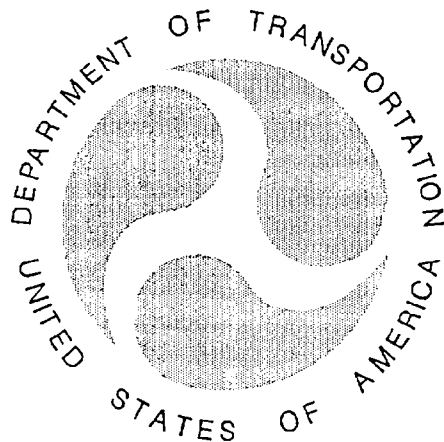


REPORT NO. KAR-96-R96024-03

NEW CAR ASSESSMENT PROGRAM
FRONTAL BARRIER IMPACT TEST

TOYOTA MOTOR CORPORATION
1997 TOYOTA TERCEL
2-DOOR SUBCOMPACT
NHTSA NO. MV5102

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



APRIL 4, 1997
FINAL REPORT

PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF MARKET INCENTIVES
ROOM NO. 5313 (NRM-22)
400 SEVENTH STREET, S.W.
WASHINGTON, D.C. 20590

This final test report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, in response to Contract Number DTNH22-97-D-02007.

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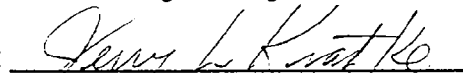
Prepared by:



Date: April 4, 1997

Mr. Mark A. Kratzke, Test Technician
KARCO Engineering

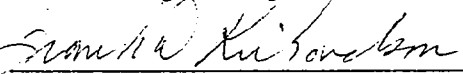
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Date: April 4, 1997

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Date: April 4, 1997

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Manager, New Car Assessment Program

Date of Acceptance

COTR, New Car Assessment Program

Date of Acceptance

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16. Abstract A 35 mph (56.3 kph) frontal barrier impact test was conducted on a 1997 Toyota Tercel Subcompact at KARCO Engineering on March 6, 1997. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), and 301 performance. The impact velocity was 55.78 kph. The ambient temperature at the barrier face at the time of impact was 22 degrees C. The vehicle's maximum post-test static crush was 560 mm. Type of occupant restraint system tested: A 3-point continuous webbing belt system at both seating positions with driver side and passenger side air bags. Occupant injury response data summary is as follows: <table border="1"> <thead> <tr> <th>Injury Criteria</th><th>Threshold Value</th><th>Driver Dummy</th><th>Passenger Dummy</th></tr> </thead> <tbody> <tr> <td>Head Injury Criteria</td><td>HIC = 1000</td><td>475.9</td><td>576.0</td></tr> <tr> <td>Chest Resultant 3 msec</td><td>60 G's</td><td>51.3</td><td>53.6</td></tr> <tr> <td>Left Femur Force</td><td>10009 N</td><td>2501.7</td><td>4116.1</td></tr> <tr> <td>Right Femur Force</td><td>10009 N</td><td>2180.7</td><td>4553.9</td></tr> </tbody> </table>				Injury Criteria	Threshold Value	Driver Dummy	Passenger Dummy	Head Injury Criteria	HIC = 1000	475.9	576.0	Chest Resultant 3 msec	60 G's	51.3	53.6	Left Femur Force	10009 N	2501.7	4116.1	Right Femur Force	10009 N	2180.7	4553.9
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TABLE OF CONTENTS

Section		Page
1	Purpose and Summary of NCAP Test	1
2	Occupant and Vehicle Information/Data Sheets	3
Appendix		
A	Photographs	A-1
B	Dummy, Vehicle, and Response Data Traces	B-1
C	Load Cell Barrier Data	C-1
D	Instrumentation Data Channel Assignments	D-1
E	Dummy Calibration	E-1
F	Vehicle Owner's Manual Occupant Restraint Instructions	F-1
Data Sheet No.		
1	Crash Test Summary	4
2	General Test and Vehicle Parameter Data	5
3	Post Impact Data	8
4	Test Vehicle Information	9
5	Dummy Positioning in Vehicle	11
6	Seat Belt Positioning Data	13
7	Vehicle Accelerometer Location and Data Summary	14
8	Dummy Injury Criteria Values	16
9	Seat Belt Assessment Test Data	19
10	Summary of FMVSS 212 Data	20
11	Windshield Zone Intrusion FMVSS 219 Data	21
12	FMVSS 301 Fuel System Integrity Post Impact Data	23
13	FMVSS 301 Static Rollover Data	24
14	Vehicle Measurements	28
15	Camera Locations	30
16	Reference Photograph Targets	31
17	Accident Investigation Division Data	32

LIST OF PHOTOGRAPHS

<u>DESCRIPTION</u>	<u>FIGURE</u>
RIGHT FRONT 3/4 AS RECEIVED	A-1
LEFT REAR 3/4 AS RECEIVED	A-2
VEHICLE CERTIFICATION LABEL	A-3
VEHICLE TIRE PLACARD	A-4
PRE-TEST FRONT VIEW	A-5
POST-TEST FRONT VIEW	A-6
PRE-TEST LEFT SIDE VIEW	A-7
POST-TEST LEFT SIDE VIEW	A-8
PRE-TEST RIGHT SIDE VIEW	A-9
POST-TEST RIGHT SIDE VIEW	A-10
PRE-TEST RIGHT FRONT 3/4 VIEW	A-11
POST-TEST RIGHT FRONT 3/4 VIEW	A-12
PRE-TEST LEFT REAR 3/4 VIEW	A-13
POST-TEST LEFT REAR 3/4 VIEW	A-14
PRE-TEST WINDSHIELD	A-15
POST-TEST WINDSHIELD	A-16
PRE-TEST ENGINE COMPARTMENT	A-17
POST-TEST ENGINE COMPARTMENT	A-18
PRE-TEST FUEL FILLER CAP	A-19
POST-TEST FUEL FILLER CAP	A-20
PRE-TEST FRONT UNDERBODY	A-21

LIST OF PHOTOGRAPHS (Continued)

<u>DESCRIPTION</u>	<u>FIGURE</u>
POST-TEST FRONT UNDERBODY	A-22
PRE-TEST REAR UNDERBODY	A-23
POST-TEST REAR UNDERBODY	A-24
PRE-TEST DRIVER DUMMY (FRONT VIEW)	A-25
POST-TEST DRIVER DUMMY (FRONT VIEW)	A-26
PRE-TEST DRIVER DUMMY (THRU WINDOW)	A-27
POST-TEST DRIVER DUMMY (THRU WINDOW)	A-28
PRE-TEST DRIVER DUMMY (DOOR OPEN)	A-29
POST-TEST DRIVER DUMMY (DOOR OPEN)	A-30
PRE-TEST DRIVER DUMMY (90° TO VEHICLE)	A-31
POST-TEST DRIVER DUMMY (90° TO VEHICLE)	A-32
POST-TEST DRIVER DUMMY CONTACT POINTS (1 OF 3)	A-33
POST-TEST DRIVER DUMMY CONTACT POINTS (2 OF 3)	A-34
POST-TEST DRIVER DUMMY CONTACT POINTS (3 OF 3)	A-35
PRE-TEST DRIVER SIDE KNEE BOLSTER	A-36
POST-TEST DRIVER SIDE KNEE BOLSTER	A-37
PRE-TEST PASSENGER DUMMY (FRONT VIEW)	A-38
POST-TEST PASSENGER DUMMY (FRONT VIEW)	A-39
PRE-TEST PASSENGER DUMMY (THRU WINDOW)	A-40
POST-TEST PASSENGER DUMMY (THRU WINDOW)	A-41
PRE-TEST PASSENGER DUMMY (DOOR OPEN)	A-42

LIST OF PHOTOGRAPHS (Continued)

<u>DESCRIPTION</u>	<u>FIGURE</u>
POST-TEST PASSENGER DUMMY (DOOR OPEN)	A-43
PRE-TEST PASSENGER DUMMY (90° TO VEHICLE)	A-44
POST-TEST PASSENGER DUMMY (90° TO VEHICLE)	A-45
POST-TEST PASSENGER DUMMY CONTACT POINTS (1 OF 3)	A-46
POST-TEST PASSENGER DUMMY CONTACT POINTS (2 OF 3)	A-47
POST-TEST PASSENGER DUMMY CONTACT POINTS (3 OF 3)	A-48
PRE-TEST PASSENGER SIDE KNEE BOLSTER	A-49
POST-TEST PASSENGER SIDE KNEE BOLSTER	A-50
VEHICLE ON STATIC ROLLOVER MACHINE	A-51

SECTION 1.

PURPOSE, TEST PROCEDURE AND SUMMARY OF TEST MV5102

1.1 PURPOSE

This 35 mph (56.3 kph) frontal barrier impact test is part of the Composite FY' 97 New Car Assessment Program (NCAP) sponsored by the National Highway Traffic Safety Administration (NHTSA) under contract No. DTNH22-97-D-02007. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for an impact speed in excess of the current 30 mph (48 kph) FMVSS 208/212/219/301 requirements.

1.2 TEST PROCEDURE

This 35 mph frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards (OCS) Laboratory Indicant Test Procedure, dated 01 September, 1996 and corresponding KARCO Engineering Test Procedure KTP-001, dated September 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 vehicle was instrumented with nine (9) accelerometers to measure longitudinal axis accelerations. The driver's and passenger's restraint systems were instrumented with four (4) seat belt load cells to measure lap and shoulder belt tension. The vehicle specified impact velocity range was 55.5 to 57.1 kph.

The test vehicle contained two (2) part 572E 50th percentile adult male anthropomorphic test devices (ATDs). Both ATDs were instrumented with head, chest, pelvic and redundant head and chest triaxial accelerometers, left/right femur load cells and left/right lower leg sensors. In addition, chest displacement and six-axis neck transducers were utilized. The ATDs were positioned in the front outboard seating positions according to the dummy placement procedures specified in Appendices VII and VIII of the Laboratory Indicant Test Procedure. Eighty-eight channels of data were recorded with a PC based (TDAS) on-board data acquisition system. The data is digitally sampled at 10,000 samples per second and processed per section IP11 of the Laboratory Indicant Test Procedure.

The Driver ATD (serial No. 35) and the right-front passenger ATD (serial No. 34) were used in two previous demonstration tests. Both ATD's were calibrated after No. 35 exceeded the injury criteria during the previous test. Injury criteria were not exceeded in test MV5102.

The test was conducted at KARCO Engineering Automotive Research Center on March 6, 1997 at a speed of 55.78 kph. The frontal barrier impact event was documented by one (1) real-time camera 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.

1.3 SUMMARY OF FRONTAL BARRIER IMPACT TEST

Eight (8) load cell barrier data channels were obtained in conducting this March 6, 1997, NCAP test. The barrier was impacted by a 1997 Toyota Tercel at a velocity of 55.78 kph. The 1997 Toyota Tercel was equipped with a 1.5 liter, four cylinder engine and a five speed manual transmission. The test weight, with two (2) 50th percentile male dummies, was 1098 kg.

The driver's Head Injury Criteria (HIC) was 475.9, the maximum chest deceleration over three (3) milliseconds was 51.3 g and the left and right femur loads were 2501.7 and 2180.7 Newtons, respectively.

The right front passenger's HIC was 576.0, maximum chest deceleration over three (3) milliseconds was 53.6 g, and the left and right femur loads were 4116.1 and 4553.9 Newtons respectively.

There was 100 percent windshield retention, no intrusion into the protected or unprotected zone of the windshield. No Stoddard solvent leakage occurred after impact or during any phase of the static rollover test.

The test vehicle sustained a maximum static crush of 560 mm at the vehicle centerline. The windshield was severely damaged but the vehicle glazing remained intact. The driver and passenger side doors opened without the aid of tools. The driver ATD's head, chest and abdomen contacted the airbag, both knees impacted the dash panel and steering column.

The passenger ATD's head, chest and abdomen contacted the airbag, both knees contacted the dash and the glove box.

Seat belt spoolout, measured by high-speed film analysis, was 69.9 mm for the driver ATD and 67.6 mm for the passenger ATD. On-board pullout potentiometers measured 73.2 mm for the driver ATD and 73.2 mm for the passenger ATD. Shoulder belt stretch was 3.2 mm for the driver ATD and 8.3 mm for the passenger ATD. Chest deflection for the driver ATD was -28.8 mm. Chest deflection for the passenger ATD was -39.4 mm.

1.4 GENERAL COMMENTS

The 1997 Toyota Tercel 2 Door Subcompact passed the requirements of FMVSS 212, FMVSS 219 and FMVSS 301-75. Data pertaining to these standards are presented in the data sheets.

The vehicle, occupant, camera and measurement data are presented in Section 2. Appendix A contains the still photograph prints. The dummy, vehicle and response data traces are presented in Appendix B. Appendix C is for load cell barrier data, eight channels were collected for this test. Appendix D contains the test equipment and instrument calibration data. Appendix E contains the dummy calibration data and Appendix F the owner's manual occupant restraint system instructions.

SECTION 2.

DATA SHEETS

TEST MODE: 35 MPH FRONTAL NCAP

CONVERSION FACTORS USED IN THIS REPORT:

2.2 lb = 1 kG

1 mi = 1.609 km

DATA SHEET NO. 1

CRASH TEST SUMMARY

VEHICLE MAKE/MODEL/BODY STYLE: TOYOTA/TERCEL/2 DOOR SUBCOMPACTNHTSA NO.: MV5102TEST DATE: 03/06/97TIME: 2:40 PMBARRIER TEMPERATURE: 22 °CWINDSHIELD MOLDING TEMPERATURE: 21 °CVEHICLE TEST WEIGHT: 1098 kgVEHICLE/BARRIER IMPACT ANGLE: 90 °IMPACT VELOCITY: PRIMARY 55.78 kphSECONDARY 55.69 kph

VEHICLE REBOUND FROM BARRIER:

Left Side	686 mm
Centerline	673 mm
Right Side	673 mm

MAXIMUM STATIC CRUSH:

	Pre-test	Post-test	Static Crush
Left Side	4000 mm	3540 mm	460 mm
Centerline	4120 mm	3560 mm	560 mm
Right Side	4005 mm	3478 mm	527 mm

DUMMIES:

DRIVER

PASSENGER

DUMMY TYPE

572E572E

SERIAL NUMBER

3534

RESTRAINT SYSTEM

TYPE IITYPE II

NO. DATA CHANNELS:

43444

NUMBER OF CAMERAS:

1 Real Time16 High Speed

DOOR OPENING DATA:

Opened - Left FrontOpened - Right Front

FRONT SEAT(S) DATA:

DRIVER

PASSENGER

Seat Track Failure (shift)-

0 mm0 mm

Seat Back Failure -

N/AN/A

VISIBLE DUMMY CONTACT POINTS:

DRIVER

PASSENGER

Head

AIRBAGDASH PANEL

Chest

AIRBAGN/A

Knees

BOTH-DASH PANELBOTH-GLOVE BOX AND DASH

DATA SHEET NO. 2

GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: TOYOTA/TERCEL/2 DOOR SUBCOMPACT
NHTSA No.: MV5102 VIN: JT2AC52L8V0220177 Color: MEADOW GREEN PEARL
Date Received: 02/27/97 Odometer Reading: 69 miles
Selling Dealer: Crown Toyota, Ontario, California

ENGINE & DRIVE TRAIN DATA:

No. Cylinders: 4 Displacement: 1.5 liter
Placement: Longitudinal/In-line: Transverse/Lateral: X
Transmission Data:
Speeds: 5 Manual: X Automatic: Overdrive:
Final Drive: Rear Wheel: Front Wheel: X Four Wheel:

MAJOR OPTIONS:

Airconditioner: X Power Steering: Power Brakes: X
Power Windows: Power Door Locks: Other: Rear Defroster, Console

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By: Toyota Motor Company
Date of Manufacture: 10/96 VIN: JT2AC52L8V0220177
GVWR: 1348 kg GAWR FRONT: 628 kg GAWR REAR: 655 kg

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load:

FRONT: 200 kPa REAR: 200 kPa

Recommended Tire Size: P175/65R14 Load Range: Standard

Recommended Cold Tire Pressure:

FRONT: 200 kPa REAR: 200 kPa

Size of Tires on Test Vehicle: P175/65R14 Manufacturer: Michelin

Type of Spare Tire: Space Saver: T115/70D14 Standard:

Data Sheet No. 2 (Continued)

VEHICLE CAPACITY DATA:

Type of Front Seats: Bench: _____ Bucket: X Split Bench:
Number of Occupants: Front 2 Rear 3 TOTAL 5

VEHICLE CAPACITY WEIGHT (VCW) = 350 kg

→ No. of Occupants x 68 kg. = 340 kg

Rated Cargo/Luggage Weight (RCLW) = 10 kg (Difference)

WEIGHT OF TEST VEHICLE AS RECEIVED AT LABORATORY: (with maximum fluids)

Right Front = 288 kg Right Rear = 181 kg

Left Front = 285 kg Left Rear = 187 kg

TOTAL FRONT = 573 kg TOTAL REAR = 368 kg

% Total Weight = 60.9 % % Total Weight = 39.1 %

TOTAL DELIVERED WEIGHT = 941 kg

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Delivered Weight = 941 kg

Rated Cargo/Luggage Weight = 10 kg

Weight of 2 P572 Dummies = 149 kg

TARGET TEST WEIGHT = 1100 kg (SUM)

WEIGHT OF TEST VEHICLE WITH TWO DUMMIES AND 61 kg OF CARGO (BALLAST):

Right Front = 308 kg Right Rear = 245 kg

Left Front = 321 kg Left Rear = 224 kg

TOTAL FRONT = 629 kg TOTAL REAR = 469 kg

% Total Weight = 57.3 % % Total Weight = 42.7 %

TOTAL TEST WEIGHT = 1098 kg

Weight of Ballast secured in cargo area = 61 kg (Includes cameras & instrumentation)

Vehicle Components Removed For Weight Reduction: Side mirrors, jack, tools, rear seat
assembly and spare tire.

Data Sheet No. 2 (Continued)

TEST VEHICLE ATTITUDE: (all dimensions in mm)

AS DELIVERED: RF 645 LF 645 RR 650 LR 645

AS TESTED: RF 627 LF 628 RR 605 LR 603

Vehicle's Wheelbase = 2388 mm

Location of Vehicle's CG = _____
(if required)

FUEL SYSTEM DATA:

Fuel System Capacity From Owner's Manual = 45.2 liters

Usable Capacity Figure Furnished by COTR = 45.2 liters

Test Volume Range (92 to 94% of Usable Capacity) = 41.4 to 42.6 liters

ACTUAL TEST VOLUME = 41.8 liters

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: Vehicle is equipped with electronic fuel injection which is activated by an electric fuel pump with ignition turned "ON". Fuel tank is located forward of the rear axle, between the frame rails. The filler neck is slightly rearward from the center of the left rear wheelwell. The filler hose runs downward, then to the rear of the fuel tank.

DATA SHEET NO. 3

POST IMPACT DATA

TEST DATE: 03/06/97 TIME: 2:40 PM

TEMPERATURE: 22 °C

VEHICLE NHTSA NO.: MV5102 VIN: JT2AC52L8V0220177

REQUIRED IMPACT VELOCITY RANGE: 55.5 km/h to 57.1 km/h

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

Trap No. 1 = 55.78 km/h Trap No. 2 = 55.69 km/h

Distance from vehicle to barrier - -

A. entering trap = 1829 mm

B. leaving trap = 610 mm

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

Vehicle Length - -

Pretest: Right = 4005 mm C/L = 4120 mm Left = 4000 mm

Post Test: Right = 3478 mm C/L = 3560 mm Left = 3540 mm

CRUSH: Right = 527 mm C/L = 560 mm Left = 460 mm

AVERAGE = 515.7 mm

VEHICLE REBOUND: (from rigid barrier only)

Distance from rear of test vehicle to impact point - -

Right = 673 mm C/L = 673 mm Left = 686 mm

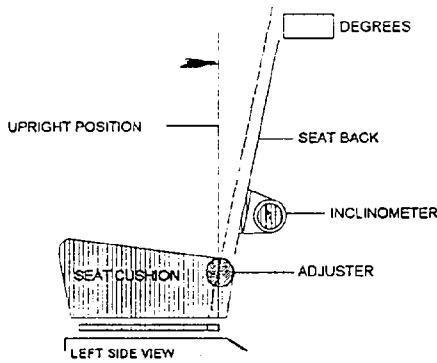
AVERAGE = 677 mm

DATA SHEET NO. 4

TEST VEHICLE INFORMATION

Vehicle Model Year & Make: 1997 Toyota

Vehicle Model & Body Style: Terrel 2 Door



FRONT SEAT ASSEMBLY

1. NOMINAL DESIGN RIDING POSITION -

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

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 4 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 = 25.0 °

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 4 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 = 25.0 °

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: 14 seating positions; set to 8th position from front.

Positioning of the passenger's seat (if applicable): 14 seating positions; set to 8th position from front.

3. STEERING COLUMN ADJUSTMENTS:

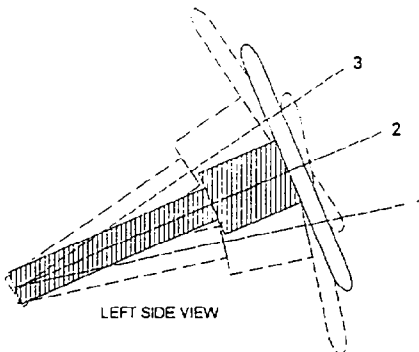
Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when it is moved through its full range of driving positions. If the tested vehicle has any of these adjustments, does your company use any specific procedures to determine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

Operational Instructions:

Position No. 1 is at 26°

Position No. 2 is at N/A

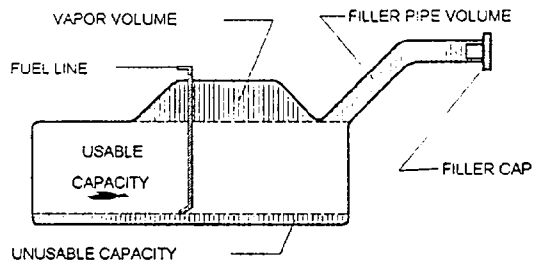
Position No. 3 is at N/A



STEERING COLUMN ASSEMBLY

4. SEAT BELT UPPER ANCHORAGE:

Nominal design riding position:



VEHICLE FUEL TANK ASSEMBLY

Operational Instructions:

5.2 Amount of Stoddard solvent added to vehicle(s) used for certification test(s) = 41.8 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.

Fuel pump is activated when ignition key is turned to the "ON" (operational) position.

5. FUEL TANK CAPACITY DATA

5.1 A. Usable Capacity" of standard equipment fuel tank = 45.2 liters.

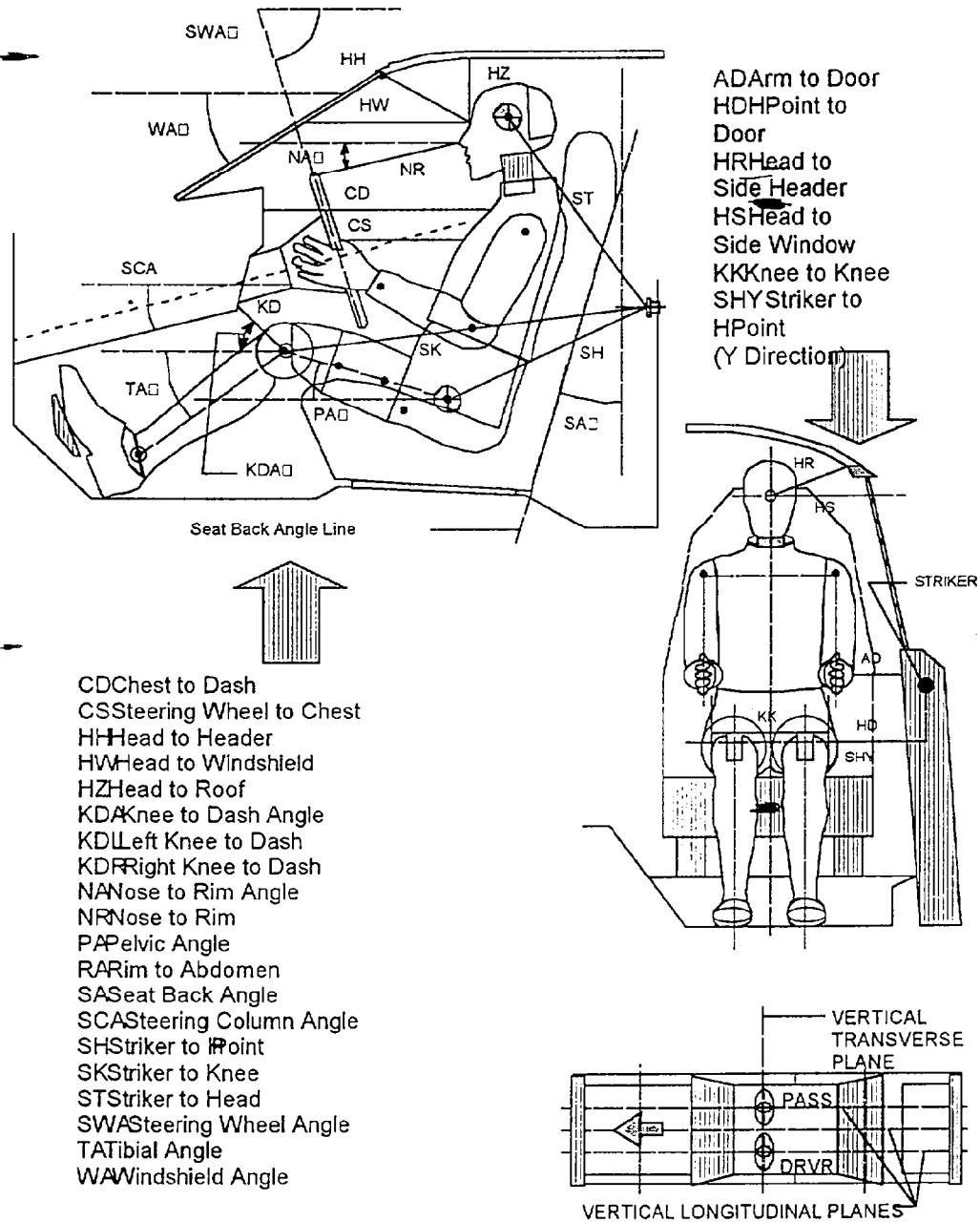
B. Usable Capacity" of optional equipment fuel tank = N/A liters.

C. Usable Capacity" of vehicle(s) used for certification testing to requirements of FMVSS 301 = 41.4 to 42.6 liters.

DATA SHEET NO. 5

DUMMY POSITIONING IN VEHICLE

DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS



DUMMY POSITIONING IN VEHICLE
FRONT SEAT MEASUREMENT TABLE

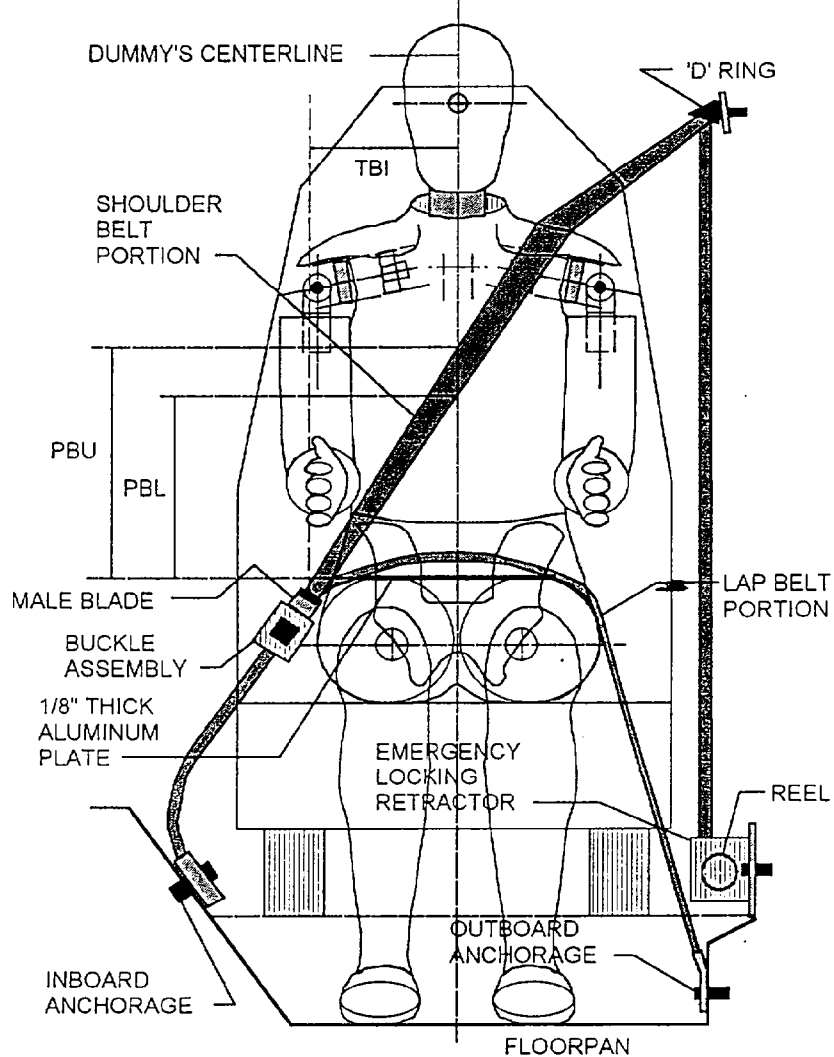
	DRIVER (Serial No. <u>35</u>)	PASS. (Serial No. <u>34</u>)
WA°	25.0°	
SWA°	62.0°	
SCA°	25.3°	
SA°	25.0°	25.0°
HZ	191 mm	191 mm
HH	277 mm	267 mm
HW	480 mm	432 mm
HR	N/A	N/A
NR	13.6°	-
CD	N/A	533 mm
CS	269 mm	-
RA	178 mm	-
KDL	76 mm	81 mm
KDR	30 mm	86 mm
PA°	20.0°	14.0°
TA°	N/A	N/A
KK	257 mm	211 mm
ST	533 mm @ 56.0°	584 mm @ 52.0°
SK	N/A	N/A
SH	368 mm @ 25.0°	424 mm @ 23.0°
SHY	249 mm	246 mm
HS	361 mm	351 mm
HD	157 mm	157 mm
AD	91 mm	94 mm

DATA SHEET NO. 6

SEAT BELT POSITIONING DATA

	DRIVER DUMMY (mm)	PASSENGER DUMMY (mm)
PBU--Top surface of aluminum plate to belt upper edge	152	178
PBL--Top surface of aluminum plate to belt lower edge	229	254

SEAT BELT POSITIONING DATA



FRONT VIEW OF DUMMY

DATA SHEET NO. 7
VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

DIMENSION	LENGTH (mm)	
	PRETEST VALUES	POST TEST VALUES
A	415	415
B	405	405
C	3610	3335
D	3481	3206
E	3435	3428
F	540	540
G	2772	2772
H	1593	1593
K	1615	1615

LOCATION NO.	DESCRIPTION	MAXIMUM VALUE (G's)			
		Max.	msec.	Min.	msec.
1	Rear Seat X-Member @ Left Side	3.3	110.9	-38.6	38.6
2	Rear Seat X-Member @ Right Side	0.0	125.7	-0.1	-30.0
3	Top of Engine Block	73.7	37.7	-167.0	26.0
4	Bottom of Engine	56.6	38.9	-111.6	25.7
5	Disc Brake Caliper @ Left Side	55.5	67.7	-108.6	49.6
6	Disc Brake Caliper @ Right Side	61.2	61.4	-127.1	44.5
7	Instrument Panel	10.5	71.8	-61.9	66.0
8	Left Rear, Redundant	2.0	113.3	-42.4	38.4
9	Right Rear, Redundant	2.5	123.5	-36.4	38.4

Diagram illustrating the top view of a ship's hull structure, showing the centerline and various components labeled with numbers 1 through 8 and letters A, B, X, Y, Z.

The diagram shows a longitudinal section of the hull. The centerline is marked with a dashed line and labeled "CENTERLINE". The engine is located at the stern (left side of the diagram). The hull is divided into sections labeled A and B. The centerline is also labeled with X, Y, and Z. The hull structure is shown with various components labeled with numbers 1 through 8 and letters A, B, X, Y, Z.

BRACKET SUPPORT

ENGINE

DISC BRAKE CALIPER

1 2 3 4 5 6 7 8

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

LEFT SIDE VIEW

DATA SHEET NO. 8

DUMMY INJURY CRITERIA VALUES

Vehicle Model Year & Make: 1997 Toyota TercelNHTSA No.: MV5102

MAXIMUM HEAD ACCELERATIONS - PRIMARY (G's)								
LOCATION	DRIVER				PASSENGER			
	MAX.	TIME	MIN.	TIME	MAX.	TIME	MIN.	TIME
Head CG - X	9.0	197.5	-55.6	66.8	11.2	233.3	-61.8	72.1
Head CG - Y	6.9	44.2	-5.8	99.6	4.5	261.0	-8.0	53.4
Head CG - Z	19.8	46.8	-21.9	82.4	30.9	63.0	-9.6	99.8
Head CG Resultant	55.9	66.8			65.6	70.7		

MAXIMUM CHEST ACCELERATIONS - PRIMARY (G's)								
LOCATION	DRIVER				PASSENGER			
	MAX.	TIME	MIN.	TIME	MAX.	TIME	MIN.	TIME
Chest CG - X	1.3	147.7	-51.1	64.5	2.1	270.9	-55.8	66.3
Chest CG - Y	2.5	94.2	-6.3	57.4	5.2	67.9	-6.9	78.1
Chest CG - Z	13.0	90.2	-14.3	59.1	13.7	98.0	-10.4	61.4
Chest CG Resultant	52.1	64.3			56.4	66.3		

MAXIMUM FORCE - FEMUR LOAD (Newtons)								
LOCATION	DRIVER				PASSENGER			
	MAX.	TIME	MIN.	TIME	MAX.	TIME	MIN.	TIME
Left Femur	433.8	37.8	-2501.7	51.9	135.7	28.1	-4116.1	54.5
Right femur	255.0	83.6	-2180.7	55.1	505.3	35.1	-4553.9	59.4

MAXIMUM FORCE - SEAT BELT LOAD (Newtons)								
LOCATION	DRIVER				PASSENGER			
	MAX.	TIME	MIN.	TIME	MAX.	TIME	MIN.	TIME
Lap Belt	11539.5	57.8	-34.0	299.9	4520.7	45.4	-3.7	-11.3
Shoulder Belt	10844.3	66.8	-6.4	216.7	10518.6	63.7	-3.1	286.1

HEAD INJURY CRITERIA (HIC)								
LOCATION	DRIVER				PASSENGER			
	HIC	T1 (msec)	T2 (msec)	Avg. Accel.	HIC	T1 (msec)	T2 (msec)	Avg. Accel.
Head CG Primary	475.9	46.0	81.9		576.0	54.2	86.5	

CHEST CLIP (3 MSEC)						
LOCATION	DRIVER			PASSENGER		
	CLIP	T1 (msec)	T2 (msec)	CLIP	T1 (msec)	T2 (msec)
Chest CG Primary	51.3	93.3	96.3	53.6	94.2	97.2

NECK, CHEST, PELVIC, LOWER LEG AND FOOT DATA

UPPER NECK MAXIMUM FORCES (Newtons) & MOMENTS (Joules)								
LOCATION	DRIVER				PASSENGER			
	MAX.	TIME	MIN.	TIME	MAX.	TIME	MIN.	TIME
Neck Force 'X'	248.8	51.8	-219.9	98.3	348.8	120.4	-137.3	69.8
Neck Force 'Y'	150.2	173.1	-249.5	103.6	135.0	71.7	-152.0	102.7
Neck Force 'Z'	2224.6	57.1	-445.5	101.2	1860.9	67.5	-414.5	99.2
Neck Moment 'X'	13.1	73.8	-14.3	256.0	13.3	113.8	-3.2	207.2
Neck Moment 'Y'	48.7	103.4	-52.4	259.2	27.3	133.2	-27.0	259.8
Neck Moment 'Z'	3.1	103.5	-1.7	129.1	8.9	65.8	-3.9	109.0

PEAK PELVIC ACCELERATIONS (G's)								
LOCATION	DRIVER				PASSENGER			
	MAX.	TIME	MIN.	TIME	MAX.	TIME	MIN.	TIME
Pelvis 'X'	4.7	101.8	-45.5	55.2	6.0	100.3	-47.1	59.2
Pelvis 'Y'	13.7	87.8	-11.0	43.4	4.7	44.2	-8.8	59.0
Pelvis 'Z'	6.9	45.1	-17.9	93.6	1.8	35.0	-19.8	76.8

TIBIA PEAK FORCES & MOMENTS (G's)								
LOCATION	DRIVER				PASSENGER			
	MAX.	TIME	MIN.	TIME	MAX.	TIME	MIN.	TIME
Lt. Upper Moment 'Y'	N/A	N/A	N/A	N/A	148.4	42.9	-220.6	68.5
Left Lower Force 'Z'	N/A	N/A	N/A	N/A	3042.7	41.8	-146.4	223.3
Rt. Upper Moment 'Y'	N/A	N/A	N/A	N/A	131.1	36.3	-79.5	60.5
Right Lower Force 'Z'	N/A	N/A	N/A	N/A	3130.9	36.4	-215.4	128.4

N/A - Instrumentation not supplied by VTRC.

FOOT PEAK ACCELERATIONS (G's)								
LOCATION	DRIVER				PASSENGER			
	MAX.	TIME	MIN.	TIME	MAX.	TIME	MIN.	TIME
Left Foot Aft	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Left Foot Aft	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Left Foot Fore	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Foot Aft	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Foot Aft	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Foot Fore	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A - Instrumentation not installed for this test.

REDUNDANT DUMMY INJURY CRITERIA VALUES

MAXIMUM HEAD ACCELERATIONS - REDUNDANT (G's)								
LOCATION	DRIVER				PASSENGER			
	MAX.	TIME	MIN.	TIME	MAX.	TIME	MIN.	TIME
Head CG - X	10.2	197.6	-56.0	67.7	11.7	233.1	-61.0	71.4
Head CG - Y	7.6	75.2	-4.5	-4.5	6.0	86.4	-3.9	53.4
Head CG - Z	22.2	51.9	-21.6	-21.6	32.9	67.5	-9.2	99.9
Head CG Resultant	56.5	67.7			67.7	70.6		

MAXIMUM CHEST ACCELERATIONS - REDUNDANT (G's)								
LOCATION	DRIVER				PASSENGER			
	MAX.	TIME	MIN.	TIME	MAX.	TIME	MIN.	TIME
Chest CG - X	2.6	147.3	-50.7	64.5	4.6	262.5	-55.5	66.3
Chest CG - Y	2.2	101.5	-6.4	49.6	8.8	68.0	-2.9	78.2
Chest CG - Z	12.8	89.9	-14.0	59.3	14.2	97.7	-11.0	69.6
Chest CG Resultant	51.8	64.4			56.6	66.3		

REDUNDANT HEAD INJURY CRITERIA (HIC)								
LOCATION	DRIVER				PASSENGER			
	HIC	T1 (msec)	T2 (msec)	Avg. Accel.	HIC	T1 (msec)	T2 (msec)	Avg. Accel.
Head CG Redundant	505.1	46.2	82.1		597.1	54.5	85.7	

REDUNDANT CHEST CLIP (3 MSEC)						
LOCATION	DRIVER			PASSENGER		
	CLIP	T1 (msec)	T2 (msec)	CLIP	T1 (msec)	T2 (msec)
Chest CG Redundant	50.9	93.6	96.6	53.5	94.2	97.2

DATA SHEET NO. 9

SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

Vehicle Model Year & Make: 1997 Toyota Tercel

NHTSA No.: MV5102

BELT LENGTH DATA (mm)	DRIVER	PASSENGER
Belt length from trim panel exit to bolt hole anchor point for continuous webbing systems.	2794	2794
Shoulder belt length as measured on Part 572 Dummy	1041	1041
Lap belt length as measured on Part 572 Dummy	864	864

SHOULDER BELT SPOOL-OFF DATA (mm)	DRIVER	PASSENGER
As determined by film analysis	69.9	67.6
As determined mechanically	73.2	73.2
As determined electronically	73.2	73.2

BELT STRETCH DATA (mm)	DRIVER	PASSENGER
Measured electronically between shoulder belt load cell and the "D" ring	3.2	8.3
Measured mechanically	3.5	9.0

DATA SHEET NO. 10

SUMMARY OF FMVSS 212 DATA

Vehicle Model Year & Make: 1997 Toyota Tercel

NHTSA No.: MV5102

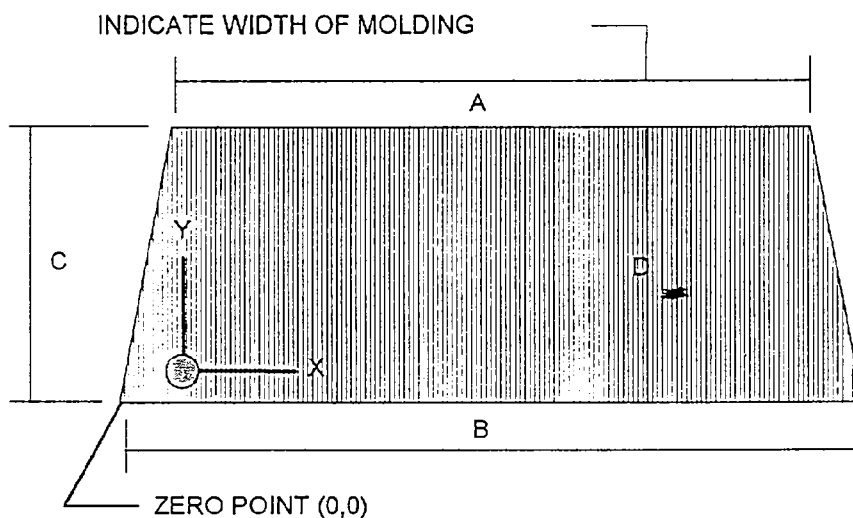
Details of windshield mounting (method of retention, type of trim, etc.):

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

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

WINDSHIELD PERIPHERY MEASUREMENTS (mm)			
	PRETEST	POST TEST	PERCENT RETENTION
Right Side	1608	1608	100%
Left Side	1607	1607	100%
Total	3215	3215	100%

Indicate area of retention failure.



FRONT VIEW OF WINDSHIELD

Width of molding = Top & Side 10 mm, Bottom 17 mm.

Temperature of windshield molding during test = 21 °C

DATA SHEET NO. 11

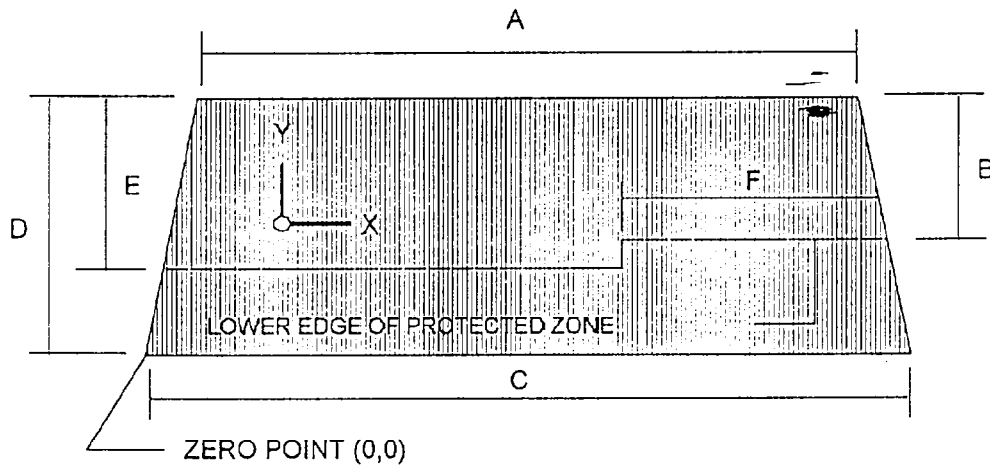
WINDSHIELD ZONE INTRUSION FMVSS 219 DATA

Vehicle Model Year & Make: 1997 Toyota Tercel

NHTSA No.: MV5102

SKETCH OF FRONT VIEW OF WINDSHIELD:

Provide all dimensions necessary to reproduce the protected area.



FRONT VIEW OF WINDSHIELD

WINDSHIELD MEASUREMENTS:

A = 1050 mm

B = 340 mm

C = 1440 mm

D = 725 mm

E = 499 mm

F = 645 mm

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

C. Record any windshield retention clips or brackets used to insure that the windshield would not disengage from the body.

DATA SHEET NO. 12

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Vehicle Model Year & Make: 1997 Toyota

NHTSA No.: MV5102

Vehicle Model & Body Style: Tercel 2 Door

Test Date: 023/0697

TYPE OF IMPACT: Frontal Barrier

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

A. TEST PHASE = 0° TO 90°

Determination of Stoddard Solvent Collection Time Period:

1. Rollover Fixture 90° Rotation Time = 1 minutes, 20 seconds (Specified Range is 1 to 3 minutes)

2. FMVSS 301 Position Hold Time = 5 minutes, 0 seconds

3. TOTAL = 6 minutes, 20 seconds

4. NEXT WHOLE MINUTE INTERVAL = 7 minutes

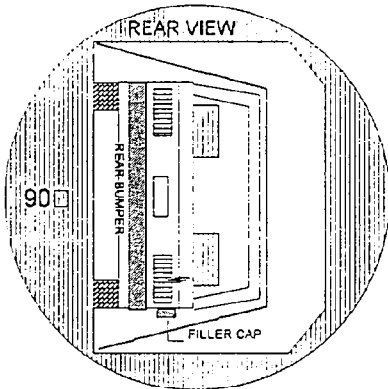
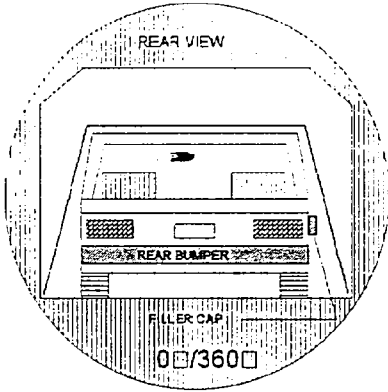
Actual Test Vehicle Stoddard Solvent Spillage:

1. First 5 min. from onset of rotation = 0 oz. (5 oz. allowed)

2. 6th minute = 0 oz. (1 oz. allowed)

3. 7th minute = 0 oz. (1 oz. allowed)

4. 8th minute (if required) = N/A oz. (1 oz. allowed)



Provide Details of Stoddard Solvent Spillage Locations--
No solvent leakage occurred during rollover tests.

Data Sheet No. 13 (Continued)

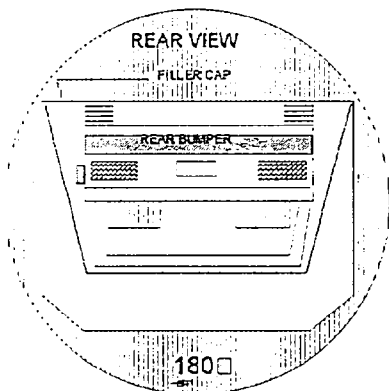
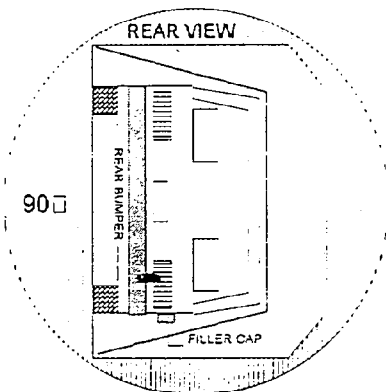
B. TEST PHASE = 90° TO 180°

Determination of Stoddard Solvent Collection Time Period:

1. Rollover Fixture 90° Rotation Time = 1 minutes, 20 seconds (Specified Range is 1 to 3 minutes)
2. FMVSS 301 Position Hold Time = 5 minutes, 0 seconds
3. TOTAL = 6 minutes, 20 seconds
4. NEXT WHOLE MINUTE INTERVAL = 7 minutes

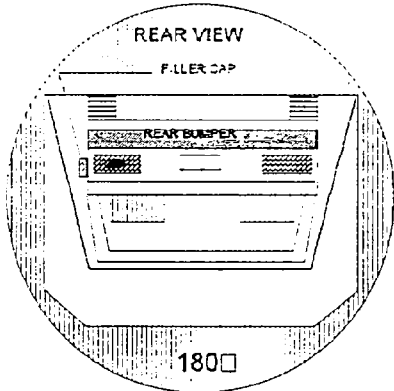
Actual Test Vehicle Stoddard Solvent Spillage:

1. First 5 min. from onset of rotation = 0 oz.
(5 oz. allowed)
2. 6th minute = 0 oz.
(1 oz. allowed)
3. 7th minute = 0 oz.
(1 oz. allowed)
4. 8th minute (if required) = N/A oz.
(1 oz. allowed)

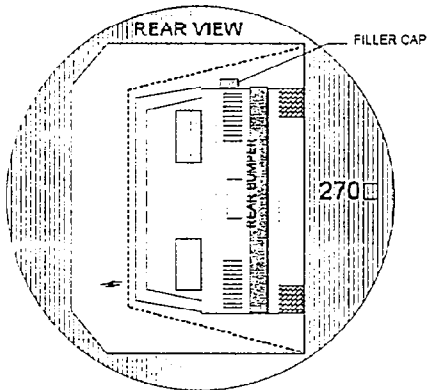


Provide Details of Stoddard Solvent Spillage Locations--

No solvent leakage occurred during rollover tests.



2. 6th minute = 0 oz.



C. TEST PHASE = 180° TO 270°

Determination of Stoddard Solvent Collection Time Period:

1. Rollover Fixture 90° Rotation Time = 1 minutes, 20 seconds (Specified Range is 1 to 3 minutes)
2. FMVSS 301 Position Hold Time = 5 minutes, 0 seconds
3. TOTAL = 6 minutes, 20 seconds
4. NEXT WHOLE MINUTE INTERVAL = 7 minutes

Actual Test Vehicle Stoddard Solvent Spillage:

1. First 5 min. from onset of rotation = 0 oz.
(5 oz. allowed)

(1 oz. allowed)

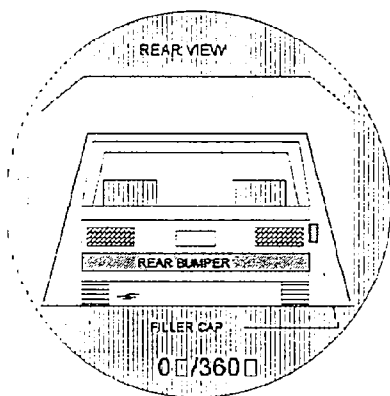
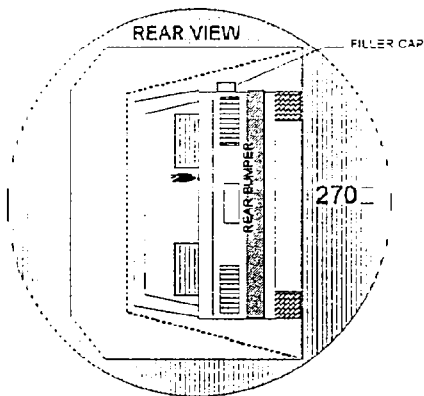
3. 7th minute = 0 oz.
(1 oz. allowed)

4. 8th minute (if required) = N/A oz.
(1 oz. allowed)

Provide Details of Stoddard Solvent Spillage Locations--

No solvent leakage occurred during rollover tests.

Data Sheet No. 13 (Continued)



D. TEST PHASE = 270° TO 360°

Determination of Stoddard Solvent Collection Time Period:

1. Rollover Fixture 90° Rotation Time = 1 minutes, 20 seconds (Specified Range is 1 to 3 minutes)
2. FMVSS 301 Position Hold Time = 5 minutes, 0 seconds
3. TOTAL = 6 minutes, 20 seconds
4. NEXT WHOLE MINUTE INTERVAL = 7 minutes

Actual Test Vehicle Stoddard Solvent Spillage:

1. First 5 min. from onset of rotation = 0 oz. (5 oz. allowed)
2. 6th minute = 0 oz. (1 oz. allowed)
3. 7th minute = 0 oz. (1 oz. allowed)
4. 8th minute (if required) = N/A oz. (1 oz. allowed)

Provide Details of Stoddard Solvent Spillage Locations--

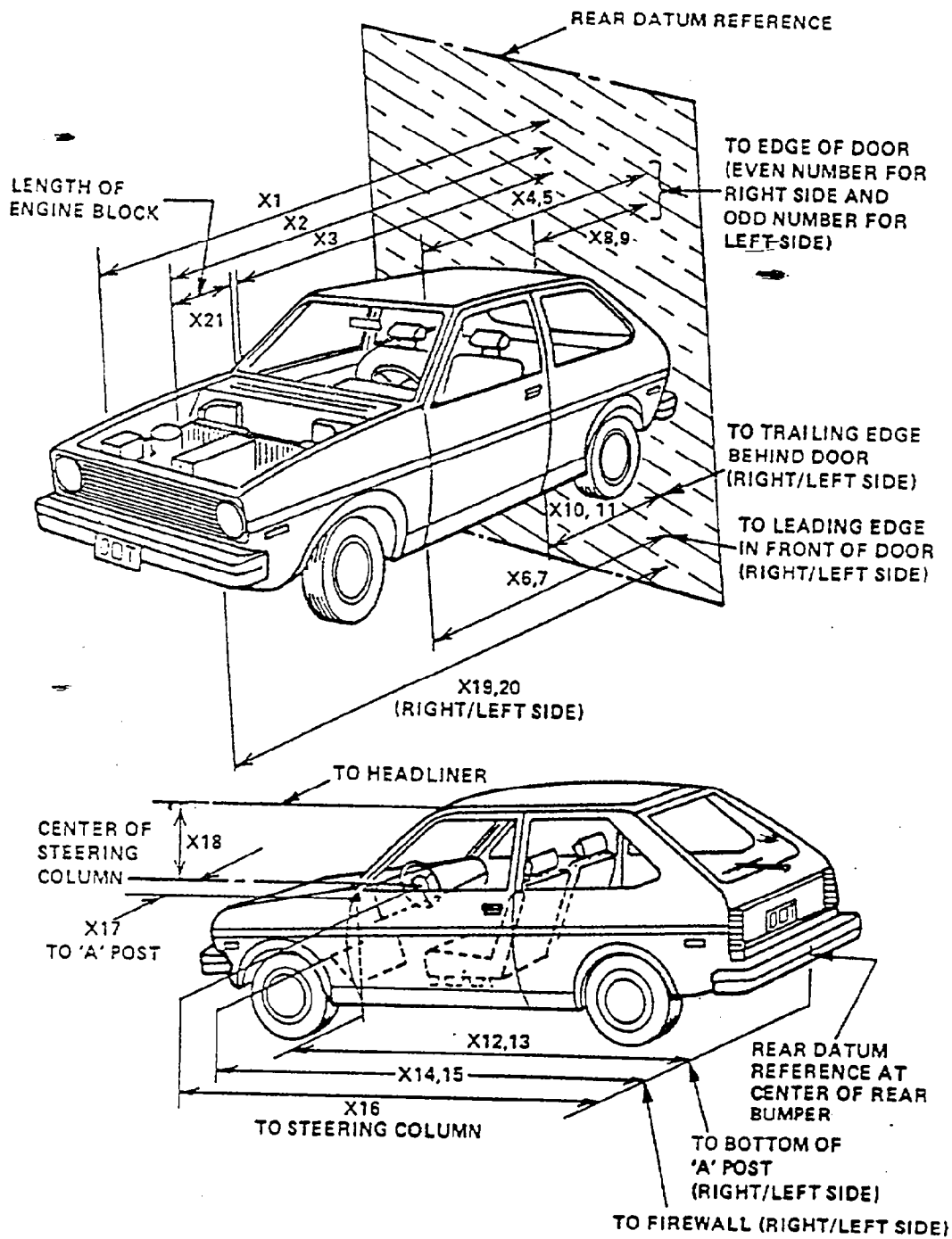
No solvent leakage occurred during rollover tests.

DATA SHEET NO. 14
VEHICLE MEASUREMENTS

Vehicle Model Year & Make: 1997 Toyota

NHTSA No.: MV5102

NO.	MEASUREMENT DESCRIPTION	DIMENSIONS IN MM		
		PRE-TEST	POST-TEST	DIFFERENCE
1	Total length of vehicle at centerline	4120	3506	560
2	Rear surface of vehicle (RSOV) to front of engine	3620	3310	310
3	RSOV to firewall centerline	3200	2960	240
4	RSOV to leading edge of right door	2840	2833	7
5	RSOV to leading edge of left door	2835	2835	0
6	RSOV to lower leading edge of right door	2840	2837	3
7	RSOV to lower leading edge of left door	2840	2834	6
8	RSOV to upper trailing edge of right door	1670	1660	10
9	RSOV to upper trailing edge of left door	1645	1665	+20
10	RSOV to lower trailing edge of right door	1656	1635	21
11	RSOV to lower trailing edge of left door	1650	1645	5
12	RSOV to bottom of right 'A' pillar	2845	2806	39
13	RSOV to bottom of left 'A' pillar	2840	2838	2
14	RSOV to firewall on right side	3160	2955	165
15	RSOV to firewall of left side	3145	2928	217
16	RSOV to steering column	2410	2404	6
17	Center of steering column to left 'A' pillar	290	293	+3
18	Center of steering column to headlining	410	300	110
19	RSOV to right side of front bumper	4005	3478	527
20	RSOV to left side of front bumper	4000	3540	460
21	Length of engine block	403	403	0
22	Right side to dash panel	2660	2638	22
23	Center to dash panel	2610	2586	24
24	Left side to dash panel	2667	2639	28



VEHICLE MEASUREMENTS

DATA SHEET 15 CAMERA LOCATIONS

VEH. NHTSA No.: MV5102

TEST DATE: 03/06/97

TIME: 2:40 PM

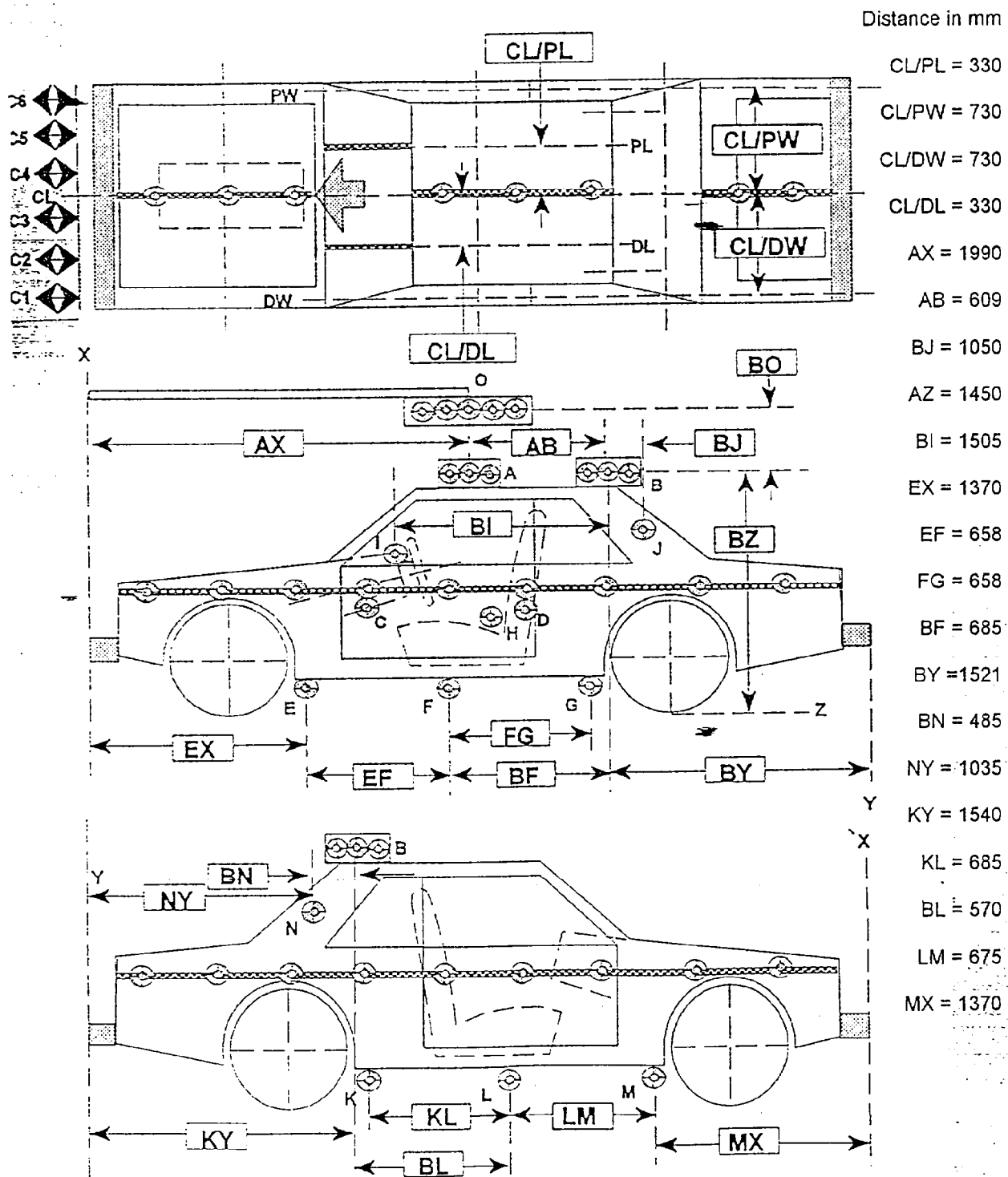
VEH. YEAR/MAKE/MODEL/BODY STYLE: 1997 Toyota Tercel 2 Door

CAMERA NO.	VIEW	CAMERA POSITIONS (mm) *			ANGLE (deg.)	FILM PLANE TO HEAD TARGET (mm)	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Right Side View	3050	14500	1524	-2	14820	12-50 Zoom	24
2	Left Side View <u>1/</u>	1270	-8280	765	0	8015	25	---
3	Left Side View	3327	-2210	1994	-2-	2038	80	940
4	Left Side View	1219	-11938	1308	0	11724	14	1000
5	Left Side View	2057	-8280	3073	-15	8669	25	1090
6	Left Side View	2057	-8280	2540	-13	8555	25	---
7	Right Side View <u>2/</u>	1905	8204	1219	-3	7930	17	1100
8	Right Side View	3023	11608	914	0	11318	50	900
9	Right Side View	3251	2413	1994	-19	2205	19	1000
10	Right Side View	991	9677	940	0	9757	50	870
11	Front View Windshield <u>3/</u>	-330	0	3531	-65	N/A	12.5	---
12	Front View Driver	-292	-318	2489	-46	N/A	19	1200
13	Front View Passenger	-368	318	2489	-49	N/A	19	1200
14	Pit Camera Engine View	559	0	1651	90	N/A	13	920
15	Pit Camera Fuel Tank View	1422	0	1753	64	N/A	13	1110
16	Driver Side Belt	3251	76	559	20	N/A	13	800
17	Passenger Side Belt	-3251	-76	559	20	N/A	13	800

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

1/ Late start, operator error
2/ Film broke at startup (cleaned and re-tested)
3/ Film broke, tension out of adjustment, re-adjusted and re-tested.

REFERENCE PHOTOGRAPH TARGETS



DATA SHEET NO. 17

ACCIDENT INVESTIGATION DIVISION DATA

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1997 Toyota Tercel 2 Door Subcompact

VEHICLE NHTSA NO.: MV5102

VIN: JT2AC52L8V0220177

WHEELBASE: 2388 mm

BUILD DATE: 10/96

TEST DATE: 03/06/97

VEH. SIZE CATEGORY: Subcompact

TEST WEIGHT: 1098 kg

ACCELEROMETER DATA:

LOCATION: Left and right side passenger compartment

CALIBRATION PROCEDURE: 6 months/ drop test

LINEARITY: Good INTEGRATION ALGORITHM: NHTSA Standard

VEHICLE IMPACT SPEED: 55.78 kph

TIME OF SEPARATION: 75.8 msec

VEL. CHANGE: 66.0 kph

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

IMPACT MODE: Frontal

CRUSH DEPTH DIMENSIONS:

C1 = 457 mm

C2 = 514 mm

C3 = 559 mm

C4 = 552 mm

C5 = 543 mm

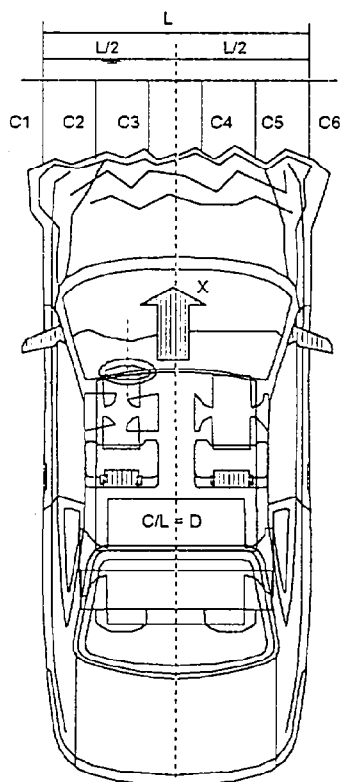
C6 = 526 mm

MIDPOINT OF DAMAGE: D = Vehicle centerline

(Vehicle Longitudinal Centerline)

LENGTH OF DAMAGE REGION:

L = 1400 mm



APPENDIX A
PHOTOGRAPHS

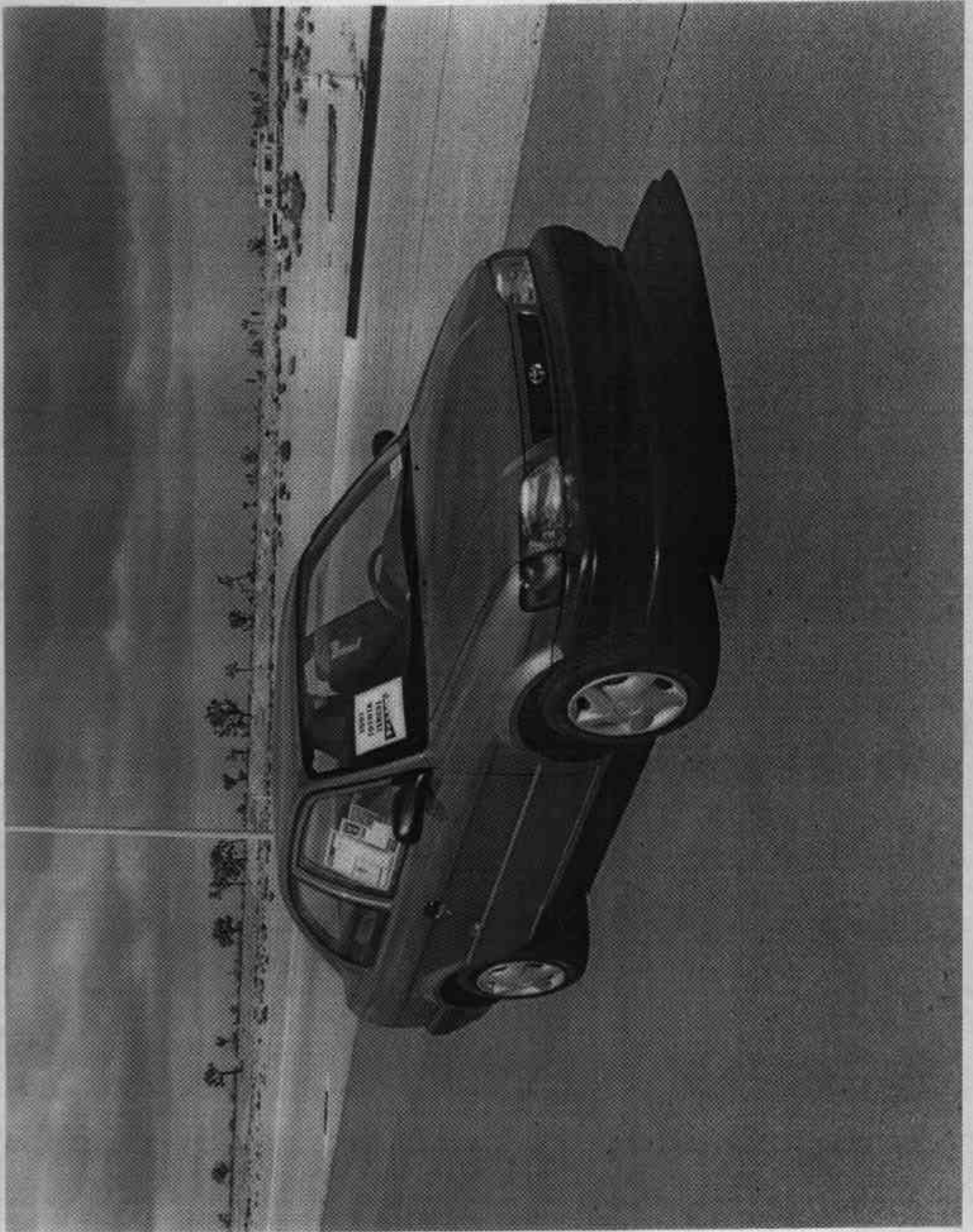


FIGURE A-1. RIGHT FRONT AS RECEIVED

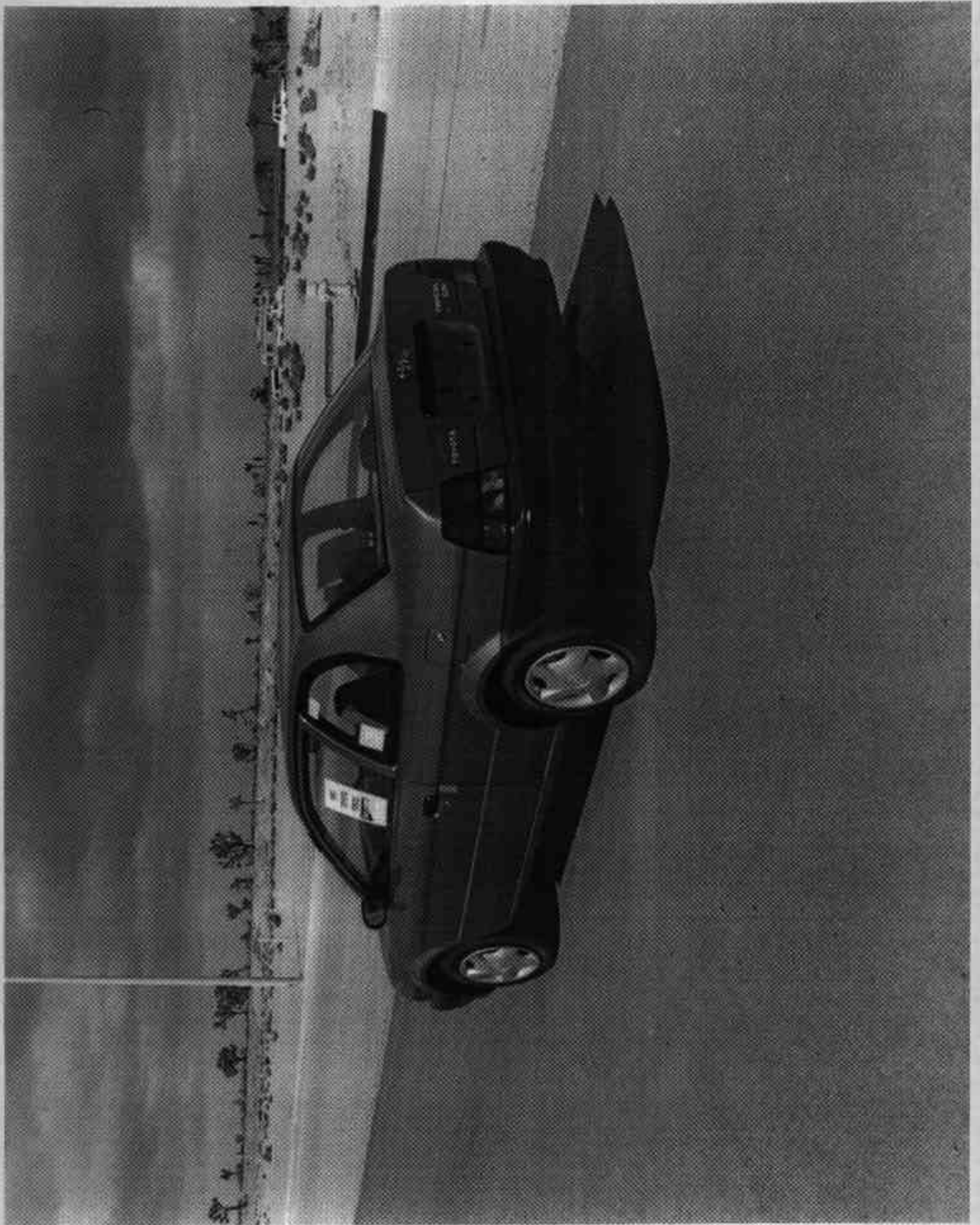


FIGURE A-2. LEFT REAR AS RECEIVED



FIGURE A-3. VEHICLE CERTIFICATION LABEL

SPARE TIRE		P175/65R14 81S P185/60R14 82H	
T115/70D14			
COLD TIRE PRESSURES kPa (psi)			
P175/65R14 81S	FRT 200(28)	RR 200(28)	
P185/60R14 82H	FRT 180(26)	RR 180(26)	
SPARE TIRE 420 (60)			
SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION			
CHARGE MAXIMALE DU VEHICULE 3500g (775.19 lbs)			
PERSONNES AVANT 2		ARRIERE 3 TOTAL 5	
DIMENSION DES PNEUS		P175/65R14 81S P185/60R14 82H	
PNEU DE RECHANGE		T115/70D14	
PRESSION DE PNEUS		kPa (lb/PO2)	
P175/65R14 81S	AVANT 200(28)	ARRIERE 200(28)	
P185/60R14 82H	AVANT 180(26)	ARRIERE 180(26)	
PNEU DE RECHANGE 420(60)			
VOIR LE MANUEL DU PROPRIETAIRE POUR DE PLUS AMPLES DETAILS			

