REPORT NO. KAR-97-15

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
FRONTAL BARRIER (FMVSS 208) IMPACT TEST

FORD MOTOR COMPANY
1996 FORD TAURUS
4-DOOR SEDAN
NHTSA NO. MT0212

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

NOVEMBER 1, 1997
FINAL REPORT

PREPARED FOR:
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Date of Acceptance

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Technical Report Documentation Page

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16. *Abstract*

A 48.3 km/h frontal barrier impact test was conducted on a 1996 Ford Taurus 4-door sedan at KARCO Engineering on September 4, 1997. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301 and footwell intrusion performance. The impact velocity was 48.90 km/h. The ambient temperature at the barrier face at the time of impact was 31.1 °C. The vehicle's maximum post-test static crush was 420 mm, located at the vehicle centerline. test vehicle was equipped with a 3-point continuous belt system and supplemental airbags at both frontal outboard-seating positions.

With respect to FMVSS 208 "Occupant Crash Protection - Injury Criteria" the occupant injury response data summary is as follows:

Injury Criteria	Threshold Value	Driver Dummy	Passenger Dummy
Head Injury Criteria (HIC)	1000	103.5	254.7
Chest Resultant Peak 3 msec clip	60 G's	37.5	38.0
Left Femur Force	10009 N	-2452.9	-2527.3
Right Femur Force	10009 N	-2729.6	-2943.7
Peak Chest Displacement (cm)		-2.22	-0.84

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SECTION 1

PURPOSE, TEST PROCEDURE AND SUMMARY OF TEST MT0212

1.1 PURPOSE

This 30.0 mph (48.3 km/h) frontal barrier impact test is part of the FY' 97 FMVSS 208 frontal barrier crash worthiness evaluation program sponsored by the National Highway Traffic Safety Administration (NHTSA) under contract No. DTNH22-97-D-02007. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for frontal barrier impacts with the vehicle impacting a deformable barrier at an impact speed in excess of the current 30 mph (48 km/h) FMVSS 208/212/219/301 requirements. The test program will be used to develop a standard for driver footwell intrusion data during frontal offset collisions.

1.2 TEST PROCEDURE

This 48.3 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 September 1996 and corresponding KARCO Engineering Test Procedure KTP-001, dated September 18, 1996. Data was obtained indicant of FMVSS 208, "Occupant Crash Protection"; FMVSS 212, "Windshield Retention"; FMVSS 219, "Windshield Zone Intrusion (Partial)"; and FMVSS 301" "Fuel System Integrity" performance. Procedures for receiving, inspection testing and reporting of test results are described in the test procedures and are not repeated in this report.

The test was conducted at KARCO Engineering on September 4, 1997 at a speed of 48.90 km/h. The test vehicle was instrumented with eight (8) accelerometers to measure longitudinal axis and rotational 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 47.47 to 49.07 km/h. The frontal barrier impact event was documented by one (1) real-time panning motion picture camera and seventeen (17) high-speed motion picture cameras. The pre- and post-test conditions were recorded by one (1) real-time motion picture camera. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

The test vehicle contained two (2) part 572E 5th percentile adult female anthropomorphic test devices (ATDs). Both ATDs were instrumented with head, chest, pelvic tri-axial accelerometers, left/right femur load cells and left/right lower leg sensors. In addition, chest displacement and neck six-axis load and moment sensors were utilized. The ATDs were positioned in the front outboard seating positions according to the dummy placement procedures specified in the Laboratory Indicant Test Procedure. Ninety-six channels of data were recorded with a PC based (TDAS) on-board data acquisition system. The data was digitally sampled at 10,000 samples per second and processed per section IP11 of the Laboratory Indicant Test Procedure.

The Driver ATD (serial No. 202) and the right-front passenger ATD (serial No. 274) were used in one previous test since their last calibration. Injury criteria were not exceeded by either ATD during this frontal offset barrier impact test.

1.3 SUMMARY OF FRONTAL BARRIER IMPACT TEST

Twenty-four (24) load cell barrier data channels were obtained in conducting this frontal barrier impact test on September 4, 1997. The barrier was impacted by a 1996 Ford Taurus at a velocity of 48.90 km/h. The test vehicle was equipped with a transverse mounted 3.0 liter, six cylinder engine and a three speed automatic transmission. The test weight, with two (2) 5th percentile female ATDs, was 1714 kg.

The driver's Head Injury Criteria (HIC) was 103.5, the maximum chest deceleration over three (3) milliseconds was 37.5 g and the left and right femur loads were -2452.9 and -2729.6 Newtons, respectively. Chest deflection for the driver ATD was –22.2 mm. The driver ATD head contacted the airbag and headrest, its chest and abdomen contacted the airbag, both knees contacted the lower dash knee bolster.

The right front passenger's HIC was 254.7, maximum chest deceleration over three (3) milliseconds was 38.0 g, and the left and right femur loads were -2527.3 and -2943.7 Newtons respectively. Chest deflection for the passenger ATD was –8.4 mm. The passenger ATD head contacted the airbag and headrest, the chest and abdomen contacted the airbag, both knees contacted the glove box and knee bolster.

Seat belt spoolout, measured by on-board pullout potentiometers was 36.6 mm for the driver ATD and 36.6 mm for the passenger ATD. Shoulder belt stretch was 0.033 cm/cm for the driver ATD and 0.001 cm/cm for the passenger ATD.

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

The test vehicle sustained a maximum static crush of 420 mm at the left side of the front bumper. The driver side and passenger side doors all opened without the aid of tools.

1.4 GENERAL COMMENTS

The 1996 Ford Taurus 4-door sedan passed the requirements of FMVSS 212, FMVSS 219 and FMVSS 301-75. Data pertaining to these standards are presented in the data sheets.

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

SECTION 2.

OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

TEST MODE: 48.3 km/h FMVSS 208 Frontal Barrier Impact

CONVERSION FACTORS USED IN THIS REPORT:

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

DATA SHEET NO. 1

CRASH TEST SUMMARY

TEST MODE: 48.3 km/h FMVSS 208 Frontal Barrier Impact NHTSA NO. MT0212

TEST DATE: September 4, 1997 TIME: 1:40 PM TEMPERATURE: 31.1° C

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1996 FORD TAURUS 4-DOOR SEDAN

TEST WEIGHT: 1714 kg IMPACT VELOCITY: 48.90 km/h

VEHICLE REBOUND AND STATIC CRUSH; REBOUND ANGLE = 0°

	Left	Center	Right
Vehicle Rebound (mm)	2020	1920	2020
Pre-test Measurements (mm)	4740	5070	4740
Post-test Measurements (mm)	4500	4650	4500
Static Crush (mm)	240	420	240

DOOR OPENING AND SEAT TRACK INFORMATION

	Driver	Passenger
Door Opening (Front)	**OPENED**	**OPENED**
Door Opening (Rear)	**OPENED**	**OPENED**
Seat Track Shift (mm of shift)	**0**	**0**
Seat Back Failure	**NO**	**NO**

DUMMY INFORMATION

	Driver	Passenger
Dummy Type/No.	**5% Female Hybrid III (S/N 202)**	**5% Female Hybrid III (S/N 274)**
Data Channels	**44**	**44**
Visible Contact Points		
Head	**AIR BAG, HEAD REST**	**AIR BAG, HEAD REST**
Chest	**AIR BAG**	**AIR BAG**
Abdomen	**AIR BAG**	**AIR BAG**
Left Knee	**KNEE BOLSTER**	**KNEE BOLSTER**
Right Knee	**KNEE BOLSTER**	**KNEE BOLSTER**

DATA SHEET NO. 2

GENERAL TEST AND VEHICLE PARAMETER DATA

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1996 FORD TAURUS 4-DOOR SEDAN

TEST VEHICLE INFORMATION			
Manufacturer	FORD MOTOR COMPANY	VIN	1FALP52U6TA308137
Manufacturing Date	6/96	Delivery Date	7/3/97
Dealer	San Bernardino Ford San Bernardino, CA	NHTSA No.	MT0212
Odometer Reading	20,979 mi.	Fuel Type	Unleaded Gasoline
Engine Displacement	3.0 Liter	Cylinders	6
Transmission	3-speed Automatic	Final Drive	Front Wheel Drive
Engine Placement	Transverse	Color	Dark Blue
Tire Press./Max. Cap. Front	230 kPa	Cold Tire Press. Front	230 kPa
Tire Press./Max. Cap. Rear	230 kPa	Cold Tire Press. Rear	230 kPa
Recommend Tire Size	205/65R15	Type of Spare	T135/70/R15 Temporal Spare
Tire Size on Vehicle	205/65R15	Manufacturer	General
GVWR	2135 kg	Cargo Capacity	91 kg
GAWR Front	1201 kg	GAWR Rear	981 kg
Air Conditioning	YES	Power Steering	YES
Power Brakes	YES	AM/FM/Cassette	YES
Disc Brakes (Front)	YES	Disc Brakes (Rear)	YES
Power Windows	YES	Tilt Steering	YES
Anti-lock Brakes (ABS)	YES	Power Seats	YES (DRIVER SIDE)
Driver Airbag	YES	Passenger Airbag	YES

VEHICLE CAPACITY DATA:

TYPE OF FRONT SEATS Split Bench

TOTAL NUMBER OF OCCUPANTS 6 OCCUPANTS x 68 kg. 408 kg

WEIGHT OF VEHICLE AS RECEIVED AT KARCO (with maximum fluids): 1522 kg

VEHICLE CAPACITY WEIGHT (kg):

Vehicle Capacity Weight	499 kg
Occupant Weight	408 kg
Rated Cargo/Luggage Weight (RCLW)	91 kg

	FRONT	REAR	TOTAL
Right	489	265	
Left	496	272	
Total	985	537	1522
Percent of Total	64.7	35.3	

CALCULATION OF TEST TARGET WEIGHT (kg):

Total Delivered Weight	1522 kg
RCLW	91 kg
Weight of 2 P572 ATDs	105 kg
TARGET TEST WEIGHT	1720 kg

TEST WEIGHT OF VEHICLE WITH 2 ATDs AND BALLAST

	FRONT	REAR	TOTAL
Right	548	318	
Left	532	316	
Total	1080	634	1714
Percent of Total	63.0	37.0	

Weight of Ballast secured in cargo area: 60 kg

Includes cameras, instrumentation, brake abort and bags containing lead shot secured in the right and left rear fender wells.

Vehicle Components Removed For Weight Reduction:

Side mirrors, jack, tools, rear seat assembly and spare tire.

TEST VEHICLE ATTITUDE (mm)

ATTITUDE	LF	RF	LR	RR
As Delivered	699	699	686	686
As Tested	690	690	650	650

Vehicle Wheelbase: 2767 mm

FUEL SYSTEM DATA:

Fuel System Capacity From Owner's Manual = 60.5 liters

Usable Capacity Figure Furnished by COTR = 60.5 liters

Test Volume Range (92 to 94% of Usable Capacity) = 55.7 to 56.9 liters

ACTUAL TEST VOLUME = 56.4 liters (With entire fuel system filled)

Test Fluid Type = Stoddard Solvent **Specific Gravity =** 0.764

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

Type of Fuel Pump = Electric X Mechanical ____

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

DETAILS OF FUEL SYSTEM: Electrically operated, ignition key activated, with automatic shutoff

DATA SHEET NO. 3

POST IMPACT DATA

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1996 FORD TAURUS 4-DOOR SEDAN

TEST MODE: 48.3 km/h FMVSS 208 Frontal Barrier Impact NHTSA NO. MT0212

TEST DATE: September 4, 1997 TIME: 1:40 PM TEMPERATURE: 31.1° C

REQUIRED IMPACT VELOCITY RANGE: 47.47 km/h to 49.07 km/h

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

Trap No. 1 = 48.90 km/h Trap No. 2 = 48.94 km/h

Distance from vehicle to barrier - -

A. entering trap = 1818 mm

B. leaving trap = 599 mm

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

Vehicle Length	Left	Center	Right
Pre-test Measurements (mm)	4740	5070	4740
Post-test Measurements (mm)	4500	4650	4500
Static Crush (mm)	240	420	240
Average	300		

VEHICLE REBOUND: (from rigid barrier with rotational movement)

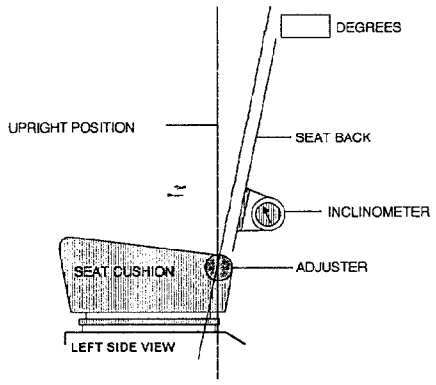
	Left	Center	Right
Vehicle Rebound (mm)	2020	1920	2020
Average	1987		

DATA SHEET NO. 4

TEST VEHICLE INFORMATION

TEST VEHICLE: 1996 FORD TAURUS 4-DOOR SEDAN NHTSA NO. MT0212

1. NOMINAL DESIGN RIDING POSITION -



FRONT SEAT ASSEMBLY

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

Measurement Instructions: A special application tool with pointed probes was inserted through the fabric to make contact with the rigid portion of the lower seat frame assembly approximately 13 inches above the pivot point of the seat back. The inclinometer was placed against the flat surface of the tool and the seat back angle was measured directly from the dial face. For reference purposes the first detent from the front of the seat was identified as number "1". **Seat back angle for driver's seat = 18.5 °; set to fully upright position.**

Measurement Instructions: A special application tool with pointed probes was inserted through the fabric to make contact with the rigid portion of the lower seat frame assembly approximately 13 inches above the pivot point of the seat back. The inclinometer was placed against the flat surface of the tool and the seat back angle was measured directly from the dial face. For reference purposes the first detent from the front of the seat was identified as number "1". **Seat back angle for passenger's seat = 18.5 °; set to fully upright position.**

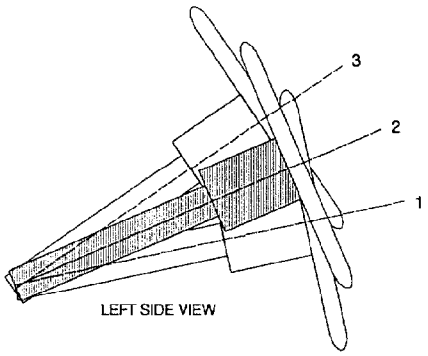
2. SEAT FORE & AFT POSITIONS -

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

Positioning of the driver's seat: Motorized; set to full forward seating position

Positioning of the passenger's seat (if applicable): 13 seating positions; set to full forward seating position.

3. STEERING COLUMN ADJUSTMENTS:



STEERING COLUMN ASSEMBLY

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

Operational Instructions:

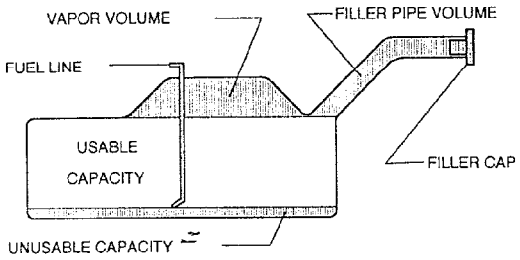
Position No. 1 is at 15°
Position No. 2 is at 23°
Position No. 3 is at 30°

4. SEAT BELT UPPER ANCHORAGE:

Set to mid-position

DATA SHEET NO. 4 (continued)

5. FUEL TANK CAPACITY DATA



5.1 A. "Usable Capacity" of standard equipment fuel tank = 60.5 liters.

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

C. "Usable Capacity" of vehicle(s) used for certification testing to requirements of FMVSS 301 = 55.7 to 56.9 liters.

VEHICLE FUEL TANK ASSEMBLY

Operational Instructions:

5.2 Amount of Stoddard solvent added to vehicle(s) used for certification test(s) = 65.4 liters

5.3 Is vehicle equipped with electric fuel pump?

Yes X No ____

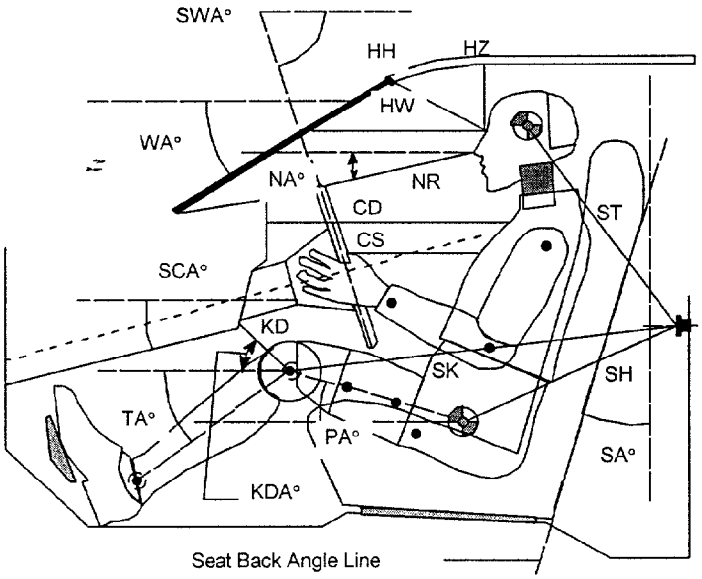
If YES, explain the vehicle operating conditions under which the fuel pump will pump fuel.

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

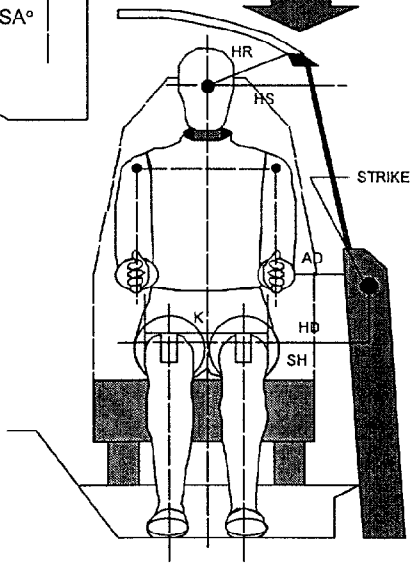
DATA SHEET NO. 5

DUMMY POSITIONING IN VEHICLE

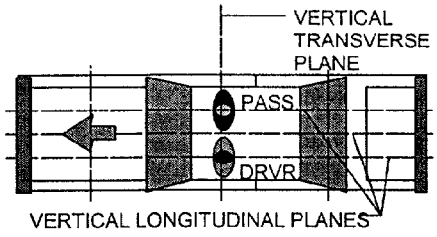
DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS



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



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



DATA SHEET NO. 5...(continued)

DUMMY POSITIONING IN VEHICLE

TEST VEHICLE: 1996 FORD TAURUS 4-DOOR SEDAN NHTSA NO. MT0212

FRONT SEAT MEASUREMENT TABLE

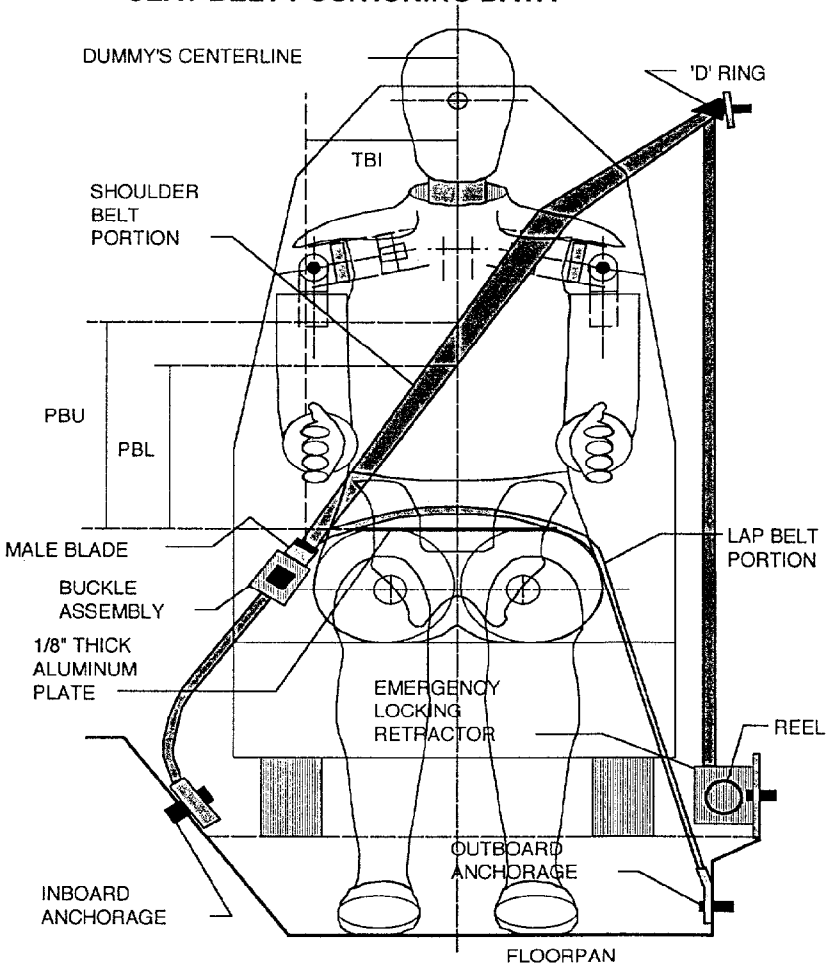
	DRIVER (Serial No. 202)		PASS. (Serial No. 274)	
	DISTANCE (mm)	ANGLE (°)	DISTANCE (mm)	ANGLE (°)
WA°		25		
SWA°		68		
SCA°		22		
SA°		18.0		18.0
HZ	220	90	230	90
HH	210	0	250	0
HW	606	0	585	0
HR	250		230	
NR	255	10		
CD	420		350	
CS	210	0		
RA	40	0		
KDL	80	30	90	
KDR	55		80	40
PA°		24.0		25.0
TA°		-36		-40
KK	245		215	
ST	550	63	510	68
SH	330	20	290	15
SHY	300		280	
HS	340		260	
HD	180		205	
AD	125		85	

DATA SHEET NO. 6

SEAT BELT POSITIONING DATA

SEATING POSITION	DRIVER	PASSENGER
TCI -- Dummy centerline to shoulder bolt	229 mm	229 mm
PBU--Top surface of aluminum plate to belt upper edge	203 mm	203 mm
PBL--Top surface of aluminum plate to belt lower edge	279 mm	279 mm
Lap Belt tension	10 Newtons	10 Newtons
Shoulder Belt tension	Retractor	Retractor

SEAT BELT POSITIONING DATA



FRONT VIEW OF DUMMY

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

VEHICLE YR/MAKE/MODEL/BODY: 1996 Ford Taurus GL 4 Door Sedan NHTSA No.: MT0212

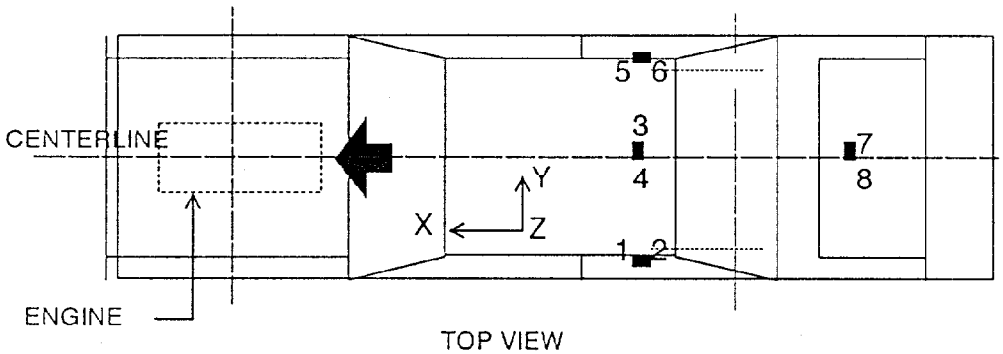
TEST PROGRAM: 1997 48.4 km/h Frontal Impact (Female) TEST DATE: 9/4/97

VEHICLE ACCELEROMETER LOCATIONS AND PEAK ACCELERATIONS

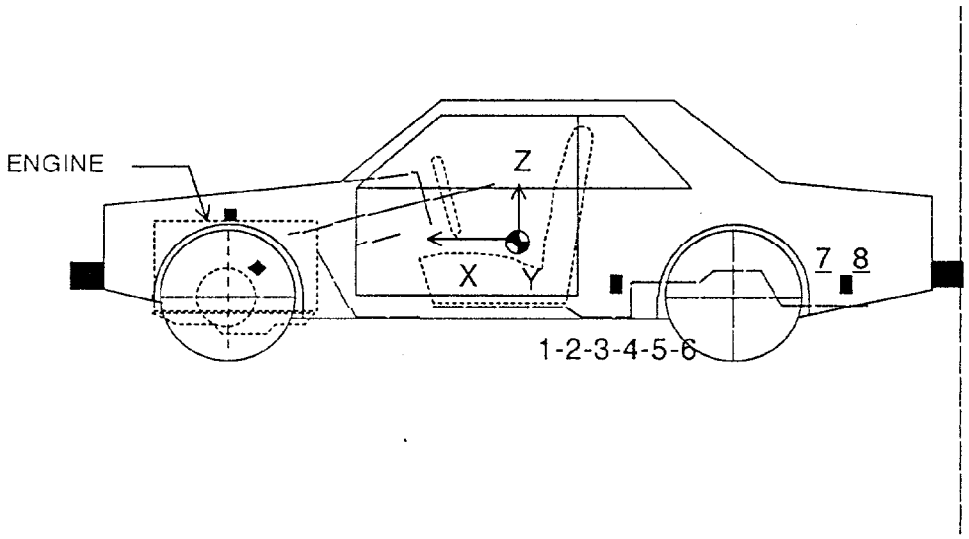
No.	Accelerometer Locations	Measurements (mm)			Peak Values				
		X	Y	Z	Units	Max	Time	Min	Time
1	Left Rear Sill X	2266	-665	345	G's	0.8	105.1	-33.6	51.5
2	Left Rear Sill Y	2150	-665	345	G's	3.3	9.6	-4.5	13.4
3	Center Console Rear X	2245	0	425	G's	2.5	146.3	-44.2	61.0
4	Center Console Rear Y	2175	0	425	G's	1.9	66.0	-6.6	59.1
5	Right Rear Sill X	2298	665	345	G's	0.9	106.7	-34.8	51.7
6	Right Rear Sill Y	2189	665	345	G's	5.2	9.9	-5.1	13.6
7	Center Rear Trunk X	305	125	544	G's	3.4	107.7	-40.7	53.3
8	Center Rear Trunk Y	310	-115	544	G's	2.5	42.7	-5.1	31.8

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

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



TOP VIEW



LEFT SIDE VIEW

DATA SHEET NO. 8 - HYBRID III 5TH FEMALE ATD INJURY CRITERA AND SENSOR DATA

VEHICLE YR/MAKE/MODEL/BODY: 1996 Ford Taurus GL 4 Door Sedan NHTSA No.: MT0212

TEST PROGRAM: 1997 48.4 km/h Frontal Impact (Female) TEST DATE: 9/4/97

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	14.8	130.5	-43.6	36.3	16.1	243.5	-57.1	45.9
Head CG	Y	G's	9.3	132.2	-9.8	75.8	8.1	182.6	-21.9	70.9
Head CG	Z	G's	12.4	31.5	-17.9	29.0	6.6	230.1	-32.9	46.4
Head CG Resultant	N/A	G's	43.7	36.3			63.7	45.4		

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	5.0	135.9	-38.0	63.7	0.0	0.0	0.0	0.0
Chest CG	Y	G's	2.2	102.8	-1.0	135.4	0.0	0.0	0.0	0.0
Chest CG	Z	G's	10.1	111.9	-5.6	80.2	0.0	0.0	0.0	0.0
Chest CG Resultant	N/A	G's	38.0	63.7			0.0	0.0		

FEMUR PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Femur	Z	Newtons	128.9	258.2	-2452.9	63.8	1271.2	252.6	-2527.3	38.3
Right Femur	Z	Newtons	859.8	15.4	-2729.6	67.9	1816.0	252.2	-2943.7	44.4

SEAT BELT PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Lap Belt	N/A	Newtons	2413.5	58.5	-71.9	107.4	1353.2	62.4	7.0	2.7
Shoulder Belt	N/A	Newtons	6147.6	62.5	-132.8	138.0	3292.2	68.7	-24.1	146.7

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	103.5	24.2	33.5	69.4	254.7	47.1	37.6	54.2

CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T^1	T^2	CLIP	T^1	T^2
Chest CG Primary	37.5	62.6	65.6	0.0	0.0	0.0

VEHICLE YR/MAKE/MODEL/BODY: 1996 Ford Taurus GL 4 Door Sedan NHTSA No.: MT0212

TEST PROGRAM: 1997 48.4 km/h Frontal Impact (Female) TEST DATE: 9/4/97

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	6.7	145.0	-37.0	63.1	11.8	147.8	-35.9	64.6
Pelvis	Y	G's	8.4	87.6	-9.3	66.2	12.9	150.3	-22.6	146.8
Pelvis	Z	G's	10.0	200.1	-8.3	104.2	14.2	202.6	-8.5	55.5

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	1054.0	70.1	-142.7	27.8	121.7	163.8	-1284.5	45.4
Neck Force	Y	Newtons	103.1	30.7	-236.6	155.4	237.8	67.2	-98.7	171.4
Neck Force	Z	Newtons	2389.4	40.6	-546.9	174.6	988.0	72.3	-869.5	46.1
Neck Moment	X	Joules	15.5	97.8	-4.5	170.9	9.3	41.6	-13.1	89.8
Neck Moment	Y	Joules	5.6	28.1	-73.8	70.5	104.2	46.7	-9.4	72.8
Neck Moment	Z	Joules	7.7	113.9	-1.0	15.6	19.9	75.8	-9.3	169.9

CHEST PEAK DISPLACEMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest	X	CM	0.01	13.0	-2.22	78.4	0.01	15.5	-0.84	72.1

CHEST REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	6.2	135.3	-38.6	63.8	3.1	183.8	-40.4	47.5
Chest CG	Y	G's	2.4	103.8	-2.0	150.3	6.2	83.0	-8.3	67.8
Chest CG	Z	G's	10.1	112.0	-5.7	202.6	11.6	109.5	-10.1	73.9
Chest CG Resultant	N/A	G's	38.7	63.9			41.1	47.5		

REDUNDANT CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T^1	T^2	CLIP	T^1	T^2
Chest CG Redundant	38.0	62.7	65.7	37.8	46.4	49.4

DATA SHEET NO. 9

SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

TEST VEHICLE: 1996 FORD TAURUS 4-DOOR SEDAN NHTSA NO. MT0212

BELT LENGTH DATA (mm)	DRIVER	PASSENGER
Total belt length for continuous webbing systems.	2800	2800
Retractor reel to 'D' ring	600	600
Shoulder belt length as measured on Part 572 Dummy	920	920
Lap belt length as measured on Part 572 Dummy	890	900
Remainder of belt on reel	390	380

SHOULDER BELT SPOOL-OFF DATA (mm)	DRIVER	PASSENGER
As determined mechanically	50.0	35.0
As determined electronically	36.6	36.6

BELT STRETCH DATA (cm/cm)	DRIVER	PASSENGER
Measured electronically between shoulder belt load cell and the "D" ring	0.033	0.001
Measured mechanically	0.0	0.0

VEHICLE YR/MAKE/MODEL/BODY: 1996 Ford Taurus GL 4 Door Sedan NHTSA No.: MT0212

TEST PROGRAM: 1997 48.4 km/h Frontal Impact (Female) TEST DATE: 9/4/97

FOOT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Foot Aft	X	G's	63.3	54.6	-9.8	99.5	107.6	50.1	-20.4	71.2
Left Foot Aft	Z	G's	13.5	157.8	-45.8	53.2	14.8	48.0	-90.2	48.3
Left Foot Fore	Z	G's	10.2	171.5	-62.8	53.0	20.6	68.0	-93.7	49.2
Right Foot Aft	X	G's	100.8	52.0	-12.4	69.1	57.2	57.8	-6.5	96.6
Right Foot Aft	Z	G's	25.0	61.8	-78.7	60.4	14.0	161.8	-28.7	54.7
Right Foot Fore	Z	G's	26.4	78.7	-123.0	48.3	18.8	45.0	-37.8	50.8

UPPER AND LOWER TIBIA PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Lower Force	X	Newtons	654.7	56.6	-43.4	122.5	39.5	128.2	-757.2	51.4
Left Lower Force	Z	Newtons	117.7	124.0	-1023.3	52.6	55.4	117.9	-2332.4	52.6
Left Lower Moment	X	Joules	2.2	30.7	-14.9	50.5				
Left Lower Moment	Y	Joules	62.4	89.9	-18.5	32.9	37.7	51.1	-14.1	77.7
Left Upper Force	X	Newtons	352.3	77.0	-94.5	121.8				
Left Upper Force	Z	Newtons	162.6	123.5	-861.0	52.5				
Left Upper Moment	X	Joules	9.4	30.8	-11.2	61.7	14.4	85.9	-24.7	48.4
Left Upper Moment	Y	Joules	19.4	91.4	-47.5	36.4	102.1	51.1	-10.5	214.0
Right Lower Force	X	Newtons	824.3	55.3	-51.9	128.5	0.0	0.0	0.0	0.0
Right Lower Force	Z	Newtons	117.2	164.0	-2894.8	53.8	0.0	0.0	0.0	0.0
Right Lower Moment	X	Joules	43.2	57.0	-9.6	53.0				
Right Lower Moment	Y	Joules	21.0	84.4	-39.4	49.8	0.0	0.0	0.0	0.0
Right Upper Force	X	Newtons	291.9	56.3	-185.9	46.1				
Right Upper Force	Z	Newtons	108.0	127.2	-2332.0	54.1				
Right Upper Moment	X	Joules	21.0	57.3	-14.9	45.4	9.7	83.6	-5.8	149.4
Right Upper Moment	Y	Joules	15.1	84.5	-97.4	55.4	46.3	55.4	-4.7	111.3

DATA SHEET NO. 10

SUMMARY OF FMVSS 212 DATA

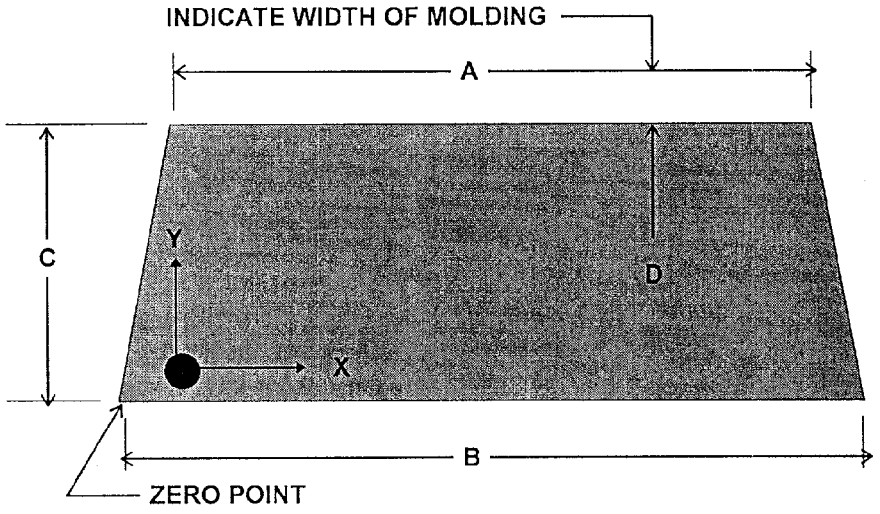
TEST VEHICLE: 1996 FORD TAURUS 4-DOOR SEDAN NHTSA NO. MT0212

Details of windshield mounting (method of retention, type of trim, etc.):
Windshield glass is secured to the vehicle frame with a rubber adhesive type adhesive with rubber molding along the top and sides with rubber and plastic molding along the bottom.

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

WINDSHIELD PERIPHERY MEASUREMENTS (mm)			
	PRETEST	POST TEST	PERCENT RETENTION
Right Side	1795	1795	100%
Left Side	1795	1795	100%
Total	3590	3590	100%

Indicate area of retention failure.



FRONT VIEW OF WINDSHIELD

Width of molding = Top & Sides 20 mm, Bottom 17 mm.

Temperature of windshield molding during test = 28.1 °C

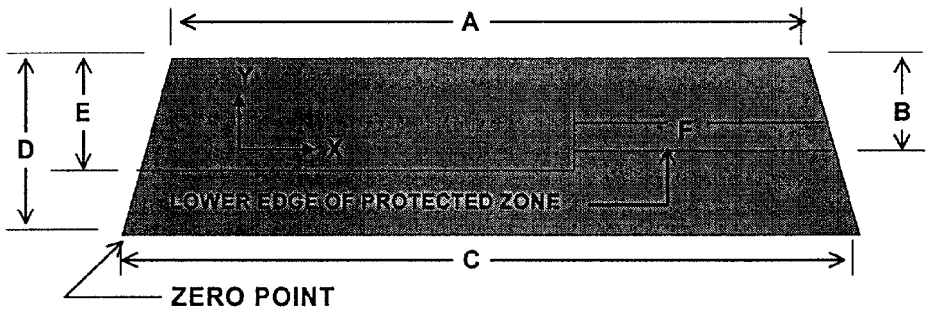
DATA SHEET NO. 11

WINDSHIELD ZONE INTRUSION FMVSS 219 (PARTIAL) DATA

TEST VEHICLE: 1996 FORD TAURUS 4-DOOR SEDAN NHTSA NO. MT0212

SKETCH OF FRONT VIEW OF WINDSHIELD:

Provide all dimensions necessary to reproduce the protected area.



	DIMENSION (mm)
A	1170
B	370
C	1570
D	850
E	570
F	850

FRONT VIEW OF WINDSHIELD

AREA OF PROTECTED ZONE FAILURES:

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

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

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

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

DATA SHEET NO. 12

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1996 FORD TAURUS 4-DOOR SEDAN

TEST MODE: 48.3 km/h FMVSS 208 Frontal Barrier Impact NHTSA NO. MT0212

TEST DATE: September 4, 1997 TIME: 1:40 PM TEMPERATURE: 31.1° C

STODDARD SOLVENT SPILLAGE MEASUREMENT:

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

B. For 5 minute period after vehicle motion ceases - -
Actual = 0.0 oz. (Maximum Allowable = 5 ounces)

C. For next 25 minutes - -
Actual = 0.0 oz. (Maximum Allowable = 1 oz./minute)

D. Provide Spillage Details: No solvent spillage occurred

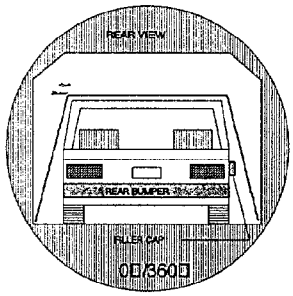
DATA SHEET NO. 13

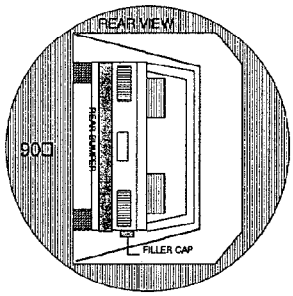
FMVSS 301 STATIC ROLLOVER DATA SHEET

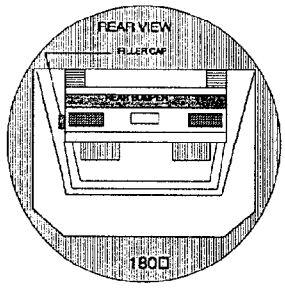
VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1996 FORD TAURUS 4-DOOR SEDAN

TEST MODE: 48.3 km/h FMVSS 208 Frontal Barrier Impact NHTSA NO. MT0212

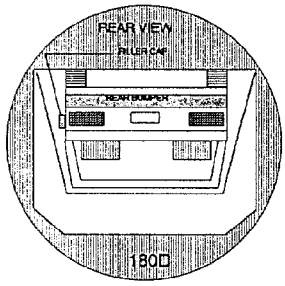
TEST DATE: September 4, 1997 TIME: 1:40 PM TEMPERATURE: 31.1° C

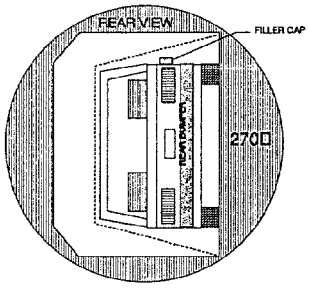


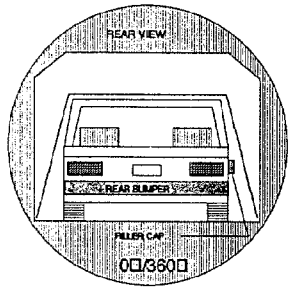




0° TO 90° **90° TO 180°**







180° TO 270° **270° TO 0°**

1. The specified fixture rollover rate for each 90° of rotation = 1 to 3 minutes.

2. The position hold time at each position = 5 minutes (minimum)

TEST PHASE	ROTATION TIME (sec.)	POSITION HOLD TIME (sec)	STODDARD SPILLAGE (oz.)
0° TO 90°	80	352	0.0
90° TO 180°	83	356	0.0
180° TO 270°	86	349	0.0
270° TO 360°	88	355	0.0

3. Provide Details of Stoddard Solvent Spillage Locations--

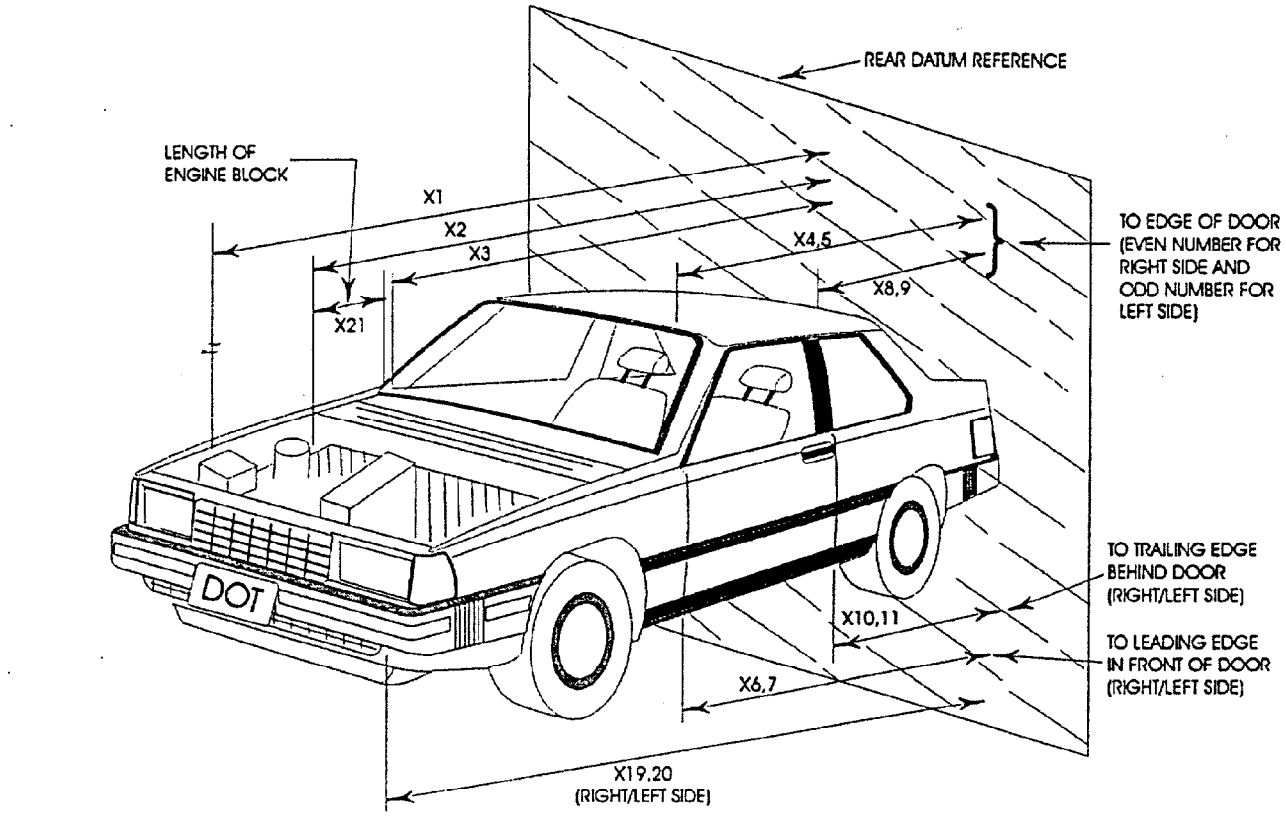
No solvent leakage occurred during rollover tests.

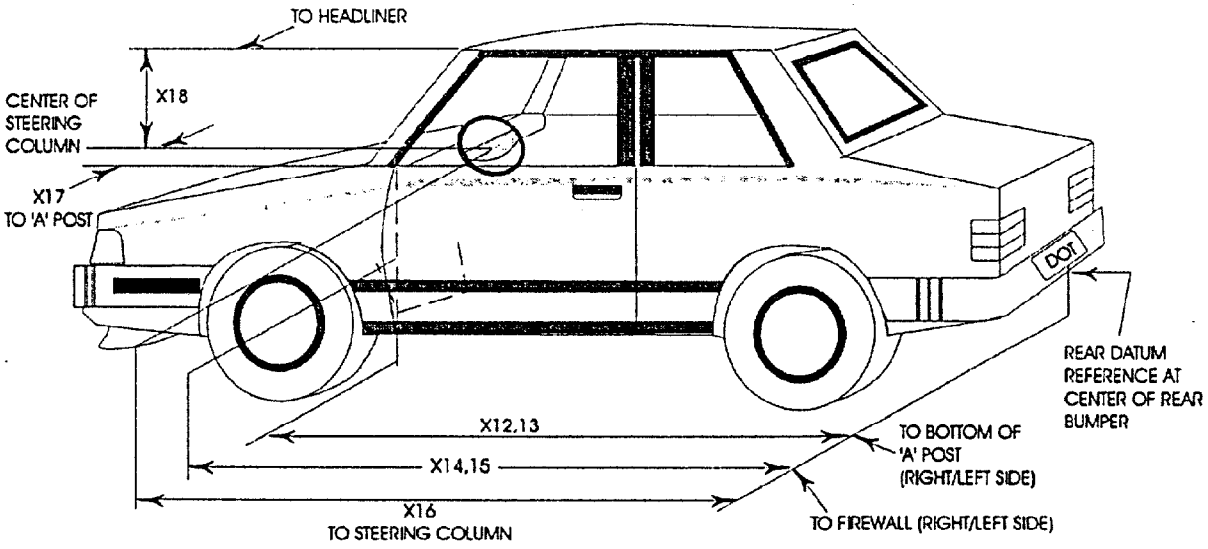
DATA SHEET NO. 14

VEHICLE MEASUREMENTS

TEST VEHICLE: 1996 FORD TAURUS 4-DOOR SEDAN NHTSA NO. MT0212

NO.	MEASUREMENT DESCRIPTION	DIMENSIONS IN MM		
		PRE-TEST	POST-TEST	DIFFERENCE
1	Total length of vehicle at centerline	5070	4650	420
2	Rear surface of vehicle (RSOV) to front of engine	4410	4270	140
3	RSOV to firewall centerline	3750	3670	80
4	RSOV to leading edge of right door	3470	3460	10
5	RSOV to leading edge of left door	3470	3450	20
6	RSOV to lower leading edge of right door	3450	3435	15
7	RSOV to lower leading edge of left door	3450	3425	25
8	RSOV to upper trailing edge of right door	2370	2400	+30
9	RSOV to upper trailing edge of left door	2370	2380	+10
10	RSOV to lower trailing edge of right door	2360	2350	10
11	RSOV to lower trailing edge of left door	2360	2370	+10
12	RSOV to bottom of right 'A' pillar	3500	3400	100
13	RSOV to bottom of left 'A' pillar	3500	3420	80
14	RSOV to firewall on right side	3750	3690	60
15	RSOV to firewall of left side	3750	3760	+10
16	RSOV to steering column	3010	2990	20
17	Center of steering column to left 'A' pillar	350	330	20
18	Center of steering column to headlining	400	410	+10
19	RSOV to right side of front bumper	4740	4500	240
20	RSOV to left side of front bumper	4740	4500	240
21	Length of engine block	440	440	0
22	RSOV to right side of dash panel	3140	3150	+10
23	RSOV to center of dash panel	3250	3255	+5
24	RSOV to left side of dash panel	3140	3140	0


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: 1996 FORD TAURUS 4-DOOR SEDAN NHTSA NO. MT0212

CAMERA NO.	VIEW	CAMERA POSITIONS (mm) *			ANGLE (Deg.)	FILM PLANE TO HEAD TARGET (mm)	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Left Side View-Real Time	1321	-10058	2108	0	9652	Zoom	24
2	Left Side View No. 1	1549	-7874	1111	1	7471	25	1000
3	Left Side View No. 2	2007	-8306	3137	15	7833	80	1050
4	Left Side View No. 3	2007	-8306	2527	12	7738	50	1050
5	Left Side View No. 4	2032	-8306	1105	1	7802	25	1000
6	Left Side View No. 5	1778	-8331	1448	5	7622	25	1000
7	Right Side View No. 1	2438	3327	2089	20	2443	17	1000
8	Right Side View No. 2	813	4572	1473	10	4356	13	950
9	Right Side View No. 3	2134	8280	851	0	7788	25	950
10	Right Side View No. 4	1676	9449	1372	0	9240	50	1300
11	Right Side View No. 5	7010	11658	2934	9	12437	50	1000
12	Overhead No. 1 Overall	-610	0	3645	54	N/A	12.5	450
13	Overhead No. 2 Close-up	-483	0	6096	87	N/A	13	850
14	Front View No. 1 Windshield	-1445	229	838	57	N/A	13	1000
15	Front View No. 2 Driver	-305	356	997	40	N/A	19	1000
16	Front View No. 3 Passenger	-305	-305	997	39	N/A	19	1100
17	Driver Side Interior	3353	381	1156	14	N/A	13	700
18	Passenger Side Interior	3353	-381	1156	14	N/A	13	700

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

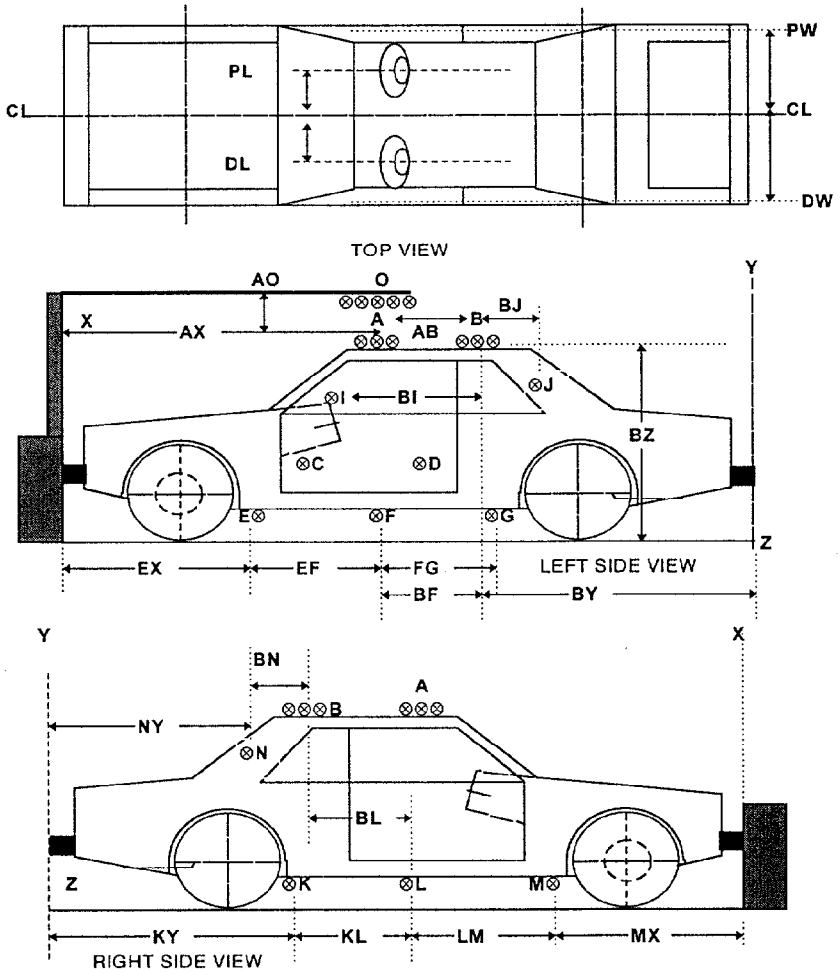
DATA SHEET NO. 16

REFERENCE PHOTOGRAPH TARGETS

TEST VEHICLE: 1996 FORD TAURUS 4-DOOR SEDAN NHTSA NO. MT0212

ITEM	DESCRIPTION	VALUE	ITEM	DESCRIPTION	VALUE
AX	TARGET A TO BARRIER	2485	NY	TARGET N TO REAR BUMPER	1439
AB	TARGET A TO TARGET B	610	BN	TARGET B TO TARGET N	430
AO	VERTICAL DISTANCE A TO O	152	KY	TARGET K TO REAR BUMPER	1814
BJ	TARGET B TO TARGET J	300	KL	TARGET K TO TARGET L	803
BI	TARGET B TO STEERING COLUMN	157	BL	TARGET B TO TARGET L	120
BZ	TARGET B TO GROUND LEVEL	1115	LM	TARGET L TO TARGET M	807
EX	TARGET E TO BARRIER	1486	MX	TARGET M TO BARRIER	1524
EF	TARGET E TO TARGET F	1524	CL/PL	VEHICLE CENTERLINE TO PASSENGER	355
FG	TARGET F TO TARGET G	806	CL/PW	VEHICLE CENTERLINE TO RIGHT SILL	768
BF	TARGET B TO TARGET F	856	CL/DL	VEHICLE CENTERLINE TO DRIVER	397
BY	TARGET B TO REAR BUMPER	1814	CL/DW	VEHICLE CENTERLINE TO LEFT SILL	387

Distances in mm

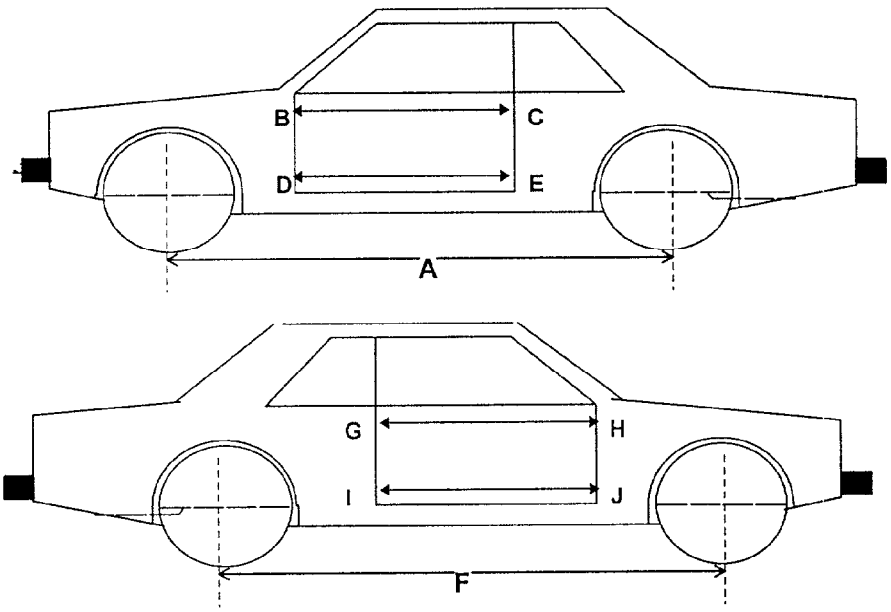


DATA SHEET NO. 17

VEHICLE INTRUSION MEASUREMENTS

TEST VEHICLE: 1996 FORD TAURUS 4-DOOR SEDAN NHTSA NO. MT0212

DOOR OPENING WIDTH



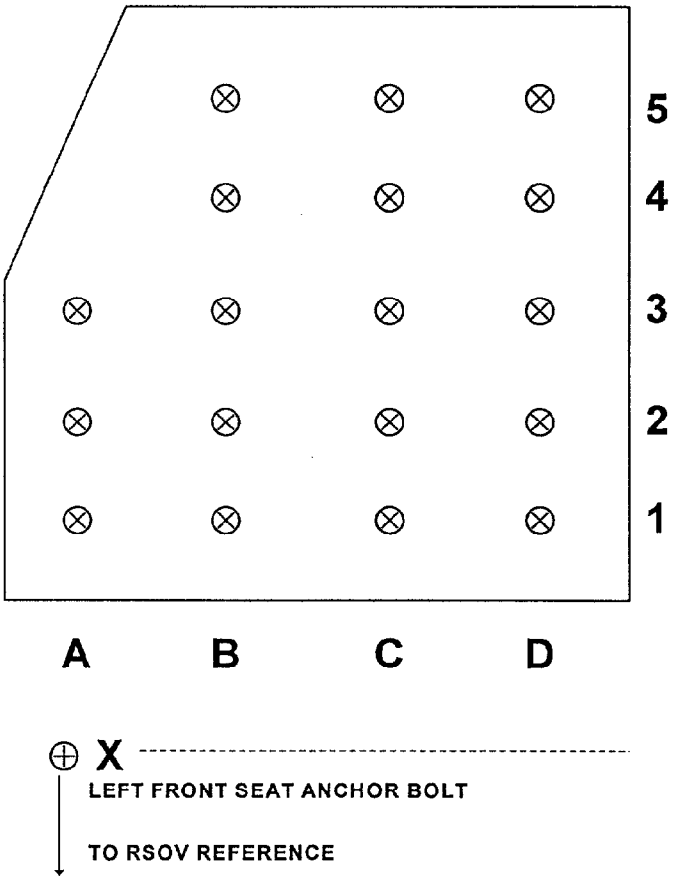
UNITS (mm)	LEFT SIDE		RIGHT SIDE	
MEASUREMENT	BC	DE	GH	IJ
PRE-TEST	1100	1090	1100	1090
POST-TEST	1070	1655	1060	1085
DIFFERENCE	30	35	40	5

VEHICLE WHEELBASE CHANGE

UNITS (mm)	A = LEFT SIDE WHEELBASE	F = RIGHT SIDE WHEELBASE
PRE-TEST	2770	2770
POST-TEST	2650	2630
DIFFERENCE	120	140

FLOOR PAN INTRUSION (Distances in mm)

TARGET COLUMN	A		B		C		D	
TARGET ROW	PRE-TEST	POST-TEST	PRE-TEST	POST-TEST	PRE-TEST	POST-TEST	PRE-TEST	POST-TEST
1	N/A	N/A	700	665	700	663	700	660
2	N/A	N/A	600	580	600	580	600	578
3	450	460	450	460	450	455	450	455
4	300	310	300	305	300	305	300	305
5	150	160	150	150	150	150	150	150
REF. POINT	RSOV TO ANCHOR BOLT (PRE-TEST)		2860		RSOV TO ANCHOR BOLT (POST-TEST)		2920	

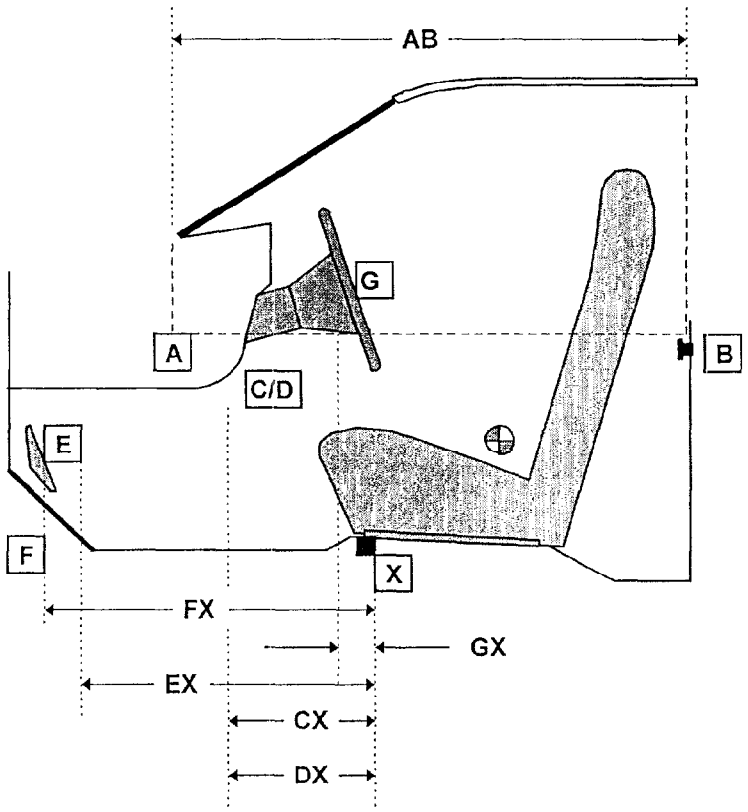


DRIVER SIDE FLOOR PLAN

DRIVER COMPARTMENT INTRUSION (Distances in mm)

REF.	DESCRIPTION	PRE-TEST	POST-TEST
AB	DOOR OPENING (INSIDE WINDOW JAM)	960	955
CX	LOWER LEFT KNEE BOLSTER TO X	370	365
DX	LOWER RIGHT KNEE BOLSTER TO X	380	370
EX	BRAKE PEDAL TO X	540	520
FX	FOOT REST TO X	560	540
GX	STEERING COLUMN HUB (CENTER) TO X	40	60

X = LEFT FRONT SEAT ANCHOR BOLT



DRIVER COMPARTMENT

DATA SHEET NO. 18

OFFSET BARRIER ORIENTATION

TEST VEHICLE: 1996 FORD TAURUS 4-DOOR SEDAN NHTSA NO. MT0212

NO OFFSET OR DEFORMABLE BARRIER USED FOR THIS TEST

DATA SHEET NO. 19

ACCIDENT INVESTIGATION DIVISION DATA

TEST VEHICLE: 1996 FORD TAURUS 4-DOOR SEDAN NHTSA NO. MT0212

VIN: 1FALP52U6TA308137 TEST DATE: 09/04/97

WHEELBASE: 2767 mm TEST WEIGHT: 1714 kg

VEHICLE SIZE CATEGORY: 4-DOOR PASSENGER SEDAN

ACCELEROMETER DATA:

LOCATION: Left and right side passenger compartment

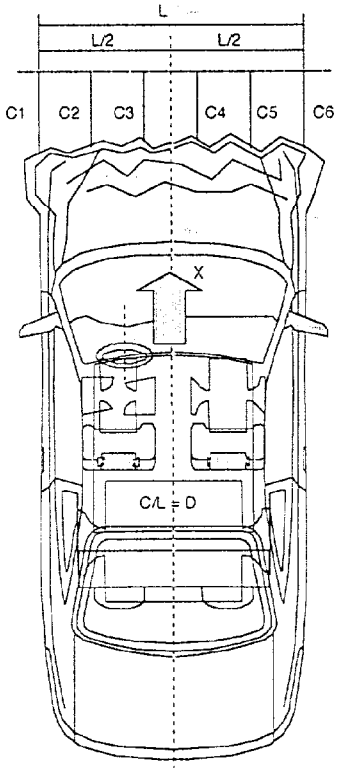
CALIBRATION PROCEDURE: 6 months/ drop test

LINEARITY: Good INTEGRATION ALGORITHM: NHTSA Standard

VEHICLE IMPACT SPEED: 48.90 km/h TIME OF SEPARATION: 71.7 msec

VELOCITY CHANGE: 59.50 km/h

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



IMPACT MODE: Frontal Barrier

CRUSH DEPTH DIMENSIONS:

C1 = 255 mm

C2 = 380 mm

C3 = 402 mm

C4 = 402 mm

C5 = 371 mm

C6 = 275 mm

MIDPOINT OF DAMAGE: D = vehicle centerline

LENGTH OF DAMAGE REGION:

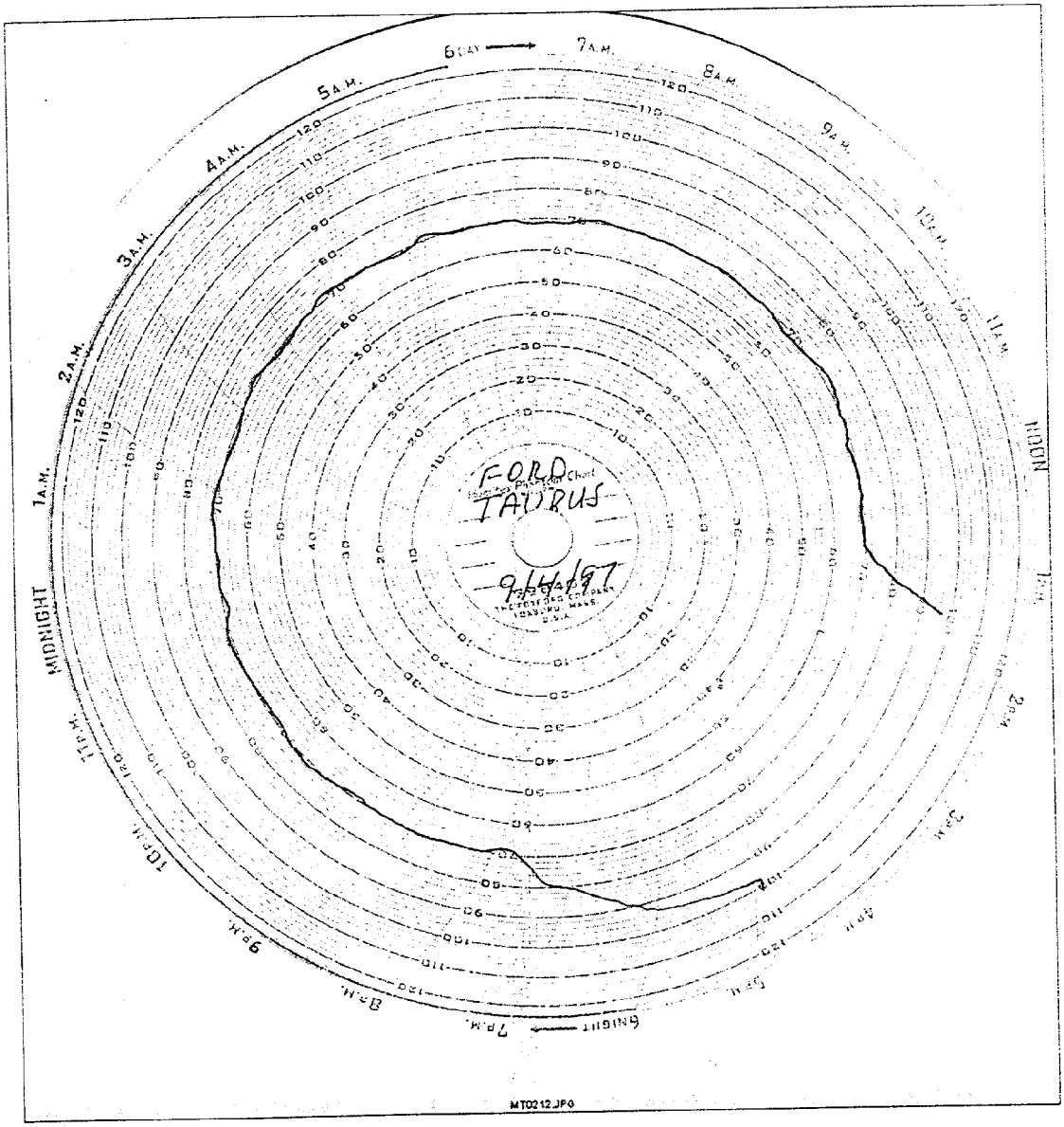
L = 1500 mm

DATA SHEET NO. 20

DUMMY/VEHICLE TEMPERATURE STABILIZATION

TEST VEHICLE: 1996 FORD TAURUS 4-DOOR SEDAN NHTSA NO. MT0212

VIN: 1FALP52U6TA308137 TEST DATE: 09/04/97



APPENDIX A

PHOTOGRAPHS

LIST OF PHOTOGRAPHS

LIST OF PHOTOGRAPHS...(Continued)

