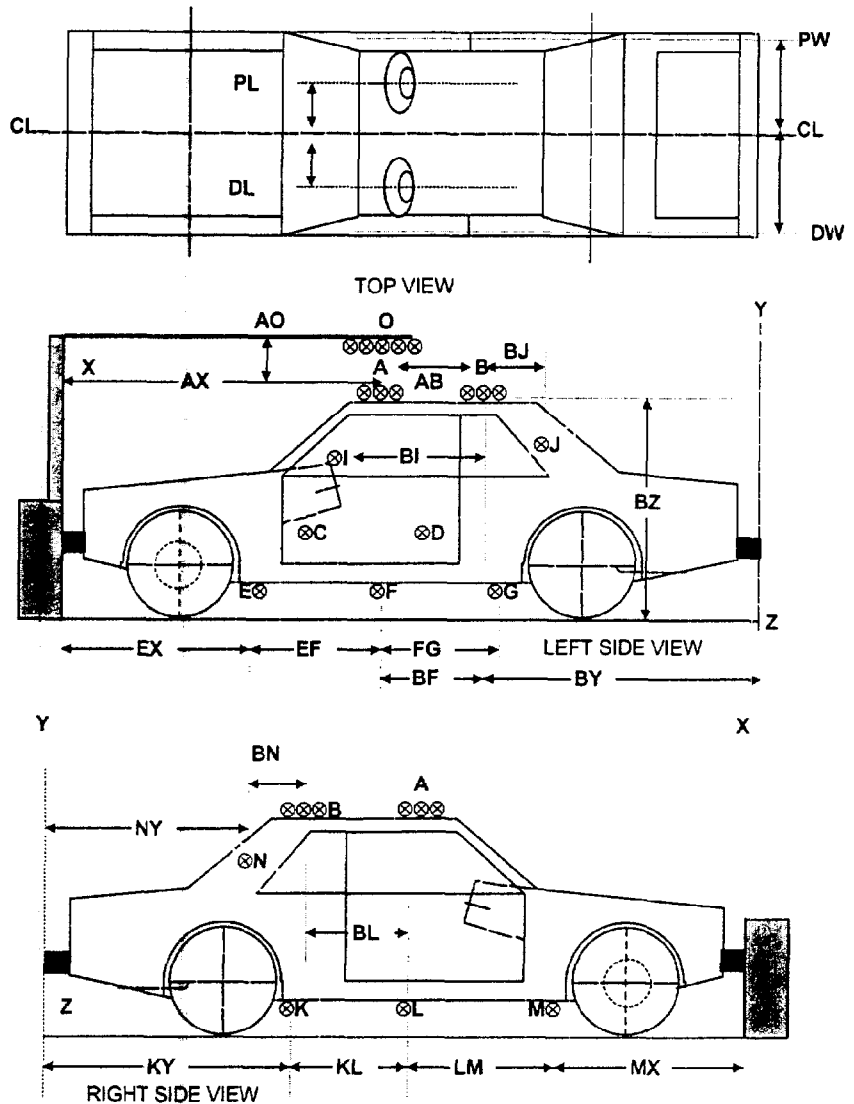
Test Vehicle: 1999 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA No.: MX5300

Test Program: 1999 35 MPH NCAP FRONTAL IMPACT

Test Date: 12/4/98

Item	Value
AX	2345
AB	608
AO	502
BJ	450
BI	1185
BZ	1465
EX	1273
EF	892
FG	892
BF	749
BY	1495
NY	1015
BN	510
KY	1365
KL	892
BL	766
LM	892
MX	1274
CL/PL	335
CL/PW	741.5
CL/DL	335
CL/DW	741.5



VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 1999 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA No.: MX5300

Test Program: 1999 35 MPH NCAP FRONTAL IMPACT

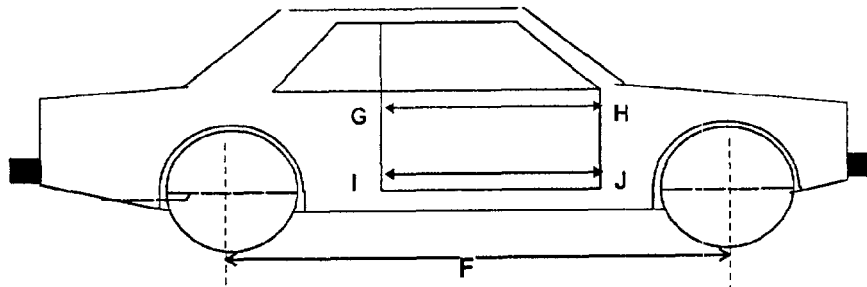
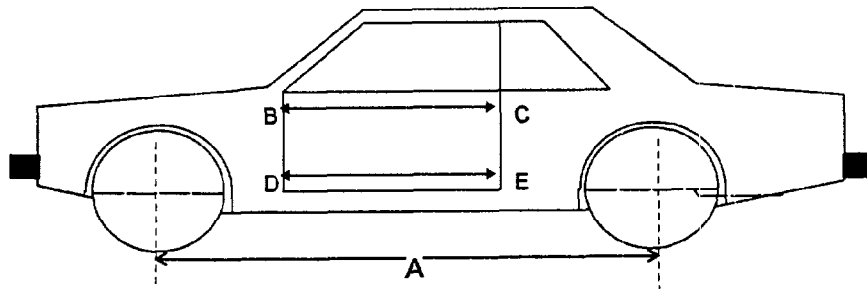
Test Date: 12/4/98

DOOR OPENING WIDTH

UNITS (mm)	LEFT SIDE		RIGHT SIDE	
MEASUREMENT	BC	DE	GH	IJ
PRE-TEST	940	880	945	880
POST-TEST	939	879	937	909
DIFFERENCE	-1	-1	-8	+29

VEHICLE WHEELBASE CHANGE

UNITS (mm)	A = LEFT SIDE WHEELBASE	F = RIGHT SIDE WHEELBASE
PRE-TEST	2625	2625
POST-TEST	2526	2525
DIFFERENCE	-99	-100



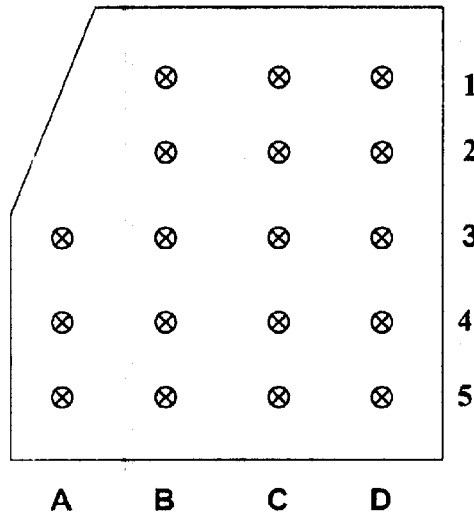
Data Sheet No. 17(Continued)

Test Vehicle: 1999 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA No.: MX5300

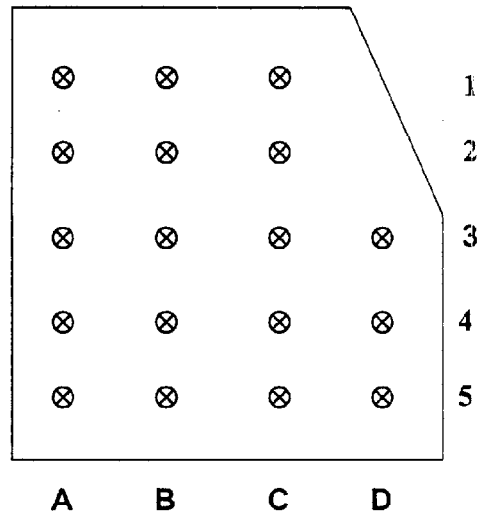
Test Program: 1999 35 MPH NCAP FRONTAL IMPACT

Test Date: 12/4/98



⊕ X
LEFT FRONT SEAT ANCHOR BOLT
↓
TO RSOV REFERENCE

DRIVER SIDE FLOOR PLAN



RIGHT FRONT SEAT ANCHOR BOLT
↓
TO RSOV REFERENCE

PASSENGER SIDE FLOORPAN

(Data Sheet No. 17Continued)

Test Vehicle: 1999 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA No.: MX5300

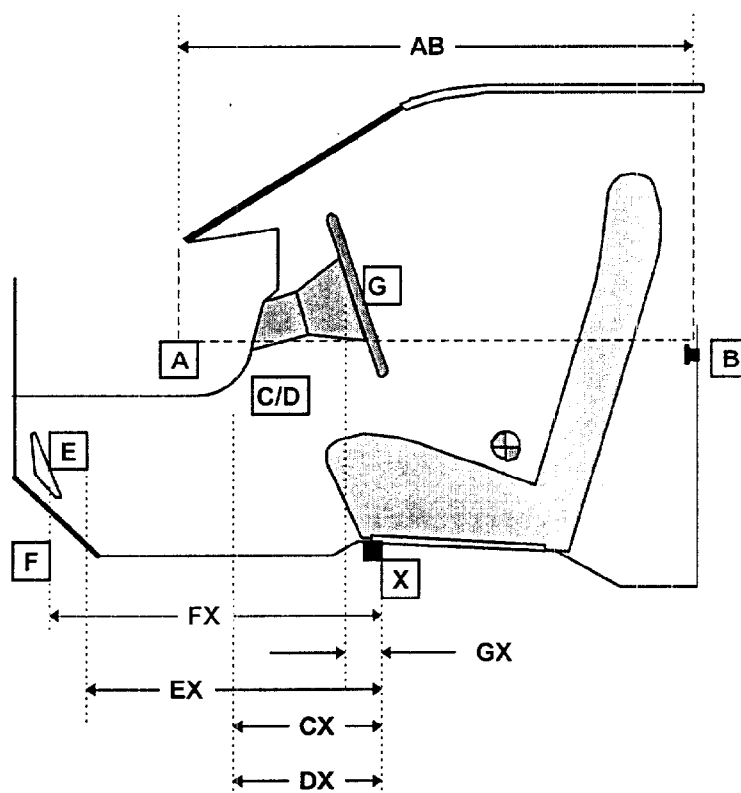
Test Program: 1999 35 MPH NCAP FRONTAL IMPACT

Test Date: 12/4/98

DRIVER COMPARTMENT INTRUSION (Distances in mm)

REF.	DESCRIPTION	PRE-TEST	POST-TEST
AB	DOOR OPENING (INSIDE WINDOW JAM)	940	939
CX	LOWER LEFT KNEE BOLSTER TO X	300	298
DX	LOWER RIGHT KNEE BOLSTER TO X	290	295
EX	BRAKE PEDAL TO X	600	530
FX	FOOT REST TO X	1240	587
GX	STEERING COLUMN HUB (CENTER) TO X	70	89

X = LEFT FRONT SEAT ANCHOR BOLT



DRIVER COMPARTMENT

(Data Sheet No. 17Continued)

DRIVER SIDE "X"

	A			B			C			D		
	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.
1				718	595	-123	715	595	-120	711	582	-129
2				612	530	-82	611	526	-85	605	567	-38
3	513	509	-4	511	499	-12	508	483	-25	504	481	-23
4	414	411	-3	412	403	-9	409	403	-6	406	405	-1
5	315	312	-3	313	305	-8	309	303	-6	305	302	-3

DRIVER SIDE "Z"

	A			B			C			D		
	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.
1				46	43	41	41	40	-1	36	-9	-45
2				-55	-95	-40	-53	-83	-30	-59	-114	-55
3	-70	-51	-59	-59	-61	-59	-59	-69	-60	-60	-74	-14
4	-62	-54	8	-57	-42	15	-57	-46	11	-56	-64	-8
5	-65	-54	11	-55	-44	11	-60	-47	13	-54	-66	-12

PASSENGER SIDE "X"

	A			B			C			D		
	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.
1	719	564	-155	724	571	-153	725	587	-138			
2	612	542	-70	619	519	-100	620	531	-89			
3	517	479	-38	518	480	-38	520	518	-2	521	510	-11
4	421	412	-9	420	411	-9	421	413	-8	422	413	-9
5	321	311	-10	321	314	-7	322	312	-10	322	317	-5

PASSENGER SIDE "Z"

	A			B			C			D		
	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.	PRE-TEST	POST-TEST	DIFF.
1	41	67	26	42	46	4	49	60	11			
2	-54	-68	-14	-66	-89	-23	-63	-74	-11			
3	-70	-65	5	-70	-92	-22	-67	-88	-21	-66	-45	21
4	-70	-60	10	-67	-75	-8	-63	-65	-2	-66	-74	-8
5	-64	-59	5	-64	-59	5	-63	-55	8	-65	-72	-7

RSOV to anchor bolt
Ground level to anchor bolt

DRIVER

PRE	POST	DIFF.
2478	2480	2
270	270	0

PASSENGER

PRE	POST	DIFF.
2478	2482	4
270	270	0

DATA SHEET NO. 18

OFFSET BARRIER ORIENTATION

Test Vehicle: 1999 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA No.: MX5300

Test Program: 1999 35 MPH NCAP FRONTAL IMPACT

Test Date: 12/4/98

NOT APPLICABLE TO THIS TEST

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

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

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

DATA SHEET NO. 19

ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle: 1999 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA No.: MX5300

Test Program: 1999 35 MPH NCAP FRONTAL IMPACT

Test Date: 12/4/98

VIN: 2HGEJ6621XH502506 Wheelbase: 2625 mm Test Weight: 1273 kg

Vehicle Size Category: HONDA CIVIC DX 4-DOOR SEDAN

ACCELEROMETER DATA:

LOCATION: Left and right rear floor pans

CALIBRATION PROCEDURE: 6 months/ drop test

LINEARITY: Good

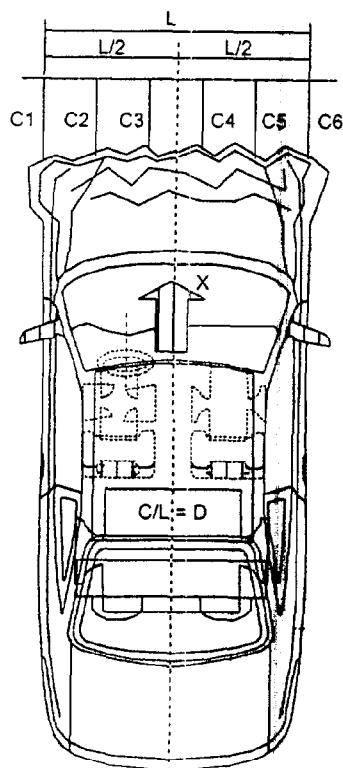
INTEGRATION ALGORITHM: NHTSA Standard

VEHICLE IMPACT SPEED: 56.0 km/h

TIME OF SEPARATION: 80.0 msec

VELOCITY CHANGE: 66.22 km/h

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



IMPACT MODE: Full Frontal

CRUSH DEPTH DIMENSIONS:

C1 = 276 mm

C2 = 432 mm

C3 = 468 mm

C4 = 473 mm

C5 = 458 mm

C6 = 237 mm

MIDPOINT OF DAMAGE: Vehicle Centerline

LENGTH OF DAMAGE REGION: 1630 mm

DATA SHEET NO. 20

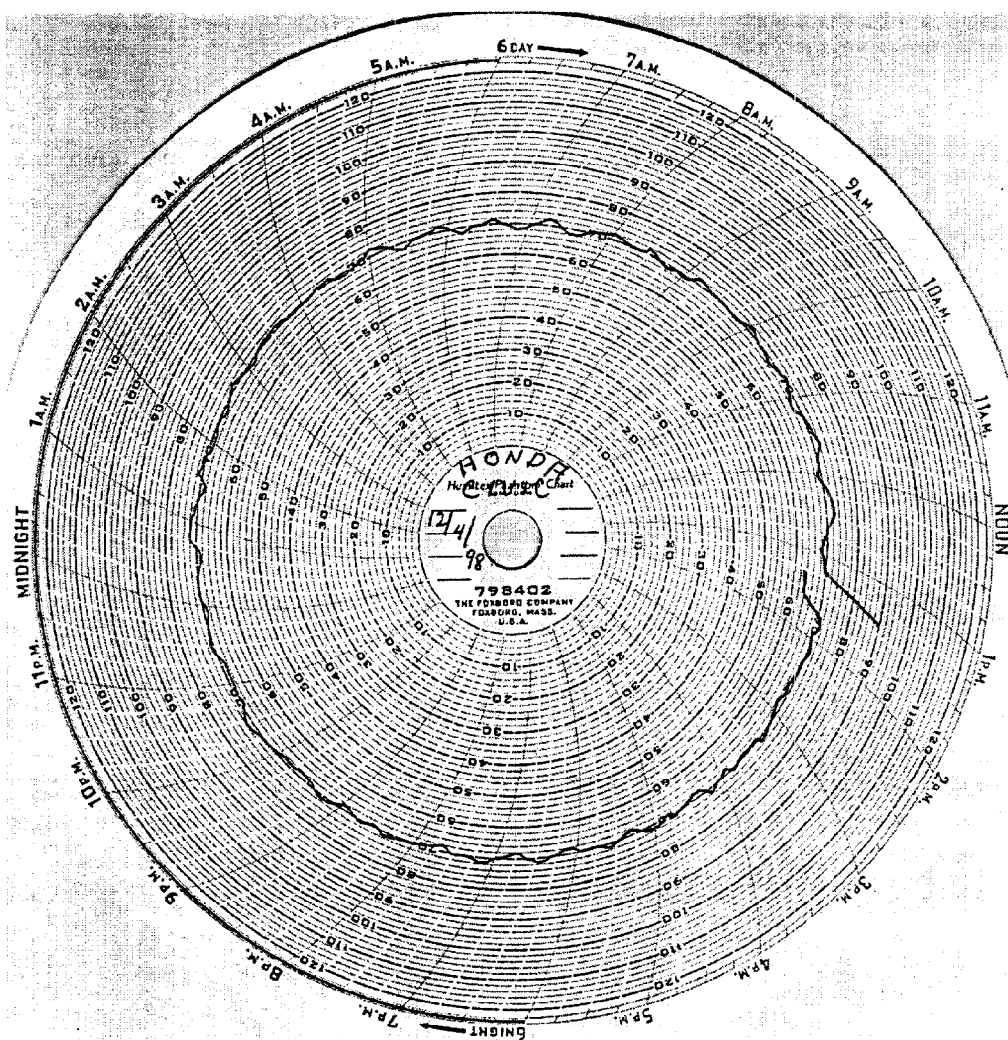
DUMMY/VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 1999 HONDA CIVIC DX 4-DOOR SEDAN

NHTSA No.: MX5300

Test Program: 1999 35 MPH NCAP FRONTAL IMPACT

Test Date: 12/4/98



APPENDIX A
PHOTOGRAPHS

KAR99001-03

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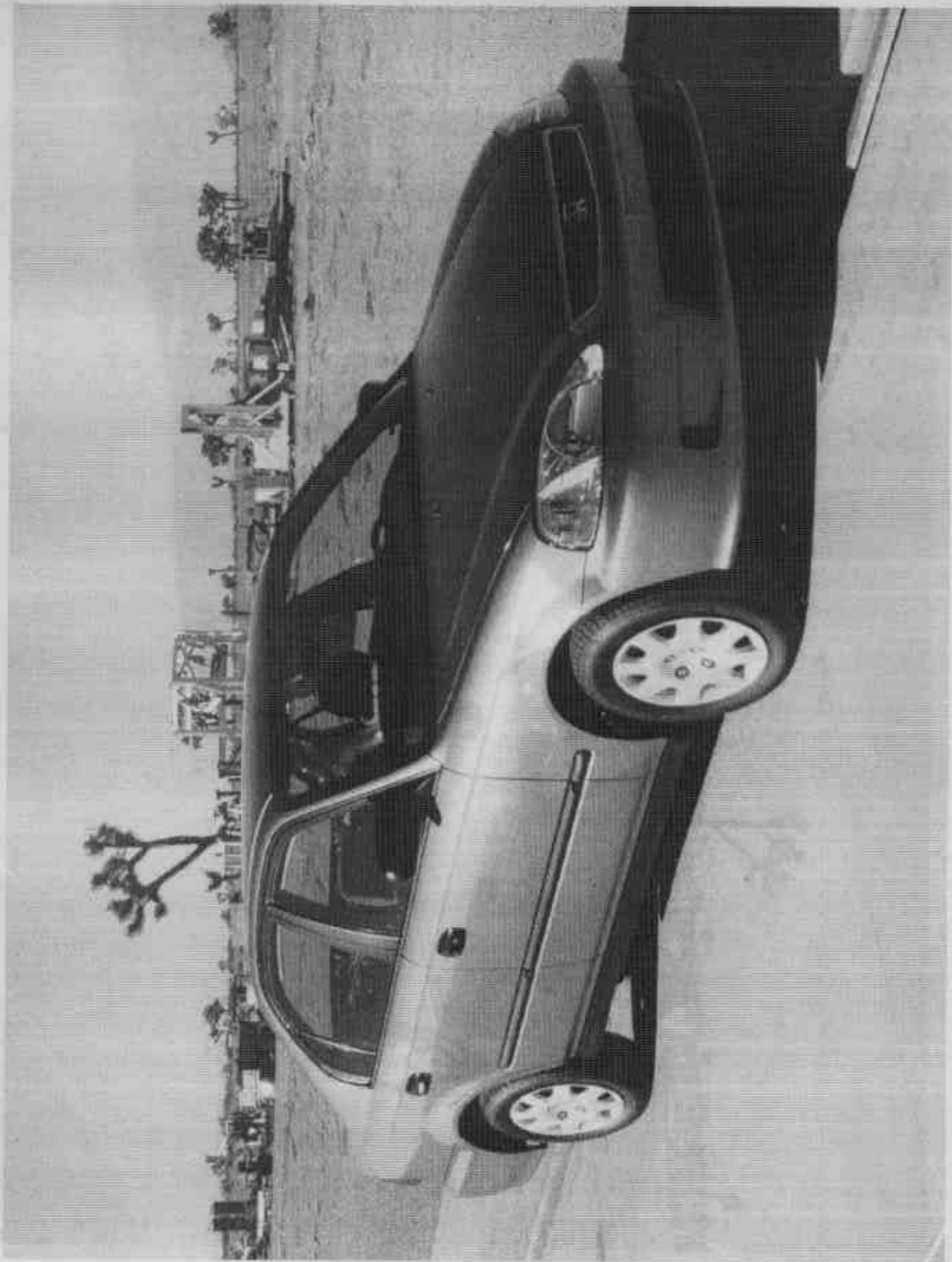


FIGURE A-1. RIGHT FRONT AS RECEIVED

A-1

P99001-3

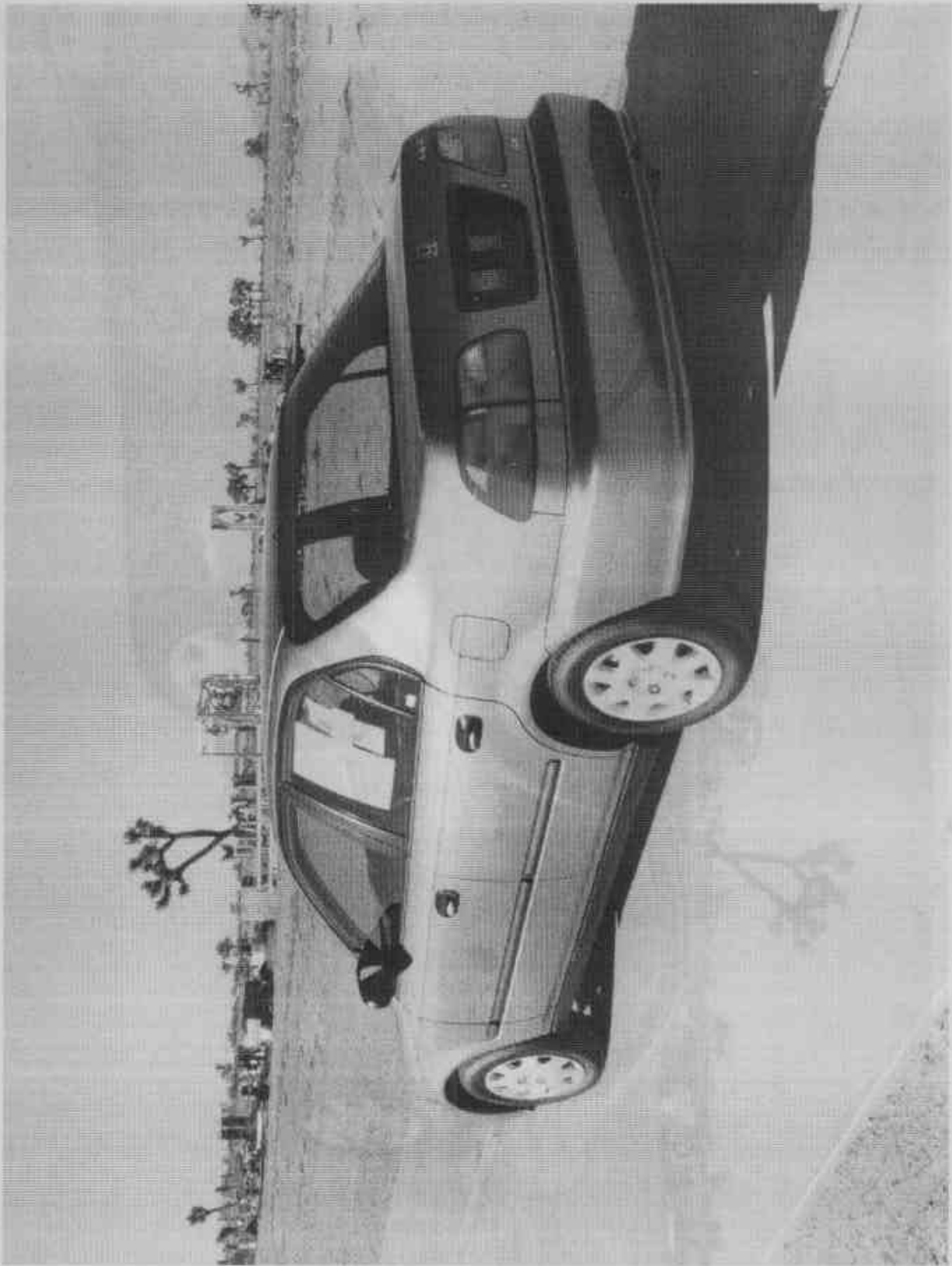


FIGURE A-2. LEFT REAR AS RECEIVED

E-100009

A-2

P99001-3

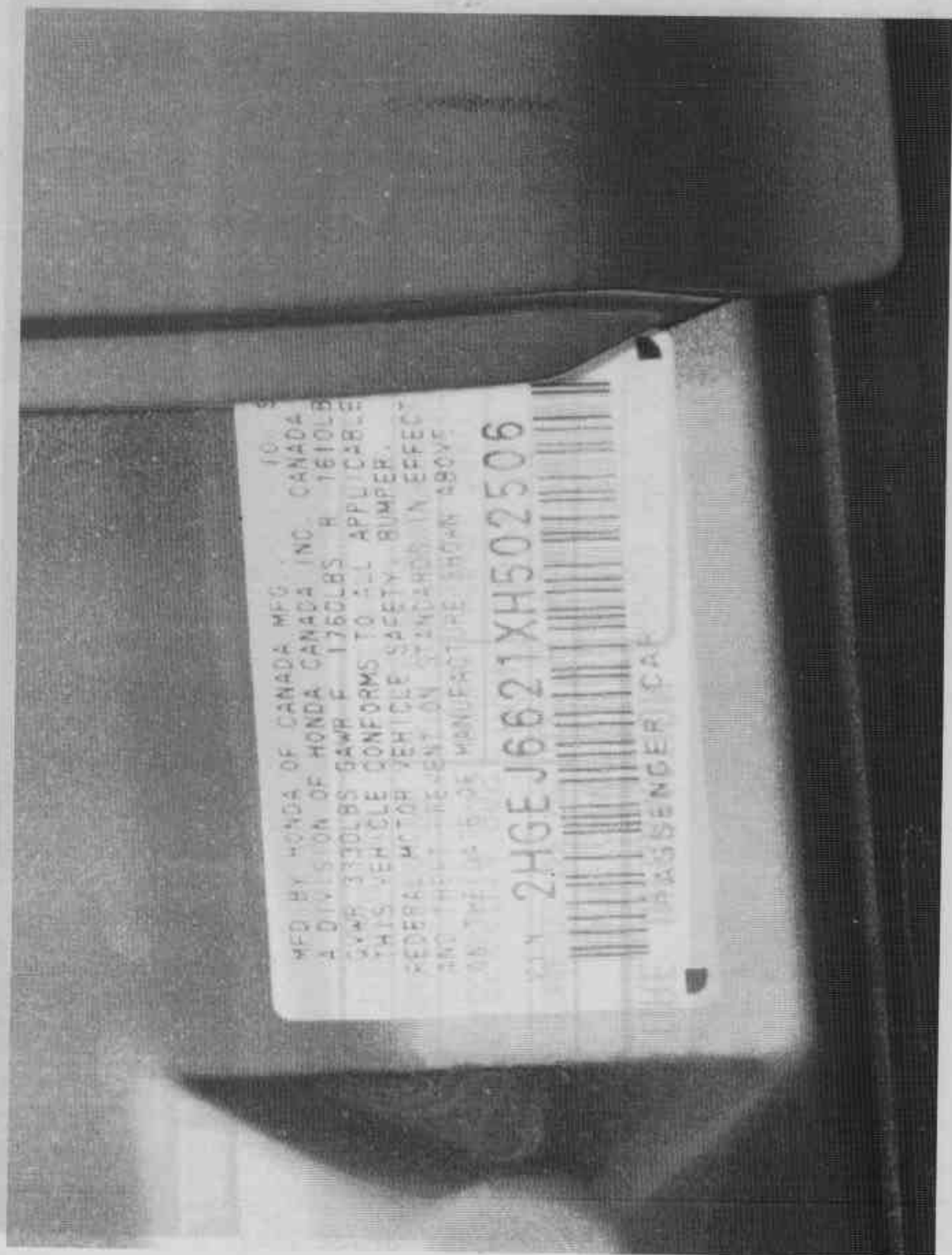


FIGURE A-3. VEHICLE CERTIFICATION LABEL

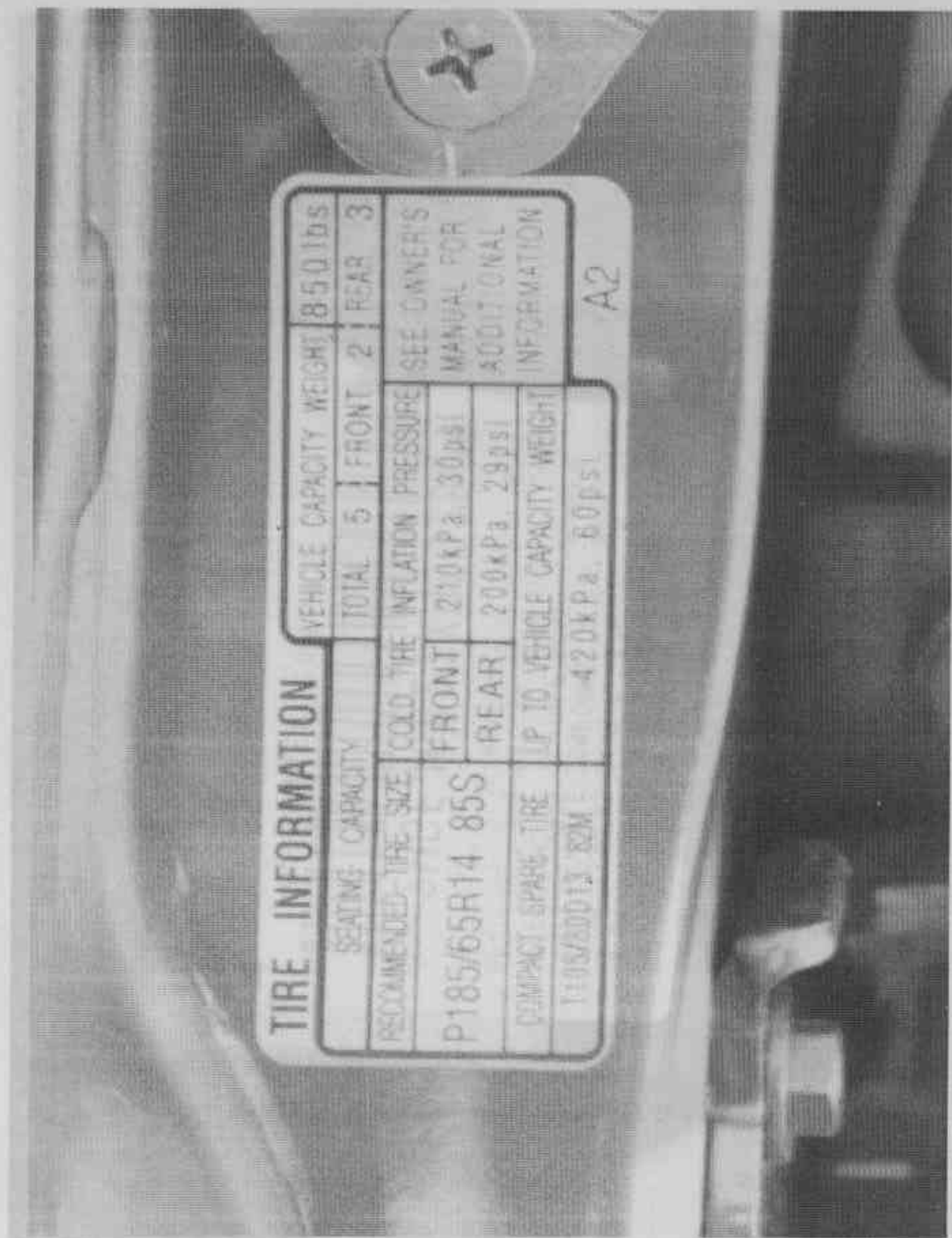


FIGURE A-4. VEHICLE TIRE PLACARD



FIGURE A-5. PRETEST FRONT VIEW



FIGURE A-6. POST TEST FRONT VIEW



FIGURE A-9. PRETEST RIGHT SIDE VIEW



FIGURE A-10. POST TEST RIGHT SIDE VIEW



FIGURE A-11. PRETEST RIGHT FRONT VIEW

C-100001

A-11

P99001-3



FIGURE A-12. POST TEST RIGHT FRONT VIEW

A-12

P99001-3

P99001-3

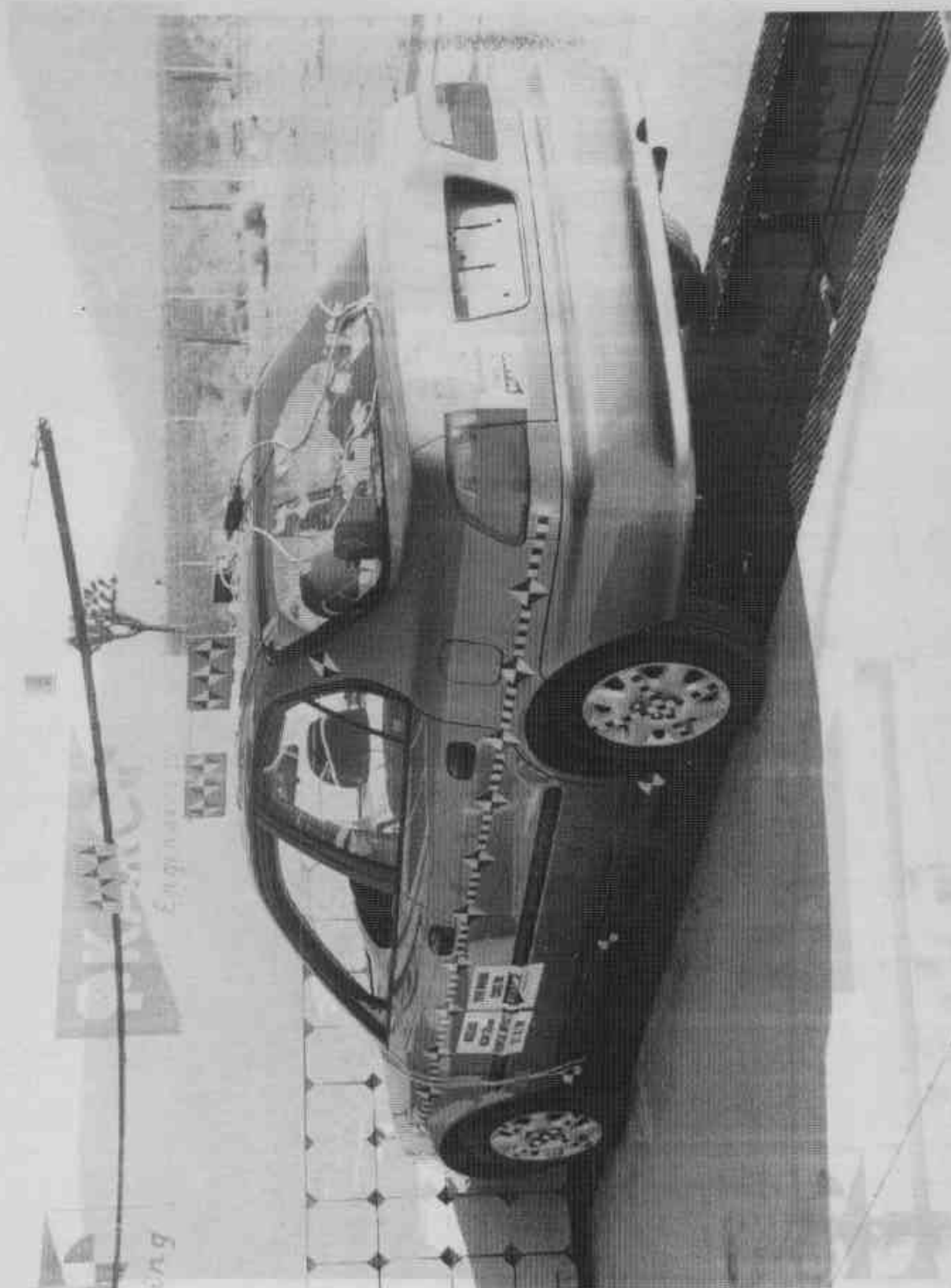


FIGURE A-13. PRETEST LEFT REAR VIEW

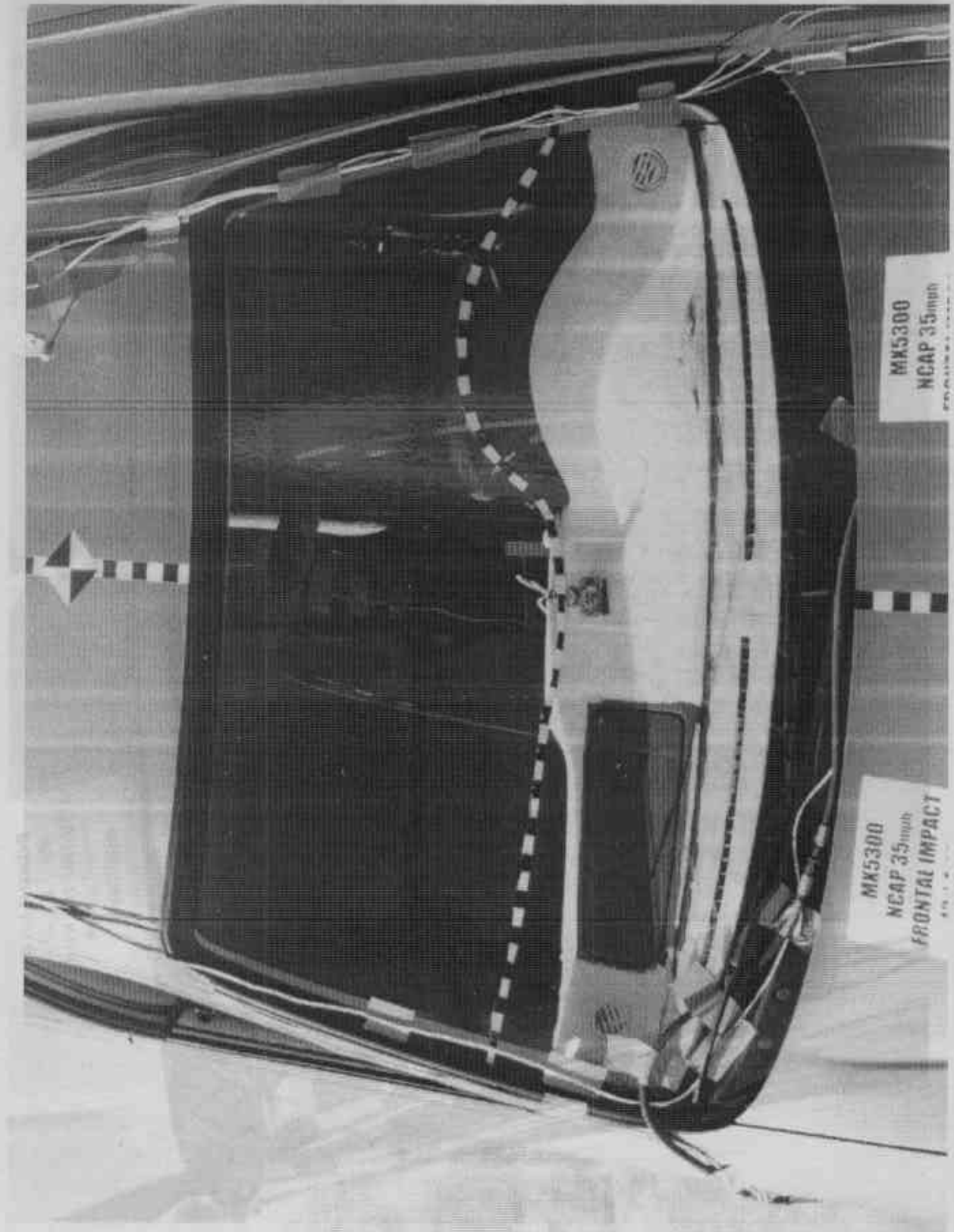


FIGURE A-15. PRETEST WINDSHIELD

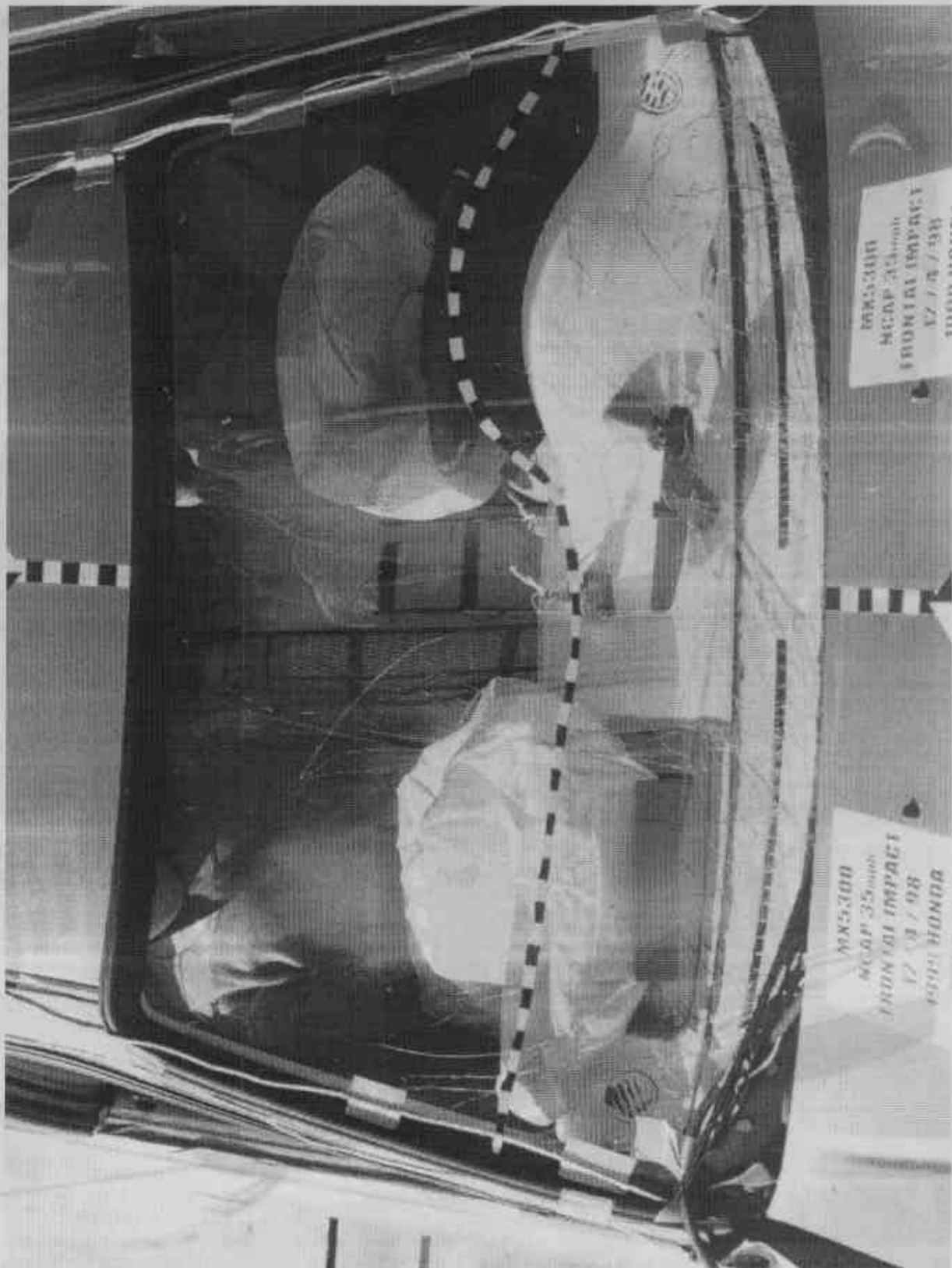


FIGURE A-16. POST TEST WINDSHIELD

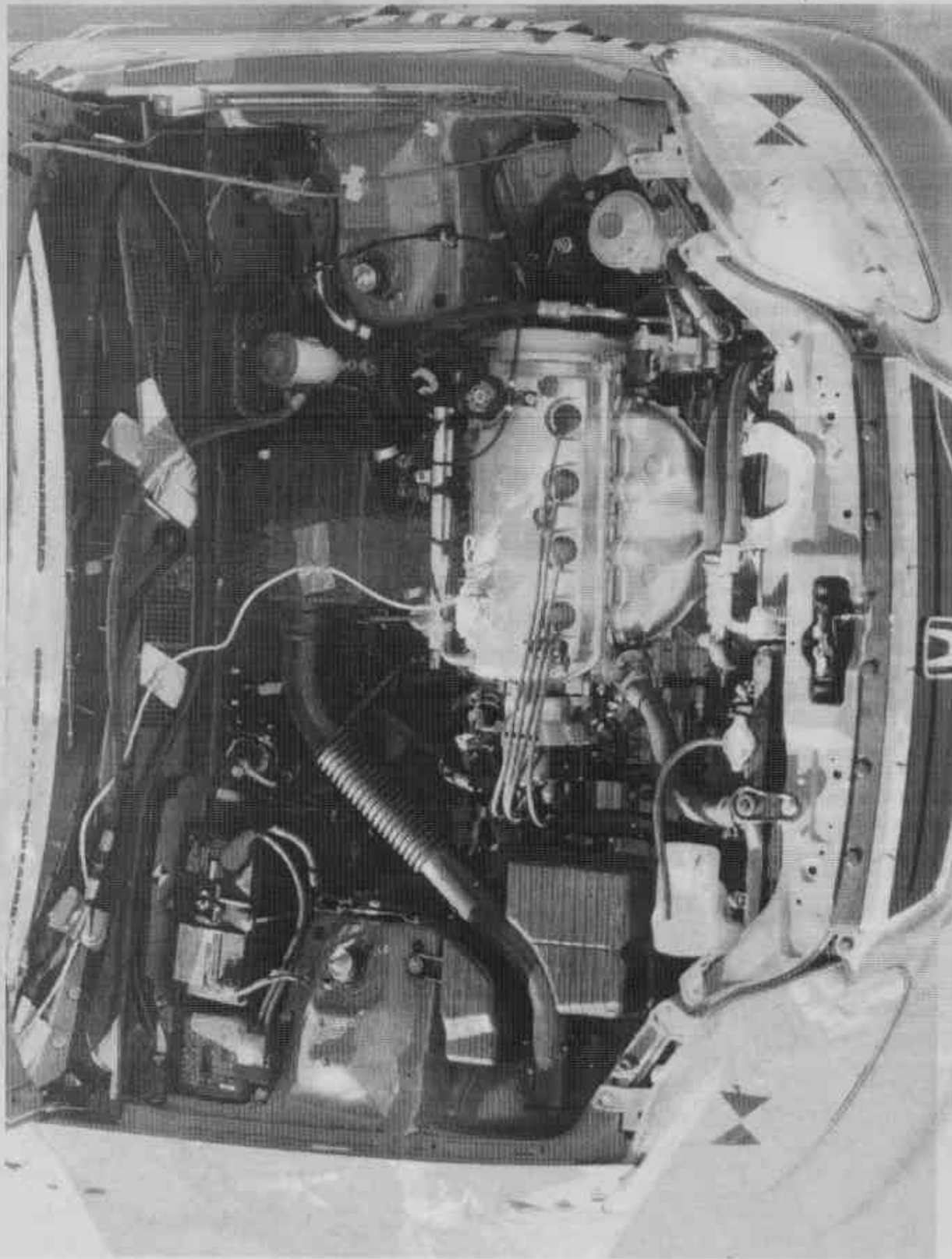


FIGURE A-17. PRETEST ENGINE COMPARTMENT

A-17

P99001-3

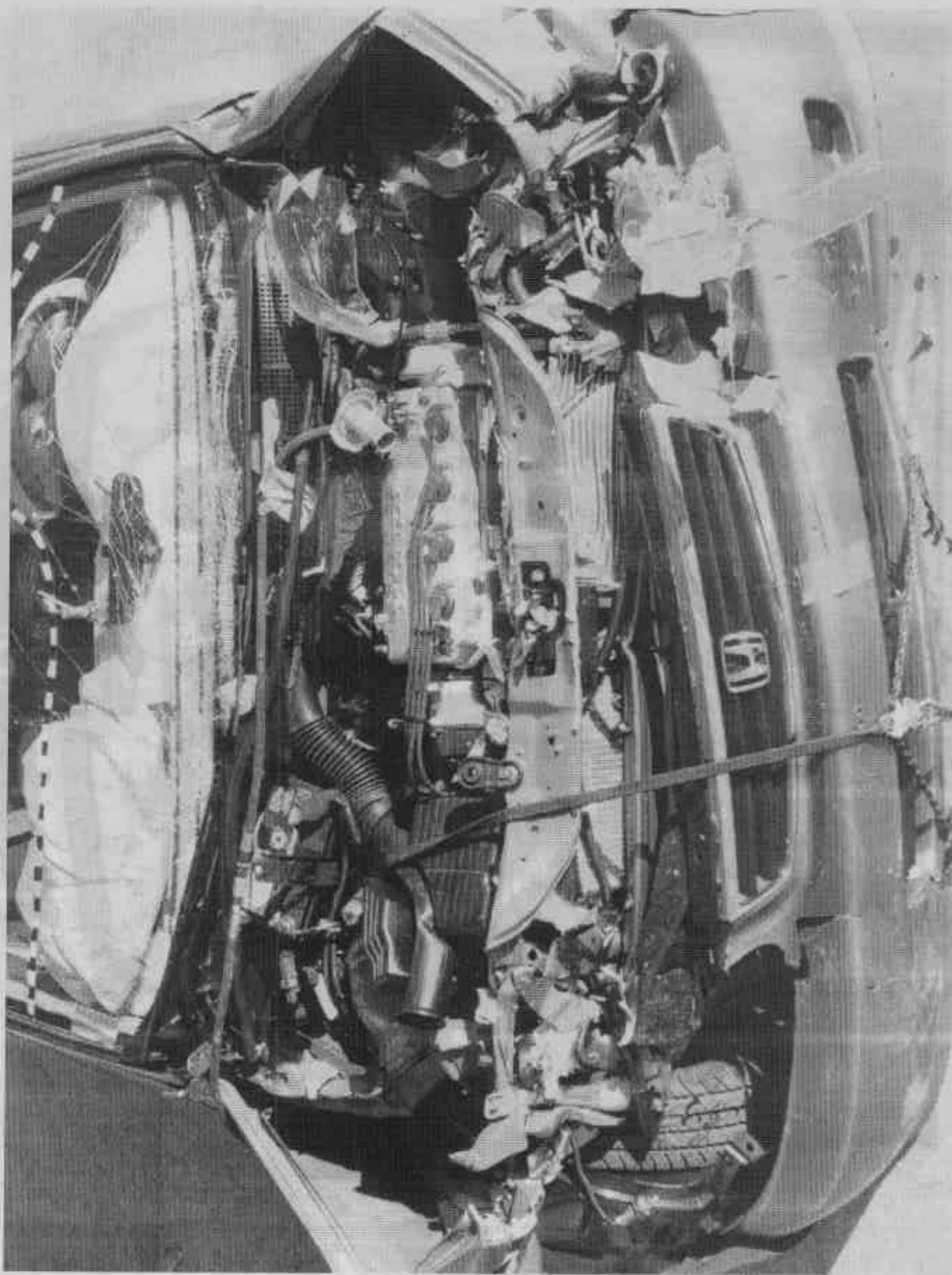


FIGURE A-18. POST TEST ENGINE COMPARTMENT

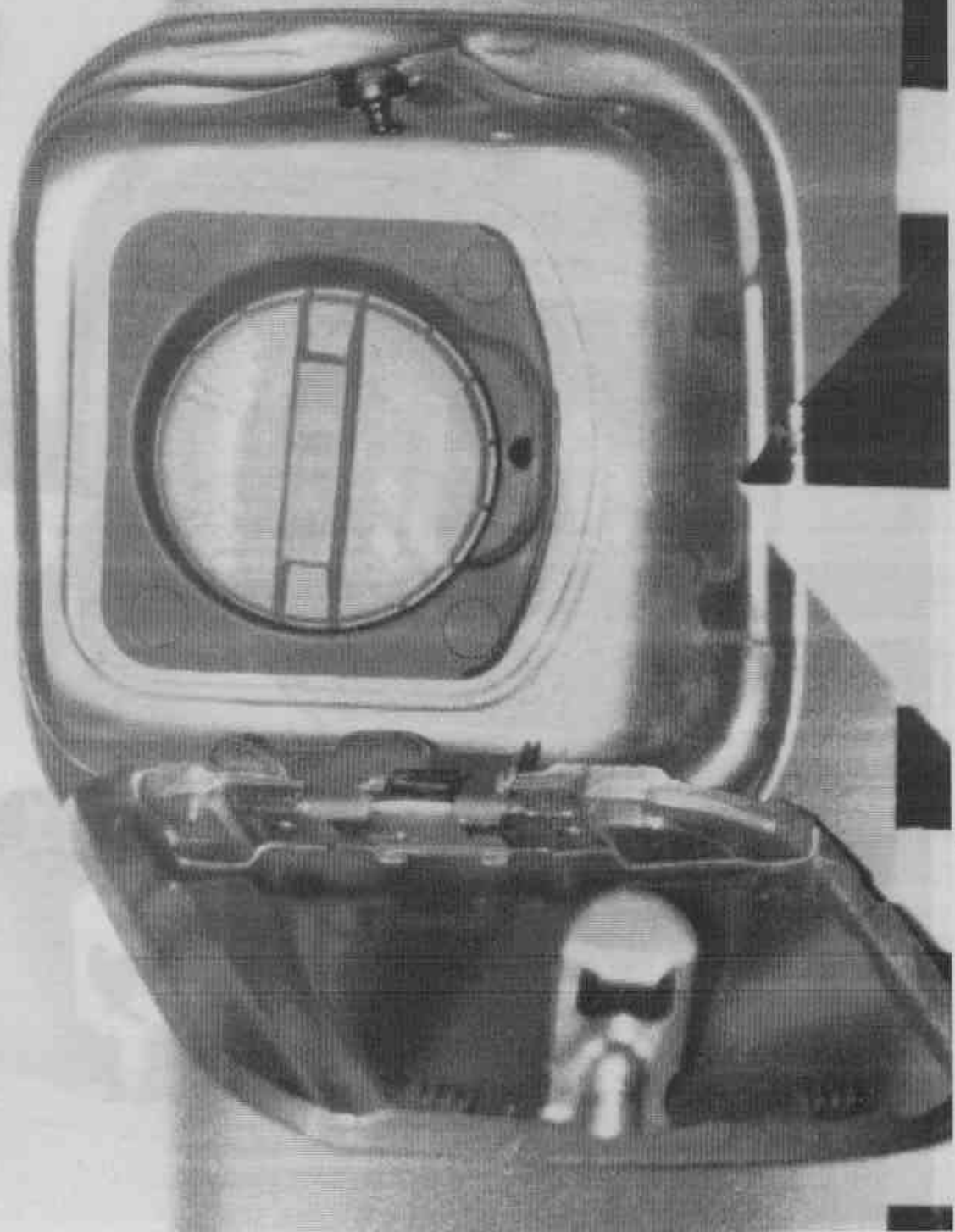


FIGURE A-19. PRETEST FUEL CAP



FIGURE A-20. POST TEST FUEL CAP

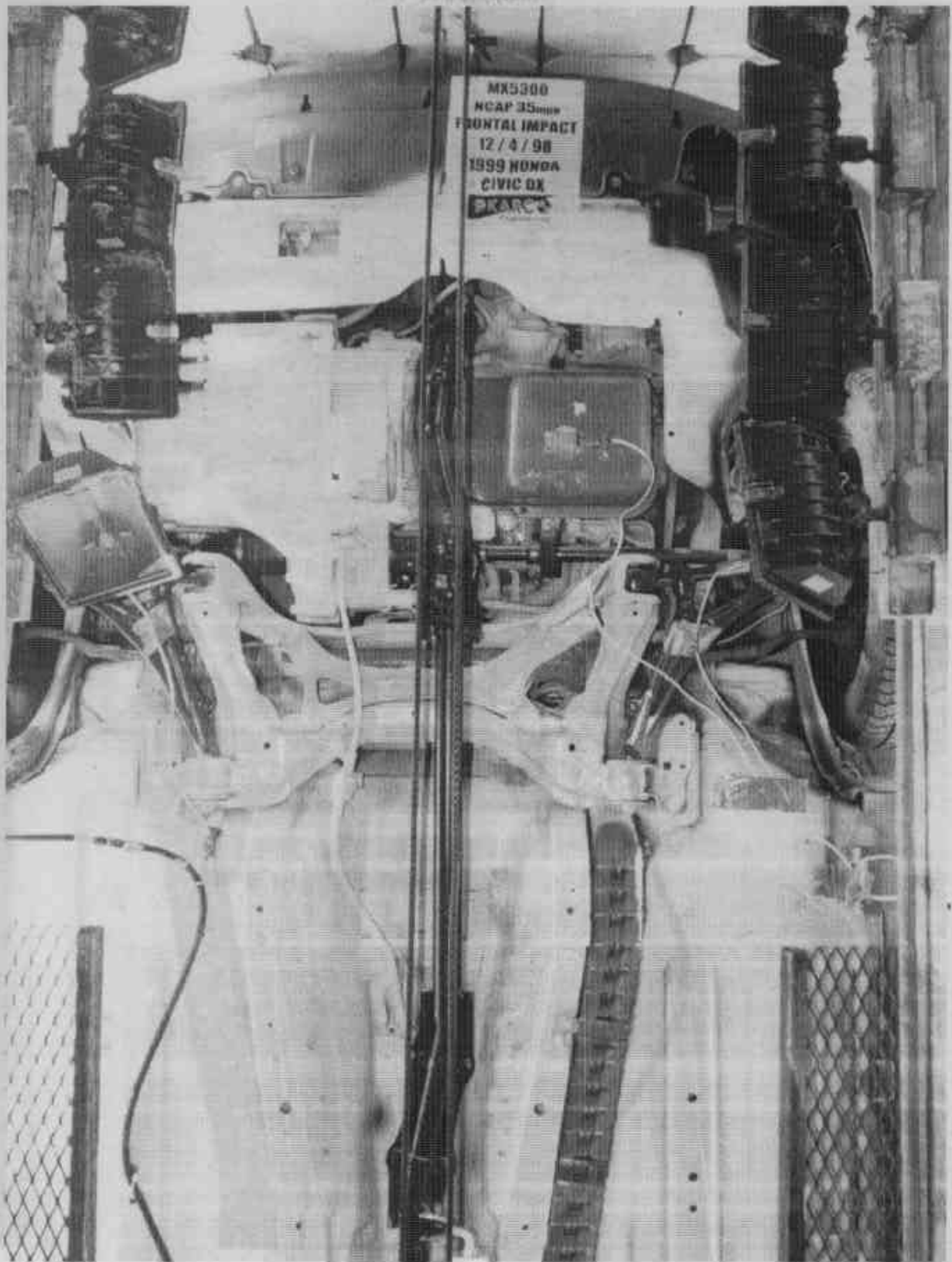


FIGURE A-21. PRETEST FRONT UNDERSIDE

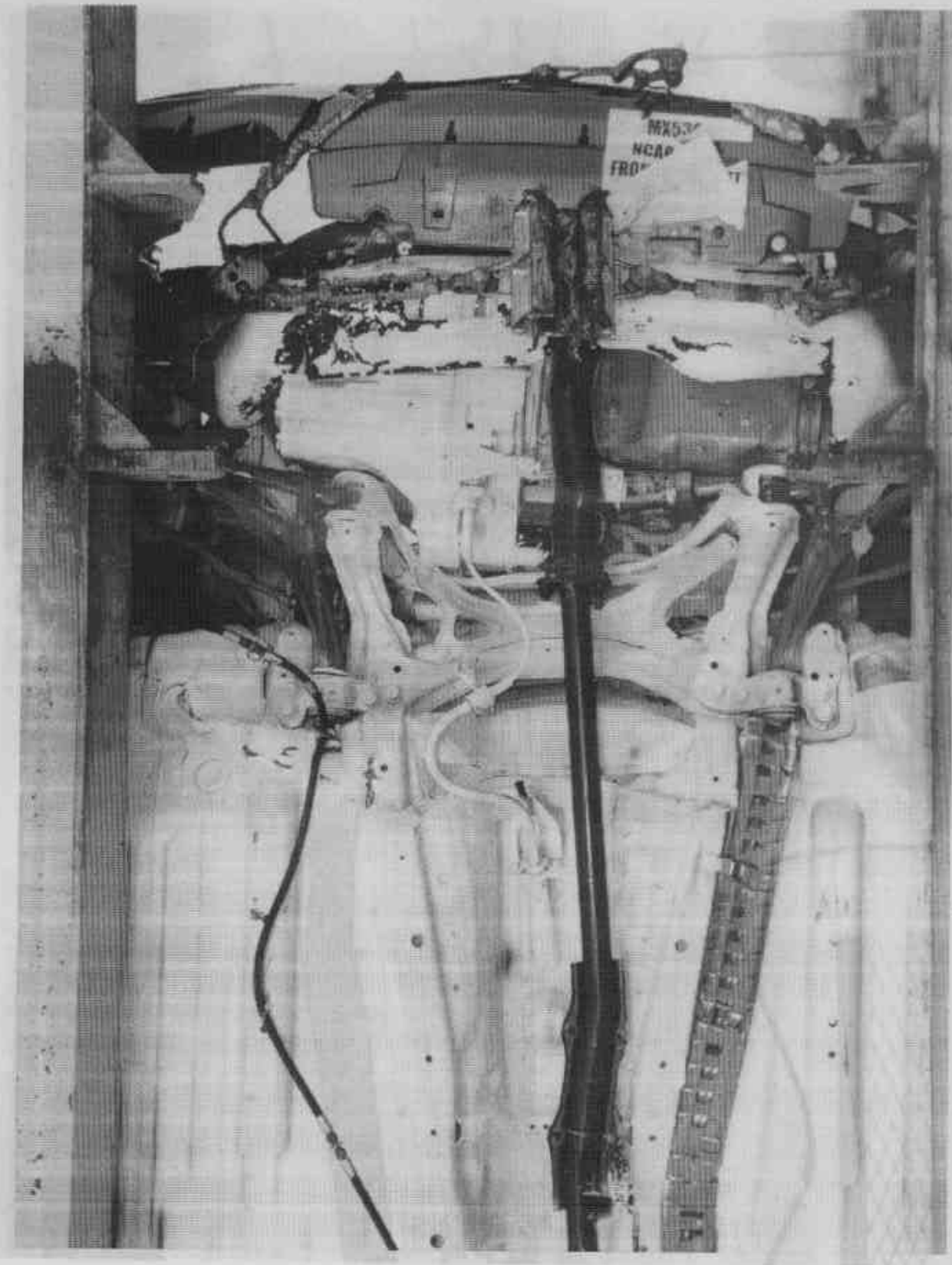


FIGURE A-22. POST TEST FRONT UNDERSIDE

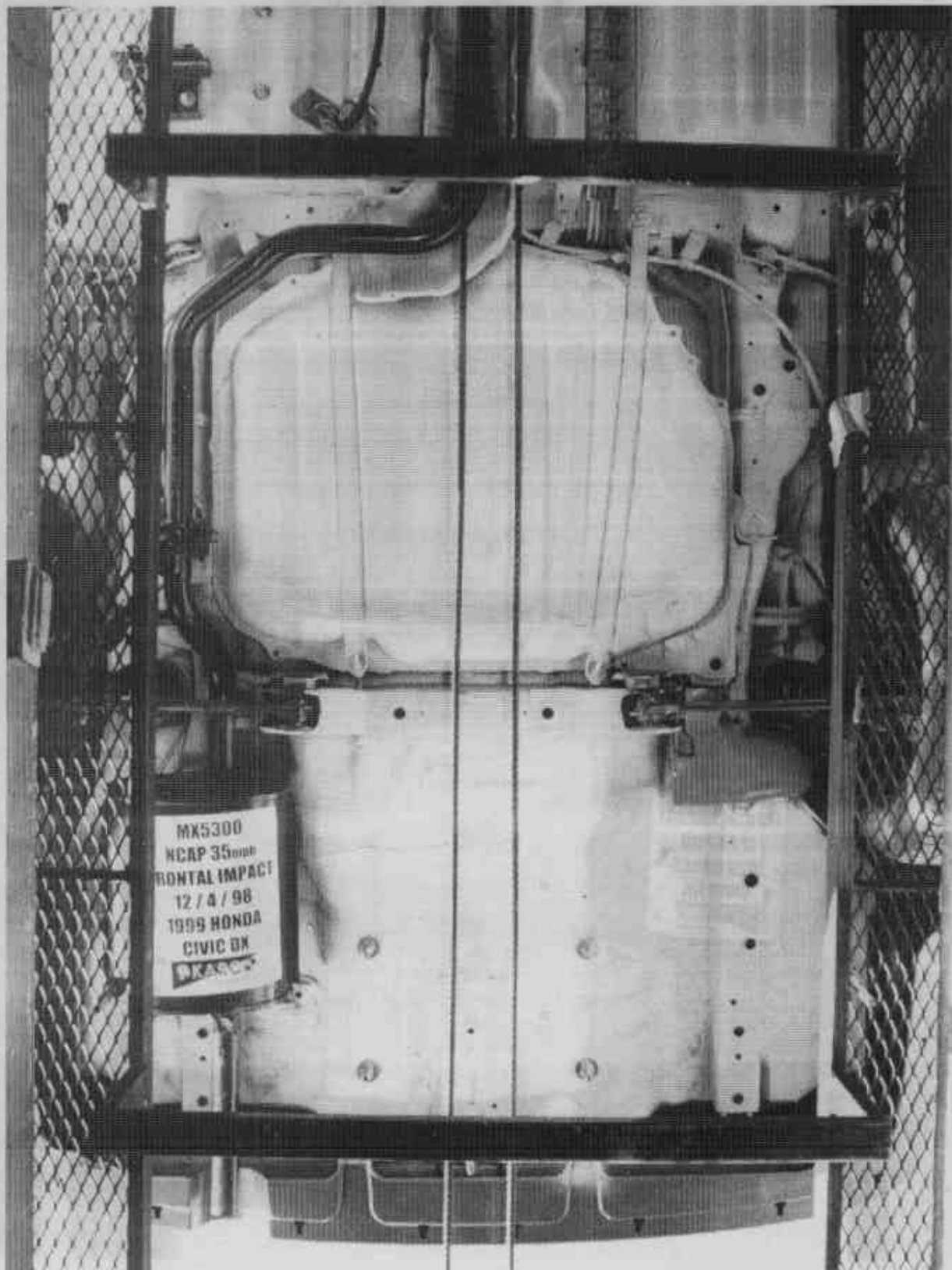


FIGURE A-23. PRETEST REAR UNDERSIDE

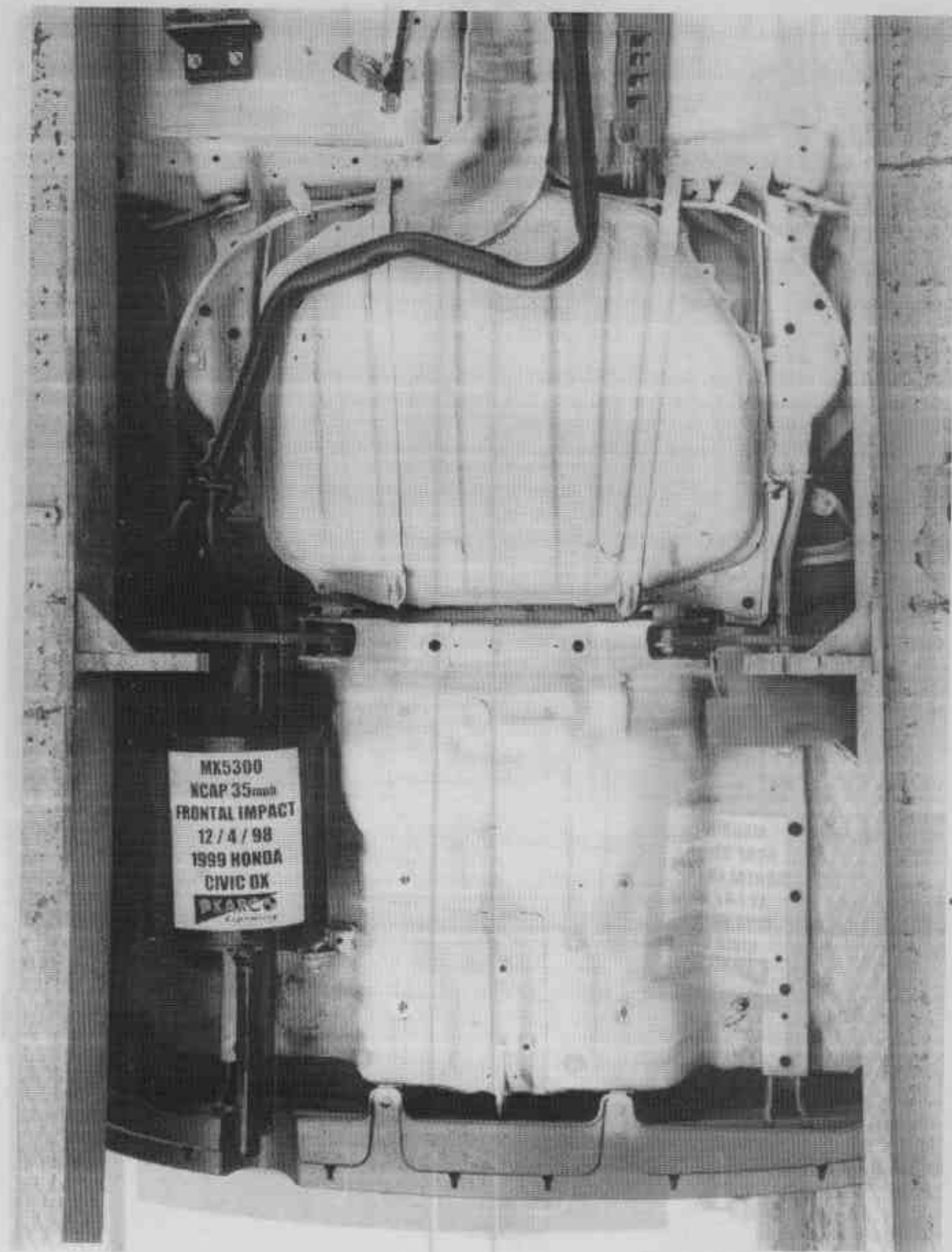


FIGURE A-24. POST TEST REAR UNDERSIDE



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



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

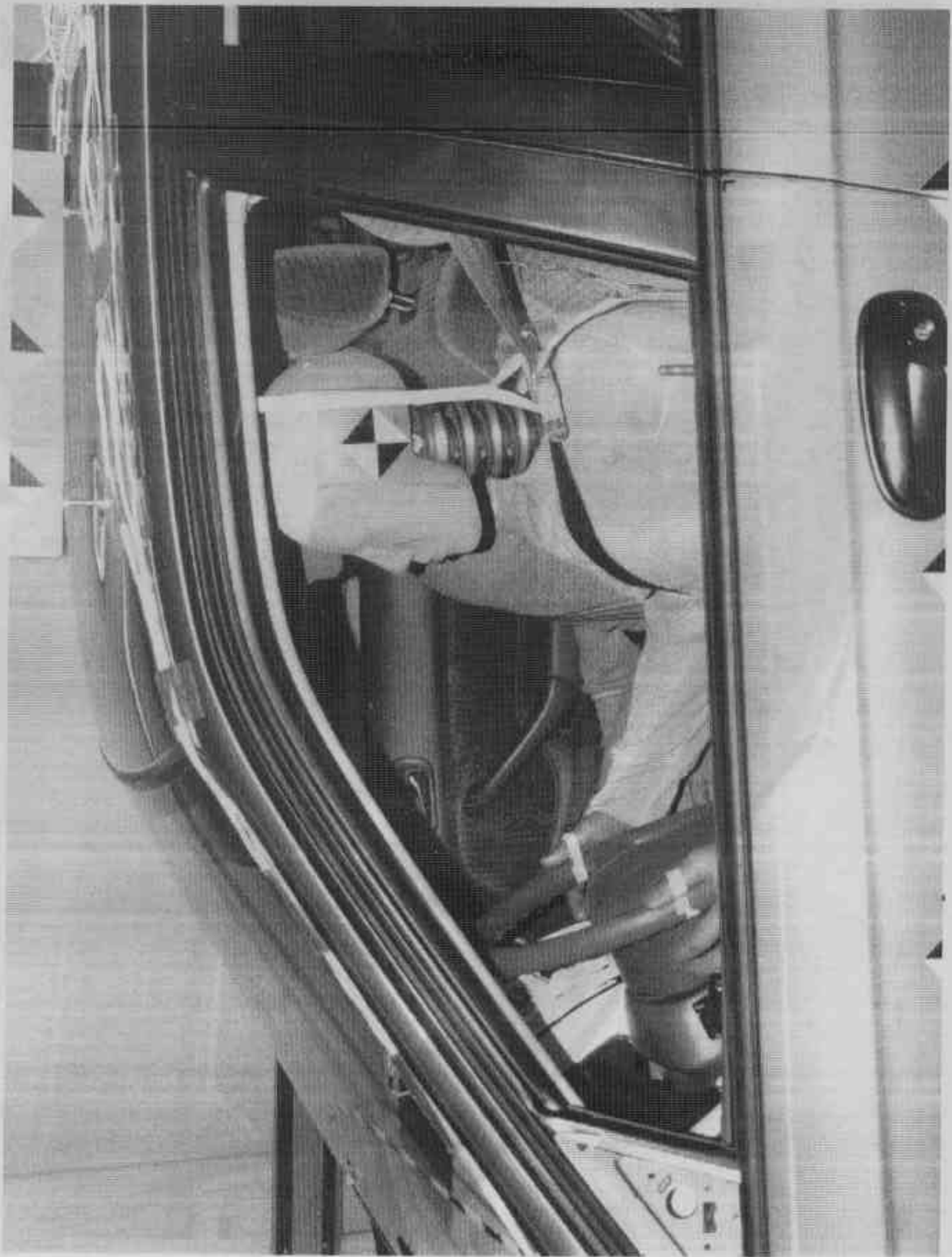


FIGURE A-27. PRETEST DRIVER DUMMY (THRU WINDOW)



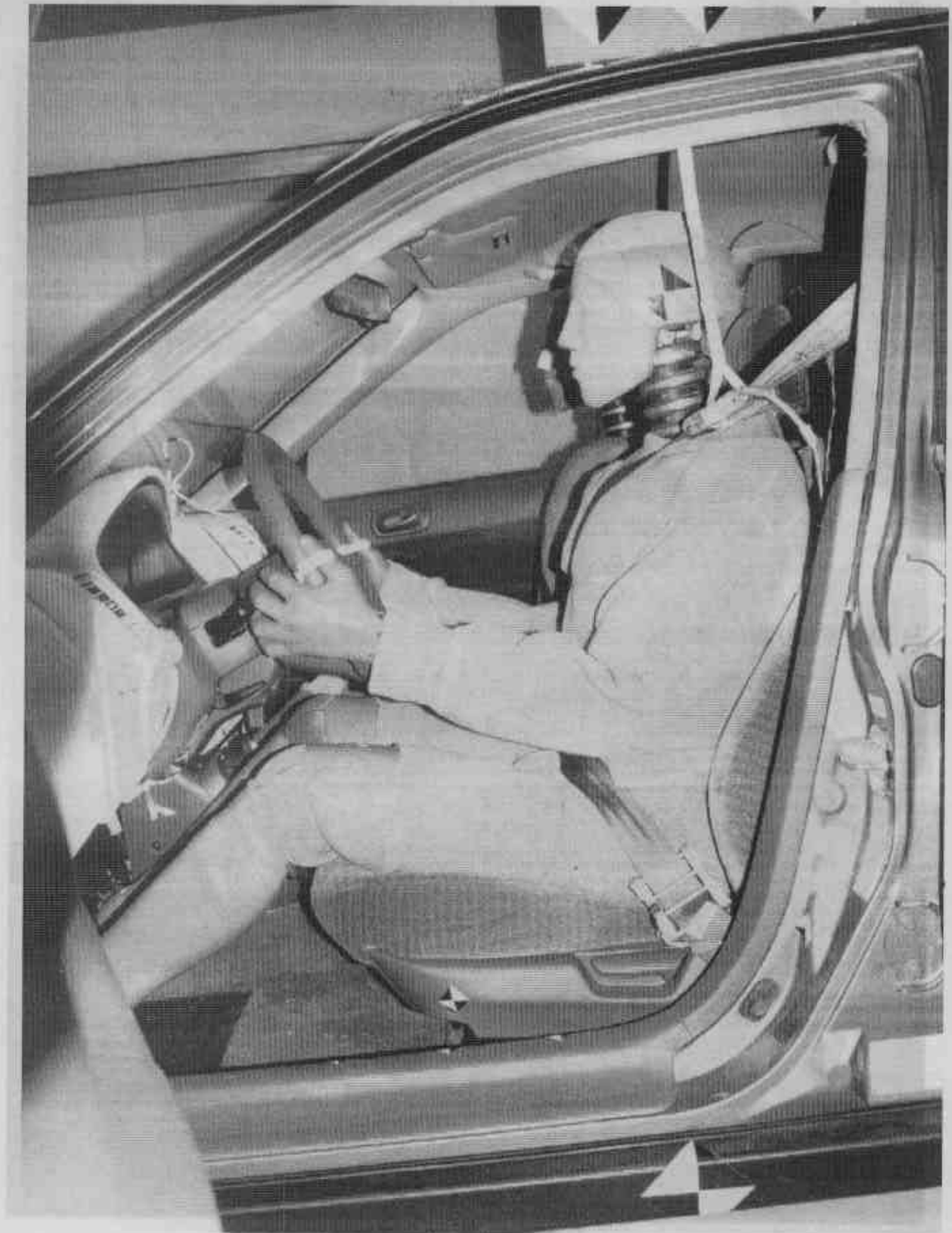
FIGURE A-28. POST TEST DRIVER DUMMY (THRU WINDOW)



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



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



(3) PRETEST DRIVER DUMMY (90° TO VEHICLE)

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

E-1001094



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



FIGURE A-33. PRETEST DRIVER DUMMY FEET



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

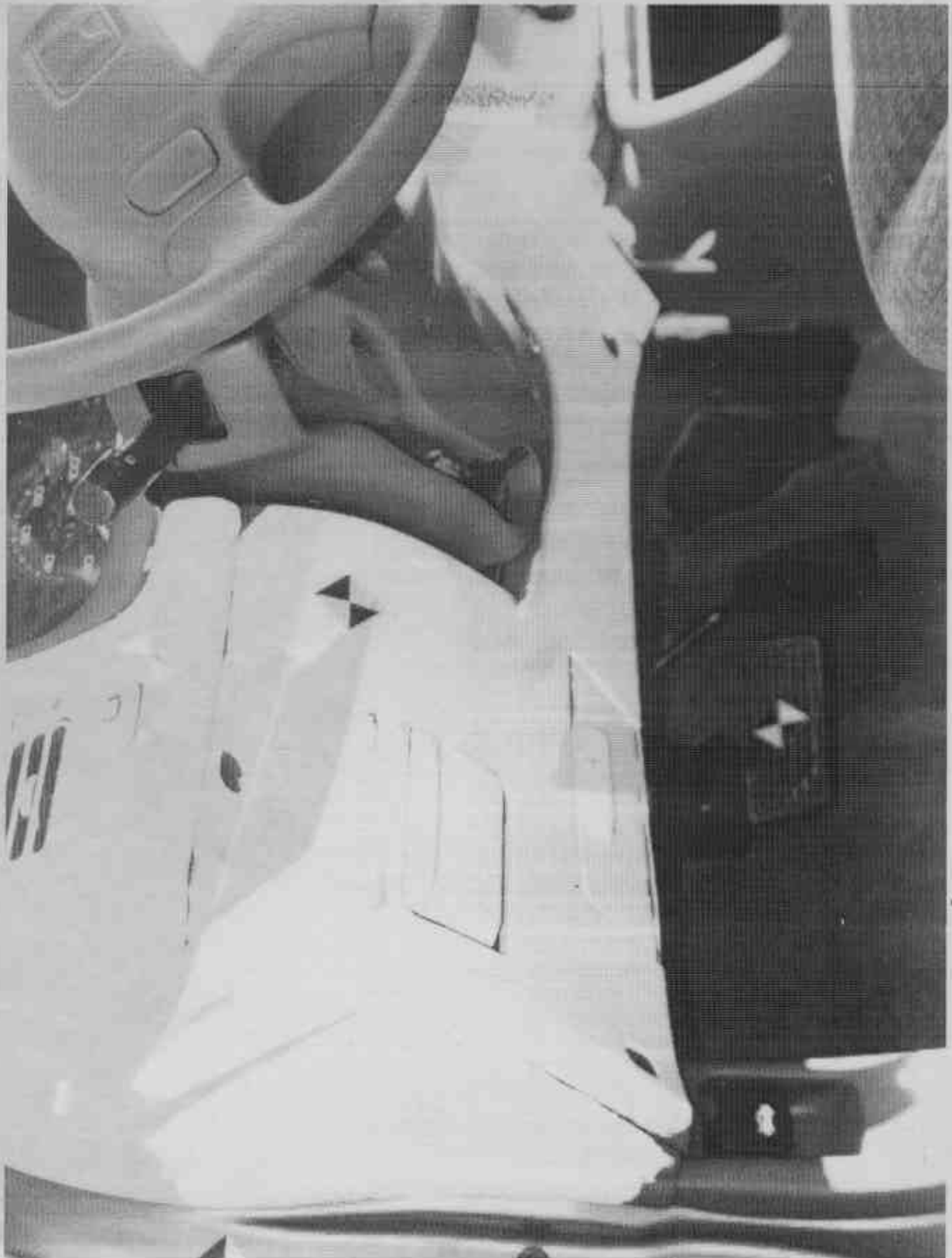


FIGURE A-35. PRE TEST DRIVER KNEE BOLSTER

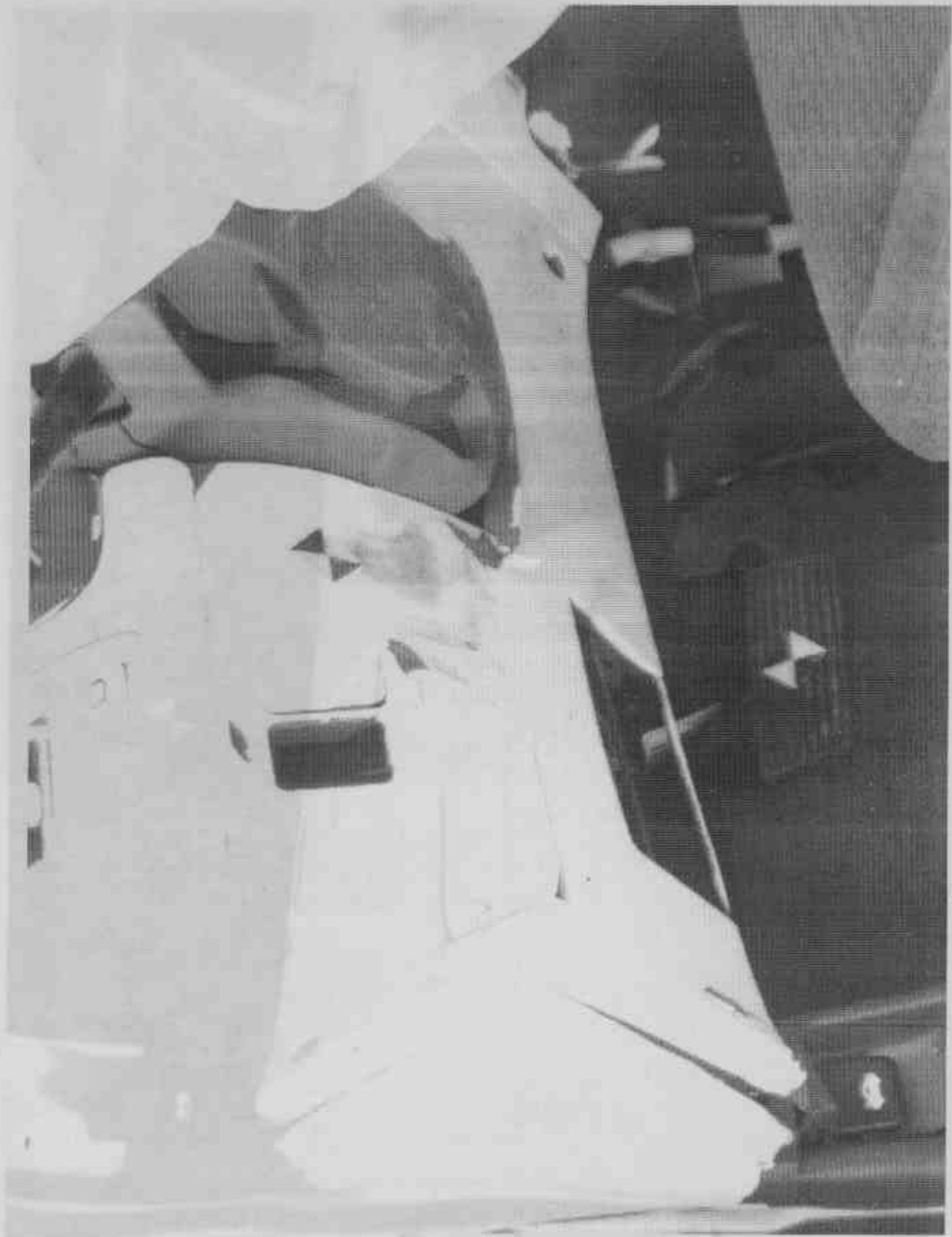


FIGURE A-36. POST TEST DRIVER KNEE BOLSTER

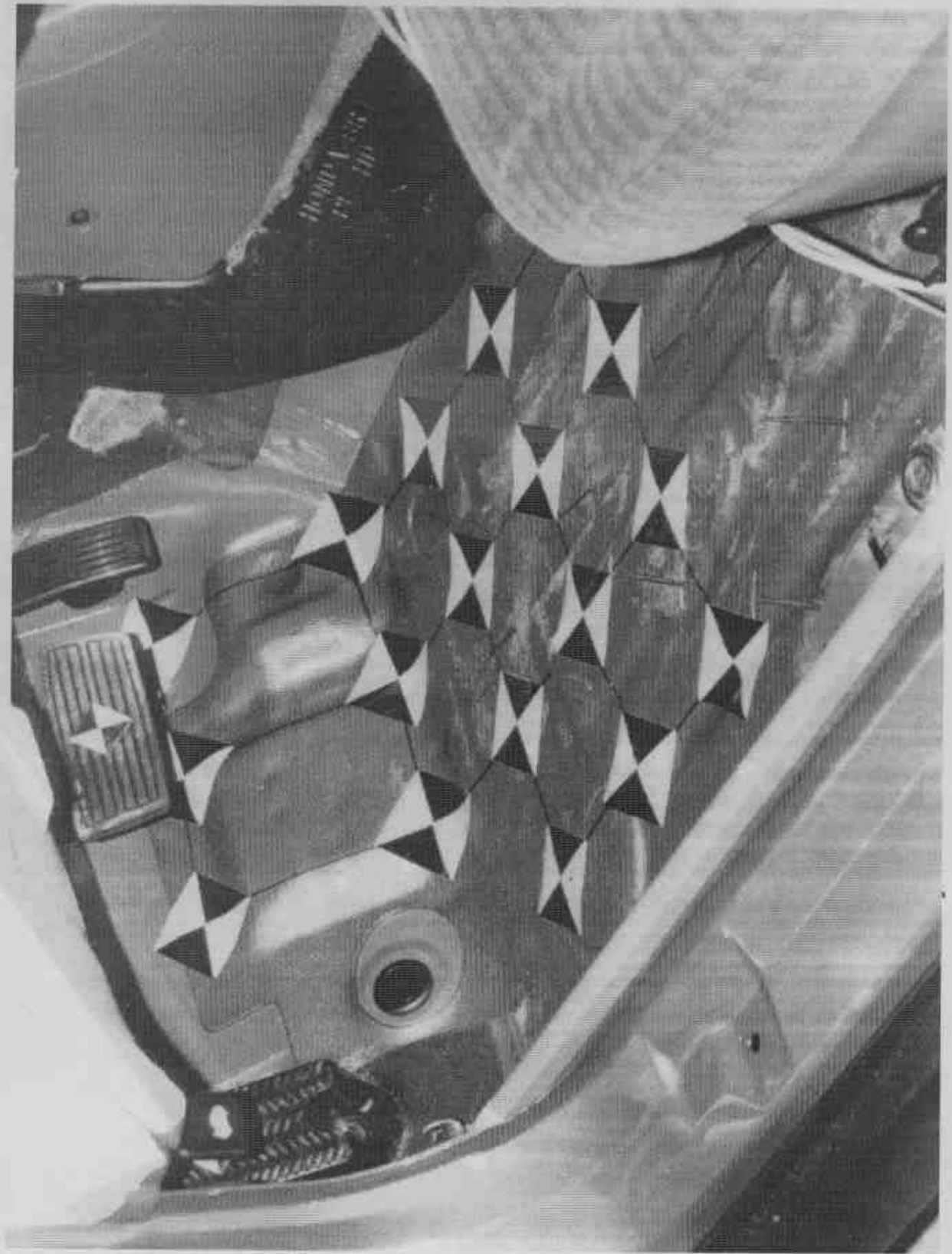


FIGURE A-37. PRE TEST DRIVER SIDE FLOOR PAN

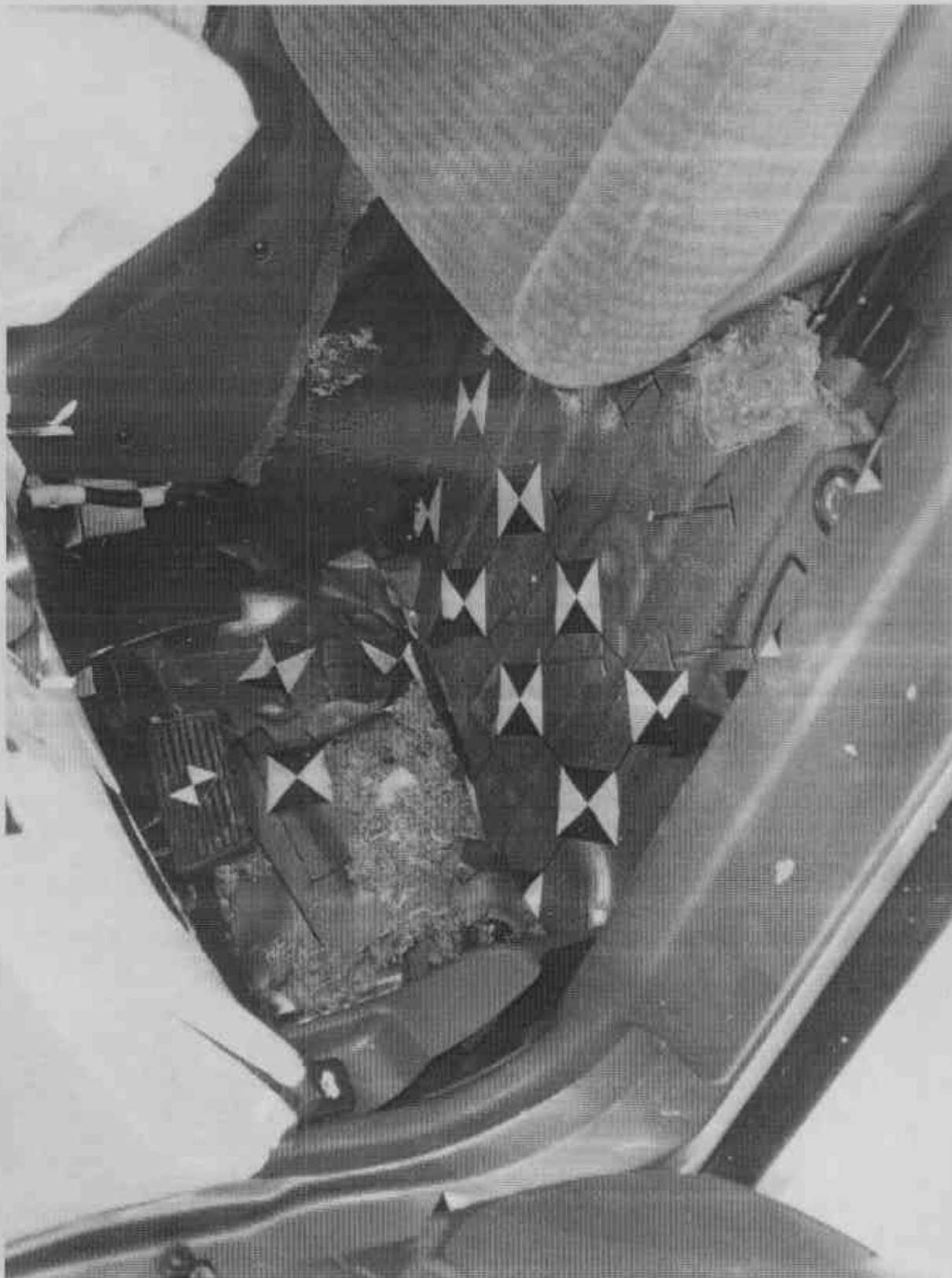


FIGURE A-38. POST TEST DRIVER SIDE FLOOR PAN



FIGURE A-39. POST TEST DRIVER HEAD

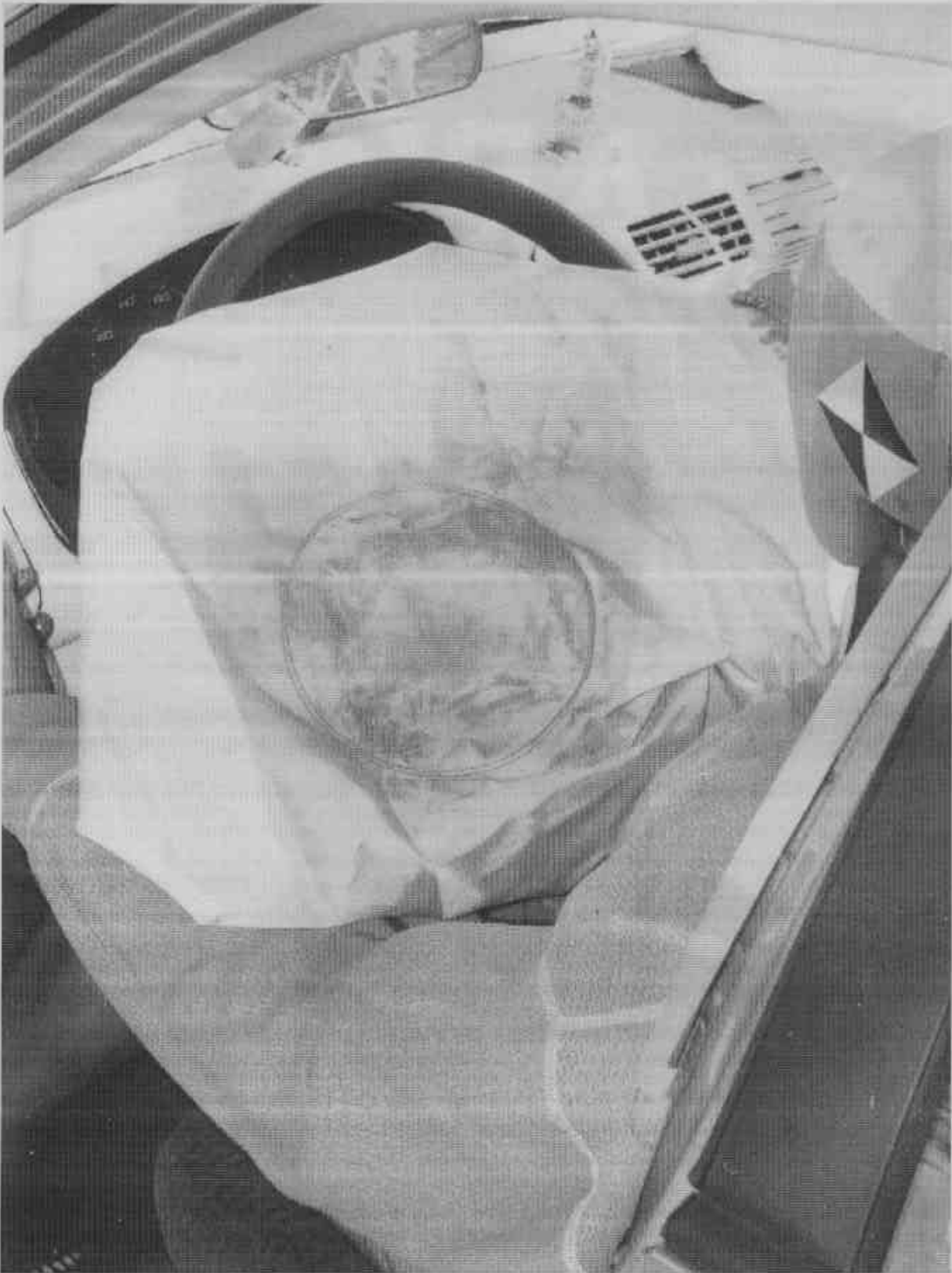


FIGURE A-40. POST TEST DRIVER DUMMY CONTACT

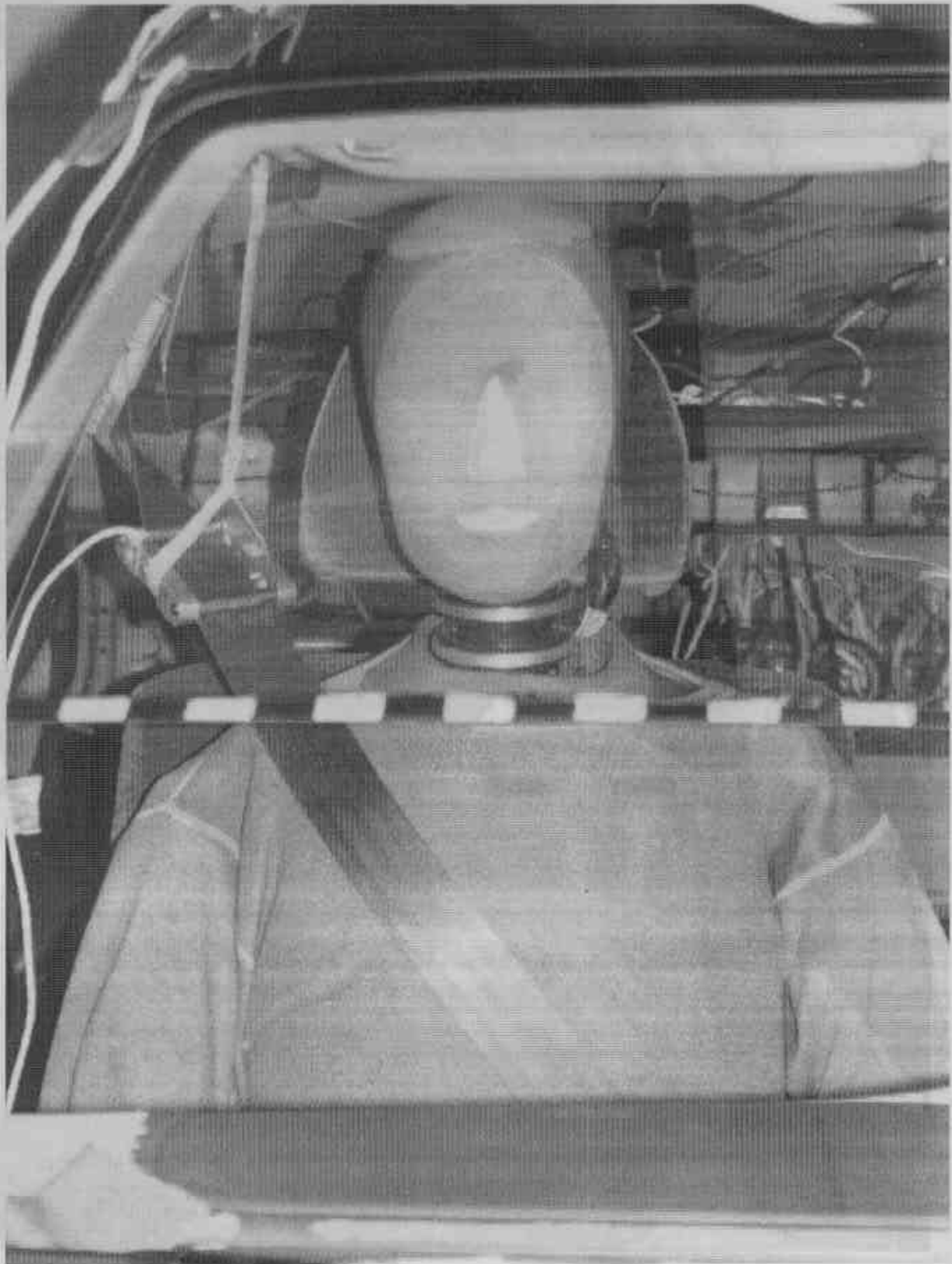


FIGURE A-41. PRE TEST PASSENGER DUMMY (FRONT VIEW)



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

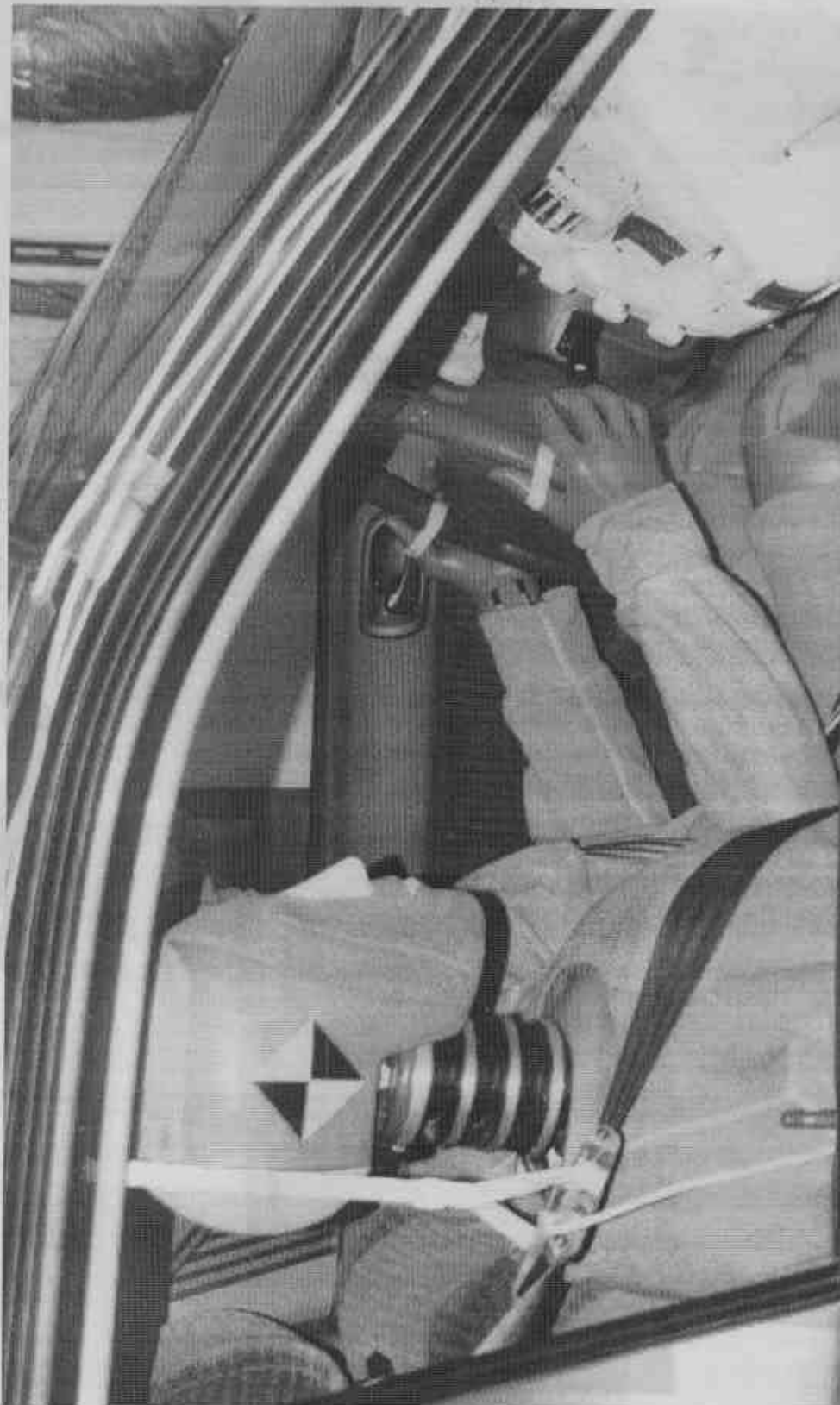


FIGURE A-43. PRE TEST PASSENGER DUMMY (THRU WINDOW)



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)



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

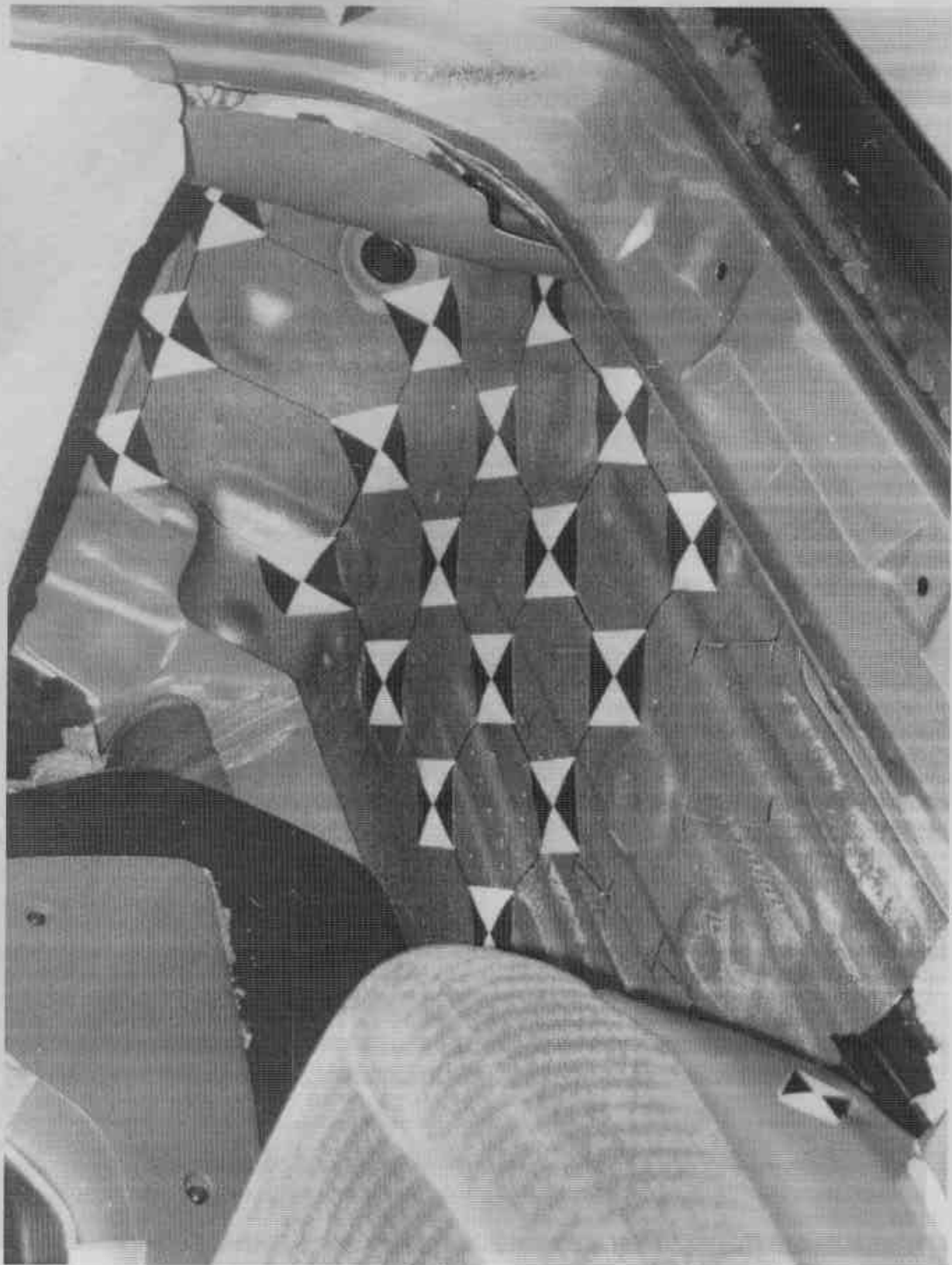


FIGURE A-51. PRETEST PASSENGER SIDE FLOOR PAN



FIGURE A-52. POST TEST PASSENGER SIDE FLOOR PAN

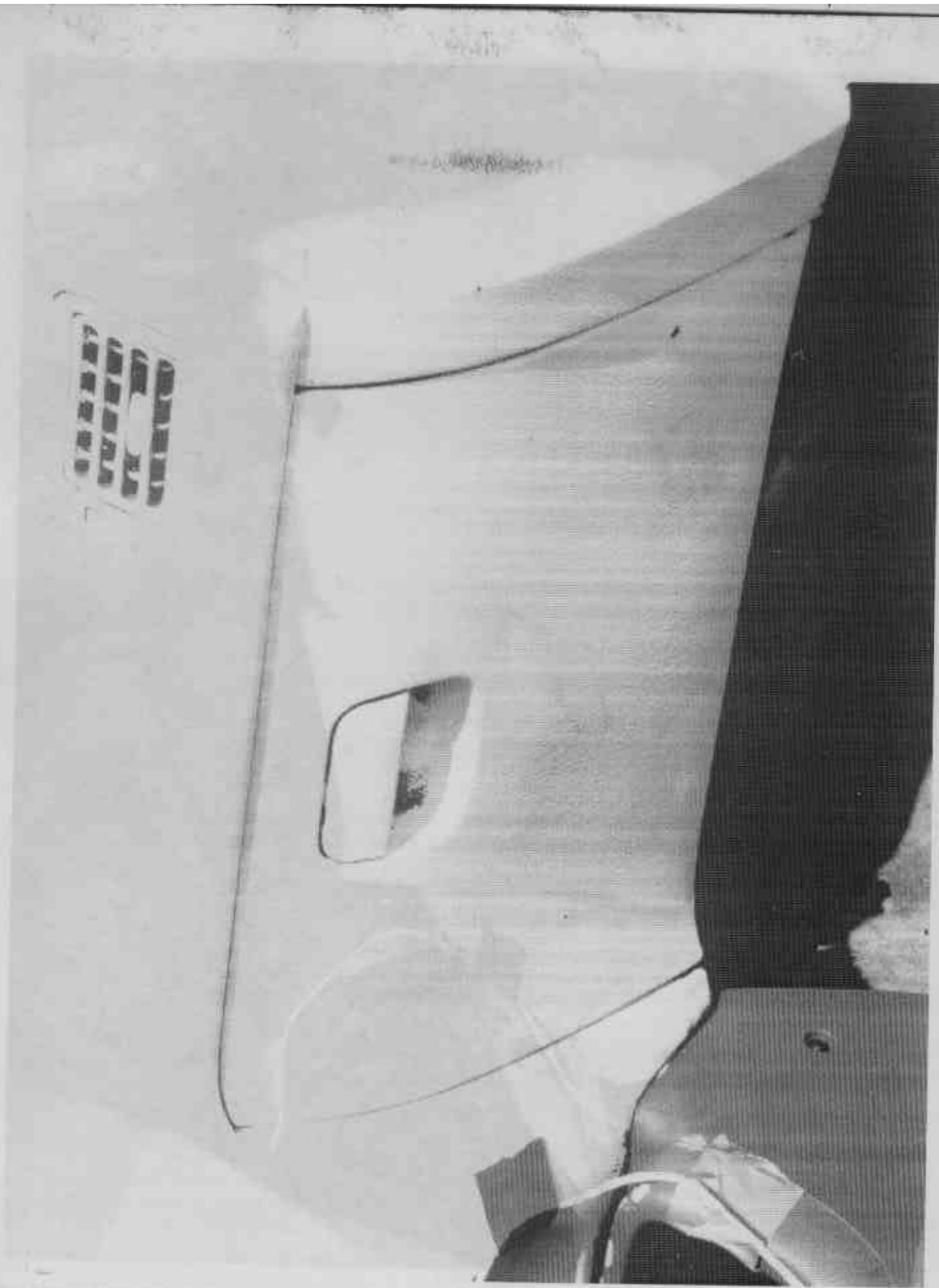


FIGURE A-53. PRE TEST PASSENGER SIDE KNEE BOLSTER



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



FIGURE A-55. POST TEST PASSENGER HEAD

A-55

P99001-3

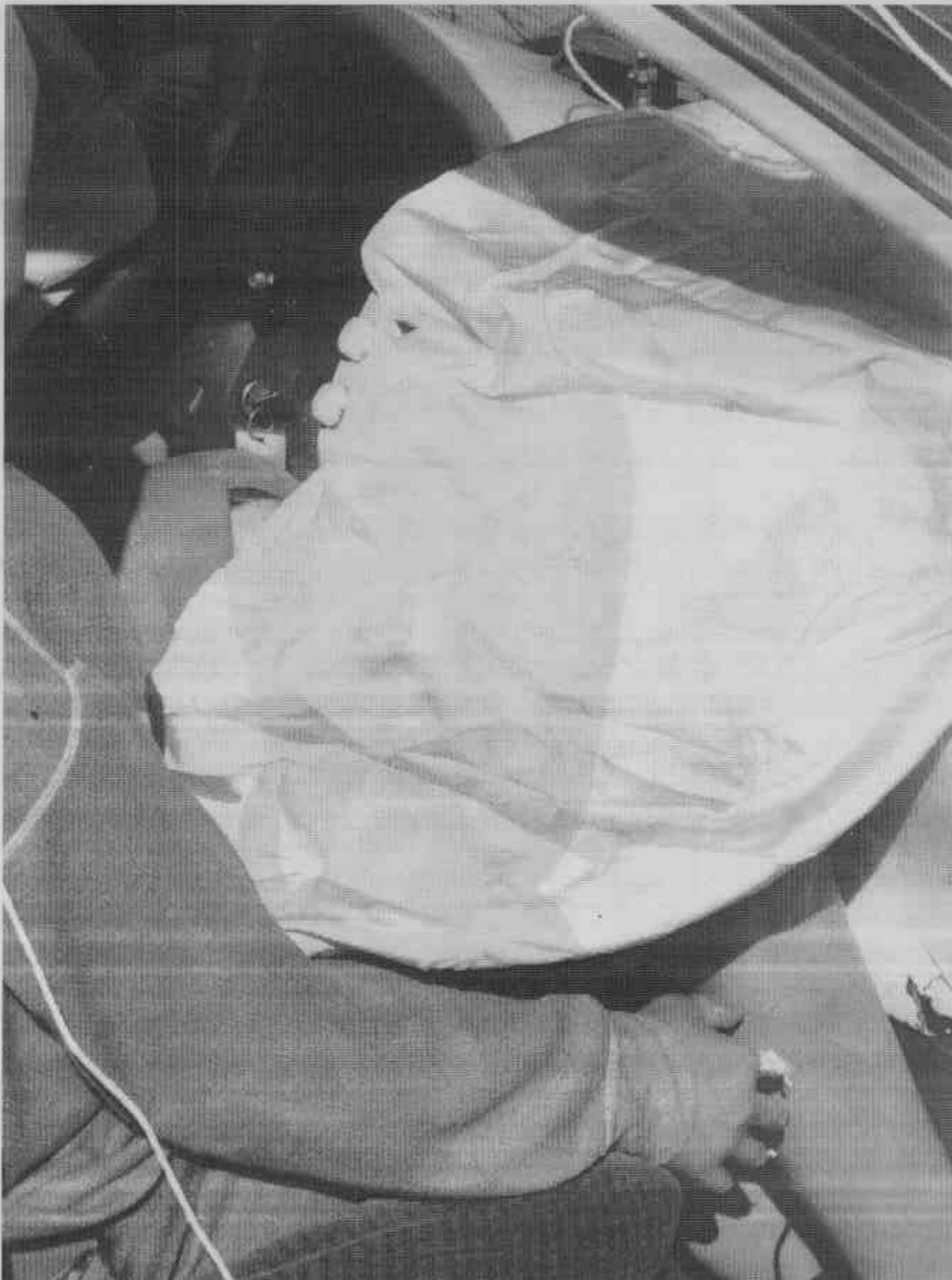


FIGURE A-56. POST TEST PASSENGER DUMMY CONTACT

A-56

P99001-3

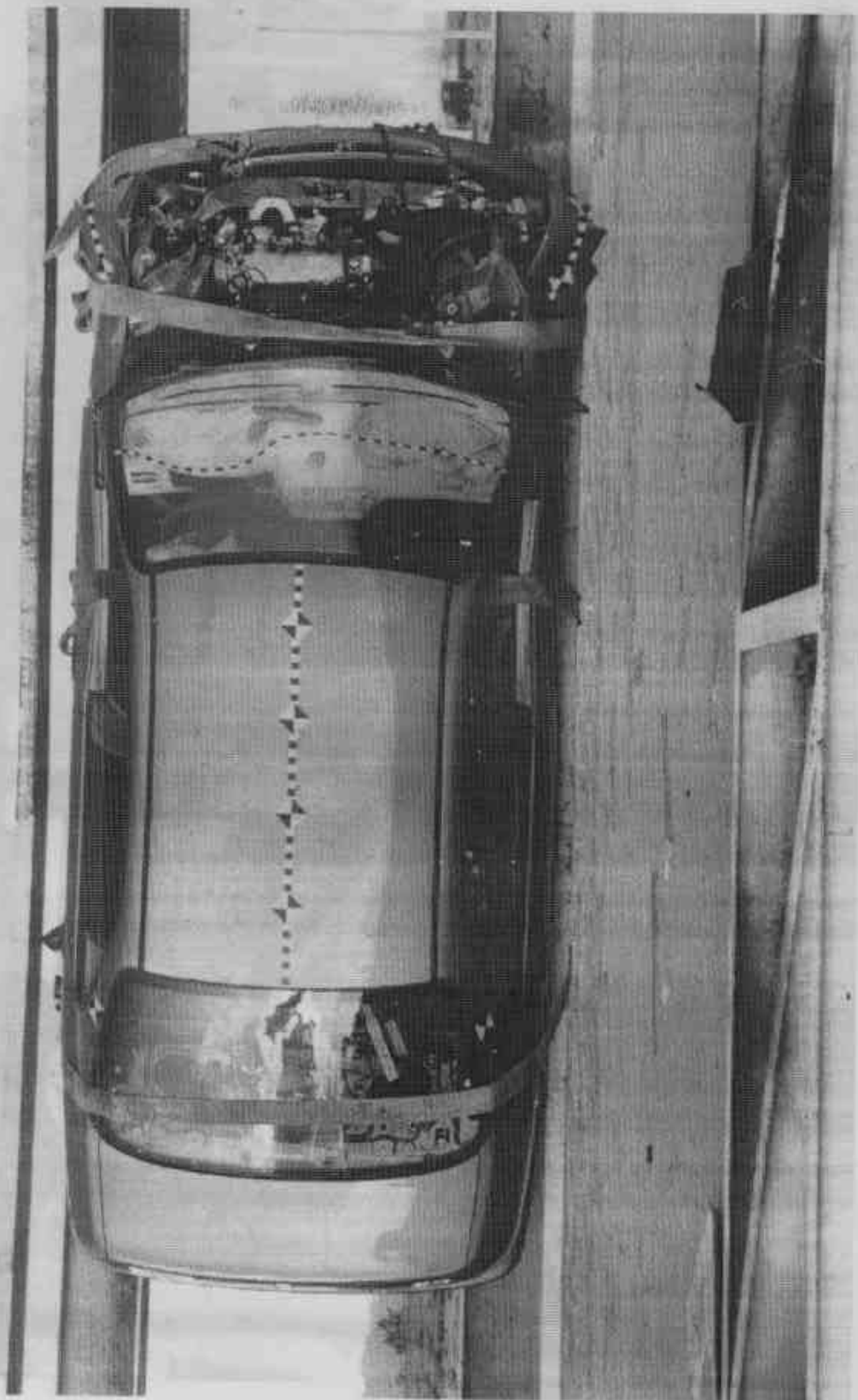


FIGURE A-57. VEHICLE ON ROLLOVER

A-57

P99001-3

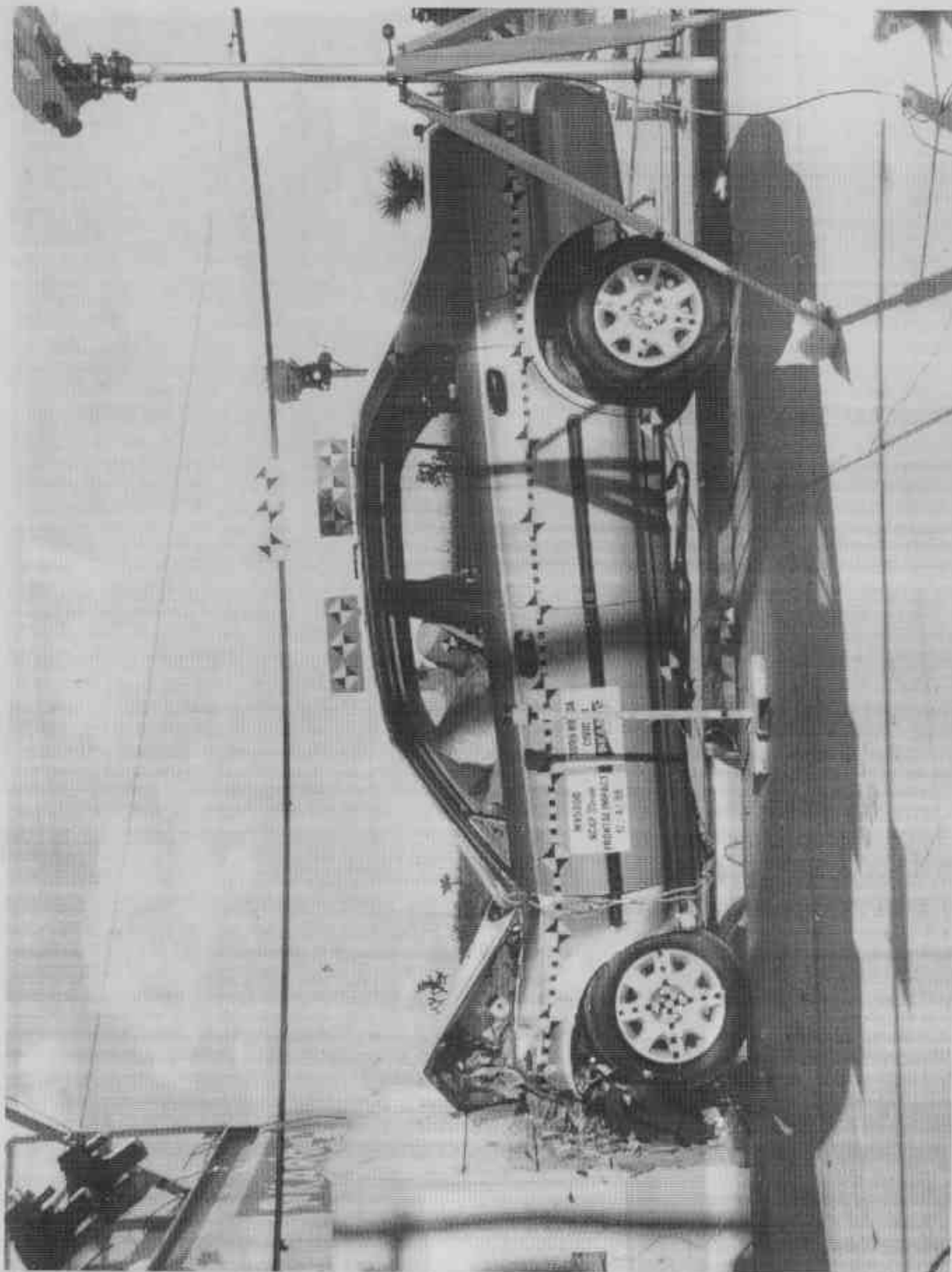


FIGURE A-58. VEHICLE DURING IMPACT

A-58

P99001-3

APPENDIX B
DUMMY AND VEHICLE RESPONSE DATA TRACES

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B-4	Driver Head Primary Y	B-4
B-5	Driver Head Primary Z	B-5
B-6	Driver Head Resultant Primary	B-6
B-7	Driver Head Redundant X	B-7
B-8	Driver Head Redundant X Velocity	B-8
B-9	Driver Head Redundant X Displacement	B-9
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B-19	Driver Neck Moment Z	B-19
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B-25	Driver Chest Primary Z	B-25
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B-70	Passenger Head Redundant X Displacement	B-70