SV

FIGURE A-4. VEHICLE TIRE PLACARD



FIGURE A-5. PRE-TEST FRONT VIEW

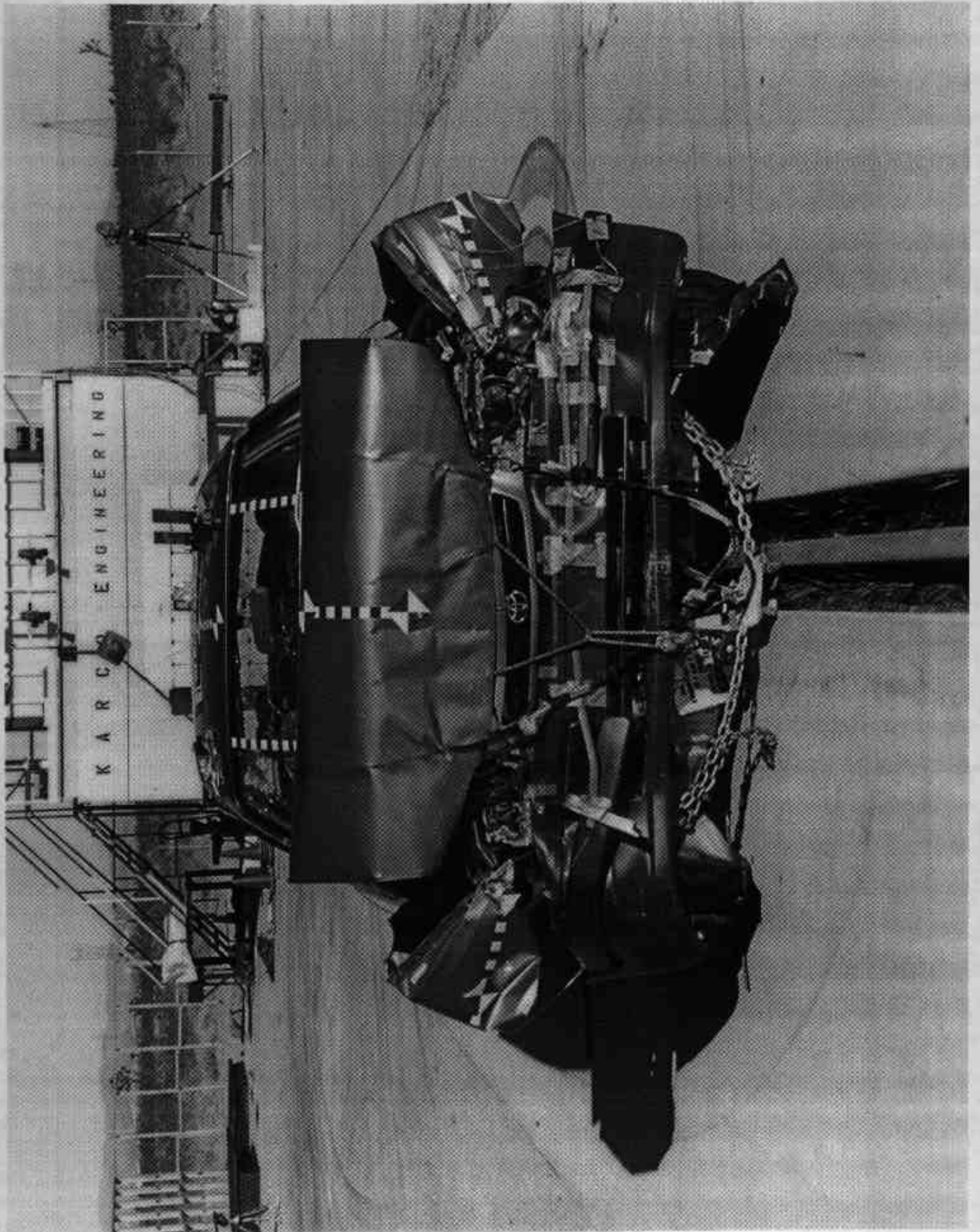


FIGURE A-6. POST-TEST FRONT VIEW

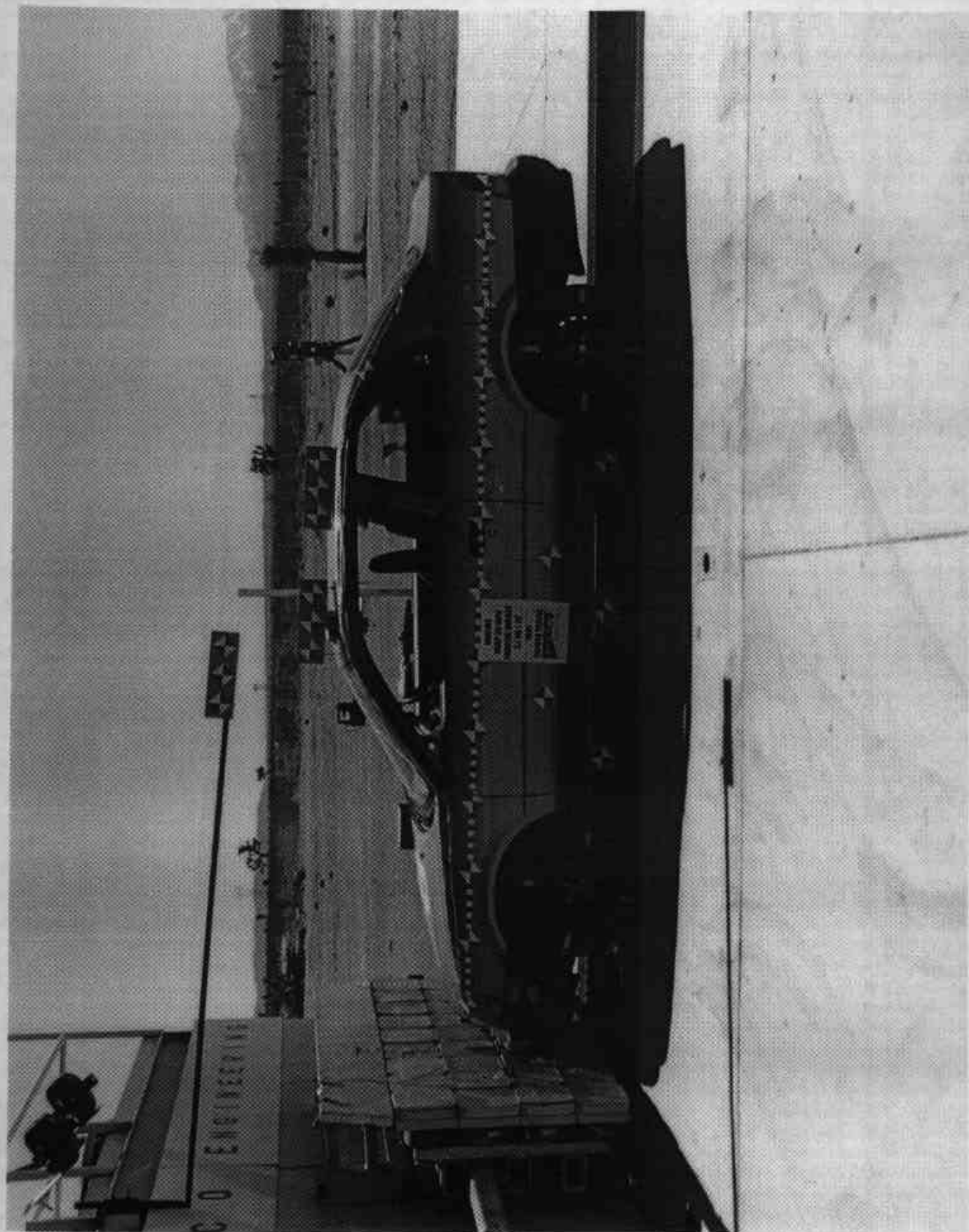


FIGURE A-7. PRE-TEST LEFT SIDE VIEW

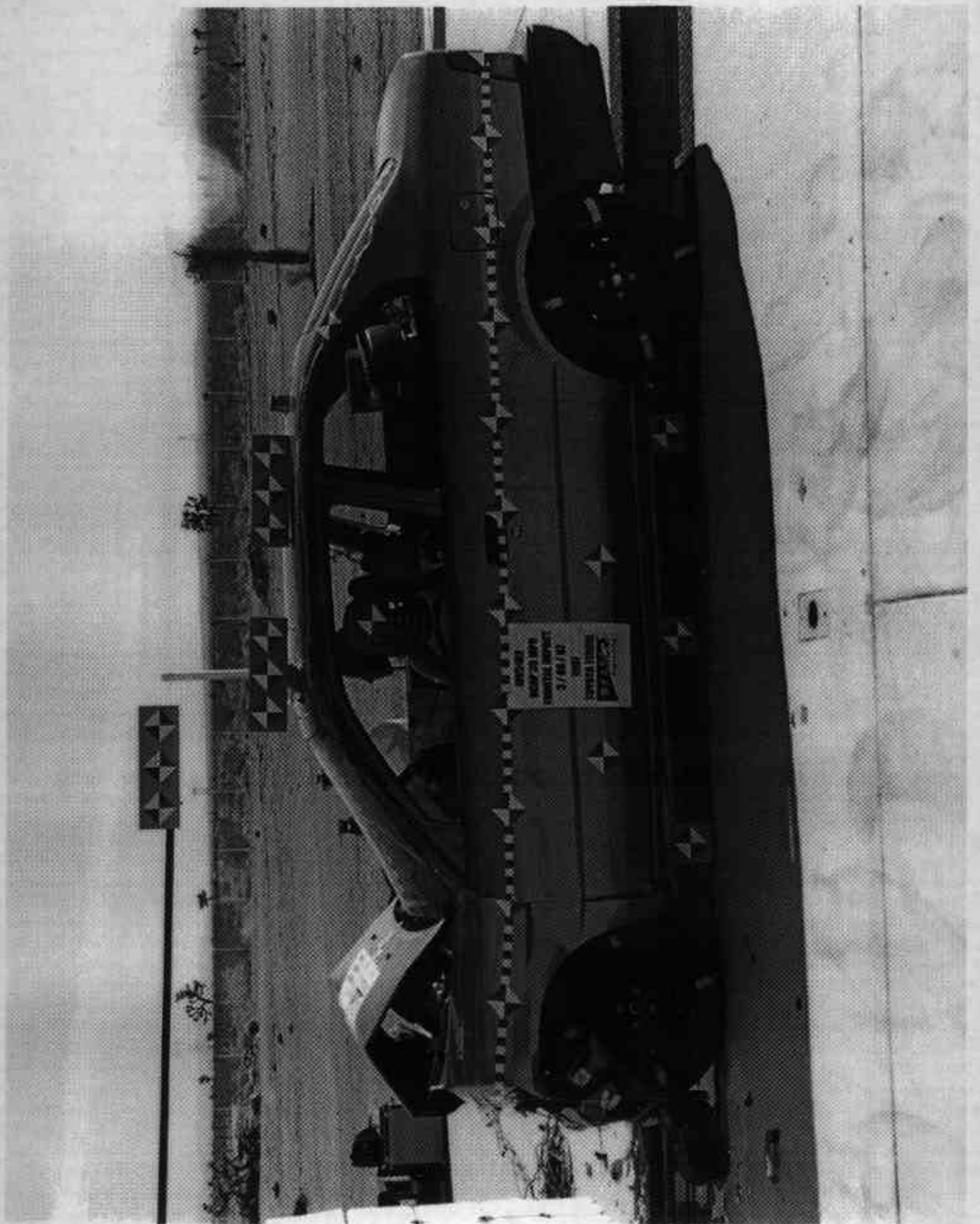


FIGURE A-8. POST-TEST LEFT SIDE VIEW

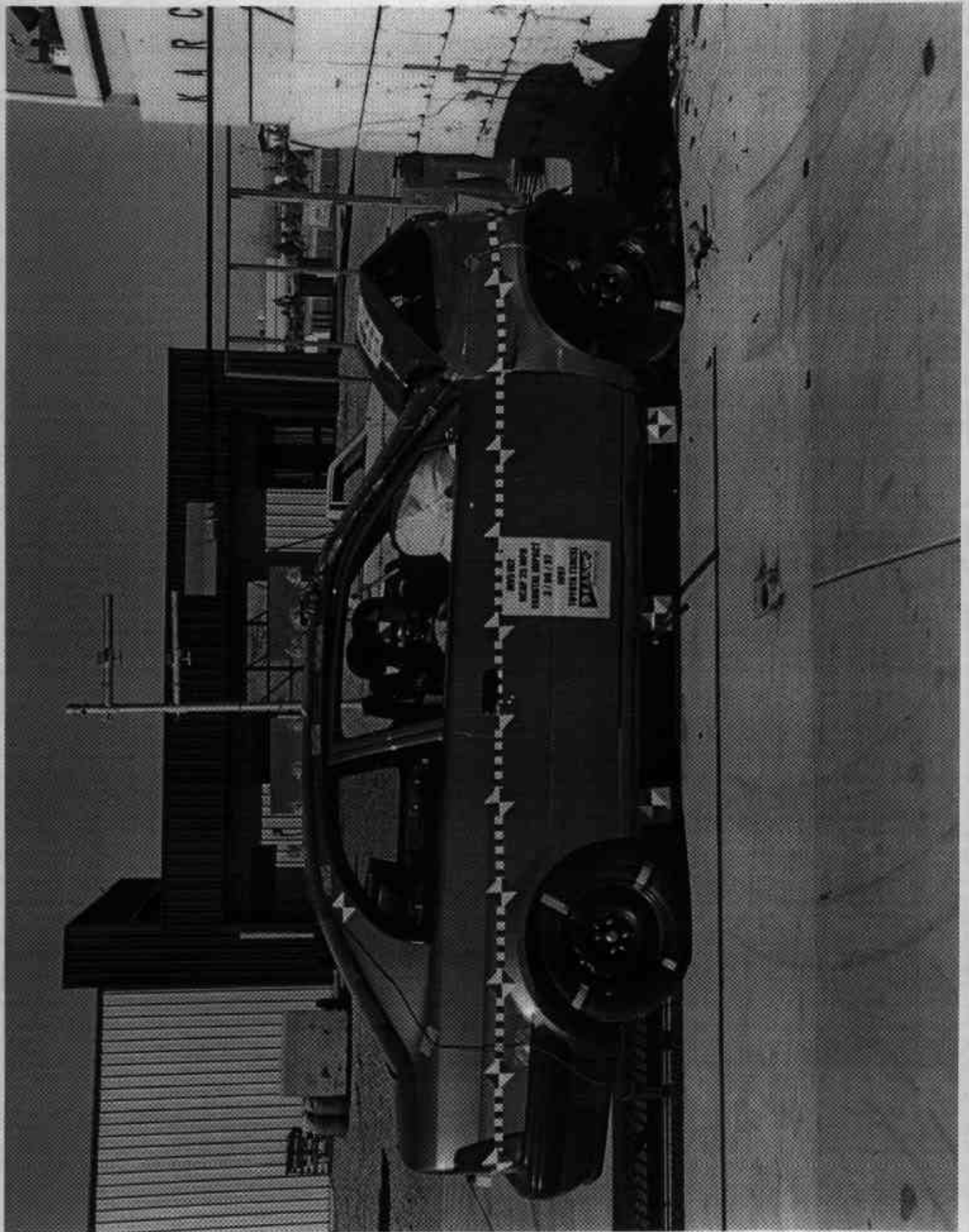


FIGURE A-10. POST-TEST RIGHT SIDE VIEW

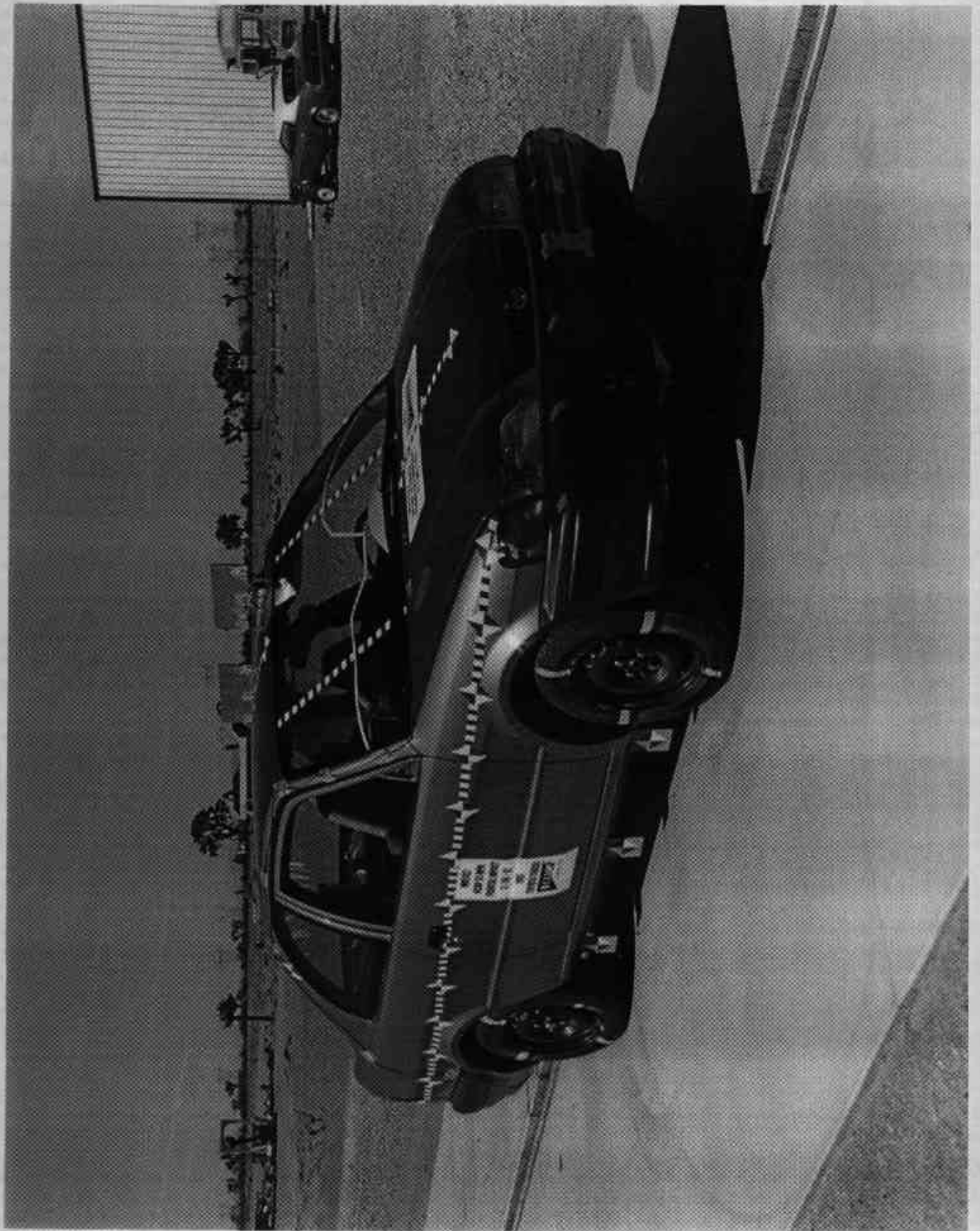


FIGURE A-11. PRE-TEST RIGHT FRONT 3/4 VIEW

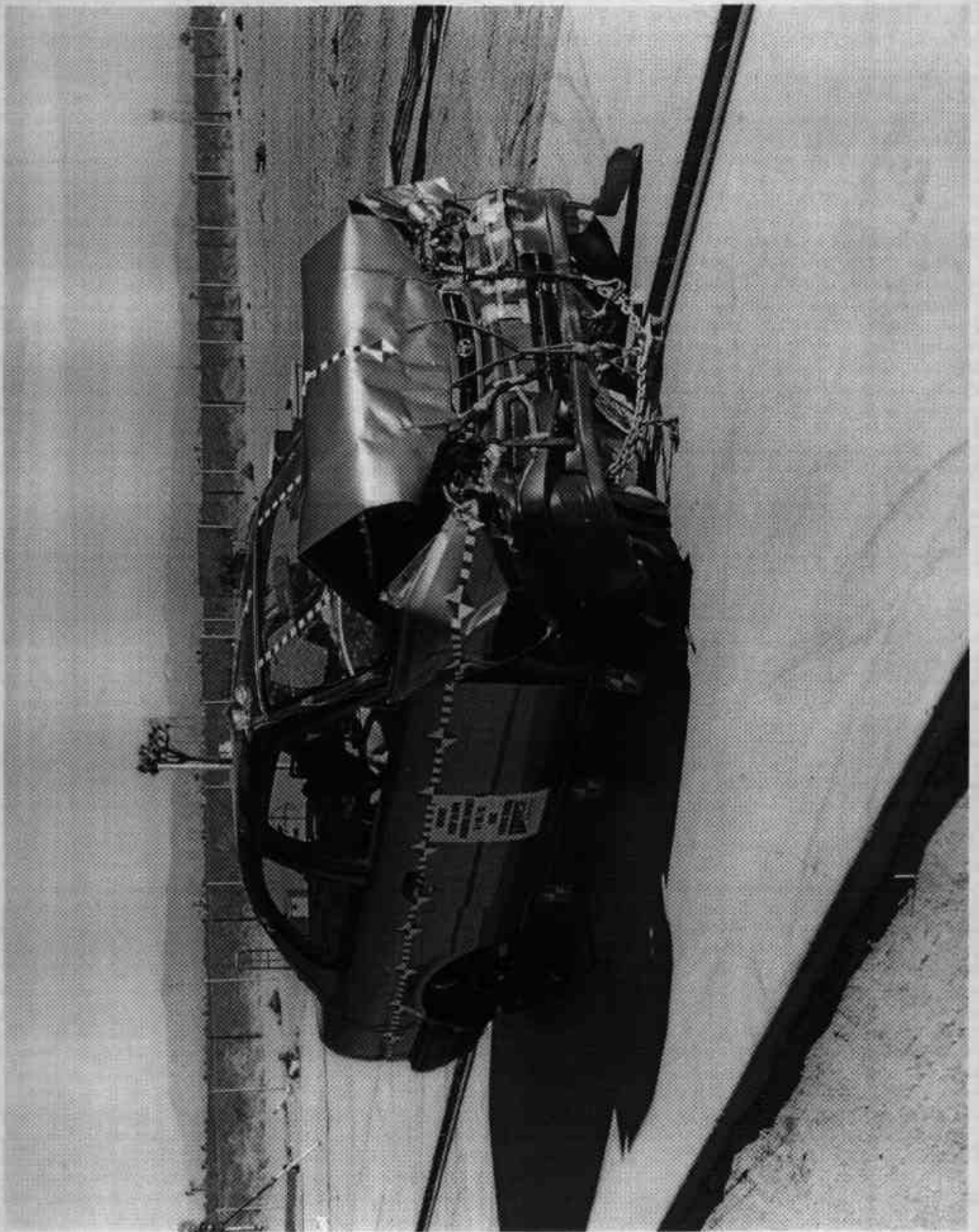


FIGURE A-12. POST-TEST RIGHT FRONT 3/4 VIEW

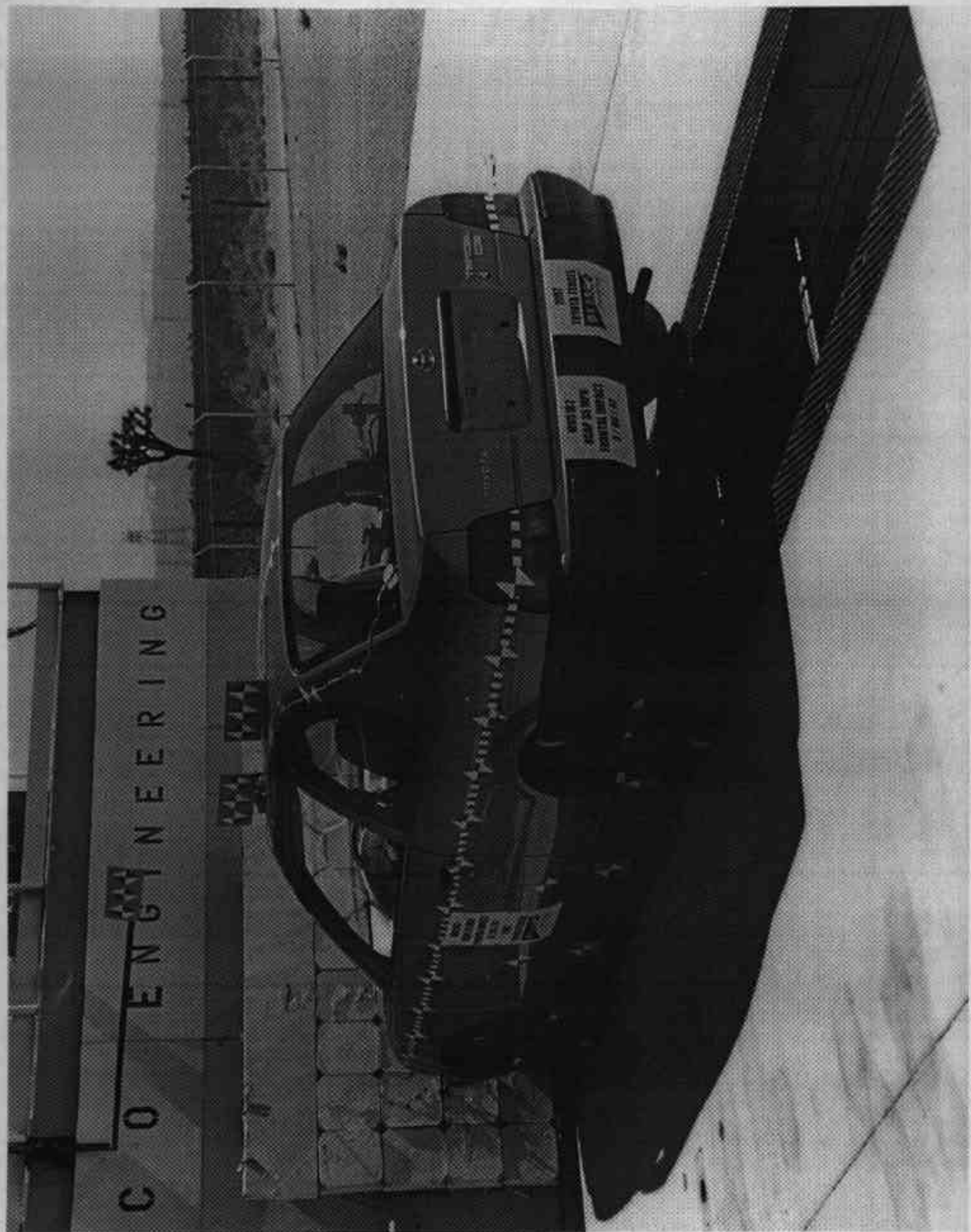


FIGURE A-13. PRE-TEST LEFT REAR 3/4 VIEW

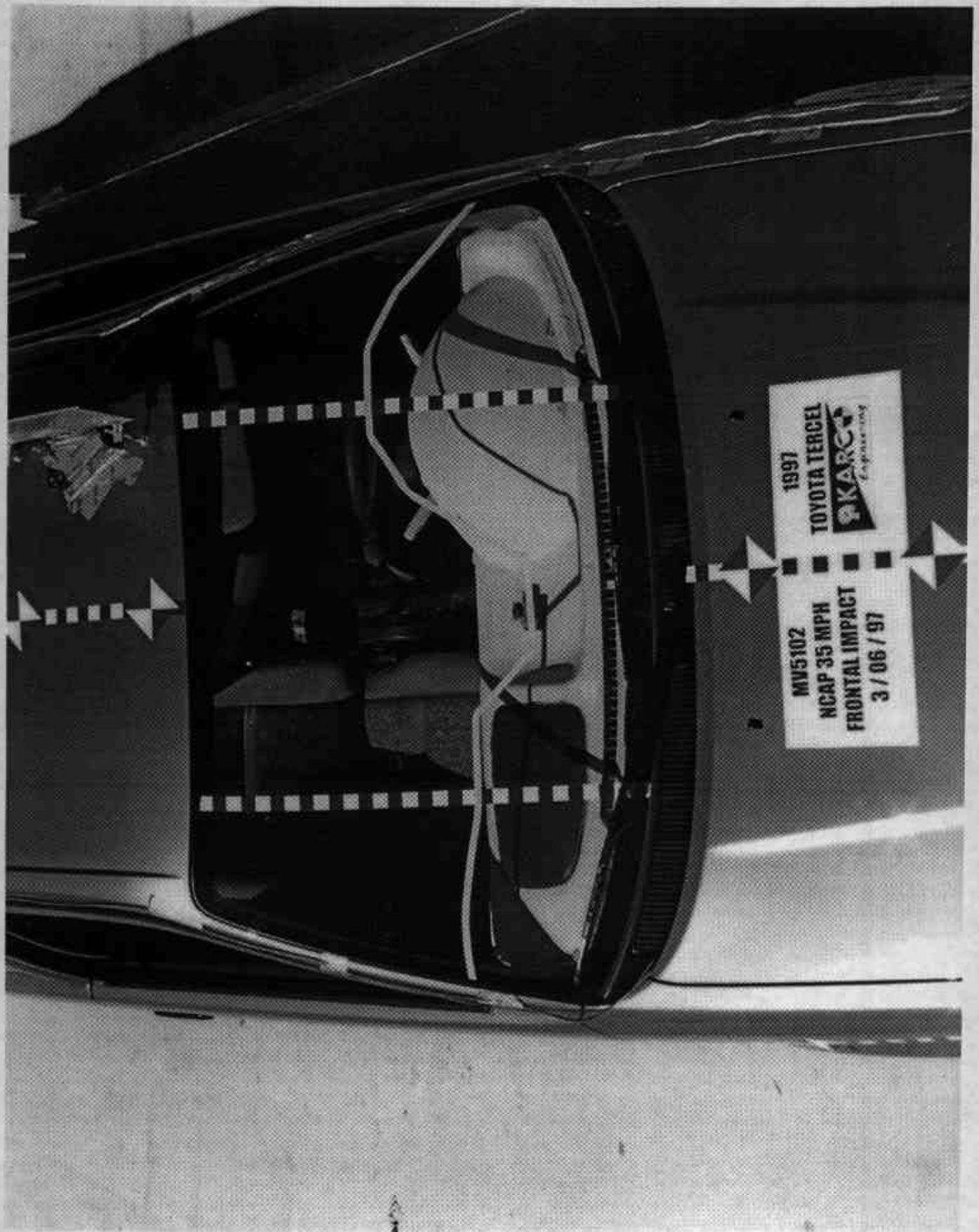


FIGURE A-15. PRE-TEST WINDSHIELD

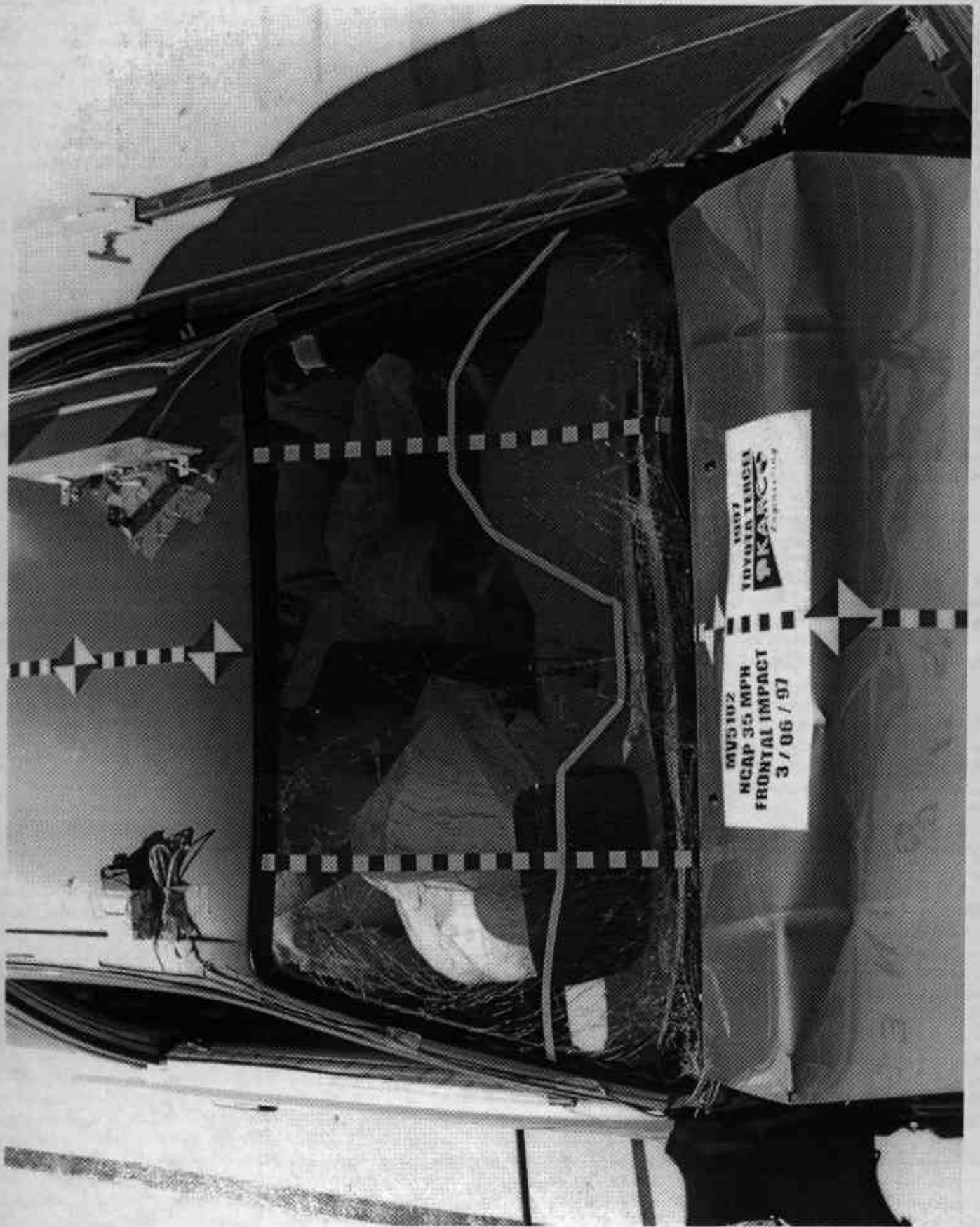


FIGURE A-16. POST-TEST WINDSHIELD

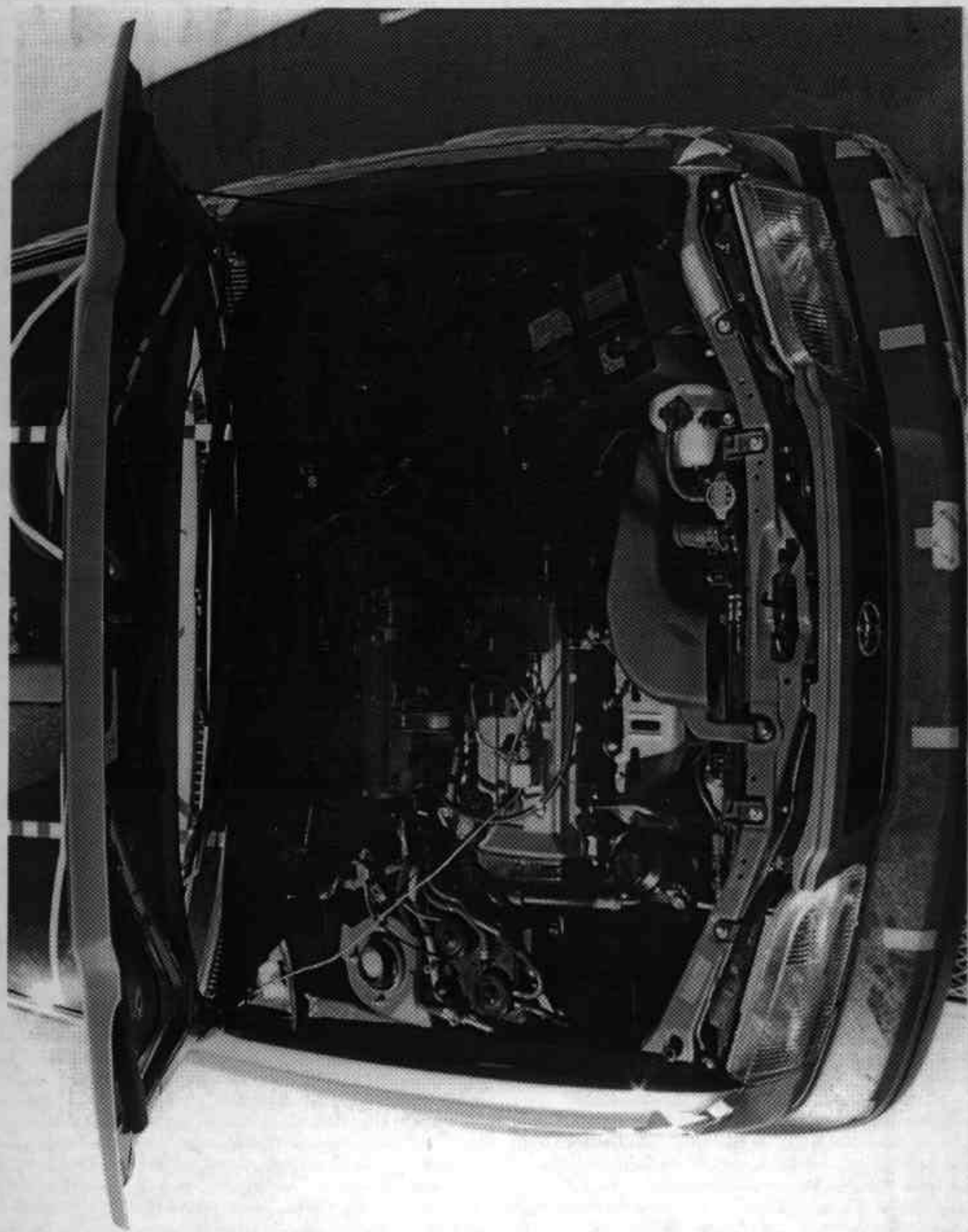


FIGURE A-17. PRE-TEST ENGINE COMPARTMENT



FIGURE A-18. POST-TEST ENGINE COMPARTMENT



FIGURE A-19. PRE-TEST FUEL FILLER CAP



FIGURE A-20. POST-TEST FUEL FILLER CAP

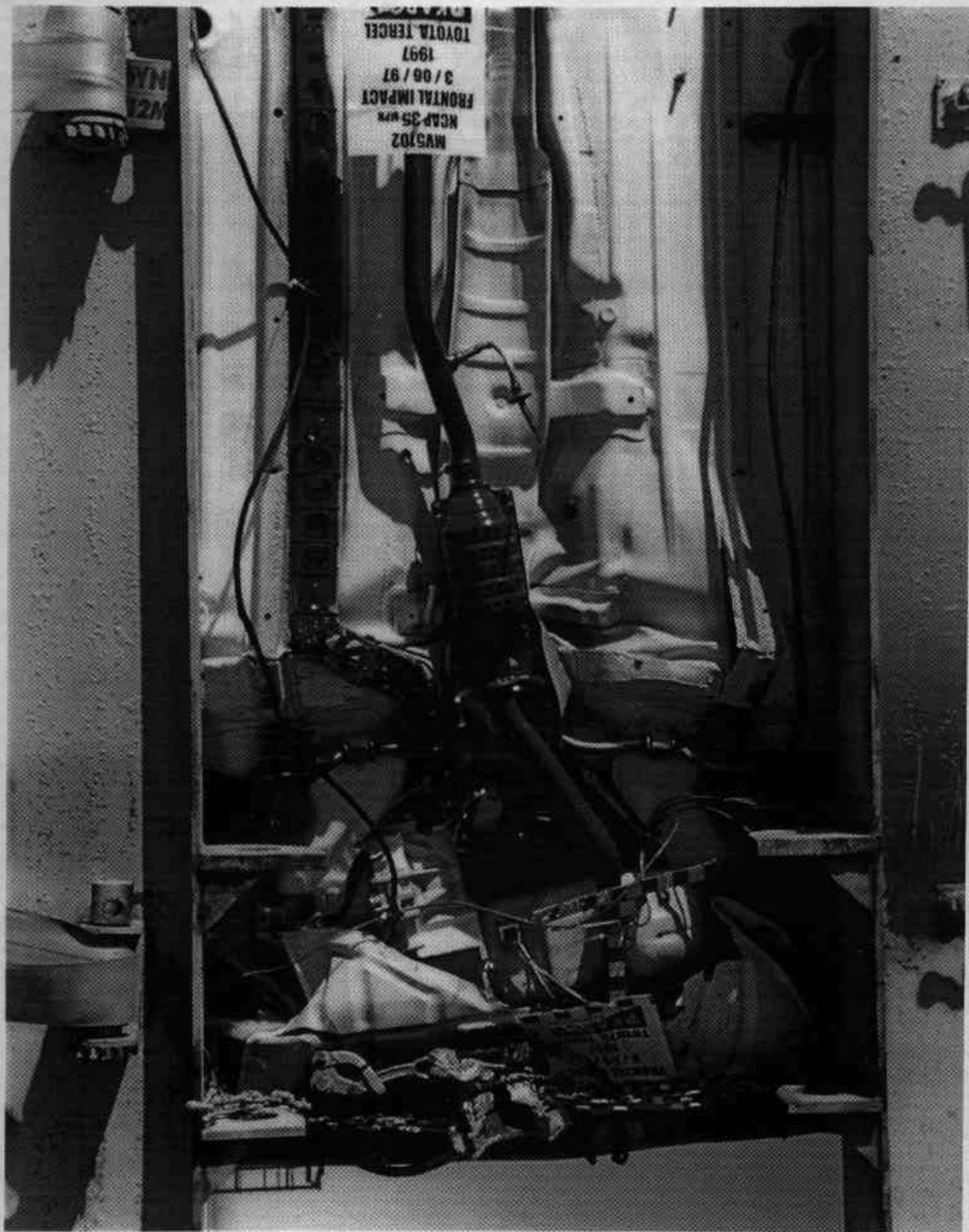


FIGURE A-22. POST-TEST FRONT UNDERBODY

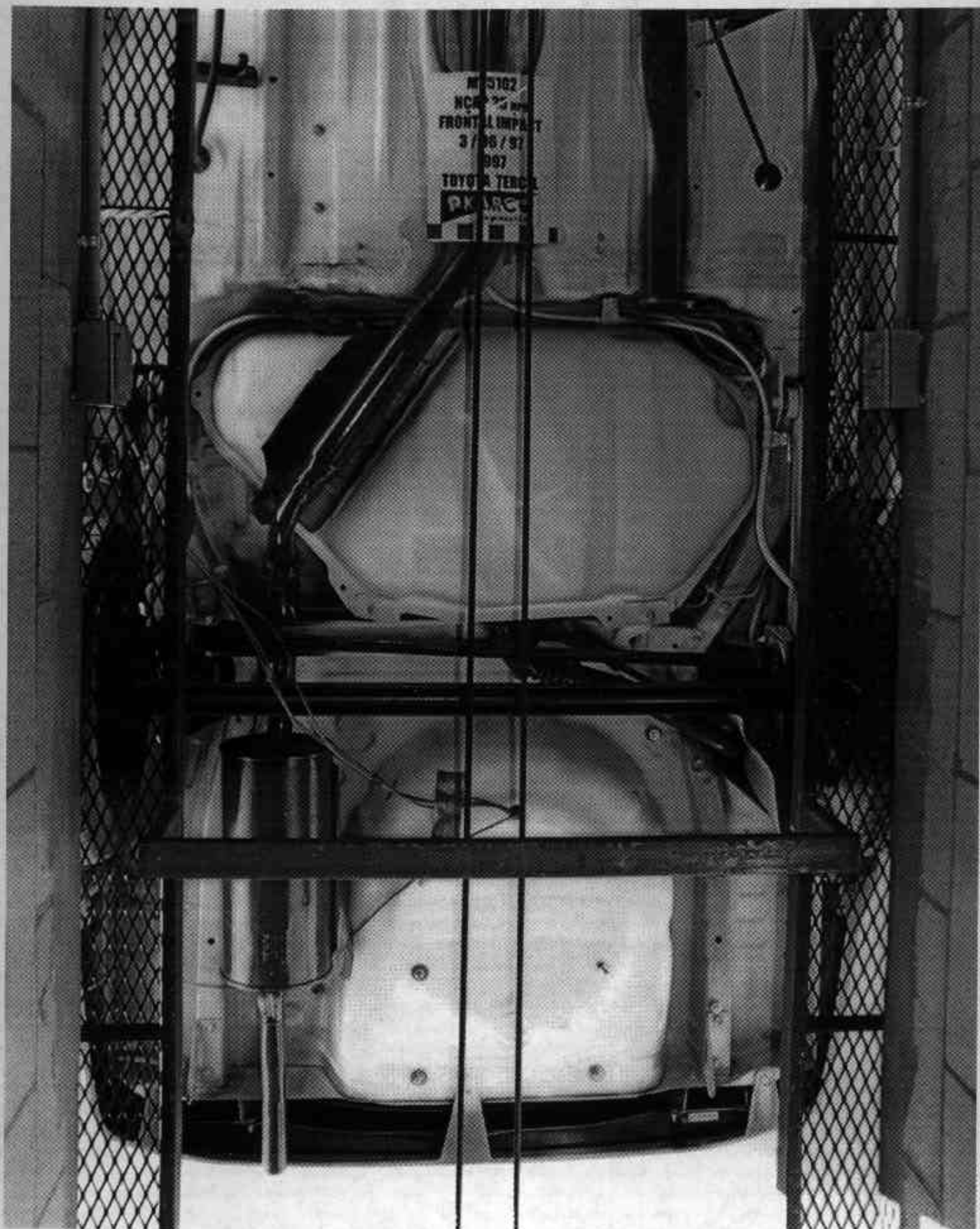


FIGURE A-23. PRE-TEST REAR UNDERBODY

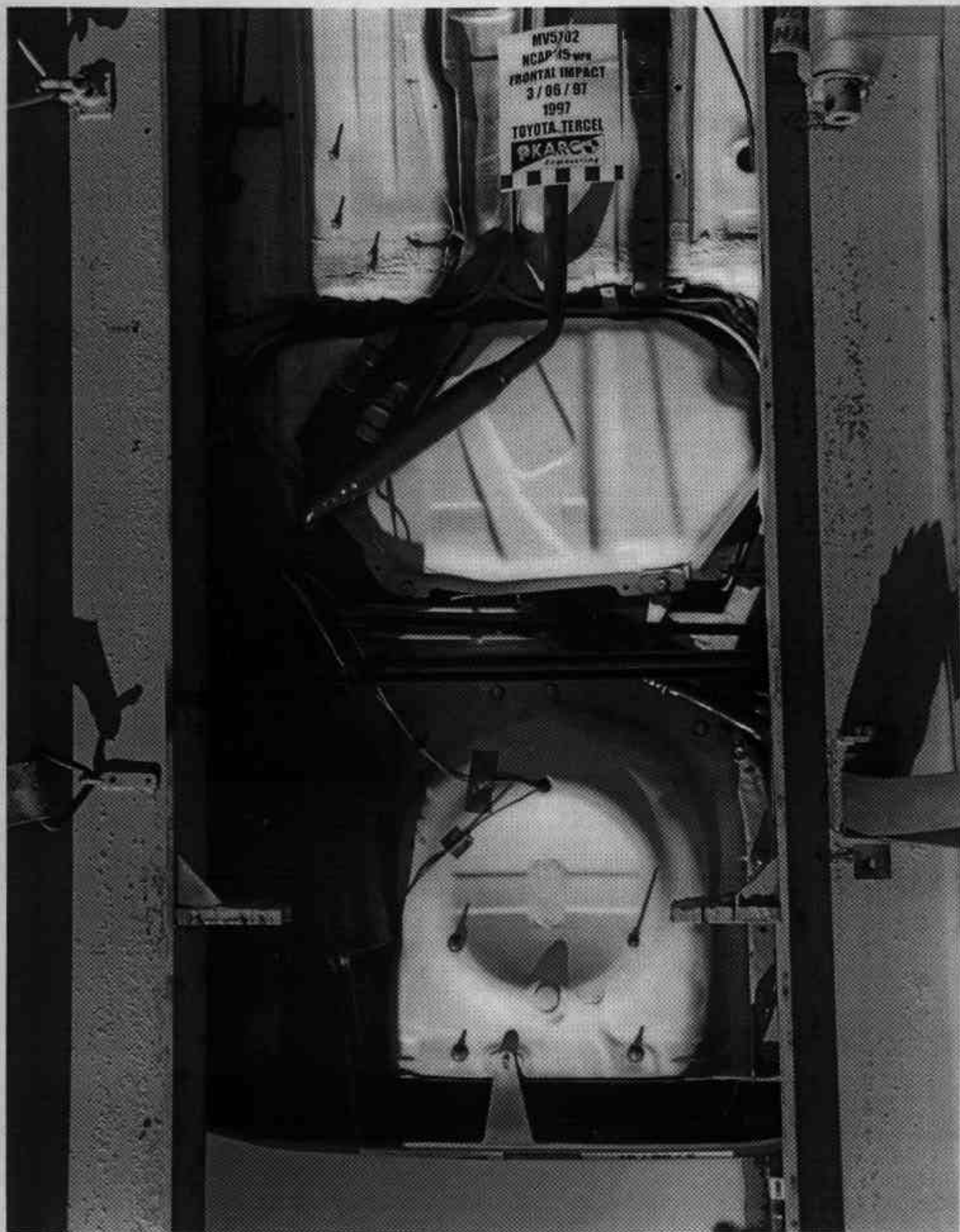


FIGURE A-24. POST-TEST REAR UNDERBODY



FIGURE A-25. PRE-TEST DRIVER DUMMY (FRONT VIEW)



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



FIGURE A-27. PRE-TEST DRIVER DUMMY (THRU WINDOW)



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



FIGURE A-29. PRE-TEST DRIVER DUMMY (DOOR OPEN)



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



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



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



FIGURE A-33. POST-TEST DRIVER DUMMY CONTACT POINTS (1 OF 3)



FIGURE A-34. POST-TEST DRIVER DUMMY CONTACT POINTS (2 OF 3)



FIGURE A-35. POST-TEST DRIVER DUMMY CONTACT POINTS (3 OF 3)



FIGURE A-36. PRE-TEST DRIVER SIDE KNEE BOLSTER

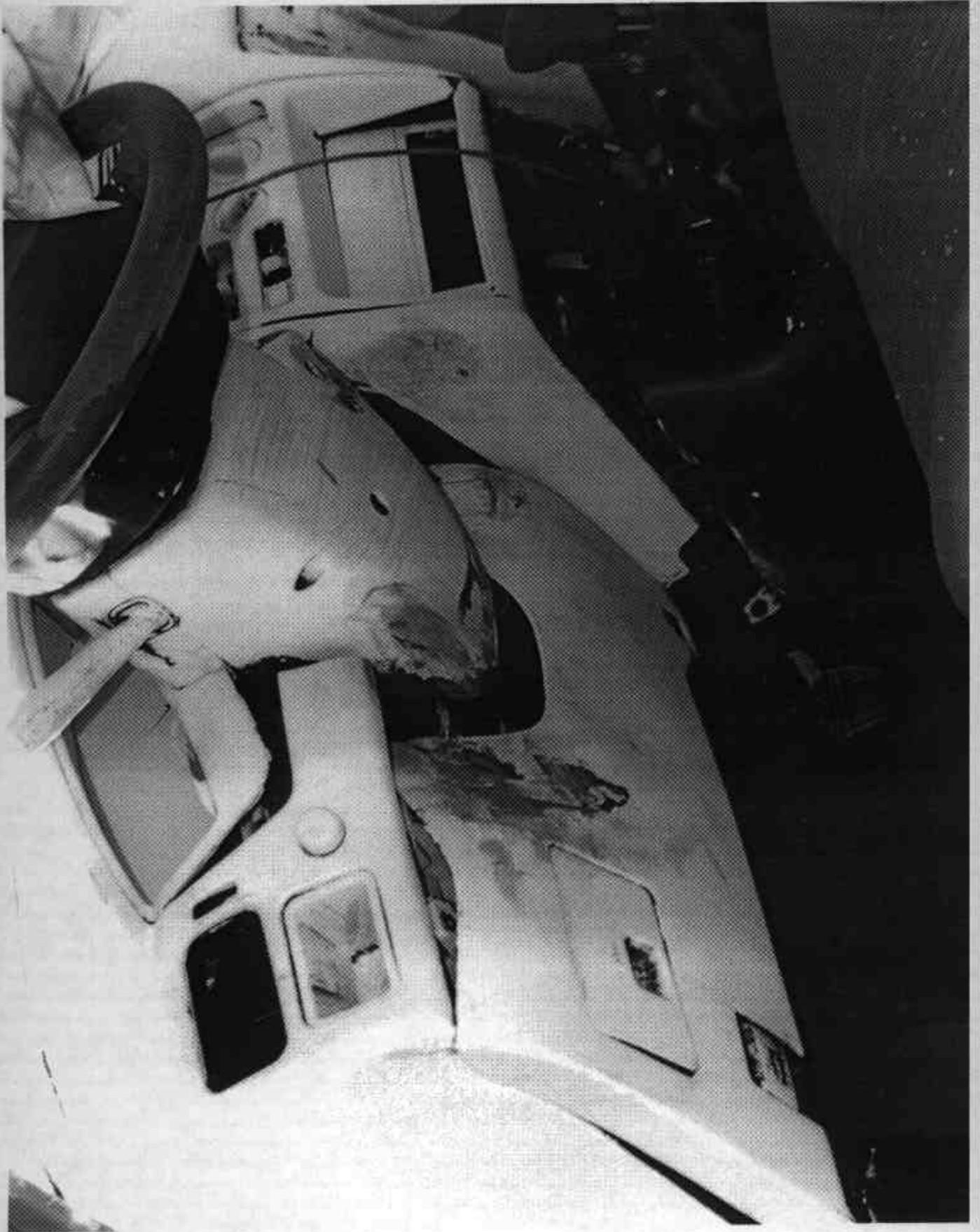


FIGURE A-37. POST-TEST DRIVER SIDE KNEE BOLSTER



FIGURE A-38. PRE-TEST PASSENGER DUMMY (FRONT VIEW)



FIGURE A-39. POST TEST PASSENGER DUMMY (FRONT VIEW)



FIGURE A-40. PRE-TEST PASSENGER DUMMY (THRU WINDOW)



FIGURE A-41. POST-TEST PASSENGER DUMMY (THRU WINDOW)



FIGURE A-42. PRE-TEST PASSENGER DUMMY (DOOR OPEN)



FIGURE A-43. POST-TEST PASSENGER DUMMY (DOOR OPEN)



FIGURE A-44. PRE-TEST PASSENGER DUMMY (90° TO VEHICLE)



FIGURE A-45. POST-TEST PASSENGER DUMMY (90° TO VEHICLE)



FIGURE A-46. POST-TEST PASSENGER DUMMY CONTACT POINTS (1 OF 3)



FIGURE A-47. POST-TEST PASSENGER DUMMY CONTACT POINTS (2 OF 3)

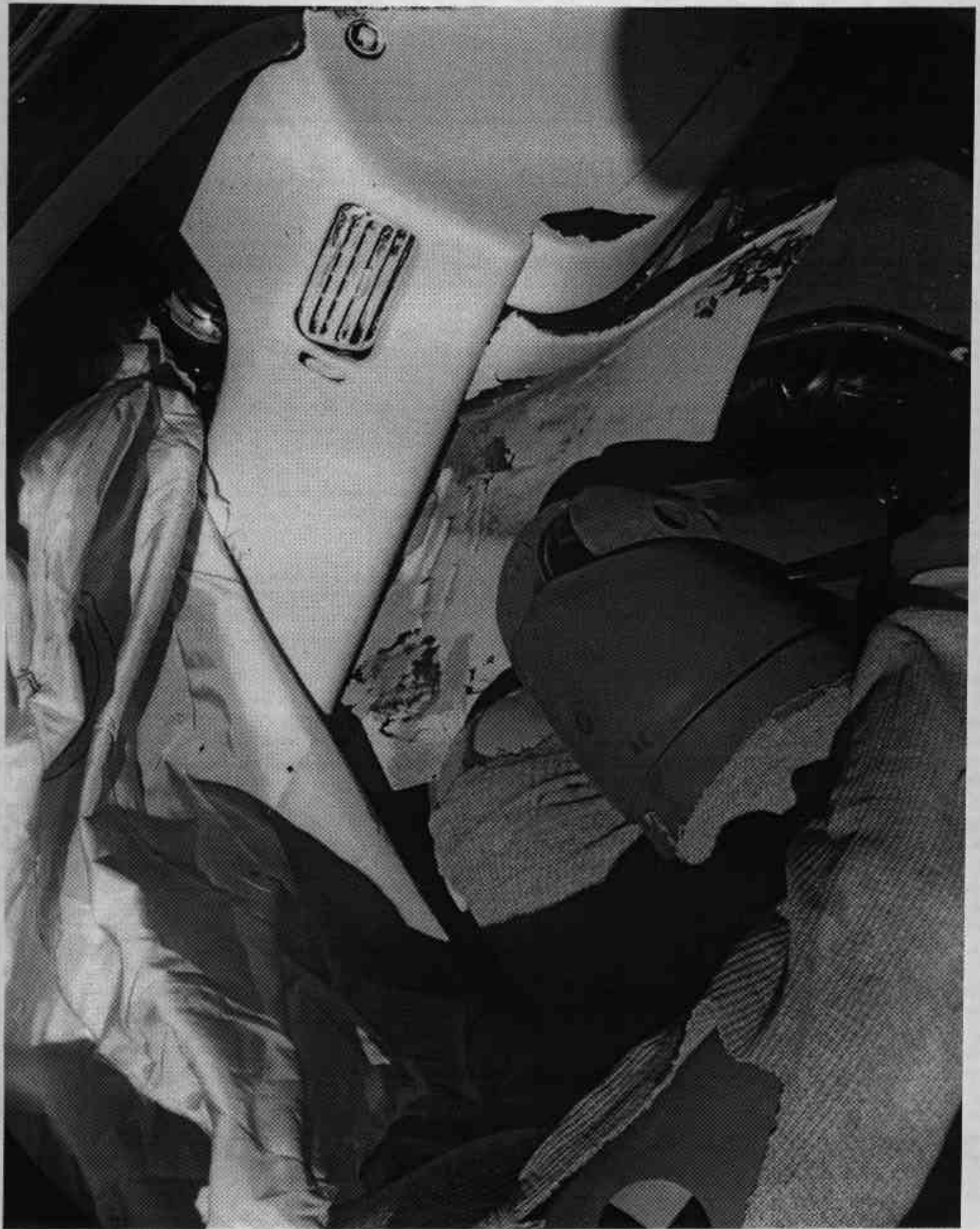


FIGURE A-48. POST-TEST PASSENGER DUMMY CONTACT POINTS (3 OF 3)



FIGURE A-49. PRE-TEST PASSENGER SIDE KNEE BOLSTER



FIGURE A-50. POST-TEST PASSENGER SIDE KNEE BOLSTER

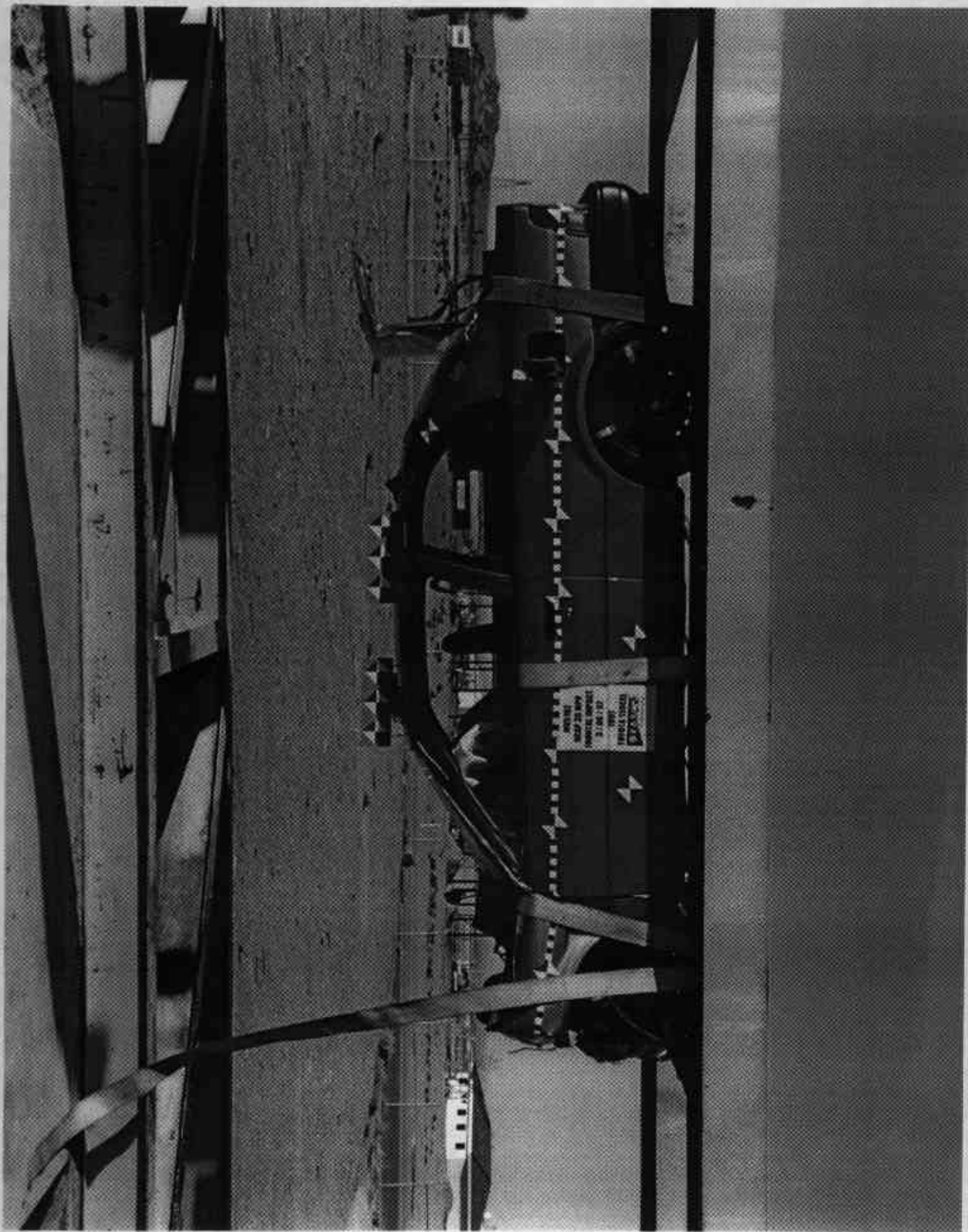
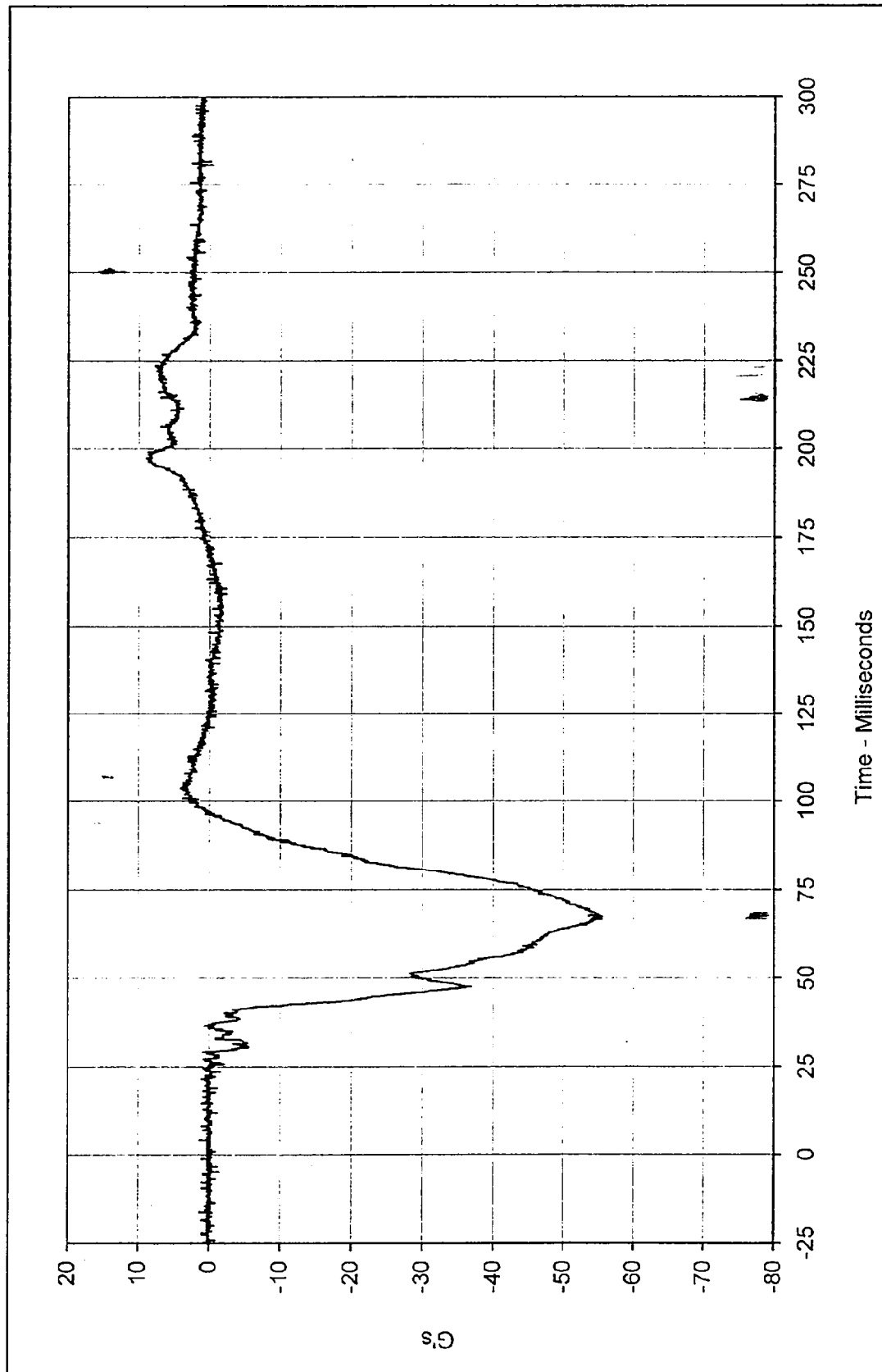


FIGURE A-51. VEHICLE ON STATIC ROLLOVER MACHINE

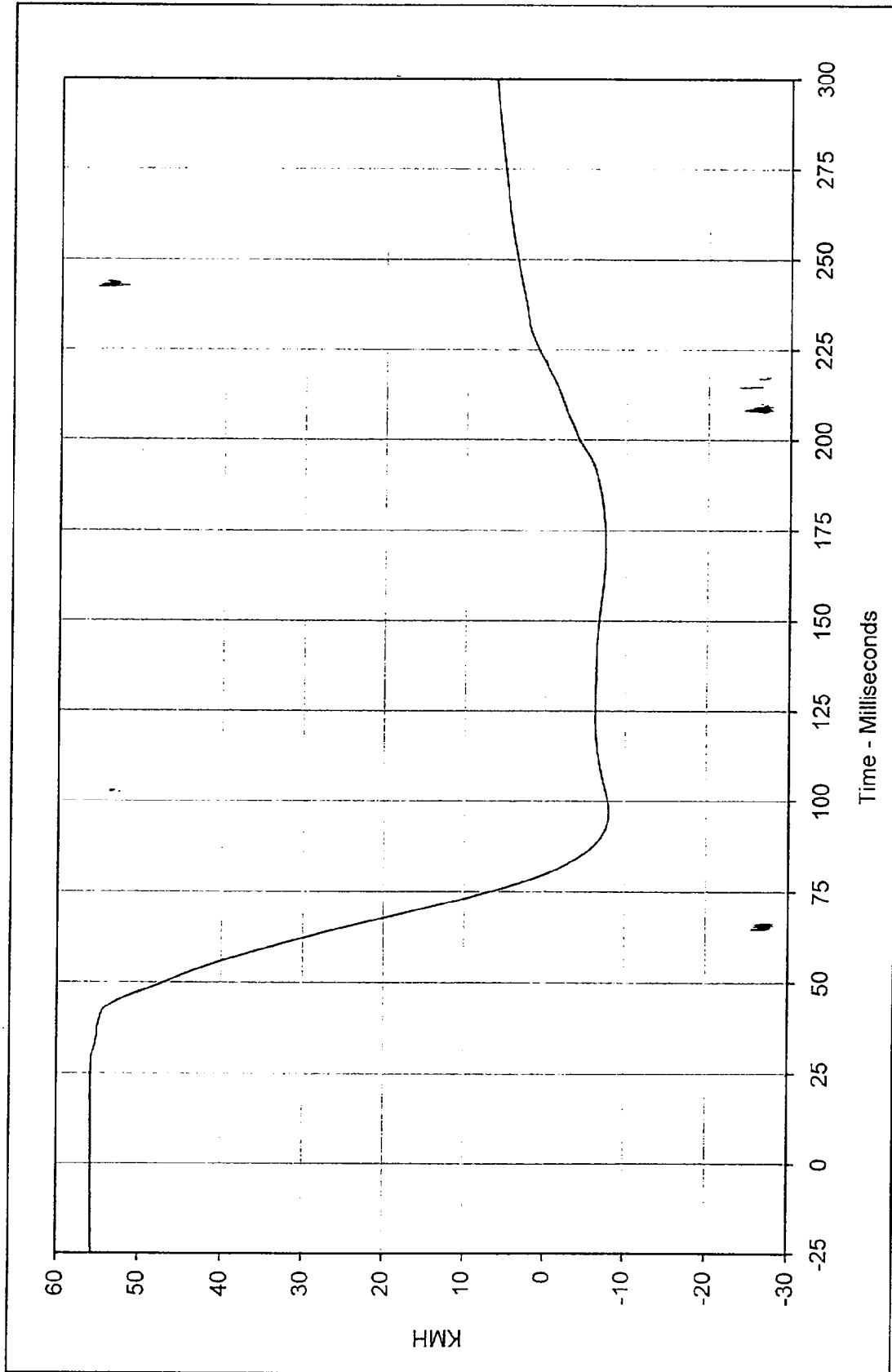
APPENDIX B

DUMMY, VEHICLE, AND RESPONSE DATA TRACES



Curve Description:	Driver Head Primary X		Testing Program:	1997 New Car Assessment Program	
Maximum Value:	9.0	at 197.5 Milliseconds	Test Vehicle:	1997 Toyota Tercel	
Minimum Value:	-55.6	at 66.8 Milliseconds			
SAE Filter Class:	1000				
Date of Test:	3/6/97				
Curve Number:	FIL-001				





Curve Description: Driver Head Primary X Velocity

Maximum Value: 55.9 at 21.8 Milliseconds

Minimum Value: -8.0 at 96.8 Milliseconds

SAE Filter Class: 180

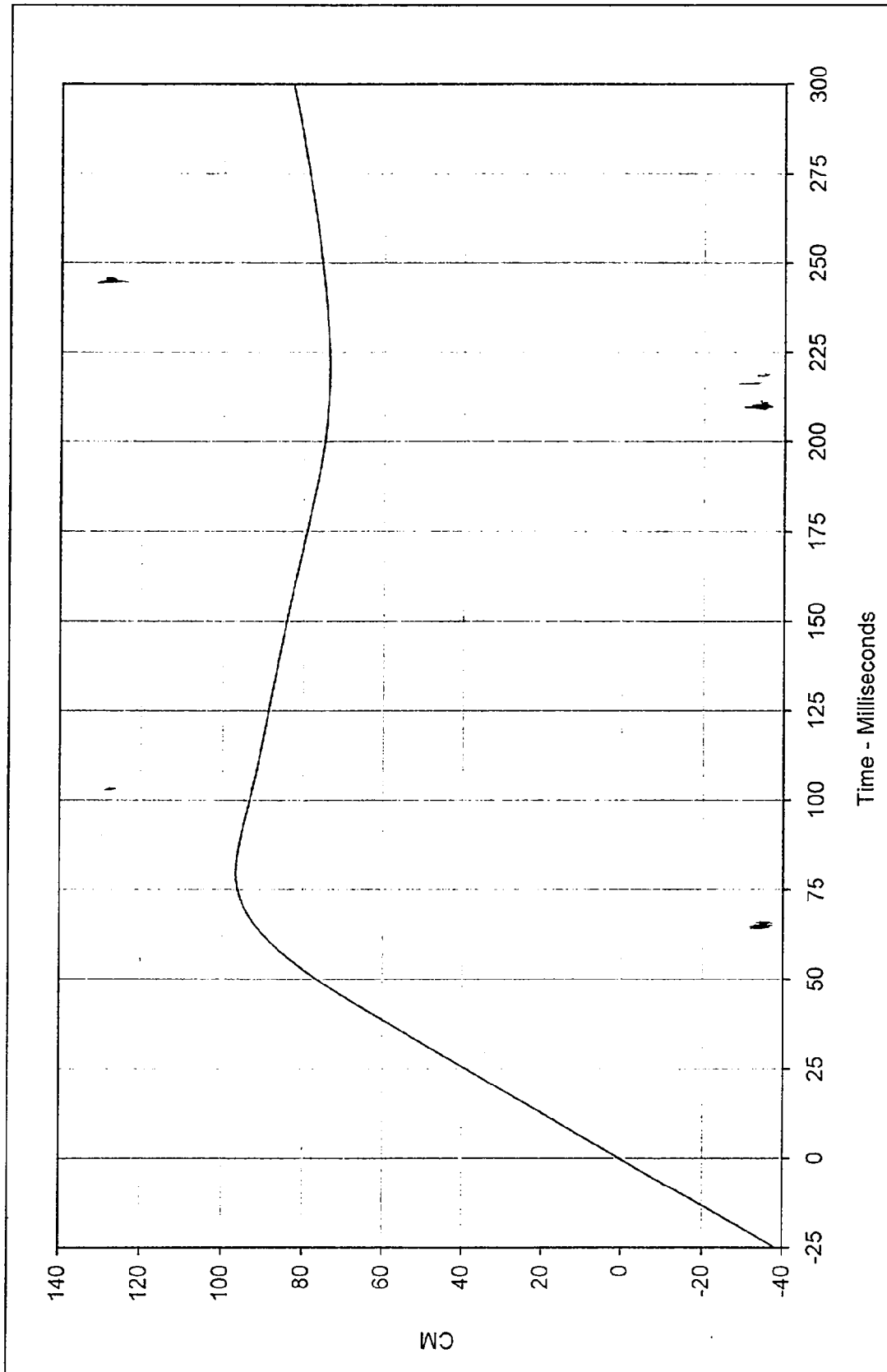
Date of Test: 3/6/97

Curve Number: IN1-001

Testing Program: 1997 New Car Assessment Program

Test Vehicle: 1997 Toyota Tercel





Curve Description: Driver Head Primary X Displ.

Maximum Value: 96.6 at 79.8 Milliseconds

Minimum Value: 0.3 at 0.0 Milliseconds

SAE Filter Class: 180

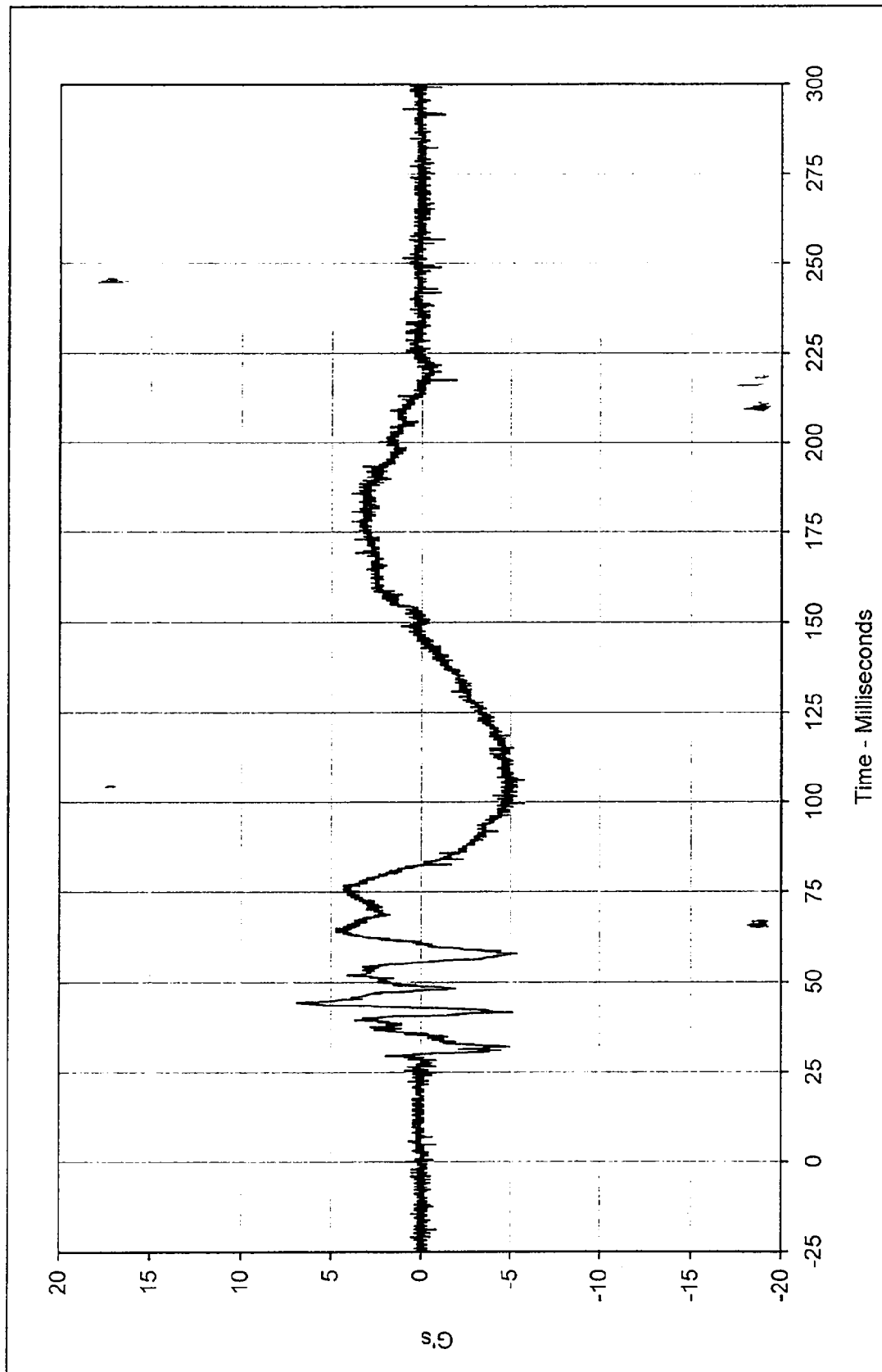
Date of Test: 3/6/97

Curve Number: IN2-001

Testing Program: 1997 New Car Assessment Program

Test Vehicle: 1997 Toyota Tercel





Curve Description: Driver Head Primary Y

Maximum Value: 6.9 at 44.2 Milliseconds

Minimum Value: -5.8 at 99.6 Milliseconds

SAE Filter Class: 1000

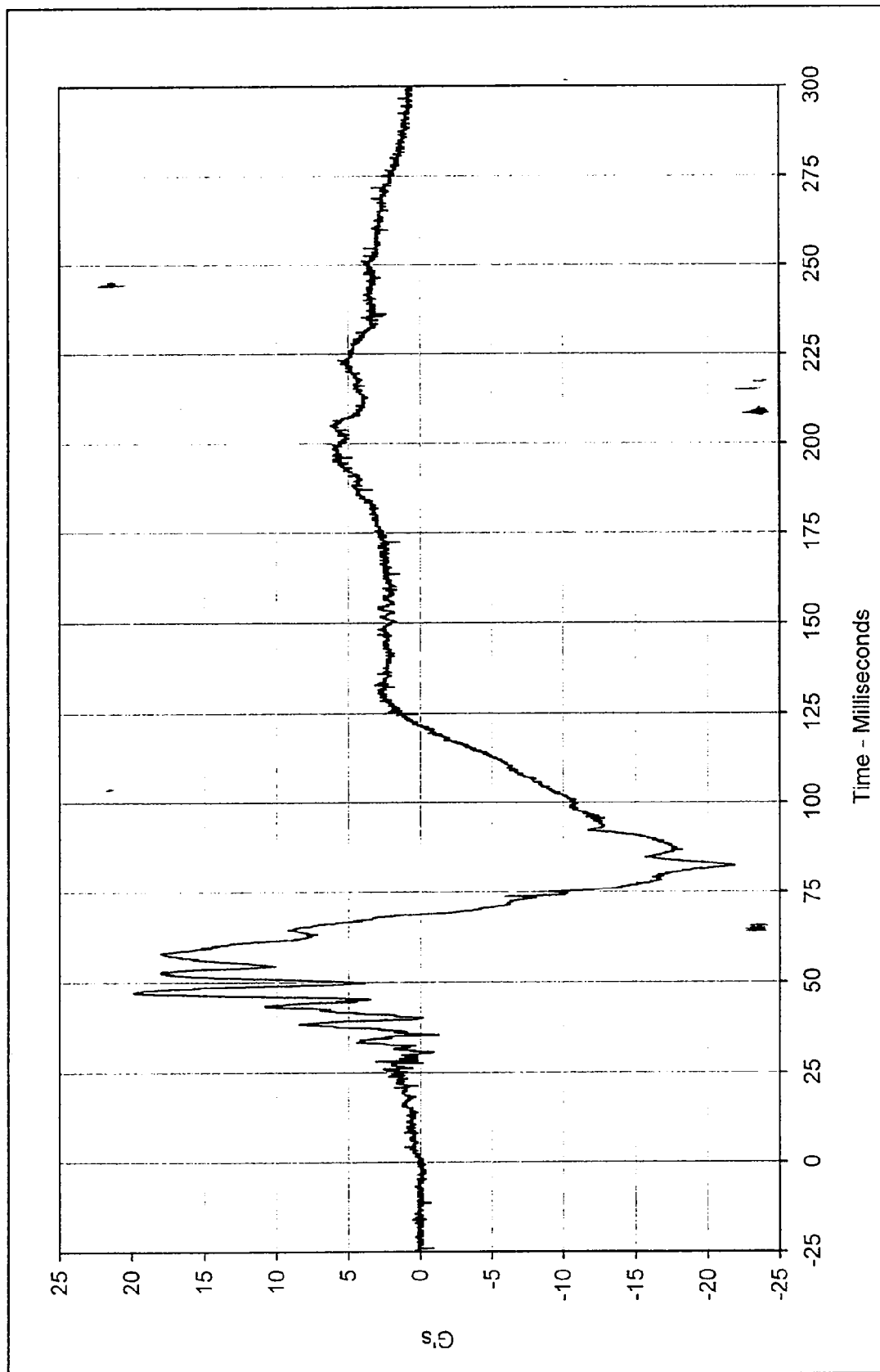
Date of Test: 3/6/97

Curve Number: FIL-002

Testing Program: 1997 New Car Assessment Program

Test Vehicle: 1997 Toyota Tercel

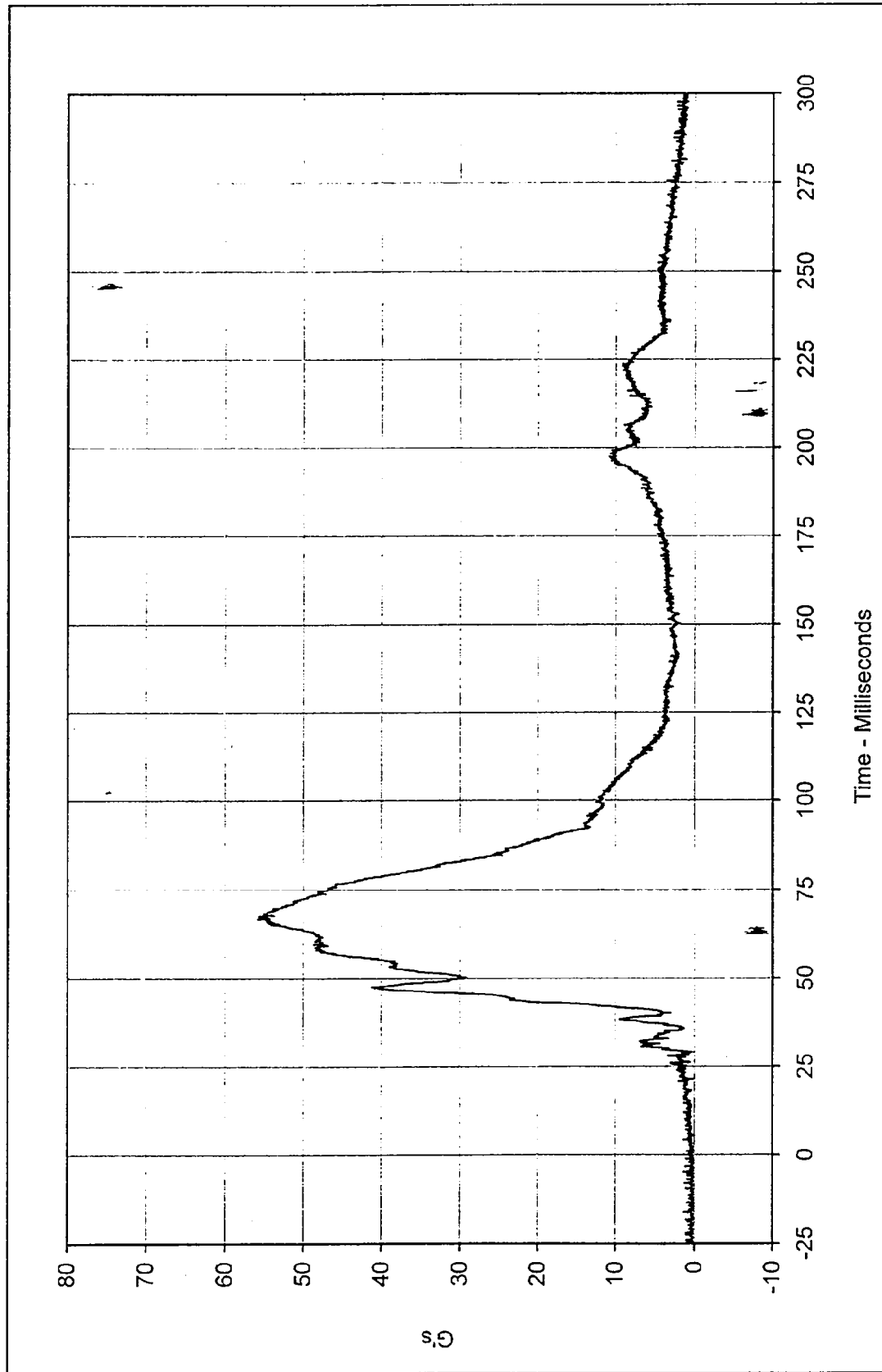




Curve Description: Driver Head Primary Z
 Maximum Value: 19.8 at 46.8 Milliseconds
 Minimum Value: -21.9 at 82.4 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 3/6/97
 Curve Number: FIL-003

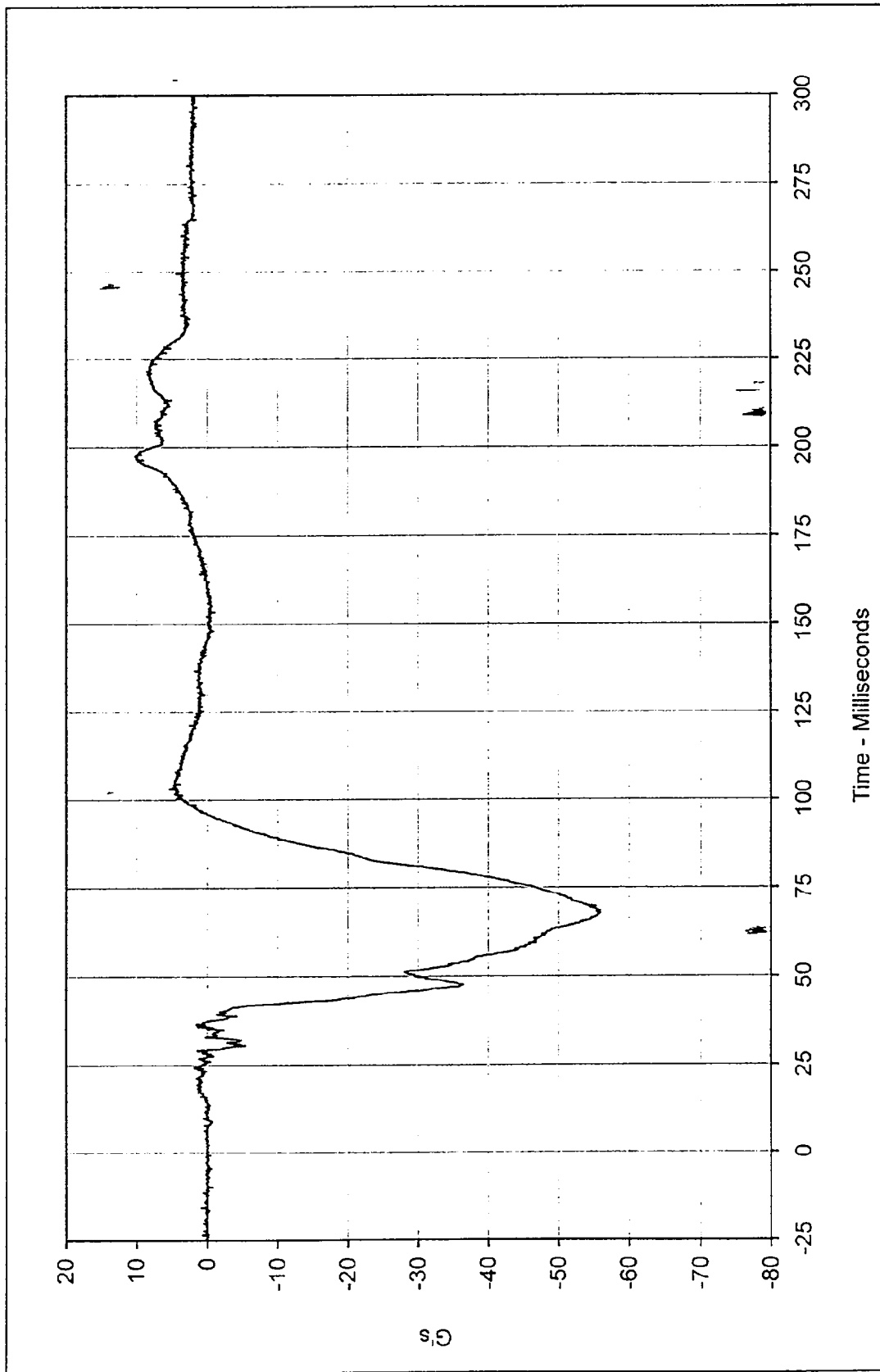
Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel





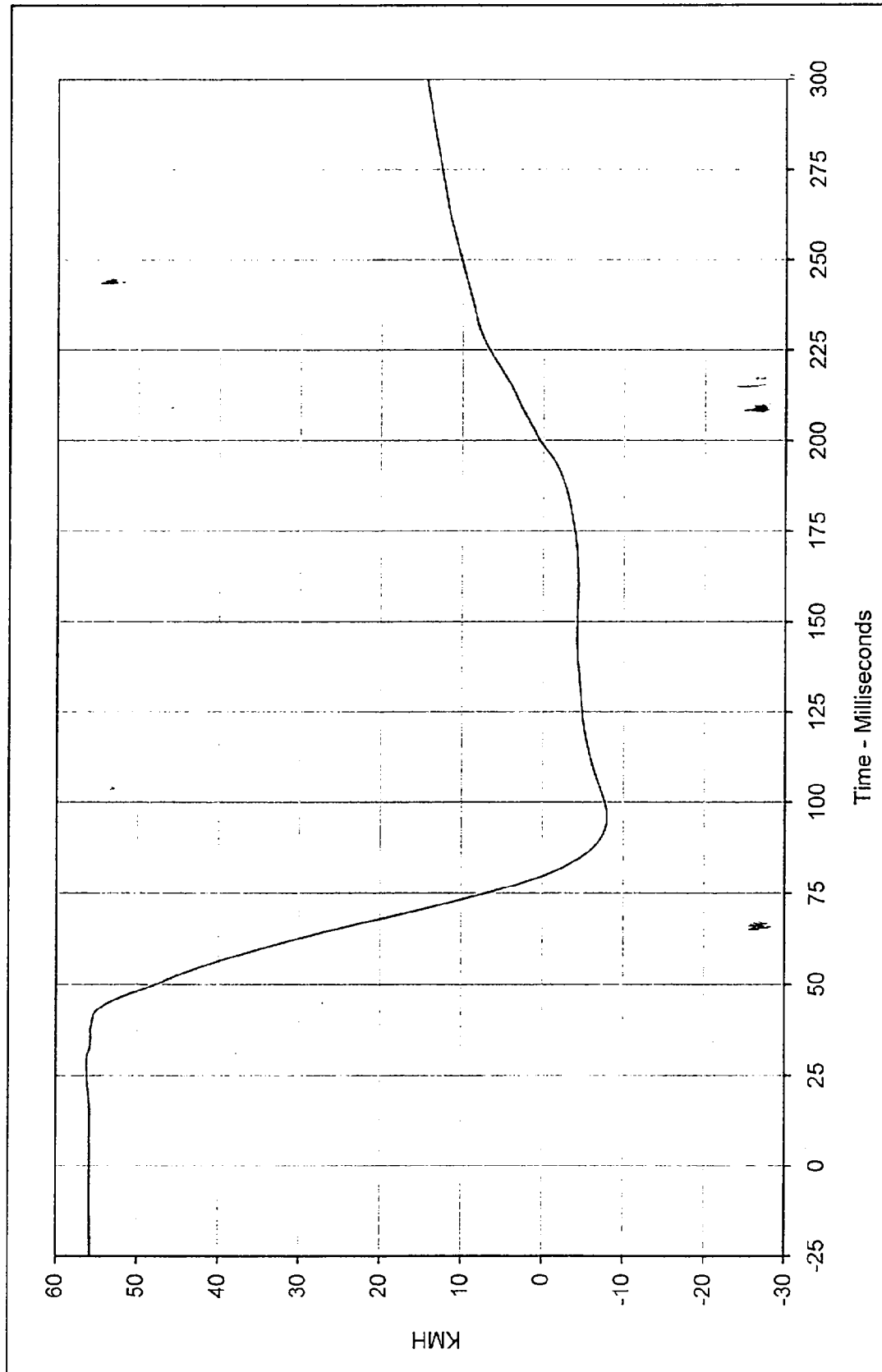
Curve Description: <u>Driver Head Resultant Primary</u>		Testing Program: <u>1997 New Car Assessment Program</u>	
Maximum Value: <u>55.9</u>	at <u>66.8</u> Milliseconds	Test Vehicle: <u>1997 Toyota Tercel</u>	
Minimum Value: <u>0.1</u>	at <u>1.1</u> Milliseconds		
SAE Filter Class: <u>1000</u>			
Date of Test: <u>3/6/97</u>			
Curve Number: <u>RES-001</u>			





Curve Description:	Driver Head Redundant X	Testing Program:	1997 New Car Assessment Program
Maximum Value:	10.2 at 197.6 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-56.0 at 67.7 Milliseconds		
SAE Filter Class:	1000		
Date of Test:	3/6/97		
Curve Number:	FIL-004		





Curve Description: Driver Head Redundant X Velocity Testing Program: 1997 New Car Assessment Program

Maximum Value: 56.2 at 29.1 Milliseconds Test Vehicle: 1997 Toyota Tercel

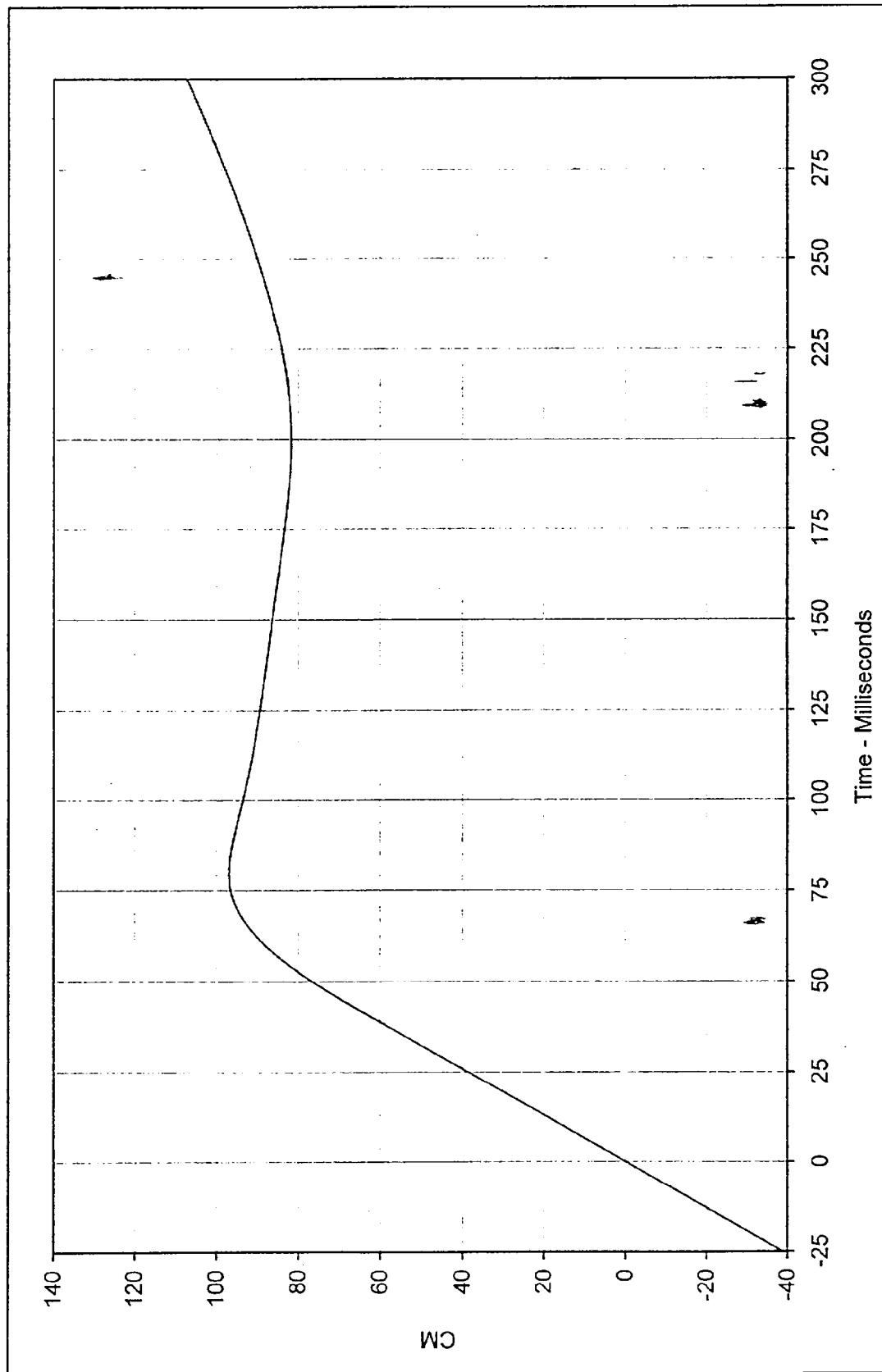
Minimum Value: -8.0 at 95.9 Milliseconds

SAE Filter Class: 180

Date of Test: 3/6/97

Curve Number: IN1-004



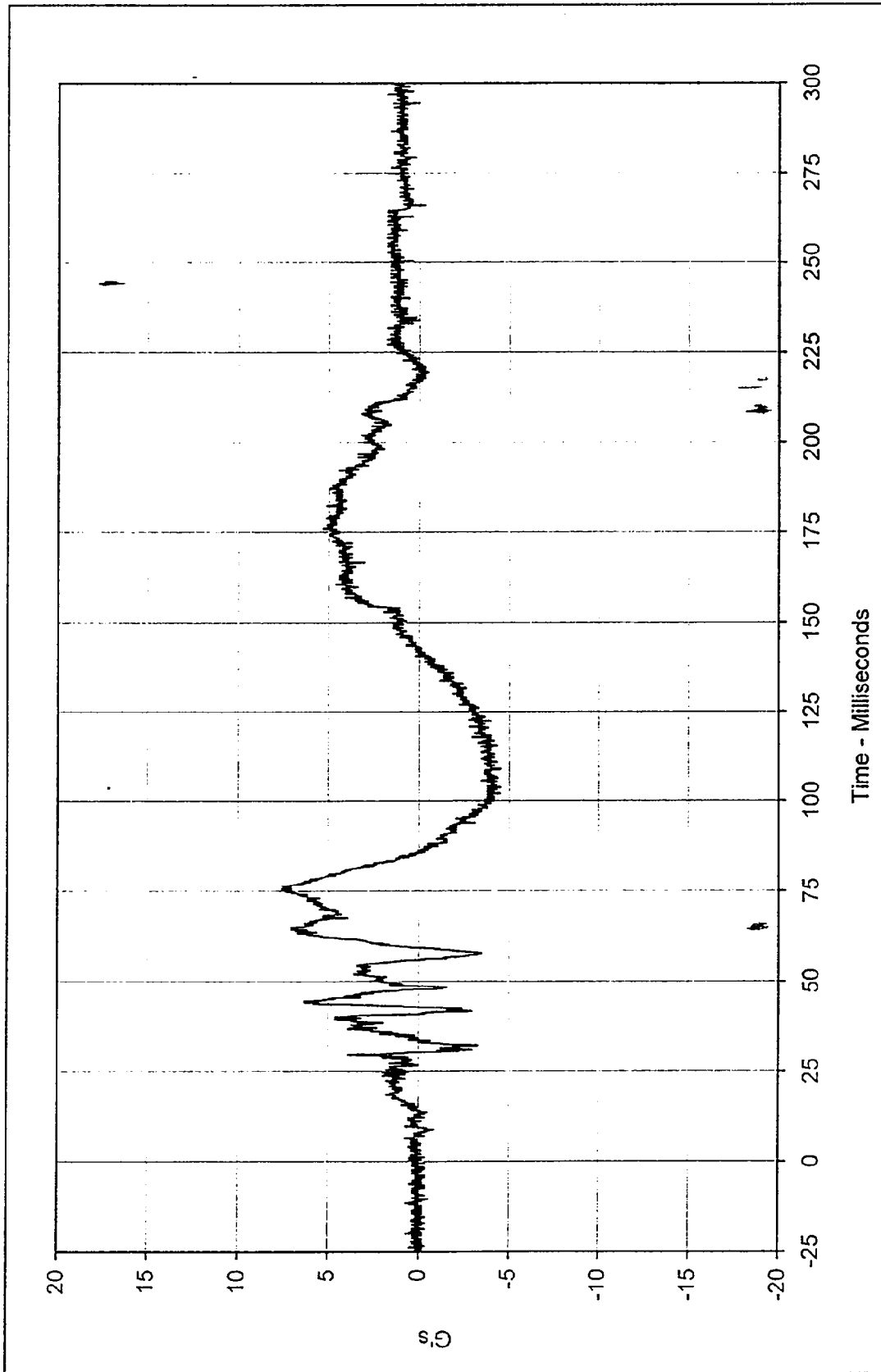


B9

Curve Description: Driver Head Redundant X Displ.
 Maximum Value: 107.2 at 299.9 Milliseconds
 Minimum Value: -0.2 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 3/6/97
 Curve Number: IN2-004

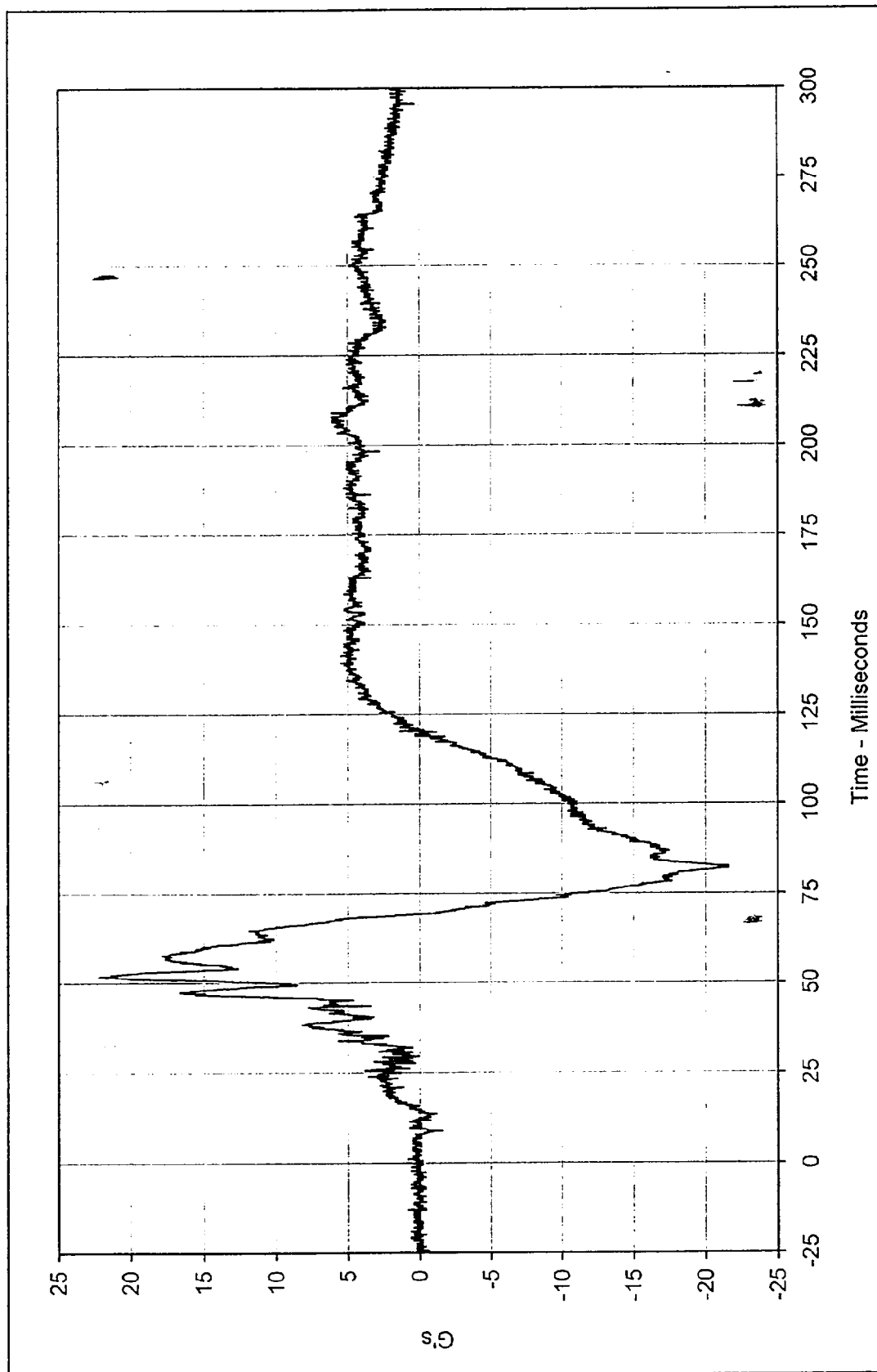
Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel





Curve Description:	Driver Head Redundant Y				Testing Program:	1997 New Car Assessment Program	
Maximum Value:	7.6	at	75.2	Milliseconds	Test Vehicle:	1997 Toyota Tercel	
Minimum Value:	-4.5	at	102	Milliseconds			
SAE Filter Class:	1000						
Date of Test:	3/6/97						
Curve Number:	FIL-005						

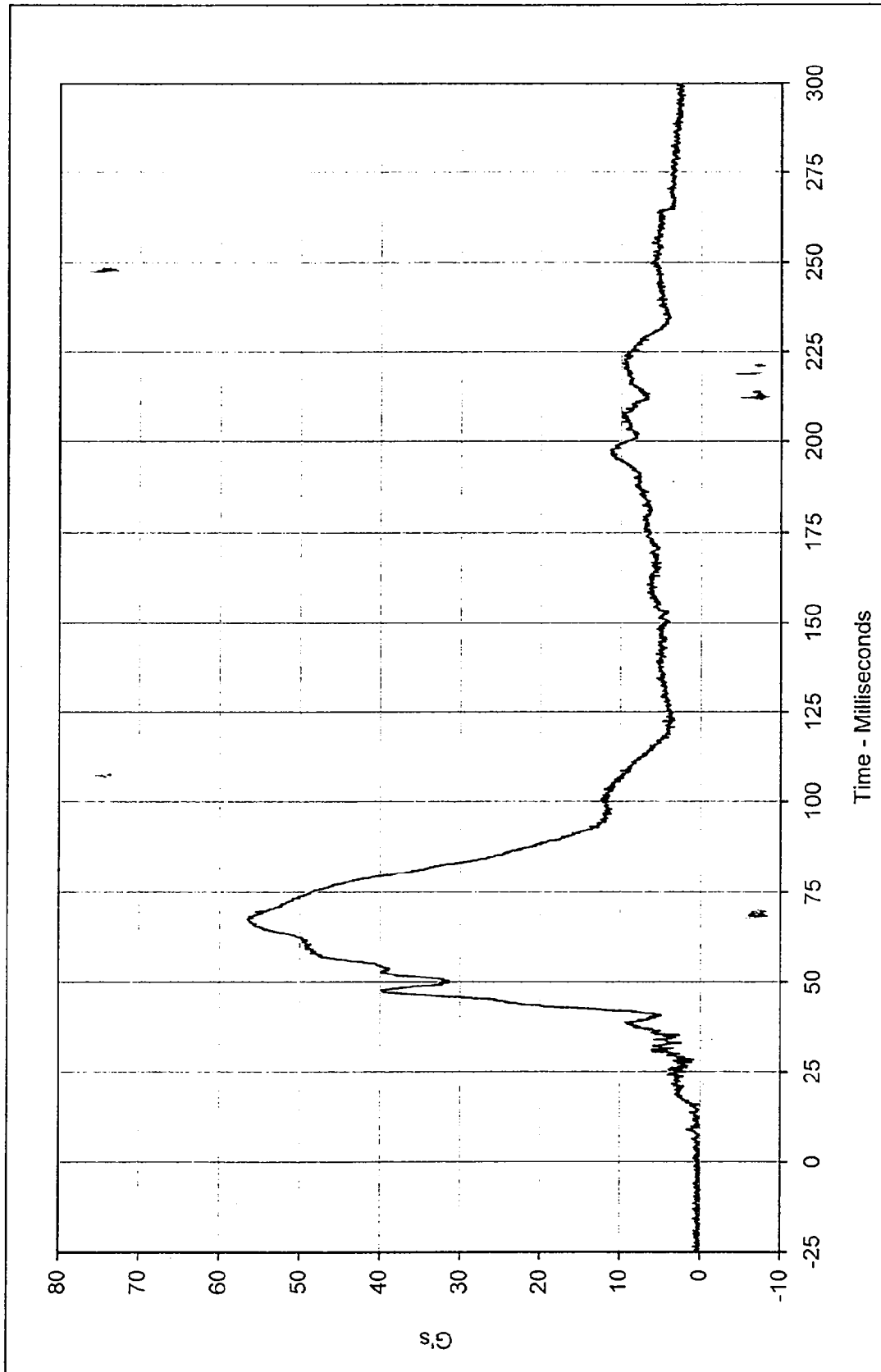




B11

Curve Description:	Driver Head Redundant Z	Testing Program:	1997 New Car Assessment Program
Maximum Value:	22.2 at 51.9 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-21.6 at 82.2 Milliseconds		
SAE Filter Class:	1000		
Date of Test:	3/6/97		
Curve Number:	FIL-006		

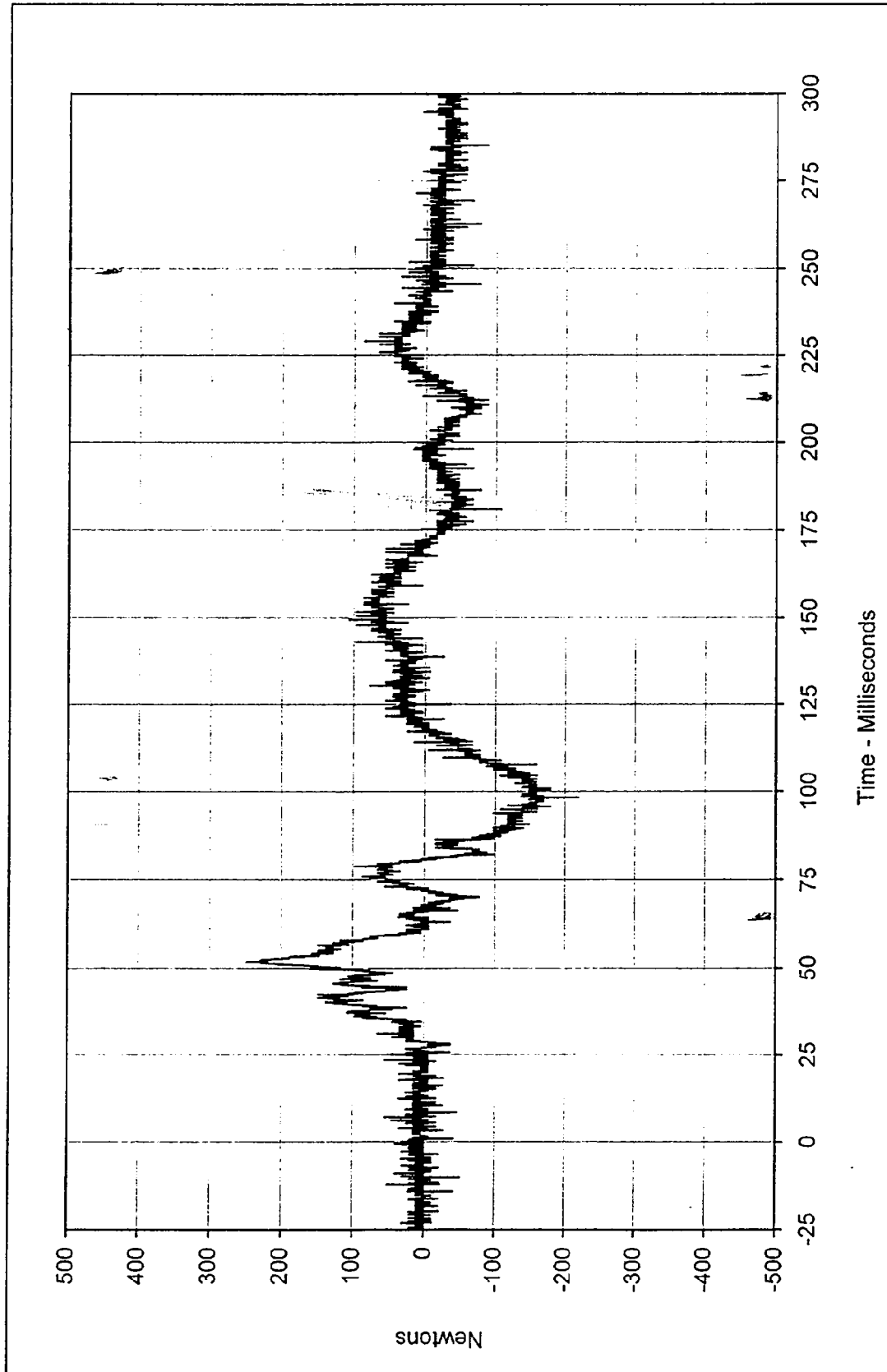




B12

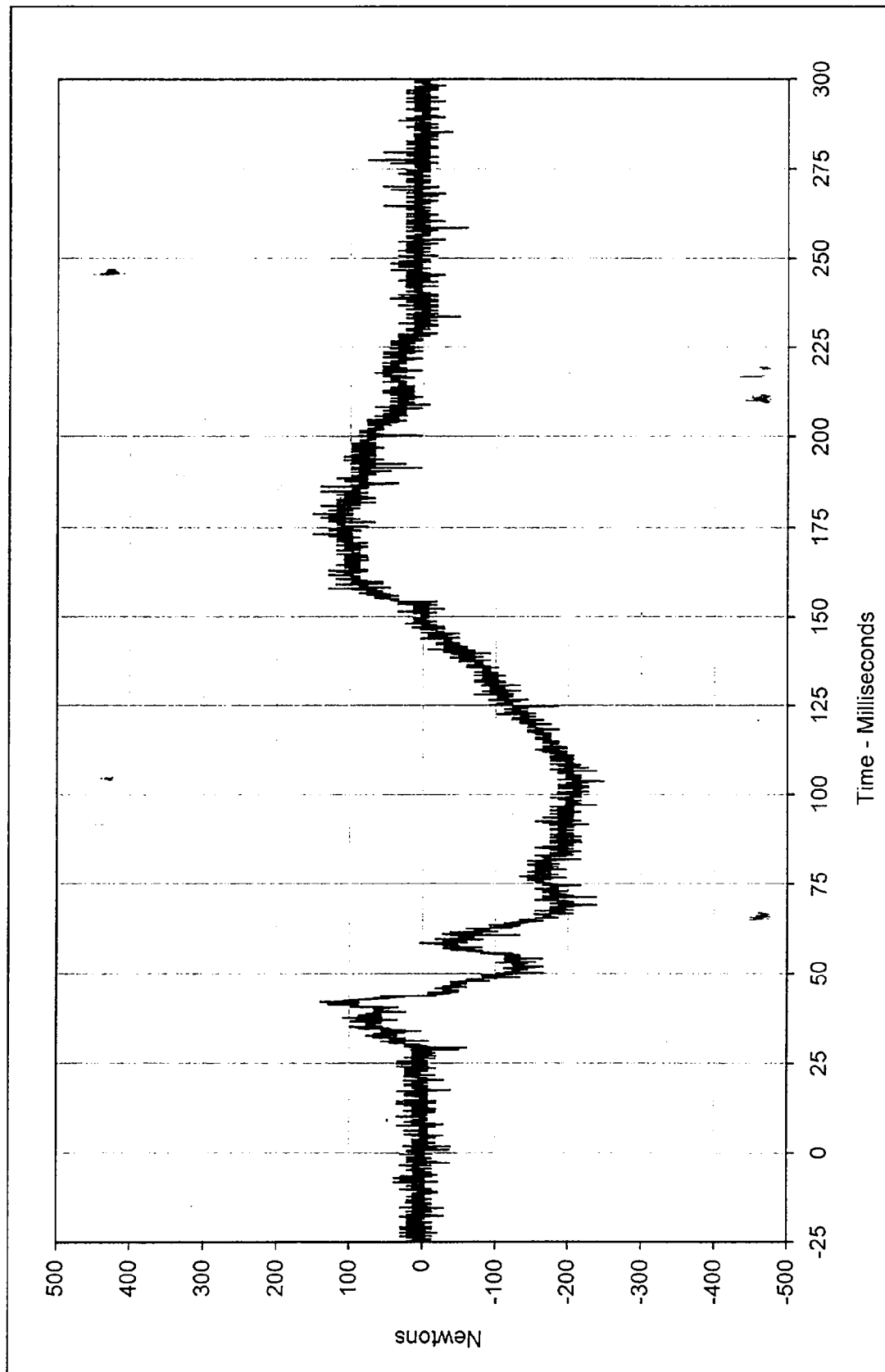
Curve Description:	Driver Head Resultant Redundant	Testing Program:	1997 New Car Assessment Program
Maximum Value:	56.5 at 67.7 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	0.1 at 5.5 Milliseconds		
SAE Filter Class:	1000		
Date of Test:	3/6/97		
Curve Number:	RES-004		