FIGURE A-1. LEFT FRONT AS RECEIVED

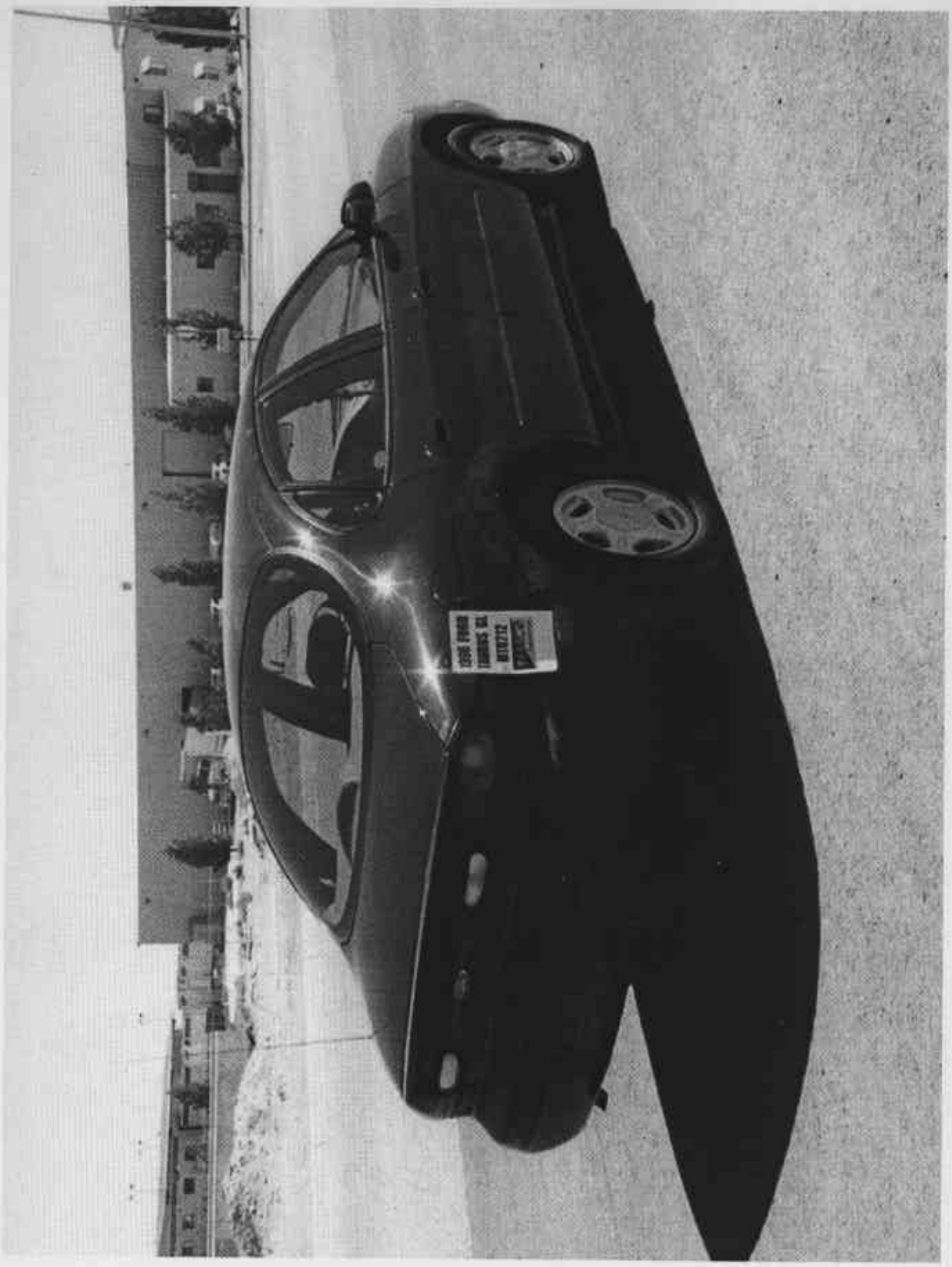


FIGURE A-2. RIGHT REAR AS RECEIVED

FIGURE A-3. VEHICLE CERTIFICATION LABEL

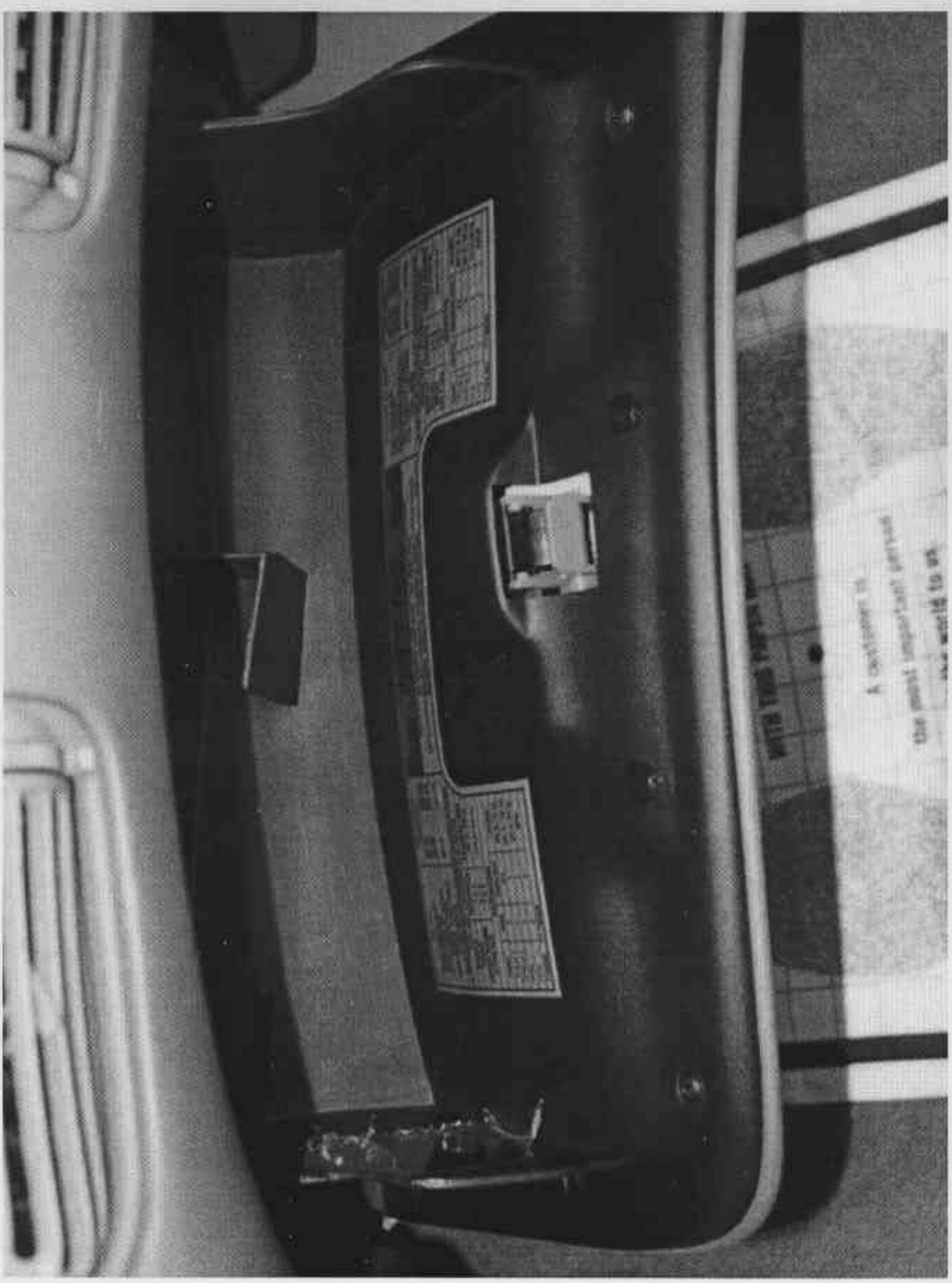


FIGURE A-4. VEHICLE TIRE PLACARD

FIGURE A-5. PRETEST FRONT VIEW

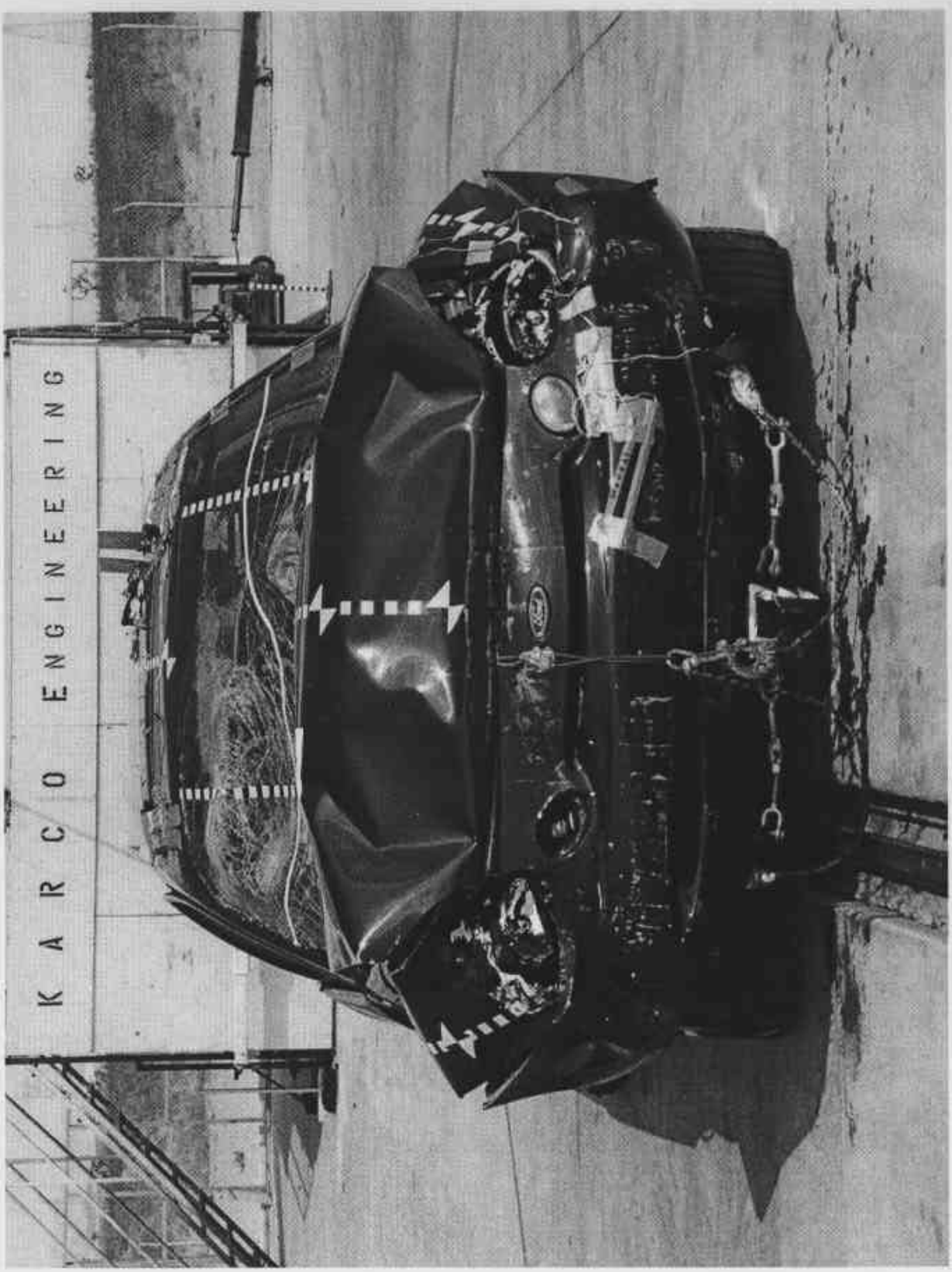


FIGURE A-6. POST TEST FRONT VIEW

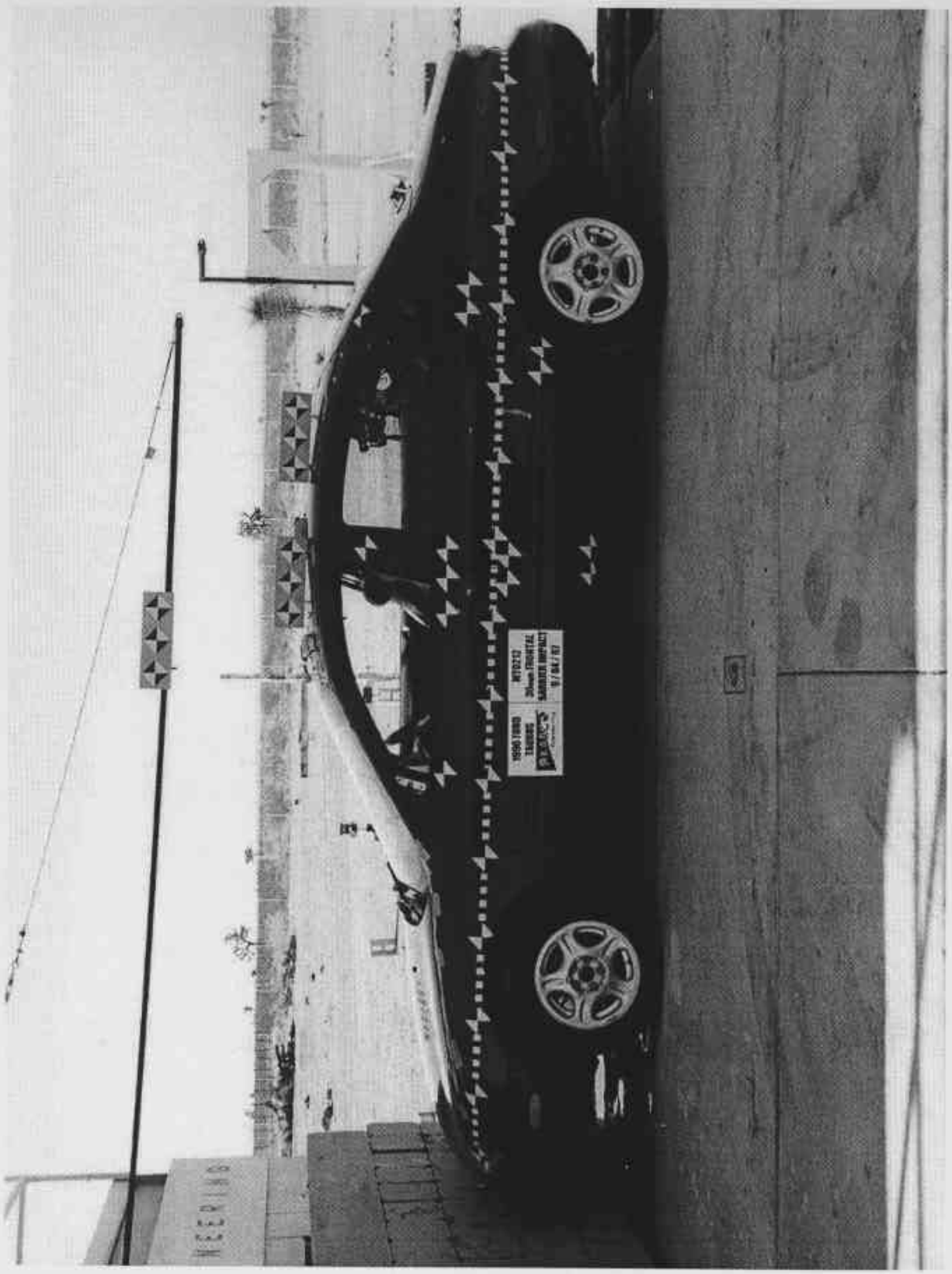


FIGURE A-7. PRETEST LEFT SIDE VIEW

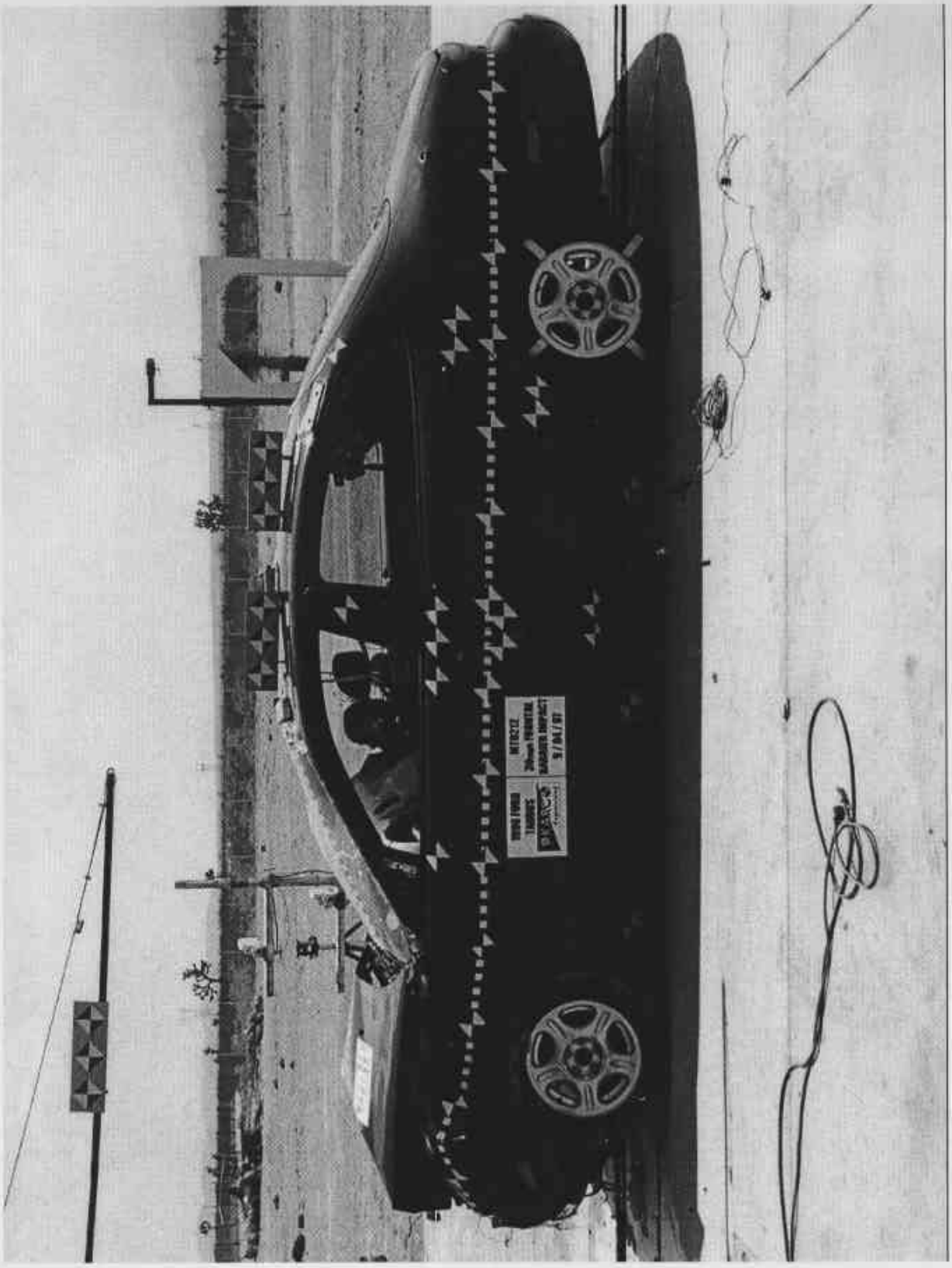


FIGURE A-8. POST TEST LEFT SIDE VIEW

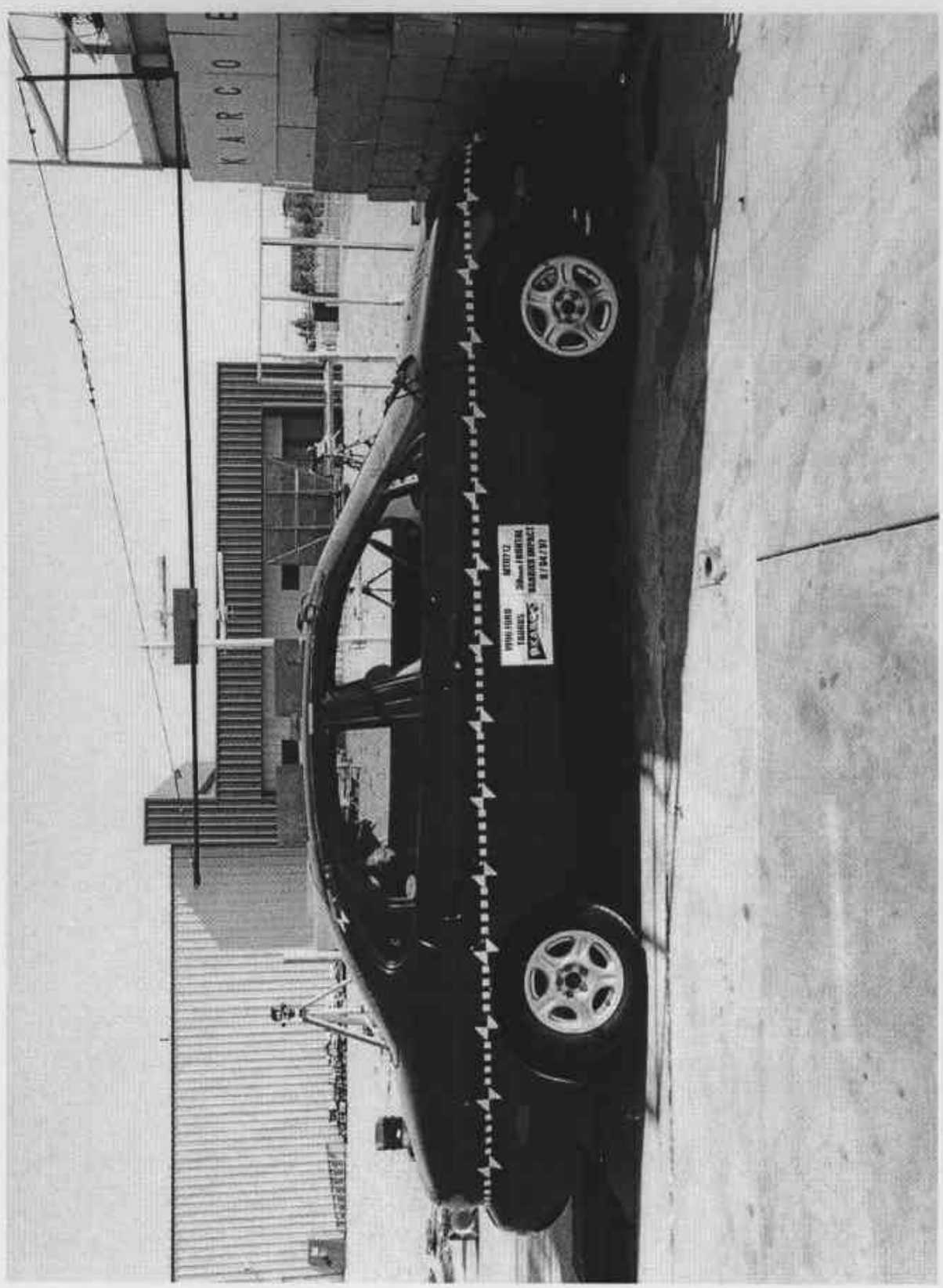


FIGURE A-9 PRETEST RIGHT SIDE VIEW

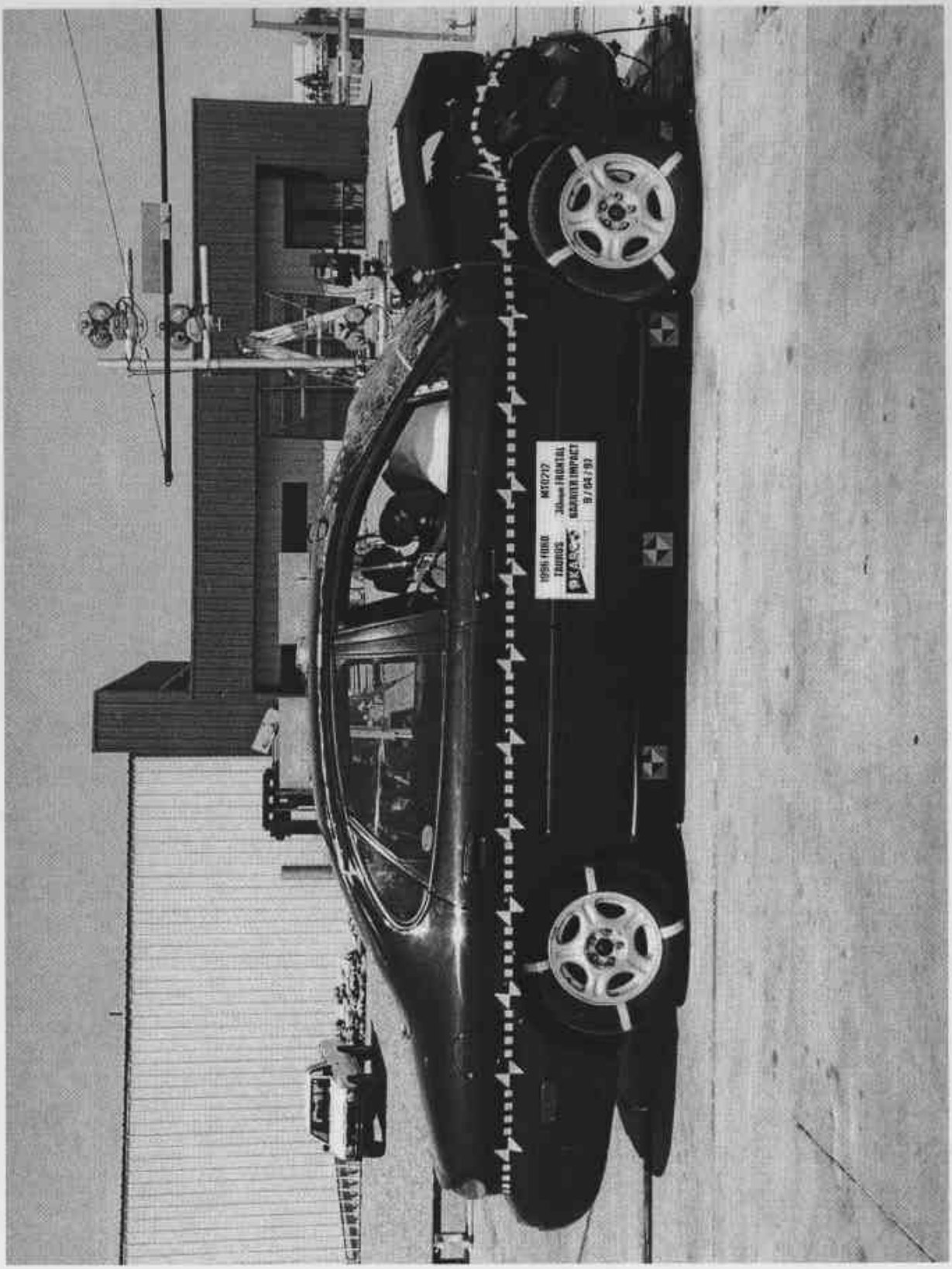


FIGURE A-10. POST TEST RIGHT SIDE VIEW

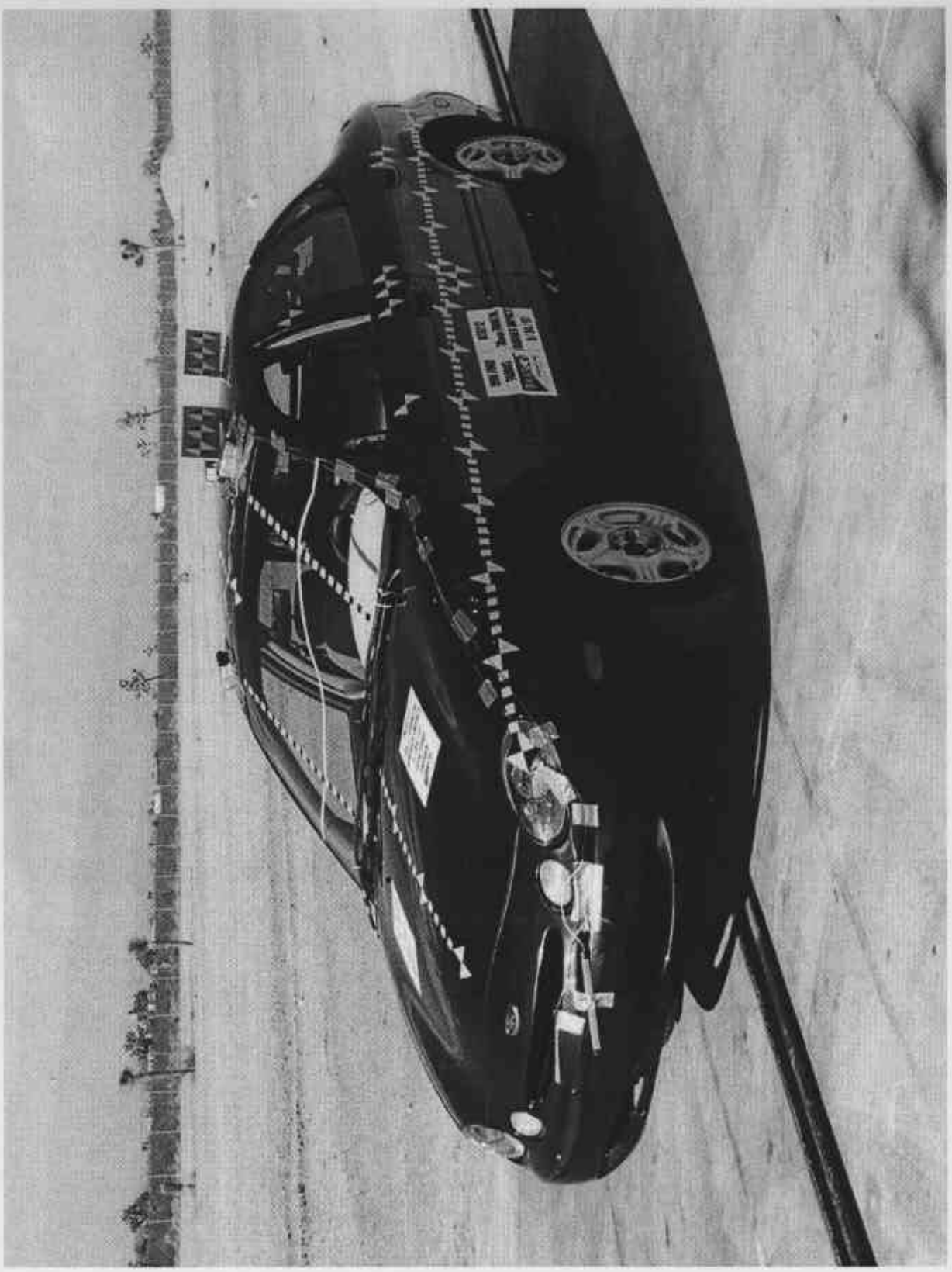


FIGURE A-11. PRETEST LEFT FRONT VIEW

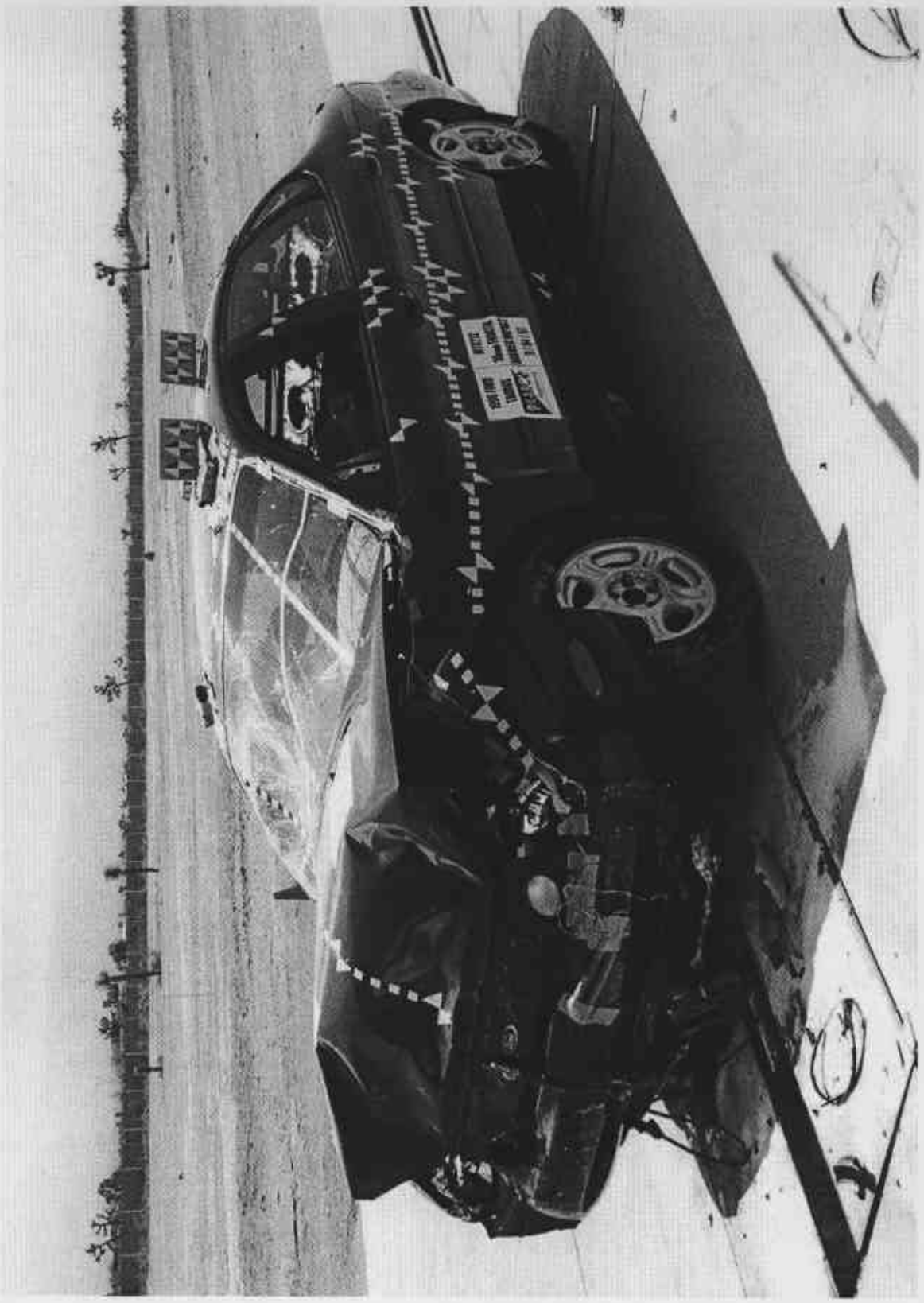


FIGURE A-12. POST TEST LEFT FRONT VIEW

FIGURE A-13. PRETEST RIGHT REAR VIEW

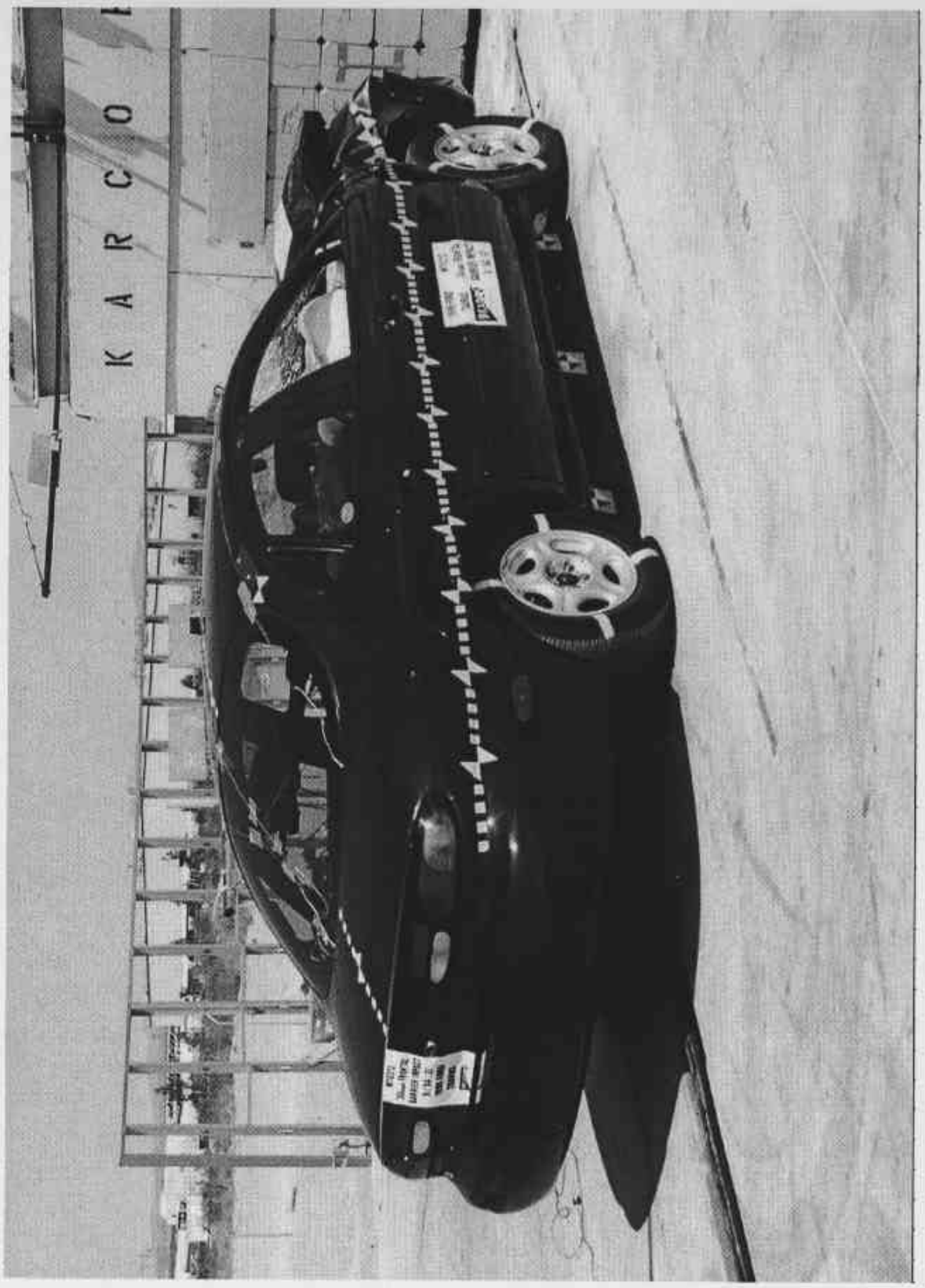


FIGURE A-14 POST TEST RIGHT REAR VIEW

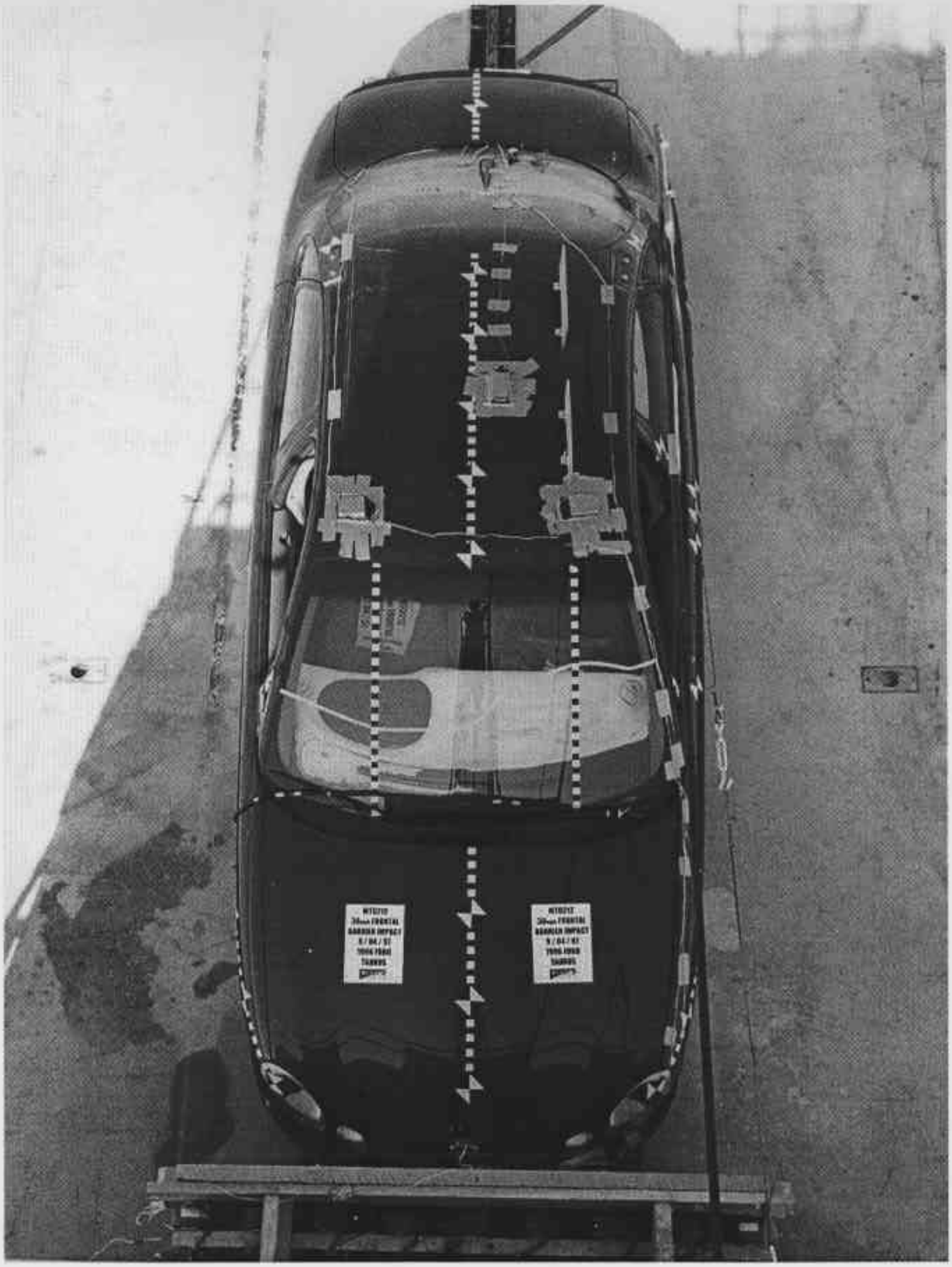


FIGURE A-15. PRETEST OVERHEAD VIEW

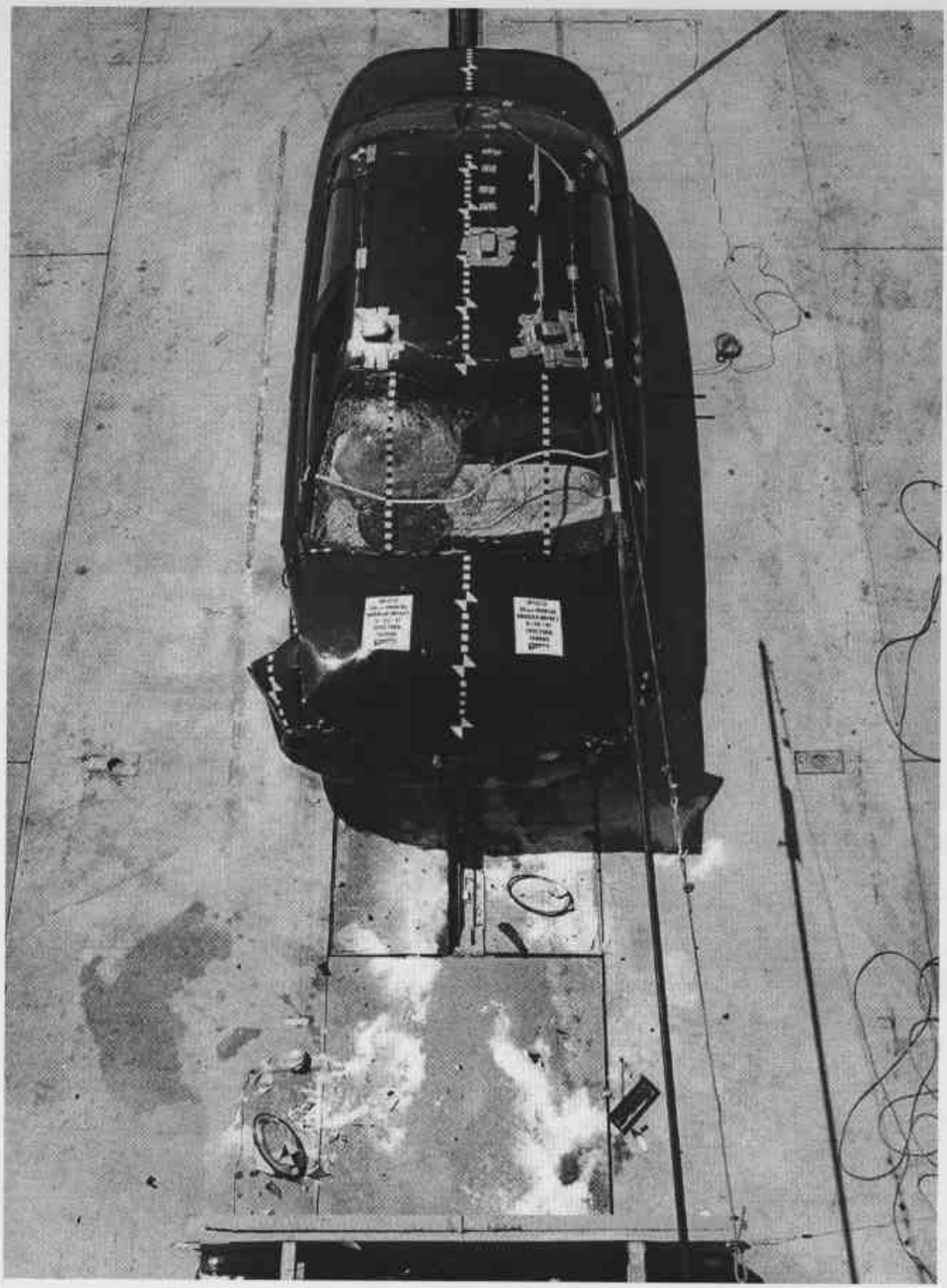


FIGURE A-16. POST TEST OVERHEAD VIEW

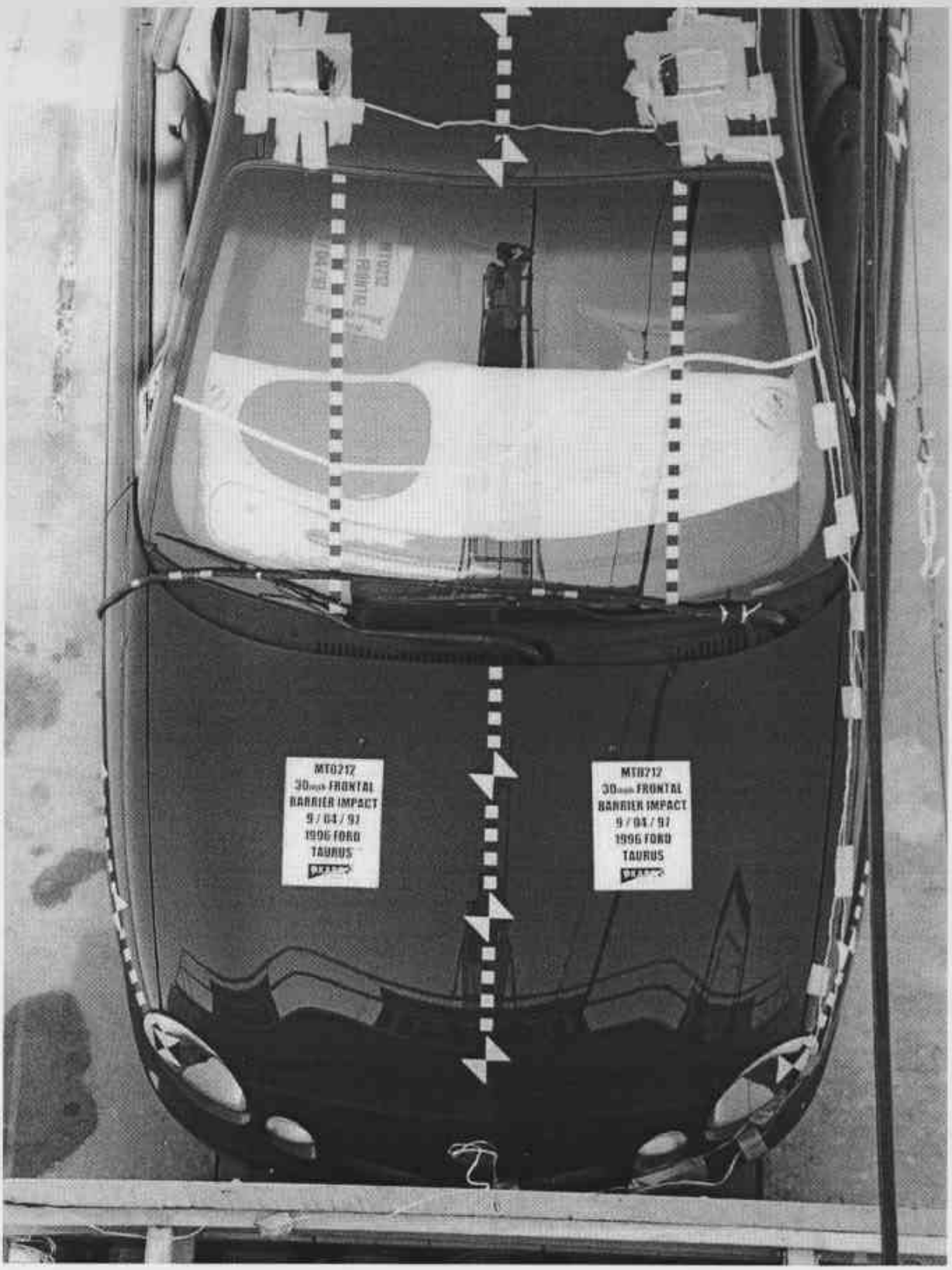


FIGURE –17. PRETEST OVERHEAD CLOSE-UP

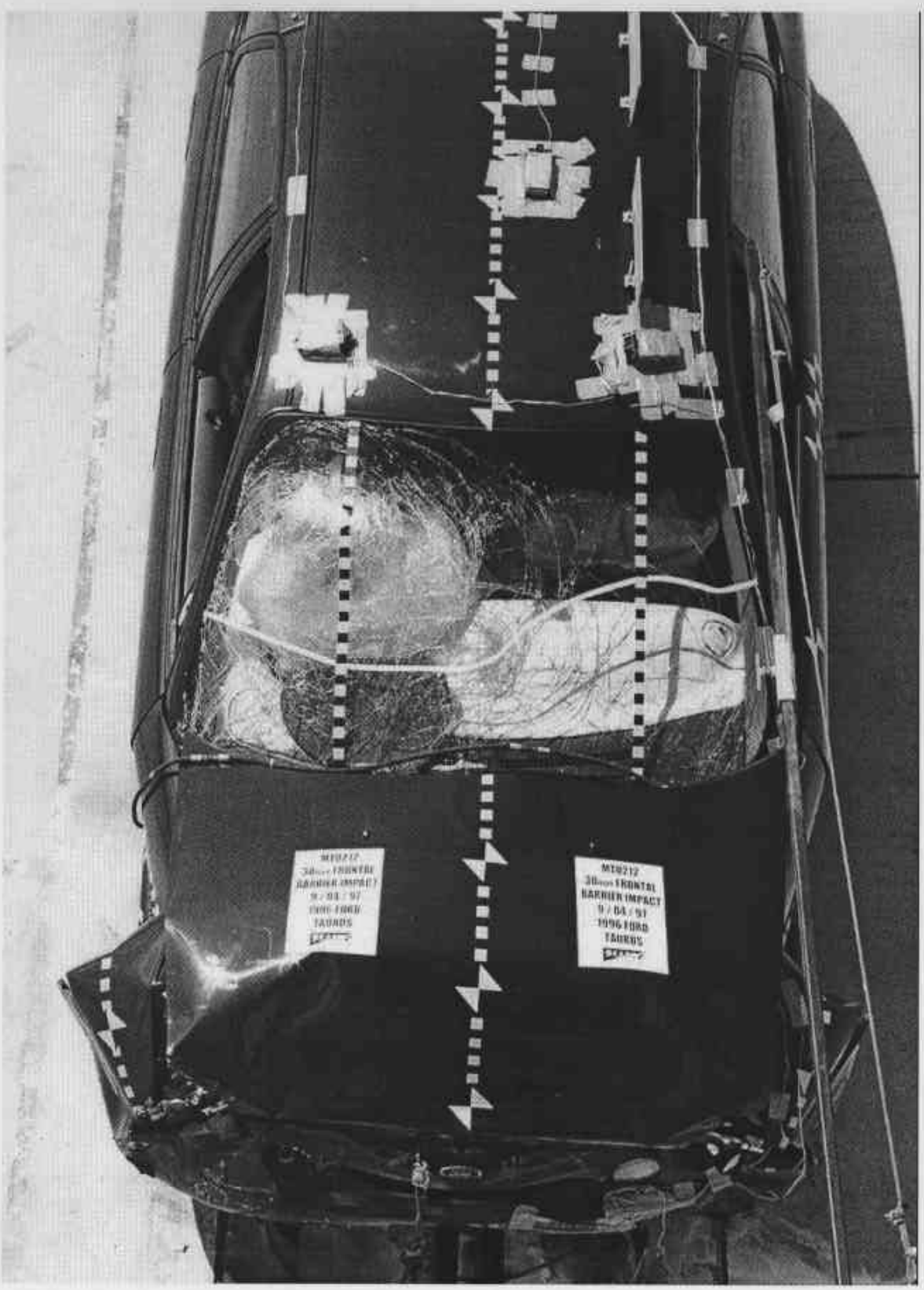


FIGURE A-18. POST TEST OVERHEAD CLOSE-UP

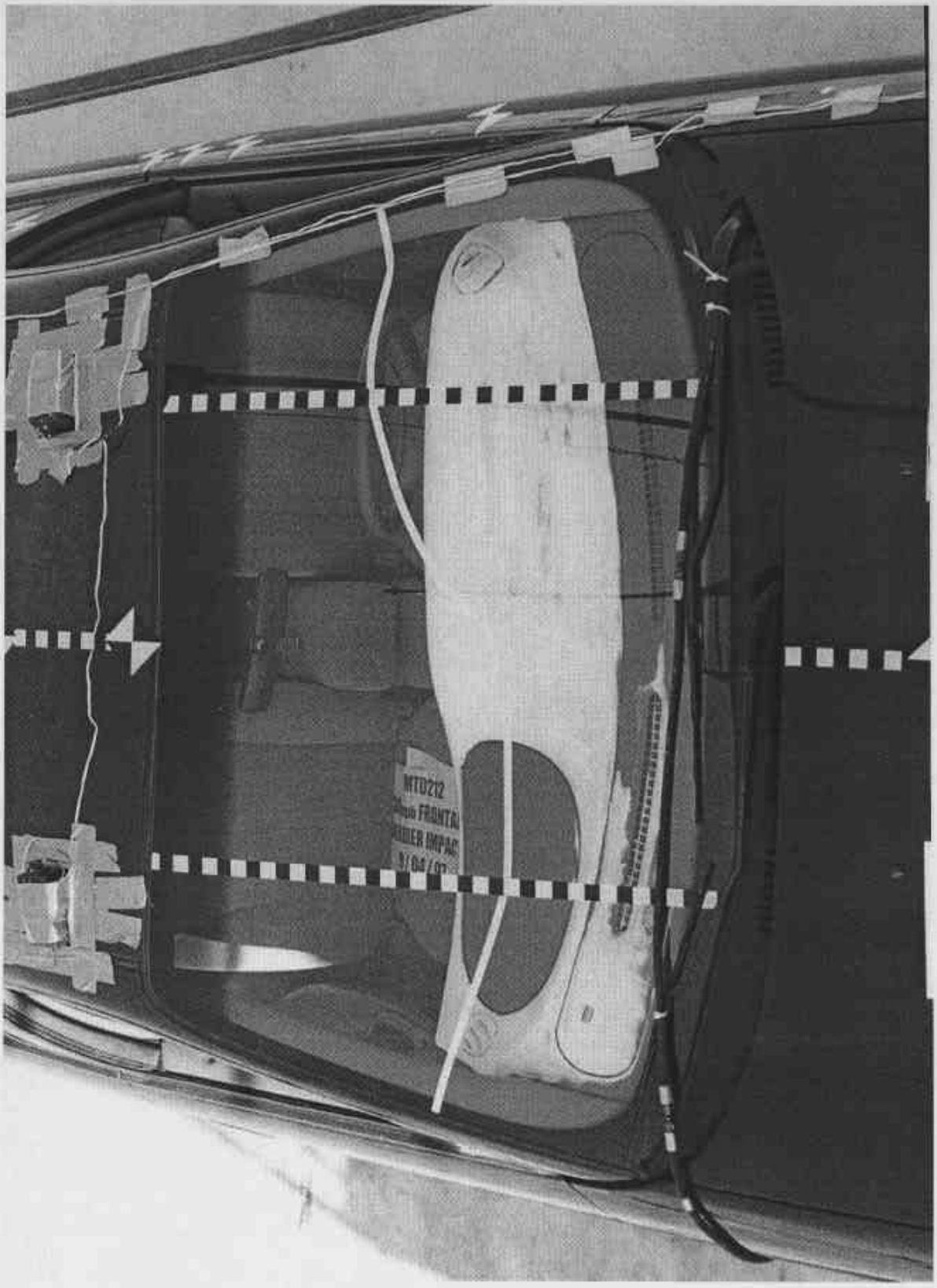


FIGURE A-19. PRETEST WINDSHIELD

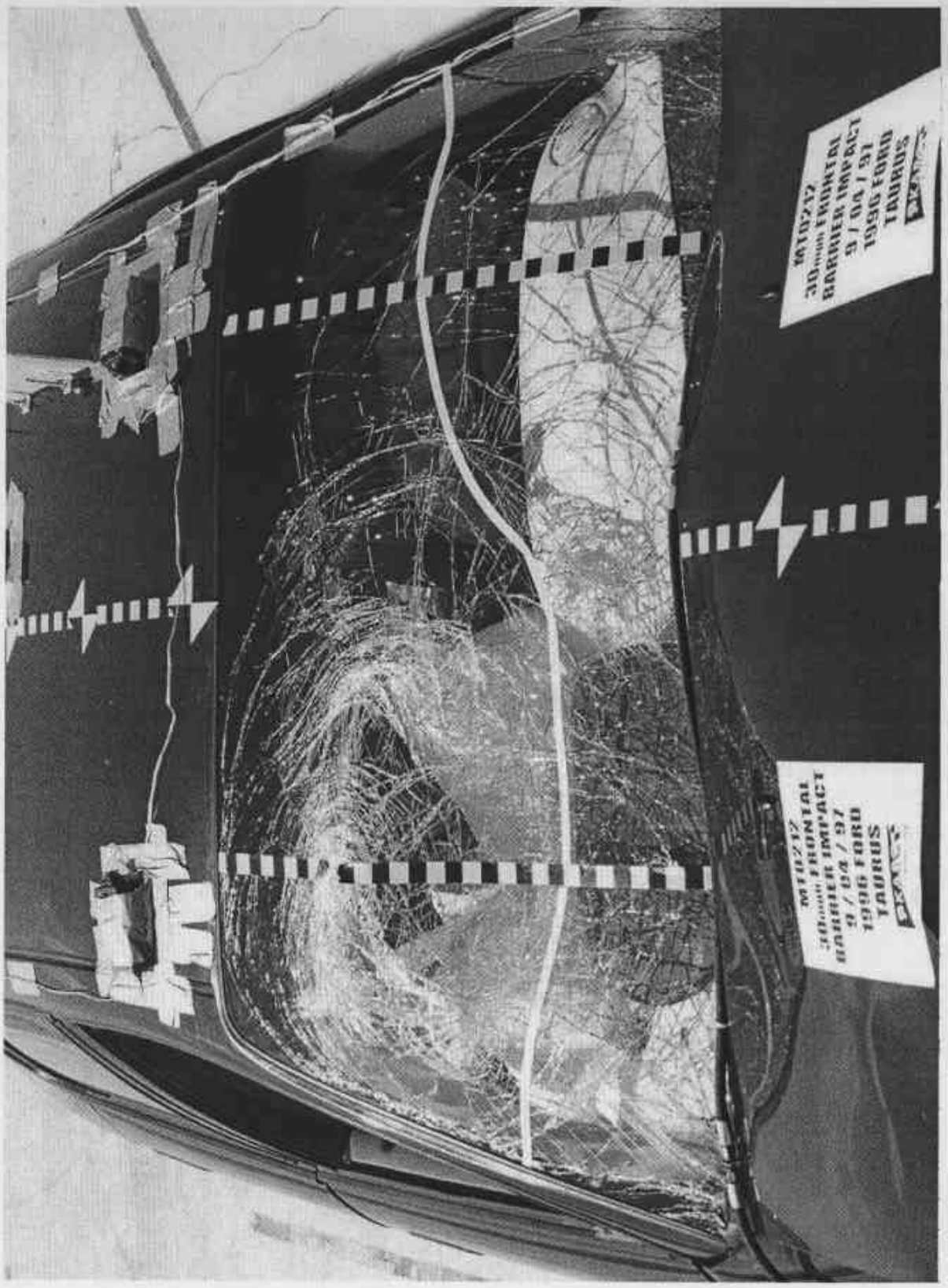


FIGURE A-20. POST TEST WINDSHIELD

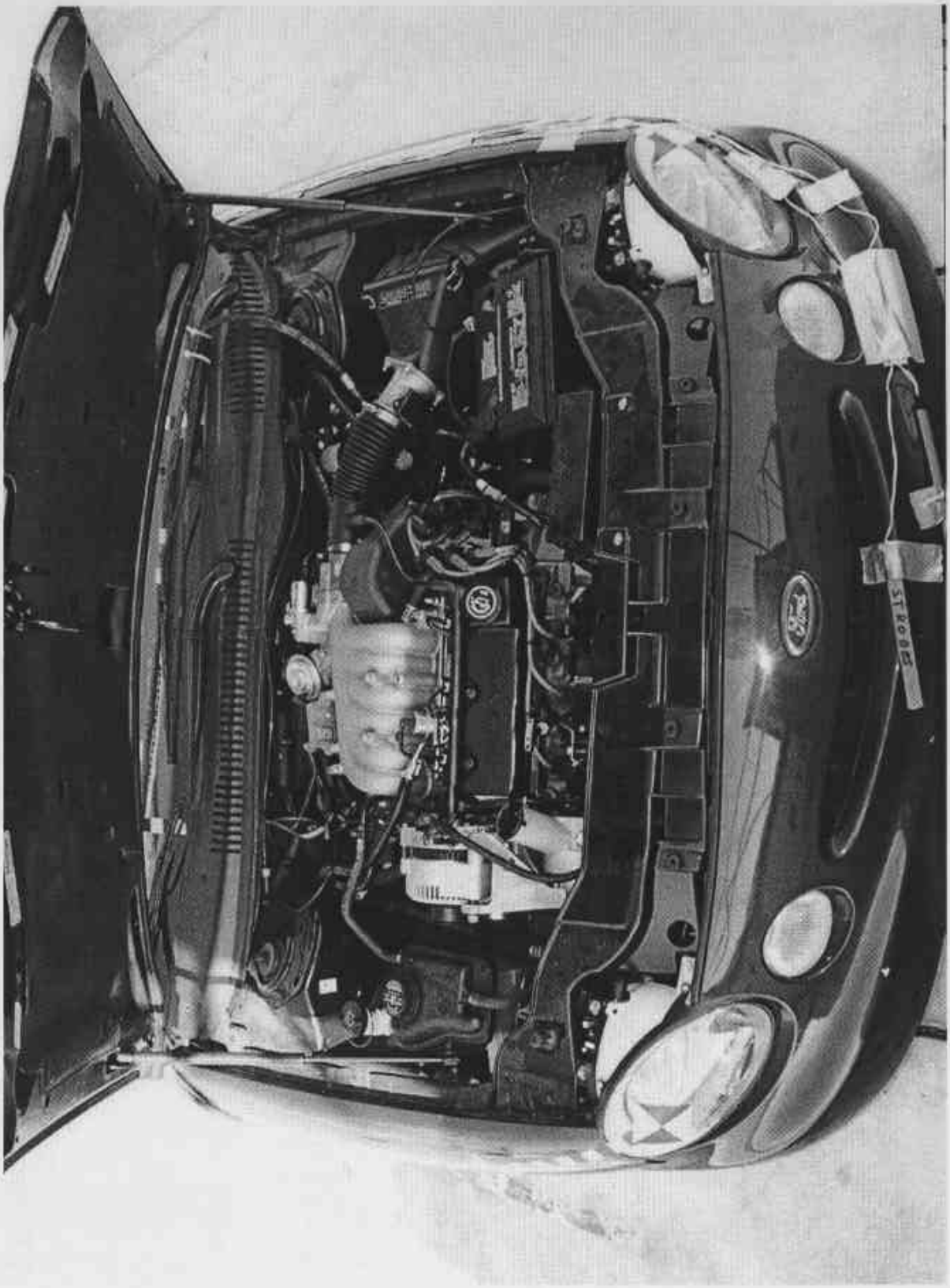


FIGURE-21. PRETEST ENGINE COMPARTMENT

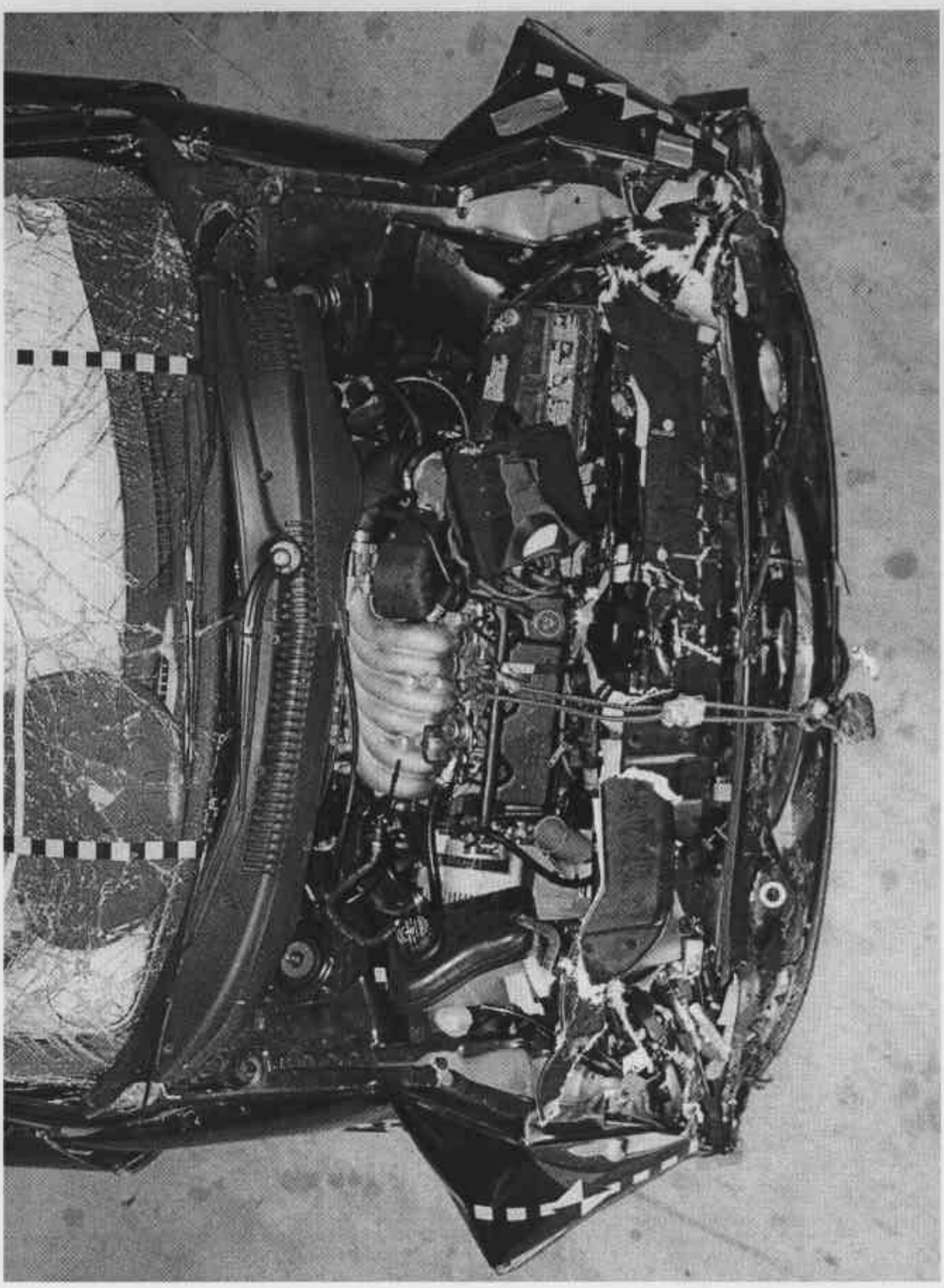


FIGURE A-22. POST TEST ENGINE COMPARTMENT

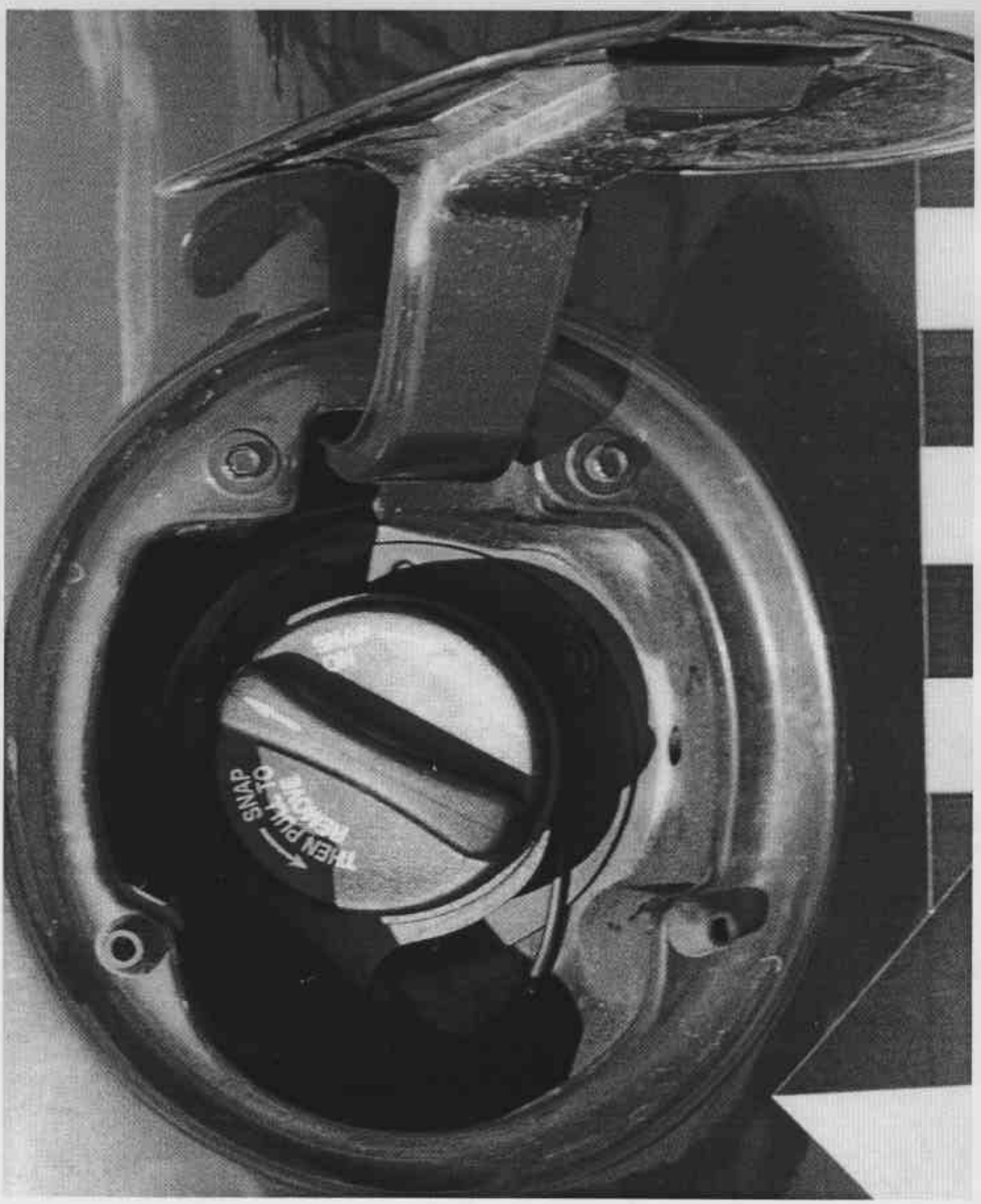


FIGURE A-23. FUEL CAP

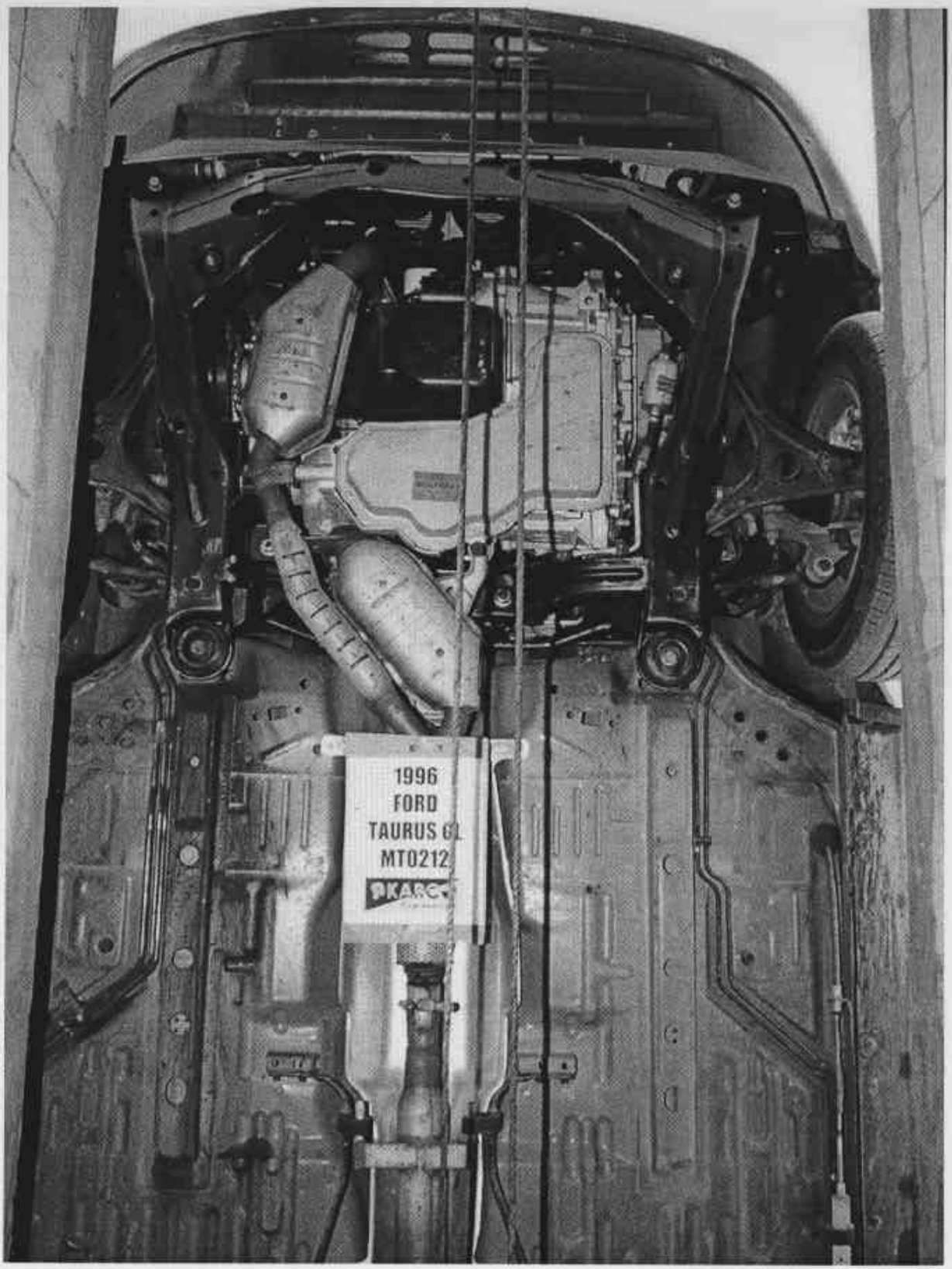


FIGURE A-24.PRETEST FRONT UNDERBODY

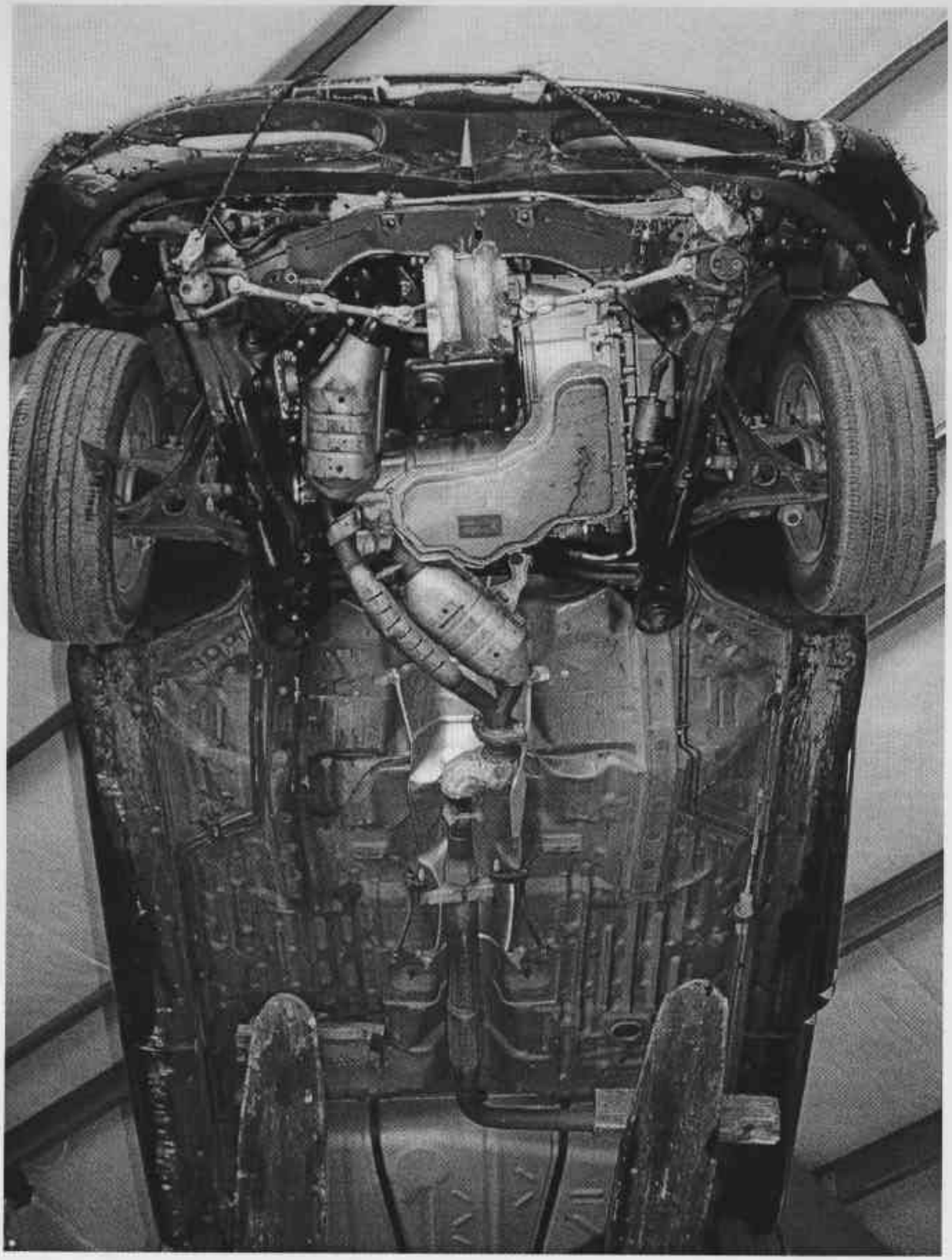


FIGURE A-25. POST TEST FRONT UNDERBODY

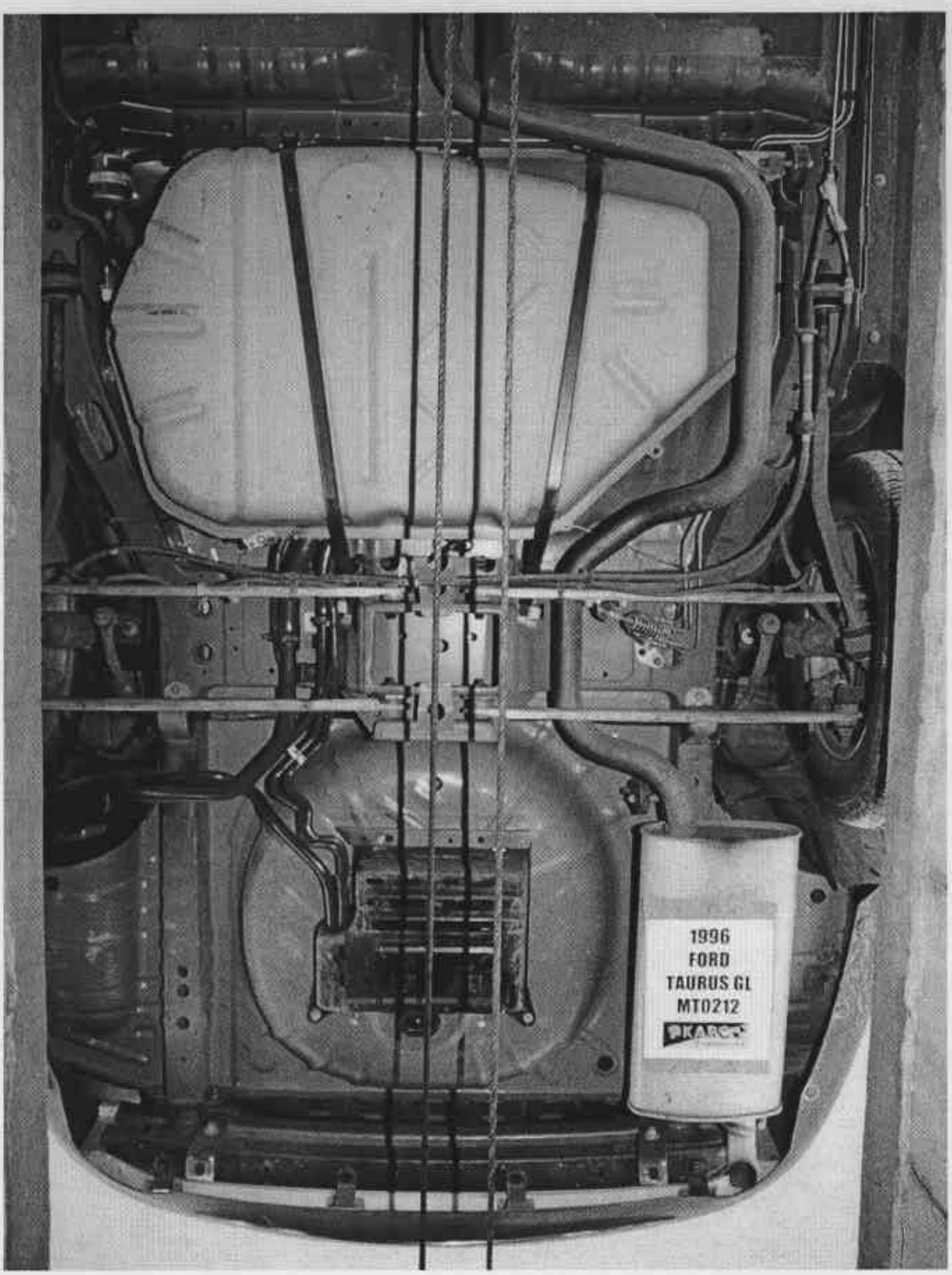


FIGURE A-26. PRETEST REAR UNDERBODY

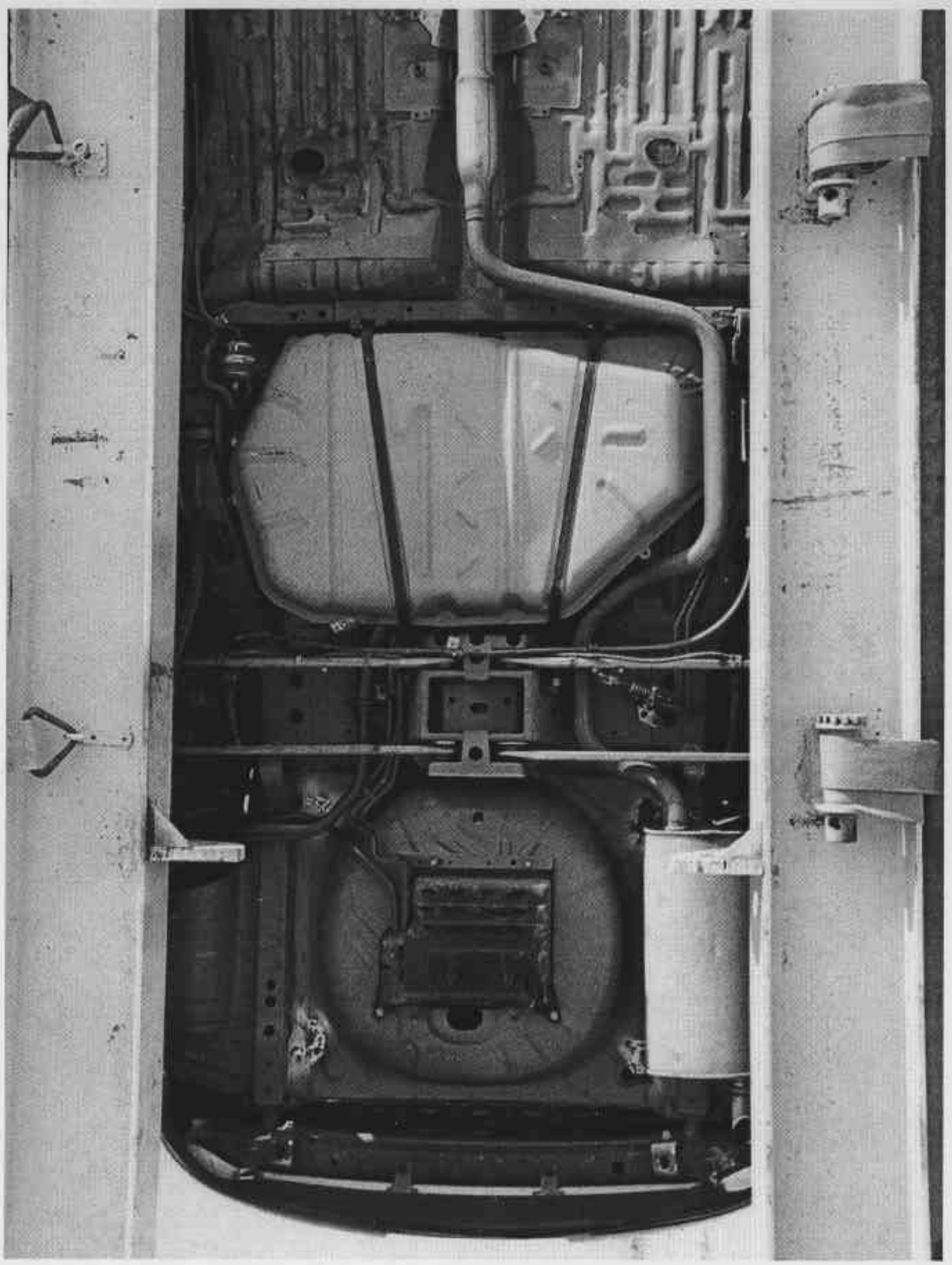


FIGURE A-27. POST TEST REAR UNDERBODY

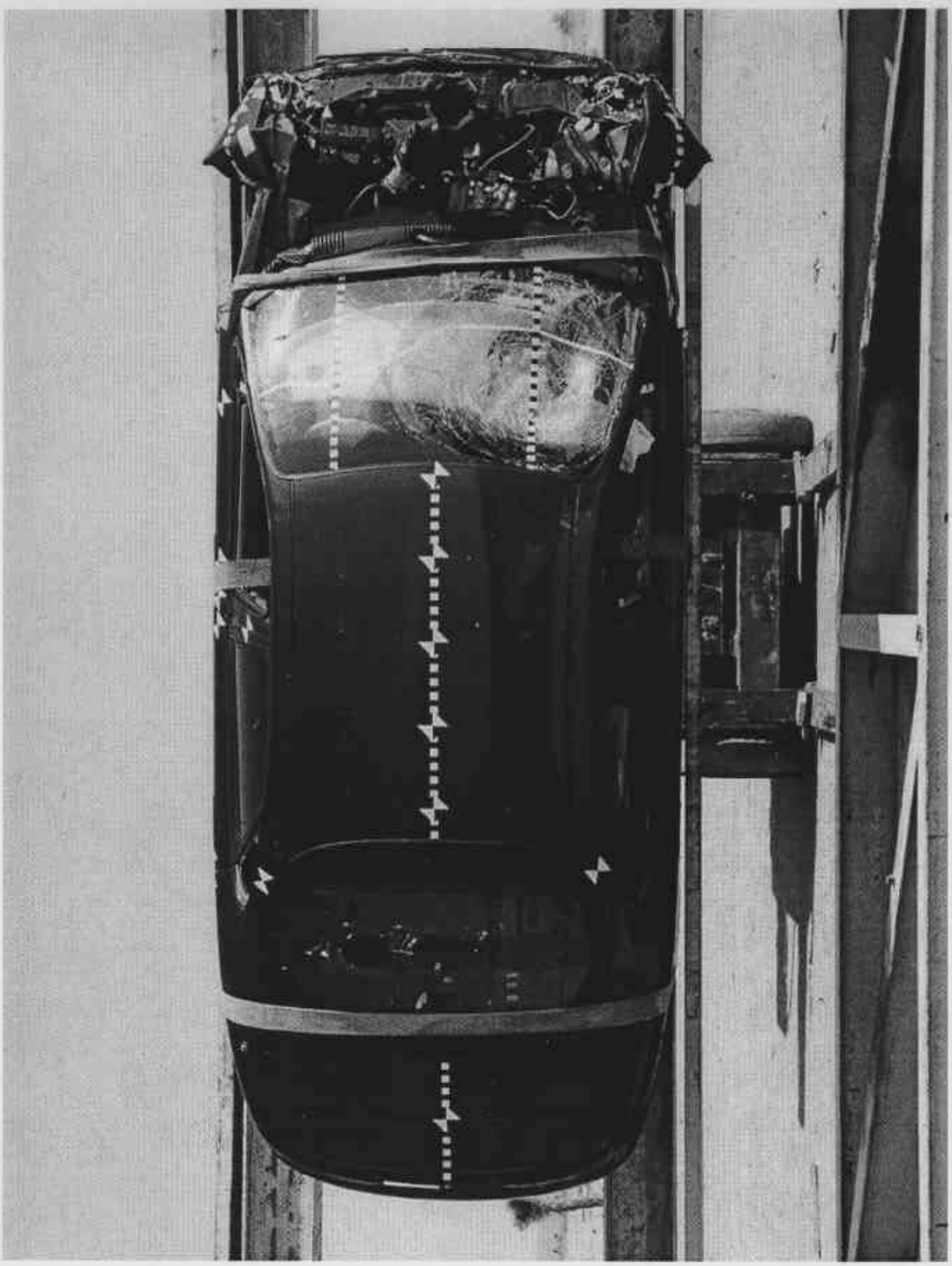


FIGURE A-28. VEHICLE ON ROLLOVER DEVICE

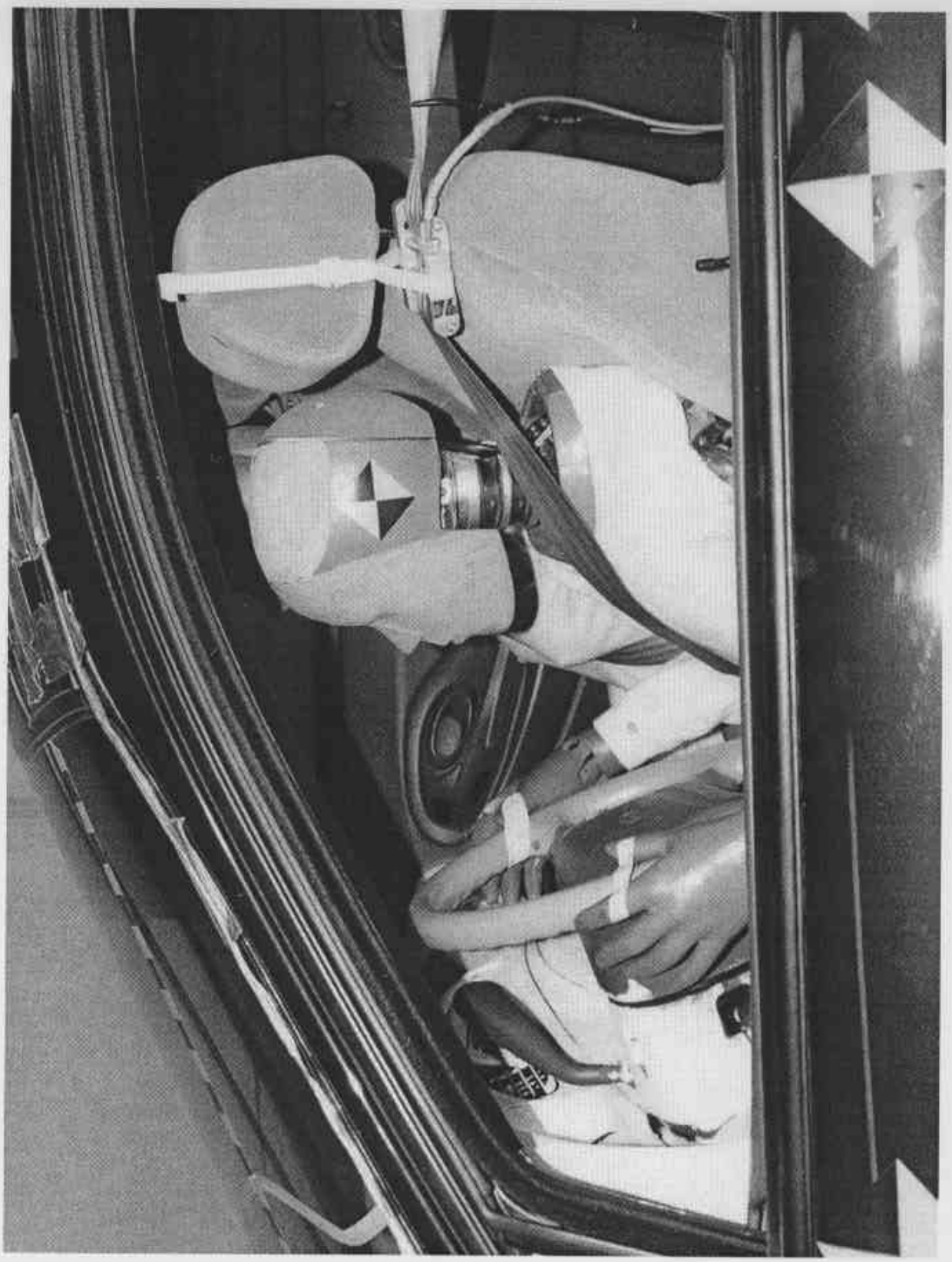


FIGURE A29. PRETEST DRIVER DUMMY (THRU WINDOW)

FIGURE A-30. POST TEST DRIVER DUMMY (THRU WINDOW)

FIGURE A-31. PRETEST DRIVER DUMMY (DOOR OPEN)

FIGURE A-32. POST TEST DRIVER DUMMY (DOOR OPEN)

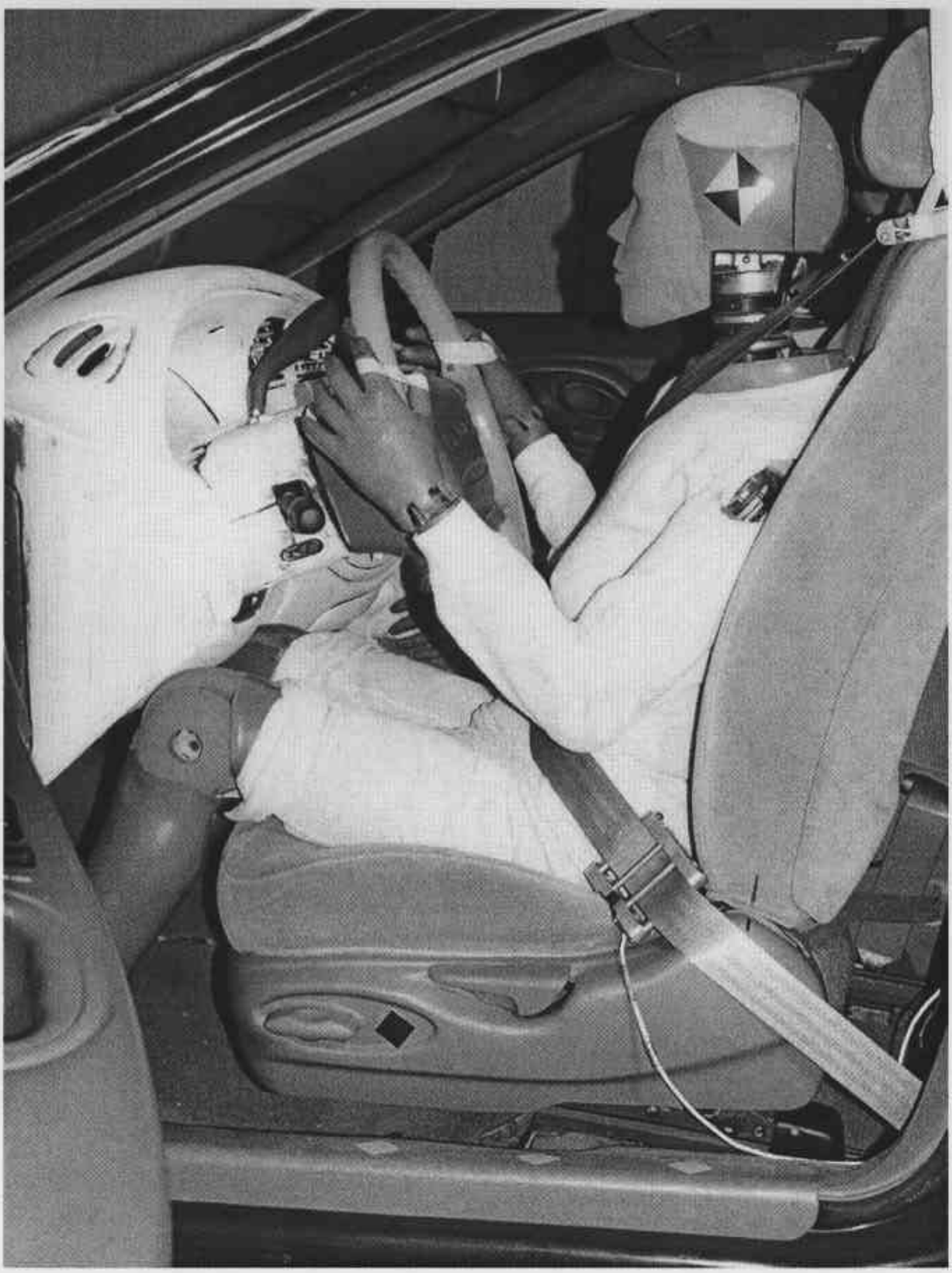


FIGURE A-33. PRE TEST DRIVER DUMMY (90° TO VEHICLE)

FIGURE A-34. POST TEST DRIVER DUMMY (90° TO VEHICLE)

FIGURE A-35. PRETEST DRIVER DUMMY FEET

FIGURE A-36. POST TEST DRIVER DUMMY FEET

FIGURE A-37. PRETEST DRIVER SIDE FLOOR

FIGURE A-38.POST TEST DRIVER SIDE FLOOR

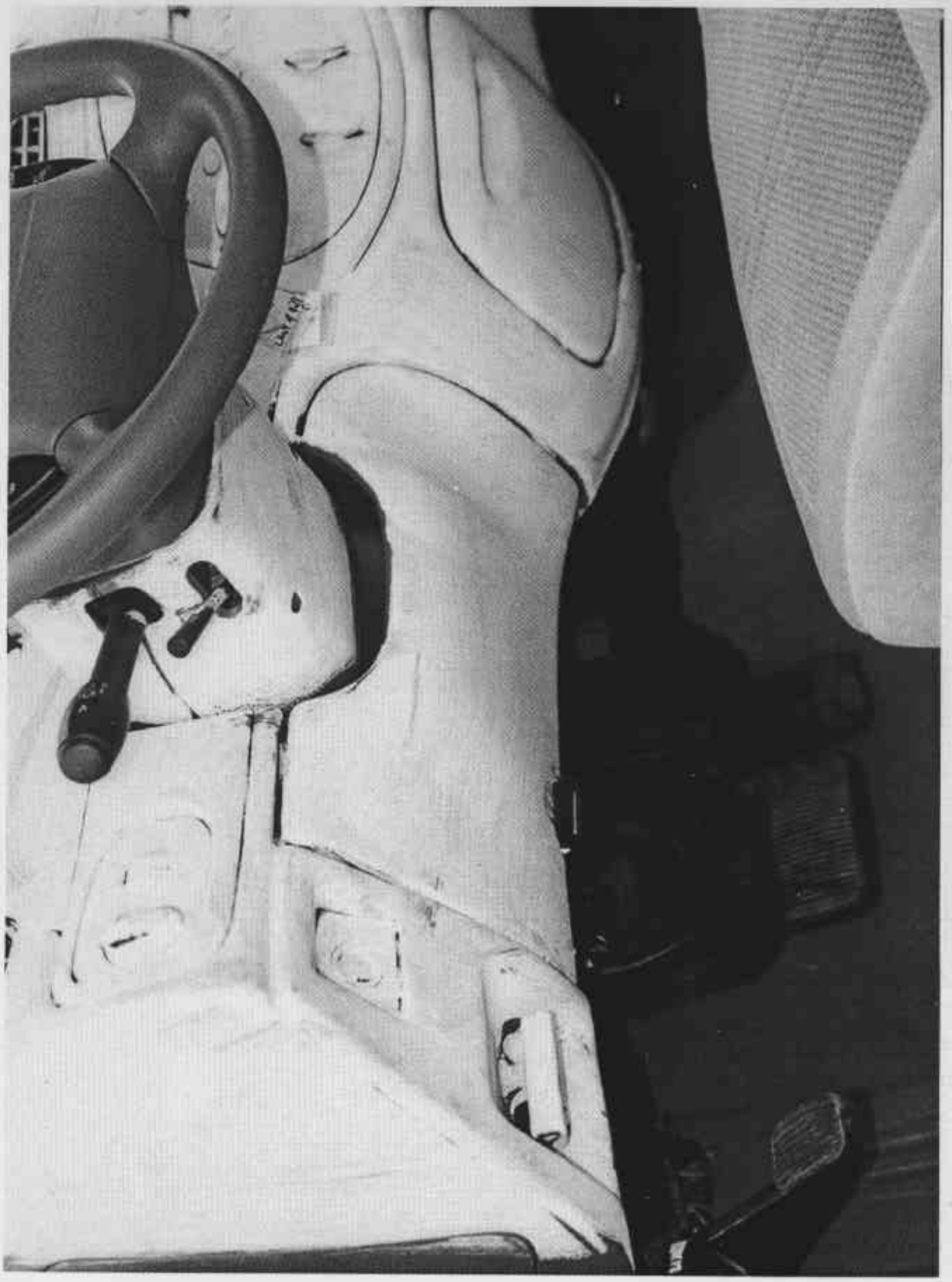


FIGURE A-39. PRETEST DRIVER KNEE BOLSTER

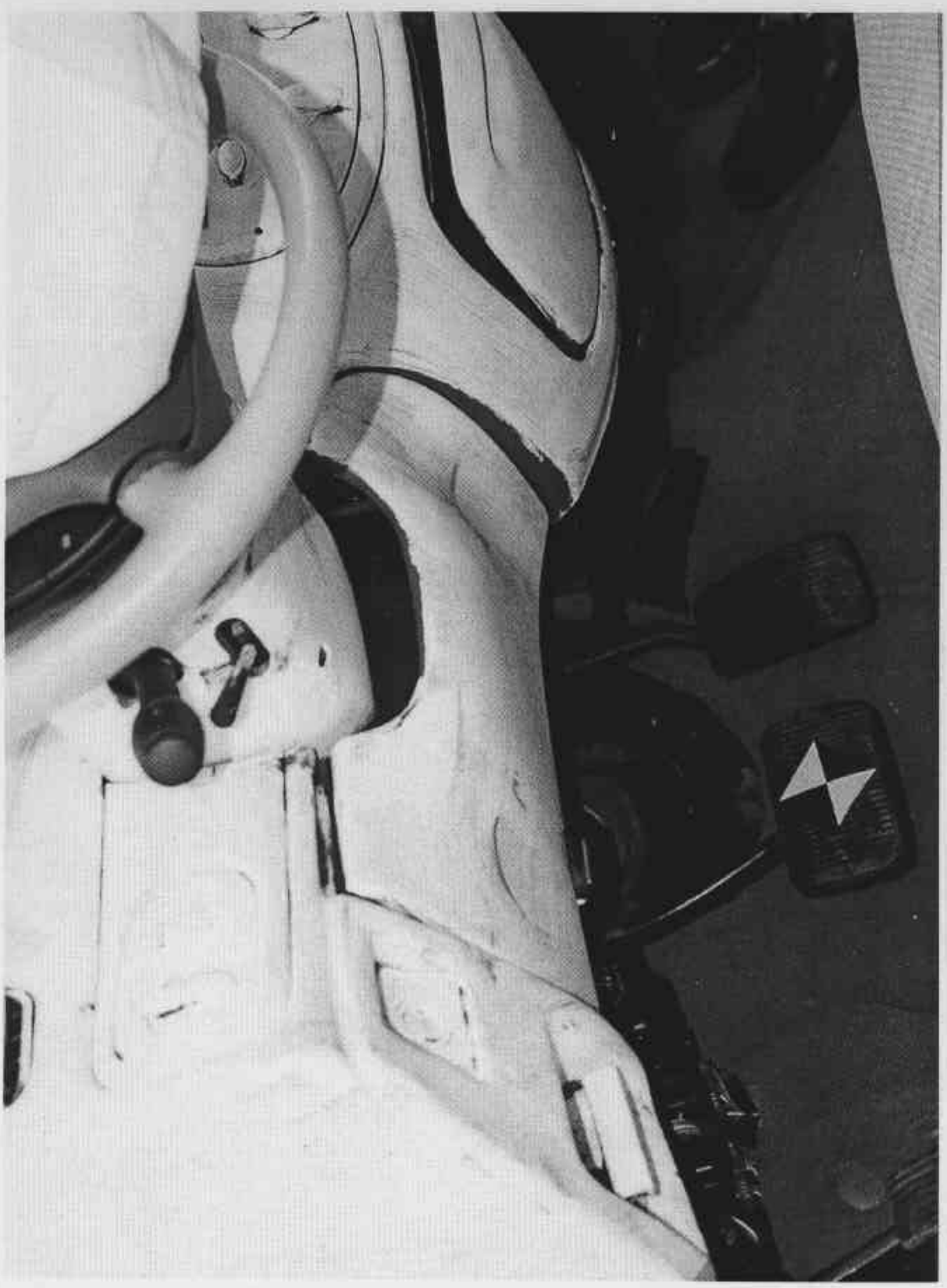


FIGURE A-40. POST TEST DRIVER KNEE BOLSTER AND DUMMY CONTACT

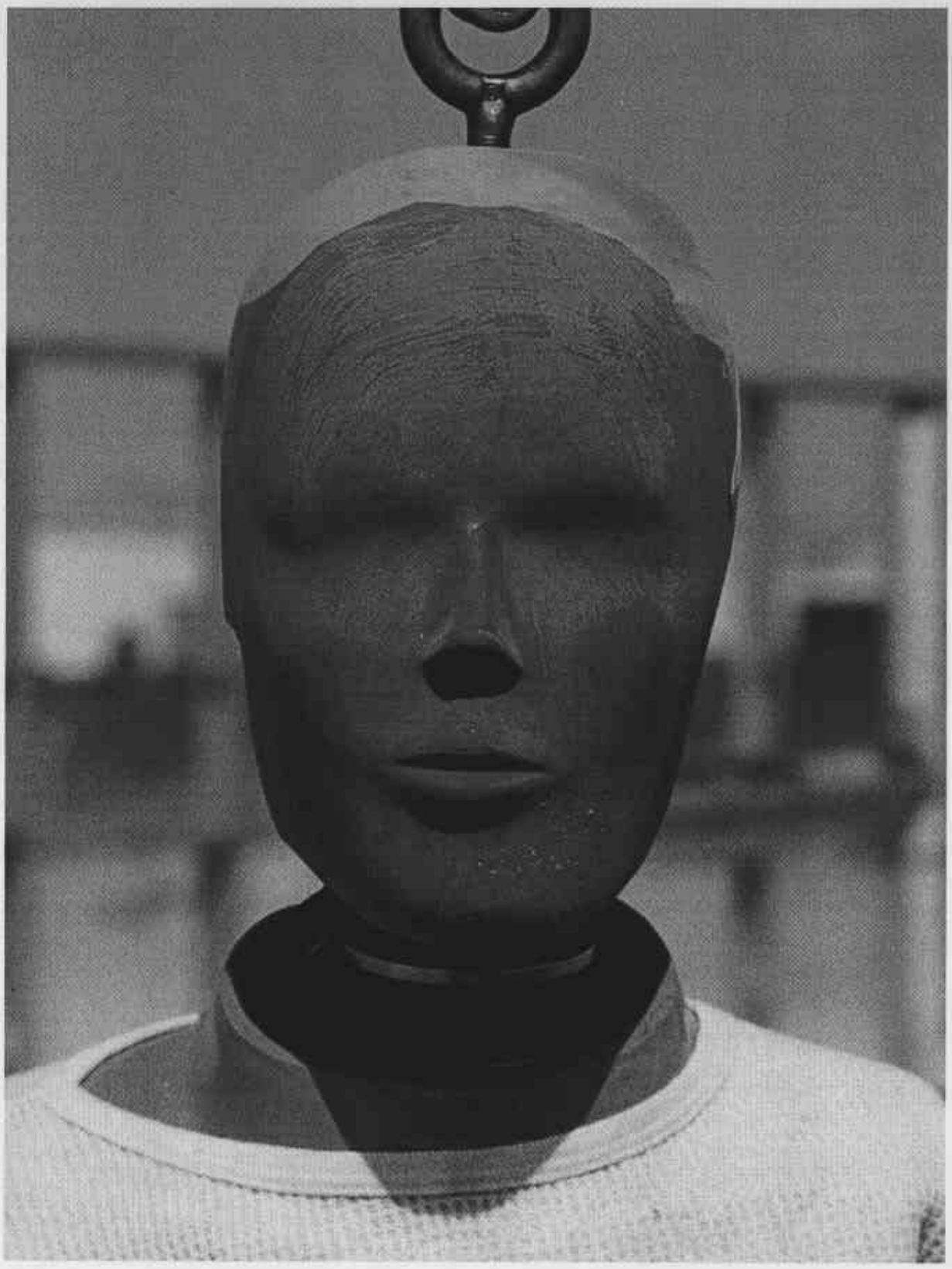


FIGURE A-41. DRIVER HEAD POST TEST

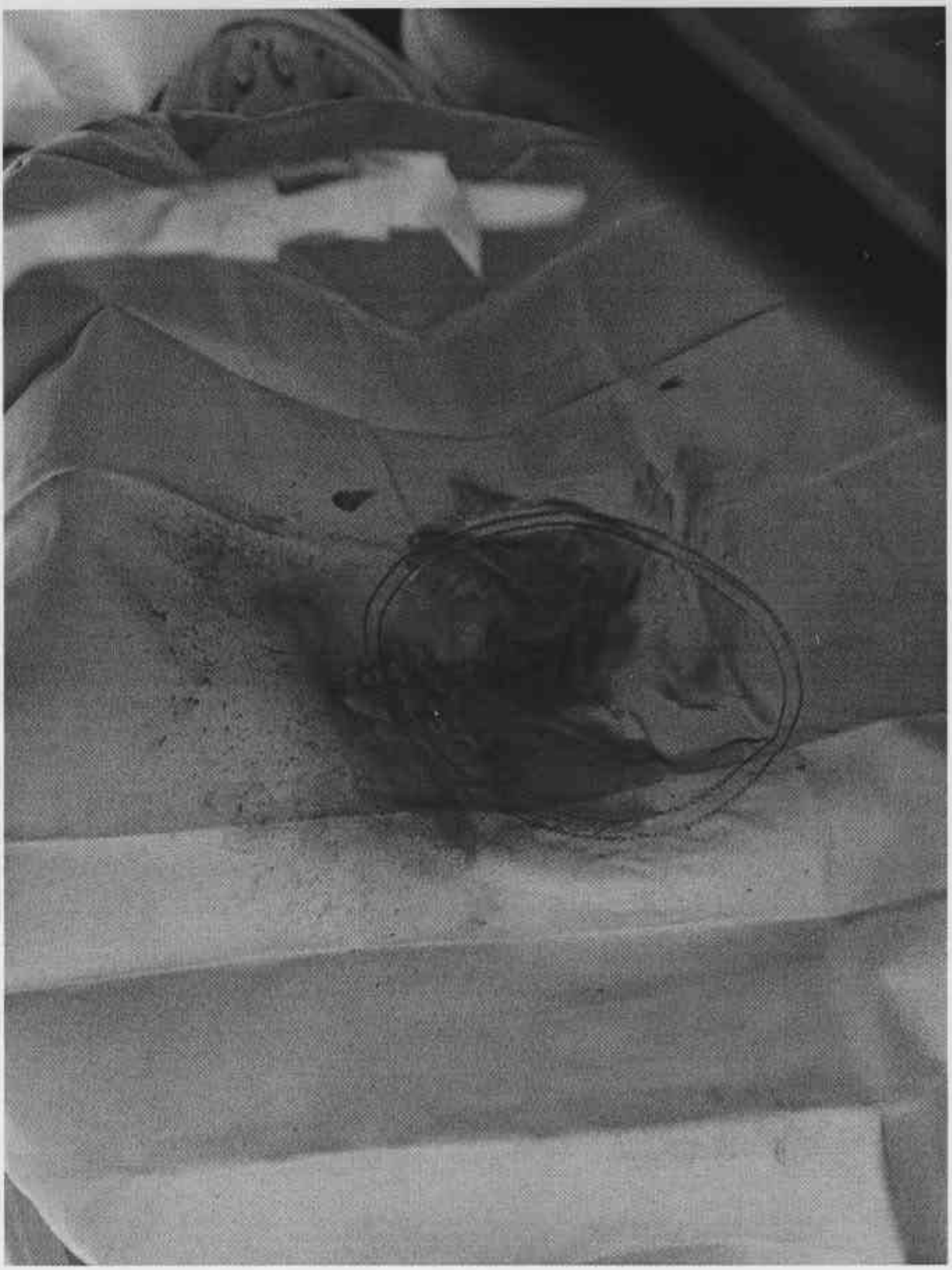


FIGURE A-42. DRIVER DUMMY HEAD CONTACT POINT

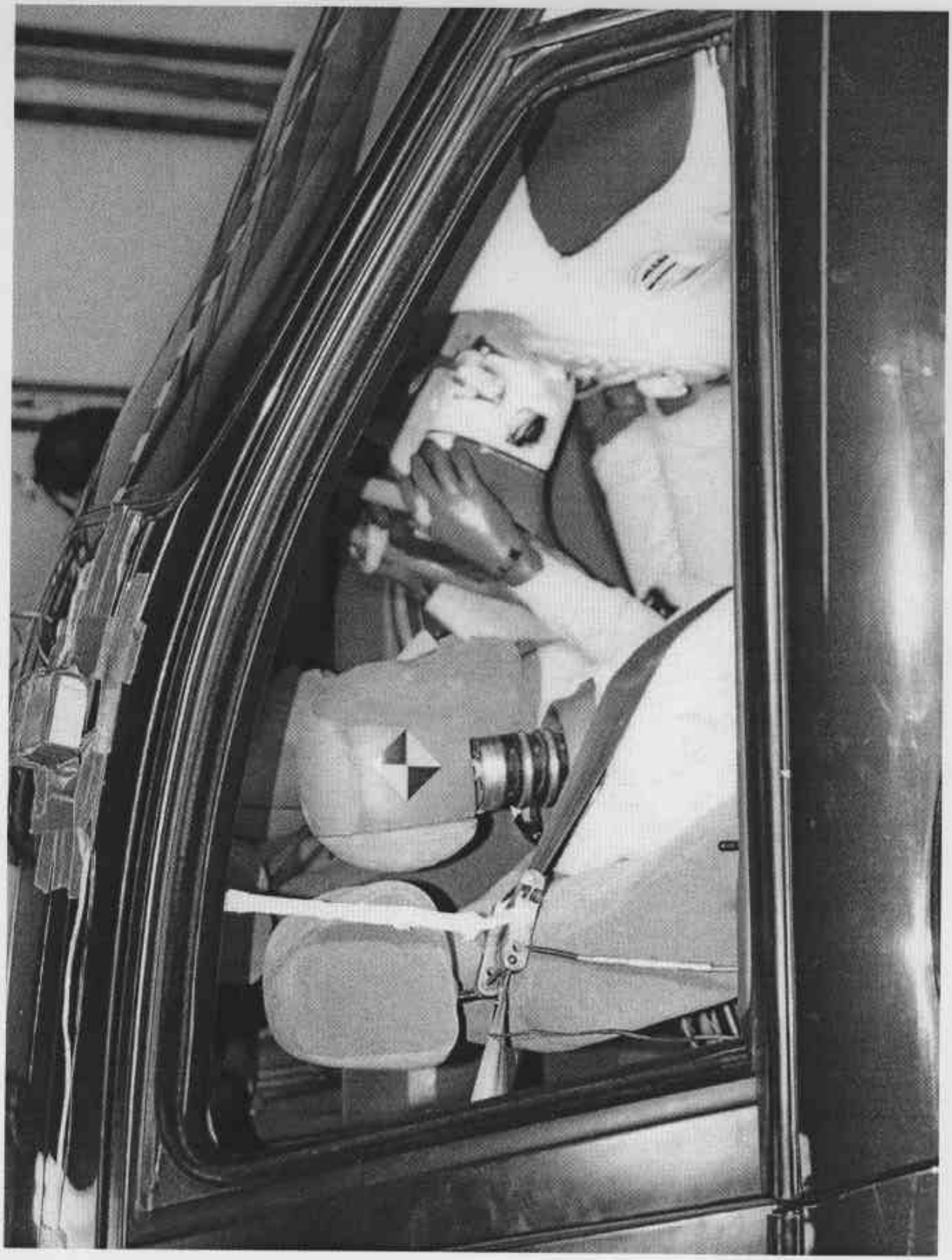


FIGURE A-43. PRETEST PASSENGER DUMMY (THRU WINDOW)

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

FIGURE A-45. PRETEST PASSENGER DUMMY (DOOR OPEN)

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

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

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

FIGURE A-49.PRETEST PASSENGER KNEE BOLSTER

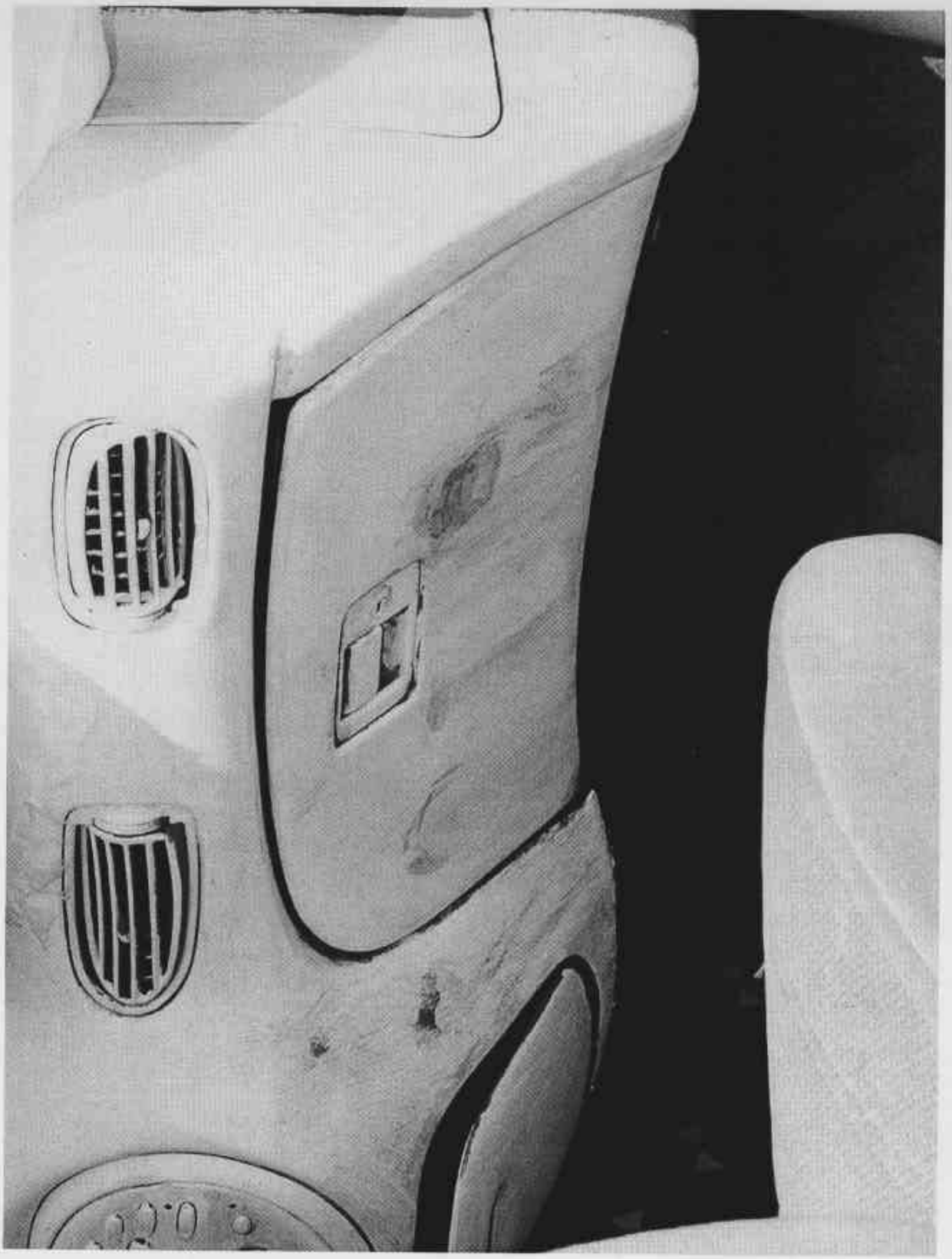


FIGURE A-50. POST TEST PASSENGER DUMMY KNEE BOLSTER AND DUMMY CONTACT

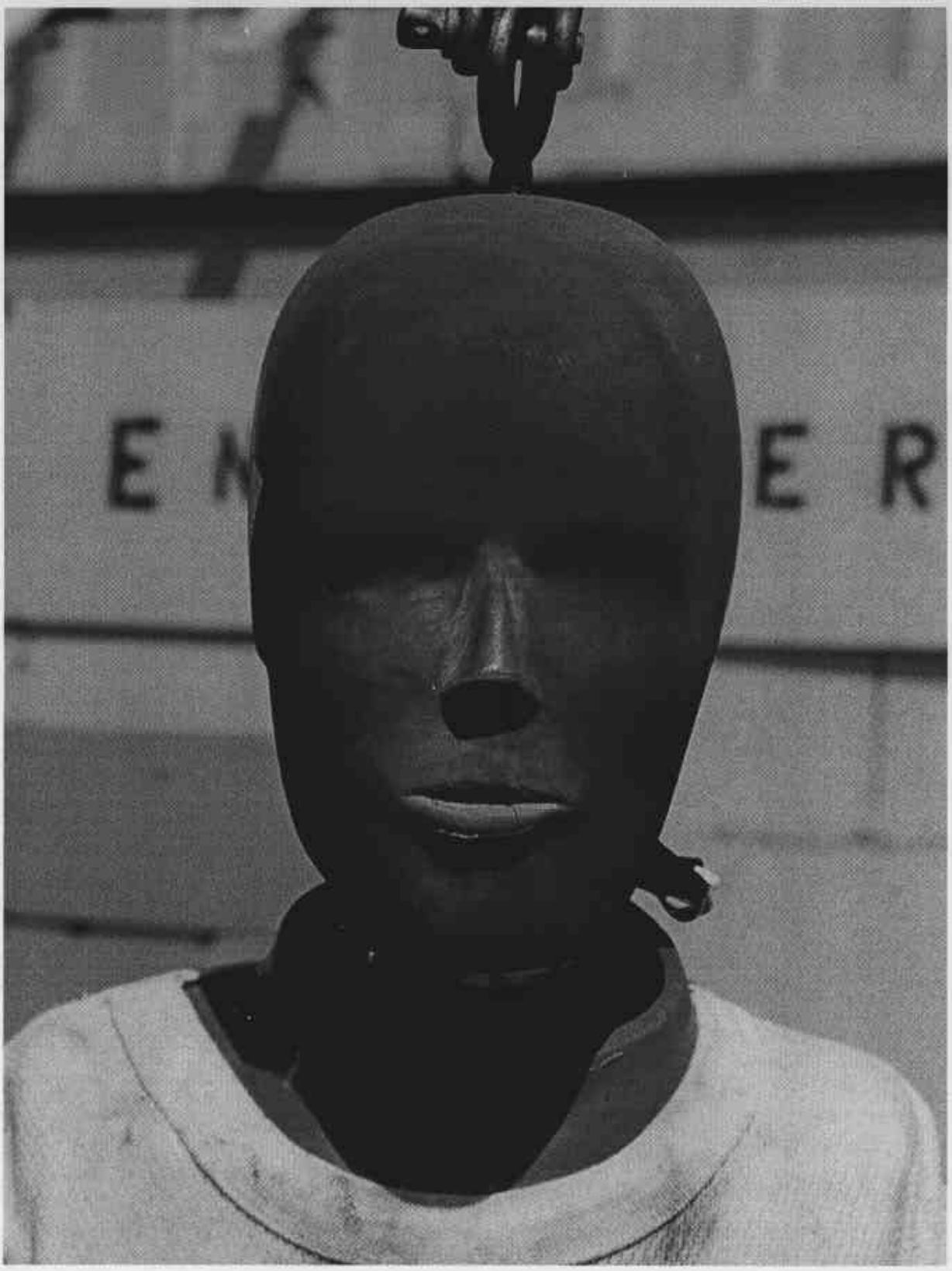


FIGURE A-51.PASSENGER HEAD POST TEST

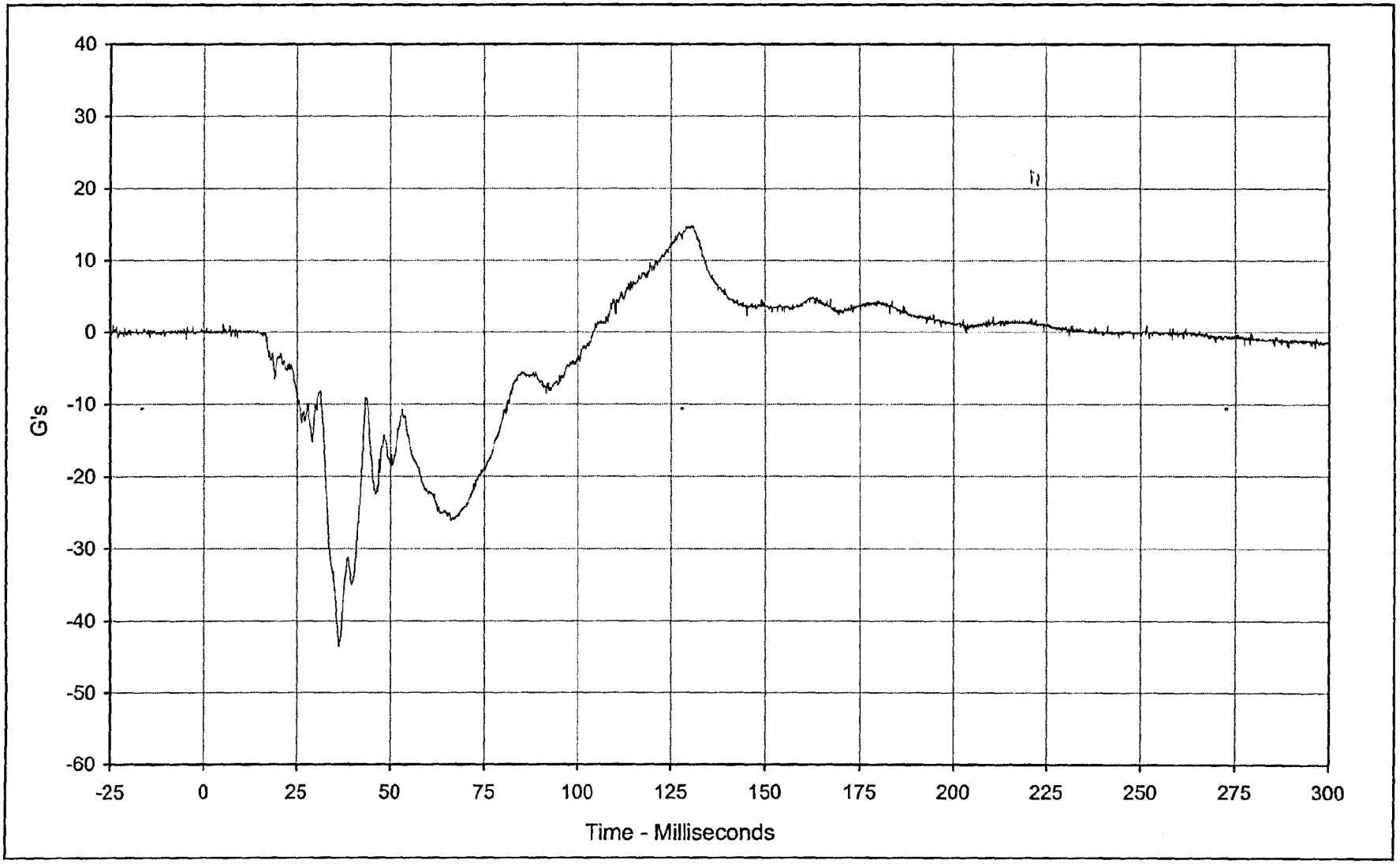
FIGURE A-52. PASSENGER HEAD CONTACT POINT

APPENDIX B

DUMMY, VEHICLE AND RESPONSE DATA TRACES

LIST OF DATA PLOTS

LIST OF DATA PLOTS...(Continued)

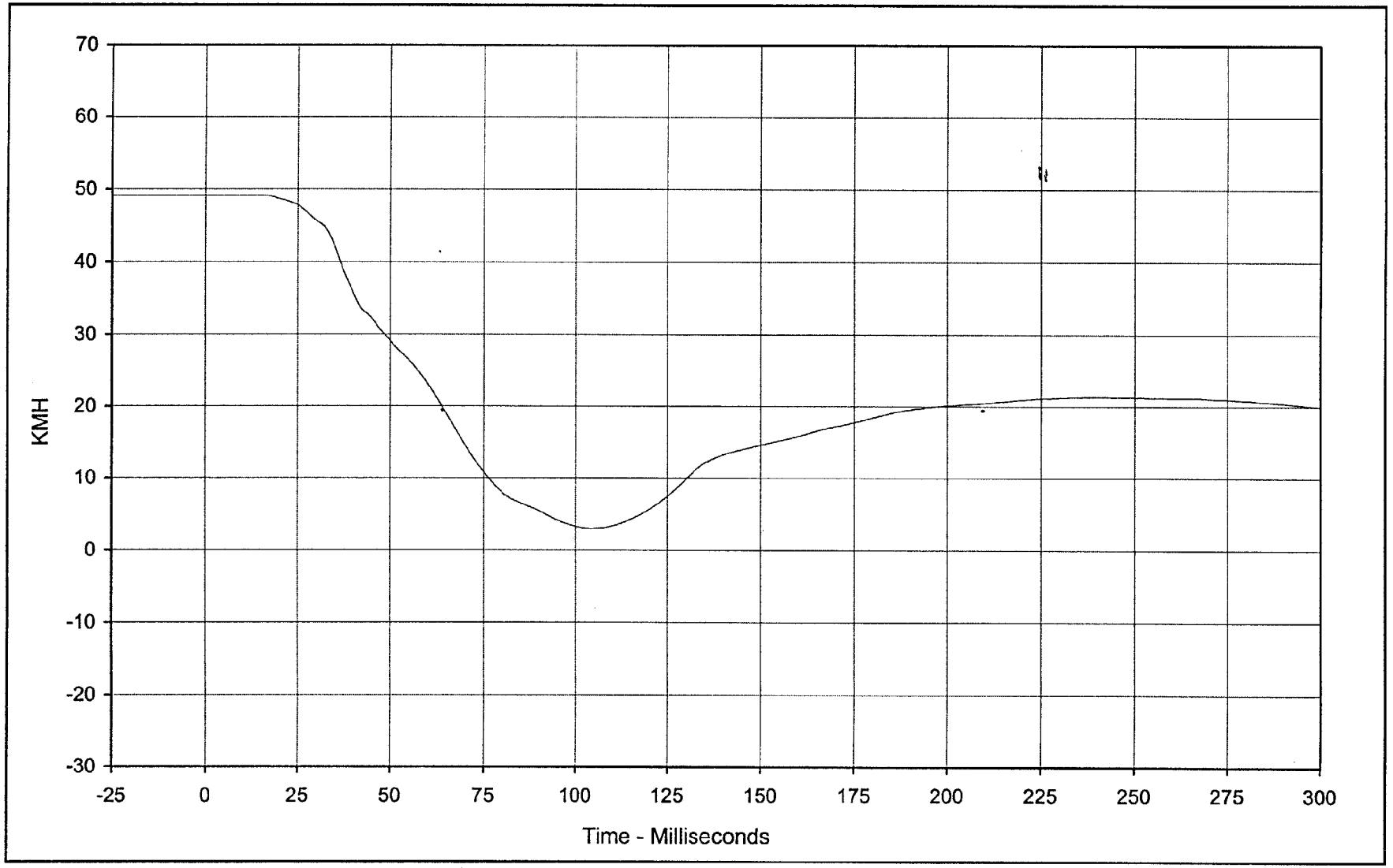


Curve Description:	Driver Head Primary X			
Maximum Value:	14.8	at	130.5	Milliseconds
Minimum Value:	-43.6	at	36.3	Milliseconds
SAE Filter Class:	1000			
Date of Test:	9/4/97			
Curve Number:	FIL-001			

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

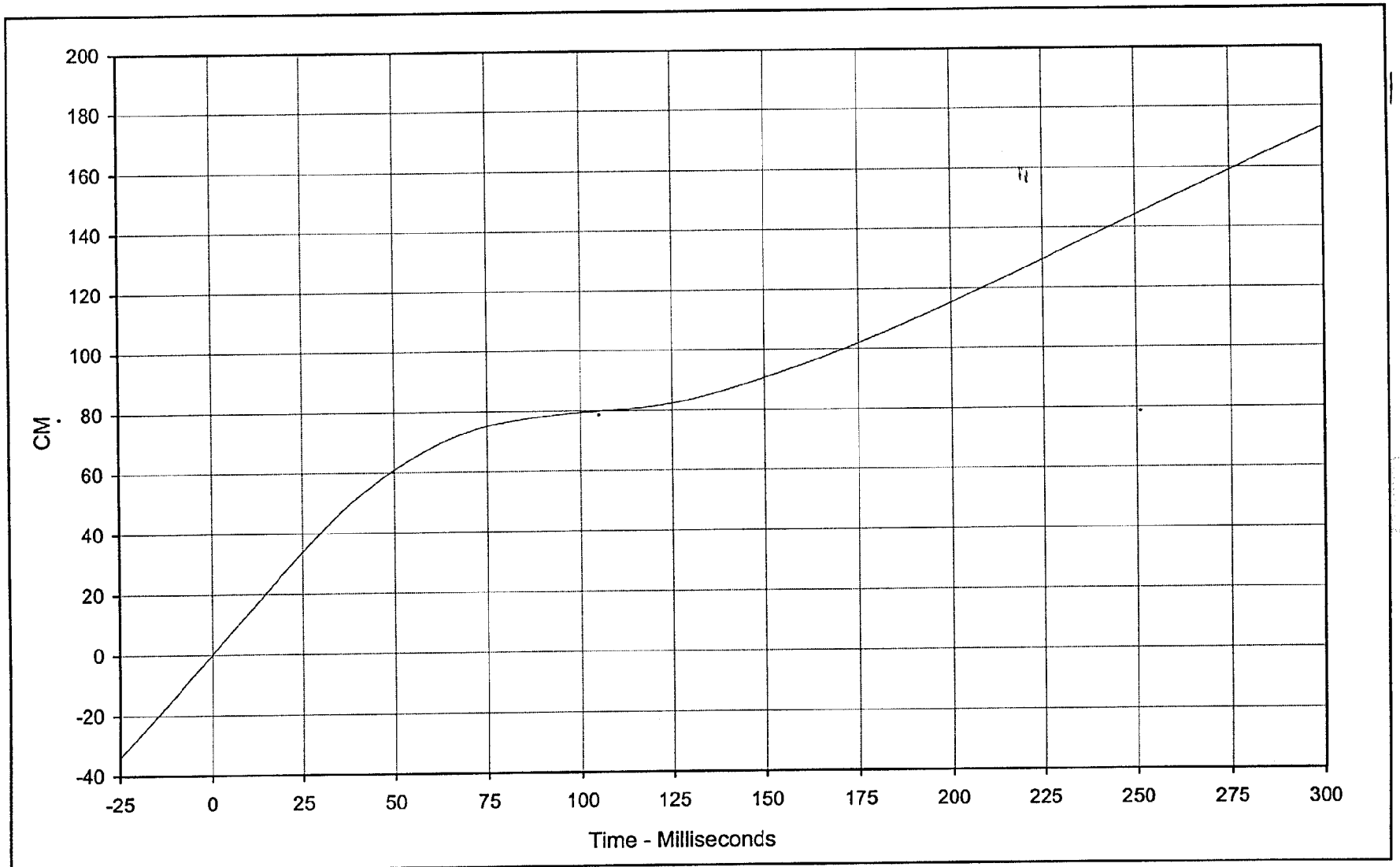
Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description:	Driver Head Primary X Velocity			Testing Program	1997 48.4 km/h Frontal Impact (Female)
Maximum Value:	49.1	at	13.6 Milliseconds	Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan
Minimum Value:	3.0	at	104.4 Milliseconds		
SAE Filter Class:	180				
Date of Test:	9/4/97				
Curve Number:	IN1-001				

KARCO Engineering



Curve Description: Driver Head Primary X Displ.

Maximum Value: 173.1 at 299.9 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

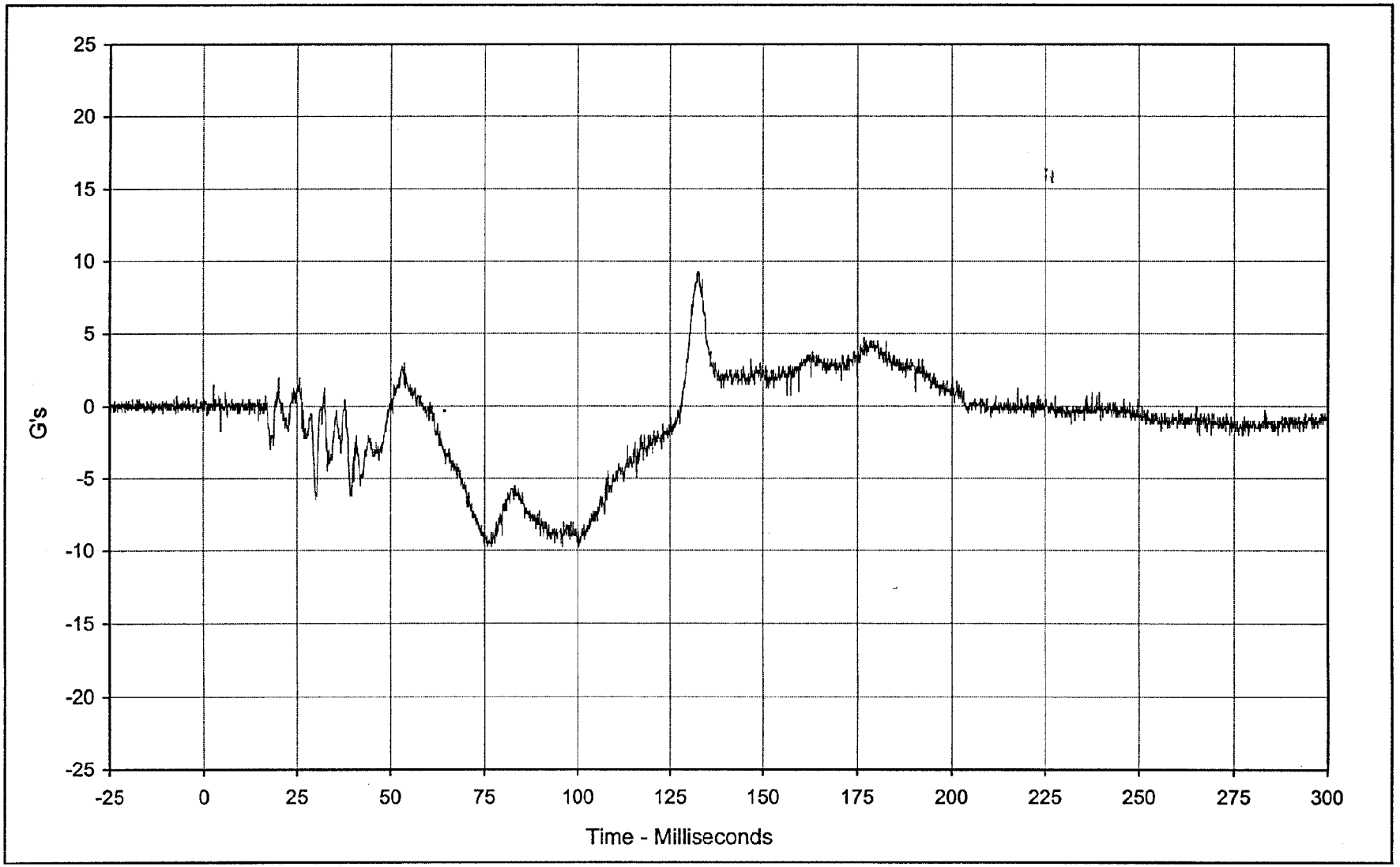
Date of Test: 9/4/97

Curve Number: IN2-001

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Head Primary Y

Maximum Value: 9.3 at 132.2 Milliseconds

Minimum Value: -9.8 at 75.8 Milliseconds

SAE Filter Class: 1000

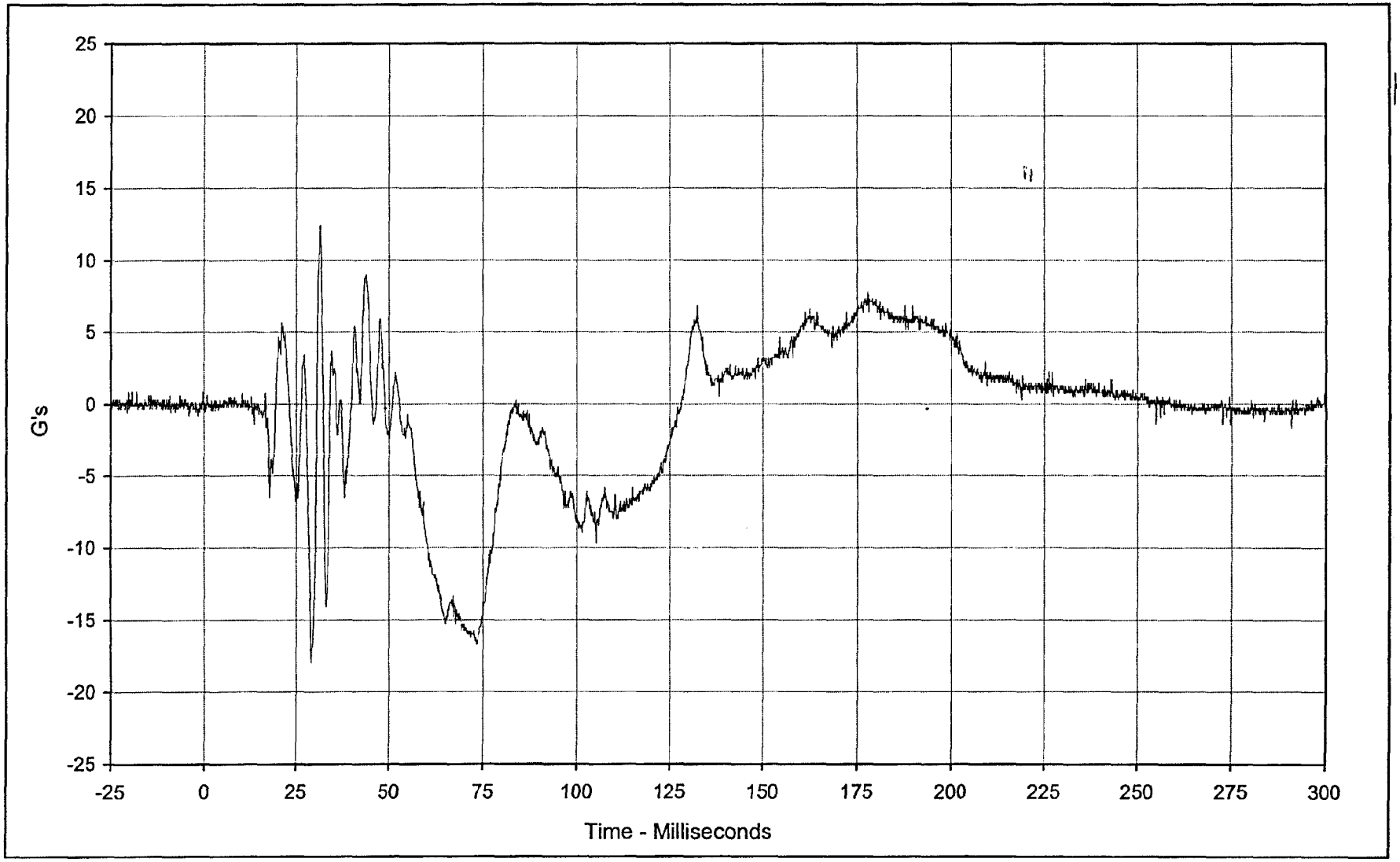
Date of Test: 9/4/97

Curve Number: FIL-002

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

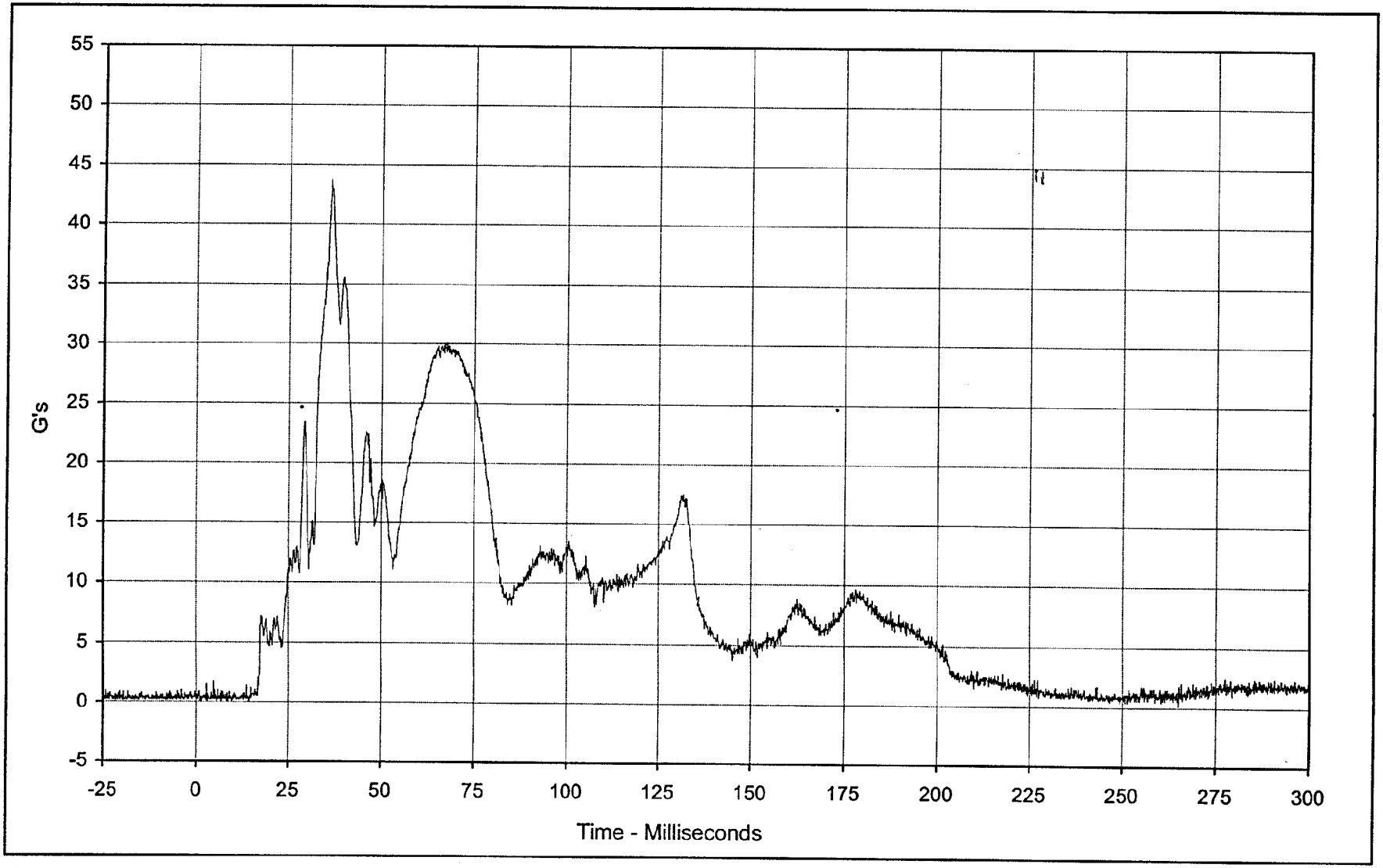
KARCO Engineering



Curve Description:	Driver Head Primary Z			
Maximum Value:	12.4	at	31.5	Milliseconds
Minimum Value:	-17.9	at	29.0	Milliseconds
SAE Filter Class:	1000			
Date of Test:	9/4/97			
Curve Number:	FIL-003			

Testing Program:	1997 48.4 km/h Frontal Impact (Female)
Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Head Resultant Primary

Maximum Value: 43.7 at 36.3 Milliseconds

Minimum Value: 0.0 at 1.0 Milliseconds

SAE Filter Class: 1000

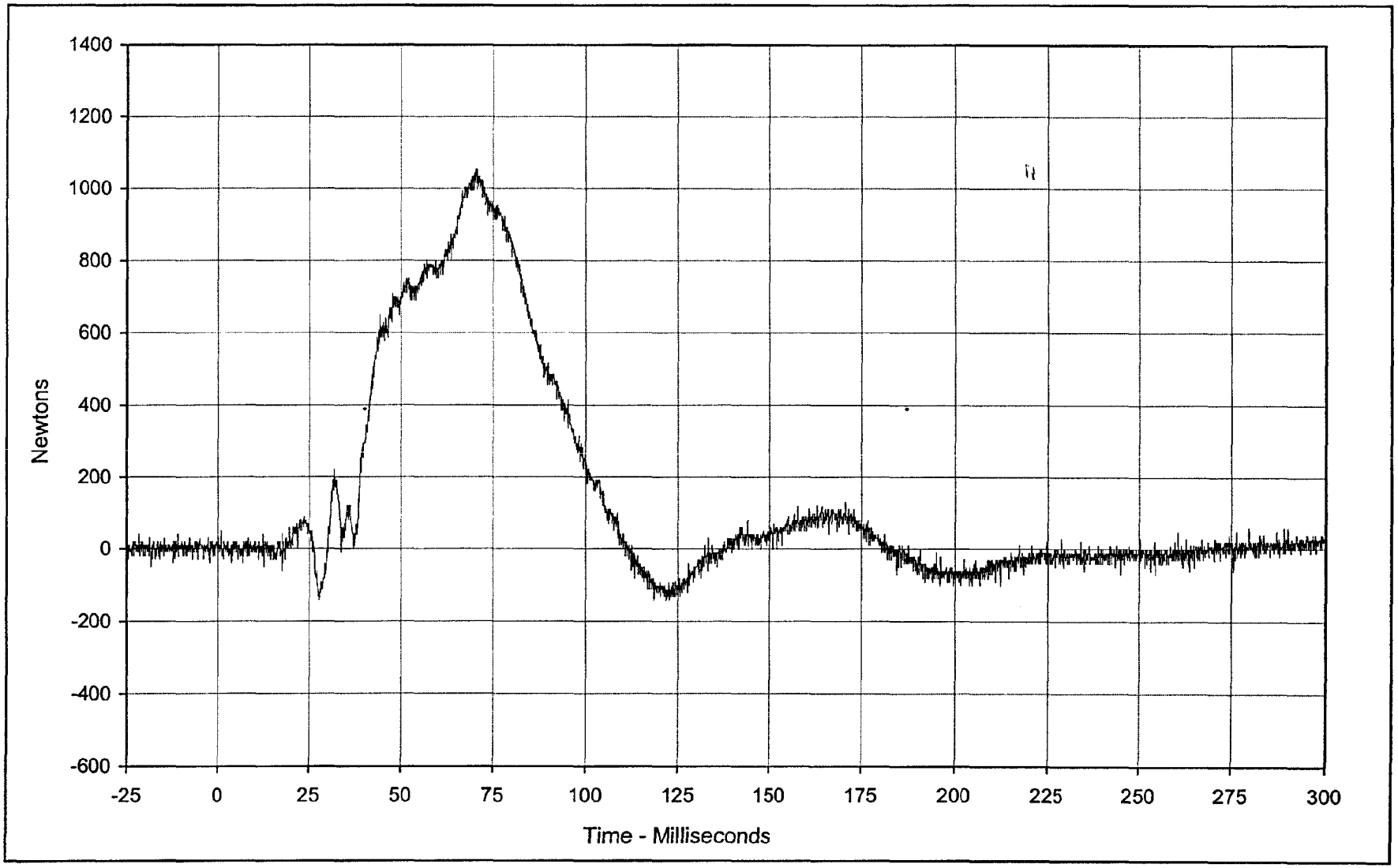
Date of Test: 9/4/97

Curve Number: RES-001

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering

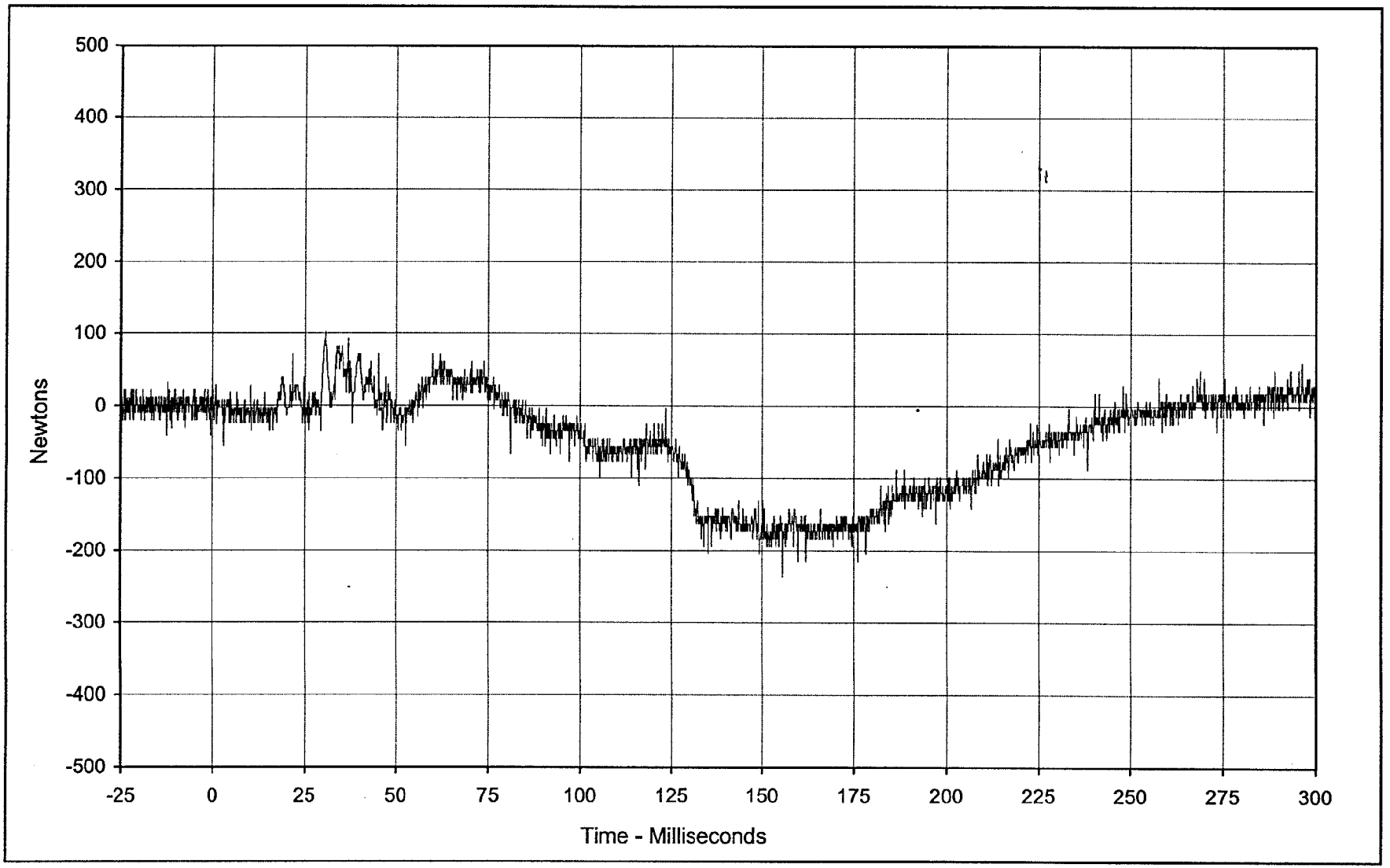


Curve Description:	Driver Neck Force X			
Maximum Value:	1054.0	at	70.1	Milliseconds
Minimum Value:	-142.7	at	27.8	Milliseconds
SAE Filter Class:	1000			
Date of Test:	9/4/97			
Curve Number:	FIL-004			

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering

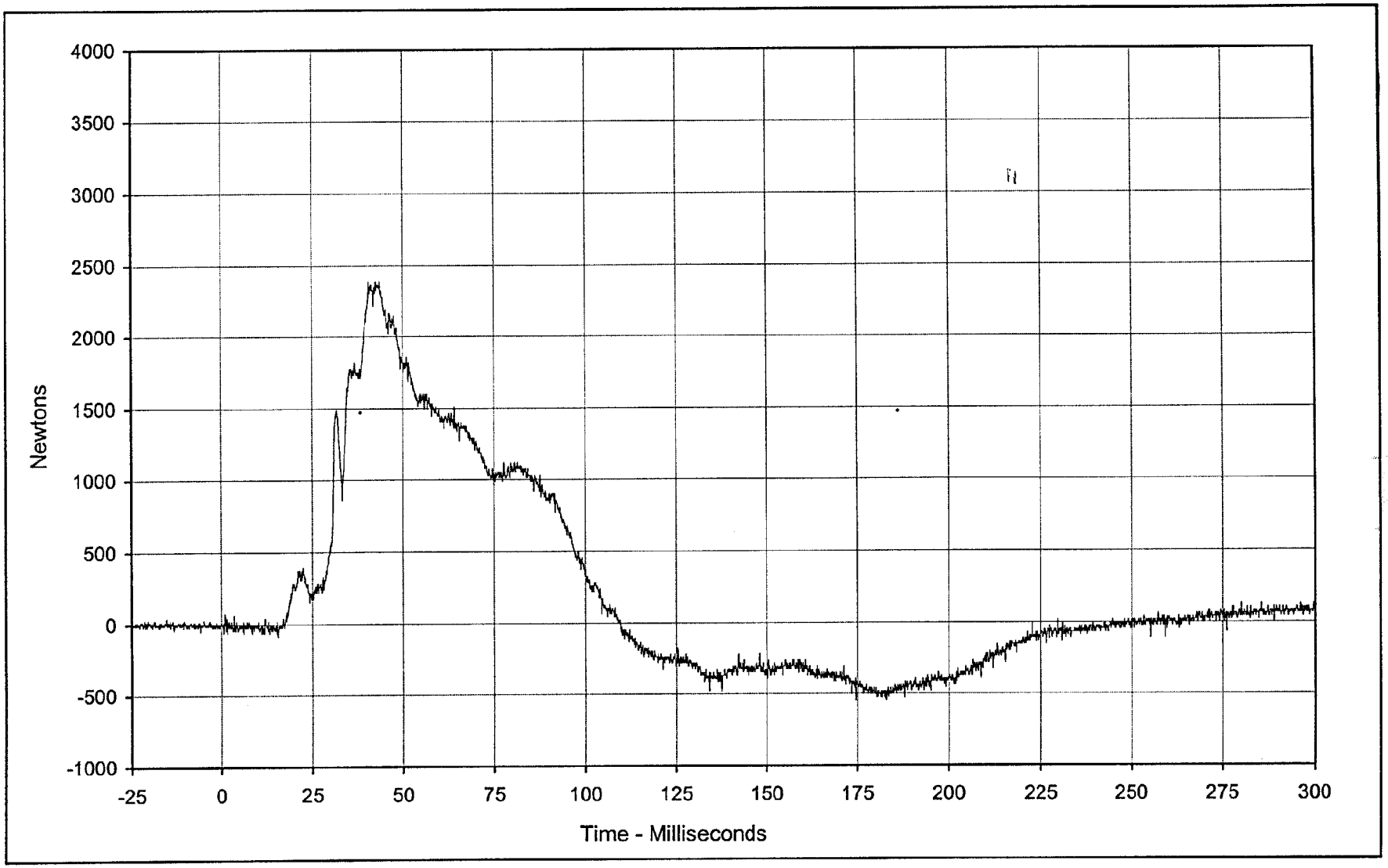


Curve Description:	Driver Neck Force Y			
Maximum Value:	103.1	at	30.7	Milliseconds
Minimum Value:	-236.6	at	155.4	Milliseconds
SAE Filter Class:	1000			
Date of Test:	9/4/97			
Curve Number:	FIL-005			

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Neck Force Z

Maximum Value: 2389.4 at 40.6 Milliseconds

Minimum Value: -546.9 at 174.6 Milliseconds

SAE Filter Class: 1000

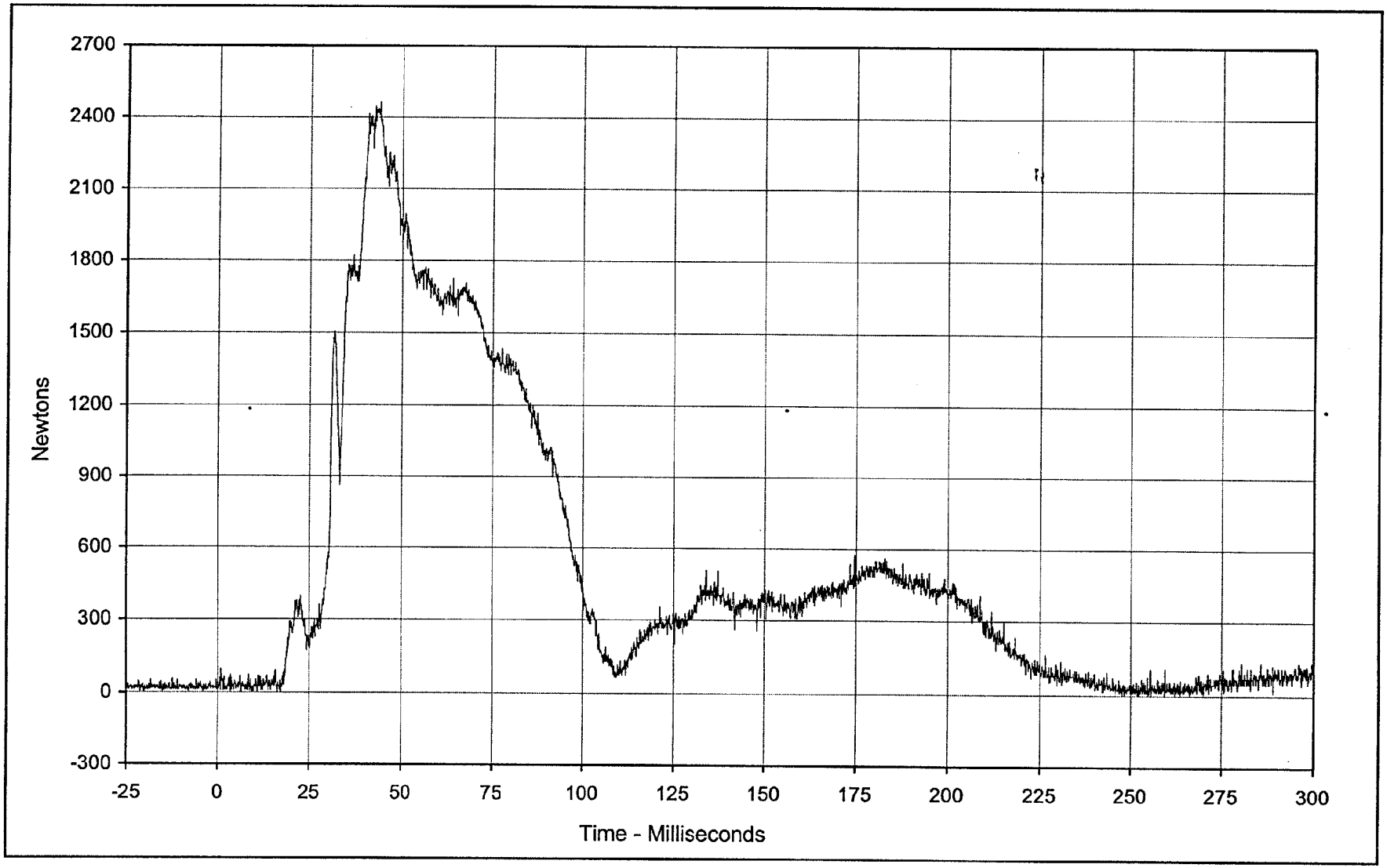
Date of Test: 9/4/97

Curve Number: FIL-006

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Neck Force Resultant

Maximum Value: 2465.5 at 43.7 Milliseconds

Minimum Value: 3.3 at 3.4 Milliseconds

SAE Filter Class: 1000

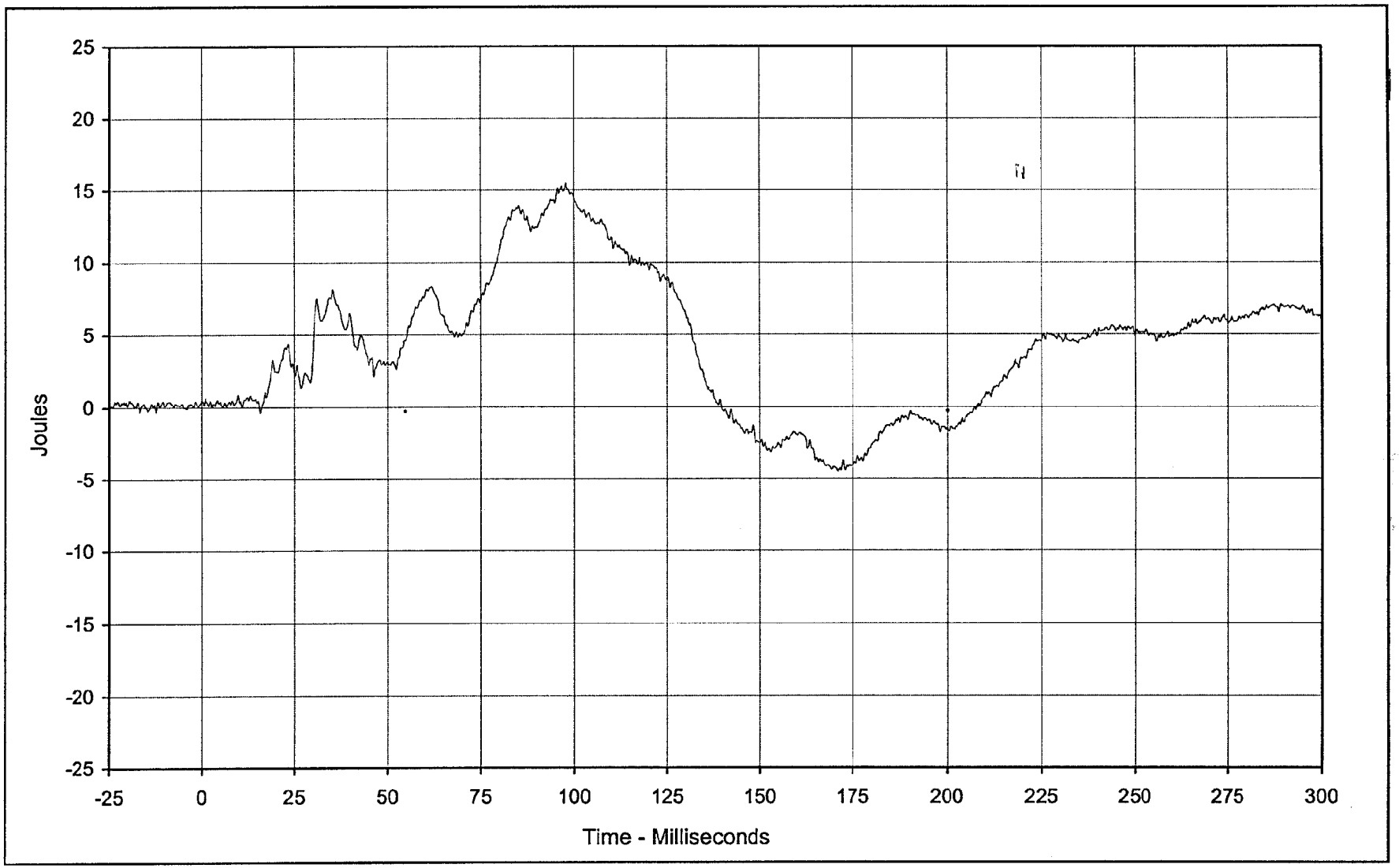
Date of Test: 9/4/97

Curve Number: RES-004

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Neck Moment X

Maximum Value: 15.5 at 97.8 Milliseconds

Minimum Value: -4.5 at 170.9 Milliseconds

SAE Filter Class: 600

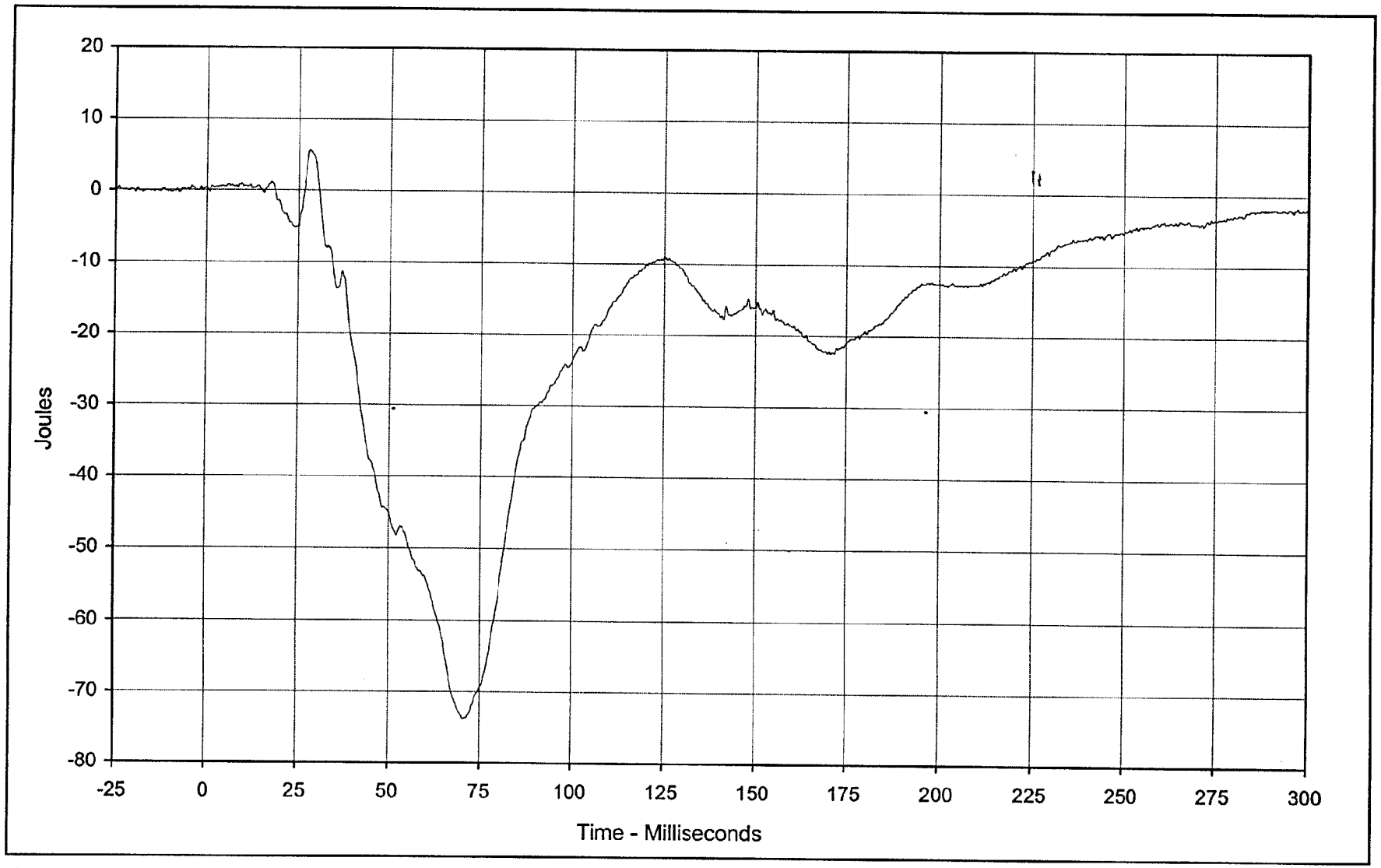
Date of Test: 9/4/97

Curve Number: FIL-007

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Neck Moment Y

Maximum Value: 5.6 at 28.1 Milliseconds

Minimum Value: -73.8 at 70.5 Milliseconds

SAE Filter Class: 600

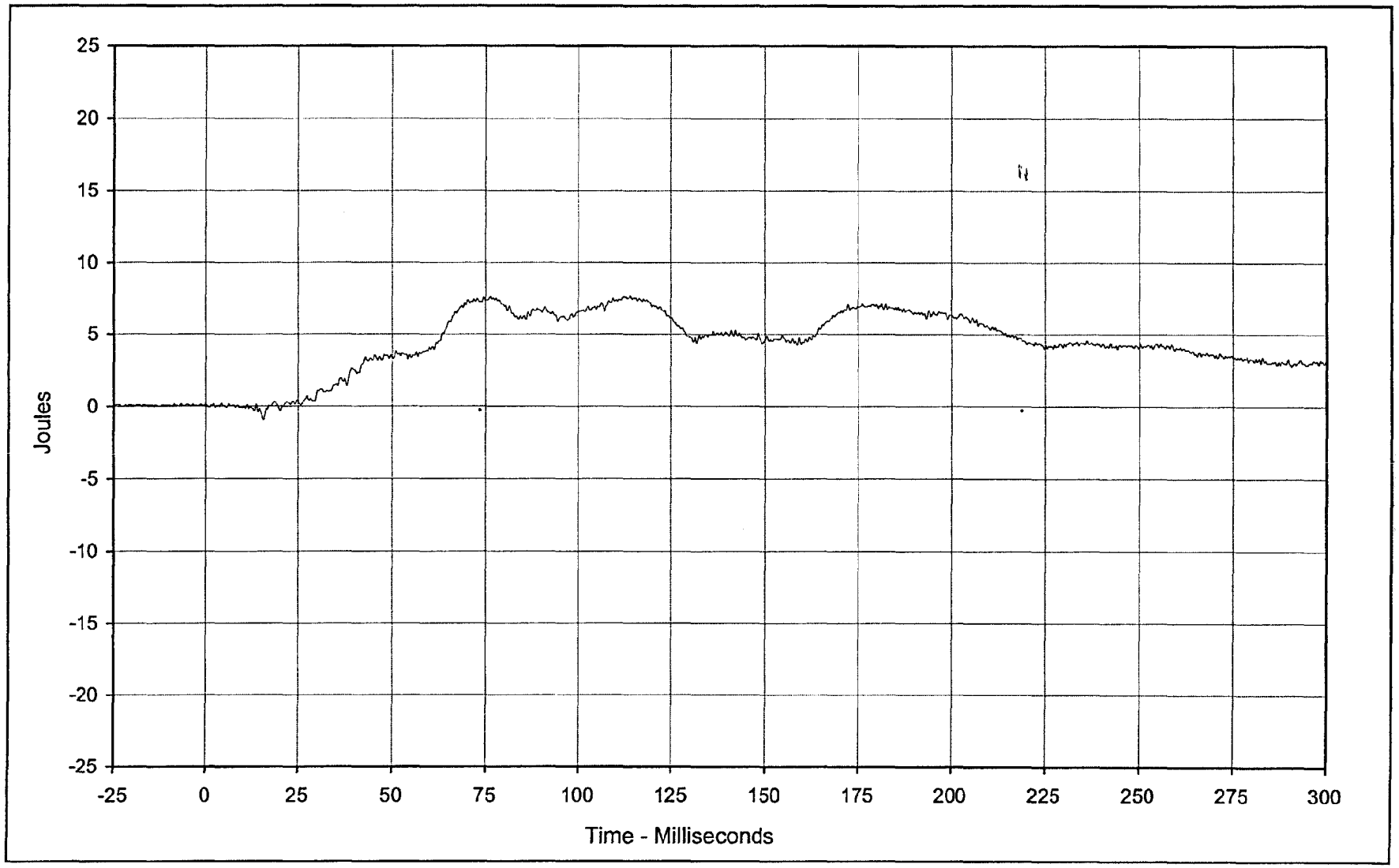
Date of Test: 9/4/97

Curve Number: FIL-008

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Neck Moment Z

Maximum Value: 7.7 at 113.9 Milliseconds

Minimum Value: -1.0 at 15.6 Milliseconds

SAE Filter Class: 600

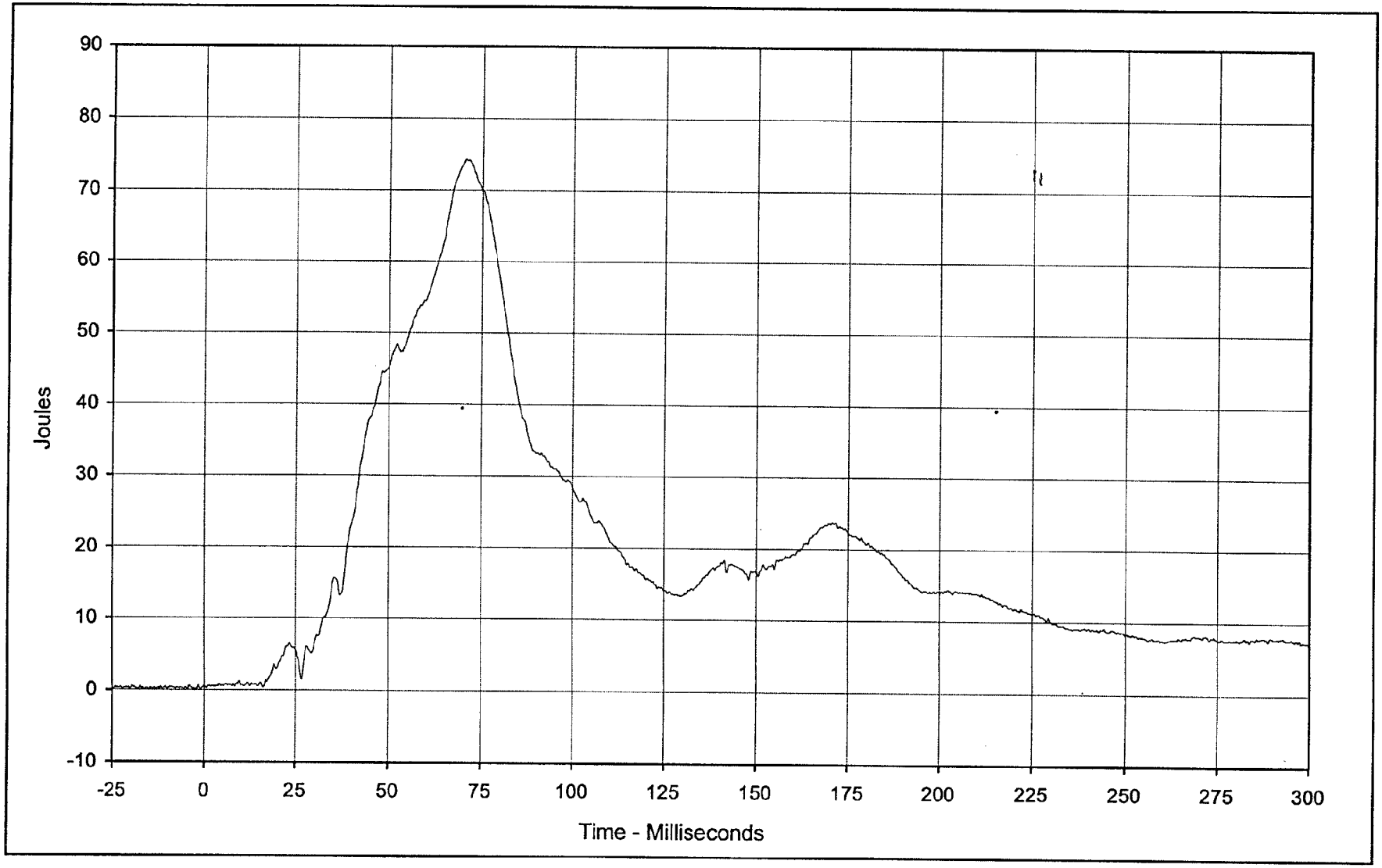
Date of Test: 9/4/97

Curve Number: FIL-009

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Neck Moment Resultant

Maximum Value: 74.4 at 70.5 Milliseconds

Minimum Value: 0.2 at 0.6 Milliseconds

SAE Filter Class: 600

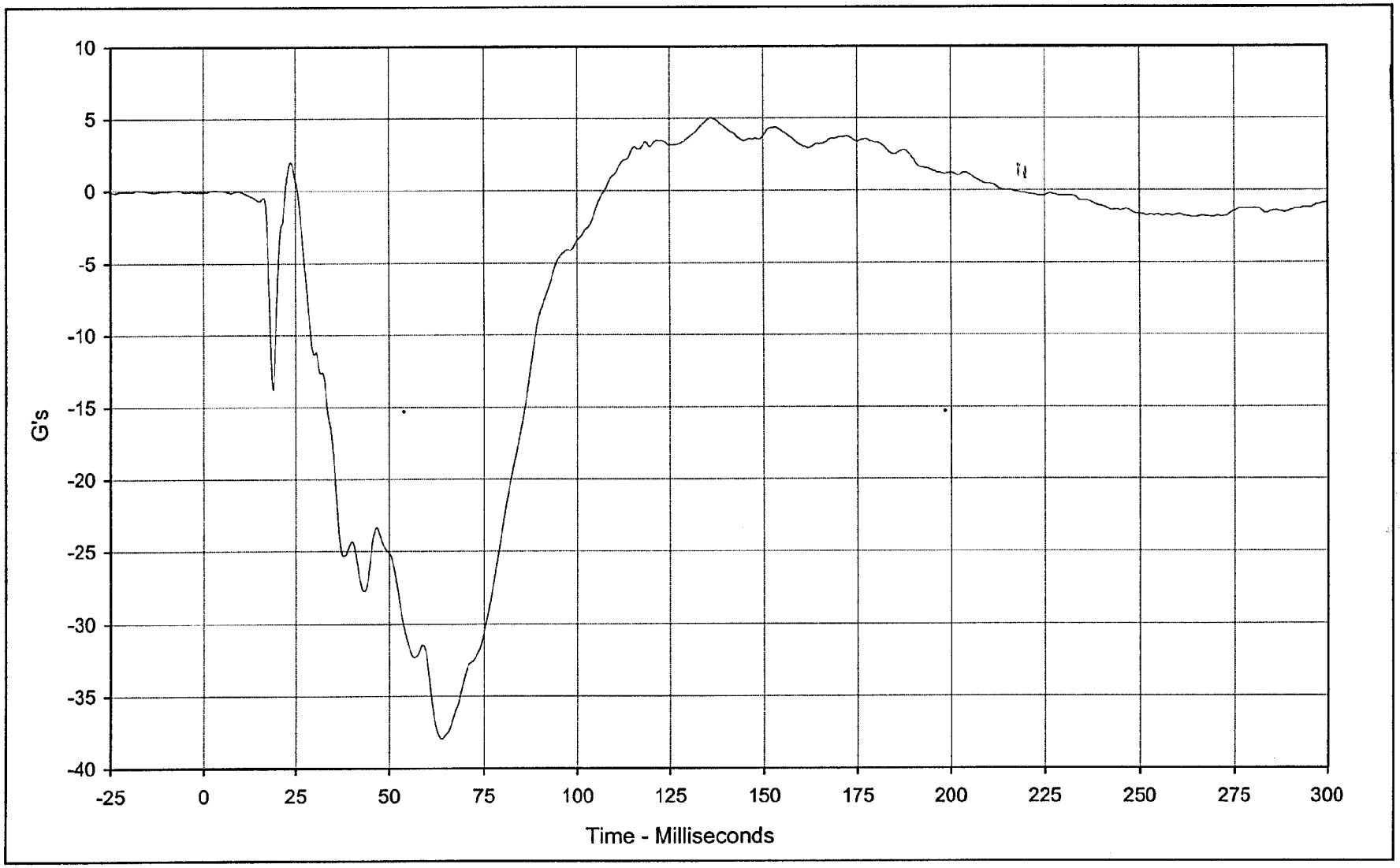
Date of Test: 9/4/97

Curve Number: RES-007

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering

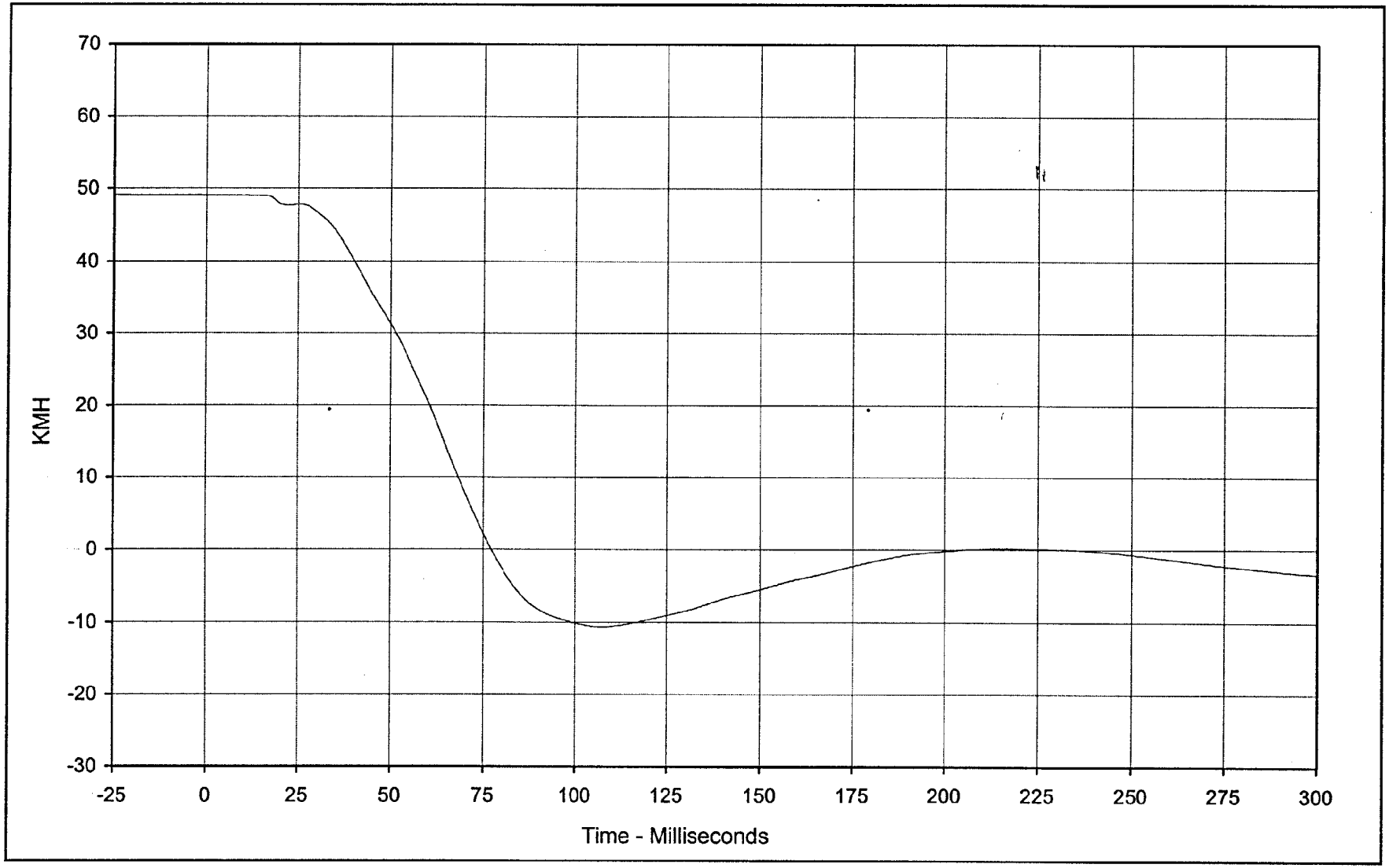


Curve Description:	Driver Chest Primary X			
Maximum Value:	5.0	at	135.9	Milliseconds
Minimum Value:	-38.0	at	63.7	Milliseconds
SAE Filter Class:	180			
Date of Test:	9/4/97			
Curve Number:	FIL-010			

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

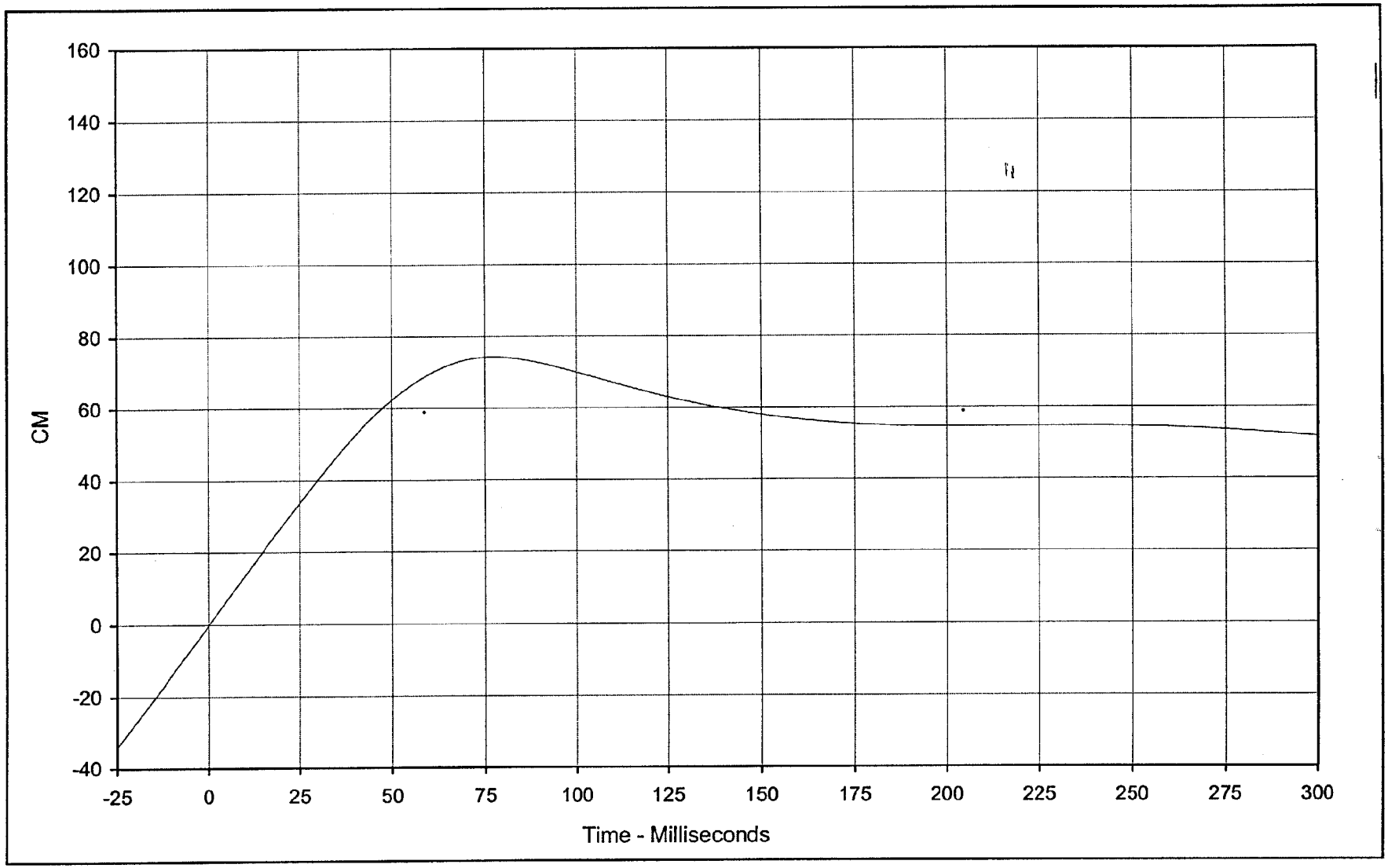
KARCO Engineering



Curve Description:	Driver Chest Primary X Velocity			
Maximum Value:	49.1	at	0.0	Milliseconds
Minimum Value:	-10.6	at	107.4	Milliseconds
SAE Filter Class:	180			
Date of Test:	9/4/97			
Curve Number:	IN1-010			

Testing Program	1997 48.4 km/h Frontal Impact (Female)
Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan

KARC Engineering



Curve Description: Driver Chest Primary X Displ.