LIST OF DATA PLOTS...(Continued)

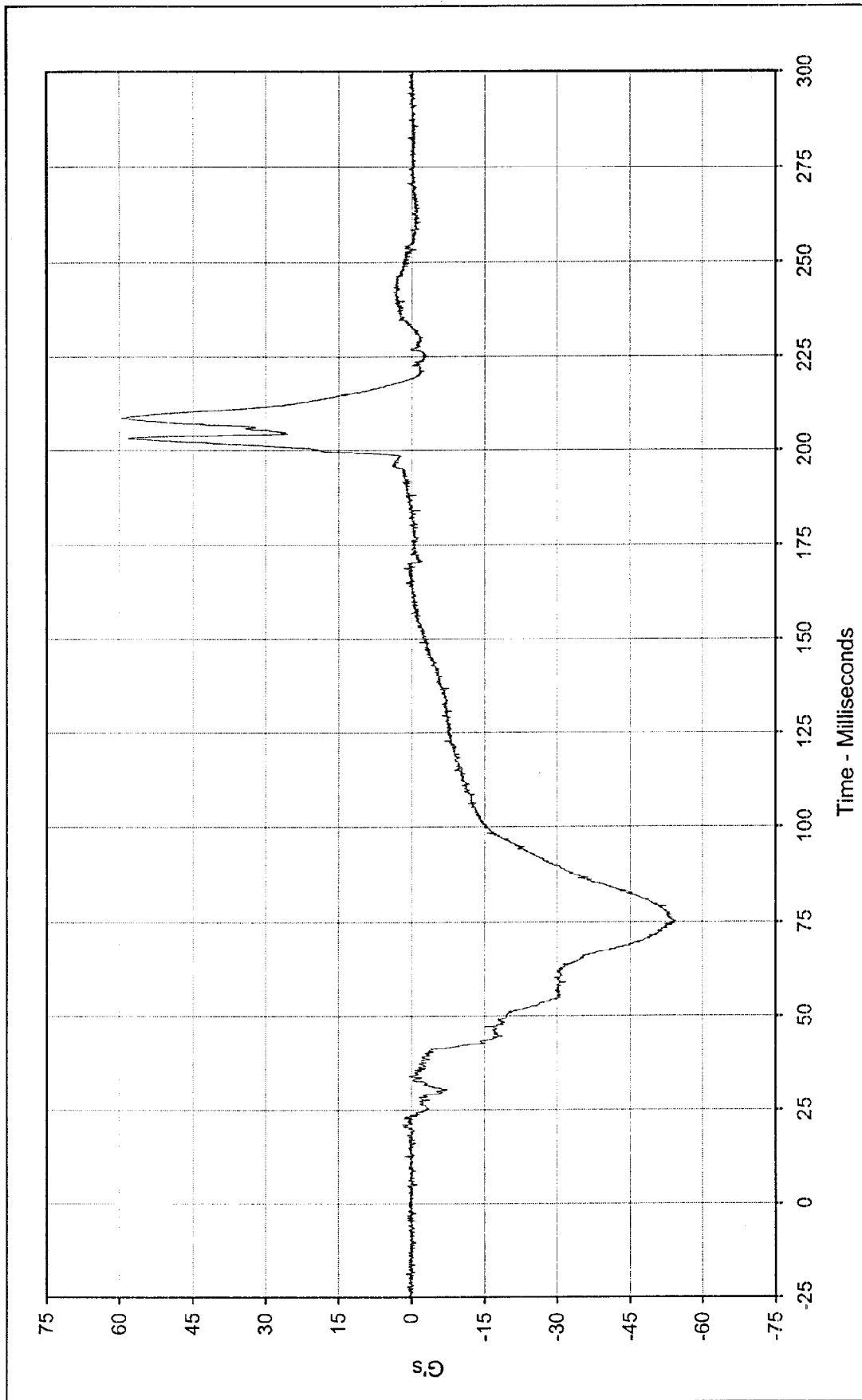
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B-76	Passenger Neck Force Z	B-76
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B-79	Passenger Neck Moment Y	B-79
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B-81	Passenger Neck Moment Resultant	B-81
B-82	Passenger Chest Primary X	B-82
B-83	Passenger Chest Primary X Velocity	B-83
B-84	Passenger Chest Primary X Displacement	B-84
B-85	Passenger Chest Primary Y	B-85
B-86	Passenger Chest Primary Z	B-86
B-87	Passenger Chest Primary Resultant	B-87
B-88	Passenger Chest Redundant X	B-88
B-89	Passenger Chest Redundant X Velocity	B-89
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B-92	Passenger Chest Redundant Z	B-92
B-93	Passenger Chest Redundant Resultant	B-93
B-94	Passenger Chest Displacement X	B-94
B-95	Passenger Pelvis X	B-95
B-96	Passenger Pelvis X Velocity	B-96
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B-99	Passenger Pelvis Z	B-99
B-100	Passenger Pelvis Resultant	B-100
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B-102	Passenger Right Femur Force	B-102
B-103	Passenger Left Upper Tibia Moment X	B-103
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B-107	Passenger Left Lower Tibia Moment X	B-107
B-108	Passenger Left Lower Tibia Moment Y	B-108
B-109	Passenger Left Lower Tibia Force Z	B-109
B-110	Passenger Right Lower Tibia Moment X	B-110
B-111	Passenger Right Lower Tibia Moment Y	B-111
B-112	Passenger Right Lower Tibia Force Z	B-112
B-113	Passenger Left Foot Aft X	B-113
B-114	Passenger Left Foot Aft Z	B-114
B-115	Passenger Left Foot Fore Z	B-115
B-116	Passenger Right Foot Aft X	B-116
B-117	Passenger Right Foot Aft Z	B-117
B-118	Passenger Right Foot Fore Z	B-118
B-119	Passenger Lap Belt Force	B-119
B-120	Passenger Shoulder Belt Force	B-120
B-121	Passenger Shoulder Belt Pullout	B-121
B-122	Passenger Shoulder Belt Elongation	B-122
B-123	Vehicle Left Rear Primary	B-123
B-124	Vehicle Left Rear Primary Velocity	B-124
B-125	Vehicle Left Rear Primary Displacement	B-125
B-126	Vehicle Right Rear Primary	B-126
B-127	Vehicle Right Rear Primary Velocity	B-127
B-128	Vehicle Right Rear Primary Displacement	B-128
B-129	Vehicle Engine Top	B-129
B-130	Vehicle Engine Top Velocity	B-130
B-131	Vehicle Engine Top Displacement	B-131
B-132	Vehicle Engine Bottom	B-132
B-133	Vehicle Engine Bottom Velocity	B-133
B-134	Vehicle Engine Bottom Displacement	B-134
B-135	Vehicle Left Brake Caliper	B-135
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B-137	Vehicle Left Brake Caliper Displacement	B-137
B-138	Vehicle Right Brake Caliper	B-138
B-139	Vehicle Right Brake Caliper Velocity	B-139
B-140	Vehicle Right Brake Caliper Displacement	B-140

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B-143	Vehicle Instrument Panel Displacement	B-143
B-144	Vehicle Left Rear Redundant	B-144
B-145	Vehicle Left Rear Redundant Velocity	B-145
B-146	Vehicle Left Rear Redundant Displacement	B-146



Curve Description: Driver Head Primary X

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Maximum Value: 59.5 at 208.6 Milliseconds

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

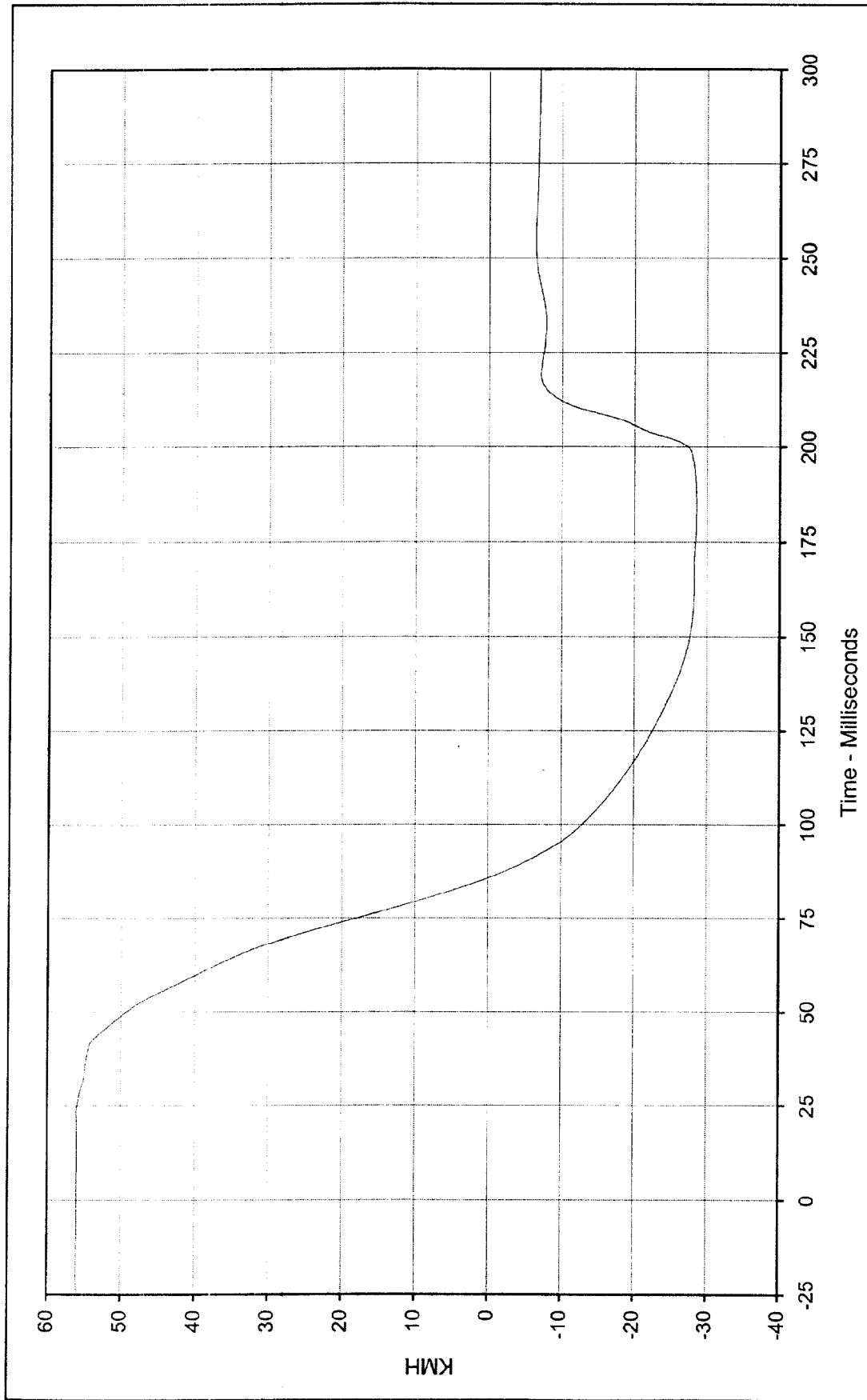
Minimum Value: -54.6 at 75.2 Milliseconds

SAE Filter Class: 1000

Date of Test: 12/4/98

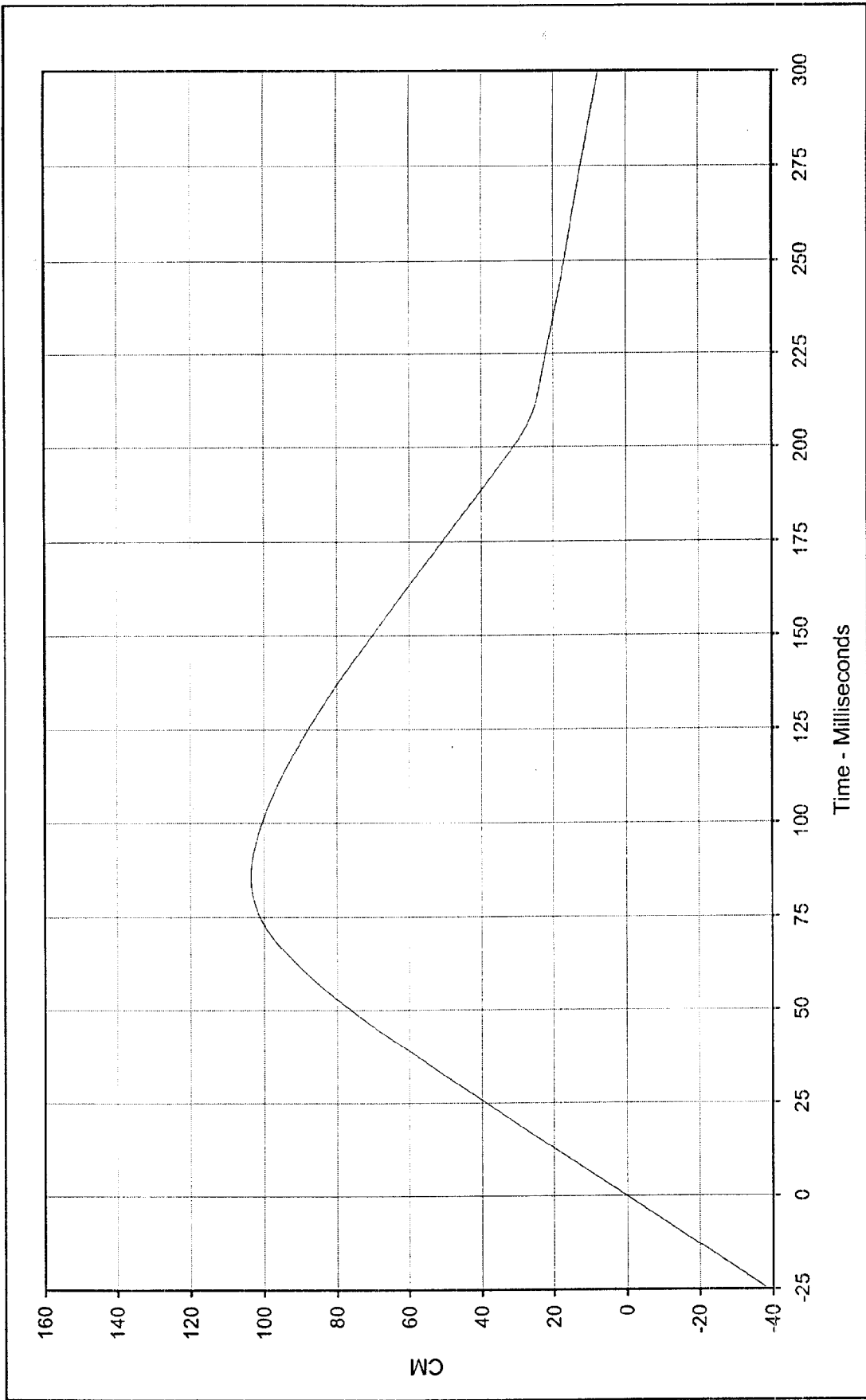
Curve Number: FIL-001





Curve Description:	Driver Head Primary X Velocity	Testing Program	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	56.0 at 23.3 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-28.6 at 184.6 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/4/98			
Curve Number:	IN1-001			

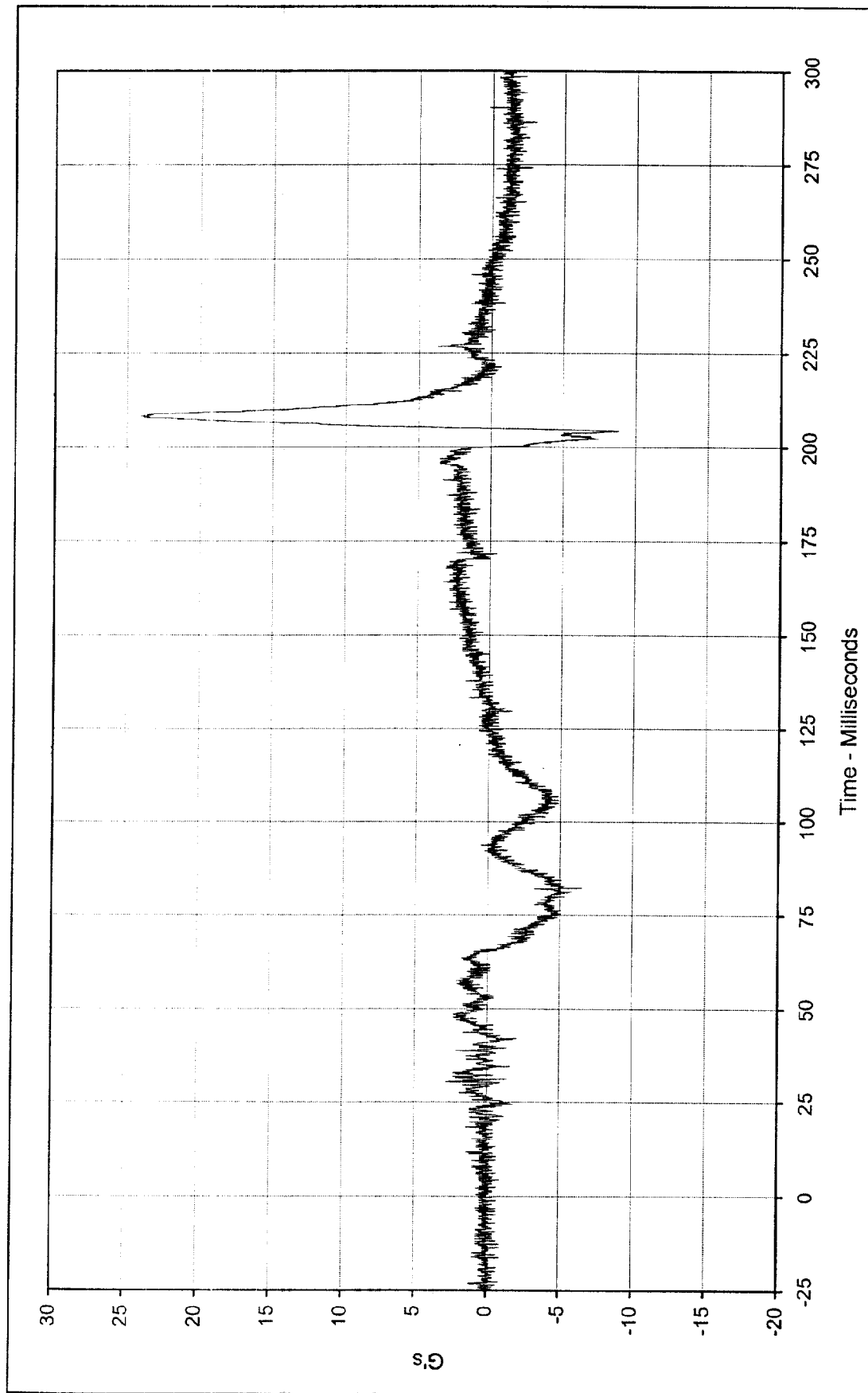




Curve Description: Driver Head Primary X Displ.
 Maximum Value: 103.5 at 85.5 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/4/98
 Curve Number: IN2-001

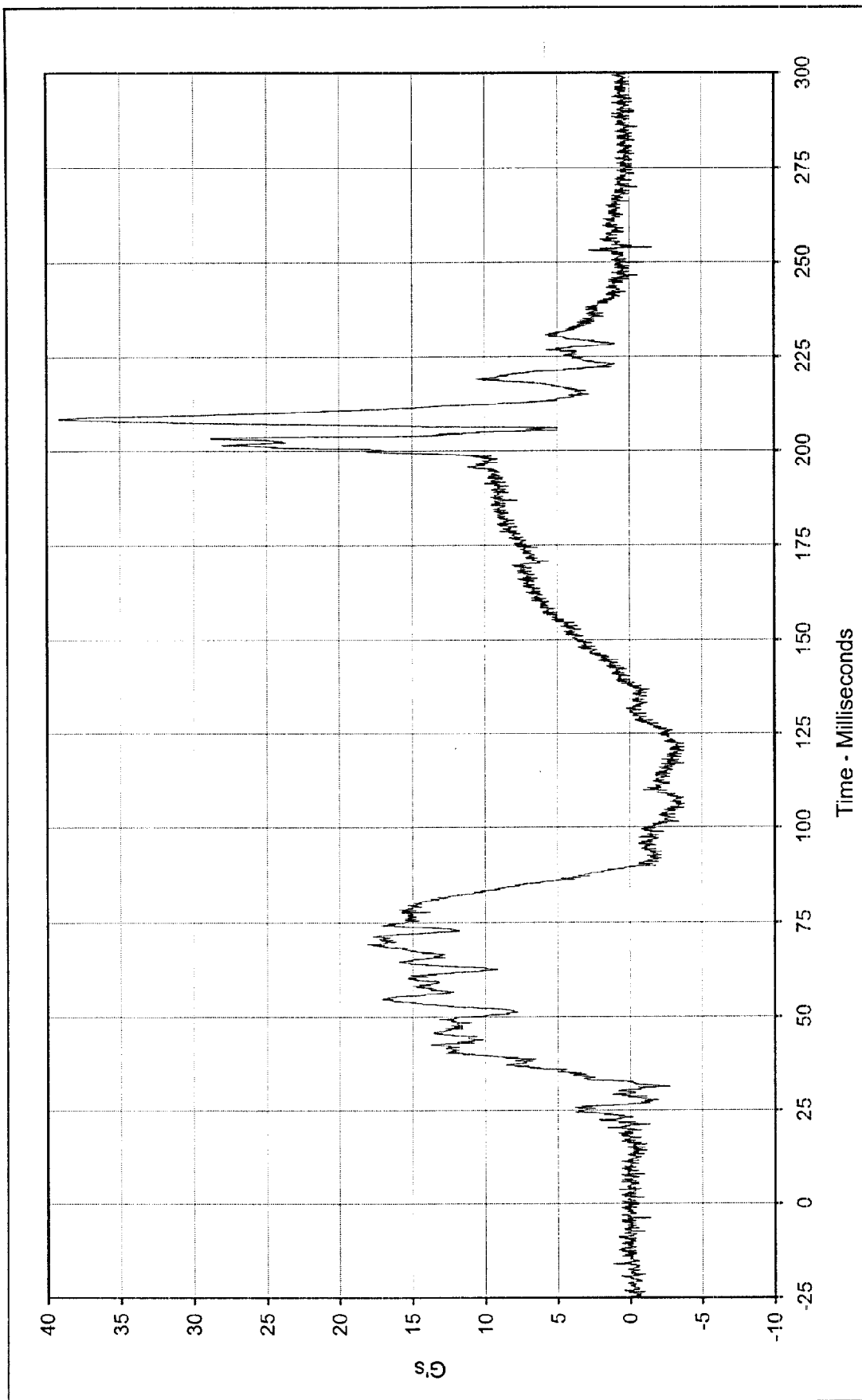
Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description:	Driver Head Primary Y	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	24.1 at 208.2 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-8.8 at 204.3 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/4/98			
Curve Number:	FIL-002			

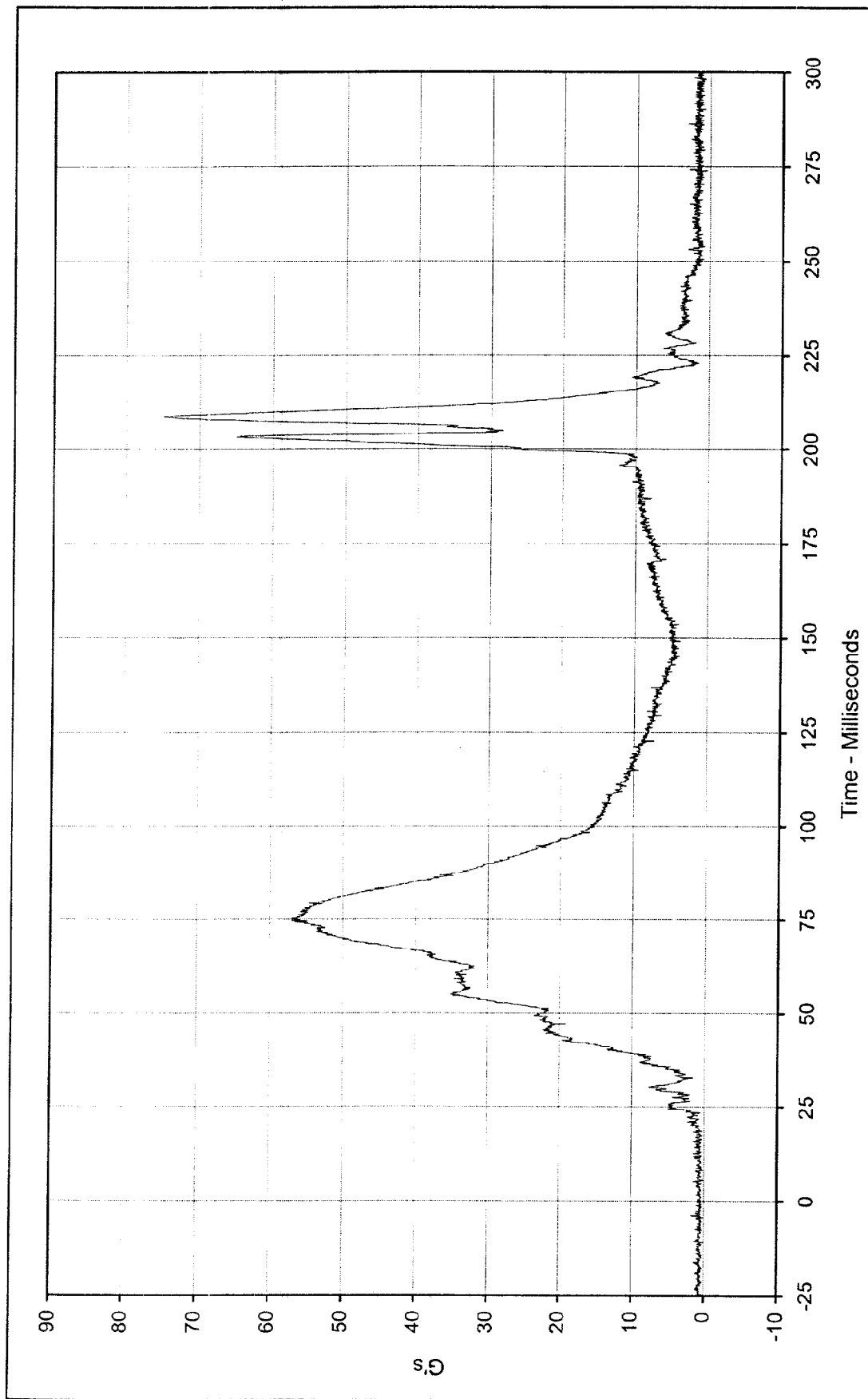




Curve Description: Driver Head Primary Z
 Maximum Value: 39.2 at 208.5 Milliseconds
 Minimum Value: -3.8 at 105.1 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/4/98
 Curve Number: FIL-003

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description: Driver Head Resultant Primary

Maximum Value: 74.9 at 208.6 Milliseconds

Minimum Value: 0.0 at 5.4 Milliseconds

SAE Filter Class: 1000

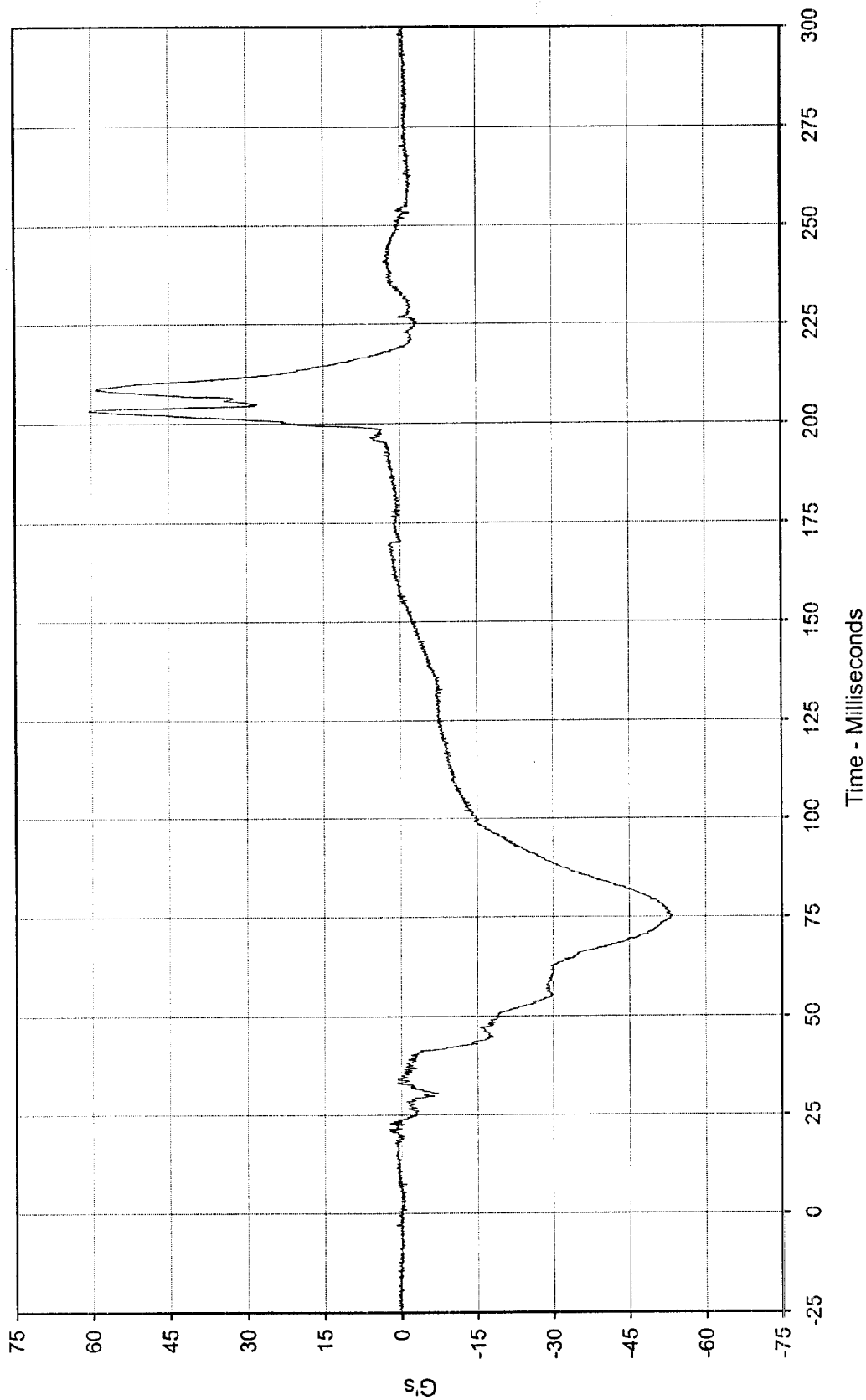
Date of Test: 12/4/98

Curve Number: RES-001

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

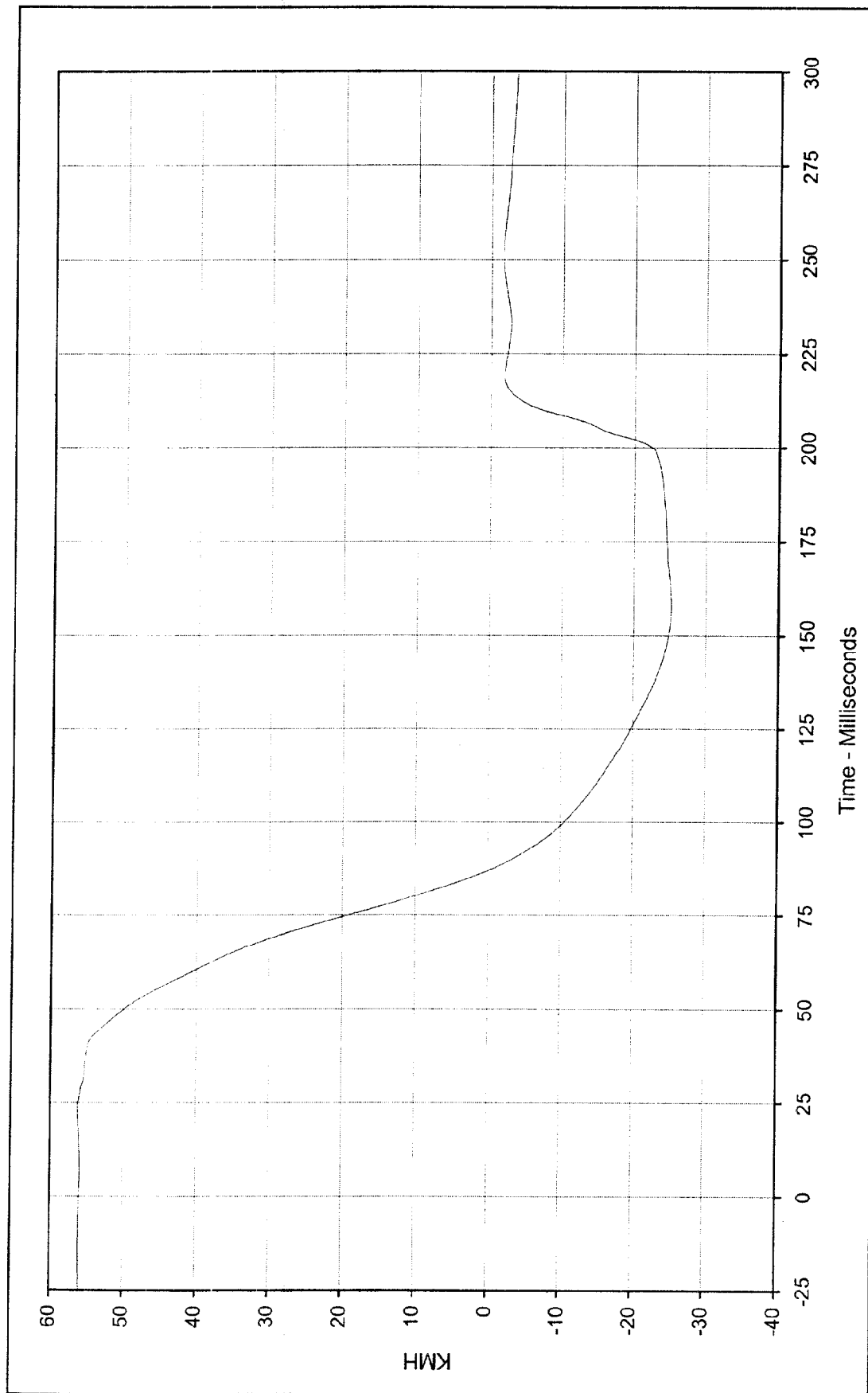




Curve Description:	Driver Head Redundant X	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	60.6 at 203.2 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-53.6 at 75.4 Milliseconds			



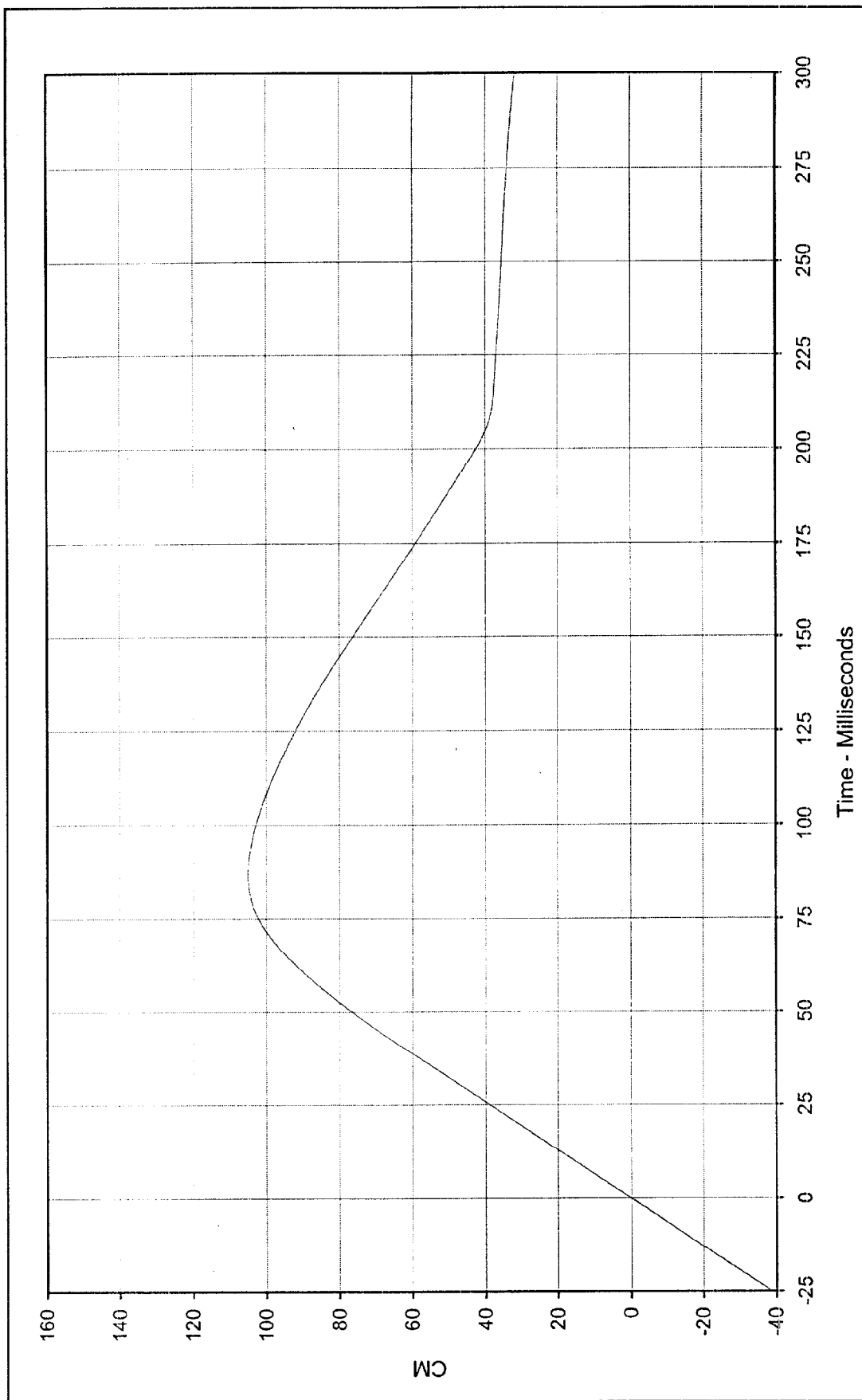
SAE Filter Class:	1000
Date of Test:	12/4/98
Curve Number:	FIL-004



Curve Description:		Driver Head Redundant X Velocity		Testing Program	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	56.3	at	23.6			
Minimum Value:	-25.2	at	157.6	Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan
SAE Filter Class:	180					
Date of Test:	12/4/98					
Curve Number:	IN1-004					







Curve Description: Driver Head Redundant X Displ.

Maximum Value: 105.0 at 86.9 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

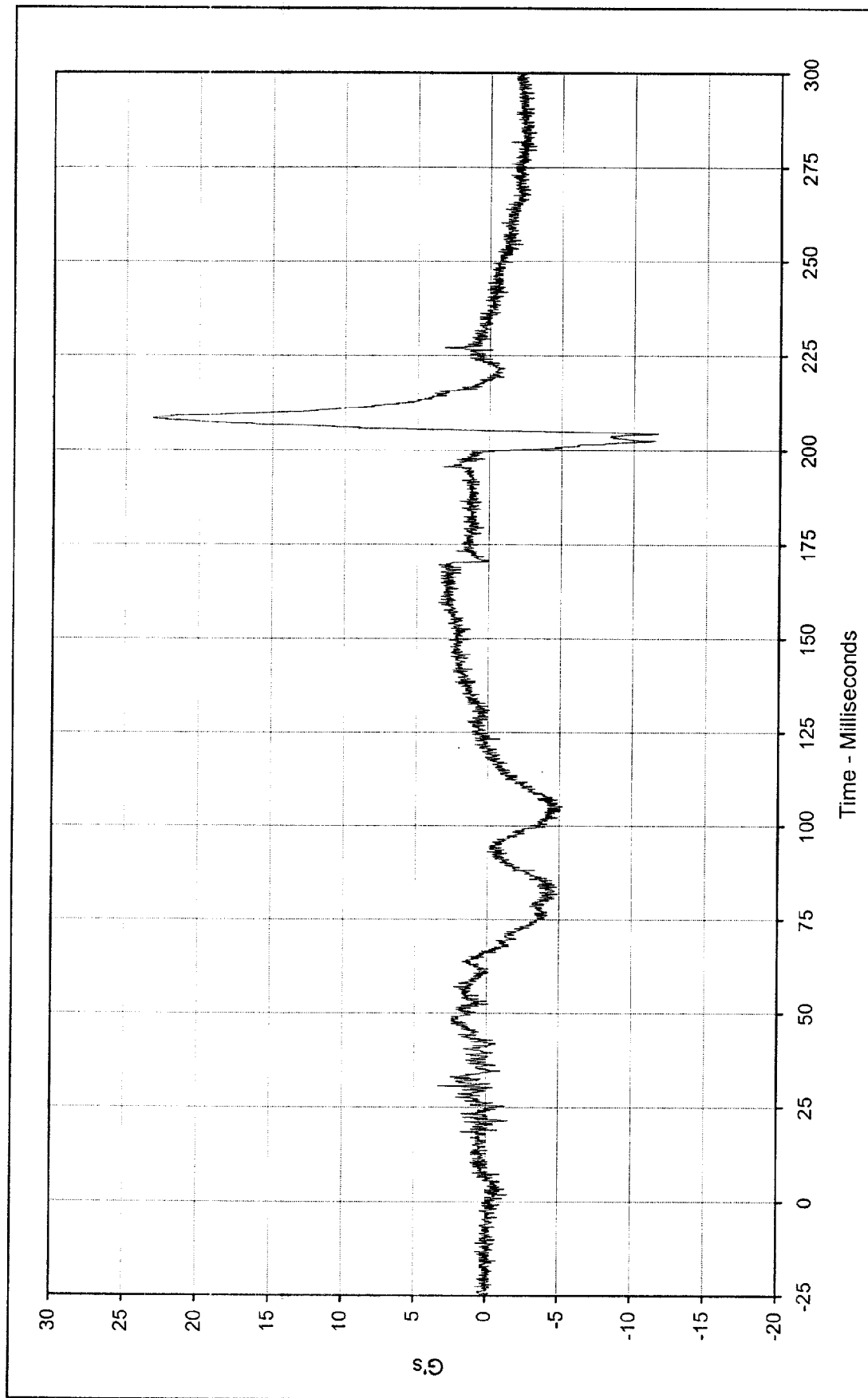
Date of Test: 12/4/98

Curve Number: IN2-004

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

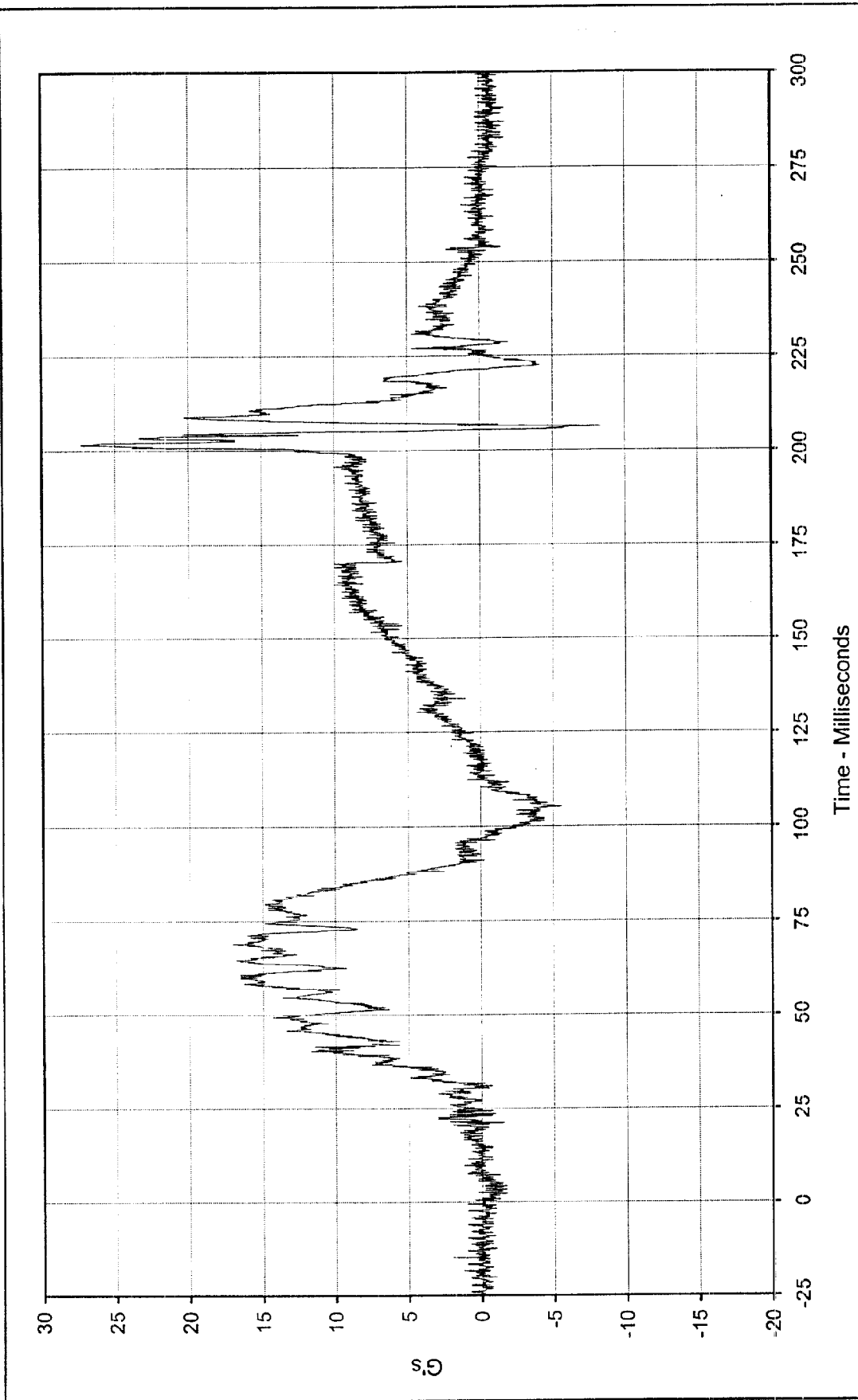
Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description:		Driver Head Redundant Y		Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	23.2	at	208.2	Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan
Minimum Value:	-11.7	at	204.4	Milliseconds		
SAE Filter Class:	1000					
Date of Test:	12/4/98					
Curve Number:	FIL-005					

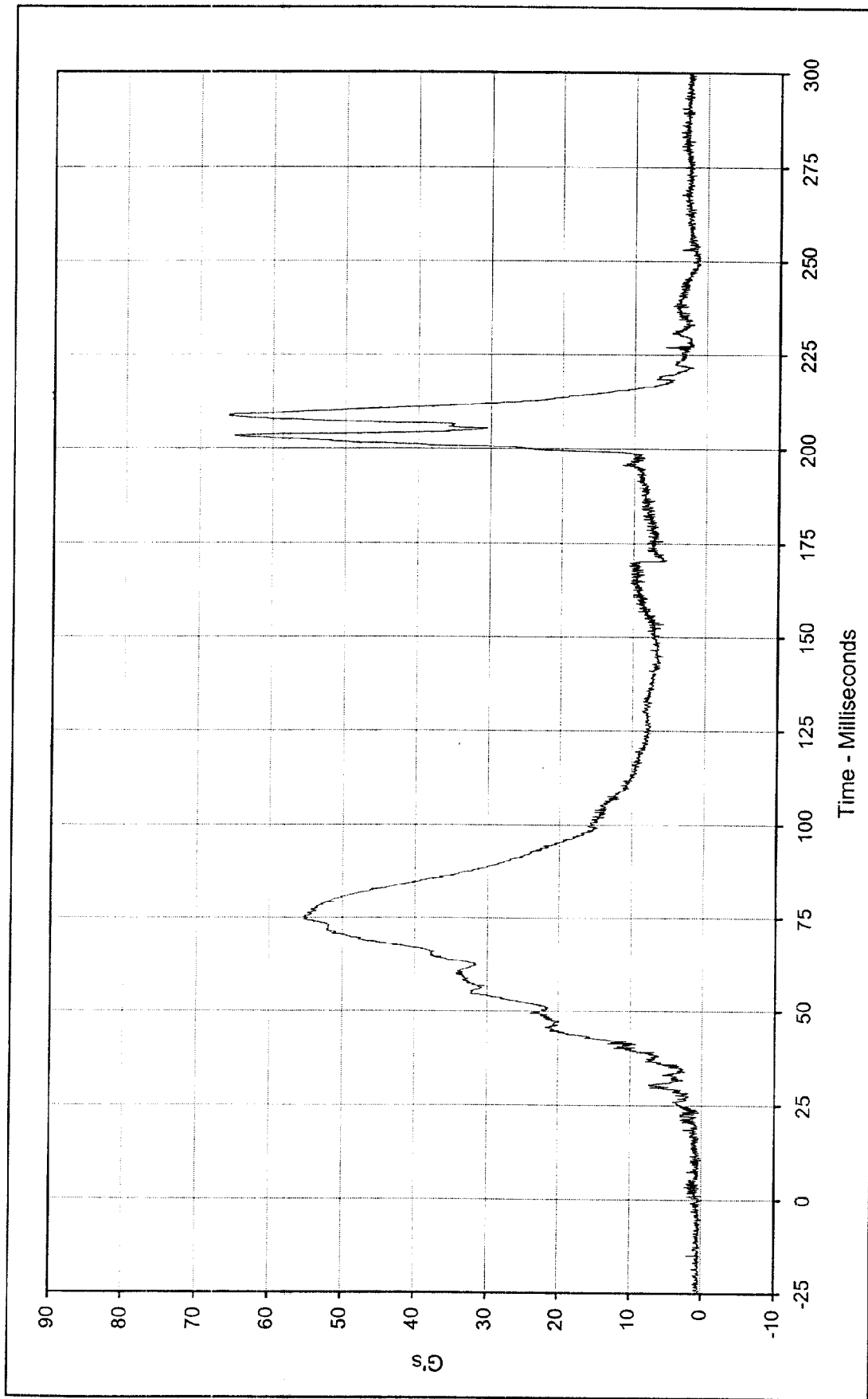




Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

Curve Description: Driver Head Redundant Z
 Maximum Value: 27.3 at 201.6 Milliseconds
 Minimum Value: -8.3 at 206.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/4/98
 Curve Number: FIL-006

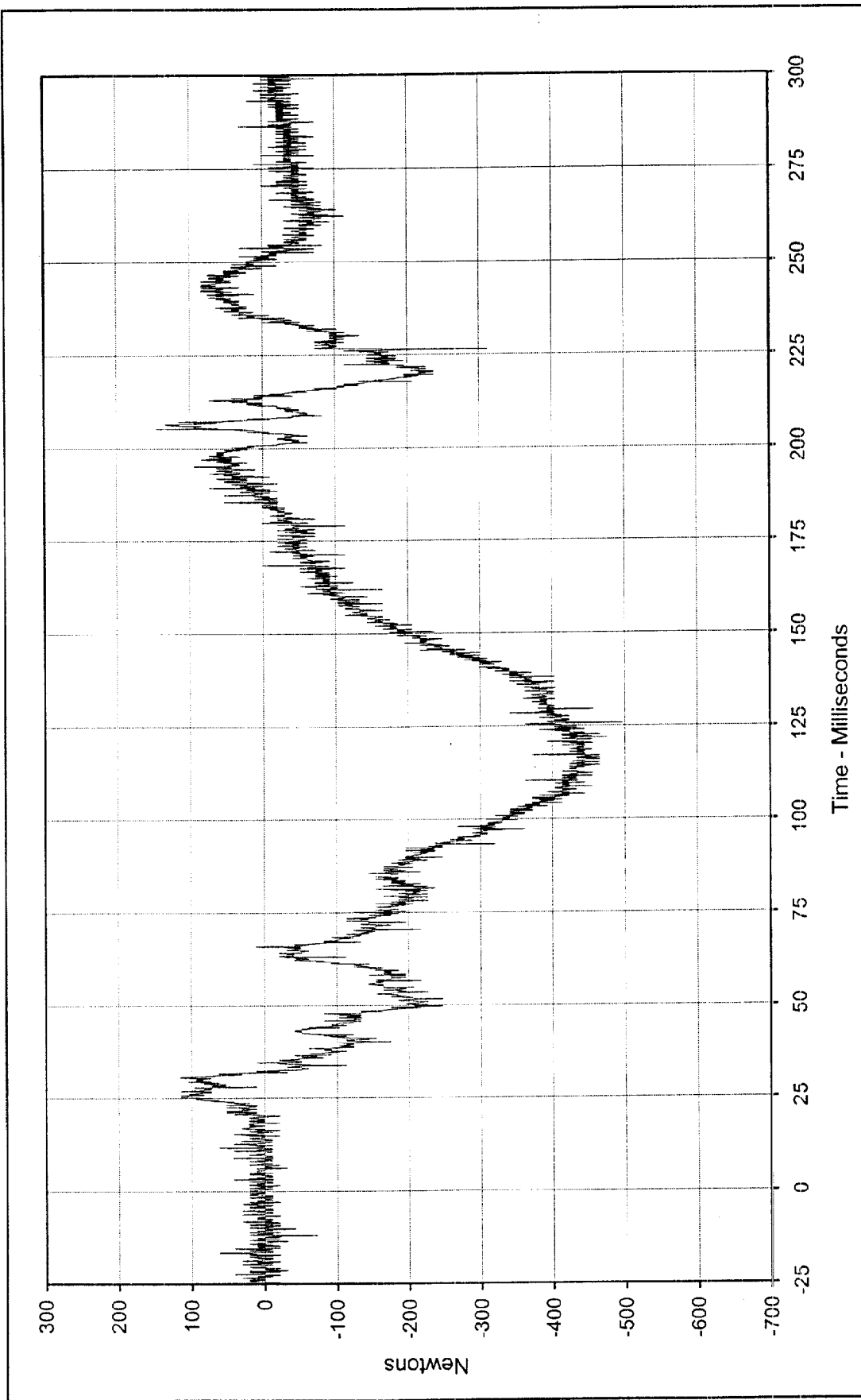




Curve Description: Driver Head Resultant Redundant
 Maximum Value: 66.1 at 208.5 Milliseconds
 Minimum Value: 0.0 at 1.1 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/4/98
 Curve Number: RES-004

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

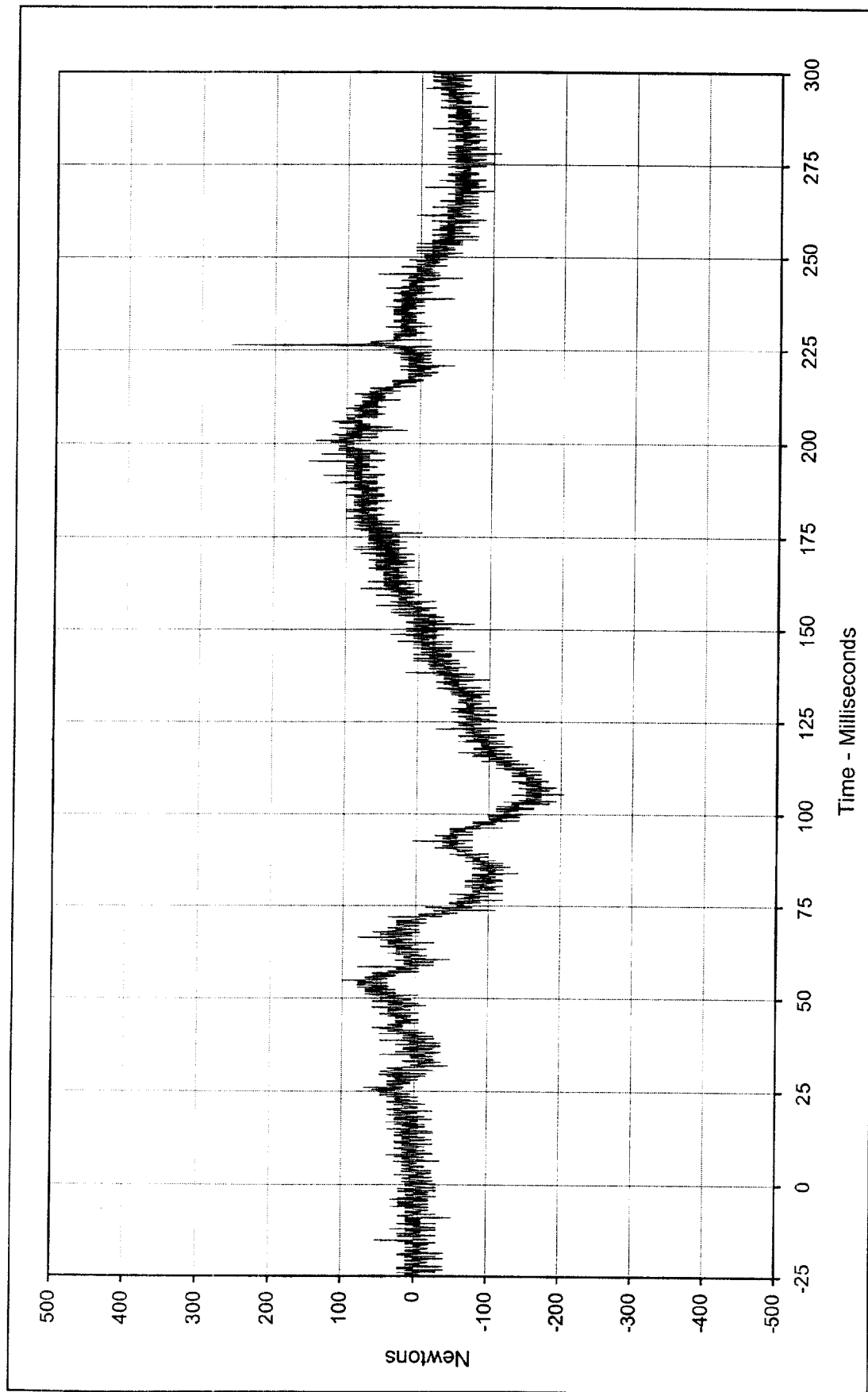




Curve Description: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Program:
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

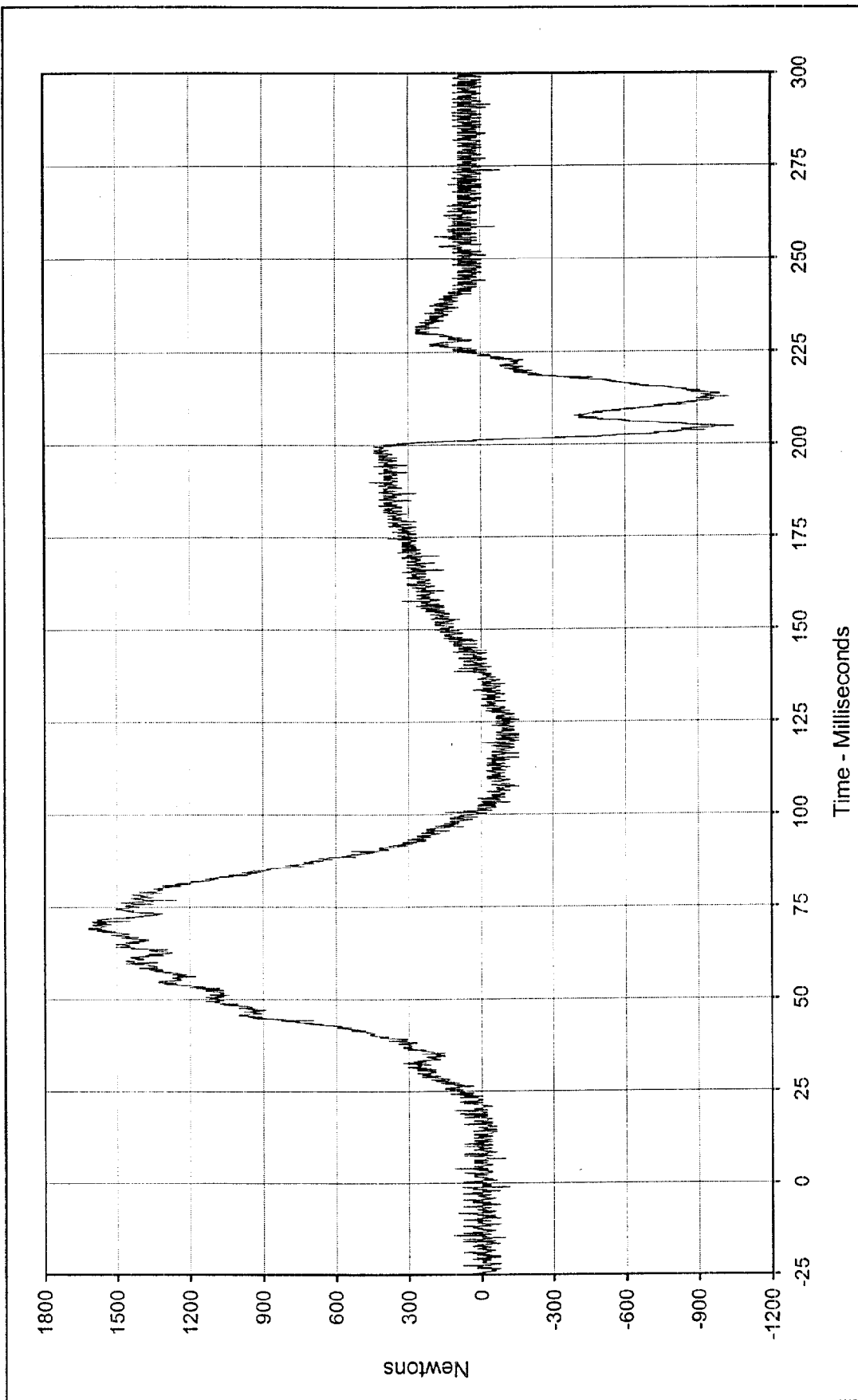
Driver Neck Force X
 Maximum Value: 145.3 at 205.2 Milliseconds
 Minimum Value: -496.5 at 125.7 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/4/98
 Curve Number: FIL-007





Curve Description:		Test Program:		1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	257.9	at	226.4	Milliseconds	
Minimum Value:	-204.8	at	105.4	Milliseconds	
SAE Filter Class:	1000				
Date of Test:	12/4/98				
Curve Number:	FIL-008				
		Test Vehicle:		1999 Honda Civic DX 4 Door Sedan	

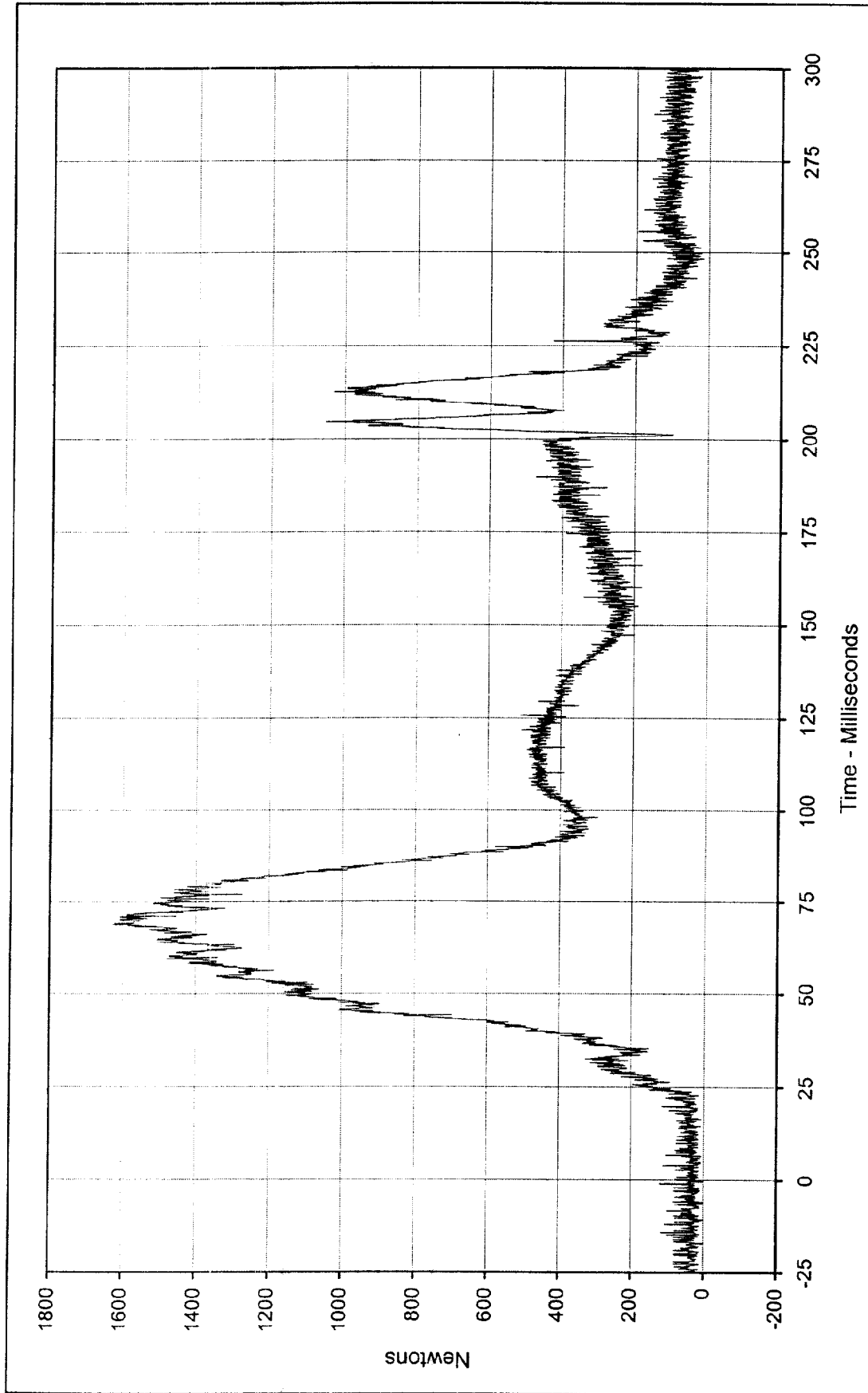




Curve Description: Driver Neck Force Z
 Maximum Value: 1620.2 at 69.0 Milliseconds
 Minimum Value: -1049.8 at 204.7 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/4/98
 Curve Number: FIL-009

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

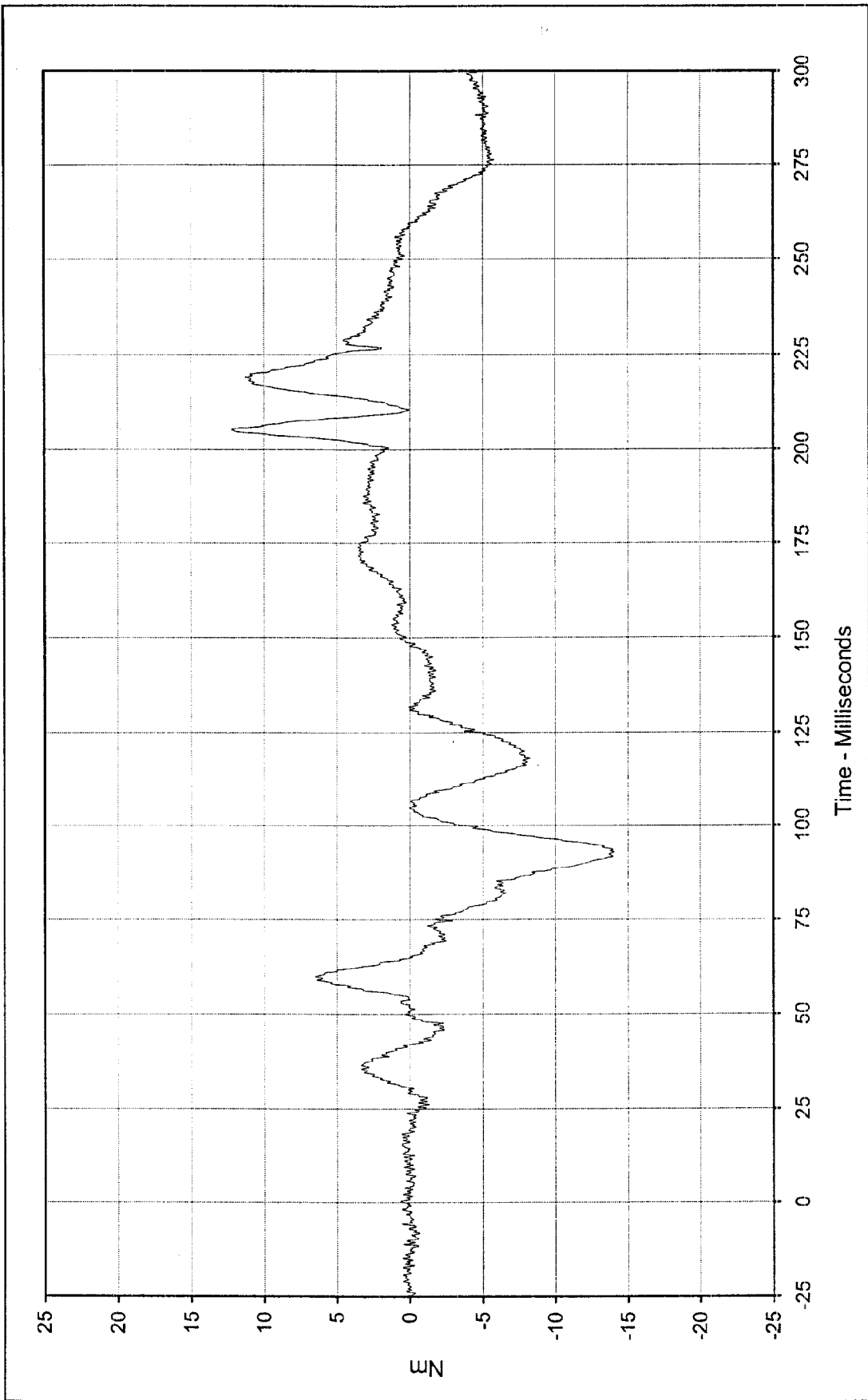




Curve Description: Driver Neck Force Resultant Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
Maximum Value: 1626.2 at 69.0 Milliseconds Test Vehicle: 1999 Honda Civic DX 4 Door Sedan
Minimum Value: 7.1 at 6.4 Milliseconds

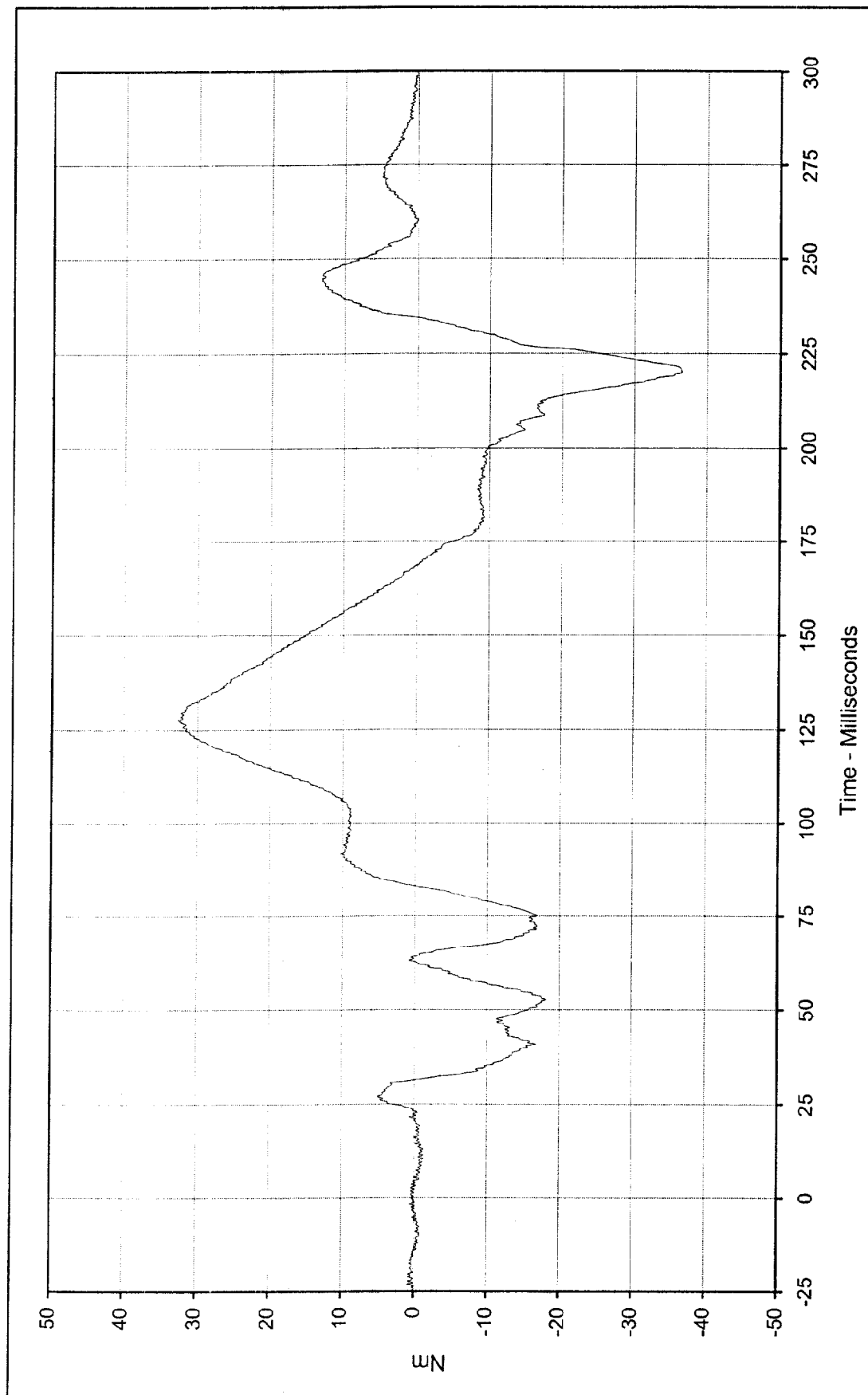


SAE Filter Class: 1000
Date of Test: 12/4/98
Curve Number: RES-007



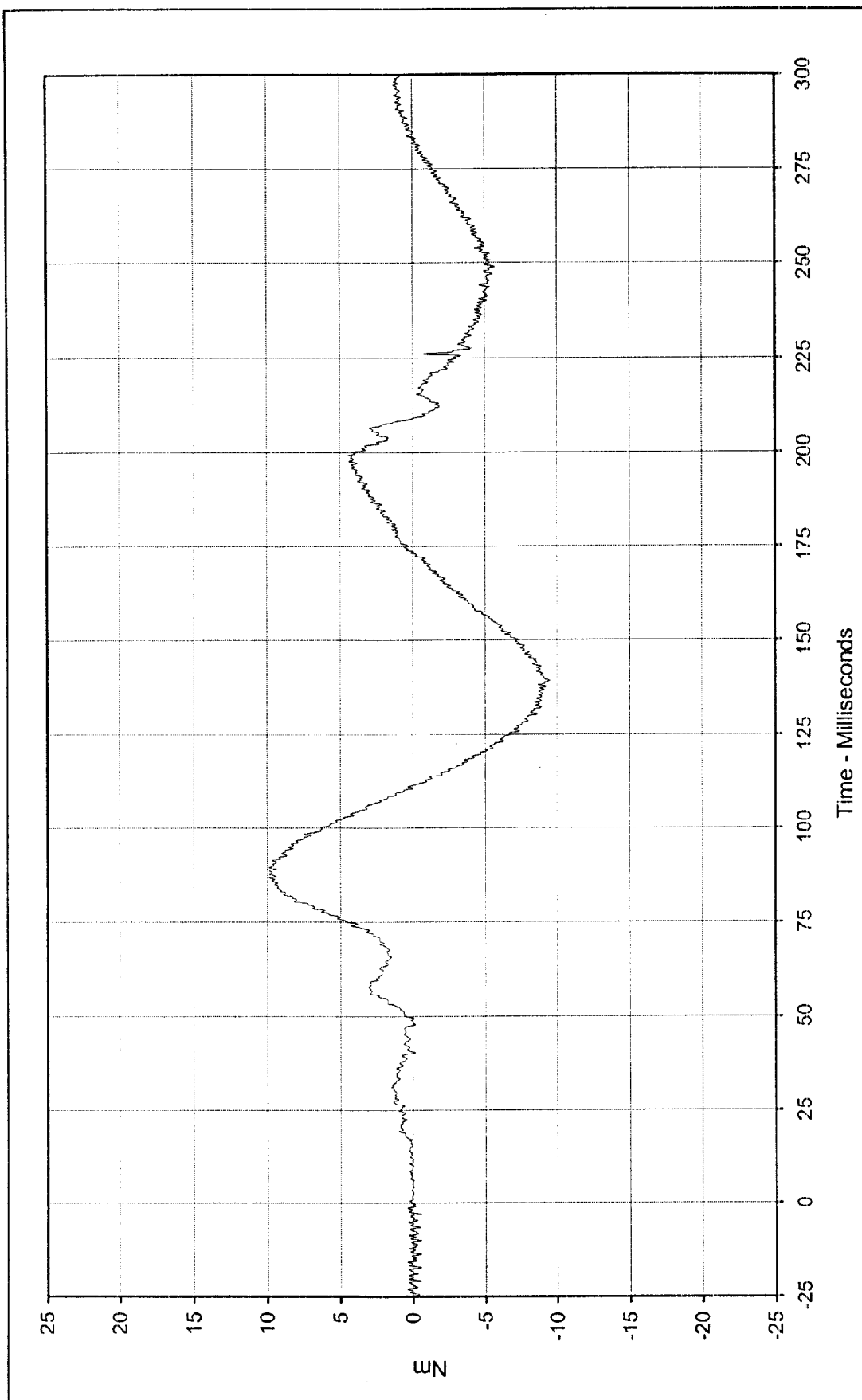
Curve Description:	Driver Neck Moment X	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	12.2	at	205.3	Milliseconds
Minimum Value:	-14.1	at	92.6	Milliseconds
SAE Filter Class:	600	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Date of Test:	12/4/98			
Curve Number:	FIL-010			





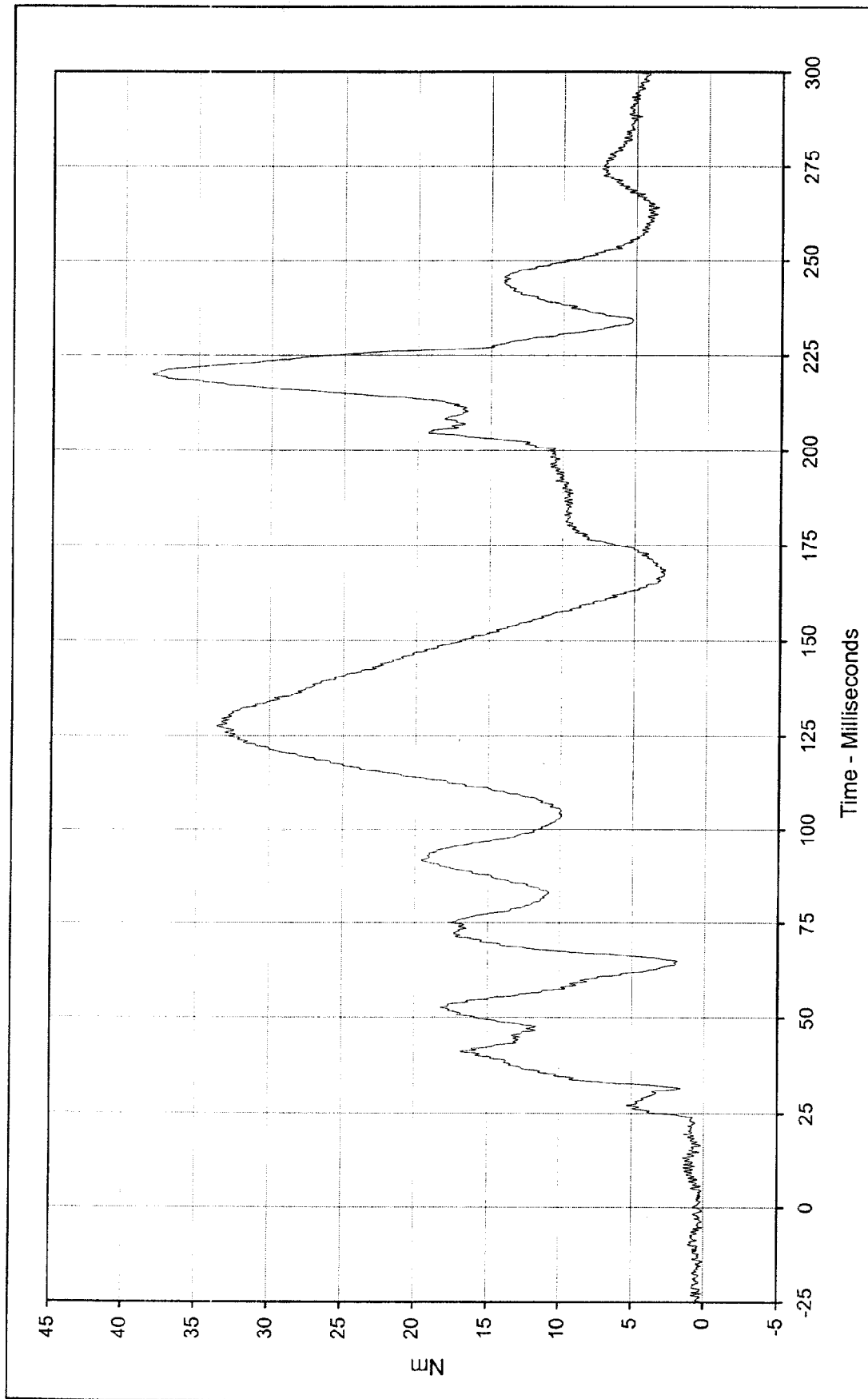
Curve Description:	Driver Neck Moment Y	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	32.6 at 127.6 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-36.6 at 220.0 Milliseconds			
SAE Filter Class:	600			
Date of Test:	12/4/98			
Curve Number:	FIL-011			





Curve Description:	Driver Neck Moment Z	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	9.9	at	86.7	Milliseconds
Minimum Value:	-9.5	at	139.2	Milliseconds
SAE Filter Class:	600	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Date of Test:	12/4/98			
Curve Number:	FIL-012			

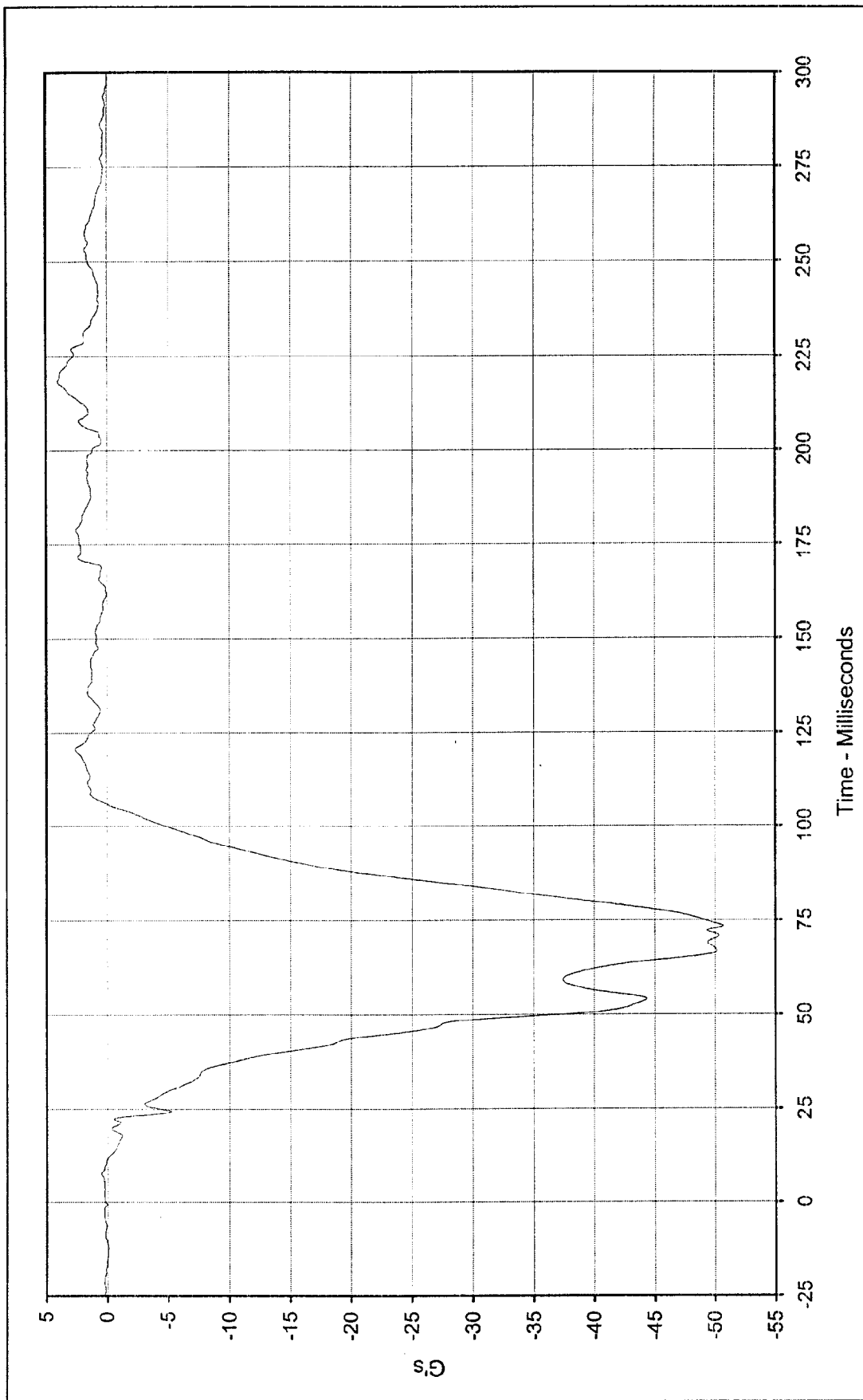




Curve Description:		Driver Neck Moment Resultant		Test Program:	1999 NHTSA 35 mph NCAP No.: MX5300
Maximum Value:		38.2	at 220.0		
Minimum Value:		0.1	at 1.5		
SAE Filter Class:		600			
Date of Test:		12/4/98			
Curve Number:		RES-010			

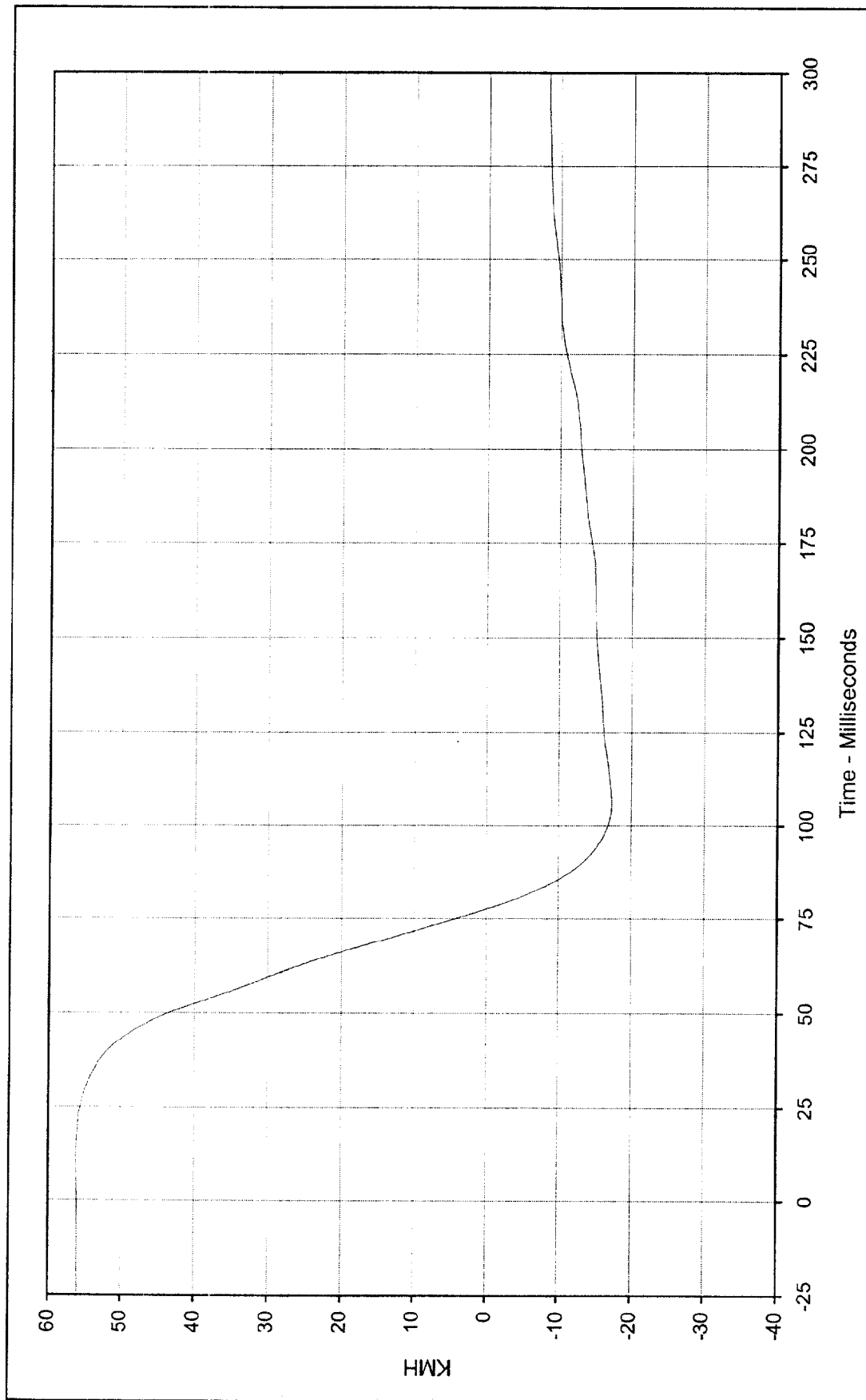






Curve Description:	Driver Chest Primary X	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	4.0 at 218.3 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-50.7 at 73.4 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/4/98			
Curve Number:	FIL-013			

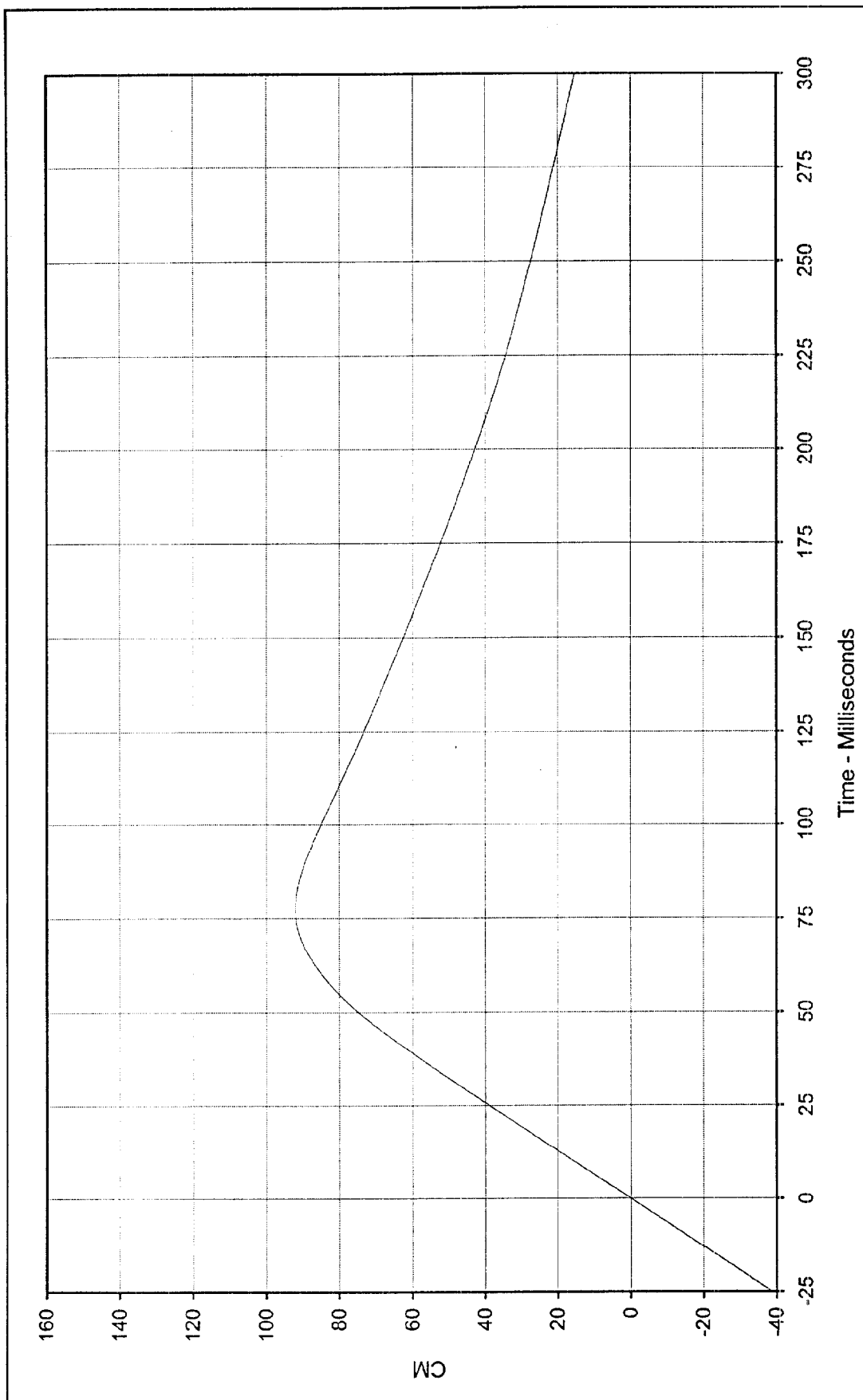




Curve Description:		Driver Chest Primary X Velocity		Testing Program	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	56.2	at	11.7	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-17.3	at	106.0			
SAE Filter Class:	180					
Date of Test:	12/4/98					
Curve Number:	IN1-013					

The logo for KARCO Engineering features a stylized lightbulb with a gear-like base, followed by the word "KARCO" in large, bold, sans-serif capital letters. To the right of "KARCO", the word "Engineering" is written in a smaller, italicized, sans-serif font. The entire logo is set against a dark, rectangular background.





Curve Description: Driver Chest Primary X Displ.

Maximum Value: 92.0 at 77.5 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

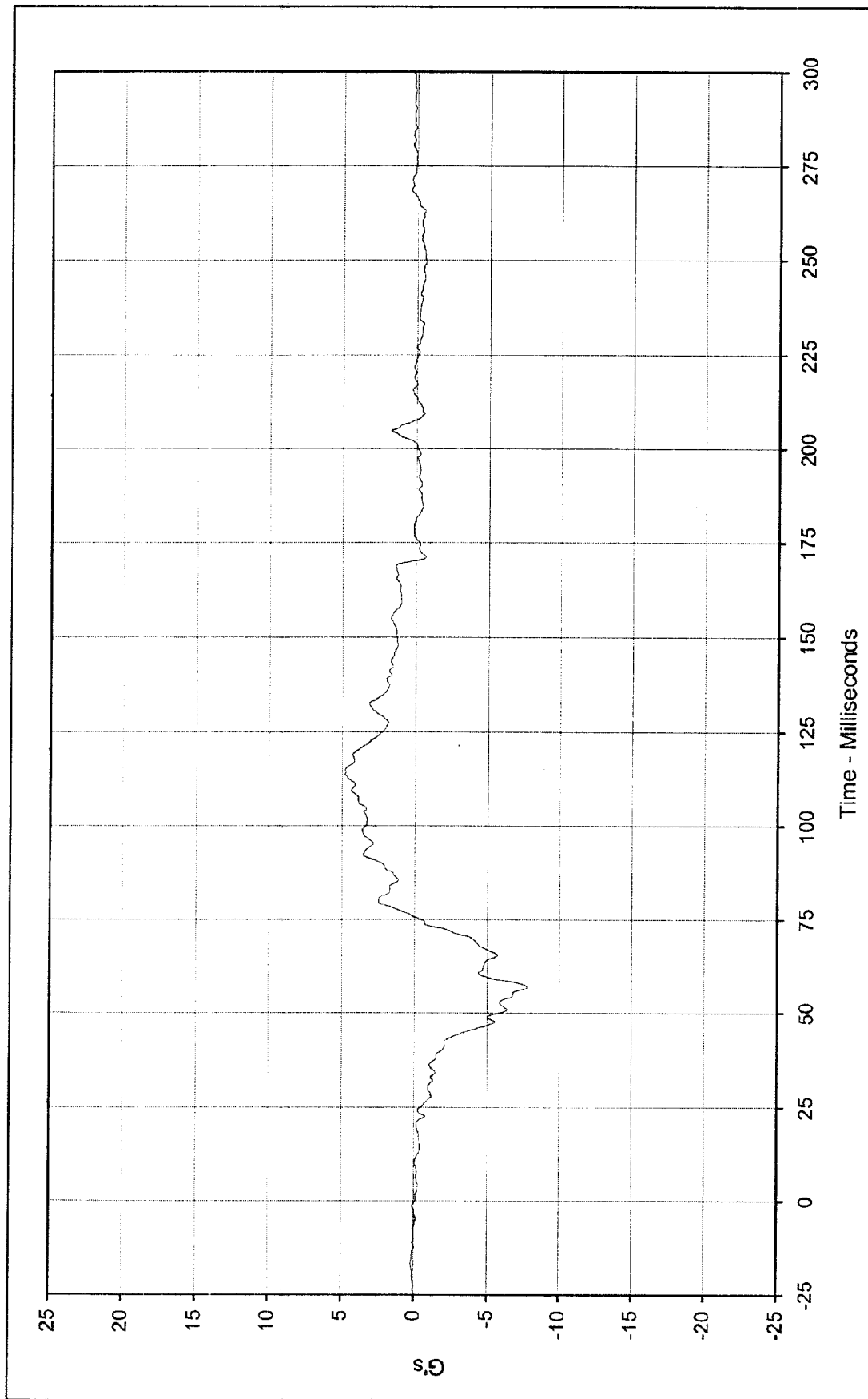
Date of Test: 12/4/98

Curve Number: IN2-013

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

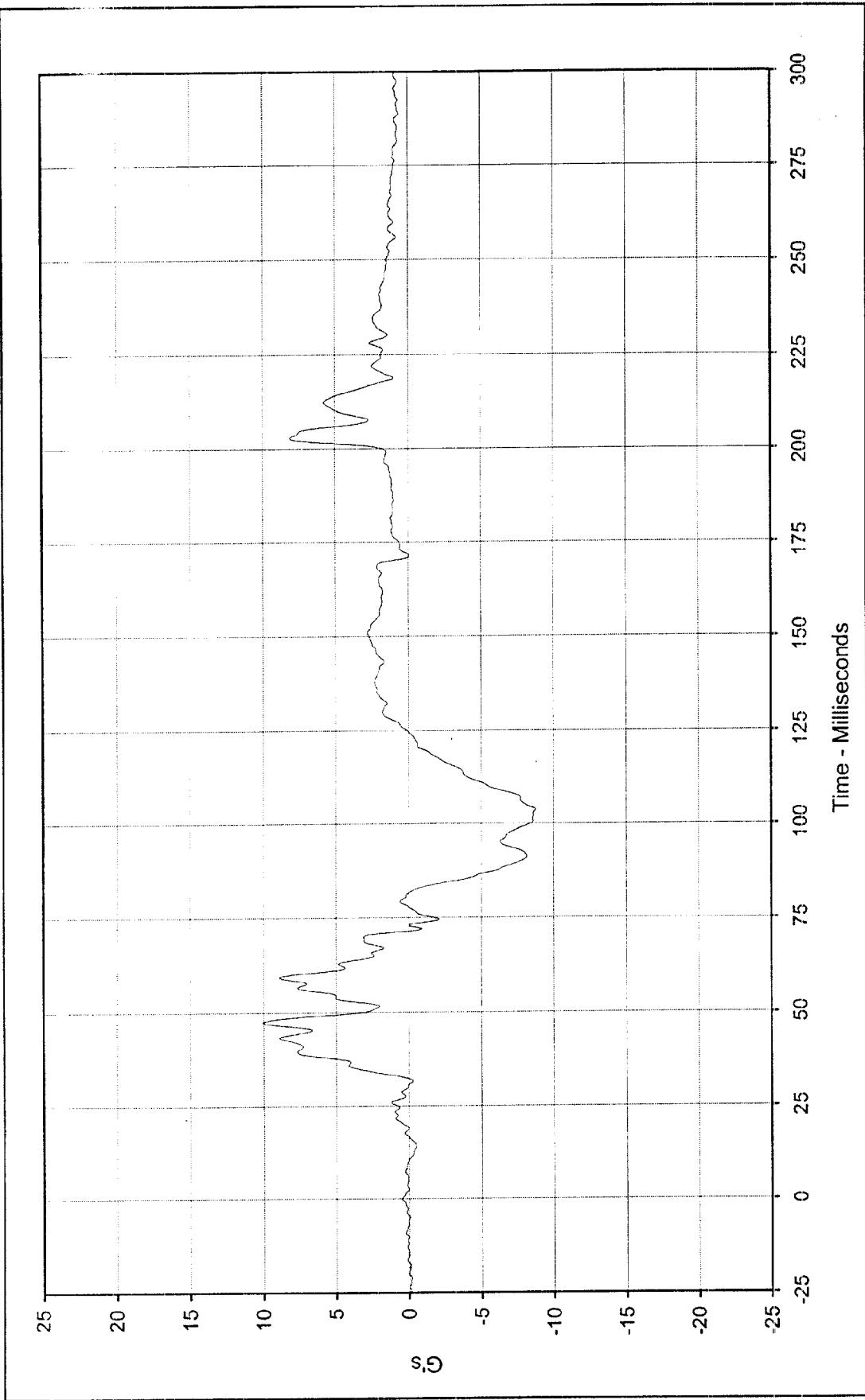
Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description:	Driver Chest Primary Y	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	4.8	at	113.5	Milliseconds
Minimum Value:	-7.8	at	56.8	Milliseconds
SAE Filter Class:	180	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Date of Test:	12/4/98			
Curve Number:	FIL-014			

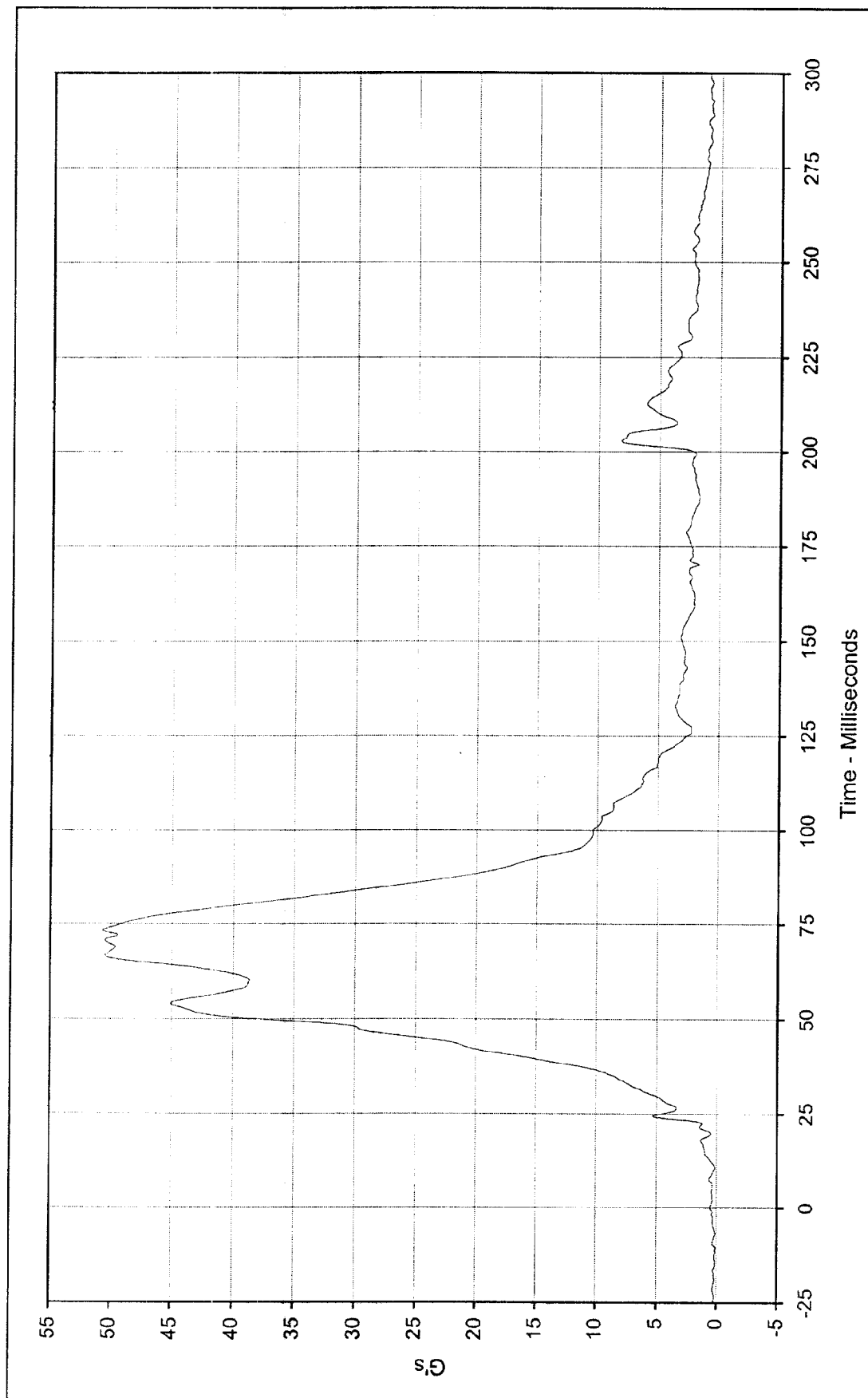




Curve Description: Driver Chest Primary Z
 Maximum Value: 10.1 at 47.4 Milliseconds
 Minimum Value: -8.7 at 103.6 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/4/98
 Curve Number: FIL-015

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

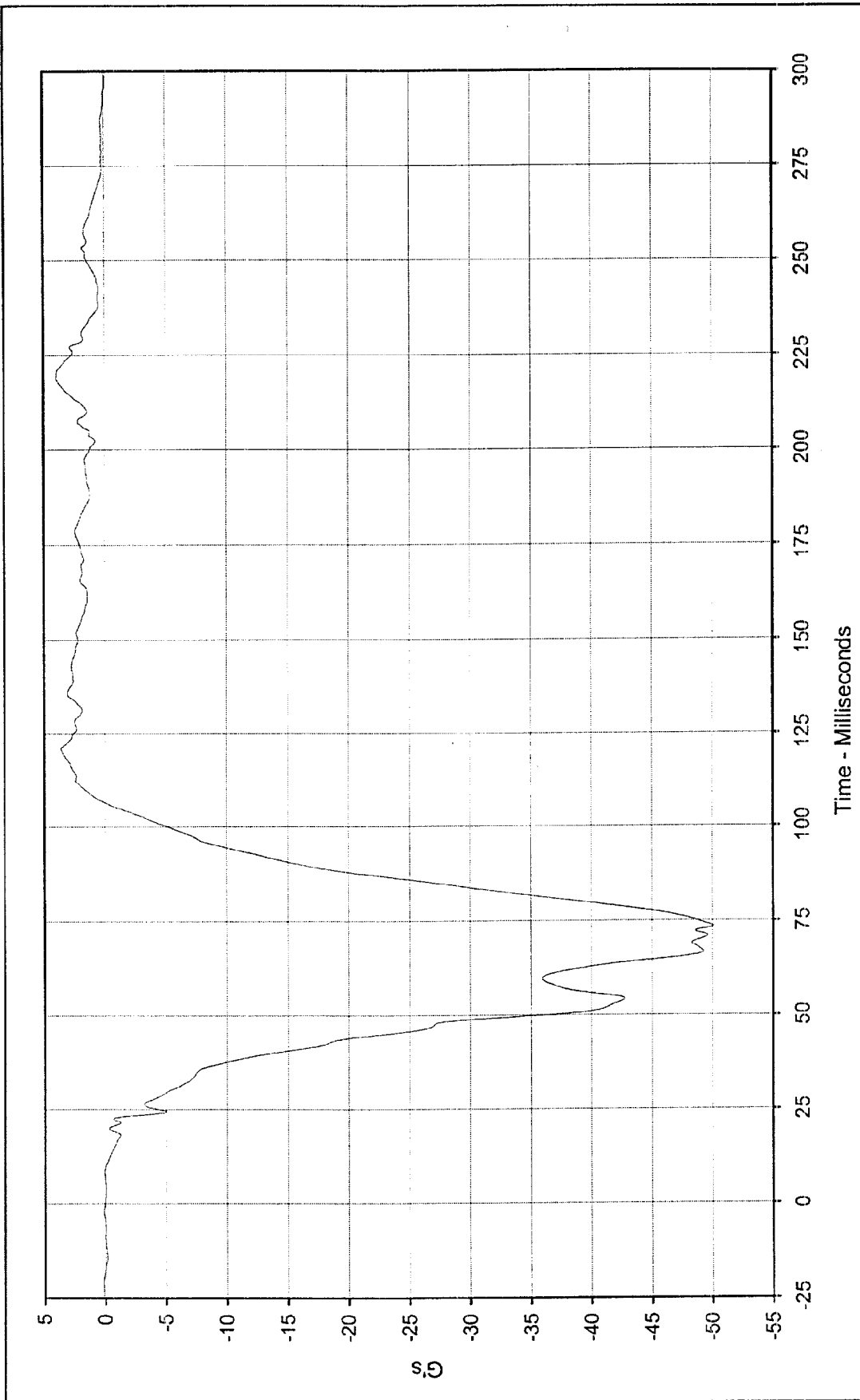




Curve Description:	Driver Chest Resultant Primary	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	50.7 at 73.4 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	0.1 at 10.5 Milliseconds			

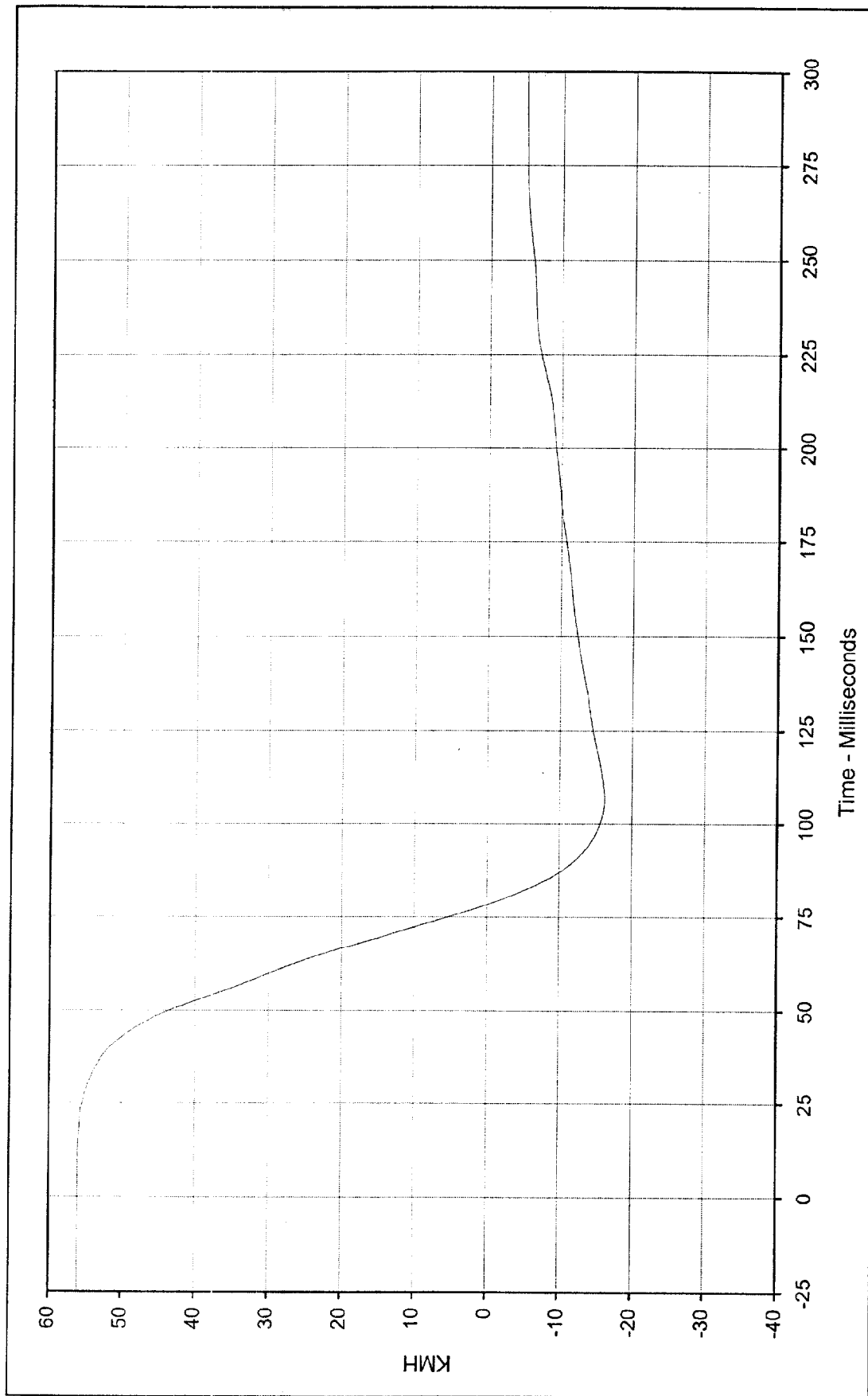


SAE Filter Class:	180
Date of Test:	12/4/98
Curve Number:	RES-013



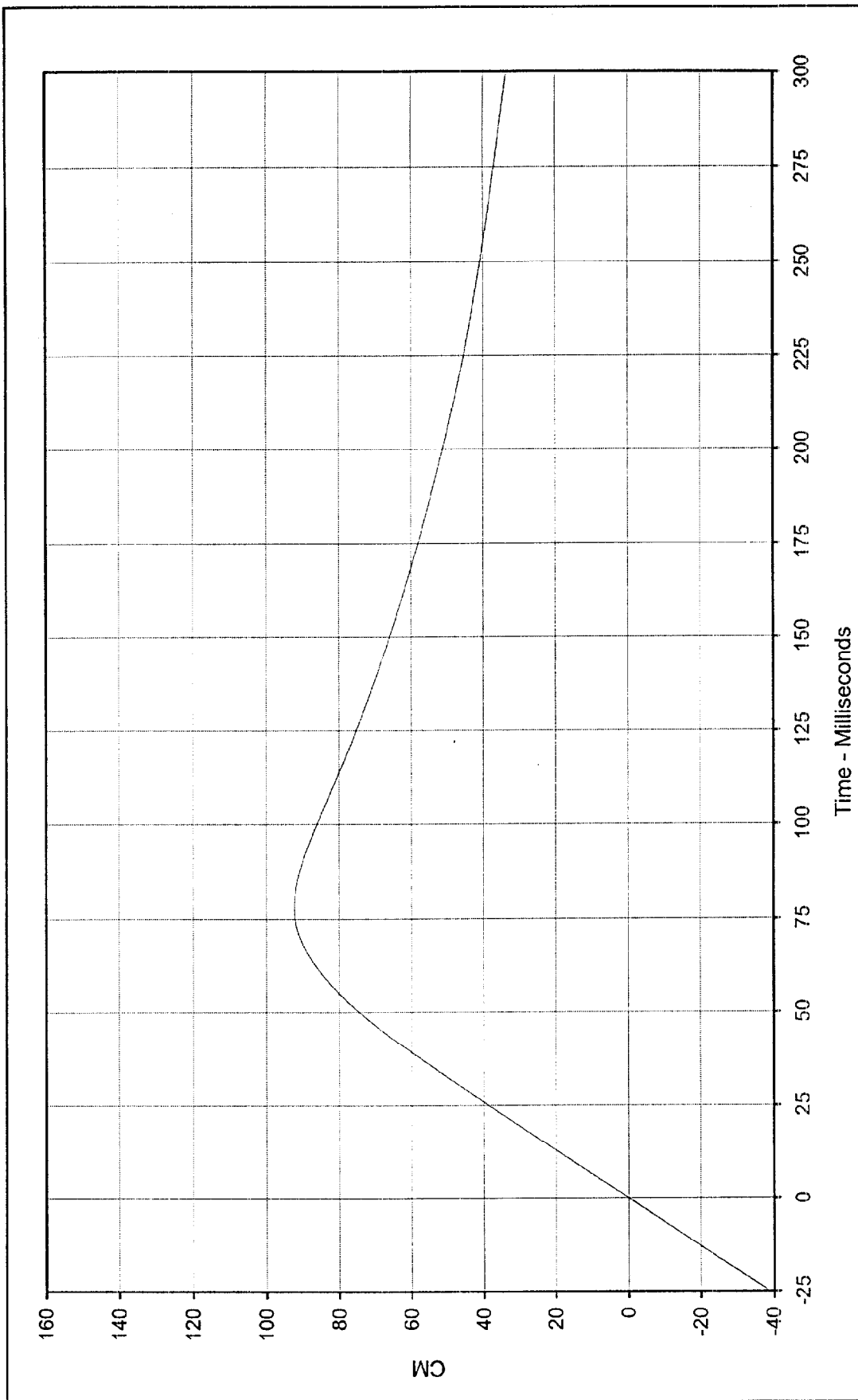
Curve Description:	Driver Chest Redundant X	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	3.9	at	218.9	Milliseconds
Minimum Value:	-50.1	at	73.5	Milliseconds
SAE Filter Class:	180	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Date of Test:	12/4/98			
Curve Number:	FIL-016			





Curve Description:	Driver Chest Redundant X Velocity	Testing Program	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	56.0	at	9.9	Milliseconds
Minimum Value:	-16.2	at	106.4	Milliseconds
SAE Filter Class:	180			
Date of Test:	12/4/98			
Curve Number:	IN1-016	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	





Curve Description: Driver Chest Redundant X Displ.

