3198

1999 Dodge Intrepid
into a IIHS 40% Right Offset Barrier
TRC Test Number: 990809-1

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Section 1.0

Purpose and Test Procedure

Purpose and Test Summary

This 35.0 mph IIHS 40% right offset impact test has as the main objective to investigate both vehicle and occupant dynamics during a IIHS 40% right offset test. A secondary objective is to gather information on depowered airbags.

This test was conducted with a 1999 Dodge Intrepid that impacted a IIHS 40% right offset. The test vehicle contained two instrumented Hybrid III 5th percentile adult female dummies.

Section 2.0

IIHS 40% Right Offset Impact Test Summary

Test Procedure

This test was conducted per VRTC personnel's instructions. Data was obtained relative to FMVSS 208, "Occupant Crash Protection," performance.

The test vehicle was instrumented with ten (10) accelerometers to measure longitudinal, lateral, and vertical axis accelerations and two (2) inductive pickup switches to measure the driver and passenger airbag fire times. The vehicle's specified impact velocity range was 55.5 to 57.1 kph. The vehicle impacted a IIHS 40% right offset.

The test vehicle contained two (2) Hybrid III 5th percentile adult female anthropomorphic test devices (dummies). The dummies were positioned in the front outboard designated seating positions according to the FMVSS 208 laboratory seating procedure.

Both dummies were instrumented with head and chest accelerometers to measure longitudinal, lateral, and vertical accelerations; chest deflection potentiometers; left and right femur load cells to measure axial forces; and upper neck load cells to measure forces and moments.

The fifty-two (52) data channels were digitally sampled at 12,500 samples per second and processed per Sections 11.13 through 11.15 of the Laboratory Test Procedure.

The crash event was recorded by one (1) real-time panning motion picture camera and fifteen (15) high-speed motion picture cameras. The pre-test and post-test conditions were recorded by one (1) real-time motion picture camera.

The vehicle and occupant data are summarized in Section 2.0. The FMVSS 208 data are presented in Section 3.0. The vehicle, occupant, and camera measurements are presented in Section 4.0. Appendix A contains the still photographic prints. Appendix B contains the vehicle data plots. Appendix C contains the dummy certification and Appendix D contains the miscellaneous test information.

Test Results Summary

This IIHS 40% right offset test was conducted at TRC on August 9, 1999.

The test vehicle, a 1999 Dodge Intrepid, was equipped with airbags at the driver's and right front passenger's seating positions. The vehicle's test weight was 1687.0 kilograms. The vehicle's impact speed was 56.5 kph. The vehicle's maximum static crush was 398 millimeters.

The driver's 15-millisecond HIC was 57 and its 36-millisecond HIC was 95. The driver's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 35.5 g. The driver's chest deflection was 34.8 millimeters. The driver's left and right femur maximum compressive forces were 1818 N and 3426 N, respectively.

The right front passenger's 15-millisecond HIC was 220 and its 36-millisecond HIC was 298. The right front passenger's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 56.2 g. The passenger's chest deflection was 9.0 millimeters. The right front passenger's left and right femur maximum compressive forces were 3183 N and 4616 N, respectively. The right front passenger's tibia indices are: upper left leg, 0.40; upper right leg, 0.25; lower left leg, 0.94; lower right leg, 0.49.

Data Acquisition Explanations

The right front passenger dummy's neck X-axis moment data channel, NEKXM2, recorded intermittent data spikes throughout the event.

The vehicle's right front brake caliper X-axis acceleration data channel, BCRXG1, exceeded the channel's full-scale at approximately 114 milliseconds and lost data after that.

Table 1 Crash Test Summary

Test type:	IIHS 40% Right Offset Impact
Test date:	08/09/99
Test time:	1704
Ambient temperature at impact area:	21° C
Vehicle year/make/ model/body style:	1999/Dodge/Intrepid
Vehicle test weight:	1687.0 kg
Impact angle[1]:	0°
Impact velocity[2]:	
Primary:	56.5 kph
Secondary:	56.5 kph
Maximum static crush:	398 mm
Impact variance:	7 mm right
Number of cameras:	
Real-time:	1
High-speed:	15
Door opening data:	
Left-front:	Easy
Right-front:	Did not open post-test

[1] With respect to tow track centerline.
[2] Speed trap measurement (± .08 km/h accuracy)

Table 1 Crash Test Summary, Cont'd.

