3220

REPORT NUMBER KAR-20-03

NEW CAR ASSESSMENT PROGRAM
FRONTAL BARRIER IMPACT TEST

NISSAN MOTOR CORPORATION
2000 NISSAN XTERRA
SUV
NHTSA NUMBER: MY5203

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

DECEMBER 4, 1999

FINAL REPORT

PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
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15. Supplementary Notes

16. Abstract

A 35 mph (56.3 km/h) frontal barrier impact was conducted on a 2000 Nissan Xterra SUV at KARCO Engineering on November 23, 1999. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The impact velocity was 56.28 km/h. The ambient temperature at the barrier face at the time of impact is 12.7 degrees Celcius. The vehicle's maximum post test static crush is 539 mm located to the right of the vehicle centerline. The test vehicle is equipped with a 3-point continuous belt system and second generation supplemental airbags in both front outboard seating positions. With respect to FMVSS 208 "Occupant Crash Protection", the occupant injury criteria summary is as follows:

Measurement Description	Units	Threshold	Driver ATD	Passenger ATD
Head Injury Criteria (HIC)	N/A	1000	500.0	658.4
Max. Thorax Accel. (3 msec Clip)	G's	60	44.7	45.2
Left Femur force	Newtons	10009	-1269.7	-2505.3
Right Femur Force	Newtons	10009	-2848.7	-979.8

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SECTION 1

PURPOSE, TEST PROCEDURE AND SUMMARY OF TEST MY5203

1.1 PURPOSE

This 35 mph (56.3 km/h) frontal barrier impact test is part of the FY' 99 New Car Assessment Program (NCAP) frontal barrier crash worthiness evaluation program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract Number DTNH22-97-D-02007. The purpose of this test is to obtain vehicle crashworthiness, occupant restraint system performance, and lower leg data for frontal barrier impacts. The impact velocity used in this test is in excess of the current 30 mph (48.3 km/h) FMVSS 208/212/219/301 requirements.

1.2 TEST PROCEDURE

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

The test was conducted at KARCO Engineering on November 23, 1999 at a speed of 56.28 km/h. The test vehicle was instrumented with eight (8) accelerometers to measure longitudinal axi accelerations. The driver and passenger's restraint systems were instrumented with four (4) seat belt load cells to measure lap and shoulder belt tension. The specified impact velocity range was 55.5 to 57.1 km/h. The frontal barrier impact event was documented by one (1) real-time panning motion picture camera and eighteen (18) high-speed motion picture cameras. The pre- and post-test conditions were recorded by one (1) real-time motion picture camera. Camera locations and pertinent camera information is documented in the data sheets. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

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

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

1.3 SUMMARY OF FRONTAL BARRIER IMPACT TEST

A rigid load cell barrier was impacted by a 2000 NISSAN XTERRA SUV at a velocity of 56.28 km/h. The test vehicle weight is 1908 kilograms with two (2) part 572E 50th percentile adult male ATDs. Twenty-four (24) load cell barrier data channels were obtained in conducting the November 23, 1999 NCAP test. The test vehicle is equipped with a longitudinally mounted 2.4-liter, 4-cylinder engine and a 5-speed manual transmission.

The driver Head Injury Criteria (HIC) is 500.0. The maximum resultant chest deceleration over three (3) milliseconds is 44.7 g's. The left and right femur loads are –1269.7 and –2848.7 Newtons, respectively. Chest deflection for the driver ATD peaked at —33.4mm. The driver ATD head contacted the airbag and headrest, its chest and abdomen contacted the airbag, the left and right knees contacted the knee bolster and steering column.

The right front passenger's HIC is 658.4. The maximum resultant chest deceleration over three (3) milliseconds is 45.2 g's. The left and right femur loads are –2505.3 and –979.8 Newtons respectively. Chest deflection for the passenger ATD peaked at –30.7 mm. The passenger ATD head contacted the airbag and headrest, the chest and abdomen contacted the airbag and both knees contacted the glove box.

Maximum seat belt spool out as measured by on-board pullout potentiometers is 100.2mm for the driver ATD and 146.2 mm for the passenger ATD. The shoulder belt stretch is not measured with pre-tensioner systems.

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

The test vehicle sustained a maximum static crush of 539 mm located to the right of the vehicle centerline. Both the driver and passenger side doors opened without the aid of tools.

1.4 GENERAL COMMENTS

The 2000 NISSAN XTERRA SR5 P/U passed the requirements of FMVSS 208, FMVSS 212, FMVSS 219 and FMVSS 301-75. Data pertaining to these standards are presented in the data sheets.

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

SECTION 2

OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2000 NISSAN XTERRA SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99

CONVERSION FACTORS USED IN THIS REPORT*

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

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

DATA SHEET NO. 1
CRASH TEST SUMMARY

Test Vehicle: 2000 Nissan Xterra SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99

PRIMARY IMPACT DATA

Measured Parameter	Units	Value
Velocity at Impact	km/h	56.28
Test Weight	kg	1908
Impact Angle	degrees	0
Average Rebound	mm	977
Maximum Static Crush	mm	539

DOOR OPENING AND SEAT TRACK INFORMATION

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

TEST DUMMY INFORMATION

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

16mm MOVIE COVERAGE

High Speed	18
Real Time	1
Total	19

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

DATA SHEET NO. 2
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2000 Nissan Xterra SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99

TEST VEHICLE INFORMATION

Manufacturer	Nissan Motor Corporation
Model	X Terra
Body Style	SUV
NHTSA NO.	MY5203
VIN	5N1DD28T4YC533930
Color	White
Delivery Date	11/8/99
Odometer Reading (mile)	110
Dealer	Corona Nissan
Transmission	5-Speed Manual
Final Drive	Rear
Number of Cylinders	4
Engine Displacement (L)	2.4
Engine Placement	Longitudinal

TEST VEHICLE OPTIONS

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

DATA FROM CERTIFICATION LABEL

Manufactured By	Nissan Motor Corporation
Date of Manufacture	September-99

GVWR (kg)	2268
GAWR Front (kg)	1243
GAWR Rear (kg)	1293

DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	182	182
Cold Pressure (kPa)	182	182
Recommend Tire Size	P235/70R15	P235/70R15
Tire Size on Vehicle	P235/70R15	P235/70R15
Tire Manufacturer	Goodyear	Goodyear

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench	None	
Number of Occupants	2	3	0	5
Capacity Wt. *(VCW)* (kg)				300
Cargo Weight (RCLW) (kg)				136

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

Test Vehicle: 2000 Nissan Xterra SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99

TEST VEHICLE WEIGHTS

	Units	As Delivered *(UVW)*			As Tested *(ATW)*		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	419	390		449	494	
Right	kg	430	385		472	493	
Ratio	%	52.3	47.7		48.3	51.7	
Totals	kg	849	775	1624	921	987	1908

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight *(UVW)*	kg	1624
Weight of 2 P572 ATD's	kg	152
Rated Cargo/Luggage Weight *(RCLW)*	kg	136
Calculated Vehicle Target Weight *(TVTW)*	kg	1912

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	833	833	883	884	1269
As Tested	mm	816	813	821	822	1375

Vehicle Wheel base (mm): 2659

Weight of Ballast secured in cargo area (kg): 45 *

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

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

FUEL SYSTEM DATA

Fuel System Capacity From Owner's Manual (L): 73.4

Usable Capacity Figure Furnished by COTR (L): 73.4

Actual Test Volume with entire fuel System Filled (L): 68.3

Test Fluid Type: Stoddard Solvent ; Specific Gravity: 0.764

Is Vehicle Fuel Pump Electric or Mechanical?: Electric

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

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

DATA SHEET NO. 3
POST IMPACT DATA

Test Vehicle: 2000 Nissan Xterra SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99

SPEED TRAP DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	55.51 to 57.12	56.28
Trap No. 1 Entry Distance	mm	< 1524	1524
Trap No. 1 Exit Distance	mm	< 1524	305
Trap No. 2 Velocity (Redundant)	km/h	55.51 to 57.12	56.33
Trap No. 2 Entry Distance	mm	< 1524	1524
Trap No. 2 Exit Distance	mm	< 1524	305

VEHICLE STATIC CRUSH

Measured Parameter	Units	Pre-Test	Post-Test	Difference
Left Side	mm	4250	3828	-422
Center	mm	4523	3986	-537
Right Side	mm	4258	3783	-475

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	1094
Center	mm	850
Right Side	mm	986
Average	mm	977

DATA SHEET NO. 4

TEST VEHICLE INFORMATION

Test Vehicle: 2000 NISSAN XTERRA SUV NHTSA No.: MY5203

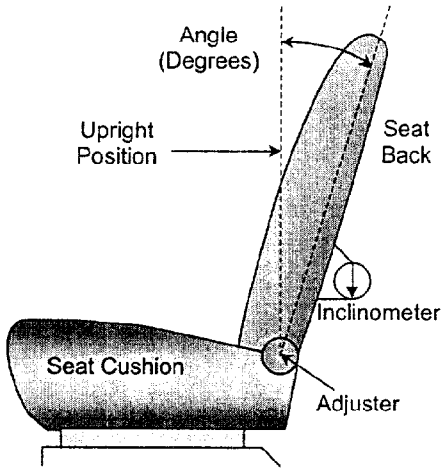
Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99

NOMINAL DESIGN RIDING POSITION

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

Driver seat back angle: 10.0° with a seated dummy

Passenger seat back angle: 10.0° with a seated dummy



FRONT SEAT ASSEMBLY

SEAT FORE/AFT POSITIONS

Both driver and passenger seats have manually operated seats. The total travel on the driver and the passenger is 13 seat positions. The fore/aft position is set at the middle position for both driver and passenger.

Driver seat fore/aft total travel: 13 seat detent positions

Passenger seat fore/aft total travel: 19 seat detent positons

Driver seat fore/aft position: Set at 7th detent position

Passenger seat fore/aft position: Set at 10th detent position

SEAT BELT UPPER ANCHORAGE

The test vehicle is equipped with adjustable anchorages for both driver and passenger seat positions. There are 4 positions or detents. The anchorages were placed in position #2.

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

Test Vehicle: 2000 NISSAN XTERRA SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99

FUEL TANK CAPACITY DATA

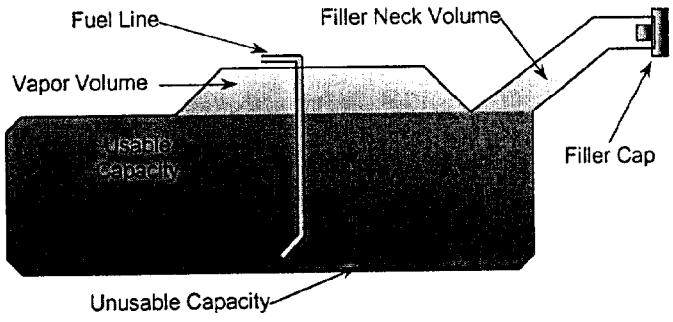
The "Usable Capacity" of the standard equipment fuel tank is: 73.4 liters

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

"Usable Capacity" used for certification tests FMVSS 301 requirements: 67.5 to 69.0 liters

Actual amount of Stoddard solvent added to vehicle for certification test: 68.3 liters

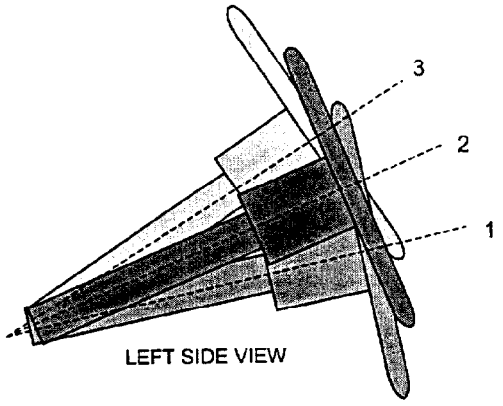
The test vehicle is equipped with an electric fuel pump. The fuel pump operates for 5 seconds after the ignition is turned on.The fuel filler door is located on the right rear fender.



VEHICLE FUEL TANK ASSEMBLY

STEERING COLUMN ADJUSTMENT

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



STEERING COLUMN ASSEMBLY

Lowermost, position 1: 24°

Geometric center, position 2: 25°

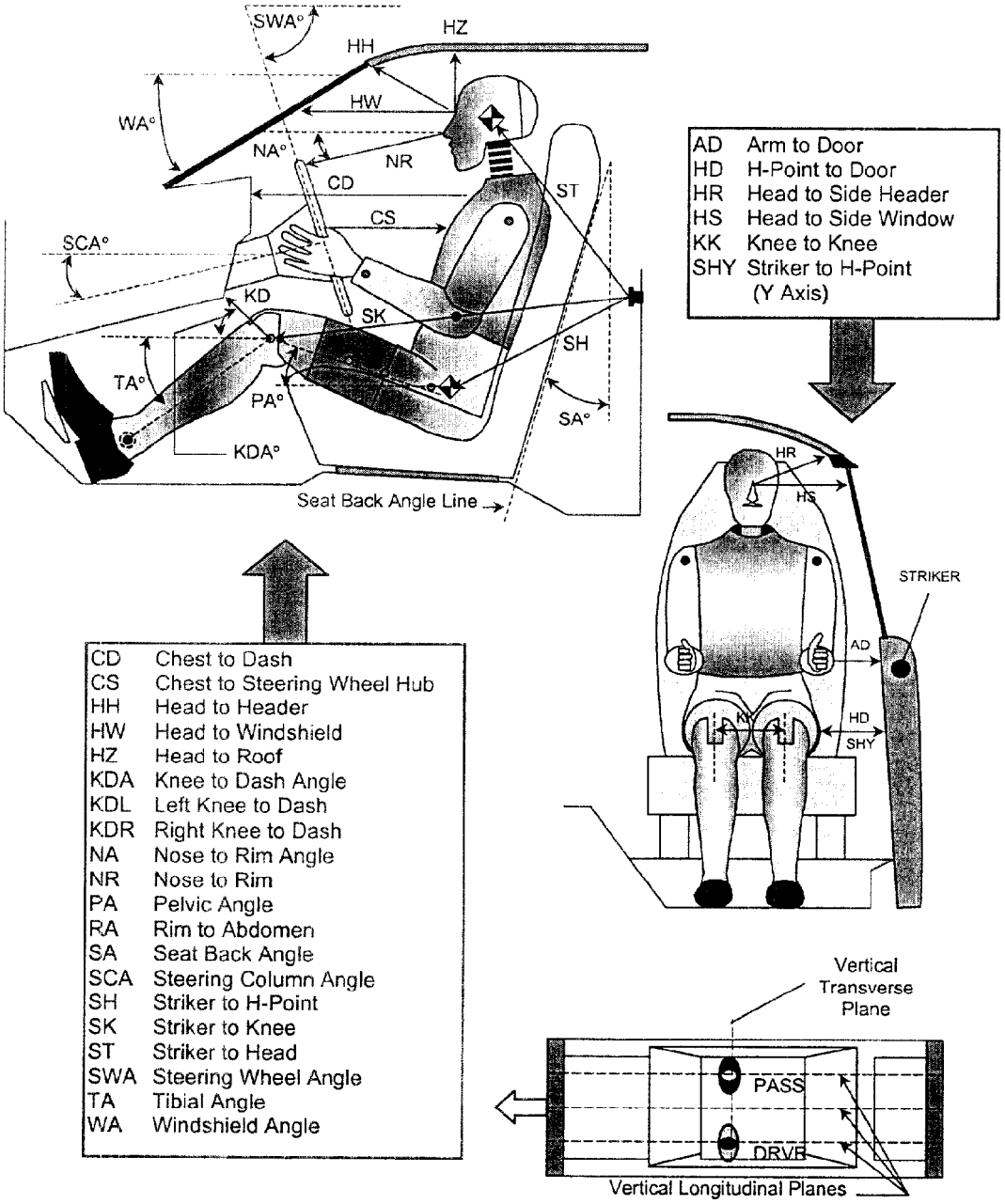
Uppermost, position 3: 26°

DATA SHEET NO. 5

DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2000 NISSAN XTERRA SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99



DUMMY MEASUREMENTS FOR FRONT SEAT OCCUPANTS

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

Test Vehicle: 2000 Nissan Xterra SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99

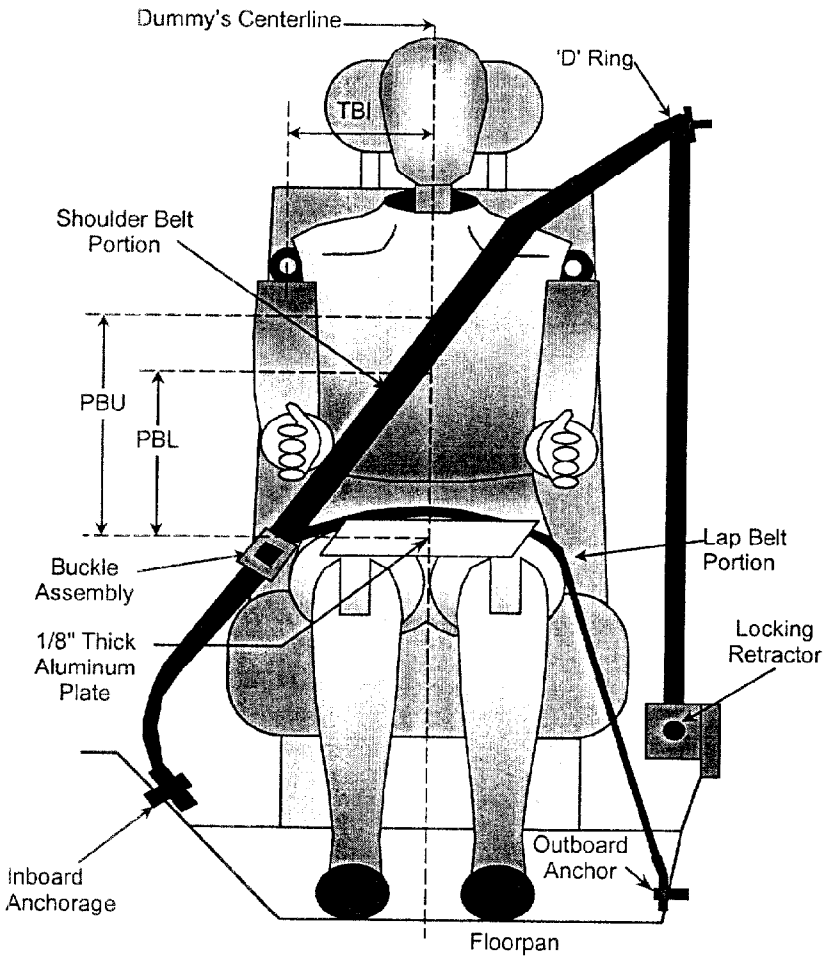
TEST DUMMY POSITION MEASUREMENTS

Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA	Windshield Angle		32		
SWA	Steering Wheel Angle		66		
SCA	Steering Column Angle		25		
SA	Seat Back Angle		25		25
HZ	Head to Roof (Z)	210	90	200	90
HH	Head to Header	450	0	415	0
HW	Head to Windshield	640	0	615	0
HR	Head to Side Header (Y)	250		255	
NR	Nose to Rim	434	12		
CD	Chest to Dash	610		535	
CS	Chest to Steering Hub	320	0		
RA	Rim to Abdomen	210	0		
KDL	Left Knee to Dash	200	21	190	
KDR	Right Knee to Dash	210		185	20
PA	Pelvic Angle		23		23
TA	Tibia Angle		37		35
KK	Knee to Knee (Y)	220		185	
SK	Striker to Knee	660	1	670	2
ST	Striker to Head	605	77	603	74
SH	Striker to H-Point	265	20	290	10
SHY	Striker to H-Point (Y)	190		170	
HS	Head to Side Window	323		335	
HD	H-Point to Door (Y)	137		128	
AD	Arm to Door (Y)	75		15	
AA	Ankle to Ankle	n/a		n/a	

DATA SHEET NO. 6
SEAT BELT POSITIONING DATA

Test Vehicle: 2000 NISSAN XTERRA SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99



SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
TBI - Dummy centerline to shoulder bolt	mm	220	220
PBU -Top surface of reference to belt upper edge	mm	340	340
PBL - Top surface of reference to belt lower edge	mm	265	265
Lap Belt tension	Newtons	10	10
Shoulder Belt tension	N/A	Retractor	Retractor

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

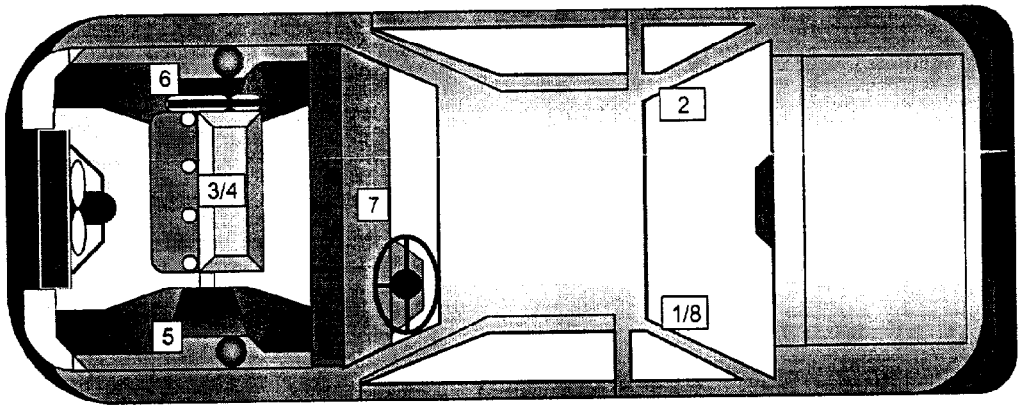
Test Vehicle: 2000 Nissan Xterra SUV NHTSA No.: MY5203

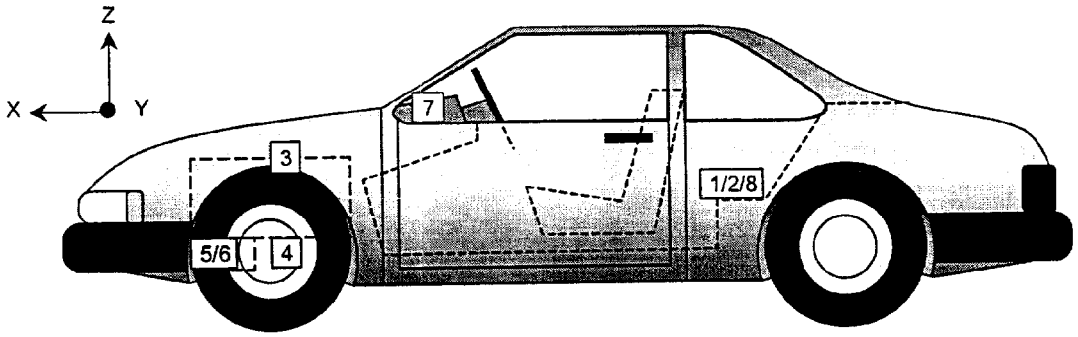
Test Program: 2000 NHTSA 35 mph NCAP Test Date: 11/23/99

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

No.	Accelerometer Location	Measurements (mm)			Peak Values				
		X	Y	Z	Units	Max	Time	Min	Time
1	Left Rear X-Member (Pri.)	1975	-535	564	G's	2.1	167.1	-47.0	58.0
2	Right Rear X-Member (Pri.)	1980	528	559	G's	3.5	102.7	-46.7	57.8
3	Engine Top	3722	-34	984	G's	26.8	44.6	-117.6	32.1
4	Engine Bottom	3612	0	238	G's	15.0	44.0	-102.0	32.4
5	Left Brake Caliper	3467	-710	317	G's	48.3	32.2	-148.6	37.2
6	Right Brake Caliper	3467	710	304	G's	69.3	35.4	-143.4	39.9
7	Instrument Panel	2931	0	1224	G's	74.4	50.4	-84.8	74.0
8	Left Rear X-Member (Rednt.)	1928	-535	564	G's	2.2	166.8	-46.1	58.0

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





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

Test Vehicle: 2000 Nissan Xterra SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 mph NCAP Test Date: 11/23/99

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	22.9	202.6	-60.6	70.1	20.0	213.1	-67.2	71.1
Head CG	Y	G's	8.2	53.0	-2.9	72.1	8.0	60.0	-14.1	74.7
Head CG	Z	G's	22.5	53.6	-6.2	124.9	22.9	62.8	-7.9	99.7
Head CG Resultant	N/A	G's	61.0	70.5			68.5	71.1		

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	3.8	128.4	-46.1	54.1	2.3	252.4	-45.2	68.1
Chest CG	Y	G's	8.9	80.9	-1.3	36.4	2.7	22.9	-9.5	70.9
Chest CG	Z	G's	10.5	47.2	-8.0	98.9	12.0	45.3	-12.0	108.3
Chest CG Resultant	N/A	G's	46.1	54.1			45.7	68.2		

FEMUR PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Femur	Z	Newtons	938.4	69.6	-1269.7	51.9	748.4	46.8	-2505.3	63.2
Right Femur	Z	Newtons	1383.8	37.7	-2848.7	50.2	1053.3	67.3	-979.8	58.1

SEAT BELT SENSOR PEAK VALUES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Lap Belt Force	N/A	Newtons	7938.0	53.7	0.8	4.6	8548.3	64.6	1.0	0.0
Shoulder Belt Force	N/A	Newtons	5185.2	79.2	-19.3	180.5	4938.4	79.4	-26.5	11.9
Shoulder Belt Pullout	N/A	MM	100.2	83.3	-41.1	42.5	146.2	82.0	-52.0	42.7
Shoulder Belt Stretch	N/A	MM/CM	0.000	0.0	0.000	0.0	0.000	0.0	0.000	0.0 *

* Not Used on vehicle with pre-tensioners.

HEAD INJURY CRITERA (HIC)

Location	Driver				Passenger			
	HIC	Avg G's	T^1	T^2	HIC	Avg G's	T^1	T^2
Head CG Primary	500.0	45.4	49.0	84.9	658.4	56.1	58.6	86.5

CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T^1	T^2	CLIP	T^1	T^2
Chest CG Primary	44.7	53.2	56.2	45.2	67.8	70.8

DATA SHEET NO. 8...(continued)

Test Vehicle: 2000 Nissan Xterra SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 mph NCAP Test Date: 11/23/99

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	8.6	95.2	-56.1	50.6	10.8	88.7	-56.9	61.5
Pelvis	Y	G's	13.5	73.4	-12.4	46.2	12.5	58.3	-11.5	81.8
Pelvis	Z	G's	3.8	248.0	-30.0	55.6	2.2	250.7	-28.5	61.1

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	610.7	61.8	-579.6	126.8	547.7	71.7	-485.7	136.3
Neck Force	Y	Newtons	180.4	81.6	-127.4	104.8	188.7	96.0	-262.1	148.5
Neck Force	Z	Newtons	1695.2	56.9	-792.6	231.8	1622.6	62.1	-328.4	247.6
Neck Moment	X	N•m	18.3	66.4	-13.9	93.7	10.3	91.1	-15.7	58.3
Neck Moment	Y	N•m	44.0	60.3	-45.1	233.4	35.5	145.6	-30.9	252.3
Neck Moment	Z	N•m	18.9	90.5	-9.7	138.4	17.3	92.5	-9.0	147.5

FOOT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Foot Aft	X	G's	17.9	103.3	-73.5	33.7	21.9	84.8	-92.6	43.6
Left Foot Aft	Z	G's	3.5	281.3	-56.1	31.5	13.7	68.7	-82.8	39.9
Left Foot Fore	Z	G's	41.7	28.8	-88.5	34.6	68.1	47.0	-151.8	29.5
Right Foot Aft	X	G's	57.3	53.0	-146.4	43.6	22.5	93.1	-86.2	41.4
Right Foot Aft	Z	G's	29.2	43.7	-163.8	46.3	9.3	59.0	-60.7	44.0
Right Foot Fore	Z	G's	72.6	43.9	-239.8	35.8	28.0	48.9	-111.0	32.4 *

* Driver channel failed. Check plot for time of failure.

UPPER AND LOWER TIBIA PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Lower Moment	X	N•m	53.7	42.4	-26.4	32.3	20.8	38.8	-32.4	87.1
Left Lower Moment	Y	N•m	24.3	100.3	-30.3	32.6	61.6	84.1	-37.3	44.7
Left Lower Force	Z	Newtons	0.0	0.0	0.0	0.0	117.3	194.8	-3539.0	43.2 *
Left Upper Moment	X	N•m	17.2	120.0	-45.7	33.0	13.5	123.1	-71.3	51.7
Left Upper Moment	Y	N•m	13.0	231.0	-98.8	33.4	97.5	61.7	-138.7	44.3
Right Lower Moment	X	N•m	26.8	38.0	-156.8	44.8	26.2	34.2	-47.1	47.0
Right Lower Moment	Y	N•m	231.7	51.9	-72.0	38.5	42.2	85.8	-26.7	34.5
Right Lower Force	Z	Newtons	180.8	34.5	-6156.6	45.3	129.6	156.0	-2546.5	39.9
Right Upper Moment	X	N•m	51.0	43.6	-75.7	50.1	52.8	40.9	-30.1	57.0
Right Upper Moment	Y	N•m	29.9	99.2	-200.2	44.9	20.9	57.0	-106.9	41.8

* Driver channel failed, no data.

DATA SHEET NO. 8...(continued)

Test Vehicle: 2000 Nissan Xterra SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 mph NCAP Test Date: 11/23/99

CHEST PEAK DISPLACEMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	MM	0.1	1.4	-33.4	70.1	0.2	1.9	-30.7	69.7

HEAD REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	23.3	203.4	-60.4	70.4	20.6	213.9	-67.9	71.2
Head CG	Y	G's	6.4	53.2	-4.4	81.4	7.6	59.9	-11.5	75.3
Head CG	Z	G's	23.3	56.8	-5.4	93.3	24.5	62.8	-10.6	100.0
Head CG Resultant	N/A	G's	60.8	70.4			69.0	69.5		

CHEST REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	4.0	128.4	-47.7	54.3	2.9	141.0	-45.3	68.2
Chest CG	Y	G's	7.3	81.1	-3.5	42.6	4.2	20.1	-9.8	70.4
Chest CG	Z	G's	10.0	47.3	-7.0	98.5	11.1	45.0	-11.6	108.5
Chest CG Resultant	N/A	G's	47.7	54.3			46.2	68.2		

REDUNDANT HEAD INJURY CRITERA (HIC)

Location	Driver				Passenger			
	HIC	Avg G's	T^1	T^2	HIC	Avg G's	T^1	T^2
Head CG Redundant	492.9	45.2	49.5	85.3	680.7	56.5	58.2	86.5

REDUNDANT CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T^1	T^2	CLIP	T^1	T^2
Chest CG Redundant	45.3	53.2	56.2	45.8	68.1	71.1

DATA SHEET NO. 9

SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

Test Vehicle: 2000 NISSAN XTERRA SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99

Lap Belt tension	Newtons	10	10
Shoulder Belt tension	N/A	Retractor	Retractor

BELT LENGTH DATA

Measurement Description	Units	Driver	Passenger
Retractor reel to 'D' ring	mm	640	640
Shoulder belt length as measured on ATD	mm	850	878
Lap belt length as measured on ATD	mm	877	895
Remainder of belt on reel	mm	603	600
Total belt length for continuous webbing systems	mm	2970	3013

SHOULDER BELT SPOOL-OFF DATA

Measurement Description	Units	Driver	Passenger
As determined mechanically	mm	100.0	125.0
As determined electronically	mm	100.2	146.2

BELT STRETCH DATA

Measurement Description	Units	Driver	Passenger
Electronically from shoulder belt load cell and "D" ring	mm/cm	0.00*	0.00*
Mechanically	mm/cm	0.00	3.00

*Not used on vehicles with pre-tensioners.

DATA SHEET NO. 10

SUMMARY OF FMVSS 212 DATA

Test Vehicle: 2000 NISSAN XTERRA SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99

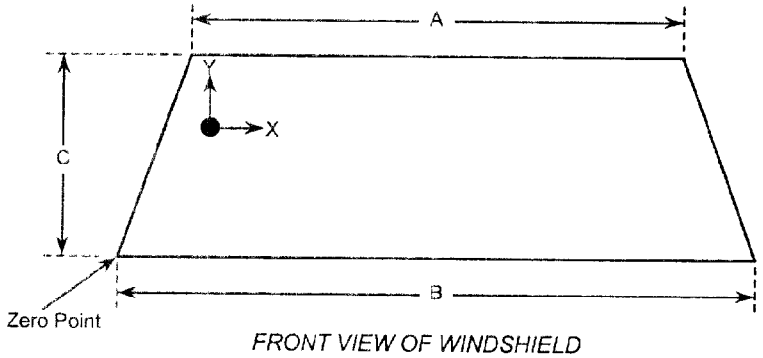
Windshield Mounting Details:
Windshield glass is secured to the vehicle frame with a rubber type adhesive. There is no molding that covers the windshield periphery at any point.

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

Temperature of windshield molding during test: 21.1 °C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test (mm)	Post-Test (mm)	% of Retention
Left Side	1988.5	1988.5	100
Right Side	1988.5	1988.5	100
Total	3977.0	3977.0	100



FRONT VIEW OF WINDSHIELD

WINDSHIELD DIMENSIONS

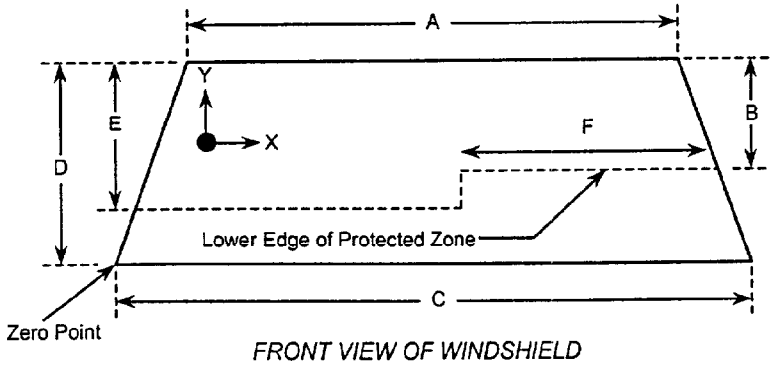
Item	Units	Segment Length	Molding Width
A	mm	1213	12
B	mm	1464	10
C	mm	650	13

DATA SHEET NO. 11

WINDSHIELD ZONE INTRUSION FMVSS 219 (PARTIAL) DATA

Test Vehicle: 2000 NISSAN XTERRA SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99



FRONT VIEW OF WINDSHIELD

WINDSHIELD AND PROTECTED ZONE

Item	Units	Value
A	mm	1213
B	mm	341
C	mm	1464
D	mm	650
E	mm	414
F	mm	814

AREA OF PROTECTED ZONE FAILURES

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

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

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

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

DATA SHEET NO. 12

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Test Vehicle: 2000 NISSAN XTERRA SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99

Test Time: 12:40 PM Temperature at Time of Impact: 12.7 °C

STODDARD SOLVENT SPILLAGE MEASUREMENT

A. From impact until vehicle motion ceases: 0.0 oz.
(Maximum Allowable = 1 ounce)

B. For the 5 minute period after motion ceases: 0.0 oz.
(Maximum Allowable = 5 ounces)

C. For the following 25 minutes: 0.0 oz.
(Maximum Allowable = 1 oz./minute)

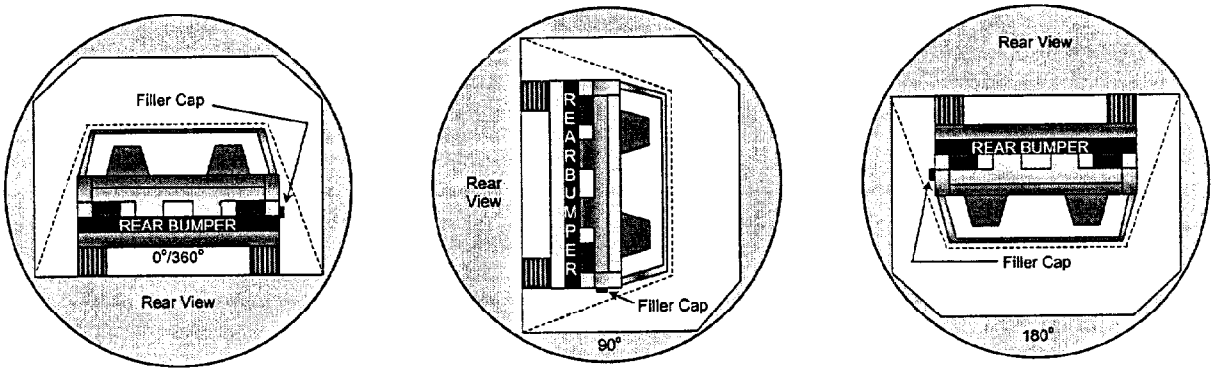
D. Spillage Details: No leakage occurred

DATA SHEET NO. 13

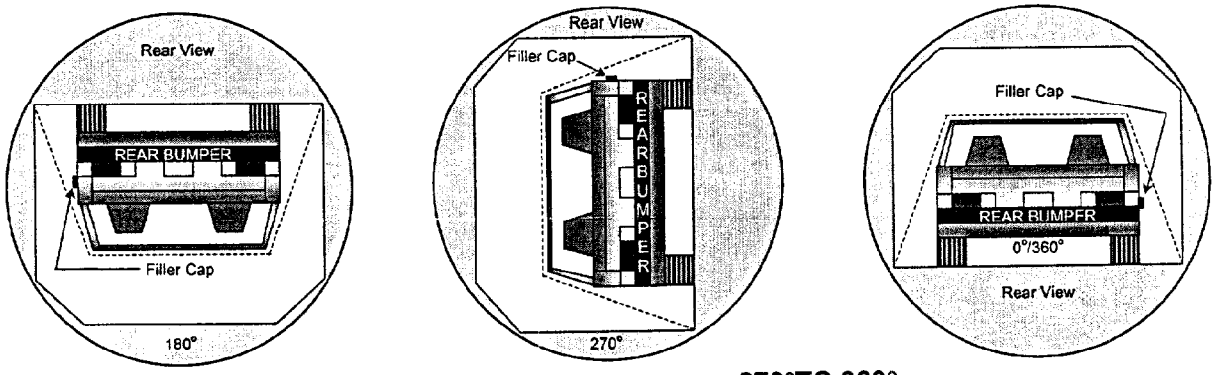
FMVSS 301 STATIC ROLLOVER DATA SHEET

Test Vehicle: 2000 NISSAN XTERRA SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99



0° TO 90° **90°TO 180°**



180° TO 270° **270°TO 360°**

1. The specified fixture rollover rate for each 90° of rotation is 60 to 120 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. Details of Stoddard Solvent spillage locations:

   No solvent leakage occurred during static rollover testing.

TEST PHASE	Rotation Time (sec.)	Hold Time (sec.)	Spillage (oz.)
0° TO 90°	81	300	0.0
90° TO 180°	81	300	0.0
180° TO 270°	78	300	0.0
270° TO 360°	82	300	0.0

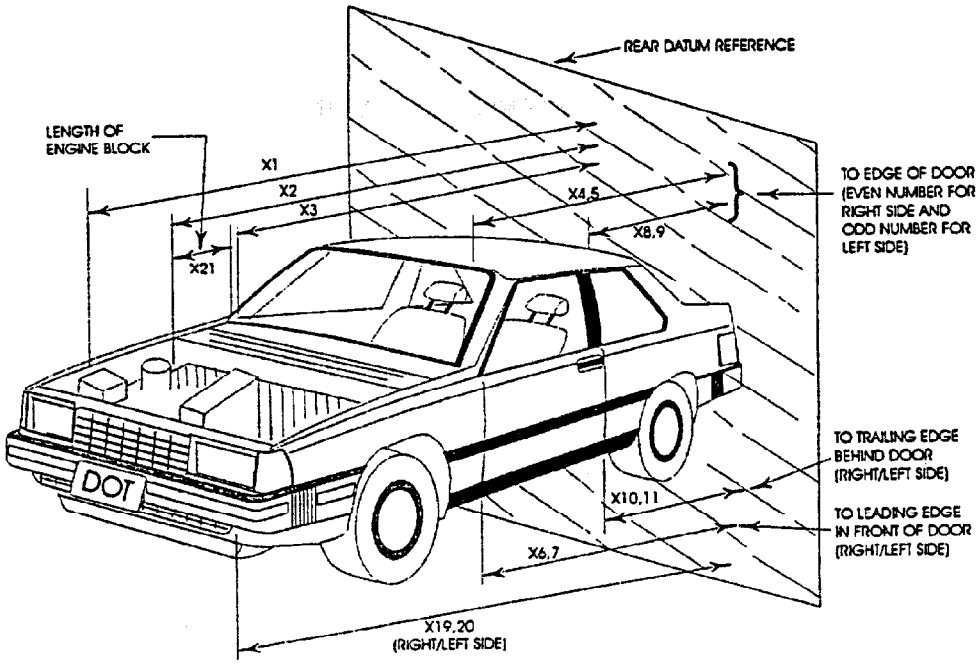
DATA SHEET NO. 14

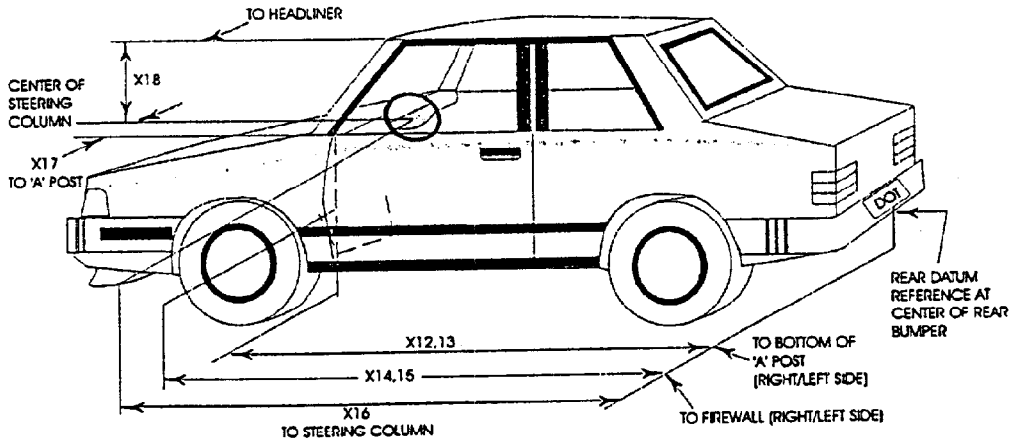
VEHICLE MEASUREMENTS

Test Vehicle: 2000 NISSAN XTERRA SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
1	Total length of vehicle at centerline	mm	4523	3986	-537
2	RSOV to front of engine	mm	3966	3768	-198
3	RSOV to firewall centerline	mm	3375	3419	44
4	RSOV to leading edge of right door	mm	3210	3234	24
5	RSOV to leading edge of left door	mm	3195	3226	31
6	RSOV to lower leading edge of right door	mm	3110	3105	-5
7	RSOV to lower leading edge of left door	mm	3110	3100	-10
8	RSOV to upper trailing edge of right door	mm	2035	2066	31
9	RSOV to upper trailing edge of left door	mm	2030	2062	32
10	RSOV to lower trailing edge of right door	mm	2011	2012	1
11	RSOV to lower trailing edge of left door	mm	2010	2300	290
12	RSOV to bottom of right 'A' pillar	mm	3175	3201	26
13	RSOV to bottom of left 'A' pillar	mm	3175	3160	-15
14	RSOV to firewall on right side	mm	3368	3431	63
15	RSOV to firewall of left side	mm	3368	3429	61
16	RSOV to steering column	mm	2665	2645	-20
17	Center of steering column to left 'A' pillar	mm	350	319	-31
18	Center of steering column to headlining	mm	440	443	3
19	RSOV to right side of front bumper	mm	4258	3783	-475
20	RSOV to left side of front bumper	mm	4250	3820	-430
21	Length of engine block	mm	530	530	0
RD	RSOV to right side of dash panel	mm	2900	2925	25
CD	RSOV to center of dash panel	mm	2900	2820	-80
LD	RSOV to left side of dash panel	mm	2900	2901	1


REAR DATUM REFERENCE
LENGTH OF ENGINE BLOCK
X1
X2
X3
X21
X4,5
X8,9
TO EDGE OF DOOR (EVEN NUMBER FOR RIGHT SIDE AND ODD NUMBER FOR LEFT SIDE)
DOT
TO TRAILING EDGE BEHIND DOOR (RIGHT/LEFT SIDE)
X10,11
TO LEADING EDGE IN FRONT OF DOOR (RIGHT/LEFT SIDE)
X6,7
X19,20 (RIGHT/LEFT SIDE)


TO HEADLINER
X18
CENTER OF STEERING COLUMN
X17 TO 'A' POST
DOT
REAR DATUM REFERENCE AT CENTER OF REAR BUMPER
X12,13
TO BOTTOM OF 'A' POST (RIGHT/LEFT SIDE)
X14,15
X16 TO STEERING COLUMN
TO FIREWALL (RIGHT/LEFT SIDE)

DATA SHEET NO. 15
CAMERA LOCATIONS

Test Vehicle: 2000 NISSAN XTERRA SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99

No.	Camera View	Location (mm)			Angle (Deg.)	Film Plane to Head	Lens (mm)	Speed (fps)
		X	Y	Z				
1	Right Side, Real Time	3454	10973	1245	0	1651	Zoom	24
2	Left Side, No. 1	2050	8250	1285	2	7750	12	1030
3A	Left Side No. 2	1460	8350	1695	1	7800	35	990
3B	Left Side No. 3A	1450	9350	1415	1	8850	50	DNR
4	Left Side No. 3B	8000	10600	2925	7	11900	80	990
5	Left Side, No. 4	1820	8380	3265	16	8120	19	1010
6	Left Side, No. 5	1800	8400	2640	12	8100	19	1020
7	Right Side, No. 1	2100	8300	1032	2	8000	13	970
8A	Right Side, No. 2A	1800	8350	1695	1	10000	35	1030
8B	Right Side, No. 2B	1750	10450	1415	3	8150	50	650
9	Right Side, No. 3	8500	9200	2960	10	11400	80	DNR
10	Right Side, No. 4	2500	8150	1297	3	7570	24	1000
11	Overhead Overall	700	0	5486	90	N/A	13	DNR
12	Front View, Driver	-420	345	2801	38	N/A	13	1000
13	Front View, Passenger	-420	356	2801	45	N/A	13	1010
14	Pit Camera, Engine	650	0	-1810	90	N/A	13	940
15	Pit Camera, Fuel Tank	4300	0	-1470	50	N/A	19	890
16	Onboard, Driver	3665	270	1540	10	1393	13	910
17	Onboard, Passenger	3655	270	1540	15	1390	13	740

X - Barrier Face Y - Monorail Centerline Z - Ground

DATA SHEET NO. 16

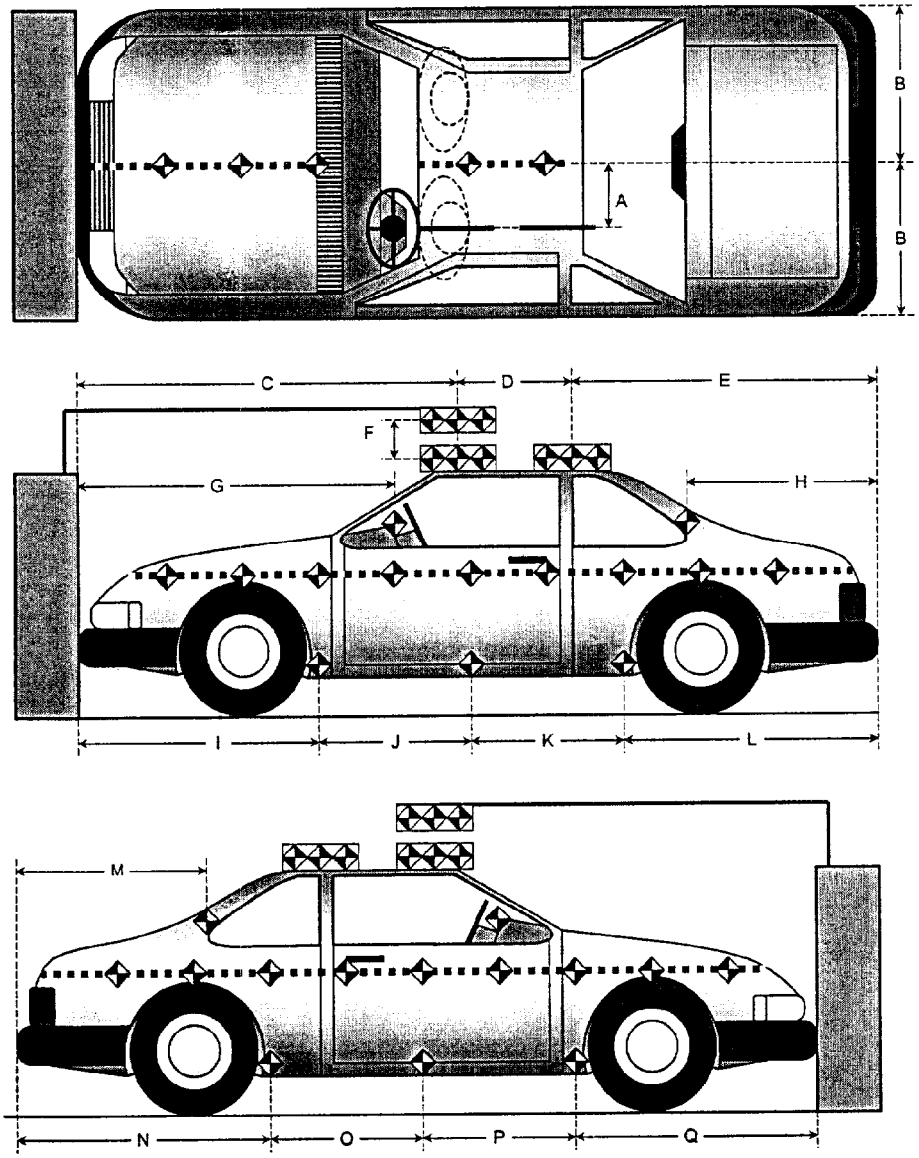
PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2000 NISSAN XTERRA SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99

All Dimensions in mm

Item	Value
A	363
B	1565
C	240
D	610
E	1785
F	153.6
G	1630
H	1074
I	1485
J	782
K	781
L	1483
M	1075
N	1485
O	784
P	784
Q	1476



DATA SHEET NO. 17

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2000 NISSAN XTERRA SUV NHTSA No.: MY5203

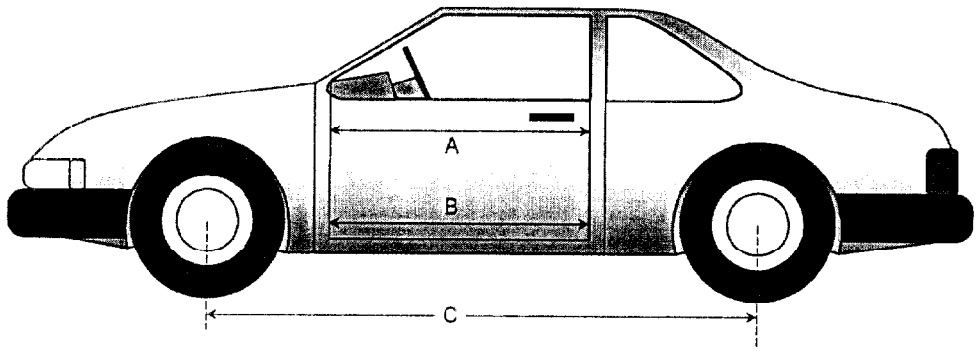
Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99

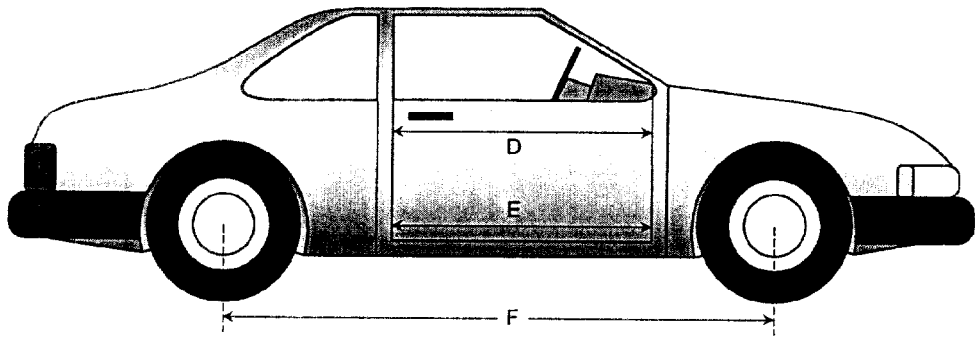
DOOR OPENING WIDTH

Item	Description	Units	Pre-Test	Post-Test	Difference
A	Left Side Upper	mm	1091	1080	-11
B	Left Side Lower	mm	1059	1055	-4
D	Right Side Upper	mm	1093	1090	-3
E	Right Side Lower	mm	1060	1080	20

WHEELBASE MEASUREMENTS

Item	Description	Units	Pre-Test	Post-Test	Difference
C	Left Side Wheel base	mm	2659	2580	-79
F	Right Side Wheel base	mm	2659	2585	-74





DATA SHEET NO. 17...(CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

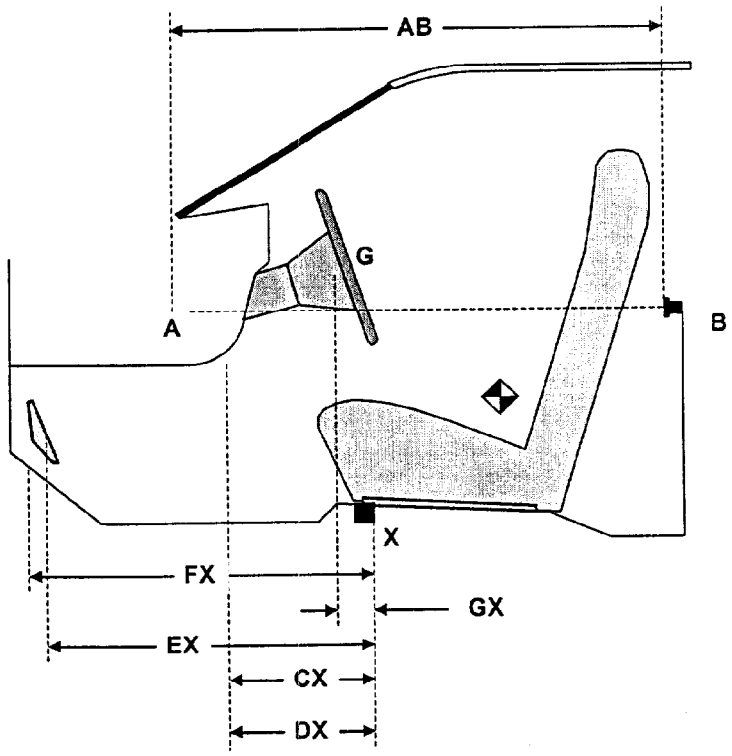
Test Vehicle: 2000 NISSAN XTERRA SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99

DRIVER COMPARTMENT INTRUSION

Item	Description	Units	Pre-Test	Post-Test	Difference
AB	Door Opening (Inside window jam)	mm	1091	1080	-11
CX	Left Knee Bolster to X	mm	310	302	-8
DX	Right Knee Bolster to X	mm	300	311	11
EX	Brake Pedal to X	mm	565	525	-40
FX	Foot Rest to X	mm	620	585	-35
GX	Center of Steering Wheel Hub to X	mm	48	40	-8

X = Left Front Seat Outboard Anchor Bolt Head



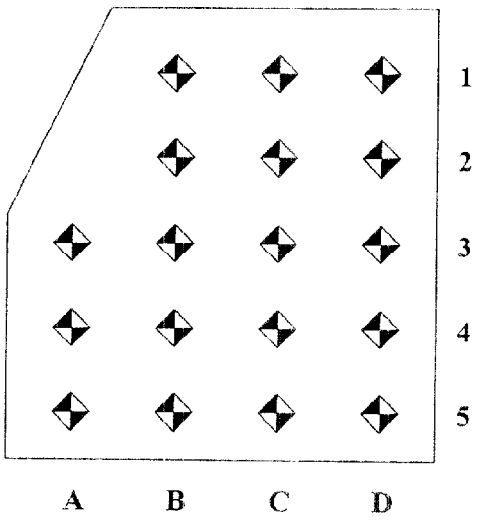
DRIVER COMPARTMENT

DATA SHEET NO. 17...(CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2000 NISSAN XTERRA SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99



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

Columns A through D are evenly spaced.

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

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

DRIVER FLOOR PAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	N/A	734	724	726	N/A	668	655	630	N/A	-66	-69	-96
2	N/A	619	616	618	N/A	598	582	585	N/A	-21	-34	-33
3	521	519	516	518	501	498	495	490	-20	-21	-21	-28
4	419	419	416	418	400	398	395	390	-19	-21	-21	-28
5	319	319	317	318	302	301	300	295	-17	-18	-17	-23

DRIVER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	N/A	-17	-15	-10	N/A	2	-11	-2	15	19	4	8
2	N/A	-87	-80	-80	N/A	-100	-100	-102	-15	-13	-20	-22
3	-85	-80	-87	-100	-117	-124	-125	-125	-32	-44	-38	-25
4	-77	-77	-78	-80	-99	-108	-116	-127	-22	-31	-38	-47
5	-80	-78	-80	-80	-107	-110	-117	-124	-27	-32	-37	-44

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

Test Vehicle: 2000 NISSAN XTERRA SUV NHTSA No.: MY5203

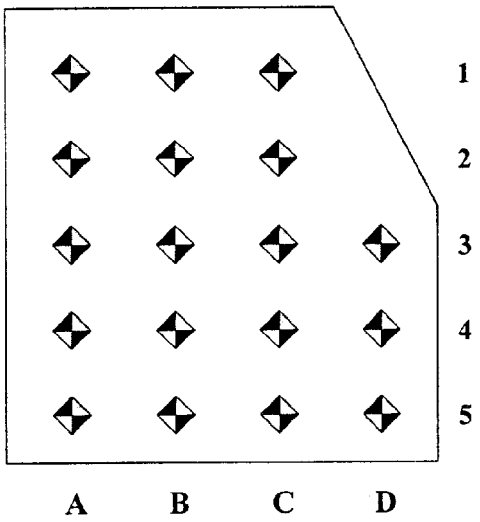
Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99

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

Columns A through D are evenly spaced.

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

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



PASSENGER FLOOR PAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	707	712	697	N/A	635	643	653	N/A	-72	-69	-44	N/A
2	610	627	612	N/A	559	567	582	N/A	-51	-60	-30	N/A
3	510	517	527	529	473	485	495	500	-37	-32	-32	-29
4	410	418	427	429	372	385	397	410	-38	-33	-30	-19
5	311	321	330	330	277	291	302	310	-34	-30	-28	-20

PASSENGER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	127	27	52	N/A	90	89	76	N/A	-37	62	24	N/A
2	-73	-73	-48	N/A	-4	-27	-35	N/A	69	46	13	N/A
3	-80	-83	-83	-83	-50	-64	-71	-81	30	19	12	2
4	-77	-75	-73	-78	-53	-62	-75	-90	24	13	-2	-12
5	-83	-85	-80	-77	-64	-60	-77	-76	19	25	3	1

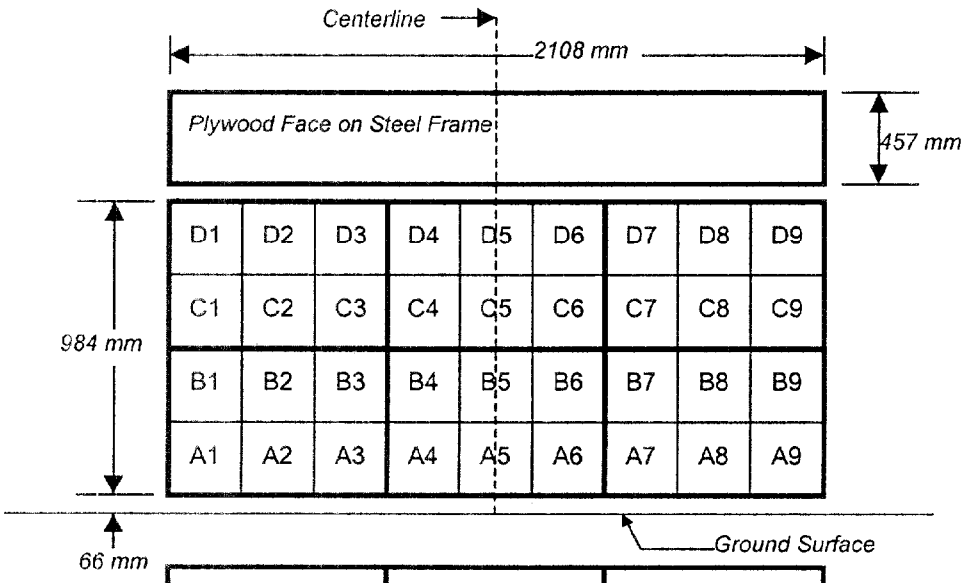
DATA SHEET NO. 18

FIXED BARRIER TYPE

Test Vehicle: 2000 NISSAN XTERRA SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99

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



Group 4 C1 – D3	Group 5 C4 – D6	Group 6 C7 – D9
Group 1 A1 – B3	Group 2 A4 – B6	Group 3 A7 – B9

6 Groups of 6 Load Cells Each

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

1.) Data from 36 individual load cells

2.) Sum data from 6 groupings shown above (6 cells/group)

3.) Total or sum of all 36 individual load cells

4.) Sum of all 36 individual load cells vs. vehicle dynamic crush

DATA SHEET NO. 19
ACCIDENT INVESTIGATION DATA

Test Vehicle: 2000 Nissan Xterra SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99

VEHICLE INFORMATION

VIN: 5N1DD28T4YC533930 Wheel base (mm): 2659

Vehicle Size Category: SUV Test Weight (kg): 1908

ACCELEROMETER DATA

Accelerometer Location: Left rear floor pan

Cal. Procedure/Interval: 6 months / drop test

Integration Algorithm: NHTSA Standard Linearity: Good

Impact Velocity (km/h): 56.28

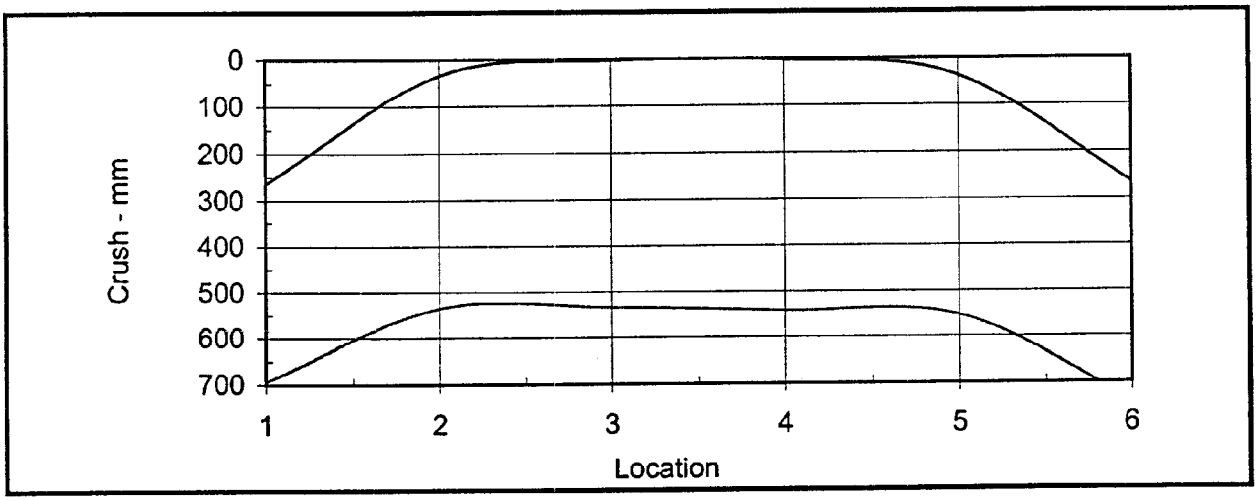
Velocity Change (km/h): 66.87 Time of Separation (msec): 65.2

CRUSH PROFILE

Collision Deformation Classification: 12FDEW6 Midpoint of Damage: Vehicle Centerline

Damage Region Length (mm): 1600 Impact Mode: Full Frontal

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	265	695	-430
C2	Crush zone 2 on left side	mm	34	535	-501
C3	Crush zone 3 on left side	mm	3	533	-530
C4	Crush zone 4 on right side	mm	3	542	-539
C5	Crush zone 5 on right side	mm	37	553	-516
C6	Crush zone 6 at right side	mm	265	740	-475

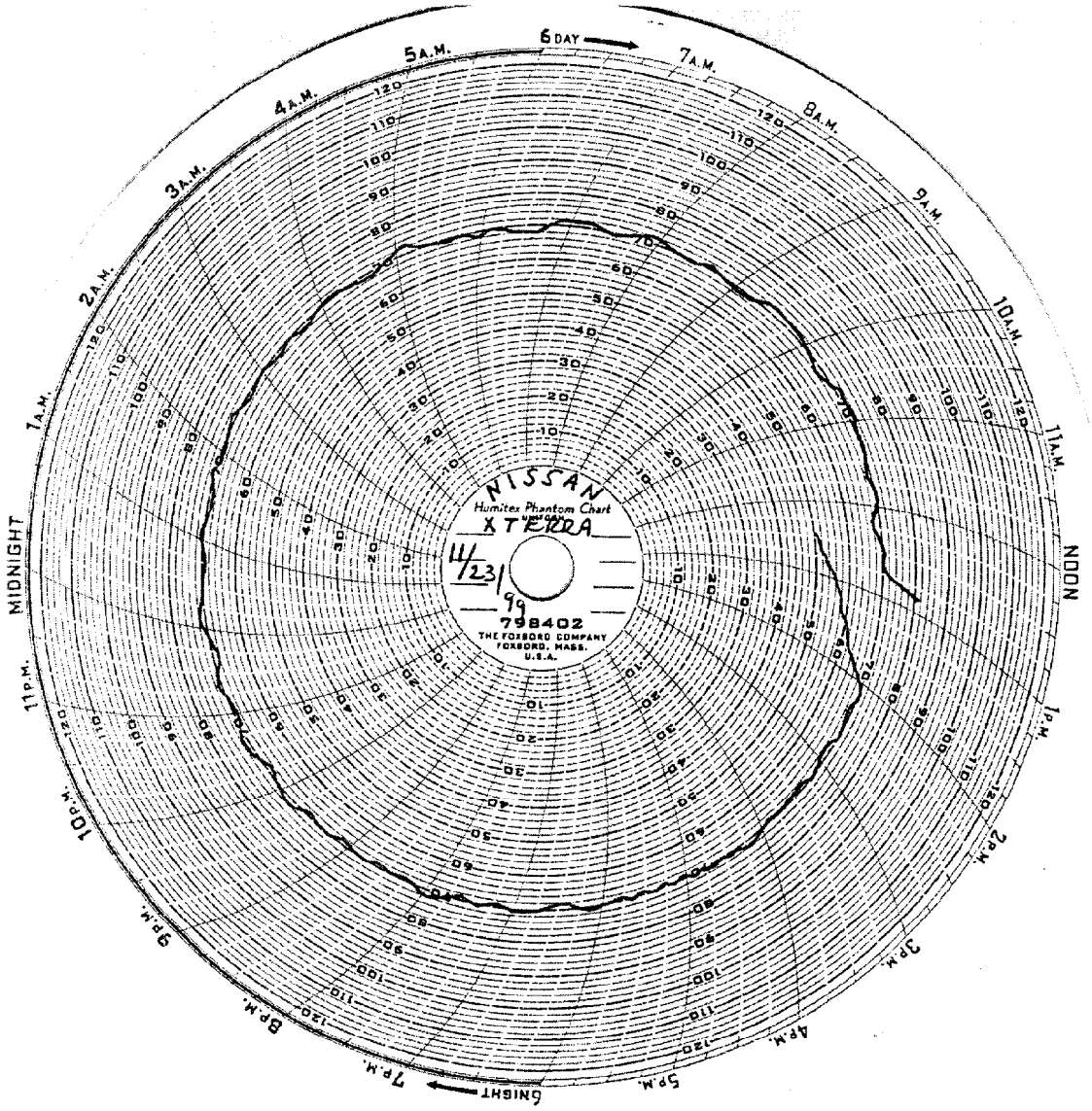


DATA SHEET NO. 20

DUMMY/ VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2000 NISSAN XTERRA SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 MPH NCAP Test Date: 11/23/99



APPENDIX A

PHOTOGRAPHS

LIST OF PHOTOGRAPHS

LIST OF PHOTOGRAPHS...(Continued)