Maximum Value: 92.3 at 78.2 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

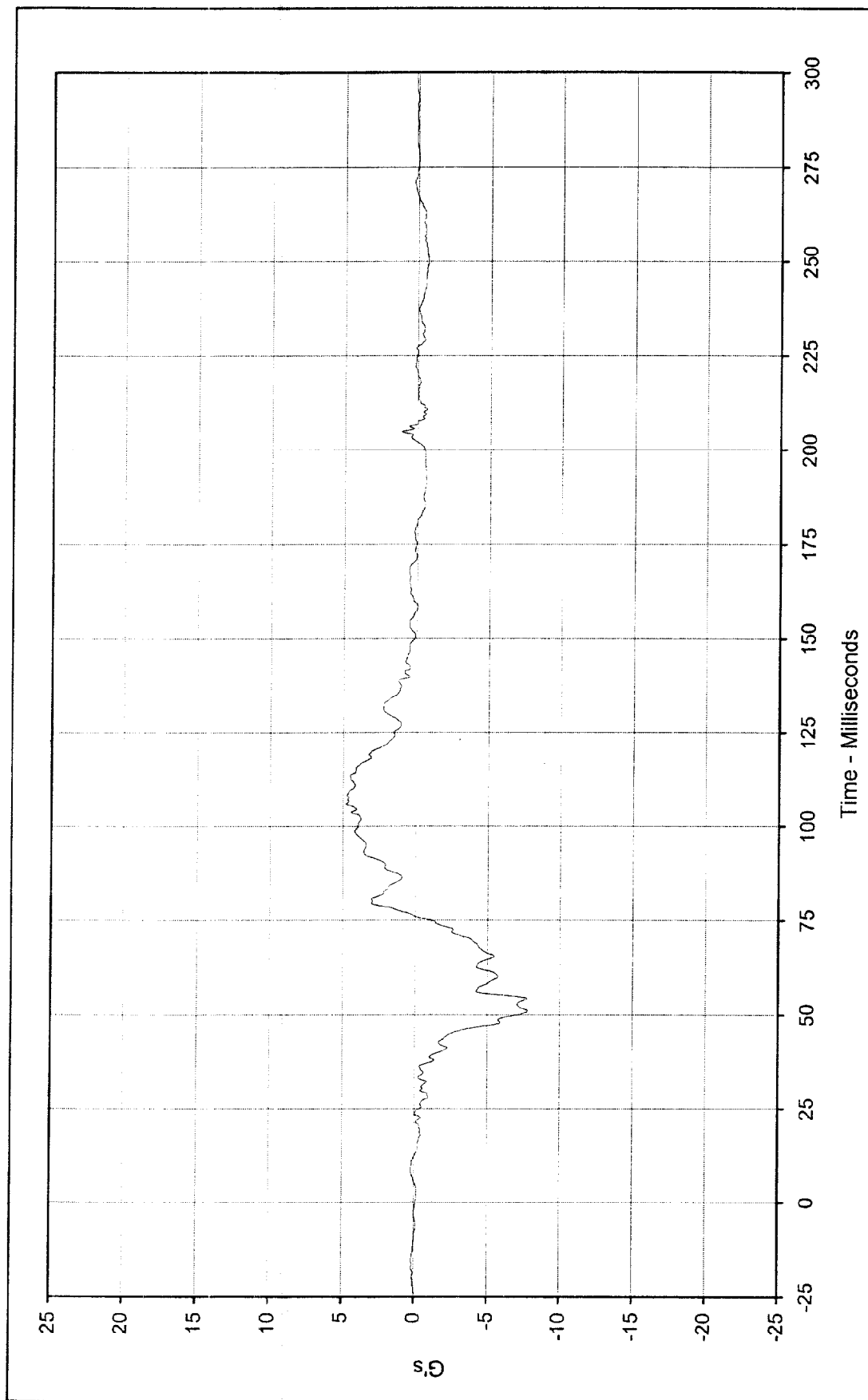
Date of Test: 12/4/98

Curve Number: IN2-016

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

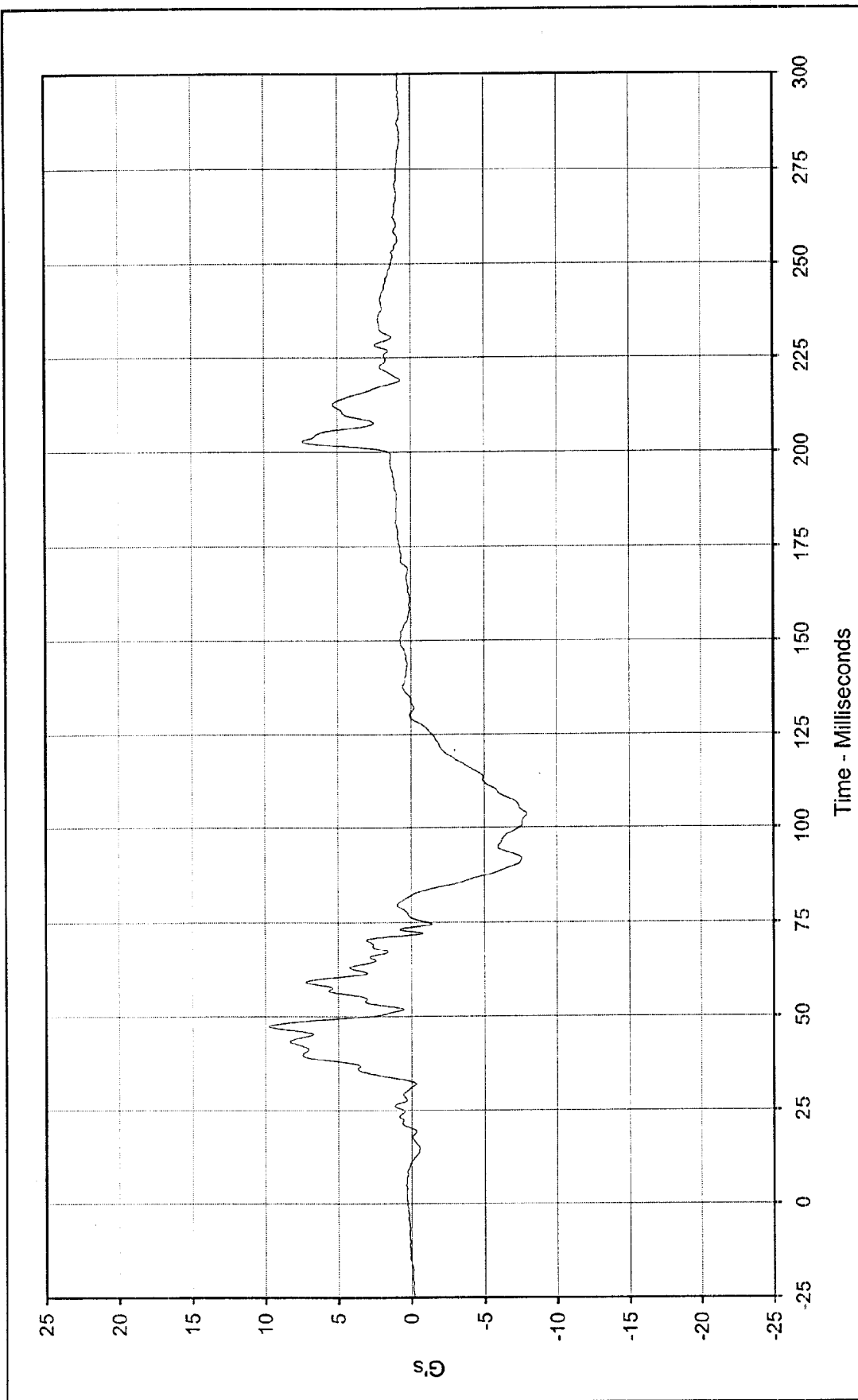
Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description:	Driver Chest Redundant Y	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	4.8 at 106.0 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-7.8 at 51.0 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/4/98			
Curve Number:	FIL-017			





Curve Description: Driver Chest Redundant Z

Test Program: 1999 NHTSA 35 mph NCAP

Maximum Value: 9.8 at 47.4 Milliseconds

No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

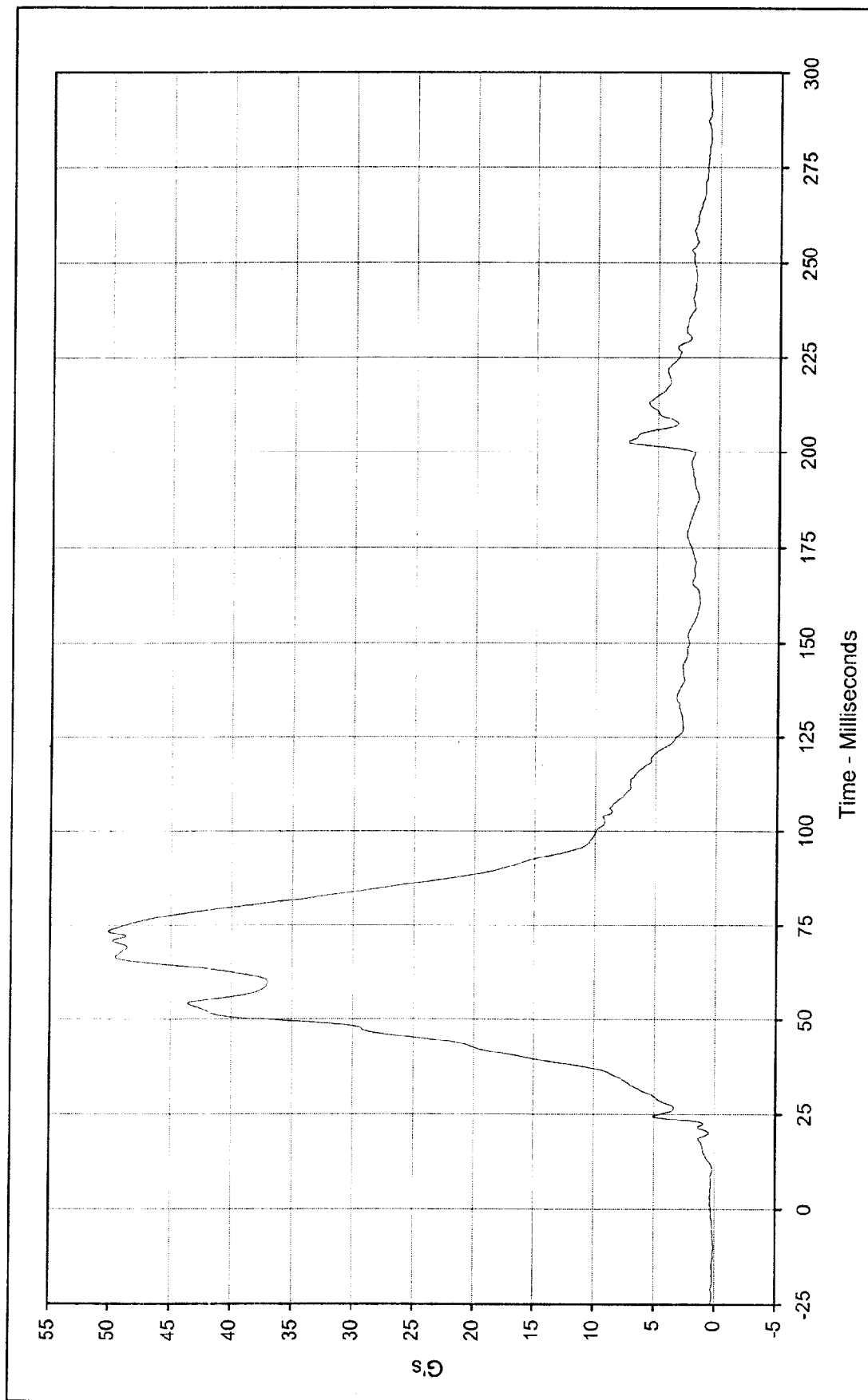
Minimum Value: -7.9 at 103.5 Milliseconds

SAE Filter Class: 180

Date of Test: 12/4/98

Curve Number: FIL-018



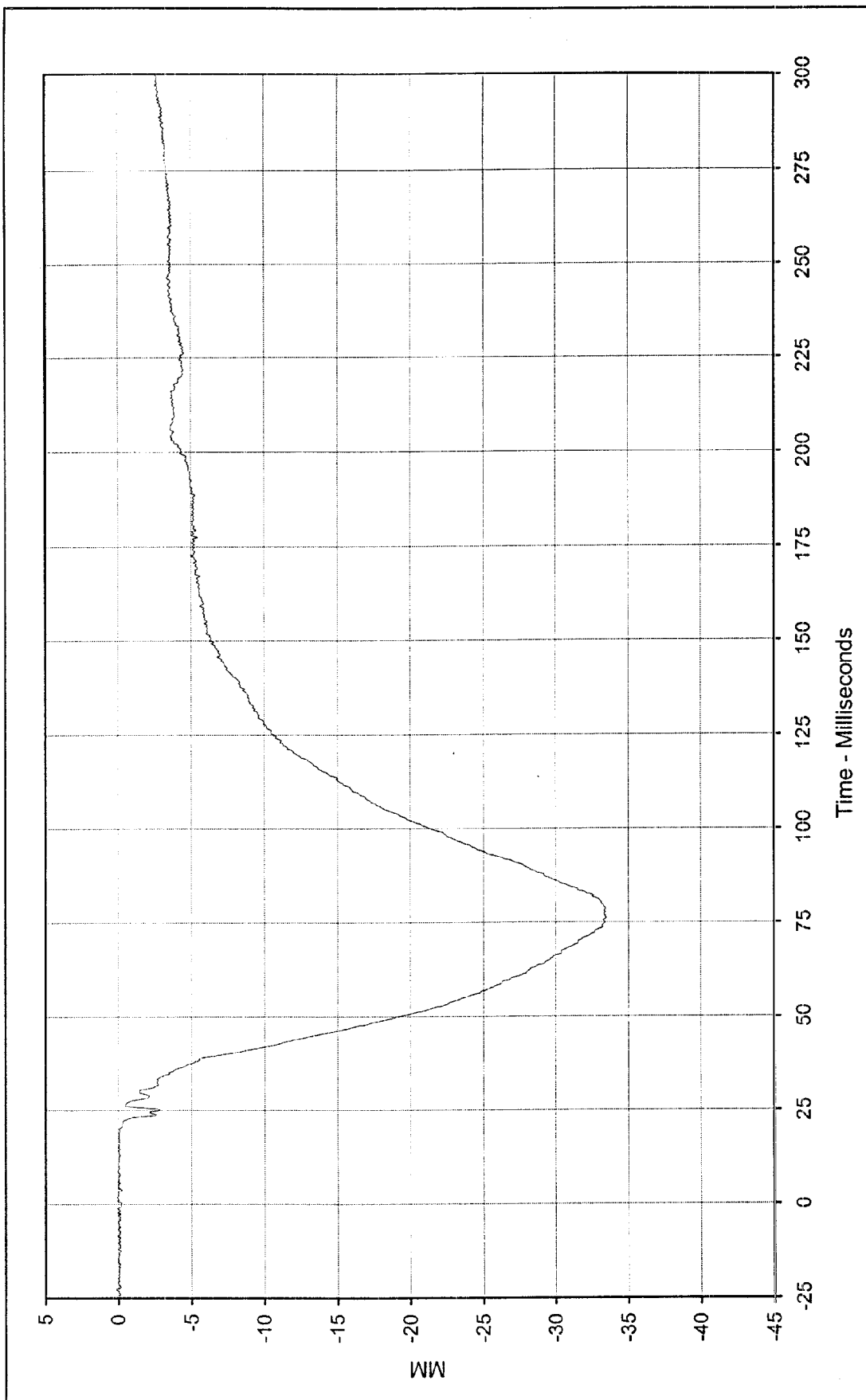


Curve Description: Driver Chest Resultant Redundant
 Maximum Value: 50.2 at 73.5 Milliseconds
 Minimum Value: 0.2 at 10.3 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/4/98
 Curve Number: RES-016

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

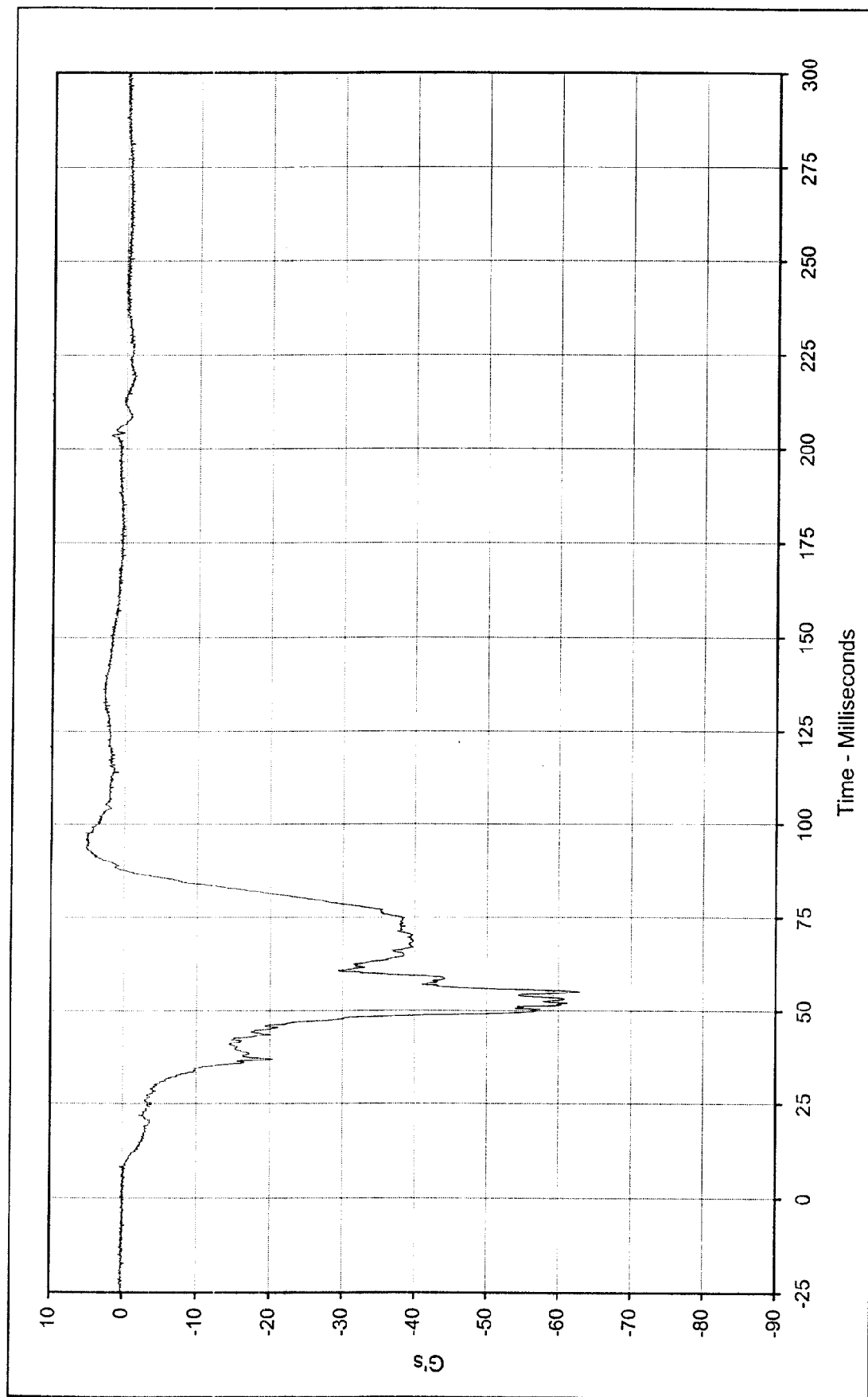




Curve Description:		Driver Chest Displacement X		Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	0.1	at	1.8			
Minimum Value:	-33.5	at	76.0			
SAE Filter Class:	600					
Date of Test:	12/4/98					
Curve Number:	FIL-019					

The logo for KARCO Engineering. It features the word "KARCO" in a large, bold, sans-serif font. To the left of "KARCO" is a circular emblem containing a stylized, abstract design. To the right of "KARCO" is the word "Engineering" in a smaller, italicized, sans-serif font. The entire logo is set against a dark, rectangular background.

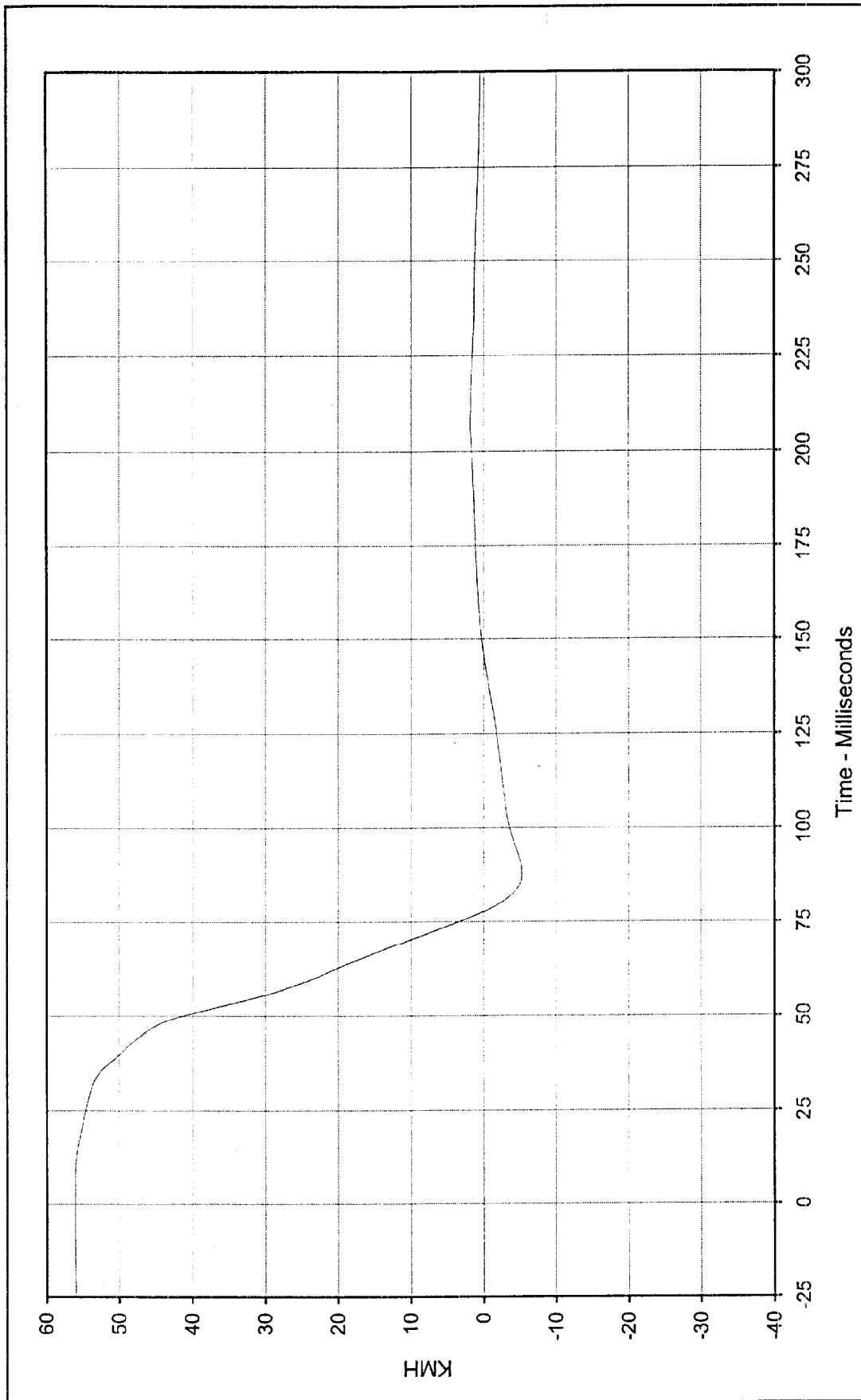




Curve Description:		Driver Pelvis X		Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	5.3	at	97.6	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-63.0	at	55.1			
SAE Filter Class:	1000					
Date of Test:	12/4/98					
Curve Number:	FIL-020					

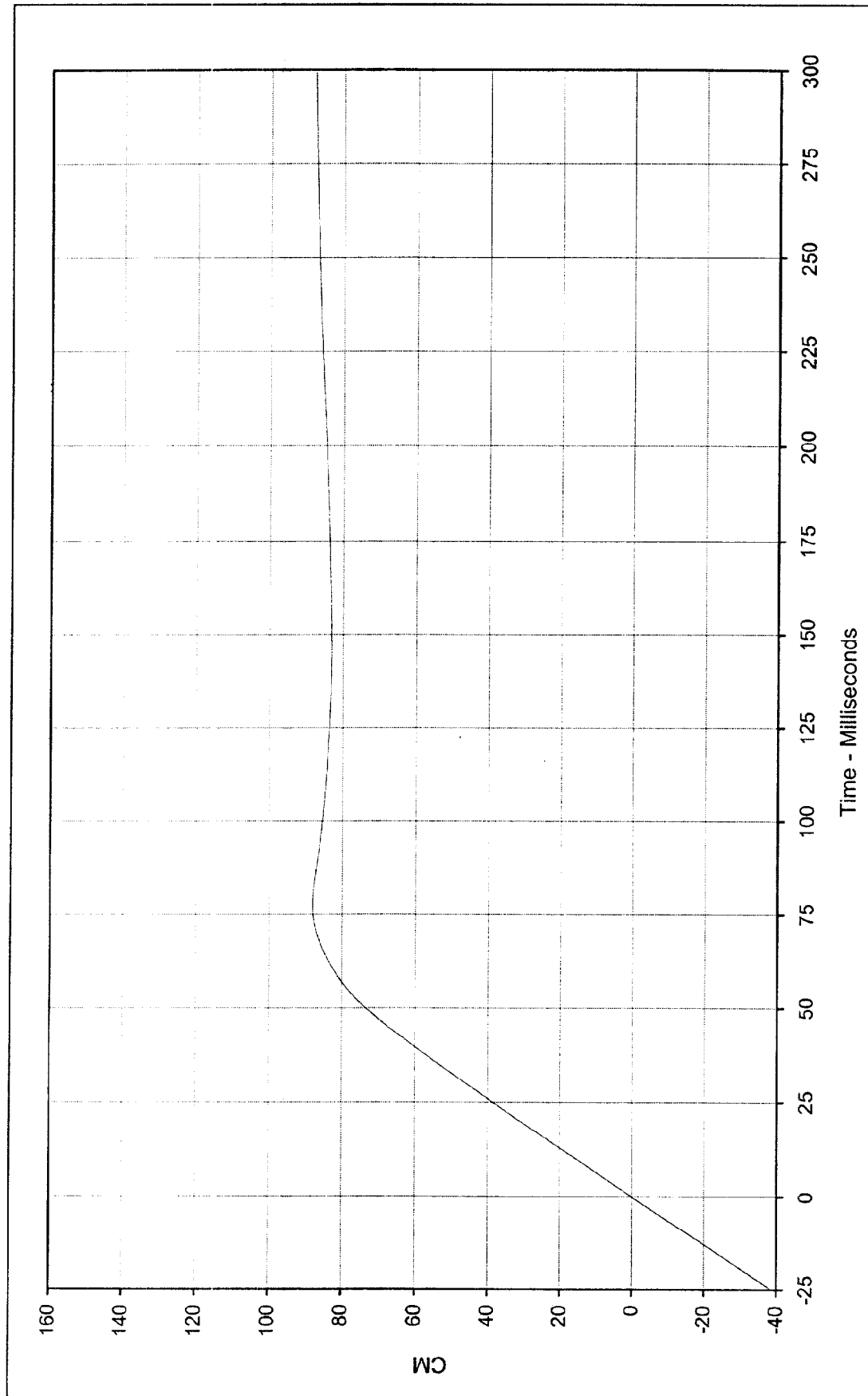






Curve Description: Testing Program 1999 NHTSA 35 mph NCAP No.: MX5300
 Maximum Value: 56.0 at 0.6 Milliseconds
 Minimum Value: -5.3 at 87.4 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/4/98
 Curve Number: IN1-020





Curve Description: Driver Pelvis X Displ. Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Maximum Value: 88.0 at 77.7 Milliseconds Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

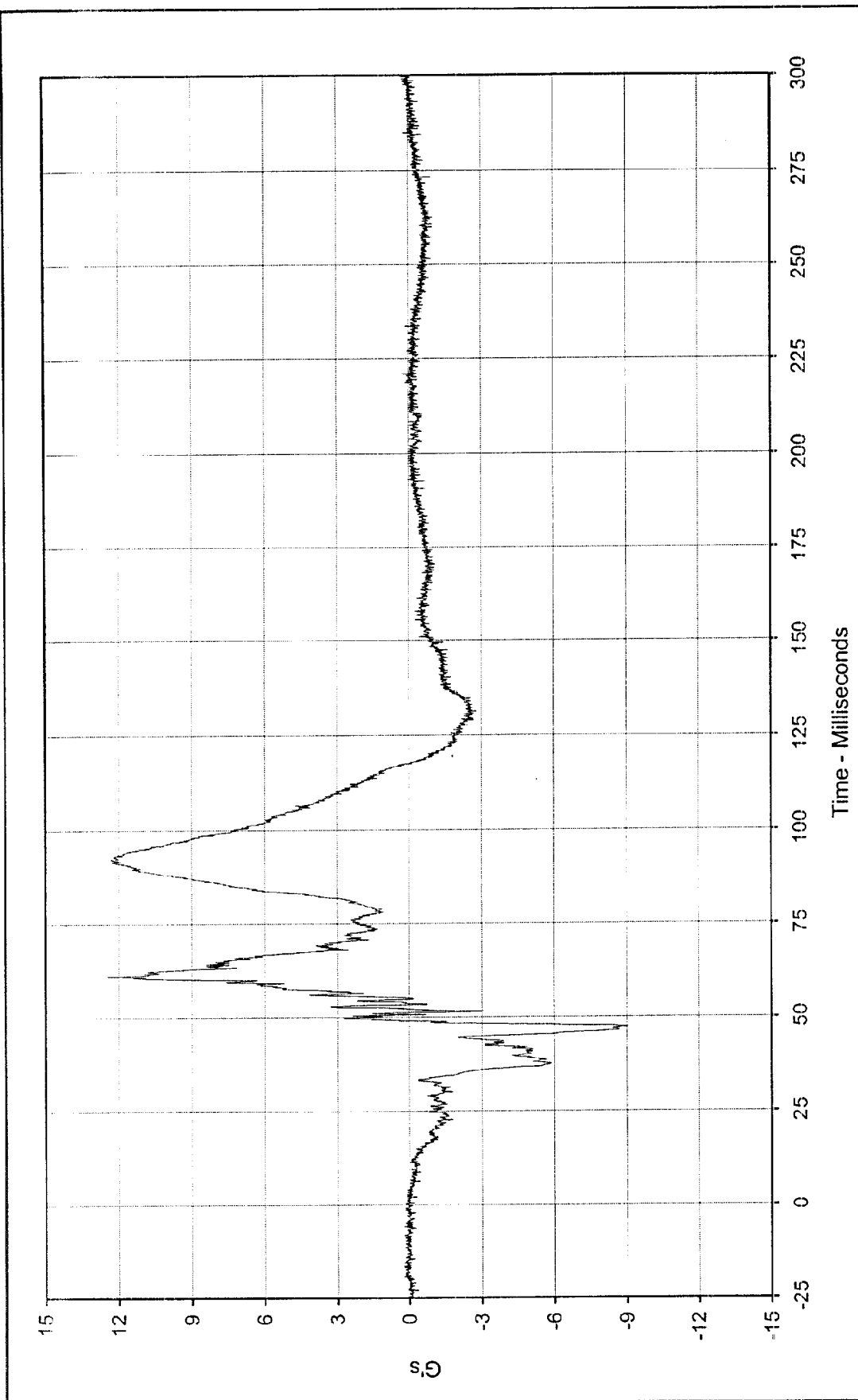
Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 12/4/98

Curve Number: IN2-020

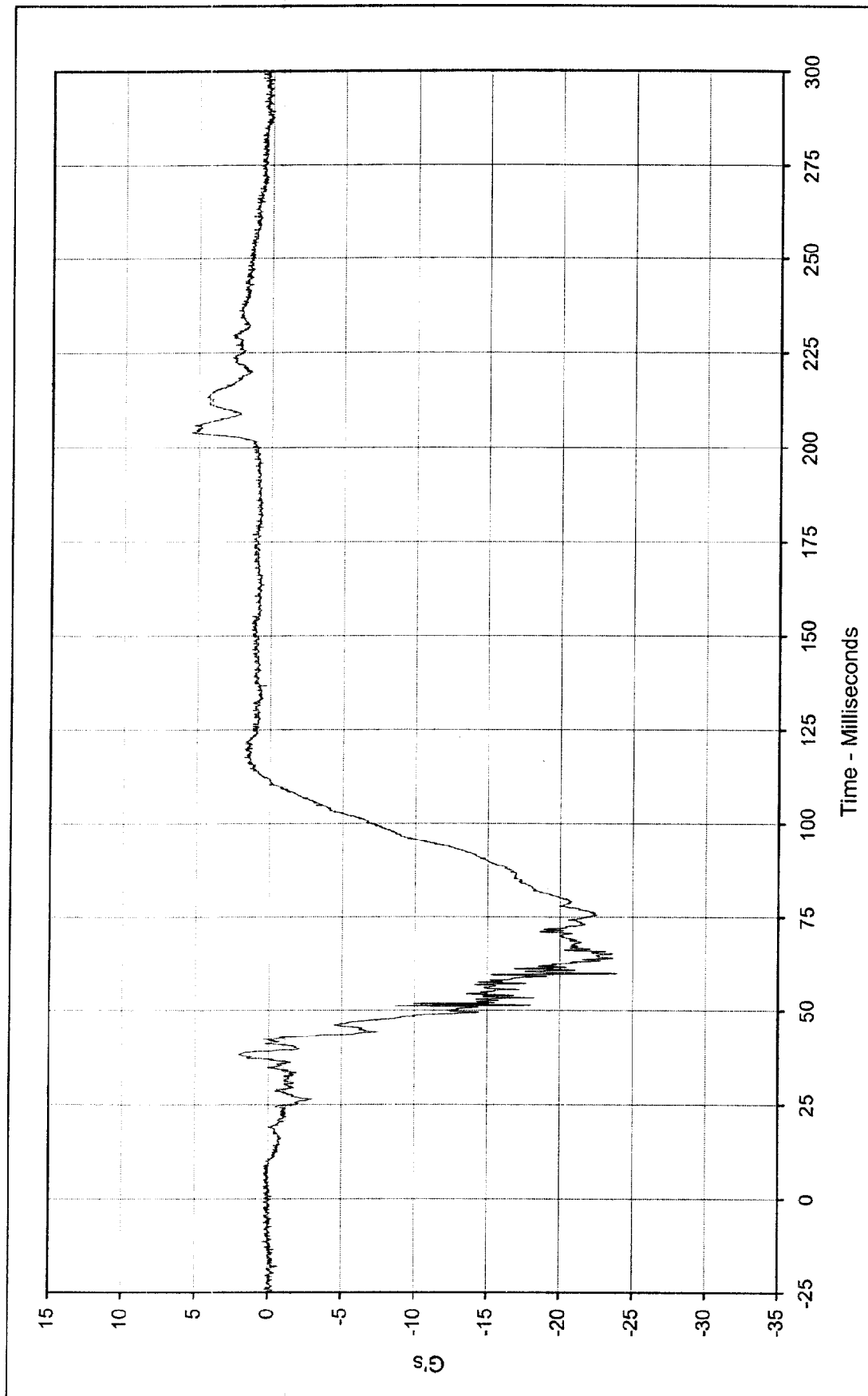




Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

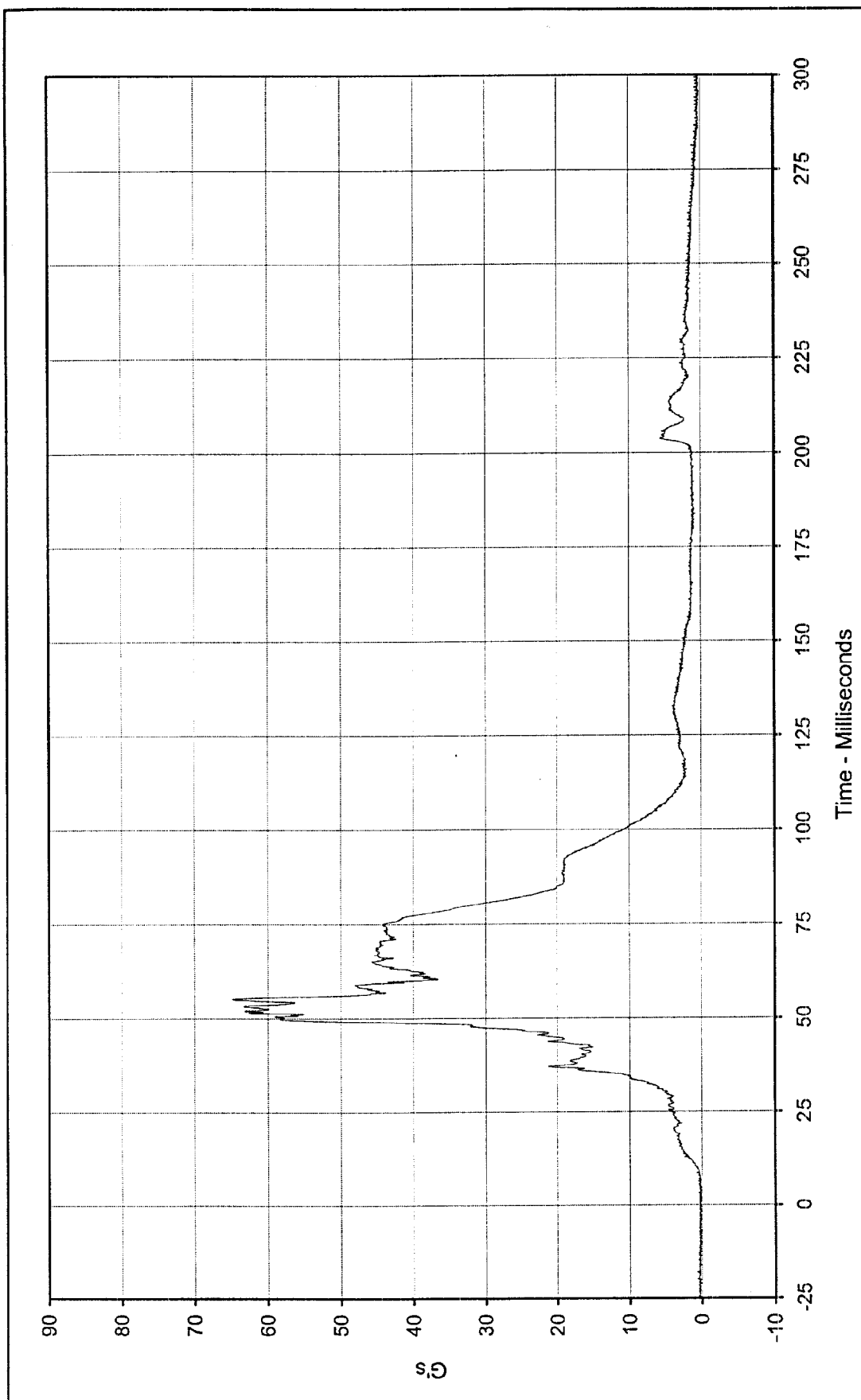
Curve Description: Driver Pelvis Y
 Maximum Value: 12.5 at 61.0 Milliseconds
 Minimum Value: -9.1 at 47.4 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/4/98
 Curve Number: FIL-021





Curve Description:	Driver Pelvis Z		Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	5.5	at 203.9	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-23.9	at 59.8			
SAE Filter Class:	1000				
Date of Test:	12/4/98				
Curve Number:	FIL-022				

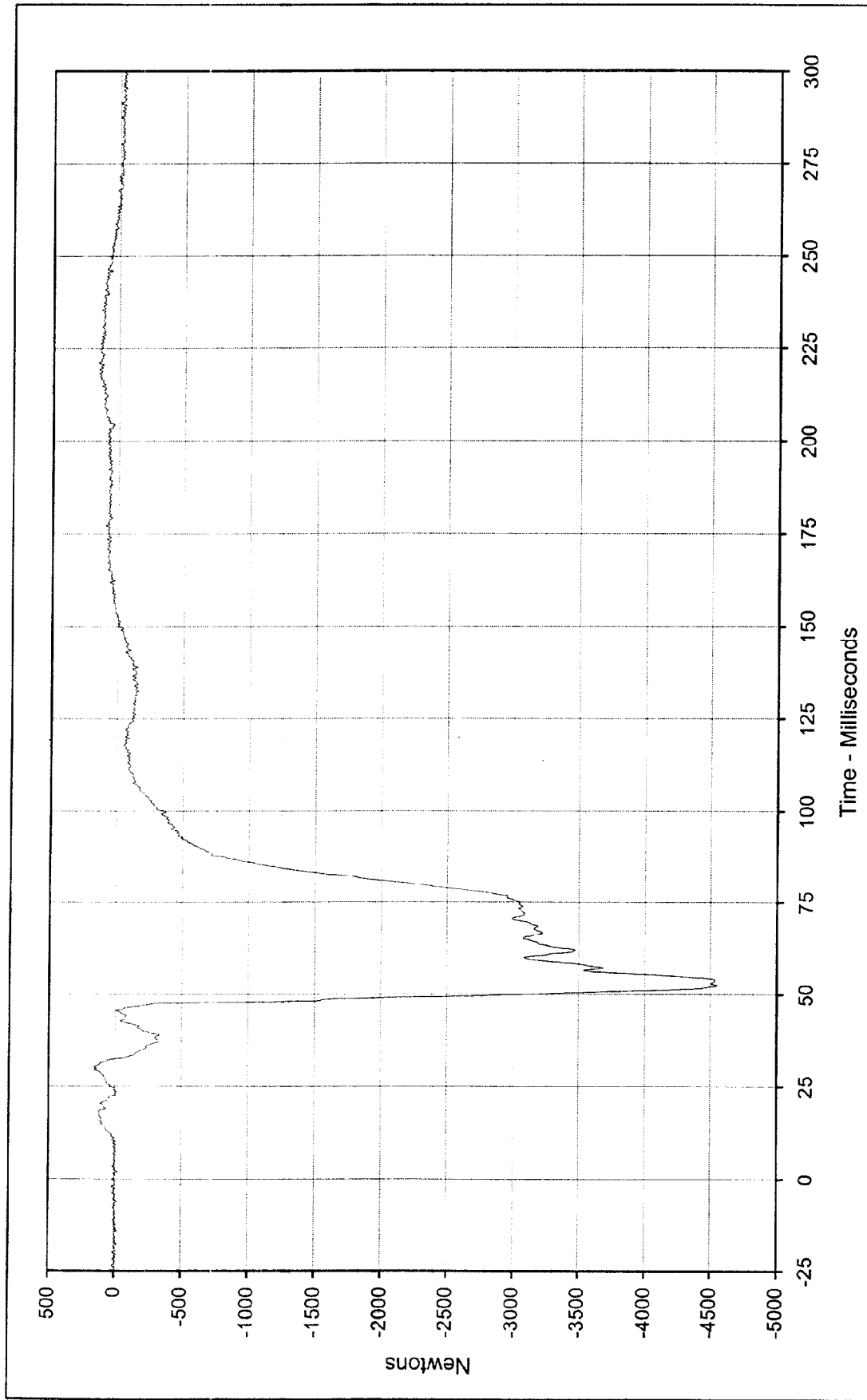




Curve Description: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Program:
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

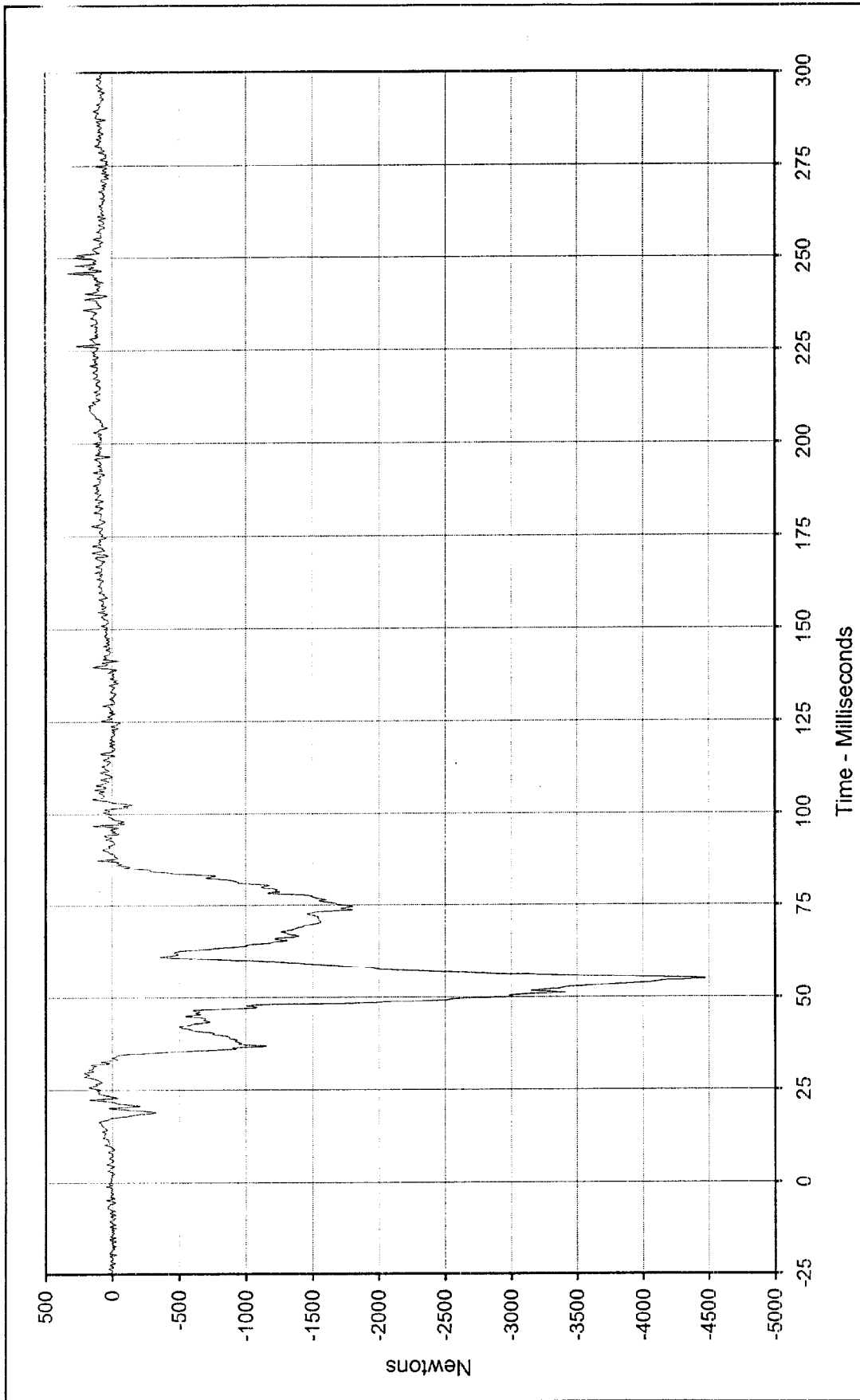
Driver Pelvis Resultant
 Maximum Value: 64.9 at 55.1 Milliseconds
 Minimum Value: 0.1 at 0.8 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/4/98
 Curve Number: RES-020





Curve Description:	Driver Left Femur Force	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	158.9	at	30.3	Milliseconds
Minimum Value:	-4554.7	at	52.5	Milliseconds
SAE Filter Class:	600	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Date of Test:	12/4/98			
Curve Number:	FIL-023			

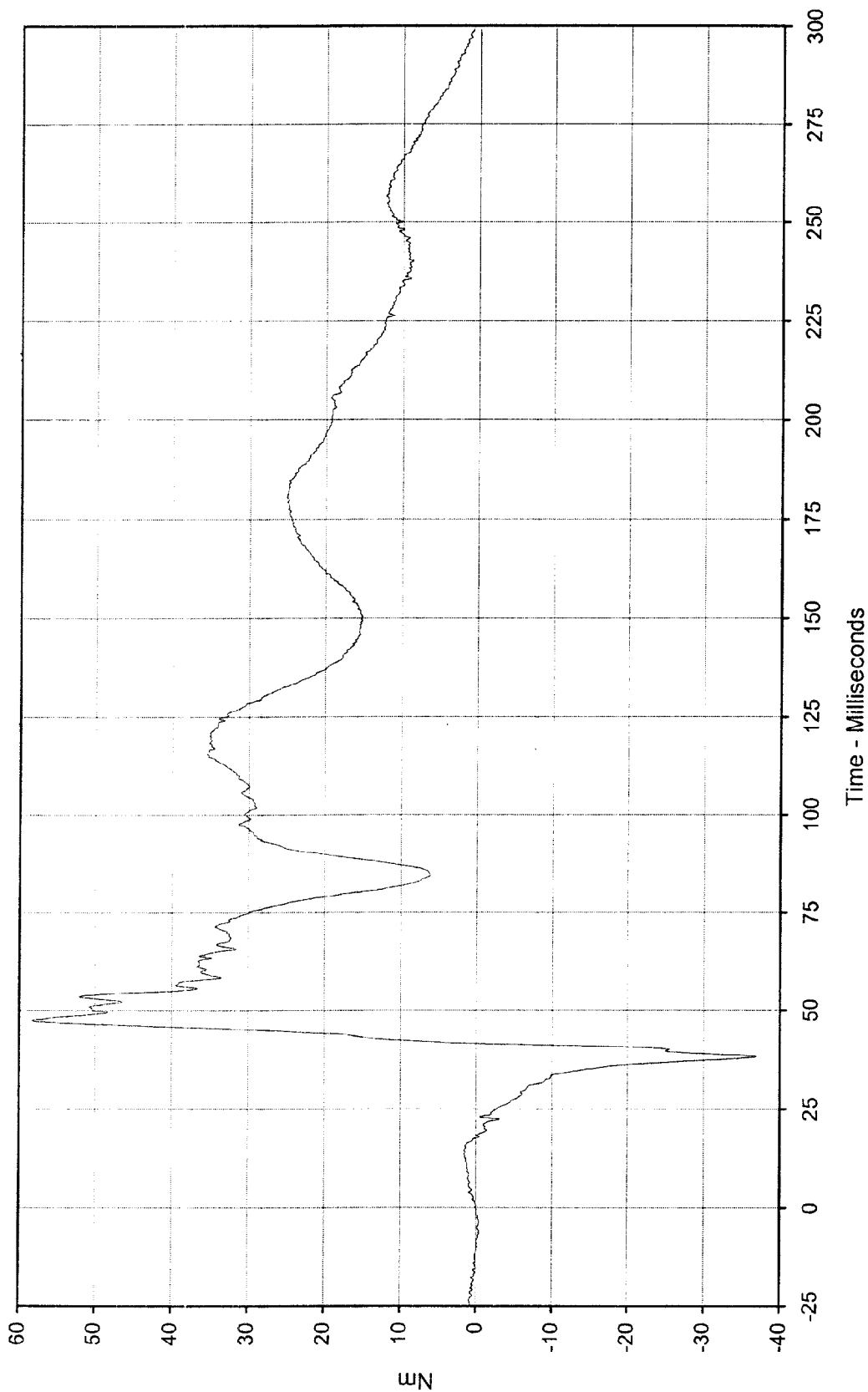




Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

Curve Description: Driver Right Femur Force
 Maximum Value: 332.7 at 246.1 Milliseconds
 Minimum Value: -4480.0 at 54.9 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/4/98
 Curve Number: FIL-024





Curve Description: Driver Left Upper Tibia Moment X

Maximum Value: 58.3 at 47.4 Milliseconds

Minimum Value: -36.9 at 38.2 Milliseconds

SAE Filter Class: 600

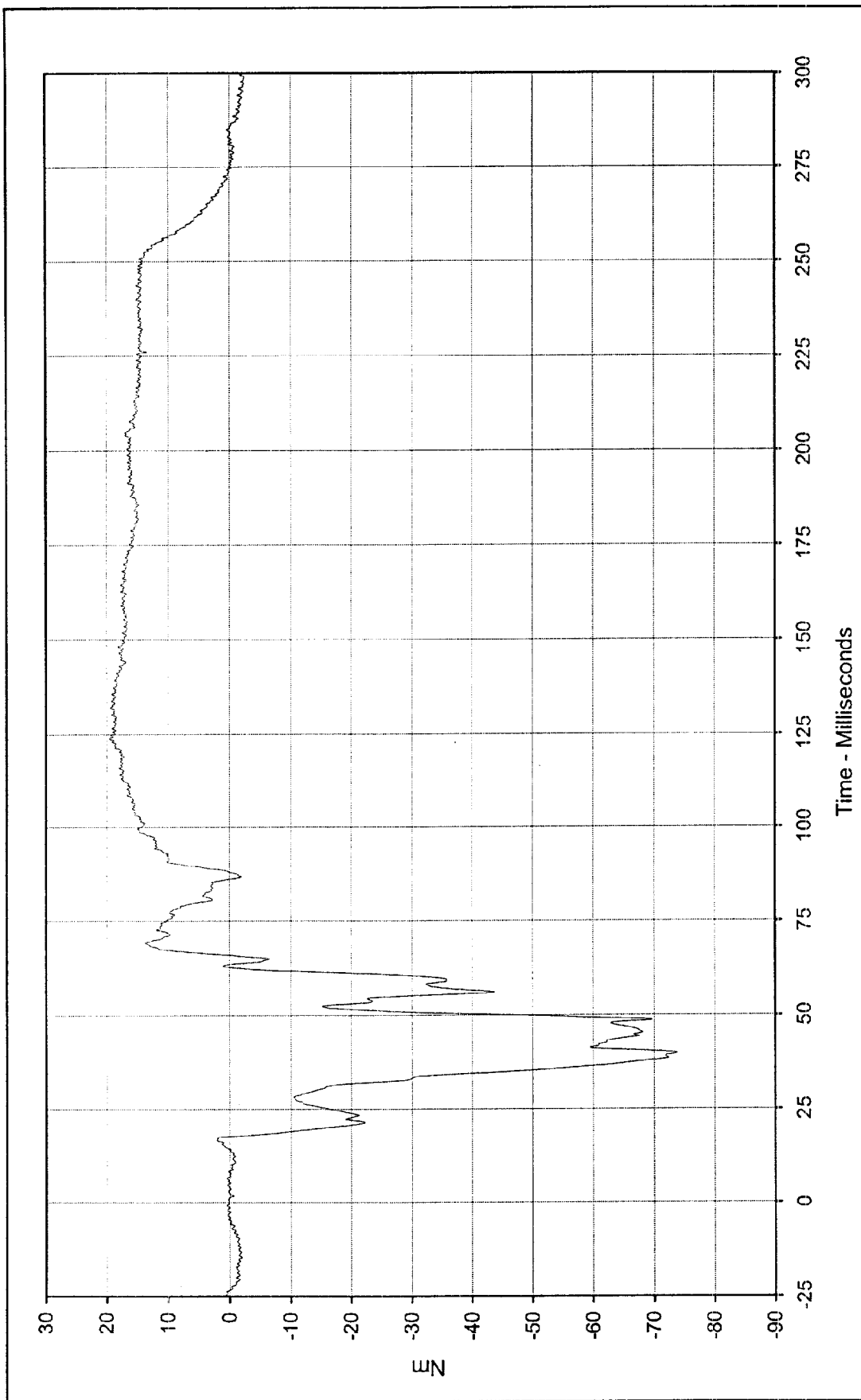
Date of Test: 12/4/98

Curve Number: FIL-025

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

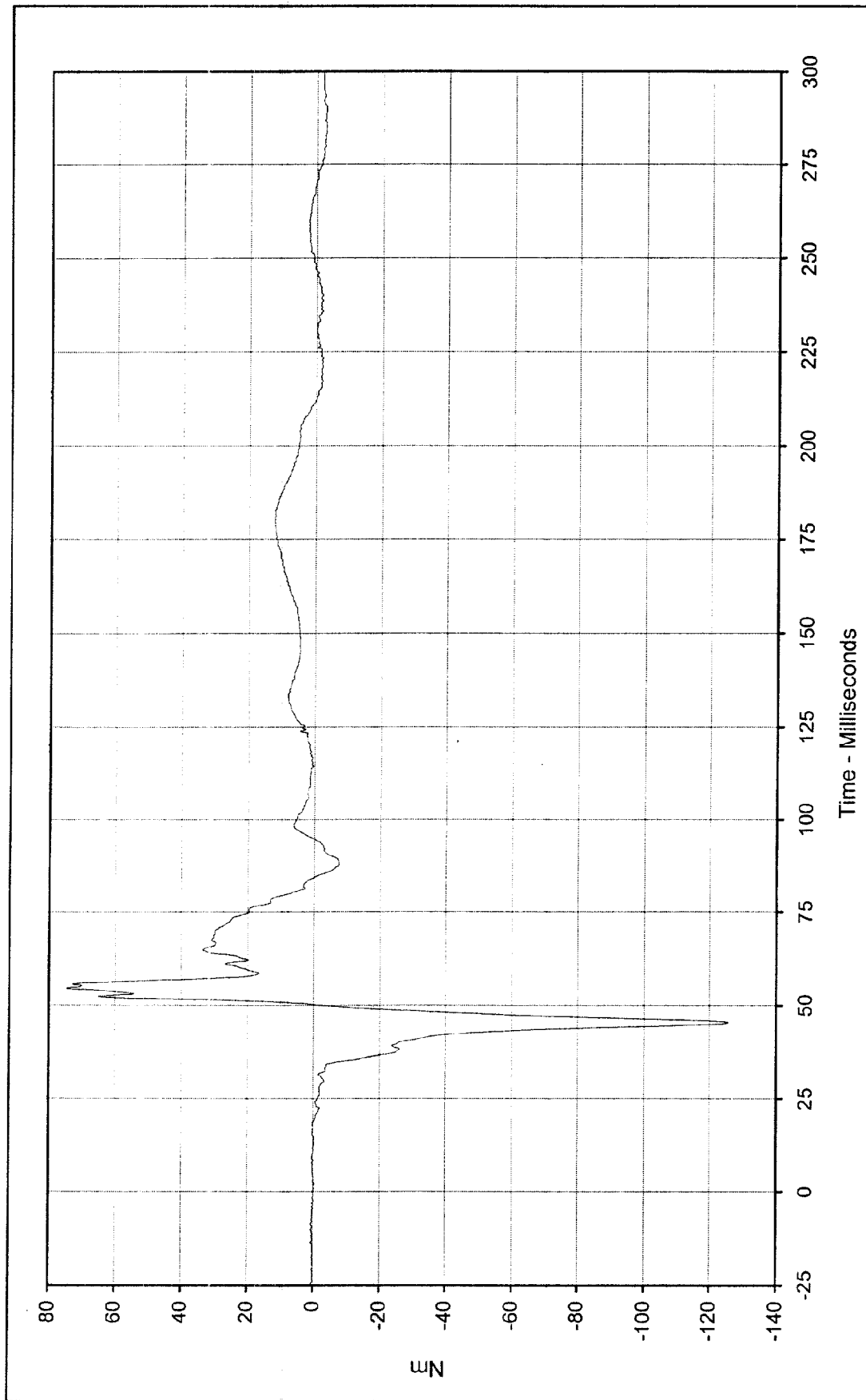




Curve Description:	Driver Left Upper Tibia Moment Y	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	19.6 at 124.0 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-73.8 at 39.7 Milliseconds			

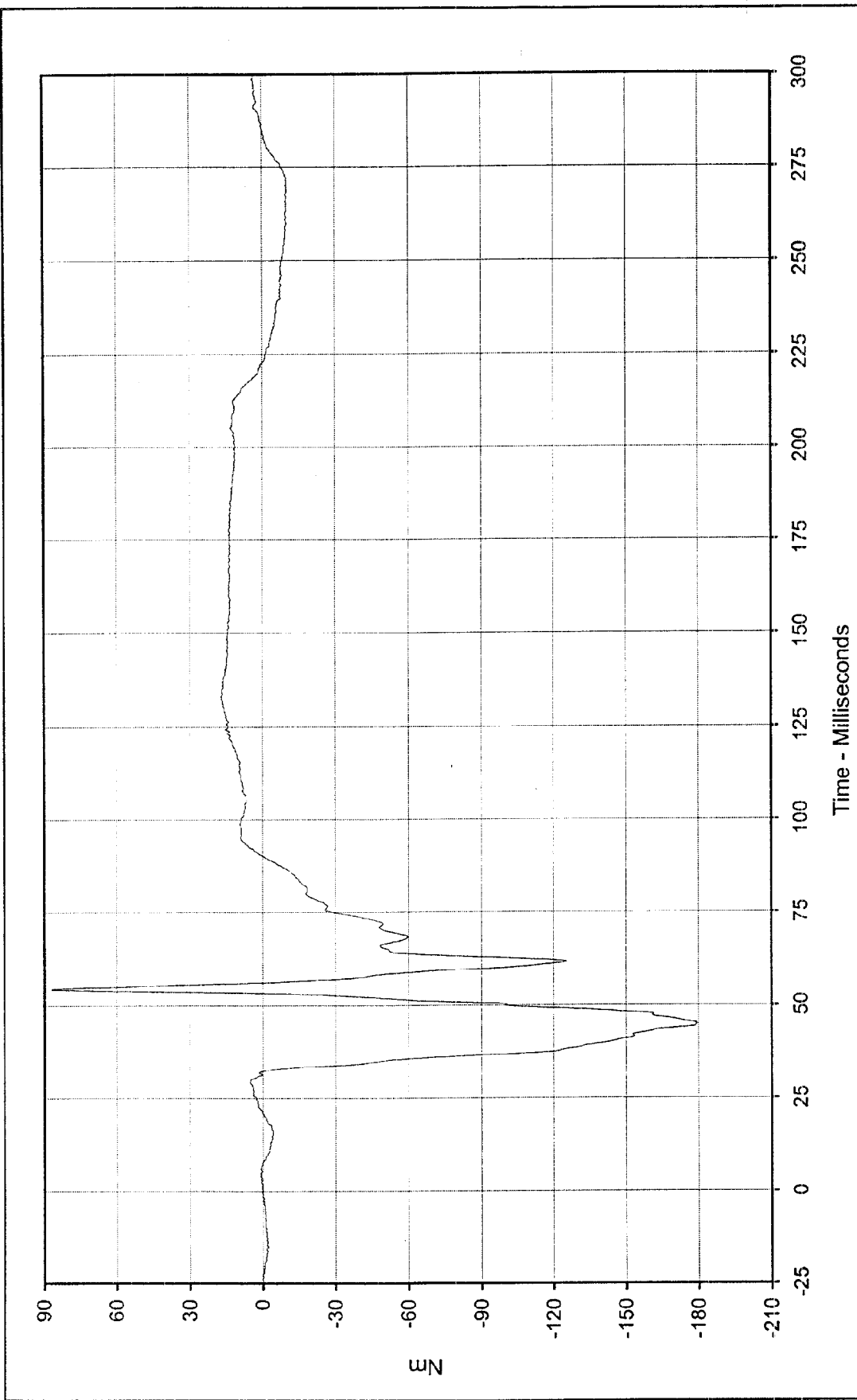


SAE Filter Class:	600
Date of Test:	12/4/98
Curve Number:	FIL-026



Curve Description: Driver Right Upper Tibia Moment X		Test Program: 1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value: 74.6	at 54.5	Test Vehicle: 1999 Honda Civic DX 4 Door Sedan	
Minimum Value: -125.8	at 45.4		
SAE Filter Class: 600			
Date of Test: 12/4/98			
Curve Number: FIL-027			





Curve Description: Driver Right Upper Tibia Moment Y

Maximum Value: 86.9 at 54.4 Milliseconds

Minimum Value: -179.5 at 45.1 Milliseconds

SAE Filter Class: 600

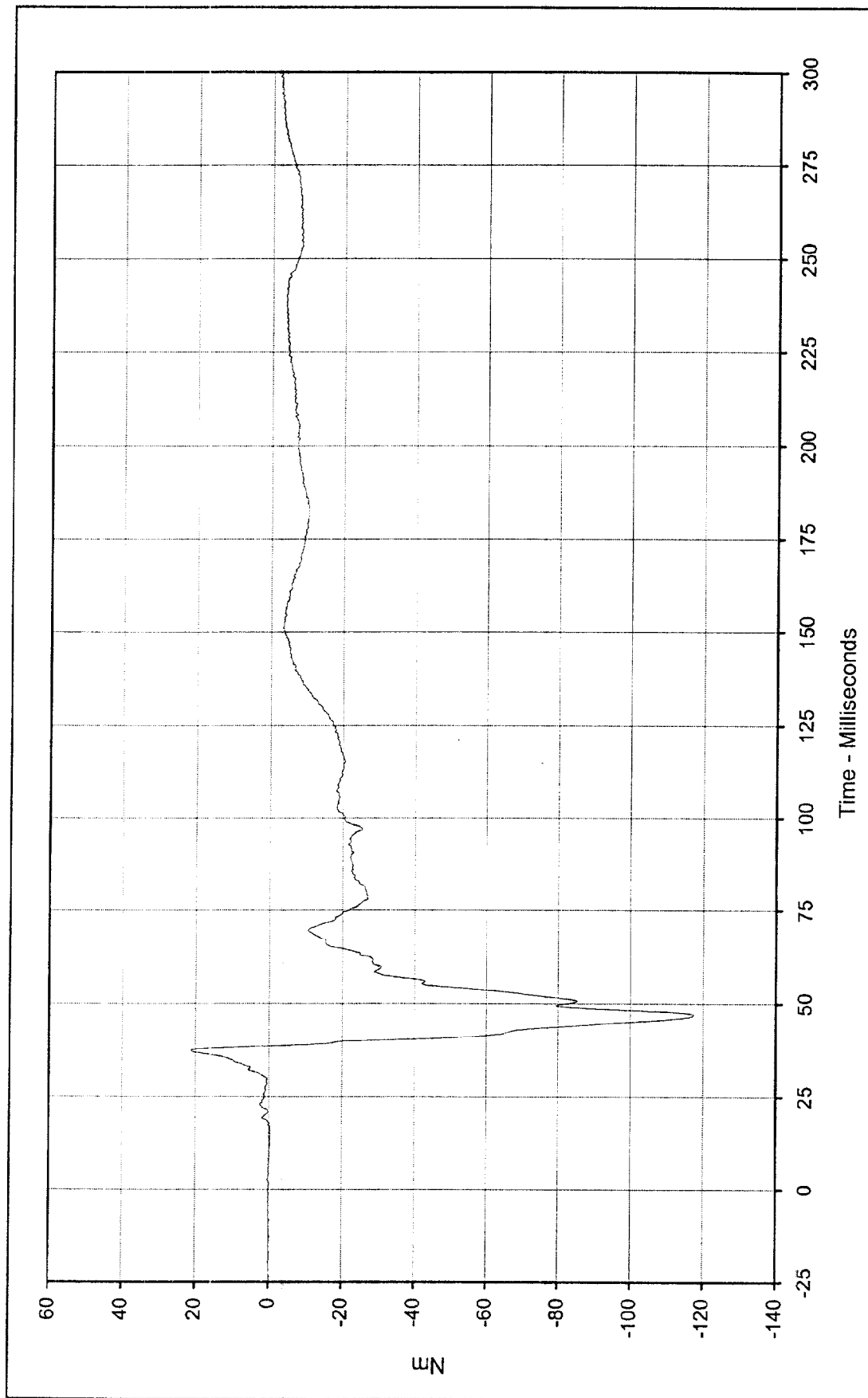
Date of Test: 12/4/98

Curve Number: FIL-028

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

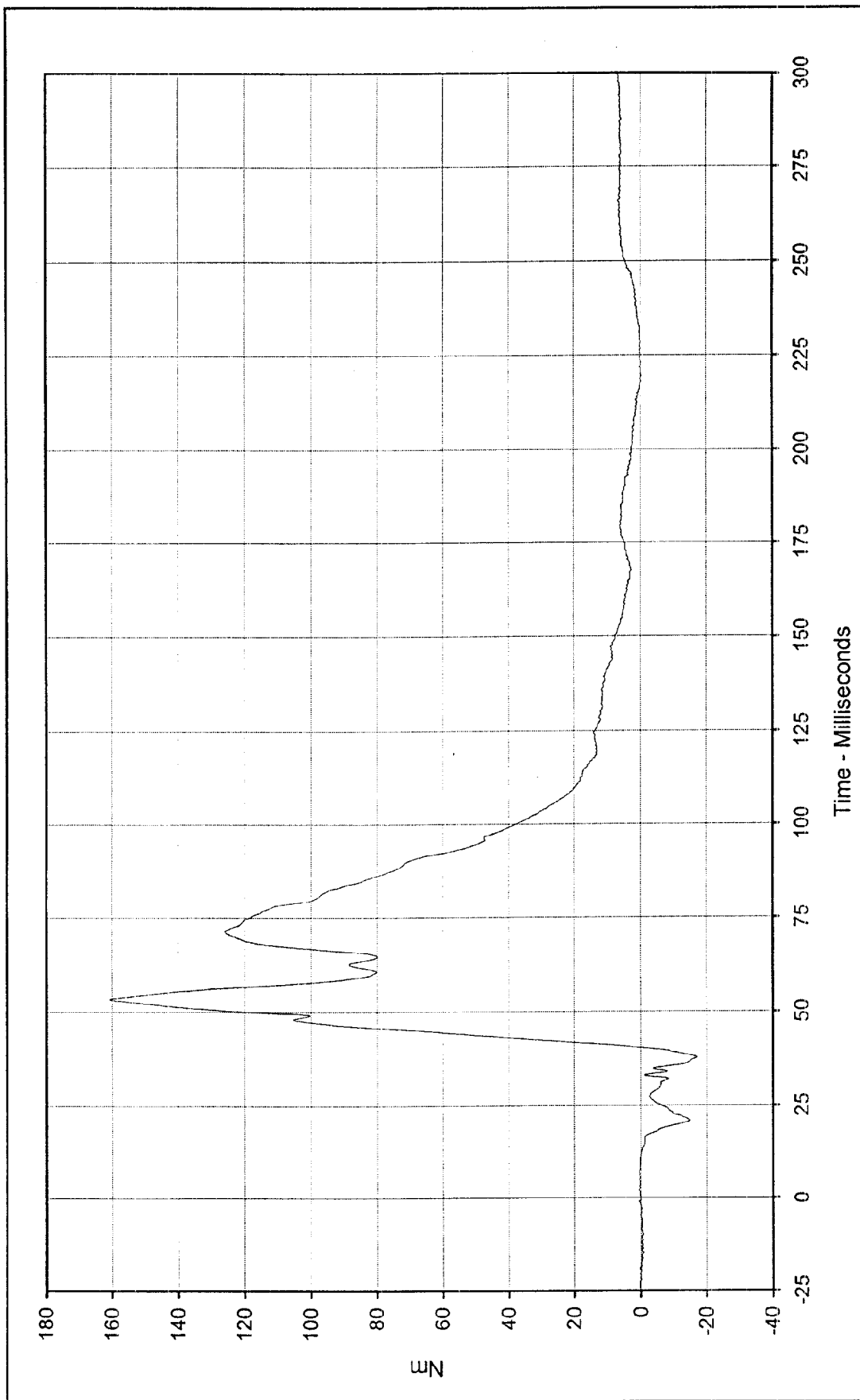




Curve Description:		Driver Left Lower Tibia Moment X		Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	21.2	at	37.4	Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan
Minimum Value:	-117.4	at	47.1	Milliseconds		
SAE Filter Class:	600					
Date of Test:	12/4/98					
Curve Number:	FIL-029					



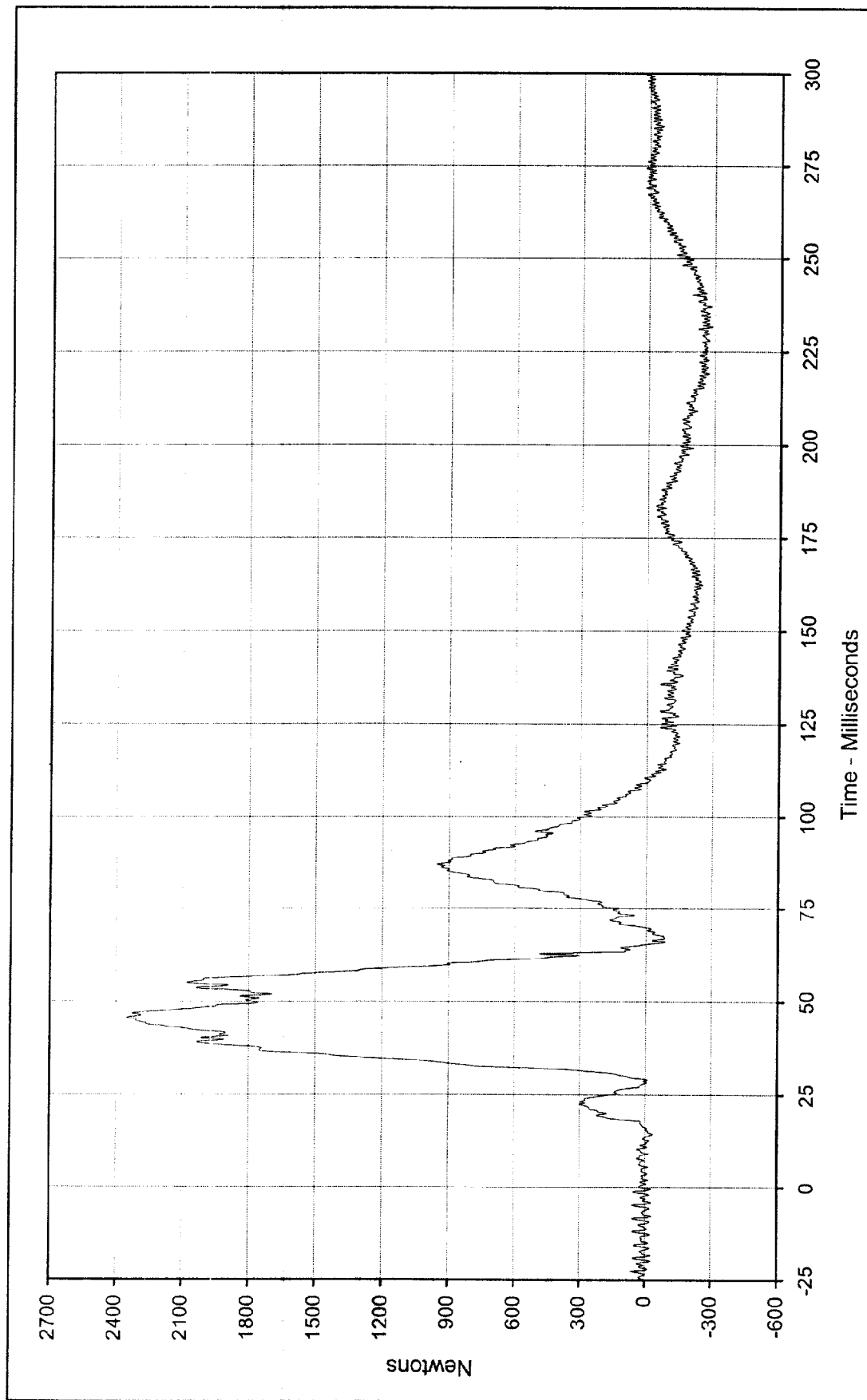




Curve Description:	Driver Left Lower Tibia Moment Y	Test Program:	1999 NHTSA 35 mph NCAP No.: MX5300
Maximum Value:	160.6 at 53.3 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan
Minimum Value:	-17.2 at 37.7 Milliseconds		



SAE Filter Class:	600
Date of Test:	12/4/98
Curve Number:	FIL-030



Curve Description: Driver Left Lower Tibia Force Z

Maximum Value: 2351.3 at 45.7 Milliseconds

Minimum Value: -288.9 at 231.7 Milliseconds

SAE Filter Class: 600

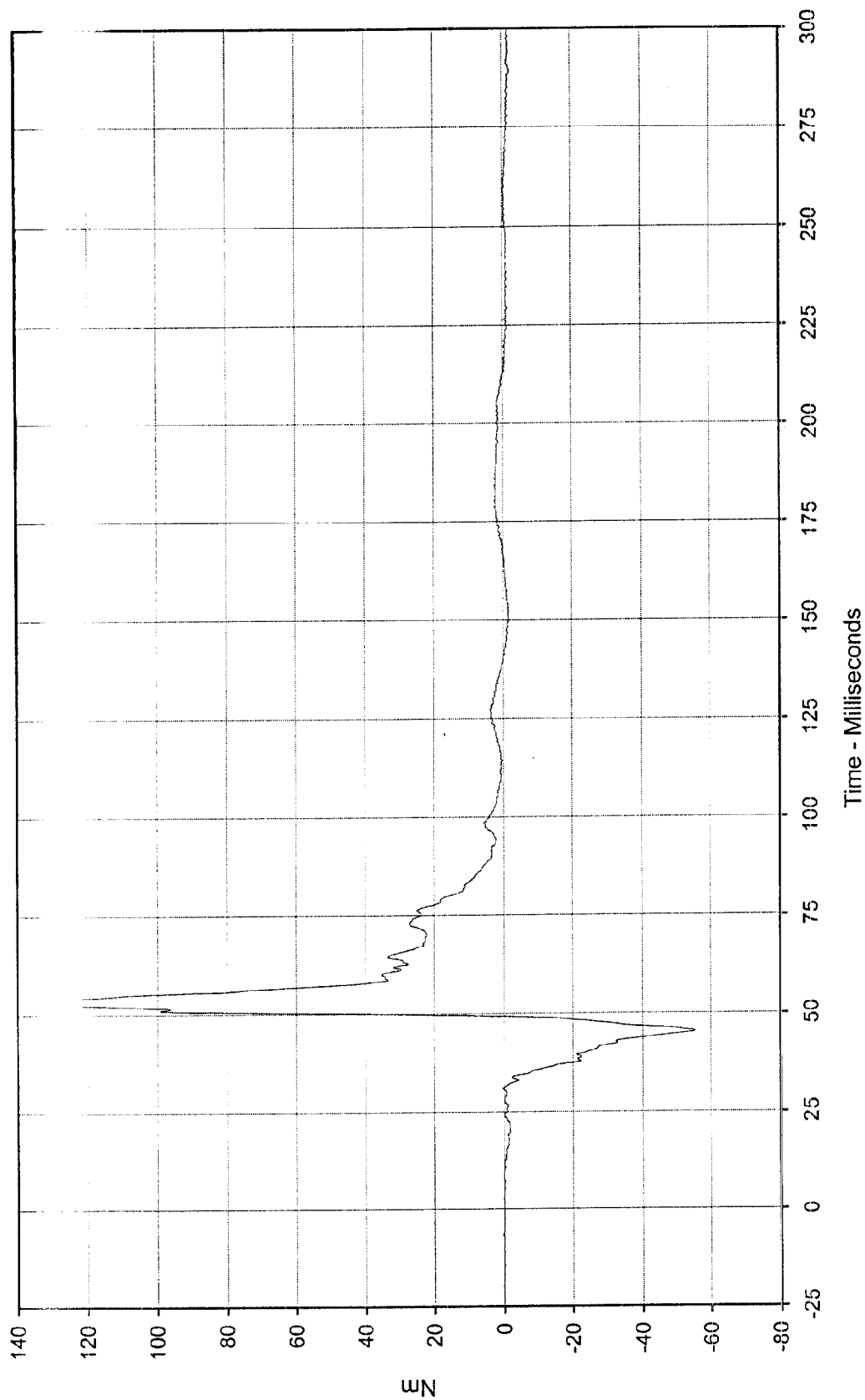
Date of Test: 12/4/98

Curve Number: FIL-031

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description: Driver Right Lower Tibia Moment X

Test Program: 1999 NHTSA 35 mph NCAP

No.: MX5300

Maximum Value: 126.3 at 52.8 Milliseconds

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

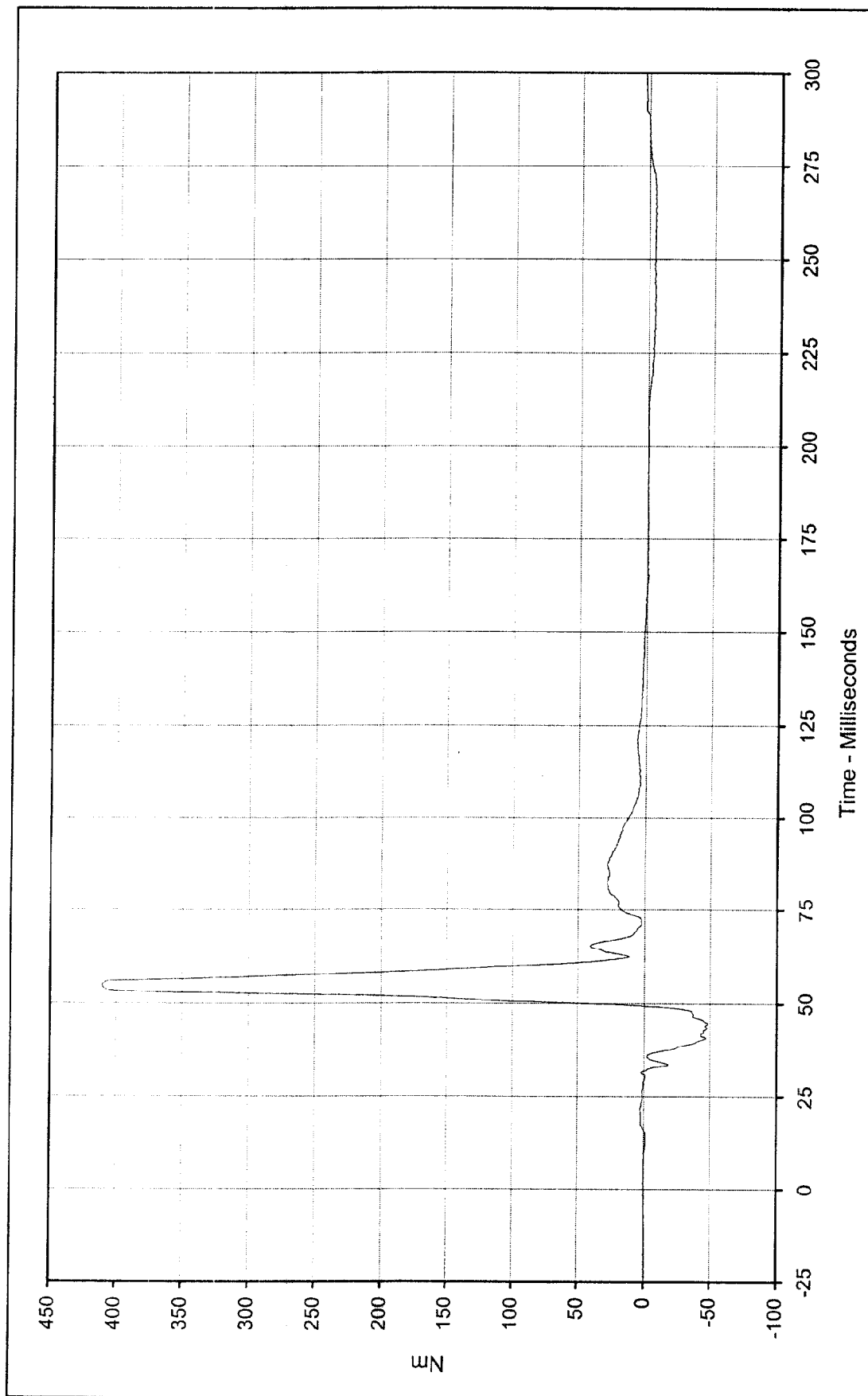
Minimum Value: -55.4 at 45.4 Milliseconds

SAE Filter Class: 600

Date of Test: 12/4/98

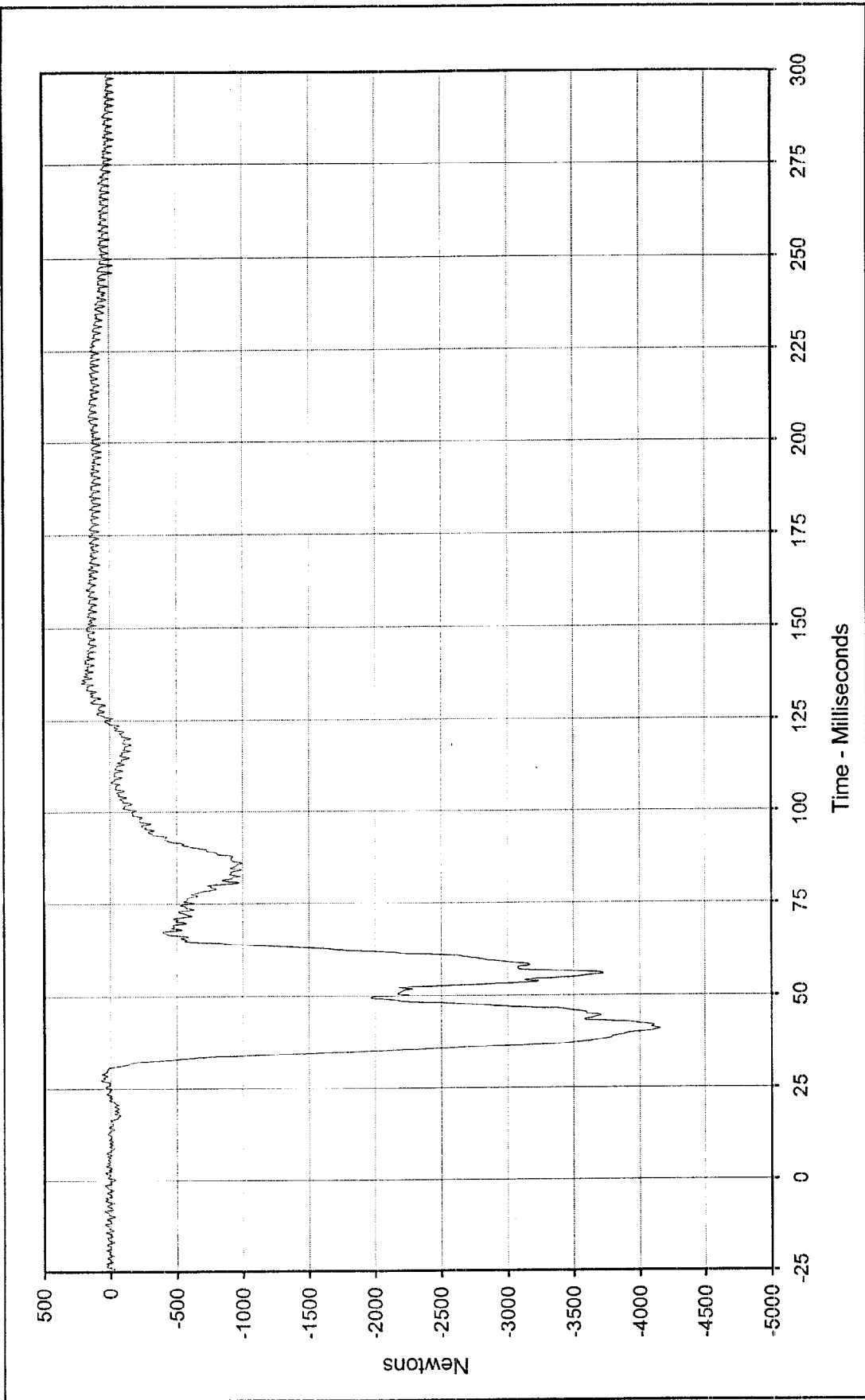
Curve Number: FIL-032





Curve Description:	Driver Right Lower Tibia Moment Y	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	410.7 at 54.7 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-48.4 at 44.7 Milliseconds			
SAE Filter Class:	600			
Date of Test:	12/4/98			
Curve Number:	FIL-033			

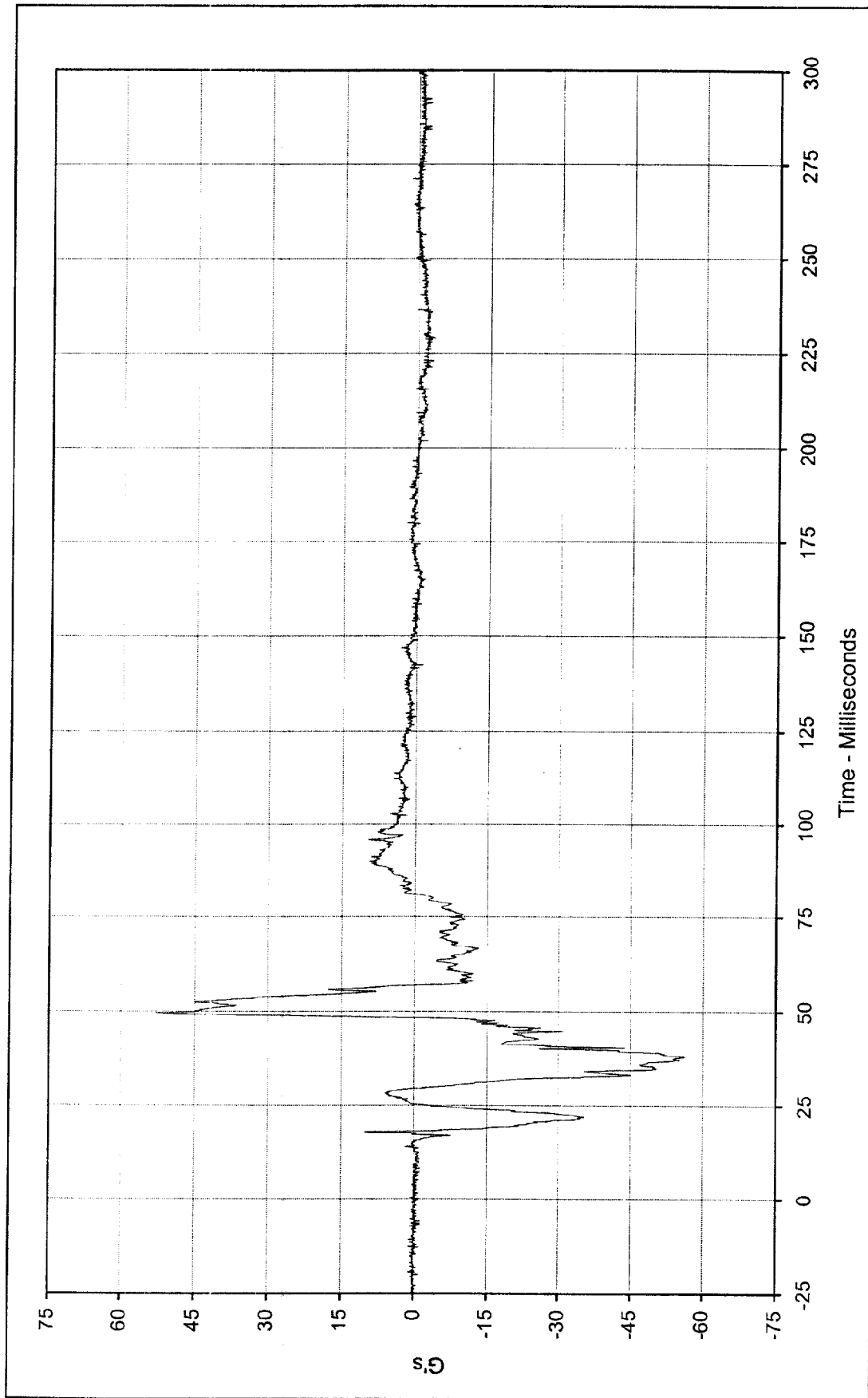




Curve Description: Driver Right Lower Tibia Force Z
 Maximum Value: 212.0 at 135.1 Milliseconds
 Minimum Value: -4155.8 at 41.0 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/4/98
 Curve Number: FIL-034

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

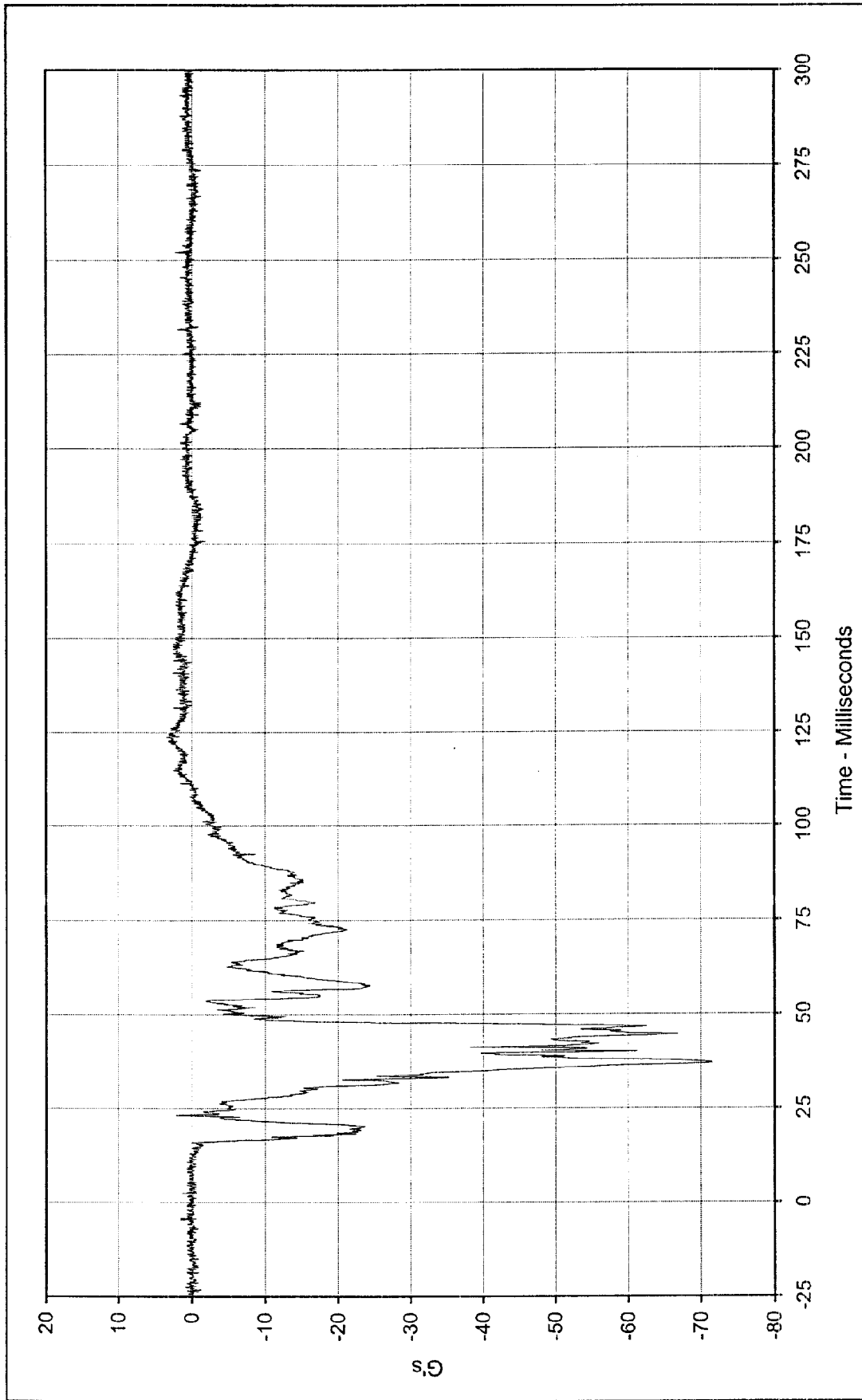




Curve Description:		Driver Left Foot Aft X		Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	52.8	at	49.6	Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan
Minimum Value:	-56.3	at	37.8	Milliseconds		
SAE Filter Class:	1000					
Date of Test:	12/4/98					
Curve Number:	FIL-035					

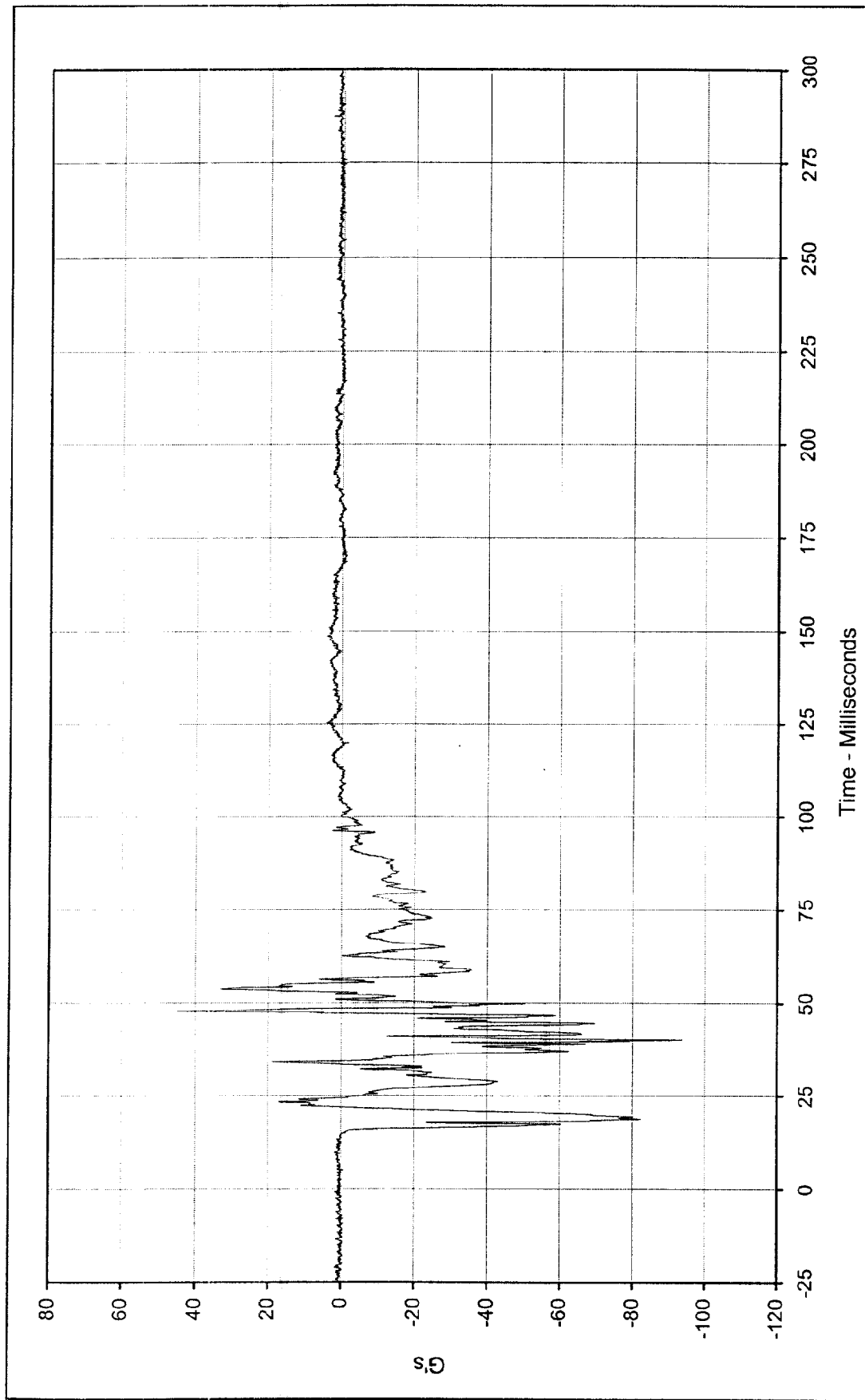
**KARCO**
Engineering





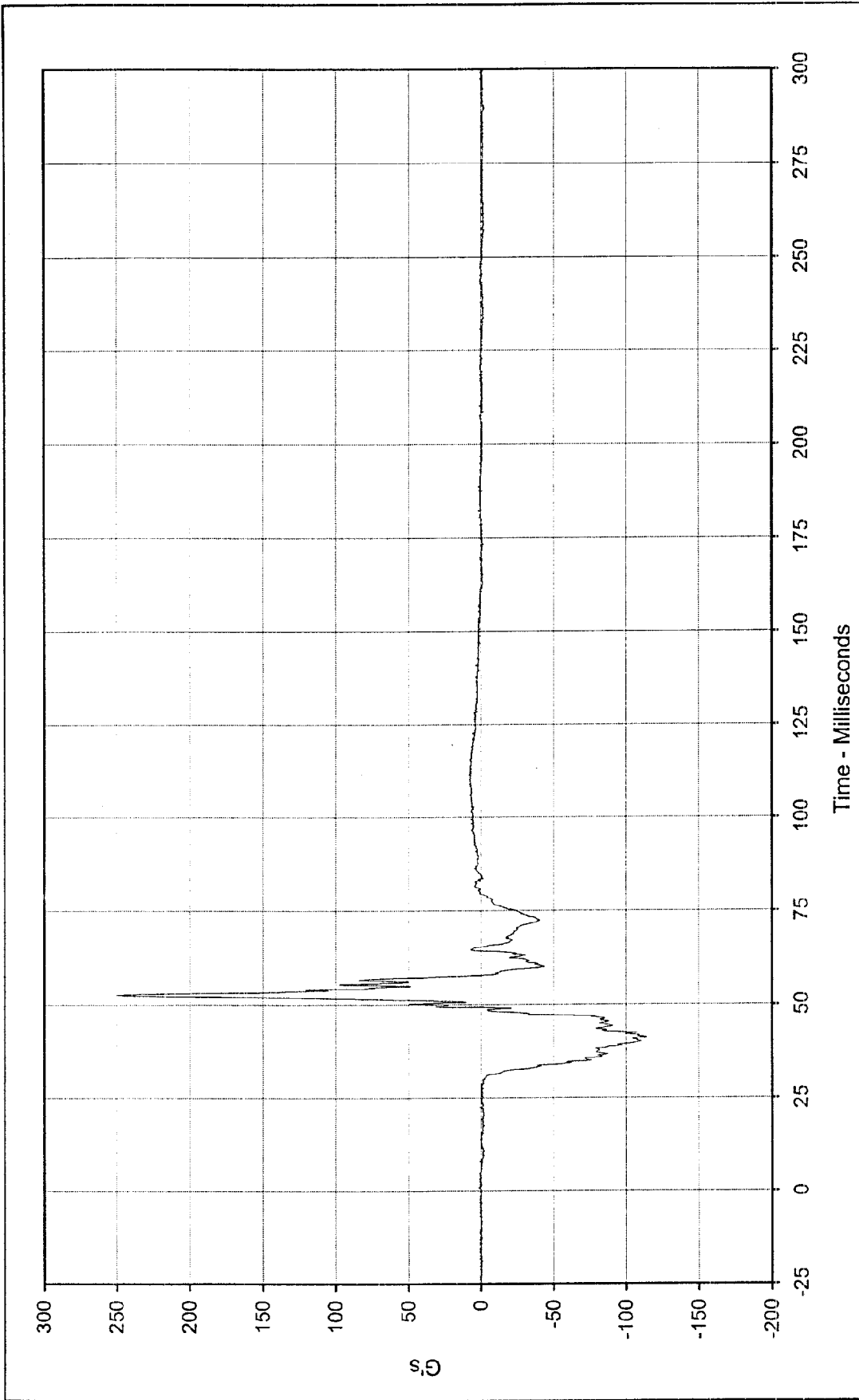
Curve Description:	Driver Left Foot Aft Z	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	3.4 at 123.8 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-71.6 at 36.8 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/4/98			
Curve Number:	FIL-036			





Curve Description:	Driver Left Foot Fore Z		Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	44.8	at 47.9 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-93.8	at 40.3 Milliseconds			
SAE Filter Class:	1000				
Date of Test:	12/4/98				
Curve Number:	FIL-037				

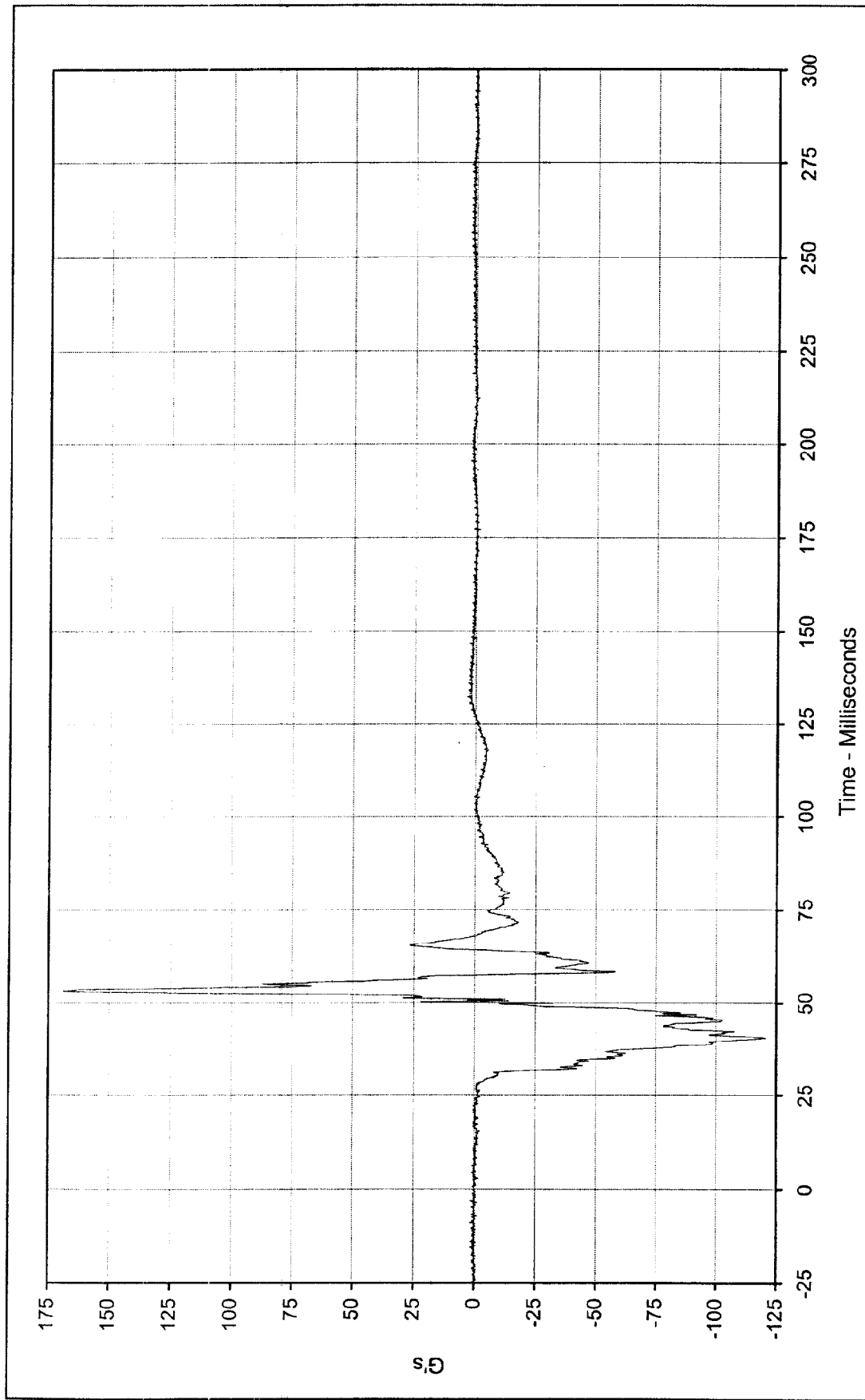




Curve Description: Driver Right Foot Aft X
 Maximum Value: 249.2 at 52.6 Milliseconds
 Minimum Value: -114.4 at 41.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/4/98
 Curve Number: FIL-038

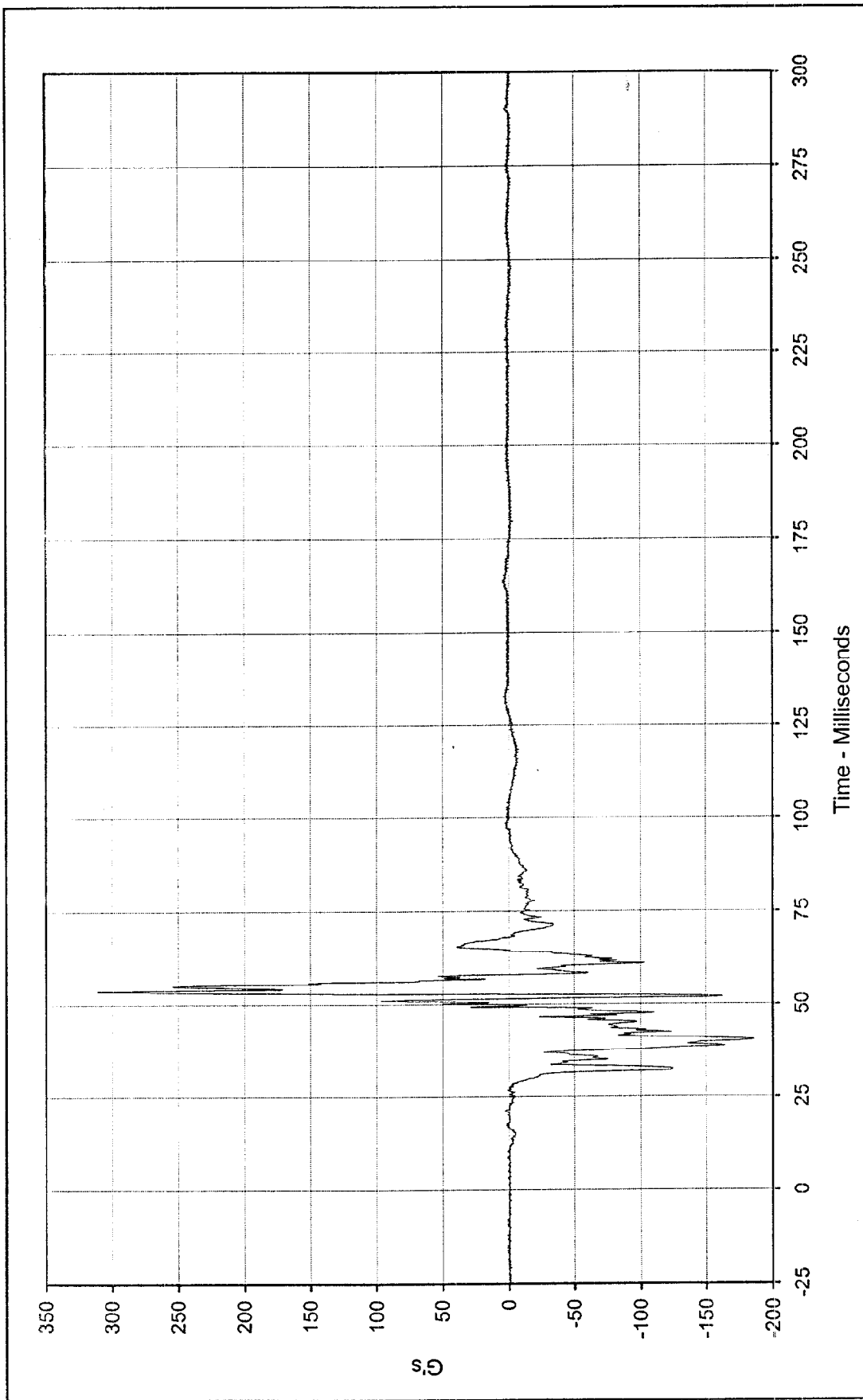
Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description:	Driver Right Foot Aft Z	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	168.9 at 53.3 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-120.8 at 40.6 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/4/98			
Curve Number:	FIL-039			





Curve Description: Driver Right Foot Fore Z

Maximum Value: 310.6 at 53.9 Milliseconds

Minimum Value: -185.8 at 40.5 Milliseconds

SAE Filter Class: 1000

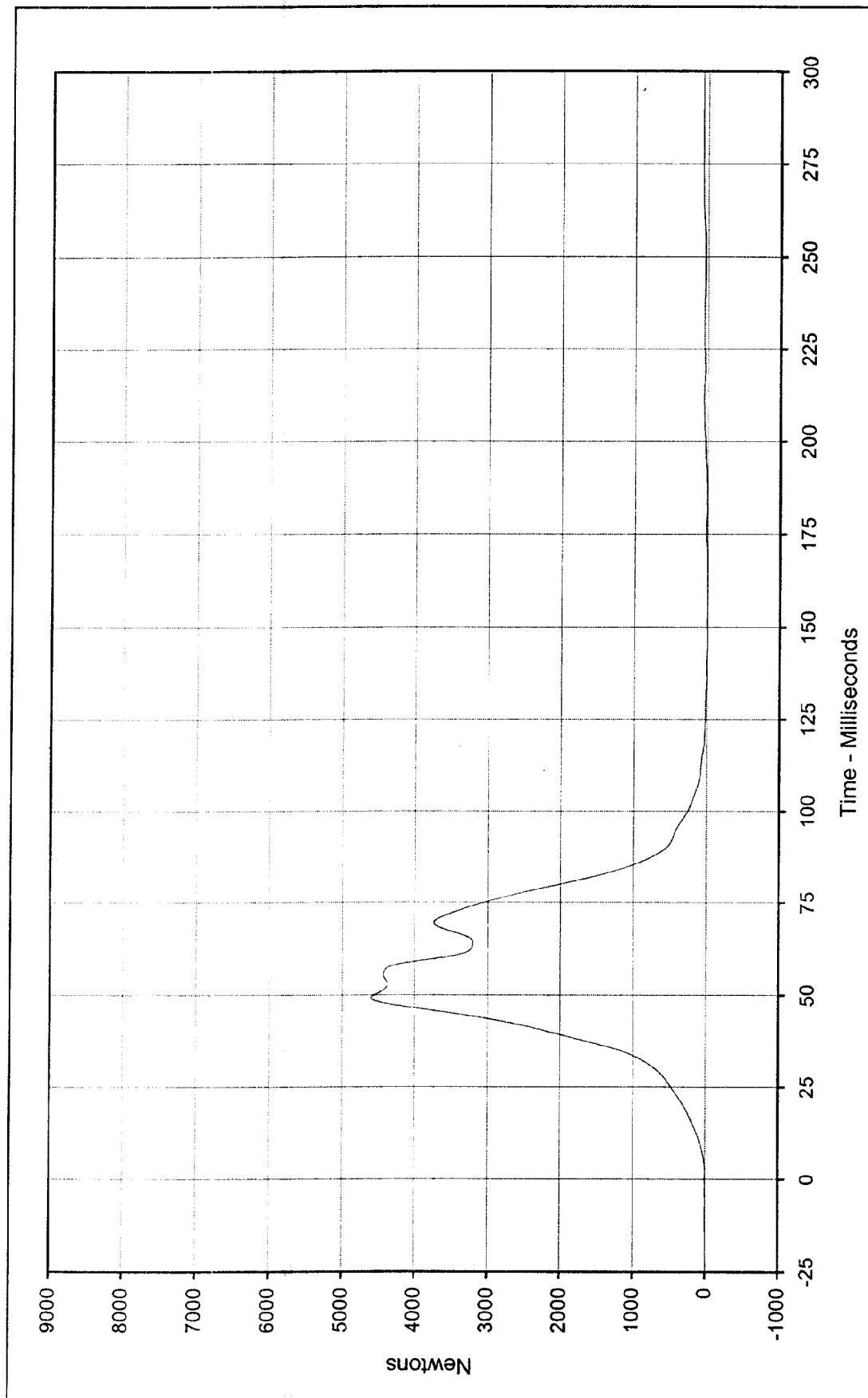
Date of Test: 12/4/98

Curve Number: FIL-040

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

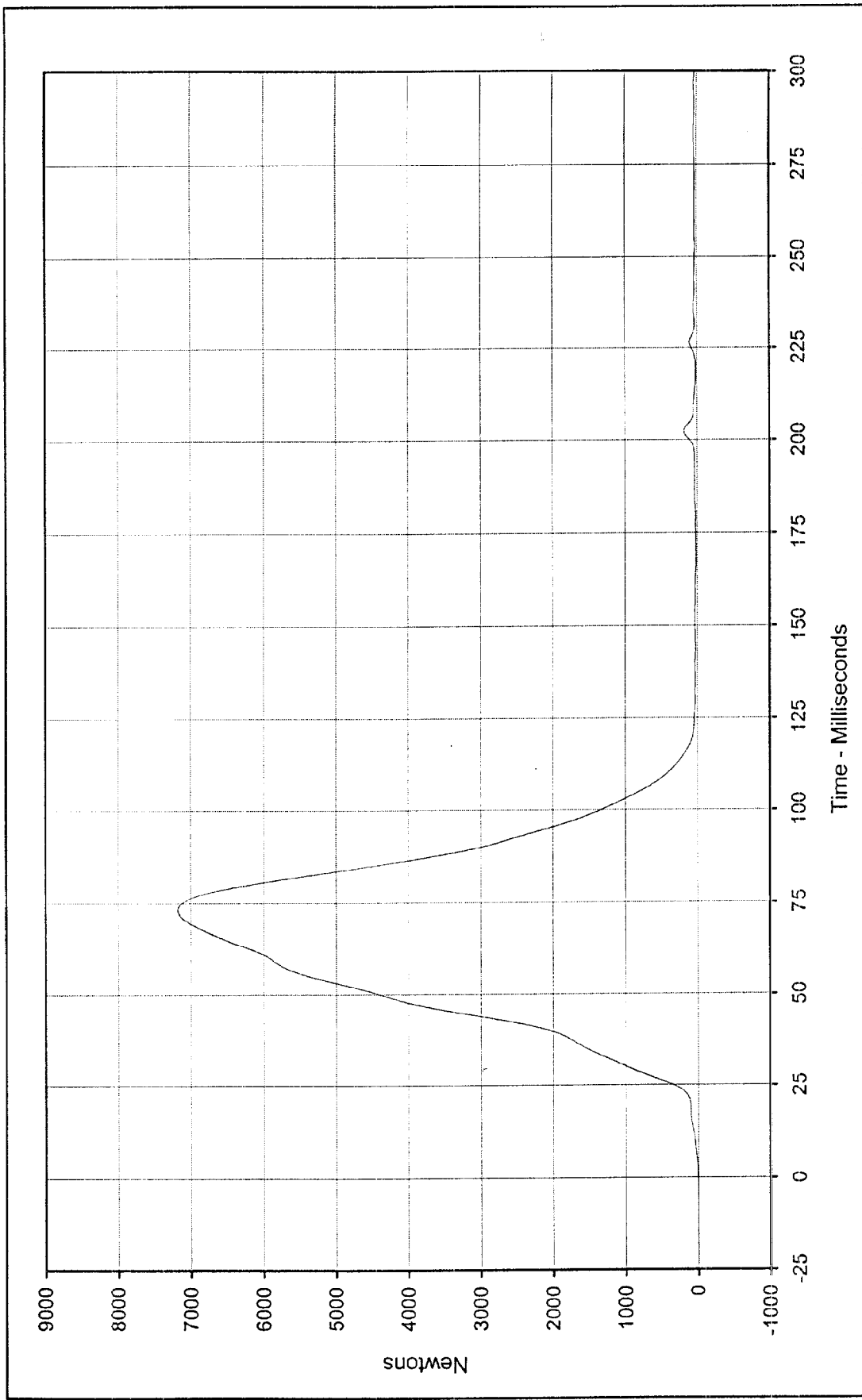




Curve Description: Driver Lap Belt Force
 Maximum Value: 4600.3 at 49.2 Milliseconds
 Minimum Value: -4.6 at 147.1 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: FIL-041

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

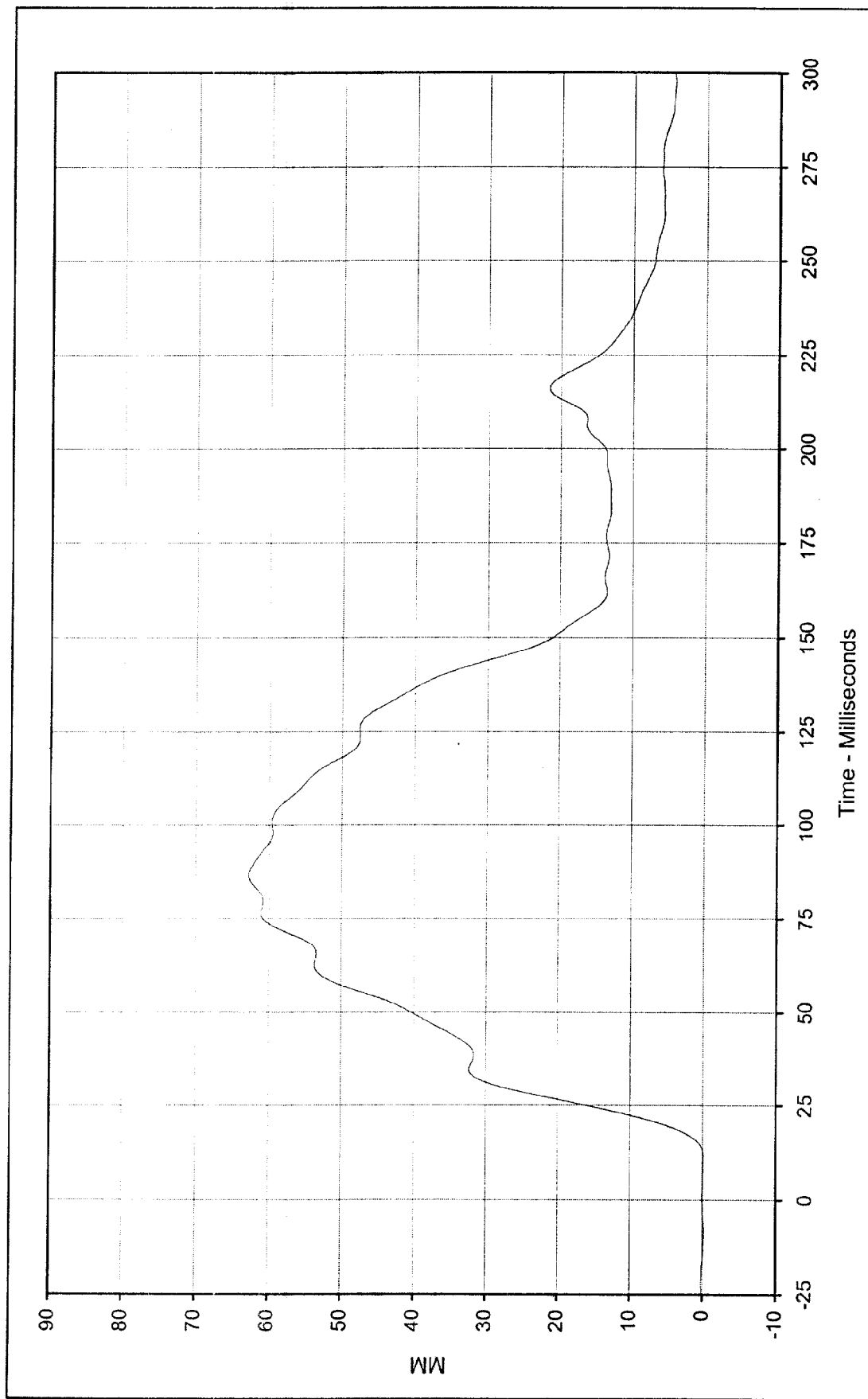




Curve Description: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Program:
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

Driver Shoulder Belt Force
 Maximum Value: 7178.3 at 73.2 Milliseconds
 Minimum Value: 3.6 at 0.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: FIL-042

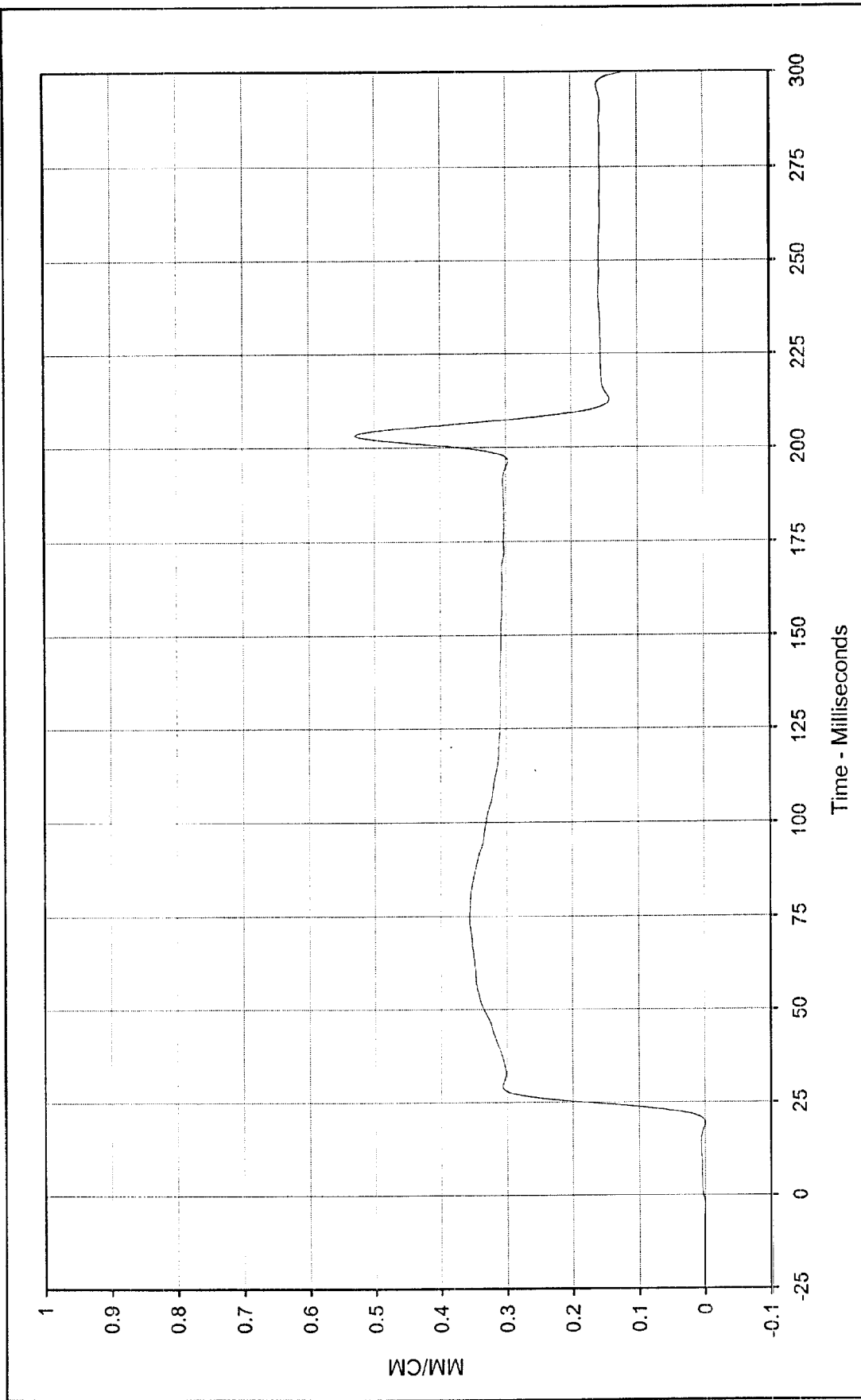




Curve Description:	Driver Shoulder Belt Pullout	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	62.8 at 86.5	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-0.1 at 11.3			
SAE Filter Class:	60			
Date of Test:	12/4/98			
Curve Number:	FIL-043			



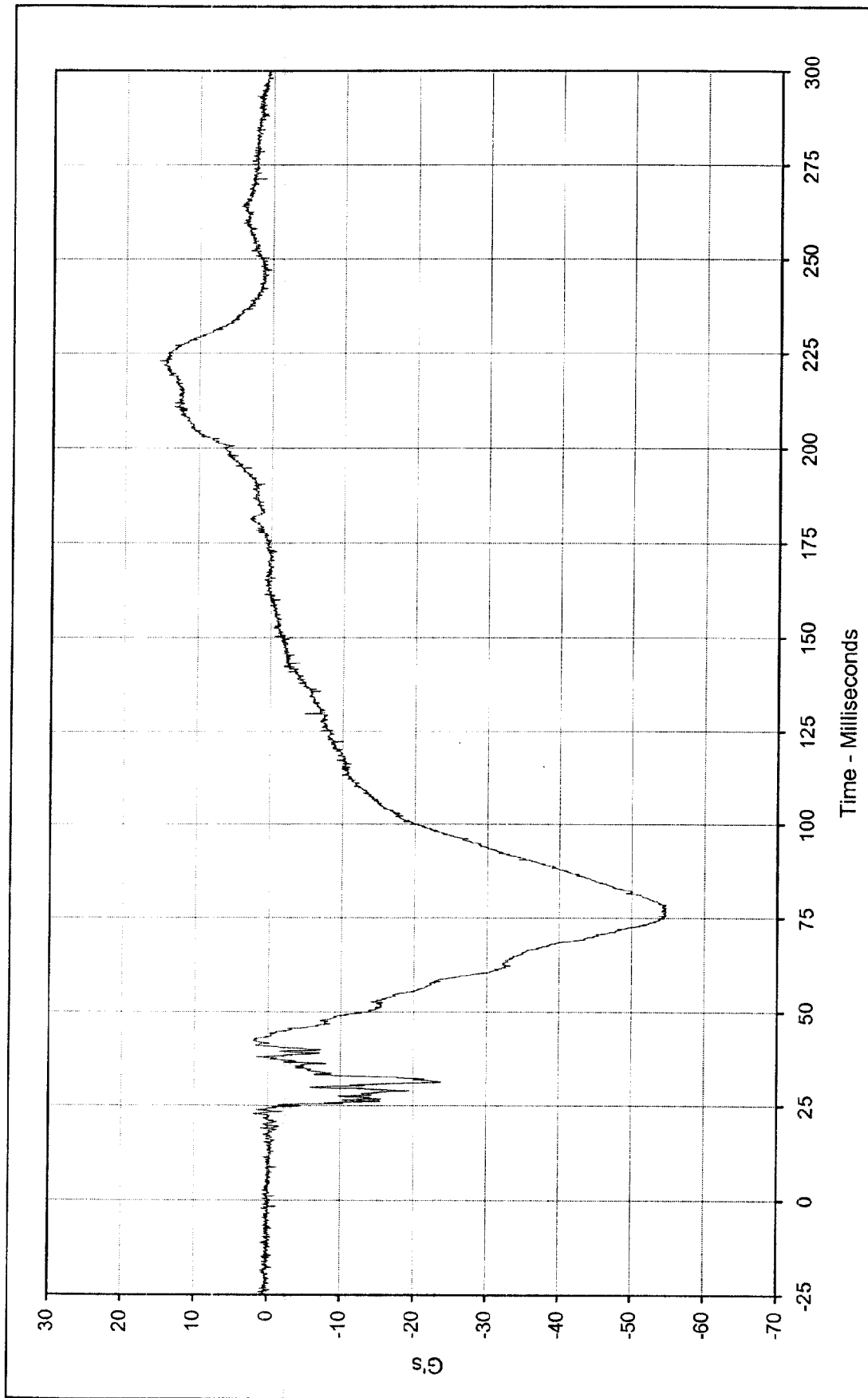




Curve Description: Driver Shoulder Belt Elongation
 Maximum Value: 0.53 at 203.2 Milliseconds
 Minimum Value: 0.00 at 19.4 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: FIL-044

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

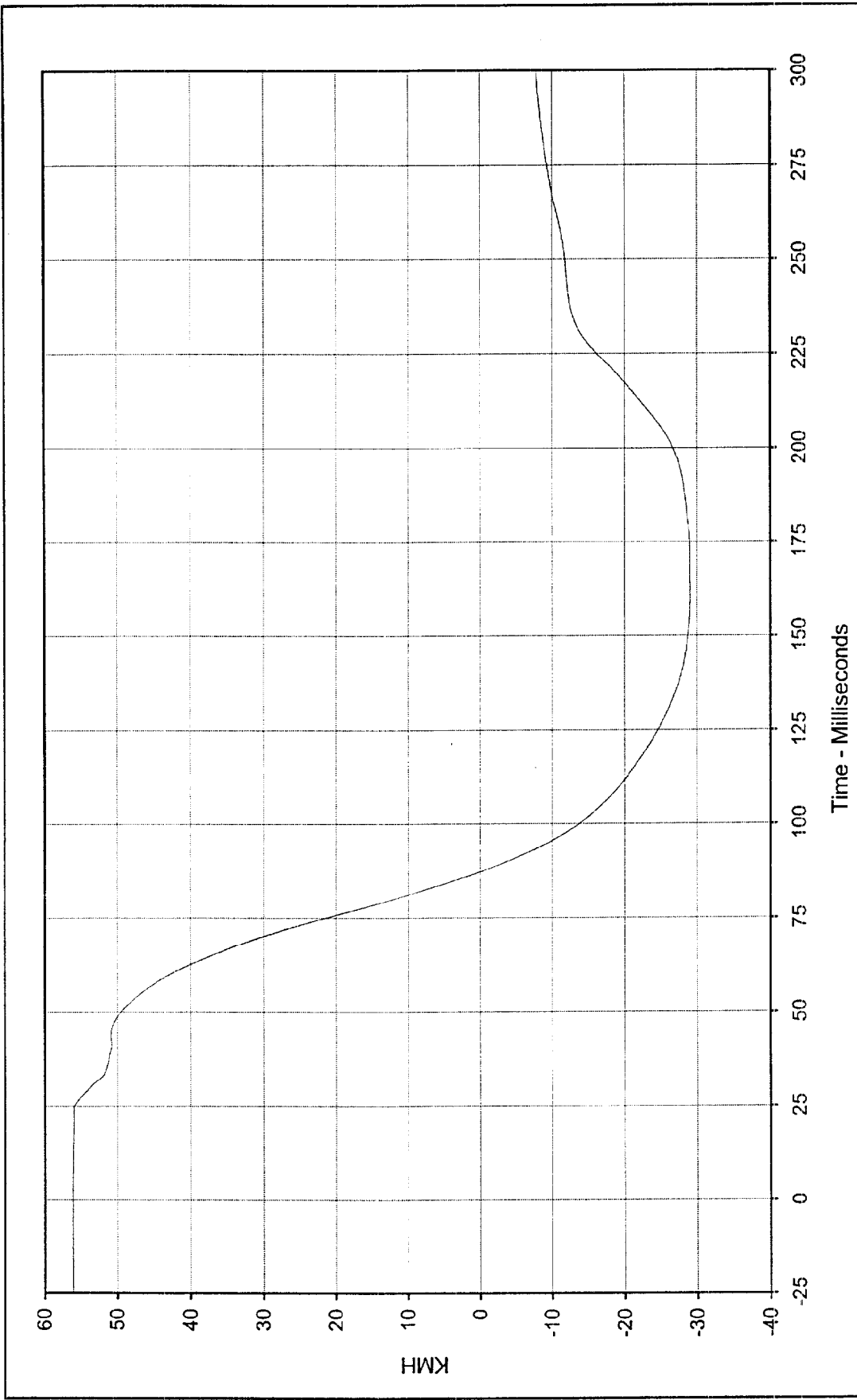




Curve Description: Passenger Head Primary X
 Maximum Value: 15.5 at 223.0 Milliseconds
 Minimum Value: -54.8 at 75.5 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/4/98
 Curve Number: FIL-045

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

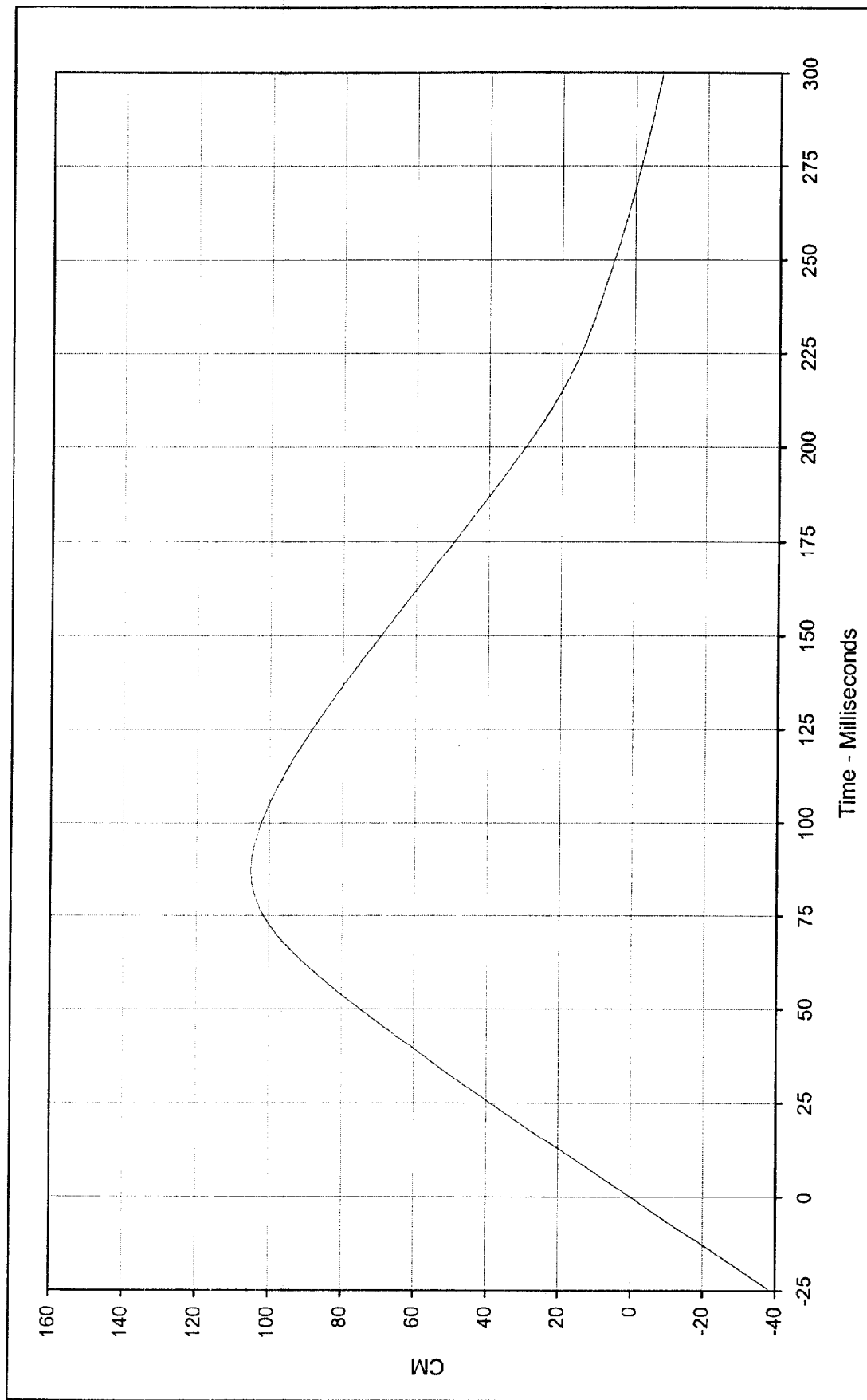




Curve Description: Passenger Head Primary X Velocity
 Maximum Value: 56.1 at 3.7 Milliseconds
 Minimum Value: -29.1 at 161.1 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/4/98
 Curve Number: IN1-045

Testing Program 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description: Passenger Head Primary X Displ.