Maximum Value: 74.3 at 77.1 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

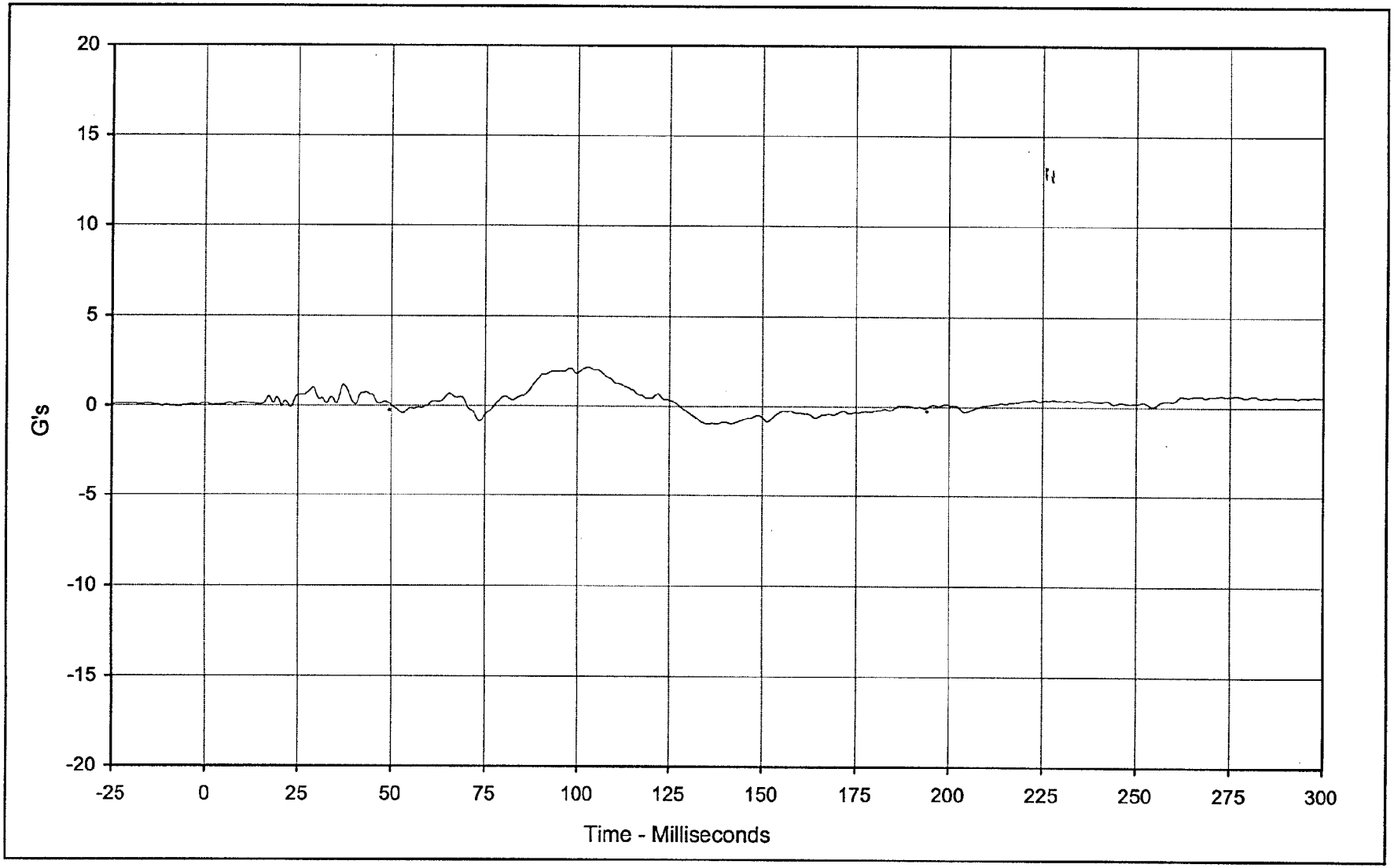
Date of Test: 9/4/97

Curve Number: IN2-010

Testing Program 1997 48.4 km/h Frontal Impact (Female)

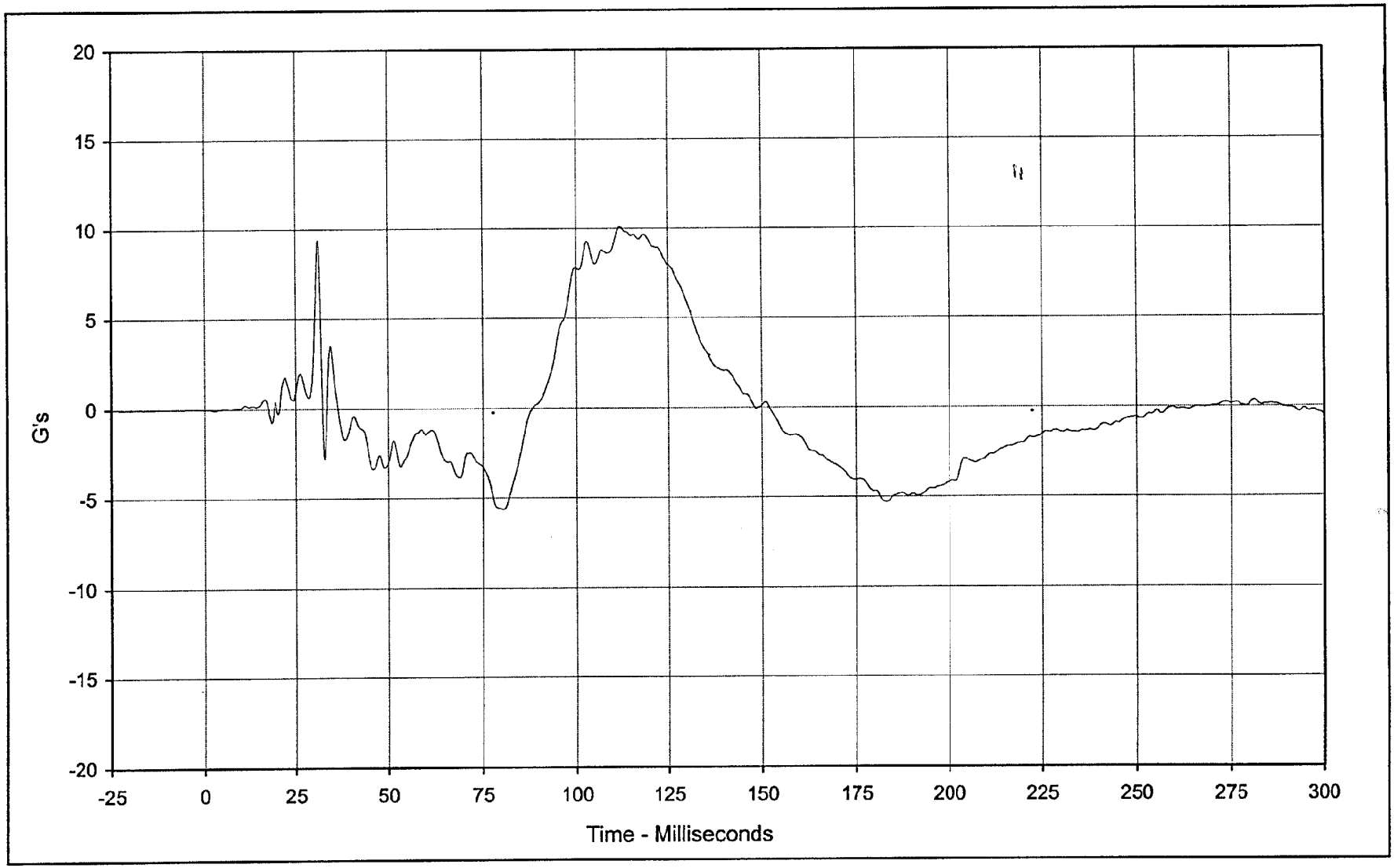
Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description:	Driver Chest Primary Y			Testing Program:	1997 48.4 km/h Frontal Impact (Female)
Maximum Value:	2.2	at	102.8 Milliseconds	Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan
Minimum Value:	-1.0	at	135.4 Milliseconds		
SAE Filter Class:	180				
Date of Test:	9/4/97				
Curve Number:	FIL-011				

KARC Engineering



Curve Description: Driver Chest Primary Z

Maximum Value: 10.1 at 111.9 Milliseconds

Minimum Value: -5.6 at 80.2 Milliseconds

SAE Filter Class: 180

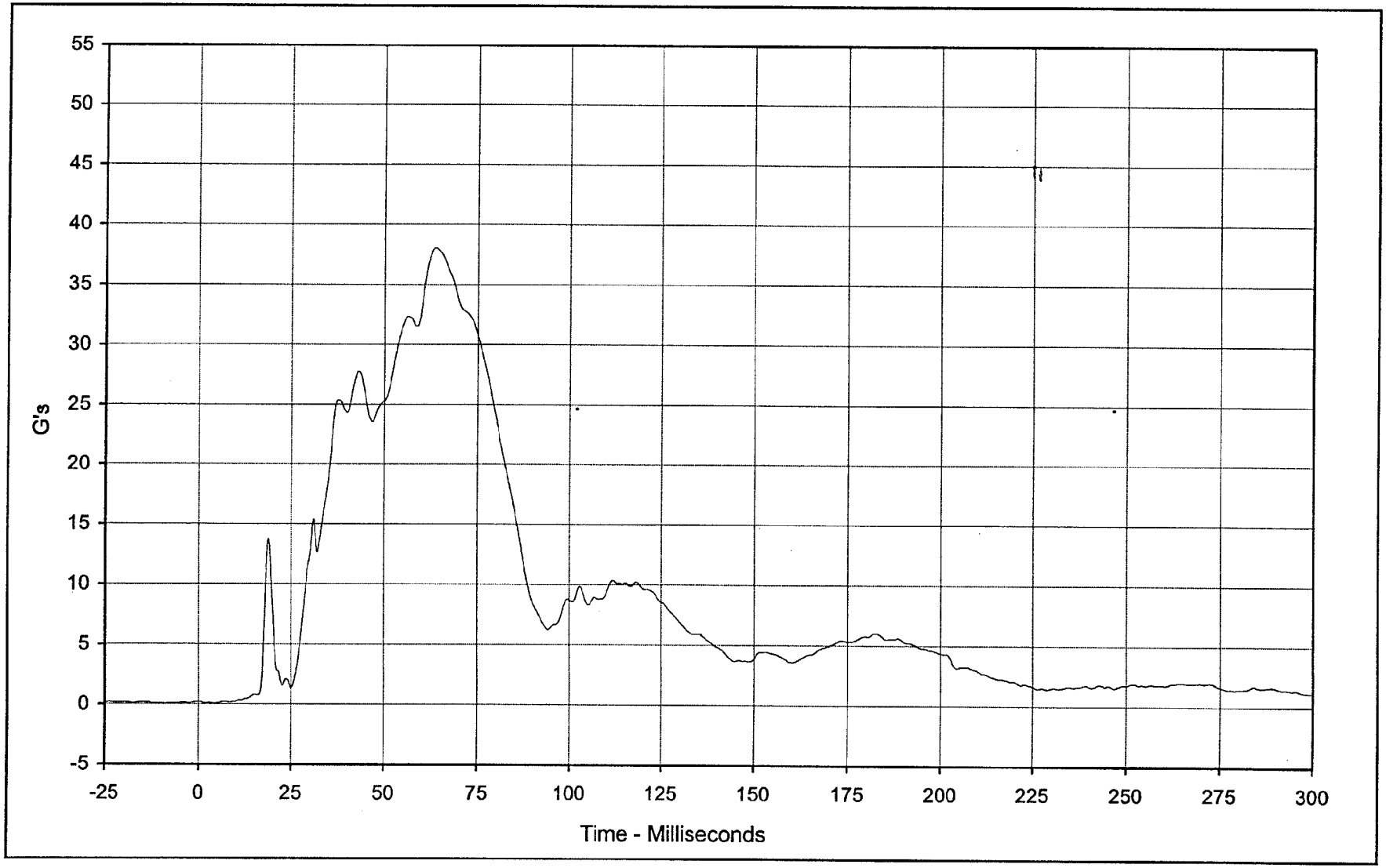
Date of Test: 9/4/97

Curve Number: FIL-012

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Chest Resultant Primary

Maximum Value: 38.0 at 63.7 Milliseconds

Minimum Value: 0.0 at 4.6 Milliseconds

SAE Filter Class: 180

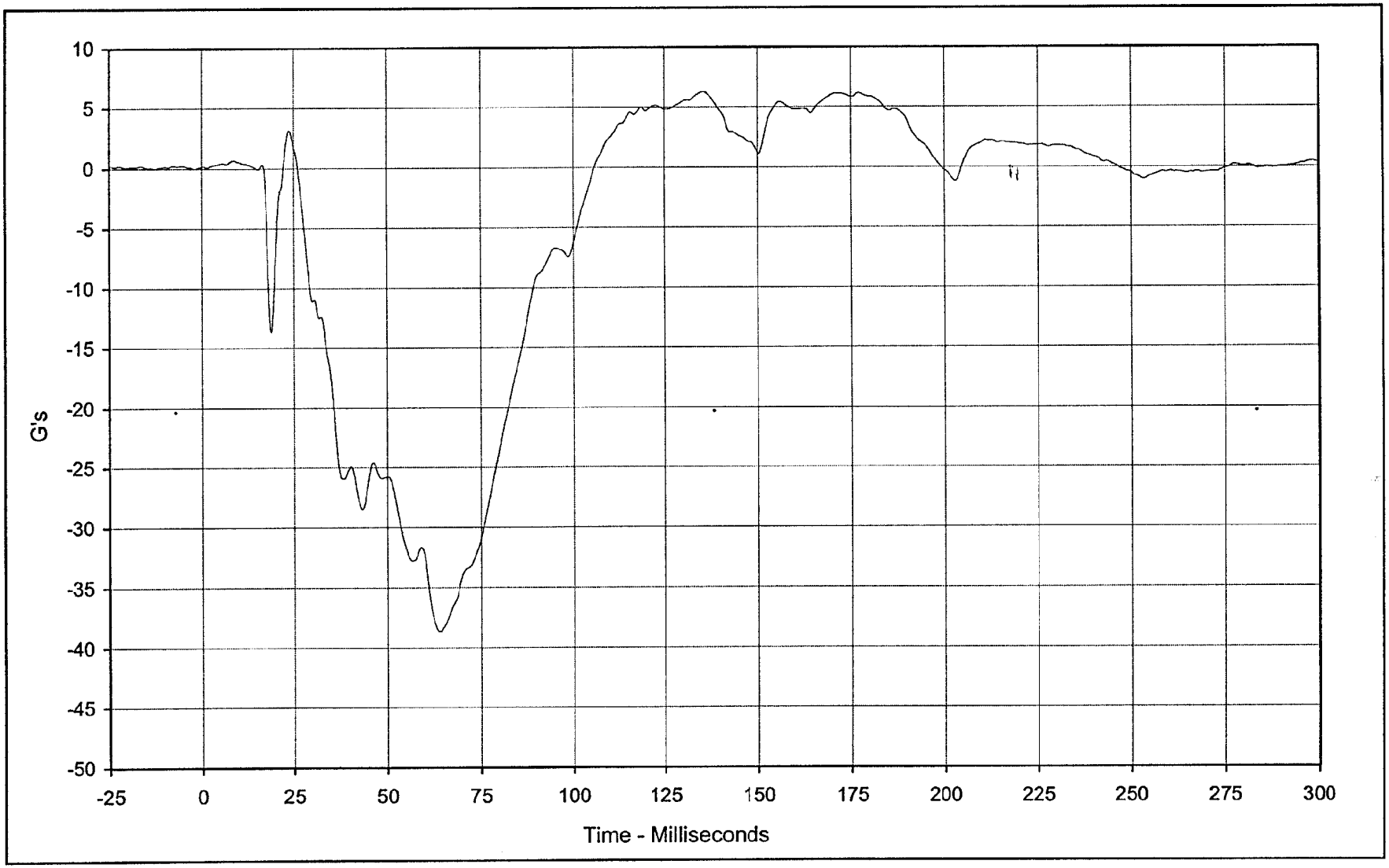
Date of Test: 9/4/97

Curve Number: RES-010

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Chest Redundant X

Maximum Value: 6.2 at 135.3 Milliseconds

Minimum Value: -38.6 at 63.8 Milliseconds

SAE Filter Class: 180

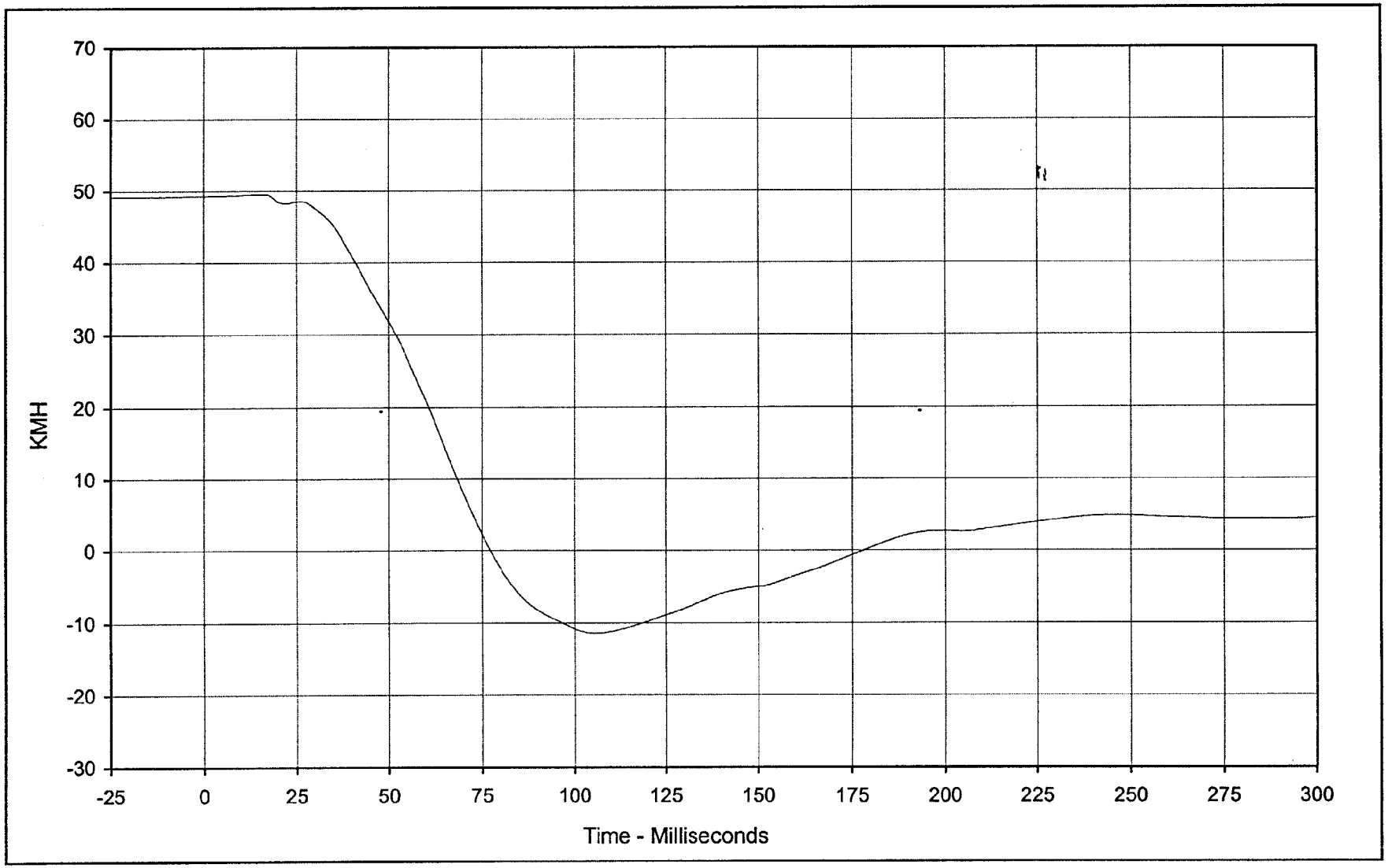
Date of Test: 9/4/97

Curve Number: FIL-013

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Chest Redundant X Velocity

Maximum Value: 49.4 at 16.8 Milliseconds

Minimum Value: -11.4 at 105.7 Milliseconds

SAE Filter Class: 180

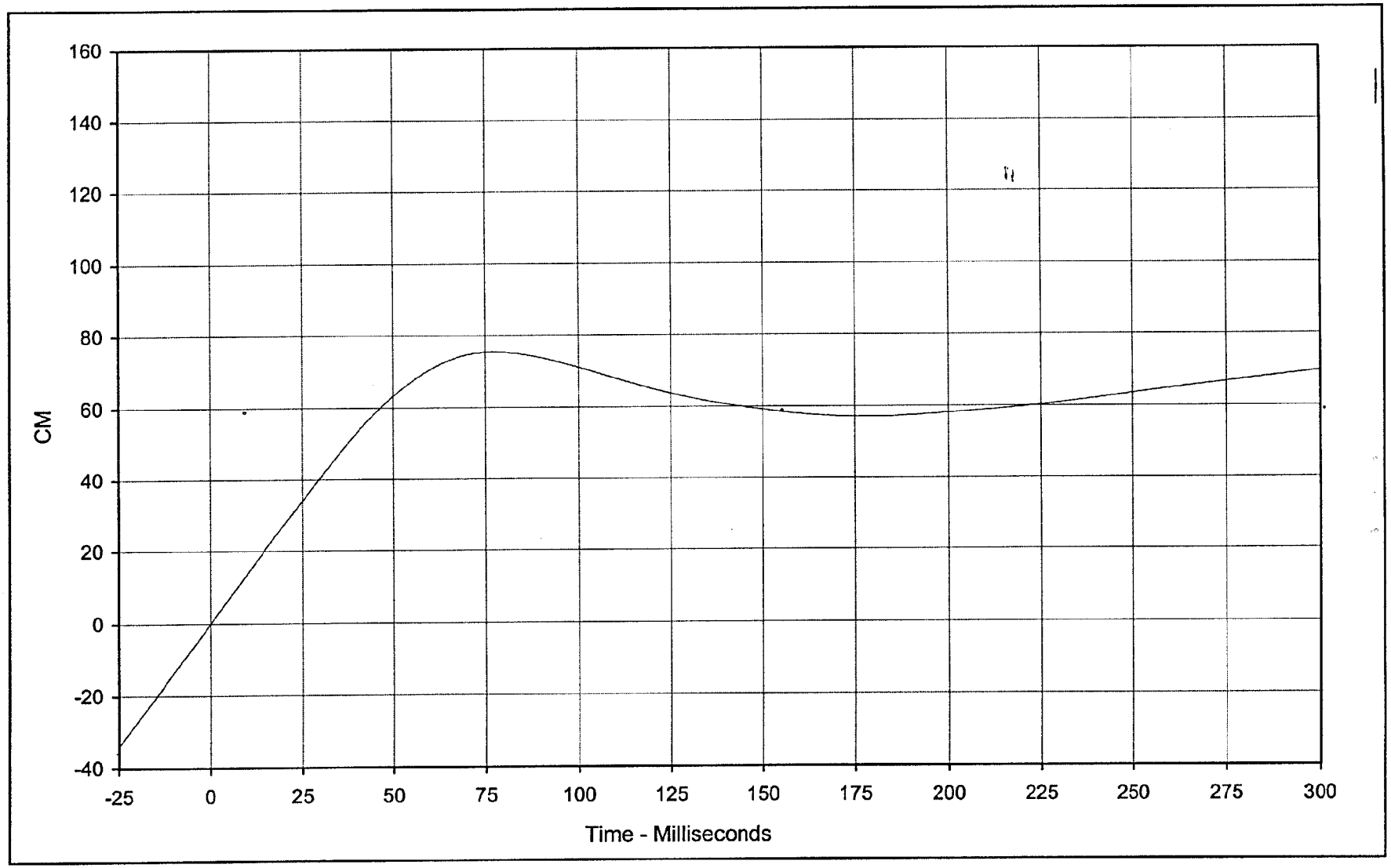
Date of Test: 9/4/97

Curve Number: IN1-013

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Chest Redundant X Displ.

Maximum Value: 75.4 at 77.2 Milliseconds

Minimum Value: 0.1 at 0.0 Milliseconds

SAE Filter Class: 180

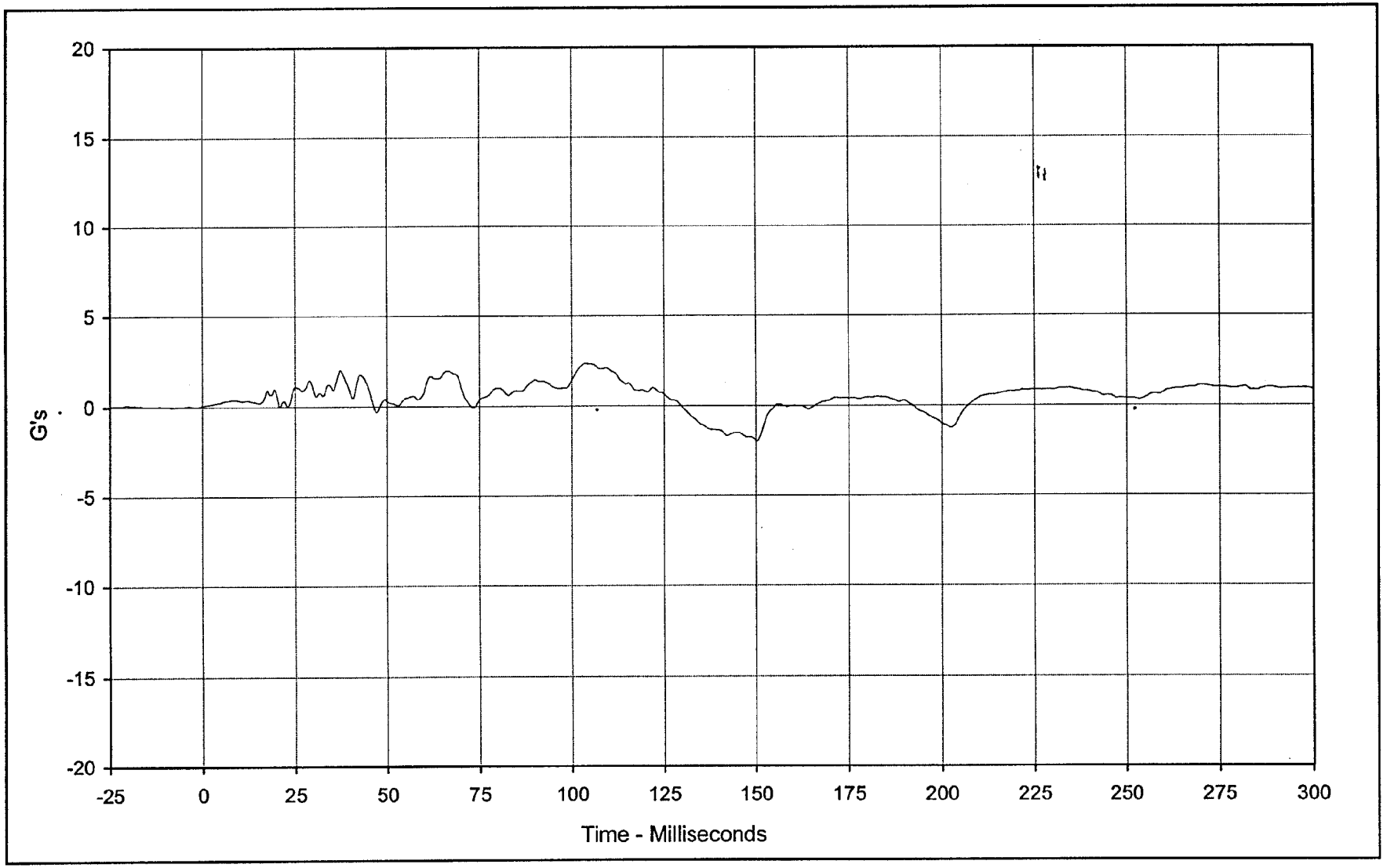
Date of Test: 9/4/97

Curve Number: IN2-013

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Chest Redundant Y

Maximum Value: 2.4 at 103.8 Milliseconds

Minimum Value: -2.0 at 150.3 Milliseconds

SAE Filter Class: 180

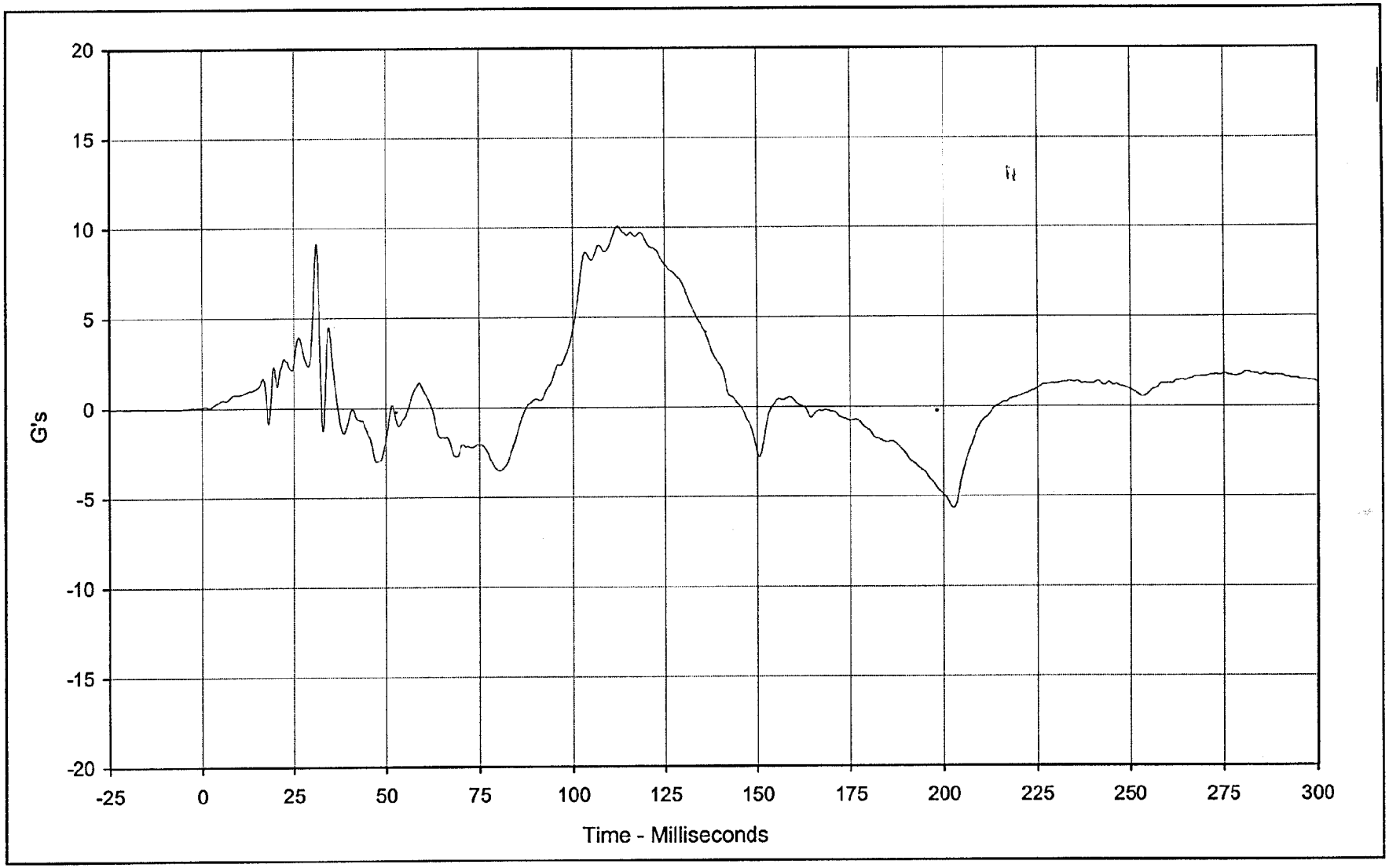
Date of Test: 9/4/97

Curve Number: FIL-014

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Chest Redundant Z

Maximum Value: 10.1 at 112.0 Milliseconds

Minimum Value: -5.7 at 202.6 Milliseconds

SAE Filter Class: 180

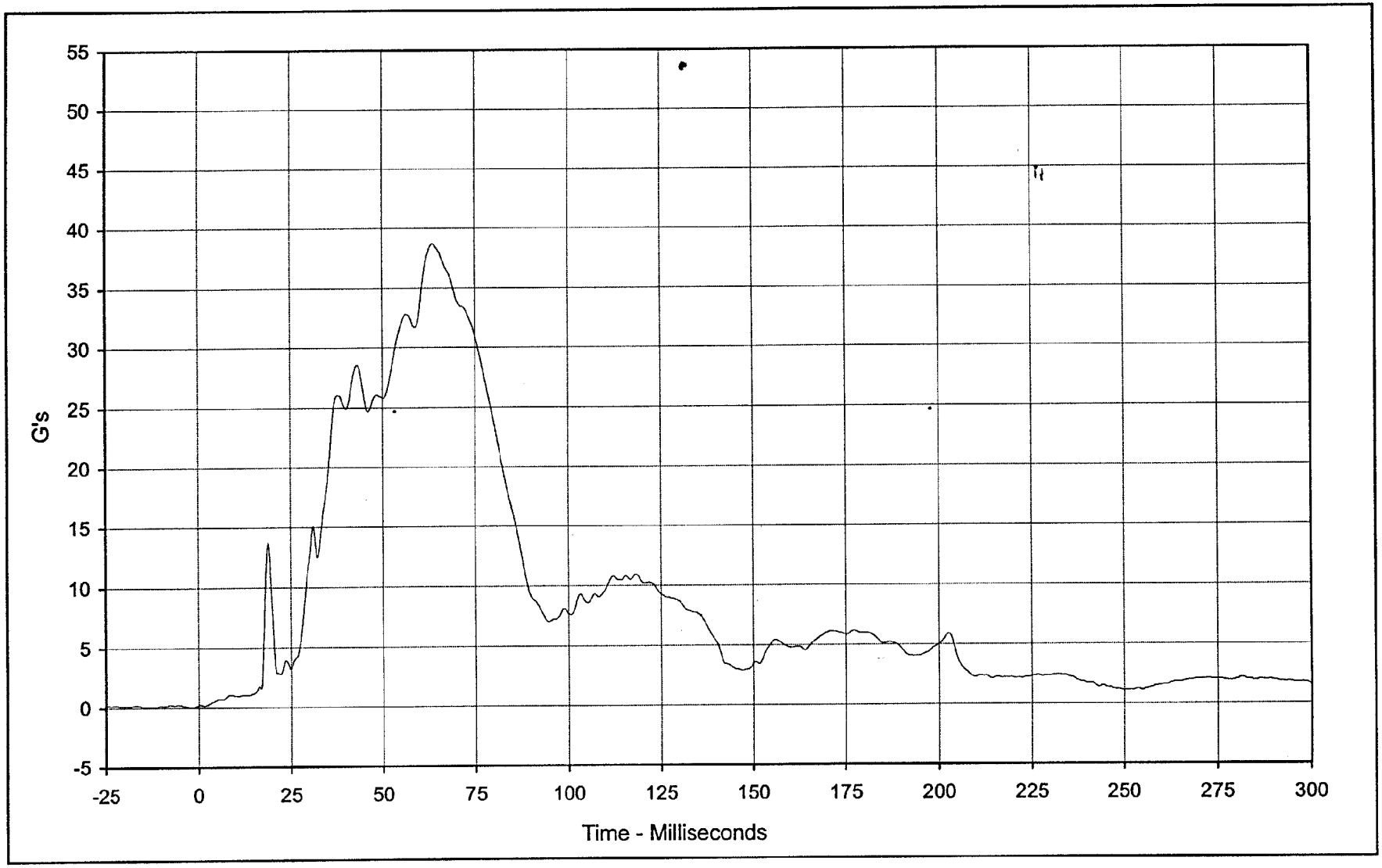
Date of Test: 9/4/97

Curve Number: FIL-015

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Chest Resultant Redundant

Maximum Value: 38.7 at 63.9 Milliseconds

Minimum Value: 0.2 at 1.7 Milliseconds

SAE Filter Class: 180

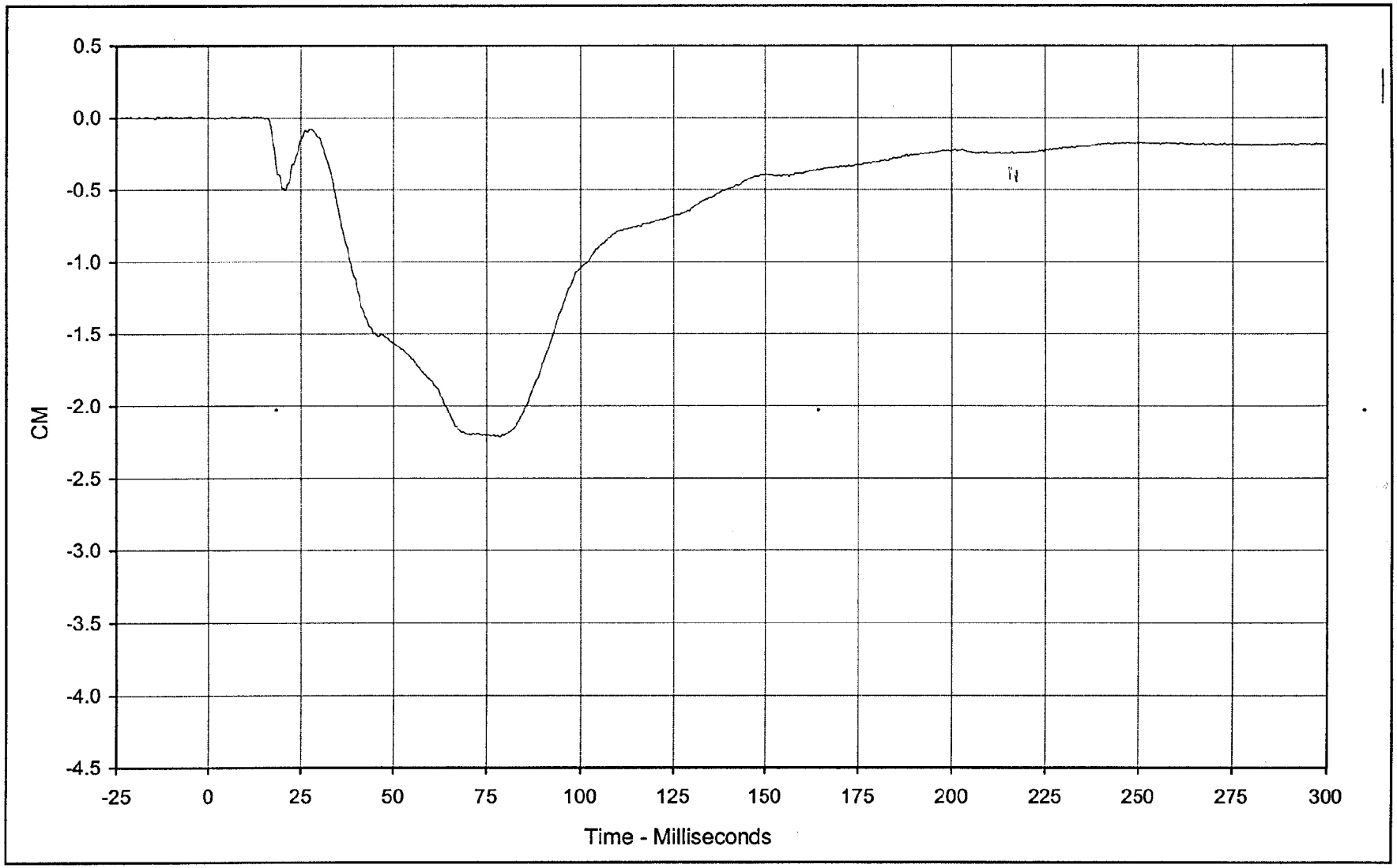
Date of Test: 9/4/97

Curve Number: RES-013

Testing Program 1997 48.4 km/h Frontal Impact (Female)

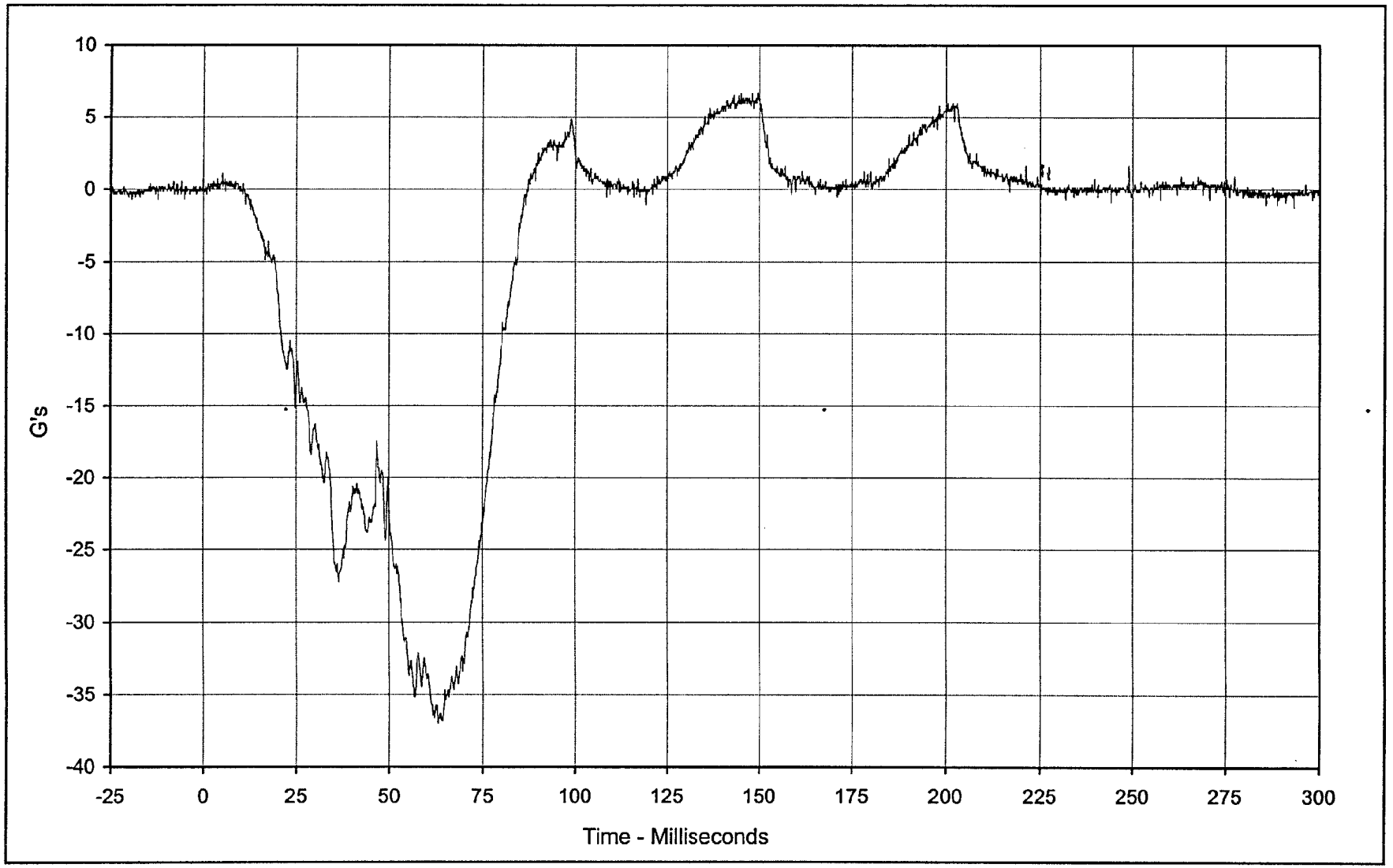
Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description:	Driver Chest Displacement X			Testing Program	1997 48.4 km/h Frontal Impact (Female)
Maximum Value:	0.01	at	13.0 Milliseconds	Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan
Minimum Value:	-2.22	at	78.4 Milliseconds		
SAE Filter Class:	600				
Date of Test:	9/4/97				
Curve Number:	FIL-016				

KARCO Engineering

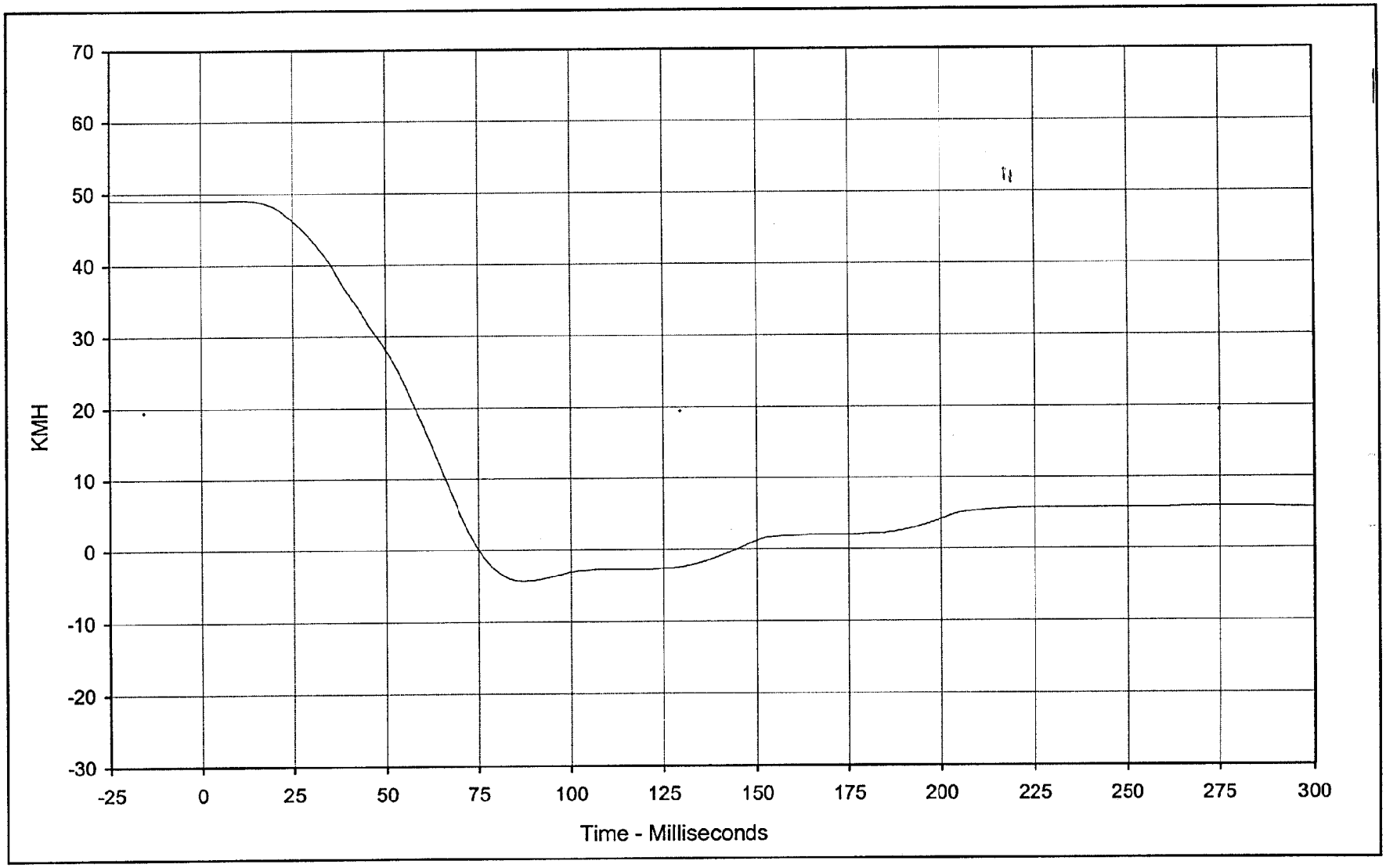


Curve Description:	Driver Pelvis X			
Maximum Value:	6.7	at	145.0	Milliseconds
Minimum Value:	-37.0	at	63.1	Milliseconds
SAE Filter Class:	1000			
Date of Test:	9/4/97			
Curve Number:	FIL-017			

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Pelvis X Velocity

Maximum Value: 49.1 at 10.4 Milliseconds

Minimum Value: -4.3 at 87.1 Milliseconds

SAE Filter Class: 180

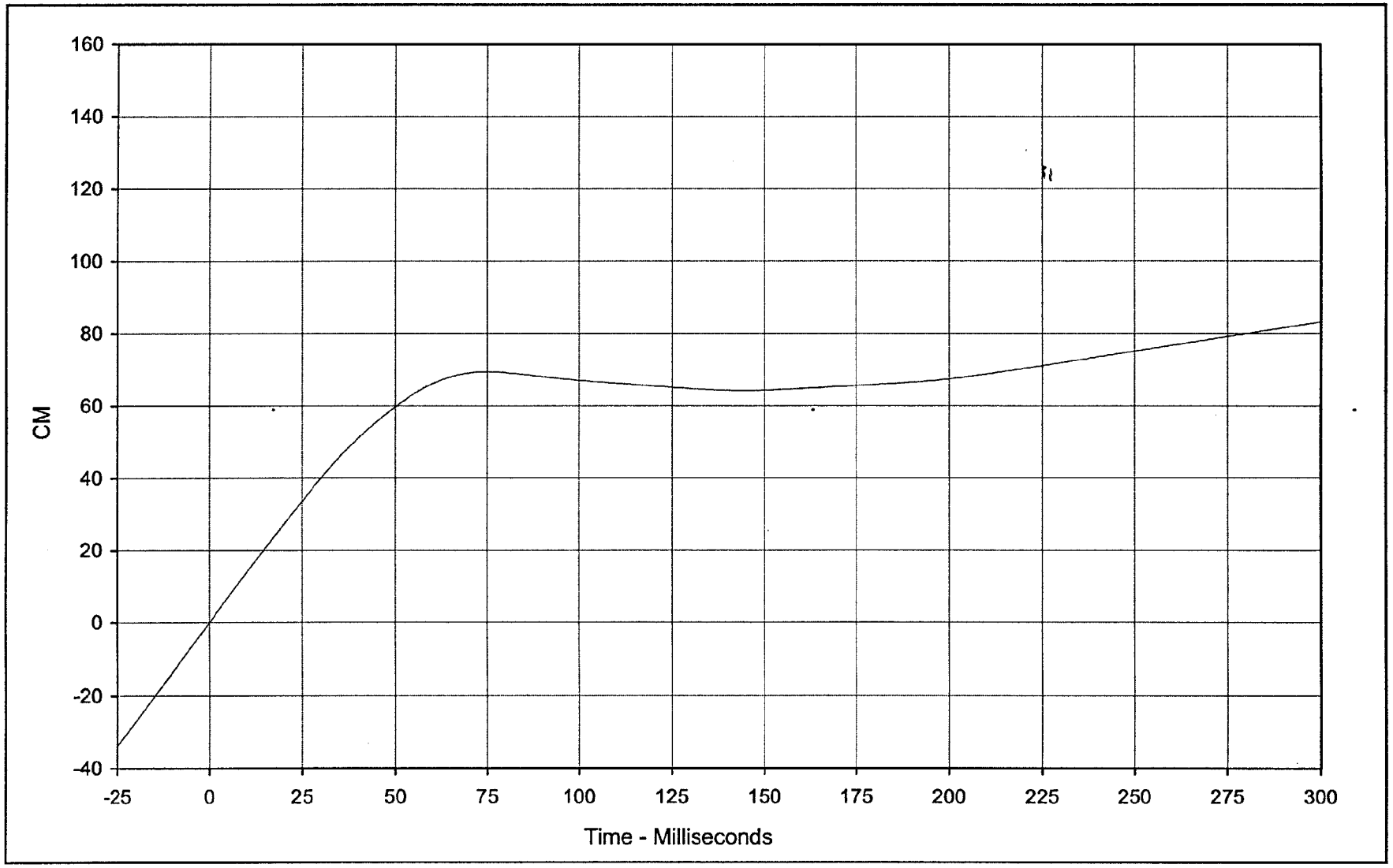
Date of Test: 9/4/97

Curve Number: IN1-017

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Pelvis X Displ.

Maximum Value: 83.2 at 299.9 Milliseconds

Minimum Value: -0.1 at 0.0 Milliseconds

SAE Filter Class: 180

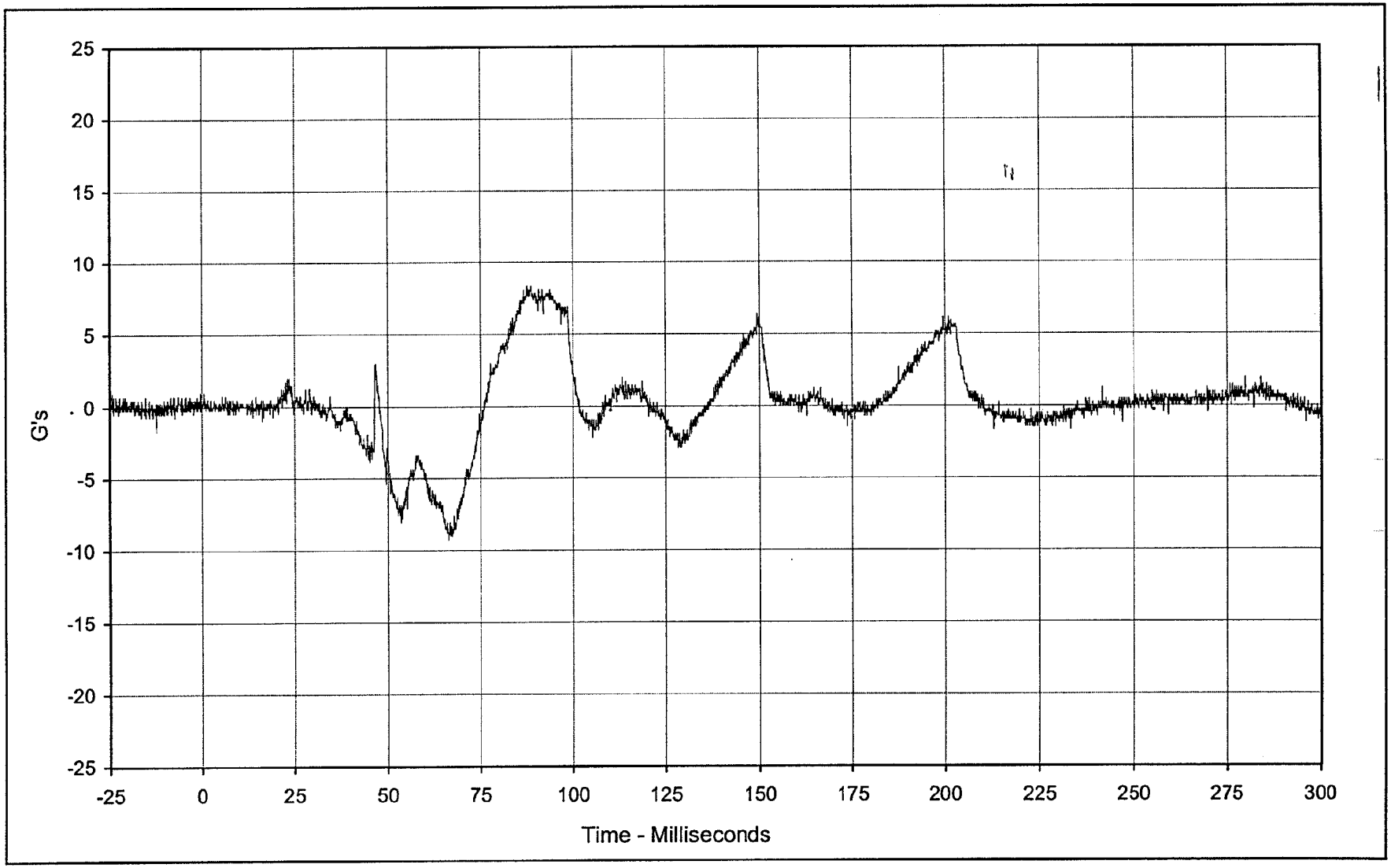
Date of Test: 9/4/97

Curve Number: IN2-017

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARC Engineering



Curve Description: Driver Pelvis Y

Maximum Value: 8.4 at 87.6 Milliseconds

Minimum Value: -9.3 at 66.2 Milliseconds

SAE Filter Class: 1000

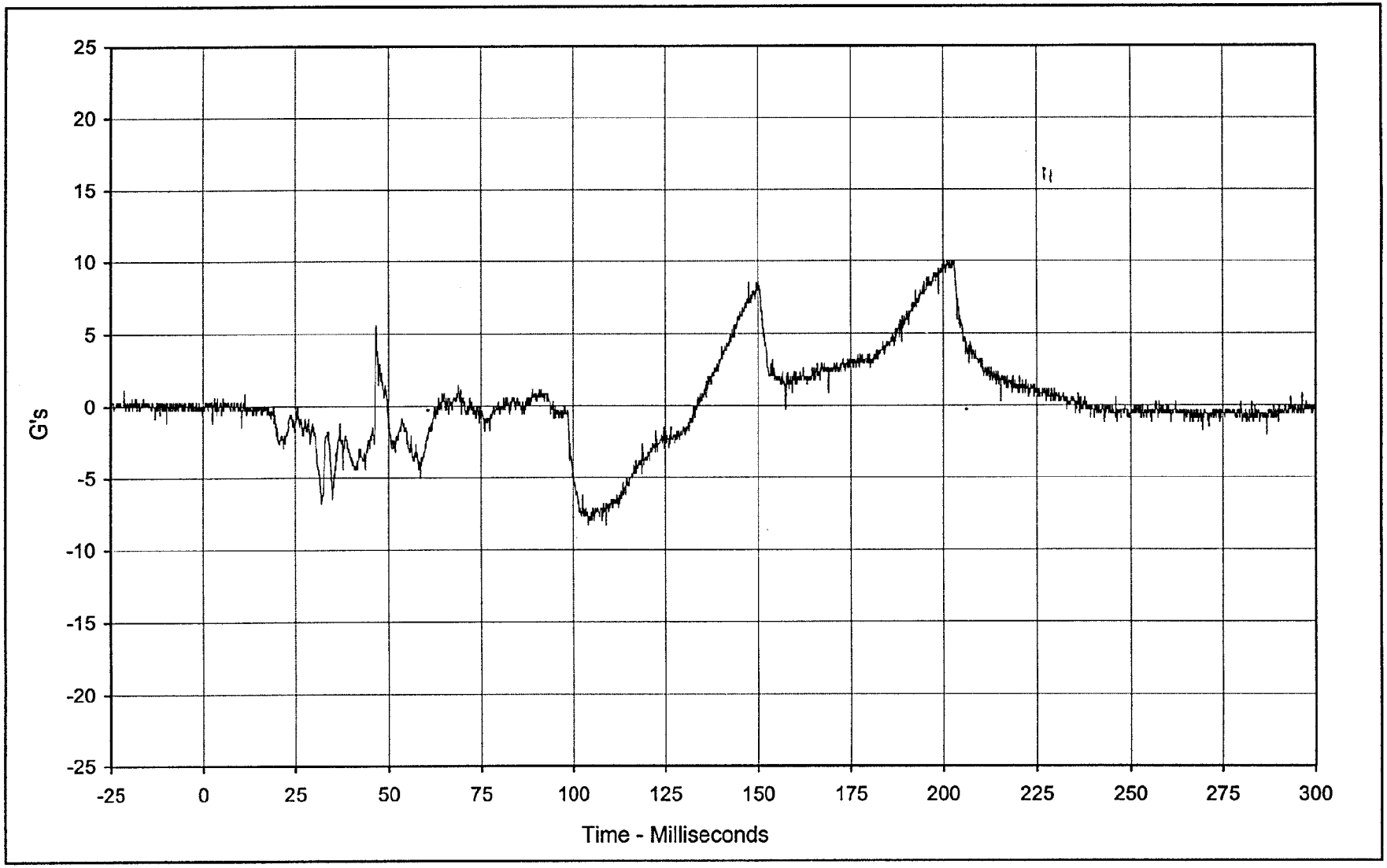
Date of Test: 9/4/97

Curve Number: FIL-018

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering

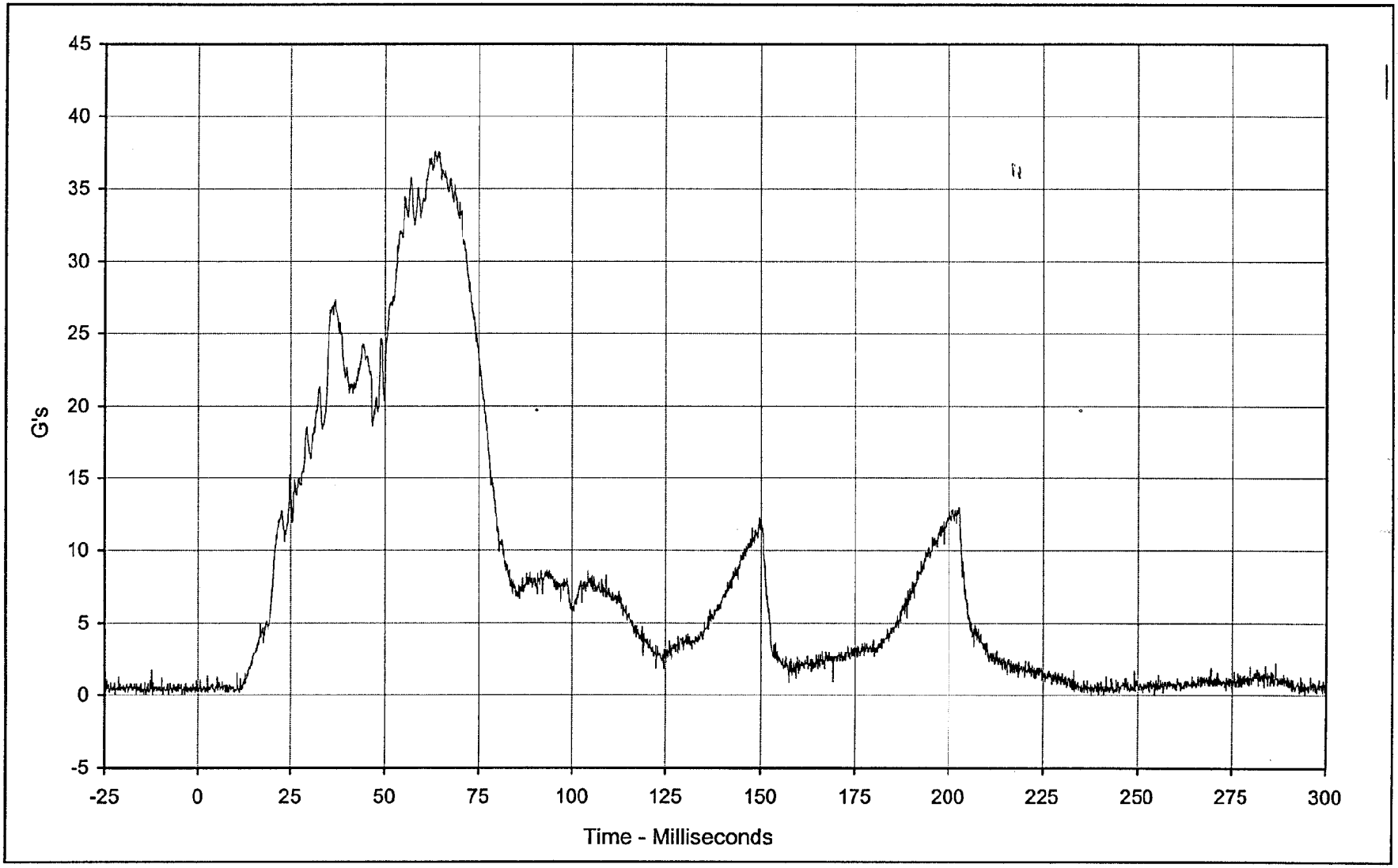


Curve Description:	Driver Pelvis Z			
Maximum Value:	10.0	at	200.1	Milliseconds
Minimum Value:	-8.3	at	104.2	Milliseconds
SAE Filter Class:	1000			
Date of Test:	9/4/97			
Curve Number:	FIL-019			

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Pelvis Resultant

Maximum Value: 37.6 at 63.1 Milliseconds

Minimum Value: 0.0 at 237.8 Milliseconds

SAE Filter Class: 1000

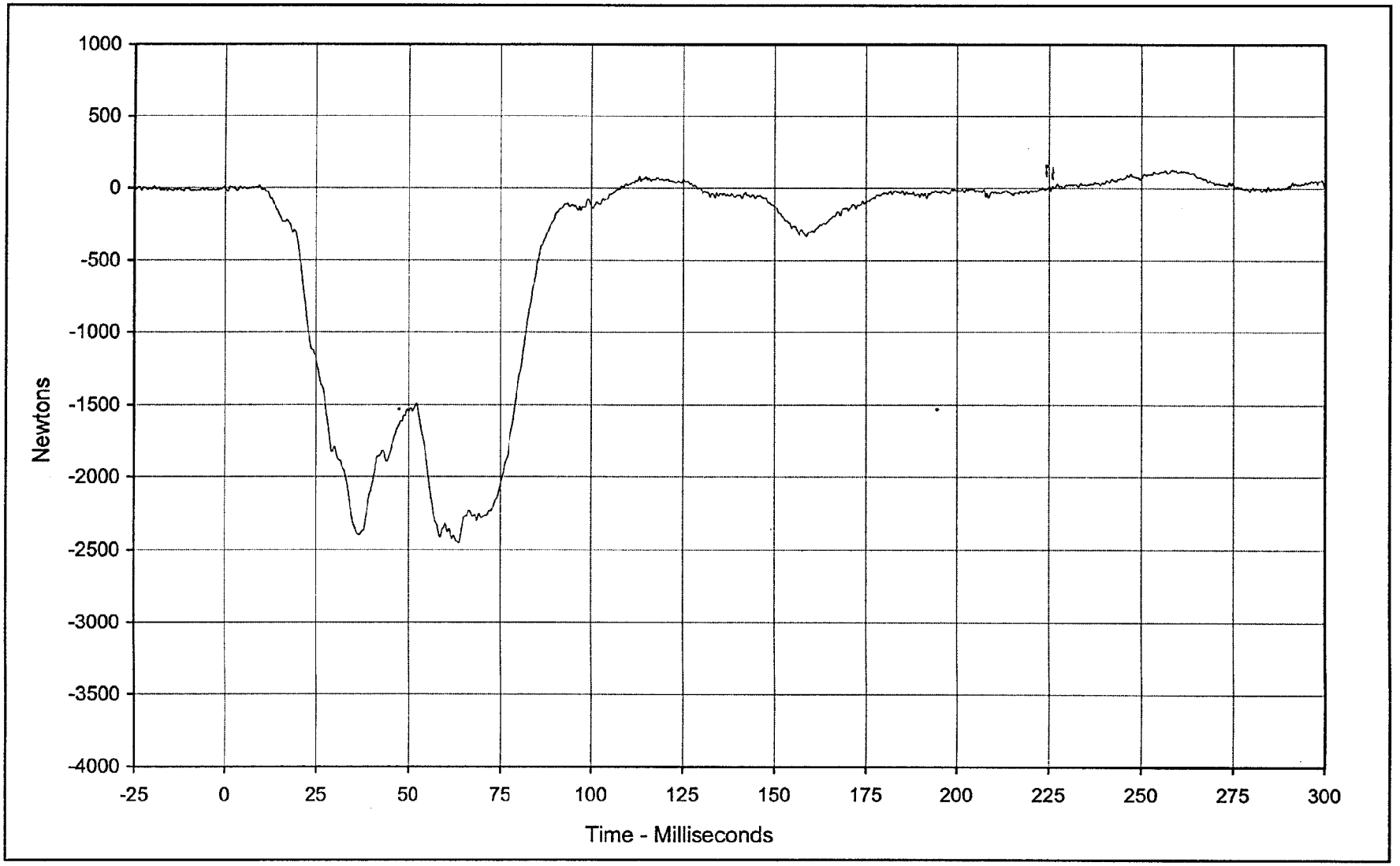
Date of Test: 9/4/97

Curve Number: RES-017

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Left Femur Force

Maximum Value: 128.9 at 258.2 Milliseconds

Minimum Value: -2452.9 at 63.8 Milliseconds

SAE Filter Class: 600

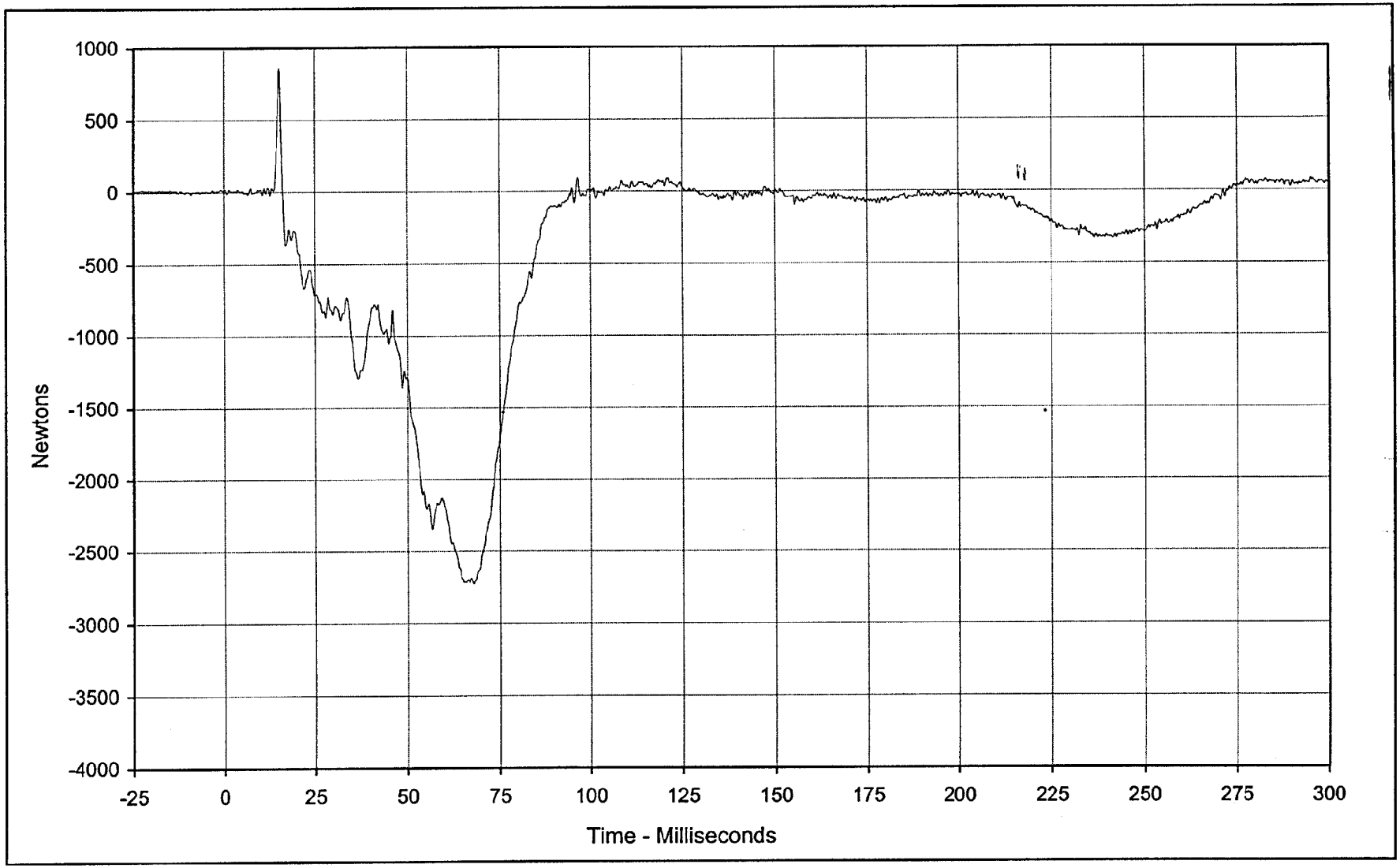
Date of Test: 9/4/97

Curve Number: FIL-020

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Right Femur Force

Maximum Value: 859.8 at 15.4 Milliseconds

Minimum Value: -2729.6 at 67.9 Milliseconds

SAE Filter Class: 600

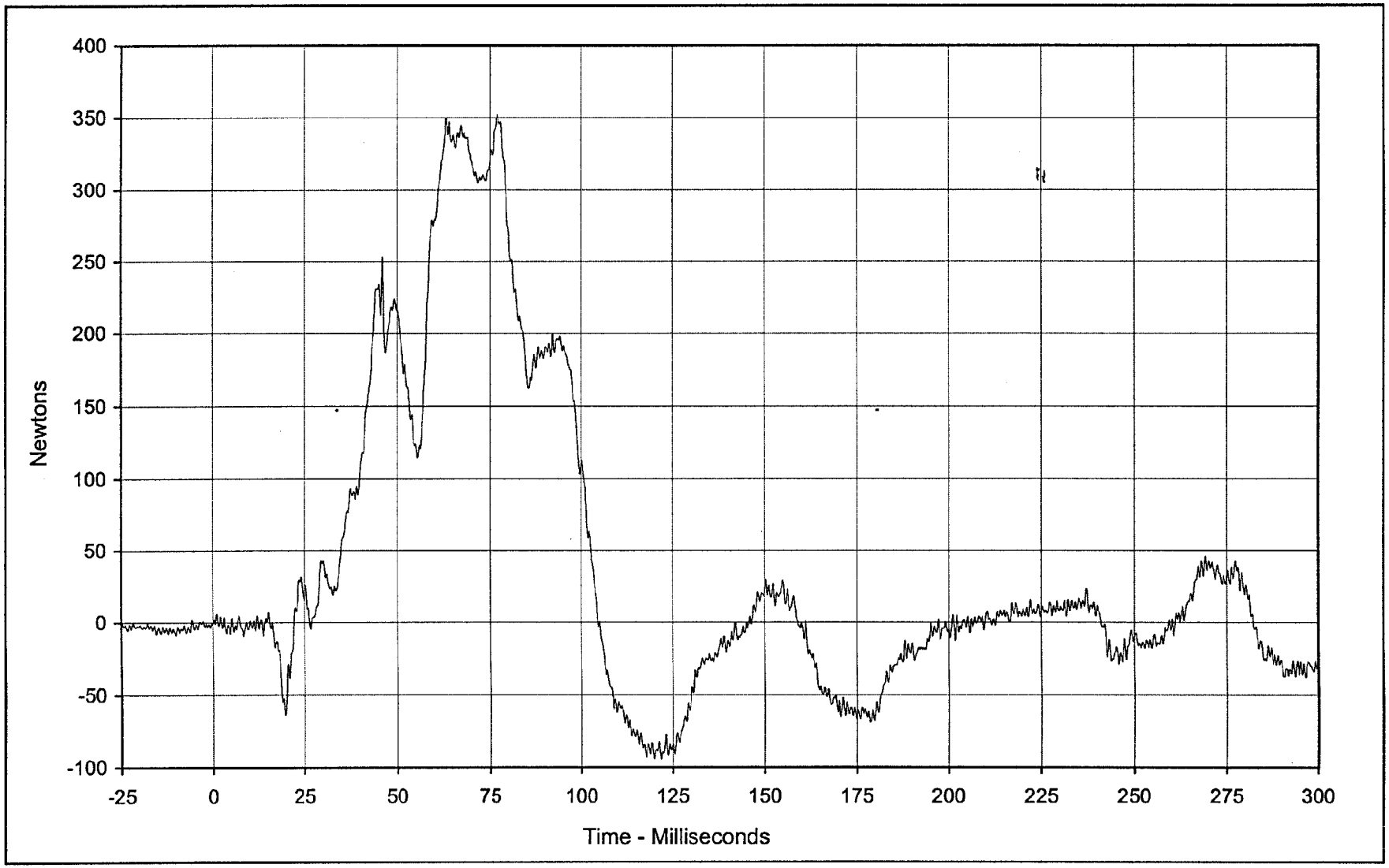
Date of Test: 9/4/97

Curve Number: FIL-021

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Left Upper Tibia Force X

Maximum Value: 352.3 at 77.0 Milliseconds

Minimum Value: -94.5 at 121.8 Milliseconds

SAE Filter Class: 600

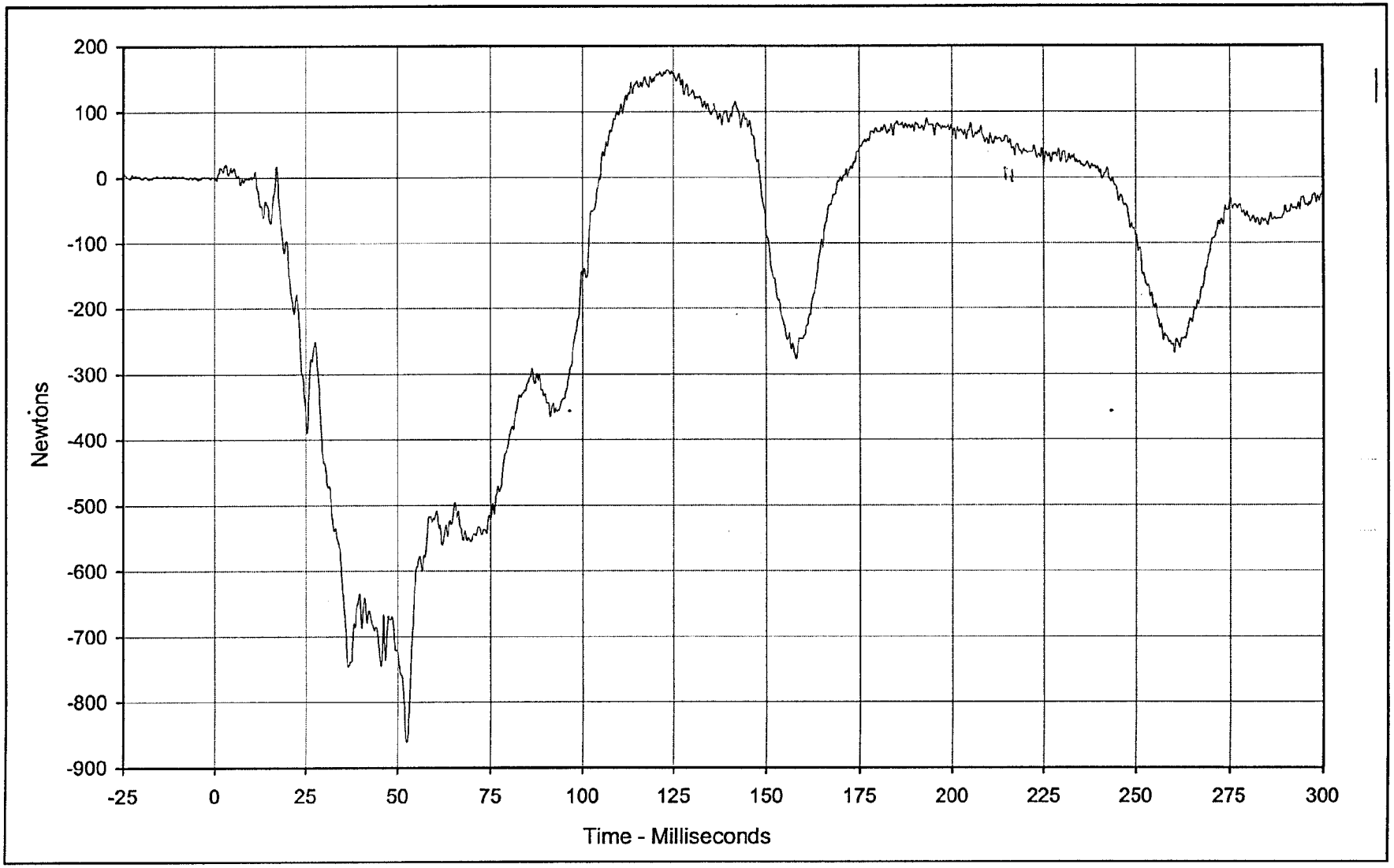
Date of Test: 9/4/97

Curve Number: FIL-022

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Left Upper Tibia Force Z

Maximum Value: 162.6 at 123.5 Milliseconds

Minimum Value: -861.0 at 52.5 Milliseconds

SAE Filter Class: 600

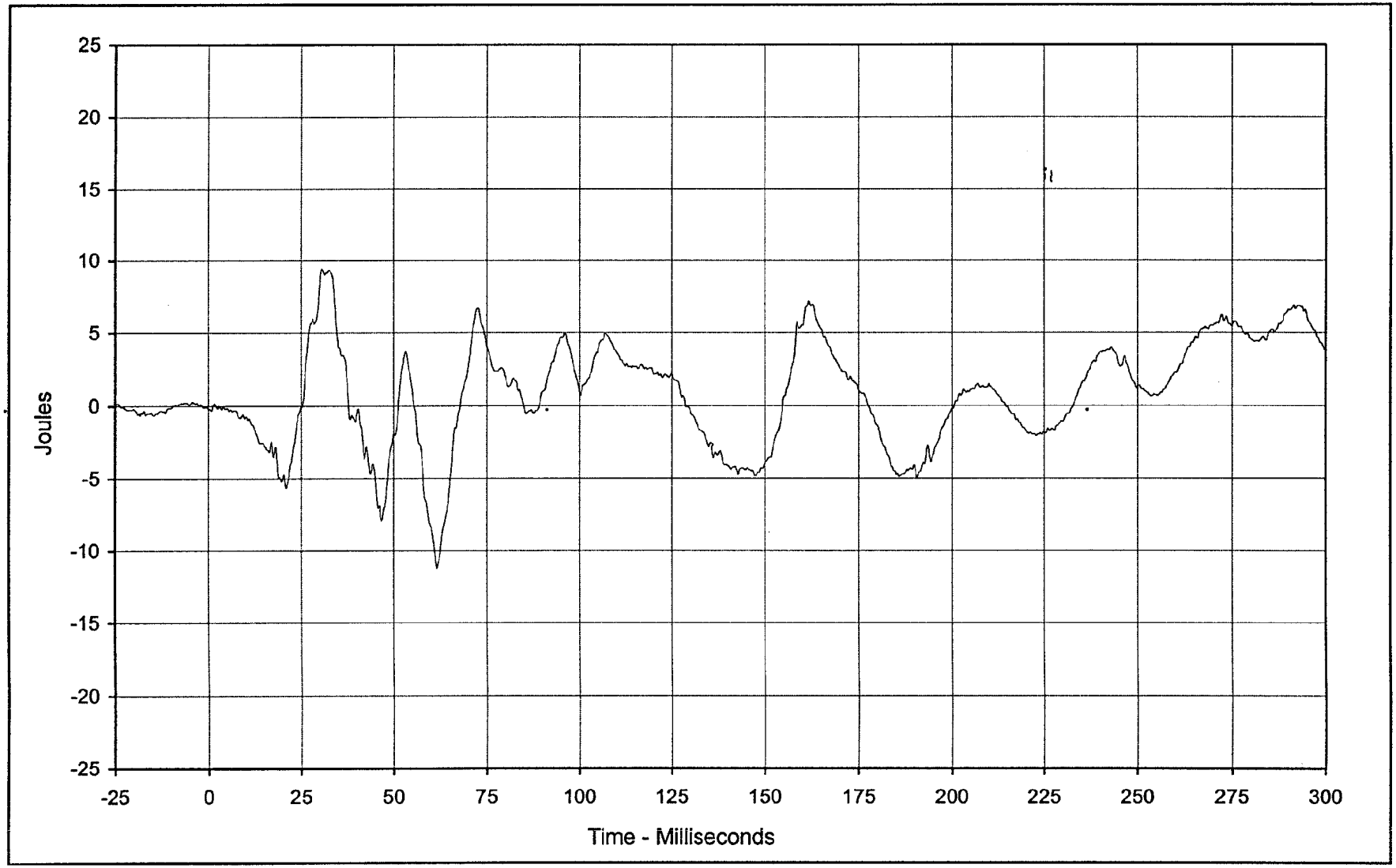
Date of Test: 9/4/97

Curve Number: FIL-023

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Left Upper Tibia Moment X

Maximum Value: 9.4 at 30.8 Milliseconds

Minimum Value: -11.2 at 61.7 Milliseconds

SAE Filter Class: 600

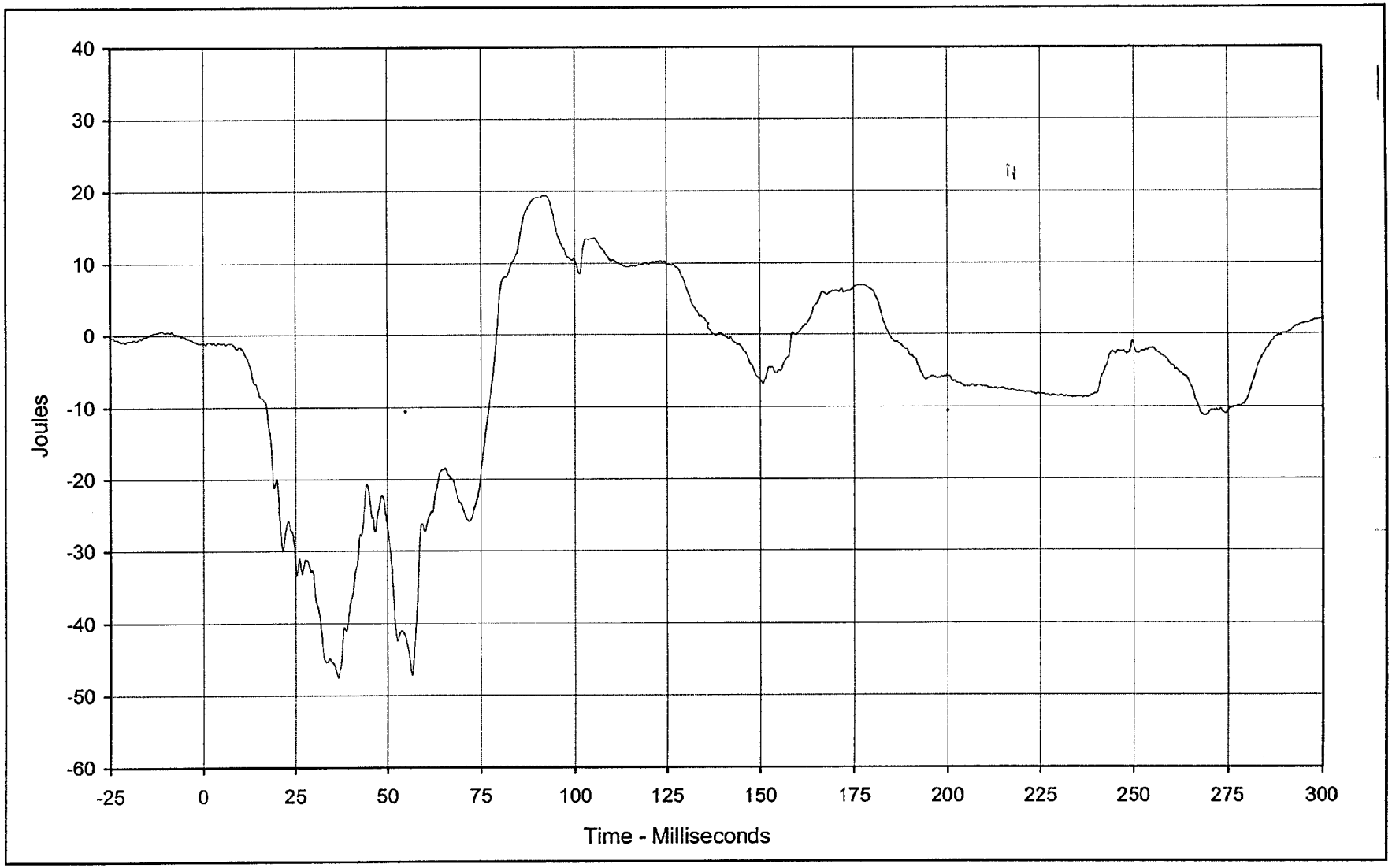
Date of Test: 9/4/97

Curve Number: FIL-024

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Left Upper Tibia Moment Y

Maximum Value: 19.4 at 91.4 Milliseconds

Minimum Value: -47.5 at 36.4 Milliseconds

SAE Filter Class: 600

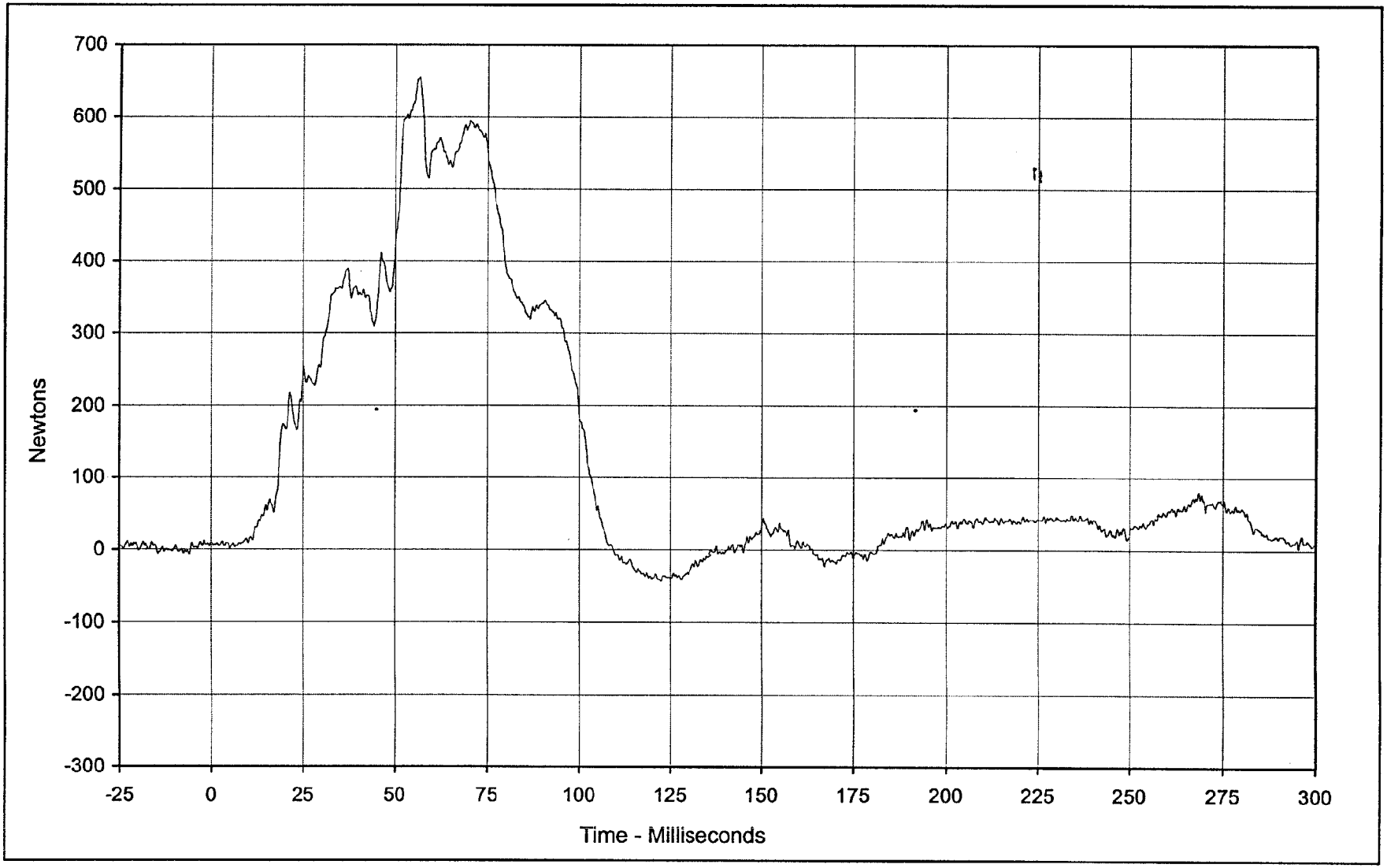
Date of Test: 9/4/97

Curve Number: FIL-025

Testing Program 1997 48.4 km/h Frontal Impact (Female)

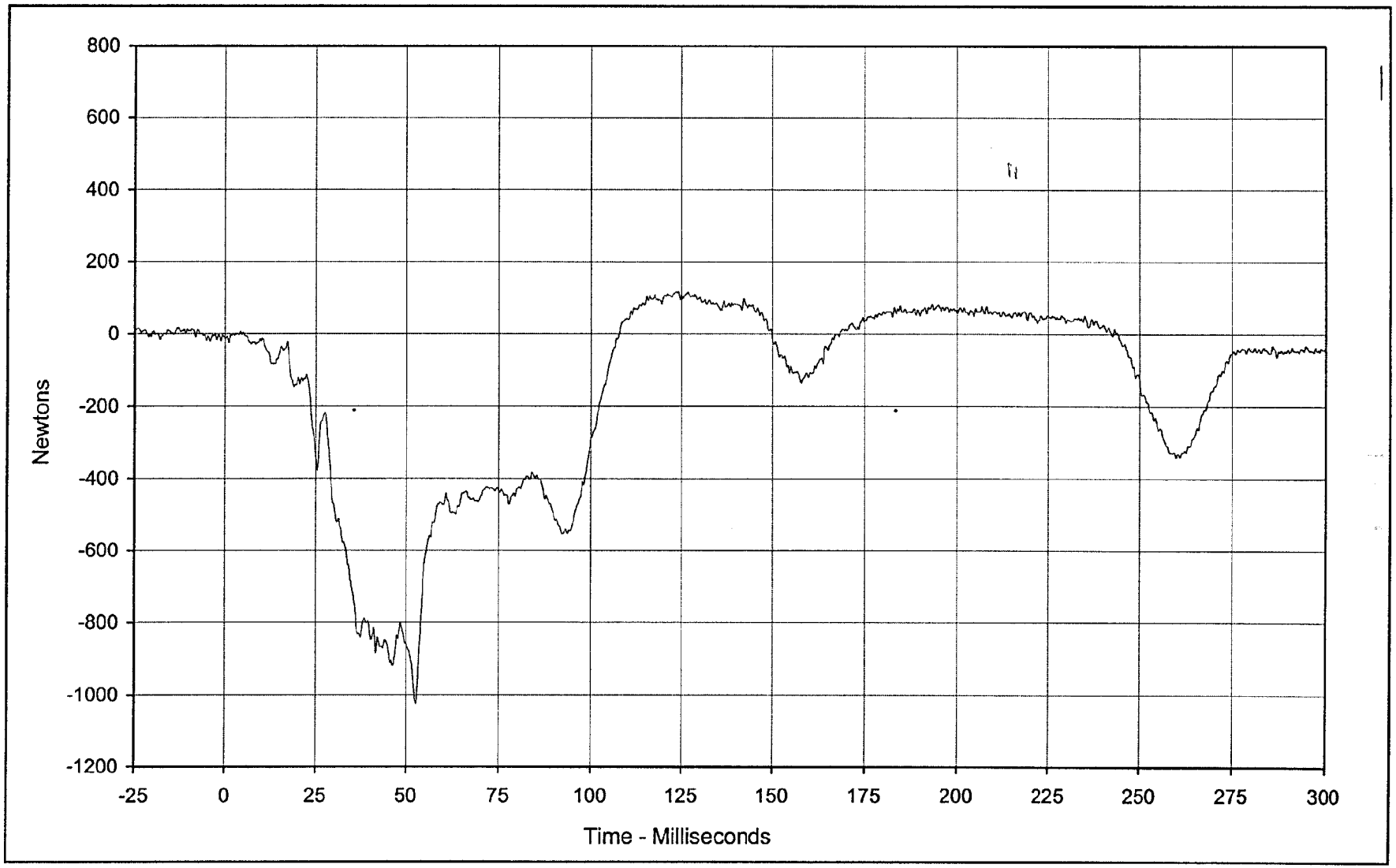
Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description:	Driver Left Lower Tibia Force X			Testing Program	1997 48.4 km/h Frontal Impact (Female)
Maximum Value:	654.7	at	56.6 Milliseconds	Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan
Minimum Value:	-43.4	at	122.5 Milliseconds		
SAE Filter Class:	600				
Date of Test:	9/4/97				
Curve Number:	FIL-026				

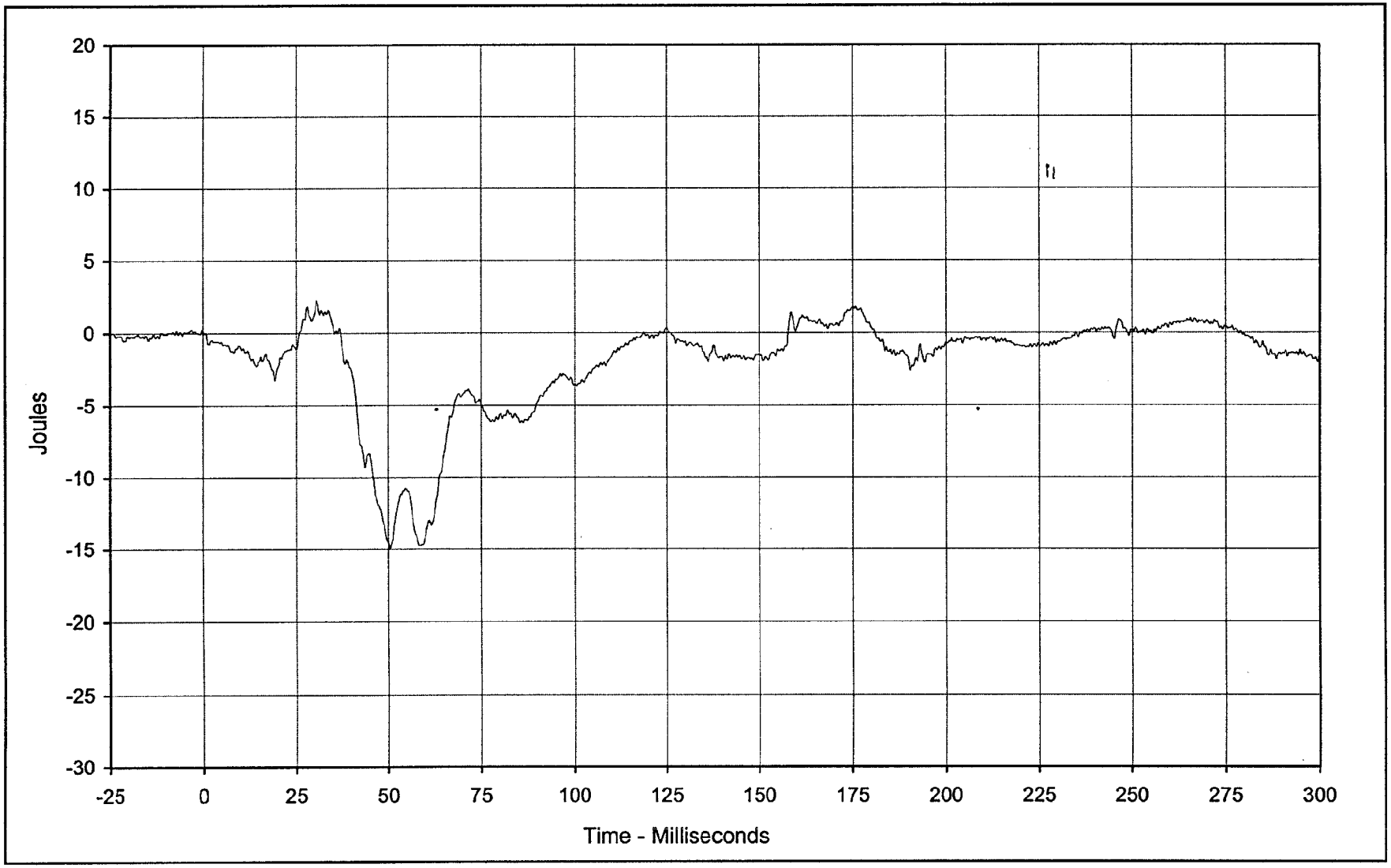
KARCO Engineering



Curve Description:	Driver Left Lower Tibia Force Z			
Maximum Value:	117.7	at	124.0	Milliseconds
Minimum Value:	-1023.3	at	52.6	Milliseconds
SAE Filter Class:	600			
Date of Test:	9/4/97			
Curve Number:	FIL-027			

Testing Program	1997 48.4 km/h Frontal Impact (Female)
Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Left Lower Tibia Moment X

Maximum Value: 2.2 at 30.7 Milliseconds

Minimum Value: -14.9 at 50.5 Milliseconds

SAE Filter Class: 600

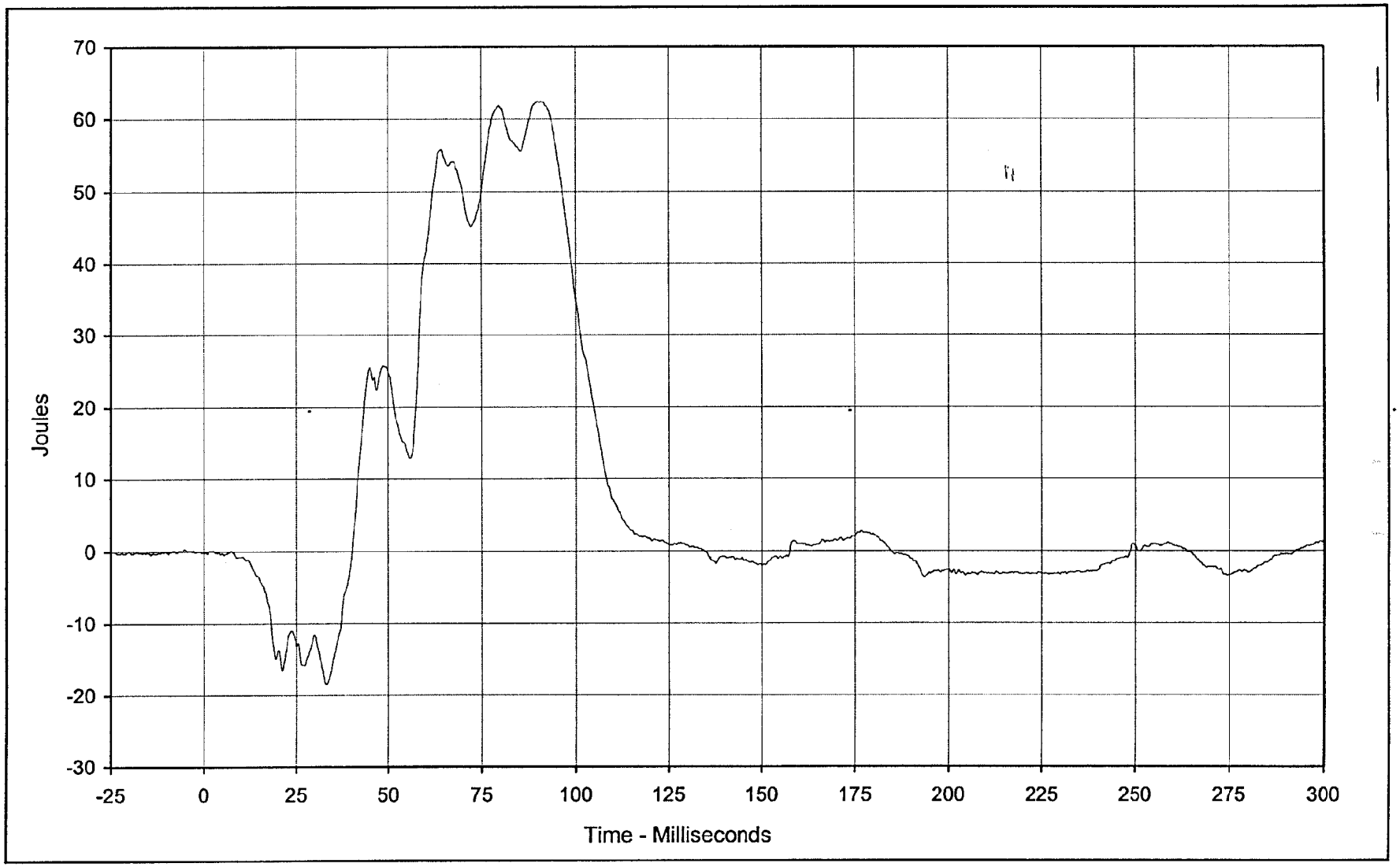
Date of Test: 9/4/97

Curve Number: FIL-028

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering

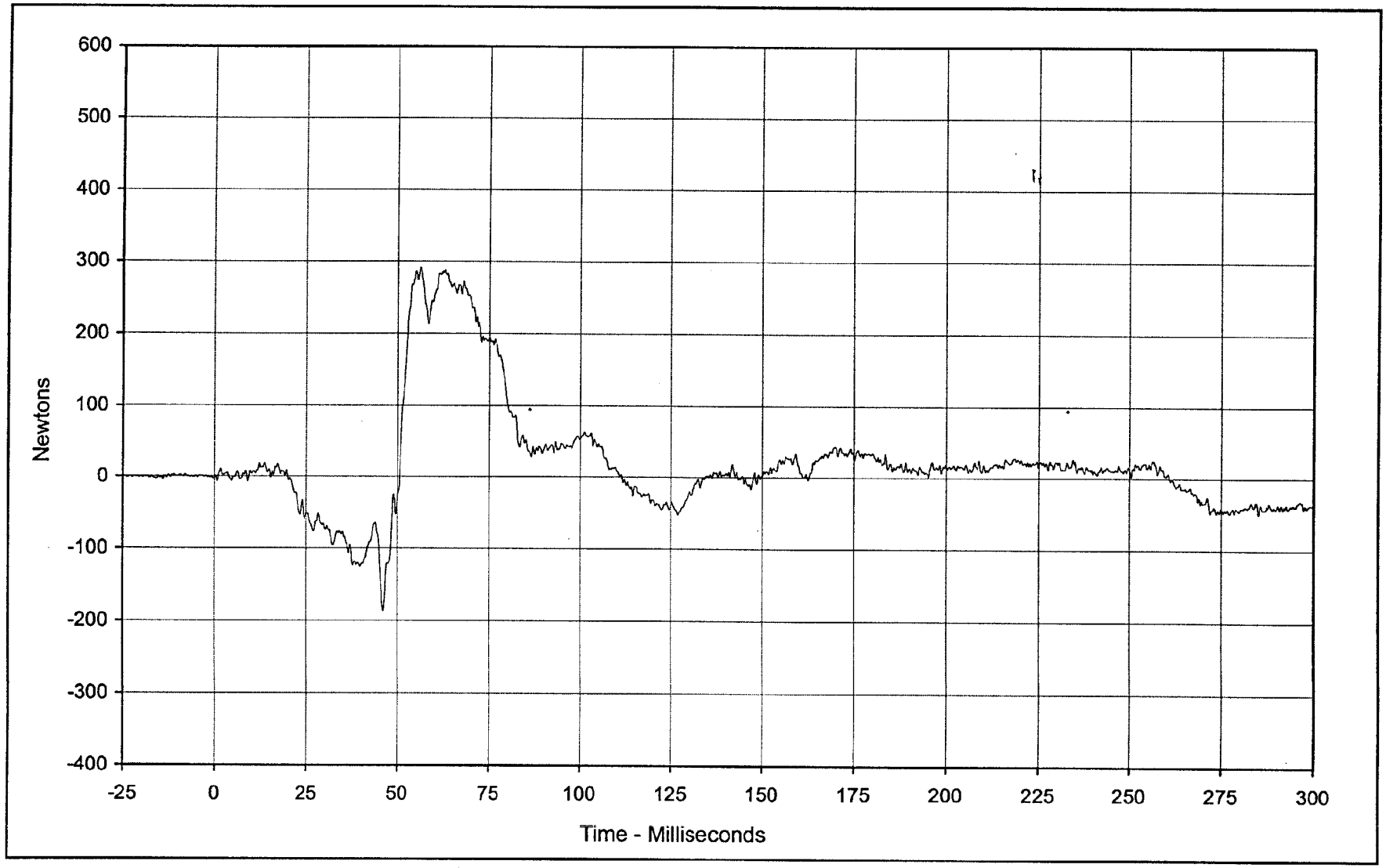


Curve Description:	Driver Left Lower Tibia Moment Y			
Maximum Value:	62.4	at	89.9	Milliseconds
Minimum Value:	-18.5	at	32.9	Milliseconds
SAE Filter Class:	600			
Date of Test:	9/4/97			
Curve Number:	FIL-029			

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Right Upper Tibia Force X

Maximum Value: 291.9 at 56.3 Milliseconds

Minimum Value: -185.9 at 46.1 Milliseconds

SAE Filter Class: 600

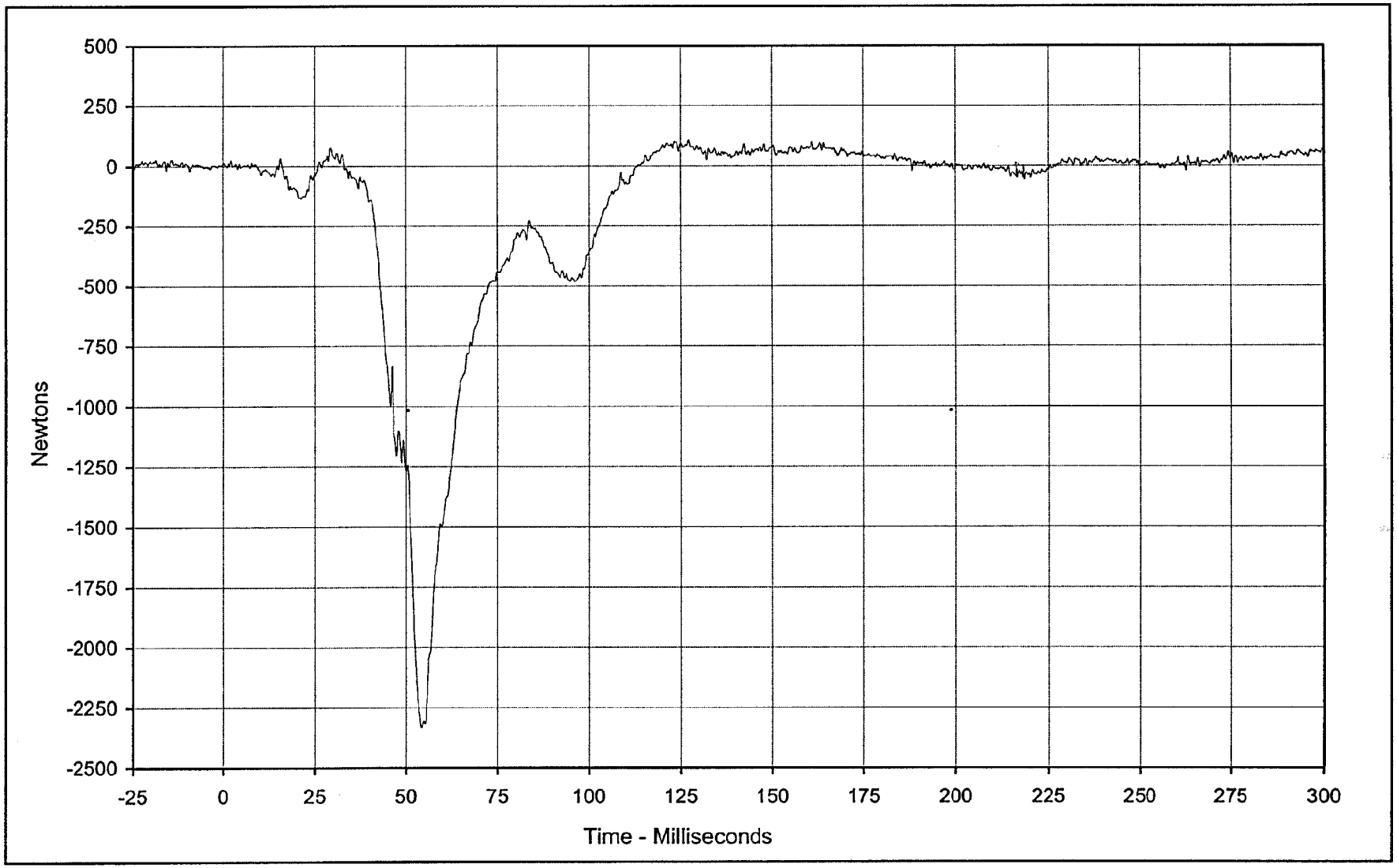
Date of Test: 9/4/97

Curve Number: FIL-030

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

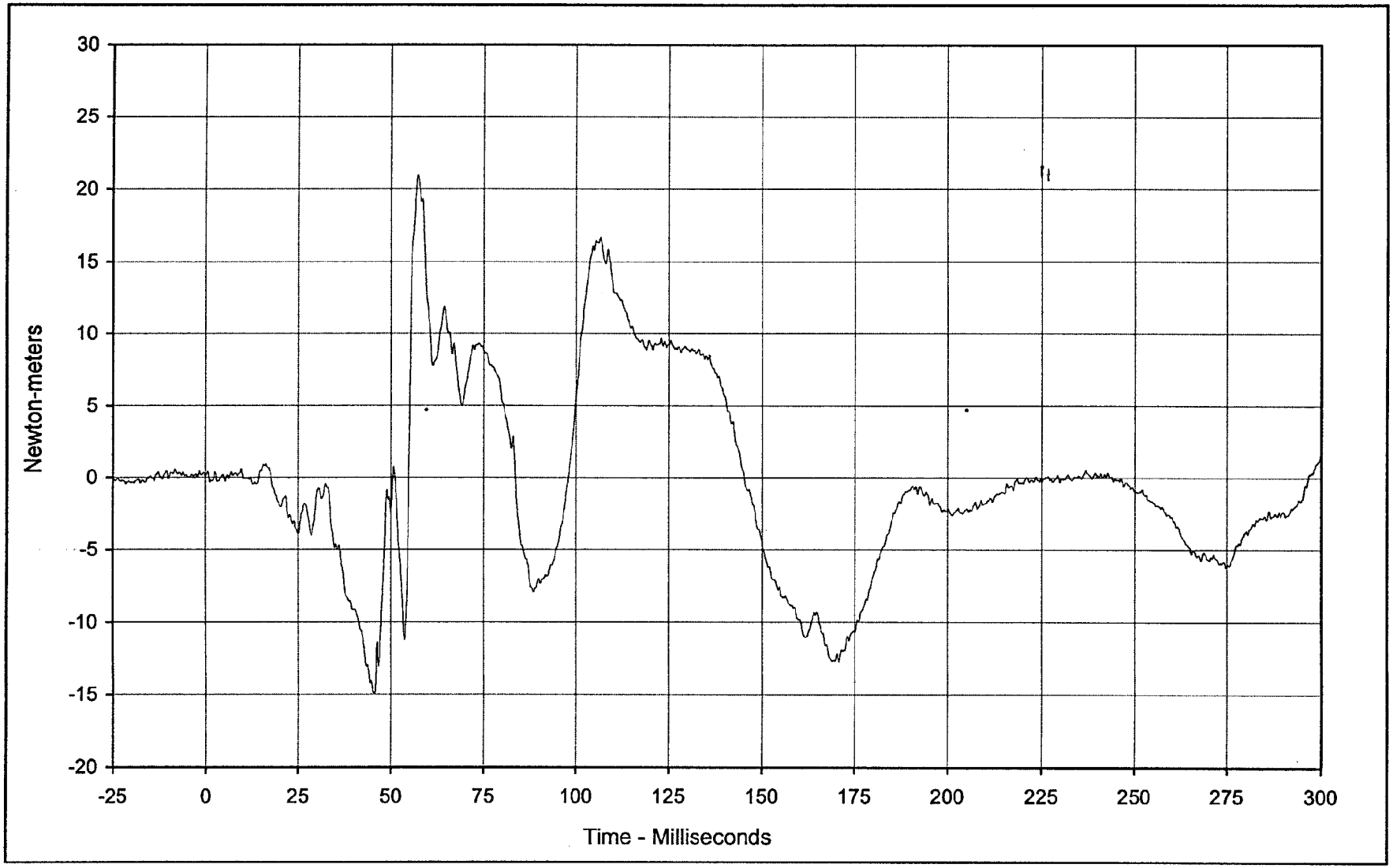
KARCO Engineering



Curve Description:	Driver Right Upper Tibia Force Z			
Maximum Value:	108.0	at	127.2	Milliseconds
Minimum Value:	-2332.0	at	54.1	Milliseconds
SAE Filter Class:	600			
Date of Test:	9/4/97			
Curve Number:	FIL-031			

Testing Program	1997 48.4 km/h Frontal Impact (Female)
Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Right Upper Tibia Moment X