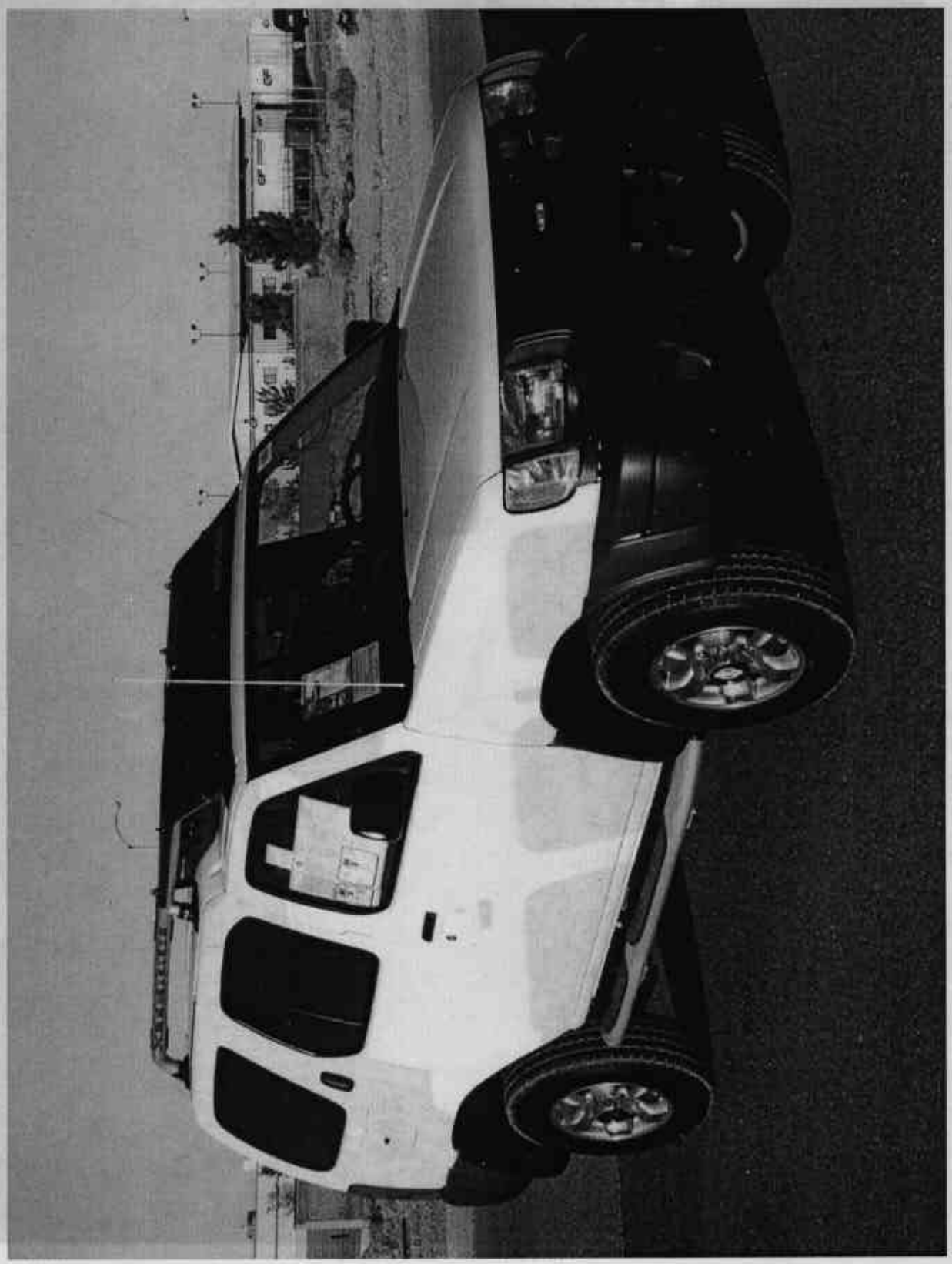


FIGURE A-1. RIGHT FRONT AS RECEIVED

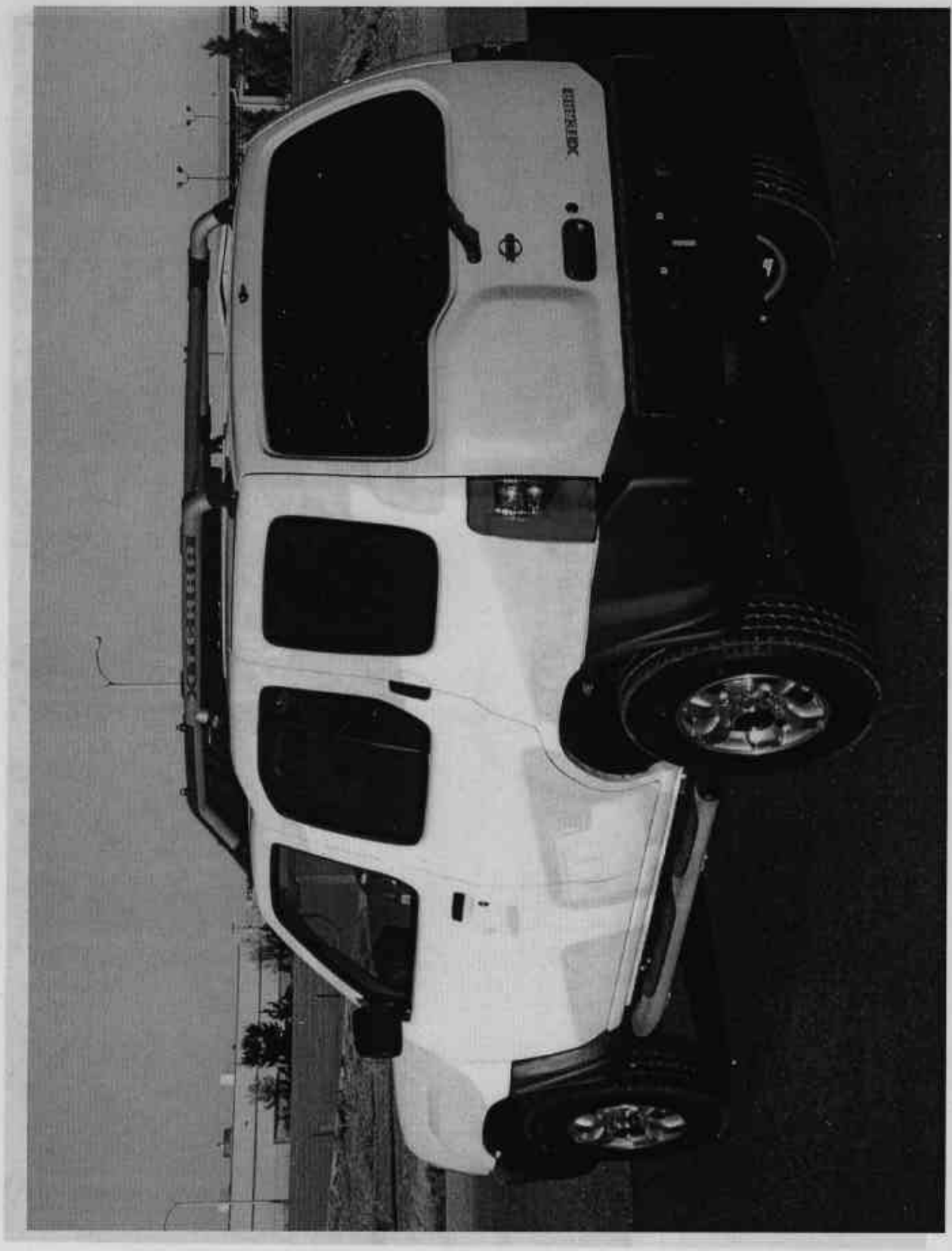


FIGURE A-2. LEFT REAR AS RECEIVED

FIGURE A-3. VEHICLE CERTIFICATION LABEL

FIGURE A-4. VEHICLE TIRE PLACARD

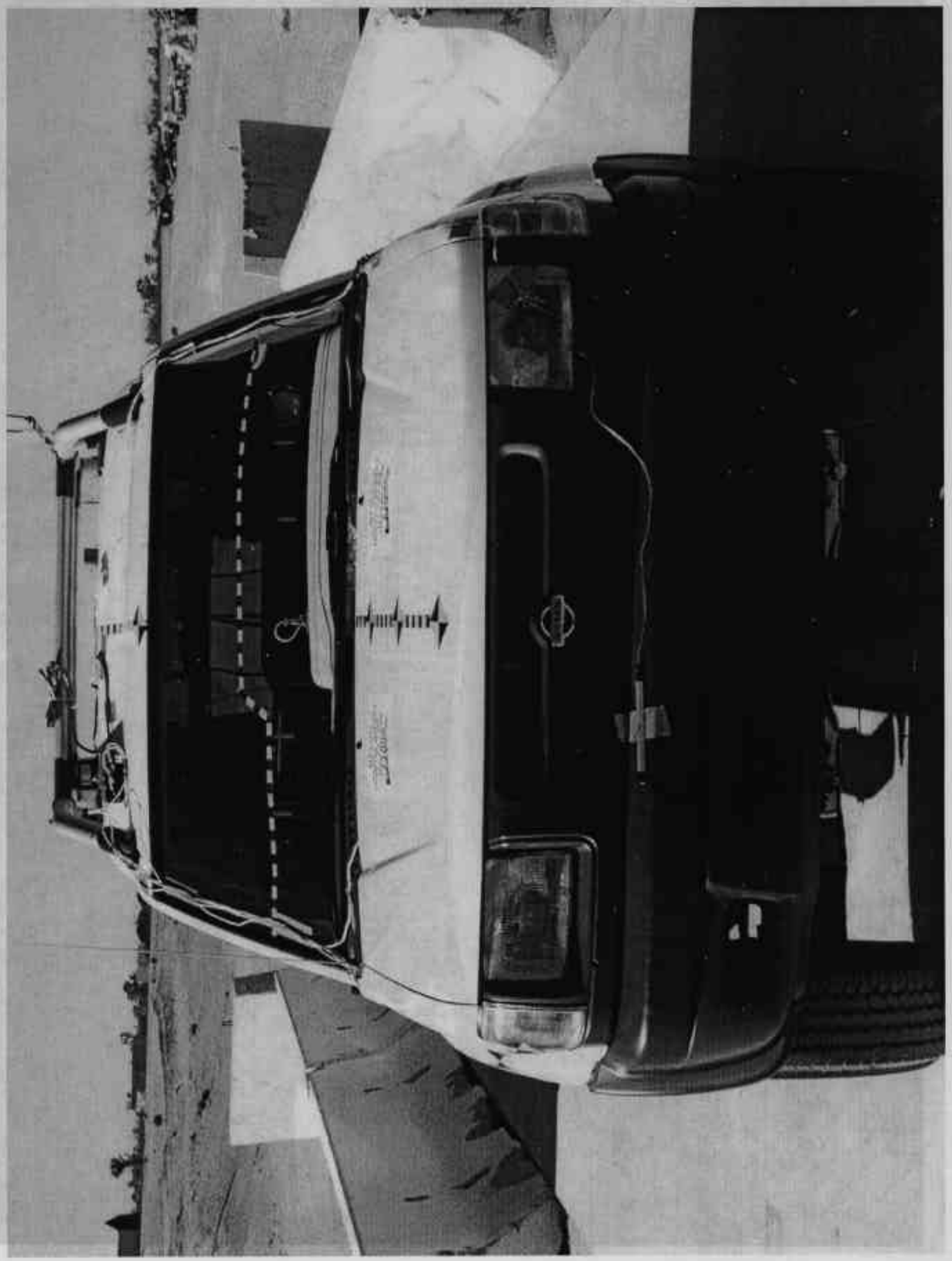


FIGURE A-5. PRETEST FRONT VIEW

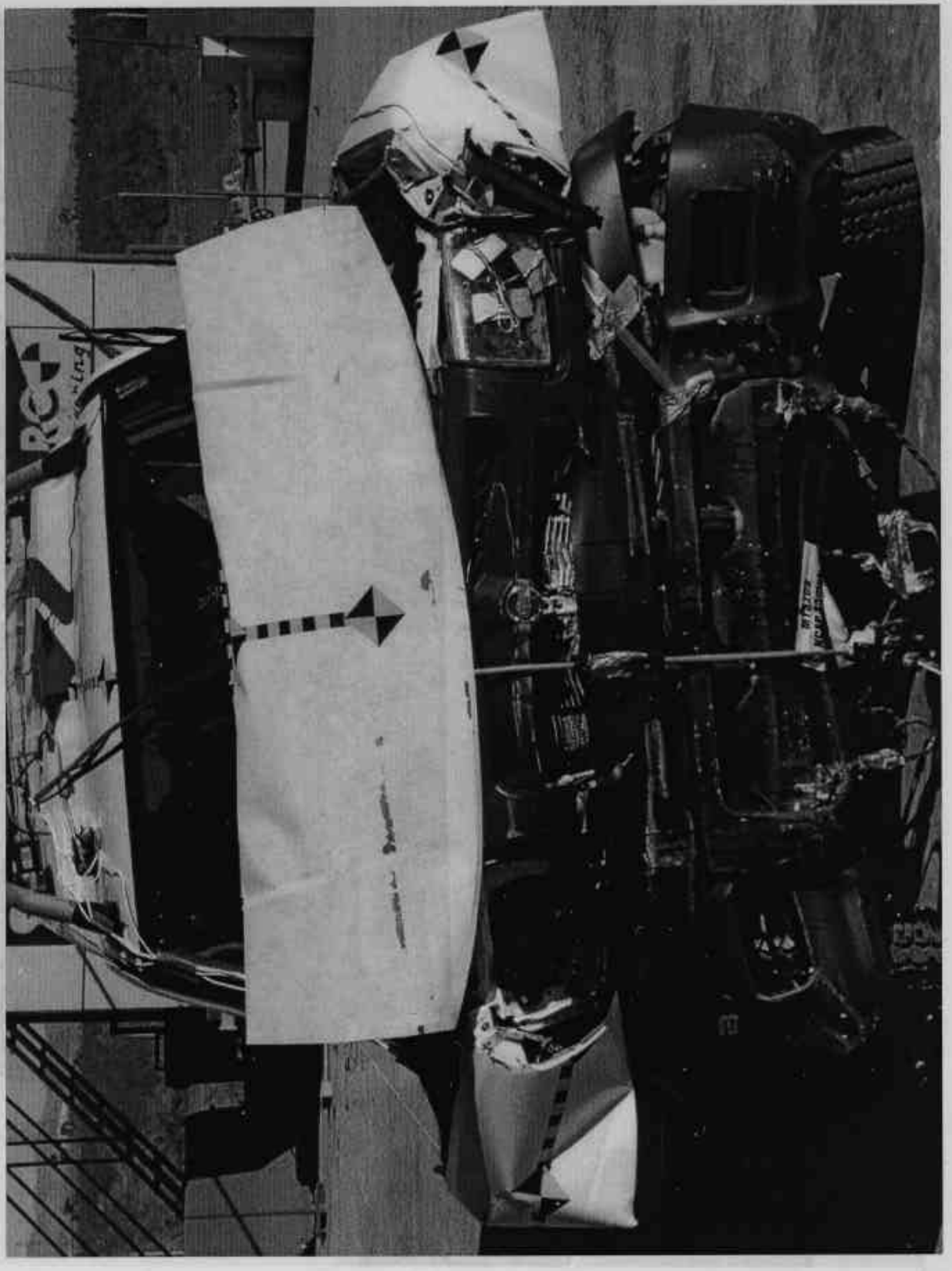


FIGURE A-6. POST TEST FRONT VIEW

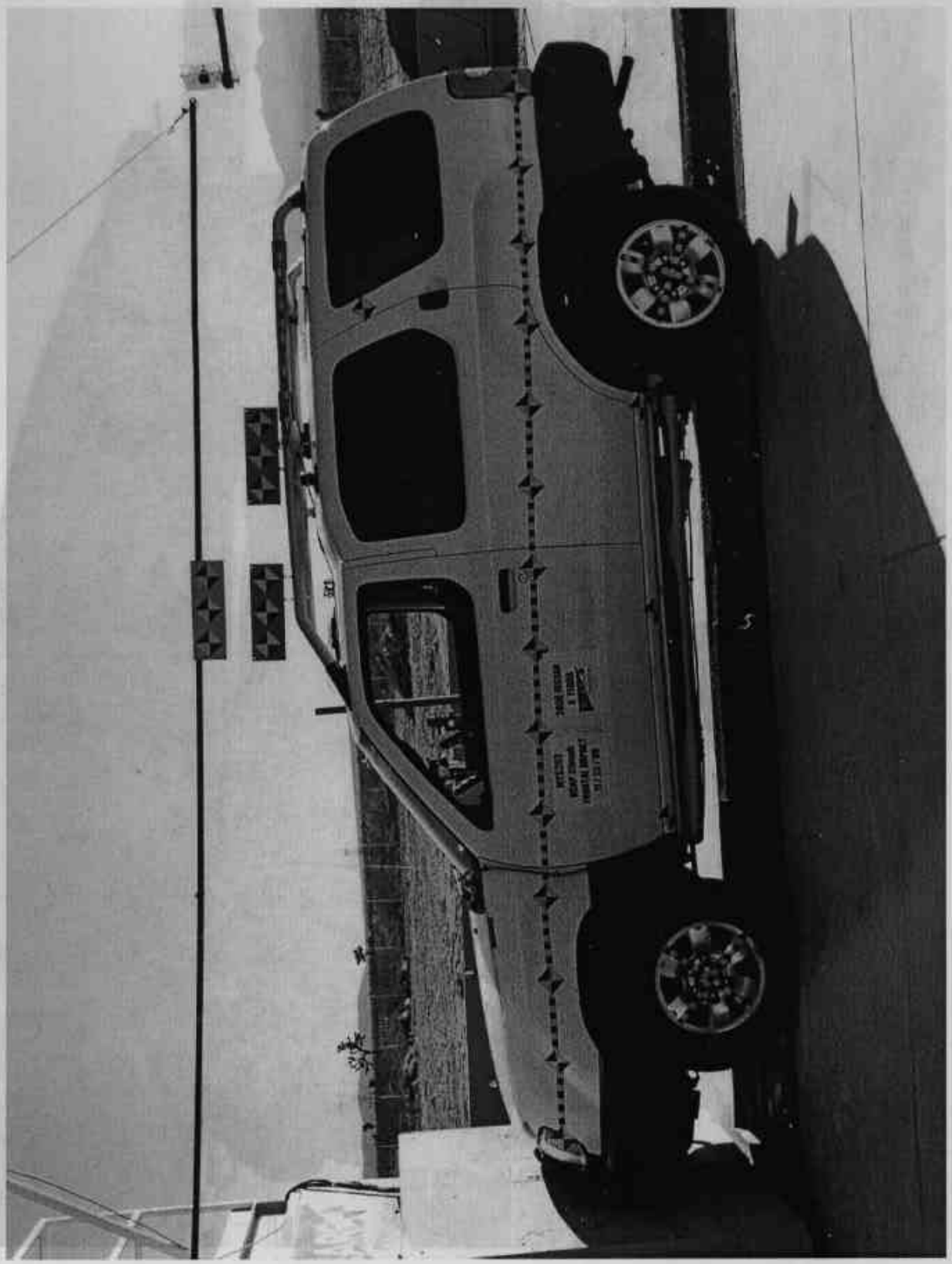


FIGURE A-7. PRETEST LEFT SIDE VIEW

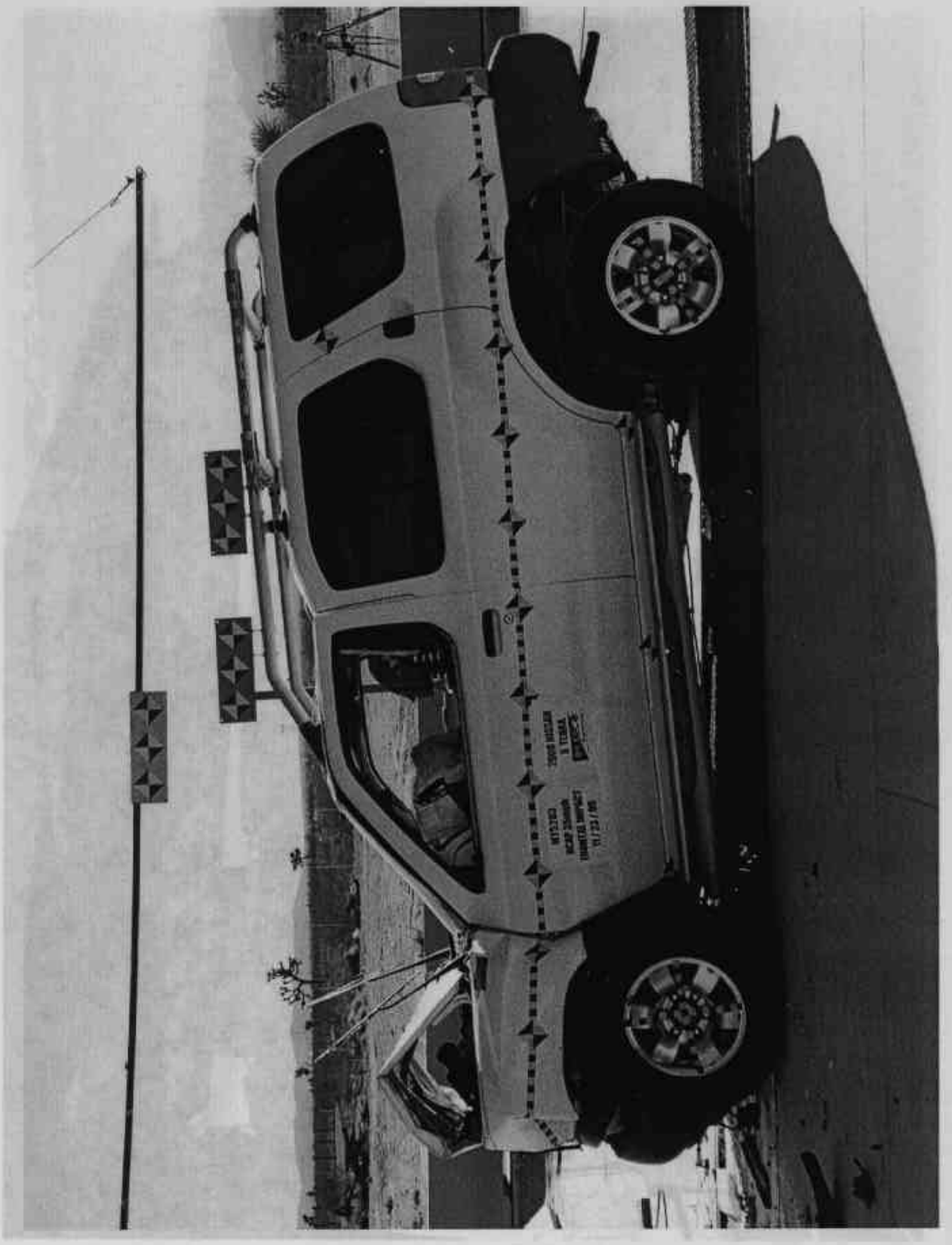


FIGURE A-8. POST TEST LEFT SIDE VIEW

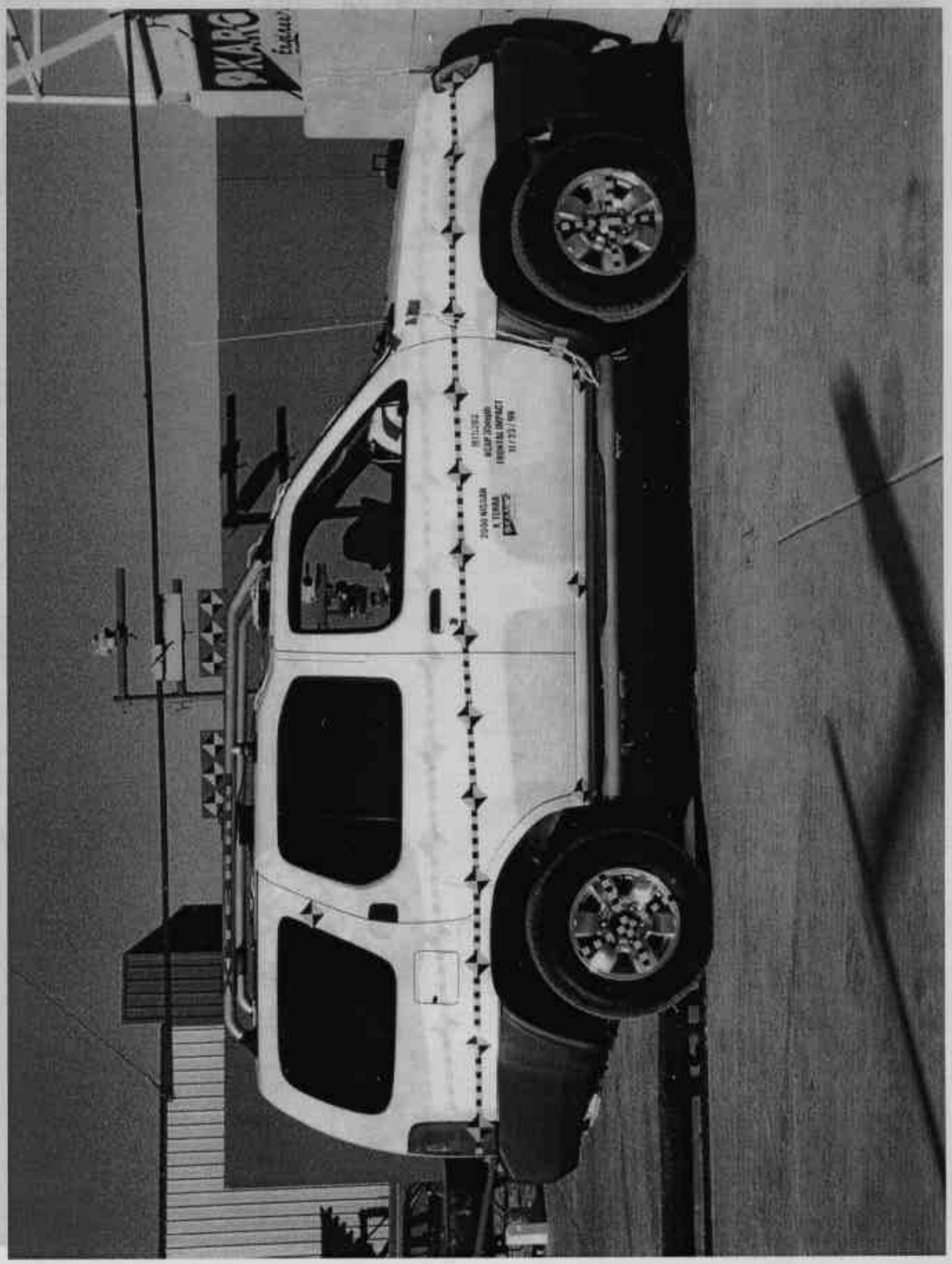


FIGURE A-9. PRETEST RIGHT SIDE VIEW

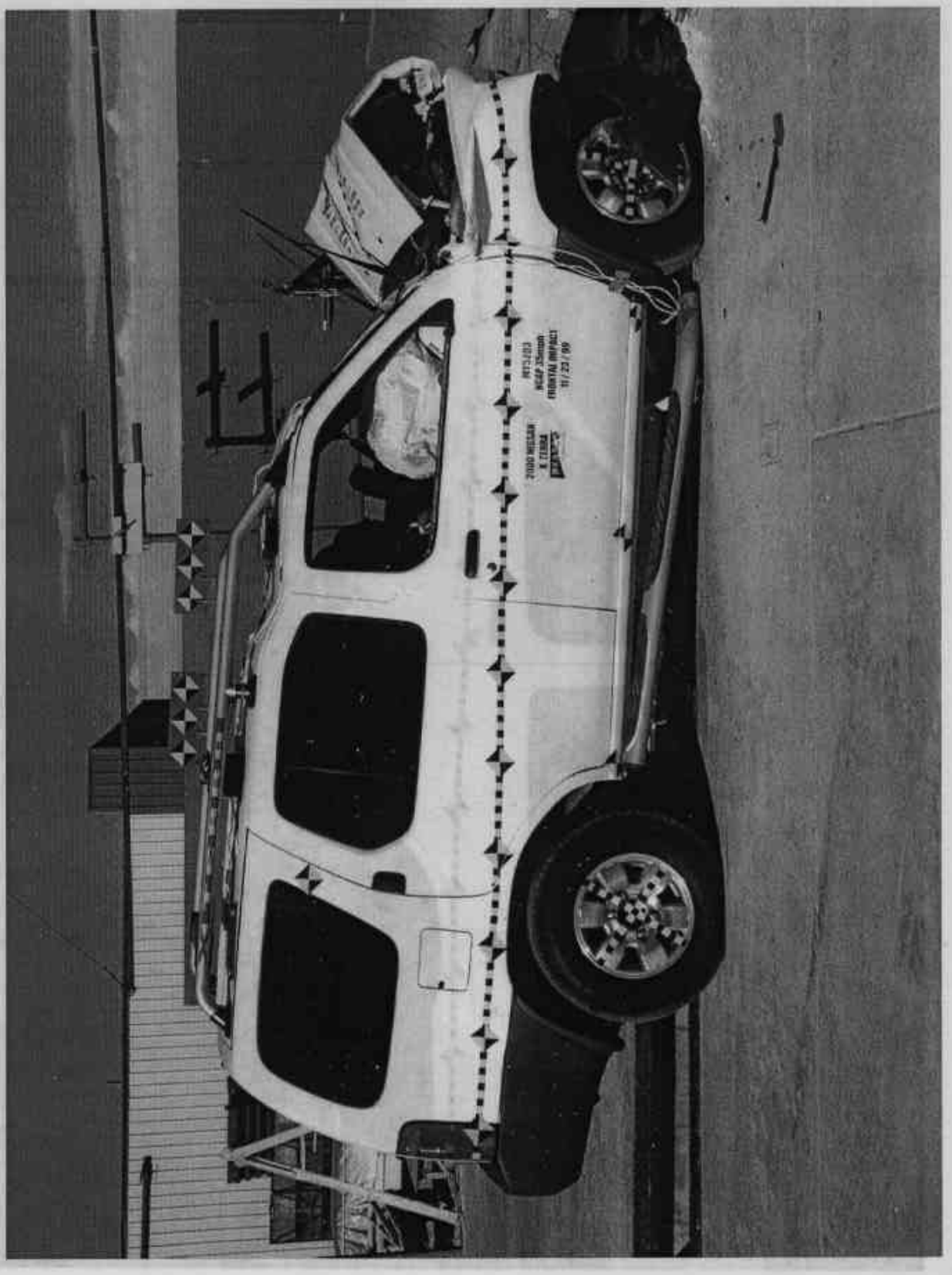


FIGURE A-10. POST TEST RIGHT SIDE VIEW

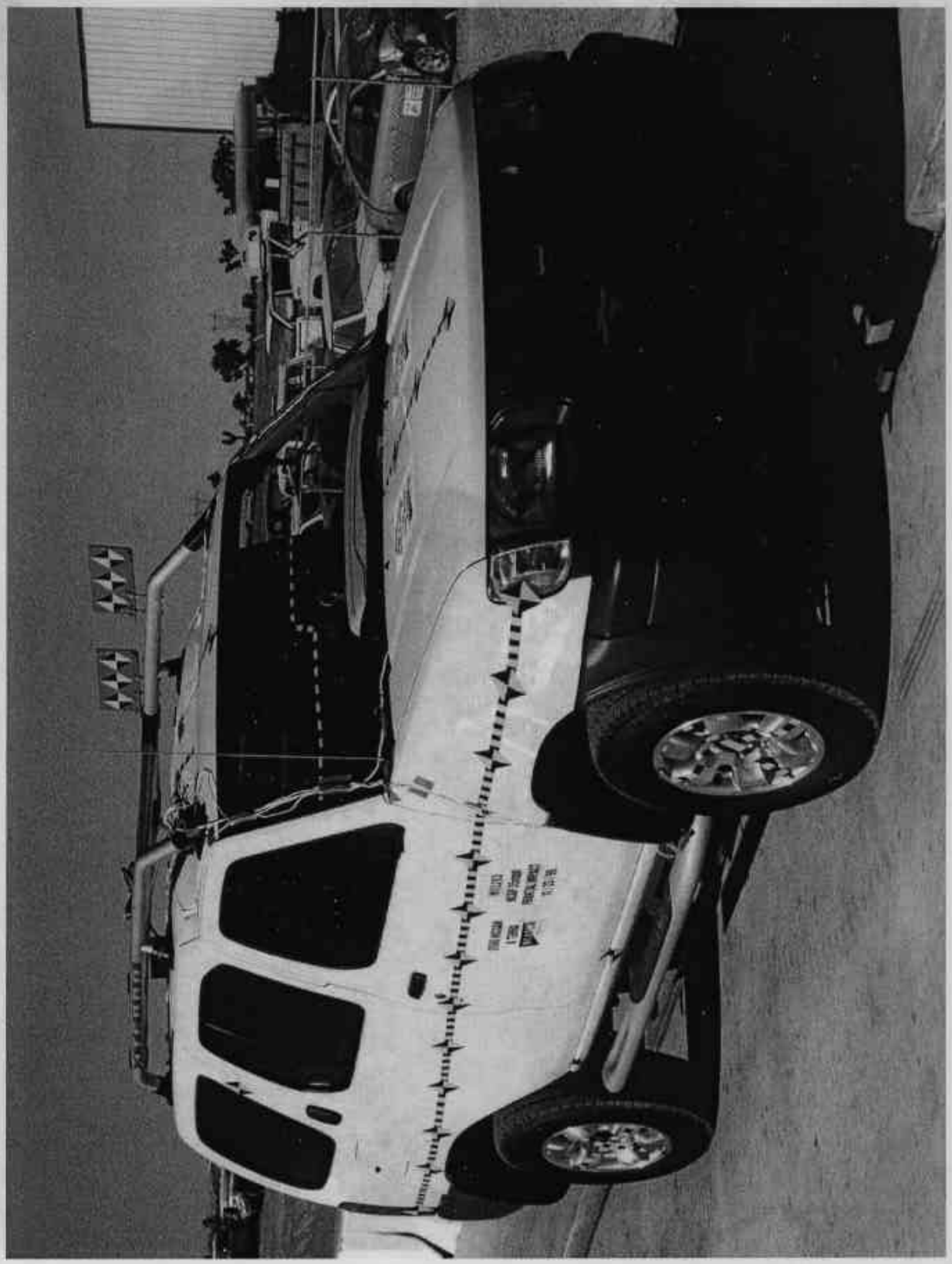


FIGURE A-11. PRETEST RIGHT FRONT VIEW

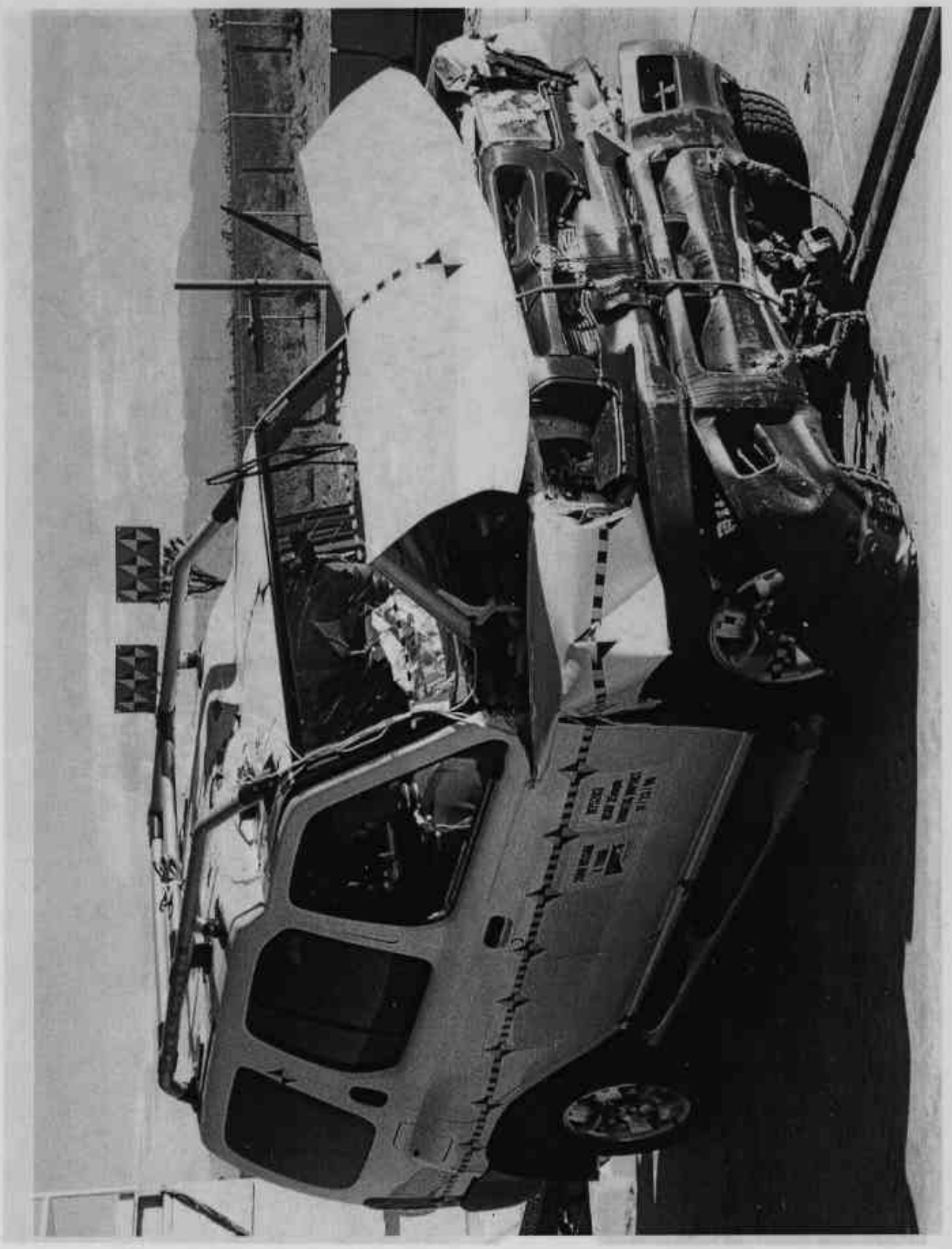


FIGURE A-12. POST TEST RIGHT FRONT VIEW

FIGURE A-13. PRETEST LEFT REAR VIEW

FIGURE A-14. POST TEST LEFT REAR VIEW

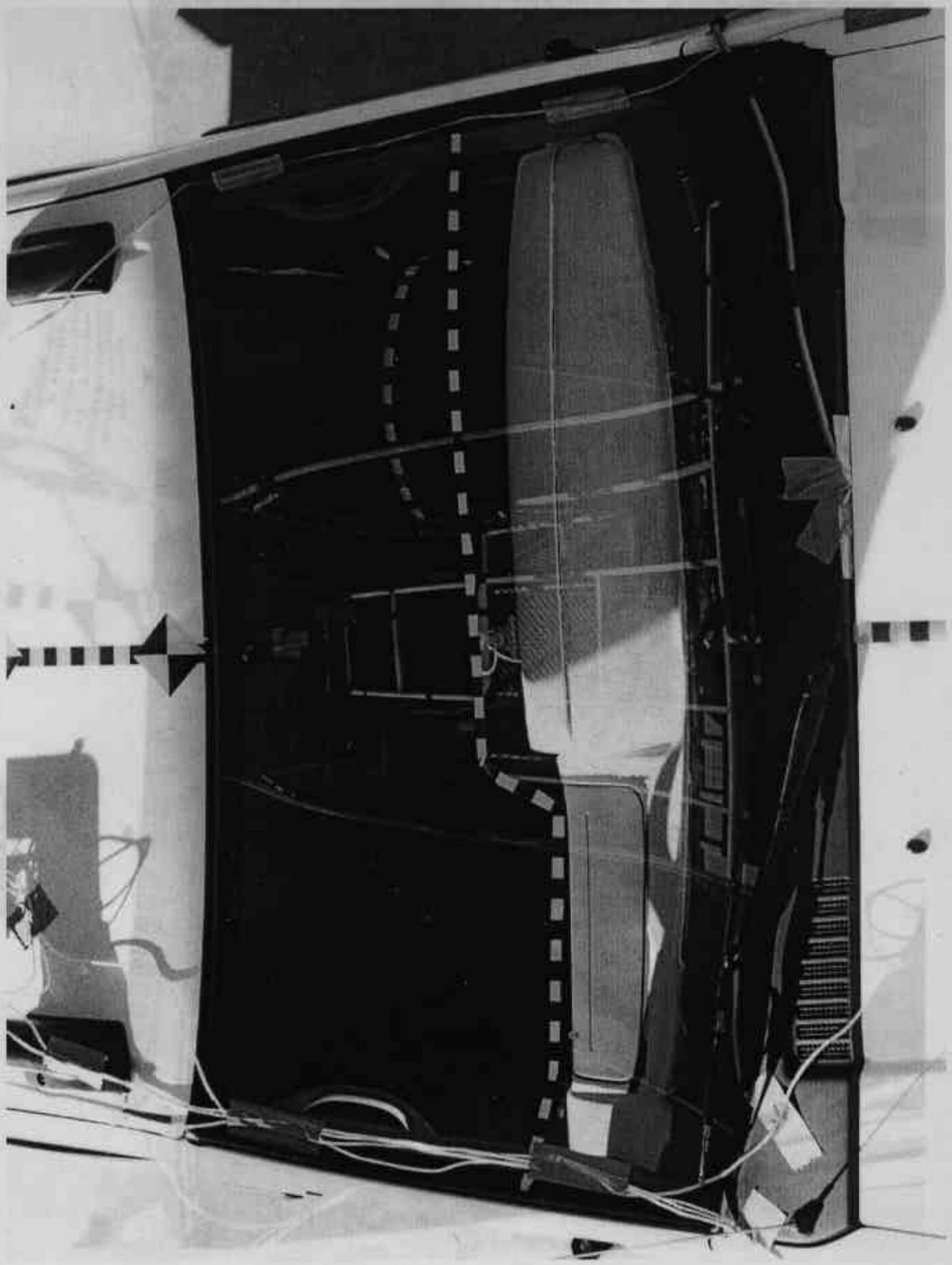


FIGURE A-15. PRETEST WINDSHIELD

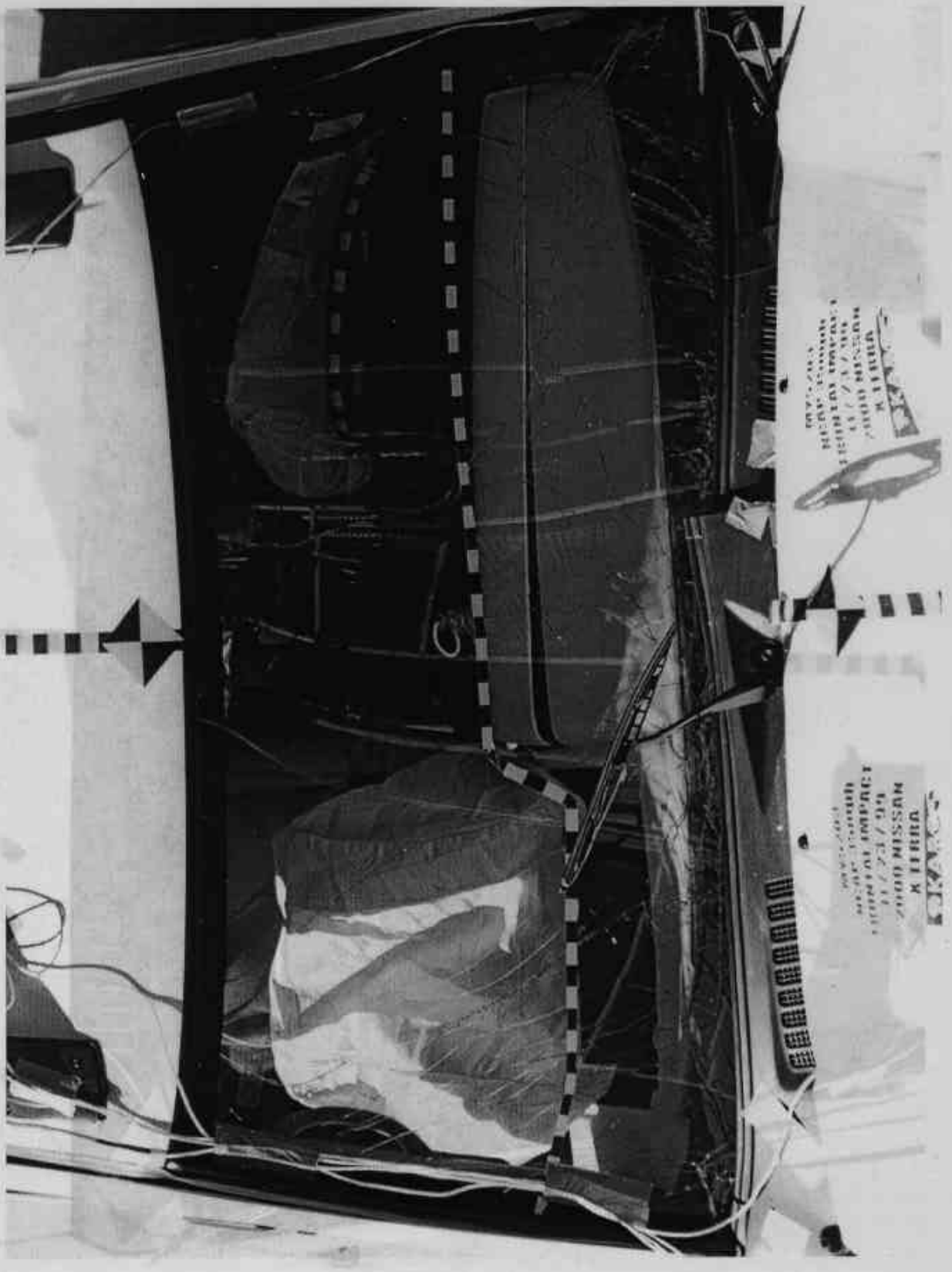


FIGURE A-16. POST TEST WINDSHIELD

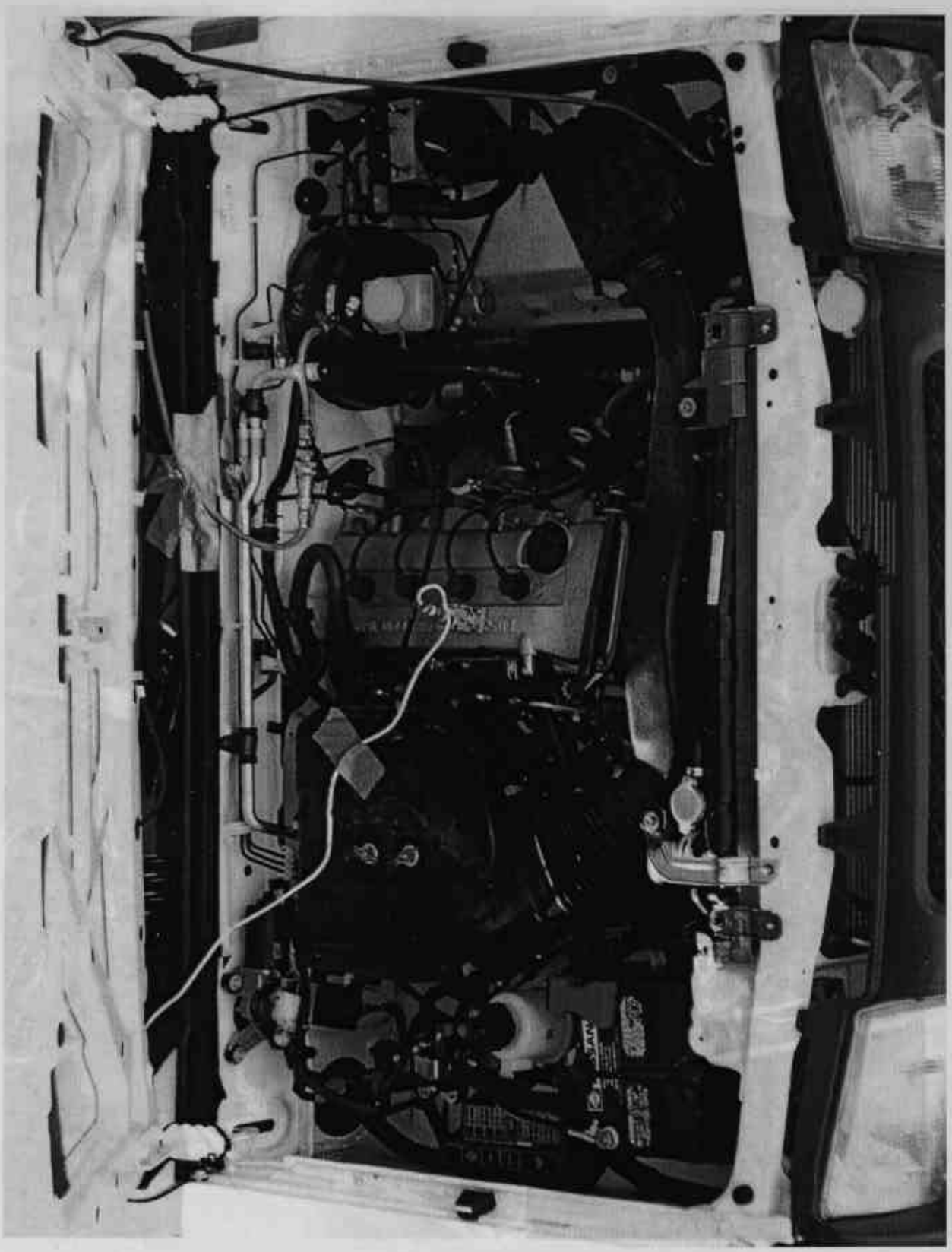


FIGURE A-17. PRETEST ENGINE COMPARTMENT

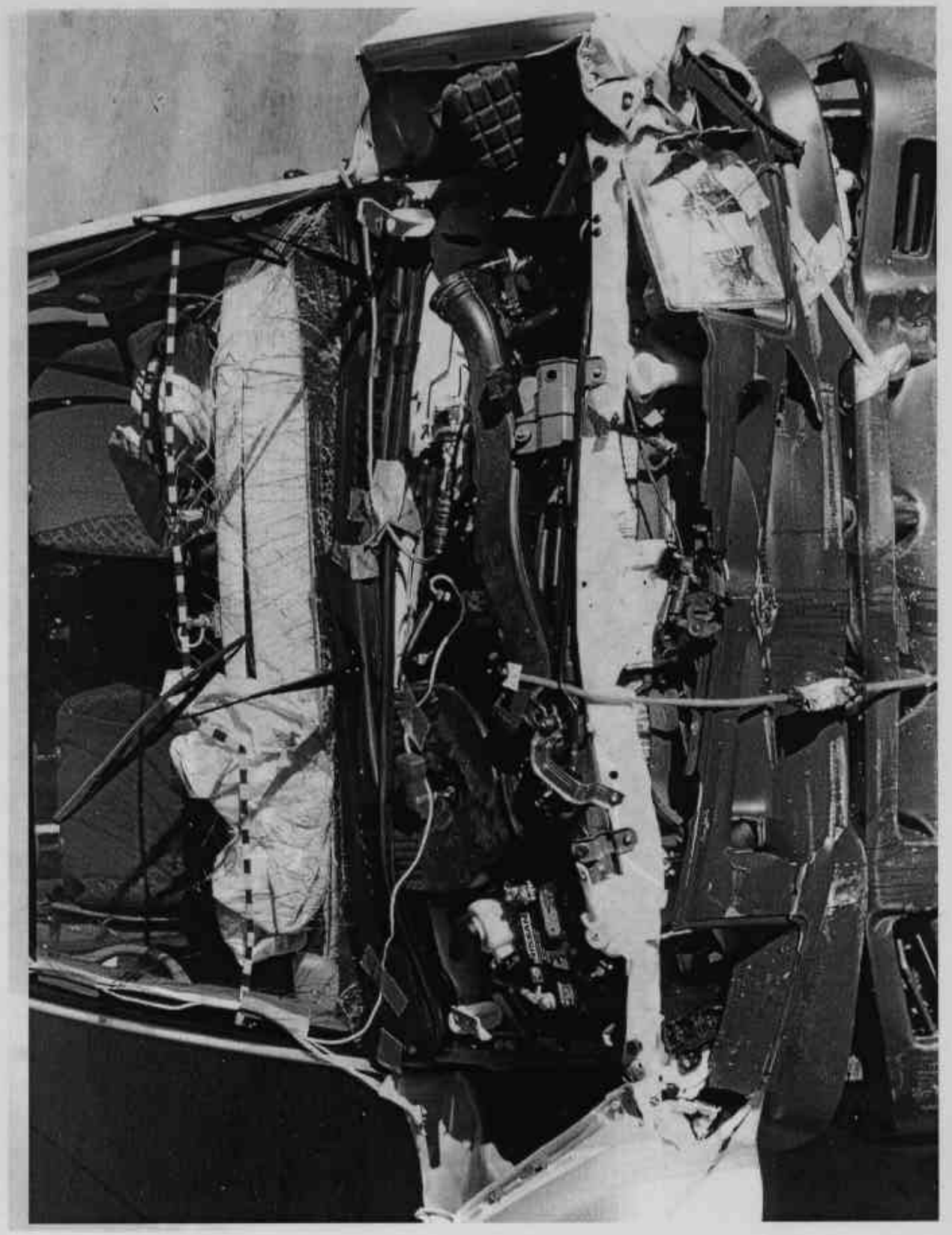


FIGURE A-18. POST TEST ENGINE COMPARTMENT

FIGURE A-19. PRETEST FUEL CAP

FIGURE A-20. POST TEST FUEL CAP

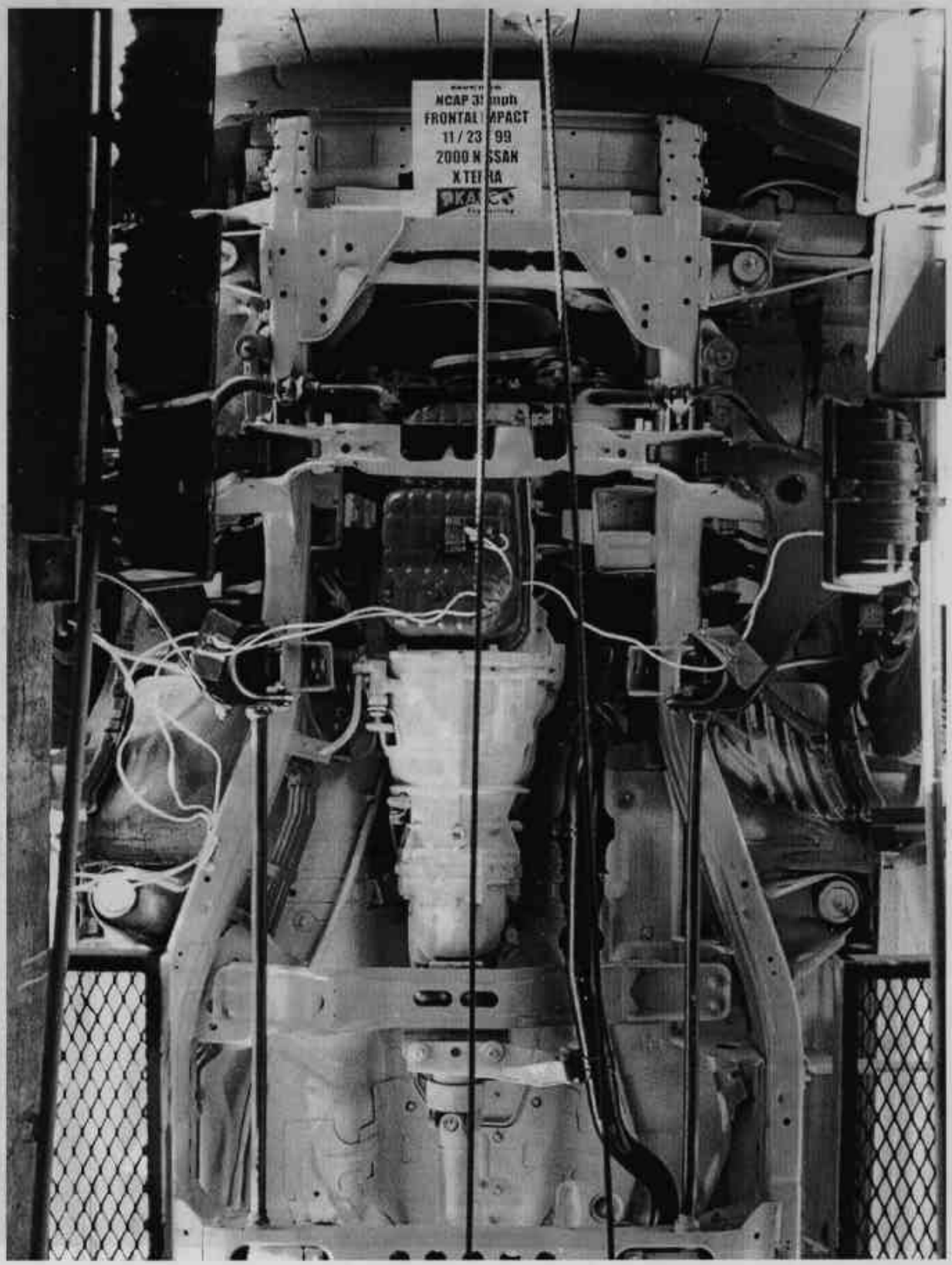


FIGURE A-21. PRETEST FRONT UNDERSIDE

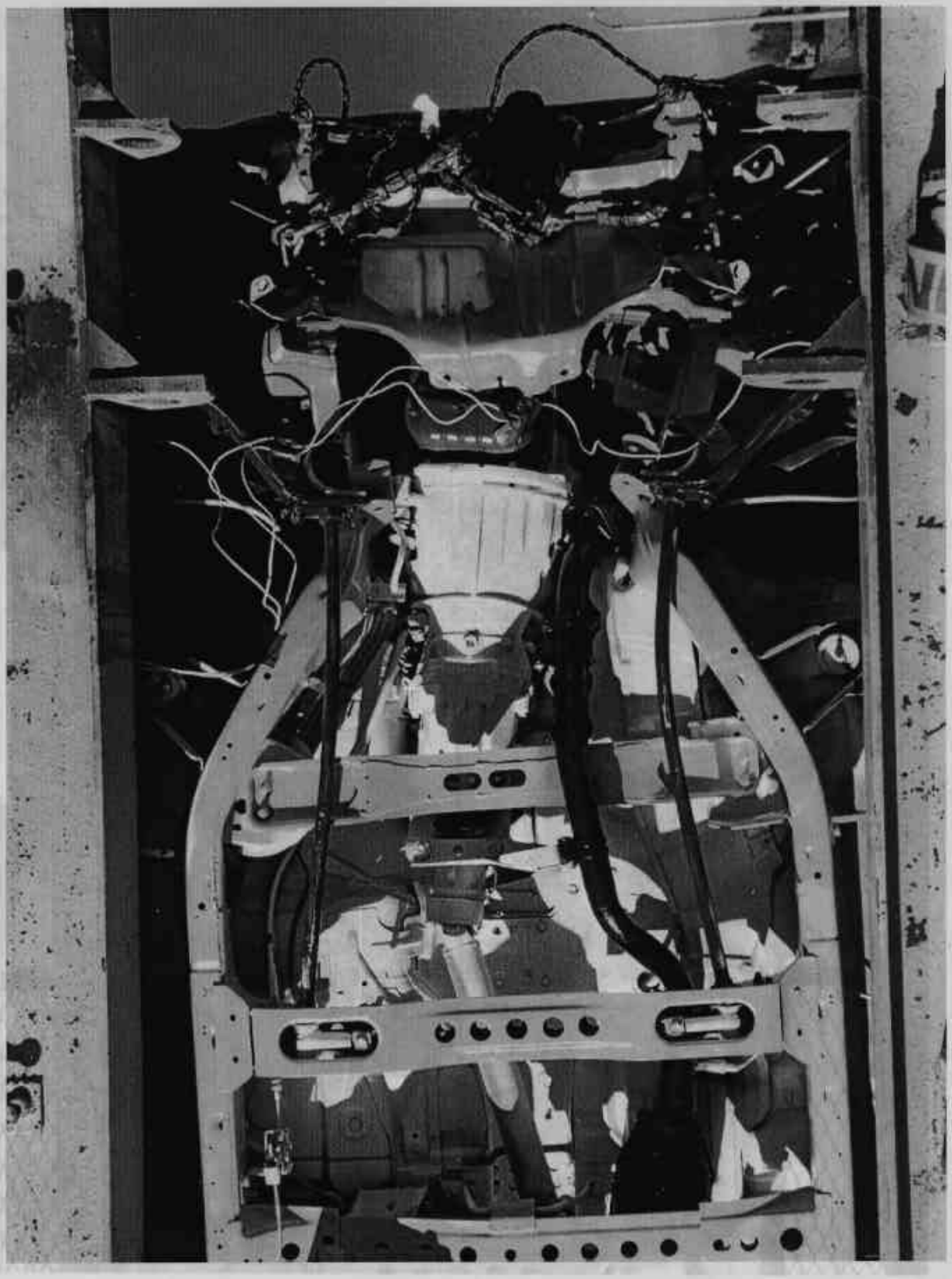


FIGURE A-22. POST TEST FRONT UNDERSIDE

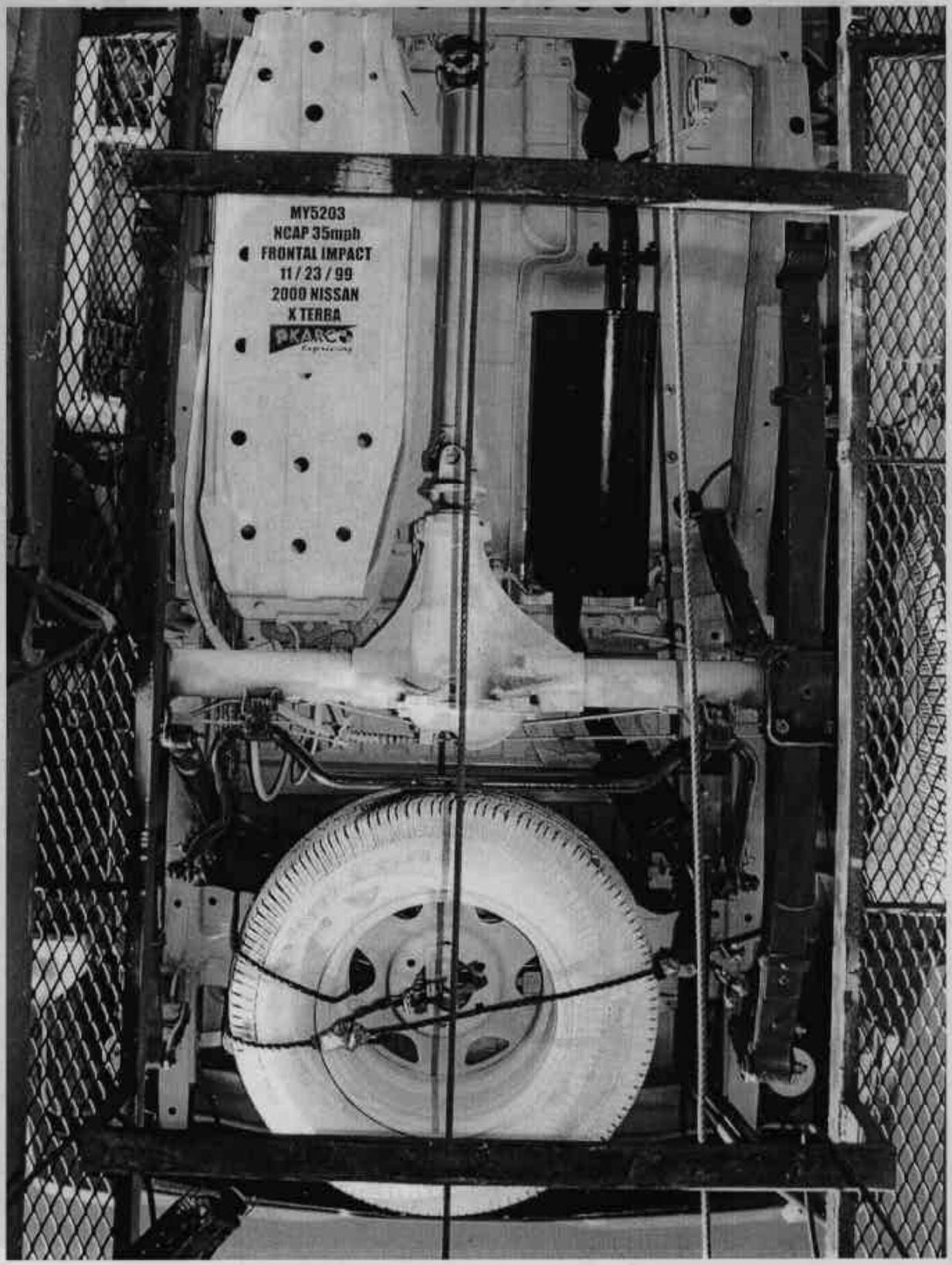


FIGURE A-23. PRETEST REAR UNDERSIDE

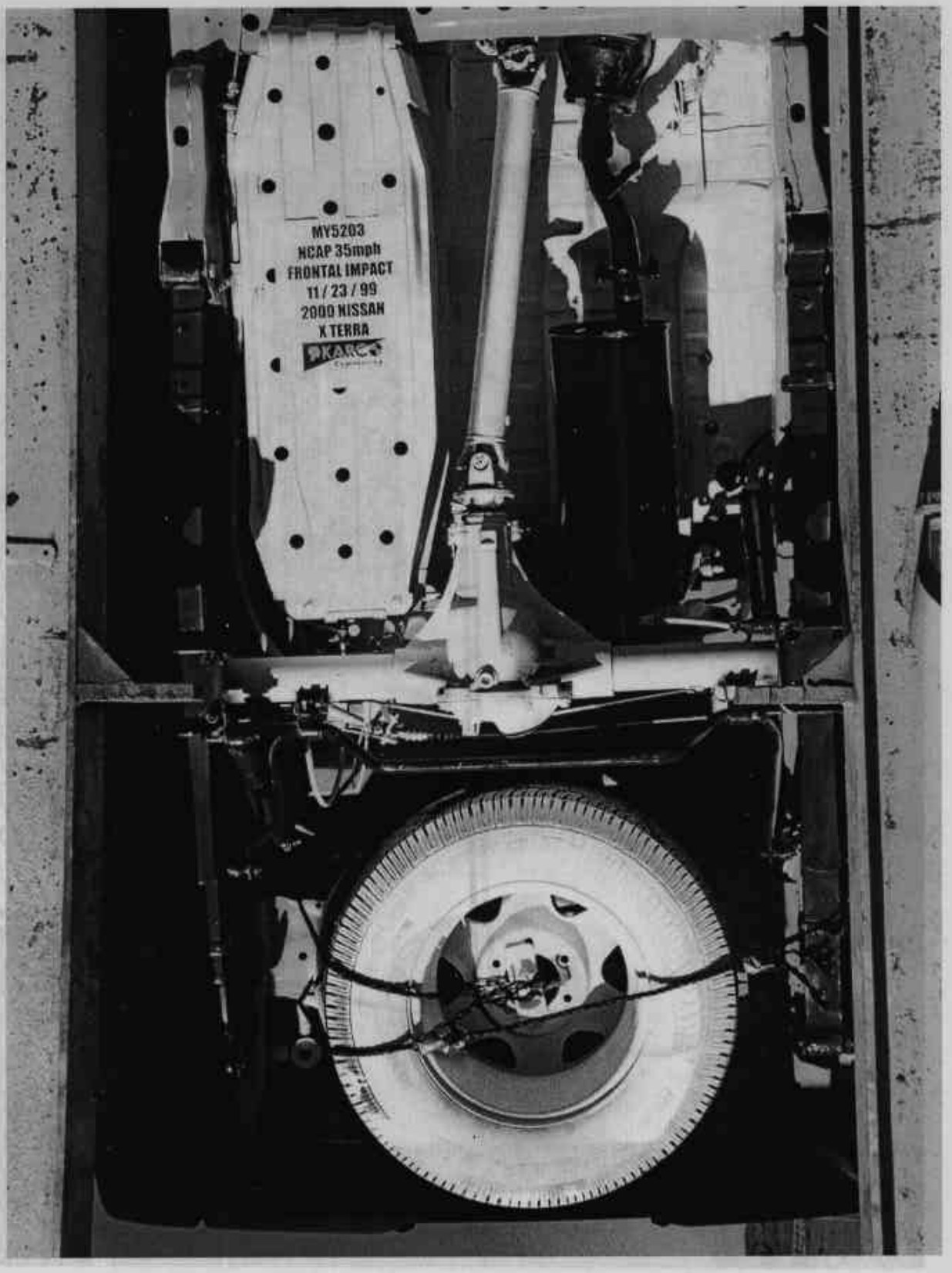


FIGURE A-24. POST TEST REAR UNDERSIDE

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

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

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

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

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

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

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

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

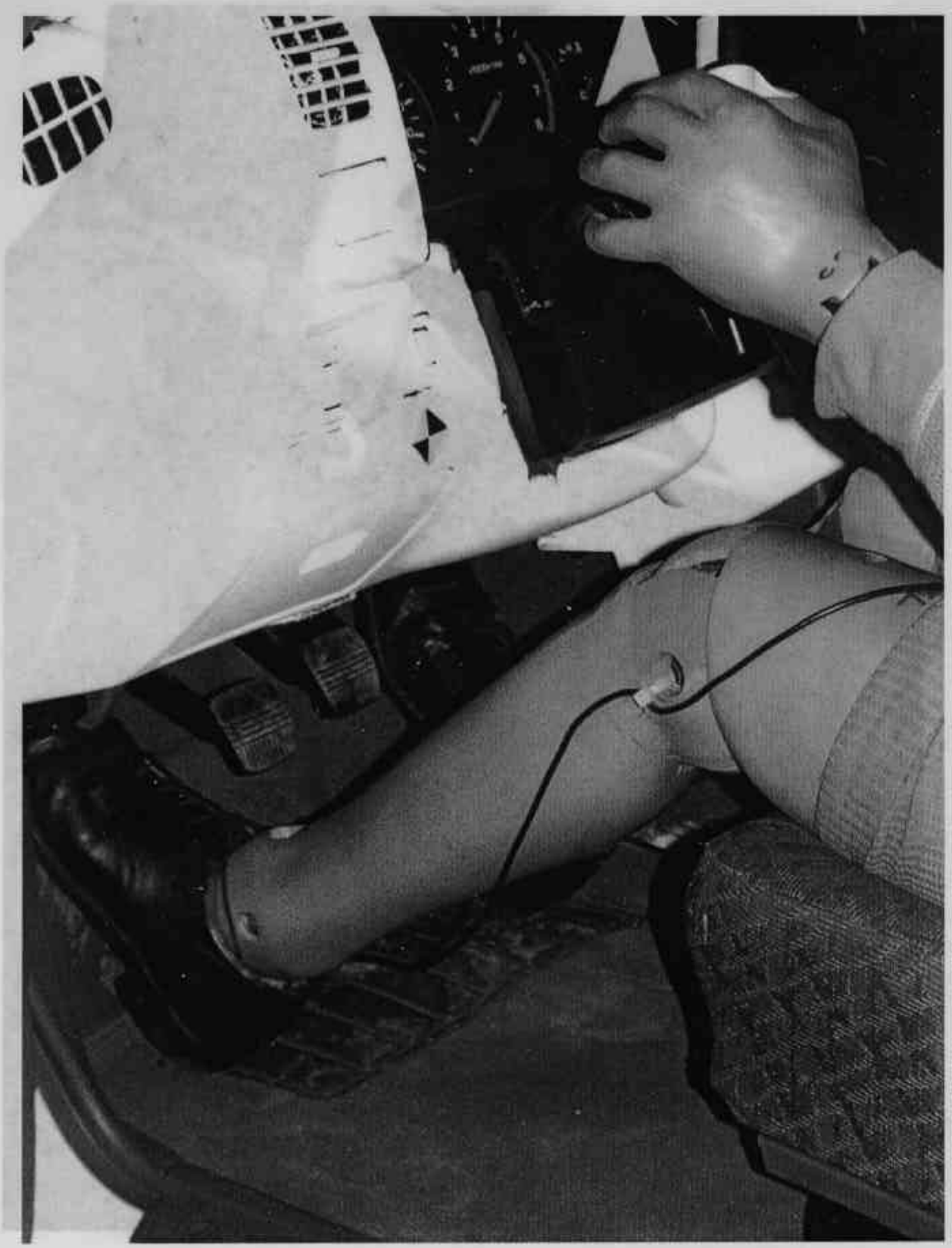


FIGURE A-33. PRETEST DRIVER DUMMY FEET

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

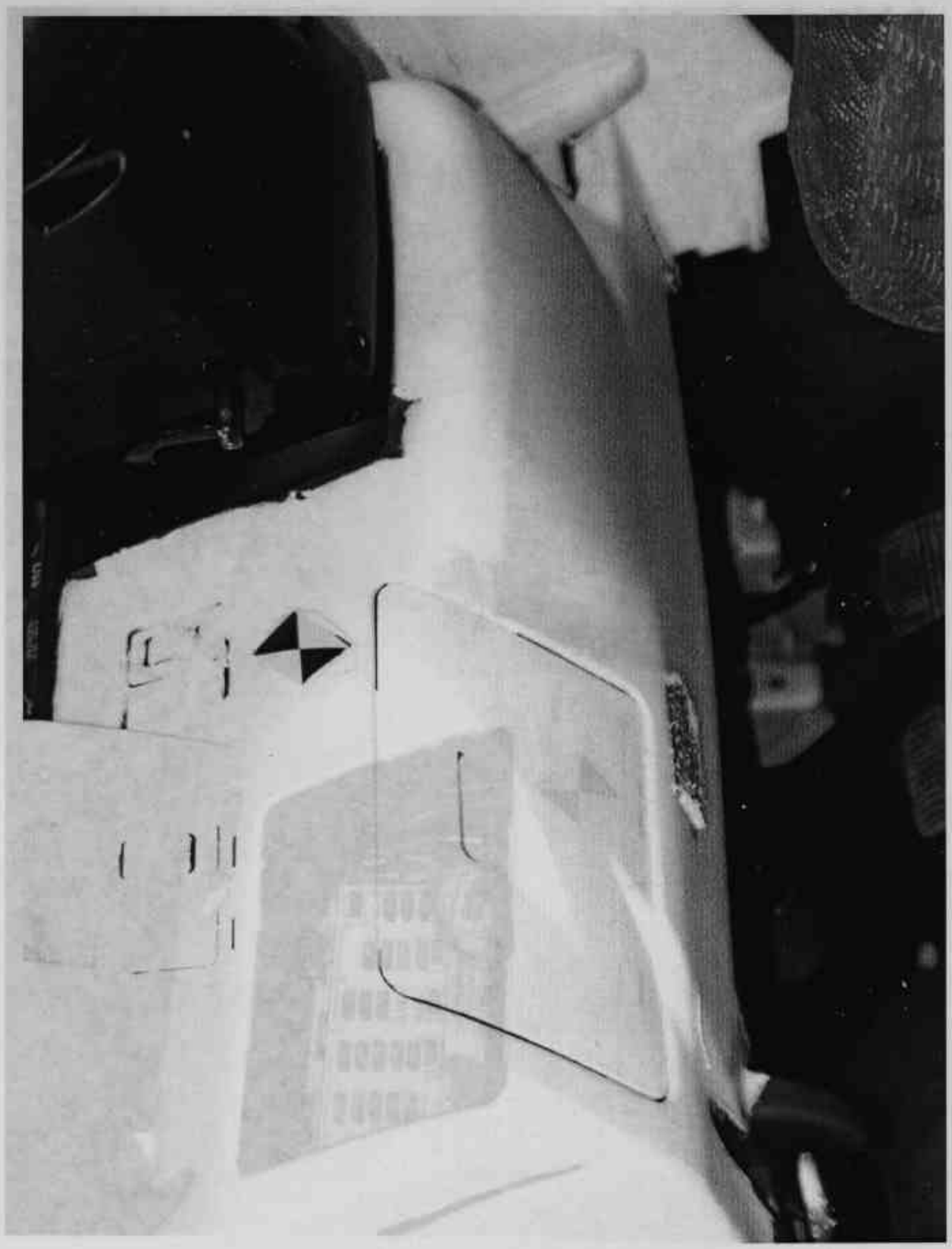


FIGURE A-35. PRE TEST DRIVER KNEE BOLSTER

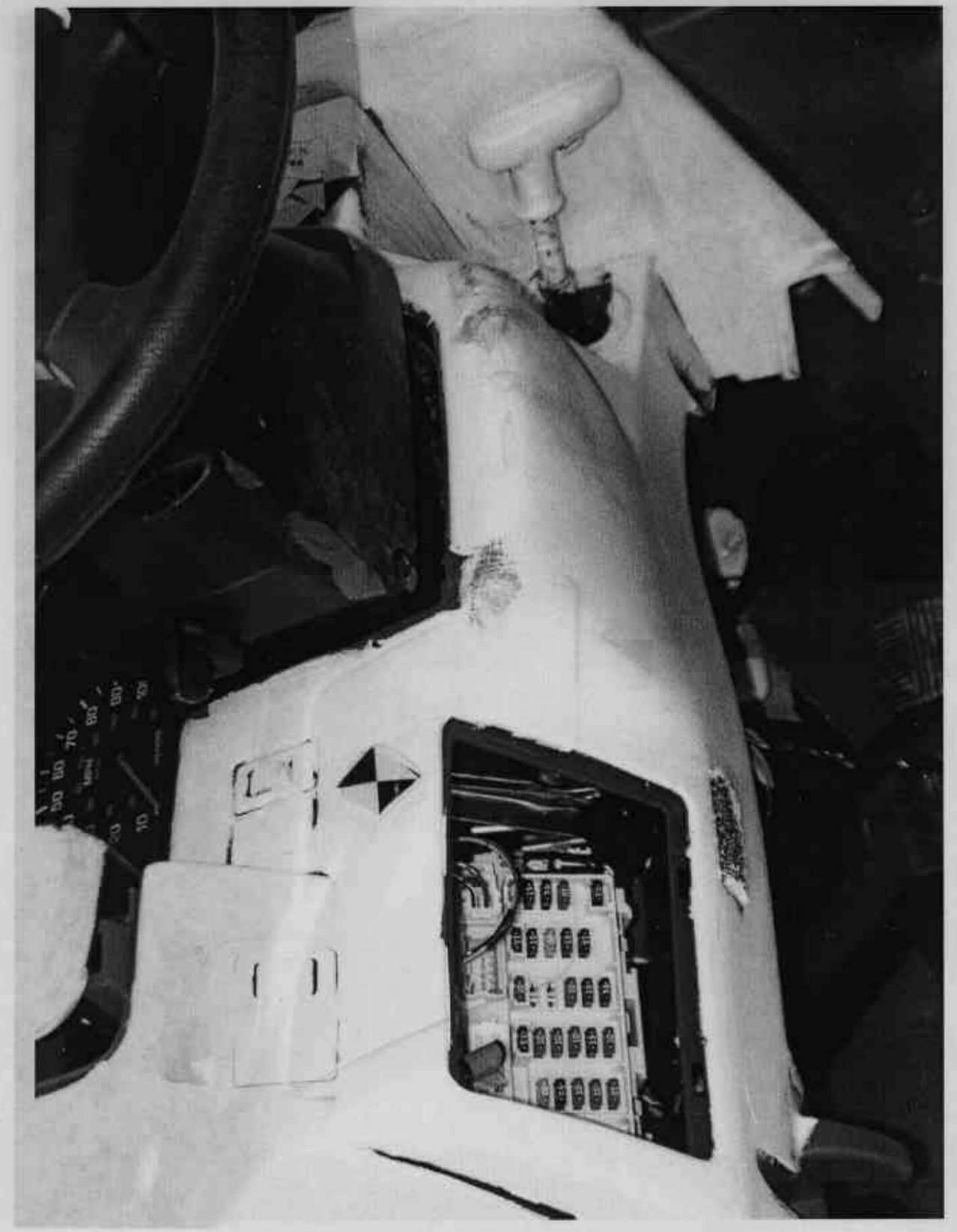


FIGURE A-36. POST TEST DRIVER KNEE BOLSTER

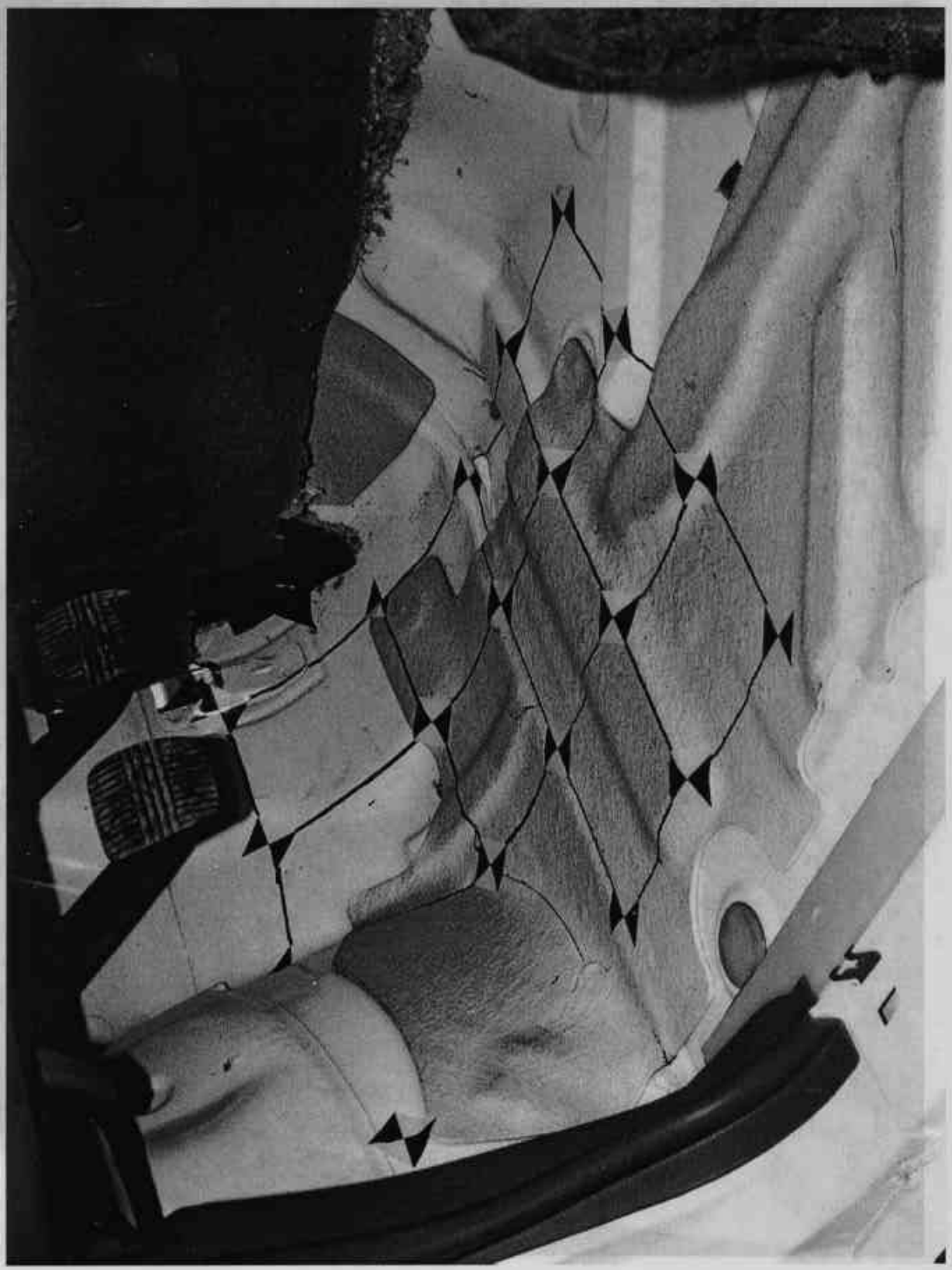


FIGURE A-37. PRE TEST DRIVER SIDE FLOOR PAN

FIGURE A-38. POST TEST DRIVER SIDE FLOOR PAN

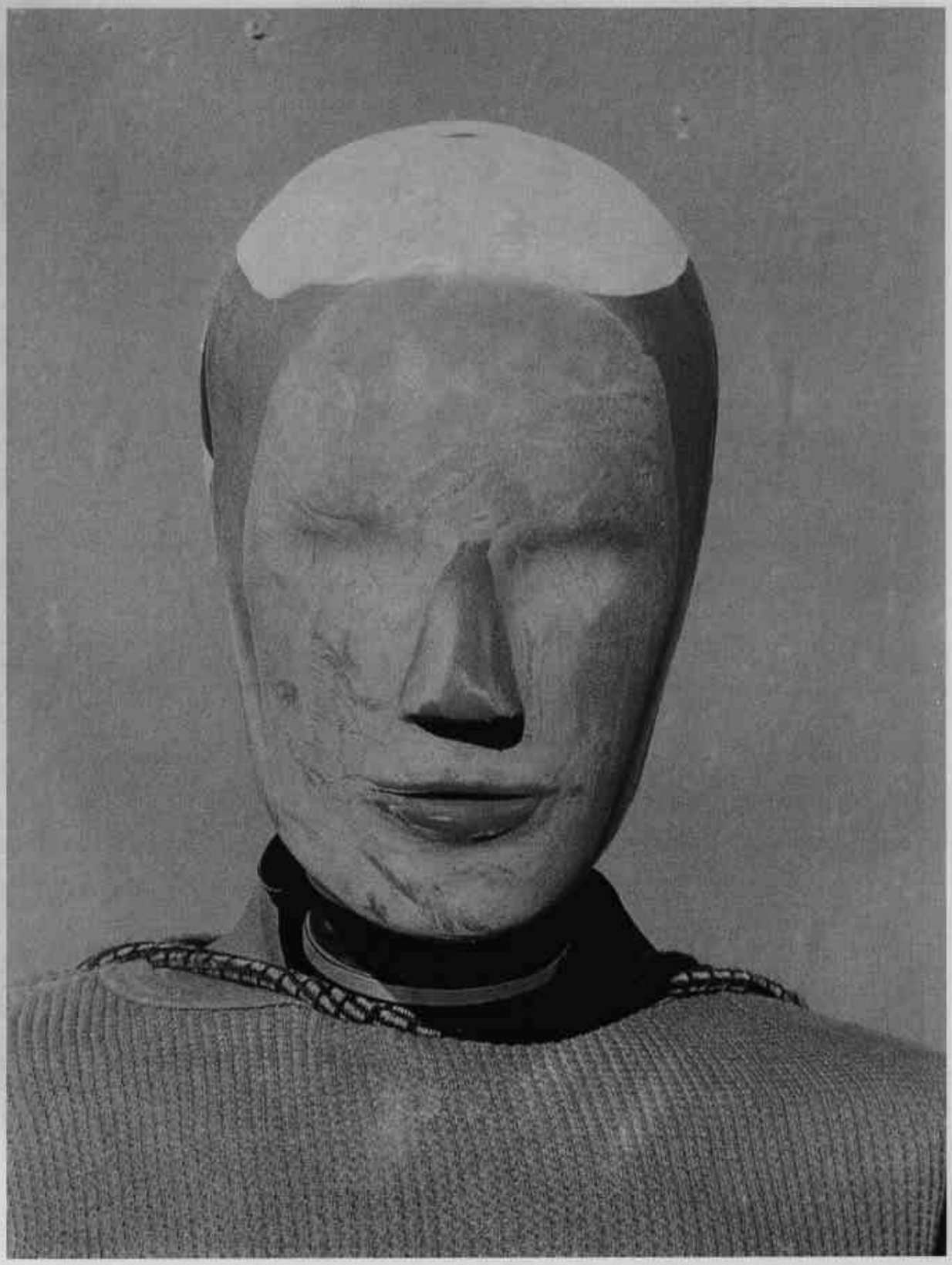


FIGURE A-39. POST TEST DRIVER HEAD

FIGURE A-40. POST TEST DRIVER DUMMY CONTACT

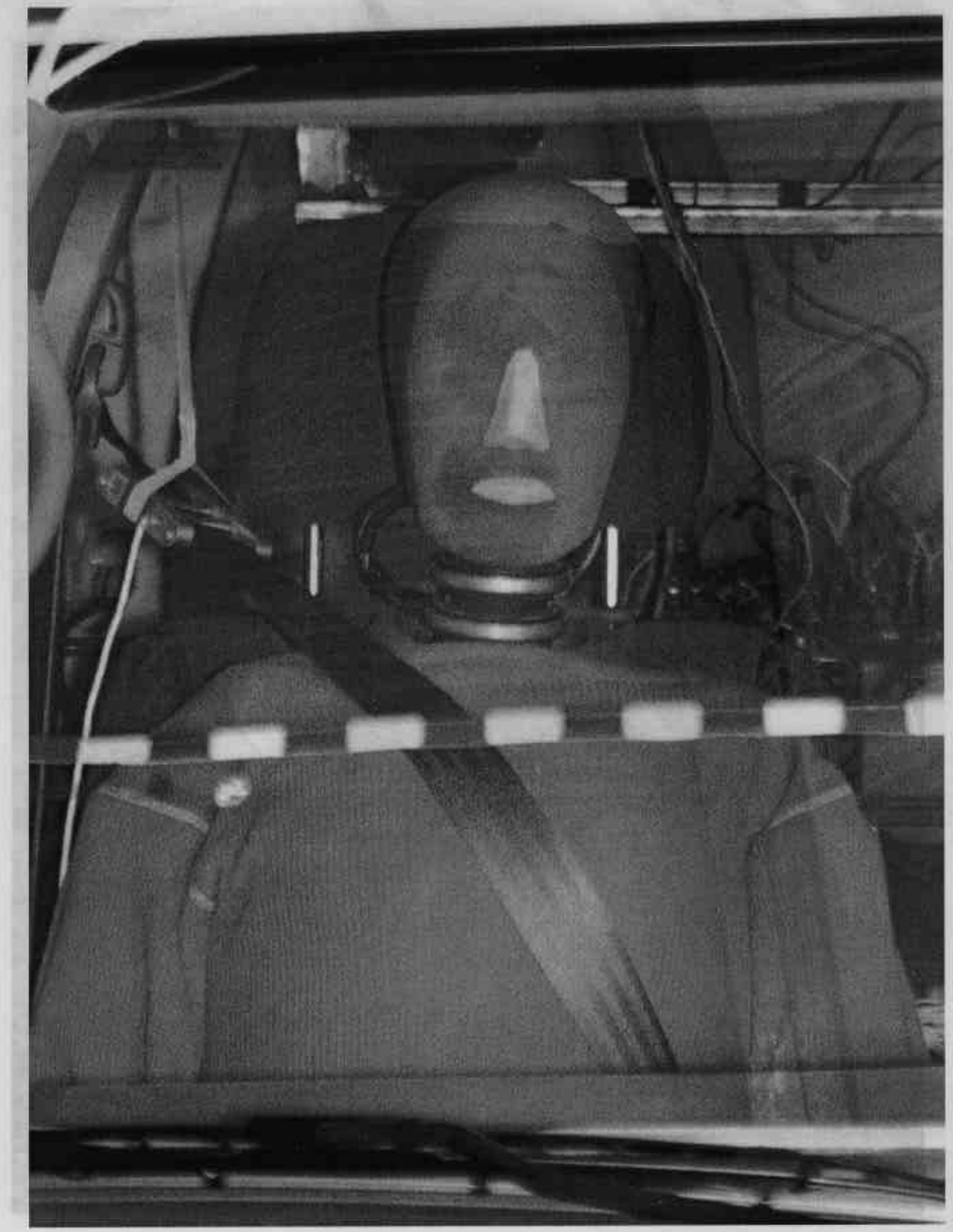


FIGURE A-41. PRE TEST PASSENGER DUMMY (FRONT VIEW)

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

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

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

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

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

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

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

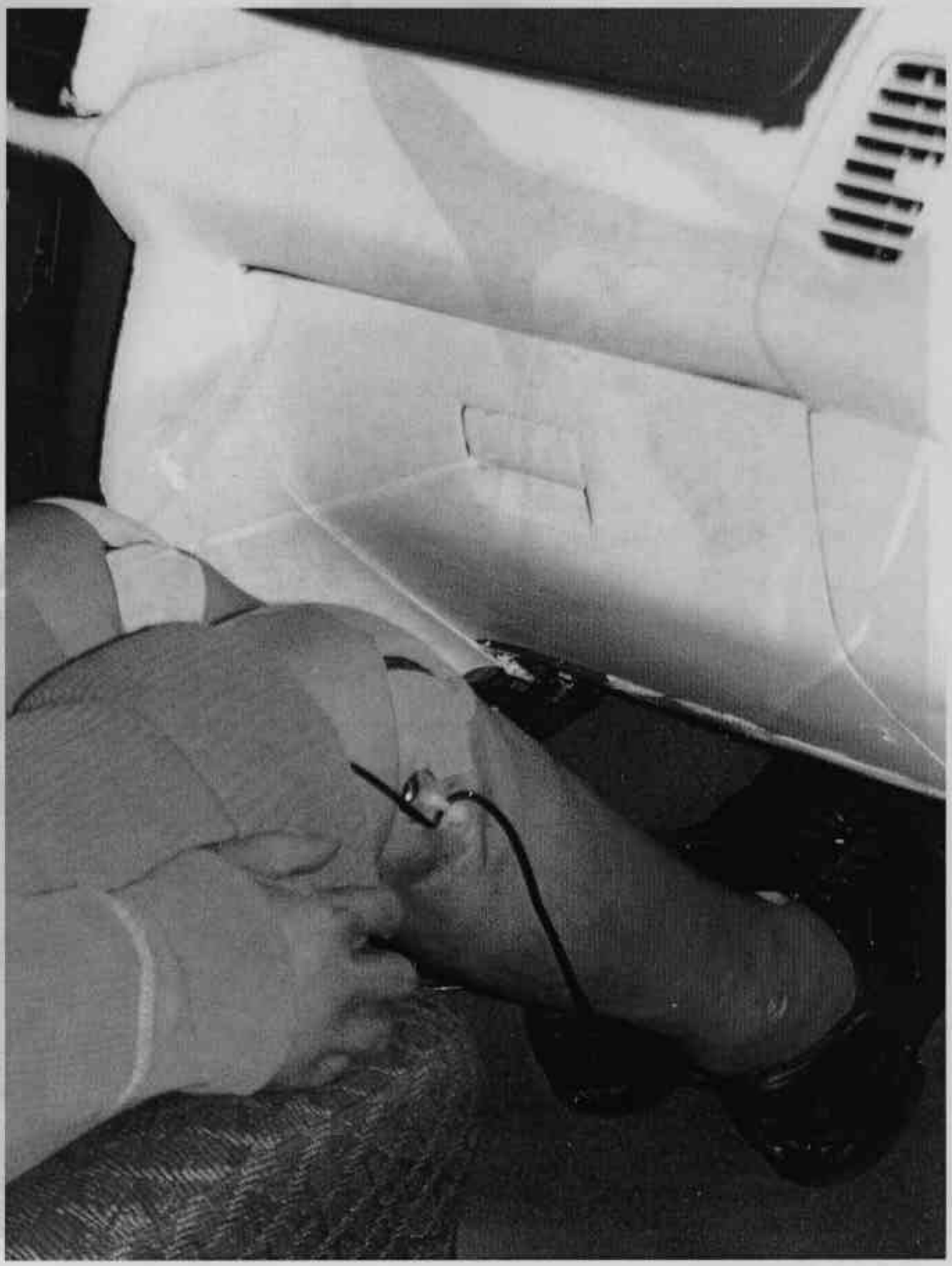


FIGURE A-49. PRE TEST PASSENGER DUMMY FEET

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

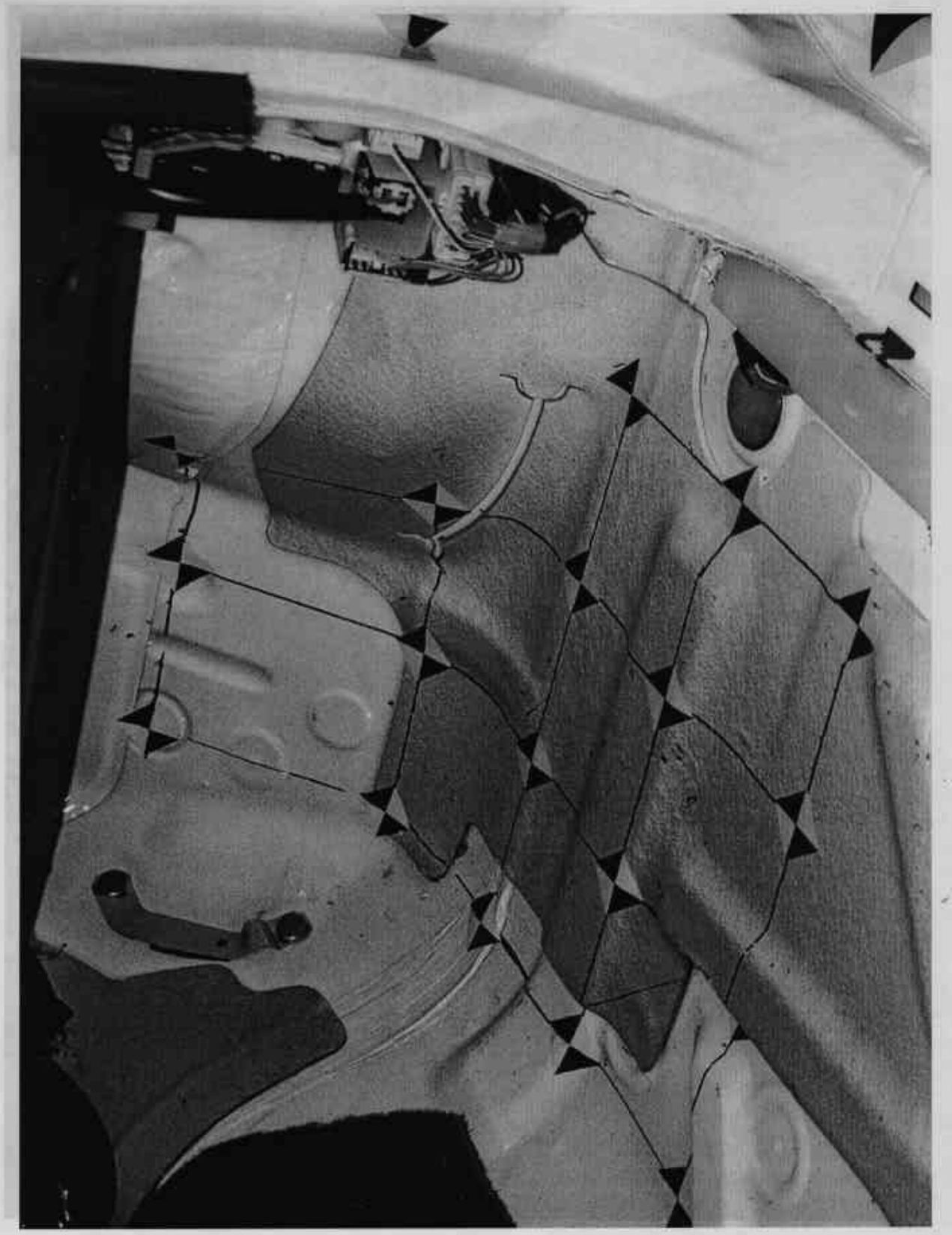


FIGURE A-51. PRETEST PASSENGER SIDE FLOOR PAN

FIGURE A-52. POST TEST PASSENGER SIDE FLOOR PAN

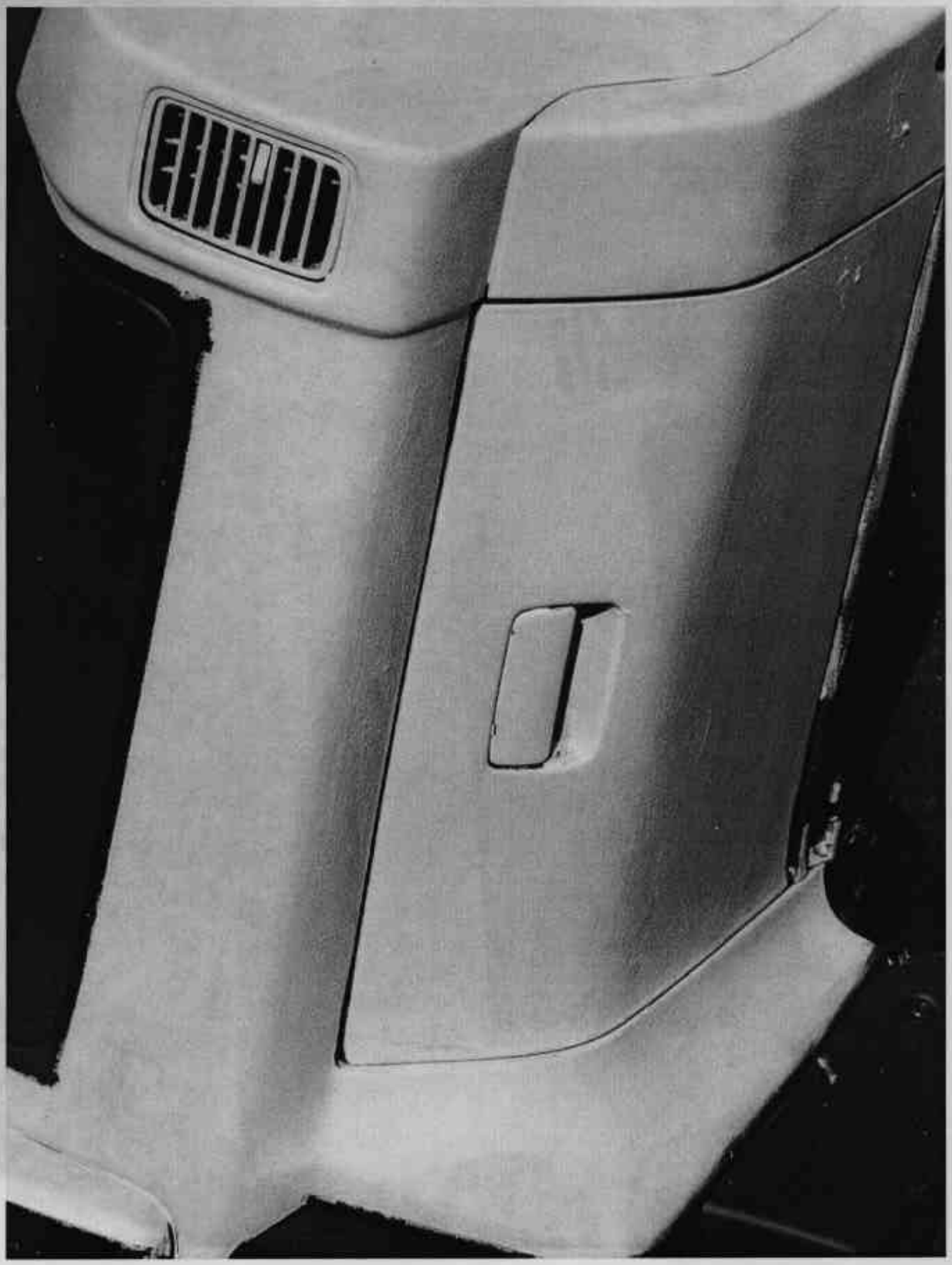


FIGURE A-53. PRE TEST PASSENGER SIDE KNEE BOLSTER

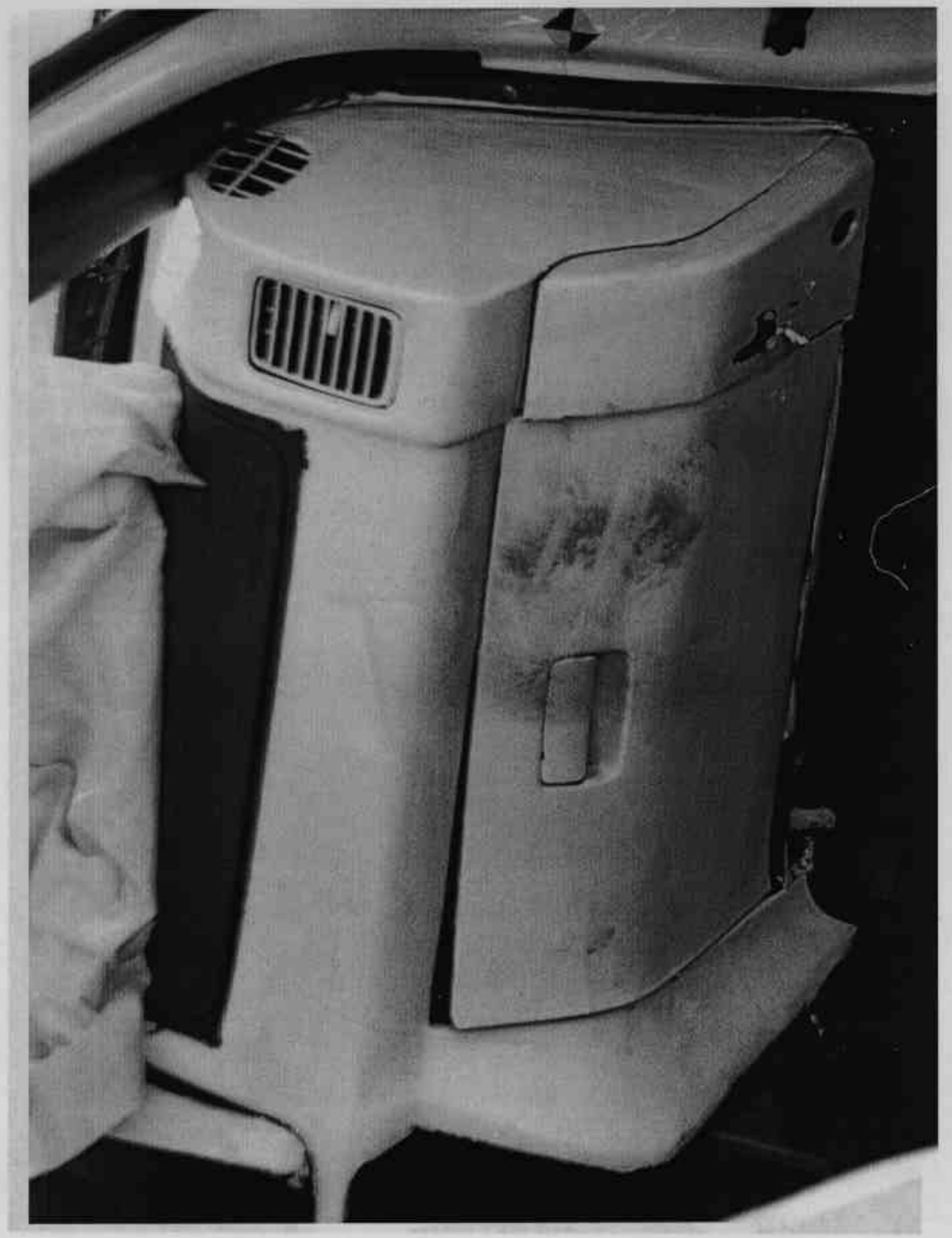


FIGURE A-54. POST TEST PASSENGER SIDE KNEE BOLSTER AND DUMMY CONTACT

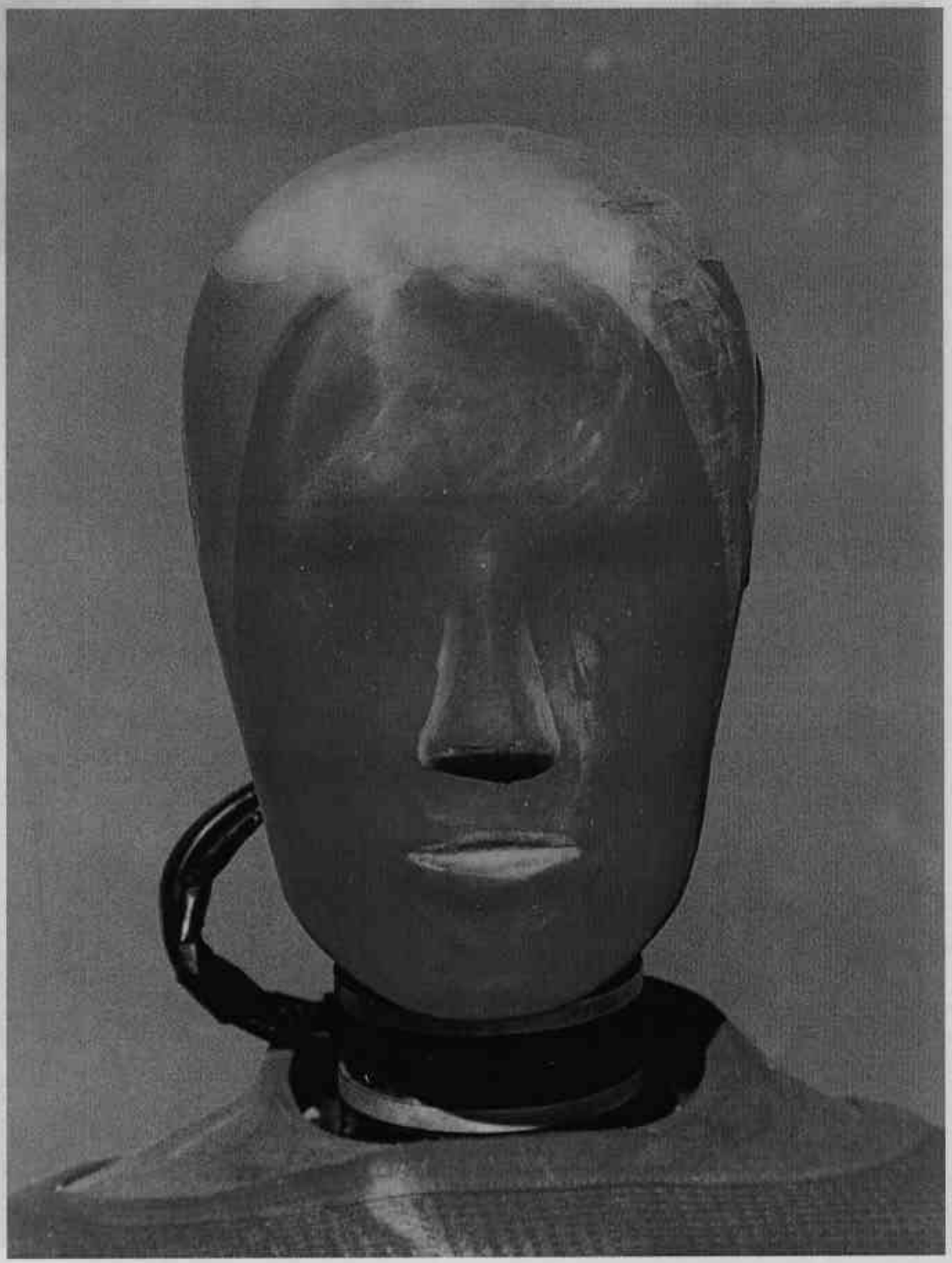


FIGURE A-55. POST TEST PASSENGER HEAD

FIGURE A-56. POST TEST PASSENGER DUMMY CONTACT

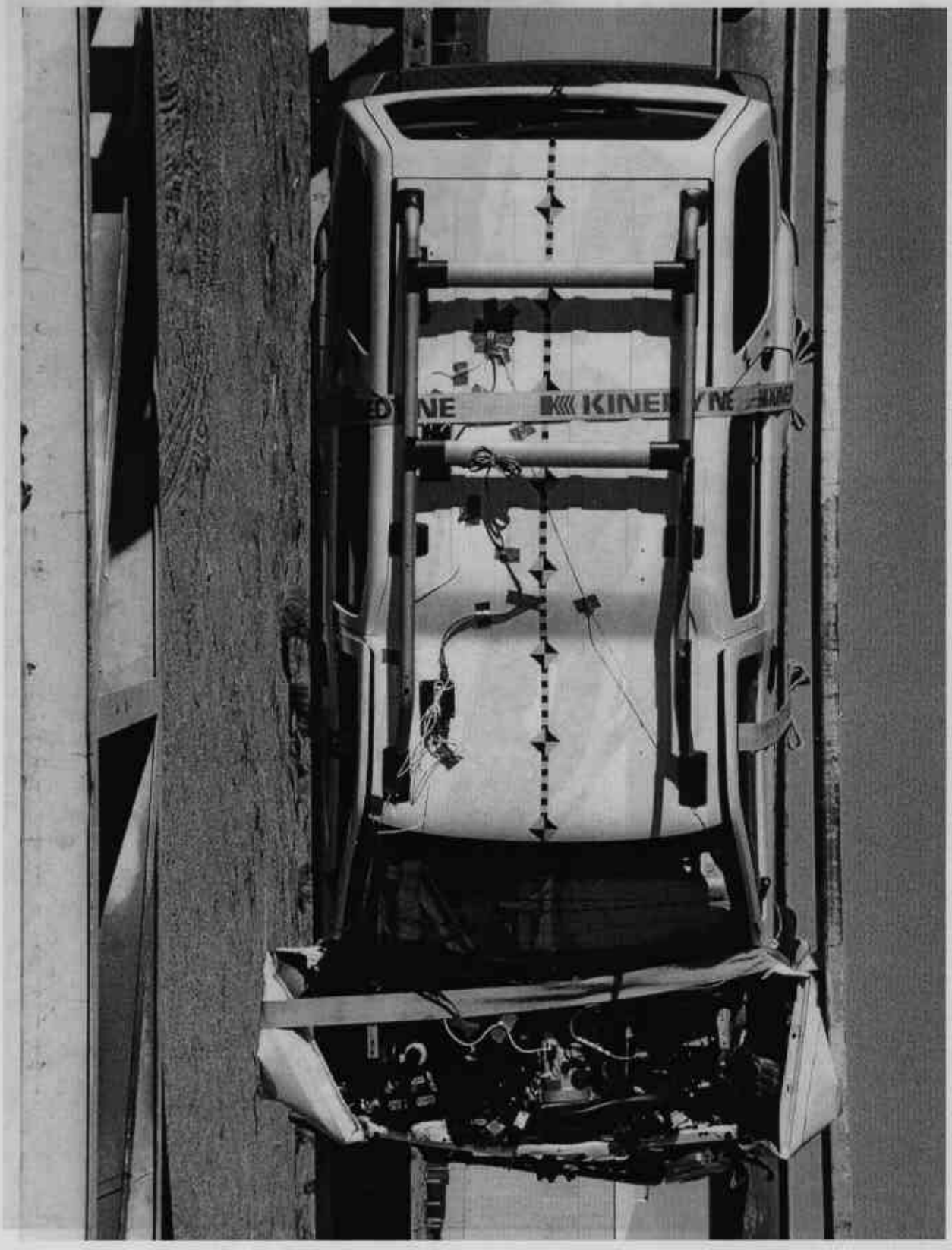


FIGURE A-57. VEHICLE ON ROLLOVER

FIGURE A-58. VEHICLE DURING IMPACT

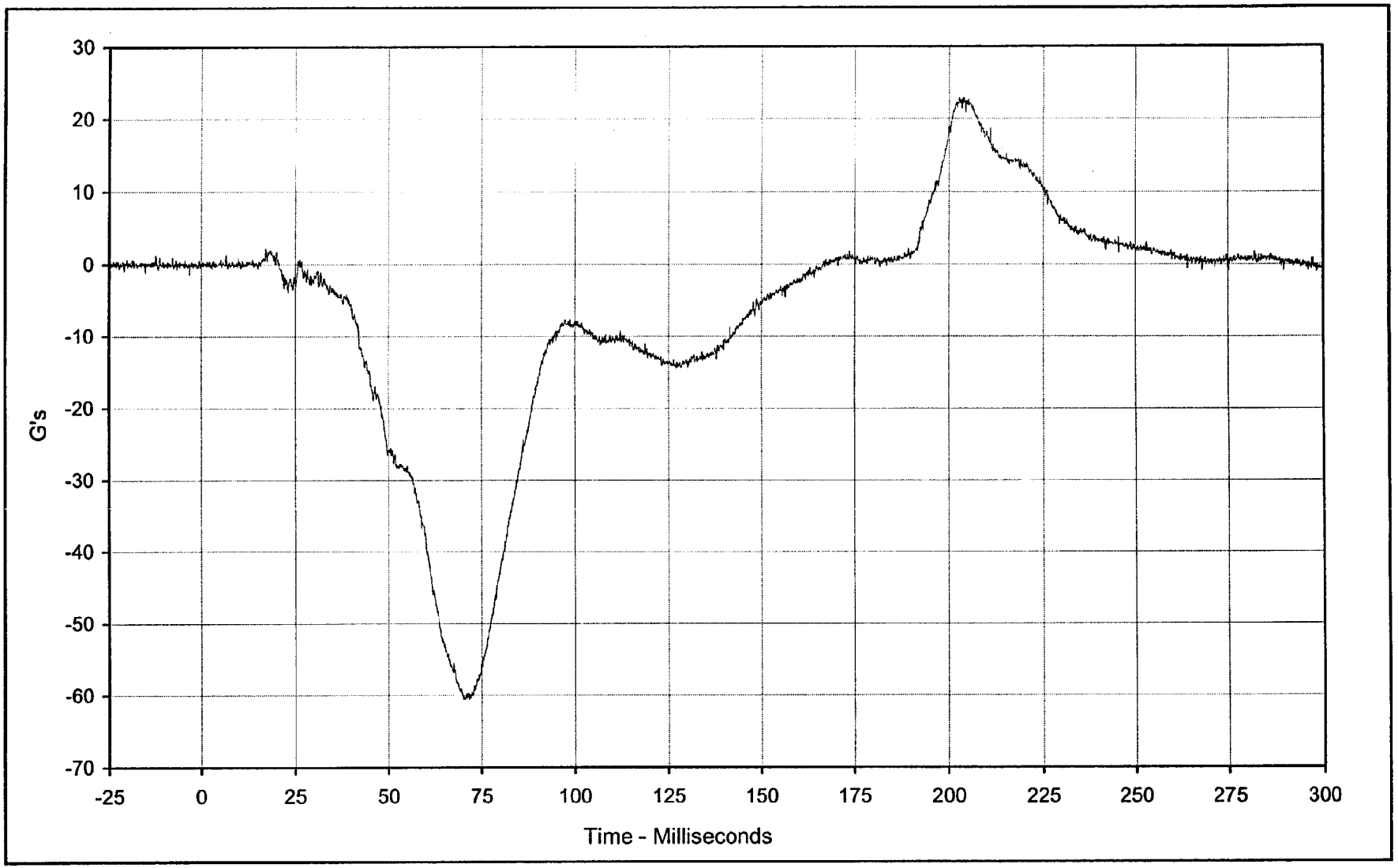
APPENDIX B

DUMMY AND VEHICLE RESPONSE DATA TRACES

LIST OF DATA PLOTS

LIST OF DATA PLOTS...(Continued)

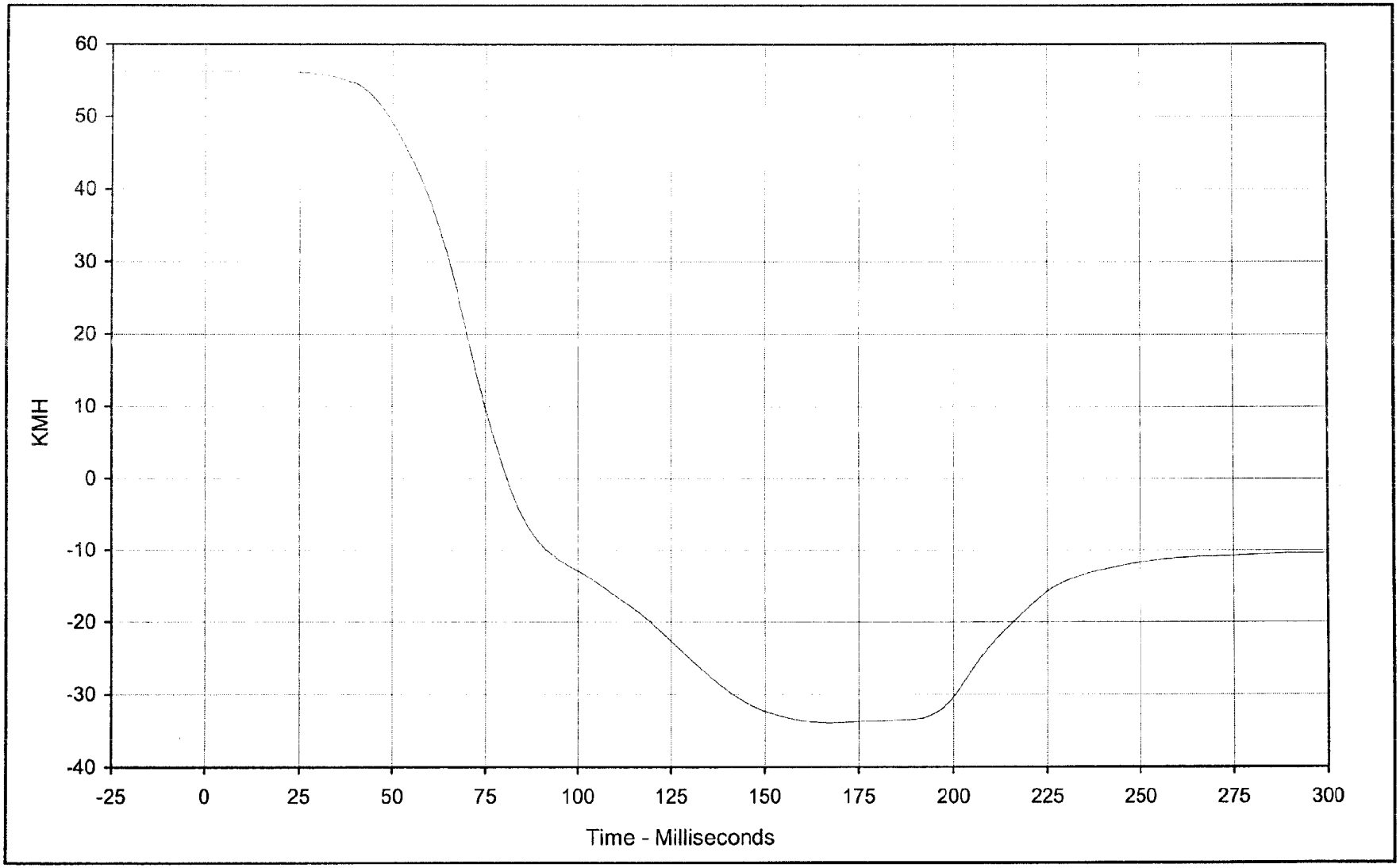
LIST OF DATA PLOTS...(Continued)



Curve Description:	Driver Head Primary X				
Maximum Value:	22.9	at	202.6	Milliseconds	
Minimum Value:	-60.6	at	70.1	Milliseconds	
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	FIL-001				

Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

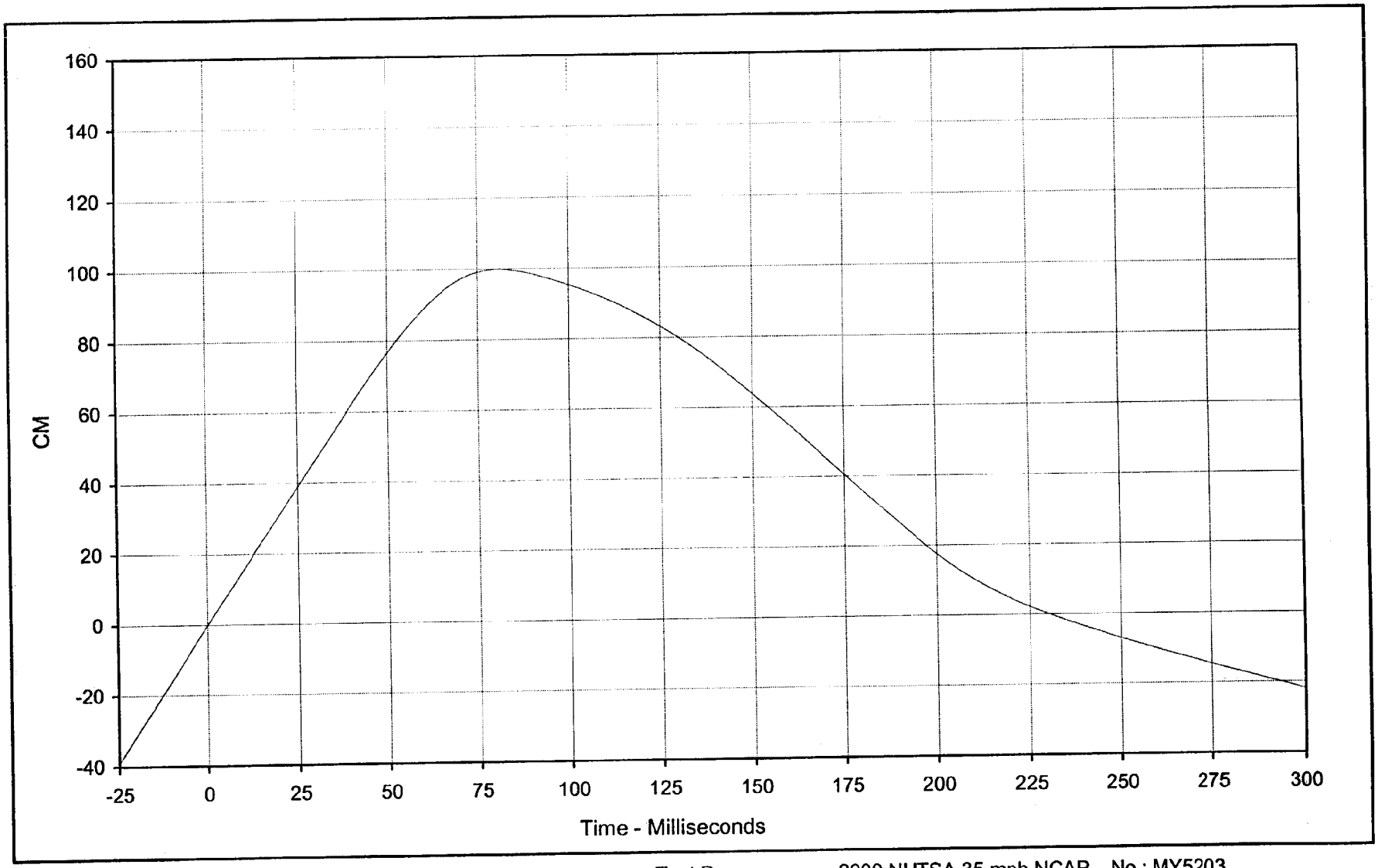
KARC Engineering



Curve Description:	Driver Head Primary X Velocity				
Maximum Value:	56.5	at	20.7	Milliseconds	
Minimum Value:	-34.0	at	166.8	Milliseconds	
SAE Filter Class:	180				
Date of Test:	11/23/99				
Curve Number:	IN1-001				

Testing Program	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Driver Head Primary X Displ.

Maximum Value: 99.8 at 80.6 Milliseconds

Minimum Value: -21.9 at 299.9 Milliseconds

SAE Filter Class: 180

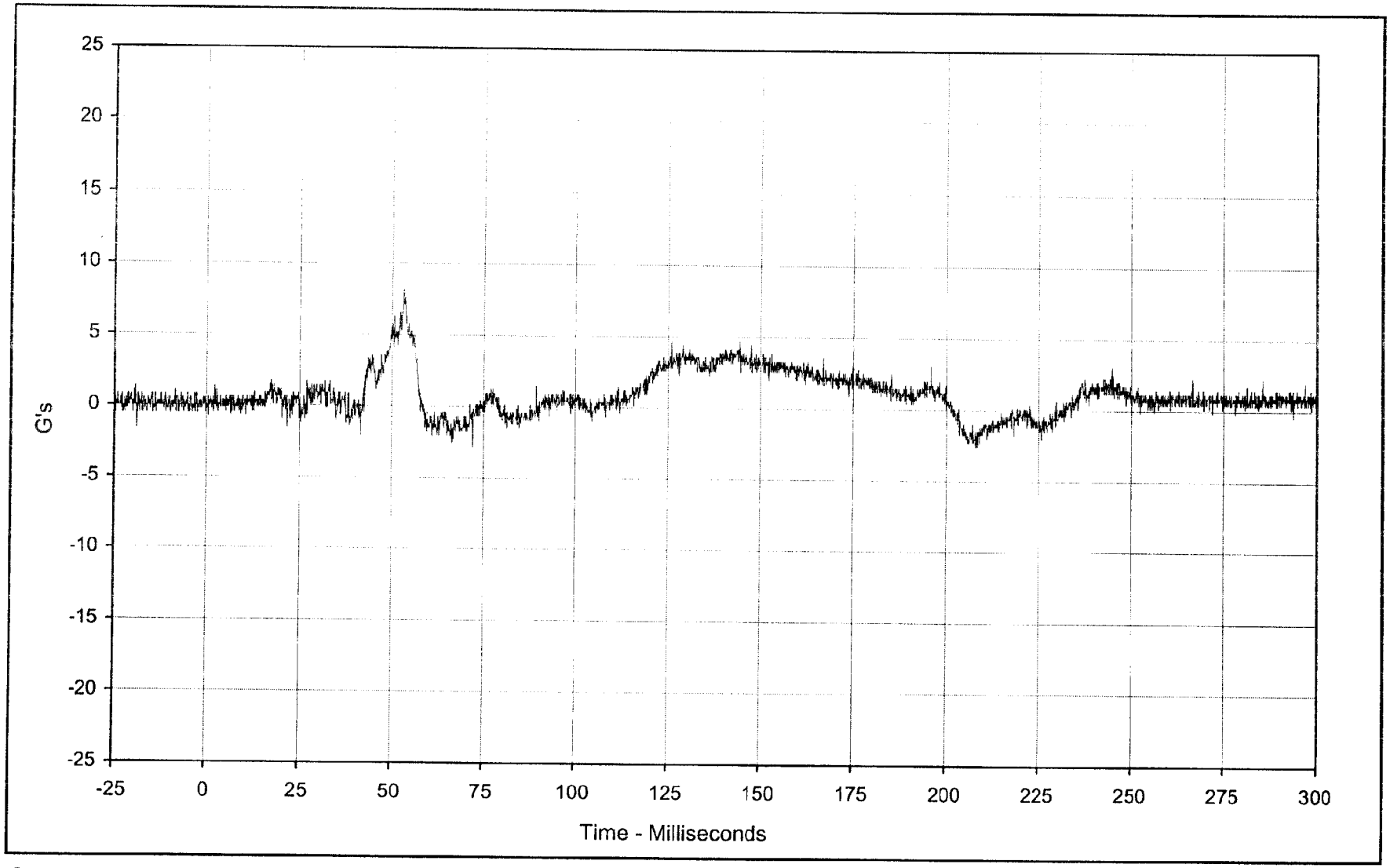
Date of Test: 11/23/99

Curve Number: IN2-001

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

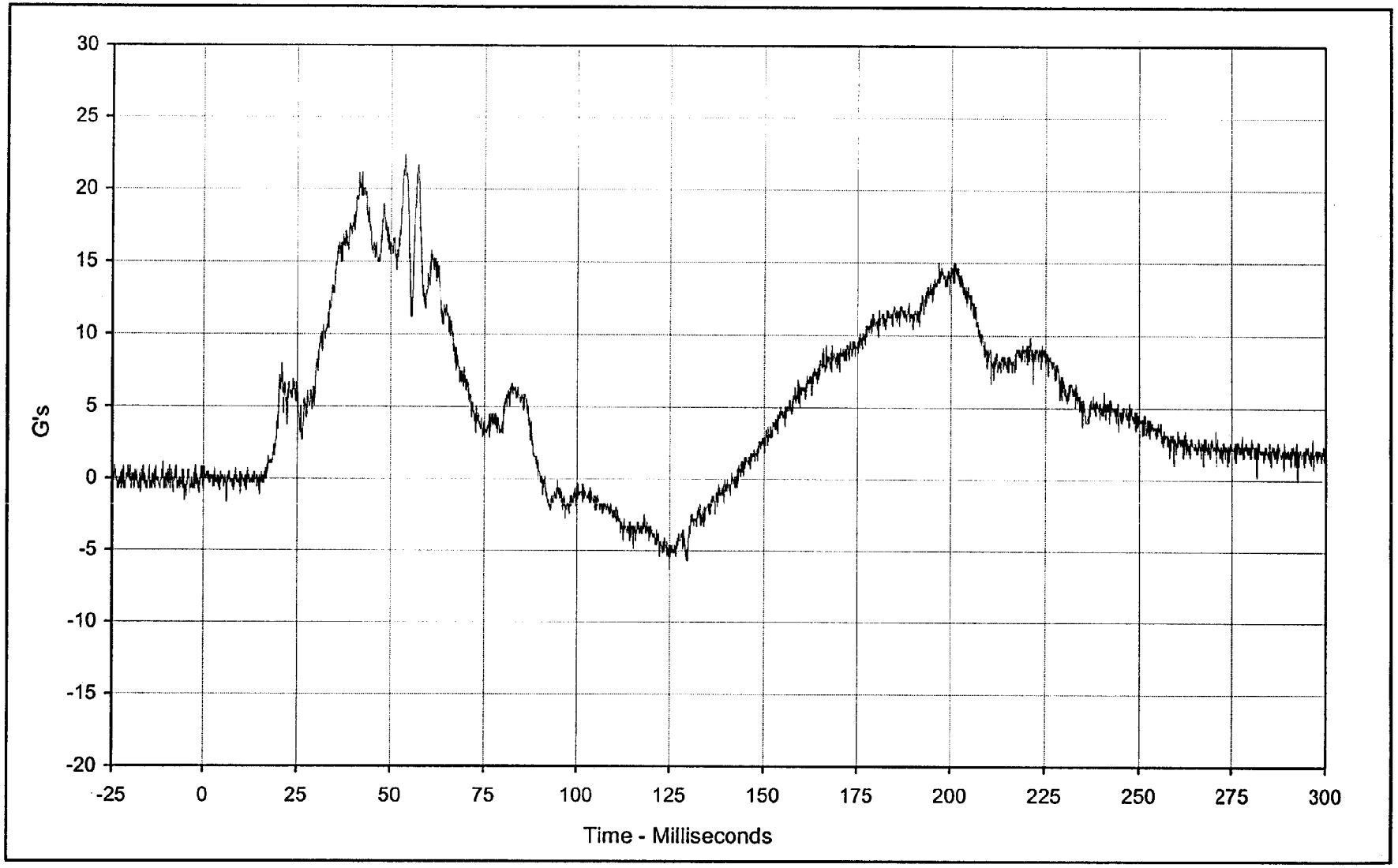
KARCO Engineering



Curve Description:	Driver Head Primary Y			
Maximum Value:	8.2	at	53.0	Milliseconds
Minimum Value:	-2.9	at	72.1	Milliseconds
SAE Filter Class:	1000			
Date of Test:	11/23/99			
Curve Number:	FIL-002			

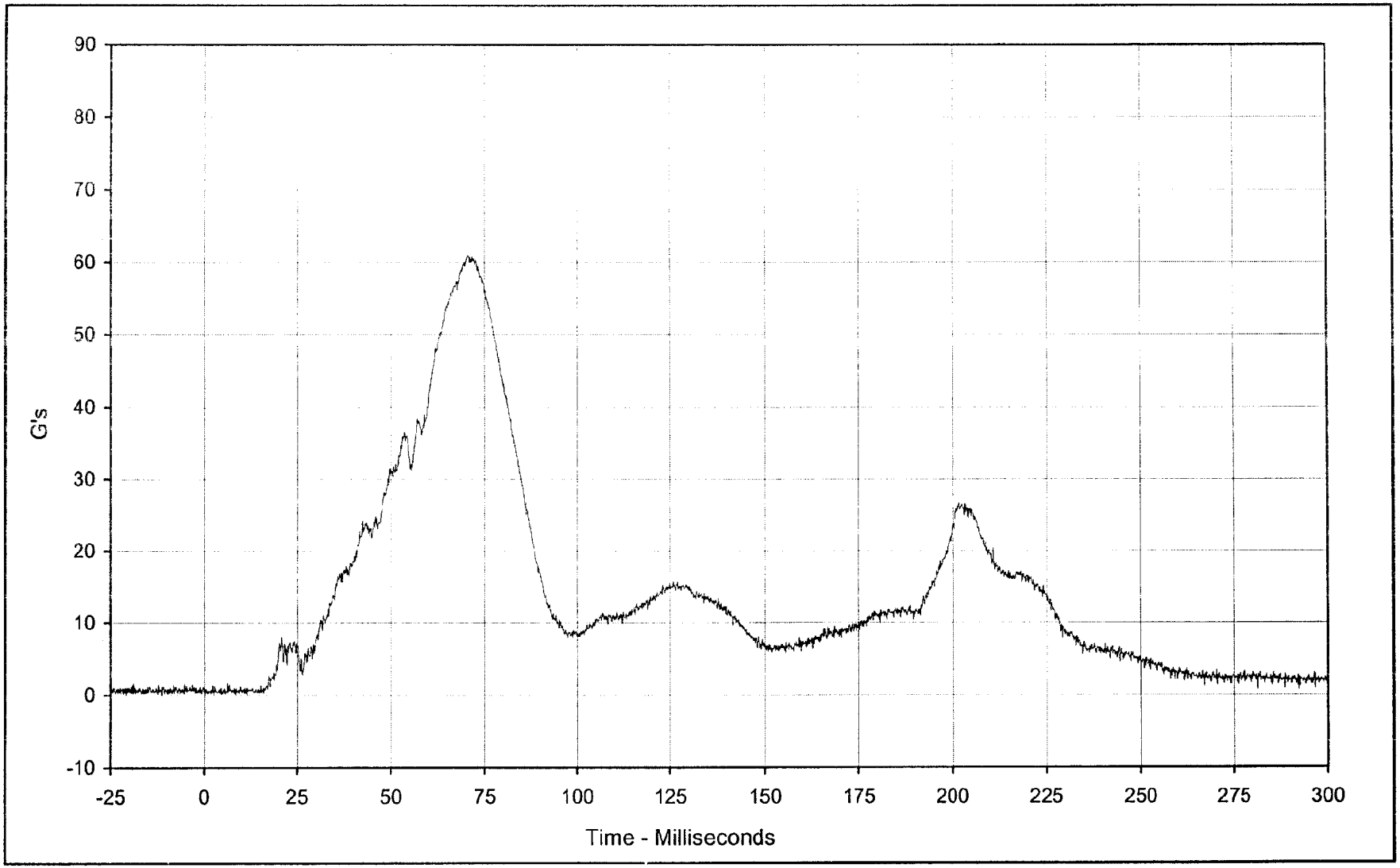
Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

KARC Engineering



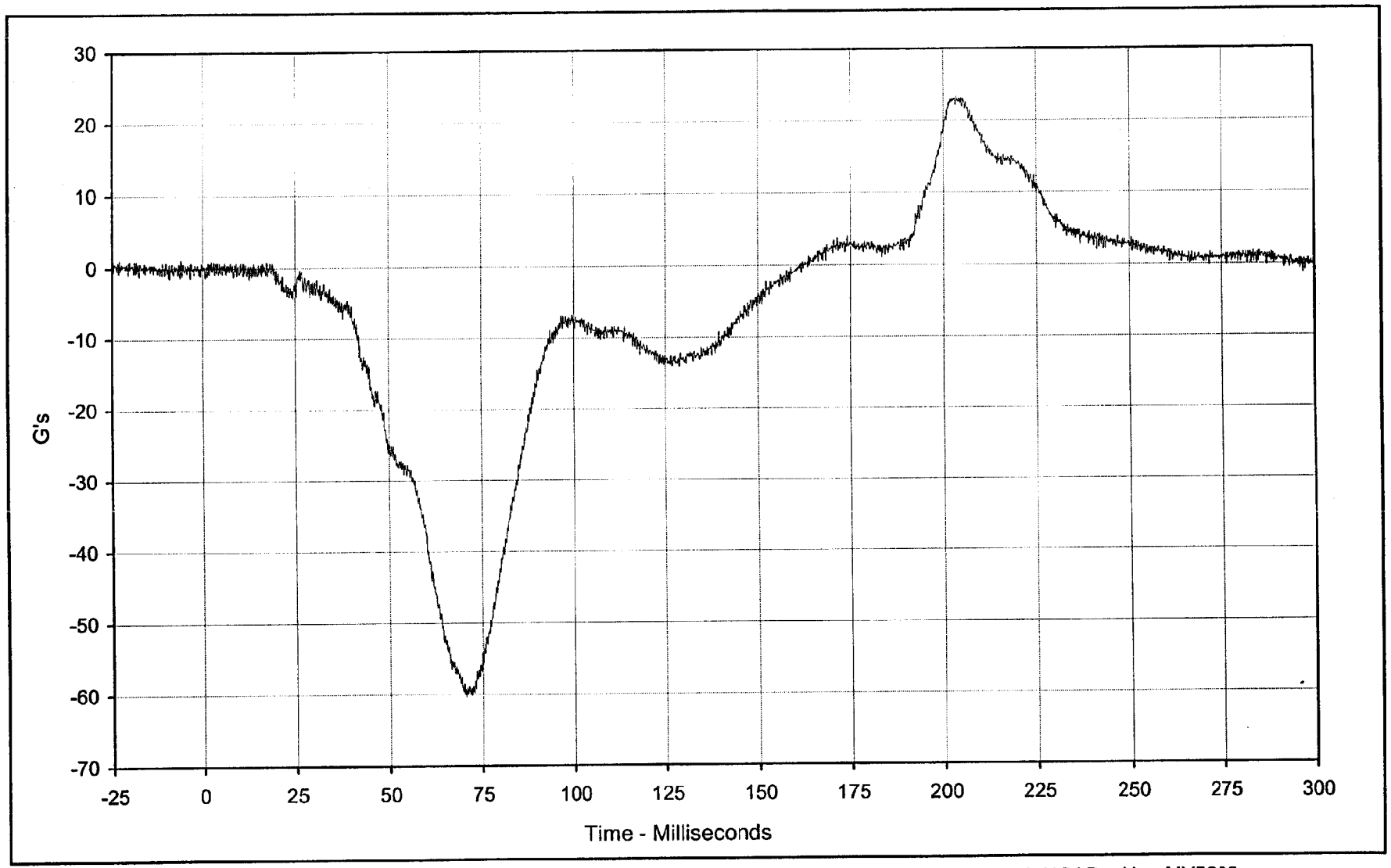
Curve Description:	Driver Head Primary Z			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	22.5	at	53.6 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-6.2	at	124.9 Milliseconds		
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	FIL-003				

KARCO Engineering



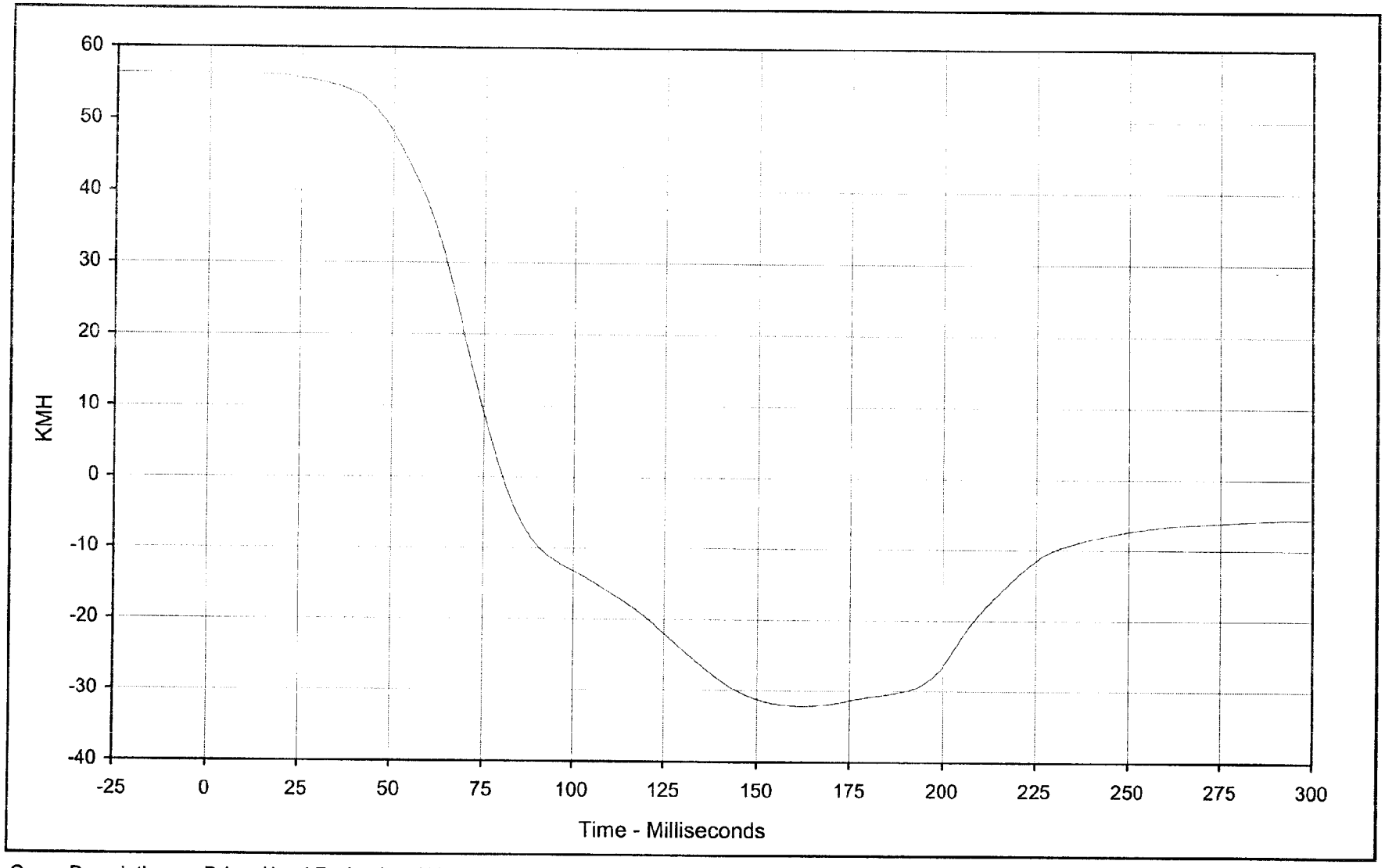
Curve Description:	Driver Head Resultant Primary				Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5203
Maximum Value:	61.0	at	70.5	Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV	
Minimum Value:	0.1	at	2.6	Milliseconds			
SAE Filter Class:	1000						
Date of Test:	11/23/99						
Curve Number:	RES-001						

KARCO Engineering



Curve Description:	Driver Head Redundant X			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	23.3	at	203.4 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-60.4	at	70.4 Milliseconds		
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	FIL-004				

KARCO Engineering



Curve Description: Driver Head Redundant X Velocity

Maximum Value: 56.3 at 0.0 Milliseconds

Minimum Value: -32.2 at 162.1 Milliseconds

SAE Filter Class: 180

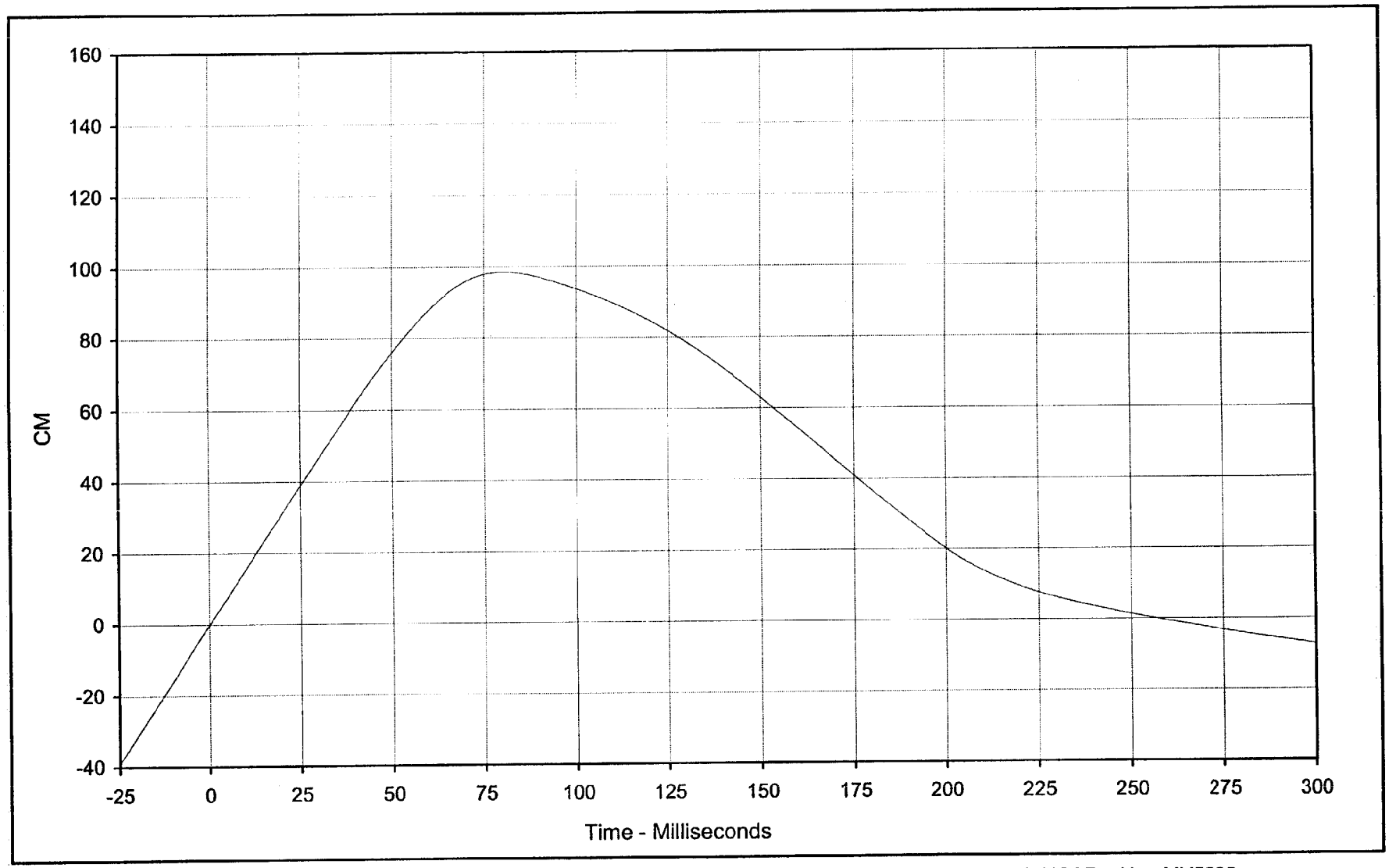
Date of Test: 11/23/99

Curve Number: IN1-004

Testing Program 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Driver Head Redundant X Displ.

Maximum Value: 98.5 at 80.2 Milliseconds

Minimum Value: -7.3 at 299.9 Milliseconds

SAE Filter Class: 180

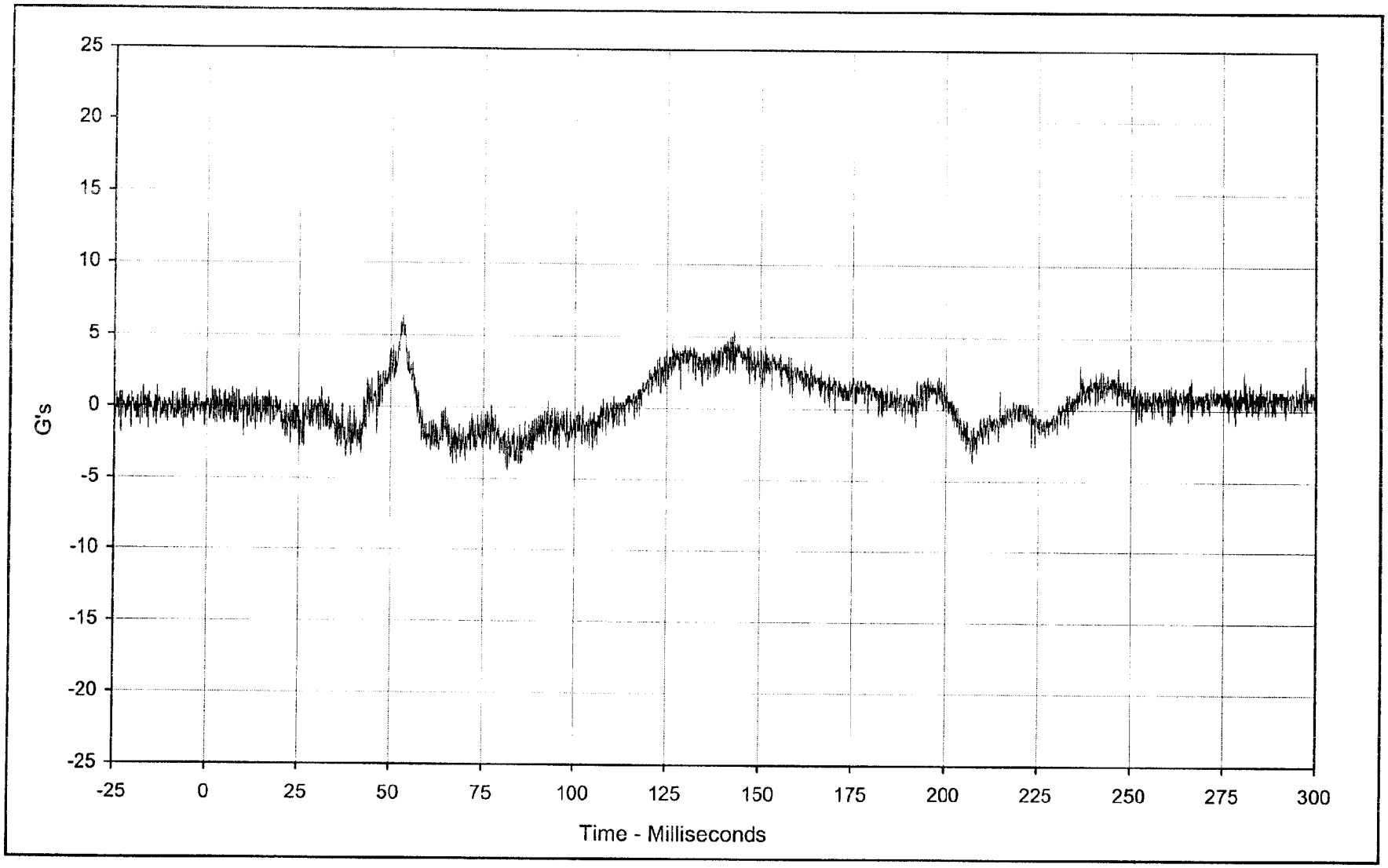
Date of Test: 11/23/99

Curve Number: IN2-004

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

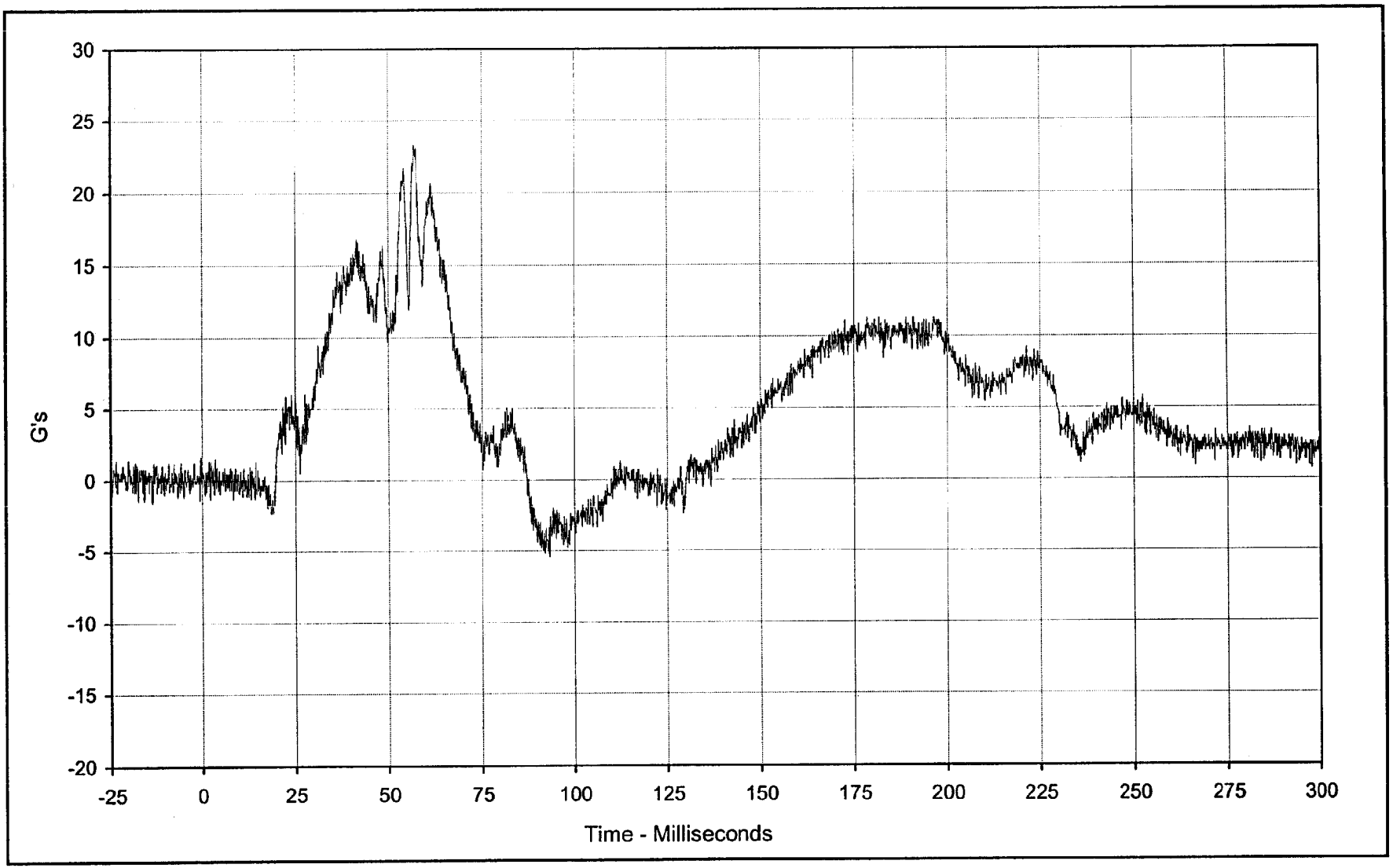
Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



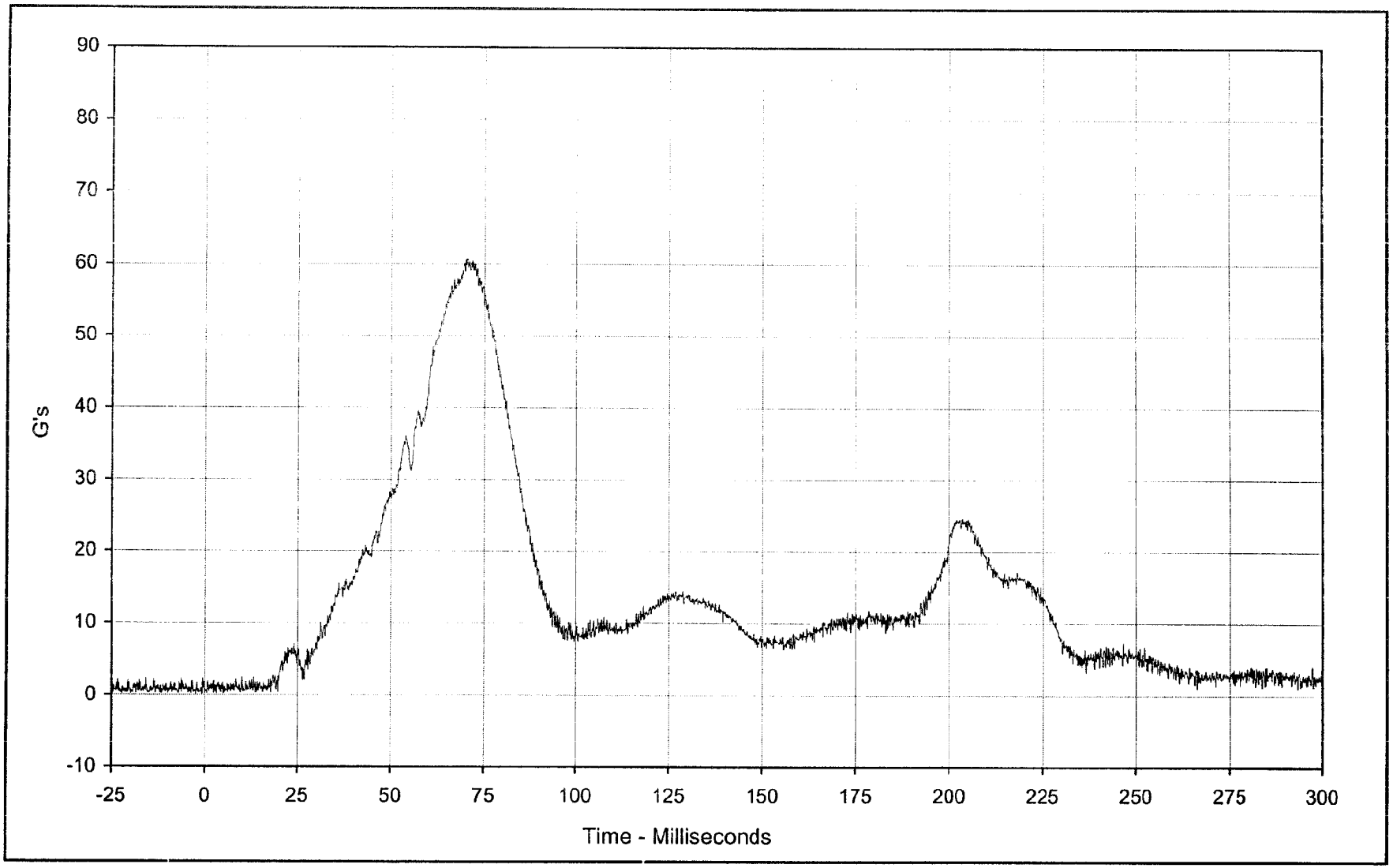
Curve Description:	Driver Head Redundant Y			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	6.4	at	53.2 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-4.4	at	81.4 Milliseconds		
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	FIL-005				

KARC Engineering



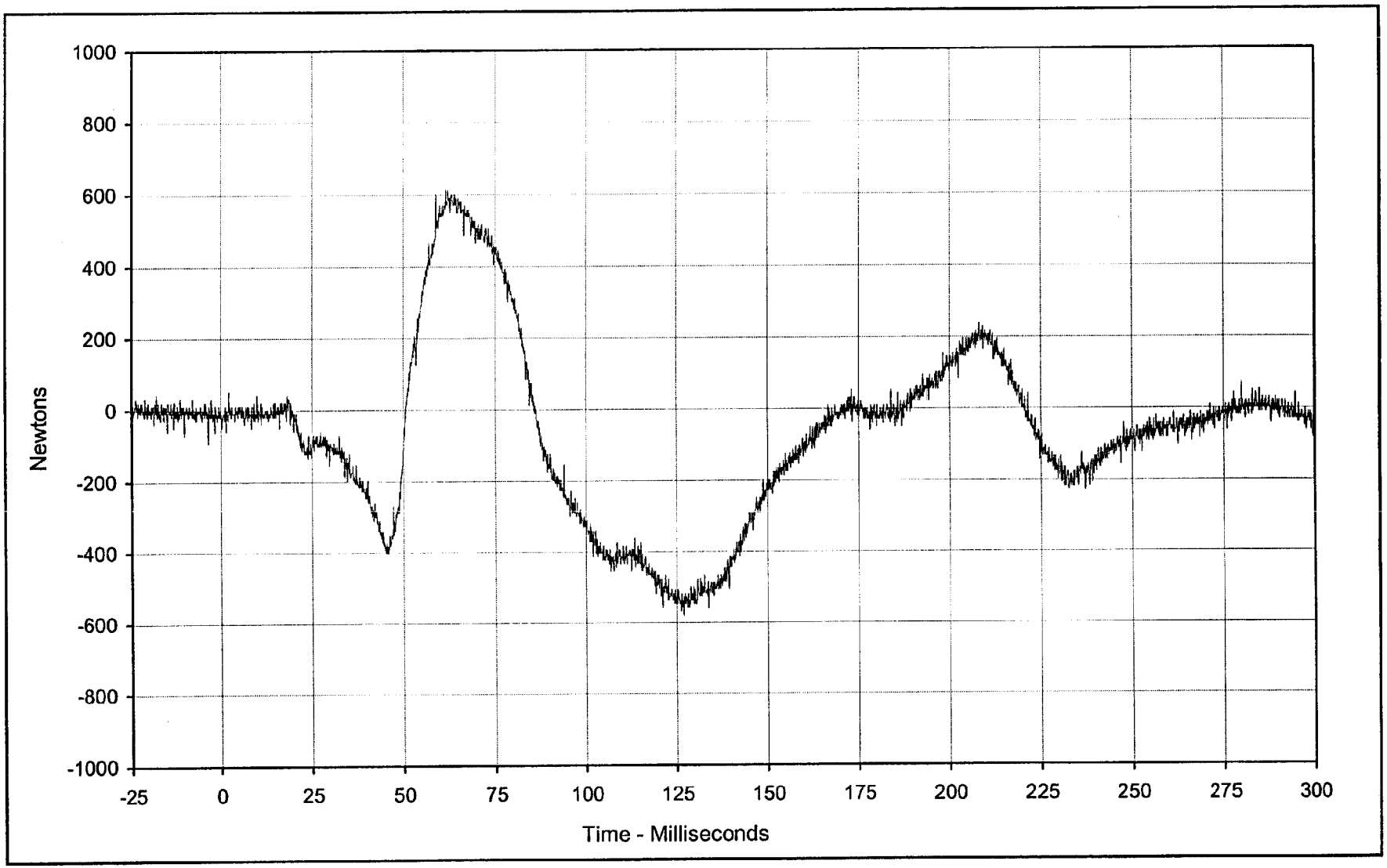
Curve Description:	Driver Head Redundant Z			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	23.3	at	56.8 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-5.4	at	93.3 Milliseconds		
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	FIL-006				

KARCO Engineering



Curve Description:	Driver Head Resultant Redundant			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	60.8	at	70.4 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	0.2	at	4.9 Milliseconds		
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	RES-004				

KARC Engineering



Curve Description: Driver Neck Force X

Maximum Value: 610.7 at 61.8 Milliseconds

Minimum Value: -579.6 at 126.8 Milliseconds

SAE Filter Class: 1000

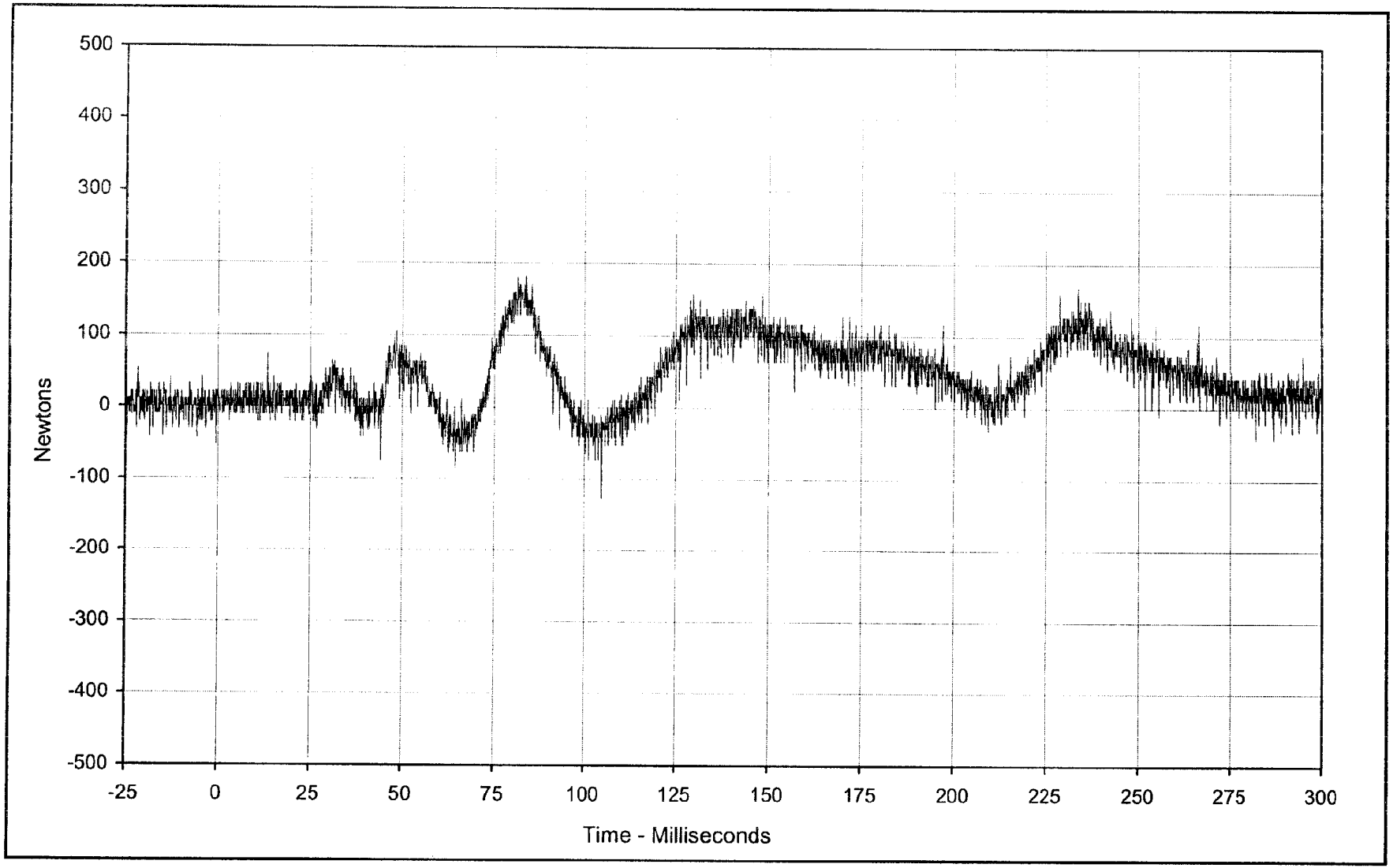
Date of Test: 11/23/99

Curve Number: FIL-007

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

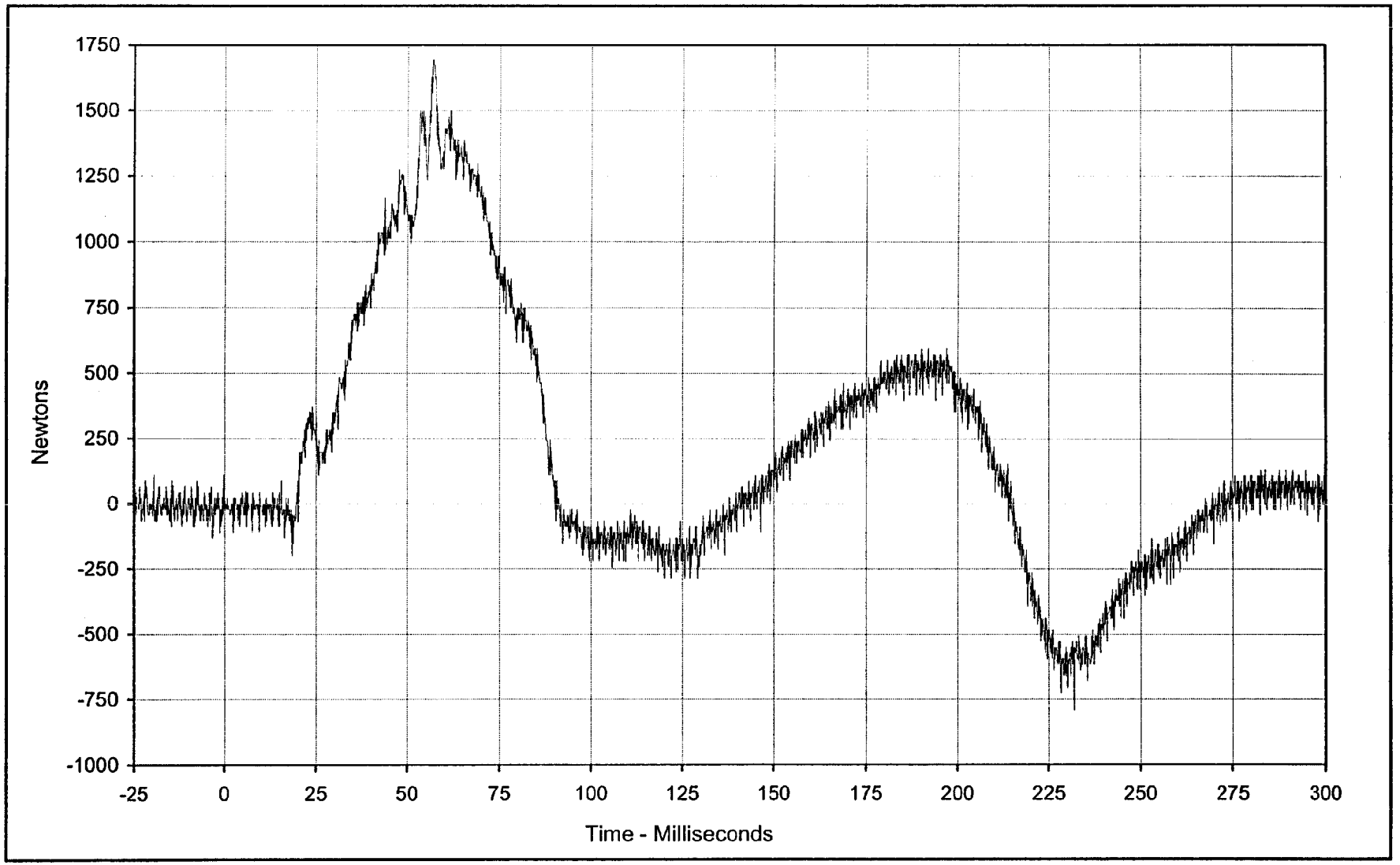
KARCO Engineering



Curve Description:	Driver Neck Force Y				
Maximum Value:	180.4	at	81.6	Milliseconds	
Minimum Value:	-127.4	at	104.8	Milliseconds	
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	FIL-008				

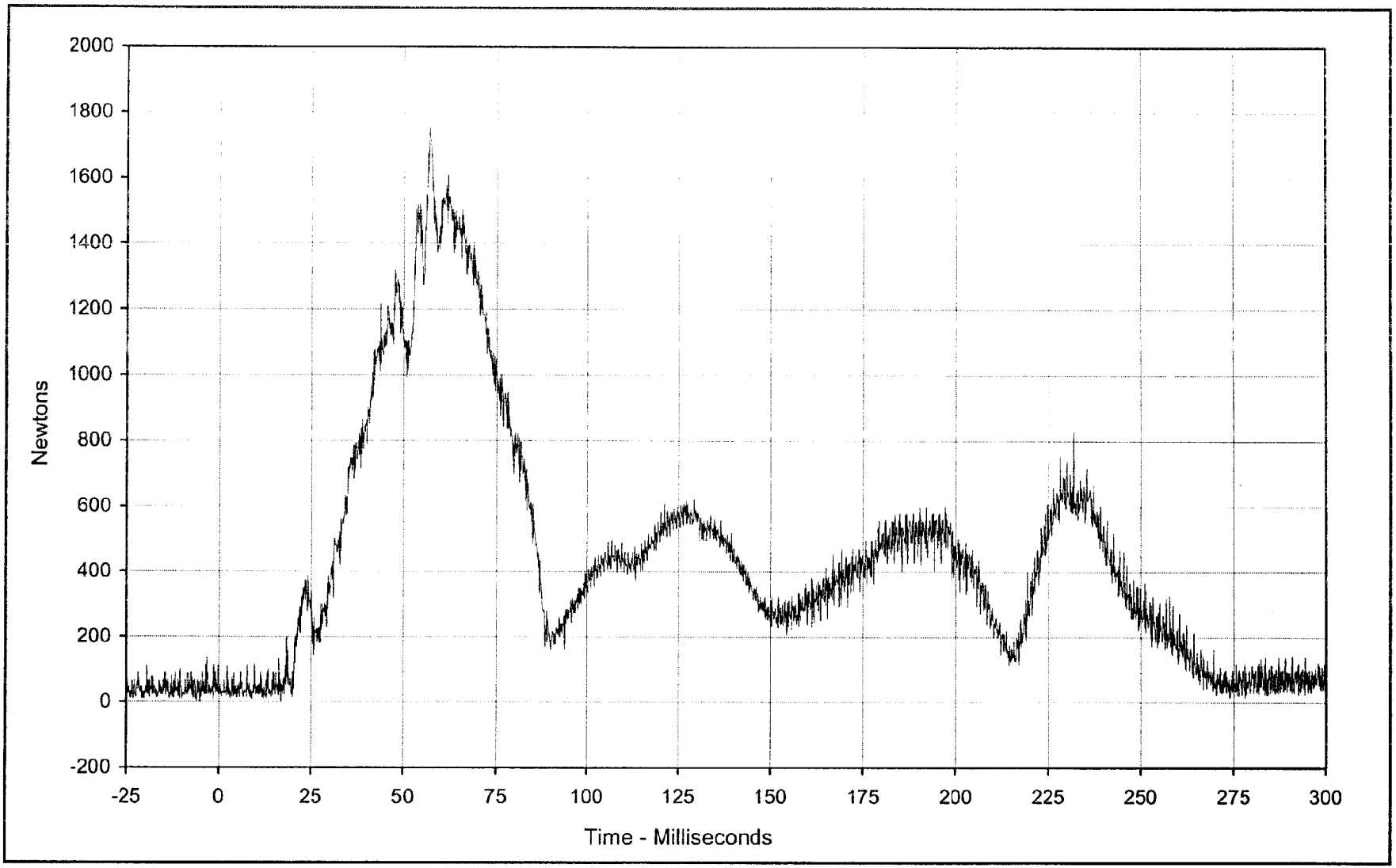
Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

KARCO Engineering



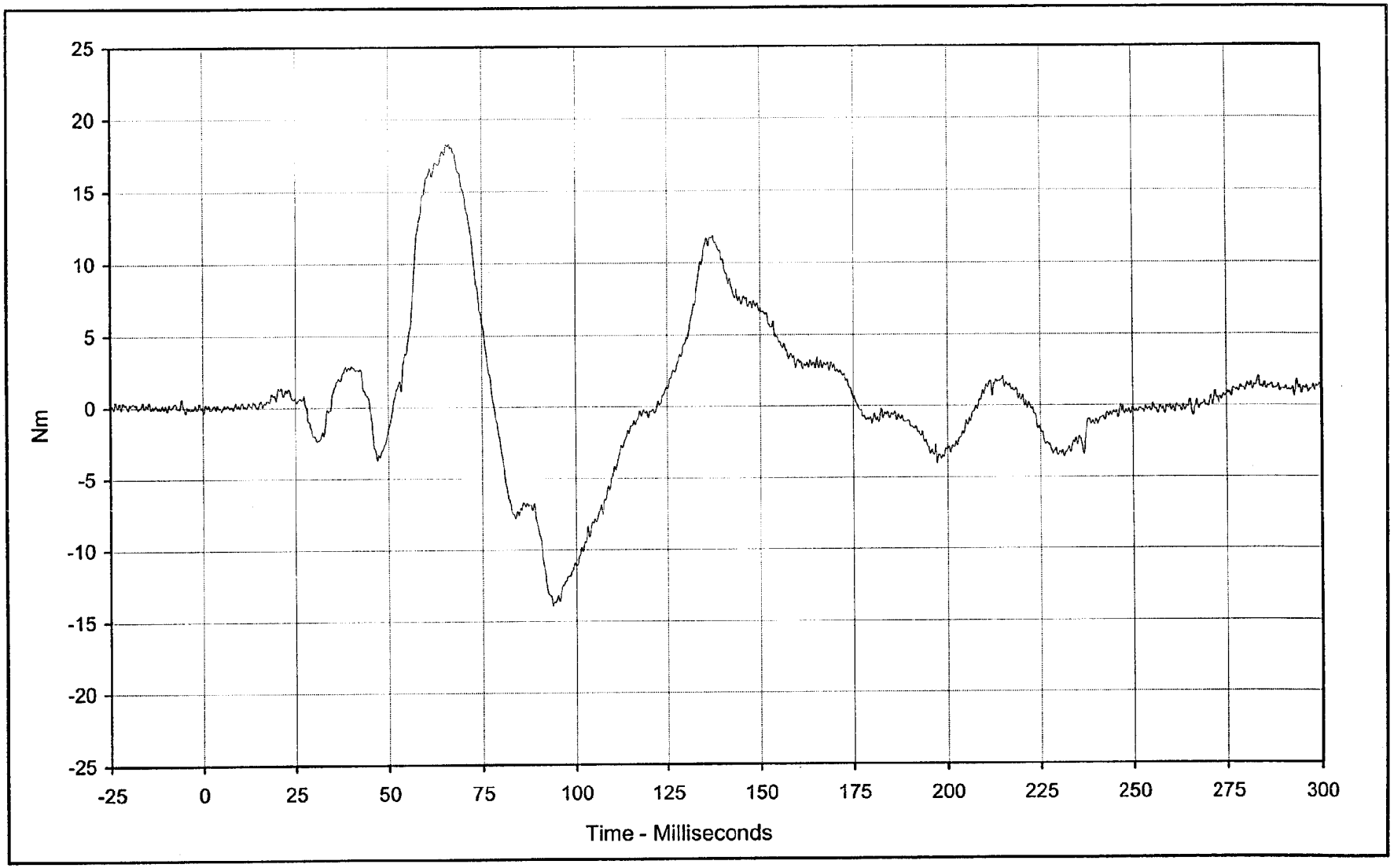
Curve Description:	Driver Neck Force Z			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	1695.2	at	56.9 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-792.6	at	231.8 Milliseconds		
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	FIL-009				

KARC Engineering



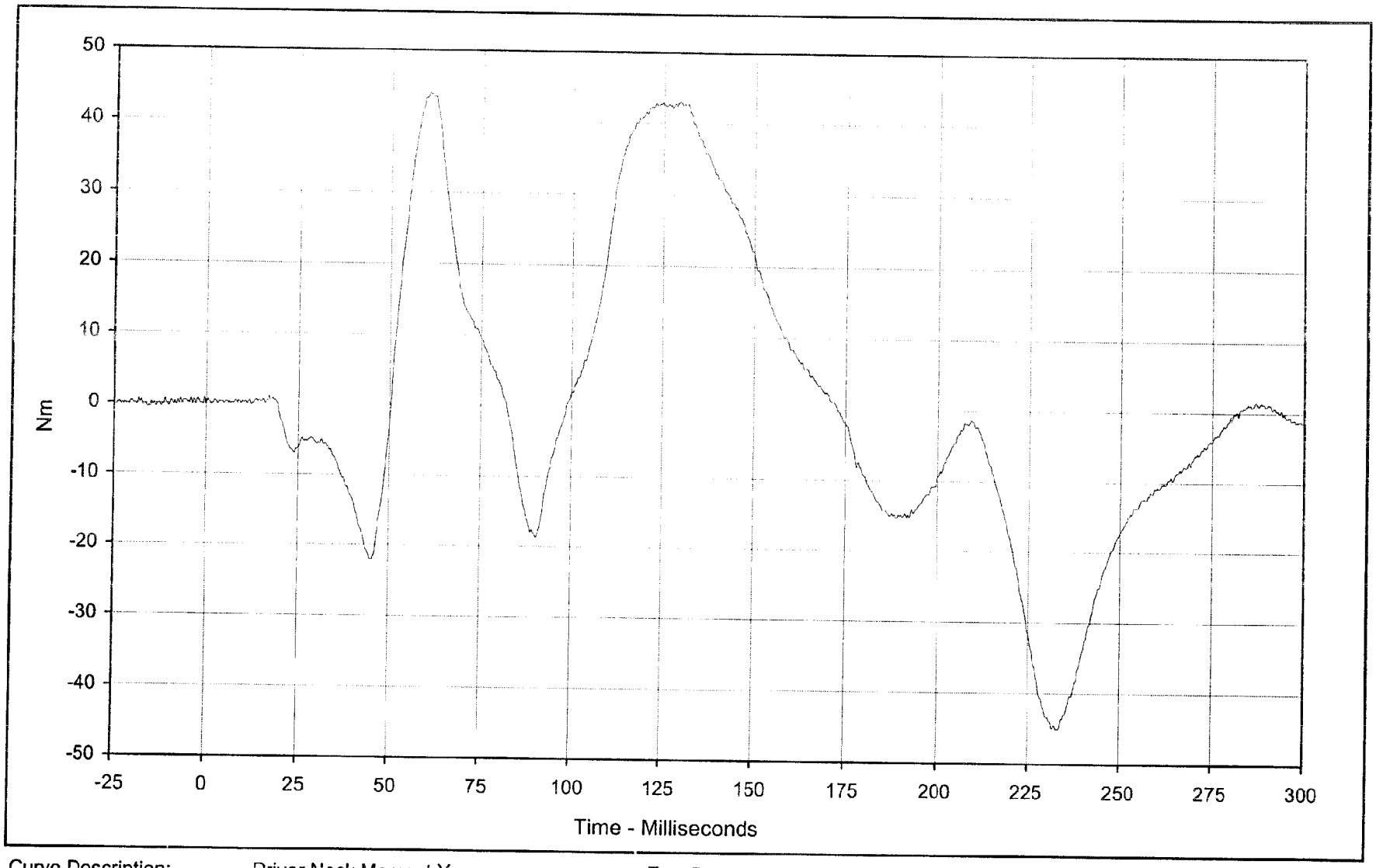
Curve Description:	Driver Neck Force Resultant			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	1758.4	at	56.9 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	0.0	at	17.1 Milliseconds		
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	RES-007				

KARC Engineering



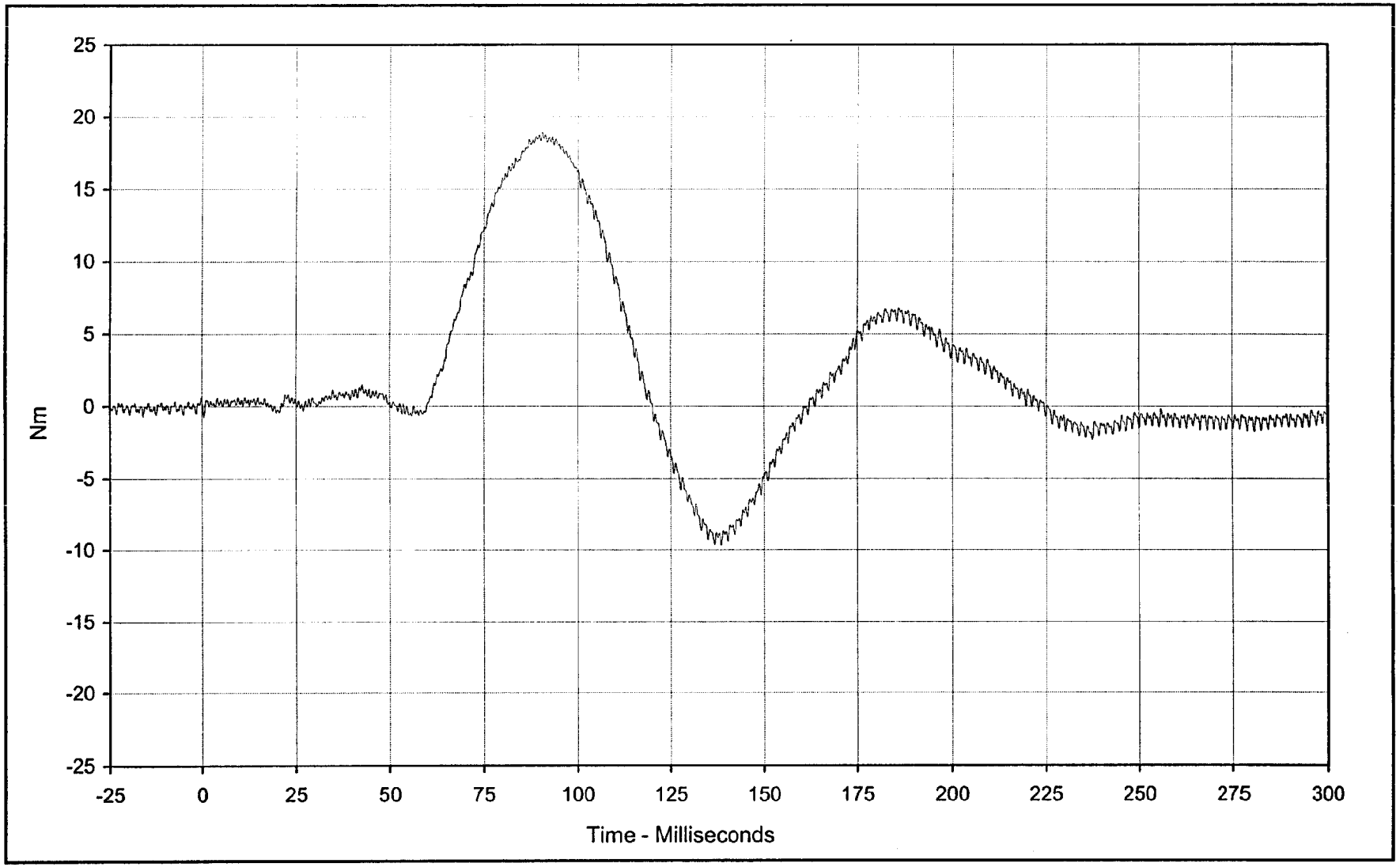
Curve Description:	Driver Neck Moment X			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	18.3	at	66.4 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-13.9	at	93.7 Milliseconds		
SAE Filter Class:	600				
Date of Test:	11/23/99				
Curve Number:	FIL-010				

KARC Engineering



Curve Description:	Driver Neck Moment Y			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	44.0	at	60.3 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-45.1	at	233.4 Milliseconds		
SAE Filter Class:	600				
Date of Test:	11/23/99				
Curve Number:	FIL-011				

KARC Engineering



Curve Description:	Driver Neck Moment Z				
Maximum Value:	18.9	at	90.5	Milliseconds	
Minimum Value:	-9.7	at	138.4	Milliseconds	
SAE Filter Class:	600				
Date of Test:	11/23/99				
Curve Number:	FIL-012				

Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

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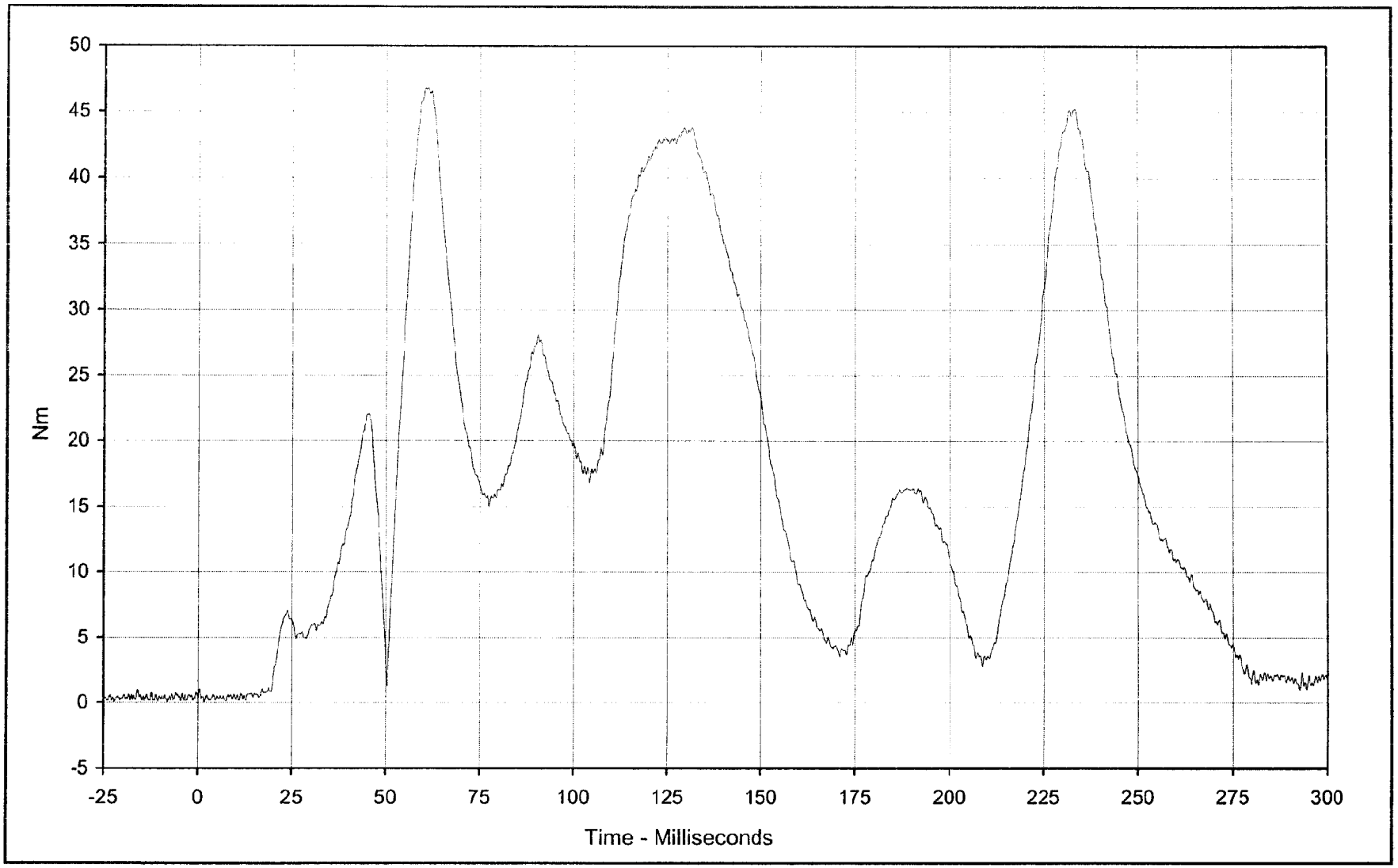
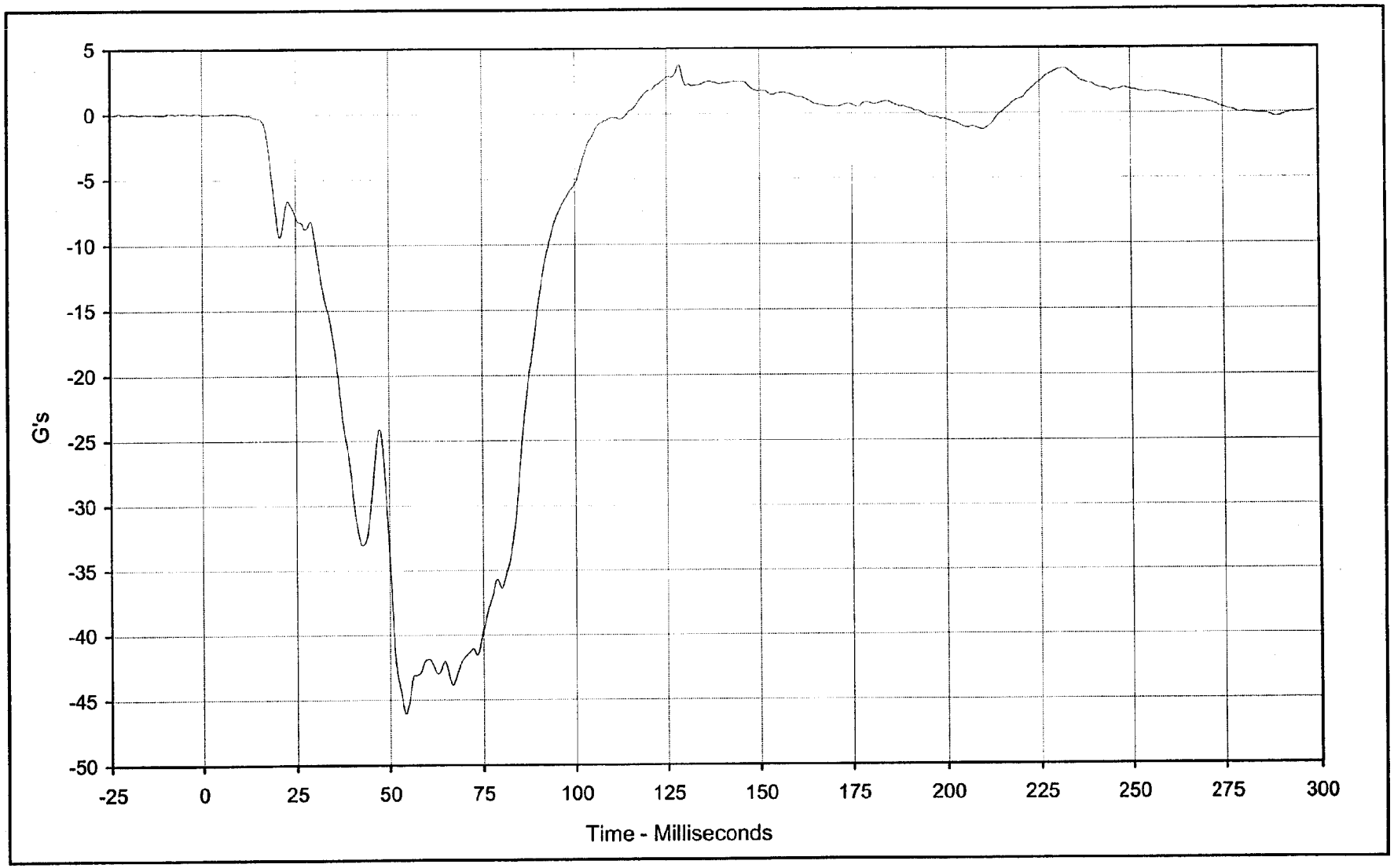


Curve Description:	Driver Neck Moment Resultant			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	46.8	at	60.9 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	0.0	at	1.7 Milliseconds		
SAE Filter Class:	600				
Date of Test:	11/23/99				
Curve Number:	RES-010				

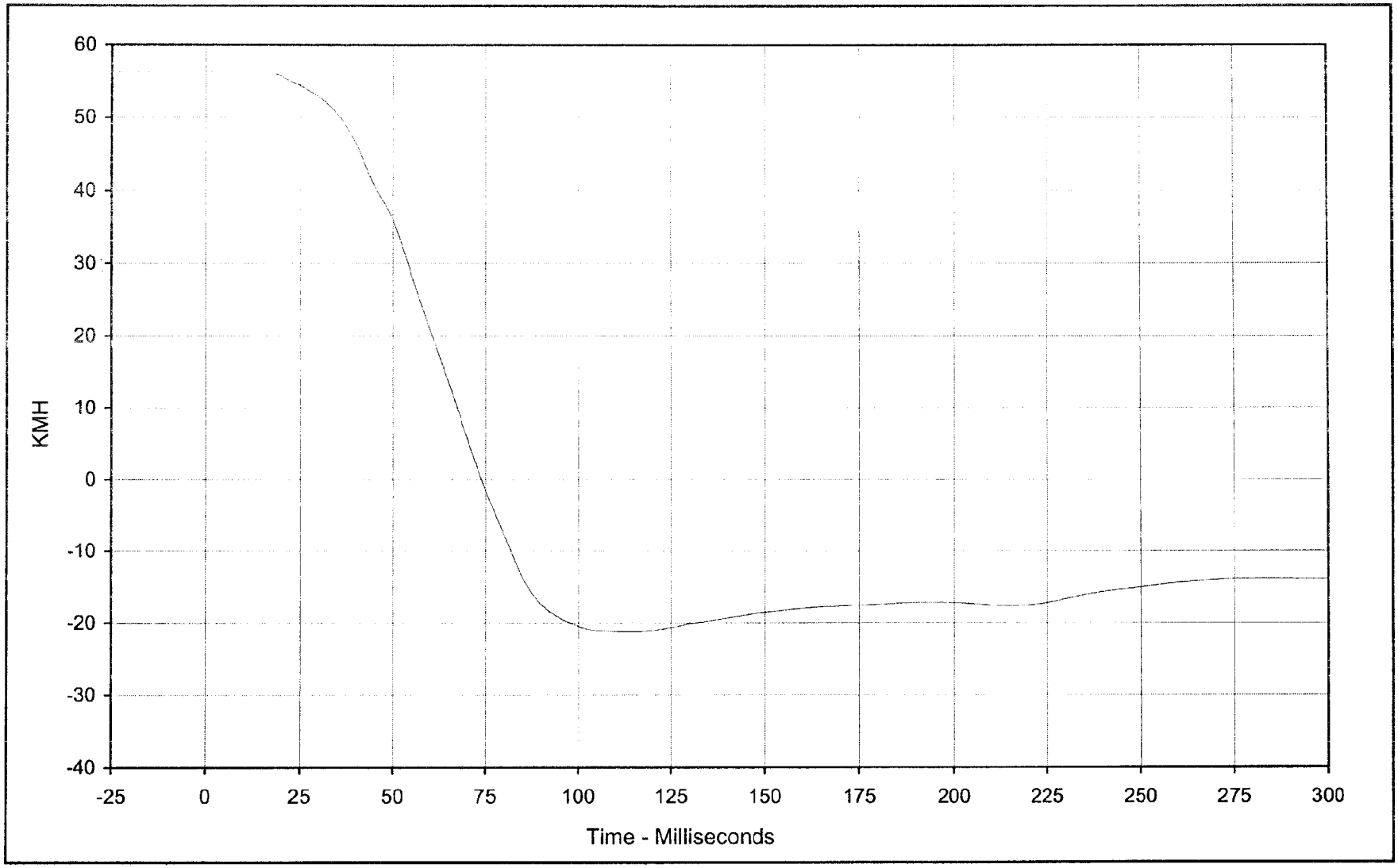
KARC Engineering



Curve Description:	Driver Chest Primary X			
Maximum Value:	3.8	at	128.4	Milliseconds
Minimum Value:	-46.1	at	54.1	Milliseconds
SAE Filter Class:	180			
Date of Test:	11/23/99			
Curve Number:	FIL-013			

Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Driver Chest Primary X Velocity

Maximum Value: 56.3 at 10.1 Milliseconds

Minimum Value: -21.2 at 114.1 Milliseconds

SAE Filter Class: 180

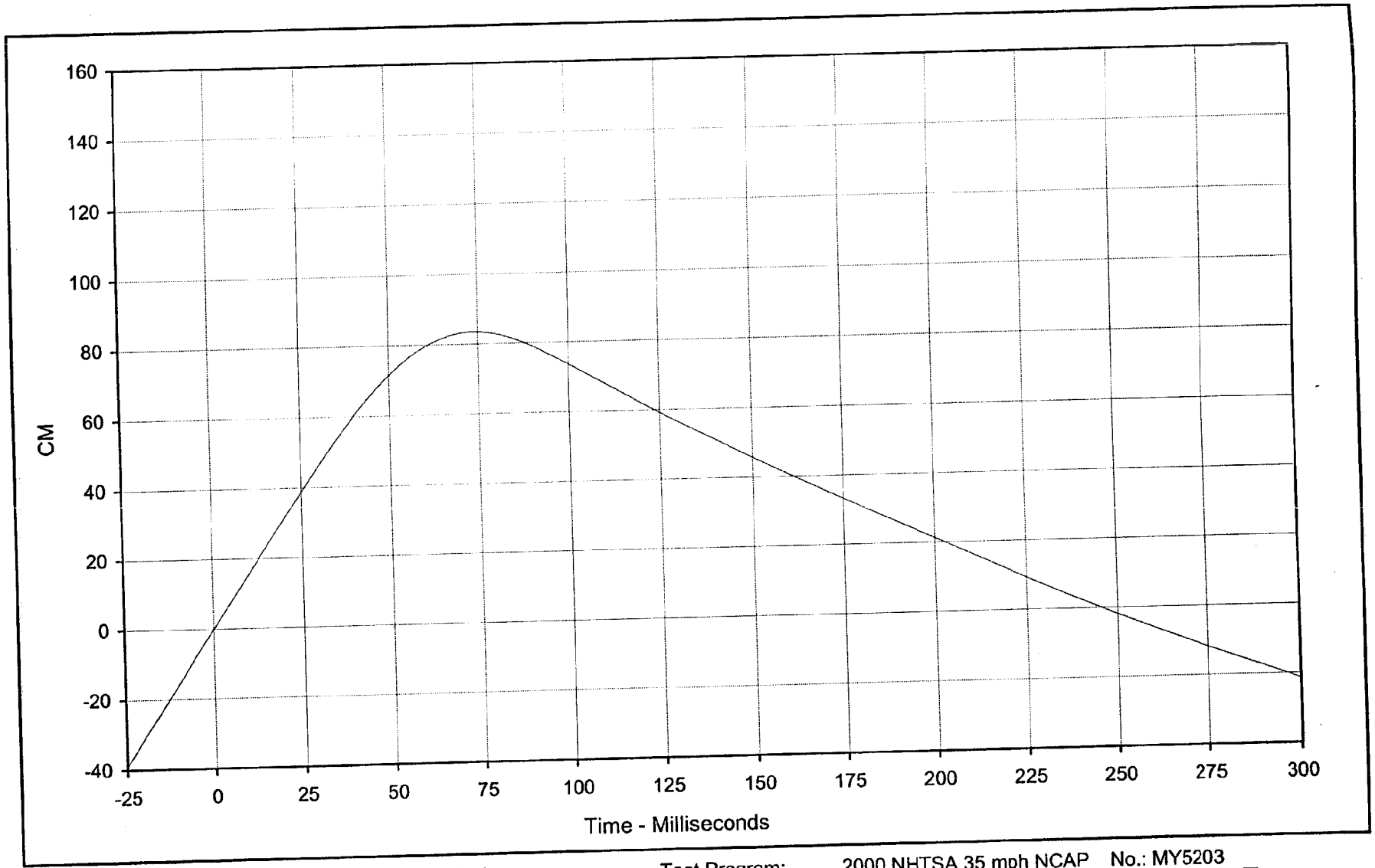
Date of Test: 11/23/99

Curve Number: IN1-013

Testing Program 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Driver Chest Primary X Displ.