Maximum Value: 105.0 at 87.2 Milliseconds

Minimum Value: -7.5 at 299.9 Milliseconds

SAE Filter Class: 180

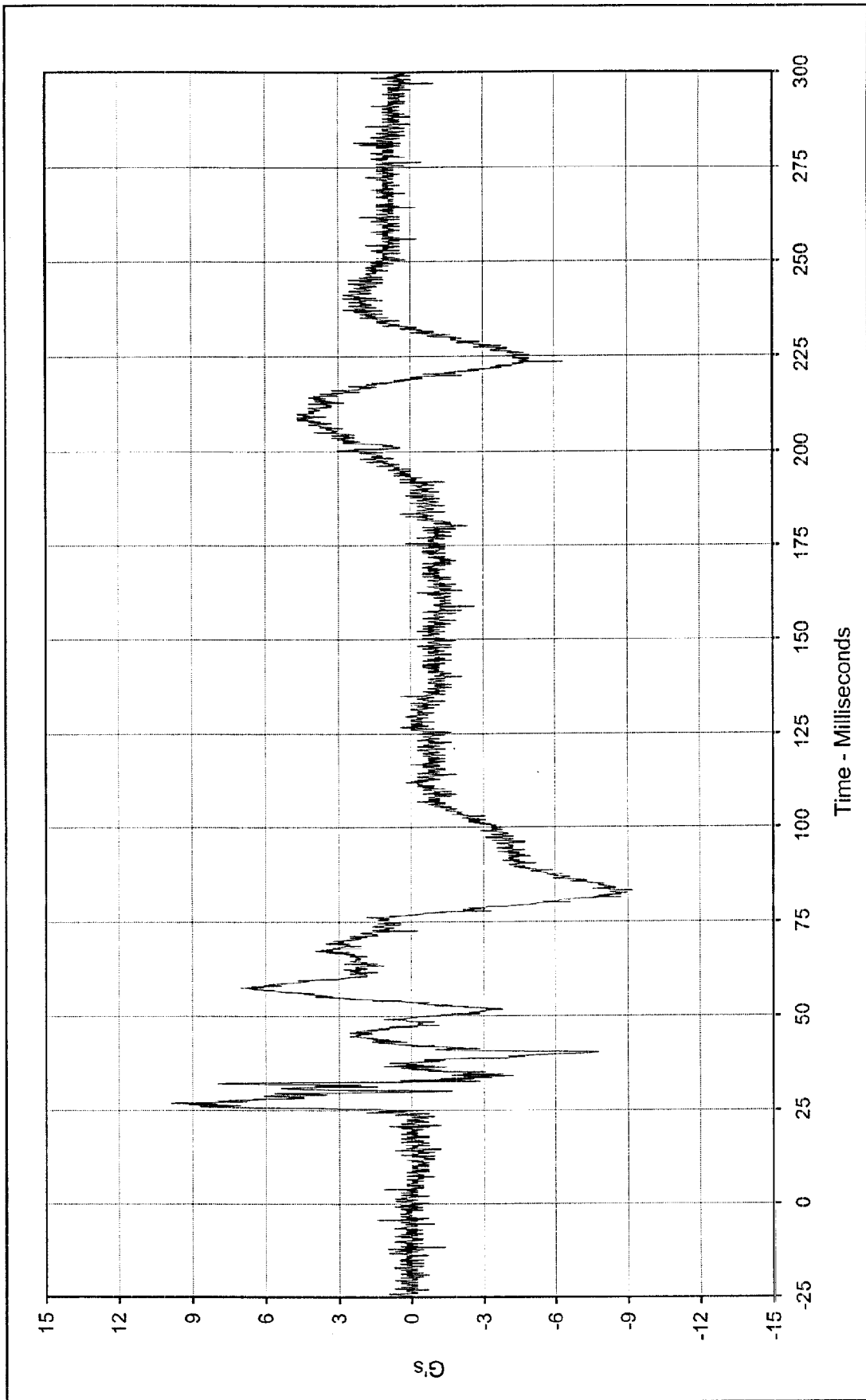
Date of Test: 12/4/98

Curve Number: IN2-045

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

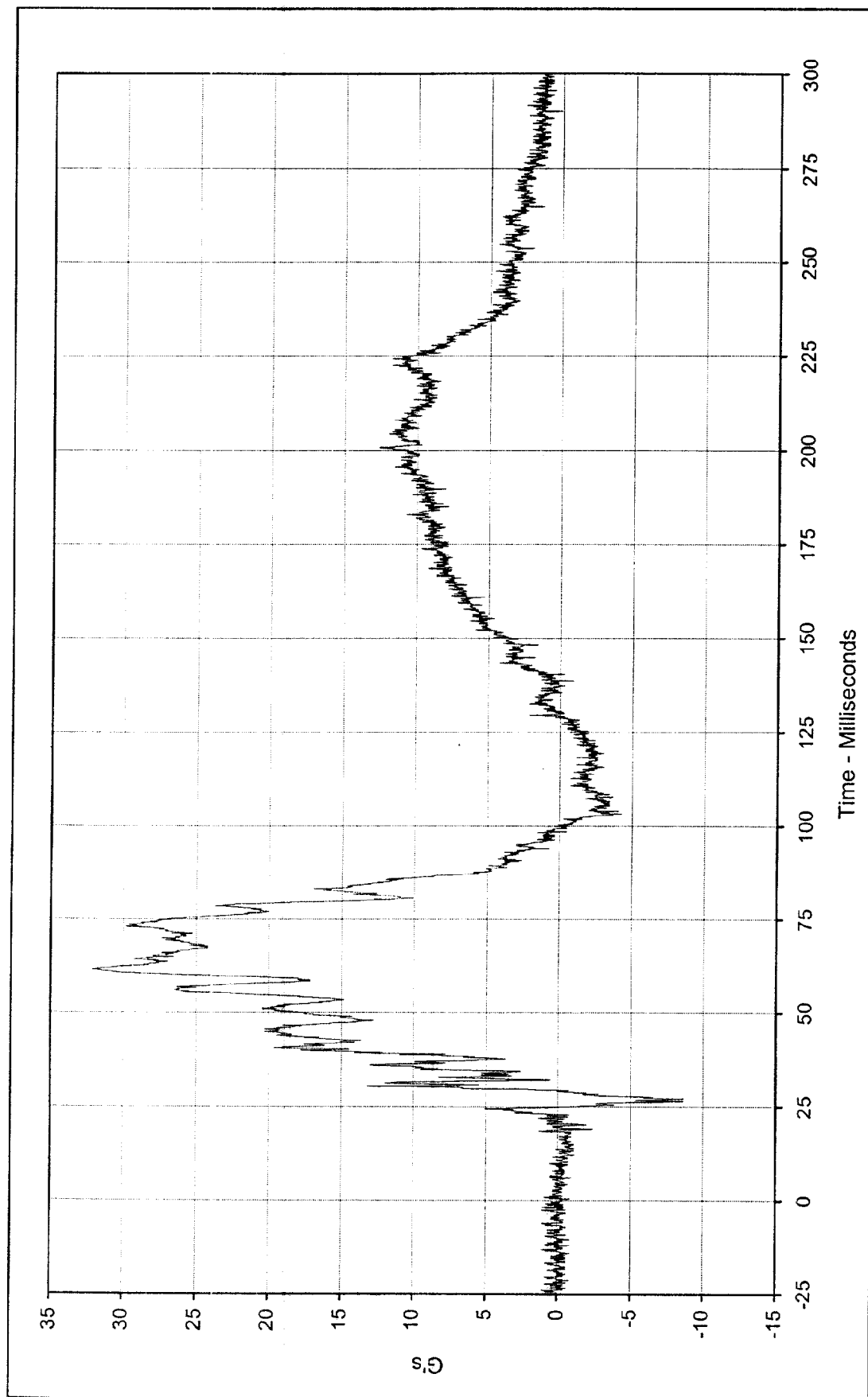




Curve Description: Passenger Head Primary Y
 Maximum Value: 9.8 at 26.9 Milliseconds
 Minimum Value: -9.2 at 83.1 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/4/98
 Curve Number: FIL-046

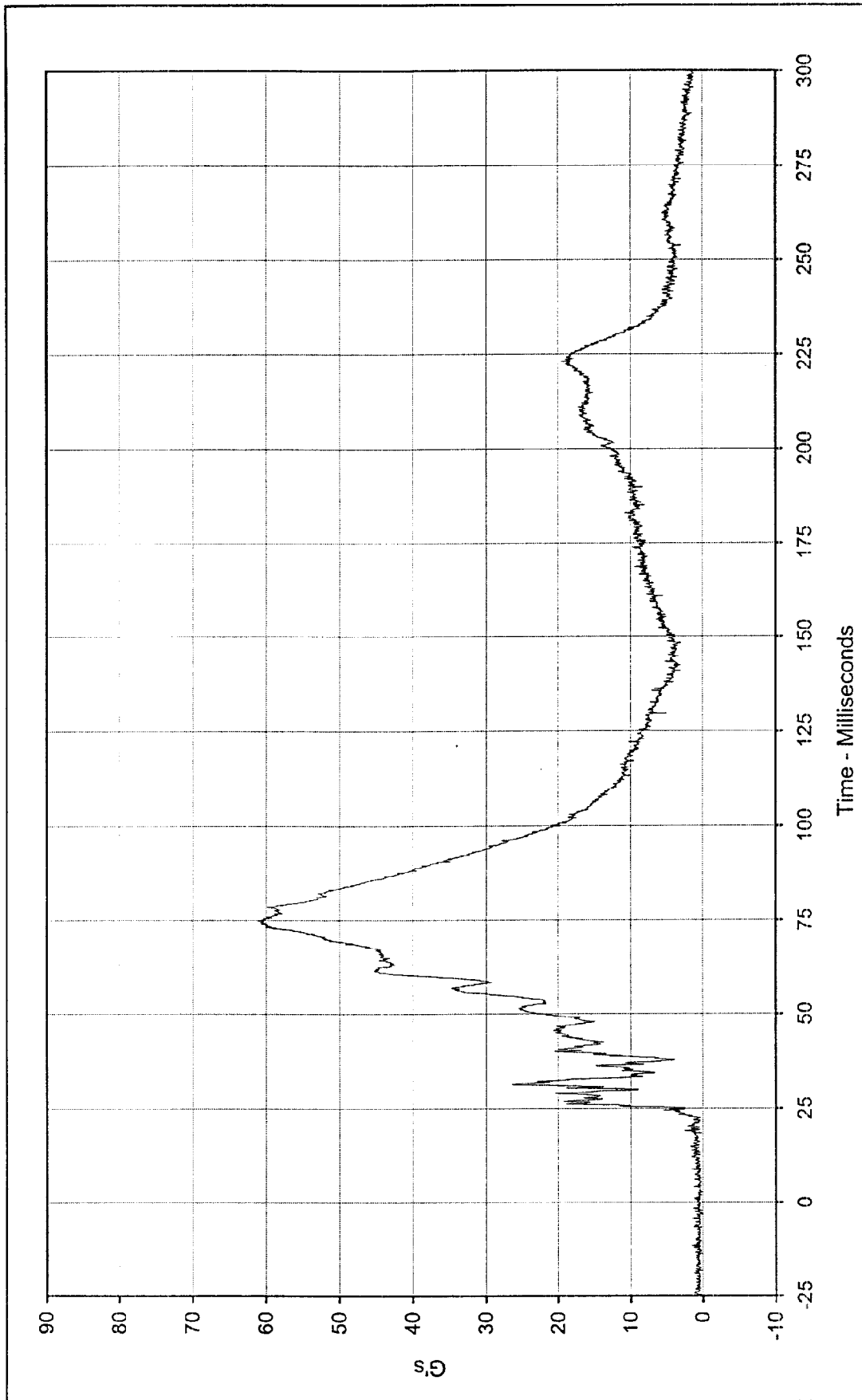
Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description:	Passenger Head Primary Z	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	32.1 at 61.3 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-8.6 at 26.5 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/4/98			
Curve Number:	FIL-047			

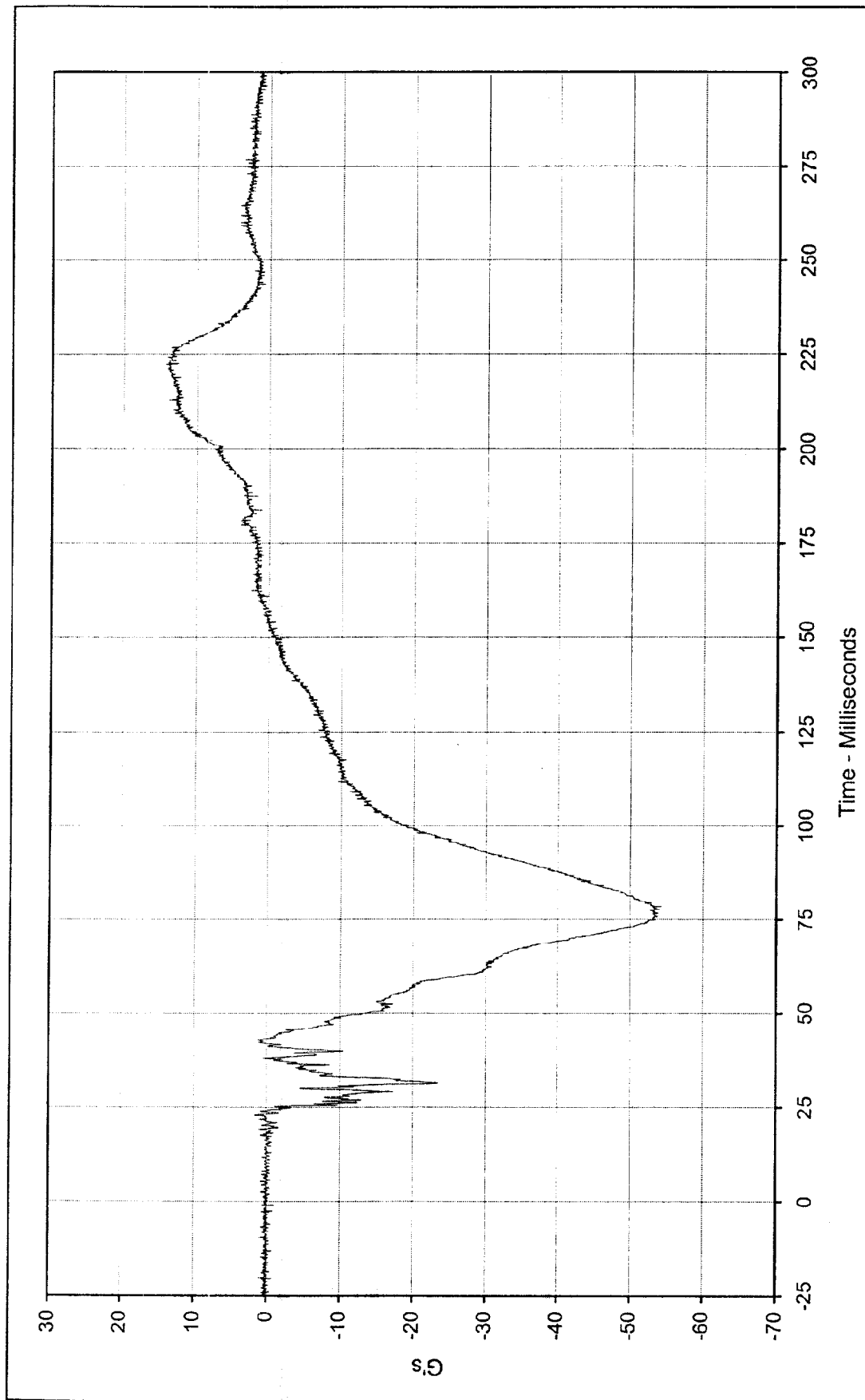




Curve Description: Passenger Head Resultant Primary
 Maximum Value: 61.1 at 74.9 Milliseconds
 Minimum Value: 0.1 at 2.8 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/4/98
 Curve Number: RES-045

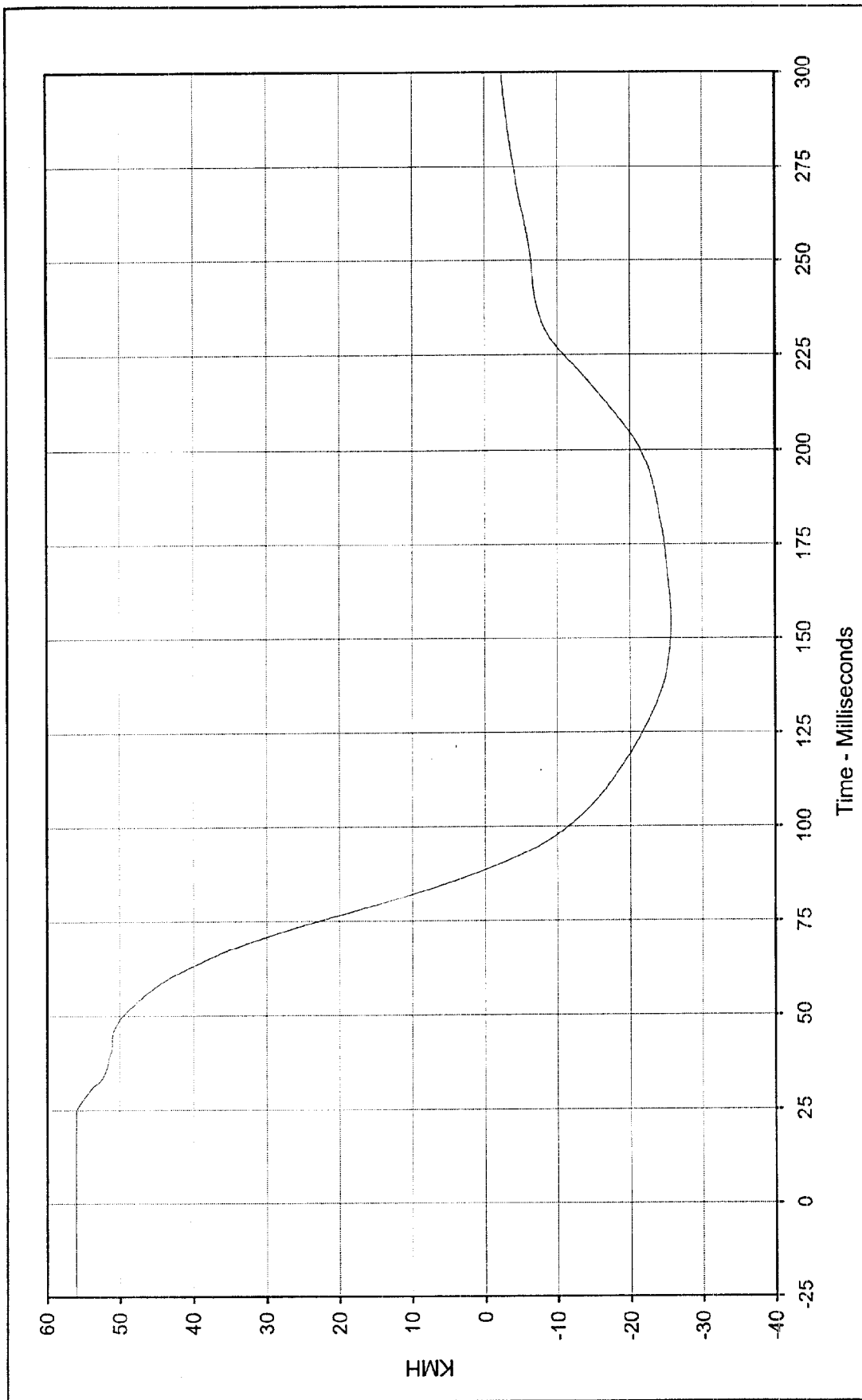
Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description:	Passenger Head Redundant X	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	14.2	at	222.3	Milliseconds
Minimum Value:	-54.3	at	78.4	Milliseconds
SAE Filter Class:	1000			
Date of Test:	12/4/98			
Curve Number:	FIL-048	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	





Curve Description: Passenger Head Redundant X Velocity

Maximum Value: 56.1 at 5.5 Milliseconds

Minimum Value: -25.6 at 154.3 Milliseconds

SAE Filter Class: 180

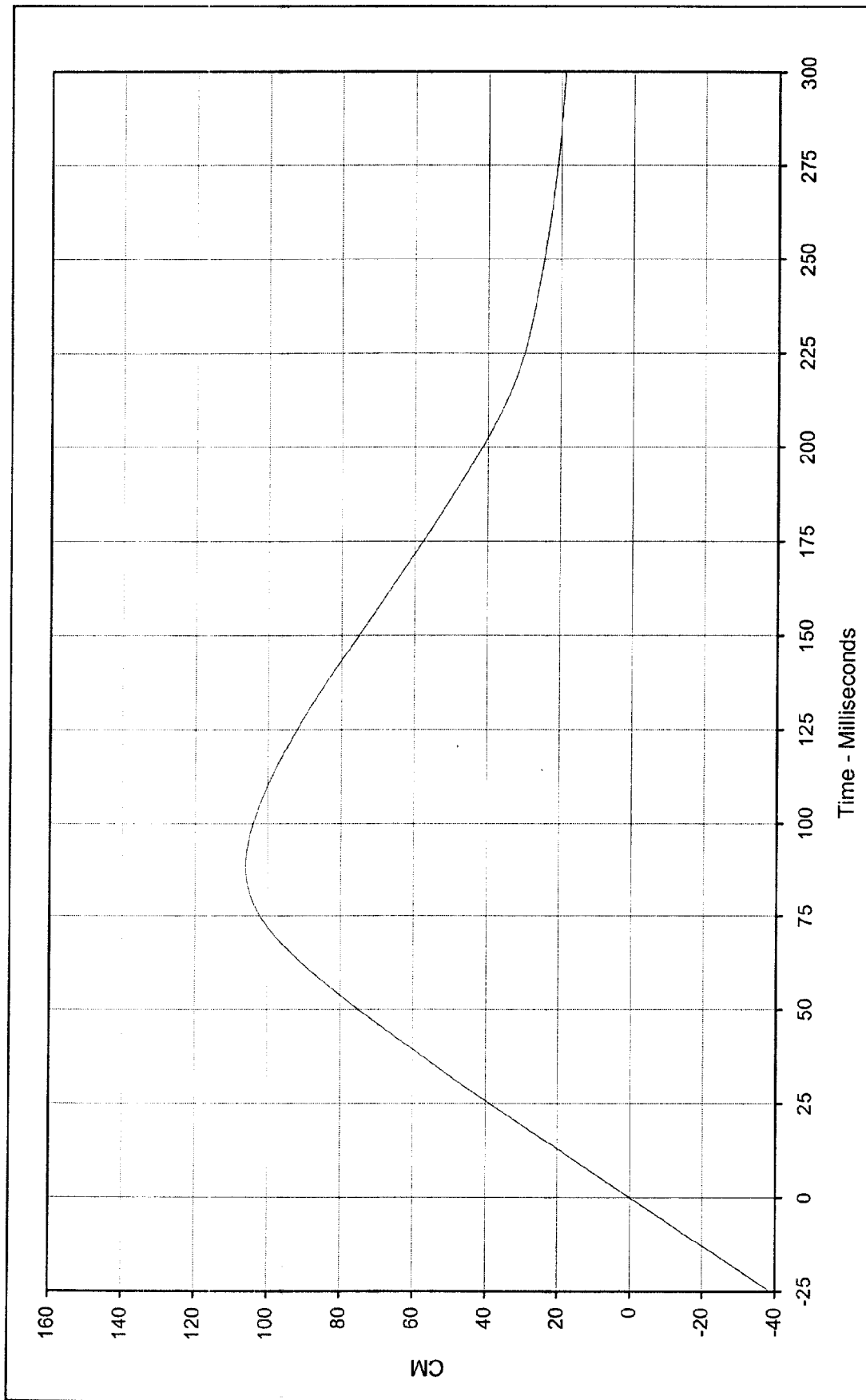
Date of Test: 12/4/98

Curve Number: IN1-048

Testing Program 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description: Passenger Head Redundant X Displ.

Maximum Value: 106.1 at 88.4 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

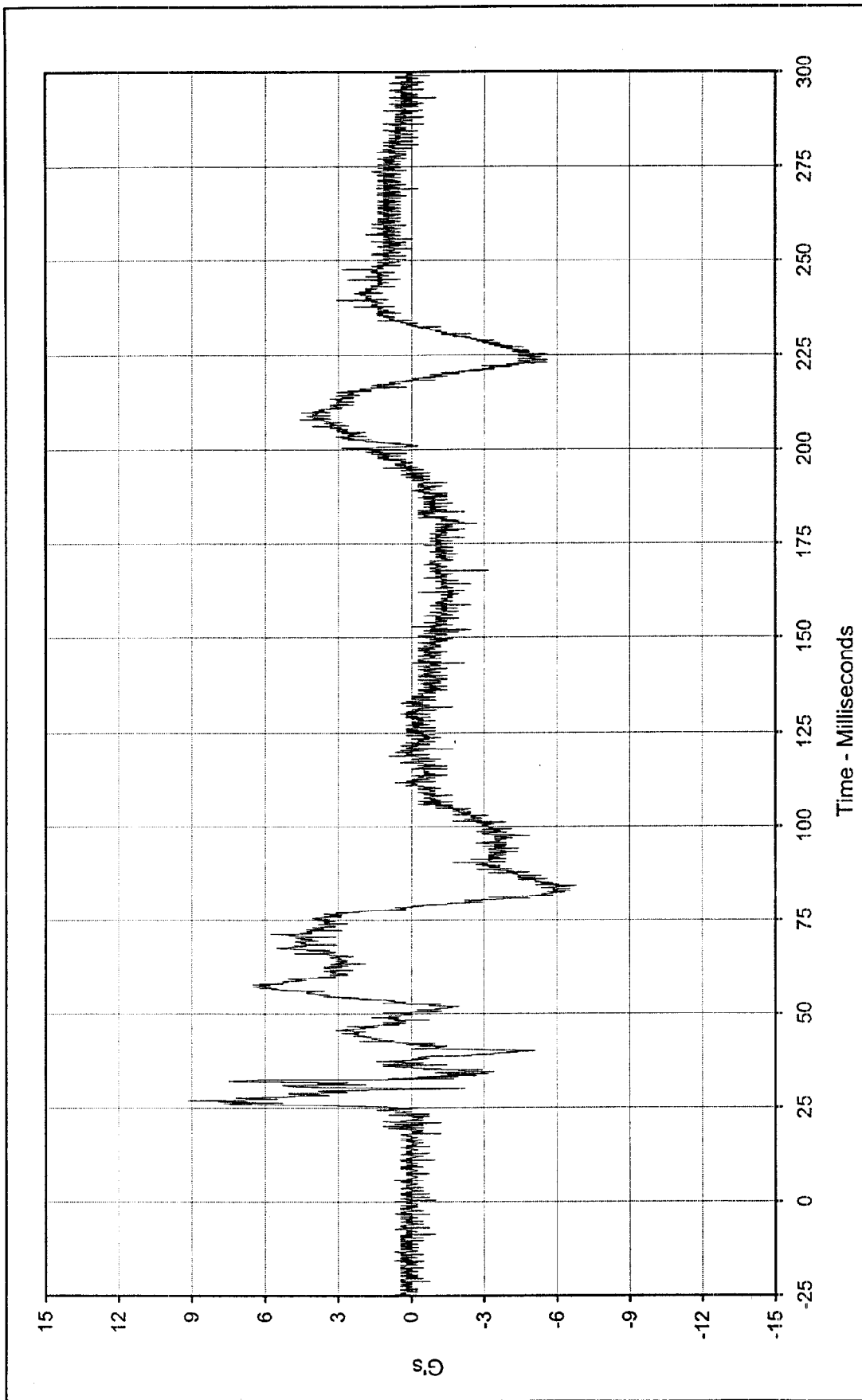
Date of Test: 12/4/98

Curve Number: IN2-048

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

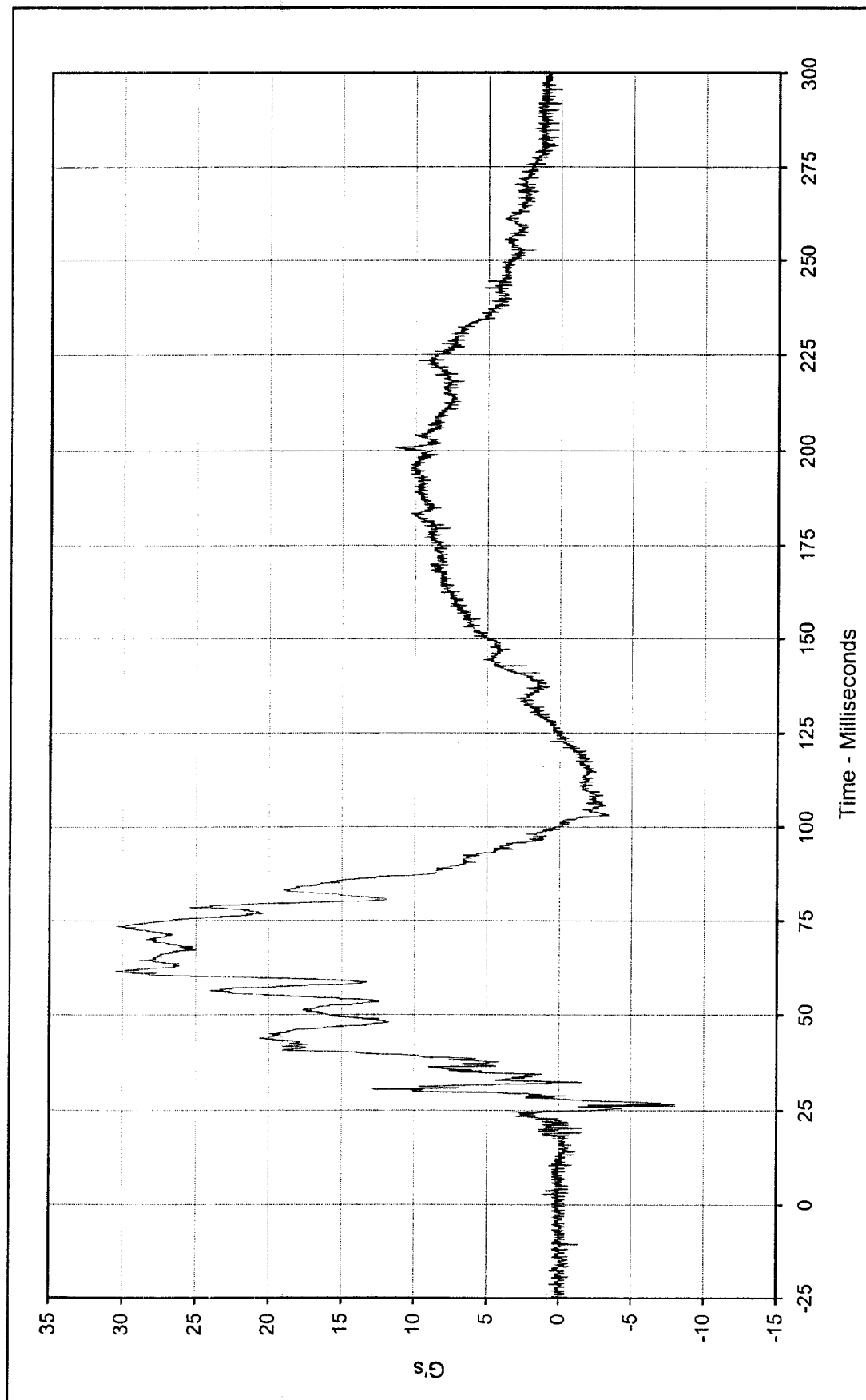




Curve Description:	Passenger Head Redundant Y	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	9.1 at 26.9 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-6.8 at 84.0 Milliseconds			



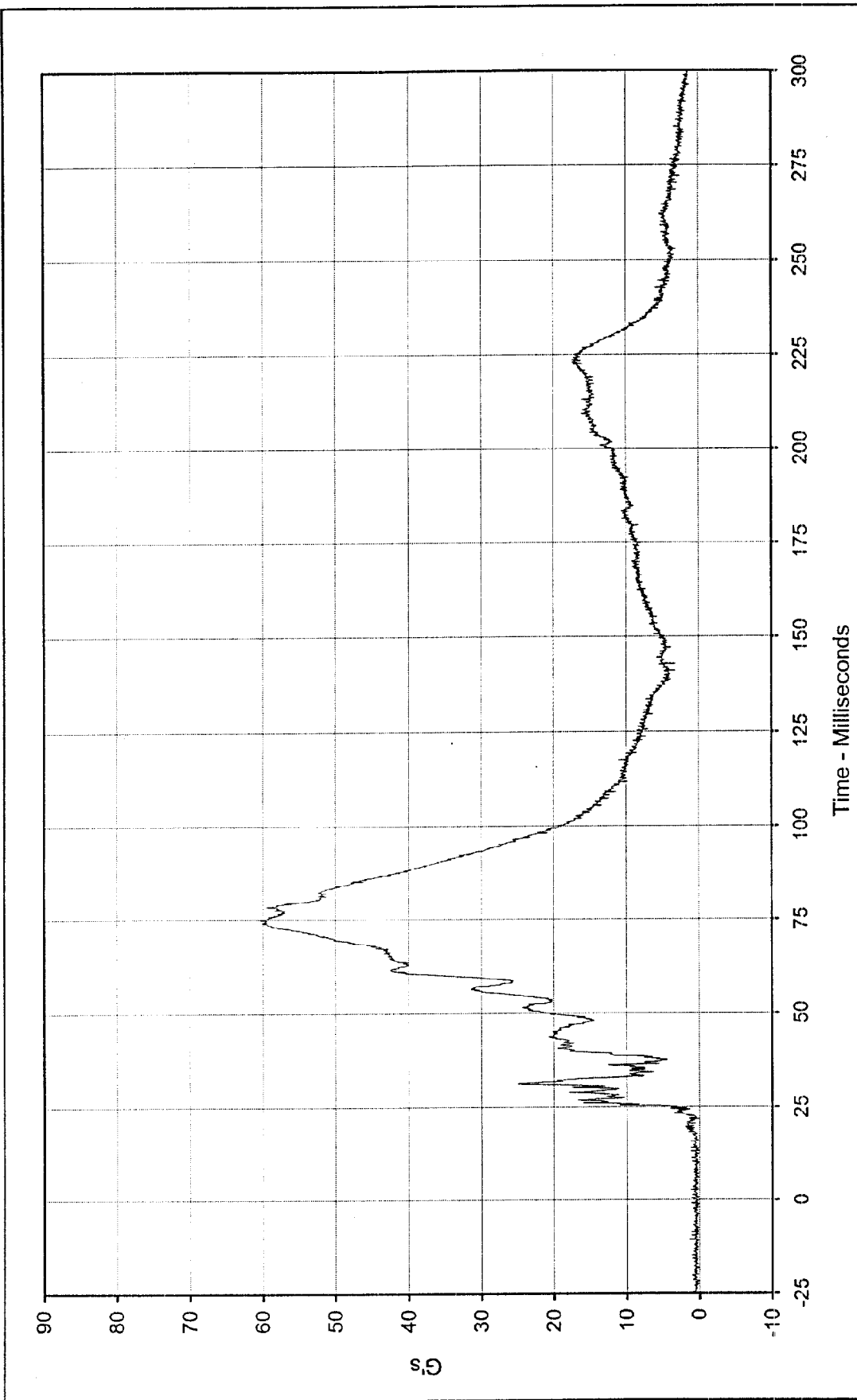
SAE Filter Class:	1000
Date of Test:	12/4/98
Curve Number:	FIL-049



Curve Description:		Passenger Head Redundant Z		Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	30.5	at	61.4	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-8.0	at	26.1			
SAE Filter Class:	1000					
Date of Test:	12/4/98					
Curve Number:	FIL-050					



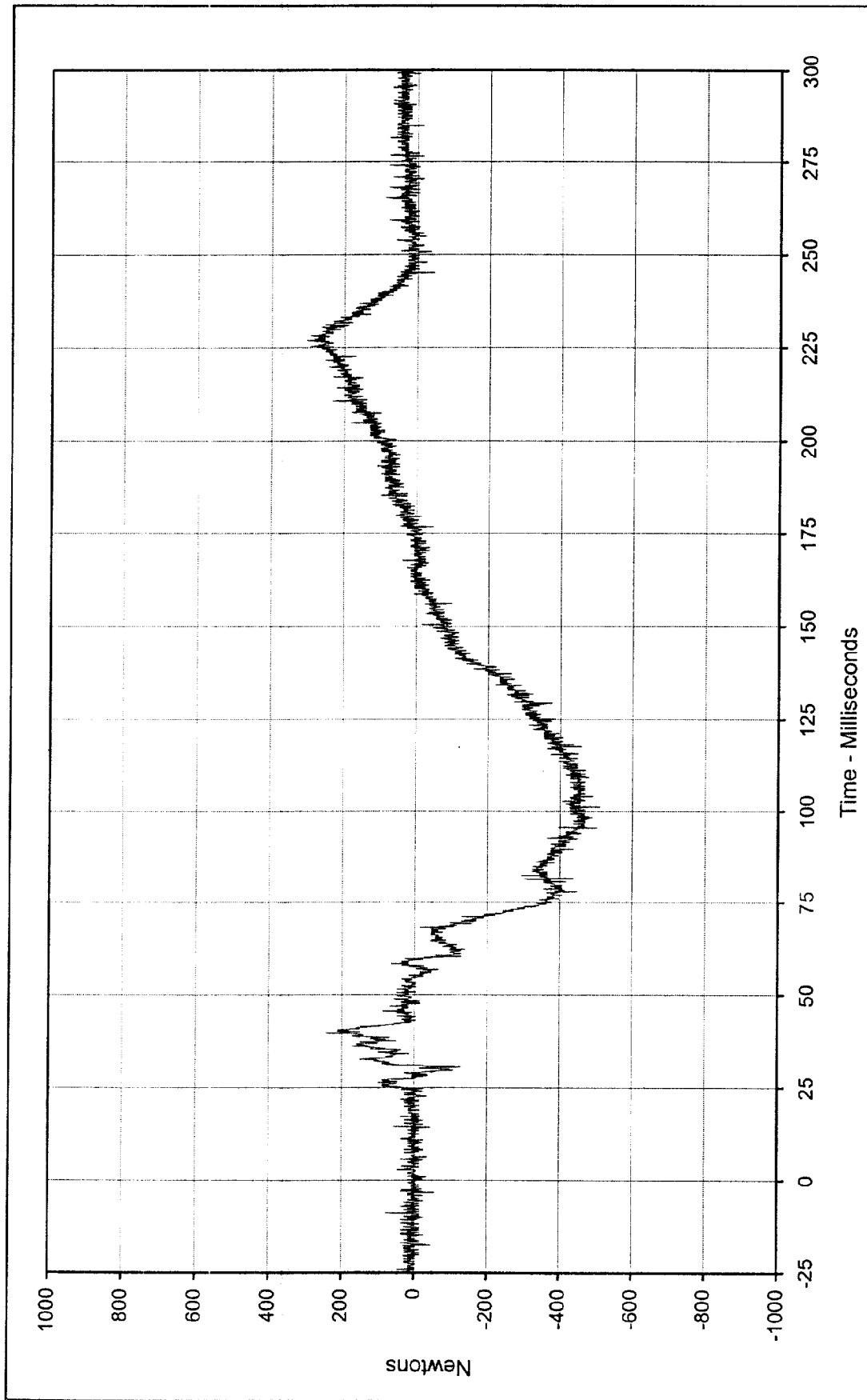




Curve Description: Passenger Head Resultant Redundant
 Maximum Value: 60.4 at 74.9 Milliseconds
 Minimum Value: 0.1 at 0.7 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/4/98
 Curve Number: RES-048

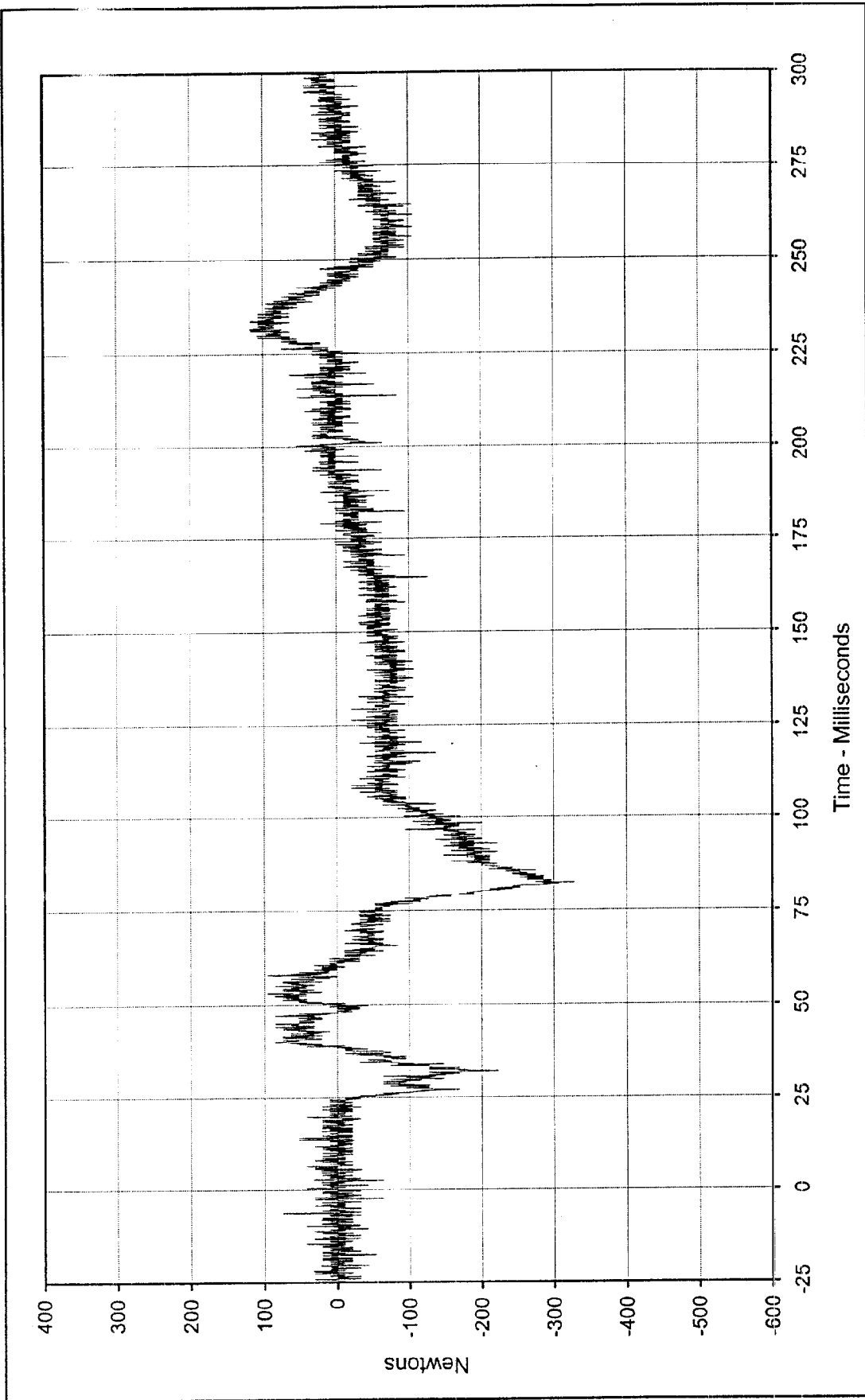
Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description: Passenger Neck Force X Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
Maximum Value: 303.7 at 227.0 Milliseconds Test Vehicle: 1999 Honda Civic DX 4 Door Sedan
Minimum Value: -510.1 at 101.1 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/4/98
Curve Number: FIL-051

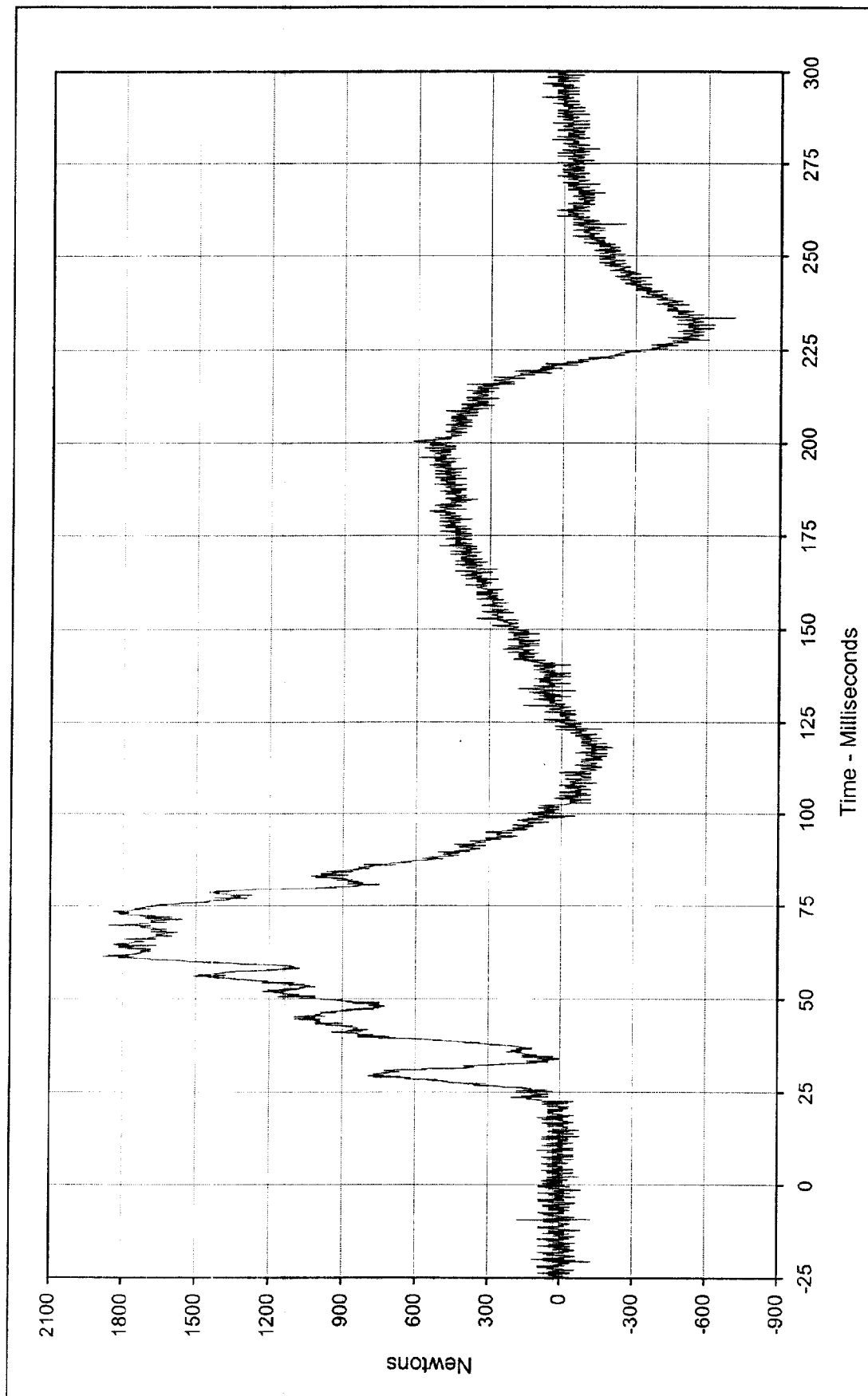




Curve Description: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Program:
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

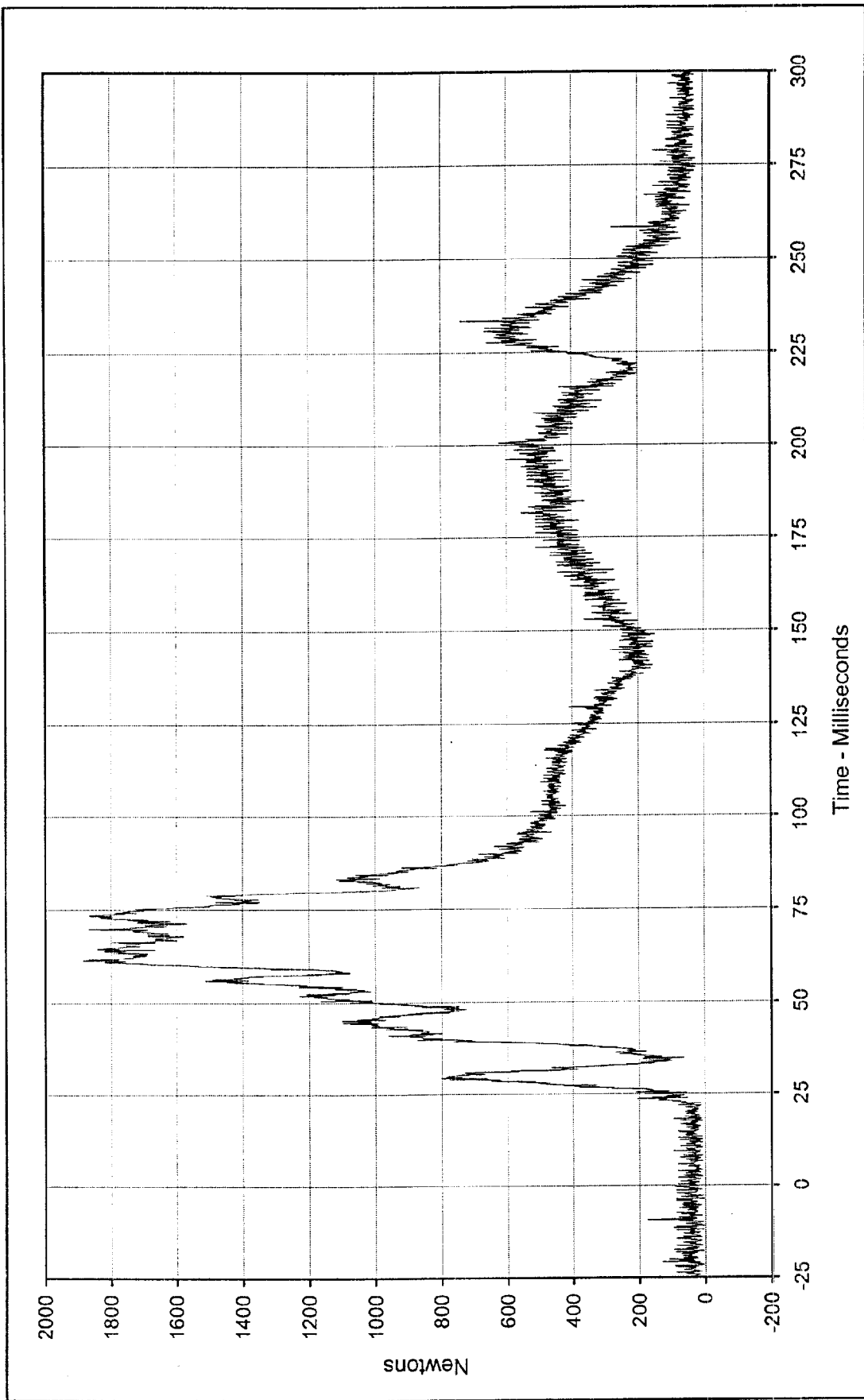
Passenger Neck Force Y
 Maximum Value: 116.4 at 231.2 Milliseconds
 Minimum Value: -328.0 at 82.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/4/98
 Curve Number: FIL-052





Curve Description:	Passenger Neck Force Z			Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	1882.3	at	61.4	Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan
Minimum Value:	-712.9	at	233.5	Milliseconds		
SAE Filter Class:	1000					
Date of Test:	12/4/98					
Curve Number:	FIL-053					

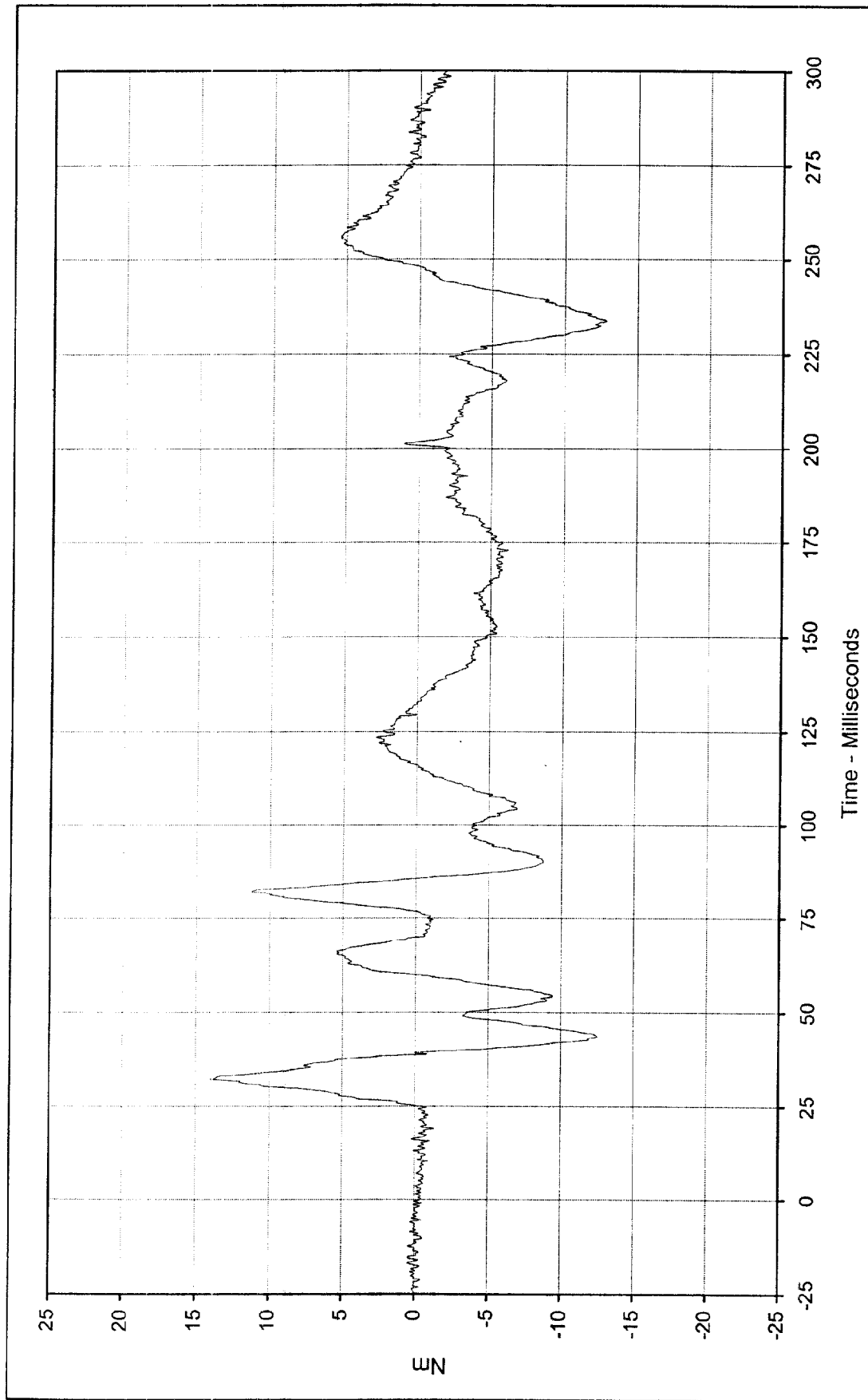




Curve Description: Passenger Neck Force Resultant
Maximum Value: 1884.9 at 61.4 Milliseconds
Minimum Value: 8.4 at 6.5 Milliseconds
SAE Filter Class: 1000
Date of Test: 12/4/98
Curve Number: RES-051

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description: Passenger Neck Moment X

Maximum Value: 14.0 at 32.3 Milliseconds

Minimum Value: -12.9 at 233.9 Milliseconds

SAE Filter Class: 600

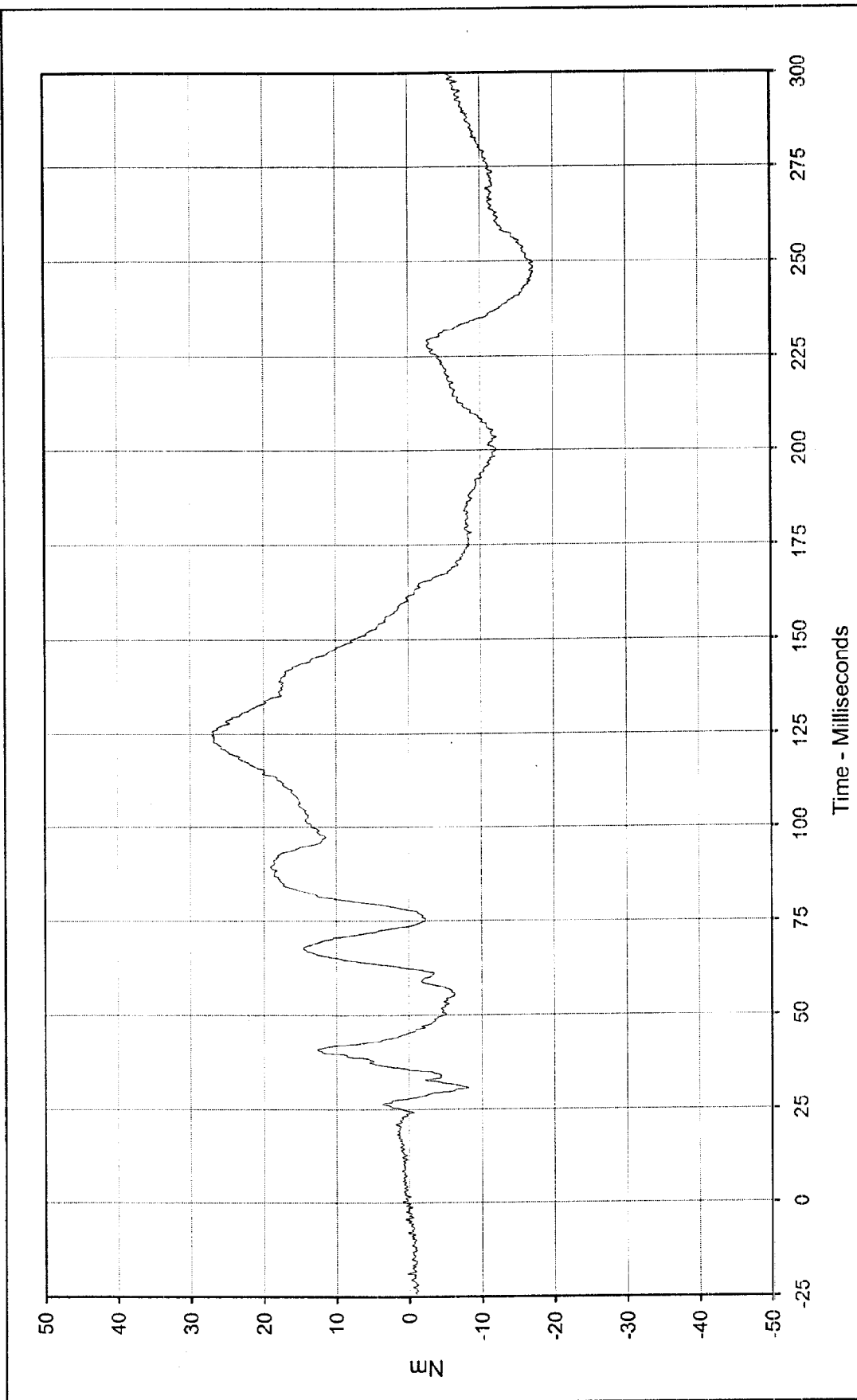
Date of Test: 12/4/98

Curve Number: FIL-054

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

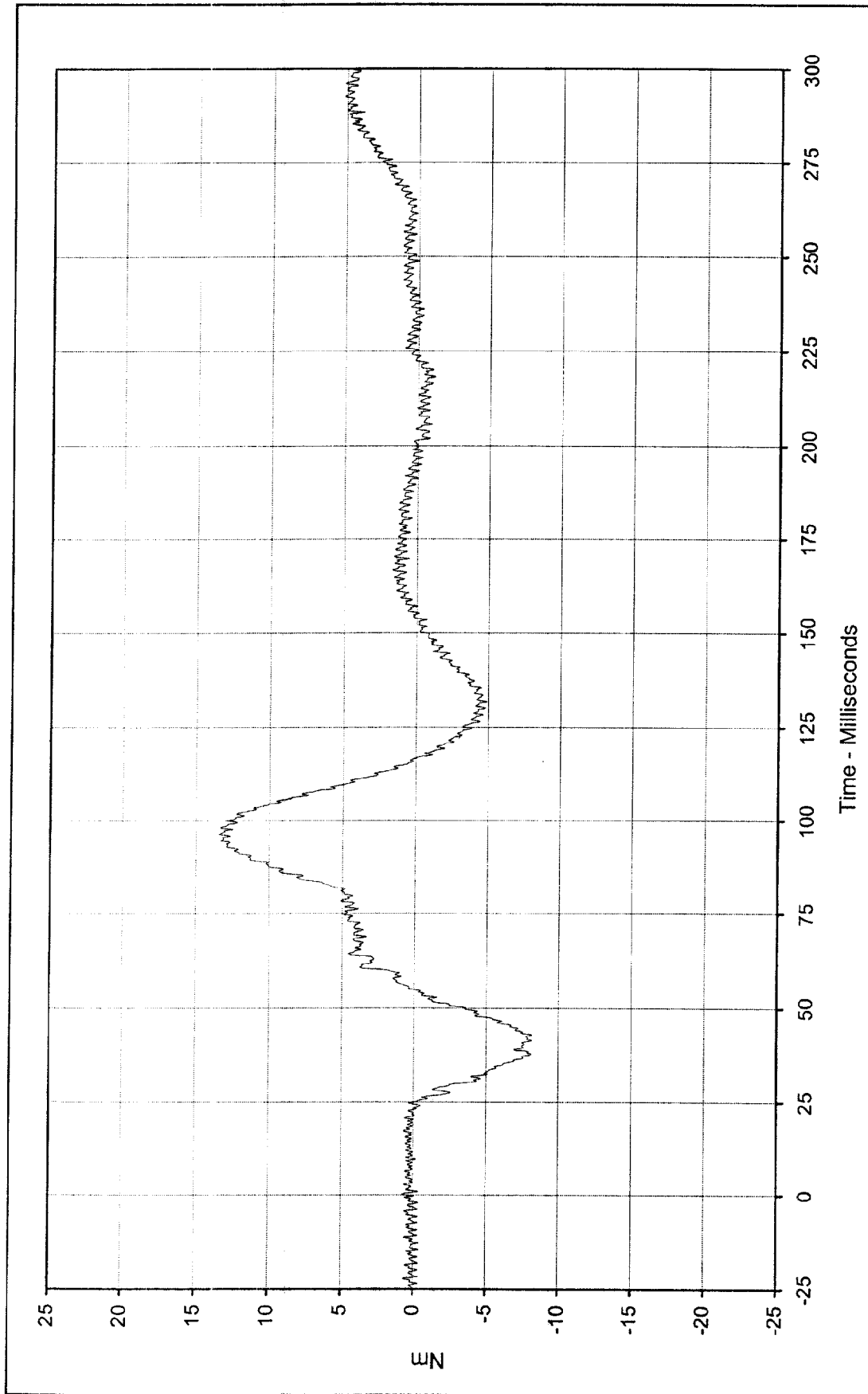




Curve Description: Passenger Neck Moment Y
 Maximum Value: 27.1 at 125.6 Milliseconds
 Minimum Value: -17.4 at 247.2 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/4/98
 Curve Number: FIL-055

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

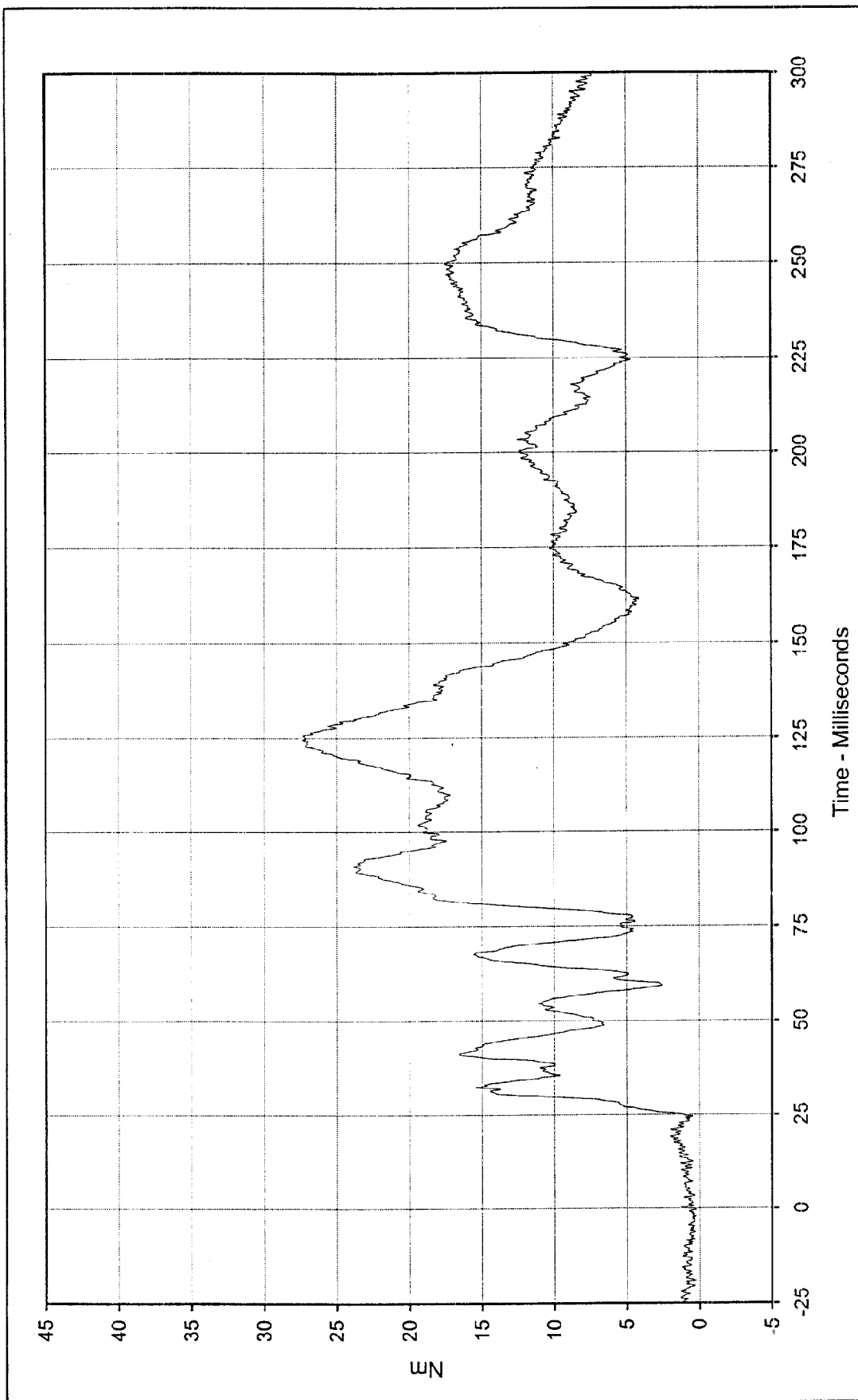




Curve Description:		Passenger Neck Moment Z		Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	13.4	at	96.3	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-8.2	at	41.3			
SAE Filter Class:	600					
Date of Test:	12/4/98					
Curve Number:	FIL-056					

The logo for PKARCO Engineering features the word "PKARCO" in a large, bold, sans-serif font. To the left of the letters "K" and "A" is a circular icon containing a stylized lightbulb. To the right of "PKARCO" is the word "Engineering" in a smaller, italicized, sans-serif font. The entire logo is set against a black rectangular background.

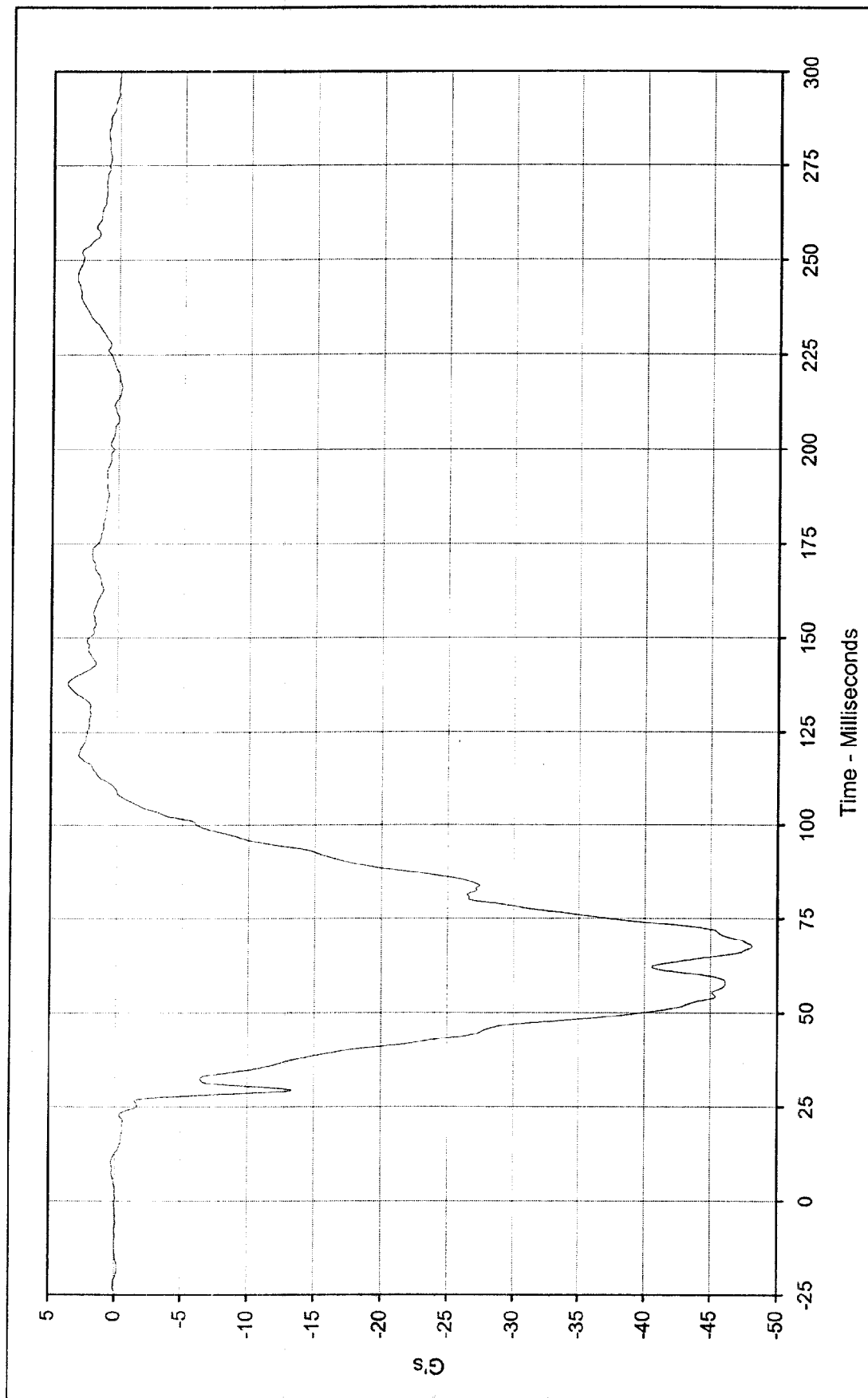




Curve Description: Passenger Neck Moment Resultant
 Maximum Value: 27.3 at 124.6 Milliseconds
 Minimum Value: 0.3 at 3.4 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/4/98
 Curve Number: RES-054

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

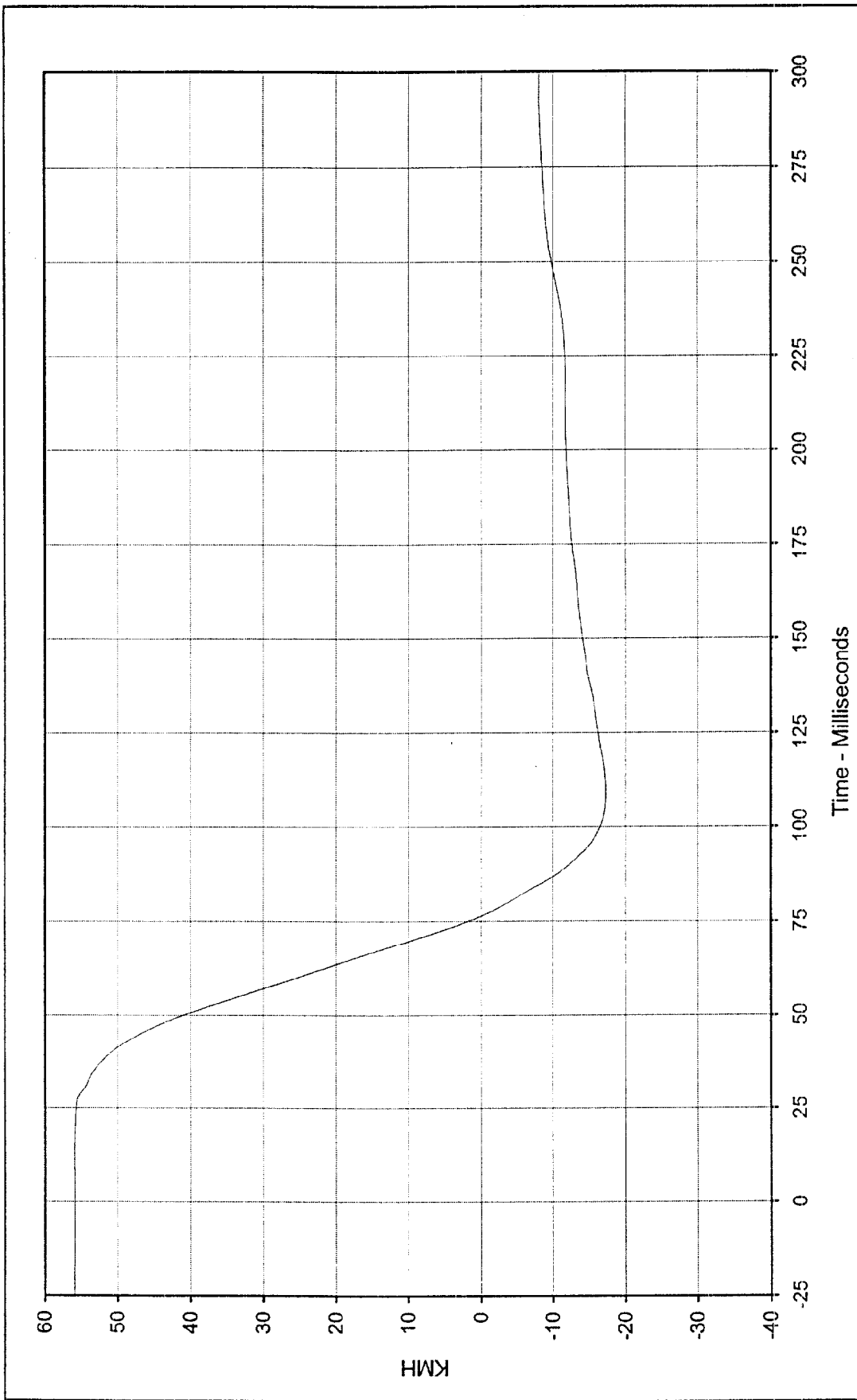




Curve Description:	Passenger Chest Primary X		Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	3.7	at 137.9	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-48.1	at 67.5			
SAE Filter Class:	180				
Date of Test:	12/4/98				
Curve Number:	FIL-057				



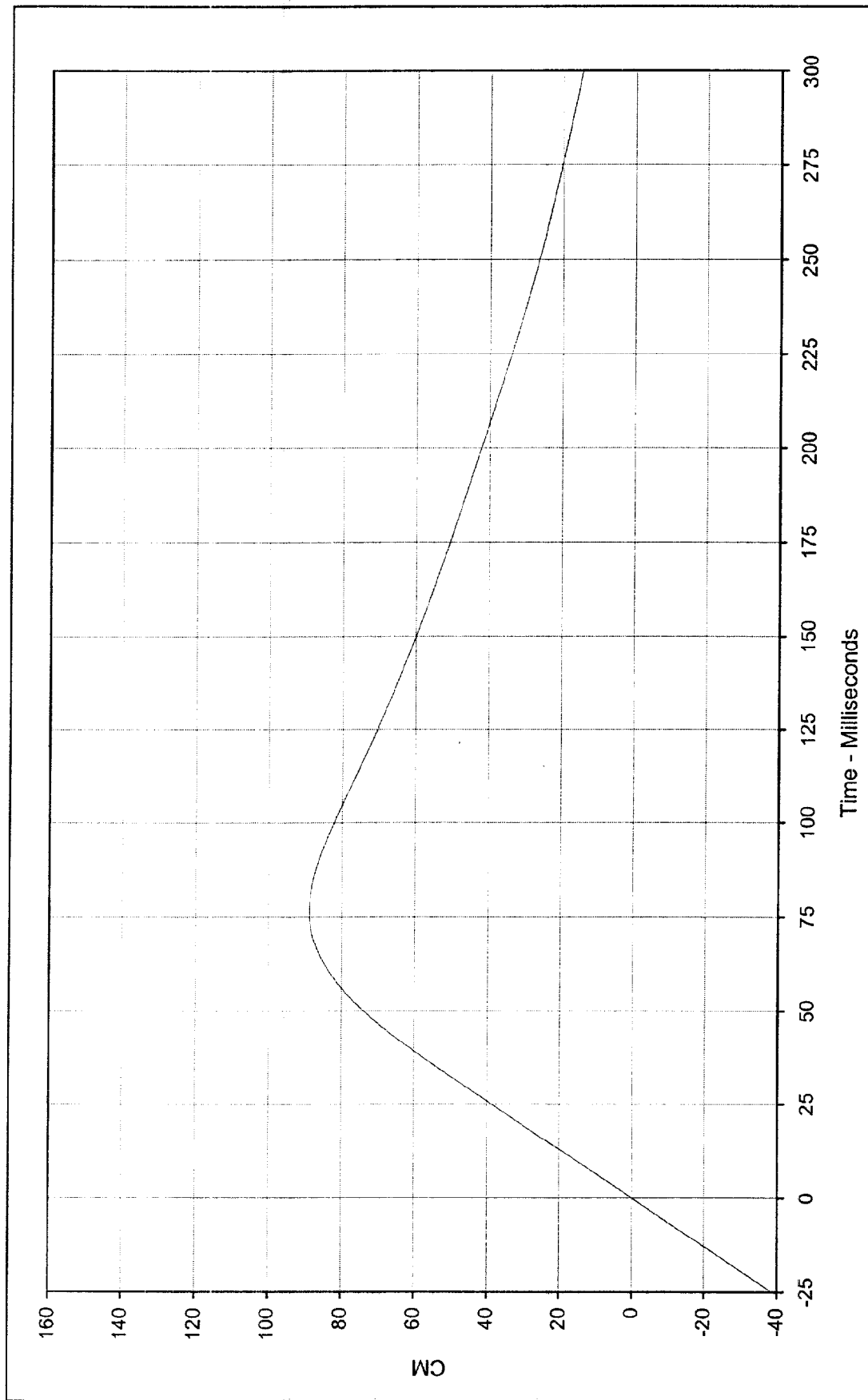




Curve Description: Passenger Chest Primary X Velocity
 Maximum Value: 56.0 at 12.5 Milliseconds
 Minimum Value: -17.3 at 108.9 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/4/98
 Curve Number: IN1-057

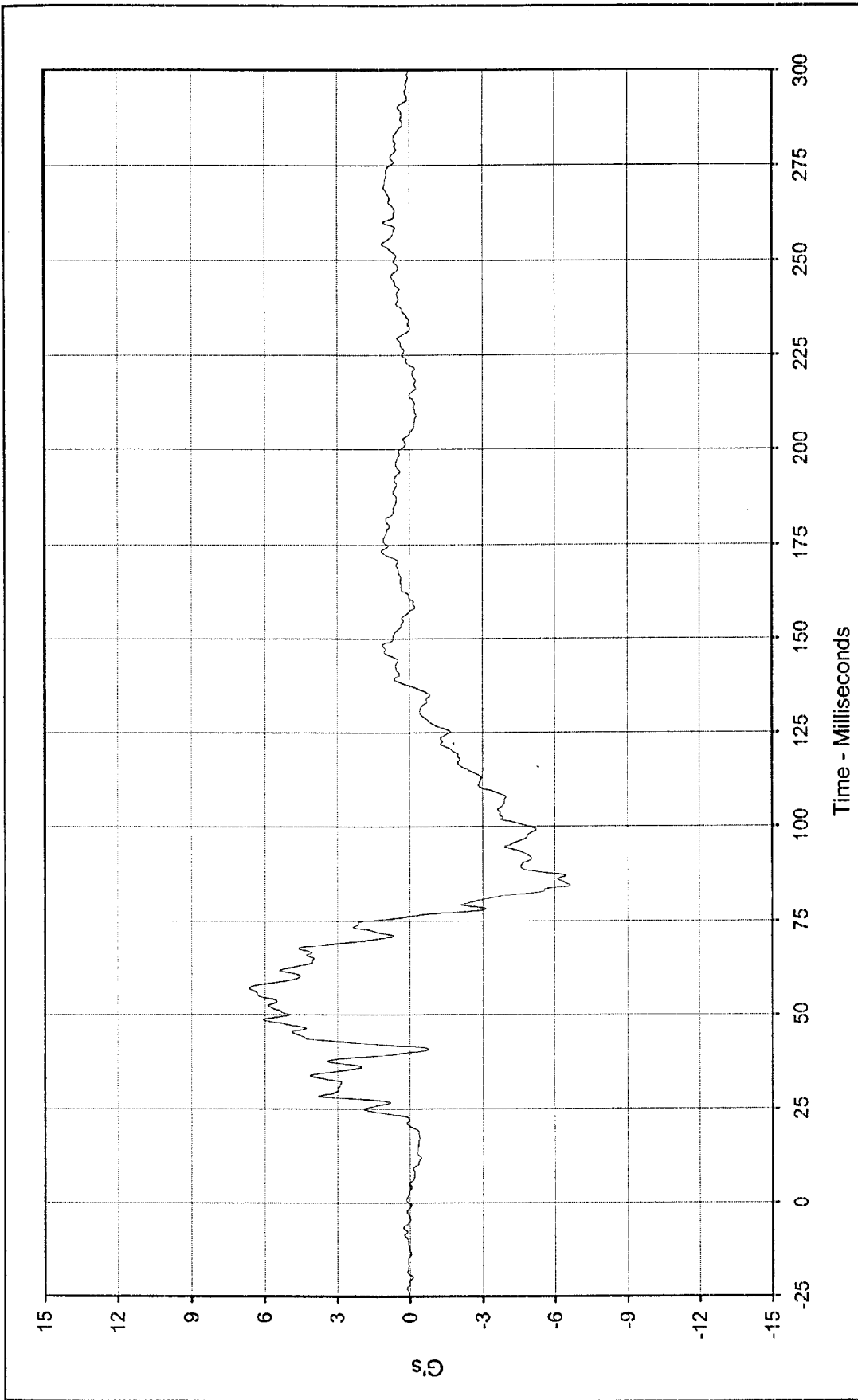
Testing Program 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description:	Passenger Chest Primary X Displ.	Test Program:	1999 NHTSA 35 mph NCAP	No.:	MX5300
Maximum Value:	88.8	at	76.4	Milliseconds	Test Vehicle:
Minimum Value:	0.0	at	0.0	Milliseconds	1999 Honda Civic DX 4 Door Sedan
SAE Filter Class:	180				
Date of Test:	12/4/98				
Curve Number:	IN2-057				

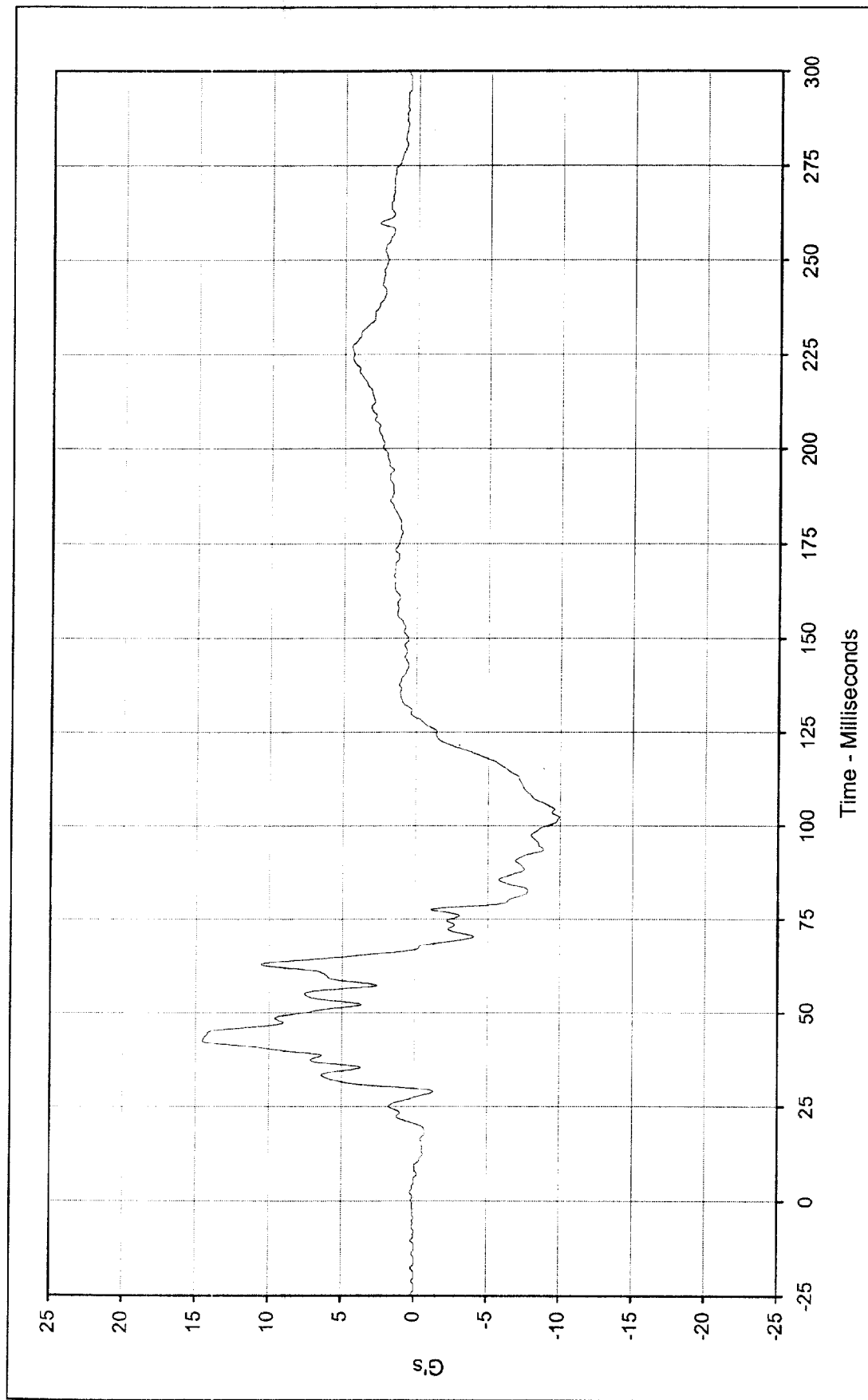




Curve Description: Passenger Chest Primary Y
 Maximum Value: 6.6 at 57.0 Milliseconds
 Minimum Value: -6.6 at 84.2 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/4/98
 Curve Number: FIL-058

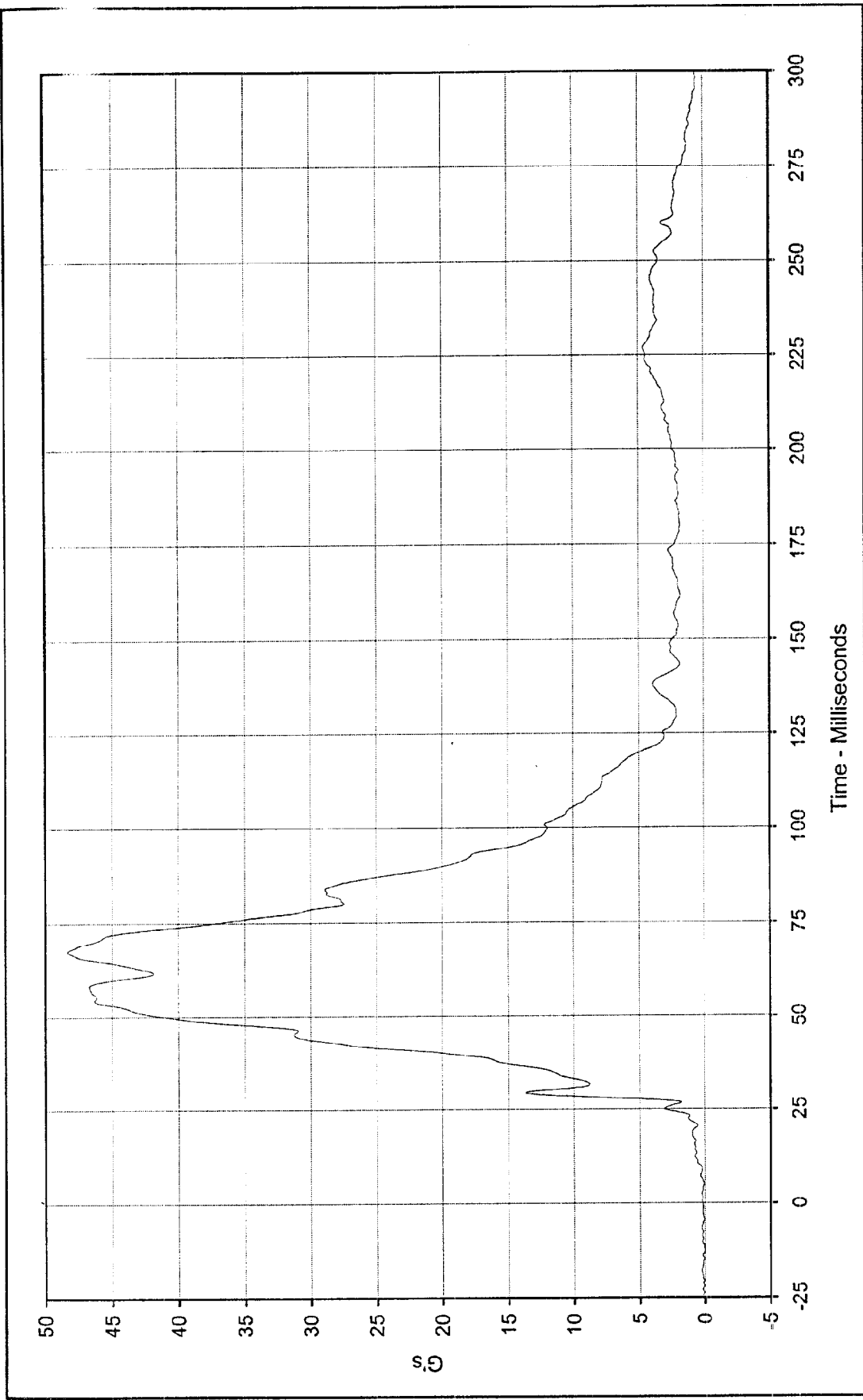
Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description:	Passenger Chest Primary Z	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	14.5 at 42.5 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-9.9 at 102.2 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/4/98			
Curve Number:	FIL-059			

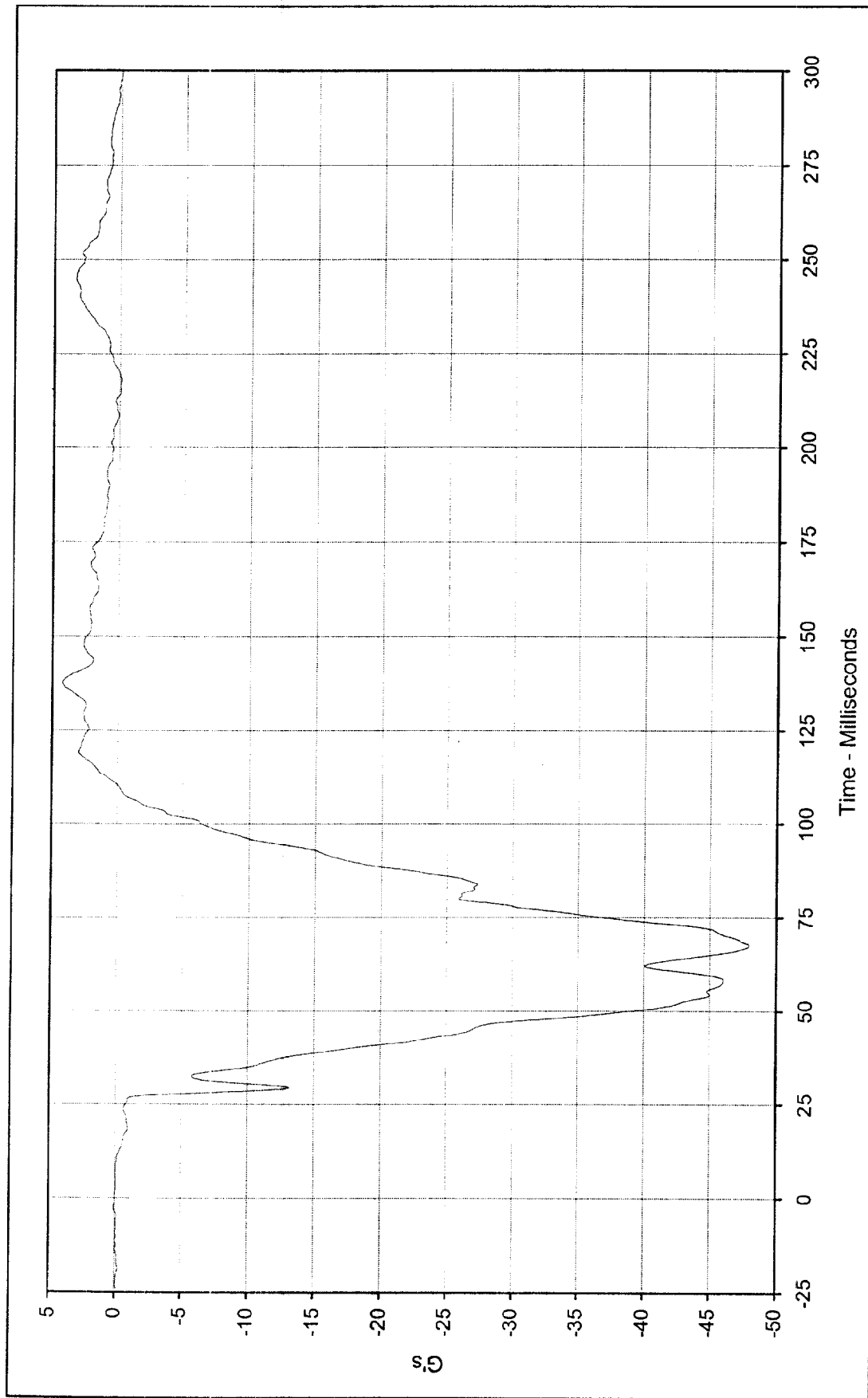




Curve Description: Passenger Chest Resultant Primary
 Maximum Value: 48.3 at 67.5 Milliseconds
 Minimum Value: 0.1 at 4.8 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/4/98
 Curve Number: RES-057

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan



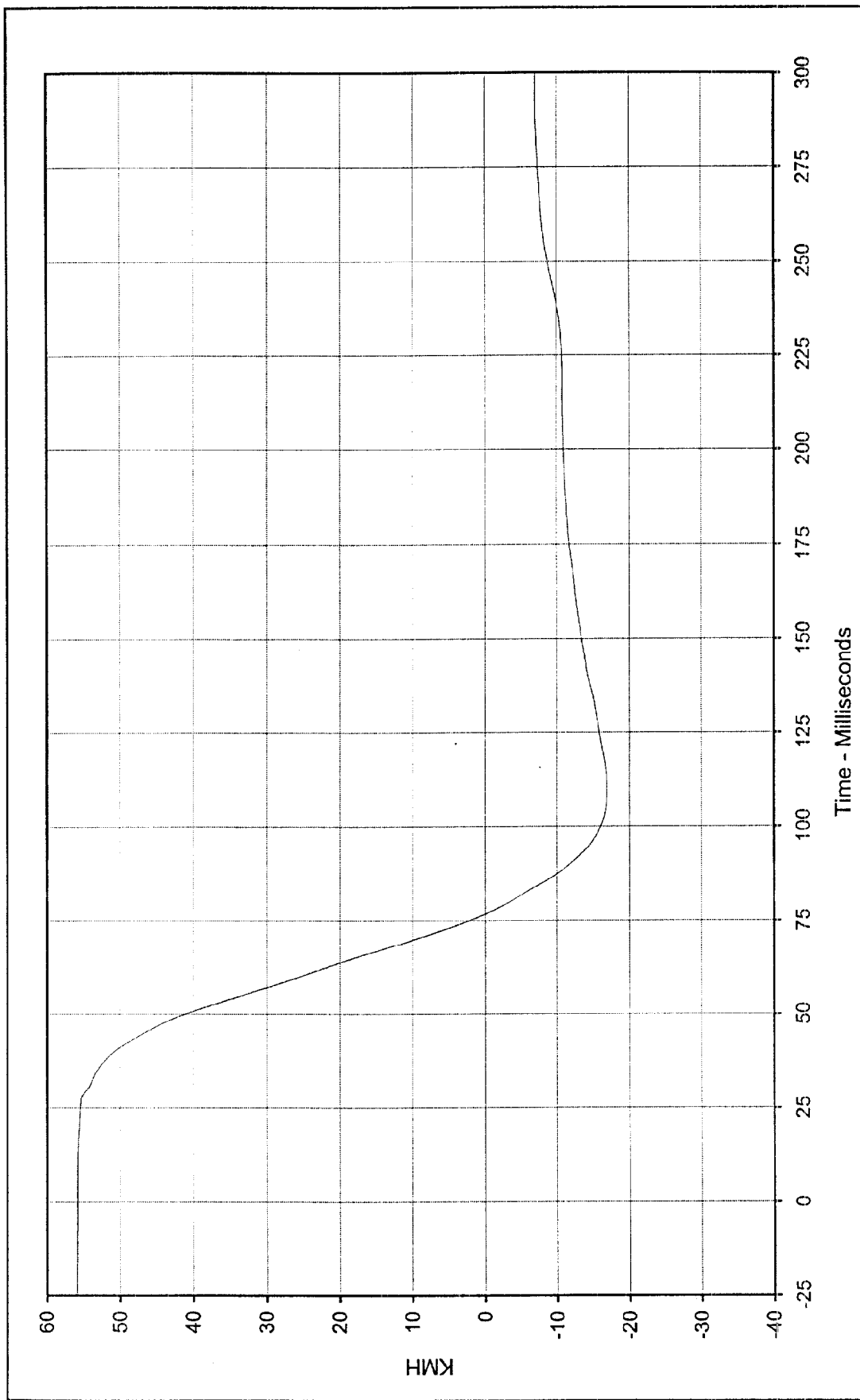


Curve Description:	Passenger Chest Redundant X	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	4.2 at 137.7 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-48.0 at 67.4 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/4/98			
Curve Number:	FIL-060			



KARCO
Engineering





Curve Description: Passenger Chest Redundant X Velocity

Maximum Value: 55.8 at 0.7 Milliseconds

Minimum Value: -16.9 at 110.2 Milliseconds

SAE Filter Class: 180

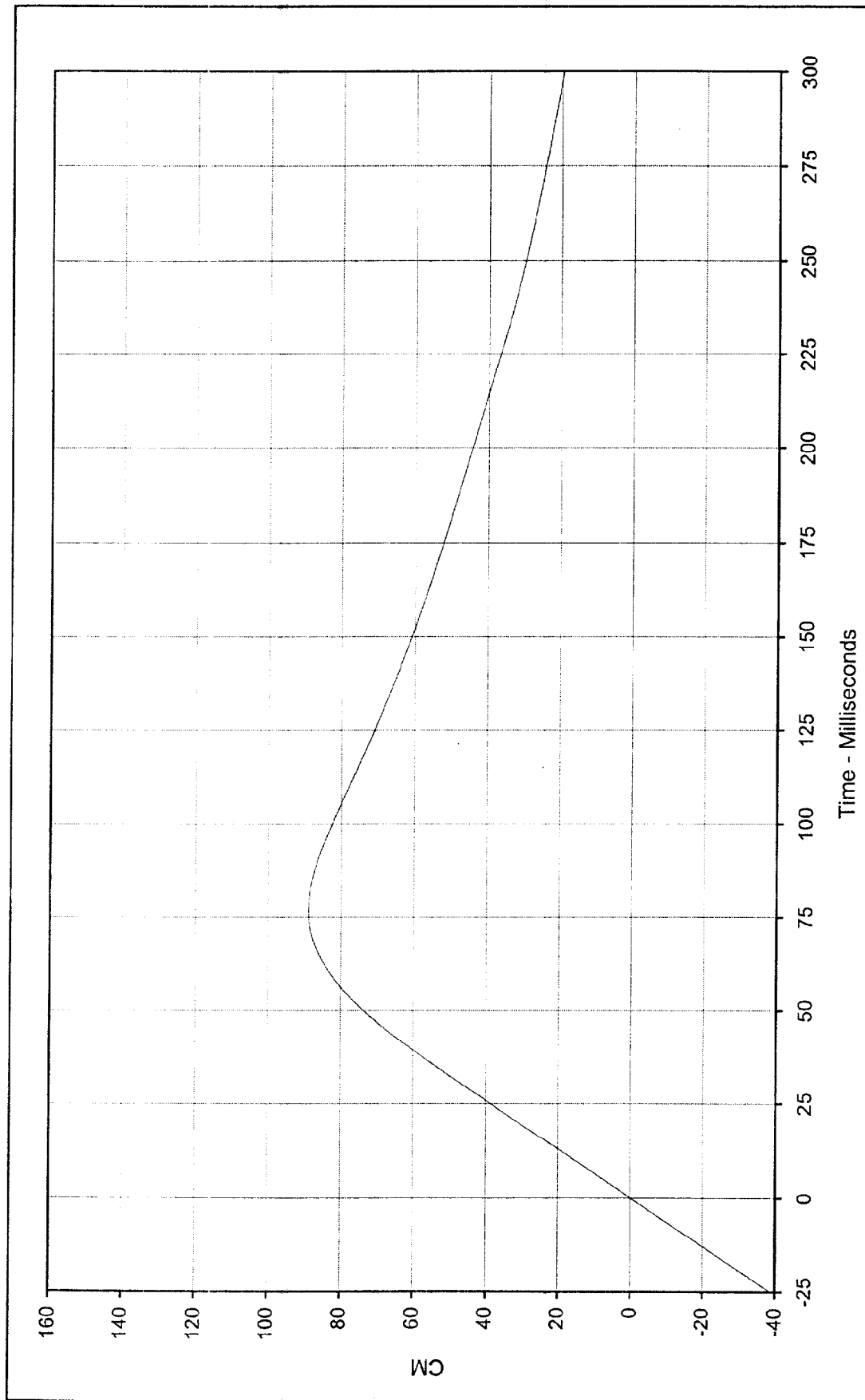
Date of Test: 12/4/98

Curve Number: IN1-060

Testing Program 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description: Passenger Chest Redundant X Displ.