Maximum Value: 21.0 at 57.3 Milliseconds

Minimum Value: -14.9 at 45.4 Milliseconds

SAE Filter Class: 600

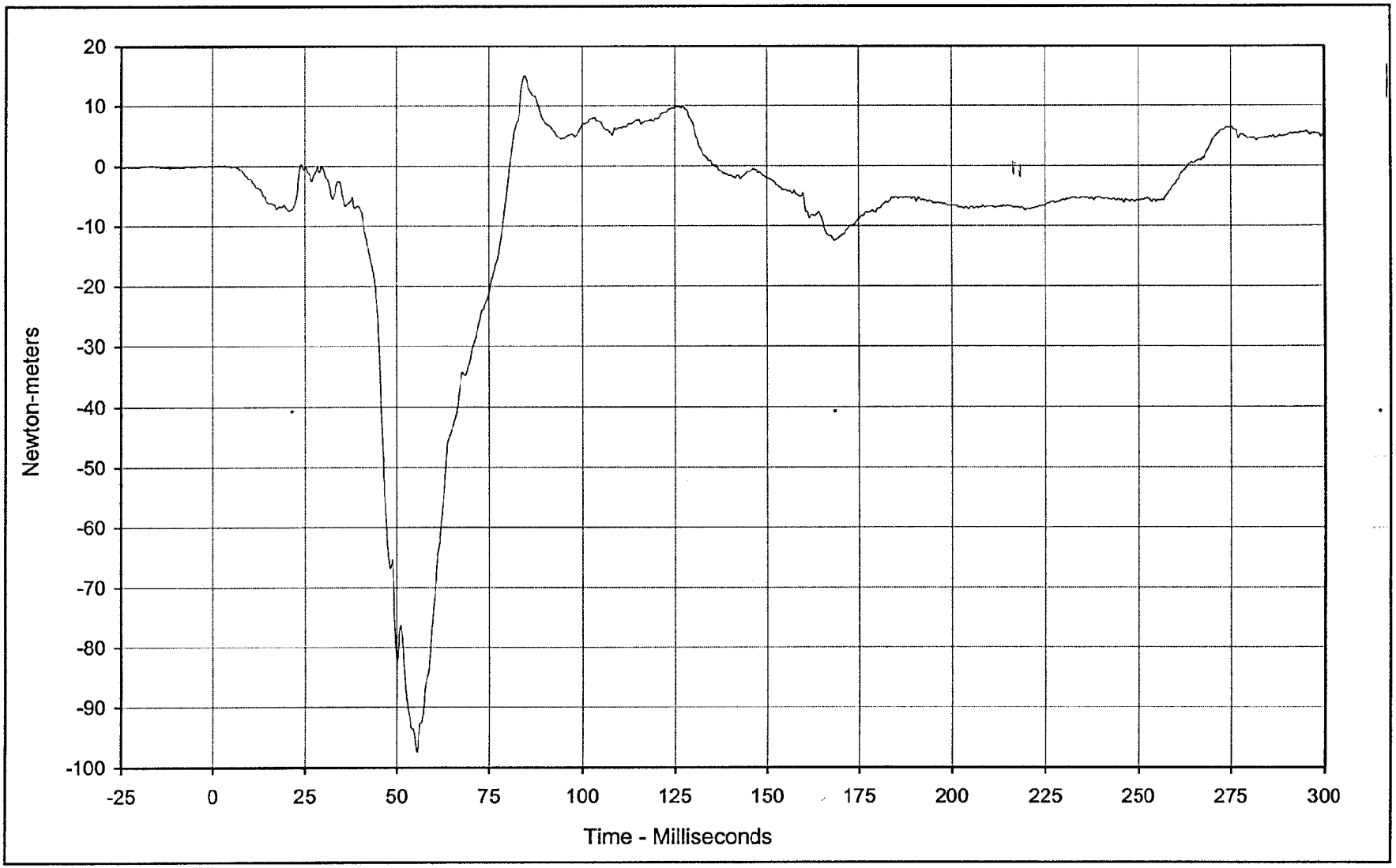
Date of Test: 9/4/97

Curve Number: FIL-032

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Right Upper Tibia Moment Y

Maximum Value: 15.1 at 84.5 Milliseconds

Minimum Value: -97.4 at 55.4 Milliseconds

SAE Filter Class: 600

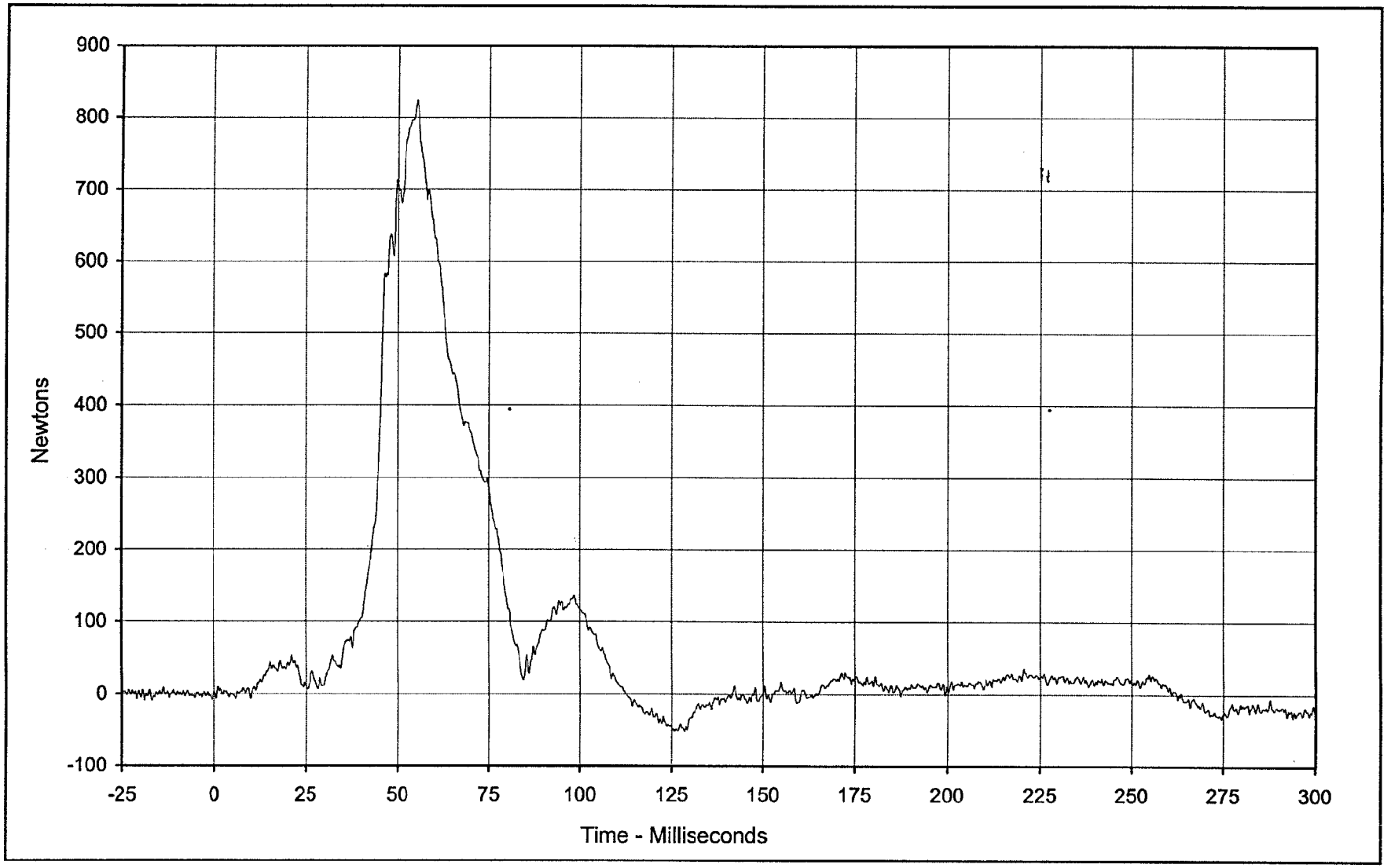
Date of Test: 9/4/97

Curve Number: FIL-033

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering

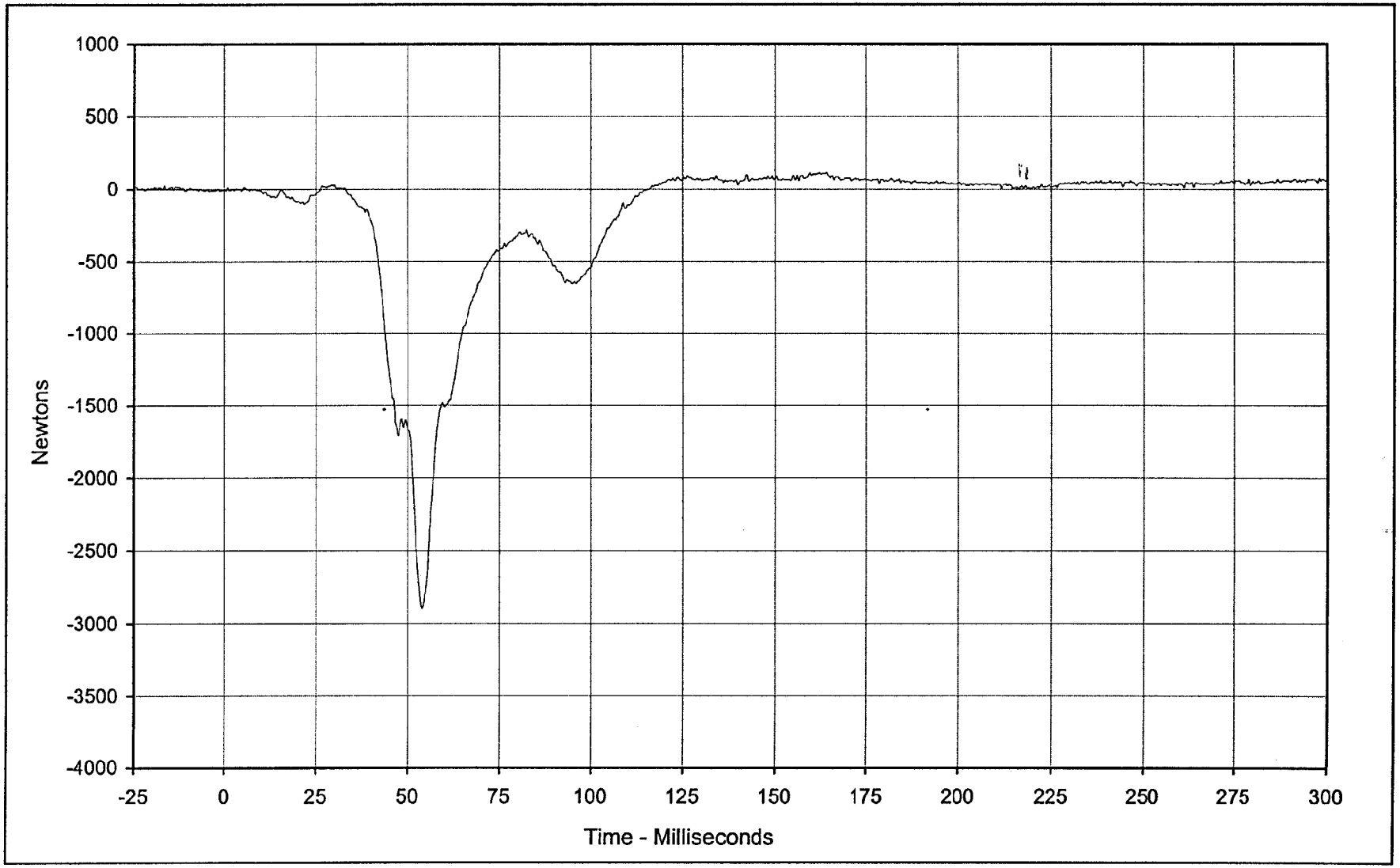


Curve Description:	Driver Right Lower Tibia Force X			
Maximum Value:	824.3	at	55.3	Milliseconds
Minimum Value:	-51.9	at	128.5	Milliseconds
SAE Filter Class:	600			
Date of Test:	9/4/97			
Curve Number:	FIL-034			

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Right Lower Tibia Force Z

Maximum Value: 117.2 at 164.0 Milliseconds

Minimum Value: -2894.8 at 53.8 Milliseconds

SAE Filter Class: 600

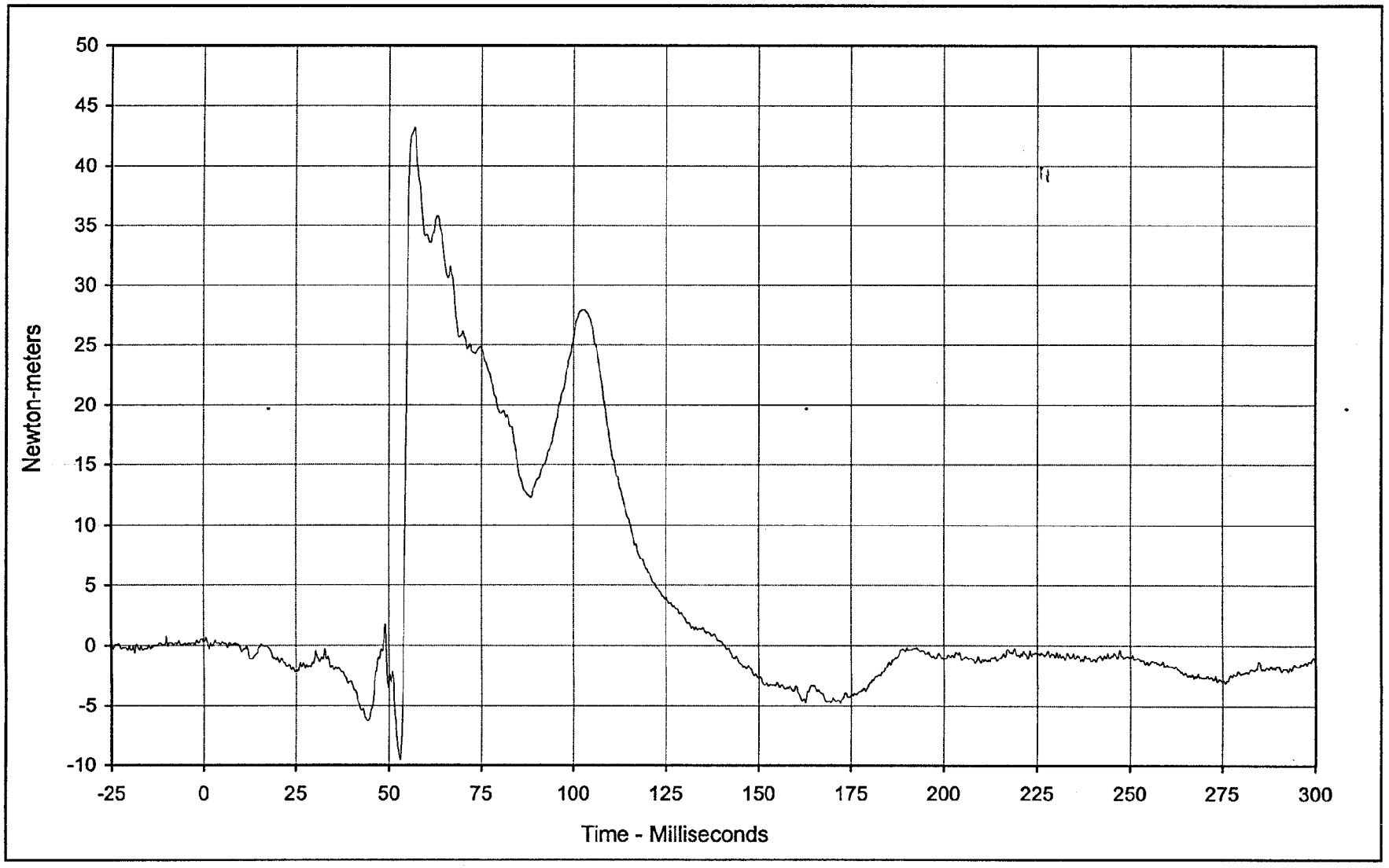
Date of Test: 9/4/97

Curve Number: FIL-035

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Right Lower Tibia Moment X

Maximum Value: 43.2 at 57.0 Milliseconds

Minimum Value: -9.6 at 53.0 Milliseconds

SAE Filter Class: 600

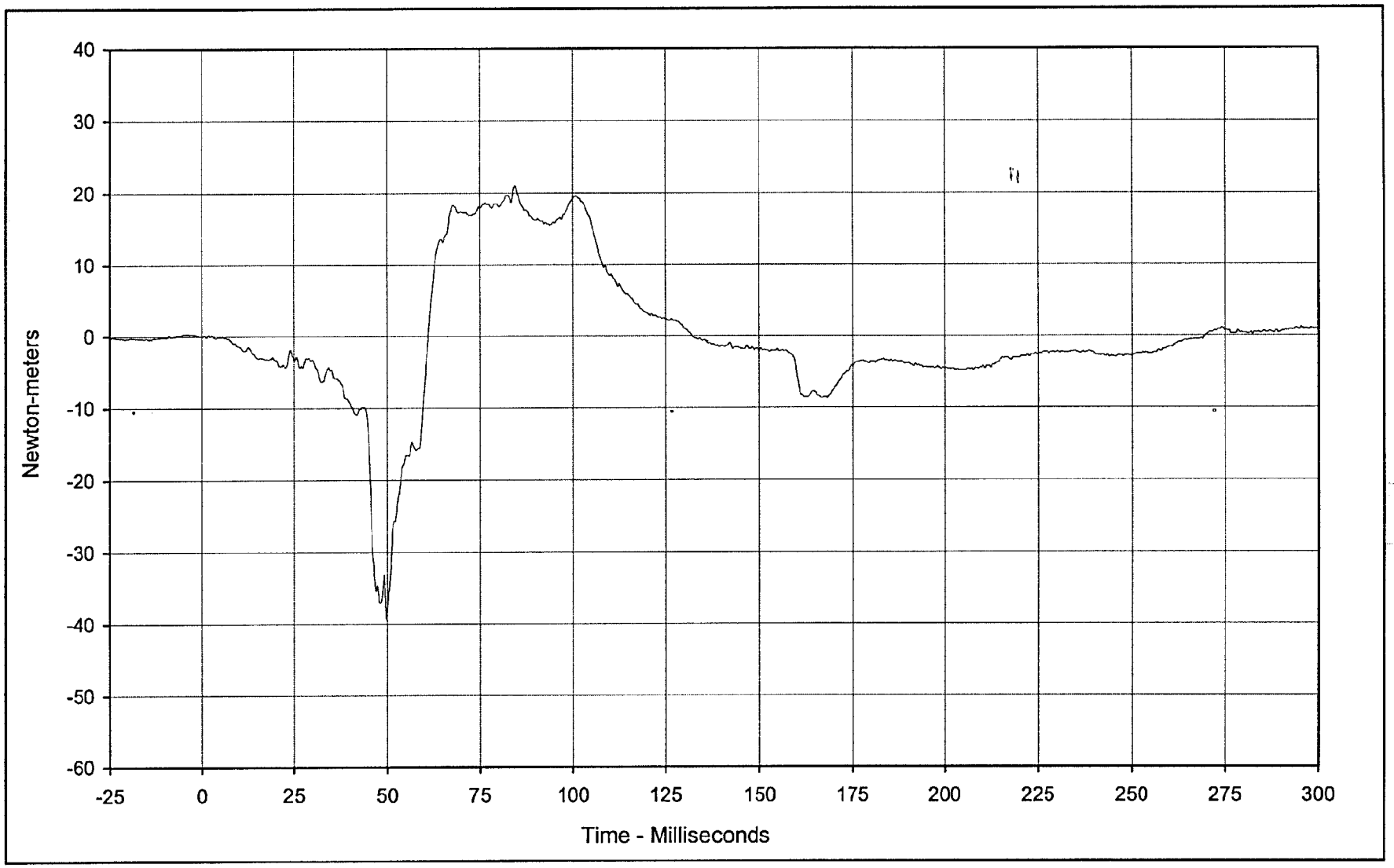
Date of Test: 9/4/97

Curve Number: FIL-036

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Right Lower Tibia Moment Y

Maximum Value: 21.0 at 84.4 Milliseconds

Minimum Value: -39.4 at 49.8 Milliseconds

SAE Filter Class: 600

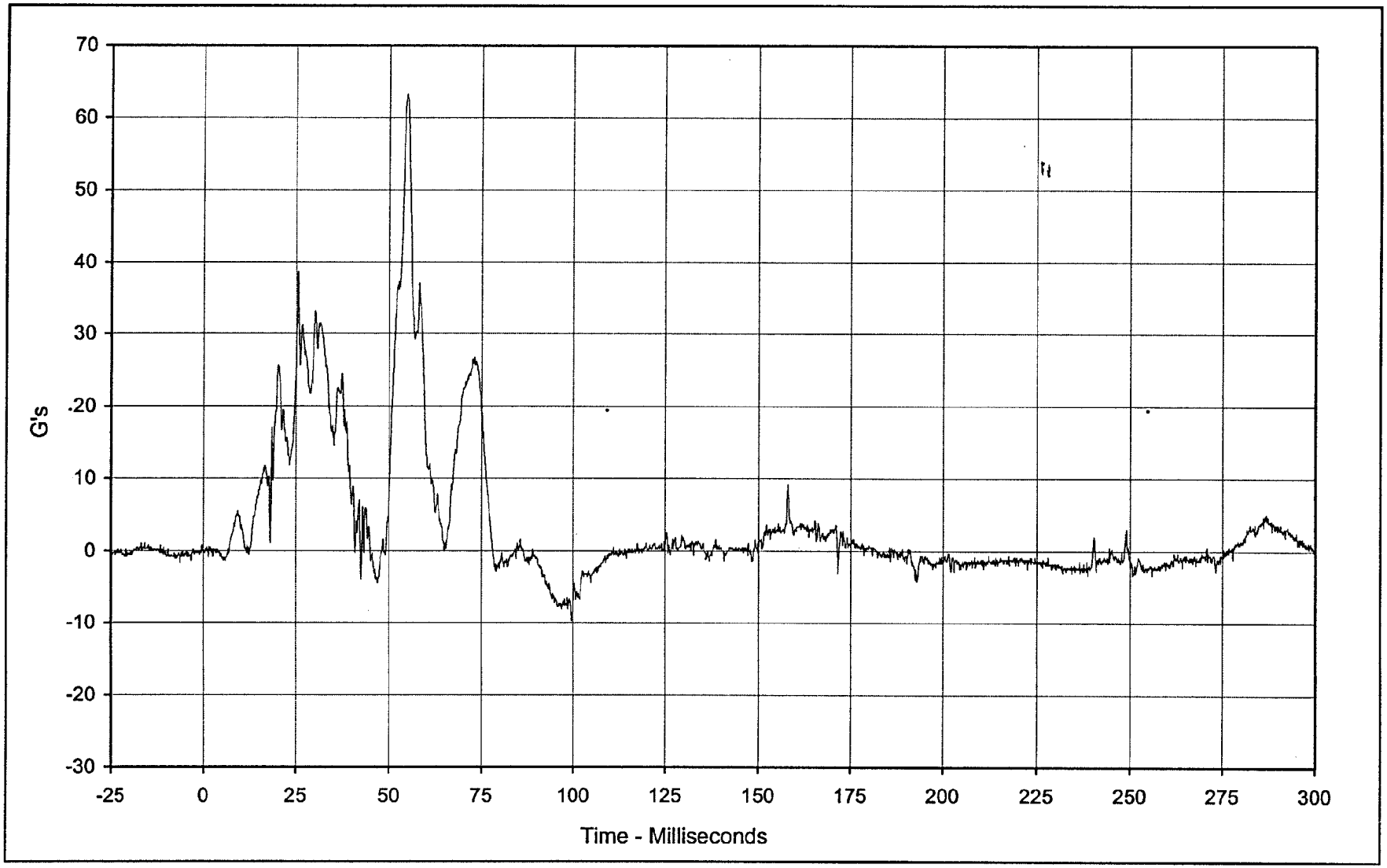
Date of Test: 9/4/97

Curve Number: FIL-037

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

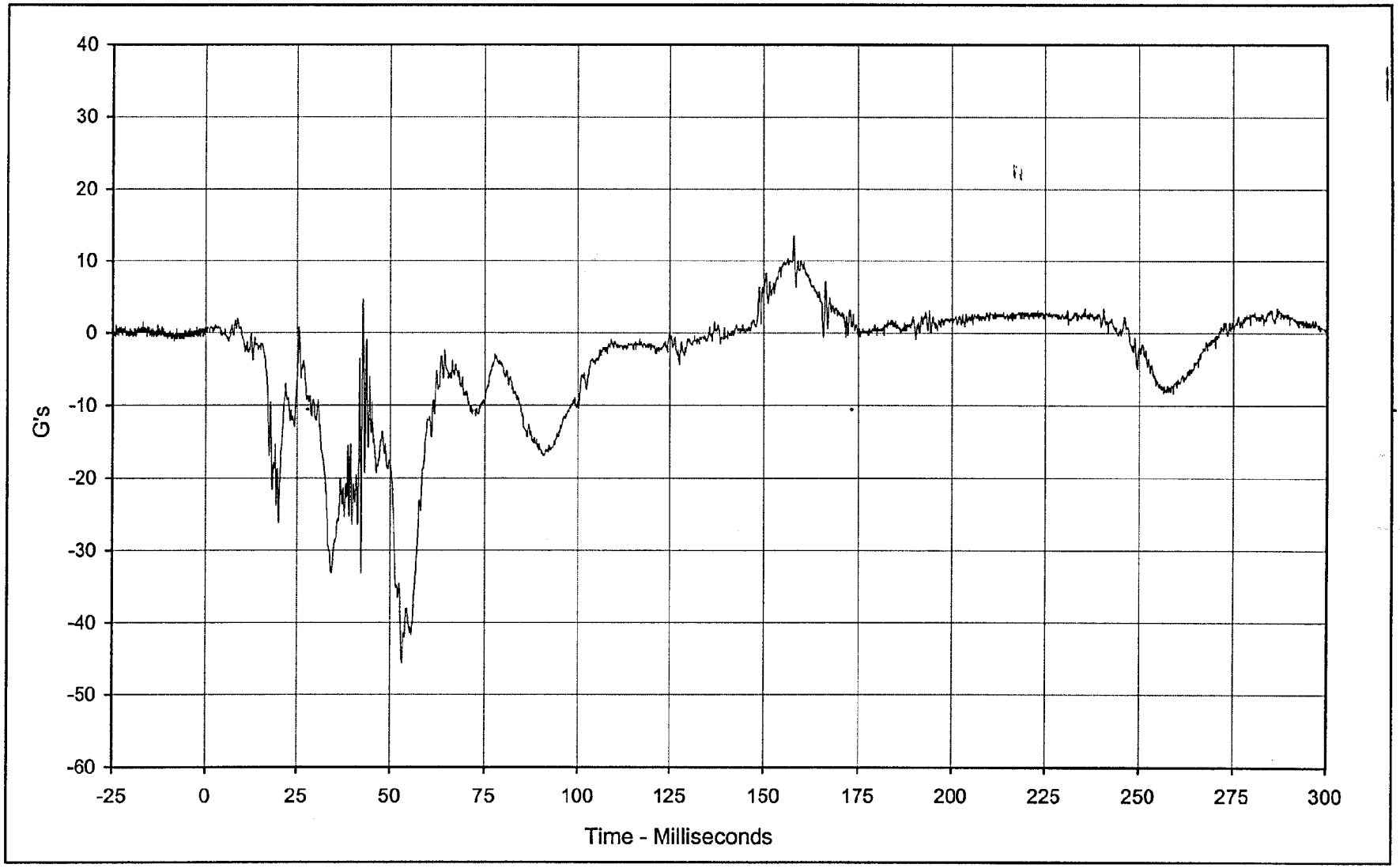
KARCO Engineering



Curve Description:	Driver Left Foot Aft X			
Maximum Value:	63.3	at	54.6	Milliseconds
Minimum Value:	-9.8	at	99.5	Milliseconds
SAE Filter Class:	1000			
Date of Test:	9/4/97			
Curve Number:	FIL-038			

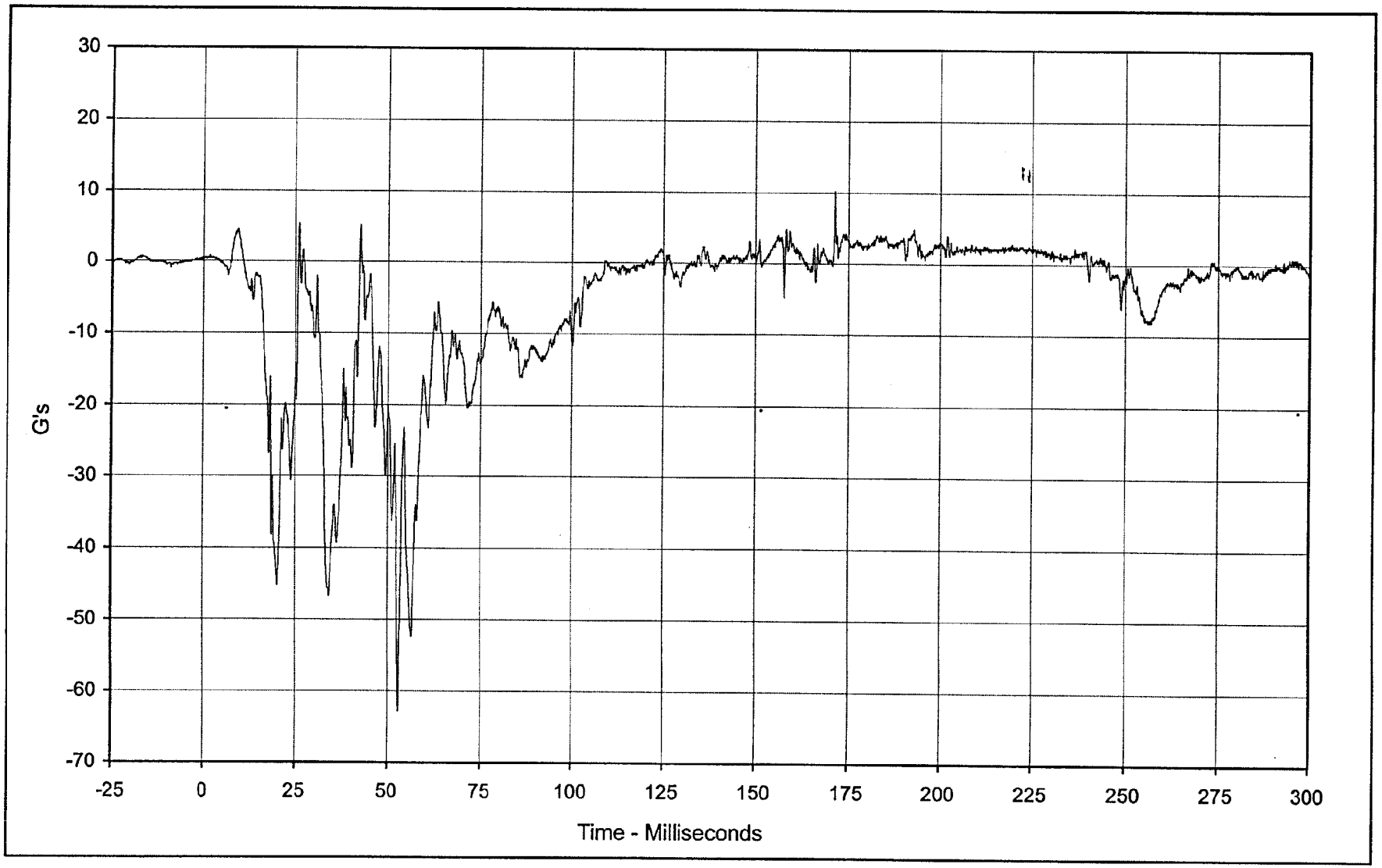
Testing Program	1997 48.4 km/h Frontal Impact (Female)
Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description:	Driver Left Foot Aft Z			Testing Program	1997 48.4 km/h Frontal Impact (Female)
Maximum Value:	13.5	at	157.8 Milliseconds	Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan
Minimum Value:	-45.8	at	53.2 Milliseconds		
SAE Filter Class:	1000				
Date of Test:	9/4/97				
Curve Number:	FIL-039				

KARCO Engineering



Curve Description: Driver Left Foot Fore Z

Maximum Value: 10.2 at 171.5 Milliseconds

Minimum Value: -62.8 at 53.0 Milliseconds

SAE Filter Class: 1000

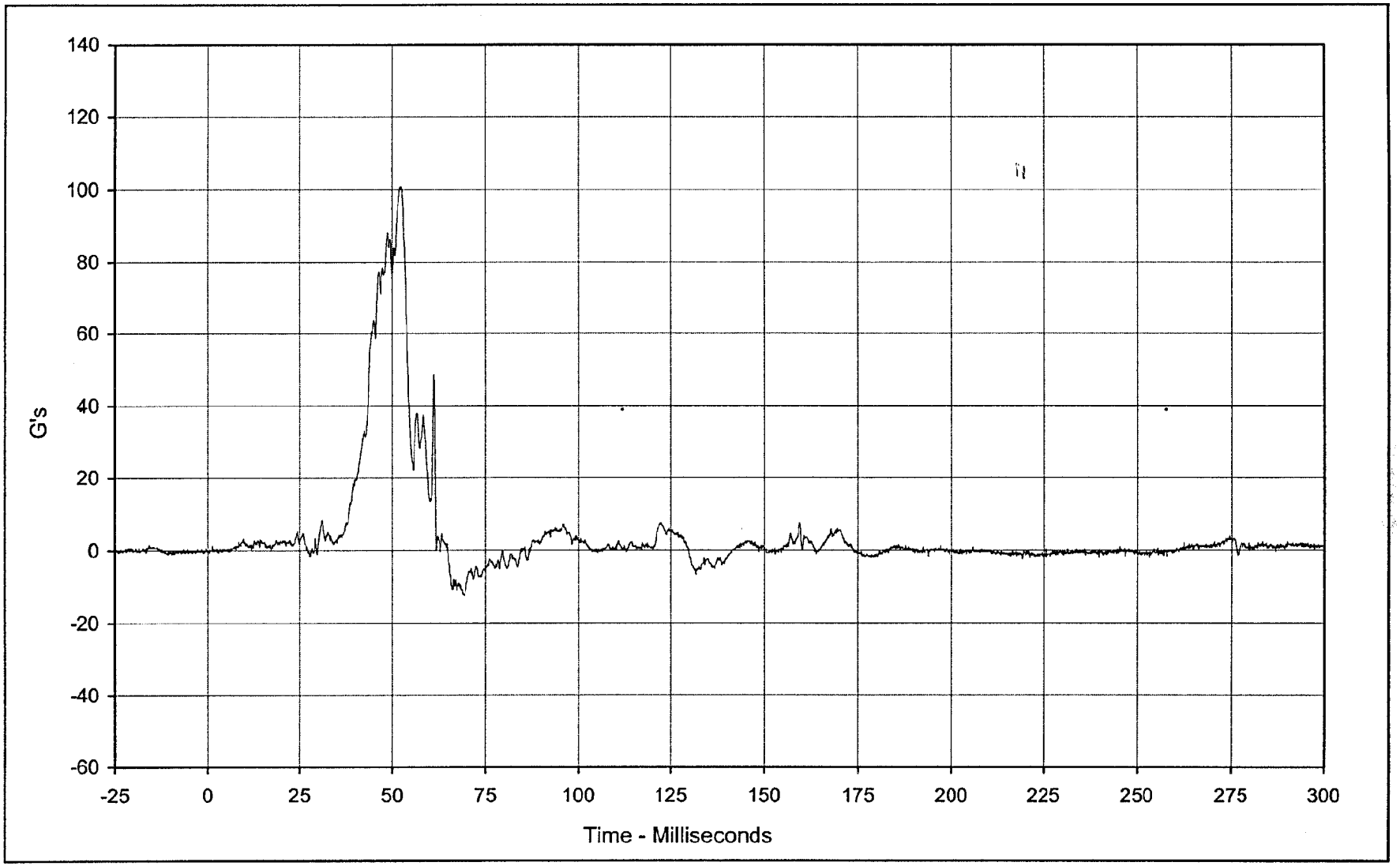
Date of Test: 9/4/97

Curve Number: FIL-040

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Right Foot Aft X

Maximum Value: 100.8 at 52.0 Milliseconds

Minimum Value: -12.4 at 69.1 Milliseconds

SAE Filter Class: 1000

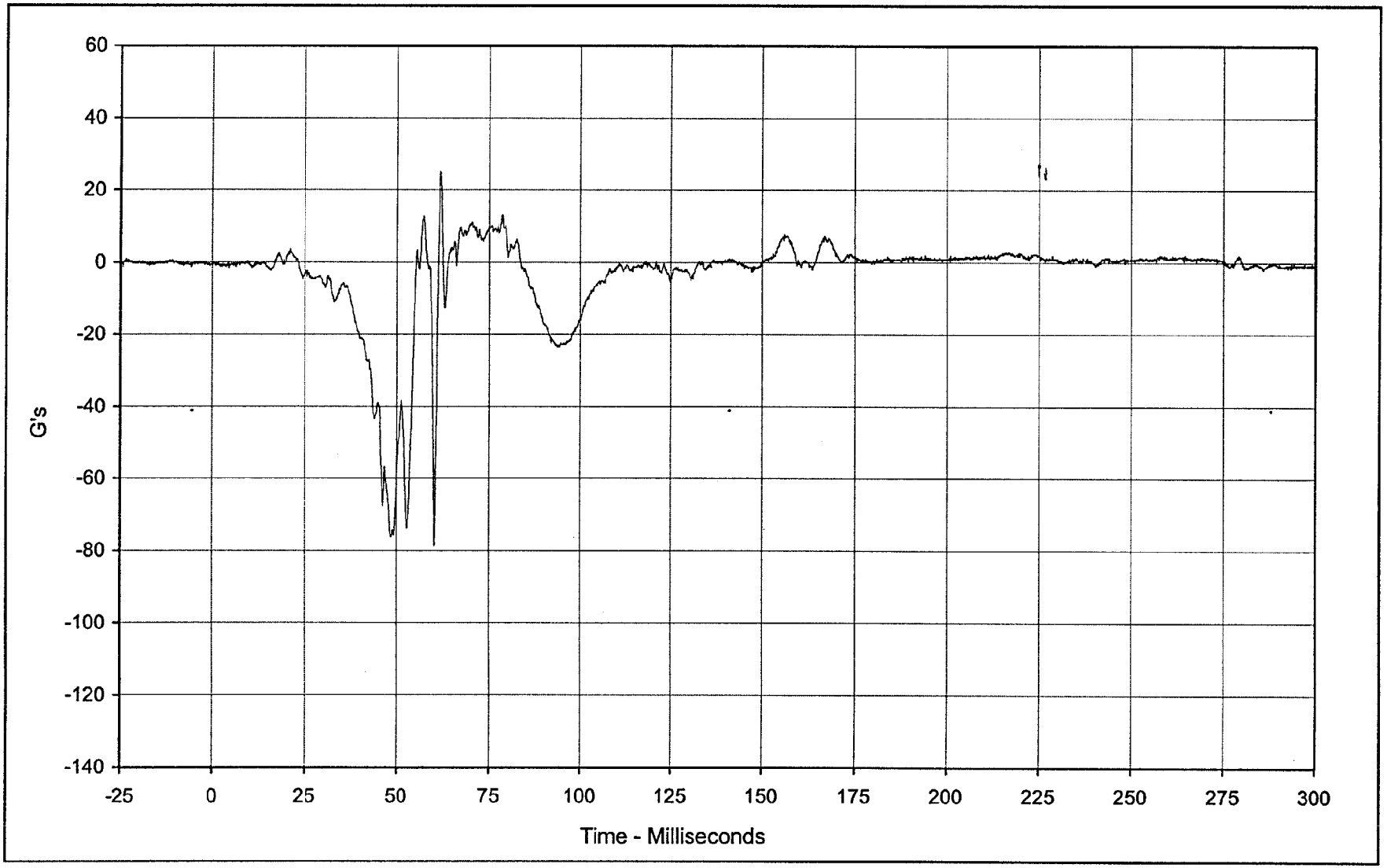
Date of Test: 9/4/97

Curve Number: FIL-041

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Right Foot Aft Z

Maximum Value: 25.0 at 61.8 Milliseconds

Minimum Value: -78.7 at 60.4 Milliseconds

SAE Filter Class: 1000

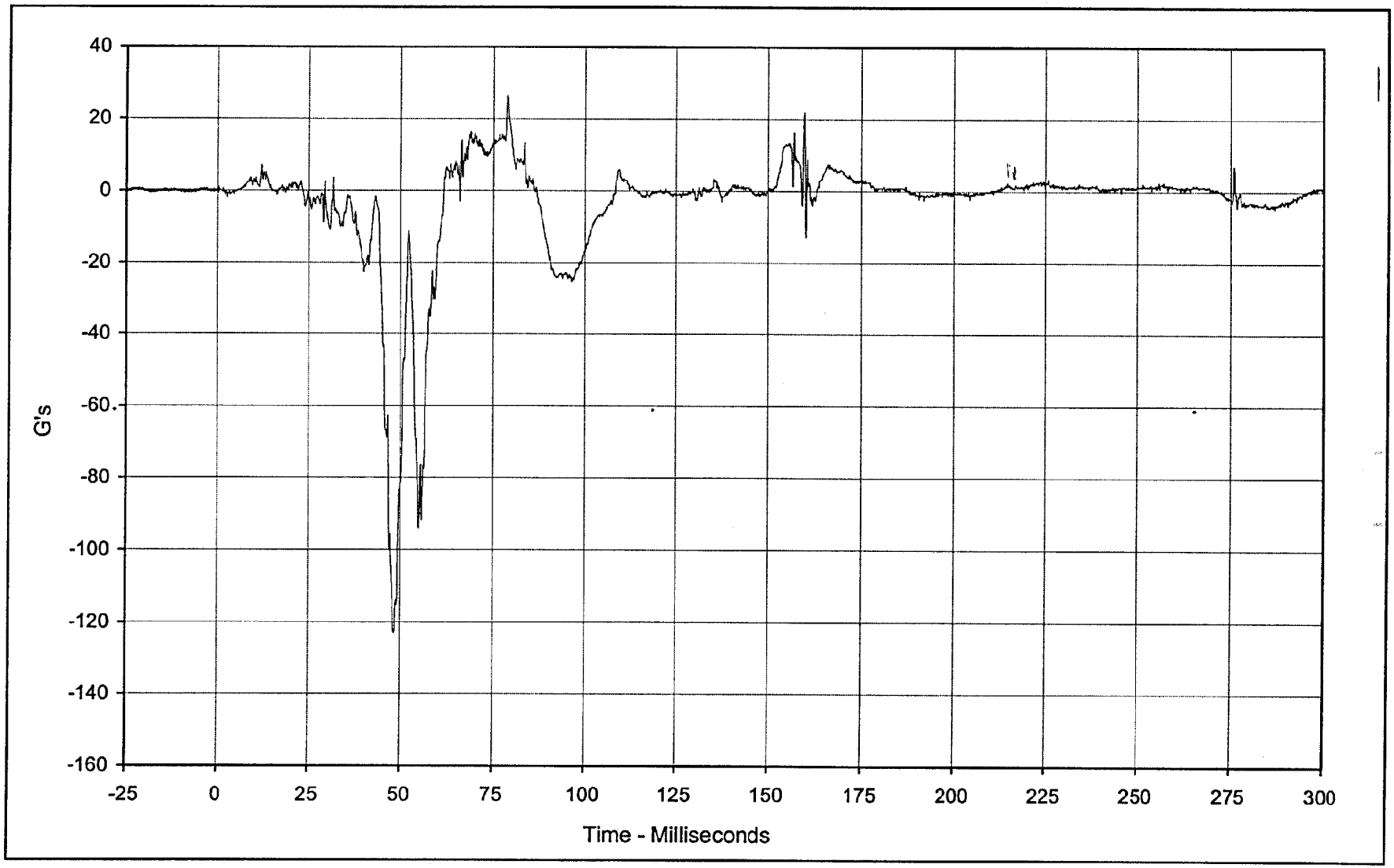
Date of Test: 9/4/97

Curve Number: FIL-042

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Right Foot Fore Z

Maximum Value: 26.4 at 78.7 Milliseconds

Minimum Value: -123.0 at 48.3 Milliseconds

SAE Filter Class: 1000

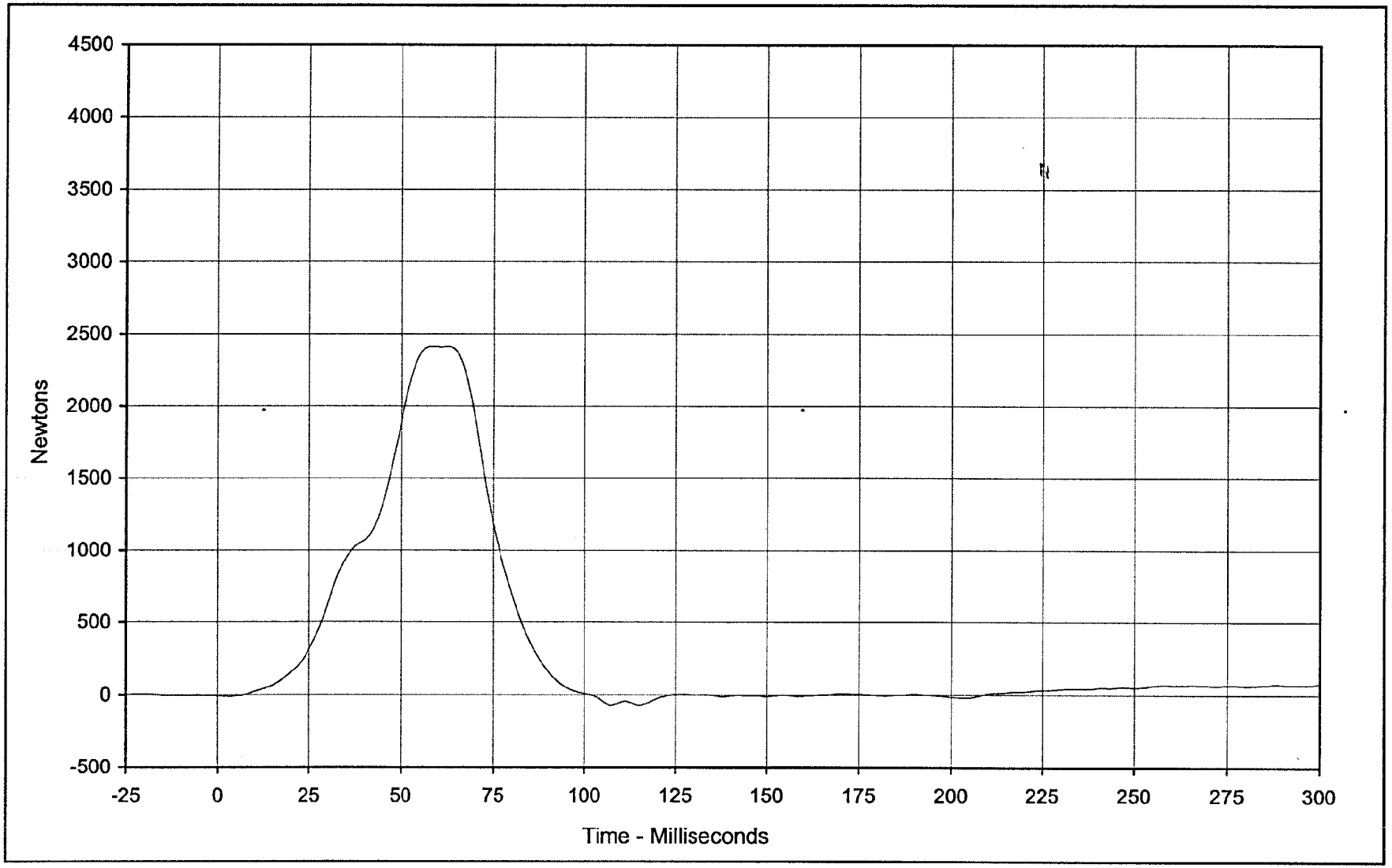
Date of Test: 9/4/97

Curve Number: FIL-043

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Lap Belt Force

Maximum Value: 2413.5 at 58.5 Milliseconds

Minimum Value: -71.9 at 107.4 Milliseconds

SAE Filter Class: 60

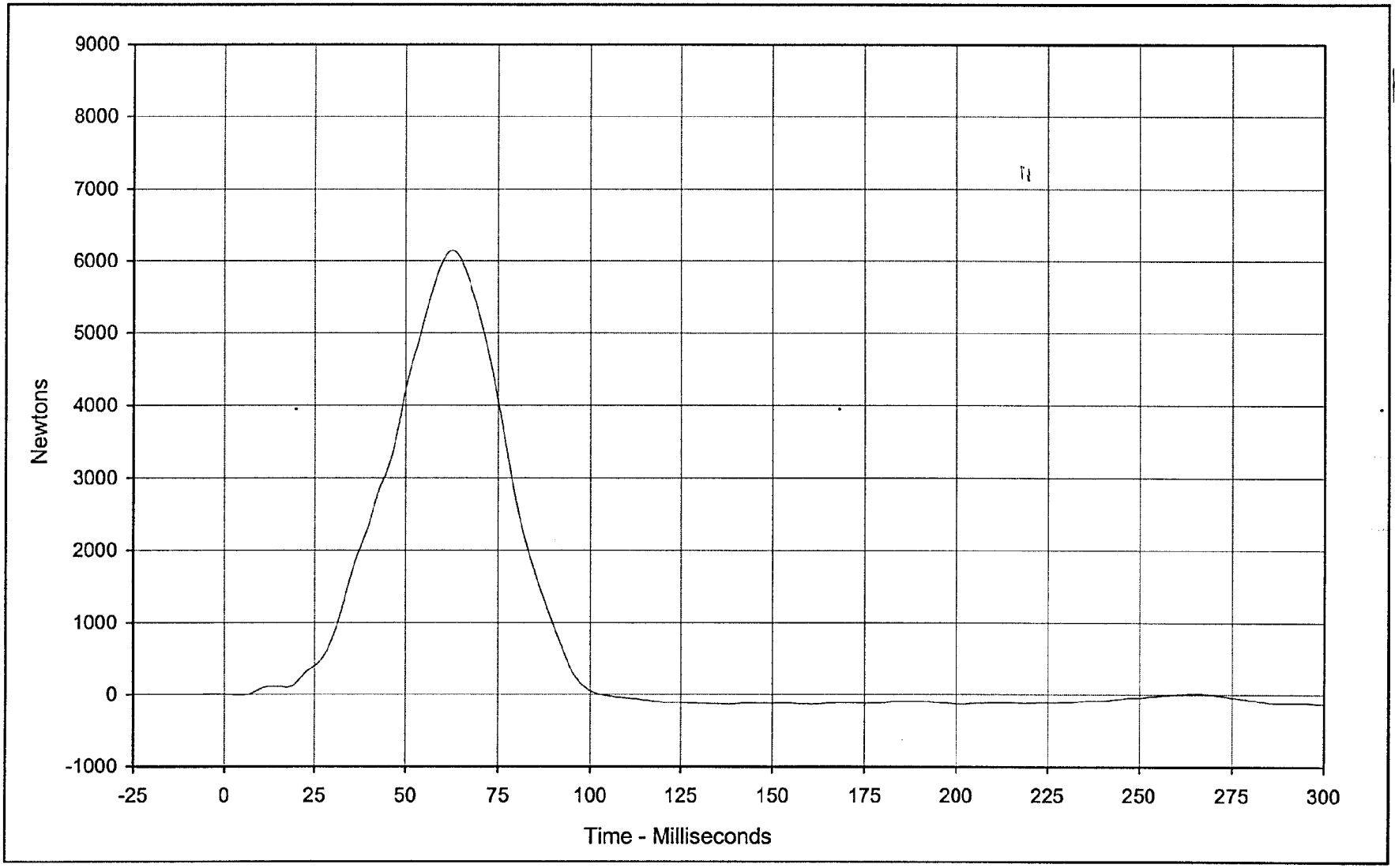
Date of Test: 9/4/97

Curve Number: FIL-044

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Shoulder Belt Force

Maximum Value: 6147.6 at 62.5 Milliseconds

Minimum Value: -132.8 at 138.0 Milliseconds

SAE Filter Class: 60

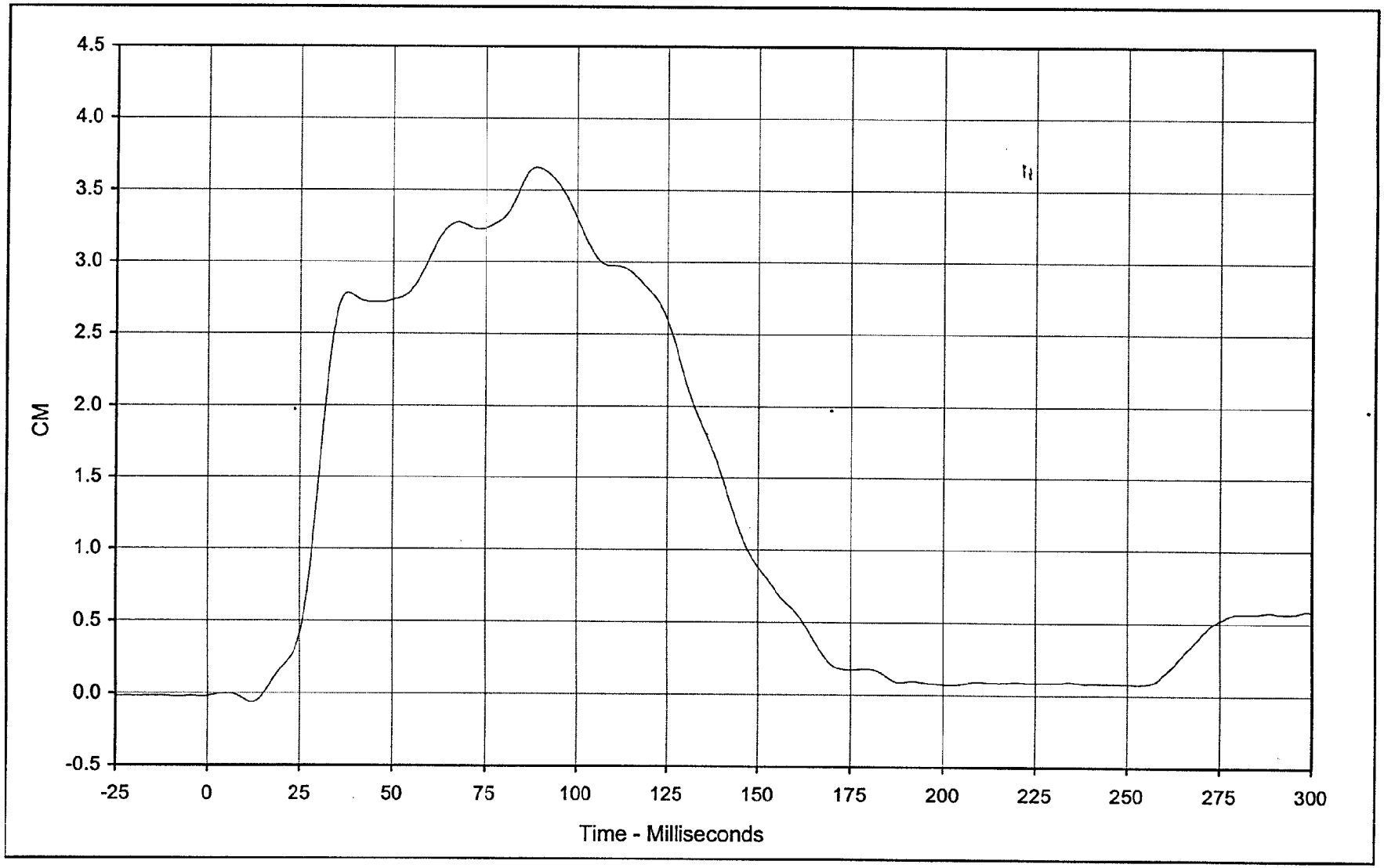
Date of Test: 9/4/97

Curve Number: FIL-045

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Driver Shoulder Belt Pullout

Maximum Value: 3.66 at 88.9 Milliseconds

Minimum Value: -0.06 at 11.8 Milliseconds

SAE Filter Class: 60

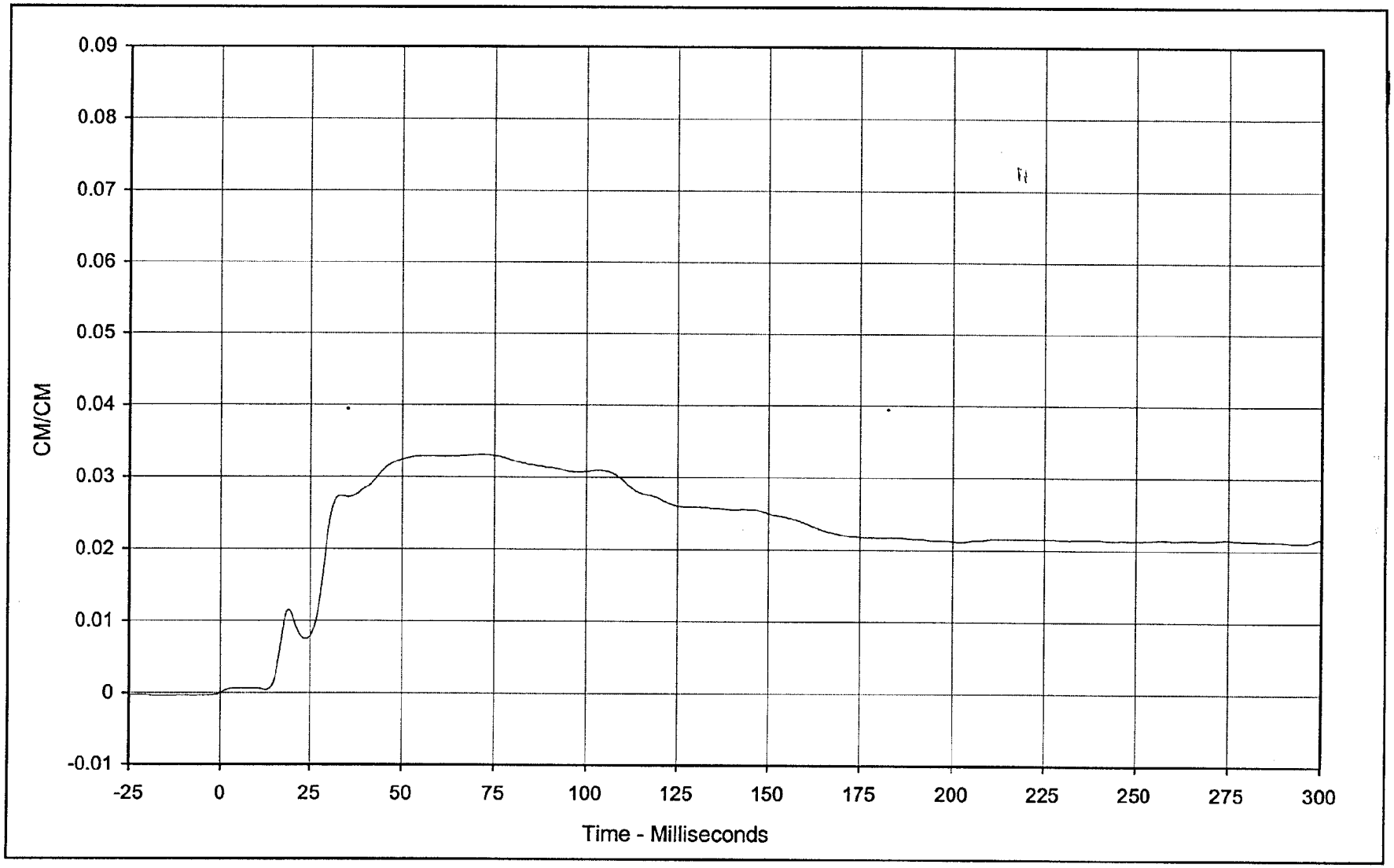
Date of Test: 9/4/97

Curve Number: FIL-046

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

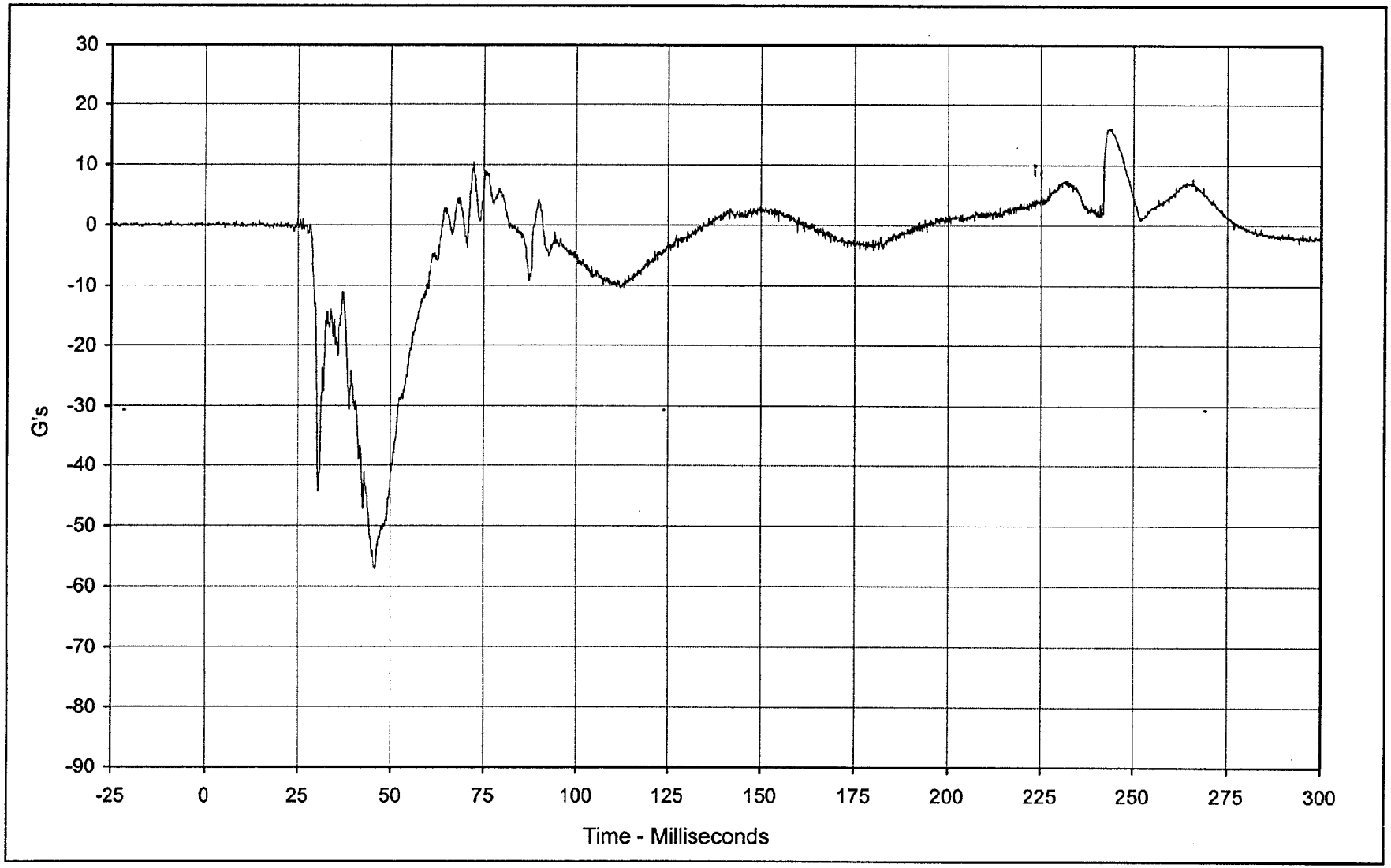
KARCO Engineering



Curve Description:	Driver Shoulder Belt Elongation			
Maximum Value:	0.033	at	71.3	Milliseconds
Minimum Value:	0.000	at	0.0	Milliseconds
SAE Filter Class:	60			
Date of Test:	9/4/97			
Curve Number:	FIL-047			

Testing Program	1997 48.4 km/h Frontal Impact (Female)
Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Head Primary X

Maximum Value: 16.1 at 243.5 Milliseconds

Minimum Value: -57.1 at 45.9 Milliseconds

SAE Filter Class: 1000

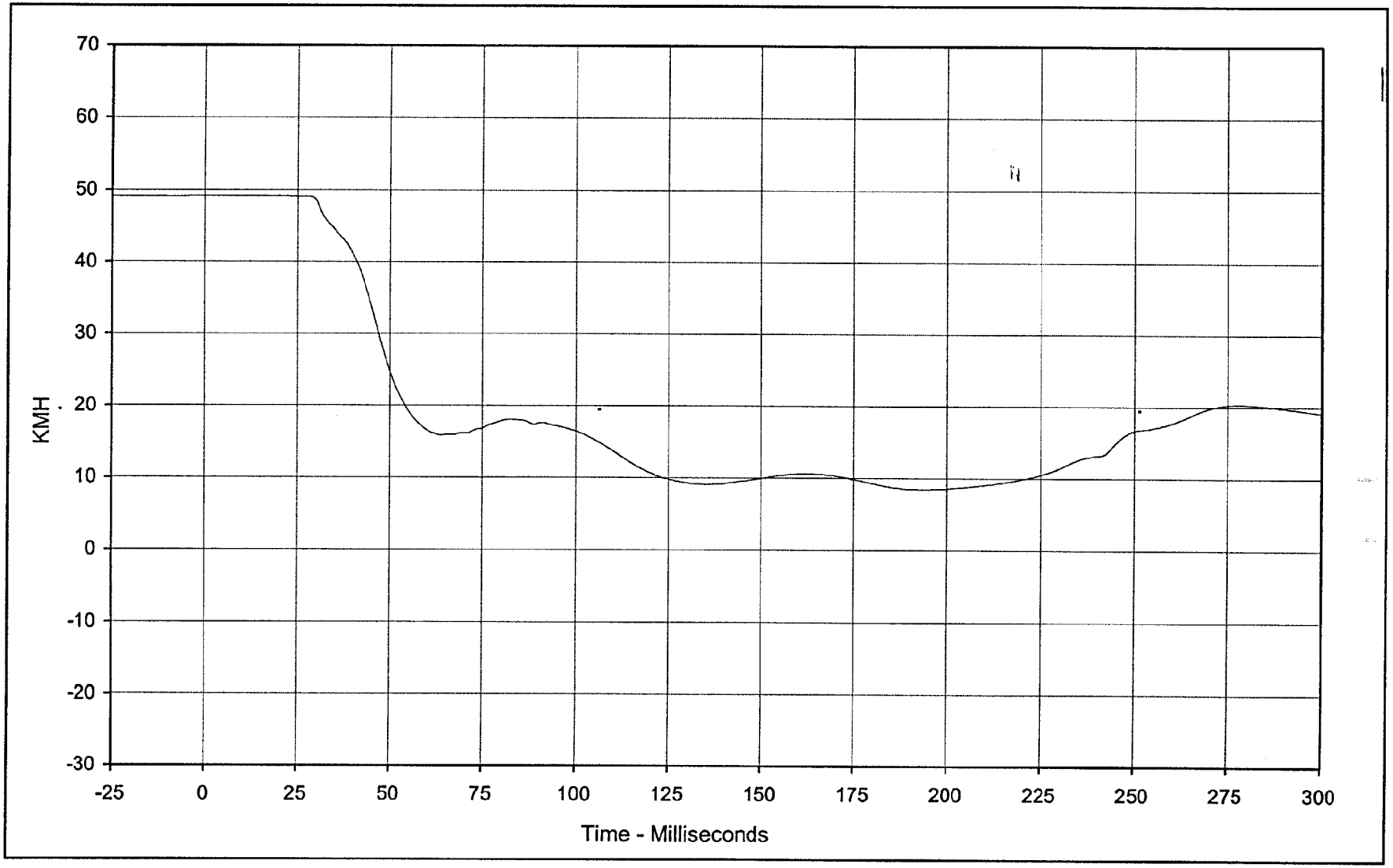
Date of Test: 9/4/97

Curve Number: FIL-048

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Head Primary X Velocity

Maximum Value: 49.1 at 16.1 Milliseconds

Minimum Value: 8.5 at 193.8 Milliseconds

SAE Filter Class: 180

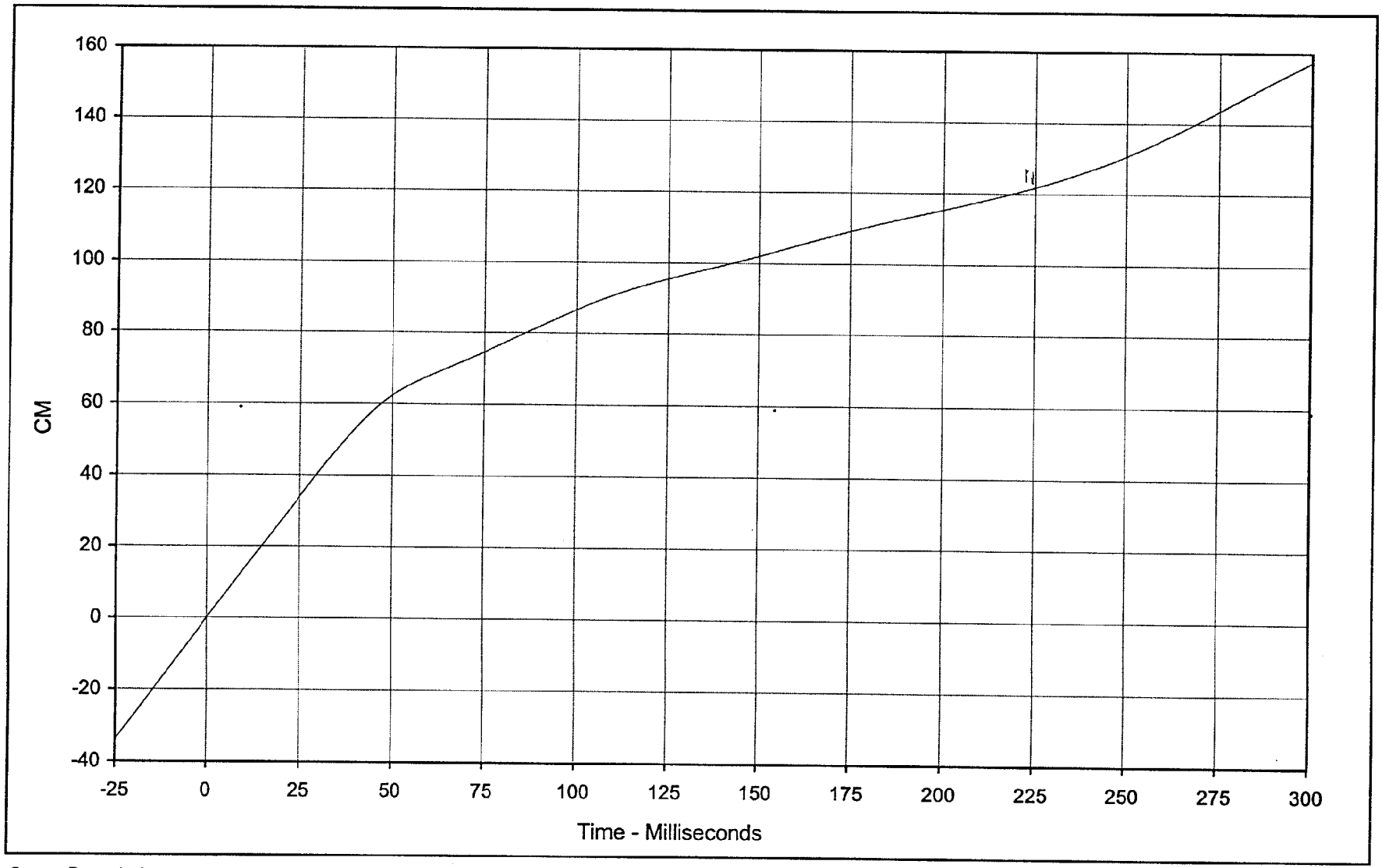
Date of Test: 9/4/97

Curve Number: IN1-048

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Head Primary X Displ.

Maximum Value: 157.3 at 299.9 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

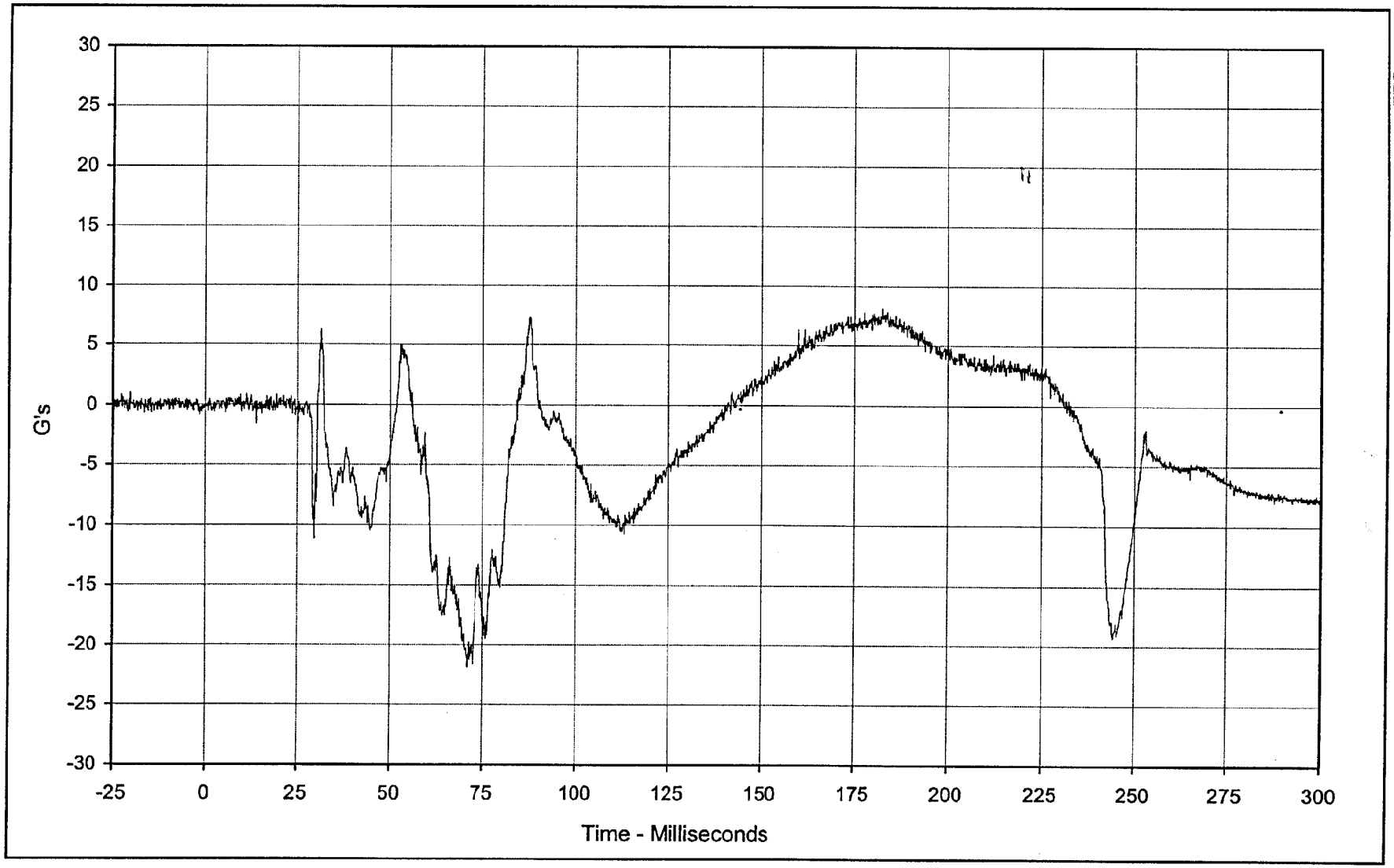
Date of Test: 9/4/97

Curve Number: IN2-048

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Head Primary Y

Maximum Value: 8.1 at 182.6 Milliseconds

Minimum Value: -21.9 at 70.9 Milliseconds

SAE Filter Class: 1000

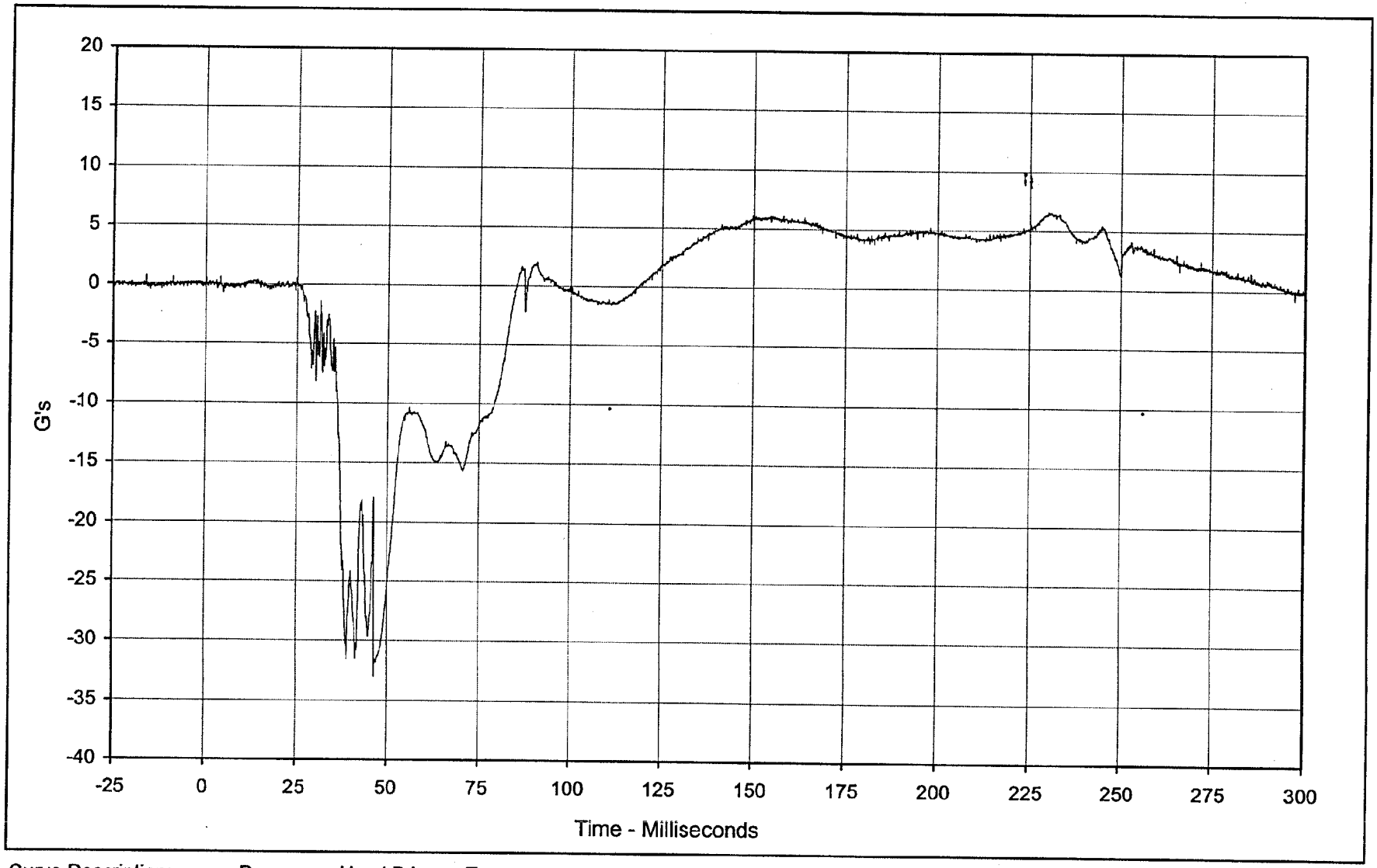
Date of Test: 9/4/97

Curve Number: FIL-049

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Head Primary Z

Maximum Value: 6.6 at 230.1 Milliseconds

Minimum Value: -32.9 at 46.4 Milliseconds

SAE Filter Class: 1000

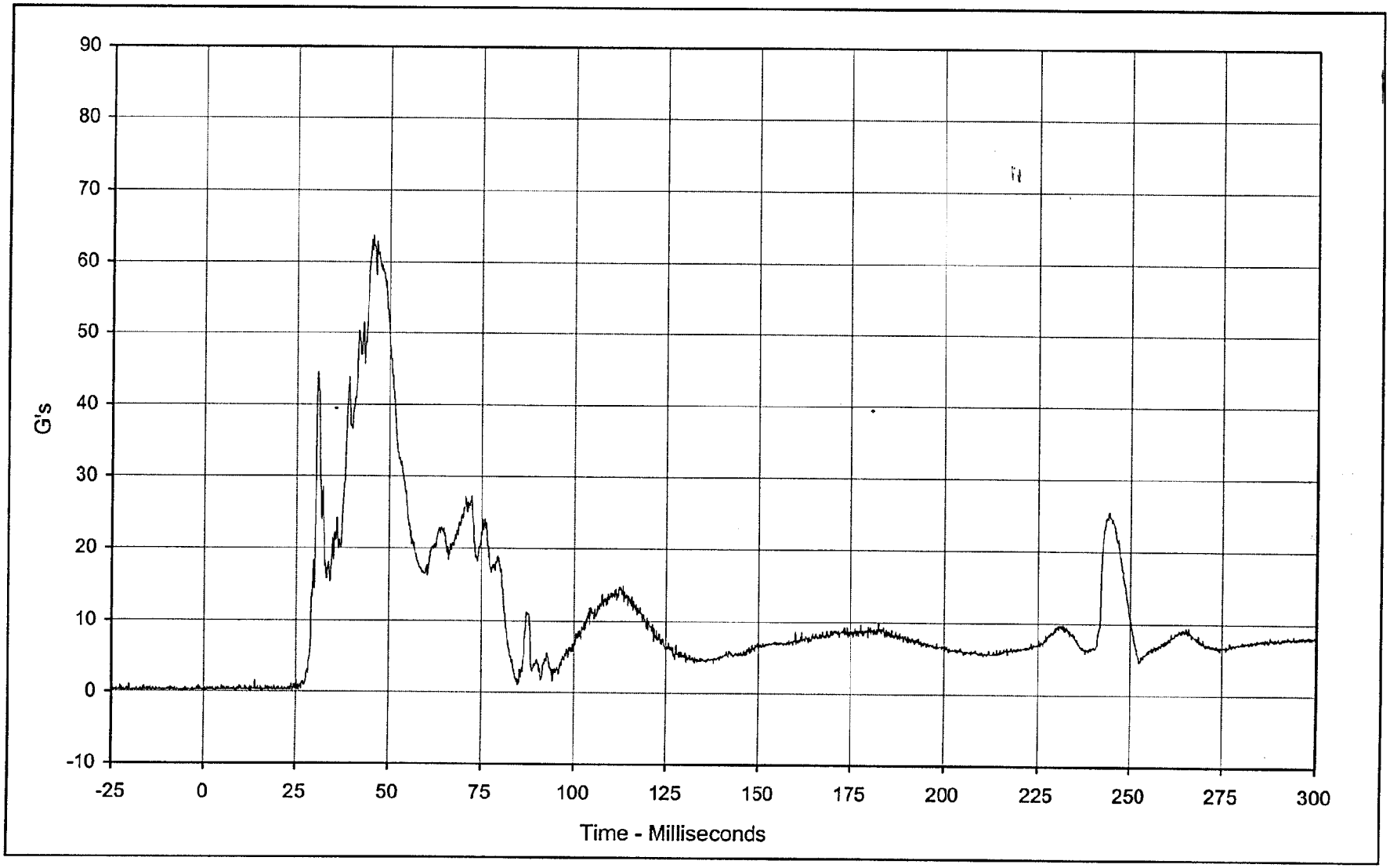
Date of Test: 9/4/97

Curve Number: FIL-050

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Head Resultant Primary

Maximum Value: 63.7 at 45.4 Milliseconds

Minimum Value: 0.1 at 12.9 Milliseconds

SAE Filter Class: 1000

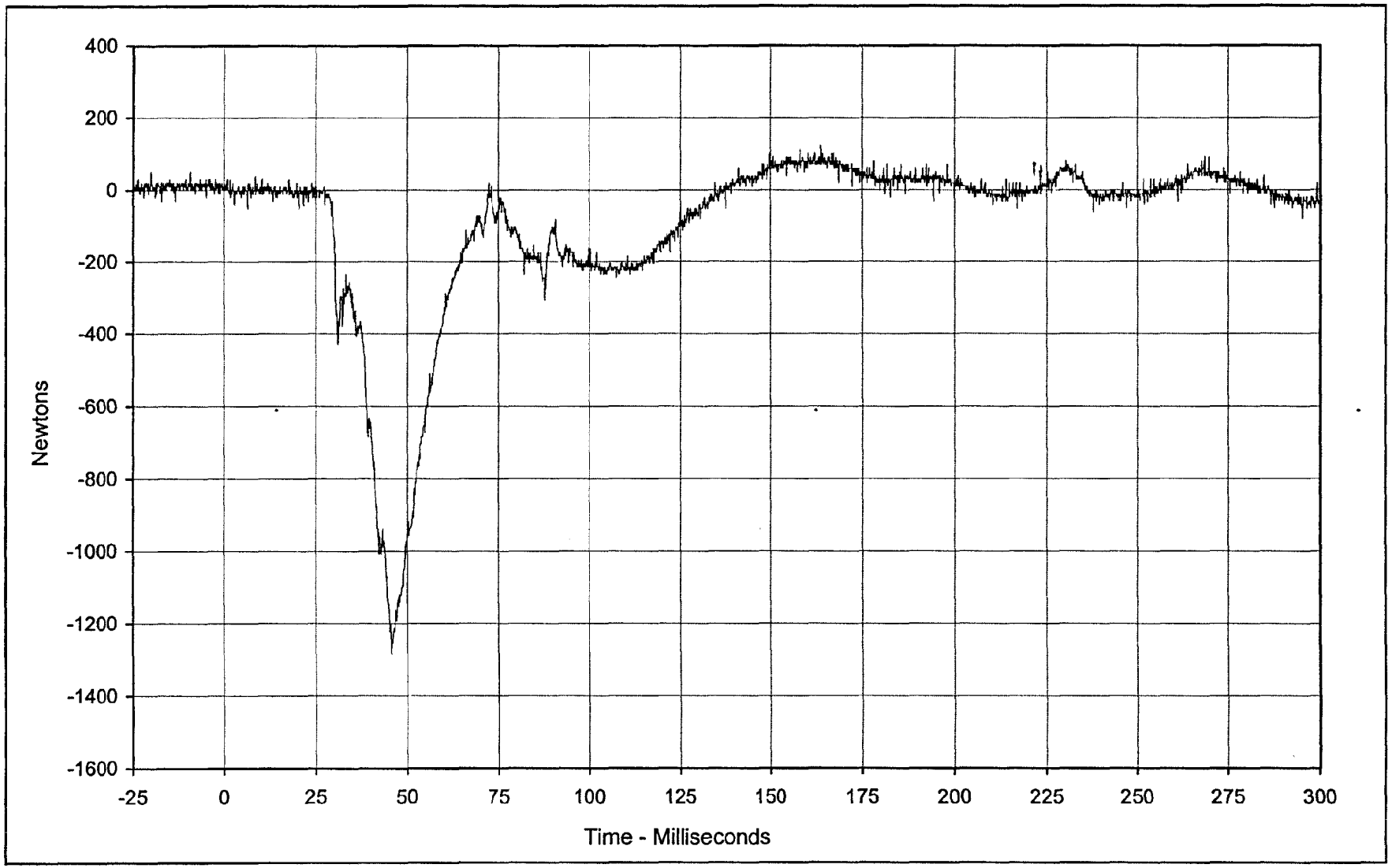
Date of Test: 9/4/97

Curve Number: RES-048

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Neck Force X

Maximum Value: 121.7 at 163.8 Milliseconds

Minimum Value: -1284.5 at 45.4 Milliseconds

SAE Filter Class: 1000

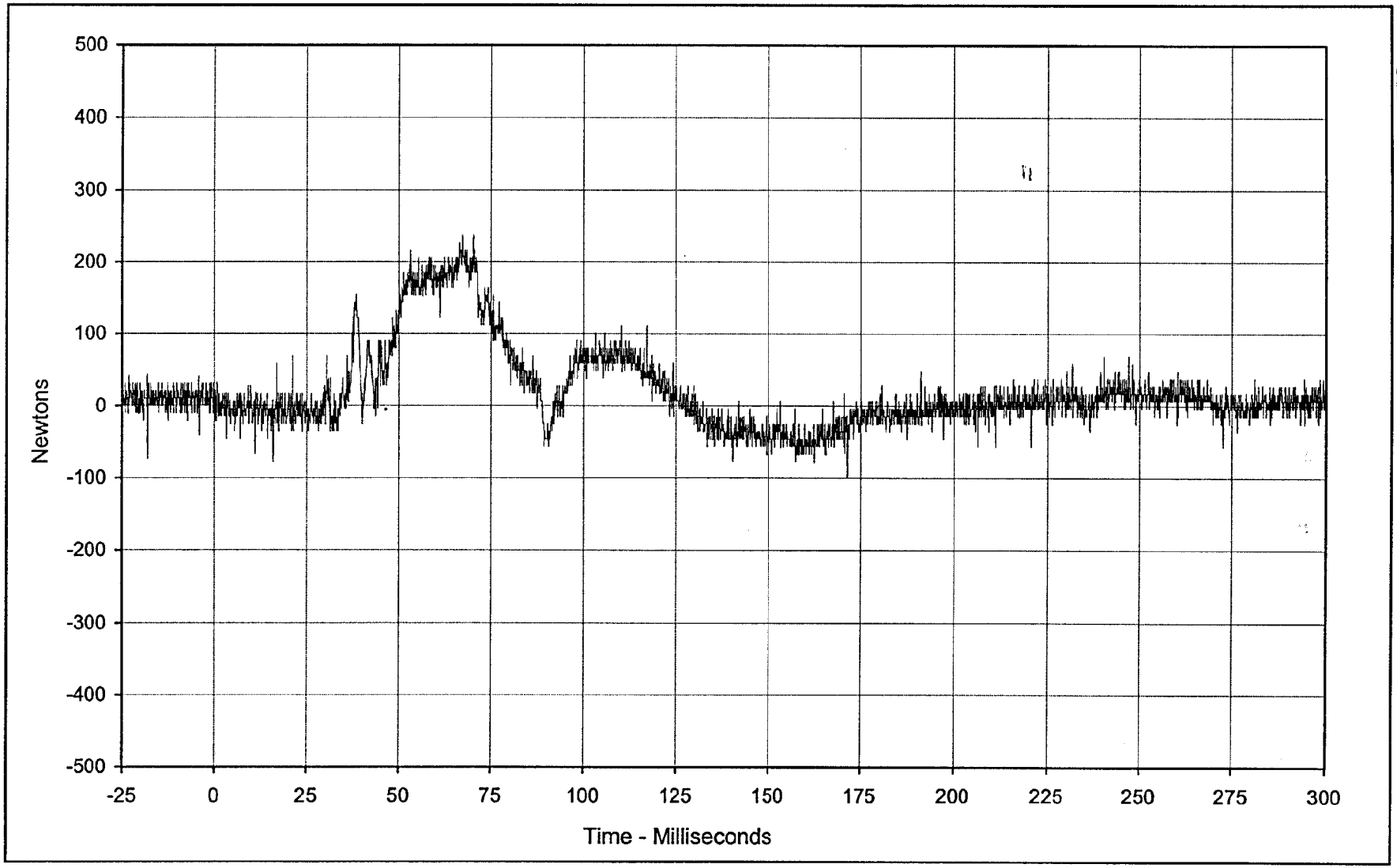
Date of Test: 9/4/97

Curve Number: FIL-007

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Neck Force Y

Maximum Value: 237.8 at 67.2 Milliseconds

Minimum Value: -98.7 at 171.4 Milliseconds

SAE Filter Class: 1000

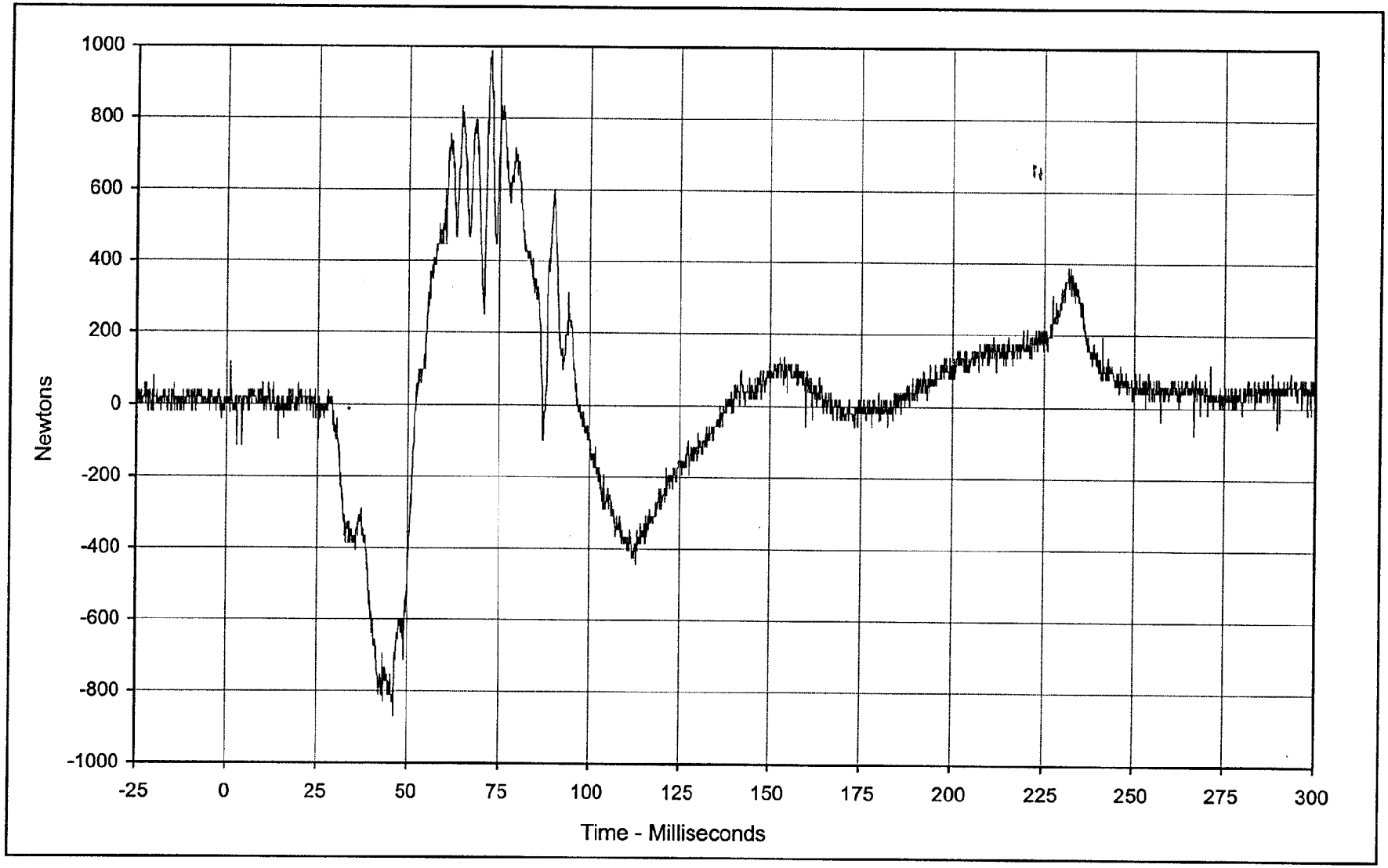
Date of Test: 9/4/97

Curve Number: FIL-008

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering

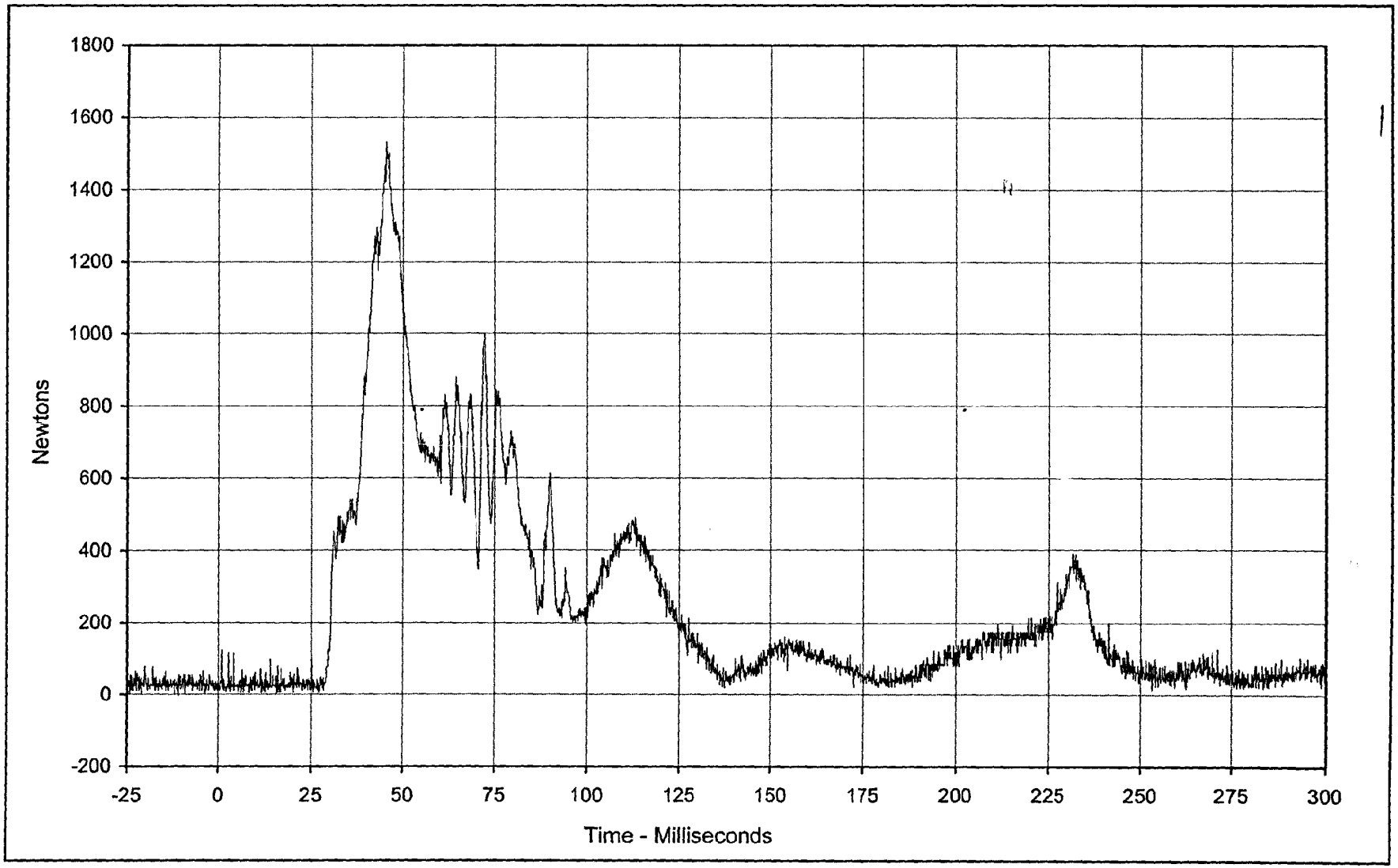


Curve Description:	Passenger Neck Force Z			
Maximum Value:	988.0	at	72.3	Milliseconds
Minimum Value:	-869.5	at	46.1	Milliseconds
SAE Filter Class:	1000			
Date of Test:	9/4/97			
Curve Number:	FIL-009			

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering

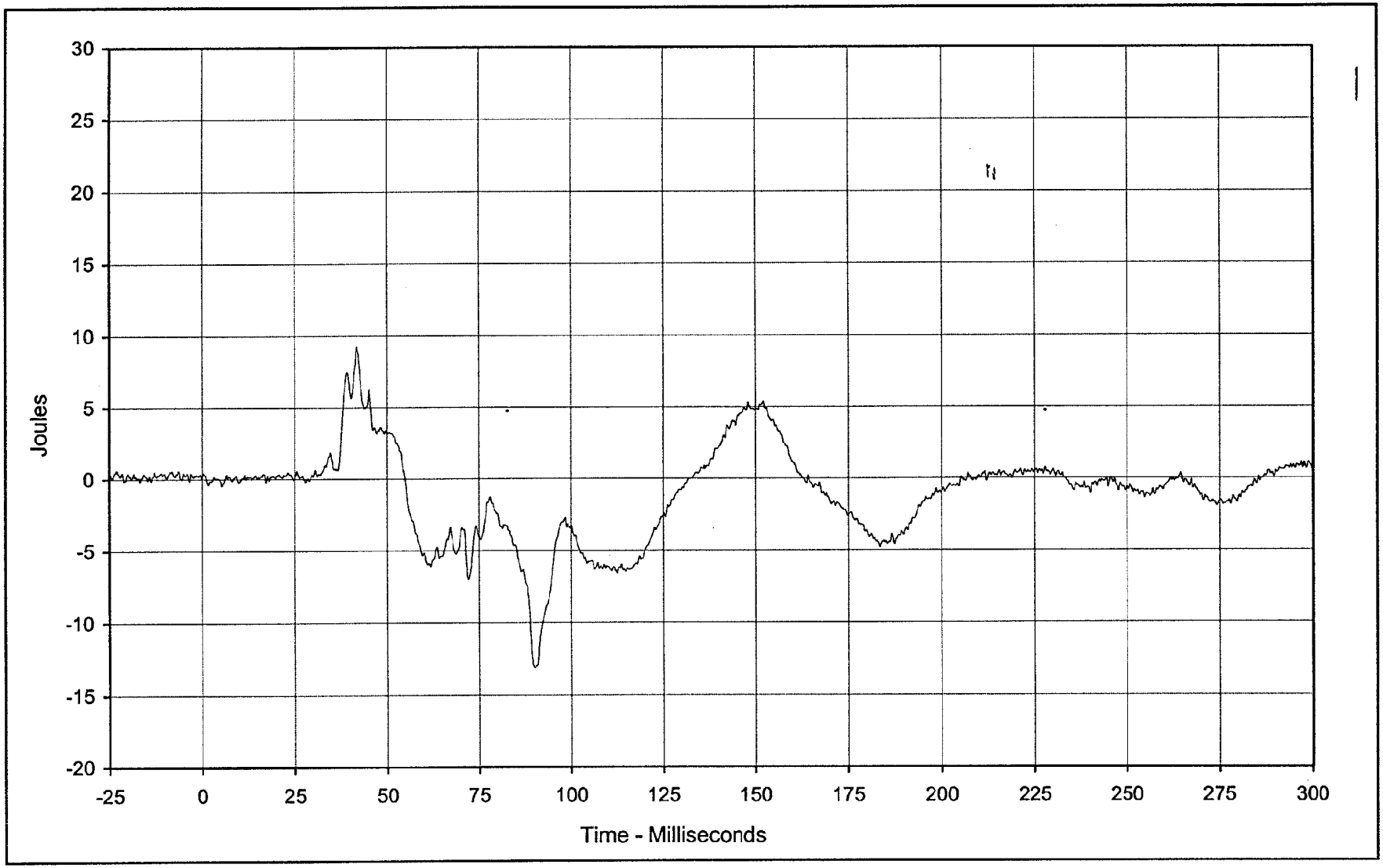


Curve Description:	Passenger Neck Force Resultant			
Maximum Value:	1530.2	at	45.4	Milliseconds
Minimum Value:	4.3	at	6.0	Milliseconds
SAE Filter Class:	1000			
Date of Test:	9/4/97			

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO engineering

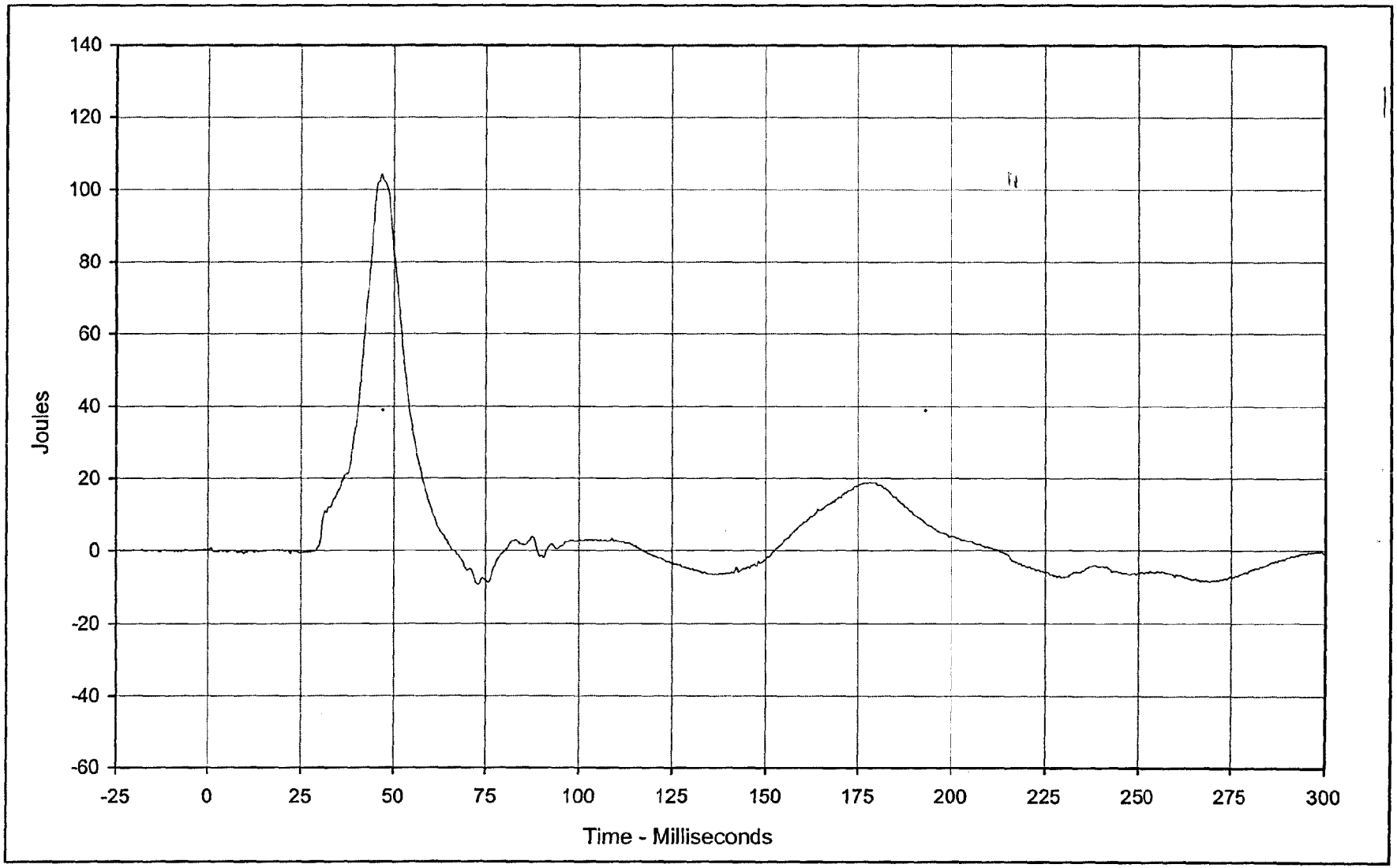


Curve Description:	Passenger Neck Moment X			
Maximum Value:	9.3	at	41.6	Milliseconds
Minimum Value:	-13.1	at	89.8	Milliseconds
SAE Filter Class:	600			
Date of Test:	9/4/97			
Curve Number:	FIL-010			

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Neck Moment Y

Maximum Value: 104.2 at 46.7 Milliseconds

Minimum Value: -9.4 at 72.8 Milliseconds

SAE Filter Class: 600

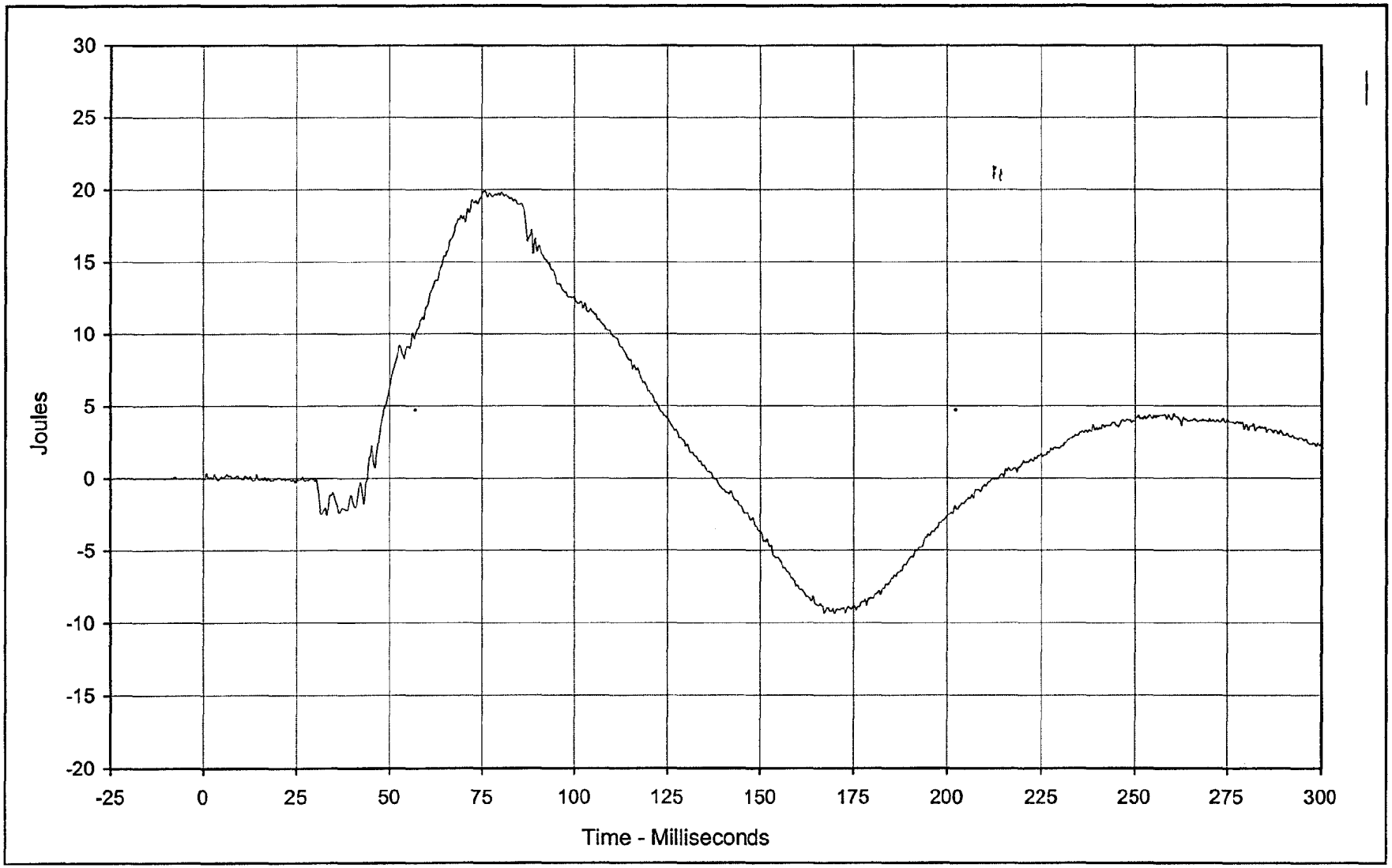
Date of Test: 9/4/97

Curve Number: FIL-011

Testing Program 1997 48.4 km/h Frontal Impact (Female)

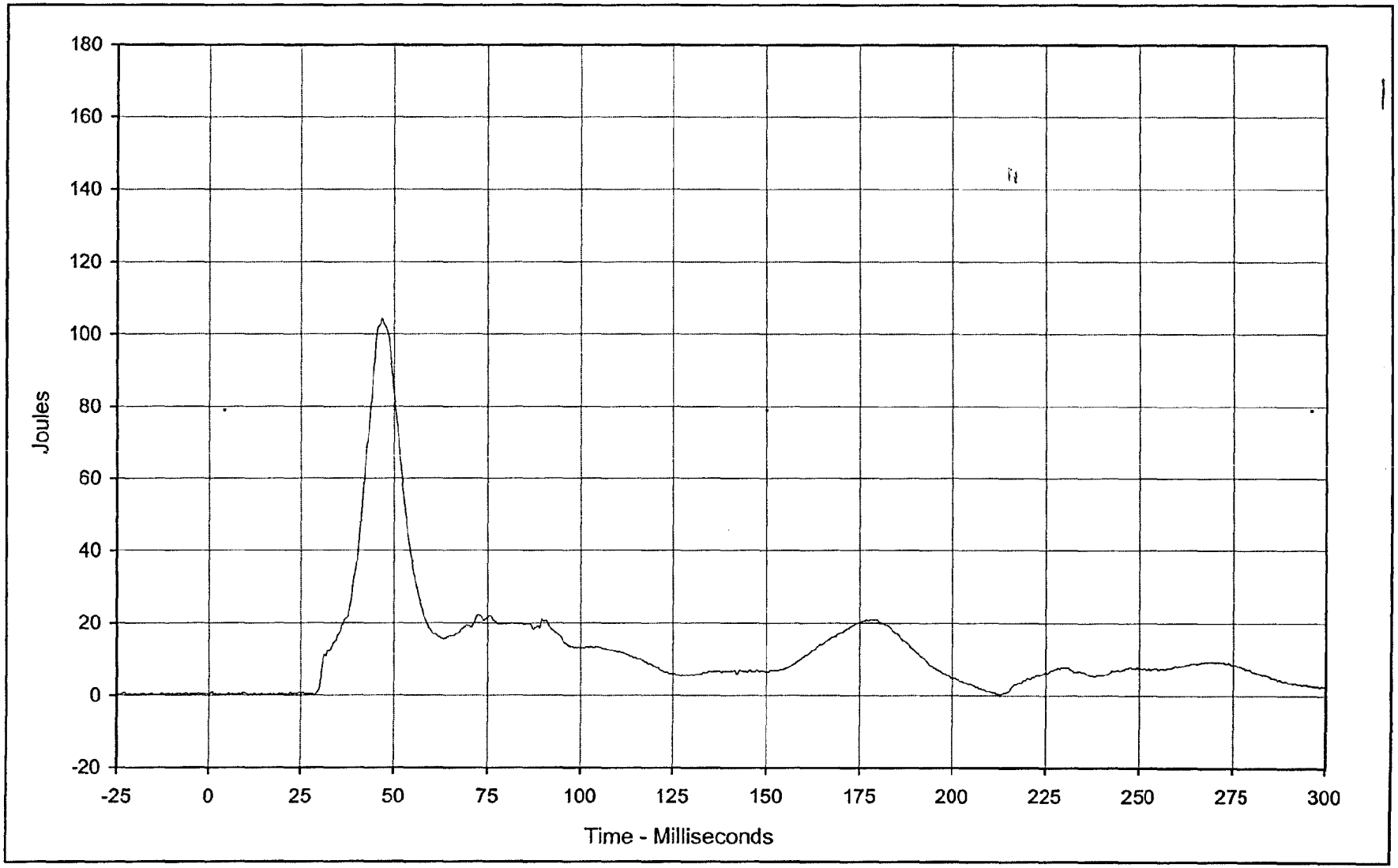
Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description:	Passenger Neck Moment Z			Testing Program	1997 48.4 km/h Frontal Impact (Female)
Maximum Value:	19.9	at	75.8 Milliseconds	Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan
Minimum Value:	-9.3	at	169.9 Milliseconds		
SAE Filter Class:	600				
Date of Test:	9/4/97				
Curve Number:	FIL-012				

KARC Engineering



Curve Description: Passenger Neck Moment Resultant

Maximum Value: 104.3 at 46.7 Milliseconds

Minimum Value: 0.0 at 28.6 Milliseconds

SAE Filter Class: 600

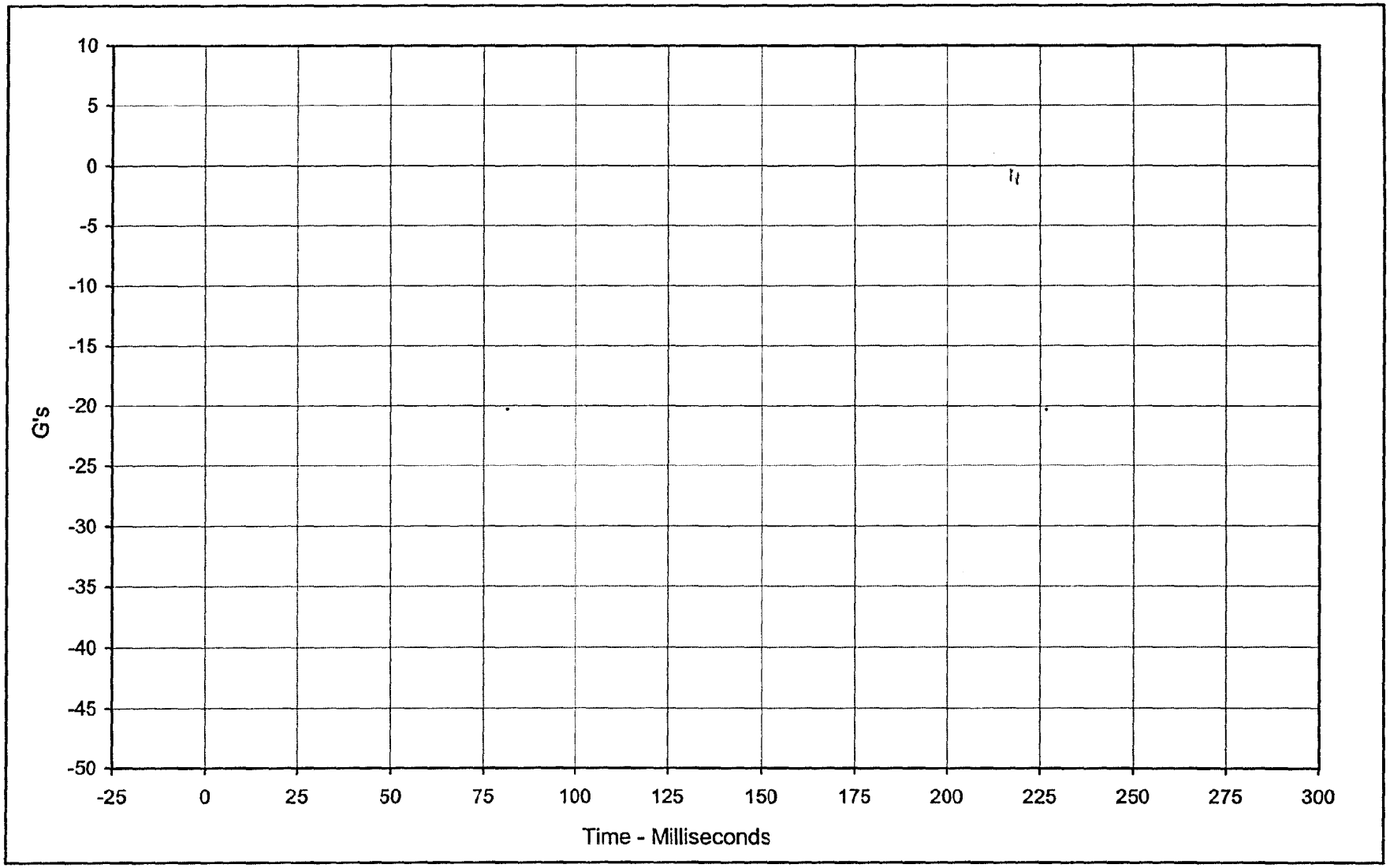
Date of Test: 9/4/97

Curve Number: RES-054

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Chest Primary X *

Maximum Value: 0.0 at 0.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 9/4/97

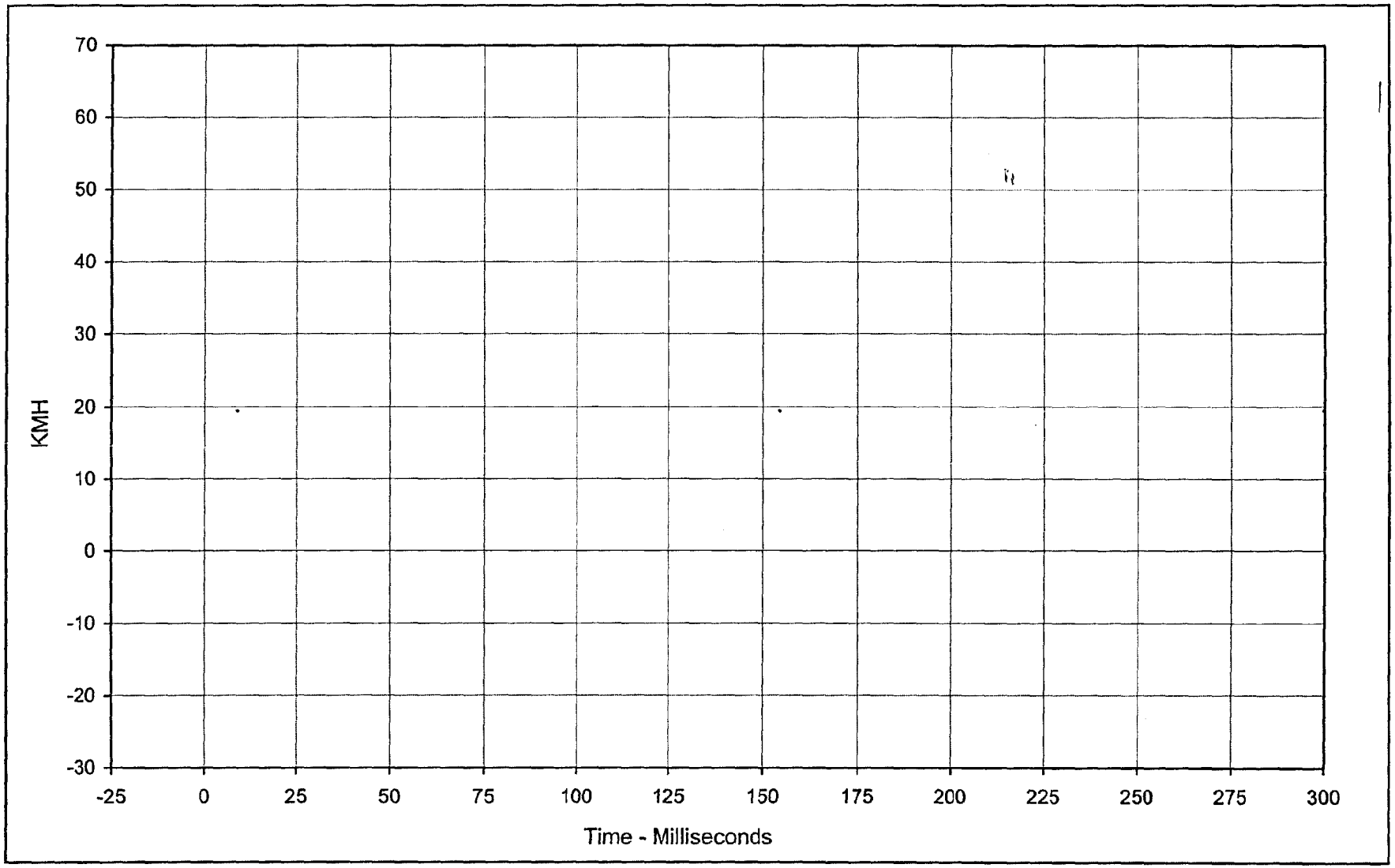
Curve Number: F11-057

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

* Channel Failed, No Data

KARCO Engineering



Curve Description: Passenger Chest Primary X Velocity *

Maximum Value: 0.0 at 0.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 9/4/97

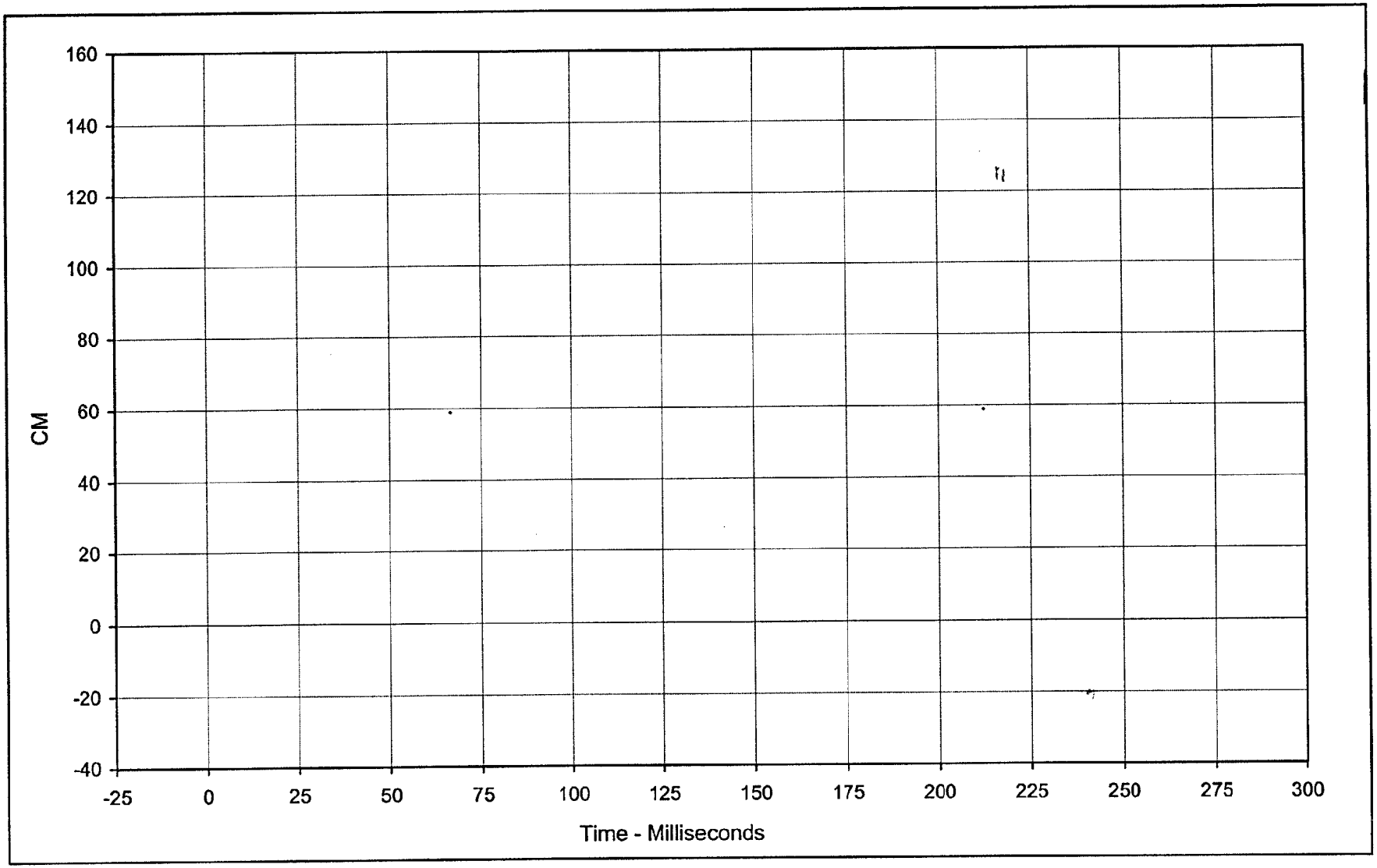
Curve Number: IN1-057

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

* Channel Failed, No Data

KARCO Engineering



Curve Description: Passenger Chest Primary X Displ. *

Maximum Value: 0.0 at 0.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 9/4/97