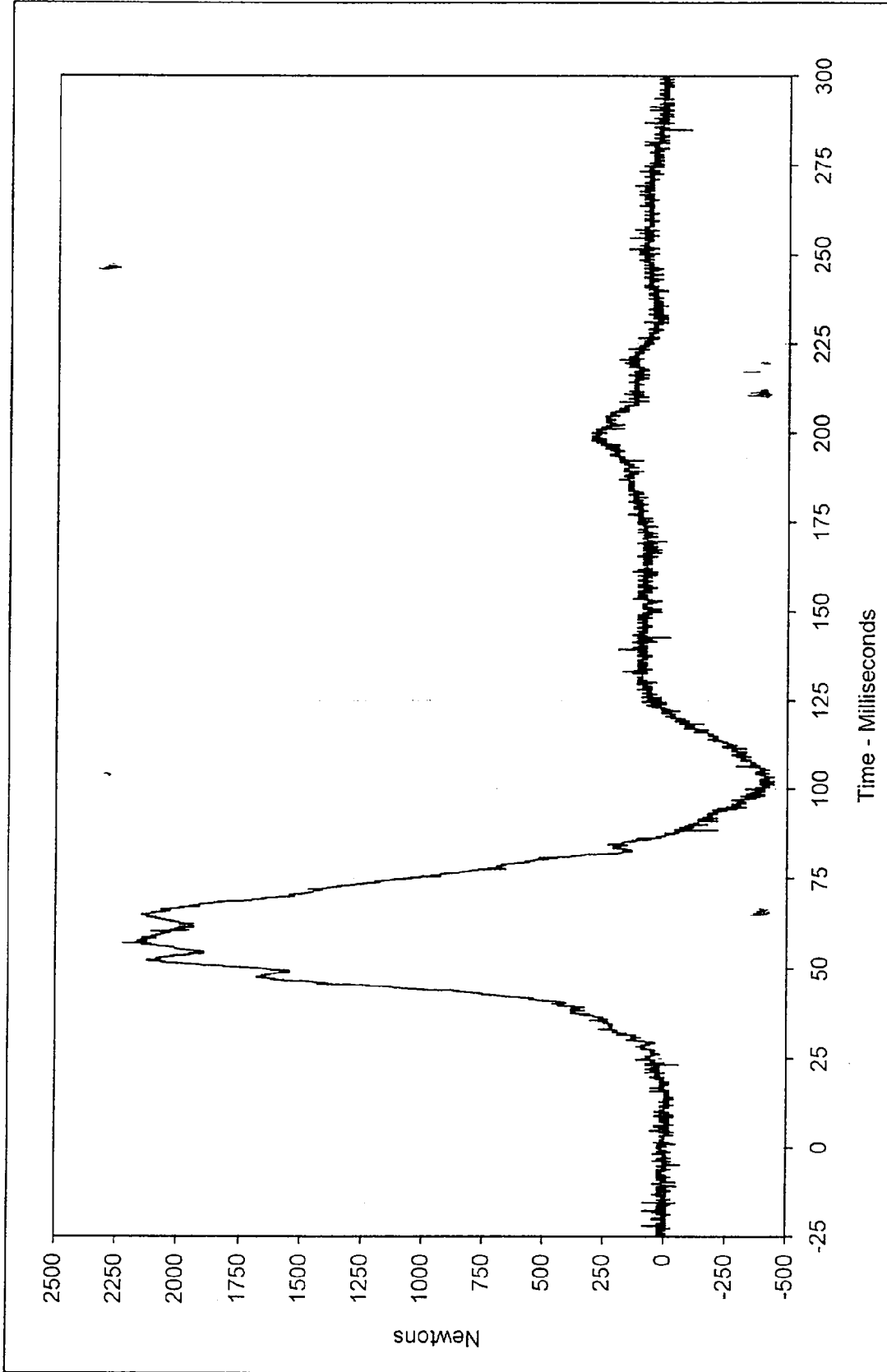
Curve Description:	Driver Neck Force X		Testing Program:	1997 New Car Assessment Program	
Maximum Value:	248.8	at 51.8 Milliseconds	Test Vehicle:	1997 Toyota Tercel	
Minimum Value:	-219.9	at 98.3 Milliseconds			
SAE Filter Class:	1000				
Date of Test:	3/6/97				
Curve Number:	FIL-007				





Curve Description:	Driver Neck Force Y	Testing Program:	1997 New Car Assessment Program
Maximum Value:	150.2 at 173.1 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-249.5 at 103.6 Milliseconds		
SAE Filter Class:	1000		
Date of Test:	3/6/97		
Curve Number:	FIL-008		

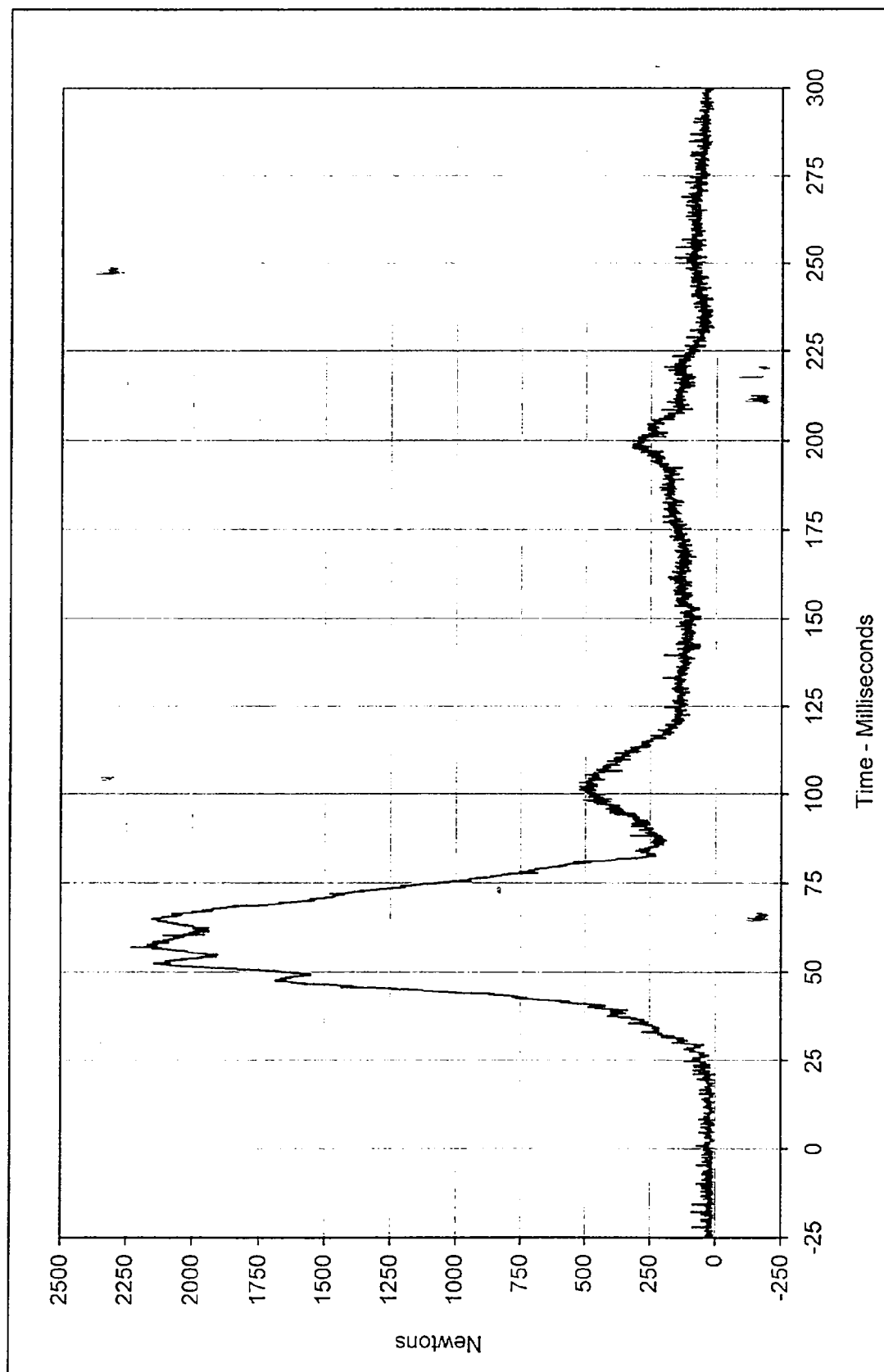




B15

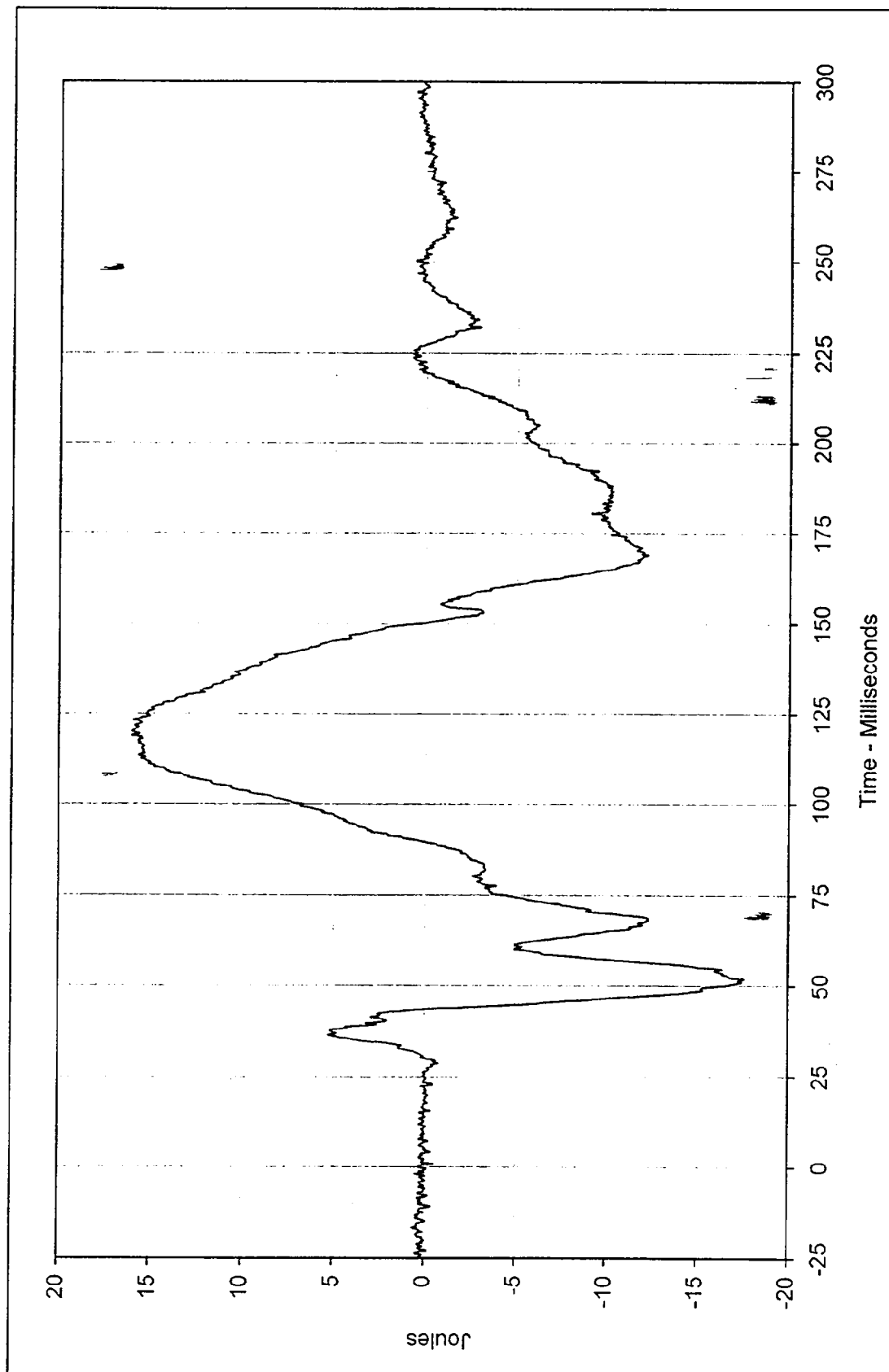
Curve Description:	Driver Neck Force Z	Testing Program:	1997 New Car Assessment Program
Maximum Value:	2224.6 at 57.1 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-445.5 at 101.2 Milliseconds		
SAE Filter Class:	1000		
Date of Test:	3/6/97		
Curve Number:	FIL-009		





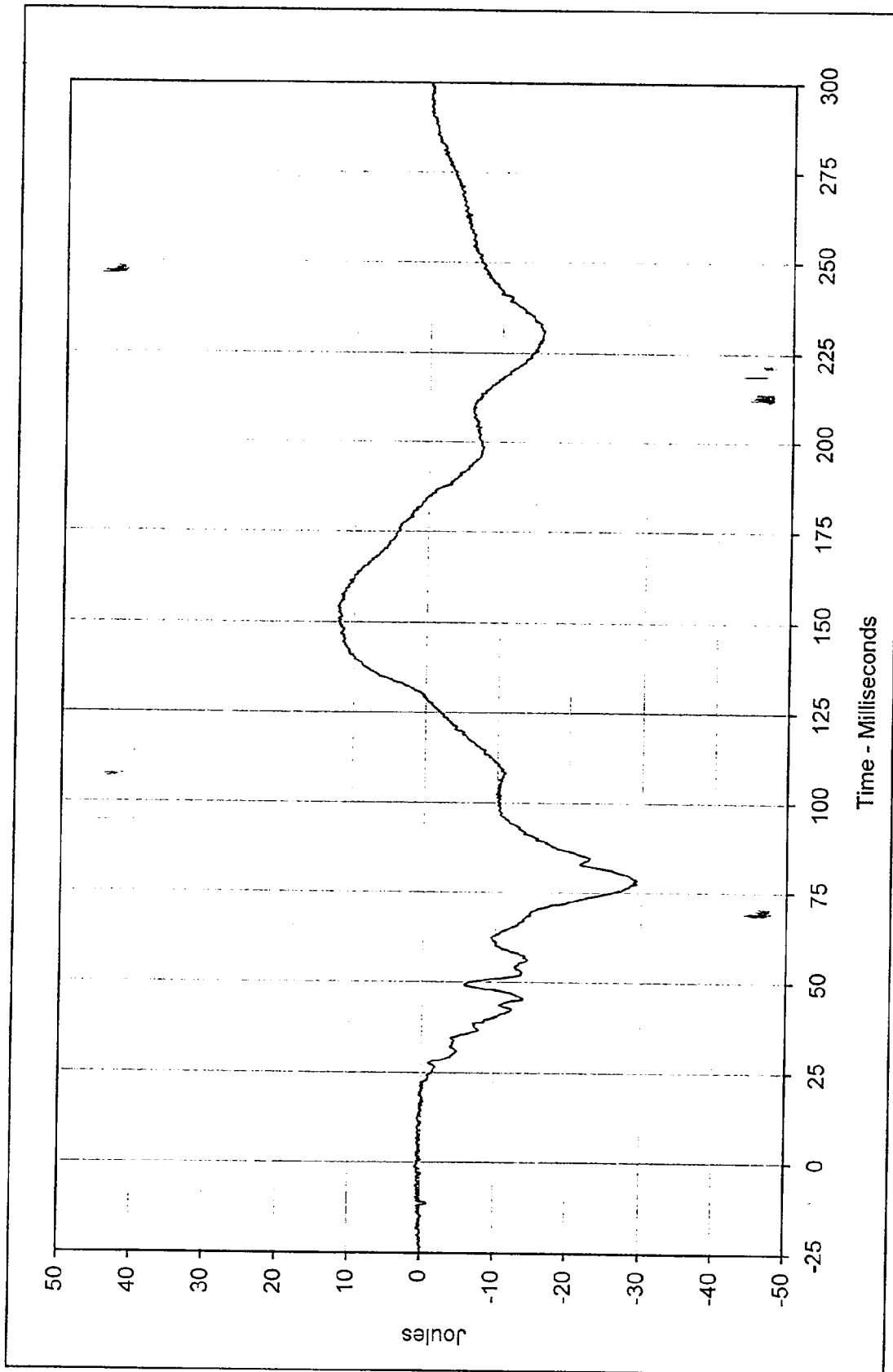
Curve Description:	Driver Neck Force Resultant	Testing Program:	1997 New Car Assessment Program
Maximum Value:	2228.4 at 57.1 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	5.2 at 6.6 Milliseconds		
SAE Filter Class:	1000		
Date of Test:	3/6/97		
Curve Number:	RES-007		





Curve Description:	Driver Neck Moment X	Testing Program:	1997 New Car Assessment Program
Maximum Value:	16.0 at 119.1 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-17.6 at 52.0 Milliseconds		
SAE Filter Class:	600		
Date of Test:	3/6/97		
Curve Number:	FIL-010		

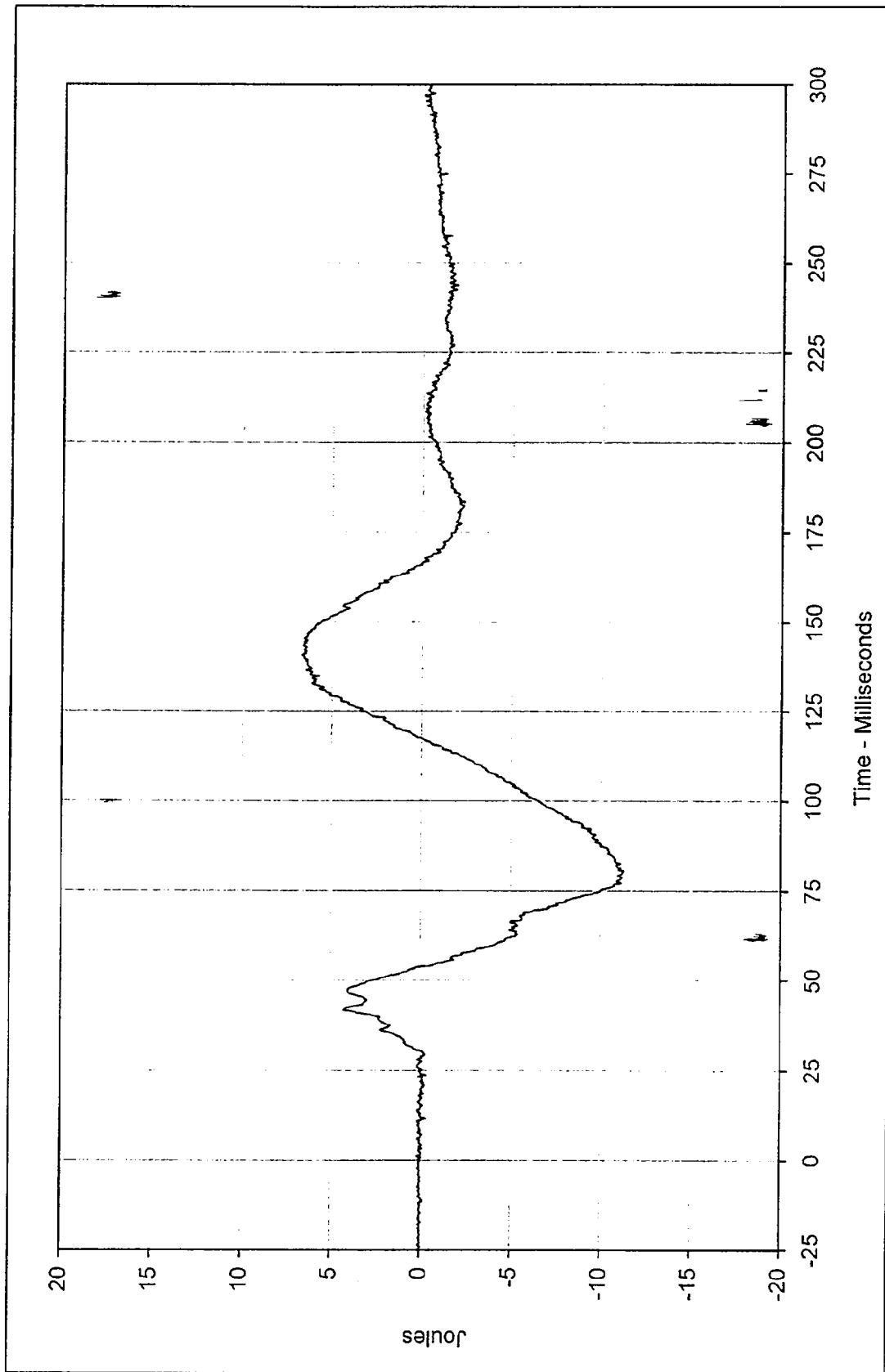




B18

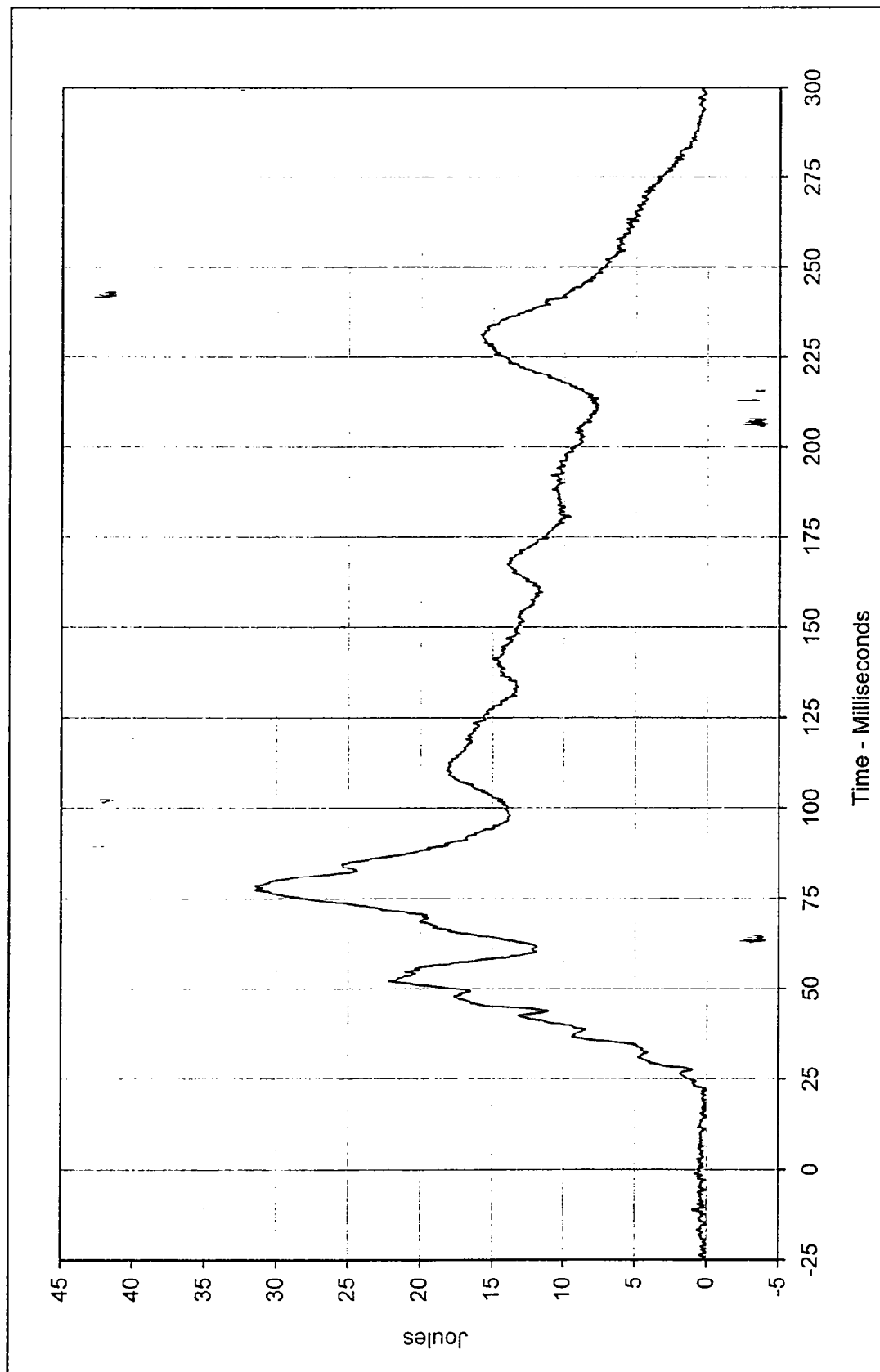
Curve Description:	Driver Neck Moment Y		Testing Program:	1997 New Car Assessment Program	
Maximum Value:	12.2	at 154.3 Milliseconds	Test Vehicle:	1997 Toyota Tercel	
Minimum Value:	-29.3	at 78.4 Milliseconds			
SAE Filter Class:	600				
Date of Test:	3/6/97				
Curve Number:	FIL-011				





Curve Description:	Driver Neck Moment Z	Testing Program:	1997 New Car Assessment Program
Maximum Value:	6.7 at 140.8 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-11.3 at 80.6 Milliseconds		
SAE Filter Class:	600		
Date of Test:	3/6/97		
Curve Number:	FIL-012		

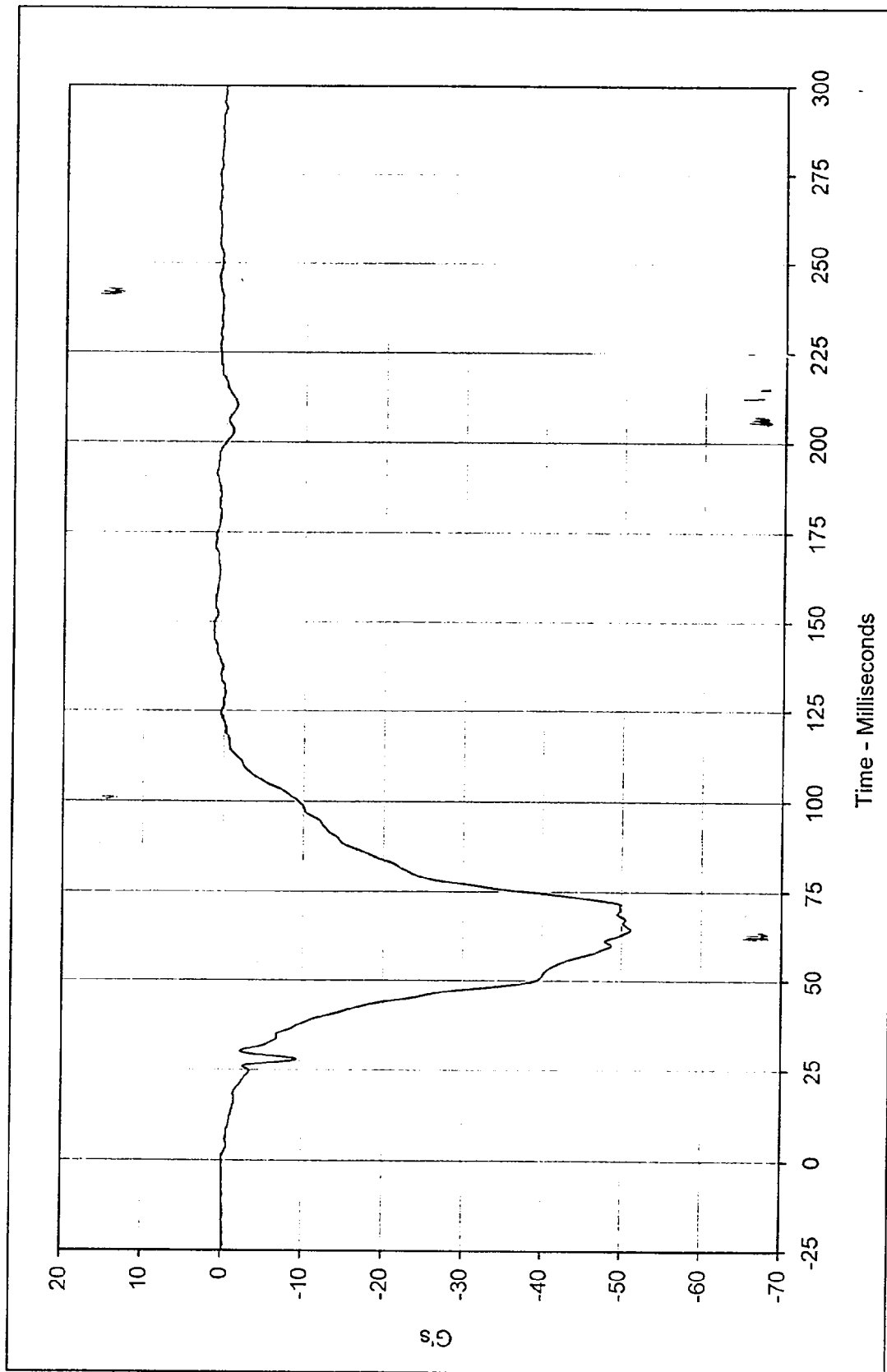




B20

Curve Description:	Driver Neck Moment Resultant	Testing Program:	1997 New Car Assessment Program
Maximum Value:	31.5 at 78.5 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	0.0 at 14.6 Milliseconds		
SAE Filter Class:	600		
Date of Test:	3/6/97		
Curve Number:	RES-010		

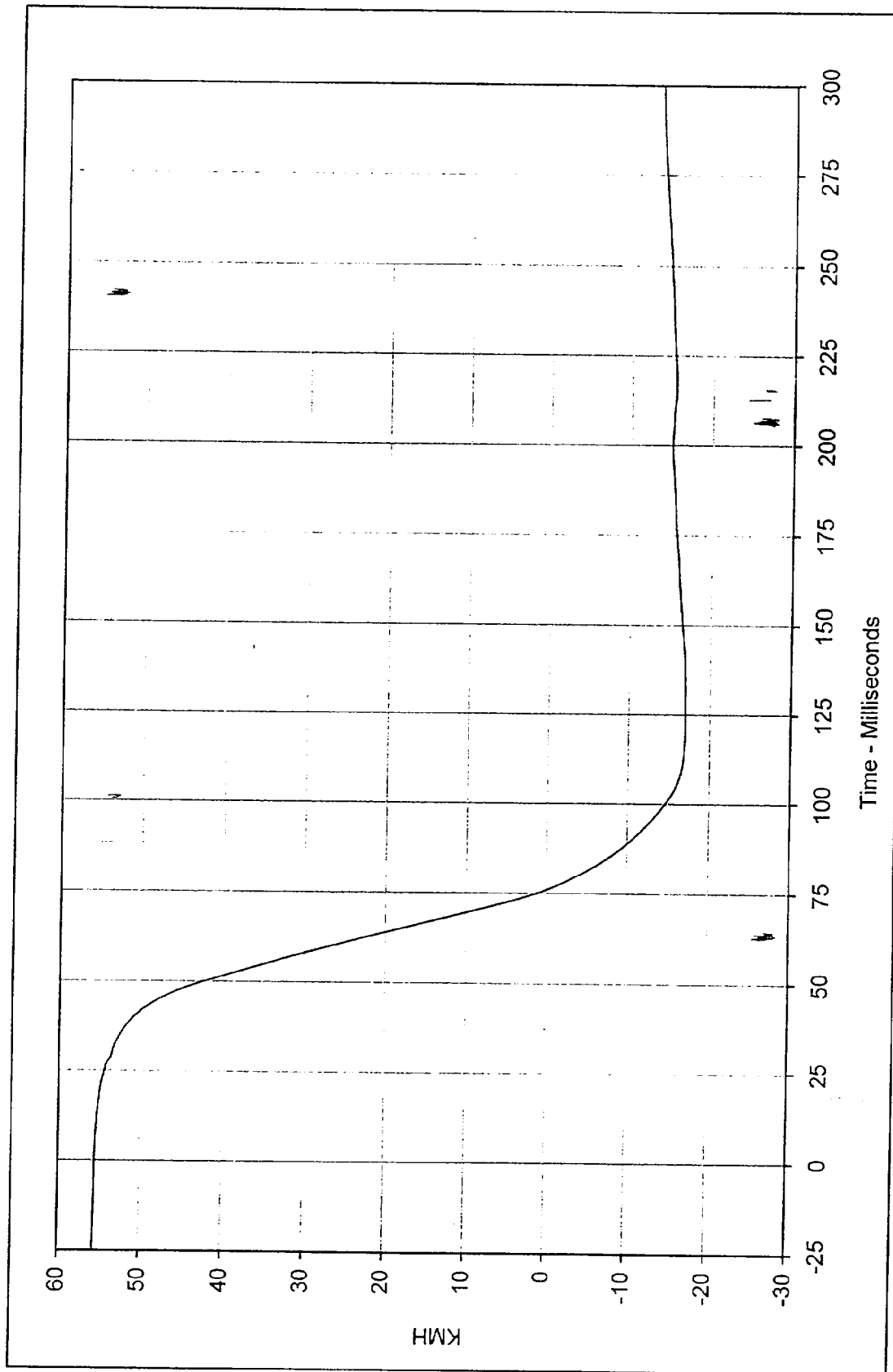




Curve Description: Driver Chest Primary X
 Maximum Value: 1.3 at 147.7 Milliseconds
 Minimum Value: -51.1 at 64.5 Milliseconds
 SAE Filter Class: 180
 Date of Test: 3/6/97
 Curve Number: FIL-013

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel

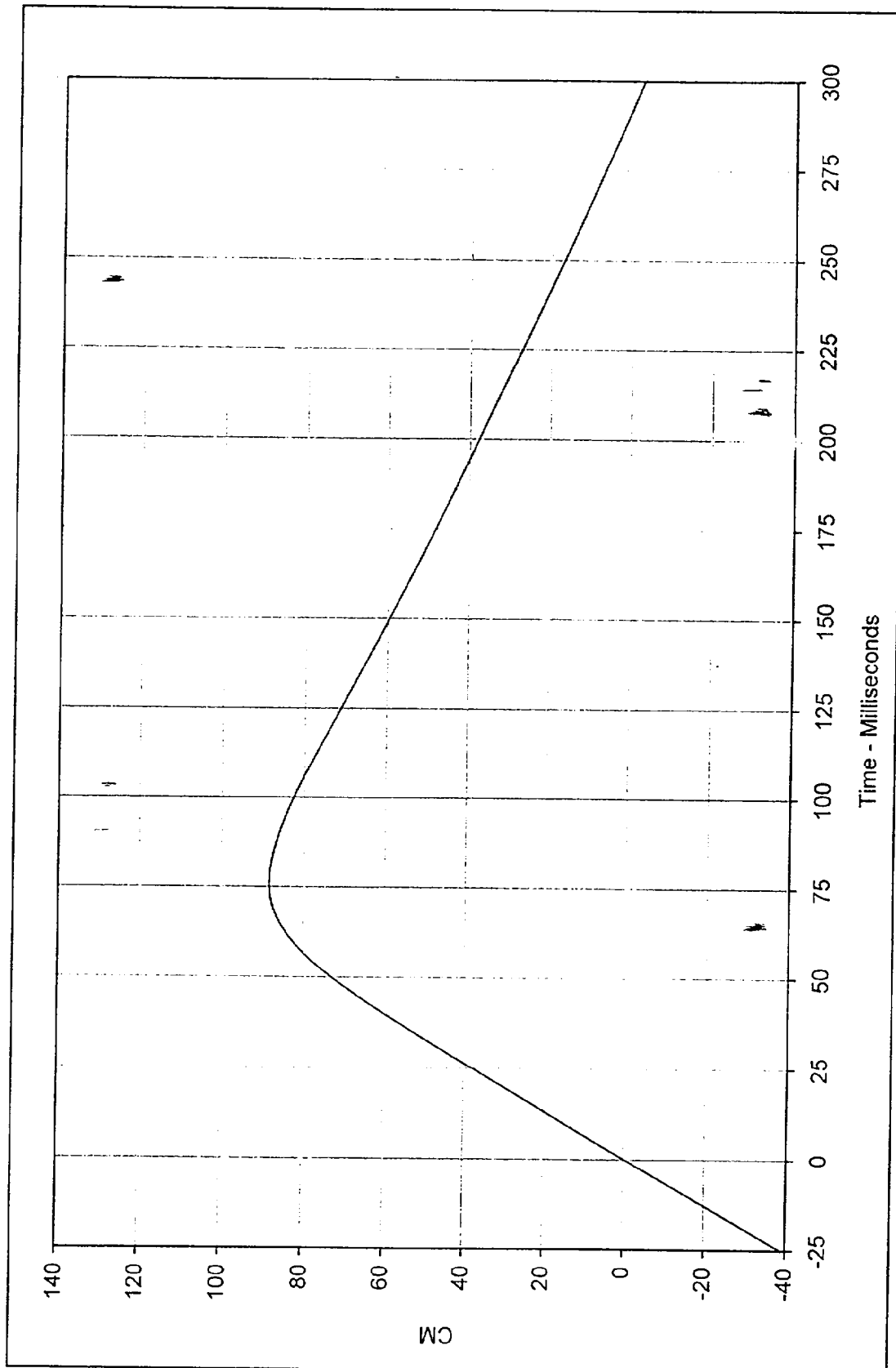




B22

Curve Description:	Driver Chest Primary X Velocity	Testing Program:	1997 New Car Assessment Program
Maximum Value:	55.5 at 0.0 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-17.0 at 122.0 Milliseconds		
SAE Filter Class:	180		
Date of Test:	3/6/97		
Curve Number:	IN1-013		

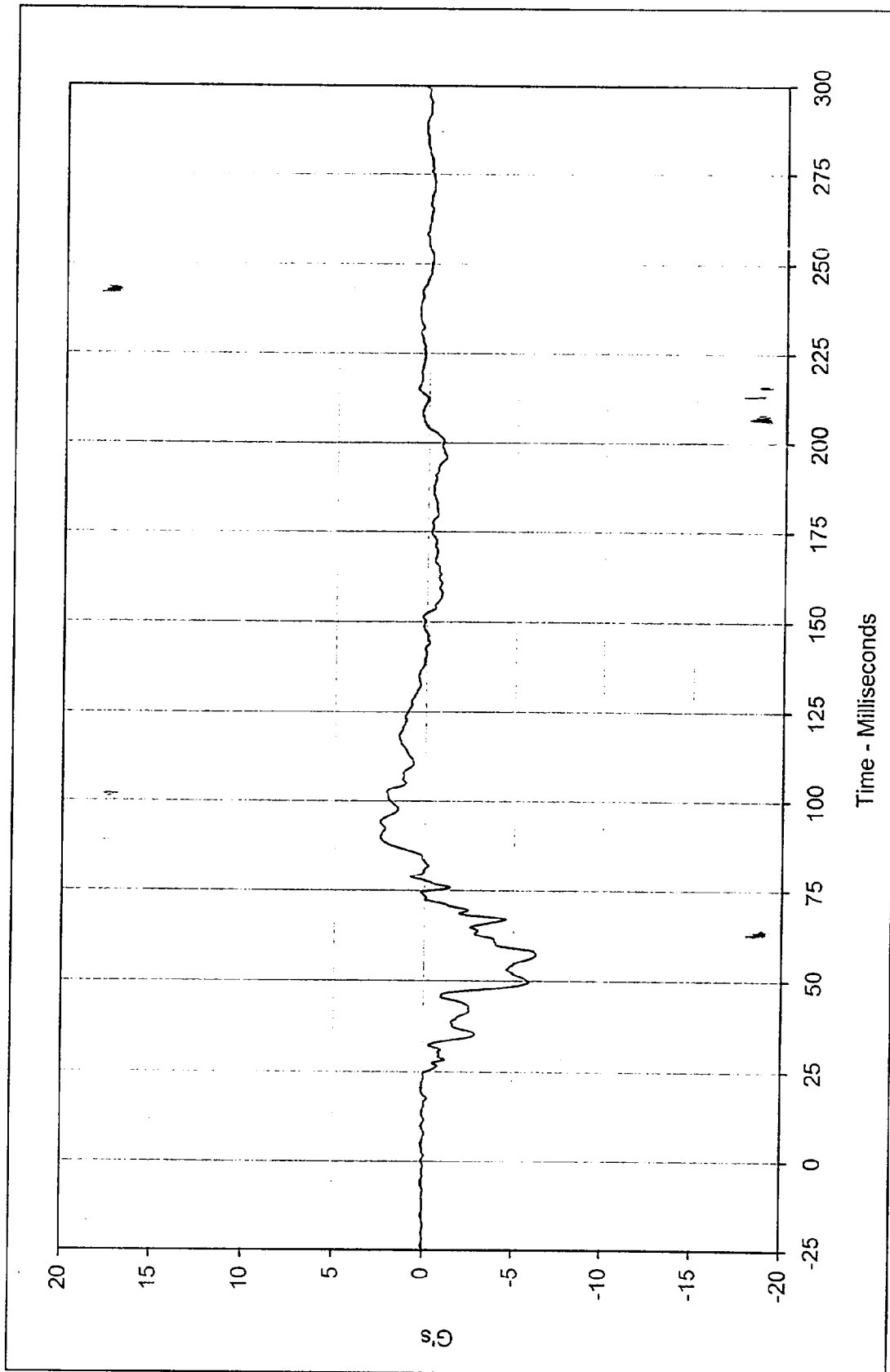




B23

Curve Description:	Driver Chest Primary X Displ.	Testing Program:	1997 New Car Assessment Program
Maximum Value:	88.4 at 76.1 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-2.6 at 299.9 Milliseconds		
SAE Filter Class:	180		
Date of Test:	3/6/97		
Curve Number:	IN2-013		





Time - Milliseconds

Curve Description:

Driver Chest Primary Y

Testing Program: 1997 New Car Assessment Program

Maximum Value:

2.5 at 94.2 Milliseconds

Minimum Value:

-6.3 at 57.4 Milliseconds

SAE Filter Class:

180

Date of Test:

3/6/97

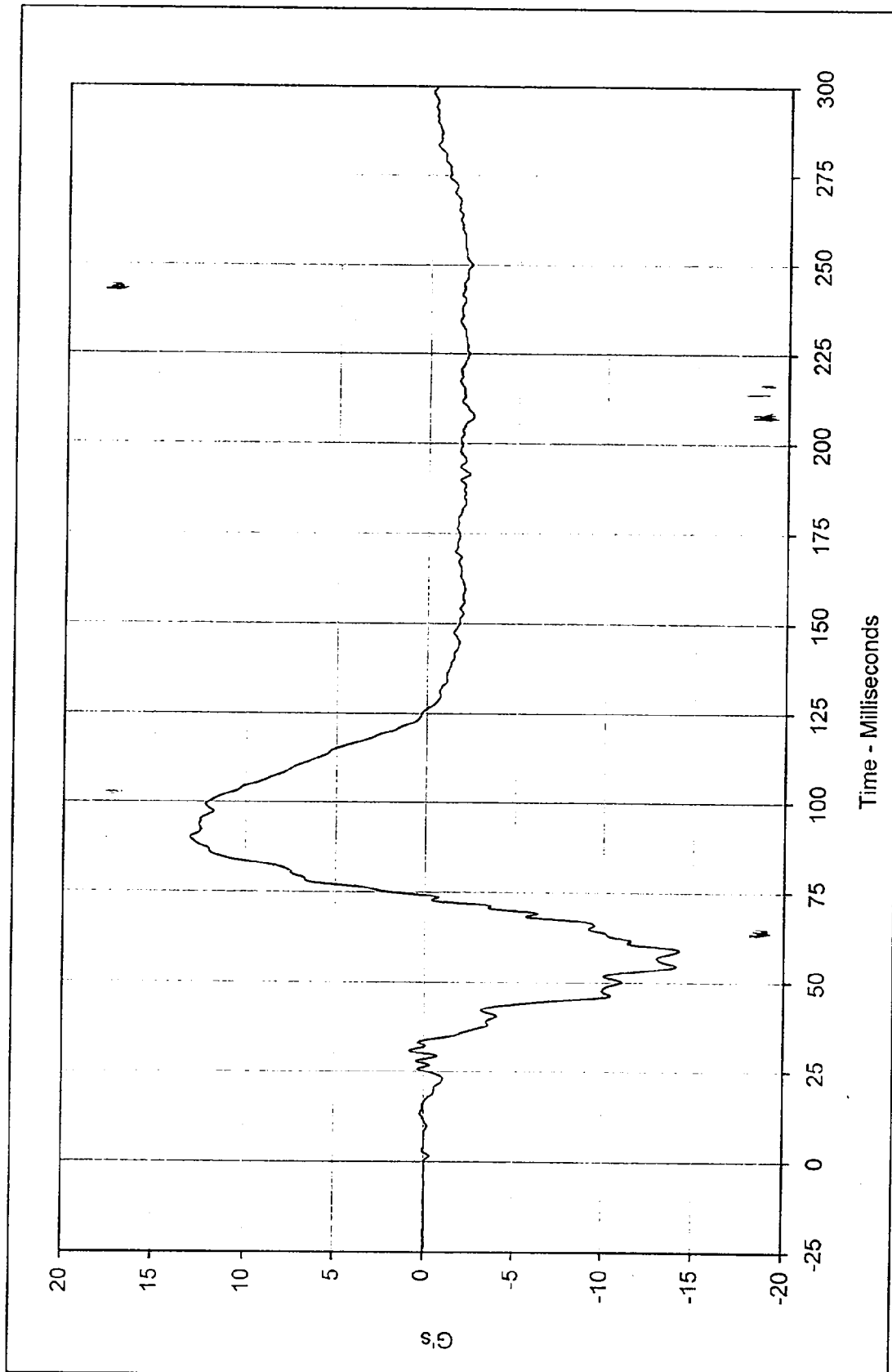
Curve Number:

FIL-014

Test Vehicle:

1997 Toyota Tercel

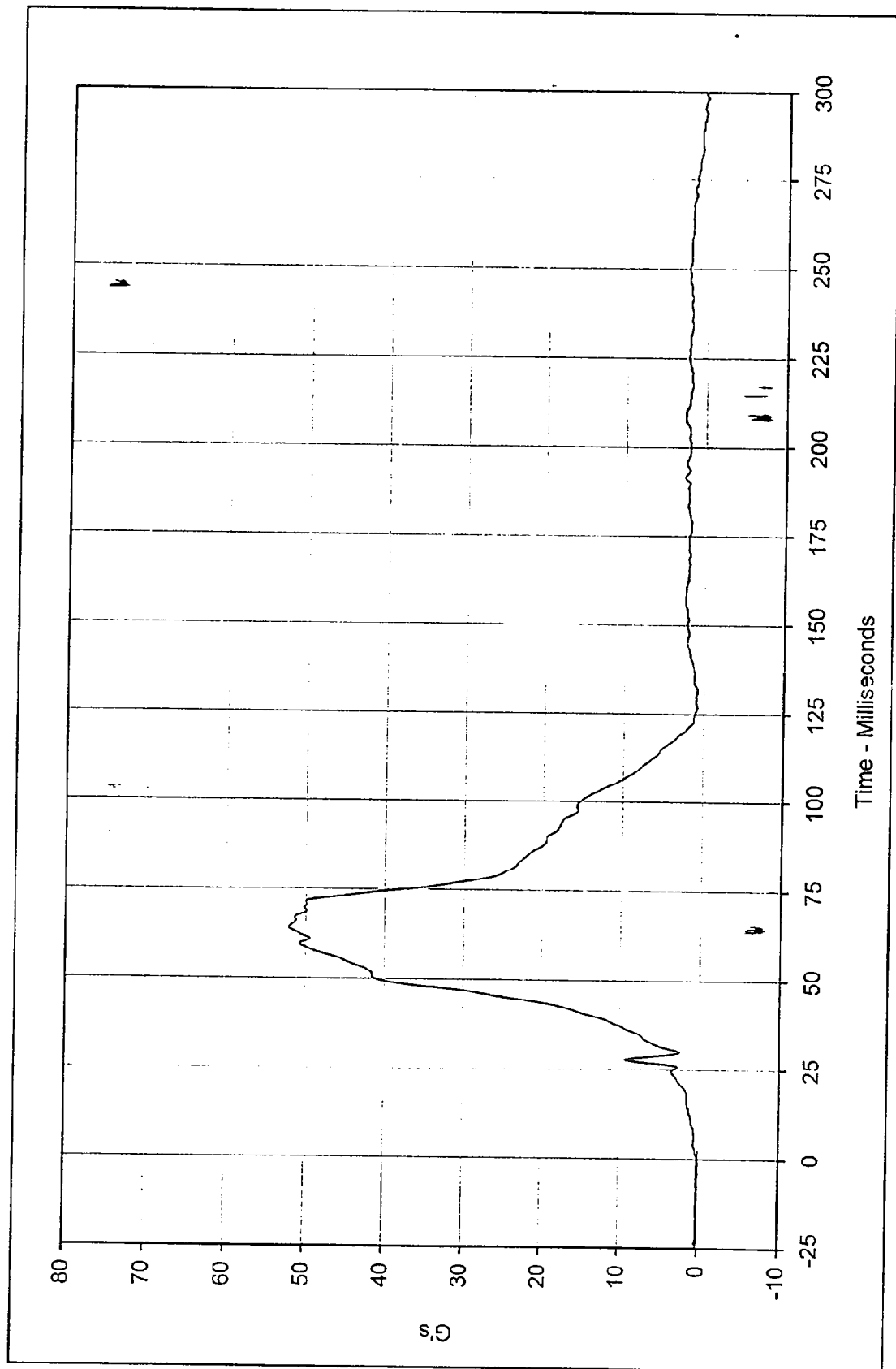




Curve Description: Driver Chest Primary Z
 Maximum Value: 13.0 at 90.2 Milliseconds
 Minimum Value: -14.3 at 59.1 Milliseconds
 SAE Filter Class: 180
 Date of Test: 3/6/97
 Curve Number: FIL-015

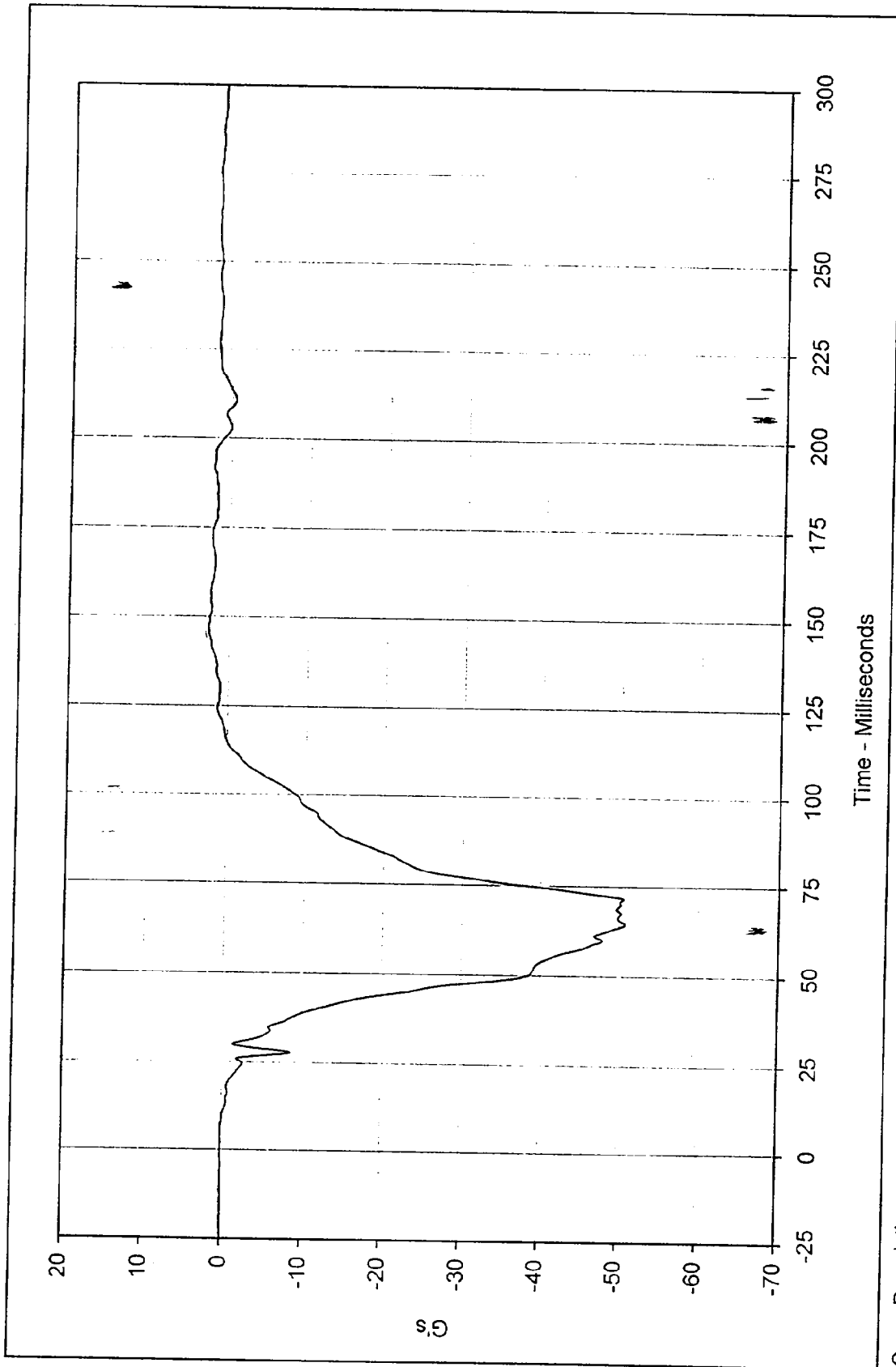
Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel





Curve Description:		Driver Chest Resultant Primary		Testing Program: 1997 New Car Assessment Program	
Maximum Value:	52.1	at	64.3	Milliseconds	Test Vehicle: 1997 Toyota Tercel
Minimum Value:	0.1	at	0.3	Milliseconds	
SAE Filter Class:	180				
Date of Test:	3/6/97				
Curve Number:	RES-013				





Curve Description: Driver Chest Redundant X

Maximum Value: 2.6 at 147.3 Milliseconds

Minimum Value: -50.7 at 64.5 Milliseconds

SAE Filter Class: 180

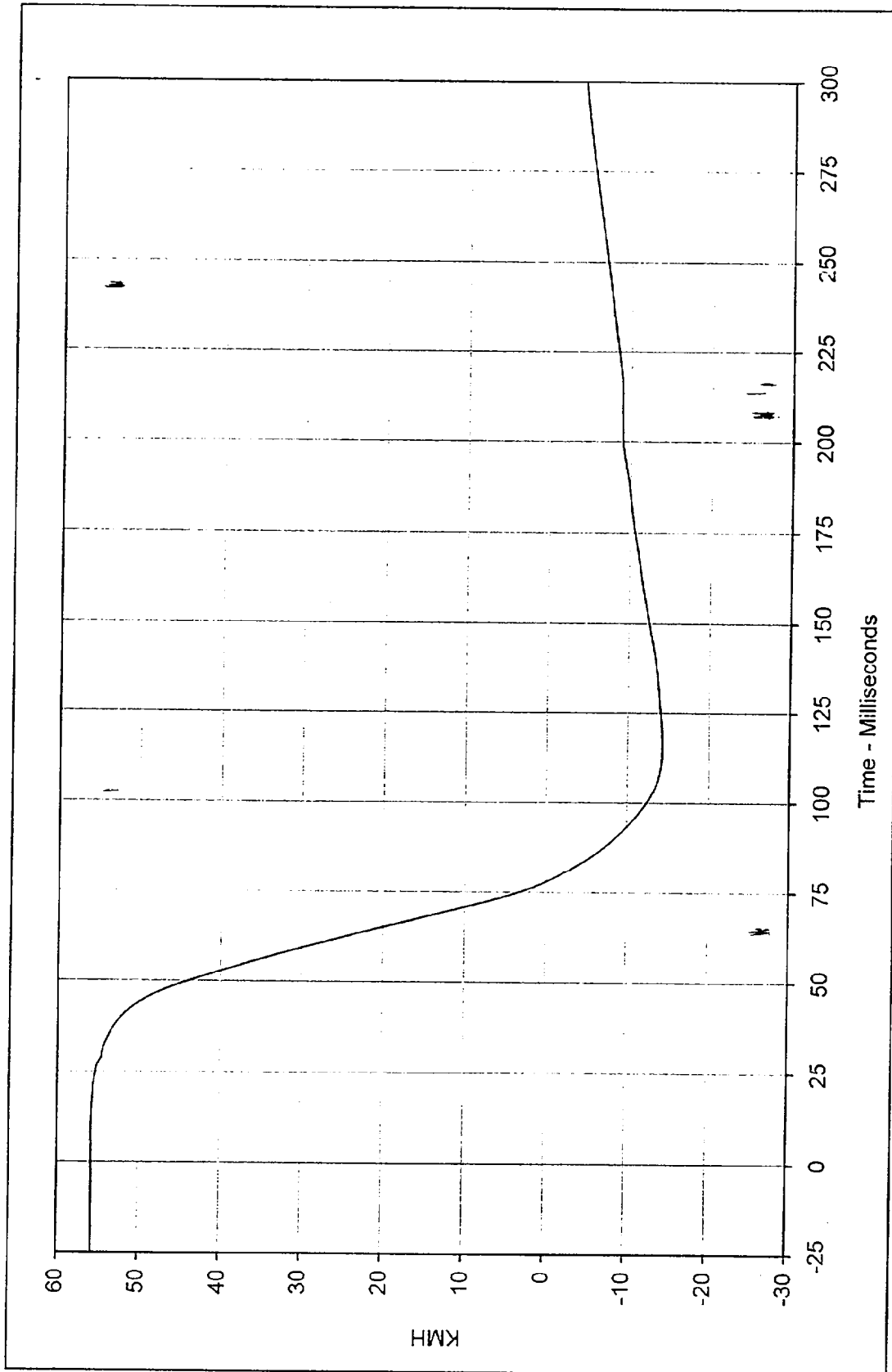
Date of Test: 3/6/97

Curve Number: FIL-016

Testing Program: 1997 New Car Assessment Program

Test Vehicle: 1997 Toyota Tercel





Curve Description: Driver Chest Redundant X Velocity

Maximum Value: 55.8 at 8.2 Milliseconds

Minimum Value: -14.3 at 114.7 Milliseconds

SAE Filter Class: 180

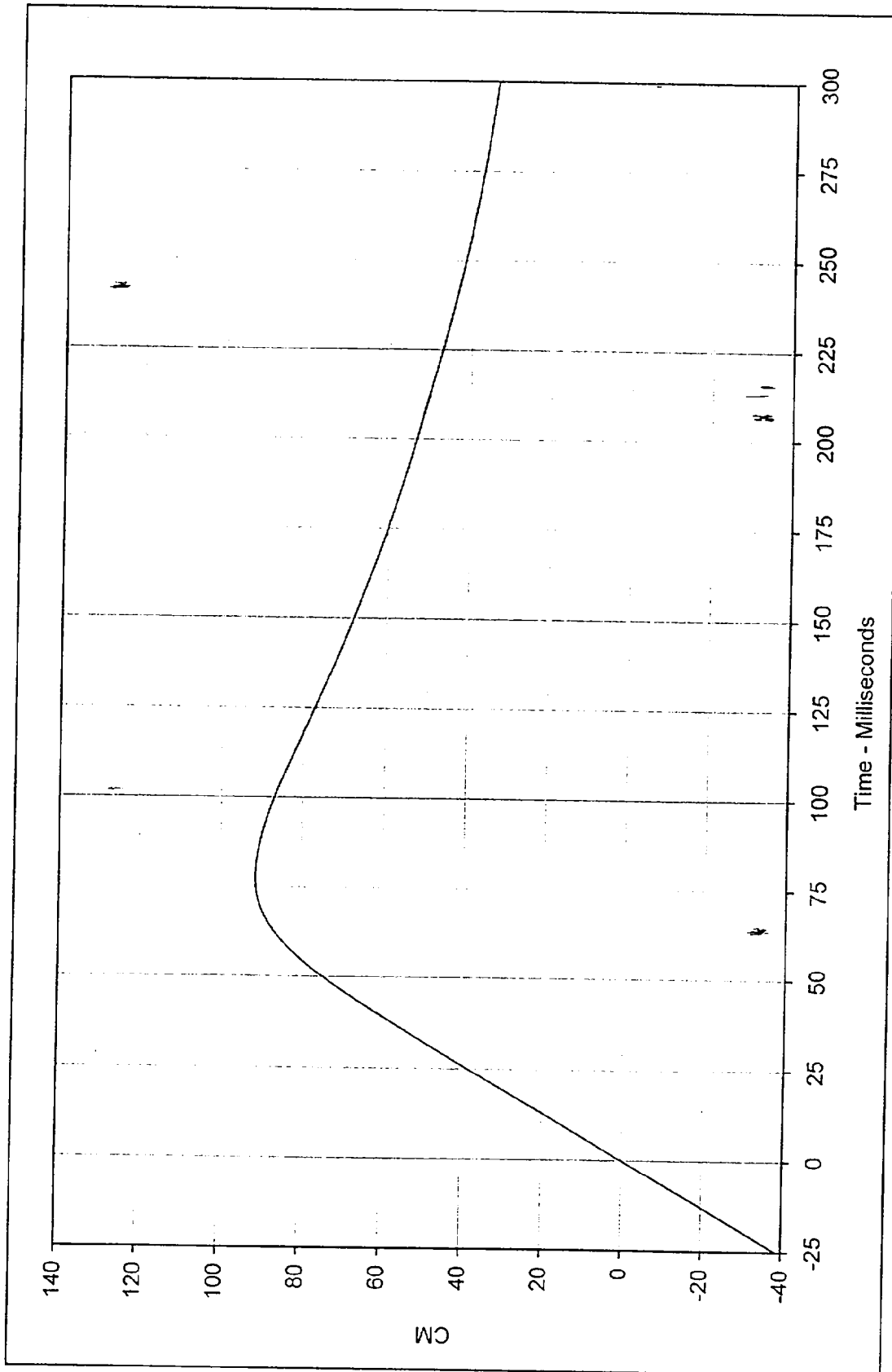
Date of Test: 3/6/97

Curve Number: IN1-016

Testing Program: 1997 New Car Assessment Program

Test Vehicle: 1997 Toyota Tercel



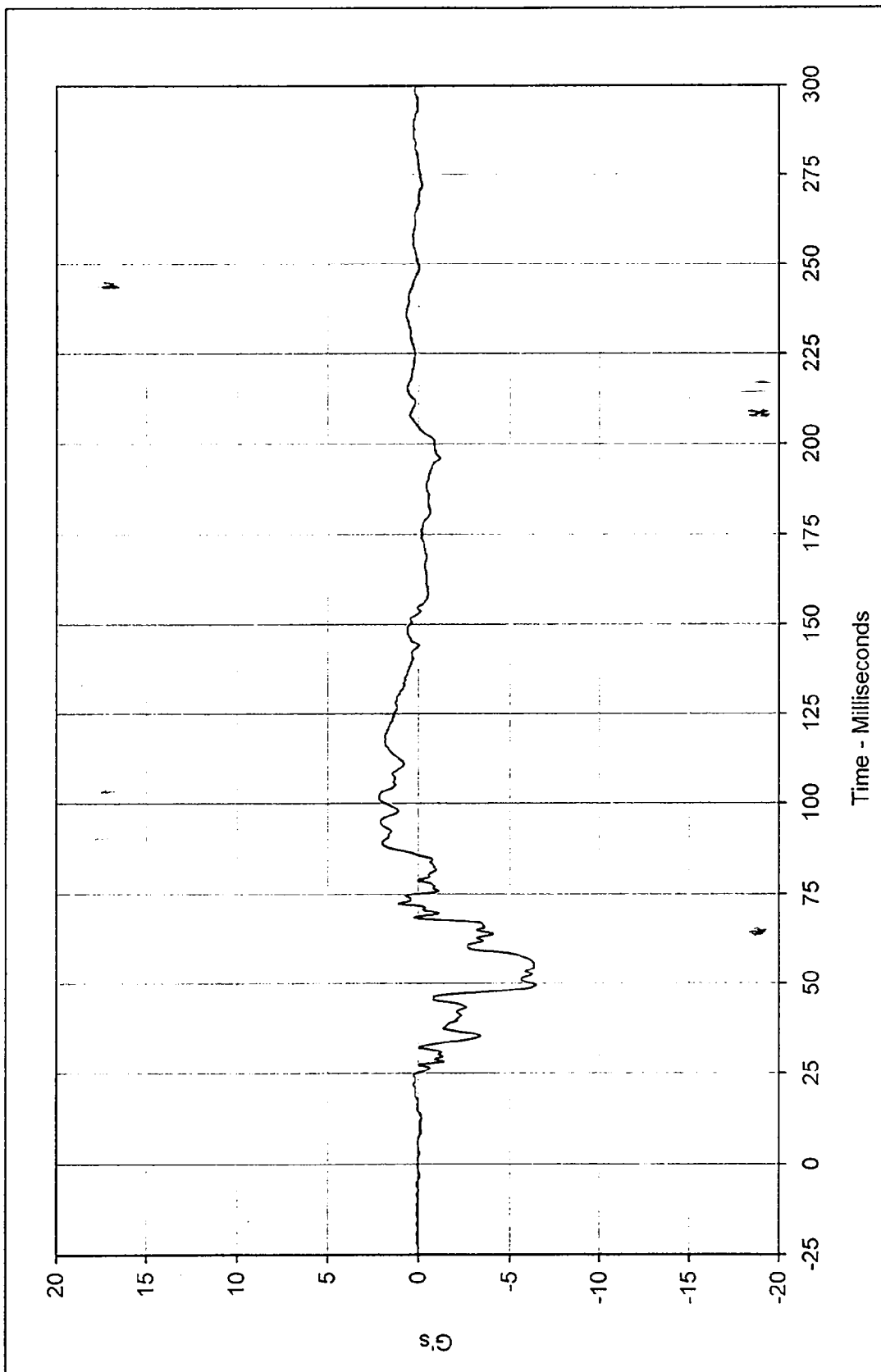


B29

Curve Description: Driver Chest Redundant X Displ.
 Maximum Value: 91.4 at 77.9 Milliseconds
 Minimum Value: -0.1 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 3/6/97
 Curve Number: IN2-016

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel

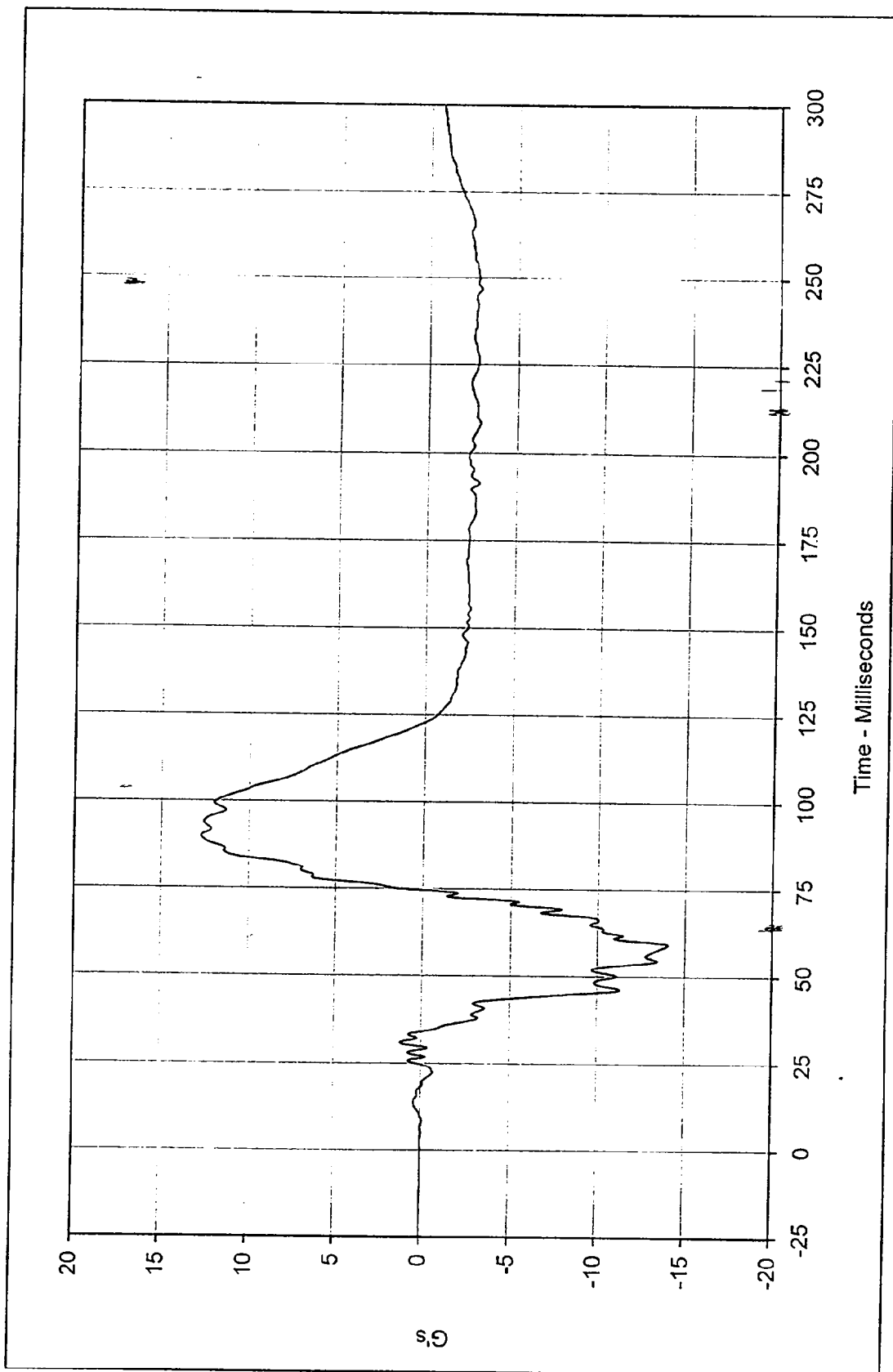




B30

Curve Description:	Driver Chest Redundant Y	Testing Program:	1997 New Car Assessment Program
Maximum Value:	2.2 at 101.5 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-6.4 at 49.6 Milliseconds		
SAE Filter Class:	180		
Date of Test:	3/6/97		
Curve Number:	FIL-017		

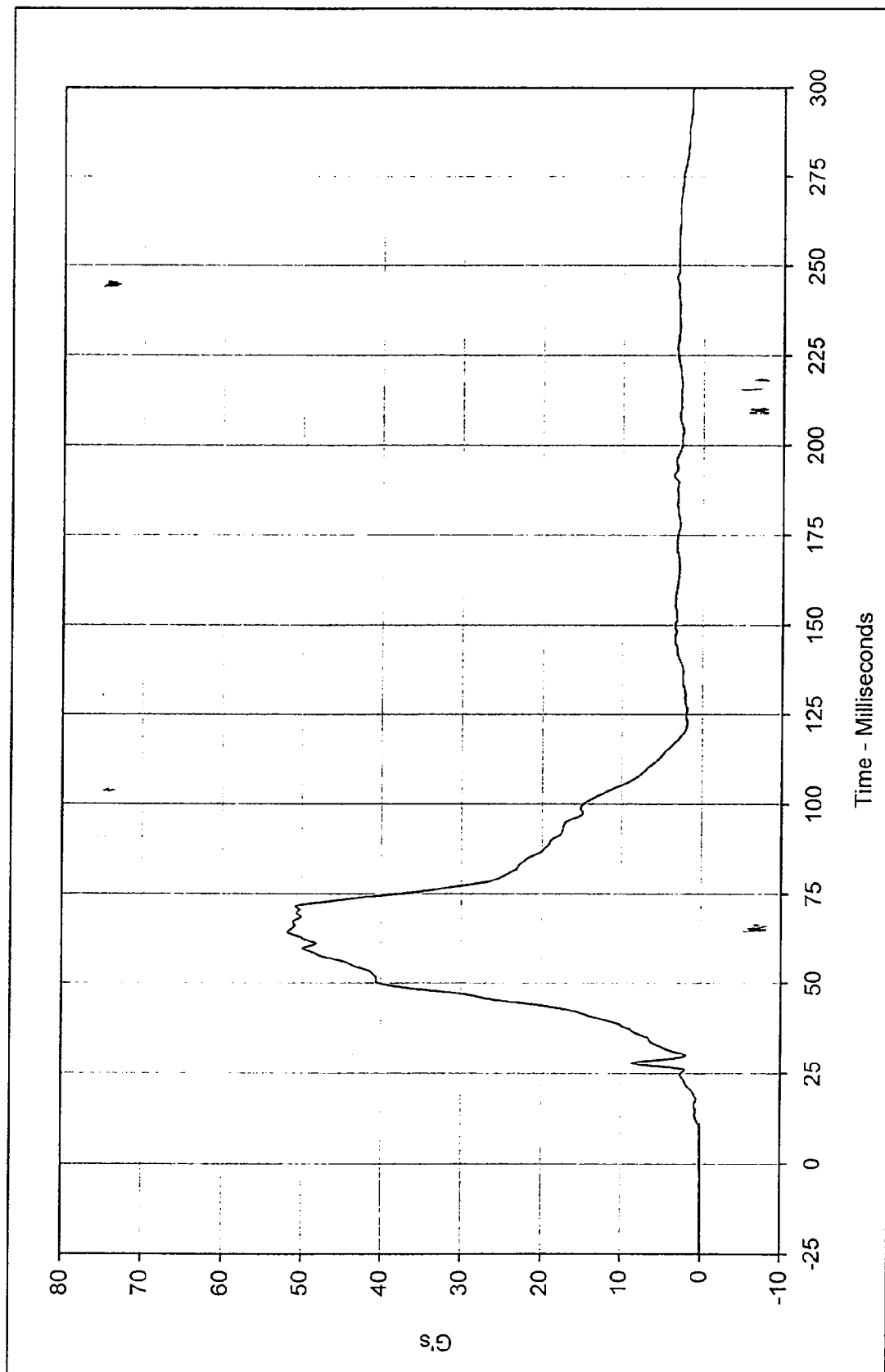




Curve Description: Driver Chest Redundant Z
 Maximum Value: 12.8 at 89.9 Milliseconds
 Minimum Value: -14.0 at 59.3 Milliseconds
 SAE Filter Class: 180
 Date of Test: 3/6/97
 Curve Number: FIL-018

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel

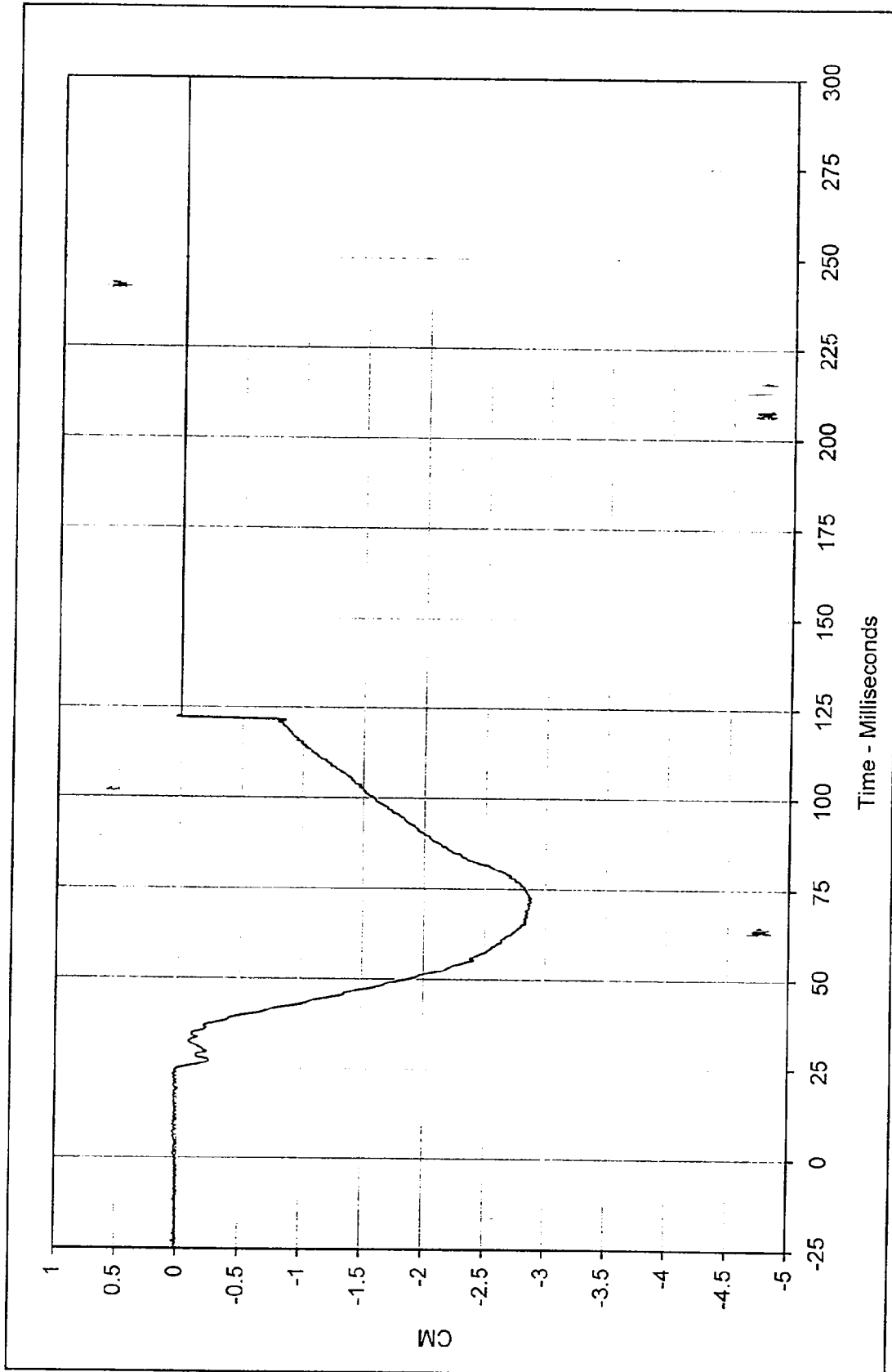




B32

Curve Description:	Driver Chest Resultant Redundant	Testing Program:	1997 New Car Assessment Program
Maximum Value:	51.8 at 64.4 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	0.1 at 2.1 Milliseconds		
SAE Filter Class:	180		
Date of Test:	3/6/97		
Curve Number:	RES-016		



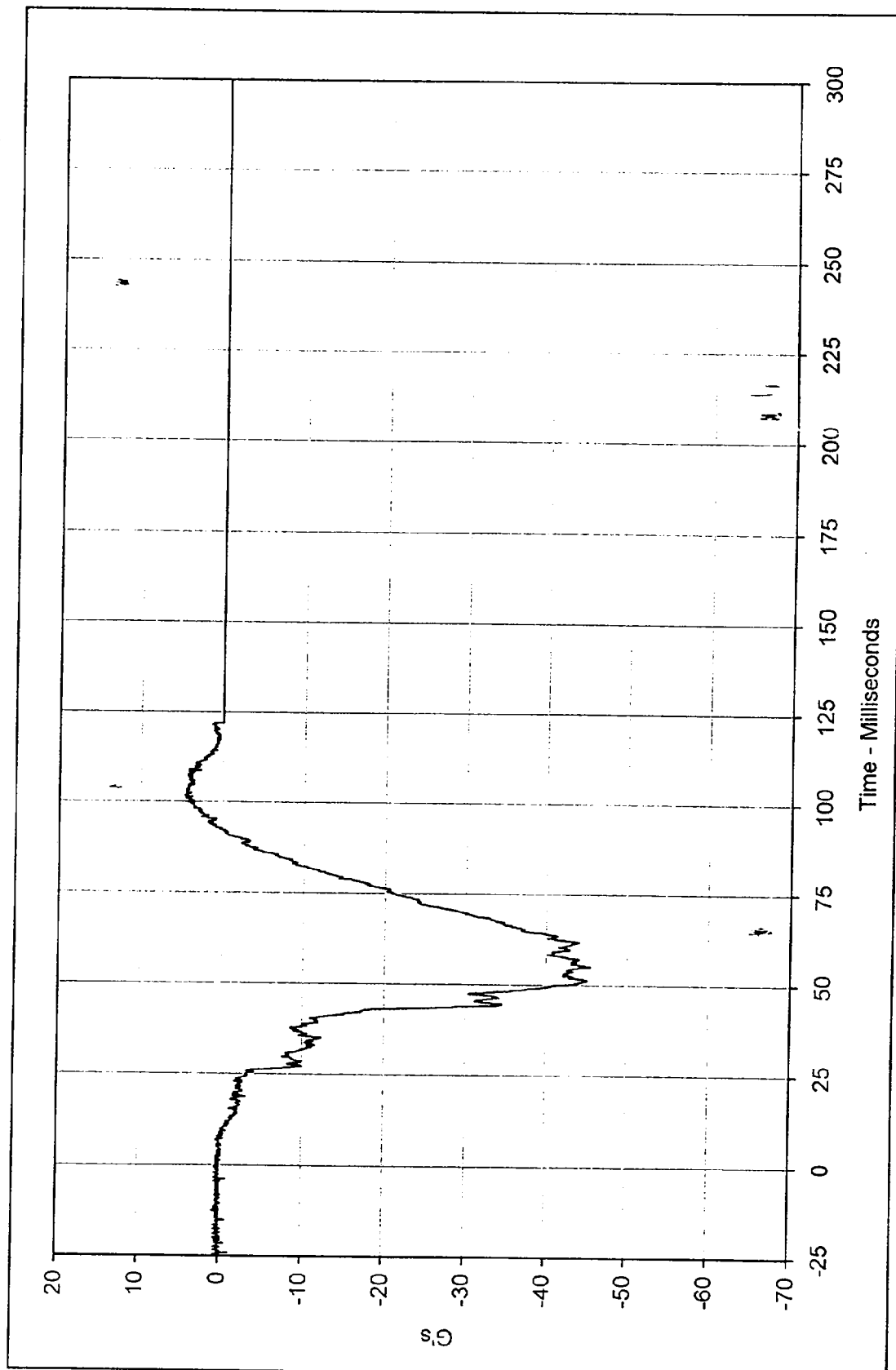


Curve Description: Driver Chest Displacement * Testing Program: 1997 New Car Assessment Program
 Maximum Value: 0.04 at 9.1 Milliseconds Test Vehicle: 1997 Toyota Tercel
 Minimum Value: -2.88 at 72.5 Milliseconds



SAE Filter Class: 600
 Date of Test: 3/6/97
 Curve Number: FIL-019

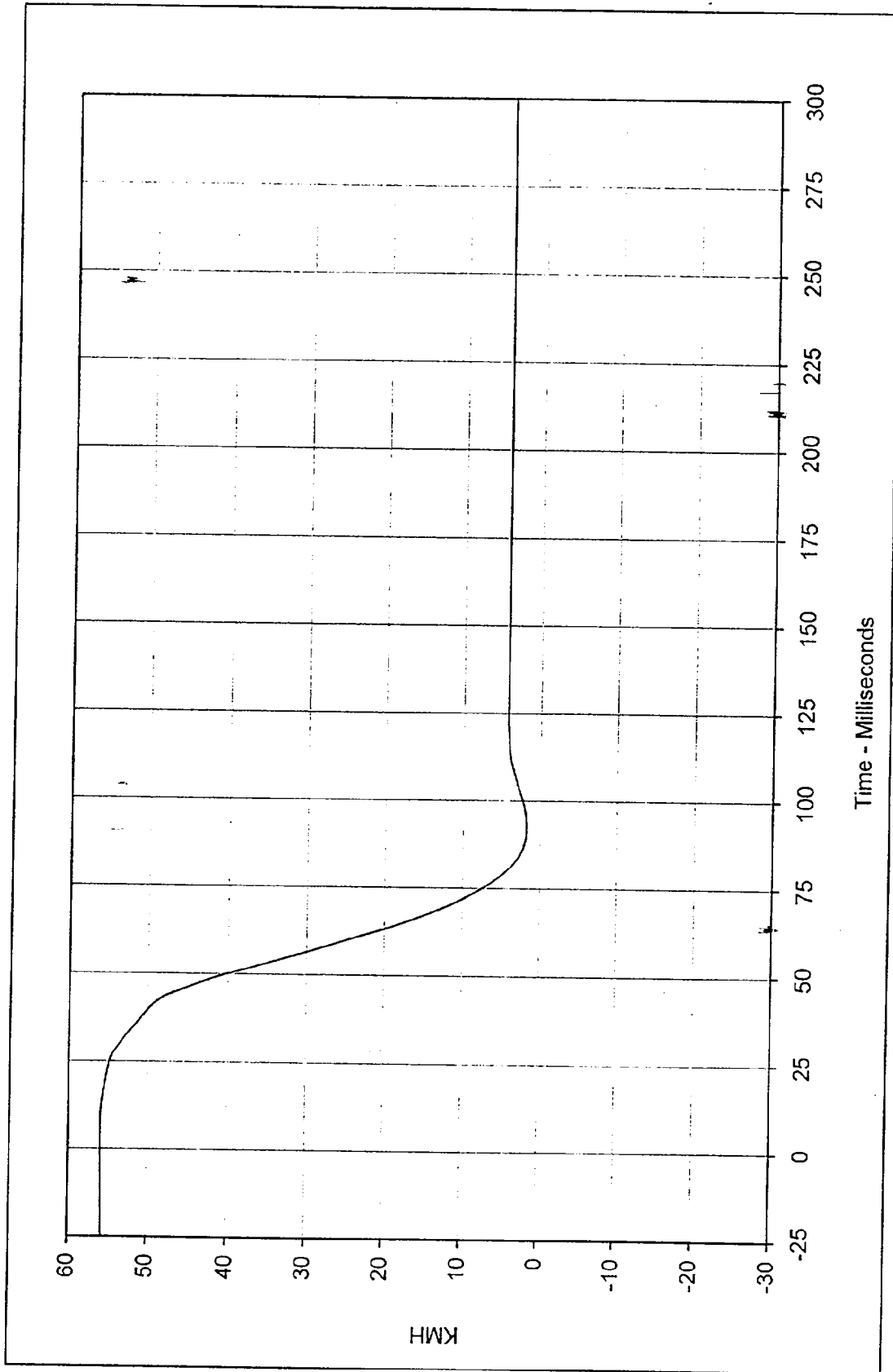
*Channel Failed at 122 Msec



Curve Description:	Driver Pelvis X	Testing Program:	1997 New Car Assessment Program
Maximum Value:	4.7 at 101.8 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-45.5 at 55.2 Milliseconds		
SAE Filter Class:	1000		
Date of Test:	3/6/97		
Curve Number:	FIL-020		



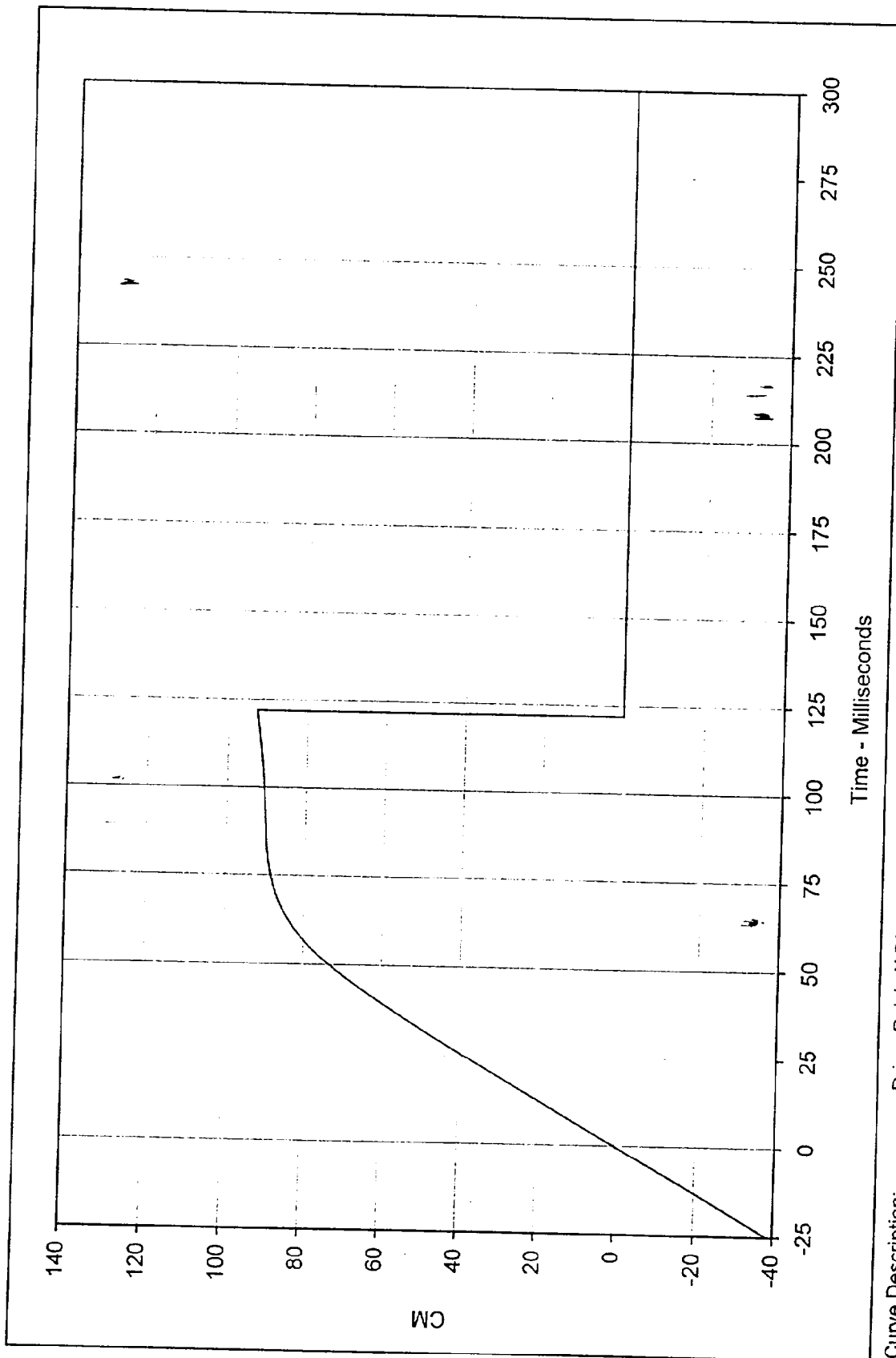
*Channel Failed at 122 Msec



Curve Description:	Driver Pelvis X Velocity	Testing Program:	1997 New Car Assessment Program
Maximum Value:	55.9 at 7.1 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	1.7 at 92.3 Milliseconds		
SAE Filter Class:	180		
Date of Test:	3/6/97		
Curve Number:	IN1-020		



*Channel Failed at 122 Msec



Curve Description:

Maximum Value: 92.8 at 121.9 Milliseconds

Minimum Value: 0.0 at 122.0 Milliseconds

SAE Filter Class: 180

Date of Test: 3/6/97

Curve Number: IN2-020

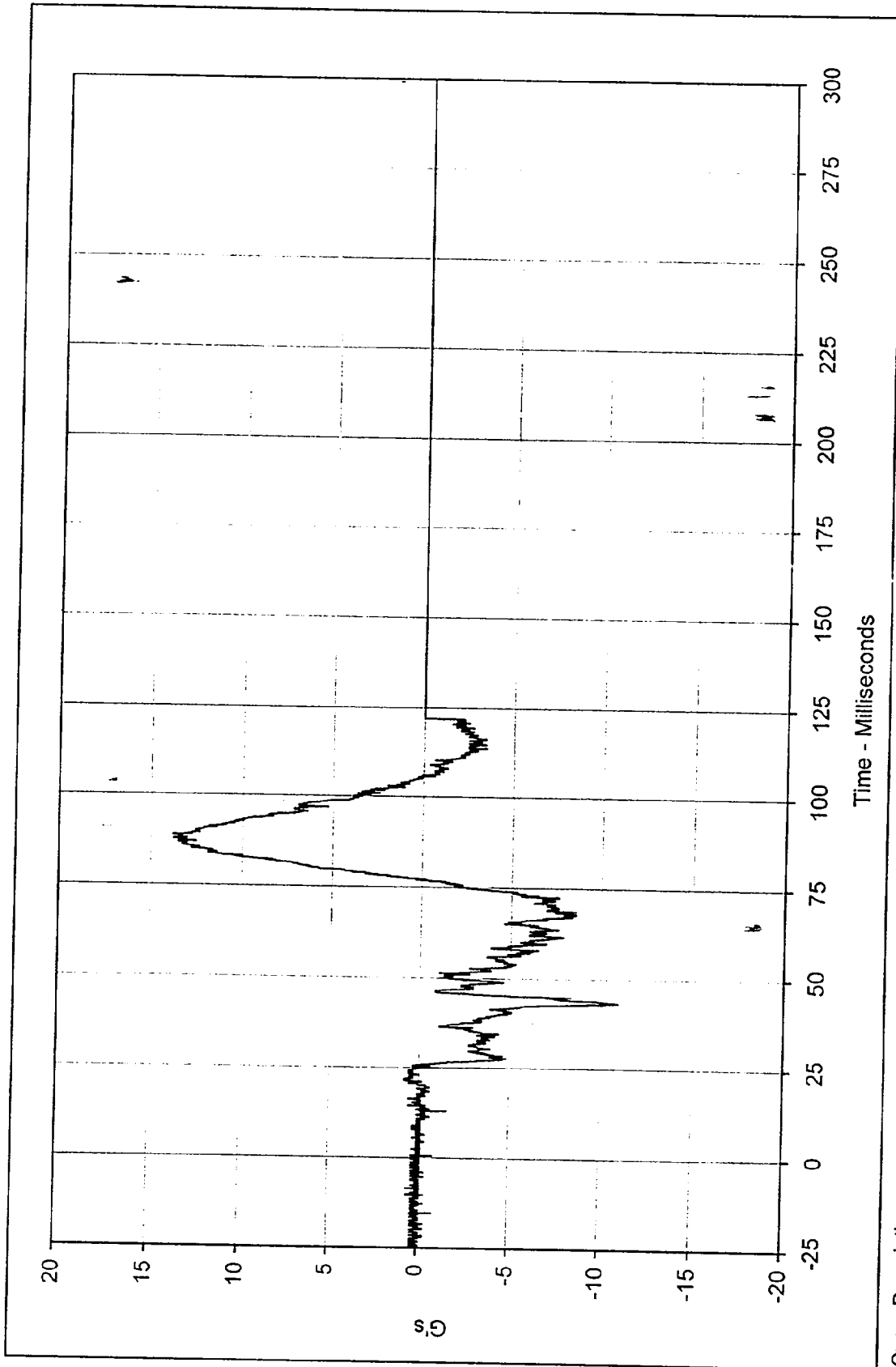
Driver Pelvis X Displ. *

Testing Program: 1997 New Car Assessment Program

Test Vehicle: 1997 Toyota Tercel



*Channel Failed at 122 Msec



Curve Description:

Driver Pelvis Y

*

Testing Program: 1997 New Car Assessment Program

Maximum Value: 13.7 at 87.8 Milliseconds

Minimum Value: -11.0 at 43.4 Milliseconds

SAE Filter Class: 1000

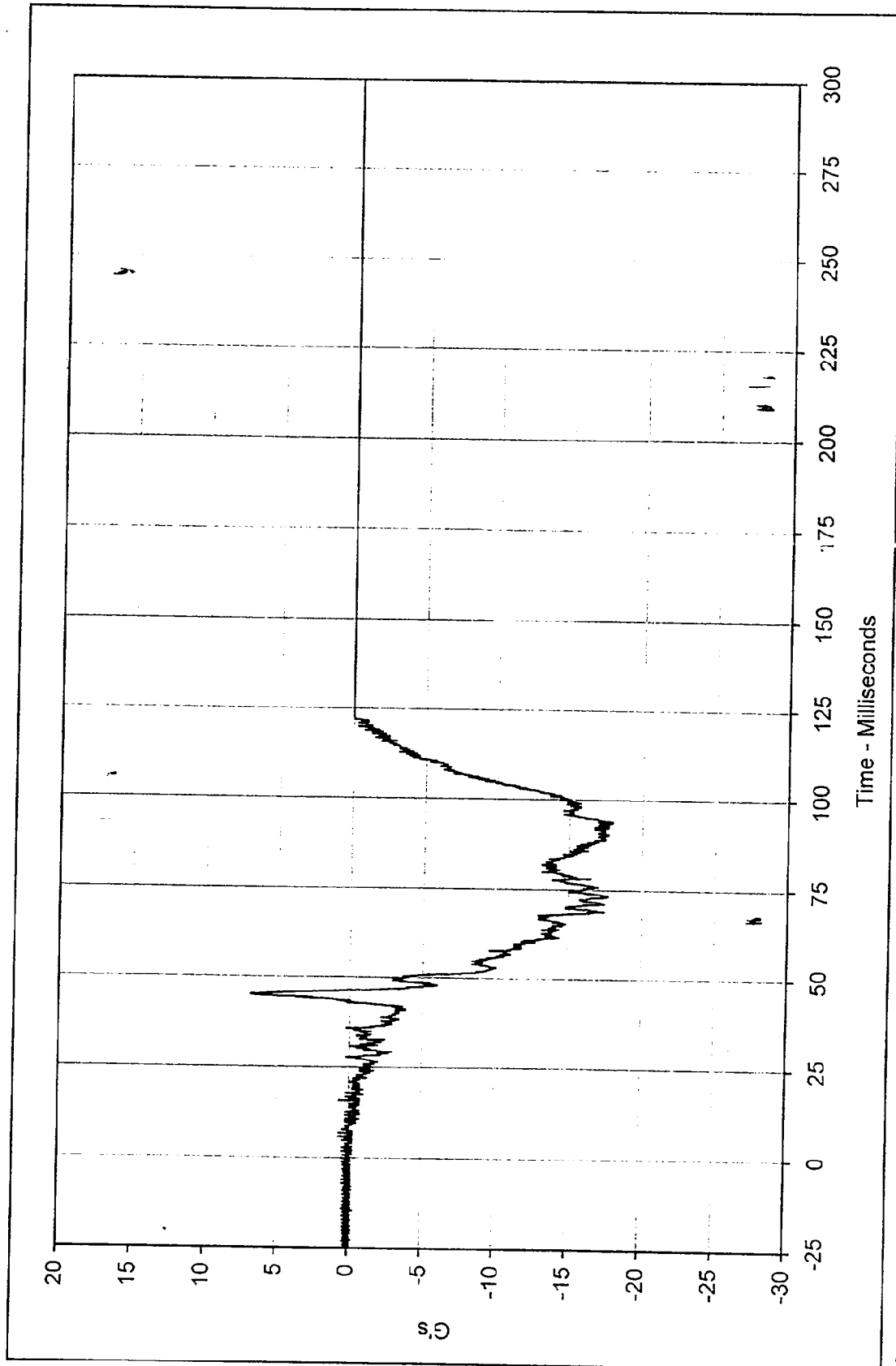
Date of Test: 3/6/97

Curve Number: FIL-021

Test Vehicle: 1997 Toyota Tercel



*Channel Failed at 122 Msec

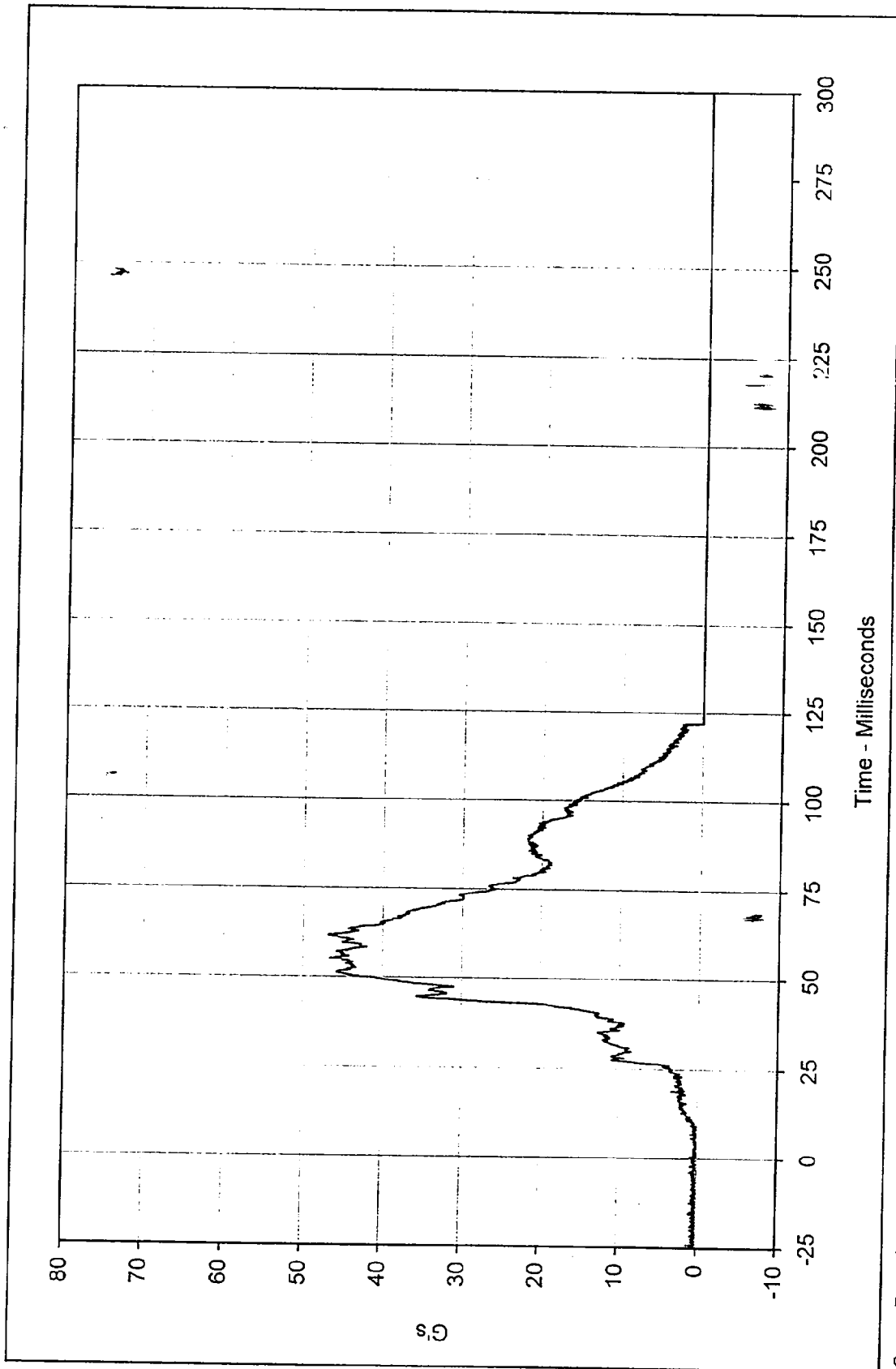


B38

Curve Description:	Driver Pelvis Z	Testing Program:	1997 New Car Assessment Program
Maximum Value:	6.9 at 45.1 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-17.9 at 93.6 Milliseconds		
SAE Filter Class:	1000		
Date of Test:	3/6/97		
Curve Number:	FIL-022		



*Channel Failed at 122 Msec



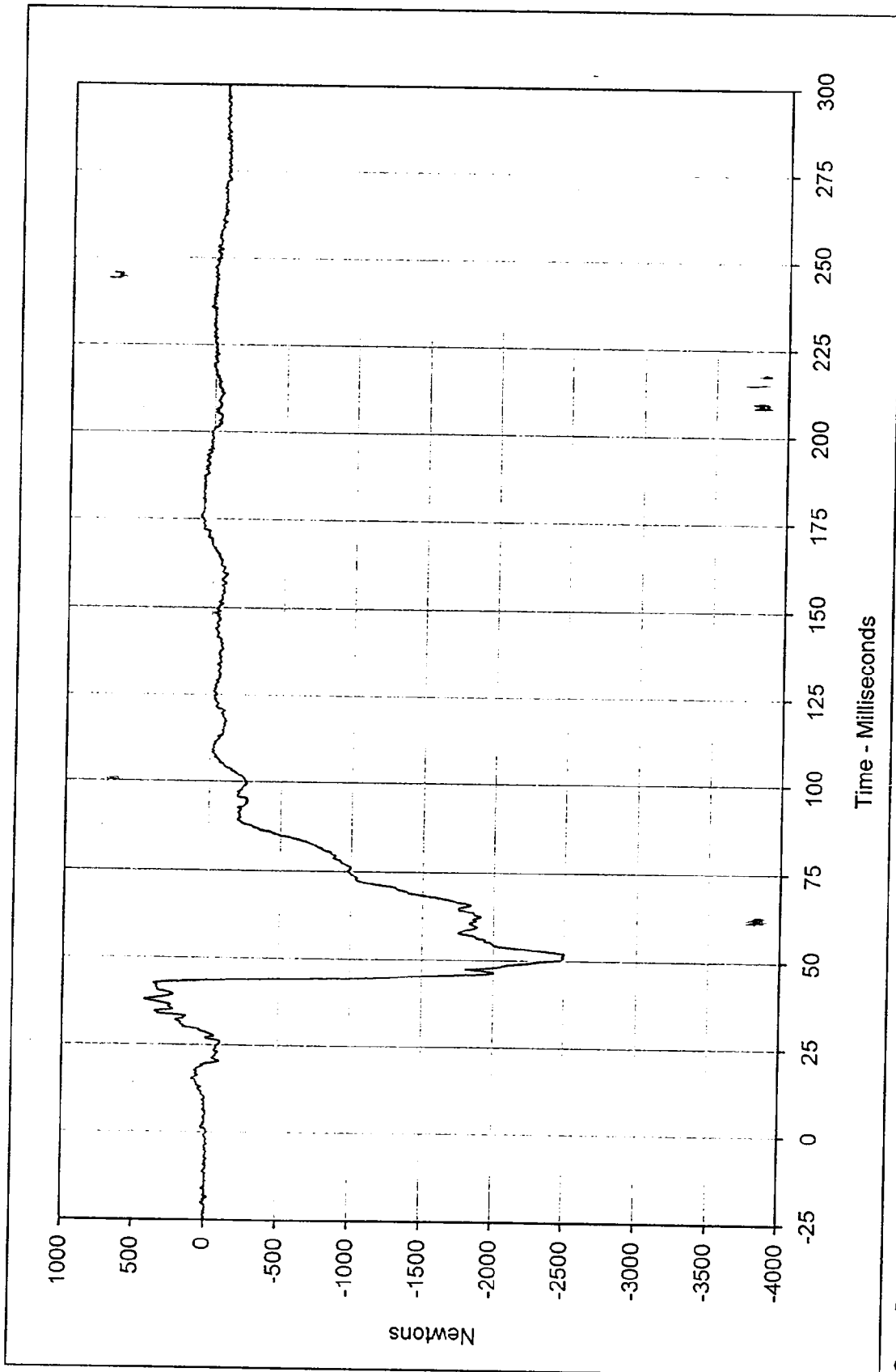
Curve Description: Driver Pelvis Resultant *
 Maximum Value: 46.8 at 61.8 Milliseconds
 Minimum Value: 0.0 at 122 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 3/6/97
 Curve Number: RES-020

Testing Program: 1997 New Car Assessment Program

Test Vehicle: 1997 Toyota Tercel



* Channel failed at 122 Msec



Curve Description:

Driver Left Femur Force

Testing Program: 1997 New Car Assessment Program

Maximum Value:

433.8 at 37.8 Milliseconds

Minimum Value:

-2501.7 at 51.9 Milliseconds

SAE Filter Class:

600

Date of Test:

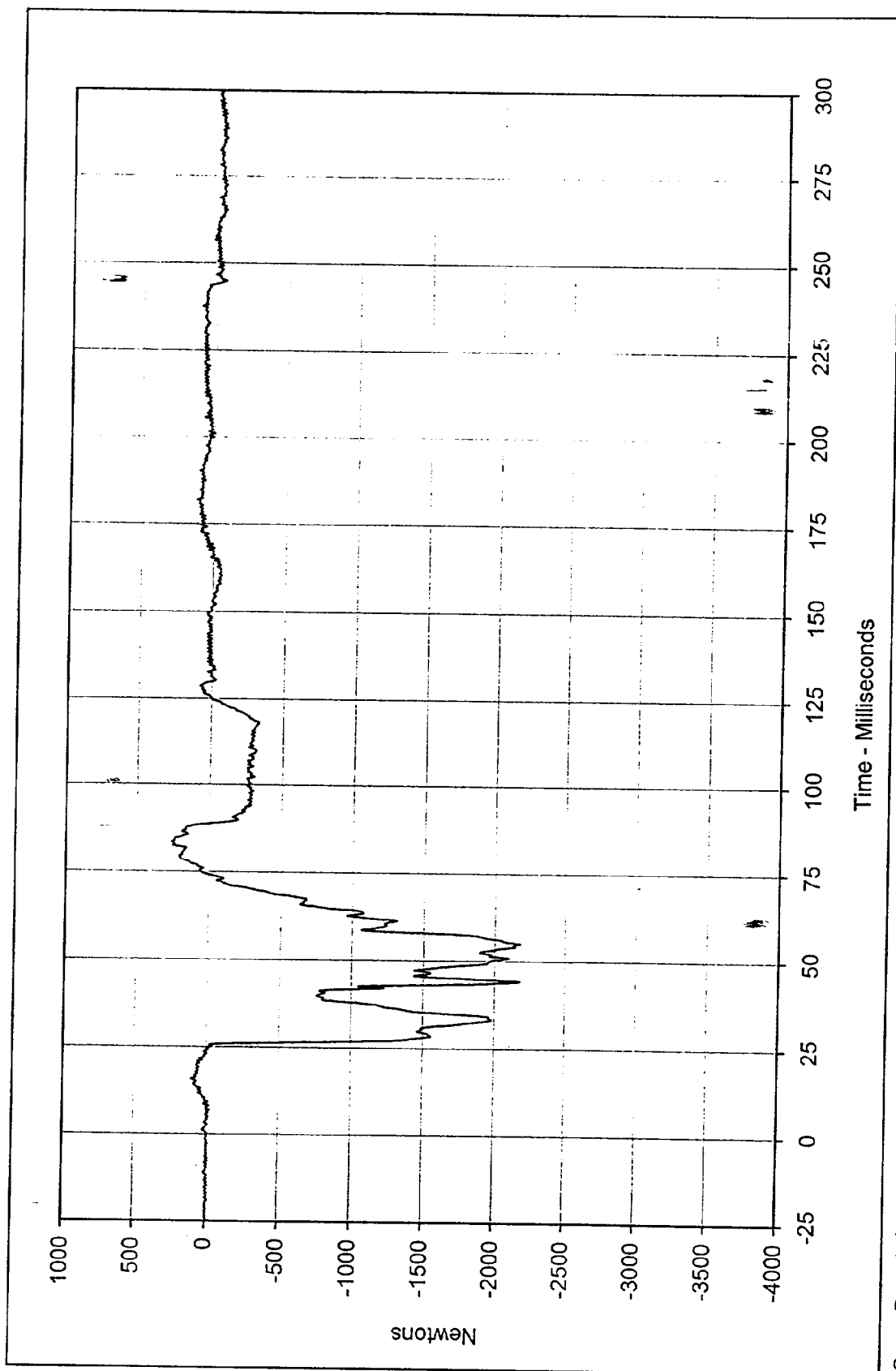
3/6/97

Curve Number:

FIL-023

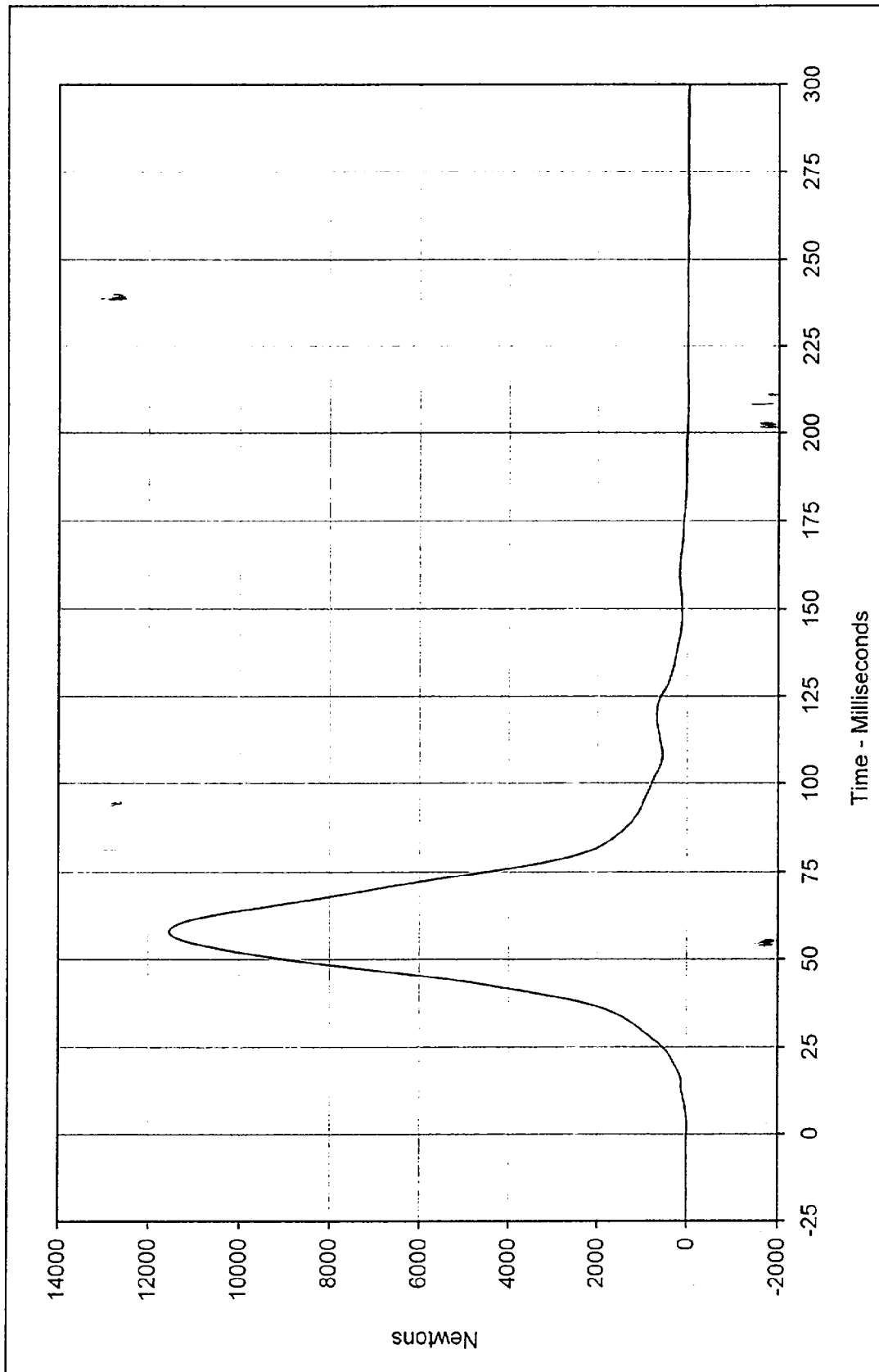
Test Vehicle: 1997 Toyota Tercel





Curve Description:		Testing Program:	
Driver Right Femur Force		1997 New Car Assessment Program	
Maximum Value:	255.0	at	83.6
Minimum Value:	-2180.7	at	55.1
SAE Filter Class:	600	Test Vehicle:	
Date of Test:	3/6/97	1997 Toyota Tercel	
Curve Number:	FIL-024		

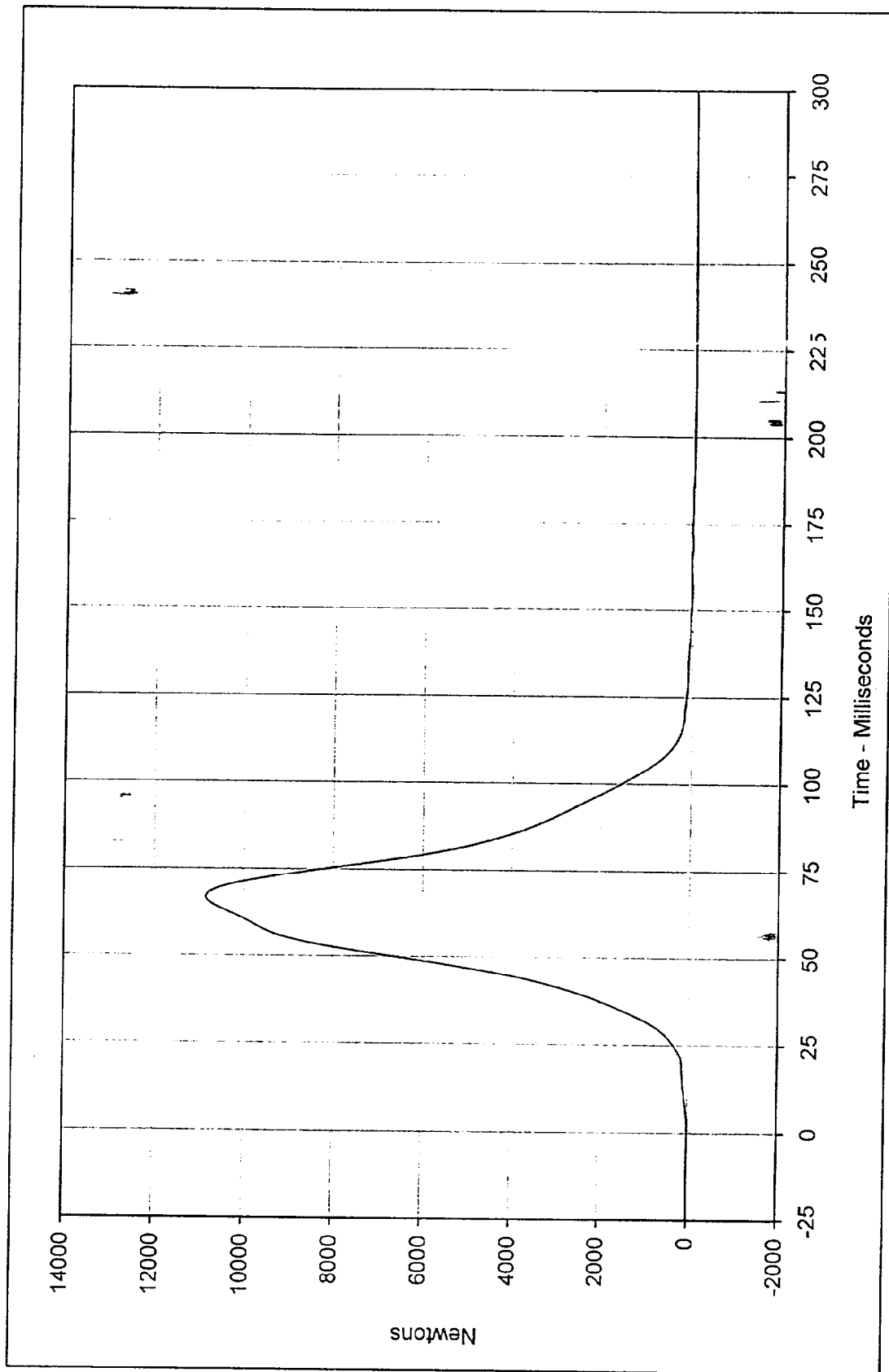




Curve Description: Driver Lap Belt Force
 Testing Program: 1997 New Car Assessment Program
 Maximum Value: 11539.5 at 57.8 Milliseconds
 Test Vehicle: 1997 Toyota Tercel
 Minimum Value: -34.0 at 299.9 Milliseconds

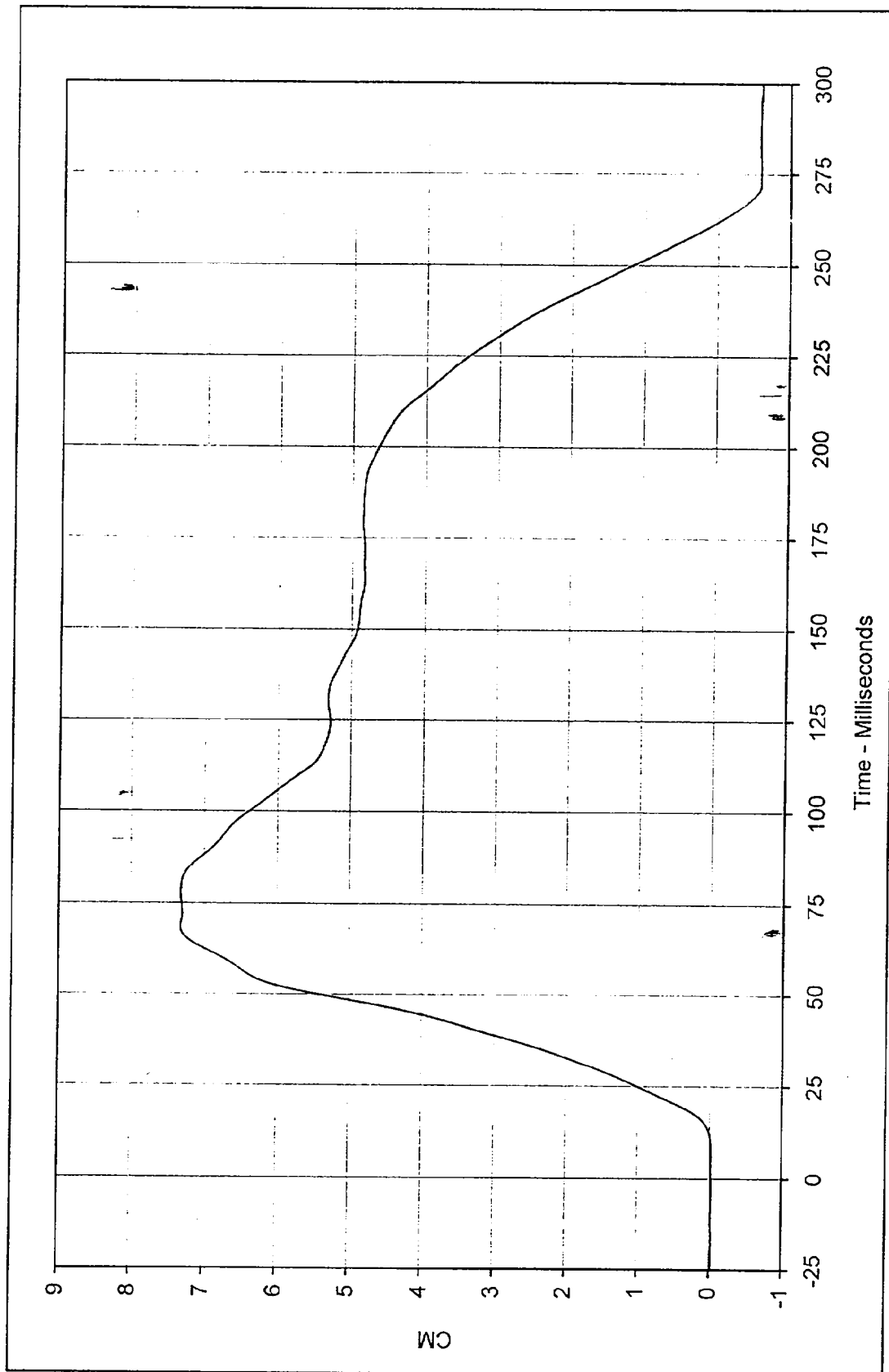


SAE Filter Class: 60
 Date of Test: 3/6/97
 Curve Number: FIL-041



Curve Description: <u>Driver Shoulder Belt Force</u>		Testing Program: <u>1997 New Car Assessment Program</u>	
Maximum Value: <u>10844.3</u>	at <u>66.8</u> Milliseconds	Test Vehicle: <u>1997 Toyota Tercel</u>	
Minimum Value: <u>-6.4</u>	at <u>216.7</u> Milliseconds		
SAE Filter Class: <u>60</u>			
Date of Test: <u>3/6/97</u>			
Curve Number: <u>FIL-042</u>			

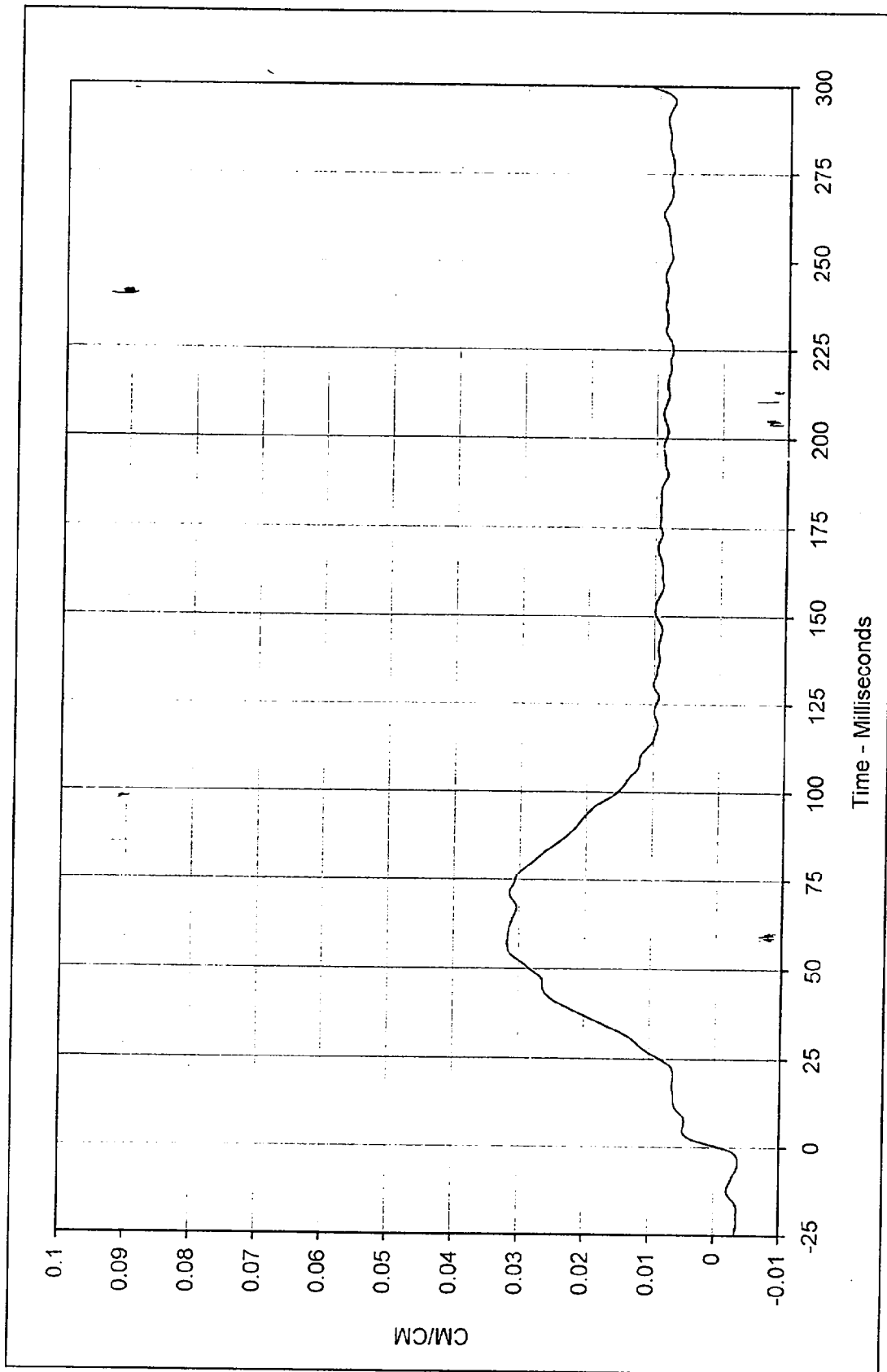




Curve Description: Driver Shoulder Belt Pullout
 Maximum Value: 7.32 at 68.6 Milliseconds
 Minimum Value: -0.61 at 299.1 Milliseconds
 SAE Filter Class: 60
 Date of Test: 3/6/97
 Curve Number: FIL-043

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel

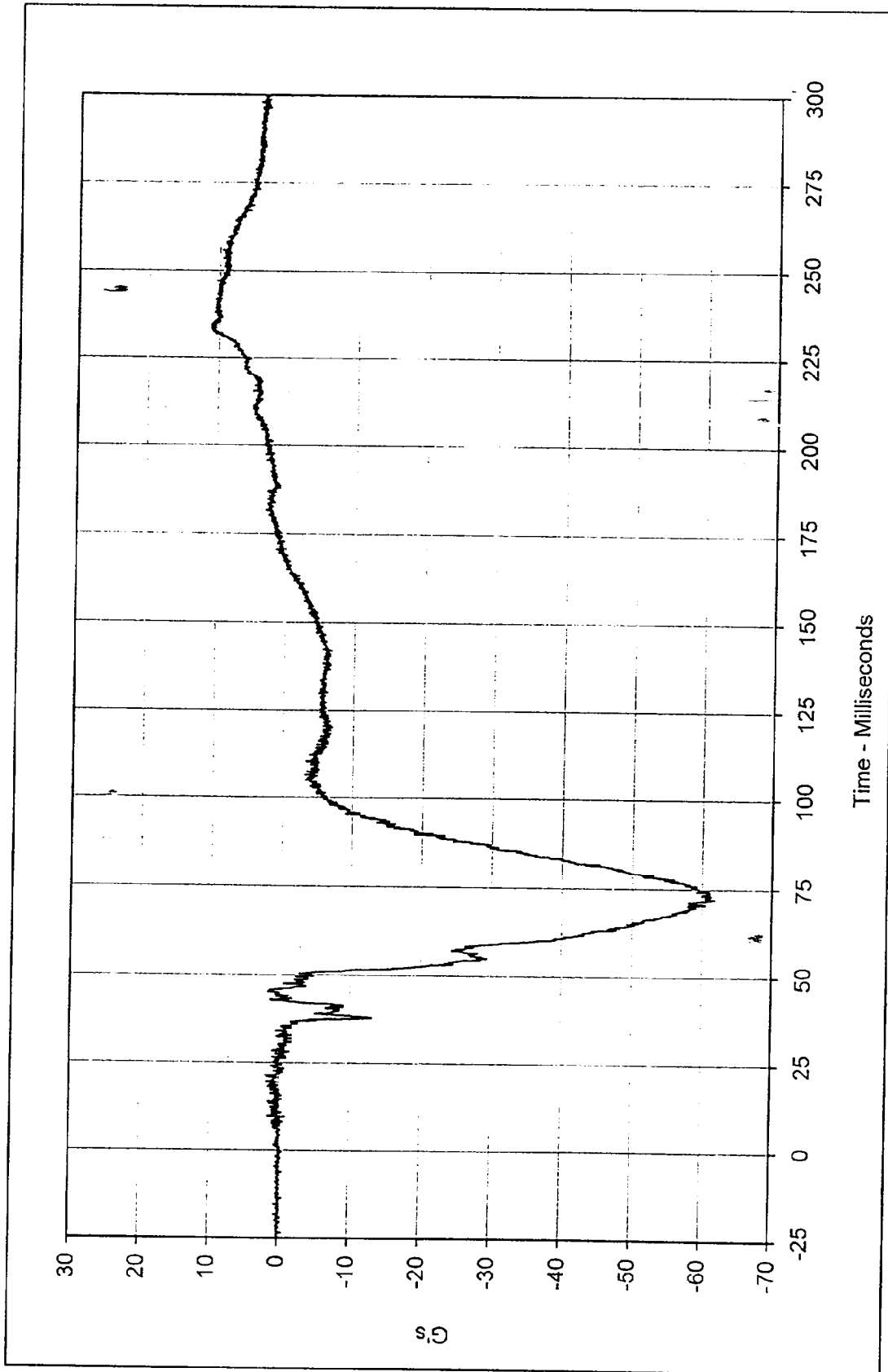




Curve Description: Driver Shoulder Belt Elongation
 Maximum Value: 0.032 at 57.2 Milliseconds
 Minimum Value: -0.001 at 0.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 3/6/97
 Curve Number: FIL-044

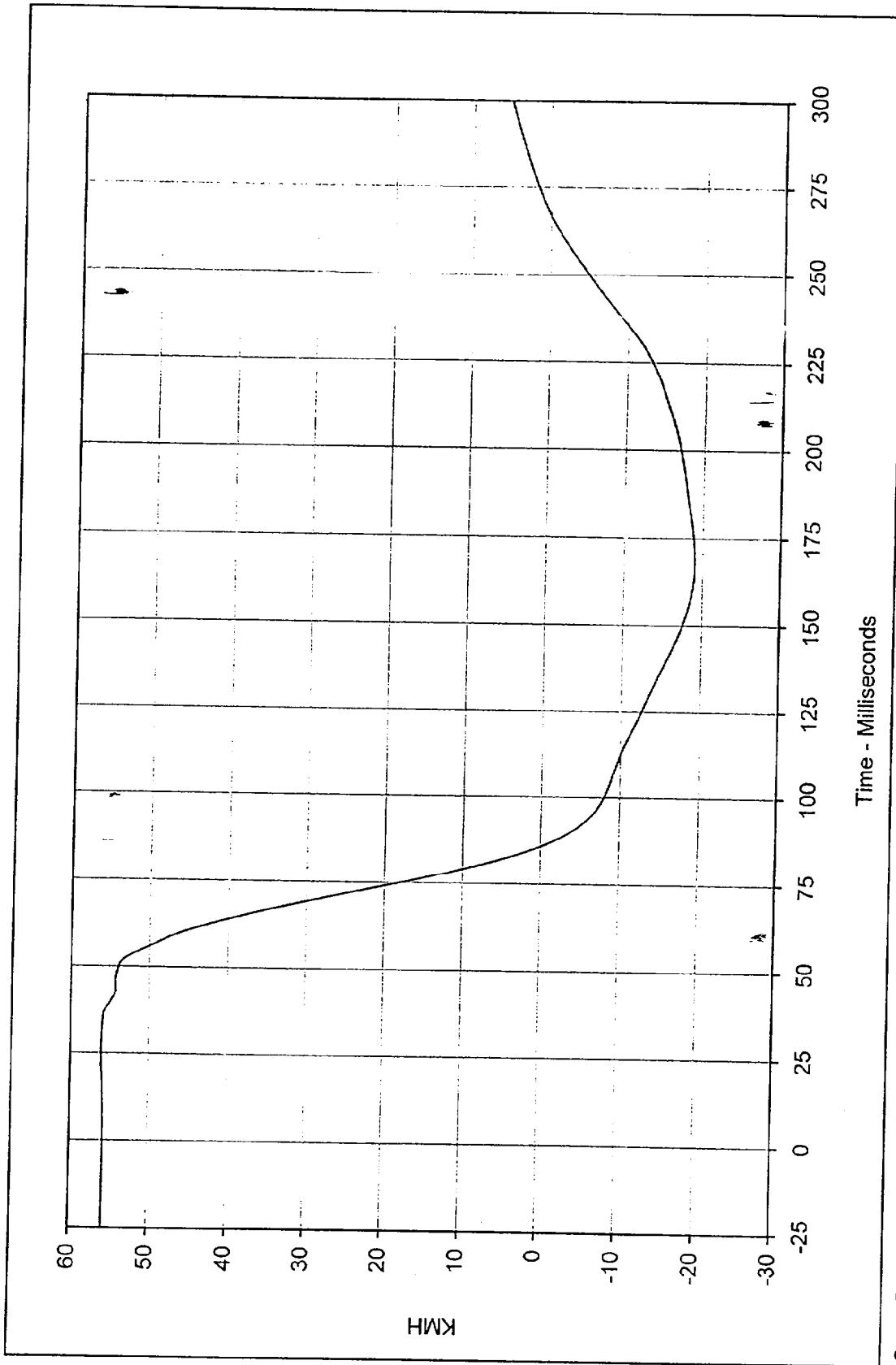
Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel





Curve Description:		Passenger Head Primary X		Testing Program:	1997 New Car Assessment Program
Maximum Value:	11.2	at	233.3	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-61.8	at	72.1		
SAE Filter Class:	1000				
Date of Test:	3/6/97				
Curve Number:	FIL-045				

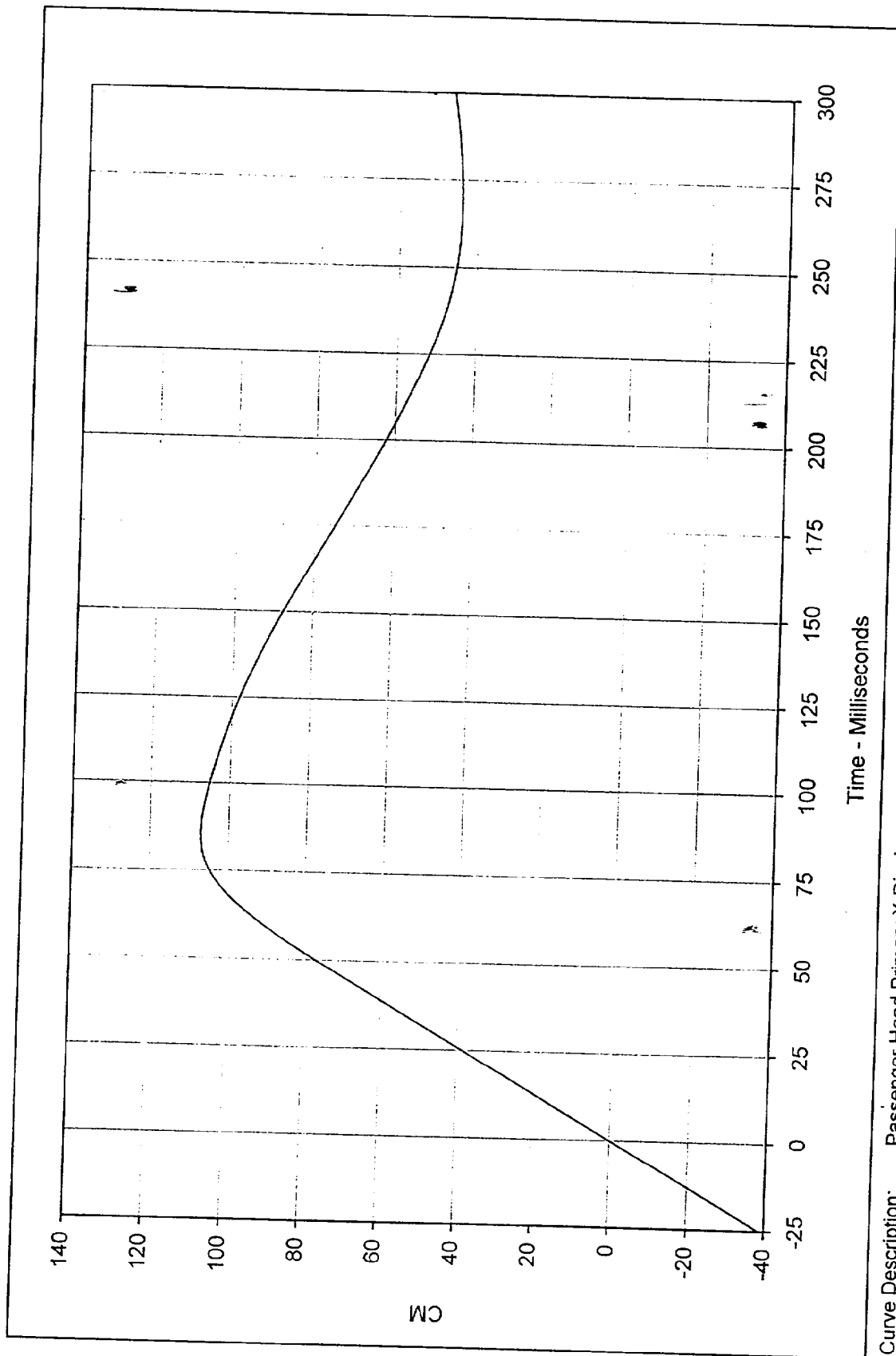




B63

Curve Description:	Passenger Head Primary X Velocity	Testing Program:	1997 New Car Assessment Program
Maximum Value:	56.0 at 26.4 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-19.0 at 167.3 Milliseconds		
SAE Filter Class:	180		
Date of Test:	3/6/97		
Curve Number:	IN1-045		





Curve Description: Passenger Head Primary X Displ.

Maximum Value: 107.1 at 85.9 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

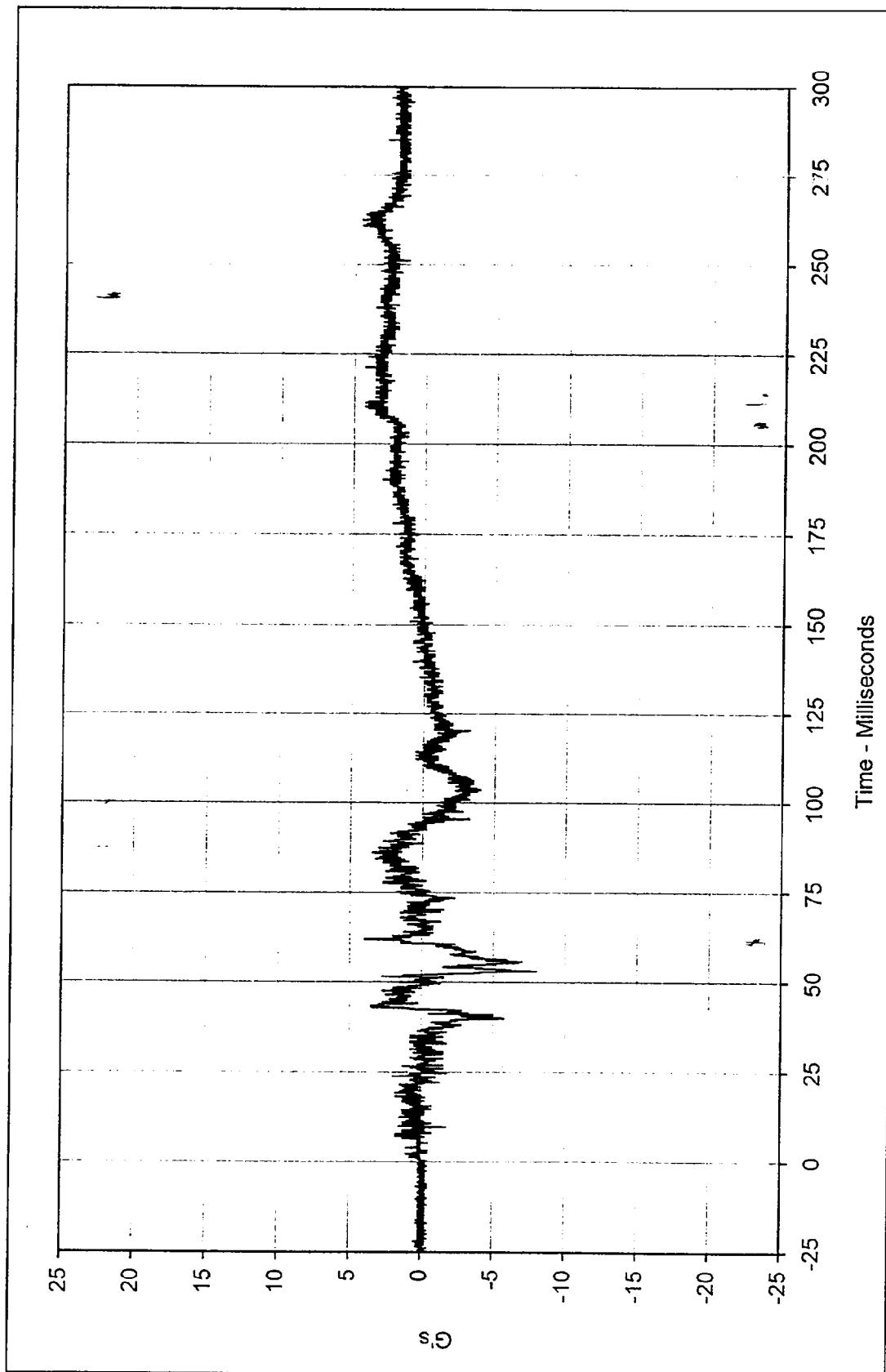
Date of Test: 3/6/97

Curve Number: IN2-045

Testing Program: 1997 New Car Assessment Program

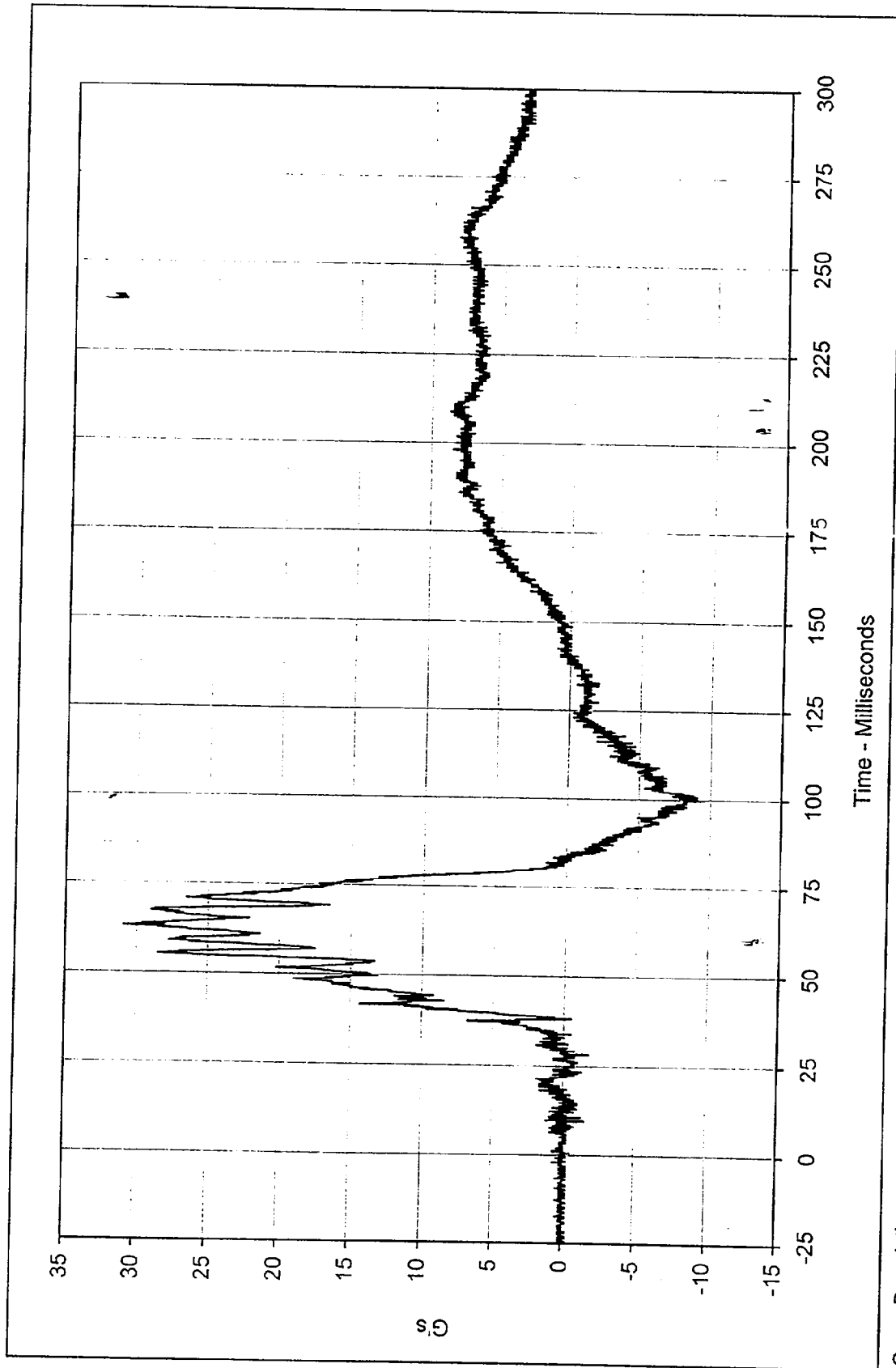
Test Vehicle: 1997 Toyota Tercel





Curve Description:	Passenger Head Primary Y		Testing Program:	1997 New Car Assessment Program	
Maximum Value:	4.5	at 261	Test Vehicle:	1997 Toyota Tercel	
Minimum Value:	-8.0	at 53.4			
SAE Filter Class:	1000				
Date of Test:	3/6/97				
Curve Number:	FIL-046				



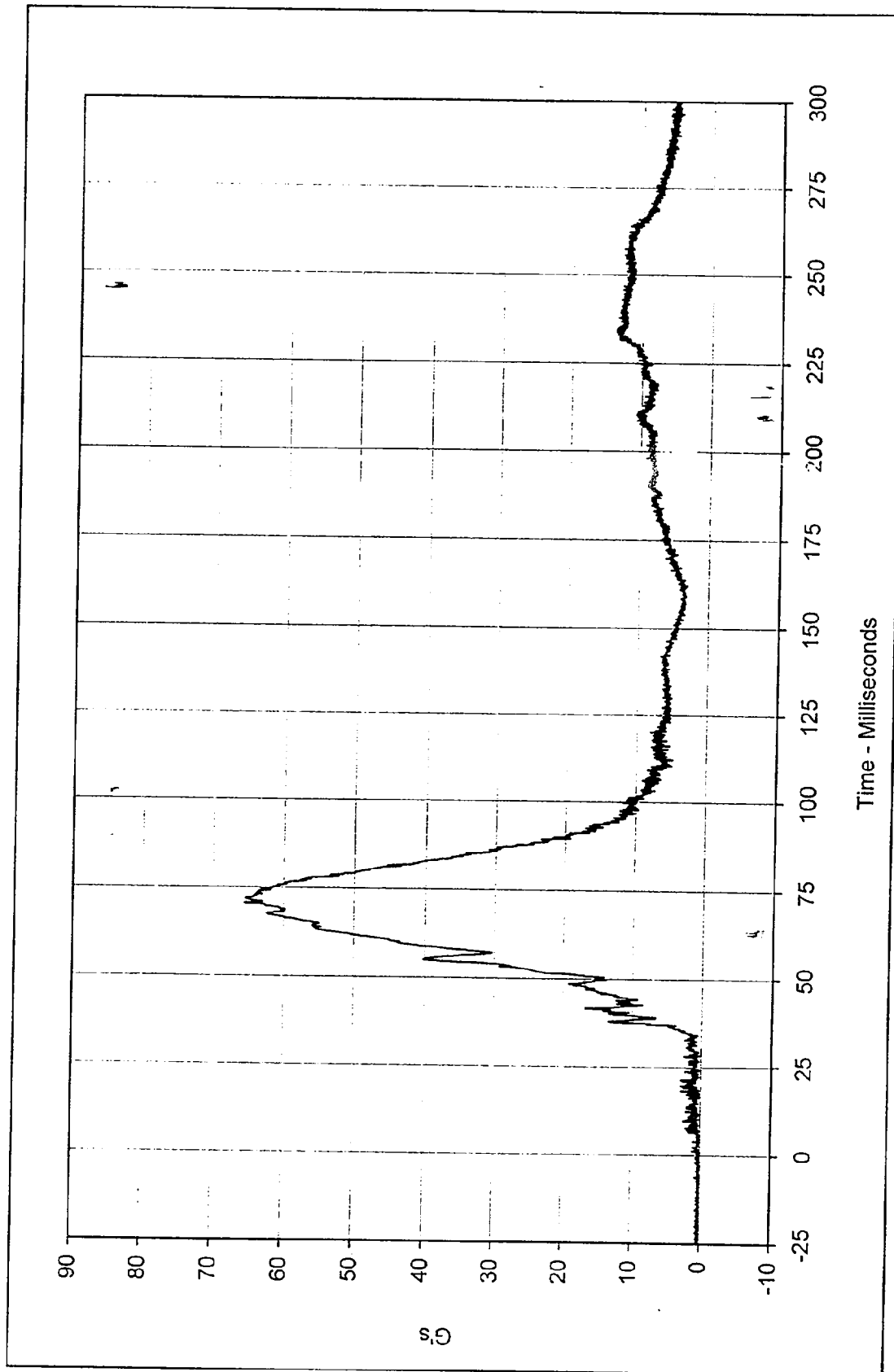


Curve Description:	Passenger Head Primary Z		Testing Program:	1997 New Car Assessment Program
Maximum Value:	30.9	at 63.0 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-9.6	at 99.8 Milliseconds		
SAE Filter Class:	1000			
Date of Test:	3/6/97			
Curve Number:	FIL-047			



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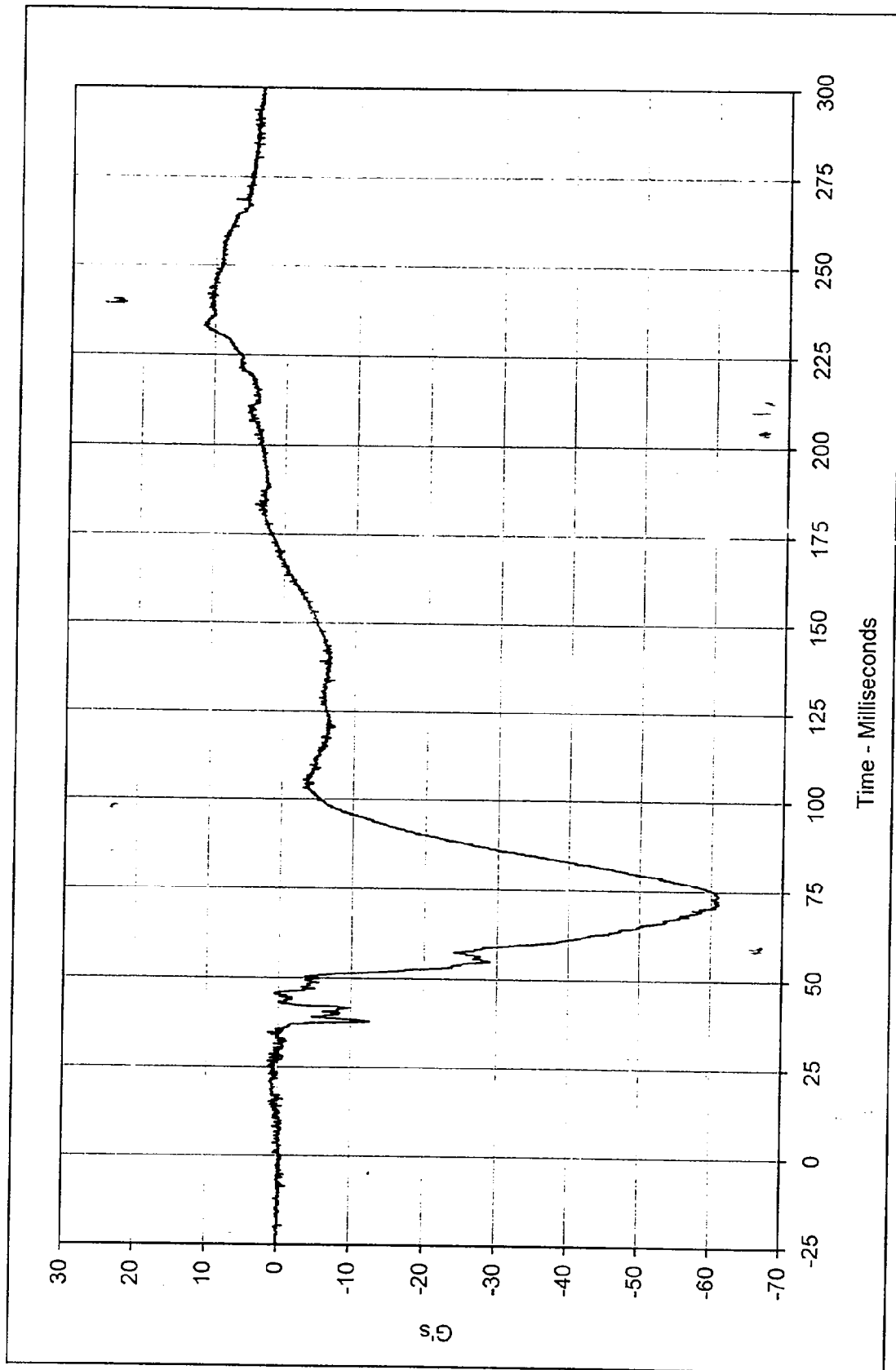




Curve Description: Passenger Head Resultant Primary
 Maximum Value: 65.6 at 70.7 Milliseconds
 Minimum Value: 0.0 at 0.2 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 3/6/97
 Curve Number: RES-045

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel





Curve Description: Passenger Head Redundant X

Maximum Value: 11.7 at 233.1 Milliseconds

Minimum Value: -61.0 at 71.4 Milliseconds

SAE Filter Class: 1000

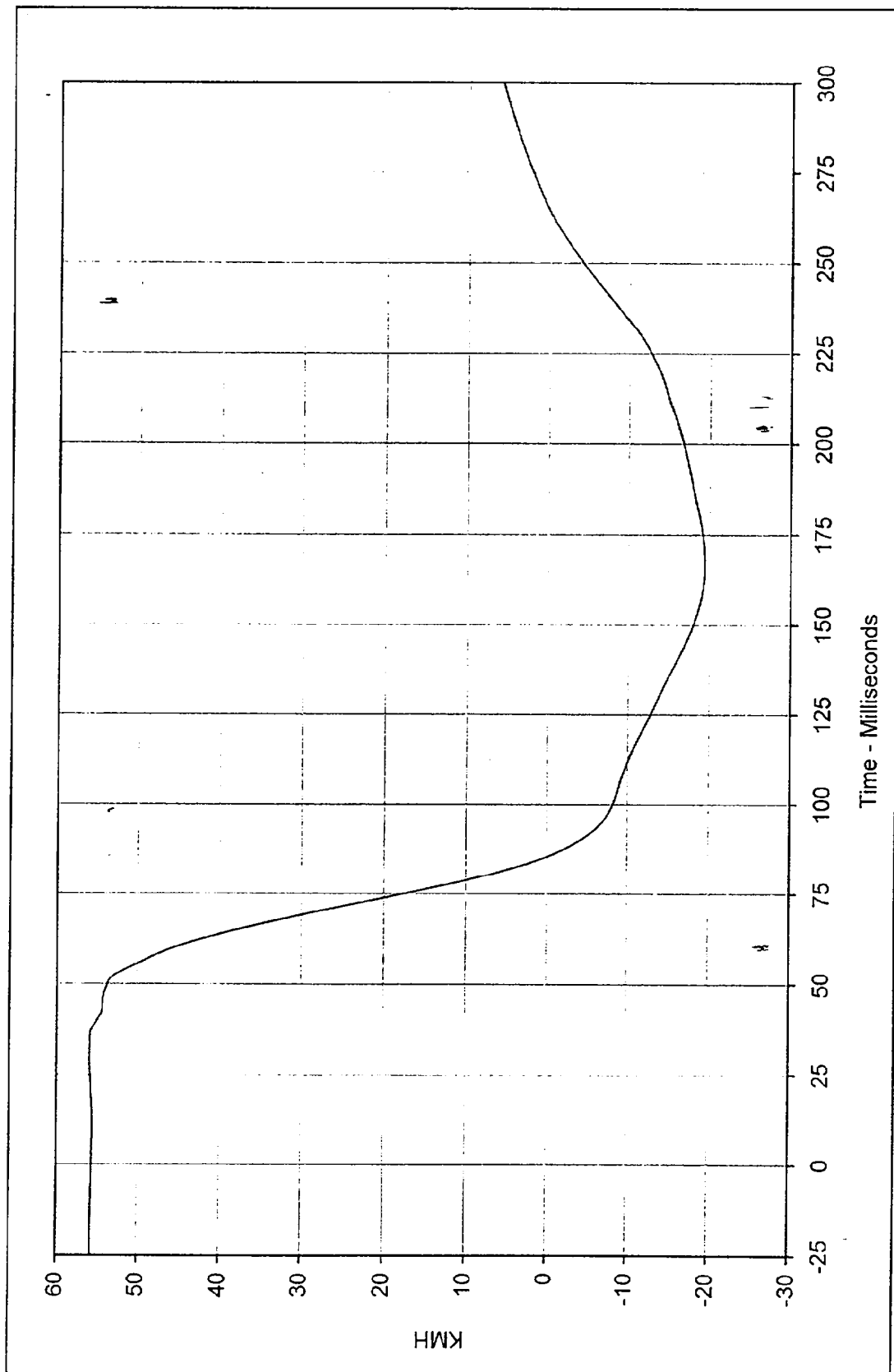
Date of Test: 3/6/97

Curve Number: FIL-048

Testing Program: 1997 New Car Assessment Program

Test Vehicle: 1997 Toyota Tercel

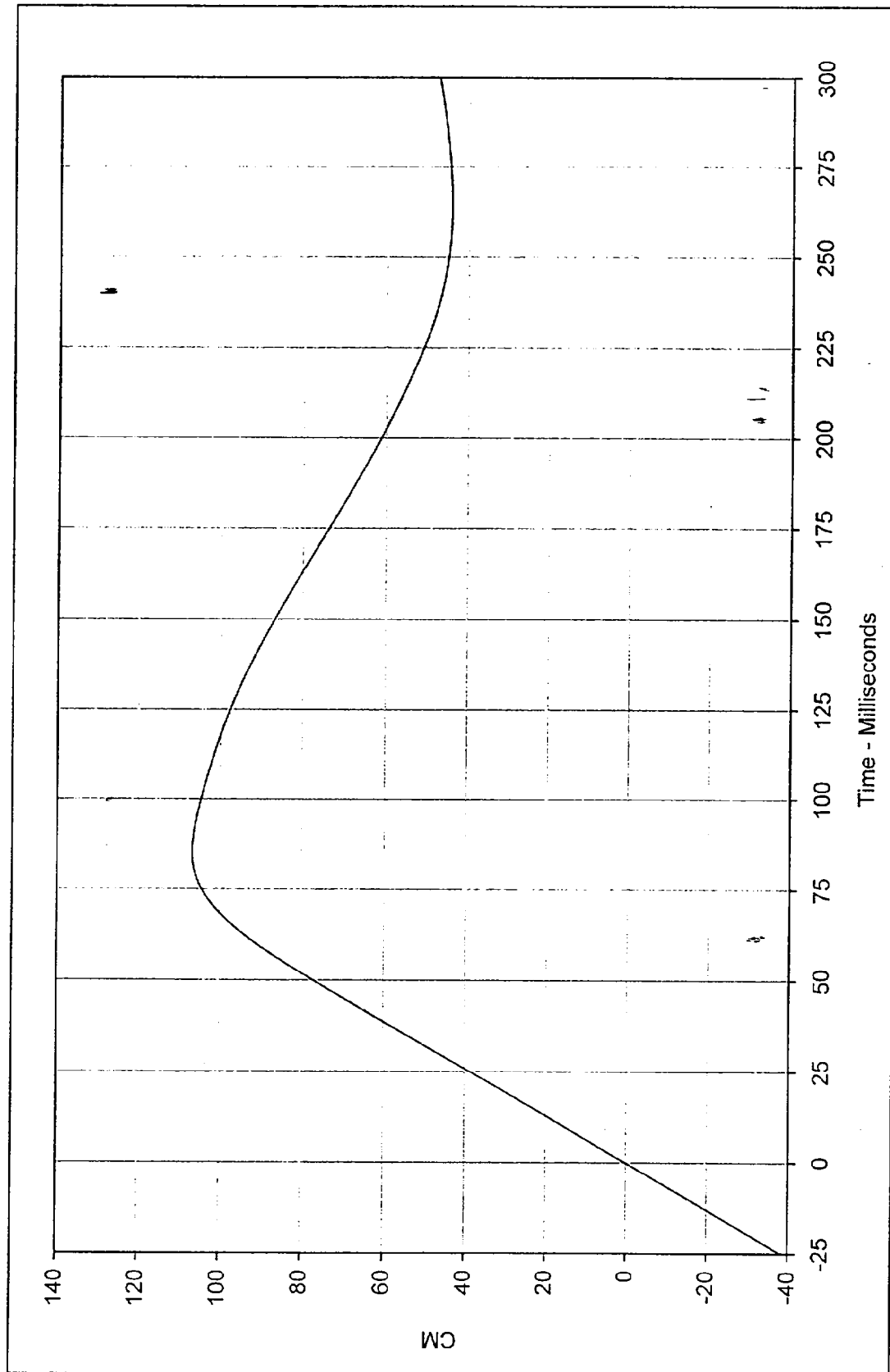




Curve Description: Passenger Head Redundant X Velocity
 Maximum Value: 55.9 at 30.1 Milliseconds
 Minimum Value: -19.4 at 166.8 Milliseconds
 SAE Filter Class: 180
 Date of Test: 3/6/97
 Curve Number: IN1-048

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel

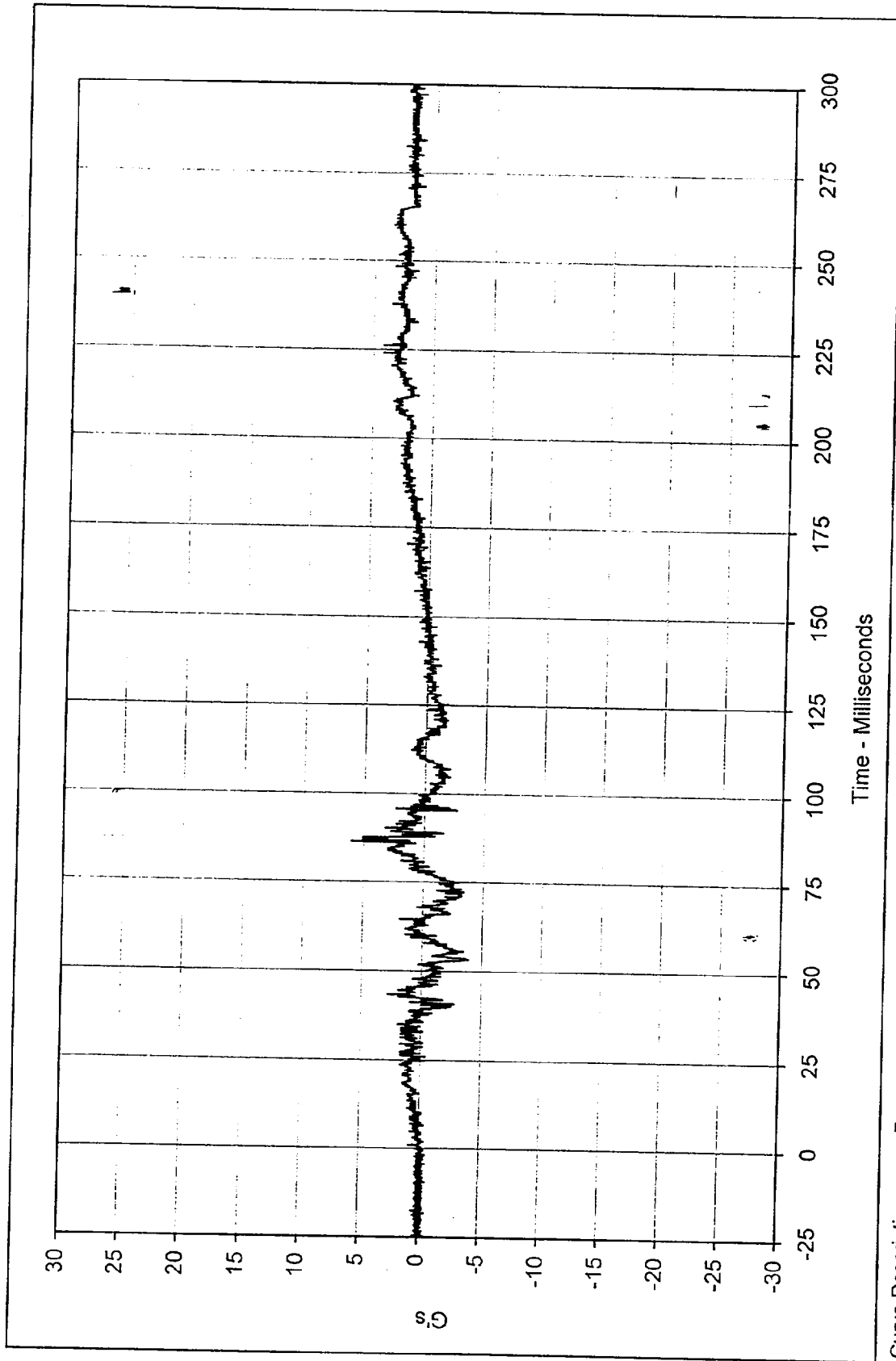




Curve Description: Passenger Head Redundant X Displ.
 Maximum Value: 106.8 at 85.5 Milliseconds
 Minimum Value: 0.1 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 3/6/97
 Curve Number: IN2-048

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel

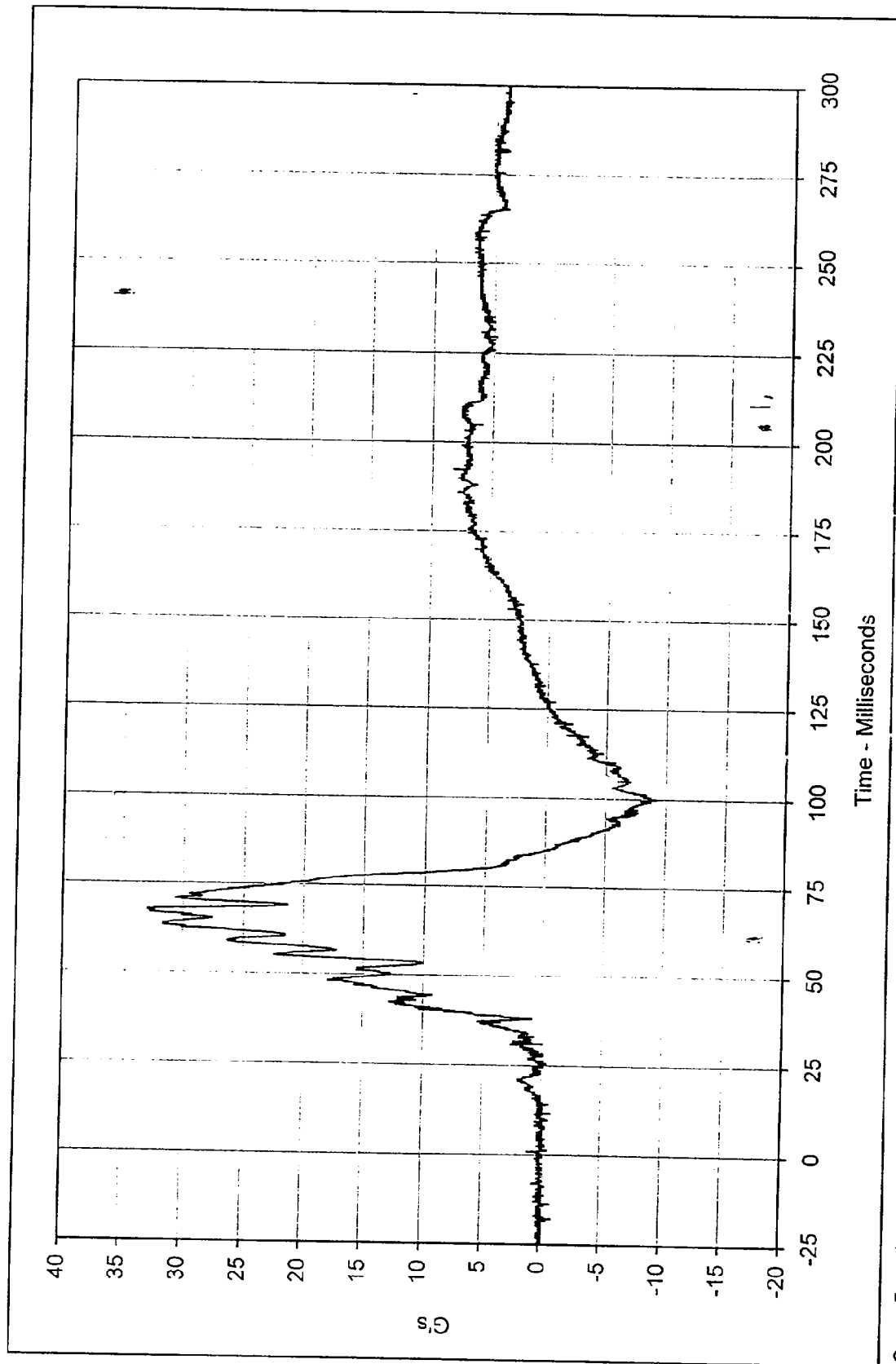




Curve Description: Passenger Head Redundant Y
 Maximum Value: 6.0 at 86.4 Milliseconds
 Minimum Value: -3.9 at 53.4 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 3/6/97
 Curve Number: FIL-049

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel



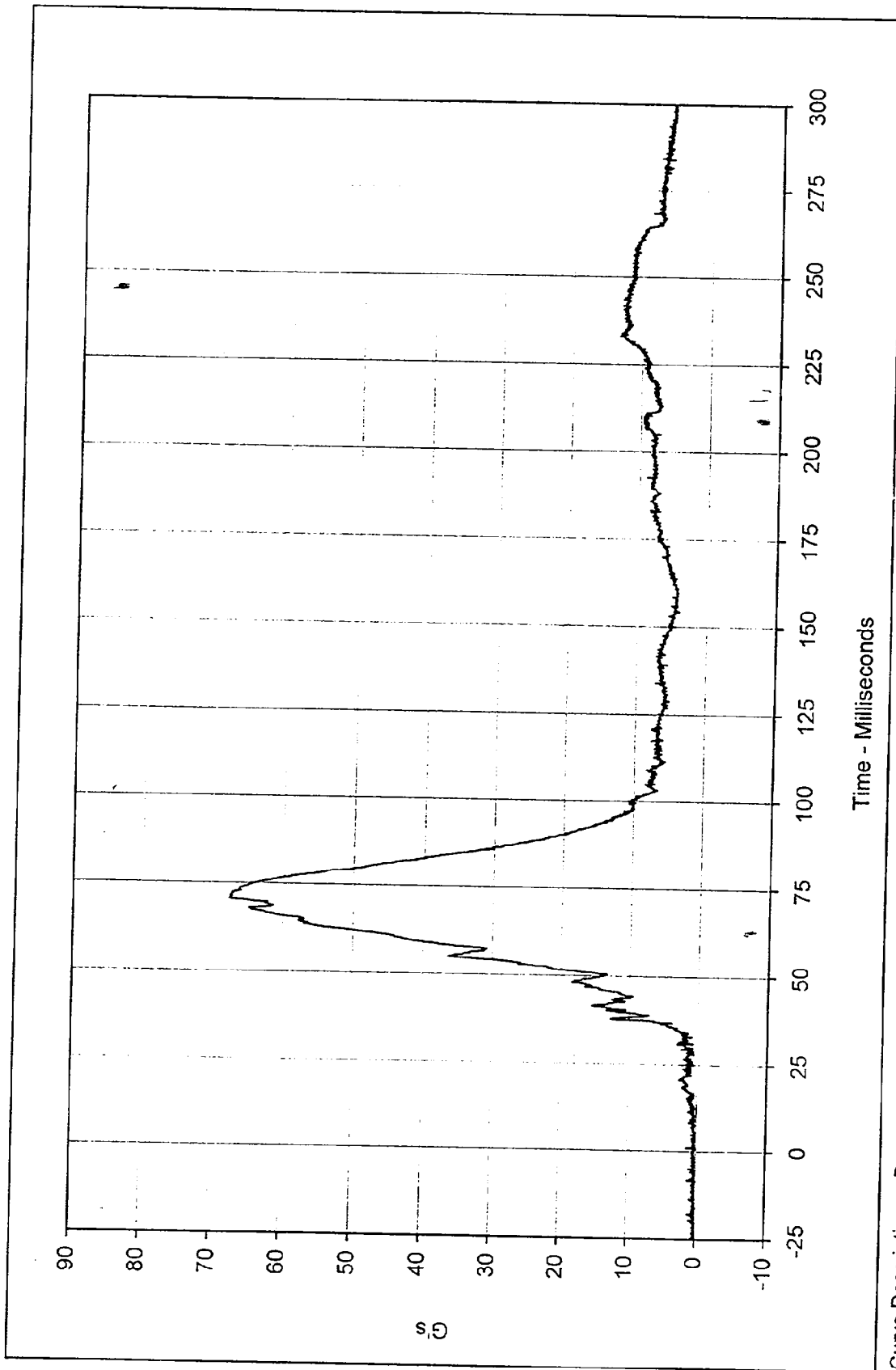


B72

Curve Description: Passenger Head Redundant Z
 Maximum Value: 32.9 at 67.5 Milliseconds
 Minimum Value: -9.2 at 99.9 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 3/6/97
 Curve Number: FIL-050

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel





Curve Description: Passenger Head Resultant Redundant

Maximum Value: 67.7 at 70.6 Milliseconds

Minimum Value: 0.0 at 0.7 Milliseconds

SAE Filter Class: 1000

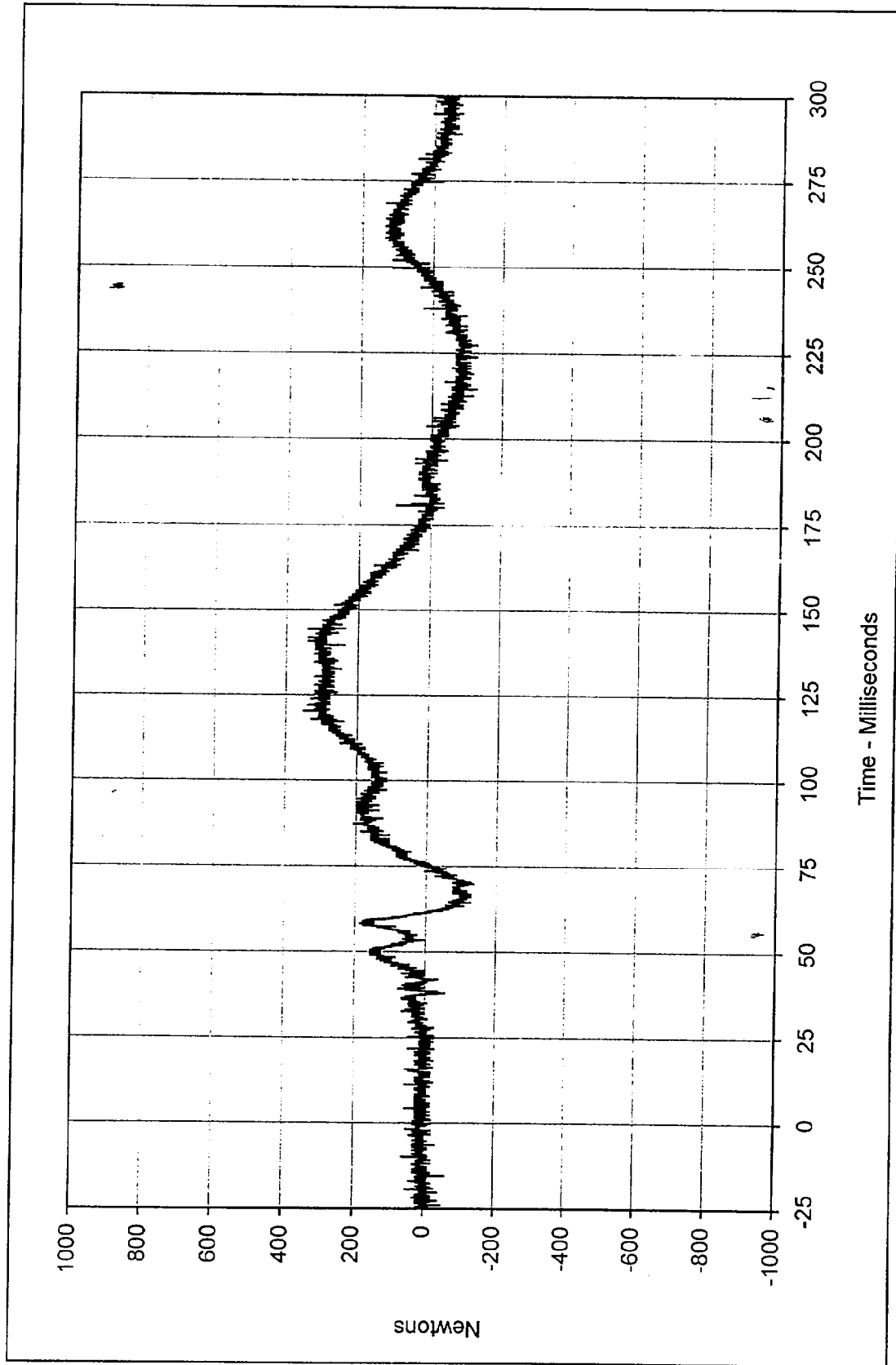
Date of Test: 3/6/97

Curve Number: RES-048

Testing Program: 1997 New Car Assessment Program

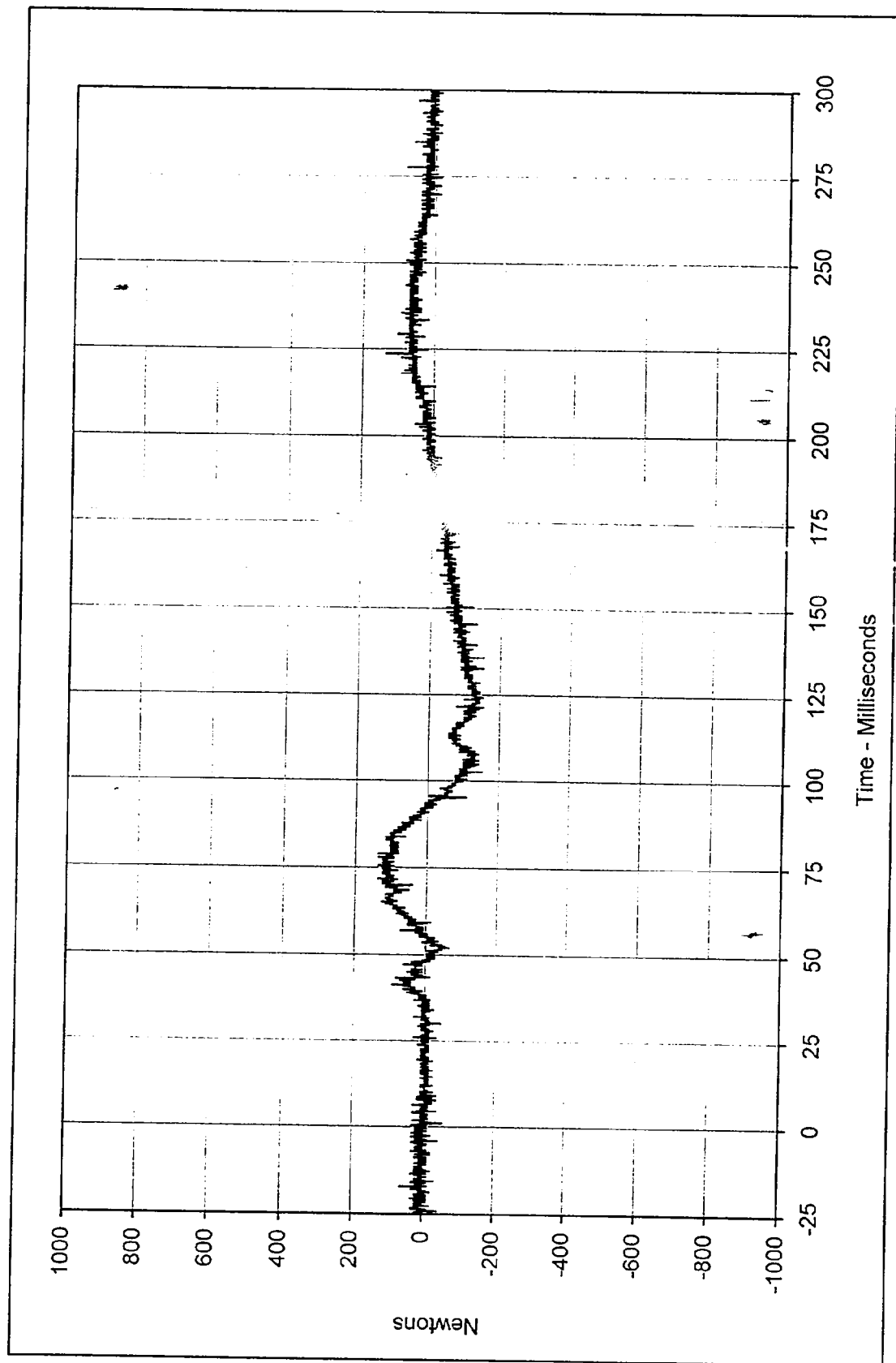
Test Vehicle: 1997 Toyota Tercel





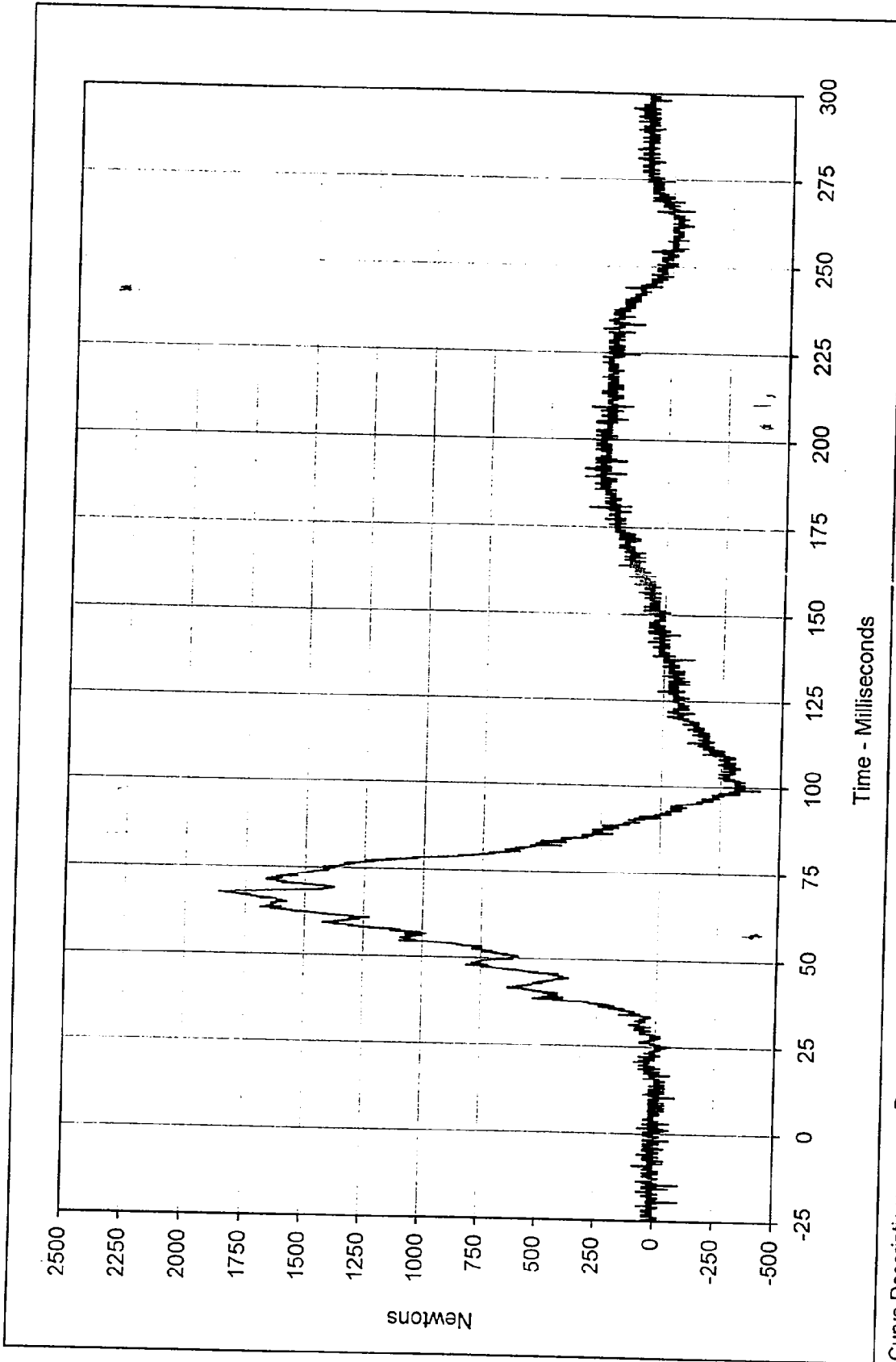
Curve Description:	Passenger Neck Force X		Testing Program:	1997 New Car Assessment Program
Maximum Value:	348.8	at 120.4 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-137.3	at 69.8 Milliseconds		
SAE Filter Class:	1000			
Date of Test:	3/6/97			
Curve Number:	FIL-051			





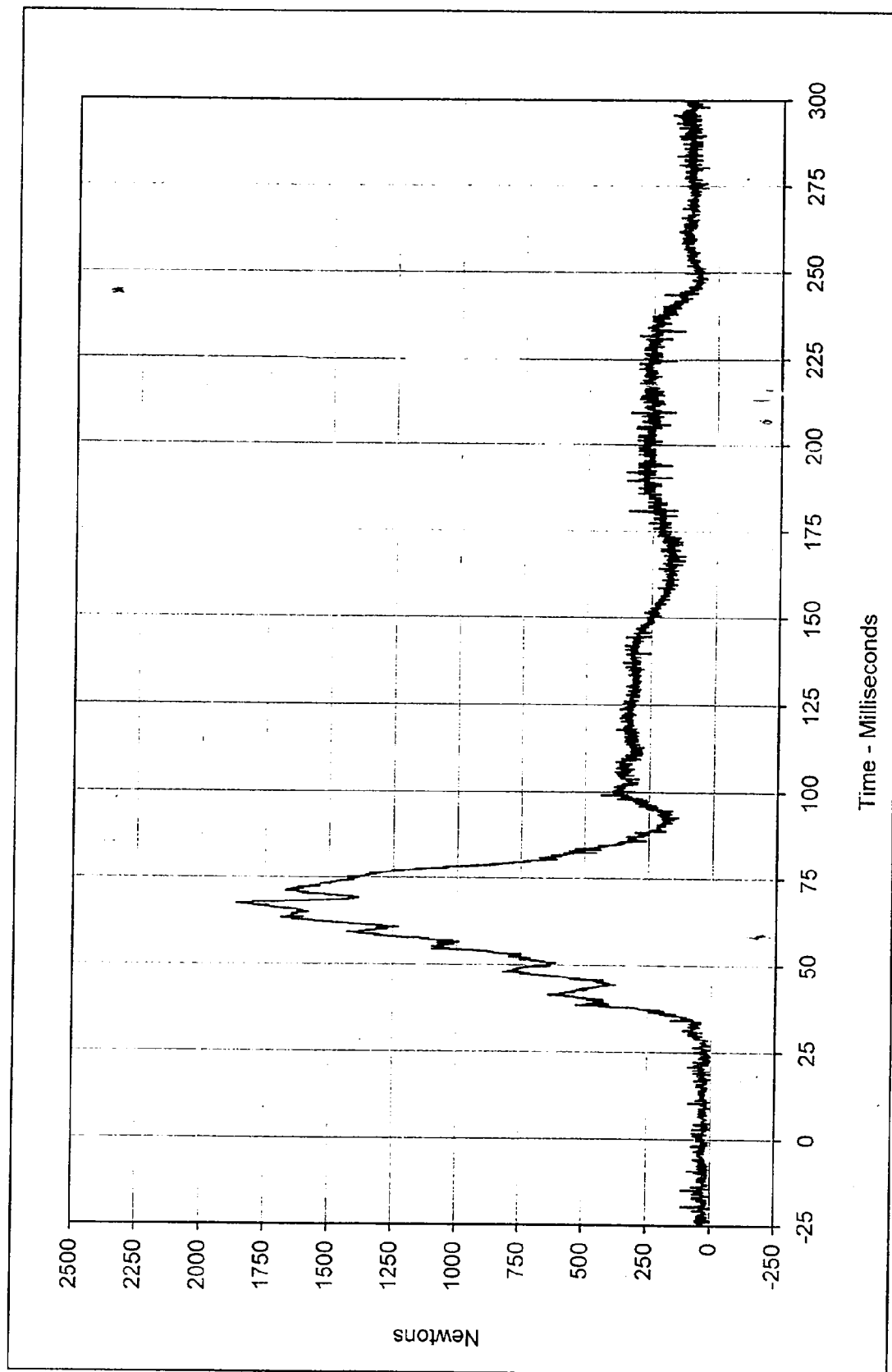
Curve Description:		Passenger Neck Force Y		Testing Program: 1997 New Car Assessment Program	
Maximum Value:	135.0	at	71.7	Milliseconds	Test Vehicle: 1997 Toyota Tercel
Minimum Value:	-152.0	at	102.7	Milliseconds	
SAE Filter Class:	1000				
Date of Test:	3/6/97				
Curve Number:	FIL-052				





Curve Description:	Passenger Neck Force Z	Testing Program:	1997 New Car Assessment Program
Maximum Value:	1860.9 at 67.5 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-414.5 at 99.2 Milliseconds		
SAE Filter Class:	1000		
Date of Test:	3/6/97		
Curve Number:	FIL-053		





Curve Description: Passenger Neck Force Resultant

Maximum Value: 1864.7 at 67.5 Milliseconds

Minimum Value: 0.0 at -28.8 Milliseconds

SAE Filter Class: 1000

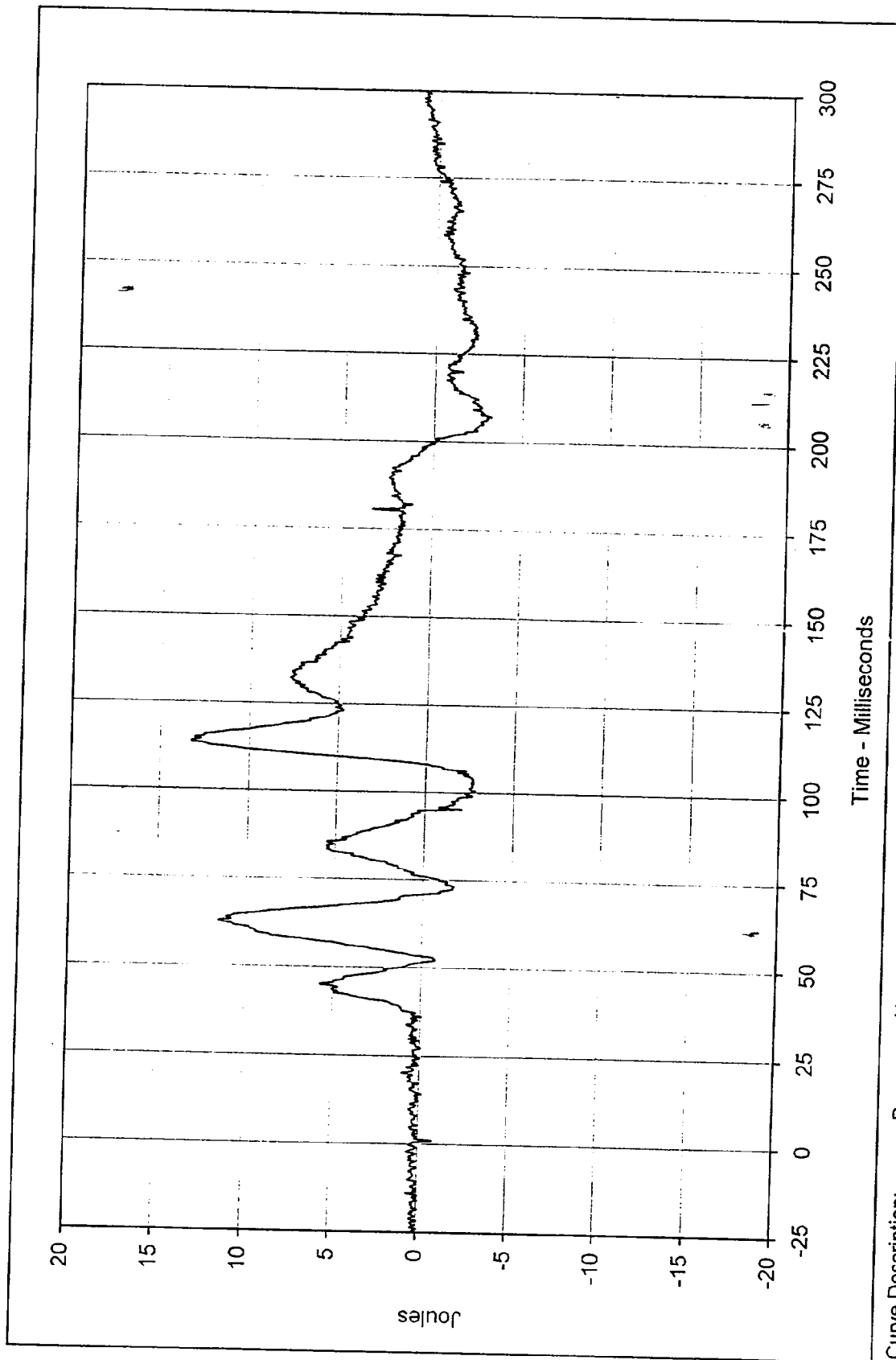
Date of Test: 3/6/97

Curve Number: RES-051

Testing Program: 1997 New Car Assessment Program

Test Vehicle: 1997 Toyota Tercel

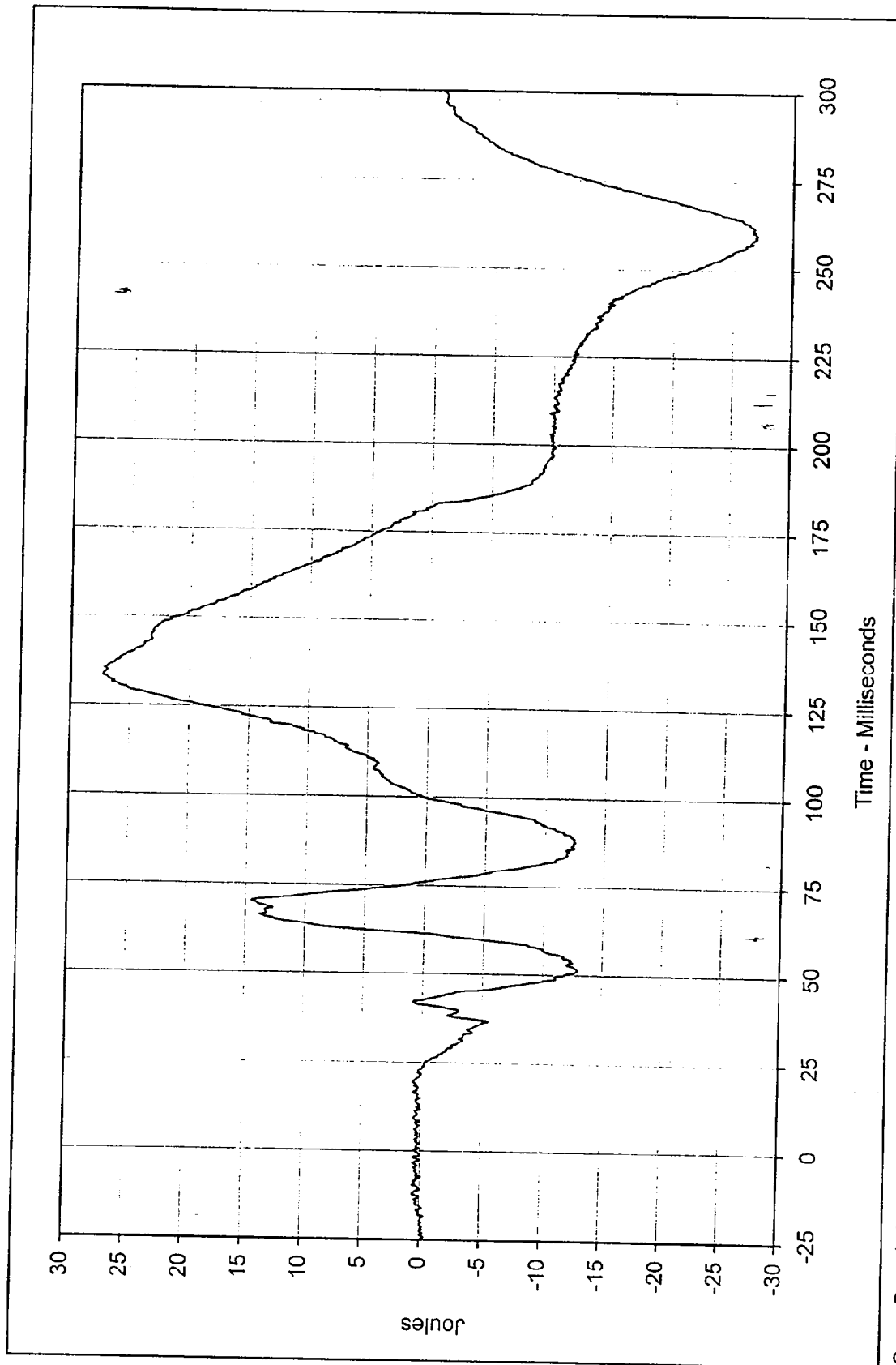




Curve Description: Passenger Neck Moment X
 Maximum Value: 13.3 at 113.8 Milliseconds
 Minimum Value: -3.2 at 207.2 Milliseconds
 SAE Filter Class: 600
 Date of Test: 3/6/97
 Curve Number: FIL-054

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Terce!