Maximum Value: 88.8 at 76.7 Milliseconds

Minimum Value: -0.1 at 0.0 Milliseconds

SAE Filter Class: 180

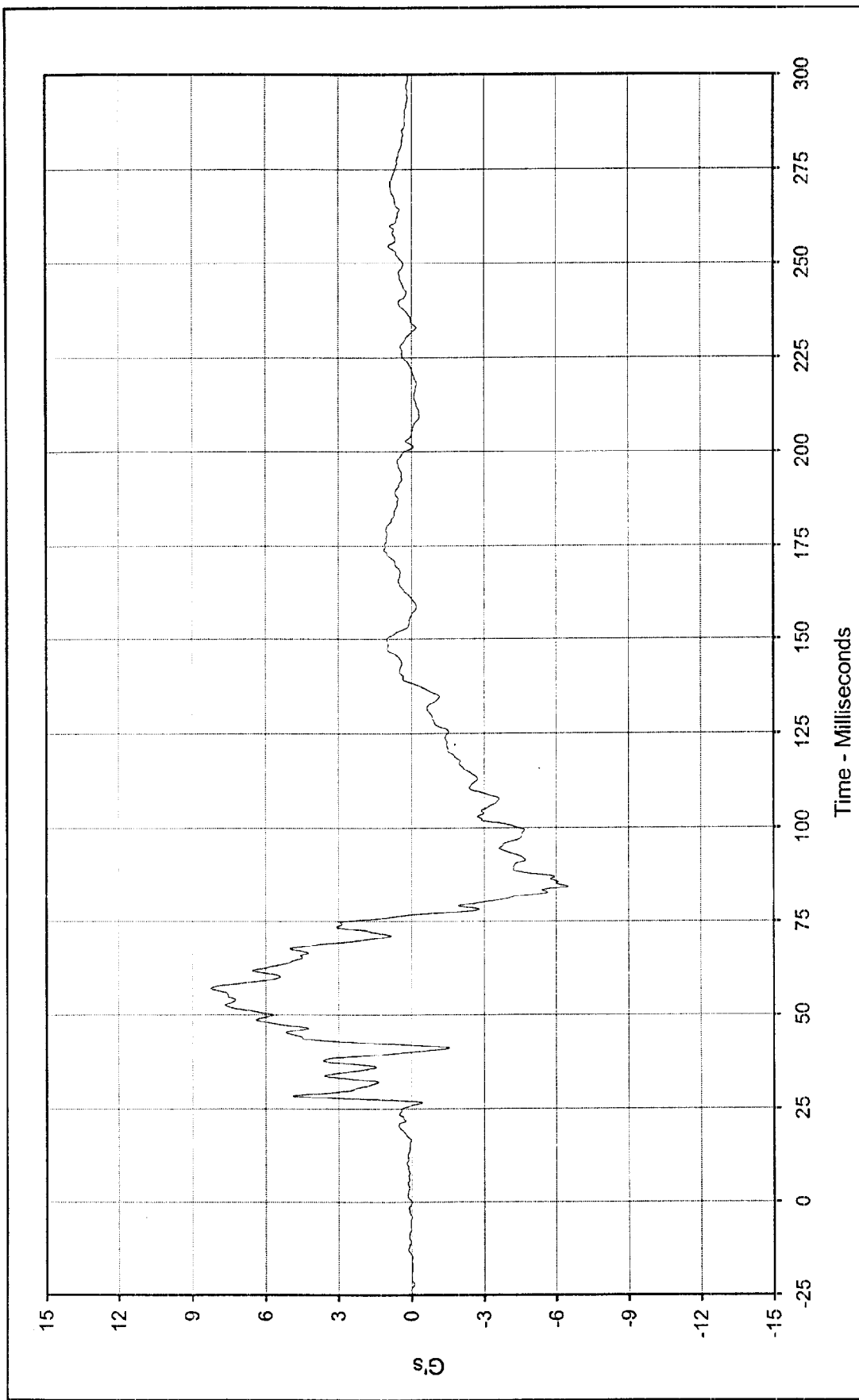
Date of Test: 12/4/98

Curve Number: IN2-060

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

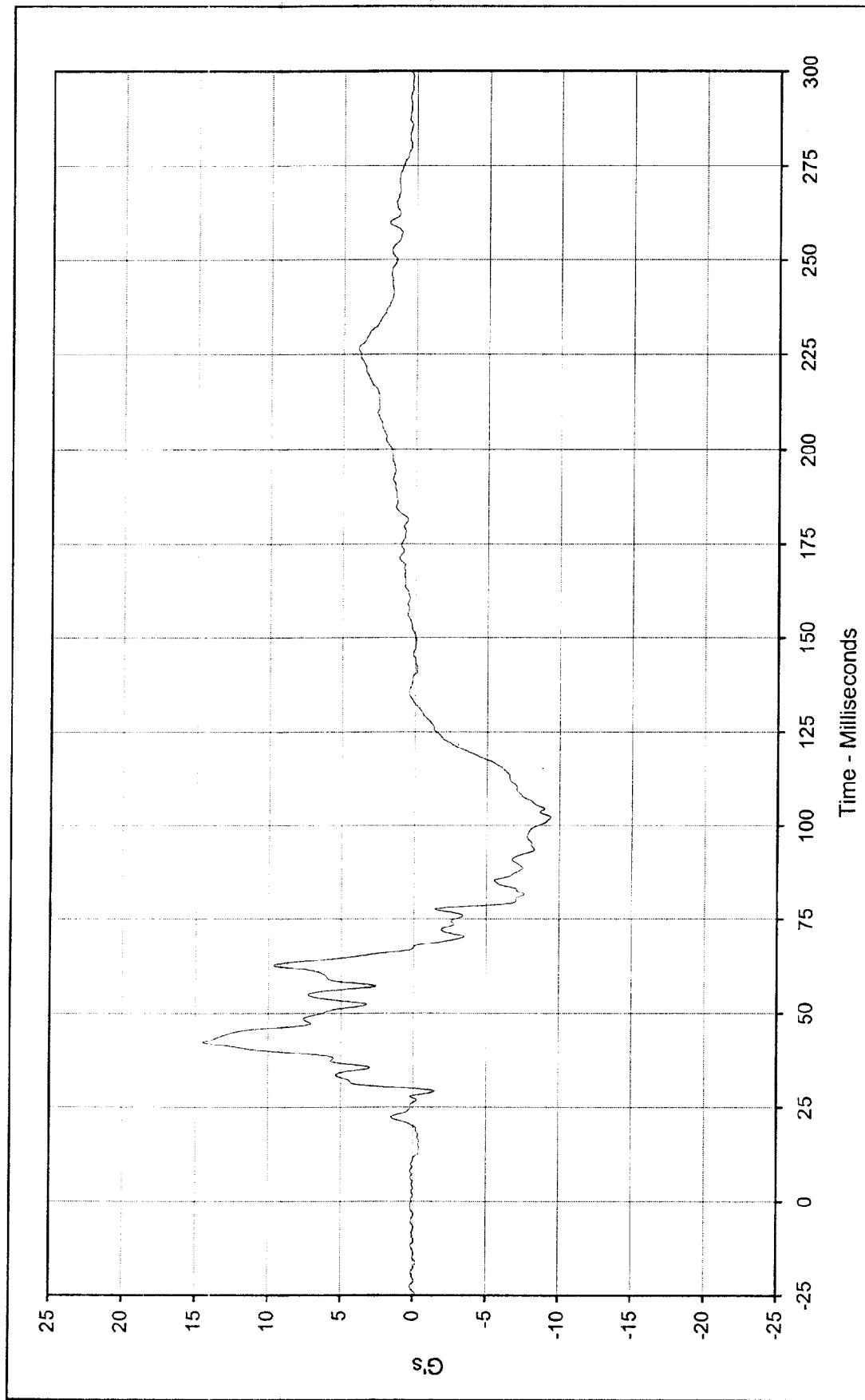




Curve Description: Passenger Chest Redundant Y
 Maximum Value: 8.2 at 57.2 Milliseconds
 Minimum Value: -6.5 at 84.1 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/4/98
 Curve Number: FIL-061

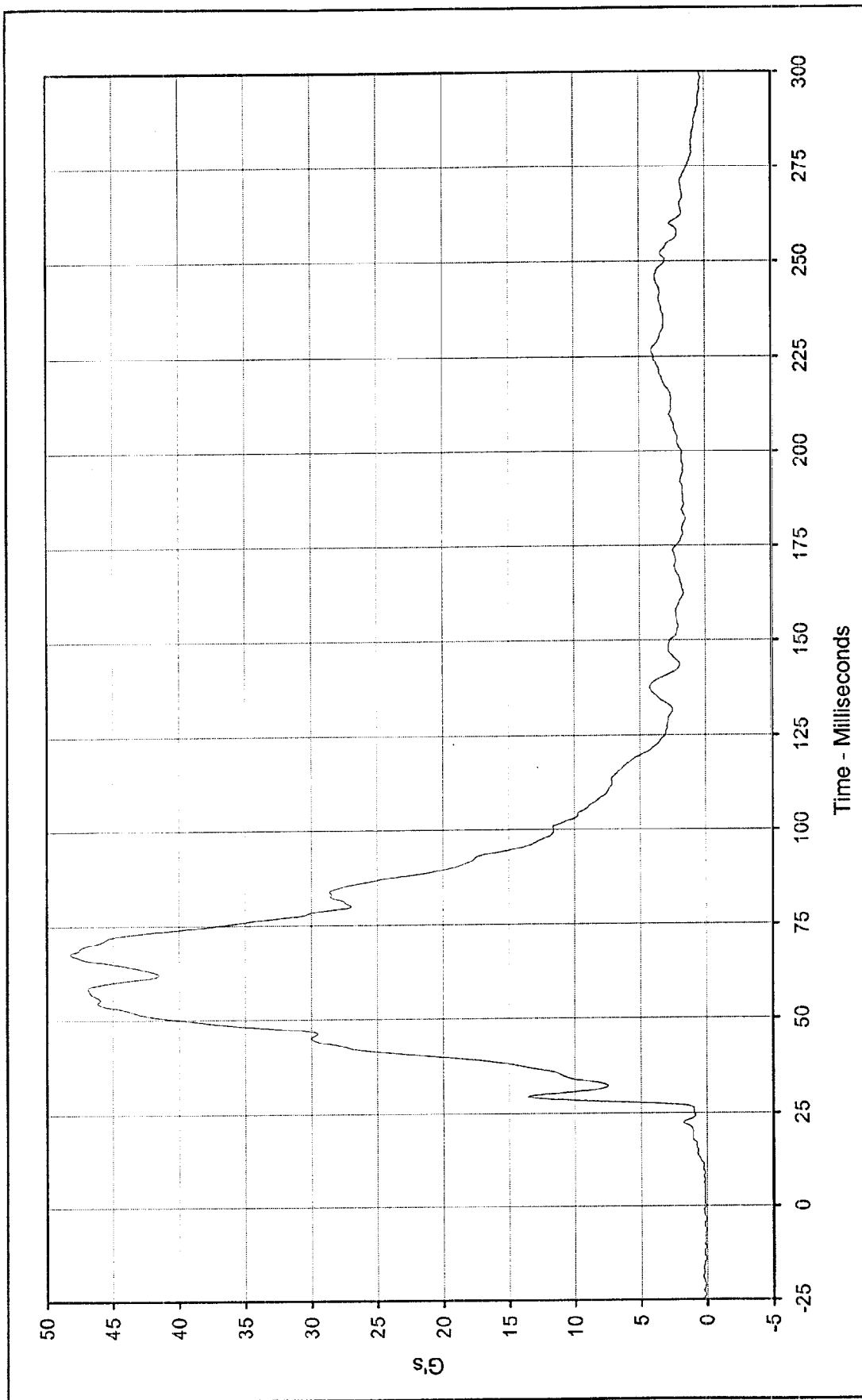
Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description:	Passenger Chest Redundant Z	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	14.5	at	42.2	Milliseconds
Minimum Value:	-9.4	at	102.1	Milliseconds
SAE Filter Class:	180	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Date of Test:	12/4/98			
Curve Number:	FIL-062			





Curve Description: Passenger Chest Resultant Redundant

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Maximum Value: 48.2 at 67.5 Milliseconds

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

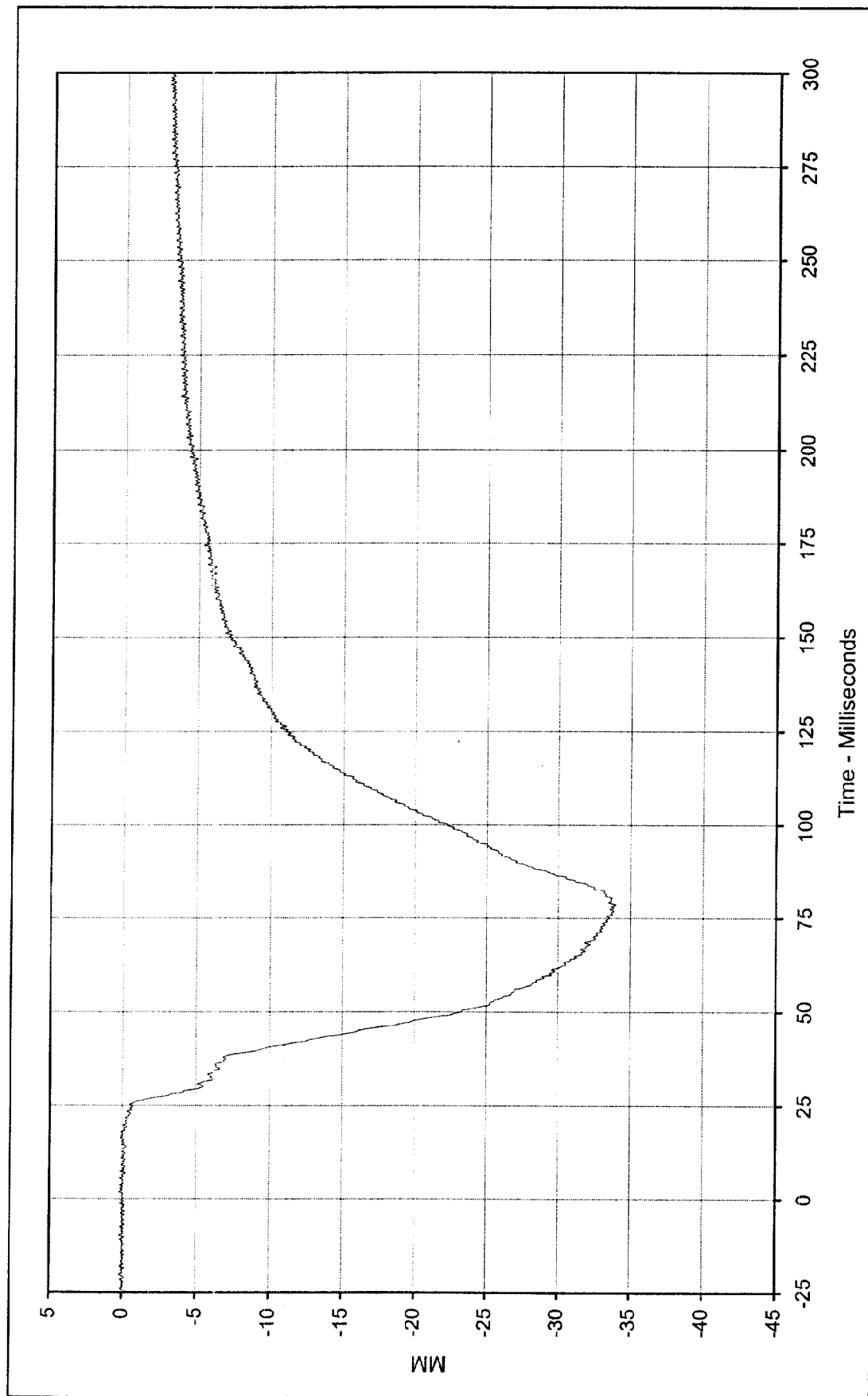
Minimum Value: 0.1 at 0.1 Milliseconds

SAE Filter Class: 180

Date of Test: 12/4/98

Curve Number: RES-060

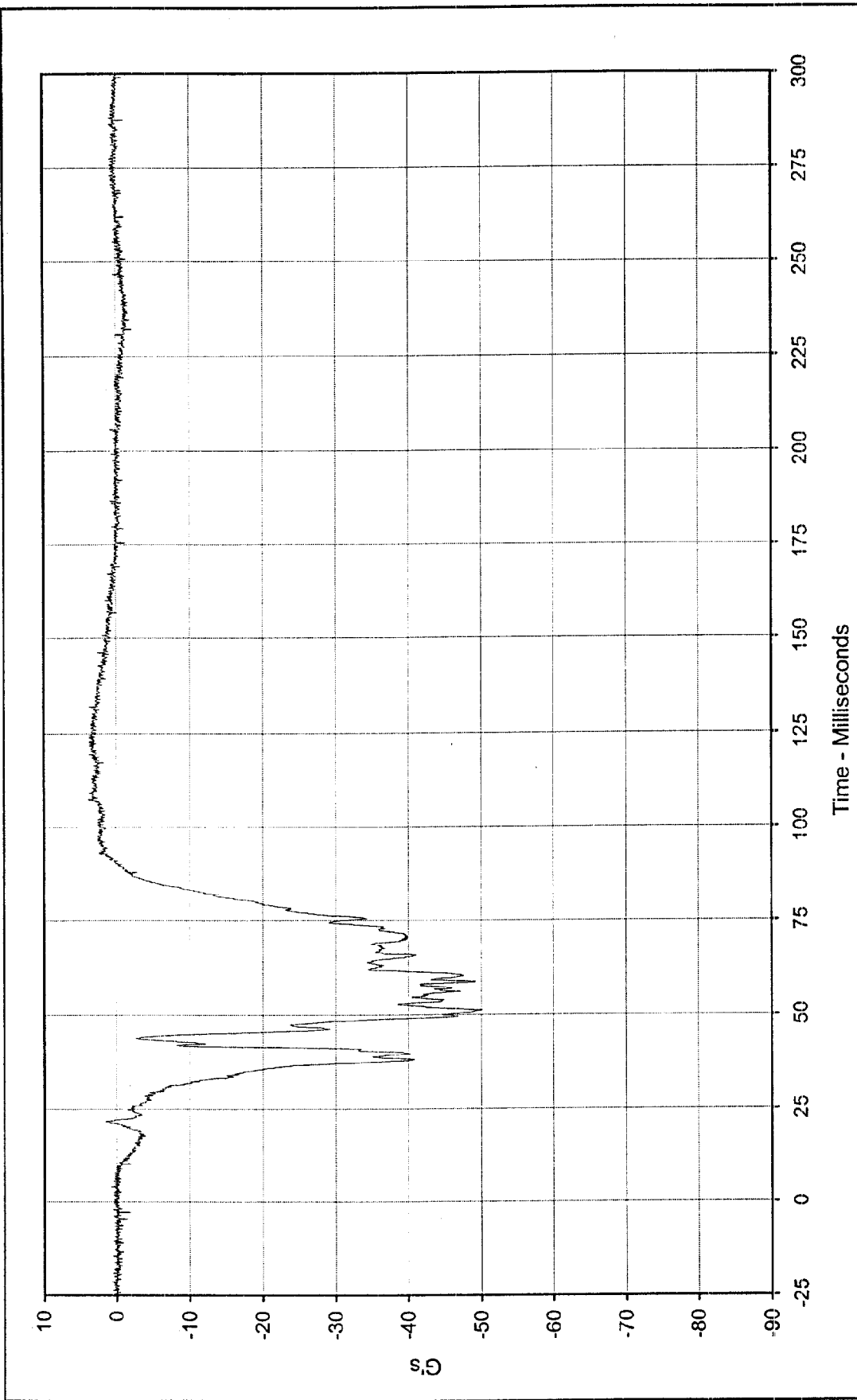




Curve Description: Passenger Chest Displacement X
 Maximum Value: 0.2 at 1.9 Milliseconds
 Minimum Value: -34.0 at 78.6 Milliseconds
 SAE Filter Class: 600
 Date of Test: 12/4/98
 Curve Number: FIL-063

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

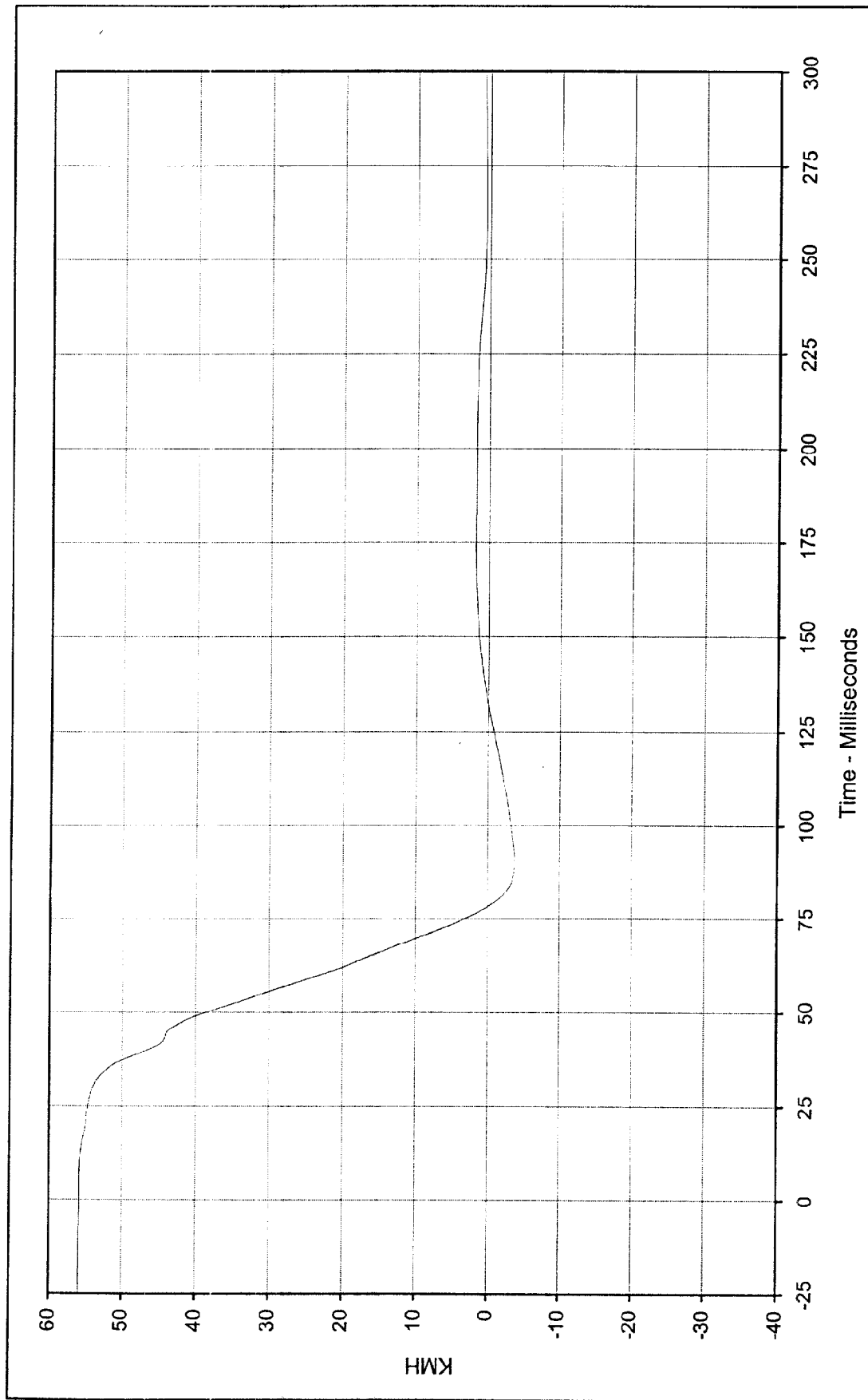




Curve Description: Passenger Pelvis X
 Maximum Value: 3.9 at 107.4 Milliseconds
 Minimum Value: -50.2 at 51.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/4/98
 Curve Number: FIL-064

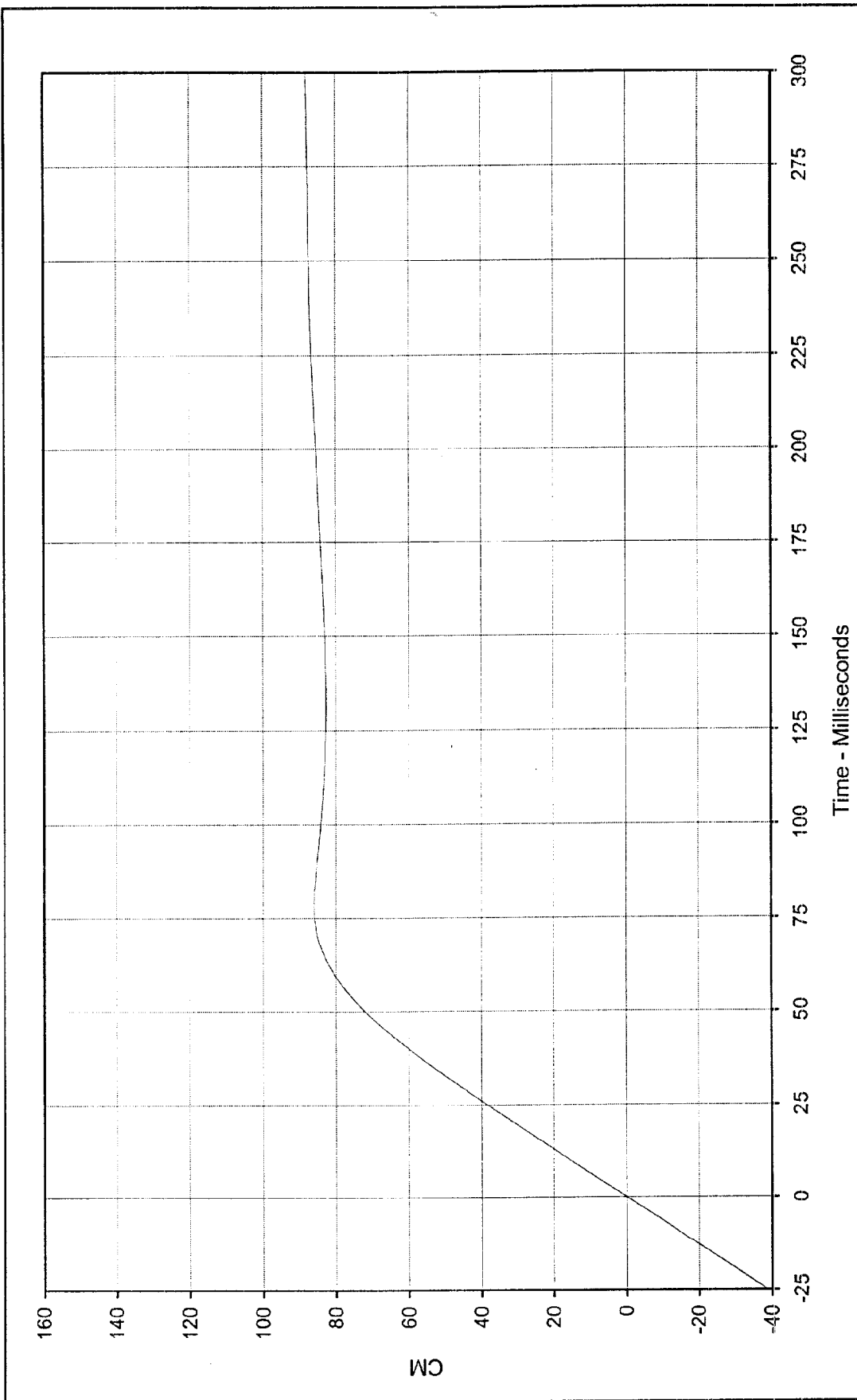
Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description:	Passenger Pelvis X Velocity	Testing Program	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	55.8	at	0.7	Milliseconds
Minimum Value:	-3.8	at	90.3	Milliseconds
SAE Filter Class:	180			
Date of Test:	12/4/98	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Curve Number:	IN1-064			

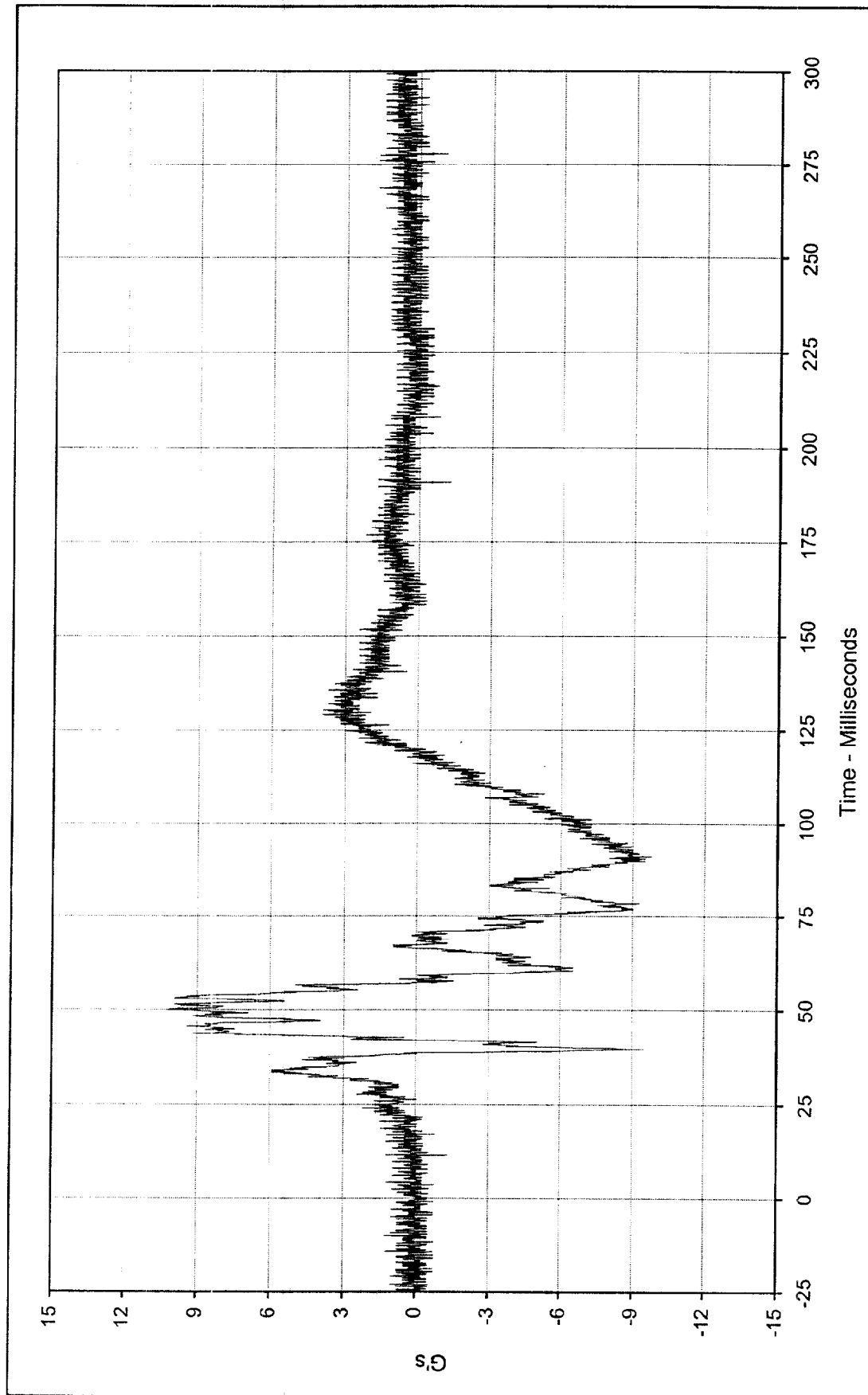




Curve Description: Passenger Pelvis X Displ.
 Maximum Value: 88.1 at 299.9 Milliseconds
 Minimum Value: -0.1 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/4/98
 Curve Number: IN2-064

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





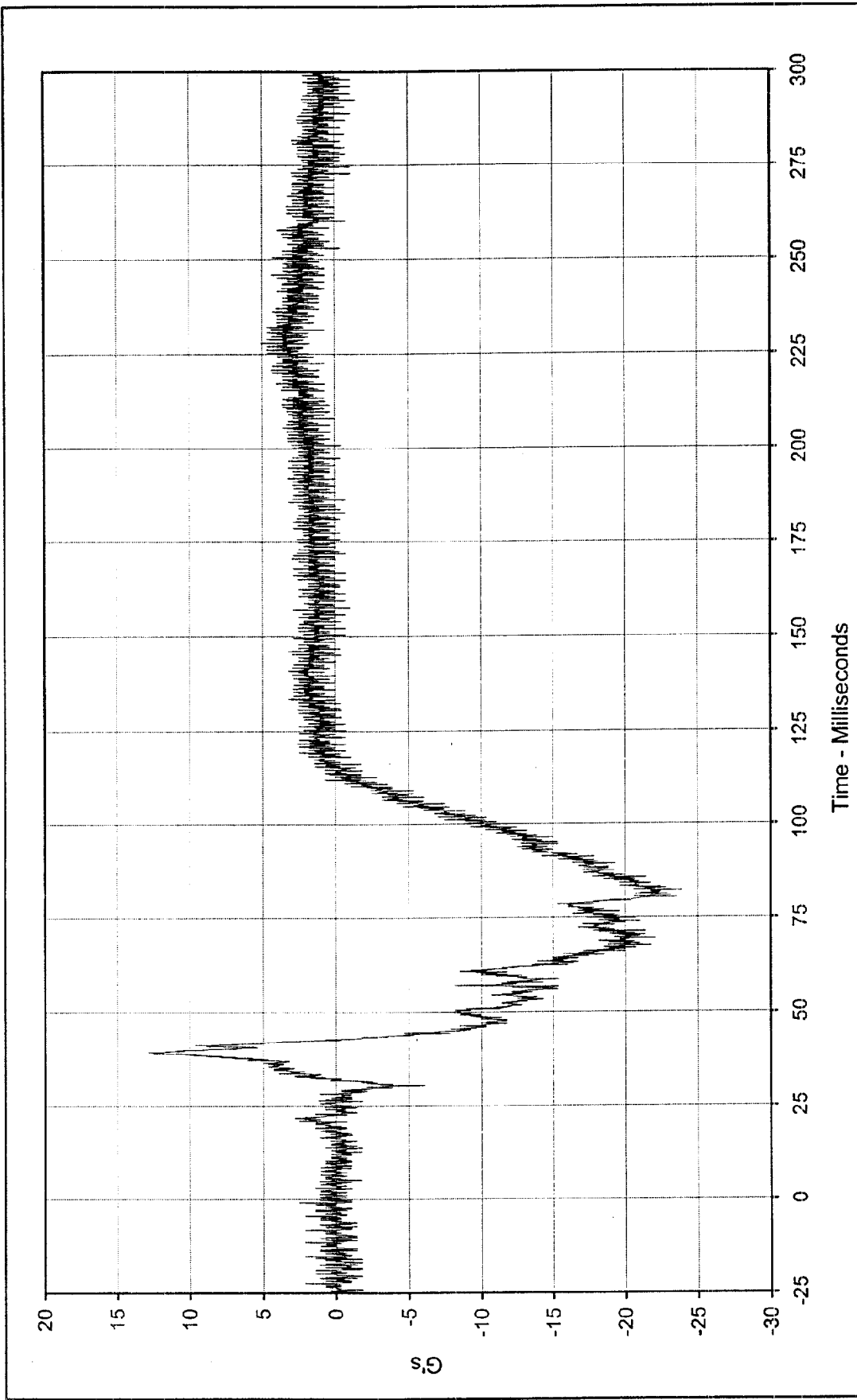
B-98

Curve Description:	Passenger Pelvis Y		Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	10.2	at 50.0	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-9.8	at 90.9			
SAE Filter Class:	1000				
Date of Test:	12/4/98				
Curve Number:	FIL-065				





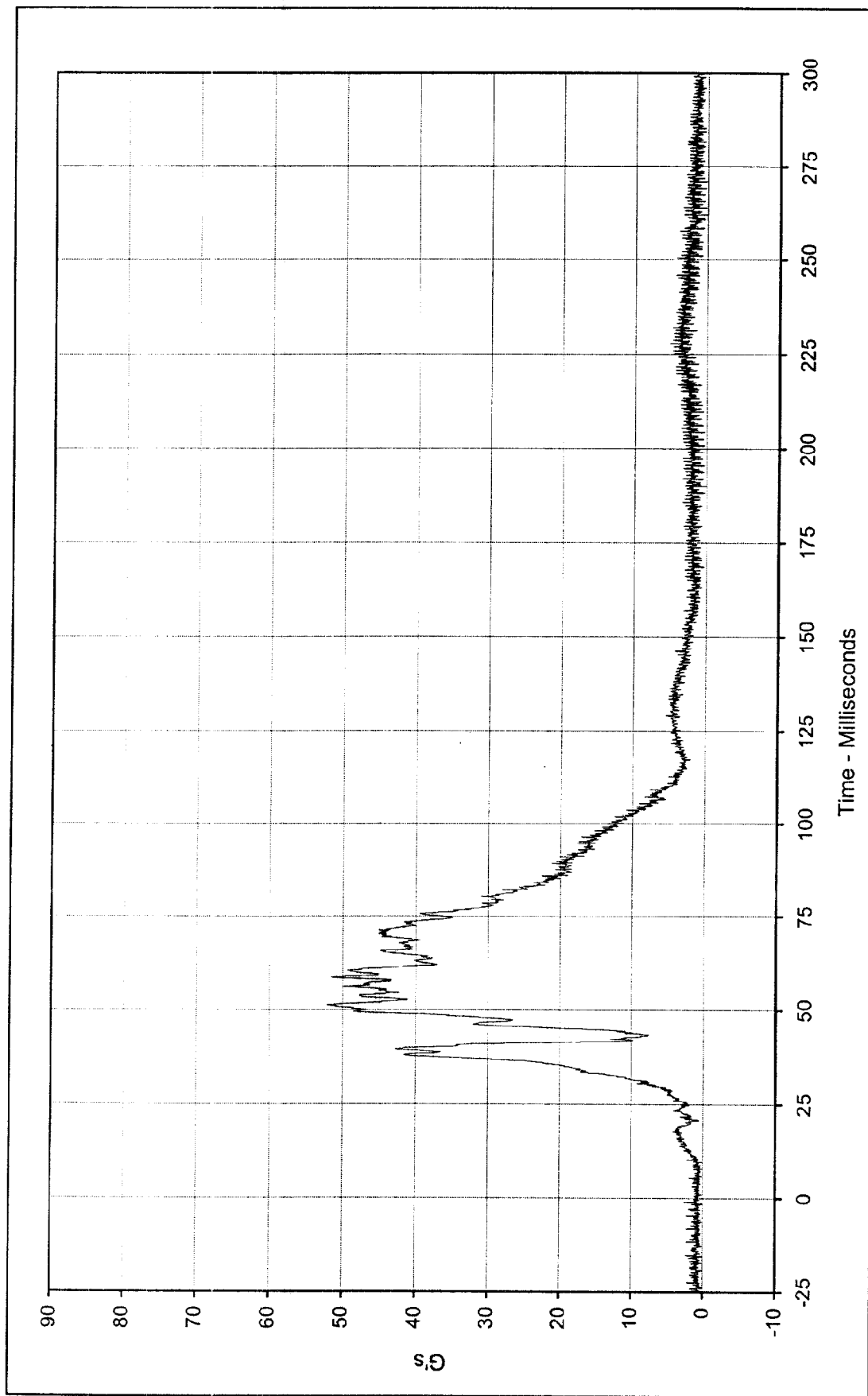
KAR99001-03



Curve Description: Passenger Pelvis Z
 Maximum Value: 12.8 at 39.4 Milliseconds
 Minimum Value: -23.9 at 82.0 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 12/4/98
 Curve Number: FIL-066

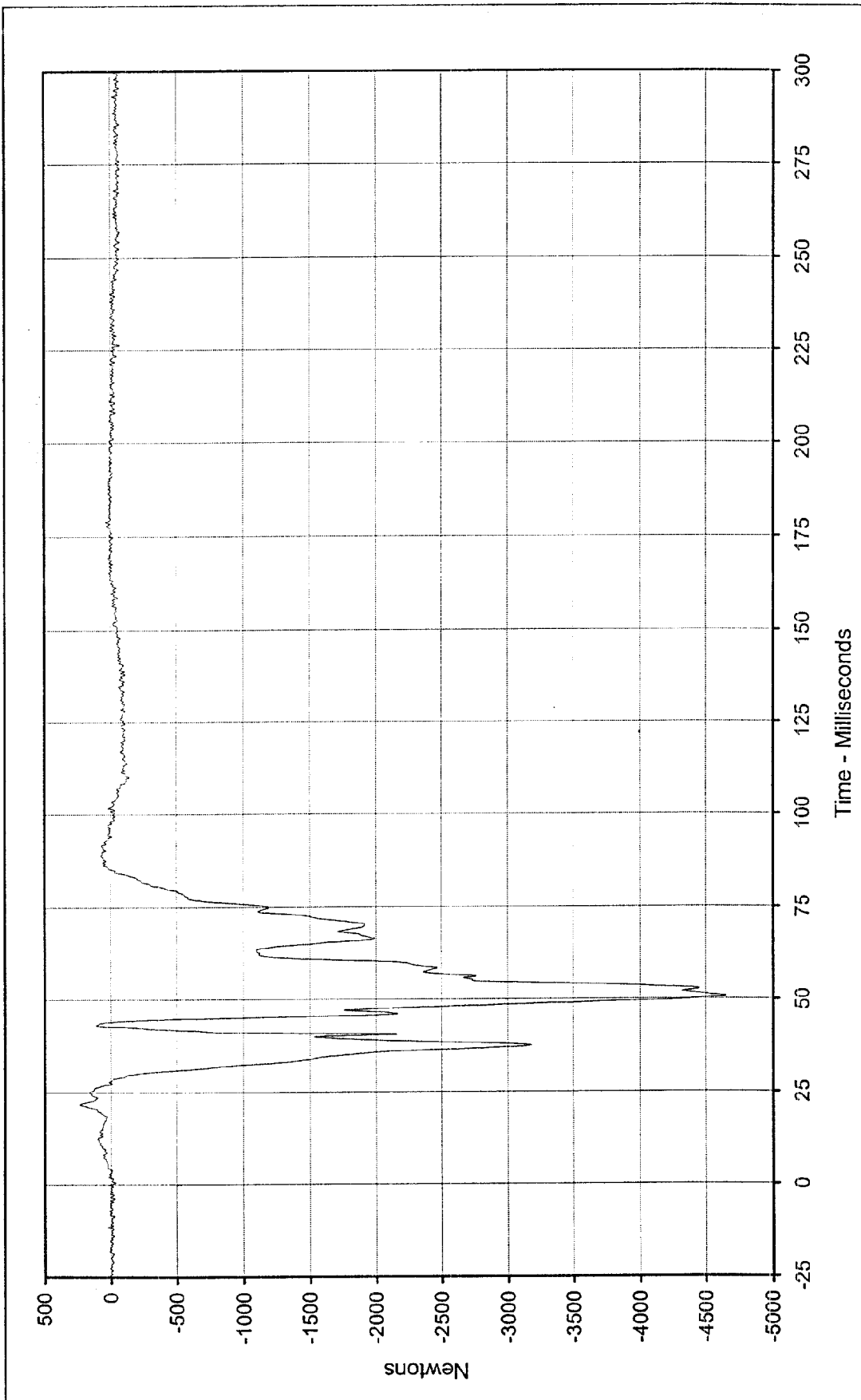
Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description:	Passenger Pelvis Resultant	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	52.1 at 51.2 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	0.1 at 7.8 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/4/98			
Curve Number:	RES-064			

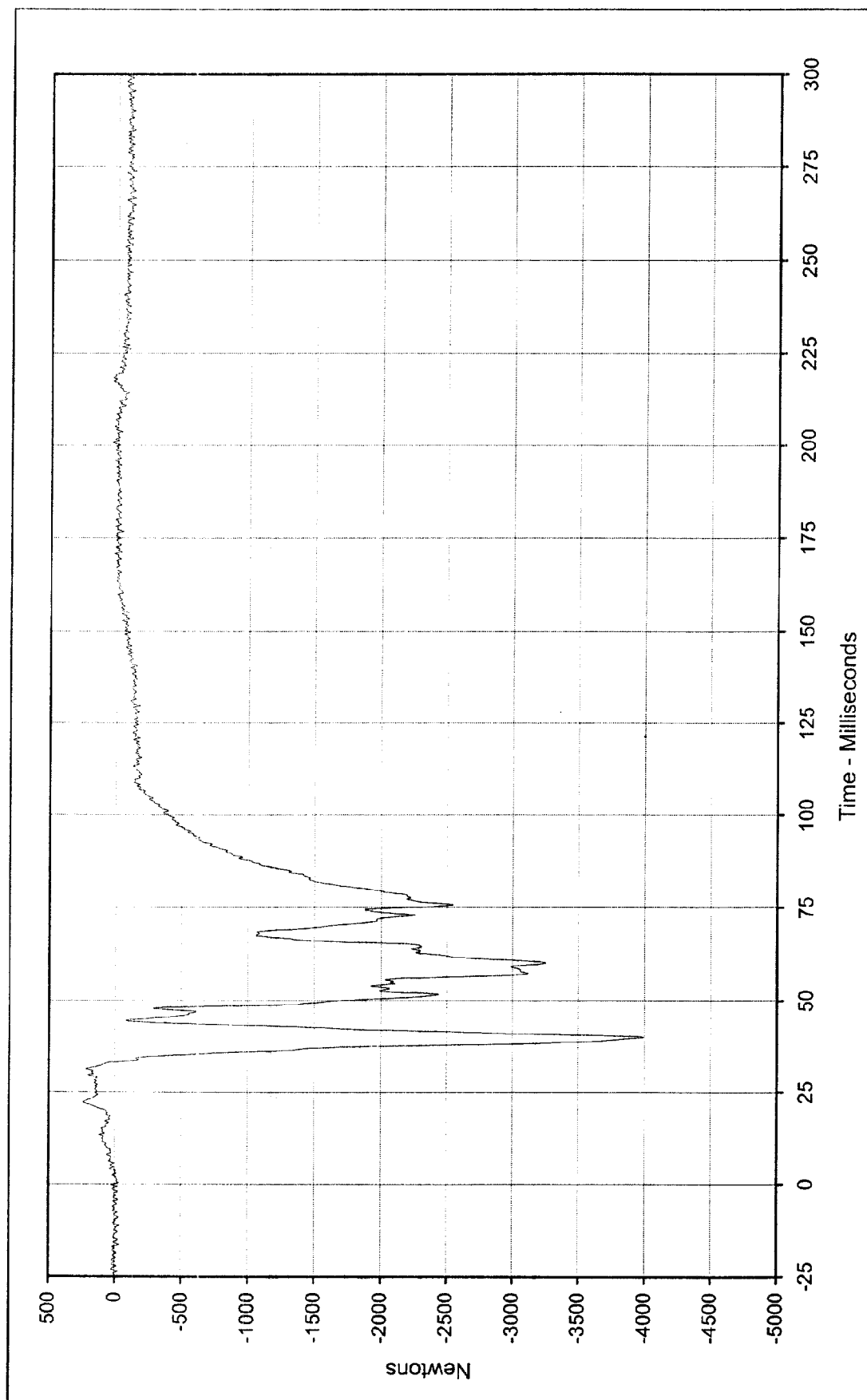




Curve Description:	Passenger Left Femur Force	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	239.7 at 21.6 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-4654.0 at 50.7 Milliseconds			

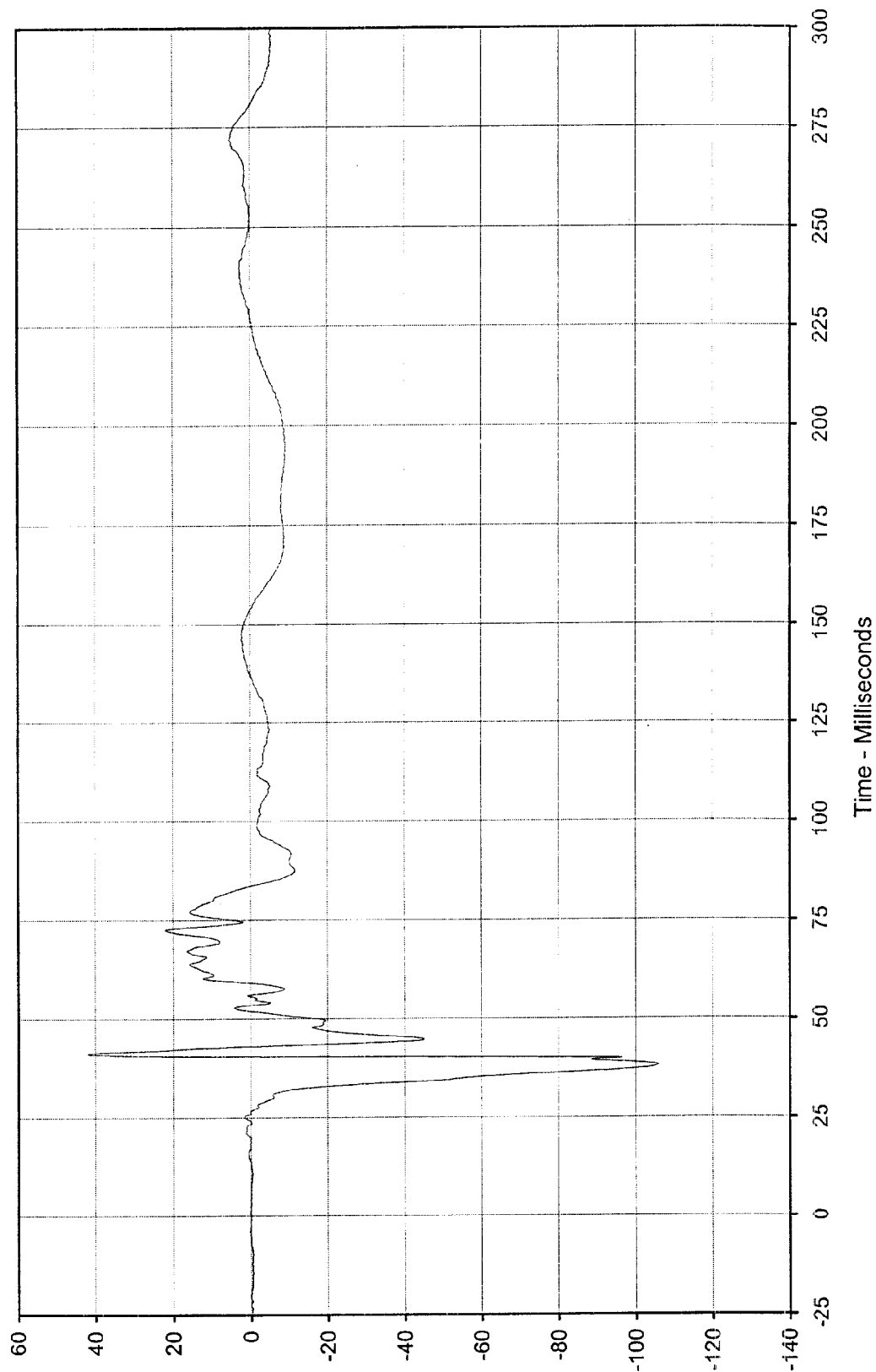


SAE Filter Class:	600
Date of Test:	12/4/98
Curve Number:	FIL-067



Curve Description:	Passenger Right Femur Force			Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	241.2	at	22.3	Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan
Minimum Value:	-3990.6	at	40.0	Milliseconds		
SAE Filter Class:	600					
Date of Test:	12/4/98					
Curve Number:	FIL-068					





Curve Description: Passenger Left Upper Tibia Moment X

Maximum Value: 42.0 at 41.3 Milliseconds

Minimum Value: -105.9 at 38.3 Milliseconds

SAE Filter Class: 600

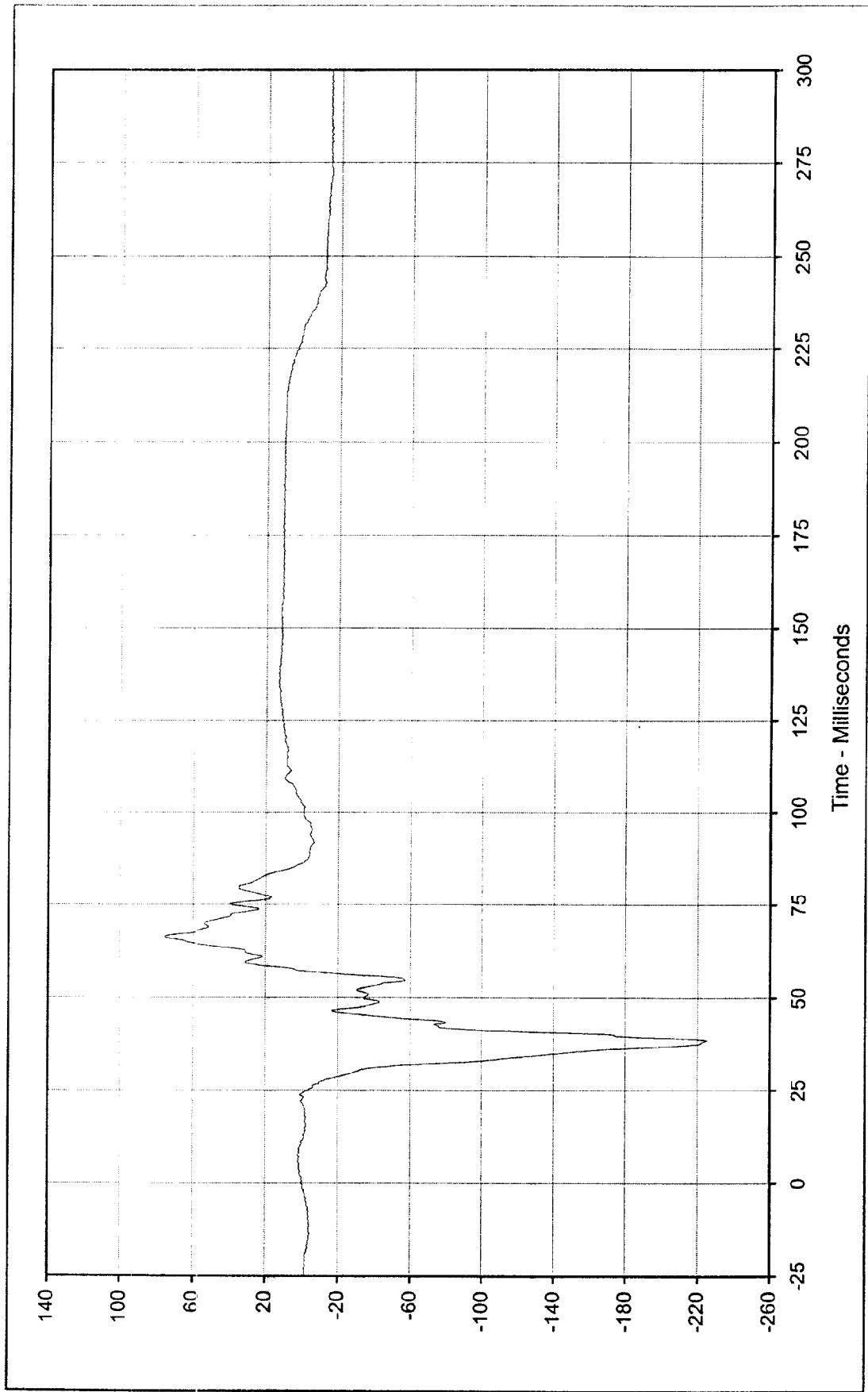
Date of Test: 12/4/98

Curve Number: FIL-069

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

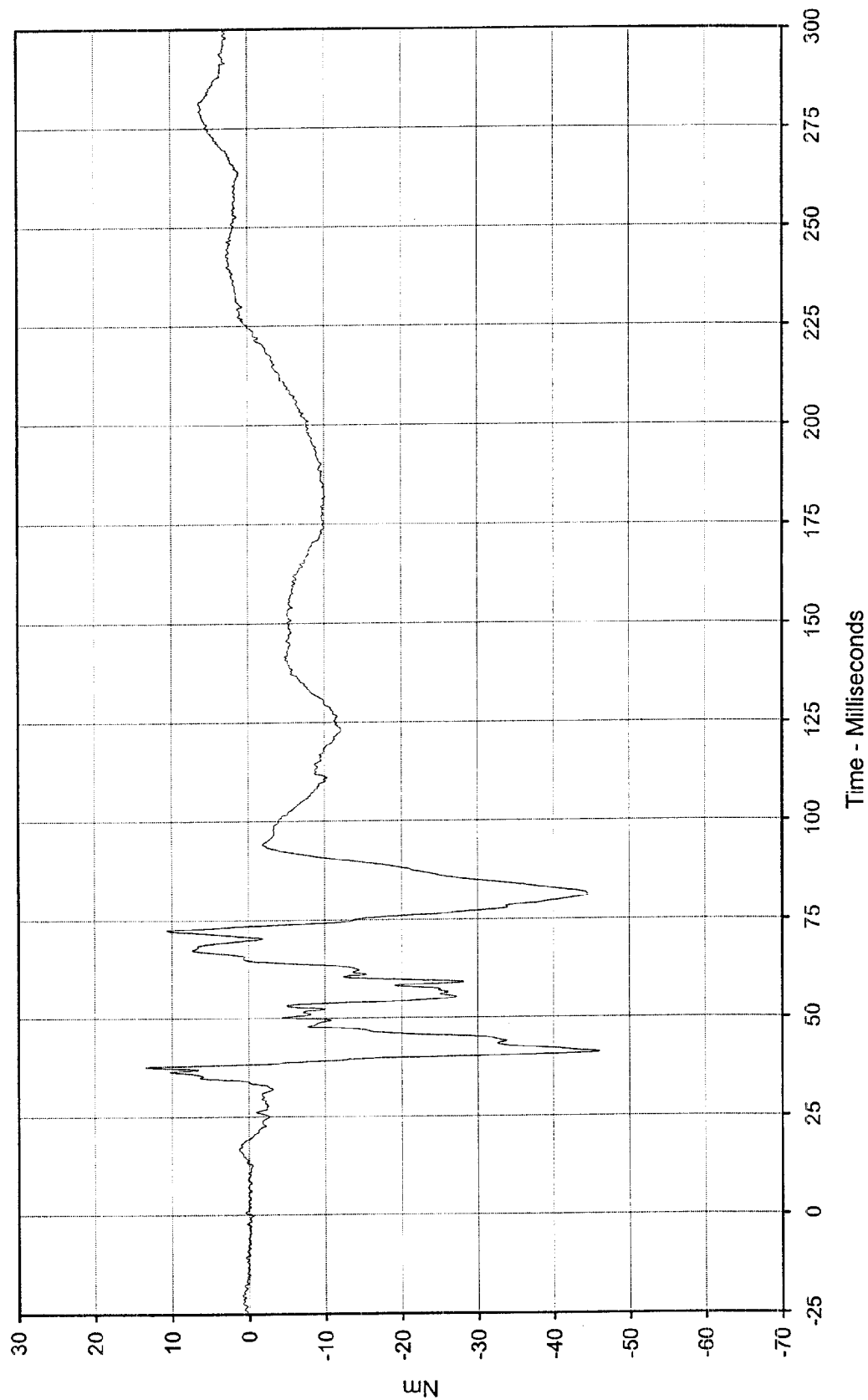




Curve Description: Passenger Left Upper Tibia Moment Y
Maximum Value: 75.4 at 66.4 Milliseconds
Minimum Value: -225.1 at 38.6 Milliseconds
SAE Filter Class: 600
Date of Test: 12/4/98
Curve Number: FIL-070

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description: Passenger Right Upper Tibia Moment X

Maximum Value: 13.4 at 37.8 Milliseconds

Minimum Value: -46.1 at 41.2 Milliseconds

SAE Filter Class: 600

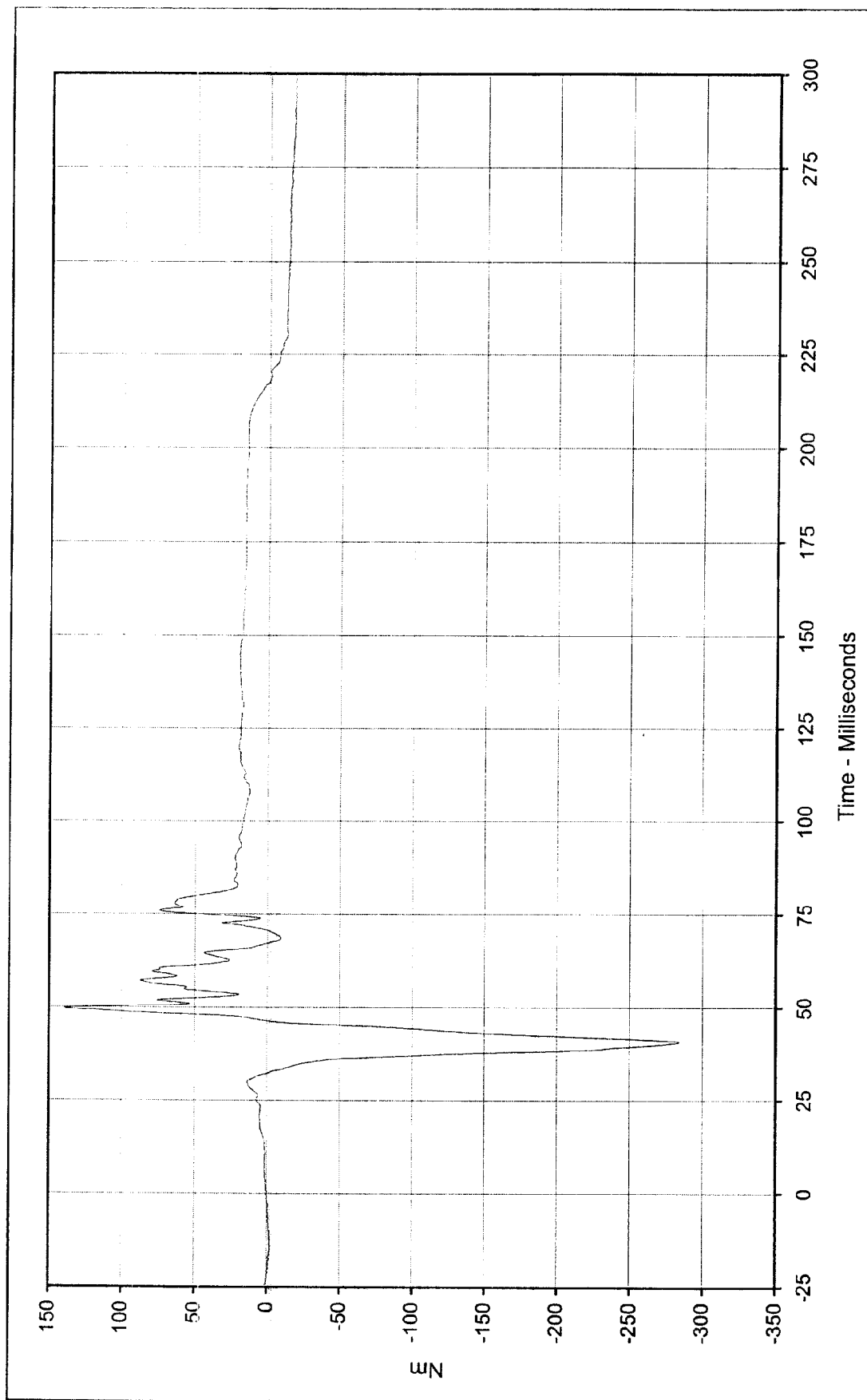
Date of Test: 12/4/98

Curve Number: FIL-071

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description: Passenger Right Upper Tibia Moment Y

Maximum Value: 139.1 at 49.8 Milliseconds

Minimum Value: -284.0 at 40.8 Milliseconds

SAE Filter Class: 600

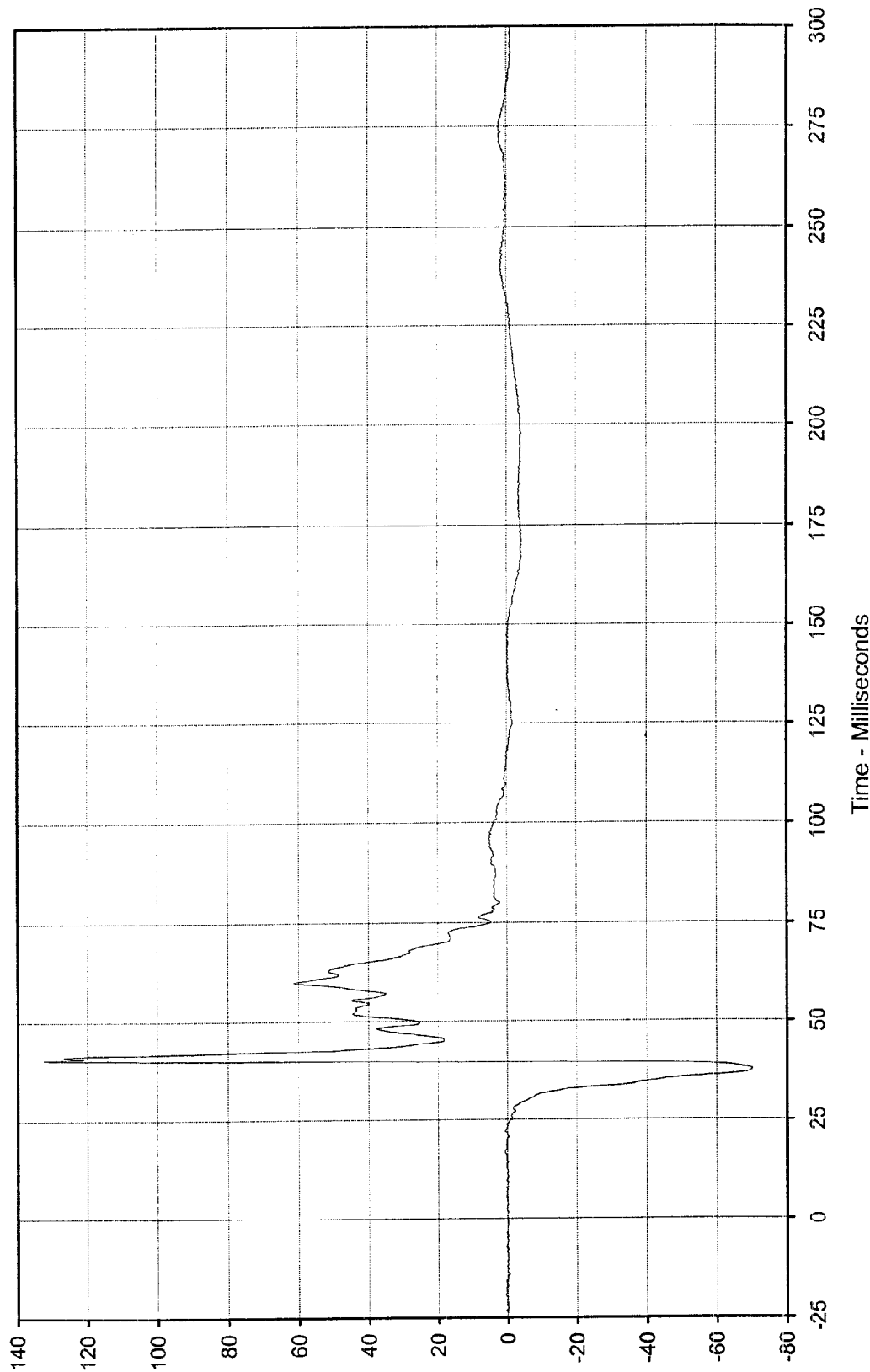
Date of Test: 12/4/98

Curve Number: FIL-072

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description: Passenger Left Lower Tibia Moment X

Maximum Value: 132.5 at 40.4 Milliseconds

Minimum Value: -70.2 at 37.9 Milliseconds

SAE Filter Class: 600

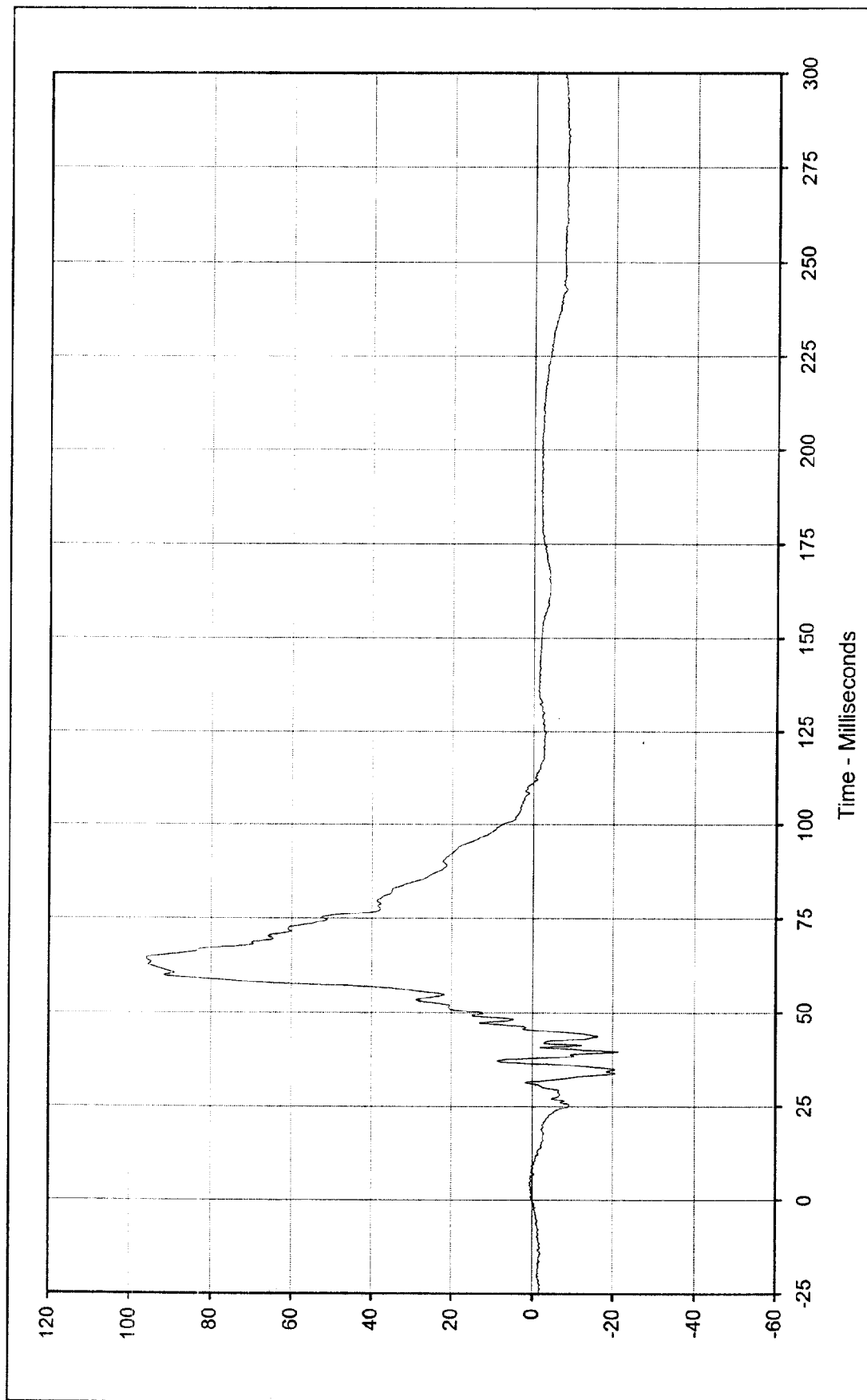
Date of Test: 12/4/98

Curve Number: FIL-073

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan



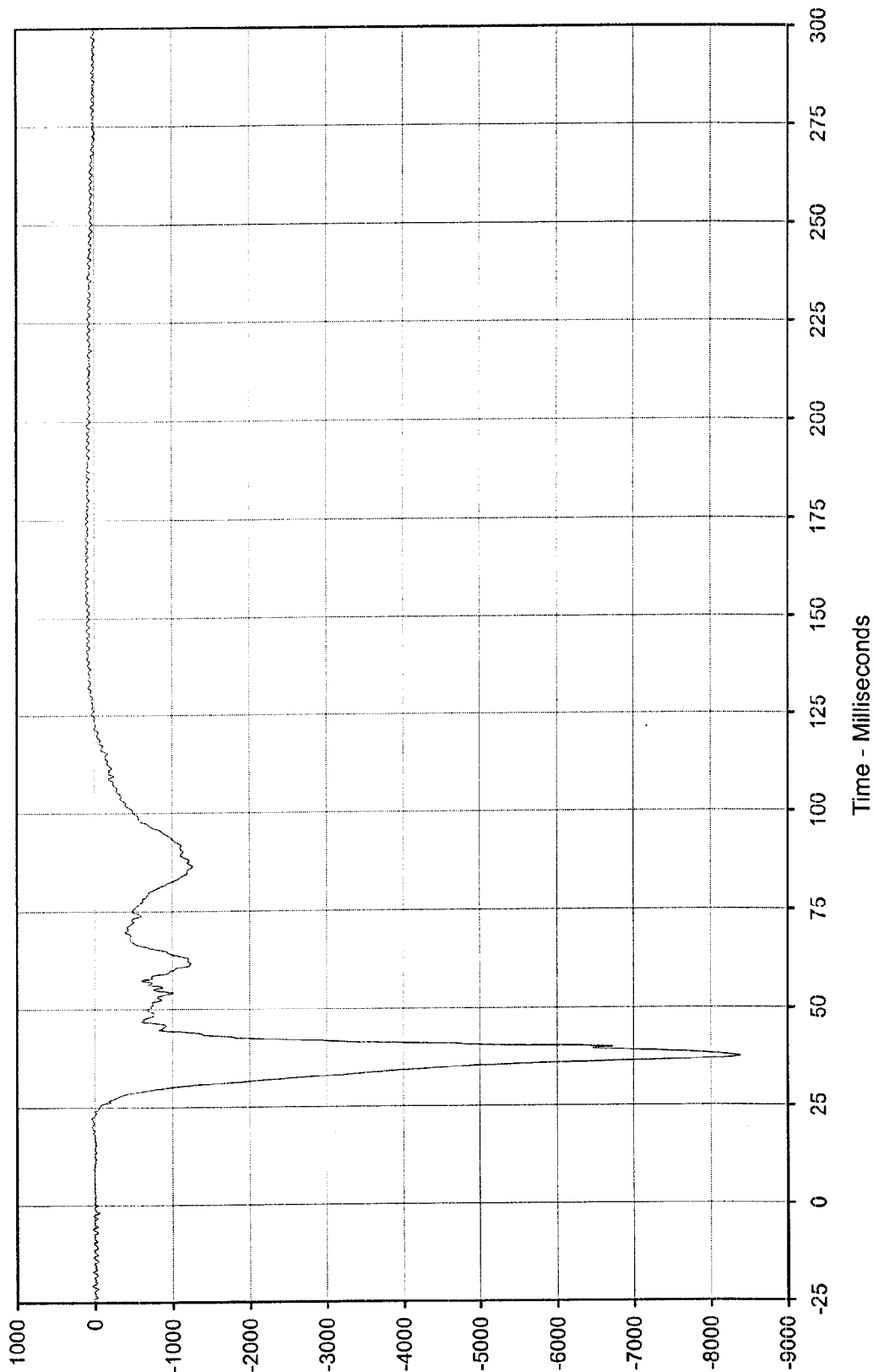


Curve Description: Passenger Left Lower Tibia Moment Y

Maximum Value:	95.9	at	64.3	Milliseconds
Minimum Value:	-21.4	at	39.6	Milliseconds
SAE Filter Class:	600			
Date of Test:	12/4/98			
Curve Number:	FIL-074			

Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	





Curve Description: Passenger Left Lower Tibia Force Z

Test Program: 1999 NHTSA 35 mph NCAP

No.: MX5300

Maximum Value: 115.8 at 170.1 Milliseconds

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

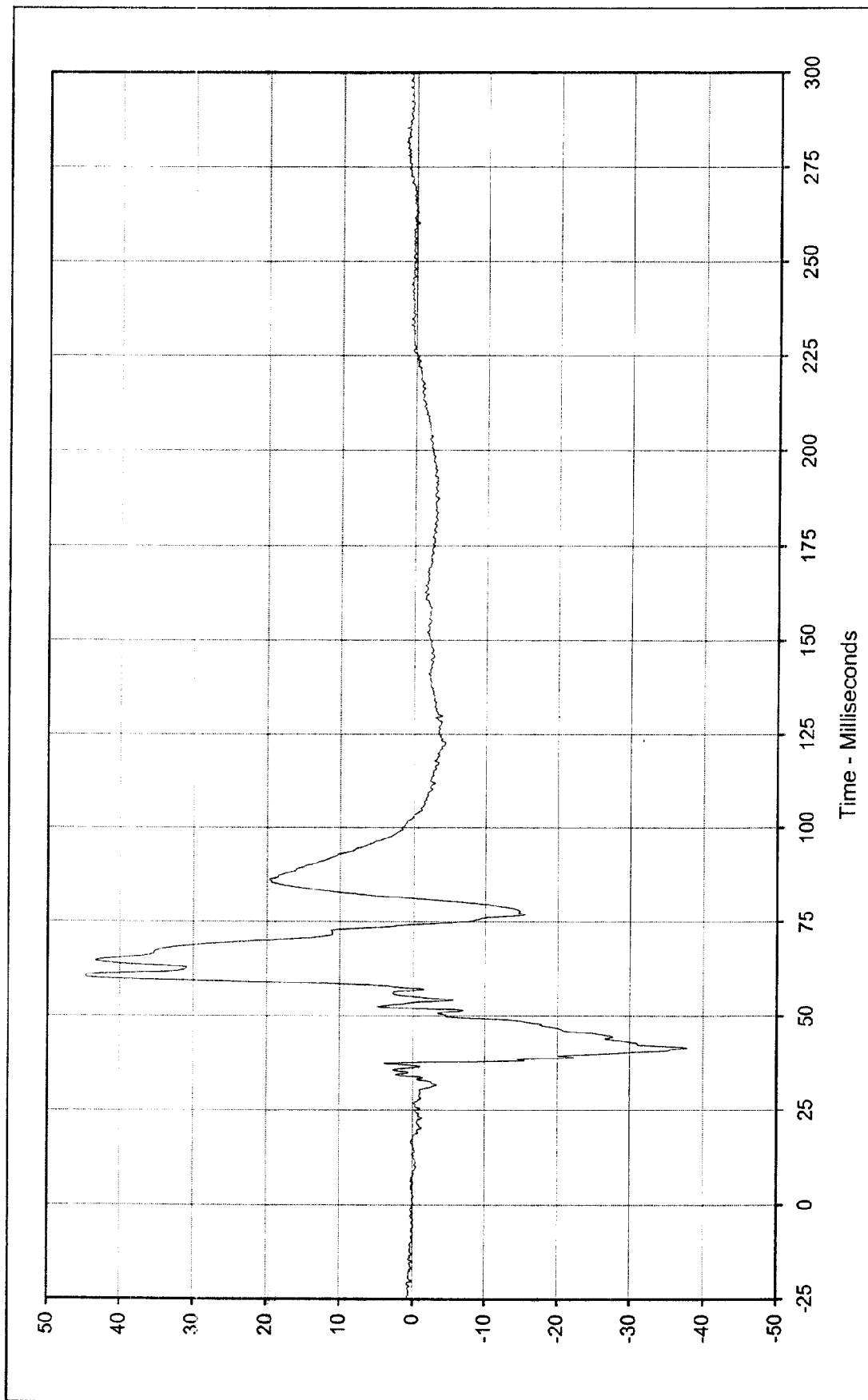
Minimum Value: -8392.9 at 37.5 Milliseconds

SAE Filter Class: 600

Date of Test: 12/4/98

Curve Number: FIL-075





Curve Description: Passenger Right Lower Tibia Moment X

Maximum Value: 44.7 at 60.4 Milliseconds

Minimum Value: -37.8 at 41.6 Milliseconds

SAE Filter Class: 600

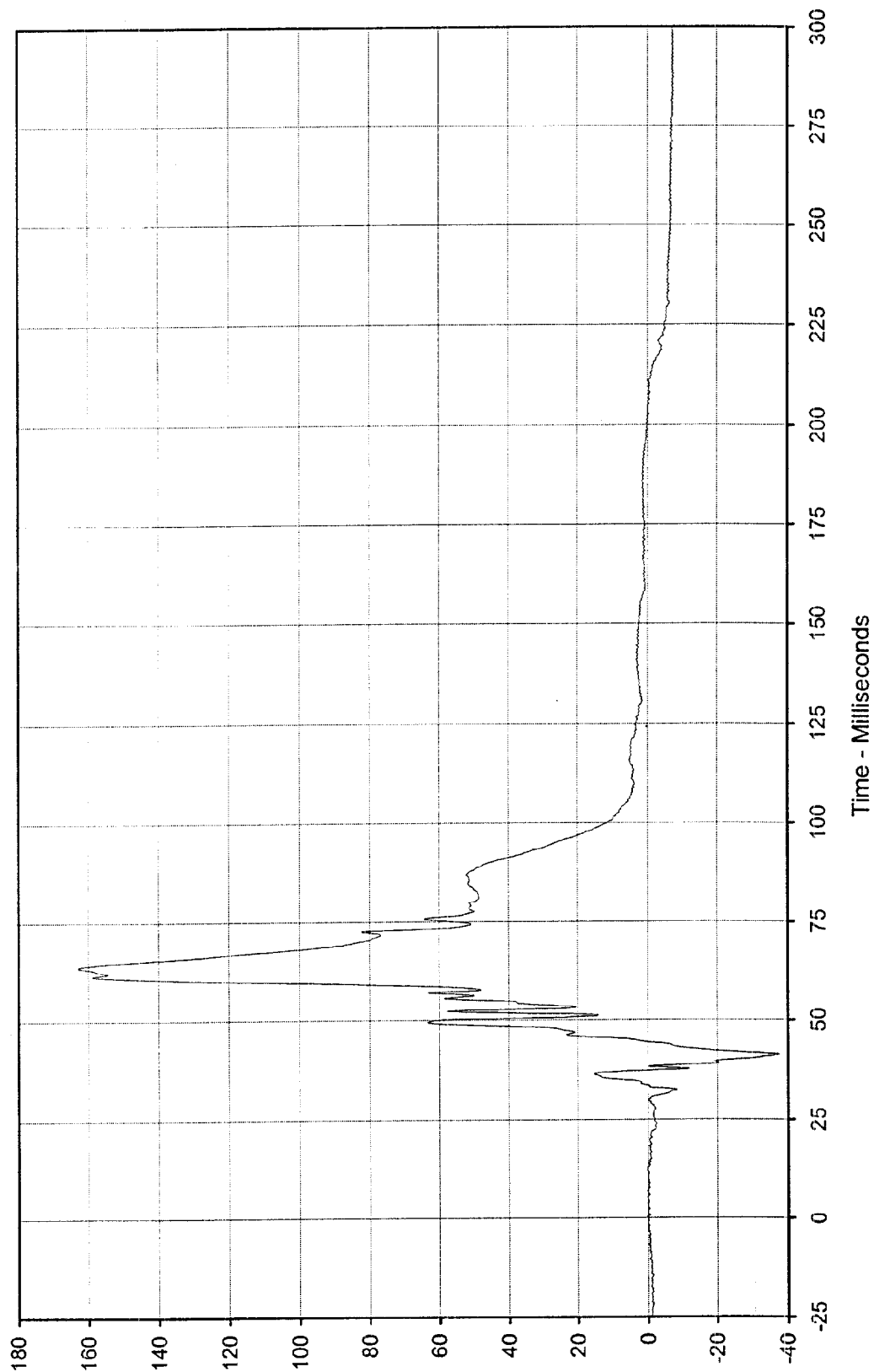
Date of Test: 12/4/98

Curve Number: FIL-076

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





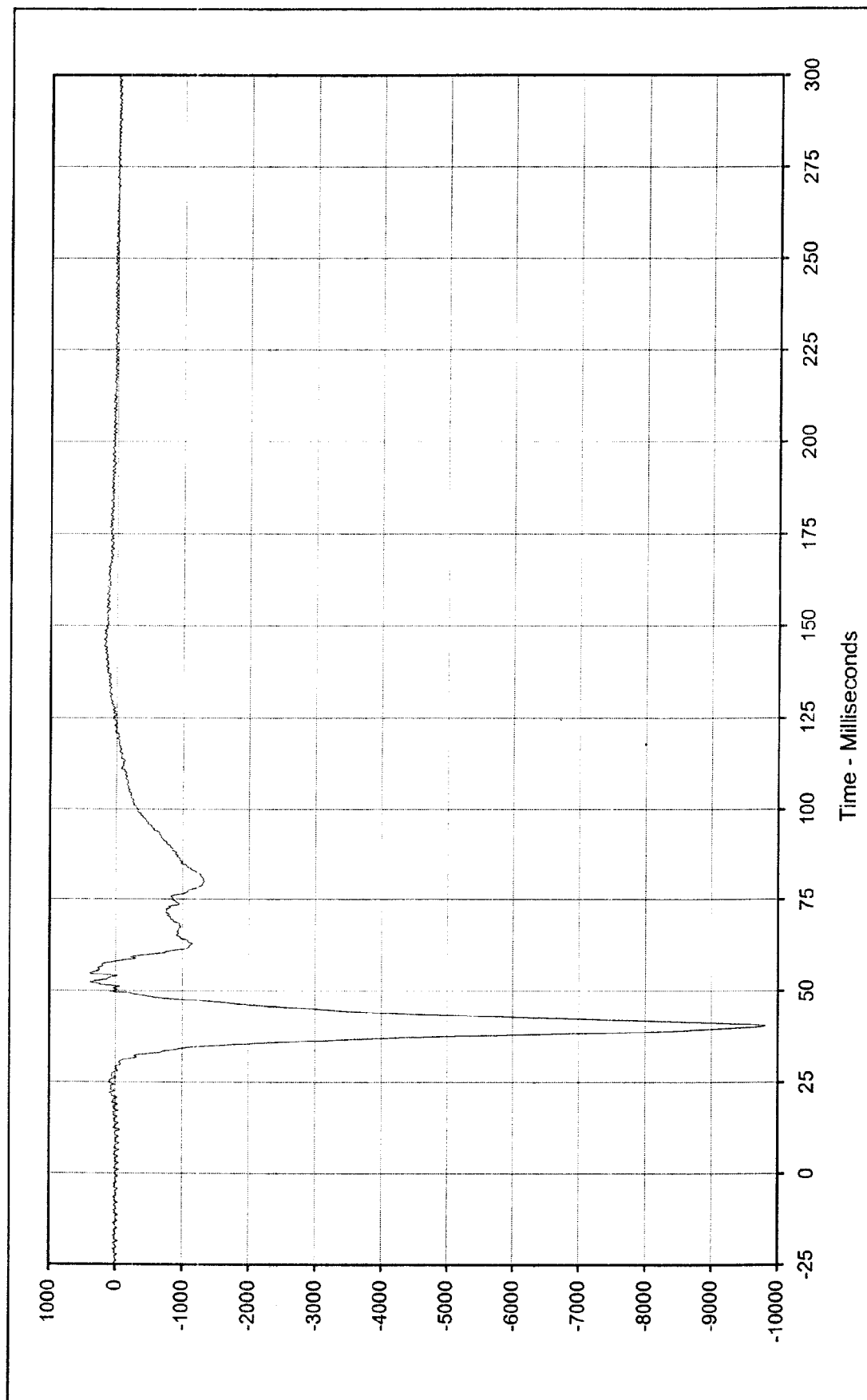
Curve Description: Passenger Right Lower Tibia Moment Y

Maximum Value:	163.0	at	63.8	Milliseconds
Minimum Value:	-37.6	at	41.4	Milliseconds
SAE Filter Class:	600			
Date of Test:	12/4/98			
Curve Number:	FIL-077			

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description: Passenger Right lower Tibia Force Z

Maximum Value: 386.7 at 54.8 Milliseconds

Minimum Value: -9815.2 at 40.2 Milliseconds

SAE Filter Class: 600

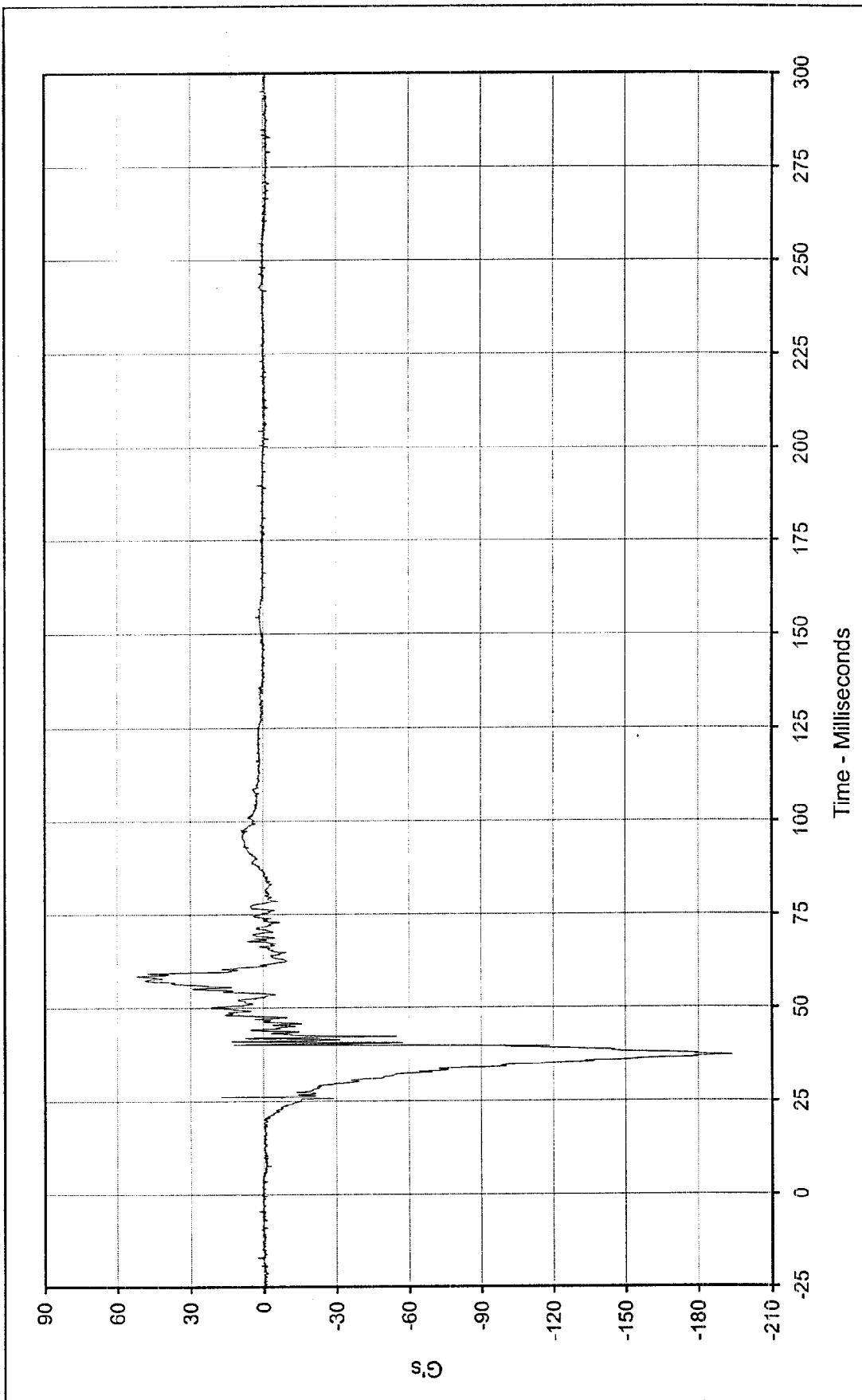
Date of Test: 12/4/98

Curve Number: FIL-078

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

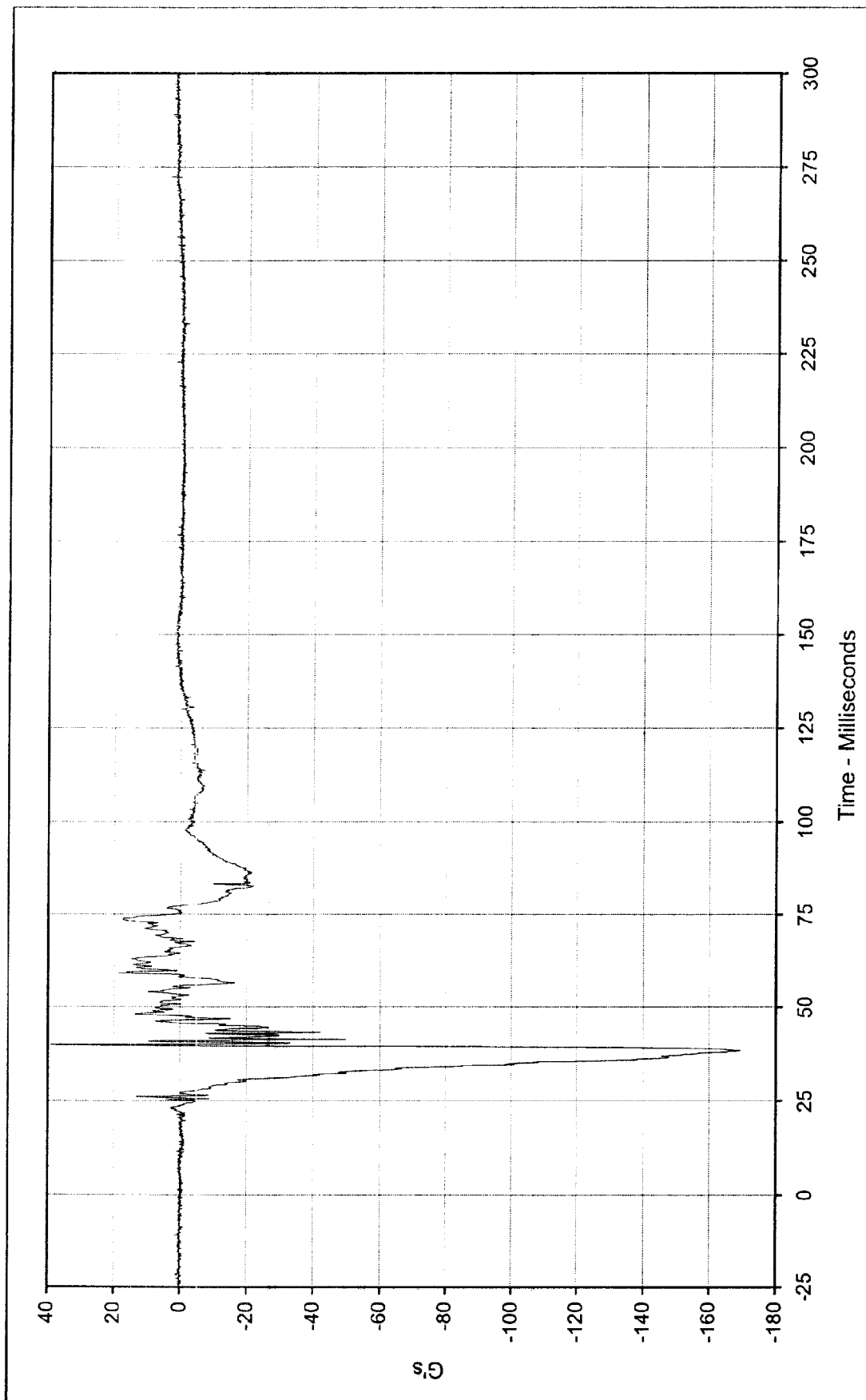
Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





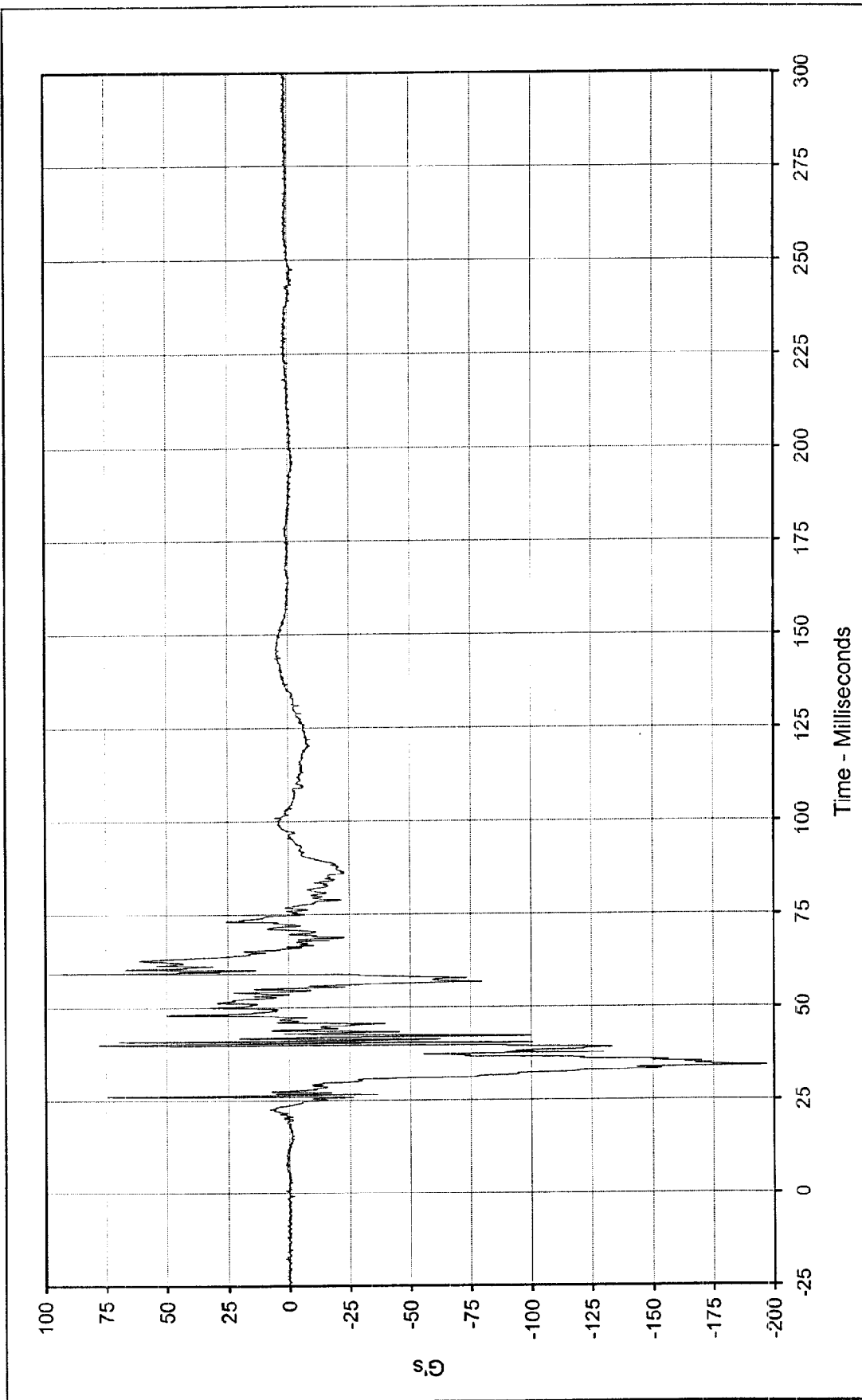
Curve Description:	Passenger Left Foot Aft X	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	52.1 at 58.6 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-193.8 at 37.2 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/4/98			
Curve Number:	FIL-079			





Curve Description:	Passenger Left Foot Aft Z	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	39.0 at 40.0 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-169.5 at 38.4 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/4/98			
Curve Number:	FIL-080			

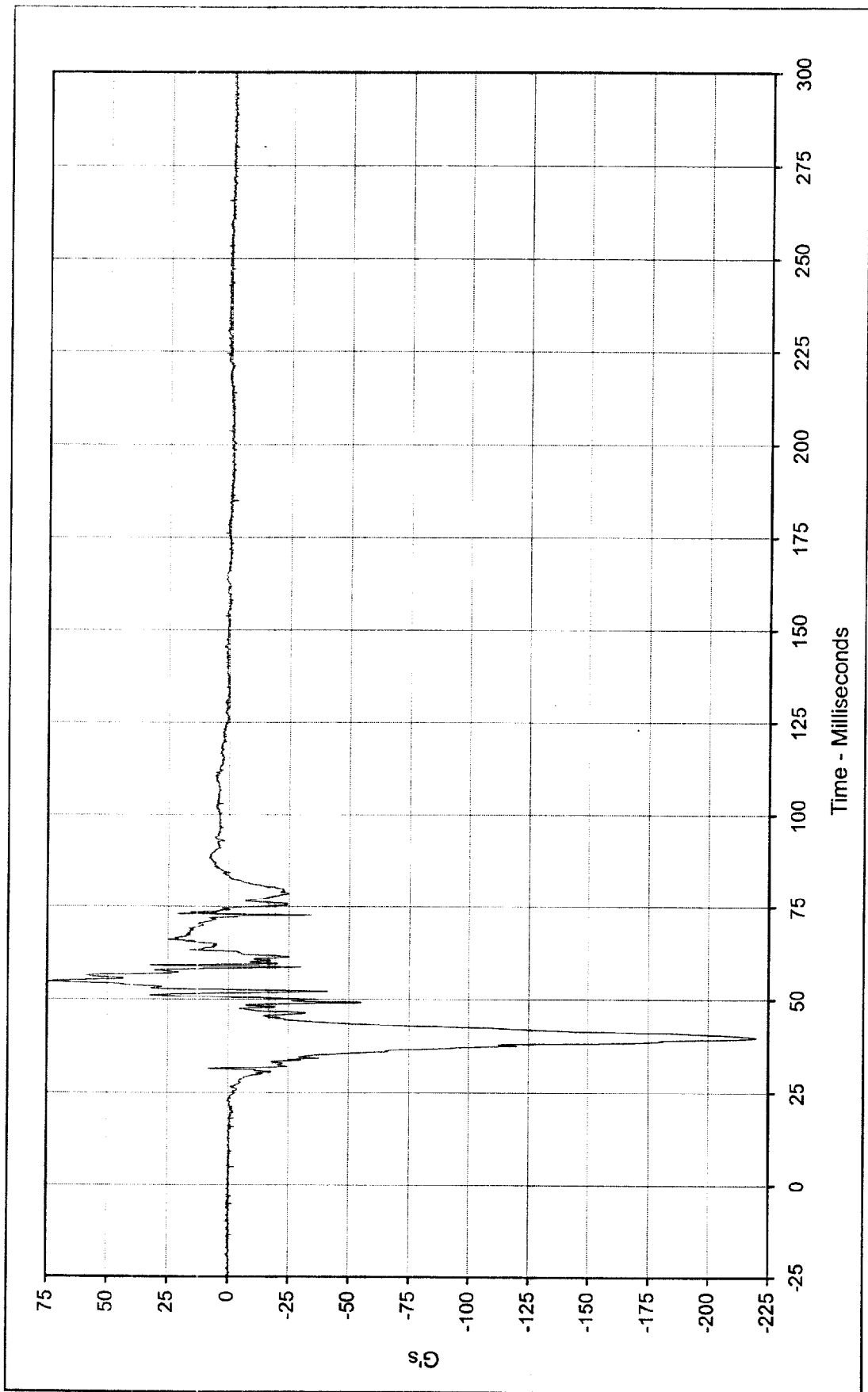




Curve Description: Passenger Left Foot Fore Z Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
Maximum Value: 98.2 at 59.4 Milliseconds Test Vehicle: 1999 Honda Civic DX 4 Door Sedan
Minimum Value: -197.2 at 34.2 Milliseconds

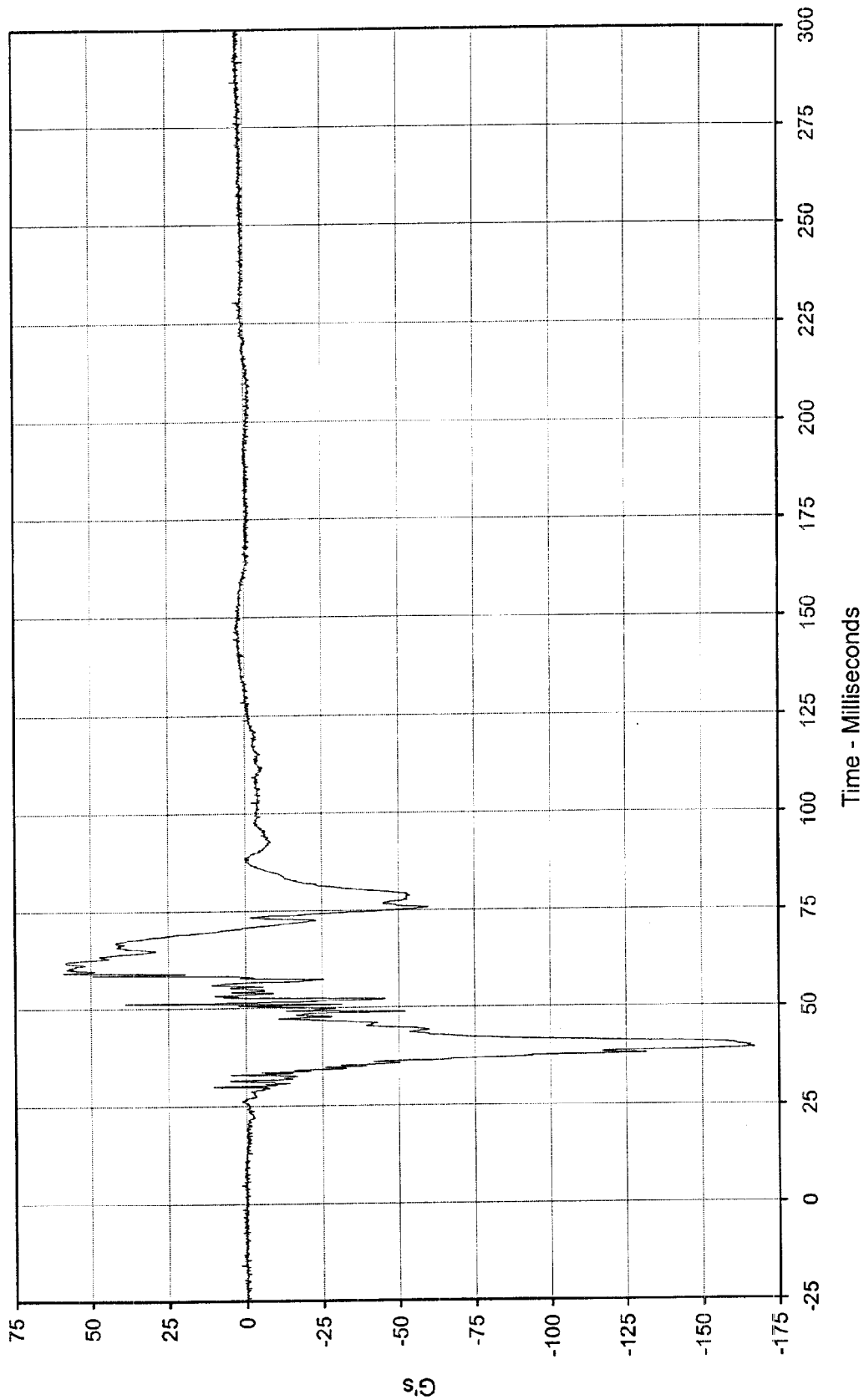


SAE Filter Class: 1000
Date of Test: 12/4/98
Curve Number: FIL-081



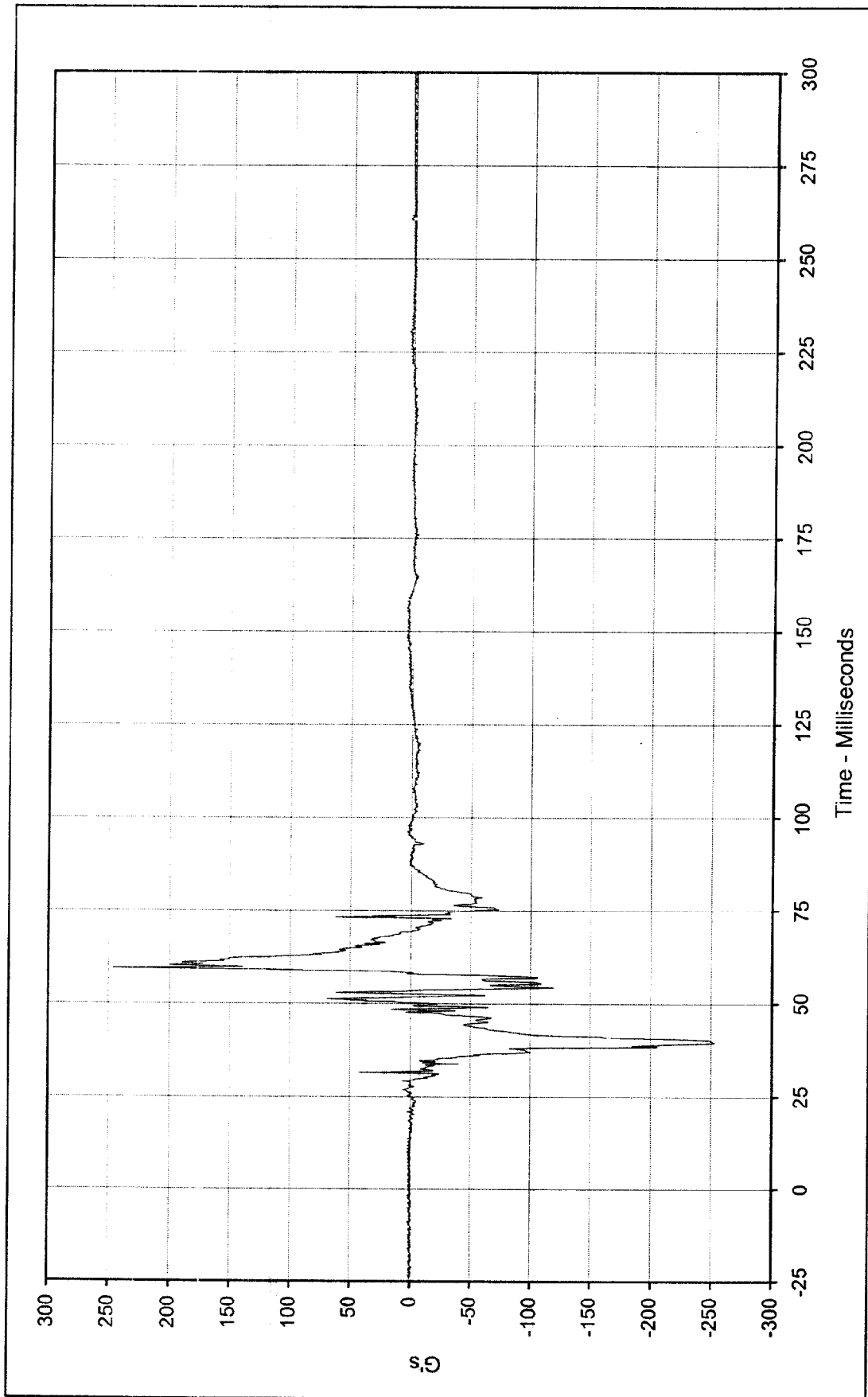
Curve Description:	Passenger Right Foot Aft X	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	74.9 at 54.9 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-219.9 at 39.8 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/4/98			
Curve Number:	FIL-082			





Curve Description:	Passenger Right Foot Aft Z	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	59.2 at 59.4 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-167.2 at 39.4 Milliseconds			
SAE Filter Class:	1000			
Date of Test:	12/4/98			
Curve Number:	FIL-083			

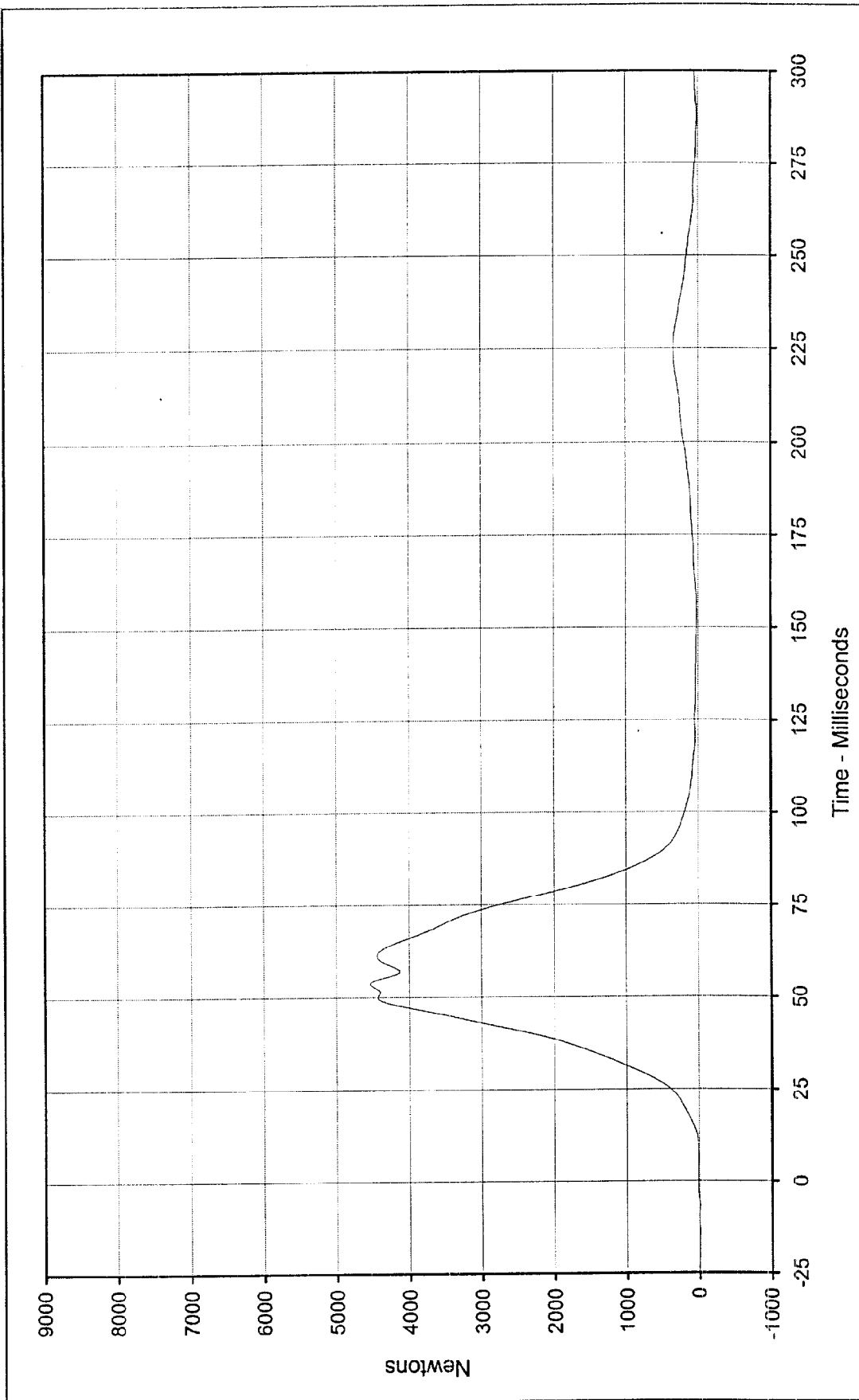




Curve Description:	Passenger Right Foot Fore Z	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	247.0 at 59.3 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-252.8 at 39.4 Milliseconds			



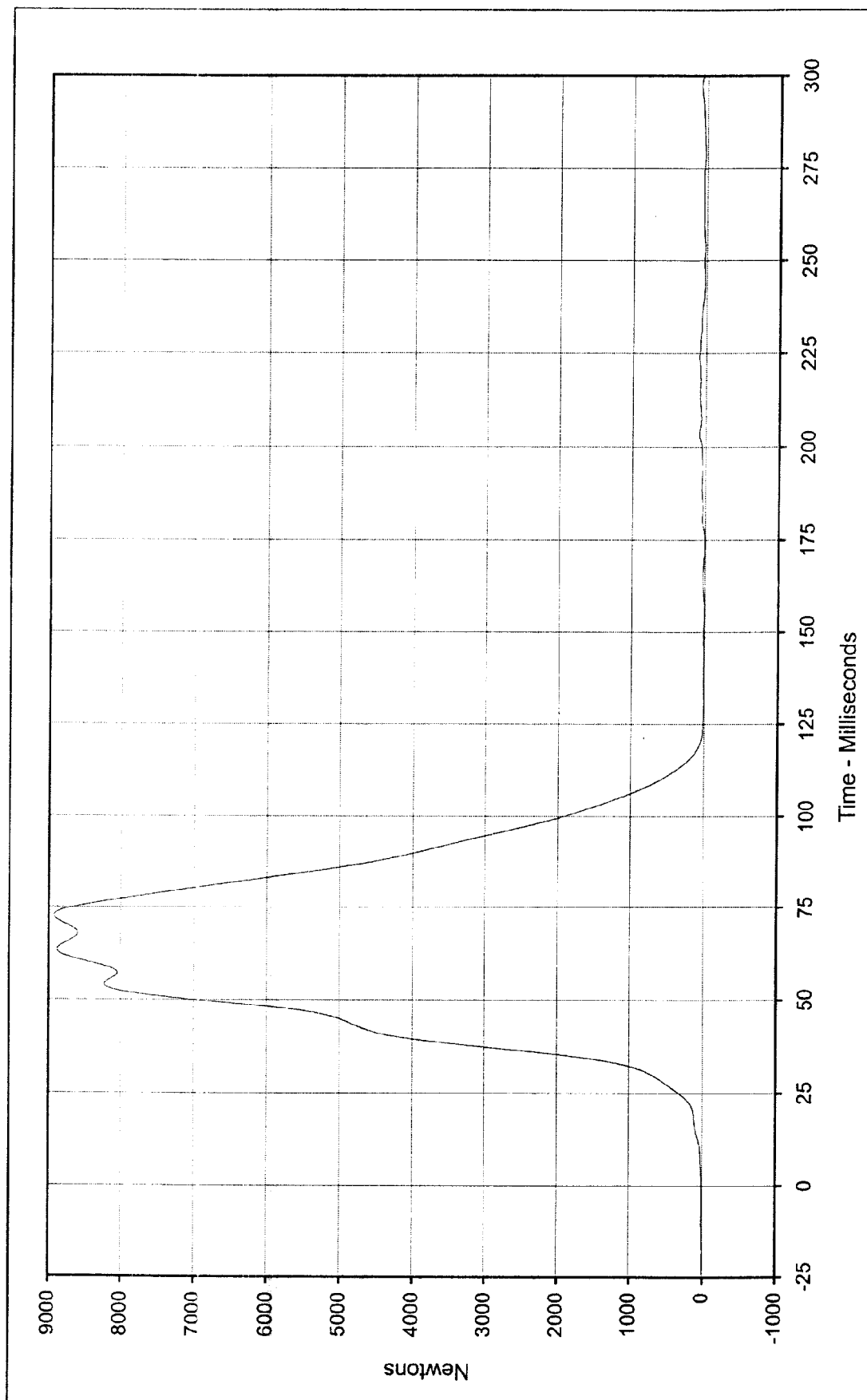
SAE Filter Class:	1000
Date of Test:	12/4/98
Curve Number:	FIL-084



Curve Description: Passenger Lap Belt Force
 Maximum Value: 4531.2 at 53.8 Milliseconds
 Minimum Value: 5.7 at 5.8 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: FIL-085

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan



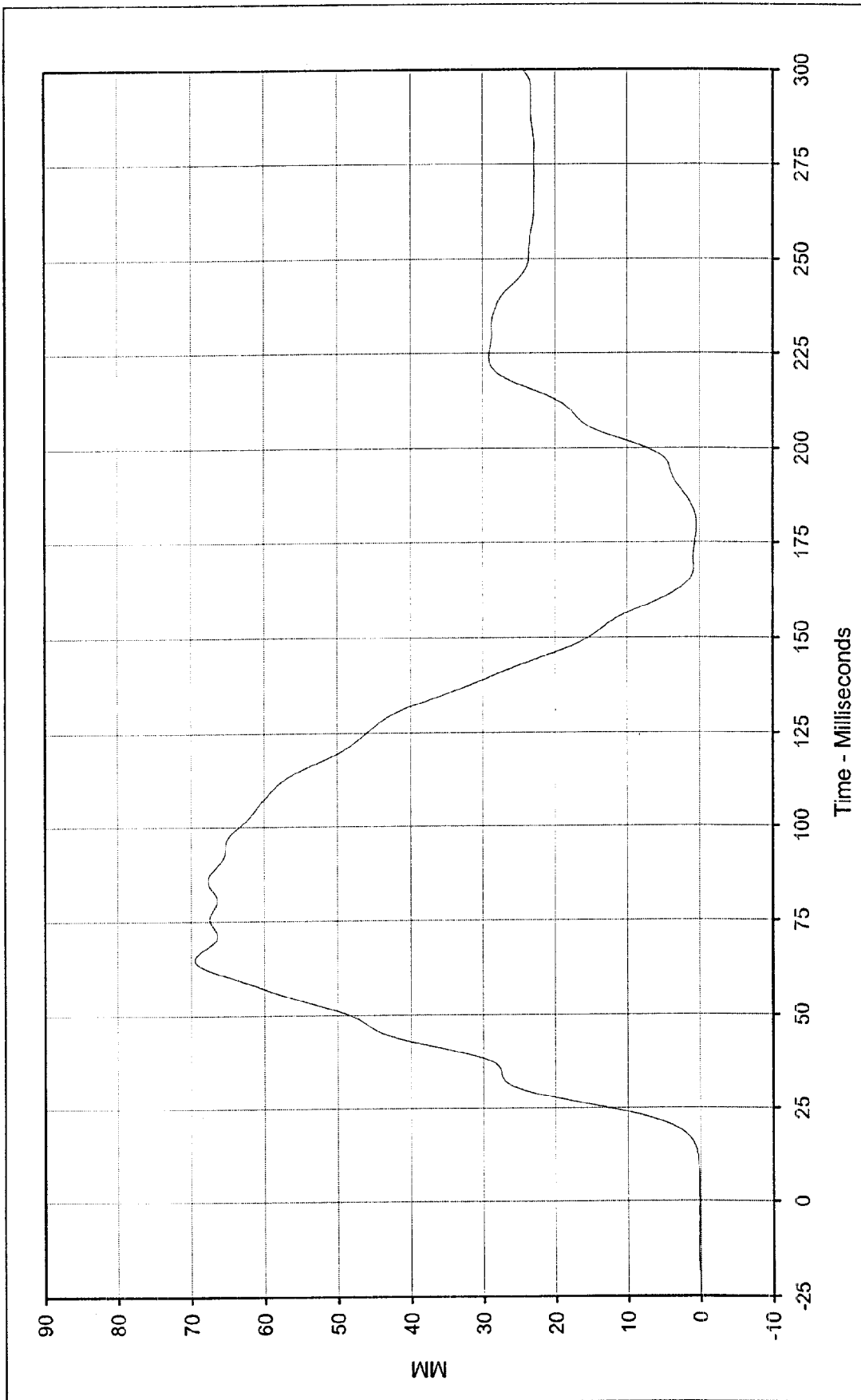


Curve Description: Passenger Shoulder Belt Force
 Maximum Value: 8922.5 at 72.5 Milliseconds
 Minimum Value: 1.0 at 174.5 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: FIL-086

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

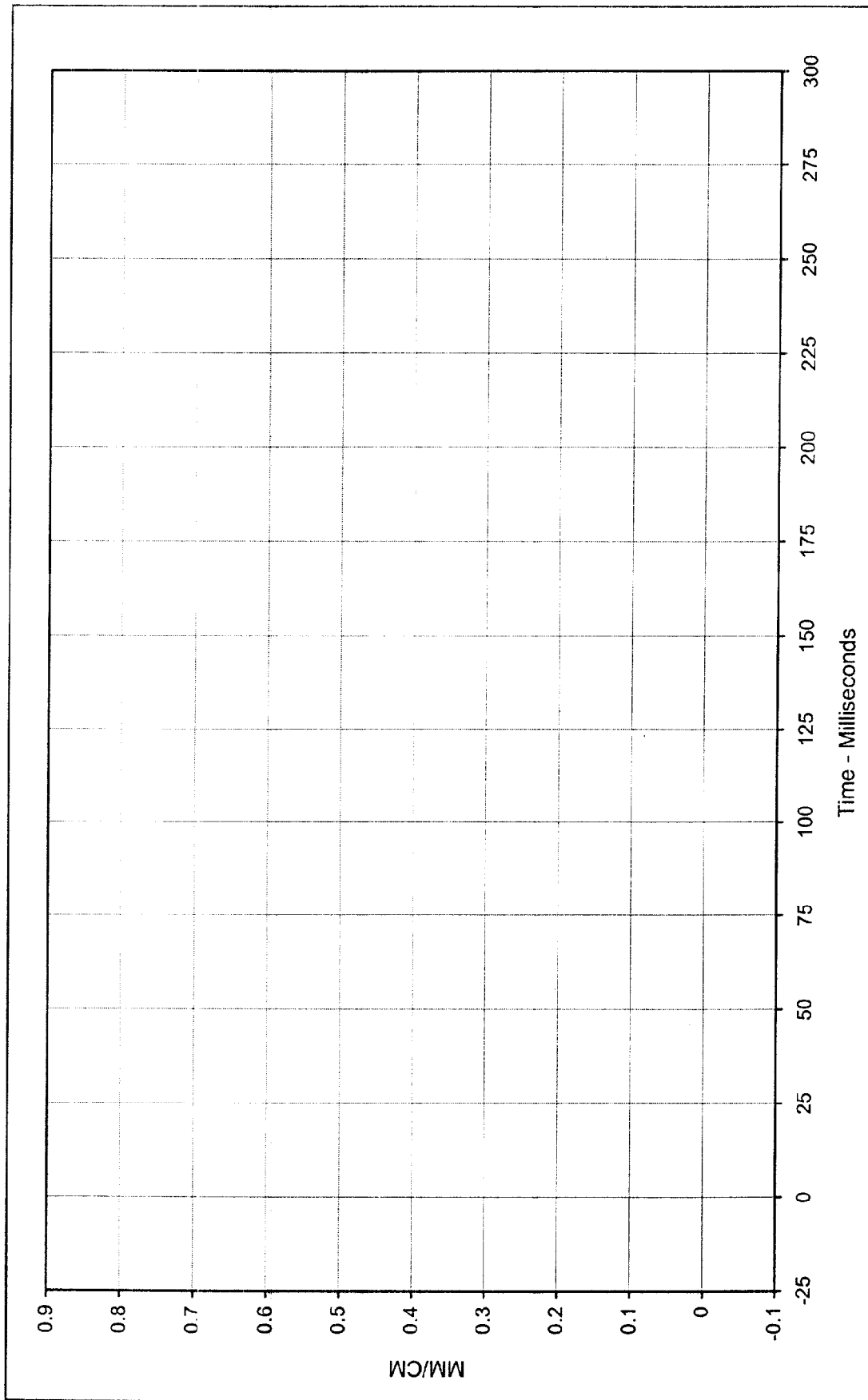




Curve Description: Passenger Shoulder Belt Pullout
 Maximum Value: 69.5 at 64.9 Milliseconds
 Minimum Value: 0.1 at 0.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: FIL-087

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description: Passenger Shoulder Belt Elongation *

Maximum Value: 0.00 at 0.0 Milliseconds

Minimum Value: 0.00 at 0.0 Milliseconds

SAE Filter Class: 60

Date of Test: 12/4/98

Curve Number: FIL-088

Test Program:

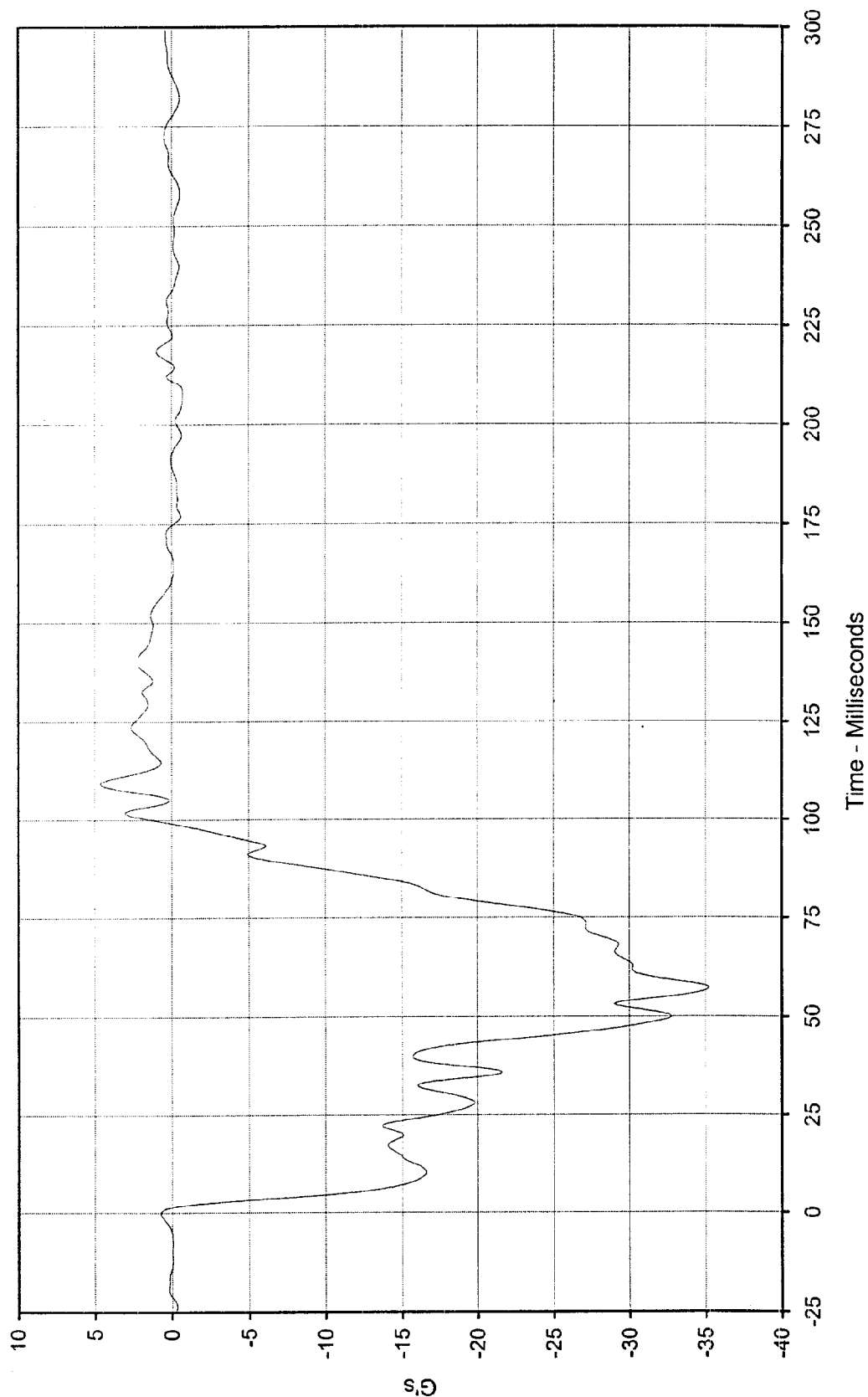
1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle:

1999 Honda Civic DX 4 Door Sedan



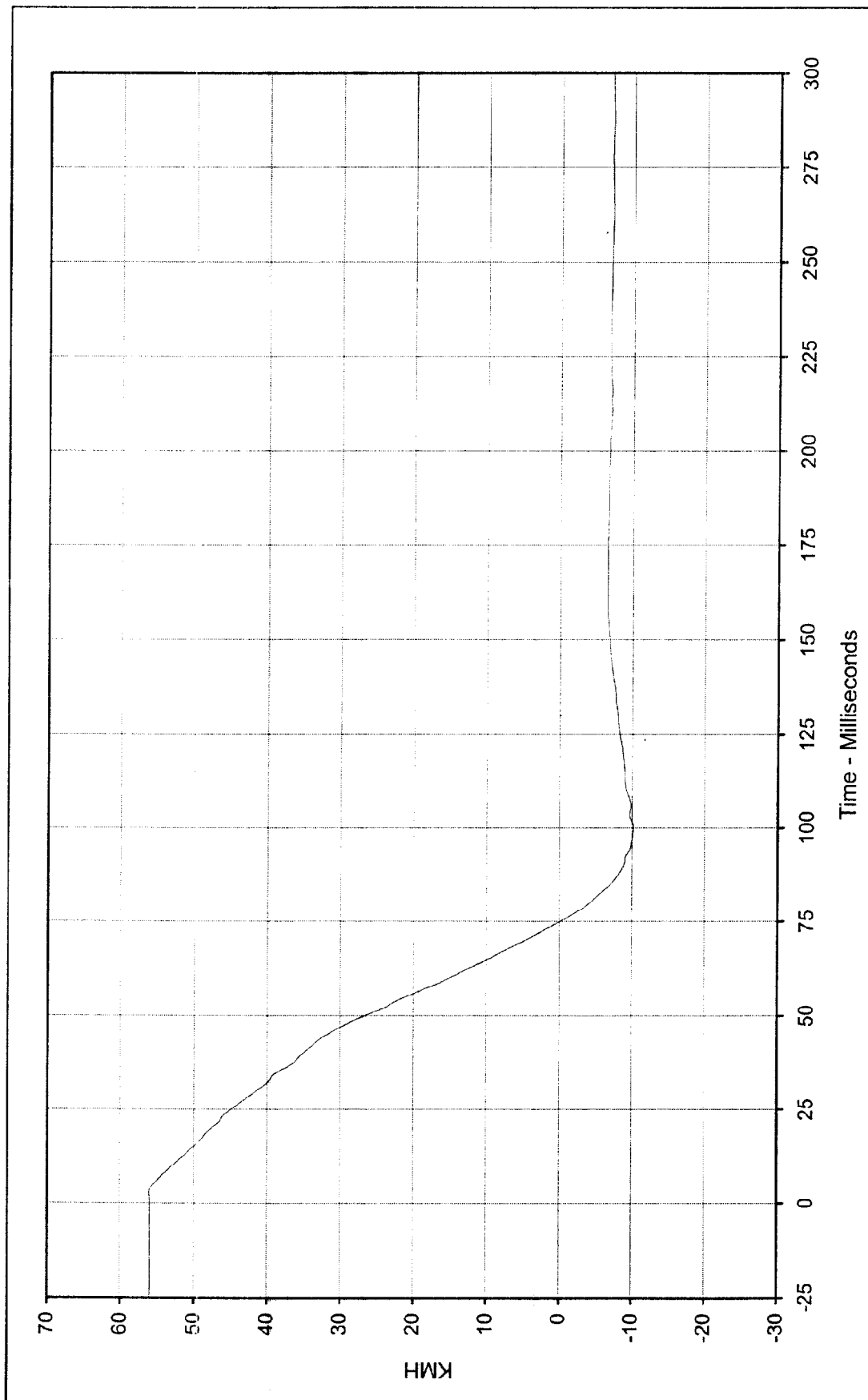
* Channel failed, No Data



Curve Description: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Program:
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

Vehicle Left Rear Primary
 Maximum Value: 4.6 at 109.2 Milliseconds
 Minimum Value: -35.2 at 57.4 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: FIL-089



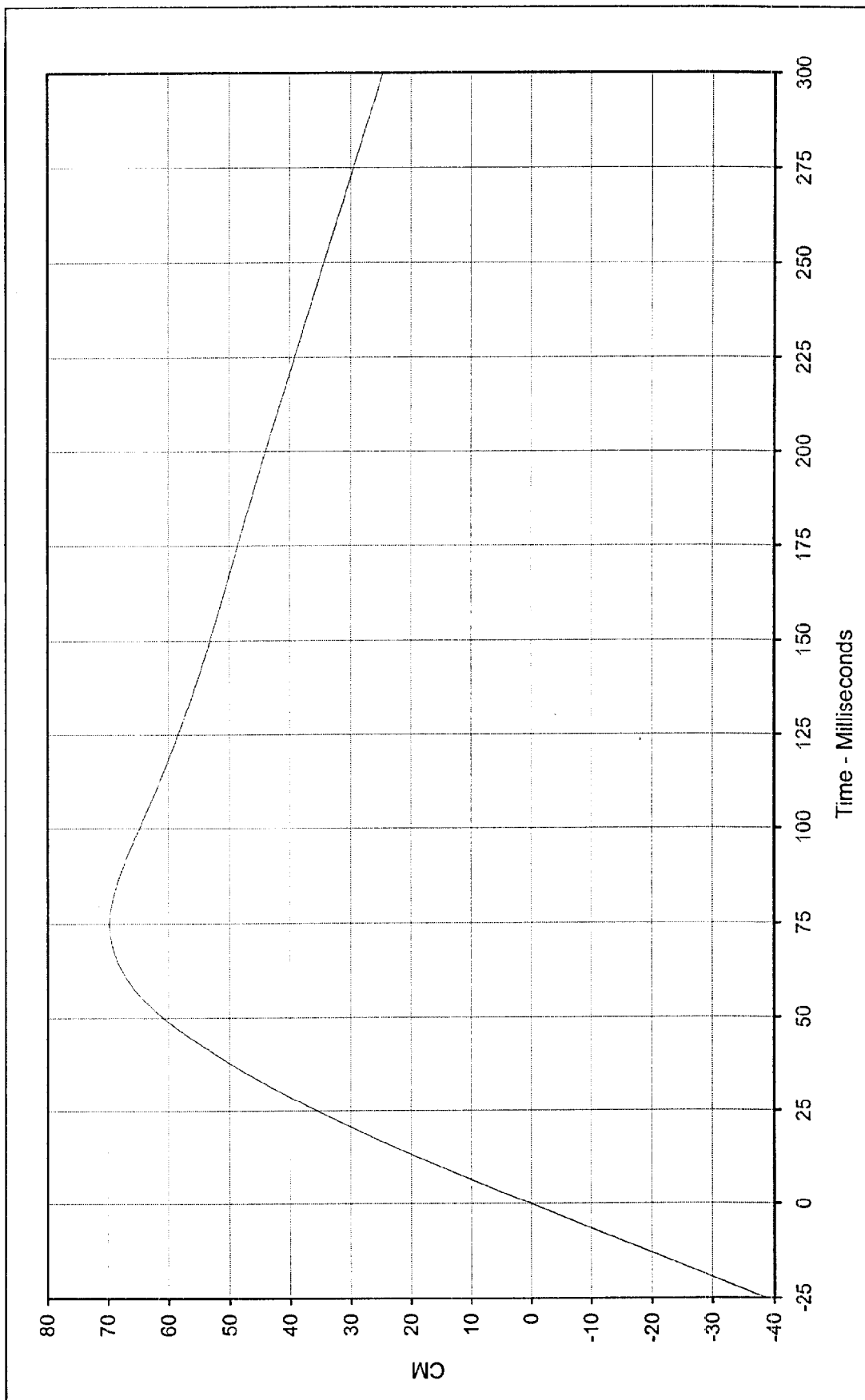


Curve Description: Vehicle Left Rear Primary Velocity
 Maximum Value: 56.0 at 3.1 Milliseconds
 Minimum Value: -10.2 at 100.2 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/4/98
 Curve Number: IN1-089

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description: Vehicle Left Rear Primary Displ.