Maximum Value: 83.4 at 74.0 Milliseconds

Minimum Value: -21.4 at 299.9 Milliseconds

SAE Filter Class: 180

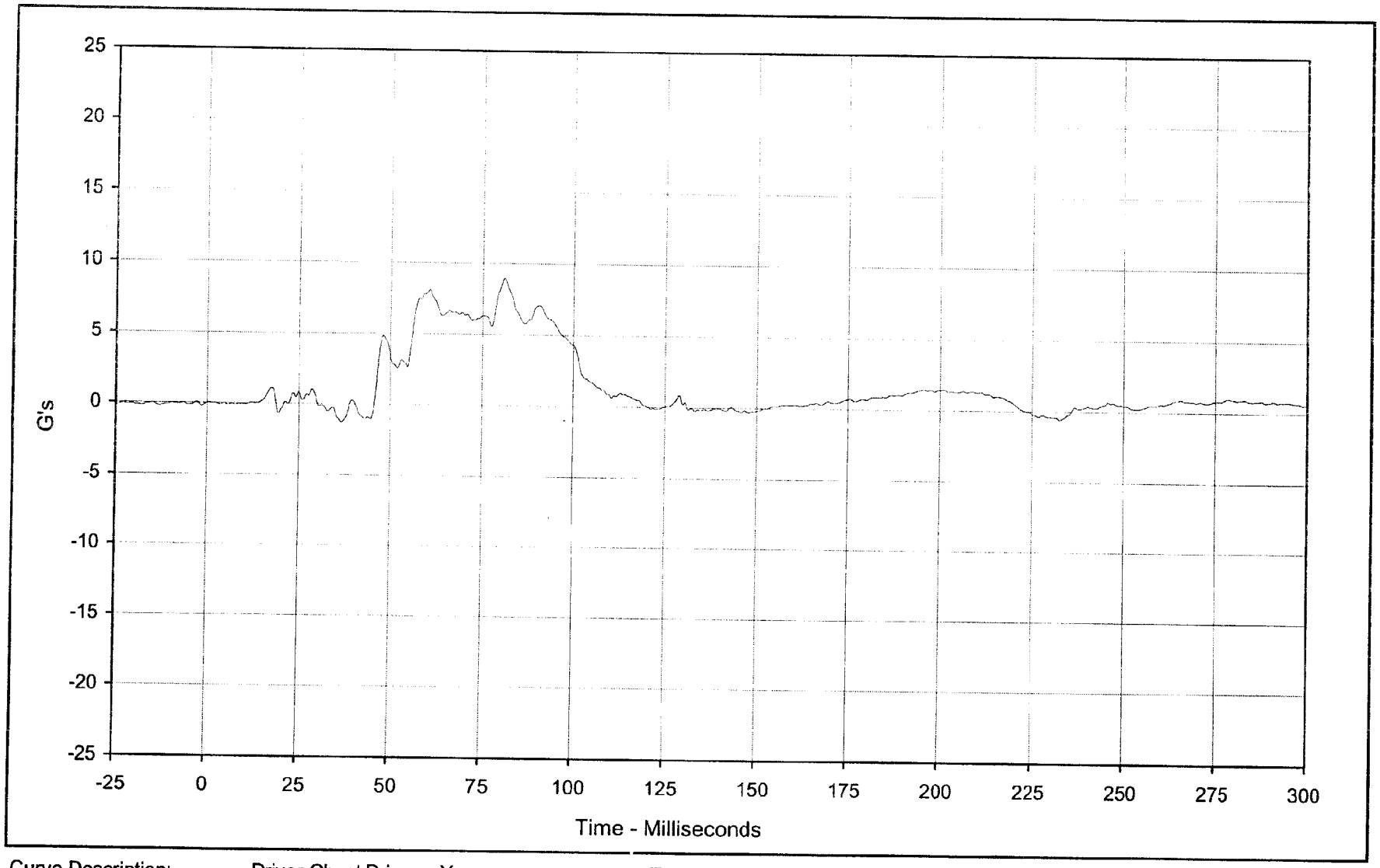
Date of Test: 11/23/99

Curve Number: IN2-013

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

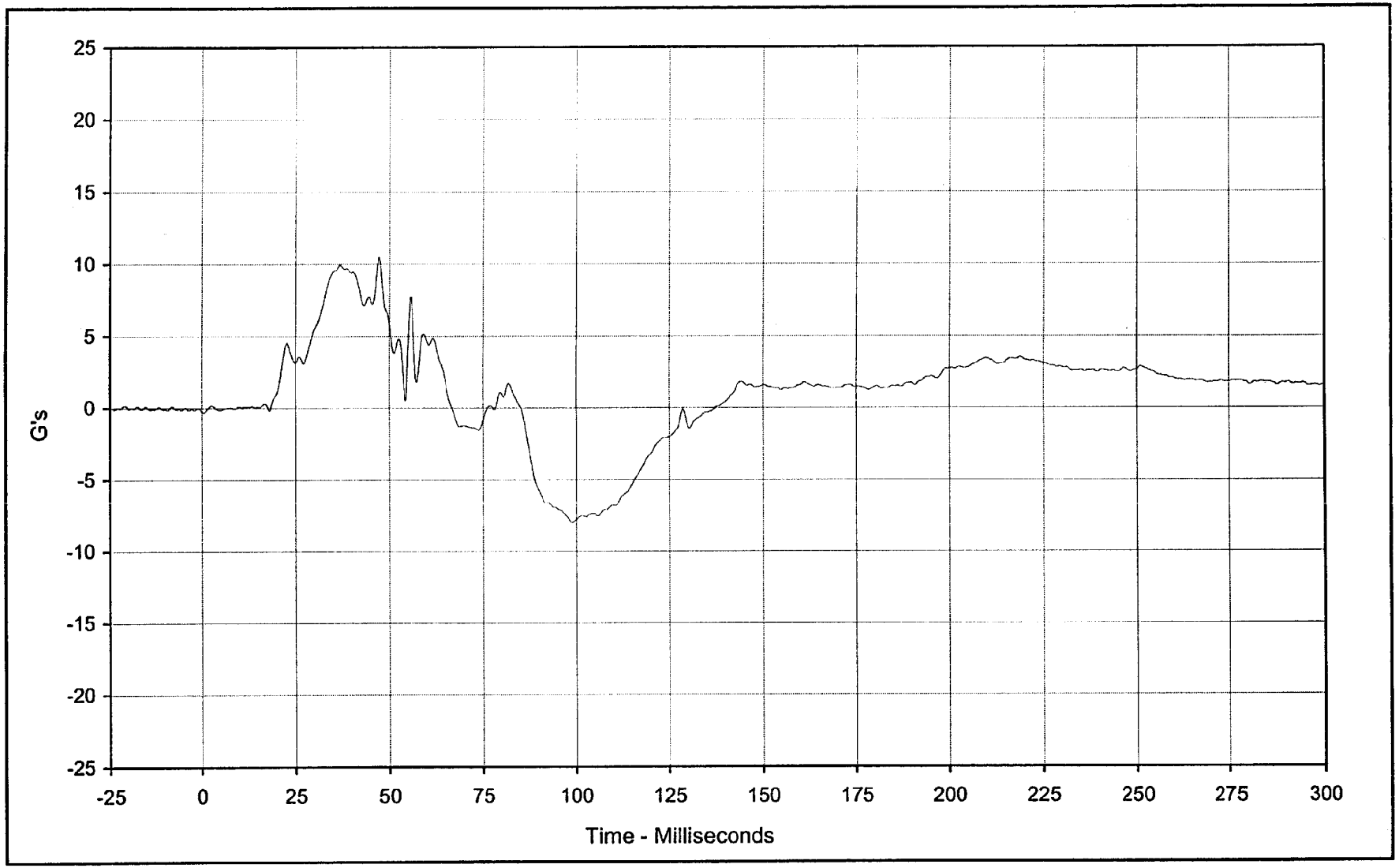
Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



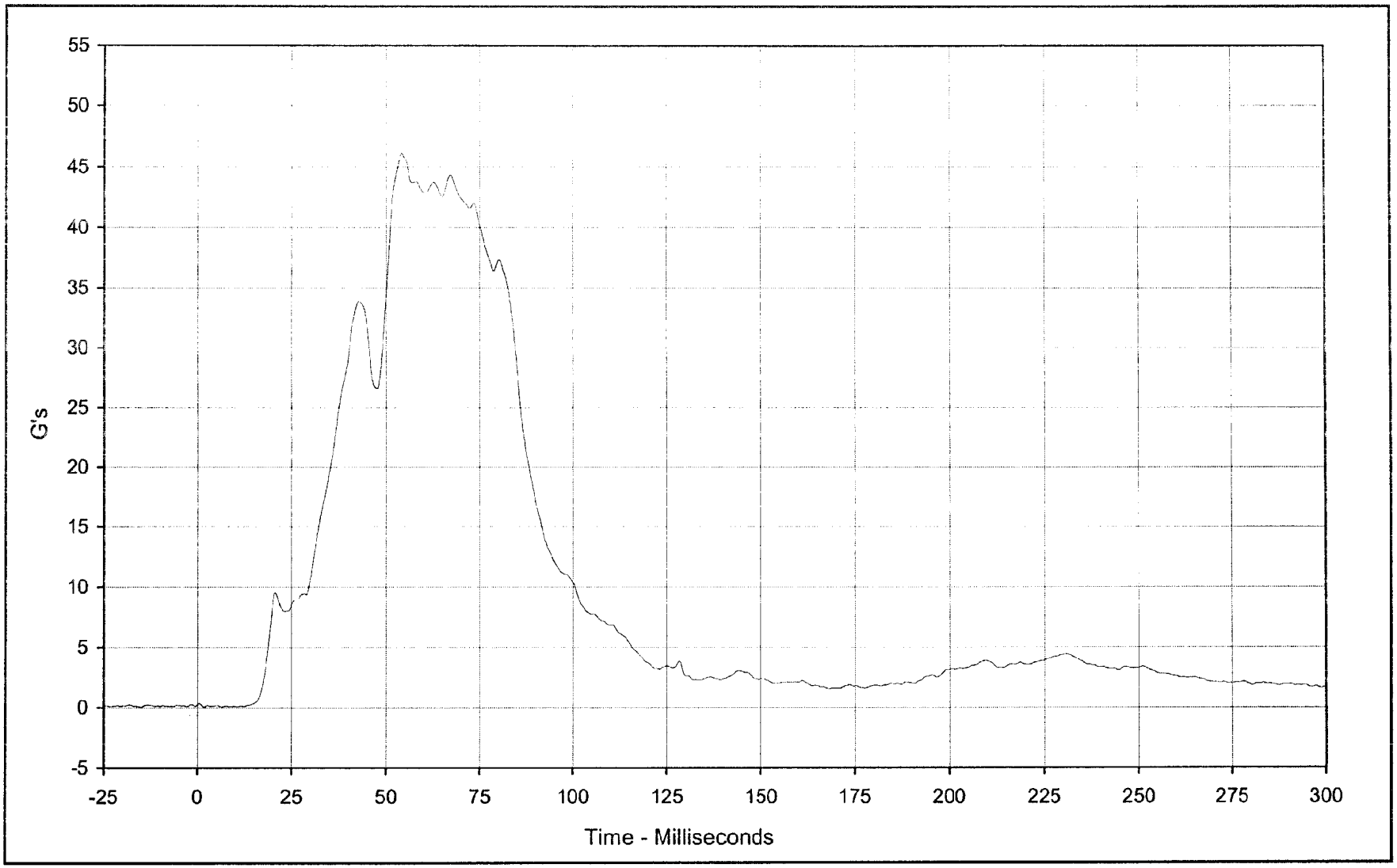
Curve Description:	Driver Chest Primary Y			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	8.9	at	80.9 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-1.3	at	36.4 Milliseconds		
SAE Filter Class:	180				
Date of Test:	11/23/99				
Curve Number:	FIL-014				

KARC Engineering



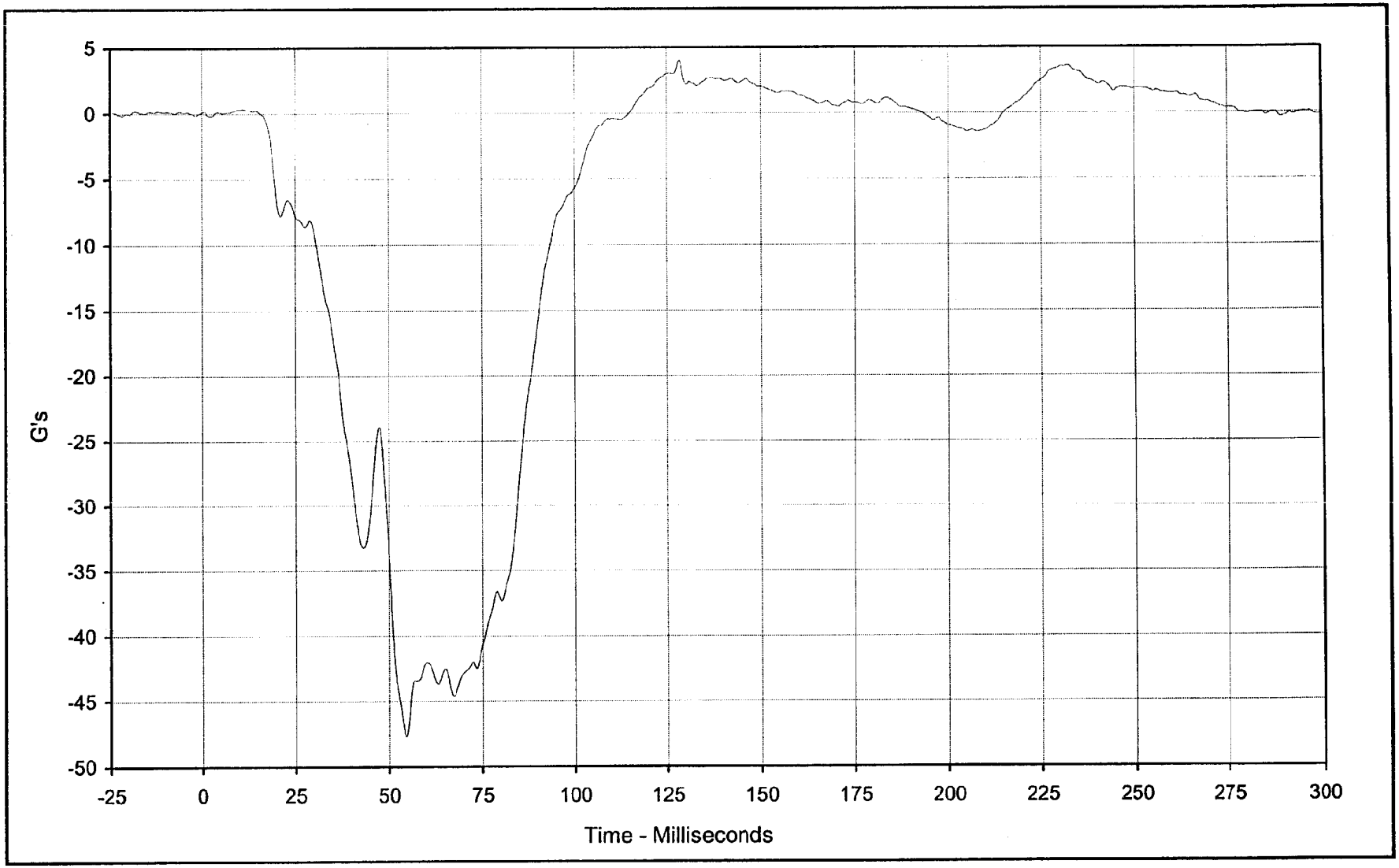
Curve Description:	Driver Chest Primary Z			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	10.5	at	47.2 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-8.0	at	98.9 Milliseconds		
SAE Filter Class:	180				
Date of Test:	11/23/99				
Curve Number:	FIL-015				

KARCO Engineering



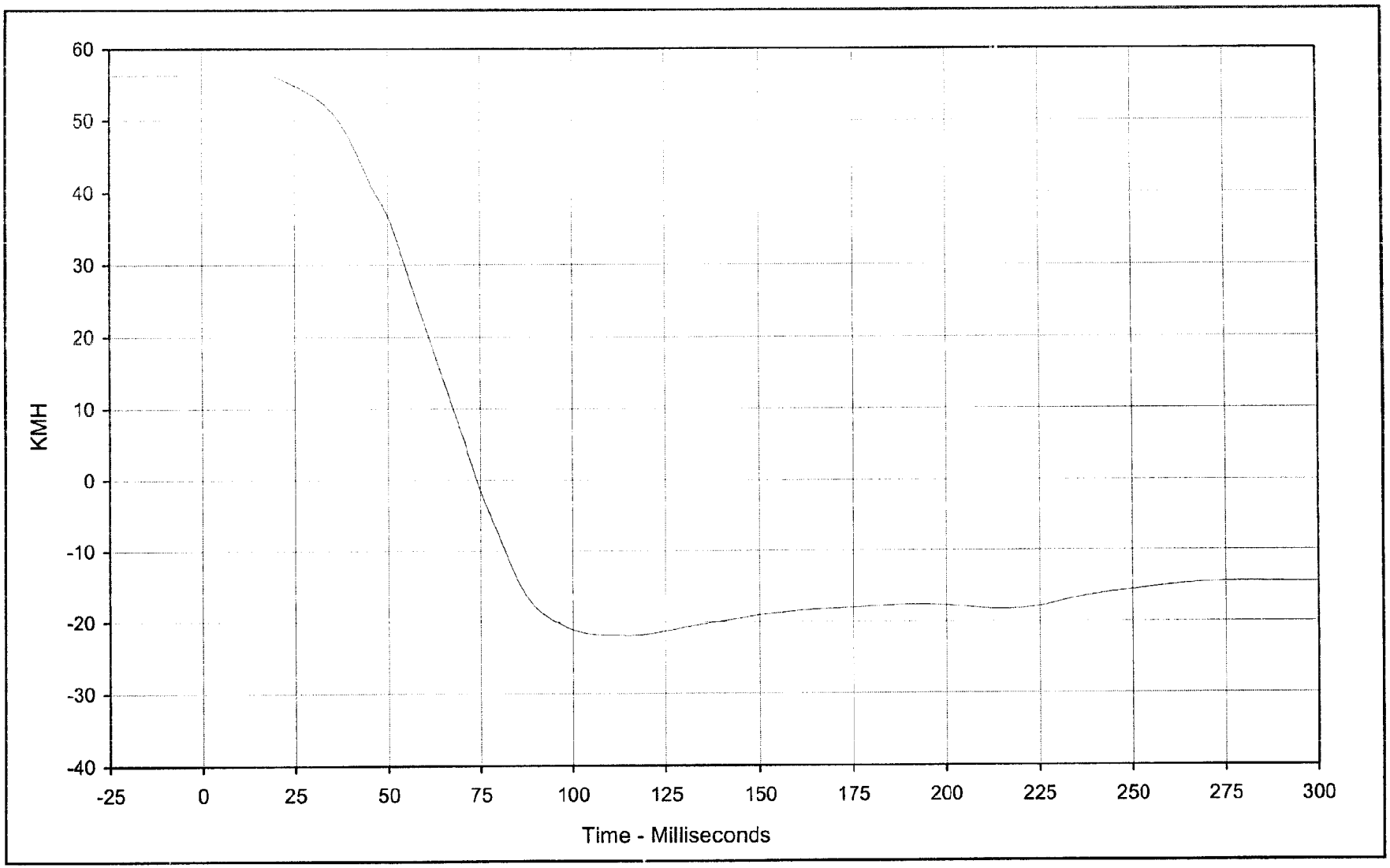
Curve Description:	Driver Chest Resultant Primary			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	46.1	at	54.1 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	0.0	at	1.7 Milliseconds		
SAE Filter Class:	180				
Date of Test:	11/23/99				
Curve Number:	RES-013				

KARC Engineering



Curve Description:	Driver Chest Redundant X			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	4.0	at	128.4 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-47.7	at	54.3 Milliseconds		
SAE Filter Class:	180				
Date of Test:	11/23/99				
Curve Number:	FIL-016				

KARC Engineering



Curve Description: Driver Chest Redundant X Velocity

Maximum Value: 56.4 at 15.7 Milliseconds

Minimum Value: -21.9 at 114.8 Milliseconds

SAE Filter Class: 180

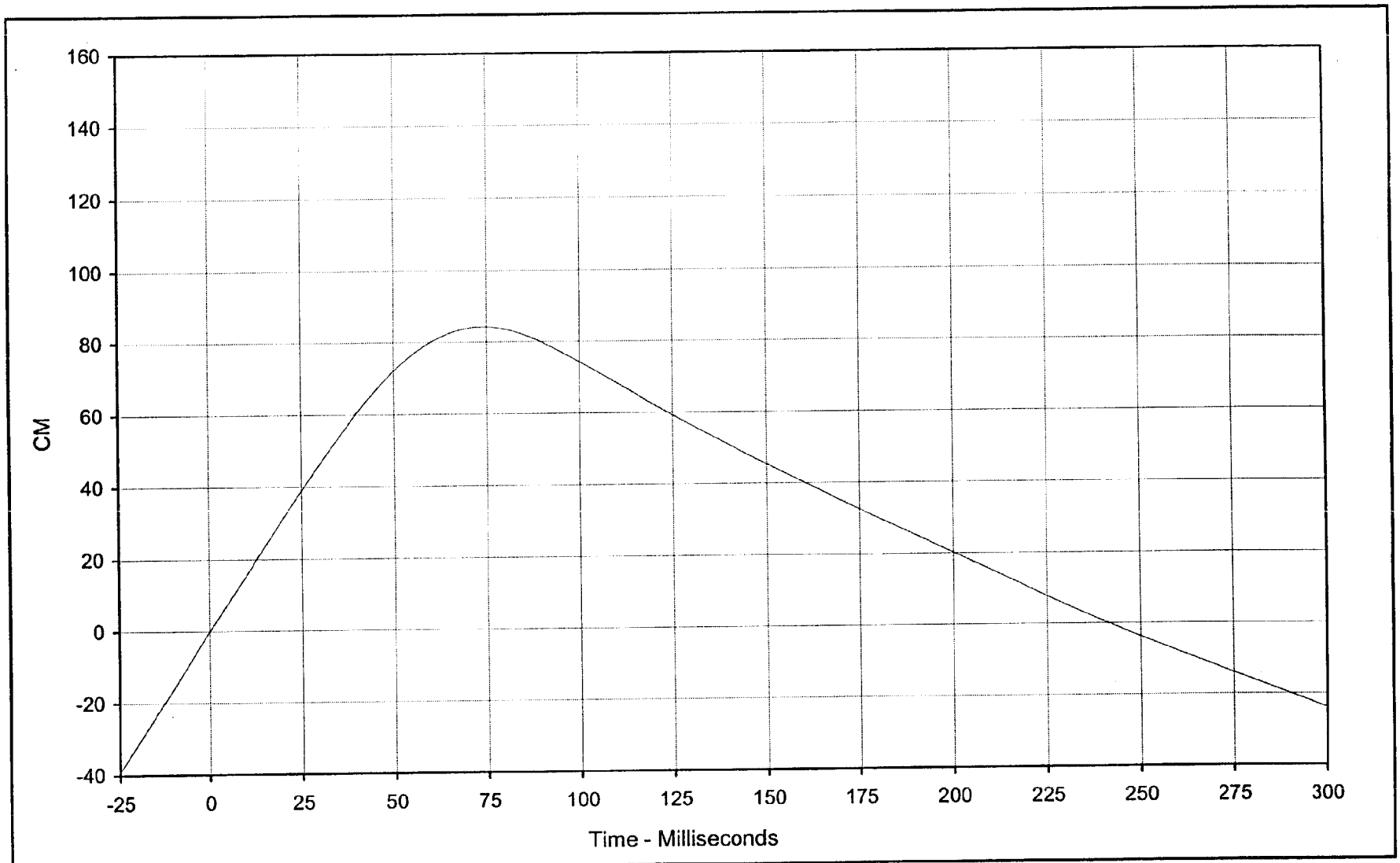
Date of Test: 11/23/99

Curve Number: IN1-016

Testing Program 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

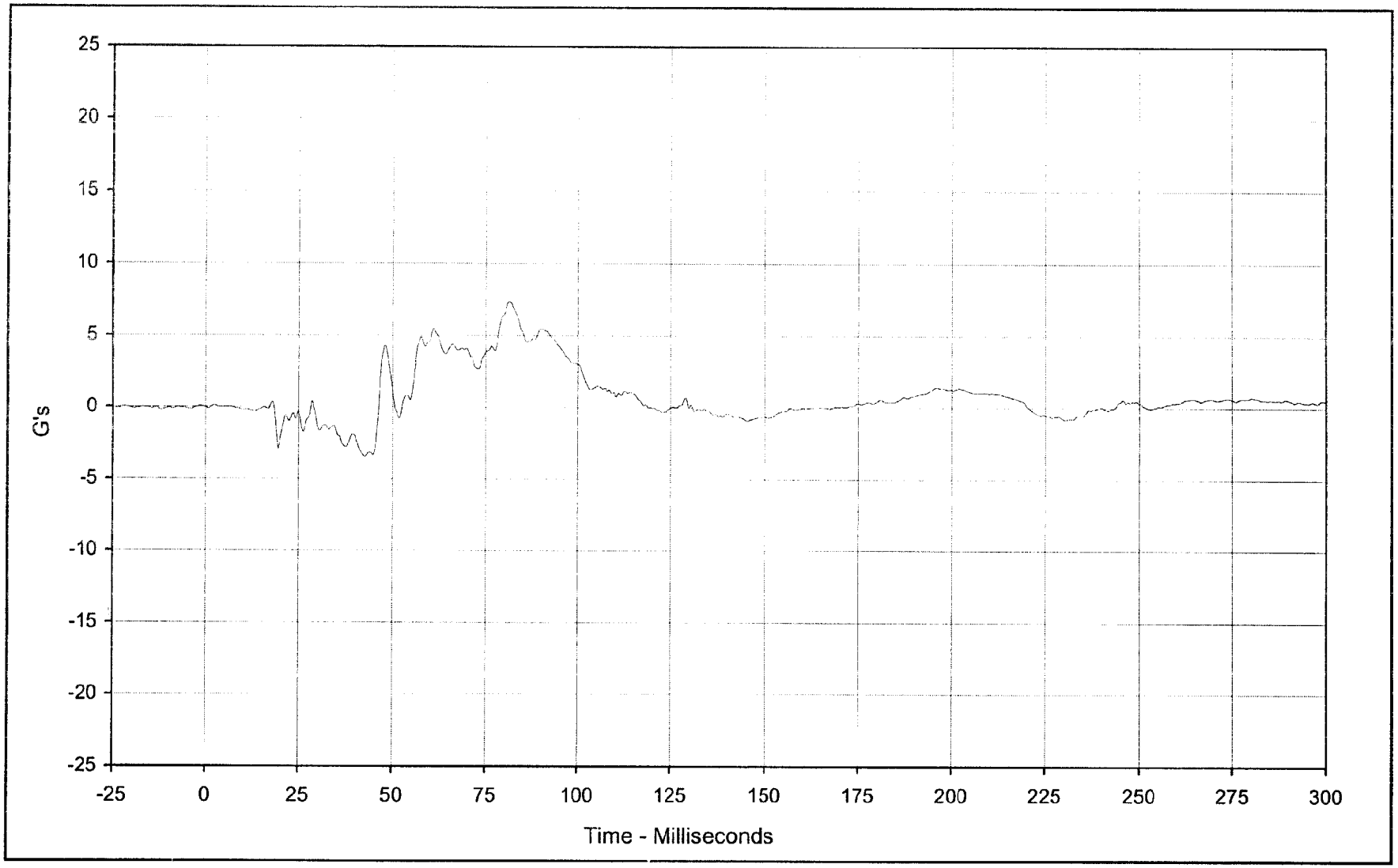
KARCO Engineering



Curve Description:	Driver Chest Redundant X Displ.				
Maximum Value:	84.2	at	74.0	Milliseconds	
Minimum Value:	-24.0	at	299.9	Milliseconds	
SAE Filter Class:	180				
Date of Test:	11/23/99				
Curve Number:	IN2-016				

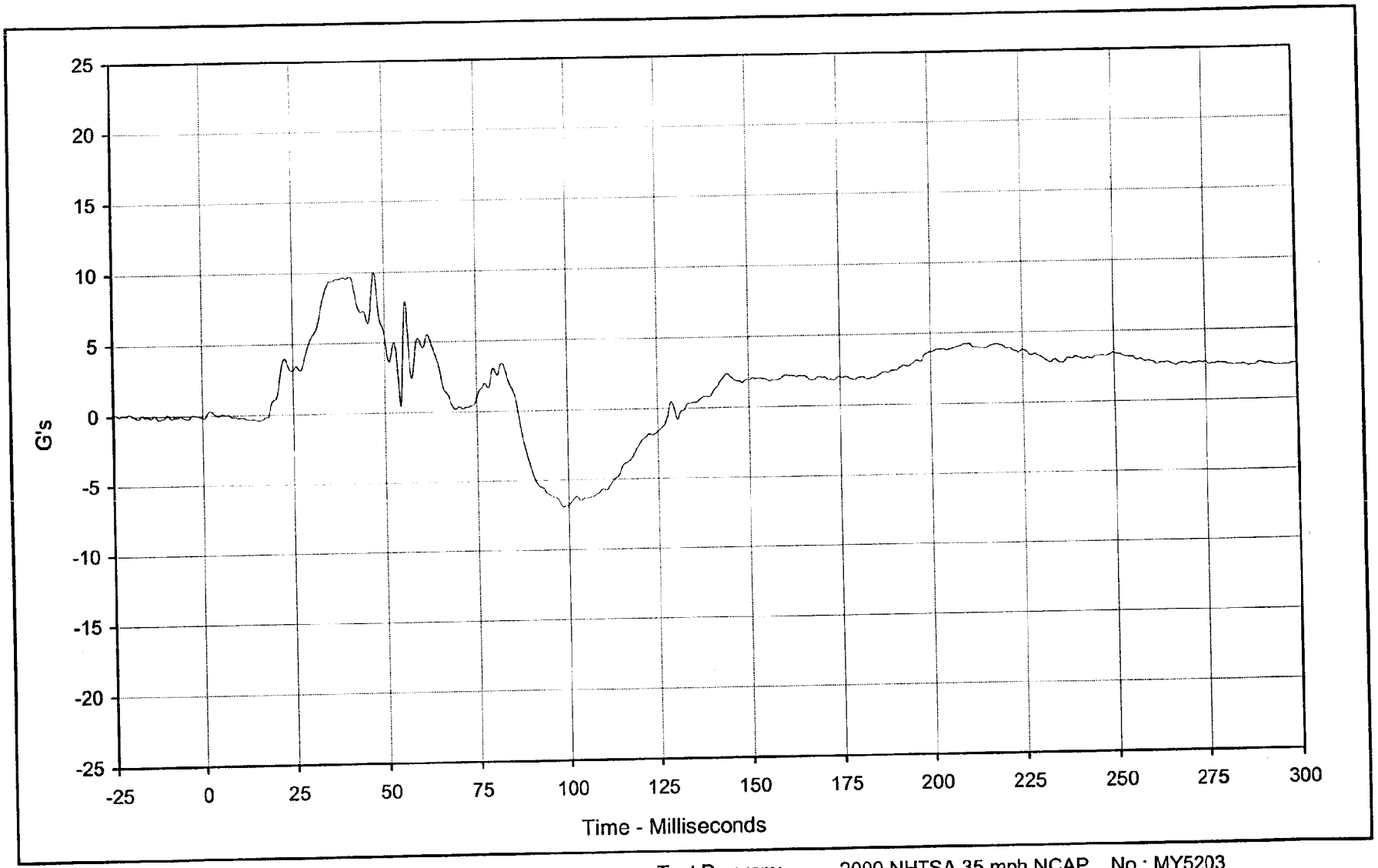
Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

KARCO Engineering



Curve Description:	Driver Chest Redundant Y			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	7.3	at	81.1 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-3.5	at	42.6 Milliseconds		
SAE Filter Class:	180				
Date of Test:	11/23/99				
Curve Number:	FIL-017				

KARCO Engineering



Curve Description: Driver Chest Redundant Z

Maximum Value: 10.0 at 47.3 Milliseconds

Minimum Value: -7.0 at 98.5 Milliseconds

SAE Filter Class: 180

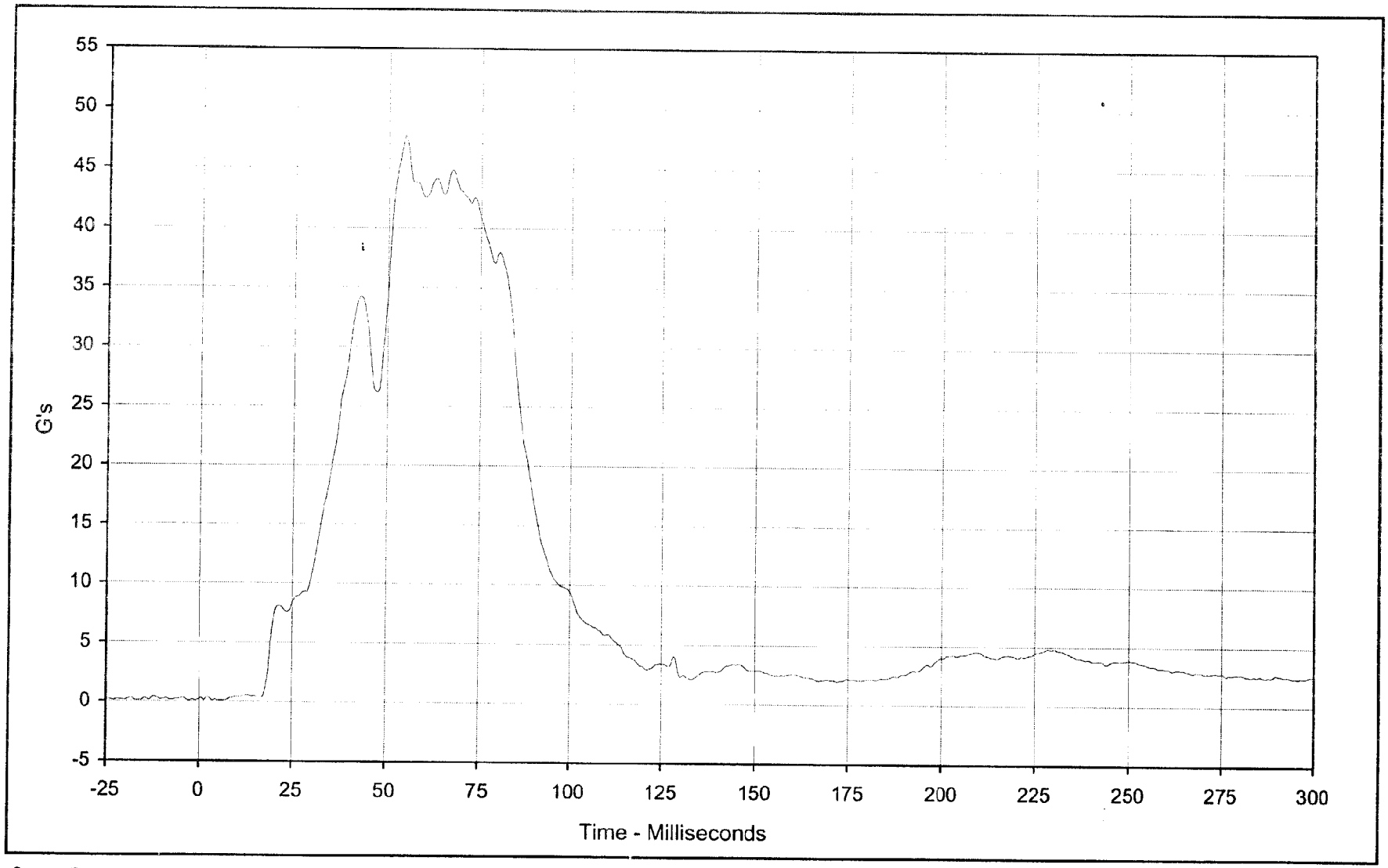
Date of Test: 11/23/99

Curve Number: FIL-018

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

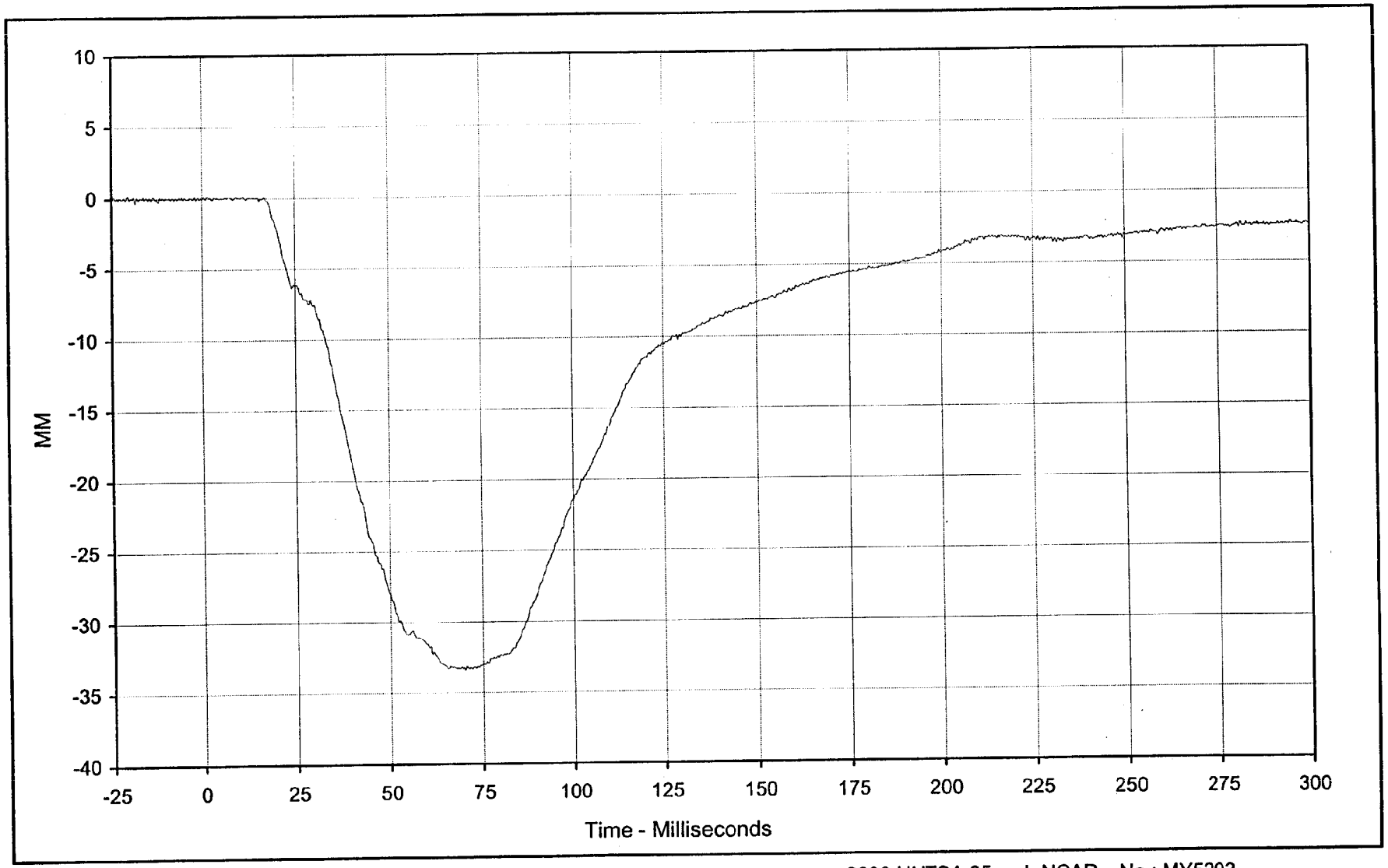
Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description:	Driver Chest Resultant Redundant				Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5203
Maximum Value:	47.7	at	54.3	Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV	
Minimum Value:	0.1	at	1.3	Milliseconds			
SAE Filter Class:	180						
Date of Test:	11/23/99						
Curve Number:	RES-016						

KARC Engineering



Curve Description: Driver Chest Displacement X

Maximum Value: 0.1 at 1.4 Milliseconds

Minimum Value: -33.4 at 70.1 Milliseconds

SAE Filter Class: 600

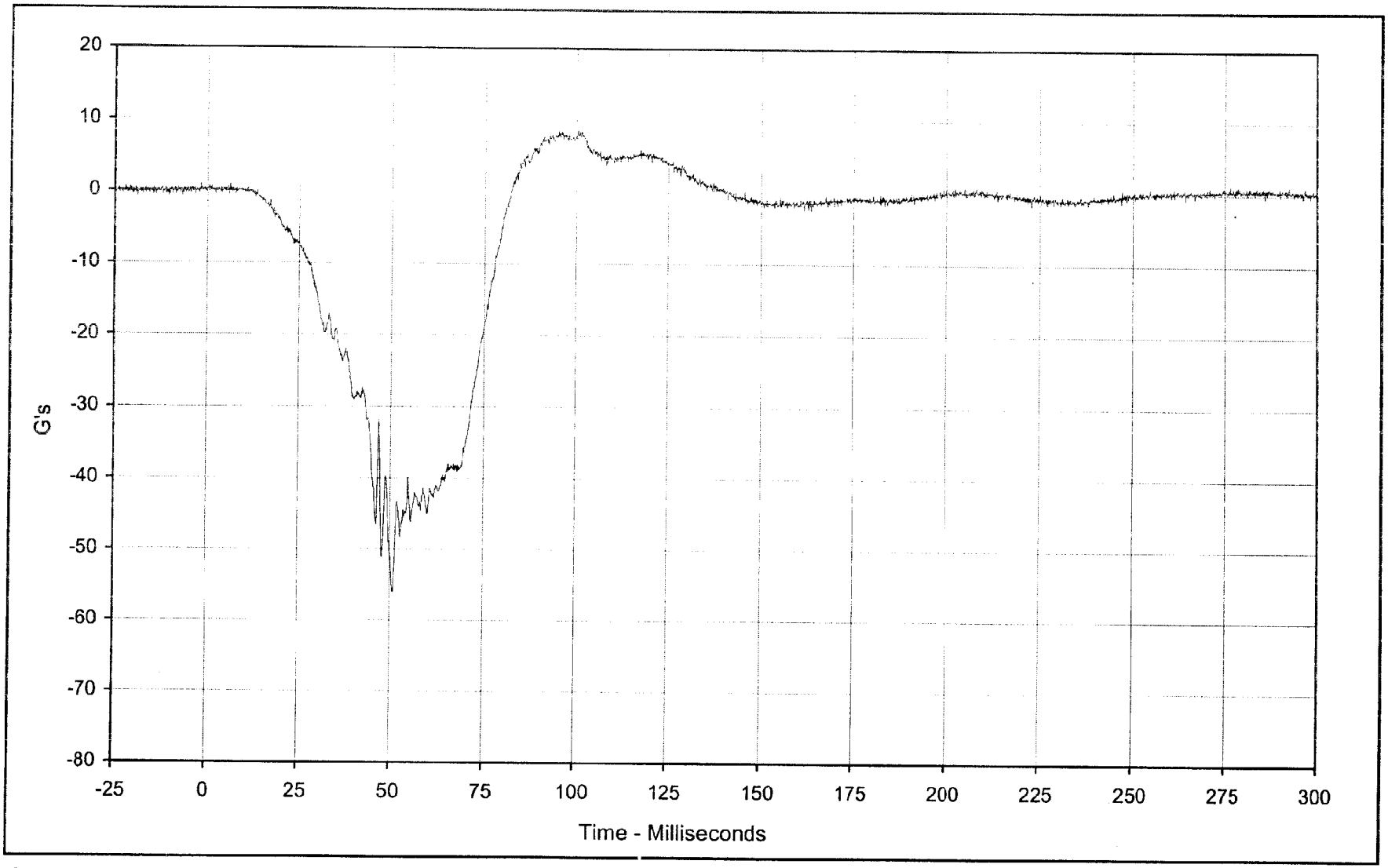
Date of Test: 11/23/99

Curve Number: FIL-019

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description:	Driver Pelvis X			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	8.6	at	95.2 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-56.1	at	50.6 Milliseconds		
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	FIL-020				

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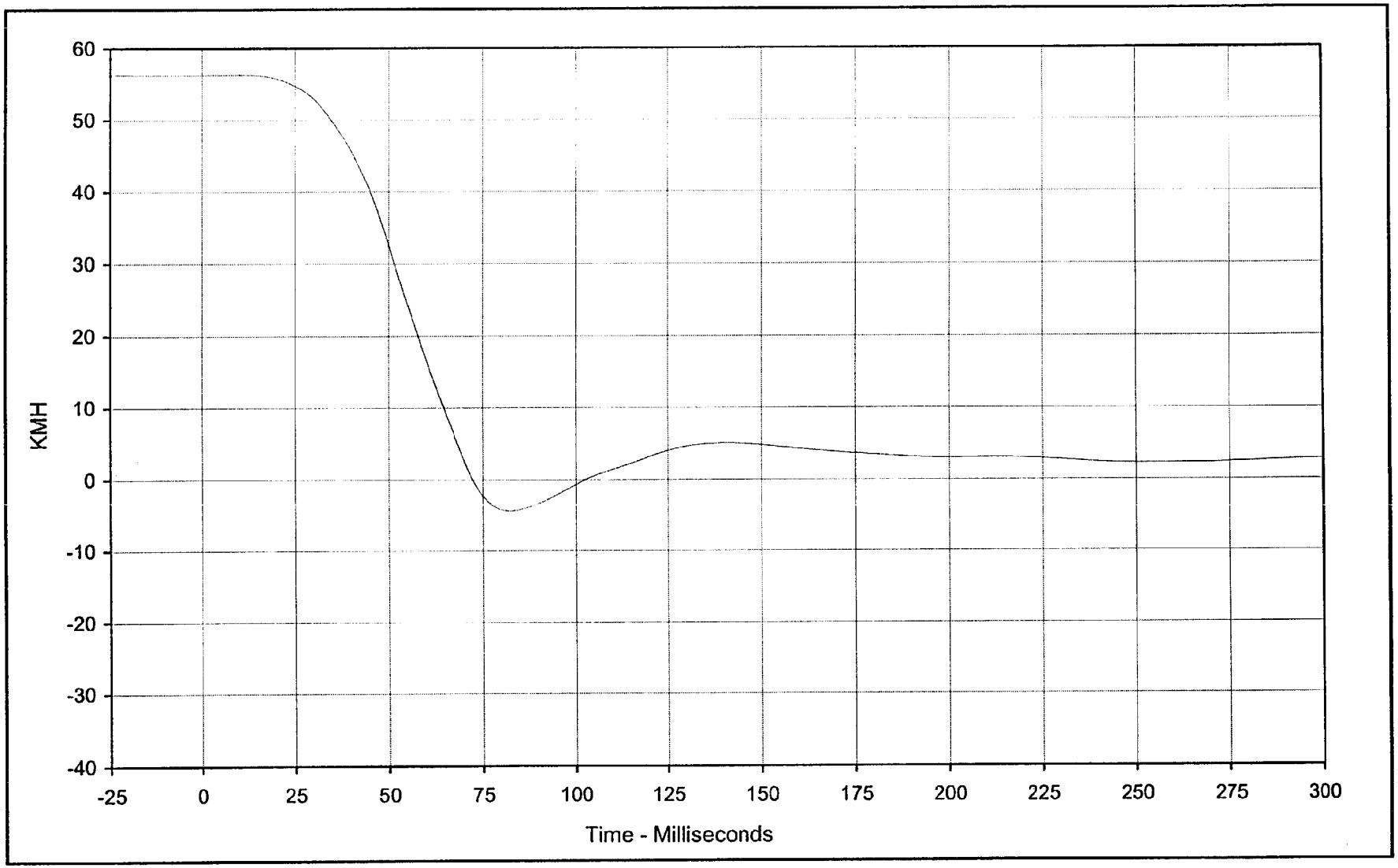

Curve Description:	Driver Pelvis X Velocity				
Maximum Value:	56.3	at	9.9	Milliseconds	
Minimum Value:	-4.4	at	82.2	Milliseconds	
SAE Filter Class:	180				
Date of Test:	11/23/99				
Curve Number:	IN1-020				

Testing Program	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

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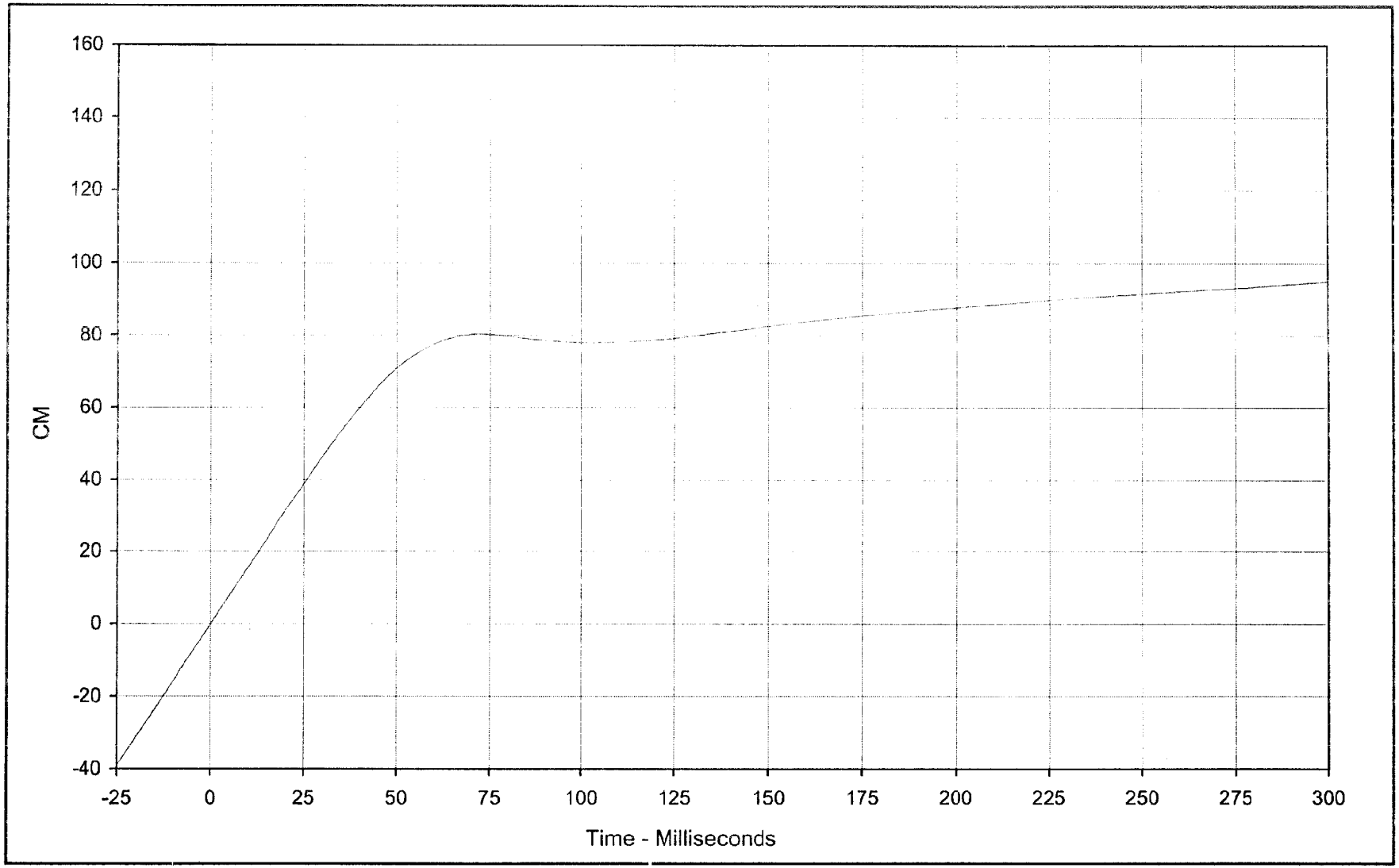
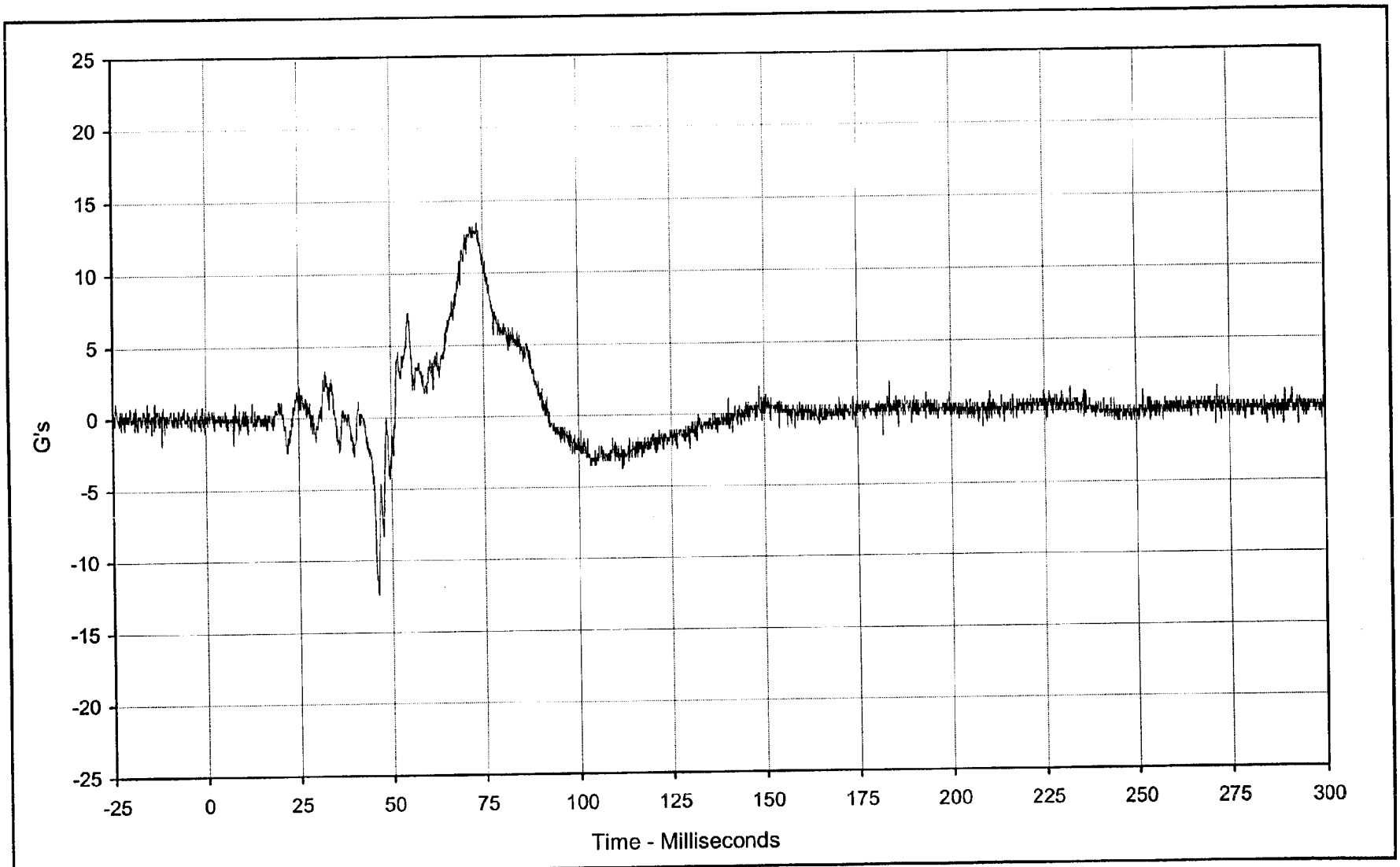


Curve Description:	Driver Pelvis X Displ.			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	94.9	at	299.9 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	0.0	at	0.0 Milliseconds		
SAE Filter Class:	180				
Date of Test:	11/23/99				
Curve Number:	IN2-020				

KARC Engineering

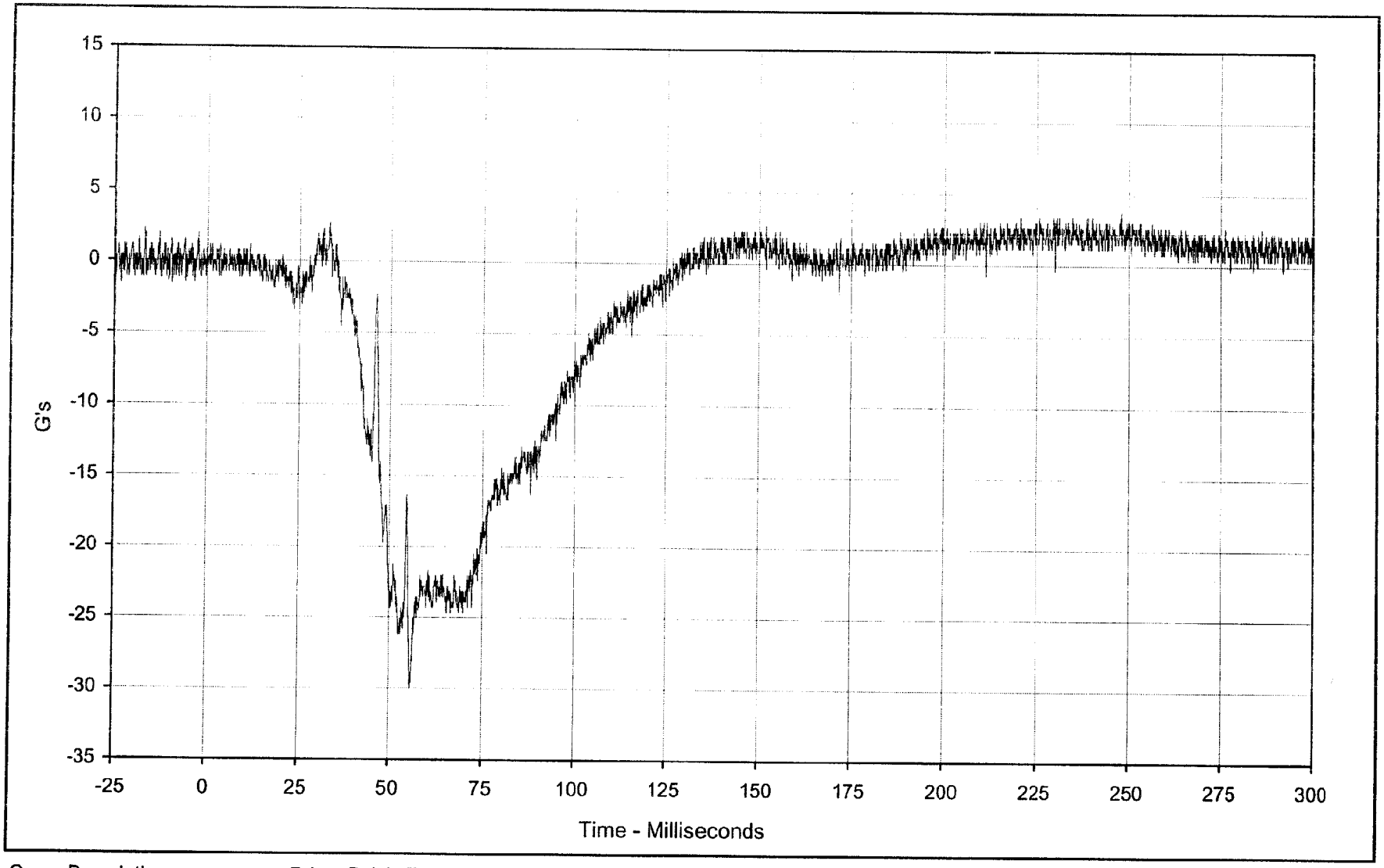


Curve Description:	Driver Pelvis Y			
Maximum Value:	13.5	at	73.4	Milliseconds
Minimum Value:	-12.4	at	46.2	Milliseconds
SAE Filter Class:	1000			
Date of Test:	11/23/99			
Curve Number:	FIL-021			

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

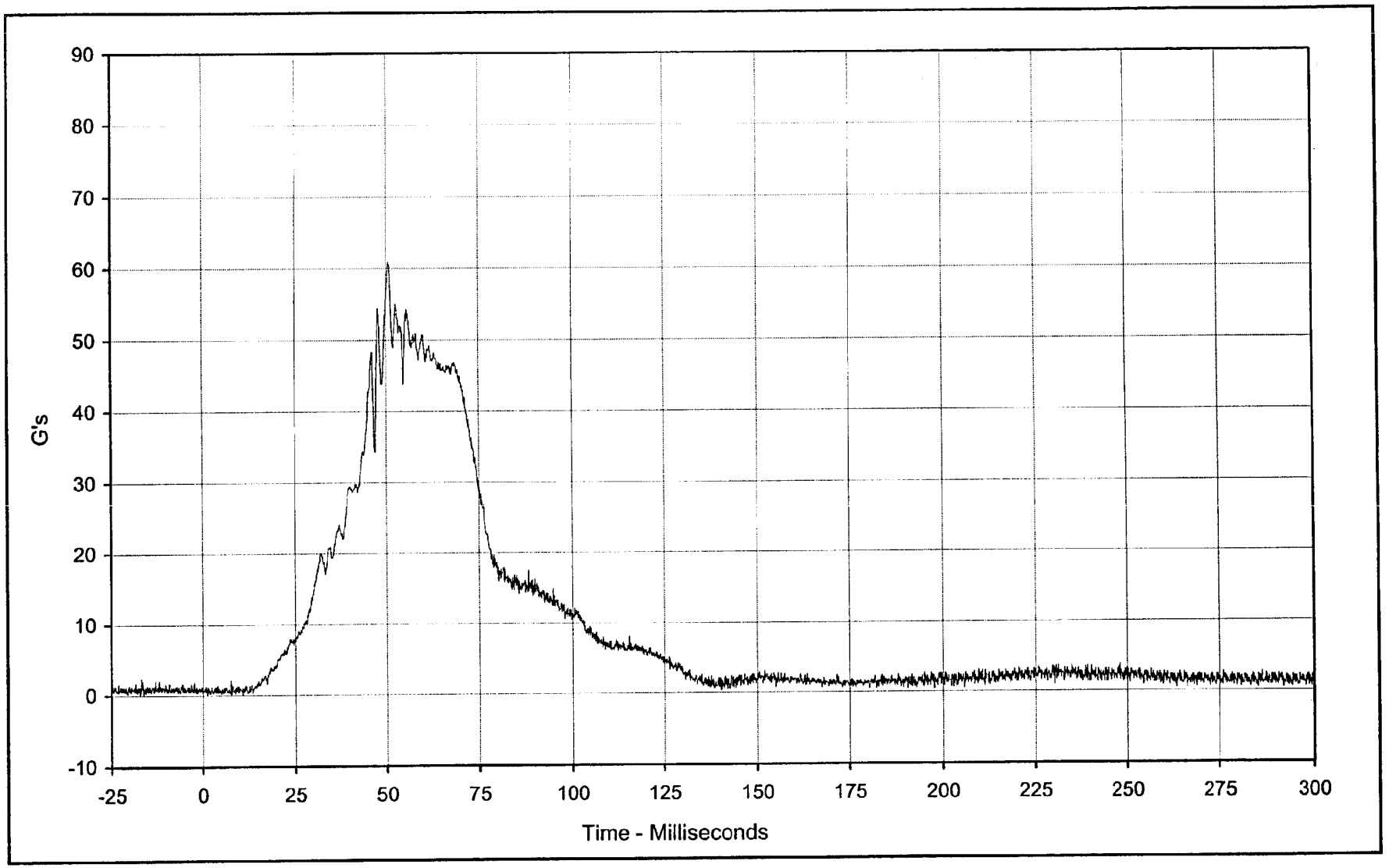
KARCO Engineering



Curve Description:	Driver Pelvis Z				
Maximum Value:	3.8	at	248.0	Milliseconds	
Minimum Value:	-30.0	at	55.6	Milliseconds	
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	FIL-022				

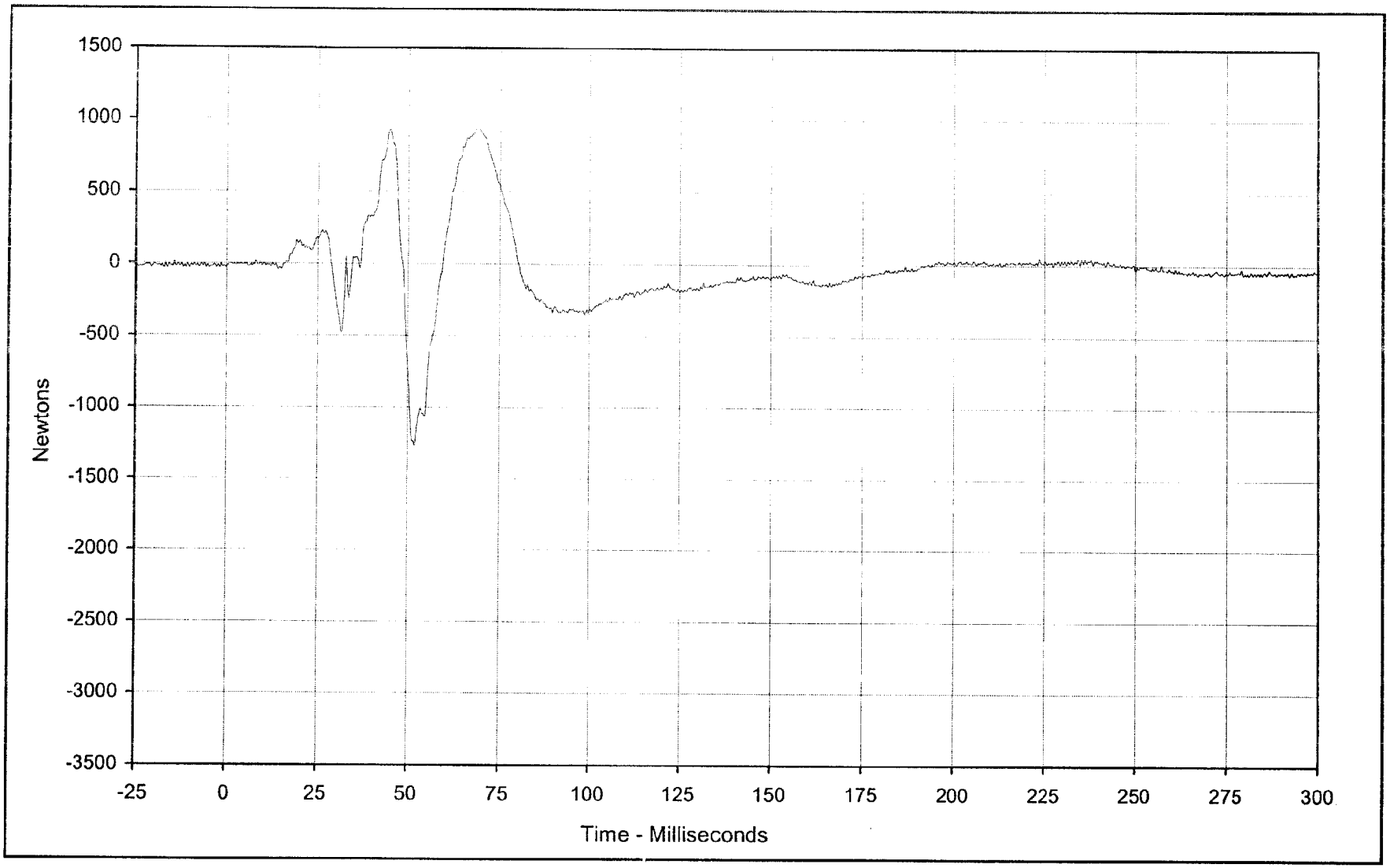
Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

KARC Engineering



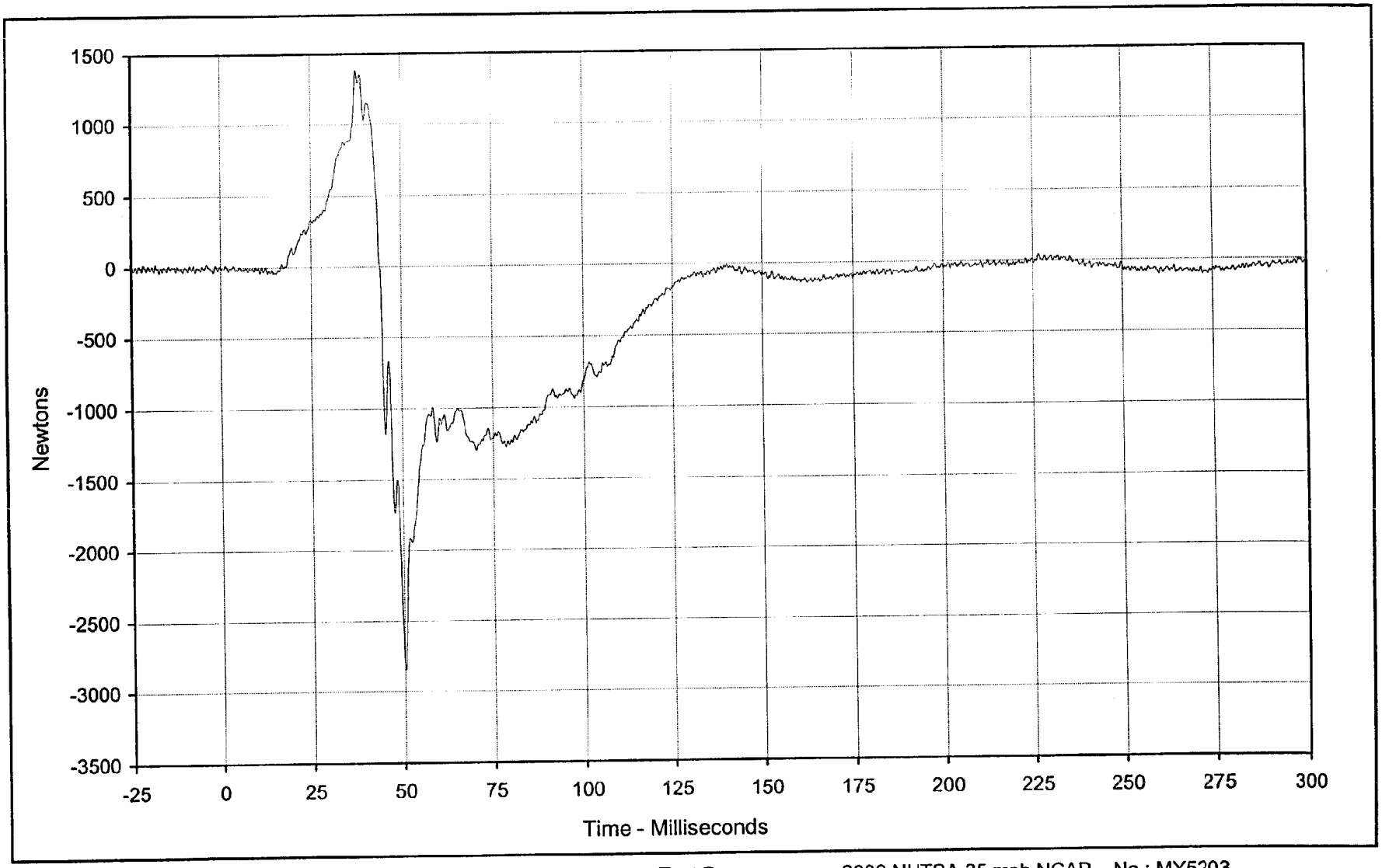
Curve Description:	Driver Pelvis Resultant			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	61.0	at	50.6 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	0.0	at	1.2 Milliseconds		
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	RES-020				

KARC Engineering



Curve Description:	Driver Left Femur Force			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	938.4	at	69.6 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-1269.7	at	51.9 Milliseconds		
SAE Filter Class:	600				
Date of Test:	11/23/99				
Curve Number:	FIL-023				

KARC Engineering



Curve Description: Driver Right Femur Force

Maximum Value: 1383.8 at 37.7 Milliseconds

Minimum Value: -2848.7 at 50.2 Milliseconds

SAE Filter Class: 600

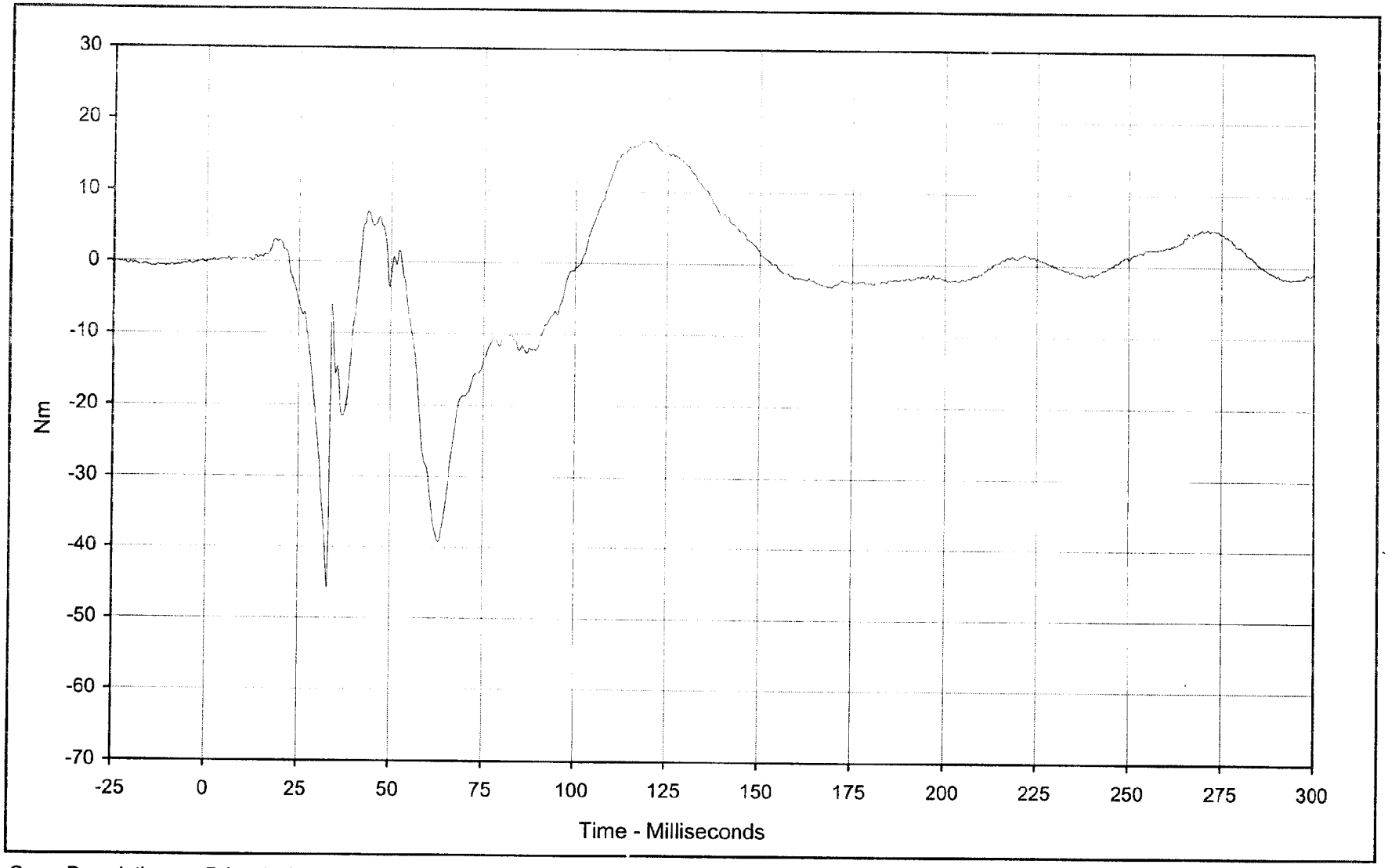
Date of Test: 11/23/99

Curve Number: FIL-024

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

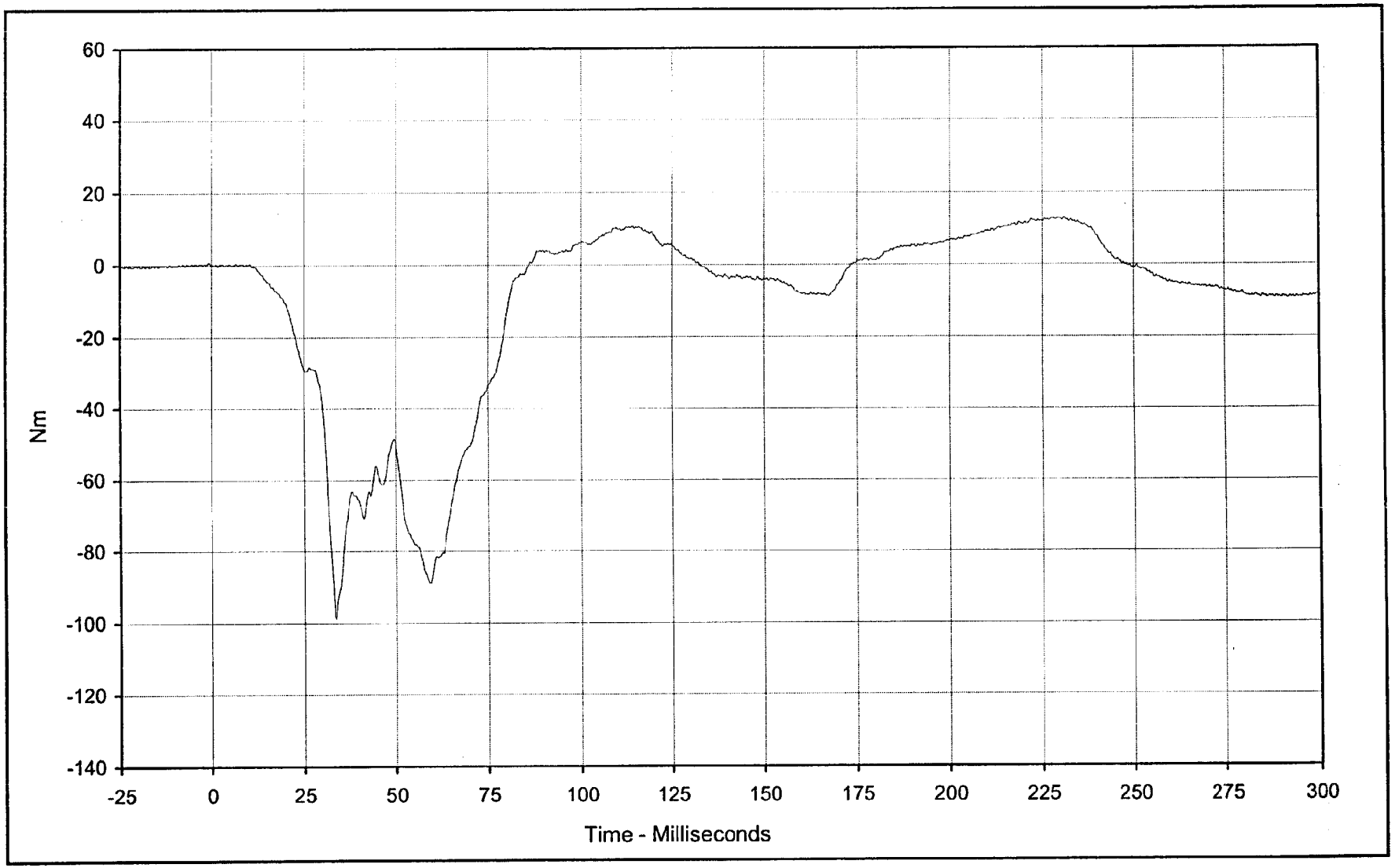
KARCO Engineering



Curve Description:	Driver Left Upper Tibia Moment X				
Maximum Value:	17.2	at	120.0	Milliseconds	
Minimum Value:	-45.7	at	33.0	Milliseconds	
SAE Filter Class:	600				
Date of Test:	11/23/99				
Curve Number:	FIL-025				

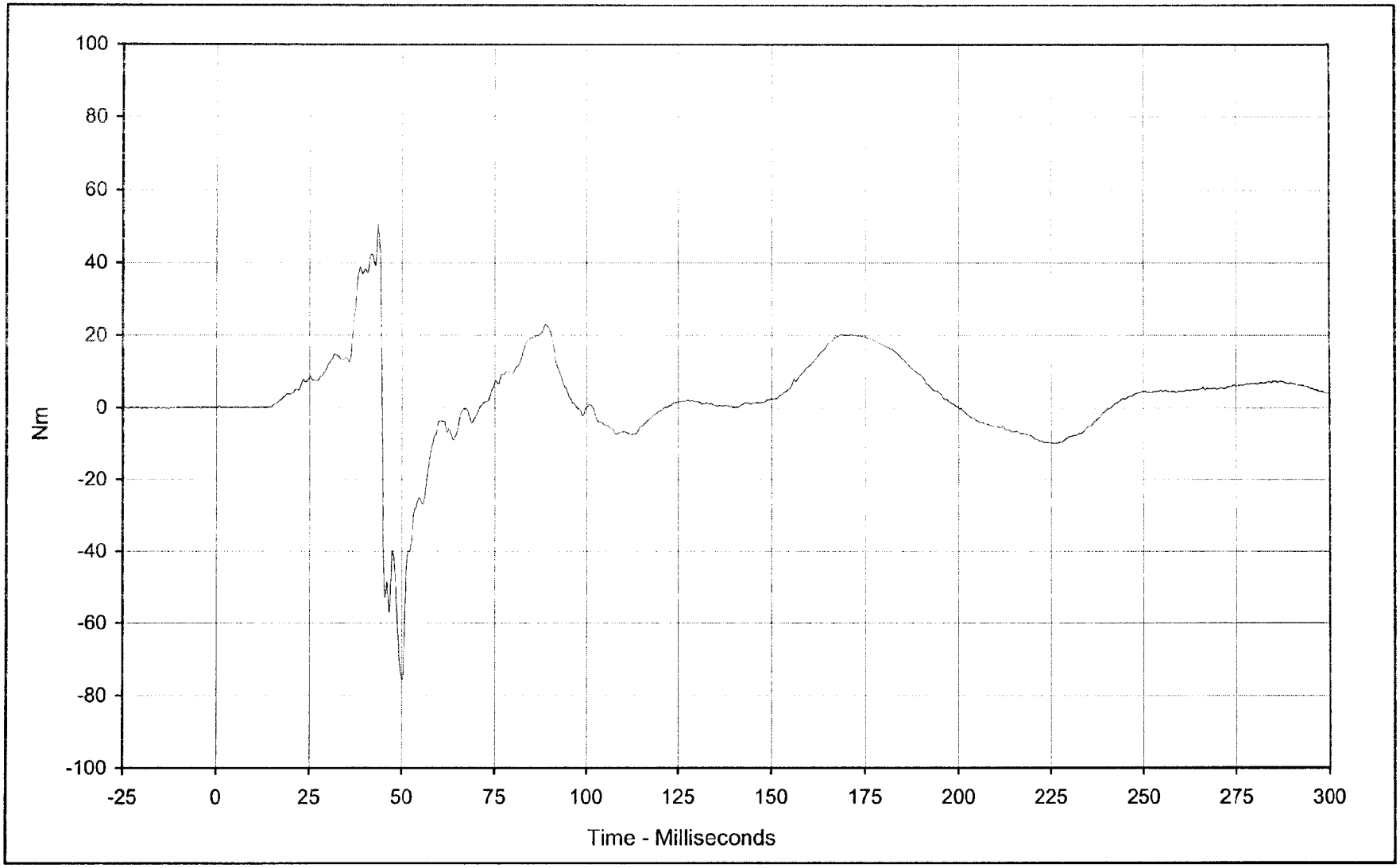
Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

KARC Engineering



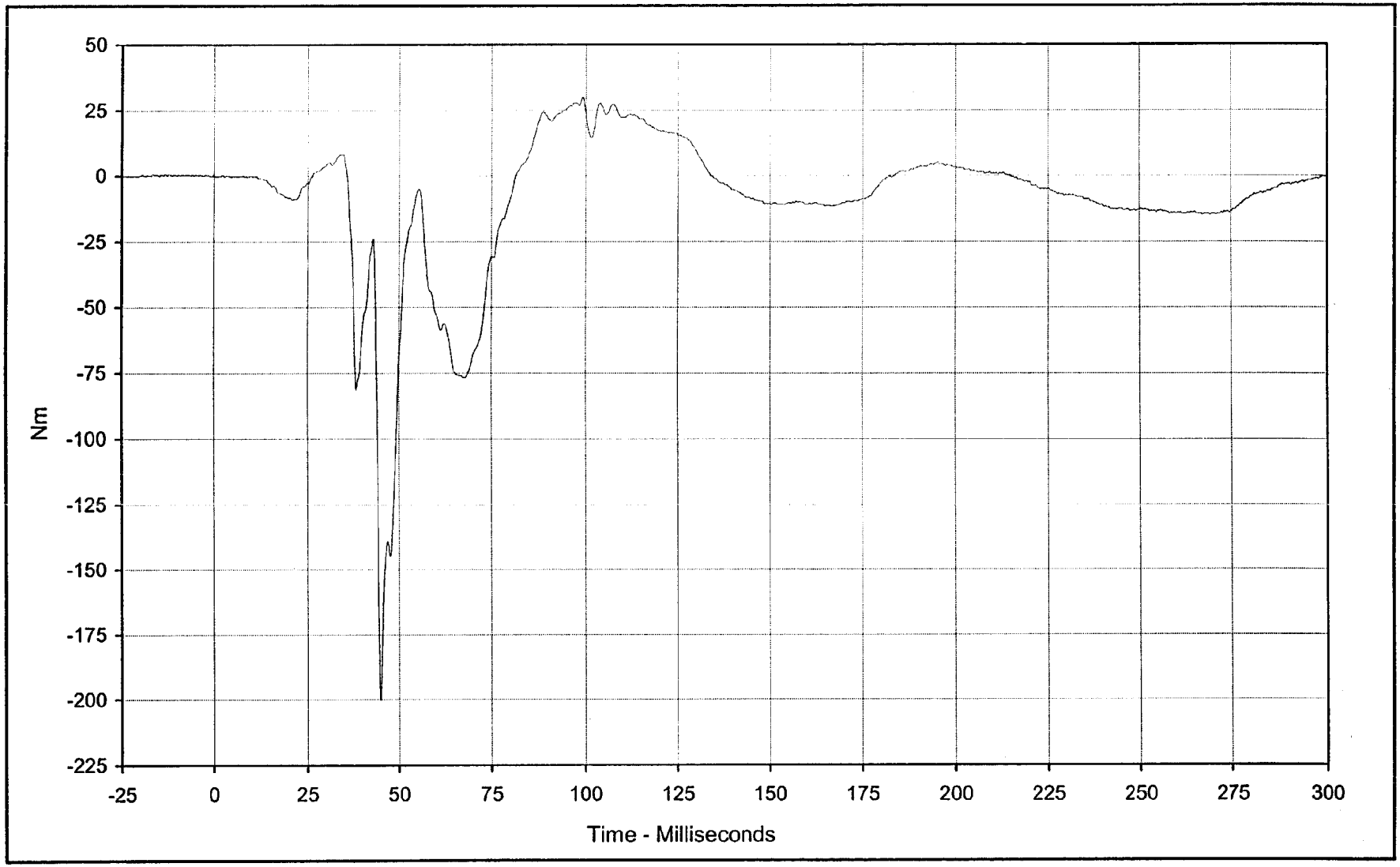
Curve Description:	Driver Left Upper Tibia Moment Y			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	13.0	at	231.0 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-98.8	at	33.4 Milliseconds		
SAE Filter Class:	600				
Date of Test:	11/23/99				
Curve Number:	FIL-026				

KARC Engineering



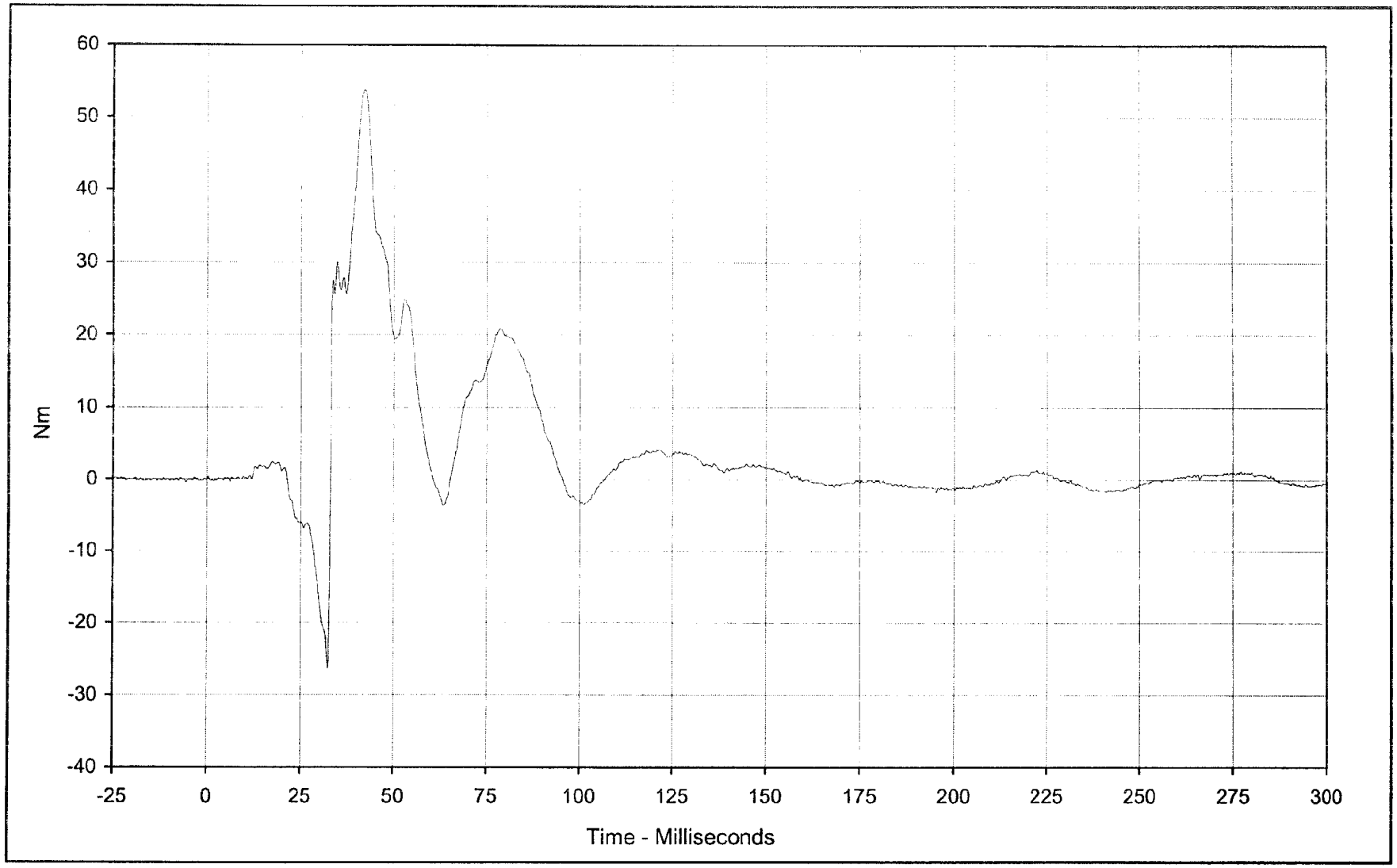
Curve Description:	Driver Right Upper Tibia Moment X			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	51.0	at	43.6 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-75.7	at	50.1 Milliseconds		
SAE Filter Class:	600				
Date of Test:	11/23/99				
Curve Number:	FIL-027				

KARC Engineering



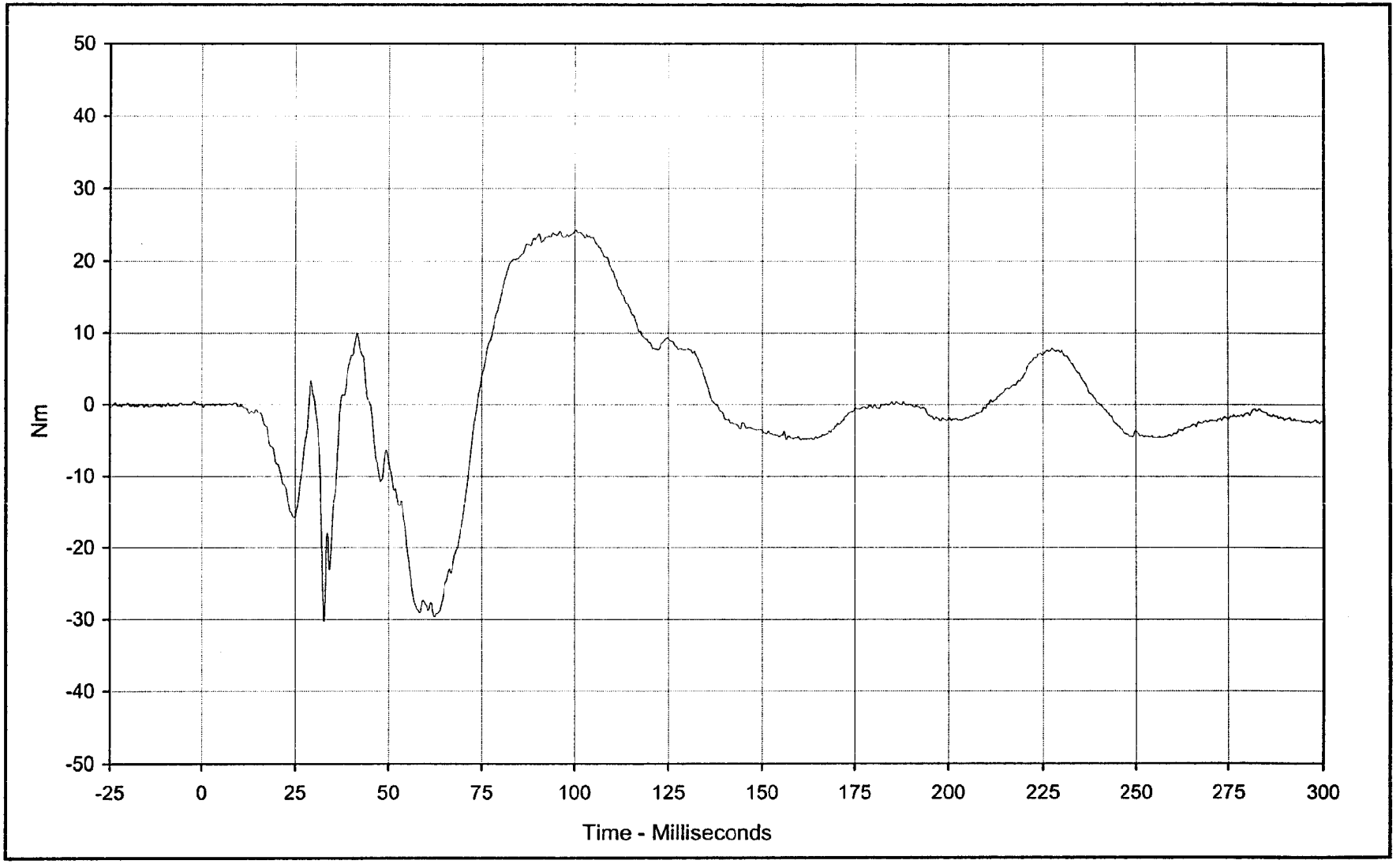
Curve Description:	Driver Right Upper Tibia Moment Y			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	29.9	at	99.2 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-200.2	at	44.9 Milliseconds		
SAE Filter Class:	600				
Date of Test:	11/23/99				
Curve Number:	FIL-028				

KARC Engineering



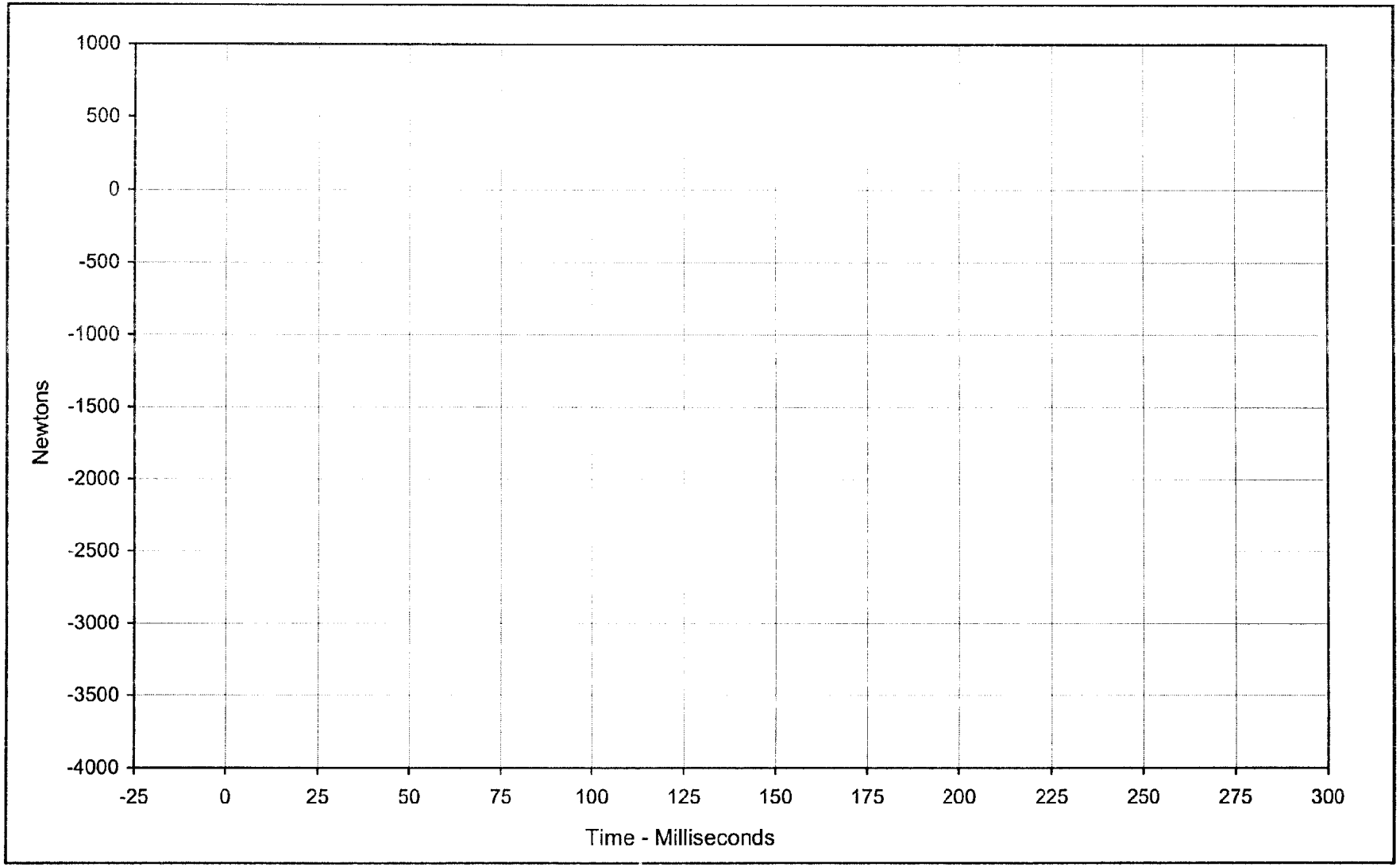
Curve Description:	Driver Left Lower Tibia Moment X			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	53.7	at	42.4 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-26.4	at	32.3 Milliseconds		
SAE Filter Class:	600				
Date of Test:	11/23/99				
Curve Number:	FIL-029				

KARC Engineering



Curve Description:	Driver Left Lower Tibia Moment Y			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	24.3	at	100.3 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-30.3	at	32.6 Milliseconds		
SAE Filter Class:	600				
Date of Test:	11/23/99				
Curve Number:	FIL-030				

KARC Engineering



Curve Description: Driver Left Lower Tibia Force Z *

Maximum Value: 0.0 at 0.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 600

Date of Test: 11/23/99

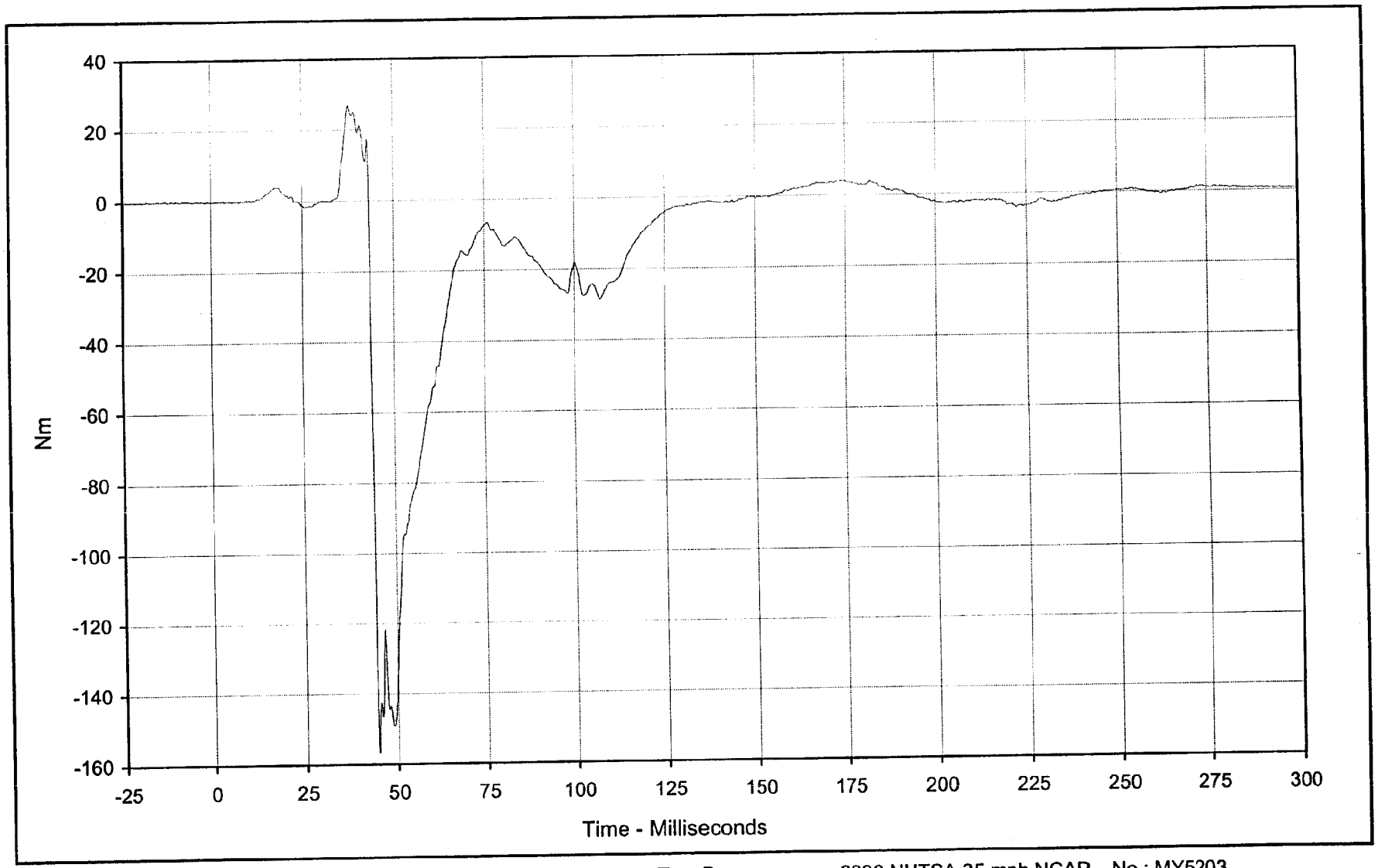
Curve Number: FIL-031

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

* Channel Failed, No Data

KARCO Engineering



Curve Description: Driver Right Lower Tibia Moment X

Maximum Value: 26.8 at 38.0 Milliseconds

Minimum Value: -156.8 at 44.8 Milliseconds

SAE Filter Class: 600

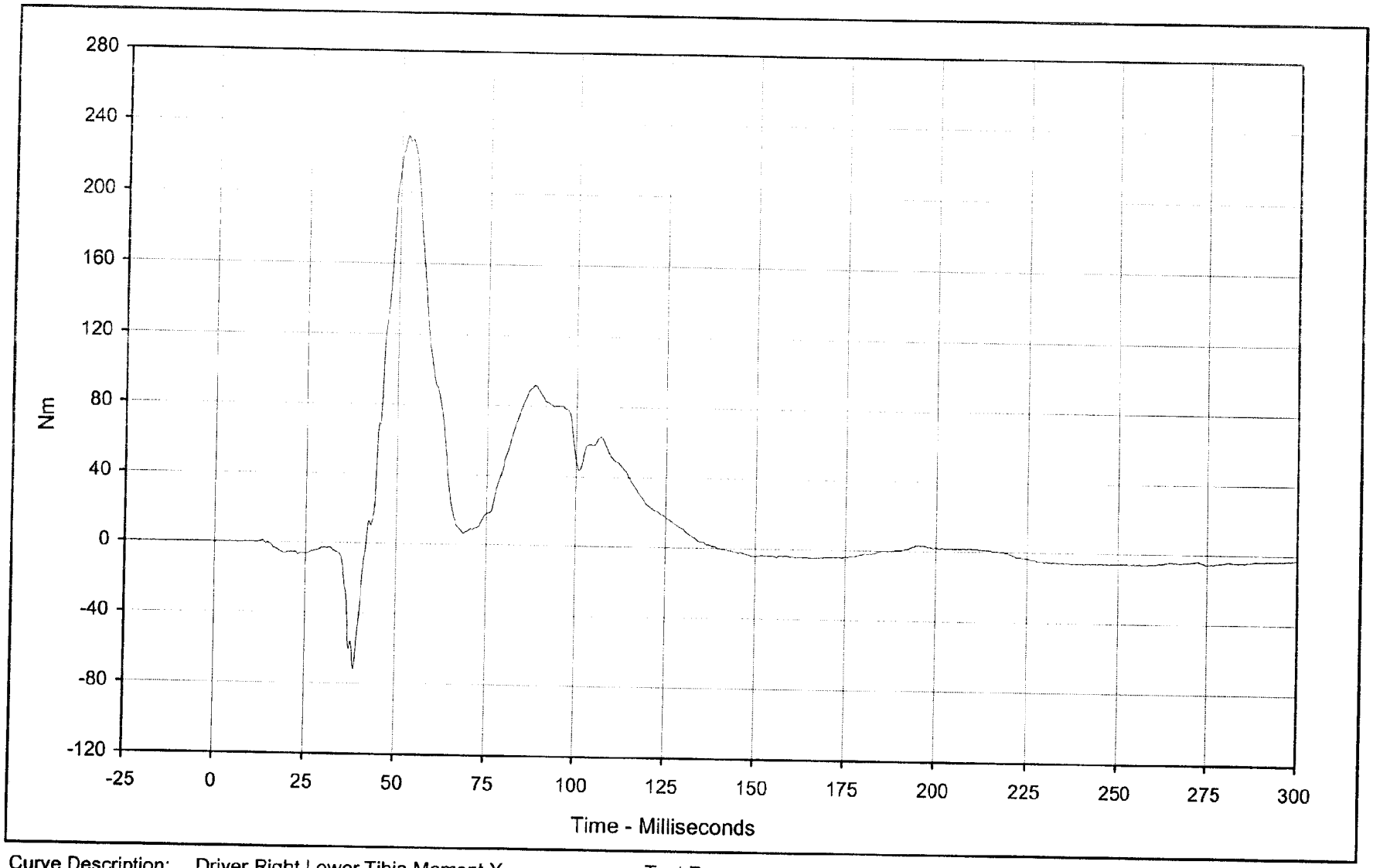
Date of Test: 11/23/99

Curve Number: FIL-032

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Driver Right Lower Tibia Moment Y