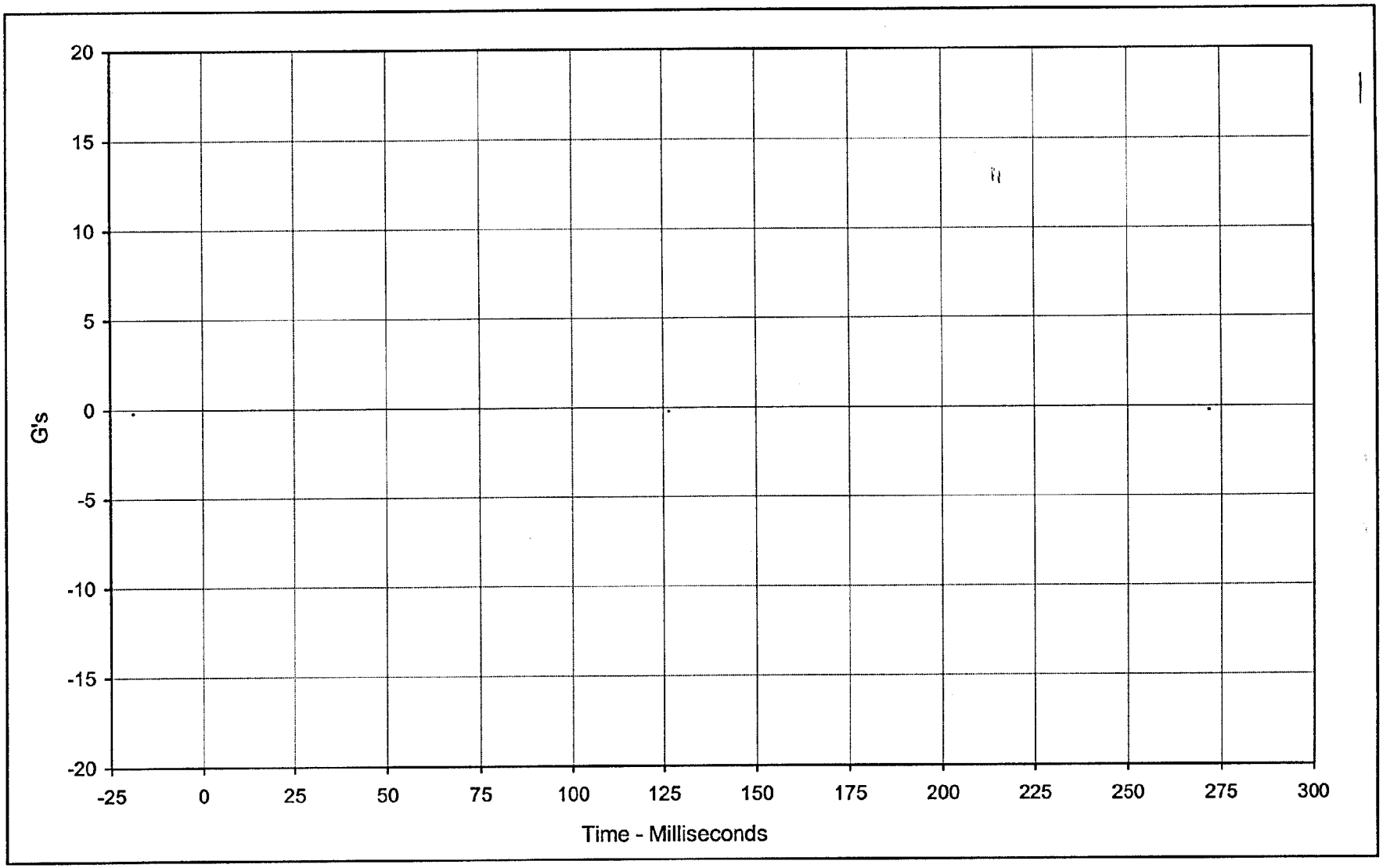
Curve Number: IN2-057

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

* Channel Failed, No Data

KARCO Engineering



Curve Description: Passenger ChestPrimary Y *

Maximum Value: 0.0 at 0.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 9/4/97

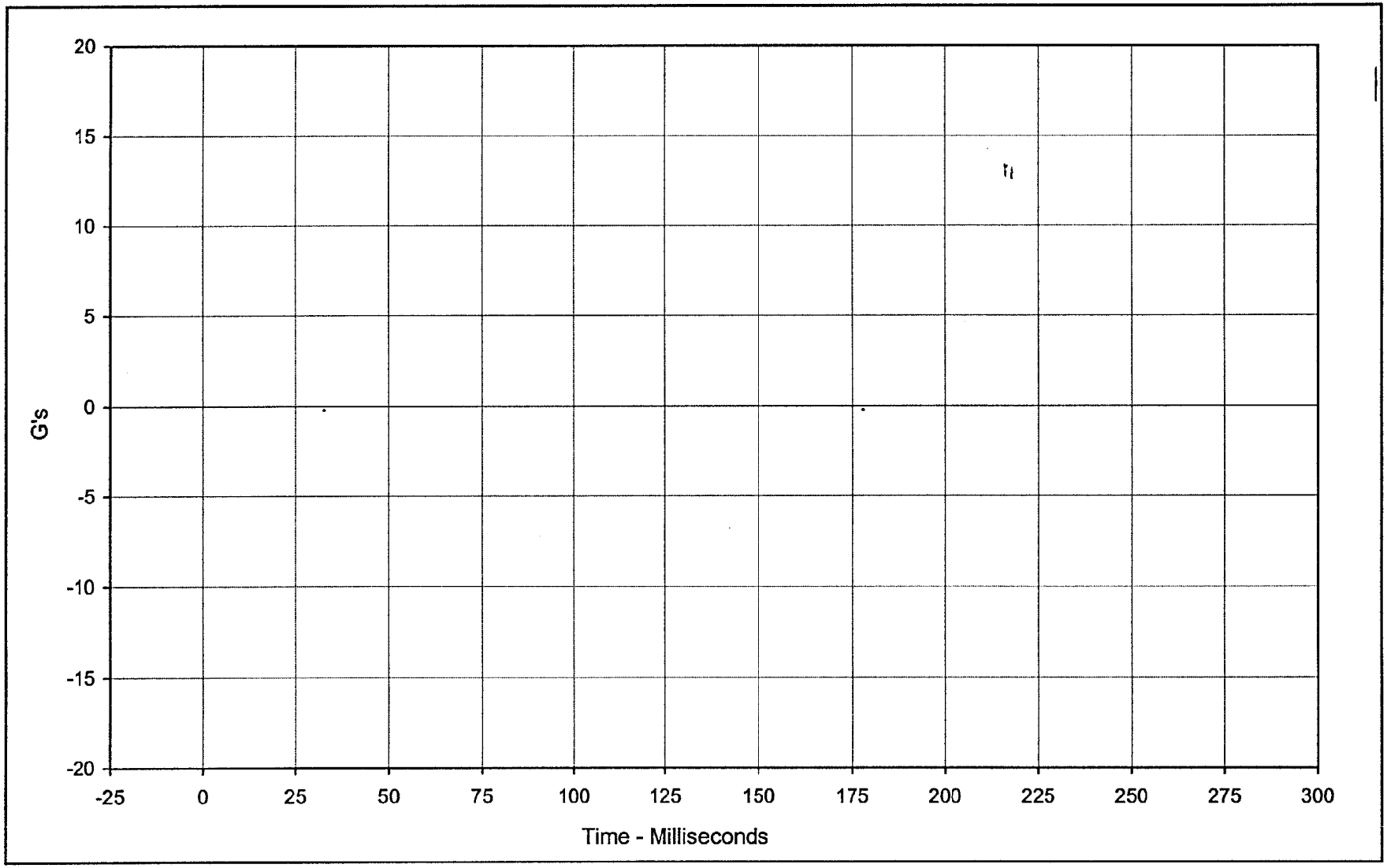
Curve Number: FIL-058

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

* Channel Failed, No Data

KARCO Engineering



Curve Description: Passenger Chest Primary Z *

Maximum Value: 0.0 at 0.0 Milliseconds

Minimum Value: 0.0 at 0 Milliseconds

SAE Filter Class: 180

Date of Test: 9/4/97

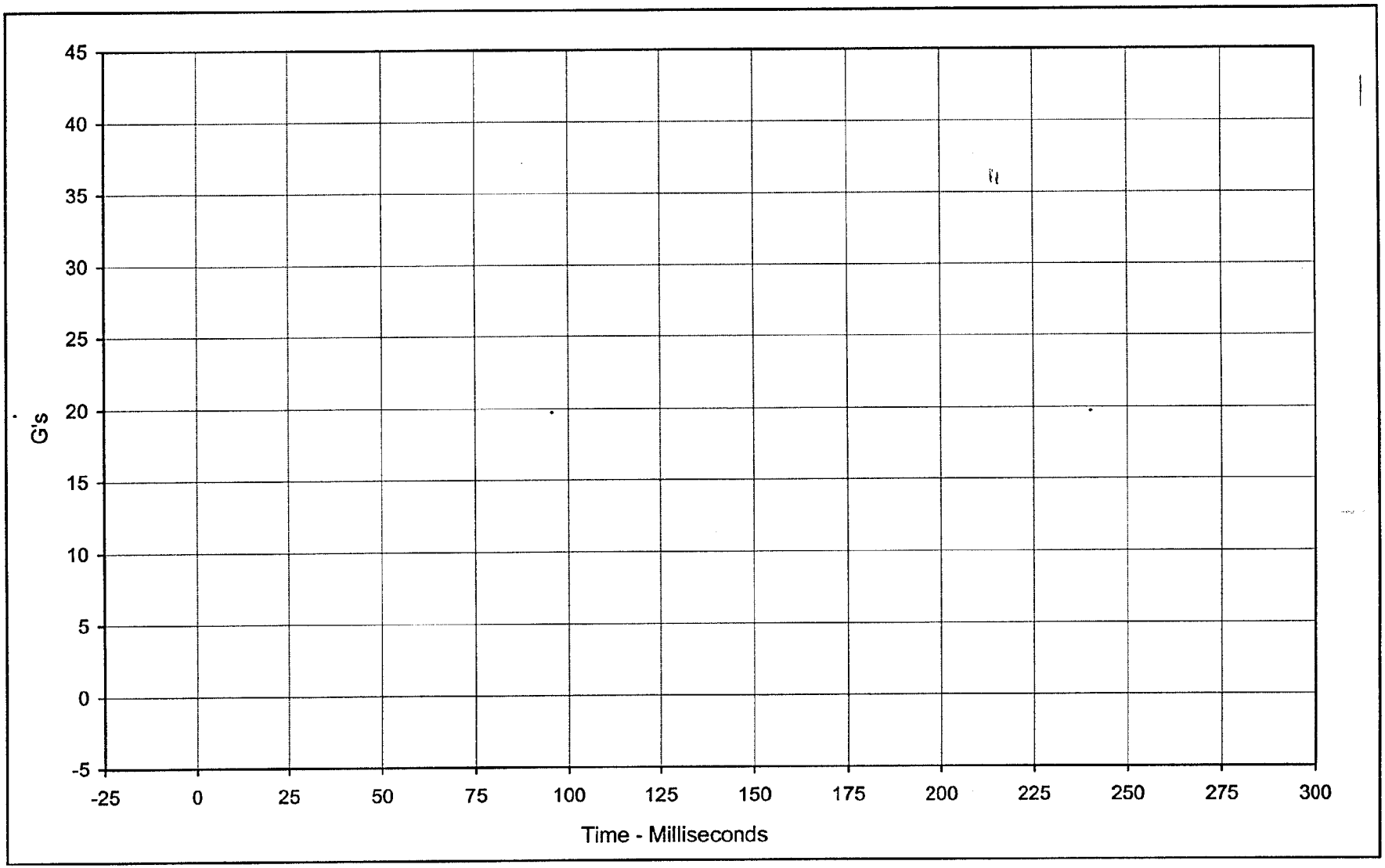
Curve Number: FIL-059

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

* Channel Failed, No Data

KARCO Engineering



Curve Description: Passenger Chest Resultant Primary *

Maximum Value: 0.0 at 0.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 9/4/97

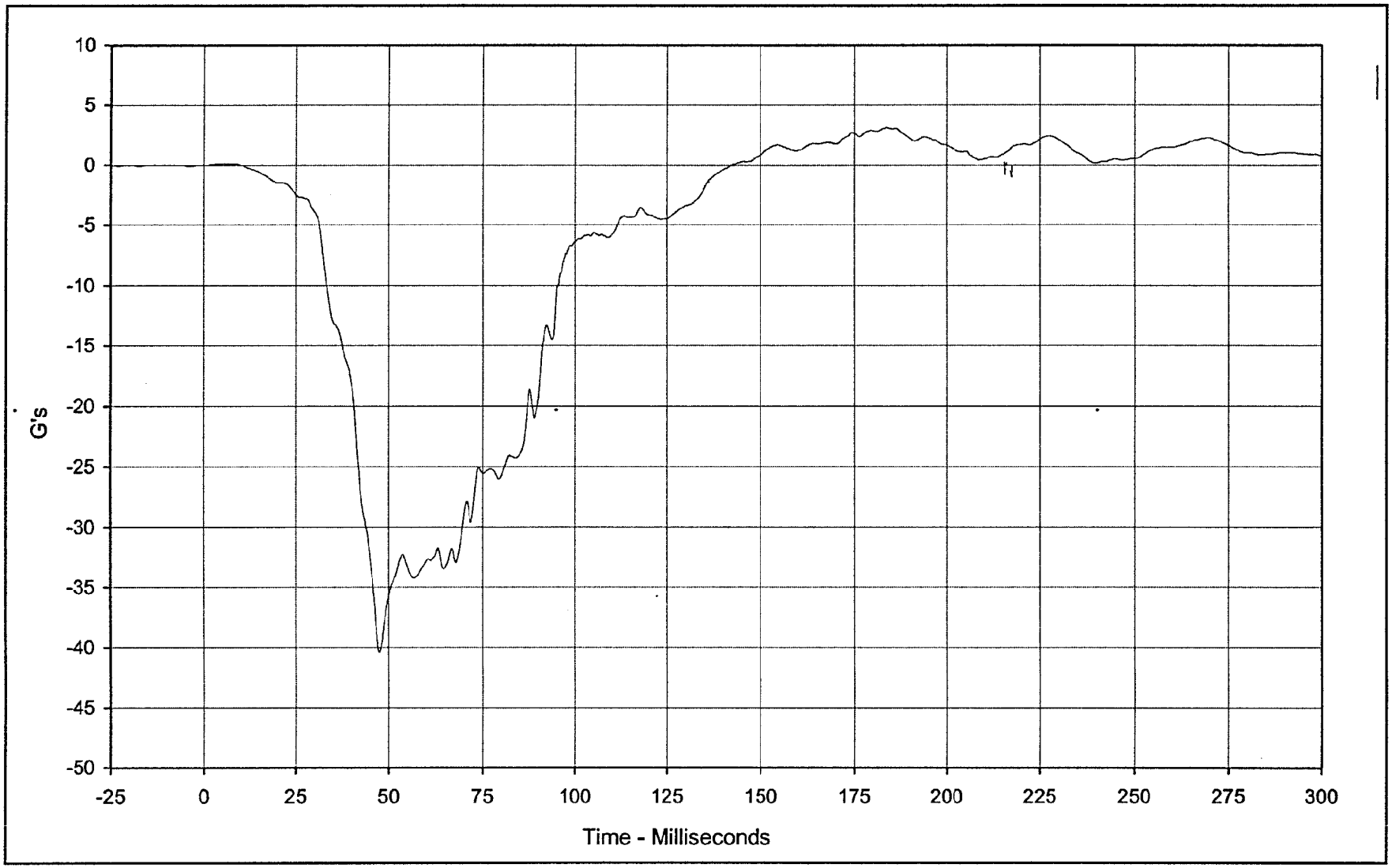
Curve Number: RES-057

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

* Channel Failed, No Data

KARCO Engineering



Curve Description: Passenger Chest Redundant X

Maximum Value: 3.1 at 183.8 Milliseconds

Minimum Value: -40.4 at 47.5 Milliseconds

SAE Filter Class: 180

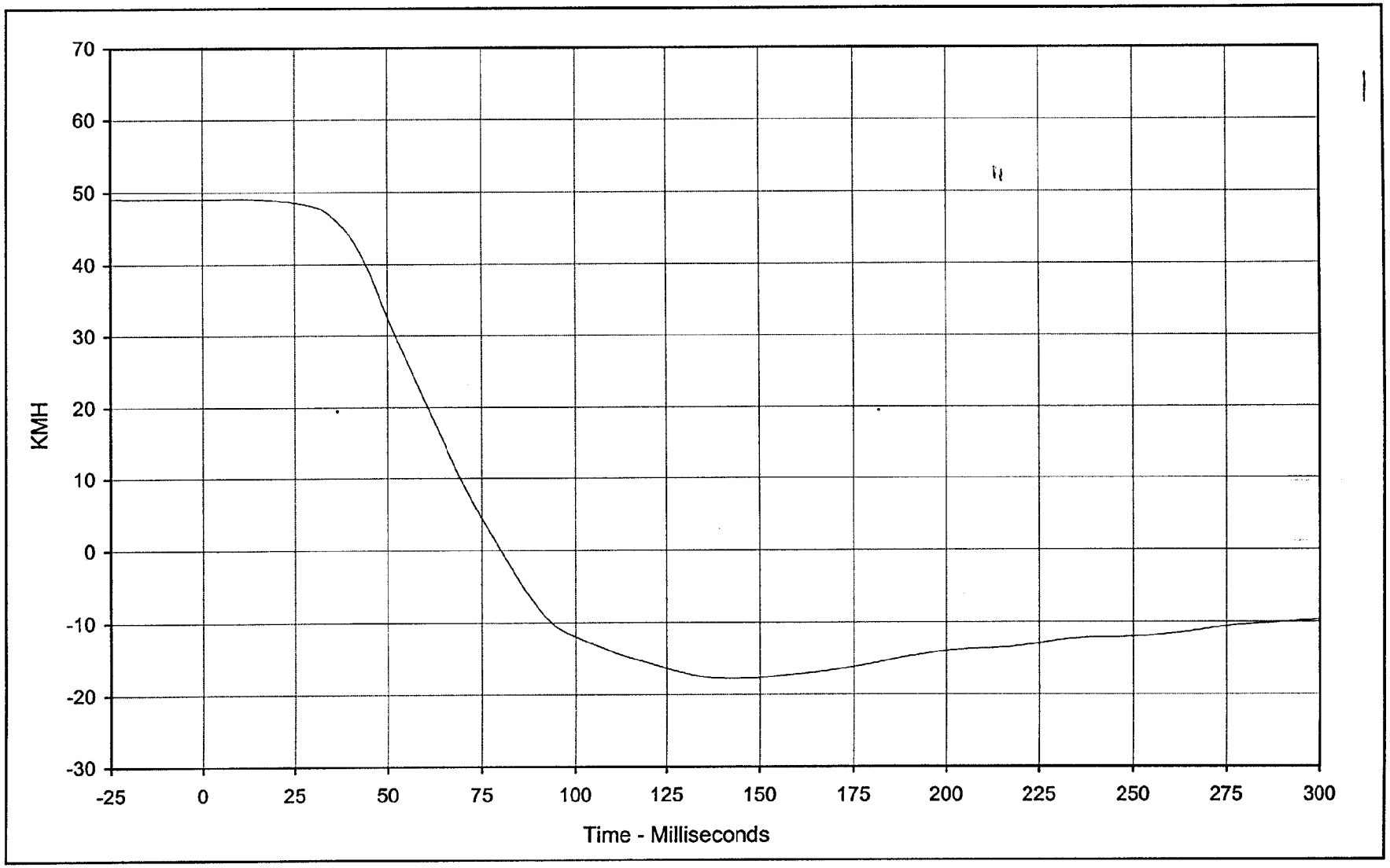
Date of Test: 9/4/97

Curve Number: FIL-060

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Chest Redundant X Velocity

Maximum Value: 49.1 at 9.9 Milliseconds

Minimum Value: -17.8 at 142.2 Milliseconds

SAE Filter Class: 180

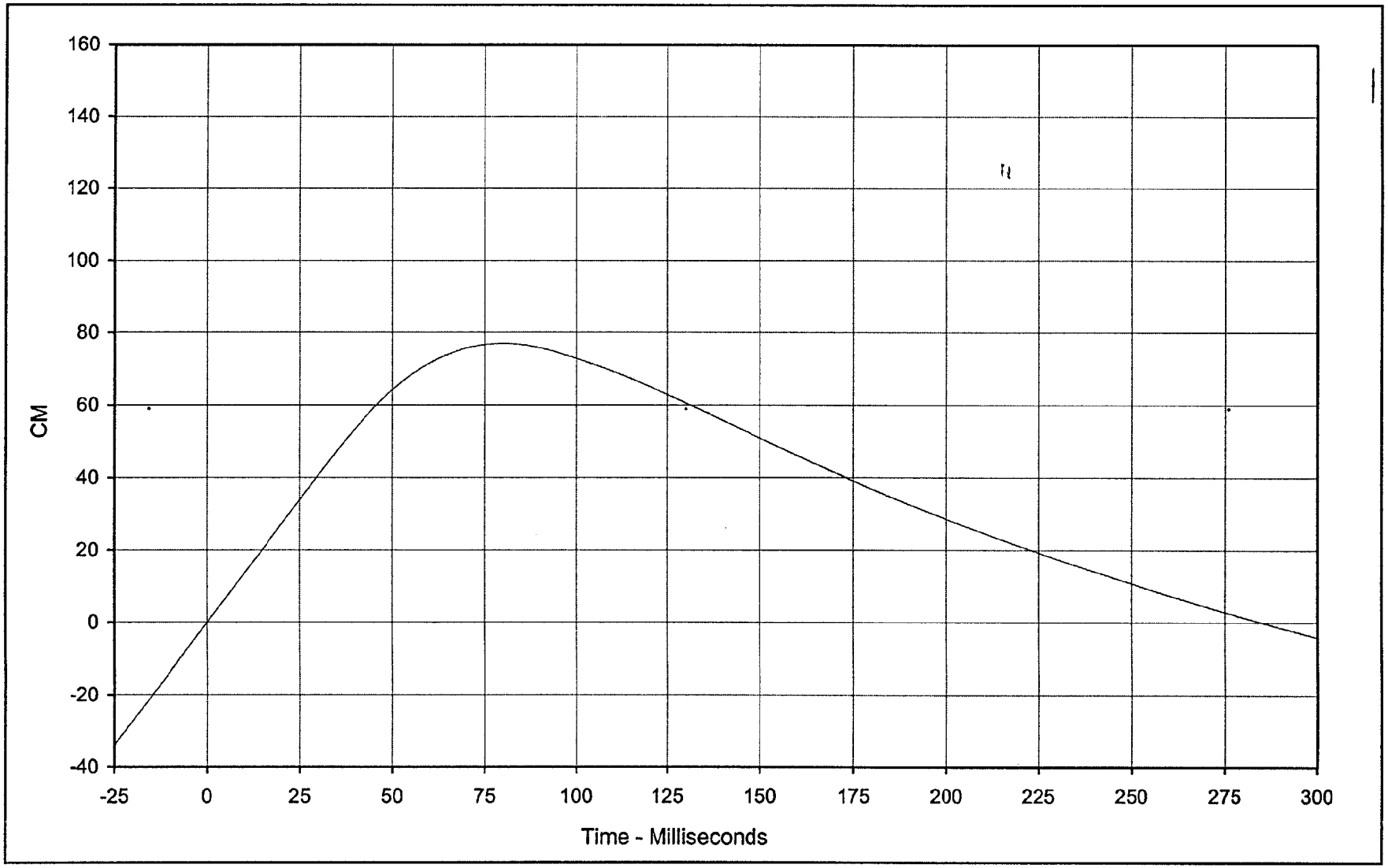
Date of Test: 9/4/97

Curve Number: IN1-060

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Chest Redundant X Displ.

Maximum Value: 76.9 at 79.9 Milliseconds

Minimum Value: -4.0 at 299.9 Milliseconds

SAE Filter Class: 180

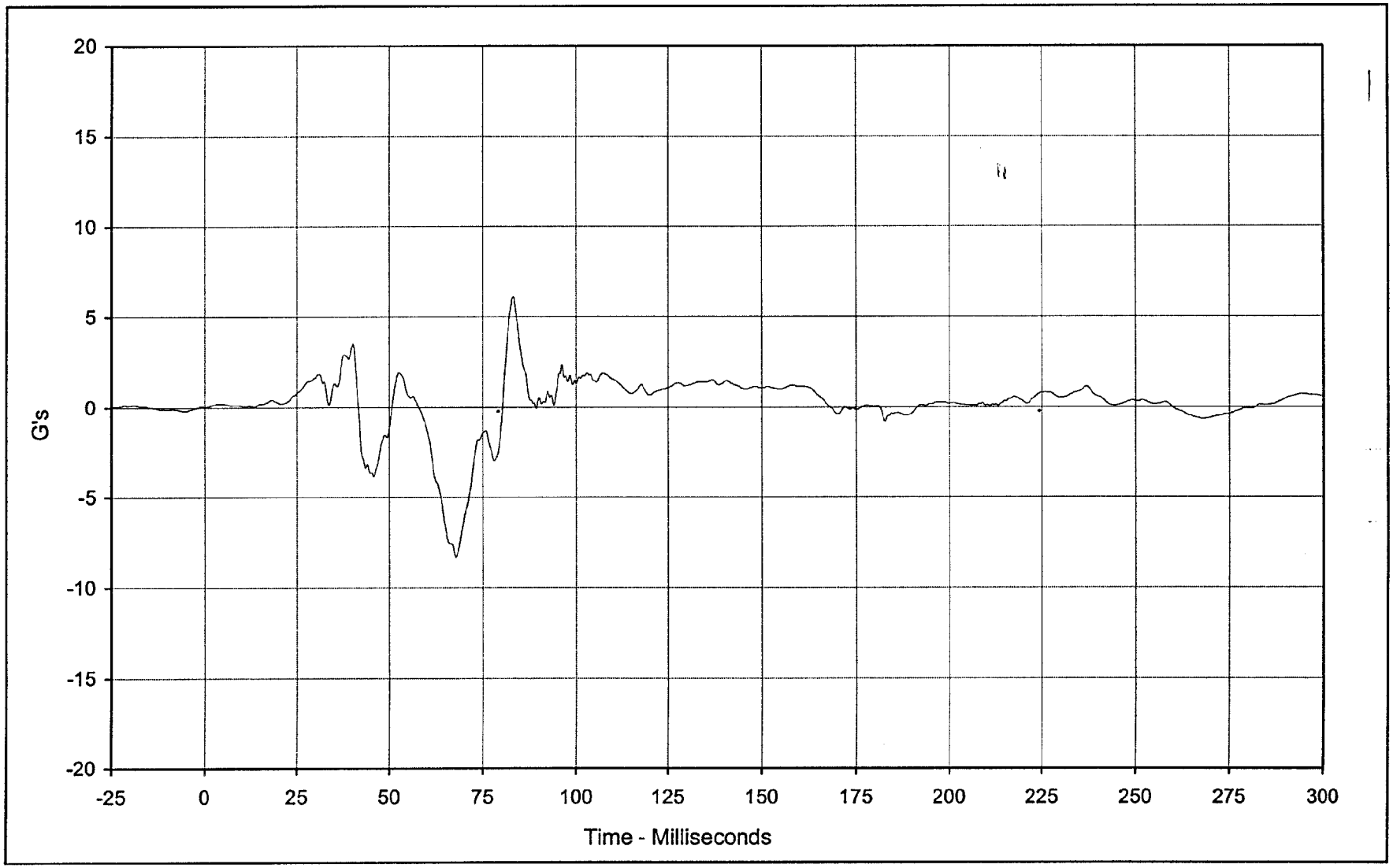
Date of Test: 9/4/97

Curve Number: IN2-060

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

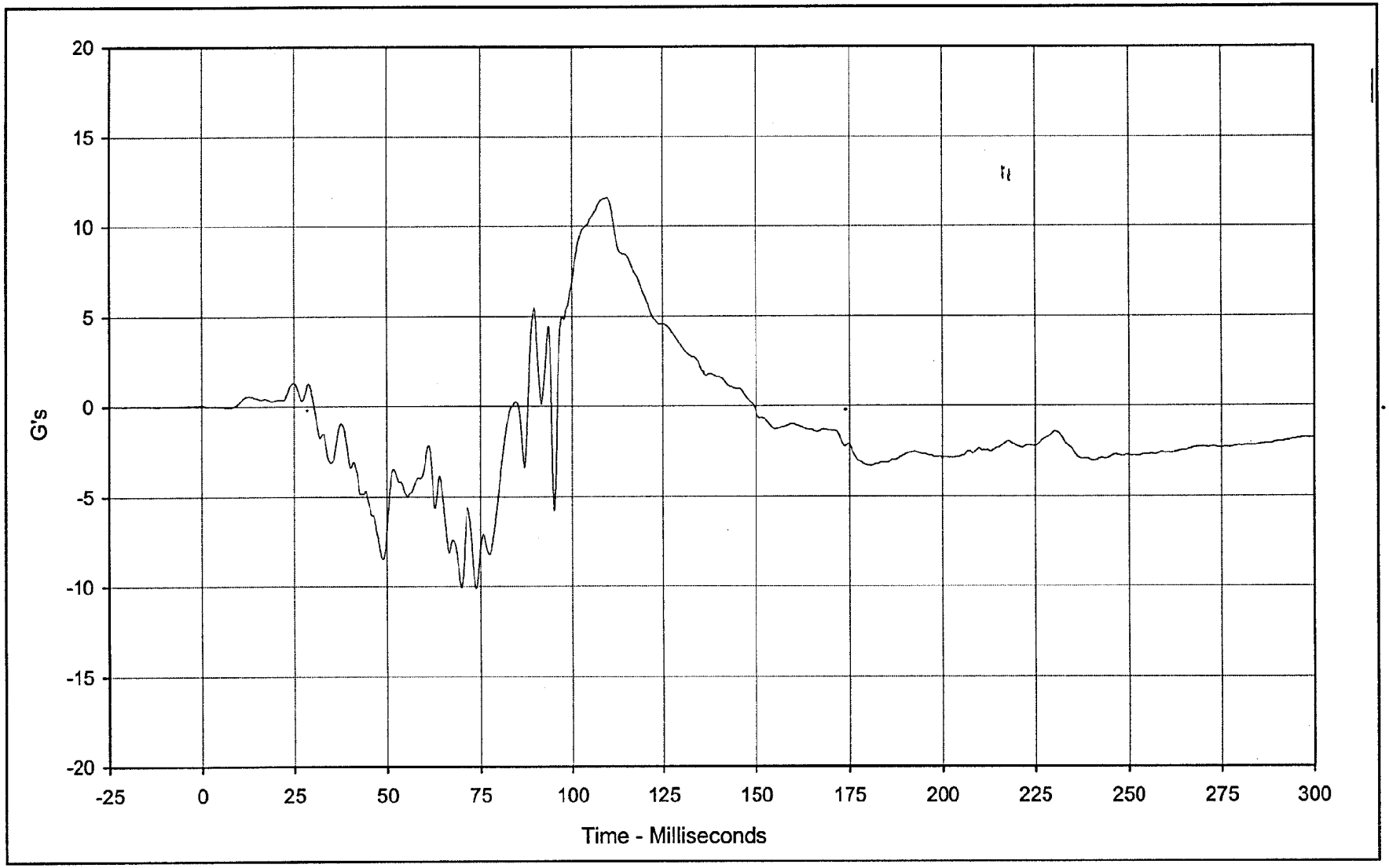
KARCO Engineering



Curve Description:	Passenger Chest Redundant Y			
Maximum Value:	6.2	at	83.0	Milliseconds
Minimum Value:	-8.3	at	67.8	Milliseconds
SAE Filter Class:	180			
Date of Test:	9/4/97			
Curve Number:	FIL-061			

Testing Program	1997 48.4 km/h Frontal Impact (Female)
Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Chest Redundant Z

Maximum Value: 11.6 at 109.5 Milliseconds

Minimum Value: -10.1 at 73.9 Milliseconds

SAE Filter Class: 180

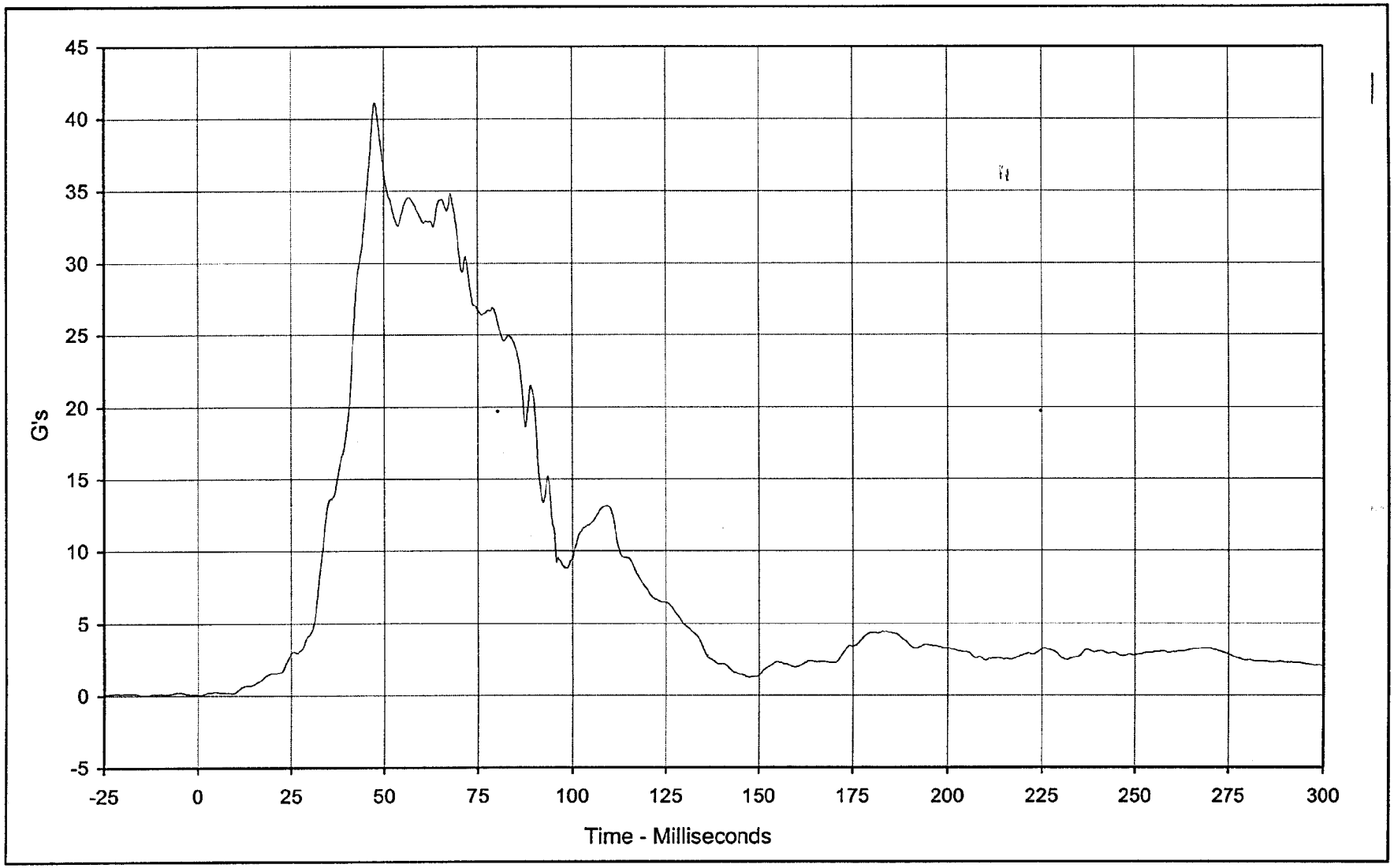
Date of Test: 9/4/97

Curve Number: FIL-062

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Chest Resultant Redundant

Maximum Value: 41.1 at 47.5 Milliseconds

Minimum Value: 0.1 at 0.8 Milliseconds

SAE Filter Class: 180

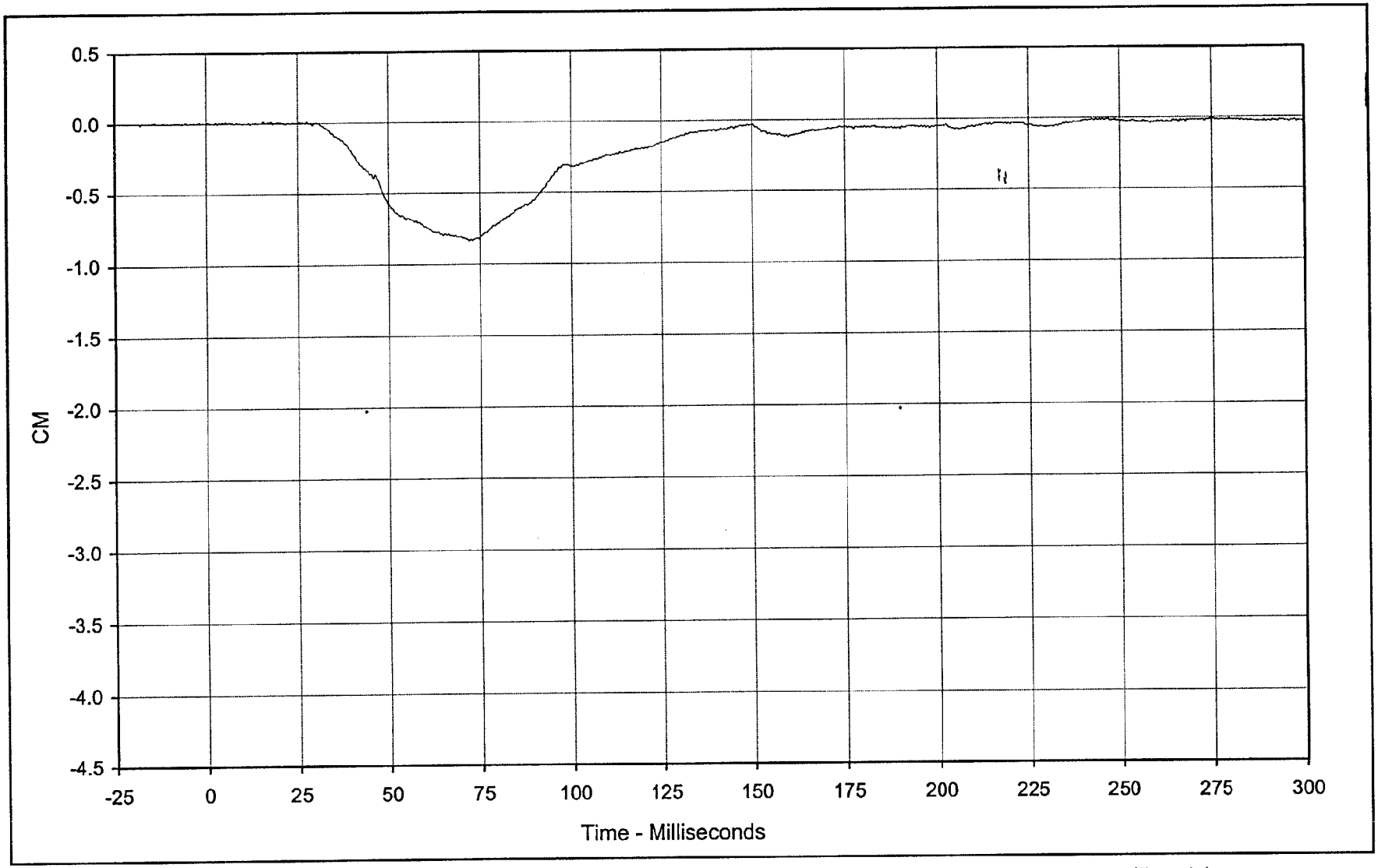
Date of Test: 9/4/97

Curve Number: RES-060

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Chest Displacement X

Maximum Value: 0.01 at 15.5 Milliseconds

Minimum Value: -0.84 at 72.1 Milliseconds

SAE Filter Class: 600

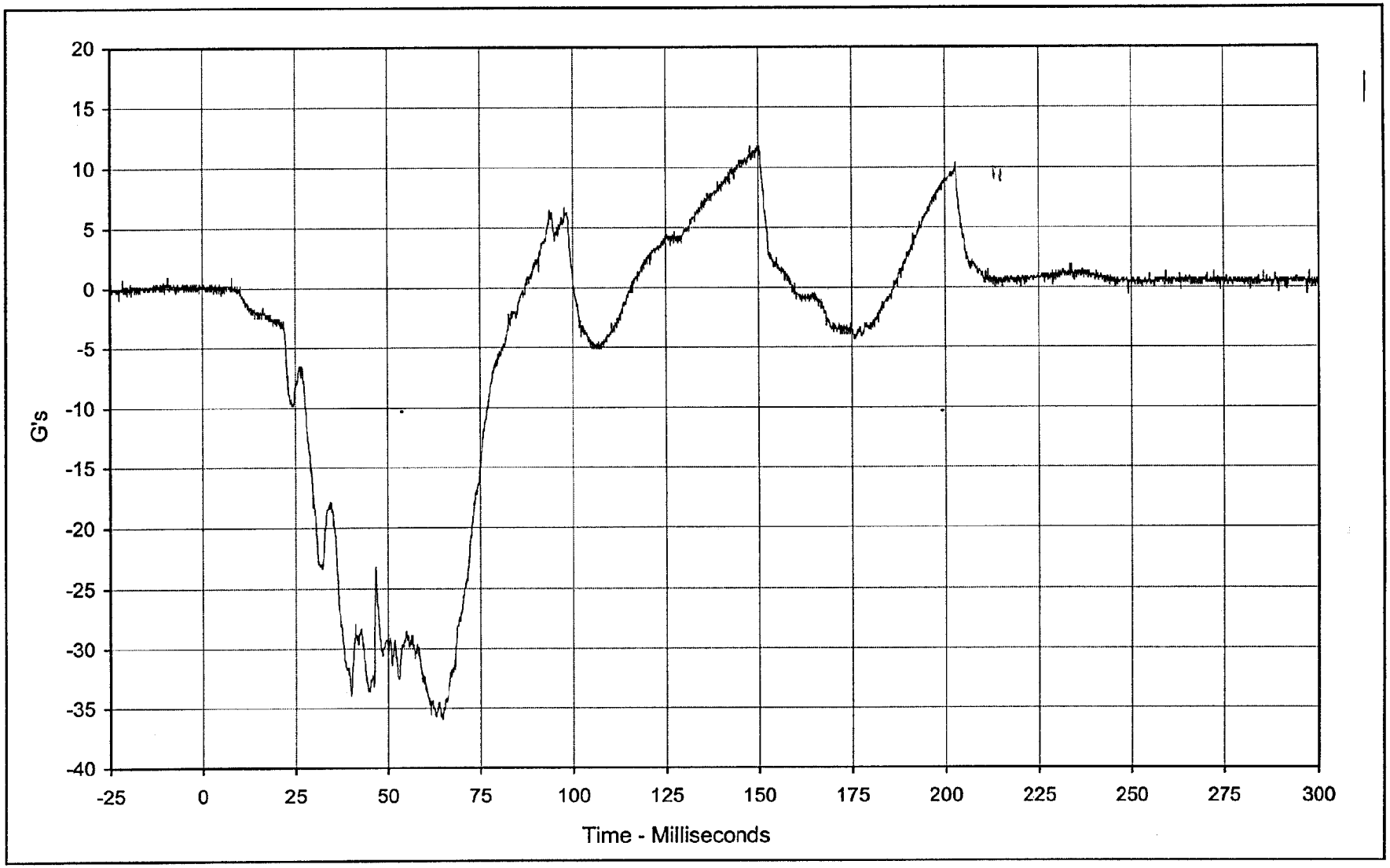
Date of Test: 9/4/97

Curve Number: FIL-063

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering

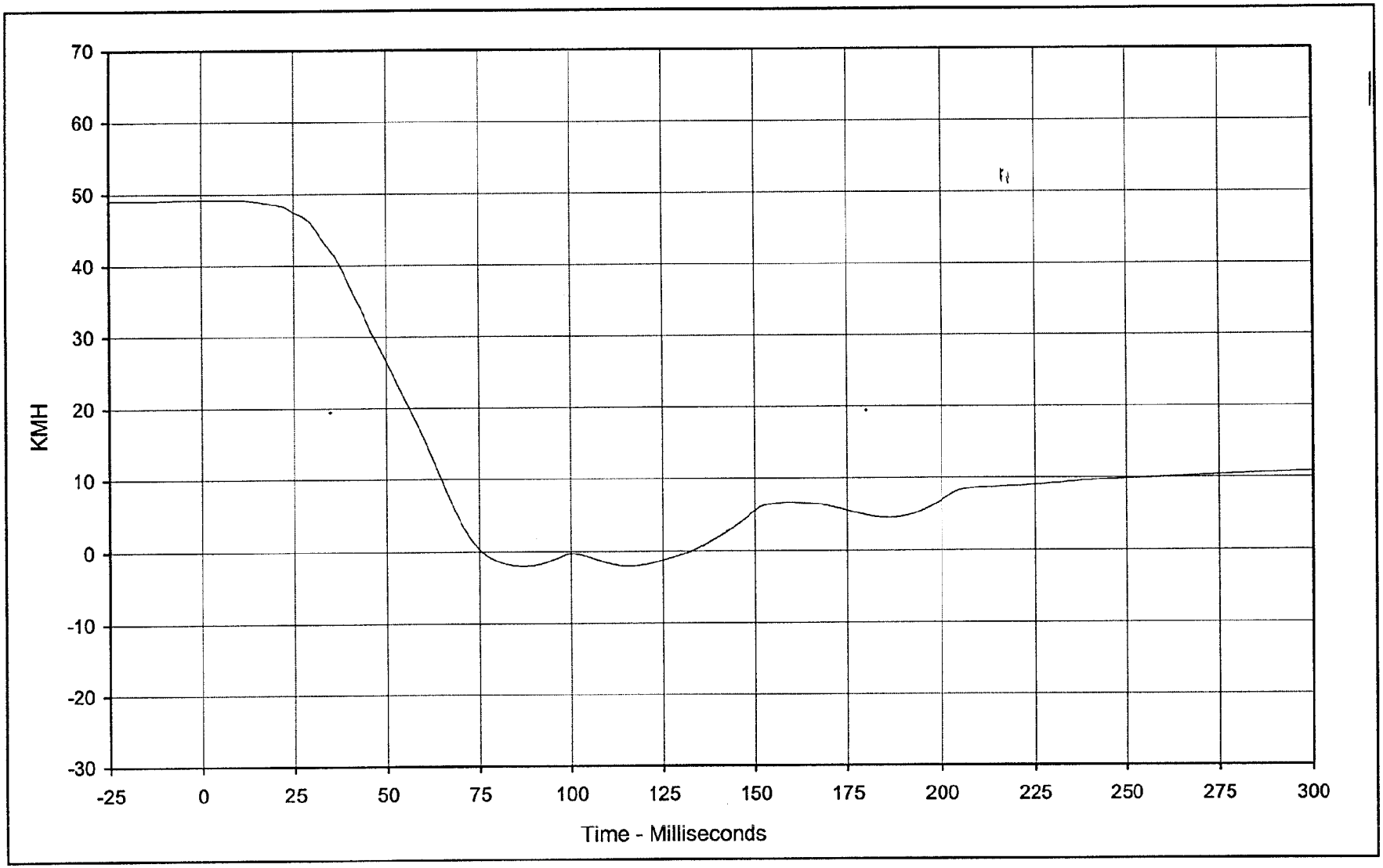


Curve Description:	Passenger Pelvis X			
Maximum Value:	11.8	at	147.8	Milliseconds
Minimum Value:	-35.9	at	64.6	Milliseconds
SAE Filter Class:	1000			
Date of Test:	9/4/97			
Curve Number:	FIL-064			

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Pelvis X Velocity

Maximum Value: 49.2 at 8.8 Milliseconds

Minimum Value: -2.0 at 115.5 Milliseconds

SAE Filter Class: 180

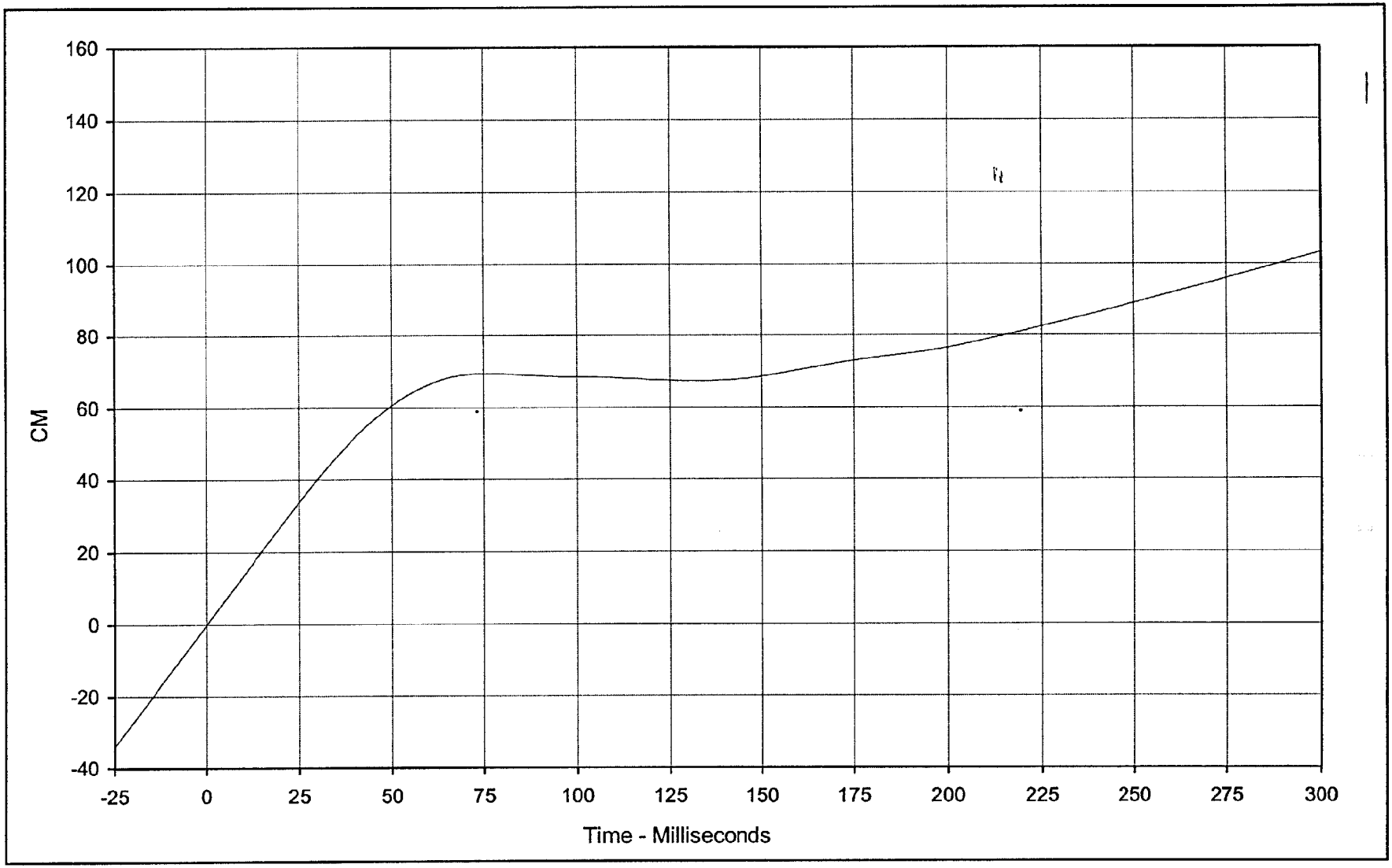
Date of Test: 9/4/97

Curve Number: IN1-064

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Pelvis X Displ.

Maximum Value: 103.2 at 299.9 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

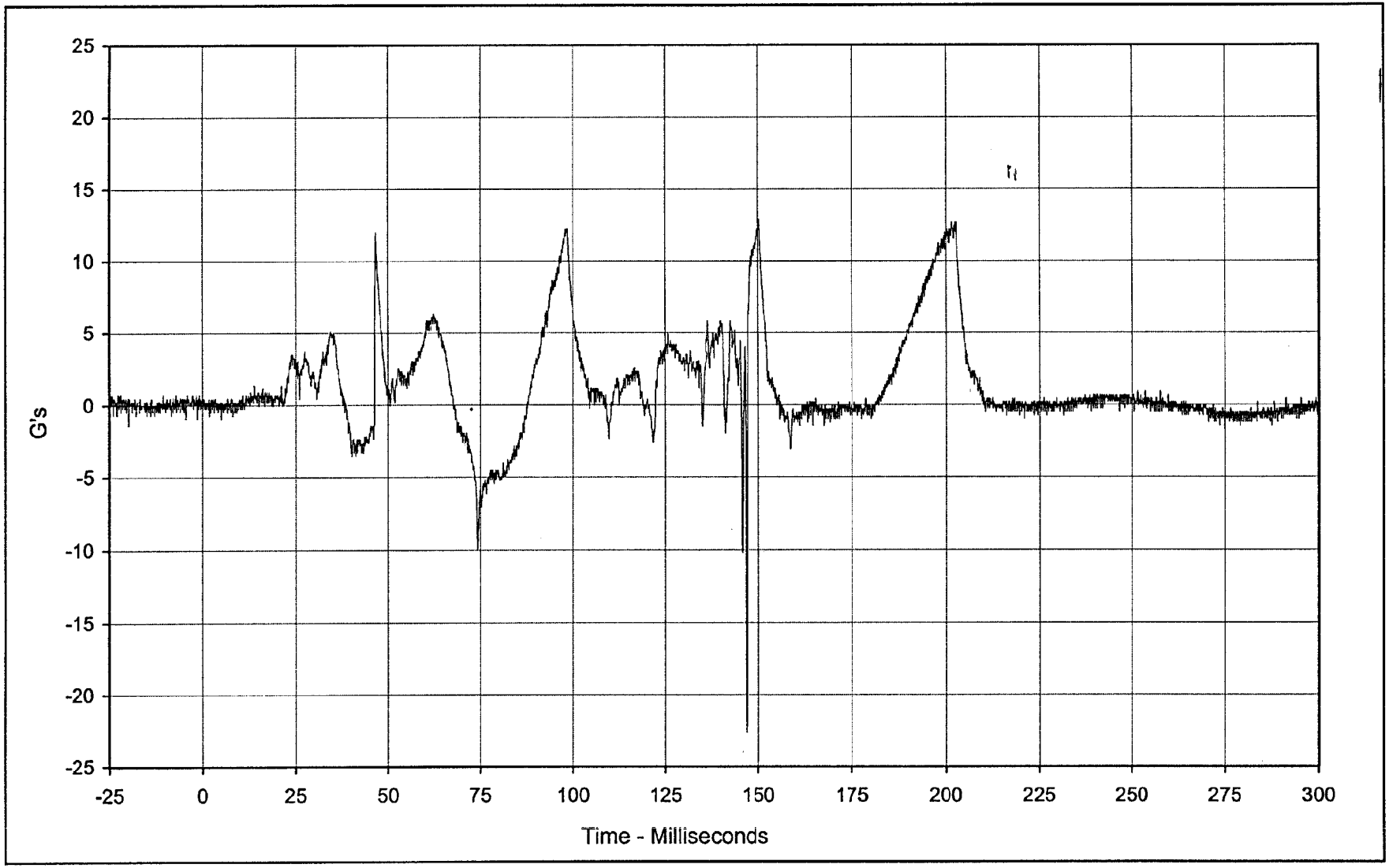
Date of Test: 9/4/97

Curve Number: IN2-064

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

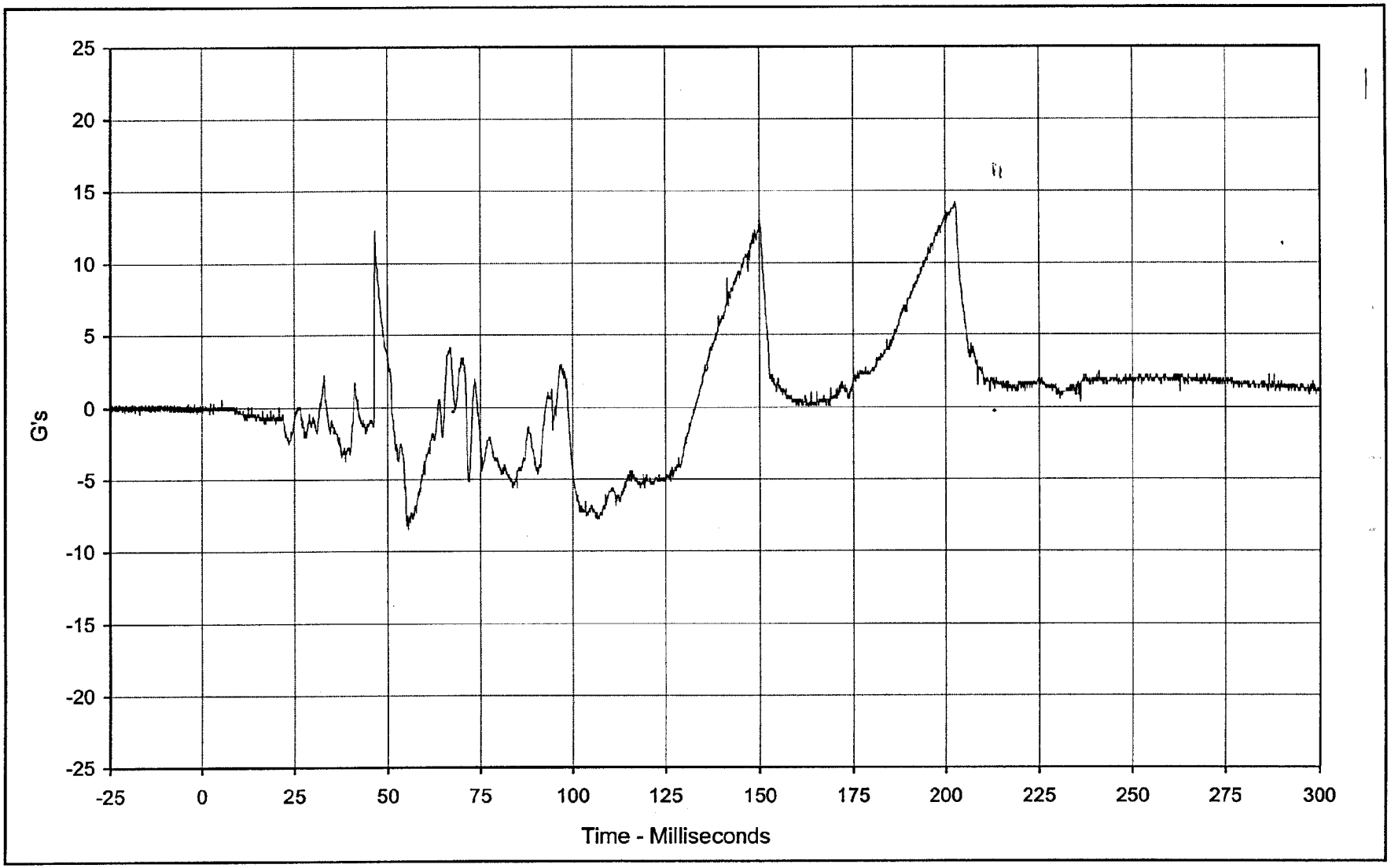
KARCO Engineering



Curve Description:	Passenger Pelvis Y			
Maximum Value:	12.9	at	150.3	Milliseconds
Minimum Value:	-22.6	at	146.8	Milliseconds
SAE Filter Class:	1000			
Date of Test:	9/4/97			
Curve Number:	FIL-065			

Testing Program	1997 48.4 km/h Frontal Impact (Female)
Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan

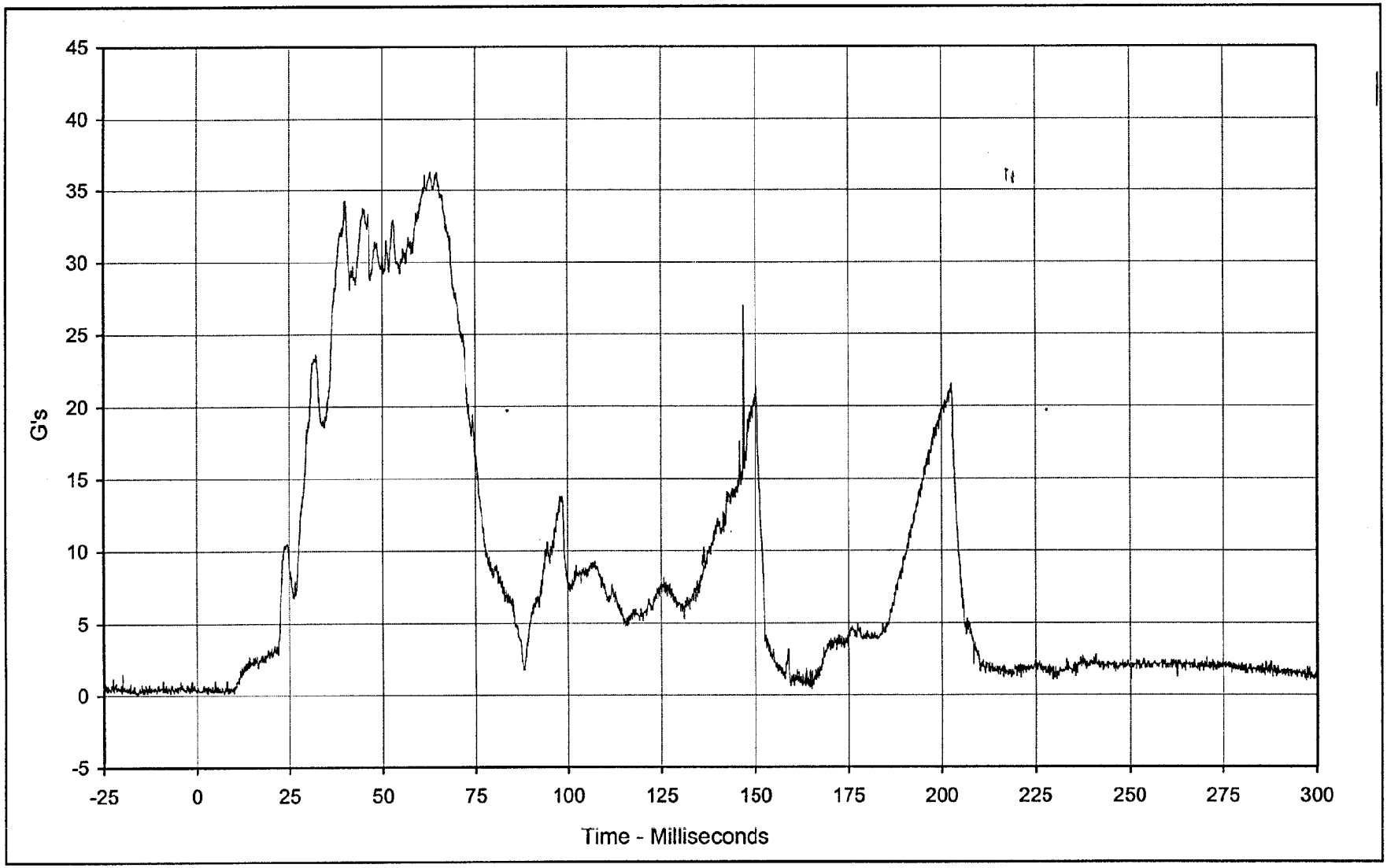
KARCO Engineering



Curve Description:	Passenger Pelvis Z			
Maximum Value:	14.2	at	202.6	Milliseconds
Minimum Value:	-8.5	at	55.5	Milliseconds
SAE Filter Class:	1000			
Date of Test:	9/4/97			
Curve Number:	FIL-066			

Testing Program	1997 48.4 km/h Frontal Impact (Female)
Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Pelvis Resultant

Maximum Value: 36.3 at 62.8 Milliseconds

Minimum Value: 0.1 at 2.9 Milliseconds

SAE Filter Class: 1000

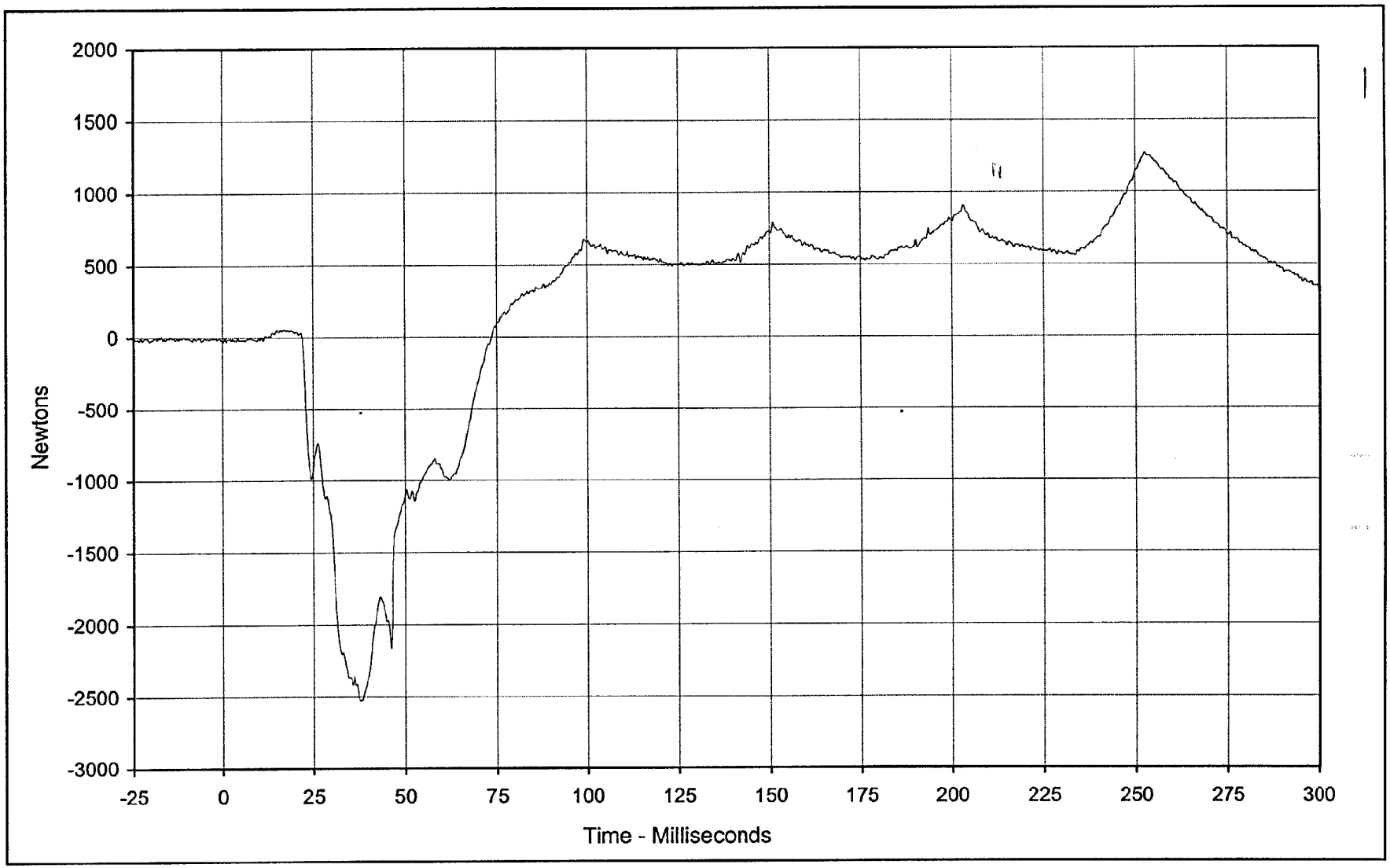
Date of Test: 9/4/97

Curve Number: RES-064

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Left Femur Force

Maximum Value: 1271.2 at 252.6 Milliseconds

Minimum Value: -2527.3 at 38.3 Milliseconds

SAE Filter Class: 600

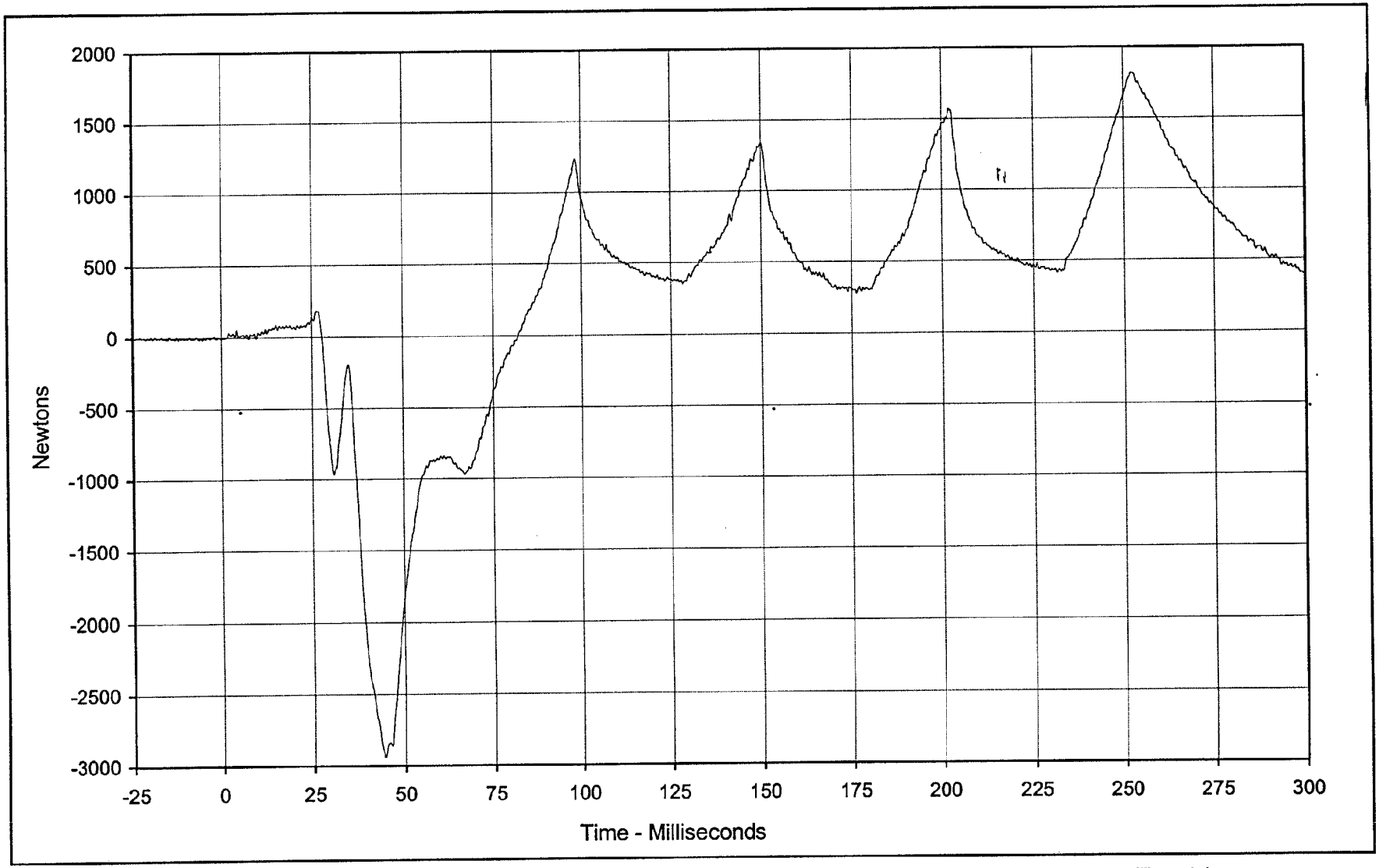
Date of Test: 9/4/97

Curve Number: FIL-067

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Right Femur Force

Maximum Value: 1816.0 at 252.2 Milliseconds

Minimum Value: -2943.7 at 44.4 Milliseconds

SAE Filter Class: 600

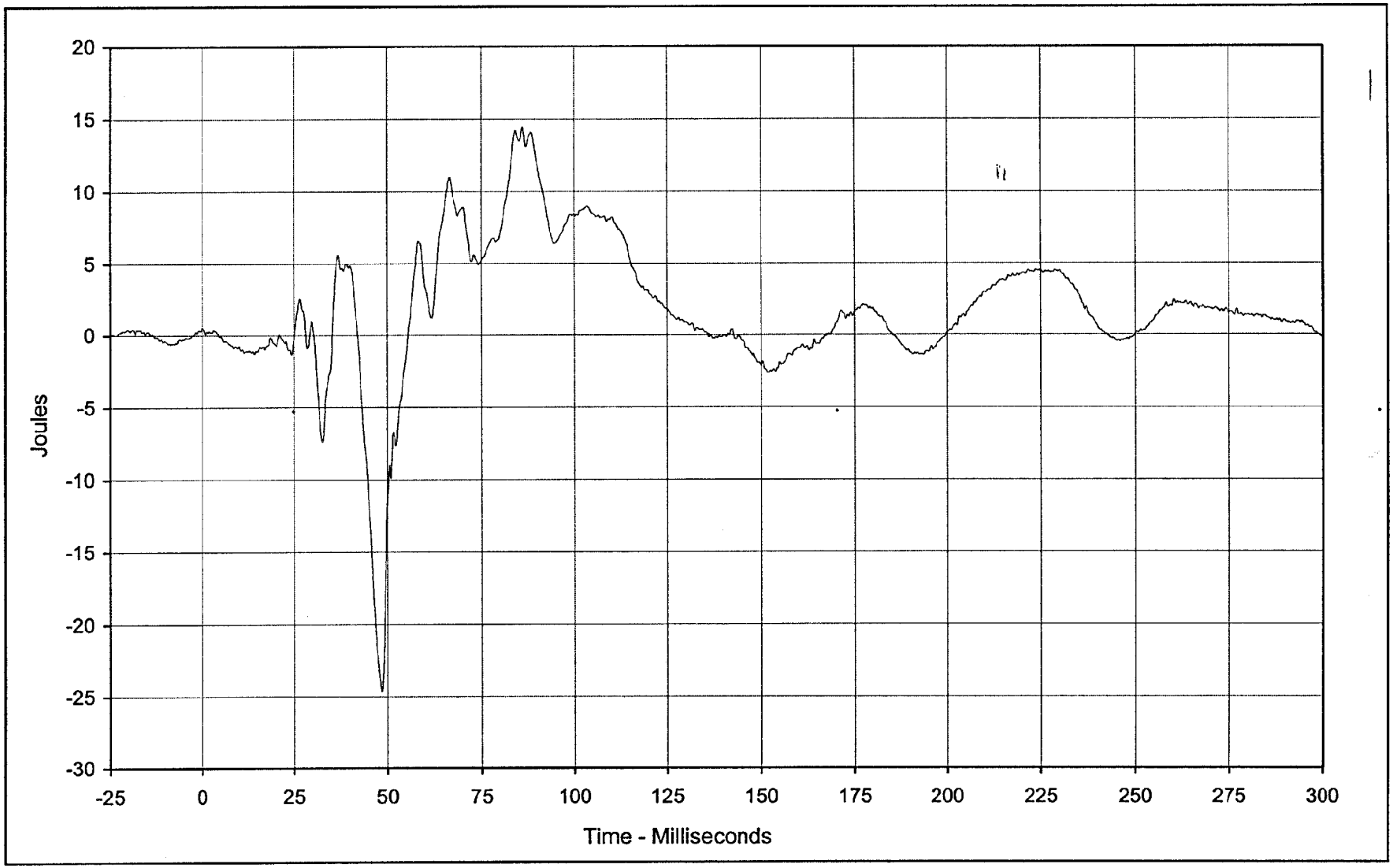
Date of Test: 9/4/97

Curve Number: FIL-068

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Left Upper Tibia Moment X

Maximum Value: 14.4 at 85.9 Milliseconds

Minimum Value: -24.7 at 48.4 Milliseconds

SAE Filter Class: 600

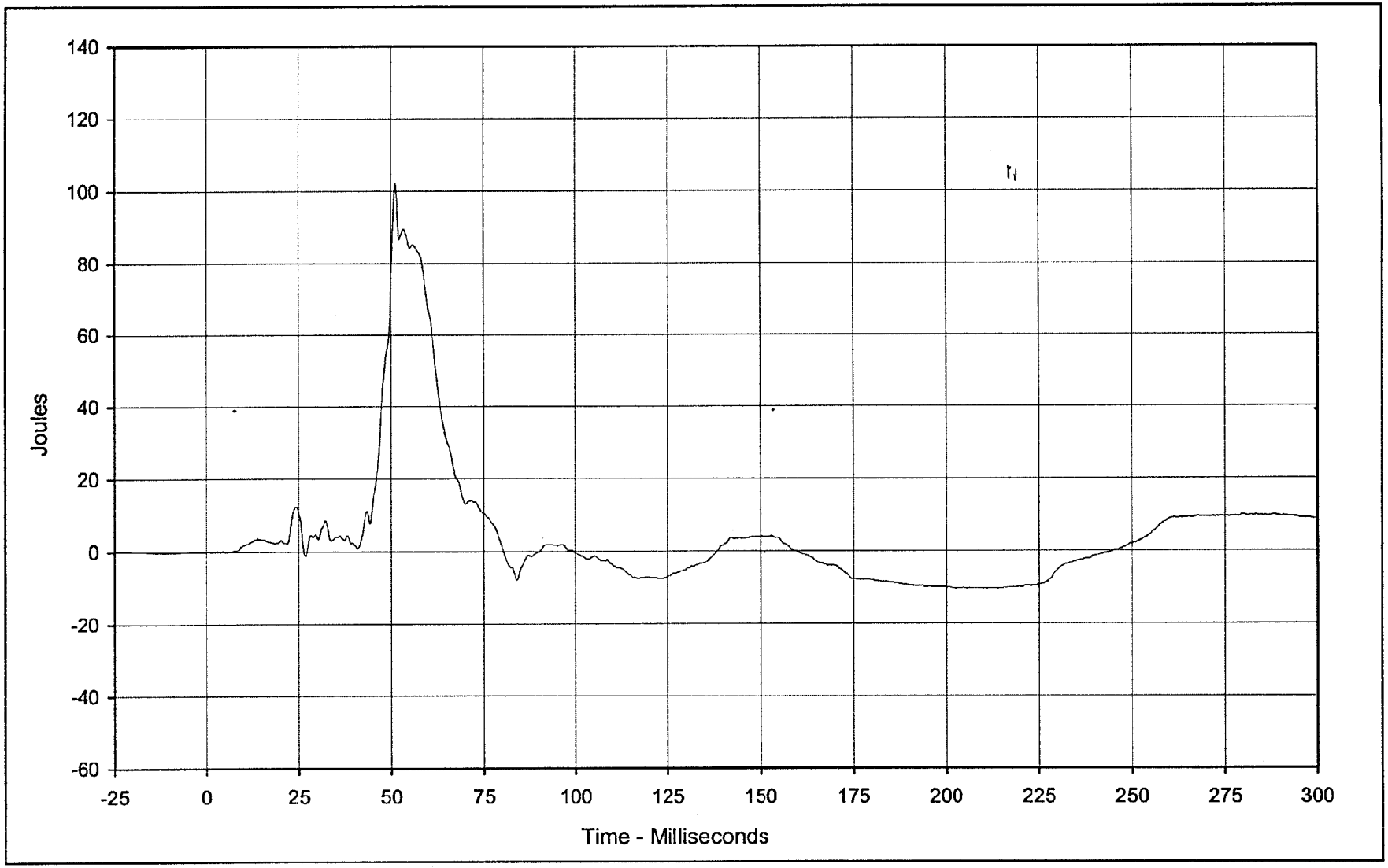
Date of Test: 9/4/97

Curve Number: FIL-069

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Left Upper Tibia Moment Y

Maximum Value: 102.1 at 51.1 Milliseconds

Minimum Value: -10.5 at 214.0 Milliseconds

SAE Filter Class: 600

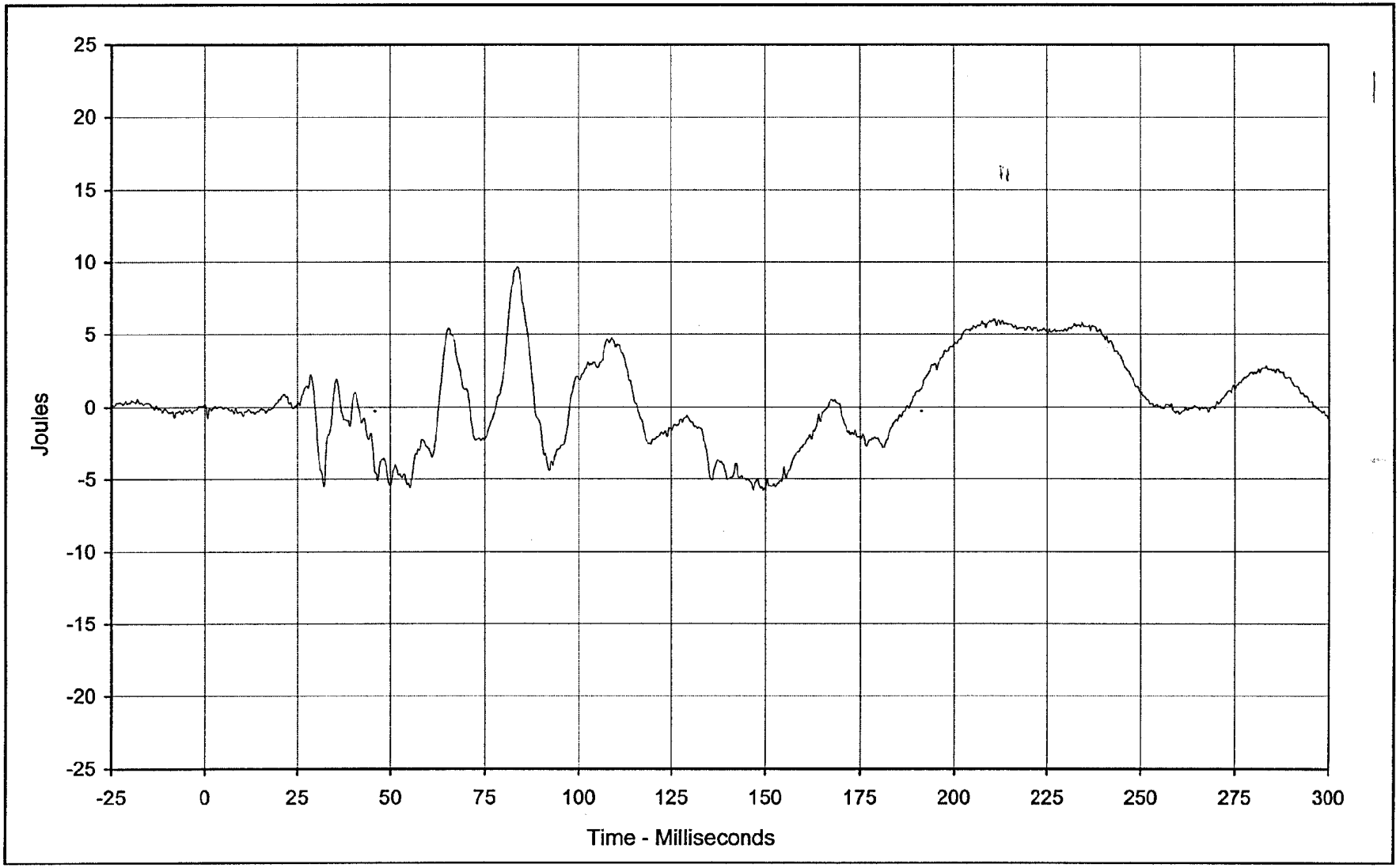
Date of Test: 9/4/97

Curve Number: FIL-070

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Right Upper Tibia Moment X

Maximum Value: 9.7 at 83.6 Milliseconds

Minimum Value: -5.8 at 149.4 Milliseconds

SAE Filter Class: 600

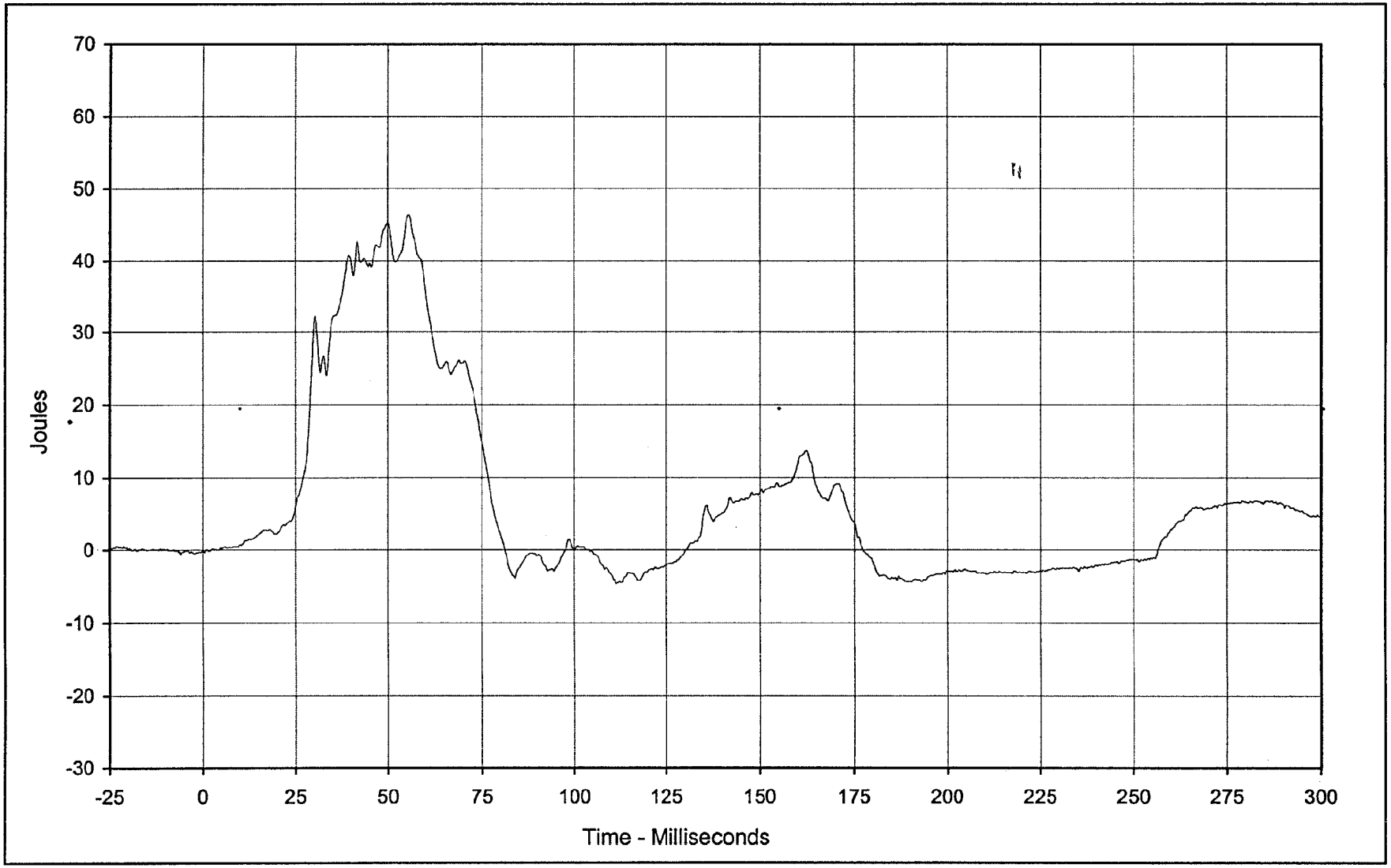
Date of Test: 9/4/97

Curve Number: FIL-071

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Right Upper Tibia Moment Y

Maximum Value: 46.3 at 55.4 Milliseconds

Minimum Value: -4.7 at 111.3 Milliseconds

SAE Filter Class: 600

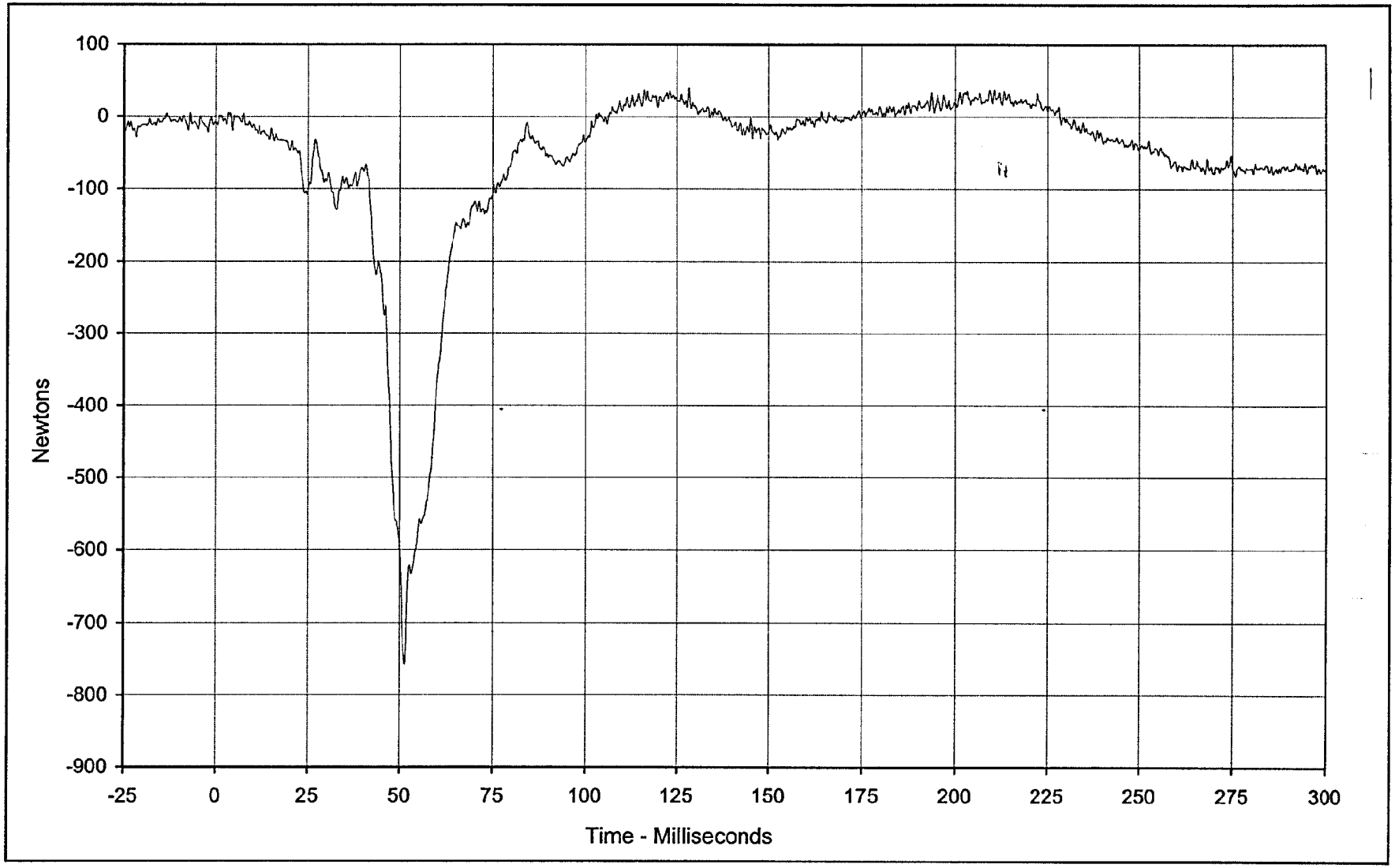
Date of Test: 9/4/97

Curve Number: FIL-072

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Left Lower Tibia Force X

Maximum Value: 39.5 at 128.2 Milliseconds

Minimum Value: -757.2 at 51.4 Milliseconds

SAE Filter Class: 600

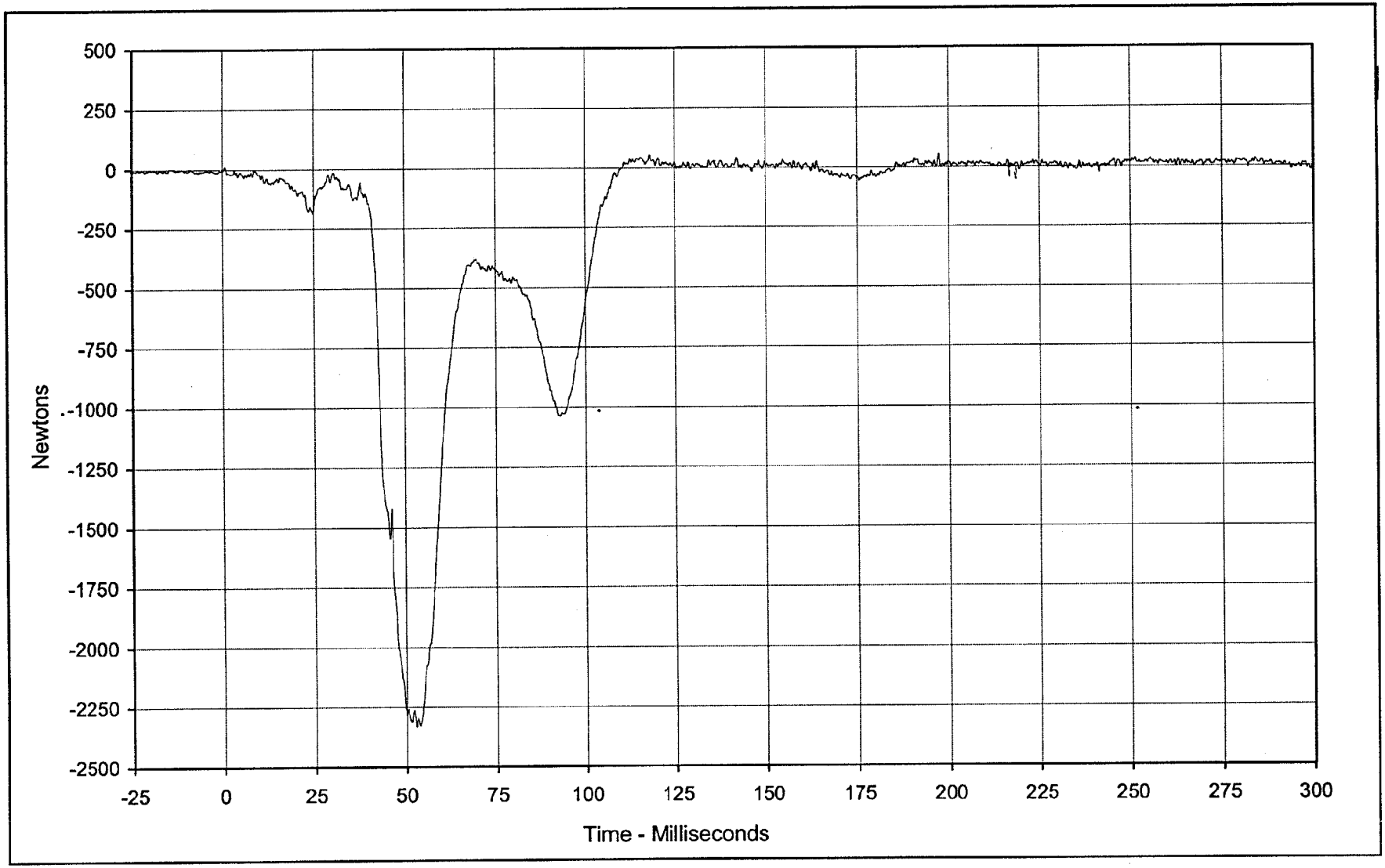
Date of Test: 9/4/97

Curve Number: FIL-073

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Left Lower Tibia force Z

Maximum Value: 55.4 at 117.9 Milliseconds

Minimum Value: -2332.4 at 52.6 Milliseconds

SAE Filter Class: 600

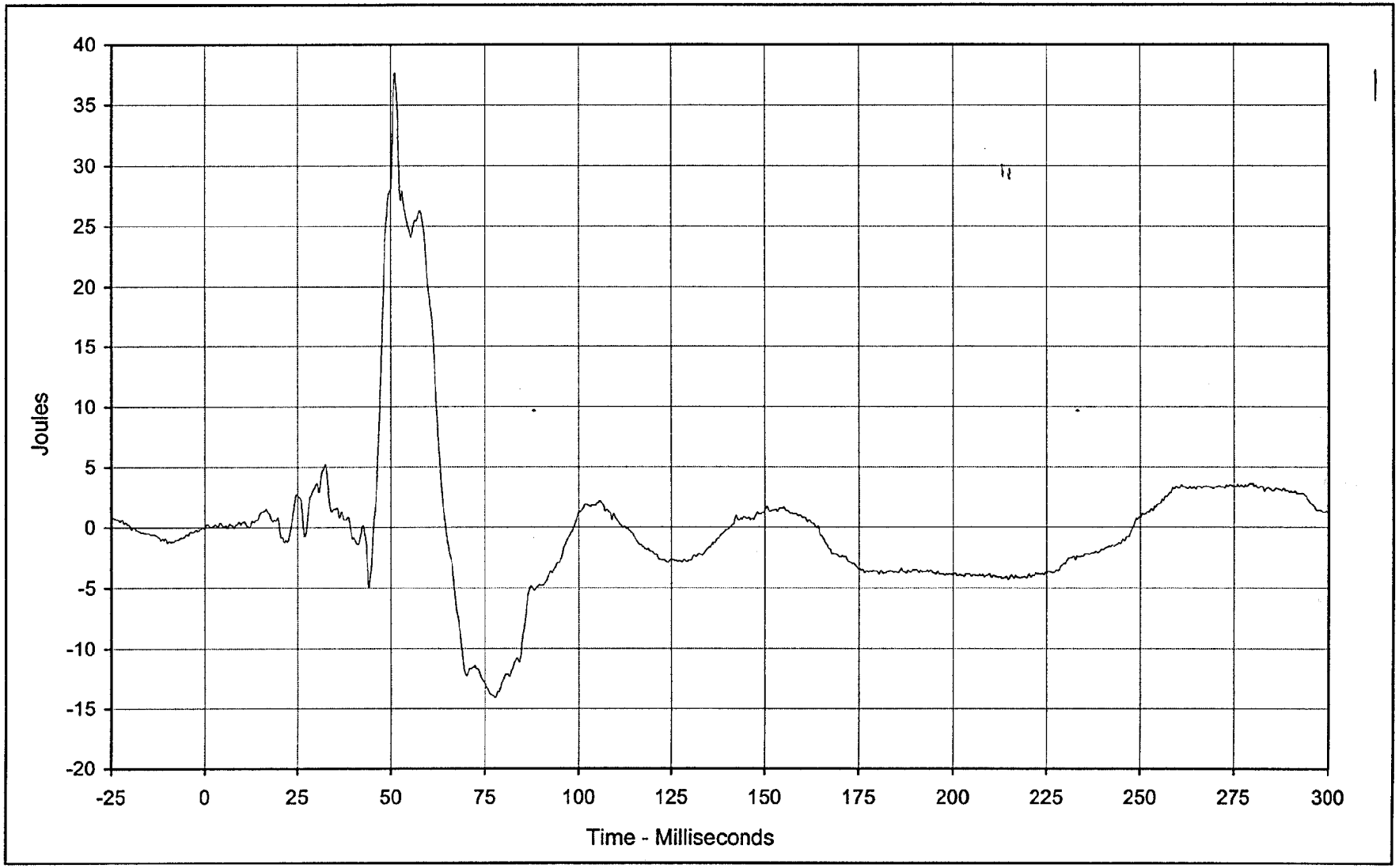
Date of Test: 9/4/97

Curve Number: FIL-074

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Left Lower Tibia Moment Y

Maximum Value: 37.7 at 51.1 Milliseconds

Minimum Value: -14.1 at 77.7 Milliseconds

SAE Filter Class: 600

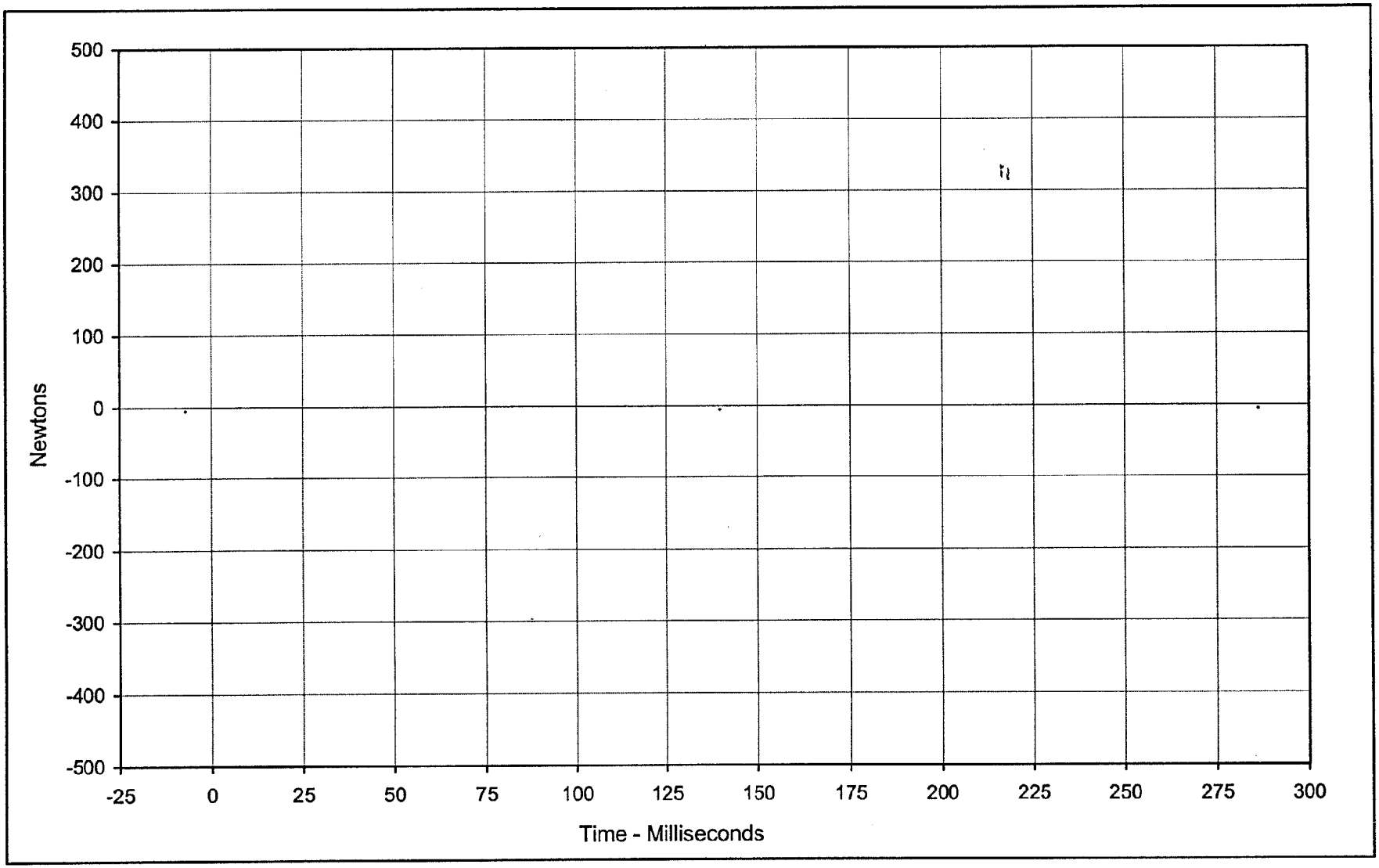
Date of Test: 9/4/97

Curve Number: FIL-075

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Right Lower Tibia Force X *

Maximum Value: 0.0 at 0.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 600

Date of Test: 9/4/97

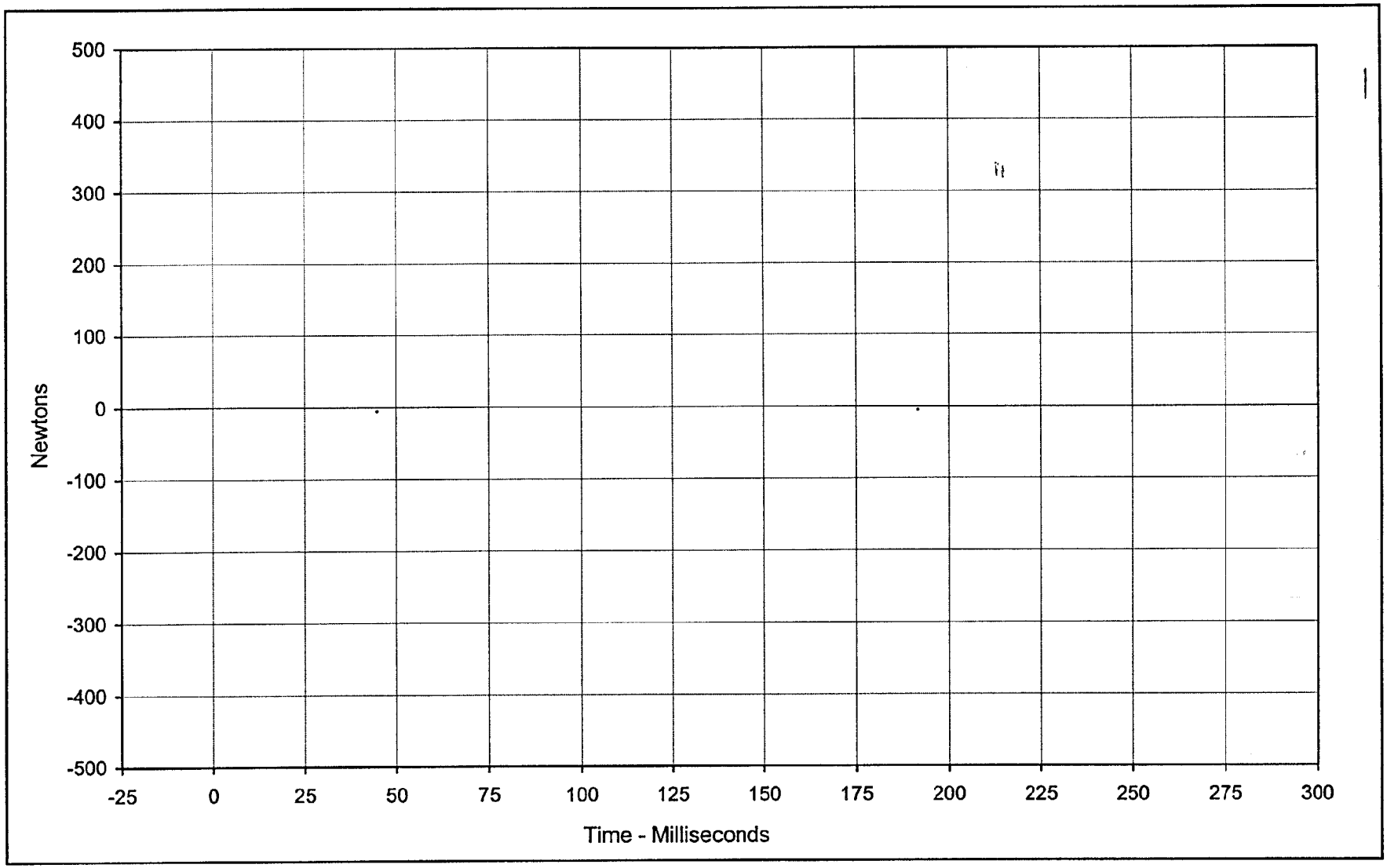
Curve Number: FIL-076

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

* Channel Failed, No Data

KARCO Engineering



Curve Description: Passenger Right 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: 9/4/97

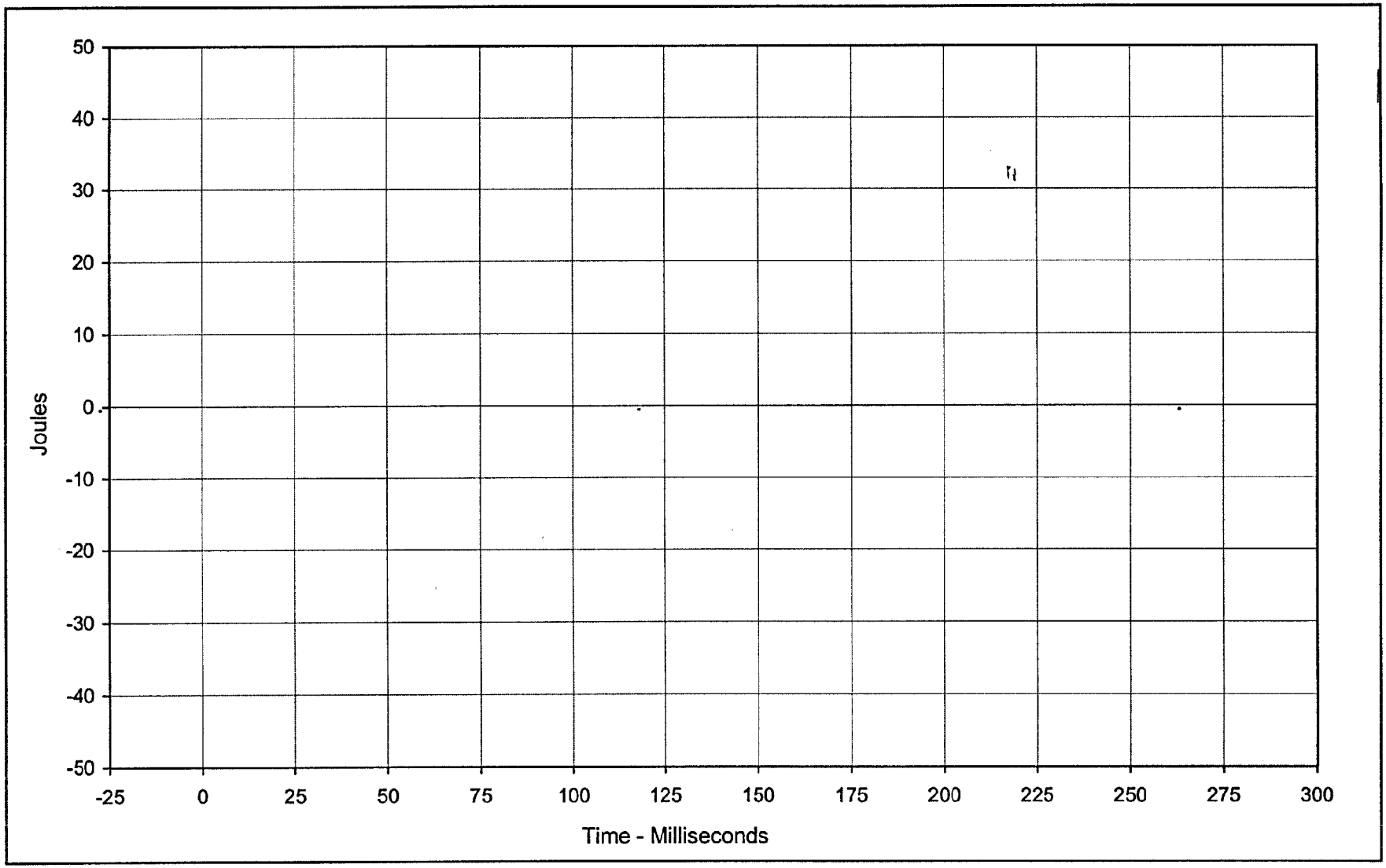
Curve Number: FIL-077

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

* Channel Failed, No Data

KARCO Engineering



Curve Description: Passenger Right lower Tibia Moment Y *

Maximum Value: 0.0 at 0.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 600

Date of Test: 9/4/97

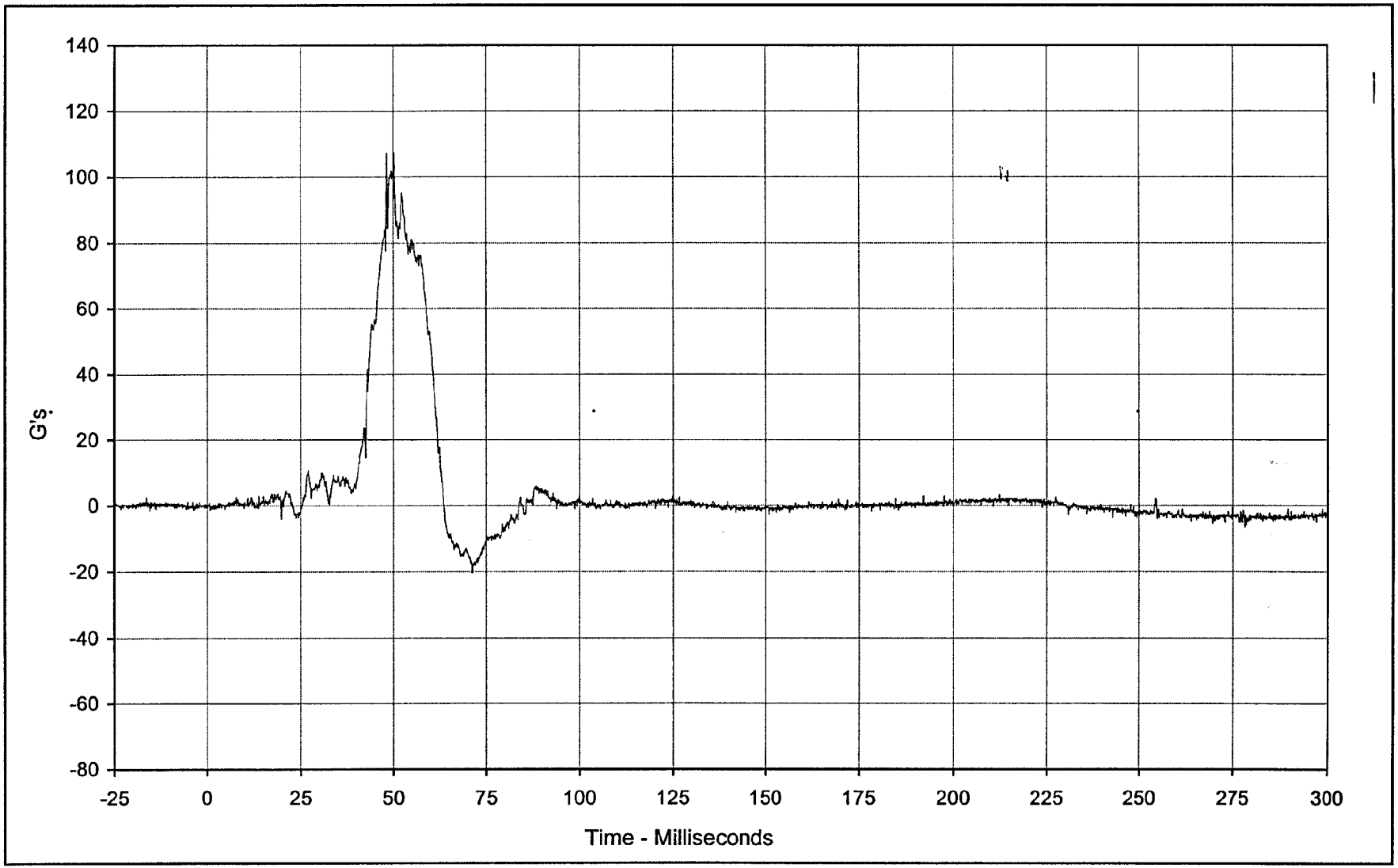
Curve Number: FIL-078

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

* Channel Failed, No Data

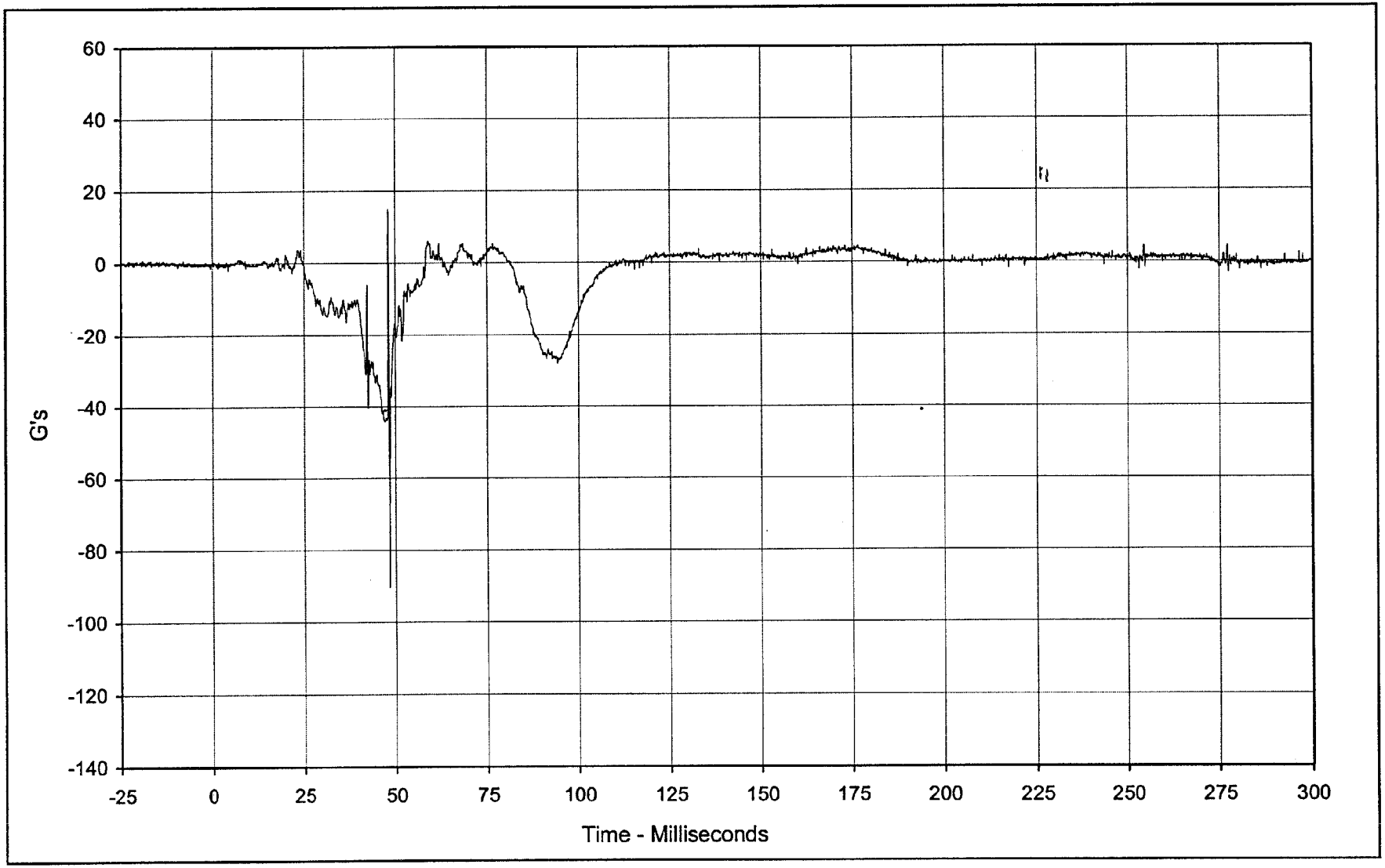
KARCO Engineering



Curve Description:	Passenger Left Foot Aft X			
Maximum Value:	107.6	at	50.1	Milliseconds
Minimum Value:	-20.4	at	71.2	Milliseconds
SAE Filter Class:	1000			
Date of Test:	9/4/97			
Curve Number:	FIL-079			

Testing Program	1997 48.4 km/h Frontal Impact (Female)
Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Left Foot Aft Z

Maximum Value: 14.8 at 48.0 Milliseconds

Minimum Value: -90.2 at 48.3 Milliseconds

SAE Filter Class: 1000

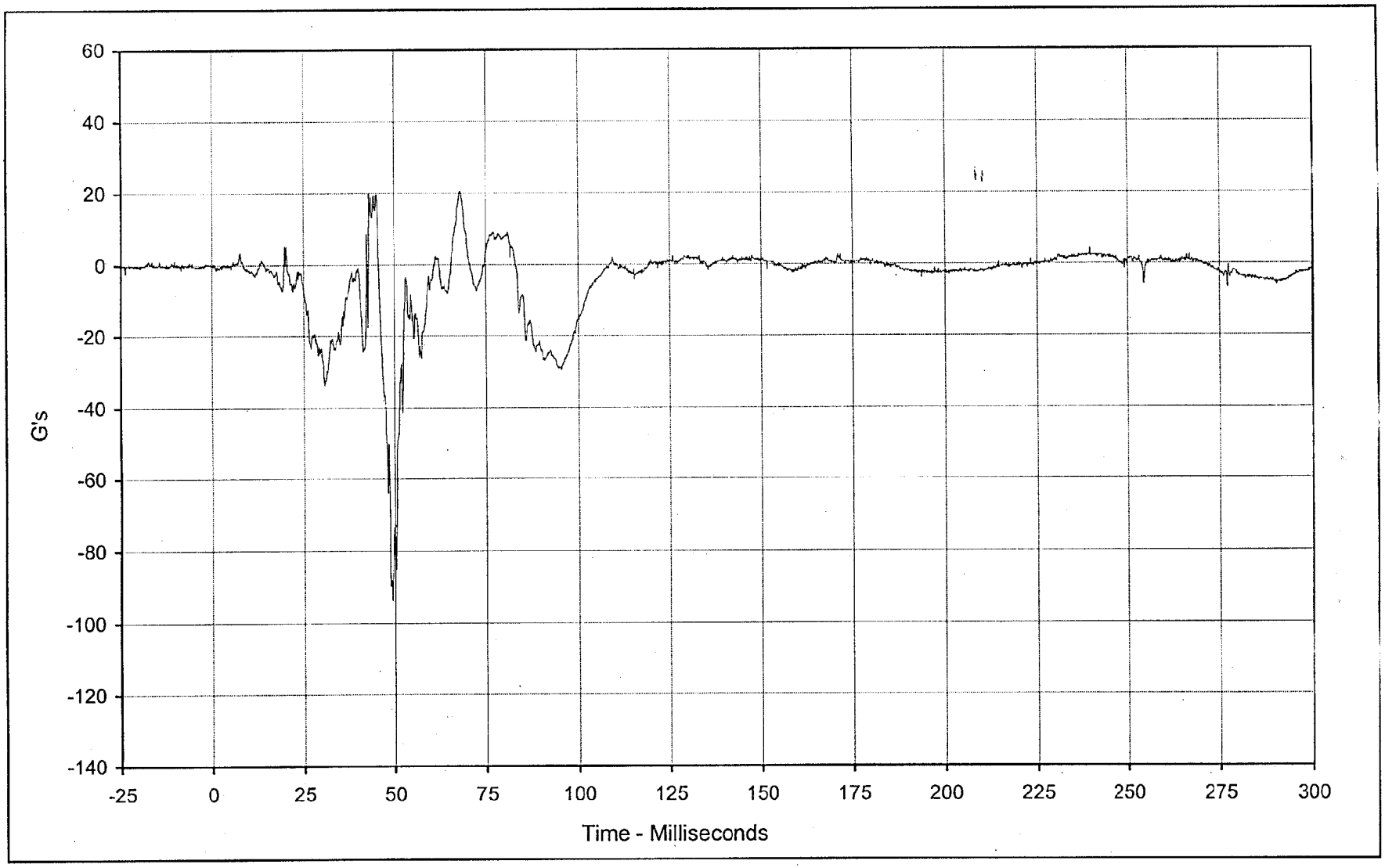
Date of Test: 9/4/97

Curve Number: FIL-080

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARC Engineering



Curve Description: Passenger Left Foot Fore Z

Maximum Value: 20.6 at 68.0 Milliseconds

Minimum Value: -93.7 at 49.2 Milliseconds

SAE Filter Class: 1000

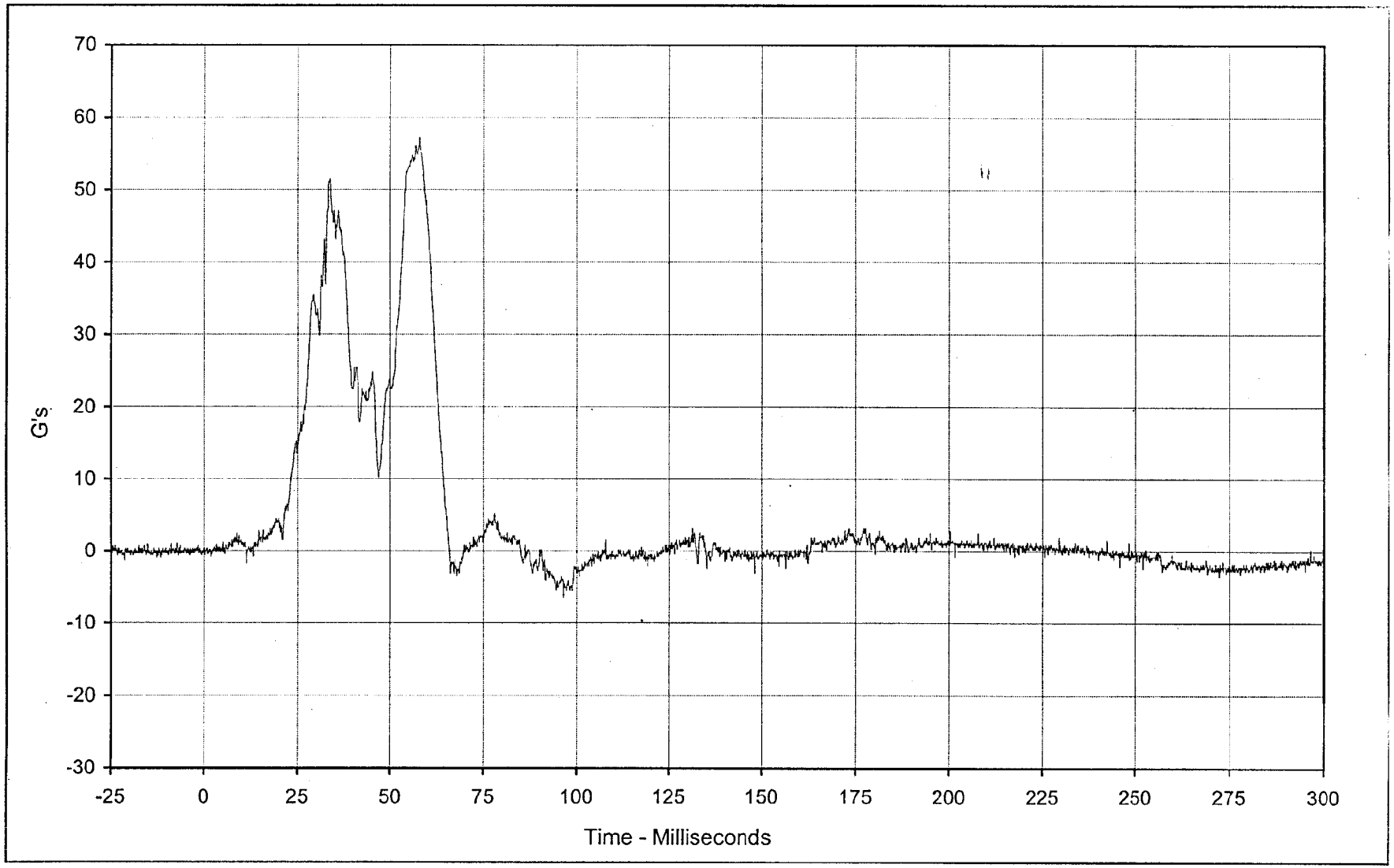
Date of Test: 9/4/97

Curve Number: FIL-081

Testing Program 1997 48.4 km/h Frontal Impact (Female)