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Maximum Value: 69.7 at 74.9 Milliseconds

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

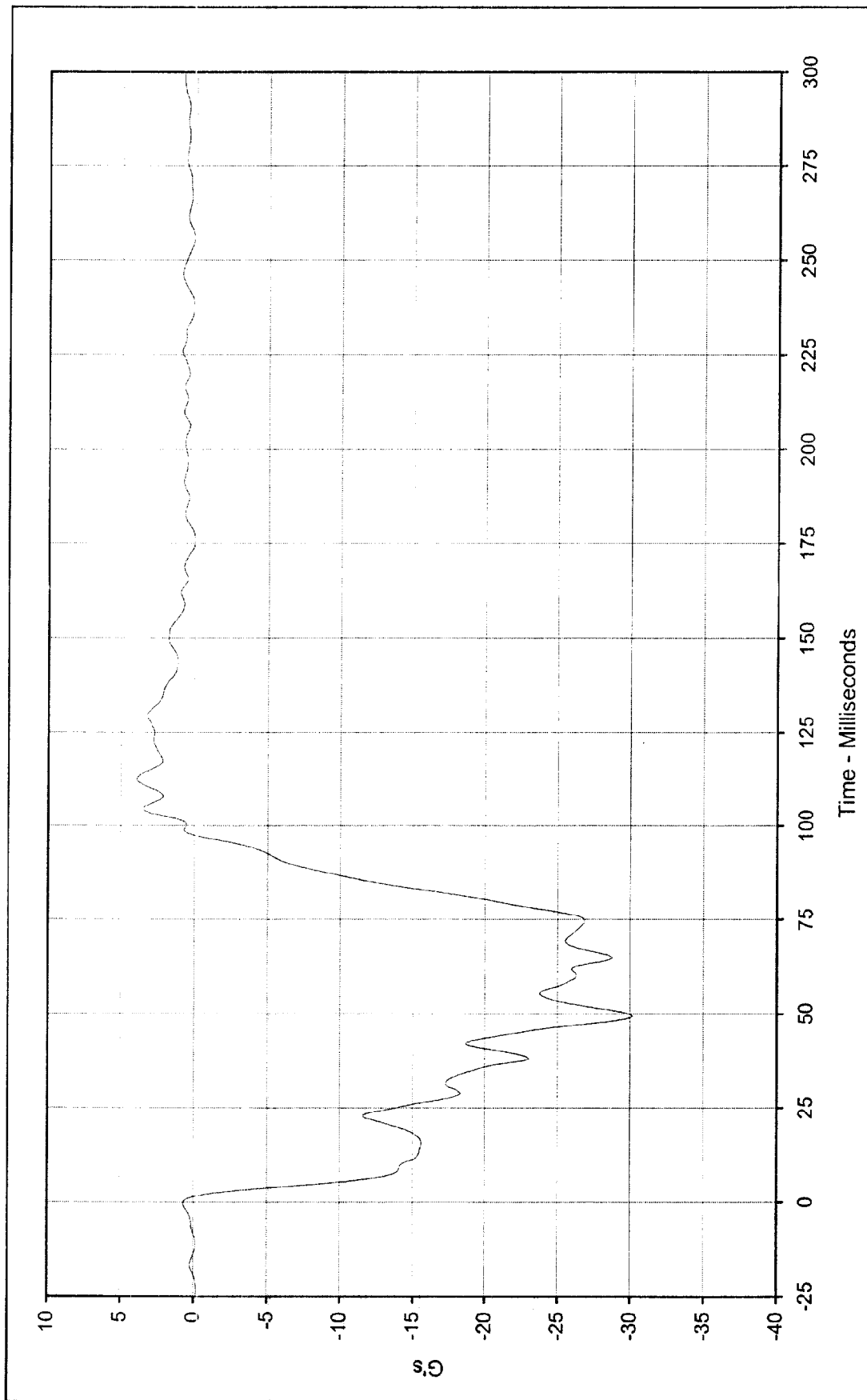
Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 12/4/98

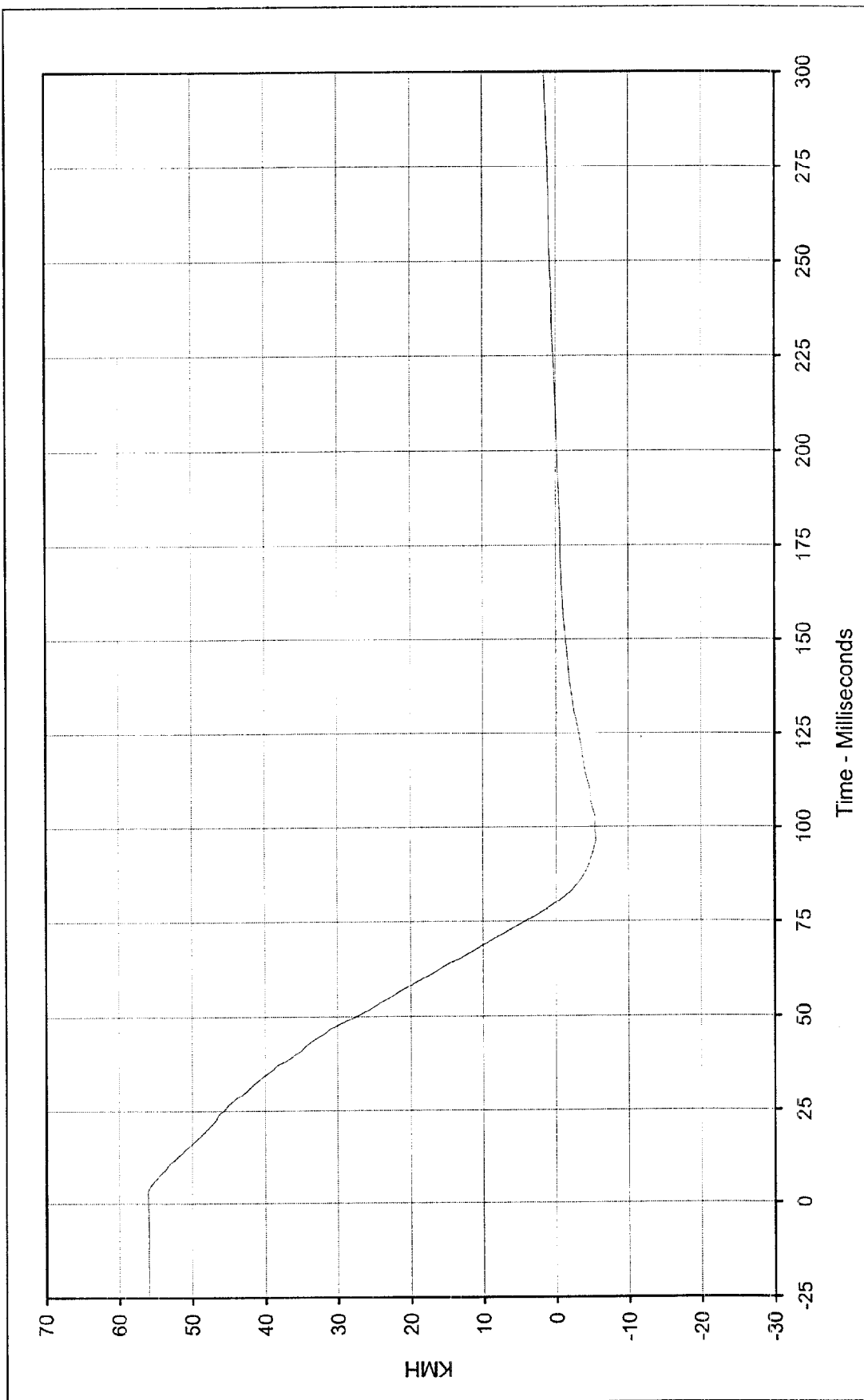
Curve Number: IN2-089





Curve Description:	Vehicle Right Rear Primary		Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	3.9	at 112.4	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-30.1	at 49.3			
SAE Filter Class:	60				
Date of Test:	12/4/98				
Curve Number:	FIL-090				





Curve Description: Vehicle Right Rear Primary Velocity

Maximum Value: 56.1 at 2.9 Milliseconds

Minimum Value: -5.6 at 96.8 Milliseconds

SAE Filter Class: 180

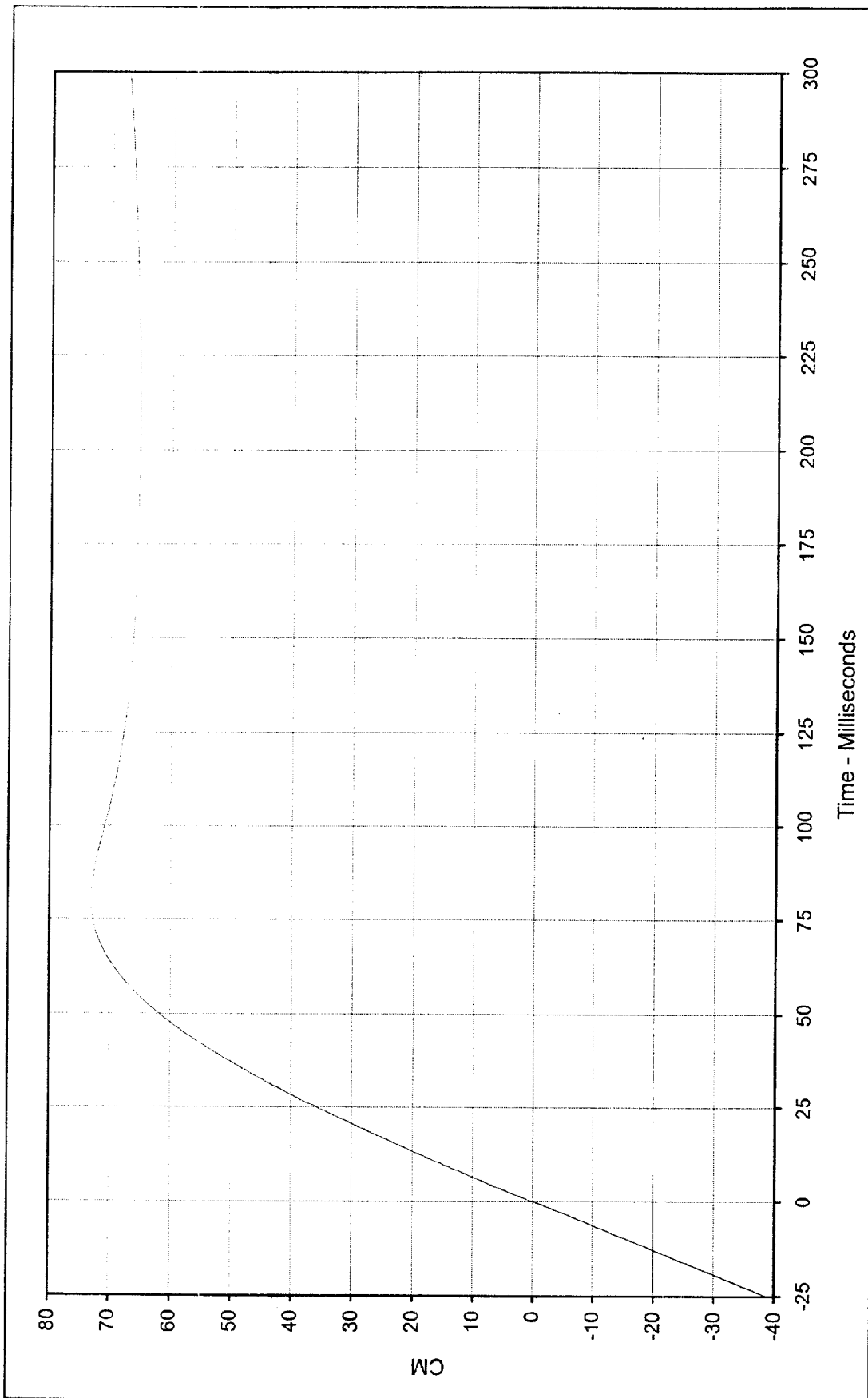
Date of Test: 12/4/98

Curve Number: IN1-090

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description: Vehicle Right Rear Primary Displ.

Maximum Value: 73.1 at 80.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

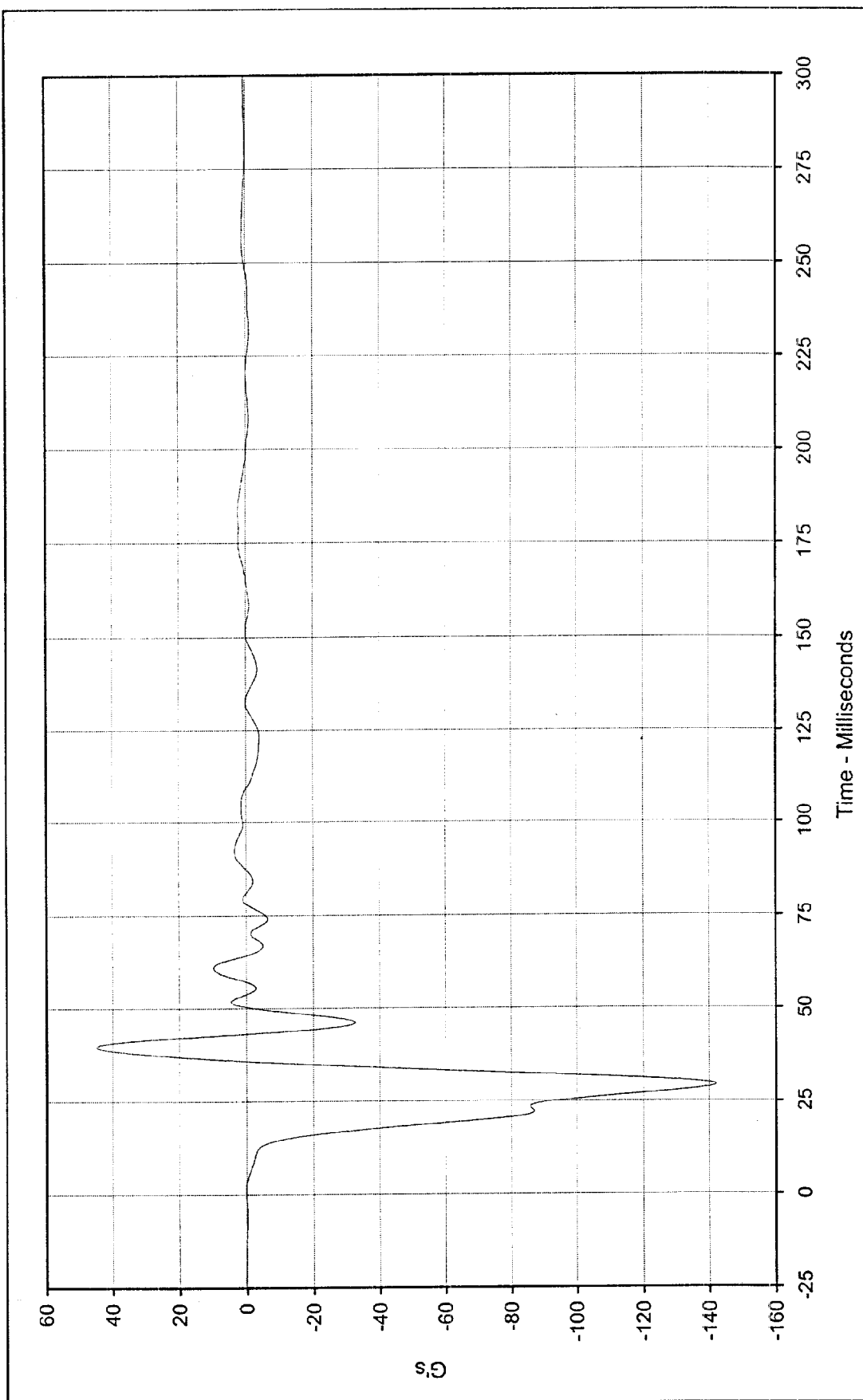
Date of Test: 12/4/98

Curve Number: IN2-090

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

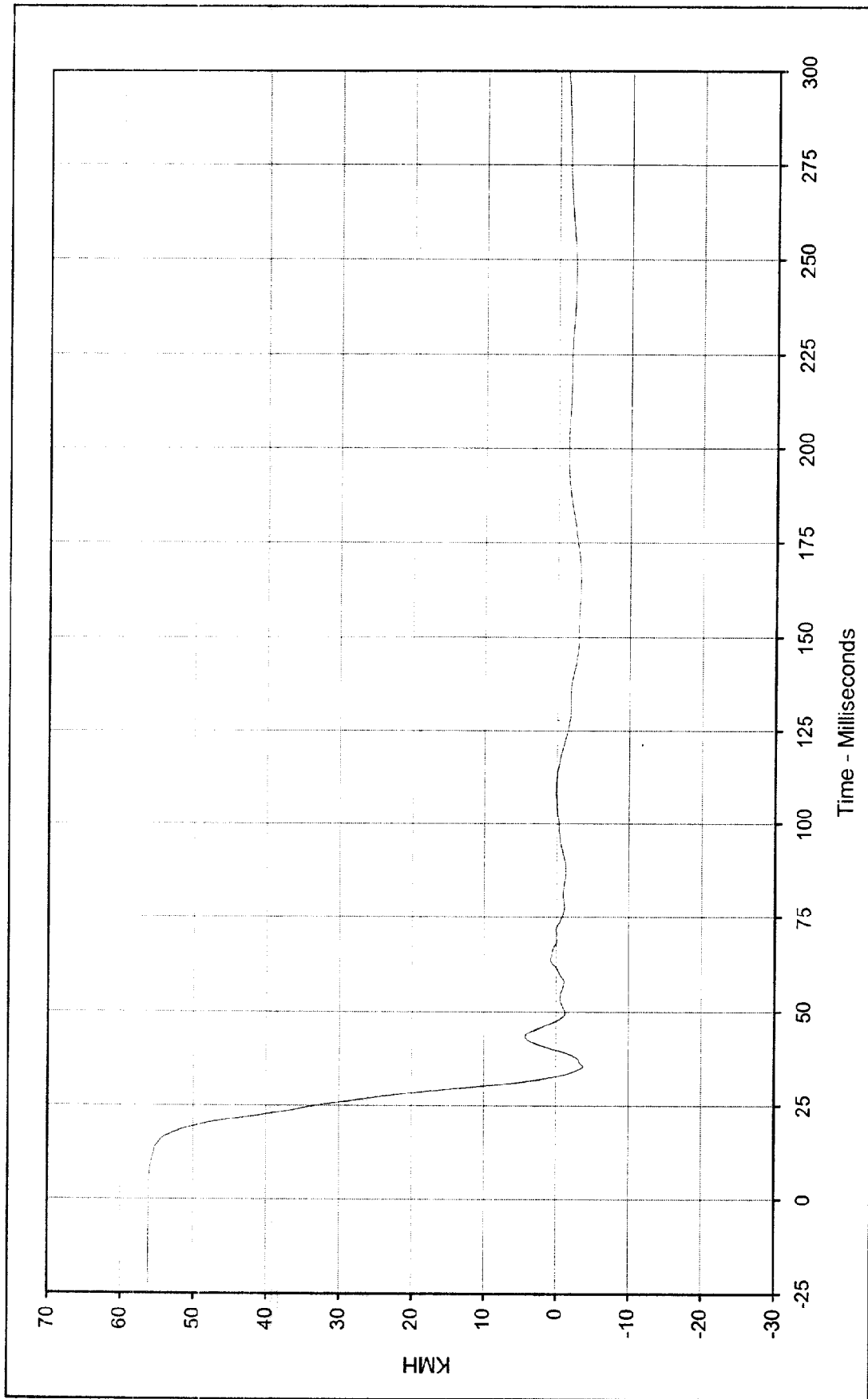




Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

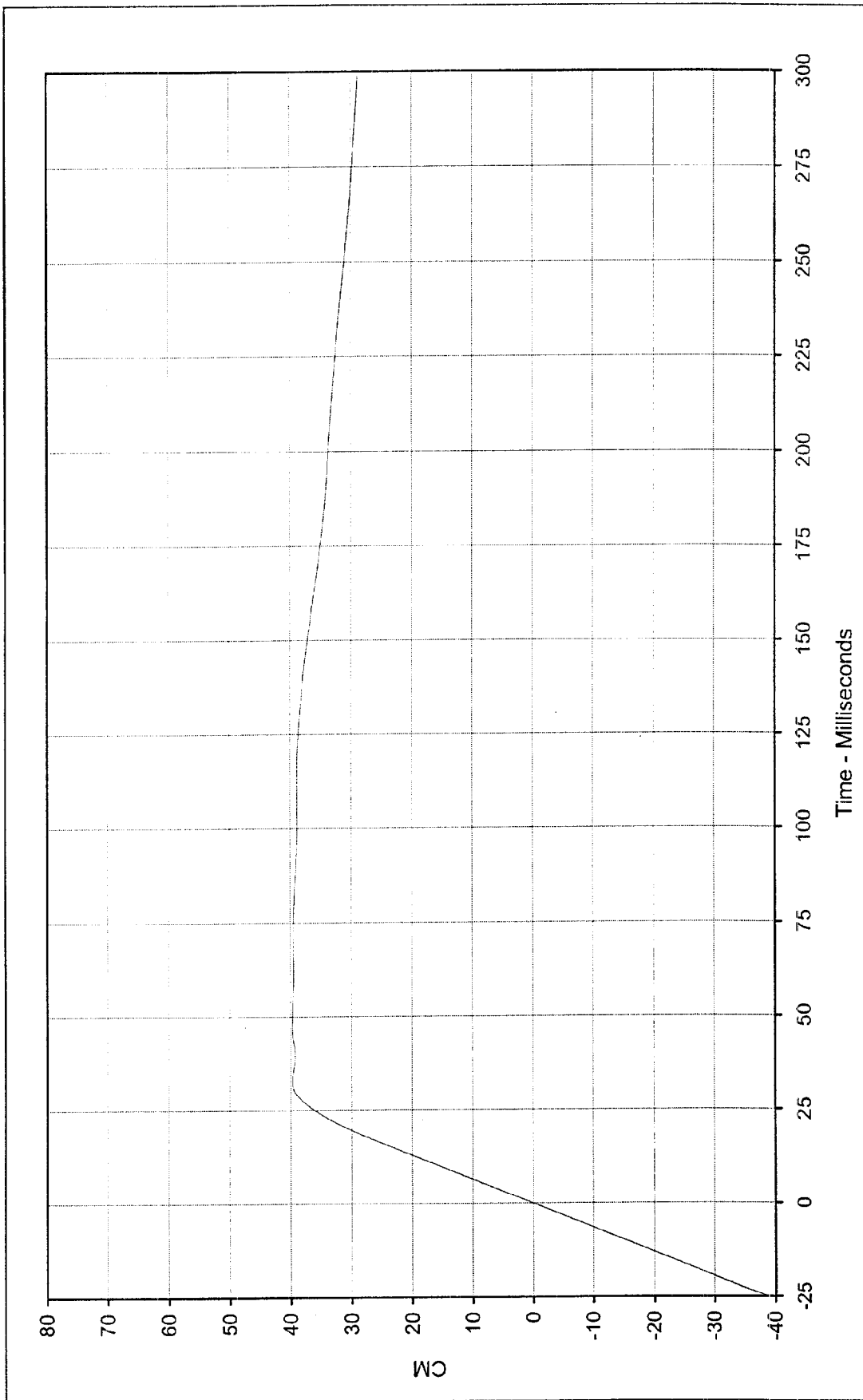
Curve Description: Vehicle Engine Top
 Maximum Value: 44.9 at 39.8 Milliseconds
 Minimum Value: -142.1 at 29.4 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: FIL-091





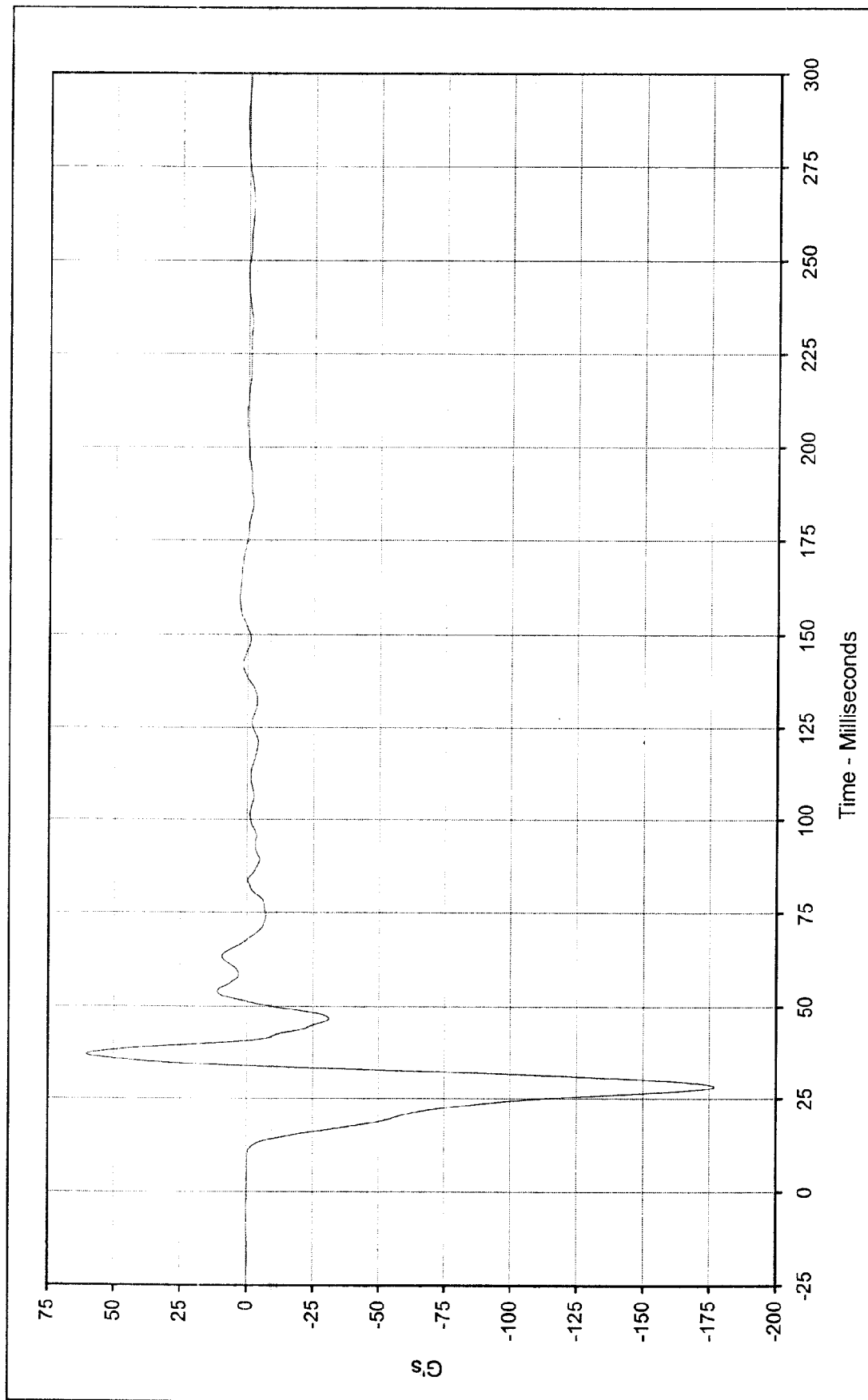
Curve Description:	Vehicle Engine Top Velocity	Test Program:	1999 NHTSA 35 mph NCAP No.: MX5300
Maximum Value:	56.0 at 3.8 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan
Minimum Value:	-3.8 at 35.4 Milliseconds		
SAE Filter Class:	180		
Date of Test:	12/4/98		
Curve Number:	IN1-091		





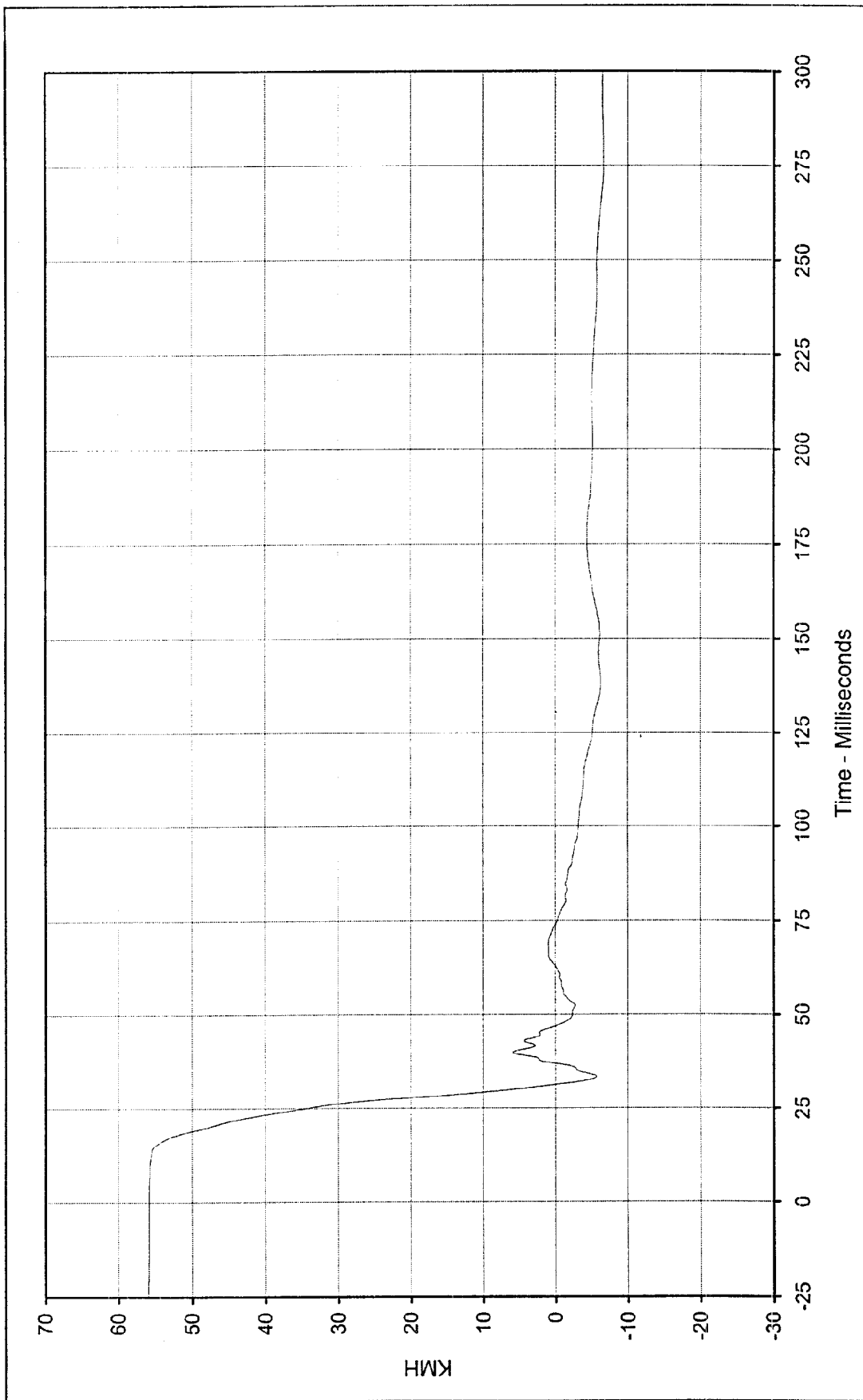
Curve Description:	Vehicle Engine Top Displacement	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	39.7 at 47.3 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	0.0 at 0.0 Milliseconds			
SAE Filter Class:	180			
Date of Test:	12/4/98			
Curve Number:	IN2-091			





Curve Description:	Vehicle Engine Bottom		Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	60.2	at 36.9	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-177.0	at 28.4			
SAE Filter Class:	60				
Date of Test:	12/4/98				
Curve Number:	FIL-092				

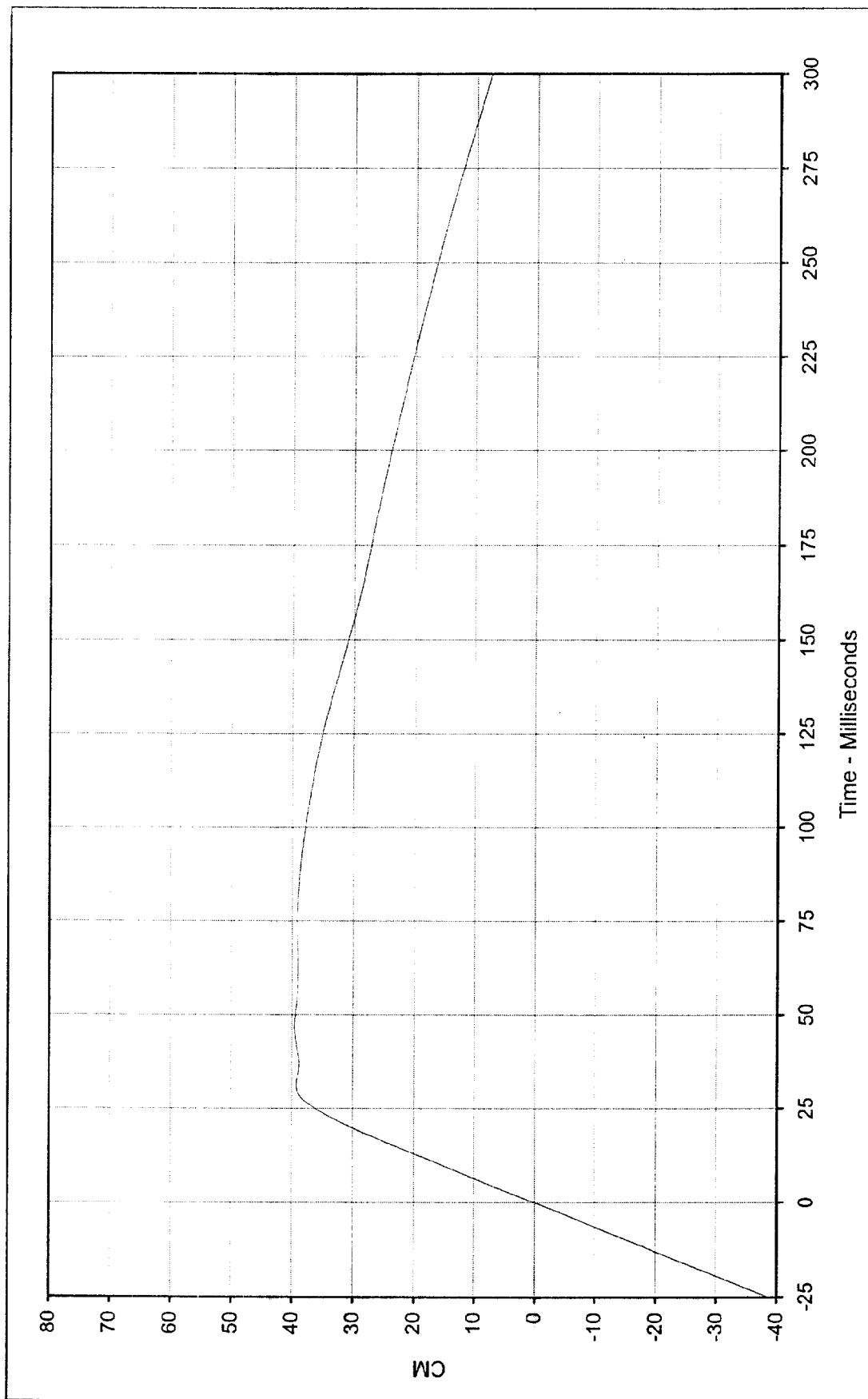




Curve Description: Vehicle Engine Bottom Velocity
 Maximum Value: 55.8 at 0.2 Milliseconds
 Minimum Value: -6.7 at 277.2 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/4/98
 Curve Number: IN1-092

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description: Vehicle Engine Bottom Displacement

Maximum Value: 39.6 at 47.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

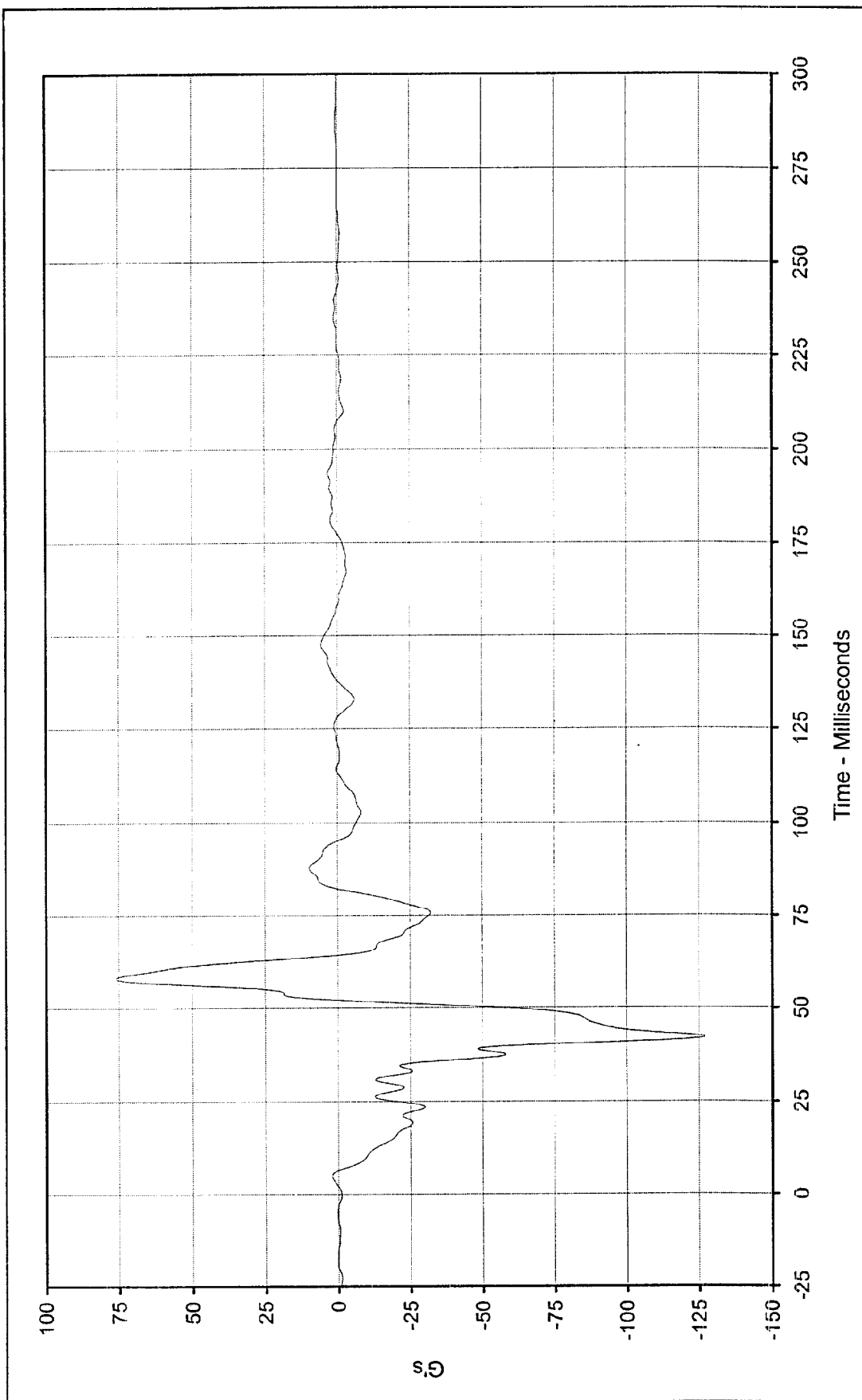
Date of Test: 12/4/98

Curve Number: IN2-092

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

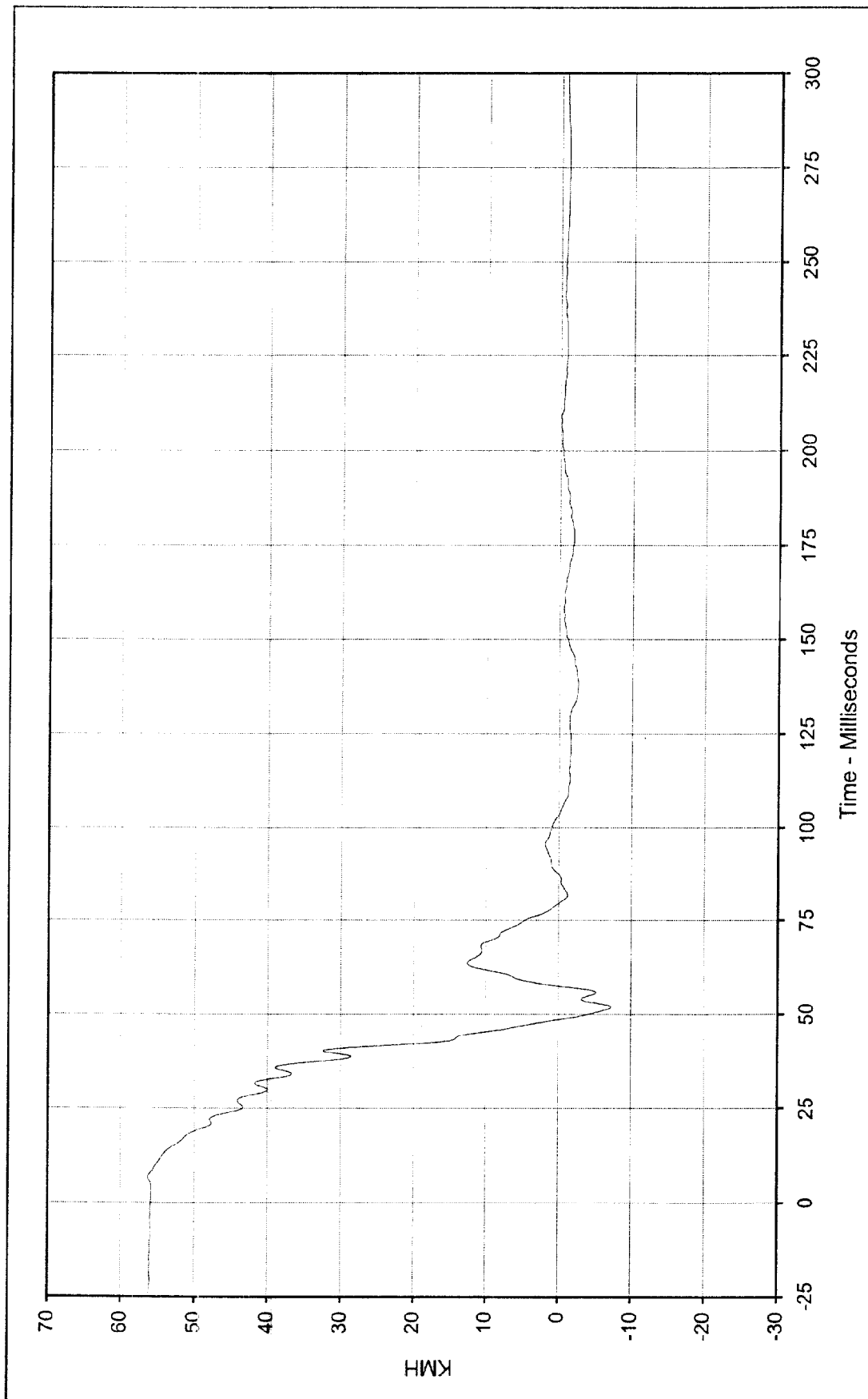
Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description:	Vehicle Left Brake Caliper	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	76.1 at 58.2 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-126.9 at 42.1 Milliseconds			
SAE Filter Class:	60			
Date of Test:	12/4/98			
Curve Number:	FIL-093			





Curve Description: Vehicle Left Brake Caliper Velocity

Maximum Value: 56.2 at 6.8 Milliseconds

Minimum Value: -7.3 at 52.0 Milliseconds

SAE Filter Class: 180

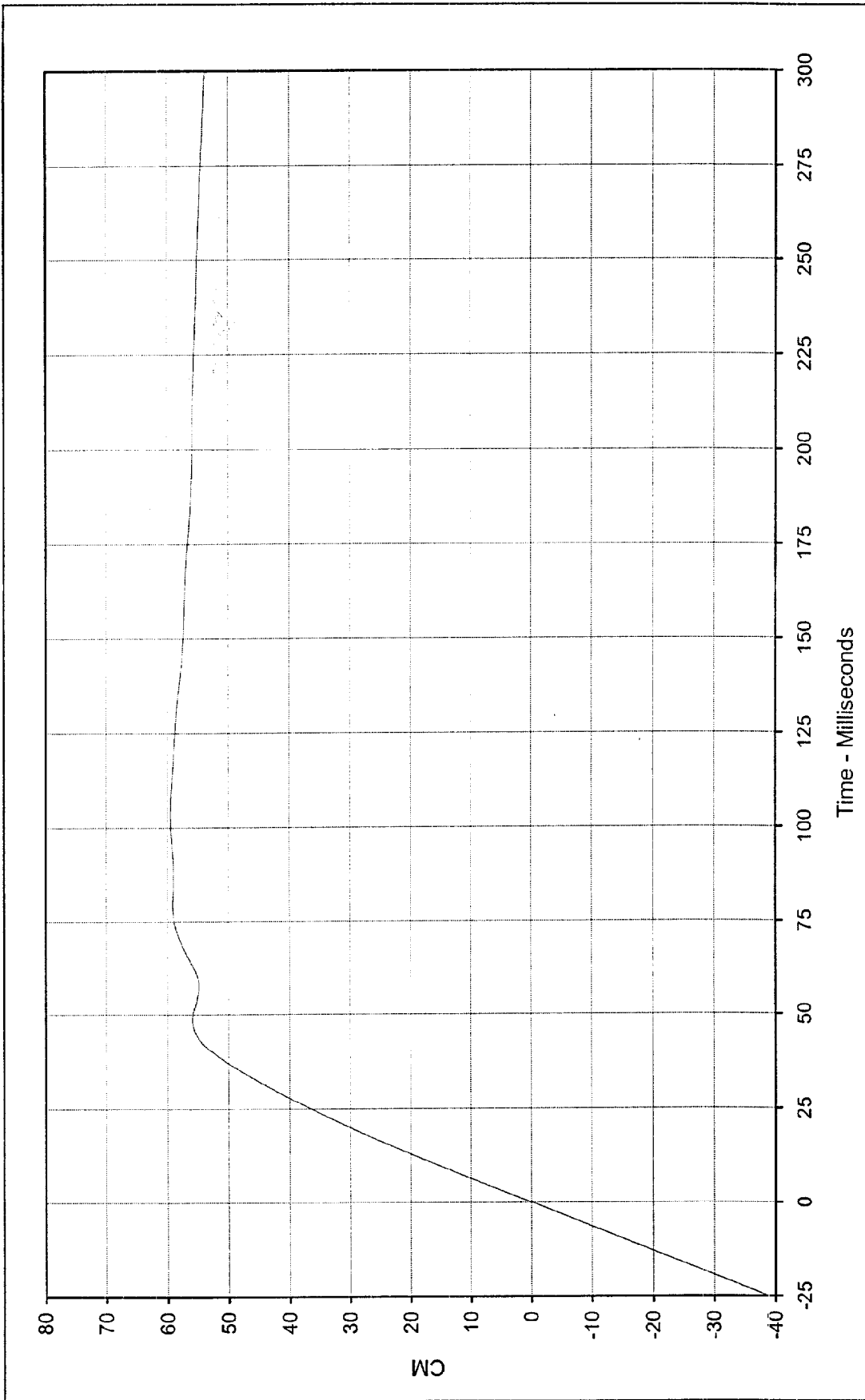
Date of Test: 12/4/98

Curve Number: IN1-093

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

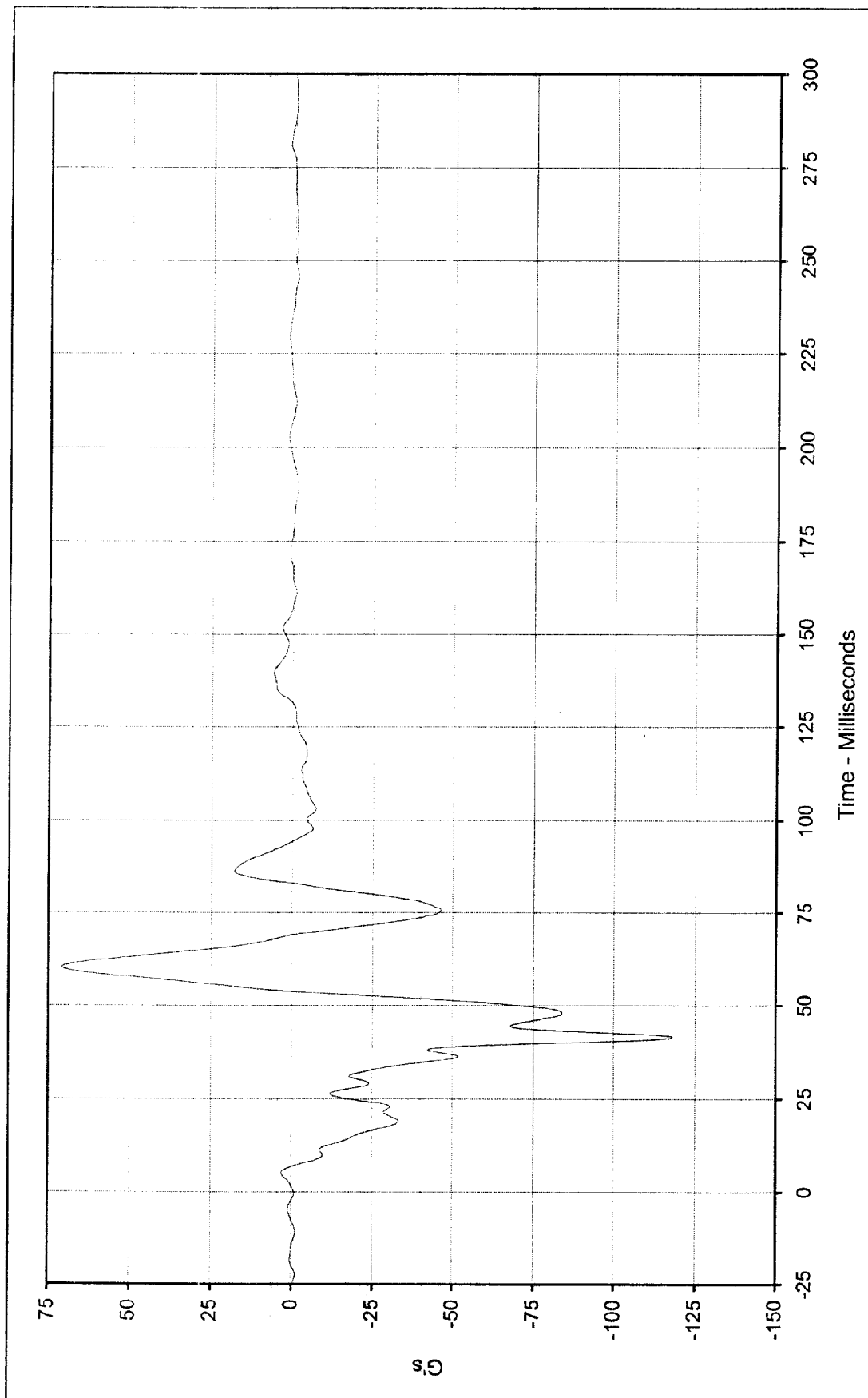




Curve Description: Vehicle Left Brake Caliper Displ.
 Maximum Value: 59.5 at 103.4 Milliseconds
 Minimum Value: 0.0 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/4/98
 Curve Number: IN2-093

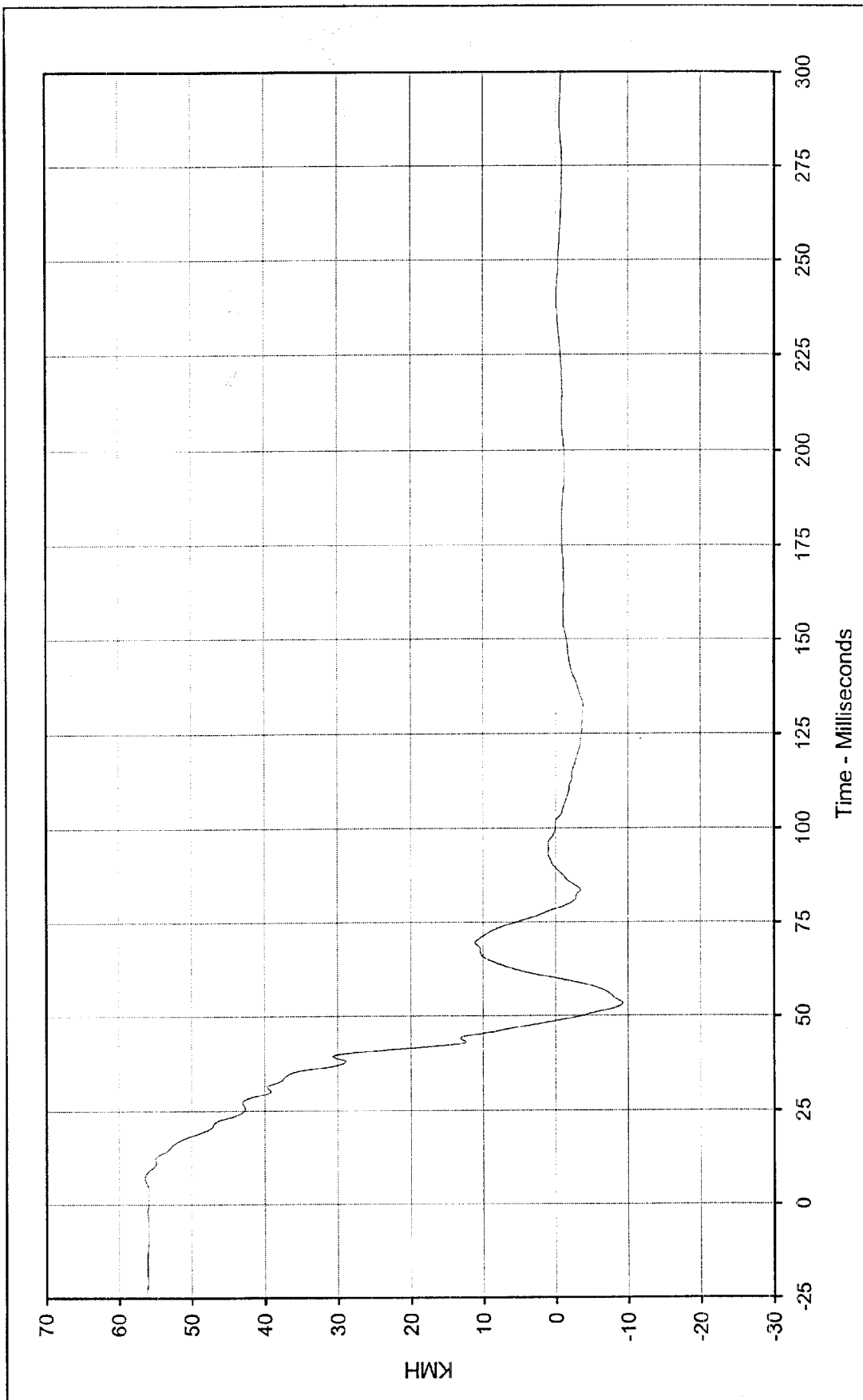
Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description:	Vehicle Right Brake Caliper	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	70.7 at 60.3 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-118.0 at 41.5 Milliseconds			
SAE Filter Class:	60			
Date of Test:	12/4/98			
Curve Number:	FIL-094			





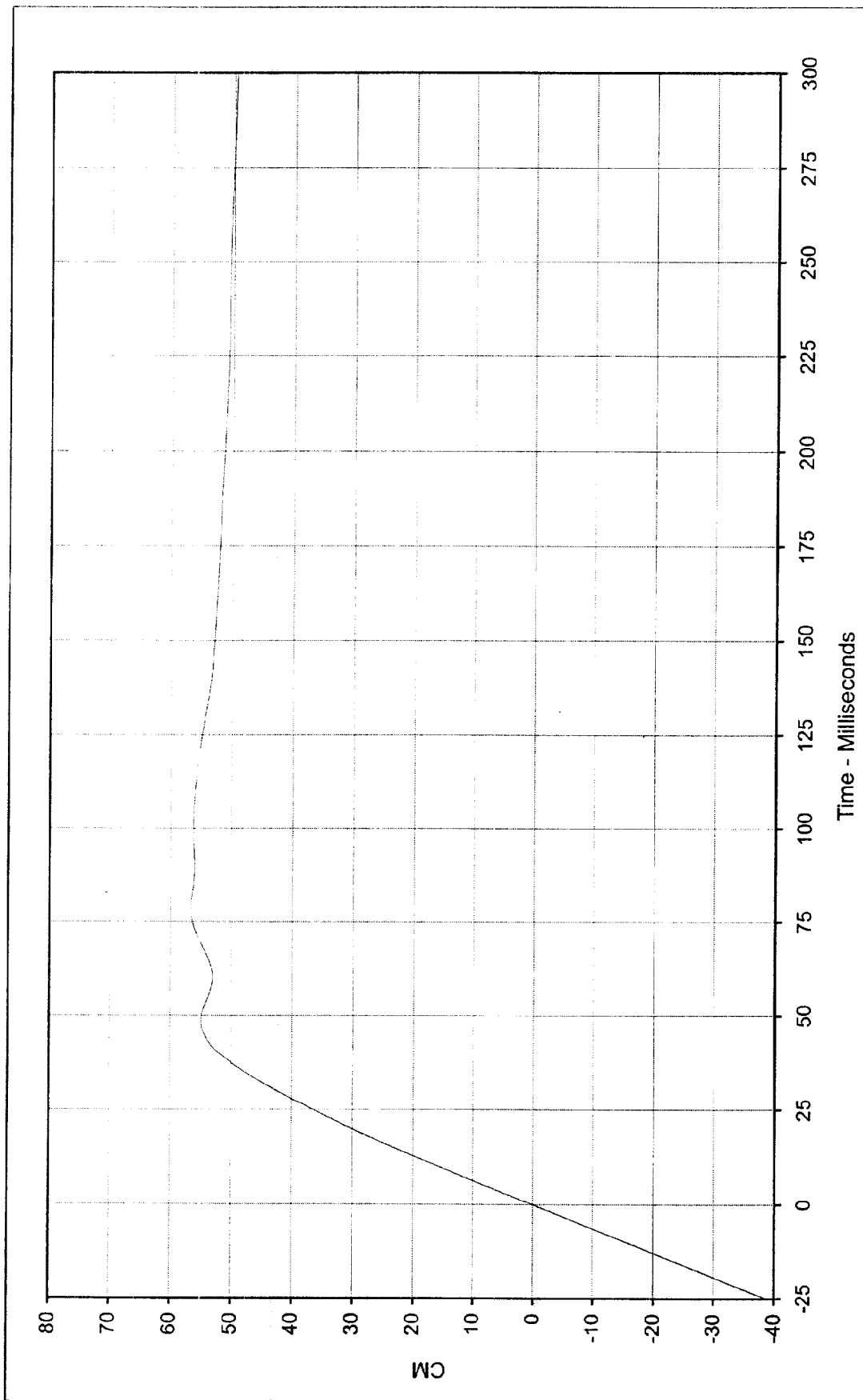
Curve Description: Vehicle Right Brake Caliper Velocity

Maximum Value:	56.4	at	7.2	Milliseconds
Minimum Value:	-9.2	at	53.2	Milliseconds
SAE Filter Class:	180			
Date of Test:	12/4/98			
Curve Number:	IN1-094			

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description: Vehicle Right Brake Caliper Displ.

Maximum Value: 56.6 at 78.6 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

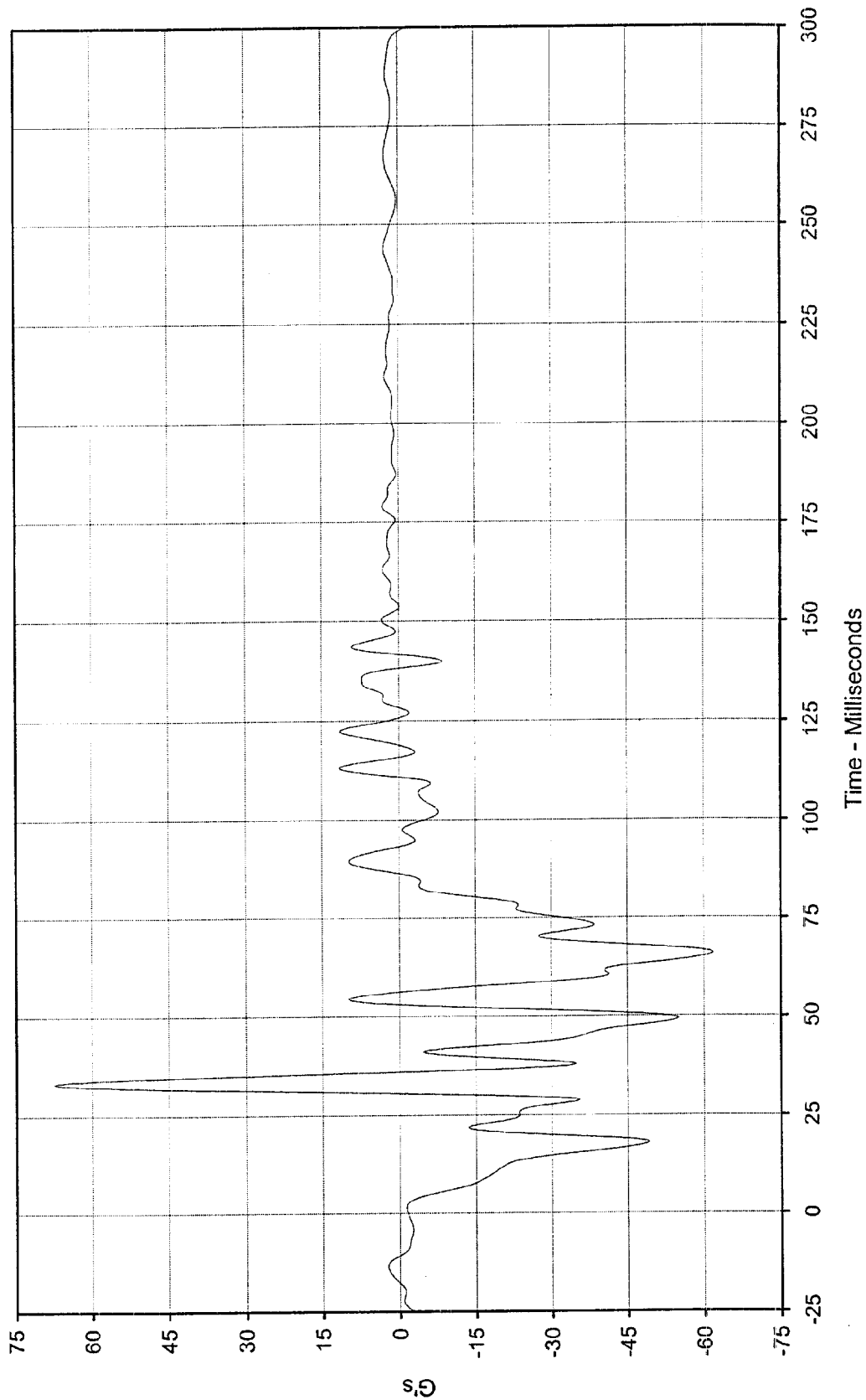
Date of Test: 12/4/98

Curve Number: IN2-094

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

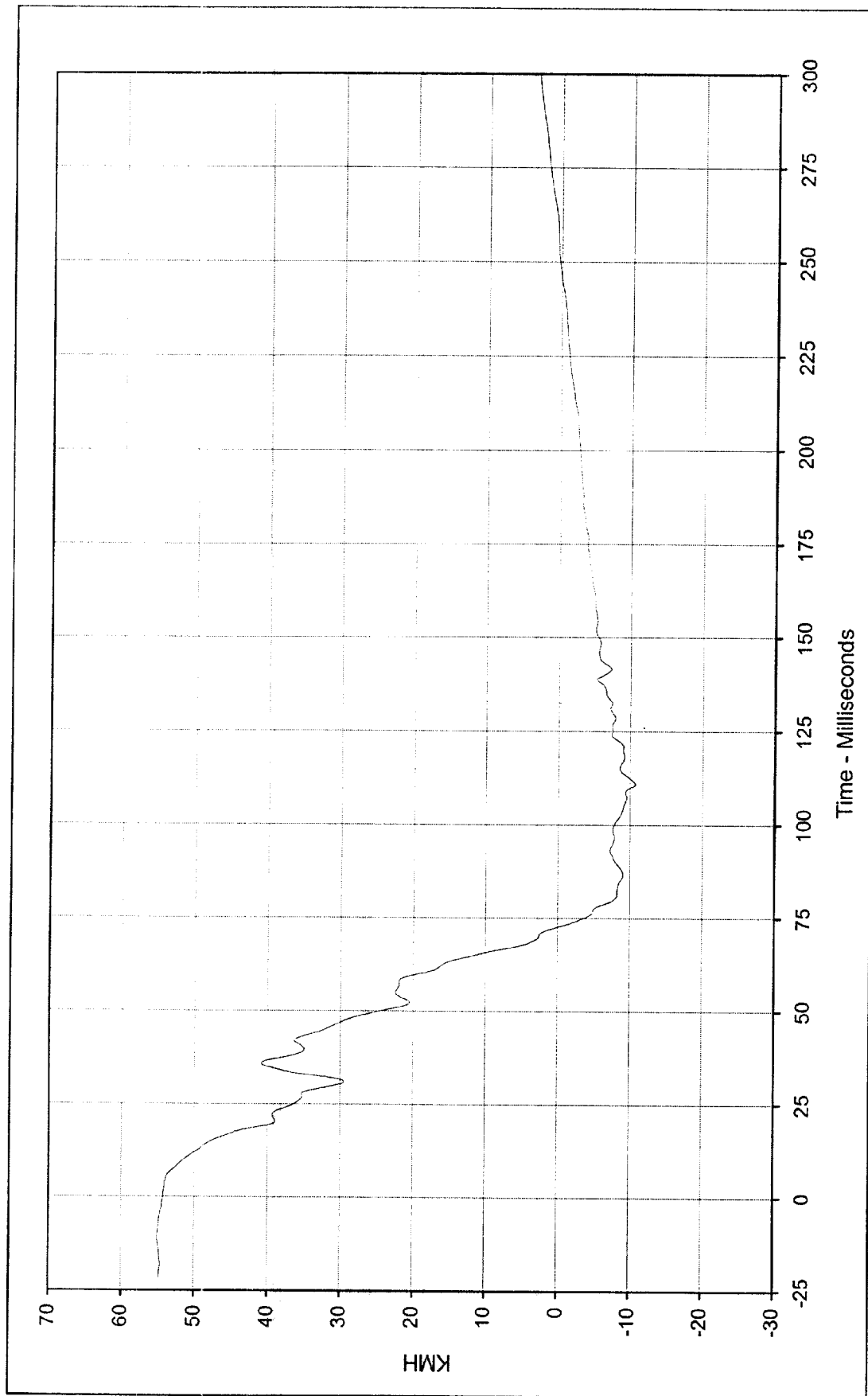
Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description:	Vehicle Instrument Panel		Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	67.4	at 33.2 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-61.8	at 66.0 Milliseconds			
SAE Filter Class:	60				
Date of Test:	12/4/98				
Curve Number:	FIL-095				

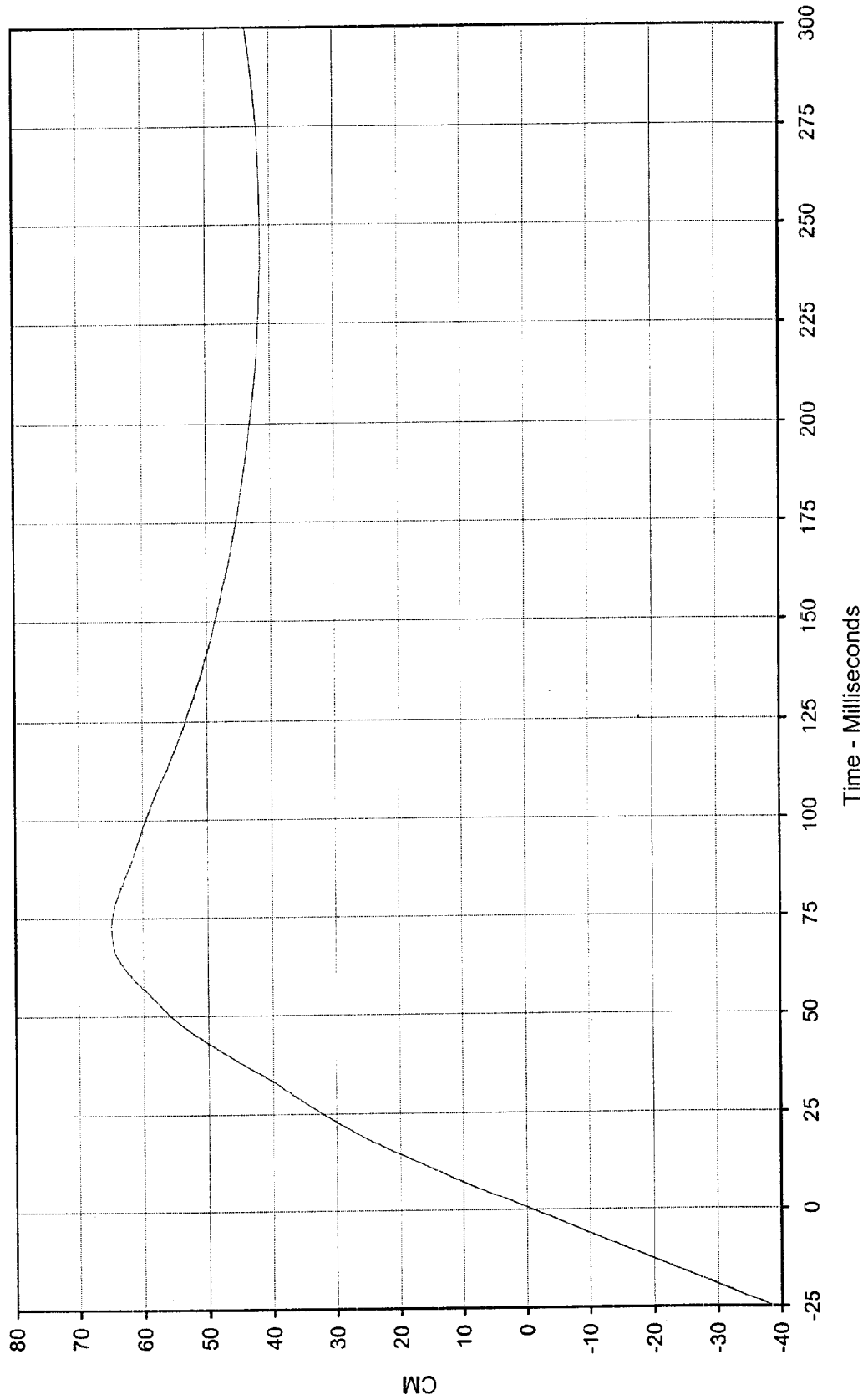




Curve Description: Vehicle Instrument Panel Velocity
Maximum Value: 54.3 at 0.0 Milliseconds
Minimum Value: -10.7 at 111.0 Milliseconds
SAE Filter Class: 180
Date of Test: 12/4/98
Curve Number: IN1-095

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

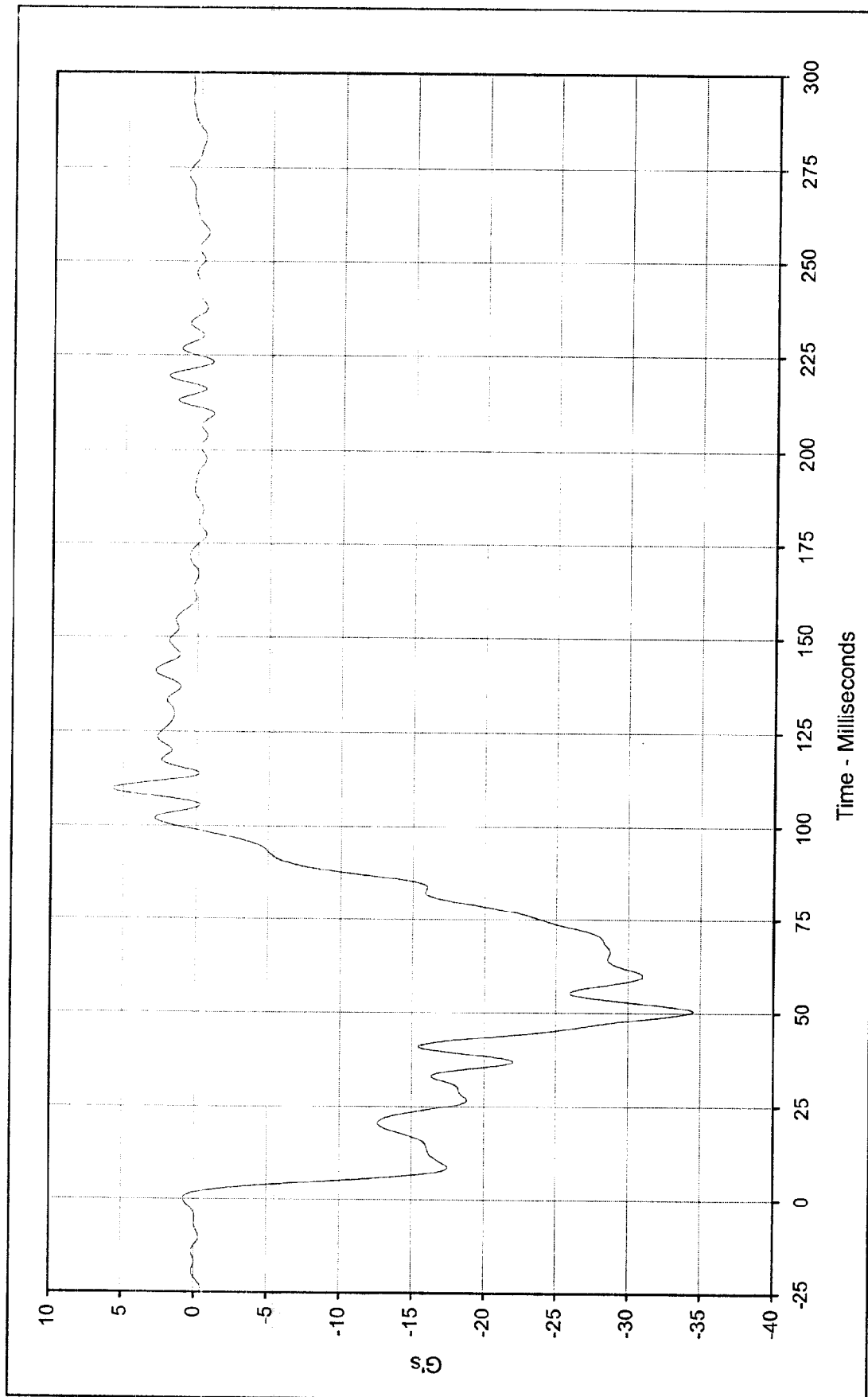




Curve Description: Vehicle Instrument Panel Displacement
 Maximum Value: 64.9 at 72.6 Milliseconds
 Minimum Value: -0.9 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/4/98
 Curve Number: IN2-095

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

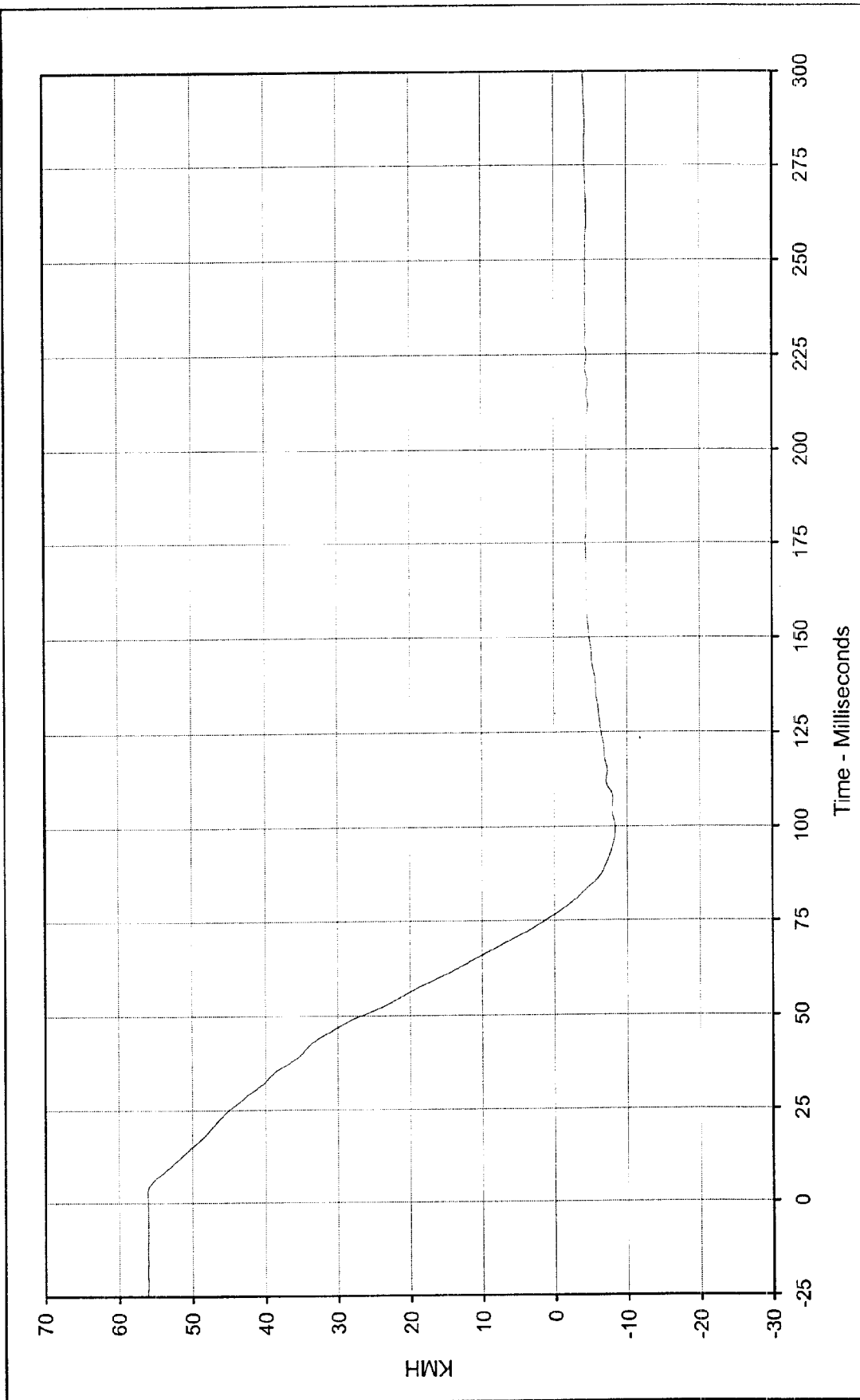




Curve Description: Vehicle Left Rear Redundant
 Maximum Value: 5.8 at 109.9 Milliseconds
 Minimum Value: -34.5 at 50.5 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: FIL-096

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

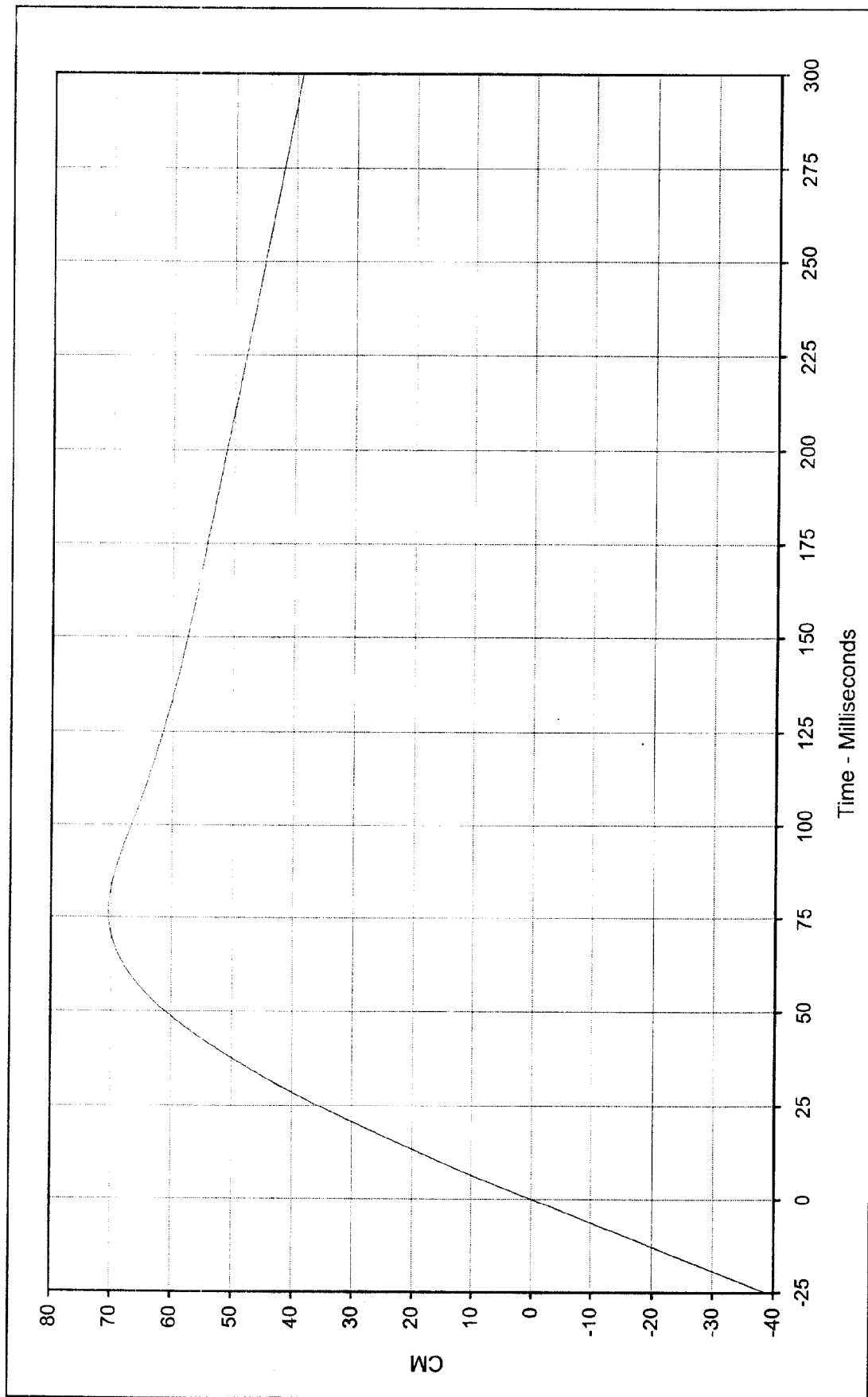




Curve Description: Vehicle Left Rear Redundant Velocity
 Maximum Value: 56.1 at 3.0 Milliseconds
 Minimum Value: -8.4 at 99.2 Milliseconds
 SAE Filter Class: 180
 Date of Test: 12/4/98
 Curve Number: IN1-096

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description: Vehicle Left Rear Redundant Displ.

Maximum Value: 70.5 at 76.5 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 12/4/98

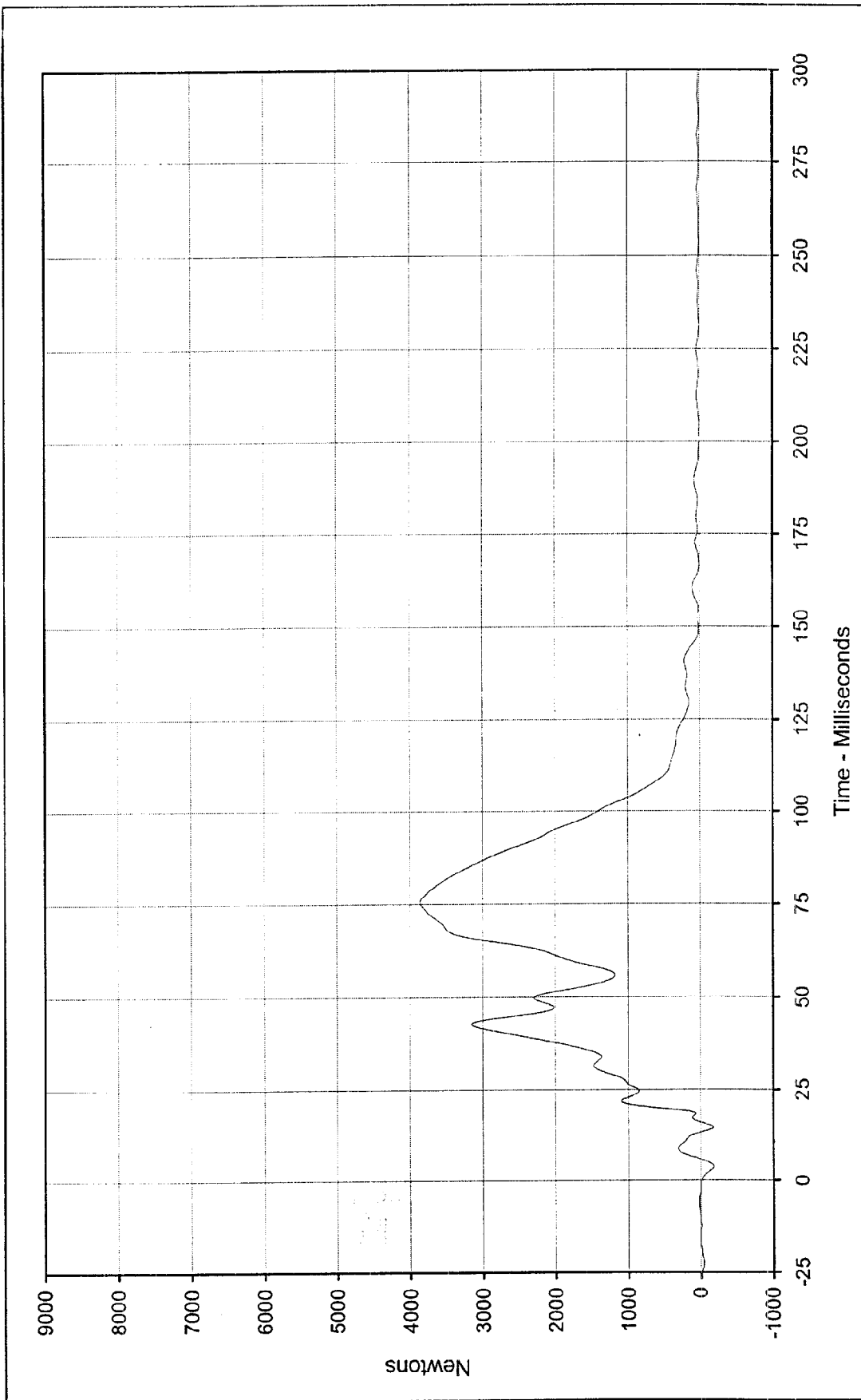
Curve Number: IN2-096

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan



APPENDIX C
LOAD CELL BARRIER INFORMATION



Curve Description: Barrier Force A2

Maximum Value: 3854.4 at 75.6 Milliseconds

Minimum Value: -181.9 at 3.7 Milliseconds

SAE Filter Class: 60

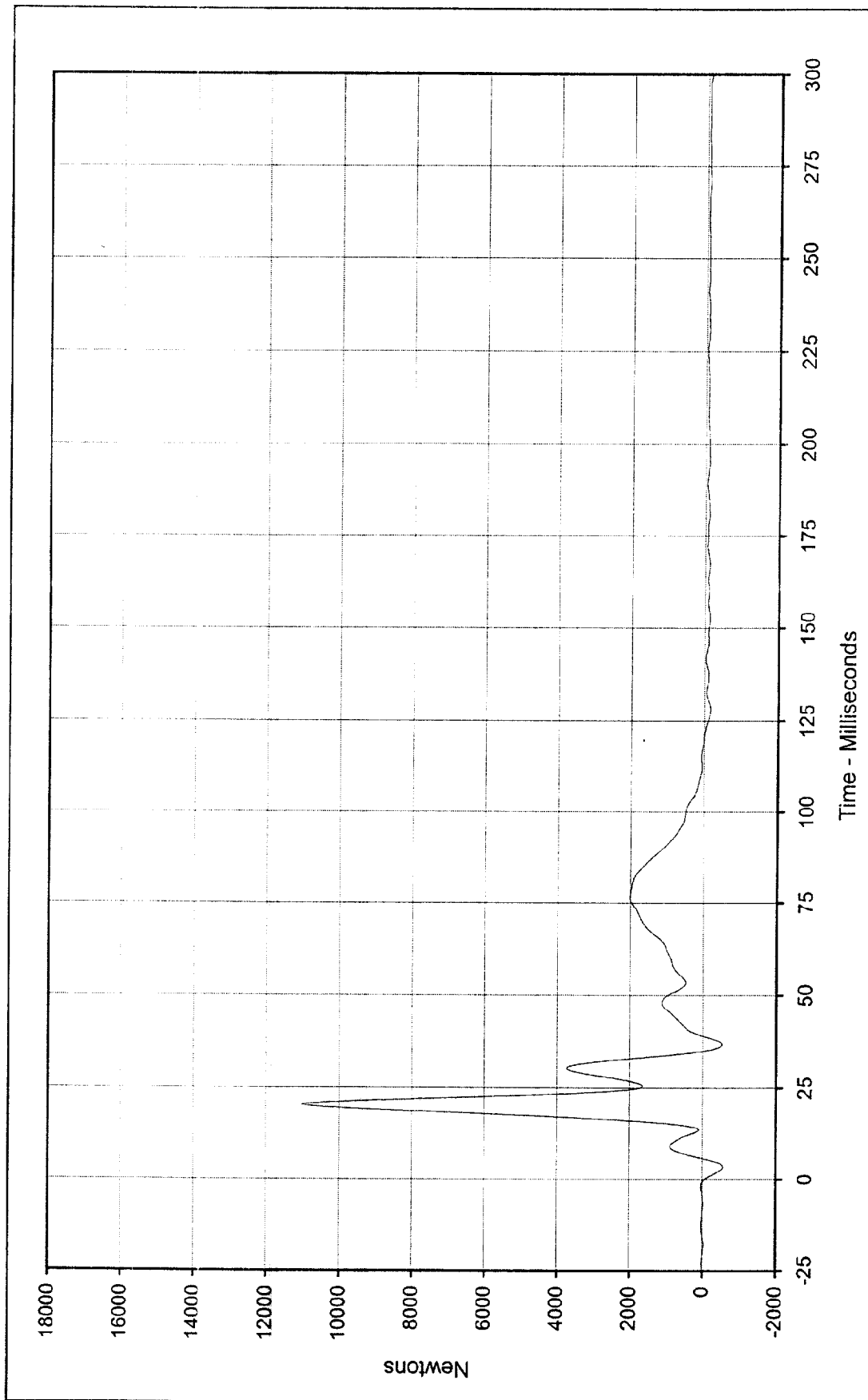
Date of Test: 12/4/98

Curve Number: FIL-099

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description:

Barrier Force A3

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Maximum Value: 11002.5 at 20.3 Milliseconds

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

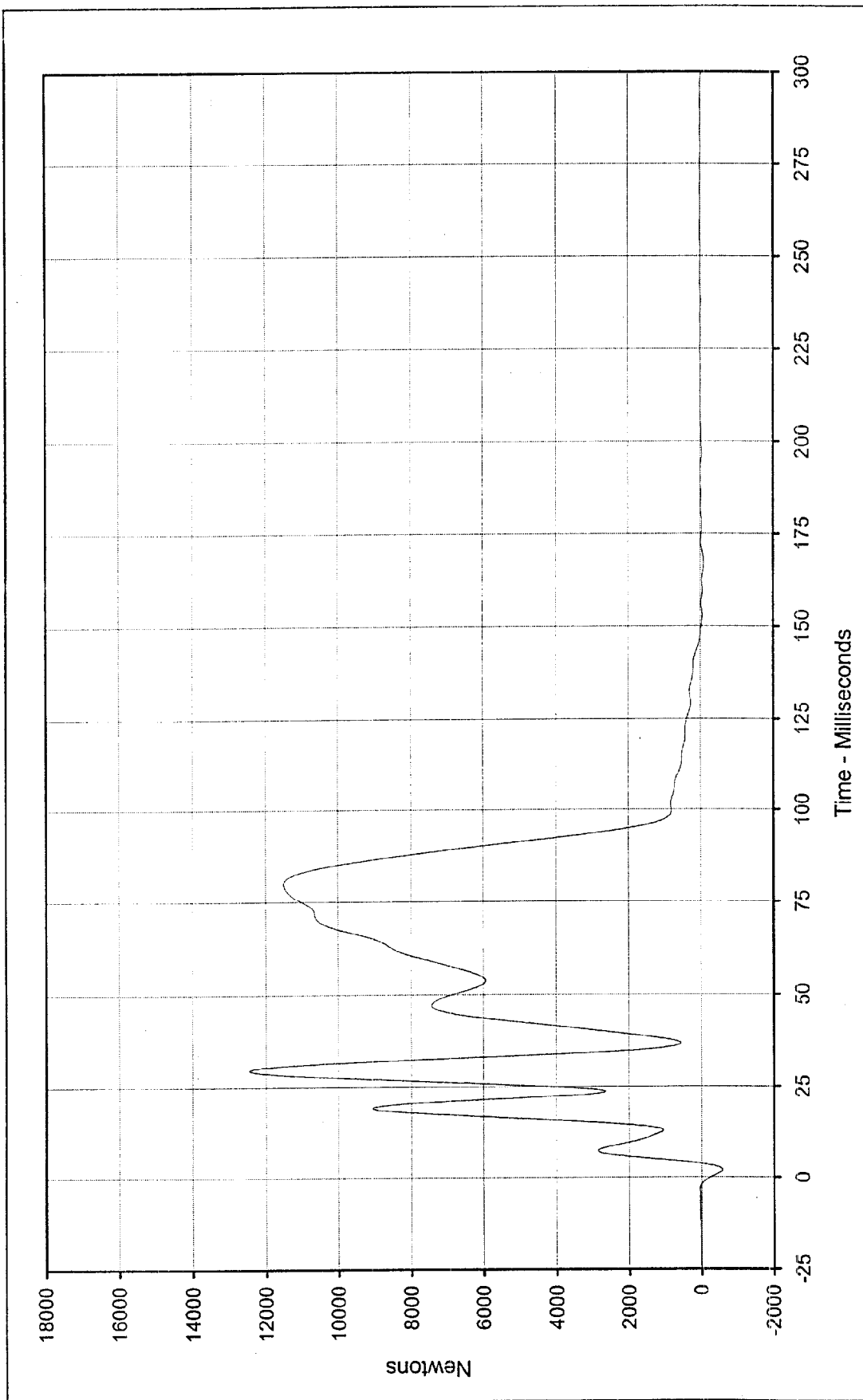
Minimum Value: -581.1 at 3.4 Milliseconds

SAE Filter Class: 60

Date of Test: 12/4/98

Curve Number: FIL-100





Curve Description: Barrier Force A4

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

Maximum Value: 12455.8 at 29.5 Milliseconds

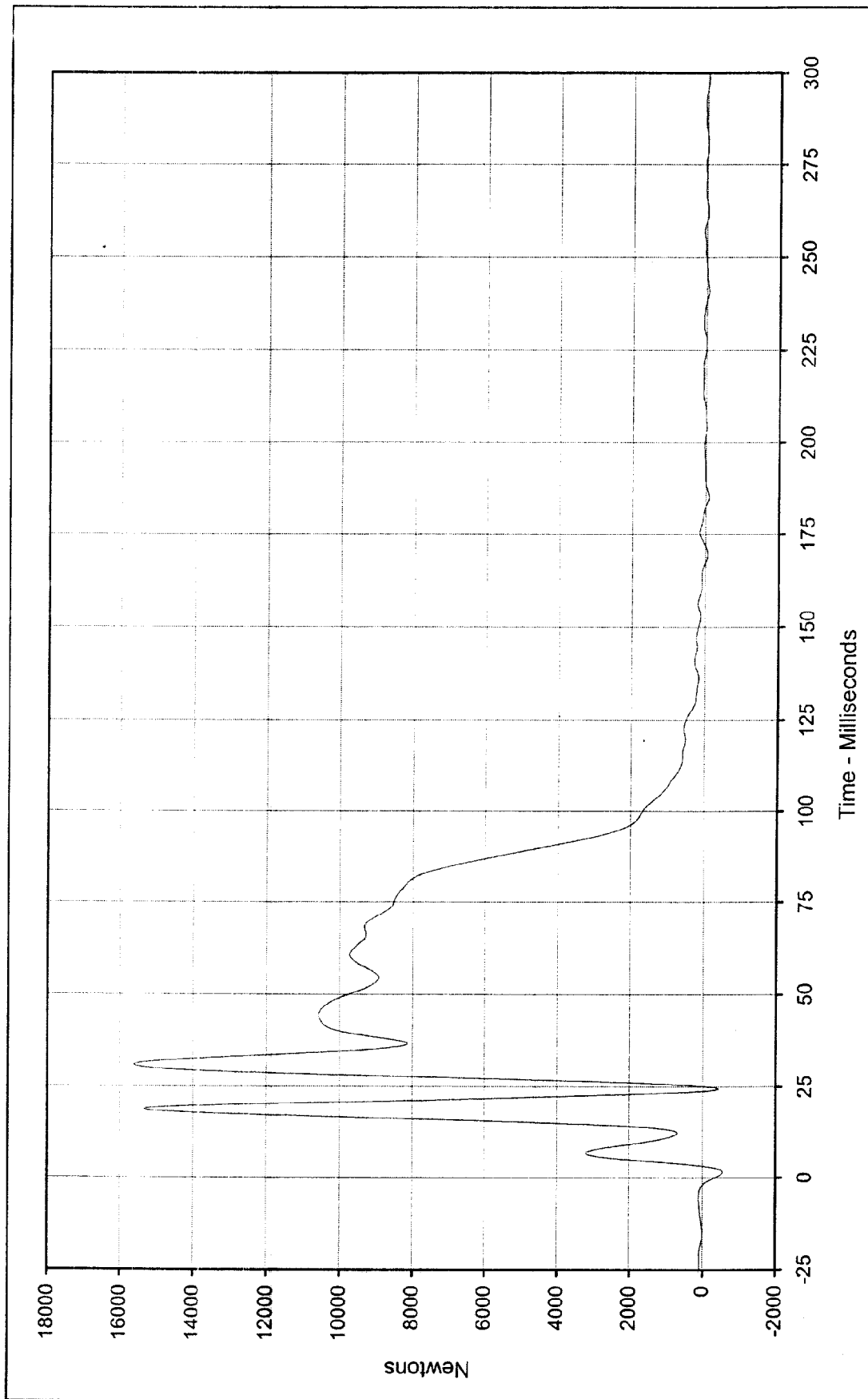
Minimum Value: -580.2 at 2.0 Milliseconds

SAE Filter Class: 60

Date of Test: 12/4/98

Curve Number: FIL-101





Curve Description:

Barrier Force A5

Maximum Value: 15615.8 at 30.7 Milliseconds

Minimum Value: -564.3 at 1.6 Milliseconds

SAE Filter Class: 60

Date of Test: 12/4/98

Curve Number: FIL-102

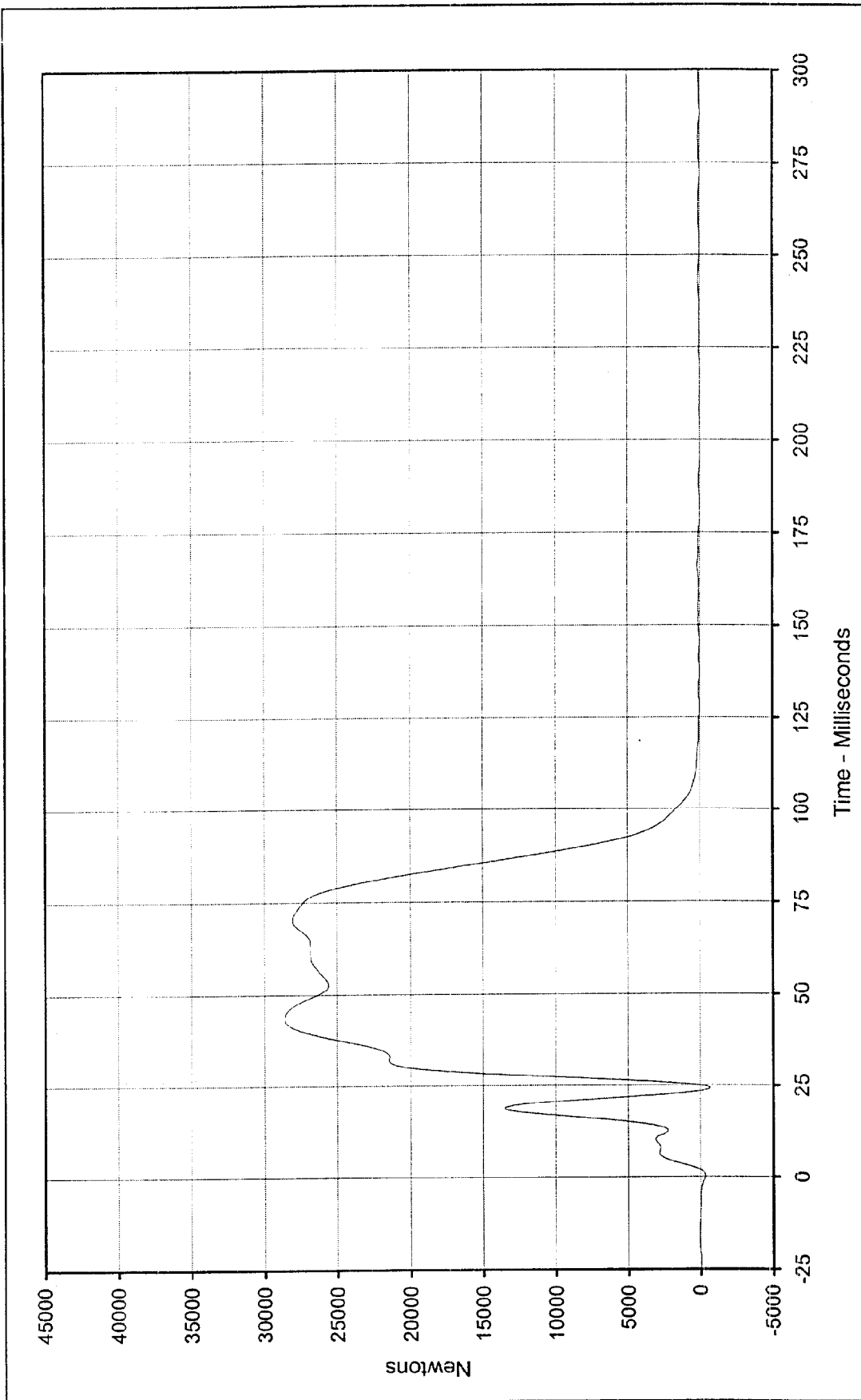
Test Program:

1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle:

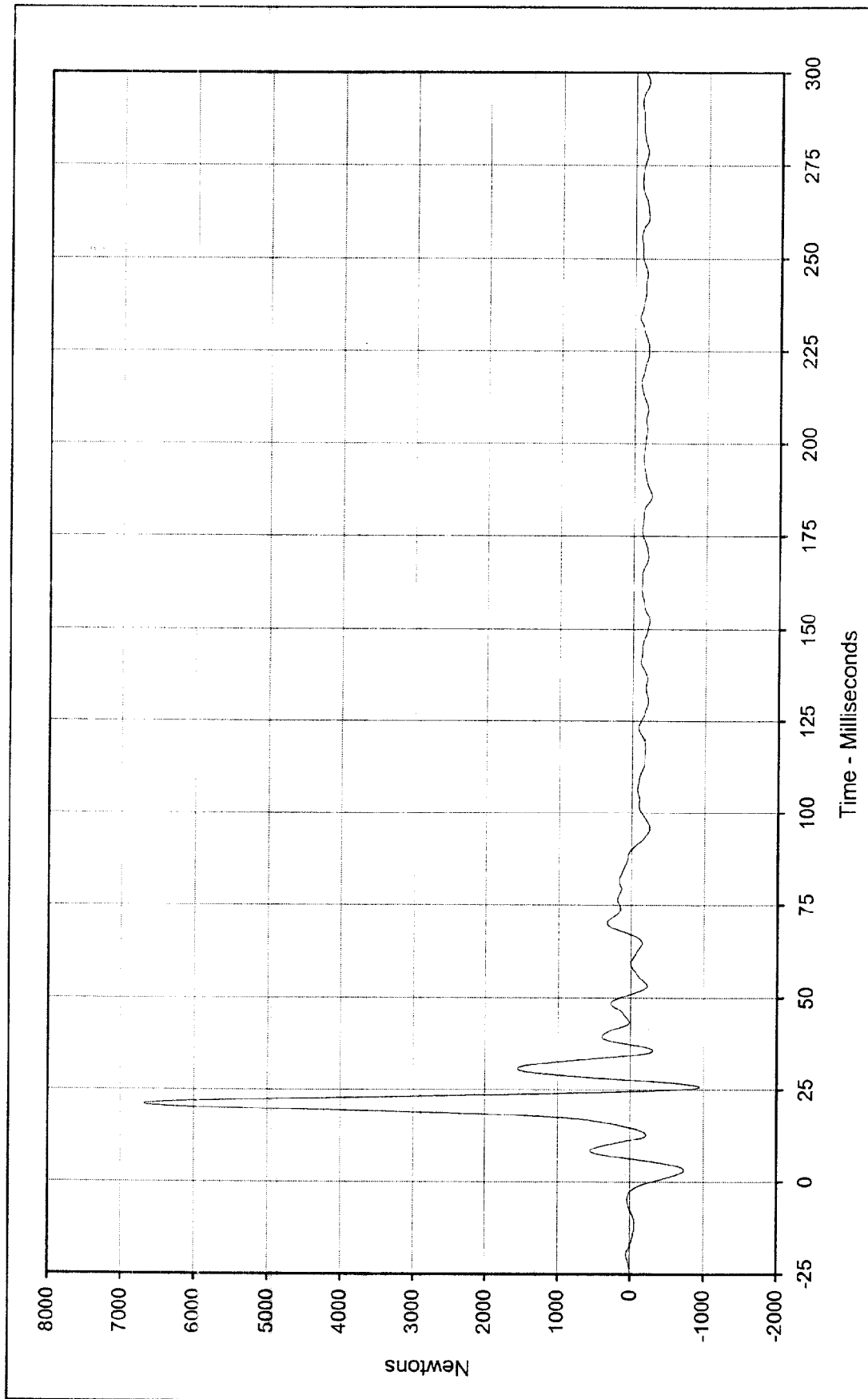
1999 Honda Civic DX 4 Door Sedan





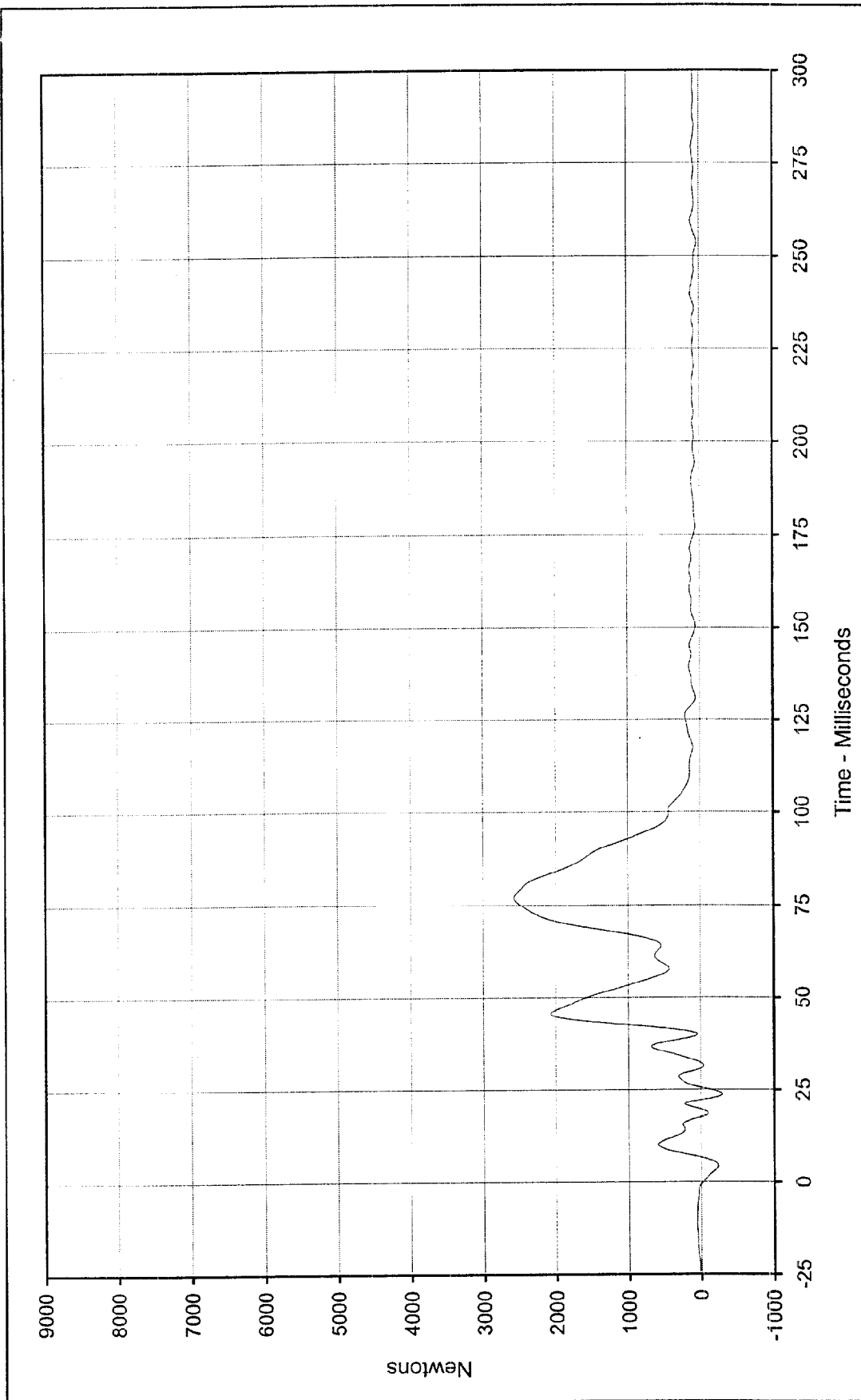
Curve Description:	Barrier Force A6	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	28606.8 at 43.2 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-685.3 at 24.2 Milliseconds			
SAE Filter Class:	60			
Date of Test:	12/4/98			
Curve Number:	FIL-103			





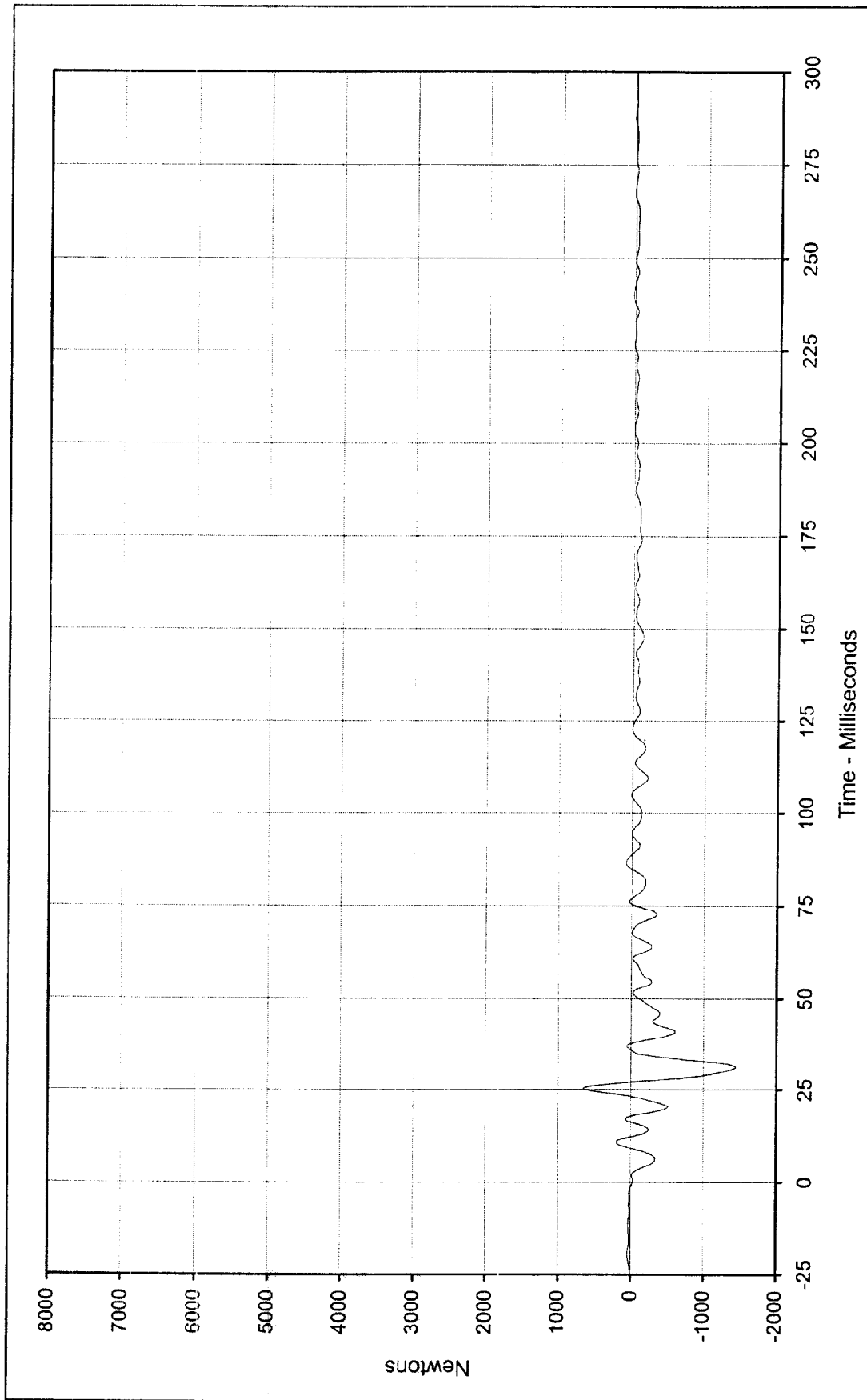
Curve Description:	Barrier Force A7	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	6684.7 at 21.0 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-948.8 at 25.8 Milliseconds			
SAE Filter Class:	60			
Date of Test:	12/4/98			
Curve Number:	FIL-104			





Curve Description:	Barrier Force A8	Test Program:	1999 NHTSA 35 mph NCAP	No.: MX5300
Maximum Value:	2571.8 at 77.1 Milliseconds	Test Vehicle:	1999 Honda Civic DX 4 Door Sedan	
Minimum Value:	-294.5 at 23.7 Milliseconds			
SAE Filter Class:	60			
Date of Test:	12/4/98			
Curve Number:	FIL -105			

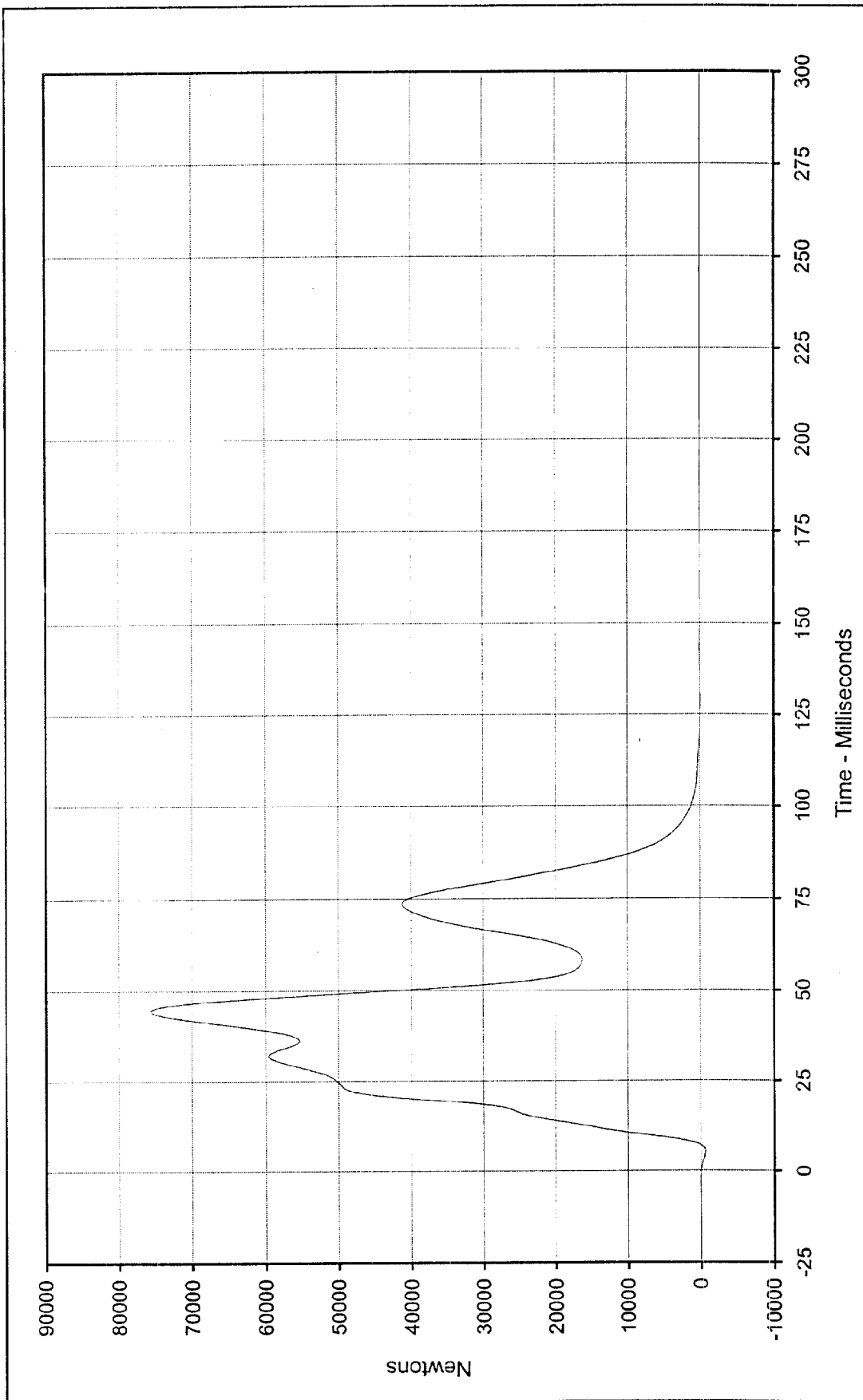




Curve Description: Barrier Force A9
 Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