Maximum Value: 231.7 at 51.9 Milliseconds

Minimum Value: -72.0 at 38.5 Milliseconds

SAE Filter Class: 600

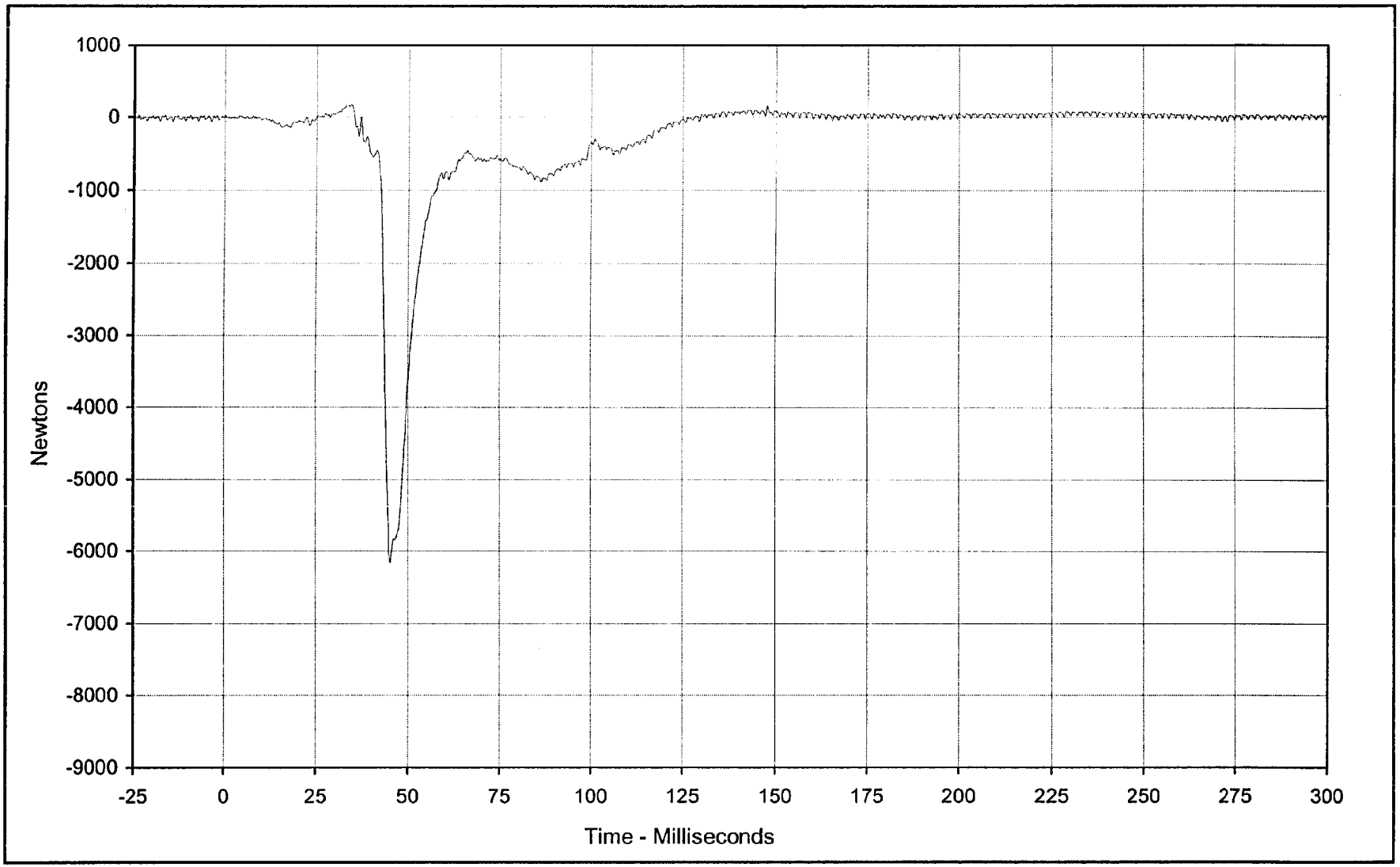
Date of Test: 11/23/99

Curve Number: FIL-033

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

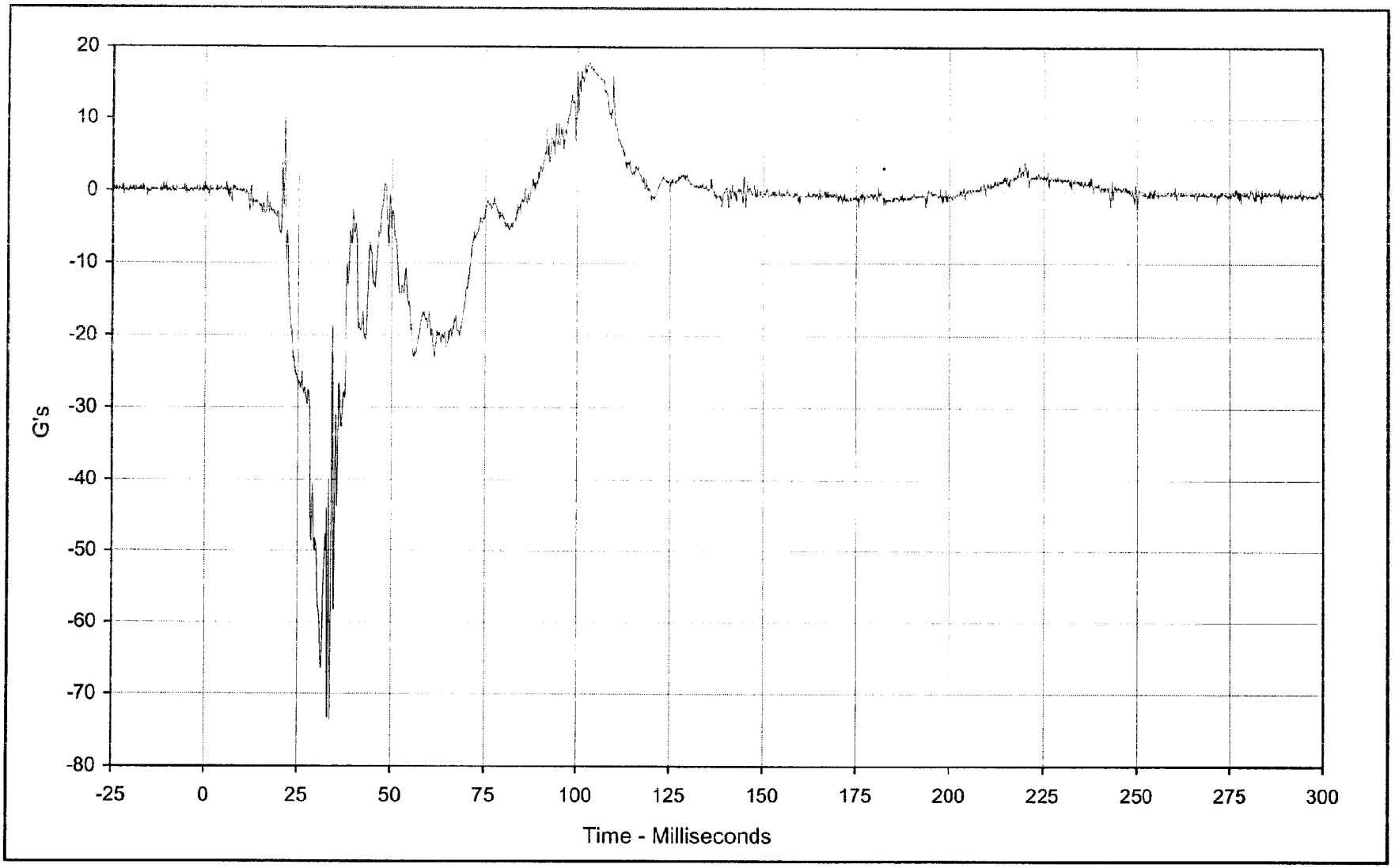
Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



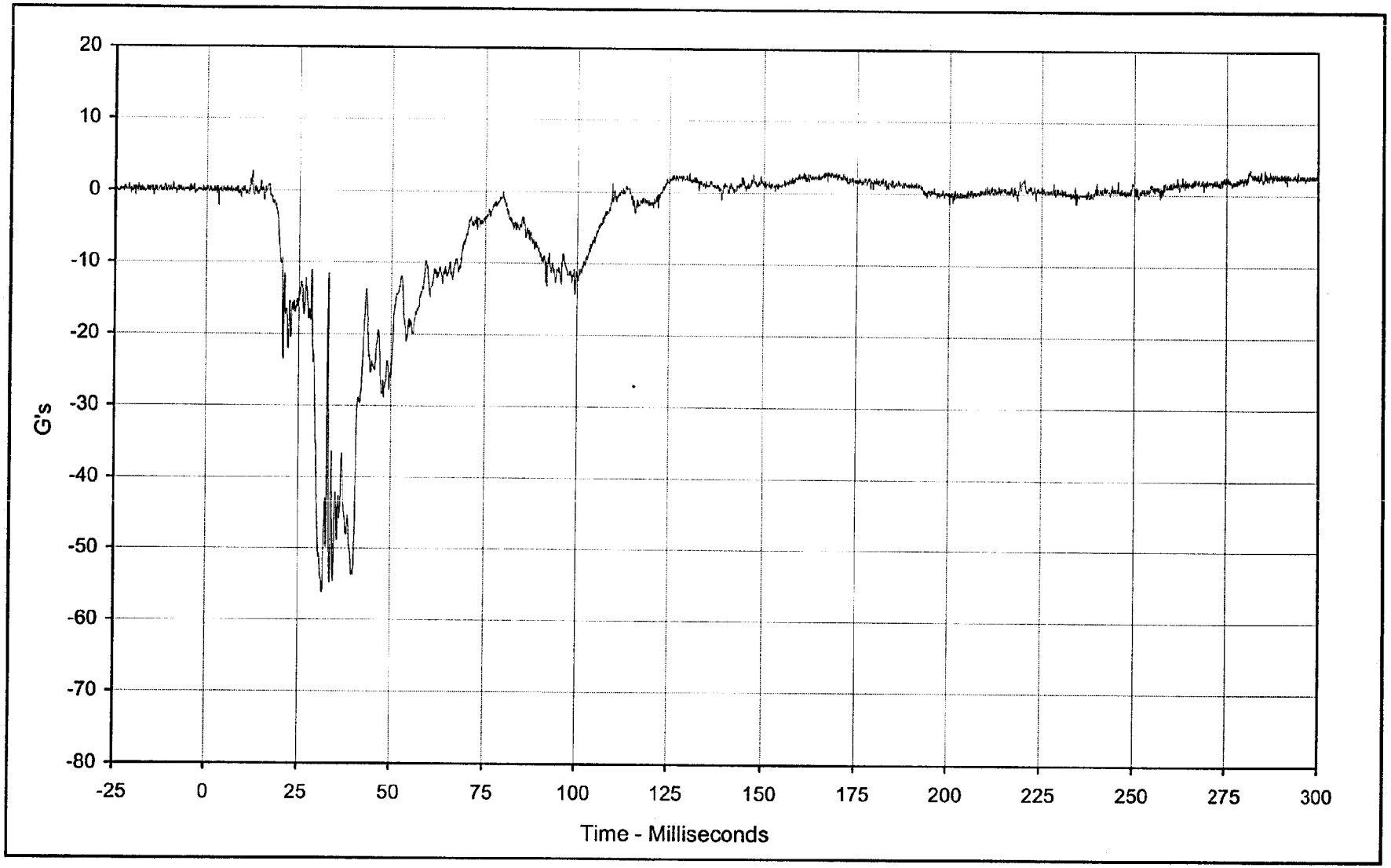
Curve Description:	Driver Right Lower Tibia Force Z			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	180.8	at	34.5 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-6156.6	at	45.3 Milliseconds		
SAE Filter Class:	600				
Date of Test:	11/23/99				
Curve Number:	FIL-034				

KARC Engineering



Curve Description:	Driver Left Foot Aft X			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	17.9	at	103.3 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-73.5	at	33.7 Milliseconds		
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	FIL-035				

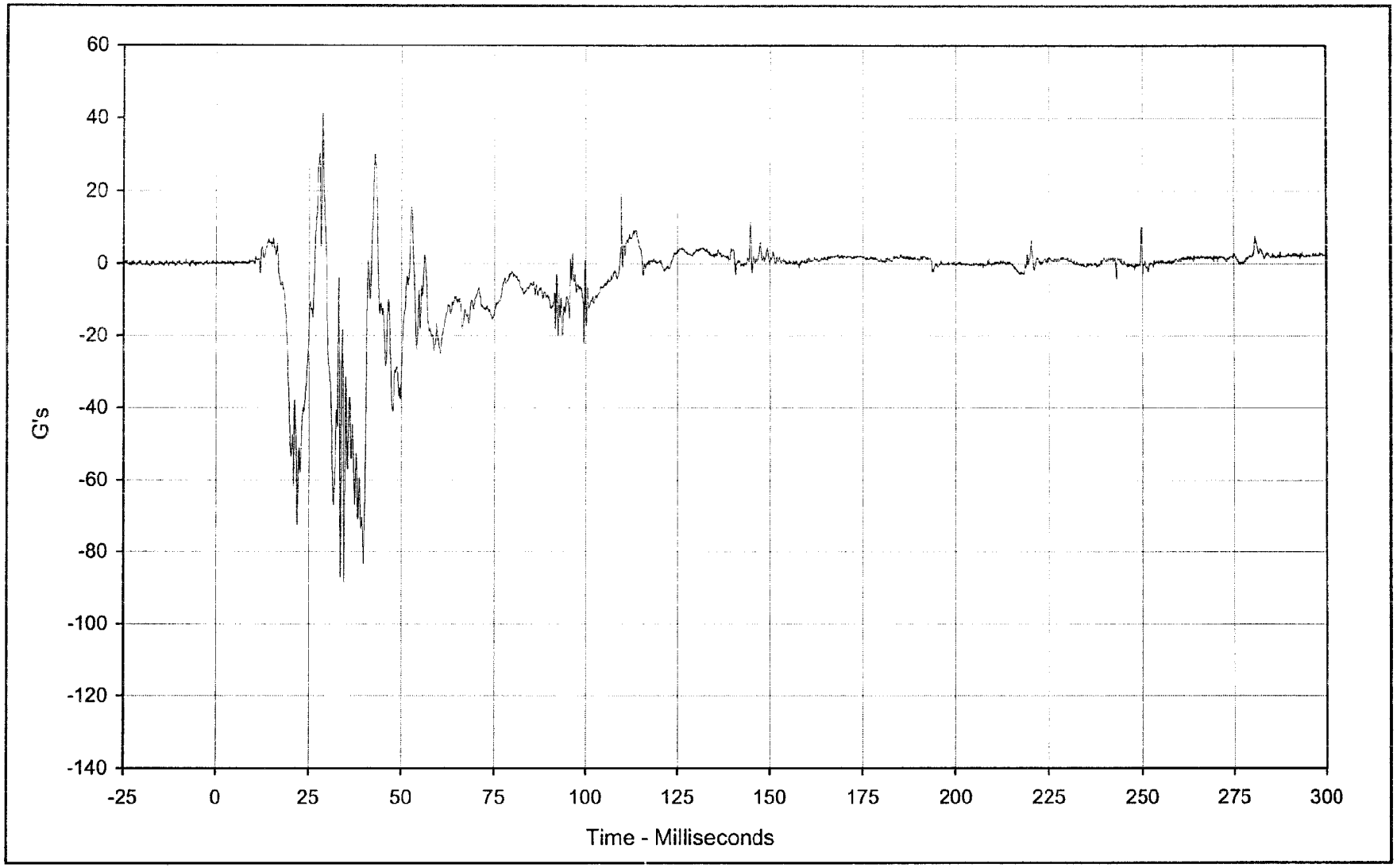
KARC Engineering



Curve Description:	Driver Left Foot Aft Z			
Maximum Value:	3.5	at	281.3	Milliseconds
Minimum Value:	-56.1	at	31.5	Milliseconds
SAE Filter Class:	1000			
Date of Test:	11/23/99			
Curve Number:	FIL-036			

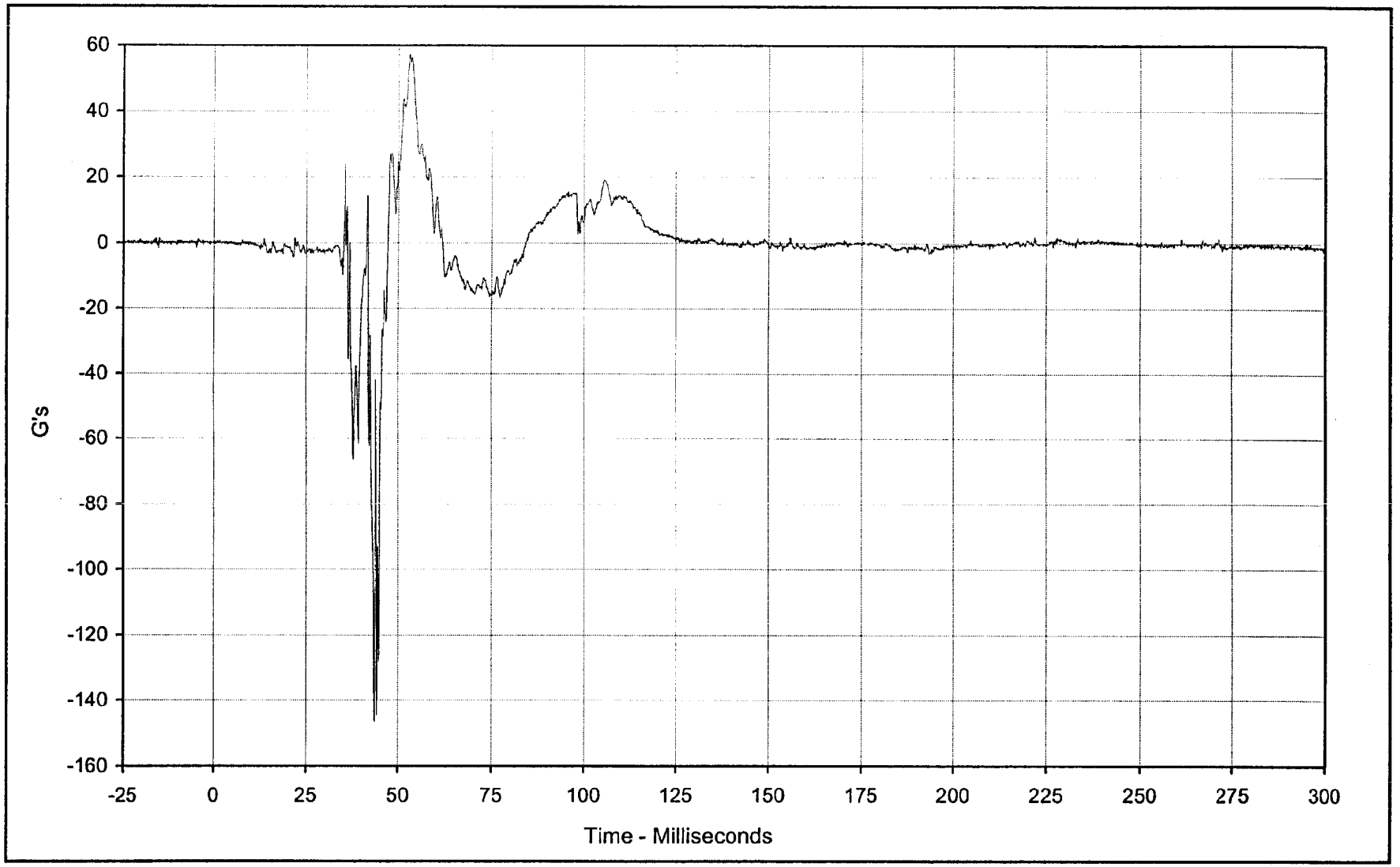
Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

KARCO Engineering



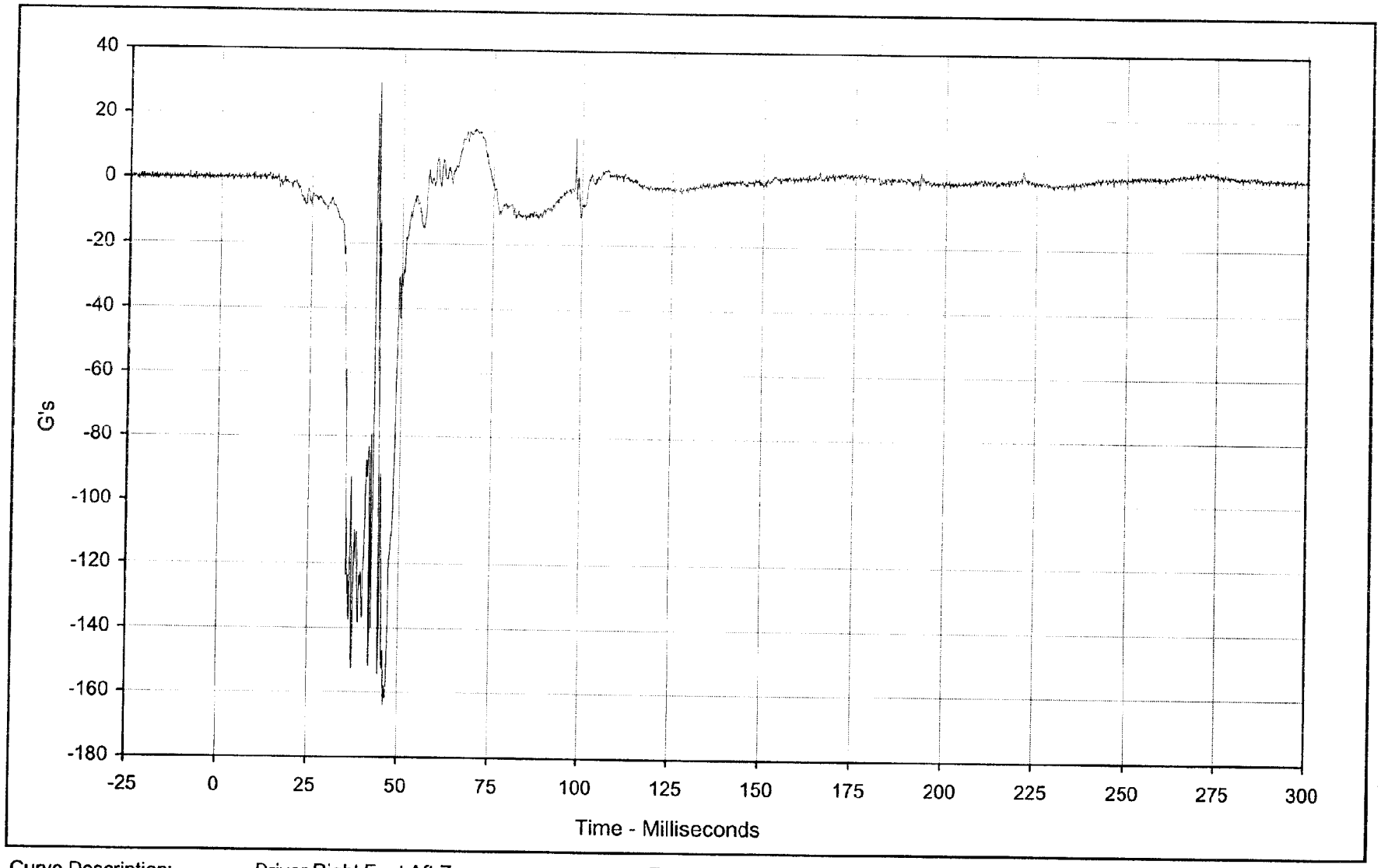
Curve Description:	Driver Left Foot Fore Z			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	41.7	at	28.8 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-88.5	at	34.6 Milliseconds		
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	FIL-037				

KARC Engineering



Curve Description:	Driver Right Foot Aft X			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	57.3	at	53.0 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-146.4	at	43.6 Milliseconds		
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	FIL-038				

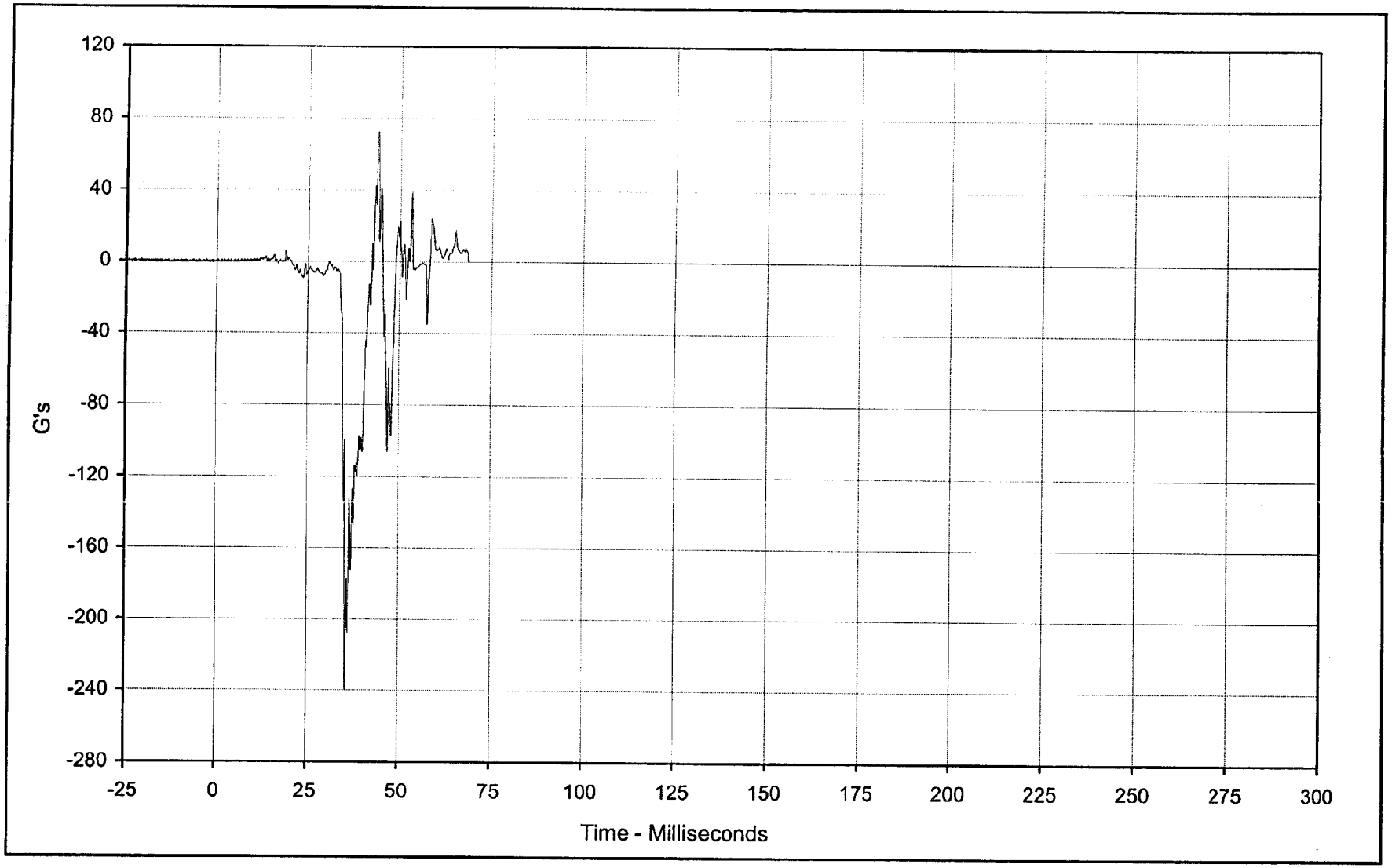
KARC Engineering



Curve Description:	Driver Right Foot Aft Z			
Maximum Value:	29.2	at	43.7	Milliseconds
Minimum Value:	-163.8	at	46.3	Milliseconds
SAE Filter Class:	1000			
Date of Test:	11/23/99			
Curve Number:	FIL-039			

Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

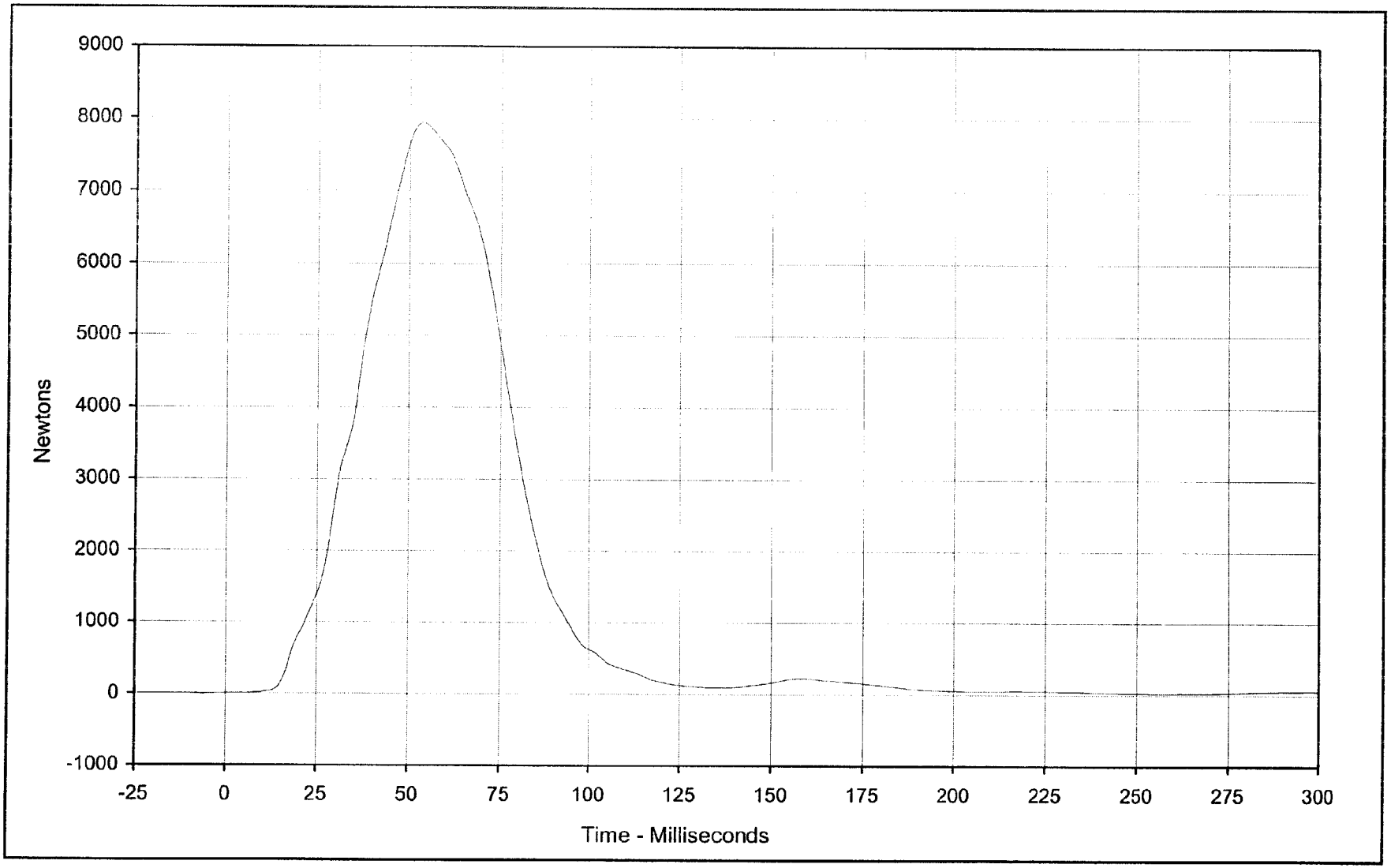
KARC Engineering



Curve Description:	Driver Right Foot Fore Z *			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	72.6	at	43.9 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-239.8	at	35.8 Milliseconds		
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	FIL-040				

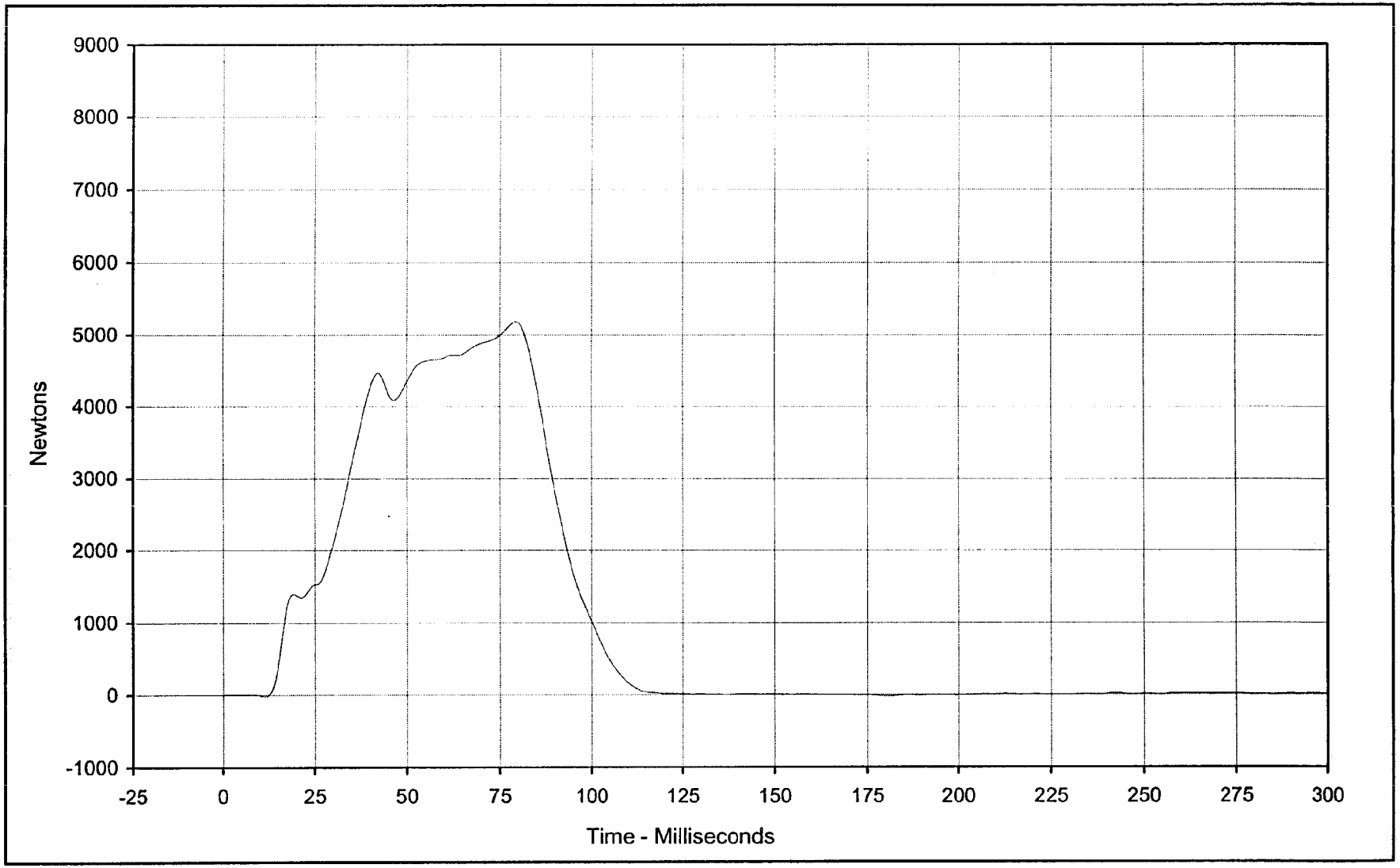
* Channel Failed at 68.7 msec.

KARCO Engineering



Curve Description:	Driver Lap Belt Force				Test Program:	2000 NHTSA 35 mph NCAP	No.: MY5203
Maximum Value:	7938.0	at	53.7	Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV	
Minimum Value:	0.8	at	4.6	Milliseconds			
SAE Filter Class:	60						
Date of Test:	11/23/99						
Curve Number:	FIL-041						

KARCO Engineering



Curve Description: Driver Shoulder Belt Force

Maximum Value: 5185.2 at 79.2 Milliseconds

Minimum Value: -19.3 at 180.5 Milliseconds

SAE Filter Class: 60

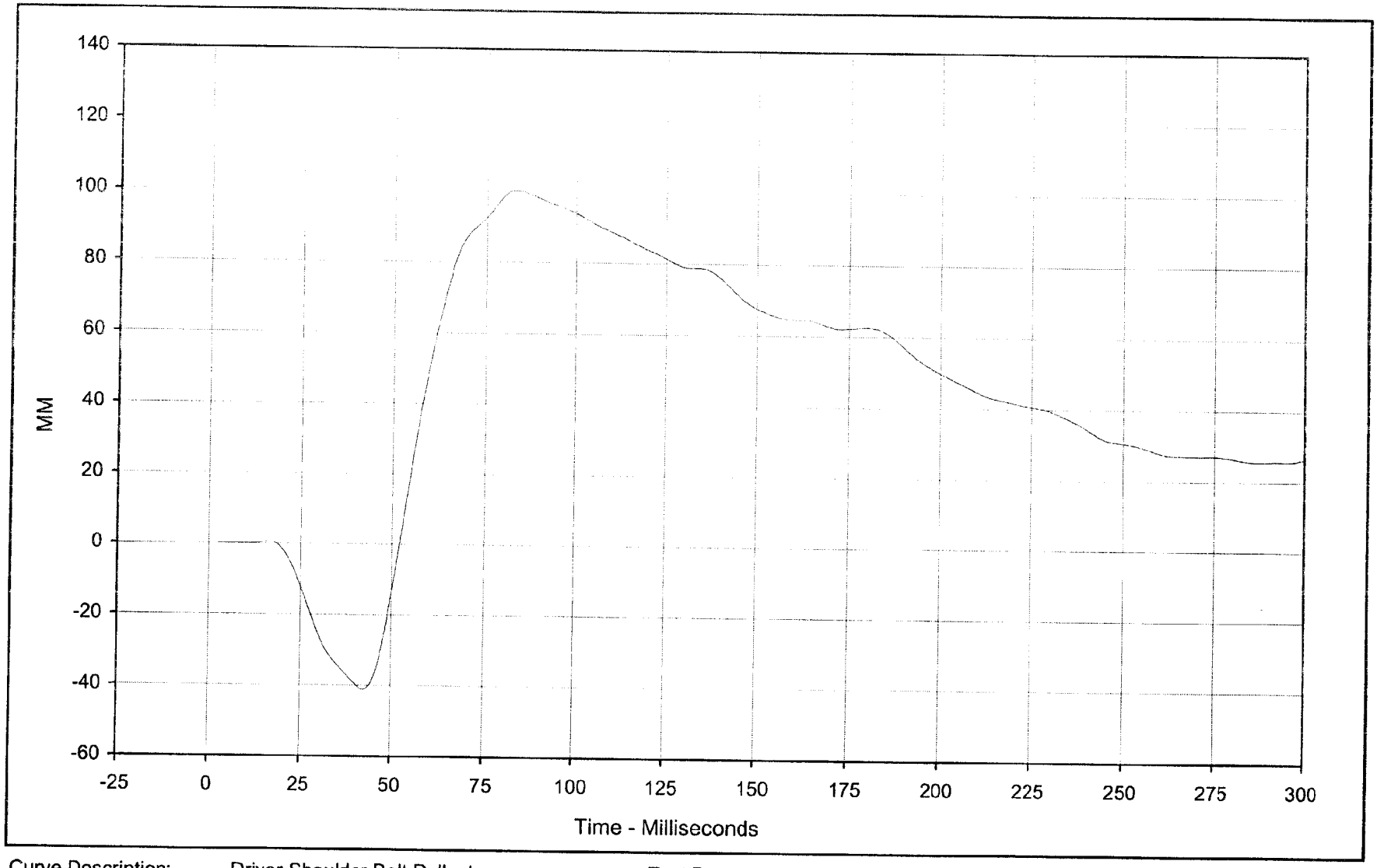
Date of Test: 11/23/99

Curve Number: FIL-042

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering

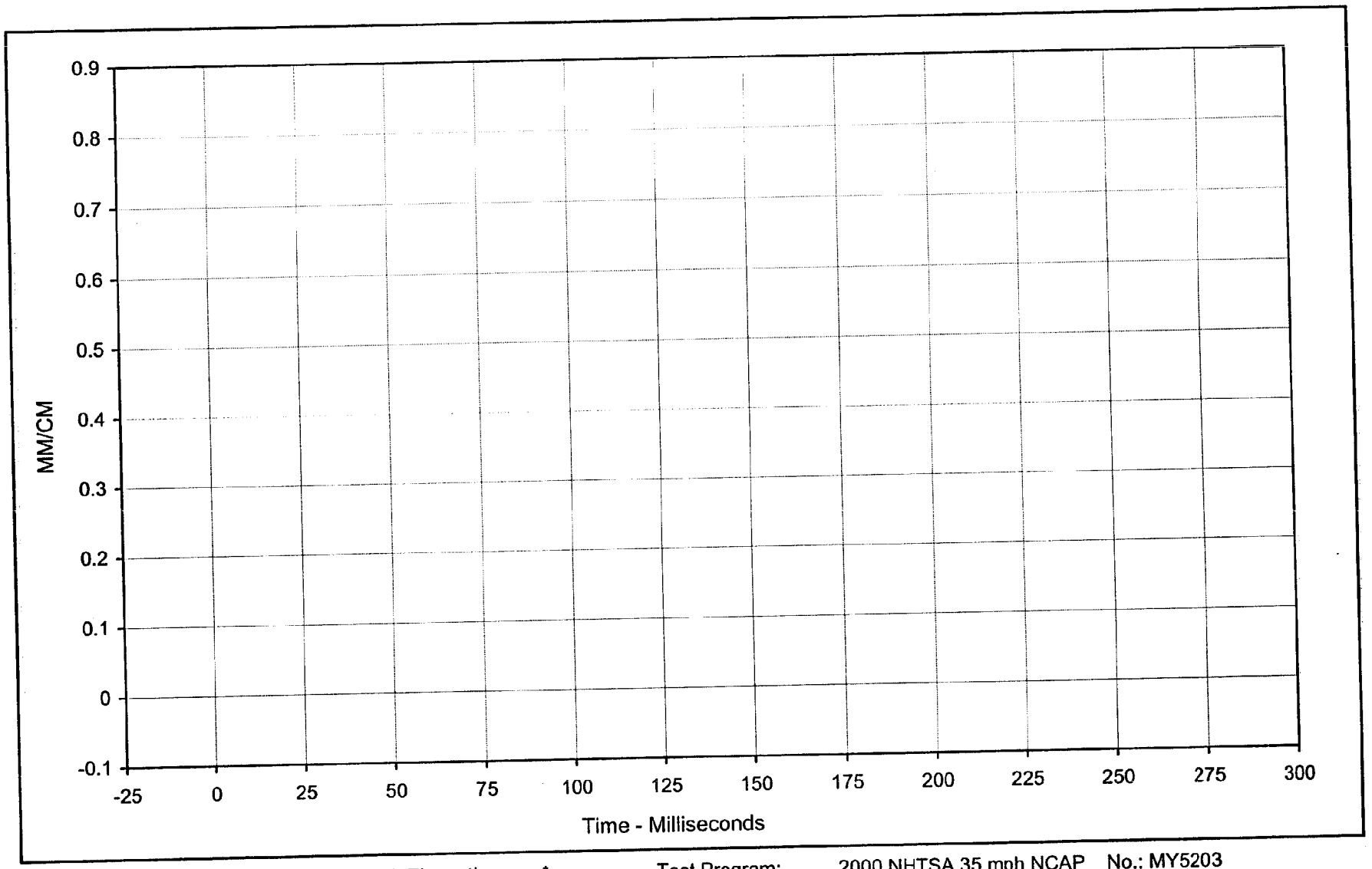


Curve Description:	Driver Shoulder Belt Pullout				
Maximum Value:	100.2	at	83.3	Milliseconds	
Minimum Value:	-41.1	at	42.5	Milliseconds	
SAE Filter Class:	60				
Date of Test:	11/23/99				
Curve Number:	FIL-043				

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Driver Shoulder Belt Elongation *

Maximum Value: 0.00 at 0.0 Milliseconds

Minimum Value: 0.00 at 0.0 Milliseconds

SAE Filter Class: 60

Date of Test: 11/23/99

Curve Number: FIL-044

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

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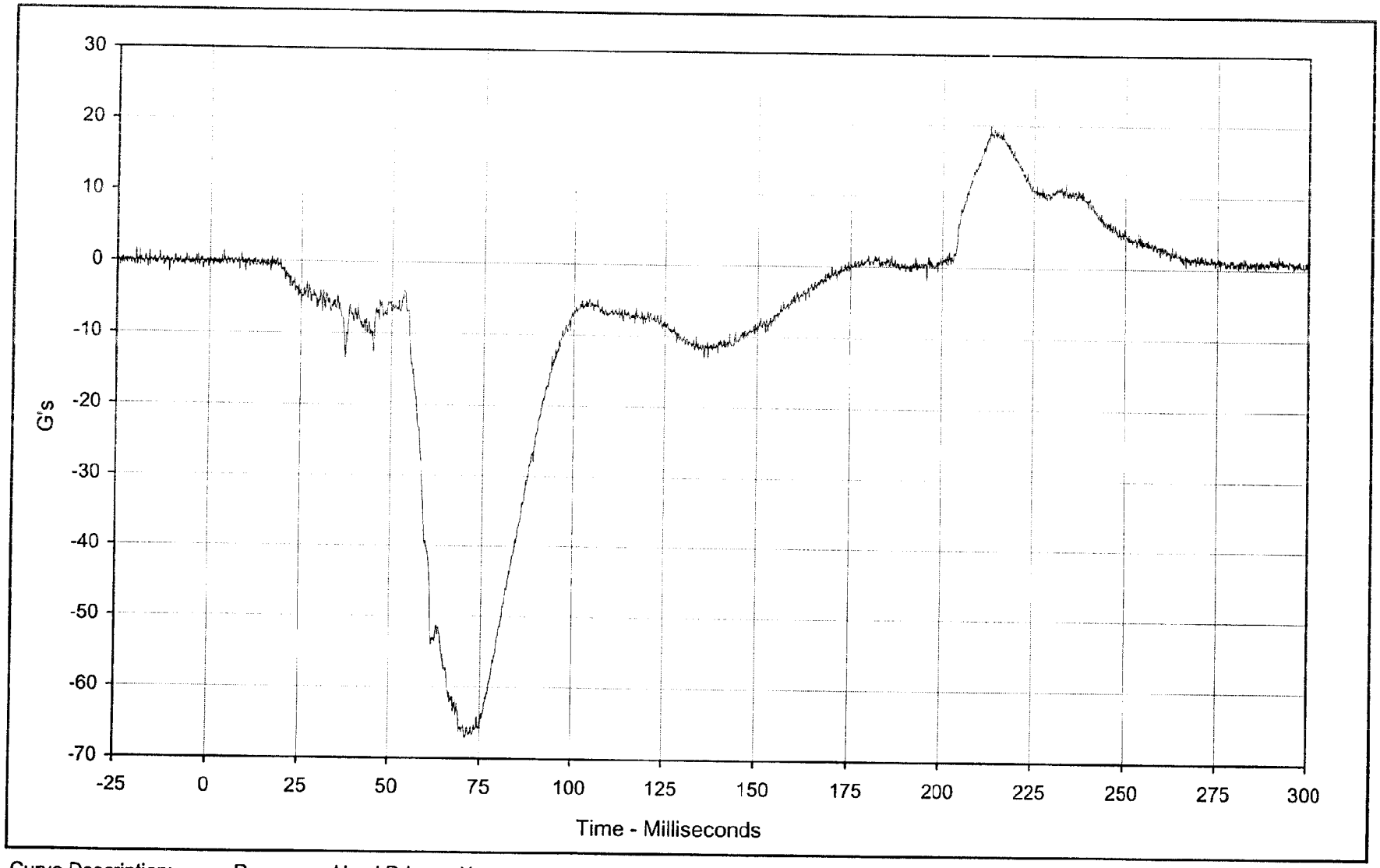
* Not Installed



Curve Description: Passenger Head Primary X

Maximum Value: 20.0 at 213.1 Milliseconds

Minimum Value: -67.2 at 71.1 Milliseconds

SAE Filter Class: 1000

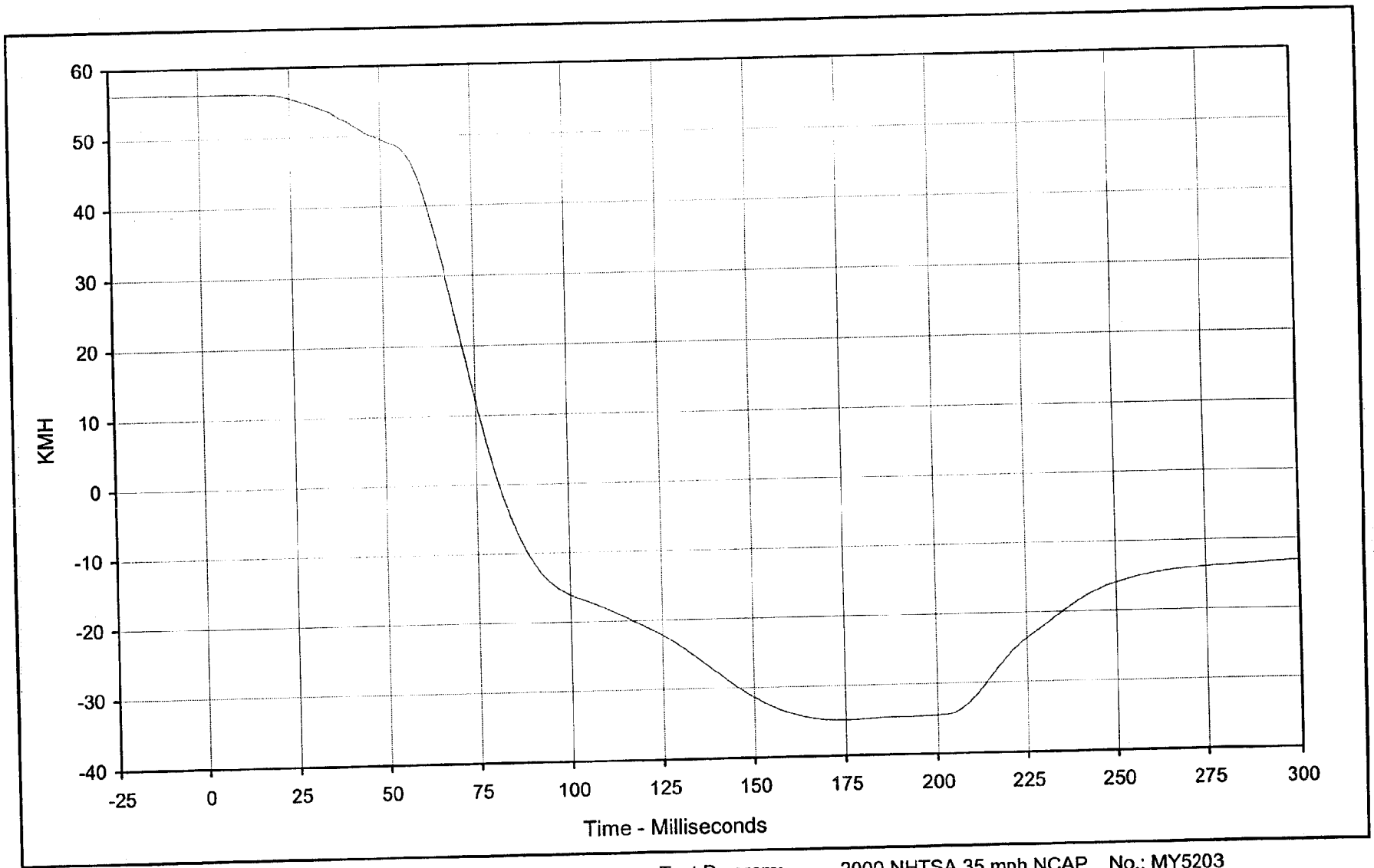
Date of Test: 11/23/99

Curve Number: FIL-045

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Passenger Head Primary X Velocity

Maximum Value: 56.2 at 0.0 Milliseconds

Minimum Value: -34.9 at 175.1 Milliseconds

SAE Filter Class: 180

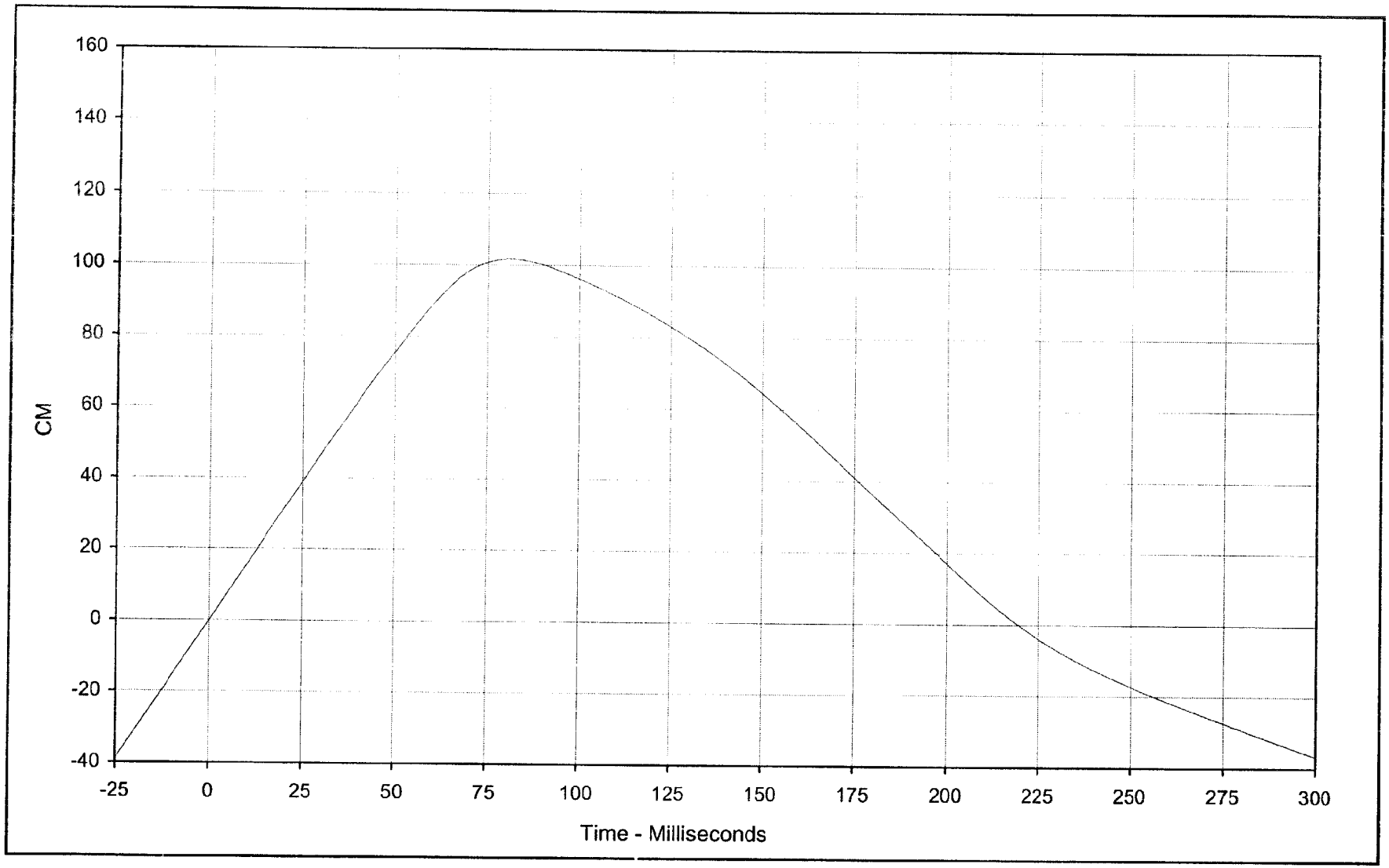
Date of Test: 11/23/99

Curve Number: IN1-045

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

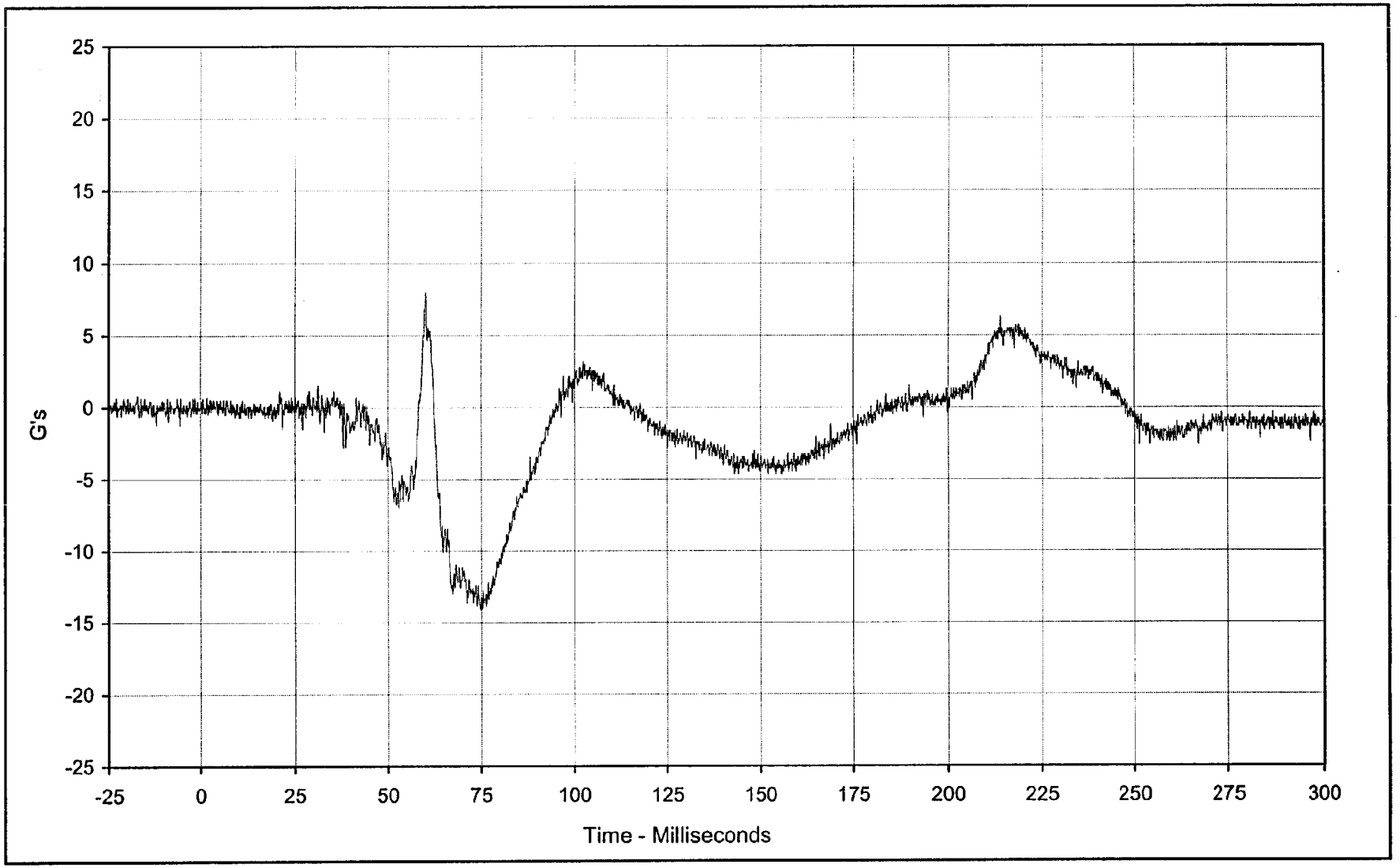
KARC Engineering



Curve Description:	Passenger Head Primary X Displ.				
Maximum Value:	101.7	at	81.1	Milliseconds	
Minimum Value:	-36.7	at	299.9	Milliseconds	
SAE Filter Class:	180				
Date of Test:	11/23/99				
Curve Number:	IN2-045				

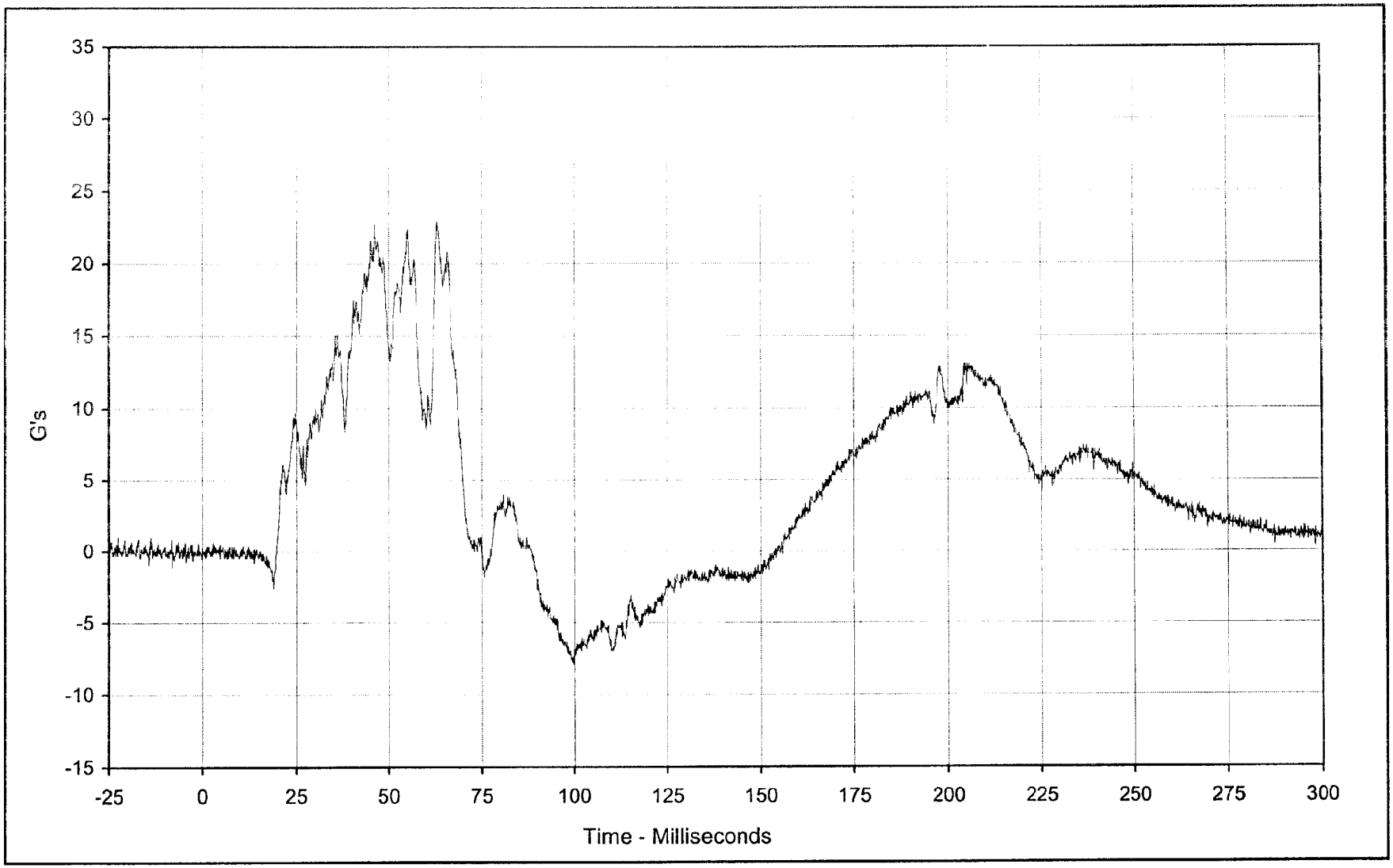
Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

KARCO Engineering



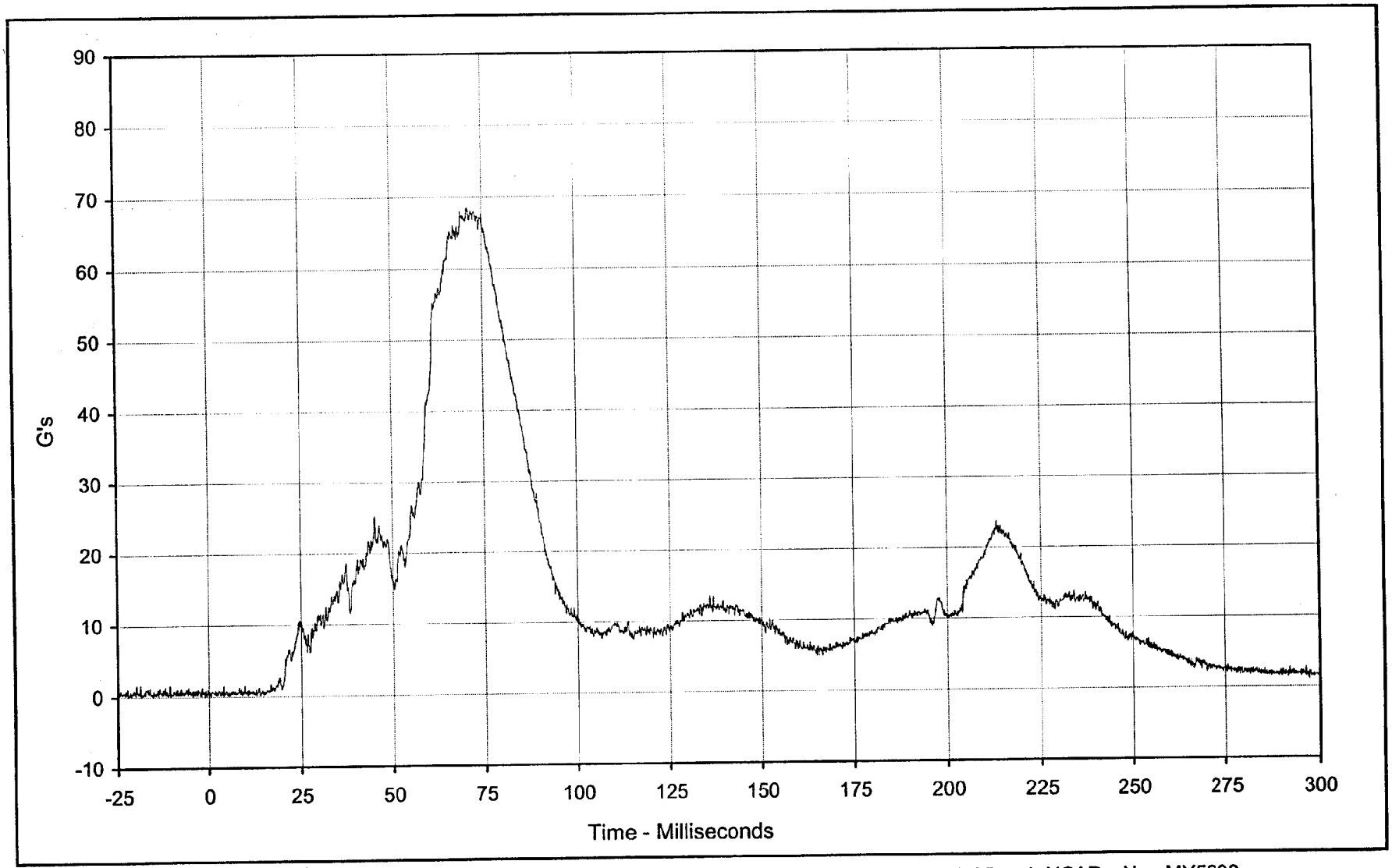
Curve Description:	Passenger Head Primary Y			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	8.0	at	60.0 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-14.1	at	74.7 Milliseconds		
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	FIL-046				

KARC Engineering



Curve Description:	Passenger Head Primary Z			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	22.9	at	62.8 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-7.9	at	99.7 Milliseconds		
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	FIL-047				

KARC Engineering



Curve Description: Passenger Head Resultant Primary

Maximum Value: 68.5 at 71.1 Milliseconds

Minimum Value: 0.0 at 0.5 Milliseconds

SAE Filter Class: 1000

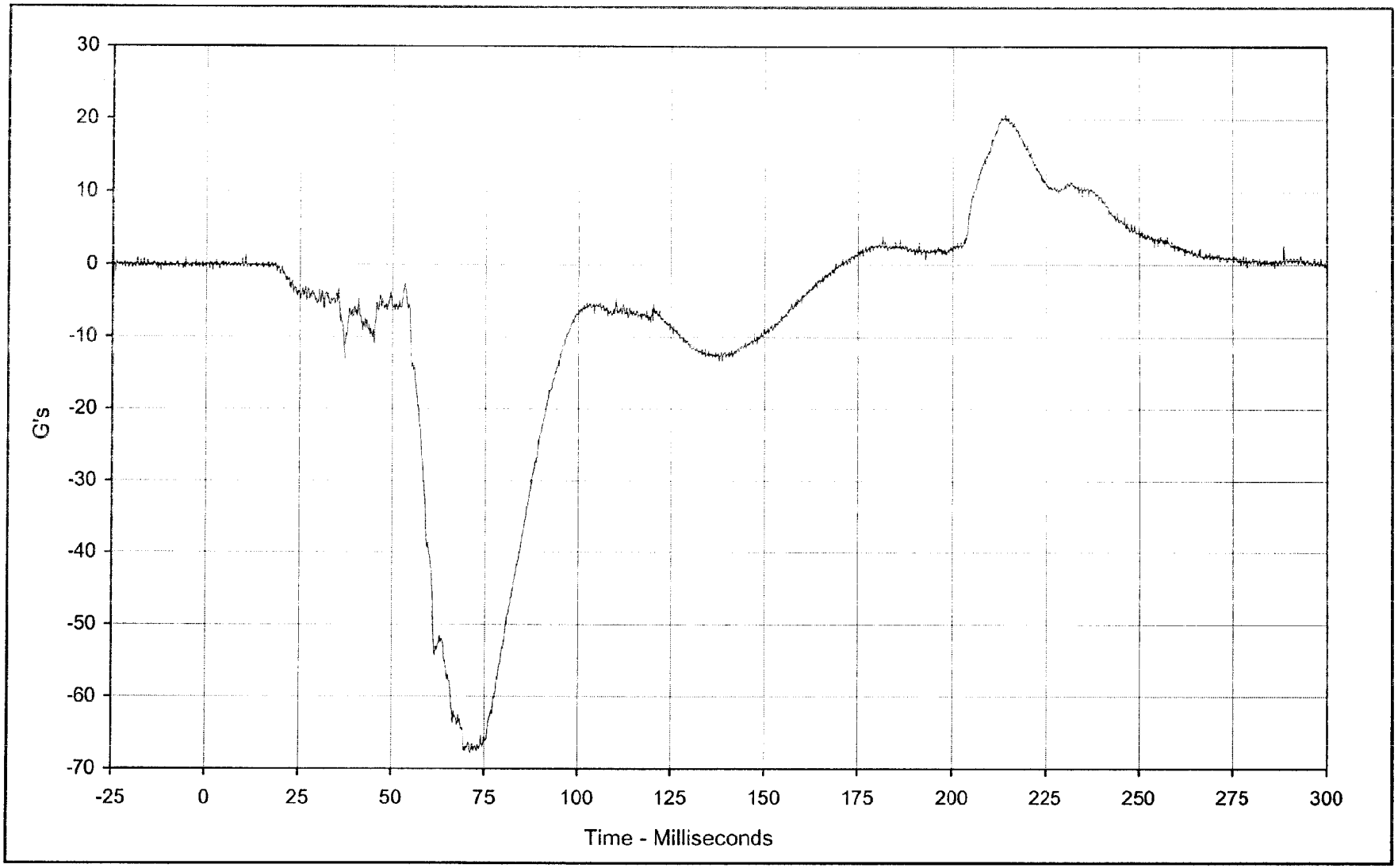
Date of Test: 11/23/99

Curve Number: RES-045

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

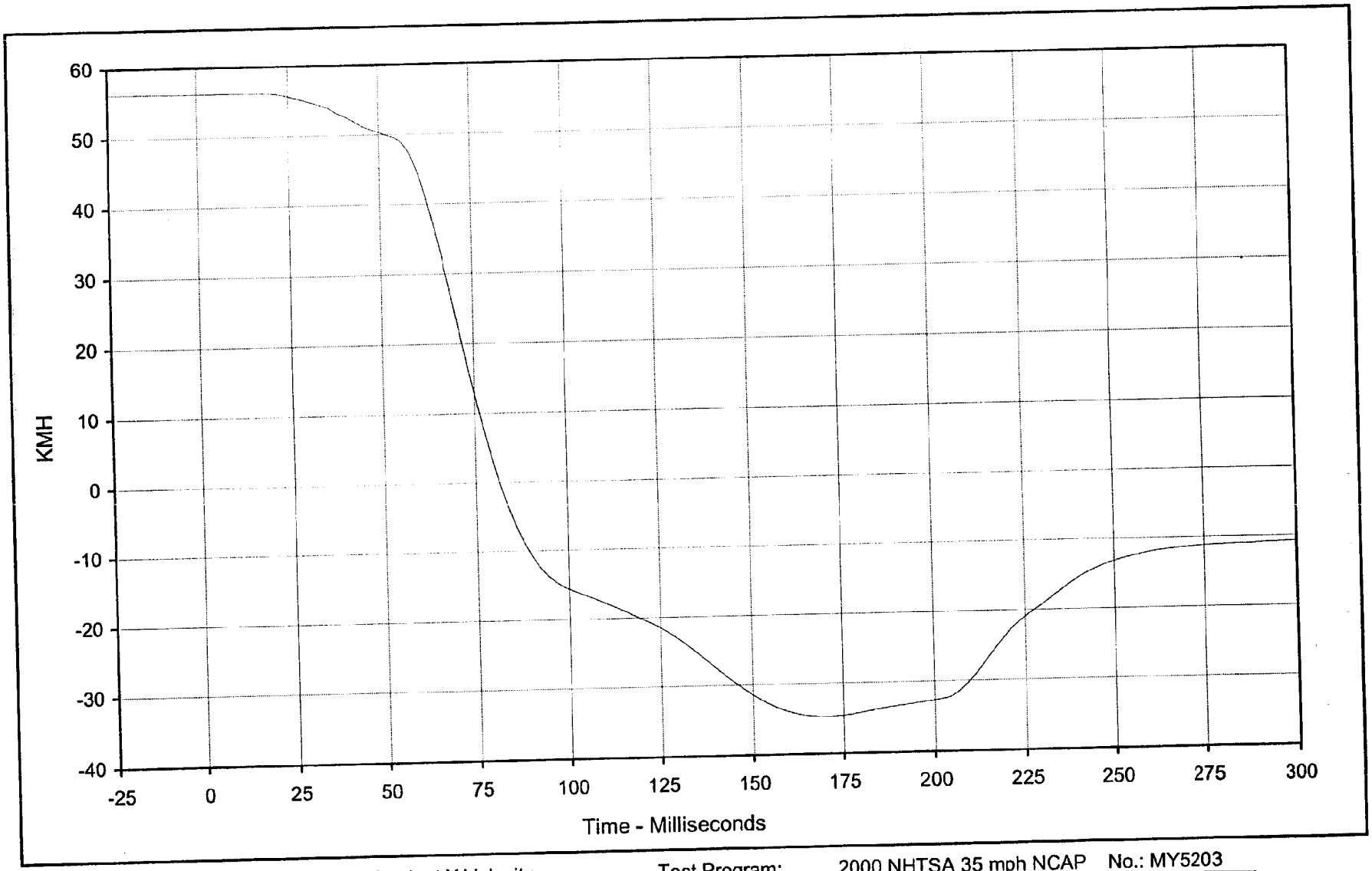
KARCO Engineering



Curve Description:	Passenger Head Redundant X				
Maximum Value:	20.6	at	213.9	Milliseconds	
Minimum Value:	-67.9	at	71.2	Milliseconds	
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	FIL-048				

Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Passenger Head Redundant X Velocity

Maximum Value: 56.2 at 0.0 Milliseconds

Minimum Value: -34.8 at 170.1 Milliseconds

SAE Filter Class: 180

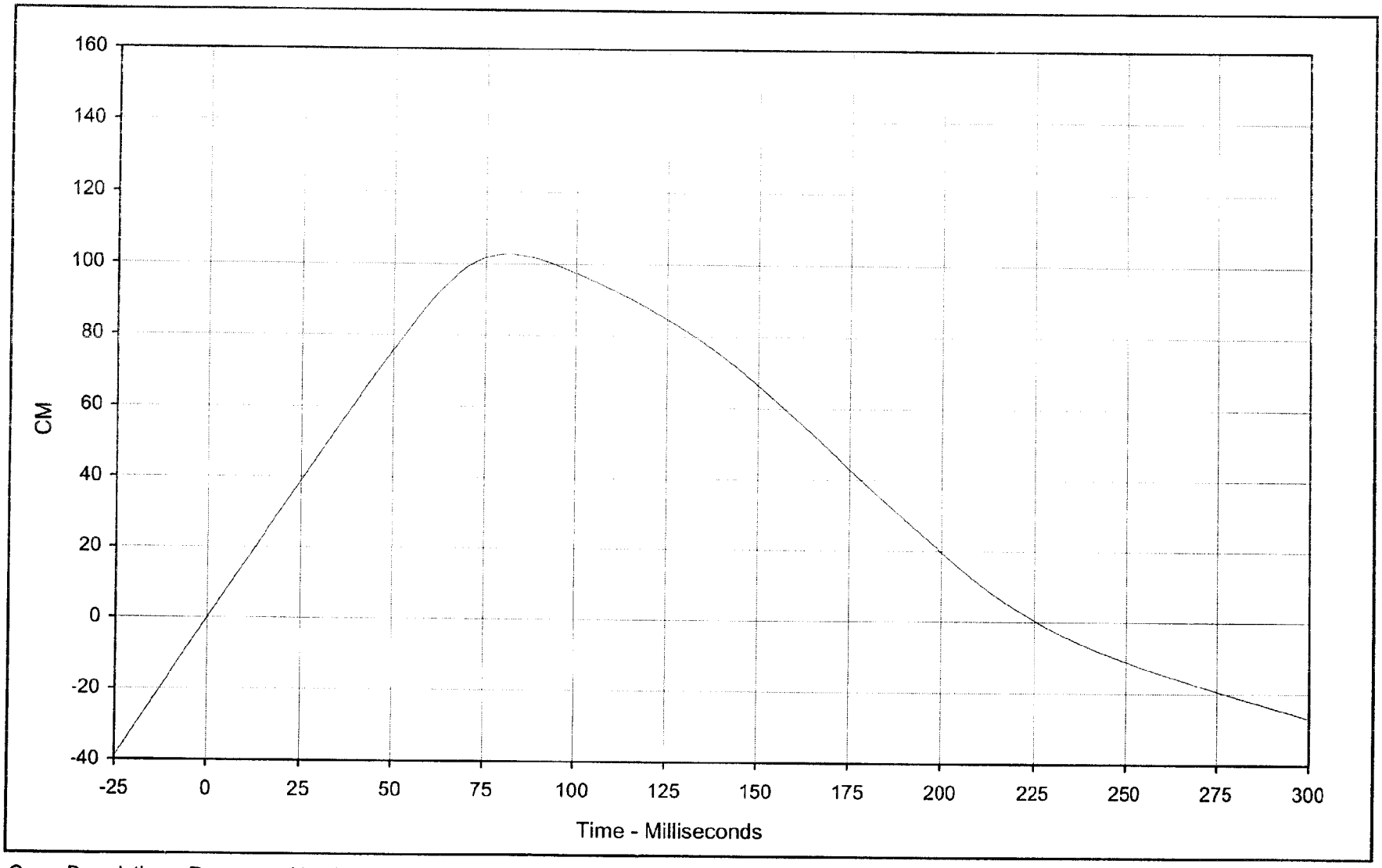
Date of Test: 11/23/99

Curve Number: IN1-048

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Passenger Head Redundant X Displ.

Maximum Value: 102.8 at 81.3 Milliseconds

Minimum Value: -26.9 at 299.9 Milliseconds

SAE Filter Class: 180

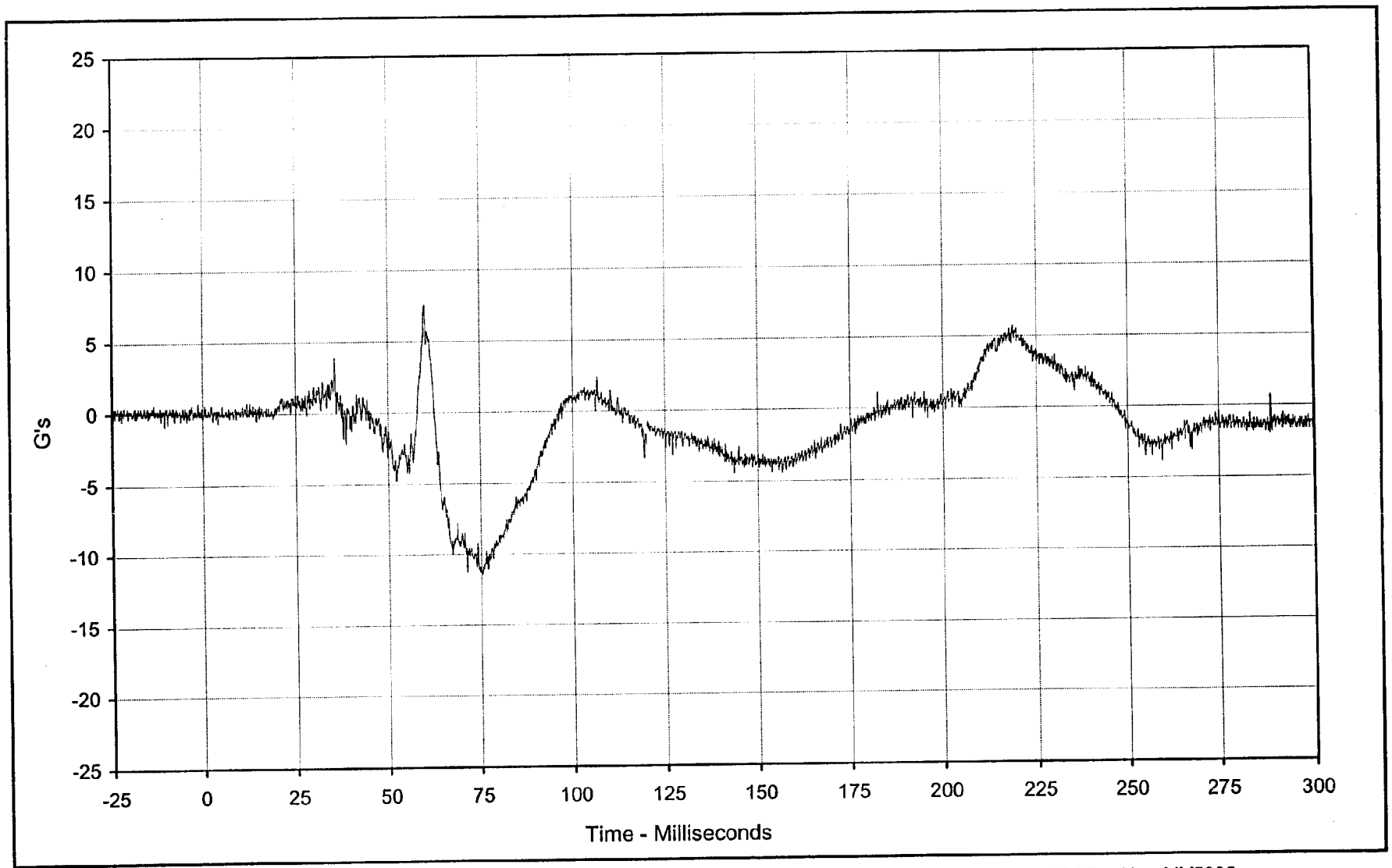
Date of Test: 11/23/99

Curve Number: IN2-048

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Passenger Head Redundant Y

Maximum Value: 7.6 at 59.9 Milliseconds

Minimum Value: -11.5 at 75.3 Milliseconds

SAE Filter Class: 1000

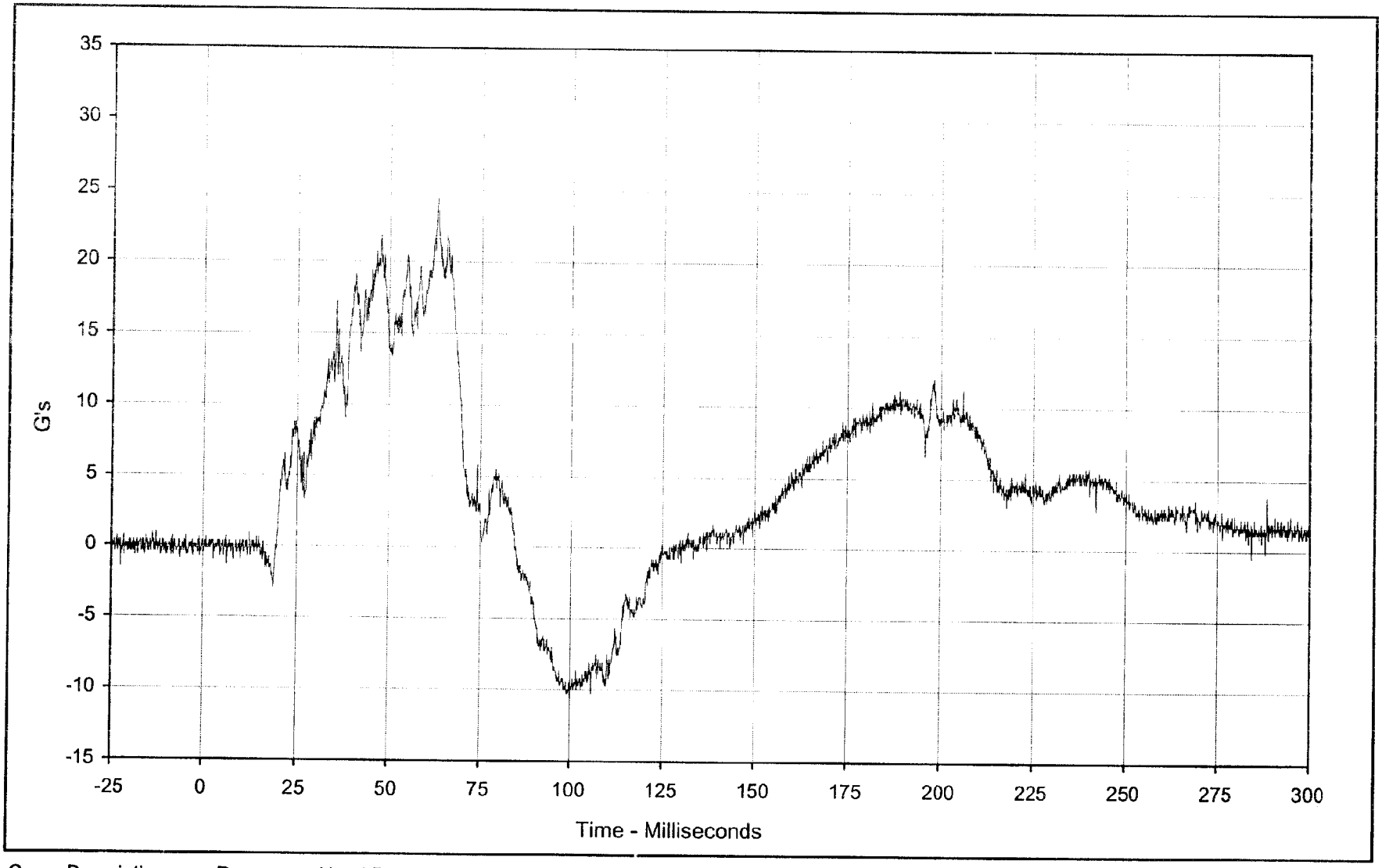
Date of Test: 11/23/99

Curve Number: FIL-049

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

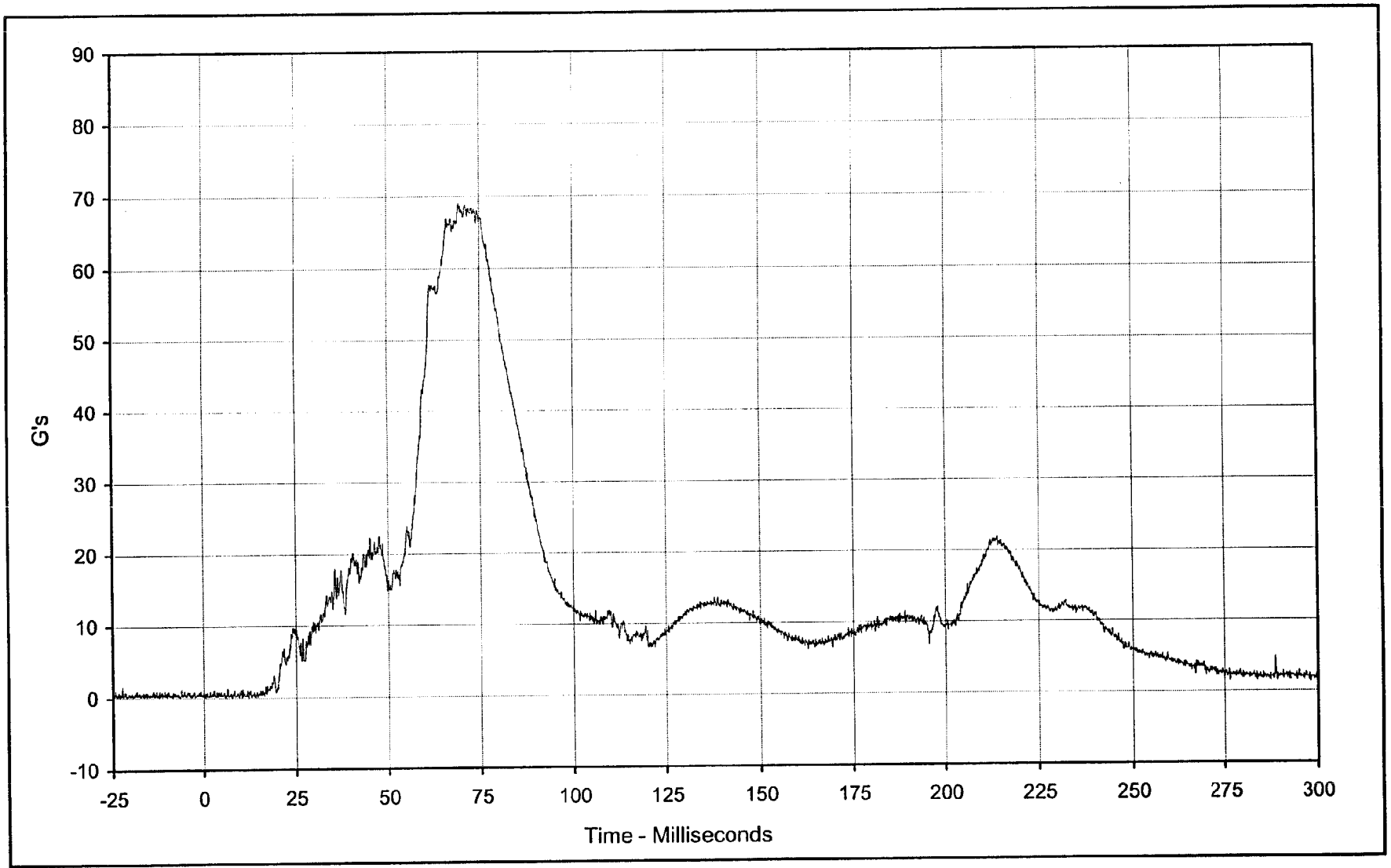
KARC Engineering



Curve Description:	Passenger Head Redundant Z				
Maximum Value:	24.5	at	62.8	Milliseconds	
Minimum Value:	-10.6	at	100.0	Milliseconds	
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	FIL-050				

Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Passenger Head Resultant Redundant

Maximum Value: 69.0 at 69.5 Milliseconds

Minimum Value: 0.1 at 5.8 Milliseconds

SAE Filter Class: 1000

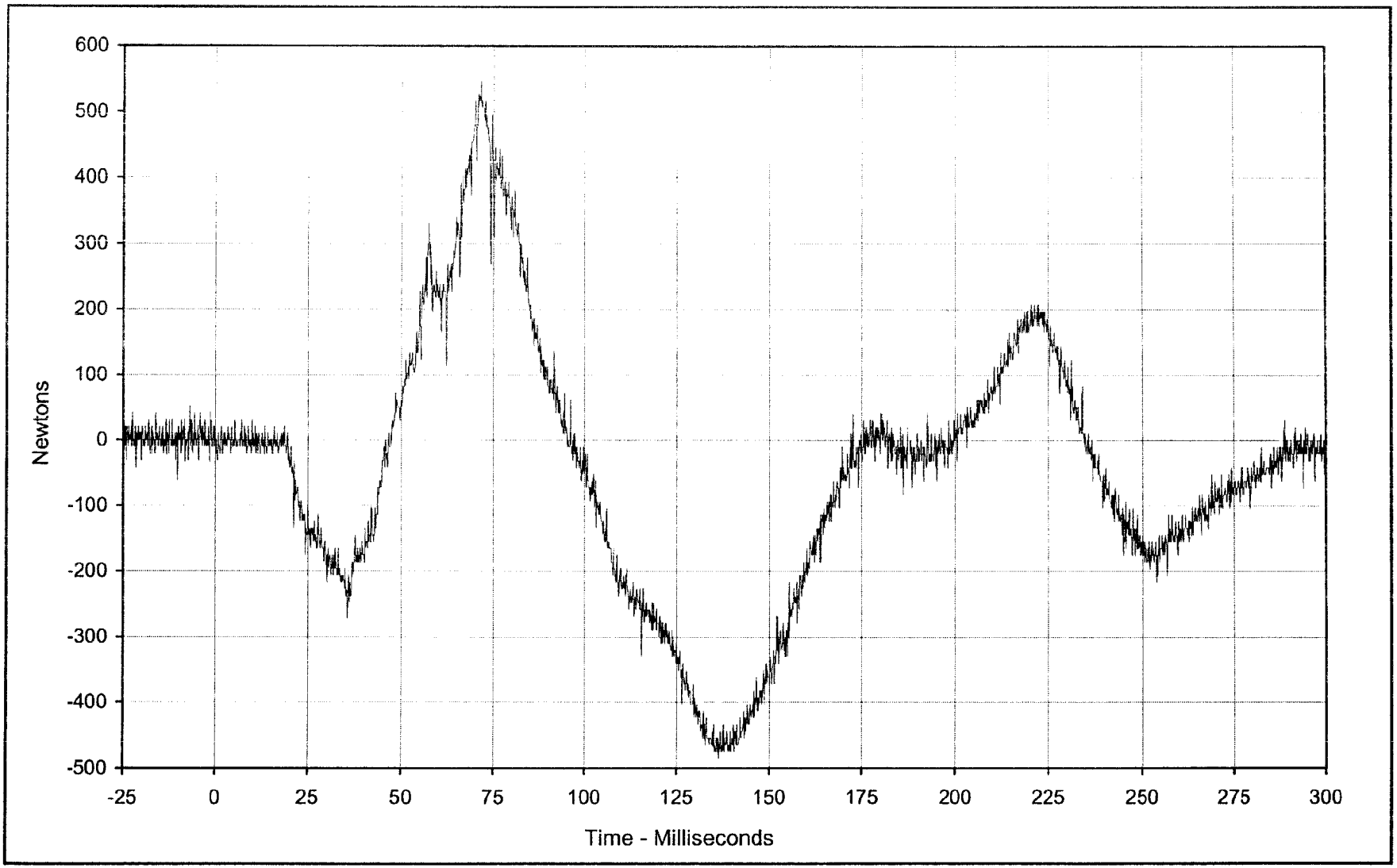
Date of Test: 11/23/99

Curve Number: RES-048

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

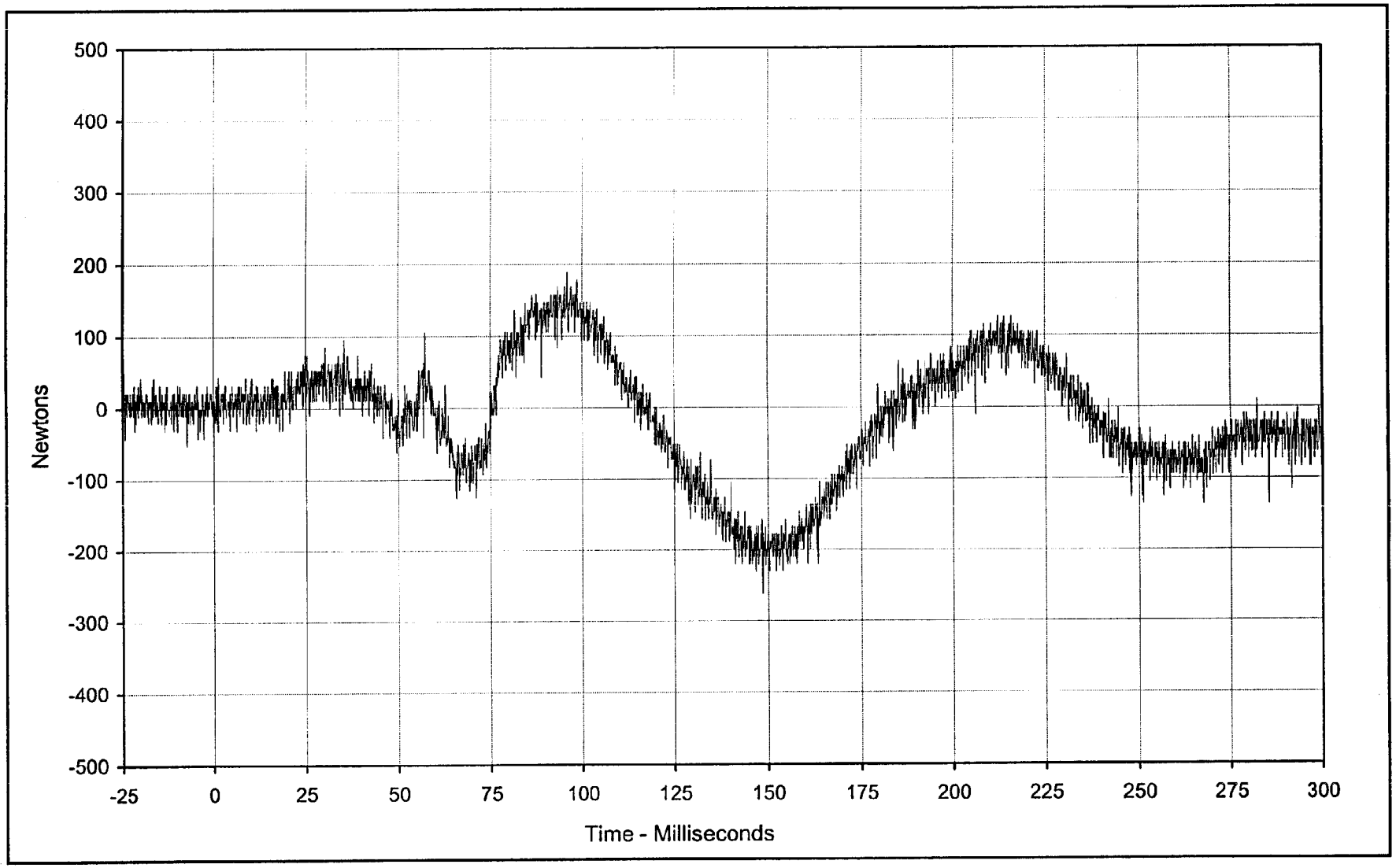
Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description:	Passenger Neck Force X			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	547.7	at	71.7 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-485.7	at	136.3 Milliseconds		
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	FIL-051				

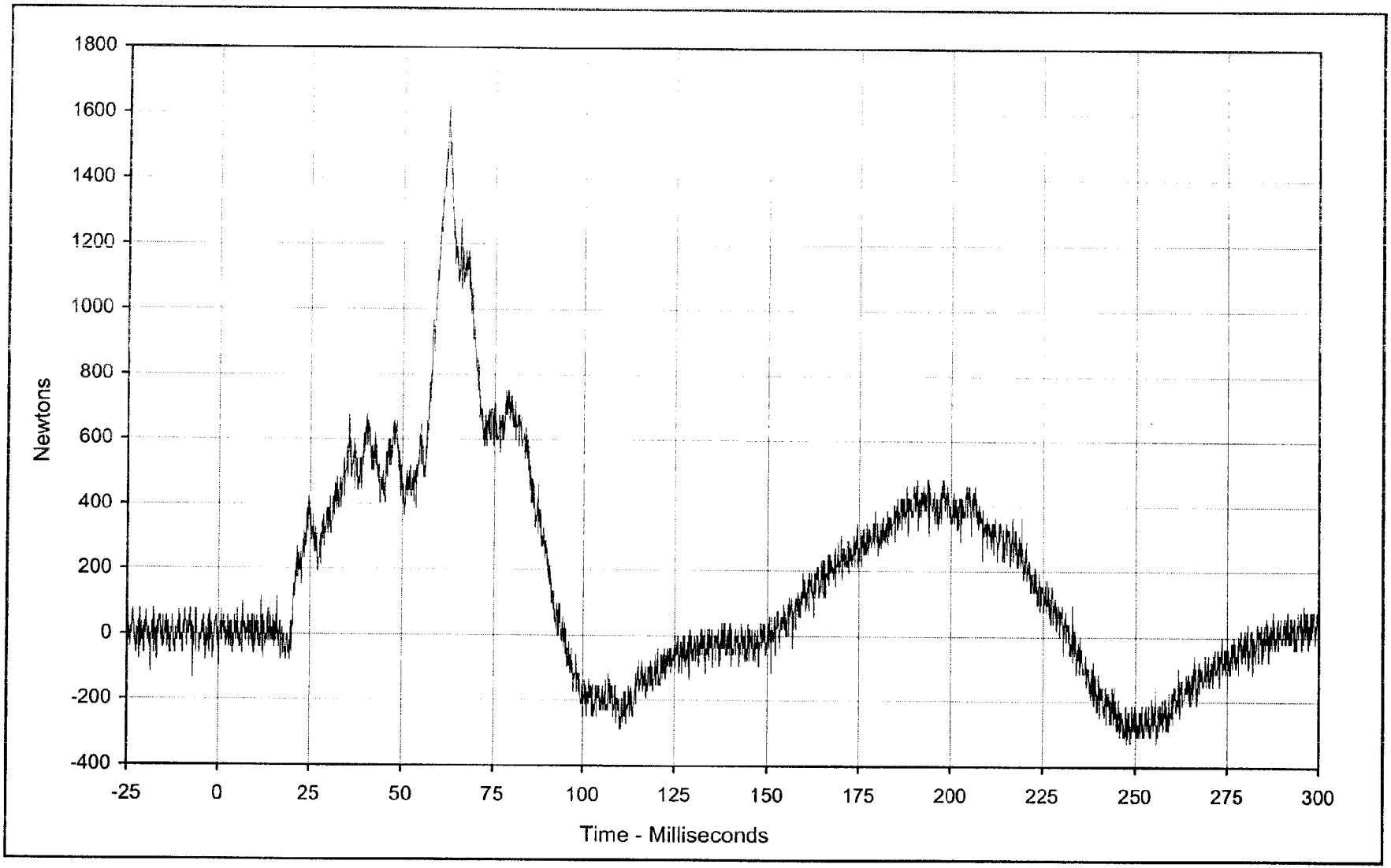
KARC Engineering



Curve Description:	Passenger Neck Force Y			
Maximum Value:	188.7	at	96.0	Milliseconds
Minimum Value:	-262.1	at	148.5	Milliseconds
SAE Filter Class:	1000			
Date of Test:	11/23/99			
Curve Number:	FIL-052			

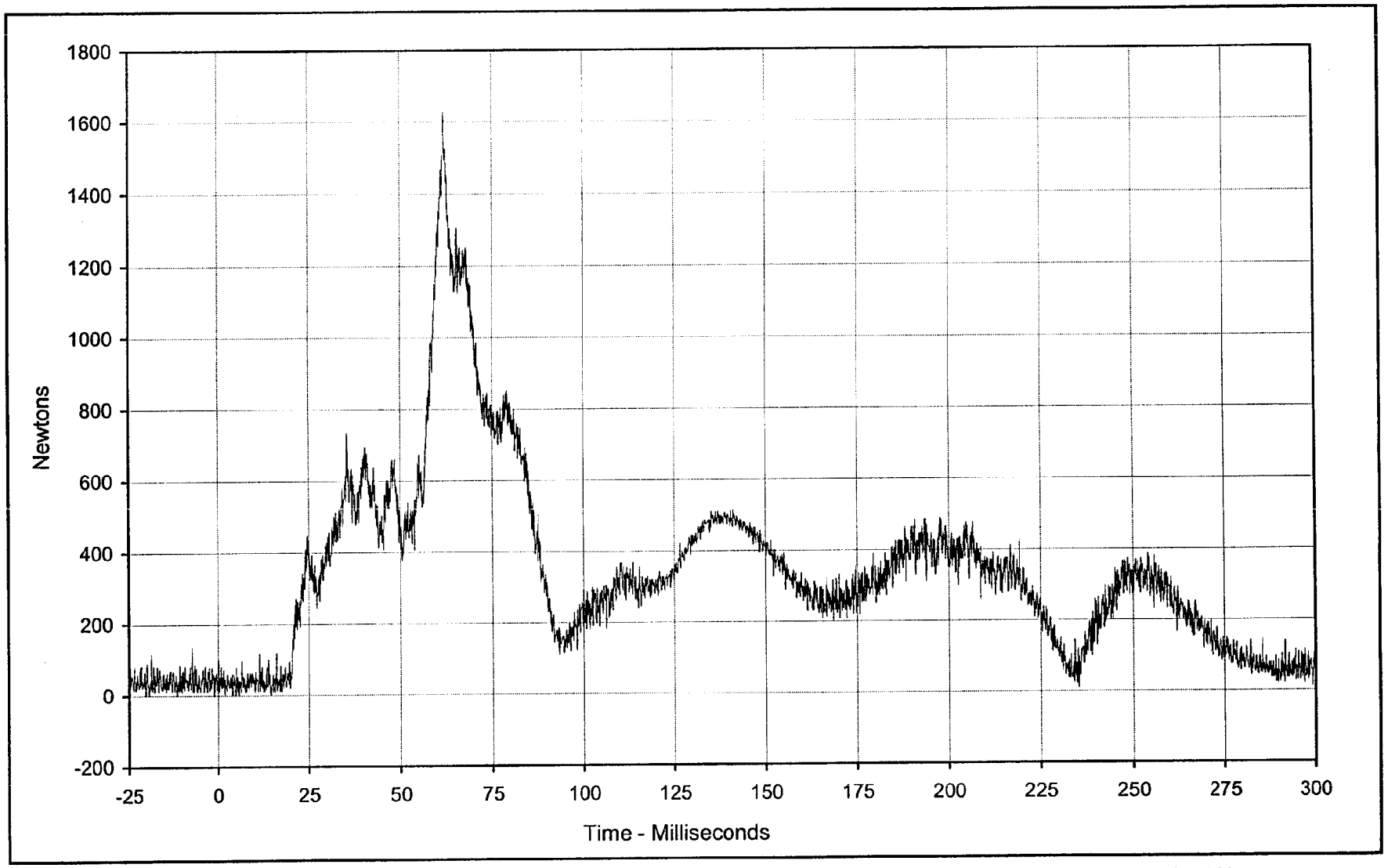
Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

KARCO Engineering



Curve Description:	Passenger Neck Force Z			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	1622.6	at	62.1 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-328.4	at	247.6 Milliseconds		
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	FIL-053				

KARC Engineering



Curve Description: Passenger Neck Force Resultant

Maximum Value: 1626.9 at 62.1 Milliseconds

Minimum Value: 0.0 at 1.8 Milliseconds

SAE Filter Class: 1000

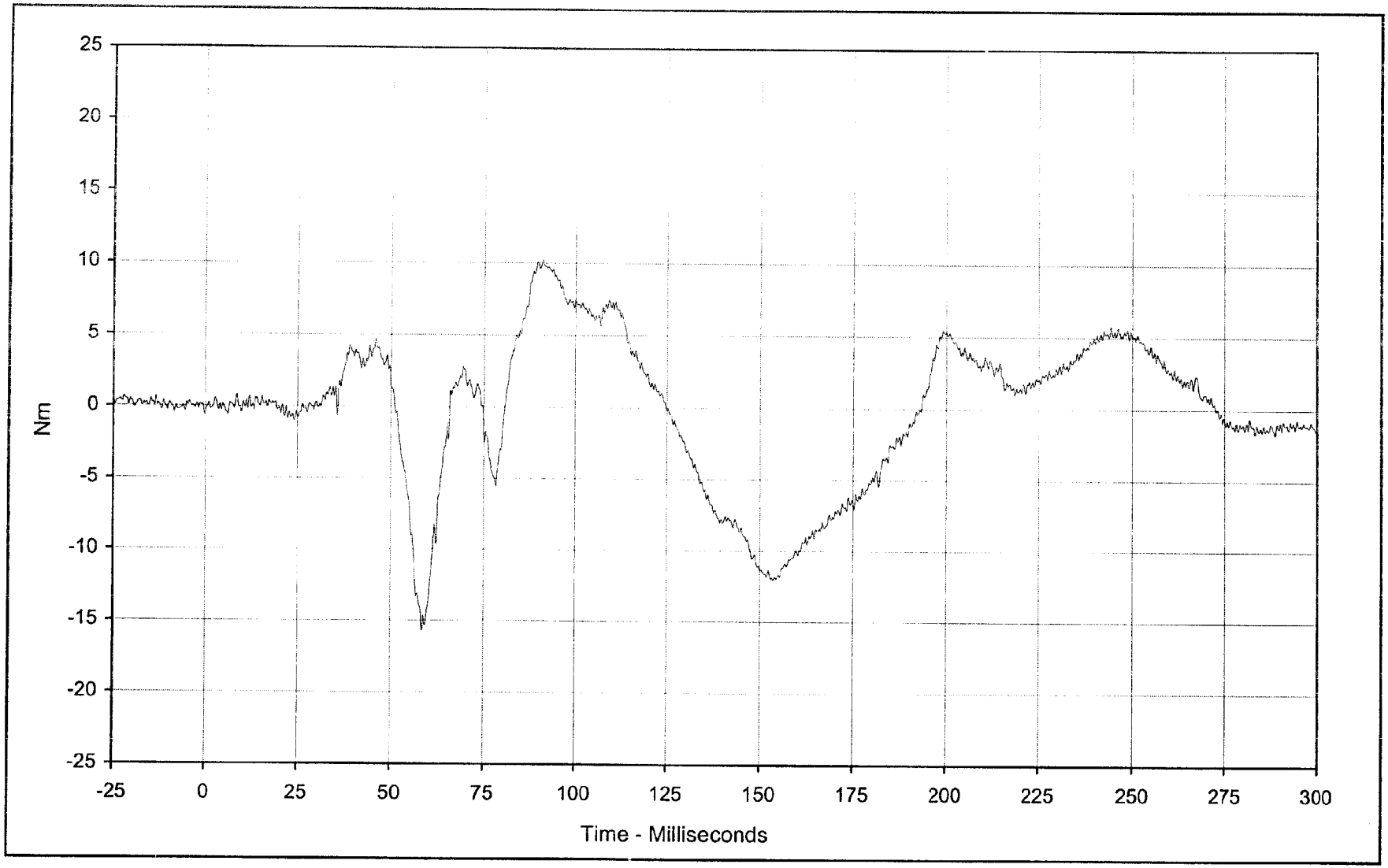
Date of Test: 11/23/99

Curve Number: RES-051

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

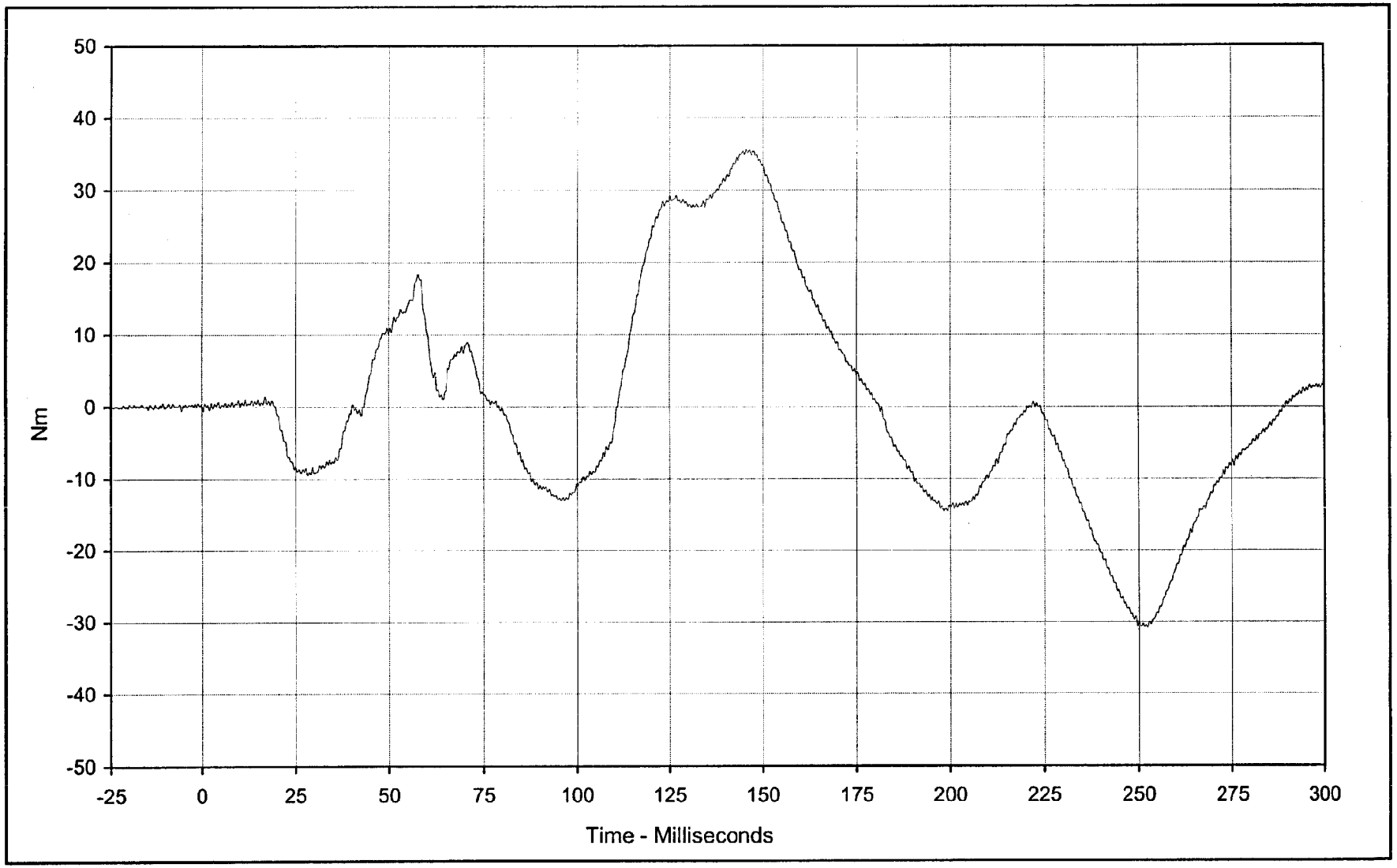
Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



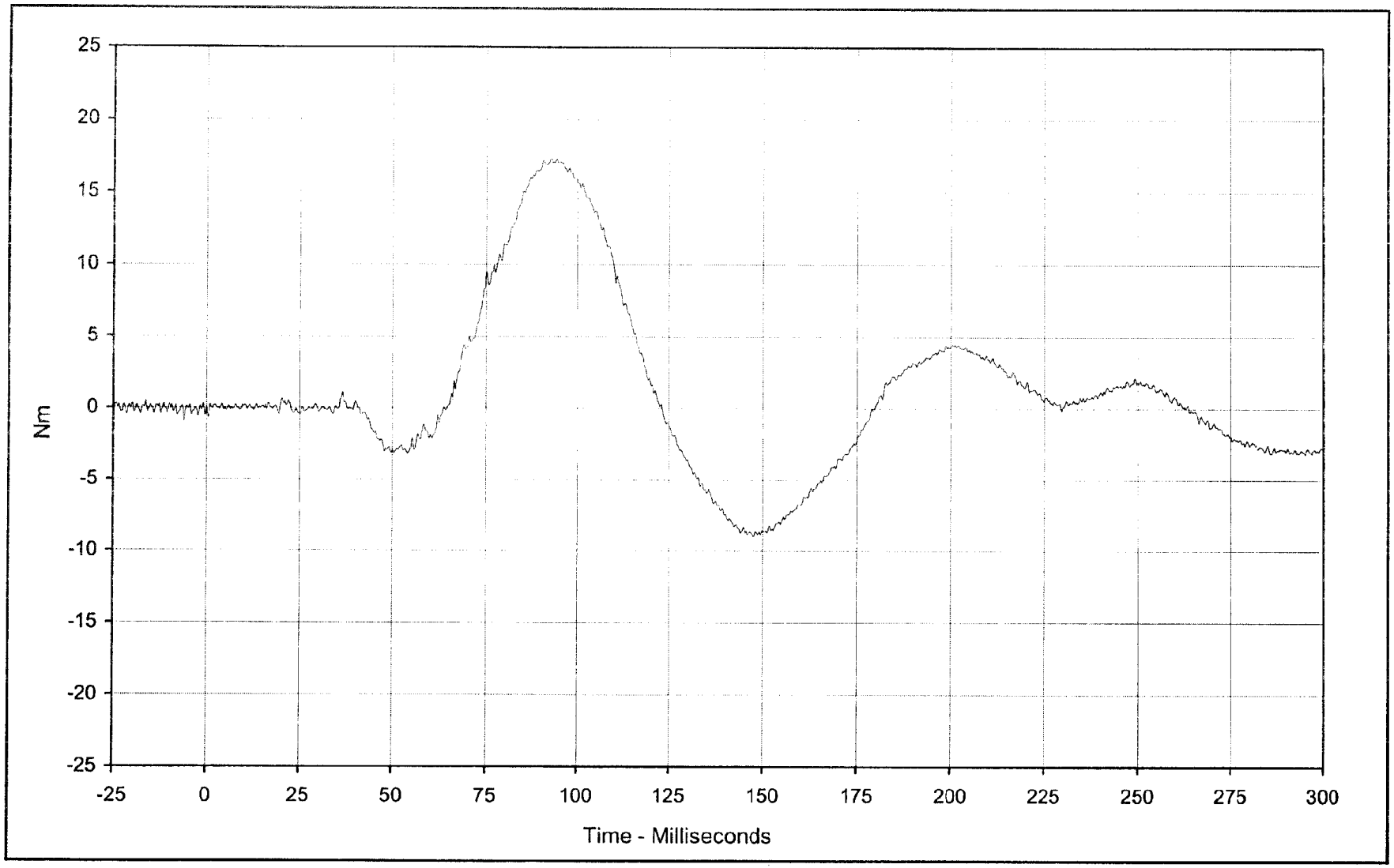
Curve Description:	Passenger Neck Moment X			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	10.3	at	91.1 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-15.7	at	58.3 Milliseconds		
SAE Filter Class:	600				
Date of Test:	11/23/99				
Curve Number:	FIL-054				

KARC Engineering



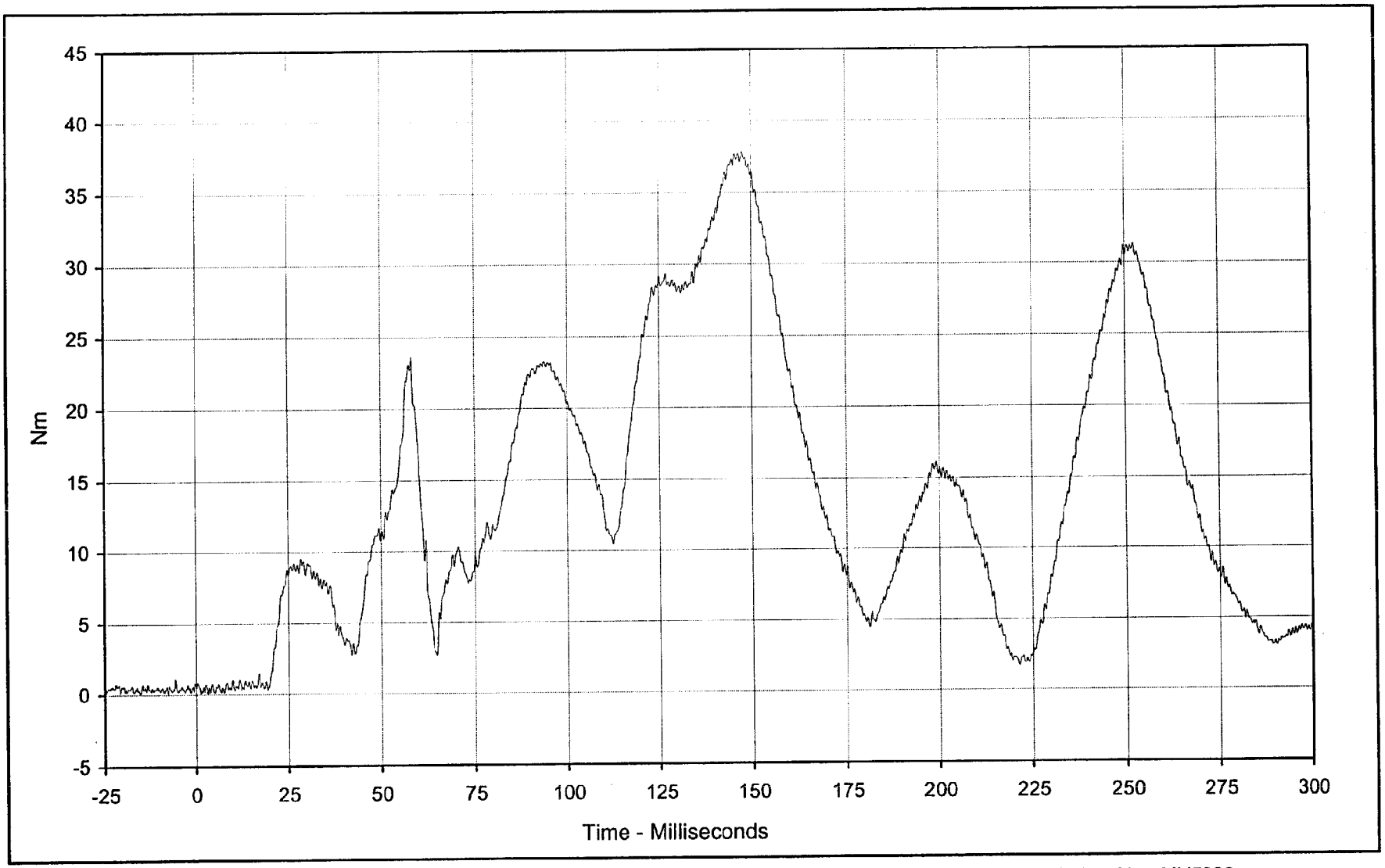
Curve Description:	Passenger Neck Moment Y			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	35.5	at	145.6 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-30.9	at	252.3 Milliseconds		
SAE Filter Class:	600				
Date of Test:	11/23/99				
Curve Number:	FIL-055				

KARC Engineering



Curve Description:	Passenger Neck Moment Z			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	17.3	at	92.5 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-9.0	at	147.5 Milliseconds		
SAE Filter Class:	600				
Date of Test:	11/23/99				
Curve Number:	FIL-056				

KARC Engineering



Curve Description: Passenger Neck Moment Resultant

Maximum Value: 37.8 at 147.6 Milliseconds

Minimum Value: 0.0 at 3.2 Milliseconds

SAE Filter Class: 600

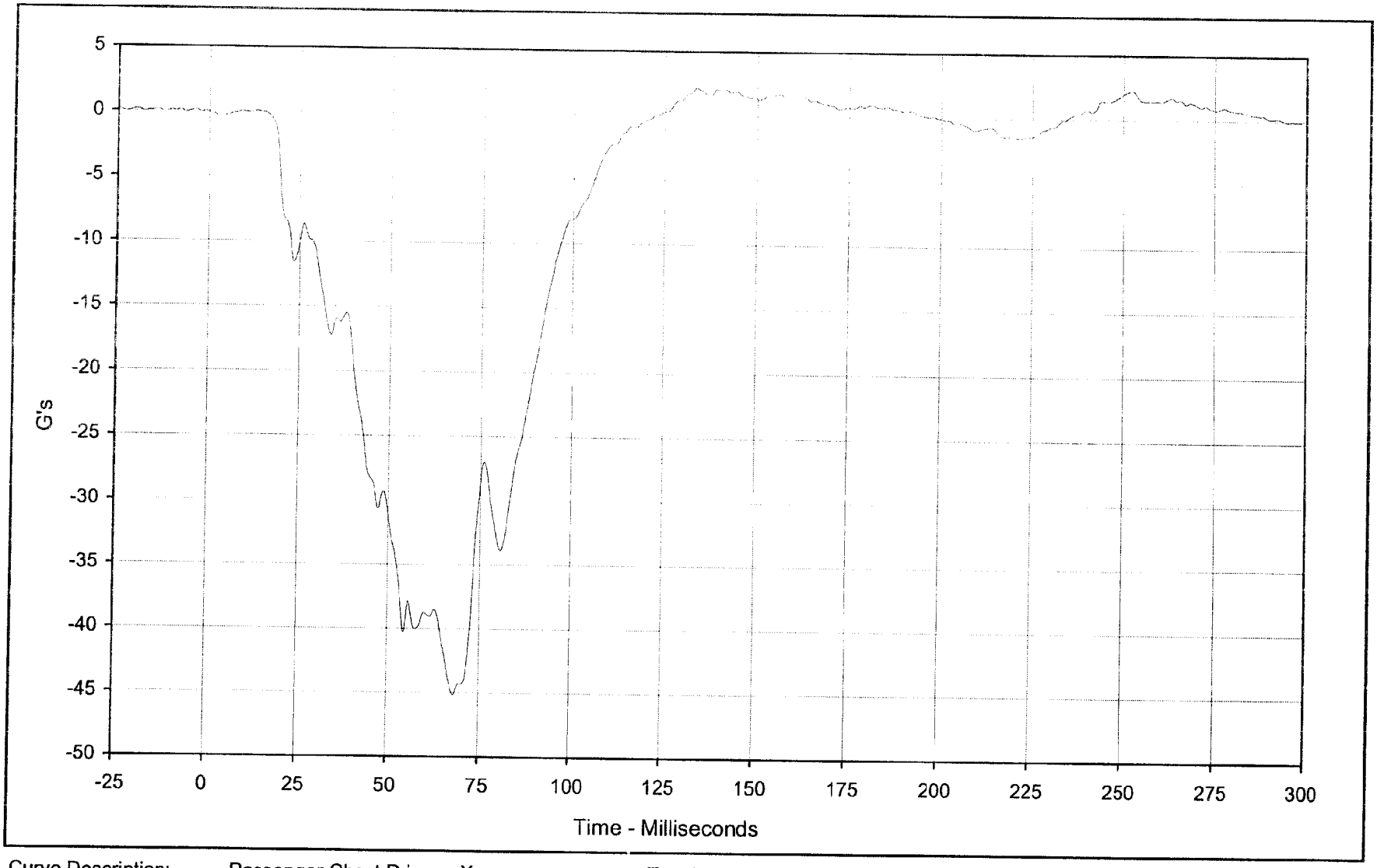
Date of Test: 11/23/99

Curve Number: RES-054

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Passenger Chest Primary X

Maximum Value: 2.3 at 252.4 Milliseconds

Minimum Value: -45.2 at 68.1 Milliseconds

SAE Filter Class: 180

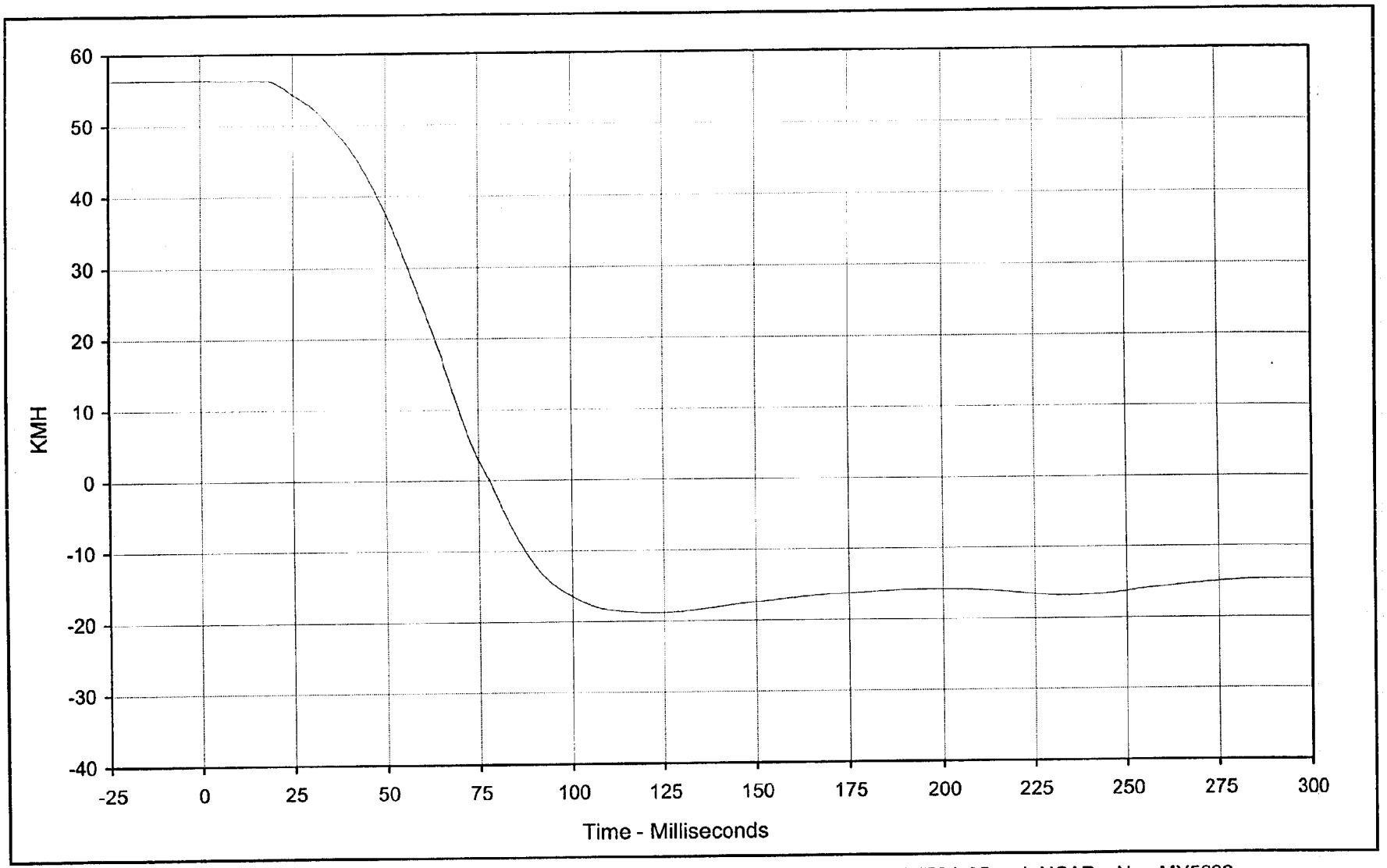
Date of Test: 11/23/99

Curve Number: FIL-057

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Passenger Chest Primary X Velocity

Maximum Value: 56.3 at 0.0 Milliseconds

Minimum Value: -18.8 at 122.1 Milliseconds

SAE Filter Class: 180

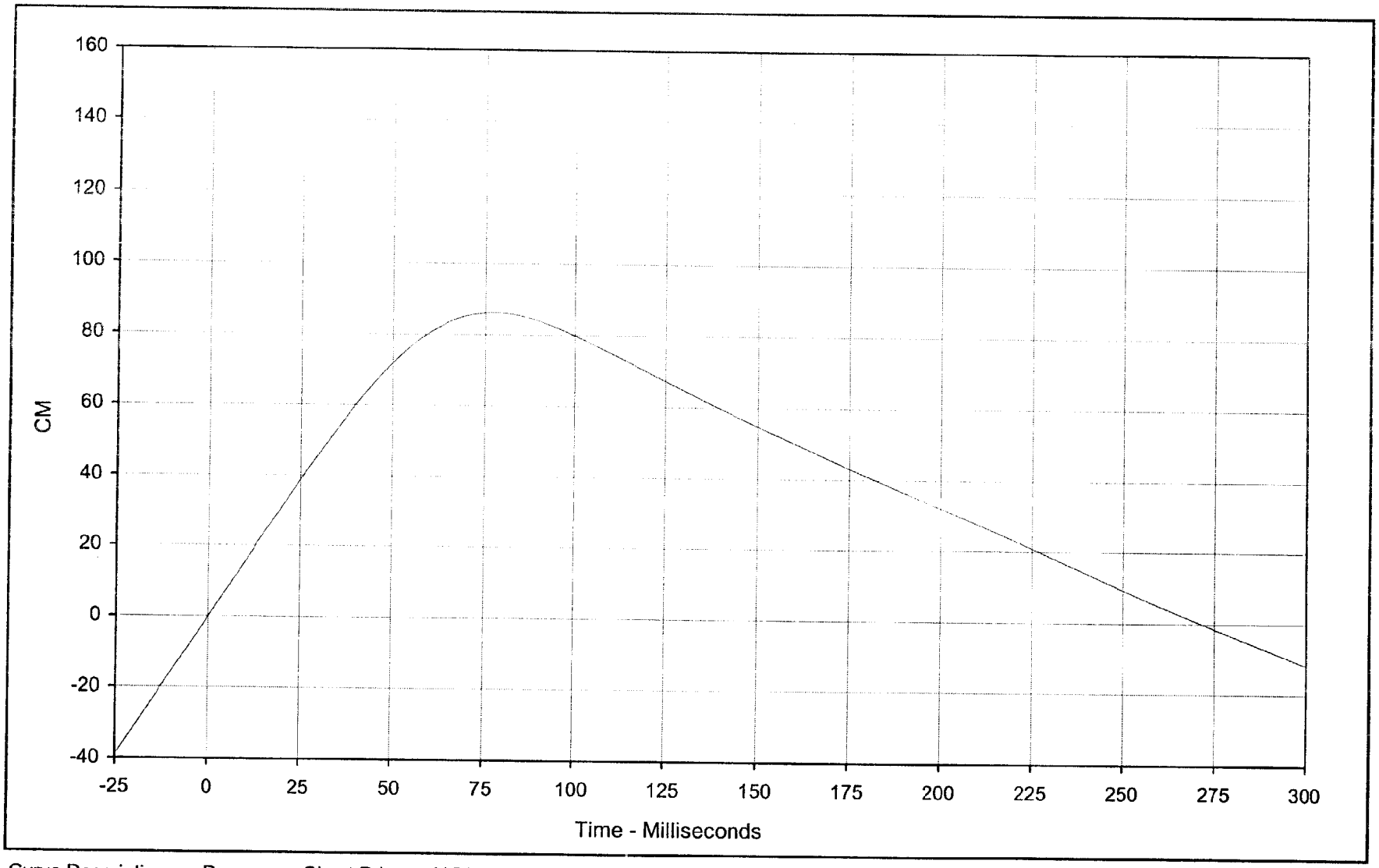
Date of Test: 11/23/99

Curve Number: IN1-057

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Passenger Chest Primary X Displ.