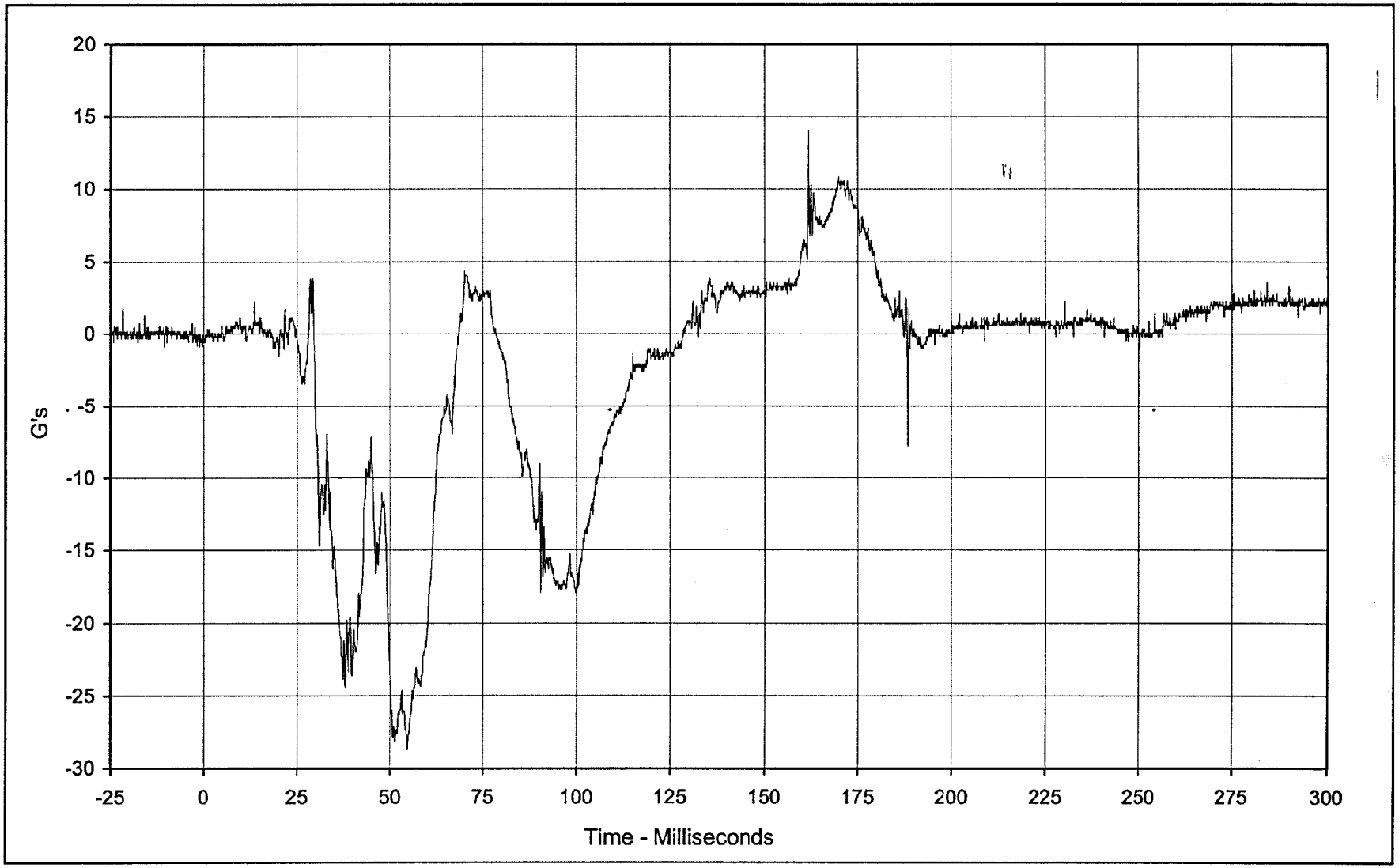
Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description:	Passenger Right Foot Aft X			Testing Program	1997 48.4 km/h Frontal Impact (Female)
Maximum Value:	57.2	at	57.8 Milliseconds	Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan
Minimum Value:	-6.5	at	96.6 Milliseconds		
SAE Filter Class:	1000				
Date of Test:	9/4/97				
Curve Number:	FIL-082				

KARC Engineering

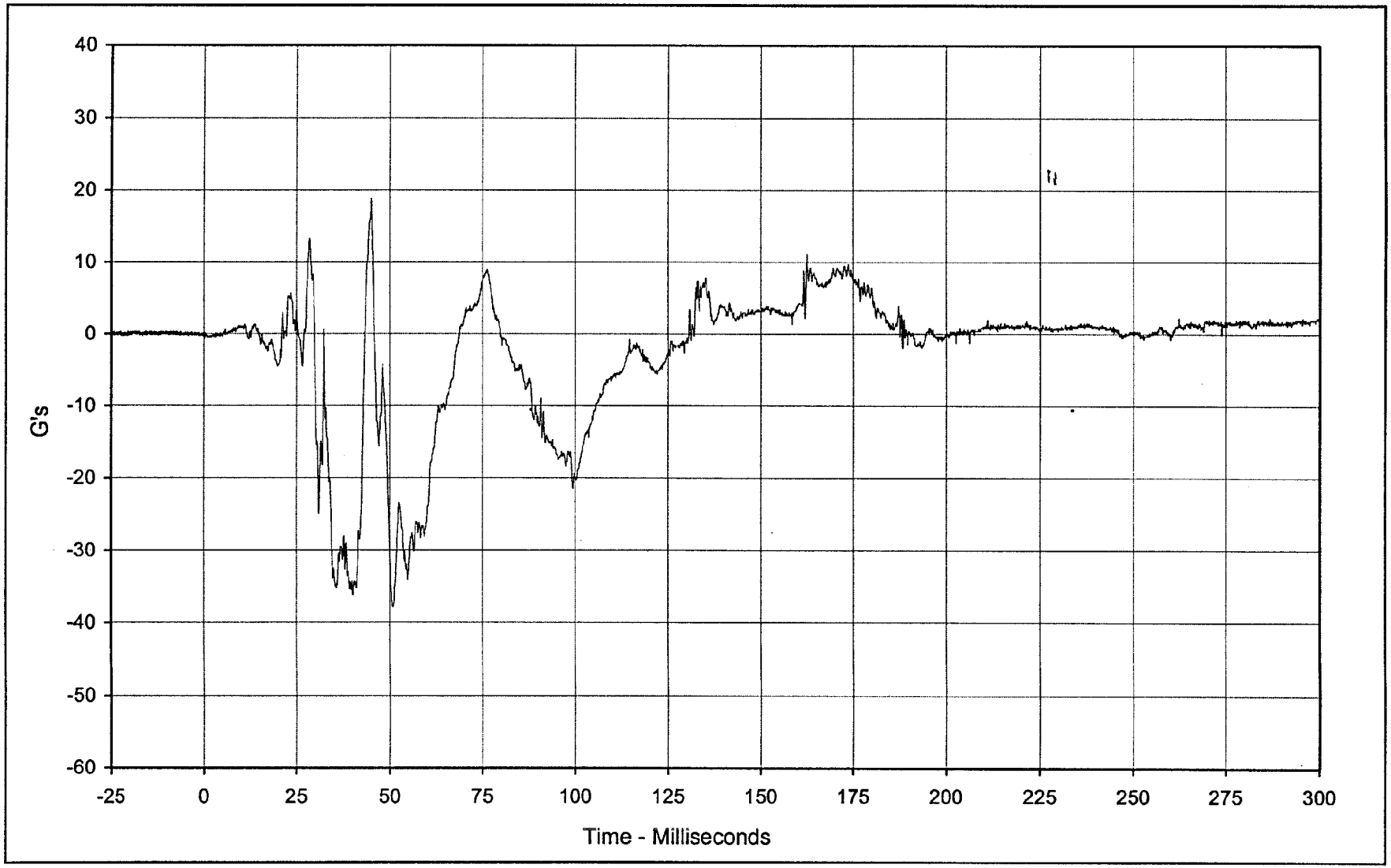


Curve Description:	Passenger Right Foot Aft Z				
Maximum Value:	14.0	at	161.8	Milliseconds	
Minimum Value:	-28.7	at	54.7	Milliseconds	
SAE Filter Class:	1000				
Date of Test:	9/4/97				
Curve Number:	FIL-083				

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

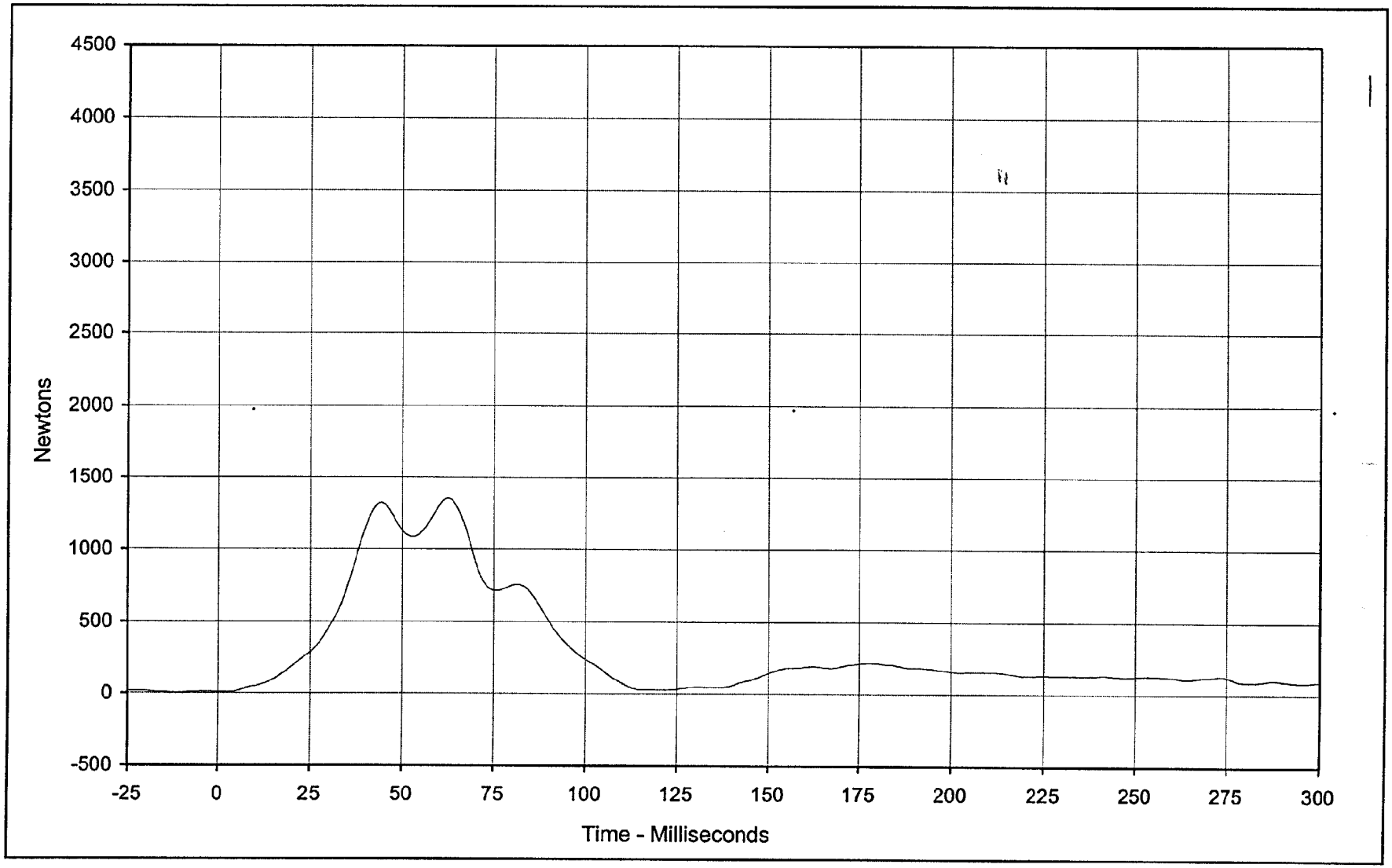
KARCO Engineering



Curve Description:	Passenger Right Foot Fore Z				
Maximum Value:	18.8	at	45.0	Milliseconds	
Minimum Value:	-37.8	at	50.8	Milliseconds	
SAE Filter Class:	1000				
Date of Test:	9/4/97				
Curve Number:	FIL-084				

Testing Program	1997 48.4 km/h Frontal Impact (Female)
Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Lap Belt Force

Maximum Value: 1353.2 at 62.4 Milliseconds

Minimum Value: 7.0 at 2.7 Milliseconds

SAE Filter Class: 60

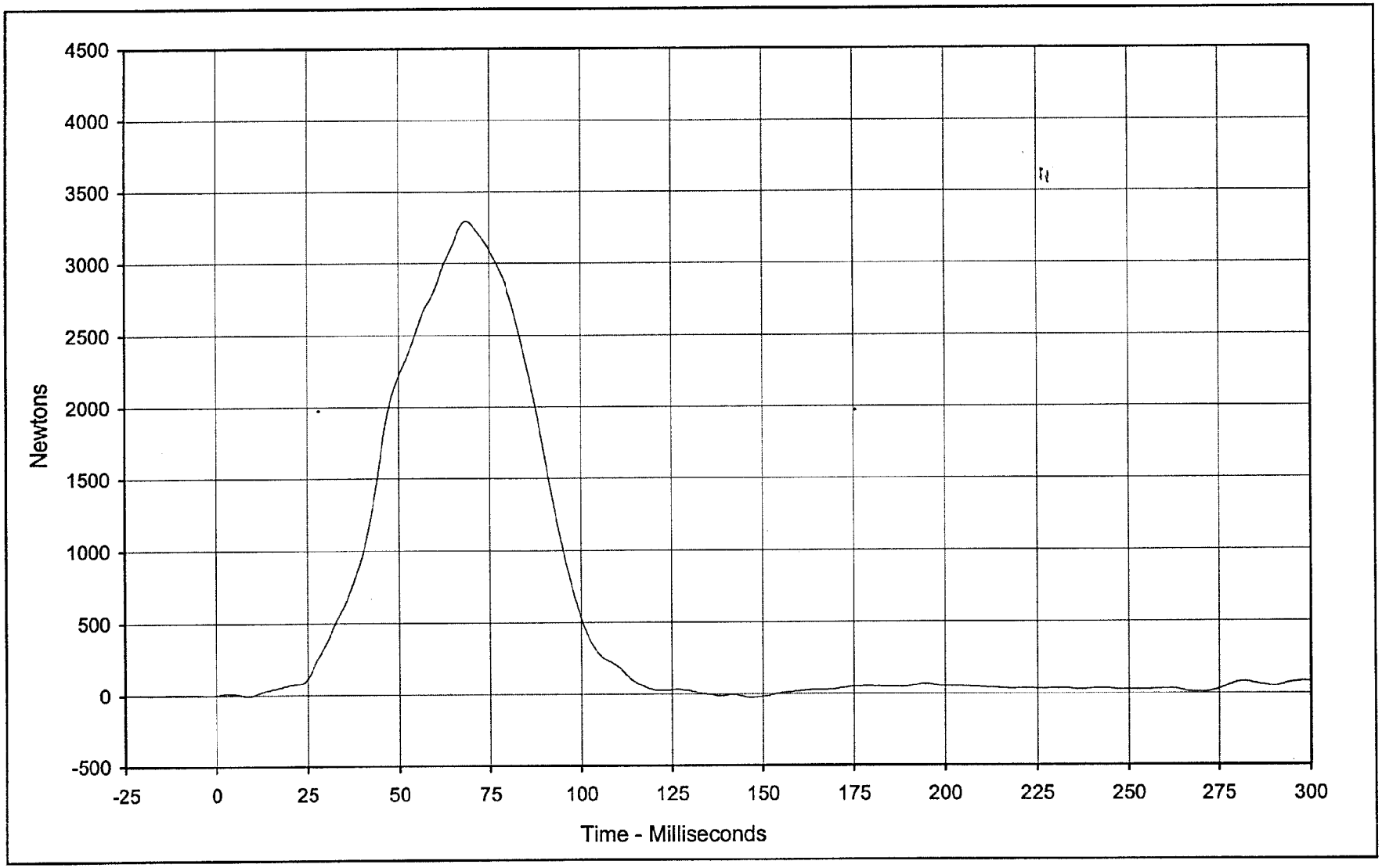
Date of Test: 9/4/97

Curve Number: FIL-085

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Shoulder Belt Force

Maximum Value: 3292.2 at 68.7 Milliseconds

Minimum Value: -24.1 at 146.7 Milliseconds

SAE Filter Class: 60

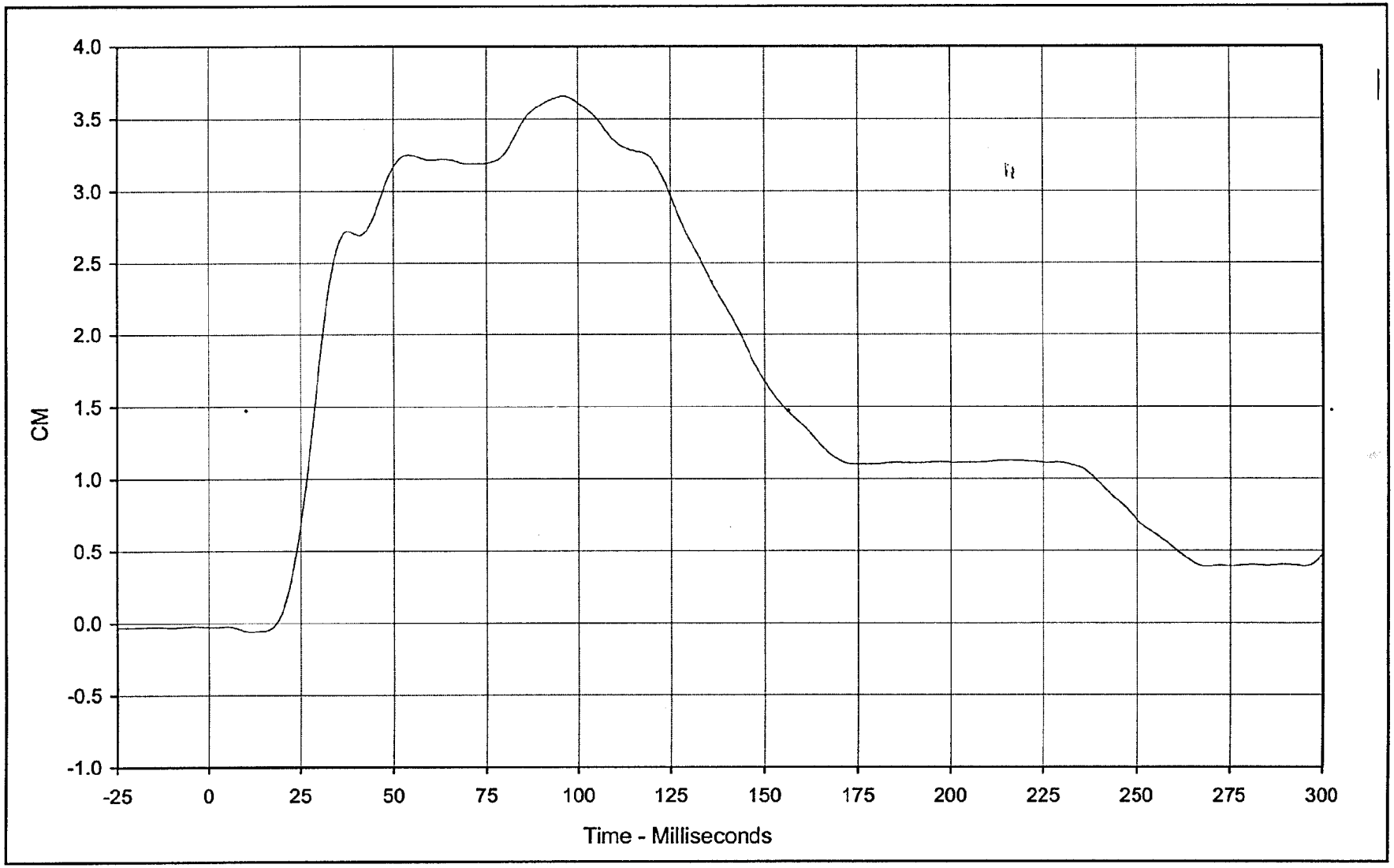
Date of Test: 9/4/97

Curve Number: FIL-086

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARC Engineering



Curve Description: Passenger Shoulder Belt Pullout

Maximum Value: 3.66 at 95.9 Milliseconds

Minimum Value: -0.06 at 11.5 Milliseconds

SAE Filter Class: 60

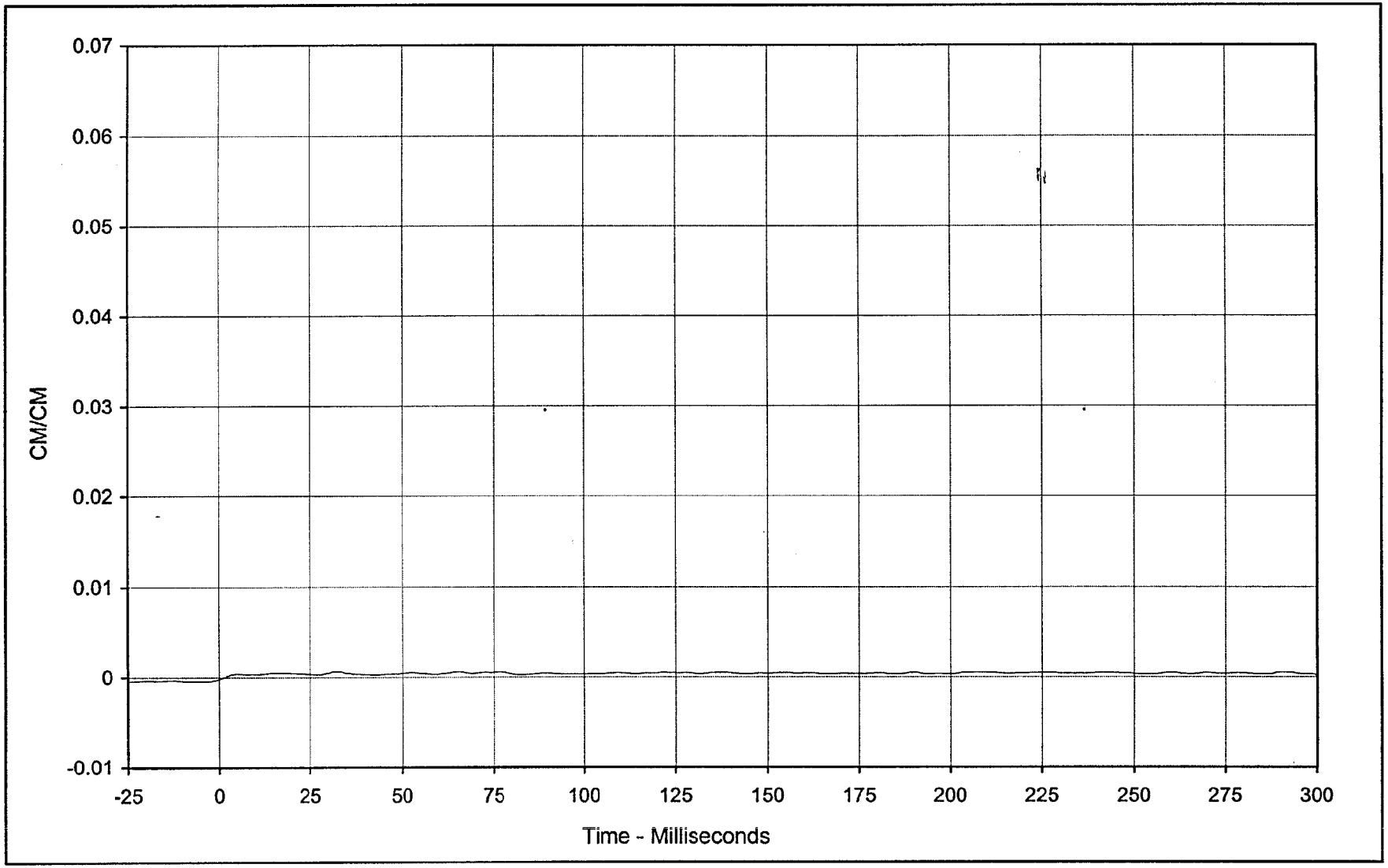
Date of Test: 9/4/97

Curve Number: FIL-087

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Passenger Shoulder Belt Elongation *

Maximum Value: 0.001 at 32.3 Milliseconds

Minimum Value: 0.000 at 0.0 Milliseconds

SAE Filter Class: 60

Date of Test: 9/4/97

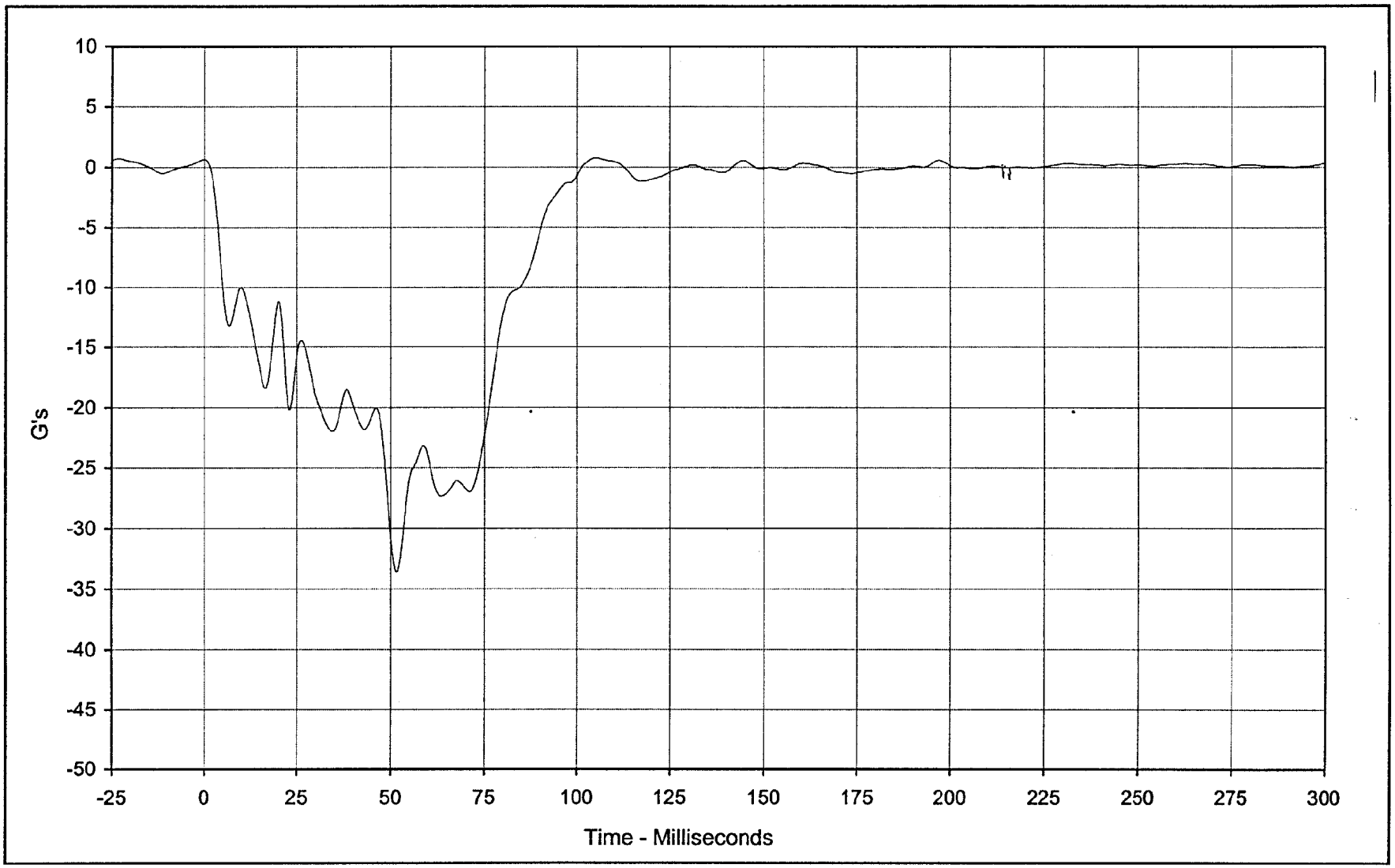
Curve Number: FIL-088

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

* Questionable Data

KARCO Engineering

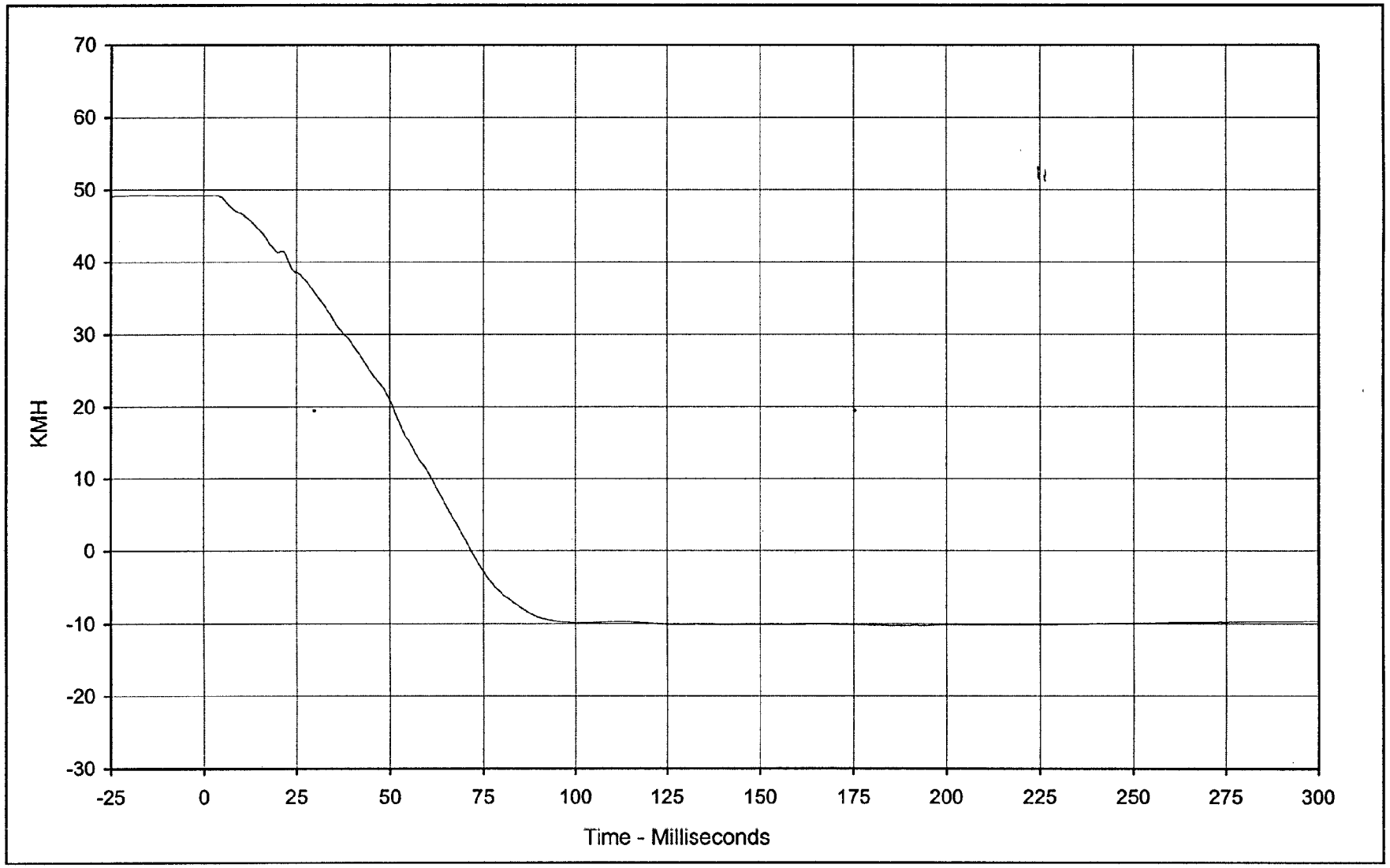


Curve Description:	Vehicle Left Rear Sill X			
Maximum Value:	0.8	at	105.1	Milliseconds
Minimum Value:	-33.6	at	51.5	Milliseconds
SAE Filter Class:	60			
Date of Test:	9/4/97			
Curve Number:	FIL-089			

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Vehicle Left Rear Sill X Velocity

Maximum Value: 49.2 at 3.2 Milliseconds

Minimum Value: -10.2 at 188.7 Milliseconds

SAE Filter Class: 180

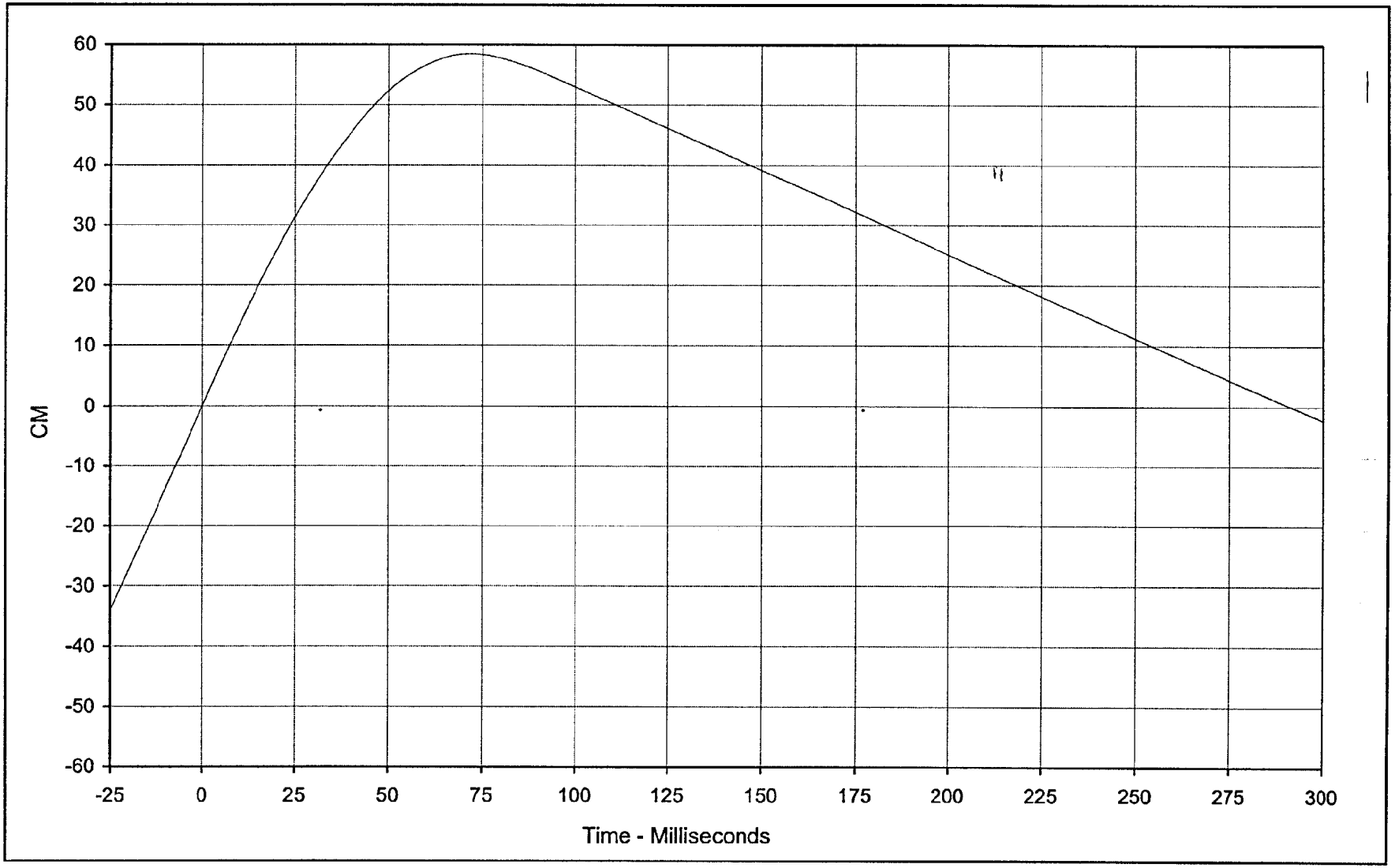
Date of Test: 9/4/97

Curve Number: IN1-089

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4Door Sedan

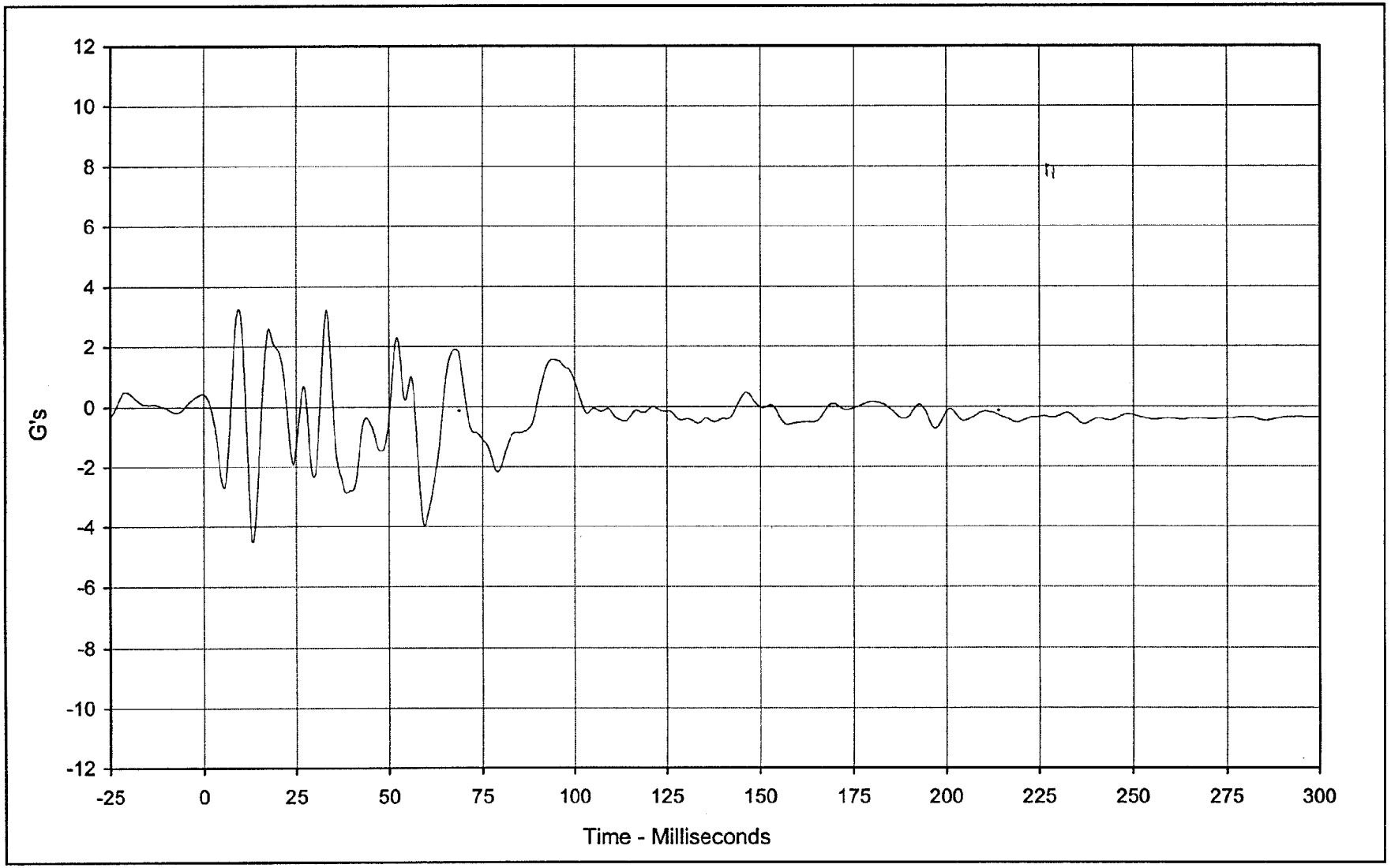
KARCO Engineering



Curve Description:	Vehicle Left Rear Sill X Displ.			
Maximum Value:	58.4	at	71.8	Milliseconds
Minimum Value:	-2.3	at	299.9	Milliseconds
SAE Filter Class:	180			
Date of Test:	9/4/97			
Curve Number:	IN2-089			

Testing Program:	1997 48.4 km/h Frontal Impact (Female)
Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan

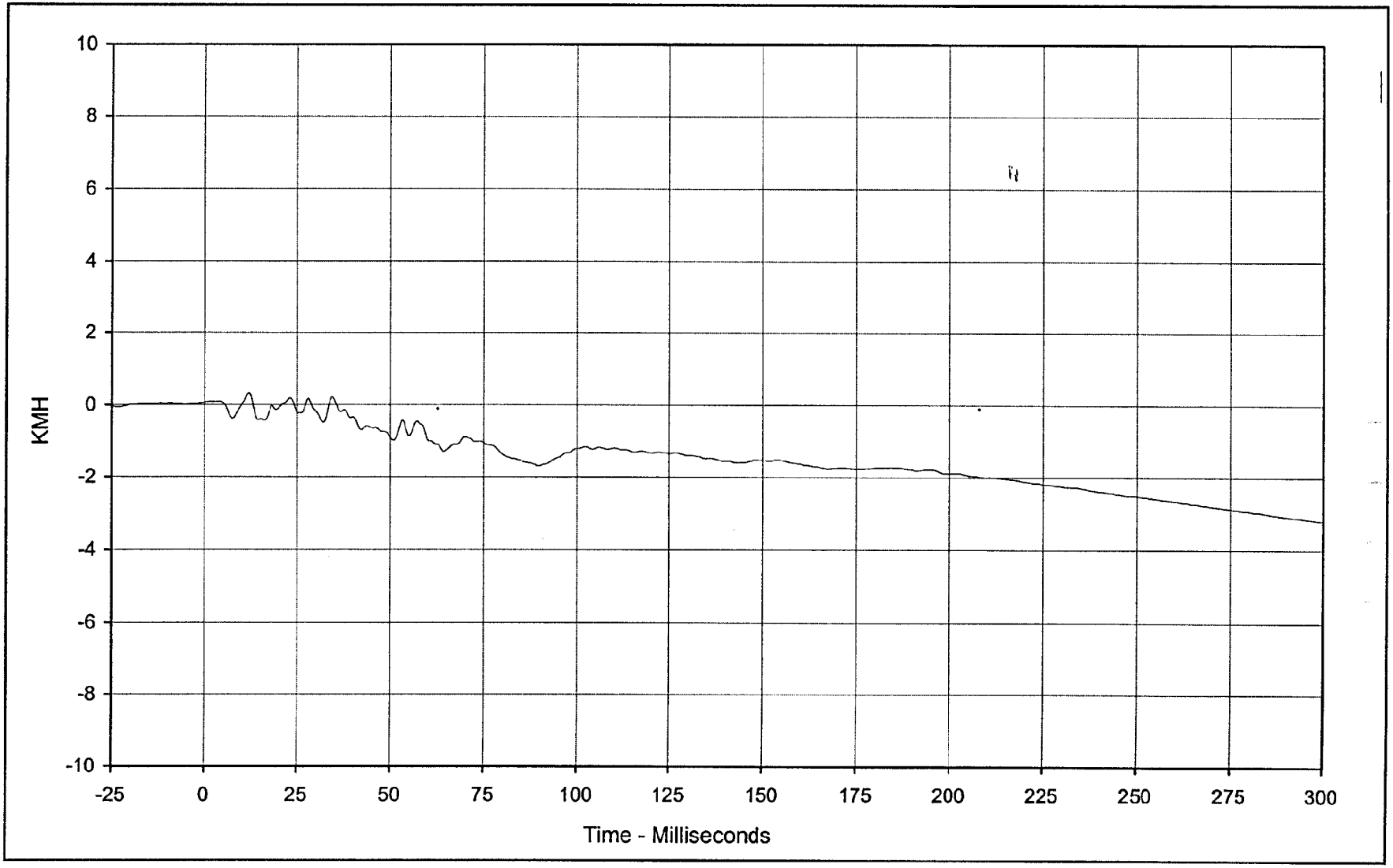
KARCO Engineering



Curve Description:	Vehicle Left Rear Sill Y			
Maximum Value:	3.3	at	9.6	Milliseconds
Minimum Value:	-4.5	at	13.4	Milliseconds
SAE Filter Class:	60			
Date of Test:	9/4/97			
Curve Number:	FIL-090			

Testing Program	1997 48.4 km/h Frontal Impact (Female)
Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Vehicle Left Rear Sill Y Velocity

Maximum Value: 0.3 at 12.0 Milliseconds

Minimum Value: -3.2 at 299.9 Milliseconds

SAE Filter Class: 180

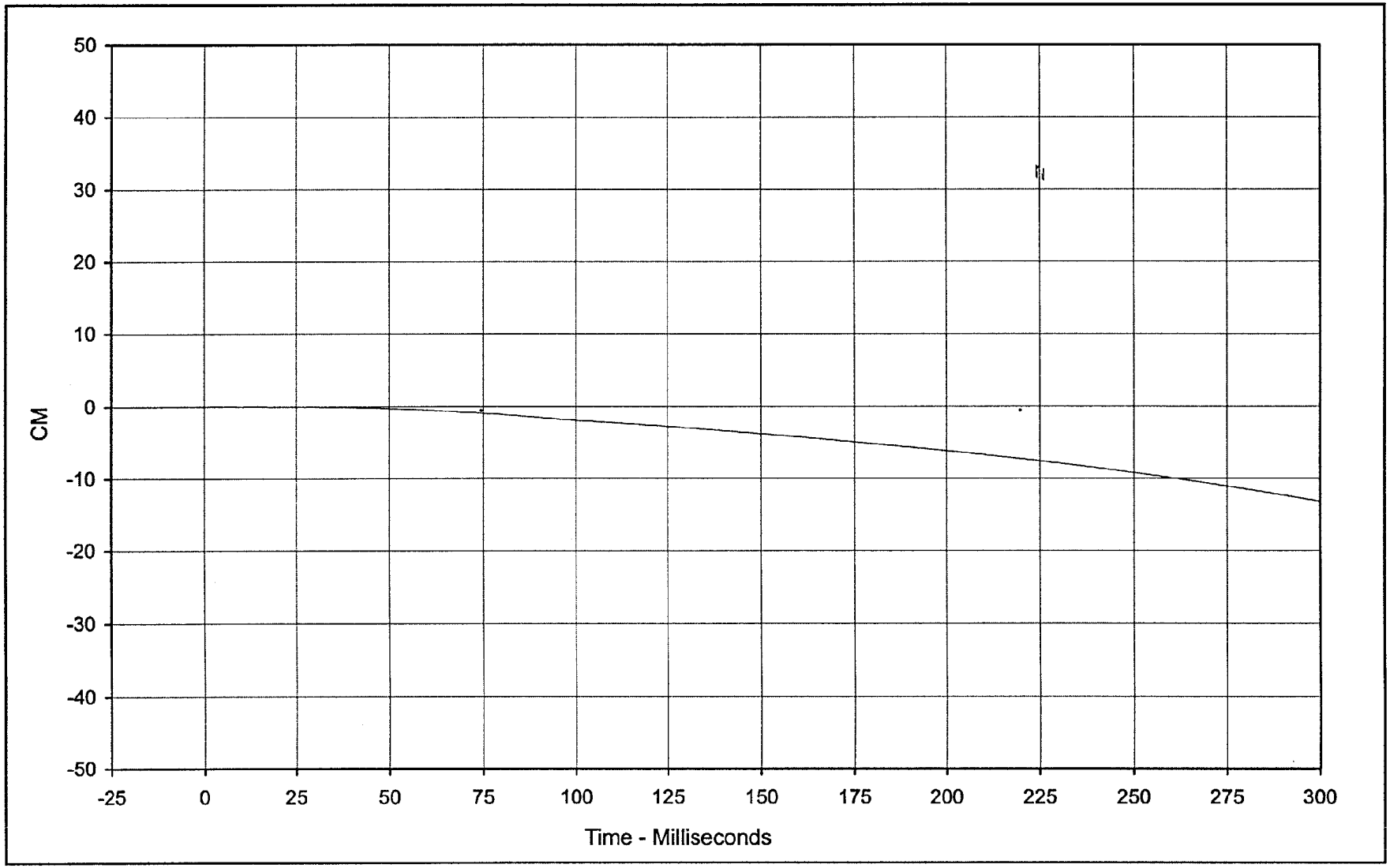
Date of Test: 9/4/97

Curve Number: IN1-090

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4Door Sedan

KARCO Engineering



Curve Description: Vehicle Left Rear Sill Y Displ.

Maximum Value: 0.0 at 5.5 Milliseconds

Minimum Value: -13.2 at 299.9 Milliseconds

SAE Filter Class: 180

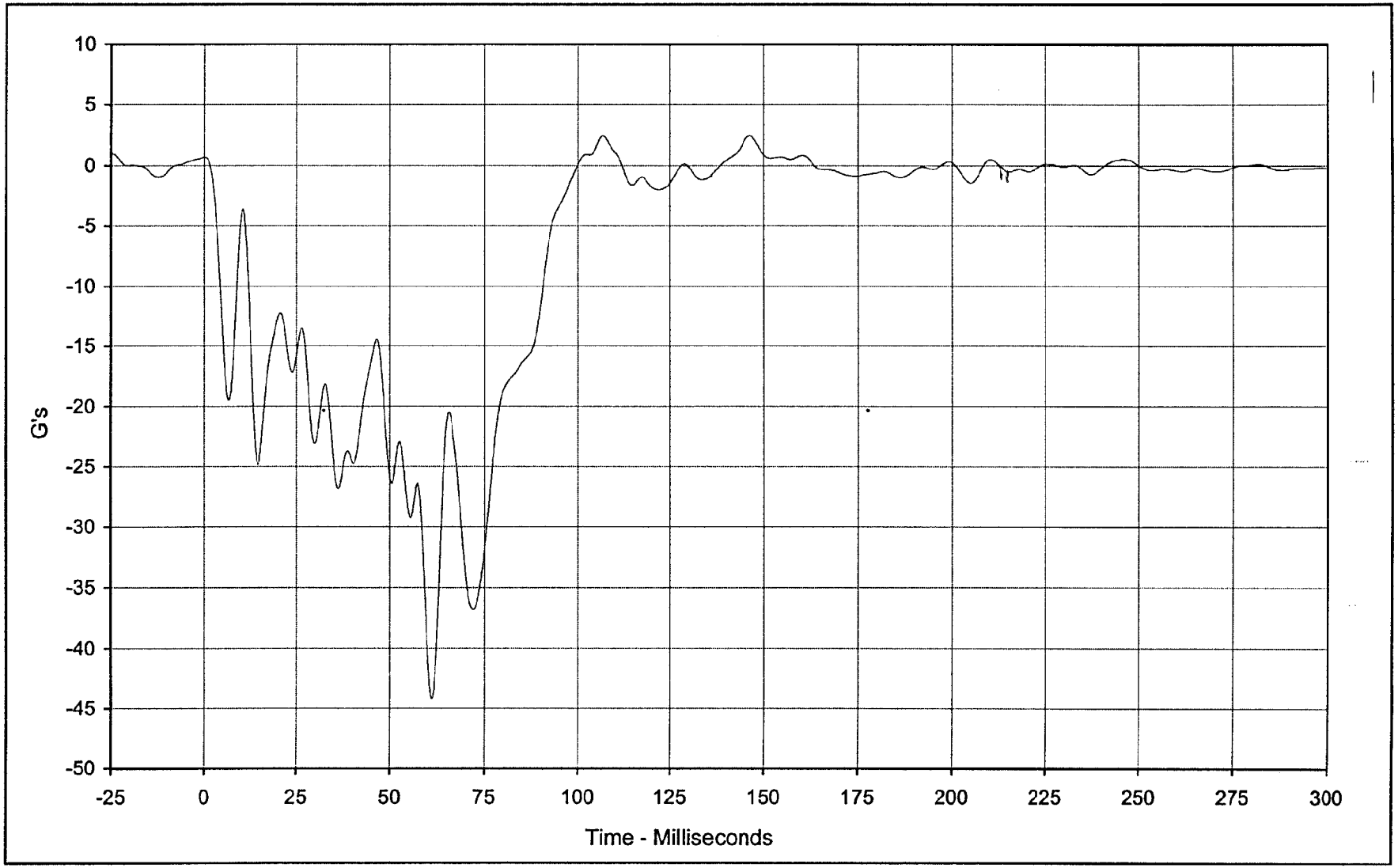
Date of Test: 9/4/97

Curve Number: IN2-090

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

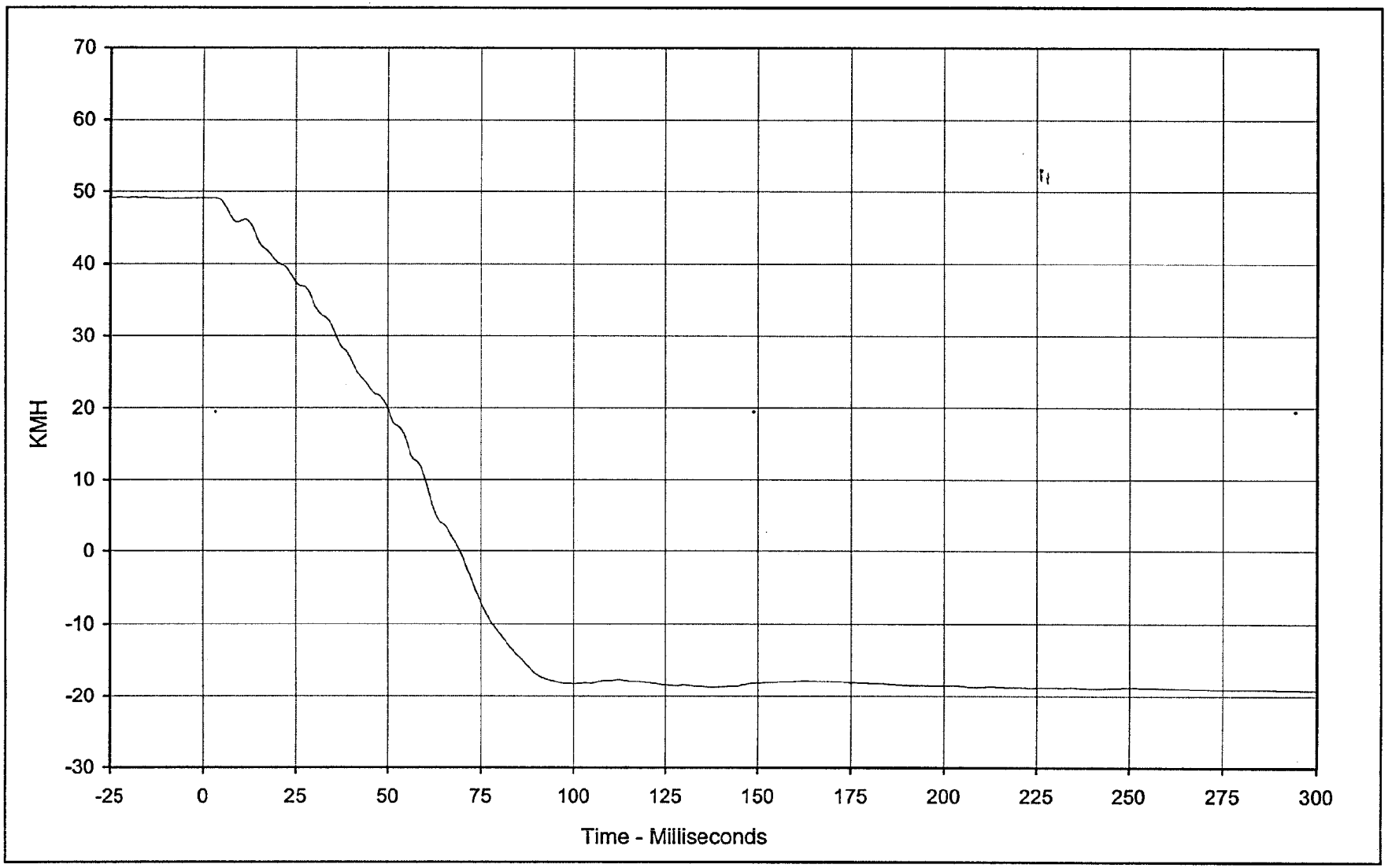
Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description:	Vehicle Center Console Rear X				Testing Program	1997 48.4 km/h Frontal Impact (Female)
Maximum Value:	2.5	at	146.3	Milliseconds	Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan
Minimum Value:	-44.2	at	61.0	Milliseconds		
SAE Filter Class:	60					
Date of Test:	9/4/97					
Curve Number:	FIL-091					

KARCO Engineering



Curve Description: Vehicle Center Rear Console X Velocity

Maximum Value: 49.1 at 2.4 Milliseconds

Minimum Value: -19.2 at 299.9 Milliseconds

SAE Filter Class: 180

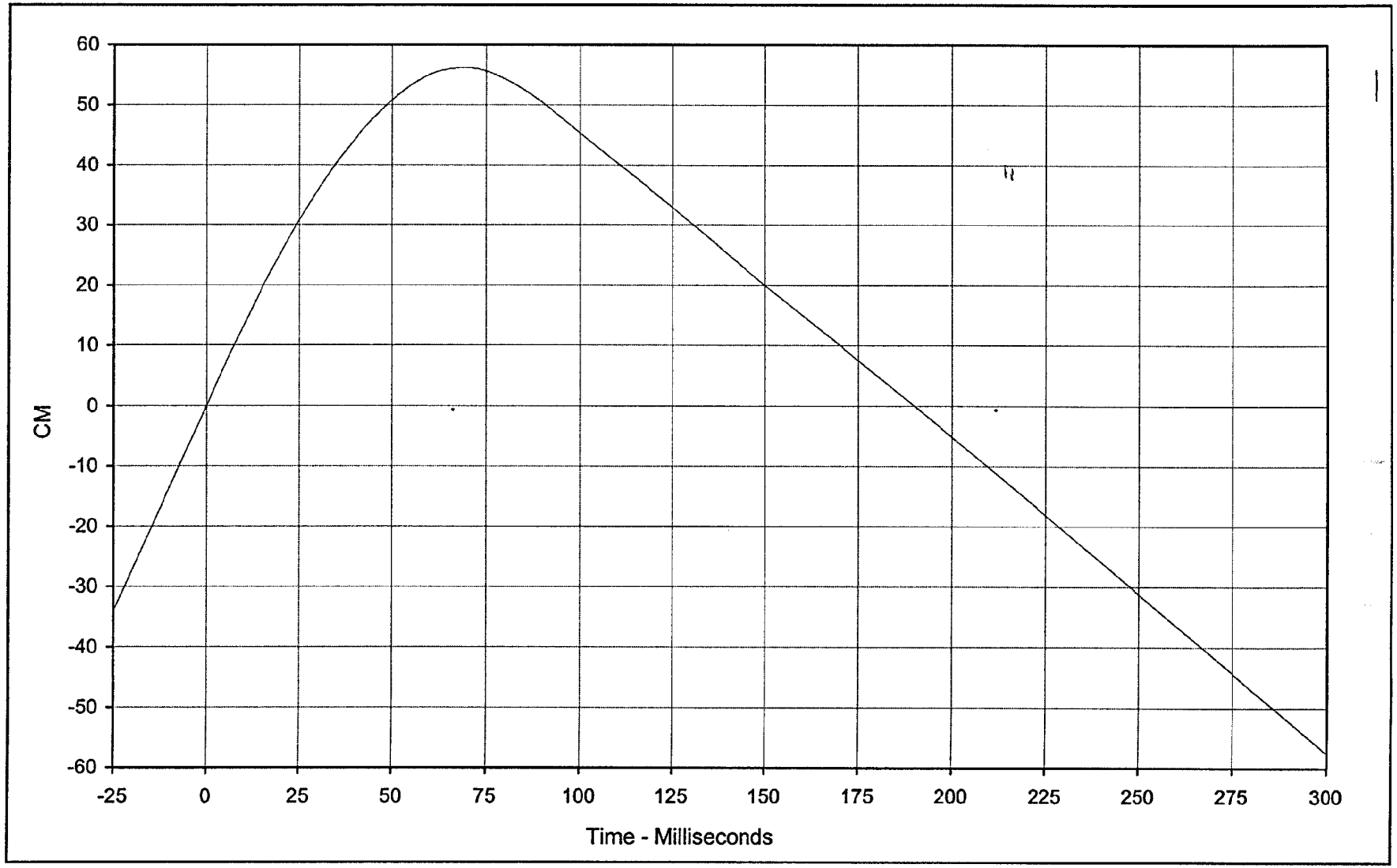
Date of Test: 9/4/97

Curve Number: IN1-091

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4Door Sedan

KARCO Engineering



Curve Description: Vehicle Center Rear Console X Displ.

Maximum Value: 56.2 at 69.4 Milliseconds

Minimum Value: -57.5 at 299.9 Milliseconds

SAE Filter Class: 180

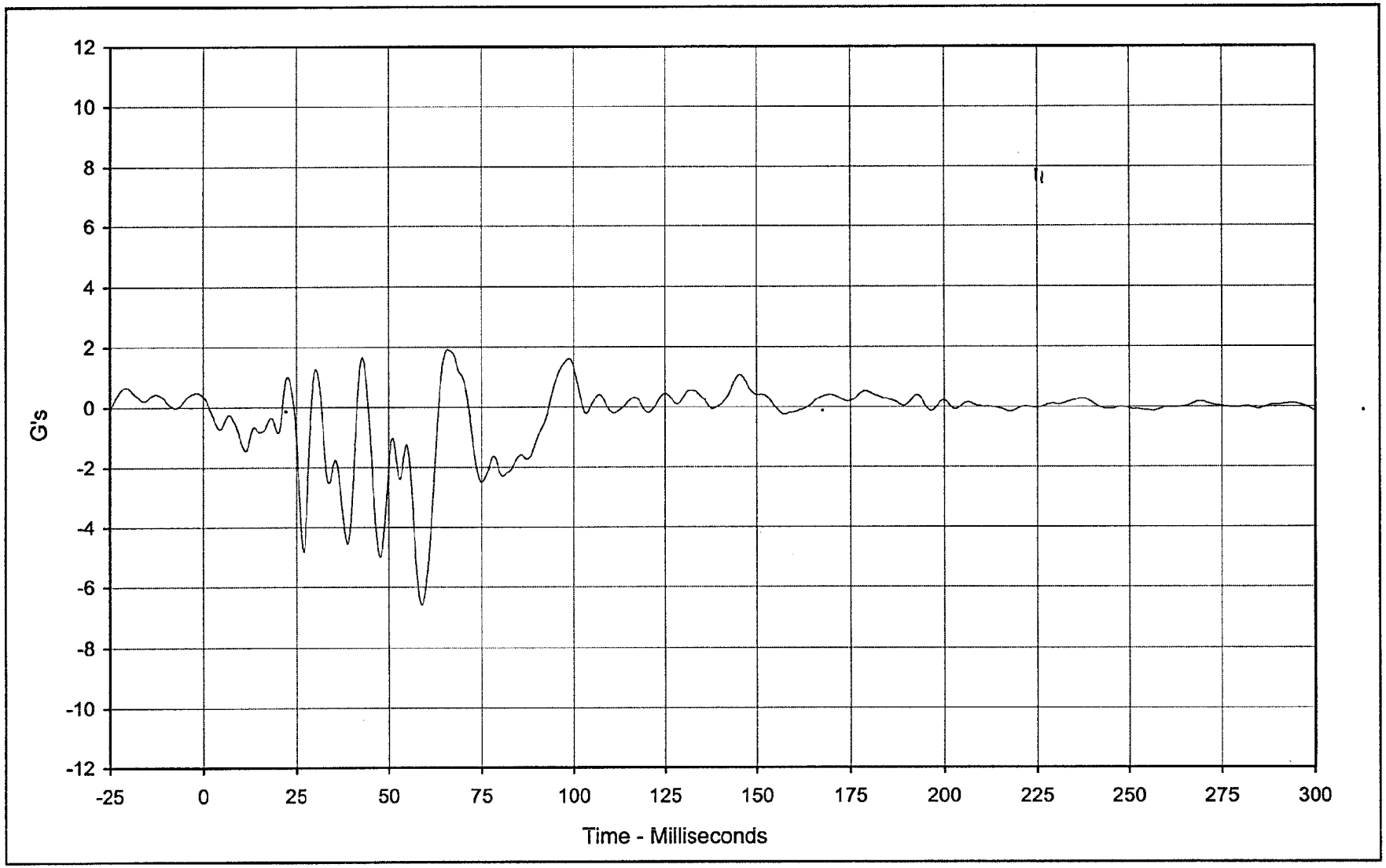
Date of Test: 9/4/97

Curve Number: IN2-091

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Vehicle Center Console Rear Y

Maximum Value: 1.9 at 66.0 Milliseconds

Minimum Value: -6.6 at 59.1 Milliseconds

SAE Filter Class: 60

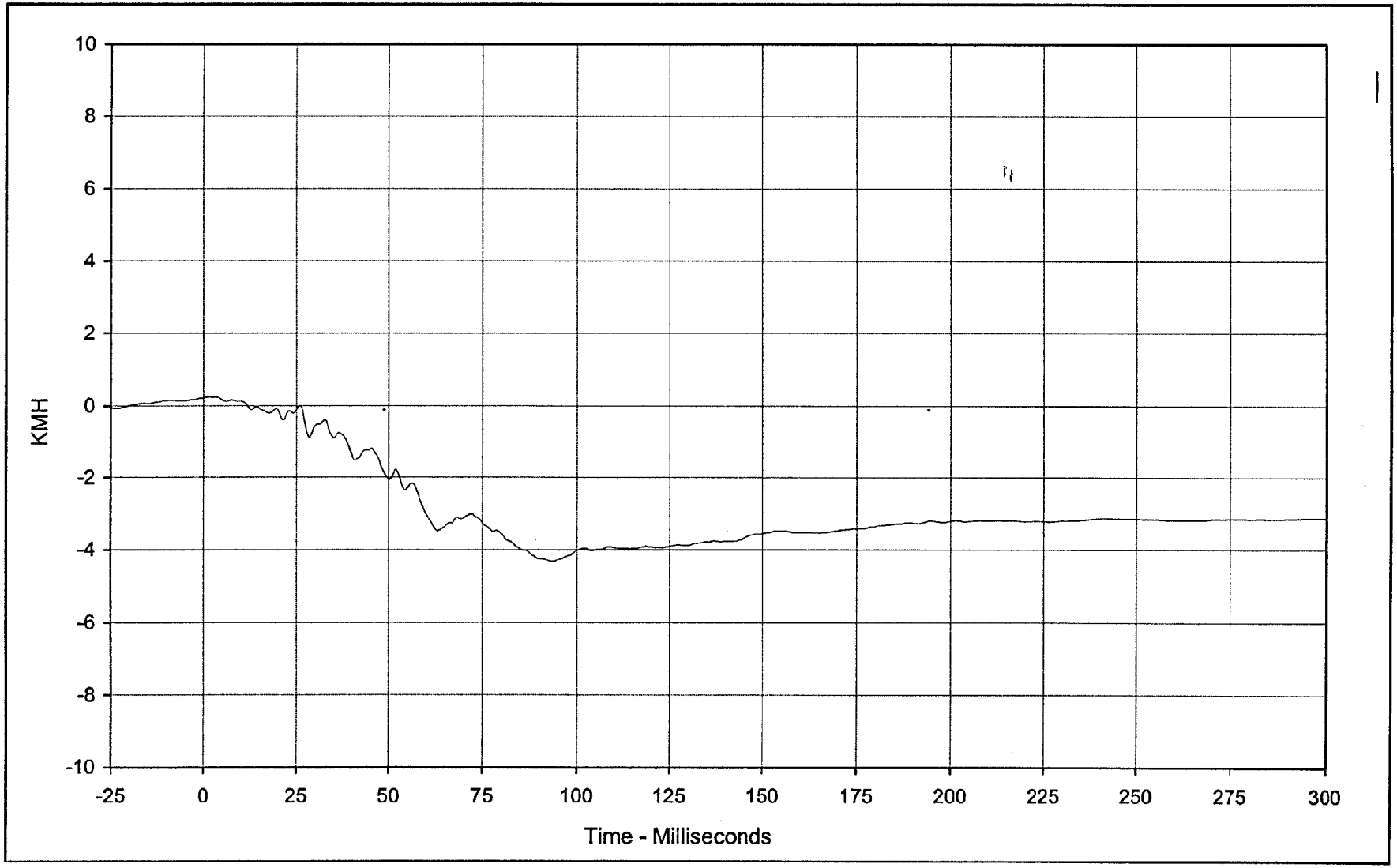
Date of Test: 9/4/97

Curve Number: FIL-092

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Vehicle Center Rear Console Y Velocity

Maximum Value: 0.2 at 3.3 Milliseconds

Minimum Value: -4.3 at 93.5 Milliseconds

SAE Filter Class: 180

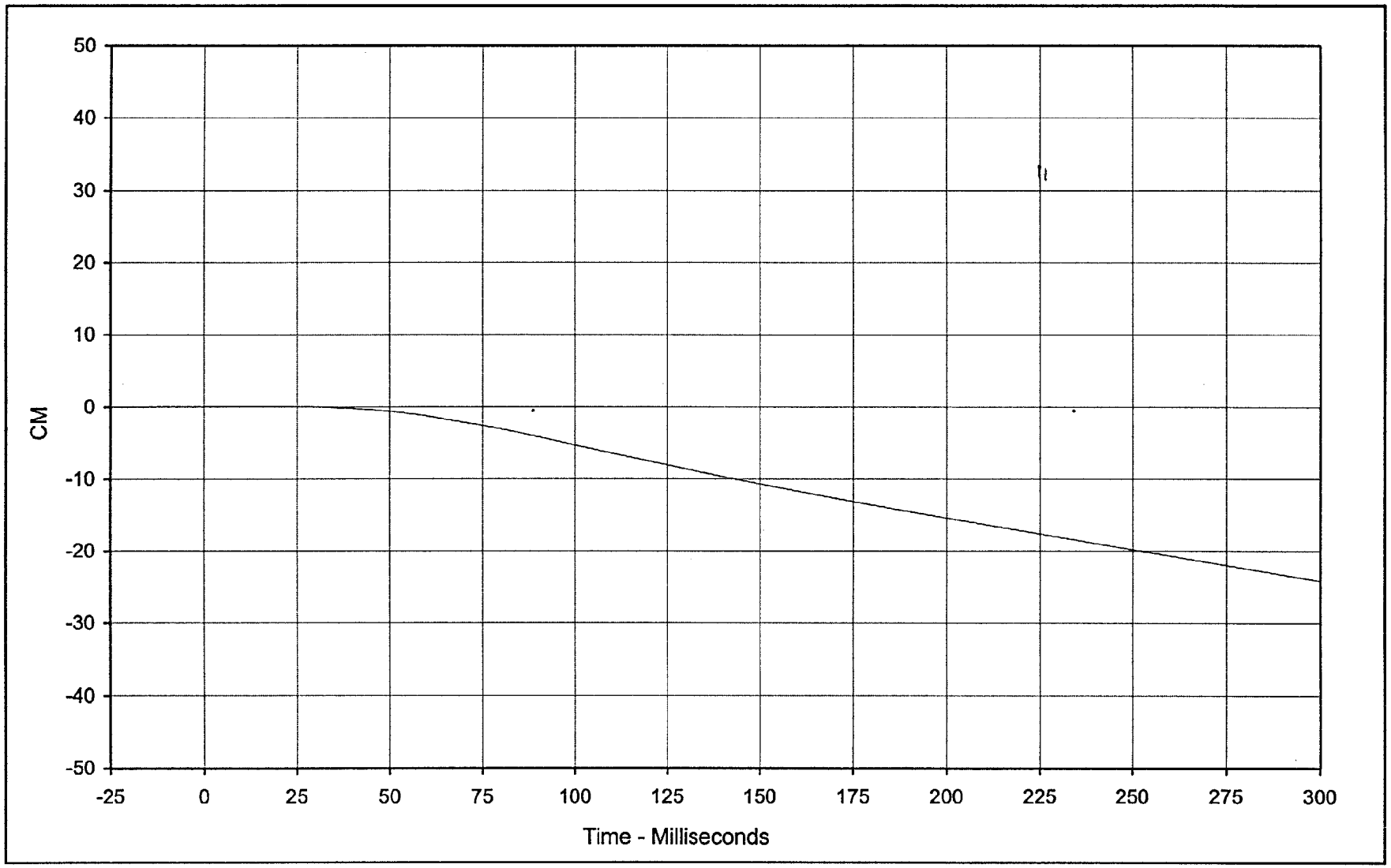
Date of Test: 9/4/97

Curve Number: IN1-092

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4Door Sedan

KARCO Engineering



Curve Description: Vehicle Center Rear Console Y Displ.

Maximum Value: 0.1 at 11.7 Milliseconds

Minimum Value: -24.2 at 299.9 Milliseconds

SAE Filter Class: 180

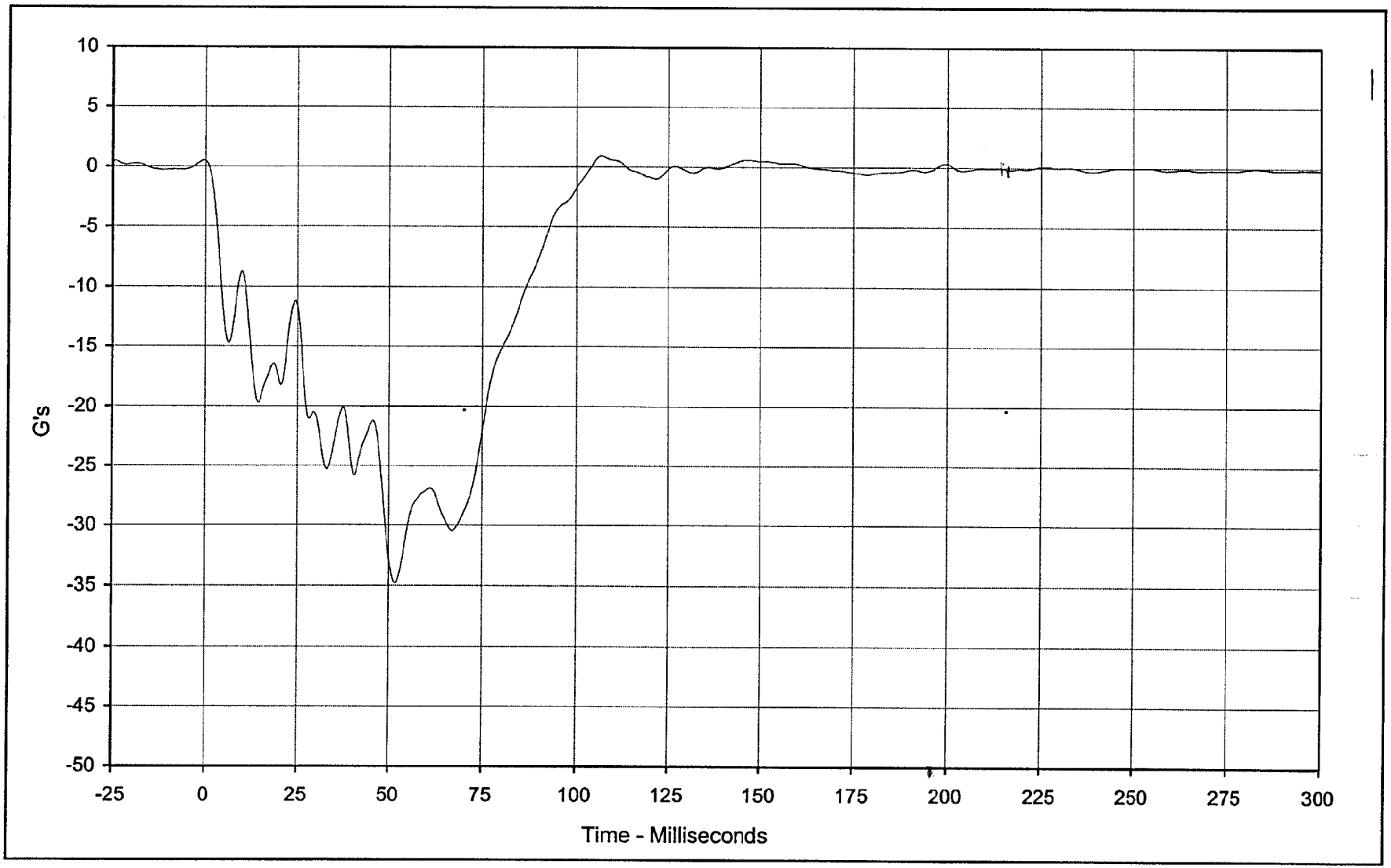
Date of Test: 9/4/97

Curve Number: IN2-092

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering

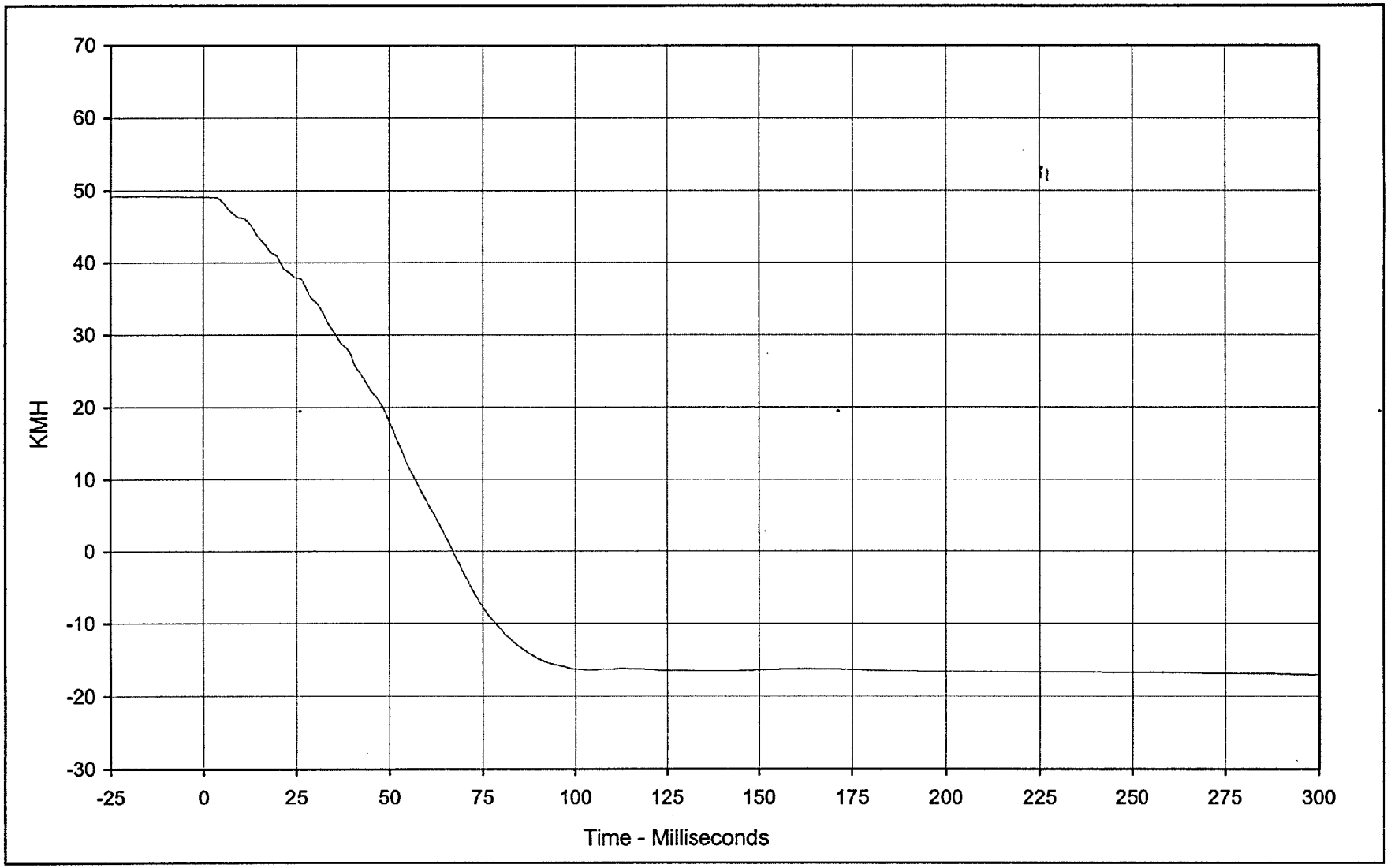


Curve Description:	Vehicle Right Rear Sill X			
Maximum Value:	0.9	at	106.7	Milliseconds
Minimum Value:	-34.8	at	51.7	Milliseconds
SAE Filter Class:	60			
Date of Test:	9/4/97			
Curve Number:	FIL-093			

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Vehicle Right Rear Sill X Velocity

Maximum Value: 49.1 at 0.0 Milliseconds

Minimum Value: -17.0 at 299.9 Milliseconds

SAE Filter Class: 180

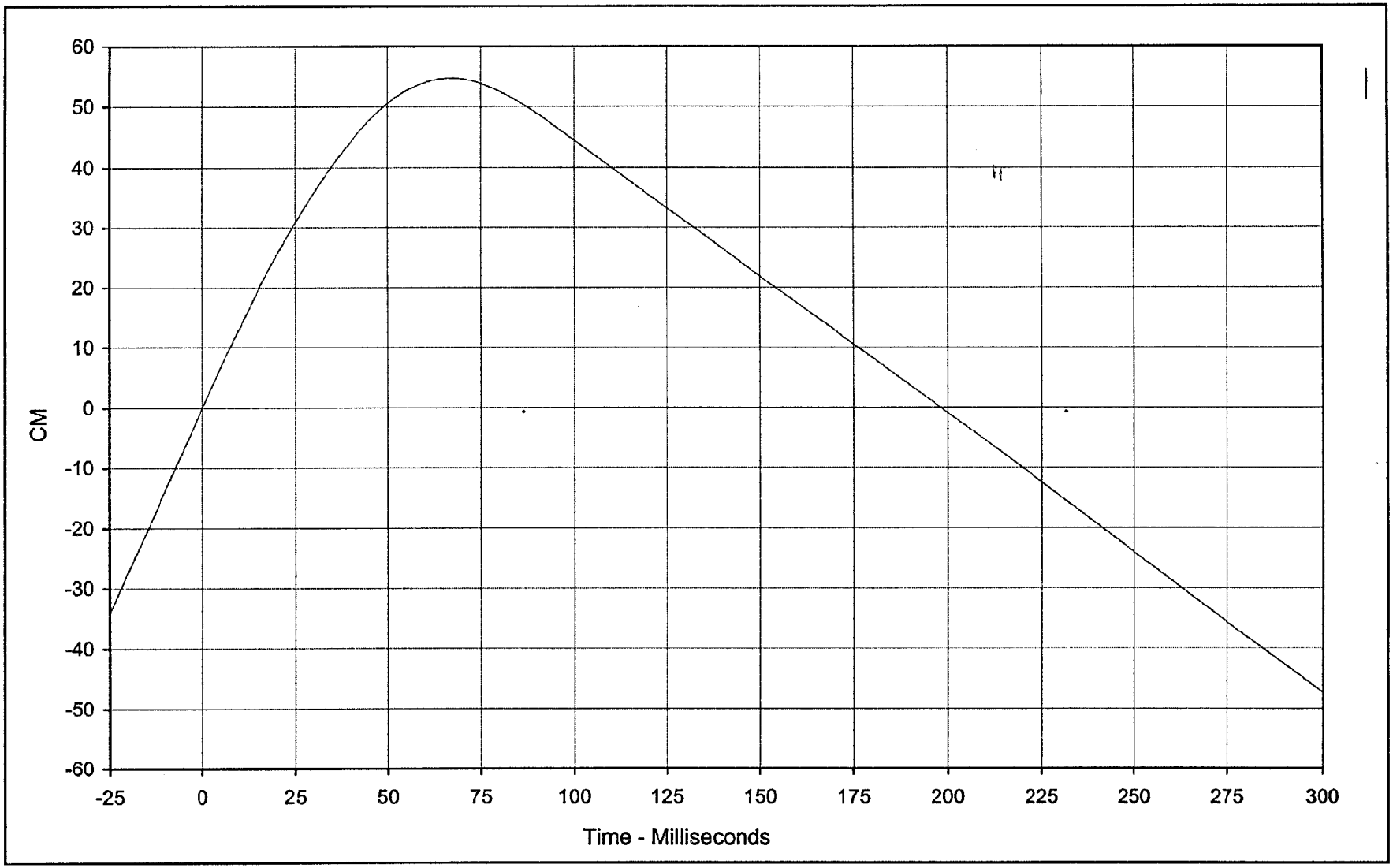
Date of Test: 9/4/97

Curve Number: IN1-093

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4Door Sedan

KARCO Engineering



Curve Description: Vehicle Right Rear Sill X Displ.

Maximum Value: 54.7 at 67.1 Milliseconds

Minimum Value: -47.3 at 299.9 Milliseconds

SAE Filter Class: 180

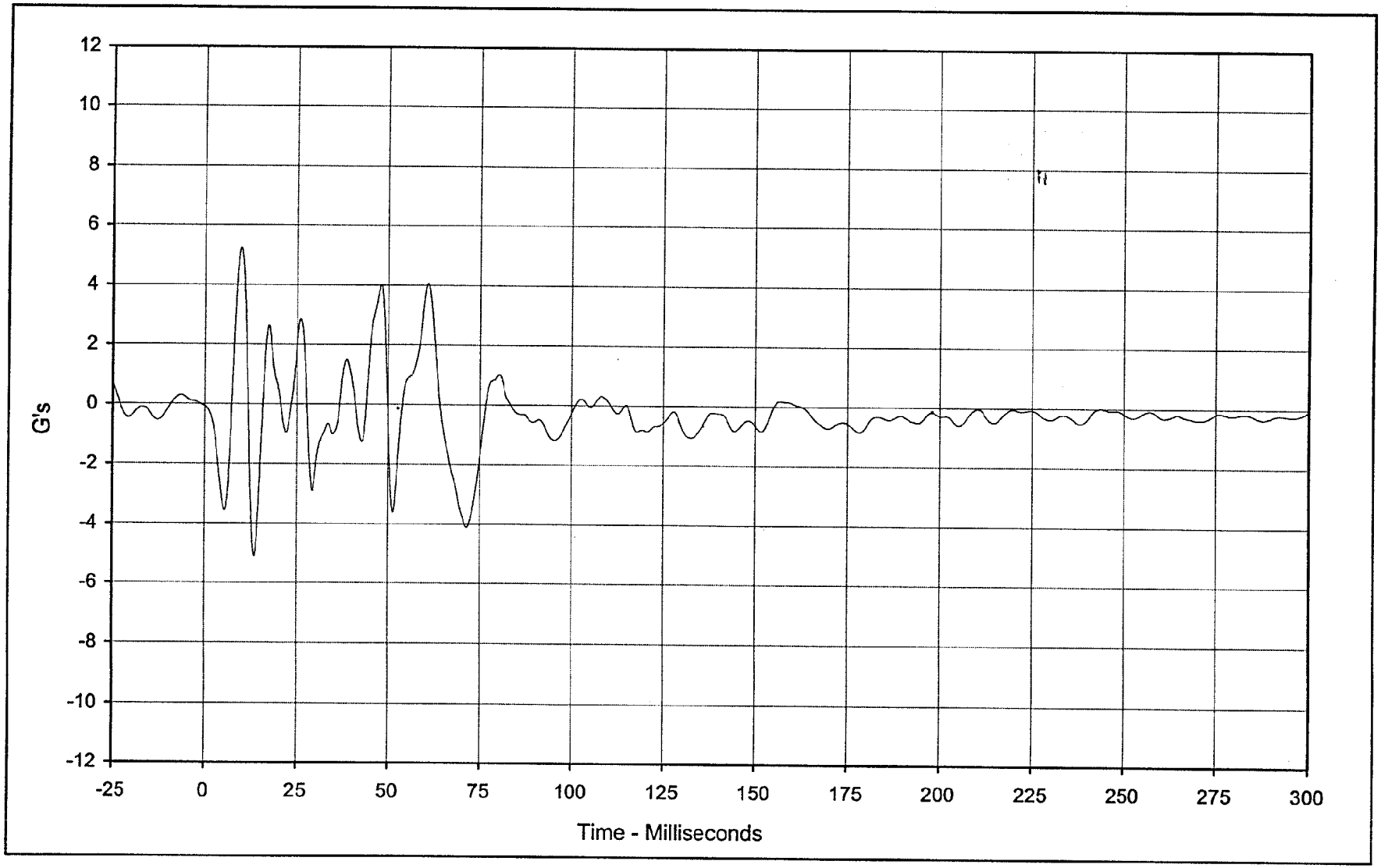
Date of Test: 9/4/97

Curve Number: IN2-093

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Vehicle Right Rear Sill Y

Maximum Value: 5.2 at 9.9 Milliseconds

Minimum Value: -5.1 at 13.6 Milliseconds

SAE Filter Class: 60

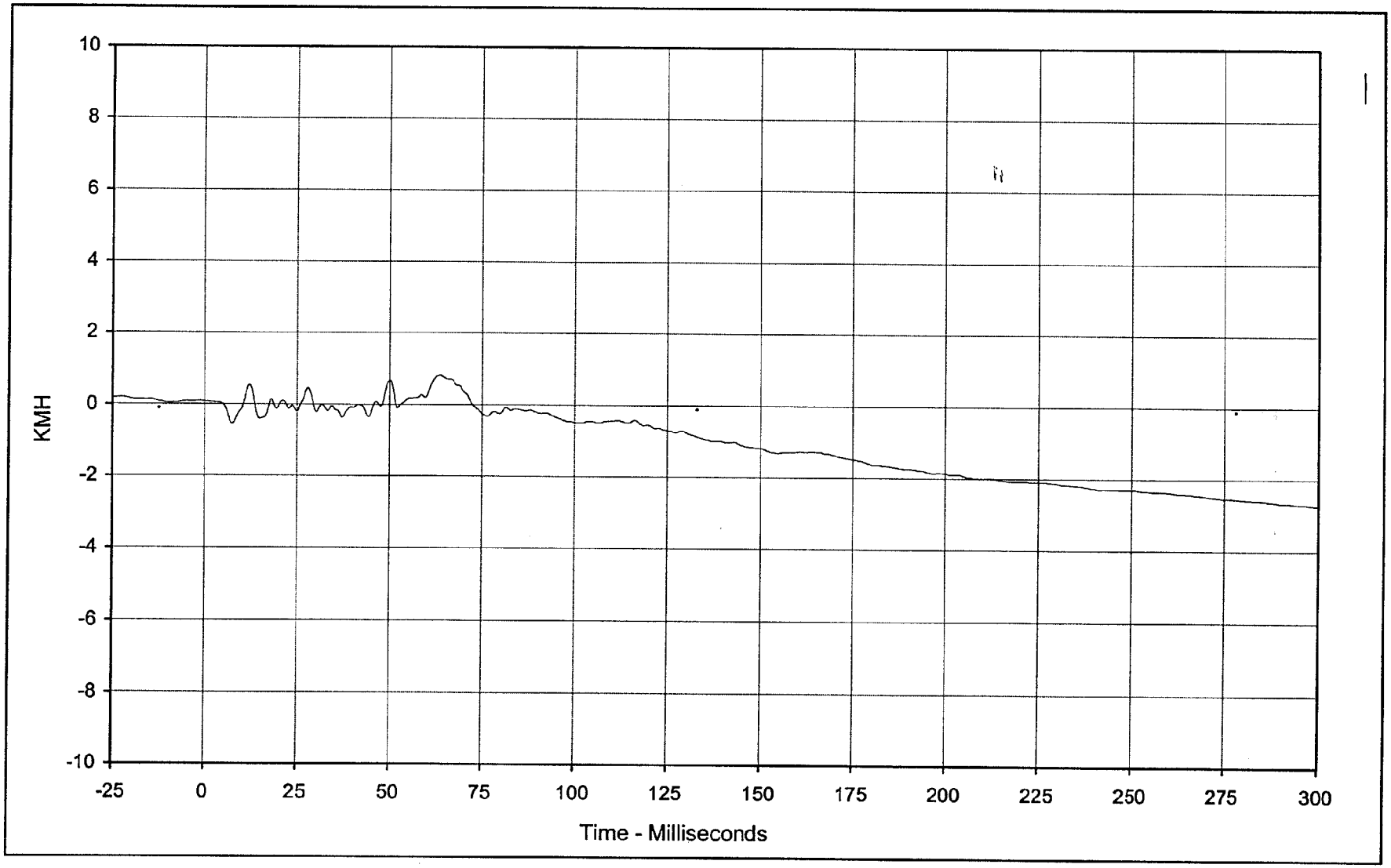
Date of Test: 9/4/97

Curve Number: FIL-094

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Vehicle Right Rear Sill Y Velocity

Maximum Value: 0.8 at 63.5 Milliseconds

Minimum Value: -2.7 at 299.9 Milliseconds

SAE Filter Class: 180

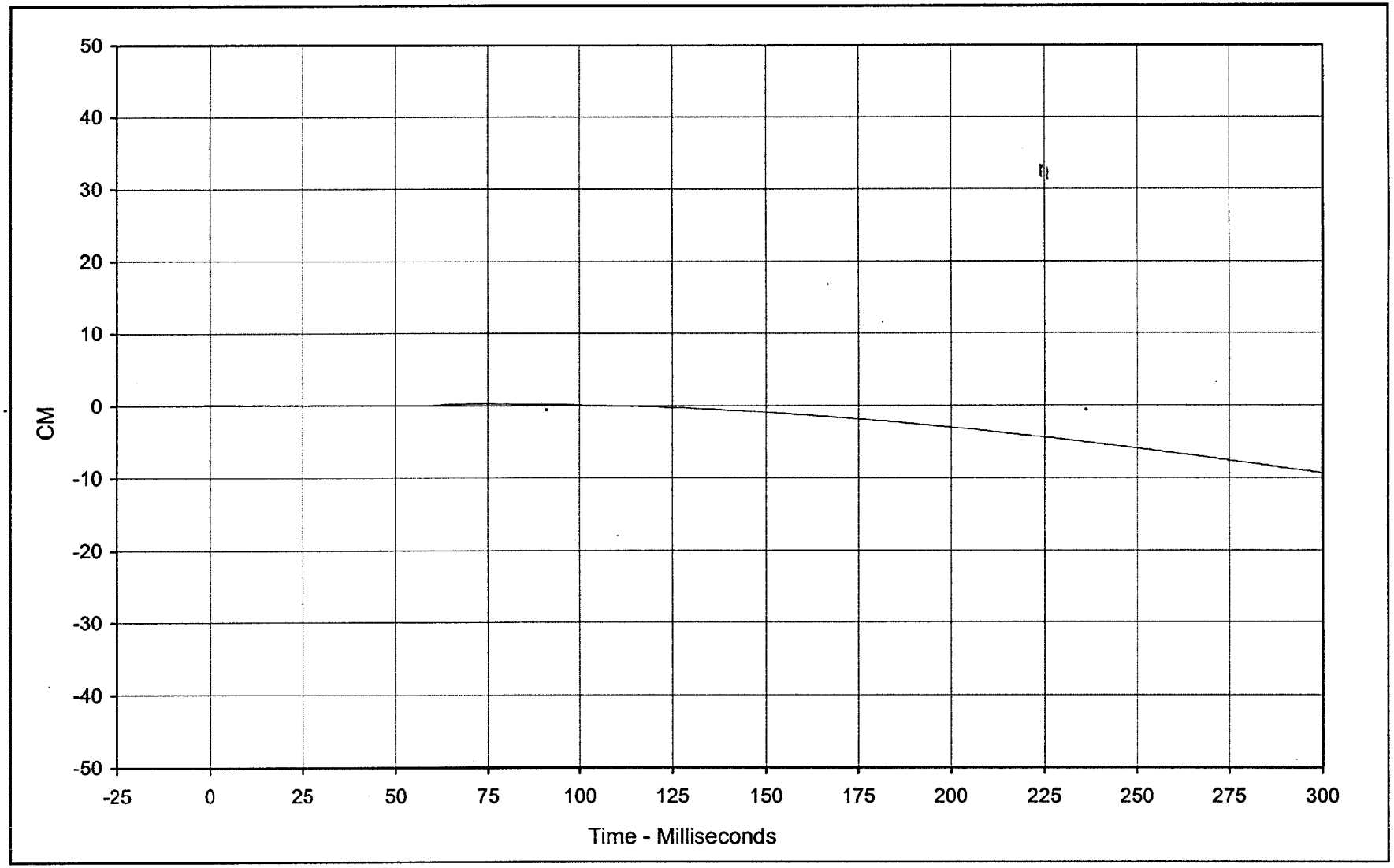
Date of Test: 9/4/97

Curve Number: IN1-094

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4Door Sedan

KARCO Engineering



Curve Description: Vehicle Right Rear Sill Y Displ.

Maximum Value: 0.3 at 72.5 Milliseconds

Minimum Value: -9.4 at 299.9 Milliseconds

SAE Filter Class: 180

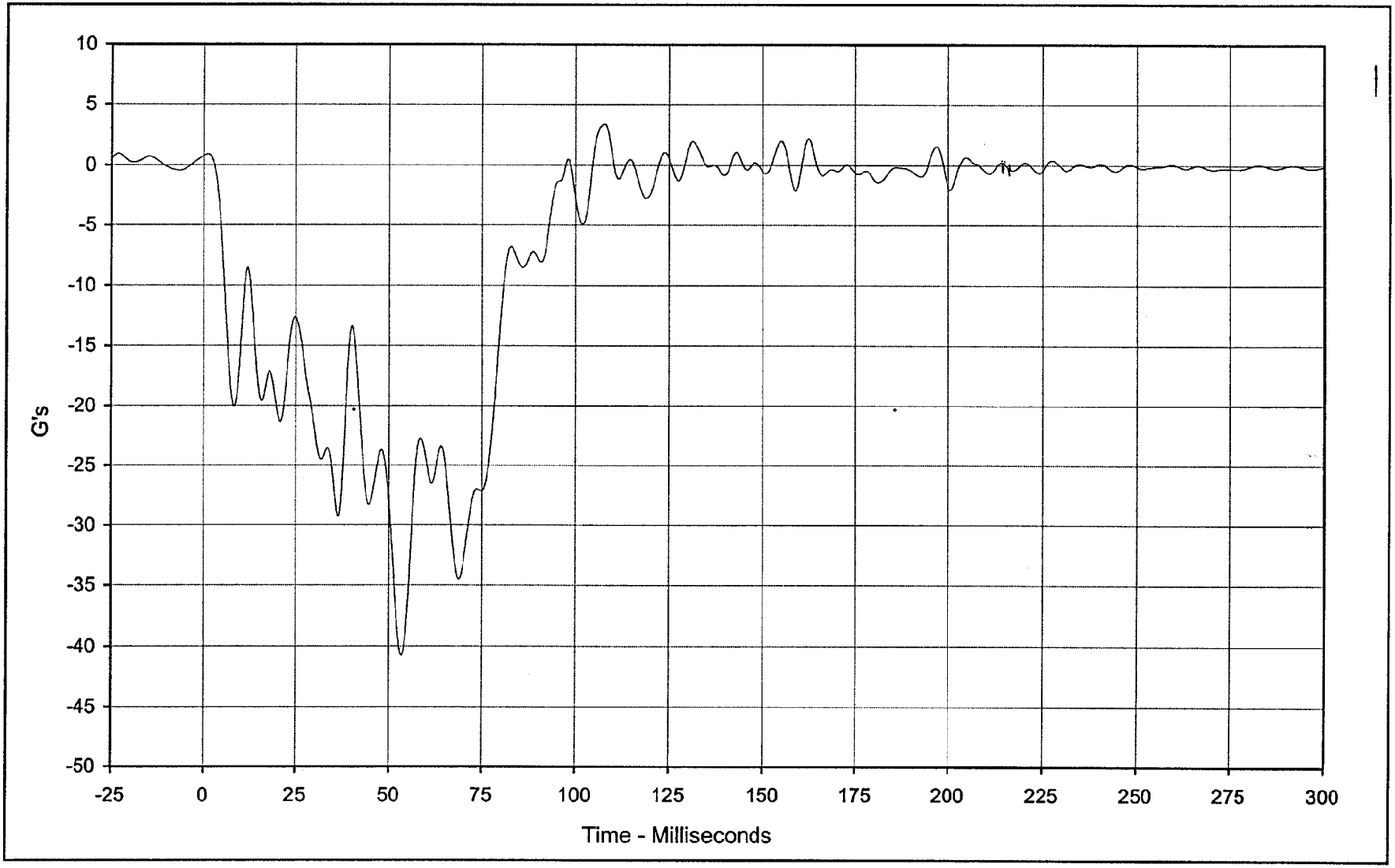
Date of Test: 9/4/97

Curve Number: IN2-094

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Vehicle Center Rear Trunk X

Maximum Value: 3.4 at 107.7 Milliseconds

Minimum Value: -40.7 at 53.3 Milliseconds

SAE Filter Class: 60

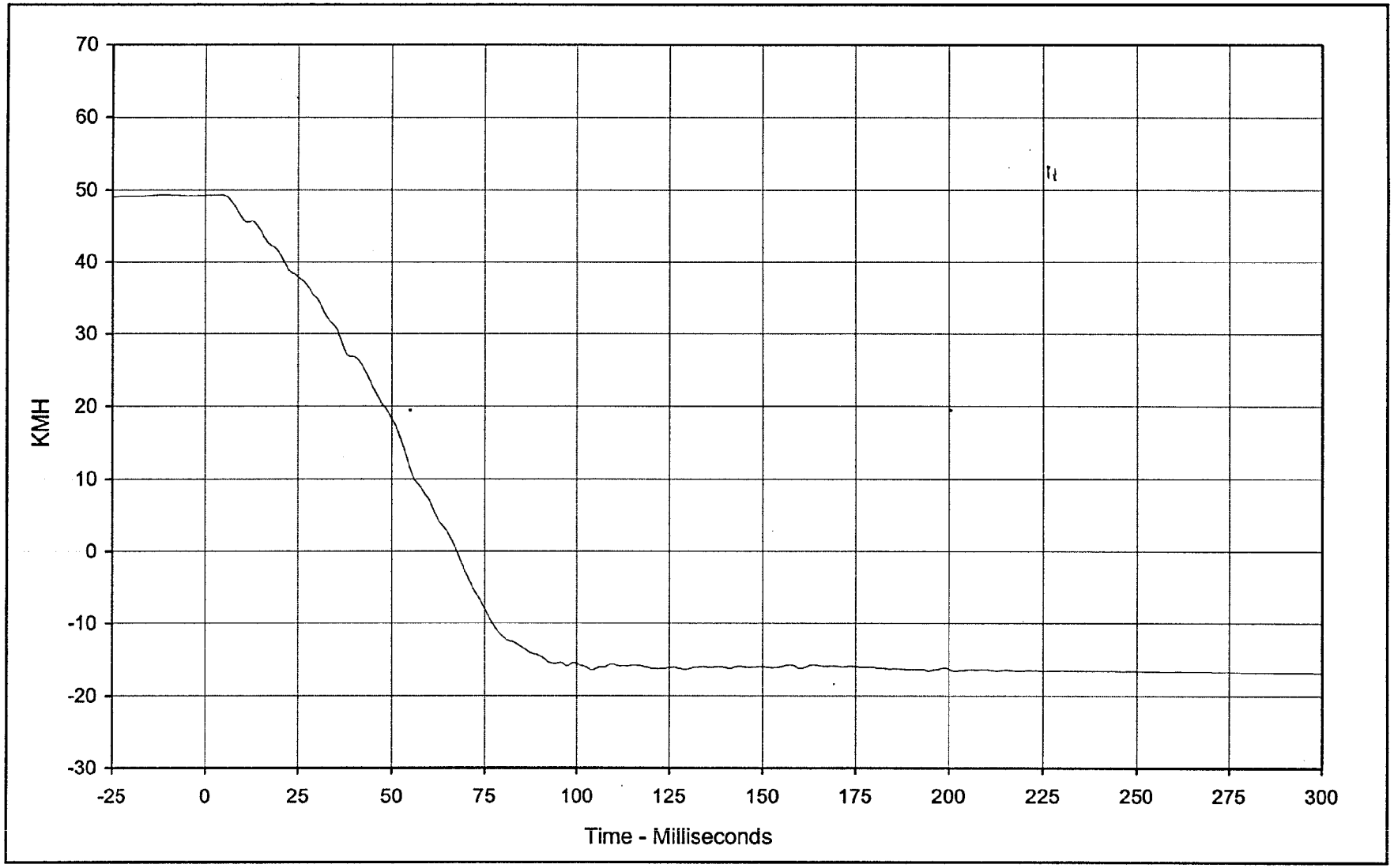
Date of Test: 9/4/97

Curve Number: FIL-095

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Vehicle Center Rear Trunk X Velocity

Maximum Value: 49.3 at 4.6 Milliseconds

Minimum Value: -16.9 at 299.9 Milliseconds

SAE Filter Class: 180

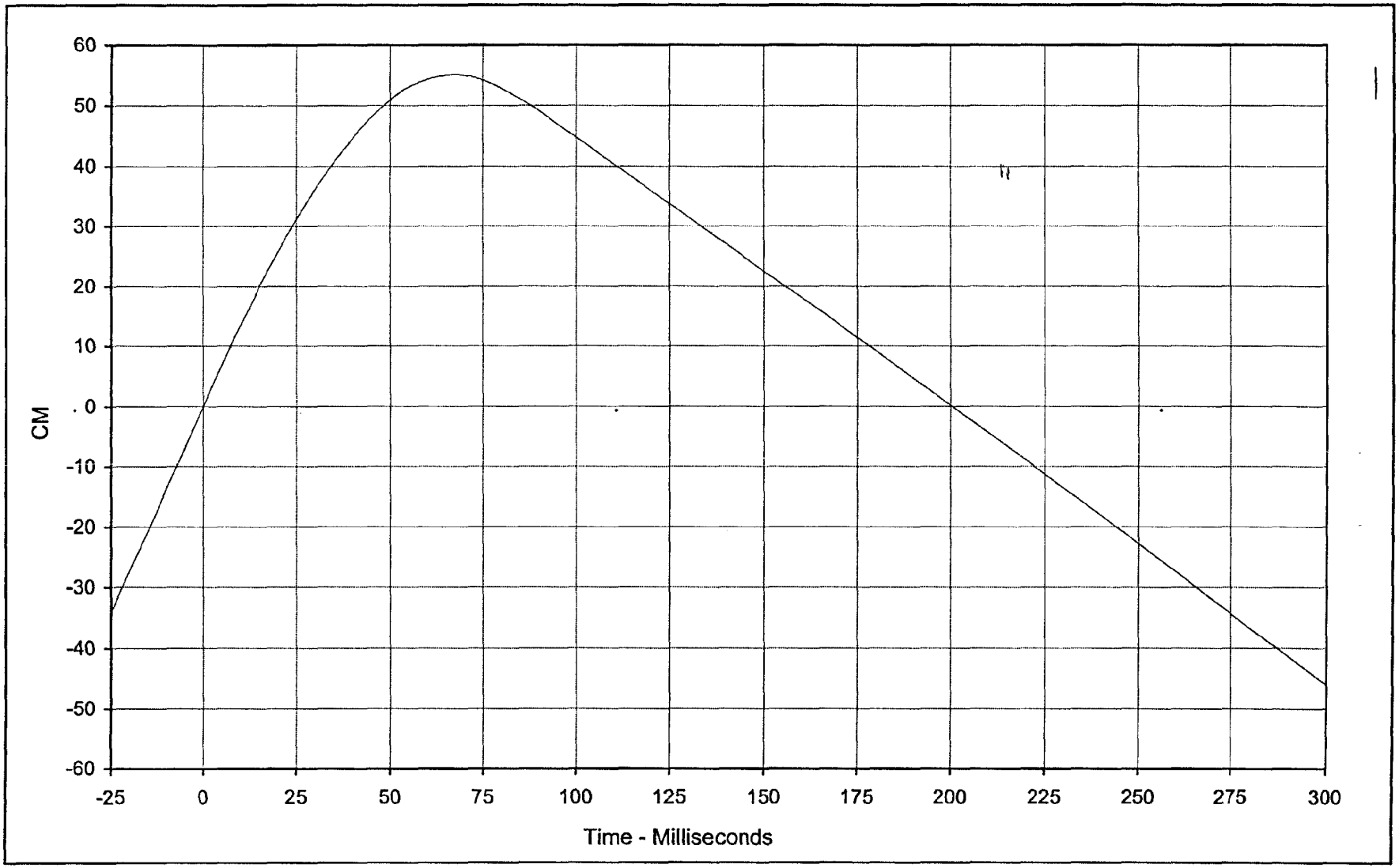
Date of Test: 9/4/97

Curve Number: IN1-095

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4Door Sedan

KARCO Engineering



Curve Description: Vehicle Center Rear Trunk X Displ.

Maximum Value: 55.1 at 67.6 Milliseconds

Minimum Value: -46.0 at 299.9 Milliseconds

SAE Filter Class: 180

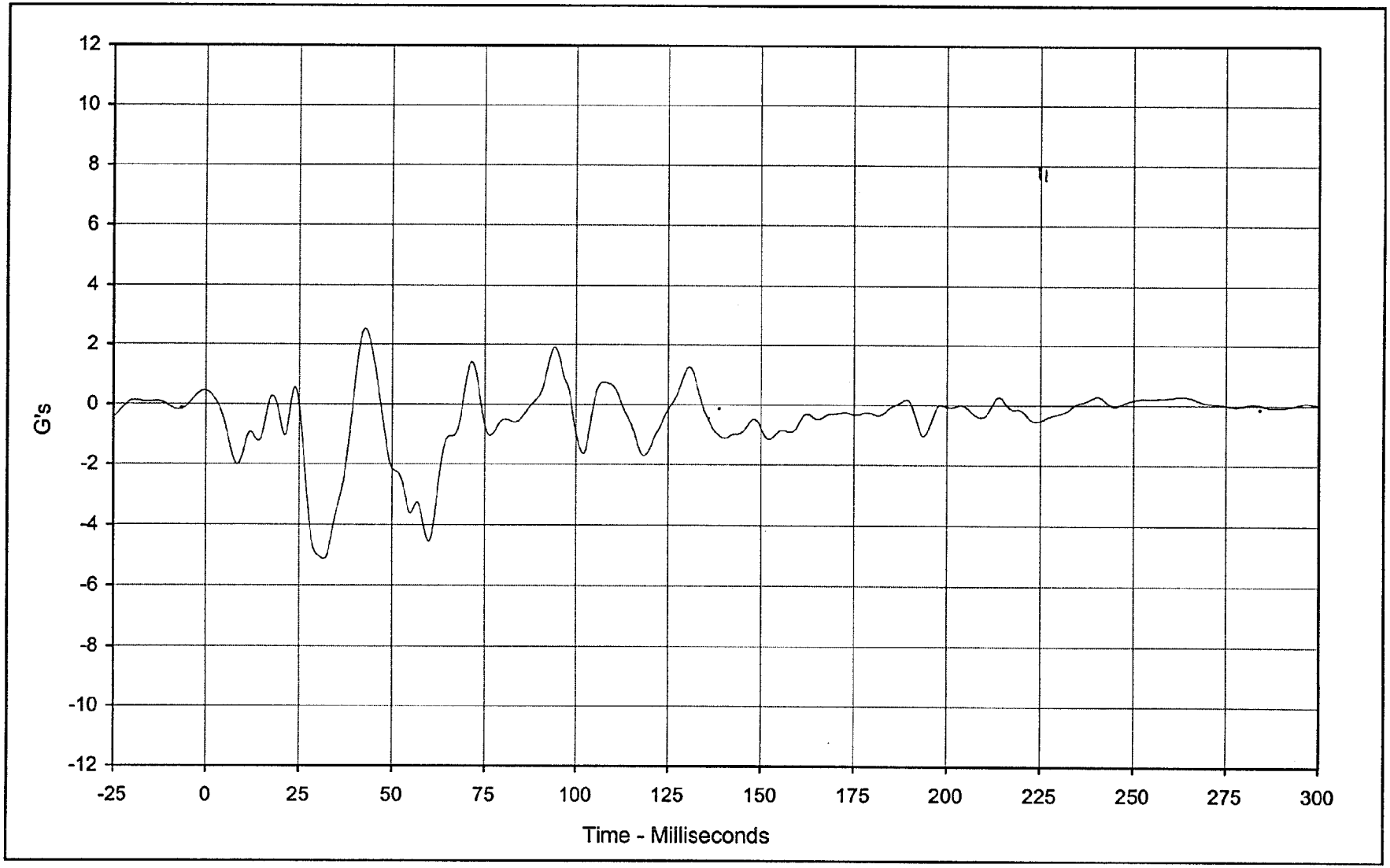
Date of Test: 9/4/97

Curve Number: IN2-095

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Vehicle Center Rear Trunk Y

Maximum Value: 2.5 at 42.7 Milliseconds

Minimum Value: -5.1 at 31.8 Milliseconds

SAE Filter Class: 60

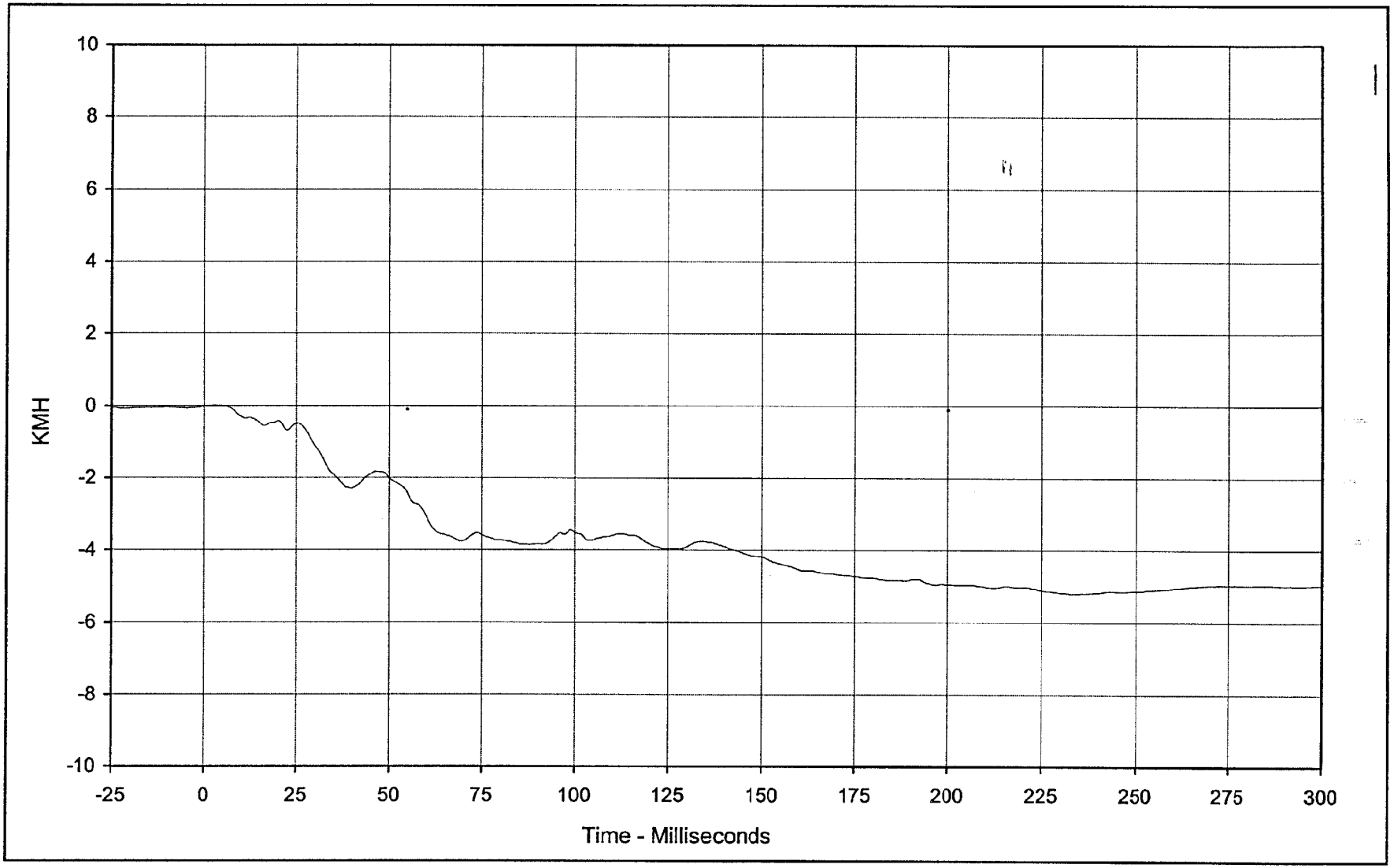
Date of Test: 9/4/97

Curve Number: FIL-096

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Vehicle Center Rear Trunk Y Velocity

Maximum Value: 0.0 at 4.1 Milliseconds

Minimum Value: -5.2 at 233.6 Milliseconds

SAE Filter Class: 180

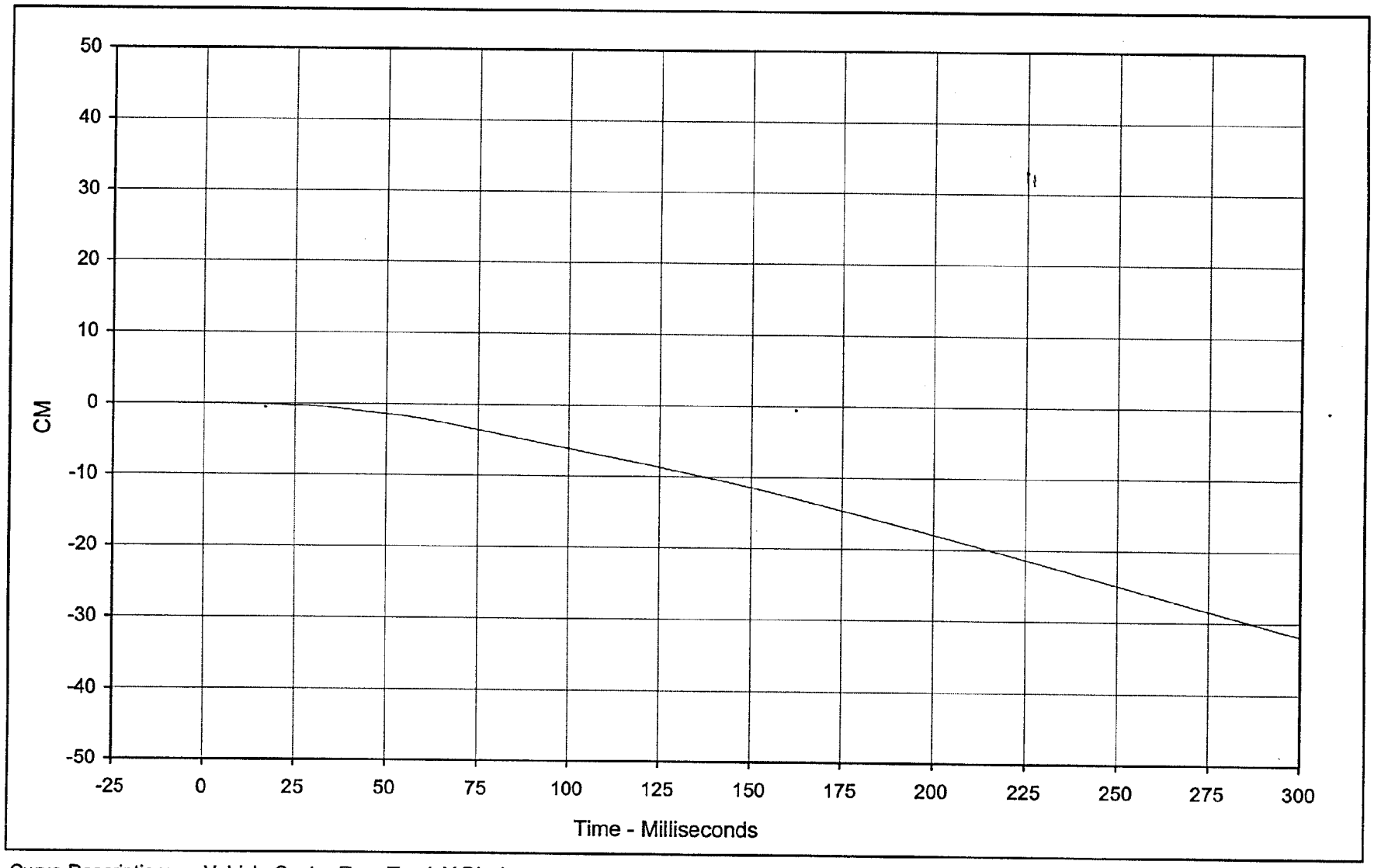
Date of Test: 9/4/97

Curve Number: IN1-096

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4Door Sedan

KARCO Engineering



Curve Description: Vehicle Center Rear Trunk Y Displ.