Maximum Value: 654.8 at 25.4 Milliseconds
 Minimum Value: -1442.3 at 31.1 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: FIL-106

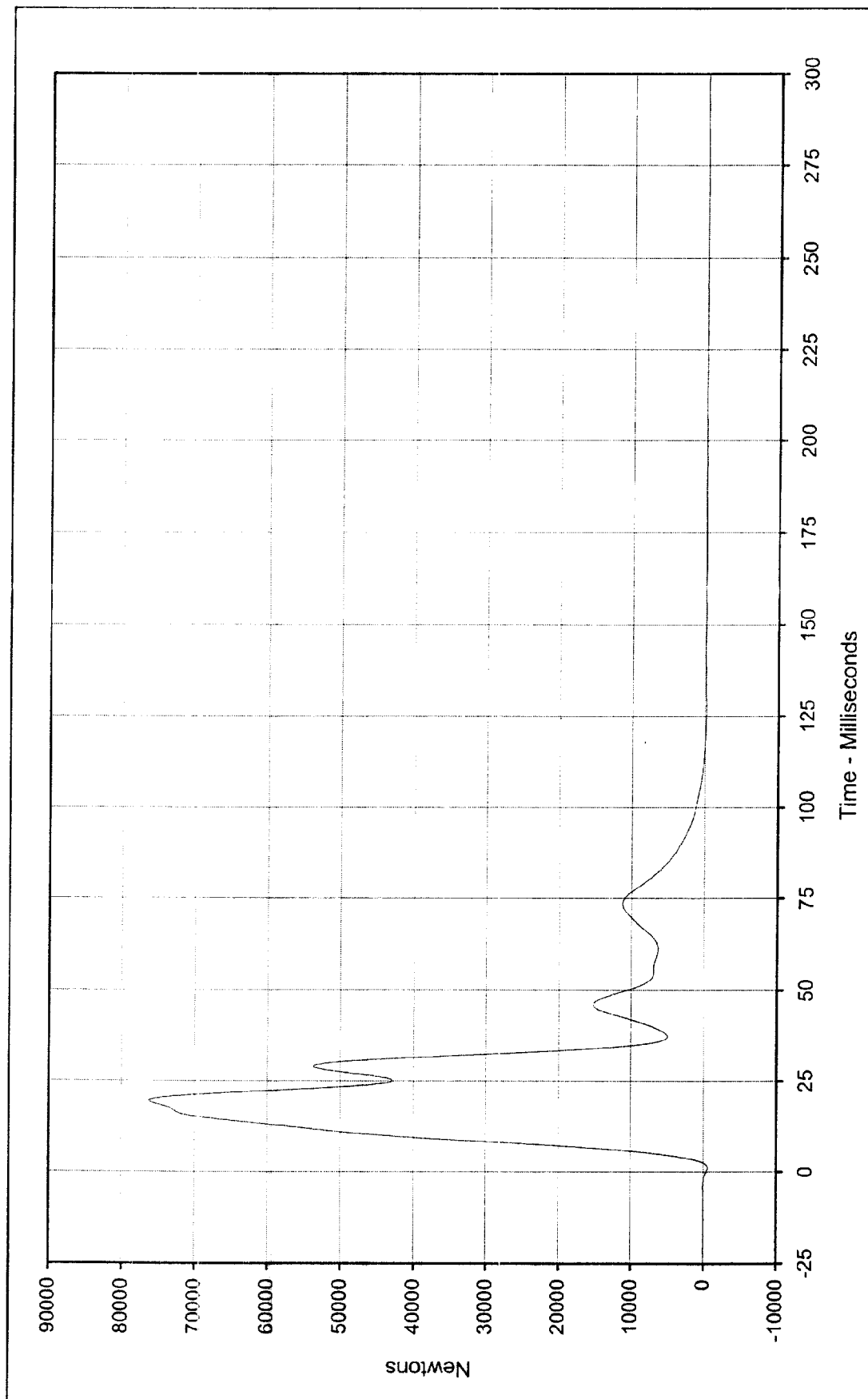




Curve Description: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Program:
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

Barrier Force B2
 Maximum Value: 75621.1 at 44.3 Milliseconds
 Minimum Value: -6255.3 at 5.3 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: FIL-108

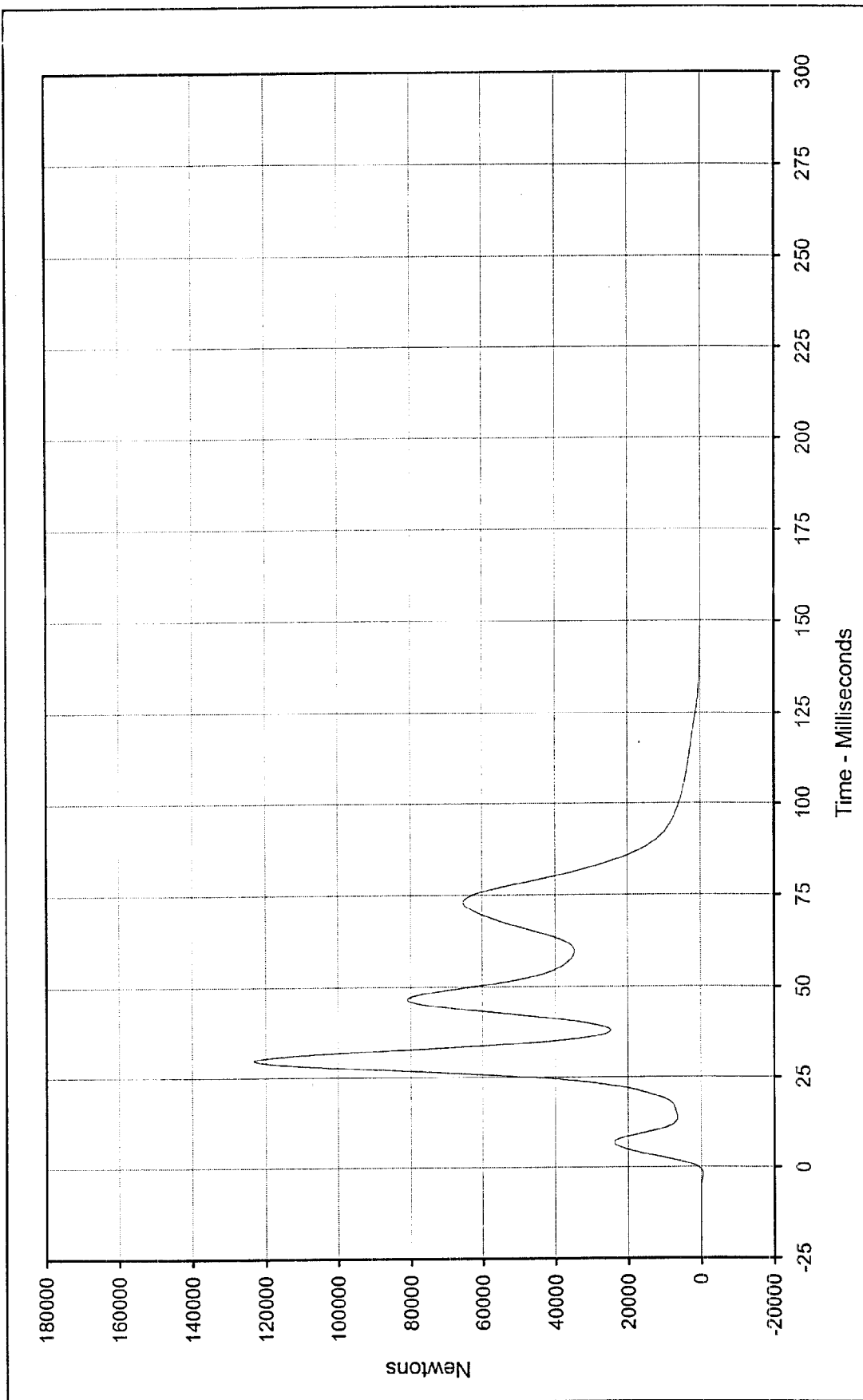




Curve Description: Barrier Force B3
 Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

Maximum Value: 76268.9 at 19.5 Milliseconds
 Minimum Value: -633.7 at 1.1 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: FIL-109

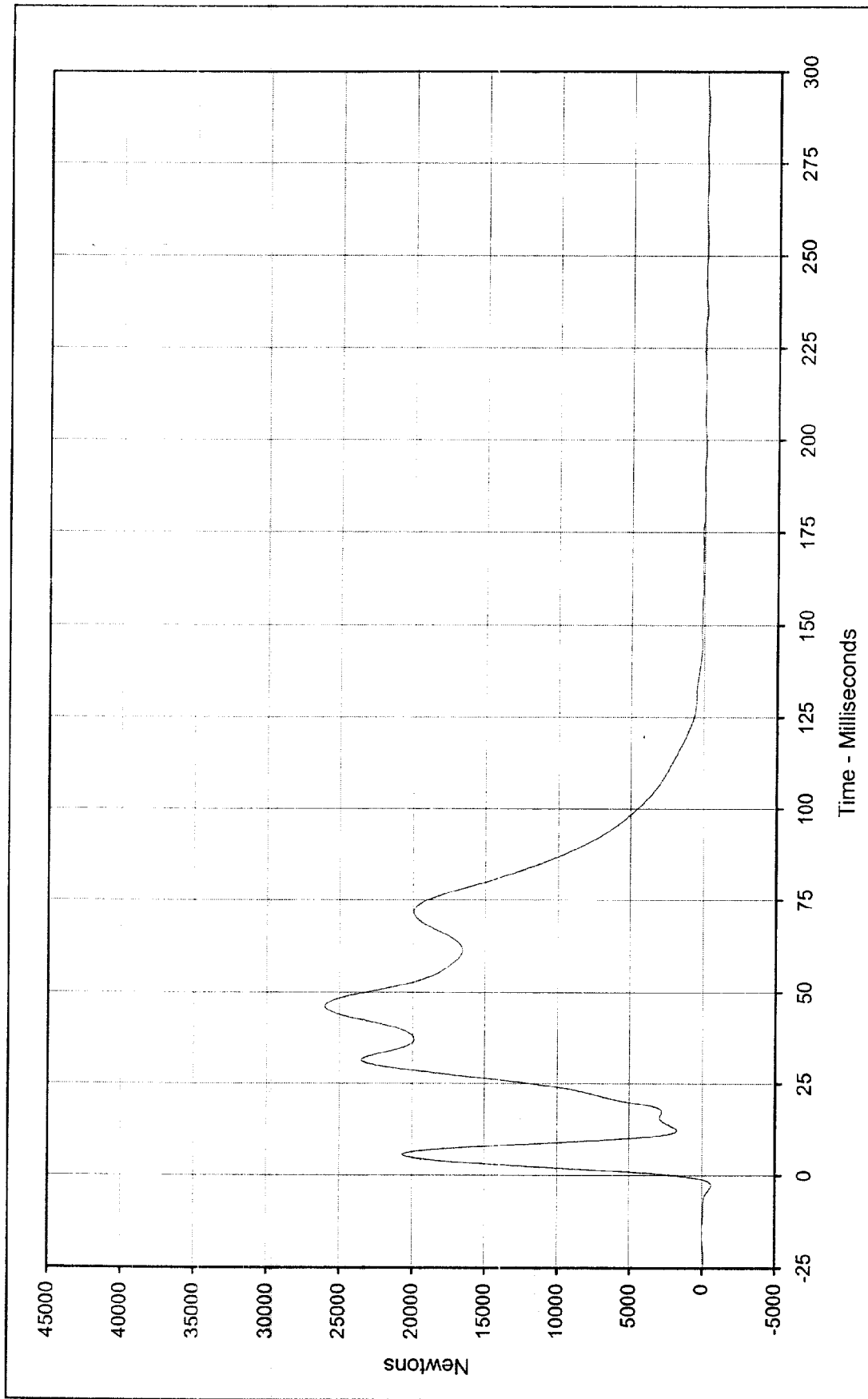




Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan



Curve Description: Barrier Force B4
 Maximum Value: 123160.0 at 29.7 Milliseconds
 Minimum Value: -11.4 at 169.1 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: FIL-110



Curve Description:

Barrier Force B5

Maximum Value: 25995.4 at 46.0 Milliseconds

Minimum Value: -99.1 at 288.9 Milliseconds

SAE Filter Class: 60

Date of Test: 12/4/98

Curve Number: FIL-111

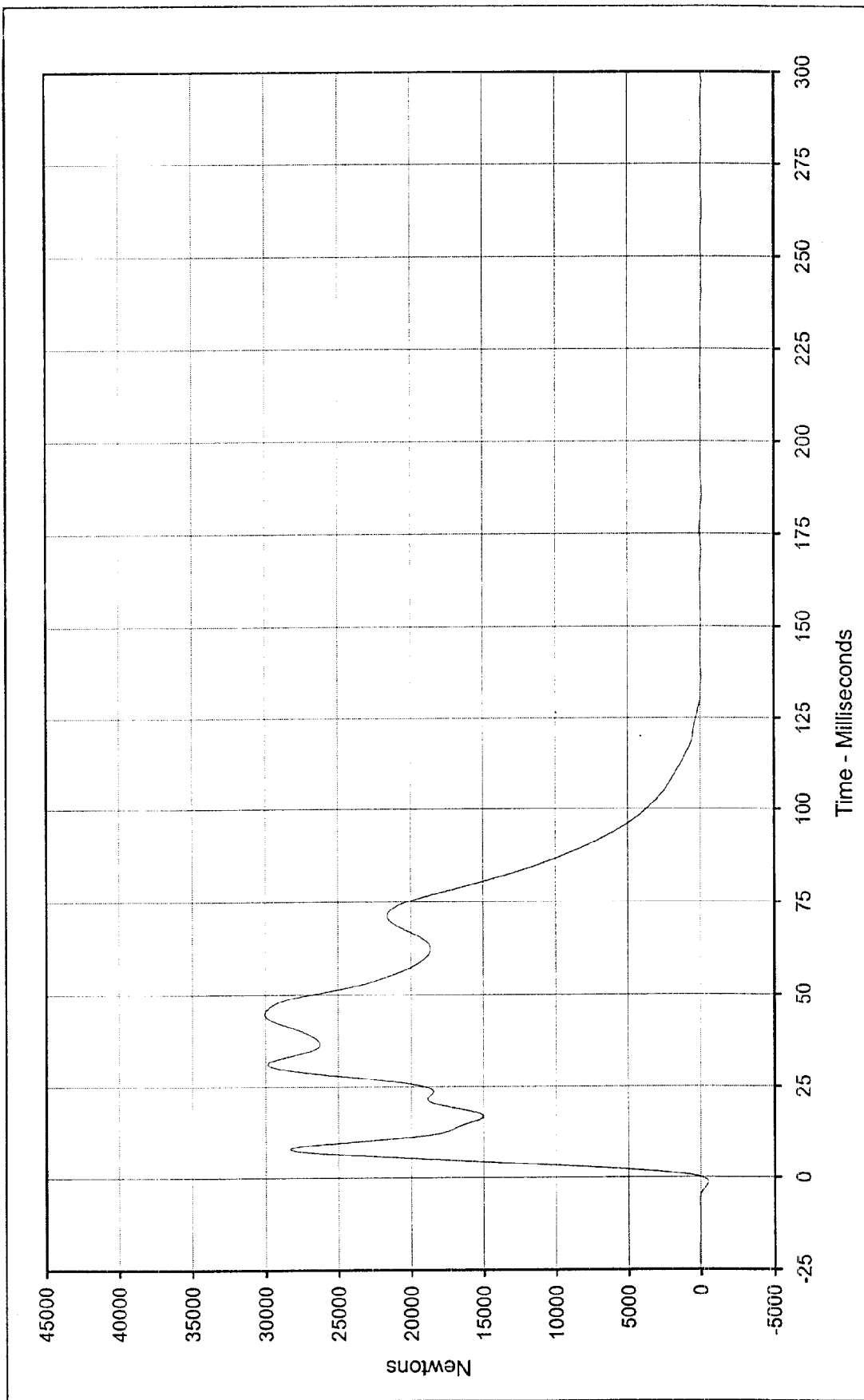
Test Program:

1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle:

1999 Honda Civic DX 4 Door Sedan

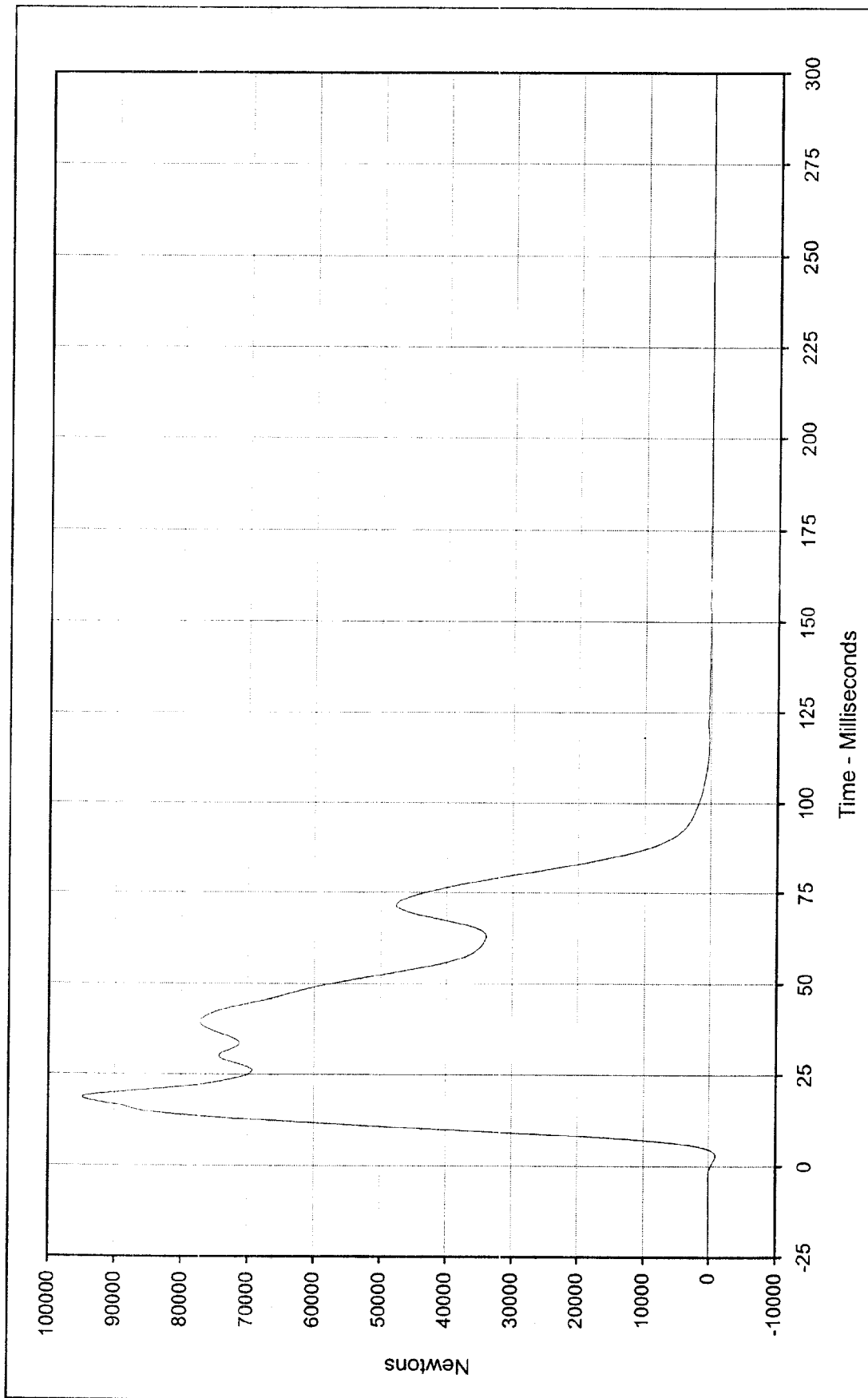




Curve Description: Barrier Force B6
 Maximum Value: 30048.3 at 44.7 Milliseconds
 Minimum Value: -142.2 at 185.6 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: FIL-112

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description:

Barrier Force B7

Maximum Value: 94878.7 at 18.6 Milliseconds

Minimum Value: -1013.5 at 2.9 Milliseconds

SAE Filter Class: 60

Date of Test: 12/4/98

Curve Number: FIL-113

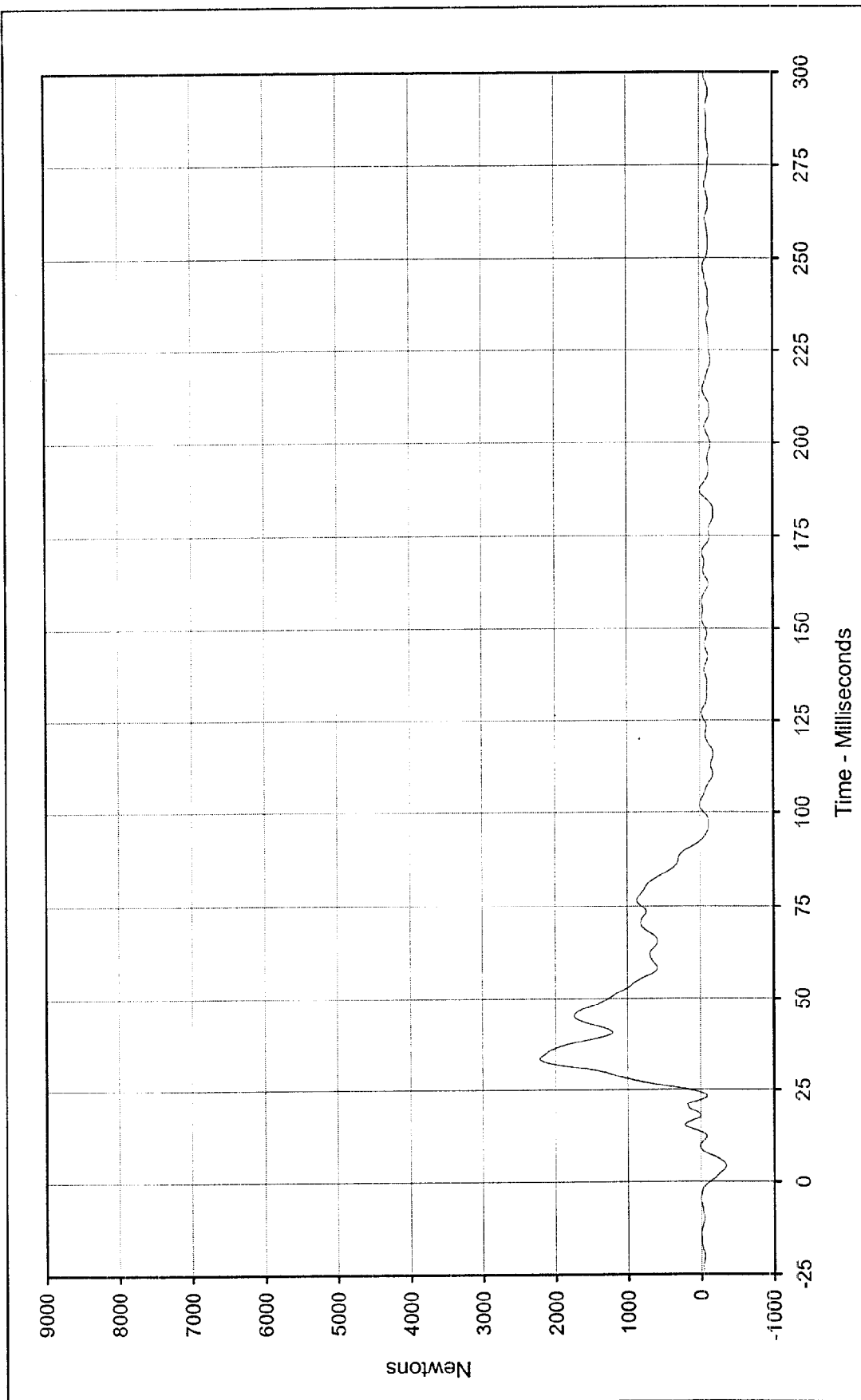
Test Program:

1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle:

1999 Honda Civic DX 4 Door Sedan

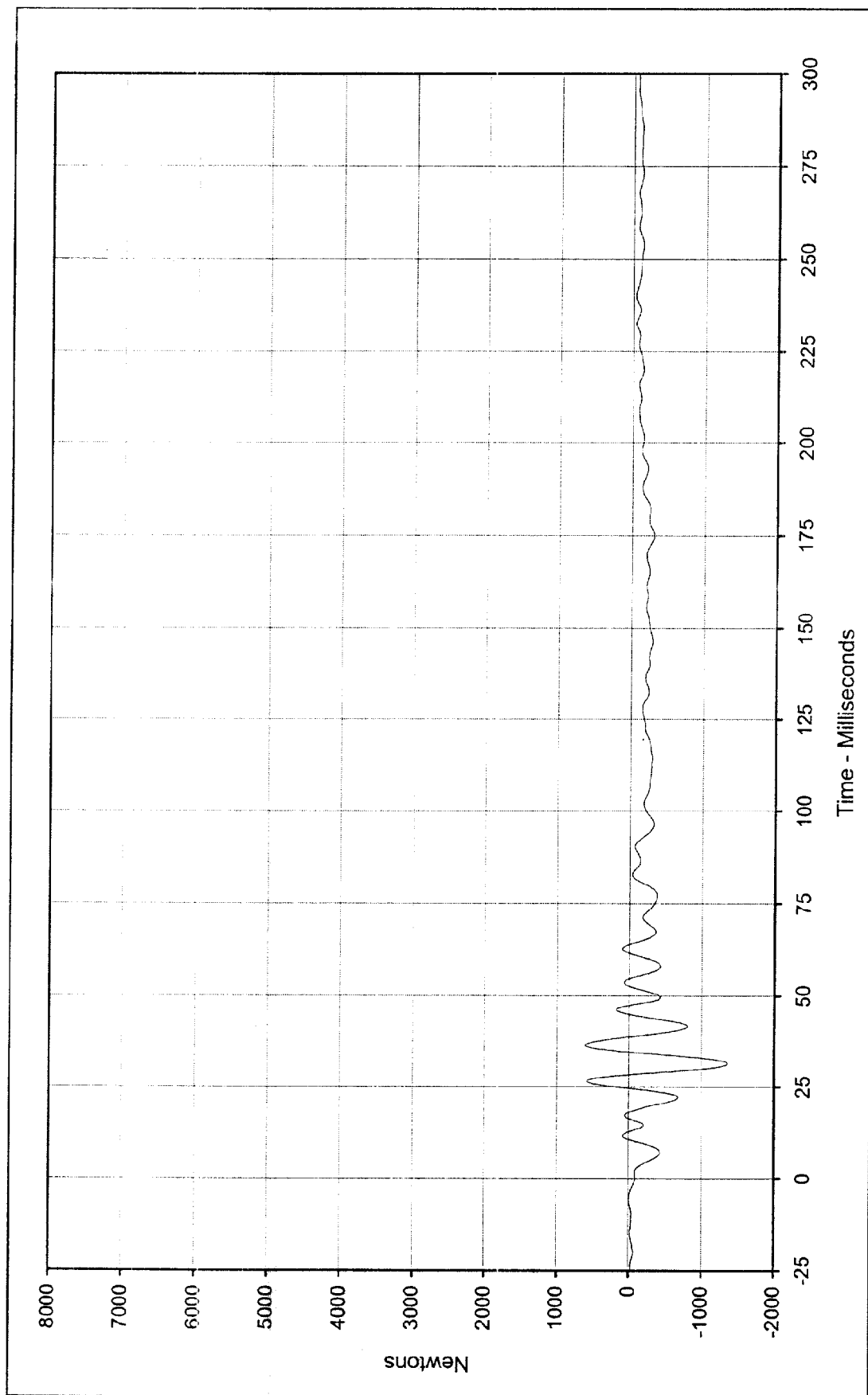




Curve Description: 1999 NHTSA 35 mph NCAP No.: MX5300
 Maximum Value: 2211.5 at 33.5 Milliseconds
 Minimum Value: -347.1 at 4.2 Milliseconds



SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: FIL-114



Curve Description:

Barrier Force B9

Maximum Value:

604.6

at

36.4

Milliseconds

Minimum Value:

-1362.2

at

31.3

Milliseconds

SAE Filter Class:

60

Date of Test:

12/4/98

Curve Number:

FIL-115

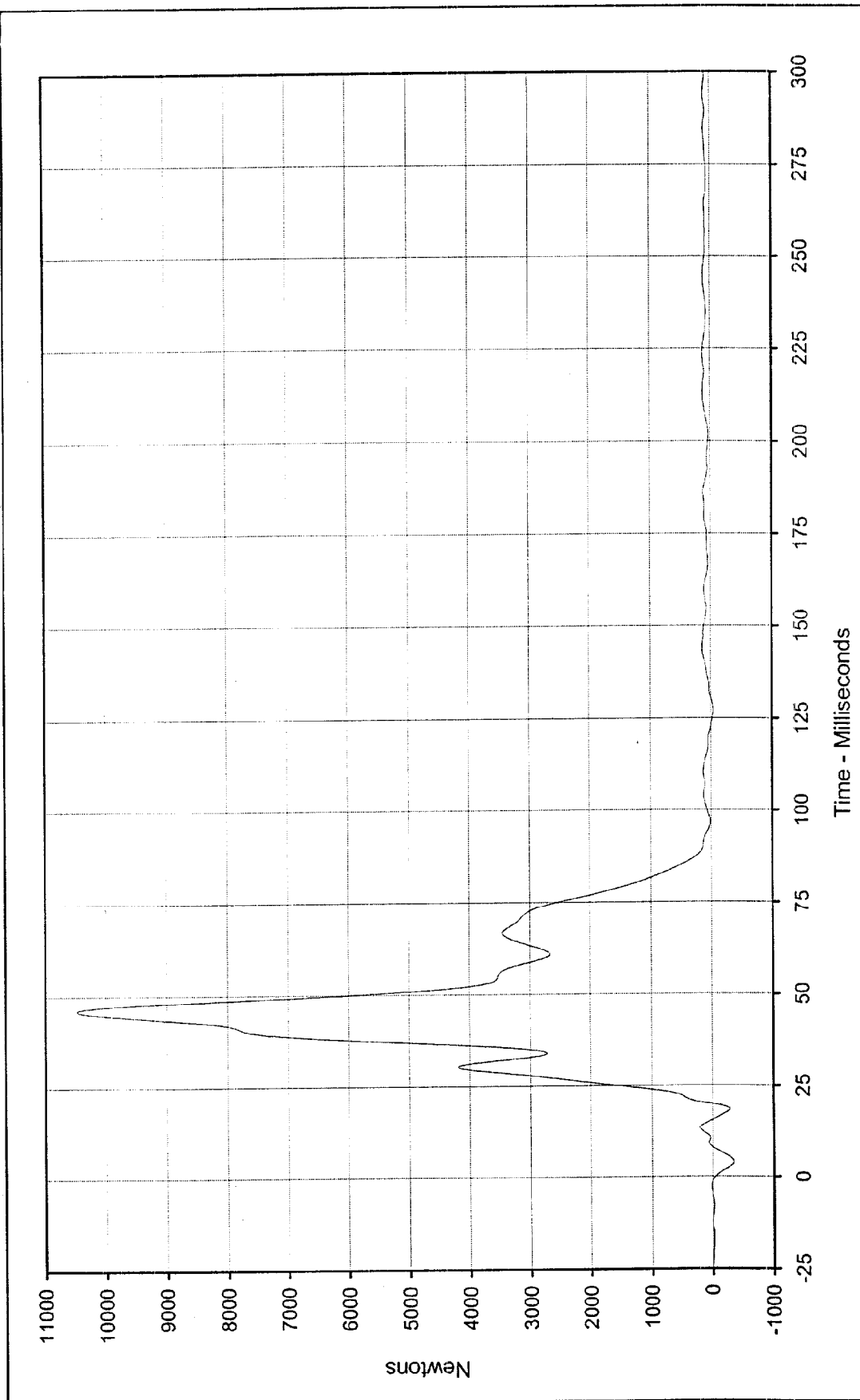
Test Program:

1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle:

1999 Honda Civic DX 4 Door Sedan

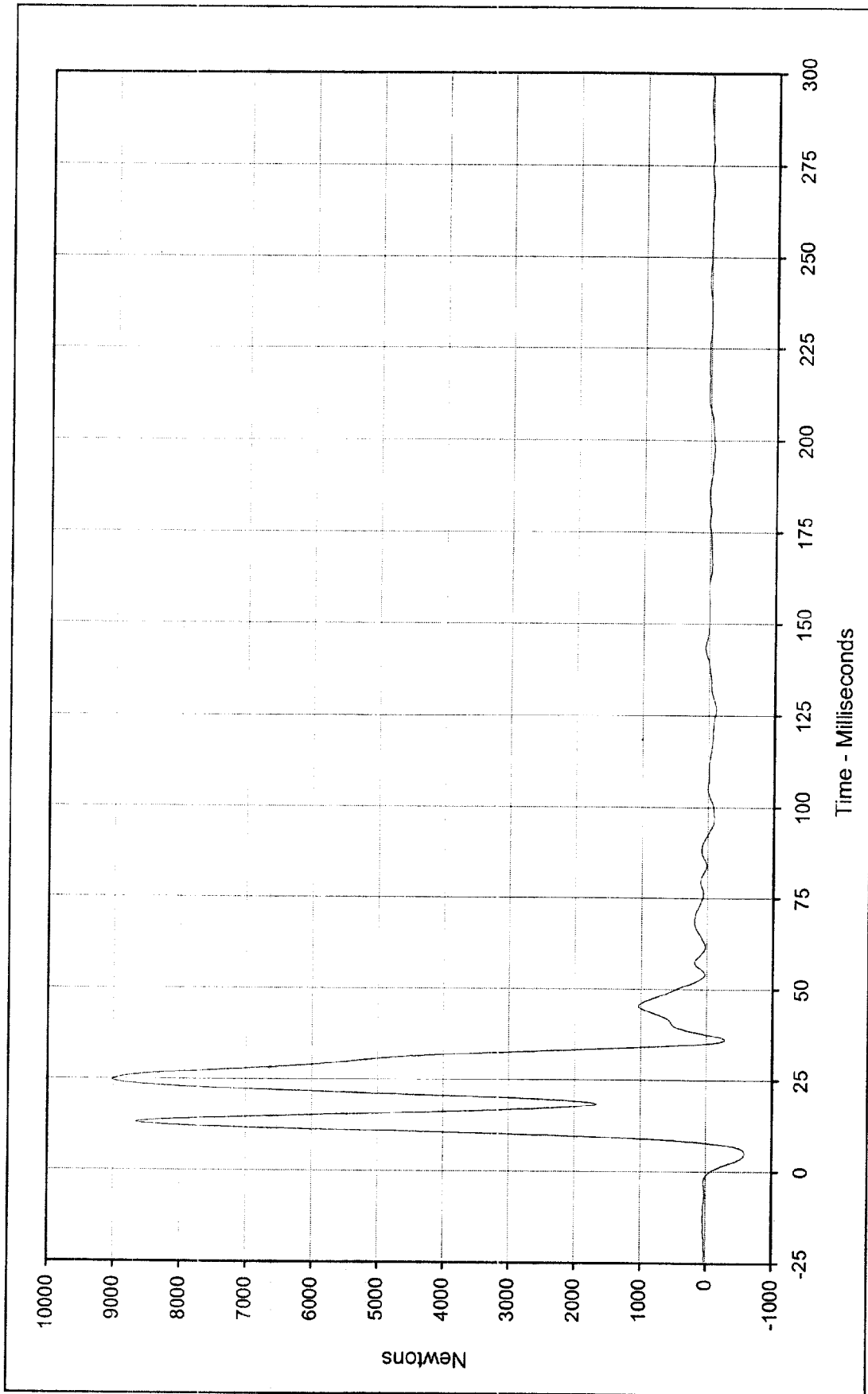




Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

Curve Description: Barrier Force C2
 Maximum Value: 10479.4 at 45.9 Milliseconds
 Minimum Value: -353.2 at 4.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: FIL-117

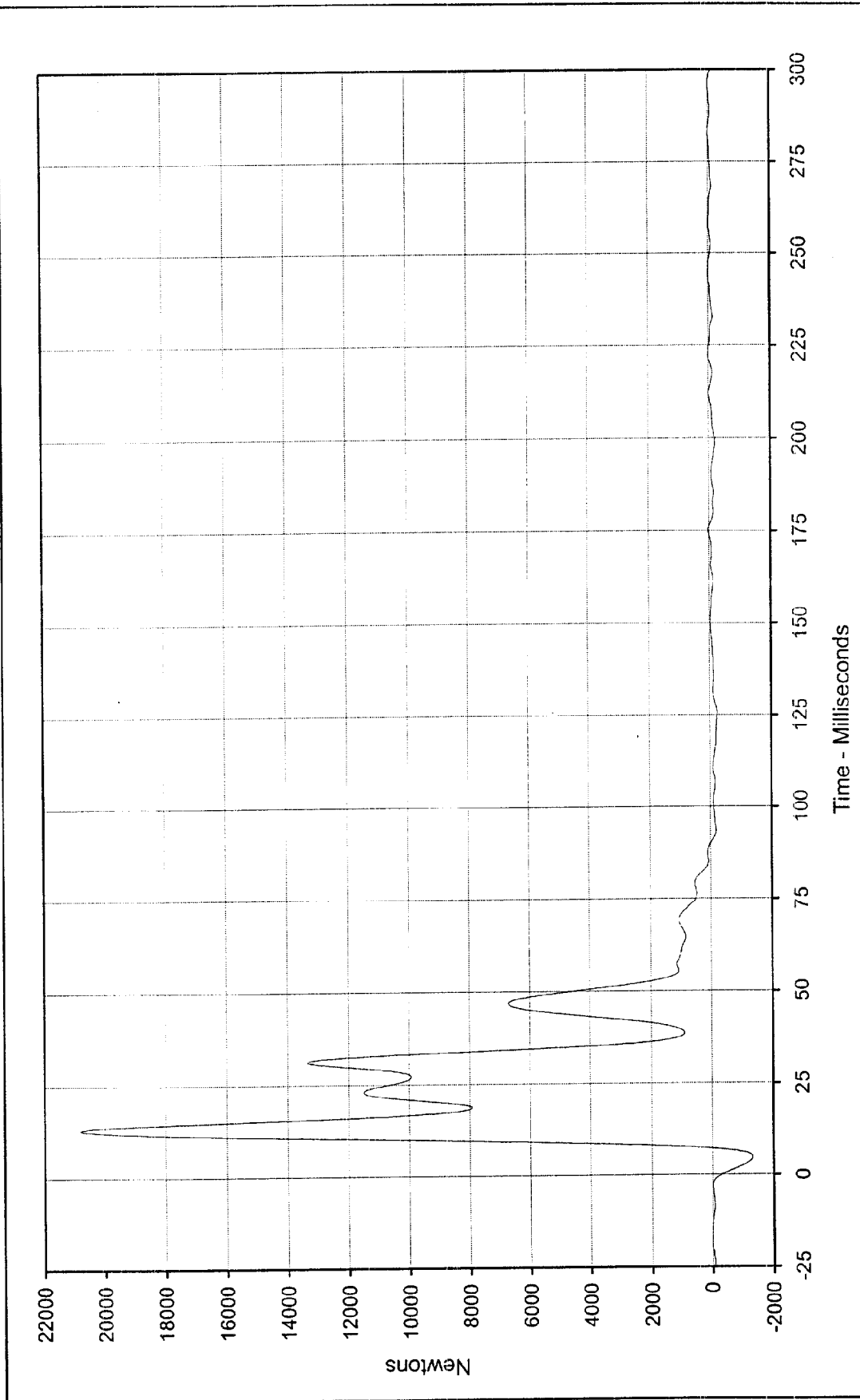




Curve Description: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Program: 1999 Honda Civic DX 4 Door Sedan
 Test Vehicle:

Barrier Force C3
 Maximum Value: 9012.7 at 24.7 Milliseconds
 Minimum Value: -587.7 at 5.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: FIL-118

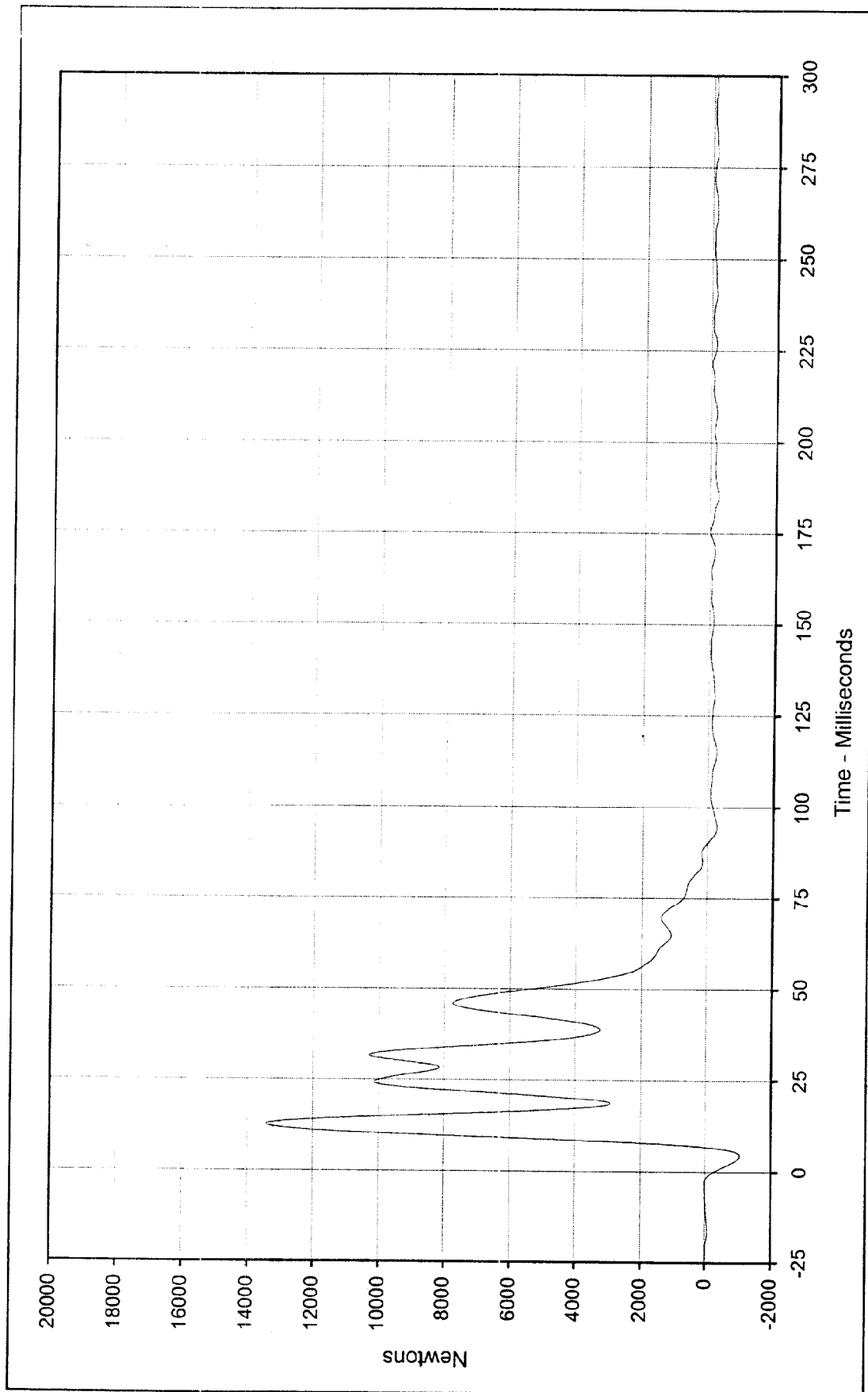




Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

Curve Description: Barrier Force C4
 Maximum Value: 20814.4 at 13.0 Milliseconds
 Minimum Value: -1329.4 at 4.8 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: FIL-119





Curve Description:

Barrier Force C5

Maximum Value:

13424.8 at 12.6 Milliseconds

Minimum Value:

-1063.9 at 4.5 Milliseconds

SAE Filter Class:

60

Date of Test:

12/4/98

Curve Number:

FIL-120

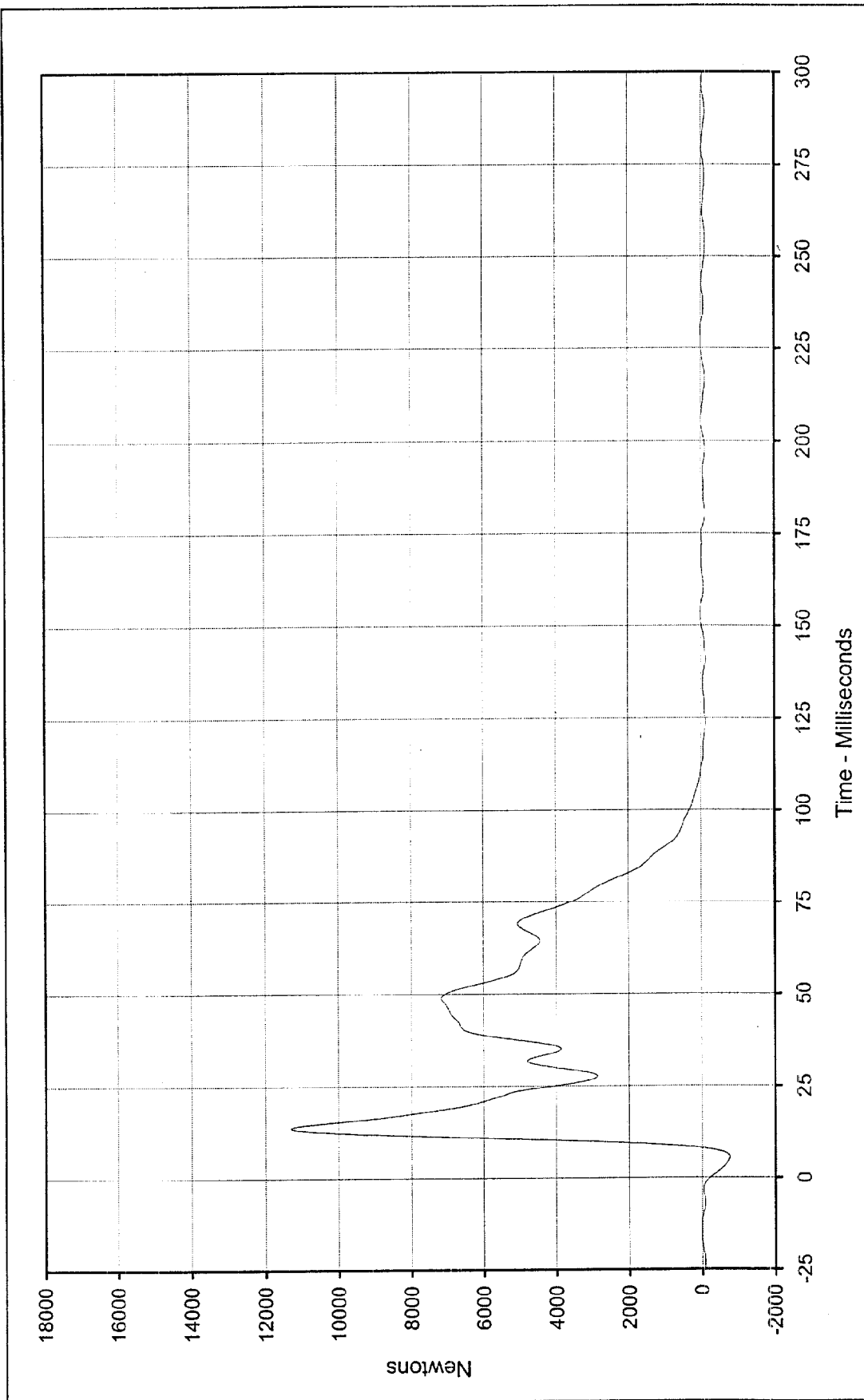
Test Program:

1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle:

1999 Honda Civic DX 4 Door Sedan

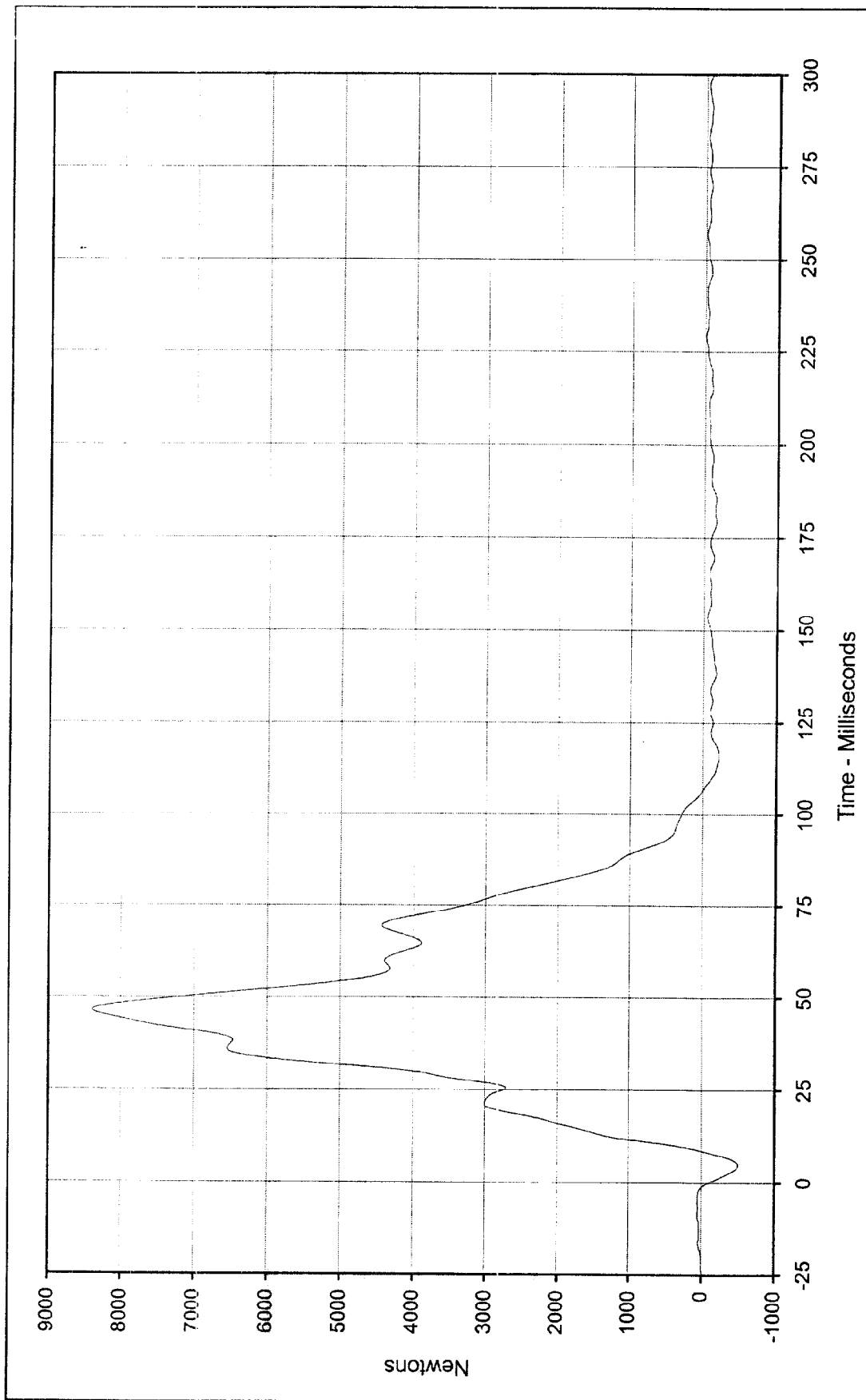




Curve Description: Barrier Force C6
 Maximum Value: 11318.7 at 13.6 Milliseconds
 Minimum Value: -763.1 at 5.5 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: FIL-121

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Curve Description:

Barrier Force C7

Maximum Value: 8396.0 at 46.4 Milliseconds

Minimum Value: -509.6 at 4.9 Milliseconds

SAE Filter Class: 60

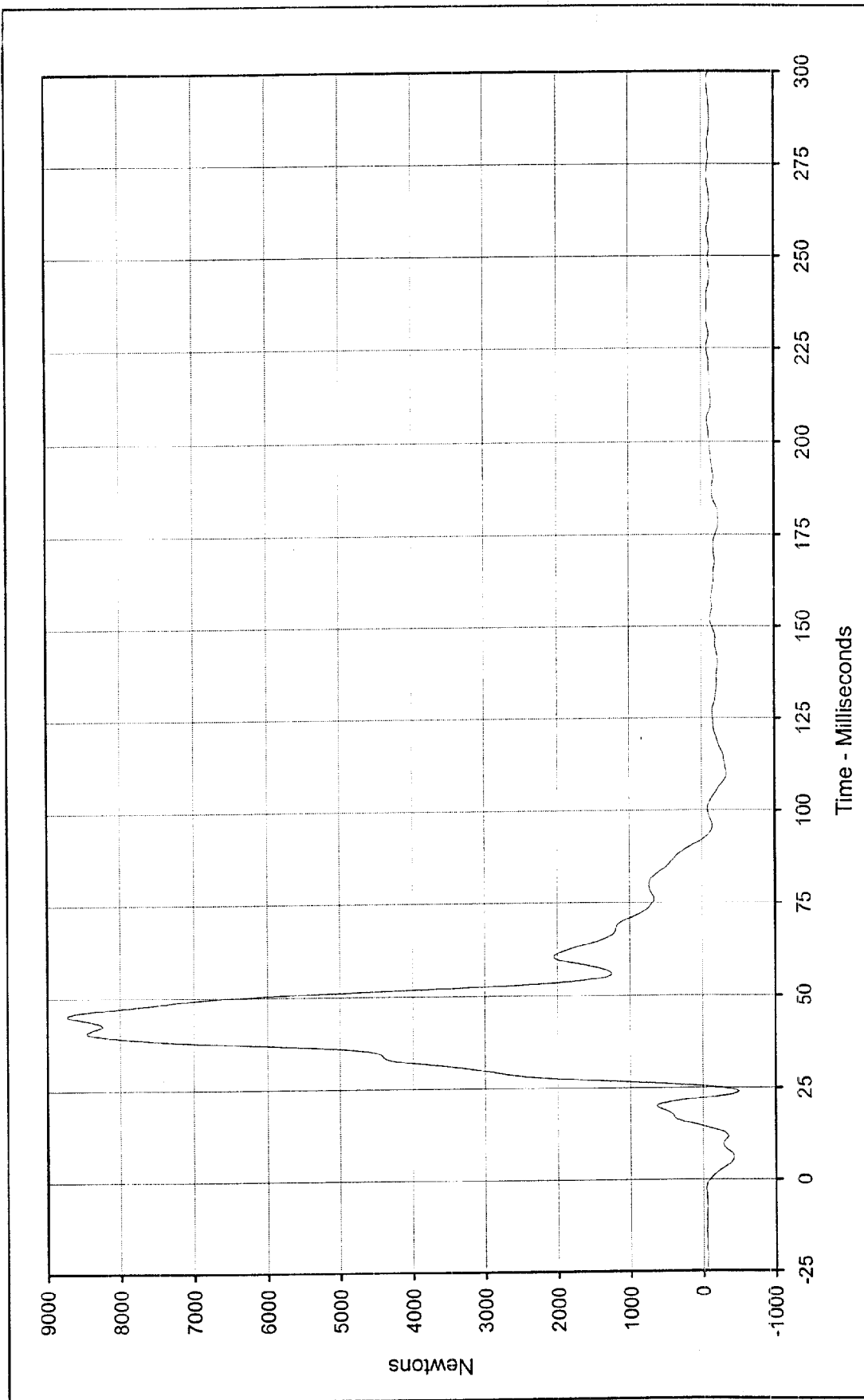
Date of Test: 12/4/98

Curve Number: FIL-122

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan



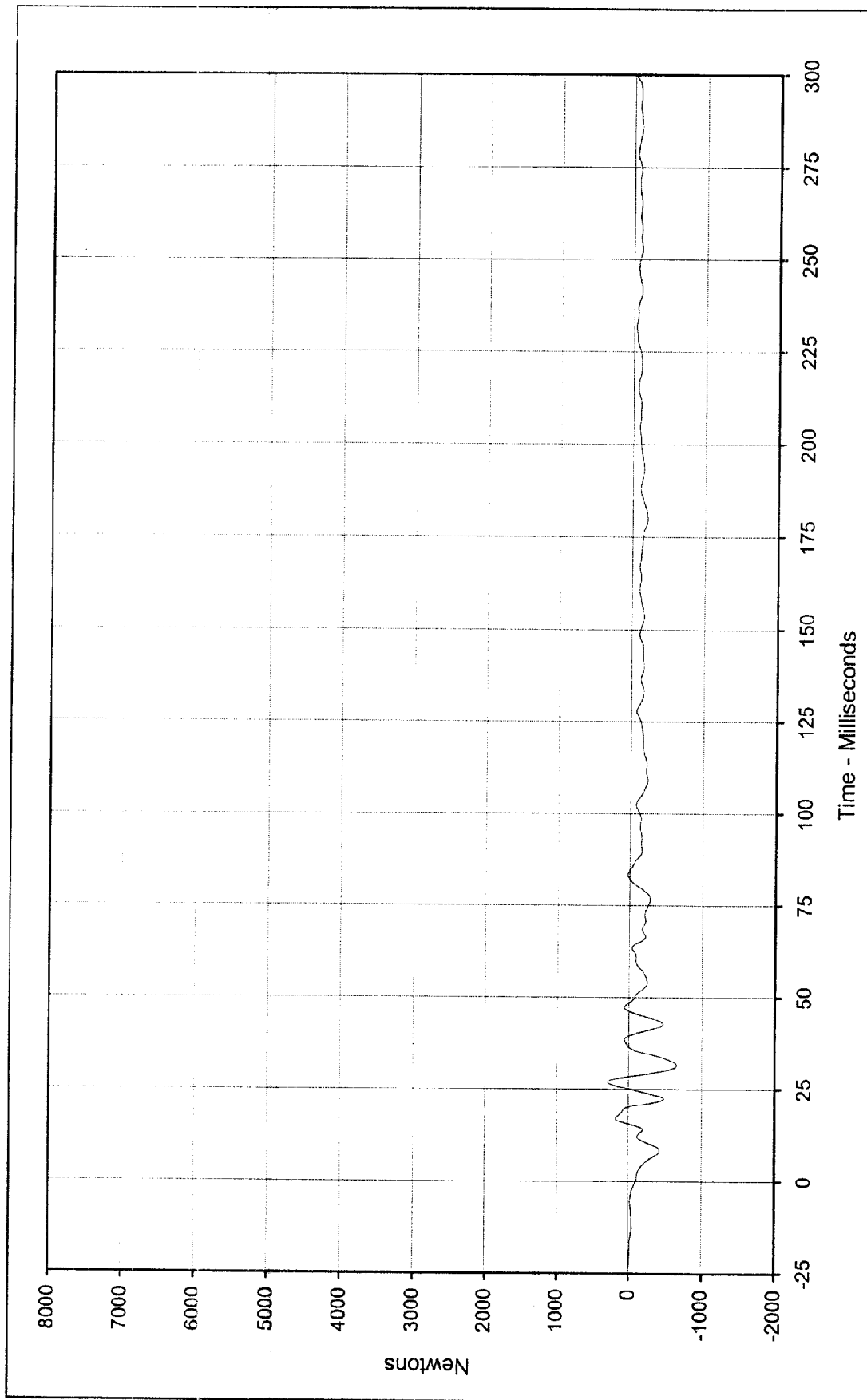


Curve Description: Barrier Force C8
 Maximum Value: 8724.6 at 45.1 Milliseconds
 Minimum Value: -493.5 at 23.9 Milliseconds

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan



SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: FIL-123



Curve Description:

Barrier Force C9

Maximum Value: 288.8 at 27.0 Milliseconds

Minimum Value: -656.7 at 31.6 Milliseconds

SAE Filter Class: 60

Date of Test: 12/4/98

Curve Number: FIL-124

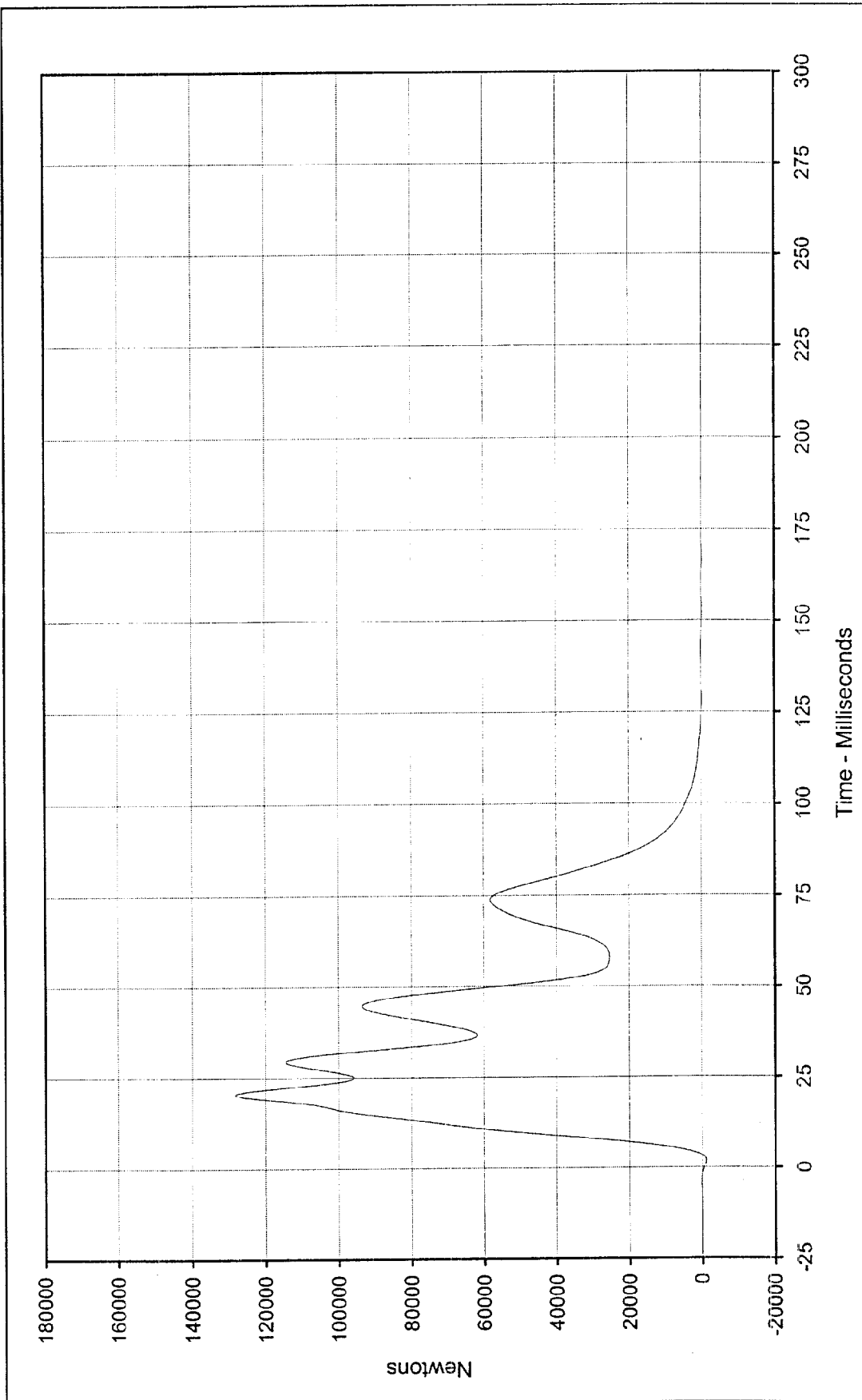
Test Program:

1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle:

1999 Honda Civic DX 4 Door Sedan

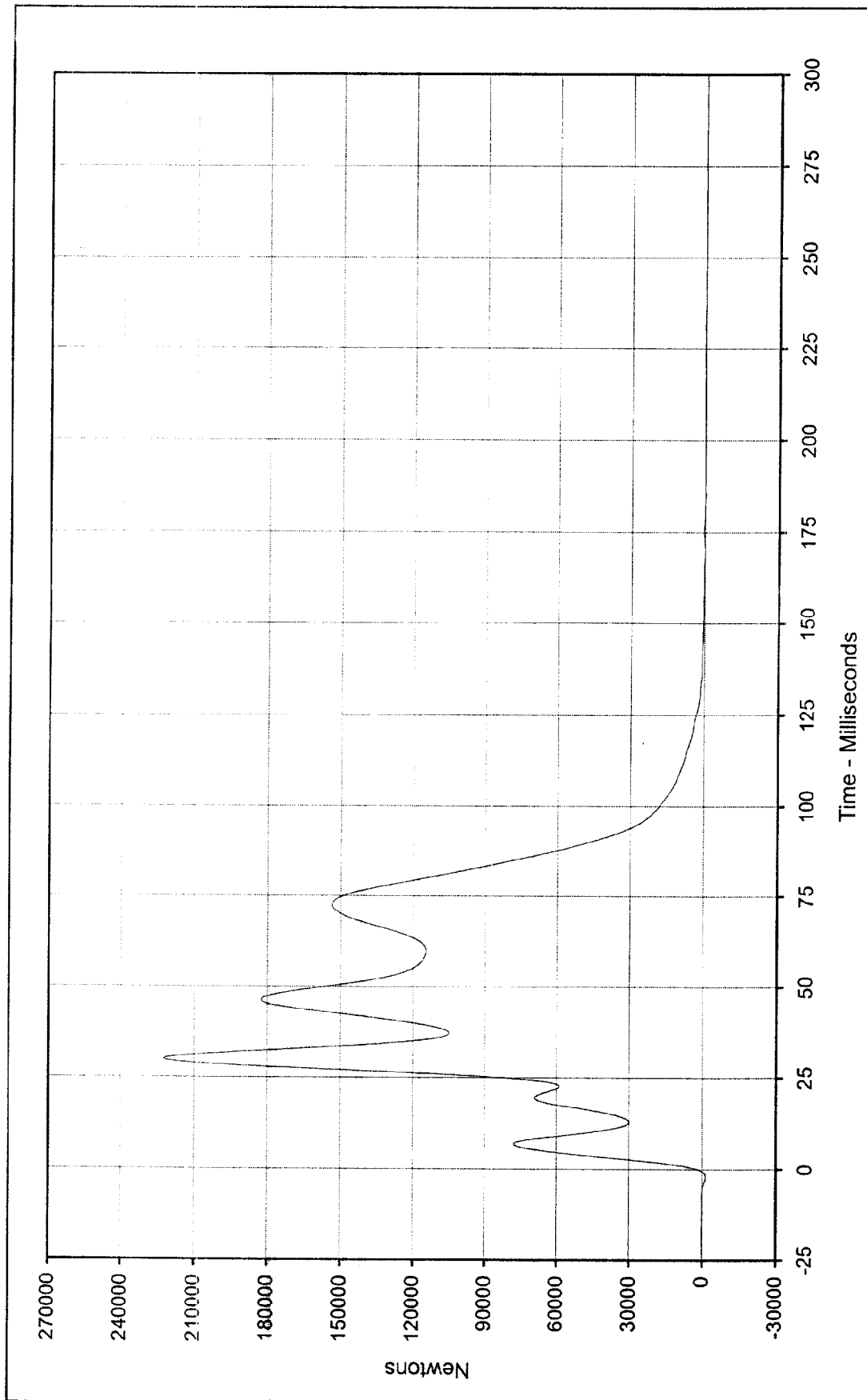




Curve Description: Barrier Force Sum No.1
 Maximum Value: 128343.8 at 20.6 Milliseconds
 Minimum Value: -1167.3 at 1.8 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: SUM-001

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

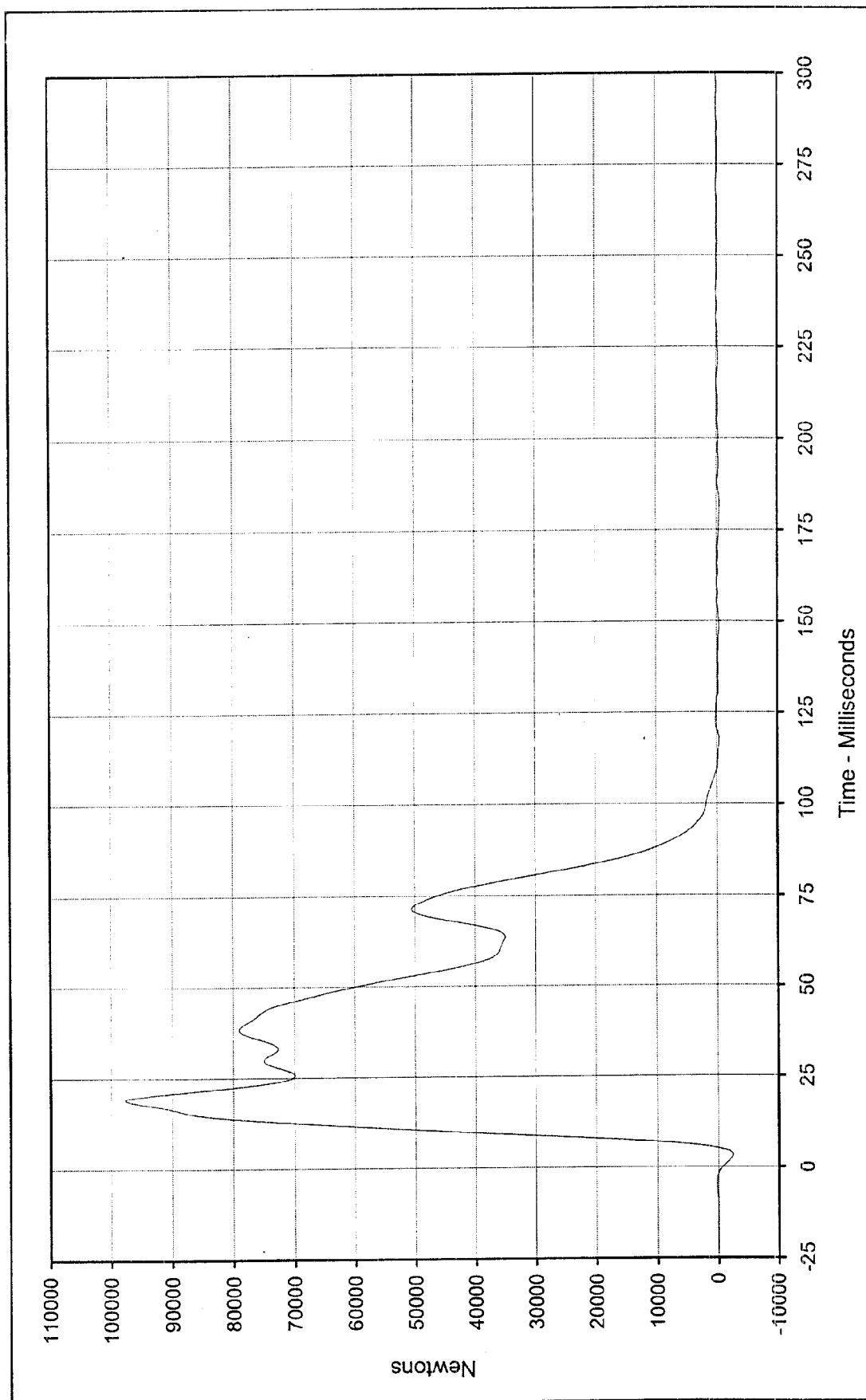




Curve Description: Barrier Force Sum No.2
 Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

Maximum Value: 222309.3 at 30.0 Milliseconds
 Minimum Value: -180.2 at 185.4 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: SUM-002





Curve Description: 1999 NHTSA 35 mph NCAP No.: MX5300

Maximum Value: 97686.8 at 19.0 Milliseconds

Minimum Value: -2471.1 at 3.3 Milliseconds

SAE Filter Class: 60

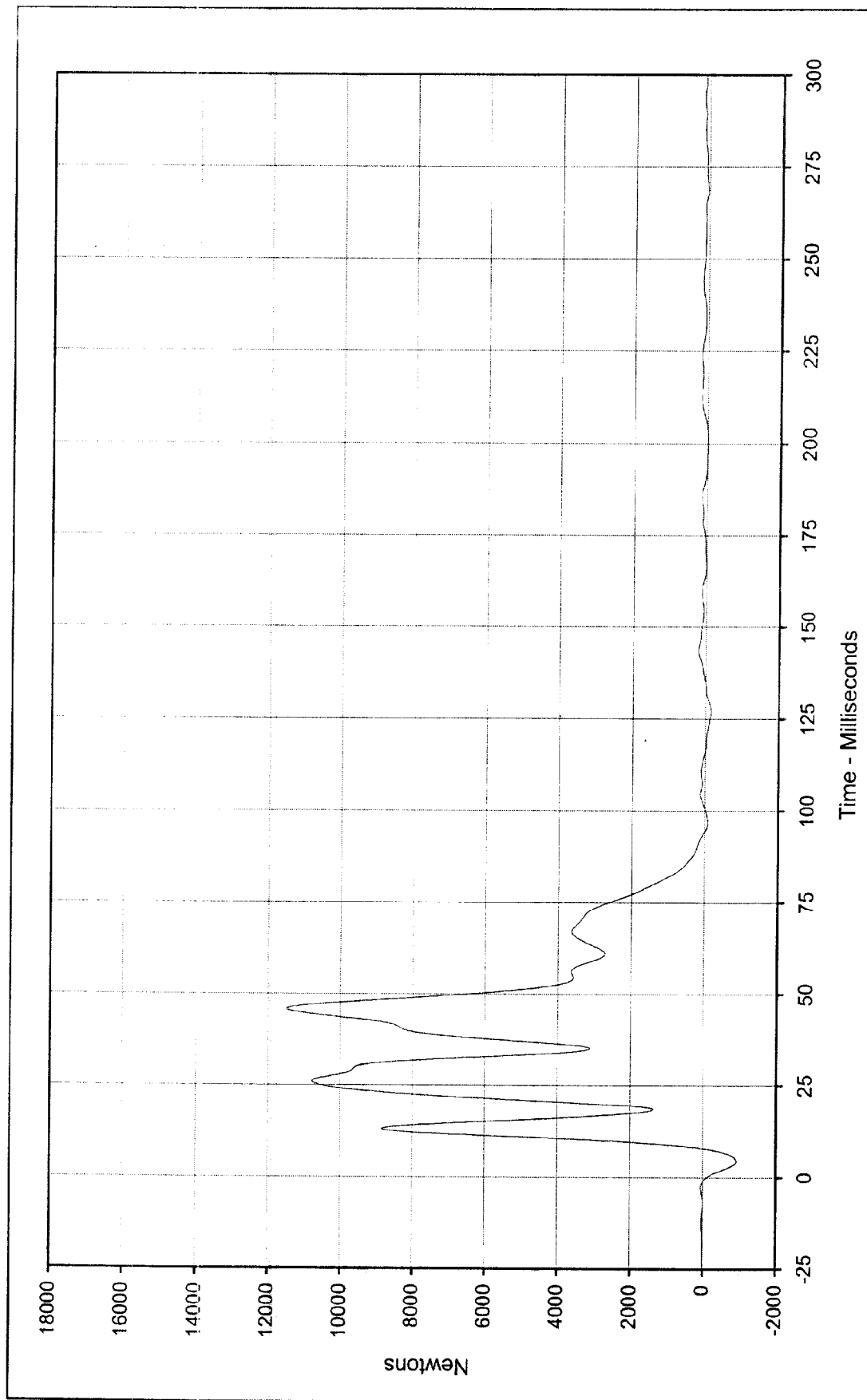
Date of Test: 12/4/98

Curve Number: SUM-003

Test Program:

Test Vehicle:

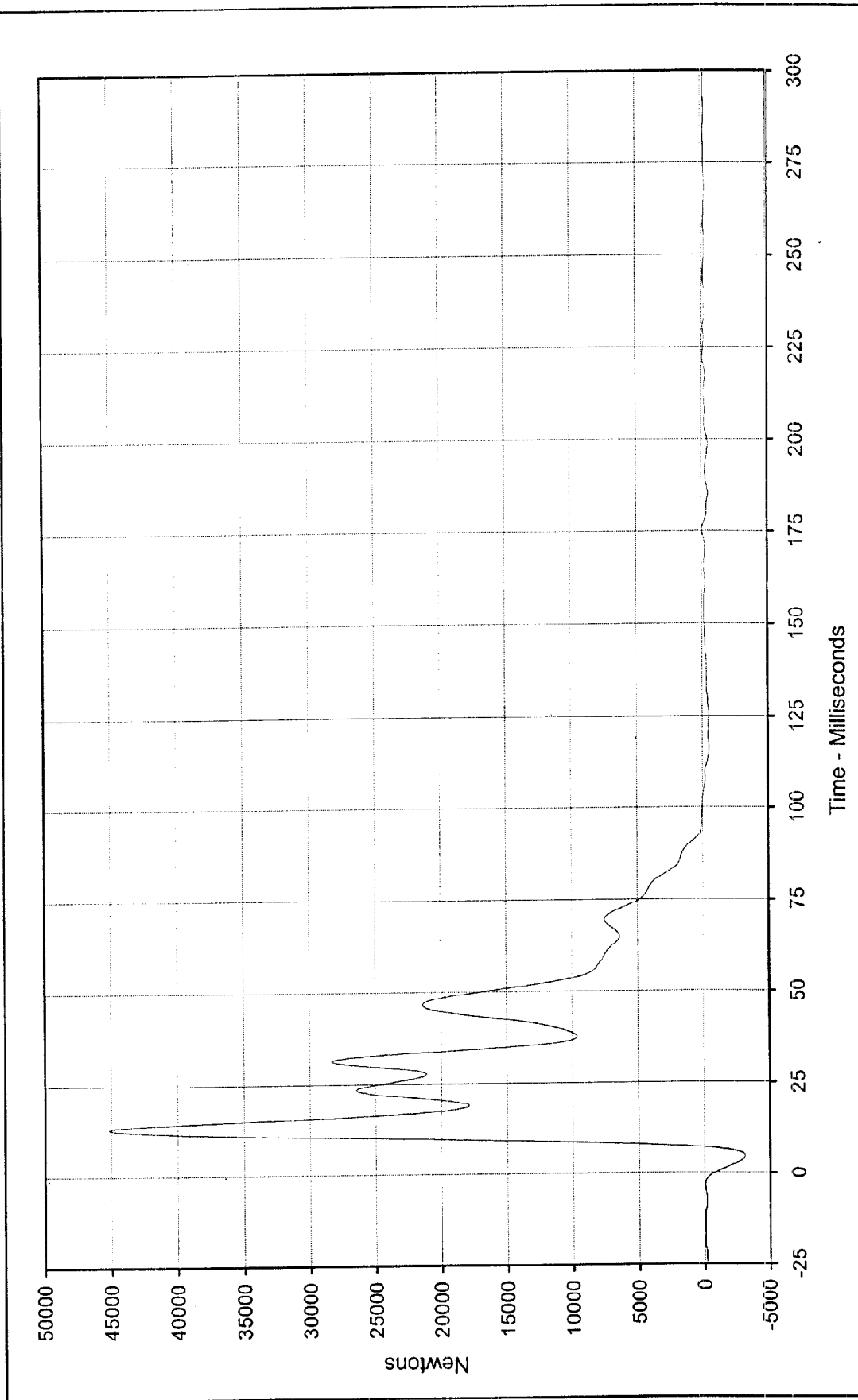




Curve Description: Barrier Force Sum No 4
 Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

Maximum Value: 11500.2 at 45.8 Milliseconds
 Minimum Value: -924.9 at 4.5 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: SUM-004

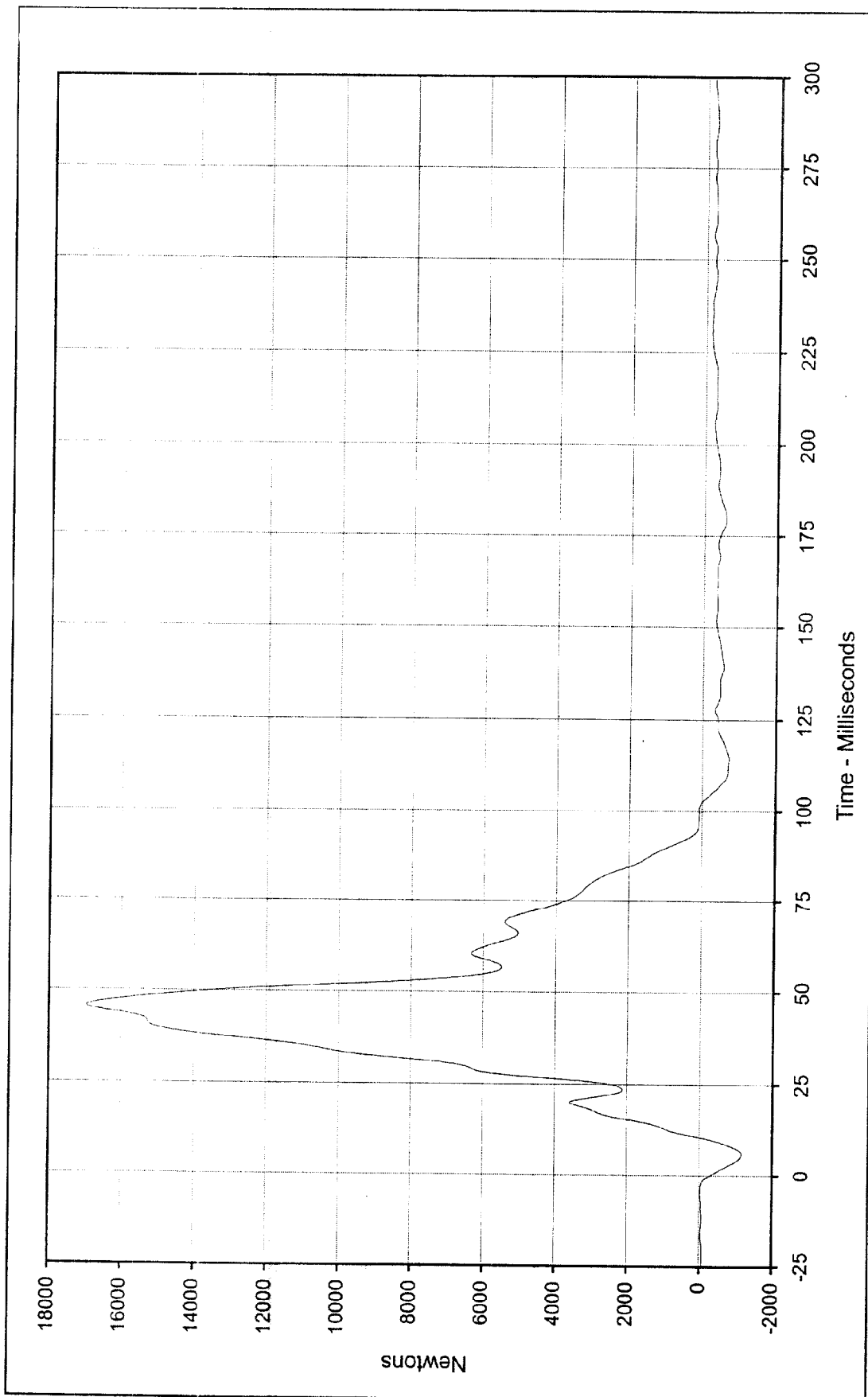




Curve Description: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Program:
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

Barrier Force Sum No.5
 Maximum Value: 45154.7 at 13.0 Milliseconds
 Minimum Value: -3122.8 at 4.7 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: SUM-005

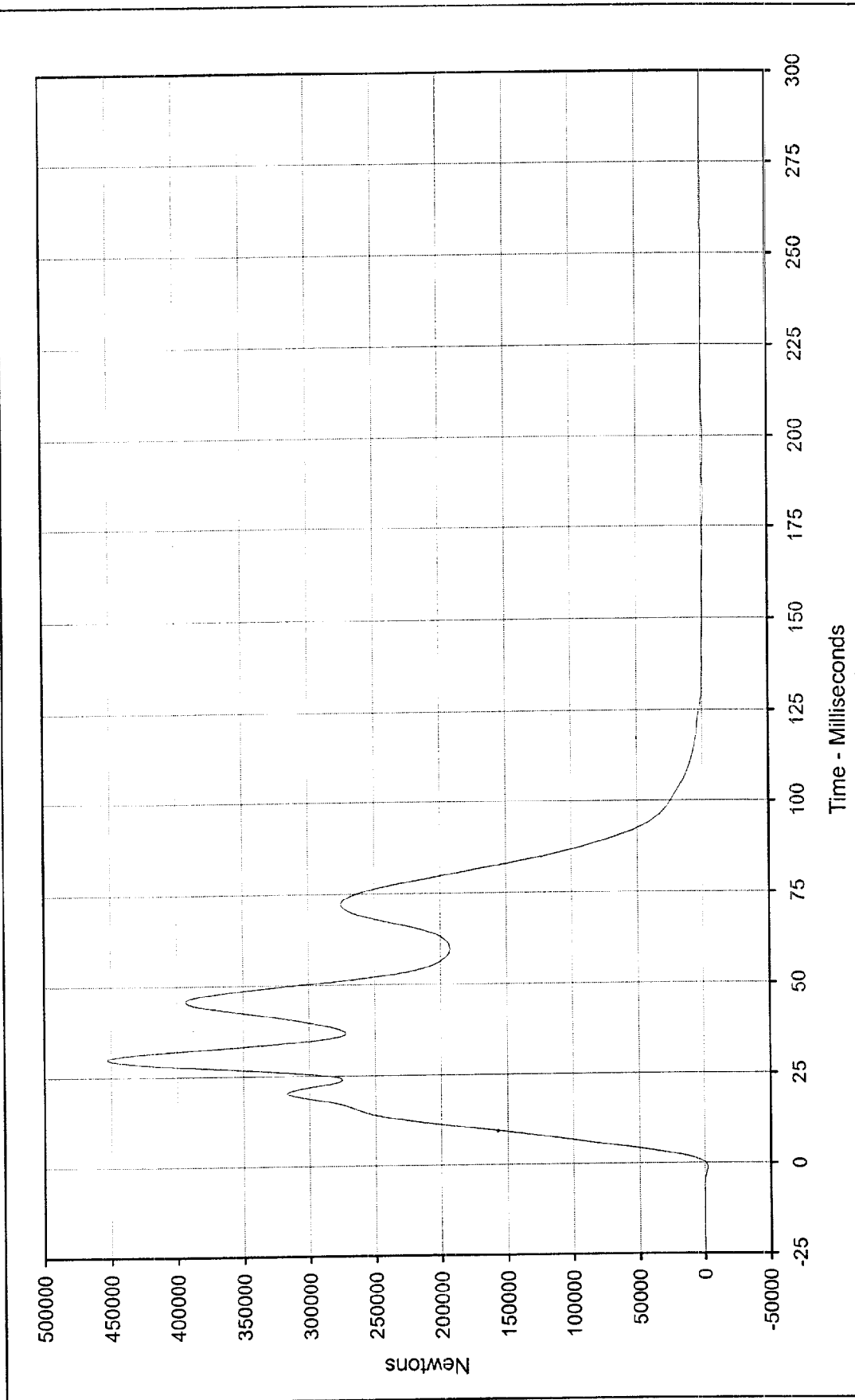




Curve Description: Barrier Force Sum No.6
 Maximum Value: 16943.3 at 45.7 Milliseconds
 Minimum Value: -1160.5 at 5.9 Milliseconds
 SAE Filter Class: 60
 Date of Test: 12/4/98
 Curve Number: SUM-006

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
 Test Vehicle: 1999 Honda Civic DX 4 Door Sedan





Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300

Test Vehicle: 1999 Honda Civic DX 4 Door Sedan

Curve Description: Barrier Force Sum Total

Maximum Value: 452855.8 at 30.0 Milliseconds

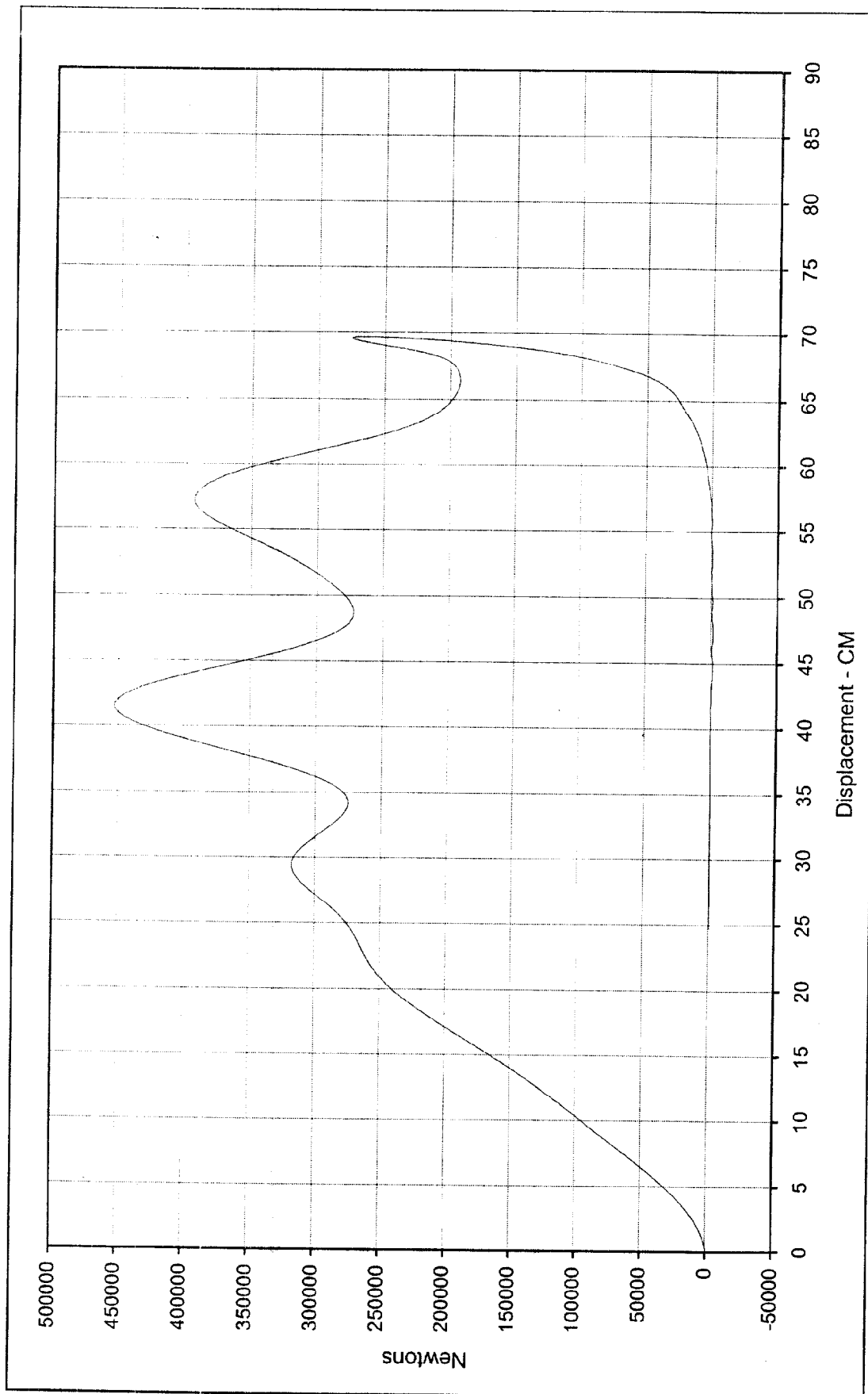
Minimum Value: -1499.6 at 184.6 Milliseconds

SAE Filter Class: 60

Date of Test: 12/4/98

Curve Number: SUM-007





Curve Description: Sum Force Total vs. Dynamic Crush
Maximum Displ.: 69.7 at 74.9 Milliseconds
Maximum Force: 452855.8 at 30.0 Milliseconds
SAE Filter Class: N/A
Date of Test: 12/4/98
Curve Number: XVY-001

Test Program: 1999 NHTSA 35 mph NCAP No.: MX5300
Test Vehicle: 1999 Honda Civic DX 4 Door Sedan



BARRIER LOAD CELL SUMMARY DATA

TEST VEHICLE: 1999 HONDA CIVIC DX 4 DOOR SEDAN

NHTSA No.: MX5300

TEST PROGRAM: 1999 NHTSA 35 MPH NCAP

TEST DATE: 12/4/98

BARRIER LOAD CELL PEAK FORCES

Location	Units	Max	Time	Min	Time
Barrier Force A2	Newtons	3854.4	75.6	-181.9	3.7
Barrier Force A3	Newtons	11002.5	20.3	-581.1	3.4
Barrier Force A4	Newtons	12455.8	29.5	-580.2	2.0
Barrier Force A5	Newtons	15615.8	30.7	-564.3	1.6
Barrier Force A6	Newtons	28606.8	43.2	-685.3	24.2
Barrier Force A7	Newtons	6684.7	21.0	-948.8	25.8
Barrier Force A8	Newtons	2571.8	77.1	-294.5	23.7
Barrier Force A9	Newtons	654.8	25.4	-1442.3	31.1
Barrier Force B2	Newtons	75621.1	44.3	-625.3	5.3
Barrier Force B3	Newtons	76268.9	19.5	-633.7	1.1
Barrier Force B4	Newtons	123160.0	29.7	-11.4	169.1
Barrier Force B5	Newtons	25995.4	46.0	-99.1	288.9
Barrier Force B6	Newtons	30048.3	44.7	-142.2	185.6
Barrier Force B7	Newtons	94878.7	18.6	-1013.5	2.9
Barrier Force B8	Newtons	2211.5	33.5	-347.1	4.2
Barrier Force B9	Newtons	604.6	36.4	-1362.2	31.3
Barrier Force C2	Newtons	10479.4	45.9	-353.2	4.0
Barrier Force C3	Newtons	9012.7	24.7	-587.7	5.0
Barrier Force C4	Newtons	20814.4	13.0	-1329.4	4.8
Barrier Force C5	Newtons	13424.8	12.6	-1063.9	4.5
Barrier Force C6	Newtons	11318.7	13.6	-763.1	5.5
Barrier Force C7	Newtons	8396.0	46.4	-509.6	4.9
Barrier Force C8	Newtons	8724.6	45.1	-493.5	23.9
Barrier Force C9	Newtons	288.8	27.0	-656.7	31.6
Barrier Force Sum No.1	Newtons	128343.8	20.6	-1167.3	1.8
Barrier Force Sum No.2	Newtons	222309.3	30.0	-180.2	185.4
Barrier Force Sum No.3	Newtons	97686.8	19.0	-2471.1	3.3
Barrier Force Sum No.4	Newtons	11500.2	45.8	-924.9	4.5
Barrier Force Sum No.5	Newtons	45154.7	13.0	-3122.8	4.7
Barrier Force Sum No.6	Newtons	16943.3	45.7	-1160.5	5.9
Barrier Force Sum Total	Newtons	452855.8	30.0	-1499.6	184.6

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

APPENDIX D
INSTRUMENTATION DATA CHANNEL ASSIGNMENTS

1999 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 34
12/18/98
1999 Honda Civic DX 2 Door Coupe

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
1	HEAD, PRIMARY	X	KEAC039	Accel., 1/2 bridge	Endevco	7264-2000	G
2	HEAD, PRIMARY	Y	KEAC038	Accel., 1/2 bridge	Endevco	7264-2000	G
3	HEAD, PRIMARY	Z	KEAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
4	HEAD, REDUNDANT	X	KEAC031	Accel., 1/2 bridge	Endevco	7264-2000	G
5	HEAD, REDUNDANT	Y	KEAC032	Accel., 1/2 bridge	Endevco	7264-2000	G
6	HEAD, REDUNDANT	Z	KEAC026	Accel., 1/2 bridge	Endevco	7264-2000	G
7	NECK FORCE	X	GPUN02FX	Load cell, six axis neck	R. A. Denton	1716A	N
8	NECK FORCE	Y	GPUN02FY	Load cell, six axis neck	R. A. Denton	1716A	N
9	NECK FORCE	Z	GPUN02FZ	Load cell, six axis neck	R. A. Denton	1716A	N
10	NECK MOMENT	X	GPUN02MX	Load cell, six axis neck	R. A. Denton	1716A	N.m
11	NECK MOMENT	Y	GPUN02MY	Load cell, six axis neck	R. A. Denton	1716A	N.m
12	NECK MOMENT	Z	GPUN02MZ	Load cell, six axis neck	R. A. Denton	1716A	N.m
13	CHEST , PRIMARY	X	GPAC031	Accel., 1/2 bridge	Endevco	7264-2000	G
14	CHEST , PRIMARY	Y	GPAC024	Accel., 1/2 bridge	Endevco	7264-2000	G
15	CHEST , PRIMARY	Z	GPAC029	Accel., 1/2 bridge	Endevco	7264-2000	G
16	CHEST , REDUNDANT	X	KEAC023	Accel., 1/2 bridge	Endevco	7264-200	G
17	CHEST , REDUNDANT	Y	KEAC022	Accel., 1/2 bridge	Endevco	7264-200	G
18	CHEST , REDUNDANT	Z	KEAC024	Accel., 1/2 bridge	Endevco	7264-200	G
19	CHEST DISPLACEMENT	X	GPCP001	Rotary Pot Chest	Servo	14CBI	MM
20	PELVIS, PRIMARY	X	KEAC019	Accel., 1/2 bridge	Endevco	7264-200	G
21	PELVIS, PRIMARY	Y	KEAC020	Accel., 1/2 bridge	Endevco	7264-200	G
22	PELVIS, PRIMARY	Z	KEAC021	Accel., 1/2 bridge	Endevco	7264-200	G
23	LEFT FEMUR FORCE	Z	KEFF002	Load cell, Femur	R.A. Denton	2121	N
24	RIGHT FEMUR FORCE	Z	KEFF003	Load cell, Femur	R.A. Denton	2121	N

1999 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 34
12/18/98
1999 Honda Civic DX 2 Door Coupe

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
25	UP. TIBIA LEFT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
26	UP. TIBIA LEFT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
27	UP. TIBIA RIGHT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
28	UP. TIBIA RIGHT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
29	LWR. TIBIA LEFT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	N.m
30	LWR. TIBIA LEFT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	N.m
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	N.m
33	LWR. TIBIA RIGHT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	N.m
34	LWR. TIBIA RIGHT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
35	FOOT LEFT	X	KEIC003X	Accel., Foot Triax	I.C. Sensor	3031-500	G
36	FOOT LEFT	Y	KEIC003Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
37	FOOT LEFT	Z	KEIC003Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
38	FOOT RIGHT	X	KEIC004X	Accel., Foot Triax	I.C. Sensor	3031-500	G
39	FOOT RIGHT	Y	KEIC004Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
40	FOOT RIGHT	Z	KEIC004Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
41	LAP BELT FORCE	X	KELC001	Load cell, Seat belt	Lebow	3371	N
42	SHOULDER BELT FORCE	X	KELC002	Load cell, Seat belt	Lebow	3371	N
43	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	MM
44	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

1999 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 35
12/18/98
1999 Honda Civic DX 2 Door Coupe

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
45	HEAD, PRIMARY	X	GPAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
46	HEAD, PRIMARY	Y	GPAC002	Accel., 1/2 bridge	Endevco	7264-2000	G
47	HEAD, PRIMARY	Z	GPAC003	Accel., 1/2 bridge	Endevco	7264-2000	G
48	HEAD, REDUNDANT	X	GPAC032	Accel., 1/2 bridge	Endevco	7264-2000	G
49	HEAD, REDUNDANT	Y	GPAC021	Accel., 1/2 bridge	Endevco	7264-2000	G
50	HEAD, REDUNDANT	Z	GPAC026	Accel., 1/2 bridge	Endevco	7264-2000	G
51	NECK FORCE	X	GPUN01FX	Load cell, six axis neck	R. A. Denton	1716A	N
52	NECK FORCE	Y	GPUN01FY	Load cell, six axis neck	R. A. Denton	1716A	N
53	NECK FORCE	Z	GPUN01FZ	Load cell, six axis neck	R. A. Denton	1716A	N
54	NECK MOMENT	X	GPUN01MX	Load cell, six axis neck	R. A. Denton	1716A	N.m
55	NECK MOMENT	Y	GPUN01MY	Load cell, six axis neck	R. A. Denton	1716A	N.m
56	NECK MOMENT	Z	GPUN01MZ	Load cell, six axis neck	R. A. Denton	1716A	N.m
57	CHEST, PRIMARY	X	GPAC005	Accel., 1/2 bridge	Endevco	7264-2000	G
58	CHEST, PRIMARY	Y	GPAC011	Accel., 1/2 bridge	Endevco	7264-2000	G
59	CHEST, PRIMARY	Z	GPAC010	Accel., 1/2 bridge	Endevco	7264-2000	G
60	CHEST, REDUNDANT	X	GPAC034	Accel., 1/2 bridge	Endevco	7264-2000	G
61	CHEST, REDUNDANT	Y	GPAC023	Accel., 1/2 bridge	Endevco	7264-2000	G
62	CHEST, REDUNDANT	Z	GPAC020	Accel., 1/2 bridge	Endevco	7264-2000	G
63	CHEST DISPLACEMENT	X	GPCP002	Rotary Pot Chest	Servo	14CBI	MM
64	PELVIS, PRIMARY	X	GPAC025	Accel., 1/2 bridge	Endevco	7264-2000	G
65	PELVIS, PRIMARY	Y	GPAC022	Accel., 1/2 bridge	Endevco	7264-2000	G
66	PELVIS, PRIMARY	Z	GPAC019	Accel., 1/2 bridge	Endevco	7264-2000	G
67	LEFT FEMUR FORCE	Z	KEFF001	Load cell, Femur	R.A. Denton	2121	N
68	RIGHT FEMUR FORCE	Z	GPLC001	Load cell, Femur	G.S.E.	2430	N

1999 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 35
12/18/98
1999 Honda Civic DX 2 Door Coupe

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	N.m
70	UP. TIBIA LEFT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
71	UP. TIBIA RIGHT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
72	UP. TIBIA RIGHT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
73	LWR. TIBIA LEFT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	N.m
74	LWR. TIBIA LEFT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	N.m
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	N.m
77	LWR. TIBIA RIGHT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	N.m
78	LWR. TIBIA RIGHT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
79	FOOT LEFT	X	KEIC002X	Accel., Foot Triax	I.C. Sensor	3031-500	G
80	FOOT LEFT	Y	KEIC002Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
81	FOOT LEFT	Z	KEIC002Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
82	FOOT RIGHT	X	KEIC001X	Accel., Foot Triax	I.C. Sensor	3031-500	G
83	FOOT RIGHT	Y	KEIC001Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
84	FOOT RIGHT	Z	KEIC001Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
85	LAP BELT FORCE	X	KELC003	Load cell, Seat belt	Lebow	3371	N
86	SHOULDER BELT FORCE	X	KELC004	Load cell, Seat belt	Lebow	3371	N
87	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	CM
88	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

1999 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Vehicle Accelerometers
12/18/98
1999 Honda Civic DX 2 Door Coupe

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
89	Left Rear X-Member (Pri.)	X	KEVA005	Accel., Vehicle block	I.C. Sensor	3031-500	G
90	Right Rear X-Member (Pri.)	X	KEVA006	Accel., Vehicle block	I.C. Sensor	3031-200	G
91	Engine Top	X	KEVA011	Accel., Vehicle block	I.C. Sensor	3031-200	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	KEVA009	Accel., Vehicle block	I.C. Sensor	3031-500	G
95	Instrument Panel	X	KEVA004	Accel., Vehicle block	I.C. Sensor	3031-500	G
96	Left Rear X-Member (Rednt.)	X	KEVA010	Accel., Vehicle block	I.C. Sensor	3031-200	G

APPENDIX E
DUMMY CALIBRATION DATA



Hybrid III Calibration Data Sheet

50TH Percentile Male

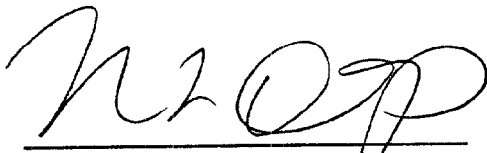
Left Knee Impact Test

ATD Serial No.: 34

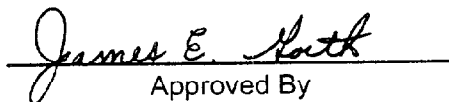
Part Serial No.: n/a

Test I.D.: KN001

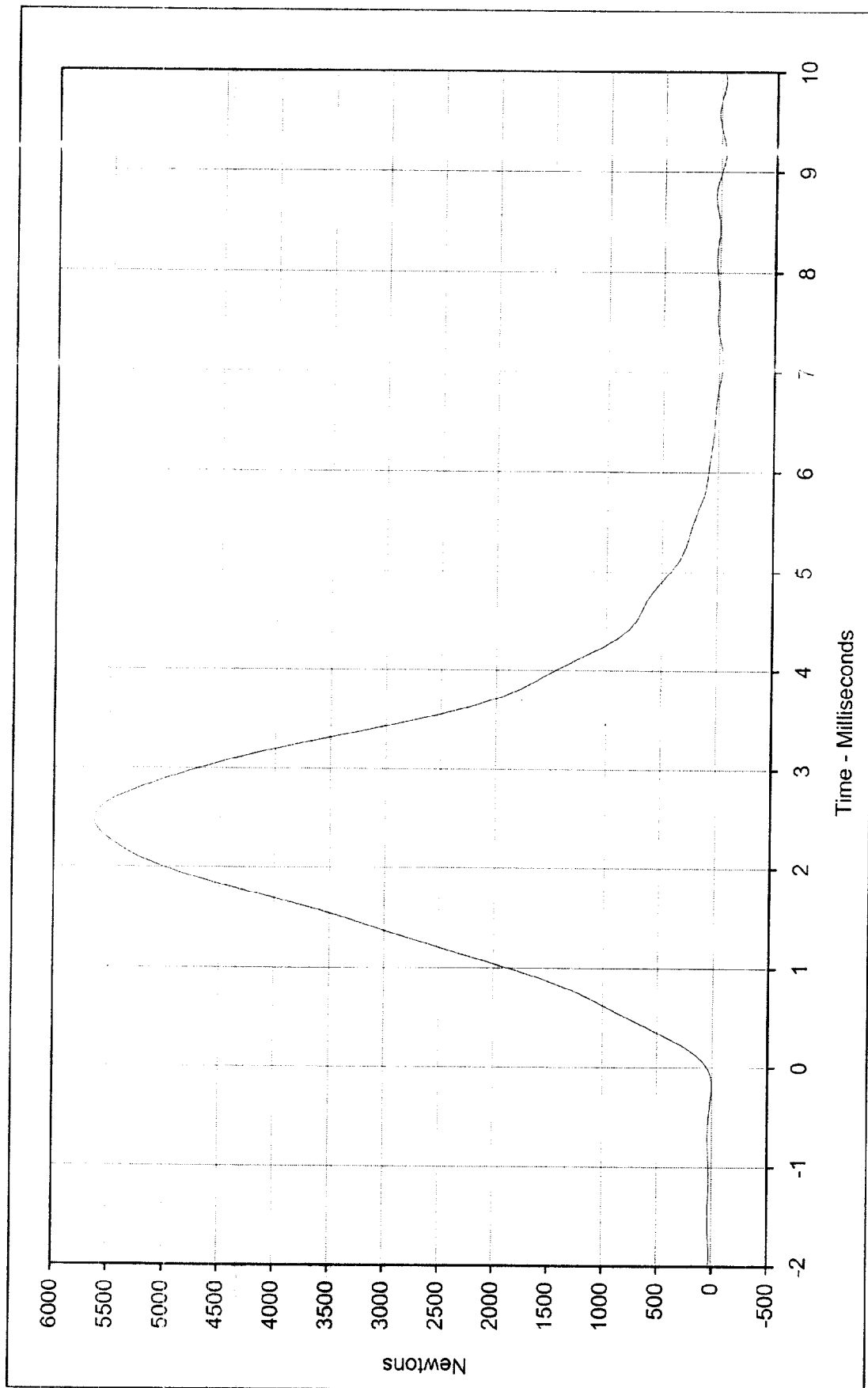
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	2.073 to 2.134	2.080	Pass
Peak Probe Force	Newtons	4715 to 5782	5627.6	Pass
Overall Test Results				Pass


Laboratory Technician

November 12, 1998
Test Date


Approved By

12/18/98
Date



Curve Description:	Testing Program		Hybrid III Left Knee Impact Test	
	Test Information:		Part S/N: n/a	Test I.D.: KN001
Maximum Value:	5627.6	at	2.5	Milliseconds
Minimum Value:	-36.2	at	7.1	Milliseconds
SAE Filter Class:	600			
Date of Test:	11/12/98			
ATD Serial No.:	34			





Hybrid III Calibration Data Sheet

50TH Percentile Male

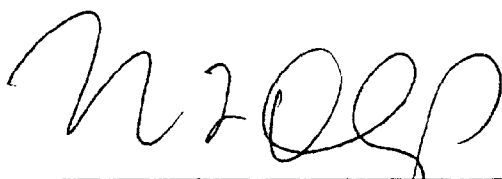
Right Knee Impact Test

ATD Serial No.: 34

Part Serial No.: n/a

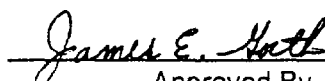
Test I.D.: KN002

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	2.080	Pass
Peak Probe Force	Newtons	4715 to 5782	5466.8	Pass
Overall Test Results				Pass



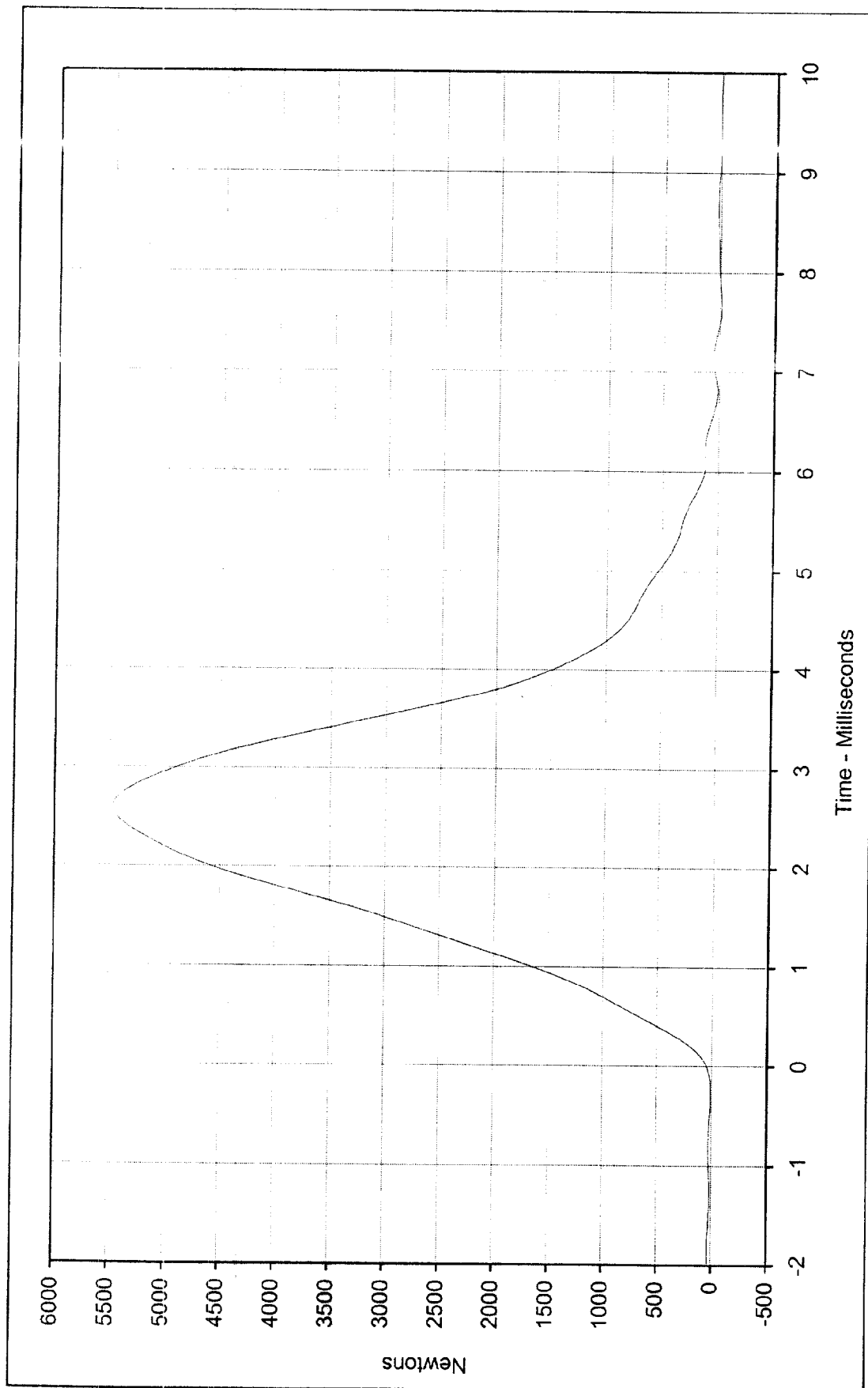
Laboratory Technician

November 12, 1998
Test Date



Approved By

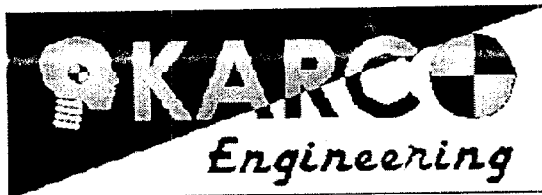
12/18/98
Date



Testing Program: Hybrid III Right Knee Impact Test
 Test Information: Part S/N: n/a Test I.D.: KN002

Curve Description: Probe Force
 Maximum Value: 5466.8 at 2.6 Milliseconds
 Minimum Value: -14.9 at 7.7 Milliseconds
 SAE Filter Class: 600
 Date of Test: 11/12/98
 ATD Serial No.: 34





Hybrid III Calibration Data Sheet

50TH Percentile Male

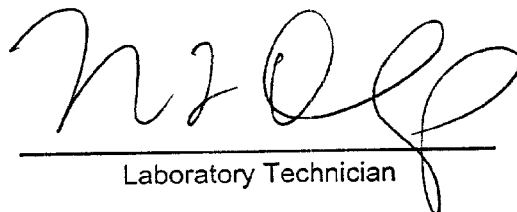
Head Drop Calibration

ATD Serial No.: 034

Part Serial No.: n/a

Test I.D.: HED05

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	39	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	256.0	Pass
Peak Lateral Acceleration	G's	≤15.0	2.3	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass


Laboratory Technician

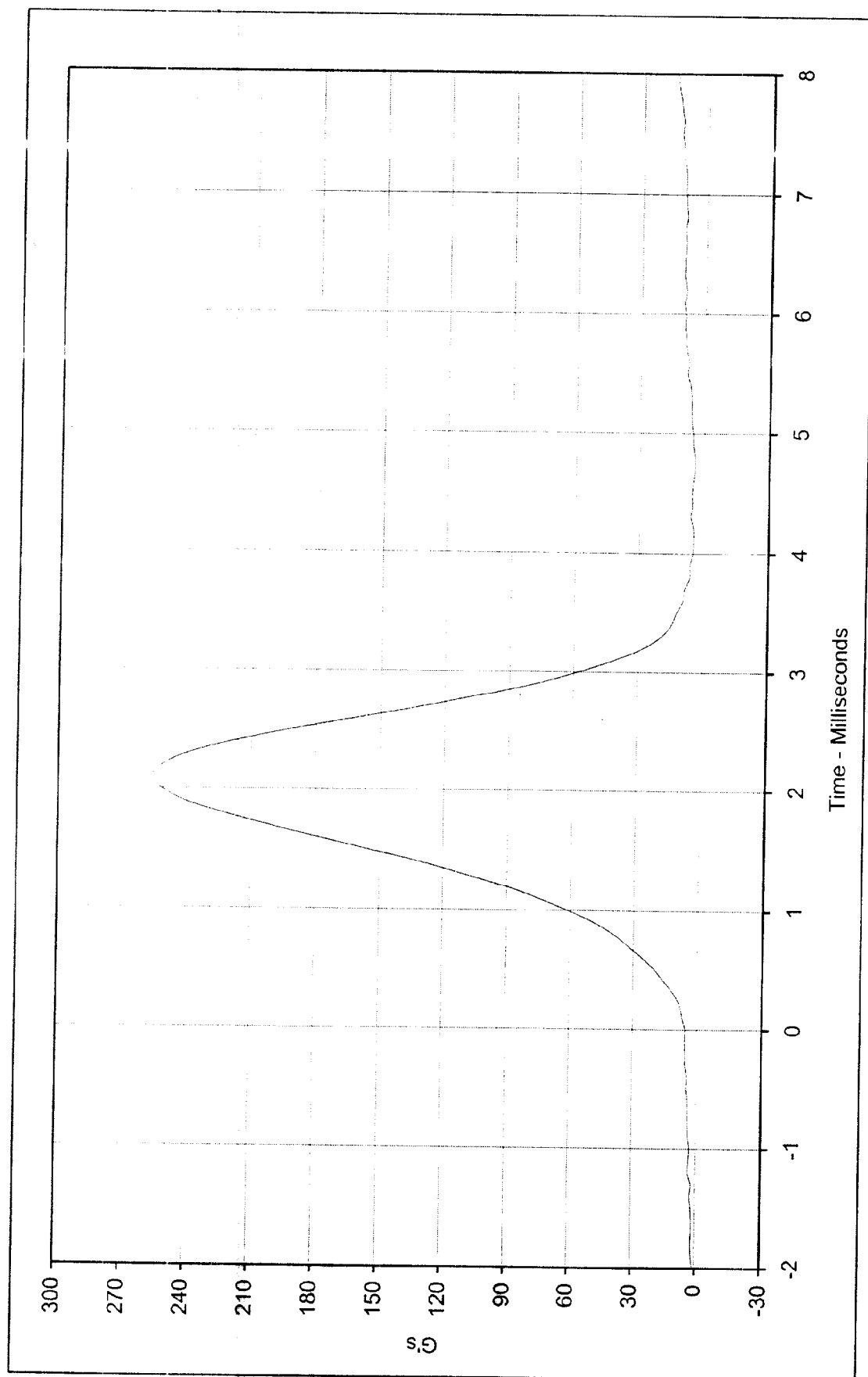
November 9, 1998

Test Date


Approved By

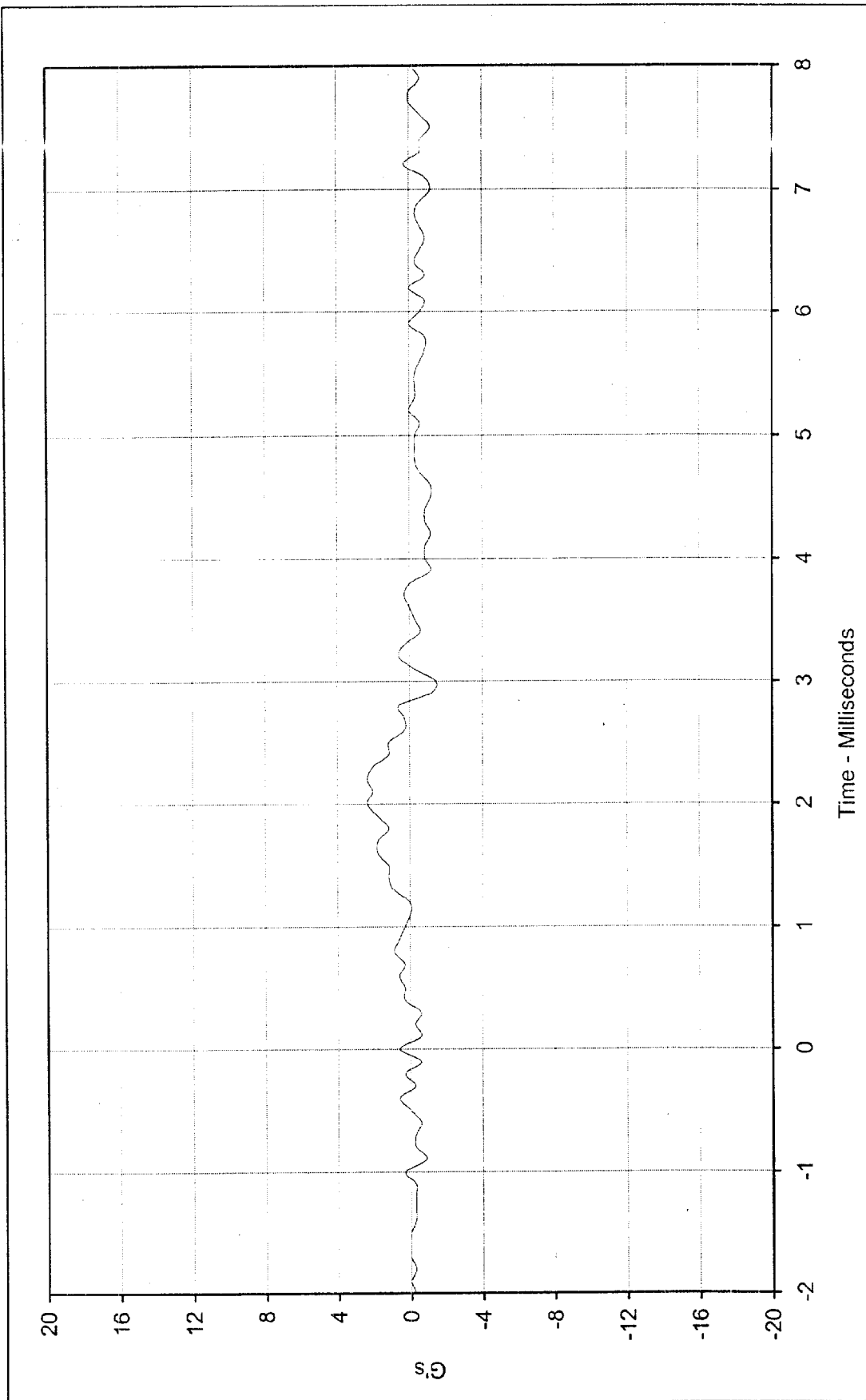
12/18/98

Date



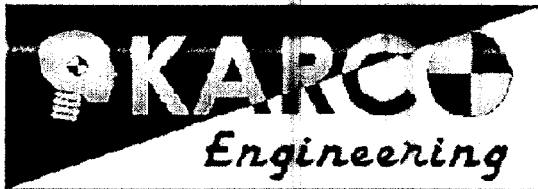
Curve Description:		Testing Program	Hybrid III Head Drop Calibration (Male)
Maximum Value:	256.0	S/N of Part:	n/a
Minimum Value:	0.9	Test I.D.:	HED05
SAE Filter Class:	1000		
Date of Test:	11/9/98		
ATD Serial No.:	034		





Curve Description:	Head Acceleration Y Axis	Testing Program	Hybrid III Head Drop Calibration (Male)
Maximum Value:	2.3 at 2.0 Milliseconds	Test Information:	S/N of Part: n/a Test I.D.: HED05
Minimum Value:	-1.5 at 3.0 Milliseconds		
SAE Filter Class:	1000		
Date of Test:	11/9/98		
ATD Serial No.:	034		





Hybrid III Calibration Data Sheet

50TH Percentile Male

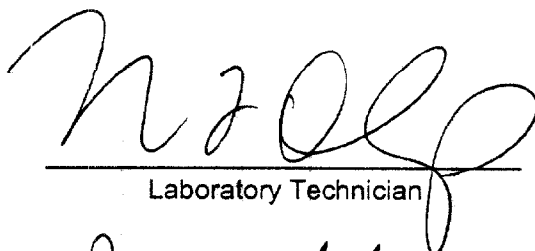
Thorax Impact Test

ATD Serial No.: 034

Part Serial No.: N/A

Test I.D.: CH34A

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	6.71	Pass
Peak Probe Force	Newtons	5159 to 5893	5578	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.73	Pass
Internal Hysteresis	%	69 to 85	74.0	Pass
Overall Test Results				Pass