Maximum Value: 86.2 at 77.8 Milliseconds

Minimum Value: -11.6 at 299.9 Milliseconds

SAE Filter Class: 180

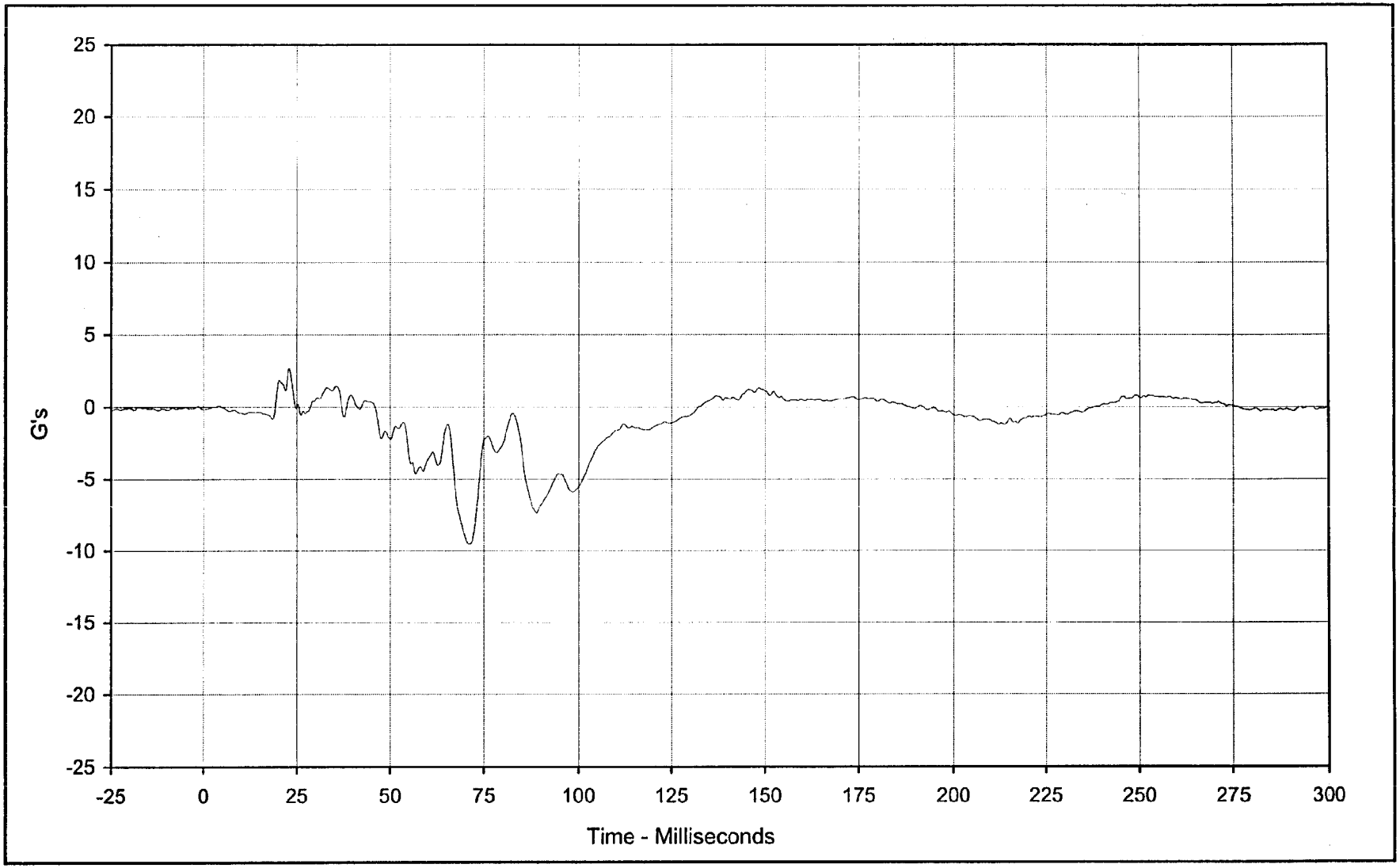
Date of Test: 11/23/99

Curve Number: IN2-057

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

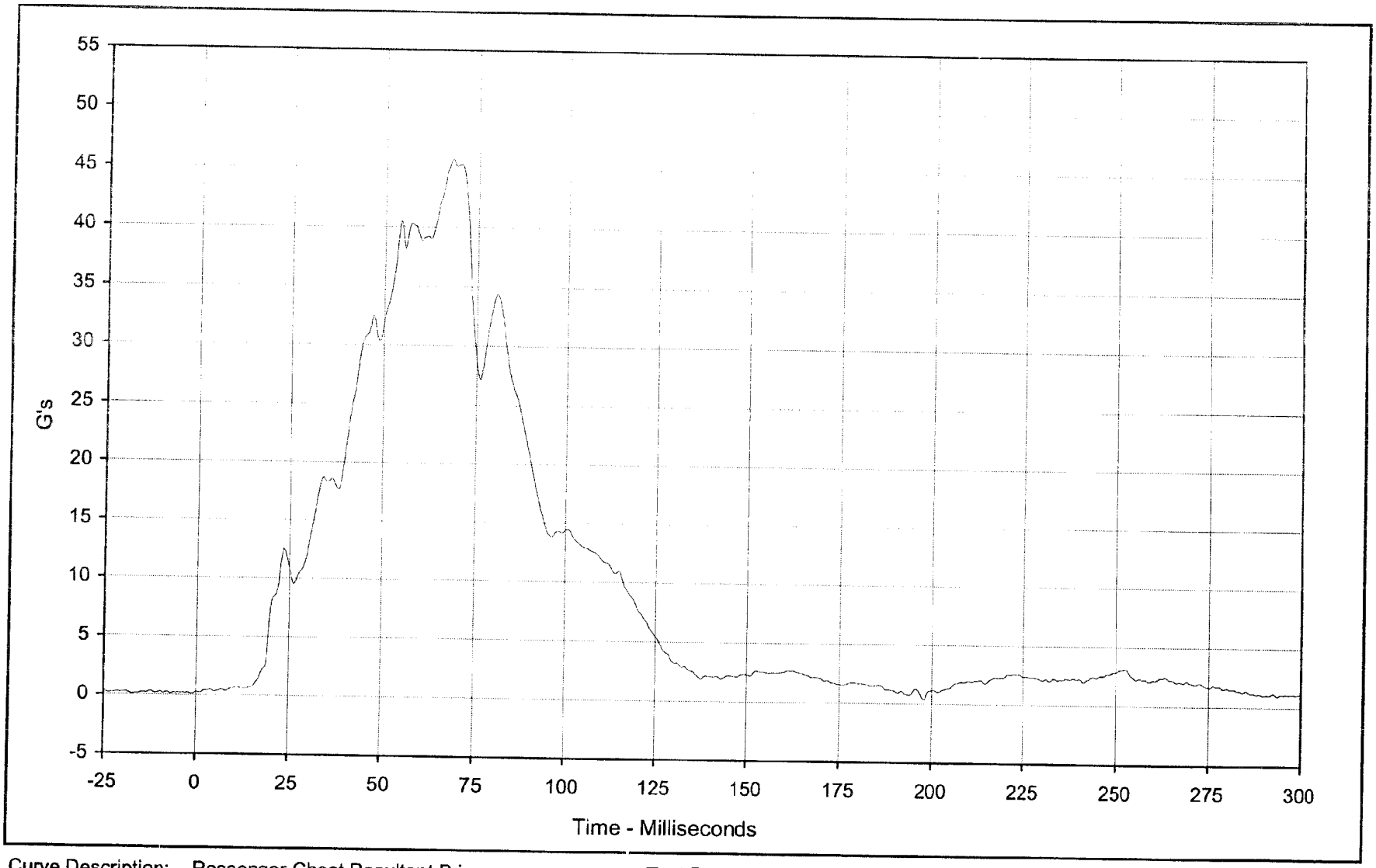
Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description:	Passenger Chest Primary Y			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	2.7	at	22.9 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-9.5	at	70.9 Milliseconds		
SAE Filter Class:	180				
Date of Test:	11/23/99				
Curve Number:	FIL-058				

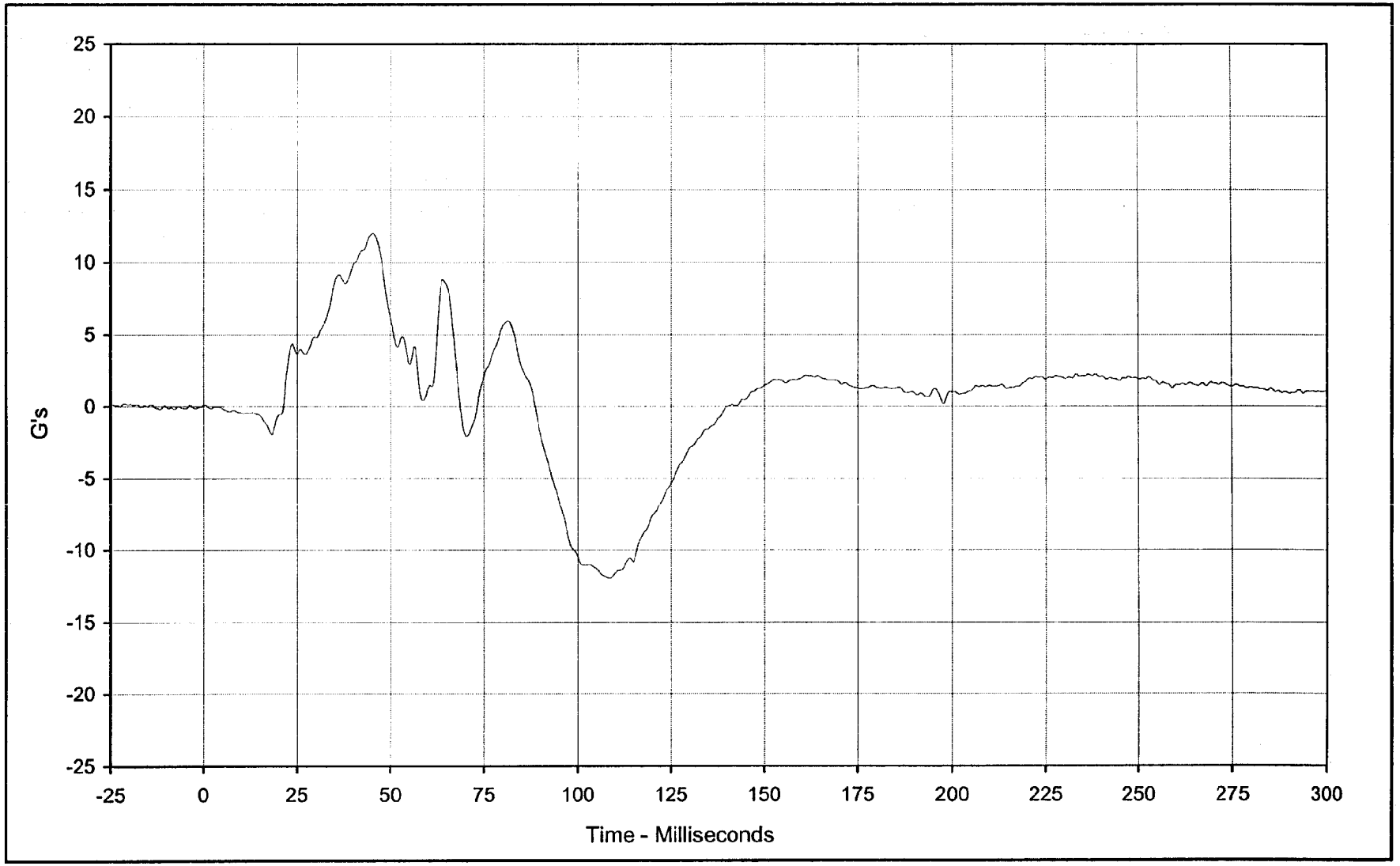
KARC Engineering



Curve Description:	Passenger Chest Resultant Primary				
Maximum Value:	45.7	at	68.2	Milliseconds	
Minimum Value:	0.2	at	1.0	Milliseconds	
SAE Filter Class:	180				
Date of Test:	11/23/99				
Curve Number:	RES-057				

Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

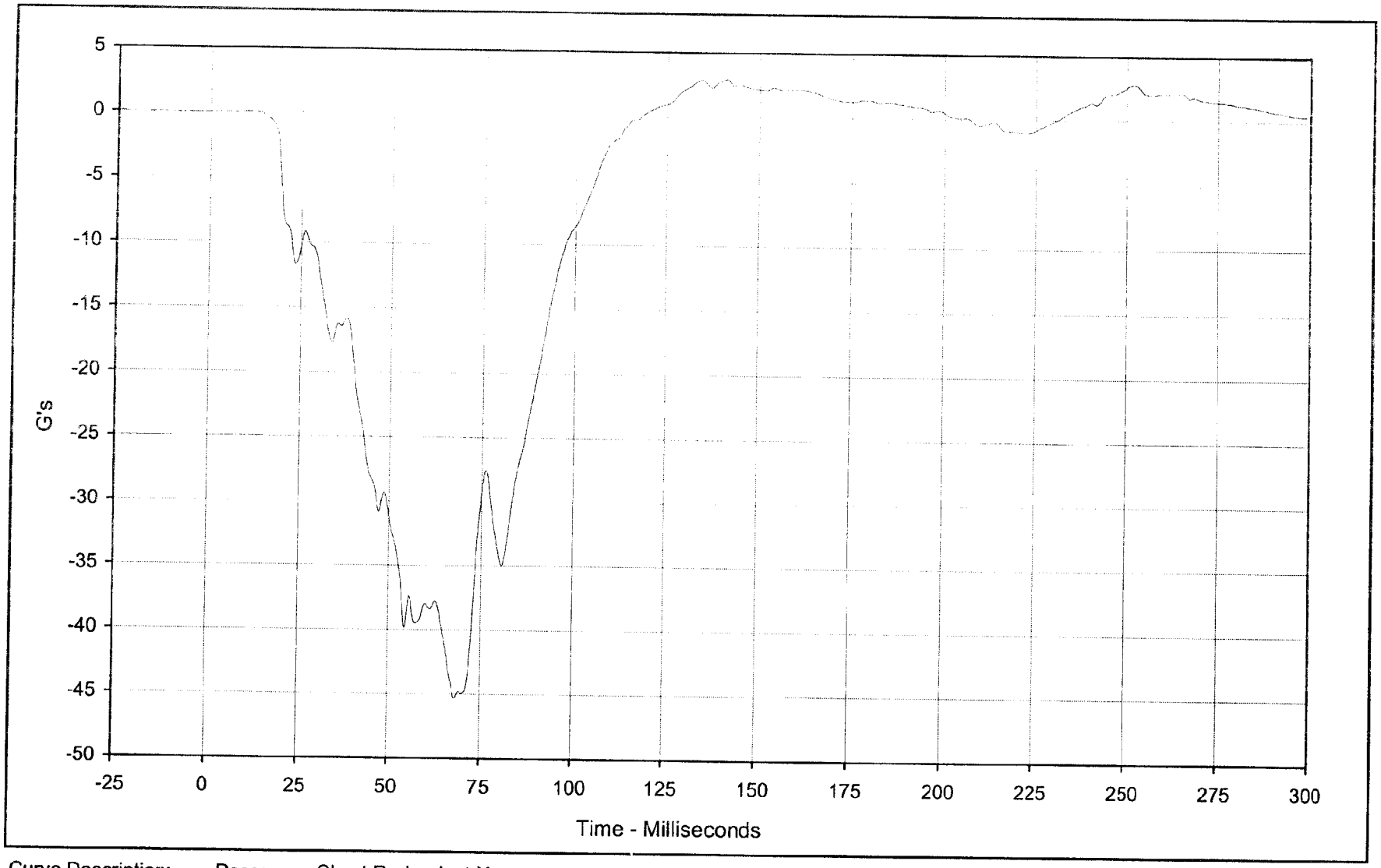
KARC Engineering



Curve Description:	Passenger Chest Primary Z				
Maximum Value:	12.0	at	45.3	Milliseconds	
Minimum Value:	-12.0	at	108.3	Milliseconds	
SAE Filter Class:	180				
Date of Test:	11/23/99				
Curve Number:	FIL-059				

Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

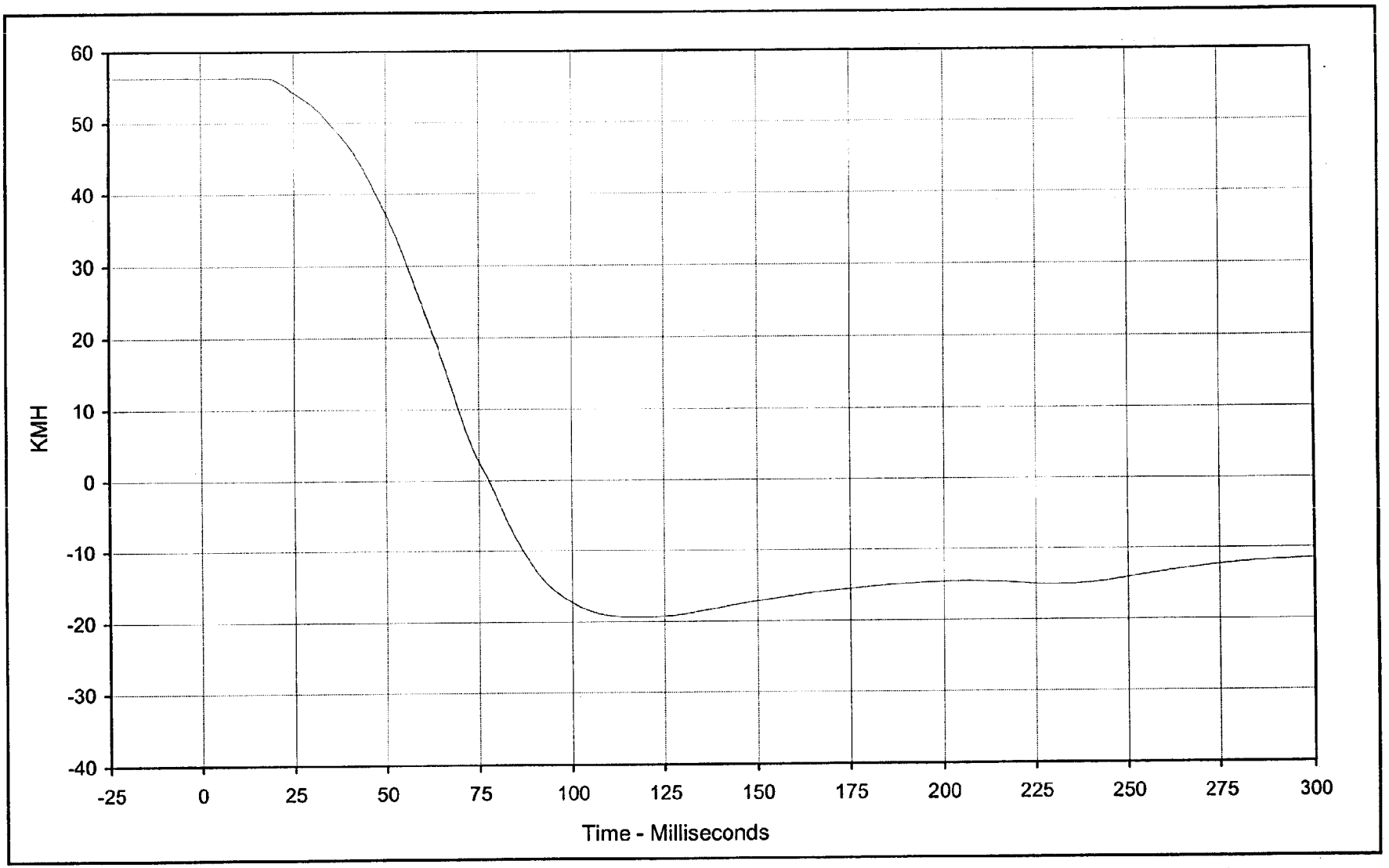
KARC Engineering



Curve Description:	Passenger Chest Redundant X				
Maximum Value:	2.9	at	141.0	Milliseconds	
Minimum Value:	-45.3	at	68.2	Milliseconds	
SAE Filter Class:	180				
Date of Test:	11/23/99				
Curve Number:	FIL-060				

Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Passenger Chest Redundant X Velocity

Maximum Value: 56.3 at 11.8 Milliseconds

Minimum Value: -19.4 at 118.1 Milliseconds

SAE Filter Class: 180

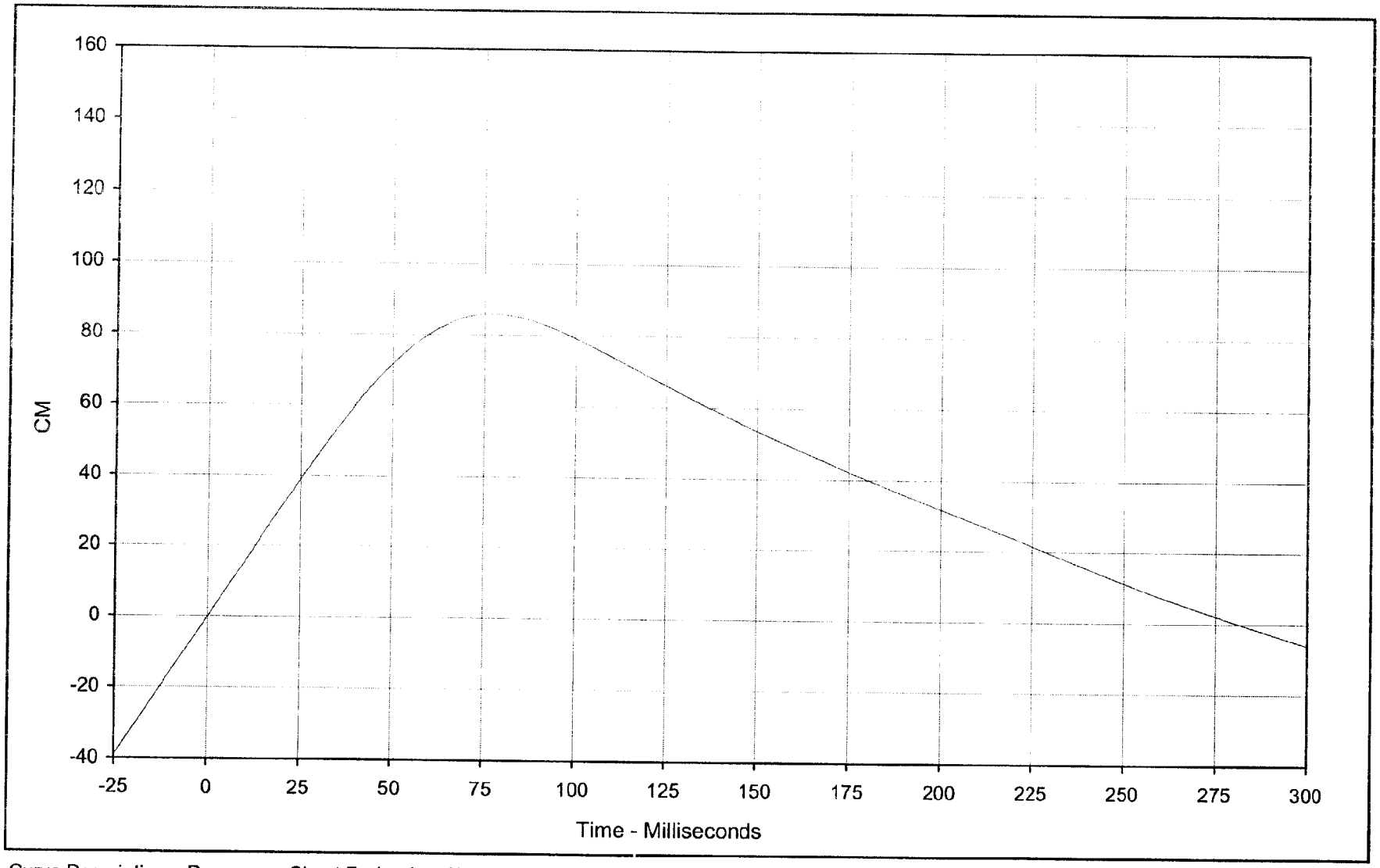
Date of Test: 11/23/99

Curve Number: IN1-060

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Passenger Chest Redundant X Displ.

Maximum Value: 85.8 at 77.6 Milliseconds

Minimum Value: -6.0 at 299.9 Milliseconds

SAE Filter Class: 180

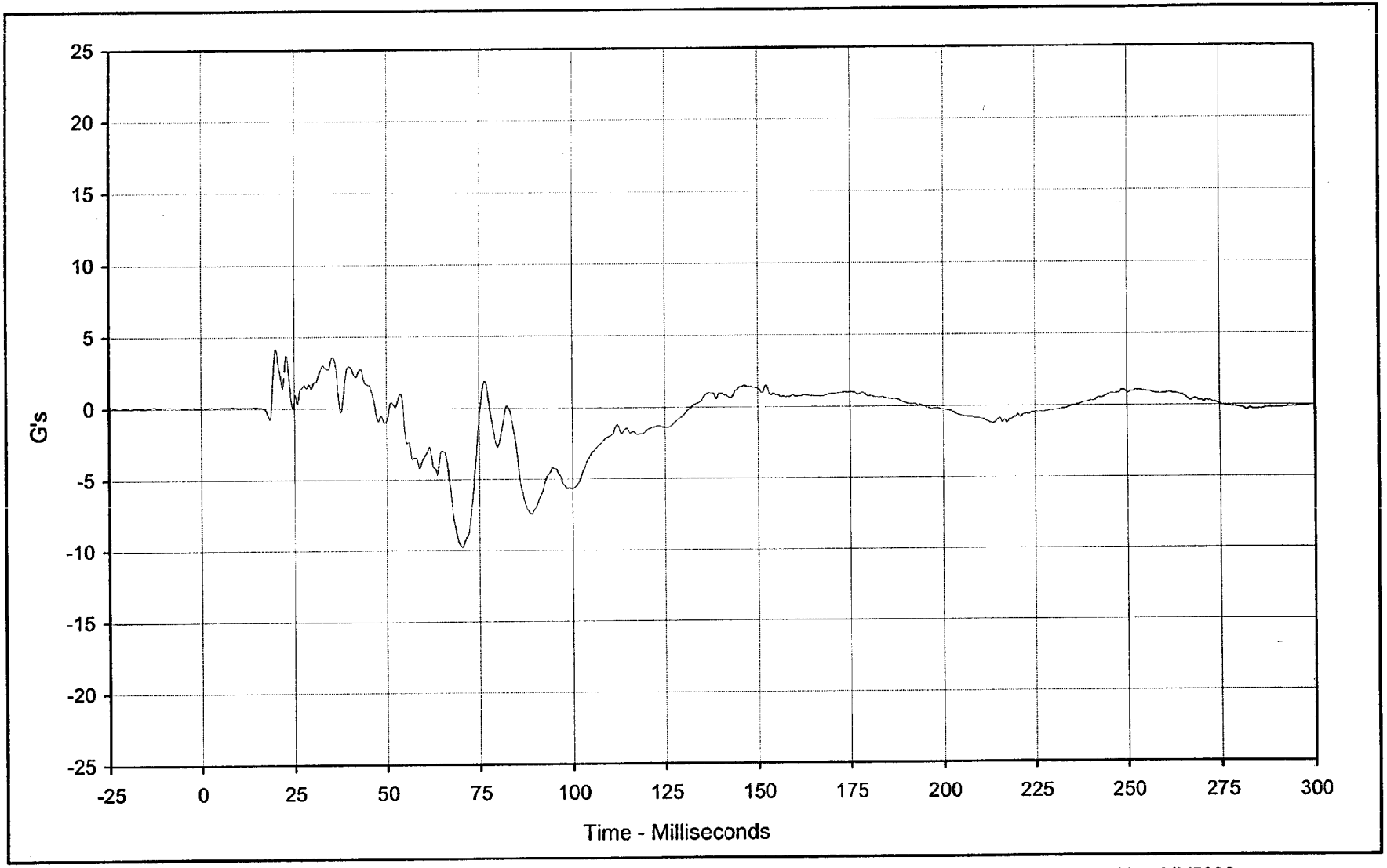
Date of Test: 11/23/99

Curve Number: IN2-060

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Passenger Chest Redundant Y

Maximum Value: 4.2 at 20.1 Milliseconds

Minimum Value: -9.8 at 70.4 Milliseconds

SAE Filter Class: 180

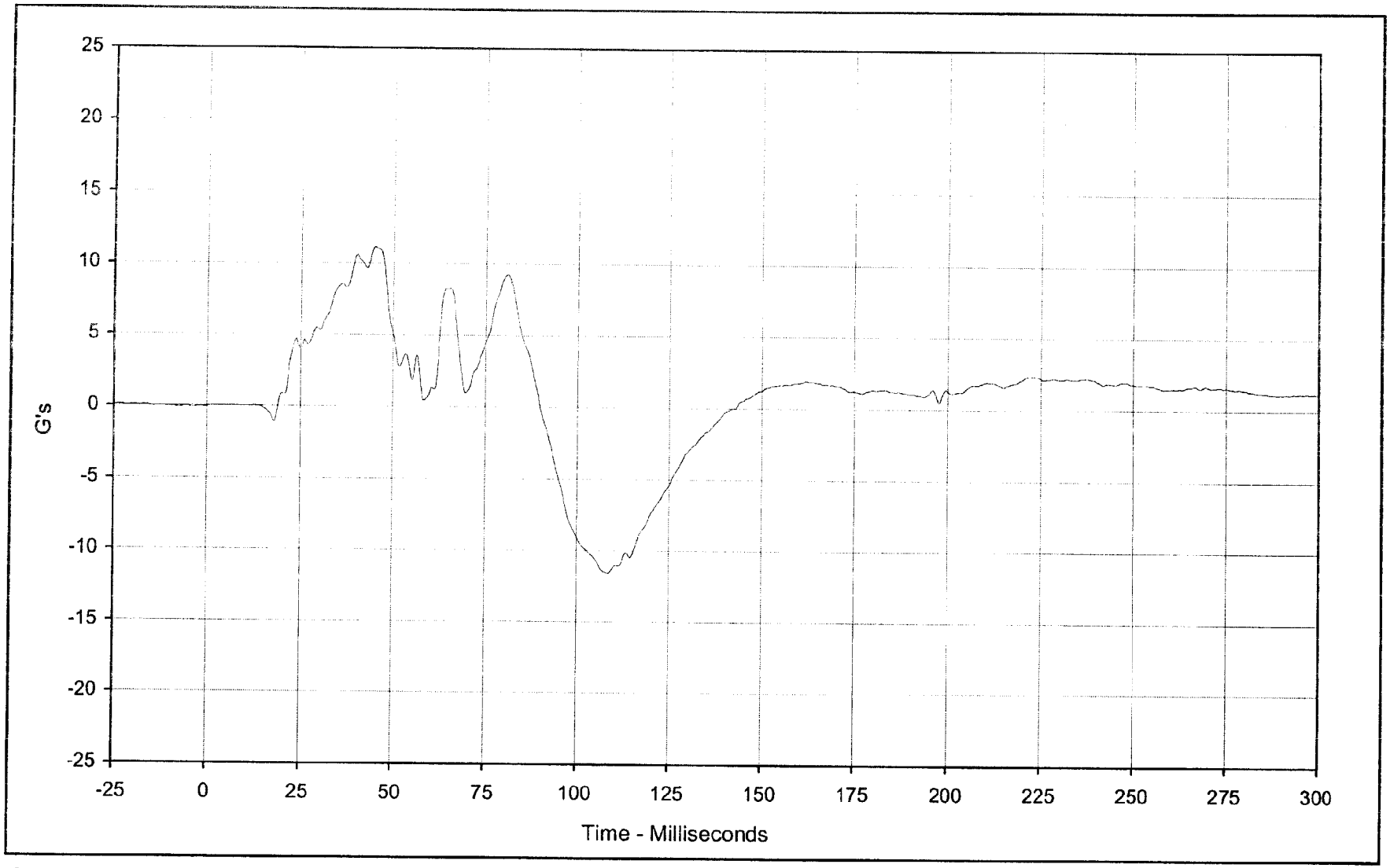
Date of Test: 11/23/99

Curve Number: FIL-061

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering

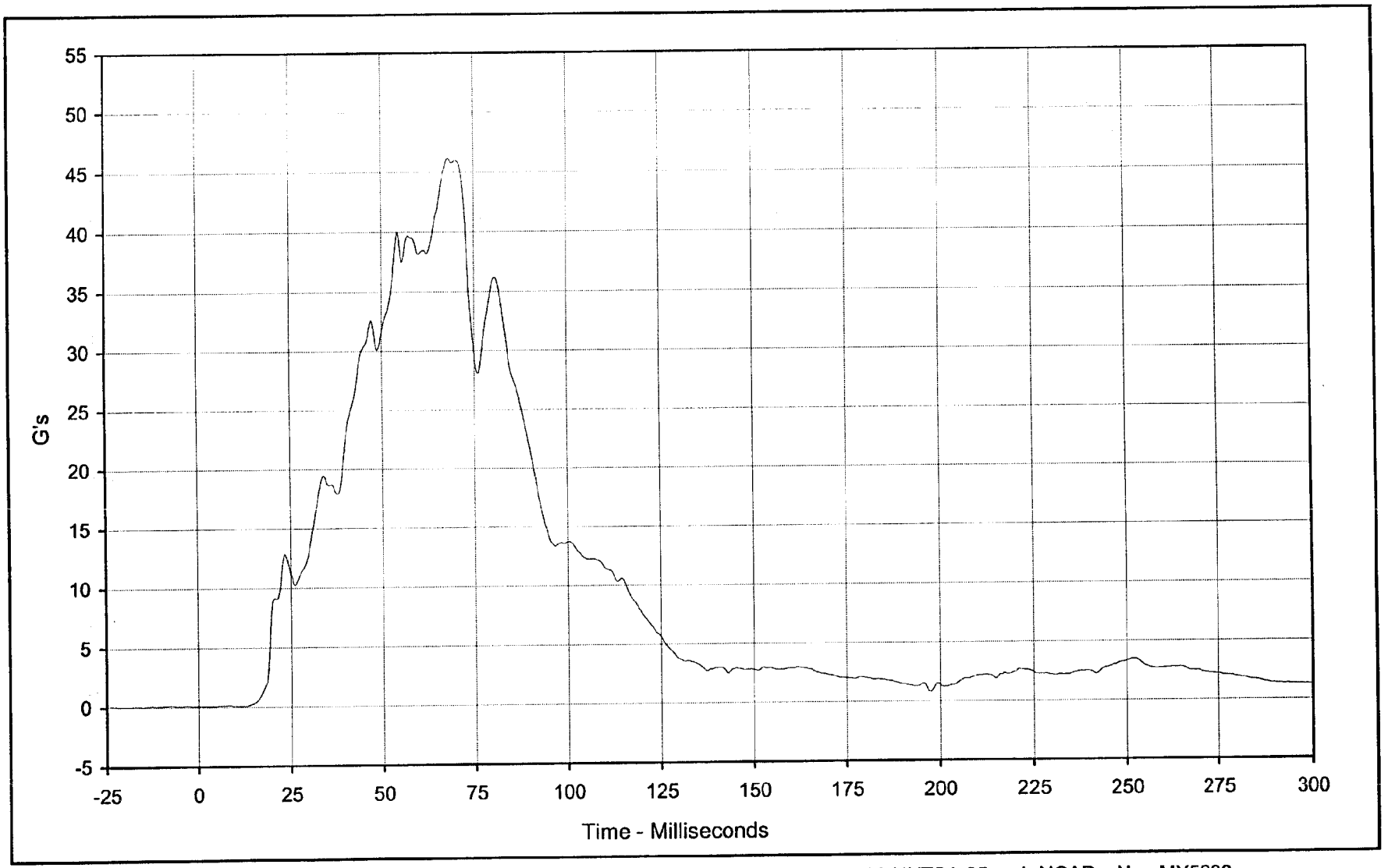


Curve Description:	Passenger Chest Redundant Z				
Maximum Value:	11.1	at	45.0	Milliseconds	
Minimum Value:	-11.6	at	108.5	Milliseconds	
SAE Filter Class:	180				
Date of Test:	11/23/99				
Curve Number:	FIL-062				

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Passenger Chest Resultant Redundant

Maximum Value: 46.2 at 68.2 Milliseconds

Minimum Value: 0.1 at 4.2 Milliseconds

SAE Filter Class: 180

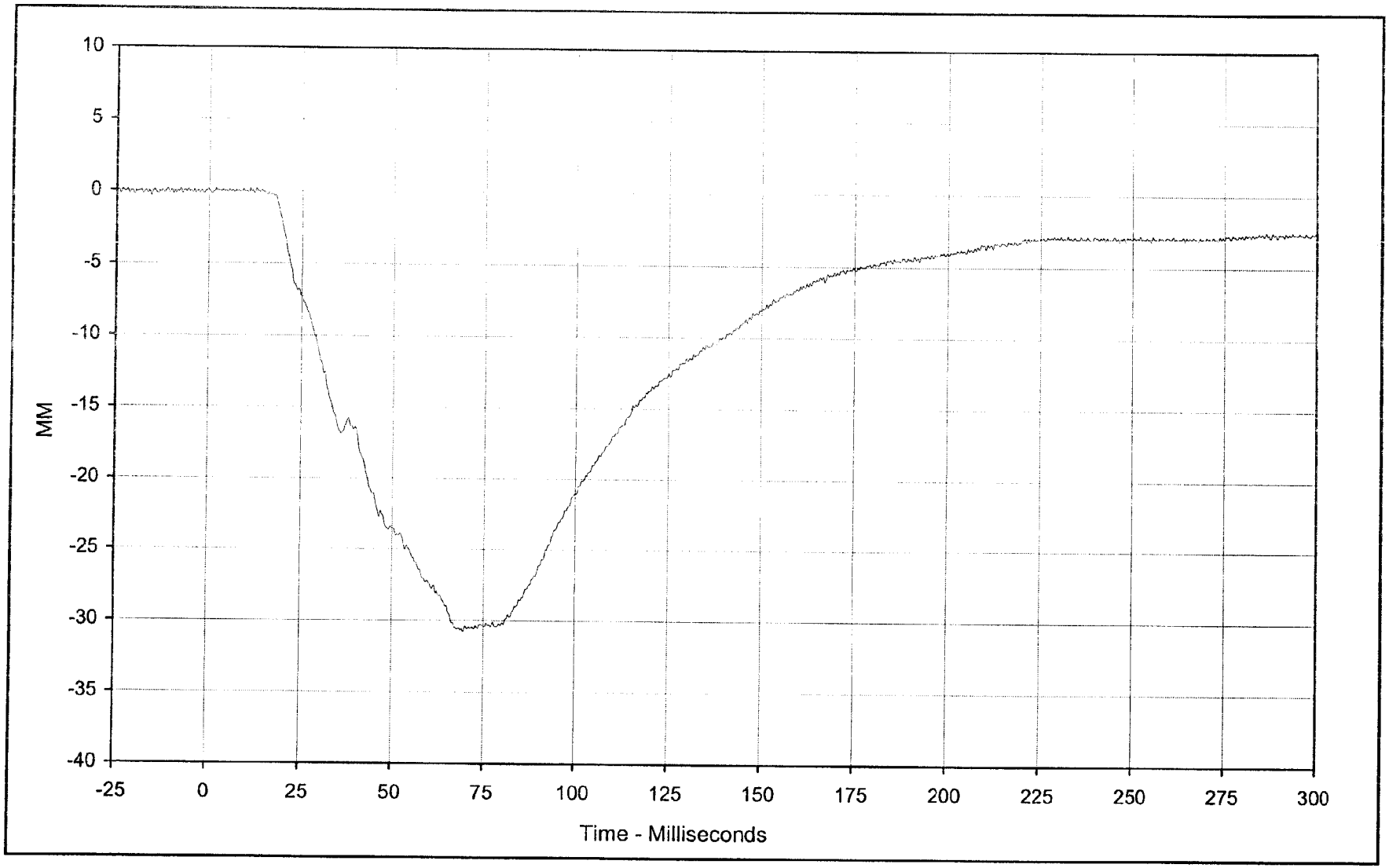
Date of Test: 11/23/99

Curve Number: RES-060

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

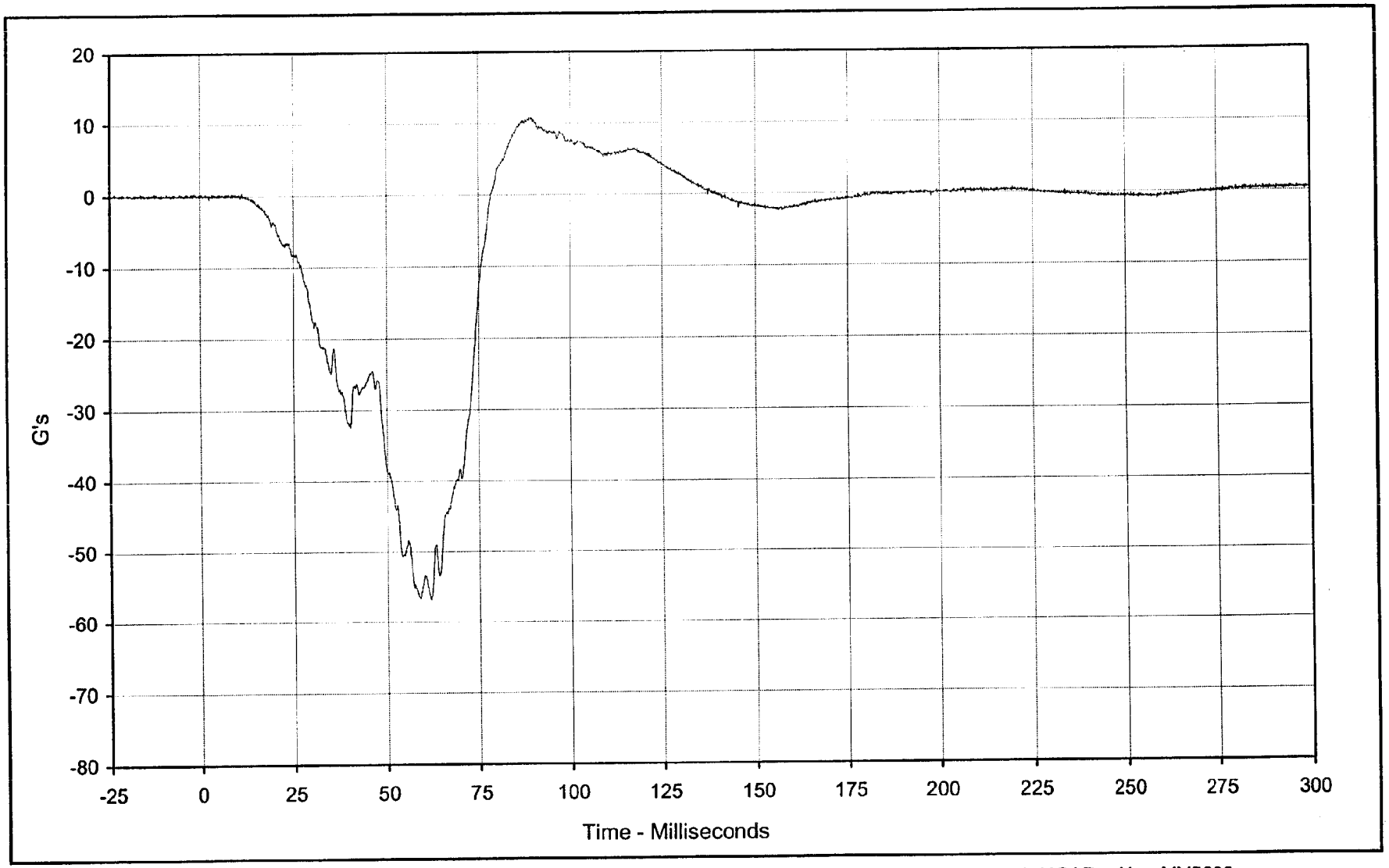
KARCO Engineering



Curve Description:	Passenger Chest Displacement X				
Maximum Value:	0.2	at	1.9	Milliseconds	
Minimum Value:	-30.7	at	69.7	Milliseconds	
SAE Filter Class:	600				
Date of Test:	11/23/99				
Curve Number:	FIL-063				

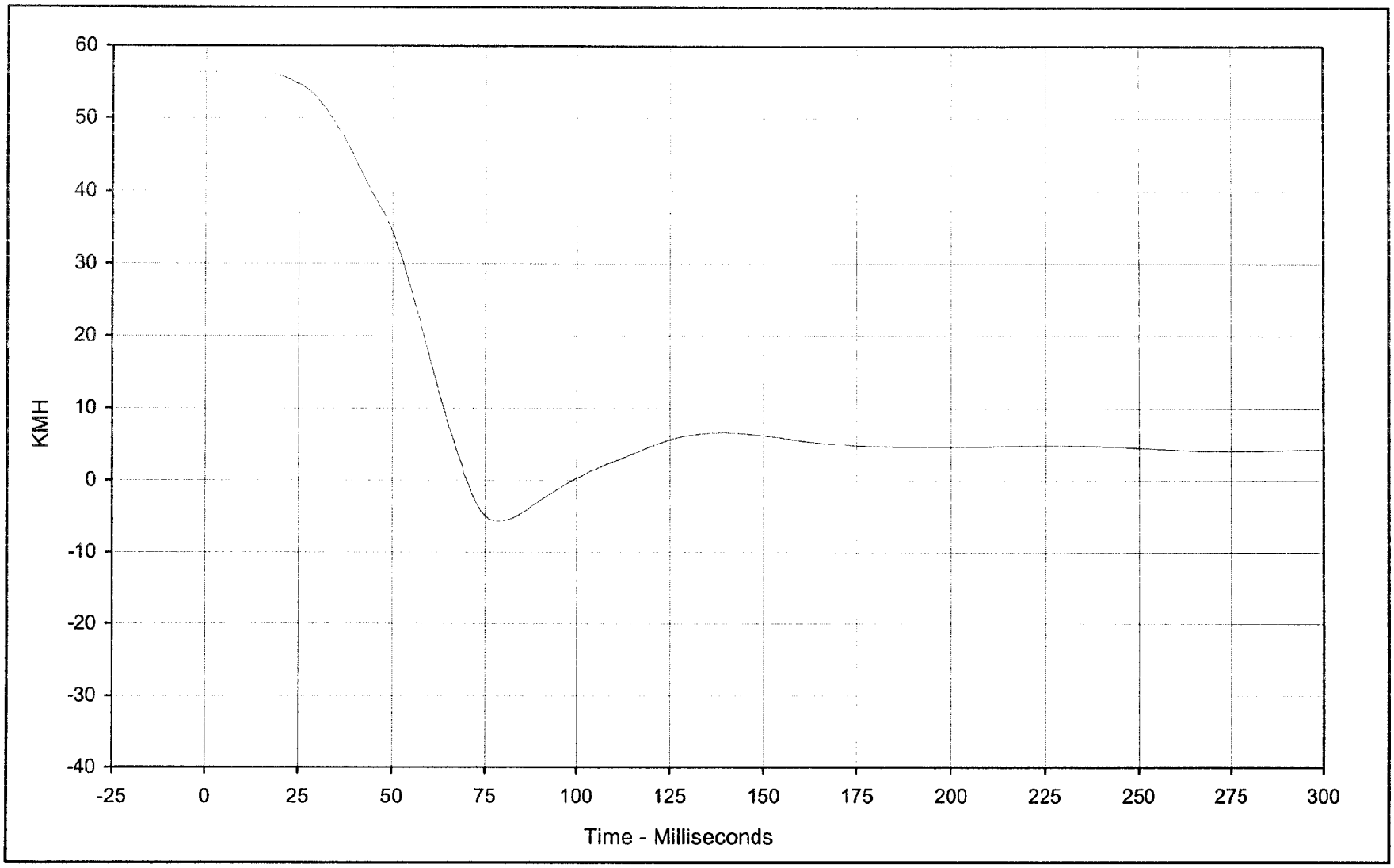
Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

KARCO Engineering



Curve Description:	Passenger Pelvis X			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	10.8	at	88.7 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-56.9	at	61.5 Milliseconds		
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	FIL-064				

KARC Engineering



Curve Description: Passenger Pelvis X Velocity

Maximum Value: 56.3 at 10.1 Milliseconds

Minimum Value: -5.7 at 78.5 Milliseconds

SAE Filter Class: 180

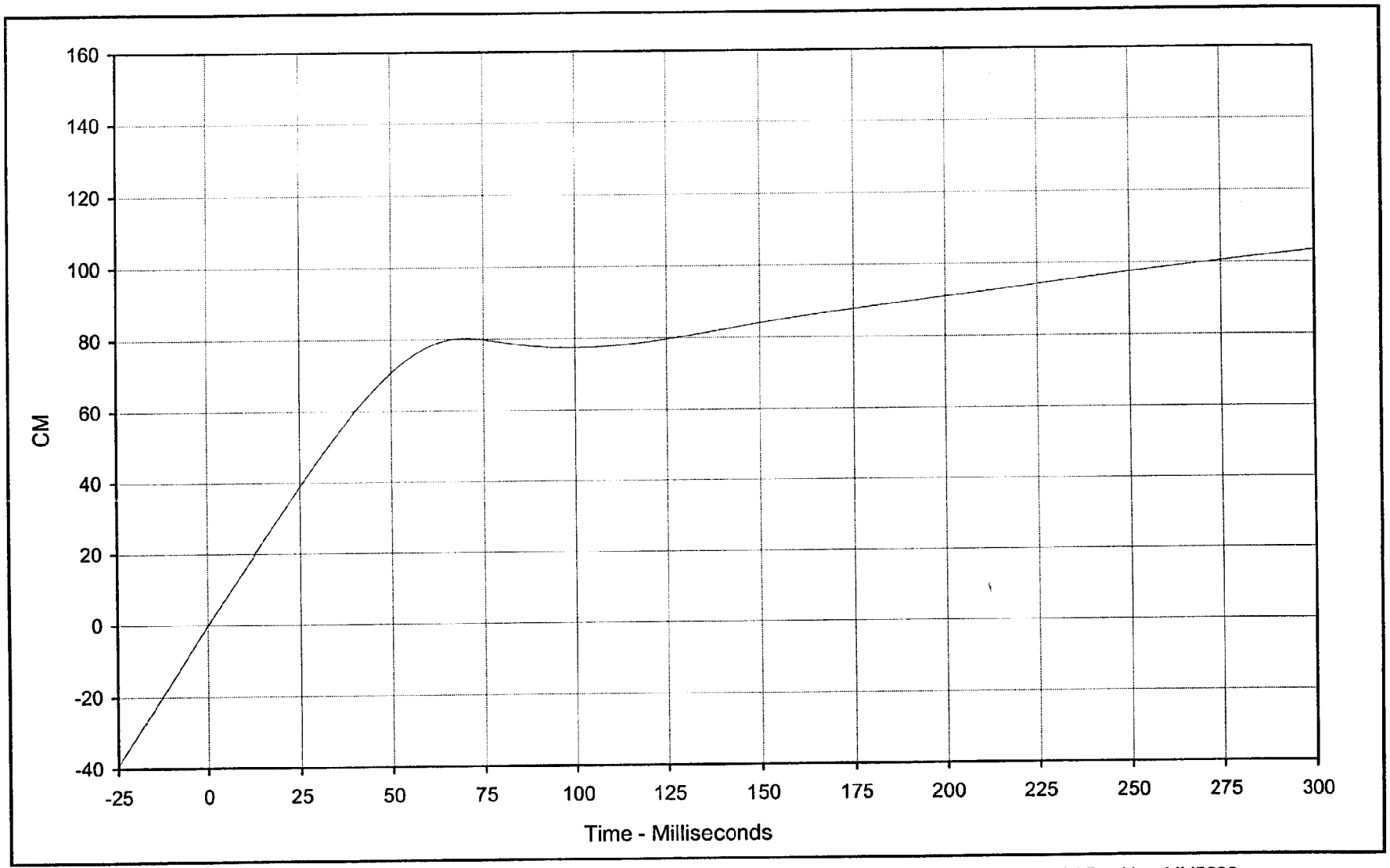
Date of Test: 11/23/99

Curve Number: IN1-064

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Passenger Pelvis X Displ.

Maximum Value: 103.3 at 299.9 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

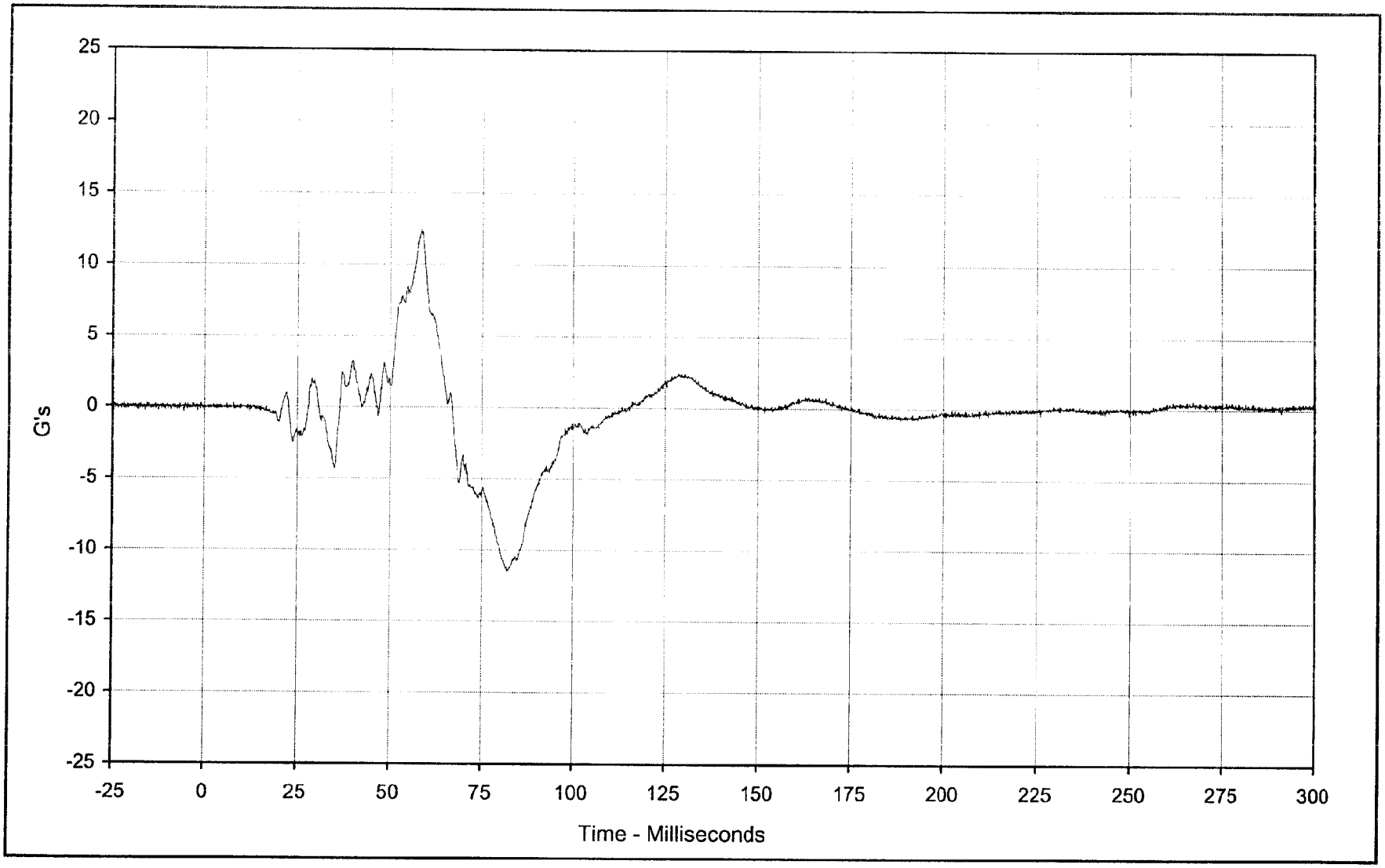
Date of Test: 11/23/99

Curve Number: IN2-064

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering

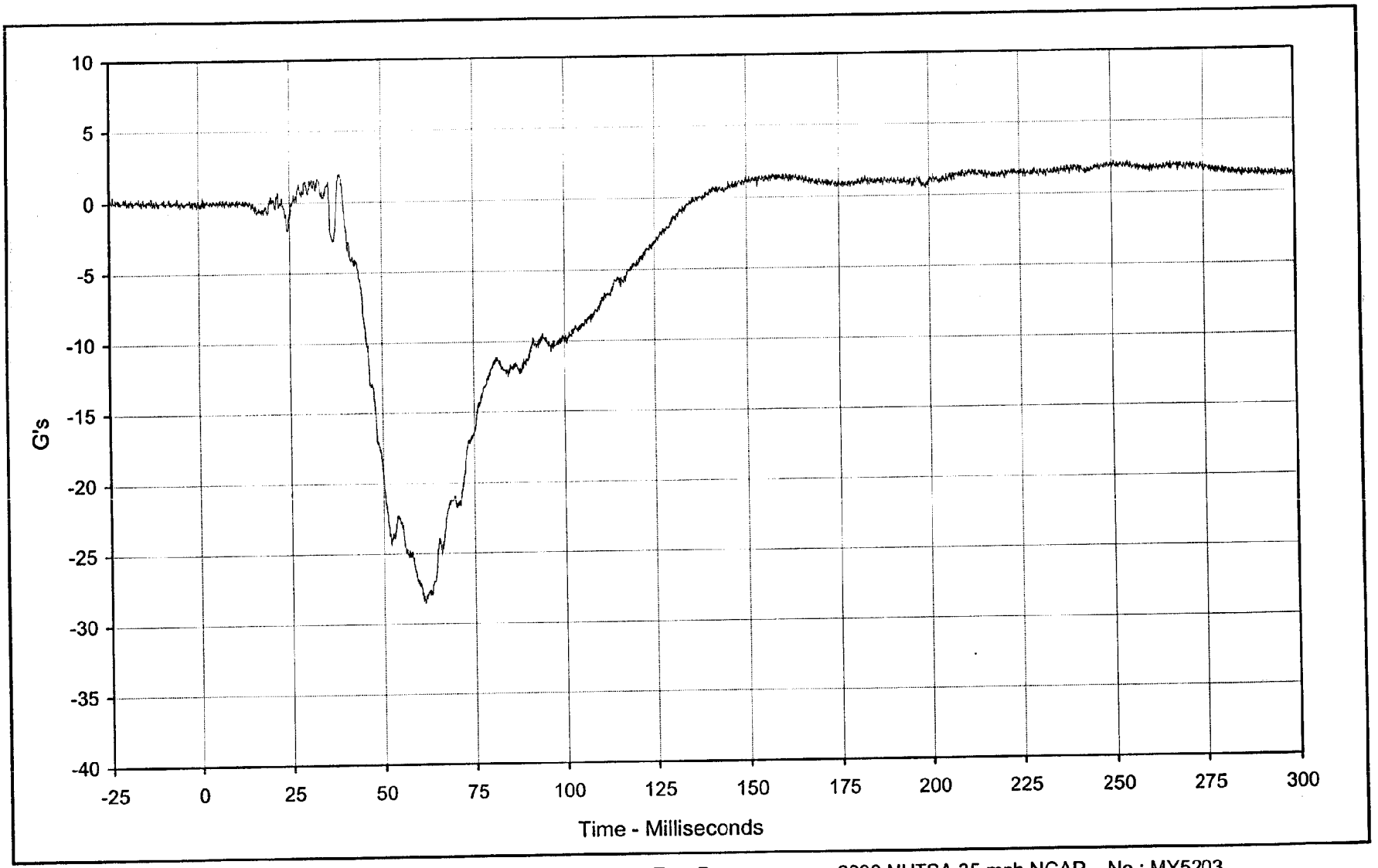


Curve Description:	Passenger Pelvis Y				
Maximum Value:	12.5	at	58.3	Milliseconds	
Minimum Value:	-11.5	at	81.8	Milliseconds	
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	FIL-065				

Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

KARC Engineering

KAR20001-03



Curve Description: Passenger Pelvis Z

Maximum Value: 2.2 at 250.7 Milliseconds

Minimum Value: -28.5 at 61.1 Milliseconds

SAE Filter Class: 1000

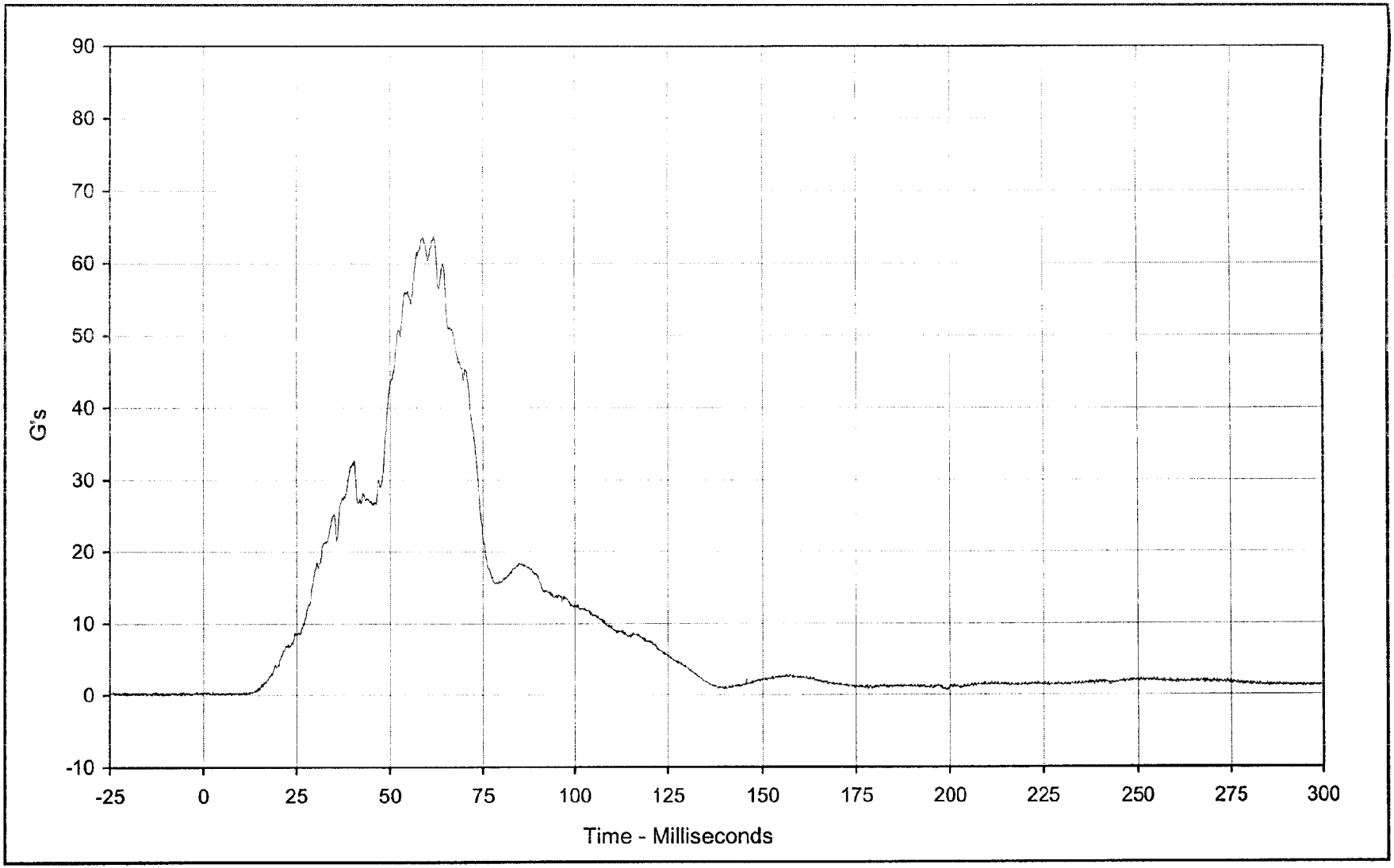
Date of Test: 11/23/99

Curve Number: FIL-066

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering

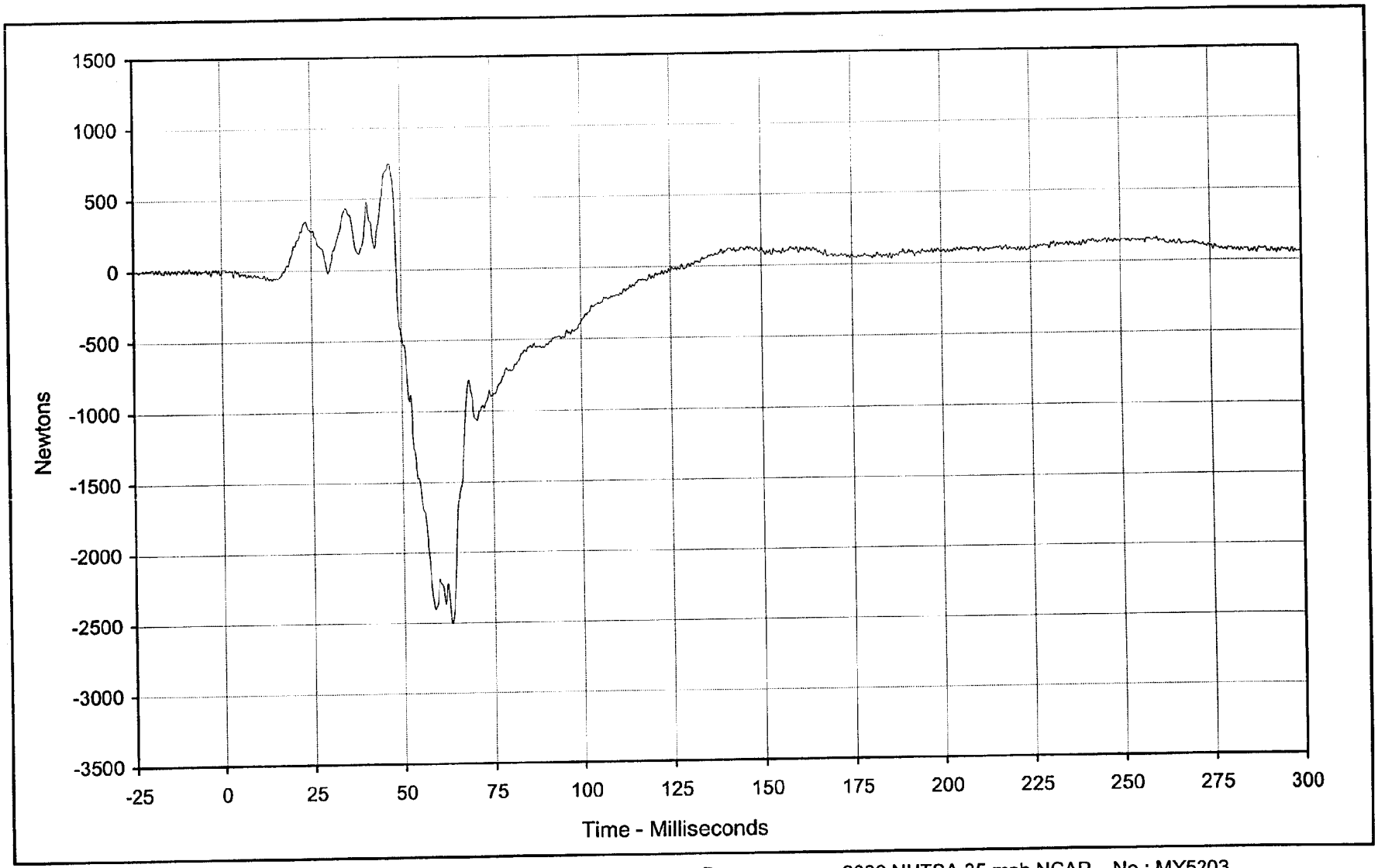


Curve Description:	Passenger Pelvis Resultant			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	63.8	at	61.5 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	0.1	at	5.8 Milliseconds		
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	RES-064				

KARC Engineering

B-100

KAR20001-03



Curve Description: Passenger Left Femur Force

Maximum Value: 748.4 at 46.8 Milliseconds

Minimum Value: -2505.3 at 63.2 Milliseconds

SAE Filter Class: 600

Date of Test: 11/23/99

Curve Number: FIL-067

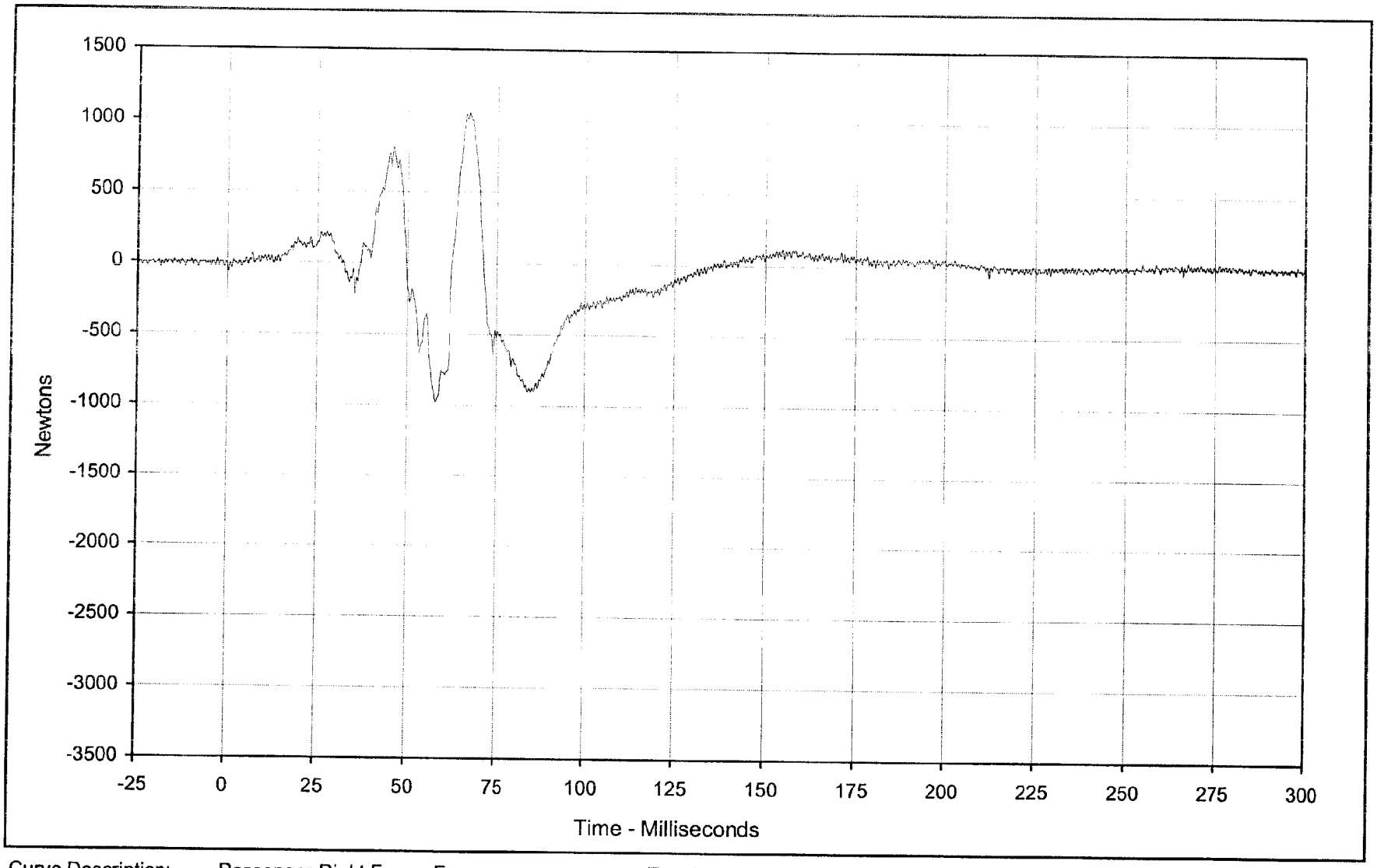
Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering

B-101

KAR20001-03



Curve Description: Passenger Right Femur Force

Maximum Value: 1053.3 at 67.3 Milliseconds

Minimum Value: -979.8 at 58.1 Milliseconds

SAE Filter Class: 600

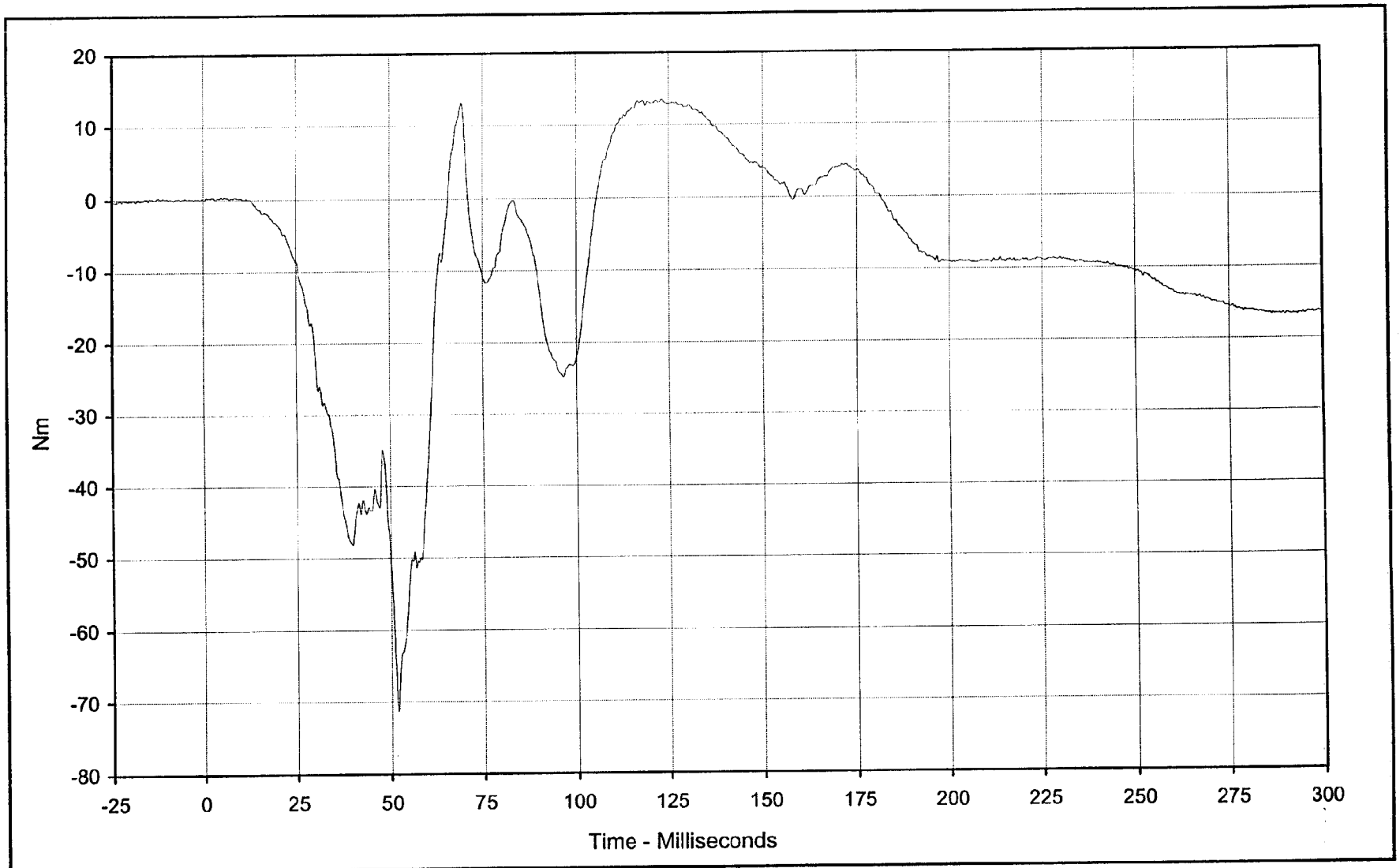
Date of Test: 11/23/99

Curve Number: FIL-068

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Passenger Left Upper Tibia Moment X

Maximum Value: 13.5 at 123.1 Milliseconds

Minimum Value: -71.3 at 51.7 Milliseconds

SAE Filter Class: 600

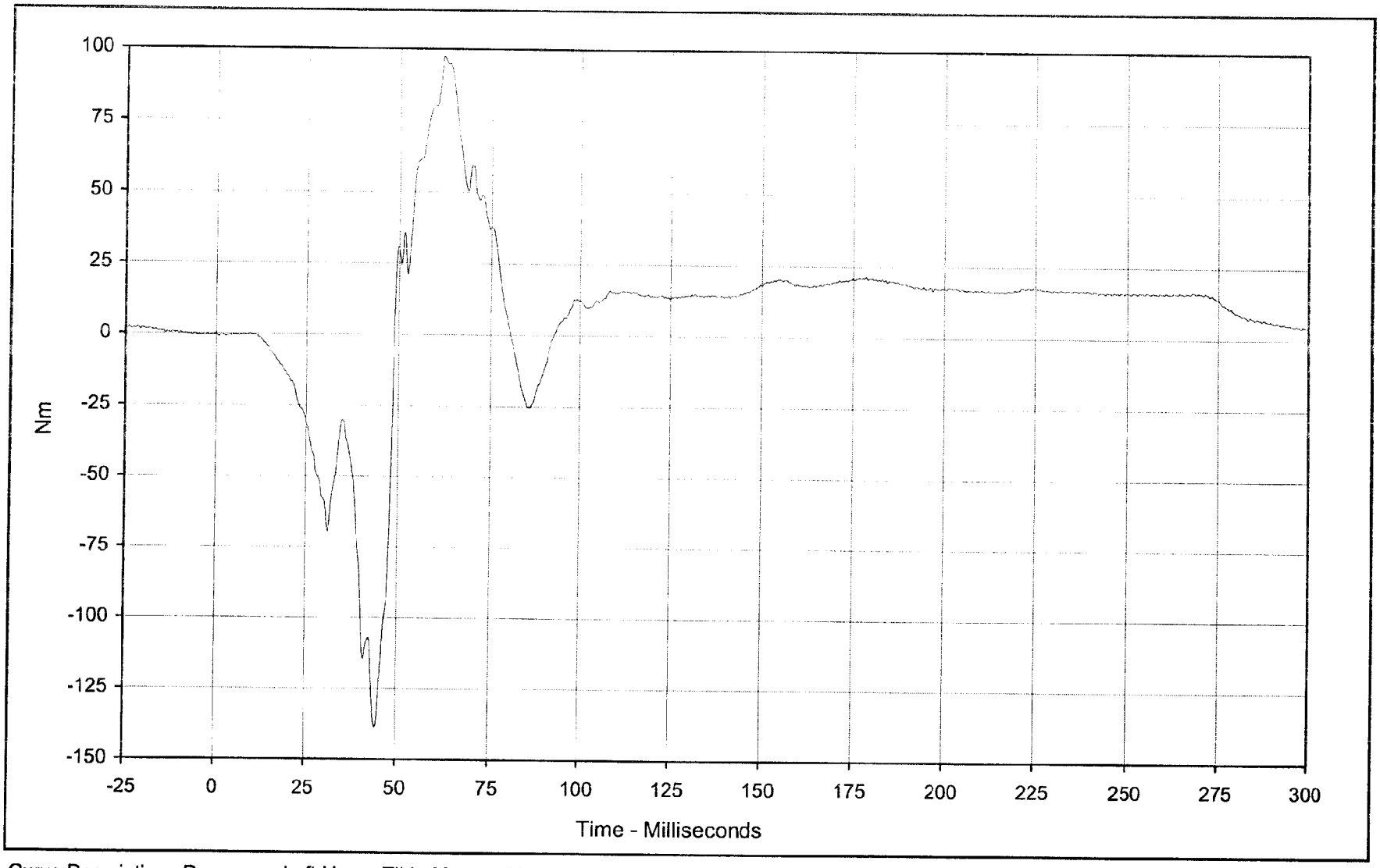
Date of Test: 11/23/99

Curve Number: FIL-069

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Passenger Left Upper Tibia Moment Y

Maximum Value: 97.5 at 61.7 Milliseconds

Minimum Value: -138.7 at 44.3 Milliseconds

SAE Filter Class: 600

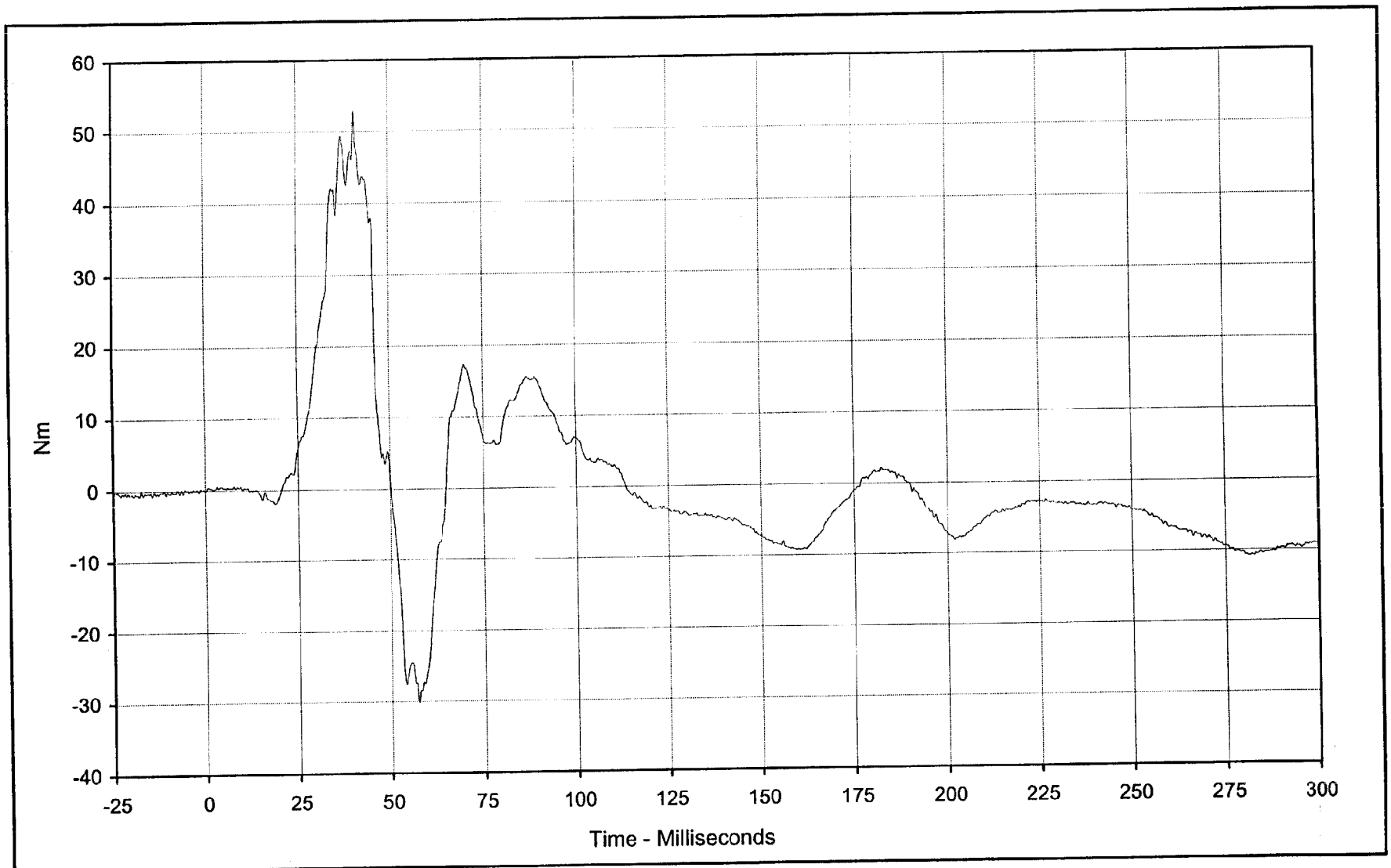
Date of Test: 11/23/99

Curve Number: FIL-070

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Passenger Right Upper Tibia Moment X

Maximum Value: 52.8 at 40.9 Milliseconds

Minimum Value: -30.1 at 57.0 Milliseconds

SAE Filter Class: 600

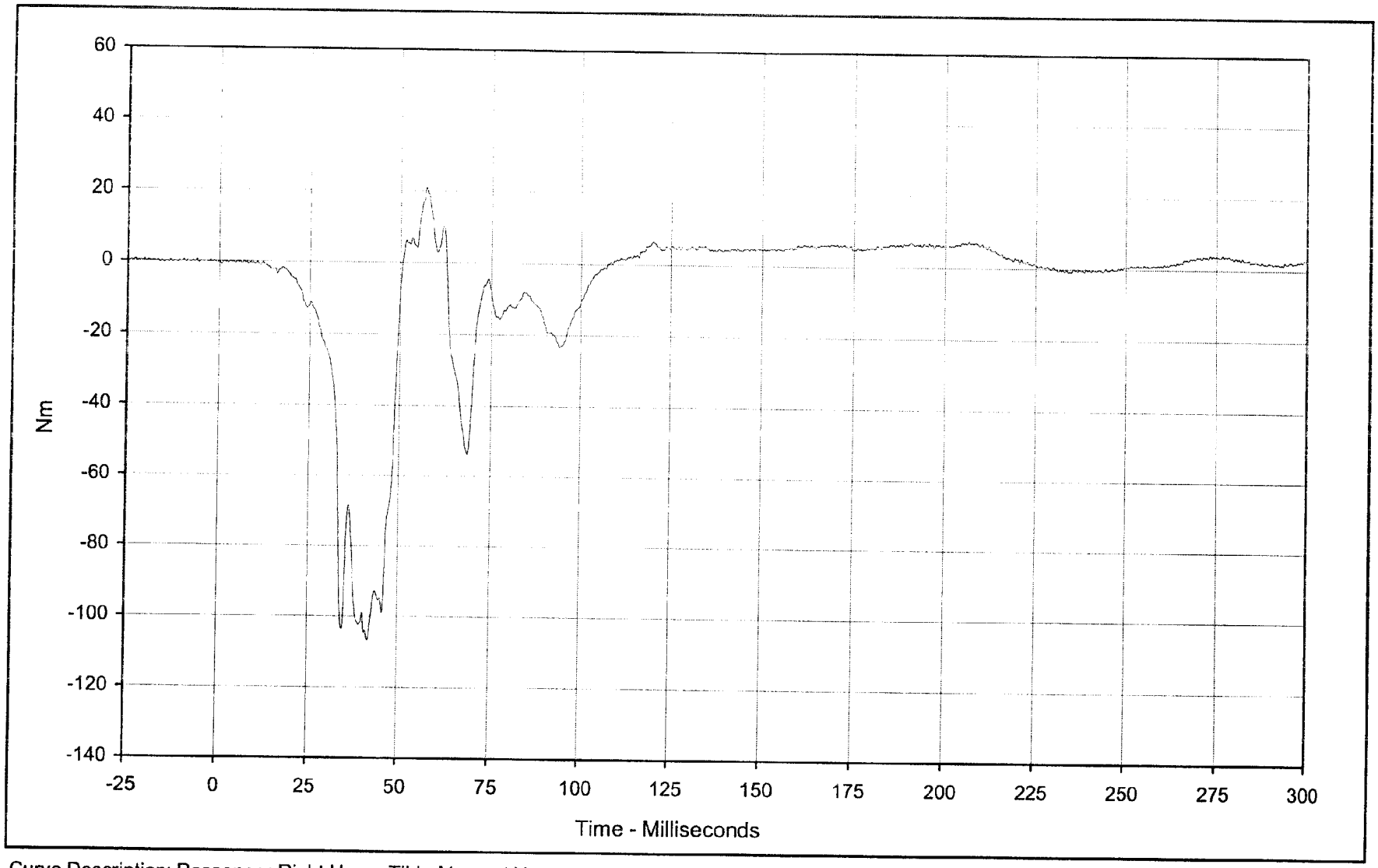
Date of Test: 11/23/99

Curve Number: FIL-071

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Passenger Right Upper Tibia Moment Y

Maximum Value: 20.9 at 57.0 Milliseconds

Minimum Value: -106.9 at 41.8 Milliseconds

SAE Filter Class: 600

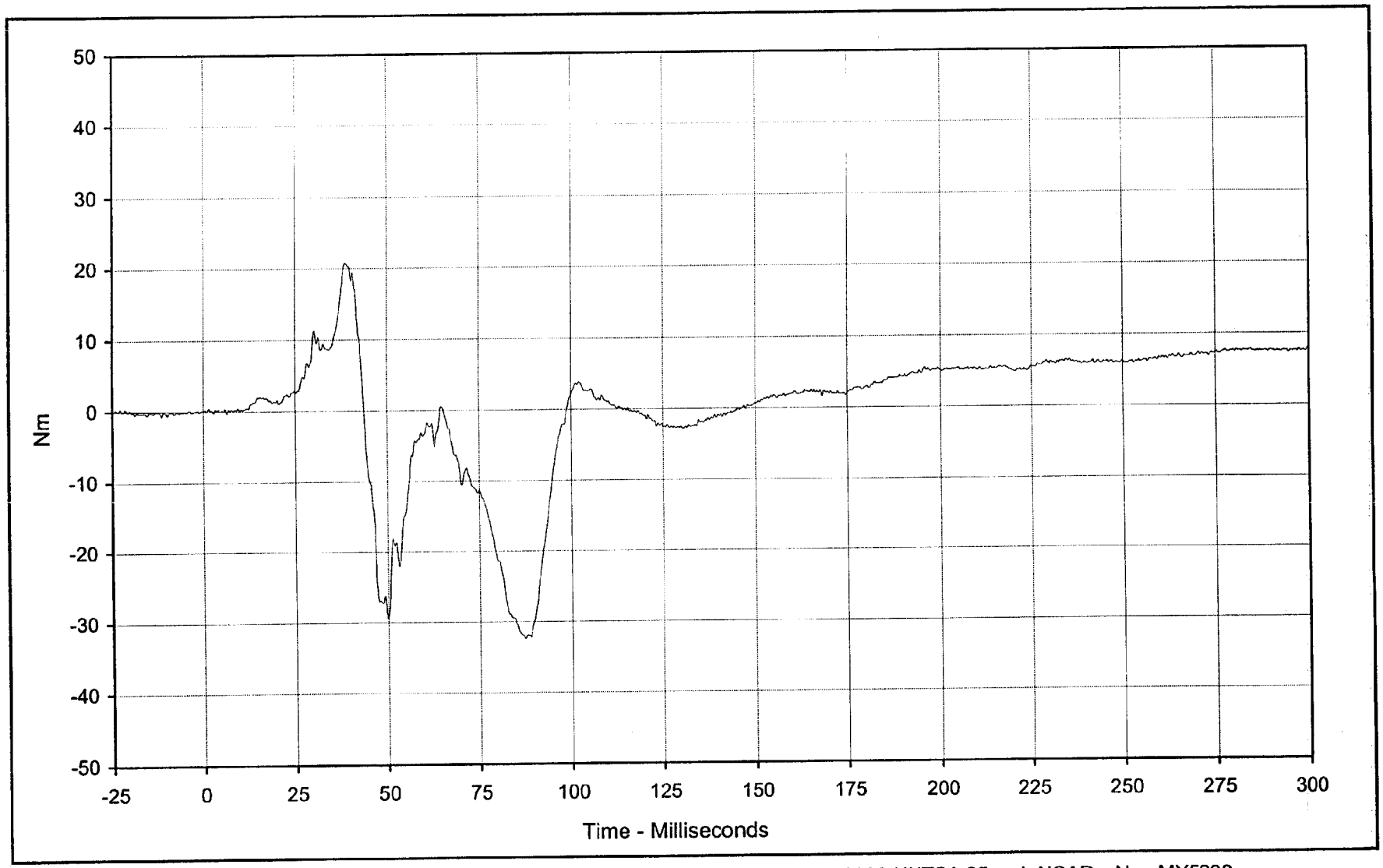
Date of Test: 11/23/99

Curve Number: FIL-072

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Passenger Left Lower Tibia Moment X

Maximum Value: 20.8 at 38.8 Milliseconds

Minimum Value: -32.4 at 87.1 Milliseconds

SAE Filter Class: 600

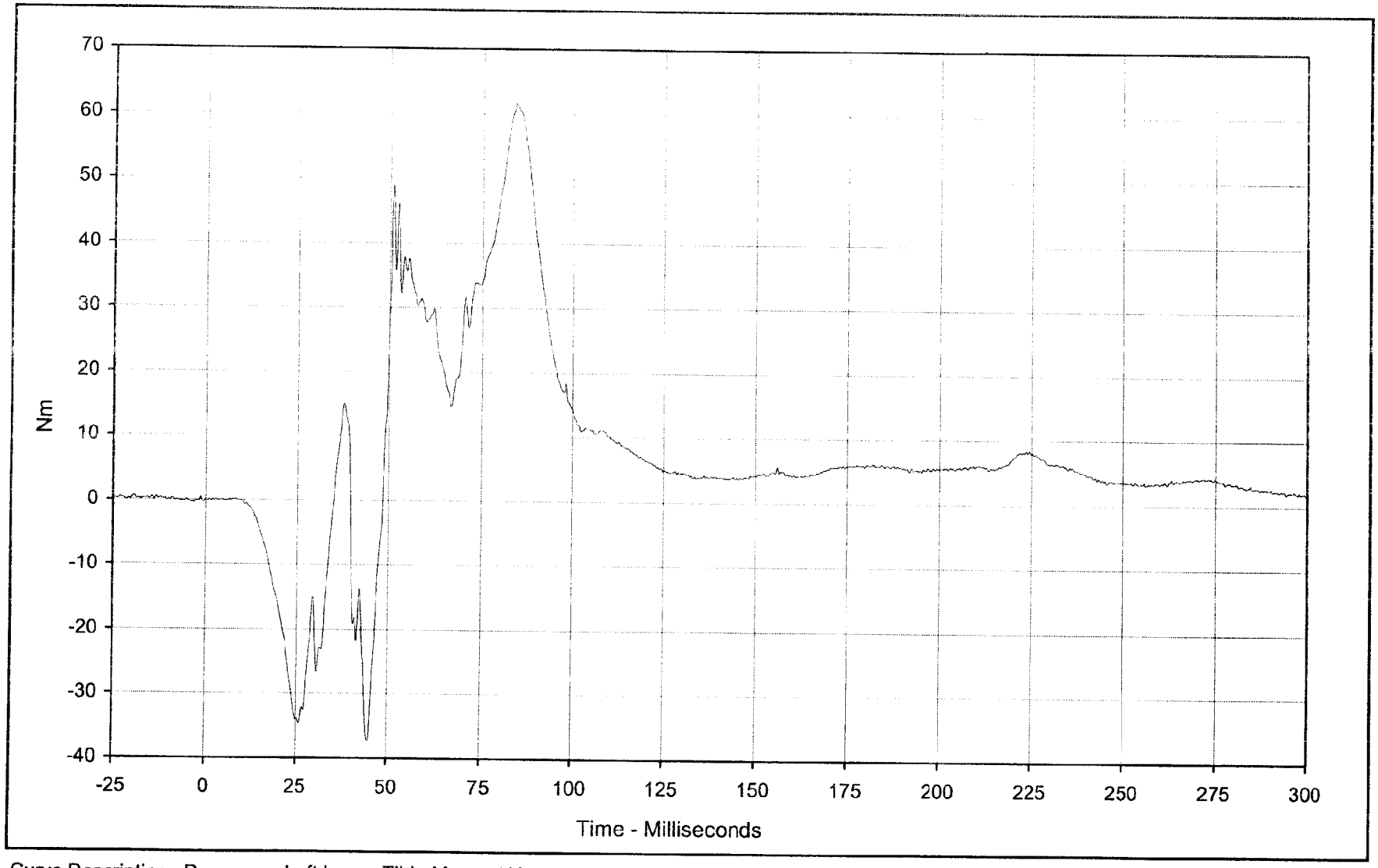
Date of Test: 11/23/99

Curve Number: FIL-073

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Passenger Left Lower Tibia Moment Y

Maximum Value: 61.6 at 84.1 Milliseconds

Minimum Value: -37.3 at 44.7 Milliseconds

SAE Filter Class: 600

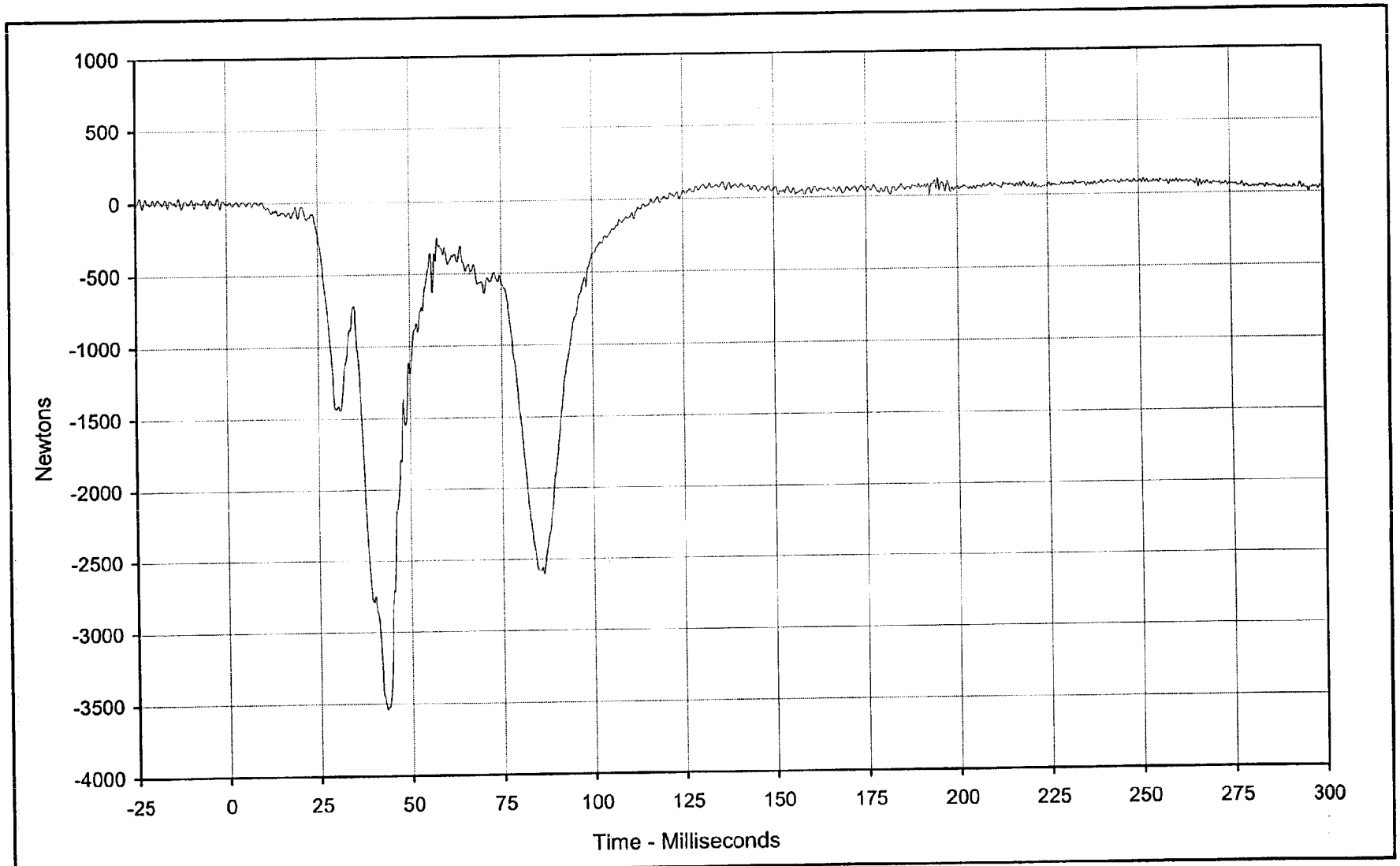
Date of Test: 11/23/99

Curve Number: FIL-074

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Passenger Left Lower Tibia Force Z

Maximum Value: 117.3 at 194.8 Milliseconds

Minimum Value: -3539.0 at 43.2 Milliseconds

SAE Filter Class: 600

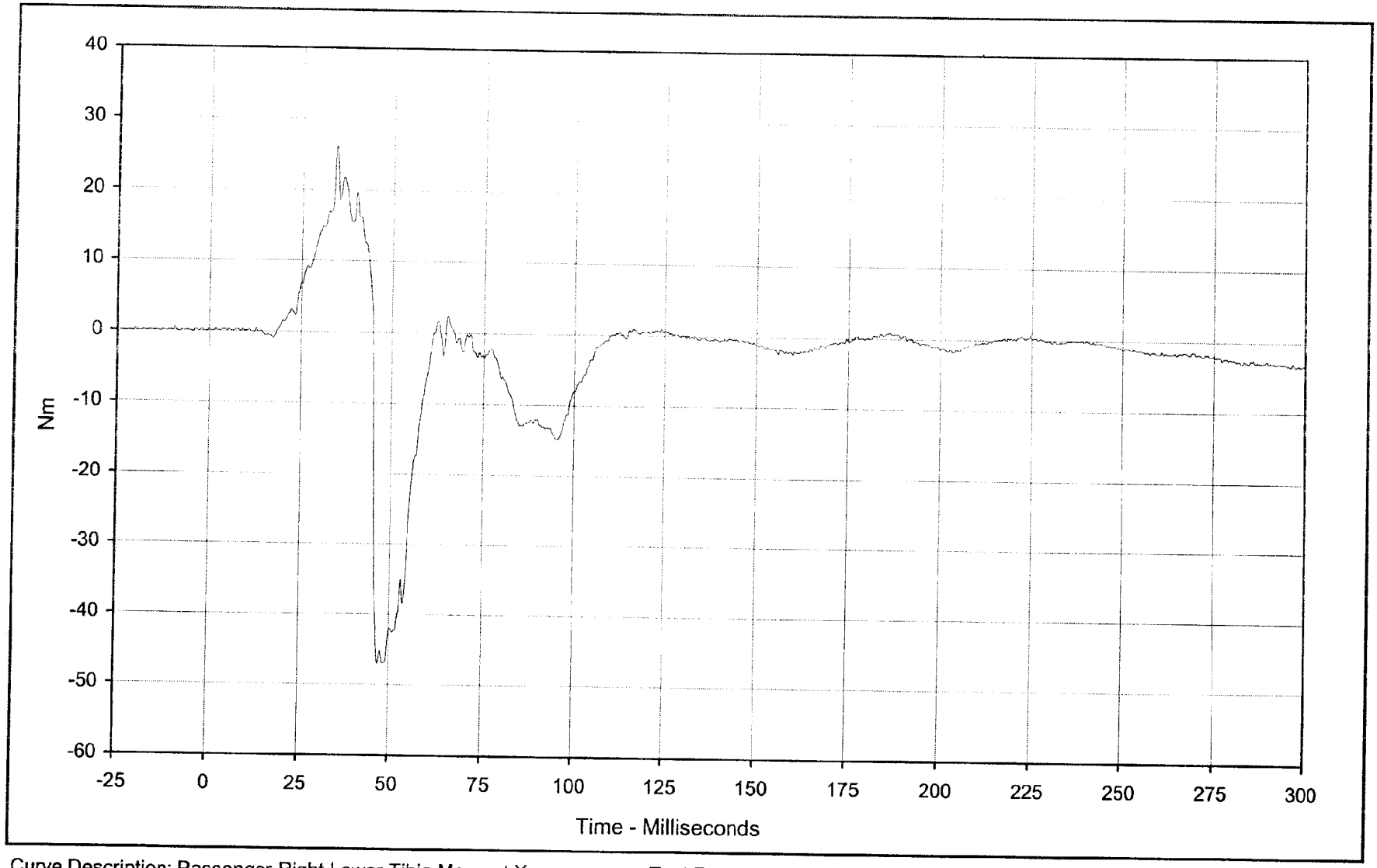
Date of Test: 11/23/99

Curve Number: FIL-075

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Passenger Right Lower Tibia Moment X

Maximum Value: 26.2 at 34.2 Milliseconds

Minimum Value: -47.1 at 47.0 Milliseconds

SAE Filter Class: 600

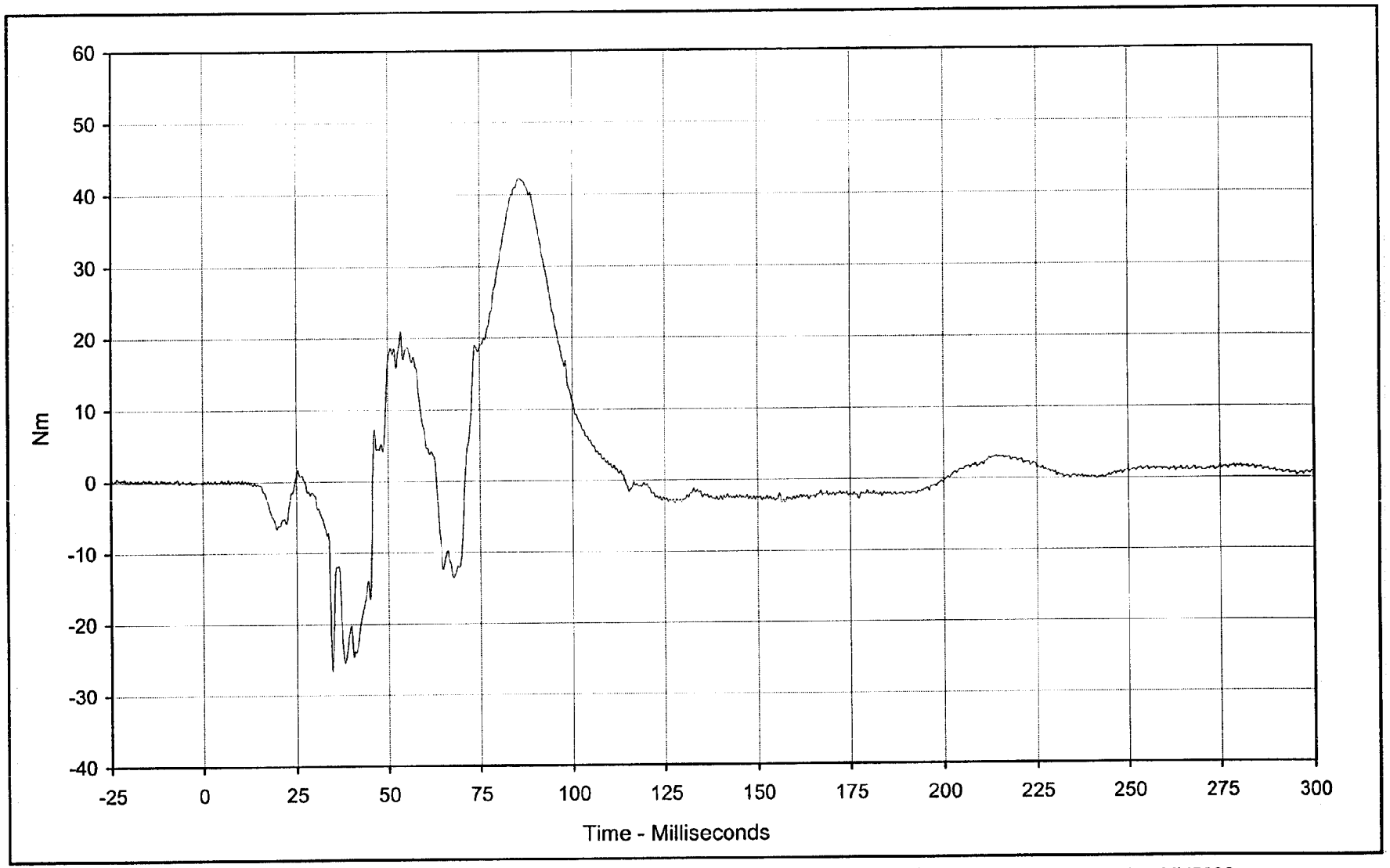
Date of Test: 11/23/99

Curve Number: FIL-076

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Passenger Right Lower Tibia Moment Y

Maximum Value: 42.2 at 85.8 Milliseconds

Minimum Value: -26.7 at 34.5 Milliseconds

SAE Filter Class: 600

Date of Test: 11/23/99

Curve Number: FIL-077

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering

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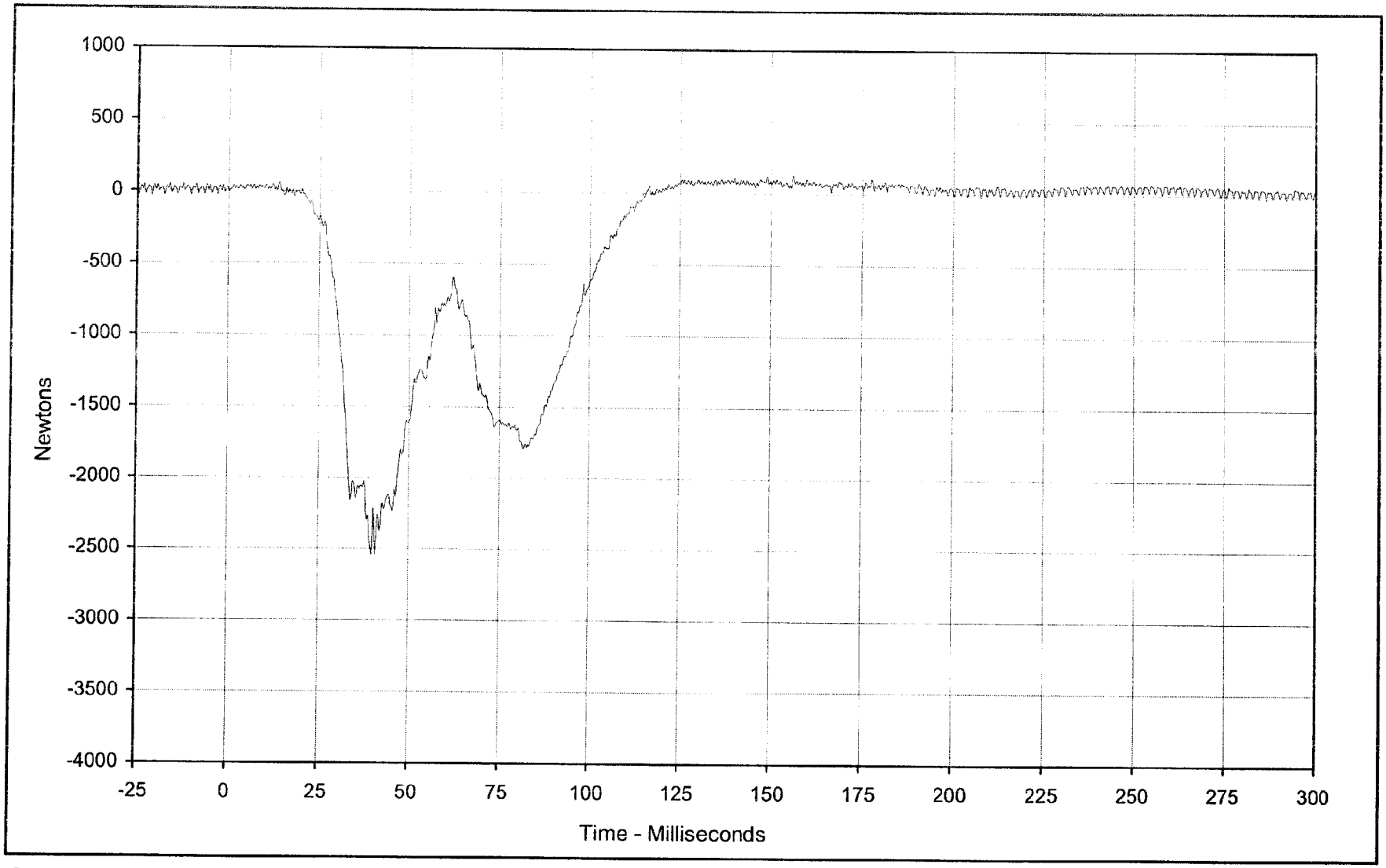
KAR20001-03



Curve Description: Passenger Right lower Tibia Force Z

Maximum Value: 129.6 at 156.0 Milliseconds

Minimum Value: -2546.5 at 39.9 Milliseconds

SAE Filter Class: 600

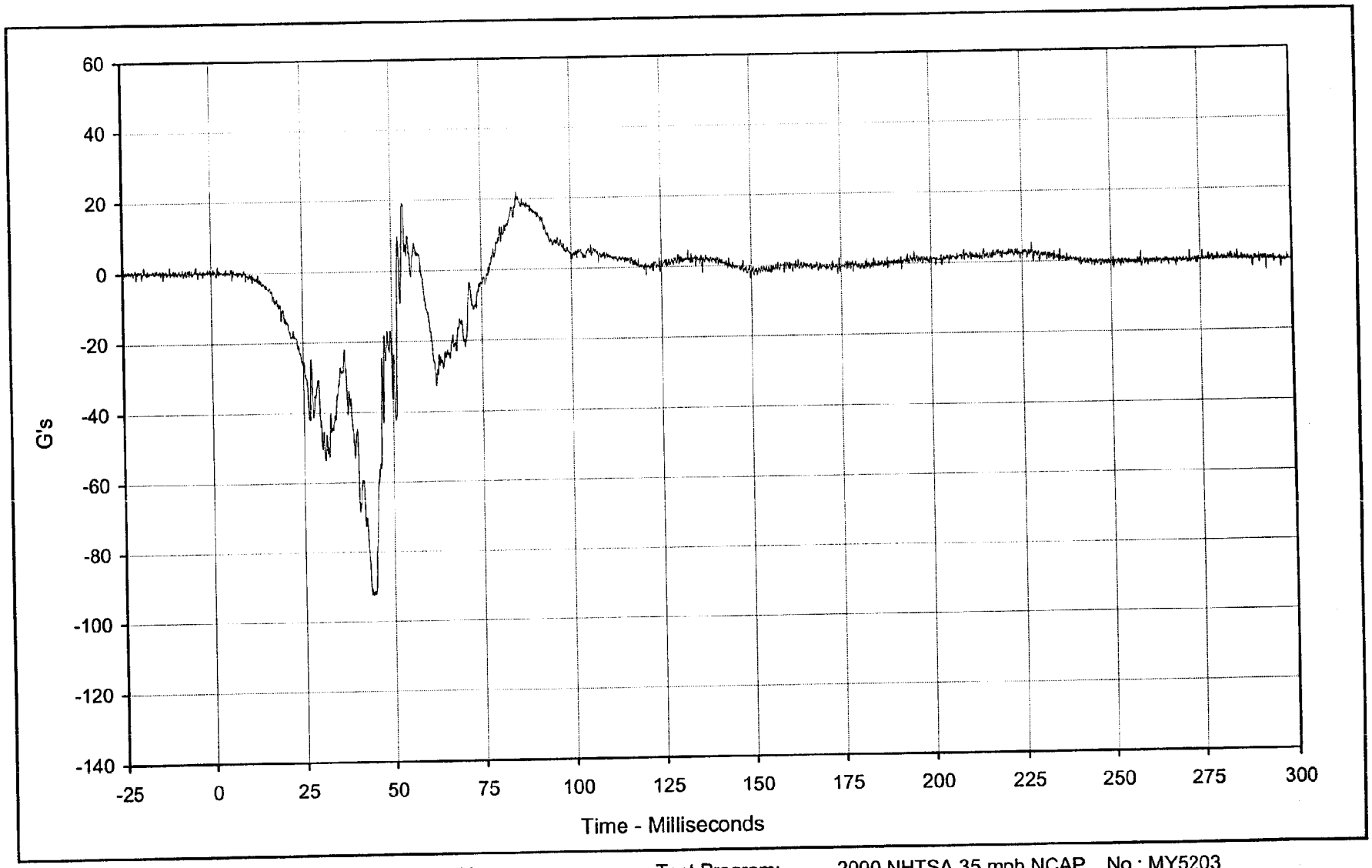
Date of Test: 11/23/99

Curve Number: FIL-078

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Passenger Left Foot Aft X

Maximum Value: 21.9 at 84.8 Milliseconds

Minimum Value: -92.6 at 43.6 Milliseconds

SAE Filter Class: 1000

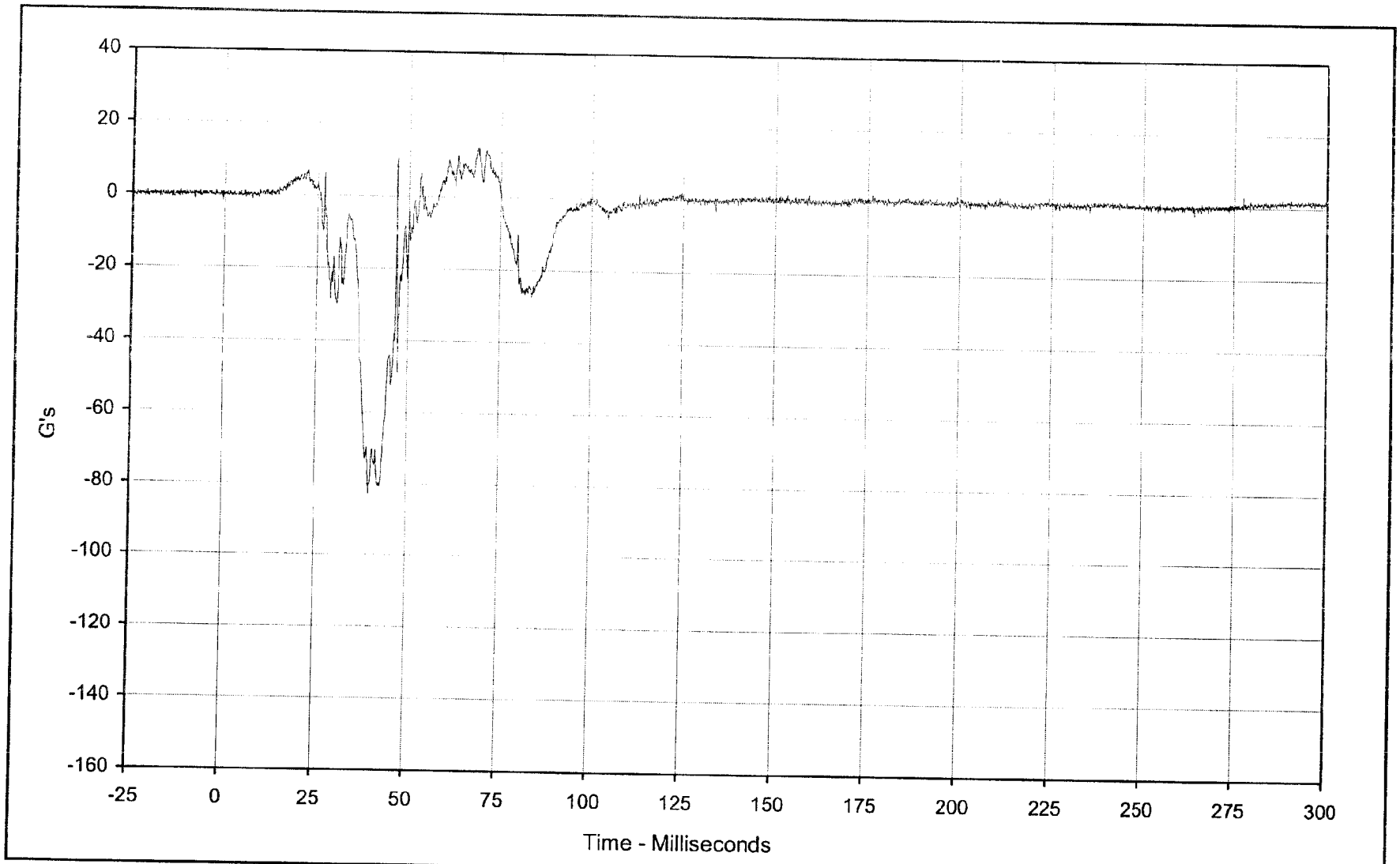
Date of Test: 11/23/99

Curve Number: FIL-079

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Passenger Left Foot Aft Z

Maximum Value: 13.7 at 68.7 Milliseconds

Minimum Value: -82.8 at 39.9 Milliseconds

SAE Filter Class: 1000

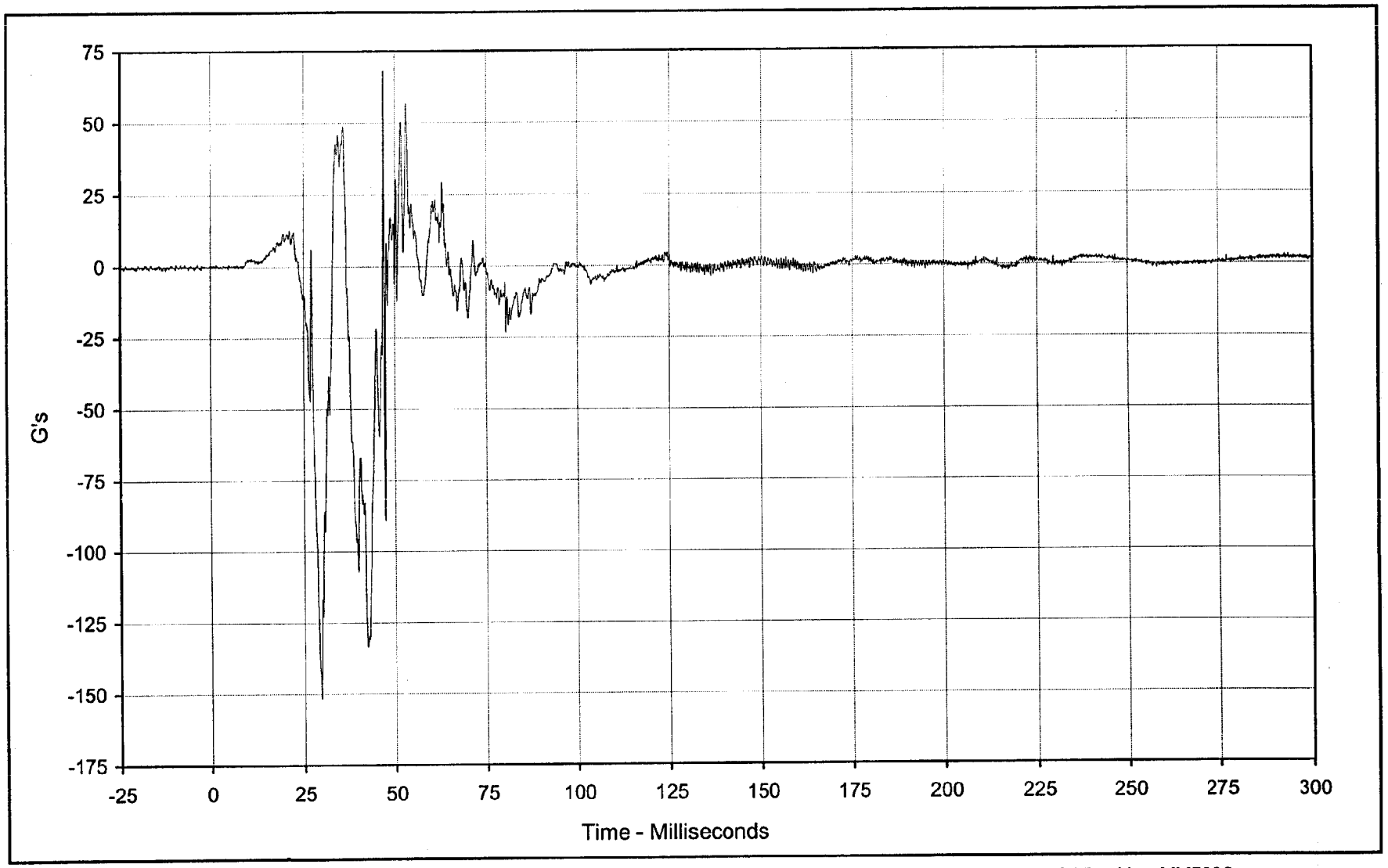
Date of Test: 11/23/99

Curve Number: FIL-080

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

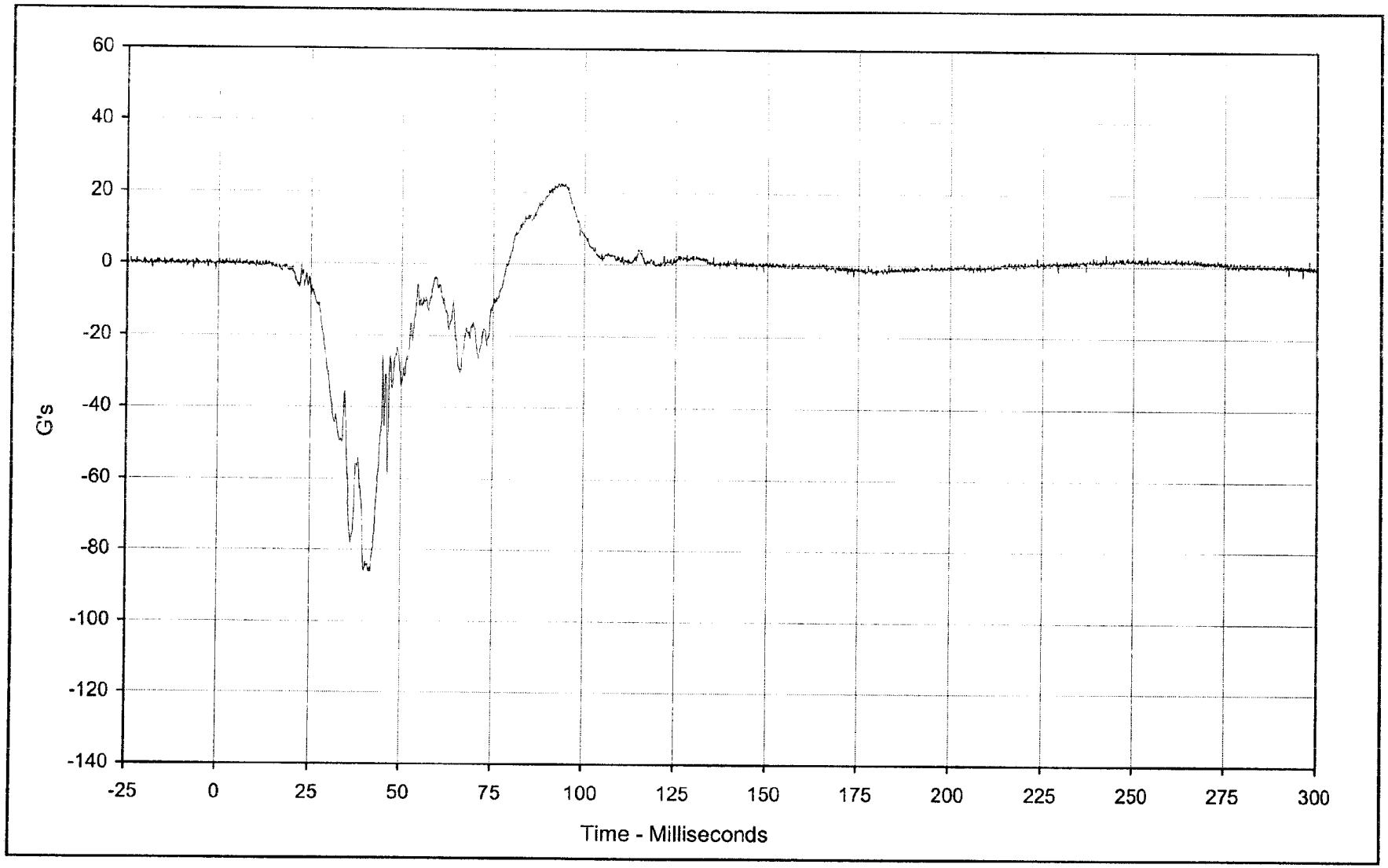
KARCO Engineering



Curve Description:	Passenger Left Foot Fore Z			
Maximum Value:	68.1	at	47.0	Milliseconds
Minimum Value:	-151.8	at	29.5	Milliseconds
SAE Filter Class:	1000			
Date of Test:	11/23/99			
Curve Number:	FIL-081			

Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

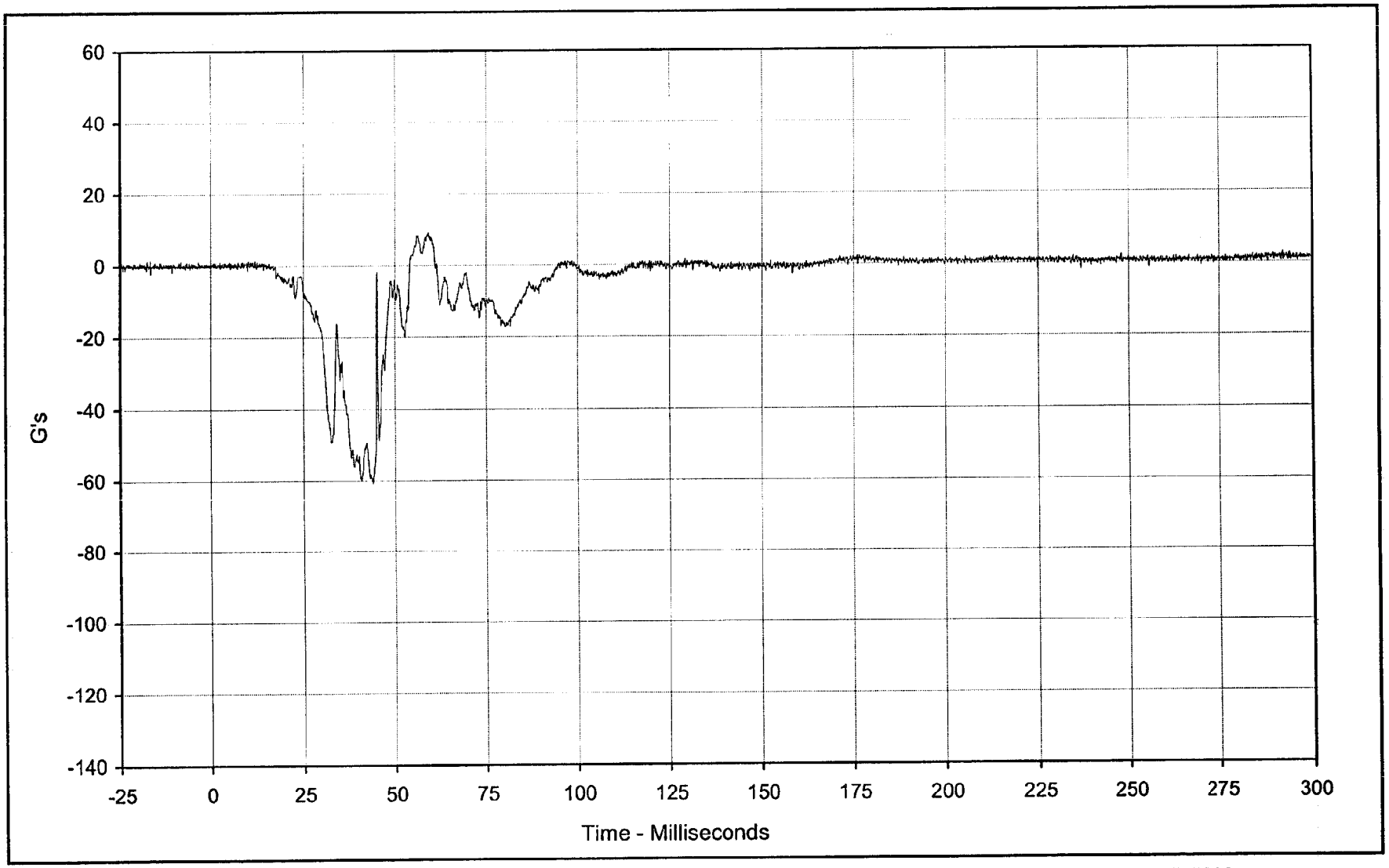
KARC Engineering



Curve Description:	Passenger Right Foot Aft X			
Maximum Value:	22.5	at	93.1	Milliseconds
Minimum Value:	-86.2	at	41.4	Milliseconds
SAE Filter Class:	1000			
Date of Test:	11/23/99			
Curve Number:	FIL-082			

Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

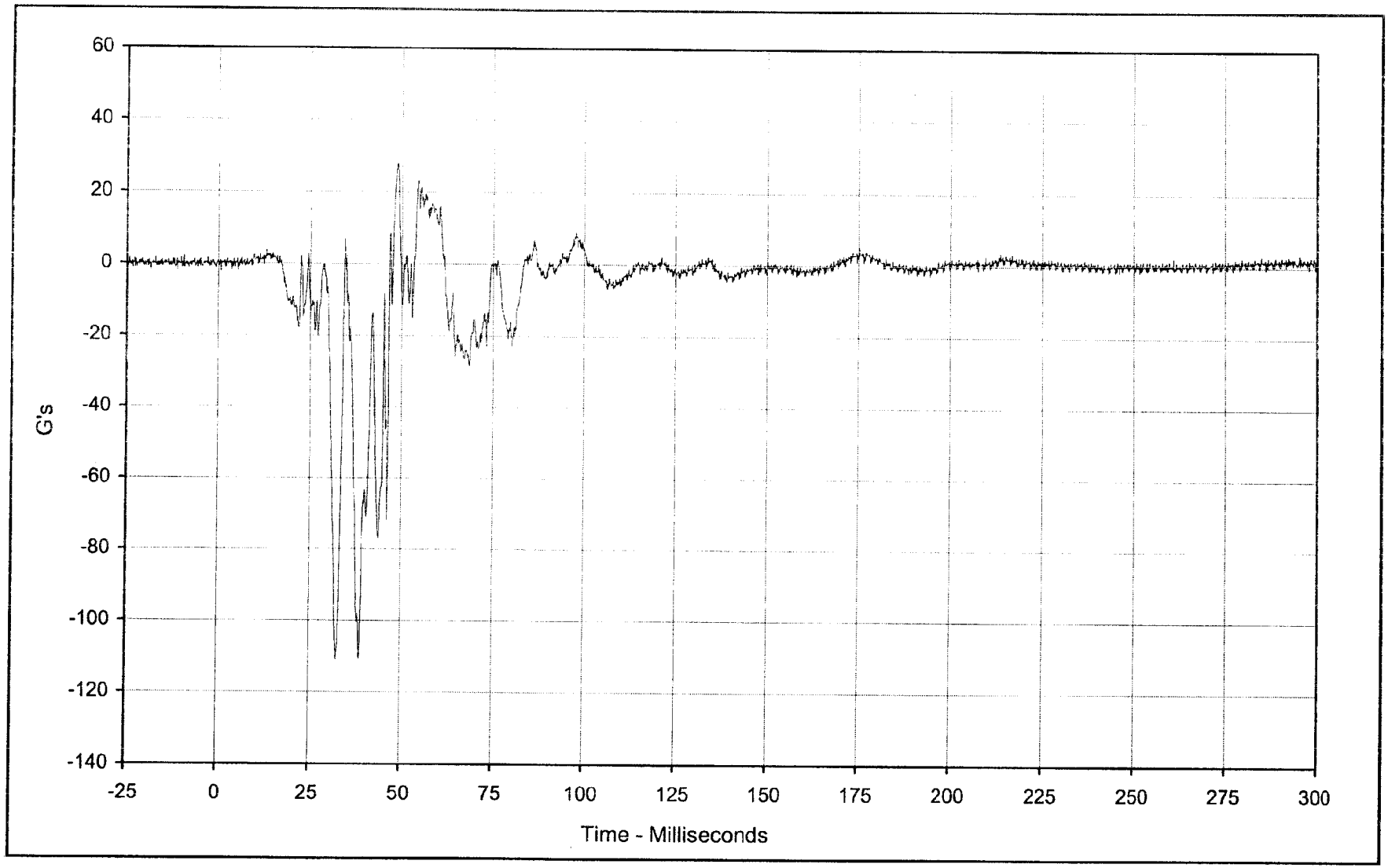
KARCO Engineering



Curve Description:	Passenger Right Foot Aft Z				
Maximum Value:	9.3	at	59.0	Milliseconds	
Minimum Value:	-60.7	at	44.0	Milliseconds	
SAE Filter Class:	1000				
Date of Test:	11/23/99				
Curve Number:	FIL-083				

Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

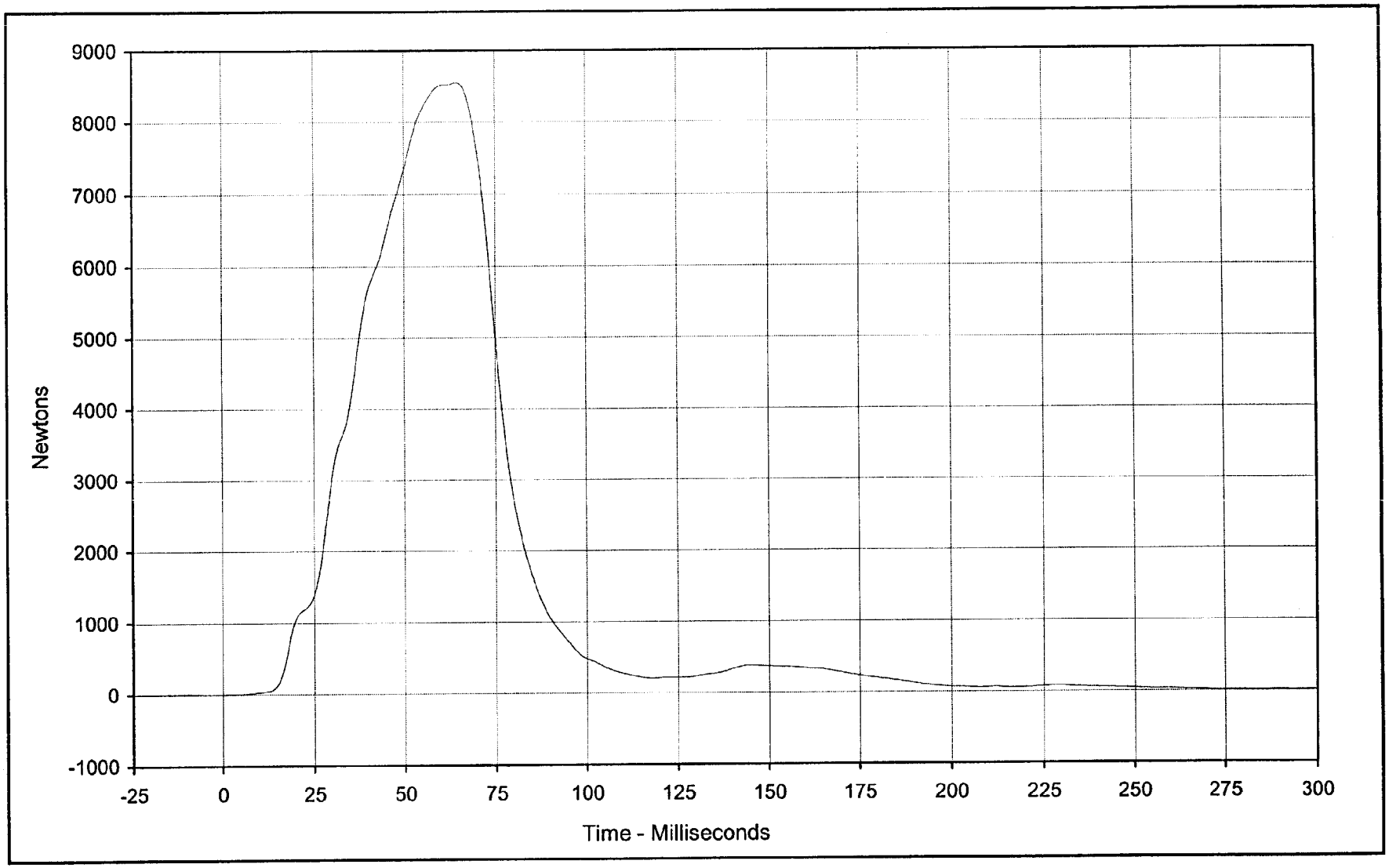
KARCO Engineering



Curve Description:	Passenger Right Foot Fore Z			
Maximum Value:	28.0	at	48.9	Milliseconds
Minimum Value:	-111.0	at	32.4	Milliseconds
SAE Filter Class:	1000			
Date of Test:	11/23/99			
Curve Number:	FIL-084			

Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

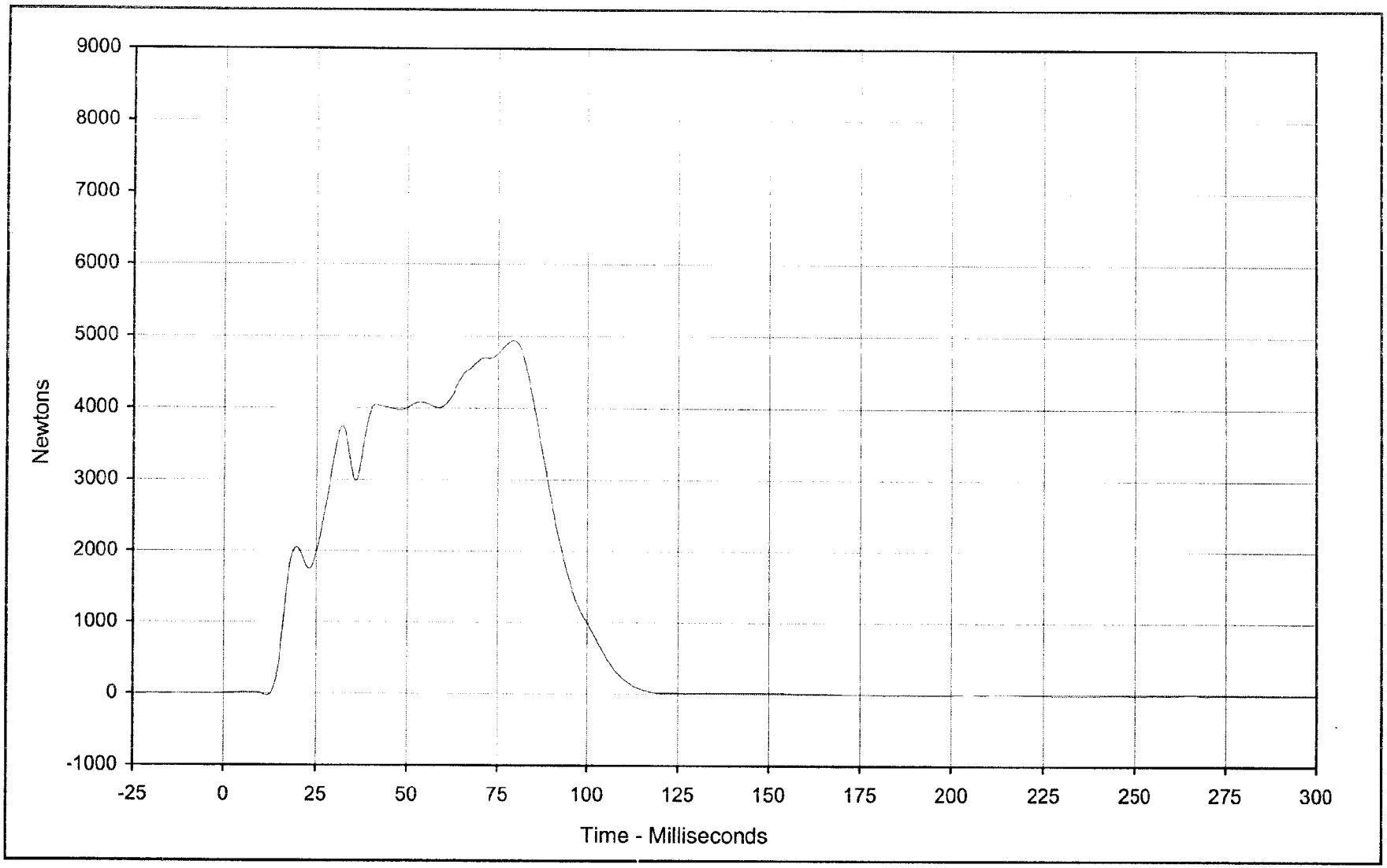
KARC Engineering



Curve Description:	Passenger Lap Belt Force			
Maximum Value:	8548.3	at	64.6	Milliseconds
Minimum Value:	1.0	at	0.0	Milliseconds
SAE Filter Class:	60			
Date of Test:	11/23/99			
Curve Number:	FIL-085			

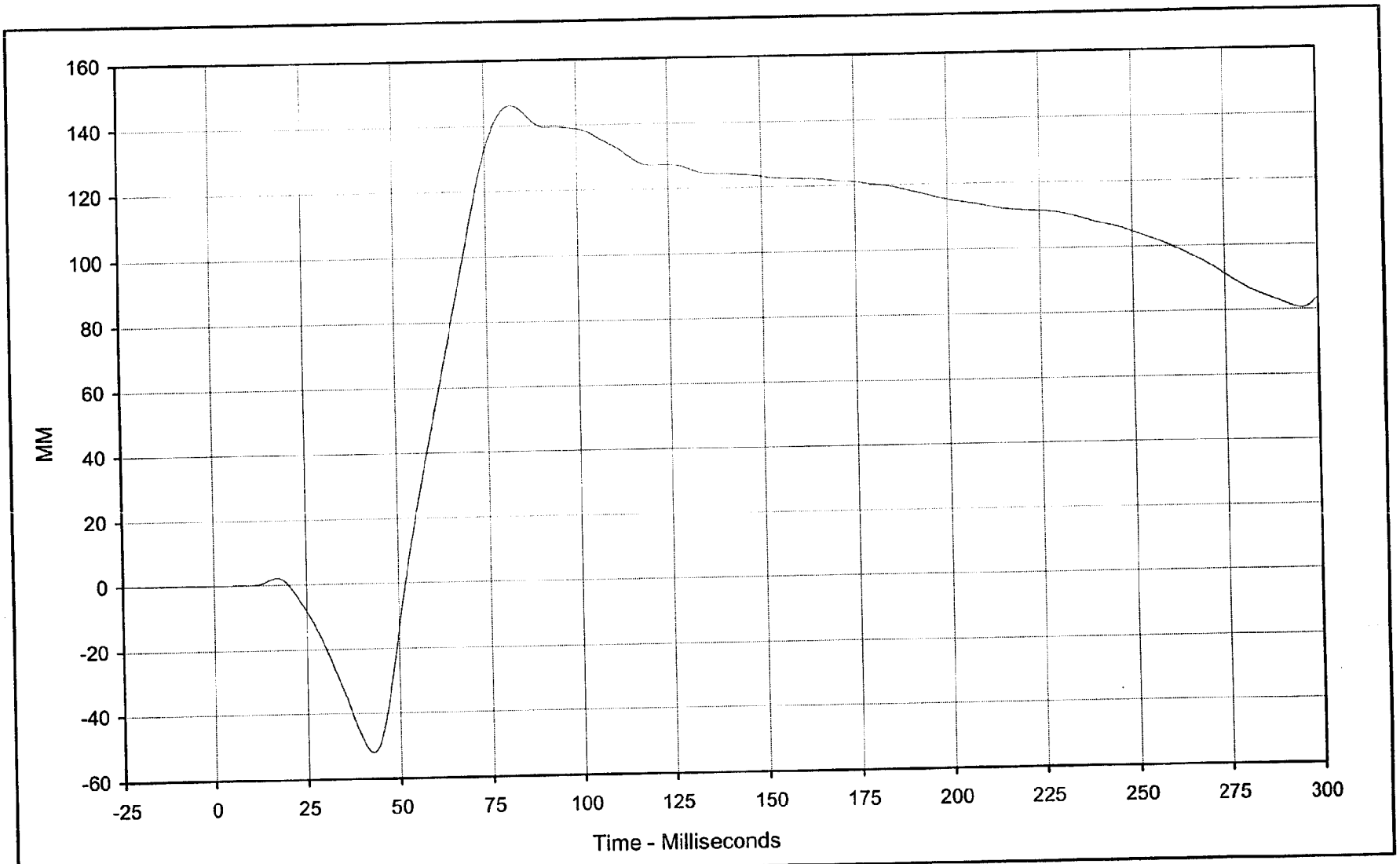
Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

KARCO Engineering



Curve Description:	Passenger Shoulder Belt Force			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	4938.4	at	79.4 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-26.5	at	11.9 Milliseconds		
SAE Filter Class:	60				
Date of Test:	11/23/99				
Curve Number:	FIL-086				

KARC Engineering



Curve Description: Passenger Shoulder Belt Pullout

Maximum Value: 146.2 at 82.0 Milliseconds

Minimum Value: -52.0 at 42.7 Milliseconds

SAE Filter Class: 60

Date of Test: 11/23/99

Curve Number: FIL-087

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering

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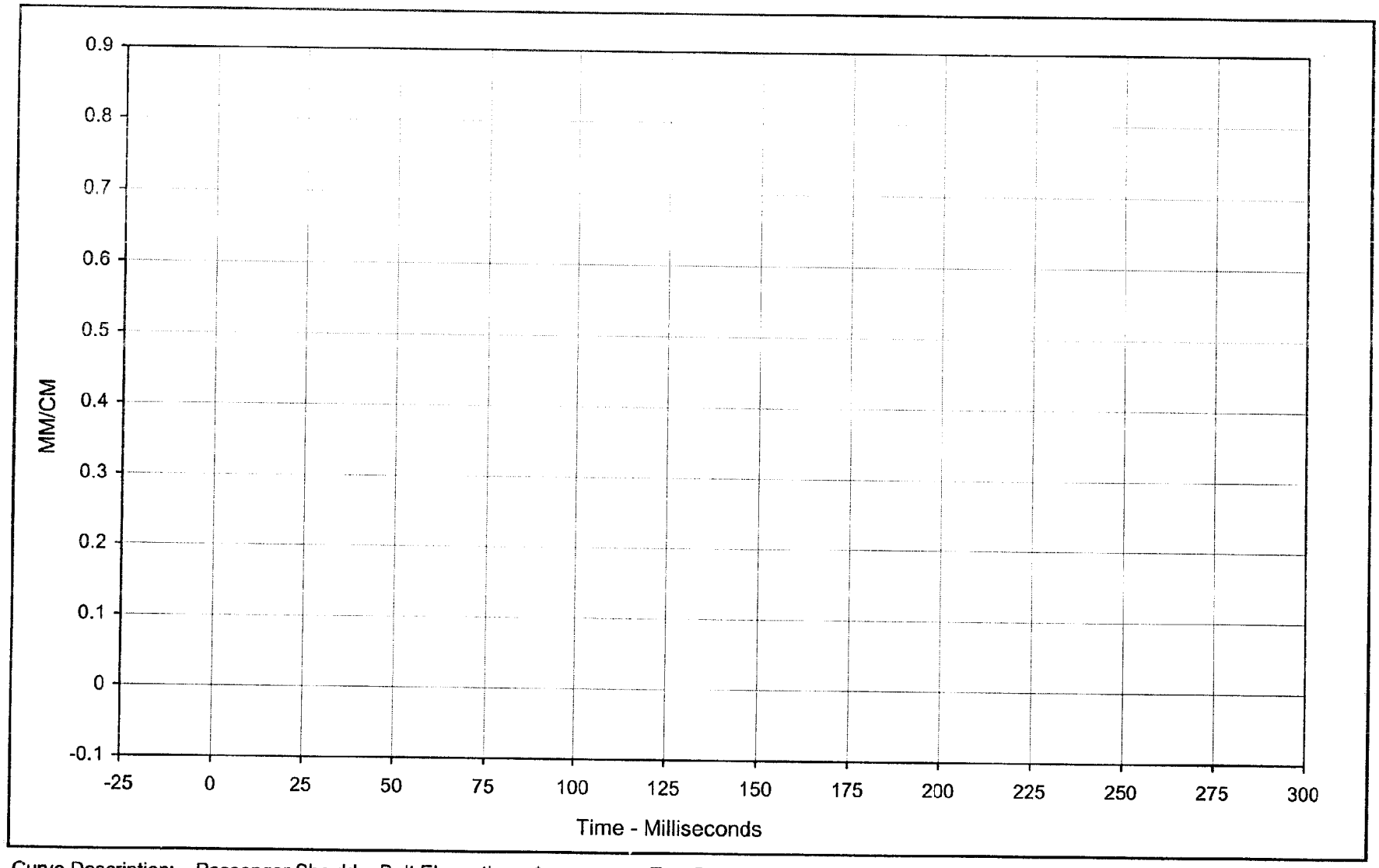
KAR2001-03



Curve Description: Passenger Shoulder Belt Elongation *

Maximum Value: 0.00 at 0.0 Milliseconds

Minimum Value: 0.00 at 0.0 Milliseconds

SAE Filter Class: 60

Date of Test: 11/23/99

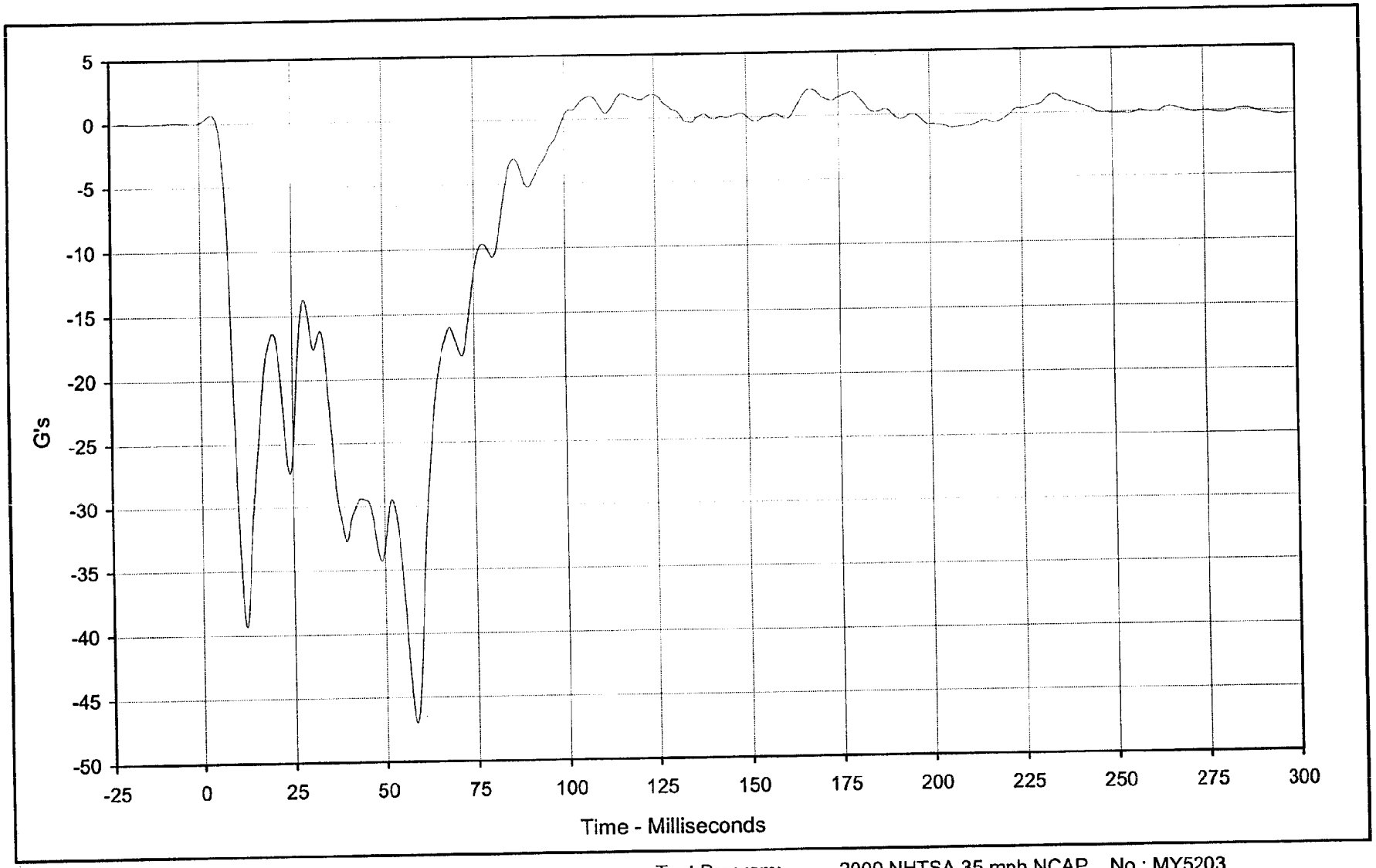
Curve Number: FIL-088

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

* Not Installed

KARC Engineering



Curve Description: Vehicle Left Rear Primary

Maximum Value: 2.1 at 167.1 Milliseconds

Minimum Value: -47.0 at 58.0 Milliseconds

SAE Filter Class: 60

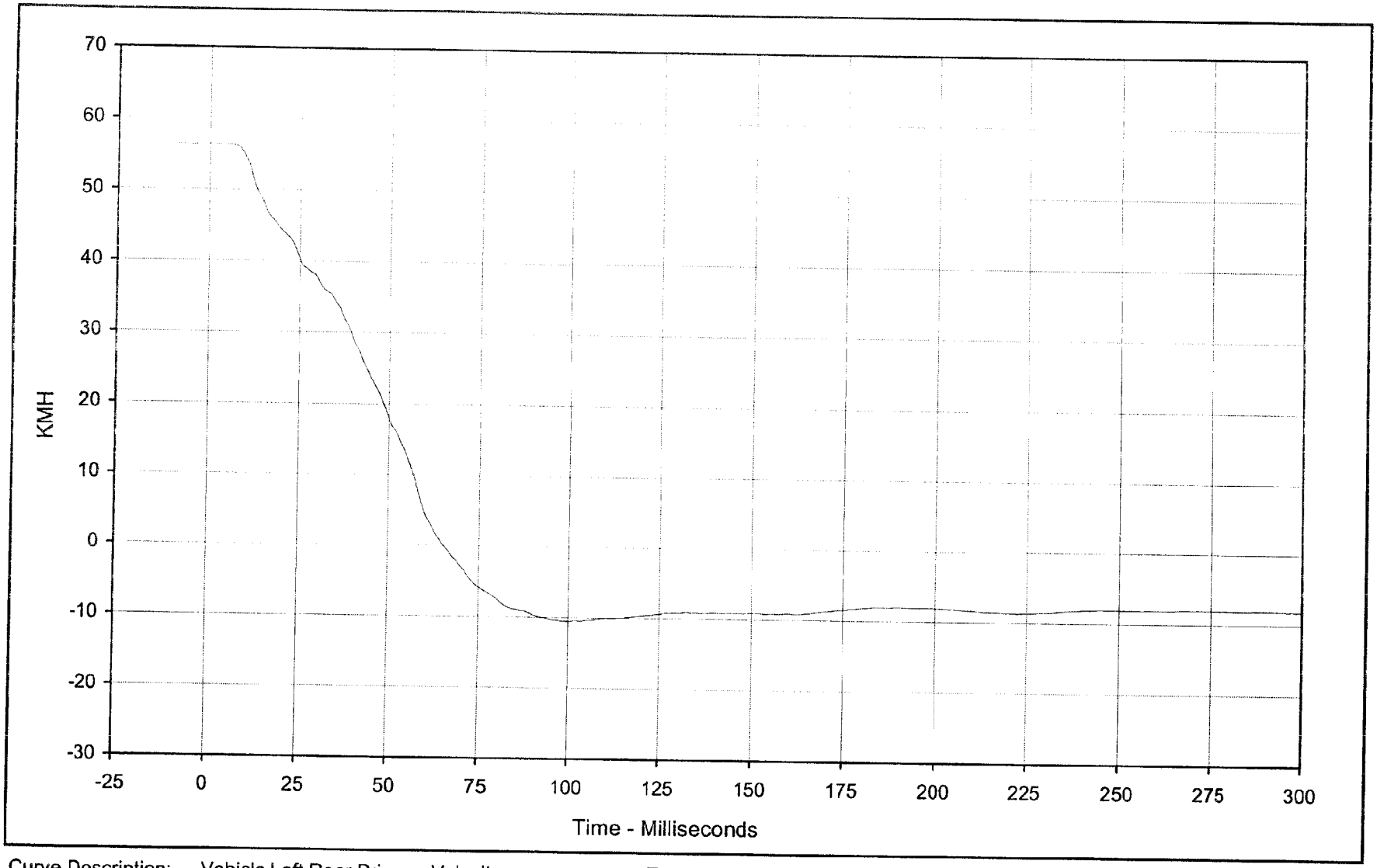
Date of Test: 11/23/99

Curve Number: FIL-089

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

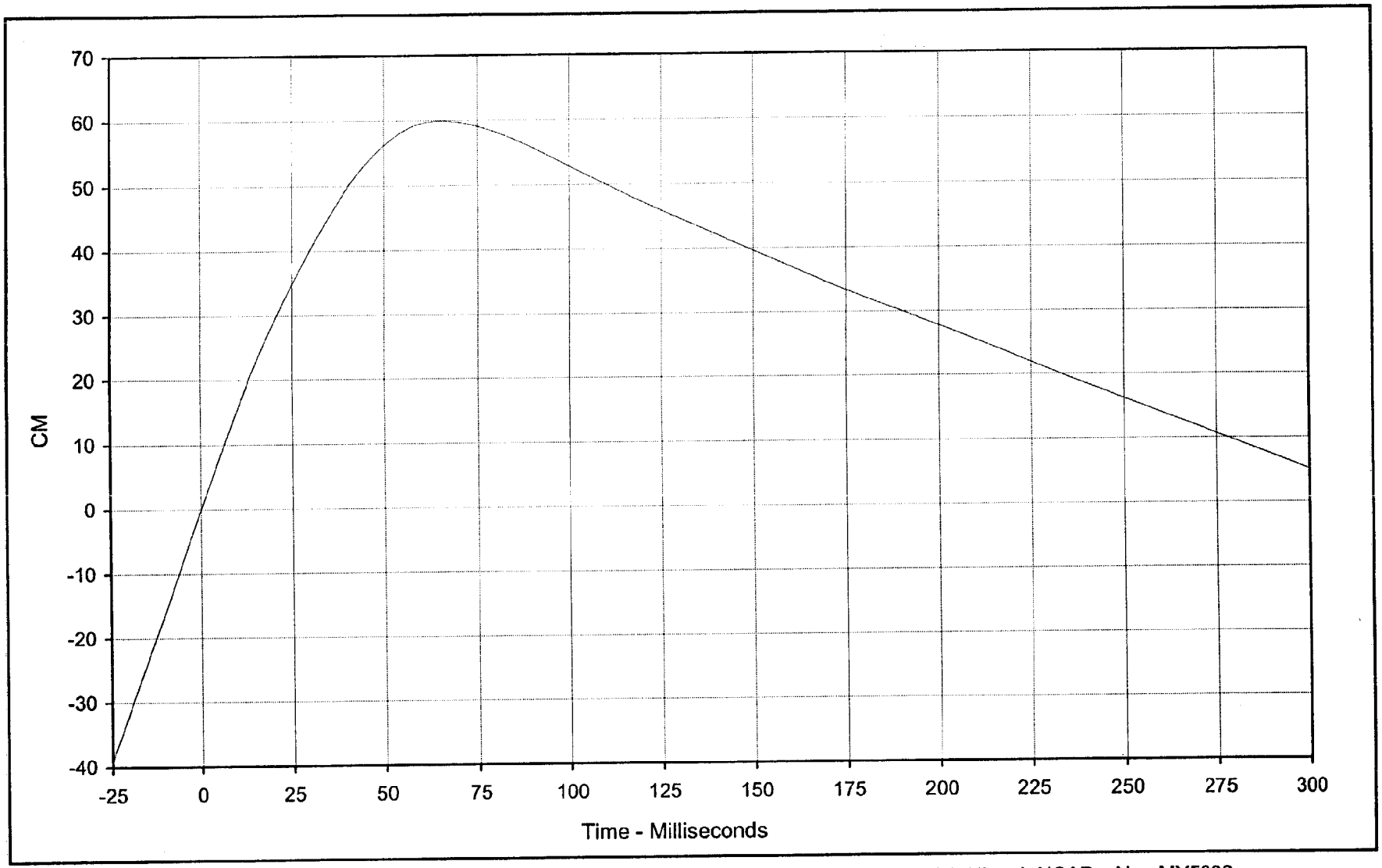
Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description:	Vehicle Left Rear Primary Velocity			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	56.3	at	2.2 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-10.6	at	98.7 Milliseconds		
SAE Filter Class:	180				
Date of Test:	11/23/99				
Curve Number:	IN1-089				

KARCO Engineering



Curve Description: Vehicle Left Rear Primary Displ.

Maximum Value: 59.9 at 65.1 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

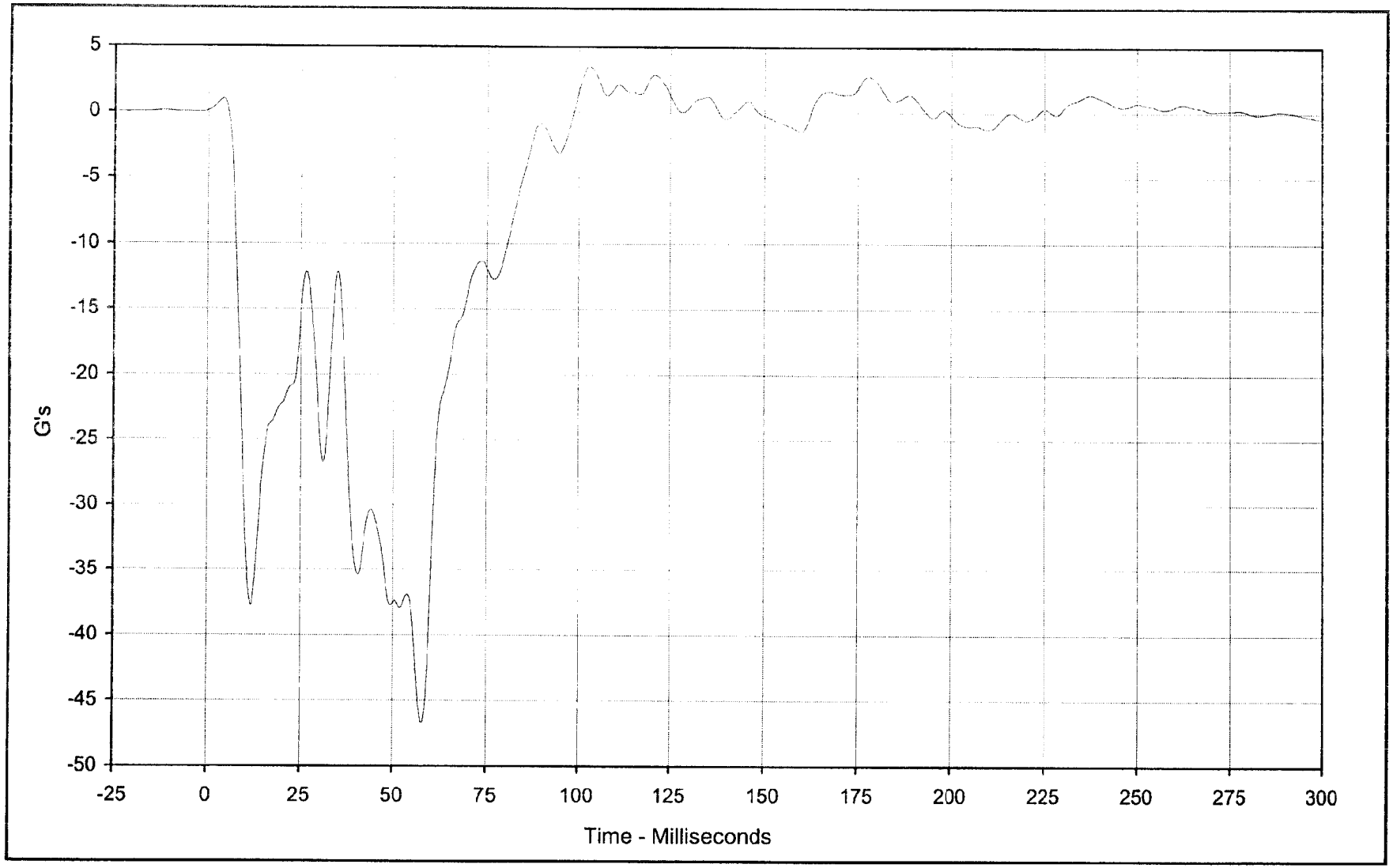
Date of Test: 11/23/99

Curve Number: IN2-089

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

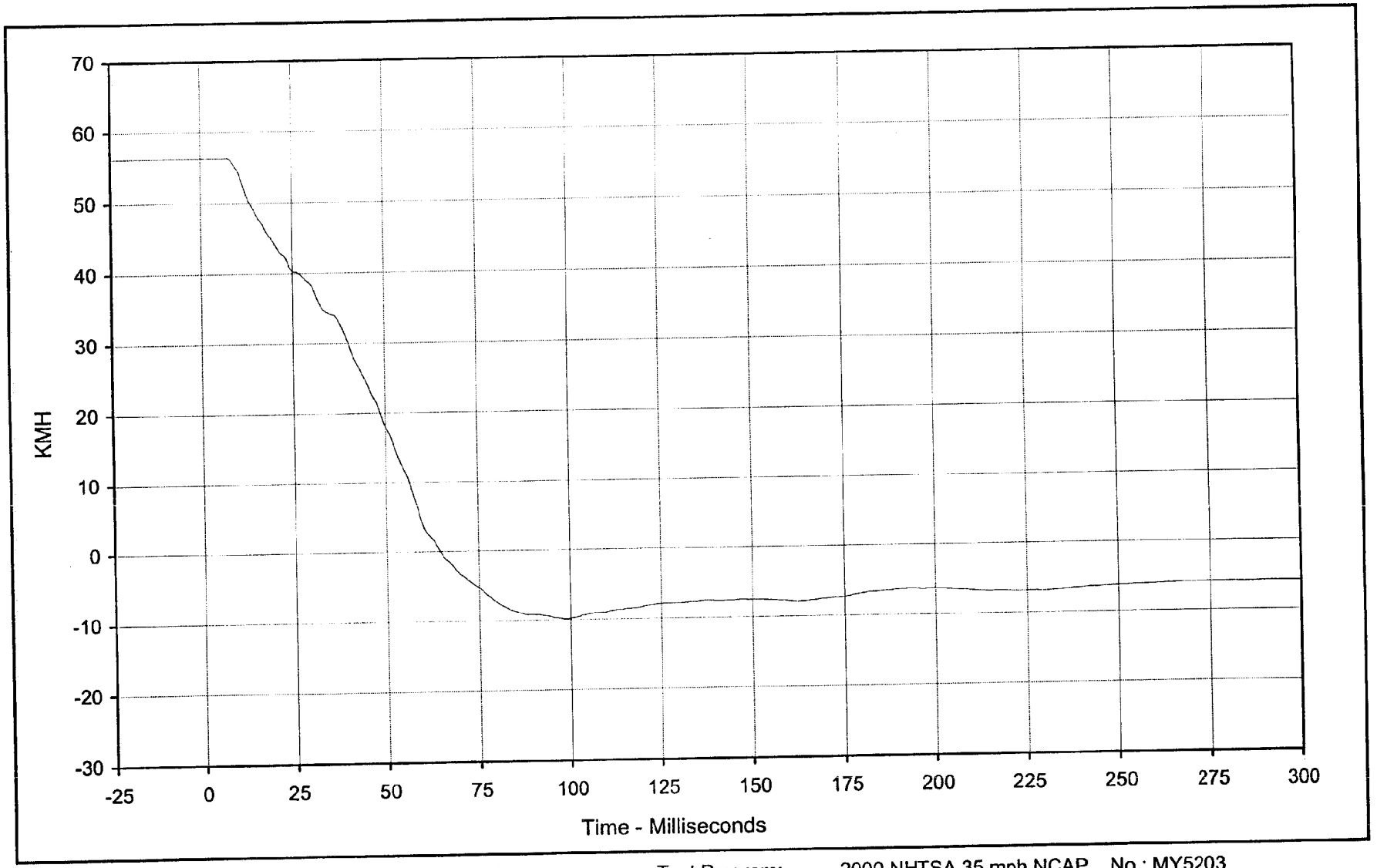
KARCO Engineering



Curve Description:	Vehicle Right Rear Primary			
Maximum Value:	3.5	at	102.7	Milliseconds
Minimum Value:	-46.7	at	57.8	Milliseconds
SAE Filter Class:	60			
Date of Test:	11/23/99			
Curve Number:	FIL-090			

Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Vehicle Right Rear Primary Velocity

Maximum Value: 56.4 at 7.0 Milliseconds

Minimum Value: -9.8 at 99.1 Milliseconds

SAE Filter Class: 180

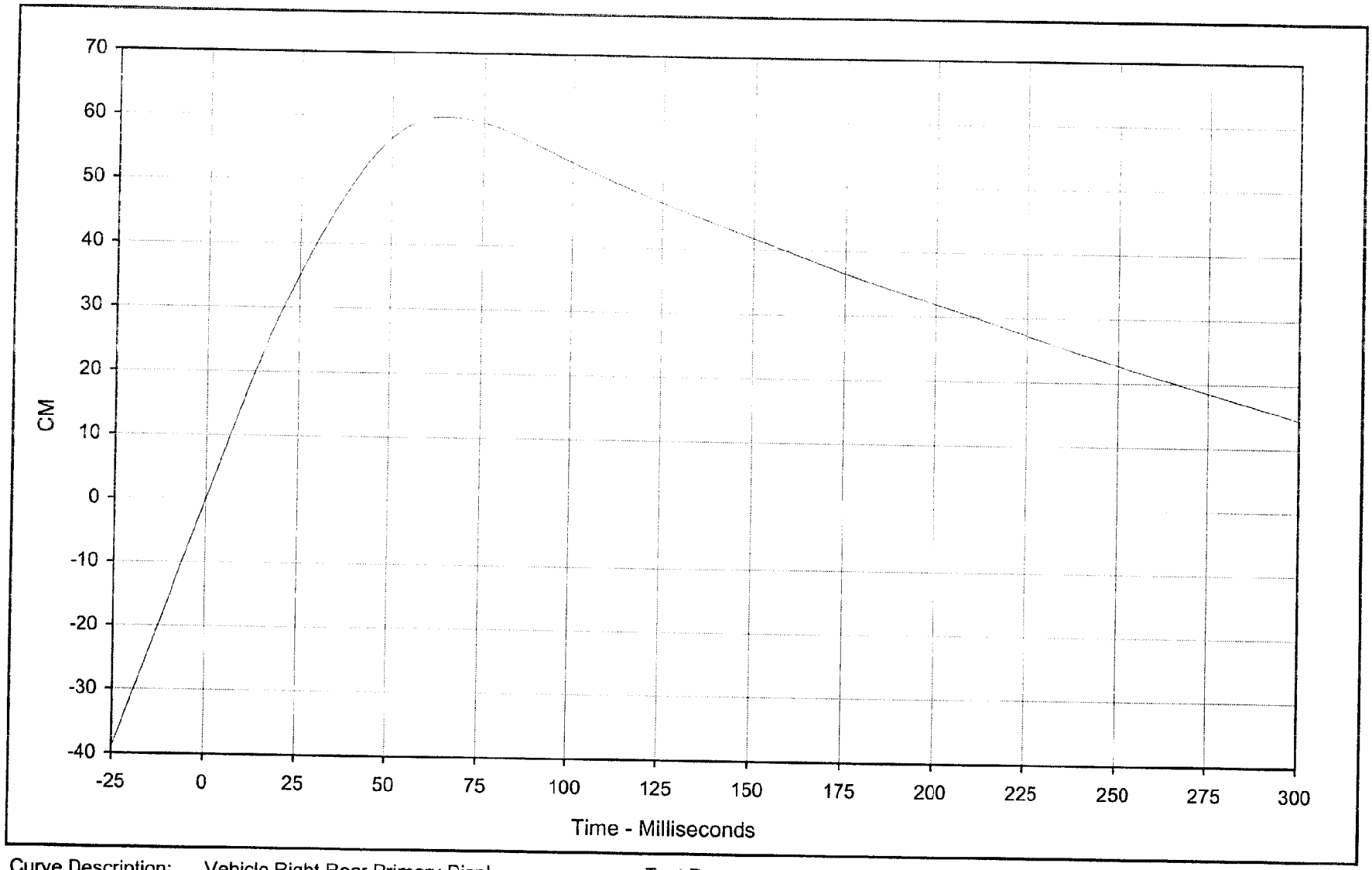
Date of Test: 11/23/99

Curve Number: IN1-090

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Vehicle Right Rear Primary Displ.

Maximum Value: 59.9 at 64.4 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

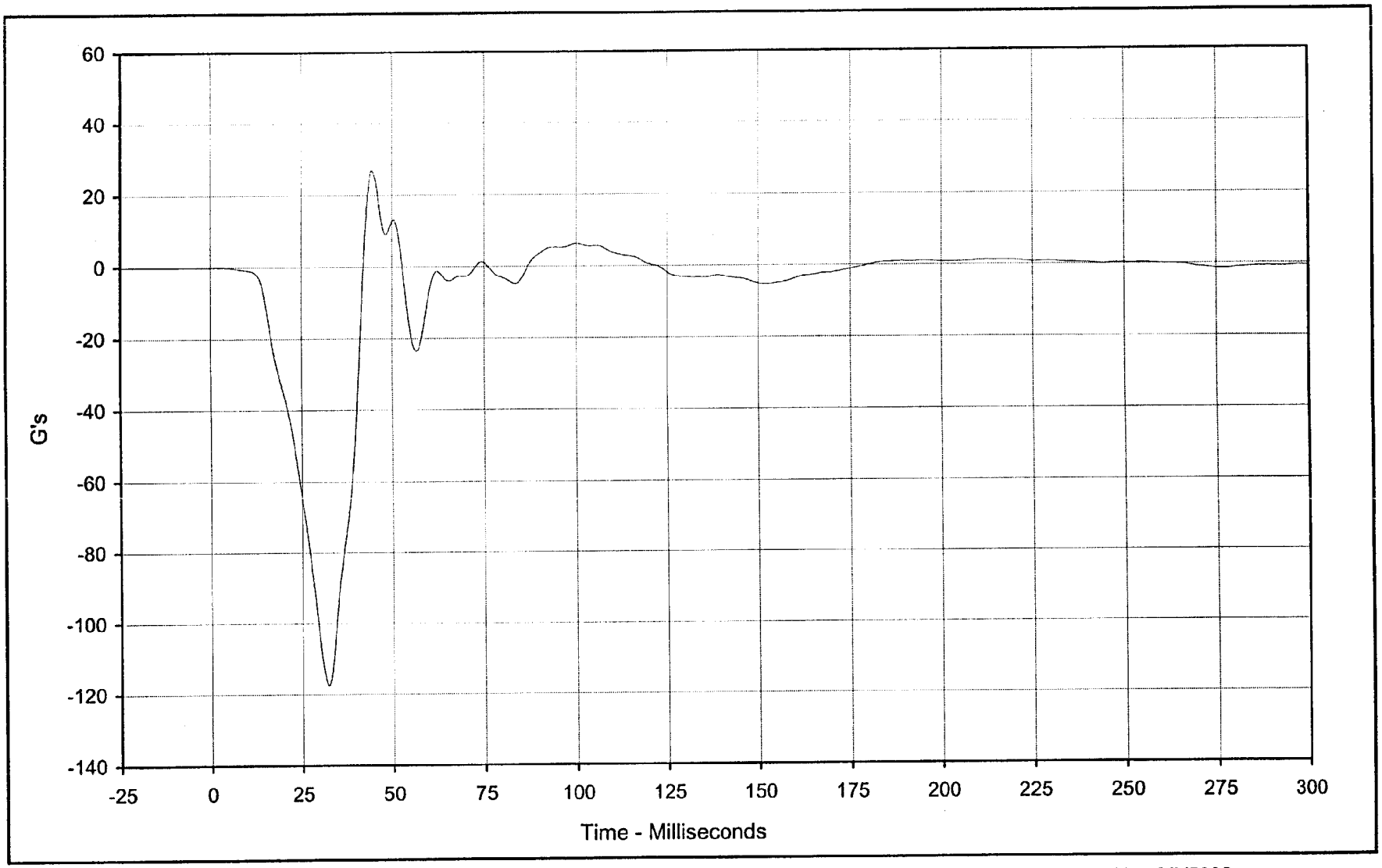
Date of Test: 11/23/99

Curve Number: IN2-090

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering

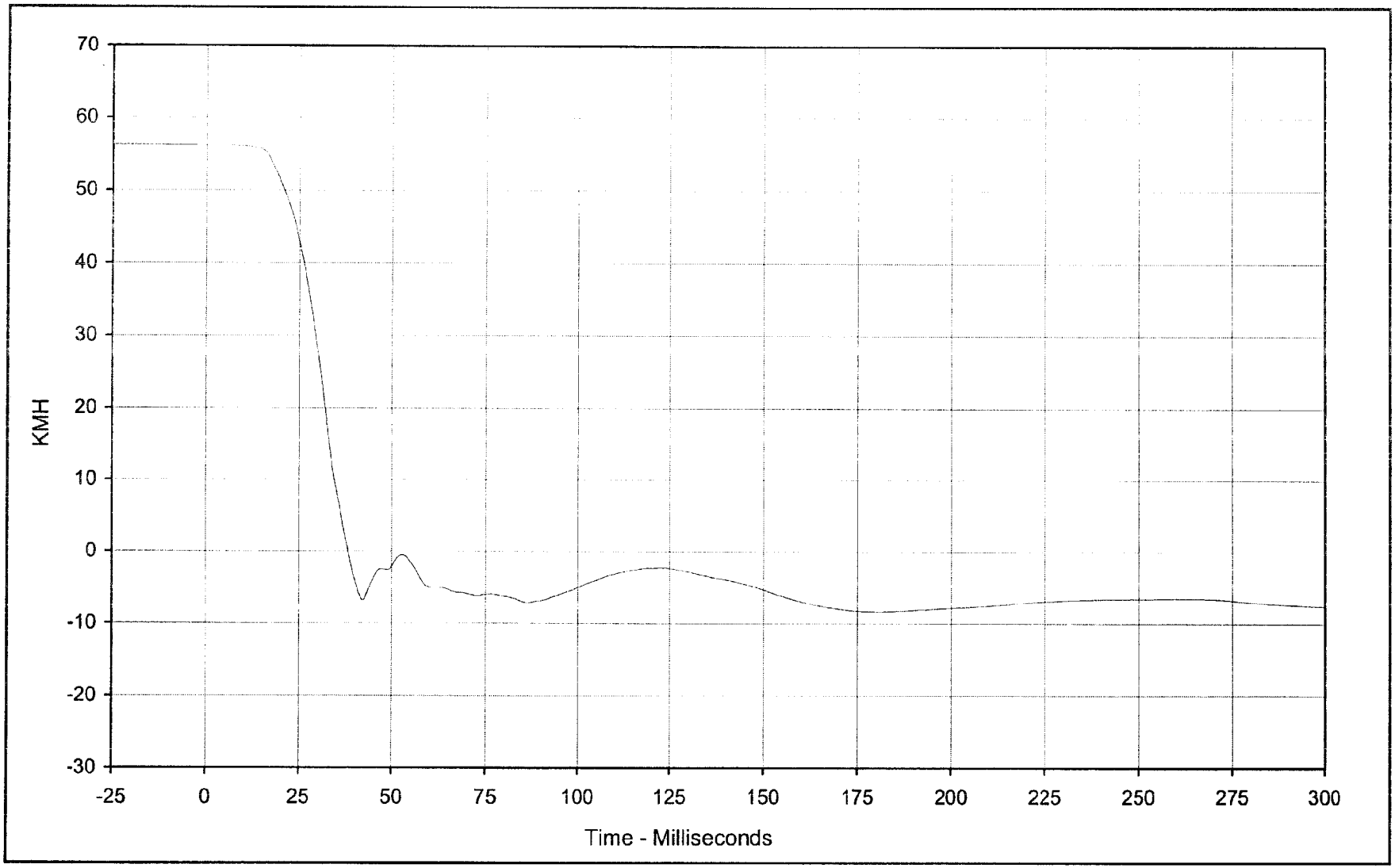


Curve Description:	Vehicle Engine Top			
Maximum Value:	26.8	at	44.6	Milliseconds
Minimum Value:	-117.6	at	32.1	Milliseconds
SAE Filter Class:	60			
Date of Test:	11/23/99			
Curve Number:	FIL-091			

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

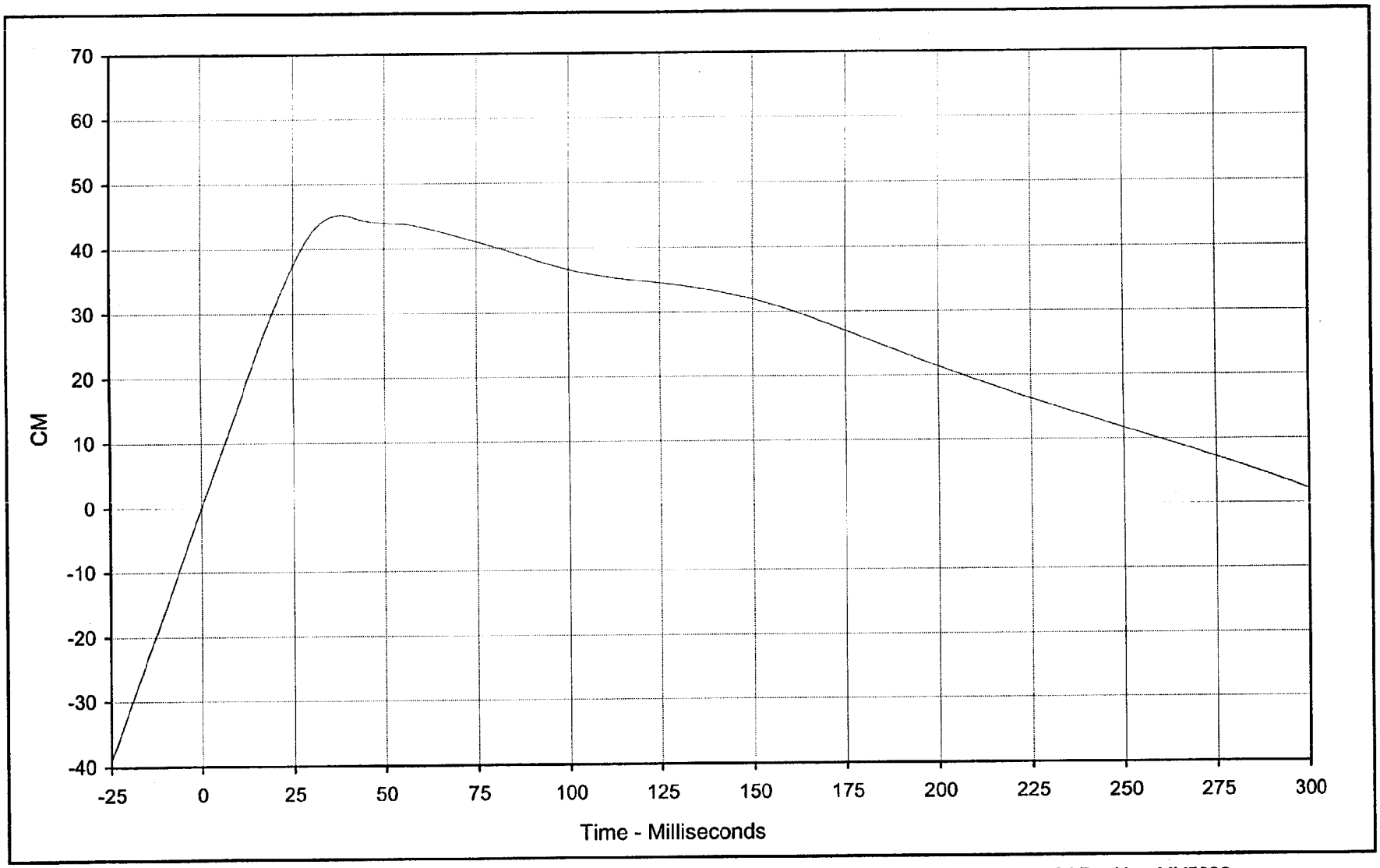
Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description:	Vehicle Engine Top Velocity			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	56.2	at	0.0 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-8.3	at	180.7 Milliseconds		
SAE Filter Class:	180				
Date of Test:	11/23/99				
Curve Number:	IN1-091				

KARC Engineering

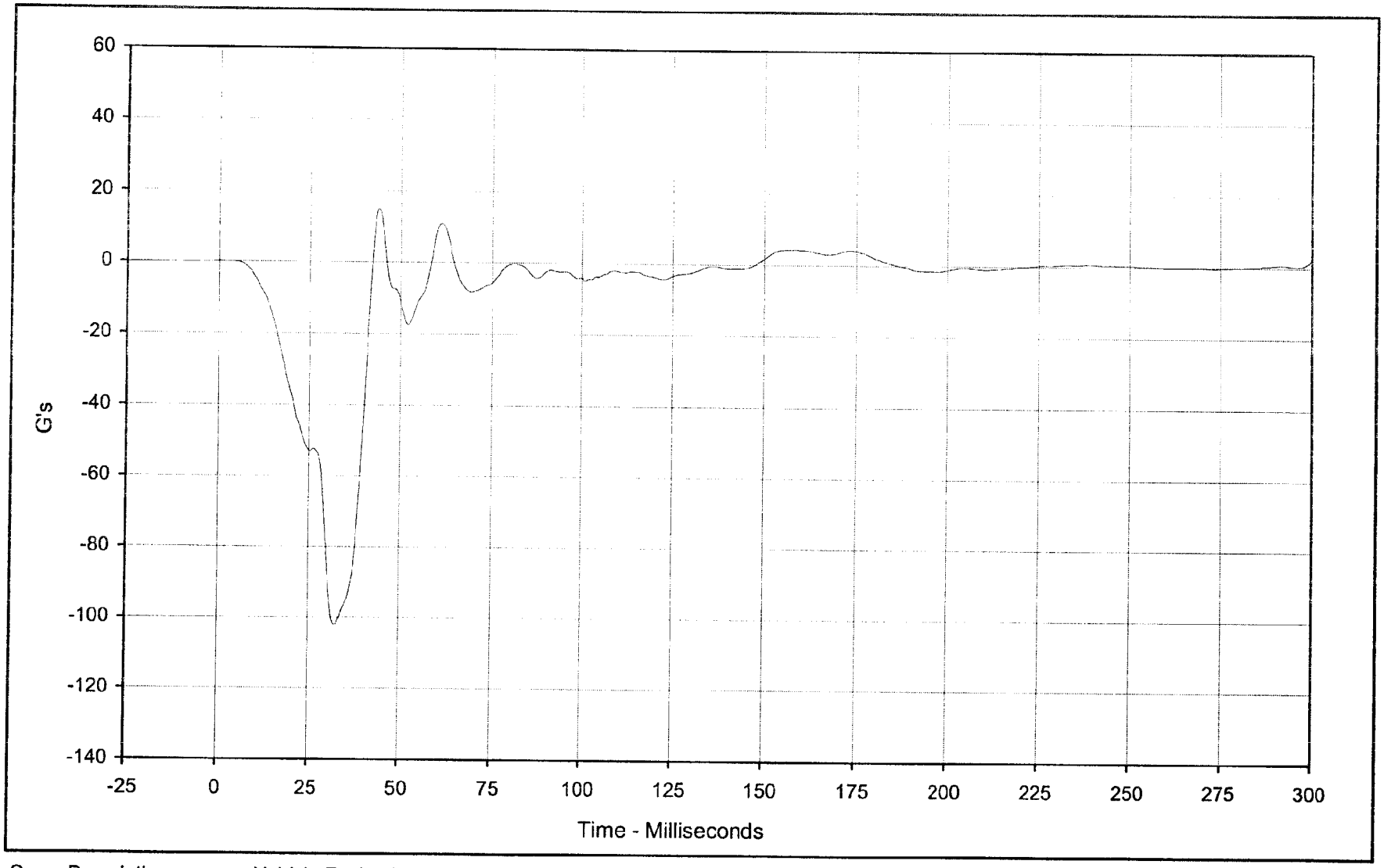


Curve Description:	Vehicle Engine Top Displ.			
Maximum Value:	45.2	at	38.1	Milliseconds
Minimum Value:	0.0	at	0.0	Milliseconds
SAE Filter Class:	180			
Date of Test:	11/23/99			
Curve Number:	IN2-091			

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

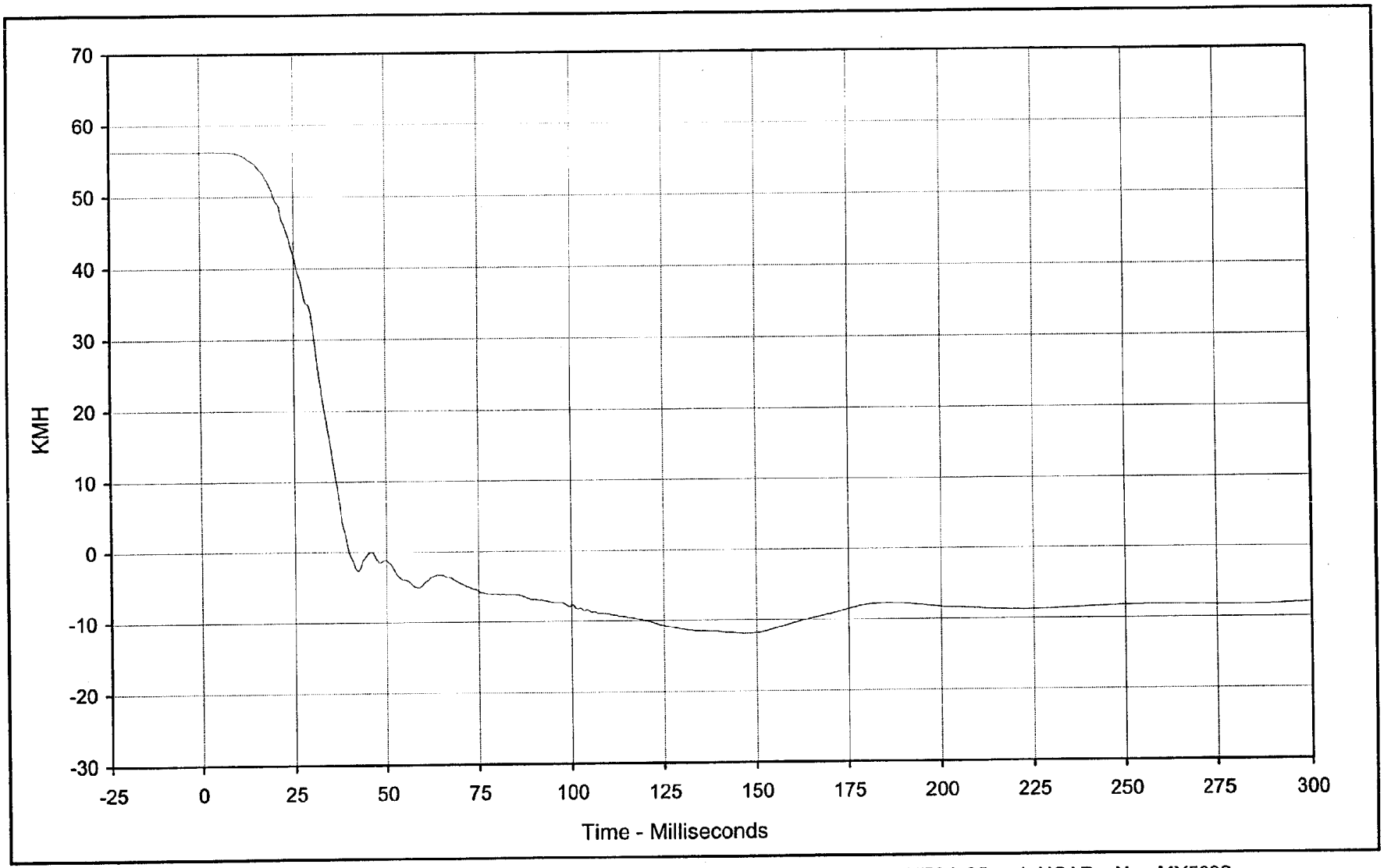
KARCO Engineering



Curve Description:	Vehicle Engine Bottom			
Maximum Value:	15.0	at	44.0	Milliseconds
Minimum Value:	-102.0	at	32.4	Milliseconds
SAE Filter Class:	60			
Date of Test:	11/23/99			
Curve Number:	FIL-092			

Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

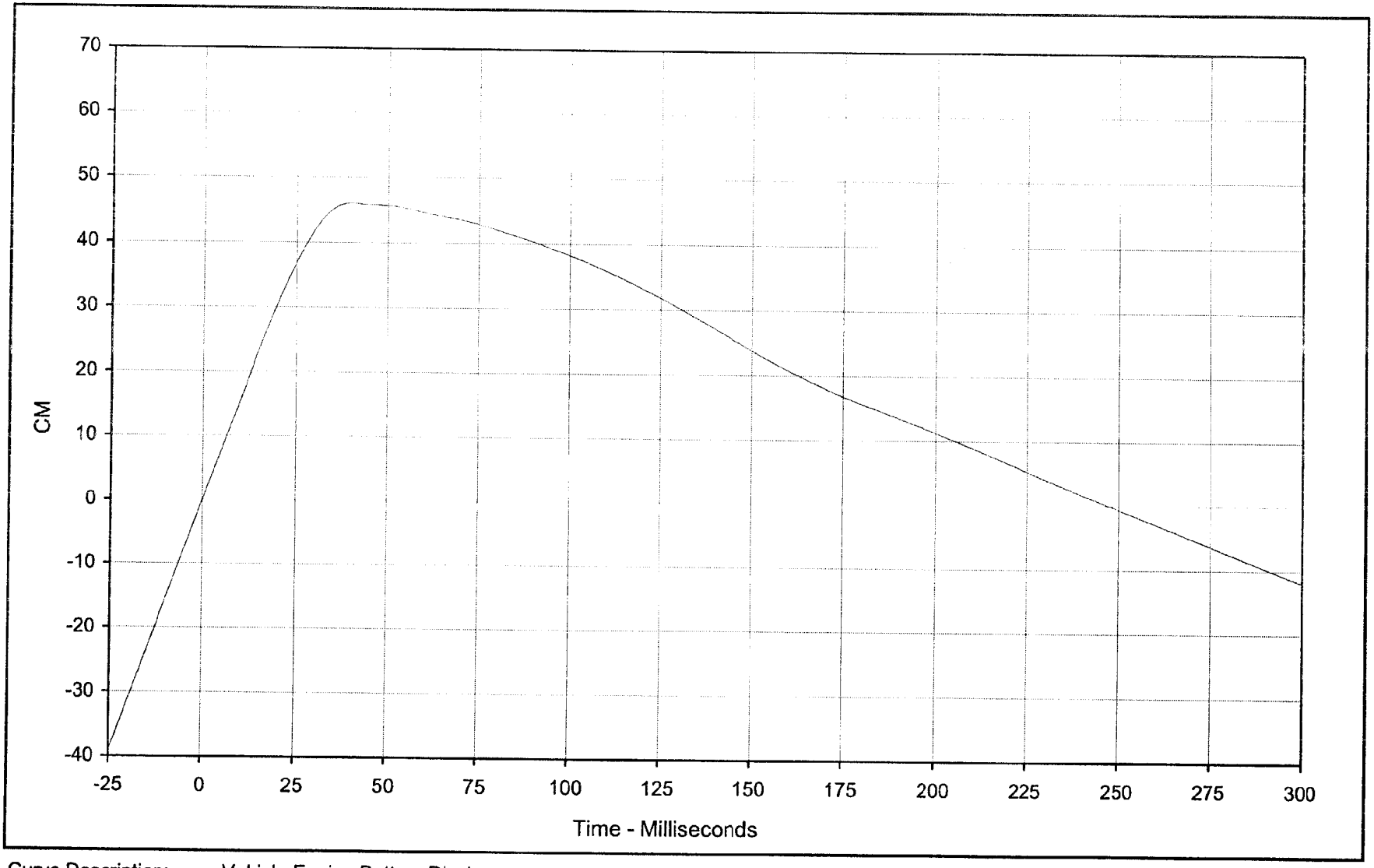
KARCO Engineering



Curve Description:	Vehicle Engine Bottom Velocity			
Maximum Value:	56.3	at	1.5	Milliseconds
Minimum Value:	-11.9	at	147.6	Milliseconds
SAE Filter Class:	180			
Date of Test:	11/23/99			
Curve Number:	IN1-092			

Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Vehicle Engine Bottom Displ.

Maximum Value: 46.0 at 39.9 Milliseconds

Minimum Value: -11.9 at 299.9 Milliseconds

SAE Filter Class: 180

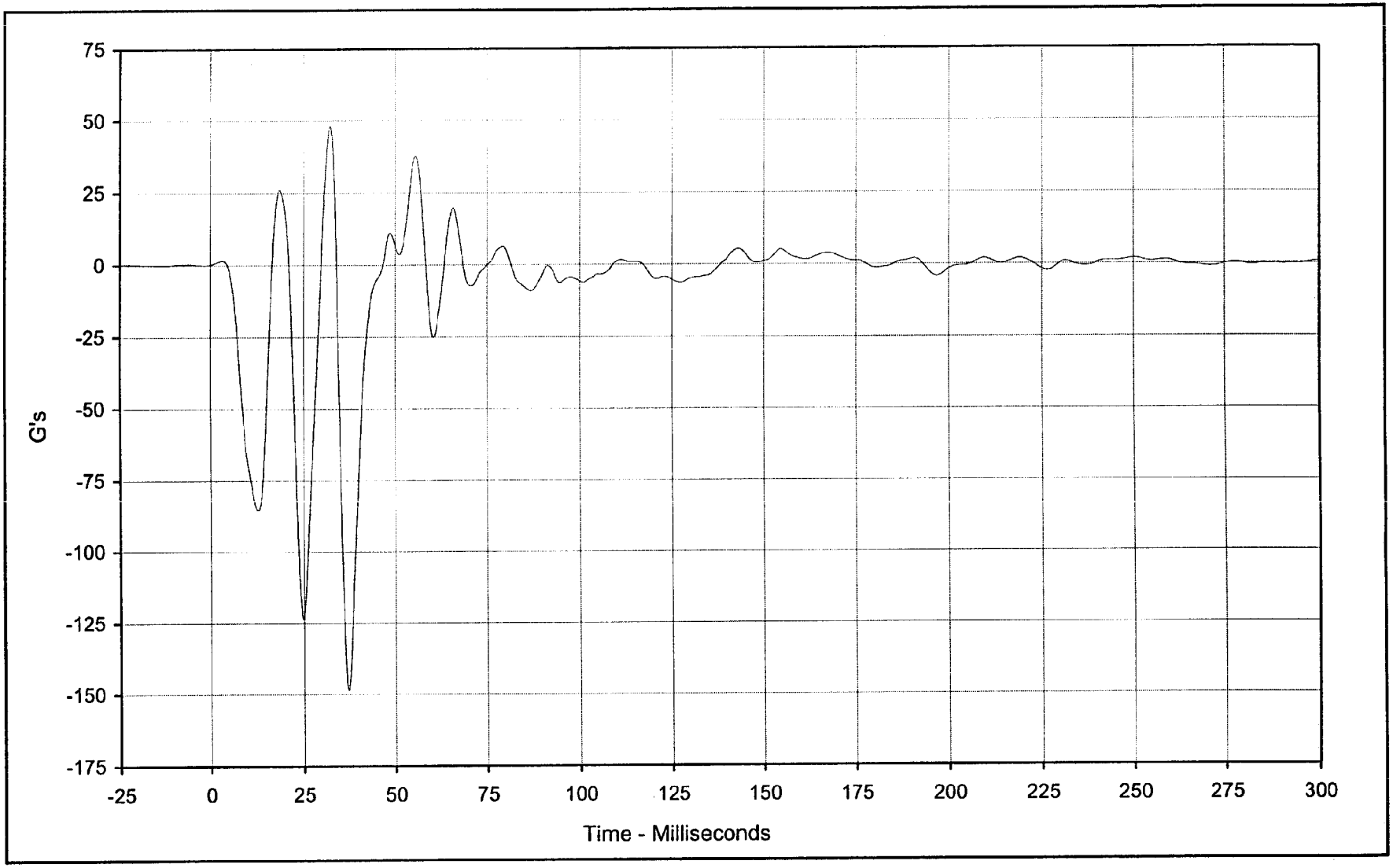
Date of Test: 11/23/99

Curve Number: IN2-092

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

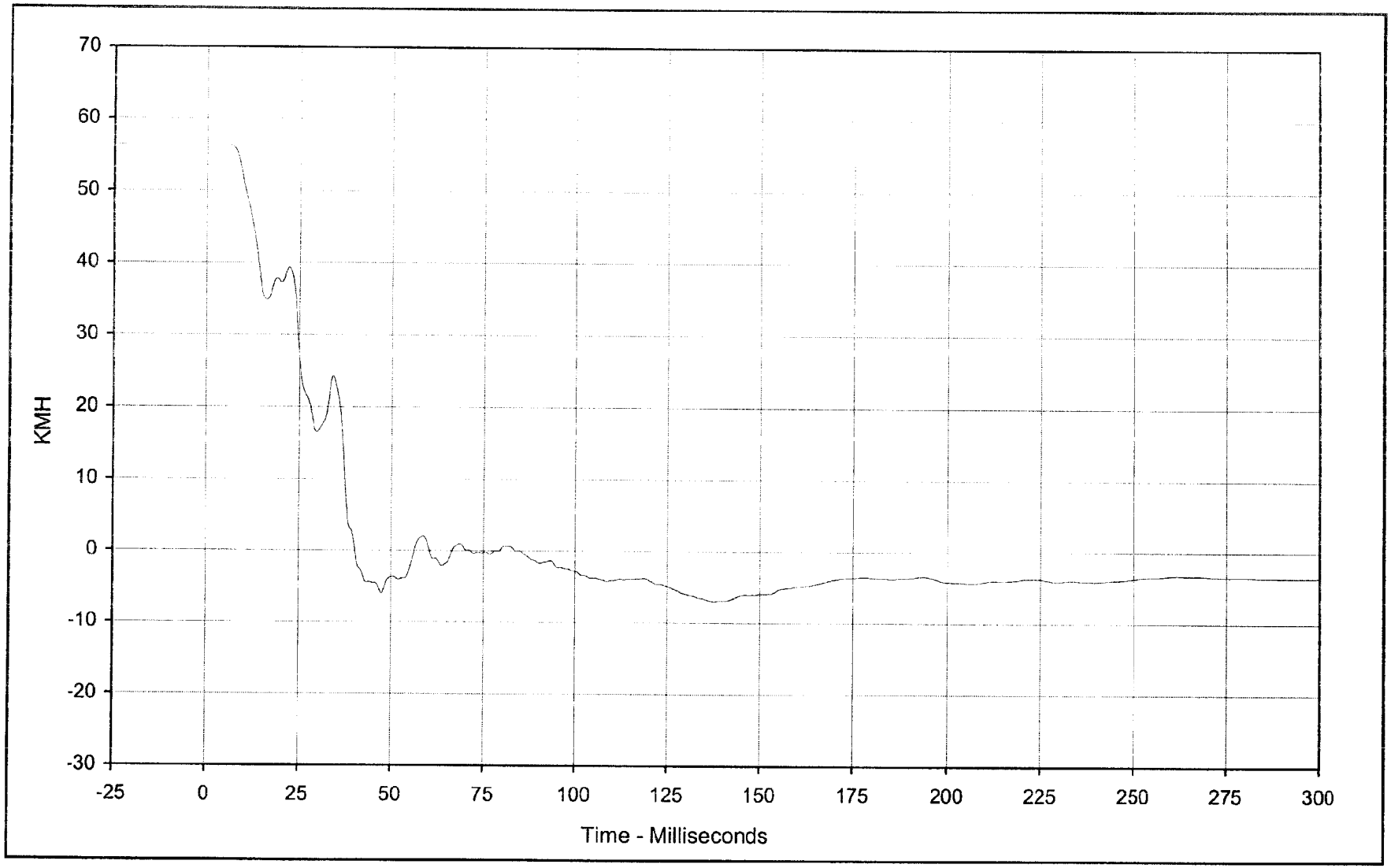
KARC Engineering



Curve Description:	Vehicle Left Brake Caliper			
Maximum Value:	48.3	at	32.2	Milliseconds
Minimum Value:	-148.6	at	37.2	Milliseconds
SAE Filter Class:	60			
Date of Test:	11/23/99			
Curve Number:	FIL-093			

Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

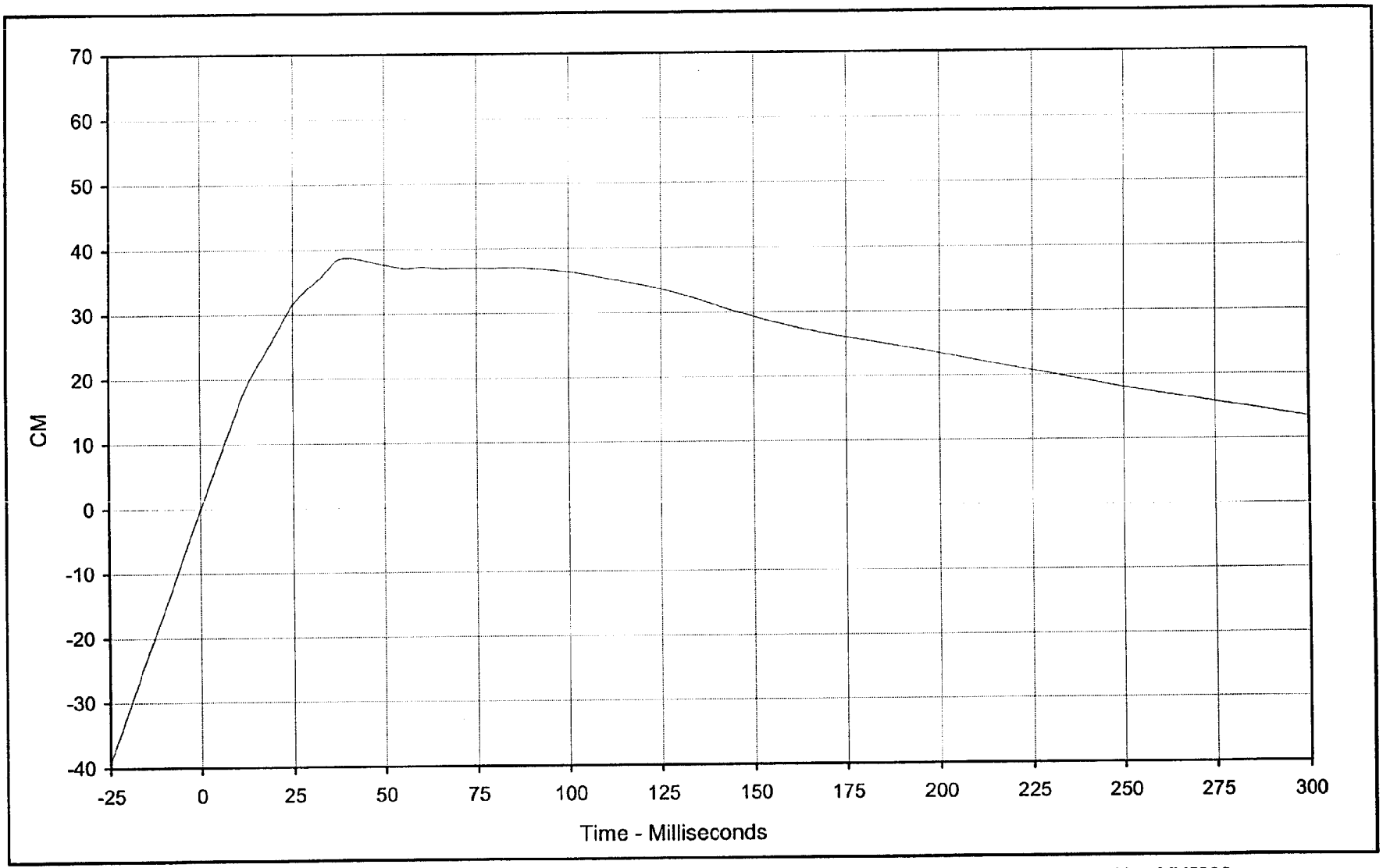
KARCO Engineering



Curve Description:	Vehicle Left Brake Caliper Velocity			
Maximum Value:	56.4	at	0.0	Milliseconds
Minimum Value:	-7.0	at	137.5	Milliseconds
SAE Filter Class:	180			
Date of Test:	11/23/99			
Curve Number:	IN1-093			

Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Vehicle Left Brake Caliper Displ.

Maximum Value: 38.7 at 40.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

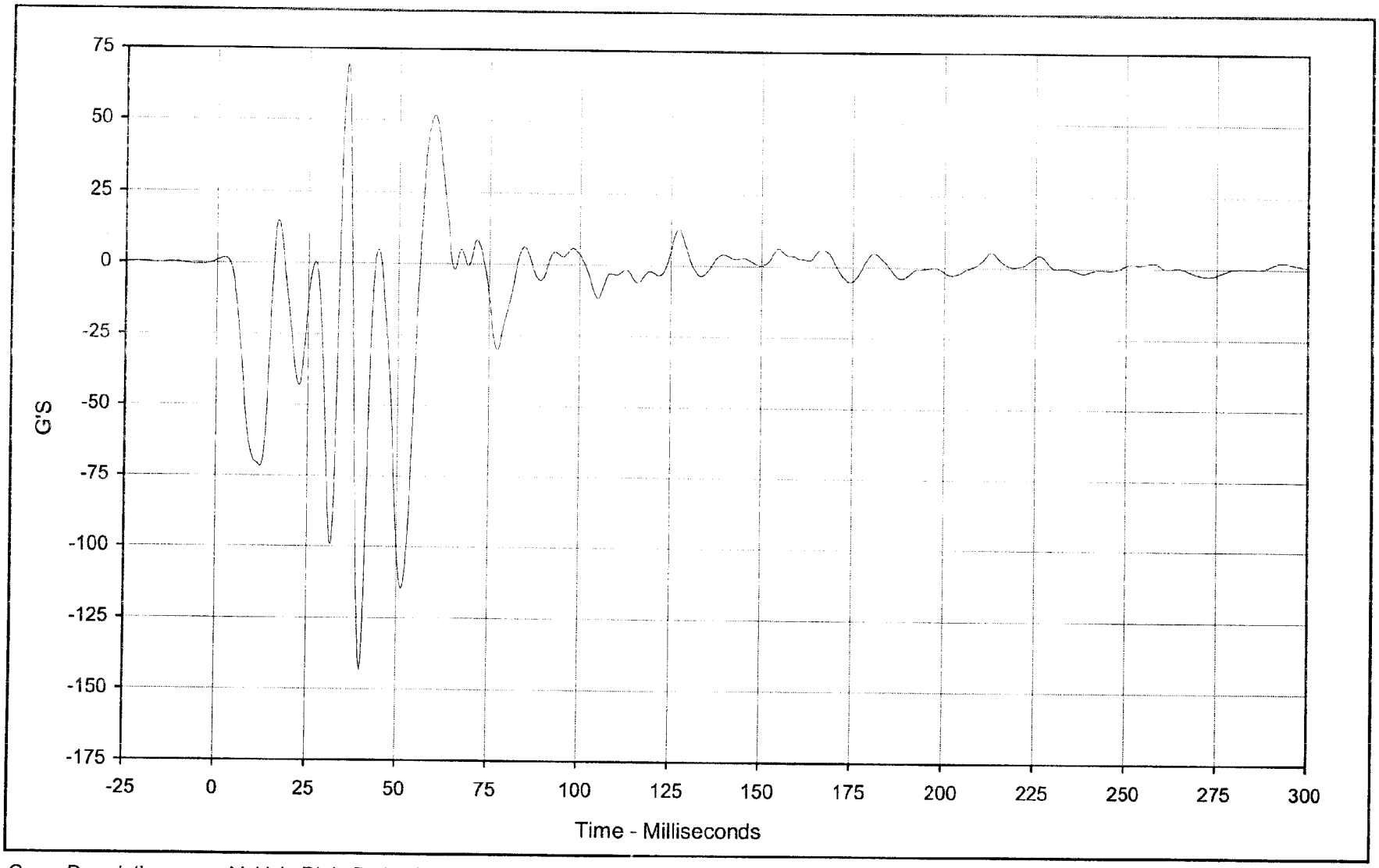
Date of Test: 11/23/99

Curve Number: IN2-093

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

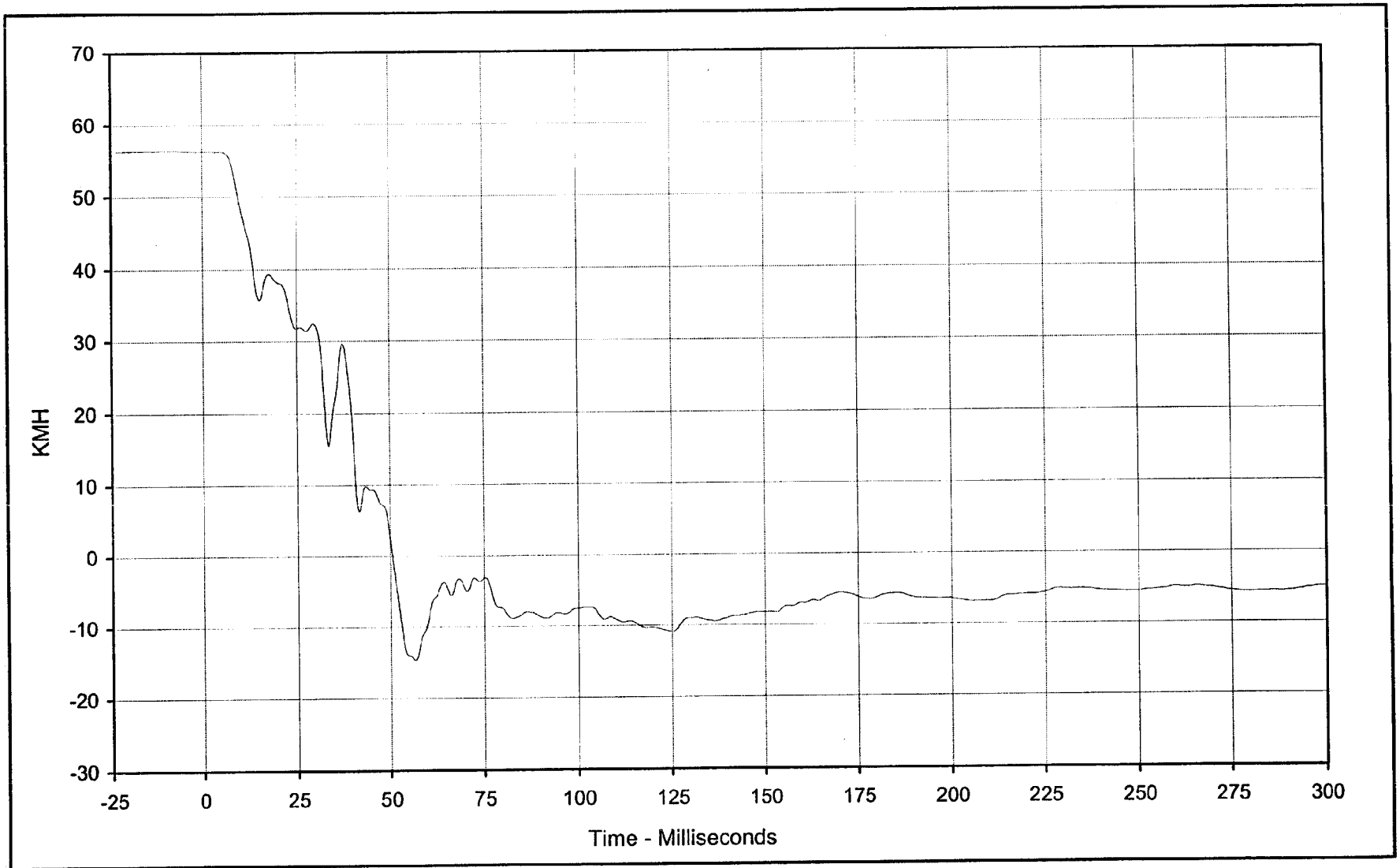
KARCO Engineering



Curve Description:	Vehicle Right Brake Caliper			
Maximum Value:	69.3	at	35.4	Milliseconds
Minimum Value:	-143.4	at	39.9	Milliseconds
SAE Filter Class:	60			
Date of Test:	11/23/99			
Curve Number:	FIL-094			

Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

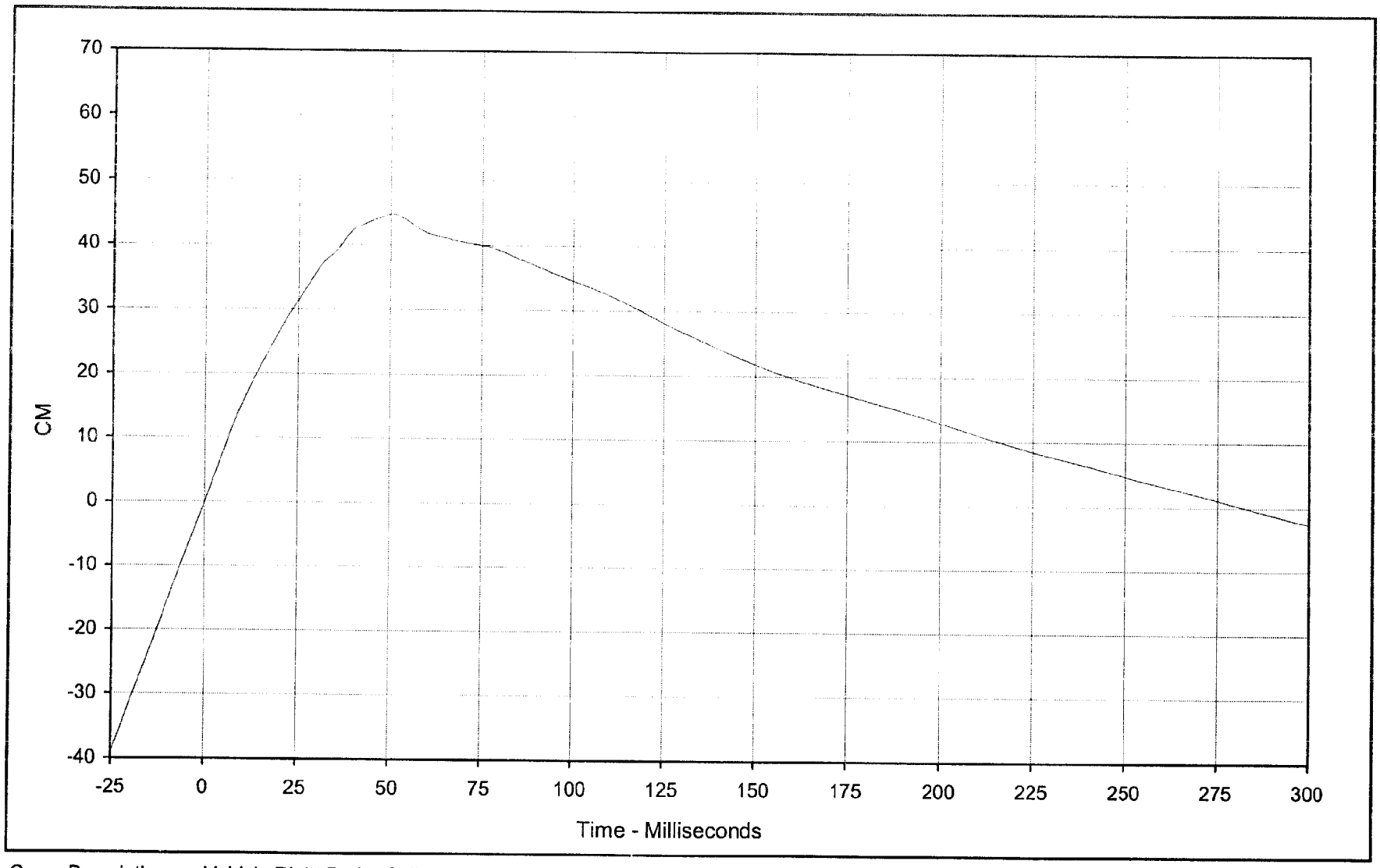
KARCO Engineering



Curve Description:	Vehicle Right Brake Caliper Velocity			
Maximum Value:	56.3	at	1.7	Milliseconds
Minimum Value:	-14.7	at	56.5	Milliseconds
SAE Filter Class:	180			
Date of Test:	11/23/99			
Curve Number:	IN1-094			

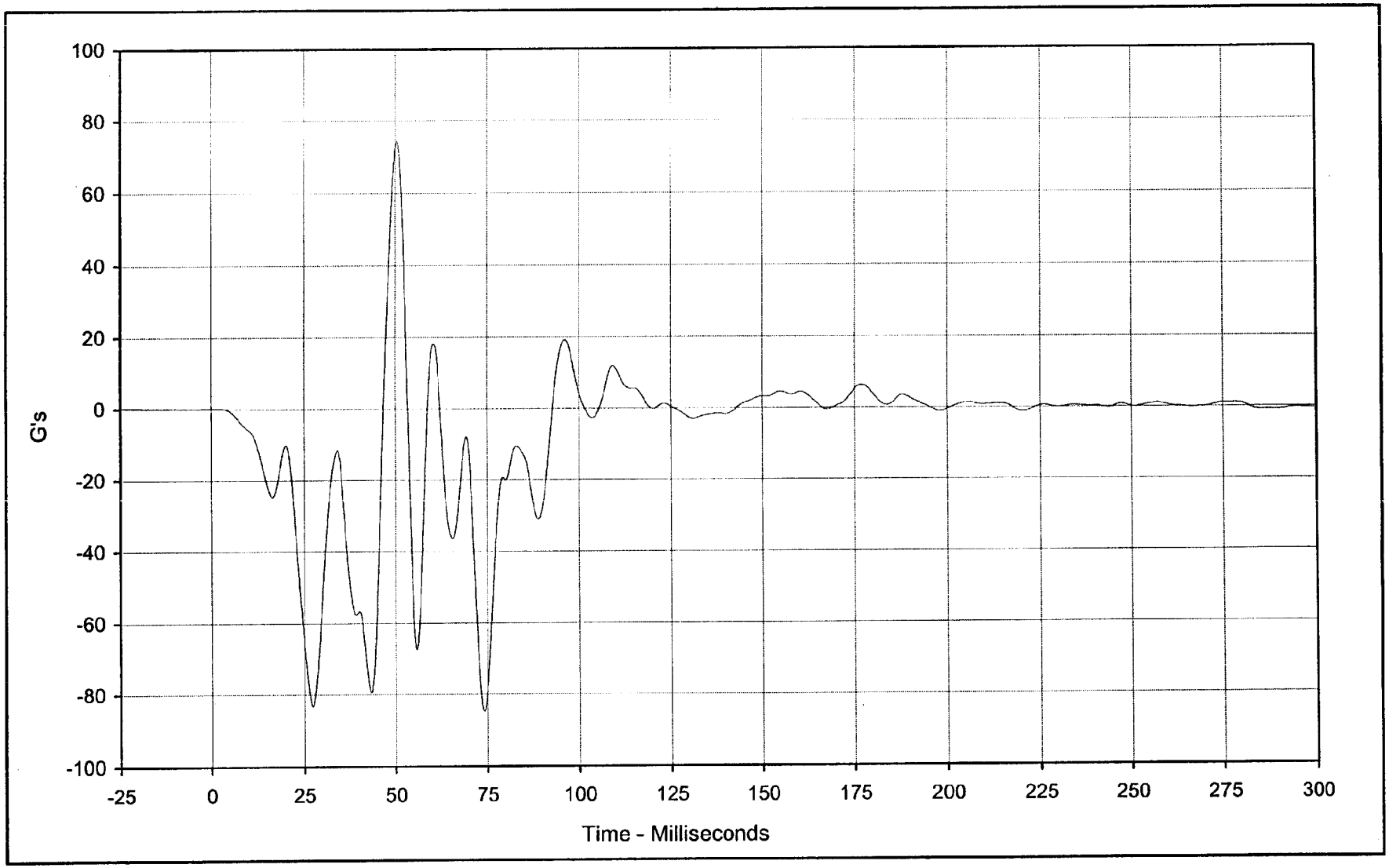
Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

KARCO Engineering



Curve Description:	Vehicle Right Brake Caliper Displ.			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	44.8	at	50.5 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-2.6	at	299.9 Milliseconds		
SAE Filter Class:	180				
Date of Test:	11/23/99				
Curve Number:	IN2-094				

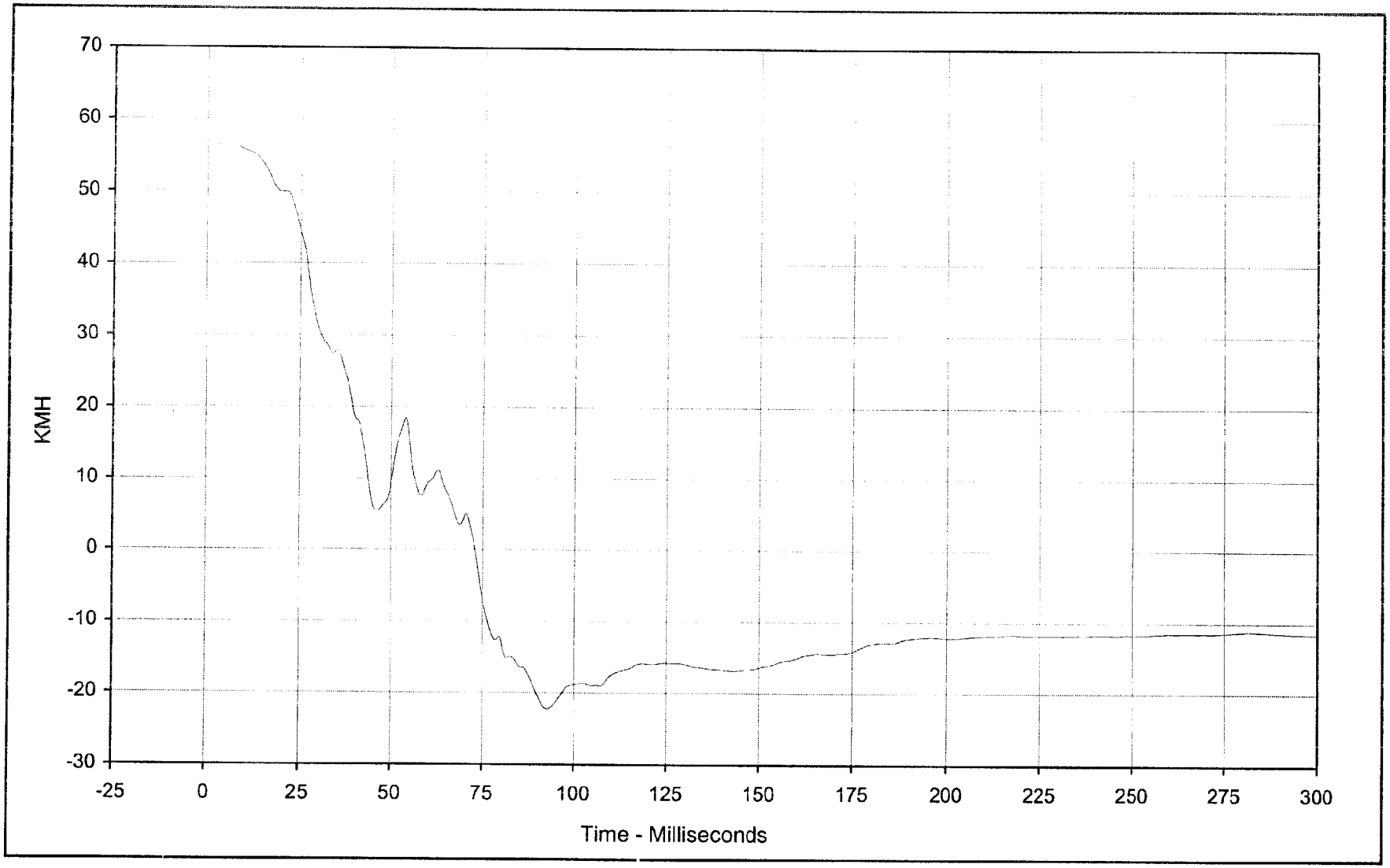
KARC Engineering



Curve Description:	Vehicle Instrument Panel				
Maximum Value:	74.4	at	50.4	Milliseconds	
Minimum Value:	-84.8	at	74.0	Milliseconds	
SAE Filter Class:	60				
Date of Test:	11/23/99				
Curve Number:	FIL-095				

Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

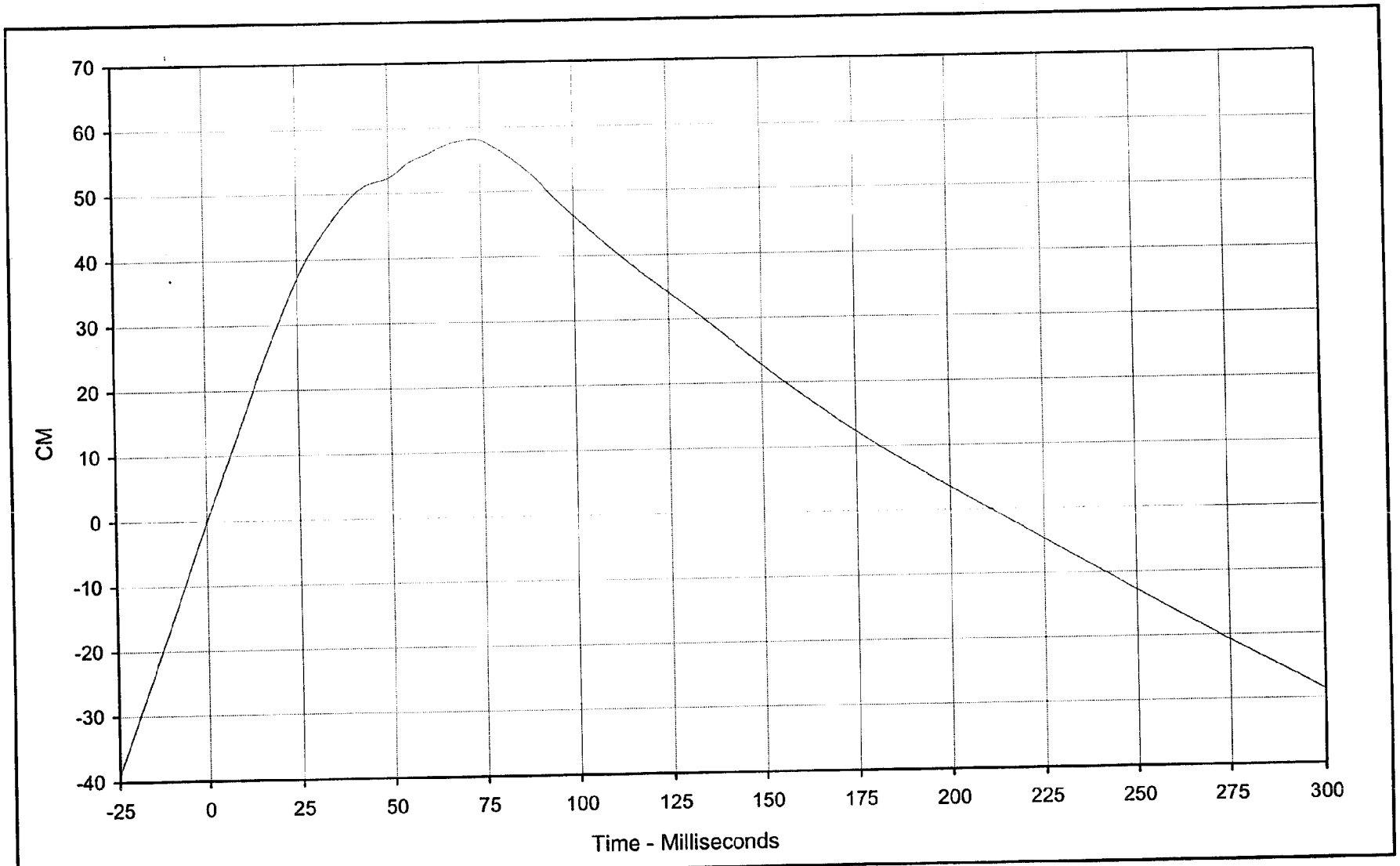
KARCO Engineering



Curve Description:	Vehicle Instrument Panel Velocity			
Maximum Value:	56.4	at	1.3	Milliseconds
Minimum Value:	-22.3	at	92.6	Milliseconds
SAE Filter Class:	180			
Date of Test:	11/23/99			
Curve Number:	IN1-095			

Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Vehicle Instrument Panel Displ.