Curve Description:

Passenger Neck Moment Y

Maximum Value:

27.3 at 133.2 Milliseconds

Minimum Value:

-27.0 at 259.8 Milliseconds

SAE Filter Class:

600

Date of Test:

3/6/97

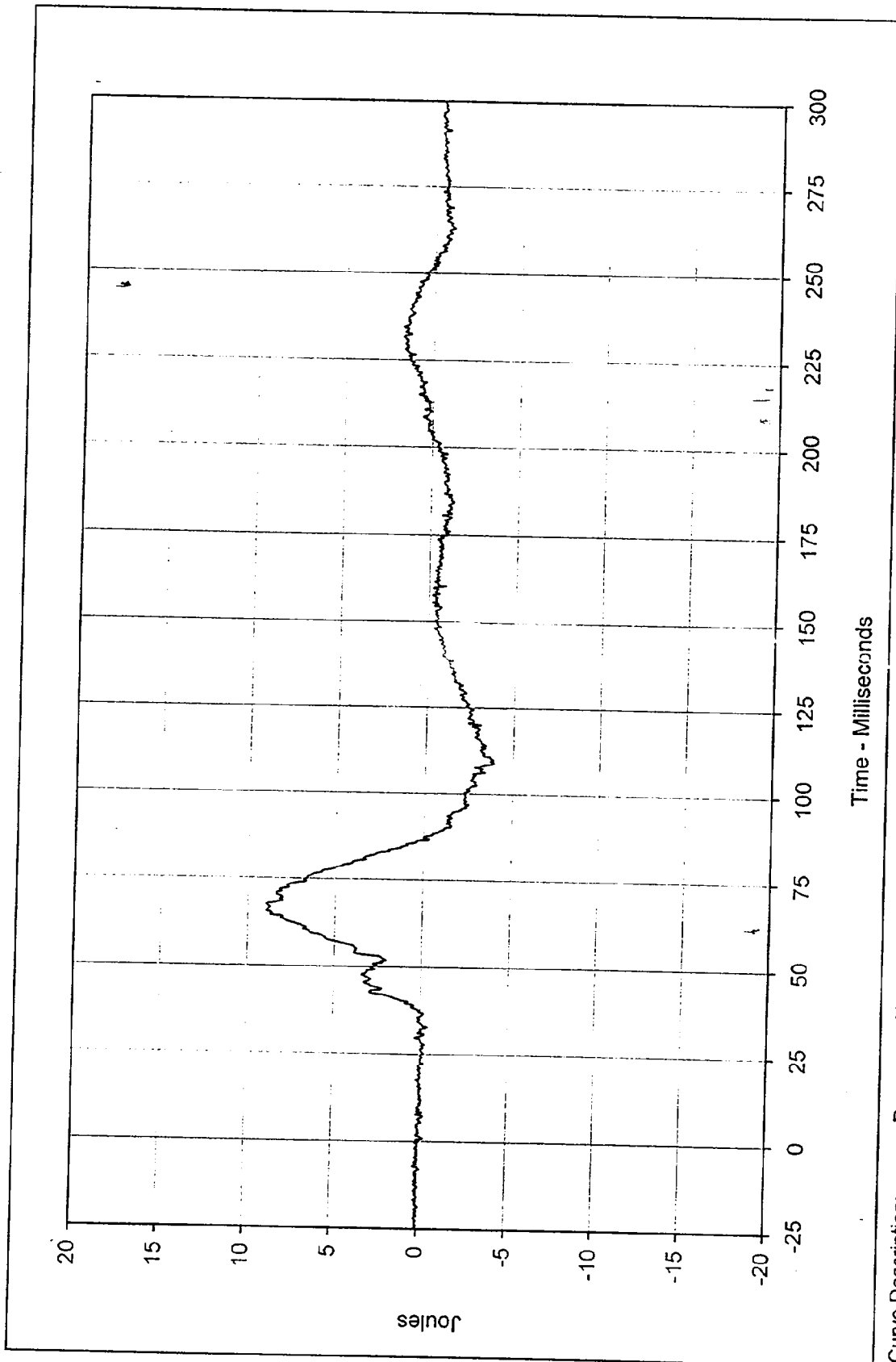
Curve Number:

FIL-055

Testing Program: 1997 New Car Assessment Program

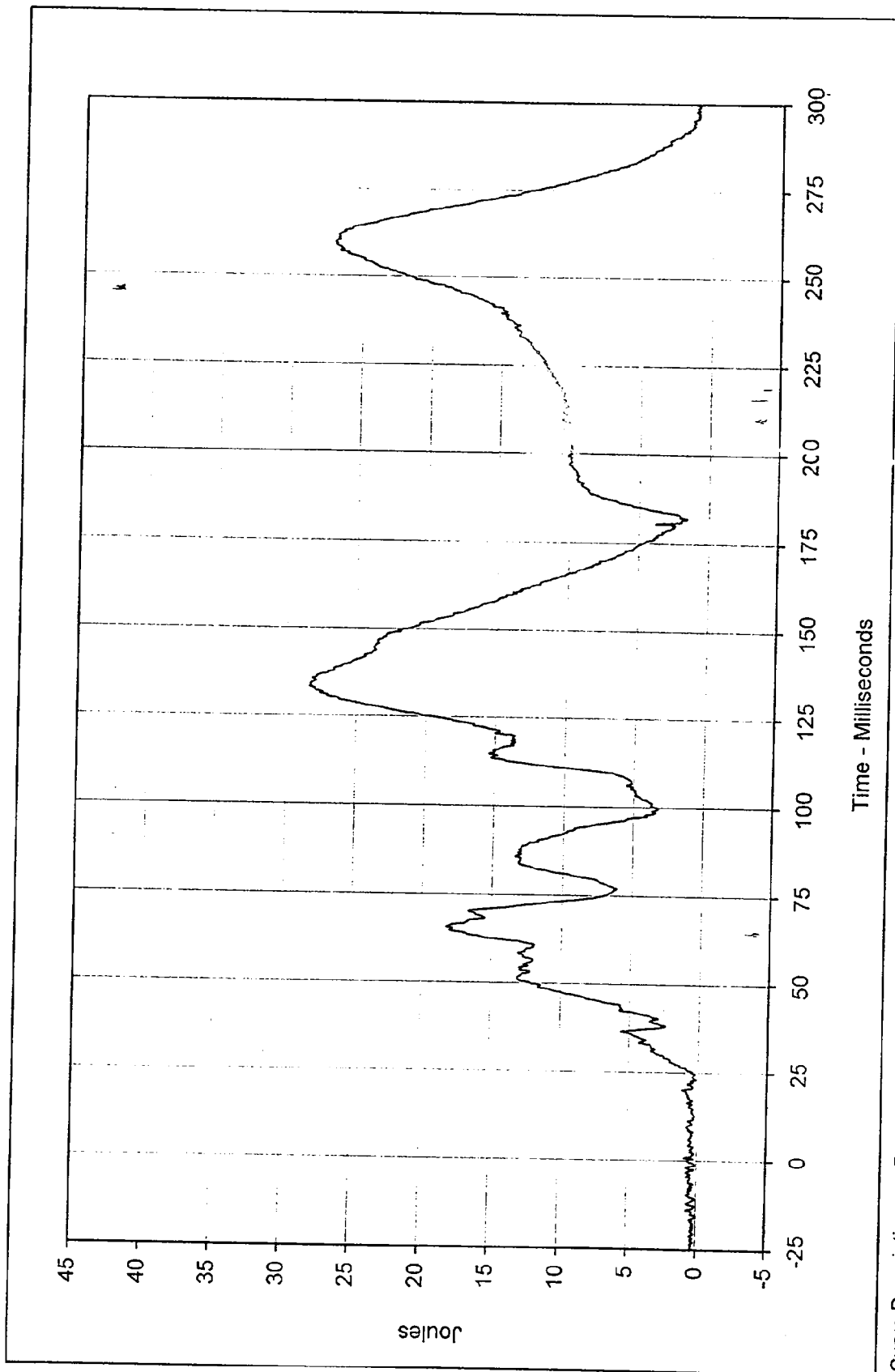
Test Vehicle: 1997 Toyota Tercel





Curve Description:	Passenger Neck Moment Z	Testing Program:	1997 New Car Assessment Program
Maximum Value:	8.9 at 65.8 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-3.9 at 109 Milliseconds		
SAE Filter Class:	600		
Date of Test:	3/6/97		
Curve Number:	FIL-056		





Curve Description: Passenger Neck Moment Resultant

Maximum Value: 28.3 at 133.2 Milliseconds

Minimum Value: 0.1 at 23.1 Milliseconds

SAE Filter Class: 600

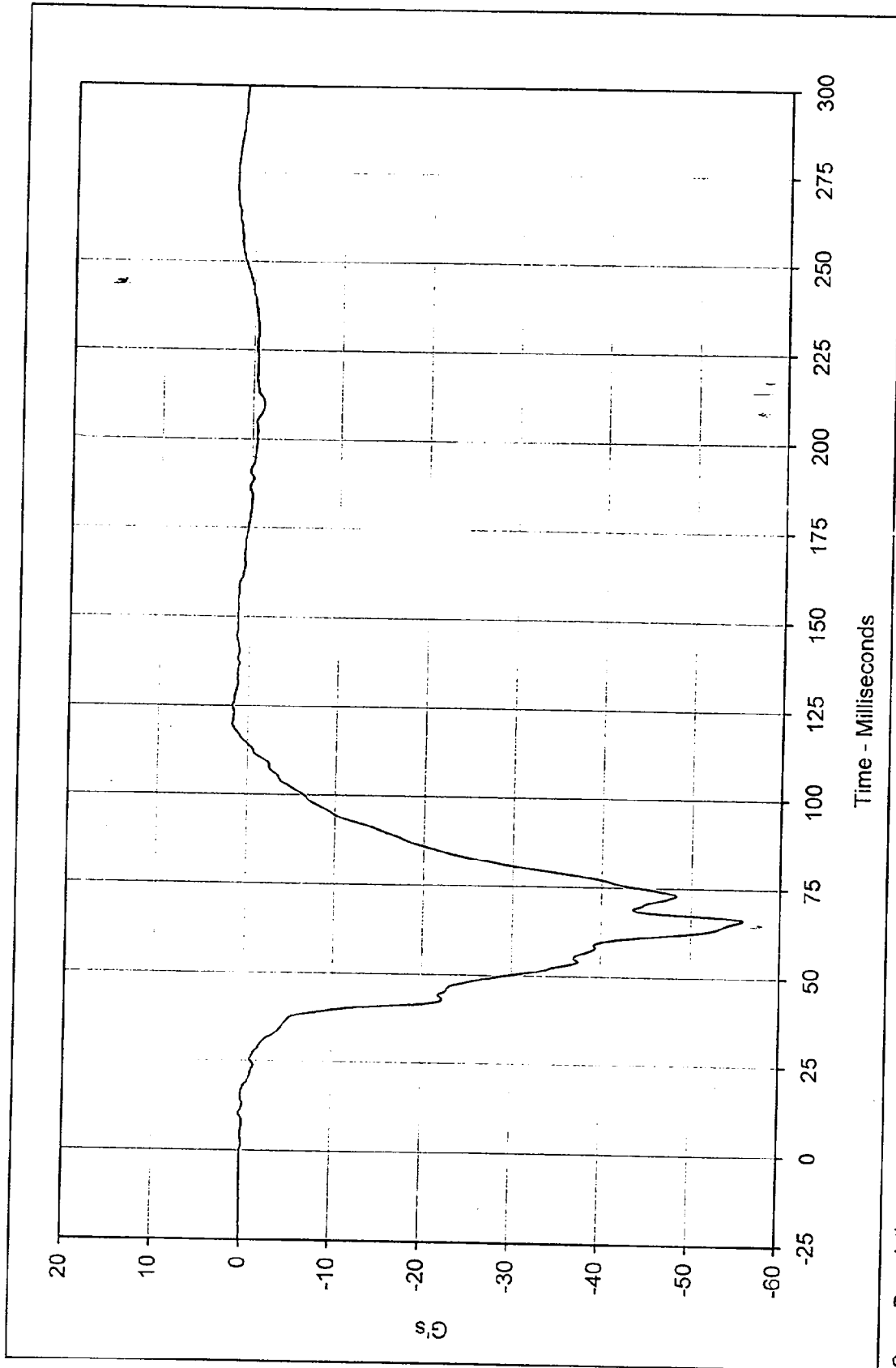
Date of Test: 3/6/97

Curve Number: RES-054

Testing Program: 1997 New Car Assessment Program

Test Vehicle: 1997 Toyota Tercel

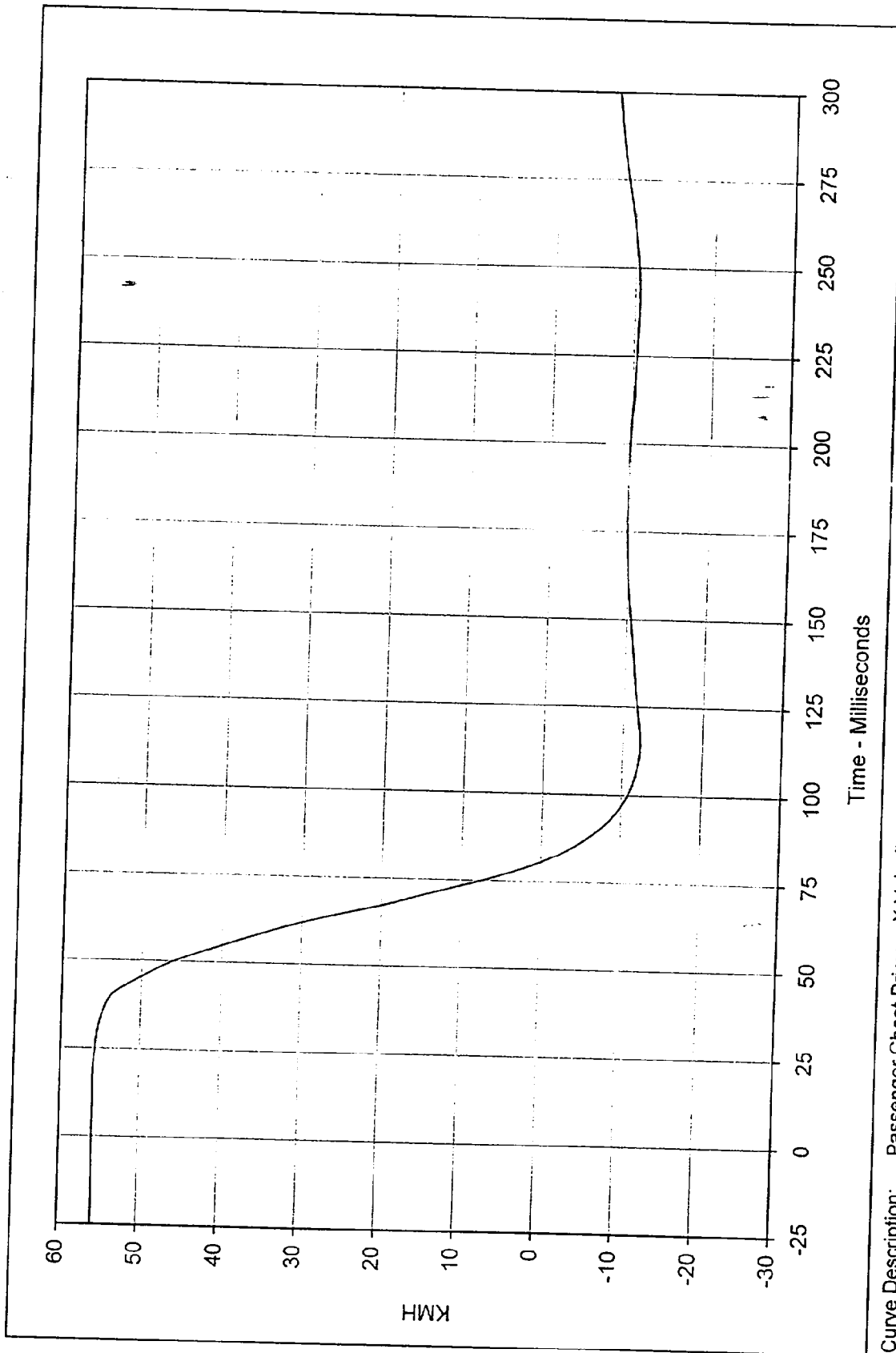




Curve Description: Passenger Chest Primary X
 Maximum Value: 2.1 at 270.9 Milliseconds
 Minimum Value: -55.8 at 66.3 Milliseconds
 SAE Filter Class: 180
 Date of Test: 3/6/97
 Curve Number: FIL-057

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel





Curve Description: Passenger Chest Primary X Velocity

Maximum Value: 55.8 at 17.0 Milliseconds

Minimum Value: -12.2 at 114.3 Milliseconds

SAE Filter Class: 180

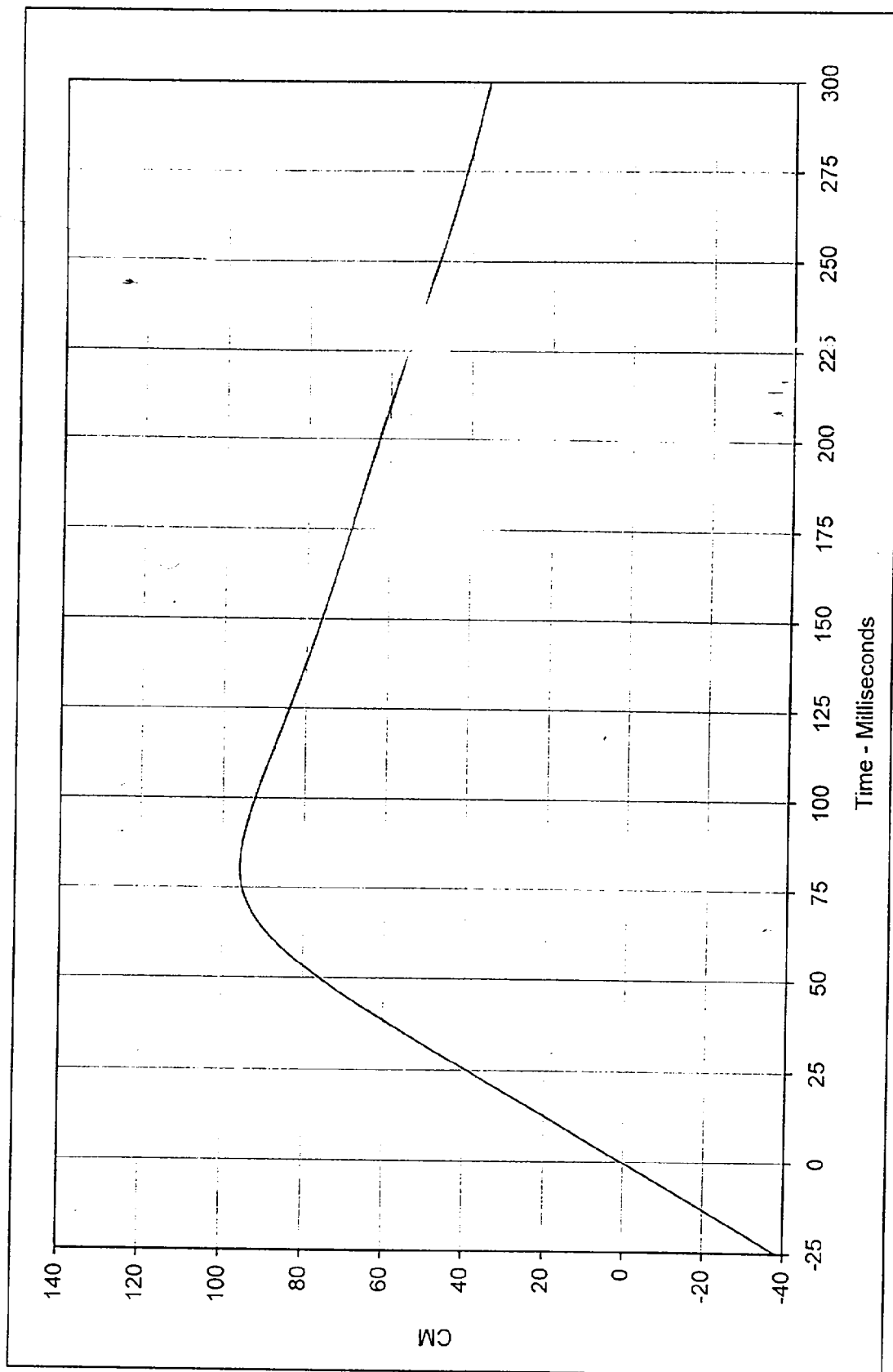
Date of Test: 3/6/97

Curve Number: IN1-057

Testing Program: 1997 New Car Assessment Program

Test Vehicle: 1997 Toyota Tercel

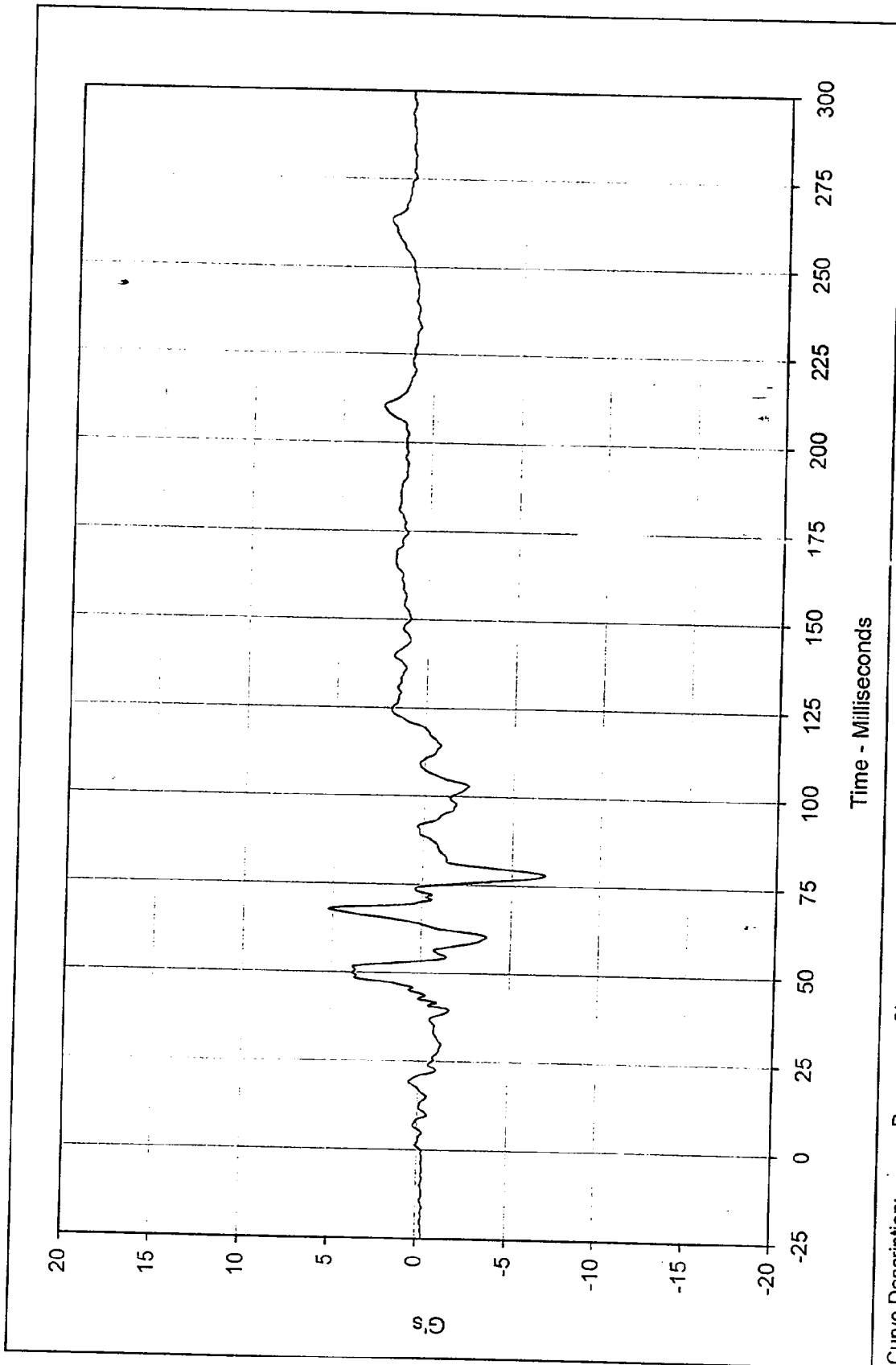




Curve Description: Passenger Chest Primary X Displ.
 Maximum Value: 95.8 at 80.6 Milliseconds
 Minimum Value: 0.4 at 0.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 3/6/97
 Curve Number: IN2-057

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel





Curve Description: Passenger Chest Primary Y

Maximum Value: 5.2 at 67.9 Milliseconds

Minimum Value: -6.9 at 78.1 Milliseconds

SAE Filter Class: 180

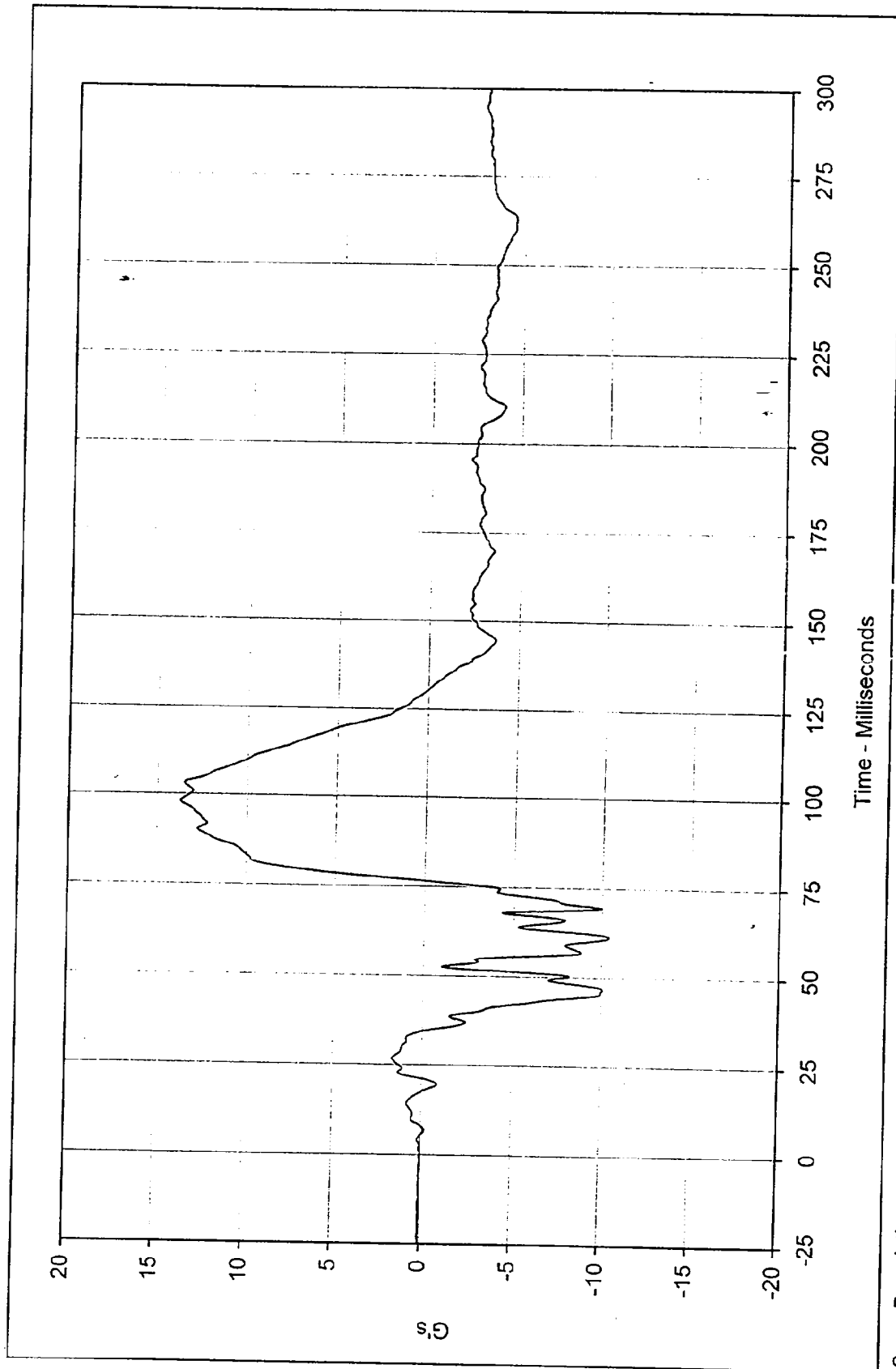
Date of Test: 3/6/97

Curve Number: FIL-058

Testing Program: 1997 New Car Assessment Program

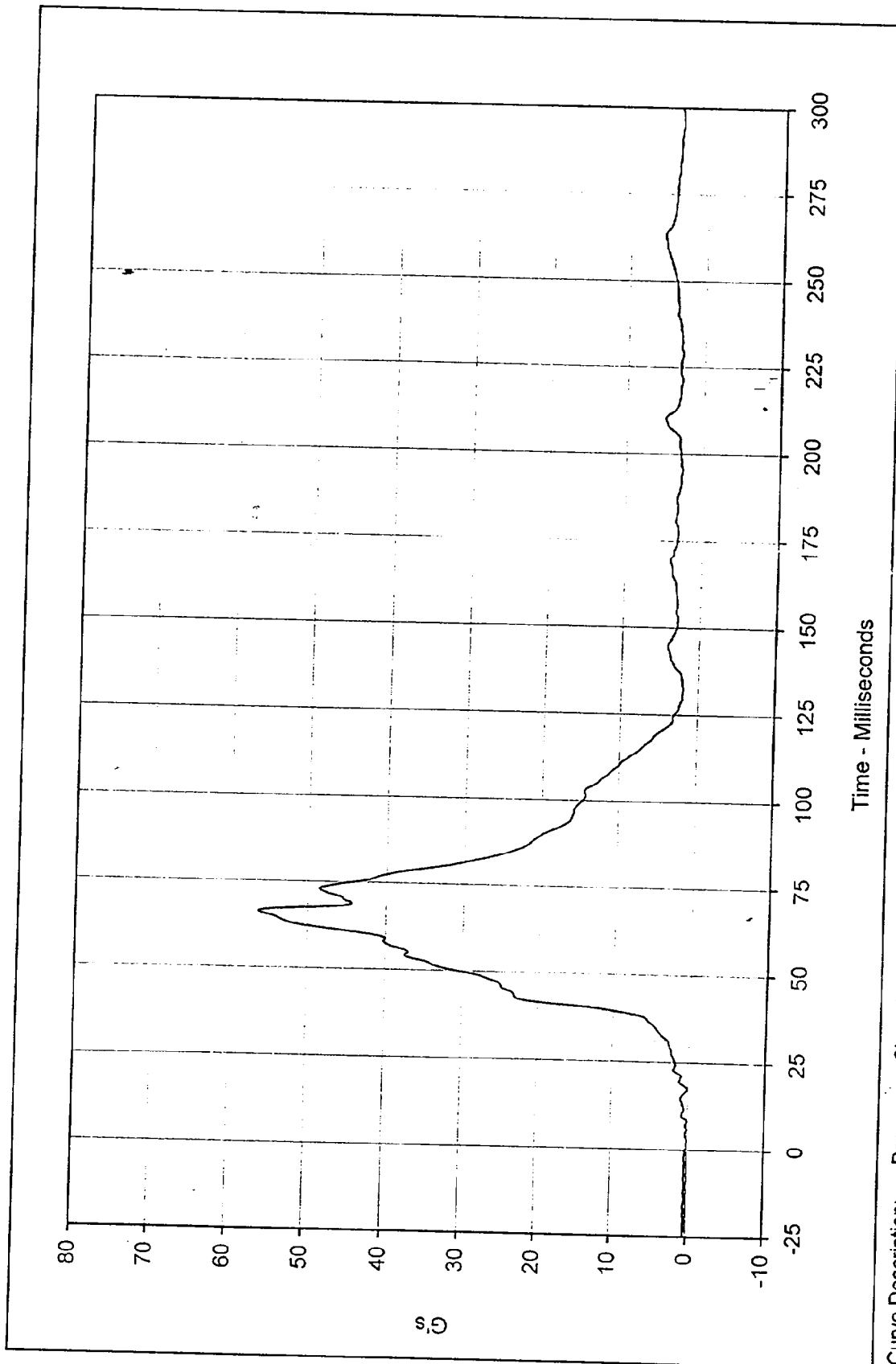
Test Vehicle: 1997 Toyota Tercel





Curve Description: Passenger Chest Primary Z
 Testing Program: 1997 New Car Assessment Program
 Maximum Value: 13.7 at 98 Milliseconds
 Minimum Value: -10.4 at 61.4 Milliseconds
 SAE Filter Class: 180
 Date of Test: 3/6/97
 Curve Number: FIL-059
 Test Vehicle: 1997 Toyota Tercel

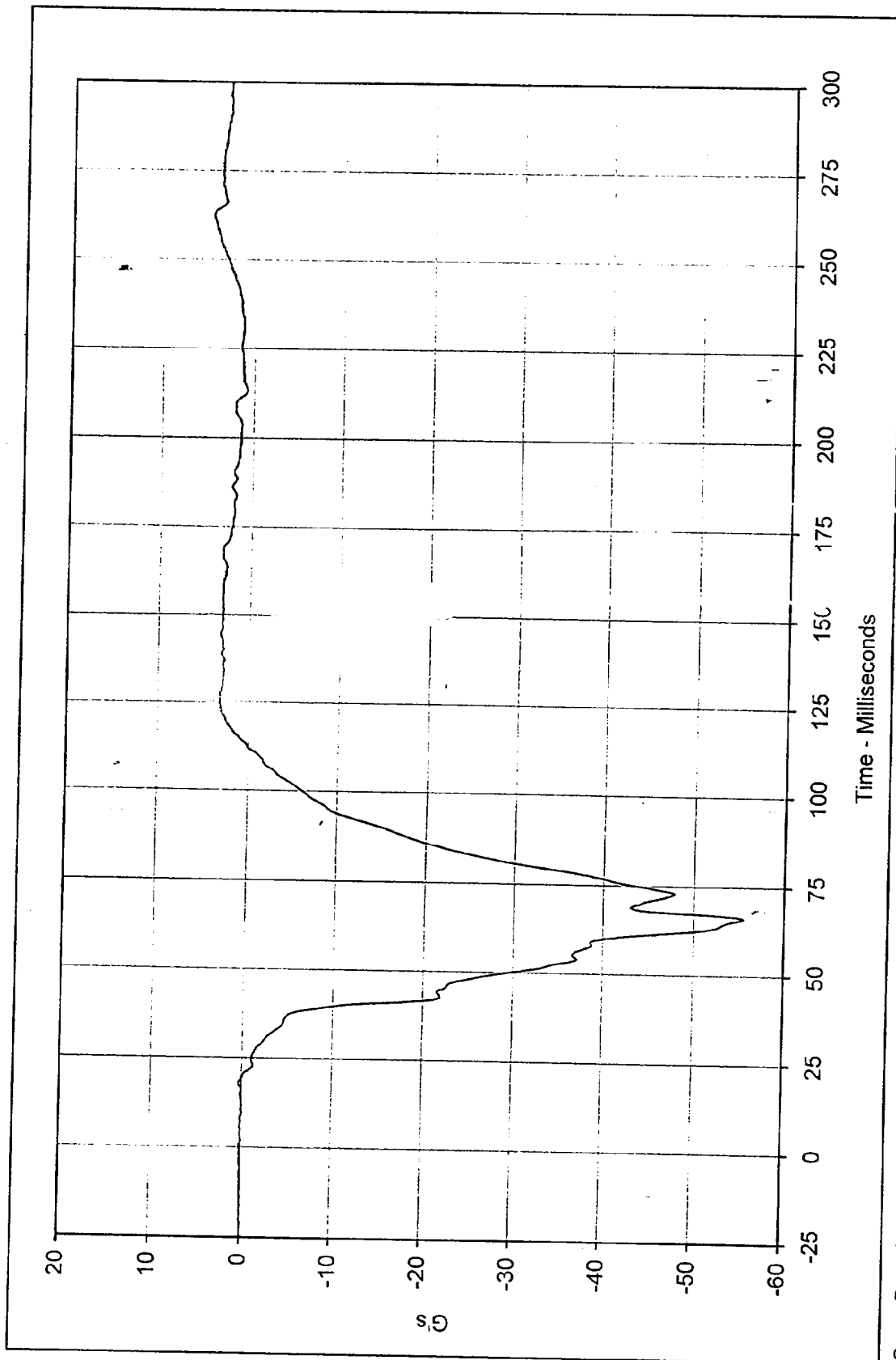




Curve Description: Passenger Chest Resultant Primary
 Maximum Value: 56.4 at 66.3 Milliseconds
 Minimum Value: 0.0 at 0.9 Milliseconds
 SAE Filter Class: 180
 Date of Test: 3/6/97
 Curve Number: RES-057

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel

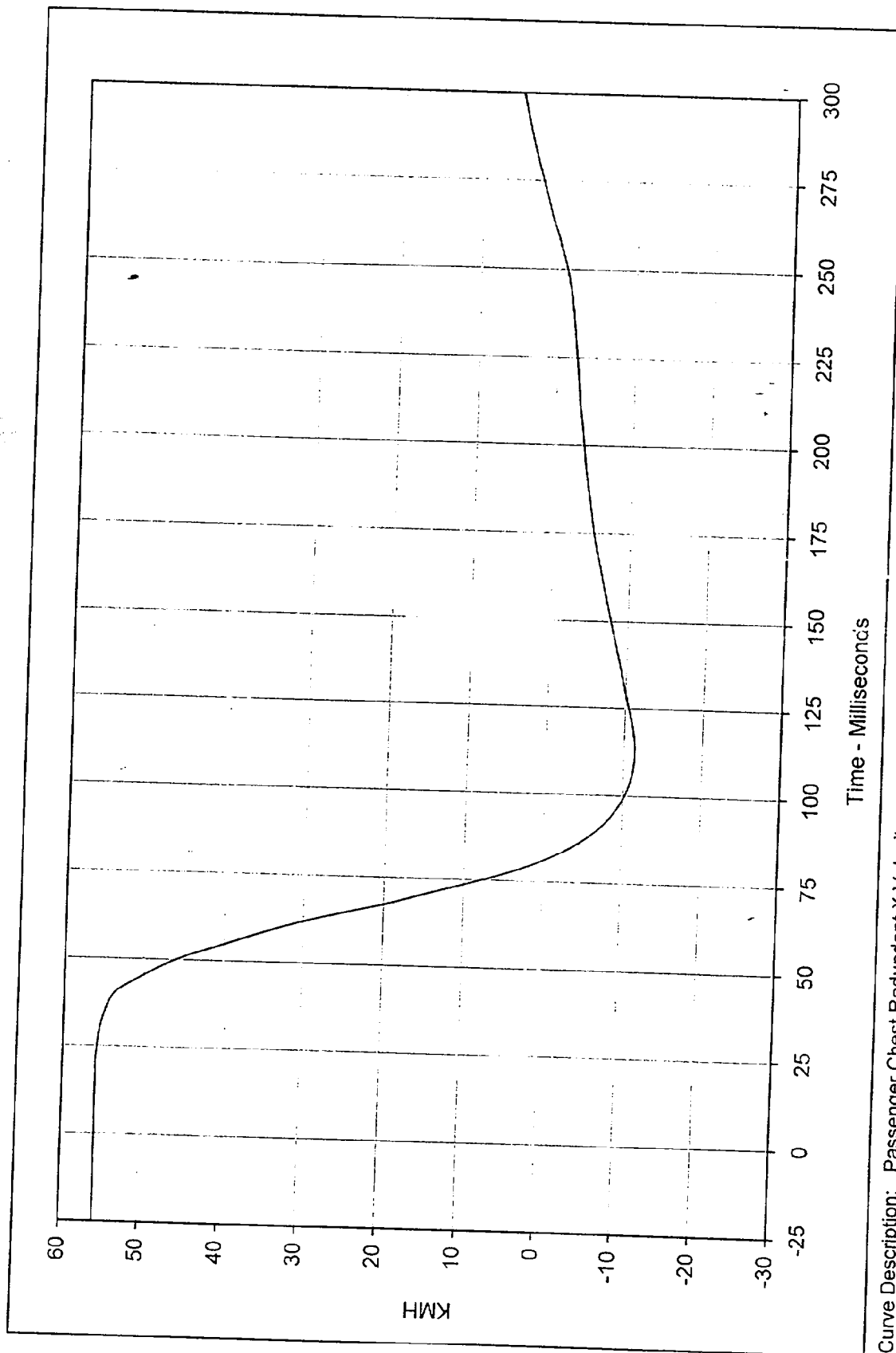




Curve Description: Passenger Chest Redundant X
 Maximum Value: 4.6 at 262.5 Milliseconds
 Minimum Value: -55.5 at 66.3 Milliseconds
 SAE Filter Class: 180
 Date of Test: 3/6/97
 Curve Number: FIL-060

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel





Curve Description: Passenger Chest Redundant X Velocity

Maximum Value: 55.8 at 19.4 Milliseconds

Minimum Value: -11.4 at 111.7 Milliseconds

SAE Filter Class: 180

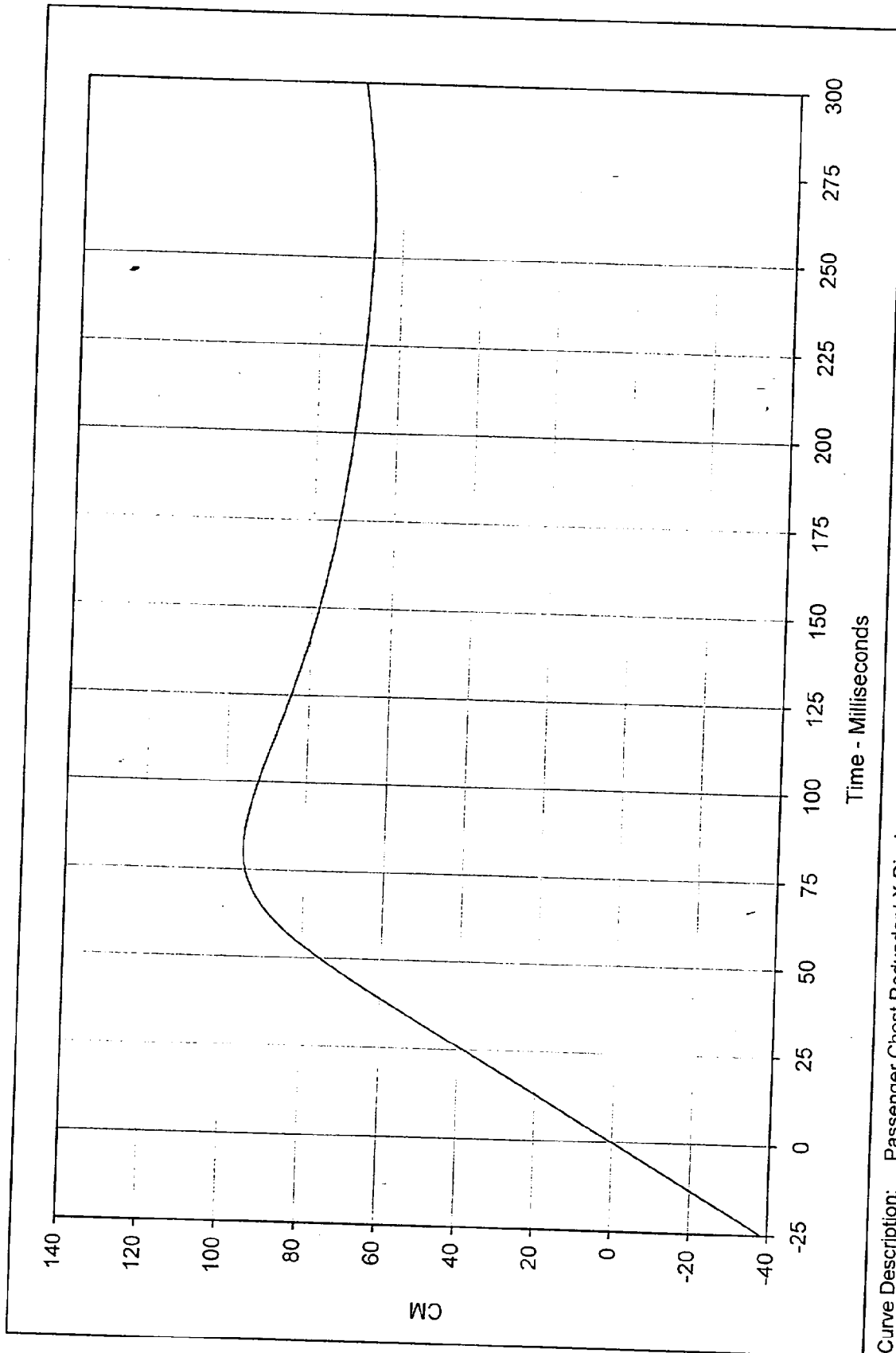
Date of Test: 3/6/97

Curve Number: IN1-060

Testing Program: 1997 New Car Assessment Program

Test Vehicle: 1997 Toyota Tercel





Curve Description: Passenger Chest Redundant X Displ.

Maximum Value: 95.4 at 81.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

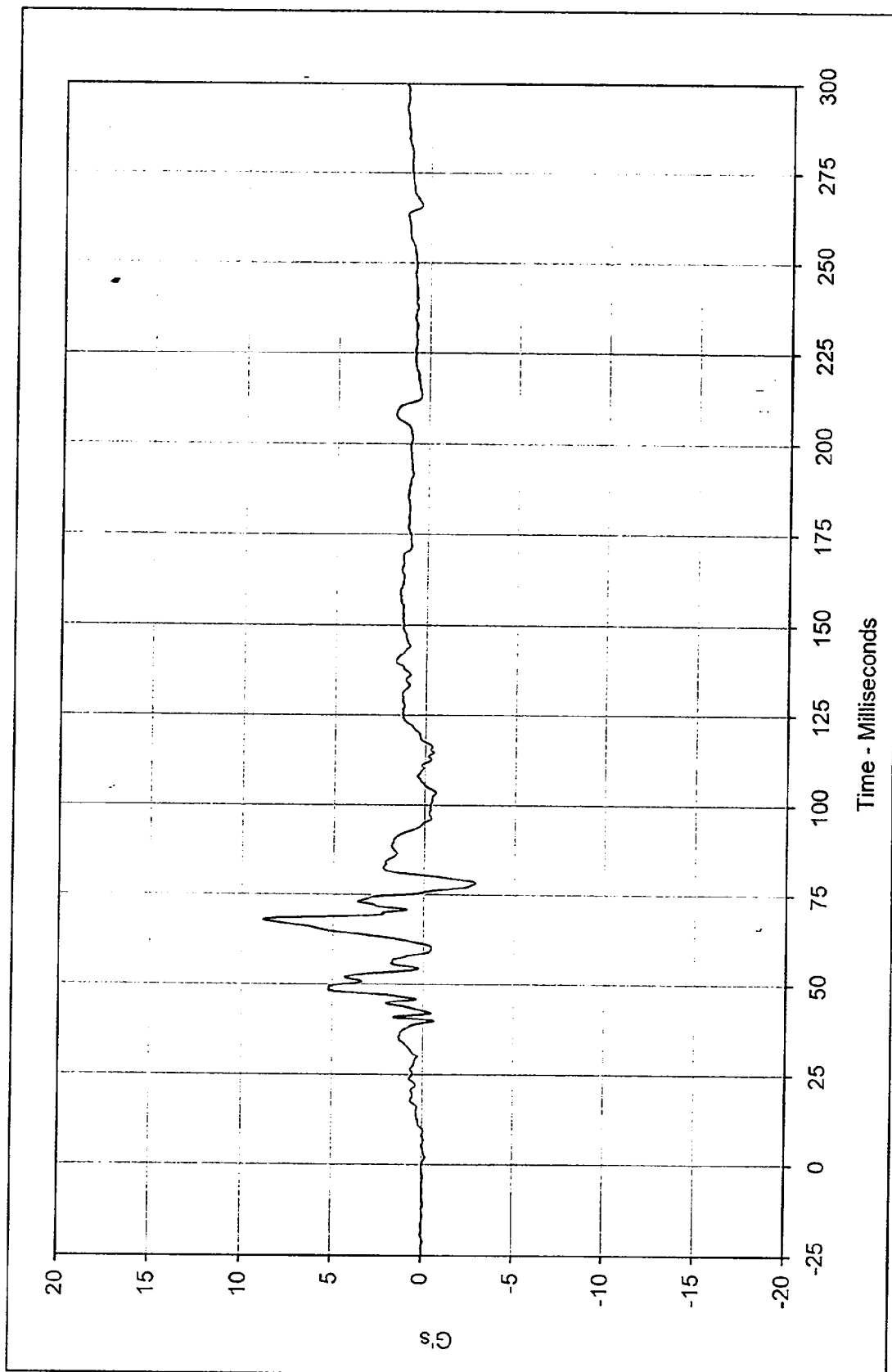
Date of Test: 3/6/97

Curve Number: IN2-060

Testing Program: 1997 New Car Assessment Program

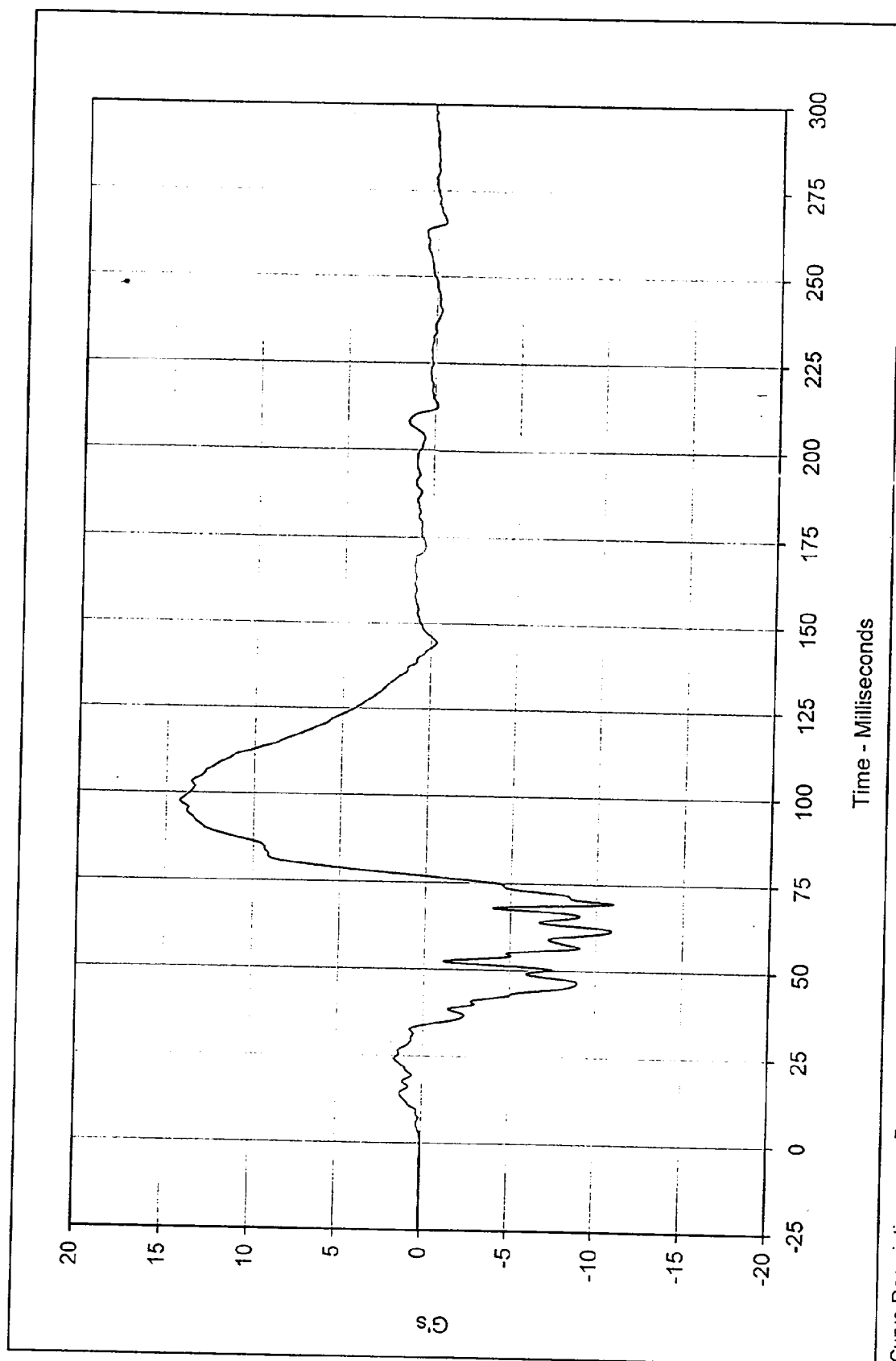
Test Vehicle: 1997 Toyota Tercel





Curve Description:	Passenger Chest Redundant Y	Testing Program:	1997 New Car Assessment Program
Maximum Value:	8.8 at 68 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-2.9 at 78.2 Milliseconds		
SAE Filter Class:	180		
Date of Test:	3/6/97		
Curve Number:	FIL-061		

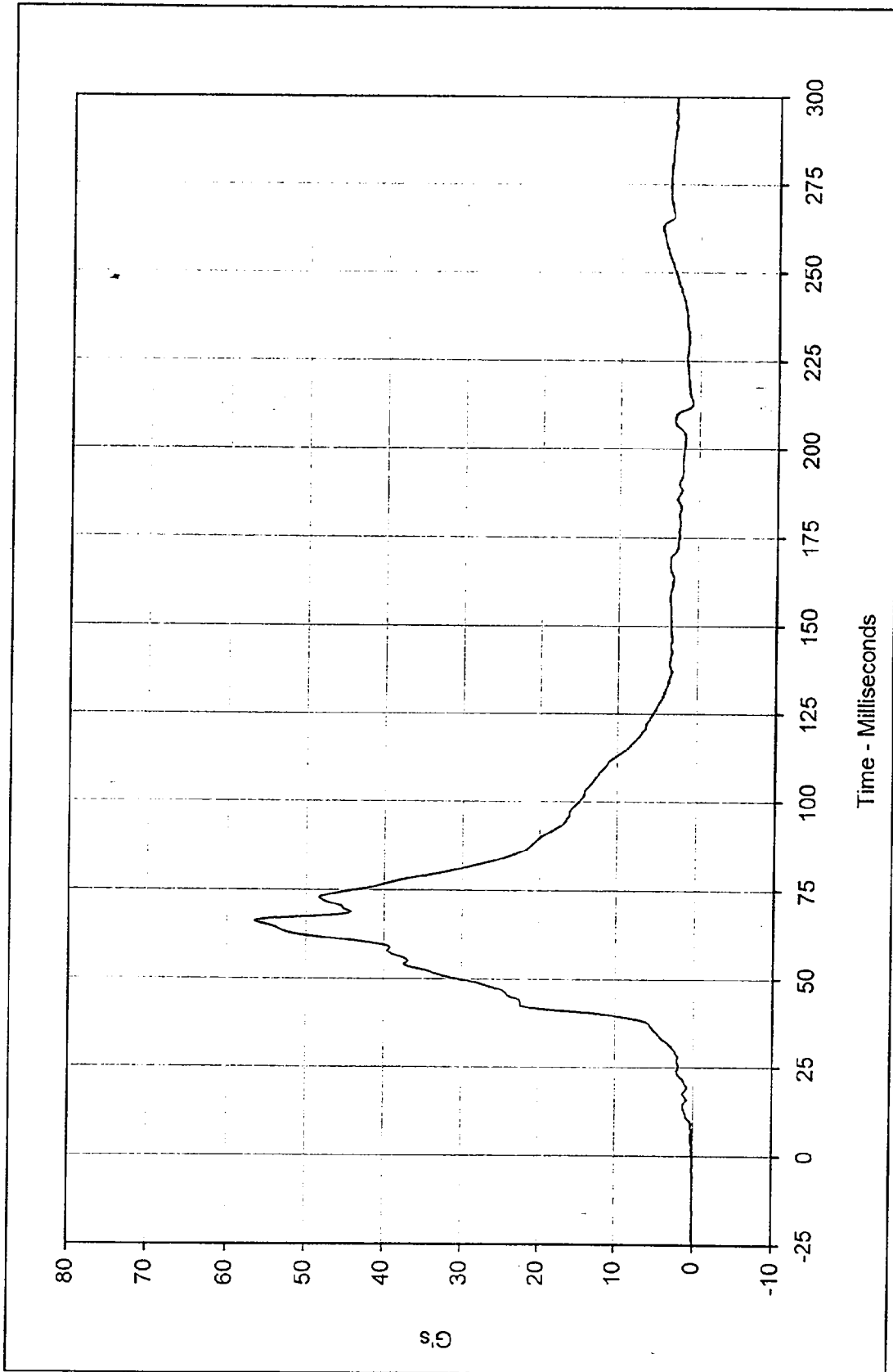




Curve Description: Passenger Chest Redundant Z
 Maximum Value: 14.2 at 97.7 Milliseconds
 Minimum Value: -11.0 at 69.6 Milliseconds
 SAE Filter Class: 180
 Date of Test: 3/6/97
 Curve Number: FIL-062

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel

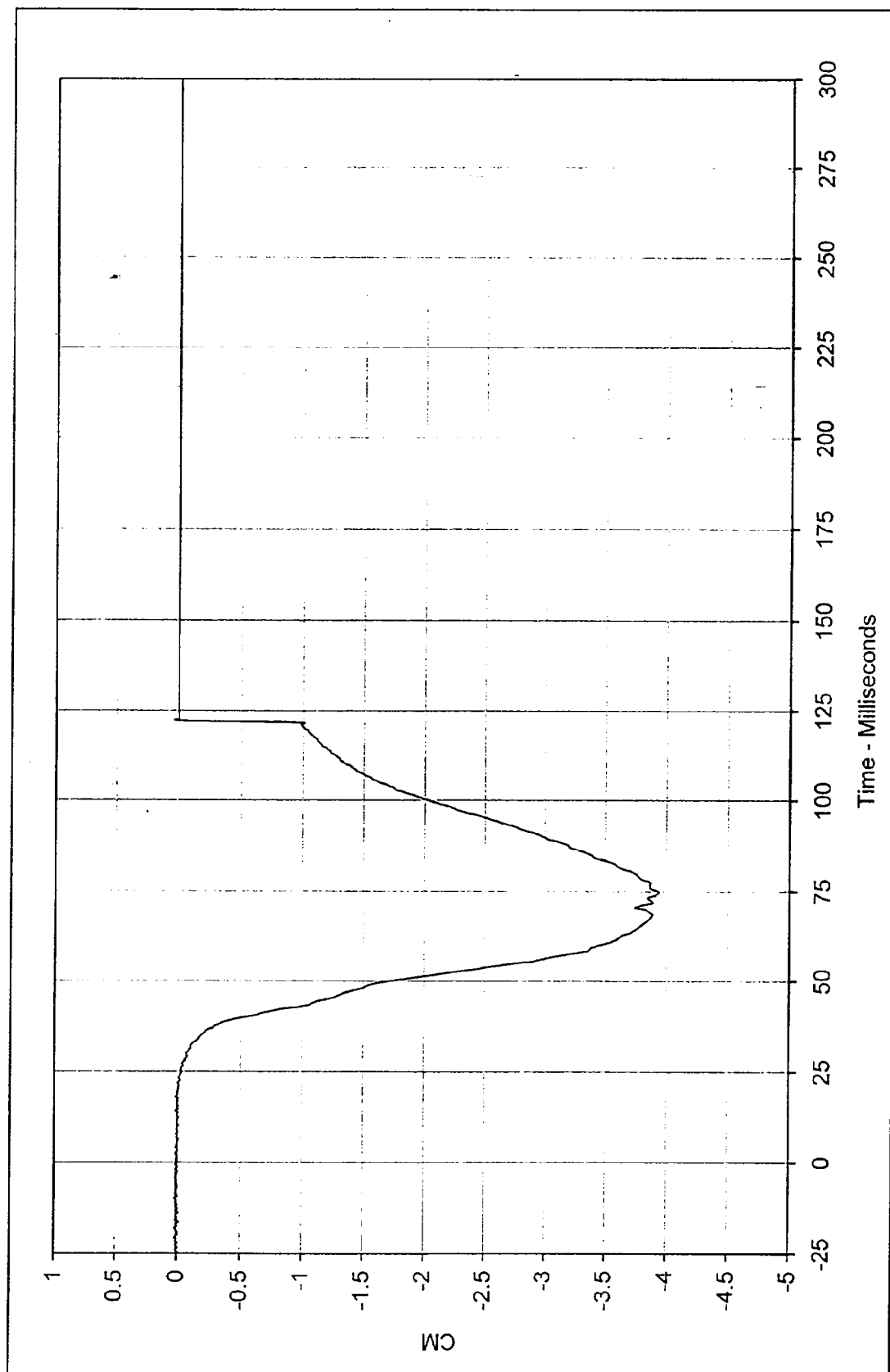




Curve Description: Passenger Chest Resultant Redundant
Maximum Value: 56.6 at 66.3 Milliseconds
Minimum Value: 0.1 at 0.0 Milliseconds
SAE Filter Class: 180
Date of Test: 3/6/97
Curve Number: RES-060

Testing Program: 1997 New Car Assessment Program
Test Vehicle: 1997 Toyota Tercel





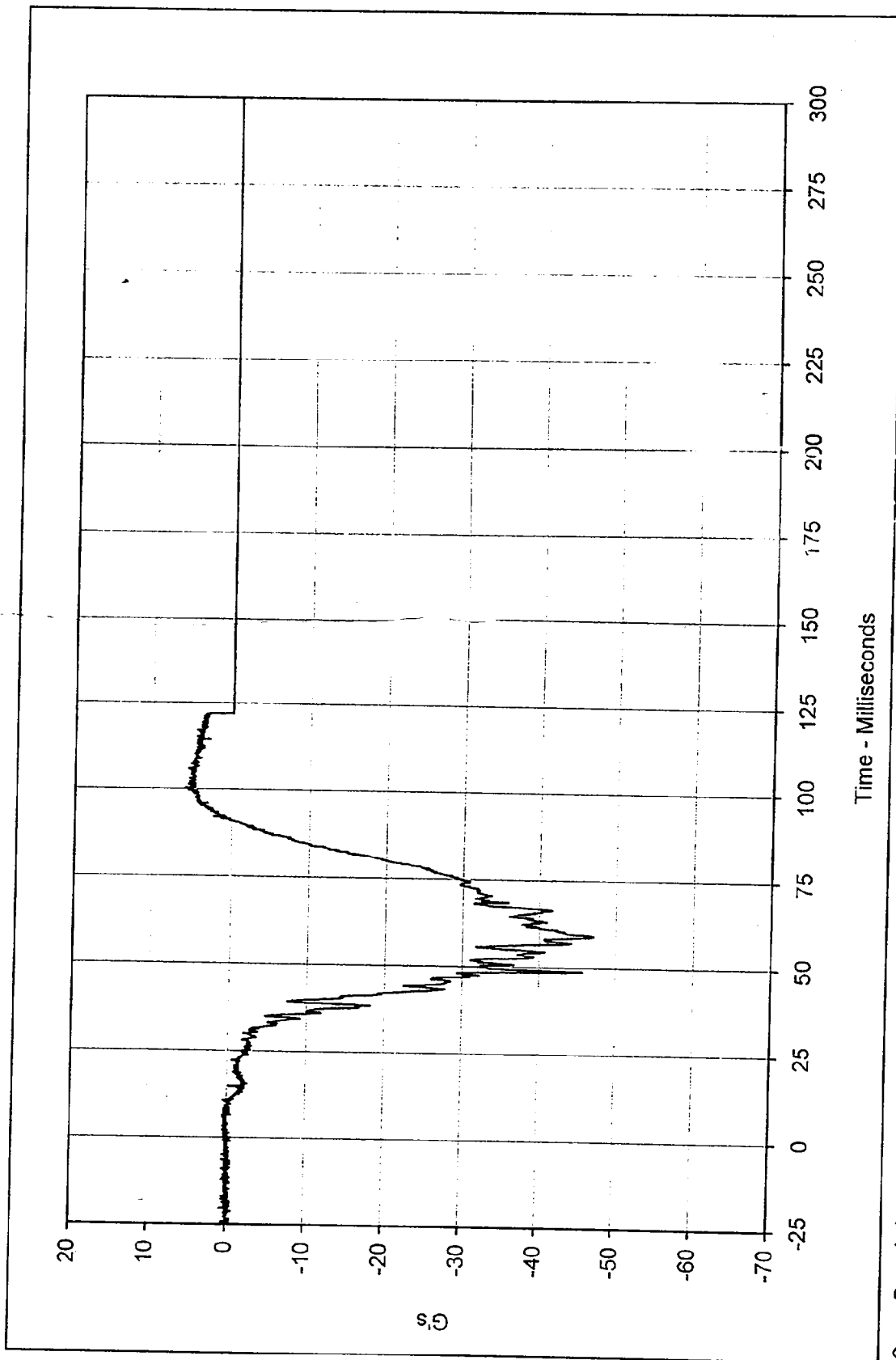
Curve Description:	Passenger Chest Displacement	*	Testing Program:	1997 New Car Assessment Program	
Maximum Value:	0.04	at 122.4	Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-3.94	at 74.6	Milliseconds		
SAE Filter Class:	600				
Date of Test:	3/6/97				
Curve Number:	FIL-063				



*Channel Failed at 122 Msec



*Channel Failed at 122 Msec



Curve Description:

Passenger Pelvis X

Maximum Value:

6.0 at 100.3 Milliseconds

Minimum Value:

-47.1 at 59.2 Milliseconds

SAE Filter Class:

1000

Date of Test:

3/6/97

Curve Number:

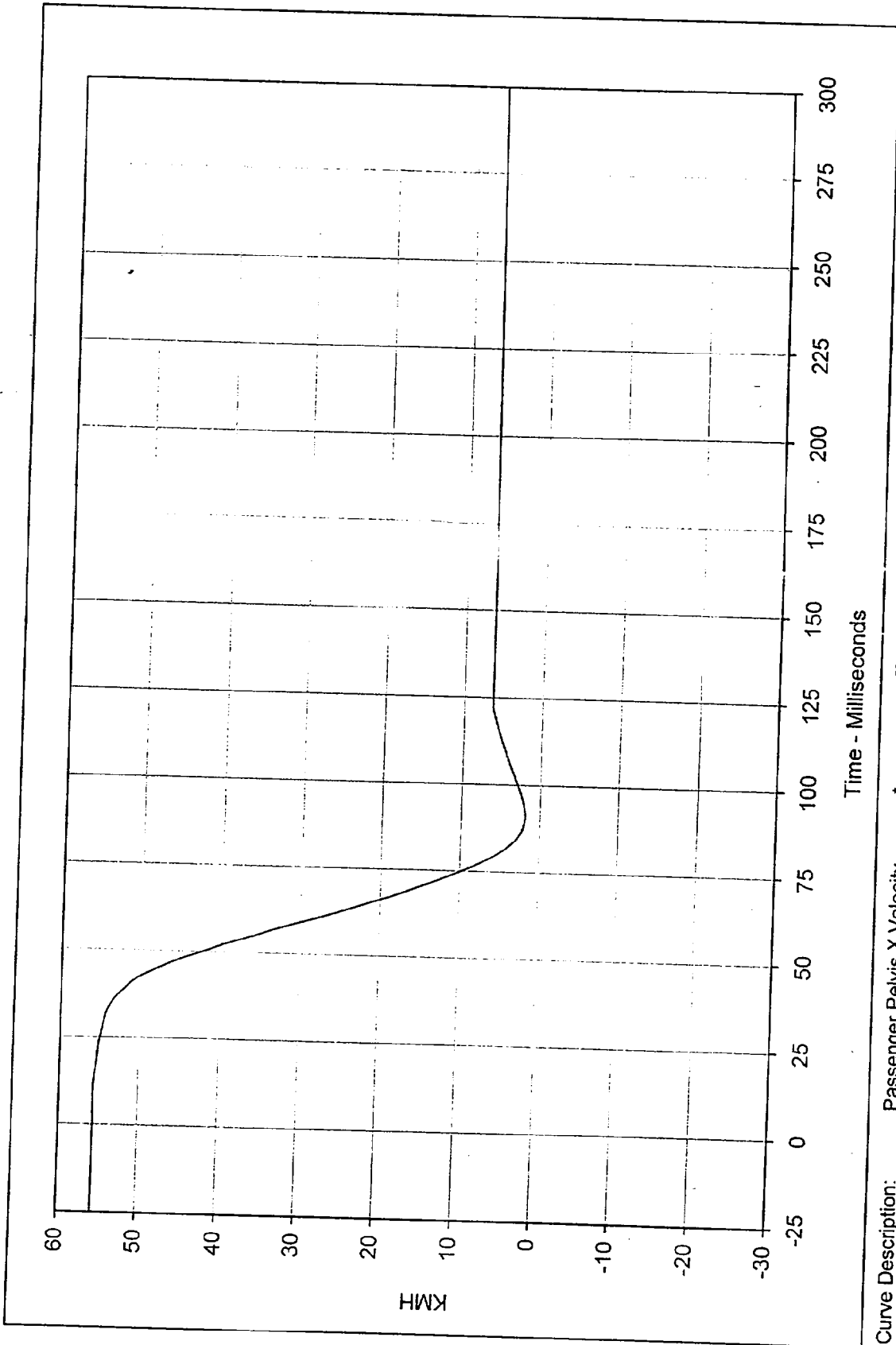
FIL-064

Testing Program: 1997 New Car Assessment Program

Test Vehicle: 1997 Toyota Tercel



*Channel Failed at 122 Msec



Curve Description: Passenger Pelvis X Velocity *

Maximum Value: 55.7 at 8.9 Milliseconds

Minimum Value: 1.8 at 91.1 Milliseconds

SAE Filter Class: 180

Date of Test: 3/6/97

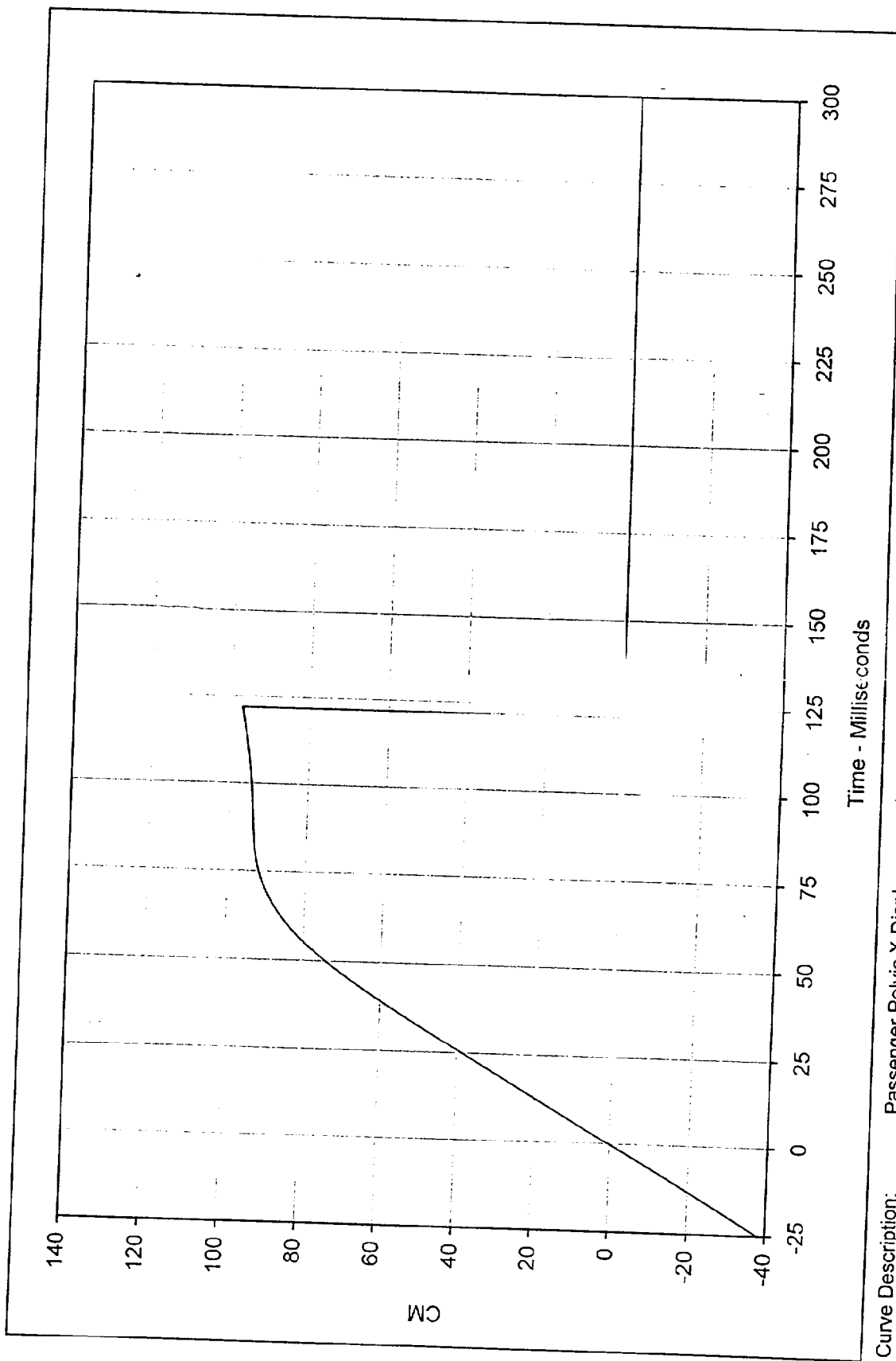
Curve Number: IN1-064

Testing Program: 1997 New Car Assessment Program

Test Vehicle: 1997 Toyota Tercel



*Channel Failed at 122 Msec

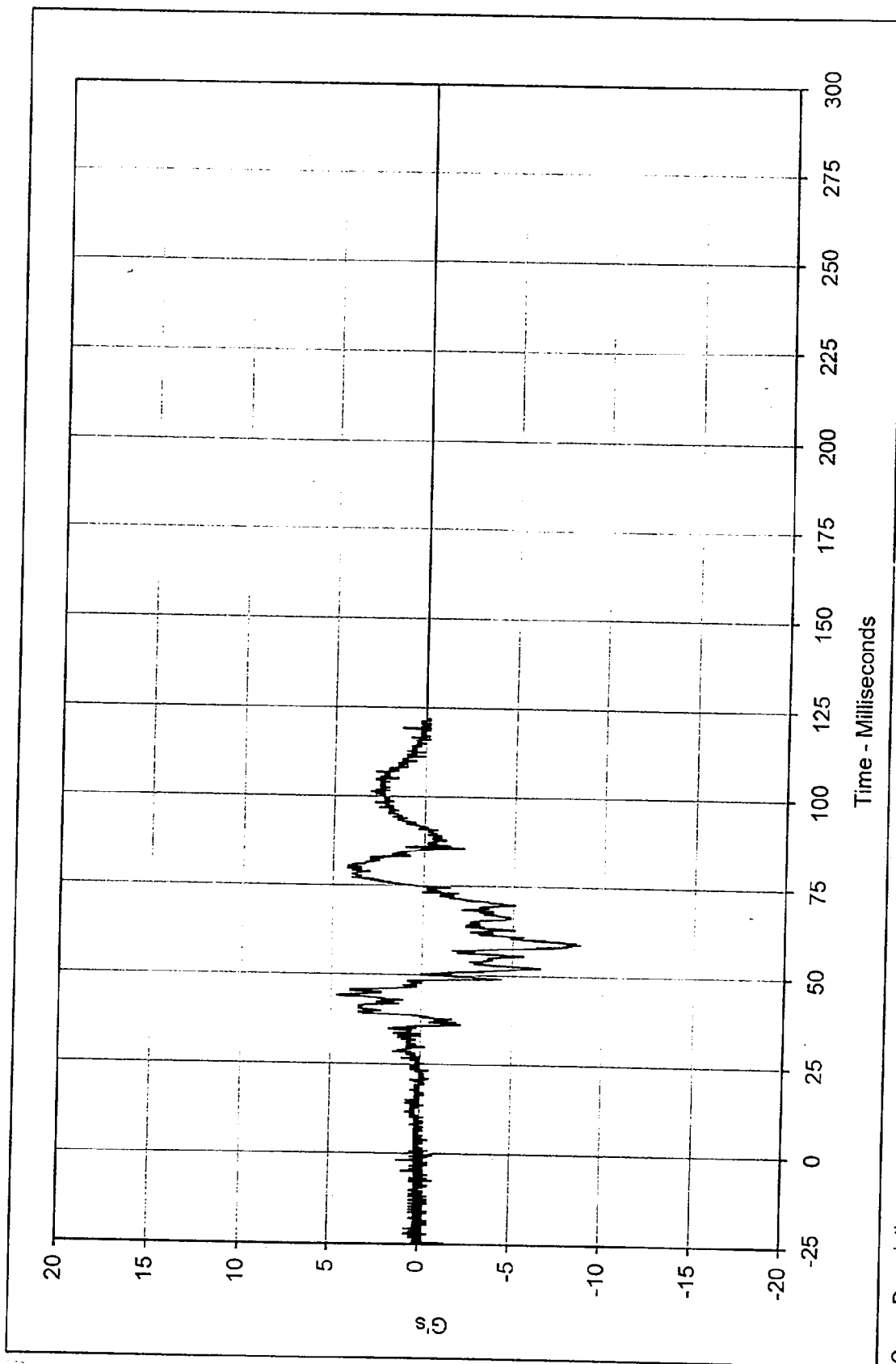


Curve Description: Passenger Pelvis X Displ. *
 Maximum Value: 97.3 at 121.9 Milliseconds
 Minimum Value: 0.0 at 122.0 Milliseconds
 SAE Filter Class: 180
 Date of Test: 3/6/97
 Curve Number: IN2-064

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel



*Channel Failed at 122 Msec



Curve Description:

Passenger Pelvis Y

*

Testing Program: 1997 New Car Assessment Program

Maximum Value:

4.7 at 44.2 Milliseconds

Minimum Value:

-8.8 at 59 Milliseconds

SAE Filter Class:

1000

Date of Test:

3/6/97

Curve Number:

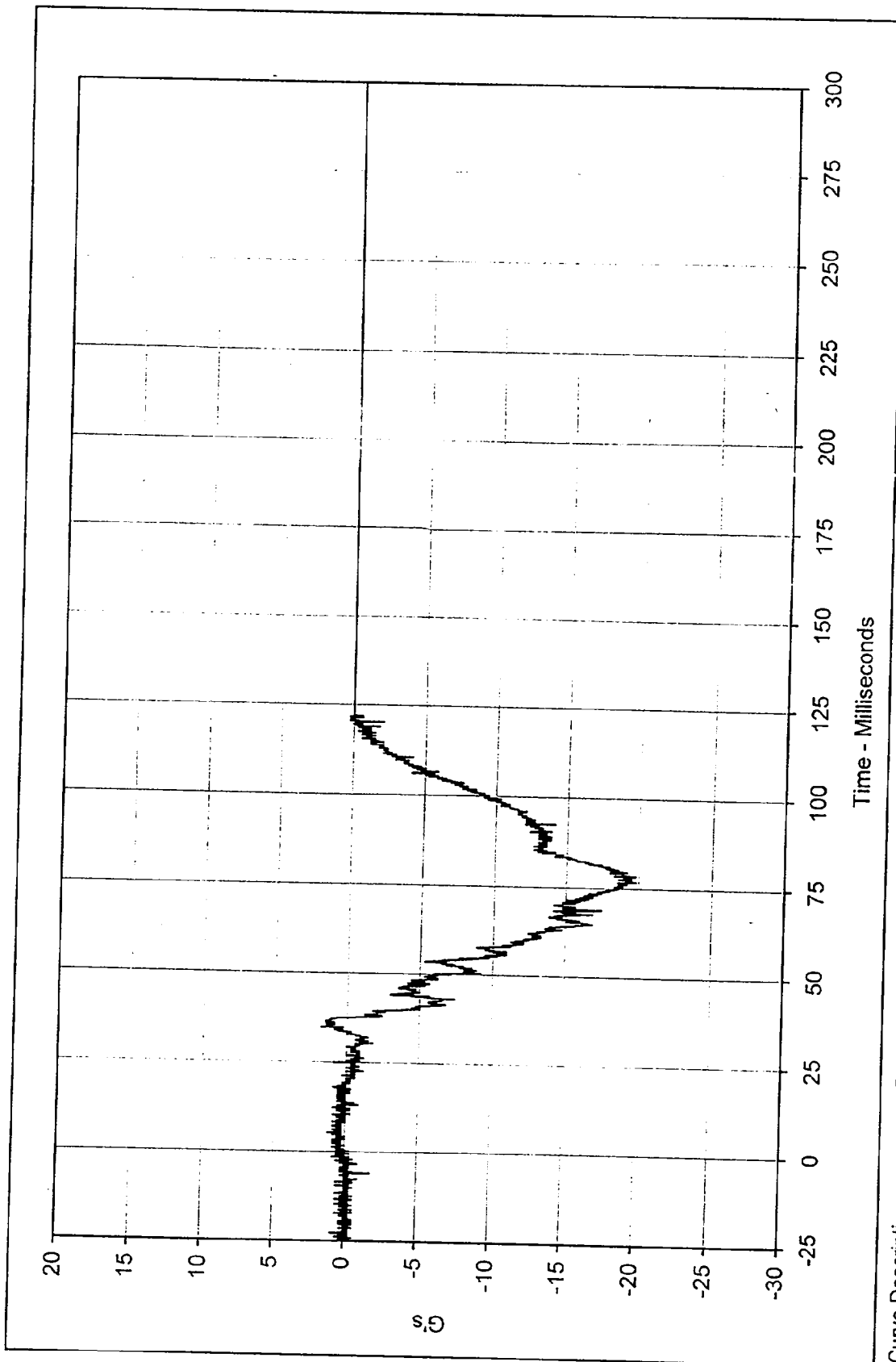
FIL-065

Test Vehicle

1997 Toyota Tercel



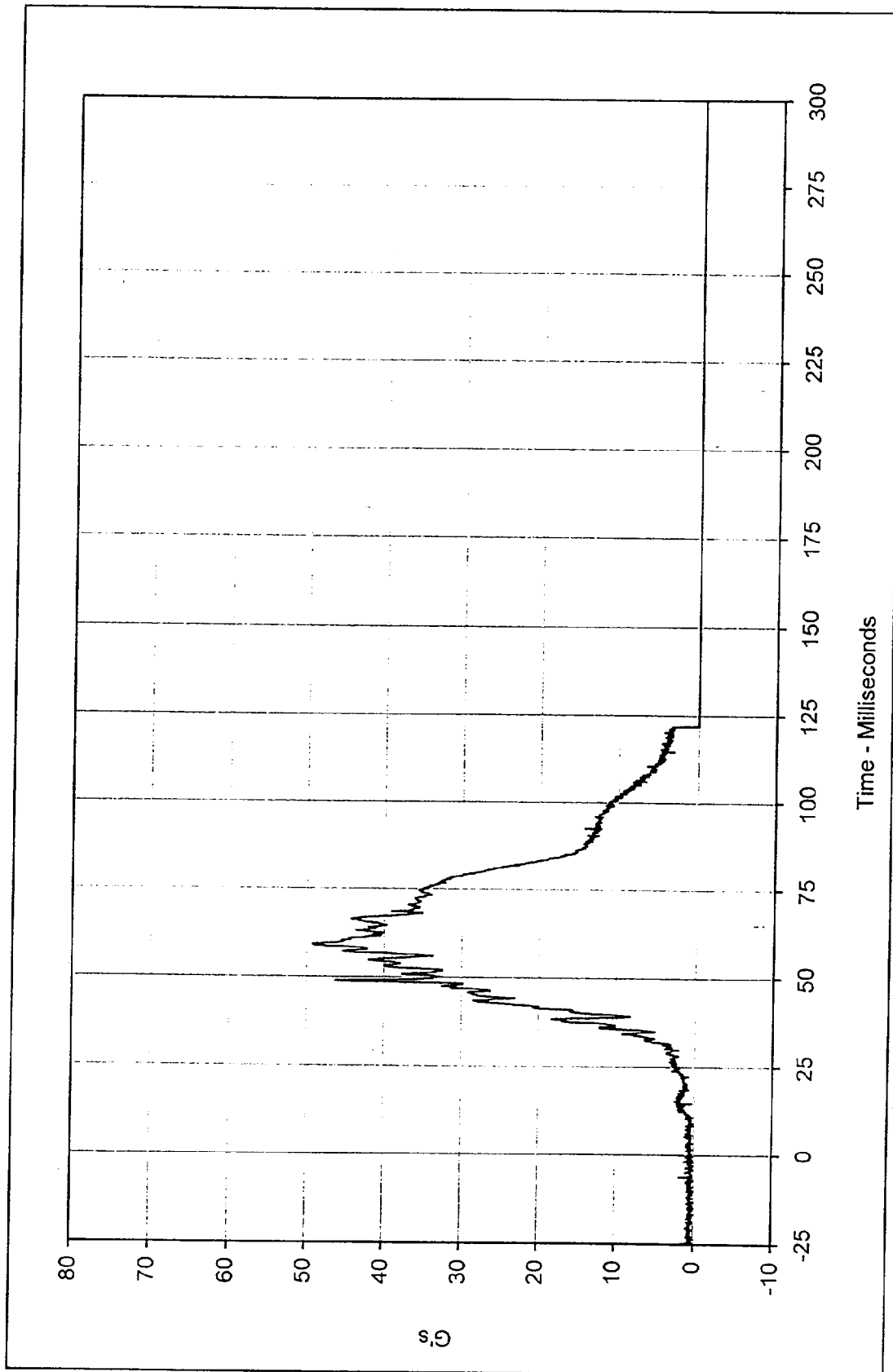
*Channel Failed at 122 Msec



Curve Description:		Passenger Pelvis Z		Testing Program: 1997 New Car Assessment Program	
Maximum Value:	1.8	at	35.0	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-19.8	at	76.8		
SAE Filter Class:	1000				
Date of Test:	3/6/97				
Curve Number:	FIL-066				