Laboratory Technician



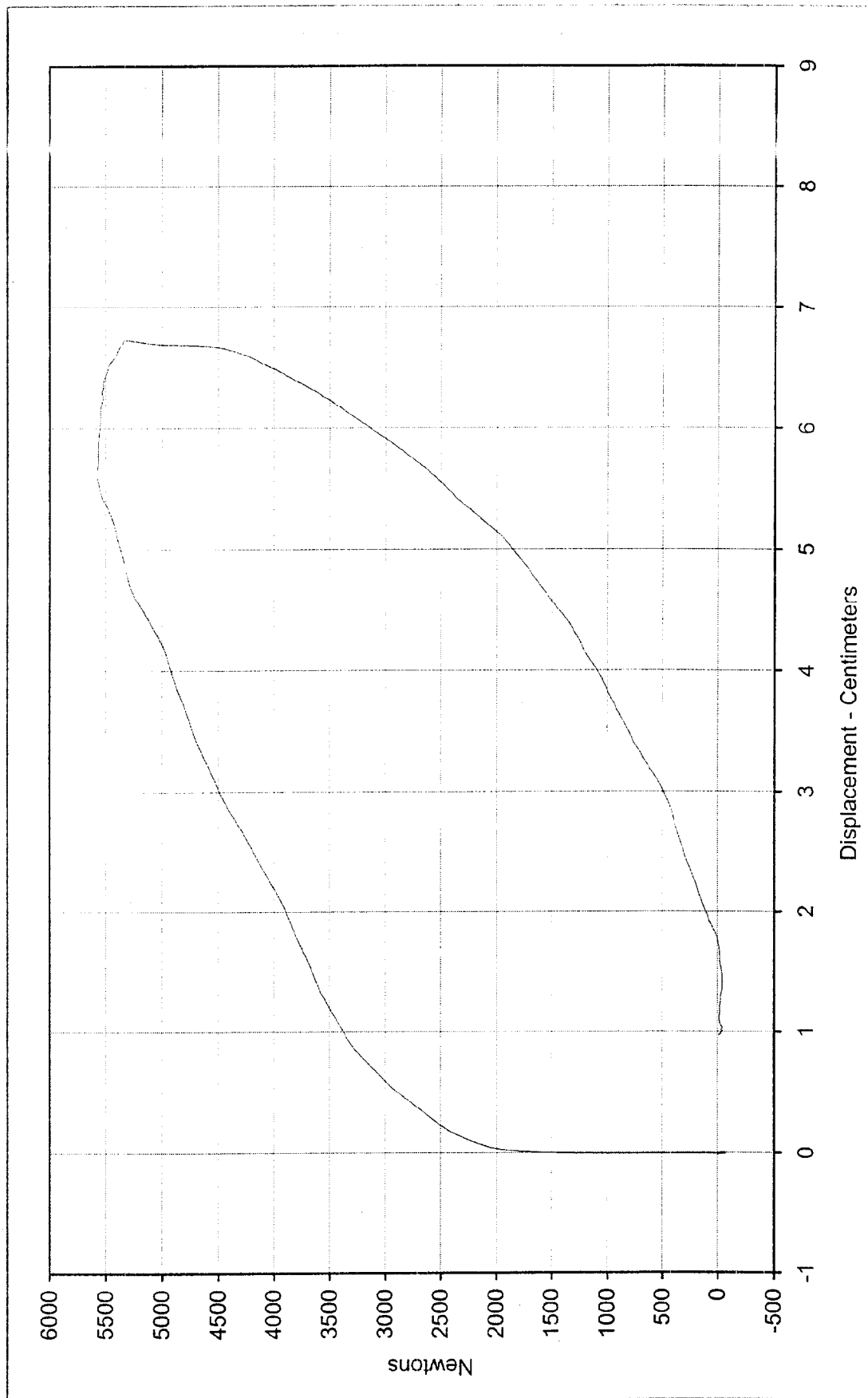
Approved By

November 13, 1998

Test Date

12/18/98

Date



Curve Description:	Probe Force vs. Chest Displacement	Testing Program	Hybrid III Thorax Impact Test
Probe Force:	5578.0 Newtons	Test Information:	S/N of Part: N/A Test I.D.: CH34A

Chest Displ.: 6.73 Centimeters

SAE Filter Class: 180

Date of Test: 11/13/98

ATD Serial No.: 034





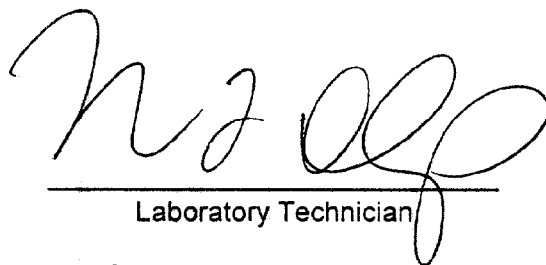
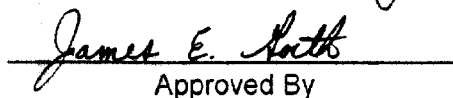
Hybrid III Calibration Data Sheet

50TH Percentile Male

Neck Flexion Test

ATD Serial No.: 034Part Serial No.: n/aTest I.D.: NEC20

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity		%	10 to 70	40	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.96	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	23.0	Pass
	20 Msec.	G's	17.6 to 22.6	20.0	Pass
	30 Msec.	G's	12.5 to 18.5	17.8	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	17.8	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	37.7	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	70.9	Pass
	Time	Msec.	57.0 to 64.0	63.3	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	126.5	Pass
Moment About Occipital Condyle	Maximum	N • m	84.1 to 108.5	85.1	Pass
	Time	Msec.	47.0 to 58.0	55.6	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	103.9	Pass
Overall Test Results					Pass

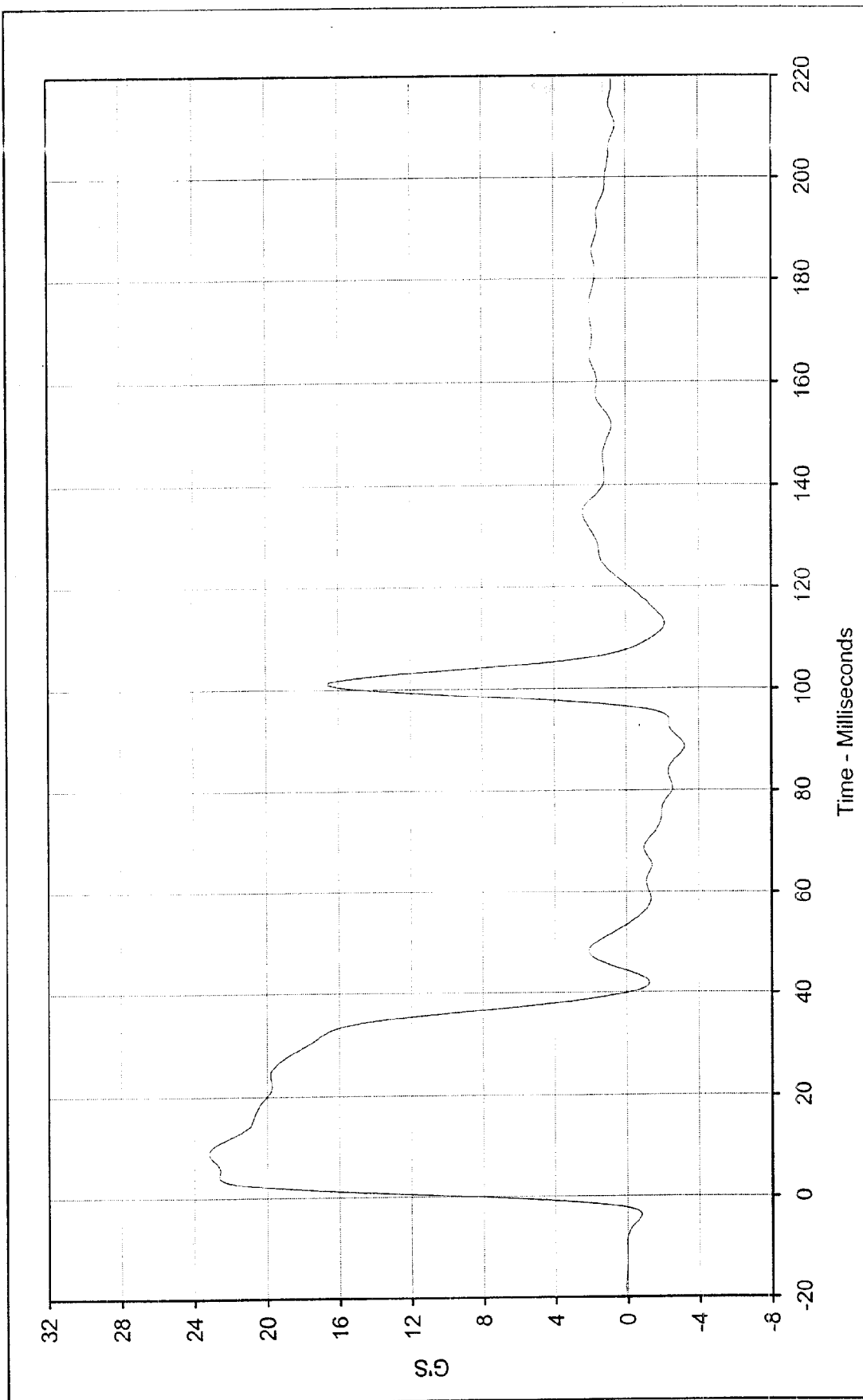

Laboratory Technician
Approved By

November 9, 1998

Test Date



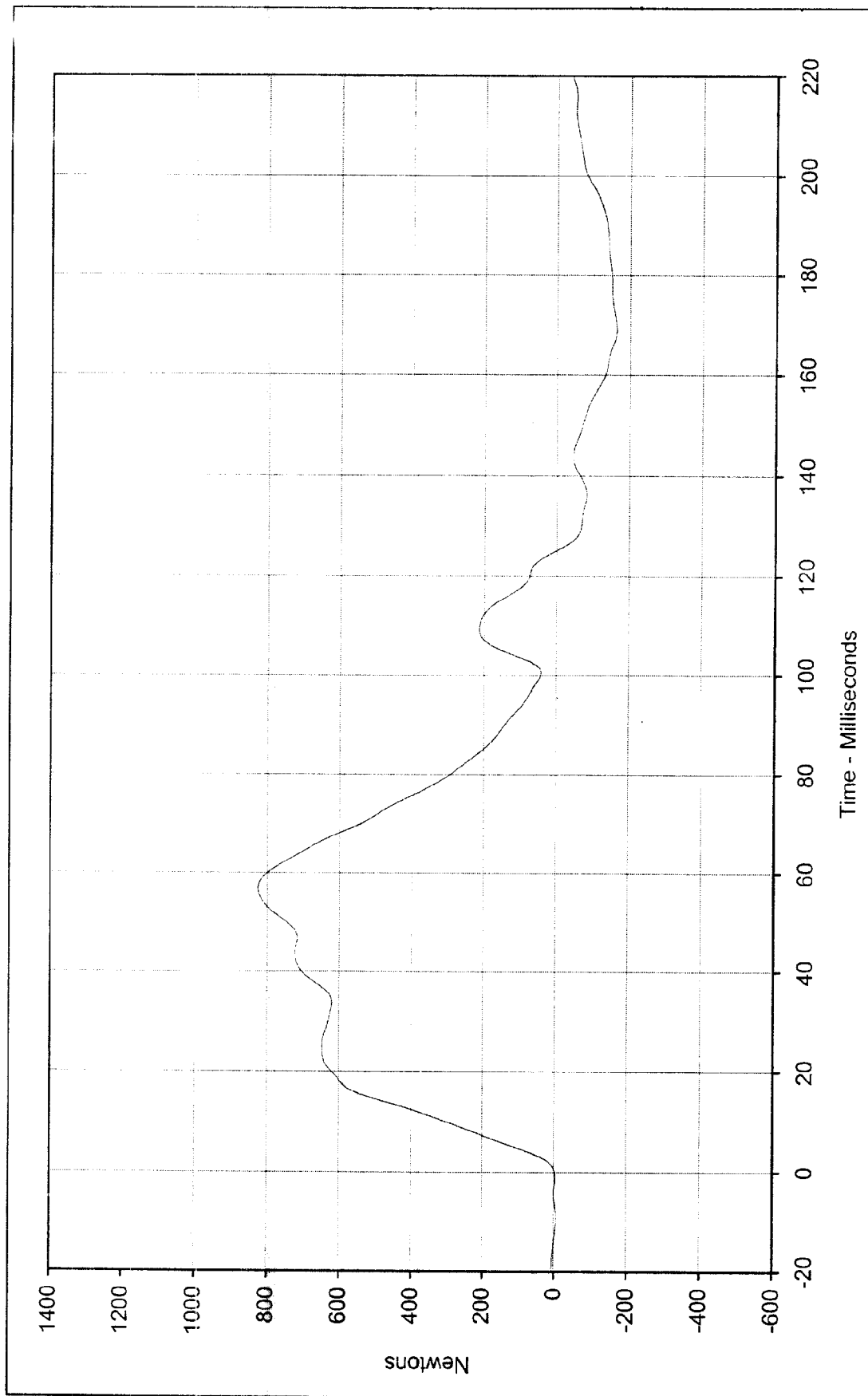
Date



Curve Description: Pendulum Deceleration
 Testing Program: Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NEC20

Maximum Value: 23.2 at 9.1 Milliseconds
 Minimum Value: -3.2 at 88.4 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/9/98
 ATD Serial No.: 034

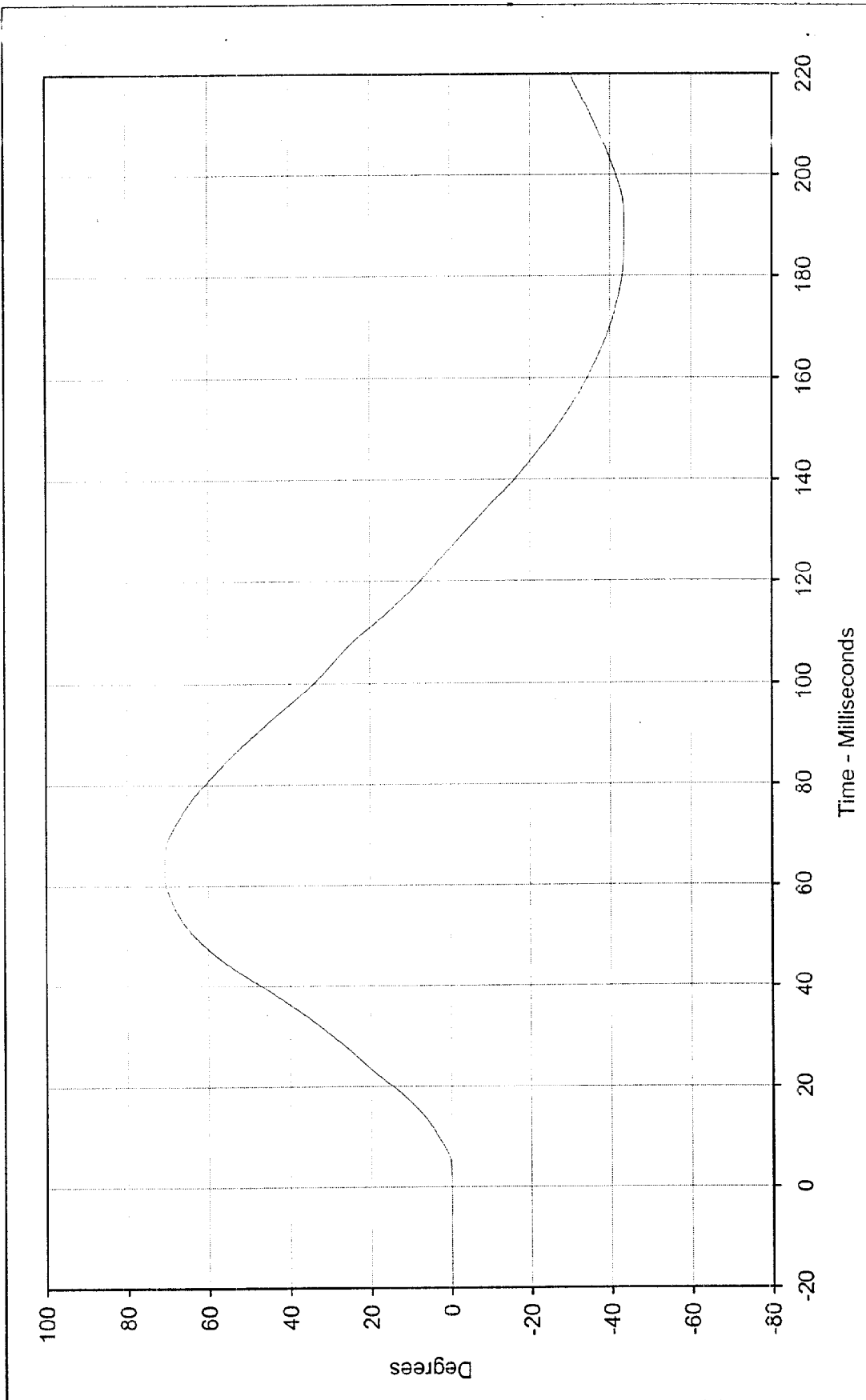




Curve Description: Neck Force X Testing Program Hybrid III Neck Flexion Test (Male)
Maximum Value: 825.0 at 56.9 Milliseconds Test Information: S/N of Part: n/a Test I.D.: NEC20
Minimum Value: -164.0 at 169.0 Milliseconds



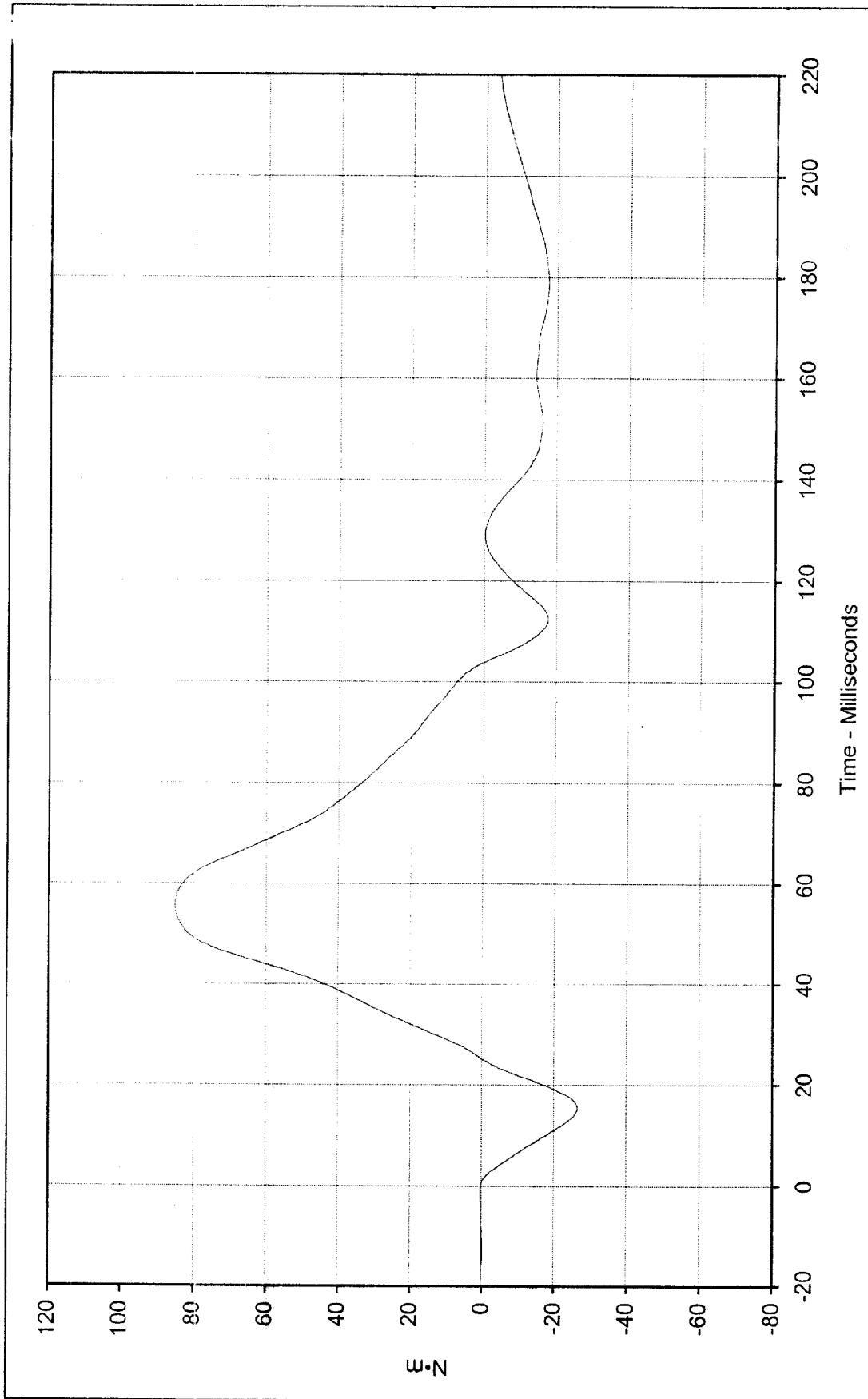
SAE Filter Class: 60
Date of Test: 11/9/98
ATD Serial No.: 034



Curve Description: "D" Plane Rotation
 Maximum Value: 70.9 at 63.3 Milliseconds
 Minimum Value: -43.6 at 189.3 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/9/98
 ATD Serial No.: 034

Testing Program: Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NEC20





Curve Description: Moment About Occipital Condyles

Maximum Value:	85.1	at	55.6	Milliseconds
Minimum Value:	-26.6	at	15.3	Milliseconds
SAE Filter Class:	60			
Date of Test:	11/9/98			
ATD Serial No.:	034			

Testing Program Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NEC20





Hybrid III Calibration Data Sheet

50TH Percentile Male

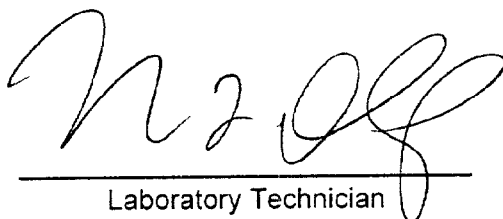
Neck Extension Test

ATD Serial No.: 034

Part Serial No.: n/a

Test I.D.: NEC06

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	6.18	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.2	Pass
	20 Msec.	G's	14.0 to 19.0	15.4	Pass
	30 Msec.	G's	11.0 to 16.0	12.8	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	12.8	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	45.5	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	92.9	Pass
	Time	Msec.	72.0 to 82.0	78.4	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	-72.5	Pass
	Time	Msec.	65.0 to 79.0	67.7	Pass
Negative Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	143.9	Pass
Overall Test Results					Pass



Laboratory Technician

November 9, 1998

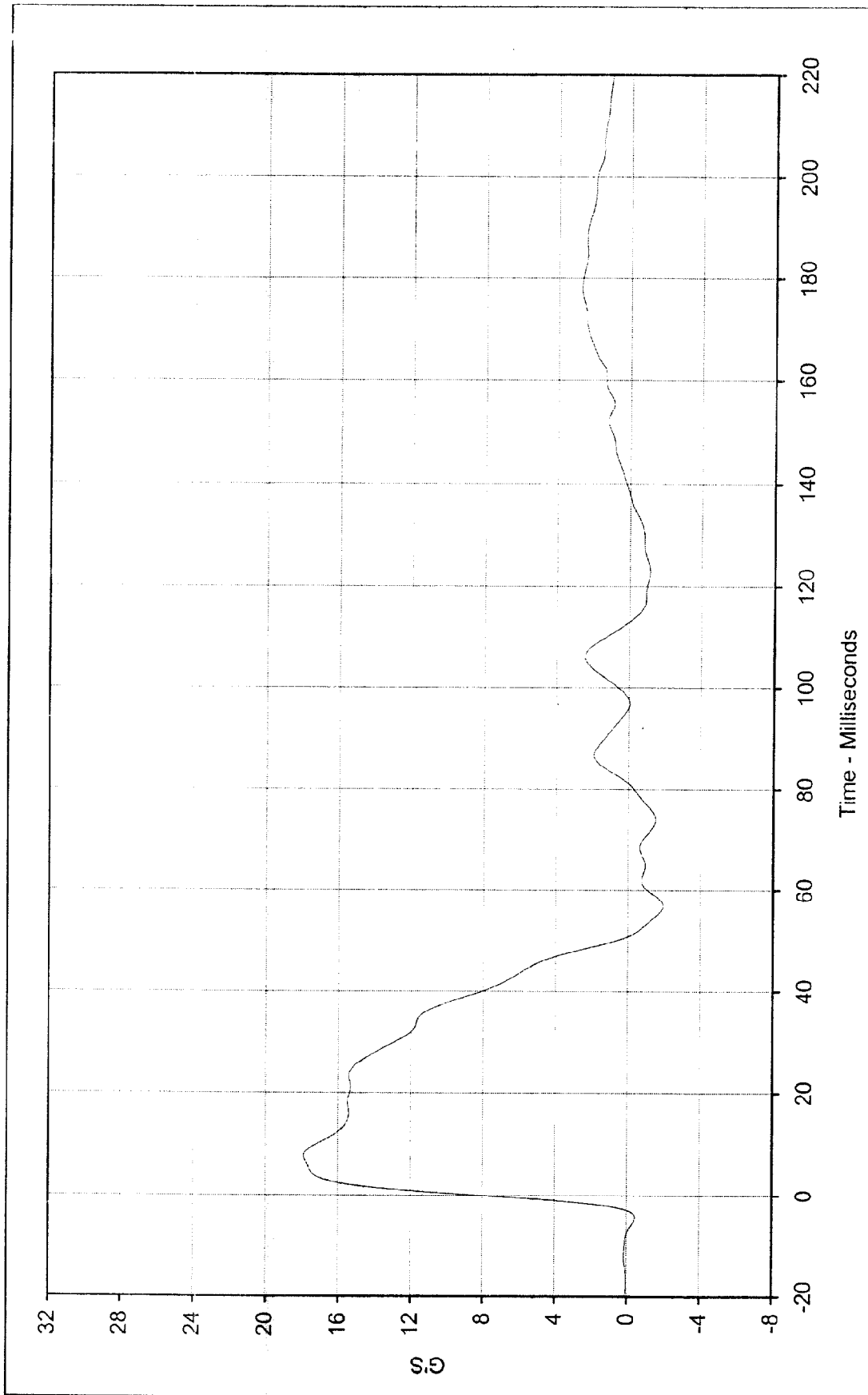
Test Date



Approved By

12/18/98

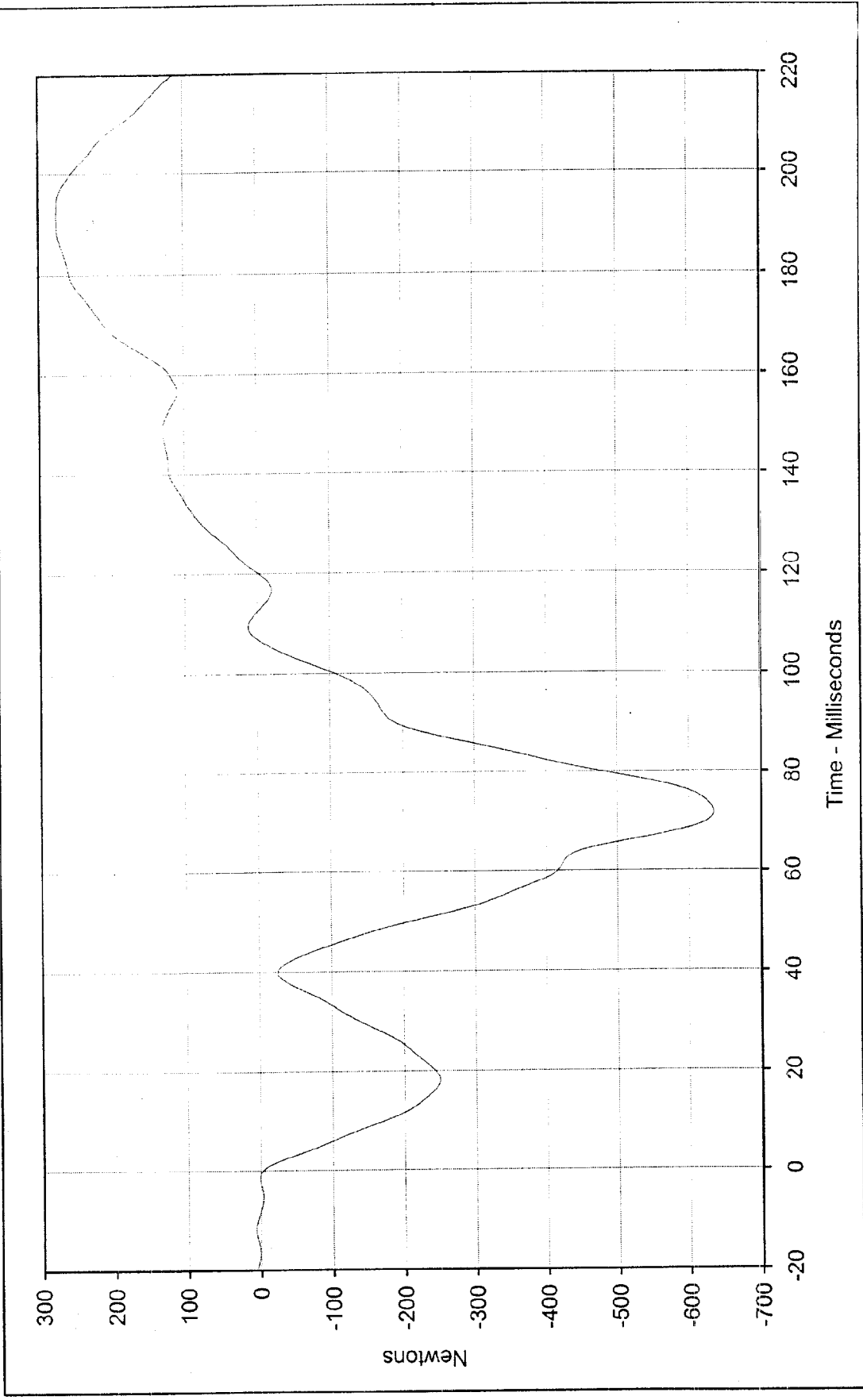
Date



Curve Description: Hybrid III Neck Extension Test (Male)
 Testing Program: S/N of Part: n/a Test I.D.: NEC06

Pendulum Deceleration
 Maximum Value: 17.9 at 7.7 Milliseconds
 Minimum Value: -1.9 at 56.8 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/9/98
 ATD Serial No.: 034

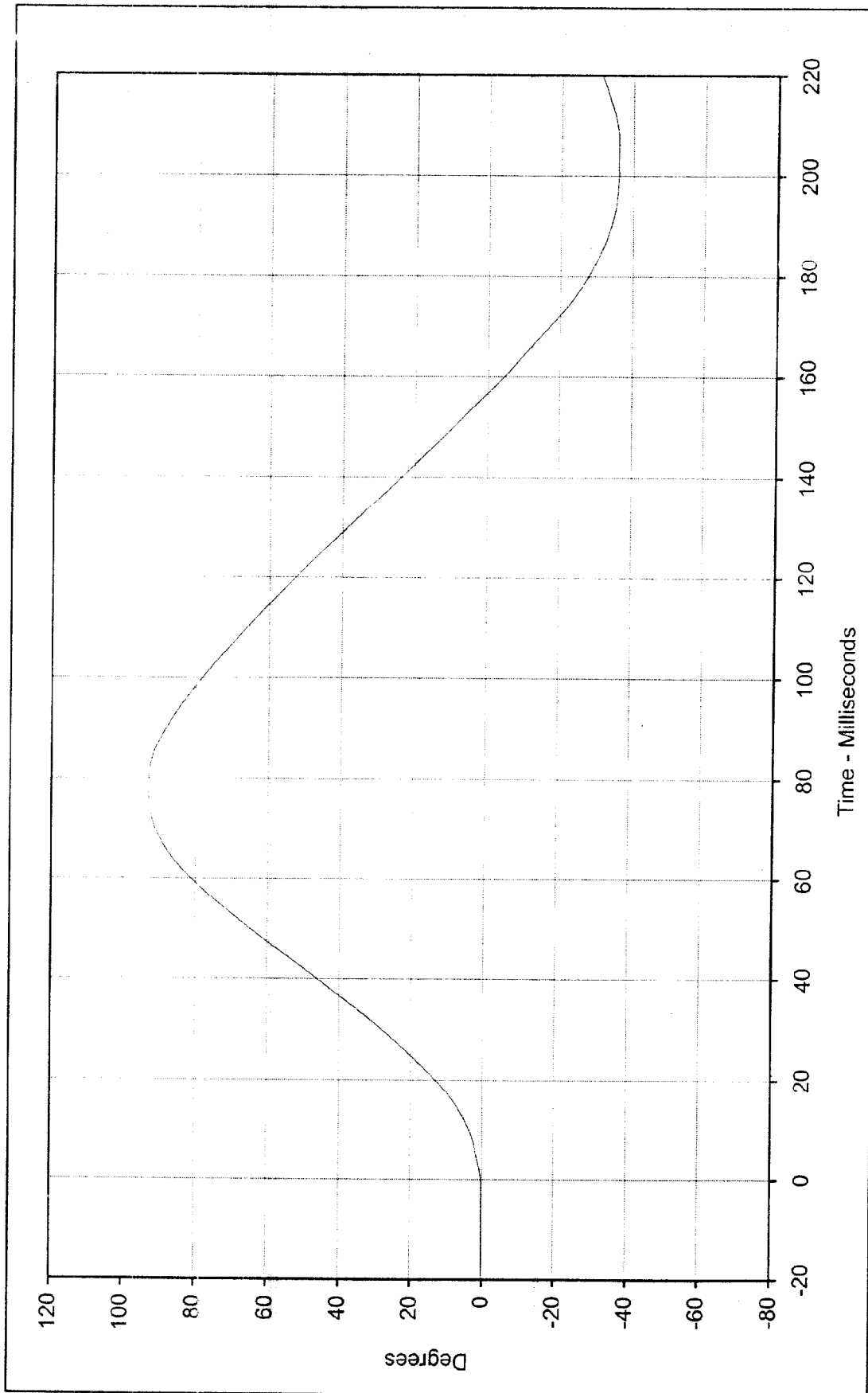




Testing Program Hybrid III Neck Extension Test (Male)
Test Information: S/N of Part: n/a Test I.D.: NEC06

Curve Description: Neck Force X
Maximum Value: 274.7 at 191.4 Milliseconds
Minimum Value: -635.4 at 71.6 Milliseconds
SAE Filter Class: 60
Date of Test: 11/9/98
ATD Serial No.: 004

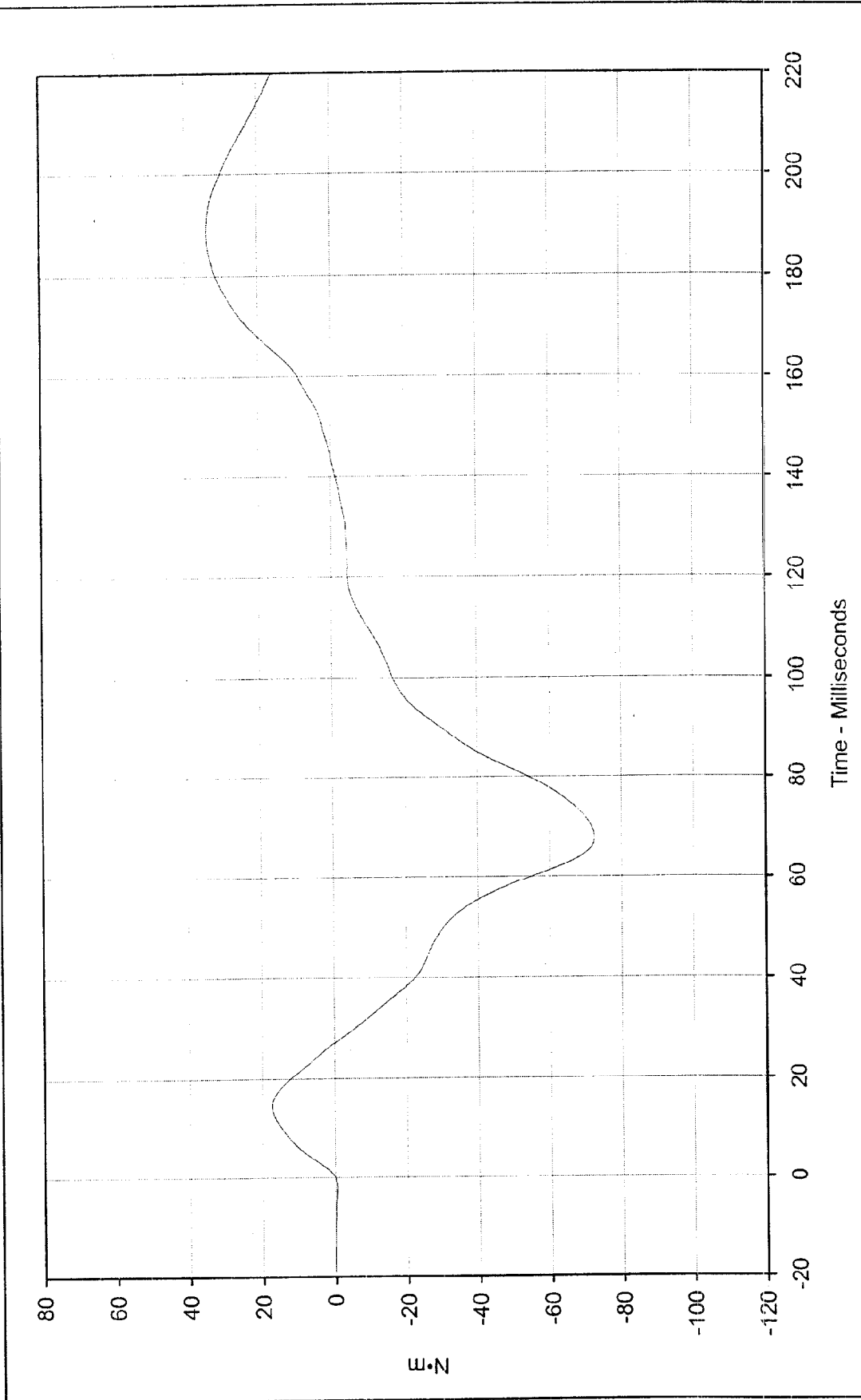




Curve Description: "D" Plane Rotation
 Testing Program Hybrid III Neck Extension Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NEC06

Maximum Value: 92.9 at 78.4 Milliseconds
 Minimum Value: -36.0 at 200.5 Milliseconds
 SAE Filter Class: 60
 Date of Test: 11/9/98
 ATD Serial No.: 034





Curve Description:	Moment About Occipital Condyles		Testing Program	Hybrid III Neck Extension Test (Male)
Maximum Value:	33.9	at 188.6 Milliseconds	Test Information:	S/N of Part: n/a Test I.D.: NEC06
Minimum Value:	-72.5	at 67.7 Milliseconds		
SAE Filter Class:	60			
Date of Test:	11/9/98			
ATD Serial No.:	034			





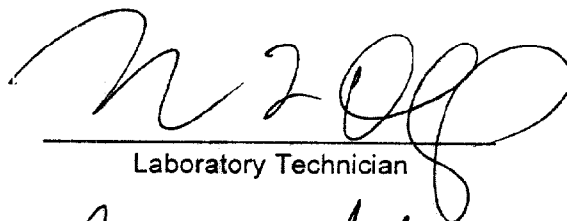
Hybrid III Calibration Data Sheet

50TH Percentile Male

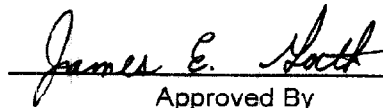
External Measurements

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

External Measurement Data				
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory temperature	°C	20.4 to 22.1	21.9	Pass
Laboratory relative humidity	%	10 to 70	44	Pass
A - Total sitting height	mm	878.8 to 889.0	888.4	Pass
B - Shoulder pivot height	mm	505.5 to 520.7	506.5	Pass
C - "H" point height	mm	83.8 to 88.9	87.5	Pass
D - "H" point from seat back	mm	134.6 to 139.7	138.5	Pass
E - Shoulder pivot from back	mm	83.8 to 94.0	91.0	Pass
F - Thigh clearance	mm	139.7 to 154.9	153.3	Pass
G - Elbow back to wrist pivot	mm	289.6 to 304.8	300.8	Pass
H - Skull cap to back line	mm	40.6 to 45.7	44.5	Pass
I - Shoulder to elbow length	mm	330.2 to 345.4	335.7	Pass
J - Elbow rest height	mm	190.5 to 210.8	207.5	Pass
K - Buttock to knee length	mm	579.1 to 604.5	603.4	Pass
L - Popliteal length	mm	429.3 to 454.7	451.5	Pass
M - Knee pivot height	mm	485.1 to 500.4	500.2	Pass
N - Buttock popliteal length	mm	452.1 to 477.5	476.4	Pass
O - Chest depth	mm	213.4 to 228.6	225.5	Pass
P - Foot length	mm	251.5 to 266.7	255.6	Pass
V - Shoulder breadth	mm	421.6 to 436.9	229.5	Pass
W - Foot breadth	mm	91.4 to 106.7	104.0	Pass
Y - Chest circumference	mm	970.3 to 1000.8	981.0	Pass
Z - Waist circumference	mm	835.7 to 866.1	865.3	Pass
AA - Location for chest circumference	mm	429.3 to 434.3	431.0	Pass
BB - Location for waist circumference	mm	226.1 to 231.1	230.0	Pass
Overall Test Results				Pass



Laboratory Technician



Approved By

November 16, 1998

Test Date



Date



Hybrid III Calibration Data Sheet

50TH Percentile Male

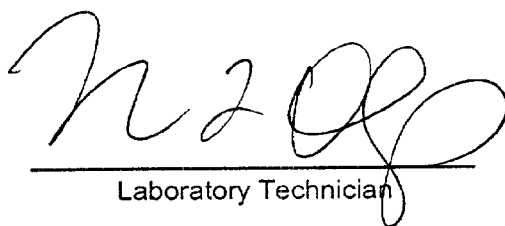
Left Knee Impact Test

ATD Serial No.: 35

Part Serial No.: n/a

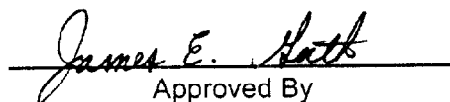
Test I.D.: KN003

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	2.119	Pass
Peak Probe Force	Newtons	4715 to 5782	5354.3	Pass
Overall Test Results				Pass


Laboratory Technician

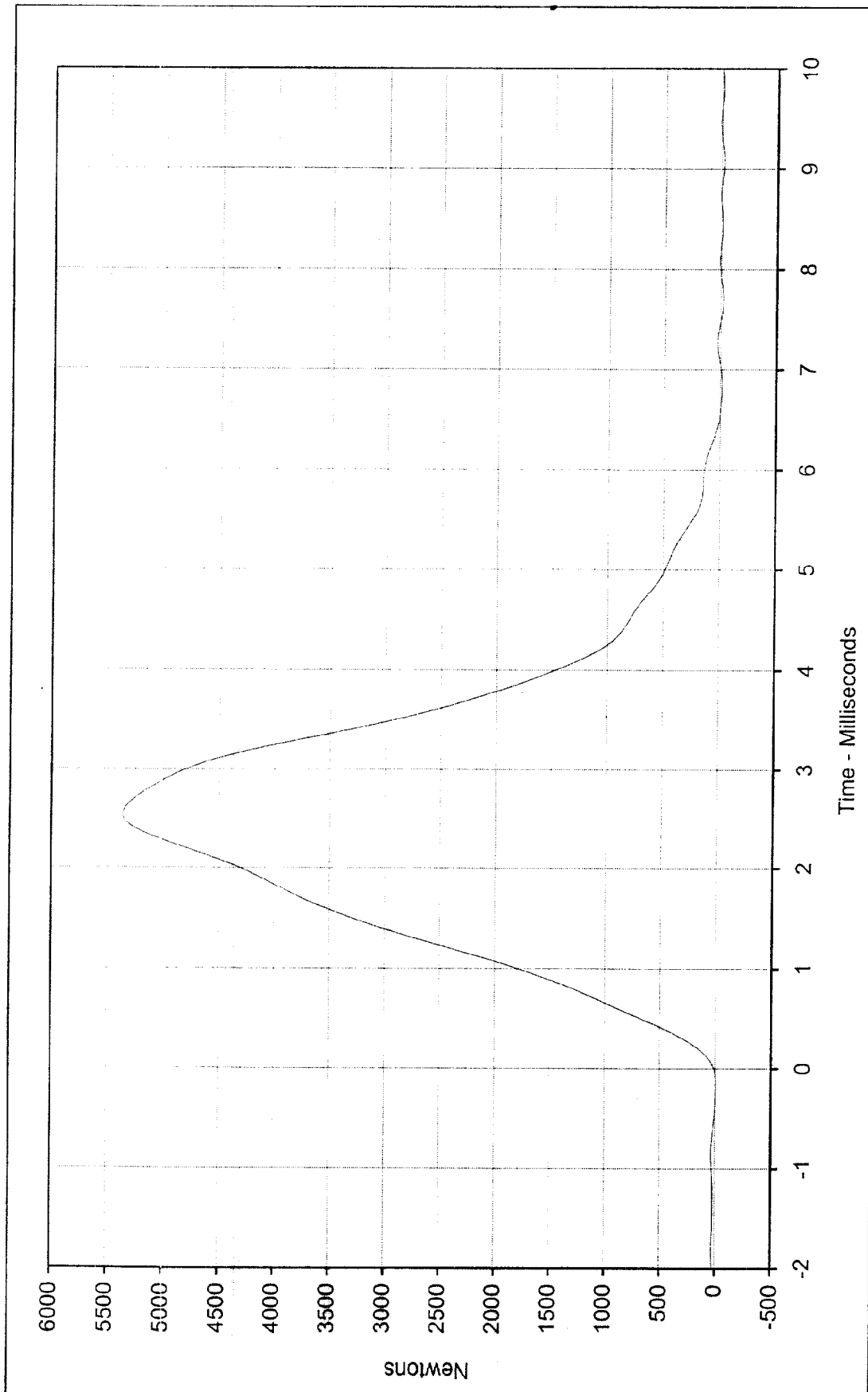
November 12, 1998

Test Date


Approved By

12/18/98

Date



Testing Program: Hybrid III Left Knee Impact Test
 Test Information: Part S/N: n/a Test I.D.: KN003



Curve Description: Probe Force
 Maximum Value: 5354.3 at 2.5 Milliseconds
 Minimum Value: -24.7 at 7.7 Milliseconds
 SAE Filter Class: 600
 Date of Test: 11/12/98
 ATD Serial No.: 35



Hybrid III Calibration Data Sheet

50TH Percentile Male

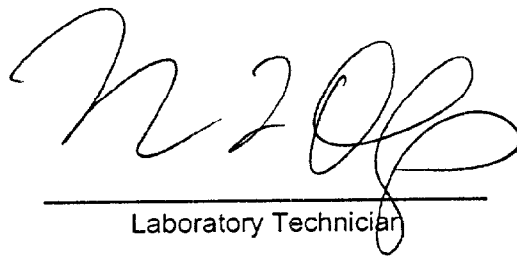
Right Knee Impact Test

ATD Serial No.: 35

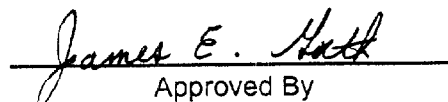
Part Serial No.: n/a

Test I.D.: KN004

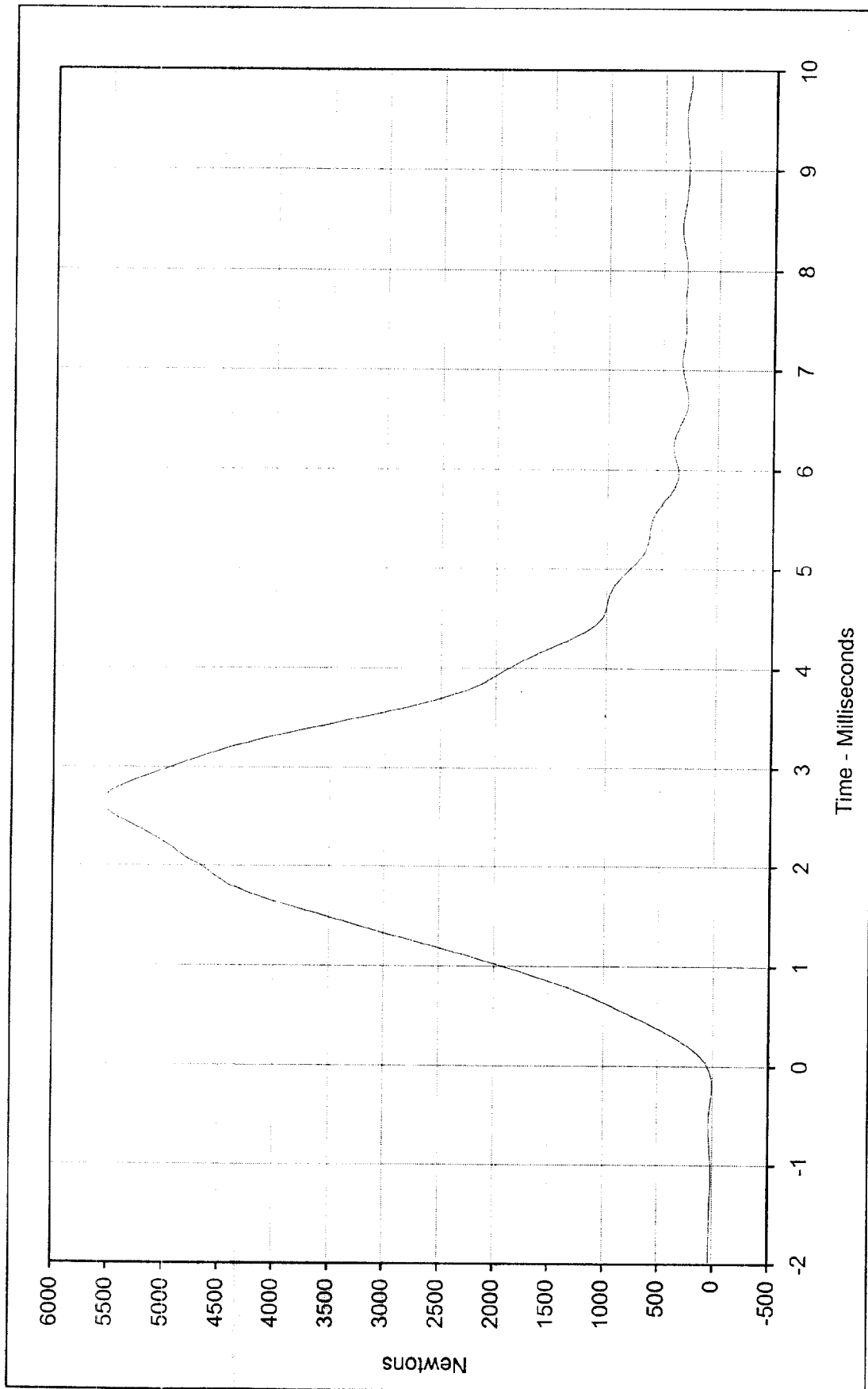
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	2.073 to 2.134	2.101	Pass
Peak Probe Force	Newtons	4715 to 5782	5539.5	Pass
Overall Test Results				Pass


Laboratory Technician

November 12, 1998
Test Date


Approved By

12/18/98
Date



Testing Program: Hybrid III Right Knee Impact Test
 Test Information: Part S/N: n/a Test I.D.: KN004



Curve Description: Probe Force
 Maximum Value: 5539.5 at 2.6 Milliseconds
 Minimum Value: 5.7 at -0.2 Milliseconds
 SAE Filter Class: 600
 Date of Test: 11/12/98
 ATD Serial No.: 35



Hybrid III Calibration Data Sheet

50TH Percentile Male

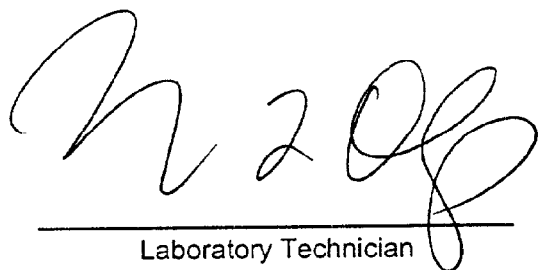
Head Drop Calibration

ATD Serial No.: 035

Part Serial No.: n/a

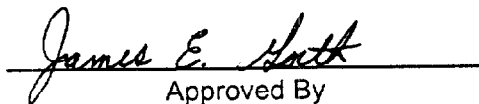
Test I.D.: HAD-11

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	39	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	251.7	Pass
Peak Lateral Acceleration	G's	≤15.0	2.3	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass


Laboratory Technician

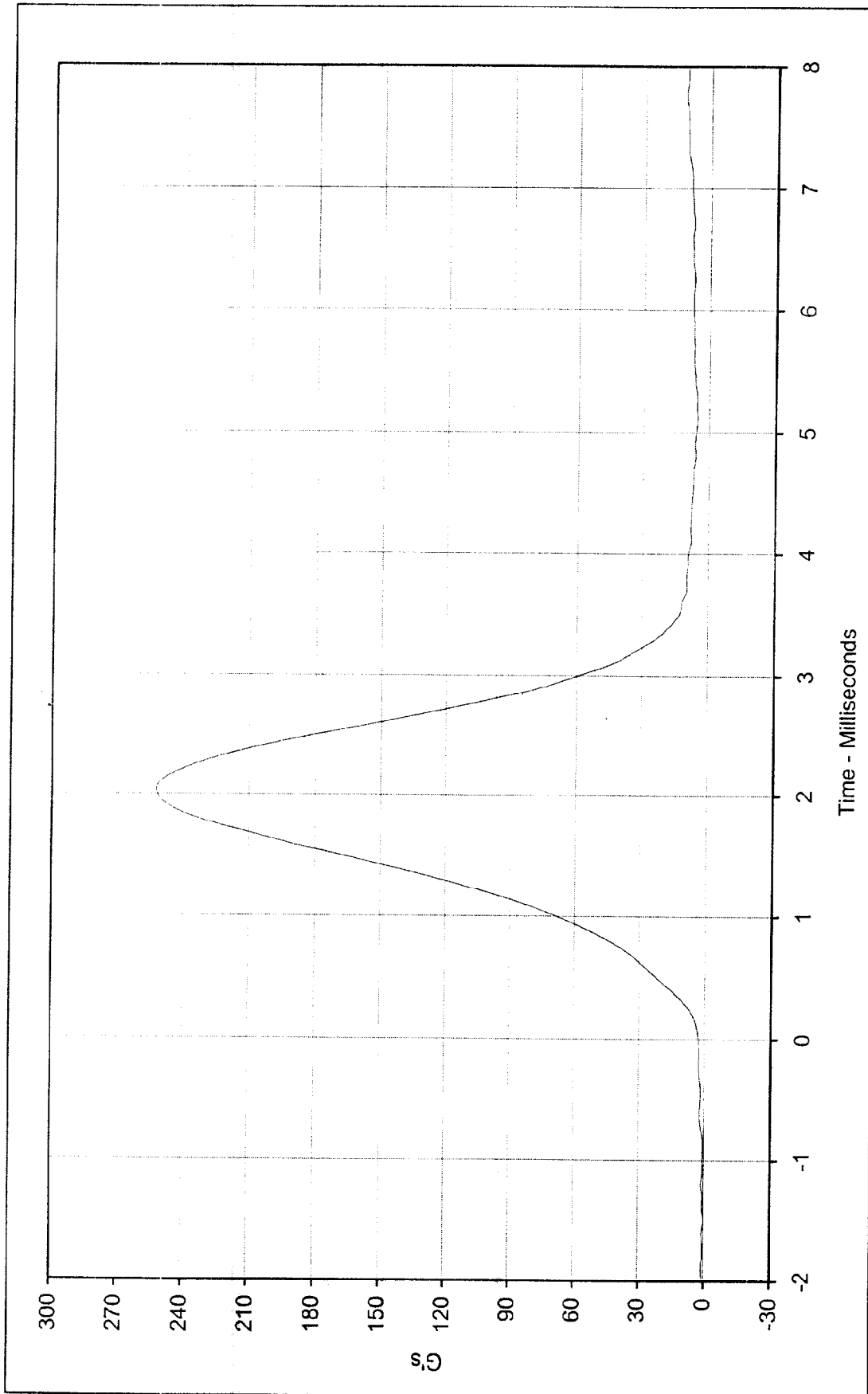
November 2, 1998

Test Date


Approved By

12/18/98

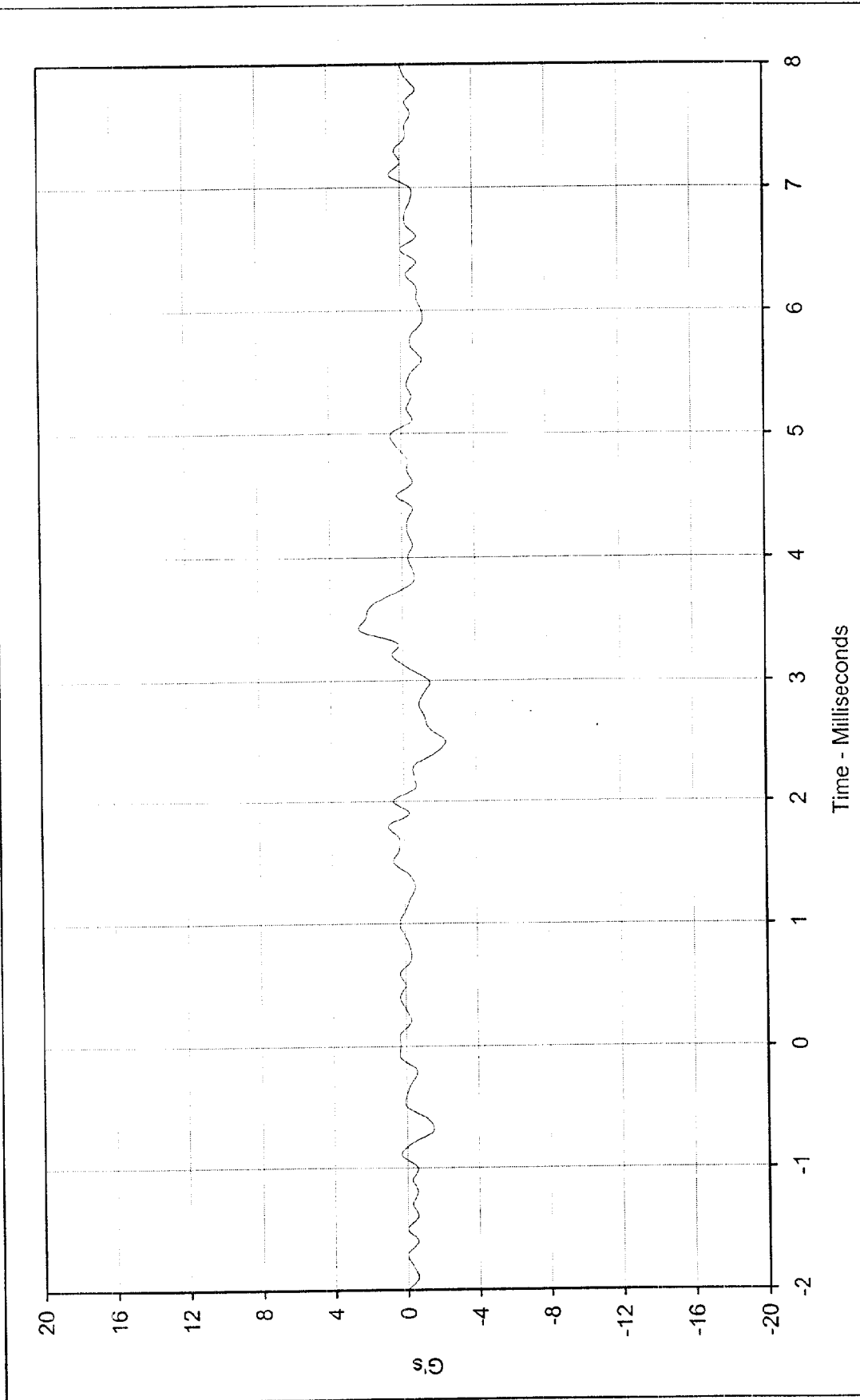
Date



Curve Description: Head Resultant Acceleration
 Maximum Value: 251.7 at 2.0 Milliseconds
 Minimum Value: 0.0 at -1.5 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 11/2/98
 ATD Serial No.: 035

Testing Program Hybrid III Head Drop Calibration (Male)
 Test Information: S/N of Part: n/a Test I.D.: HAD01

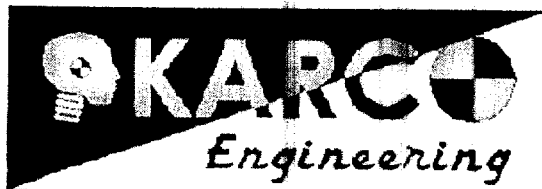




Testing Program: Hybrid III Head Drop Calibration (Male)
 Test Information: S/N of Part: n/a Test I.D.: HAD01

Curve Description: Head Acceleration Y Axis
 Maximum Value: 2.3 at 3.4 Milliseconds
 Minimum Value: -2.3 at 2.5 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 11/2/98
 ATD Serial No.: 035





Hybrid III Calibration Data Sheet

50TH Percentile Male

Thorax Impact Test

ATD Serial No.: 035

Part Serial No.: N/A

Test I.D.: CH35A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	39	Pass
Probe Velocity	m/s	6.58 to 6.82	6.68	Pass
Peak Probe Force	Newtons	5159 to 5893	5755	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.55	Pass
Internal Hysteresis	%	69 to 85	72.5	Pass
Overall Test Results				Pass

Laboratory Technician

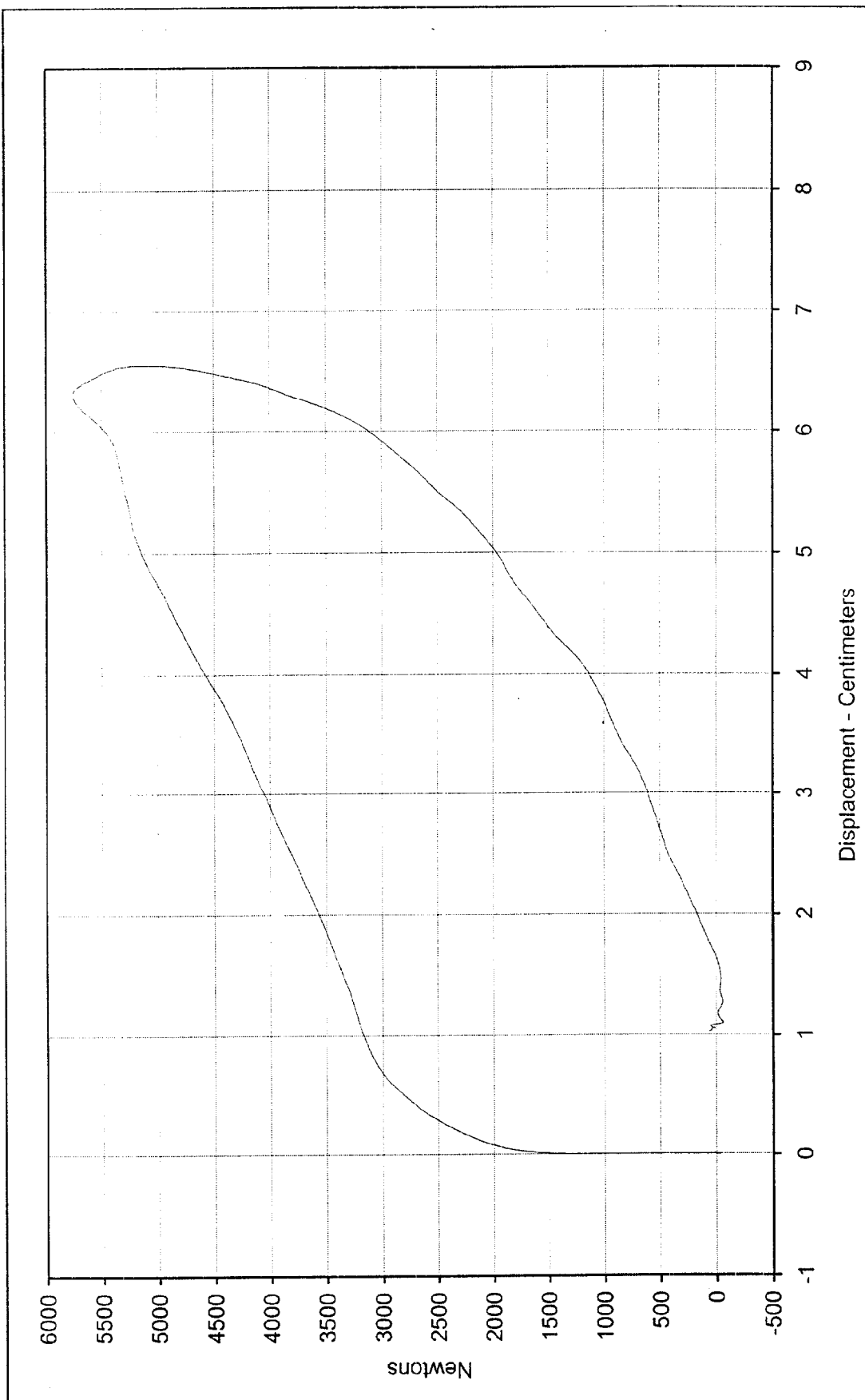
Approved By

November 13, 1998

Test Date

12/18/98

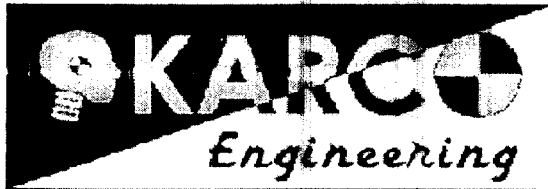
Date



Curve Description:	Probe Force vs. Chest Displacement	Testing Program	Hybrid III Thorax Impact Test
Probe Force:	5754.6 Newtons	Test Information:	S/N of Part: N/A Test I.D.: CH35A

Chest Displ.:	6.55 Centimeters
SAE Filter Class:	180
Date of Test:	11/13/98
ATD Serial No.:	035





Hybrid III Calibration Data Sheet

50TH Percentile Male

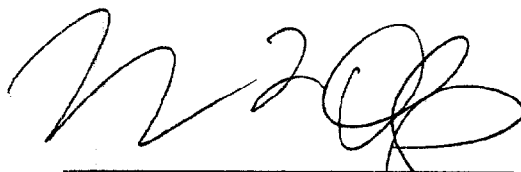
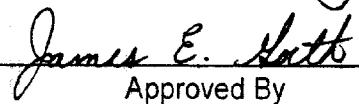
Neck Flexion Test

ATD Serial No.: 035

Part Serial No.: n/a

Test I.D.: NEC11

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity		%	10 to 70	40	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.93	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.7	Pass
	20 Msec.	G's	17.6 to 22.6	20.2	Pass
	30 Msec.	G's	12.5 to 18.5	17.5	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	17.5	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	35.5	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	77.3	Pass
	Time	Msec.	57.0 to 64.0	63.9	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	126.1	Pass
Moment About Occipital Condyle	Maximum	N • m	84.1 to 108.5	88.6	Pass
	Time	Msec.	47.0 to 58.0	57.7	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	103.5	Pass
Overall Test Results					Pass

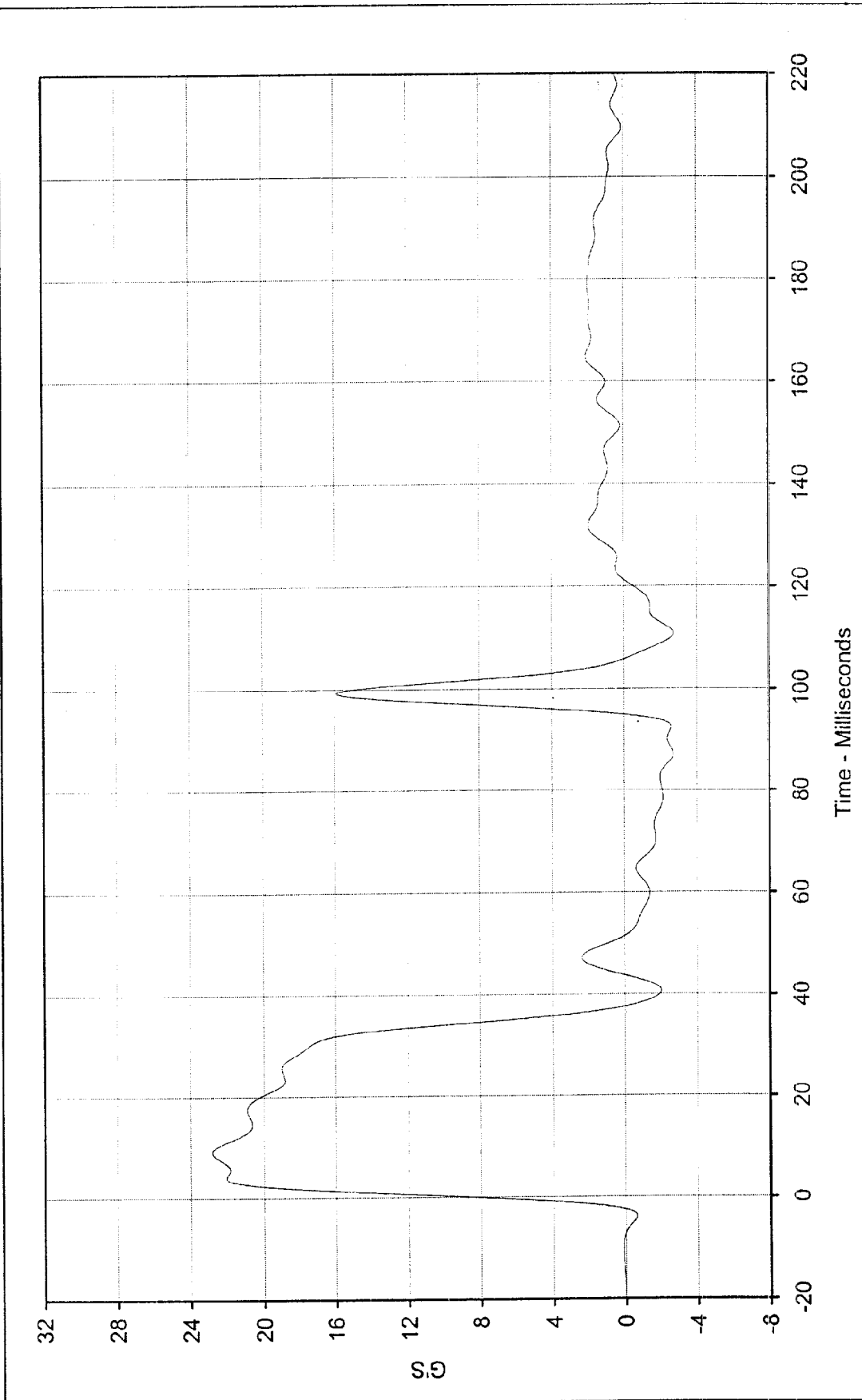

 Laboratory Technician

 Approved By

October 30, 1998

Test Date

12/18/98

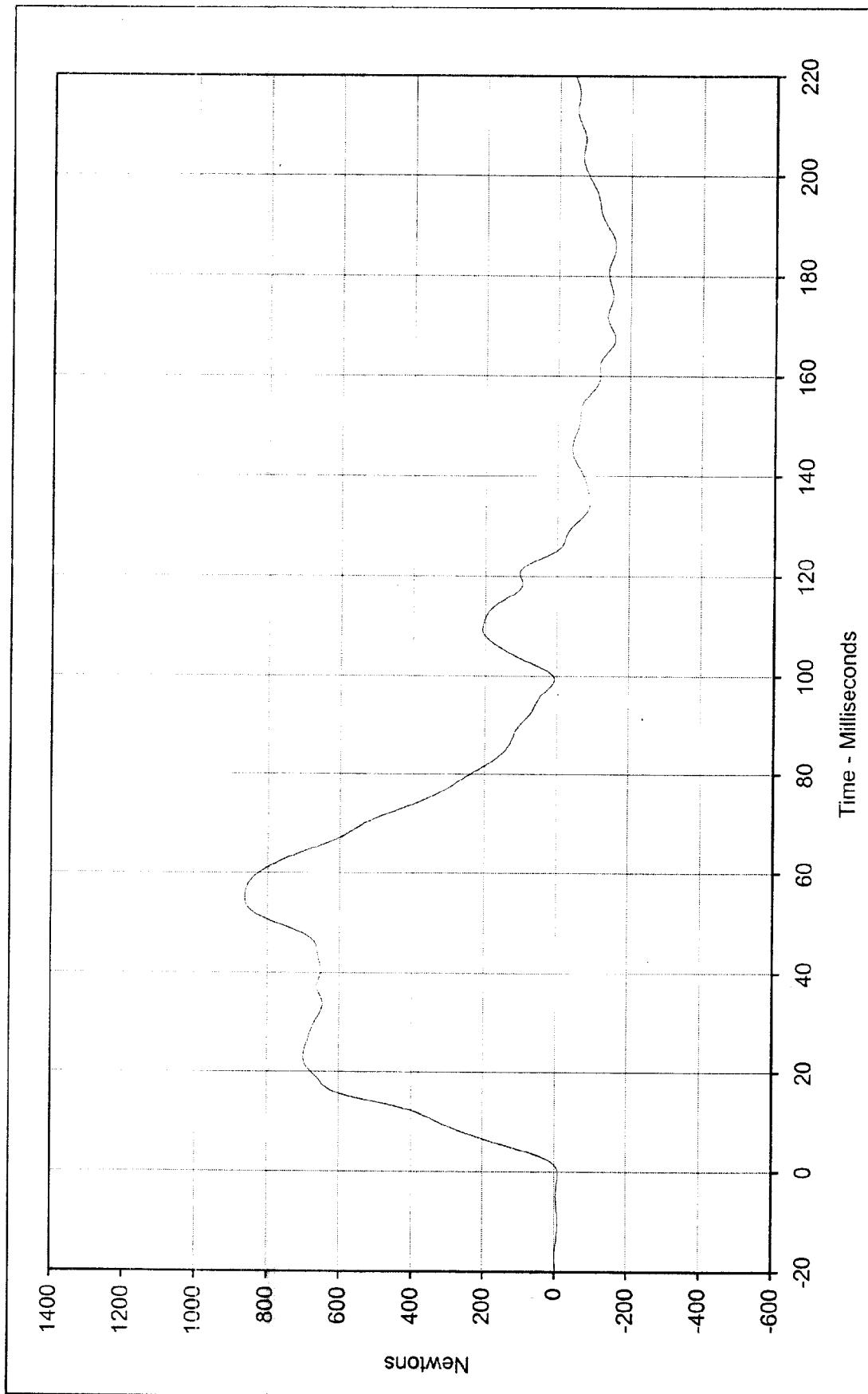
Date



Testing Program Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NEC11

Curve Description: Pendulum Deceleration
 Maximum Value: 22.8 at 9.1 Milliseconds
 Minimum Value: -2.7 at 110.7 Milliseconds
 SAE Filter Class: 60
 Date of Test: 10/30/98
 ATD Serial No.: 035

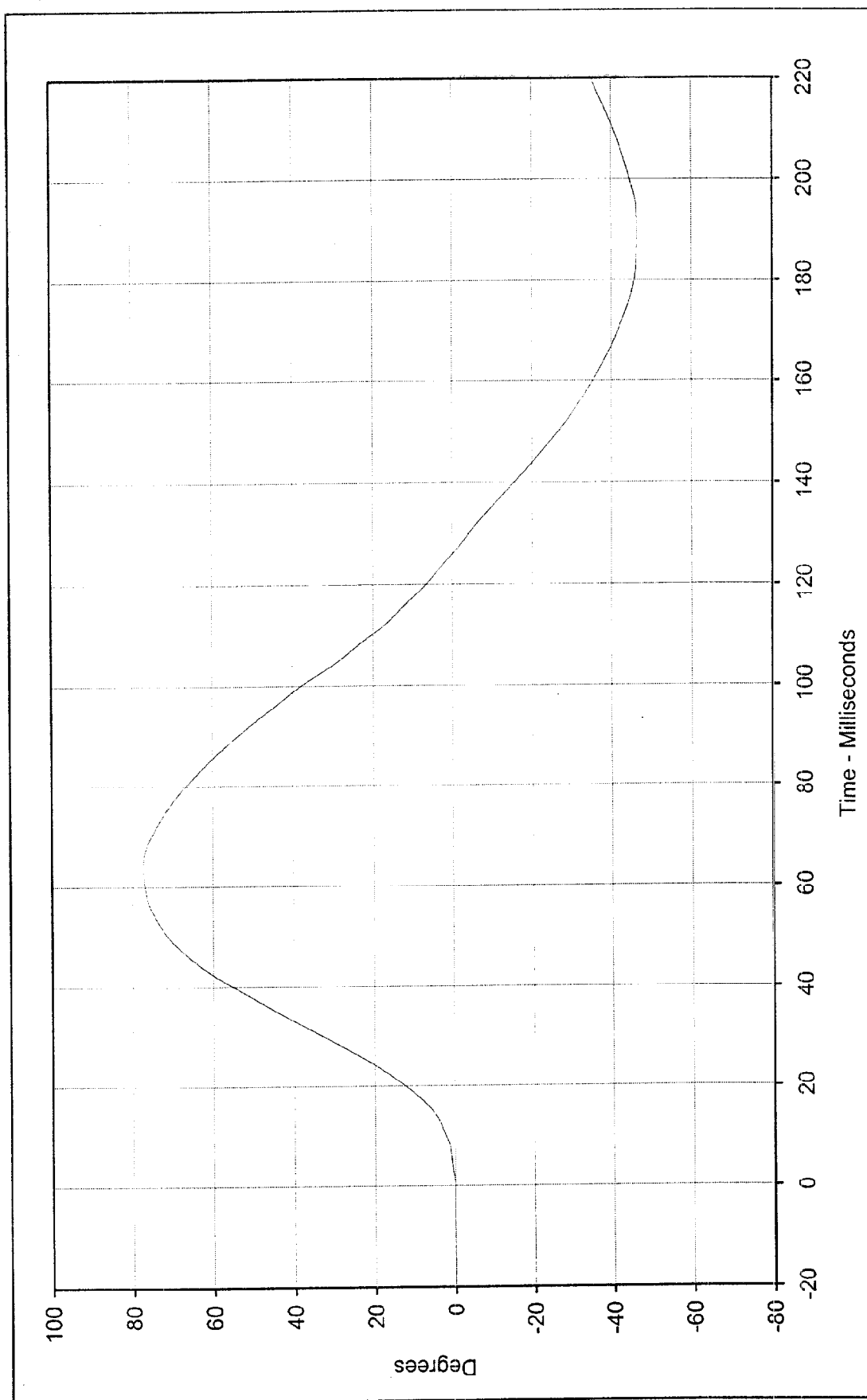




Curve Description: Neck Force X
 Maximum Value: 862.2 at 55.0 Milliseconds
 Minimum Value: -158.4 at 185.8 Milliseconds
 SAE Filter Class: 60
 Date of Test: 10/30/98
 ATD Serial No.: 035

Testing Program: Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NEC11

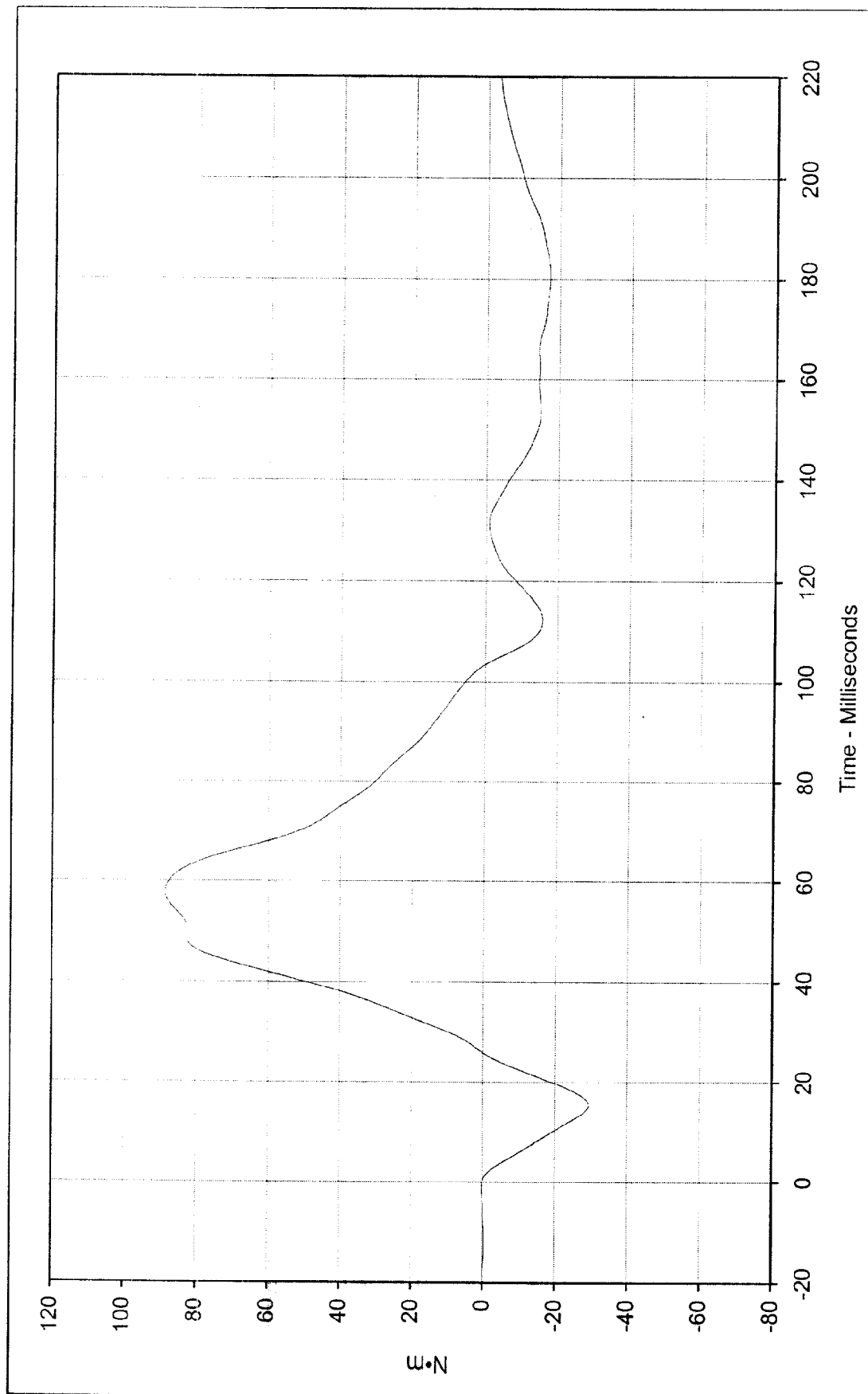




Testing Program Hybrid III Neck Flexion Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NEC11

Curve Description: "D" Plane Rotation
 Maximum Value: 77.3 at 63.9 Milliseconds
 Minimum Value: -46.4 at 191.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 10/30/98
 ATD Serial No.: 035





Curve Description: Moment About Occipital Condyles
 Maximum Value: 88.6 at 57.7 Milliseconds
 Minimum Value: -29.4 at 15.3 Milliseconds
 SAE Filter Class: 60
 Date of Test: 10/30/98
 ATD Serial No.: 035

Testing Program Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NEC11





Hybrid III Calibration Data Sheet

50TH Percentile Male

Neck Extension Test

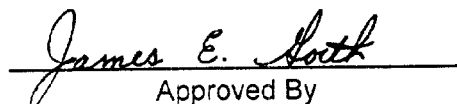
ATD Serial No.: 035

Part Serial No.: n/a

Test I.D.: NEC12

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	36	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.08	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.8	Pass
	20 Msec.	G's	14.0 to 19.0	17.6	Pass
	30 Msec.	G's	11.0 to 16.0	15.5	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.5	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	44.0	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	99.0	Pass
	Time	Msec.	72.0 to 82.0	79.3	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	162.8	Pass
Moment About Occipital Condyle	Maximum	N • m	-52.9 to - 79.9	-68.9	Pass
	Time	Msec.	65.0 to 79.0	73.0	Pass
Negative Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	145.0	Pass
Overall Test Results					Pass


 Laboratory Technician

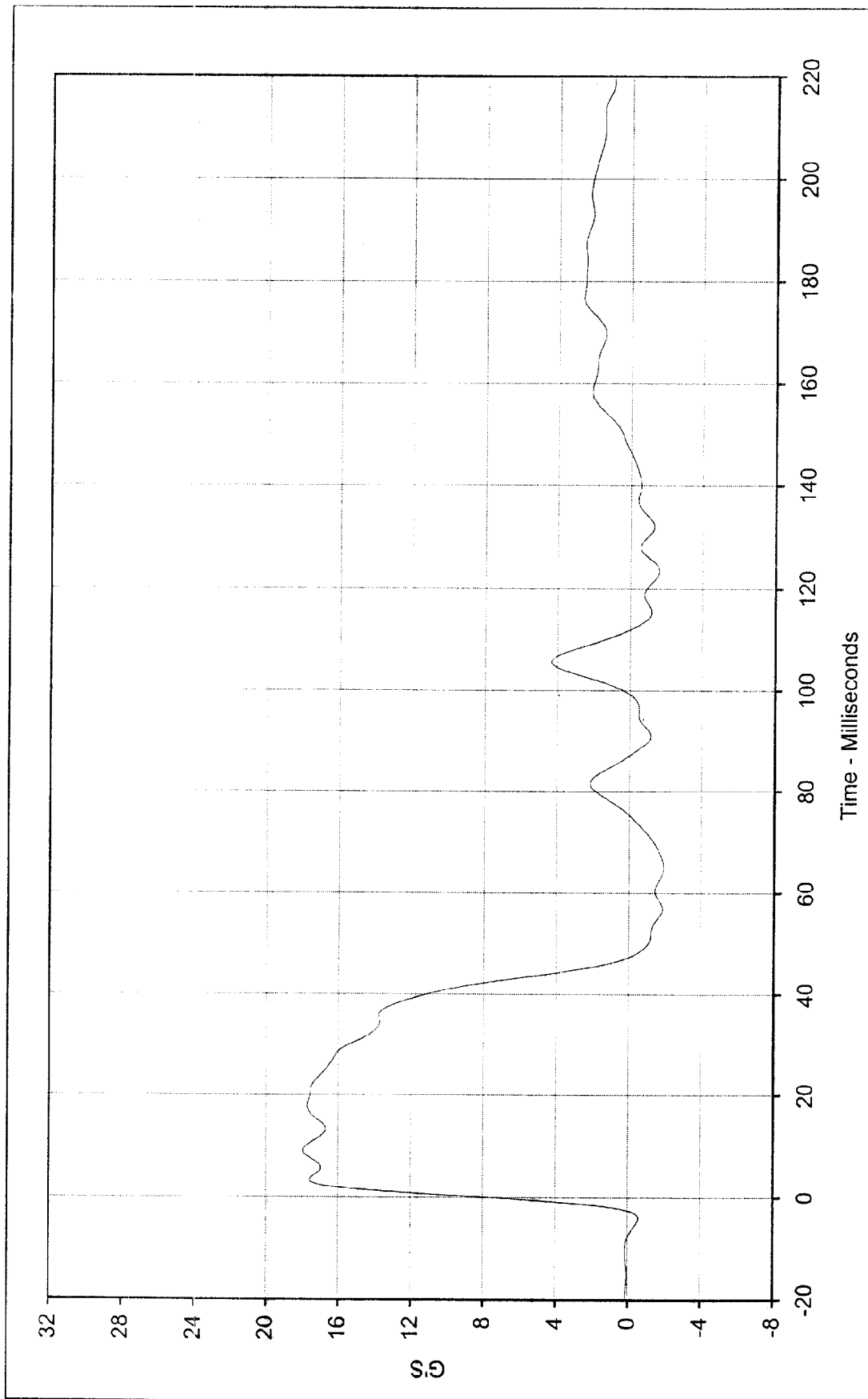

 Approved By

October 30, 1998

Test Date

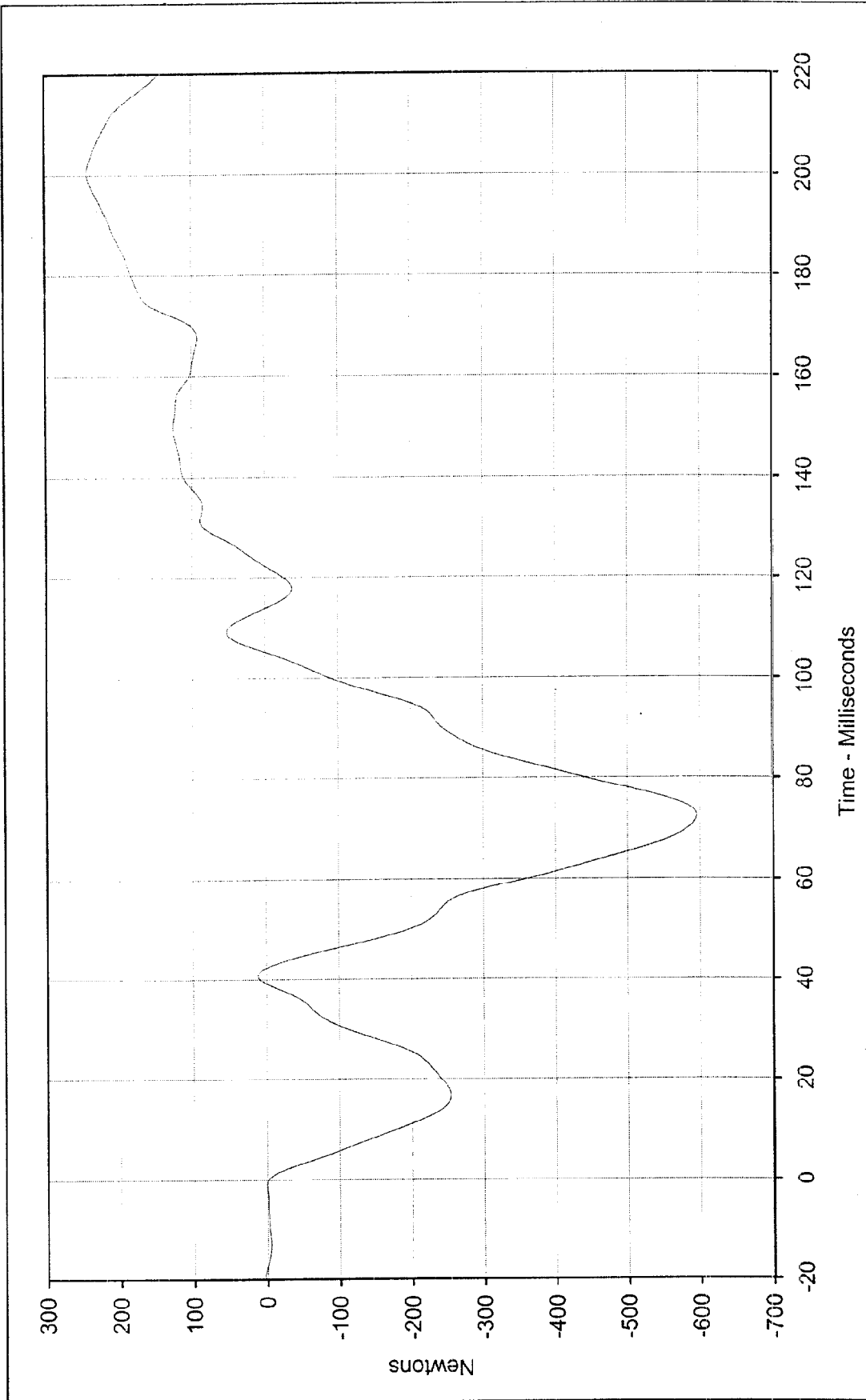


Date



Curve Description:		Pendulum Deceleration		Testing Program		Hybrid III Neck Extension Test (Male)	
Maximum Value:	17.9	at	9.2	Milliseconds	Test Information:	S/N of Part:	n/a
Minimum Value:	-1.9	at	65.1	Milliseconds		Test I.D.:	NEC12
SAE Filter Class:	60						
Date of Test:	10/30/98						
ATD Serial No.:	035						



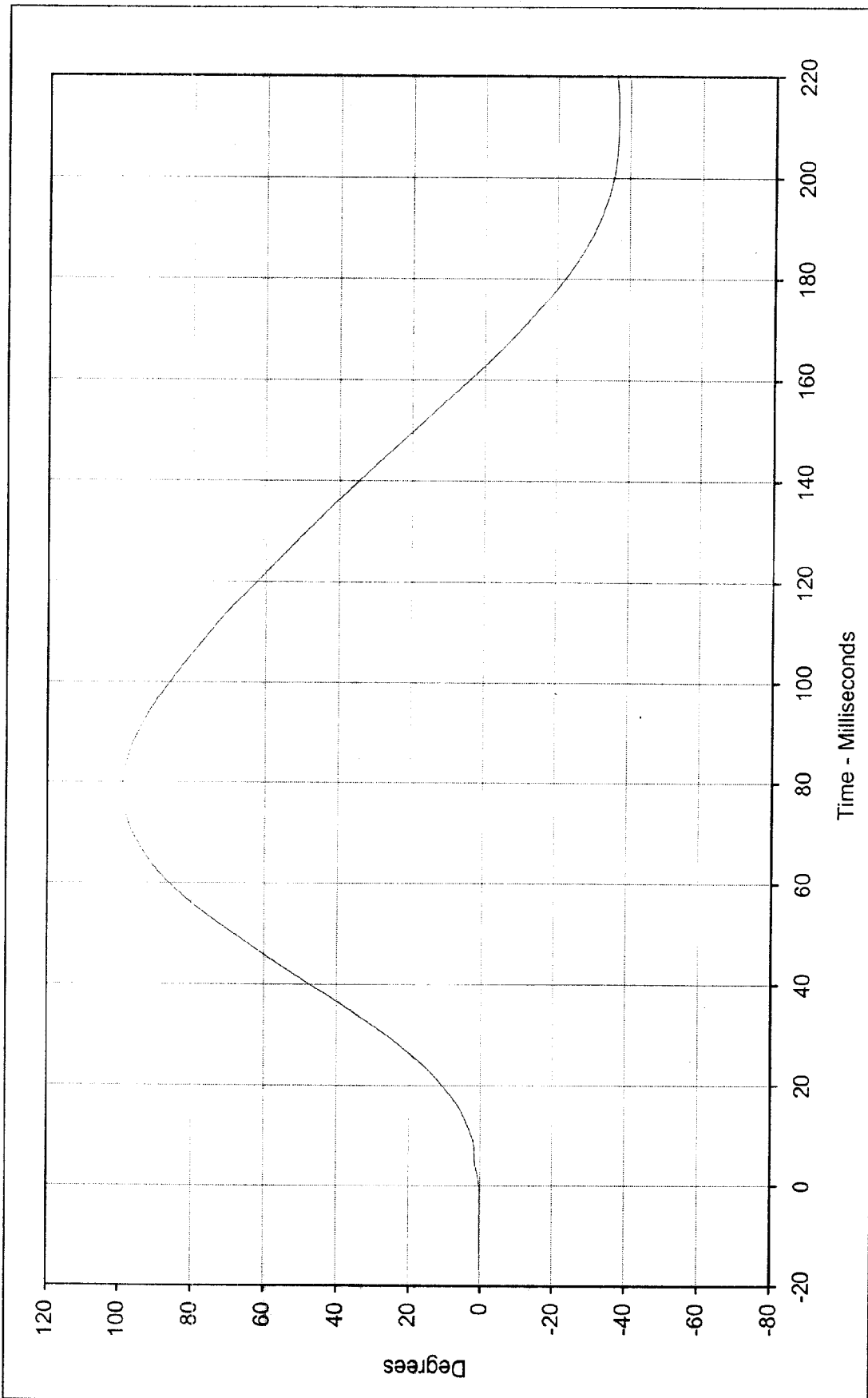


Curve Description: Neck Force X
 Maximum Value: 241.7 at 200.6 Milliseconds
 Minimum Value: -595.9 at 72.4 Milliseconds
 SAE Filter Class: 60
 Date of Test: 10/30/98
 ATD Serial No.: 035

Testing Program: Hybrid III Neck Extension Test (Male)

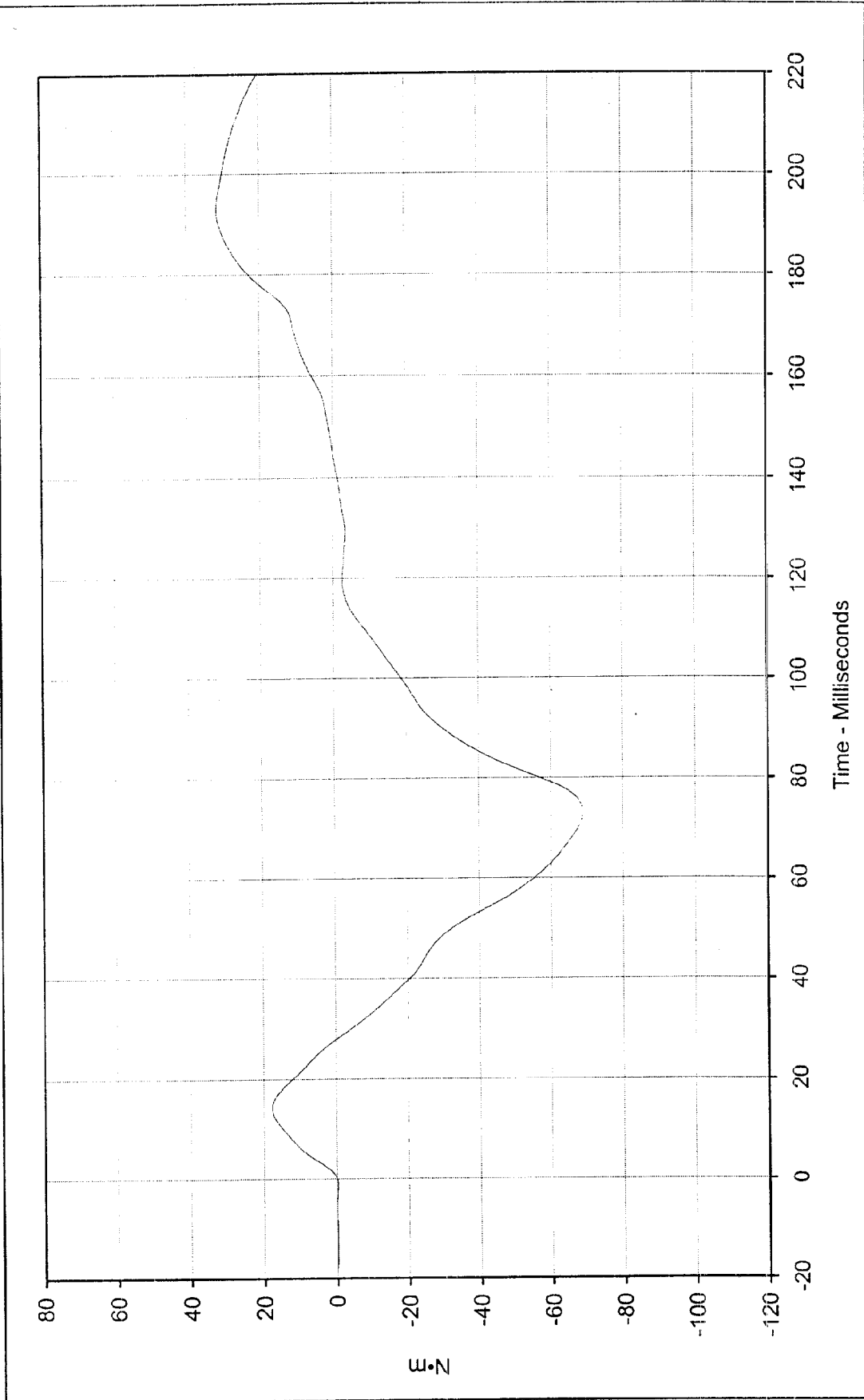
Test Information: S/N of Part: n/a Test I.D.: NEC12





Curve Description:	"D" Plane Rotation		Testing Program	Hybrid III Neck Extension Test (Male)
Maximum Value:	99.0	at 79.3 Milliseconds	Test Information:	S/N of Part: n/a Test I.D.: NEC12
Minimum Value:	-36.7	at 210.5 Milliseconds		
SAE Filter Class:	60			
Date of Test:	10/30/98			
ATD Serial No.:	035			





Testing Program Hybrid III Neck Extension Test (Male)
 Test Information: S/N of Part: n/a Test I.D.: NEC12

Curve Description: Moment About Occipital Condyles
 Maximum Value: 31.6 at 192.9 Milliseconds
 Minimum Value: -68.9 at 73.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 10/30/98
 ATD Serial No.: 035





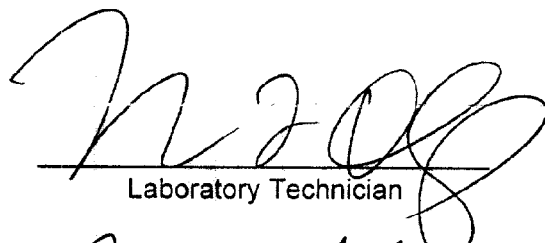
Hybrid III Calibration Data Sheet

50TH Percentile Male

External Measurements

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

External Measurement Data				
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory temperature	°C	20.4 to 22.1	21.9	Pass
Laboratory relative humidity	%	10 to 70	44	Pass
A - Total sitting height	mm	878.8 to 889.0	888.5	Pass
B - Shoulder pivot height	mm	505.5 to 520.7	507.5	Pass
C - "H" point height	mm	83.8 to 88.9	88.0	Pass
D - "H" point from seat back	mm	134.6 to 139.7	136.0	Pass
E - Shoulder pivot from back	mm	83.8 to 94.0	92.0	Pass
F - Thigh clearance	mm	139.7 to 154.9	153.0	Pass
G - Elbow back to wrist pivot	mm	289.6 to 304.8	300.1	Pass
H - Skull cap to back line	mm	40.6 to 45.7	44.0	Pass
I - Shoulder to elbow length	mm	330.2 to 345.4	340.0	Pass
J - Elbow rest height	mm	190.5 to 210.8	206.0	Pass
K - Buttock to knee length	mm	579.1 to 604.5	602.5	Pass
L - Popliteal length	mm	429.3 to 454.7	445.0	Pass
M - Knee pivot height	mm	485.1 to 500.4	489.5	Pass
N - Buttock popliteal length	mm	452.1 to 477.5	470.0	Pass
O - Chest depth	mm	213.4 to 228.6	226.7	Pass
P - Foot length	mm	251.5 to 266.7	265.0	Pass
V - Shoulder breadth	mm	421.6 to 436.9	431.0	Pass
W - Foot breadth	mm	91.4 to 106.7	105.2	Pass
Y - Chest circumference	mm	970.3 to 1000.8	990.0	Pass
Z - Waist circumference	mm	835.7 to 866.1	863.0	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 16, 1998

Test Date

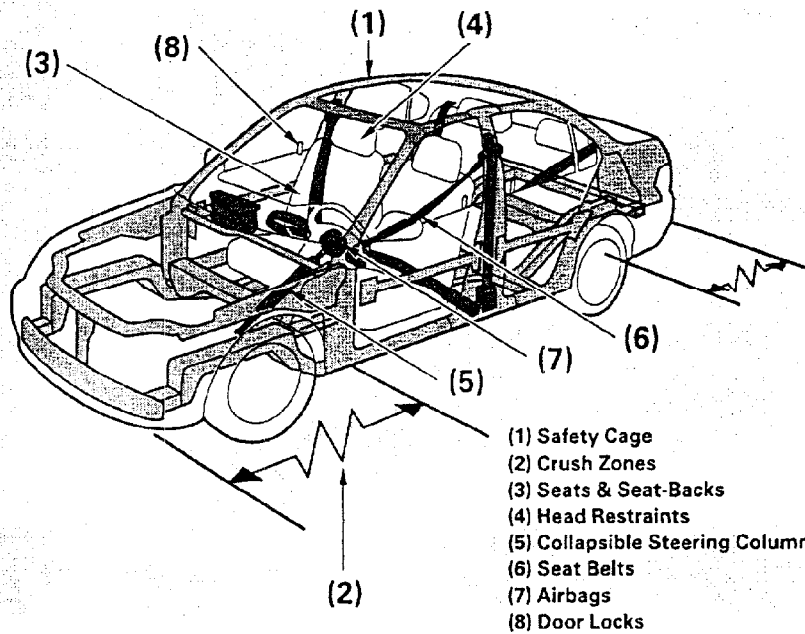


Date

APPENDIX F
VEHICLE OWNER'S MANUAL
OCCUPANT RESTRAINT INSTRUCTIONS

KAR99001-03

Your Car's Safety Features



Your car is equipped with many features that work together to protect you and your passengers during a crash.

Some safety features do not require any action on your part. These include a strong steel framework that forms a safety cage around the passenger compartment; front and rear crush zones that are designed to crumple and absorb energy during a crash; and a collapsible steering column.

These safety features are designed to reduce the severity of injuries in a crash. However, you and your passengers can't take full advantage of these safety features unless you remain sitting in a proper position and *always wear your seat belts properly*. In fact, some safety features can contribute to injuries if they are not used properly.

Your Car's Safety Features

Seat Belts

For your safety, and the safety of your passengers, your car is equipped with seat belts in all seating positions.



Your seat belt system also includes a light on the instrument panel to remind you and your passengers to fasten your seat belts.

Why Wear Seat Belts

Seat belts are the single most effective safety device for adults and larger children. (Infants and smaller children must be properly restrained in child seats.)

Not wearing a seat belt properly increases the chance of serious injury or death in a crash, even though your car has airbags.

In addition, most states and all Canadian provinces require you to wear seat belts.

WARNING

Not wearing a seat belt properly increases the chance of serious injury or death in a crash, even if you have airbags.

Be sure you and your passengers always wear seat belts and wear them properly.

When Properly worn, seat belts:

- Keep you connected to the vehicle so you can take advantage of the car's built-in safety features.
- Help protect you in almost every type of crash, including side and rear impacts and rollovers. (Your airbag can only be helpful in a moderate to severe frontal

collision.)

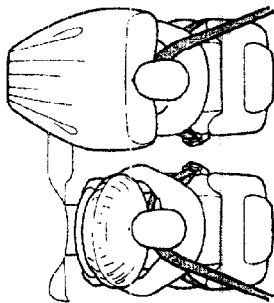
- Help keep you from being thrown against the inside of the vehicle and against other occupants.
- Keep you from being thrown out of the vehicle.
- Help keep you in a good position should the airbags ever deploy. A good position reduces the risk of injury from an inflating airbag, and allows you to get the best advantage from the airbag.

Of course, seat belts cannot completely protect you in every crash. But in most cases, seat belts can reduce your risk of serious injury.

What you should do: Always wear your seat belt, and make sure you wear it properly.

Your Car's Safety Features

Airbags



Your car has a Supplemental Restraint System (SRS) with frontal airbags to help protect the driver and a front seat passenger.

SRS This system also includes an indicator light on the instrument panel to alert you to a possible problem with the system.

The most important things you need to know about your airbags are:

- **Airbags do not replace seat belts.** The seat belts are the occupants' primary protection in all types of collisions. The airbags supplement the seat belts by providing extra protection for the head and chest of each front seat occupant in a moderate to severe frontal collision.
- **Airbags offer no protection in side impacts, rear impacts, rollovers, or minor collisions.** Airbags are designed to deploy only during a moderate to severe frontal collision.
- **Airbags can pose serious hazards.** To do their job, airbags must inflate with tremendous force and speed. So while airbags save lives,

they can cause serious injuries to adults and larger children who are not wearing seat belts, are not wearing them properly, are sitting too close to the airbag, or are not sitting in a proper position. Infants and small children are at an even greater risk of injury or death.

What you should do: Always wear your seat belt properly, and sit upright and as far back as possible from the steering wheel or dashboard.

Your Car's Safety Features

Seats & Seat-Racks

Your car's seats are designed to keep you in a comfortable, upright position so you can take full advantage of the protection offered by seat belts and the energy absorbing materials in the seats.

How you adjust your seats and seat-backs can also affect your safety. For example, sitting too close to the steering wheel or dashboard increases the risk of you or your passenger being injured by striking the inside of the car, or by an inflating airbag.

Reclining a seat-back too far reduces the seat belt's effectiveness and increases the chance that the seat's occupant will slide under the seat belt in a crash and be seriously injured.

What you should do: Move the front seats as far back as possible, and keep adjustable seat-backs in an upright position whenever the car is moving.

Head Restraints

Head restraints can help protect you from whiplash and other injuries. For maximum protection, the back of your head should rest against the center of the head restraint.

Your Car's Safety Features

Door Locks

Keeping your doors locked reduces the chance of being thrown out of the car during a crash. It also helps prevent occupants from accidentally opening a door and falling out, and outsiders from unexpectedly opening your doors.

Pre-Drive Safety Checklist

To make sure you and your passengers get the maximum protection from your car's safety features, check the following each time before you drive away:

- All adults, and children who have outgrown child safety seats, are wearing their seat belts and wearing them properly (see page 15).
- Any infant or small child is properly restrained in a child seat in the back seat (see page 21).
- Front seat occupants are sitting upright and as far back as possible from the steering wheel and dashboard (see page 12).
- Seat-backs are upright (see page 13).

- Head restraints are properly adjusted (see page 15).
- All doors are closed and locked (see page 12).
- All cargo is properly stored or secured (see page 151).

The rest of this section gives more detailed information about how you can maximize your safety.

Remember, however, that no safety system can prevent all injuries or deaths that can occur in severe crashes, even when seat belts are properly worn and the airbags deploy.

Protecting Adults

Introduction

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

These instructions also apply to children who have outgrown child seats and are large enough to wear lap/shoulder belts. (See page 37 for important additional guidelines on how to properly protect larger children.)

1. Close and Lock the Doors

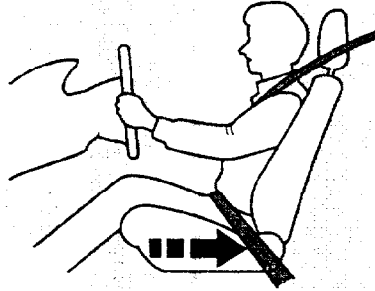
After everyone has entered the car, be sure the doors are closed and locked.

For safety, locking the doors reduces the chance that a passenger, especially a child, will open a door while the car is moving and accidentally fall out. It also reduces the chance of someone being thrown out of the car during a crash.

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

See page 70 for how to lock the doors.

2. Adjust the Front Seats



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

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

Protecting Adults

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

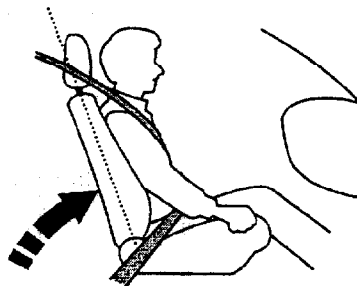
Always sit as far back from the airbags as possible.

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

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

See page 76 for how to adjust the front seats.

3. Adjust the Seat-Backs



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

A front passenger should also adjust the seat-back to an upright position, but as far from the dashboard as

possible. A passenger who sits too close to the dashboard could be injured if the front airbag inflates.

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

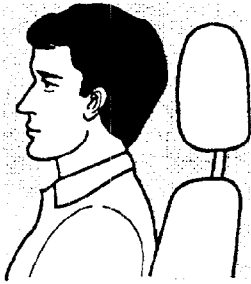
Reclining the seat-back too far can result in serious injury or death in a crash.

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

See page 78 for how to adjust seat-backs.

Protecting Adults

4. Adjust the Head Restraints



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

Improperly positioning head restraints reduces their effectiveness and you can be seriously injured in a crash.

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

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

See page 78 for how to adjust the head restraints.

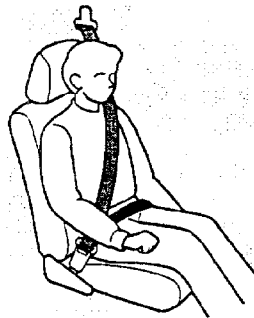
14 Driver and Passenger Safety

Protecting Adults

5. Fasten and Position the Seat Belts

Using a Lap/Shoulder Belt

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



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

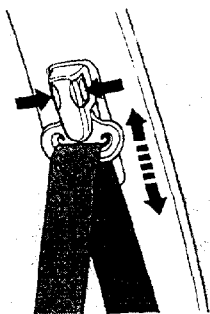
If necessary, pull up on the belt again to remove any slack from the shoulder part, then check that the belt rests across the center of your chest and over your shoulder. This spreads the forces of a crash over the strongest bones in your upper body.

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

Make sure all seat belts are properly positioned before driving.

CONTINUED

Protecting Adults

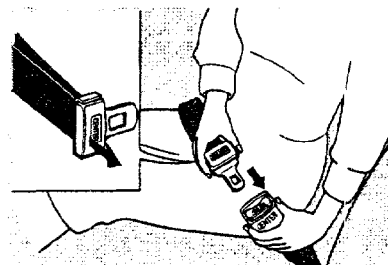


If the seat belt touches or crosses your neck, or if it crosses your arm instead of your shoulder, you need to adjust the seat belt anchor height.

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

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

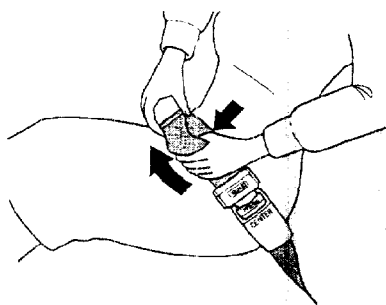
Using the Lap Belt



Insert the latch plate into the buckle marked CENTER.

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

Protecting Adults



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

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

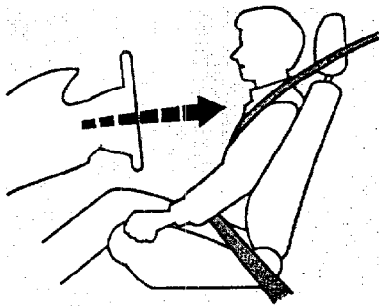
If a Seat Belt Doesn't Work Properly

If a seat belt does not seem to work as it should, it may not protect the occupant in a crash. **No one should sit in a seat with an inoperative seat belt.** Anyone using a seat belt that is not working properly can be seriously injured or killed. Have your Honda dealer check the belt as soon as possible.

See page 42 for additional information about your seat belt system and how to take care of your belts.

Protecting Adults

6. Adjust the Steering Wheel



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

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

See page 65 for how to adjust the steering wheel.

7. Maintain a Proper Sitting Position

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

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

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

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

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

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

Protecting Adults

Advice for Pregnant Women



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

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

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

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

Additional Safety Precautions

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

CONTINUED

Protecting Adults

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

Additional Information About Your Seat Belts

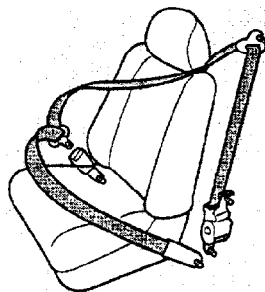
Seat Belt System Components

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



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

Lap/Shoulder Belt



This seat belt has a single belt that goes over your shoulder, across your chest and across your hips. To fasten the belt, insert the latch plate into the buckle, then tug on the belt to make sure the buckle is latched. To unlock the belt, push the red PRESS button on the buckle. Guide the belt across your body to the door pillar. After exiting the car, be sure the belt is out of the way and

will not get closed in the door.

All lap/shoulder belts have an emergency locking retractor. In normal driving, the retractor lets you move freely in your seat while it keeps some tension on the belt. During a collision or sudden stop, the retractor automatically locks the belt to help restrain your body.

The lap/shoulder belts in all seating positions except the driver's have an additional locking mechanism that must be activated to secure a child seat. (See pages 30 and 34 for instructions on how to secure child seats with this type of seat belt.)

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

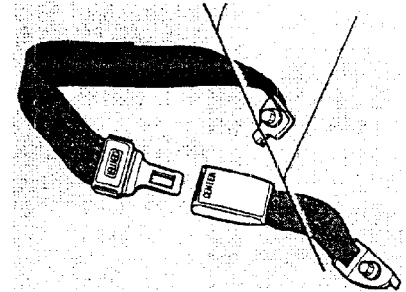
Additional Information About Your Seat Belts

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

See page 15 for instructions on how to wear the lap/shoulder belt properly.

Lap Belt

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



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

To unlock the belt, push the red **PRESS** button.

See page 16 for how to lengthen the lap belt, and how to properly position the belt.

Additional Information About Your Seat Belts

Seat Belt Maintenance

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

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

U.S. Models

Honda provides a lifetime warranty on seat belts. Honda will repair or replace any seat belt component that fails to function properly during normal use. Please see your *Honda Warranty Information* booklet for details.

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

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

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

For information on how to clean your seat belts, see page 234.

Additional Information About Your SRS

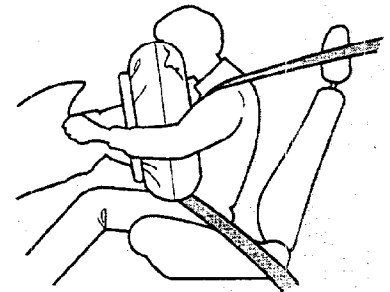
SRS Components

Your Supplemental Restraint System (SRS) includes:

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

- An indicator light on the instrument panel that alerts you to a possible problem with the system (see page 47).
- Emergency backup power in case your car's electrical system is disconnected in a crash.

How Your Airbags Work



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

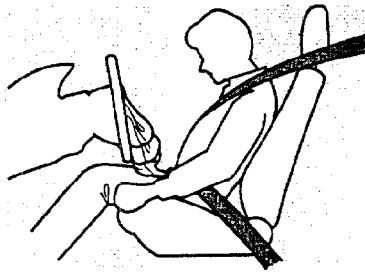
During a crash, your seat belt helps restrain your lower body and torso. Your airbag provides a cushion to help restrain and protect your head and chest.

CONTINUED

Additional Information About Your SRS

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

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



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

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

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

U.S. Owners

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

Canadian Owners

For additional information on how your airbags work, ask your dealer for a copy of the booklet titled *SRS: What You Need to Know About Airbags*.

Additional Information About Your SRS

How the SRS Indicator Light Works

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

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

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

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

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

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

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

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

SRS Service

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

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

Additional Information About Your SRS

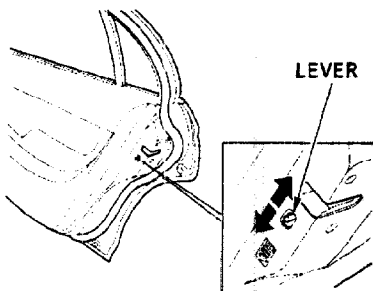
Additional Safety Precautions

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

See page 150 for further information and precautions relating to your SRS.

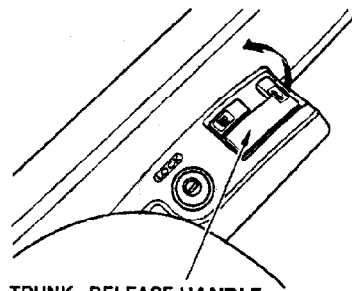
Keys and Locks

Childproof Door Locks



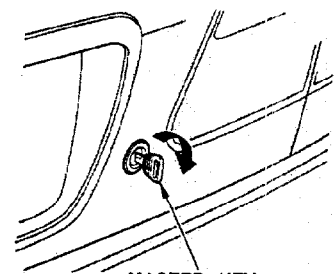
The childproof door locks are designed to prevent children seated in the rear from accidentally opening the rear doors. Each rear door has a lock lever near the edge. With the lever in the LOCK position, the door cannot be opened from the inside regardless of the position of the lock tab. To open the door, pull the lock tab up and use the outside door handle.

Trunk



You can open the trunk in two ways:

- Pull the trunk release handle to the left of the driver's seat.
- Use the master key to open the trunk lock. The valet key does not work in this lock.

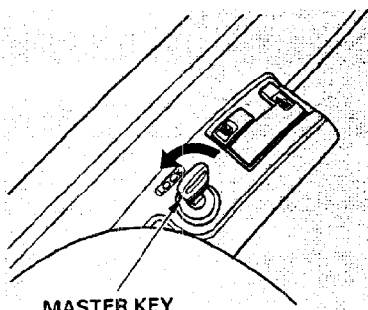


To close the trunk, press down on the trunk lid.

See page 151 for cargo loading and weight limit information. Keep the trunk lid closed at all times while driving to avoid damaging the lid, and to prevent exhaust gas from getting into the interior. See **Carbon Monoxide Hazard** on page 49.

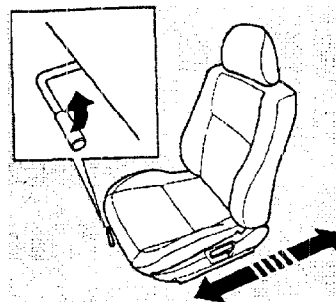
CONTINUED

Keys and Locks, Seat Adjustments



To protect items in the trunk when you need to give the key to someone else, lock the trunk release handle with the master key and give the other person the valet key.

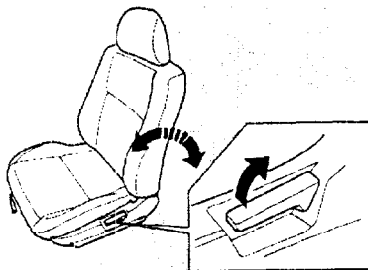
Front Seat Adjustments
See pages 12 – 13 for important safety information and warnings about how to properly position seats and seat-belts. Adjust the seat before you start driving.



To adjust the seat forward and backward, pull up on the lever under the seat cushion's front edge. Move the seat to the desired position and release the lever. Try to move the seat to make sure it is locked in position.

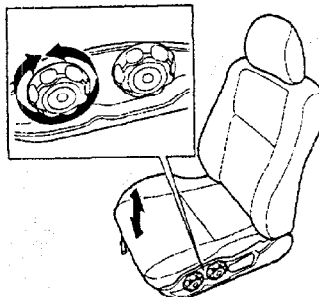
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Seat Adjustments



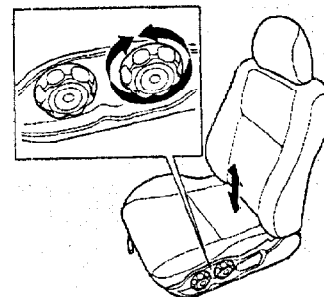
To change the angle of the seat-back, pull up on the lever on the outside of the seat bottom. Move the seat-back to the desired position and release the lever. Let the seat-back latch in the new position.

Driver's Seat Height Adjustment



On LX and EX models in the U.S., and EX model in Canada

The height of your driver's seat is adjustable. Turn the front dial on the outside of the seat cushion to raise the front of the seat bottom and turn the rear dial to raise the rear.

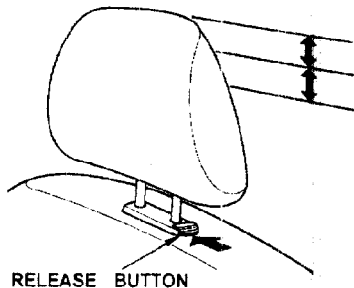


Make all adjustments before you start driving.

Instruments and Controls 77

Seat Adjustments

Head Restraints



See page 14 for important safety information and a warning about how to properly position the head restraints.

The front head restraints help protect you and your passenger from whiplash and other injuries. They are most effective when you adjust them so the back of the occupant's head rests against the center of the restraint. A taller person should adjust the restraint as high as possible.

The front head restraints adjust for height. You need both hands to adjust the restraint. Do not attempt to adjust it while driving. To raise it, pull upward. To lower the restraint, push the release button sideways and push the restraint down.

To remove a head restraint for cleaning or repair, pull it up as far as it will go. Push the release button and pull the restraint out of the seat-back.