Maximum Value: 58.2 at 72.9 Milliseconds

Minimum Value: -28.6 at 299.9 Milliseconds

SAE Filter Class: 180

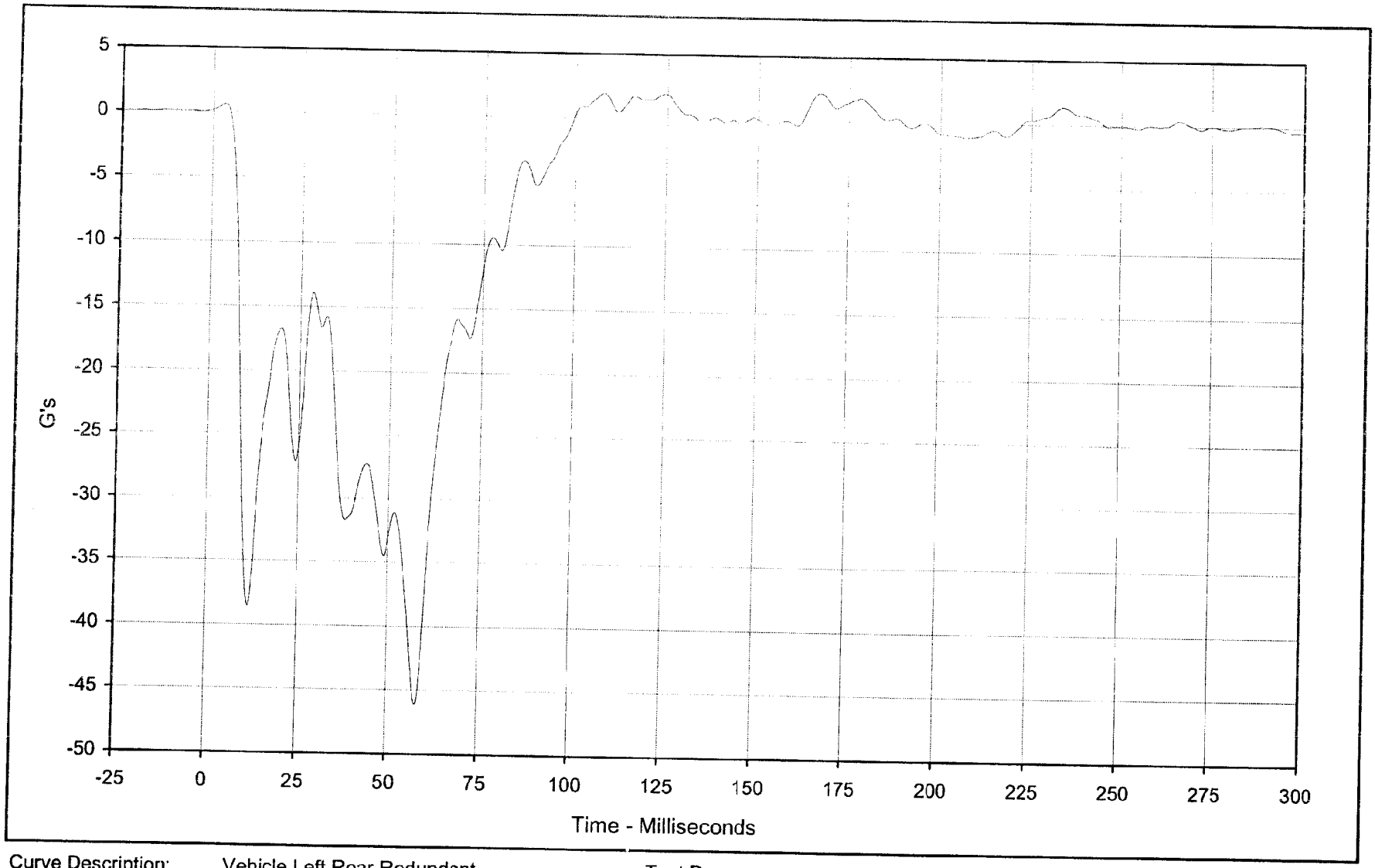
Date of Test: 11/23/99

Curve Number: IN2-095

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Vehicle Left Rear Redundant

Maximum Value: 2.2 at 166.8 Milliseconds

Minimum Value: -46.1 at 58.0 Milliseconds

SAE Filter Class: 60

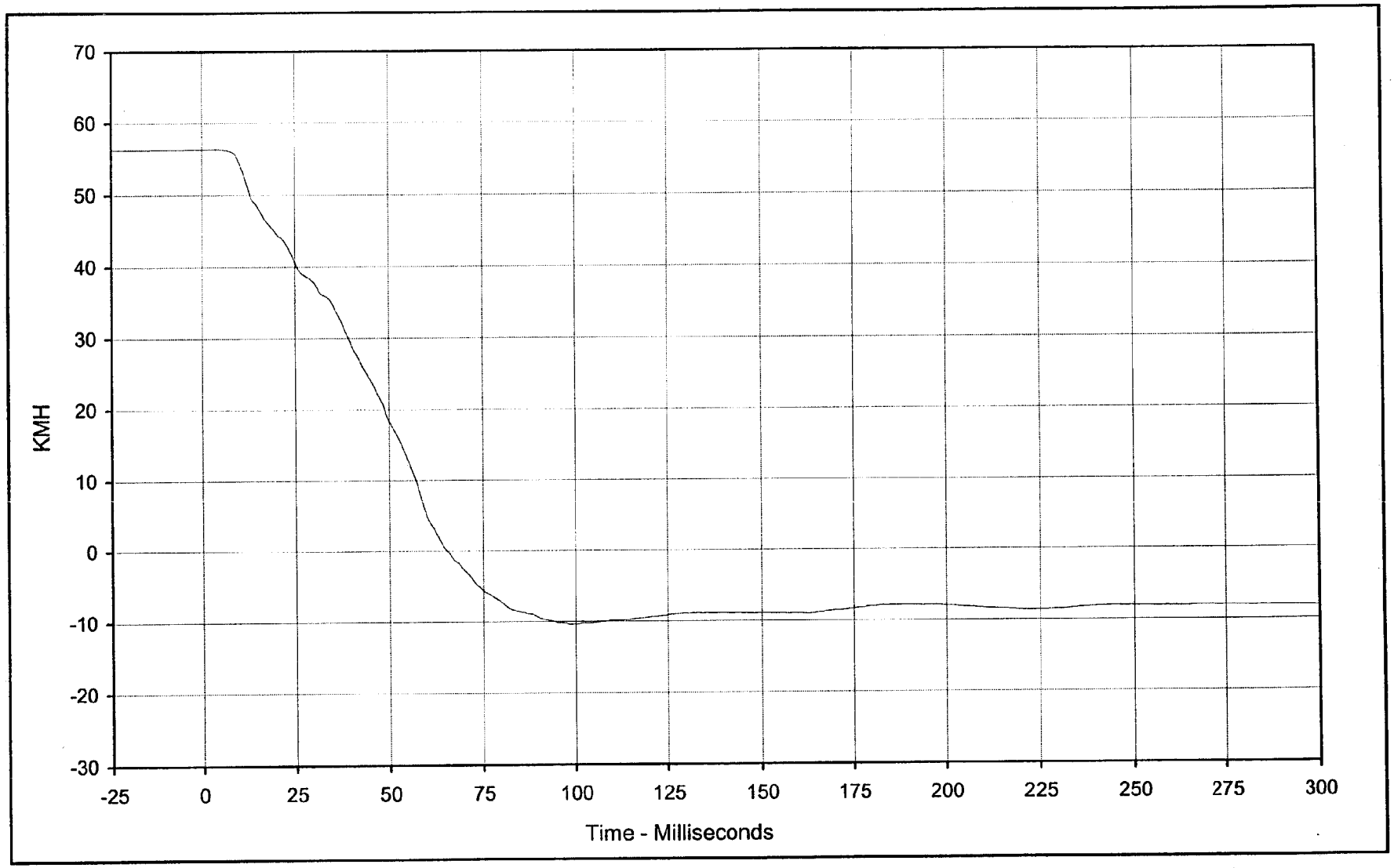
Date of Test: 11/23/99

Curve Number: FIL-096

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Vehicle Left Rear Redundant Velocity

Maximum Value: 56.3 at 1.0 Milliseconds

Minimum Value: -10.4 at 98.7 Milliseconds

SAE Filter Class: 180

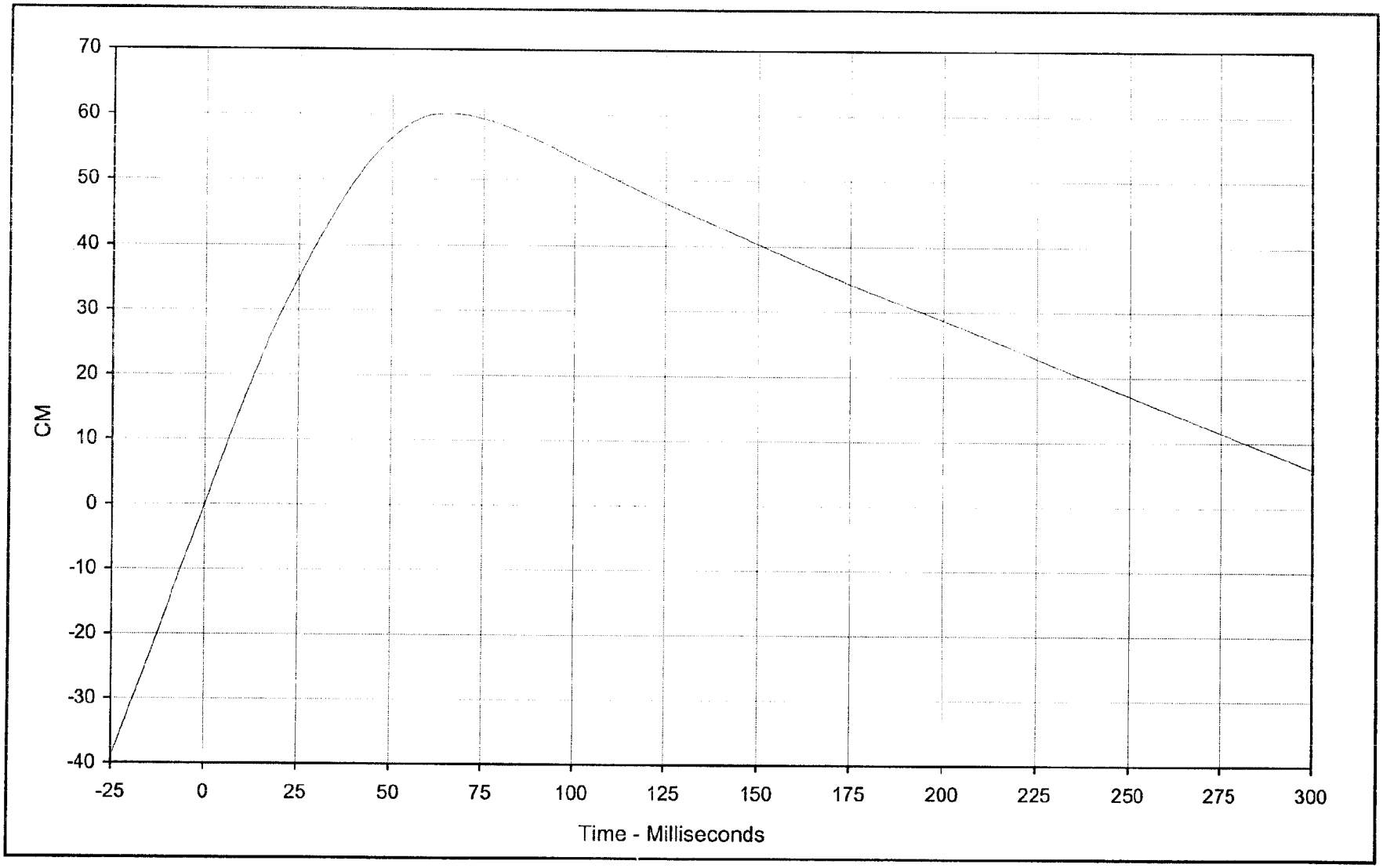
Date of Test: 11/23/99

Curve Number: IN1-096

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

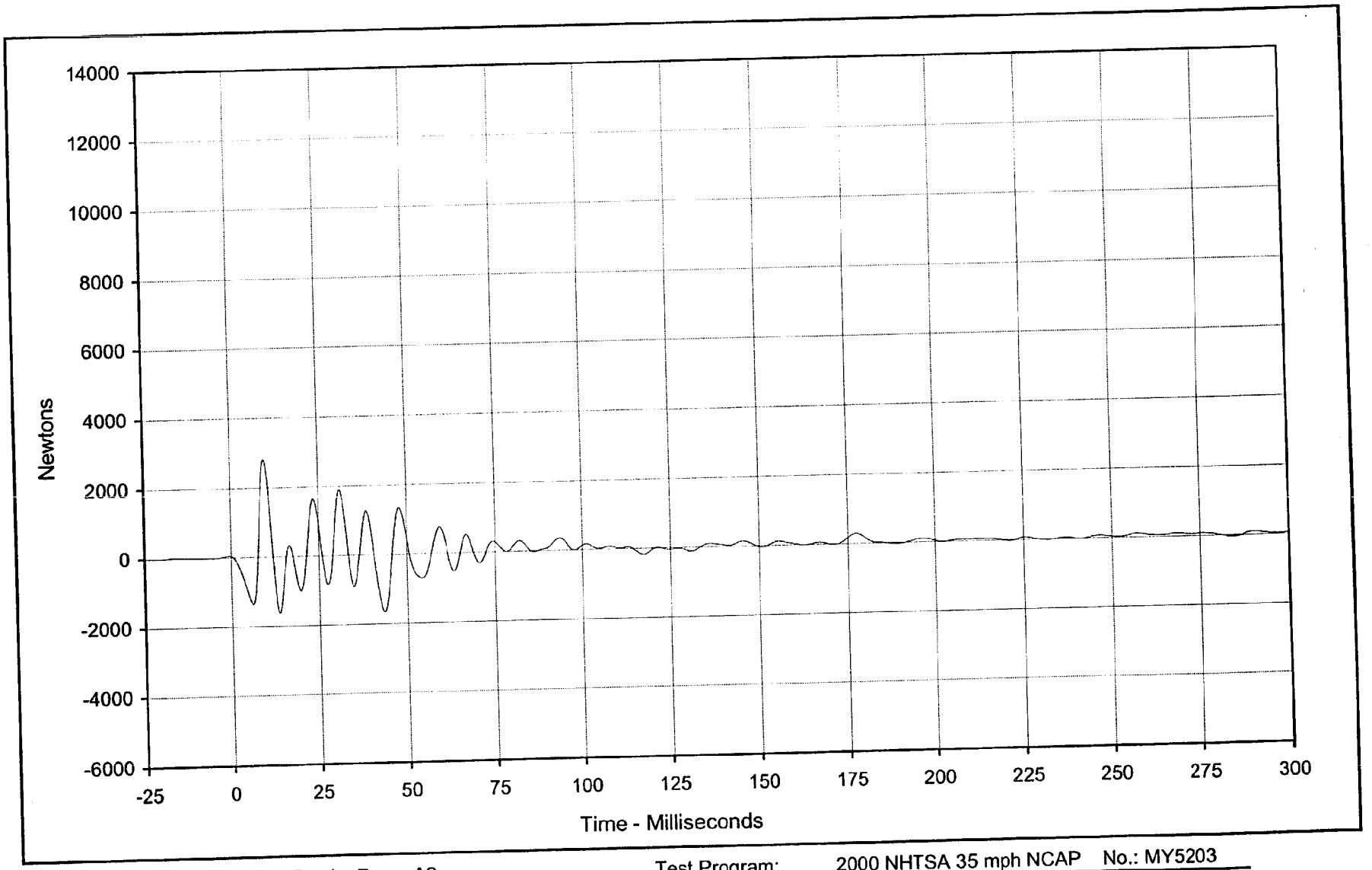
Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description:	Vehicle Left Rear Redundant Displ.			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	60.1	at	65.4 Milliseconds	Test Vehicle:	2000 Nissan Xterra S JV
Minimum Value:	0.0	at	0.0 Milliseconds		
SAE Filter Class:	180				
Date of Test:	11/23/99				
Curve Number:	IN2-096				

KARCO Engineering



Curve Description: Barrier Force A2

Maximum Value: 2794.2 at 9.9 Milliseconds

Minimum Value: -1658.4 at 43.6 Milliseconds

SAE Filter Class: 60

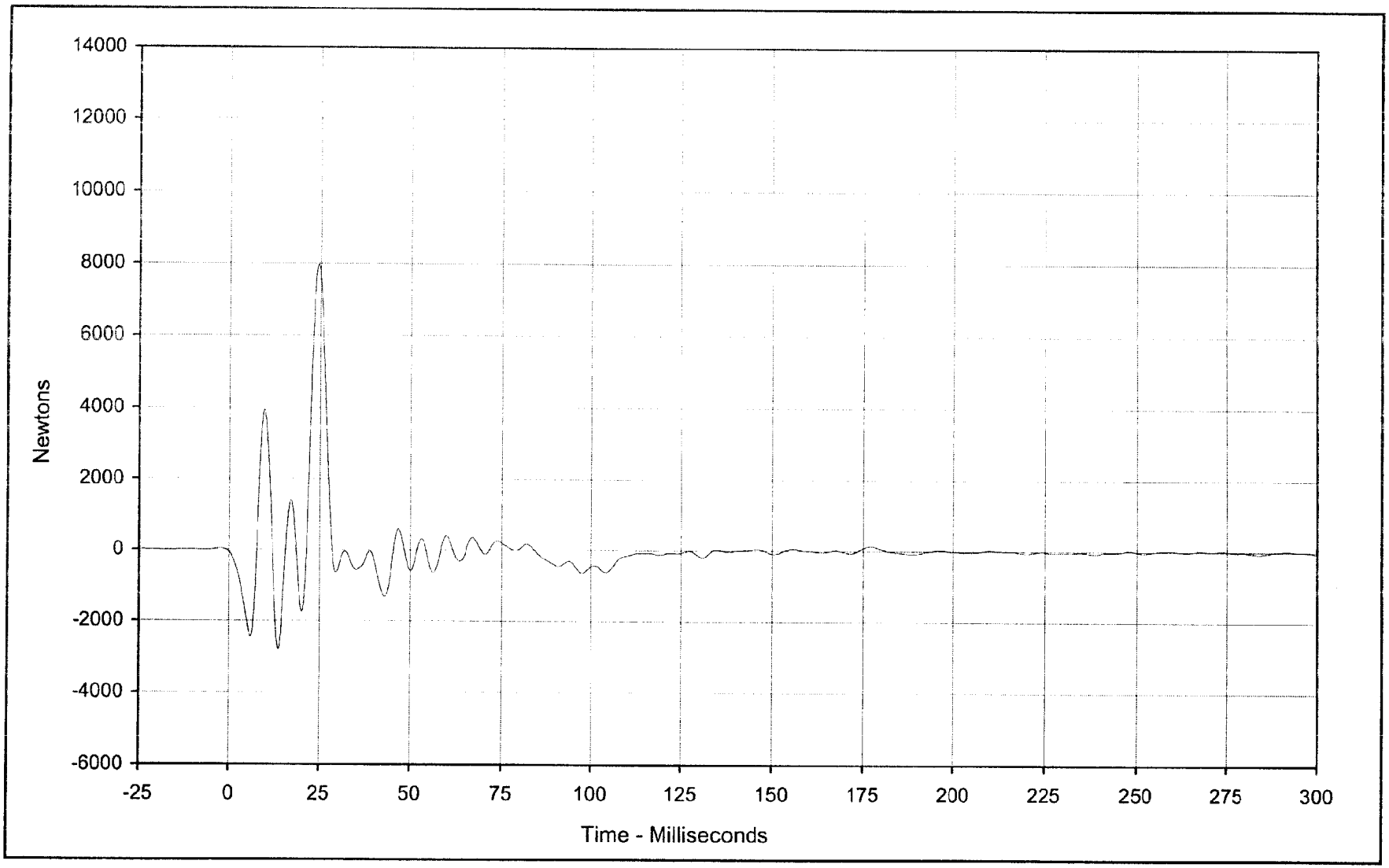
Date of Test: 11/23/99

Curve Number: FIL-099

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

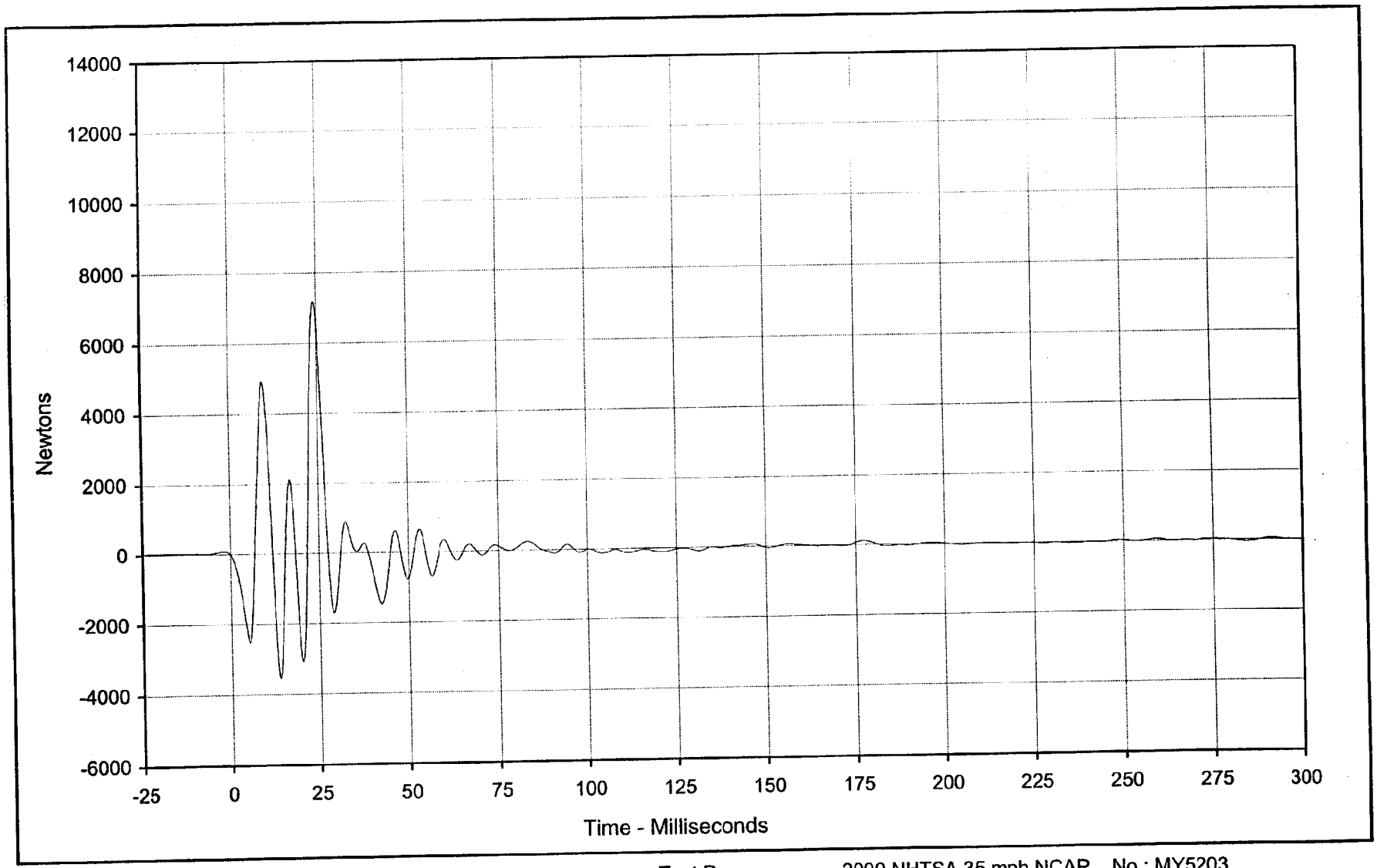
Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description:	Barrier Force A3			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	7969.5	at	24.5 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-2793.2	at	13.7 Milliseconds		
SAE Filter Class:	60				
Date of Test:	11/23/99				
Curve Number:	FIL-100				

KARC Engineering



Curve Description: Barrier Force A4

Maximum Value: 7174.3 at 24.3 Milliseconds

Minimum Value: -3551.2 at 13.7 Milliseconds

SAE Filter Class: 60

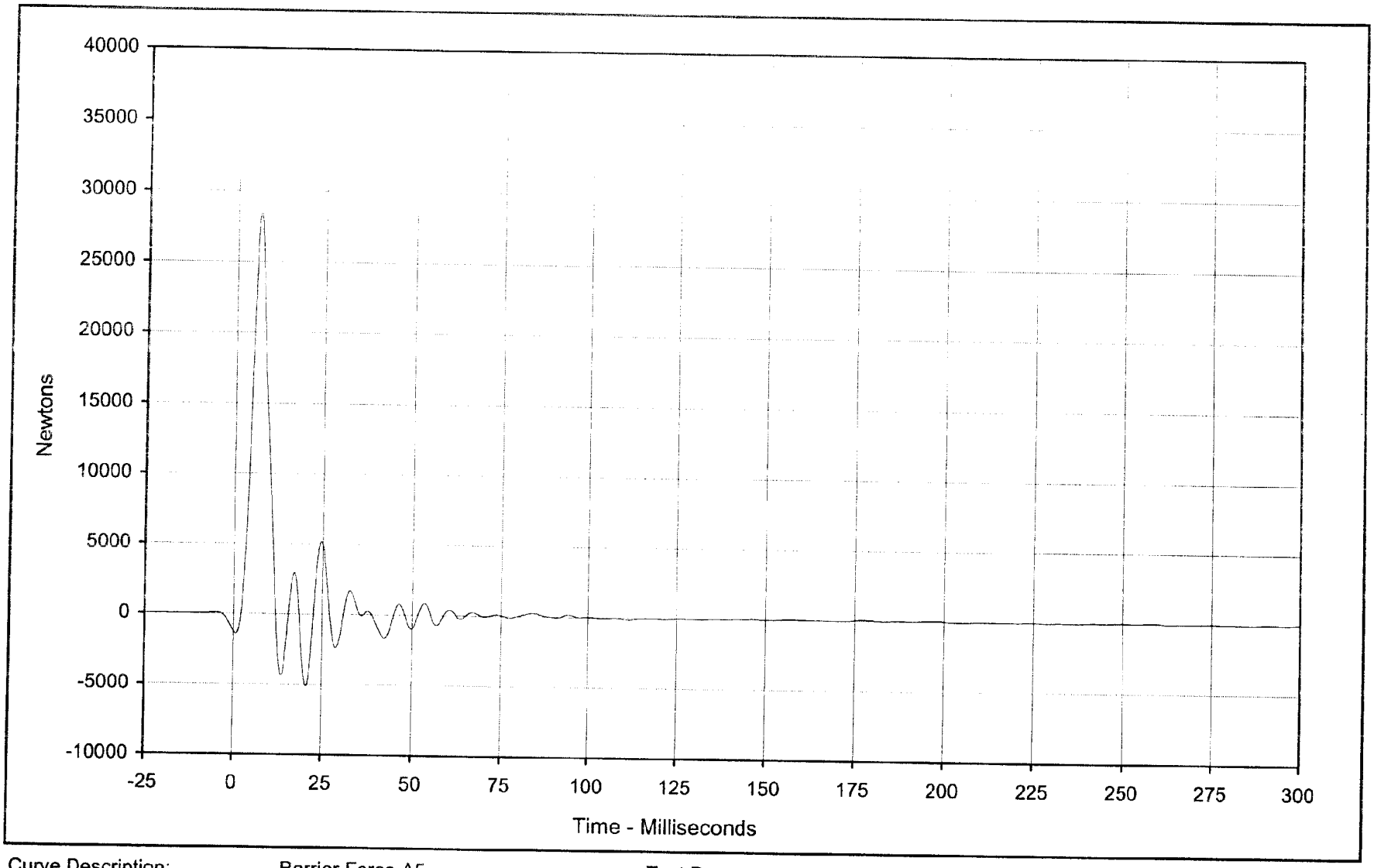
Date of Test: 11/23/99

Curve Number: FIL-101

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Barrier Force A5

Maximum Value: 28494.8 at 6.4 Milliseconds

Minimum Value: -5133.1 at 20.5 Milliseconds

SAE Filter Class: 60

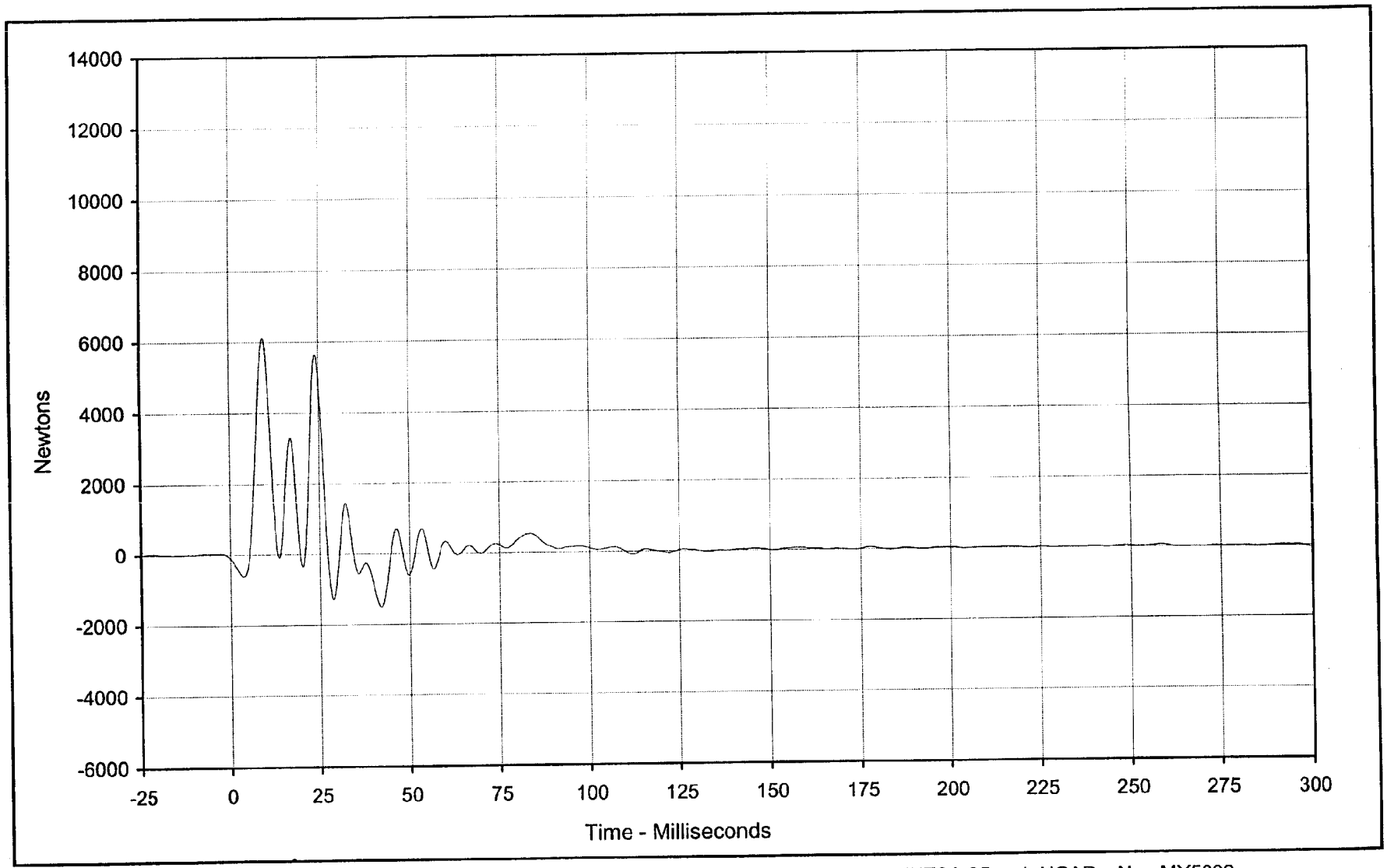
Date of Test: 11/23/99

Curve Number: FIL-102

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Barrier Force A6

Maximum Value: 6115.1 at 9.6 Milliseconds

Minimum Value: -1511.8 at 42.0 Milliseconds

SAE Filter Class: 60

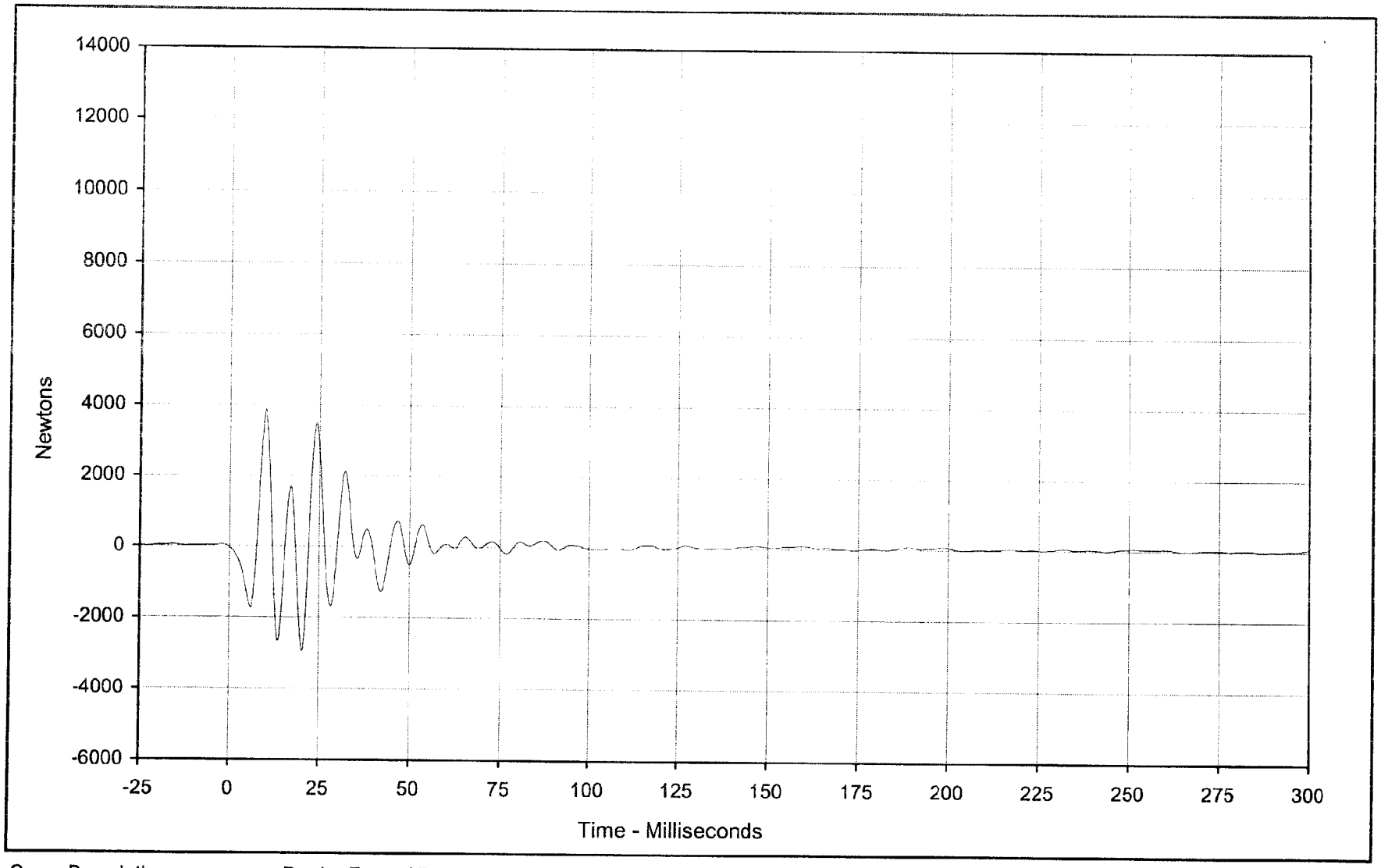
Date of Test: 11/23/99

Curve Number: FIL-103

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

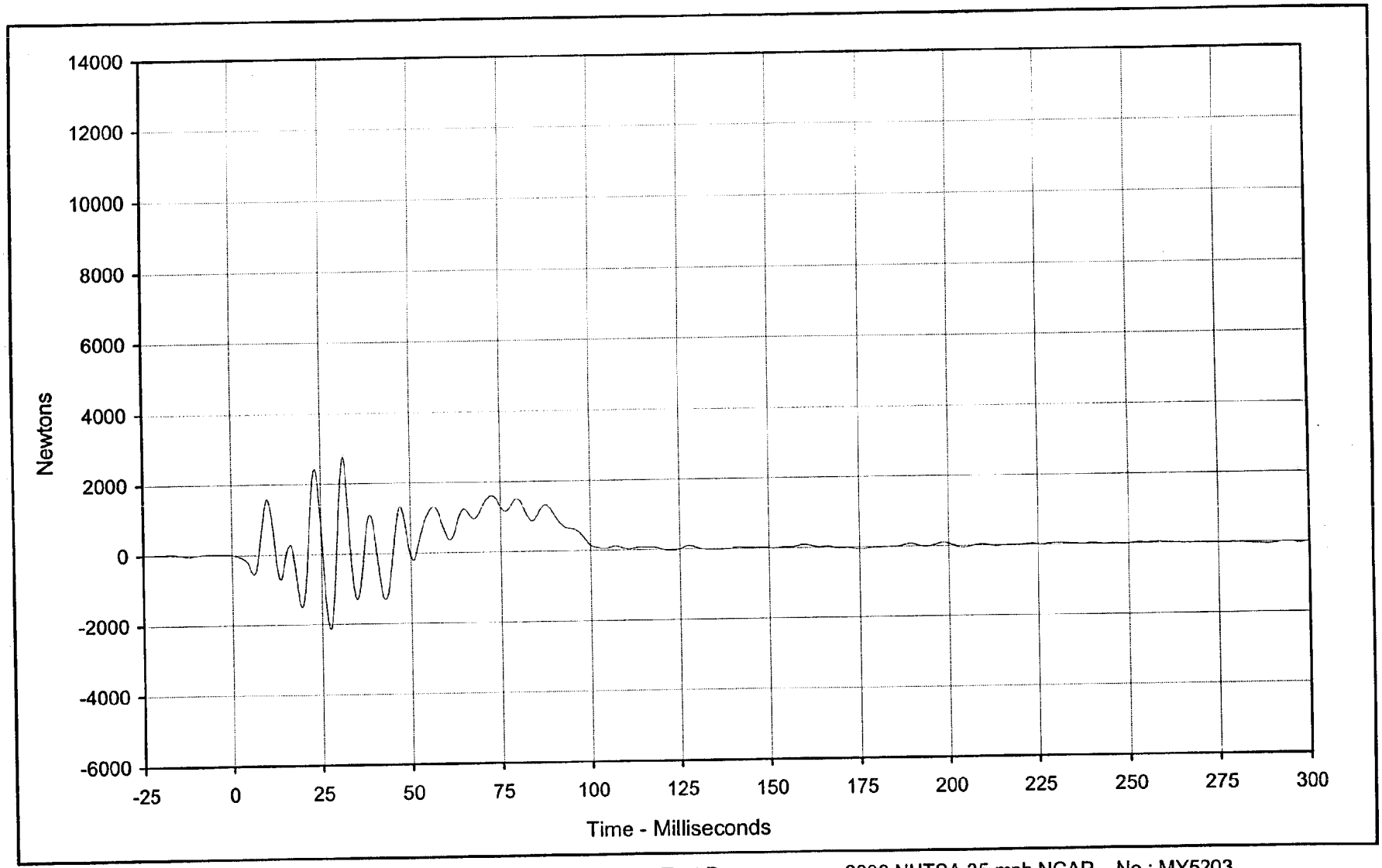
Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description:	Barrier Force A7			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	3861.6	at	9.9 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-2954.7	at	20.3 Milliseconds		
SAE Filter Class:	60				
Date of Test:	11/23/99				
Curve Number:	FIL-104				

KARC Engineering

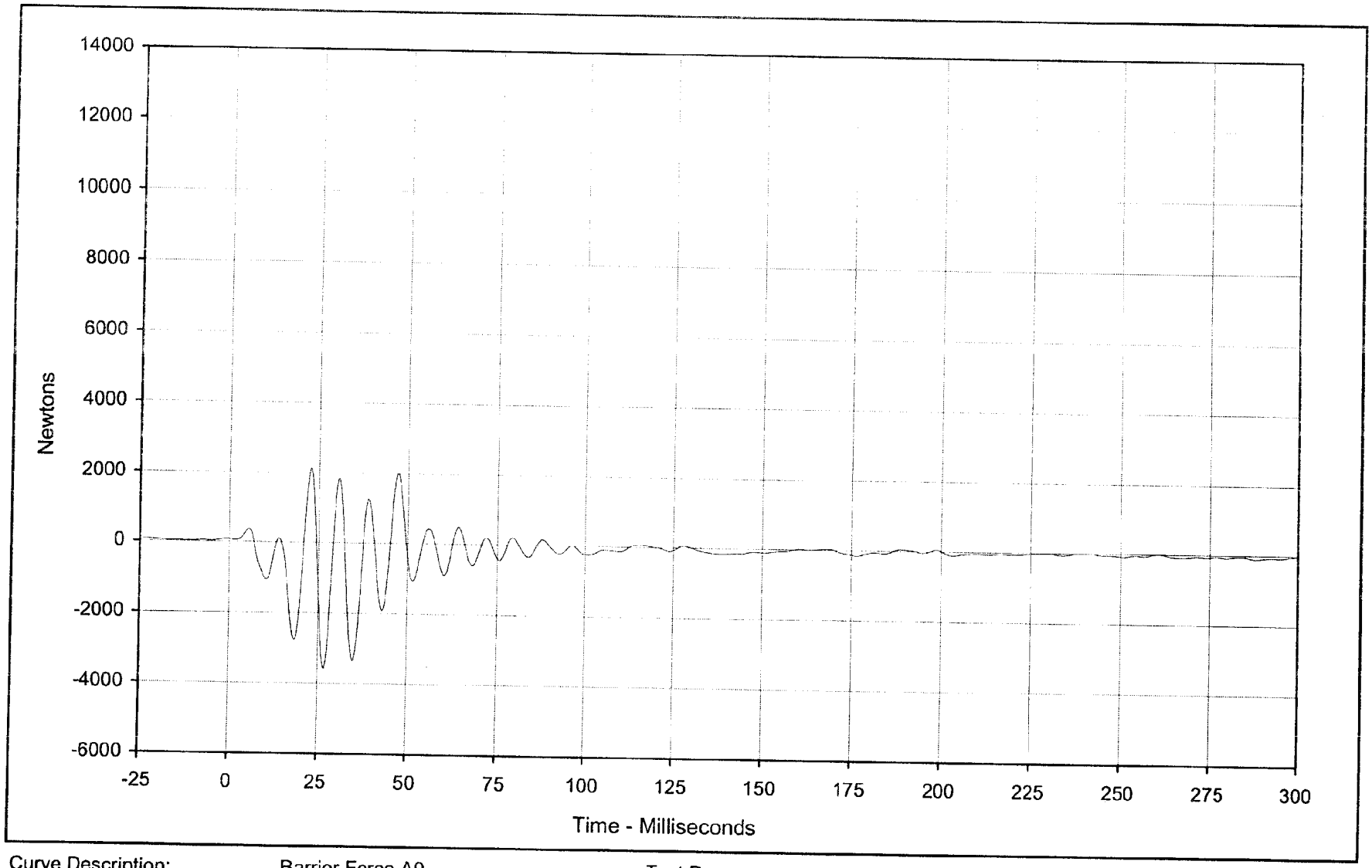


Curve Description:	Barrier Force A8			
Maximum Value:	2745.8	at	31.3	Milliseconds
Minimum Value:	-2130.6	at	27.3	Milliseconds
SAE Filter Class:	60			
Date of Test:	11/23/99			
Curve Number:	FIL-105			

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Barrier Force A9

Maximum Value: 2130.2 at 22.7 Milliseconds

Minimum Value: -3572.7 at 26.8 Milliseconds

SAE Filter Class: 60

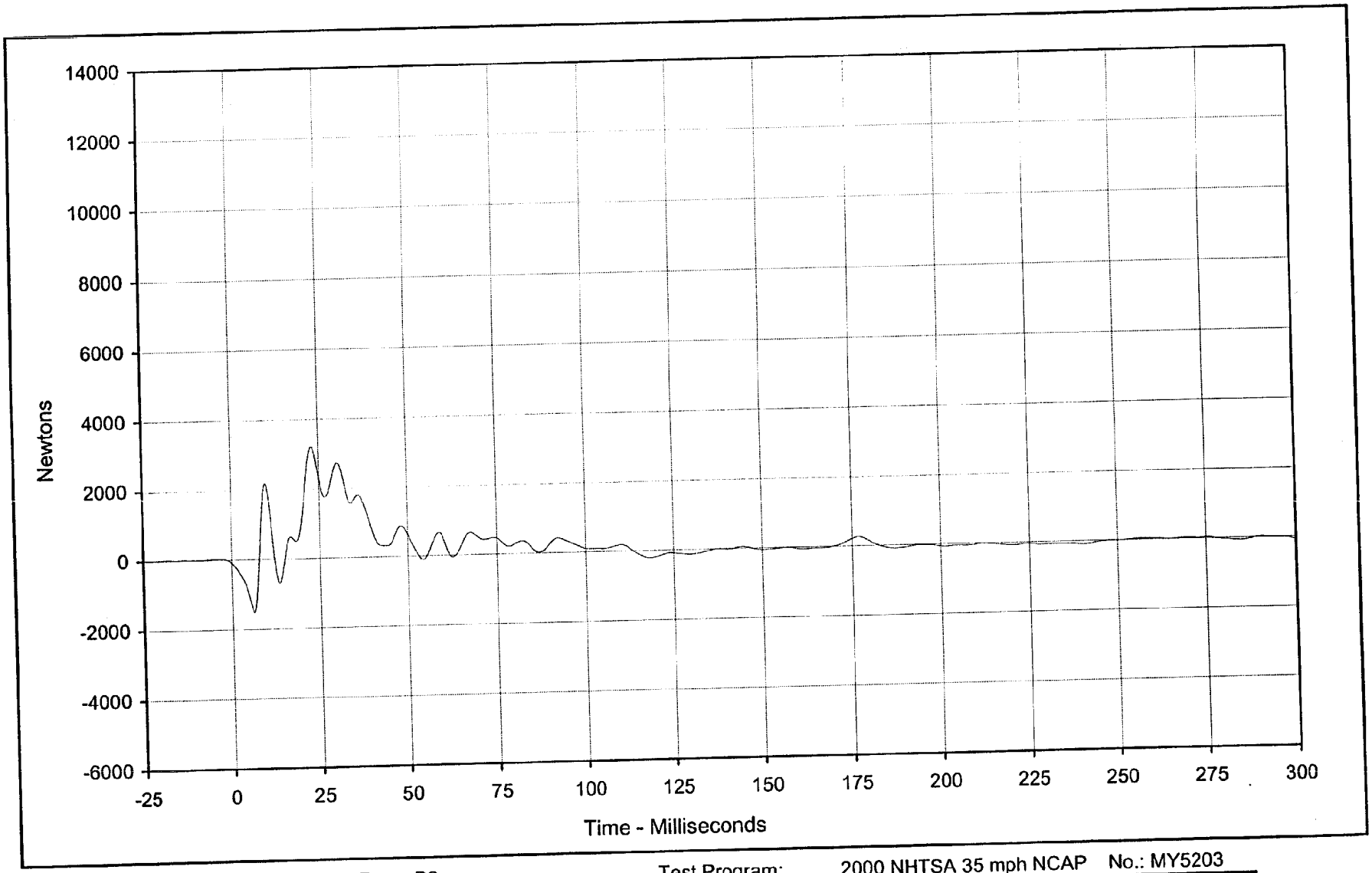
Date of Test: 11/23/99

Curve Number: FIL-106

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Barrier Force B2

Maximum Value: 3200.4 at 23.0 Milliseconds

Minimum Value: -1516.4 at 6.2 Milliseconds

SAE Filter Class: 60

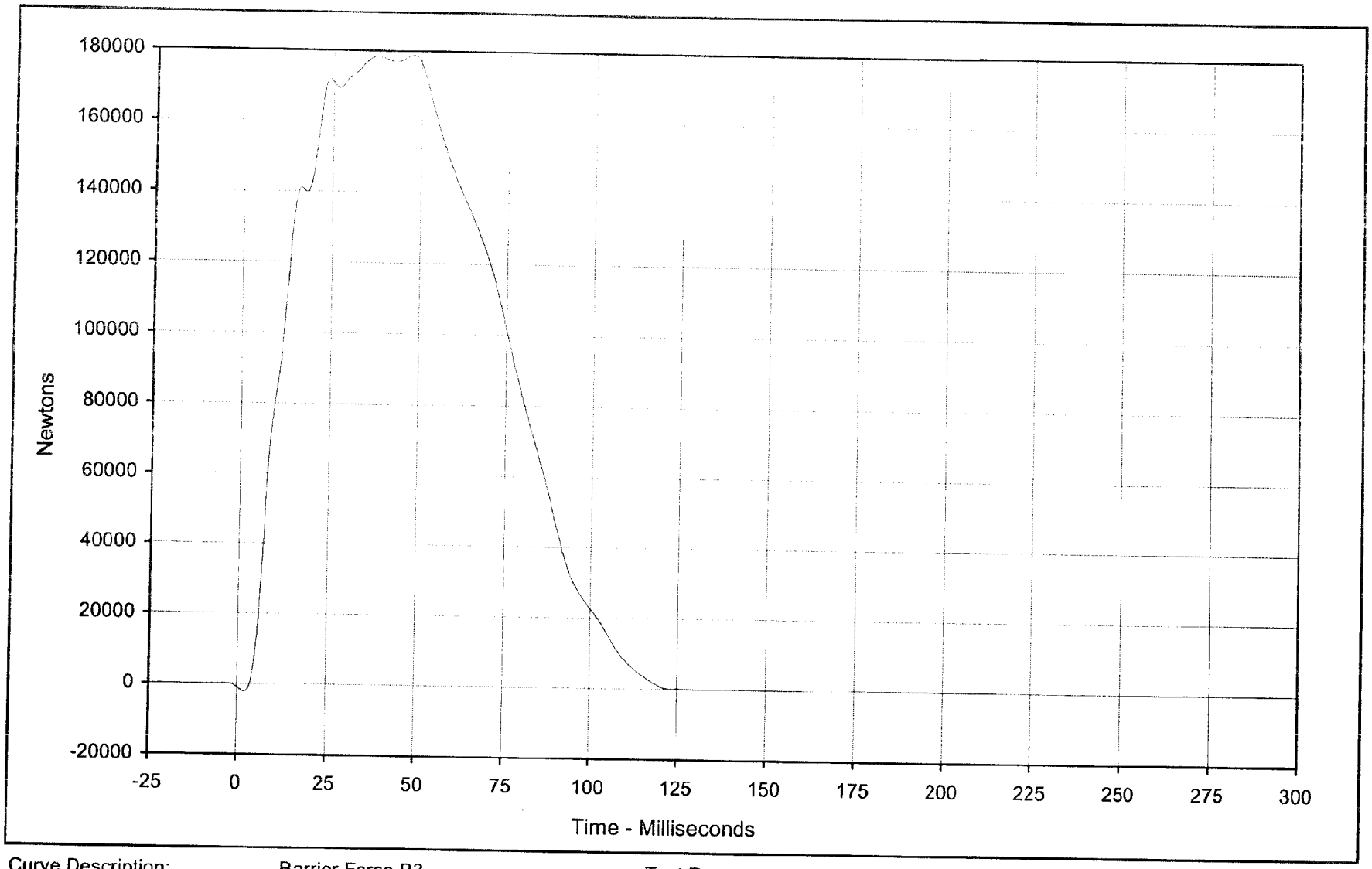
Date of Test: 11/23/99

Curve Number: FIL-108

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Barrier Force B3

Maximum Value: 178885.5 at 47.7 Milliseconds

Minimum Value: -2158.2 at 2.0 Milliseconds

SAE Filter Class: 60

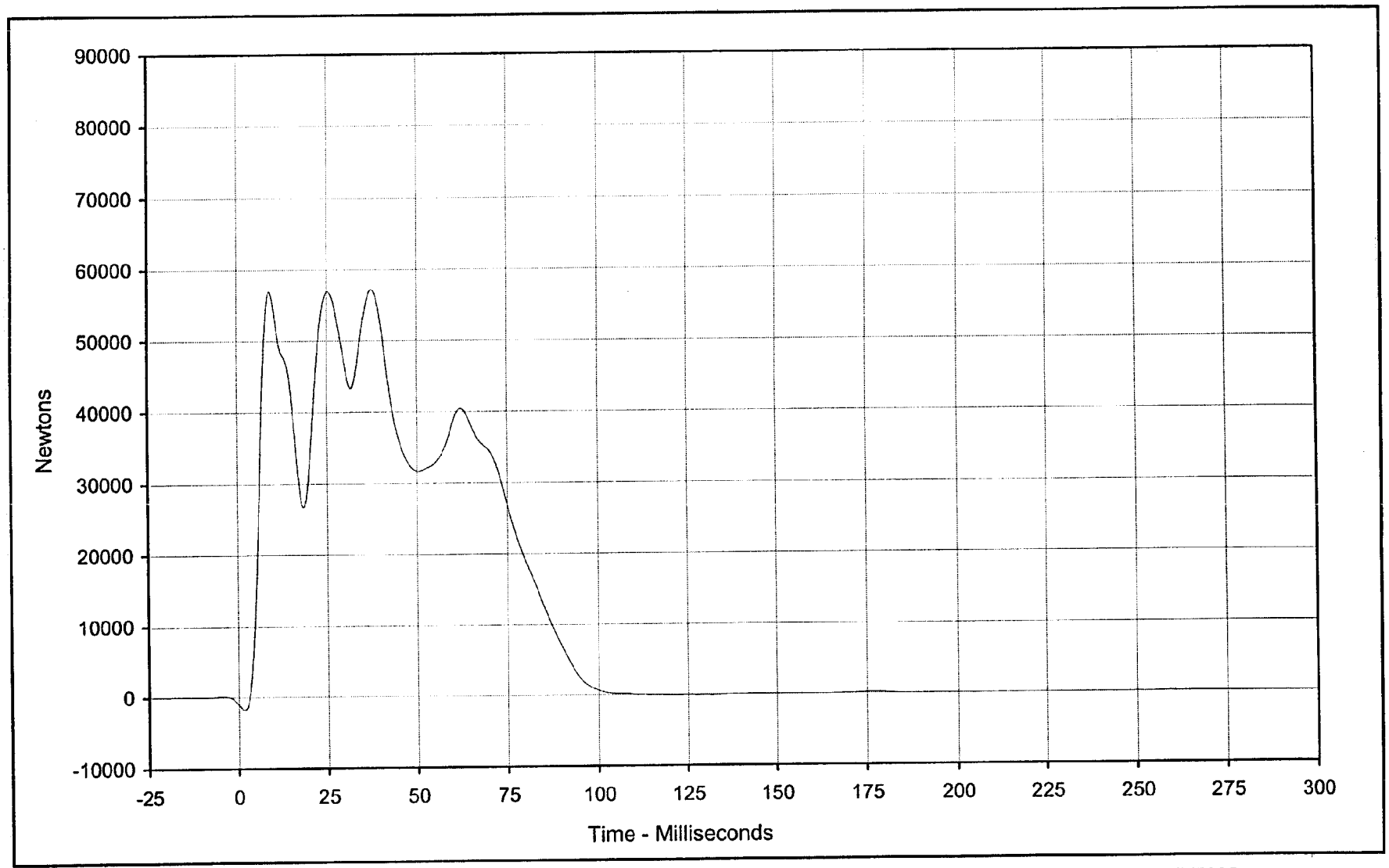
Date of Test: 11/23/99

Curve Number: FIL-109

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering

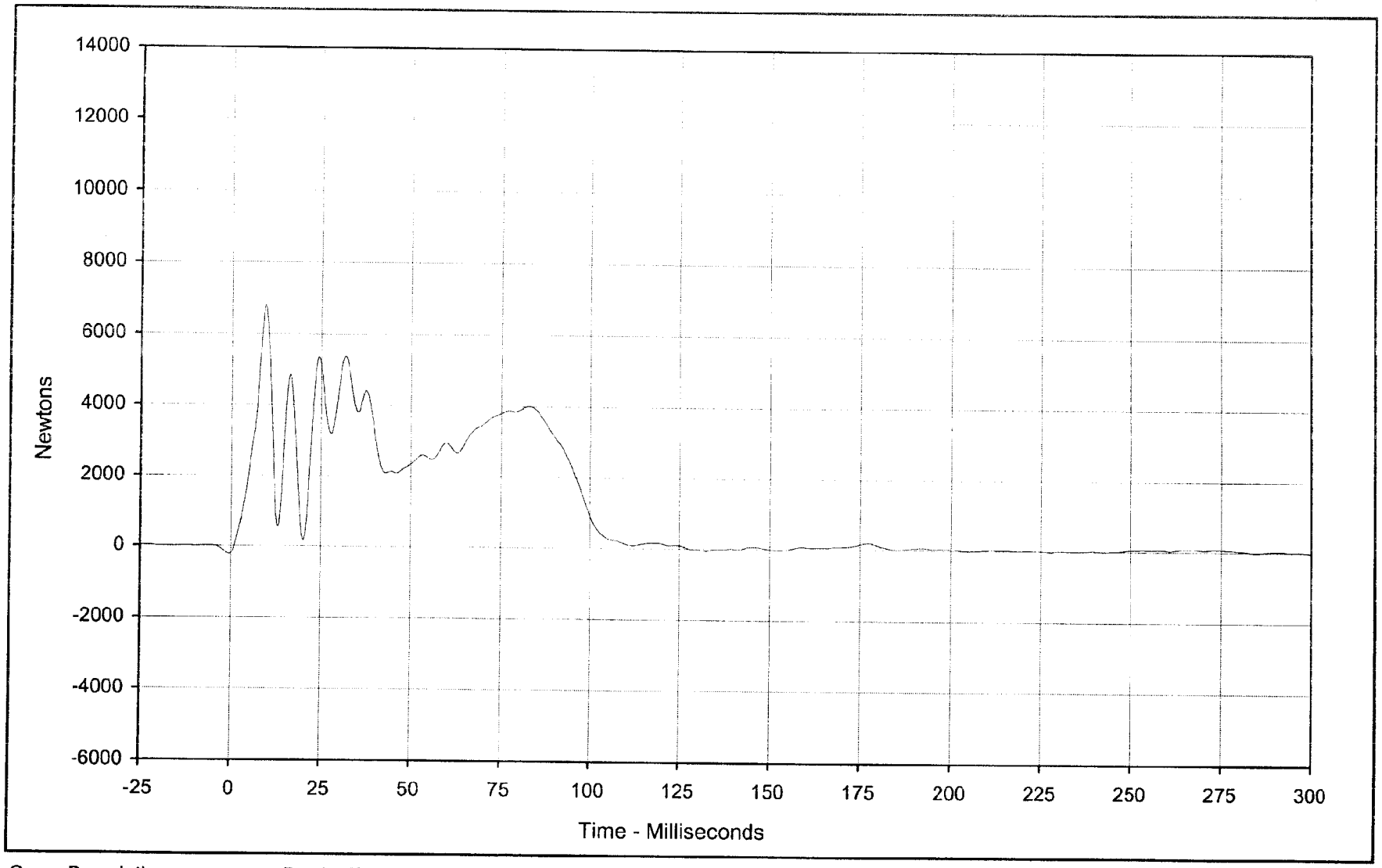


Curve Description:	Barrier Force B4			
Maximum Value:	57178.0	at	37.6	Milliseconds
Minimum Value:	-1772.1	at	1.6	Milliseconds
SAE Filter Class:	60			
Date of Test:	11/23/99			
Curve Number:	FIL-110			

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Barrier Force B5

Maximum Value: 6793.9 at 9.5 Milliseconds

Minimum Value: -203.3 at 0.0 Milliseconds

SAE Filter Class: 60

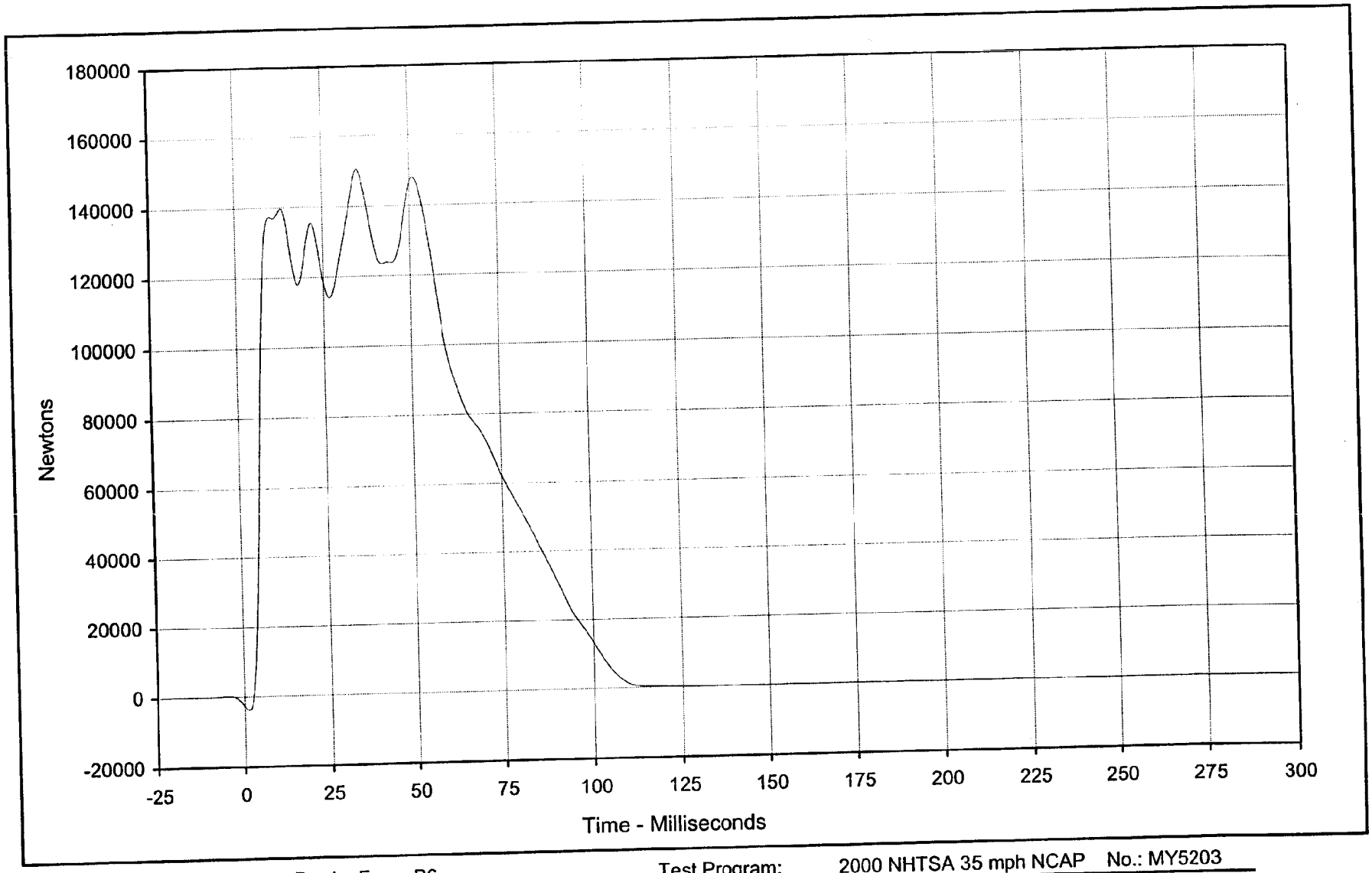
Date of Test: 11/23/99

Curve Number: FIL-111

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Barrier Force B6

Maximum Value: 150418.5 at 35.0 Milliseconds

Minimum Value: -3880.2 at 1.3 Milliseconds

SAE Filter Class: 60

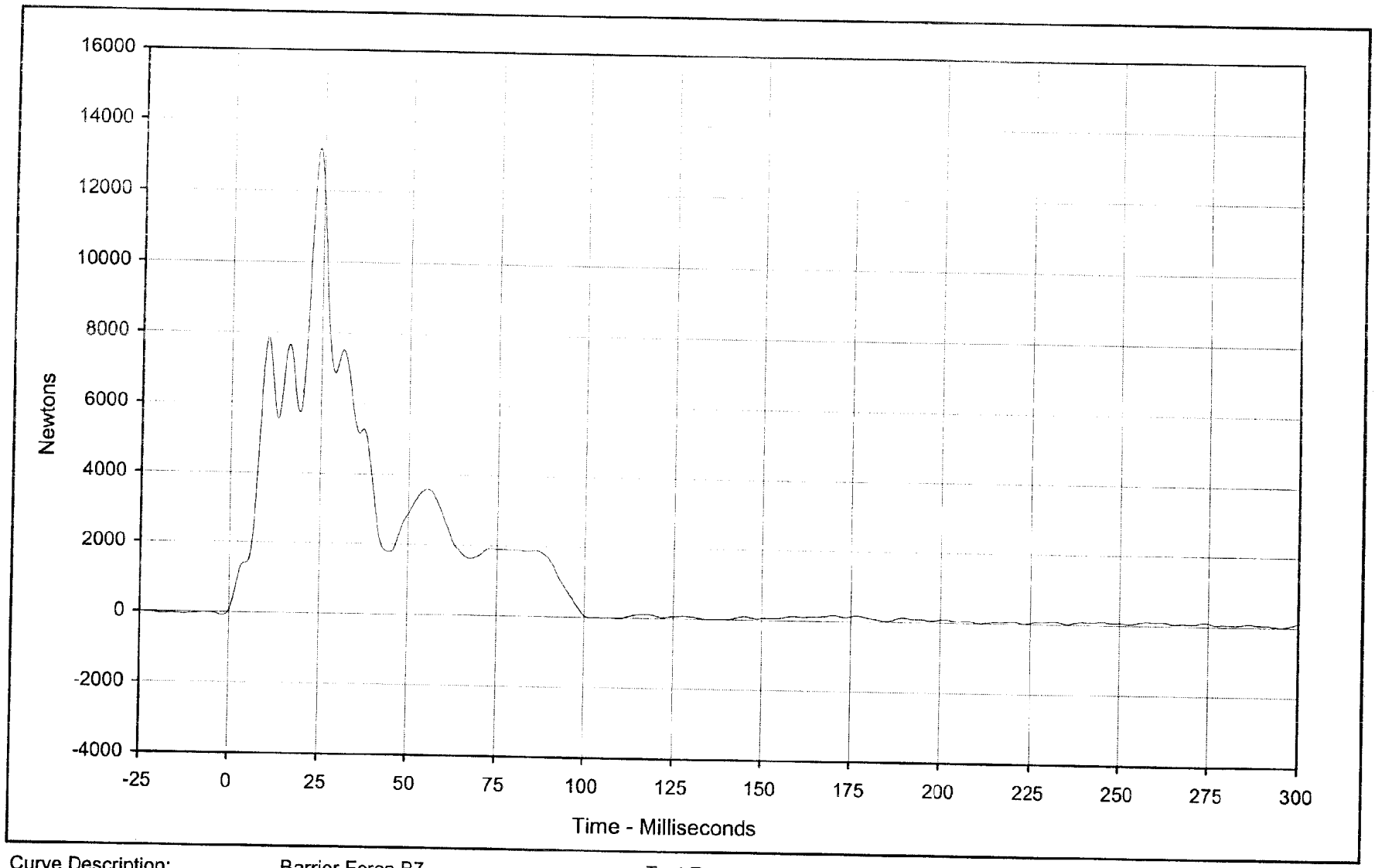
Date of Test: 11/23/99

Curve Number: FIL-112

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Barrier Force B7

Maximum Value: 13190.7 at 23.9 Milliseconds

Minimum Value: -20.5 at 109.5 Milliseconds

SAE Filter Class: 60

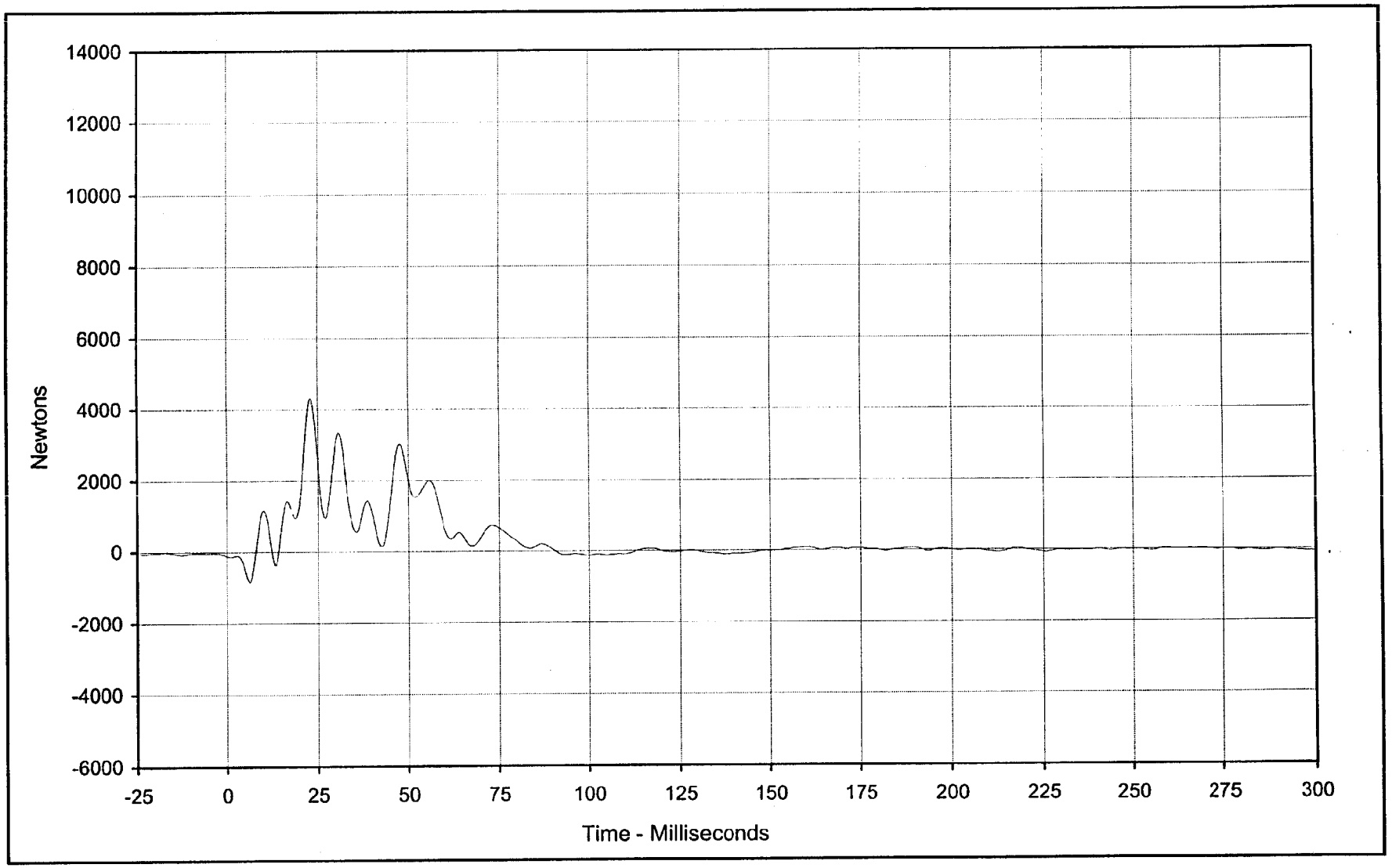
Date of Test: 11/23/99

Curve Number: FIL-113

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

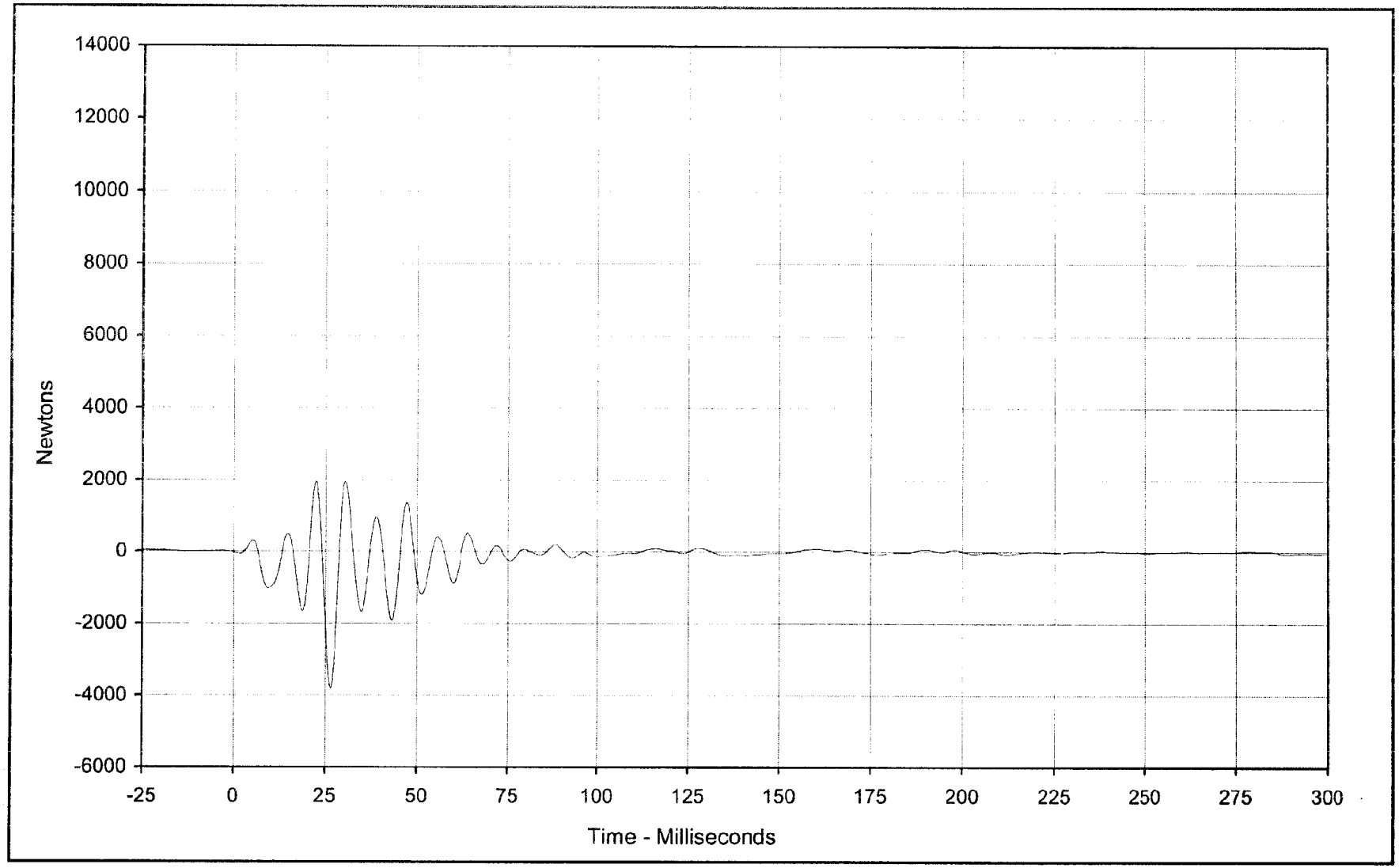
KARC Engineering



Curve Description:	Barrier Force B8			
Maximum Value:	4303.8	at	23.0	Milliseconds
Minimum Value:	-854.3	at	6.3	Milliseconds
SAE Filter Class:	60			
Date of Test:	11/23/99			
Curve Number:	FIL-114			

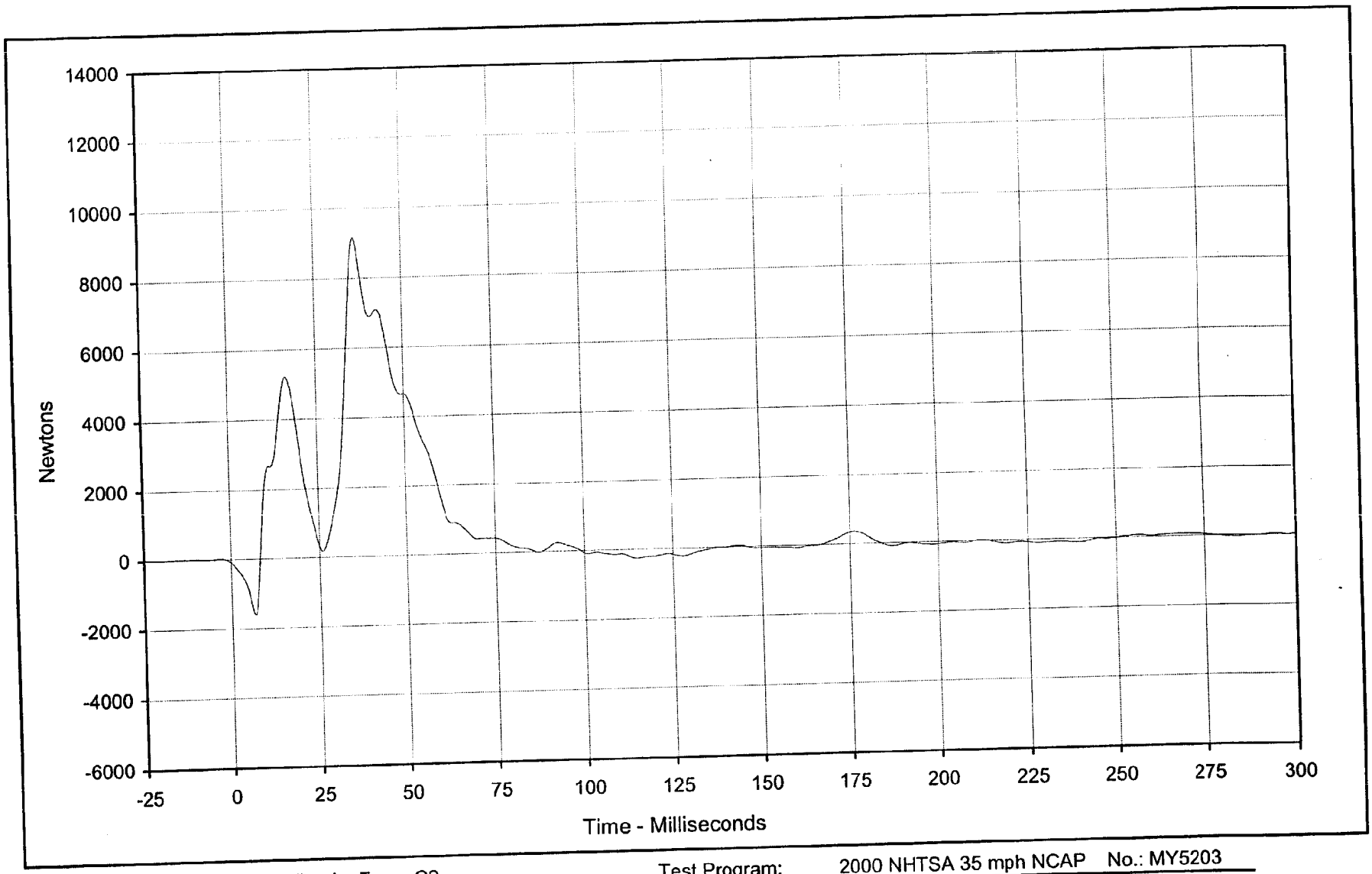
Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

KARCO Engineering



Curve Description:	Barrier Force B9			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	1955.5	at	22.4 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-3812.8	at	26.5 Milliseconds		
SAE Filter Class:	60				
Date of Test:	11/23/99				
Curve Number:	FIL-115				

KARC Engineering



Curve Description: Barrier Force C2

Maximum Value: 9166.2 at 36.4 Milliseconds

Minimum Value: -1610.9 at 6.7 Milliseconds

SAE Filter Class: 60

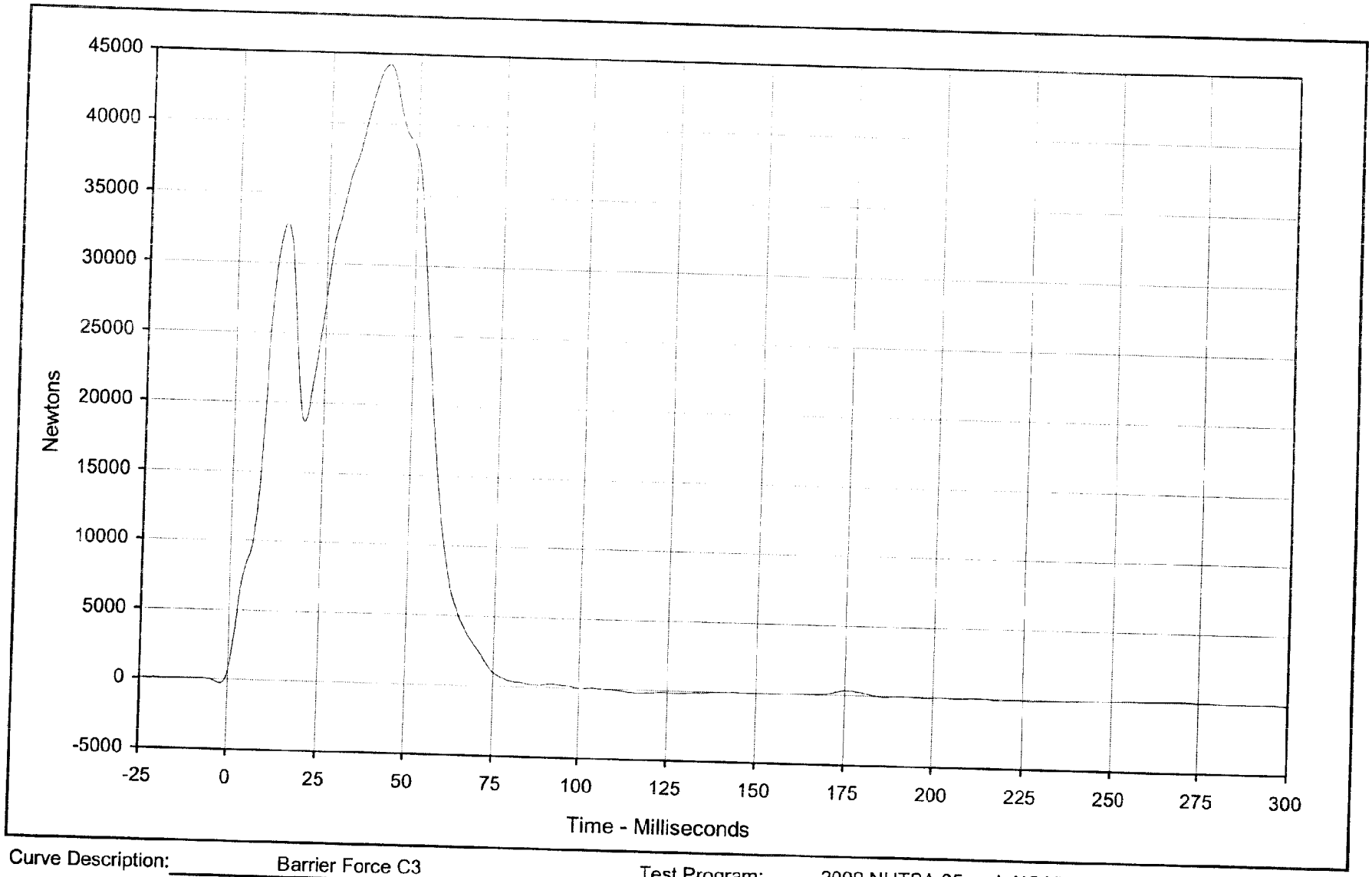
Date of Test: 11/23/99

Curve Number: FIL-117

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Barrier Force C3

Maximum Value: 44259.7 at 41.4 Milliseconds

Minimum Value: -212.7 at 116.5 Milliseconds

SAE Filter Class: 60

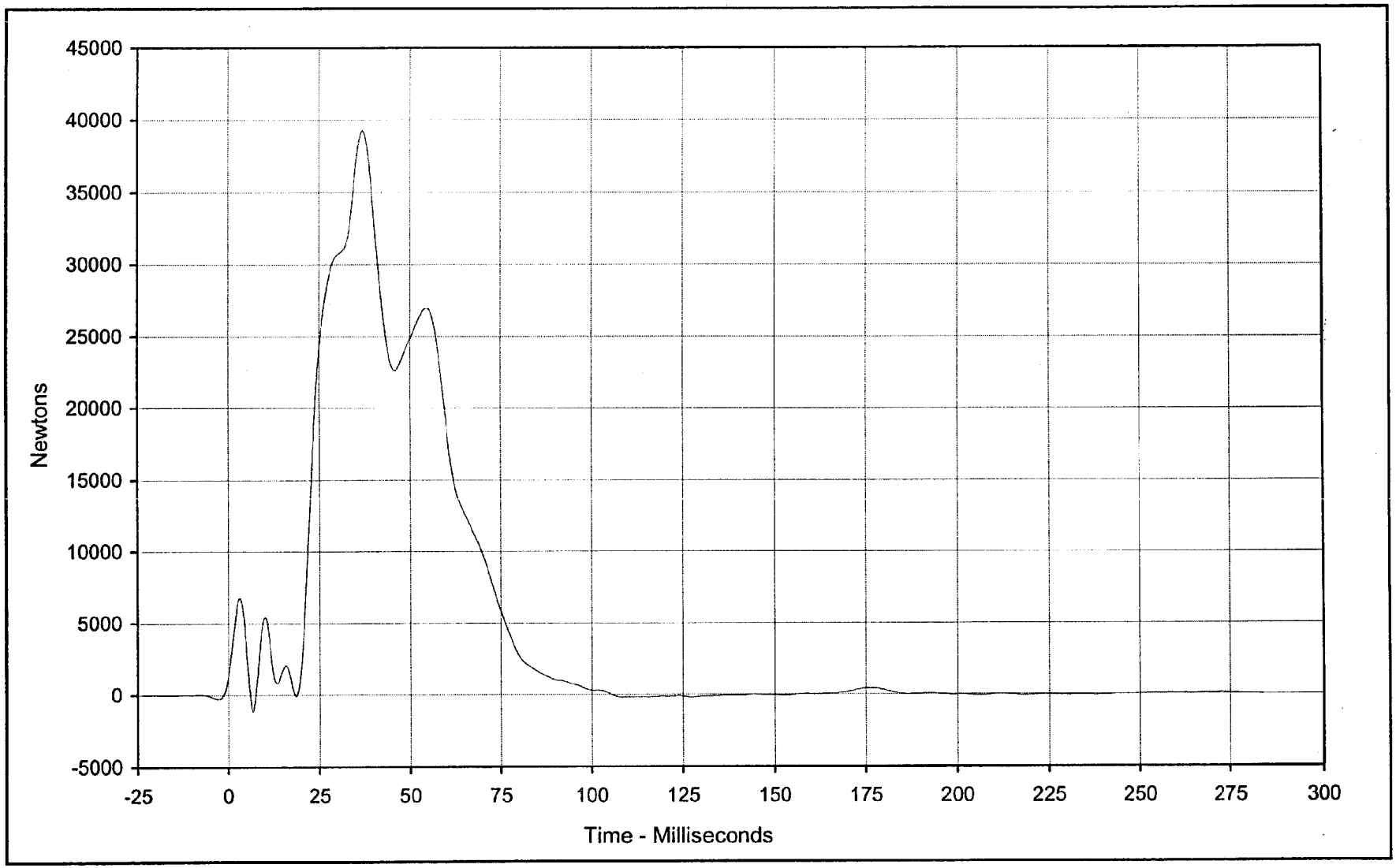
Date of Test: 11/23/99

Curve Number: FIL-118

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

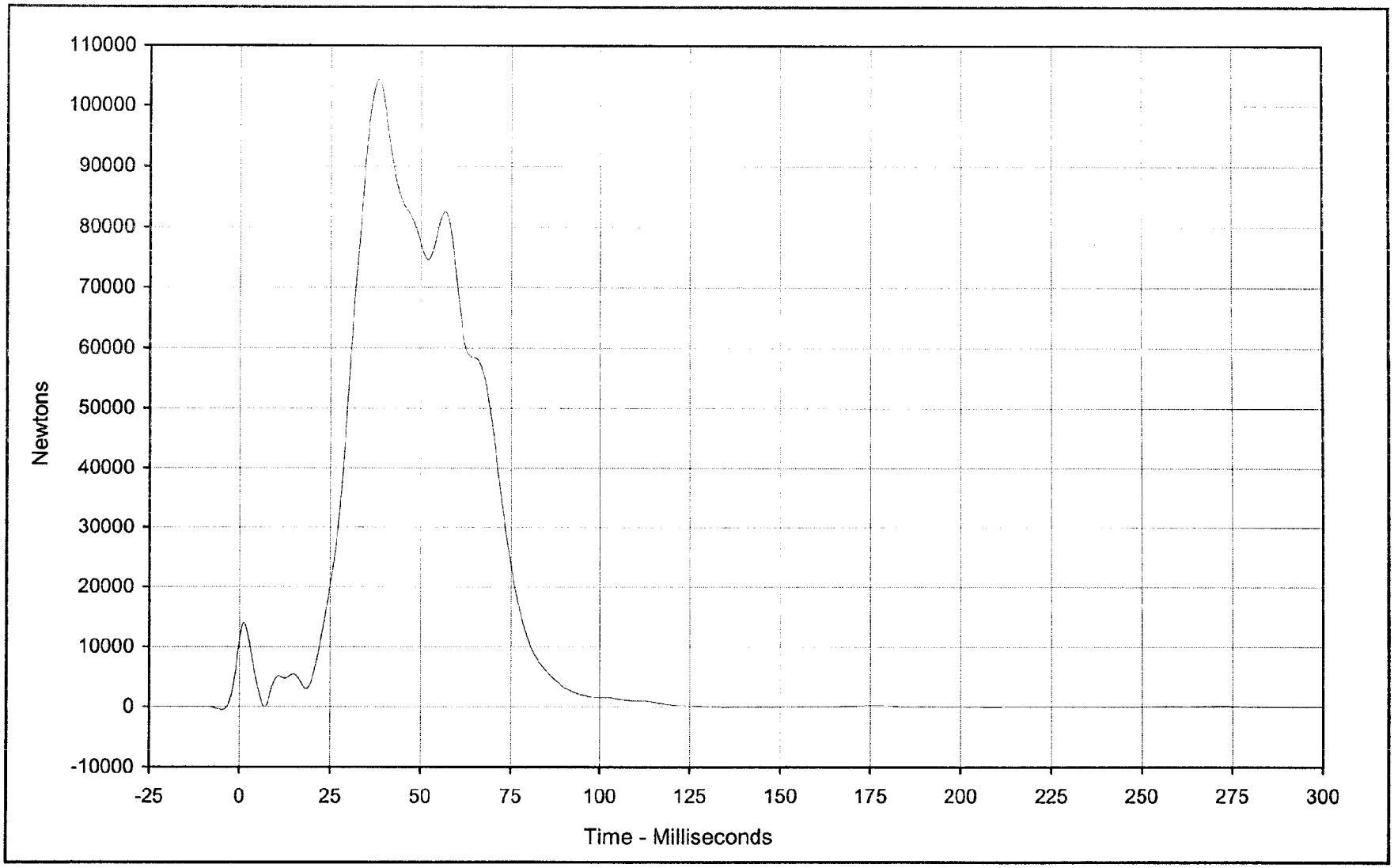
Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



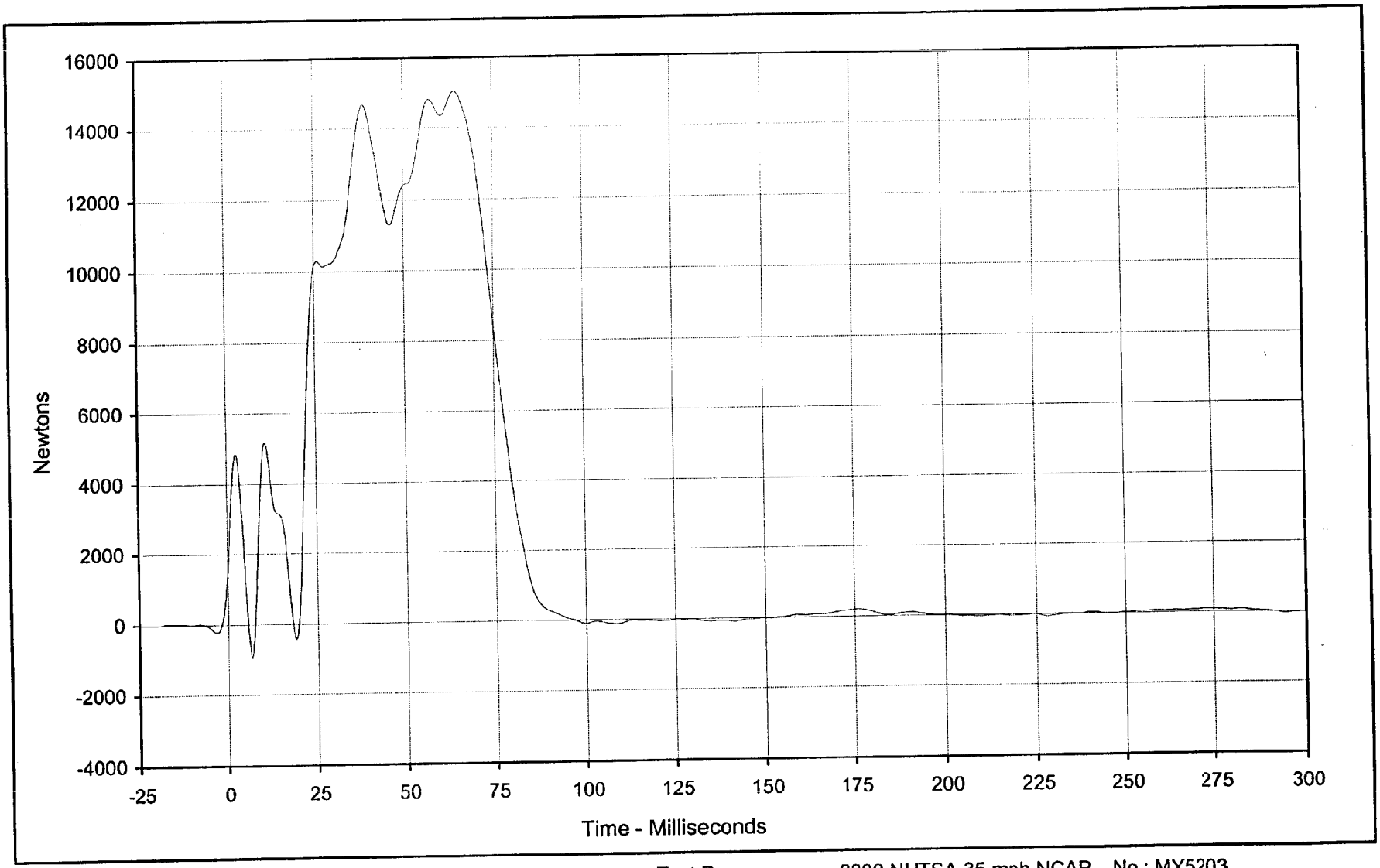
Curve Description:	Barrier Force C4			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	39281.3	at	37.0 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-1200.5	at	6.7 Milliseconds		
SAE Filter Class:	60				
Date of Test:	11/23/99				
Curve Number:	FIL-119				

KARCO Engineering



Curve Description:	Barrier Force C5			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	104300.1	at	38.3 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-100.9	at	134.6 Milliseconds		
SAE Filter Class:	60				
Date of Test:	11/23/99				
Curve Number:	FIL-120				

KARC Engineering



Curve Description: Barrier Force C6

Maximum Value: 15049.5 at 64.6 Milliseconds

Minimum Value: -945.3 at 6.6 Milliseconds

SAE Filter Class: 60

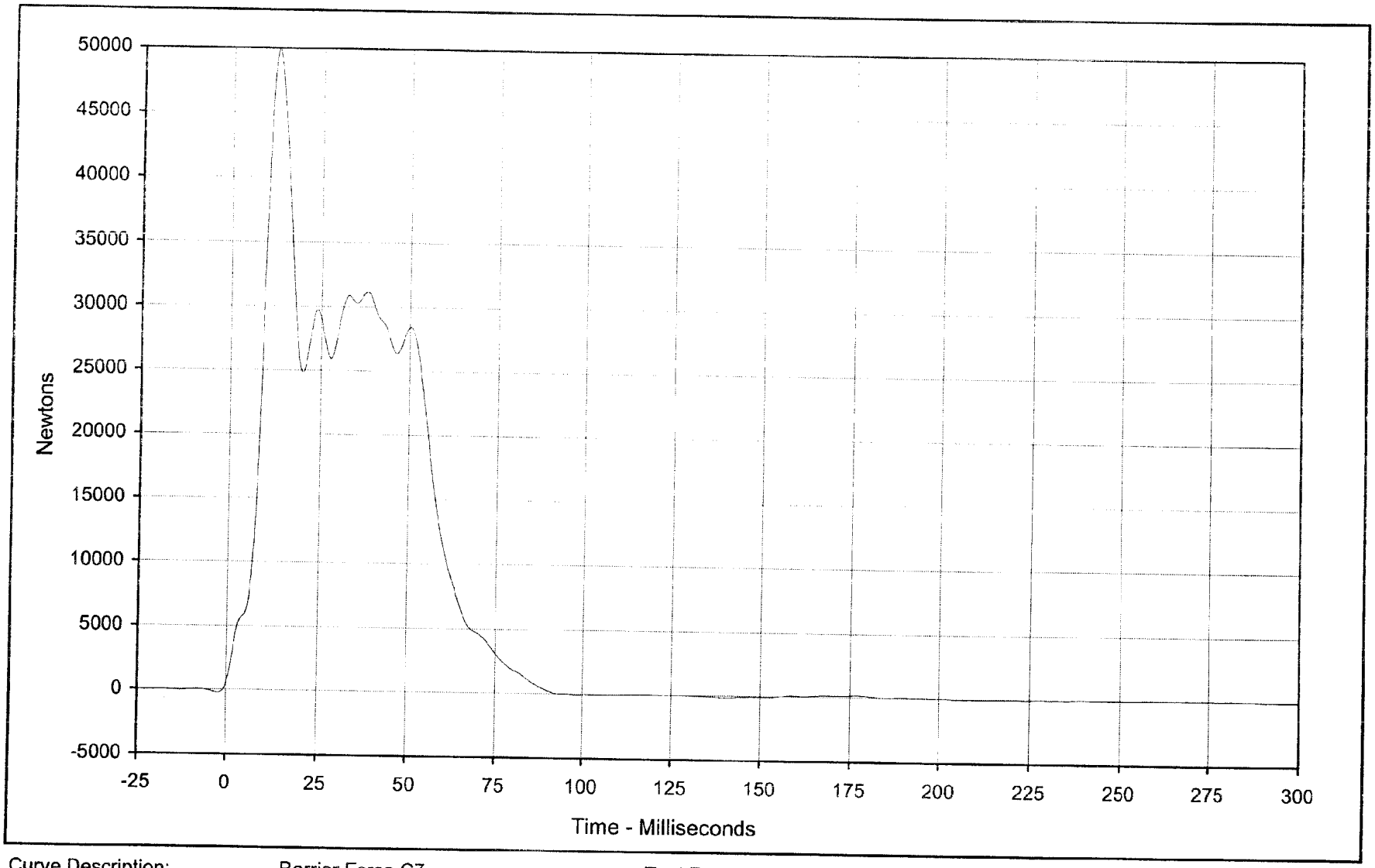
Date of Test: 11/23/99

Curve Number: FIL-121

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

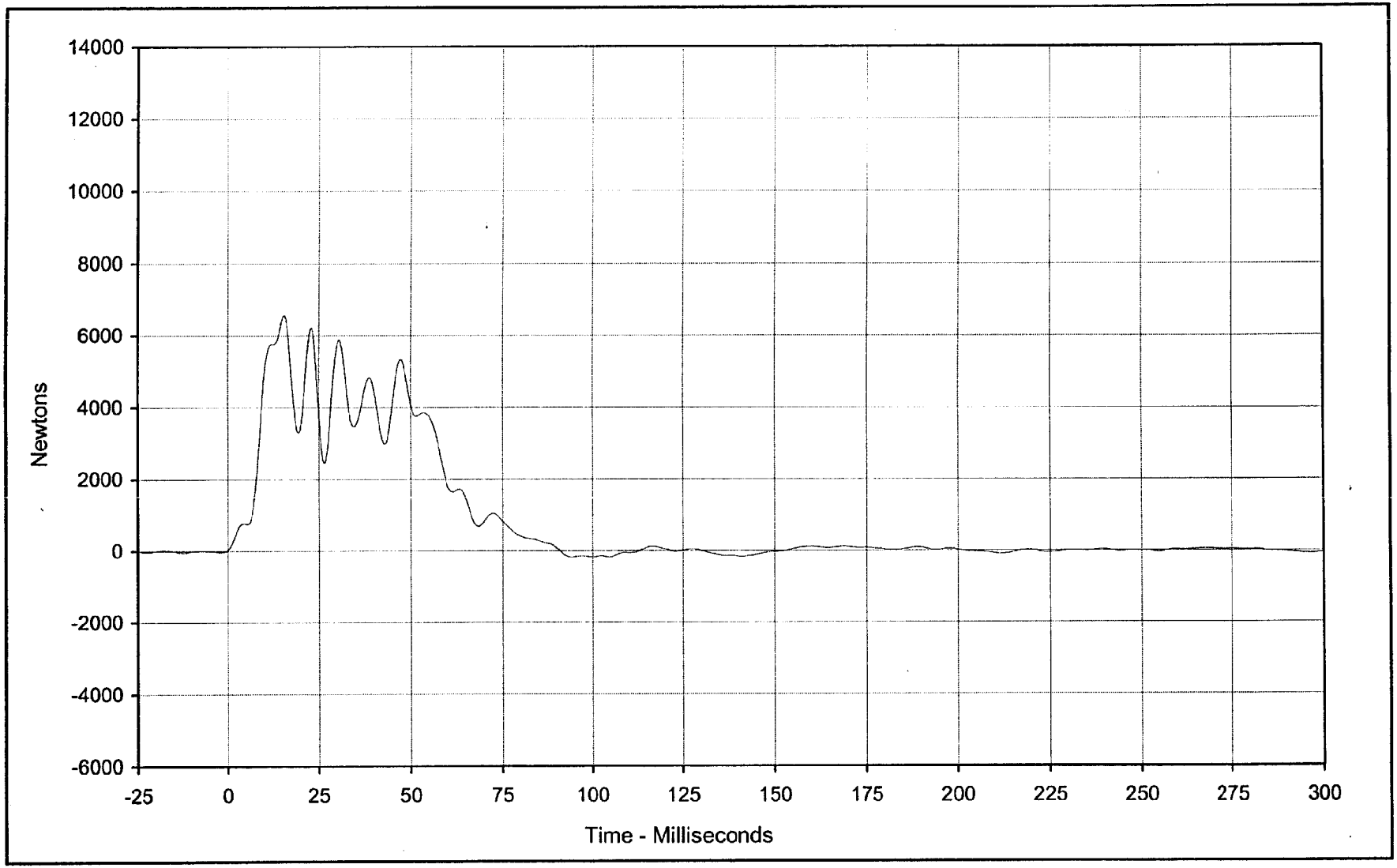
Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



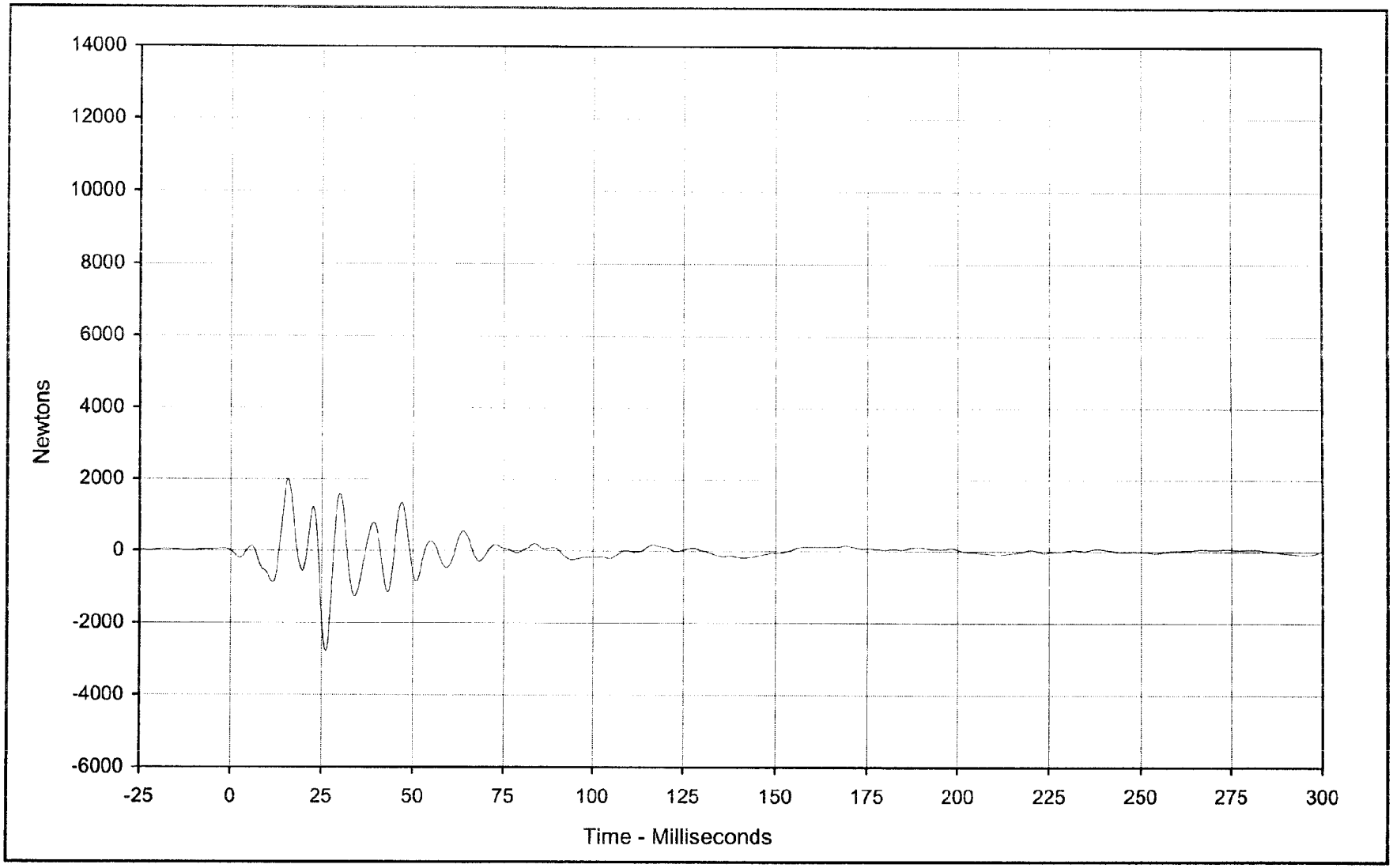
Curve Description:	Barrier Force C7			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	49973.9	at	12.6 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-139.6	at	140.5 Milliseconds		
SAE Filter Class:	60				
Date of Test:	11/23/99				
Curve Number:	FIL-122				

KARCO Engineering



Curve Description:	Barrier Force C8			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	6559.0	at	15.5 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-170.8	at	94.0 Milliseconds		
SAE Filter Class:	60				
Date of Test:	11/23/99				
Curve Number:	FIL-123				

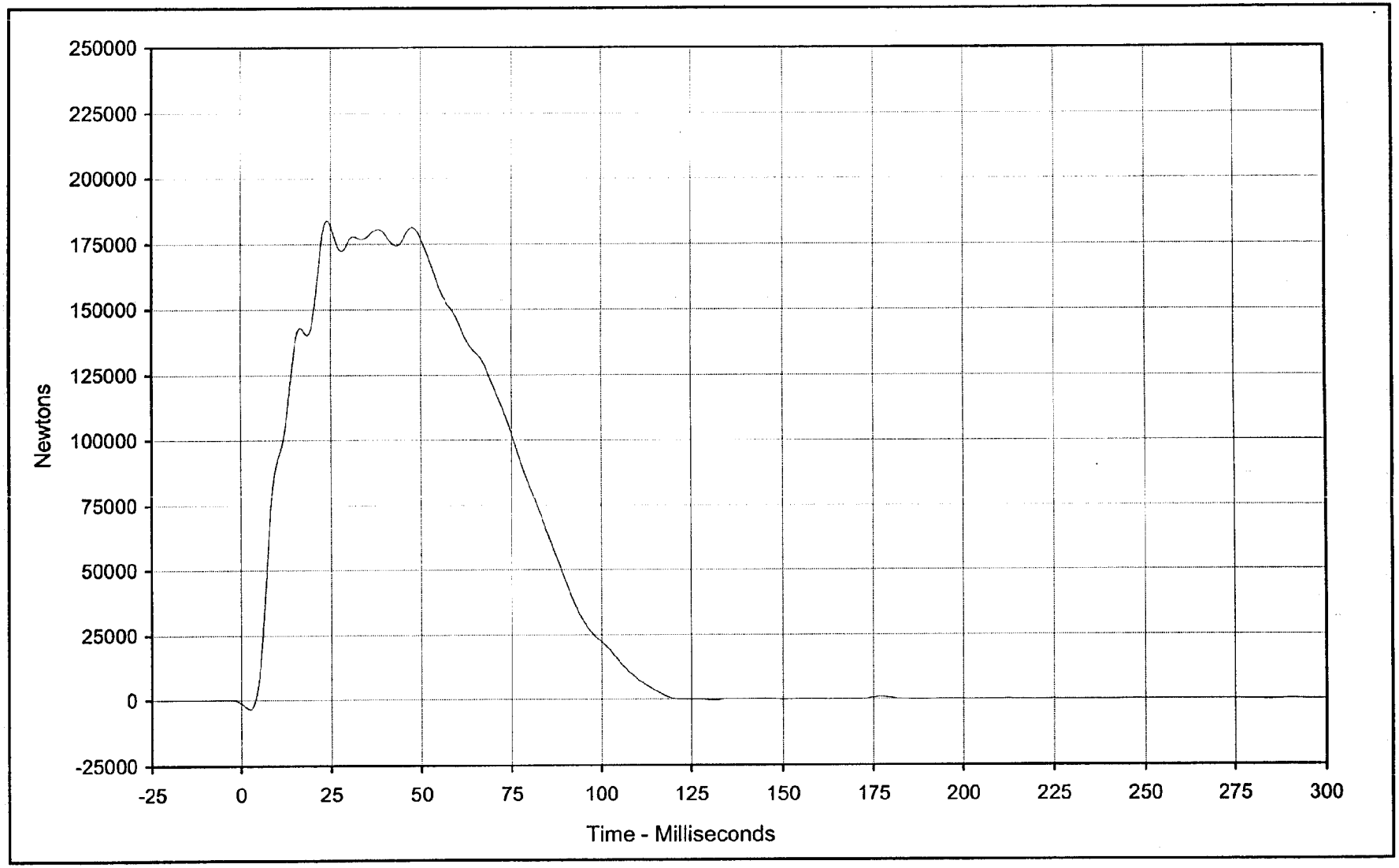
KARC Engineering



Curve Description:	Barrier Force C9				
Maximum Value:	2000.9	at	15.8	Milliseconds	
Minimum Value:	-2782.1	at	26.1	Milliseconds	
SAE Filter Class:	60				
Date of Test:	11/23/99				
Curve Number:	FIL-124				

Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Test Vehicle:	2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Driver Barrier Force Sum Group 1

Maximum Value: 184043.0 at 24.0 Milliseconds

Minimum Value: -3473.7 at 2.5 Milliseconds

SAE Filter Class: 60

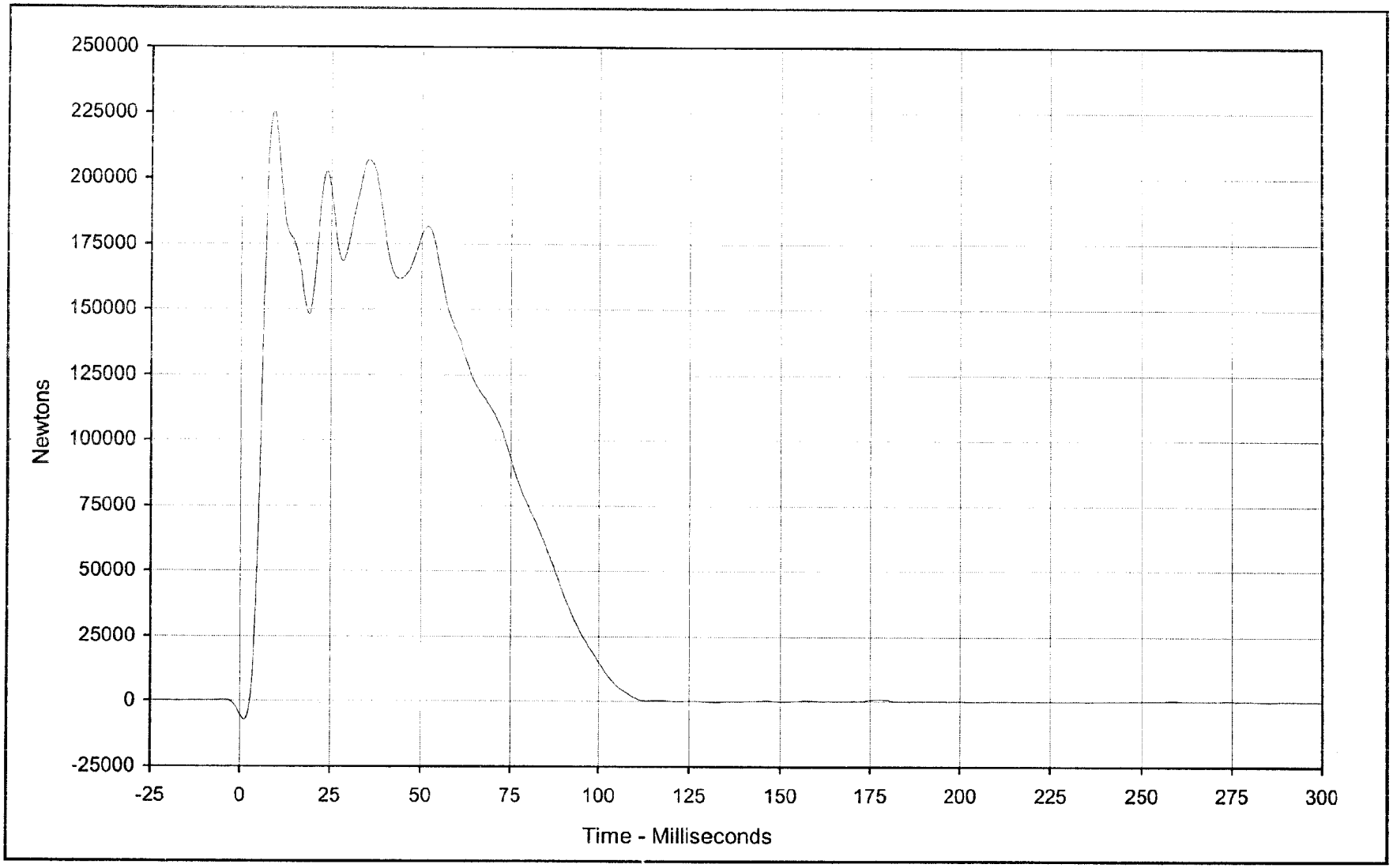
Date of Test: 11/23/99

Curve Number: SUM-001

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

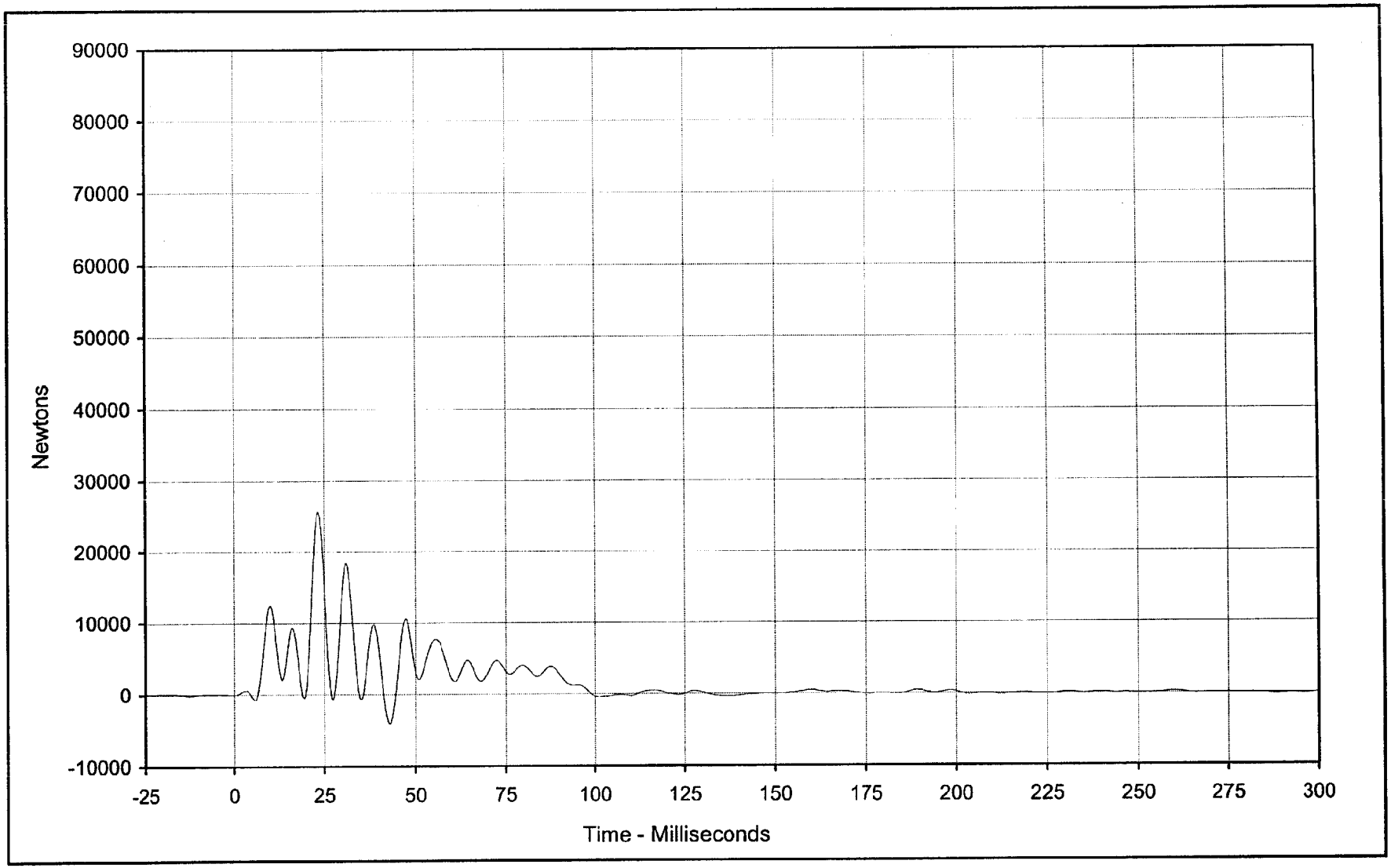
Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description:	Driver Barrier Force Sum Group 2			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	225161.2	at	9.2 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-7285.2	at	1.2 Milliseconds		
SAE Filter Class:	60				
Date of Test:	11/23/99				
Curve Number:	SUM-002				

KARC Engineering



Curve Description: Driver Barrier Force Sum Group 3

Maximum Value: 25610.8 at 23.3 Milliseconds

Minimum Value: -4106.4 at 42.9 Milliseconds

SAE Filter Class: 60

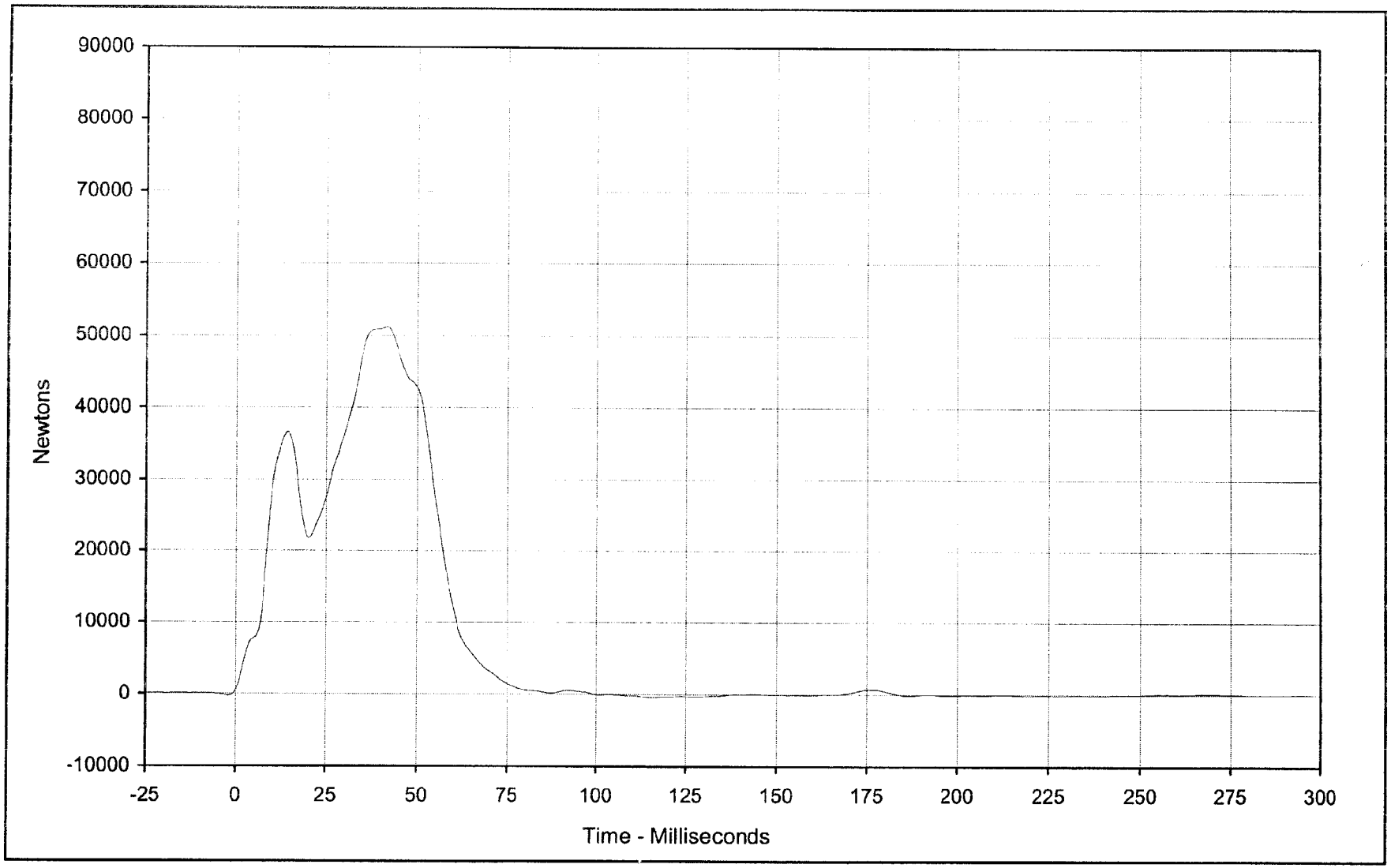
Date of Test: 11/23/99

Curve Number: SUM-003

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

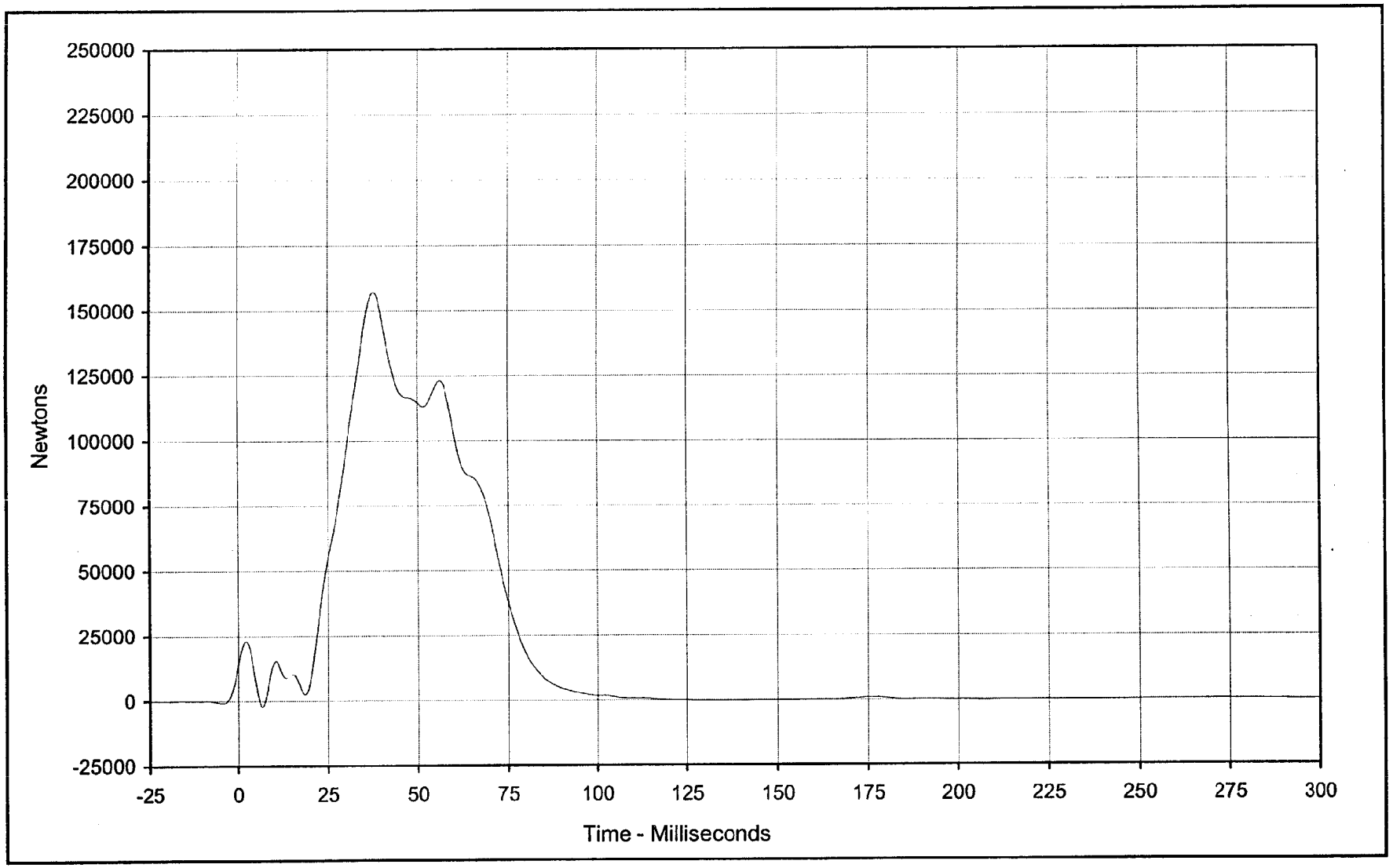
Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description:	Driver Barrier Force Sum Group 4			Test Program:	2000 NHTSA 35 mph NCAP No.: MY5203
Maximum Value:	51228.8	at	41.8 Milliseconds	Test Vehicle:	2000 Nissan Xterra SUV
Minimum Value:	-465.1	at	115.6 Milliseconds		
SAE Filter Class:	60				
Date of Test:	11/23/99				
Curve Number:	SUM-004				

KARC Engineering



Curve Description: Driver Barrier Force Sum Group 5

Maximum Value: 157232.2 at 38.0 Milliseconds

Minimum Value: -2131.7 at 6.7 Milliseconds

SAE Filter Class: 60

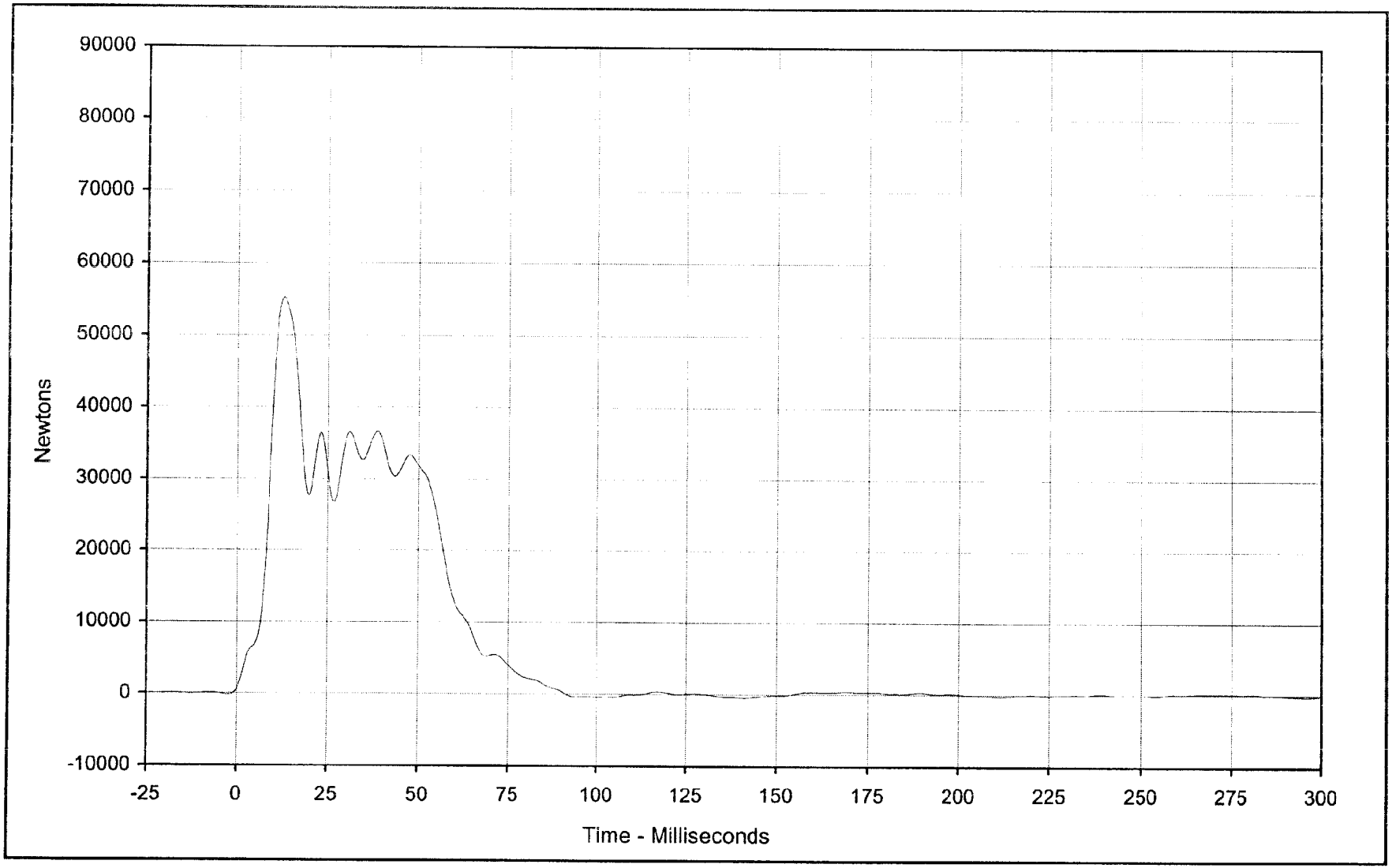
Date of Test: 11/23/99

Curve Number: SUM-005

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering



Curve Description: Driver Barrier Force Sum Group 6

Maximum Value: 55198.8 at 12.8 Milliseconds

Minimum Value: -486.6 at 141.0 Milliseconds

SAE Filter Class: 60

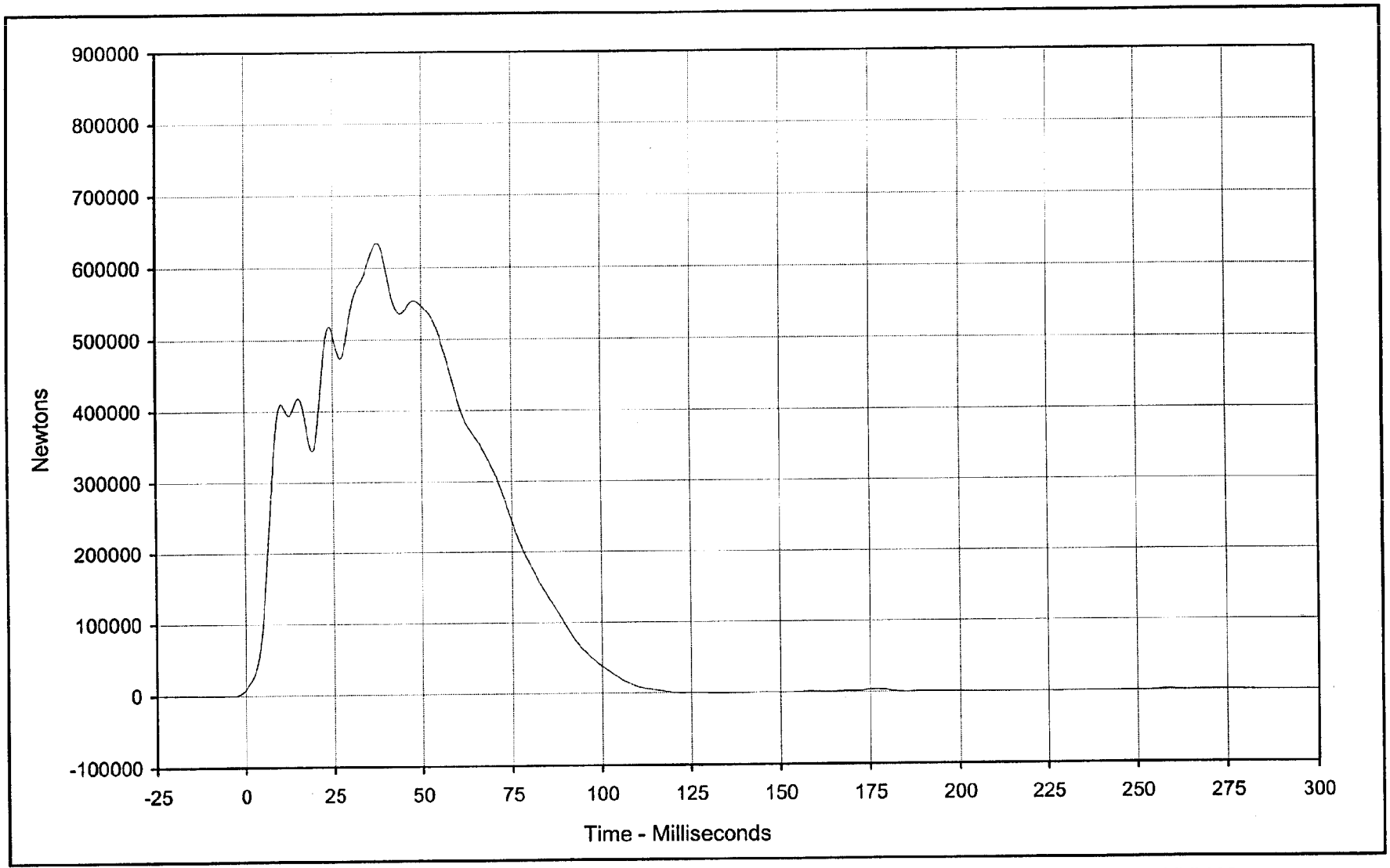
Date of Test: 11/23/99

Curve Number: SUM-006

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Driver Barrier Force Sum Total

Maximum Value: 633642.8 at 37.7 Milliseconds

Minimum Value: -1350.3 at 132.2 Milliseconds

SAE Filter Class: 60

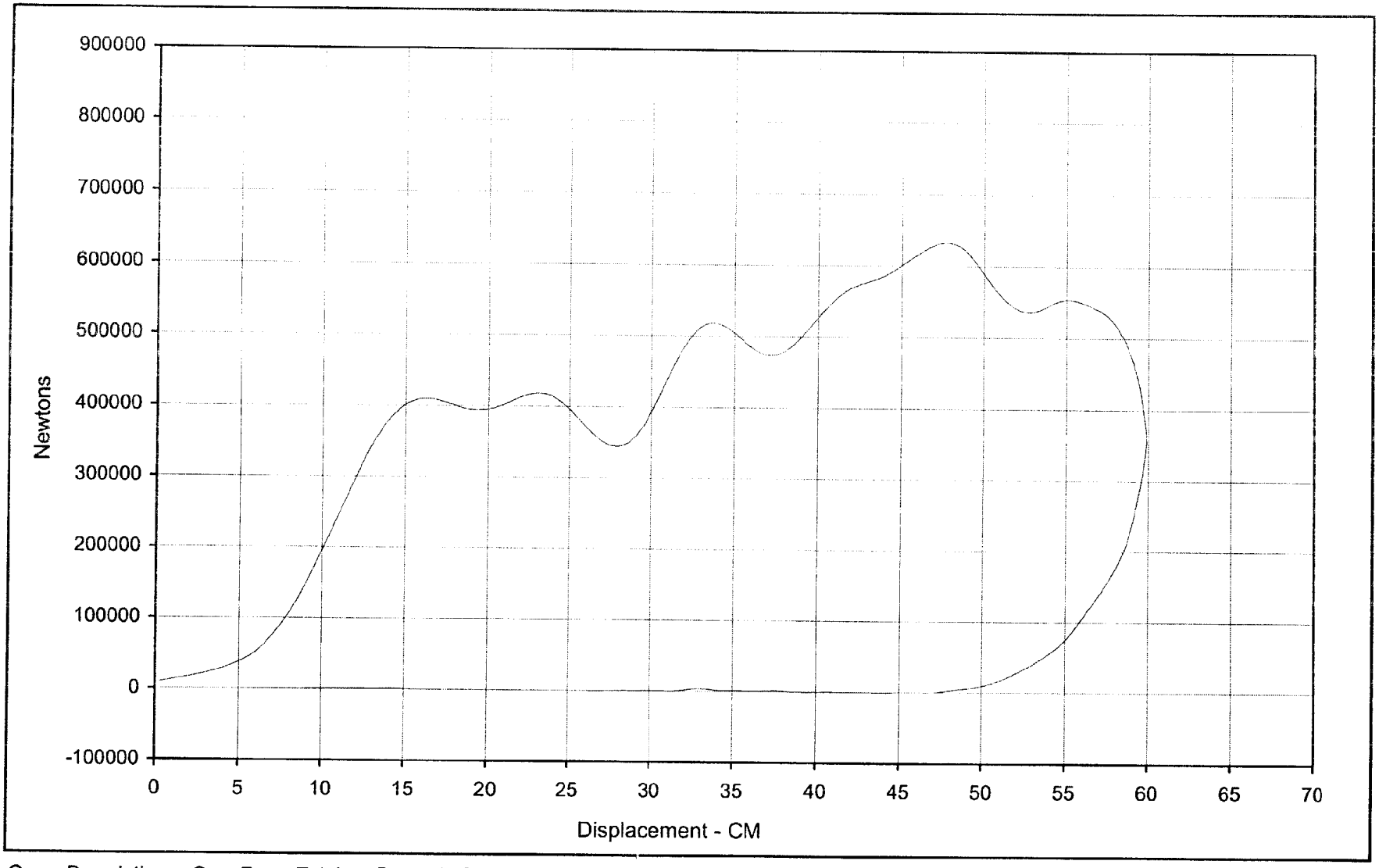
Date of Test: 11/23/99

Curve Number: SUM-007

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARC Engineering



Curve Description: Sum Force Total vs. Dynamic Crush

Maximum Displ.: 59.9 at 65.1 Milliseconds

Maximum Force: 633642.8 at 37.7 Milliseconds

Measured Energy: 230,711 joules

Date of Test: 11/23/99

Curve Number: XVY-001

Test Program: 2000 NHTSA 35 mph NCAP No.: MY5203

Test Vehicle: 2000 Nissan Xterra SUV

KARCO Engineering

BARRIER LOAD CELL SUMMARY DATA

Test Vehicle: 2000 Nissan Xterra SUV NHTSA No.: MY5203

Test Program: 2000 NHTSA 35 mph NCAP Test Date: 11/23/99

BARRIER LOAD CELL PEAK FORCES

Location	Units	Max	Time	Min	Time
Barrier Force A2	Newtons	2794.2	9.9	-1658.4	43.6
Barrier Force A3	Newtons	7969.5	24.5	-2793.2	13.7
Barrier Force A4	Newtons	7174.3	24.3	-3551.2	13.7
Barrier Force A5	Newtons	28494.8	6.4	-5133.1	20.5
Barrier Force A6	Newtons	6115.1	9.6	-1511.8	42.0
Barrier Force A7	Newtons	3861.6	9.9	-2954.7	20.3
Barrier Force A8	Newtons	2745.8	31.3	-2130.6	27.3
Barrier Force A9	Newtons	2130.2	22.7	-3572.7	26.8
Barrier Force B2	Newtons	3200.4	23.0	-1516.4	6.2
Barrier Force B3	Newtons	178885.5	47.7	-2158.2	2.0
Barrier Force B4	Newtons	57178.0	37.6	-1772.1	1.6
Barrier Force B5	Newtons	6793.9	9.5	-203.3	0.0
Barrier Force B6	Newtons	150418.5	35.0	-3880.2	1.3
Barrier Force B7	Newtons	13190.7	23.9	-20.5	109.5
Barrier Force B8	Newtons	4303.8	23.0	-854.3	6.3
Barrier Force B9	Newtons	1955.5	22.4	-3812.8	26.5
Barrier Force C2	Newtons	9166.2	36.4	-1610.9	6.7
Barrier Force C3	Newtons	44259.7	41.4	-212.7	116.5
Barrier Force C4	Newtons	39281.3	37.0	-1200.5	6.7
Barrier Force C5	Newtons	104300.1	38.3	-100.9	134.6
Barrier Force C6	Newtons	15049.5	64.6	-945.3	6.6
Barrier Force C7	Newtons	49973.9	12.6	-139.6	140.5
Barrier Force C8	Newtons	6559.0	15.5	-170.8	94.0
Barrier Force C9	Newtons	2000.9	15.8	-2782.1	26.1
Barrier Force Sum Group 1	Newtons	184043.0	24.0	-3473.7	2.5
Barrier Force Sum Group 2	Newtons	225161.2	9.2	-7285.2	1.2
Barrier Force Sum Group 3	Newtons	25610.8	23.3	-4106.4	42.9
Barrier Force Sum Group 4	Newtons	51228.8	41.8	-465.1	115.6
Barrier Force Sum Group 5	Newtons	157232.2	38.0	-2131.7	6.7
Barrier Force Sum Group 6	Newtons	55198.8	12.8	-486.6	141.0
Barrier Force Sum Total	Newtons	633642.8	37.7	-1350.3	132.2