Dummies:	Driver #369	Passenger #289
Type:	Hybrid III 5th percentile adult female	Hybrid III 5th percentile adult female
Location:	Left front	Right front
Restraint:	Airbag	Airbag
Number of data channels:	15	25
Front seat data:		
Seat track failure:	None	None
Seat back failure:	None	None
Visible dummy contact points:		
Head:	Airbag	Airbag/header
Chest:	Airbag	Airbag
Abdomen:	None	None
Left knee:	Instrument panel	Instrument panel
Right knee:	Instrument panel	Instrument panel

Table 2 Test Vehicle Information

Vehicle year/make/ model/body style:	1999/Dodge/Intrepid			
Color:	White			
VIN:	2B3HD46R2XH706902			
Engine data:				
Placement:	Longitudinal			
Cylinders:				
Displacement:	2.7 liters			
Transmission data:	_4_speed,	___manual,	_X_automatic,	_X_overdrive
Final drive:	_X_fwd,	___rwd,	___4wd	
Date vehicle received:				
Odometer reading:	26 miles			
Dealer's name and address:	Nelson Auto Group 1751 South Main Street Bellefontaine, OH 43311			

Accessories:

Power steering	Yes	Automatic transmission	Yes
Power brakes	Yes	Automatic speed control	Yes
Power seats	No	Tilting steering wheel	Yes
Power windows	Yes	Telescoping steering wheel	No
Tinted glass	Yes	Air conditioning	Yes
Radio	Yes	Anti-skid brake	No
Clock	No	Rear window defroster	Yes
Power door locks	Yes	Other:	None

Certification data from vehicle's label:

Vehicle manufactured by:		Daimler Chrysler Corporation
Date of manufacture:		05/99
VIN:		2B3HD46R2XH706902
GVWR:		4529 lb.
GAWR:	Front:	2567 lb.
	Rear:	2012 lb.

Table 2 Test Vehicle Information, Cont'd.

Size of tires on vehicle:	P205/70R15
Spare tire:	Space saver
Type of front seats:	Bucket

Tire & capacity data from vehicle's label:

Recommended tire size:	P205/70R15
Recommended cold tire pressure:	
Front:	32 psi
Rear:	32 psi
Designated Seating Capacity:	
Front	2
Rear	3
Total	5
Vehicle Cargo Weight:	865 lb.

Test vehicle attitudes:

Delivered attitude:	LF:	731 mm	RF:	740 mm	LR:	740 mm	RR:	745 mm
Fully loaded attitude:	LF:	722 mm	RF:	728 mm	LR:	718 mm	RR:	722 mm
Pre-test attitude:	LF:	716 mm	RF:	715 mm	LR:	708 mm	RR:	704 mm
Post-test attitude:	LF:	673 mm	RF:	710 mm[1]	LR:	729 mm	RR:	683 mm

[1] Right front tire was flat. Right front tire rested in rail trough and measurement taken from top of rail.

Table 2 Test Vehicle Information, Cont'd.

Weight of test vehicle as received (with maximum fluids):

Right front	480.3 kg	Right rear	296.2 kg
Left front	502.6 kg	Left rear	264.9 kg
Total front weight	982.9 kg	(63.7% of total vehicle weight)	
Total rear weight	561.1 kg	(36.3% of total vehicle weight)	
Total delivered weight	1544.0 kg		

Calculation of test vehicle's target test weight:

RCLW = Rated Cargo and Luggage Weight

UDW = Unloaded Delivered Weight (kg)

DSC[1] = Designated Seating Capacity (5)

RCLW = 51.8 kg

Target test weight = UDW + RCLW + (number of Hybrid III Dummies x 47.6 kg per dummy)

Target test weight = 1544.0 + 51.8 + 95.2 = 691.0 kg

Weight of test vehicle with required dummies and 51.8 kg of cargo weight:

Right front	504.0 kg	Right rear	348.5 kg
Left front	521.0 kg	Left rear	313.5 kg
Total front weight	1025.0 kg	(60.8% of total vehicle weight)	
Total rear weight	662.0 kg	(39.2% of total vehicle weight)	
Total test weight	1687.0 kg	(0.2% under target test weight)	

Weight of ballast secured in vehicle: None

Components removed to meet target test weight: Exhaust from rear axle back, taillights, trunk lid liner

CG rearward of front wheel centerline: 1130 mm

Vehicle Wheelbase: 2880 mm

[1] From vehicle's certification/tire information label.