Maximum Value: 0.0 at 5.7 Milliseconds

Minimum Value: -31.9 at 299.9 Milliseconds

SAE Filter Class: 180

Date of Test: 9/4/97

Curve Number: IN2-096

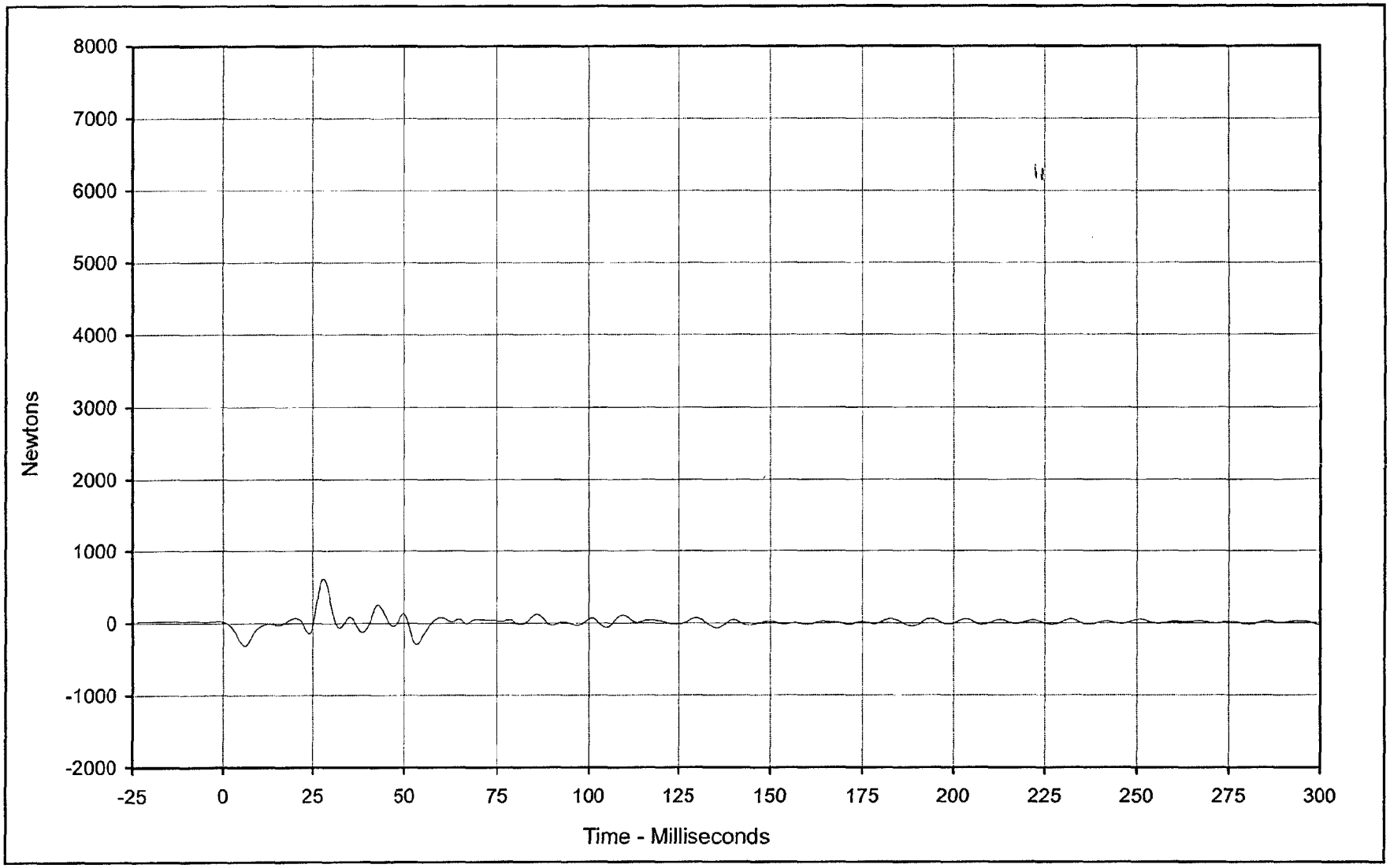
Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering

APPENDIX C

LOAD CELL BARRIER DATA

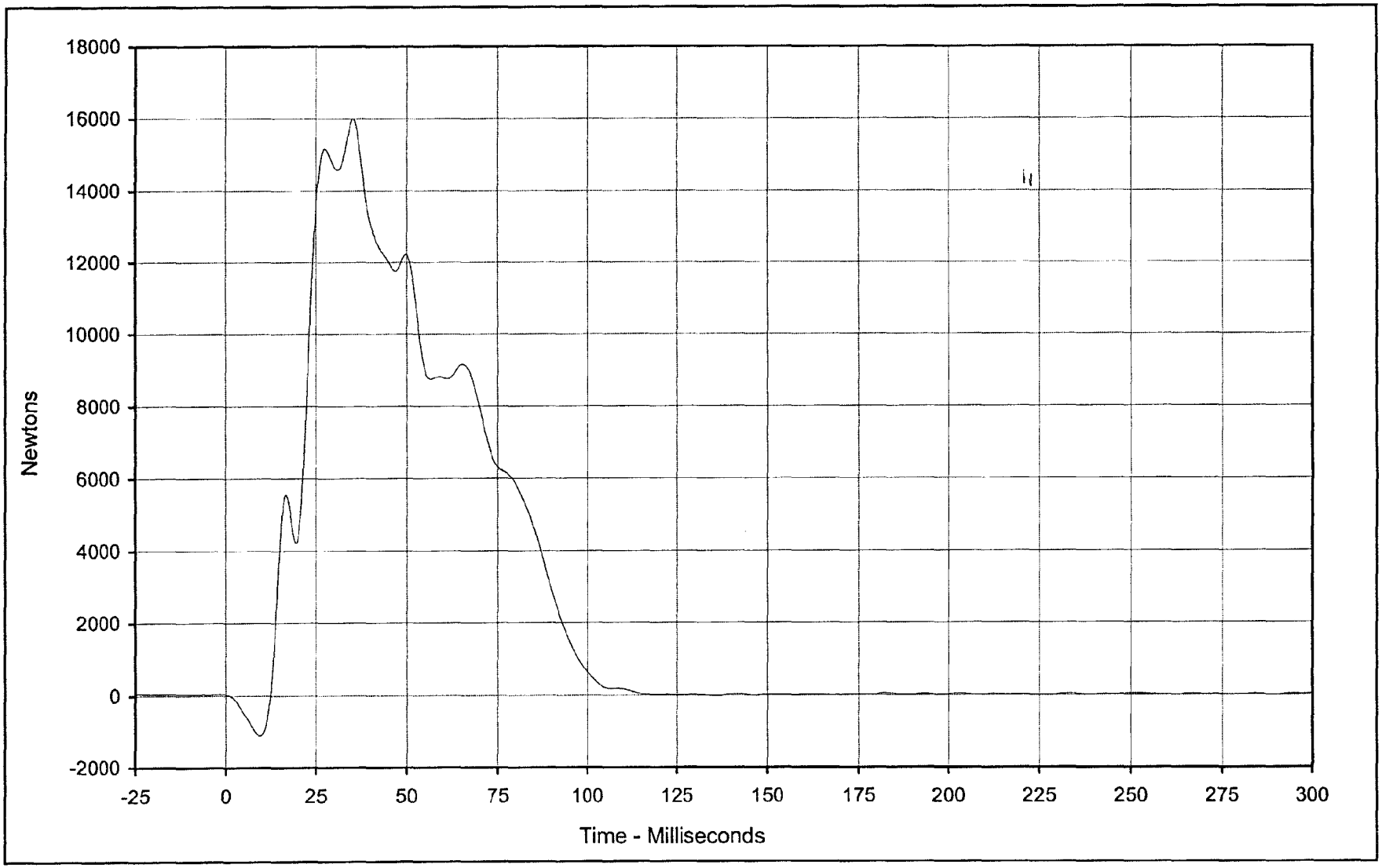


Curve Description:	Barrier Force A2			
Maximum Value:	615.4	at	27.9	Milliseconds
Minimum Value:	-310.6	at	6.0	Milliseconds
SAE Filter Class:	60			
Date of Test:	9/4/97			
Curve Number:	FIL-001			

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Barrier Force B2

Maximum Value: 15993.5 at 35.1 Milliseconds

Minimum Value: -1106.6 at 9.3 Milliseconds

SAE Filter Class: 60

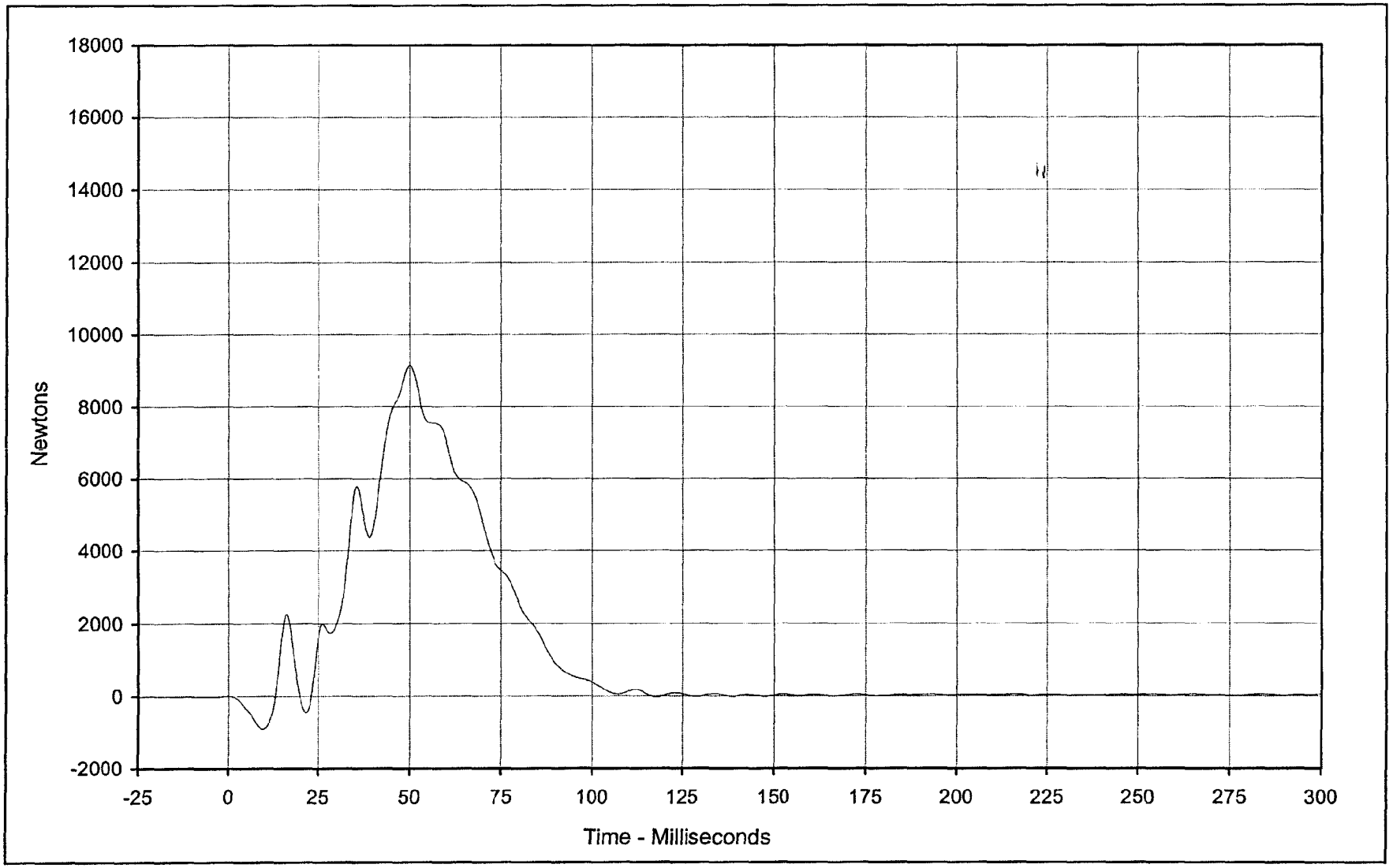
Date of Test: 9/4/97

Curve Number: FIL-002

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering

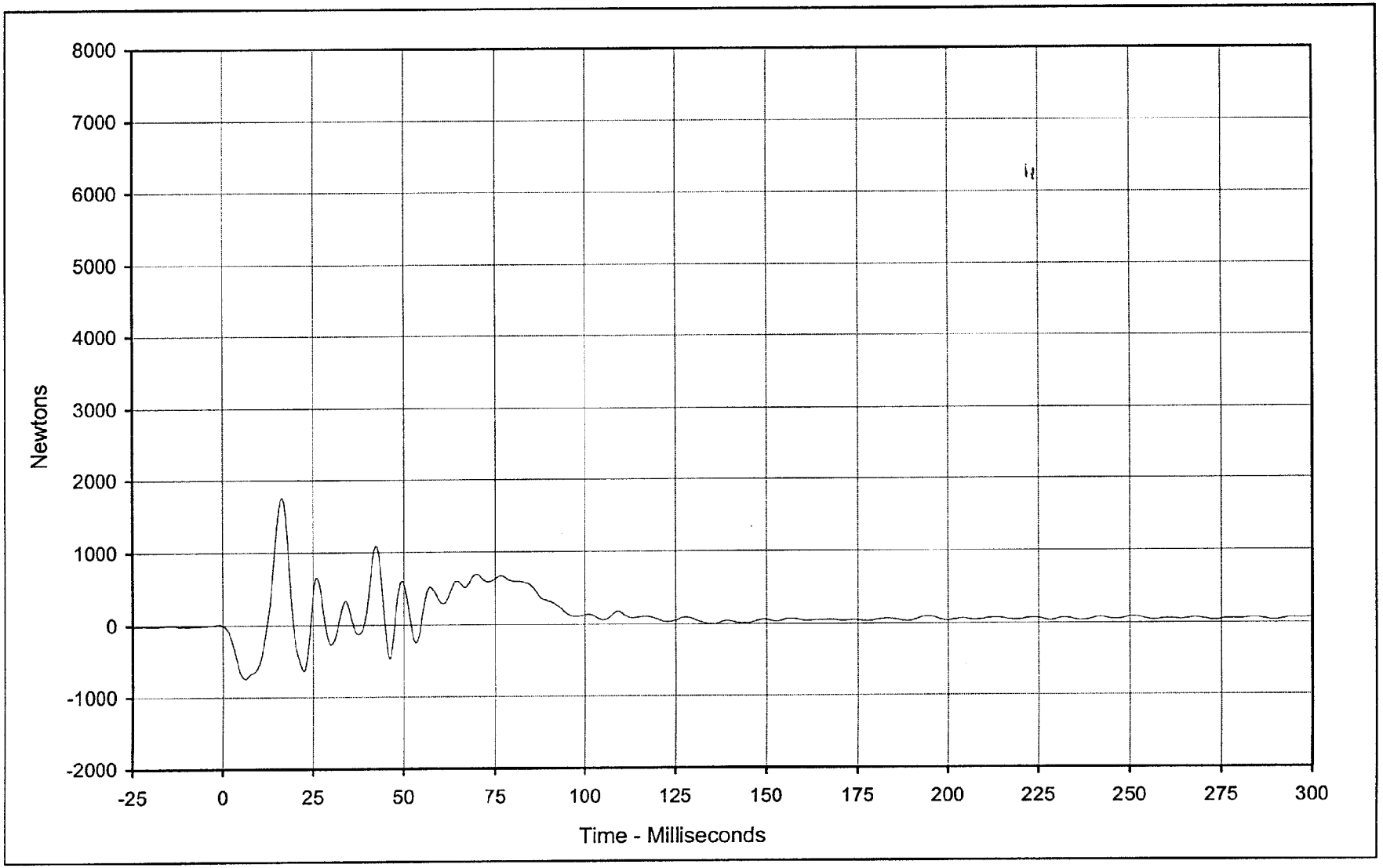


Curve Description:	Barrier Force C2			
Maximum Value:	9144.6	at	50.0	Milliseconds
Minimum Value:	-903.8	at	9.7	Milliseconds
SAE Filter Class:	60			
Date of Test:	9/4/97			
Curve Number:	FIL-003			

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Barrier Force A3

Maximum Value: 1759.6 at 16.2 Milliseconds

Minimum Value: -742.9 at 6.0 Milliseconds

SAE Filter Class: 60

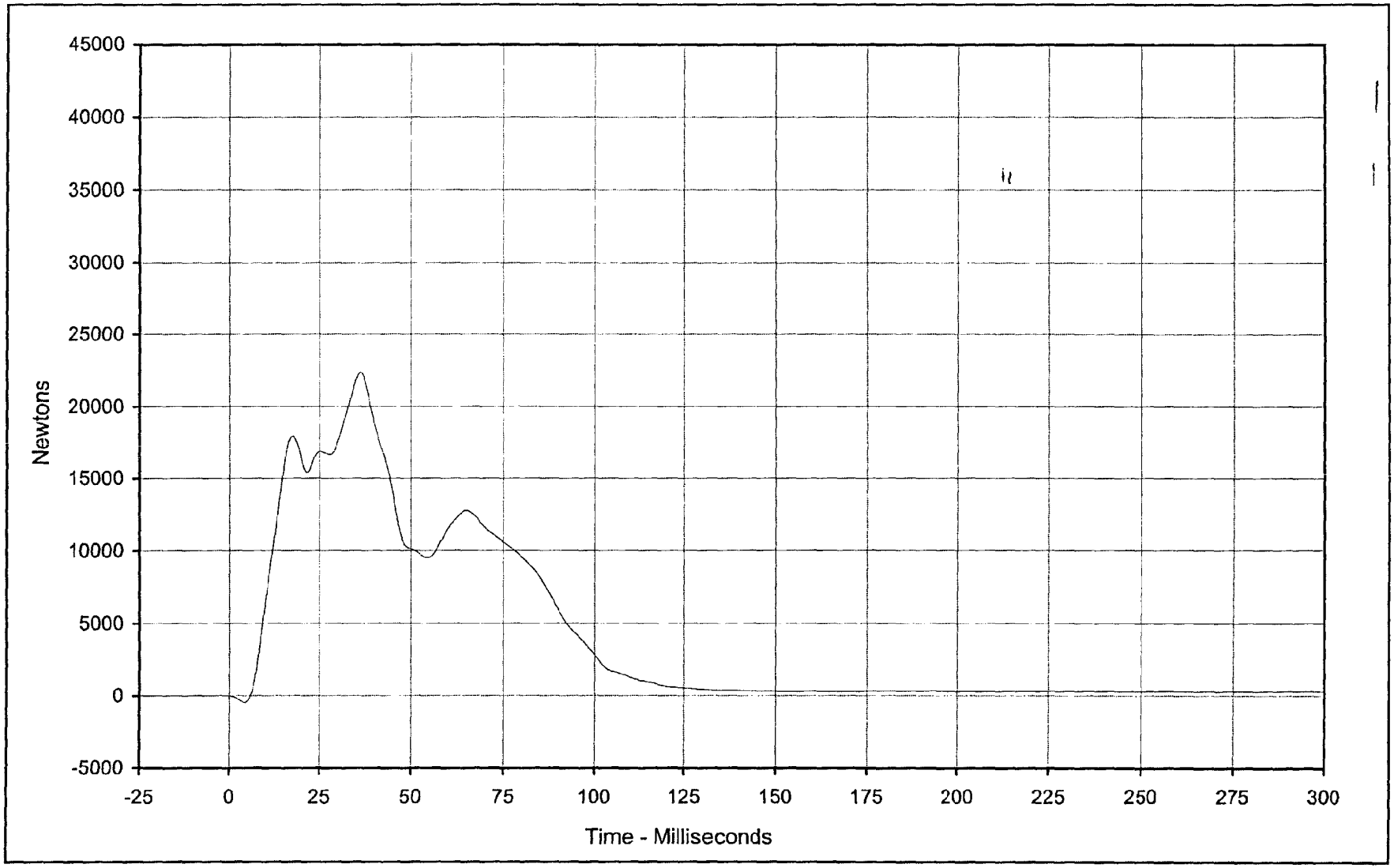
Date of Test: 9/4/97

Curve Number: FIL-004

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Barrier Force B3

Maximum Value: 22365.2 at 36.1 Milliseconds

Minimum Value: -459.4 at 4.3 Milliseconds

SAE Filter Class: 60

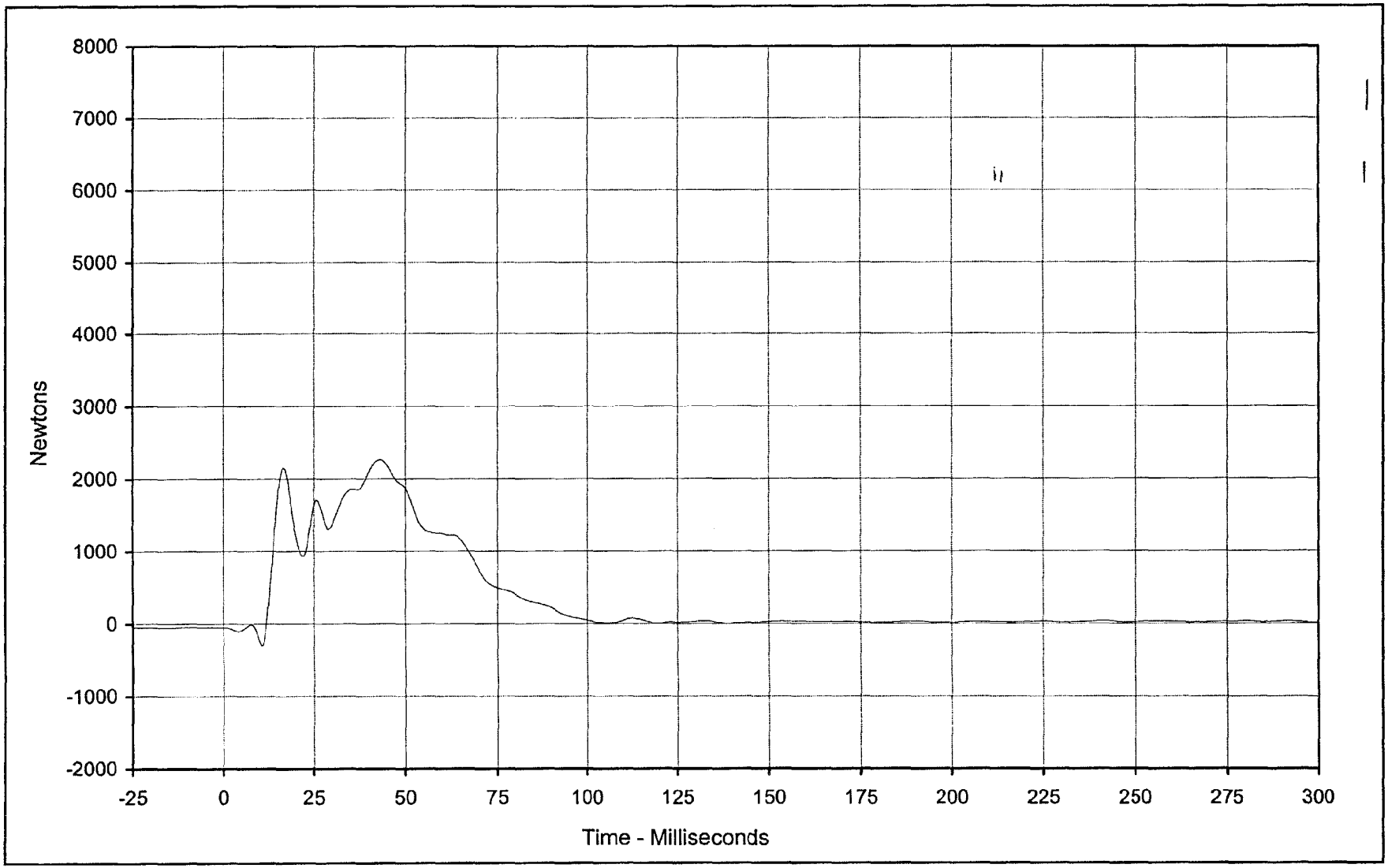
Date of Test: 9/4/97

Curve Number: FIL-005

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Barrier Force C3

Maximum Value: 2260.5 at 43.2 Milliseconds

Minimum Value: -296.3 at 10.6 Milliseconds

SAE Filter Class: 60

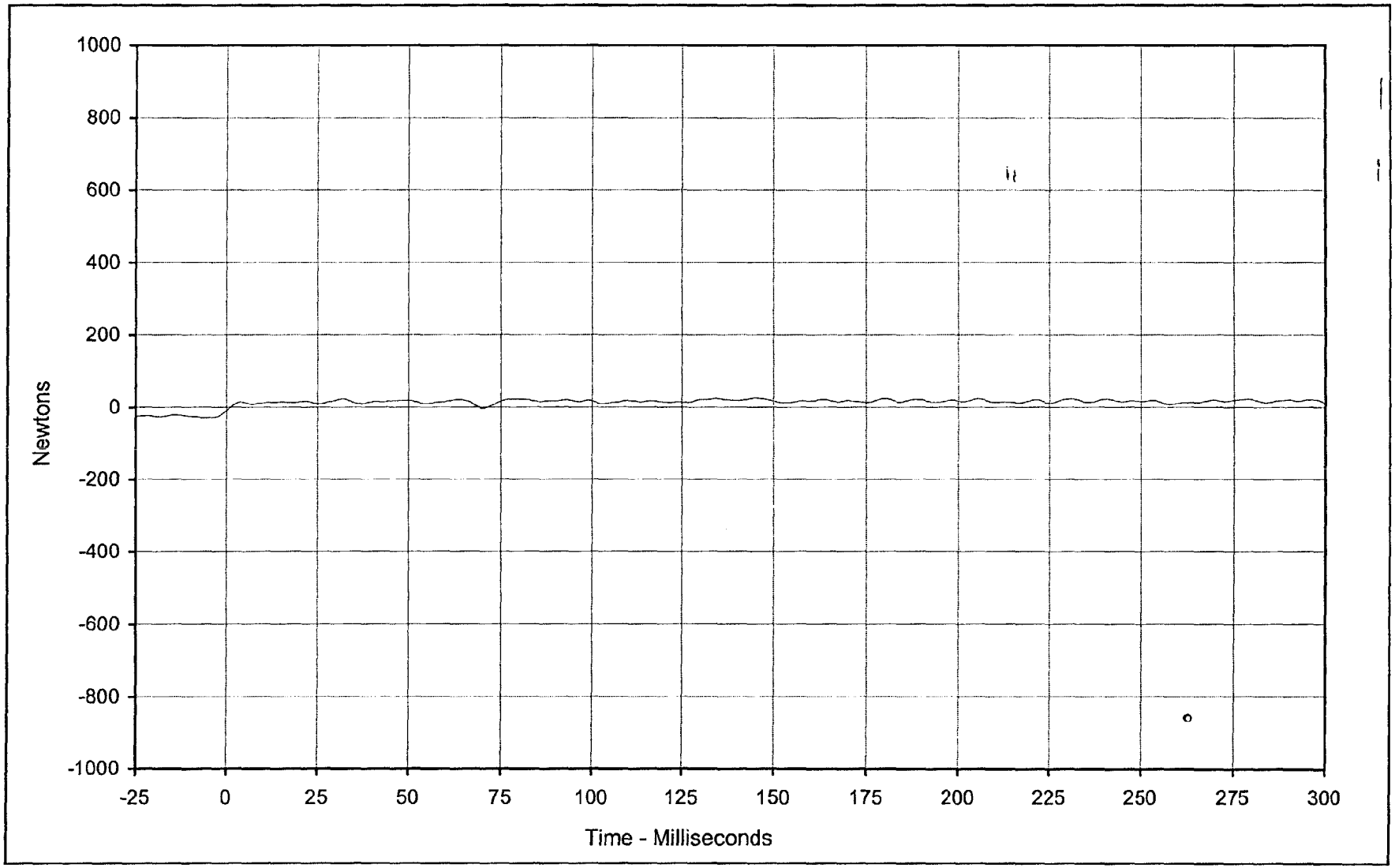
Date of Test: 9/4/97

Curve Number: FIL-006

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Barrier Force A4 *

Maximum Value: 25.9 at 145.1 Milliseconds

Minimum Value: -9.1 at 0.0 Milliseconds

SAE Filter Class: 60

Date of Test: 9/4/97

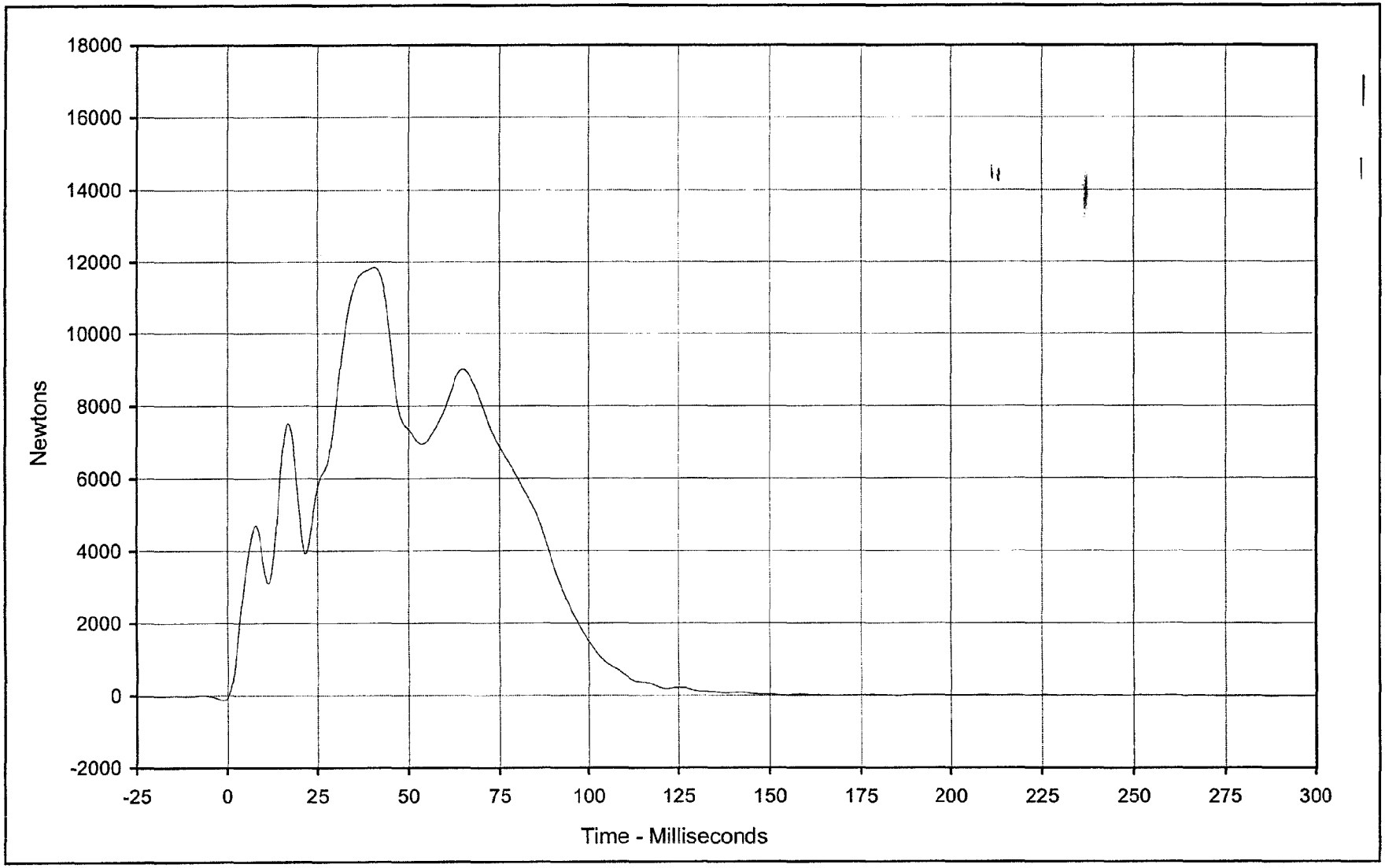
Curve Number: FIL-007

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

* Channel Failed, No Data

KARCO Engineering



Curve Description: Barrier Force B4

Maximum Value: 11838.1 at 40.7 Milliseconds

Minimum Value: -68.3 at 0.0 Milliseconds

SAE Filter Class: 60

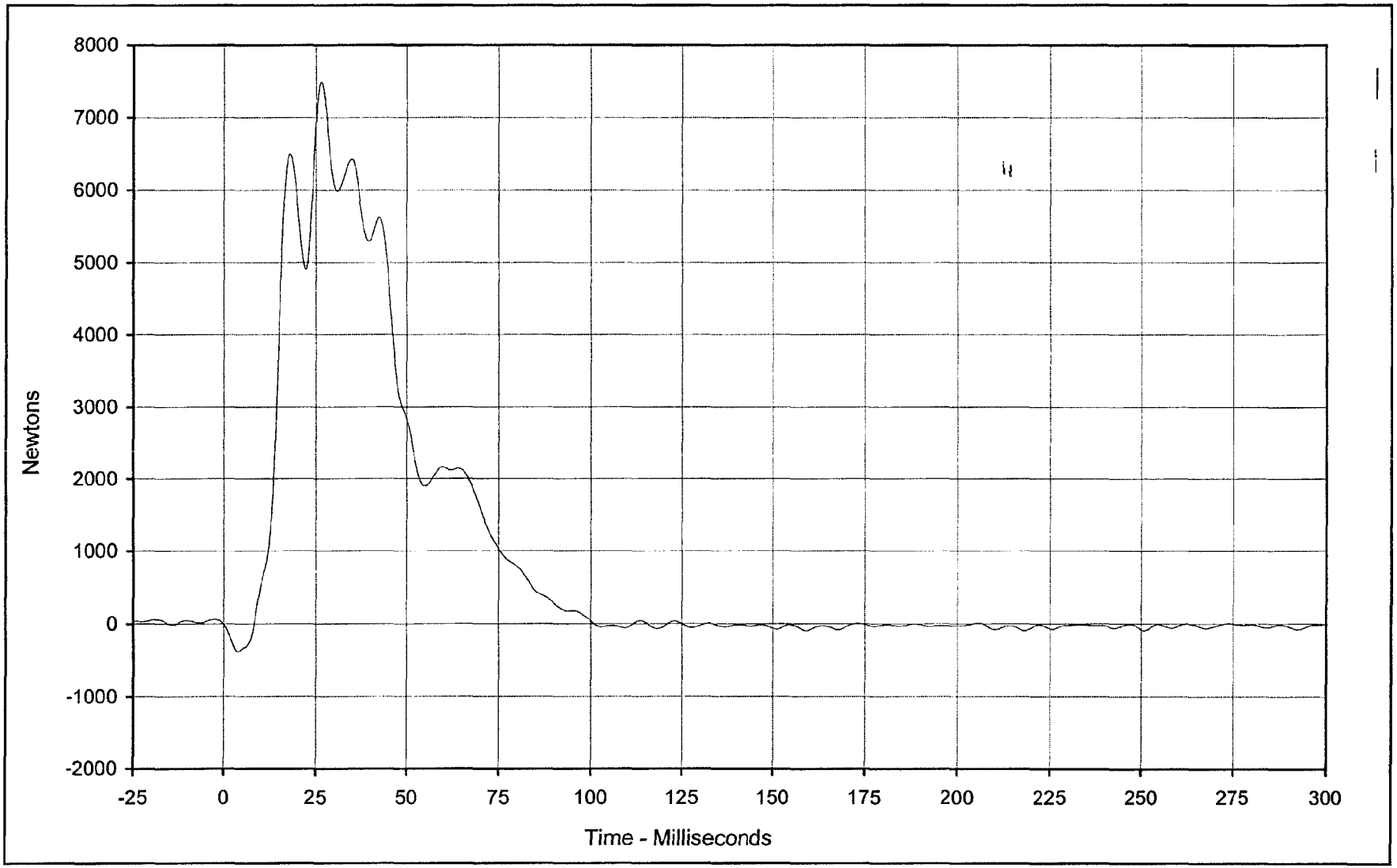
Date of Test: 9/4/97

Curve Number: FII -008

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

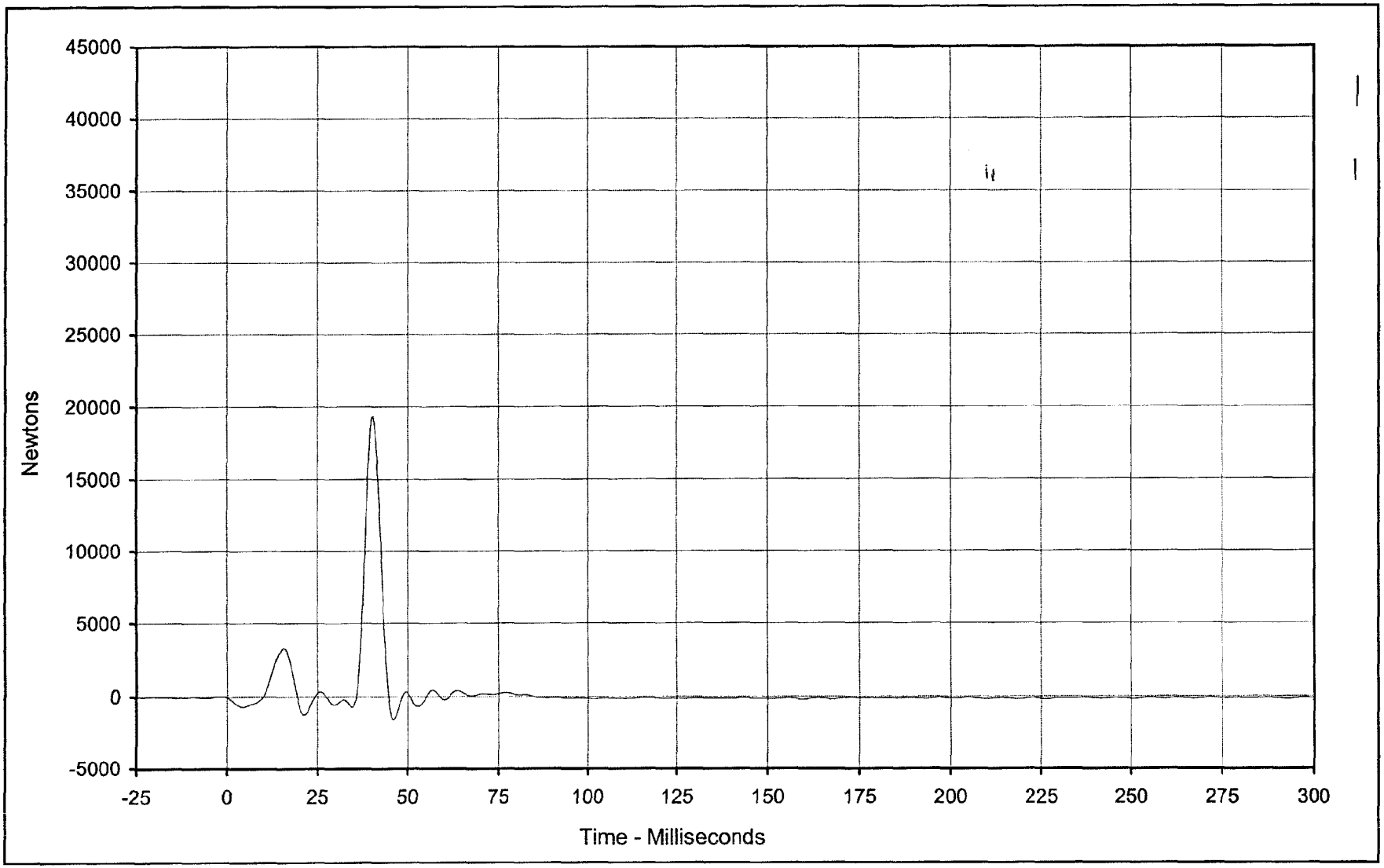
KARCO Engineering



Curve Description:	Barrier Force C4				
Maximum Value:	7493.2	at	26.3	Milliseconds	
Minimum Value:	-382.4	at	3.7	Milliseconds	
SAE Filter Class:	60				
Date of Test:	9/4/97				
Curve Number:	FIL-009				

Testing Program	1997 48.4 km/h Frontal Impact (Female)
Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan

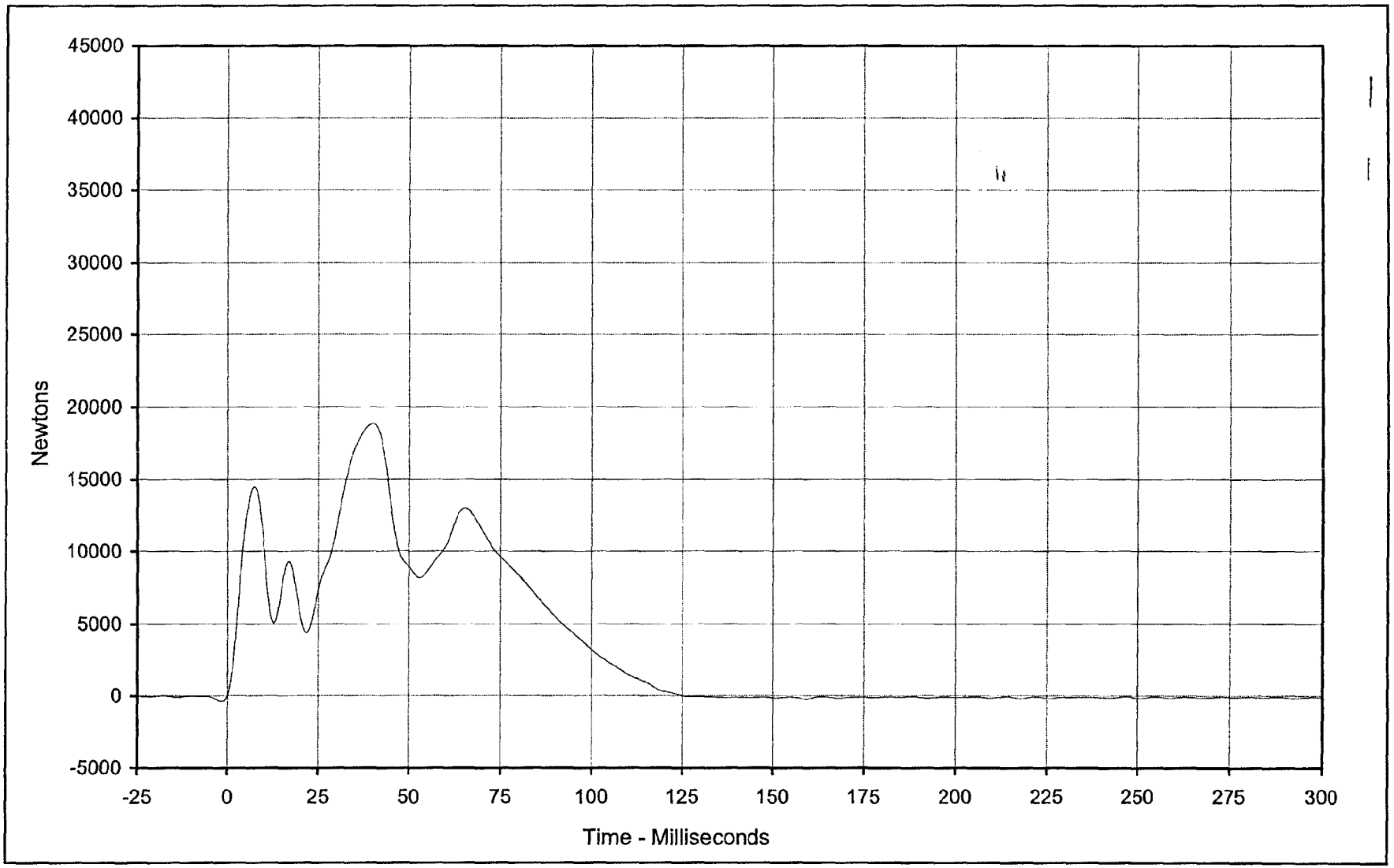
KARCO Engineering



Curve Description:	Barrier Force A5			
Maximum Value:	19336.4	at	40.4	Milliseconds
Minimum Value:	-1571.4	at	46.0	Milliseconds
SAE Filter Class:	60			
Date of Test:	9/4/97			
Curve Number:	FIL-010			

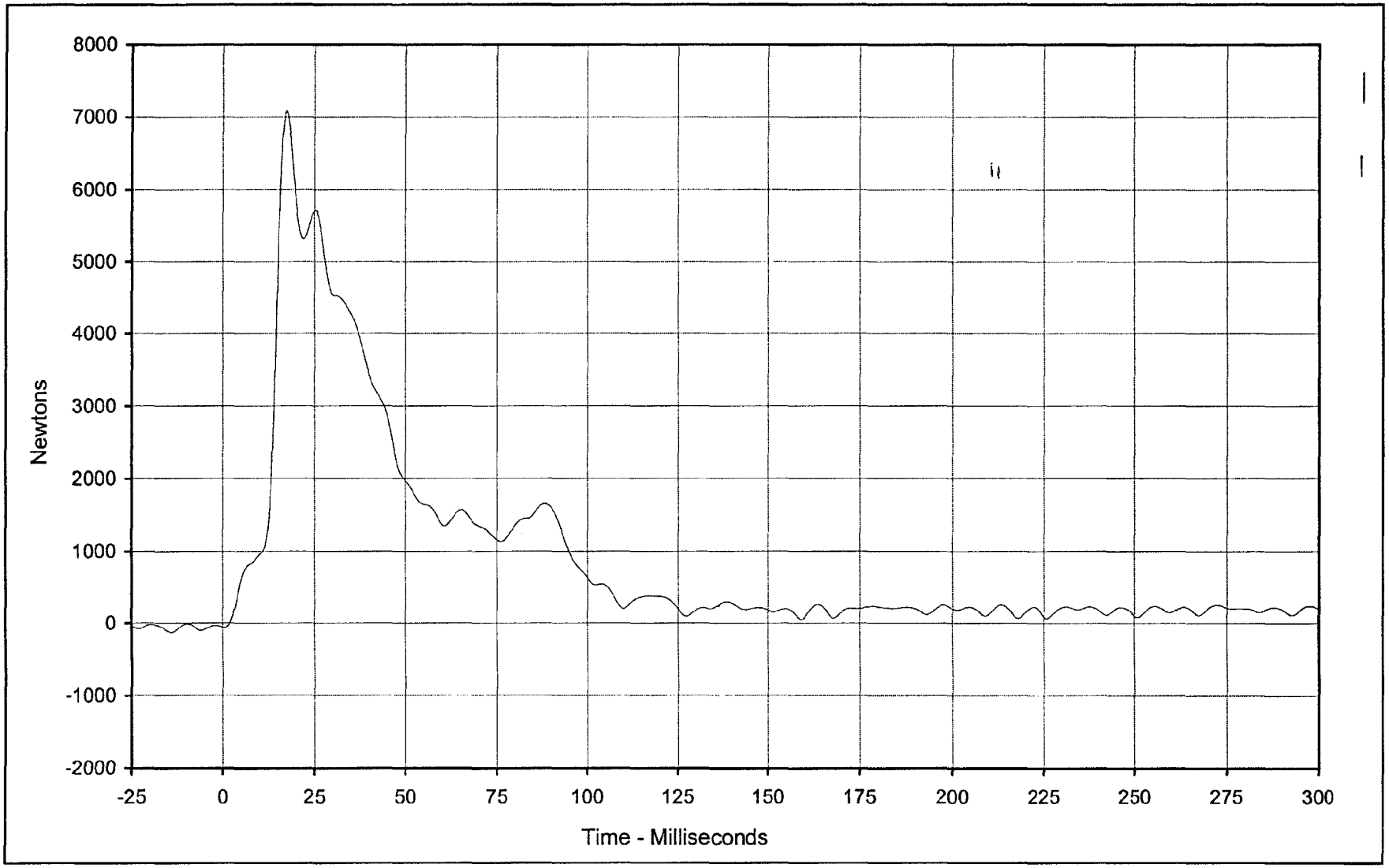
Testing Program	1997 48.4 km/h Frontal Impact (Female)
Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description:	Barrier Force B5			Testing Program	1997 48.4 km/h Frontal Impact (Female)
Maximum Value:	18835.9	at	40.2 Milliseconds	Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan
Minimum Value:	-252.7	at	159.1 Milliseconds		
SAE Filter Class:	60				
Date of Test:	9/4/97				
Curve Number:	FIL-011				

KARCO Engineering



Curve Description: Barrier Force C5

Maximum Value: 7084.8 at 17.3 Milliseconds

Minimum Value: -57.9 at 0.4 Milliseconds

SAE Filter Class: 60

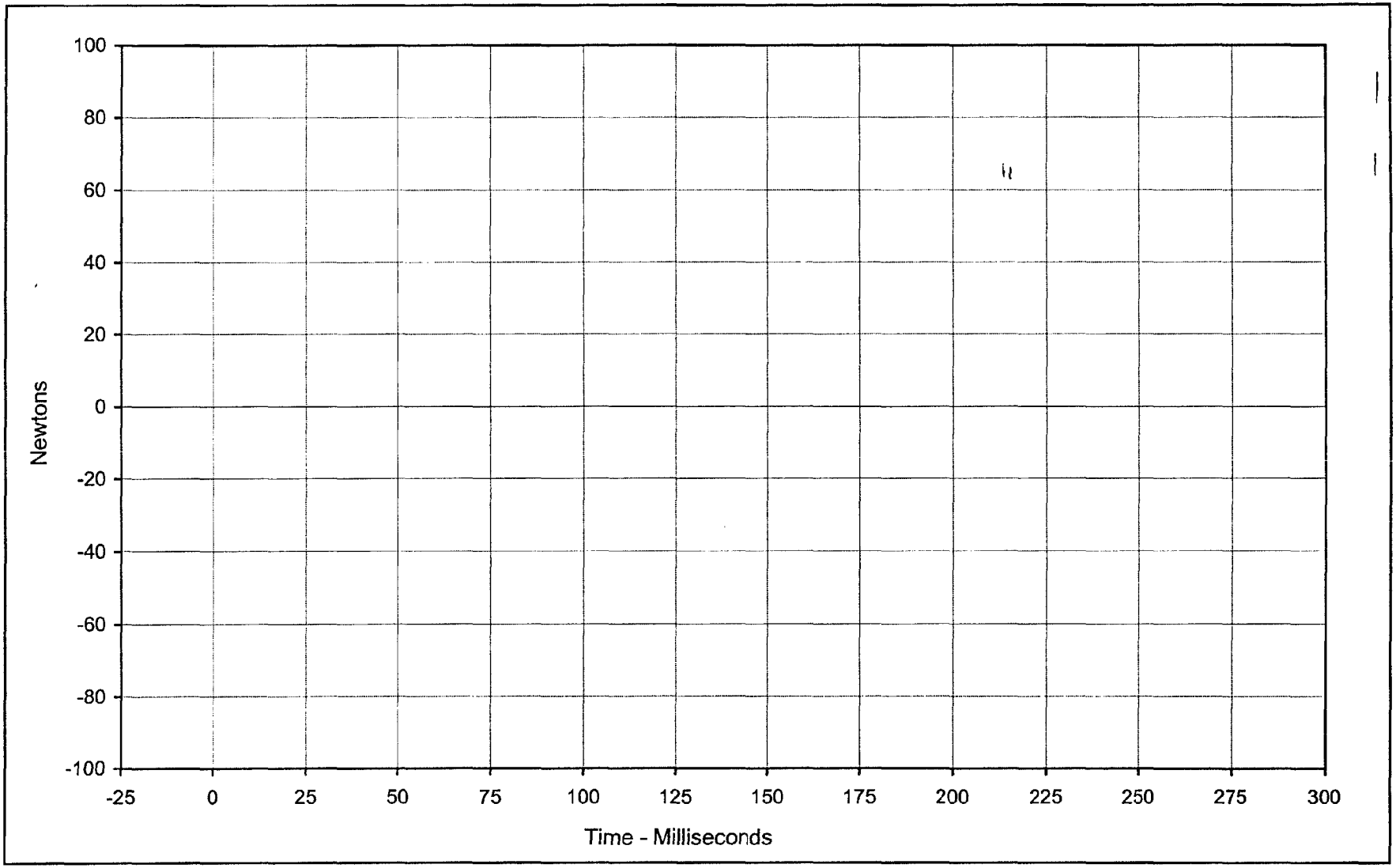
Date of Test: 9/4/97

Curve Number: FIL-012

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Barrier Force A6 *

Maximum Value: 0.0 at 0.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 60

Date of Test: 9/4/97

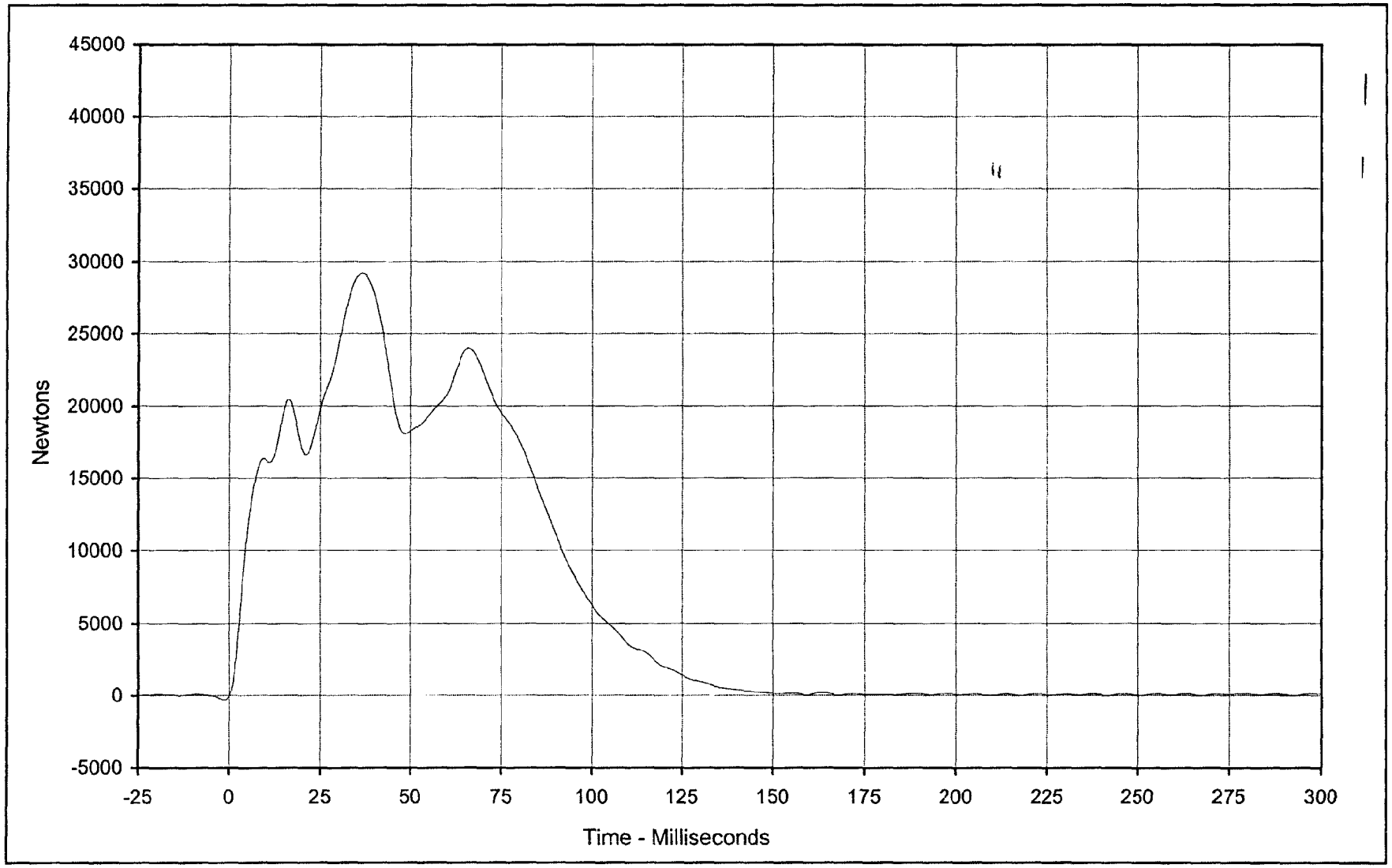
Curve Number: FIL-013

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

* Channel Failed, No Data

KARCO Engineering



Curve Description: Barrier Force B6

Maximum Value: 29242.6 at 36.6 Milliseconds

Minimum Value: -50.2 at 0.0 Milliseconds

SAE Filter Class: 60

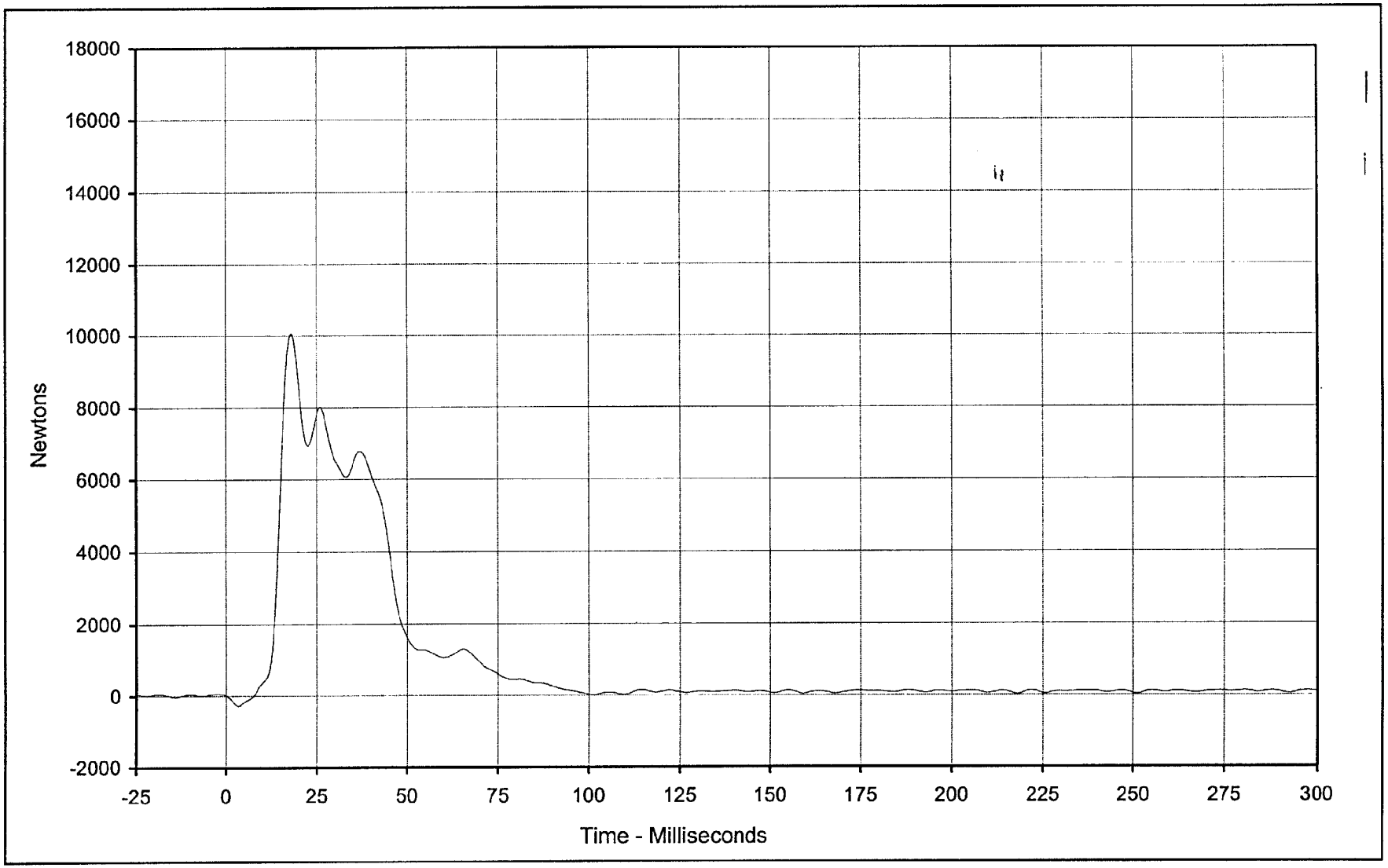
Date of Test: 9/4/97

Curve Number: FIL 014

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Barrier Force C6

Maximum Value: 10062.3 at 18.0 Milliseconds

Minimum Value: -278.0 at 3.3 Milliseconds

SAE Filter Class: 60

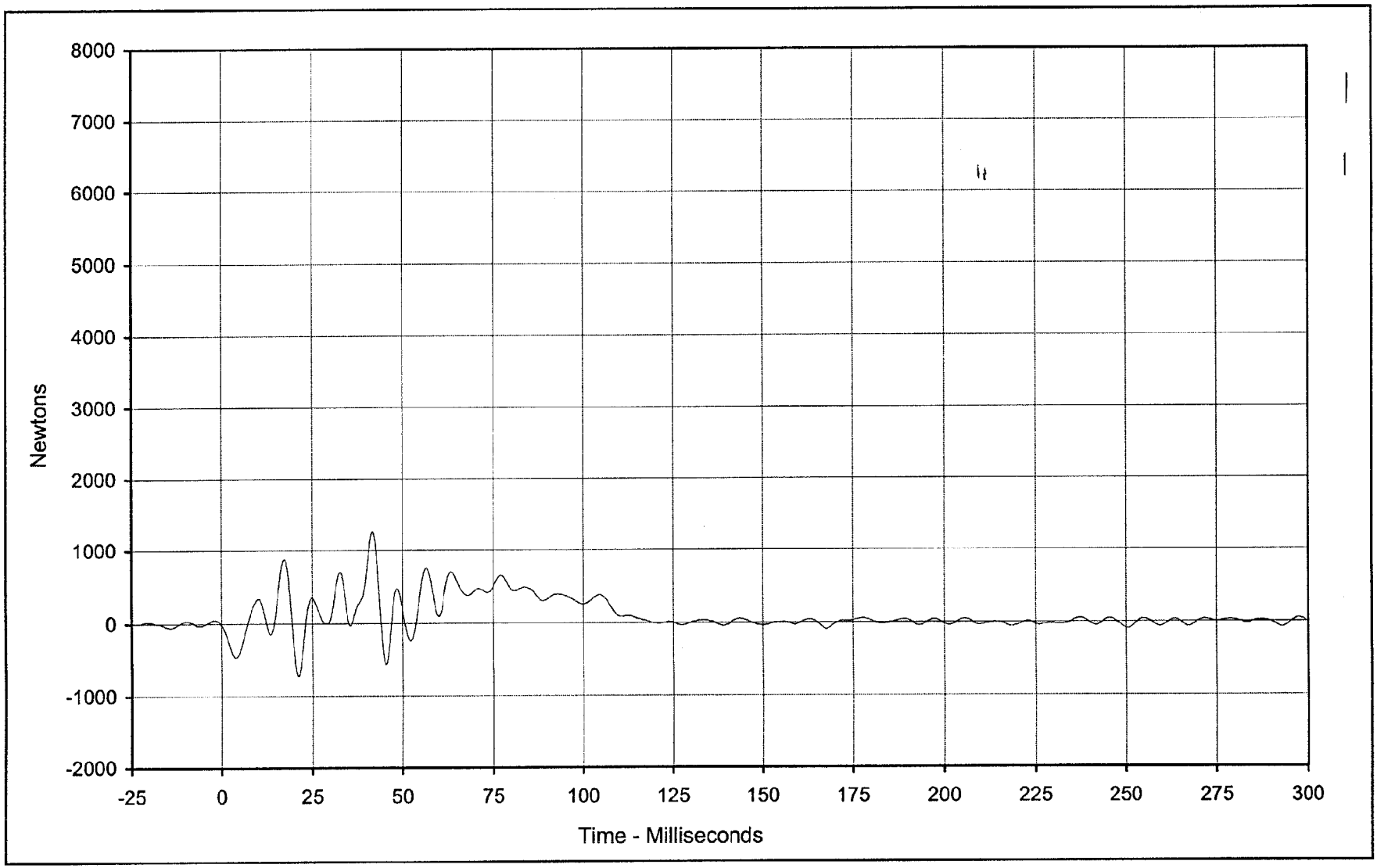
Date of Test: 9/4/97

Curve Number: FIL-015

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Barrier Force A7

Maximum Value: 1264.2 at 41.8 Milliseconds

Minimum Value: -723.1 at 21.0 Milliseconds

SAE Filter Class: 60

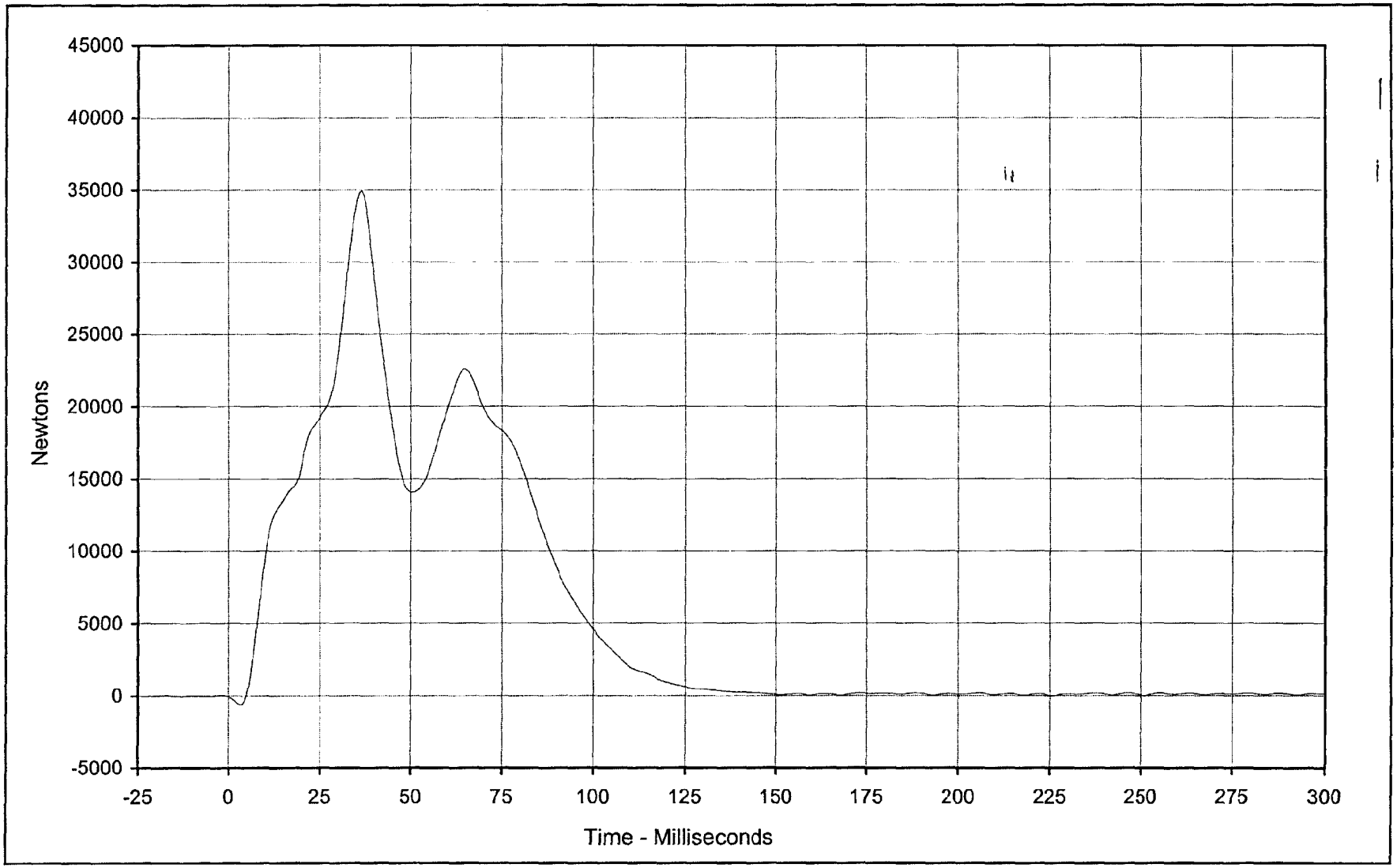
Date of Test: 9/4/97

Curve Number: FIL-016

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Barrier Force B7

Maximum Value: 34935.5 at 36.4 Milliseconds

Minimum Value: -608.4 at 3.1 Milliseconds

SAE Filter Class: 60

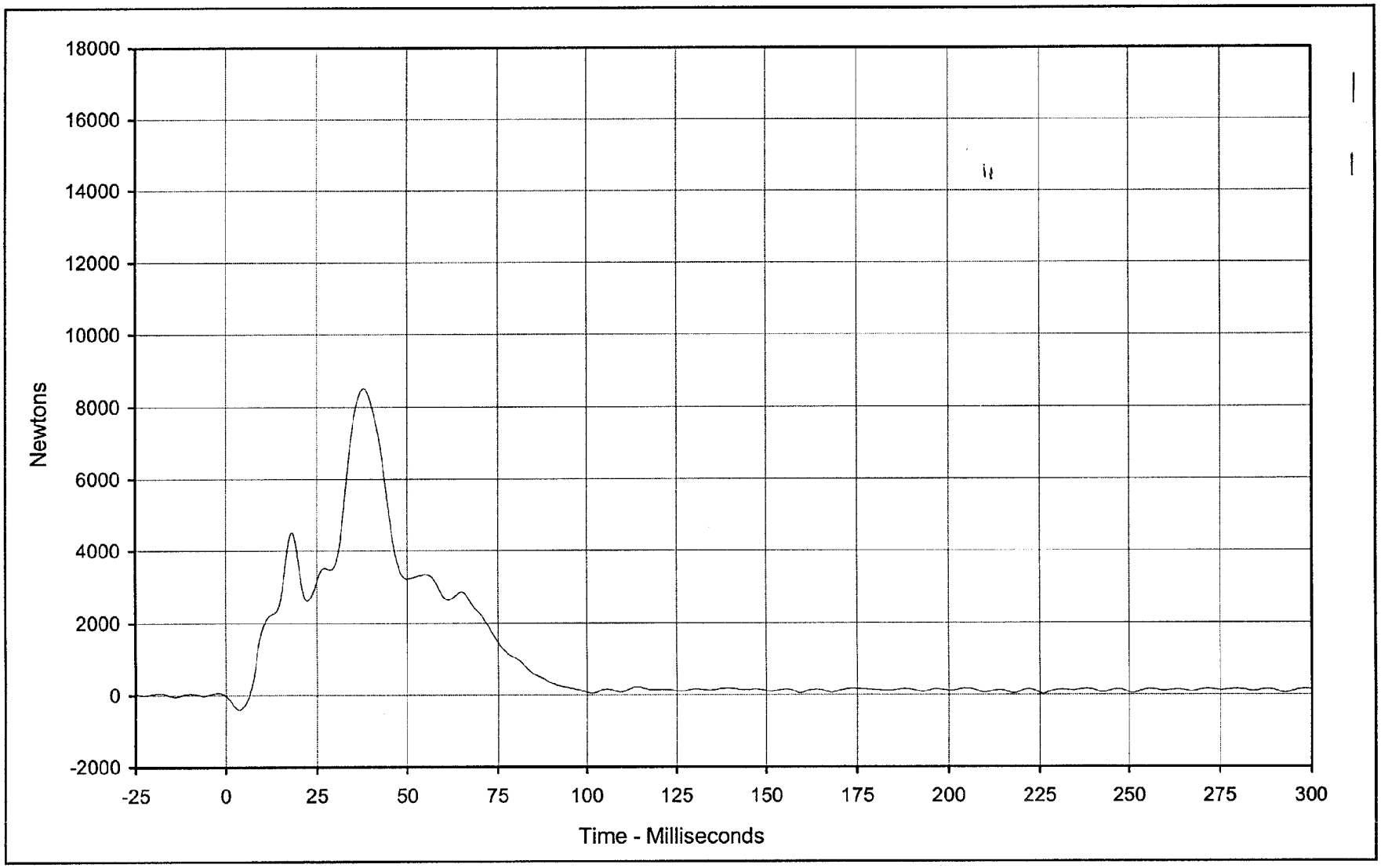
Date of Test: 9/4/97

Curve Number: FIL-017

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering

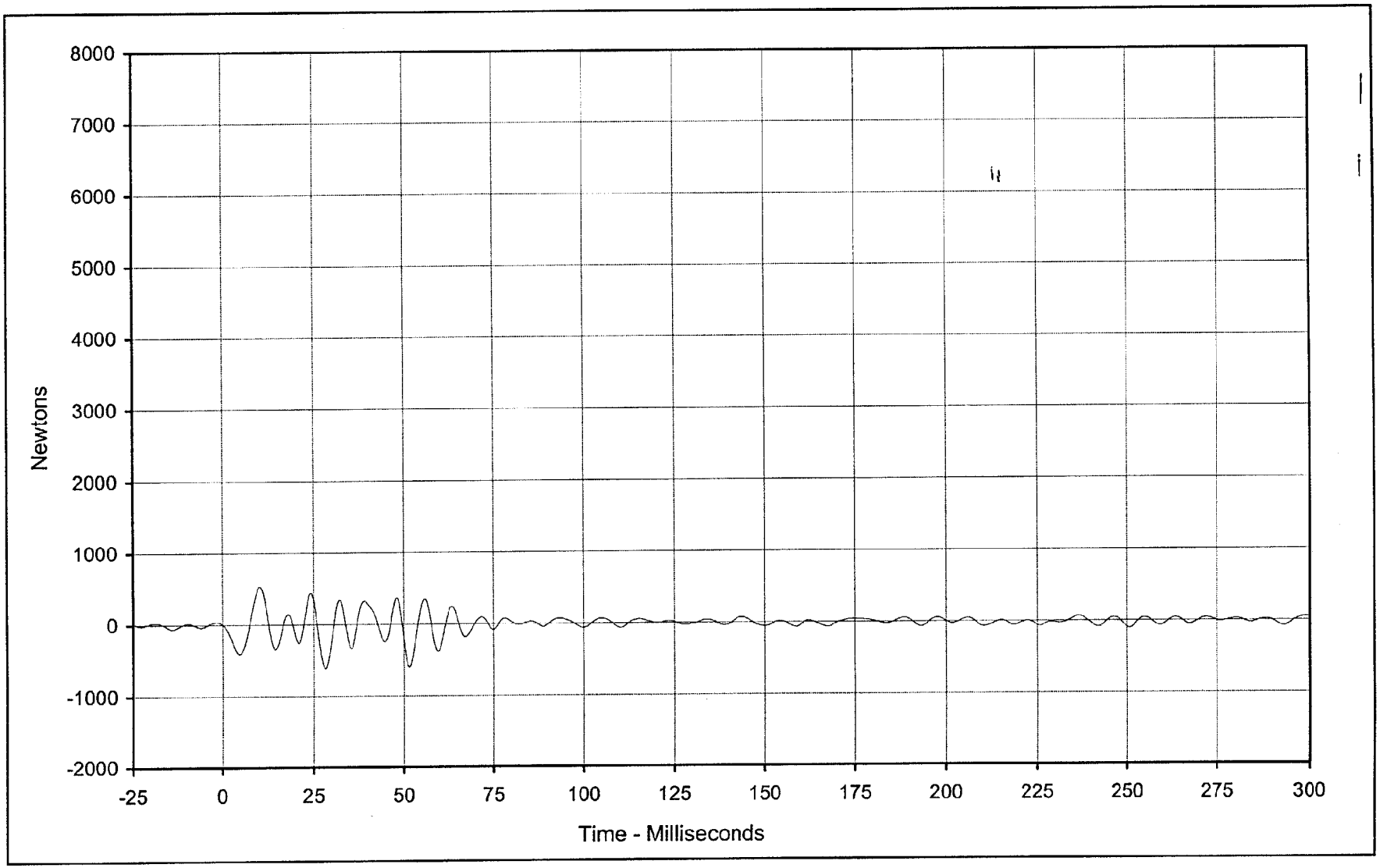


Curve Description:	Barrier Force C7			
Maximum Value:	8520.5	at	38.1	Milliseconds
Minimum Value:	-409.3	at	3.6	Milliseconds
SAE Filter Class:	60			
Date of Test:	9/4/97			
Curve Number:	FIL-018			

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Barrier Force A8

Maximum Value: 531.9 at 10.3 Milliseconds

Minimum Value: -612.0 at 28.2 Milliseconds

SAE Filter Class: 60

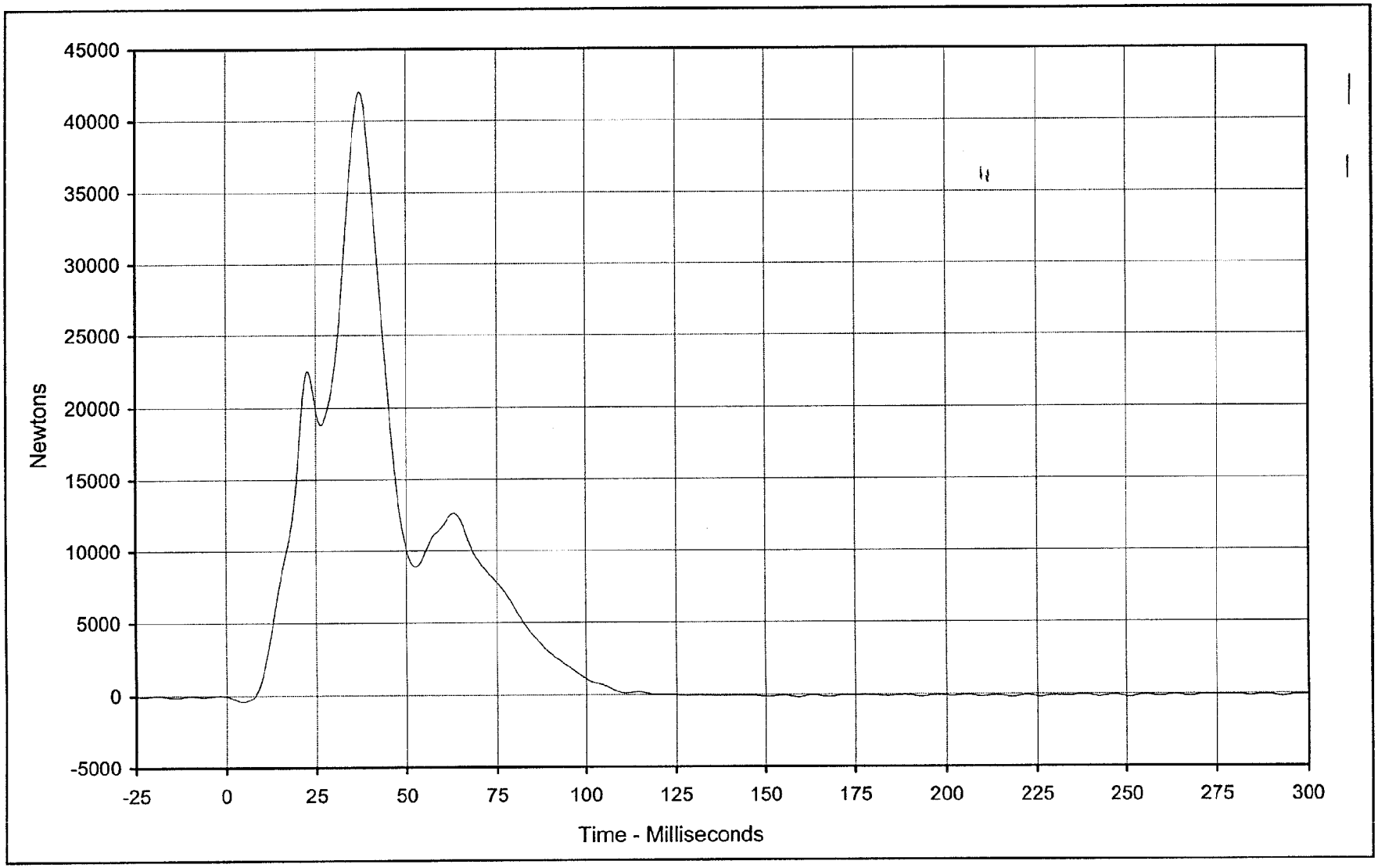
Date of Test: 9/4/97

Curve Number: FIL-019

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering

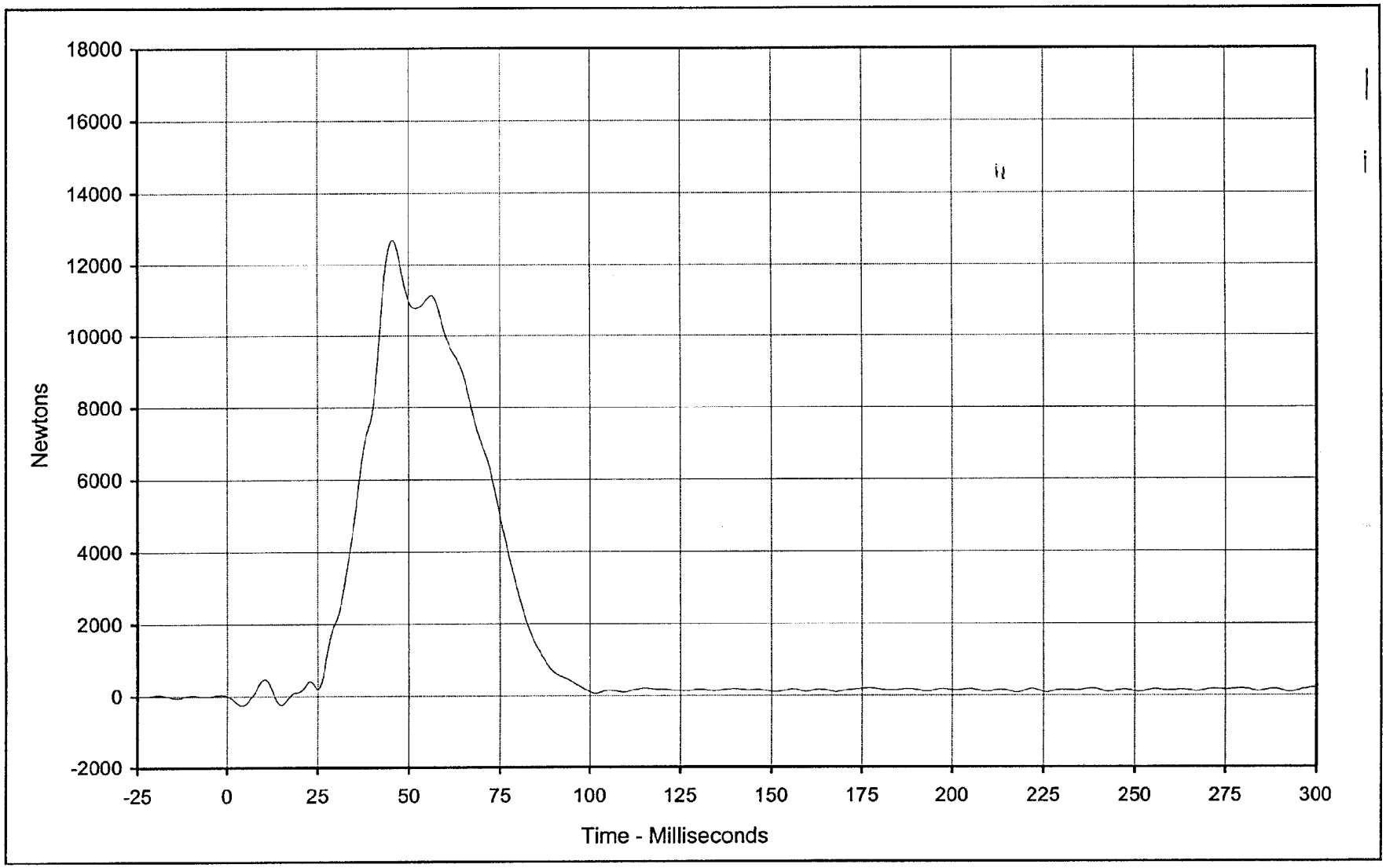


Curve Description:	Barrier Force B8			
Maximum Value:	42019.0	at	37.2	Milliseconds
Minimum Value:	-395.8	at	4.4	Milliseconds
SAE Filter Class:	60			
Date of Test:	9/4/97			
Curve Number:	FIL-020			

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering

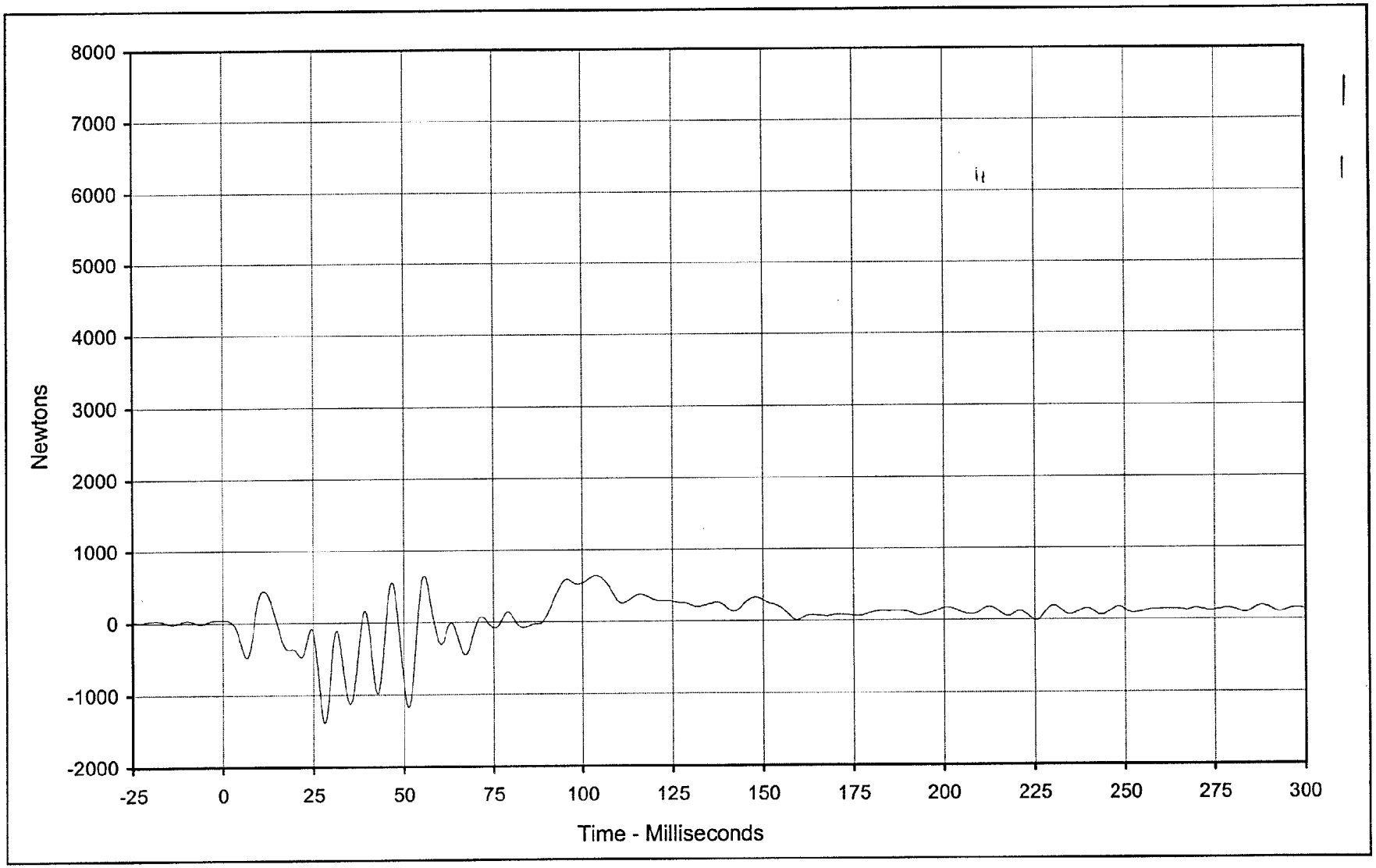


Curve Description:	Barrier Force C8			
Maximum Value:	12694.0	at	45.6	Milliseconds
Minimum Value:	-252.7	at	3.9	Milliseconds
SAE Filter Class:	60			
Date of Test:	9/4/97			
Curve Number:	FIL-021			

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering

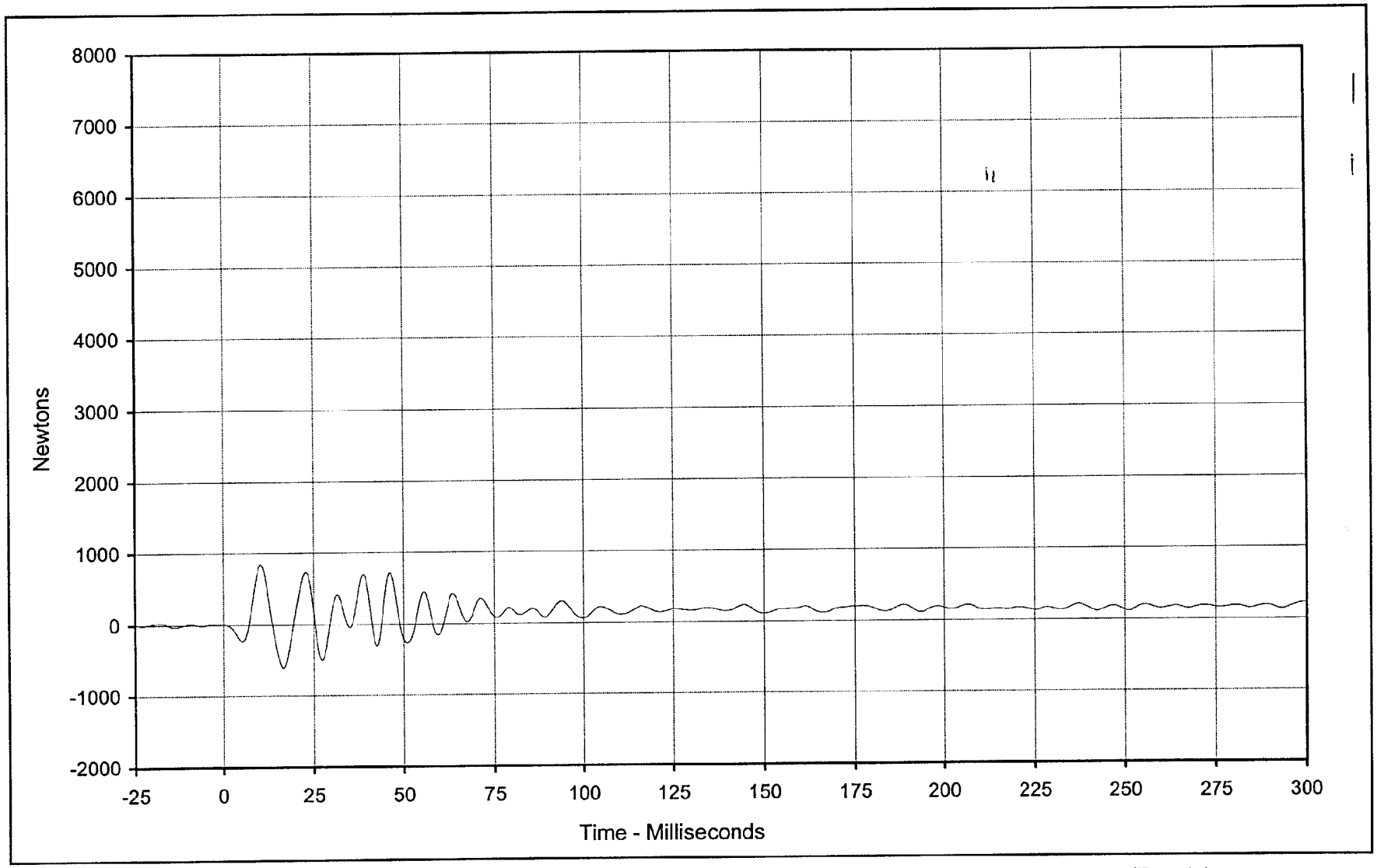


Curve Description:	Barrier Force A9			
Maximum Value:	647.4	at	55.6	Milliseconds
Minimum Value:	-1381.1	at	28.0	Milliseconds
SAE Filter Class:	60			
Date of Test:	9/4/97			
Curve Number:	FIL-022			

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Barrier Force B9

Maximum Value: 844.4 at 10.4 Milliseconds

Minimum Value: -613.1 at 16.7 Milliseconds

SAE Filter Class: 60

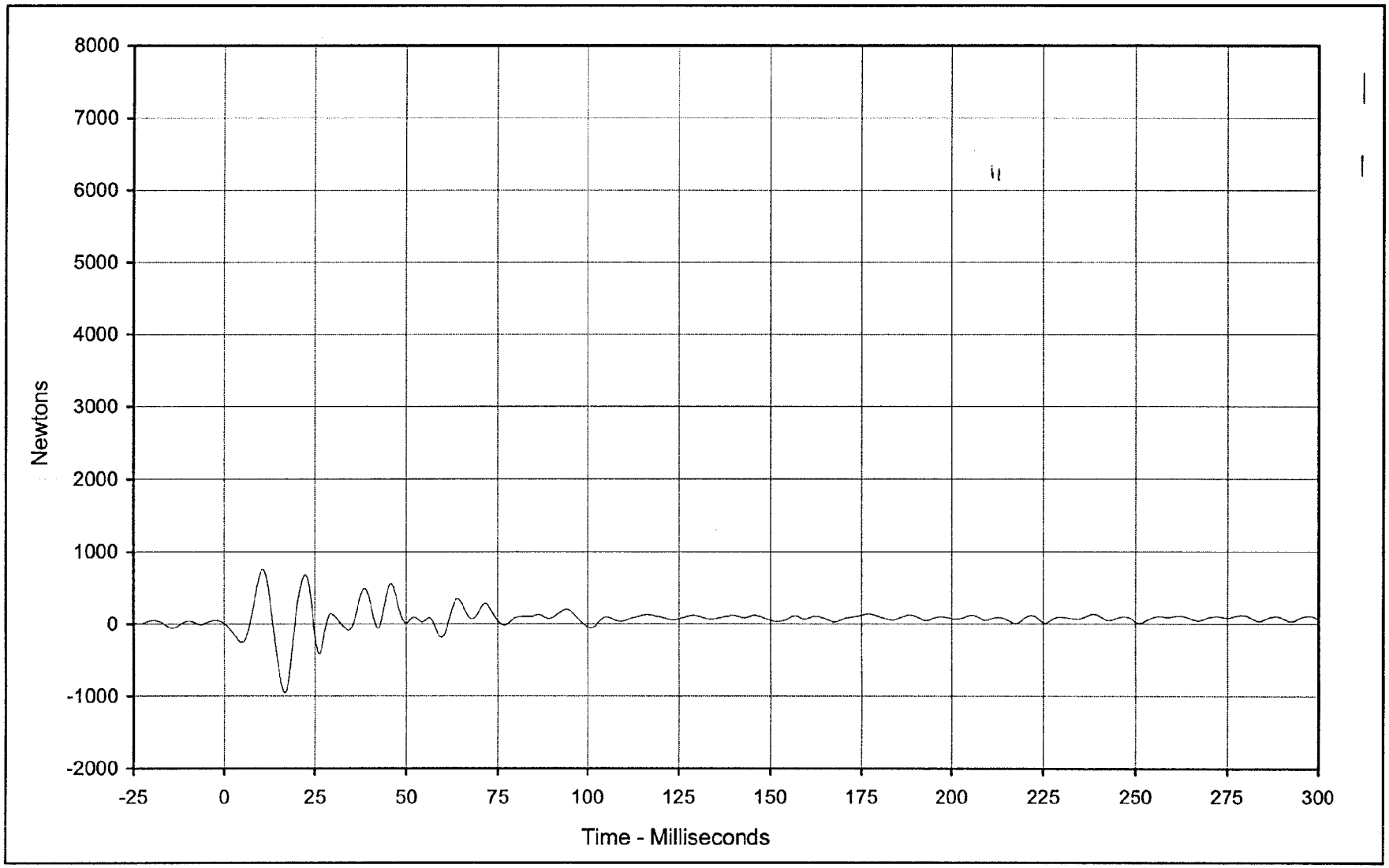
Date of Test: 9/4/97

Curve Number: FIL-023

Testing Program 1997 48.4 km/h Frontal Impact (Female)

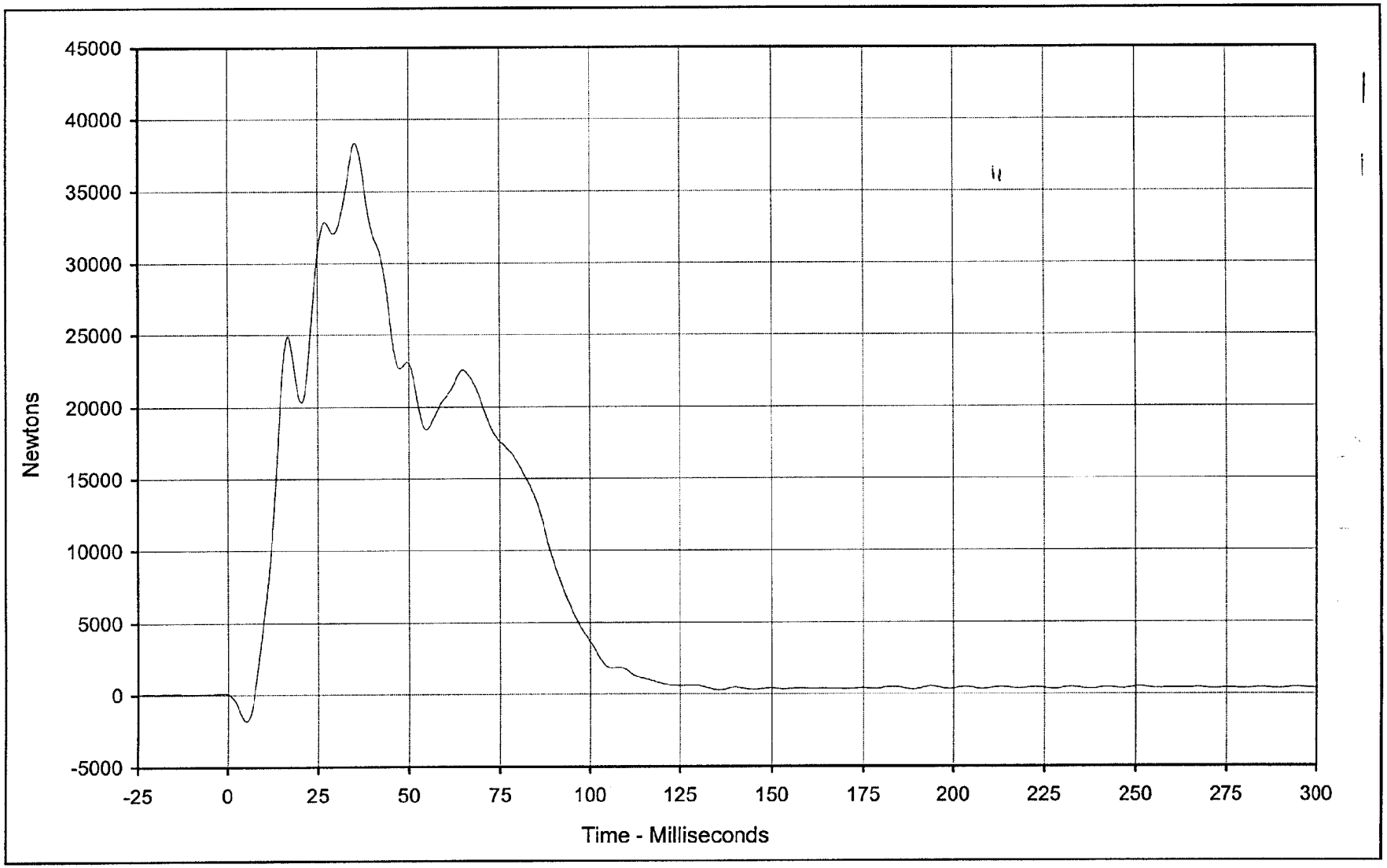
Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description:	Barrier Force C9			Testing Program	1997 48.4 km/h Frontal Impact (Female)
Maximum Value:	757.6	at	10.7 Milliseconds	Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan
Minimum Value:	-953.1	at	16.8 Milliseconds		
SAE Filter Class:	60				
Date of Test:	9/4/97				
Curve Number:	FIL-024				

KARCO Engineering



Curve Description: Barrier Force Sum No.1

Maximum Value: 38354.7 at 35.5 Milliseconds

Minimum Value: -1841.5 at 5.1 Milliseconds

SAE Filter Class: 60

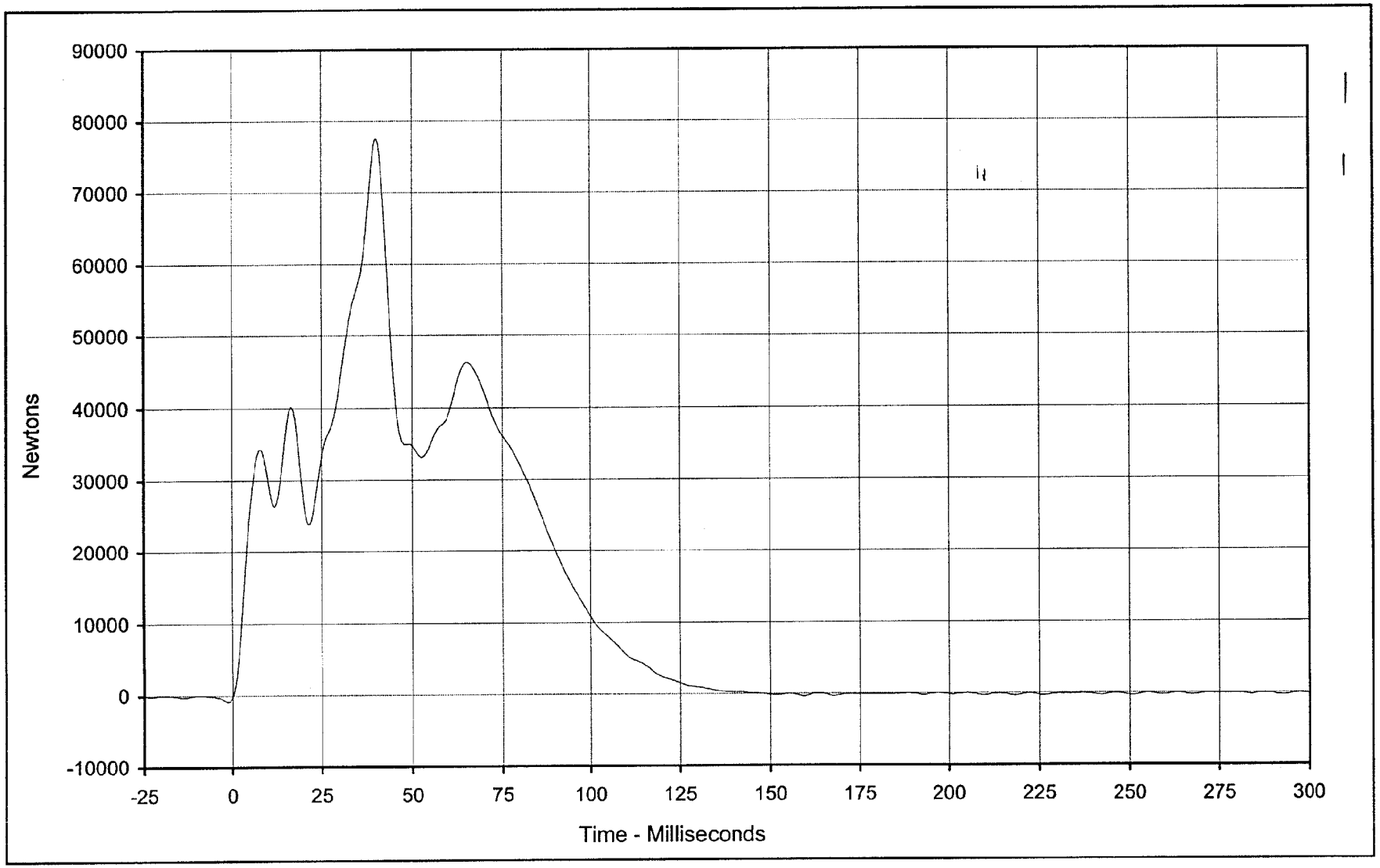
Date of Test: 9/4/97

Curve Number: SUM-001

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARC Engineering

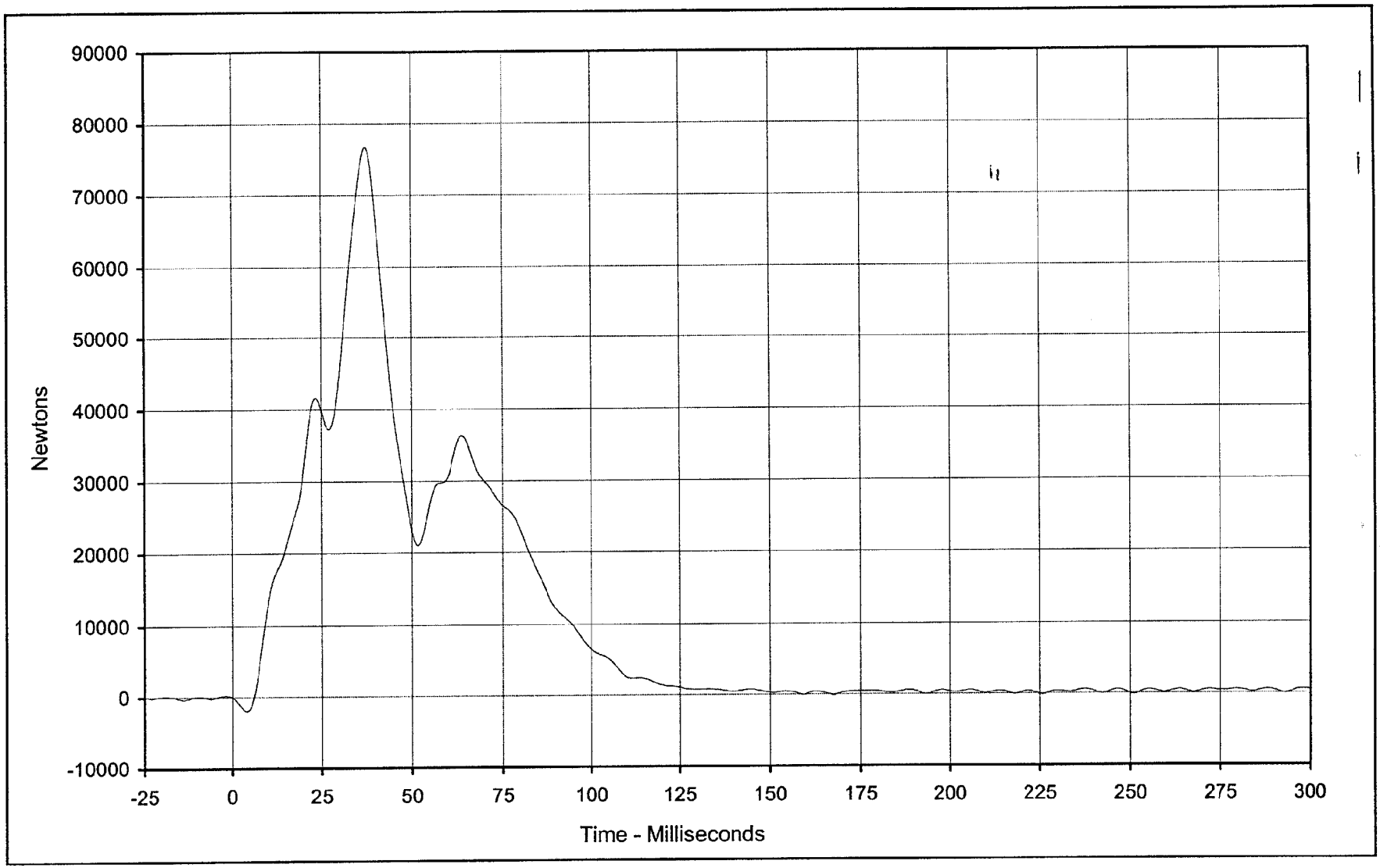


Curve Description:	Barrier Force Sum No.2			
Maximum Value:	77567.1	at	40.2	Milliseconds
Minimum Value:	-373.2	at	159.2	Milliseconds
SAE Filter Class:	60			
Date of Test:	9/4/97			
Curve Number:	SUM-002			

Testing Program: 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Barrier Force Sum No.3

Maximum Value: 76728.3 at 37.3 Milliseconds

Minimum Value: -1994.0 at 3.9 Milliseconds

SAE Filter Class: 60

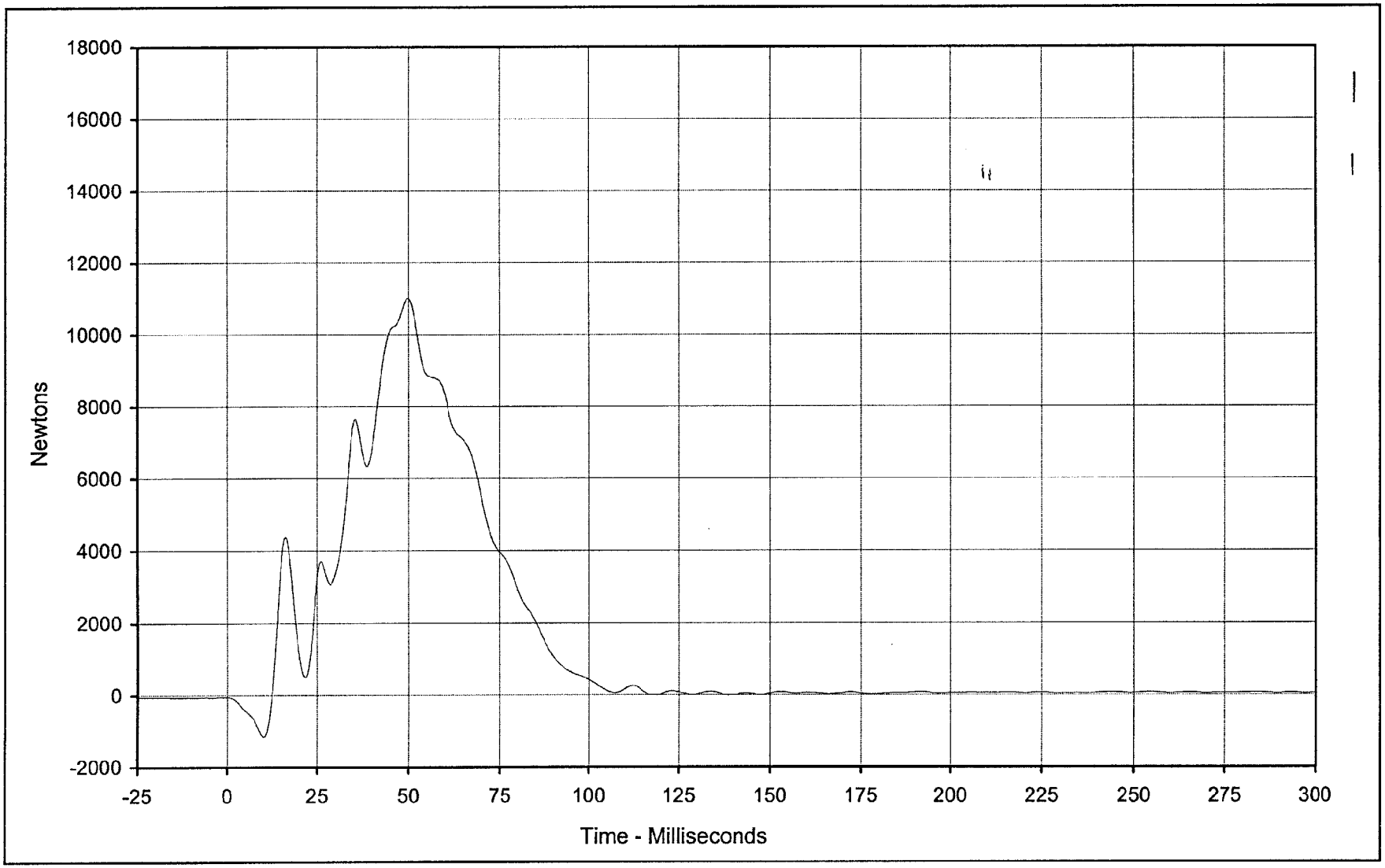
Date of Test: 9/4/97

Curve Number: SUM-003

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Barrier Force Sum No.4

Maximum Value: 11016.1 at 49.8 Milliseconds

Minimum Value: -1166.6 at 10.3 Milliseconds

SAE Filter Class: 60

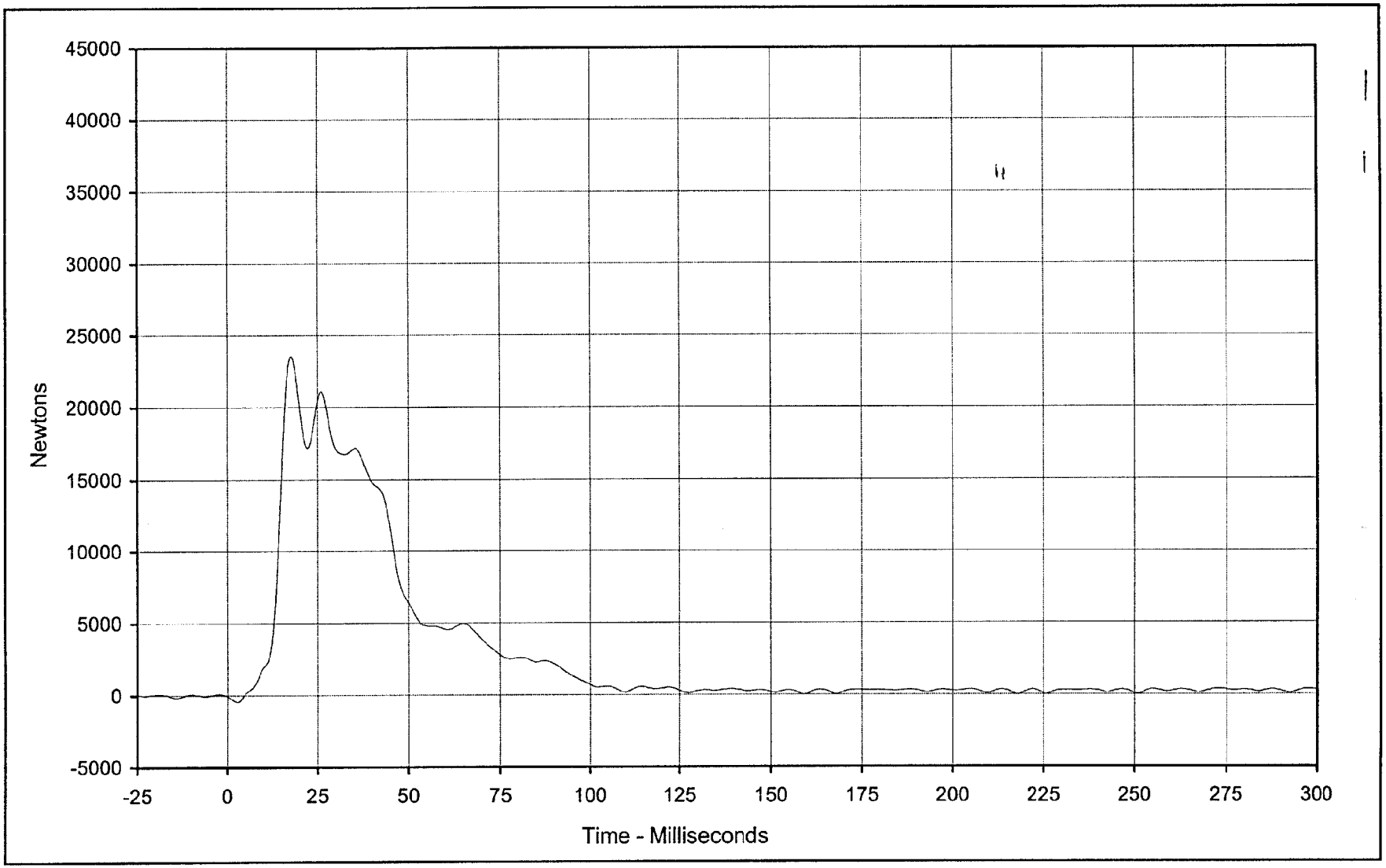
Date of Test: 9/4/97

Curve Number: SUM-004

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Barrier Force Sum No.5

Maximum Value: 23555.1 at 17.8 Milliseconds

Minimum Value: -454.9 at 2.8 Milliseconds

SAE Filter Class: 60

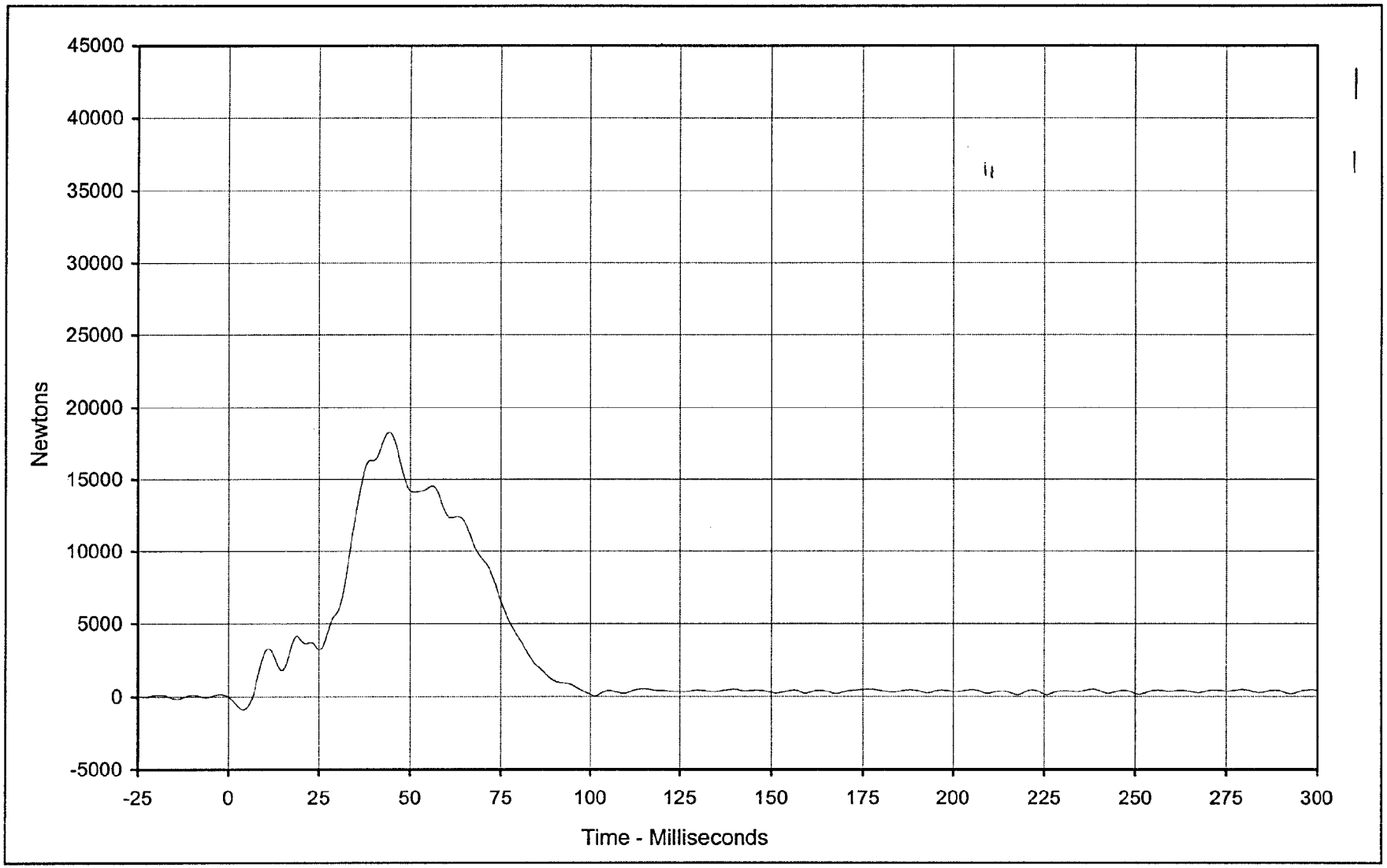
Date of Test: 9/4/97

Curve Number: SUM-005

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

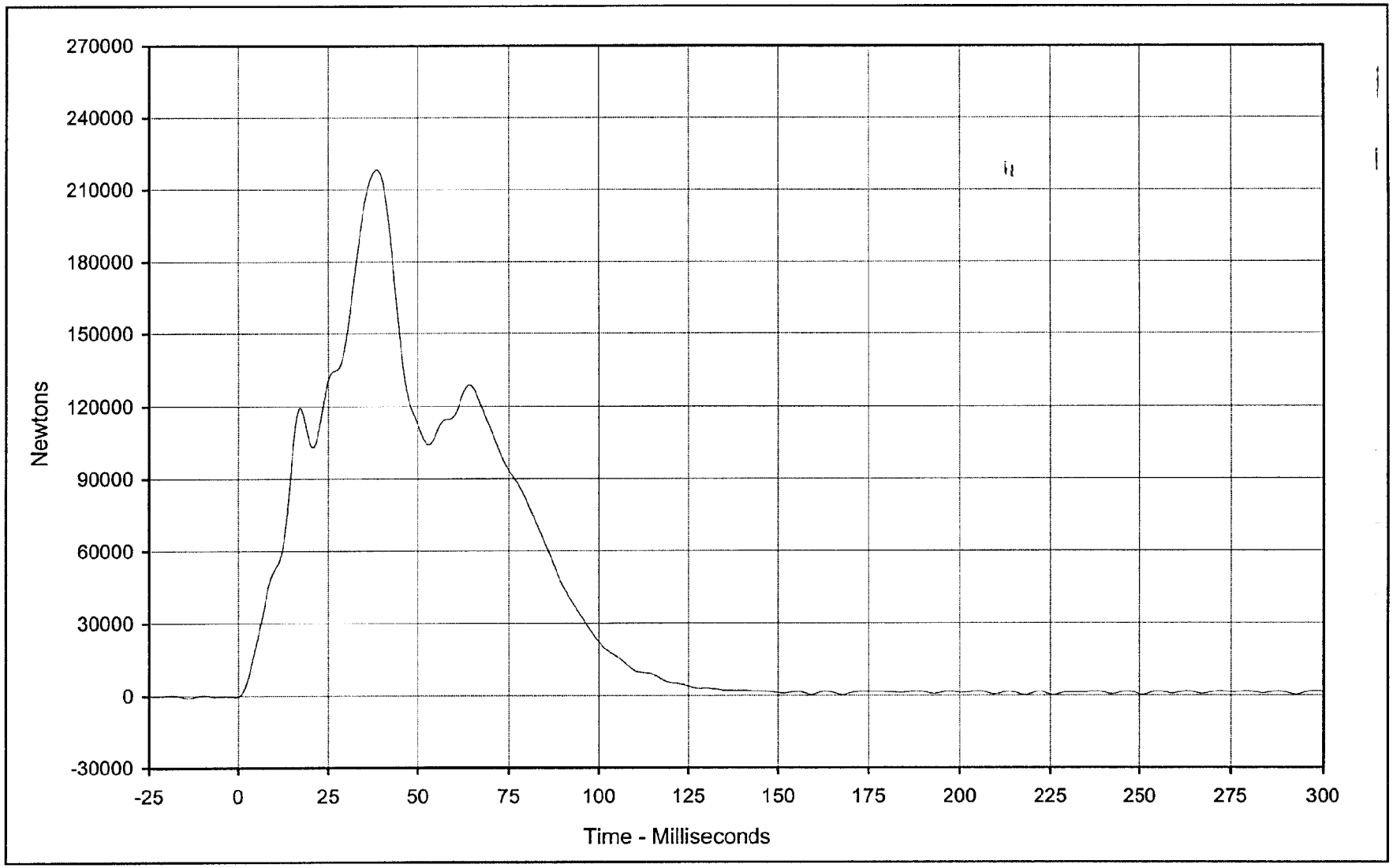
KARCO Engineering



Curve Description:	Barrier Force Sum No.6			
Maximum Value:	18274.6	at	44.3	Milliseconds
Minimum Value:	-878.2	at	4.0	Milliseconds
SAE Filter Class:	60			
Date of Test:	9/4/97			
Curve Number:	SUM-006			

Testing Program	1997 48.4 km/h Frontal Impact (Female)
Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description: Barrier Force Sum Total

Maximum Value: 218429.8 at 38.6 Milliseconds

Minimum Value: -276.4 at 0.0 Milliseconds

SAE Filter Class: 60

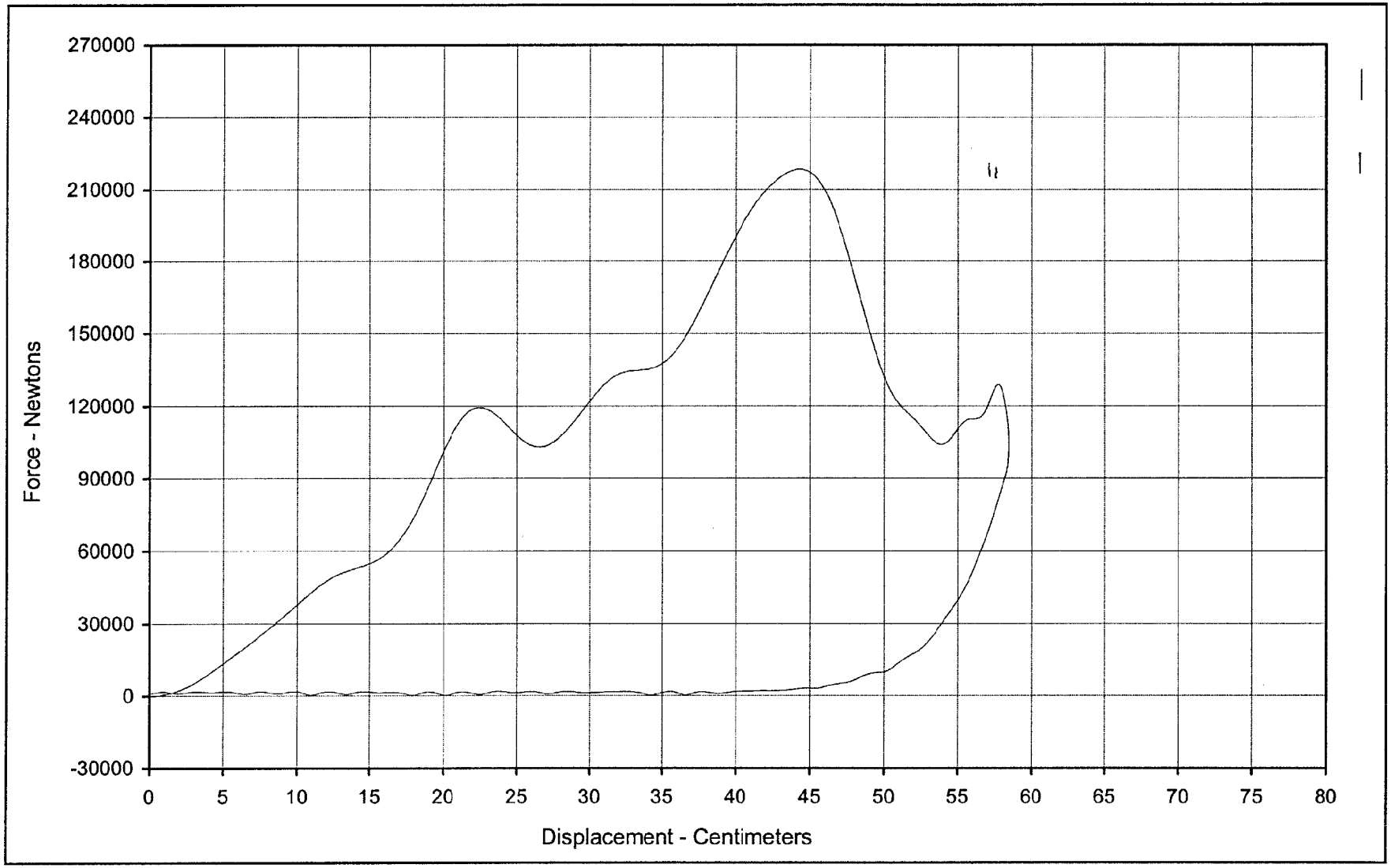
Date of Test: 9/4/97

Curve Number: SUM-007

Testing Program 1997 48.4 km/h Frontal Impact (Female)

Test Vehicle: 1996 Ford Taurus GL 4 Door Sedan

KARCO Engineering



Curve Description:	Sum Force Total vs. Dynamic Crush			
Maximum Displ.:	58.4	at	71.8	Milliseconds
Maximum Force:	218429.8	at	38.6	Milliseconds
SAE Filter Class:	N/A			
Date of Test:	9/4/97			
Curve Number:	XVY-001			

Testing Program	1997 48.4 km/h Frontal Impact (Female)
Test Vehicle:	1996 Ford Taurus GL 4 Door Sedan