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

APPENDIX D

INSTRUMENTATION DATA CHANNEL ASSIGNMENTS

2000 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 35
11/23/99
2000 Nissan Xterra SUV

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

2000 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 35
11/23/99
2000 Nissan Xterra SUV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
25	UP. TIBIA LEFT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
26	UP. TIBIA LEFT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
27	UP. TIBIA RIGHT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
28	UP. TIBIA RIGHT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
29	LWR. TIBIA LEFT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
30	LWR. TIBIA LEFT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
31	LWR. TIBIA LEFT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
32	LWR. TIBIA RIGHT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
33	LWR. TIBIA RIGHT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
34	LWR. TIBIA RIGHT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
35	FOOT LEFT	X	KEIC002X	Accel., Foot Triax	I.C. Sensor	3031-500	G
36	FOOT LEFT	Y	KEIC002Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
37	FOOT LEFT	Z	KEIC002Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
38	FOOT RIGHT	X	KEIC001X	Accel., Foot Triax	I.C. Sensor	3031-500	G
39	FOOT RIGHT	Y	KEIC001Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
40	FOOT RIGHT	Z	KEIC001Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
41	LAP BELT FORCE	X	KELC003	Load cell, Seat belt	Lebow	3371	N
42	SHOULDER BELT FORCE	X	KELC004	Load cell, Seat belt	Lebow	3371	N
43	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	MM
44	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

2000 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 34
11/23/99
2000 Nissan Xterra SUV

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

2000 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 34
11/23/99
2000 Nissan Xterra SUV

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
69	UP. TIBIA LEFT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
70	UP. TIBIA LEFT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
71	UP. TIBIA RIGHT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
72	UP. TIBIA RIGHT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
73	LWR. TIBIA LEFT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
74	LWR. TIBIA LEFT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
75	LWR. TIBIA LEFT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
76	LWR. TIBIA RIGHT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
77	LWR. TIBIA RIGHT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
78	LWR. TIBIA RIGHT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
79	FOOT LEFT	X	KEIC003X	Accel., Foot Triax	I.C. Sensor	3031-500	G
80	FOOT LEFT	Y	KEIC003Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
81	FOOT LEFT	Z	KEIC003Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
82	FOOT RIGHT	X	KEIC004X	Accel., Foot Triax	I.C. Sensor	3031-500	G
83	FOOT RIGHT	Y	KEIC004Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
84	FOOT RIGHT	Z	KEIC004Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
85	LAP BELT FORCE	X	KELC001	Load cell, Seat belt	Lebow	3371	N
86	SHOULDER BELT FORCE	X	KELC002	Load cell, Seat belt	Lebow	3371	N
87	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	CM
88	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

2000 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Vehicle Accelerometers and Reference Channel
11/23/99
2000 Nissan Xterra SUV

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

2000 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Rigid Load Cell Barrier
11/23/99
2000 Nissan Xterra SUV

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

2000 NHTSA 35 mph NCAP
Instrumentation Data Channel Assignments
Rigid Load Cell Barrier
11/23/99
2000 Nissan Xterra SUV

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

APPENDIX E

DUMMY CALIBRATION DATA

Hybrid III Calibration Data Sheet
50TH Percentile Male
Left Knee Impact Test

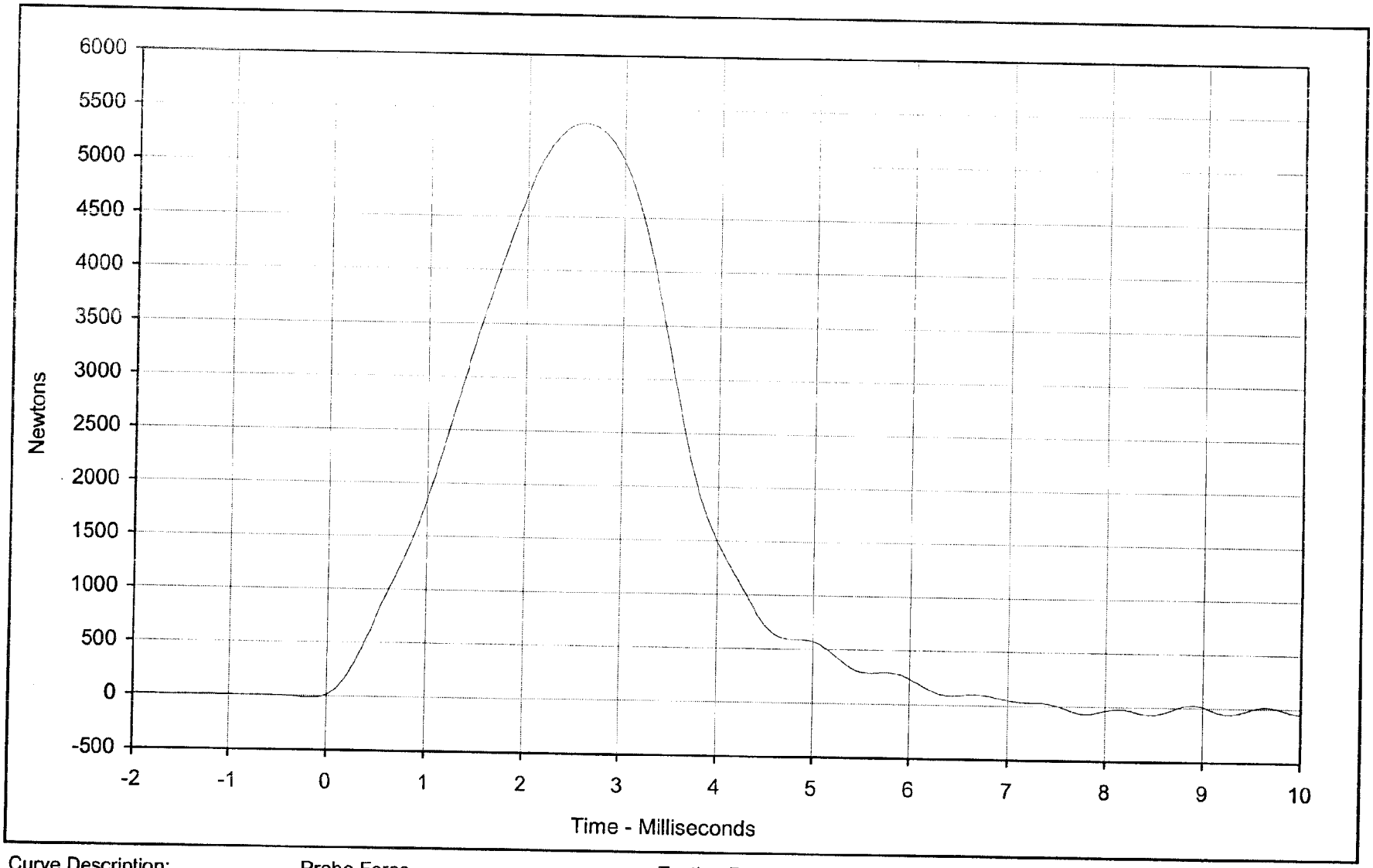
ATD Serial No.: 34 Part Serial No.: n/a Test I.D.: LK11A

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

Laboratory Technician — November 19, 1999 Test Date

James E. North — 11/20/99

Approved By — Date



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

Testing Program: Hybrid III Left Knee Impact Test

Test Information: Part S/N: n/a Test I.D.: LK11A

KARCO Engineering

Hybrid III Calibration Data Sheet
50TH Percentile Male
Right Knee Impact Test

ATD Serial No.: 34 Part Serial No.: n/a Test I.D.: RK11A

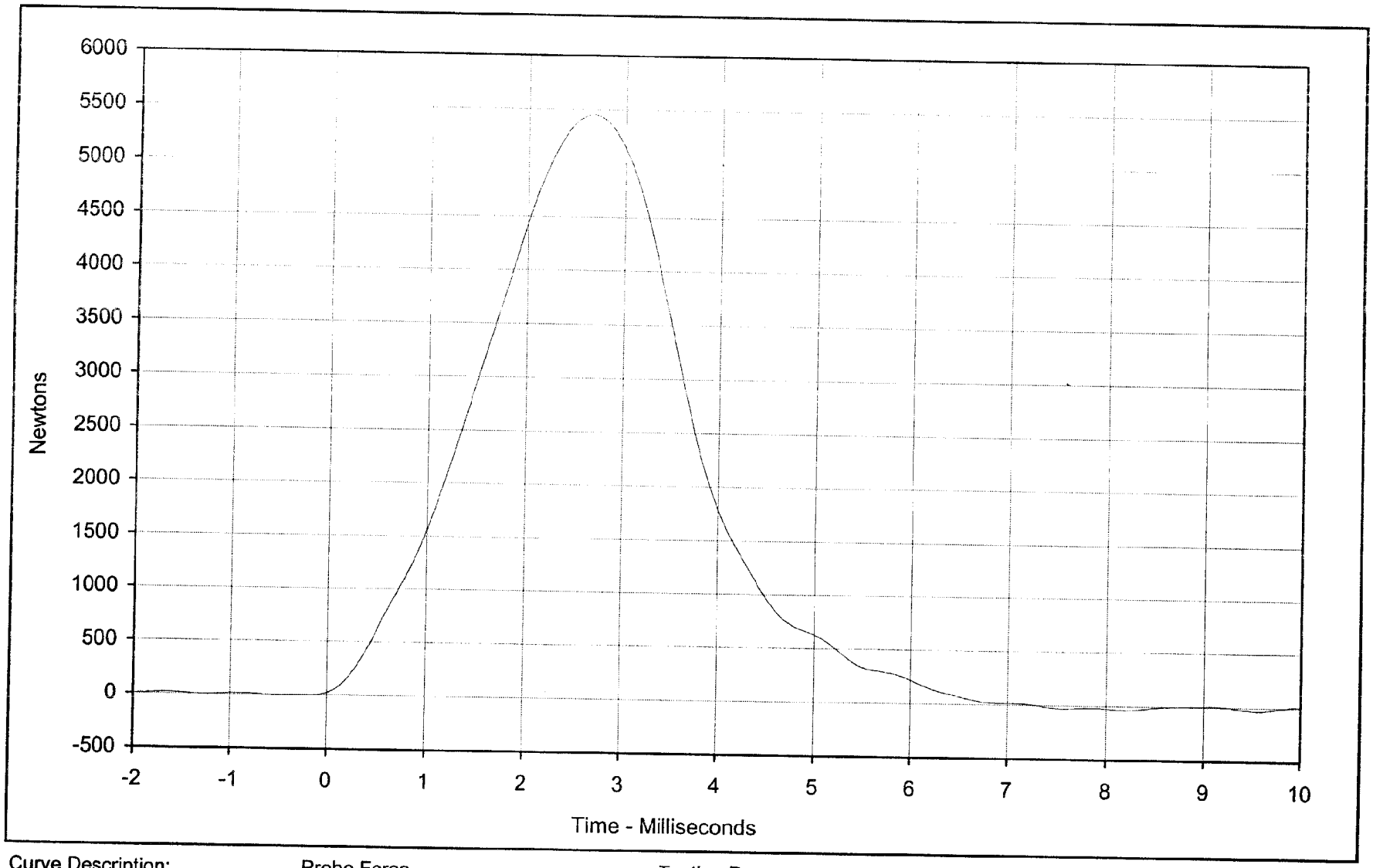
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	2.073 to 2.134	2.092	Pass
Peak Probe Force	Newtons	4715 to 5782	5448.0	Pass
		Overall Test Results		Pass

Laboratory Technician

November 19, 1999
Test Date

James E. North
Approved By

11/20/99
Date



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

Testing Program: Hybrid III Right Knee Impact Test

Test Information: Part S/N: n/a Test I.D.: RK11A

KARC Engineering

Hybrid III Calibration Data Sheet
50TH Percentile Male
Head Drop Calibration

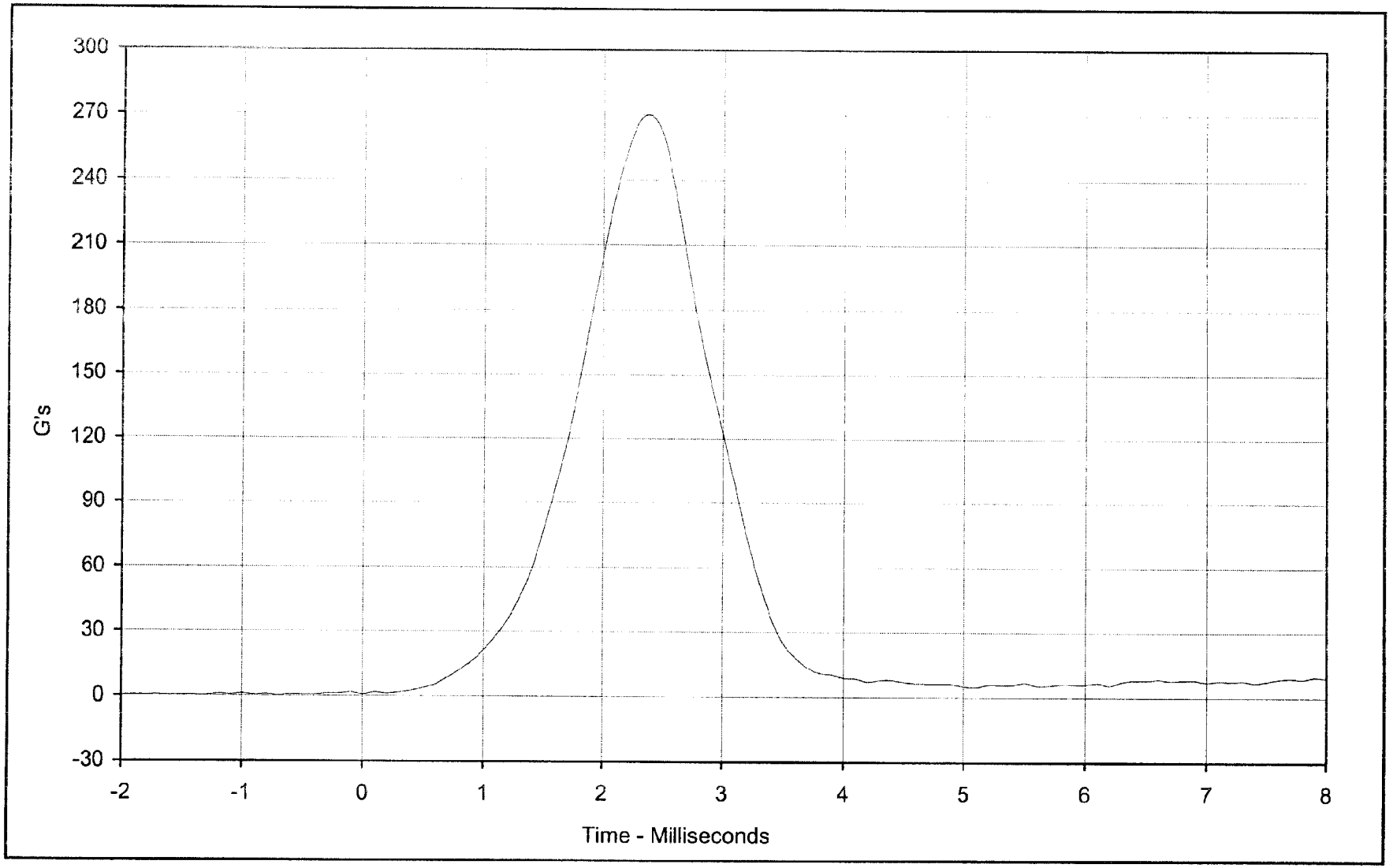
ATD Serial No.: 034 Part Serial No.: n/a Test I.D.: HD11B

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

Laboratory Technician — November 18, 1999 Test Date

James E. Hartka — 11/19/99

Approved By — Date

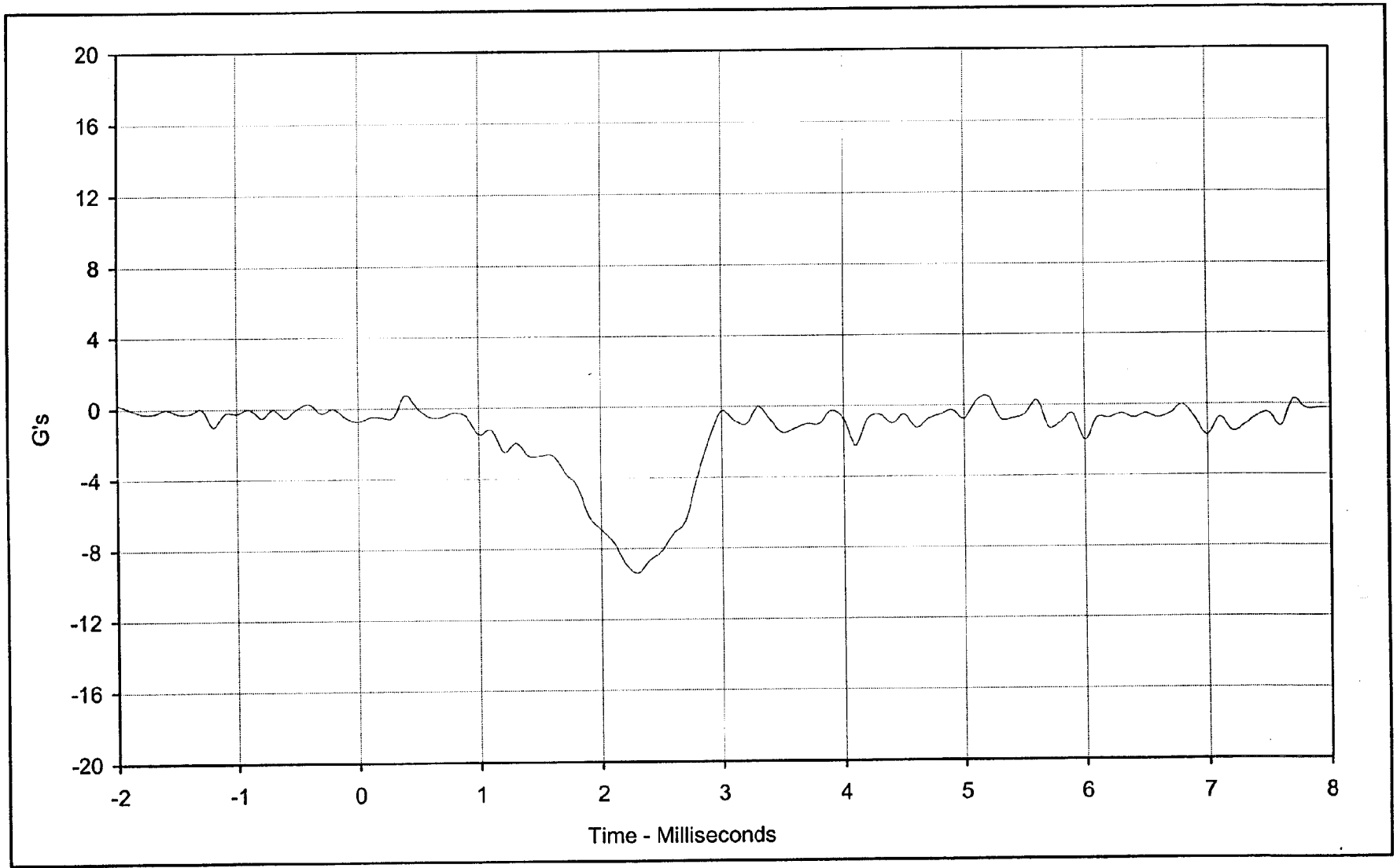


Curve Description:	Head Resultant Acceleration			
Maximum Value:	269.6	at	2.4	Milliseconds
Minimum Value:	0.3	at	-1.6	Milliseconds
SAE Filter Class:	1000			
Date of Test:	11/18/99			
ATD Serial No.:	034			

Testing Program: Hybrid III Head Drop Calibration (Male)

Test Information: S/N of Part: n/a Test I.D.: HD11B

KARCO Engineering



Curve Description: Head Acceleration Y Axis

Maximum Value: 0.7 at 0.4 Milliseconds

Minimum Value: -9.4 at 2.3 Milliseconds

SAE Filter Class: 1000

Date of Test: 11/18/99

ATD Serial No.: 034

Testing Program: Hybrid III Head Drop Calibration (Male)

Test Information: S/N of Part: n/a Test I.D.: HD11B

KARC Engineering

Hybrid III Calibration Data Sheet
50TH Percentile Male
Thorax Impact Test

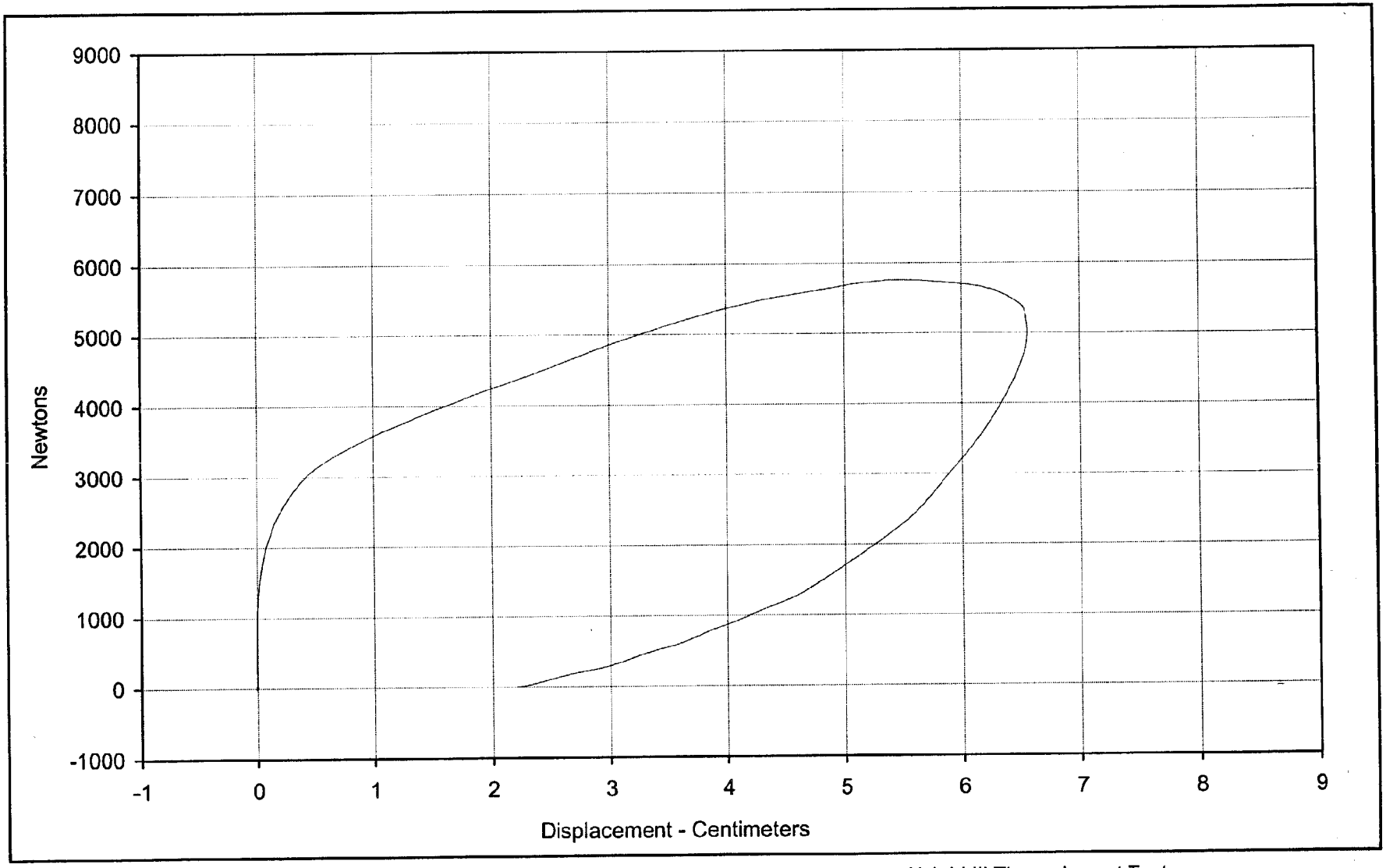
ATD Serial No.: 34 Part Serial No.: N/A Test I.D.: CH11B

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	39	Pass
Probe Velocity	m/s	6.58 to 6.82	6.74	Pass
Peak Probe Force	Newtons	5159 to 5893	5760	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.55	Pass
Internal Hysterysis	%	69 to 85	79.1	Pass
		Overall Test Results		Pass

Laboratory Technician — November 22, 1999 Test Date

James E Hoath — 11/23/99

Approved By — Date



Curve Description: Probe Force vs. Chest Displacement

Probe Force: 5759.5 Newtons

Chest Displ.: 6.55 Centimeters

SAE Filter Class: 180

Date of Test: 11/22/99

ATD Serial No.: 34

Testing Program: Hybrid III Thorax Impact Test

Test Information: S/N of Part: N/A Test I.D.: CH11B

KARCO Engineering

Hybrid III Calibration Data Sheet
50TH Percentile Male
Neck Flexion Test

ATD Serial No.: 34 Part Serial No.: n/a Test I.D.: NF11B

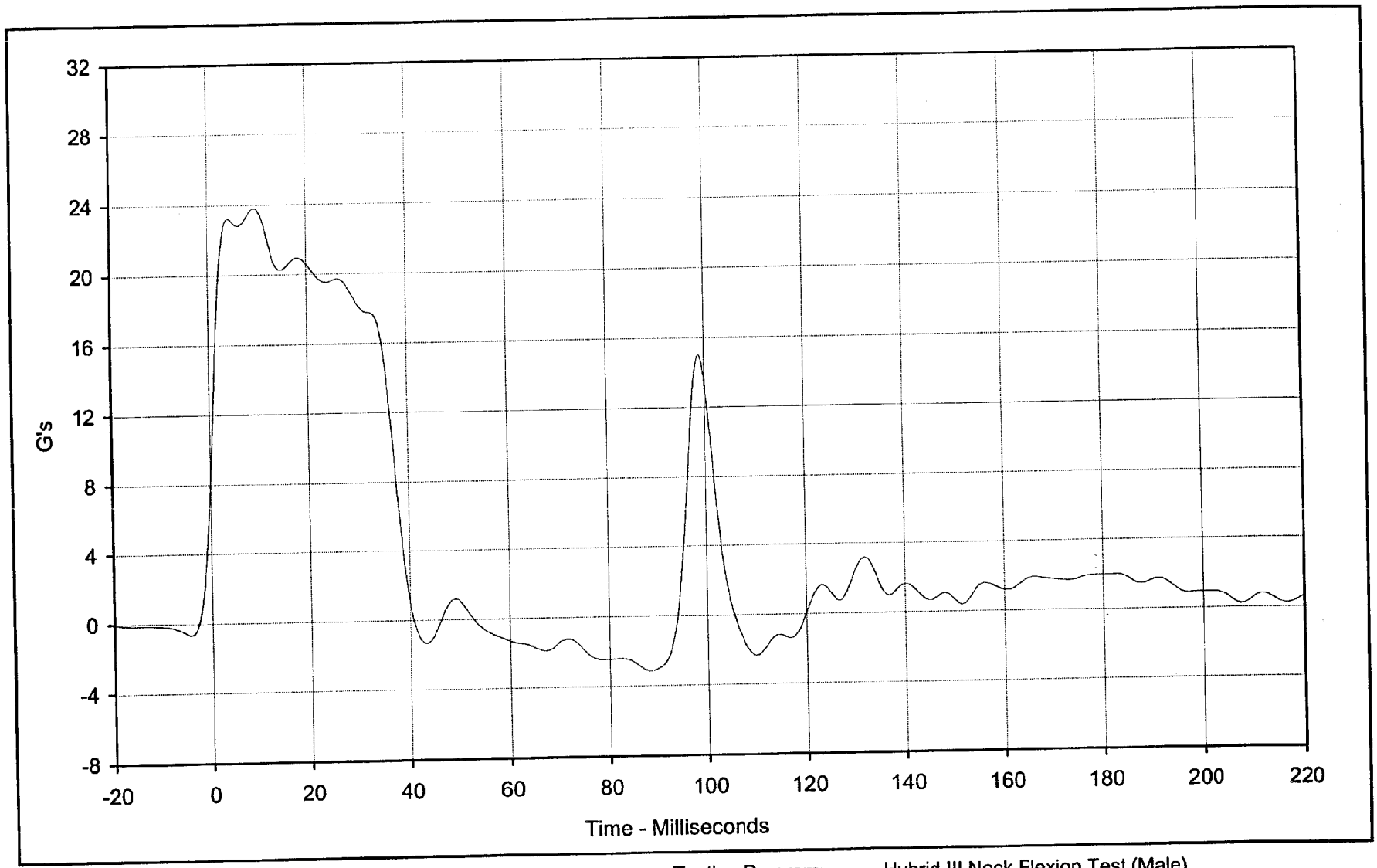
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity		%	10 to 70	40	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.00	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	23.7	Pass
	20 Msec.	G's	17.6 to 22.6	20.6	Pass
	30 Msec.	G's	12.5 to 18.5	18.3	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	18.3	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	38.5	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	76.2	Pass
	Time	Msec.	57.0 to 64.0	62.2	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	125.6	Pass
Moment About Occipital Condyle	Maximum	N • m	84.1 to 108.5	89.9	Pass
	Time	Msec.	47.0 to 58.0	57.5	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	101.6	Pass
			Overall Test Results		Pass

Laboratory Technician

November 19, 1999
Test Date

James E. Hoth
Approved By

11/20/99
Date



Curve Description: Pendulum Deceleration

Maximum Value: 23.8 at 9.5 Milliseconds

Minimum Value: -3.1 at 88.3 Milliseconds

SAE Filter Class: 60

Date of Test: 11/19/99

ATD Serial No.: 34

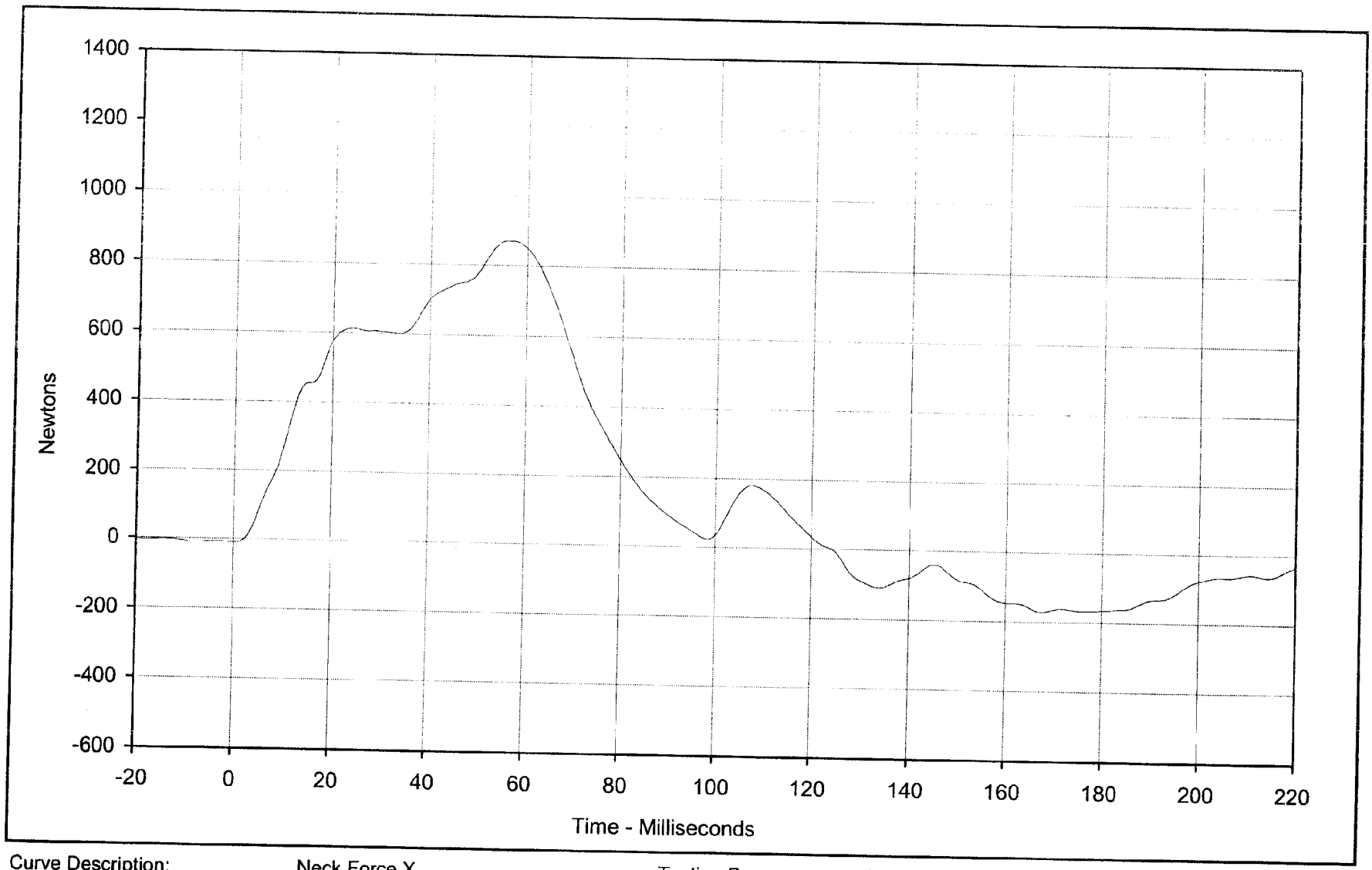
Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NF11B

KARCO Engineering

E-11

KAR20001-03



Curve Description: Neck Force X

Maximum Value: 870.7 at 56.2 Milliseconds

Minimum Value: -171.1 at 167.6 Milliseconds

SAE Filter Class: 60

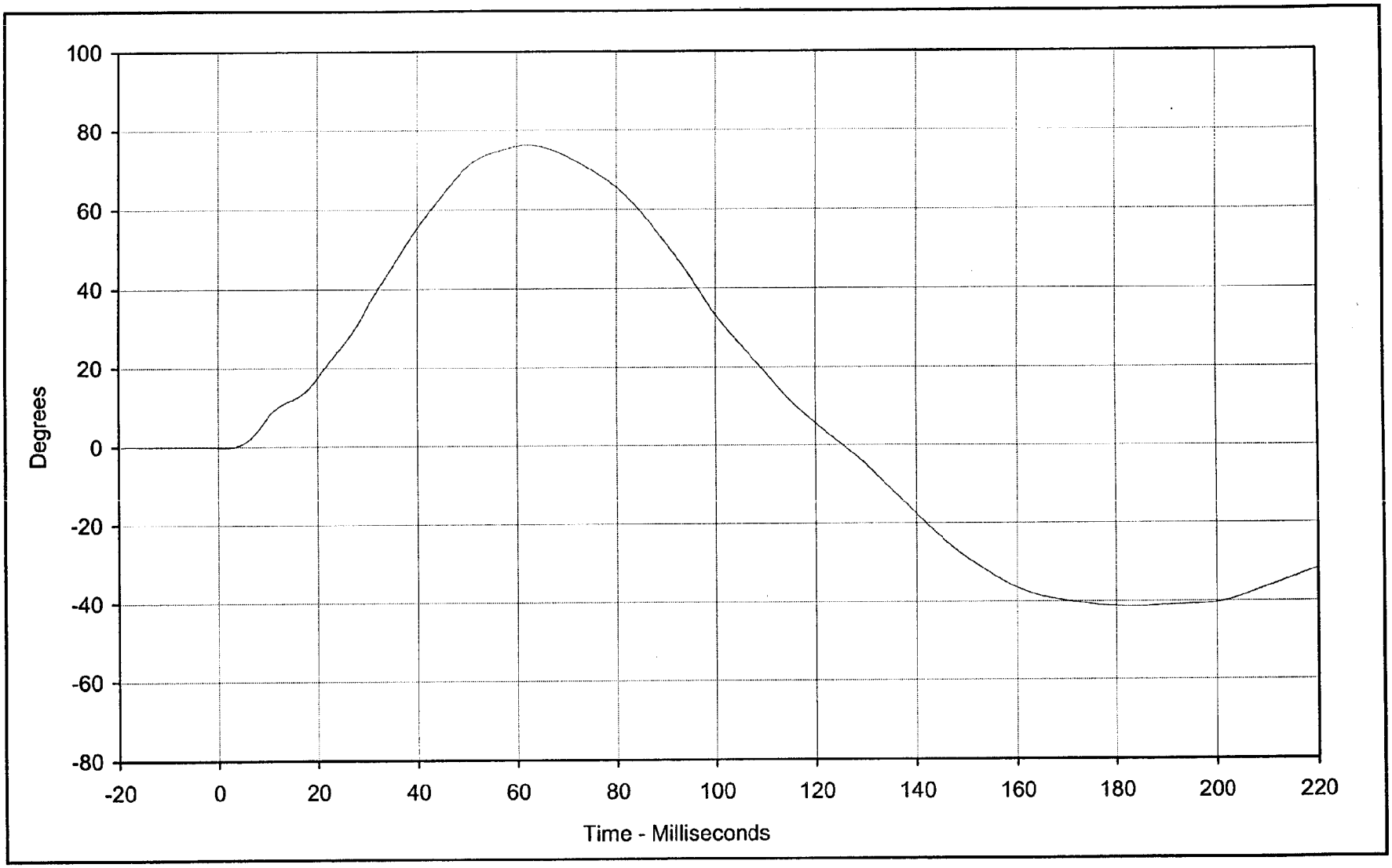
Date of Test: 11/19/99

ATD Serial No.: 34

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NF11B

KARC Engineering



Curve Description: "D" Plane Rotation

Maximum Value: 76.2 at 62.2 Milliseconds

Minimum Value: -41.4 at 184.5 Milliseconds

SAE Filter Class: 60

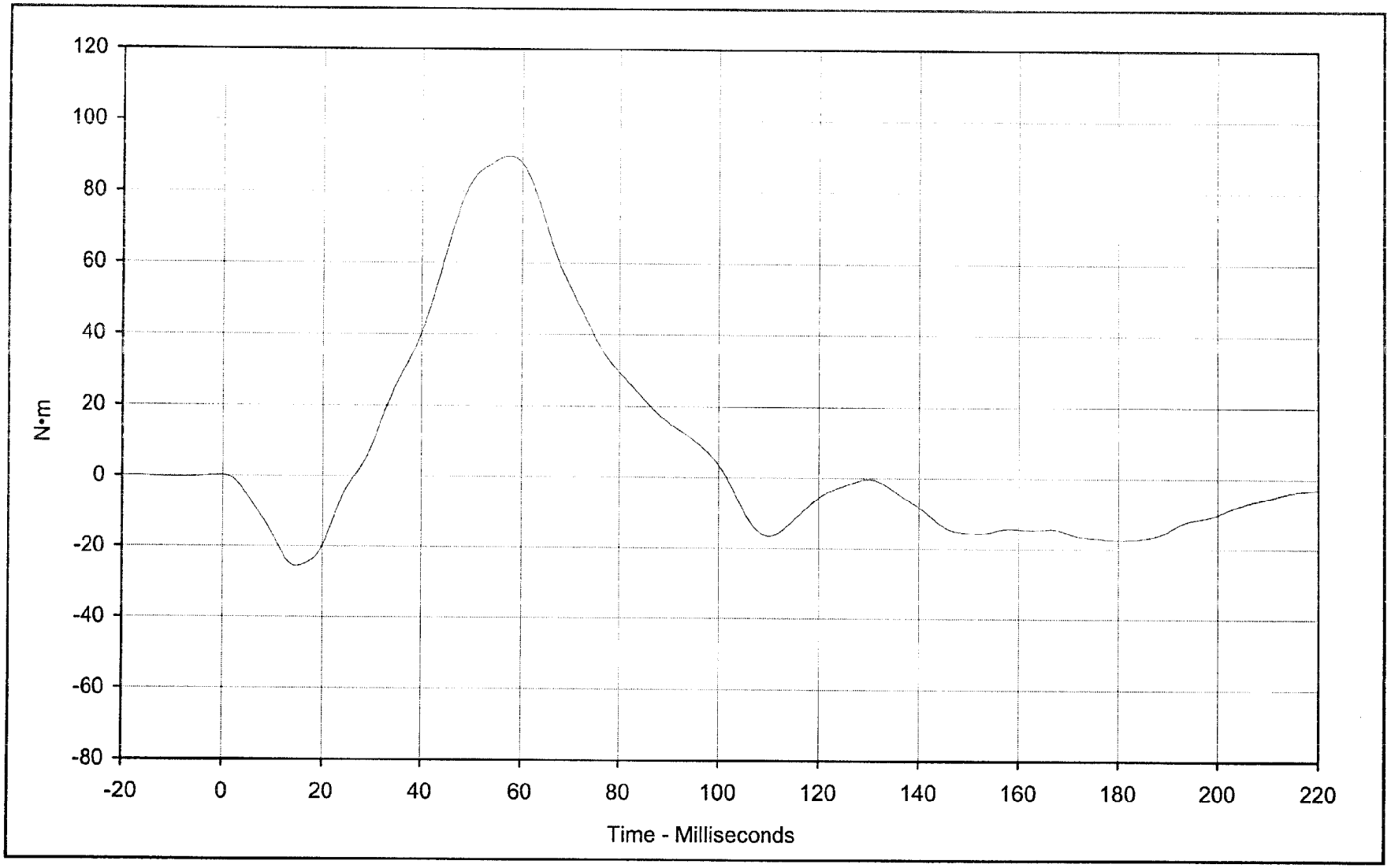
Date of Test: 11/19/99

ATD Serial No.: 34

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NF11B

KARCO Engineering



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

Testing Program: Hybrid III Neck Flexion Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NF11B

KARC Engineering

Hybrid III Calibration Data Sheet
50TH Percentile Male
Neck Extension Test

KARCO Engineering

ATD Serial No.: 34 Part Serial No.: n/a Test I.D.: NE11A

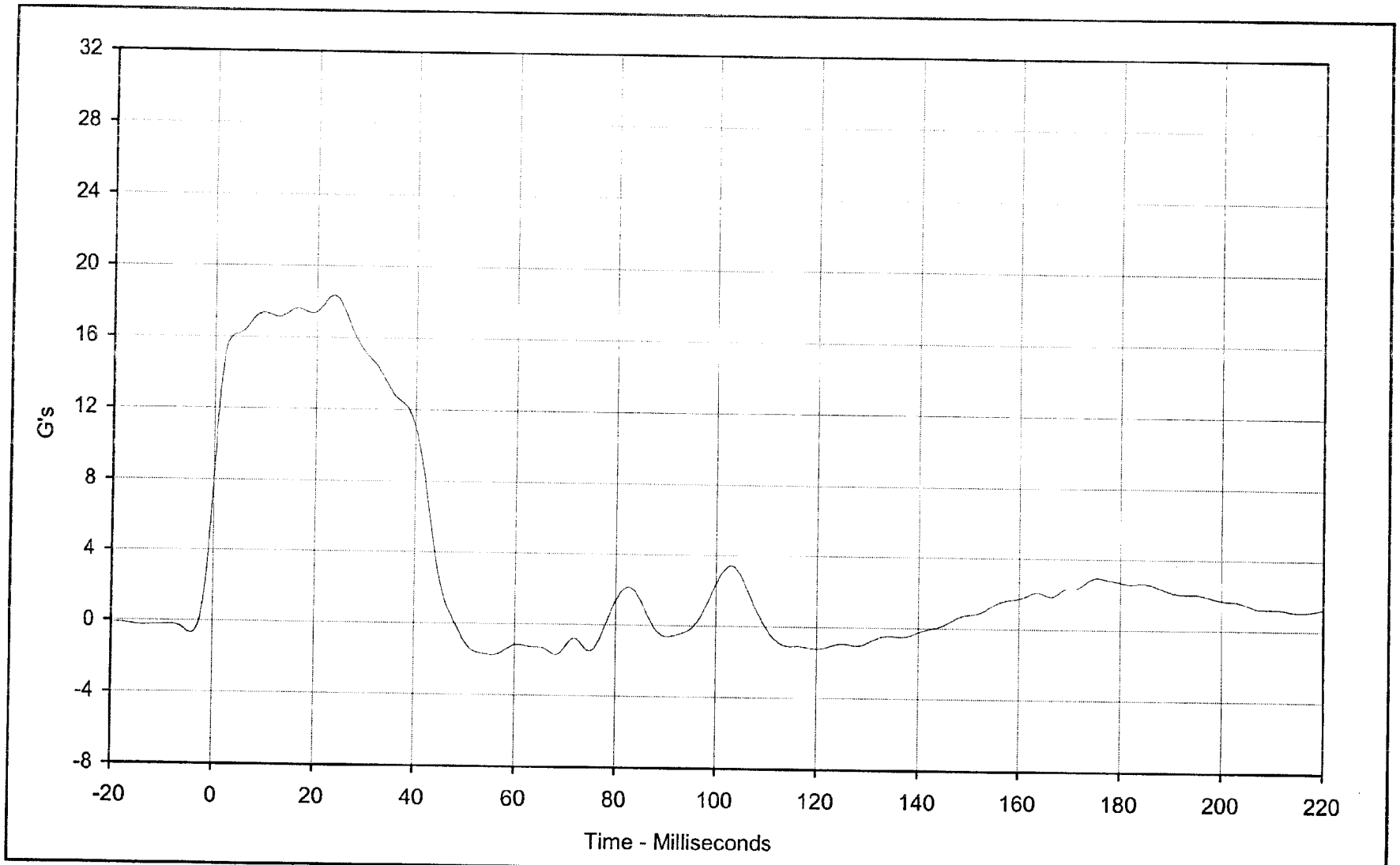
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	36	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.10	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.4	Pass
	20 Msec.	G's	14.0 to 19.0	17.4	Pass
	30 Msec.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

[signature]
Laboratory Technician

November 19, 1999
Test Date

James E. Hoth
Approved By

11/20/99
Date



Curve Description: Pendulum Deceleration

Maximum Value: 18.4 at 23.5 Milliseconds

Minimum Value: -1.7 at 55.6 Milliseconds

SAE Filter Class: 60

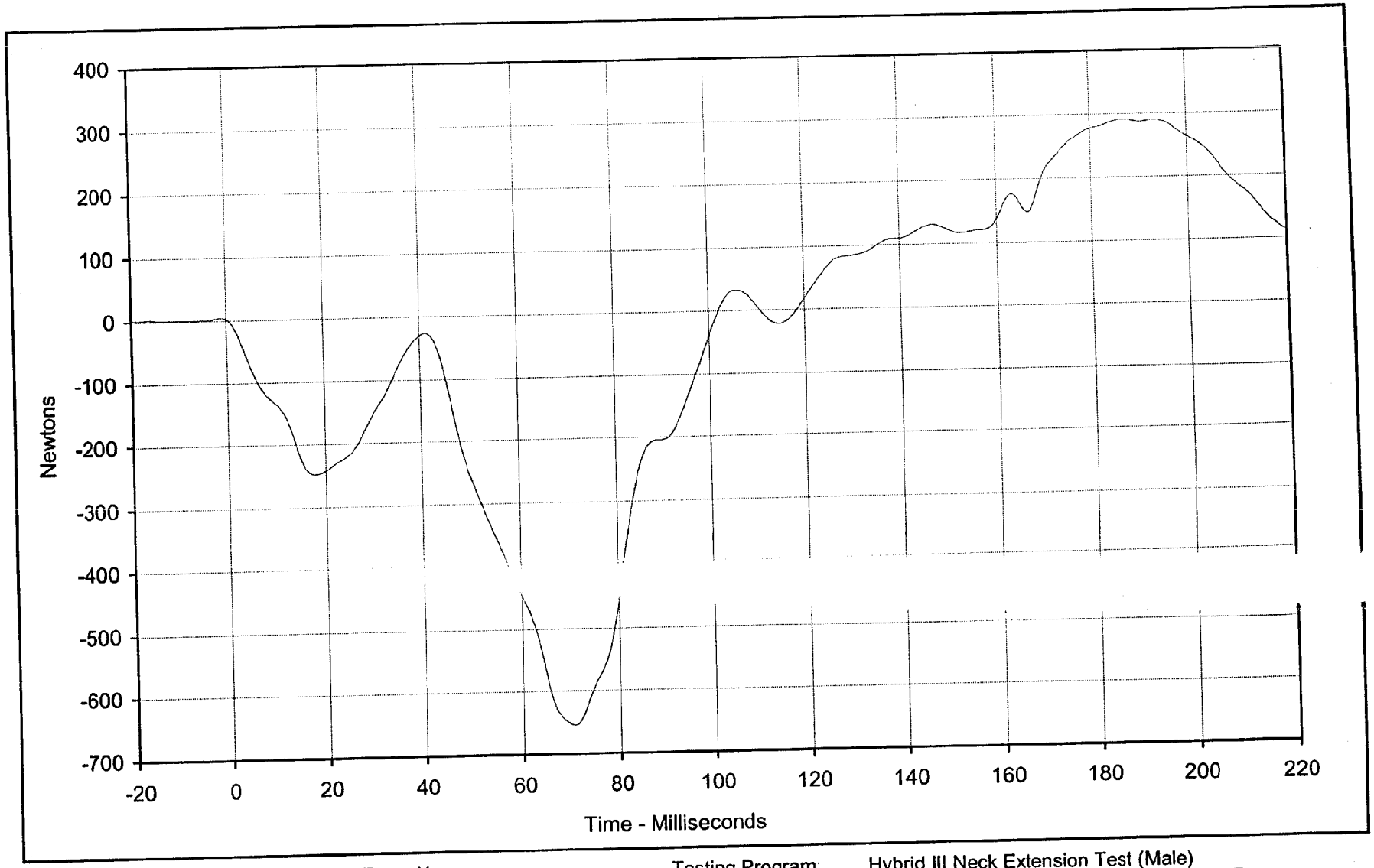
Date of Test: 11/19/99

ATD Serial No.: 34

Testing Program: Hybrid III Neck Extension Test (Male)

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

KARCO Engineering



Curve Description: Neck Force X

Maximum Value: 291.6 at 187.1 Milliseconds

Minimum Value: -654.8 at 70.6 Milliseconds

SAE Filter Class: 60

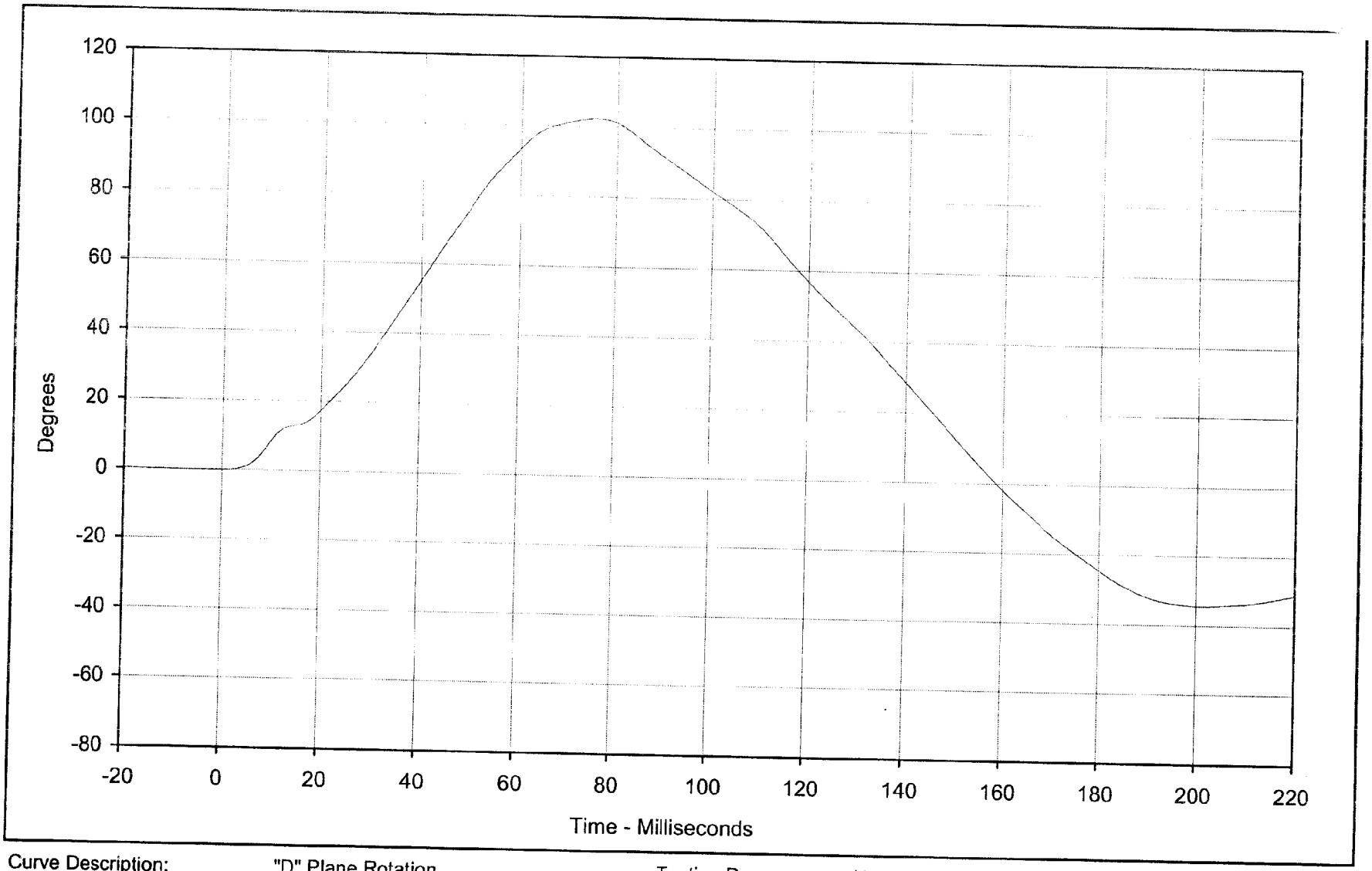
Date of Test: 11/19/99

ATD Serial No.: 34

Testing Program: Hybrid III Neck Extension Test (Male)

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

KARCO Engineering



Curve Description: "D" Plane Rotation

Maximum Value: 102.3 at 75.8 Milliseconds

Minimum Value: -34.4 at 201.2 Milliseconds

SAE Filter Class: 60

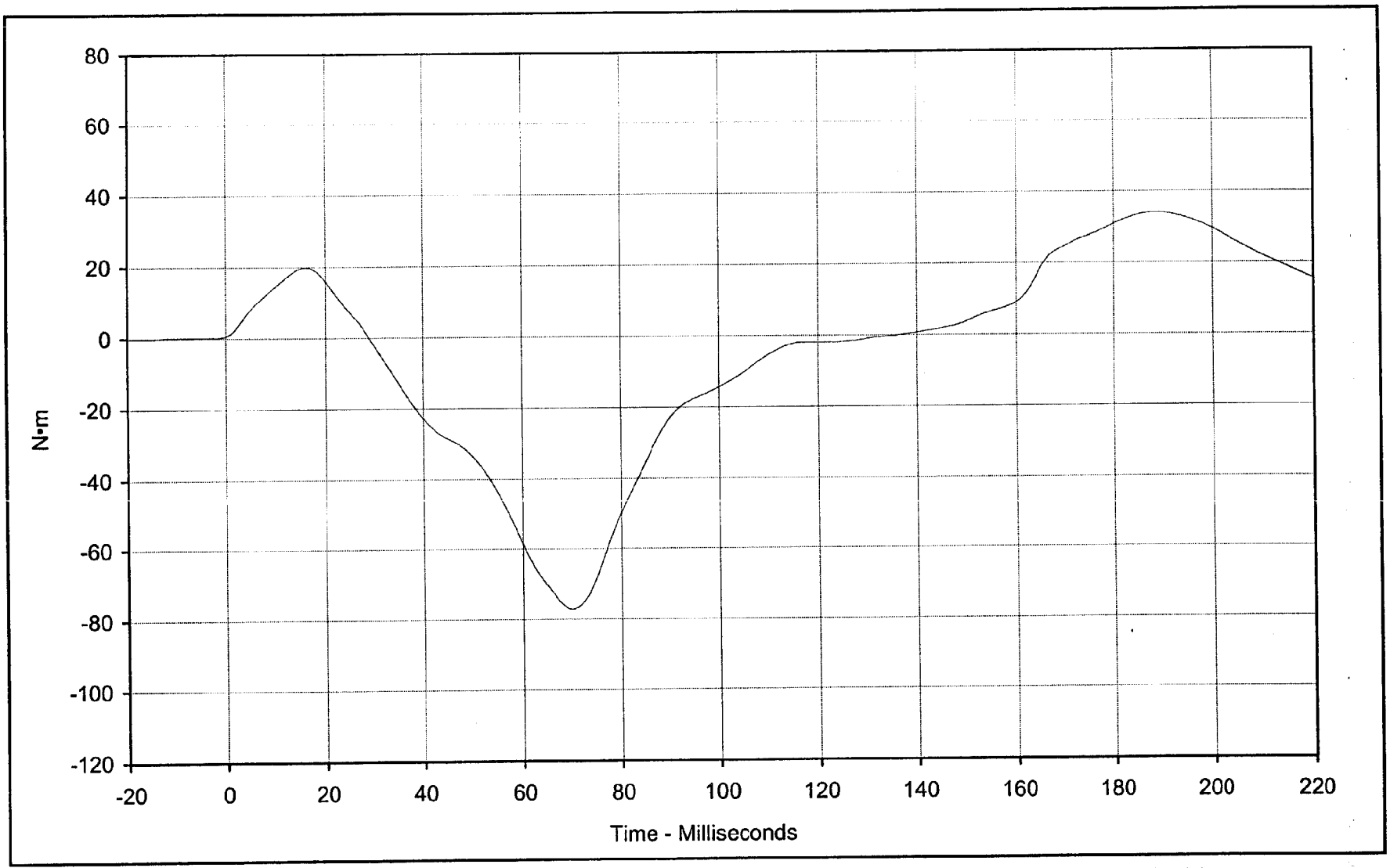
Date of Test: 11/19/99

ATD Serial No.: 34

Testing Program: Hybrid III Neck Extension Test (Male)

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

KARC Engineering



Curve Description: Moment About Occipital Condyles

Maximum Value: 34.1 at 188.6 Milliseconds

Minimum Value: -77.0 at 70.0 Milliseconds

SAE Filter Class: 60

Date of Test: 11/19/99

ATD Serial No.: 34

Testing Program: Hybrid III Neck Extension Test (Male)

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

KARCO Engineering

Hybrid III Calibration Data Sheet
50TH Percentile Male
External Measurements

ATD Serial No.: 34 Part Serial No.: N/A Test I.D.: N/A

External Measurement Data				
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory temperature	°C	20.4 to 22.1	20.9	Pass
Laboratory relative humidity	%	10 to 70	43	Pass
A - Total sitting height	mm	878.8 to 889.0	888.5	Pass
B - Shoulder pivot height	mm	505.5 to 520.7	507.0	Pass
C - "H" point height	mm	83.8 to 88.9	88.2	Pass
D - "H" point from seat back	mm	134.6 to 139.7	136.5	Pass
E - Shoulder pivot from back	mm	83.8 to 94.0	93.0	Pass
F - Thigh clearance	mm	139.7 to 154.9	151.0	Pass
G - Elbow back to wrist pivot	mm	289.6 to 304.8	300.4	Pass
H - Skull cap to back line	mm	40.6 to 45.7	44.0	Pass
I - Shoulder to elbow length	mm	330.2 to 345.4	340.0	Pass
J - Elbow rest height	mm	190.5 to 210.8	208.0	Pass
K - Buttock to knee length	mm	579.1 to 604.5	603.1	Pass
L - Poplipteal length	mm	429.3 to 454.7	451.0	Pass
M - Knee pivot height	mm	485.1 to 500.4	500.0	Pass
N - Buttock poplipteal length	mm	452.1 to 477.5	470.0	Pass
O - Chest depth	mm	213.4 to 228.6	225.0	Pass
P - Foot length	mm	251.5 to 266.7	255.0	Pass
V - Shoulder breadth	mm	421.6 to 436.9	429.0	Pass
W - Foot breadth	mm	91.4 to 106.7	103.2	Pass
Y - Chest circumference	mm	970.3 to 1000.8	980.3	Pass
Z - Waist circumference	mm	835.7 to 866.1	865.0	Pass
AA - Location for chest circumference	mm	429.3 to 434.3	430.0	Pass
BB - Location for waist circumference	mm	226.1 to 231.1	230.0	Pass
		Overall Test Results		Pass

Laboratory Technician

November 22, 1999
Test Date

James E. Scott
Approved By

11/23/99
Date

Hybrid III Calibration Data Sheet
50TH Percentile Male
Left Knee Impact Test

ATD Serial No.: 35 Part Serial No.: n/a Test I.D.: LK11B

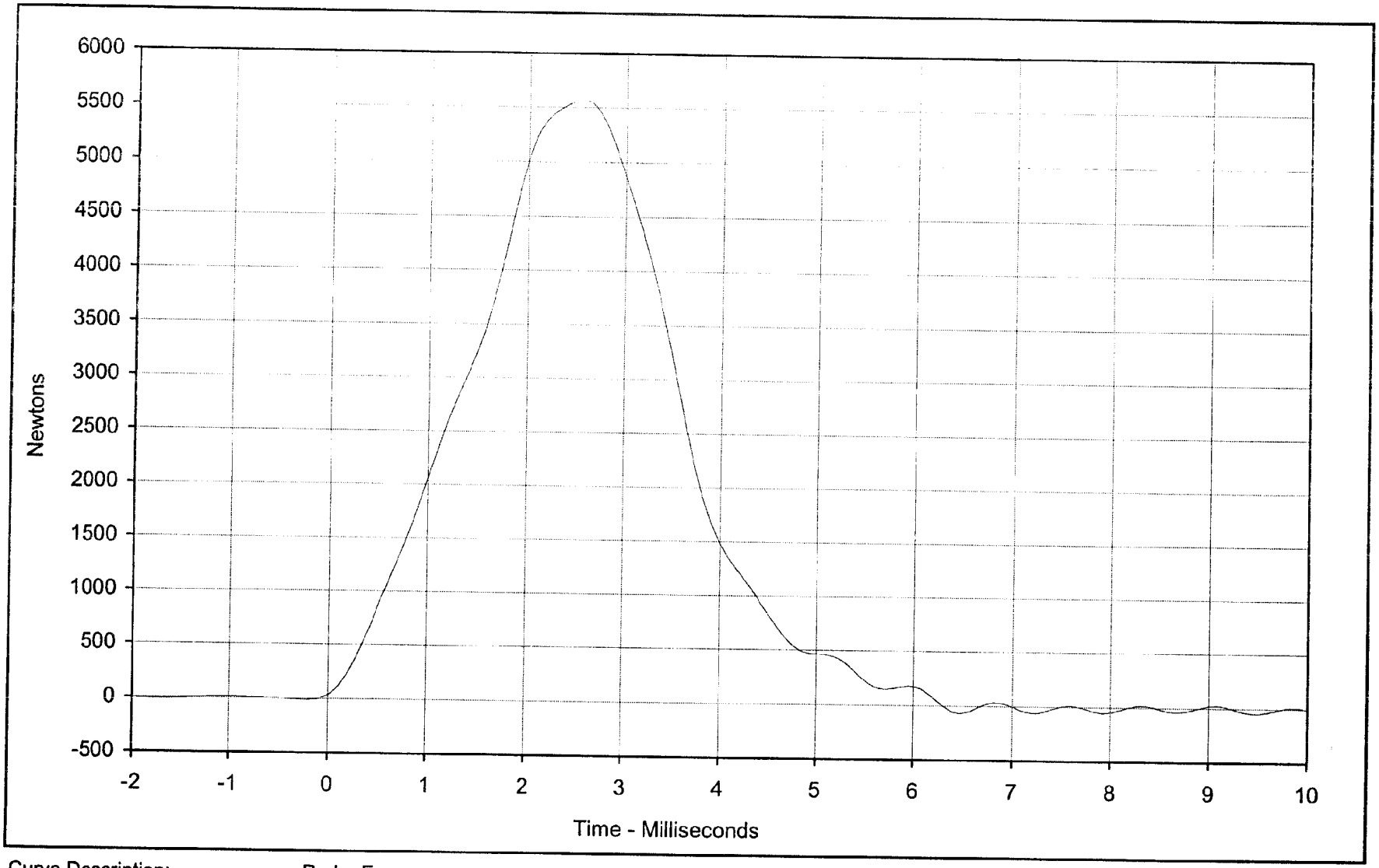
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	2.073 to 2.134	2.092	Pass
Peak Probe Force	Newtons	4715 to 5782	5565.1	Pass
		Overall Test Results		Pass

Laboratory Technician

November 19, 1999
Test Date

James E. Smith
Approved By

11/19/99
Date



Curve Description: Probe Force

Maximum Value: 5565.1 at 2.6 Milliseconds

Minimum Value: -64.1 at 6.5 Milliseconds

SAE Filter Class: 600

Date of Test: 11/19/99

ATD Serial No.: 35

Testing Program: Hybrid III Left Knee Impact Test

Test Information: Part S/N: n/a Test I.D.: LK11B

KARC Engineering

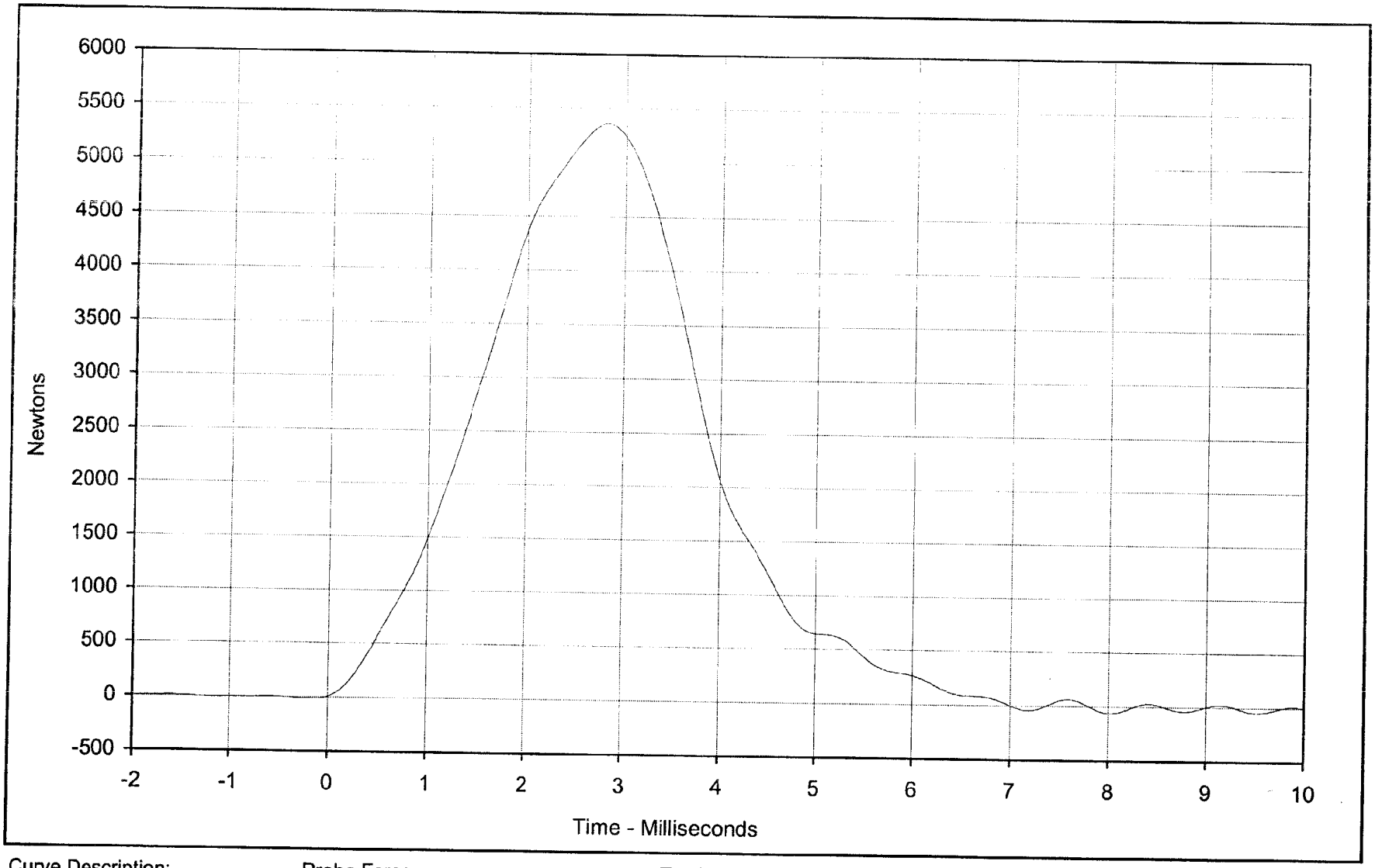
Hybrid III Calibration Data Sheet
50TH Percentile Male
Right Knee Impact Test

ATD Serial No.: 35 Part Serial No.: n/a Test I.D.: RK11B

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

Laboratory Technician — November 19, 1999 (Test Date)

James E. Hoth — Approved By — 11/20/99 (Date)



Curve Description: Probe Force

Maximum Value: 5357.5 at 2.8 Milliseconds

Minimum Value: -61.9 at 8.0 Milliseconds

SAE Filter Class: 600

Date of Test: 11/19/99

ATD Serial No.: 35

Testing Program: Hybrid III Right Knee Impact Test

Test Information: Part S/N: n/a Test I.D.: RK11B

KARC Engineering

Hybrid III Calibration Data Sheet
50TH Percentile Male
Head Drop Calibration

ATD Serial No.: 035 Part Serial No.: n/a Test I.D.: HD11A

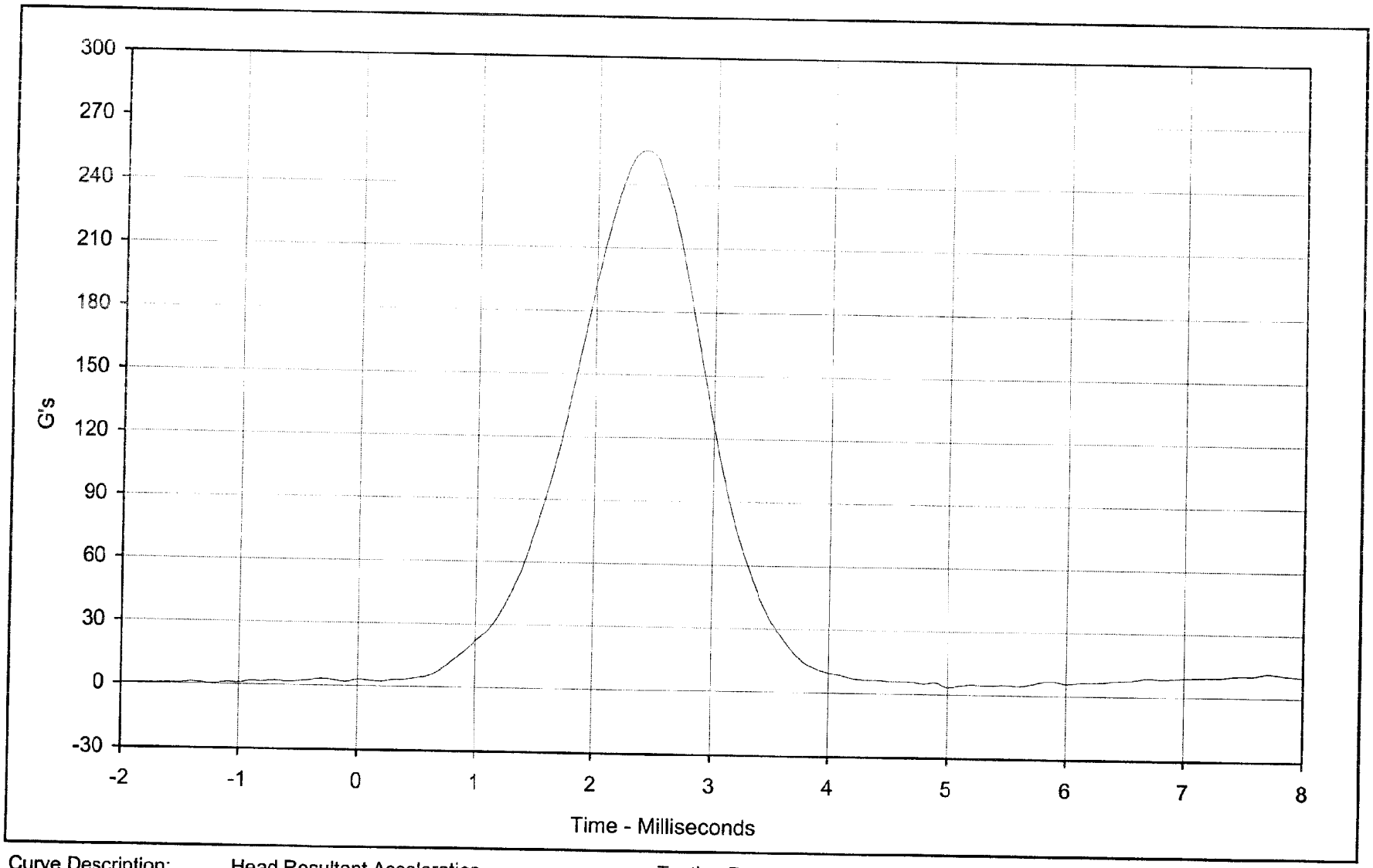
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	25	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	255.8	Pass
Peak Lateral Acceleration	G's	≤15.0	5.5	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
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

Laboratory Technician

November 18, 1999
Test Date

James E. Scott
Approved By

11/19/99
Date



Curve Description: Head Resultant Acceleration

Maximum Value: 255.8 at 2.4 Milliseconds

Minimum Value: 0.3 at -1.8 Milliseconds

SAE Filter Class: 1000

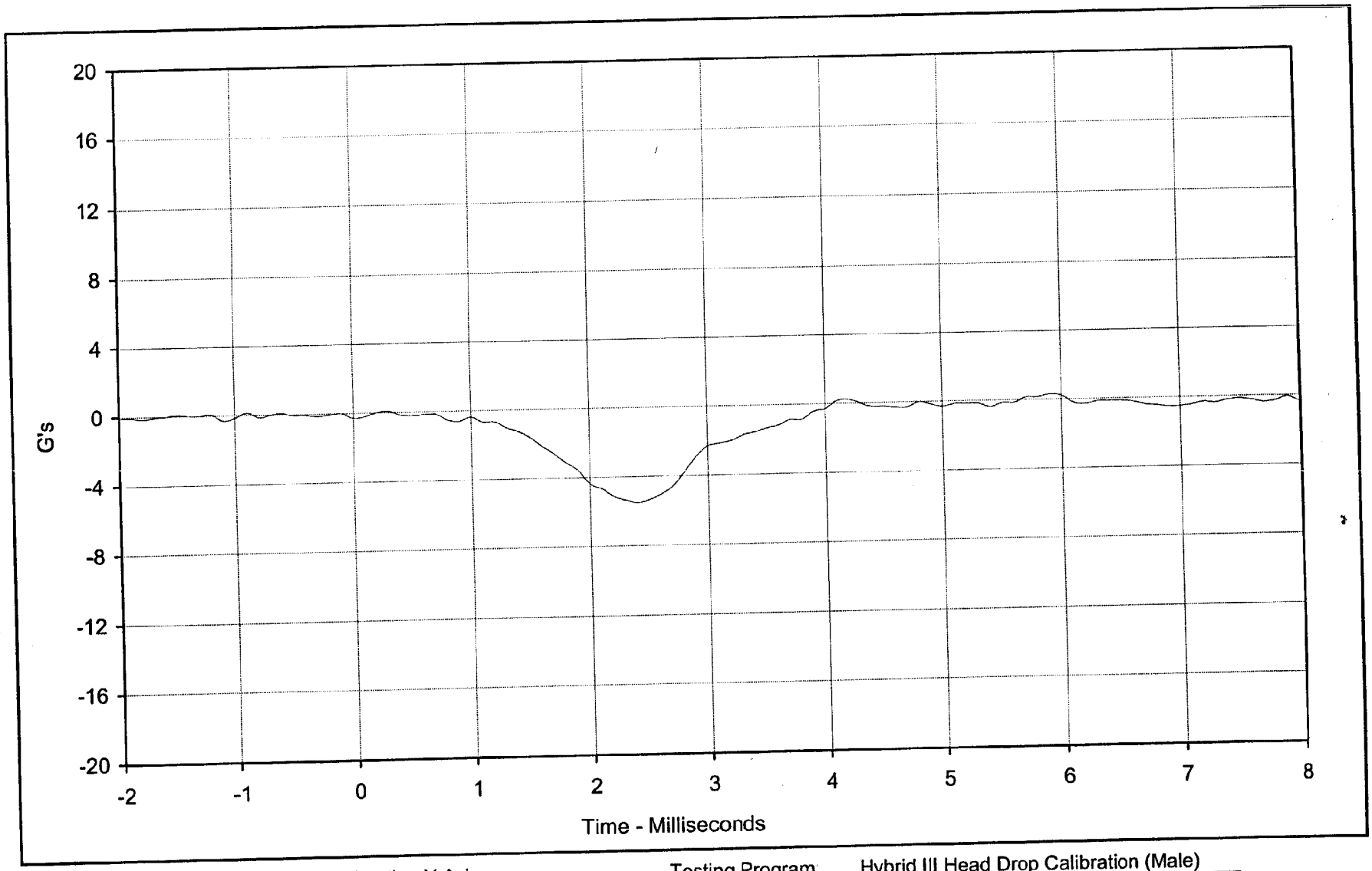
Date of Test: 11/18/99

ATD Serial No.: 035

Testing Program: Hybrid III Head Drop Calibration (Male)

Test Information: S/N of Part: n/a Test I.D.: HD11A

KARC Engineering



Curve Description: Head Acceleration Y Axis

Maximum Value: 0.3 at 5.9 Milliseconds

Minimum Value: -5.5 at 2.4 Milliseconds

SAE Filter Class: 1000

Date of Test: 11/18/99

ATD Serial No.: 035

Testing Program: Hybrid III Head Drop Calibration (Male)

Test Information: S/N of Part: n/a Test I.D.: HD11A

KARCO Engineering

Hybrid III Calibration Data Sheet
50TH Percentile Male
Thorax Impact Test

ATD Serial No.: 35 Part Serial No.: N/A Test I.D.: CH11A

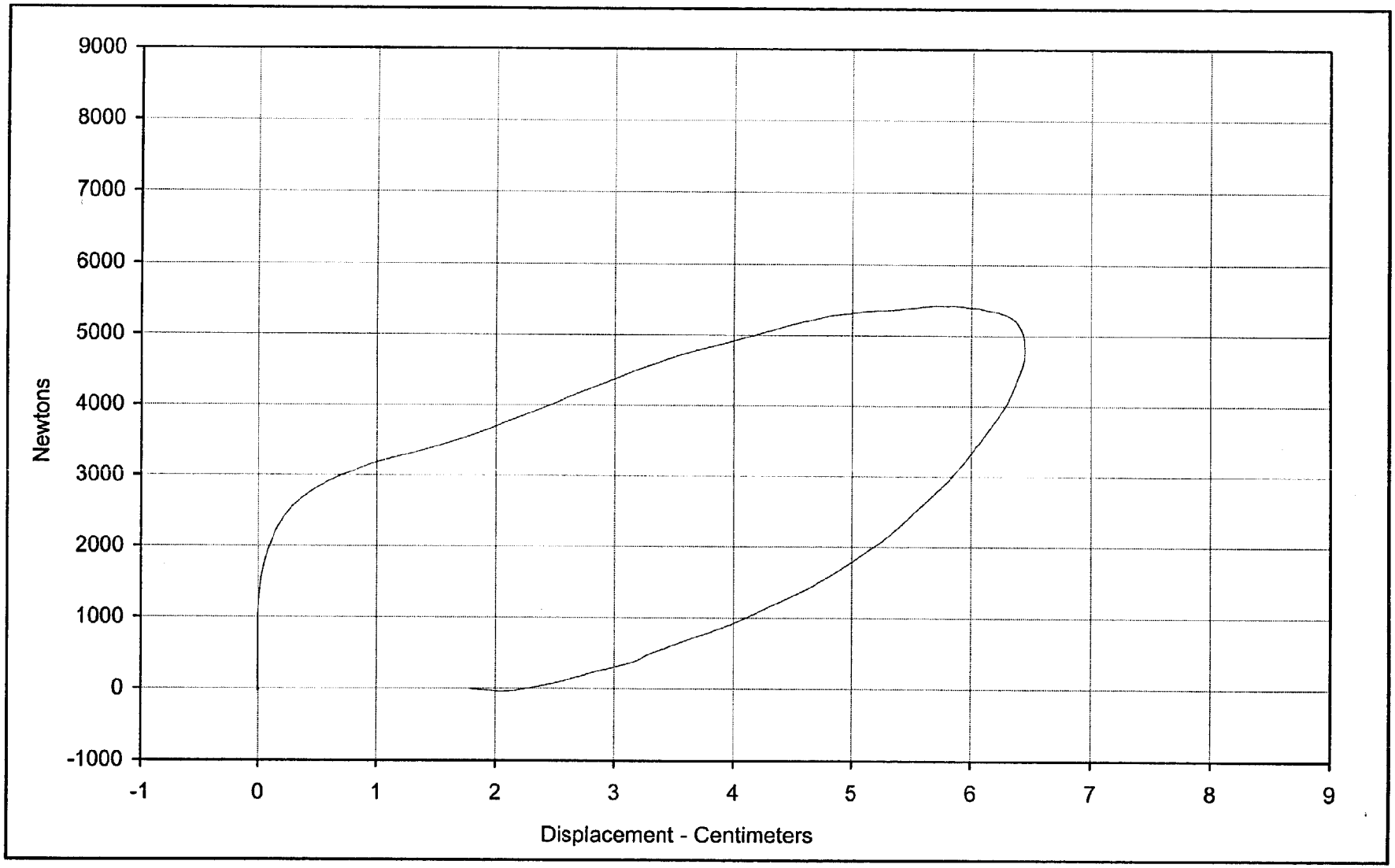
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	39	Pass
Probe Velocity	m/s	6.58 to 6.82	6.69	Pass
Peak Probe Force	Newtons	5159 to 5893	5423	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.45	Pass
Internal Hysterysis	%	69 to 85	77.4	Pass
		Overall Test Results		Pass

Laboratory Technician

November 22, 1999
Test Date

James E. Scott
Approved By

11/23/99
Date



Curve Description:	Probe Force vs. Chest Displacement		Testing Program:	Hybrid III Thorax Impact Test
Probe Force:	5422.8	Newtons	Test Information:	S/N of Part: N/A Test I.D.: CH11A
Chest Displ.:	6.45	Centimeters		
SAE Filter Class:	180			
Date of Test:	11/22/99			
ATD Serial No.:	35			

KARC Engineering

Hybrid III Calibration Data Sheet
50TH Percentile Male
Neck Flexion Test

ATD Serial No.: 35 Part Serial No.: n/a Test I.D.: NF11A

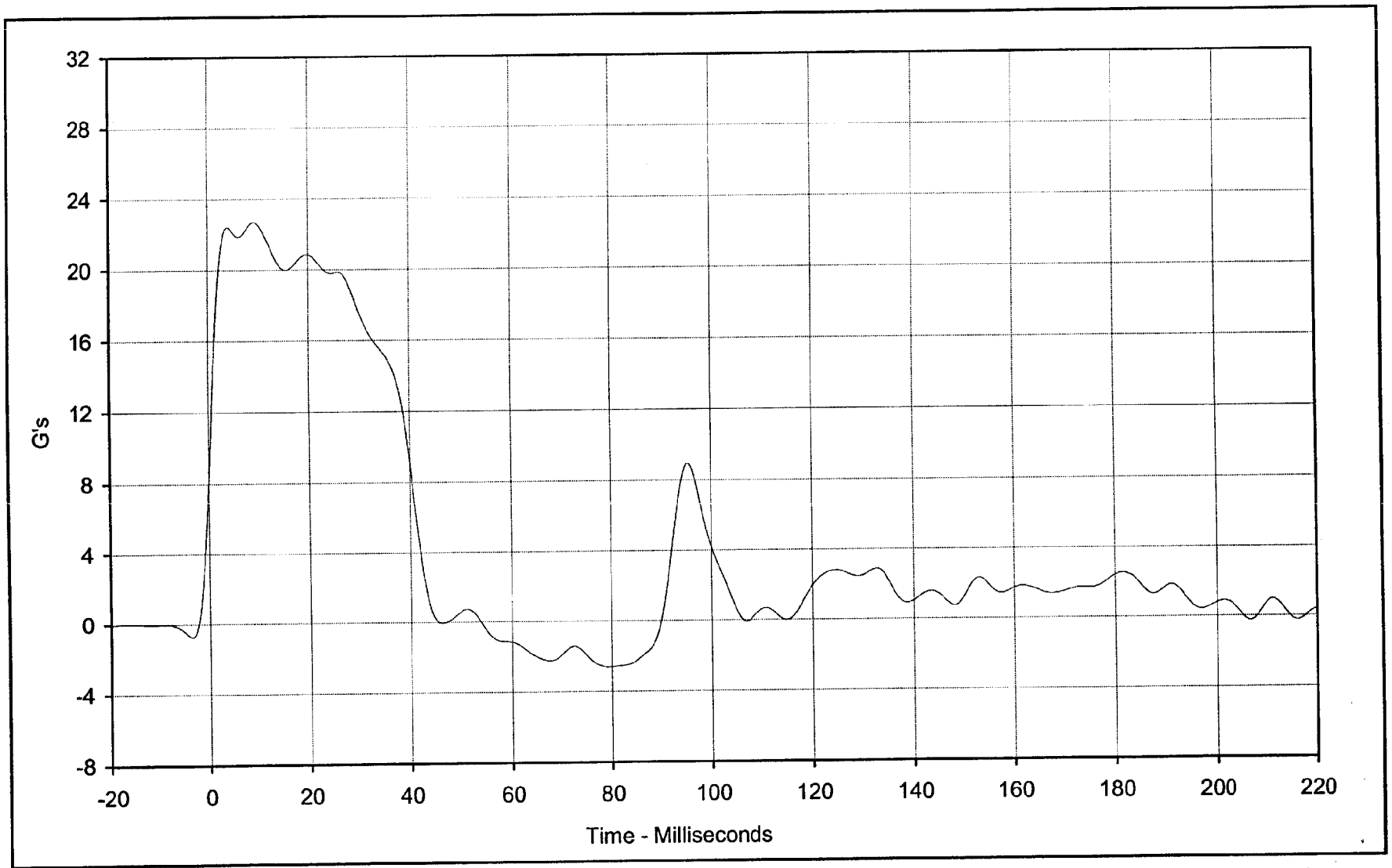
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity		%	10 to 70	40	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.00	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.5	Pass
	20 Msec.	G's	17.6 to 22.6	20.9	Pass
	30 Msec.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

Laboratory Technician

November 19, 1999
Test Date

James E. Scott
Approved By

11/19/99
Date



Curve Description: Pendulum Deceleration

Maximum Value: 22.7 at 9.2 Milliseconds

Minimum Value: -2.6 at 79.4 Milliseconds

SAE Filter Class: 60

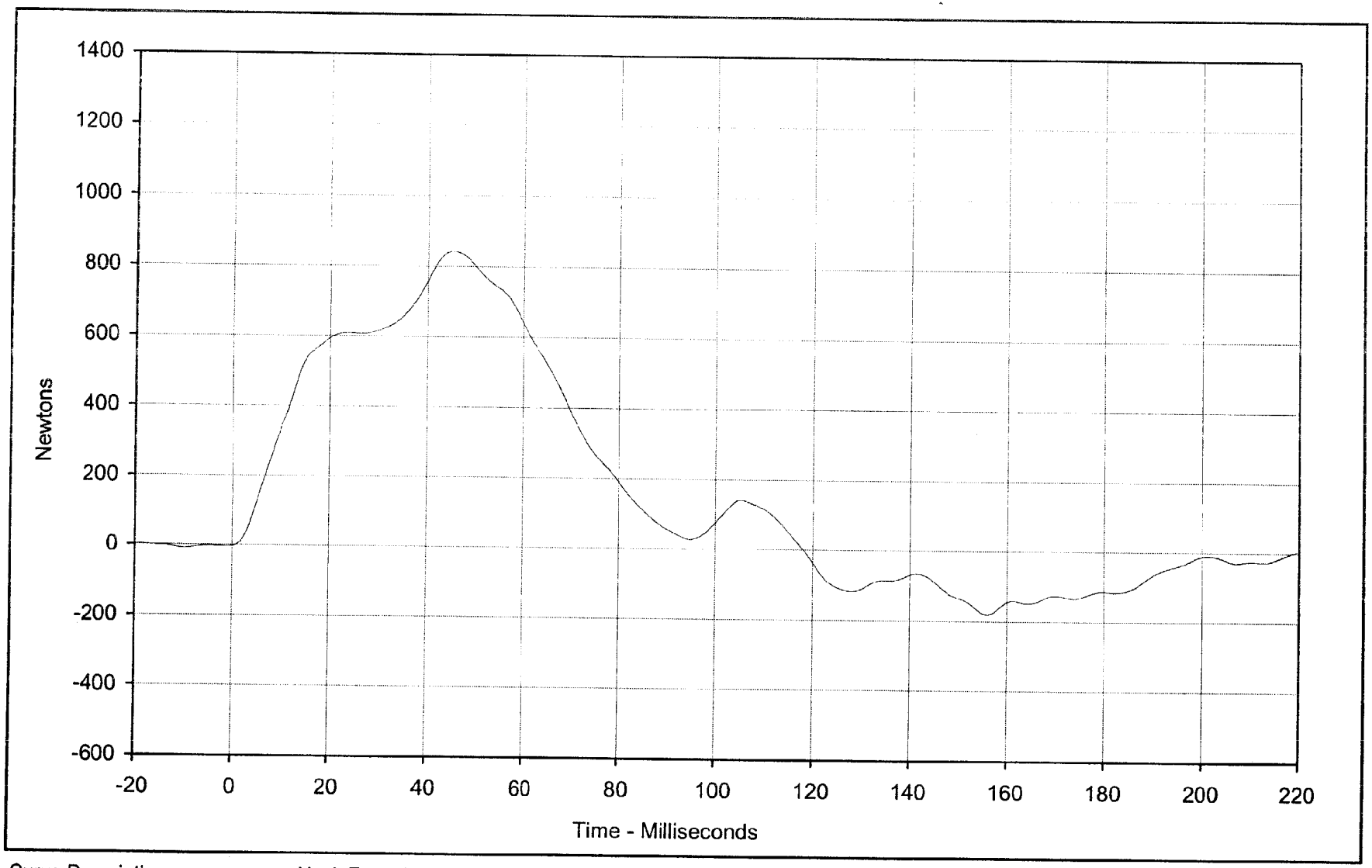
Date of Test: 11/19/99

ATD Serial No.: 35

Testing Program: Hybrid III Neck Flexion Test (Male)

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

KARC Engineering



Curve Description: Neck Force X

Maximum Value: 842.9 at 45.2 Milliseconds

Minimum Value: -180.3 at 155.9 Milliseconds

SAE Filter Class: 60

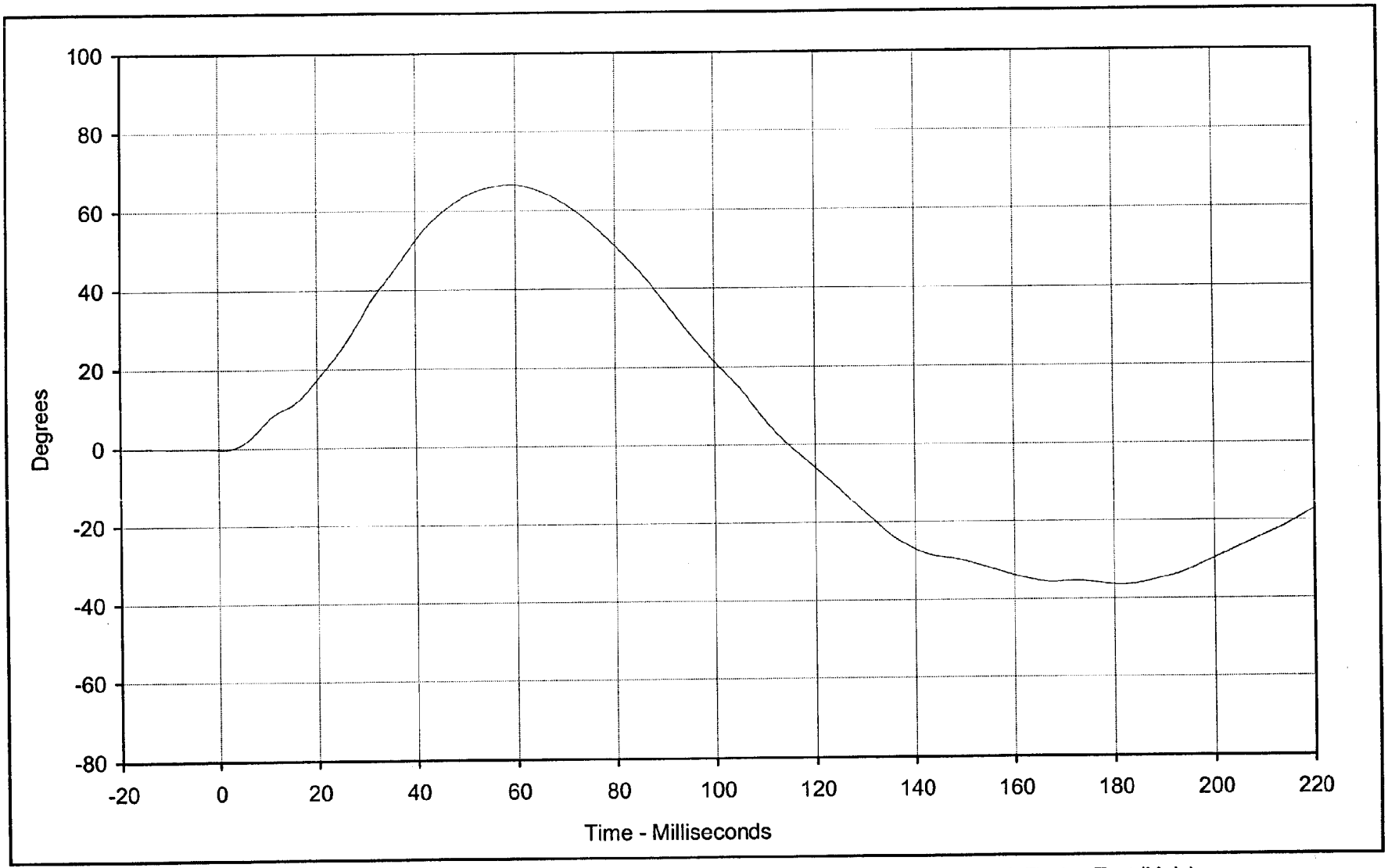
Date of Test: 11/19/99

ATD Serial No.: 35

Testing Program: Hybrid III Neck Flexion Test (Male)

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

KARCO Engineering



Curve Description: "D" Plane Rotation

Maximum Value: 66.6 at 59.1 Milliseconds

Minimum Value: -36.4 at 181.5 Milliseconds

SAE Filter Class: 60

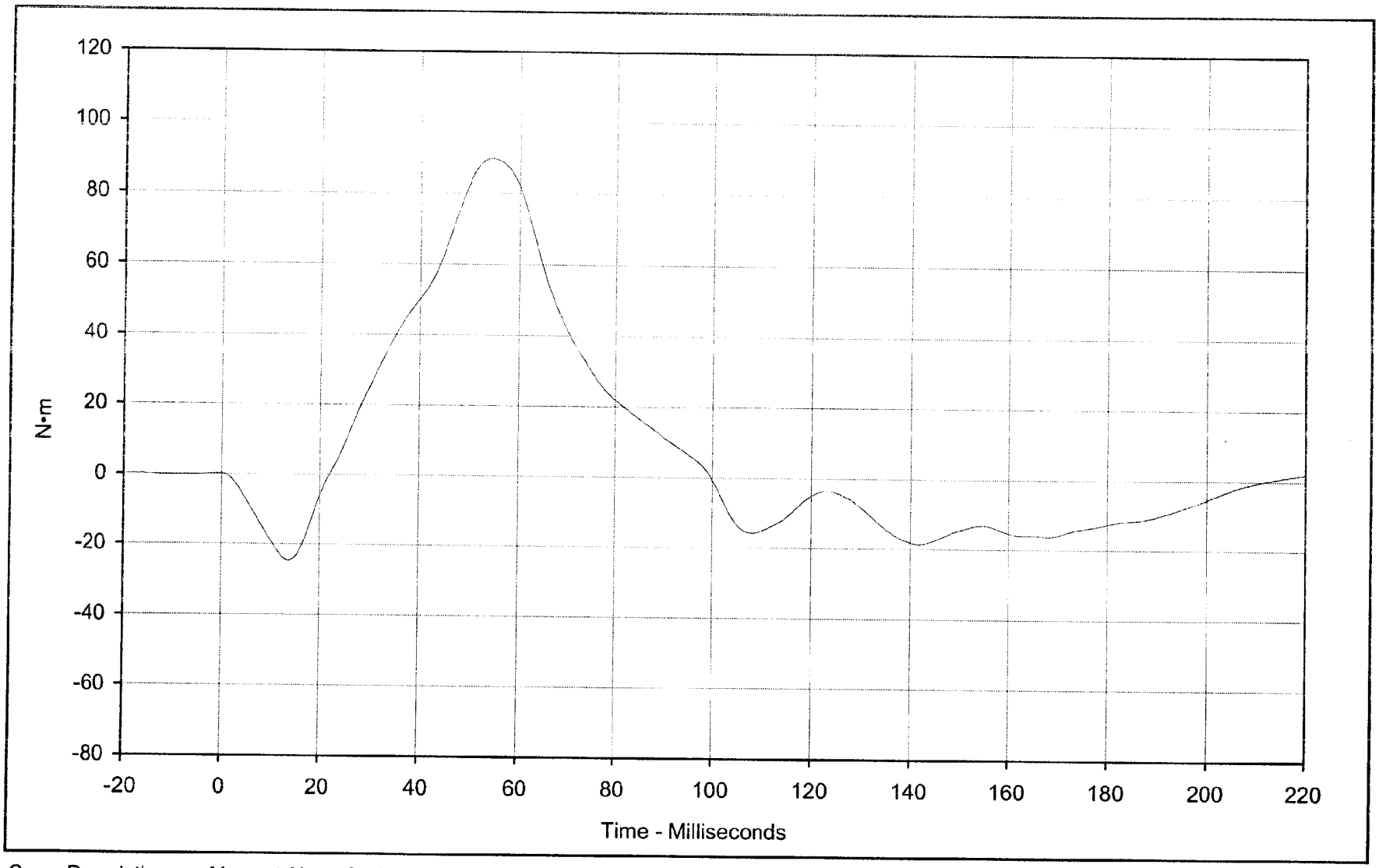
Date of Test: 11/19/99

ATD Serial No.: 35

Testing Program: Hybrid III Neck Flexion Test (Male)

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

KARCO Engineering



Curve Description: Moment About Occipital Condyles

Maximum Value: 89.8 at 54.5 Milliseconds

Minimum Value: -24.6 at 13.9 Milliseconds

SAE Filter Class: 60

Date of Test: 11/19/99

ATD Serial No.: 35

Testing Program: Hybrid III Neck Flexion Test (Male)

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

KARC Engineering

Hybrid III Calibration Data Sheet
50TH Percentile Male
Neck Extension Test

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

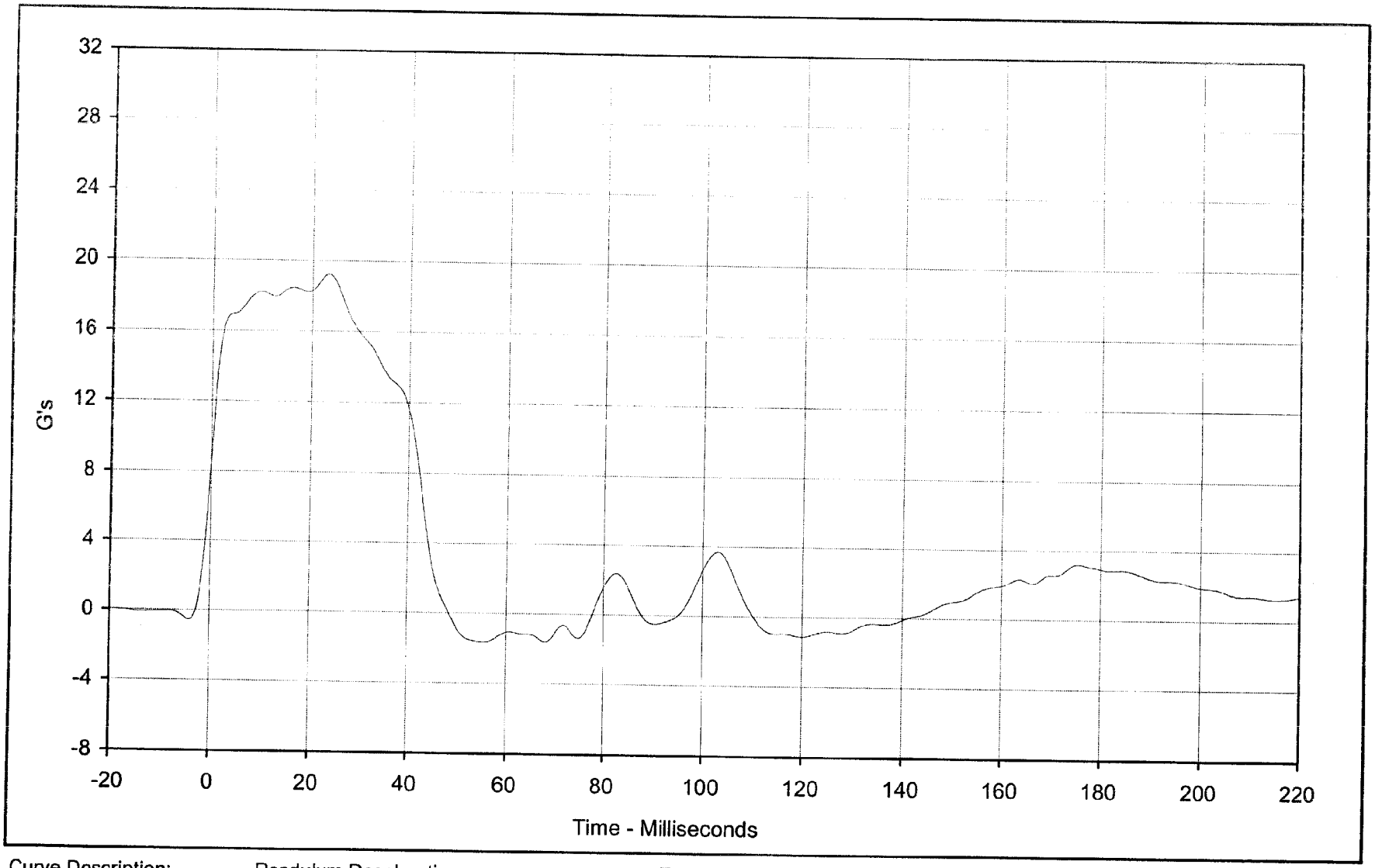
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	36	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.17	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	18.2	Pass
	20 Msec.	G's	14.0 to 19.0	18.3	Pass
	30 Msec.	G's	11.0 to 16.0	15.9	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.9	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	43.7	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	92.6	Pass
	Time	Msec.	72.0 to 82.0	78.7	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	156.9	Pass
Moment About Occipital Condyle	Maximum	N • m	-52.9 to- 79.9	-62.5	Pass
	Time	Msec.	65.0 to 79.0	68.9	Pass
Negative Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	137.8	Pass
			Overall Test Results		Pass

Laboratory Technician

November 19, 1999
Test Date

James E. Hoelt
Approved By

11/19/99
Date



Curve Description: Pendulum Deceleration

Maximum Value: 19.2 at 23.5 Milliseconds

Minimum Value: -1.7 at 55.6 Milliseconds

SAE Filter Class: 60

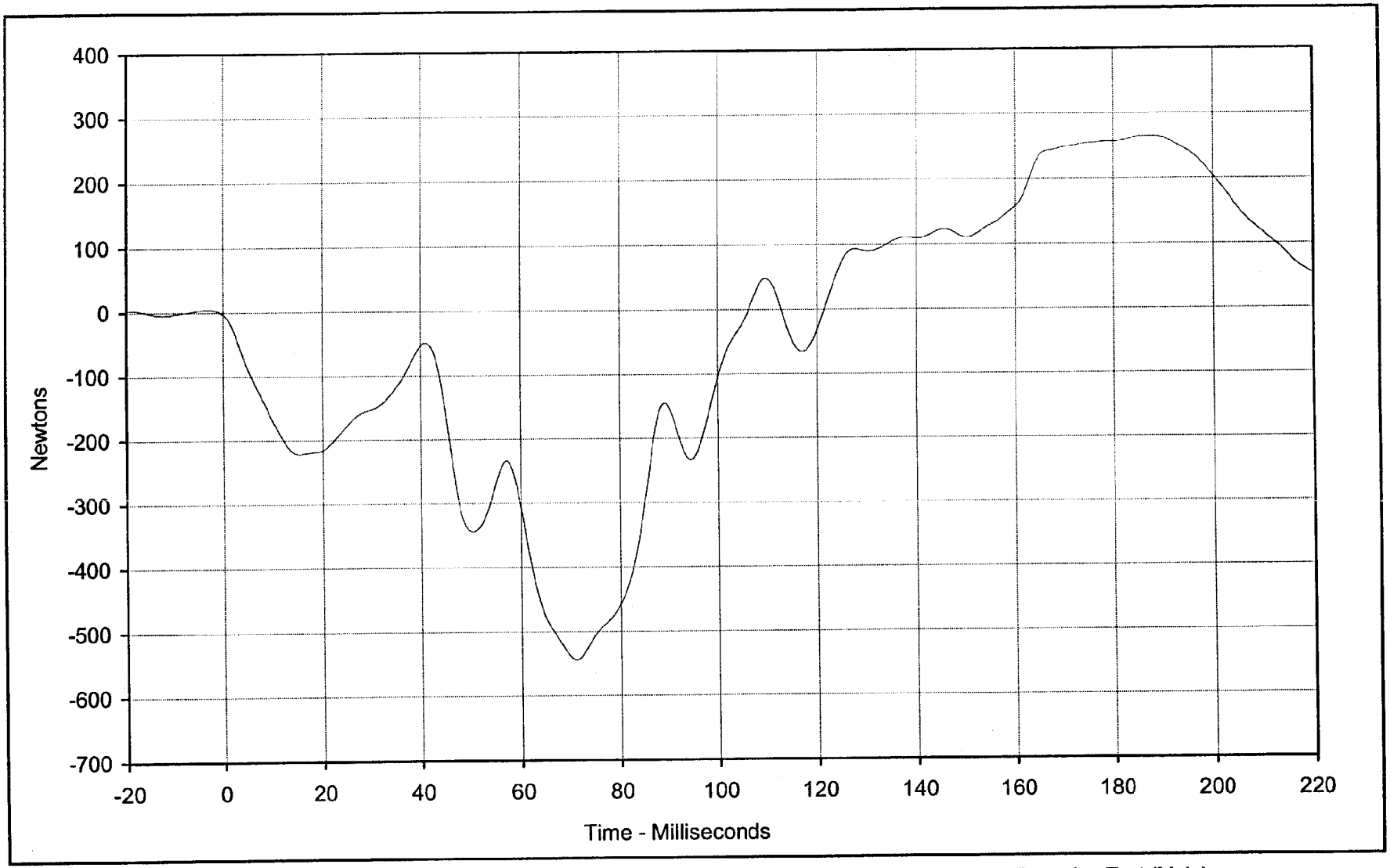
Date of Test: 11/19/99

ATD Serial No.: 35

Testing Program: Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NE11B

KARCO Engineering



Curve Description: Neck Force X

Maximum Value: 264.2 at 188.0 Milliseconds

Minimum Value: -544.2 at 70.9 Milliseconds

SAE Filter Class: 60

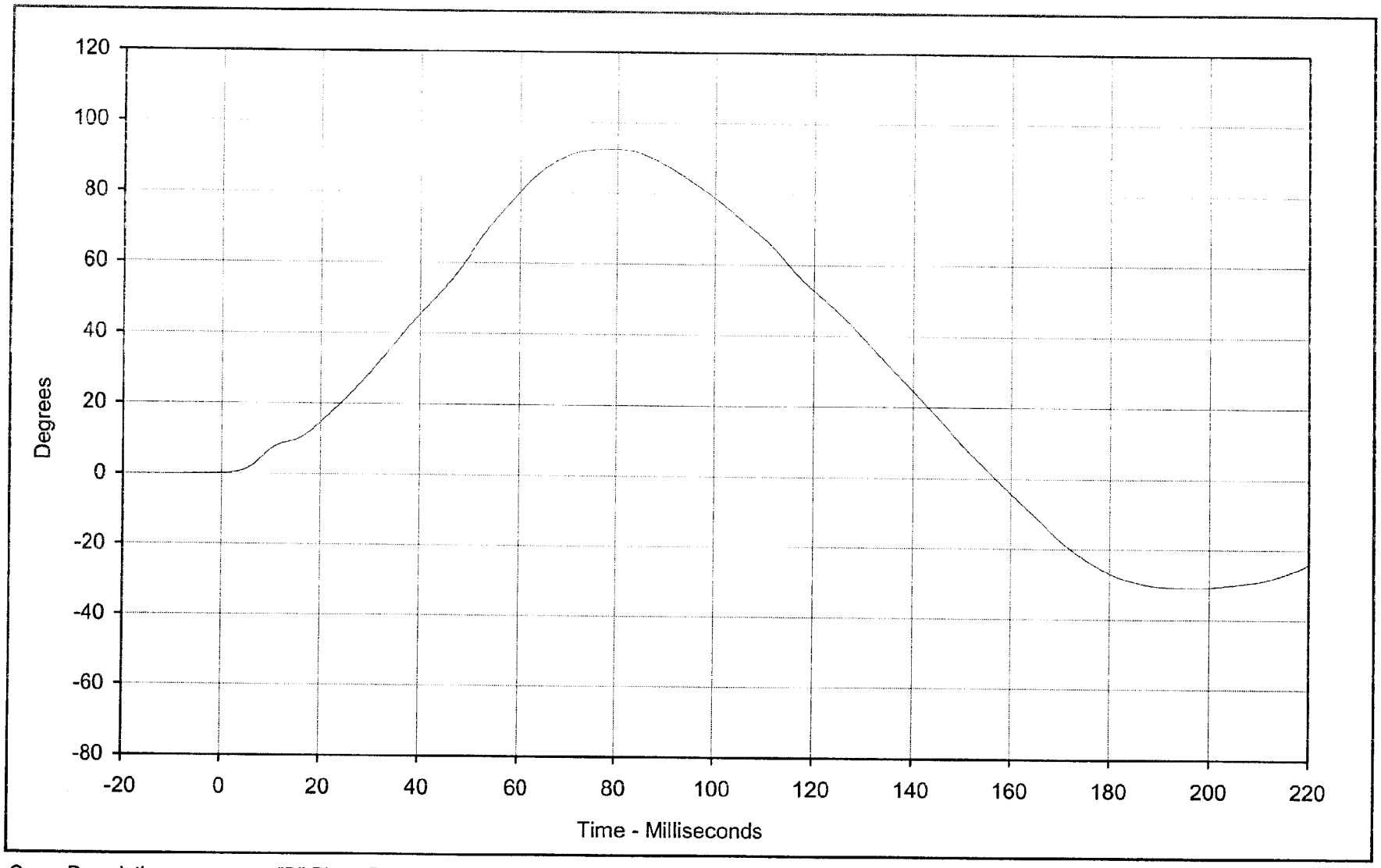
Date of Test: 11/19/99

ATD Serial No.: 35

Testing Program: Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NE11B

KARC Engineering



Curve Description: "D" Plane Rotation

Maximum Value: 92.6 at 78.7 Milliseconds

Minimum Value: -30.8 at 197.1 Milliseconds

SAE Filter Class: 60

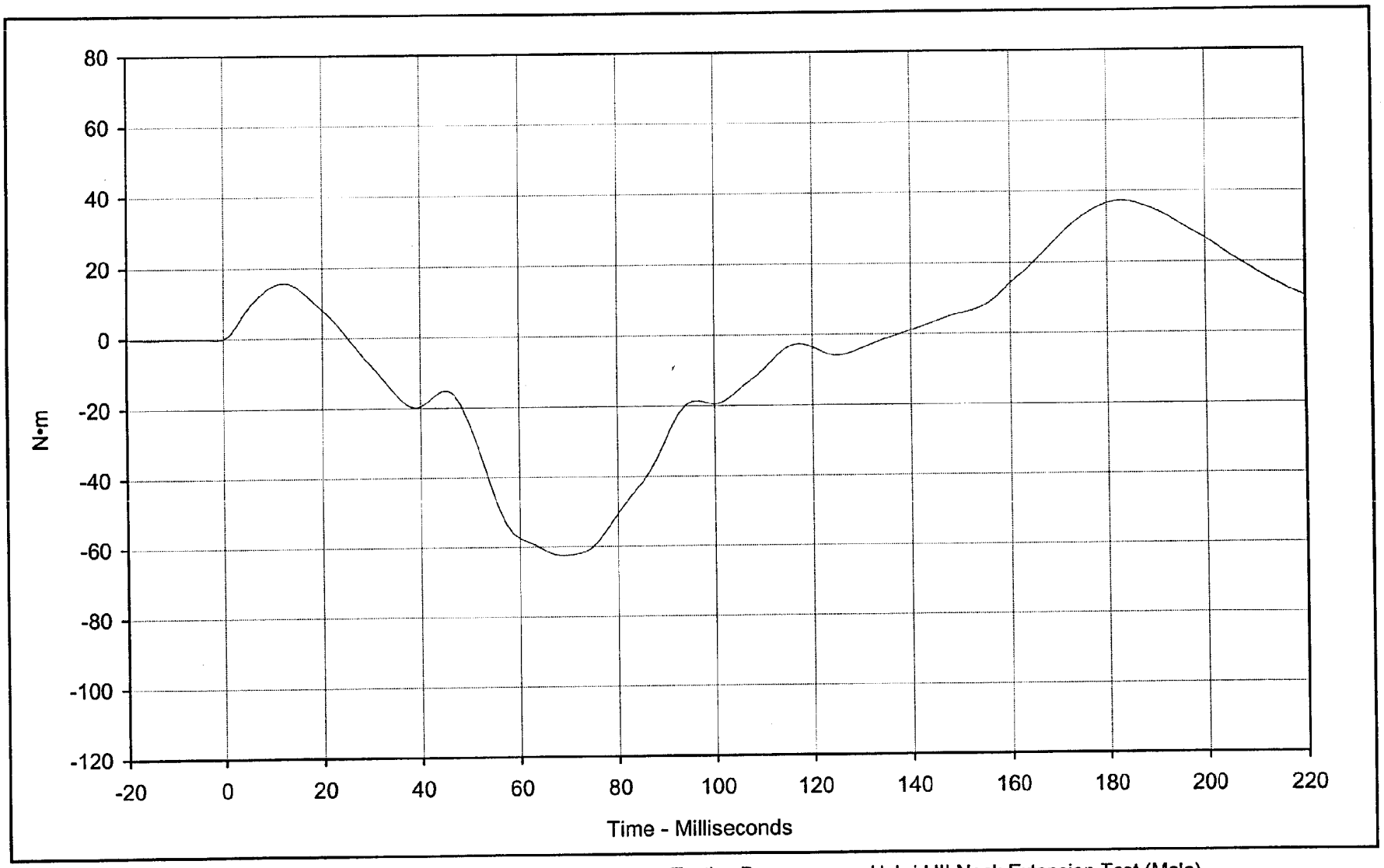
Date of Test: 11/19/99

ATD Serial No.: 35

Testing Program: Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NE11B

KARCO Engineering



Curve Description: Moment About Occipital Condyles

Maximum Value: 37.2 at 183.0 Milliseconds

Minimum Value: -62.5 at 68.9 Milliseconds

SAE Filter Class: 60

Date of Test: 11/19/99

ATD Serial No.: 35

Testing Program: Hybrid III Neck Extension Test (Male)

Test Information: S/N of Part: n/a Test I.D.: NE11B

KARC Engineering

Hybrid III Calibration Data Sheet
50TH Percentile Male
External Measurements

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

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

Laboratory Technician

November 22, 1999
Test Date

James E. Hoth
Approved By

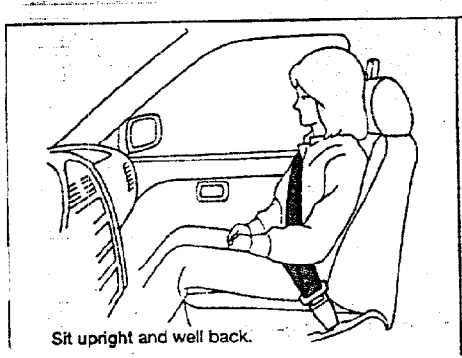
11/22/99
Date

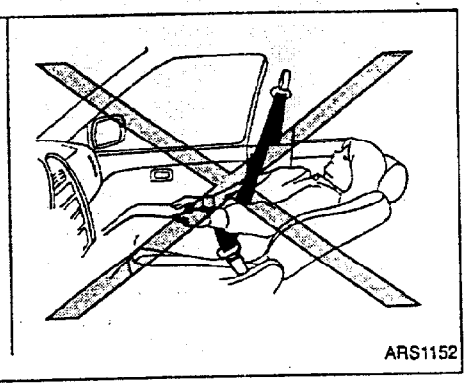
APPENDIX F

VEHICLE OWNER'S MANUAL

OCCUPANT RESTRAINT INSTRUCTIONS

FRONT BUCKET SEATS

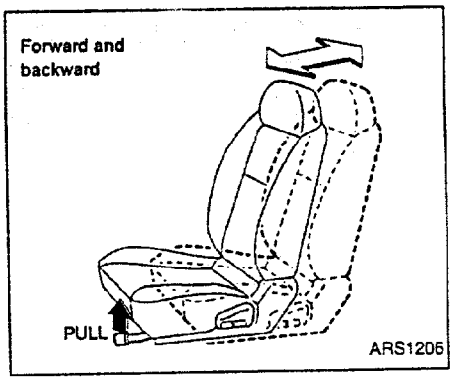




⚠ WARNING

- **Do not ride in a moving vehicle when the seatback is reclined. This can be dangerous. The shoulder belt will not be against your body. In an accident you could be thrown into it and receive neck or other serious injuries. You could also slide under the lap belt and receive serious internal injuries.**

- **For most effective protection when the vehicle is in motion, the seat should be upright. Always sit well back in the seat and adjust the seat properly. See "Precautions on Seat Belt Usage" later in this section.**



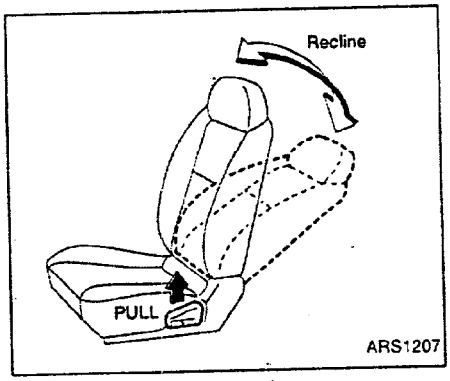
SEAT ADJUSTMENT

⚠ WARNING

- **Do not adjust the driver's seat while driving in order that full attention may be given to the driving operation. The seat may move suddenly and could cause loss of control of the vehicle.**
- **After adjustment, gently rock in the seat to make sure it is securely locked.**

Forward and backward

Pull the lever up and hold it while you slide the seat forward or backward to the desired position. Release the lever to lock the seat in position.

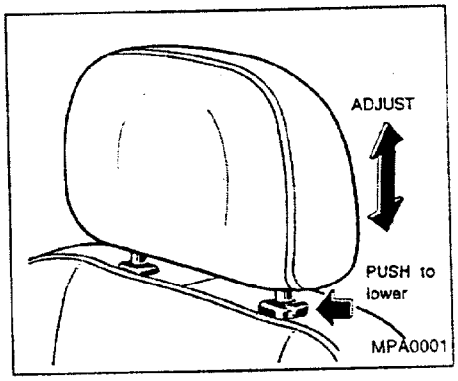


Reclining

To recline the seatback pull the lever up and lean back. To bring the seatback forward, pull the lever up and lean your body forward. Release the lever to lock the seatback in position.

⚠ WARNING

After adjustment, gently rock in the seat to make sure it is securely locked.

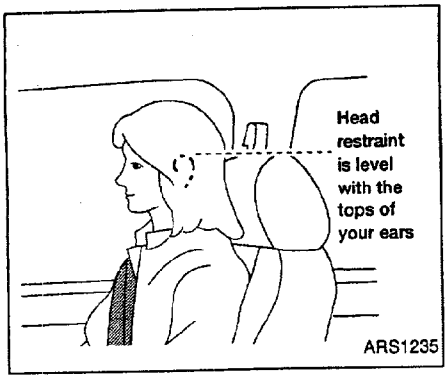


HEAD RESTRAINTS

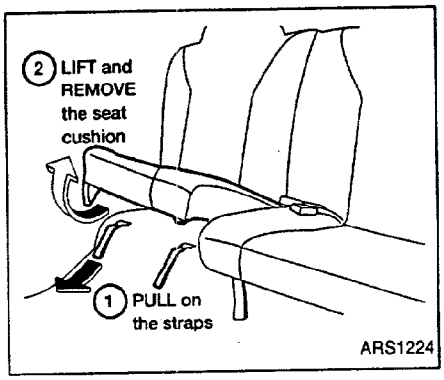
To raise the head restraint, pull it up. To lower, push the lock knob, then push the head restraint down.

⚠ WARNING

Head restraints should be adjusted properly as they may provide significant protection against injury in an accident. Do not remove them. Check the adjustment after someone else uses the seat.

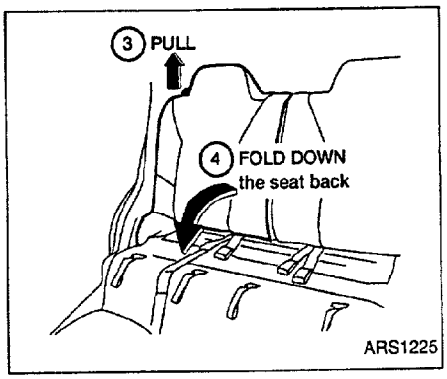


Adjust the top of the head restraint even with the tops of your ears.



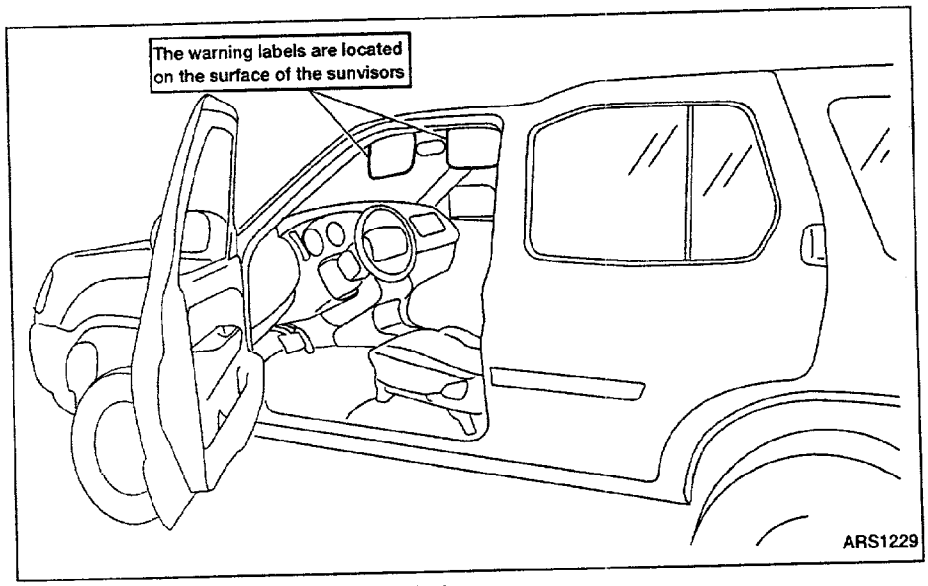
Folding down

1. Pull outward on the two straps at the bottom of the seat cushions.
2. Lift the front of the seat cushion up and remove the seat cushion. Store the seat cushion in a secure place.



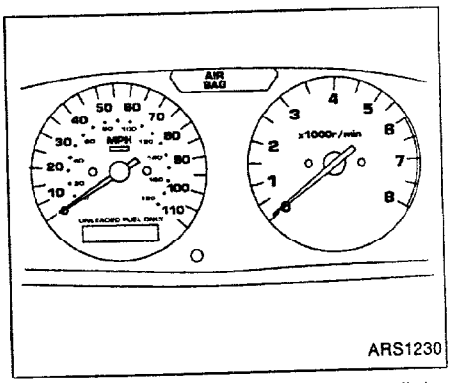
3. Pull the ring on top of the seat back up.
4. Fold down the seat back.

WARNING LABELS



Warning labels about the supplemental air bag system are placed in the vehicle as shown in the illustration.

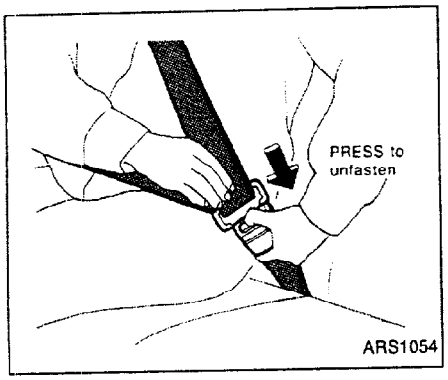
SUPPLEMENTAL AIR BAG WARNING LIGHT



The supplemental air bag warning light, displaying AIR BAG in the instrument panel, monitors the circuits of the supplemental air bag system. The circuits monitored by the supplemental air bag warning light are the diagnosis sensor unit, the supplemental air bag modules and all related wiring.

When the ignition key is in the ON or START position, the supplemental air bag warning light illuminates for about 7 seconds and then turns off. This means the system is operational.

If any of the following system conditions occur, the supplemental air bag system



Unfastening the seat belt

To unfasten the seat belt, press the button on the buckle. The seat belt automatically retracts.

Checking seat belt operation

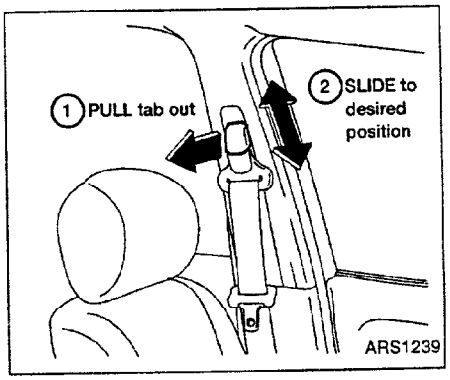
Seat belt retractors are designed to lock seat belt movement by two separate methods:

1) When the seat belt is pulled quickly from the retractor.
2) When the vehicle slows down rapidly.

To increase your confidence in the seat belts, check the operation as follows.

- Grasp the shoulder belt and pull quickly forward. The retractor should lock and restrict further belt movement.

If the retractor does not lock during this check, or if you have any questions about seat belt operation, see an authorized NISSAN dealer.



Shoulder belt height adjustment (front seats only)

The shoulder belt anchor height should be adjusted to the position best for you. (See "Precautions on seat belt usage" earlier in this section.) To adjust, pull out on the adjustment button and move the shoulder belt anchor to the desired position, so the belt passes over the center of the shoulder. The belt should be away from your face and neck, but not falling off of your shoulder. Release the adjustment button to lock the shoulder belt anchor into position.