*Channel Failed at 122 Msec

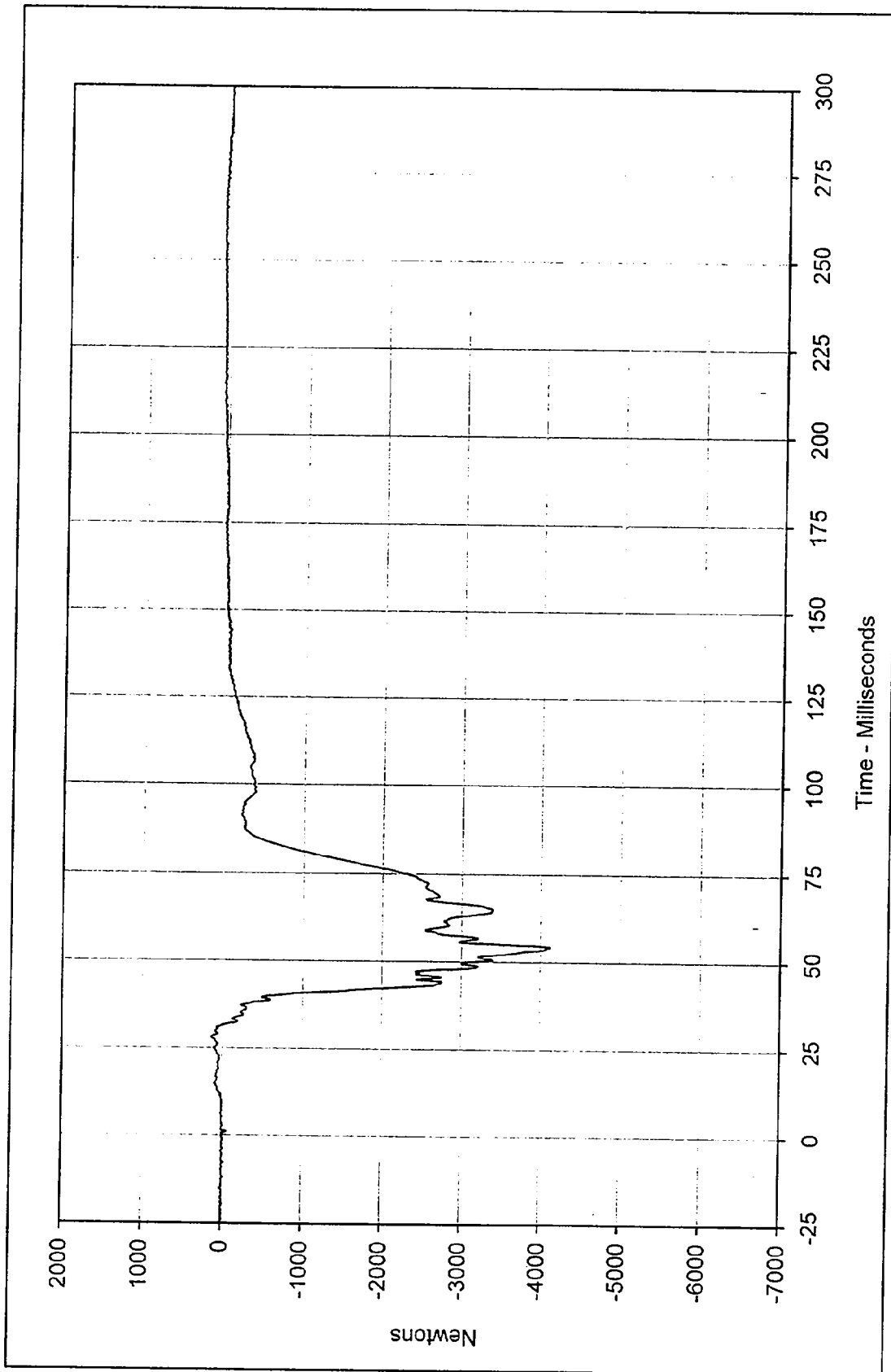


Curve Description: Passenger Pelvis Resultant *
 Maximum Value: 49.3 at 59.3 Milliseconds
 Minimum Value: 0.0 at 122 Milliseconds
 SAE Filter Class: 1000
 Date of Test: 3/6/97
 Curve Number: RES-064

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel

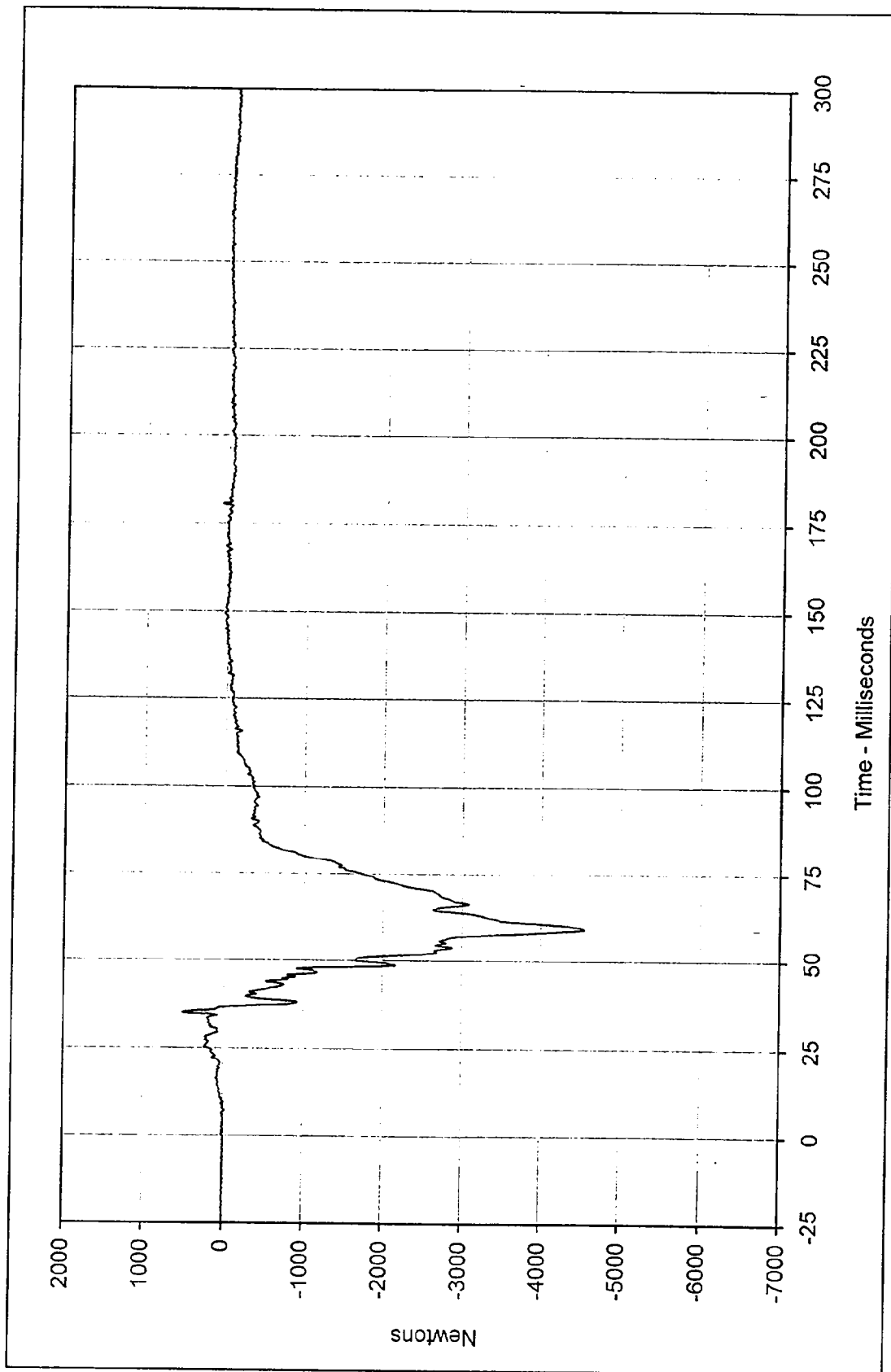


*Channel failed at 122 Msec



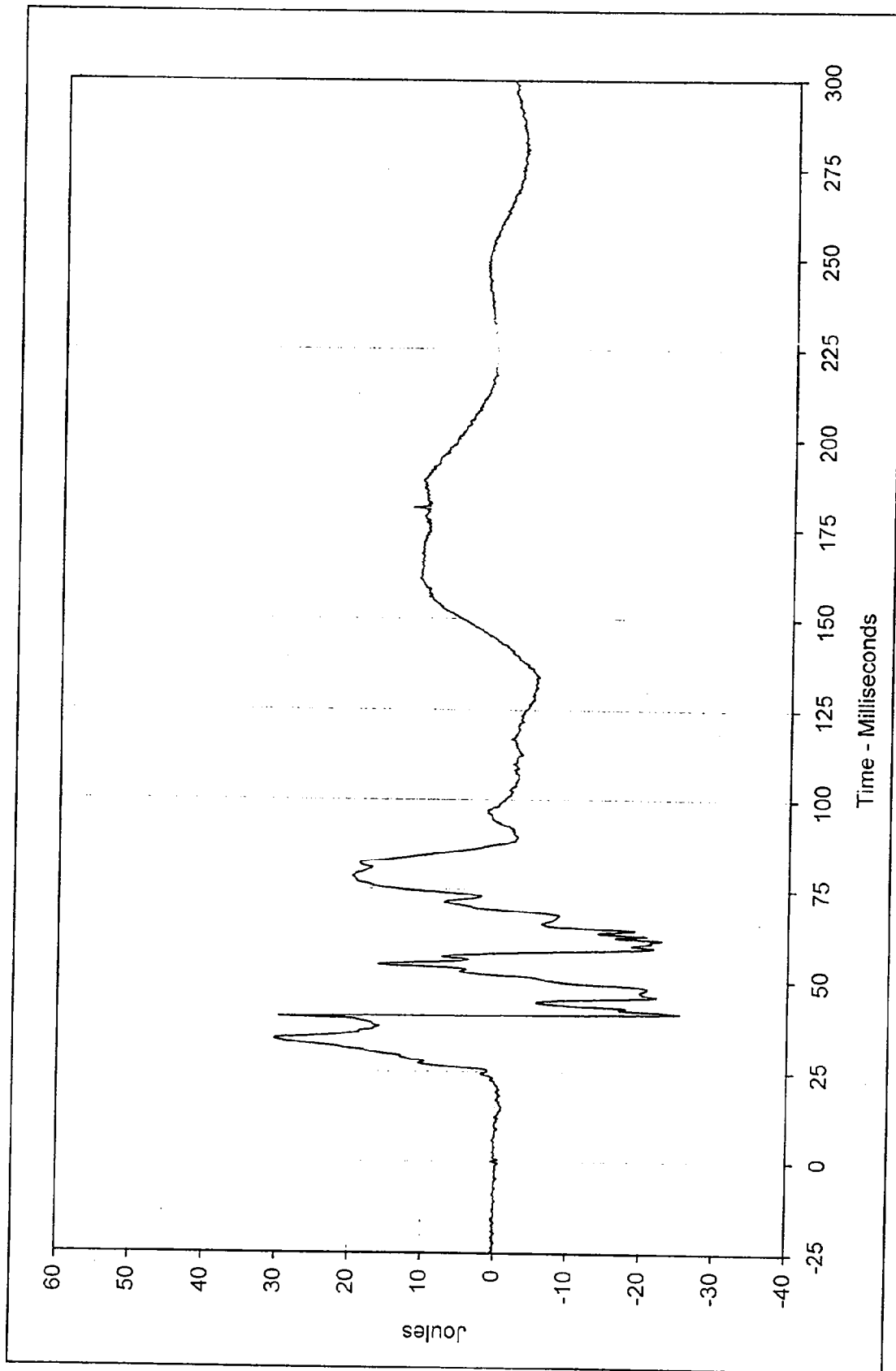
Curve Description:	Passenger Left Femur Force	Testing Program:	1997 New Car Assessment Program
Maximum Value:	135.7 at 28.1 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-4116.1 at 54.5 Milliseconds		
SAE Filter Class:	600		
Date of Test:	3/6/97		
Curve Number:	FIL-067		





Curve Description:	Passenger Right Femur Force	Testing Program:	1997 New Car Assessment Program
Maximum Value:	505.3 at 35.1 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-4553.9 at 59.4 Milliseconds		
SAE Filter Class:	600		
Date of Test:	3/6/97		
Curve Number:	FIL-068		

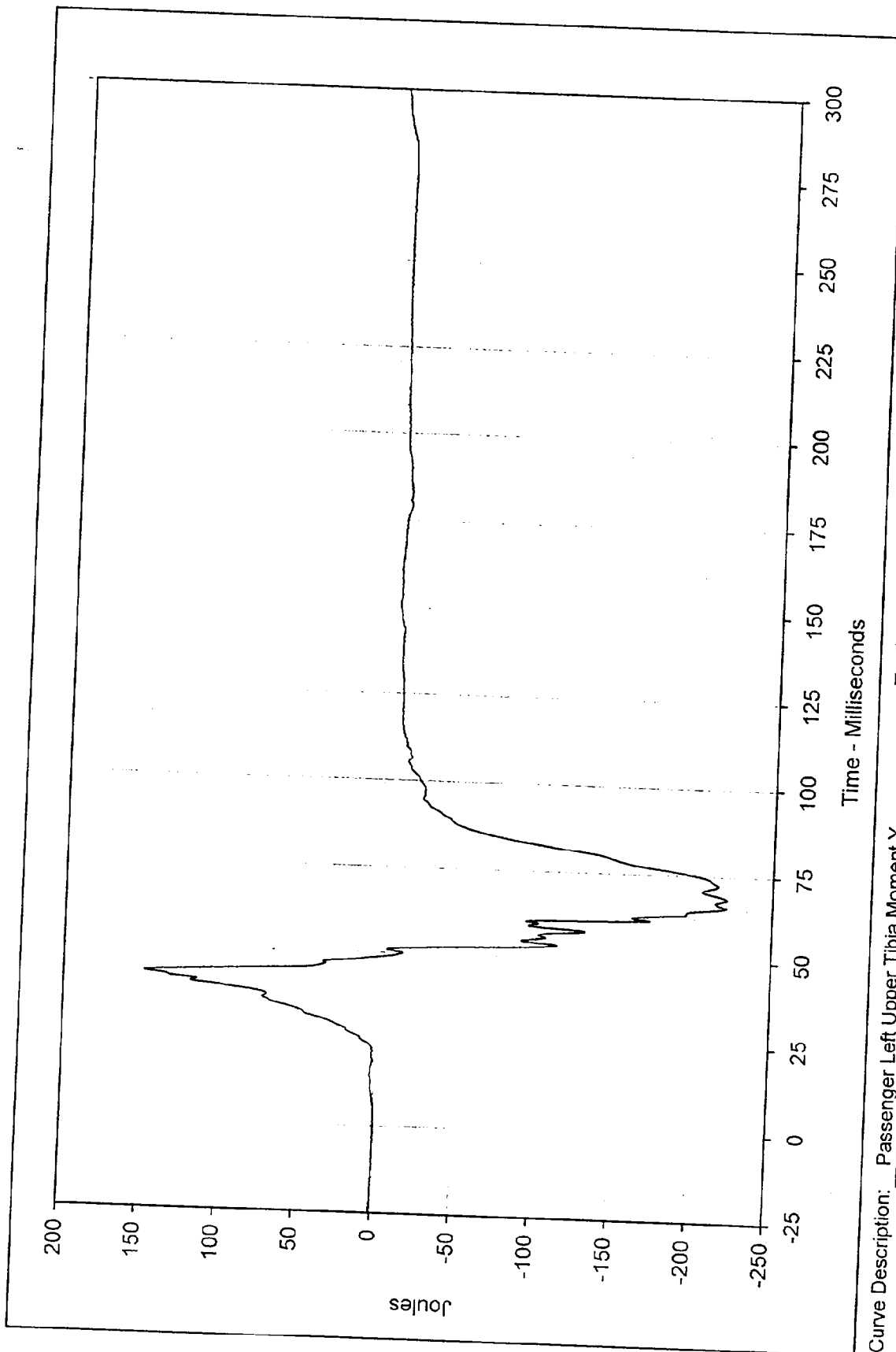




Curve Description: Passenger Left Upper Tibia Moment X
 Maximum Value: 30.4 at 34.1 Milliseconds
 Minimum Value: -25.2 at 41.2 Milliseconds
 SAE Filter Class: 600
 Date of Test: 3/6/97
 Curve Number: FIL-069

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel





Curve Description: Passenger Left Upper Tibia Moment Y

Maximum Value: 148.4 at 42.9 Milliseconds

Minimum Value: -220.6 at 68.5 Milliseconds

SAE Filter Class: 600

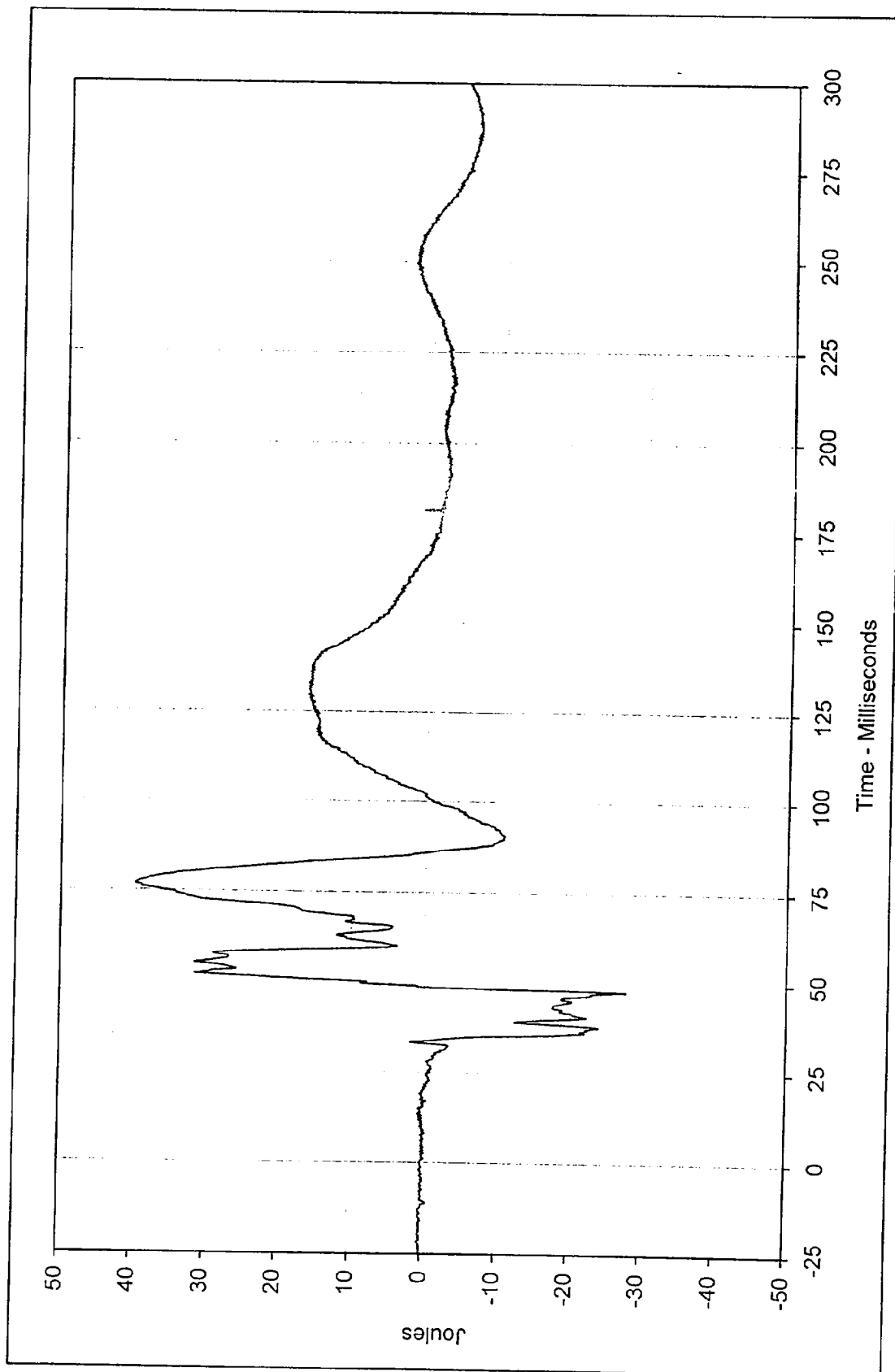
Date of Test: 3/6/97

Curve Number: FIL-070

Testing Program: 1997 New Car Assessment Program

Test Vehicle: 1997 Toyota Tercel

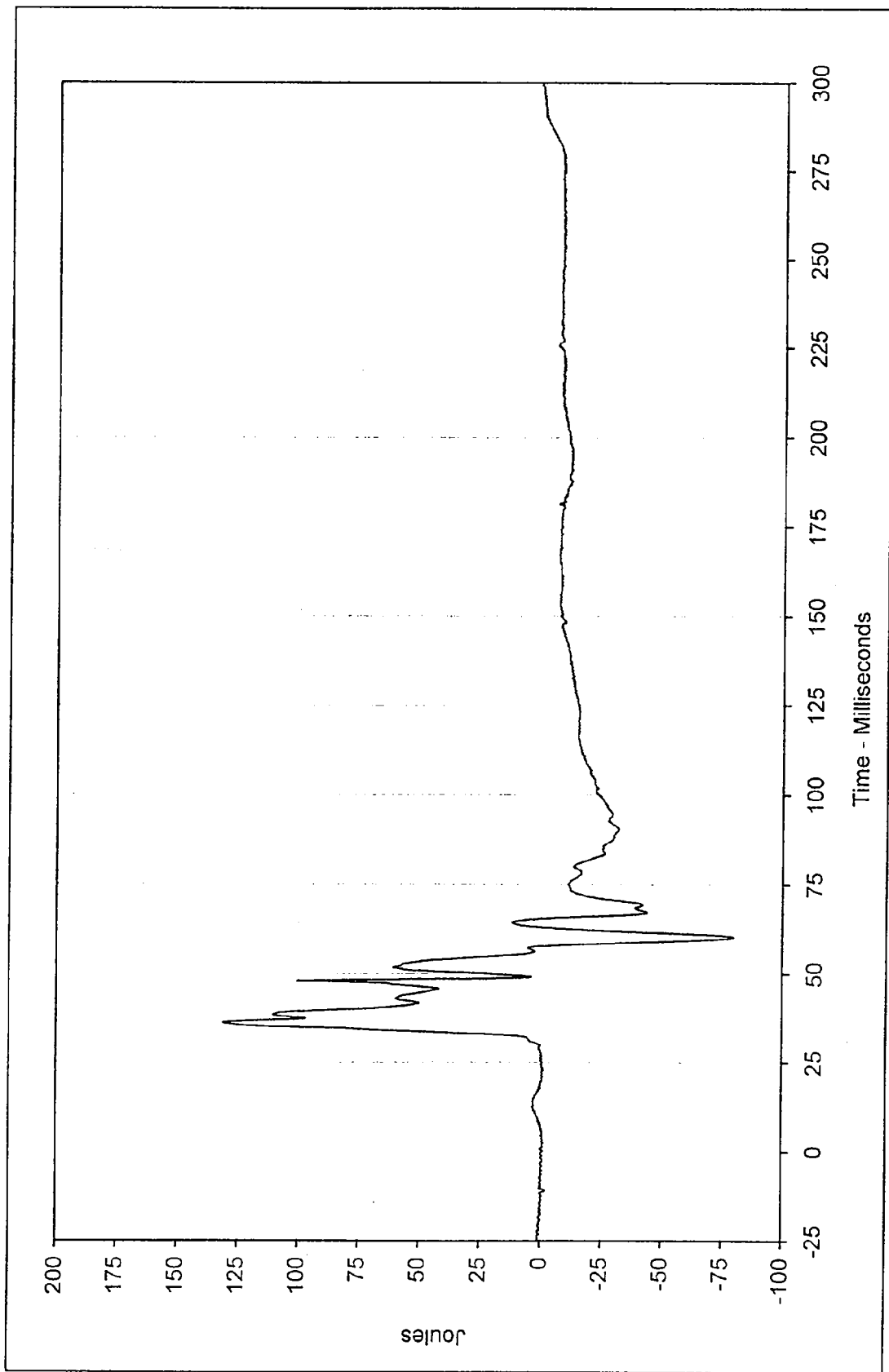




Curve Description: Passenger Right Upper Tibia Moment X
Maximum Value: 39.7 at 76.9 Milliseconds
Minimum Value: -27.9 at 47.8 Milliseconds
SAE Filter Class: 600
Date of Test: 3/6/97
Curve Number: FIL-071

Testing Program: 1997 New Car Assessment Program
Test Vehicle: 1997 Toyota Tercel

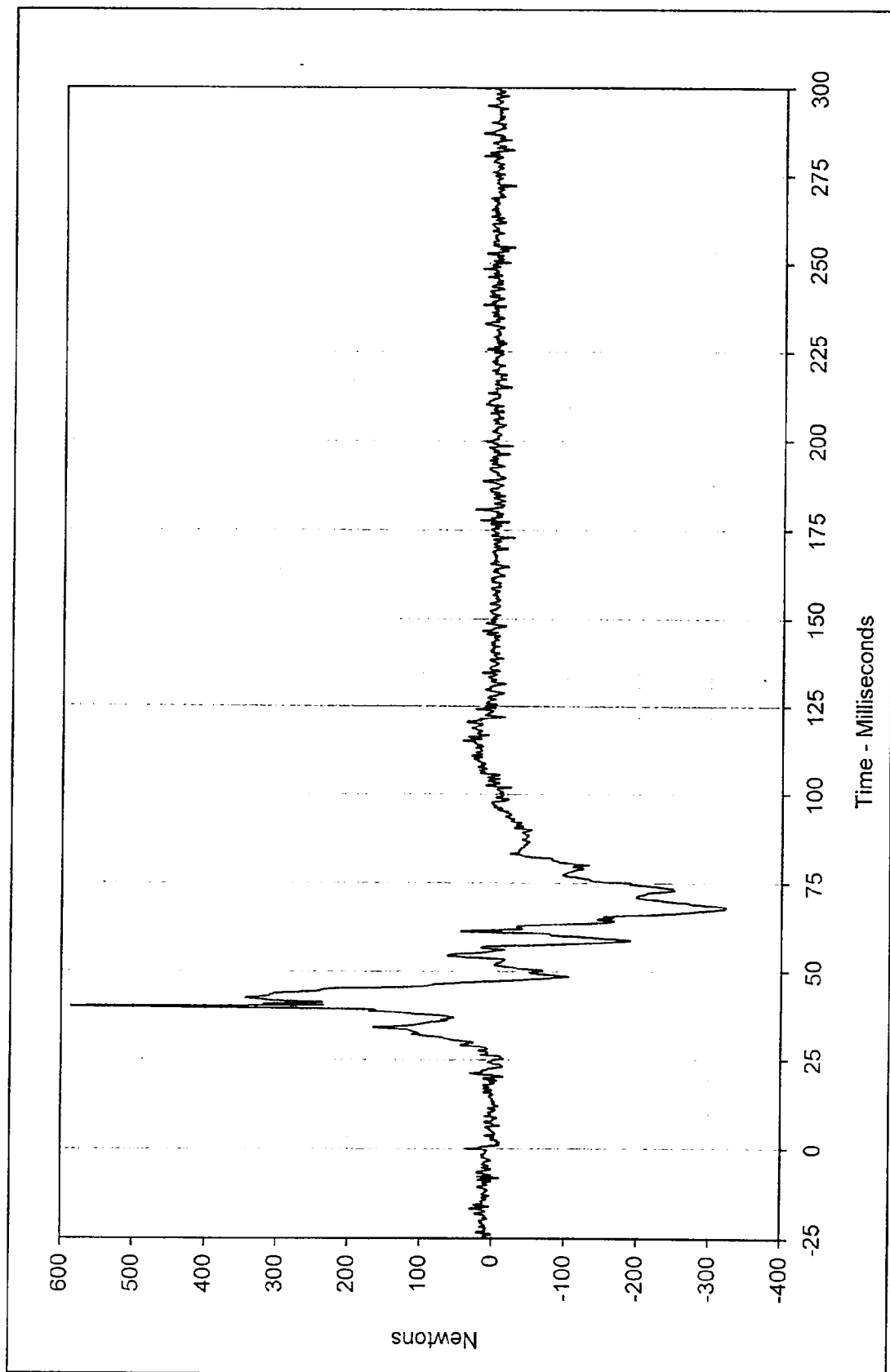




Curve Description: Passenger Right Upper Tibia Moment Y
 Maximum Value: 131.1 at 36.3 Milliseconds
 Minimum Value: -79.5 at 60.5 Milliseconds
 SAE Filter Class: 600
 Date of Test: 3/6/97
 Curve Number: FIL-072

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel





Curve Description: Passenger Left Lower Tibia Force Y

Maximum Value: 586.1 at 40 Milliseconds

Minimum Value: -321.8 at 68.1 Milliseconds

SAE Filter Class: 600

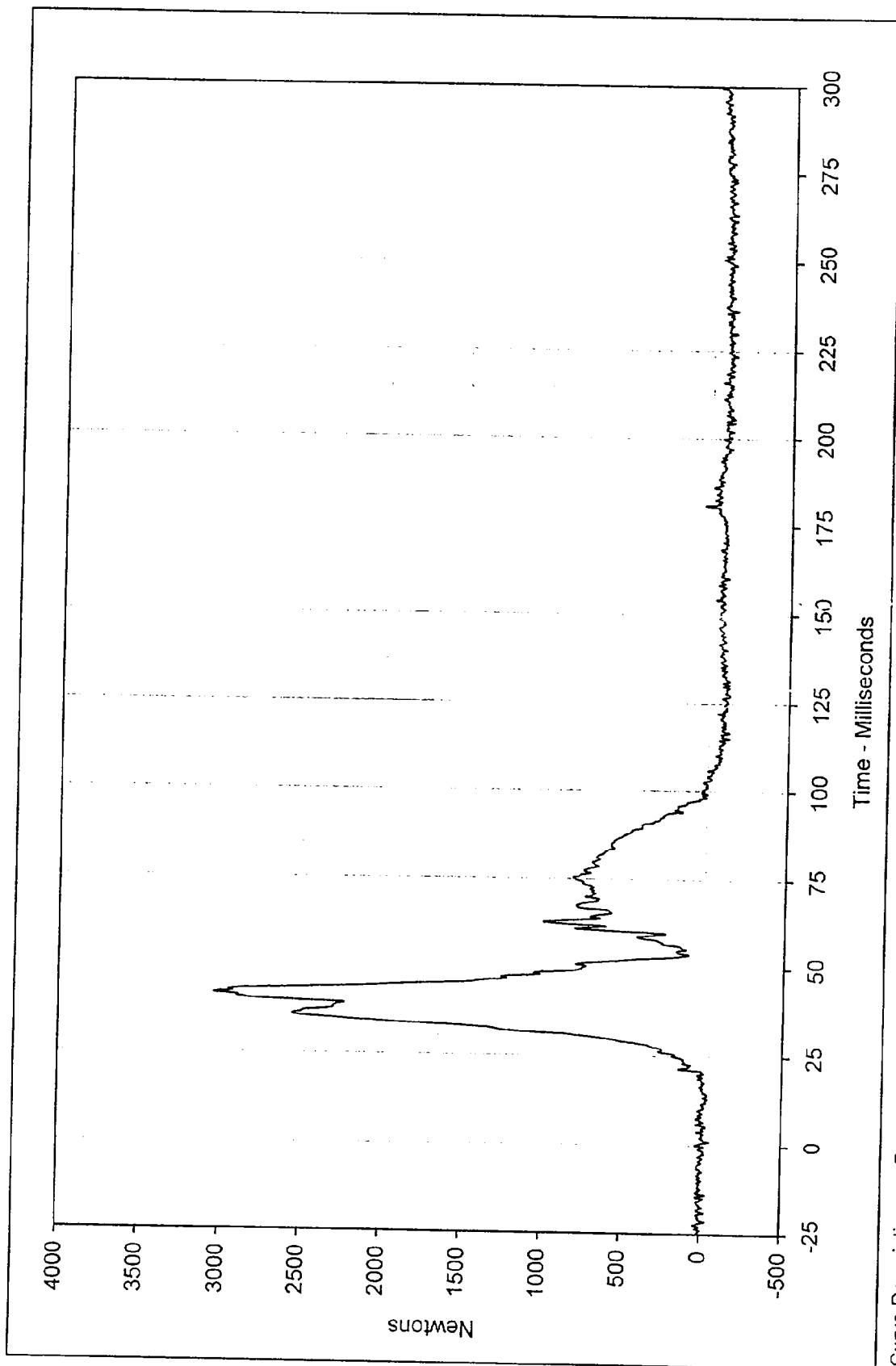
Date of Test: 3/6/97

Curve Number: FIL-073

Testing Program: 1997 New Car Assessment Program

Test Vehicle: 1997 Toyota Tercel

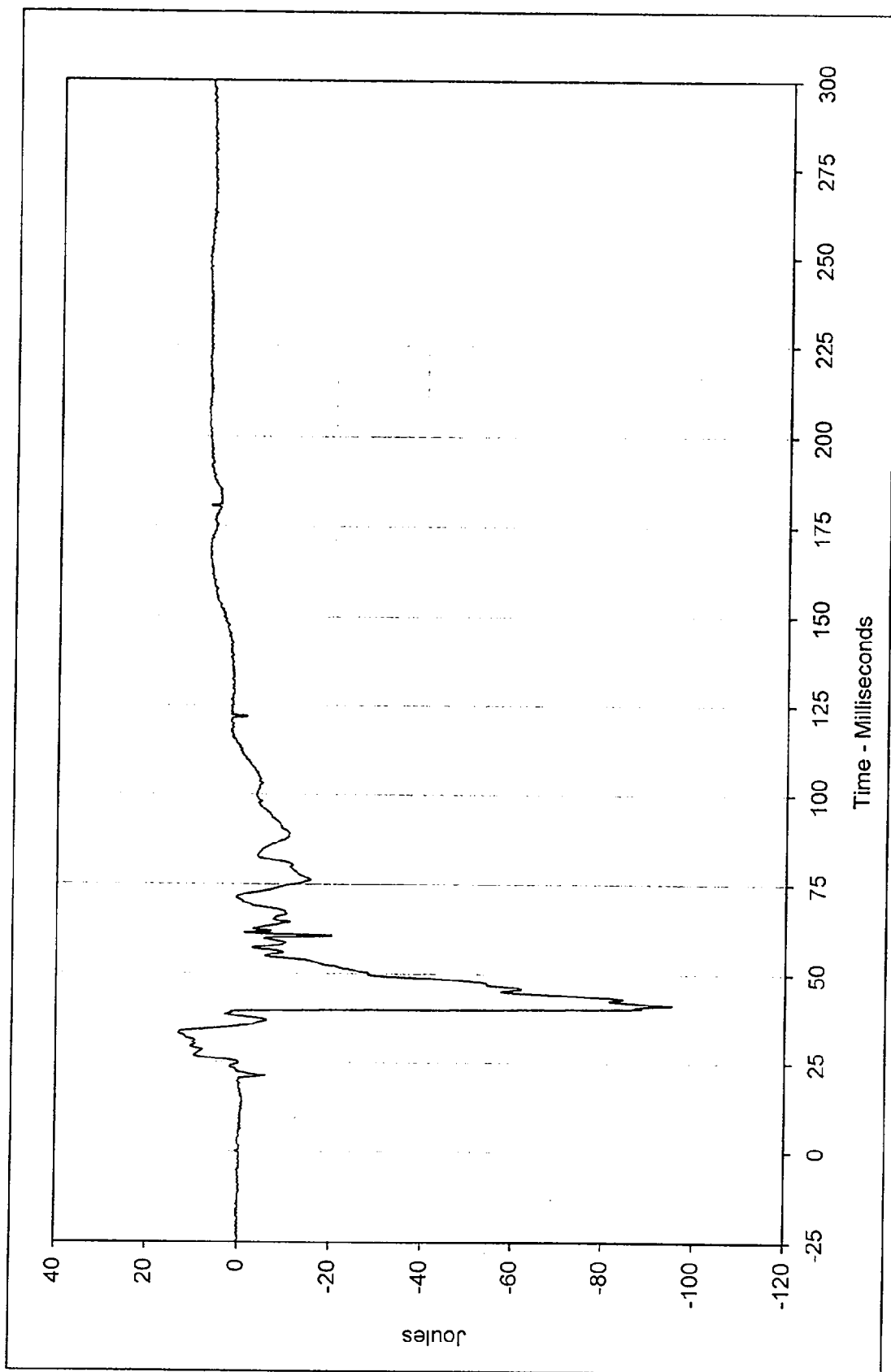




Curve Description: Passenger Left Lower Tibia Force Z
 Maximum Value: 3042.7 at 41.8 Milliseconds
 Minimum Value: -146.4 at 223.3 Milliseconds
 SAE Filter Class: 600
 Date of Test: 3/6/97
 Curve Number: FIL-074

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel

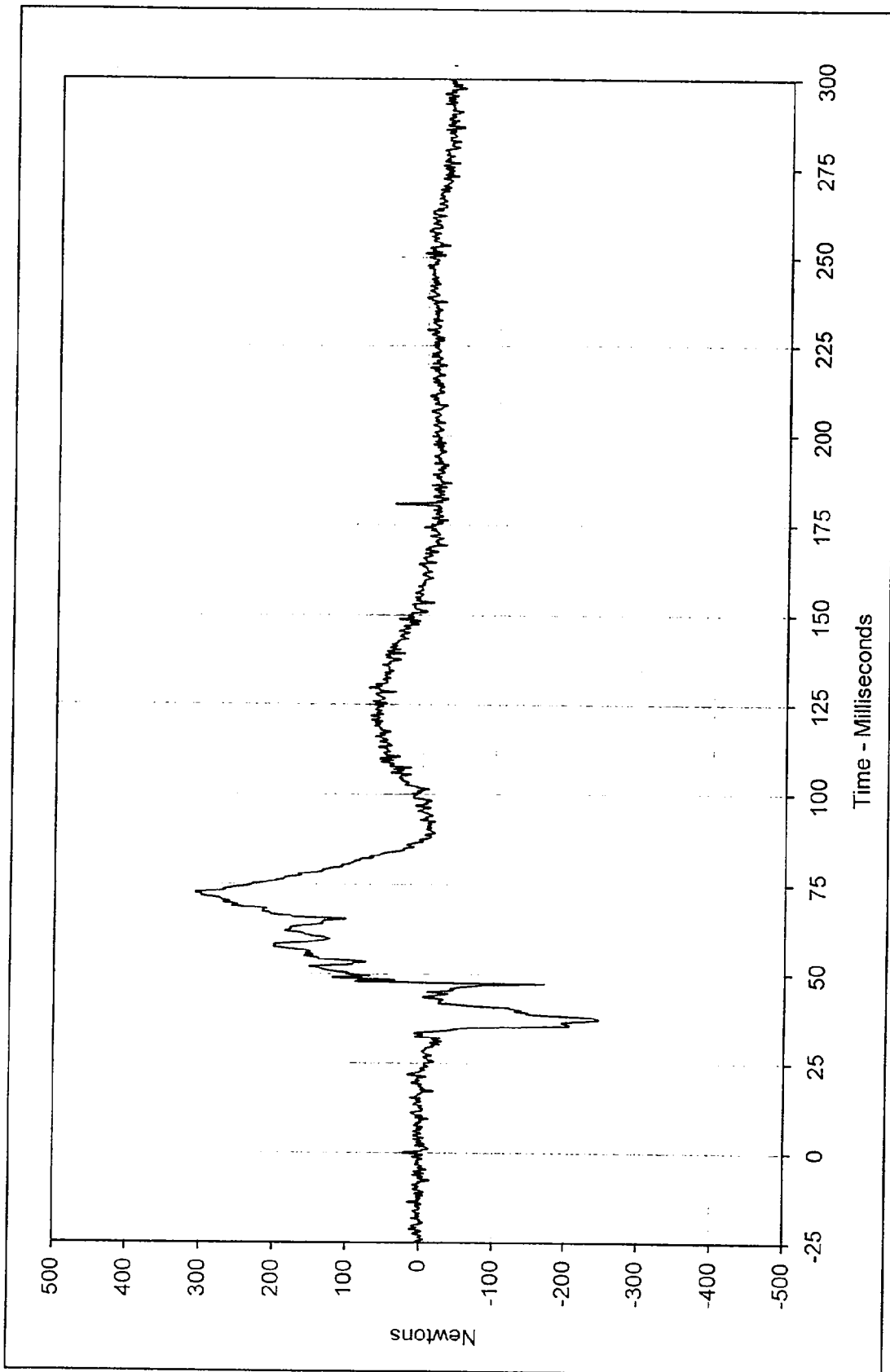




Curve Description: Passenger Left Lower Tibia Moment X
 Maximum Value: 13.0 at 33.4 Milliseconds
 Minimum Value: -95.3 at 41.5 Milliseconds
 SAE Filter Class: 600
 Date of Test: 3/6/97
 Curve Number: FIL-075

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel





Curve Description: Passenger Right Lower Tibia Force Y

Maximum Value: 308.6 at 72.7 Milliseconds

Minimum Value: -246.1 at 37.5 Milliseconds

SAE Filter Class: 600

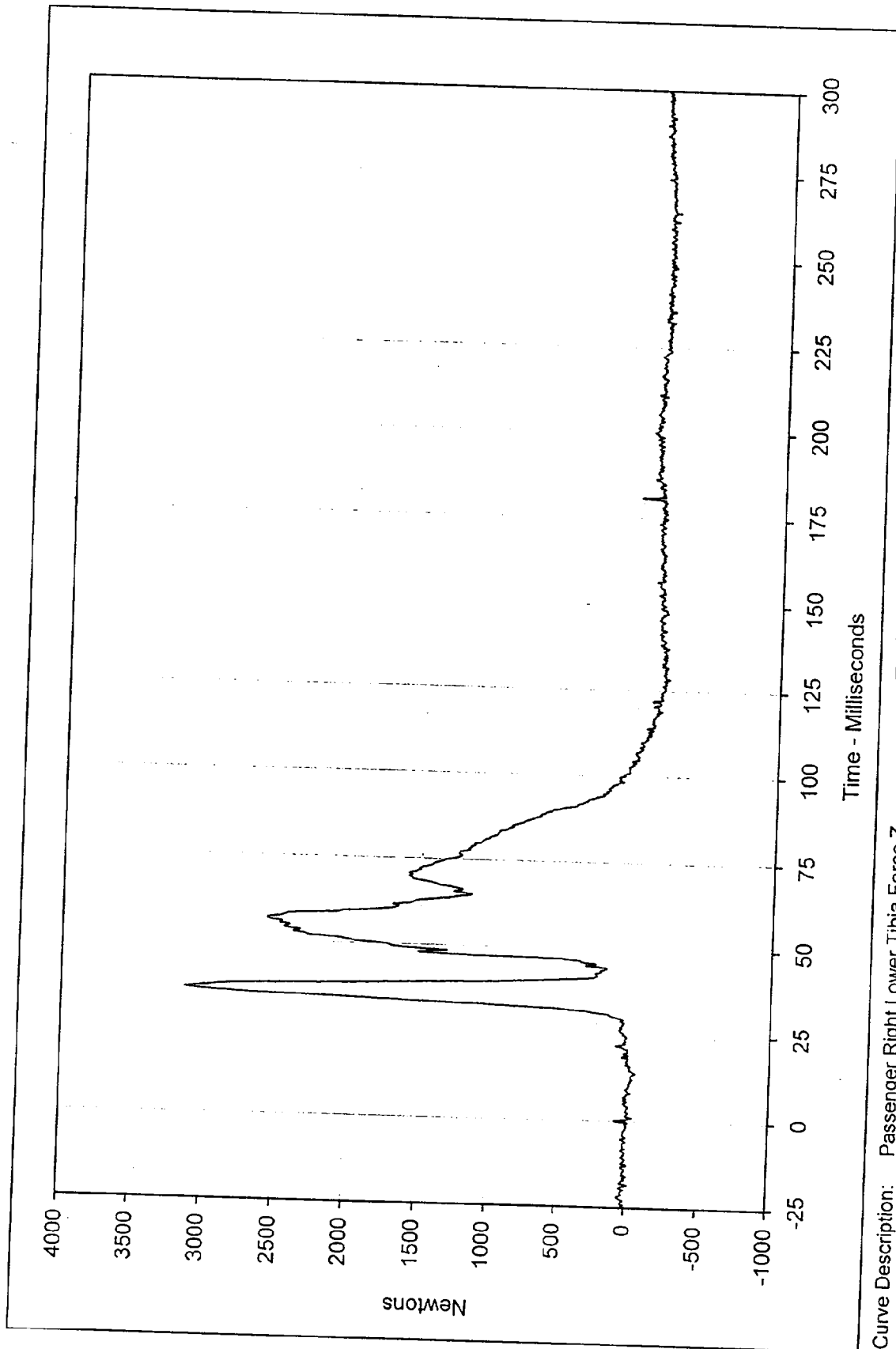
Date of Test: 3/6/97

Curve Number: FIL-076

Testing Program: 1997 New Car Assessment Program

Test Vehicle: 1997 Toyota Tercel





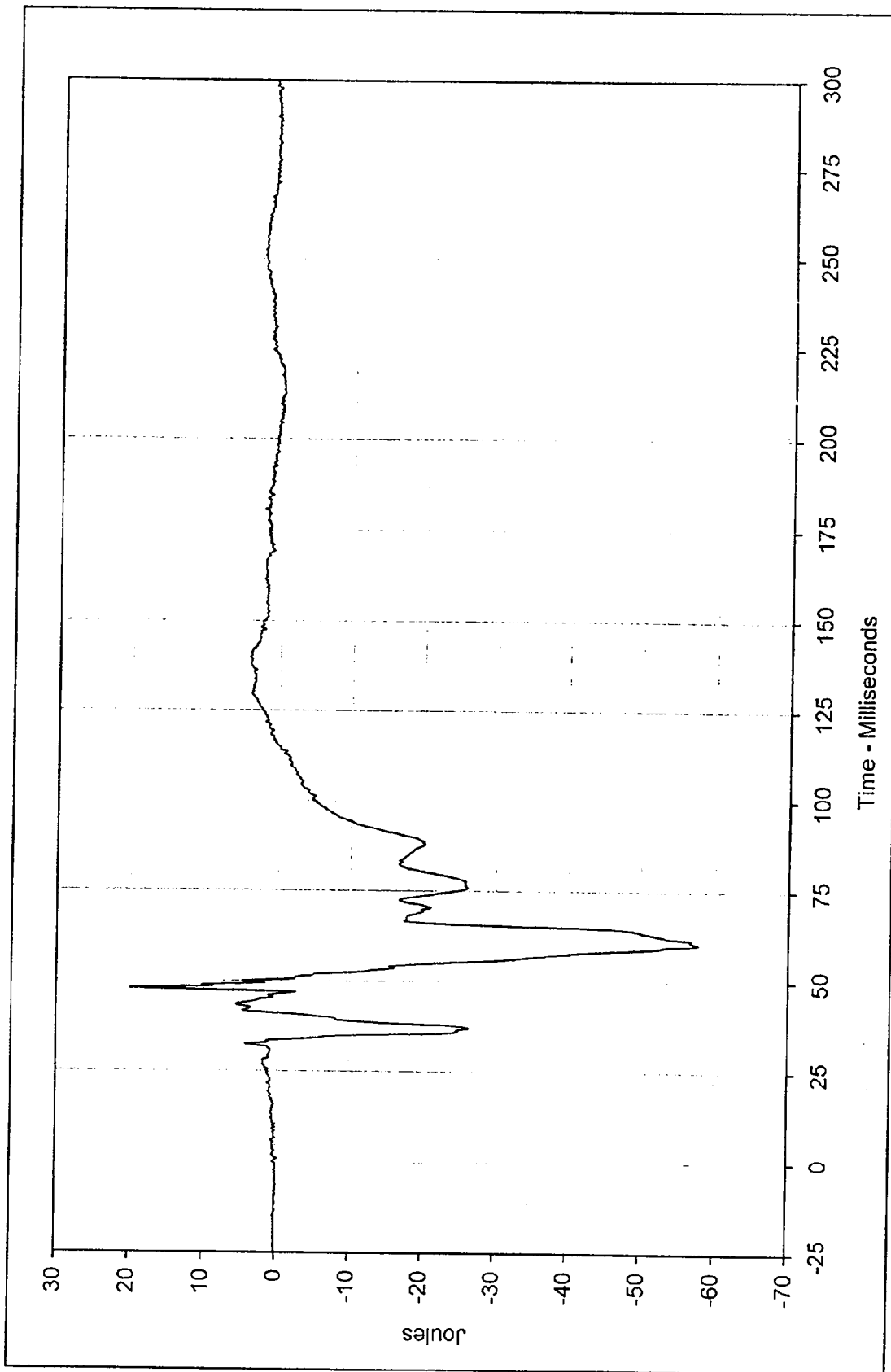
Curve Description: Passenger Right Lower Tibia Force Z

Maximum Value:	3130.9	at	36.4	Milliseconds
Minimum Value:	-215.4	at	128.4	Milliseconds
SAE Filter Class:	600			
Date of Test:	3/6/97			
Curve Number:	FIL-077			

Testing Program: 1997 New Car Assessment Program

Test Vehicle: 1997 Toyota Tercel

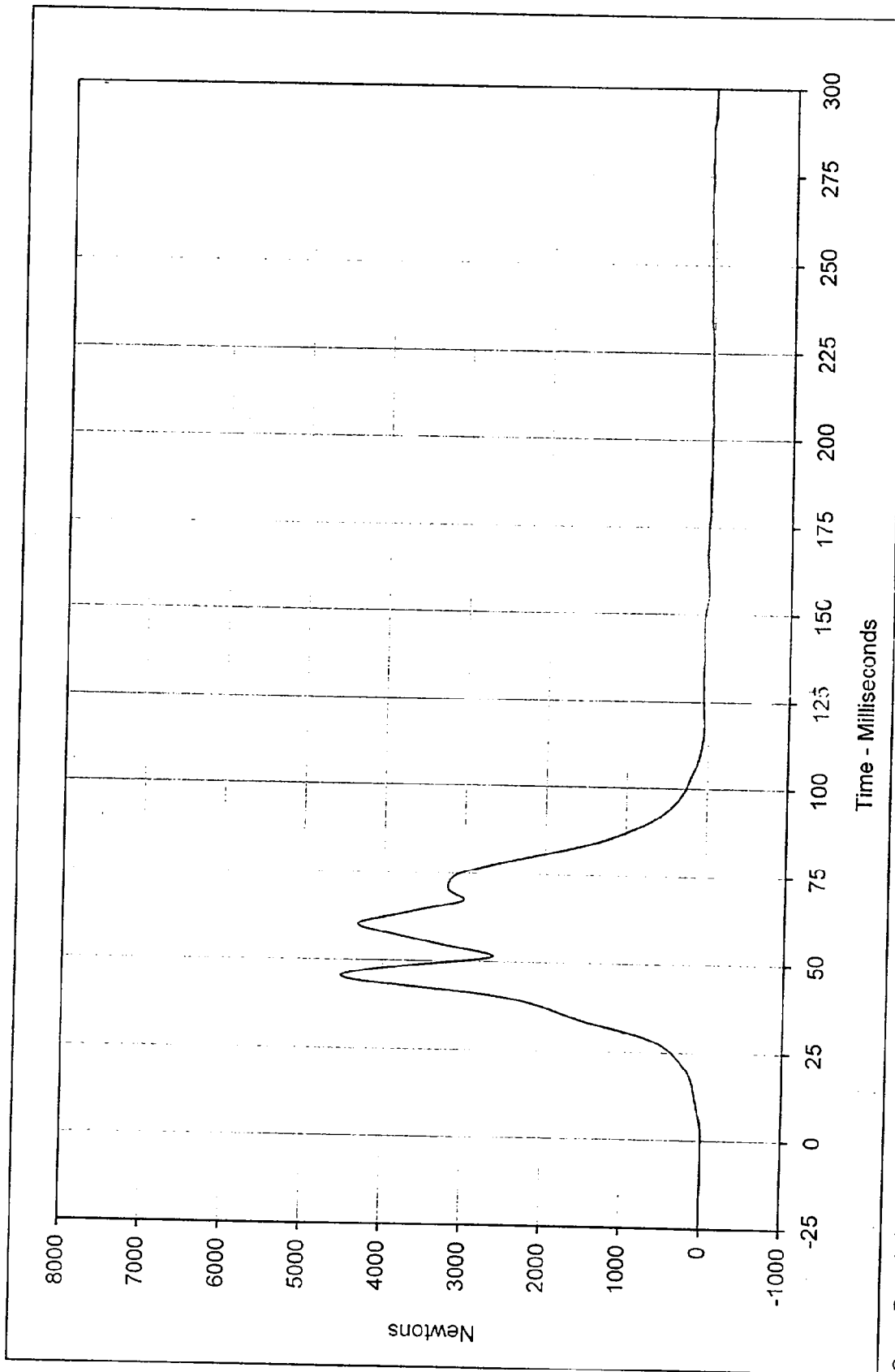




Curve Description: Passenger Right Lower Tibia Moment X
 Maximum Value: 20.0 at 47.9 Milliseconds
 Minimum Value: -57.7 at 60.3 Milliseconds
 SAE Filter Class: 600
 Date of Test: 3/6/97
 Curve Number: FIL-078

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel





Curve Description:

Passenger Lap Belt Force

Maximum Value: 4520.7 at 45.4 Milliseconds

Minimum Value: -3.7 at -11.3 Milliseconds

SAE Filter Class: 60

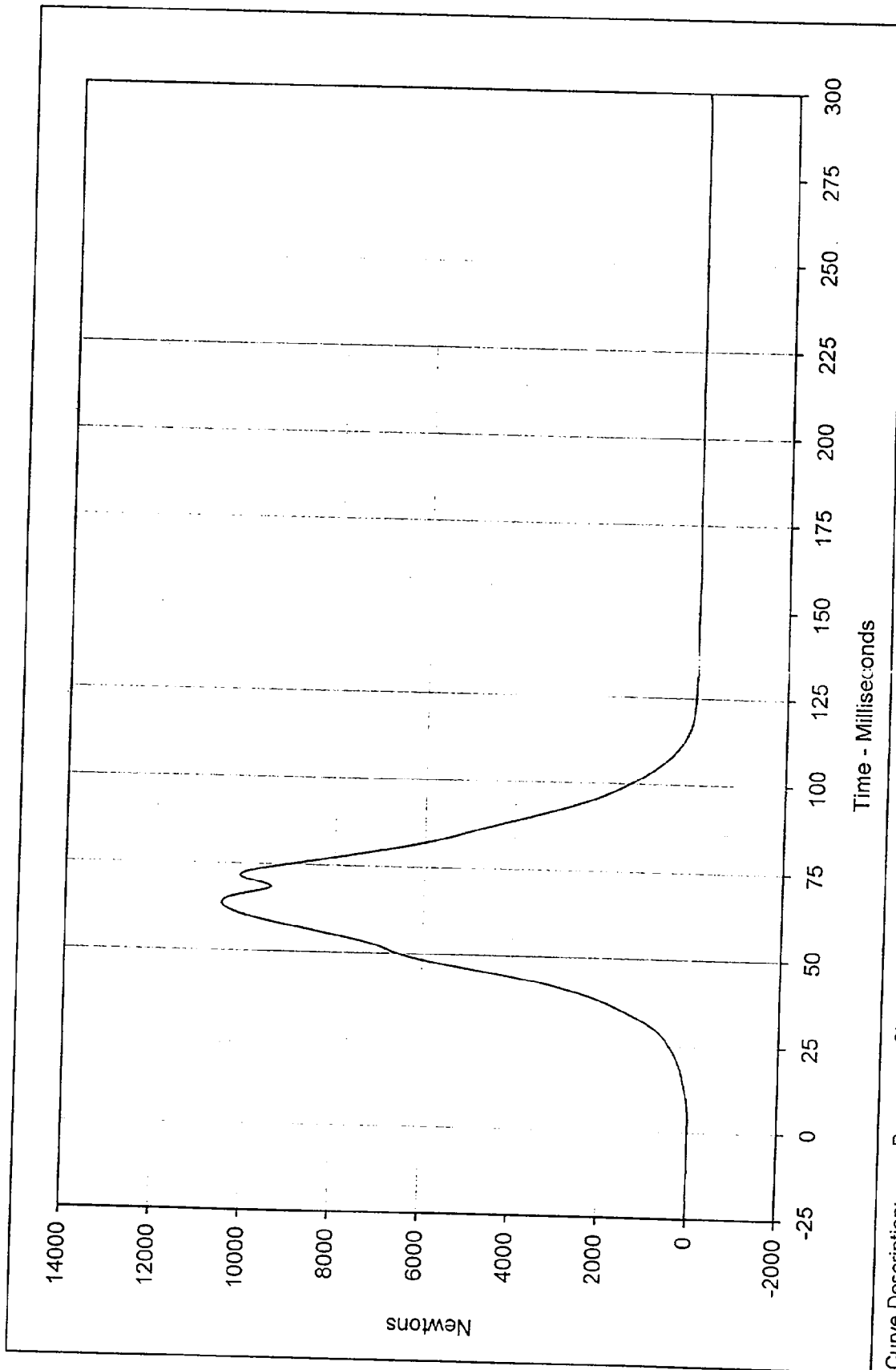
Date of Test: 3/6/97

Curve Number: FIL-085

Testing Program: 1997 New Car Assessment Program

Test Vehicle: 1997 Toyota Tercel





Curve Description:

Passenger Shoulder Belt Force

Maximum Value: 10518.6 at 63.7 Milliseconds

Minimum Value: -3.1 at 286.1 Milliseconds

SAE Filter Class: 60

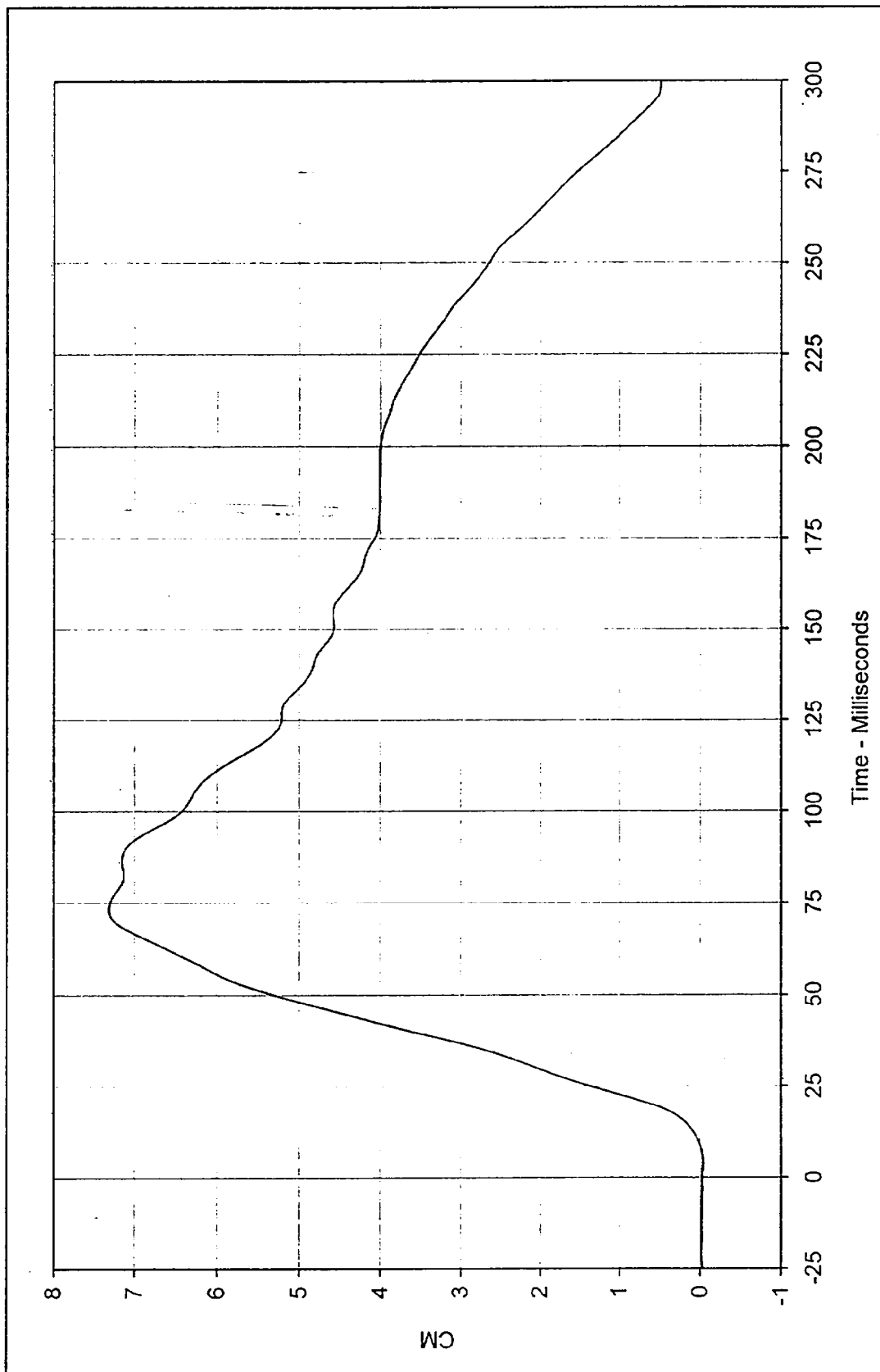
Date of Test: 3/6/97

Curve Number: FIL-086

Testing Program: 1997 New Car Assessment Program

Test Vehicle: 1997 Toyota Tercel

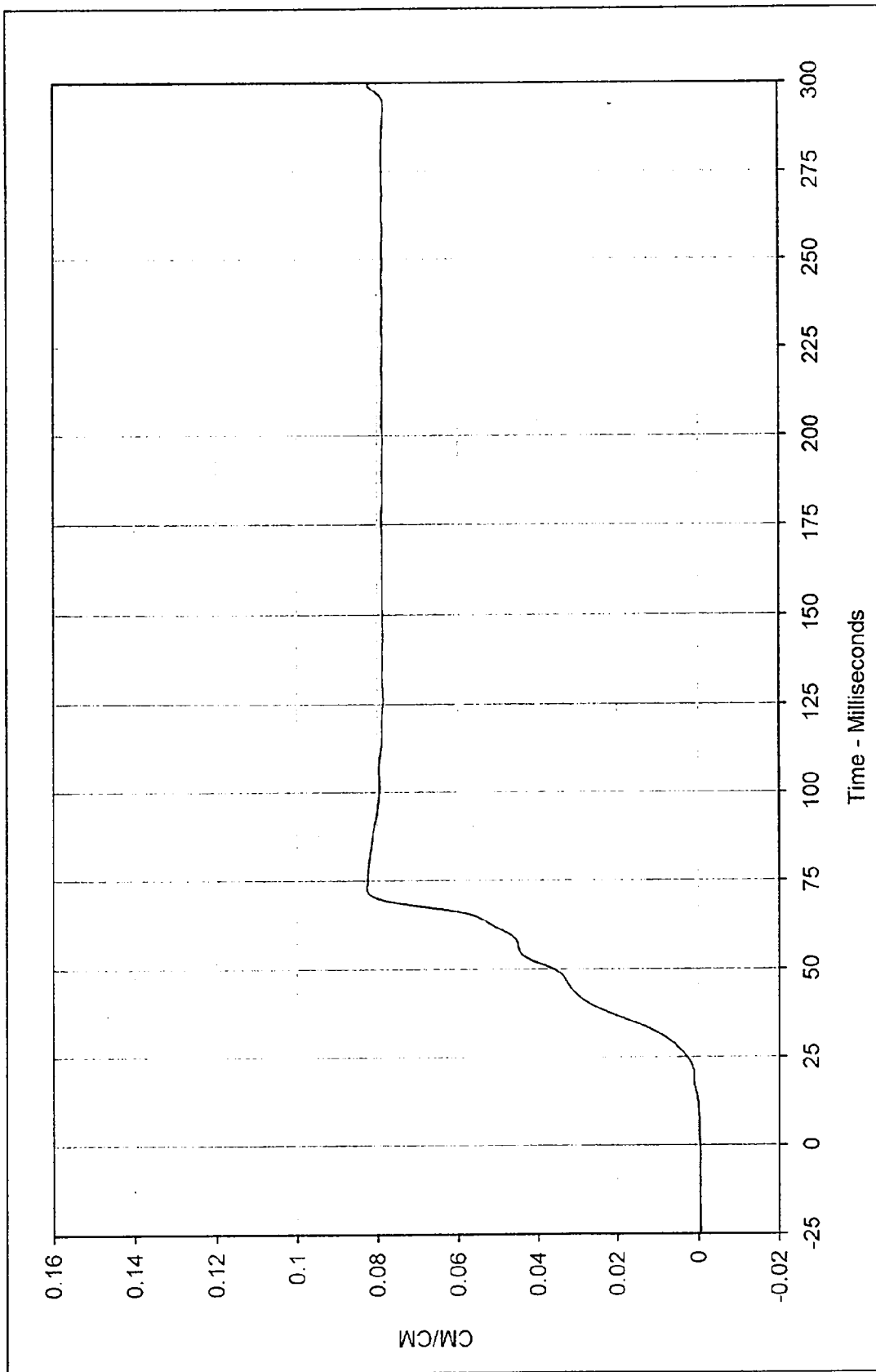




B121

Curve Description:	Passenger Shoulder Belt Pullout	Testing Program:	1997 New Car Assessment Program
Maximum Value:	7.32 at 73.1 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-0.04 at 4.2 Milliseconds		
SAE Filter Class:	60		
Date of Test:	3/6/97		
Curve Number:	FIL-087		

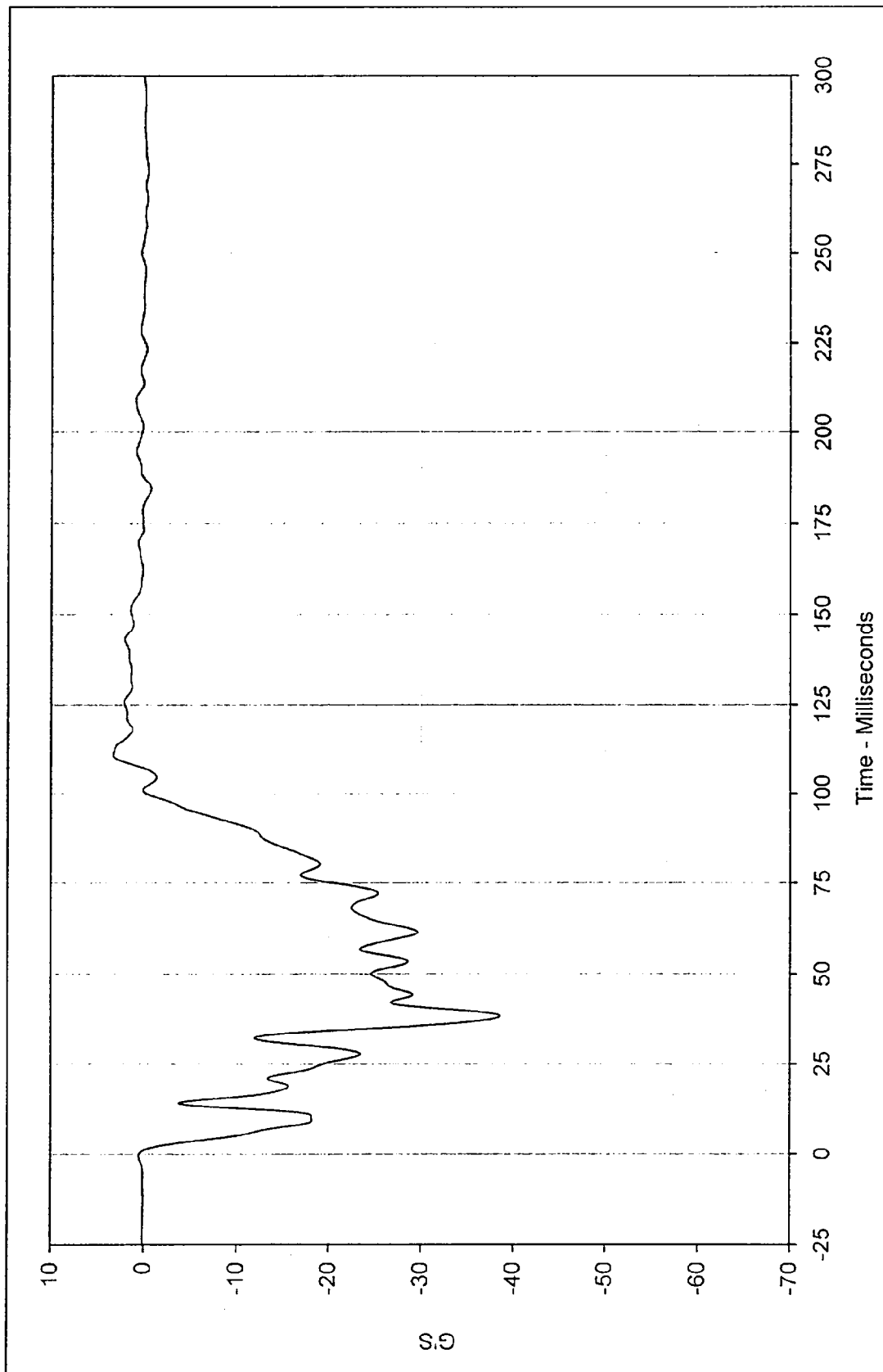




B122

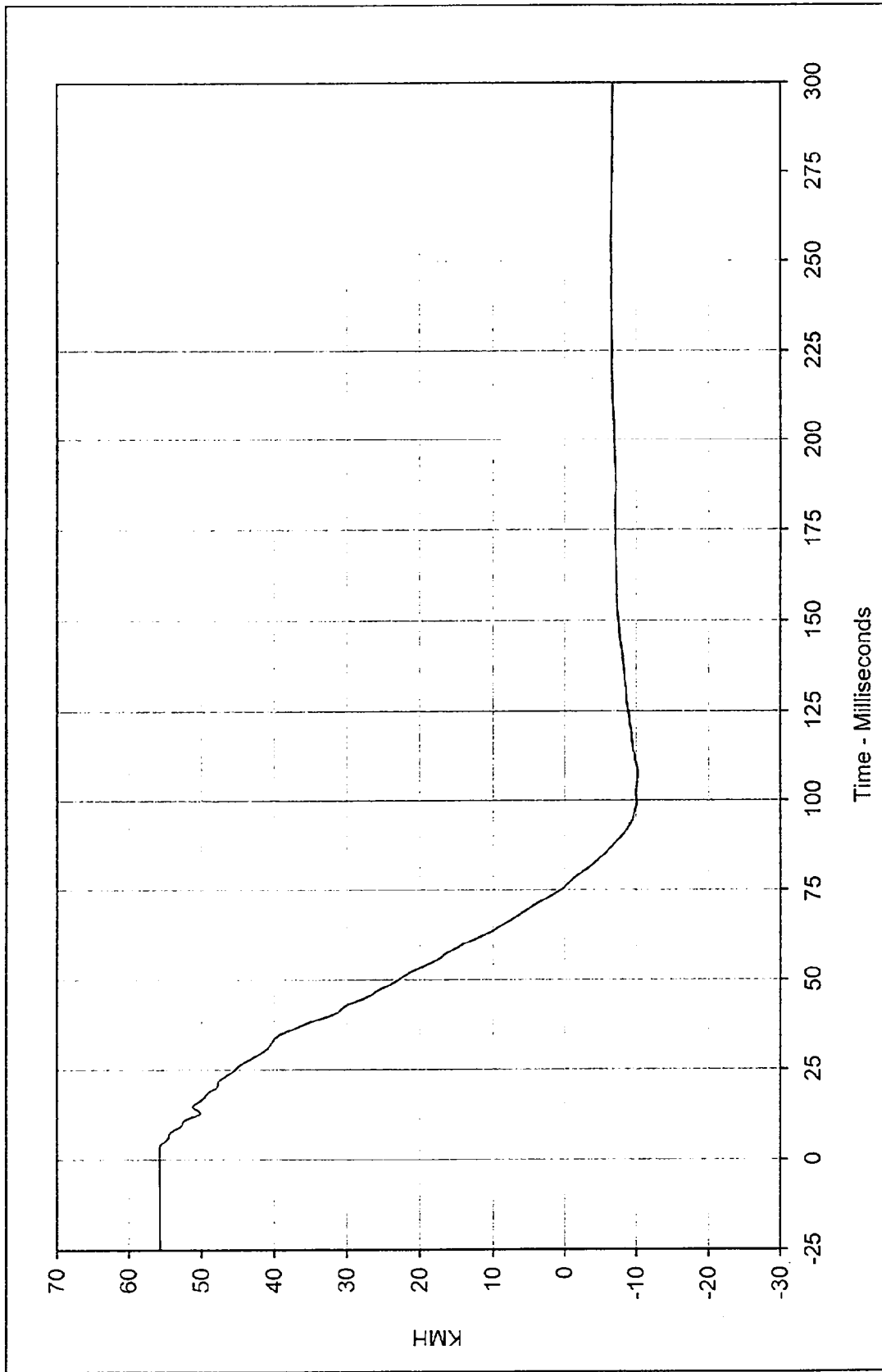
Curve Description:	Passenger Shoulder Belt Elongation	Testing Program:	1997 New Car Assessment Program
Maximum Value:	0.083 at 72.8 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	0.000 at 0.0 Milliseconds		
SAE Filter Class:	60		
Date of Test:	3/6/97		
Curve Number:	FIL-088		





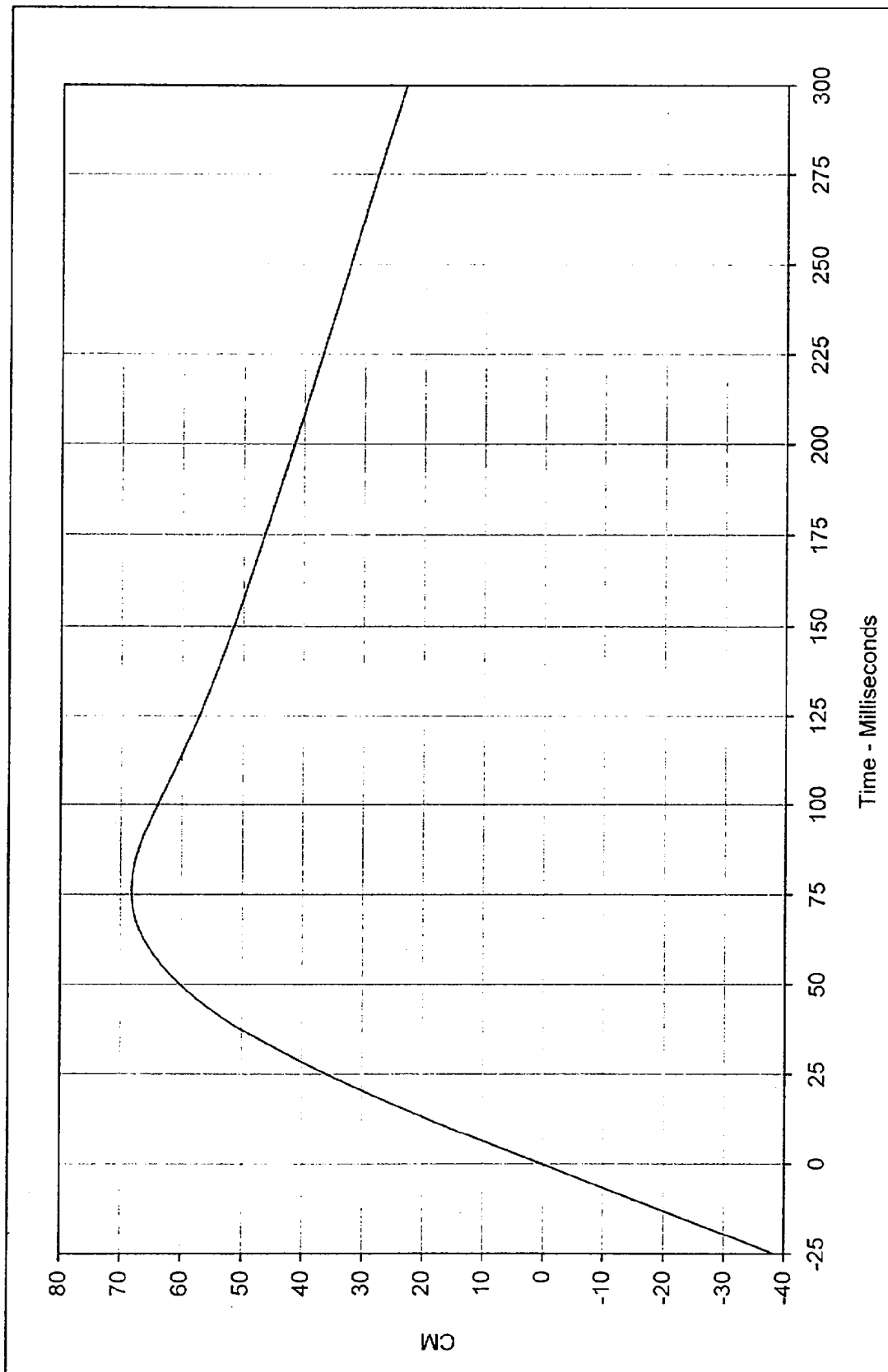
Curve Description:	Vehicle Left Rear Primary X	Testing Program:	1997 New Car Assessment Program
Maximum Value:	3.3 at 110.9 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-38.6 at 38.6 Milliseconds		
SAE Filter Class:	60		
Date of Test:	3/6/97		
Curve Number:	FIL-089		





Curve Description:	Vehicle Left Rear Primary X Velocity	Testing Program:	1997 New Car Assessment Program
Maximum Value:	55.8 at 2.7 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-10.2 at 107.7 Milliseconds		
SAE Filter Class:	180		
Date of Test:	3/6/97		
Curve Number:	IN1-089		

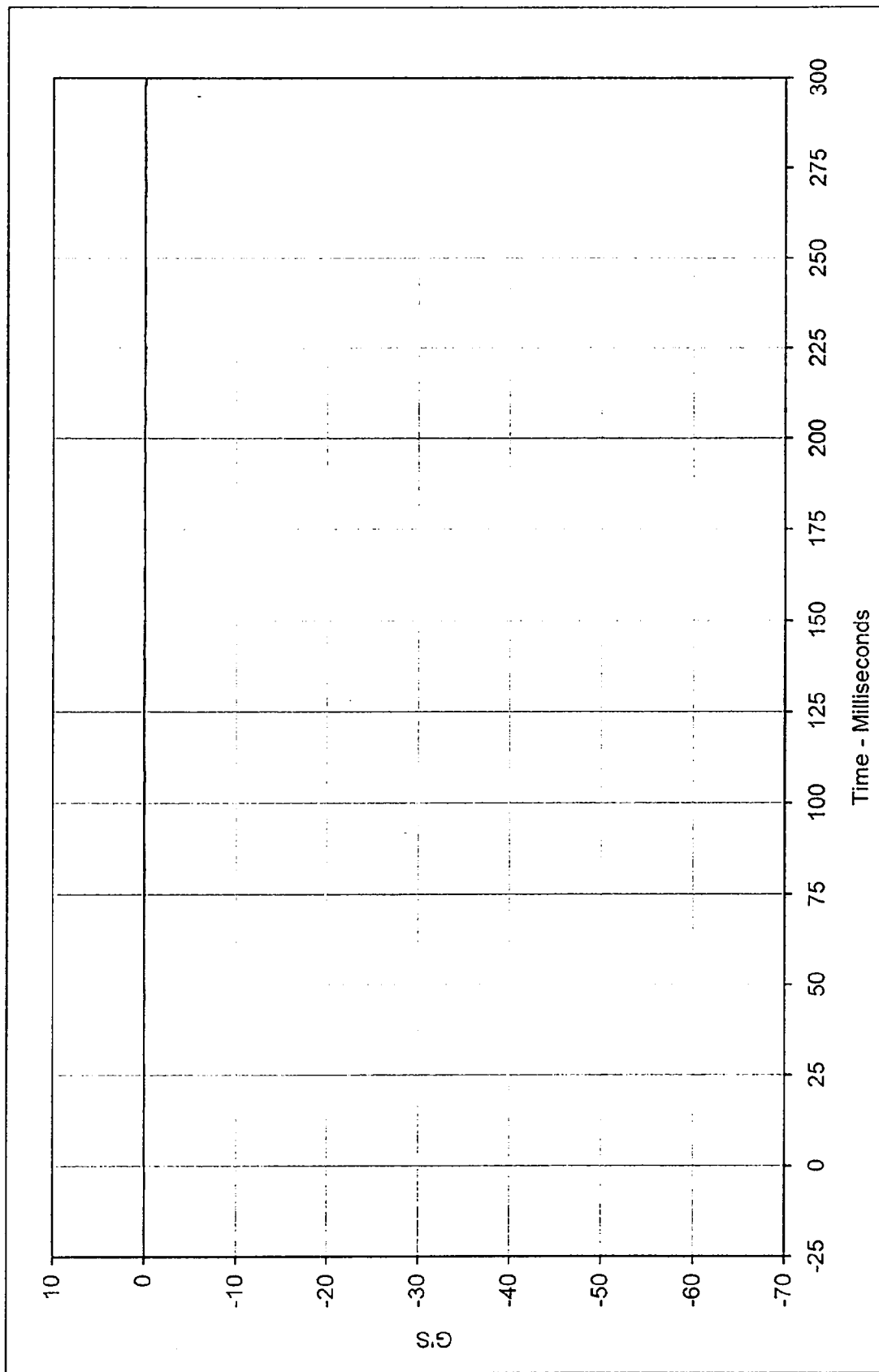




B125

Curve Description:	Vehicle Left Rear Primary X Displ.	Testing Program:	1997 New Car Assessment Program
Maximum Value:	68.2 at 75.7 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	0.1 at 0.0 Milliseconds		
SAE Filter Class:	180		
Date of Test:	3/6/97		
Curve Number:	IN2-089		



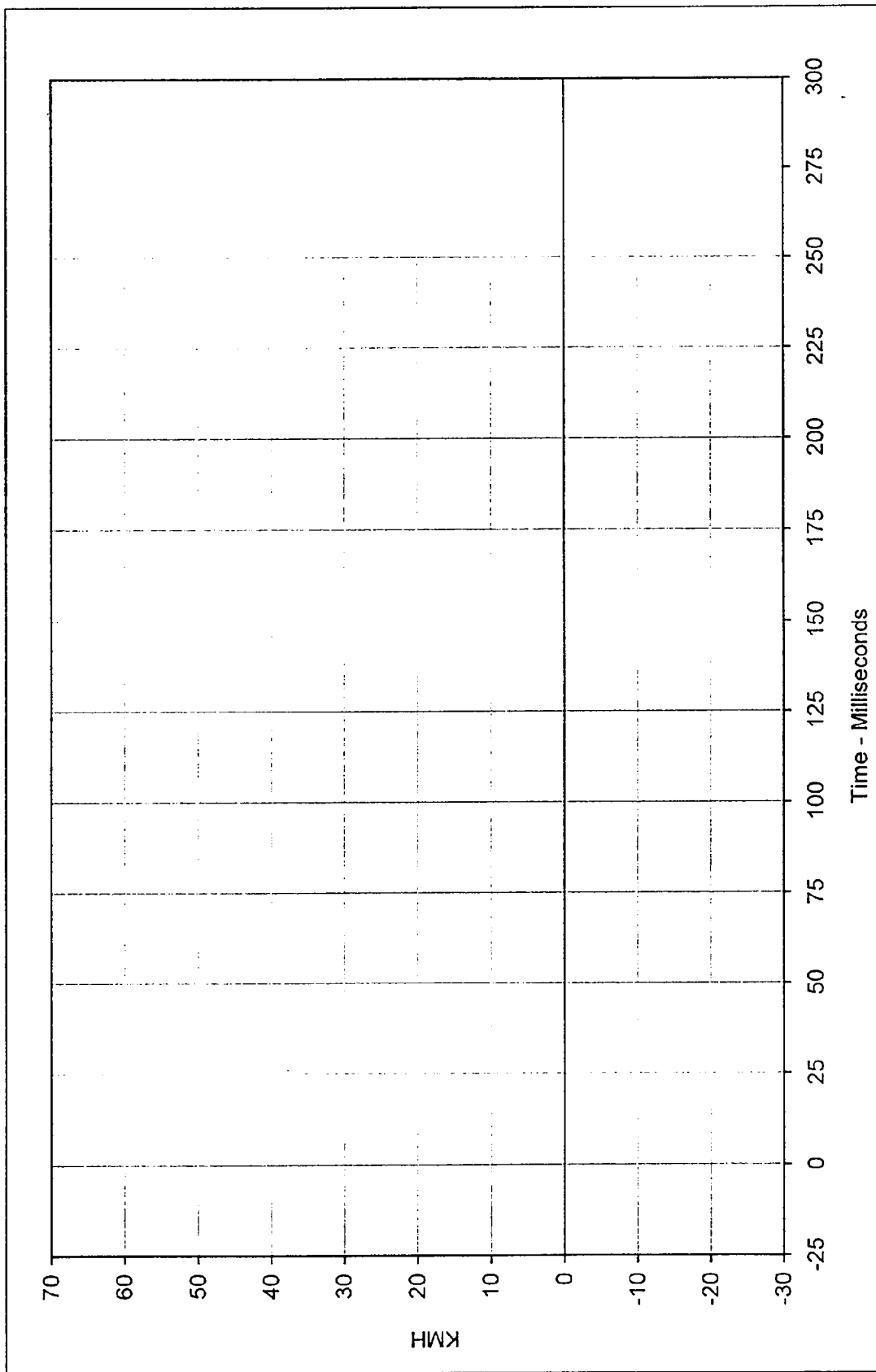


Curve Description: Vehicle Right Rear Primary X * Testing Program: 1997 New Car Assessment Program
 Maximum Value: 0.0 at 125.7 Milliseconds Test Vehicle: 1997 Toyota Tercel
 Minimum Value: -0.1 at -30 Milliseconds



SAE Filter Class: 60
 Date of Test: 3/6/97
 Curve Number: FIL-090

*Channel Failed, No Data

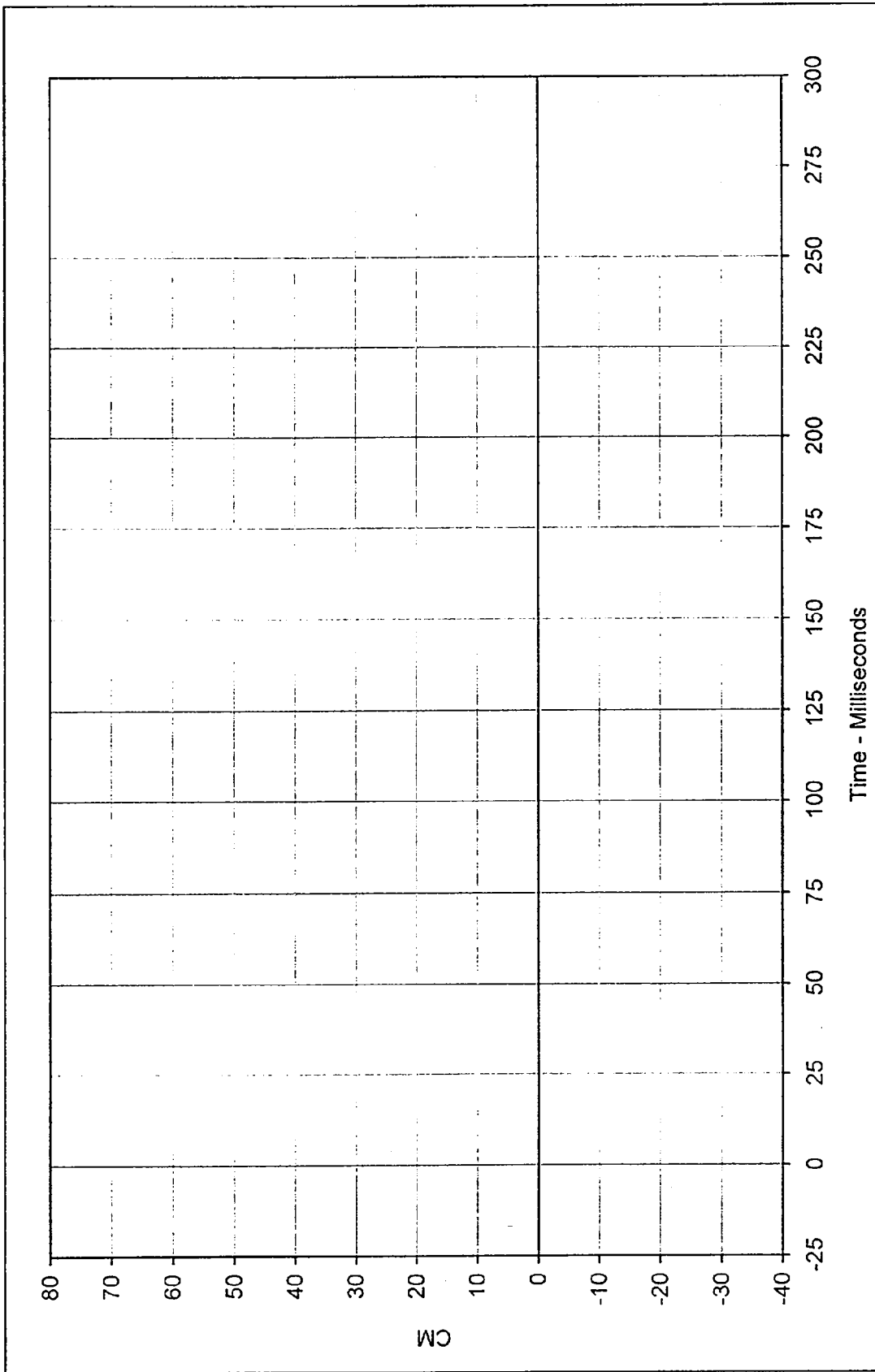


B127

Curve Description:	Vehicle Right Rear Primary X Velocity	Testing Program:	1997 New Car Assessment Program
Maximum Value:	0.0 at 0.0 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	0.0 at 0.0 Milliseconds		
SAE Filter Class:	180		
Date of Test:	3/6/97		
Curve Number:	IN1-090		



*Channel Failed, No Data



Curve Description: Vehicle Right Rear Primary X Displ. * Testing Program: 1997 New Car Assessment Program
 Maximum Value: 0.0 at 0.0 Milliseconds Test Vehicle: 1997 Toyota Tercel
 Minimum Value: 0.0 at 0.0 Milliseconds

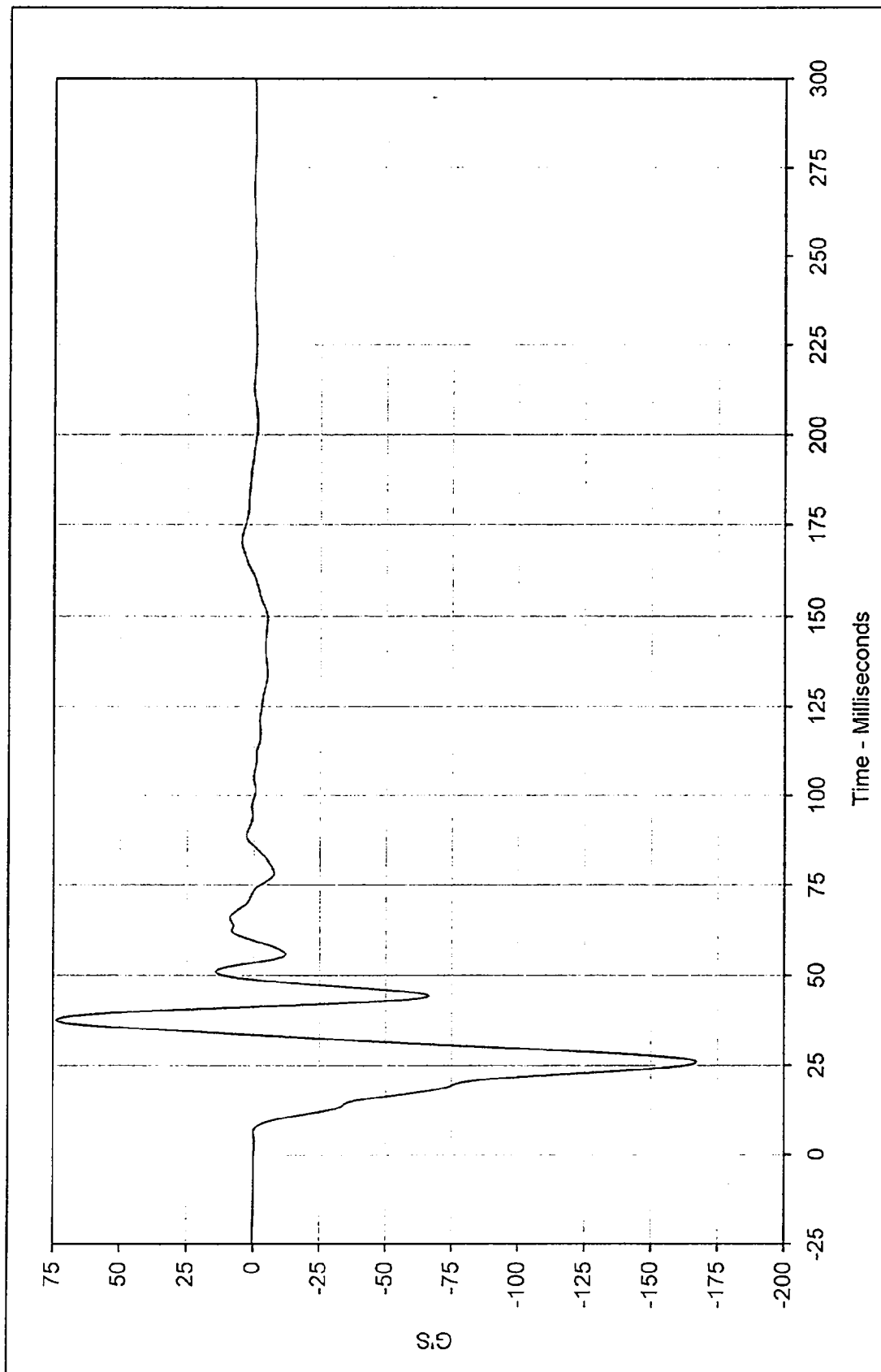
SAE Filter Class: 180

Date of Test: 3/6/97

Curve Number: IN2-090



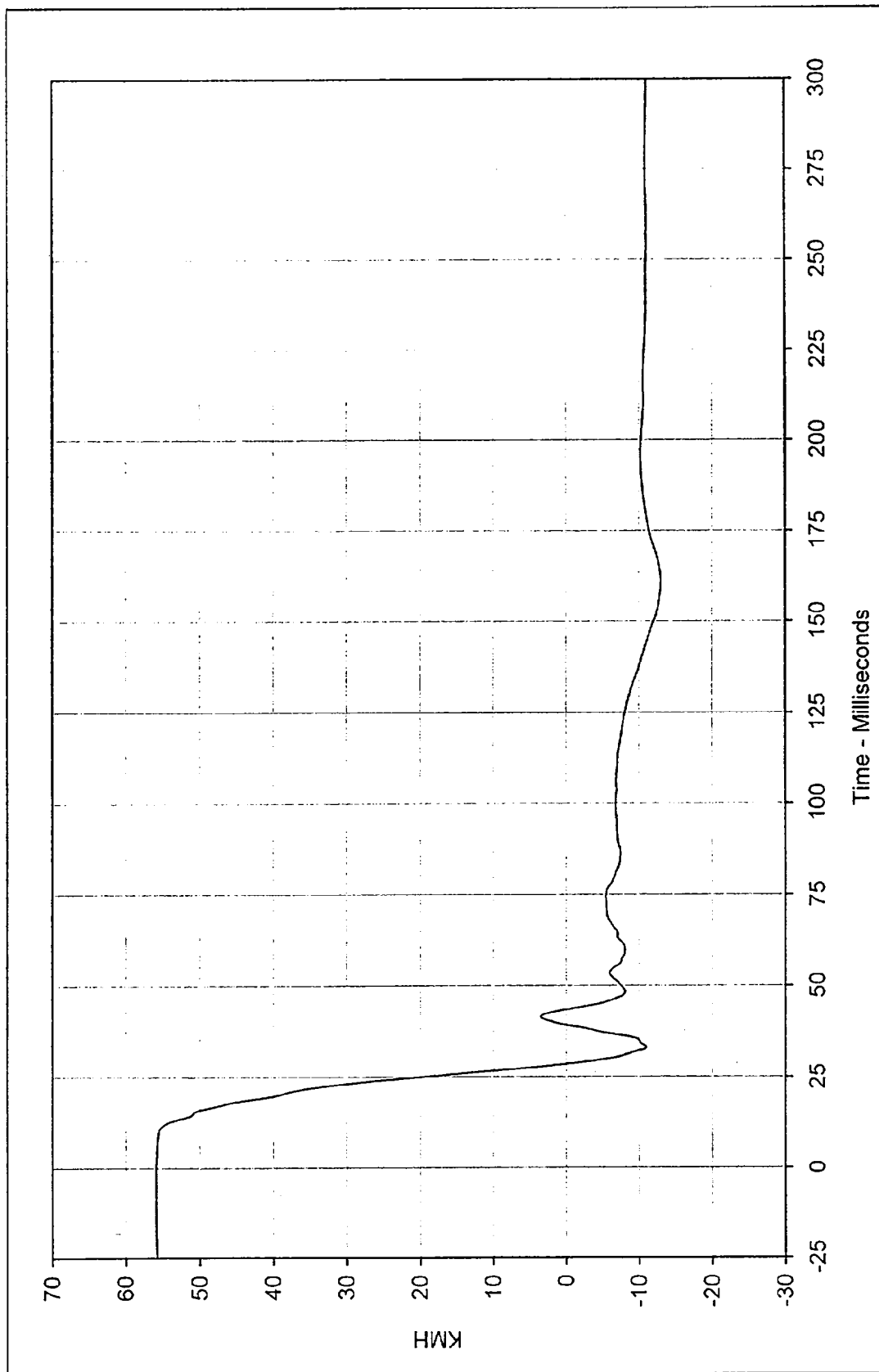
*Channel Failed, No Data



B129

Curve Description:	Vehicle Engine Top X		Testing Program:	1997 New Car Assessment Program
Maximum Value:	73.7	at 37.7 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-167.0	at 26.0 Milliseconds		
SAE Filter Class:	60			
Date of Test:	3/6/97			
Curve Number:	FIL-091			