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APPENDIX D

INSTRUMENTATION DATA CHANNEL ASSIGNMENTS

48.4 kmh Frontal Impact Test With Hybrid III Female 5th Pecentile ATD
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 202
Test Date: 9/04/97
Vehicle: 1996 Ford Taurus GL 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
1	HEAD, PRIMARY	X	GPAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
2	HEAD, PRIMARY	Y	GPAC002	Accel., 1/2 bridge	Endevco	7264-2000	G
3	HEAD, PRIMARY	Z	GPAC003	Accel., 1/2 bridge	Endevco	7264-2000	G
4	NECK FORCE	X	GPUN01FX	Load cell, six axis neck	R. A. Denton	1716A	N
5	NECK FORCE	Y	GPUN01FY	Load cell, six axis neck	R. A. Denton	1716A	N
6	NECK FORCE	Z	GPUN01FZ	Load cell, six axis neck	R. A. Denton	1716A	N
7	NECK MOMENT	X	GPUN01MX	Load cell, six axis neck	R. A. Denton	1716A	N.m
8	NECK MOMENT	Y	GPUN01MY	Load cell, six axis neck	R. A. Denton	1716A	N.m
9	NECK MOMENT	Z	GPUN01MZ	Load cell, six axis neck	R. A. Denton	1716A	N.m
10	CHEST , PRIMARY	X	GPAC005	Accel., 1/2 bridge	Endevco	7264-2000	G
11	CHEST , PRIMARY	Y	GPAC011	Accel., 1/2 bridge	Endevco	7264-2000	G
12	CHEST , PRIMARY	Z	GPAC010	Accel., 1/2 bridge	Endevco	7264-2000	G
13	CHEST , REDUNDANT	X	GPAC034	Accel., 1/2 bridge	Endevco	7264-2000	G
14	CHEST , REDUNDANT	Y	GPAC023	Accel., 1/2 bridge	Endevco	7264-2000	G
15	CHEST , REDUNDANT	Z	GPAC020	Accel., 1/2 bridge	Endevco	7264-2000	G
16	CHEST DISPLACEMENT	X	GPRP001	Potentiometer, Rotary	Servo	14CBI	CM
17	PELVIS, PRIMARY	X	GPAC025	Accel., 1/2 bridge	Endevco	7264-2000	G
18	PELVIS, PRIMARY	Y	GPAC022	Accel., 1/2 bridge	Endevco	7264-2000	G
19	PELVIS, PRIMARY	Z	GPAC019	Accel., 1/2 bridge	Endevco	7264-2000	G
20	LEFT FEMUR FORCE	Z	KEFF001	Load cell, Femur	R.A. Denton	2121	N
21	RIGHT FEMUR FORCE	Z	GPLC001	Load cell, Femur	G.S.E.	2430	N

48.4 kmh Frontal Impact Test With Hybrid III Female 5th Pecentile ATD
Instrumentation Data Channel Assignments
Driver A.T.D Serial Number 202
Test Date: 9/04/97
Vehicle: 1996 Ford Taurus GL 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
22	UP. TIBIA LEFT FORCE	X	GPUT05FX	4 ch., Upper Tibia Gage	R. A. Denton	3115	N.m
23	UP. LEFT TIBIA FORCE	Z	GPUT05FZ	4 ch., Upper Tibia Gage	R. A. Denton	3115	N.m
24	UP. TIBIA LEFT MOM.	X	GPUT05MX	4 ch., Upper Tibia Gage	R. A. Denton	3115	N.m
25	UP. TIBIA LEFT MOM.	Y	GPUT05MY	4 ch., Upper Tibia Gage	R. A. Denton	3115	N.m
26	LWR. TIBIA LEFT FORCE	X	GPLT05FX	4 ch., lower tibia gage	R. A. Denton	3287	N
27	LWR. LEFT TIBIA FORCE	Z	GPLT05FZ	4 ch., lower tibia gage	R. A. Denton	3287	N
28	LWR. TIBIA LEFT MOM.	X	GPLT05MX	4 ch., lower tibia gage	R. A. Denton	3287	N.m
29	LWR. TIBIA LEFT MOM.	Y	GPLT05MY	4 ch., lower tibia gage	R. A. Denton	3287	N.m
30	UP. TIBIA RIGHT FORCE	X	GPUT06FX	4 ch., Upper Tibia Gage	R. A. Denton	3115	N
31	UP. RIGHT TIBIA FORCE	Z	GPUT06FZ	4 ch., Upper Tibia Gage	R. A. Denton	3115	N
32	UP. TIBIA RIGHT MOM.	X	GPUT06MX	4 ch., Upper Tibia Gage	R. A. Denton	3115	N.m
33	UP. TIBIA RIGHT MOM.	Y	GPUT06MY	4 ch., Upper Tibia Gage	R. A. Denton	3115	N.m
34	LWR. TIBIA RIGHT FORCE	X	GPLT06FX	4 ch., lower tibia gage	R. A. Denton	3287	N
35	LWR. RIGHT TIBIA FORCE	Z	GPLT06FZ	4 ch., lower tibia gage	R. A. Denton	3287	N
36	LWR. TIBIA RIGHT MOM.	X	GPLT06MX	4 ch., lower tibia gage	R. A. Denton	3287	N.m
37	LWR. TIBIA RIGHT MOM.	Y	GPLT06MY	4 ch., lower tibia gage	R. A. Denton	3287	N.m
38	FOOT LEFT	X	KEIC002X	Accel., Foot Triax	I.C. Sensor	3031-500	G
39	FOOT LEFT	Y	KEIC002Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
40	FOOT LEFT	Z	KEIC002Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
41	FOOT RIGHT	X	KEIC001X	Accel., Foot Triax	I.C. Sensor	3031-500	G
42	FOOT RIGHT	Y	KEIC001Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
43	FOOT RIGHT	Z	KEIC001Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
44	LAP BELT FORCE	X	KELC001	Load cell, Seat belt	Lebow	3371	N
45	SHOULDER BELT FORCE	X	KELC002	Load cell, Seat belt	Lebow	3371	N
46	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	CM
47	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	CM/CM

48.4 kmh Frontal Impact Test With Hybrid III Female 5th Pecentile ATD
Instrumentation Data Channel Assignments
Passenger A.T.D Serial Number 274
Test Date: 9/04/97
Vehicle: 1996 Ford Taurus GL 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
48	HEAD, PRIMARY	X	KEAC039	Accel.,1/2 bridge	Endevco	7264-2000	G
49	HEAD, PRIMARY	Y	KEAC038	Accel.,1/2 bridge	Endevco	7264-2000	G
50	HEAD, PRIMARY	Z	KEAC027	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	N.m
55	NECK MOMENT	Y	GPUN02MY	Load cell, six axis neck	R. A. Denton	1716A	N.m
56	NECK MOMENT	Z	GPUN02MZ	Load cell, six axis neck	R. A. Denton	1716A	N.m
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	GPRP002	Potentiometer, Rotary	Servo	14CBI	CM
64	PELVIS, PRIMARY	X	GPAC009	Accel., 1/2 bridge	Endevco	7264-2000	G
65	PELVIS, PRIMARY	Y	GPAC017	Accel., 1/2 bridge	Endevco	7264-2000	G
66	PELVIS, PRIMARY	Z	GPAC018	Accel., 1/2 bridge	Endevco	7264-2000	G
67	LEFT FEMUR FORCE	Z	KEFF003	Load cell, Femur	R.A. Denton	2121	N
68	RIGHT FEMUR FORCE	Z	KEFF002	Load cell, Femur	R.A. Denton	2121	N

48.4 kmh Frontal Impact Test With Hybrid III Female 5th Pecentile ATD
Instrumentation Data Channel Assignments
Passenger A.T.D Serial Number 274
Test Date: 9/04/97
Vehicle: 1996 Ford Taurus GL 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
69	UP. TIBIA LEFT MOM.	X	GPUT07MX	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
70	UP. TIBIA LEFT MOM.	Y	GPUT07MY	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
71	UP. TIBIA RIGHT MOM.	X	GPUT08MX	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
72	UP. TIBIA RIGHT MOM.	Y	GPUT08MY	2 ch., Upper tibia gage	R. A. Denton	1583	N.m
73	LWR. TIBIA LEFT FORCE	X	GPLT07FY	3 ch., lower tibia gage	R. A. Denton	1584	N
74	LWR. TIBIA LEFT FORCE	Z	GPLT07FZ	3 ch., lower tibia gage	R. A. Denton	1584	N
75	LWR. TIBIA LEFT MOM.	Y	GPLT07MX	3 ch., lower tibia gage	R. A. Denton	1584	N.m
76	LWR. TIBIA RIGHT FORCE	X	GPLT08FY	3 ch., lower tibia gage	R. A. Denton	1584	N
77	LWR. TIBIA RIGHT FORCE	Z	GPLT08FZ	3 ch., lower tibia gage	R. A. Denton	1584	N
78	LWR. TIBIA RIGHT MOM.	Y	GPLT08MX	3 ch., lower tibia gage	R. A. Denton	1584	N.m
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	KELC003	Load cell, Seat belt	Lebow	3371	N
86	SHOULDER BELT FORCE	X	KELC004	Load cell, Seat belt	Lebow	3371	N
87	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	CM
88	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	CM/CM

48.4 kmh Frontal Impact Test With Hybrid III Female 5th Pecentile ATD
Instrumentation Data Channel Assignments
Vehicle Accelerometers
Test Date: 9/04/97
Vehicle: 1996 Ford Taurus GL 4 Door Sedan

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
89	LEFT REAR SILL	X	KEVA005	Accel., Vehicle block	I.C. Sensor	3031-500	G
90	LEFT REAR SILL	Y	KEVA006	Accel., Vehicle block	I.C. Sensor	3031-200	G
91	CENTER CONSOLE REAR	X	KEVA001	Accel., Vehicle block	I.C. Sensor	3031-500	G
92	CENTER CONSOLE REAR	Y	KEVA002	Accel., Vehicle block	I.C. Sensor	3031-500	G
93	RIGHT REAR SILL	X	KEVA010	Accel., Vehicle block	I.C. Sensor	3031-500	G
94	RIGHT REAR SILL	Y	KEVA004	Accel., Vehicle block	I.C. Sensor	3031-500	G
95	CENTER TRUNK REAR	X	KEVA007	Accel., Vehicle block	I.C. Sensor	3031-200	G
96	CENTER TRUNK REAR	Y	KEVA011	Accel., Vehicle block	I.C. Sensor	3031-200	G

APPENDIX E

DUMMY CALIBRATION DATA

Hybrid III Calibration Data Sheet
5TH Percentile Female
Head Drop Calibration

ATD Serial No.: 202 Part Serial No.: N/A Test I.D.: FH005

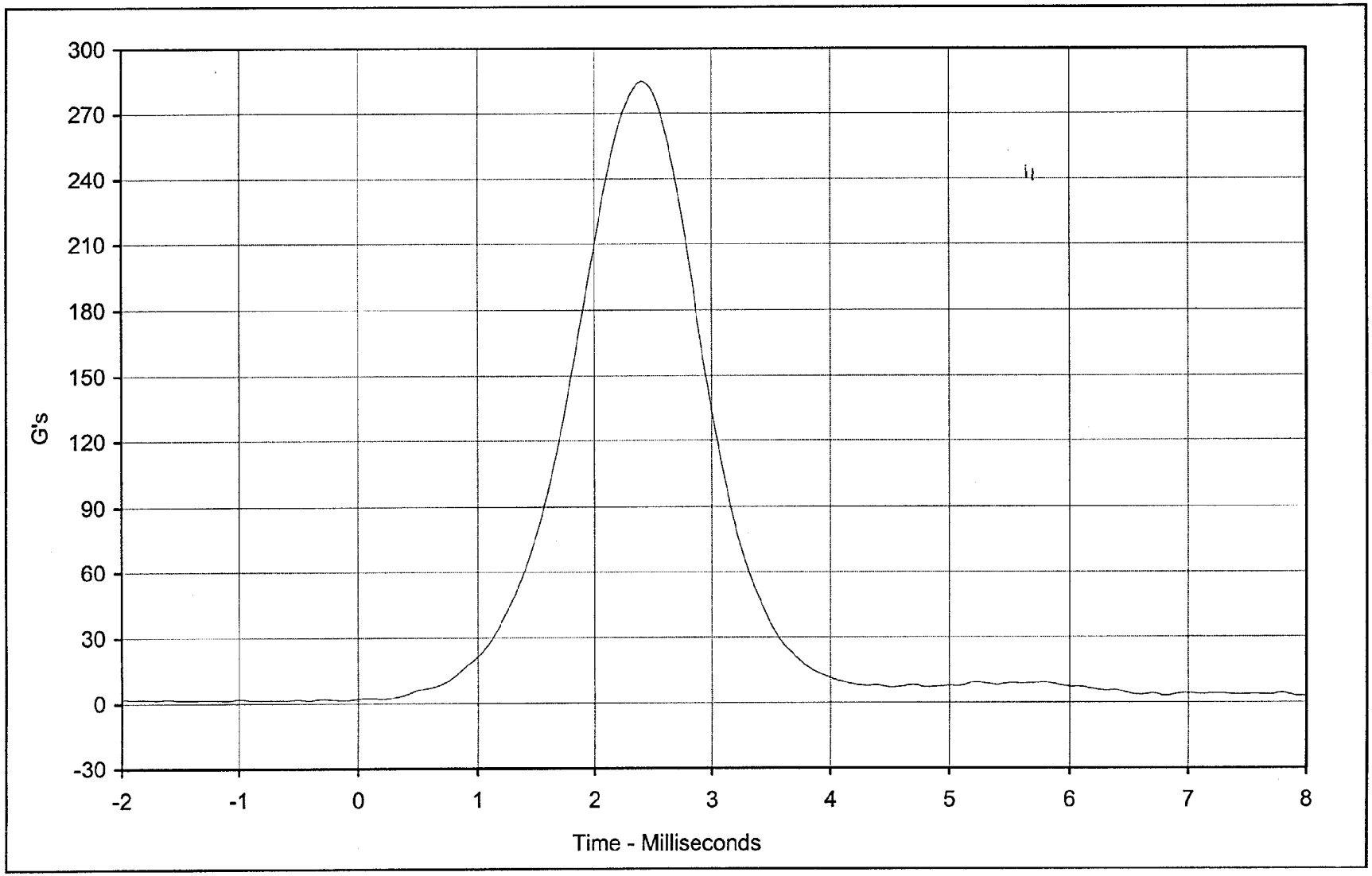
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	31	Pass
Peak Resultant Acceleration	G's	240.0 to 295.0	284.5	Pass
Peak Lateral Acceleration	G's	≤15.0	7.0	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
		Overall Test Results		Pass

Laboratory Technician

August 26, 1997
Test Date

Approved By

8/26/97
Date



Curve Description: Head Resultant Acceleration

Maximum Value: 284.5 at 2.4 Milliseconds

Minimum Value: 1.3 at -1.1 Milliseconds

SAE Filter Class: 1000

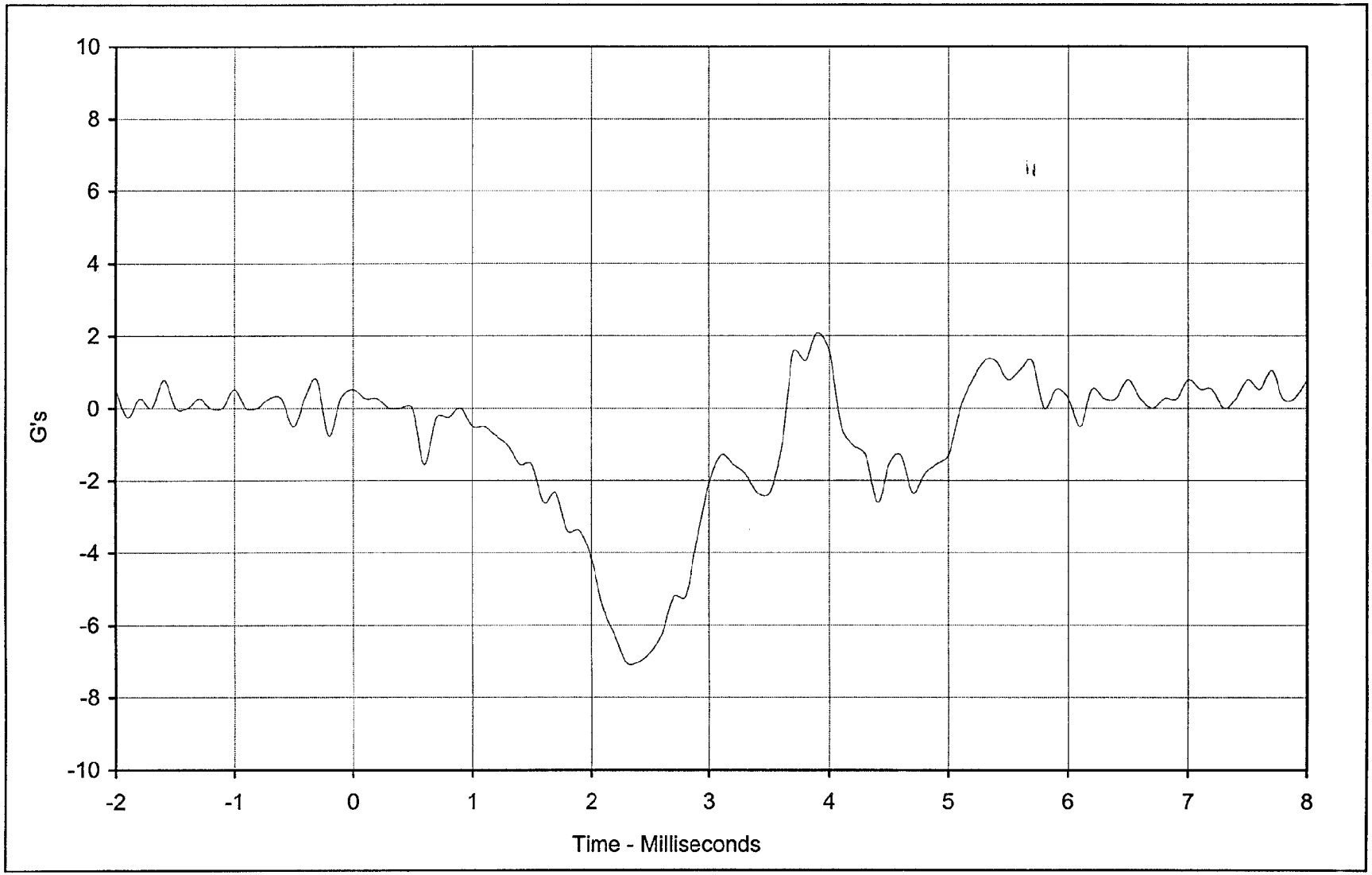
Date of Test: 8/26/96

ATD Serial No.: 202

Testing Program Hybrid III Head Drop Calibration (Female)

Test Information: S/N of Part: N/A Test I.D.: FH005

KARCO Engineering



Curve Description: Head Acceleration Y Axis

Maximum Value: 2.1 at 3.9 Milliseconds

Minimum Value: -7.0 at 2.3 Milliseconds

SAE Filter Class: 1000

Date of Test: 8/26/96

ATD Serial No.: 202

Testing Program Hybrid III Head Drop Calibration (Female)

Test Information: S/N of Part: N/A Test I.D.: FH005

KARCO Engineering

Hybrid III Calibration Data Sheet
5TH Percentile Female
Thorax Impact Test

ATD Serial No.: 202 Part Serial No.: N/A Test I.D.: FC004

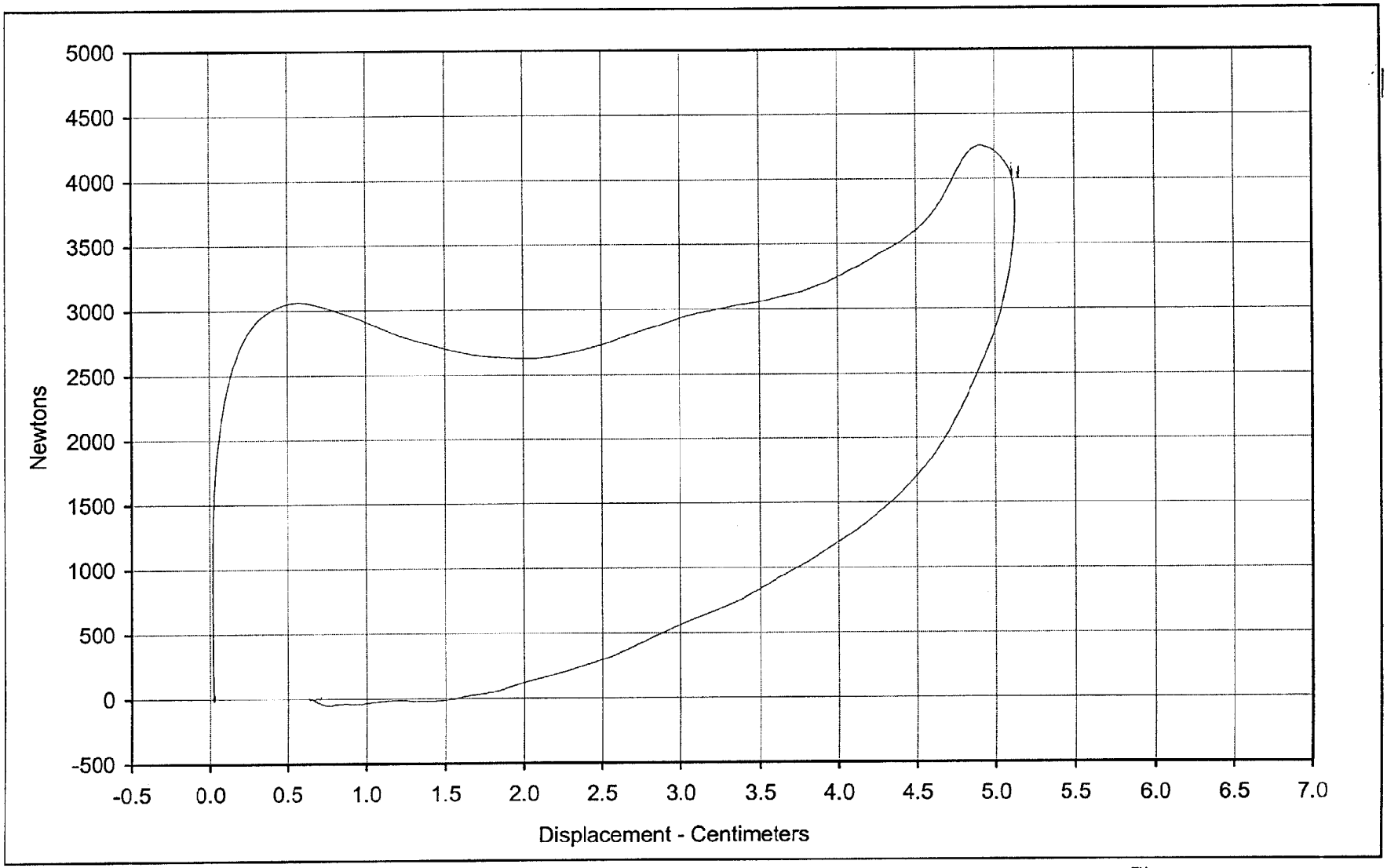
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	22.0	Pass
Laboratory Relative Humidity	%	10 to 70	34	Pass
Peak Probe Force	Newtons	3800 to 4300	4253	Pass
Peak Sternum Displacement	CM	5.1 to 5.8	5.1	Pass
Internal Hysterysis	%	69 to 85	78.3	Pass
		Overall Test Results		Pass

Laboratory Technician

August 26, 1997
Test Date

Approved By

8/26/97
Date



Curve Description: Probe Force vs. Chest Displacement

Probe Force: 4253.3 Newtons

Chest Displ.: 5.13 Centimeters

SAE Filter Class: 180

Date of Test: 8/26/97

ATD Serial No.: 202

Testing Program Hybrid III Thorax Impact Test (5TH Female)

Test Information: S/N of Part: N/A Test I.D.: FC004

KARCO Engineering

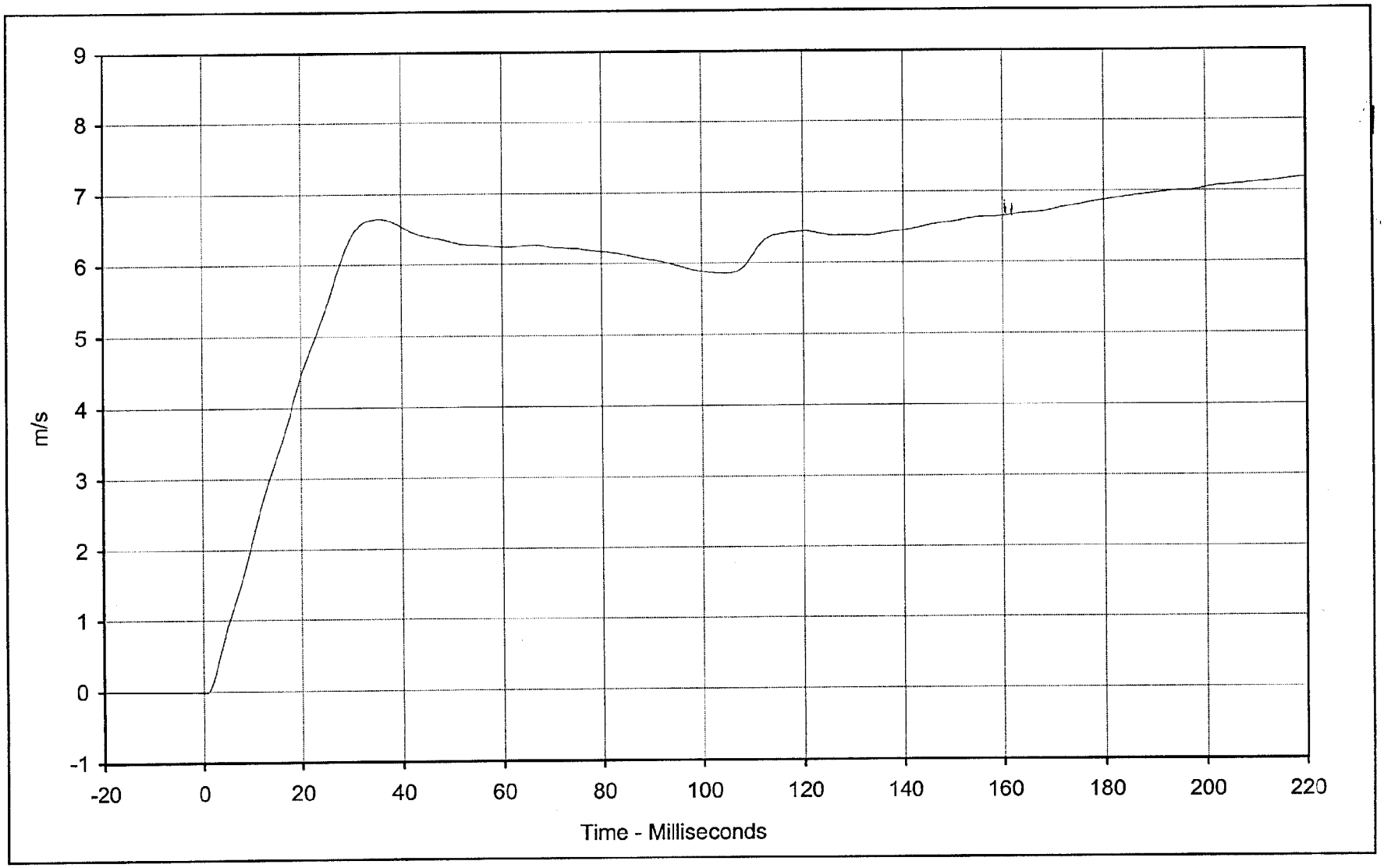
Hybrid III Calibration Data Sheet
5TH Percentile Female
Neck Flexion Test

ATD Serial No.: 202 Part Serial No.: N/A Test I.D.: FNF04

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	6.89 to 7.13	7.02	Pass
Pendulum Deceleration	10 Msec	m/s	2.10 to 2.50	2.10	Pass
	20 Msec	m/s	4.00 to 5.00	4.45	Pass
	30 Msec	m/s	5.80 to 7.00	6.39	Pass
Maximum "D" Plane Rotation		Degrees	78.0 to 96.0	92.4	Pass
"D" Plane Rotation Decay, Time From Peak Value To Zero Crossing		Msec.	57.0 to 69.0	66.1	Pass
Moment About Occipital Condyle		N•m	69.0 to 84.0	77.5	Pass
Moment About Occipital Condyle Decay, Time From Peak Value To Zero Crossing		Msec.	41.0 to 50.0	43.6	Pass
Time of Peak Rotation With Respect to Peak Moment		Msec.	2.0 to 12.0	2.3	Pass
			Overall Test Results		Pass

Laboratory Technician — August 27, 1997 Test Date

Approved By — 8/27/97 Date



Curve Description: Pendulum Velocity

Maximum Value: 7.2 at 220.0 Milliseconds

Minimum Value: 0.0 at 0.3 Milliseconds

SAE Filter Class: 180

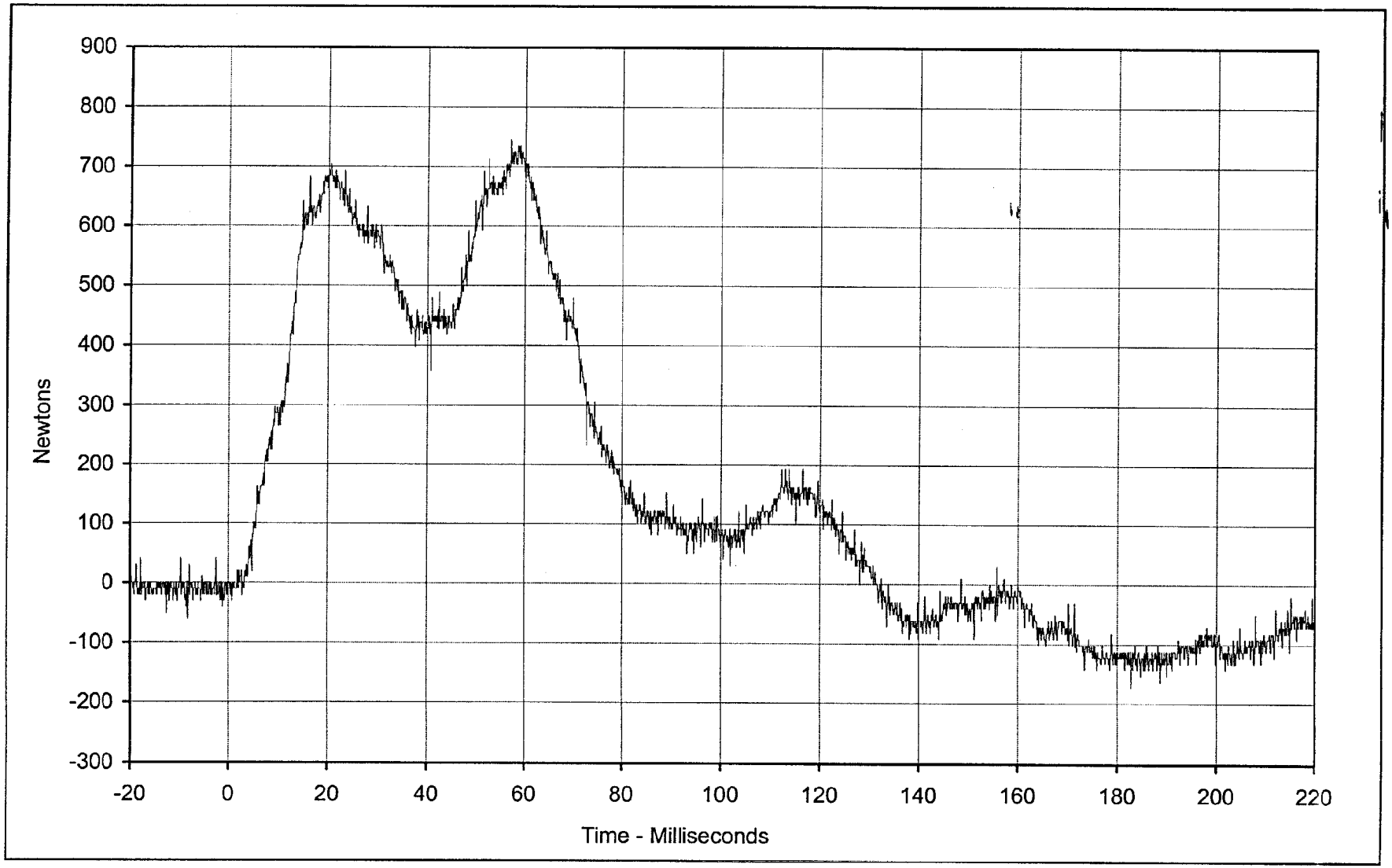
Date of Test: 8/27/97

ATD Serial No.: 202

Testing Program Hybrid III Neck Flexion Test (Female)

Test Information: S/N of Part: N/A Test I.D.: FNF04

KARCO Engineering

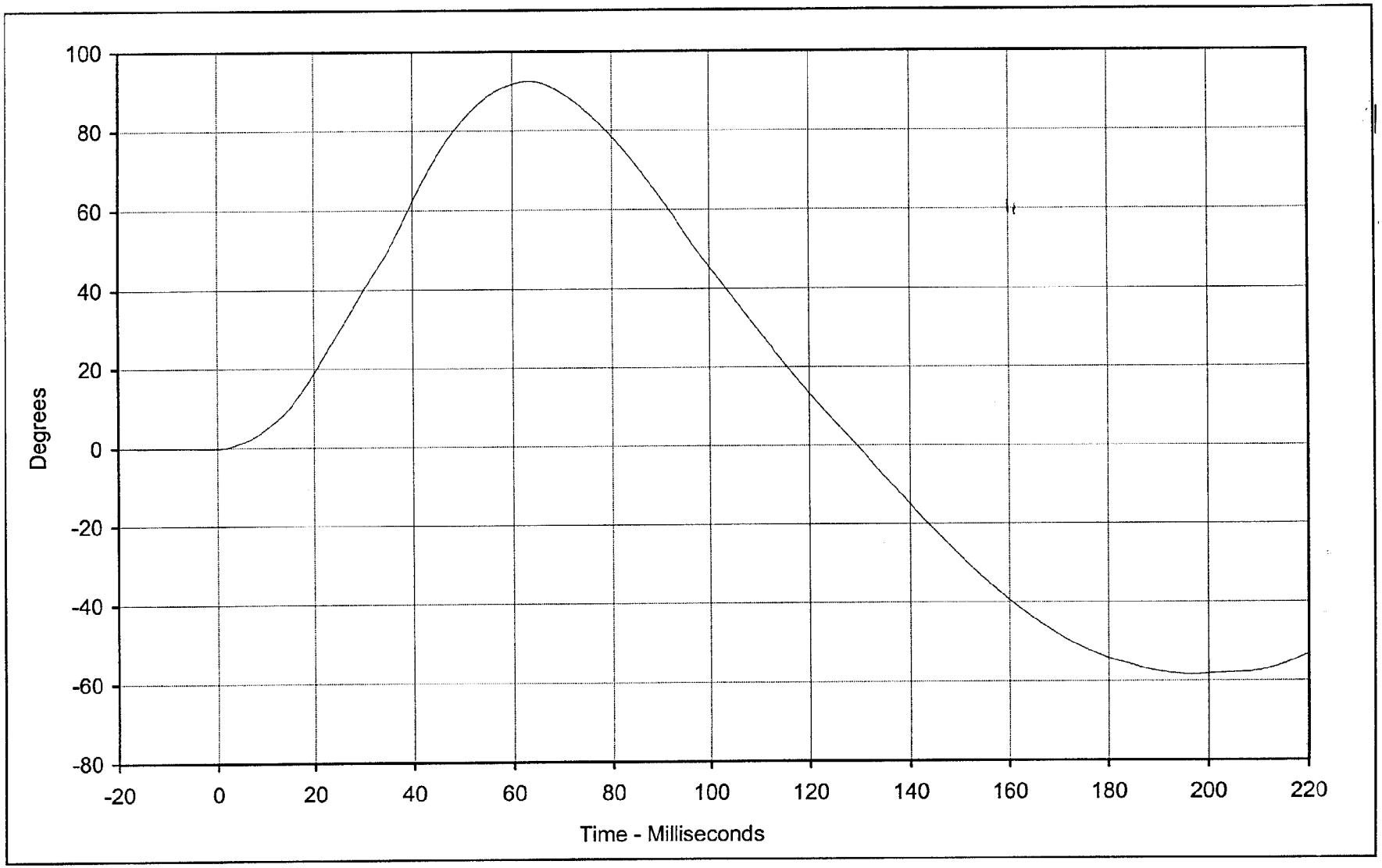


Curve Description:	Neck Force X			
Maximum Value:	745.0	at	57.0	Milliseconds
Minimum Value:	-173.5	at	182.7	Milliseconds
SAE Filter Class:	1000			
Date of Test:	8/27/97			
ATD Serial No.:	202			

Testing Program: Hybrid III Neck Flexion Test (Female)

Test Information: S/N of Part: N/A Test I.D.: FNF04

KARCO Engineering



Curve Description: "D" Plane Rotation

Maximum Value: 92.4 at 63.4 Milliseconds

Minimum Value: -58.3 at 196.7 Milliseconds

SAE Filter Class: 60

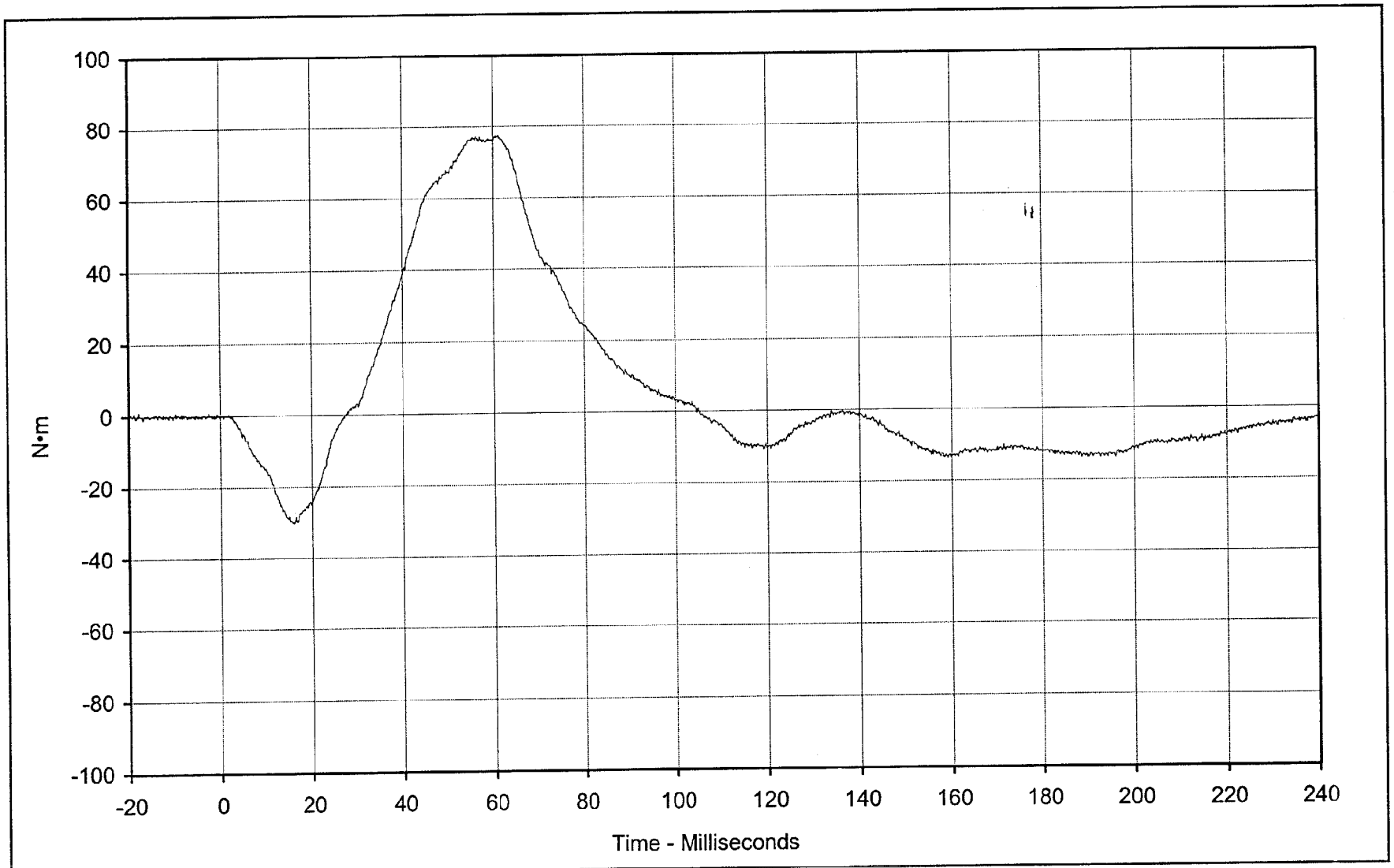
Date of Test: 8/27/97

ATD Serial No.: 202

Testing Program Hybrid III Neck Flexion Test (Female)

Test Information: S/N of Part: N/A Test I.D.: FNF04

KARCO Engineering



Curve Description: Moment About Occipital Condyles

Maximum Value: 77.5 at 61.1 Milliseconds

Minimum Value: -30.1 at 15.9 Milliseconds

SAE Filter Class: 600

Date of Test: 8/27/97

ATD Serial No.: 202

Testing Program Hybrid III Neck Flexion Test (Female)

Test Information: S/N of Part: N/A Test I.D.: FNF04

KARCO Engineering

Hybrid III Calibration Data Sheet
5TH Percentile Female
Neck Extension Test

ATD Serial No.: 202 Part Serial No.: N/A Test I.D.: FNE02

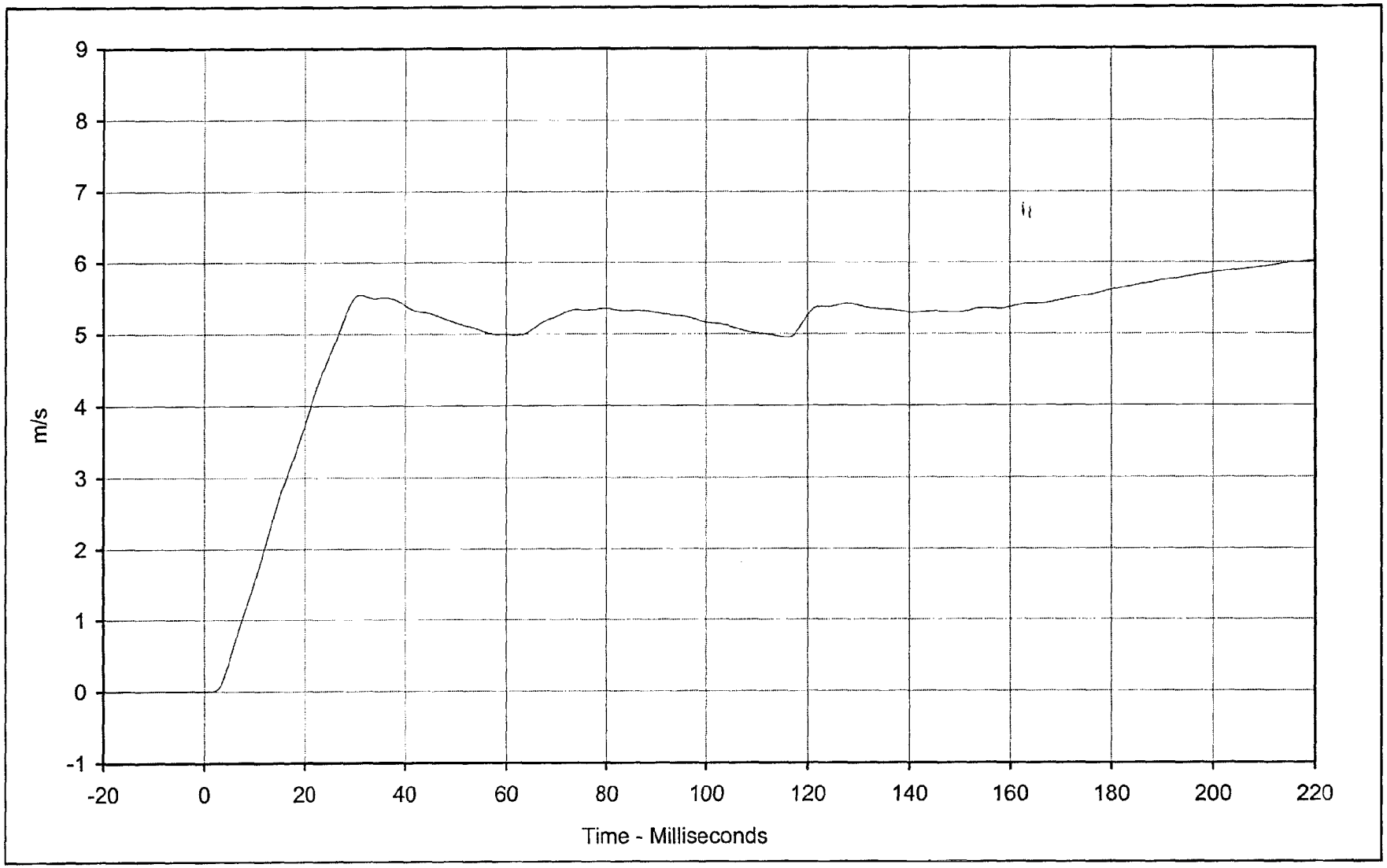
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	40	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.09	Pass
Pendulum Deceleration	10 Msec	m/s	1.50 to 1.90	1.51	Pass
	20 Msec	m/s	3.10 to 3.90	3.73	Pass
	30 Msec	m/s	4.60 to 5.60	5.51	Pass
Maximum "D" Plane Rotation		Degrees	97.0 to 119.0	104.6	Pass
"D" Plane Rotation Decay, Angle When the Decaying Y Moment is at -10 N•m		Degrees	80.0 to 96.0	89.6	Pass
Calculated Moment About Occipital Condyle		N•m	-54.0 to -67.0	-64.4	Pass
Moment About Occipital Condyle Decay, Time From Negative Peak Value To -10 N•m		Msec.	28.0 to 38.0	30.3	Pass
			Overall Test Results		Pass

Laboratory Technician

August 24, 1997
Test Date

Approved By

8/24/97
Date



Curve Description: Pendulum Velocity

Maximum Value: 6.0 at 220.0 Milliseconds

Minimum Value: 0.0 at 1.6 Milliseconds

SAE Filter Class: 180

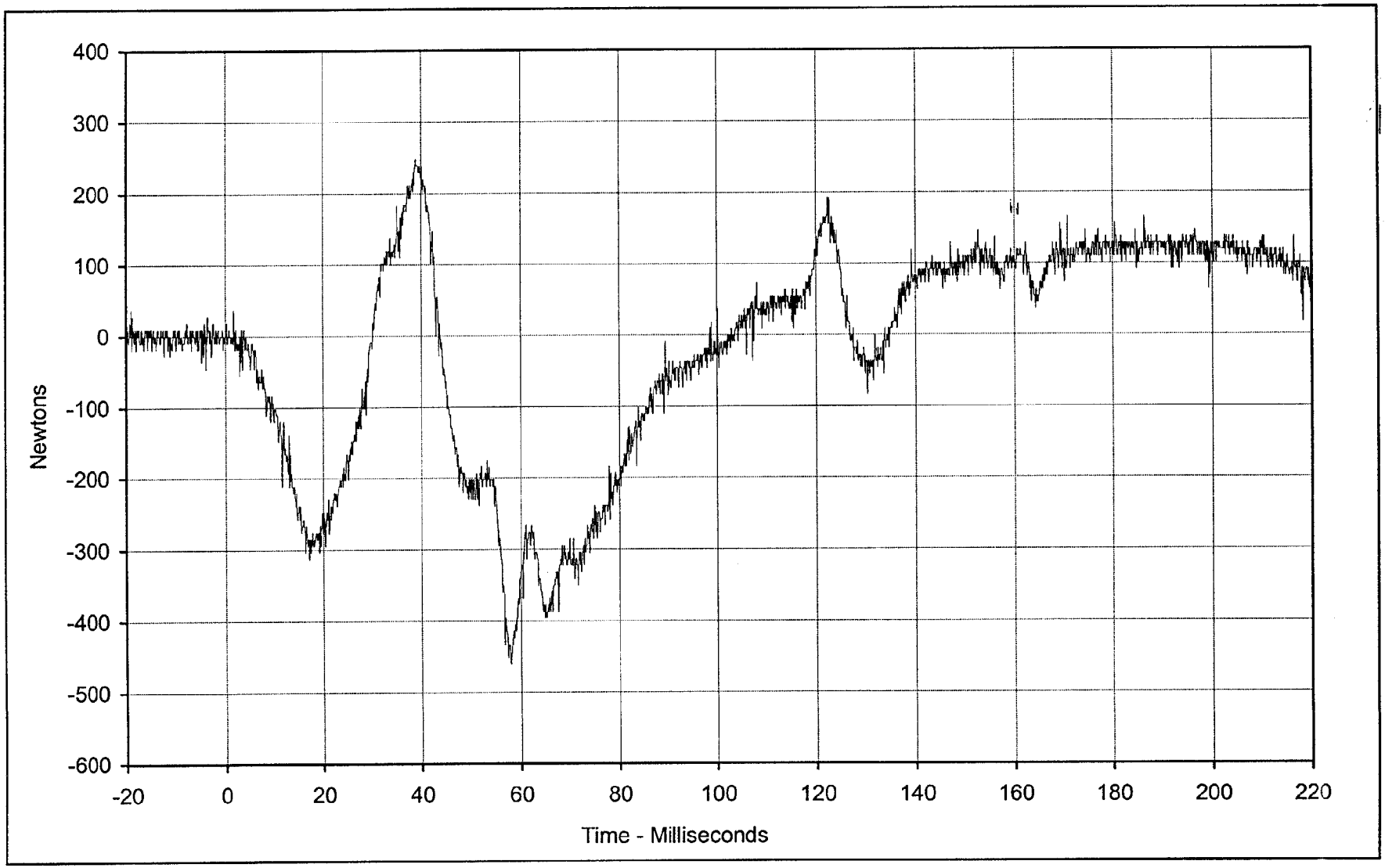
Date of Test: 8/24/97

ATD Serial No.: 202

Testing Program Hybrid III Neck Extension Test (Female)

Test Information: S/N of Part: N/A Test I.D.: FNE02

KARCO Engineering



Curve Description: Neck Force X

Maximum Value: 248.2 at 39.0 Milliseconds

Minimum Value: -460.2 at 57.9 Milliseconds

SAE Filter Class: 1000

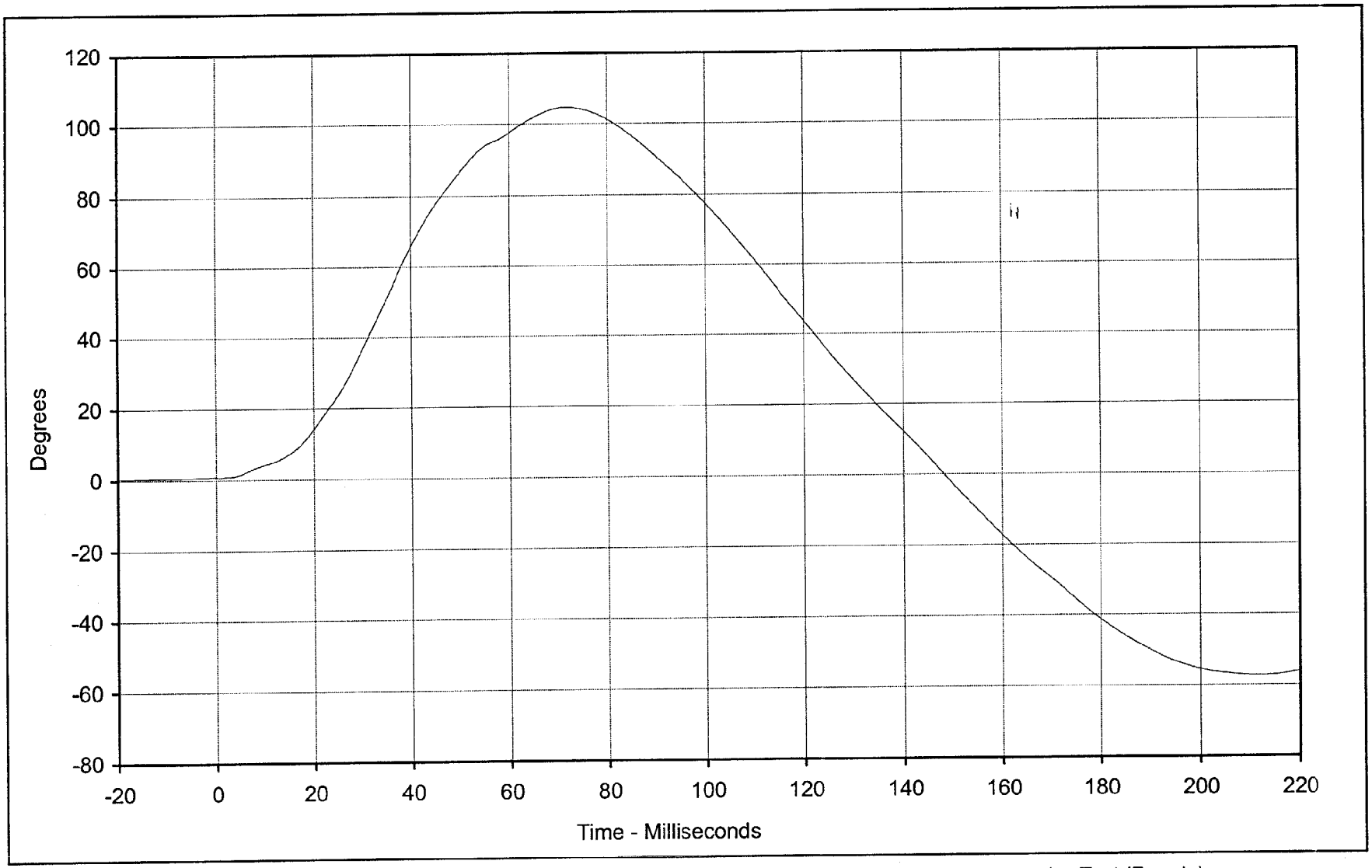
Date of Test: 8/24/97

ATD Serial No.: 202

Testing Program Hybrid III Neck Extension Test (Female)

Test Information: S/N of Part: N/A Test I.D.: FNE02

KARCO Engineering



Curve Description: "D" Plane Rotation

Maximum Value: 104.6 at 71.6 Milliseconds

Minimum Value: -57.2 at 210.8 Milliseconds

SAE Filter Class: 60

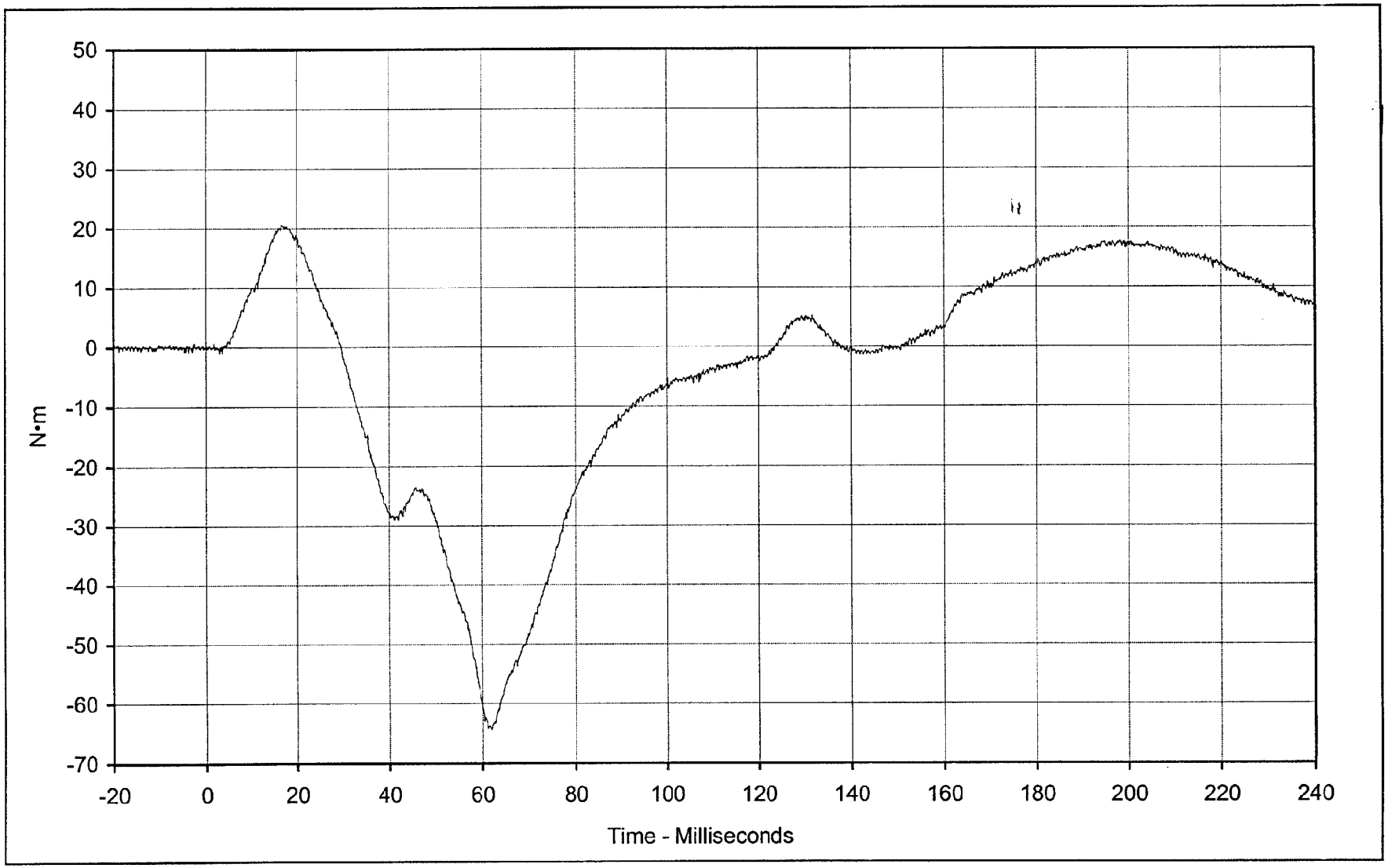
Date of Test: 8/24/97

ATD Serial No.: 202

Testing Program Hybrid III Neck Extension Test (Female)

Test Information: S/N of Part: N/A Test I.D.: FNE02

KARCO Engineering



Curve Description: Moment About Occipital Condyles

Maximum Value: 20.5 at 16.6 Milliseconds

Minimum Value: -64.4 at 61.9 Milliseconds

SAE Filter Class: 600

Date of Test: 8/24/97

ATD Serial No.: 202

Testing Program Hybrid III Neck Extension Test (Female)

Test Information: S/N of Part: N/A Test I.D.: FNE02

KARC Engineering

Hybrid III Calibration Data Sheet
50TH Percentile Female
External Measurements

ATD Serial No.: 202 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	21.0	Pass
Laboratory relative humidity	%	10 to 70	43	Pass
A - Total sitting height	mm	785.0 to 795.0	786.0	Pass
B - Shoulder pivot height	mm	434.0 to 450.0	444.0	Pass
C - "H" point height	mm	81.5 to 86.5	85.5	Pass
D - "H" point from seat back	mm	144.5 to 149.5	147.0	Pass
E - Shoulder pivot from back	mm	71.0 to 81.0	79.0	Pass
F - Thigh clearance	mm	114.0 to 130.0	116.0	Pass
G - Elbow to finger tip	mm	393.0 to 409.0	397.0	Pass
H - Skull cap to back line	mm	43.2 to 48.5	46.0	Pass
I - Shoulder to elbow length	mm	287.0 to 303.0	298.0	Pass
J - Elbow rest height	mm	191.0 to 211.0	209.0	Pass
K - Buttock to knee length	mm	509.5 to 533.5	532.0	Pass
L - Poplipteal height	mm	349.5 to 373.5	360.0	Pass
M - Knee to floor height	mm	449.0 to 465.0	450.0	Pass
N - Buttock poplipteal length	mm	399.5 to 423.5	421.0	Pass
O - Chest depth	mm	183.0 to 200.0	197.0	Pass
P - Foot length	mm	216.0 to 232.0	229.0	Pass
R - Foot width	mm	76.0 to 92.0	89.0	Pass
V - Shoulder width	mm	348.0 to 364.0	355.0	Pass
W - Hip width at "H" point	mm	299.0 to 315.0	299.0	Pass
X - Chest circumfrence	mm	783.0 to 813.0	801.0	Pass
Y - Waist circumference	mm	757.0 to 787.0	780.0	Pass
AA - Location for chest circumference	mm	300.0 to 310.0	306.0	Pass
BB - Location for waist circumference	mm	160.0 to 170.0	168.0	Pass
		Overall Test Results		Pass

Laboratory Technician — August 27, 1997 Test Date

Approved By — 8/27/97 Date

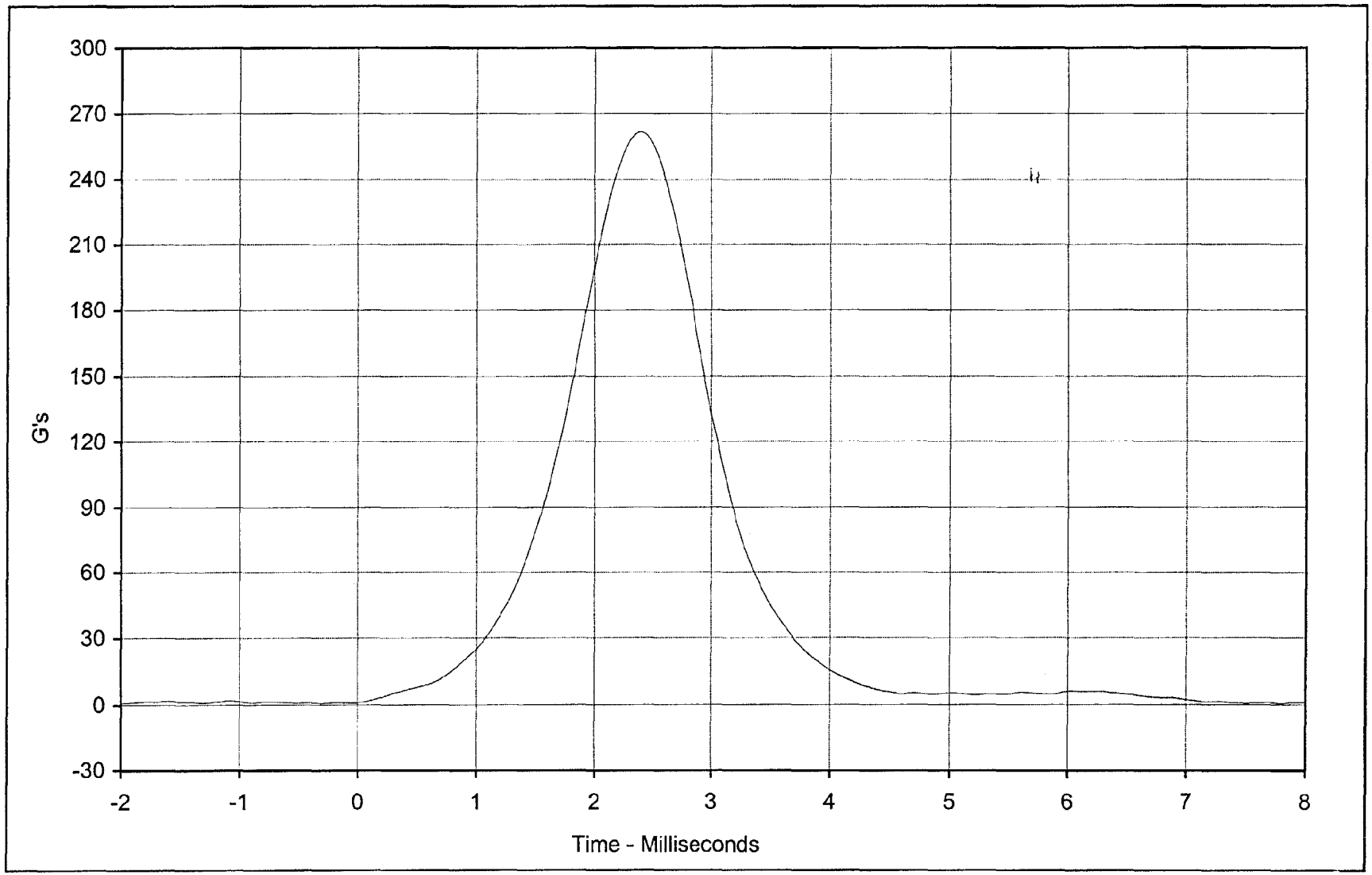
Hybrid III Calibration Data Sheet
5TH Percentile Female
Head Drop Calibration

ATD Serial No.: 274 Part Serial No.: N/A Test I.D.: FH007

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	31	Pass
Peak Resultant Acceleration	G's	240.0 to 295.0	261.8	Pass
Peak Lateral Acceleration	G's	≤15.0	6.3	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
		Overall Test Results		Pass

Laboratory Technician — August 25, 1997 Test Date

Approved By — 8/25/97 Date



Curve Description: Head Resultant Acceleration

Maximum Value: 261.8 at 2.4 Milliseconds

Minimum Value: 0.5 at 7.8 Milliseconds

SAE Filter Class: 1000

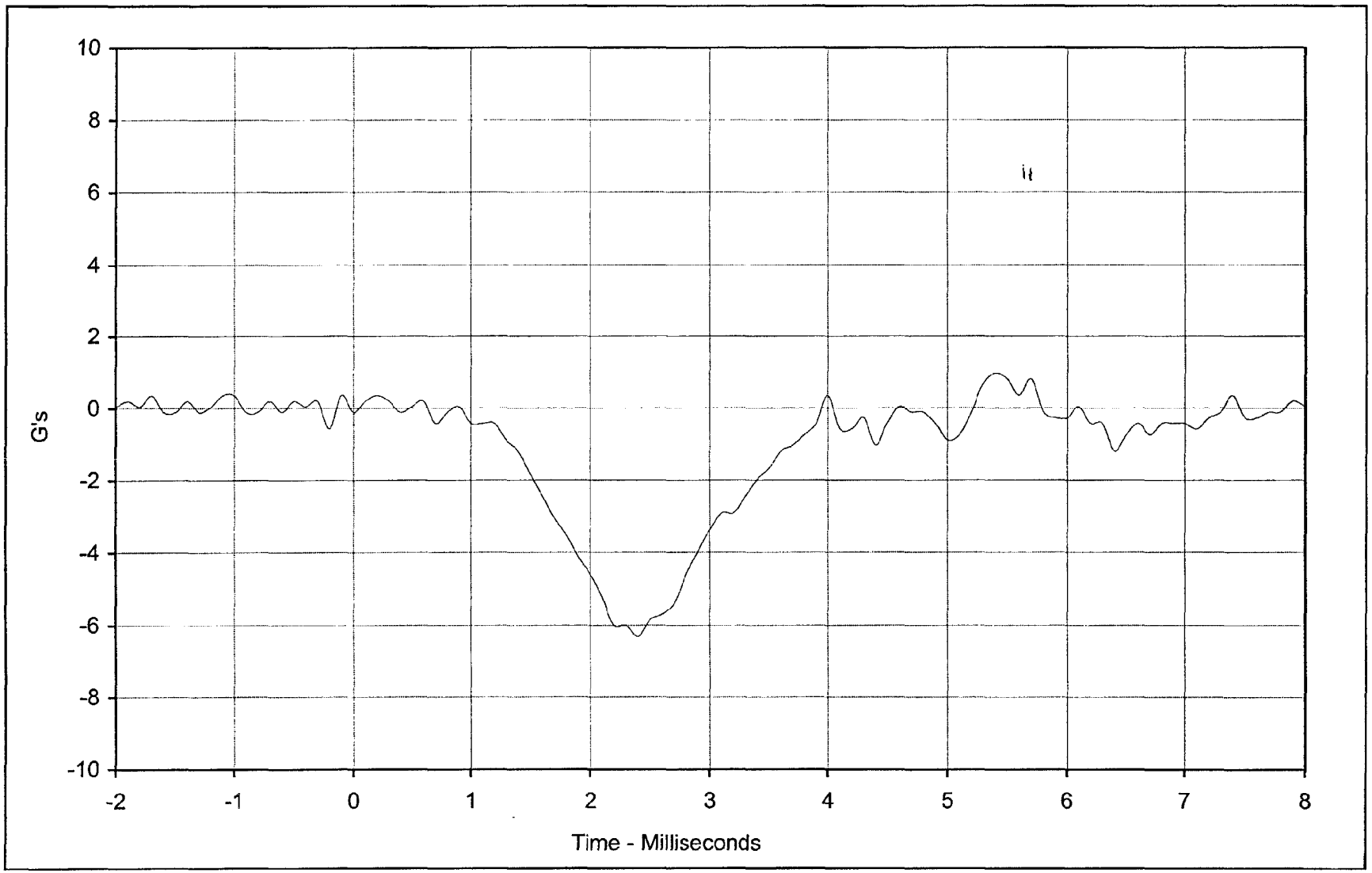
Date of Test: 8/25/97

ATD Serial No.: 274

Testing Program: Hybrid III Head Drop Calibration (Female)

Test Information: S/N of Part: N/A Test I.D.: FH007

KARCO Engineering



Curve Description:	Head Acceleration Y Axis			
Maximum Value:	1.0	at	5.4	Milliseconds
Minimum Value:	-6.3	at	2.4	Milliseconds
SAE Filter Class:	1000			
Date of Test:	8/25/97			
ATD Serial No.:	274			

Testing Program: Hybrid III Head Drop Calibration (Female)

Test Information: S/N of Part: N/A Test I.D.: FH007

KARCO Engineering

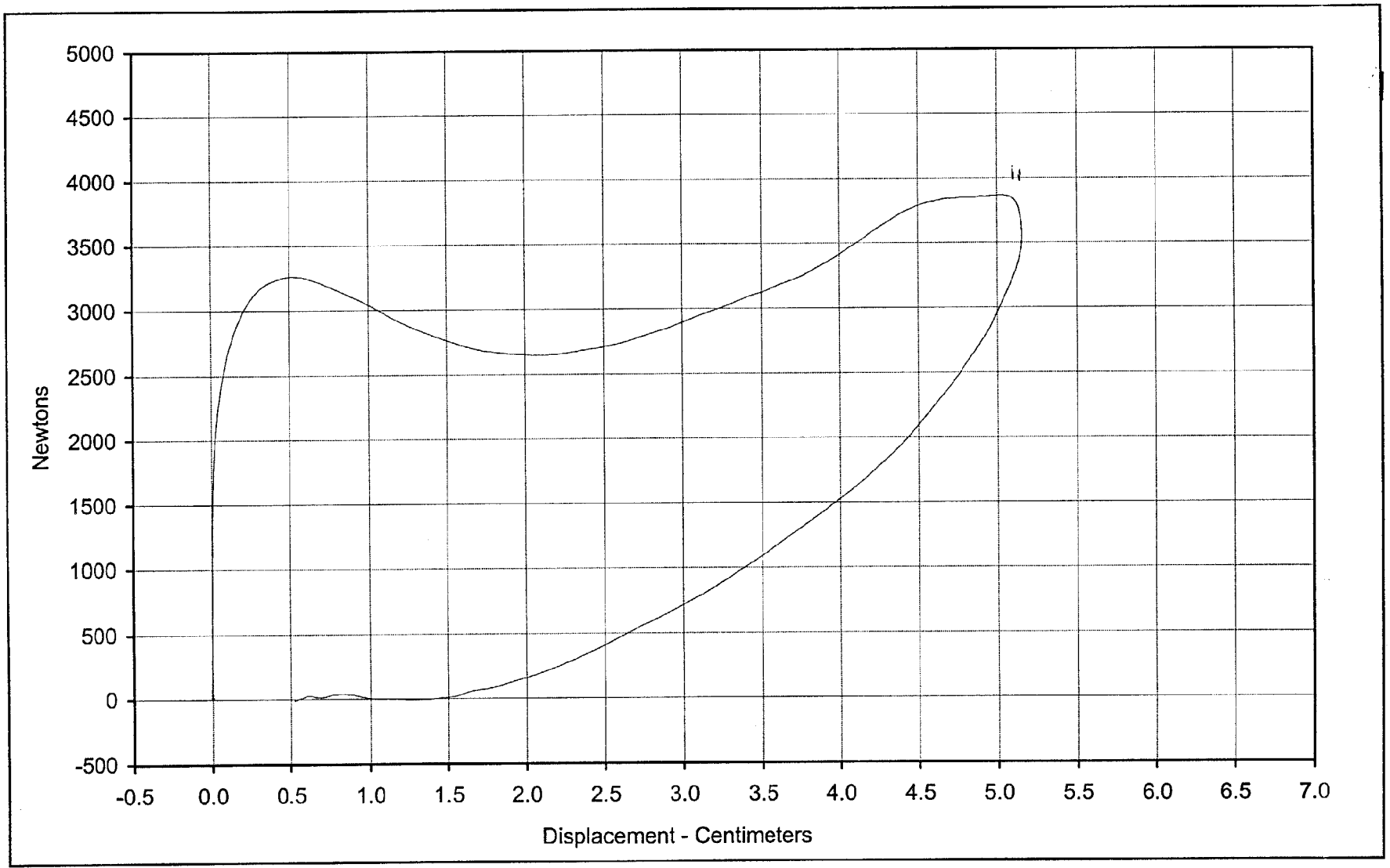
Hybrid III Calibration Data Sheet
5TH Percentile Female
Thorax Impact Test

ATD Serial No.: 274 Part Serial No.: N/A Test I.D.: FC002

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	31	Pass
Peak Probe Force	Newtons	3800 to 4300	3867	Pass
Peak Sternum Displacement	CM	5.1 to 5.8	5.2	Pass
Internal Hysterysis	%	69 to 85	73.8	Pass
		Overall Test Results		Pass

Laboratory Technician — August 26, 1997 (Test Date)

Approved By — 8/26/97 (Date)



Curve Description: Probe Force vs. Chest Displacement

Probe Force: 3867.4 Newtons

Chest Displ.: 5.15 Centimeters

SAE Filter Class: 180

Date of Test: 8/26/97

ATD Serial No.: 274

Testing Program Hybrid III Thorax Impact Test (5TH Female)

Test Information: S/N of Part: N/A Test I.D.: FC002

KARCO Engineering

KARCO Engineering

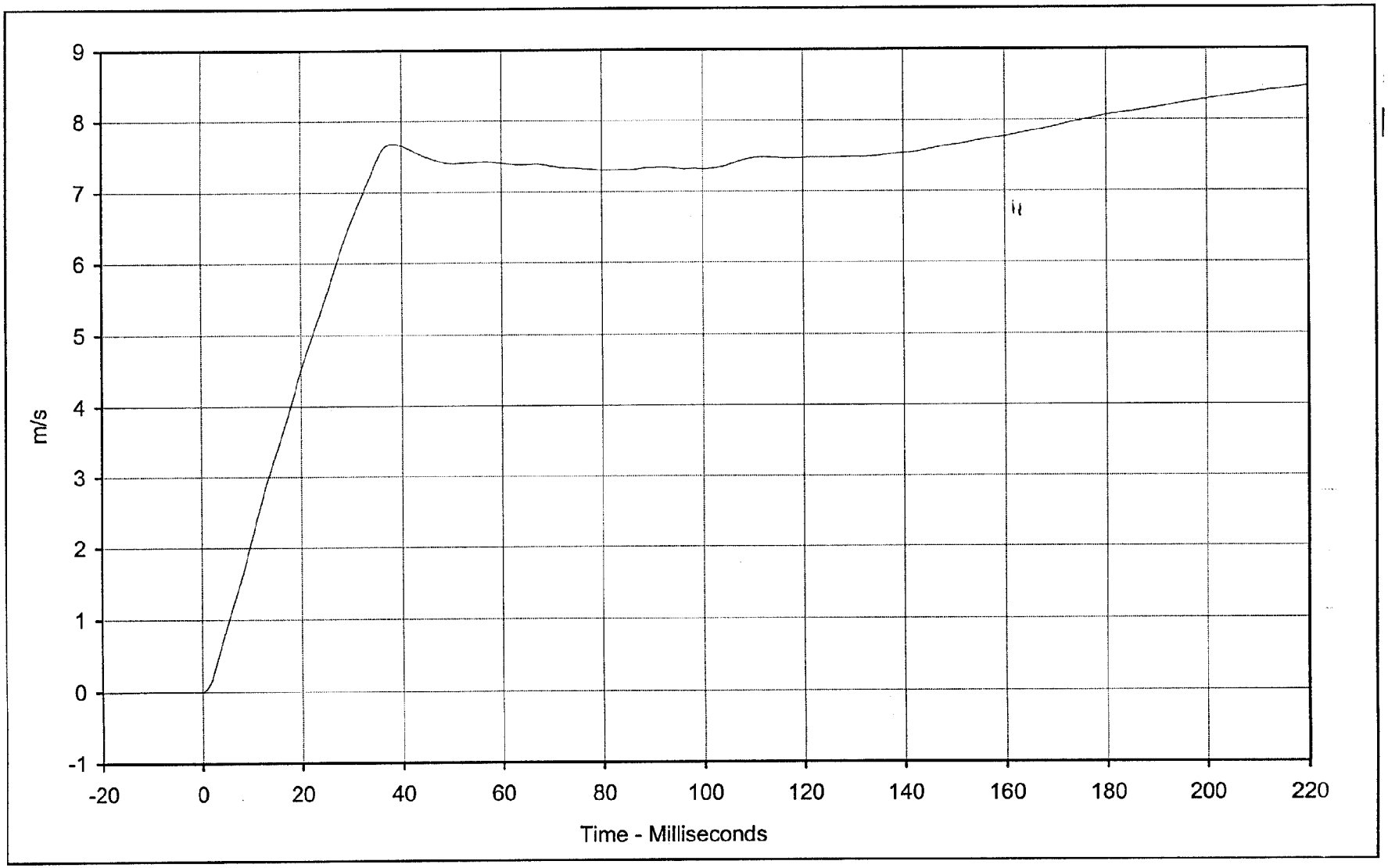
Hybrid III Calibration Data Sheet
5TH Percentile Female
Neck Flexion Test

ATD Serial No.: 274 Part Serial No.: N/A Test I.D.: 274N1

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity		%	10 to 70	31	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.06	Pass
Pendulum Deceleration	10 Msec	m/s	2.10 to 2.50	2.12	Pass
	20 Msec	m/s	4.00 to 5.00	4.52	Pass
	30 Msec	m/s	5.80 to 7.00	6.60	Pass
Maximum "D" Plane Rotation		Degrees	78.0 to 96.0	88.6	Pass
"D" Plane Rotation Decay, Time From Peak Value To Zero Crossing		Msec.	57.0 to 69.0	67.6	Pass
Moment About Occipital Condyle		N•m	69.0 to 84.0	71.9	Pass
Moment About Occipital Condyle Decay, Time From Peak Value To Zero Crossing		Msec.	41.0 to 50.0	50.0	Pass
Time of Peak Rotation With Respect to Peak Moment		Msec.	2.0 to 12.0	9.3	Pass
			Overall Test Results		Pass

Laboratory Technician — August 24, 1997 (Test Date)

Approved By — 8/24/97 (Date)

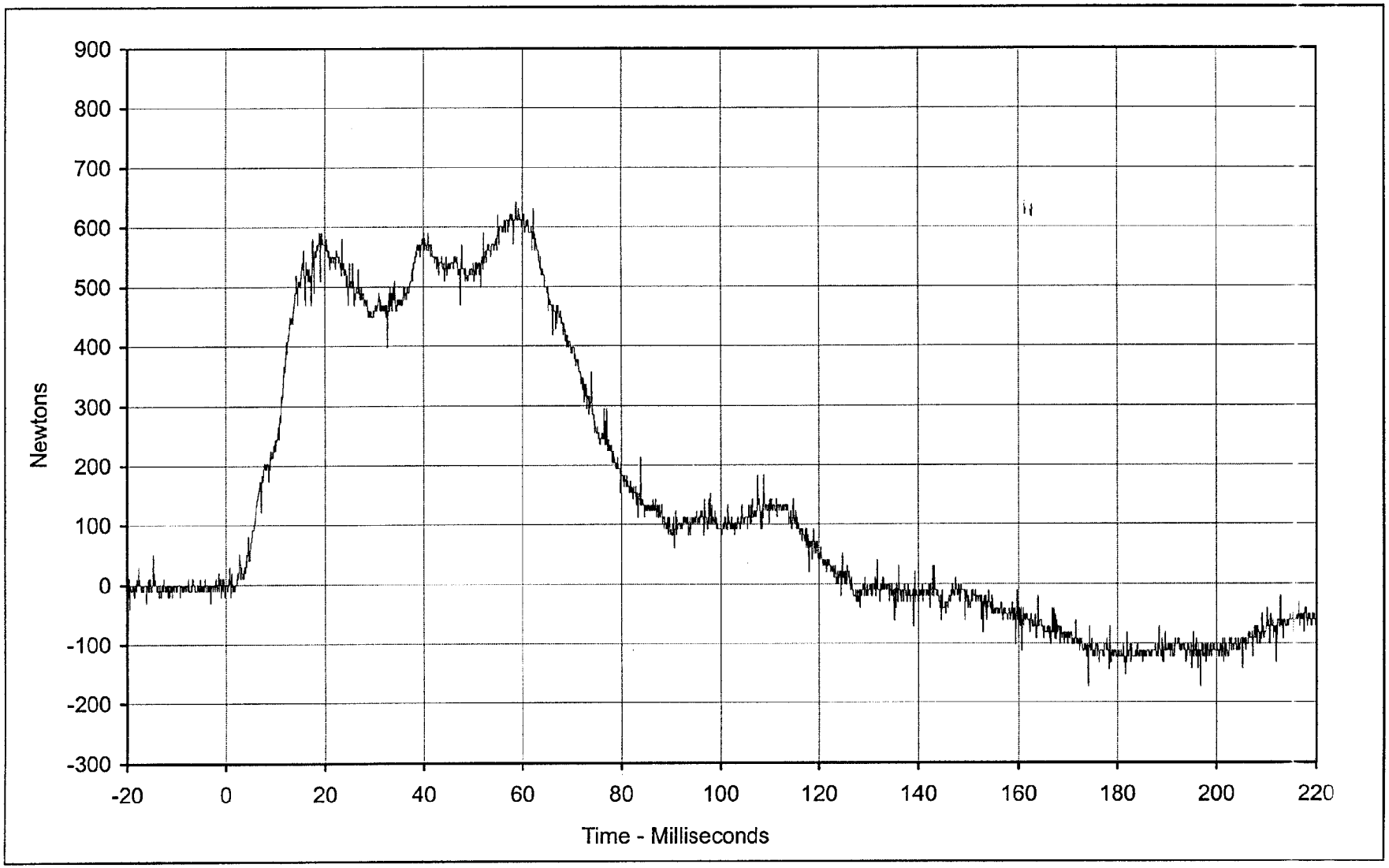


Curve Description:	Pendulum Velocity			
Maximum Value:	8.5	at	220.0	Milliseconds
Minimum Value:	0.0	at	0.0	Milliseconds
SAE Filter Class:	180			
Date of Test:	8/24/97			
ATD Serial No.:	274			

Testing Program: Hybrid III Neck Flexion Test (Female)

Test Information: S/N of Part: N/A Test I.D.: 274N1

KARCO Engineering

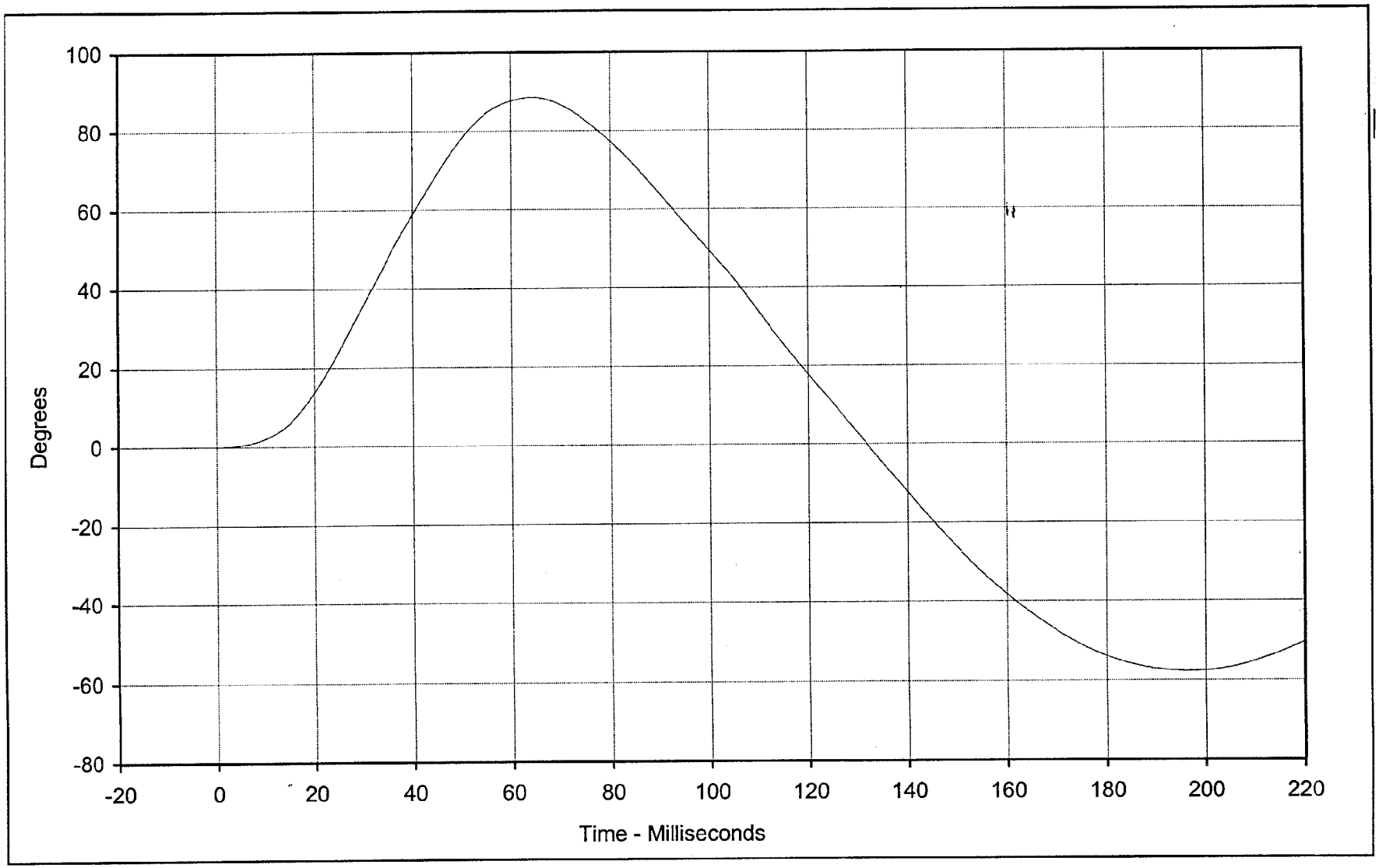


Curve Description:	Neck Force X			
Maximum Value:	642.0	at	58.8	Milliseconds
Minimum Value:	-173.2	at	174.0	Milliseconds
SAE Filter Class:	1000			
Date of Test:	8/24/97			
ATD Serial No.:	274			

Testing Program: Hybrid III Neck Flexion Test (Female)

Test Information: S/N of Part: N/A Test I.D.: 274N1

KARC Engineering



Curve Description: "D" Plane Rotation

Maximum Value: 88.6 at 64.3 Milliseconds

Minimum Value: -57.7 at 196.8 Milliseconds

SAE Filter Class: 60

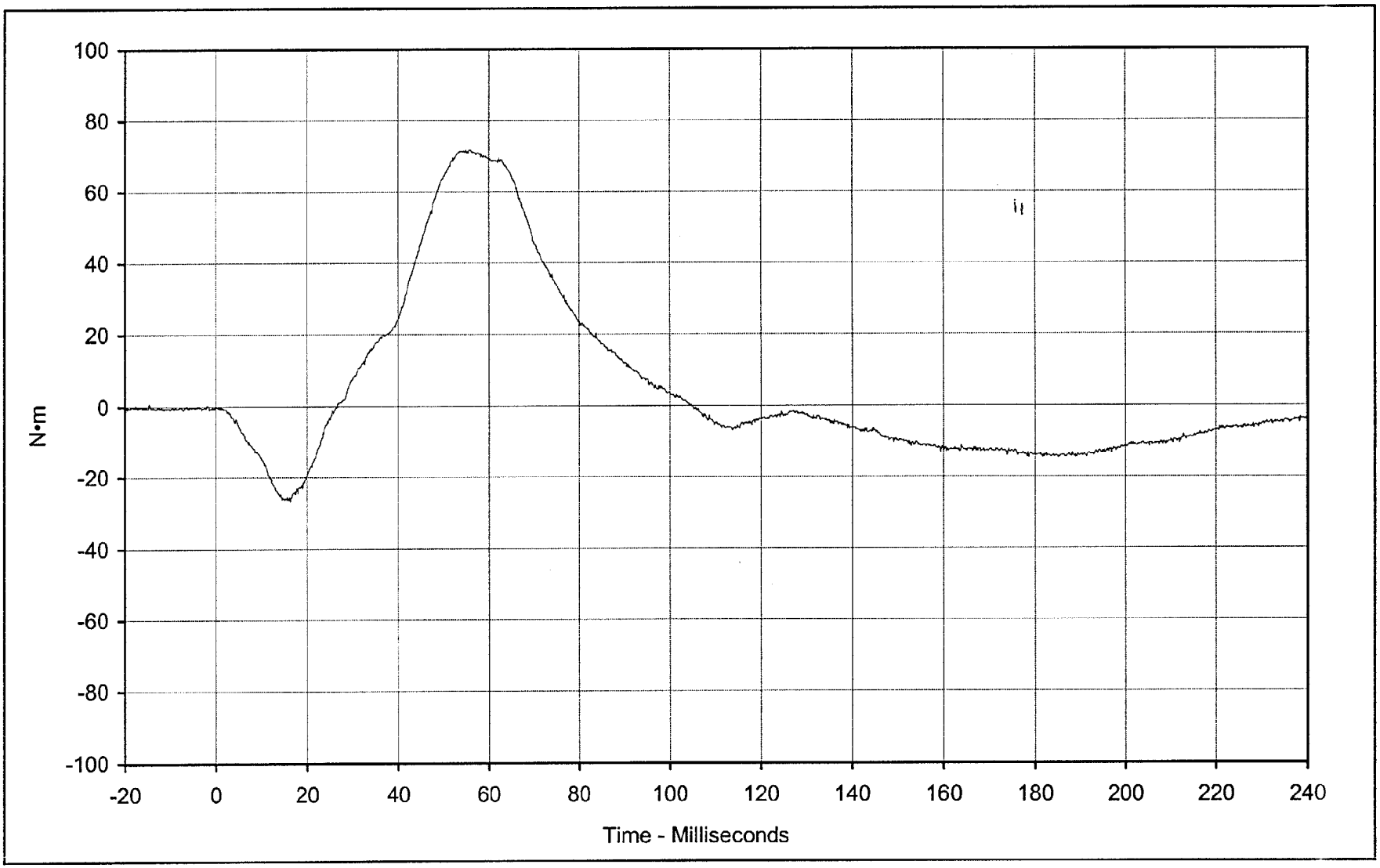
Date of Test: 8/24/97

ATD Serial No.: 274

Testing Program Hybrid III Neck Flexion Test (Female)

Test Information: S/N of Part: N/A Test I.D.: 274N1

KARCO Engineering



Curve Description:	Moment About Occipital Condyles			
Maximum Value:	71.9	at	55.0	Milliseconds
Minimum Value:	-26.8	at	16.2	Milliseconds
SAE Filter Class:	600			
Date of Test:	8/24/97			
ATD Serial No.:	274			

Testing Program: Hybrid III Neck Flexion Test (Female)

Test Information: S/N of Part: N/A Test I.D.: 274N1

KARCO Engineering

Hybrid III Calibration Data Sheet
5TH Percentile Female
Neck Extension Test

ATD Serial No.: 274 Part Serial No.: N/A Test I.D.: FNE04

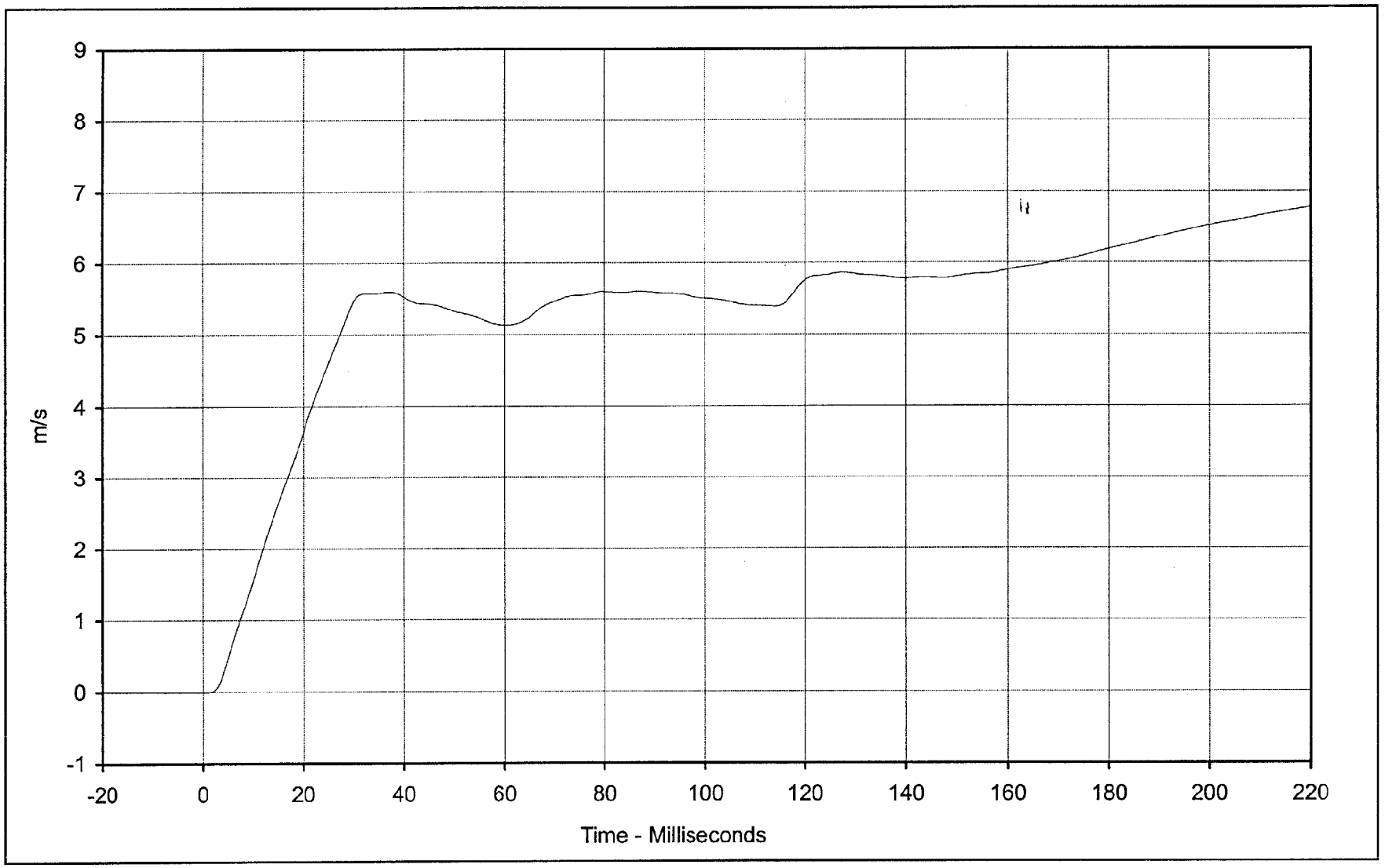
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	40	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.09	Pass
Pendulum Deceleration	10 Msec	m/s	1.50 to 1.90	1.52	Pass
	20 Msec	m/s	3.10 to 3.90	3.63	Pass
	30 Msec	m/s	4.60 to 5.60	5.47	Pass
Maximum "D" Plane Rotation		Degrees	97.0 to 119.0	99.5	Pass
"D" Plane Rotation Decay, Angle When the Decaying Y Moment is at -10 N•m		Degrees	80.0 to 96.0	83.5	Pass
Calculated Moment About Occipital Condyle		N•m	-54 to -67	-61.0	Pass
Moment About Occipital Condyle Decay, Time From Negative Peak Value To -10 N•m		Msec.	28.0 to 38.0	35.8	Pass
			Overall Test Results		Pass

Laboratory Technician

August 27, 1997
Test Date

Approved By

8/27/97
Date

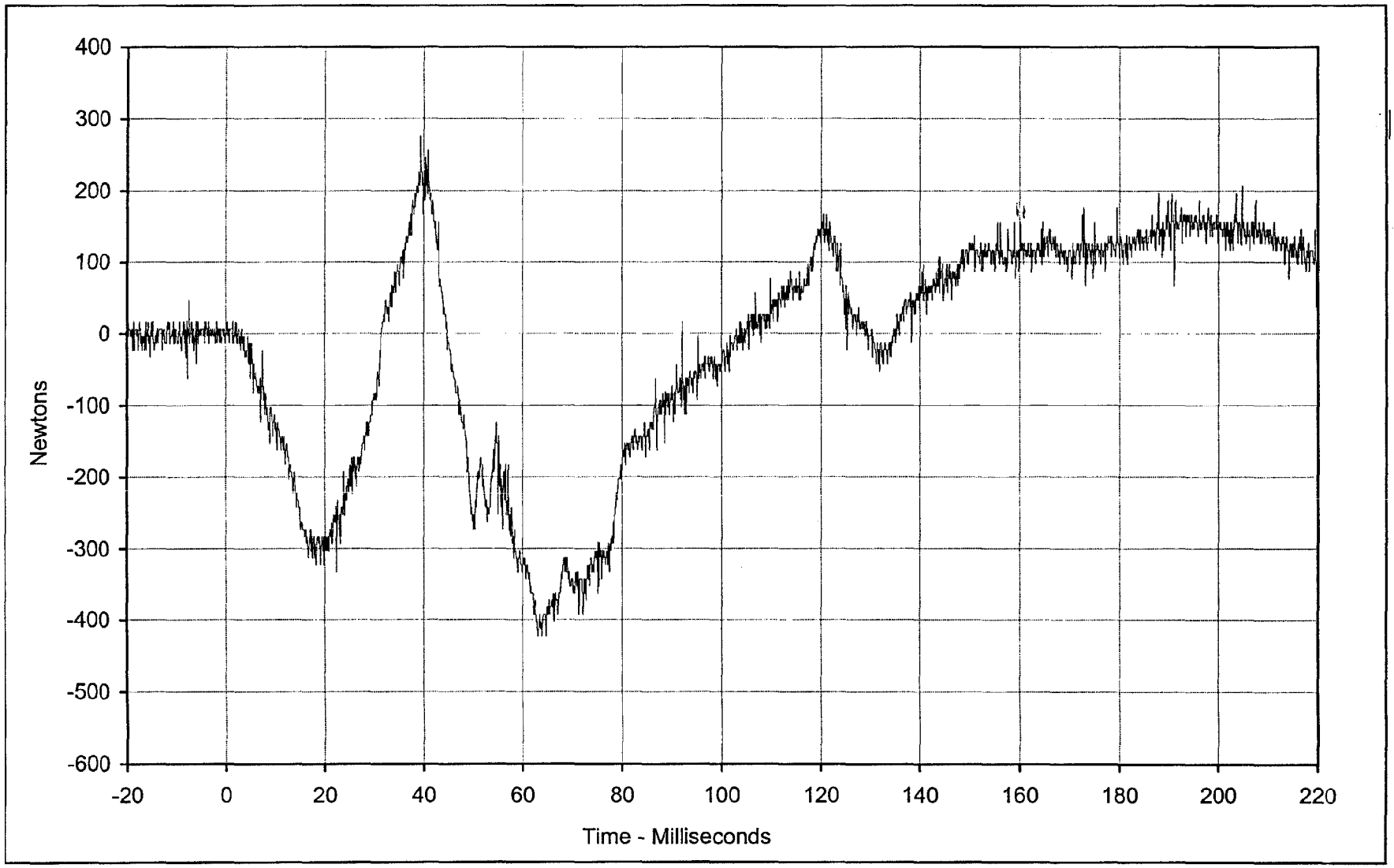


Curve Description:	Pendulum Velocity			
Maximum Value:	6.8	at	220.0	Milliseconds
Minimum Value:	0.0	at	0.8	Milliseconds
SAE Filter Class:	180			
Date of Test:	8/27/97			
ATD Serial No.:	274			

Testing Program: Hybrid III Neck Extension Test (Female)

Test Information: S/N of Part: N/A Test I.D.: FNE04

KARCO Engineering



Curve Description: Neck Force X

Maximum Value: 276.5 at 39.3 Milliseconds

Minimum Value: -422.5 at 63.0 Milliseconds

SAE Filter Class: 1000

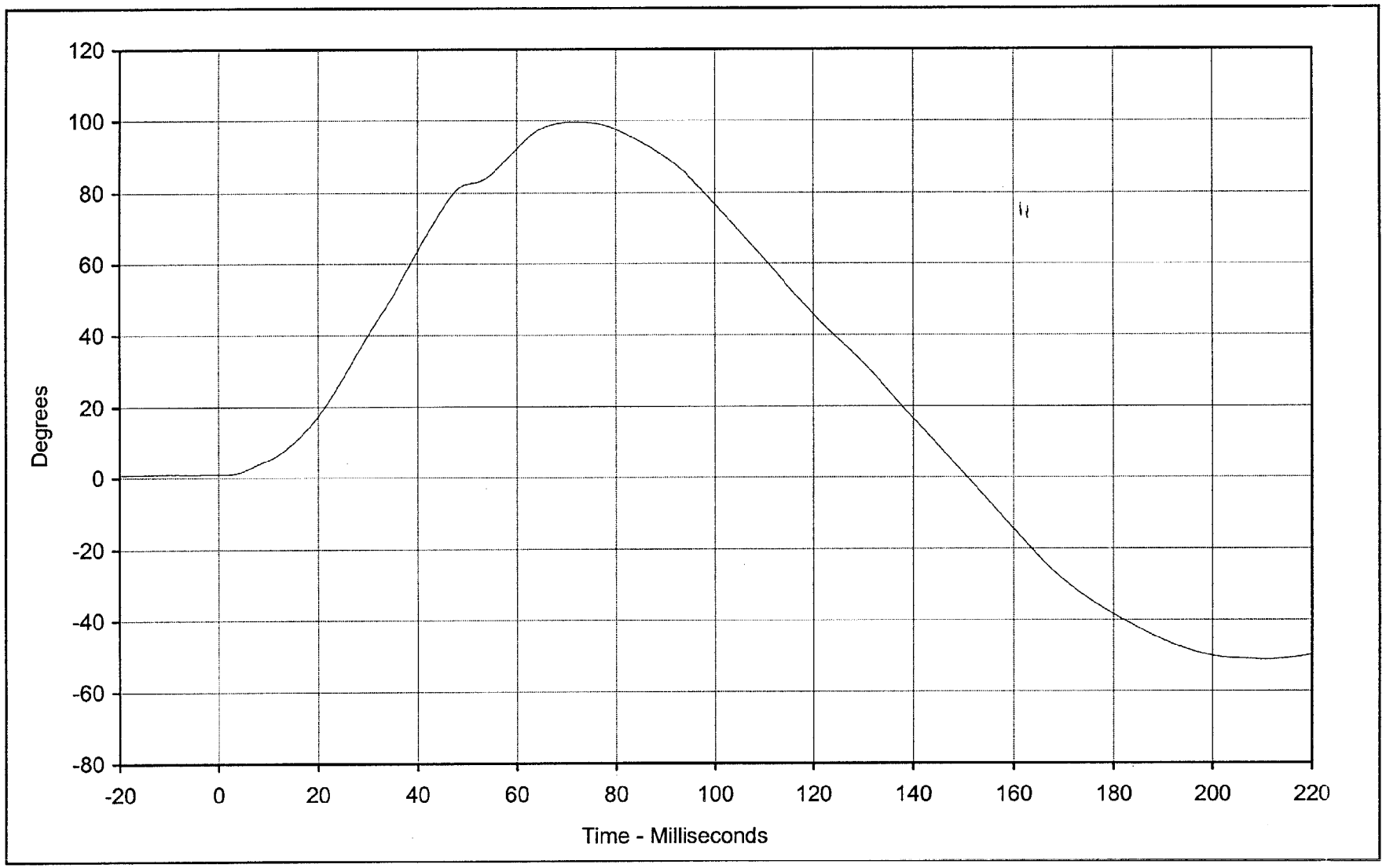
Date of Test: 8/27/97

ATD Serial No.: 274

Testing Program Hybrid III Neck Extension Test (Female)

Test Information: S/N of Part: N/A Test I.D.: FNE04

KARCO Engineering



Curve Description: "D" Plane Rotation

Maximum Value: 99.5 at 71.4 Milliseconds

Minimum Value: -51.1 at 210.9 Milliseconds

SAE Filter Class: 60

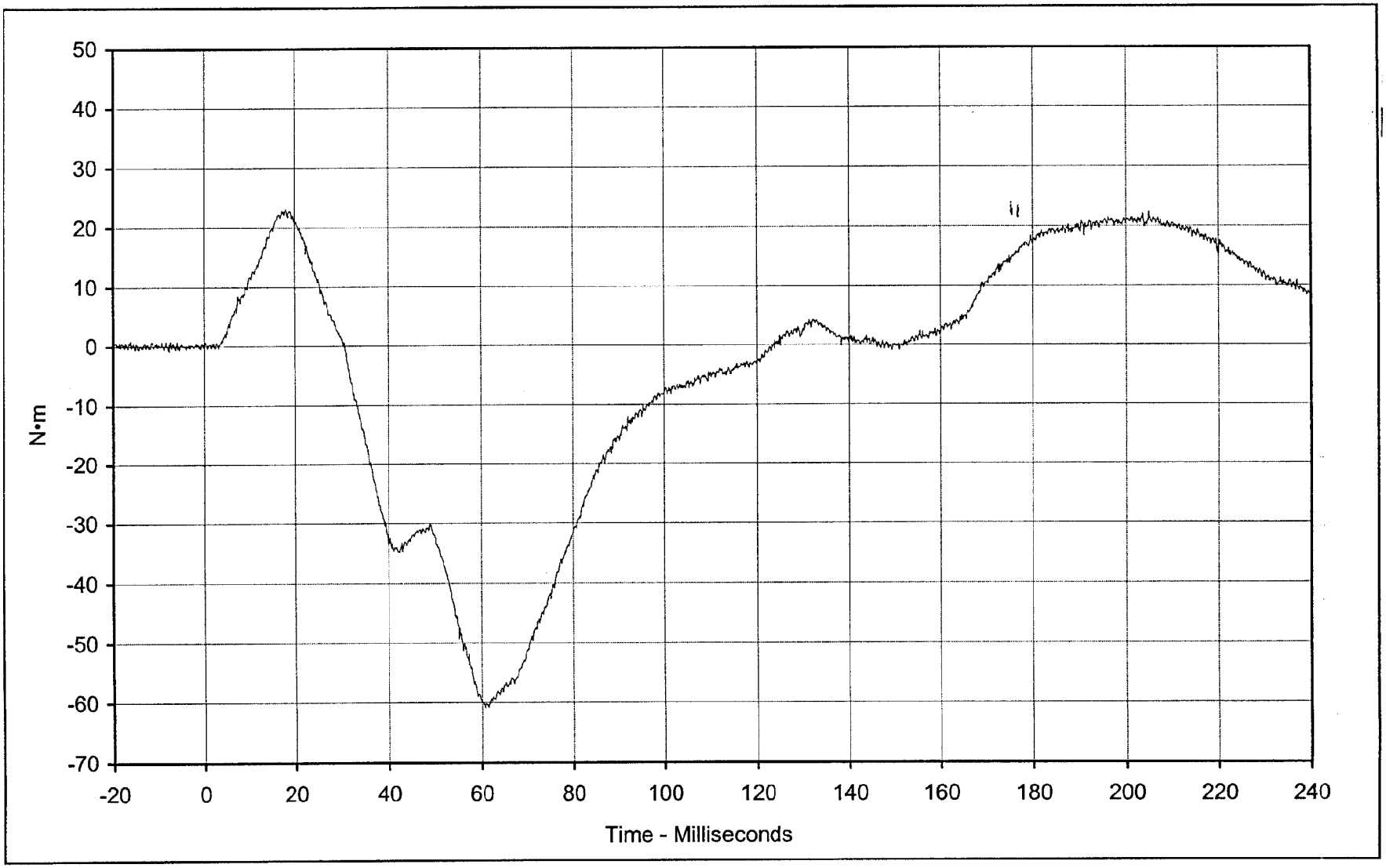
Date of Test: 8/27/97

ATD Serial No.: 274

Testing Program Hybrid III Neck Extension Test (Female)

Test Information: S/N of Part: N/A Test I.D.: FNE04

KARCO Engineering



Curve Description: Moment About Occipital Condyles

Maximum Value: 23.1 at 17.9 Milliseconds

Minimum Value: -61.0 at 60.7 Milliseconds

SAE Filter Class: 600

Date of Test: 8/27/97

ATD Serial No.: 274

Testing Program Hybrid III Neck Extension Test (Female)

Test Information: S/N of Part: N/A Test I.D.: FNE04

KARCO Engineering

Hybrid III Calibration Data Sheet
50TH Percentile Female
External Measurements

ATD Serial No.: 274 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	21.0	Pass
Laboratory relative humidity	%	10 to 70	43	Pass
A - Total sitting height	mm	785.0 to 795.0	791.0	Pass
B - Shoulder pivot height	mm	434.0 to 450.0	446.0	Pass
C - "H" point height	mm	81.5 to 86.5	84.0	Pass
D - "H" point from seat back	mm	144.5 to 149.5	148.0	Pass
E - Shoulder pivot from back	mm	71.0 to 81.0	80.0	Pass
F - Thigh clearance	mm	114.0 to 130.0	125.0	Pass
G - Elbow to finger tip	mm	393.0 to 409.0	400.0	Pass
H - Skull cap to back line	mm	43.2 to 48.5	46.0	Pass
I - Shoulder to elbow length	mm	287.0 to 303.0	298.0	Pass
J - Elbow rest height	mm	191.0 to 211.0	291.0	Pass
K - Buttock to knee length	mm	509.5 to 533.5	532.0	Pass
L - Poplipteal height	mm	349.5 to 373.5	370.0	Pass
M - Knee to floor height	mm	449.0 to 465.0	463.0	Pass
N - Buttock poplipteal length	mm	399.5 to 423.5	422.0	Pass
O - Chest depth	mm	183.0 to 200.0	197.0	Pass
P - Foot length	mm	216.0 to 232.0	229.0	Pass
R - Foot width	mm	76.0 to 92.0	90.0	Pass
V - Shoulder width	mm	348.0 to 364.0	361.0	Pass
W - Hip width at "H" point	mm	299.0 to 315.0	311.0	Pass
X - Chest circumfrence	mm	783.0 to 813.0	785.0	Pass
Y - Waist circumference	mm	757.0 to 787.0	785.0	Pass
AA - Location for chest circumference	mm	300.0 to 310.0	305.0	Pass
BB - Location for waist circumference	mm	160.0 to 170.0	164.0	Pass
		Overall Test Results		Pass

Laboratory Technician

August 27, 1997
Test Date

Approved By

8/27/97
Date

APPENDIX F

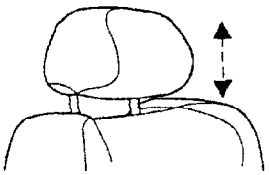
VEHICLE OWNER'S MANUAL

OCCUPANT RESTRAINT INSTRUCTIONS

SEATING

Head restraints

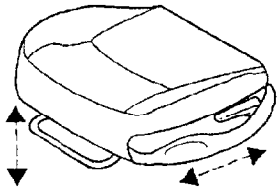
The head restraints can be moved up and down.



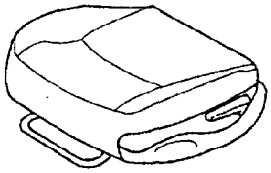
Front seats

Adjusting the manual seats

Lift bar to move seat forward or backward.



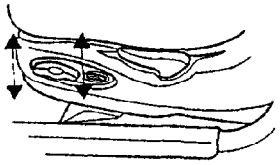
Pull lever up to adjust seatback.



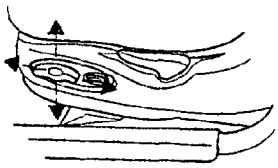
Never adjust the driver's seat or seatback when the vehicle is moving.

Adjusting the power seats (if equipped)

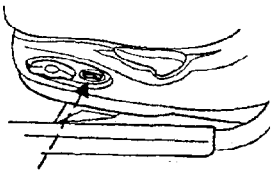
Press to move front or rear of seat up and down.



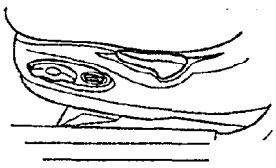
Press in the direction to raise or lower the seat, or to move the seat forward or backward.



Push to increase or decrease lumbar support.



Pull lever up to adjust seatback.

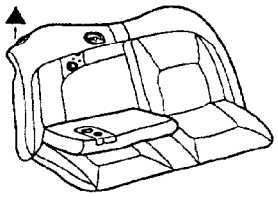


Never adjust the driver's seat or seatback when the vehicle is moving.

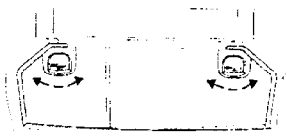
2nd seat/Split-folding rear seat

One or both rear seatbacks can be folded down to provide additional cargo space.

To lower the seatbacks(s) from inside the vehicle, lift seatback release handle, pull tab, then fold seatback down.



In the sedan, the seatbacks can also be folded down from inside the trunk. Move the release lever on the back of the rear seatback to the OPEN position and fold the seatback down.



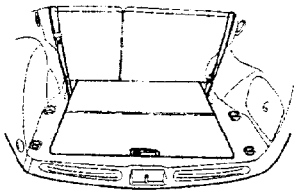
When raising the seatback(s), make sure you hear the seat latch into place.

3rd seat (wagon only)

The third seat faces the rear of the vehicle. For height and weight limits, see the label on the seat cushion. When the seat is down, the back of your wagon has a flat surface for carrying cargo.

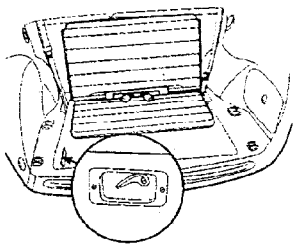
To open up the seat:

1. Unlock the floor panel with the key, then use the handle to fold the floor panel toward the front of the car.



2. Remove the cargo cover. The cargo cover must be removed or the seatback will not latch in the upright position.

3. Lift the remote latch release on the left side of the compartment and fold the remaining floor panel until it latches. Make sure the seatback is locked in the upright position.



To close the seat, make sure the safety belts are in their correct notches, then lift the remote latch release and push the seat down until it latches. Pull up on the handle and push the floor panel into place.

To close the seat, make sure the safety belts are in their correct notches, lift the remote latch release and push the seat down until it latches. Pull up on the handle and push the floor panel into place.

SAFETY RESTRAINTS

Safety restraints precautions

Always drive and ride with your seatback upright and the lap belt snug and low across the hips.

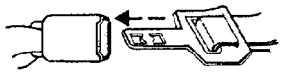
To prevent the risk of injury, make sure children sit where they can be properly restrained.

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

Combination lap and shoulder belts

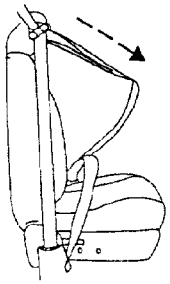
1. To fasten, insert the tongue into the slot in the buckle.

2. To unfasten, push the red release button and remove the tongue from the buckle.



The outboard safety restraints in the vehicle are combination lap and shoulder belts. The front and rear seat passenger outboard safety belts have two types of locking modes described below:

To test the vehicle sensitive (emergency) locking mode, pull the shoulder belt quickly to lock.



The vehicle sensitive mode is the normal retractor mode, adjusting shoulder belt tightness in response to vehicle movement. For example, if the driver brakes suddenly or turns a corner sharply or the vehicle receives an impact of 8 km/h (5 mph) or more, the combination safety belts would lock to help reduce forward movement of the driver and passengers.

Automatic locking mode

In this mode, the shoulder belt is locked in a certain position by the occupant and **does not** adjust tightness during vehicle movement.

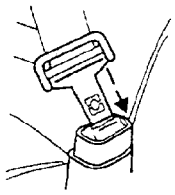
The automatic locking mode is not available on the driver belt.

When to use the automatic locking mode

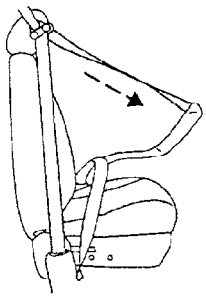
- When a tight lap/shoulder fit is desired.
- **Any time** a child safety seat is installed in the vehicle. Refer to *Children and infant or Child safety seats* later in this chapter.

How to use the automatic locking mode

- Buckle the combination lap and shoulder belt.



- Grasp the shoulder portion and pull downward until the entire belt is extracted.



- Allow the belt to retract. As the belt retracts, you will hear a clicking sound. This indicates the safety belt is now in the automatic locking mode.

How to cancel the automatic locking mode

Disconnect the combination lap/shoulder belt and allow it to retract completely to cancel the automatic locking mode and activate the vehicle sensitive (emergency) locking mode.

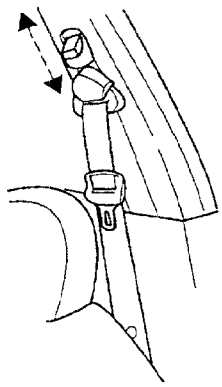
Safety belts for front outboard passenger and rear outboard seating positions (except wagon rear-facing position)

Your vehicle is equipped with a dual locking mode retractor on the **shoulder** belt portion of the combination lap/shoulder safety belt at these positions.

Front safety belt height adjustment

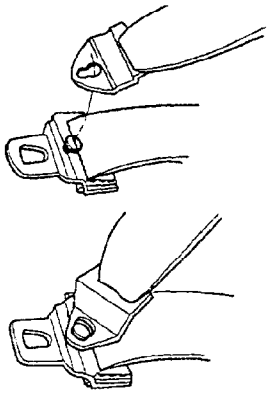
Your vehicle has safety belt height adjustments for the driver and front passenger. Adjust the height of the shoulder belt so the belt rests across the middle of your shoulder.

To lower the shoulder belt height, push the button and slide the height control down. To raise the height of the shoulder belt, slide the height adjuster up. Pull down on the height adjustment assembly to make sure it is locked in place.



Center rear lap belt (sedan)

The safety belt in the center rear seating position has a detachable shoulder belt.



To attach the shoulder belt to the lap belt, pull the shoulder belt out from the retractor in the seatback and insert into the lap belt connecting pin into the wide end of the key slot on the shoulder belt. Pull the connecting pin into the narrow end of the key slot until you hear a snap and feel it latch. Make sure the shoulder belt is securely fastened to the lap belt by pulling up on the shoulder belt.

Lap belts

The lap belts in the center front seating position (if equipped) and center rear seating position (wagon) do not adjust automatically. You must adjust them to fit snugly and low as possible around your hips. Do not wear the lap belt around your waist.

Make sure you insert the tongue into the correct buckle. If you need to lengthen the belt, turn the tongue at a right angle to the belt and pull across your lap until it reaches the buckle. If you need to tighten the belt, pull the loose end of the belt through the tongue until it is snugly across the hips. Shorten and fasten the belt when not in use.

Safety belts for rear-facing occupants (wagon only)

Never use child safety seats in the third seat of a wagon.

Your vehicle is equipped with safety belts containing an adjust tongue at the rear-facing seating positions.

When the adjust tongue of the lap/shoulder combination seat belt is latched into the buckle, the tongue will allow the lap portion to become shorter, but locks the webbing in place to restrict it from becoming longer.

Before you reach and latch a combination lap and shoulder belt having an adjust tongue into the buckle, you may have to lengthen the lap belt portion of it. To lengthen the lap belt, pull some webbing out of the shoulder belt retractor. While holding the webbing below the tongue, grasp the tongue so that it is parallel to the webbing and slide the tongue upward, provide enough length so that the tongue can reach the buckle.

To fasten the belt, pull the combination lap and shoulder belt from the retractor so that the shoulder belt portion of the safety belt crosses your shoulder and chest. Be sure the belt is not twisted. If the belt is twisted, remove the twist. Insert the tongue into the proper buckle for your seating position until you hear a snap and feel it latch. Make sure the tongue is securely fastened to the buckle by pulling on the tongue.

The lap belts should fit snugly and as low as possible around the hips, not around the waist.

Front and rear seat occupants, including pregnant women, should wear safety belts for optimum protection in an accident.

Each seating position in your vehicle has a specific safety belt assembly which is made up of one buckle and one tongue that are designed to be used as a pair. 1) Use the shoulder belt on the outside shoulder only. Never wear the shoulder belt under the arm. 2) Never swing it around your neck over the inside shoulder. 3) Never use a single belt for more than one person.

Due to folding rear seats, sometimes the buckles and tongues toward the center of the vehicle may be hidden by the rear edge of the seat cushion. Pull them out so they will be accessible.

While you are fastened in the seat belt, the shoulder belt adjusts to your movement. However, if you brake hard, turn hard or your vehicle receives an impact of 8 km/h (5 mph) or more, the safety belt will become locked and help reduce your forward movement.

To unfasten the belt, push the red release button on the end of the buckle. This allows the tongue to unlatch from the buckle. While the belt retracts, guide the tongue to its original position to prevent it from striking you or the vehicle.

Safety belt extension assembly

If the safety belt assembly is too short, even when fully extended, eight inches can be added to the safety belt assembly by adding a safety belt extension assembly (part number 6l1C22). Safety belt extension assemblies can be obtained from your dealer at no cost. This assembly is not for use in the wagon's rear-facing seat.

Use only extensions manufactured by the same supplier as the safety belt. Manufacturer identification is located at the end of the webbing on the label. Also, use the safety belt extension only if the safety belt is too short for you when fully

extended. Do not extensions to change the fit of the shoulder belt across the torso.

Safety belt warning light and indicator chime

The seat belt warning light illuminates in the instrument cluster and a chime sounds to remind the occupants to fasten their safety belts.

Conditions of operation

If...	Then...
The driver's safety belt is not buckled before the ignition key is turned ON...	The safety belt indicator illuminates for one to two minutes and the warning chime sounds for four to eight seconds.
The driver's side safety belt is buckled while the indicator light is illuminated and the warning chime is sounding...	The safety belt indicator light and warning chime turn off.
The driver's safety belt is buckled before the ignition key is turned to ON...	The safety belt warning light and indicator chime remain off.

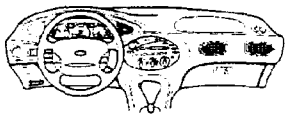
Safety belt maintenance

Check the safety belt systems periodically to make sure they work properly and are not damaged. Check the safety belts to make sure there are no nicks, wears or cuts. All safety belt assemblies, including retractors, buckles, front seat belt buckle assemblies (slide bar) (if equipped), shoulder belt height adjusters (if equipped), child safety seat tether bracket assemblies (if equipped), and attaching hardware, should be inspected after a collision. Ford recommends that all safety belt assemblies used in vehicles involved in a collision be

replaced. However, if the collision was minor and a qualified technician finds that the belts do not show damage and continue to operate properly, they do not need to be replaced. Safety belt assemblies not in use during a collision should also be inspected and replaced if either damage or improper operation is noted.

Refer to *Cleaning and maintaining the safety belts* in the *Maintenance and Care* section.

IMPORTANT SUPPLEMENTAL RESTRAINT SYSTEM (SRS) PRECAUTIONS



The supplemental restraint system is designed to:

- work with the safety belt to protect the driver and right front passenger
- reduce certain upper body injuries

Failure to follow these instructions will affect the performance of the safety belts and increase the risk of personal injury.

The supplemental air bags are not designed to protect occupants in the front center seating position.

Do not place objects or mount equipment on or near the air bag cover on the steering wheel or in front seat areas that may come in contact with a deploying air bag. Failure to follow this instruction may increase the risk of personal injury in the event of a collision.

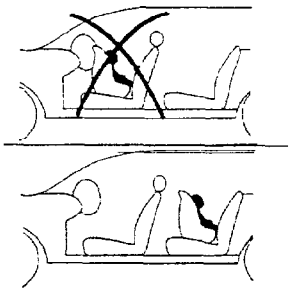
Do not attempt to service, repair, or modify the Air Bag Supplemental Restraint System or its fuses. See your Ford or Lincoln-Mercury dealer.

CHILDREN AND AIR BAGS

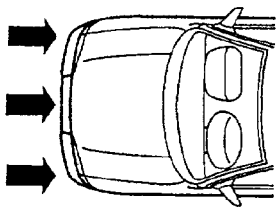
For additional important safety information, read all information on safety restraints in this guide.

Children should always wear their safety belts. Failure to follow these instructions may increase the risk of injury in a collision.

Rear-facing child seats or infant carriers should never be placed in the front seats.

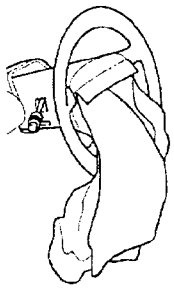


HOW DOES THE AIR BAG SUPPLEMENTAL RESTRAINT SYSTEM WORK?



The SRS is designed to activate when the vehicle sustains sufficient longitudinal deceleration, similar to hitting a fixed barrier head on at 12-24 km/h (8-14 mph).

The fact that the air bags did not inflate in a collision does not mean that something is wrong with the system. Rather, it means the forces were not of the type sufficient to cause activation.



The air bags inflate and deflate rapidly upon activation.

After air bag deployment, it is normal to notice a smoke-like, powdery residue or smell the burnt propellant. This may consist of cornstarch, talcum powder (to lubricate the bag) or sodium compounds (e.g., baking soda) that result from the combustion process that inflates the air bag. Small amounts of sodium hydroxide may be present which may irritate the skin and eyes, but none of the residue is toxic.

⚠ Air bag system components get hot after inflation. Do not touch them after inflation.

⚠ If the air bag is inflated, the air bag will not function again and must be replaced immediately. If the air bag is not replaced, the unrepaired area will increase the risk of injury in a collision.

The SRS consists of:

- driver and passenger air bag modules (which include the inflators and air bags),
- one or more impact and safing sensors,
- a readiness light and tone
- and the electrical wiring which connects the components.

The diagnostic module monitors its own internal circuits and the supplemental air bag electrical system readiness (including the impact sensors), the system wiring, the air bag system readiness light, the air bag back up power and the air bag ignitors.

DETERMINING IF THE SYSTEM IS OPERATIONAL

The SRS uses a readiness light in the instrument cluster or a tone to indicate the condition of the system. Refer to the *Air bag* readiness section in the *Instrumentation* chapter. Routine maintenance of the air bag is not required.

A difficulty with the system is indicated by one or more of the following:

- The readiness light will either flash or stay lit.
- The readiness light will not illuminate immediately after ignition is turned on.
- A group of five beeps will be heard. The tone pattern will repeat periodically until the problem and light are repaired.