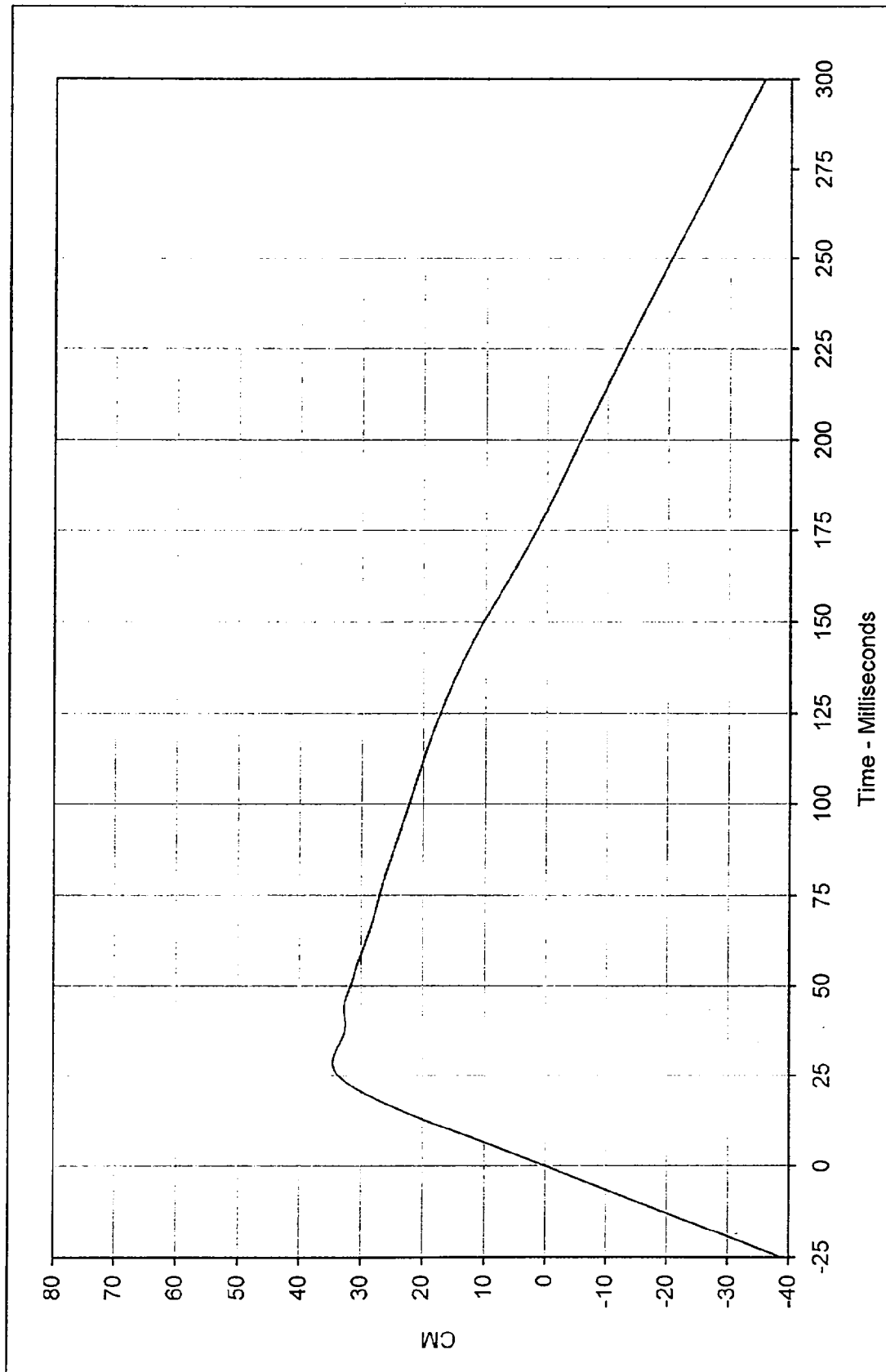




B130

Curve Description:	Vehicle Engine Top X Velocity	Testing Program:	1997 New Car Assessment Program
Maximum Value:	55.8 at 0.2 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-13.0 at 161.5 Milliseconds		
SAE Filter Class:	180		
Date of Test:	3/6/97		
Curve Number:	IN1-091		

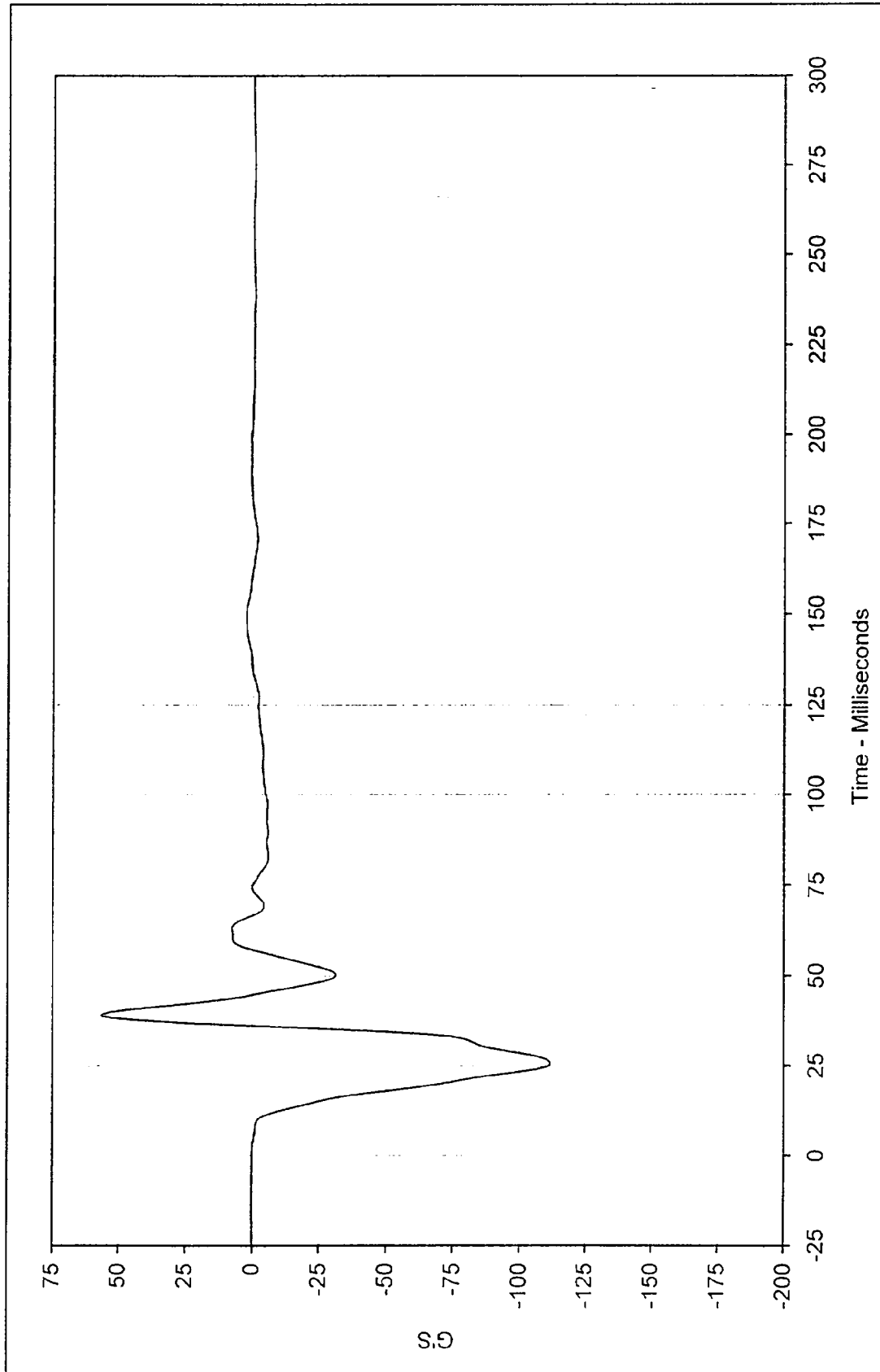




B131

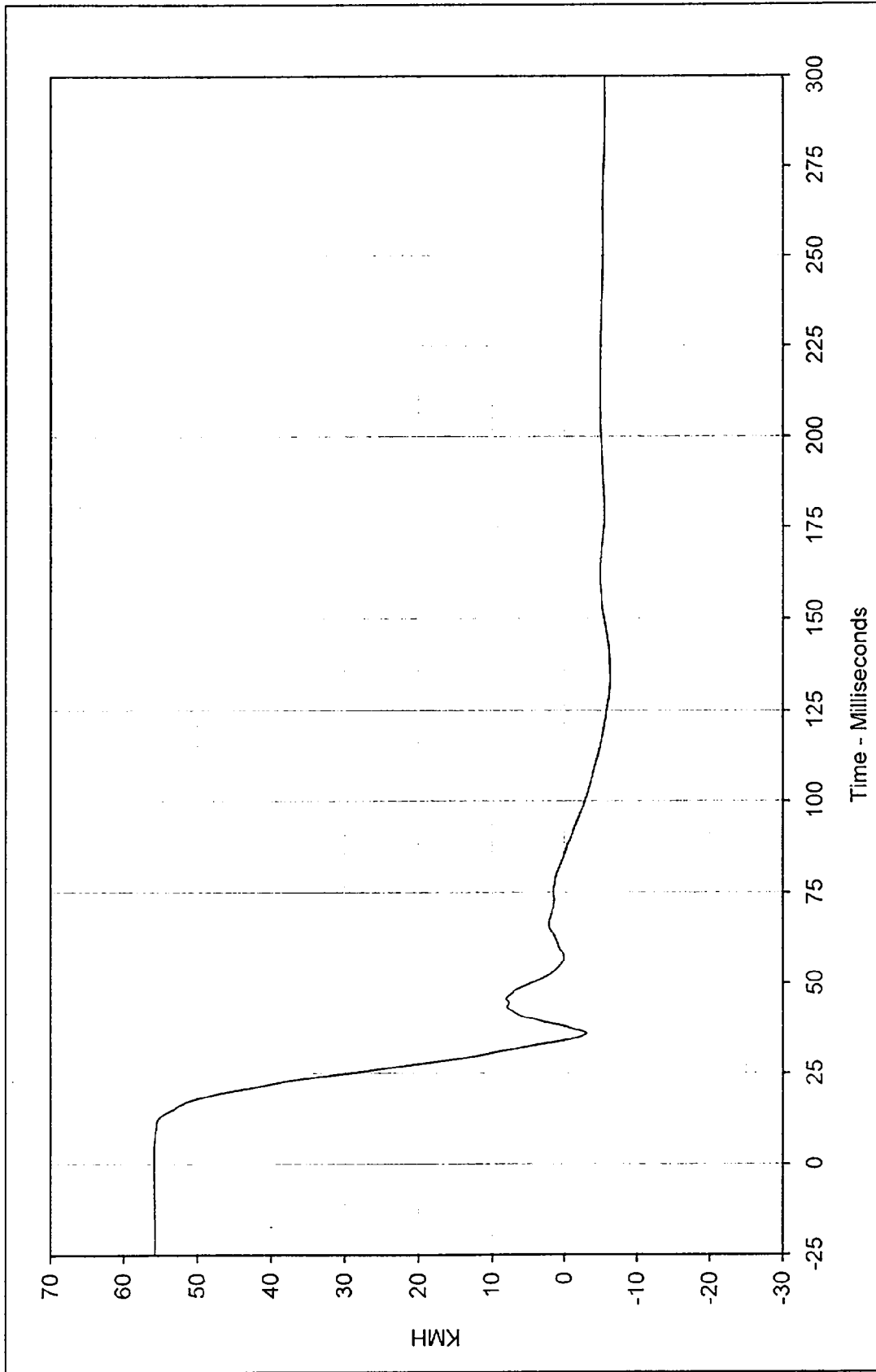
Curve Description:	Vehicle Engine Top X Displ.	Testing Program:	1997 New Car Assessment Program
Maximum Value:	34.6 at 28.5 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-35.7 at 299.9 Milliseconds		
SAE Filter Class:	180		
Date of Test:	3/6/97		
Curve Number:	IN2-091		





Curve Description:	Vehicle Engine Bottom X	Testing Program:	1997 New Car Assessment Program
Maximum Value:	56.6 at 38.9 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-111.6 at 25.7 Milliseconds		
SAE Filter Class:	60		
Date of Test:	3/6/97		
Curve Number:	FIL-092		

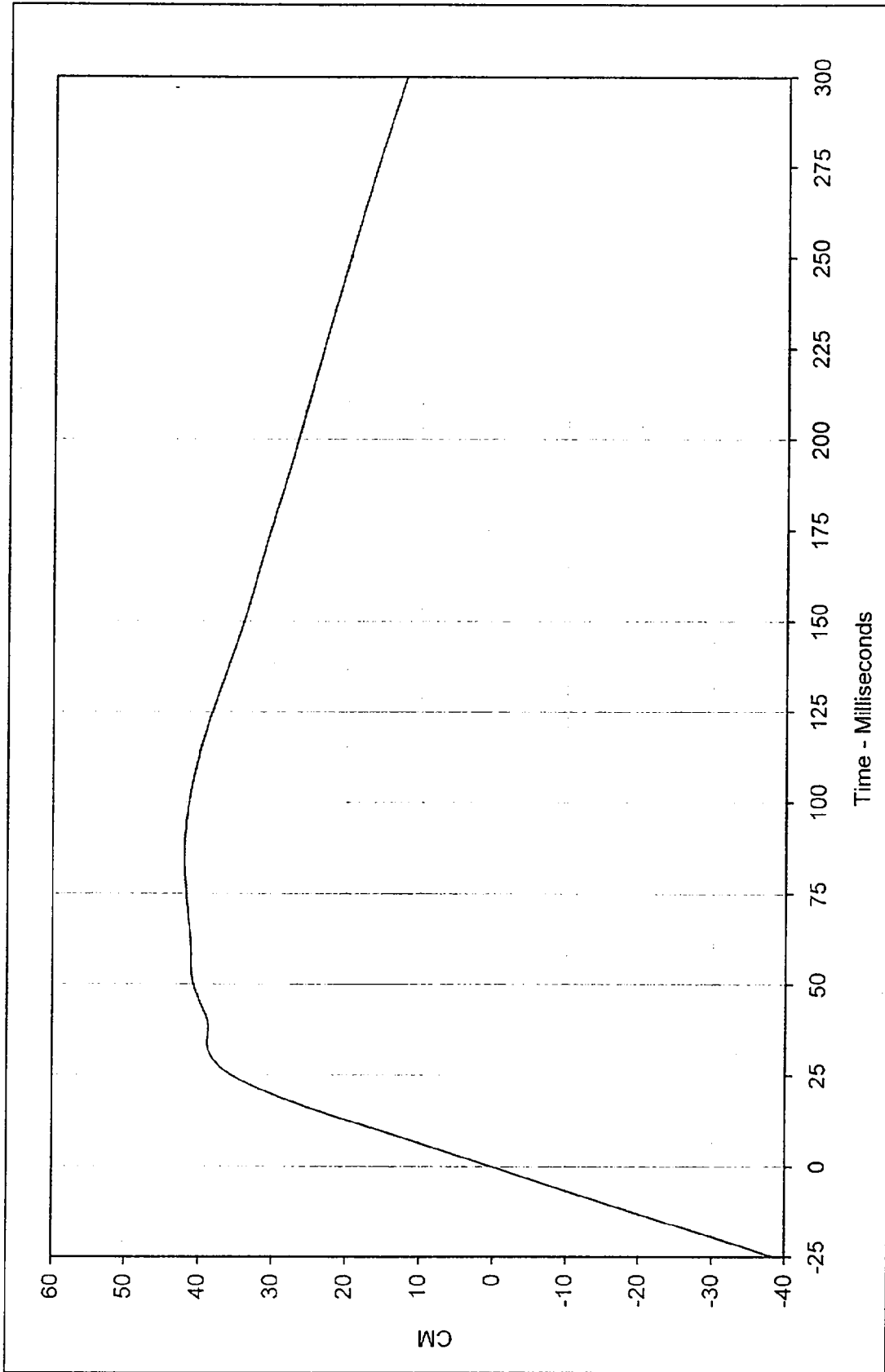




B133

Curve Description:	Vehicle Engine Bottom X Velocity	Testing Program:	1997 New Car Assessment Program
Maximum Value:	55.8 at 1.9 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-6.3 at 133.4 Milliseconds		
SAE Filter Class:	180		
Date of Test:	3/6/97		
Curve Number:	IN1-092		

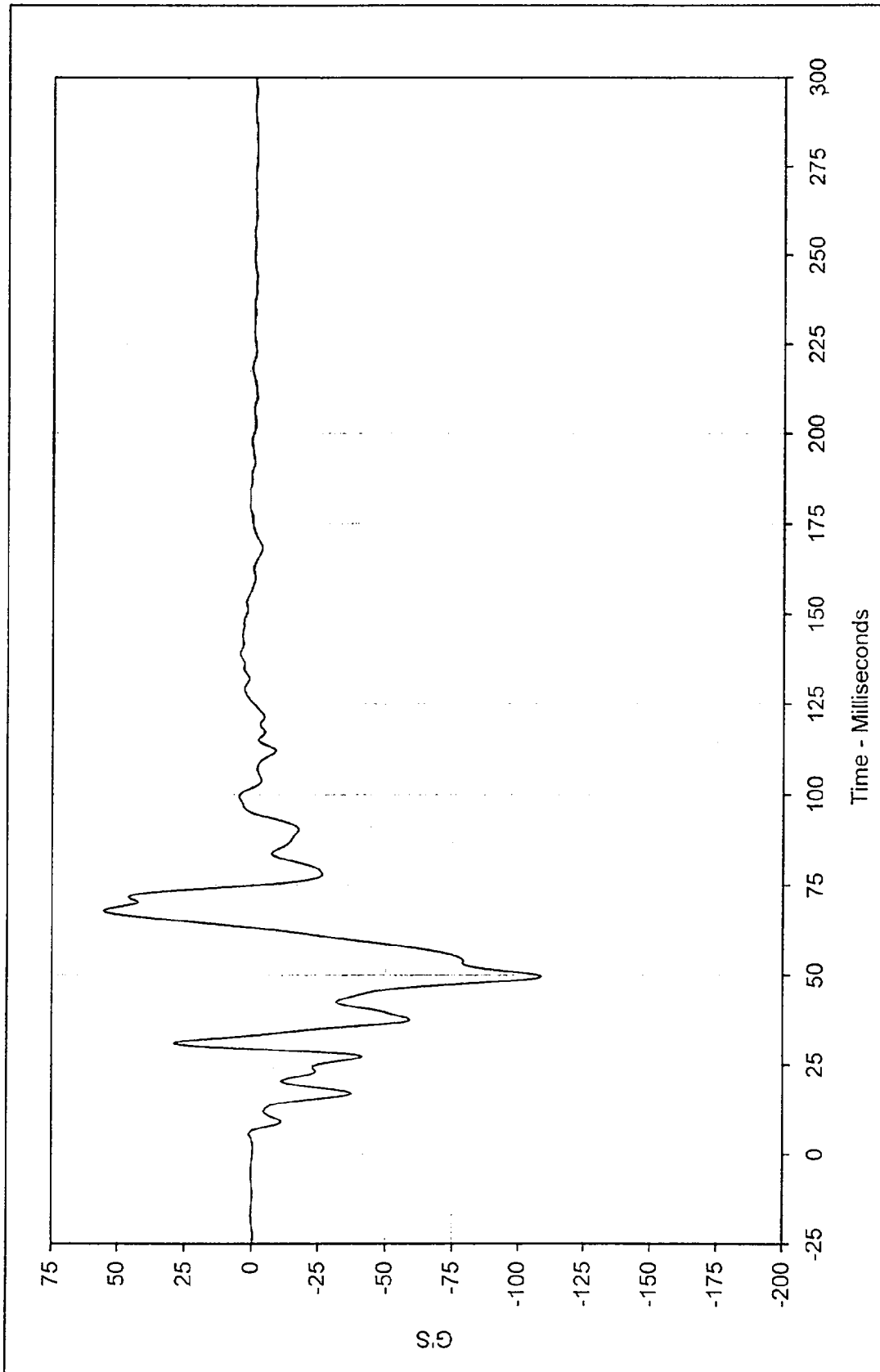




B134

Curve Description: <u>Vehicle Engine Bottom X Displ.</u>		Testing Program: <u>1997 New Car Assessment Program</u>	
Maximum Value: <u>42.0</u>	at <u>85.1</u> Milliseconds	Test Vehicle: <u>1997 Toyota Tercel</u>	
Minimum Value: <u>0.1</u>	at <u>0.0</u> Milliseconds		
SAE Filter Class: <u>180</u>			
Date of Test: <u>3/6/97</u>			
Curve Number: <u>IN2-092</u>			

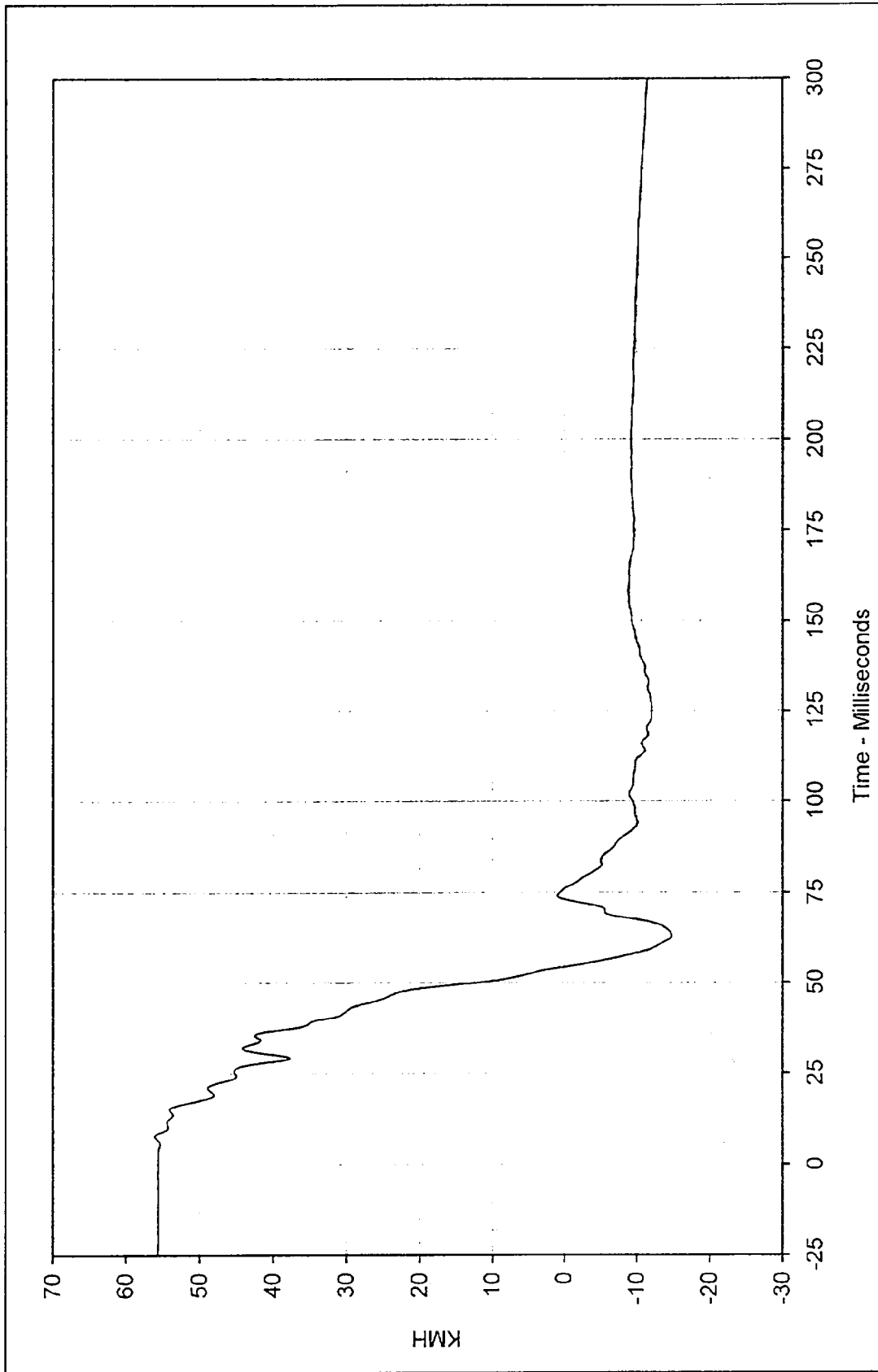




Curve Description:	Vehicle Left Brake Caliper X			Testing Program:	1997 New Car Assessment Program
Maximum Value:	55.5	at	67.7	Milliseconds	Test Vehicle: 1997 Toyota Tercel
Minimum Value:	-108.6	at	49.6	Milliseconds	
SAE Filter Class:	60				
Date of Test:	3/6/97				
Curve Number:	FIL-093				

The logo for KARCO Engineering. It features the word "KARCO" in a large, bold, sans-serif font. To the left of the letters "K" and "A" is a stylized graphic of a lightbulb with a circular base and a spiral filament. To the right of the word "KARCO" is the word "Engineering" in a smaller, italicized, sans-serif font. The entire logo is set against a black background with a white diagonal stripe running from the bottom left to the top right.

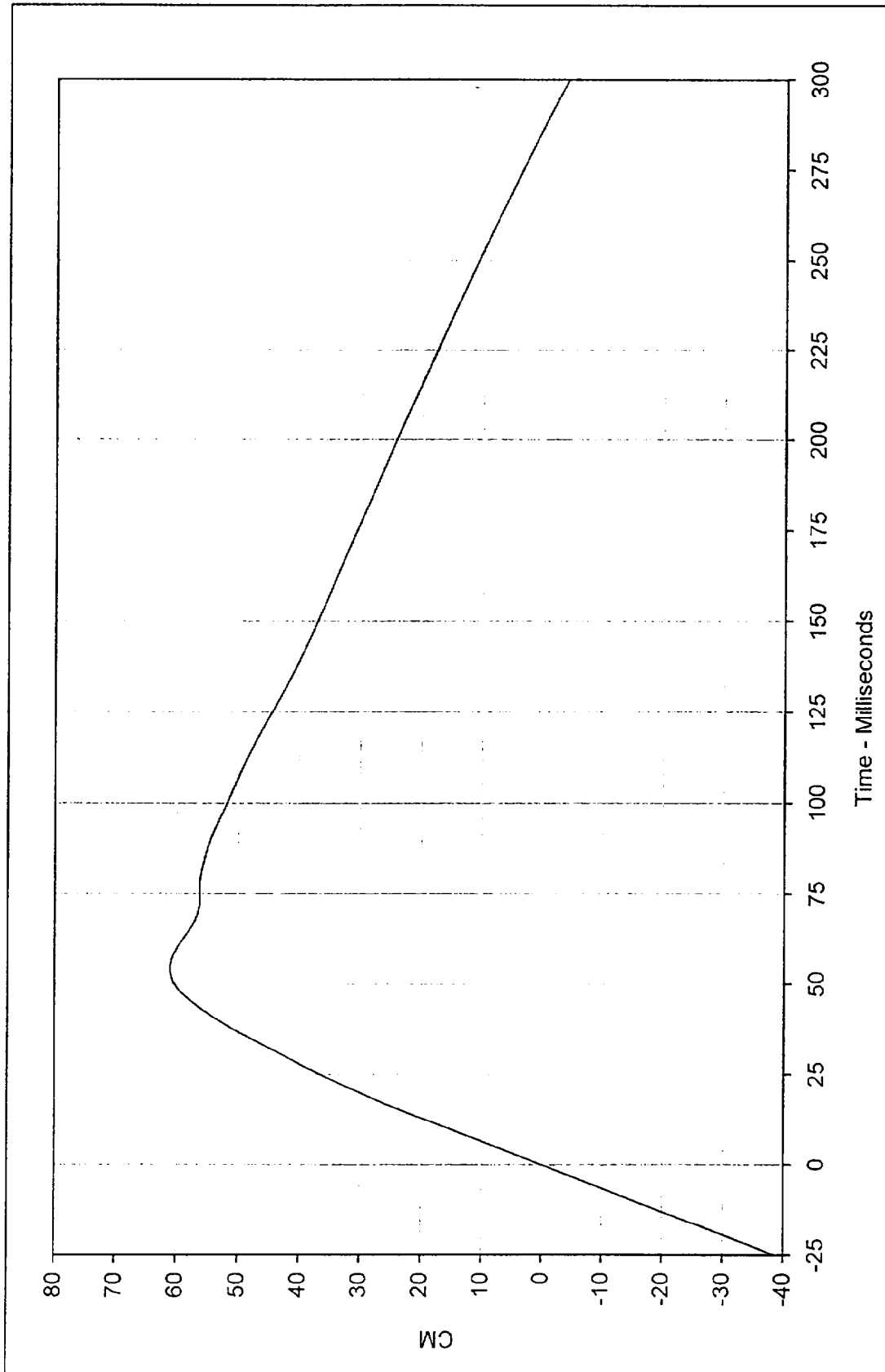




B136

Curve Description:	Vehicle Left Brake Caliper X Velocity	Testing Program:	1997 New Car Assessment Program
Maximum Value:	56.1 at 7.7 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-14.8 at 62.8 Milliseconds		
SAE Filter Class:	180		
Date of Test:	3/6/97		
Curve Number:	IN1-093		

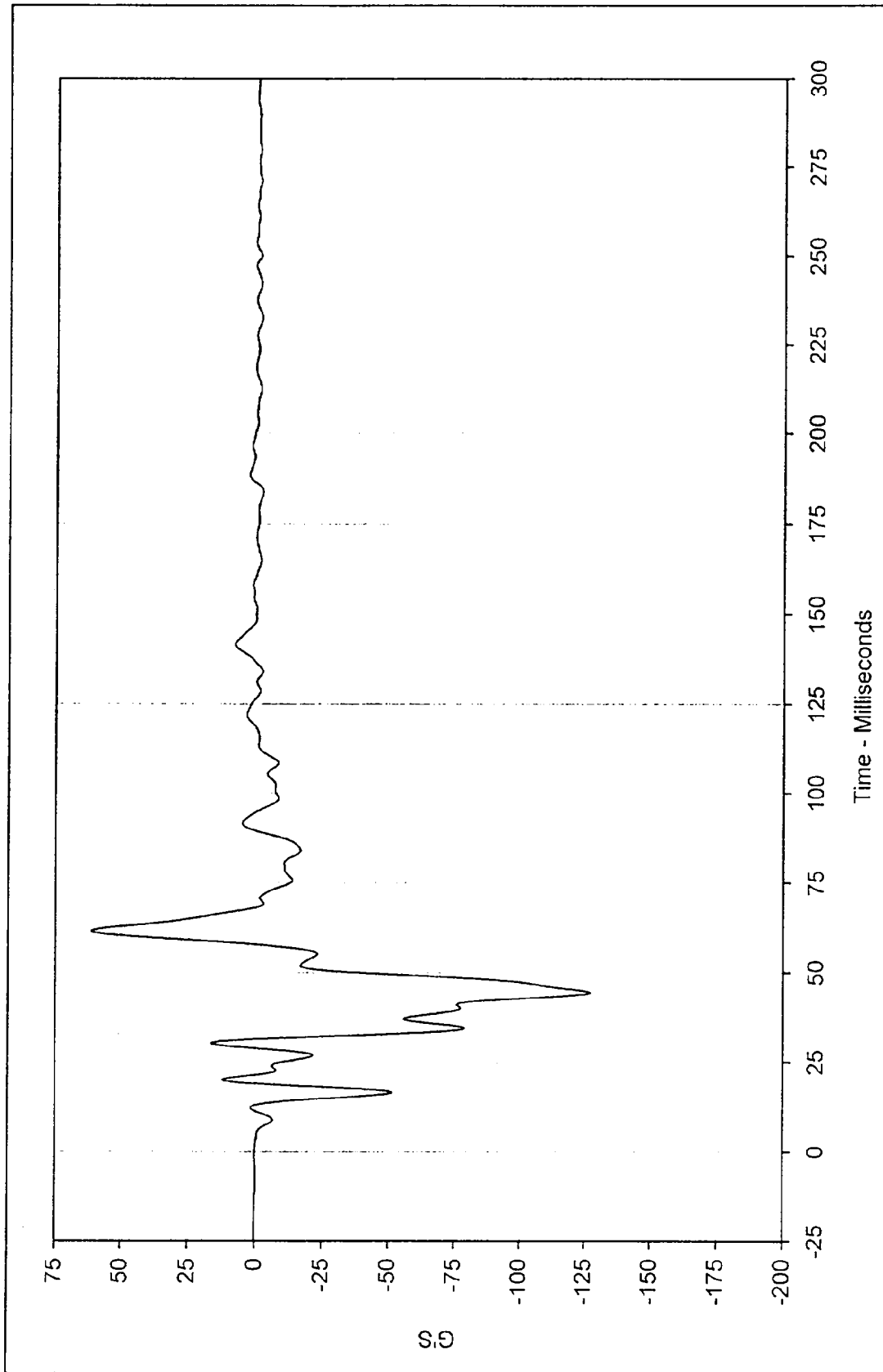




B137

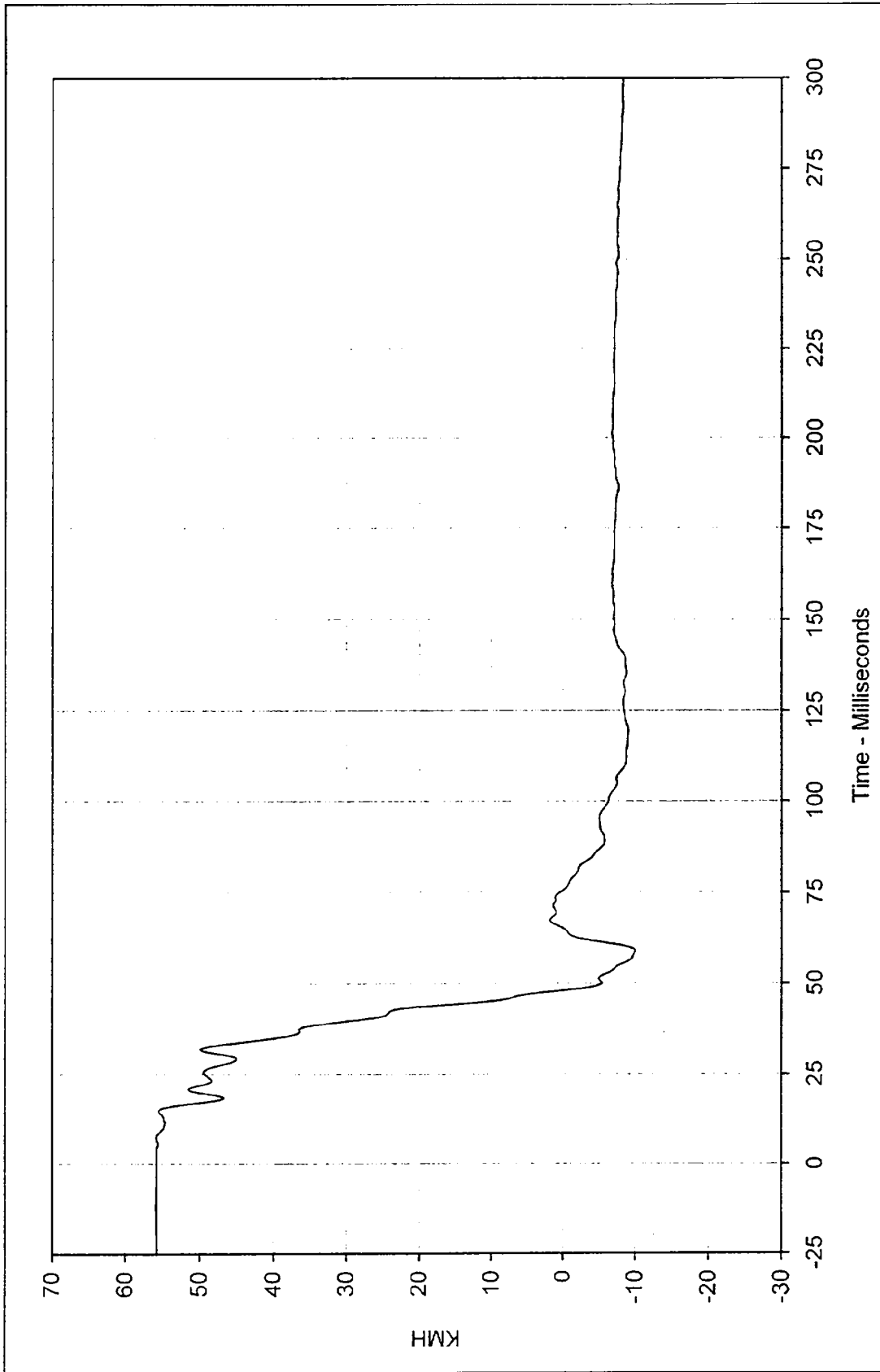
Curve Description:	Vehicle Left Brake Caliper X Displ.	Testing Program:	1997 New Car Assessment Program
Maximum Value:	61.1 at 54.3 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-4.0 at 299.9 Milliseconds		
SAE Filter Class:	180		
Date of Test:	3/6/97		
Curve Number:	IN2-093		





Curve Description:	Vehicle Right Brake Caliper X	Testing Program:	1997 New Car Assessment Program
Maximum Value:	61.2 at 61.4 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-127.1 at 44.5 Milliseconds		
SAE Filter Class:	60		
Date of Test:	3/6/97		
Curve Number:	FIL-094		

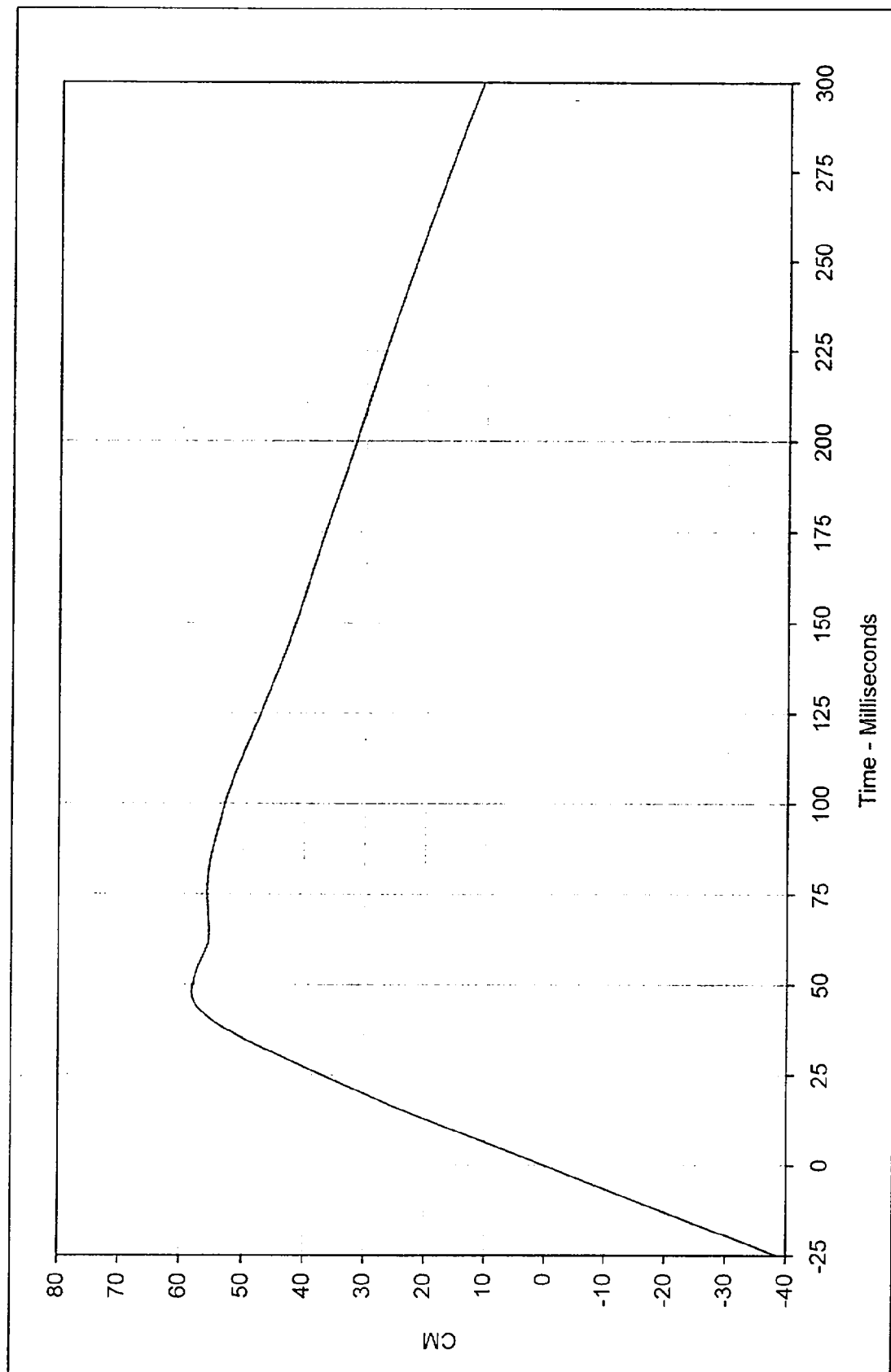




B139

Curve Description:	Vehicle Right Brake Caliper X Velocity			
Maximum Value:	55.8	at	7.4	Milliseconds
Minimum Value:	-10.0	at	58.8	Milliseconds
SAE Filter Class:	180			
Date of Test:	3/6/97			
Curve Number:	IN1-094			
Testing Program:	1997 New Car Assessment Program			
Test Vehicle:	1997 Toyota Tercel			

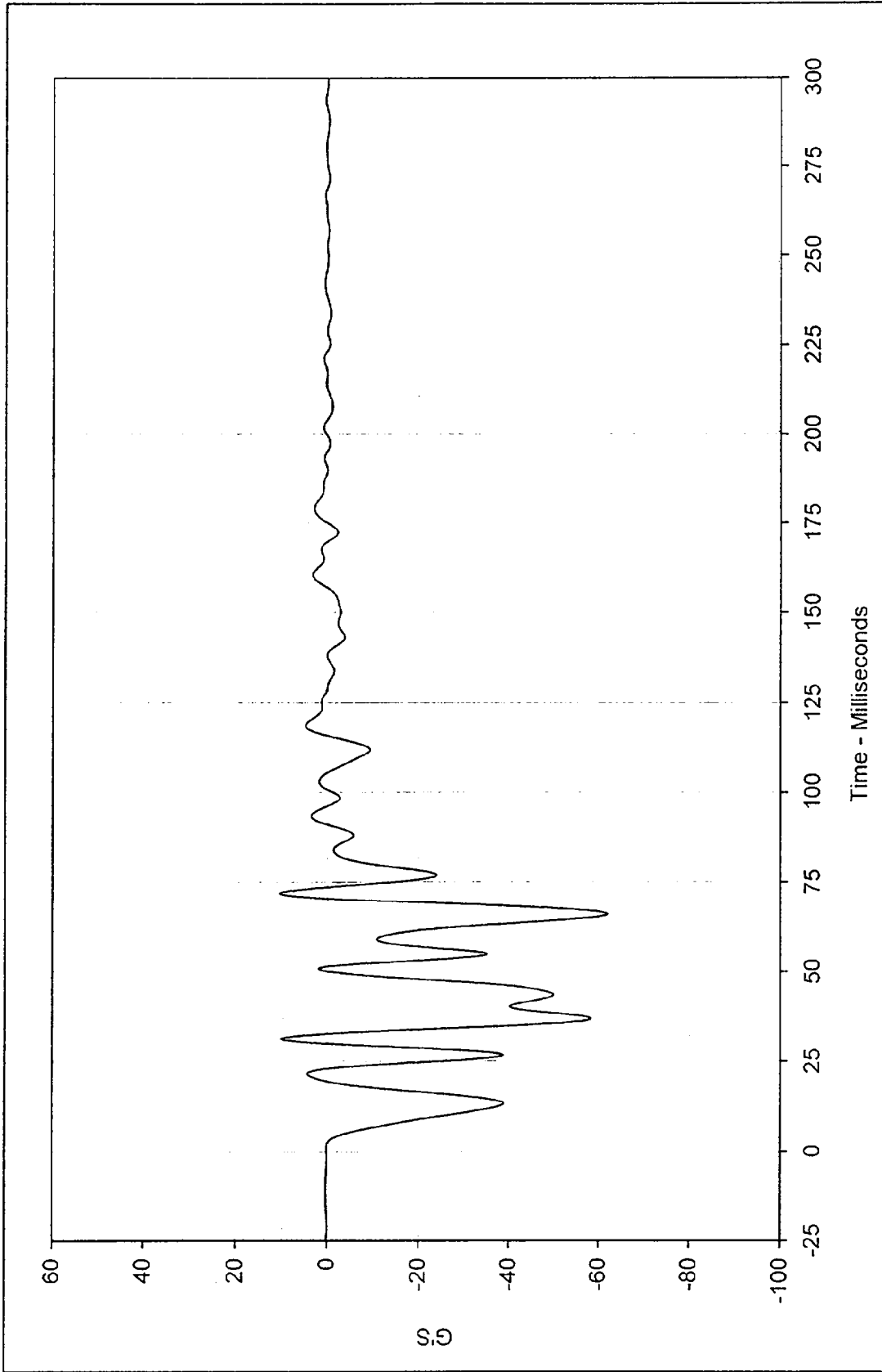




B140

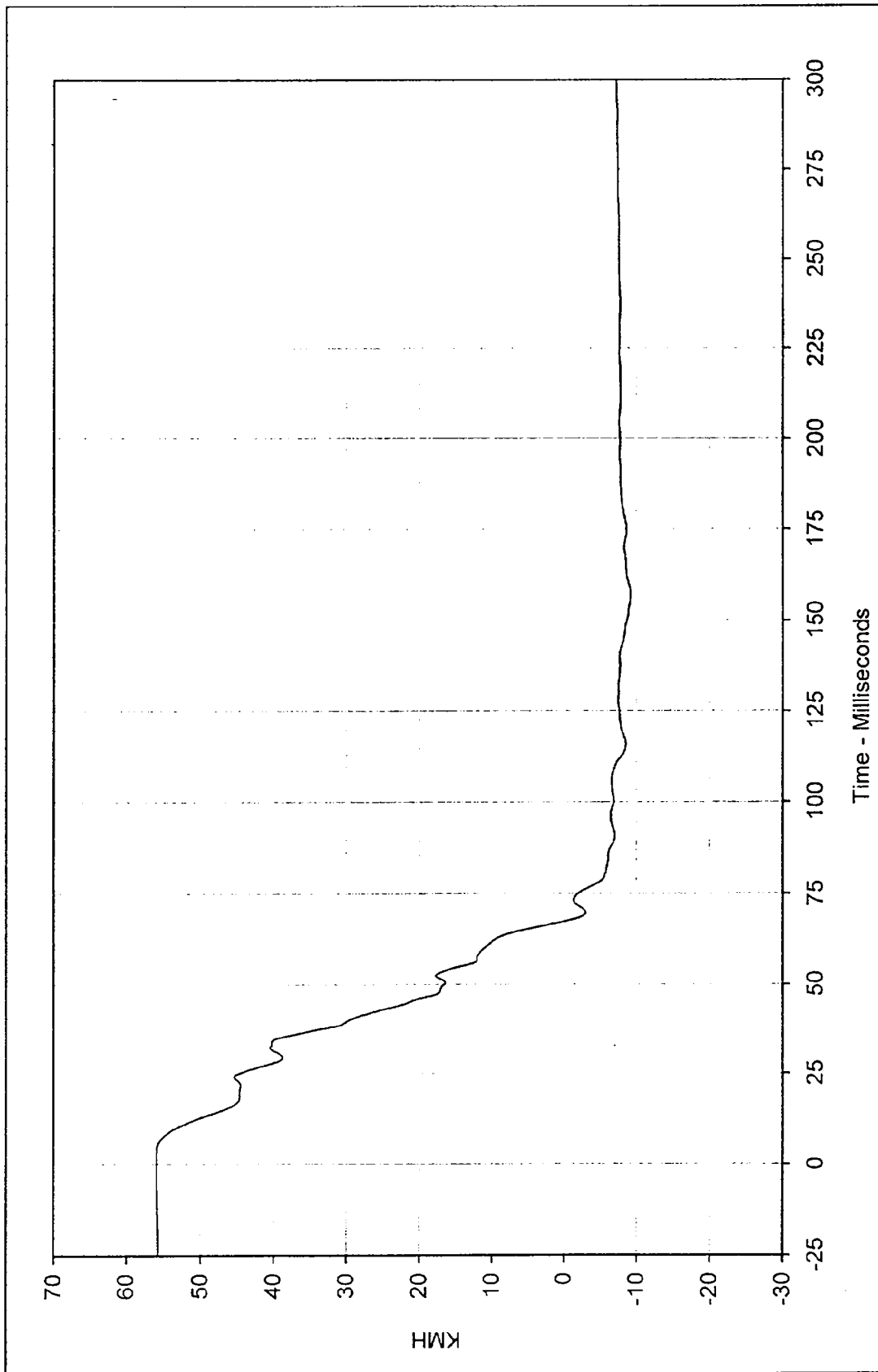
Curve Description:	Vehicle Right Brake Caliper X Displ.			
Maximum Value:	58.2	at	48.1	Milliseconds
Minimum Value:	0.0	at	0.0	Milliseconds
SAE Filter Class:	180			
Date of Test:	3/6/97			
Curve Number:	IN2-094			
Testing Program:	1997 New Car Assessment Program			
Test Vehicle:	1997 Toyota Tercel			





Curve Description:	Vehicle Instrument Panel X				Testing Program:	1997 New Car Assessment Program	
Maximum Value:	10.5	at	71.8	Milliseconds	Test Vehicle:	1997 Toyota Tercel	
Minimum Value:	-61.9	at	66	Milliseconds			
SAE Filter Class:	60						
Date of Test:	3/6/97						
Curve Number:	FIL-095						

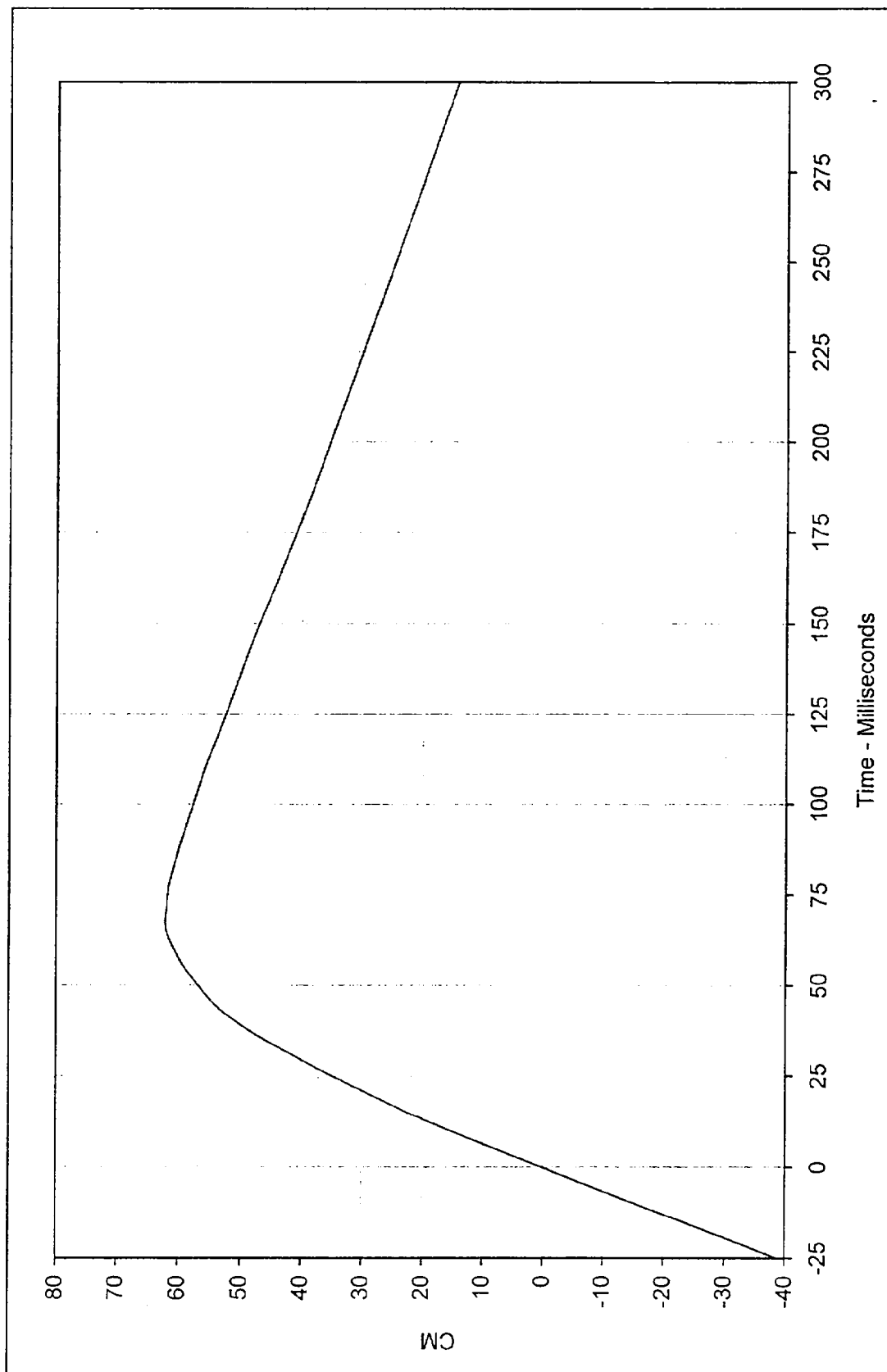




B142

Curve Description:	Vehicle Instrument Panel X Velocity	Testing Program:	1997 New Car Assessment Program
Maximum Value:	55.9 at 0.0 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-9.2 at 157.2 Milliseconds		
SAE Filter Class:	180		
Date of Test:	3/6/97		
Curve Number:	IN1-095		

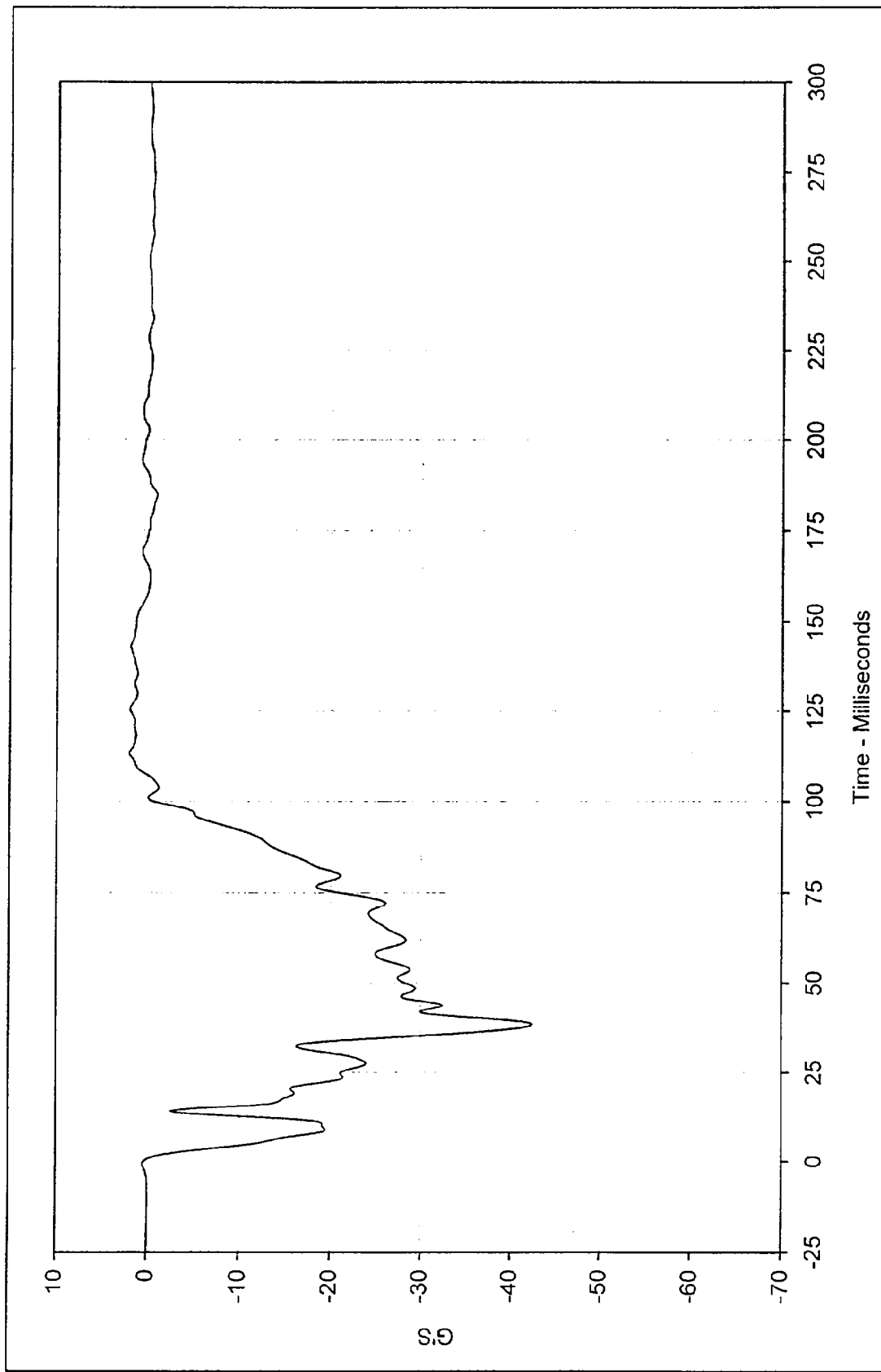




B143

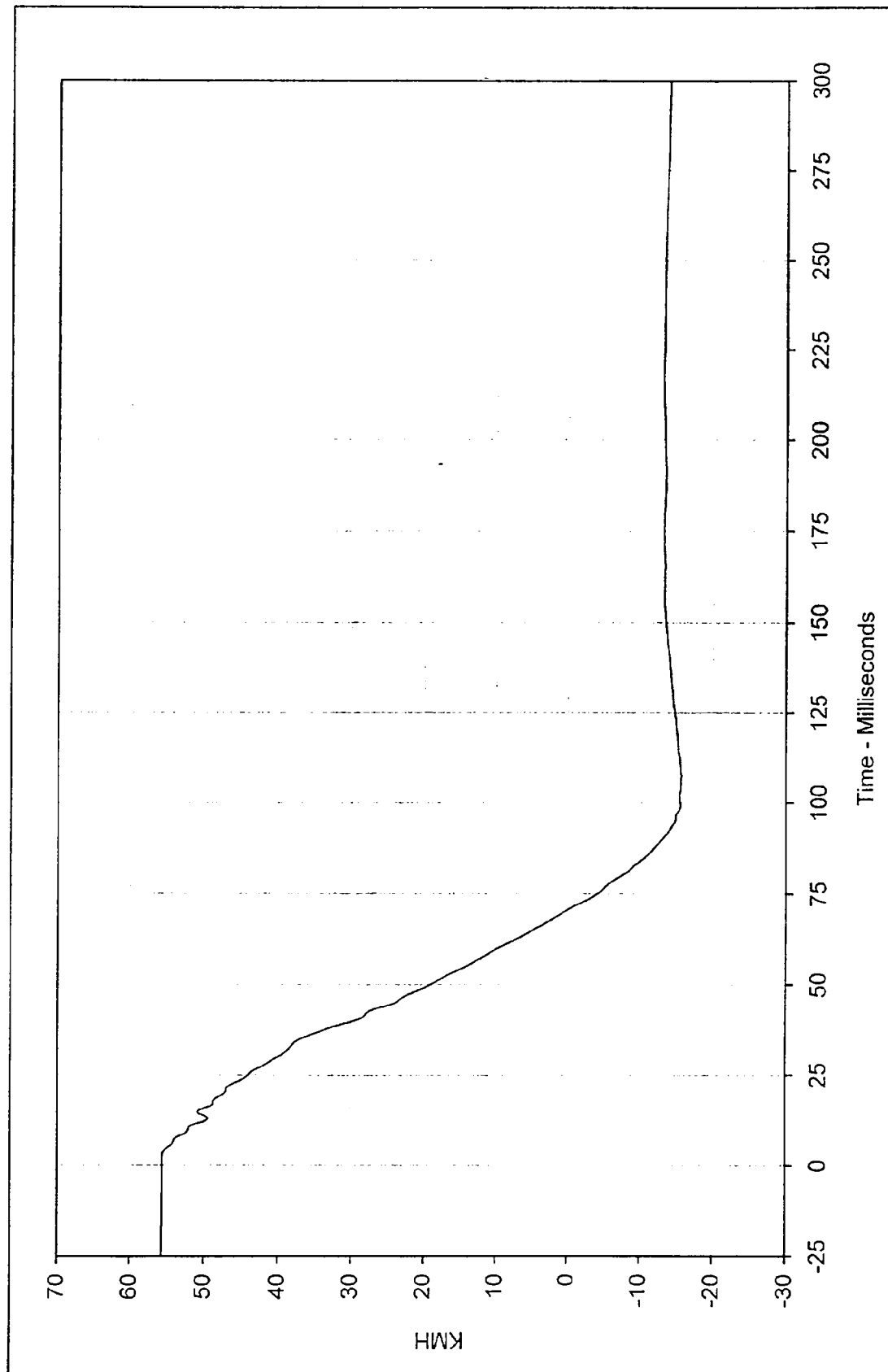
Curve Description:	Vehicle Instrument Panel X Displ.	Testing Program:	1997 New Car Assessment Program
Maximum Value:	62.2 at 67.5 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	0.0 at 0.0 Milliseconds		
SAE Filter Class:	180		
Date of Test:	3/6/97		
Curve Number:	IN2-095		





Curve Description:	Vehicle Left Rear Redundant X	Testing Program:	1997 New Car Assessment Program
Maximum Value:	2.0 at 113.3 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-42.4 at 38.4 Milliseconds		
SAE Filter Class:	60		
Date of Test:	3/6/97		
Curve Number:	FIL-096		

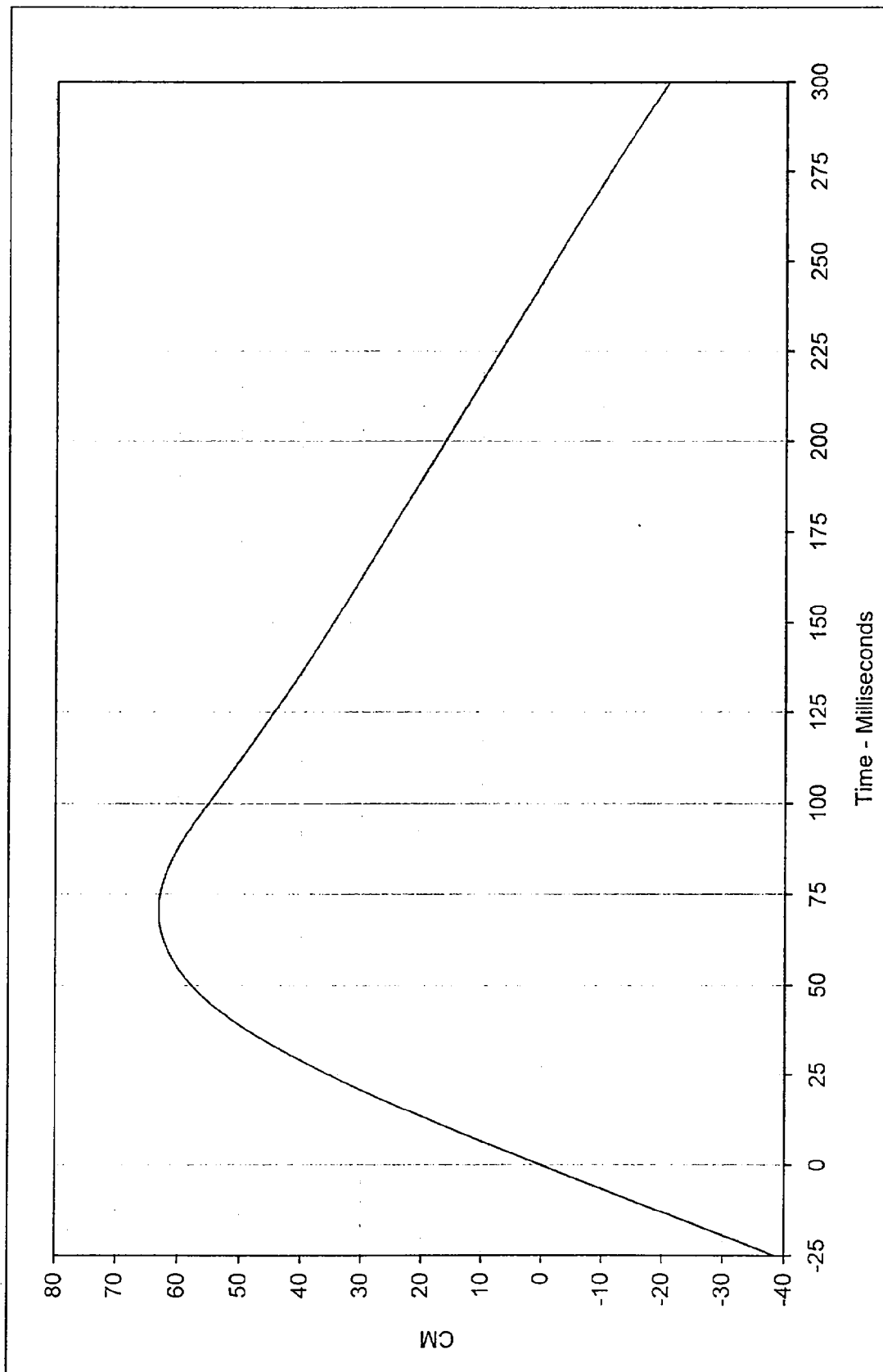




Curve Description: Vehicle Left Rear Redundant X Velocity
Maximum Value: 55.6 at 0.0 Milliseconds
Minimum Value: -15.7 at 107.6 Milliseconds
SAE Filter Class: 180
Date of Test: 3/6/97
Curve Number: IN1-096

Testing Program: 1997 New Car Assessment Program
Test Vehicle: 1997 Toyota Tercel

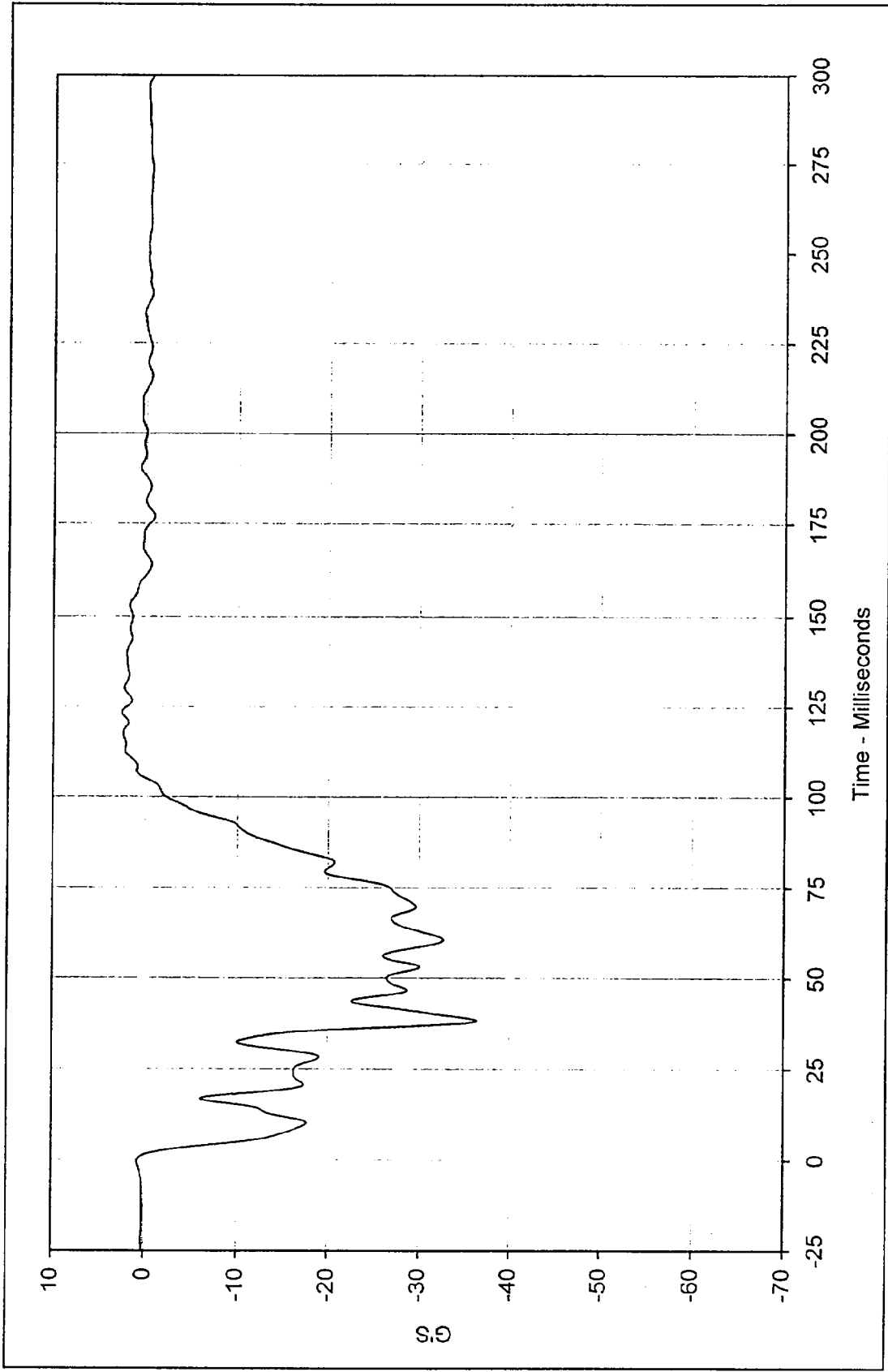




B146

Curve Description:	Vehicle Left Rear Redundant X Displ.		Testing Program:	1997 New Car Assessment Program	
Maximum Value:	63.2	at 70.6 Milliseconds	Test Vehicle:	1997 Toyota Tercel	
Minimum Value:	-20.8	at 299.9 Milliseconds			
SAE Filter Class:	180				
Date of Test:	3/6/97				
Curve Number:	IN2-096				

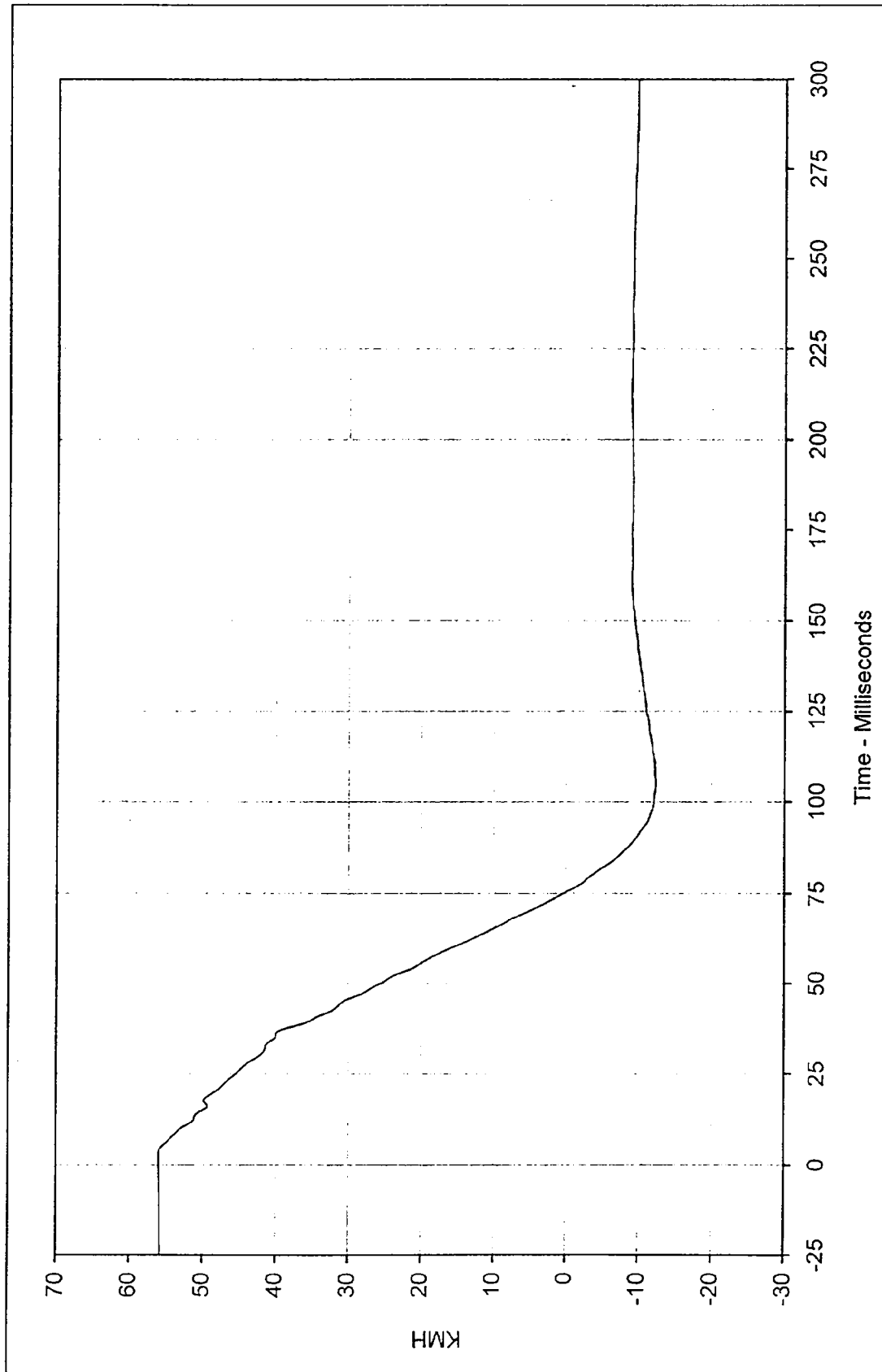




Curve Description: Vehicle Right Rear Redundant X
Maximum Value: 2.5 at 123.5 Milliseconds
Minimum Value: -36.4 at 38.4 Milliseconds
SAE Filter Class: 60
Date of Test: 3/6/97
Curve Number: FIL-097

Testing Program: 1997 New Car Assessment Program
Test Vehicle: 1997 Toyota Tercel





Curve Description: Vehicle Right Rear Redundant X Velocity

Maximum Value: 56.0 at 2.8 Milliseconds

Minimum Value: -12.4 at 104.9 Milliseconds

SAE Filter Class: 180

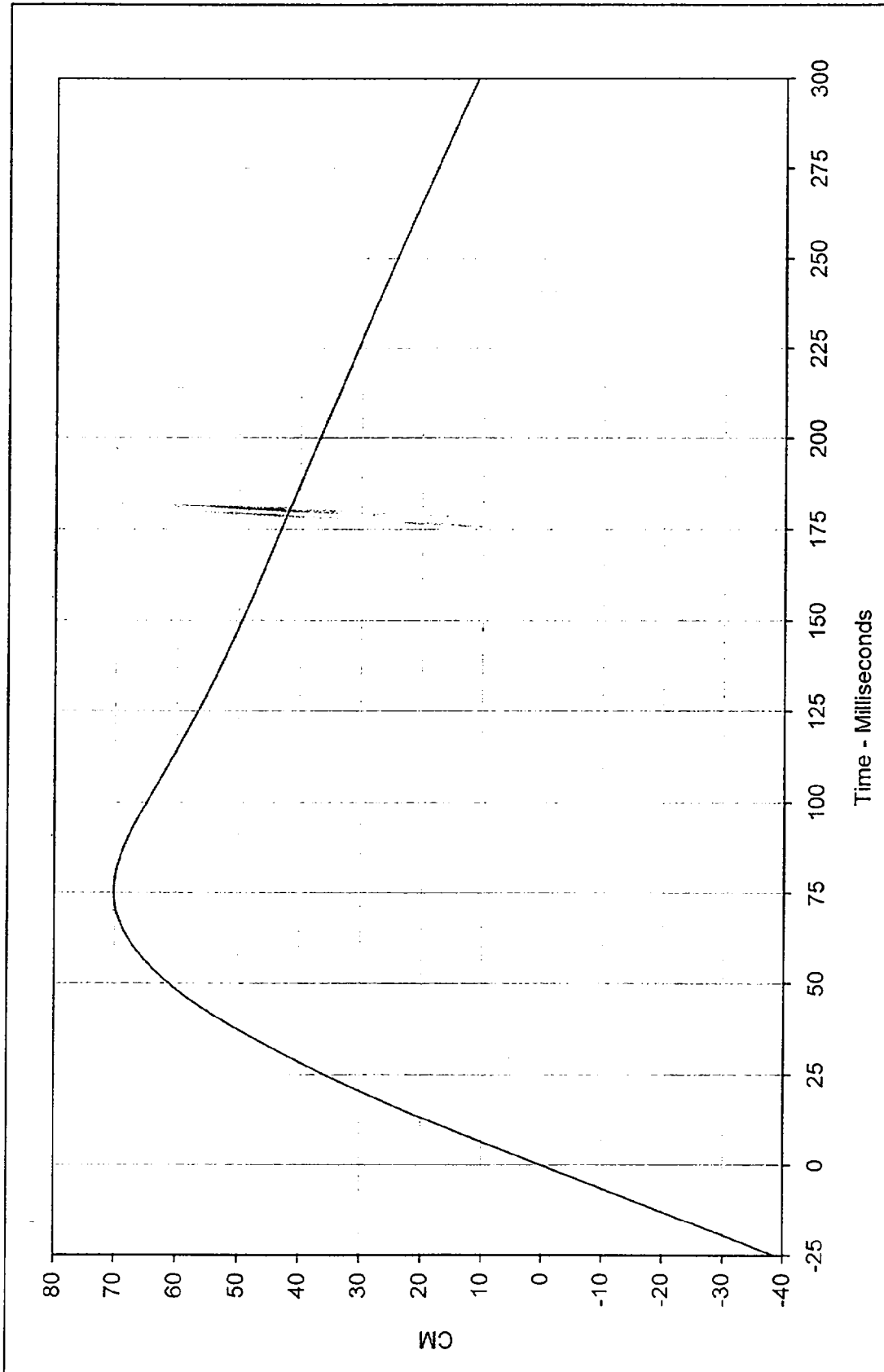
Date of Test: 3/6/97

Curve Number: IN1-097

Testing Program: 1997 New Car Assessment Program

Test Vehicle: 1997 Toyota Tercel





Curve Description: Vehicle Right Rear Redundant X Displ.

Maximum Value: 70.2 at 75.4 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 3/6/97

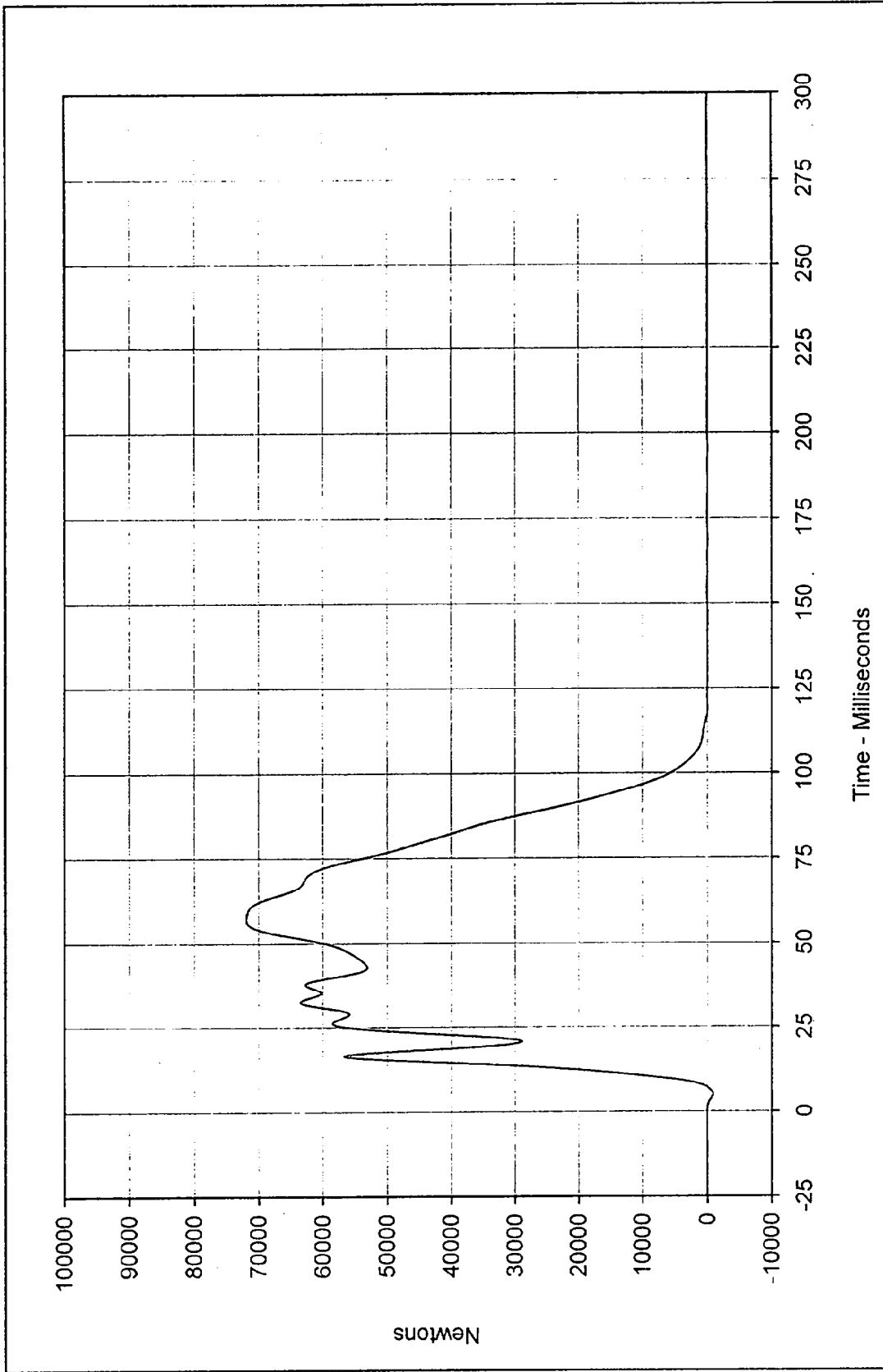
Curve Number: IN2-097

Testing Program: 1997 New Car Assessment Program

Test Vehicle: 1997 Toyota Tercel



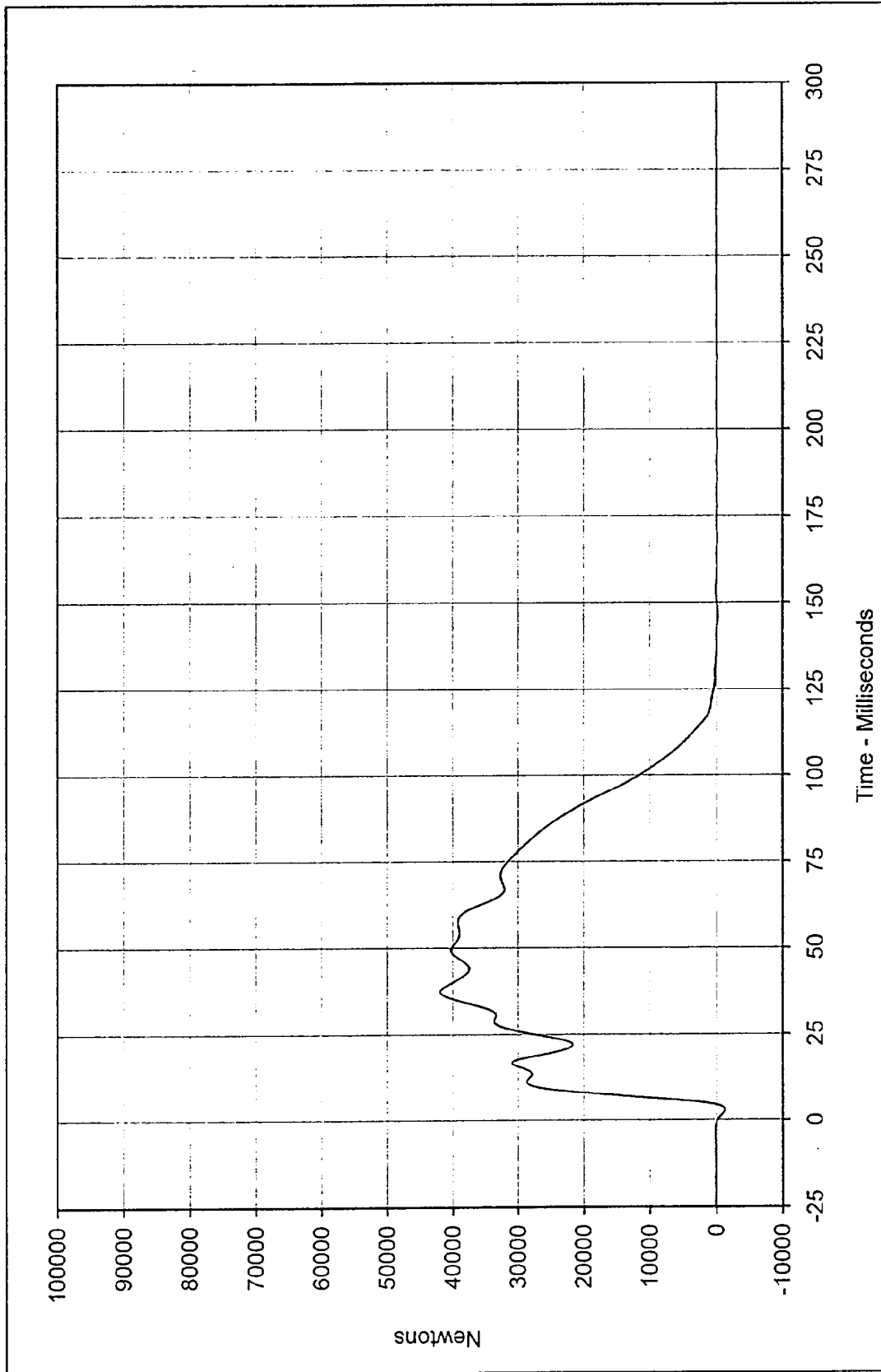
APPENDIX C
LOAD CELL BARRIER DATA



Curve Description: Barrier Force B3
 Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel

Maximum Value: 71940 at 57.1 Milliseconds
 Minimum Value: -814 at 5.2 Milliseconds
 SAE Filter Class: 60
 Date of Test: 3/6/97
 Curve Number: FIL-109

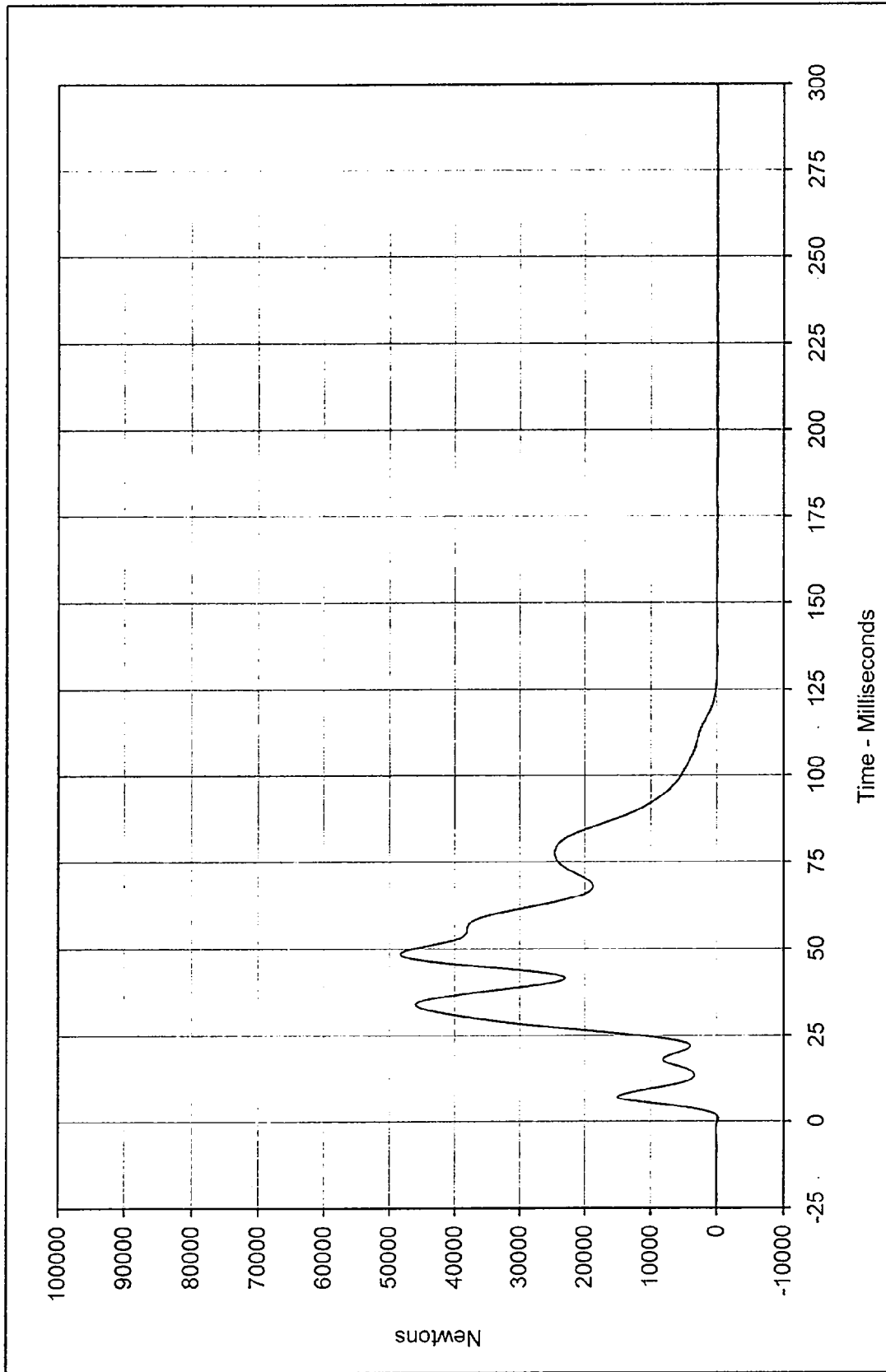




Curve Description: Barrier Force B4
 Maximum Value: 41946 at 37.4 Milliseconds
 Minimum Value: -1242 at 3.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 3/6/97
 Curve Number: FIL-110

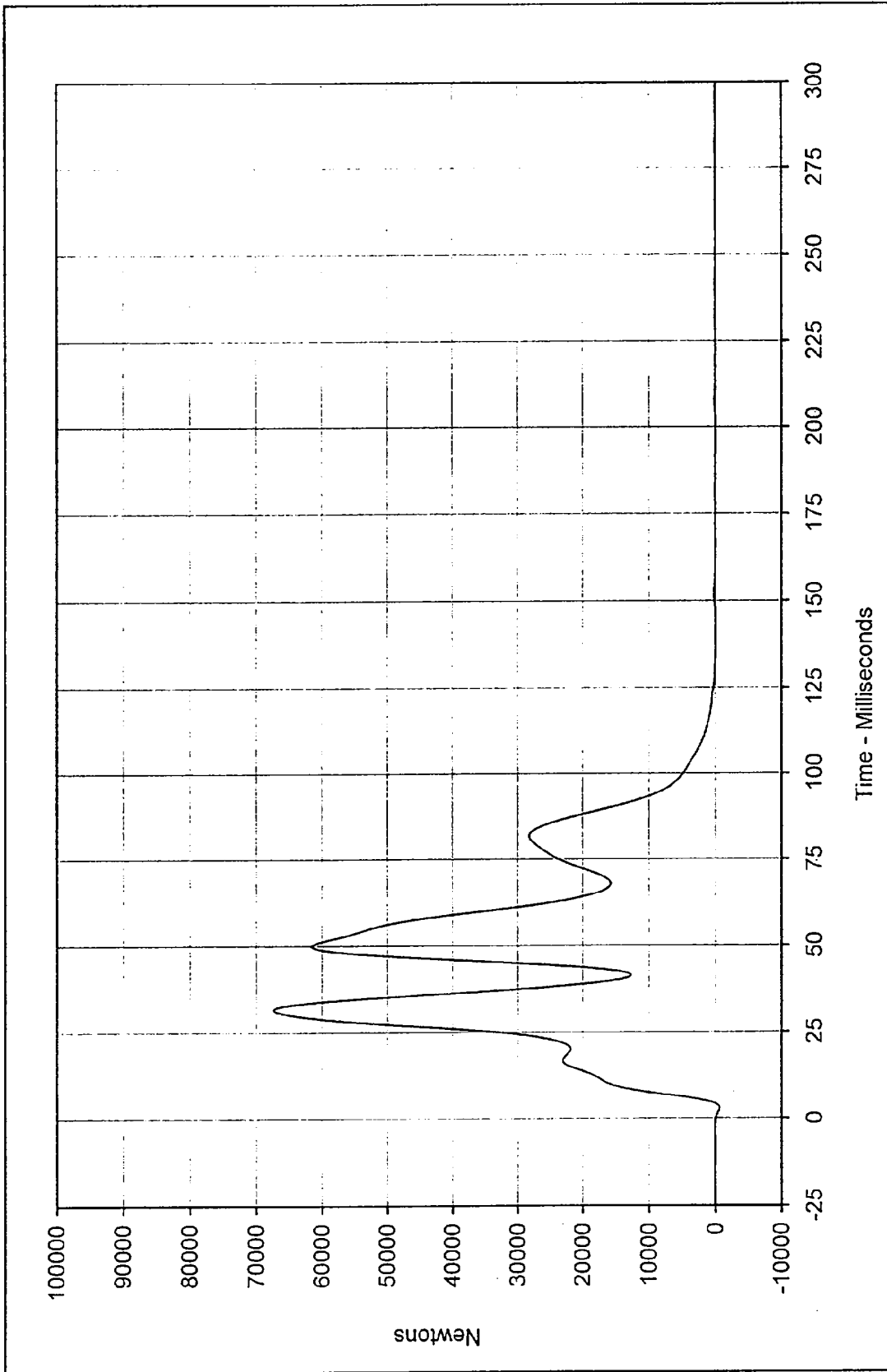
Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel





Curve Description:	Barrier Force B5		Testing Program:	1997 New Car Assessment Program
Maximum Value:	48313	at 48.6 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-216	at 0.8 Milliseconds		
SAE Filter Class:	60			
Date of Test:	3/6/97			
Curve Number:	FIL-111			

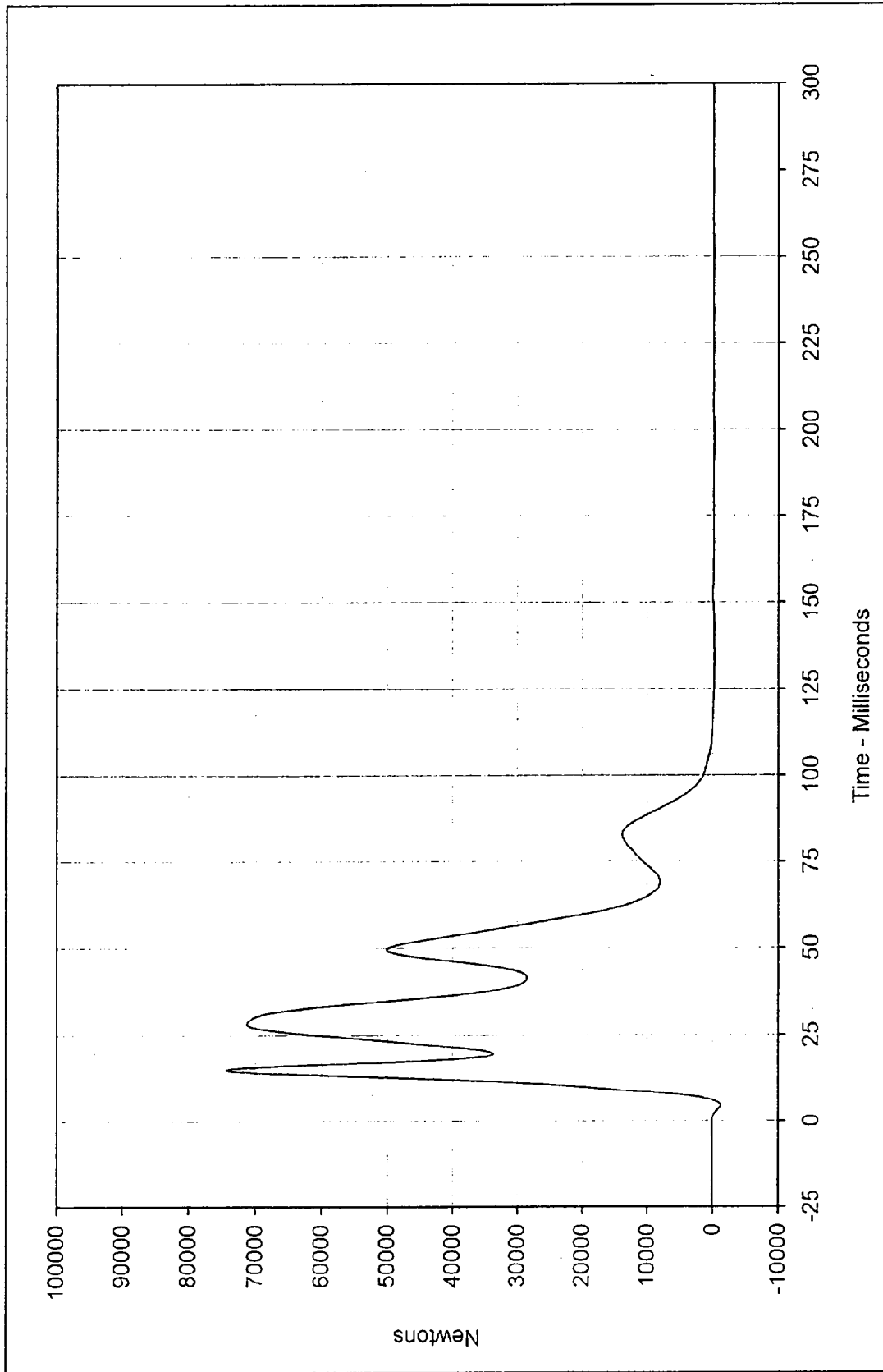




Curve Description: Barrier Force B6
 Maximum Value: 67405 at 31.6 Milliseconds
 Minimum Value: -585 at 3.0 Milliseconds
 SAE Filter Class: 60
 Date of Test: 3/6/97
 Curve Number: FIL-112

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel

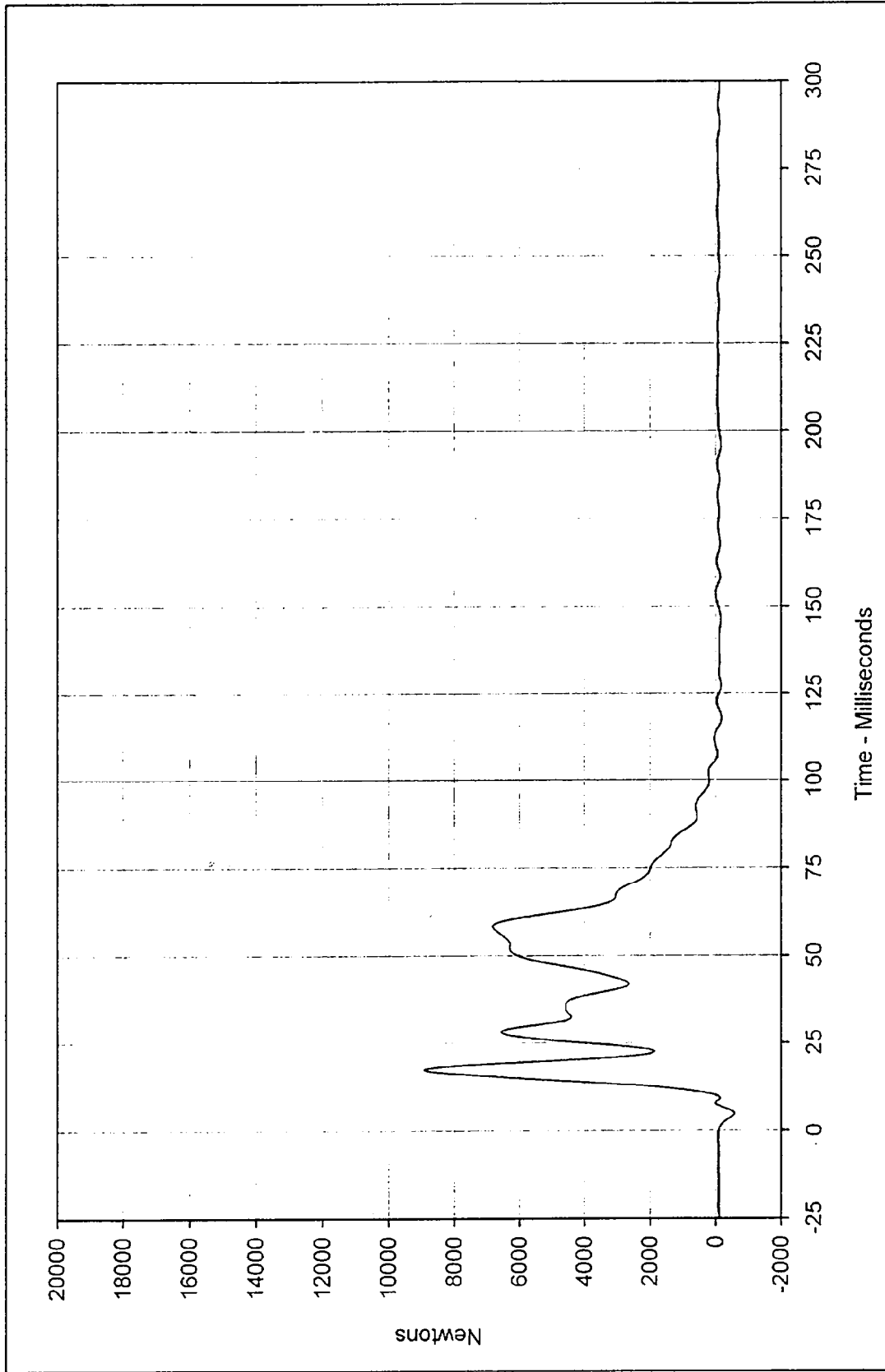




Curve Description: Barrier Force B7
 Maximum Value: 74407 at 15.1 Milliseconds
 Minimum Value: -1166 at 4.6 Milliseconds
 SAE Filter Class: 60
 Date of Test: 3/6/97
 Curve Number: FIL-113

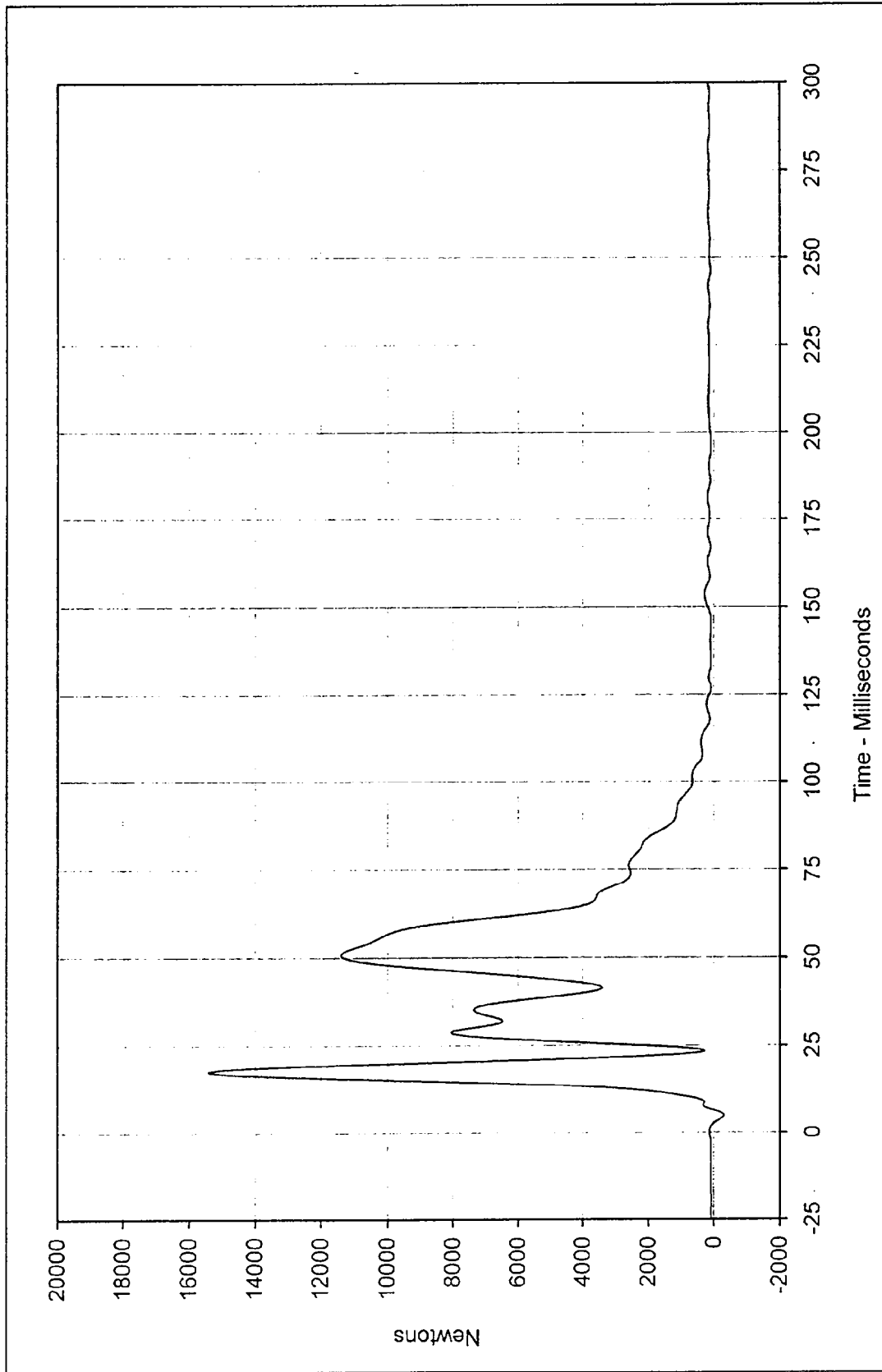
Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel





Curve Description:	Barrier Force C4	Testing Program:	1997 New Car Assessment Program
Maximum Value:	8920 at 17.5 Milliseconds	Test Vehicle:	1997 Toyota Tercel
Minimum Value:	-557 at 4.8 Milliseconds		
SAE Filter Class:	60		
Date of Test:	3/6/97		
Curve Number:	FIL-119		





Curve Description: Barrier Force C5 Testing Program: 1997 New Car Assessment Program

Maximum Value: 15410 at 17.7 Milliseconds Test Vehicle: 1997 Toyota Tercel

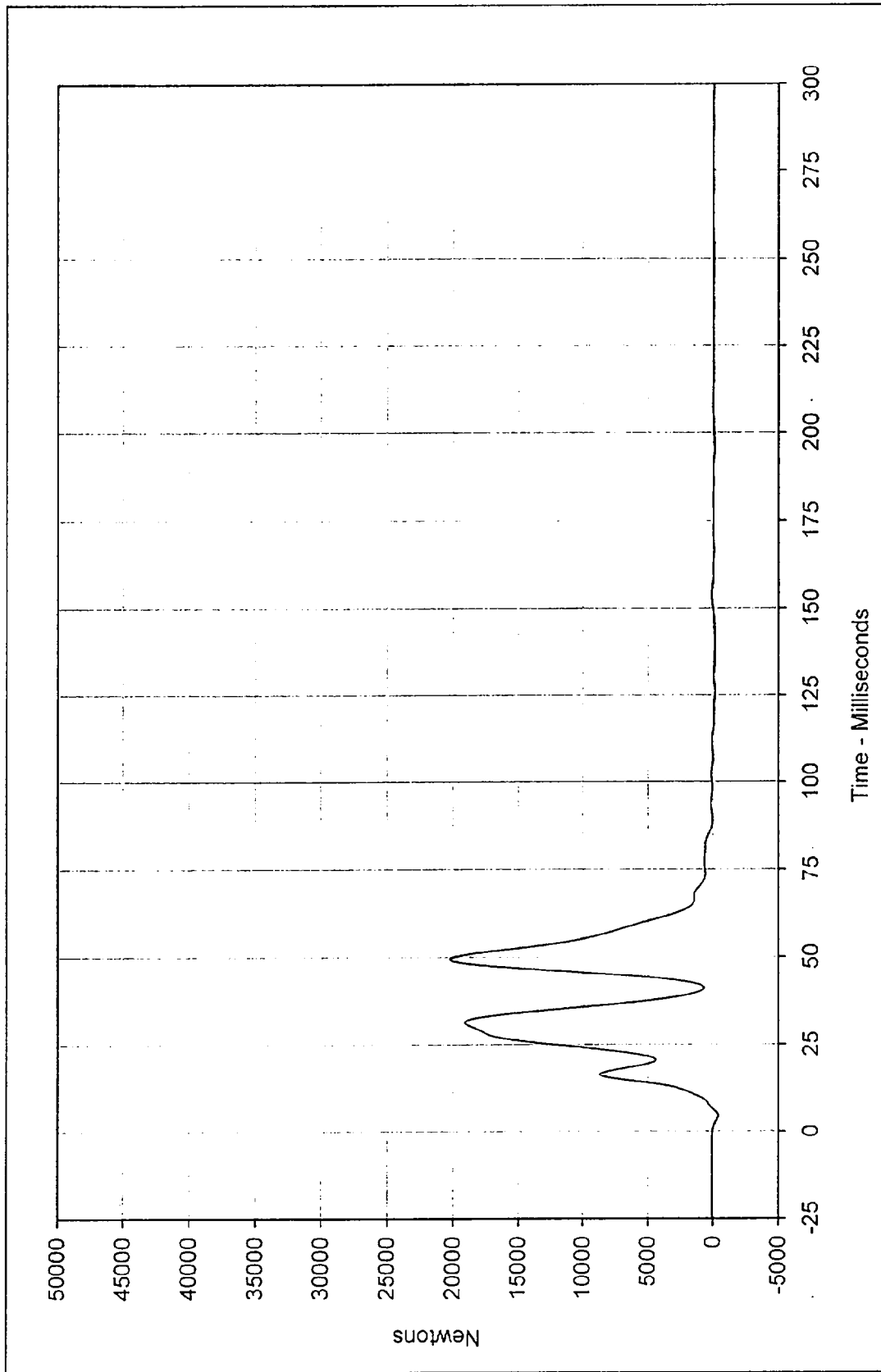
Minimum Value: -302 at 4.9 Milliseconds

SAE Filter Class: 60

Date of Test: 3/6/97

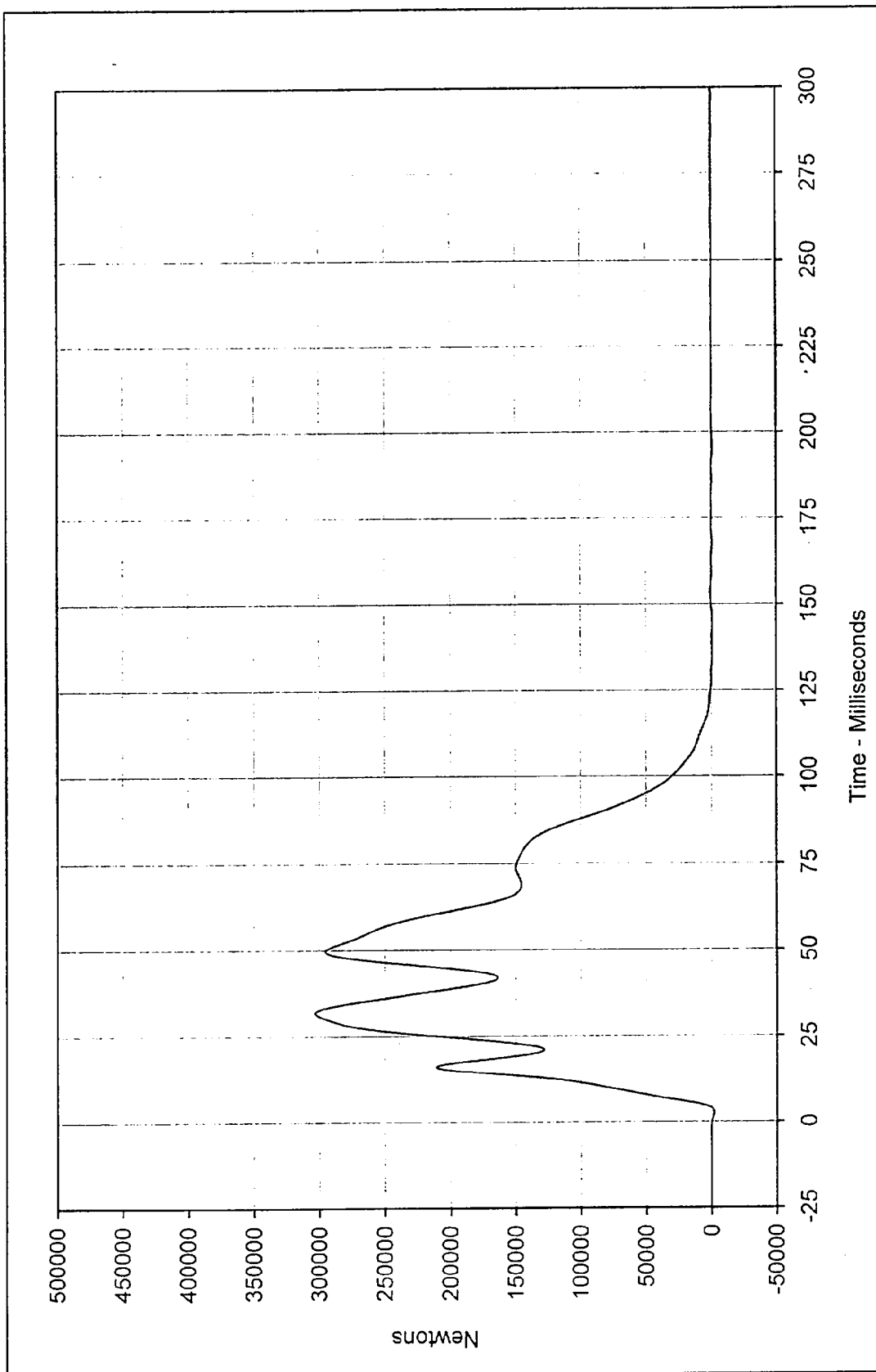
Curve Number: FIL-120





Curve Description:	Barrier Force C6	Testing Program:	1997 New Car Assessment Program
Maximum Value:	20242	at	49.4 Milliseconds
Minimum Value:	-364	at	4.5 Milliseconds
SAE Filter Class:	60	Test Vehicle:	1997 Toyota Tercel
Date of Test:	3/6/97		
Curve Number:	FIL-121		





Curve Description: Barrier Force Partial Sum
 Maximum Value: 303121 at 31.9 Milliseconds
 Minimum Value: -1845 at 2.6 Milliseconds
 SAE Filter Class: 60
 Date of Test: 3/6/97
 Curve Number: SUM-007

Testing Program: 1997 New Car Assessment Program
 Test Vehicle: 1997 Toyota Tercel



APPENDIX D
INSTRUMENTATION DATA CHANNEL ASSIGNMENTS

New Car Assessment Program
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 35
Test Date: 3/06/97
Vehicle: 1997 Toyota Tercel

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	GPLC002FX	Load cell, six axis neck	R. A. Denton	1716	N
8	NECK FORCE	Y	GPLC002FY	Load cell, six axis neck	R. A. Denton	1716	N
9	NECK FORCE	Z	GPLC002FZ	Load cell, six axis neck	R. A. Denton	1716	N
10	NECK MOMENT	X	GPLC002MX	Load cell, six axis neck	R. A. Denton	1716	J
11	NECK MOMENT	Y	GPLC002MY	Load cell, six axis neck	R. A. Denton	1716	J
12	NECK MOMENT	Z	GPLC002MZ	Load cell, six axis neck	R. A. Denton	1716	J
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	GPRP002	Potentiometer, Rotary	Servo	14CBI	CM
20	PELVIS, PRIMARY	X	GPAC009	Accel., 1/2 bridge	Endevco	7264-2000	G
21	PELVIS, PRIMARY	Y	GPAC017	Accel., 1/2 bridge	Endevco	7264-2000	G
22	PELVIS, PRIMARY	Z	GPAC018	Accel., 1/2 bridge	Endevco	7264-2000	G
23	LEFT FEMUR FORCE	Z	KEFF003	Load cell, Femur	R.A. Denton	2121	N
24	RIGHT FEMUR FORCE	Z	KEFF002	Load cell, Femur	R.A. Denton	2121	N

New Car Assessment Program
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 35
Test Date: 3/06/97
Vehicle: 1997 Toyota Tercel

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
25	UP. TIBIA LEFT MOM.	X	NOTE 1				
26	UP. TIBIA LEFT MOM.	Y	NOTE 1				
27	UP. TIBIA RIGHT MOM.	X	NOTE 1				
28	UP. TIBIA RIGHT MOM.	Y	NOTE 1				
29	LWR. TIBIA LEFT FORCE	Y	NOTE 1				
30	LWR. TIBIA LEFT FORCE	Z	NOTE 1				
31	LWR. TIBIA LEFT MOM.	X	NOTE 1				
32	LWR. TIBIA RIGHT FORCE	Y	NOTE 1				
33	LWR. TIBIA RIGHT FORCE	Z	NOTE 1				
34	LWR. TIBIA RIGHT MOM.	X	NOTE 1				
35	FOOT LEFT	X	NOTE 1				
36	FOOT LEFT	Y	NOTE 1				
37	FOOT LEFT	Z	NOTE 1				
38	FOOT RIGHT	X	NOTE 1				
39	FOOT RIGHT	Y	NOTE 1				
40	FOOT RIGHT	Z	NOTE 1				
41	LAP BELT FORCE	X	KELC003	Load cell, Seat belt	Lebow	3371	N
42	SHOULDER BELT FORCE	X	KELC004	Load cell, Seat belt	Lebow	3371	N
43	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celisco	PTX101-0030	G'S
44	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	CM

NOTE 1: Not provided by D.O.T.. channel assignments will include "0" data to maintain channel identification conformity with subsequent tests.

New Car Assessment Program
Instrumentation Data Channel Assignments
Passenger A.T.D Serial Number 34
Test Date: 3/06/97
Vehicle: 1997 Toyota Tercel

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	GPLC001FX	Load cell, six axis neck	R. A. Denton	1716	N
52	NECK FORCE	Y	GPLC001FY	Load cell, six axis neck	R. A. Denton	1716	N
53	NECK FORCE	Z	GPLC001FZ	Load cell, six axis neck	R. A. Denton	1716	N
54	NECK MOMENT	X	GPLC001MX	Load cell, six axis neck	R. A. Denton	1716	J
55	NECK MOMENT	Y	GPLC001MY	Load cell, six axis neck	R. A. Denton	1716	J
56	NECK MOMENT	Z	GPLC001MZ	Load cell, six axis neck	R. A. Denton	1716	J
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	GPRP001	Potentiometer, Rotary	Servo	14CBI	CM
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

New Car Assessment Program
Instrumentation Data Channel Assignments
Passenger A.T.D Serial Number 34
Test Date: 3/06/97
Vehicle: 1997 Toyota Tercel

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
69	UP. TIBIA LEFT MOM.	X	GPUT01MX	2 ch., Upper tibia gage	R. A. Denton	1583	J
70	UP. TIBIA LEFT MOM.	Y	GPUT01MY	2 ch., Upper tibia gage	R. A. Denton	1583	J
71	UP. TIBIA RIGHT MOM.	X	GPUT02MX	2 ch., Upper tibia gage	R. A. Denton	1583	J
72	UP. TIBIA RIGHT MOM.	Y	GPUT02MY	2 ch., Upper tibia gage	R. A. Denton	1583	J
73	LWR. TIBIA LEFT FORCE	Y	GPUT02FY	3 ch., lower tibia gage	R. A. Denton	1584	N
74	LWR. TIBIA LEFT FORCE	Z	GPUT01FZ	3 ch., lower tibia gage	R. A. Denton	1584	N
75	LWR. TIBIA LEFT MOM.	X	GPUT01MX	3 ch., lower tibia gage	R. A. Denton	1584	J
76	LWR. TIBIA RIGHT FORCE	Y	GPUT02FY	3 ch., lower tibia gage	R. A. Denton	1584	N
77	LWR. TIBIA RIGHT FORCE	Z	GPUT02FZ	3 ch., lower tibia gage	R. A. Denton	1584	N
78	LWR. TIBIA RIGHT MOM.	X	GPUT02MX	3 ch., lower tibia gage	R. A. Denton	1584	J
79	FOOT LEFT	X	NOTE 1				
80	FOOT LEFT	Y	NOTE 1				
81	FOOT LEFT	Z	NOTE 1				
82	FOOT RIGHT	X	NOTE 1				
83	FOOT RIGHT	Y	NOTE 1				
84	FOOT RIGHT	Z	NOTE 1				
85	LAP BELT FORCE	X	KELC001	Load cell, Seat belt	Lebow	3371	N
86	SHOULDER BELT FORCE	X	KELC002	Load cell, Seat belt	Lebow	3371	N
87	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	GS
88	SHOULDER BELT ELONG.	X	KEPP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	CM

NOTE 1: Not provided by D.O.T., channel assignments will include "0" data to maintain channel identification conformity with subsequent tests.

New Car Assessment Program
Instrumentation Data Channel Assignments
Vehicle Accelerometers
Test Date: 3/06/97
Vehicle: 1997 Toyota Tercel

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
89	LEFT REAR, PRIMARY	X	KEVA005	Accel., Vehicle block	I.C. Sensor	3031-500	G'S
90	RIGHT REAR, PRIMARY	X	KEVA006	Accel., Vehicle block	I.C. Sensor	3031-200	G'S
91	ENGINE TOP	X	KEVA001	Accel., Vehicle block	I.C. Sensor	3031-500	G'S
92	ENGINE BOTTOM	X	KEVA002	Accel., Vehicle block	I.C. Sensor	3031-500	G'S
93	LEFT BRAKE CALIPER	X	KEVA003	Accel., Vehicle block	I.C. Sensor	3031-500	G'S
94	RIGHT BRAKE CALIPER	X	KEVA004	Accel., Vehicle block	I.C. Sensor	3031-500	G'S
95	INSTRUMENT PANEL	X	KEVA007	Accel., Vehicle block	I.C. Sensor	3031-200	G'S
96	LEFT REAR , REDNT.	X	KEVA011	Accel., Vehicle block	I.C. Sensor	3031-200	G'S
97	RIGHT REAR , REDNT.	X	KEVA008	Accel., Vehicle block	I.C. Sensor	3031-200	G'S

APPENDIX E
DUMMY CALIBRATION



Hybrid III Calibration Data Knee Impact Test (Metric units)

Part 572E ATD I.D. Number 34
Calibration Sequence 9701

Left Knee Impact Test				
Tested Parameter	Units	Spec	Result	Pass/Fail
Laboratory temperature	°C	18.8 to 25.4	21.5	Pass
Laboratory relative humidity	%	10 to 70	40	Pass
Probe Velocity	MPS	2.07 to 2.13	2.12	Pass
Peak Acceleration	G's	96.36 to 118.18	103.23	Pass
Pendulum Mass	Kgs	4.994	4.994	Pass
Peak Impact Force	Kgs	481.2 to 590.2	515.5	Pass
Overall Test Results				Pass

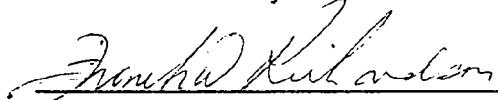
Michael Dunlap
Laboratory Technician

2/19/97
Test Date

Right Knee Impact Test				
Tested Parameter	Units	Spec	Result	Pass/Fail
Laboratory temperature	°C	18.8 to 25.4	20.4	Pass
Laboratory relative humidity	%	10 to 70	34	Pass
Probe Velocity	MPS	2.07 to 2.13	2.11	Pass
Peak Acceleration	G's	96.36 to 118.18	111.55	Pass
Pendulum Mass	Kgs	4.994	4.994	Pass
Peak Impact Force	Kgs	481.2 to 590.2	557.1	Pass
Overall Test Results				Pass

Michael Dunlap
Laboratory Technician

2/19/97
Test Date


Approved By

2/19/97
Date

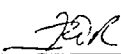


Hybrid III Calibration Data Head Drop Test (Metric units)

Part 572E ATD I.D. Number 34
Calibration Sequence 9701

Head Drop Test				
Tested Parameter	Units	Spec	Result	Pass/Fail
Laboratory temperature	°C	18.8 to 25.4	21.0	Pass
Laboratory relative humidity	%	10 to 70	46	Pass
Peak resultant acceleration	G's	225.0 to 275.0	227.7	Pass
Peak lateral acceleration	G's	15.0 Max.	3.6	Pass
Is acceleration unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

Michael Dunlap
Laboratory Technician


Approved By

19-Feb-97
Test Date

2/19/97
Date



Hybrid III Calibration Data Thorax Impact Test (Metric units)

Part 572E ATD I.D. Number 34
Calibration Sequence 9701

Thorax Impact Test				
Tested Parameter	Units	Spec	Result	Pass/Fail
Laboratory temperature	°C	20.6 to 22.2	21.5	Pass
Laboratory relative humidity	%	10 to 70	41	Pass
Probe Velocity	MPS	6.58 to 6.83	6.70	Pass
Peak acceleration	G's	22.53 to 25.73	23.6	Pass
Pendulum Mass	Kgs	23.4	23.4	Pass
Peak resistive force	Kgs	526.6 to 601.6	552.5	Pass
Peak chest deflection	CM	6.35 to 7.26	6.57	Pass
Internal hysteresis	%	69 to 85	75.4	Pass
Overall Test Results				Pass

Michael Dunlap
Laboratory Technician

2/21/97
Test Date

JD
Approved By

2/21/97
Date



Hybrid III Calibration Data Neck Flexion Test (Metric units)

Part 572E ATD I.D. Number 34
Calibration Sequence 9701

Neck Flexion Test					
Tested Parameter		Units	Spec	Result	Pass/Fail
Laboratory temperature		°C	20.6 to 22.2	21.0	Pass
Laboratory relative humidity		%	10 to 70	38	Pass
Pendulum velocity		MPS	6.89 to 7.14	6.95	Pass
Peak deceleration	10 Msec	G's	22.5 to 27.5	24.38	Pass
	20 Msec	G's	17.6 to 22.6	19.99	Pass
	30 Msec	G's	12.5 to 18.5	15.07	Pass
Max. decel. above 30 Msec.		G's	29.0 maximum	14.02	Pass
Deceleration decay time to first cross 5 G's		Msec.	34.0 to 42.0	39.75	Pass
"D" plane rotation	maximum	Degrees	64.0 to 78.0	65.8	Pass
	Time	Msec.	57.0 to 64.0	62.9	Pass
Moment about Occipital Condyle	maximum	N.m	84.1 to 108.5	89.2	Pass
	Time	Msec.	47.0 to 58.0	56.6	Pass
Rotation angle decay time to cross zero		Msec.	113.0 to 128.0	127.9	Pass
Positive moment decay time to cross zero		Msec.	97.0 to 107.0	104.1	Pass
Overall Test Results					Pass

Michael Dunlap
Laboratory Technician

2/21/97

Test Date

[Signature]
Approved By

[Signature]

Date



Hybrid III Calibration Data Neck Extension Test (Metric units)

Part 572E ATD I.D. Number 34
Calibration Sequence 9701

Neck Extension Test					
Tested Parameter		Units	Spec	Result	Pass/Fail
Laboratory temperature		°C	20.6 to 22.2	20.9	Pass
Laboratory relative humidity		%	10 to 70	38	Pass
Pendulum velocity		MPS	5.94 to 6.19	6.09	Pass
Peak deceleration	10 Msec	G's	17.2 to 21.2	20.00	Pass
	20 Msec	G's	14.0 to 19.0	17.50	Pass
	30 Msec	G's	11.0 to 16.0	15.30	Pass
Max. decel. above 30 Msec.		G's	22.0 maximum	13.90	Pass
Deceleration decay time to first cross 5 G's		Msec.	38.0 to 46.0	44.9	Pass
"D" plane rotation	maximum	Degrees	81.0 to 106.0	96.1	Pass
	Time	Msec.	72.0 to 82.0	75.9	Pass
Moment about Occipital Condyle	maximum	Mt. Kgs	-80.0 to -53.0	-75.5	Pass
	Time	Msec.	65.0 to 79.0	68.0	Pass
Rotation angle decay time to cross zero		Msec.	147.0 to 174.0	161.2	Pass
Negative moment decay time to cross zero		Msec.	120.0 to 148.0	133.5	Pass
Overall Test Results					Pass

Michael Dunlap
Laboratory Technician

2/21/97
Test Date

JD
Approved By

2/21/97
Date



Hybrid III Calibration Data Configuration Verification Data (Metric units)

Part 572E ATD I.D. Number 34
Calibration Sequence 9701

External Measurement Data				
Tested Parameter	Units	Spec	Result	Pass/Fail
Laboratory temperature	°C	20.4 to 22.1	21.7	Pass
Laboratory relative humidity	%	10 to 70	18	Pass
A - Total sitting height	mm	878.8 to 889.0	881.4	Pass
B - Shoulder pivot height	mm	505.5 to 520.7	513.1	Pass
C - "H" point height	mm	83.8 to 88.9	83.8	Pass
D - "H" point from seat back	mm	134.6 to 139.7	137.2	Pass
E - Shoulder pivot from back	mm	83.8 to 94.0	91.4	Pass
F - Thigh clearance	mm	139.7 to 154.9	144.8	Pass
G - Elbow back to wrist pivot	mm	289.6 to 304.8	294.6	Pass
H - Skull cap to back line	mm	40.6 to 45.7	43.2	Pass
I - Shoulder to elbow length	mm	330.2 to 345.4	337.8	Pass
J - Elbow rest height	mm	190.5 to 210.8	198.1	Pass
K - Buttock to knee length	mm	579.1 to 604.5	596.9	Pass
L - Popliteal length	mm	429.3 to 454.7	436.9	Pass
M - Knee pivot height	mm	485.1 to 500.4	492.8	Pass
N - Buttock popliteal length	mm	452.1 to 477.5	469.9	Pass
O - Chest depth	mm	213.4 to 228.6	215.9	Pass
P - Foot length	mm	251.5 to 266.7	259.1	Pass
V - Shoulder breadth	mm	421.6 to 436.9	426.7	Pass
W - Foot breadth	mm	91.4 to 106.7	106.7	Pass
Y - Chest circumference	mm	970.3 to 1000.8	980.4	Pass
Z - Waist circumference	mm	835.7 to 866.1	856.0	Pass
AA - Location for chest circ.	mm	429.3 to 434.3	431.8	Pass
BB - Location for waist circ.	mm	226.1 to 231.1	228.6	Pass
Overall Test Results				Pass

Michael Dunlap
Laboratory Technician

2/23/97
Test Date


Approved By

2/23/97
Date



Hybrid III Calibration Data Knee Impact Test (Metric units)

Part 572E ATD I.D. Number 35
Calibration Sequence 9701

Left Knee Impact Test				
Tested Parameter	Units	Spec	Result	Pass/Fail
Laboratory temperature	°C	18.8 to 25.4	20.4	Pass
Laboratory relative humidity	%	10 to 70	36	Pass
Probe Velocity	MPS	2.07 to 2.13	2.10	Pass
Peak Acceleration	G's	96.36 to 118.18	97.56	Pass
Pendulum Mass	Kgs	4.994	4.994	Pass
Peak Impact Force	Kgs	481.2 to 590.2	487.2	Pass
Overall Test Results				Pass

Michael Dunlap
Laboratory Technician

2/19/97
Test Date

Right Knee Impact Test				
Tested Parameter	Units	Spec	Result	Pass/Fail
Laboratory temperature	°C	18.8 to 25.4	20.4	Pass
Laboratory relative humidity	%	10 to 70	36	Pass
Probe Velocity	MPS	2.07 to 2.13	2.10	Pass
Peak Acceleration	G's	96.36 to 118.18	111.38	Pass
Pendulum Mass	Kgs	4.994	4.994	Pass
Peak Impact Force	Kgs	481.2 to 590.2	556.2	Pass
Overall Test Results				Pass

Michael Dunlap
Laboratory Technician

2/19/97
Test Date

[Signature]
Approved By

2/19/97
Date

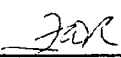


Hybrid III Calibration Data Head Drop Test (Metric units)

Part 572E ATD I.D. Number 35
Calibration Sequence 9701

Head Drop Test				
Tested Parameter	Units	Spec	Result	Pass/Fail
Laboratory temperature	°C	18.8 to 25.4	21.0	Pass
Laboratory relative humidity	%	10 to 70	58	Pass
Peak resultant acceleration	G's	225.0 to 275.0	254.9	Pass
Peak lateral acceleration	G's	15.0 Max.	5.9	Pass
Is acceleration unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

Michael Dunlap
Laboratory Technician


Approved By

2/19/97
Test Date

2/19/97
Date



Hybrid III Calibration Data Thorax Impact Test (Metric units)

Part 572E ATD I.D. Number 35
Calibration Sequence 9701

Thorax Impact Test				
Tested Parameter	Units	Spec	Result	Pass/Fail
Laboratory temperature	°C	20.6 to 22.2	21.5	Pass
Laboratory relative humidity	%	10 to 70	32	Pass
Probe Velocity	MPS	6.58 to 6.83	6.72	Pass
Peak acceleration	G's	22.53 to 25.73	24.1	Pass
Pendulum Mass	Kgs	23.4	23.4	Pass
Peak resistive force	Kgs	526.6 to 601.6	564.2	Pass
Peak chest deflection	CM	6.35 to 7.26	6.37	Pass
Internal hysteresis	%	69 to 85	76.1	Pass
Overall Test Results				Pass

Michael Dunlap
Laboratory Technician

Jan
Approved By

12/19/96
Test Date

2/19/97
Date



Hybrid III Calibration Data Neck Flexion Test (Metric units)

Part 572E ATD I.D. Number 35
Calibration Sequence 9701

Neck Flexion Test					
Tested Parameter		Units	Spec	Result	Pass/Fail
Laboratory temperature		°C	20.6 to 22.2	21.0	Pass
Laboratory relative humidity		%	10 to 70	40	Pass
Pendulum velocity		MPS	6.89 to 7.14	6.98	Pass
Peak deceleration	10 Msec	G's	22.5 to 27.5	23.85	Pass
	20 Msec	G's	17.6 to 22.6	19.12	Pass
	30 Msec	G's	12.5 to 18.5	15.99	Pass
Max. decel. above 30 Msec.		G's	29.0 maximum	15.05	Pass
Deceleration decay time to first cross 5 G's		Msec.	34.0 to 42.0	41.10	Pass
"D" plane rotation	maximum	Degrees	64.0 to 78.0	70.8	Pass
	Time	Msec.	57.0 to 64.0	60.3	Pass
Moment about Occipital Condyle	maximum	N.m	84.1 to 108.5	92.0	Pass
	Time	Msec.	47.0 to 58.0	54.5	Pass
Rotation angle decay time to cross zero		Msec.	113.0 to 128.0	118.3	Pass
Positive moment decay time to cross zero		Msec.	97.0 to 107.0	99.9	Pass
Overall Test Results					Pass

Michael Dunlap
Laboratory Technician

John
Approved By

2/21/97
Test Date

2/21/97
Date



Hybrid III Calibration Data Neck Extension Test (Metric units)

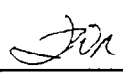
Part 572E ATD I.D. Number 35
Calibration Sequence 9701

Neck Extension Test					
Tested Parameter		Units	Spec	Result	Pass/Fail
Laboratory temperature		°C	20.6 to 22.2	20.6	Pass
Laboratory relative humidity		%	10 to 70	38	Pass
Pendulum velocity		MPS	5.94 to 6.19	6.15	Pass
Peak deceleration	10 Msec	G's	17.2 to 21.2	20.55	Pass
	20 Msec	G's	14.0 to 19.0	18.38	Pass
	30 Msec	G's	11.0 to 16.0	15.60	Pass
Max. decel. above 30 Msec.		G's	22.0 maximum	14.99	Pass
Deceleration decay time to first cross 5 G's		Msec.	38.0 to 46.0	43.2	Pass
"D" plane rotation	maximum	Degrees	81.0 to 106.0	99.4	Pass
	Time	Msec.	72.0 to 82.0	73.1	Pass
Moment about Occipital Condyle	maximum	Mt. Kgs	-80.0 to -53.0	-77.8	Pass
	Time	Msec.	65.0 to 79.0	65.6	Pass
Rotation angle decay time to cross zero		Msec.	147.0 to 174.0	159.1	Pass
Negative moment decay time to cross zero		Msec.	120.0 to 148.0	126.8	Pass
Overall Test Results					Pass

Michael Dunlap
Laboratory Technician

2/21/97

Test Date


Approved By

2/21/97
Date



Hybrid III Calibration Data Configuration Verification Data (Metric units)

Part 572E ATD I.D. Number 35
Calibration Sequence 9701

External Measurement Data				
Tested Parameter	Units	Spec	Result	Pass/Fail
Laboratory temperature	°C	20.4 to 22.1	21.7	Pass
Laboratory relative humidity	%	10 to 70	18	Pass
A - Total sitting height	mm	878.8 to 889.0	886.5	Pass
B - Shoulder pivot height	mm	505.5 to 520.7	510.5	Pass
C - "H" point height	mm	83.8 to 88.9	88.9	Pass
D - "H" point from seat back	mm	134.6 to 139.7	139.7	Pass
E - Shoulder pivot from back	mm	83.8 to 94.0	88.9	Pass
F - Thigh clearance	mm	139.7 to 154.9	152.4	Pass
G - Elbow back to wrist pivot	mm	289.6 to 304.8	292.1	Pass
H - Skull cap to back line	mm	40.6 to 45.7	43.2	Pass
I - Shoulder to elbow length	mm	330.2 to 345.4	342.9	Pass
J - Elbow rest height	mm	190.5 to 210.8	190.5	Pass
K - Buttock to knee length	mm	579.1 to 604.5	596.9	Pass
L - Popliteal length	mm	429.3 to 454.7	444.5	Pass
M - Knee pivot height	mm	485.1 to 500.4	492.8	Pass
N - Buttock popliteal length	mm	452.1 to 477.5	475.0	Pass
O - Chest depth	mm	213.4 to 228.6	215.9	Pass
P - Foot length	mm	251.5 to 266.7	256.5	Pass
V - Shoulder breadth	mm	421.6 to 436.9	436.9	Pass
W - Foot breadth	mm	91.4 to 106.7	104.1	Pass
Y - Chest circumference	mm	970.3 to 1000.8	975.4	Pass
Z - Waist circumference	mm	835.7 to 866.1	843.3	Pass
AA - Location for chest circ.	mm	429.3 to 434.3	431.8	Pass
BB - Location for waist circ.	mm	226.1 to 231.1	231.1	Pass
Overall Test Results				Pass

Michael Dunlap
Laboratory Technician

2/23/97
Test Date


Approved By

2/23/97
Date

APPENDIX F

VEHICLE OWNER'S MANUAL

OCCUPANT RESTRAINT INSTRUCTIONS

⚠ CAUTION

When returning the seatback to the upright position:

- Make sure the seat belts are not twisted or caught in the seatback and are arranged in their proper position for ready use.
- Make sure the seatback is securely locked by pushing forward and rearward on the top of the seatback.

—Seat belt precautions

Toyota strongly urges that the driver and passengers in the vehicle be properly restrained at all times with the seat belts provided. Failure to do so could increase the chance of injury and/or the severity of injury in accidents.

Child. Use a child restraint system appropriate for the child until the child becomes large enough to properly wear the vehicle's seat belts. See "Child restraint" for details.

If a child is too large for a child restraint system, the child should sit in the rear seat and must be restrained using the vehicle's seat belt. According to accident statistics, the child is safer when properly restrained in the rear seat than in the front seat.

If a child must sit in the front seat, the seat belts should be worn properly. If an accident occurs and the seat belts are not worn properly, the force of the rapid inflation of the airbag may cause serious injury to the child.

Do not allow the child to stand up or kneel on either rear or front seats. An unrestrained child could suffer serious injury during emergency braking or a collision. Also, do not let the child sit on your lap. It does not provide sufficient restraint.

If the shoulder belt falls across the child's neck or face, move the child to the center position and use the center lap belt.

Pregnant woman. Toyota recommends the use of a seat belt. Ask your doctor for specific recommendations. The lap belt should be worn securely and as low as possible over the hips and not on the waist.

Injured person. Toyota recommends the use of a seat belt. Depending on the injury, however, first check with your doctor for specific recommendations.

22

⚠ CAUTION

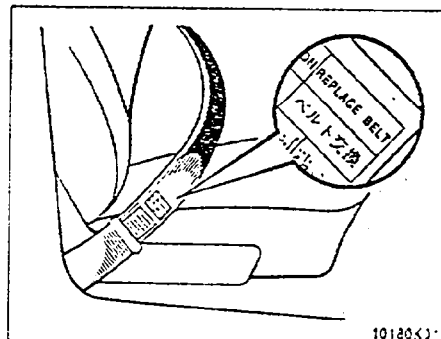
Persons should ride in their seats properly wearing their seat belts whenever the vehicle is moving. Otherwise, they are much more likely to suffer serious bodily injury in the event of sudden braking or a collision.

When using the seat belts, observe the following:

- Use the belt for only one person at a time. Do not use a single belt for two or more people—even children.
- Avoid reclining the seatbacks too much. The seat belts provide maximum protection when the seatbacks are in the upright position. (Refer to the seat adjustment instructions.)
- Be careful not to damage the belt webbing or hardware. Take care that they do not get caught or pinched in the seat or side doors.
- Inspect the belt system periodically. Check for cuts, fraying, and loose parts. Damaged parts should be replaced. Do not disassemble or modify the system.

- Keep the belts clean and dry. If they need cleaning, use a mild soap solution or lukewarm water. Never use bleach, dye, or abrasive cleaners—they may severely weaken the belts.

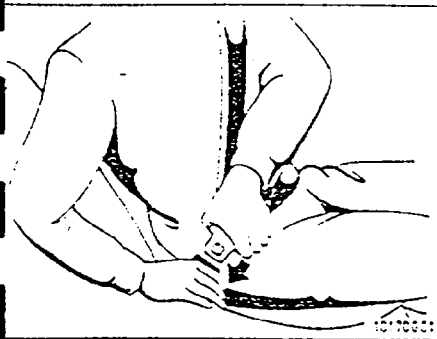
- Replace the belt assembly (including bolts) if it has been used in a severe impact. The entire assembly should be replaced even if damage is not obvious.



- Front passenger's seat, only—Replace the belt if the warning label under the sleeve can be seen. The warning label, "REPLACE BELT", will appear if the belt receives a severe impact or other force.

23

—Front seat belts and rear outside seat belts



Adjust the seat as needed (front seats only) and sit up straight and well back in the seat. To fasten your belt, pull it out of the retractor and insert the tab into the buckle.

You will hear a click when the tab locks into the buckle.

The seat belt length automatically adjusts to your size and the seat position.

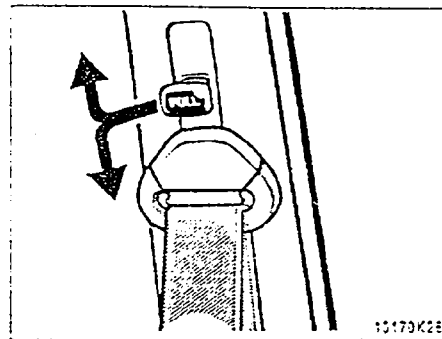
The retractor will lock the belt during a sudden stop or on impact. It also may lock if you lean forward too quickly. A slow, easy motion will allow the belt to extend, and you can move around freely.

If the seat belt cannot be pulled out of the retractor, firmly pull the belt and release it. You will then be able to smoothly pull the belt out of the retractor.

When a passenger's shoulder belt is completely extended and is then retracted even slightly, the belt is locked in that position and cannot be extended. This feature is used to hold the child restraint system securely. (For details, see "Child restraint" in this chapter.) To free the belt again, fully retract the belt and then pull the belt out once more.

CAUTION

- After inserting the tab, make sure the tab and buckle are locked and that the belt is not twisted.
- Do not insert coins, clips, etc. in the buckle as this may prevent you from properly latching the tab and buckle.
- If the seat belt does not function normally, immediately contact your Toyota dealer. Do not use the seat until the seat belt is fixed. It cannot protect an adult occupant or your child from injury.



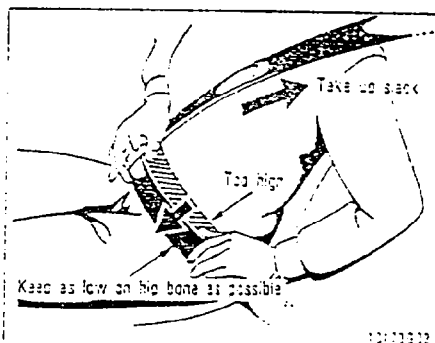
Seat belts with an adjustable shoulder anchor—

Adjust the shoulder anchor position to your size.

To adjust the anchor position, pull the knob out and slide it up or down. Release the knob and make sure the anchor is locked in position.

CAUTION

Always make sure the shoulder belt is positioned across the center of your shoulder. The belt should be kept away from your neck, but not falling off your shoulder. Failure to do so could reduce the amount of protection in an accident and cause severe injuries in a collision.

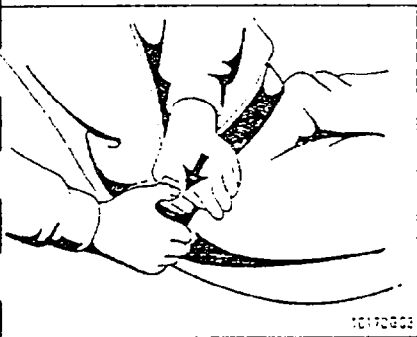


Adjust the position of the lap and shoulder belts.

Position the lap belt as low as possible on your hips—not on your waist, then adjust it to a snug fit by pulling the shoulder portion upward through the latch plate.

CAUTION

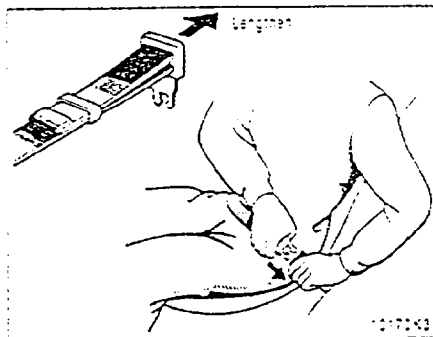
- High-positioned lap belts and loose-fitting belts both could cause severe injuries due to sliding under the lap belt during a collision. Keep the lap belt positioned as low on hips as possible.
- For your safety, do not place the shoulder belt under your arm.



To release the belt, press the buckle-release button and allow the belt to retract.

If the belt does not retract smoothly, pull it out and check for kinks or twists. Then make sure it remains untwisted as it retracts.

—Rear center seat belt



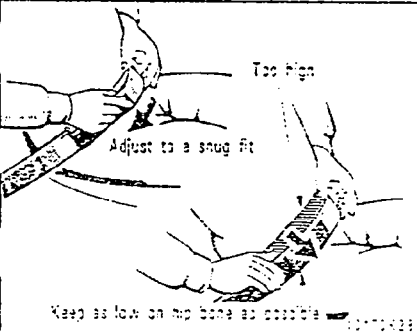
Sit up straight and well back in the seat. To fasten your belt, insert the tab into the buckle.

You will hear a click when the tab locks into the buckle.

If the belt is not long enough for you, hold the tab at a right angle to the belt and pull on the tab.

⚠ CAUTION

- After inserting the tab, make sure the tab and buckle are locked and that the belt is not twisted.
- Do not insert coins, clips, etc. in the buckle as this may prevent you from properly latching the tab and buckle.
- If the seat belt does not function normally, immediately contact your Toyota dealer. Do not use the seat until the seat belt is fixed. It cannot protect an adult occupant or your child from injury.



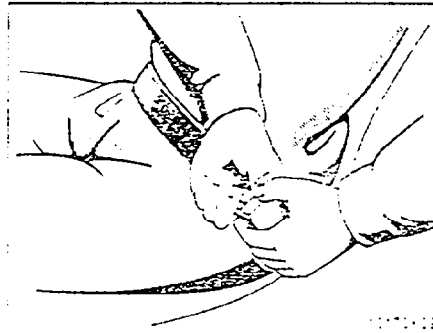
Remove excess length of the belt and adjust the belt position.

To shorten the belt, pull the free end of the belt.

Position the lap belt as low as possible on your hips—not on your waist, then adjust it to a snug fit.

⚠ CAUTION

High-positioned and loose-fitting lap belts could cause severe injuries due to sliding under the lap belt during a collision. Keep the lap belt positioned as low on hips as possible.



To release the belt, press the buckle-release button.

—Seat belt extender

If your seat belt cannot be fastened securely because it is not long enough, a personalized seat belt extender is available from your Toyota dealer free of charge.

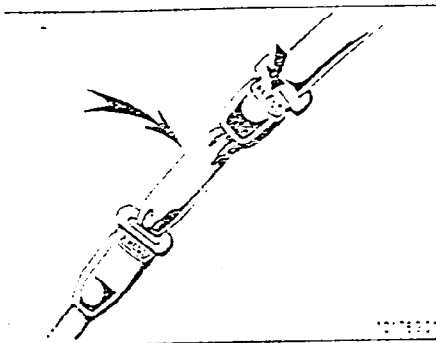
Please contact your local Toyota dealer so that the dealer can order the proper required length for the extender. Bring the nearest shoes you expect to wear for proper measurement and selection of length. Additional ordering information is available at your Toyota dealer.

⚠ CAUTION

When using the seat belt extender, observe the following. Failure to follow these instructions could result in less effectiveness of the seat belt restraint system in case of vehicle accident, increasing the chance of personal injury.

- Never use the seat belt extender if you can fasten the seat belt without it.

- Remember that the extender provided for you may not be safe when used on a different vehicle, or for another person or at a different seating position than the one originally intended for.



To connect the extender to the seat belt, insert the tab into the seat belt buckle so that the "PRESS" signs on the buckle-release buttons of the extender and the seat belt are both facing outward as shown.

You will hear a click when the tab locks into the buckle.

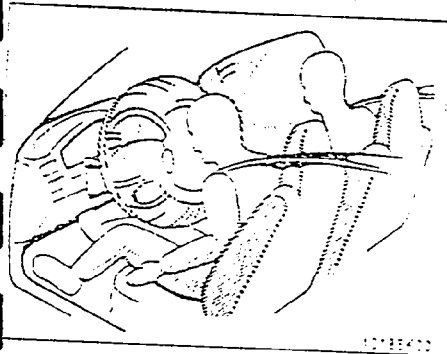
When releasing the seat belt, press on the buckle-release button on the extender, not on the seat belt. This helps prevent damage to the vehicle interior and extender itself.

When not in use, remove the extender and store in the vehicle for future use.

⚠ CAUTION

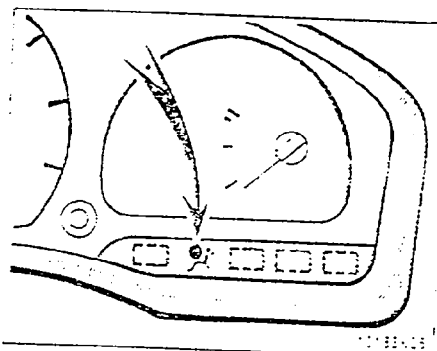
- After inserting the tab, make sure the tab and buckle are locked and that the seat belt extender is not twisted.
- Do not insert coins, clips, etc. in the buckle as this may prevent you from properly latching the tab and buckle.
- If the seat belt does not function normally, immediately contact your Toyota dealer. Do not use the seat until the seat belt is fixed. It cannot protect an adult occupant or your child from injury.

SRS airbags (for U.S.A.)



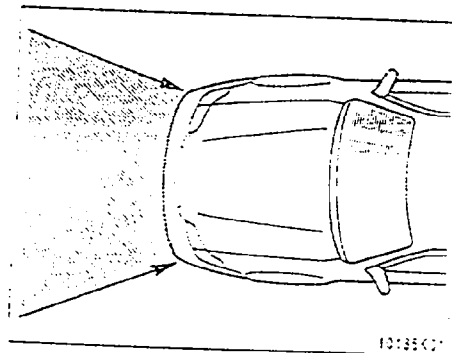
The SRS (Supplemental Restraint System) airbags are designed to provide further protection to the driver and front passenger when added to the primary protection provided by the seat belts.

In response to a severe frontal impact, the SRS airbags work together with the seat belts to help preventing or reduce injury by inflating, in order to decrease the likelihood of the driver's or front passenger's head or chest directly hitting the steering wheel or dashboard. The passenger airbag is activated even with no passenger in the front seat.



This indicator comes on when the ignition key is turned to the "ACC" or "ON" position. It goes off after about 6 seconds. This means the SRS airbags are operating properly.

The SRS airbag warning light system monitors the airbag sensor assembly, indicators, warning light, interconnecting wiring and power sources.



The SRS airbag system is designed to activate in response to a severe frontal impact within the shaded area between the arrows in the illustration.

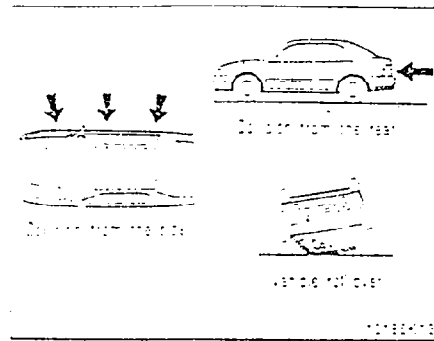
The SRS airbags will deploy if the severity of the impact is above the designed threshold level, comparable to an approximate 20 km/h (14 mph) collision when impacting straight into a fixed barrier that does not move or deform.

If the severity of the impact is below the above threshold level, the SRS airbags may not deploy.

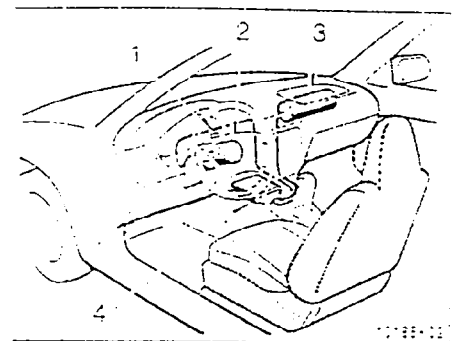
However, this threshold velocity will be considerably higher if the vehicle strikes an object, such as a parked vehicle or sign pole, which can move or deform on impact, or if it is involved in an under-ride collision (a collision in which the nose of the vehicle "under-rides" or goes under the bed of a truck).

In a collision with air bags in severe, at the marginal level of air bag sensor detection and activation that only one of your vehicle's two airbags will deploy.

For your safety, be sure to always wear your seat belts.



The SRS airbags are not designed to inflate if the vehicle is subjected to a side or rear impact, if it rolls over, or if it is involved in a low-speed frontal collision.



The SRS airbag system mainly consists of the following components and their locations are shown in the illustration.

1. SRS airbag warning light
2. Steering wheel pad (airbag and inflator)
3. Passenger airbag module (airbag and inflator)
4. Airbag sensor assembly

The airbag sensor assembly consists of a safing sensor and airbag sensor.

30

In a severe frontal impact, sensors detect deceleration and the system triggers the airbag inflators. Then a chemical reaction in the inflators momentarily fills the airbags with non-toxic nitrogen gas to help restrain the forward motion of the occupants.

When the airbags inflate, they produce a fairly loud noise and release some smoke along with the nitrogen gas. This is not harmful and does not indicate a fire. Be sure to wash off any residue as soon as possible to prevent minor skin irritation.

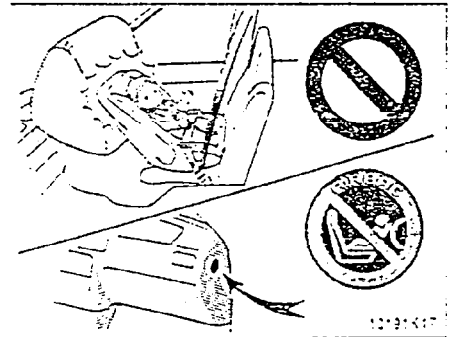
Deployment of the airbags happen in a fraction of a second, so the airbags must inflate with considerable force. While the system is designed to reduce serious injuries, it may also cause minor burns or abrasions and swellings.

Parts of the airbag module (steering wheel, hub, dashboard) may be hot for several minutes, but the airbags themselves will not be hot. The airbags are designed to inflate only once.

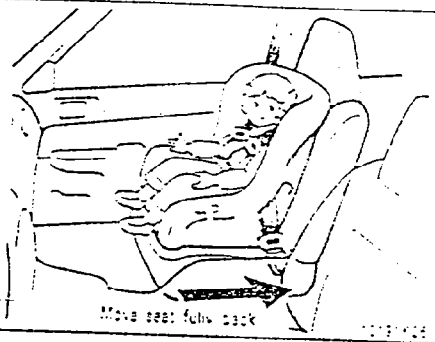
A crash severe enough to inflate the airbags may break the windshield as the vehicle buckles. In vehicles with a passenger airbag the windshield may also be damaged by absorbing some of the force of the inflating airbag.

CAUTION

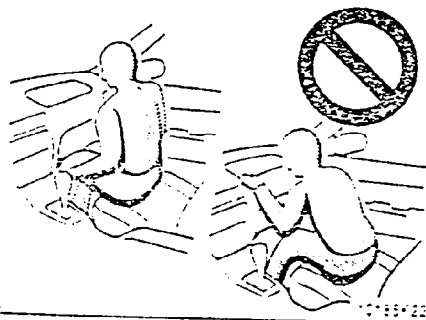
- The SRS airbag system is designed only as a supplement to the primary protection of the seat belt systems of the driver and front passenger. The front seat occupants are particularly susceptible to injury if they do not wear their seat belts; when sudden braking or a collision occurs, they may be thrown forward. To obtain maximum protection in an accident, the driver and all passengers in the vehicle should always wear their seat belts when driving because serious injuries can result to unrestrained occupants. For instructions and precautions concerning the seat belt system, see "Seat belts" in this chapter.
- A baby or small child who is too small to use a seat belt should be properly secured in a rear seat using a child restraint system.



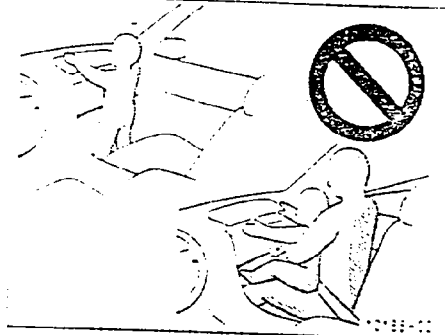
- Never use a rear-facing child restraint system in the front seat because the force of the rapid inflation of the passenger airbag can cause severe injury to the child. Vehicles with a passenger airbag display a caution label on the passenger side instrument panel as shown above to remind you not to install a rear-facing child restraint system on the front seat.



- If you must use a forward-facing child restraint system in the front seat, the seat must be moved as far back as possible. For instructions concerning the installation of a child restraint system, see "Child restraint" in this chapter.

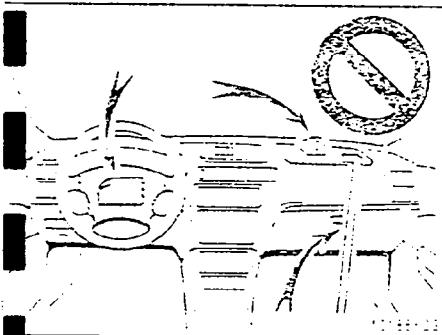


- Do not sit on the edge of the seat or lean over the dashboard when the vehicle is in use. The airbags inflate with considerable speed and force; you may be severely injured. Sit up straight and well back in the seat, and always use your seat belt.



- Do not allow a child to stand up, or to kneel on the front passenger seat. The airbag inflates with considerable speed and force; the child may be severely injured.
- Do not hold a child on your lap or in your arms. Use a child restraint system in the rear seat. For instructions concerning the installation of a child restraint system, see "Child restraint" in this chapter.

32



- Do not put objects on or in front of the dashboard or steering wheel pad that houses the airbag system. They might restrict inflation or cause personal injury as they are projected rearward.

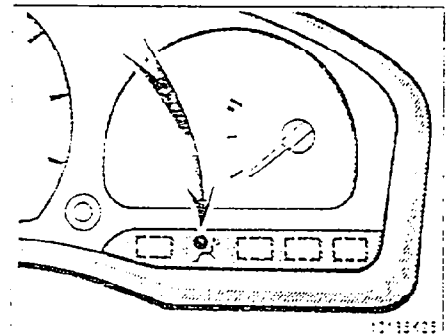
Do not modify, remove or open any component or wiring, such as the steering wheel, column cover, front passenger airbag cover, front passenger airbag, airbag sensor assembly. Doing any of these may cause sudden SRS airbag inflation or disable the system, which could result in personal injury.

Failure to follow these instructions can result in severe injuries.

NOTICE

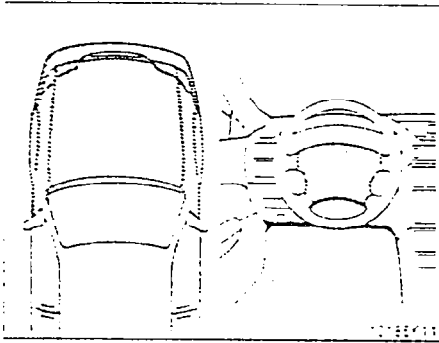
Do not perform any of the following changes without consulting your Toyota dealer. Such changes can interfere with proper operation of the SRS airbag system in some cases.

- ♦ Installation of electronic items such as a mobile two-way radio, cassette tape player or compact disc player
- ♦ Modification of the suspension system
- ♦ Modification of the front end structure
- ♦ Attachment of a grille guard (bull bar, kangaroo bar, etc.), snowplow, winches or any other equipment to the front end
- ♦ Repairs made on or near the front end structure, console, steering column, steering wheel or dashboard near the front passenger airbag



This SRS airbag system has a service reminder indicator to inform the driver of operating problems. If either of the following conditions occurs, this indicates a malfunction of the airbags. Contact your Toyota dealer as soon as possible to service the vehicle.

- The light does not come on when the ignition key is turned to the "ACC" or "ON" position, or remains on.
- The light comes on while driving.



In the following cases, contact your Toyota dealer as soon as possible:

- The SRS airbag has been inflated.
- The front part of the vehicle (shaped in the illustration) was involved in an accident not of the extent to cause the SRS airbag to inflate.
- The pad section of the steering wheel (shaped in the illustration) is scratched, cracked, or otherwise damaged.

Child restraint— —Child restraint precautions

Toyota strongly urges the use of child restraint systems for children small enough to use it.

The laws of a city, states in the U.S.A. and Canada now require the use of a child restraint system.

Your vehicle conforms to SAE J209.

If a child is too large for a child restraint system, the child should sit in the rear seat and must be restrained using the vehicle's seat belt. See "Seat belts" for details.

CAUTION

- For effective protection in automobile accidents and sudden stops, children must be properly restrained using a seat belt or child restraint system depending on the age and size of the child. Holding a child in your arms is not a substitute for a child restraint system. In an accident, the child can be crushed against the windshield, or between you and the vehicle's interior.

- Toyota strongly urges use of a proper child restraint system that conforms to the size of the child on the rear seat. According to accident statistics, the child is safer when properly restrained in the rear seat than in the front seat.

- Vehicles with a passenger airbag:
Never install a rear-facing child restraint system on the front seat. In the event of an accident, the force of the rapid inflation of the airbag can cause severe injury if a rear-facing child restraint system is installed on the front seat.

Unless it is unavoidable, do not install a forward-facing child restraint system on the front seat.

If you must install a forward-facing child restraint system on the front seat, move the seat as far back as possible.

- Make sure that you have complied with all installation instructions provided by the child restraint manufacturer and that the system is properly secured.

38

—Child restraint system

A child restraint system for a small child or baby must itself be properly restrained on the seat with either the lap belt or the lap portion of the lap/shoulder belt. You must carefully consult the manufacturer's instructions which accompany your child restraint system.

Toyota strongly urges use of a child restraint system following the manufacturer's instructions about the appropriate age and size of the child for the child restraint system.

Install the child restraint system correctly, following the instructions provided by its manufacturer of the system.

Toyota recommends installing the child restraint system on the rear seat. According to accident statistics, the child is safer when properly restrained in the rear seat than in the front seat.

CAUTION

- Vehicles with a passenger airbag:

Never install a rear-facing child restraint system on the front seat. In the event of an accident, the force of the rapid inflation of the airbag can cause severe injury if a rear-facing child restraint system is installed on the front seat.

Unless it is unavoidable, do not install a forward-facing child restraint system on the front seat.

If you must install a forward-facing child restraint system on the front seat, move the seat as far back as possible.

- After installing the child restraint system, make sure it is secured in place following the manufacturer's instructions. If it is not restrained securely, it can cause injury to the child in the event of a sudden stop or accident.

When not using the child restraint system, keep it secured with the seat belt. This will prevent it injuring passengers in the event of a sudden stop or accident.

Your vehicle has anchors for securing the top strap of a child restraint system. The anchor nuts are welded beneath the sheet metal to permit installation of an anchor bracket for a child restraint system.

To install an anchor bracket, use an 8 mm X 60 mm X 1.25 mm coarse thread metric bolt and a 10 mm (3/4 in.) spacer. Note that the bolts accompanying many child restraint systems are not metric. You can damage the anchor nuts on your vehicle if you force bolts with different thread into the anchor nuts.

For instructions about how to install the anchor bracket, see "Top strap anchors and locations".

If your child restraint system does not provide any of the necessary parts, you can purchase the following items from your Toyota dealer.

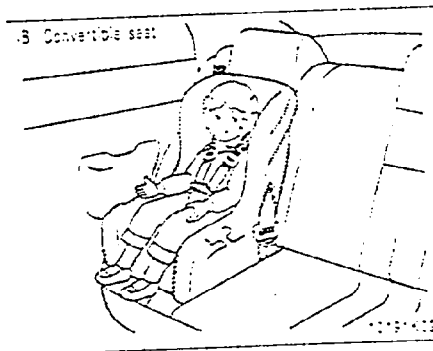
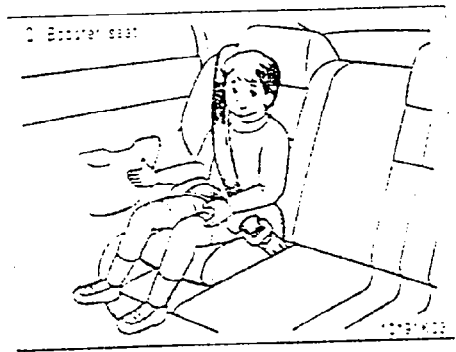
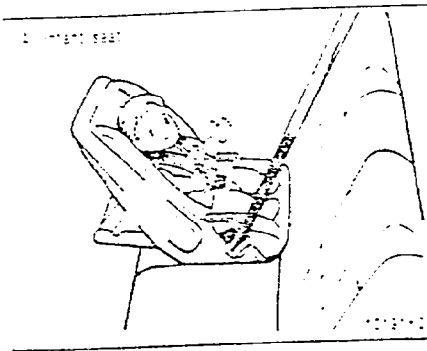
- CRS installation kit:
(Part No. 04731-22012)—contains 1 bolt, 3 types of spacers and 1 locking clip.
- Bolt (Part No. 91511-60830)

Types of child restraint system

Child restraint systems are classified into the following 3 types depending on the child's age and size.

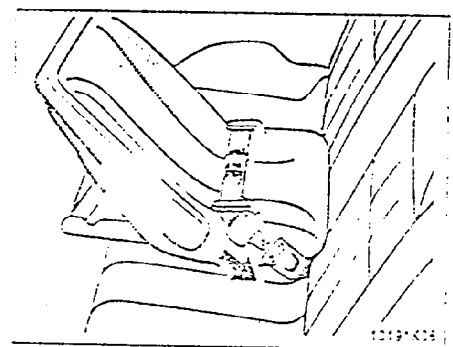
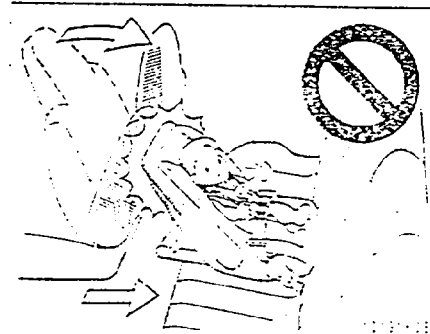
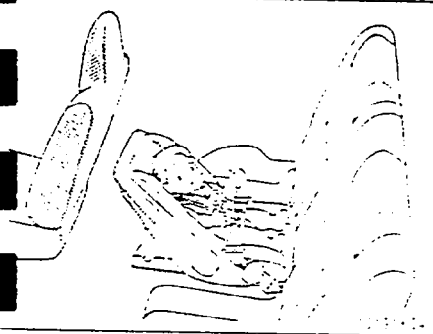
- A) Infant seat
- B) Convertible seat
- C) Booster seat

Install the child restraint system following the instructions provided by its manufacturer.



40

Installation with 2-point type seat belt



INFANT SEAT INSTALLATION
Infant seat is used in rear-facing only.

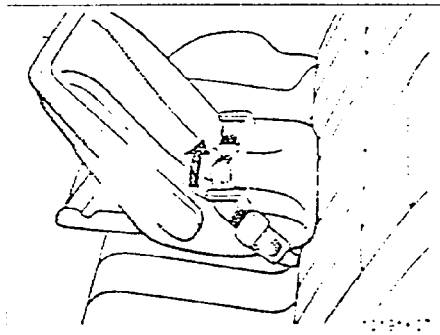
⚠ CAUTION

Do not use a rear-facing child restraint system in the rear seat if it interferes with the lock mechanism of the front seats. This can cause severe injury to the child and front passenger in case of sudden braking or a collision.

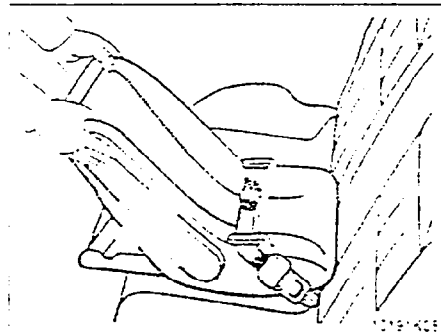
1. Run the center lap belt through or around the infant seat following the instructions provided by its manufacturer and insert the tab into the buckle taking care not to twist the lap belt.

⚠ CAUTION

- After inserting the tab, make sure the tab and buckle are locked and that the lap belt is not twisted.
- Do not insert coins, clips, etc. in the buckle as this may prevent you from properly latching the tab and buckle.
- If the seat belt does not function normally, it cannot protect your child from injury. Contact your Toyota dealer immediately. Do not use the seat until the seat belt is fixed.



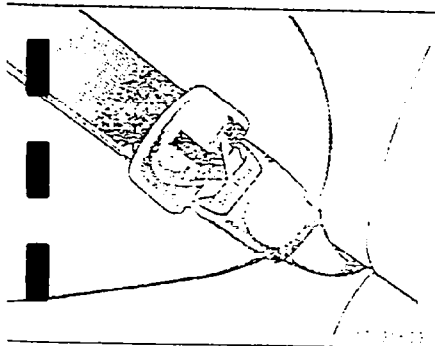
2. While pressing the infant seat firmly against the seat cushion and seatback, tighten the lap belt by pulling its free end to hold the infant seat securely.



⚠ CAUTION

Push and pull the child restraint system in different directions to be sure it is secure. Follow all the installation instructions provided by its manufacturer.

42

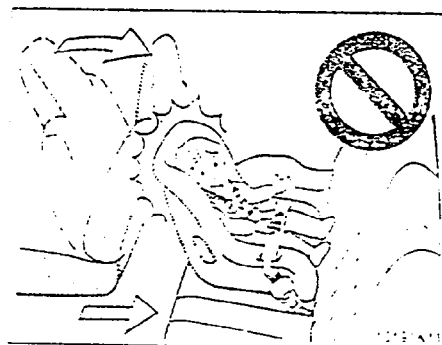


To remove the infant seat, press the buckle-release button.



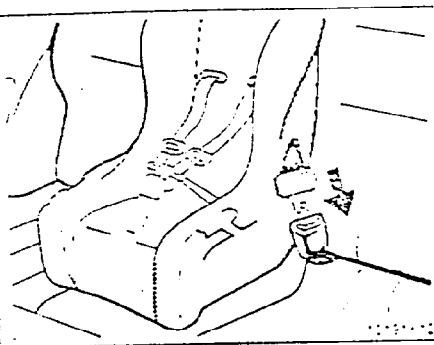
(B) CONVERTIBLE SEAT INSTALLATION

A convertible seat is used in forward-facing and rear-facing depending on the child's age and size. When installing, follow the manufacturer's instructions about the applicable child's age and size.



⚠ CAUTION

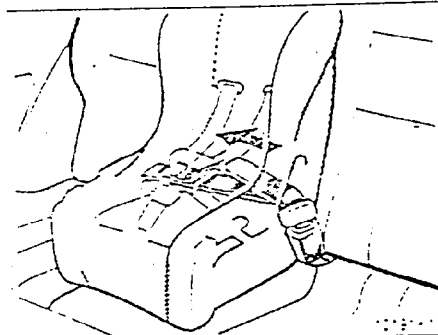
Do not use a rear-facing child restraint system in the rear seat if it interferes with the lock mechanism of the front seats. This can cause severe injury to the child and front passenger in case of sudden braking or a collision.



1. Run the center lap belt through or around the convertible seat following the instructions provided by its manufacturer and insert the tab into the buckle taking care not to twist the lap belt.

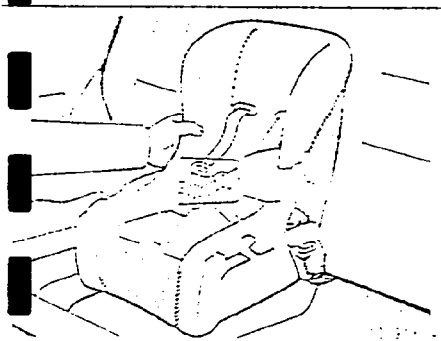
CAUTION

- After inserting the tab, make sure the tab and buckle are locked and that the lap belt is not twisted.
- Do not insert coins, clips, etc. in the buckle as this may prevent you from properly latching the tab and buckle.
- If the seat belt does not function normally, it cannot protect your child from injury. Contact your Toyota dealer immediately. Do not use the seat until the seat belt is fixed.



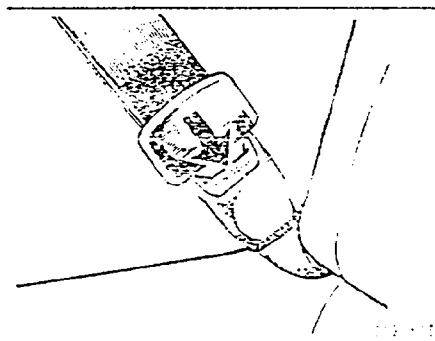
2. While pressing the convertible seat firmly against the seat cushion and seatback, tighten the lap belt by pulling its free end to hold the convertible seat securely.

44



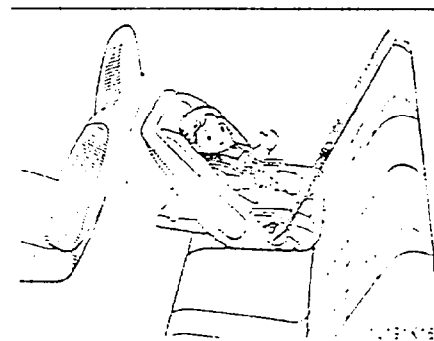
CAUTION

Push and pull the child restraint system in different directions to be sure it is secure. Follow all the installation instructions provided by its manufacturer.



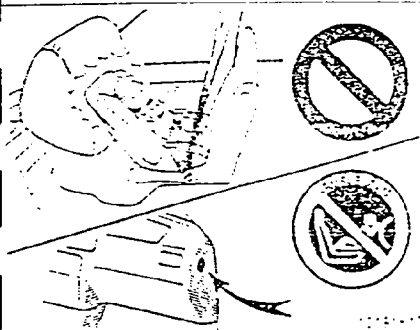
3. To remove the convertible seat, press the buckle-release button.

—Installation with 3-point type seat belt



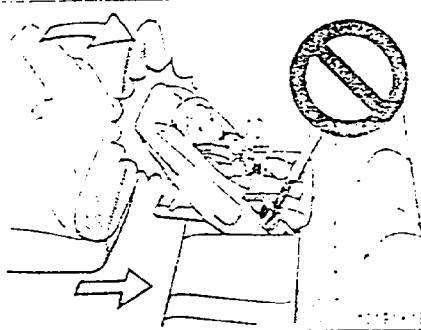
(A) INFANT SEAT INSTALLATION

An infant seat is used in rear-facing only.

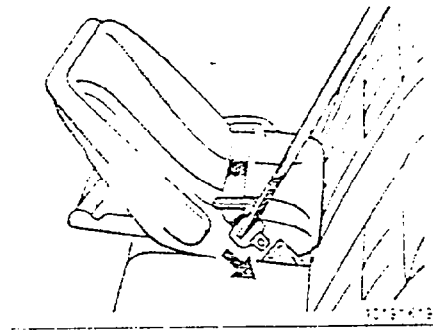


CAUTION

- Vehicles with a passenger airbag:
Never use a rear-facing child restraint system in the front seat because the force of the rapid inflation of the passenger airbag can cause severe injury to the child. Vehicles with a passenger airbag display a caution label on the passenger side instrument panel as shown above to remind you not to install a rear-facing child restraint system on the front seat at any time.



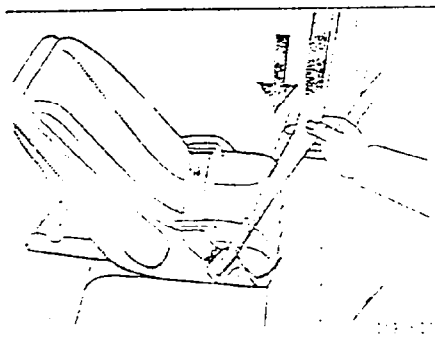
Do not use a rear-facing child restraint system in the rear seat if it interferes with the lock mechanism of the front seats. This can cause severe injury to the child and front passenger in case of sudden braking or a collision.



- Run the lap and shoulder belt through or around the infant seat following the instructions provided by its manufacturer and insert the tab into the buckle taking care not to twist the belt. Keep the top portion of the belt tight.

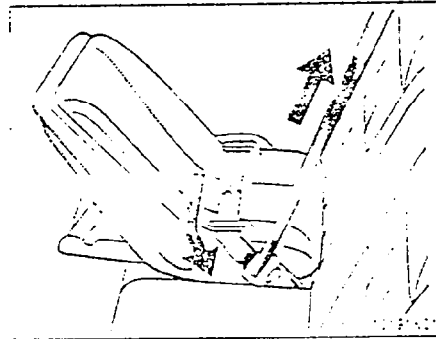
CAUTION

- After inserting the tab, make sure the tab and buckle are locked and that the lap and shoulder portions of the belt is not twisted.
- Do not insert coins, keys, etc. in the buckle as this may prevent you from properly latching the tab and buckle.
- If the seat belt does not function normally, it cannot protect your child from injury. Contact your Toyota dealer immediately. Do not use the seat until the seat belt is fixed.

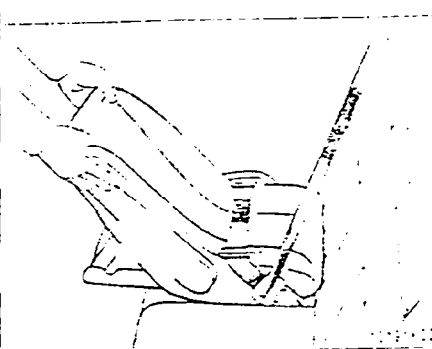


2. Fully extend the shoulder belt to put it in the lock mode. When the belt is then retracted even slightly, it cannot be extended.

To hold the infant seat securely, make sure the belt is in the lock mode before letting the belt to retract.

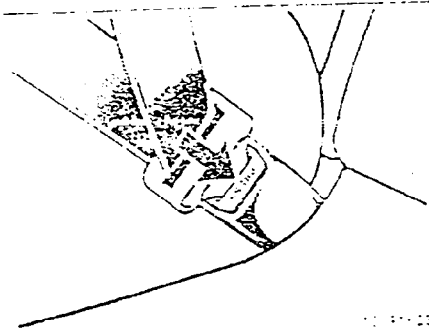


3. While pressing the infant seat firmly against the seat cushion and seatback, let the shoulder belt retract as far as it will go to hold the infant seat securely.

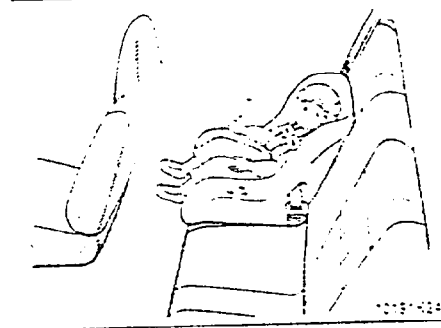


⚠ CAUTION

Make sure the seat belt is securely locked. Also make sure the child restraint system is secure by pushing and pulling it in different directions. Follow all the installation instructions provided by its manufacturer.



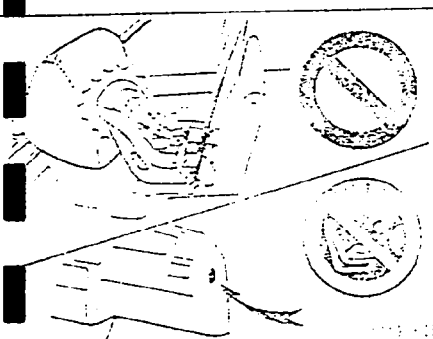
To remove the infant seat, press the buckle-release button and pull the seat to retract completely. The seat will move freely again and be ready to work for an adult or older child or passenger.



(B) CONVERTIBLE SEAT INSTALLATION

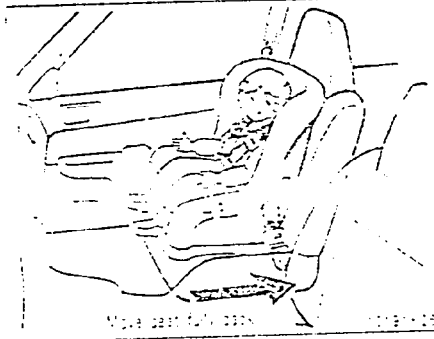
A convertible seat is used in forward-facing and rear-facing depending on the child's age and size. When installing, follow the manufacturer's instruction about the applicable child's age and size as well as direction of a child restraint system.

48

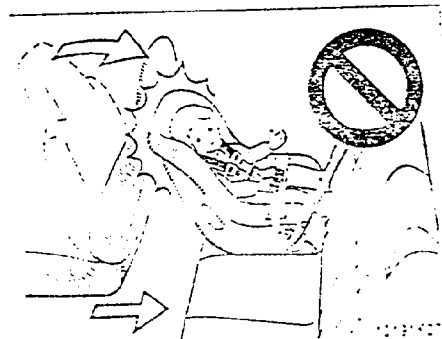


⚠ CAUTION

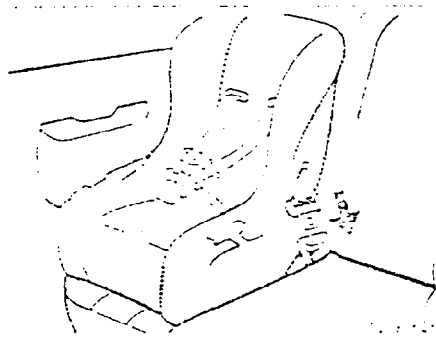
• Vehicles with a passenger airbag: Never use a rear-facing child restraint system in the front seat because the force of the rapid inflation of the passenger airbag can cause severe injury to the child. Vehicles with a passenger airbag display a caution label on the passenger side instrument panel as shown above to remind you not to install a rear-facing child restraint system on the front seat at any time.



Only when it is unavoidable should a forward-facing child restraint system be used on the front seat. Always move the seat as far back as possible because the force of deploying airbag would cause serious injury to the child.



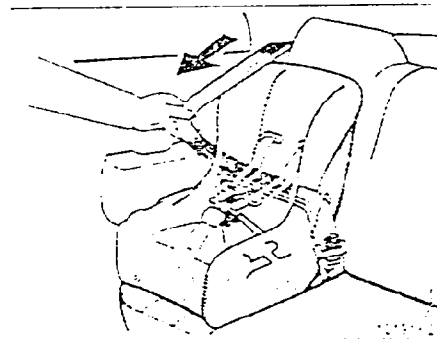
• Do not use a rear-facing child restraint system in the rear seat if it interferes with the lock mechanism of the front seats. This can cause severe injury to the child and front passenger in case of sudden braking or a collision.



1. Run the lap and shoulder belt through or around the convertible seat following the instructions provided by its manufacturer and insert the tab into the buckle taking care not to twist the belt. Keep the lap portion of the belt tight.

CAUTION

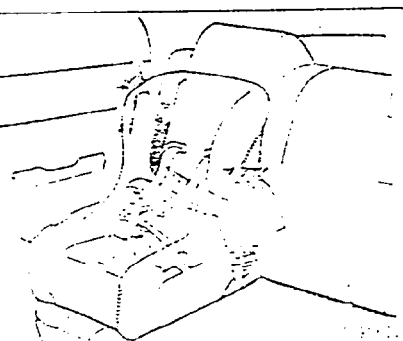
- After inserting the tab, make sure the tab and buckle are locked and that the lap and shoulder portions of the belt is not twisted.
- Do not insert coins, clips, etc. in the buckle as this may prevent you from properly latching the tab and buckle.
- If the seat belt does not function normally, it cannot protect your child from injury. Contact your Toyota dealer immediately. Do not use the seat until the seat belt is fixed.



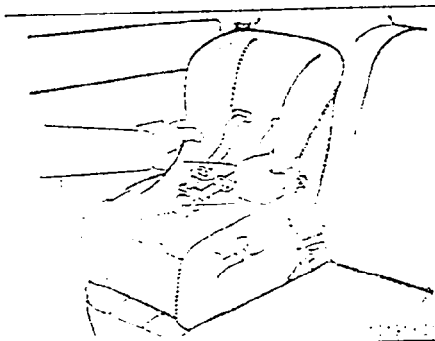
2. Fully extend the shoulder belt to put it in the lock mode. When the belt is then retracted slightly, it cannot be extended.

To hold the convertible seat secure, make sure the belt is in the lock mode before letting the belt to retract.

50

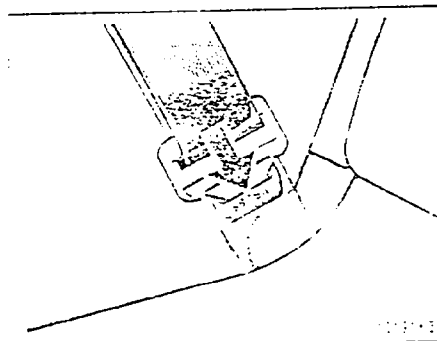


3. While pressing the convertible seat firmly against the seat cushion and seatback, let the shoulder belt retract as far as it will go to hold the convertible seat secure.

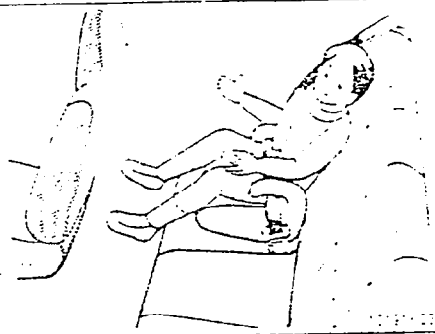


CAUTION

Make sure the seat belt is securely locked. Also make sure the child restraint system is secure by pushing and pulling it in different directions. Follow all the installation instructions provided by its manufacturer.

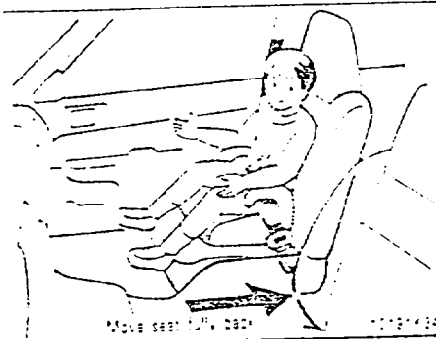


4. To remove the convertible seat, press the buckle-release button and allow the belt to retract completely. The belt will move freely again and be ready to work for an adult or older child passenger.



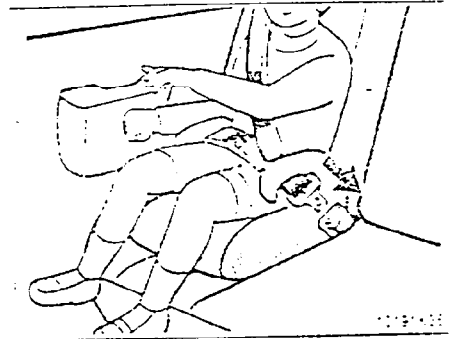
(C) BOOSTER SEAT INSTALLATION

A booster seat is used in forward-facing only.



⚠ CAUTION

Vehicles with a passenger airbag: Only when it is unavoidable should a forward-facing child restraint system be used on the front seat. Always move the seat as far back as possible because the force of deploying airbag would cause serious injury to the child.



1. Sit the child on a booster seat. Run the lap and shoulder belt through or around the booster seat and child following the instructions provided by the manufacturer and insert the tab into the buckle taking care not to twist the belt.

Make sure the shoulder belt is correctly across the child's shoulder and that the lap belt is positioned as low as possible on child's hips. See "Seat belts" for details.

⚠ CAUTION

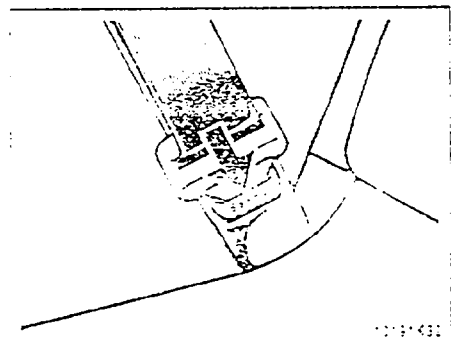
Always make sure the shoulder belt is positioned across the center of child's shoulder. The belt should be kept away from child's neck, but not falling off child's shoulder. Failure to do so could reduce the amount of protection in an accident and increase the chance of injury.

High-positioned lap belts and loose-fitting belts both could increase the chance of injury due to sliding under the lap belt during an accident. Keep the lap belt as low on your hip bone as possible.

For child's safety, do not place the shoulder belt under child's arm.

- After inserting the tab, make sure the tab and buckle are locked and that the lap and shoulder portions of the belt is not twisted.
- Do not insert coins, clips, etc. in the buckle as this may prevent you from properly latching the tab and buckle.

- If the seat belt does not function normally, it cannot protect your child from injury. Contact your Toyota dealer immediately. Do not use the seat until the seat belt is fixed.



2. To remove the child restraint system, press the buckle-release button and allow the belt to retract.