Table 3 Post-Impact Data

Test number:	990809-1
Test date:	08/09/99
Test time:	1704
Test type:	IIHS 40% right offset impact
Impact angle:	0°
Ambient temperature at impact area:	22° C
Temperature in occupant compartment:	21° C

Impact velocity:

Primary:	56.5 kph
Secondary	56.5 kph
Specified range:	55.5 to 57.1 kph

Distance from vehicle to barrier:

Entering velocity trap:	356 mm
Exiting velocity trap:	51 mm

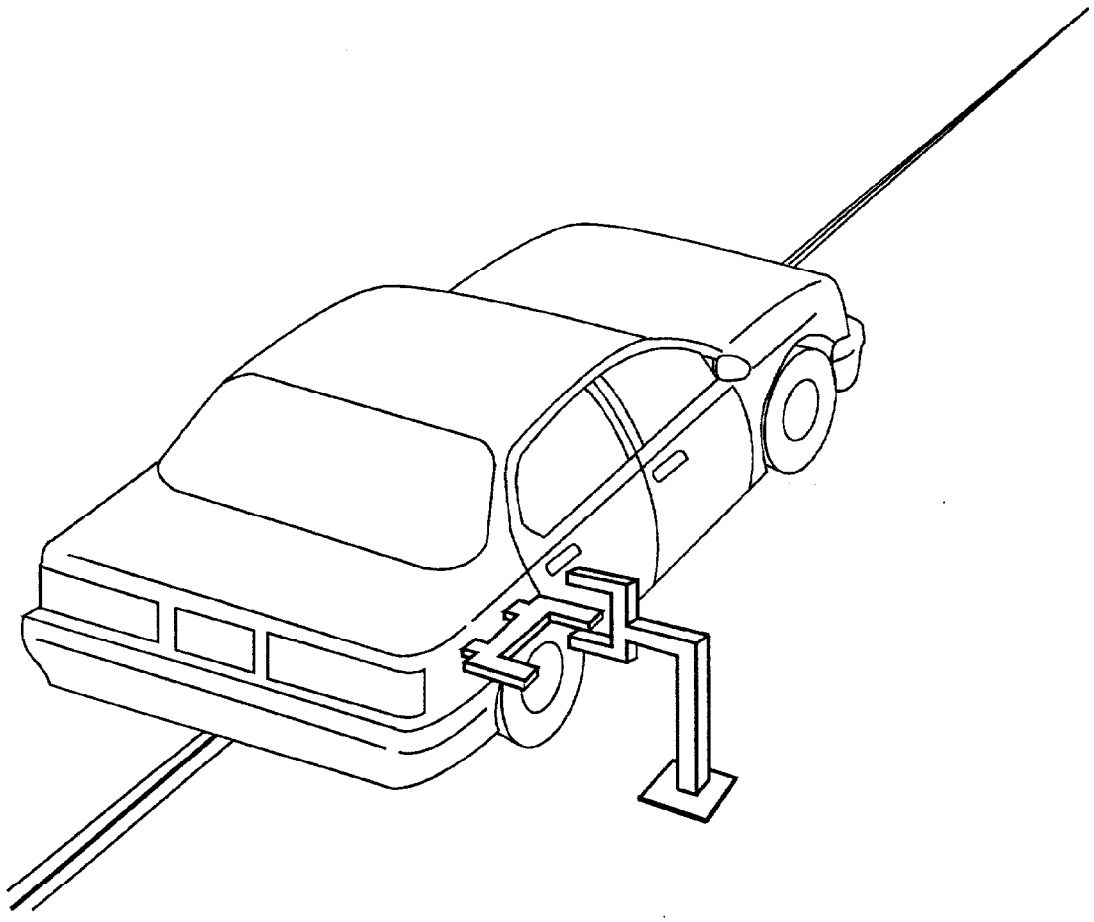
Test vehicle static crush:

Overall length of test vehicle:

Pre-test:	L: 5060 mm	C: 5264 mm	R: 5055 mm
Post-test:	L: 5199 mm	C: 5072 mm	R: 4687 mm
Total crush:	L: -139 mm	C: 192 mm	R: 368 mm
Average crush:	150 mm		

Impact variance: 7 mm right

Figure 1 Impact Velocity Measurement System

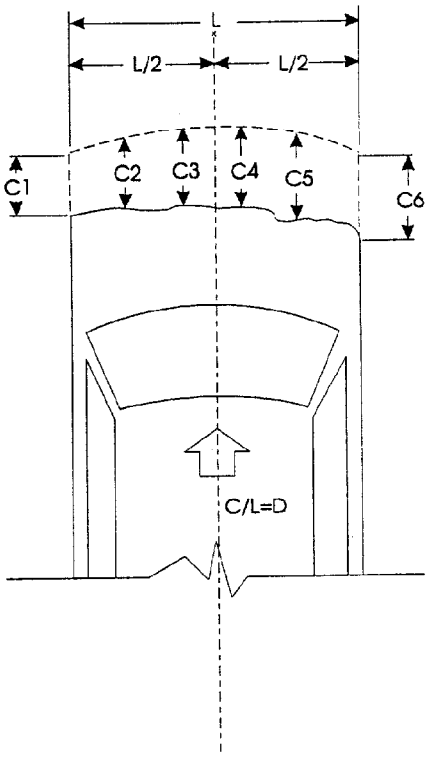


The final vane clears the final emitter/receiver pair 51 millimeters before impact.

The vanes have 305-millimeter spacing.

Figure 2 Accident Investigation Division Data for 35.0 mph IIHS 40% right offset Impact

Test date:	08/09/99
Vehicle year/make/ model/body style:	1999/Dodge/Intrepid
VIN:	2B3HD46R2XH706902
Build date:	05/99
Test weight:	1687.0 kg
Vehicle wheelbase:	2880 mm
Maximum width:	1892 mm
Front overhang:	1049 mm



Collision Deformation Classification (CDC) Code: 12FZEW1

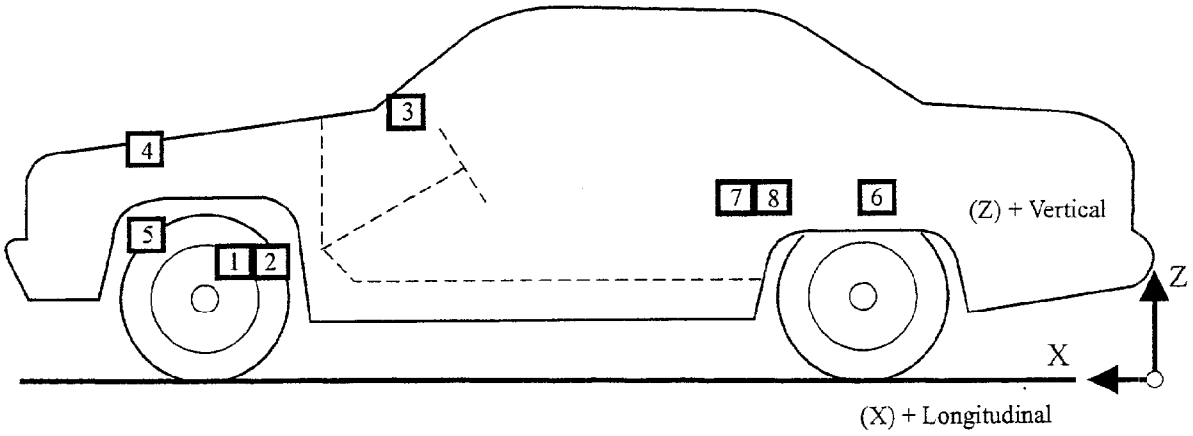
Crush depth measurements:

C1:	-139 mm
C2:	-101 mm
C3:	146 mm
C4:	301 mm
C5:	336 mm
C6:	368 mm

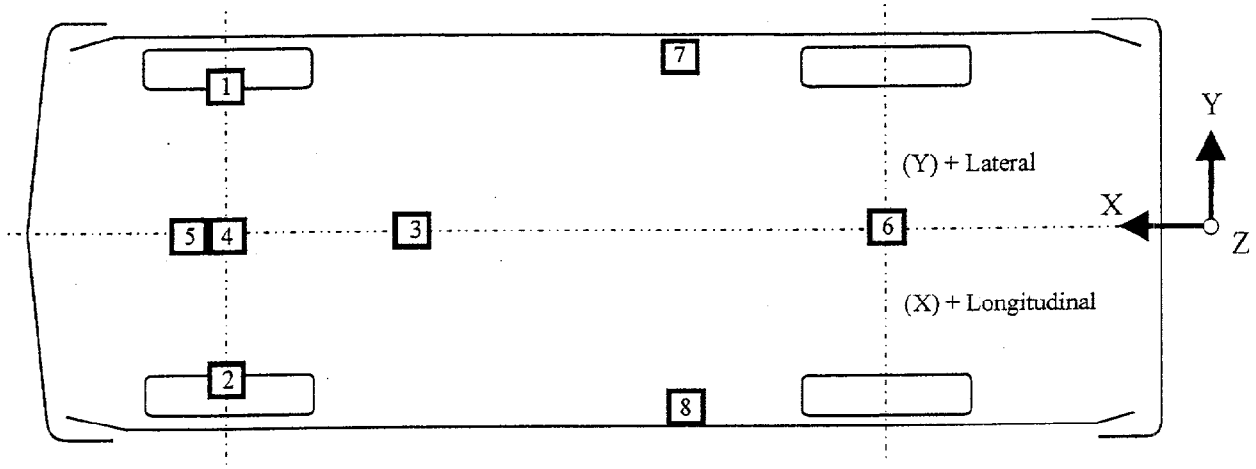
Midpoint of damage: D: 192 mm

Length of damaged region: L: 1525 mm

Figure 3 Vehicle Accelerometer Placement



Side View



Bottom View

Table 4 Vehicle Accelerometer Locations and Data Summary

TEST NUMBER: 990809-1 No. LOCATION		X	Y	Z	POSITIVE DIRECTION		NEGATIVE DIRECTION	
1 LEFT BRAKE CALIPER	PRE	4260 mm	667 mm	302 mm				
	POST	4235 mm	690 mm	314 mm				
LONGITUDINAL					13.9 g	@ 155.0 ms	43.7 g	@ 103.0 ms
2 RIGHT BRAKE CALIPER	PRE	4260 mm	-667 mm	306 mm				
	POST	4132 mm	-723 mm	210 mm				
LONGITUDINAL[1]					---	---	---	---
3 INSTRUMENT PANEL CENTER	PRE	3505 mm	-20 mm	873 mm				
	POST	3417 mm	-13 mm	827 mm				
LONGITUDINAL					20.6 g	@ 45.2 ms	59.7 g	@ 98.9 ms
LATERAL					29.1 g	@ 53.1 ms	31.5 g	@ 58.2 ms
4 ENGINE TOP	PRE	4725 mm	-151 mm	776 mm				
	POST	4503 mm	-110 mm	814 mm				
LONGITUDINAL					9.9 g	@ 78.7 ms	48.0 g	@ 60.2 ms
5 ENGINE BOTTOM	PRE	4565 mm	-30 mm	168 mm				
	POST	4457 mm	-40 mm	155 mm				
LONGITUDINAL					0.5 g	@ 225.5 ms	31.7 g	@ 59.7 ms

Table 4 Vehicle Accelerometer Locations and Data Summary, Cont'd.

TEST NUMBER: 990809-1 No. LOCATION		X	Y	Z	POSITIVE DIRECTION		NEGATIVE DIRECTION	
6 REAR VEHICLE	PRE	315 mm	0 mm	645 mm				
CENTERLINE	POST	300 mm	0 mm	676 mm				
LATERAL					5.2 g	@ 84.8 ms	18.4 g	@ 110.6 ms
VERTICAL					9.5 g	@ 133.1 ms	11.9 g	@ 84.0 ms
7 LEFT REAR SEAT	PRE	2205 mm	655 mm	369 mm				
	POST	2175 mm	655 mm	376 mm				
LONGITUDINAL					1.3 g	@ 200.2 ms	29.7 g	@ 93.2 ms
8 RIGHT REAR SEAT	PRE	2205 mm	-655 mm	369 mm				
	POST	2170 mm	-661 mm	334 mm				
LONGITUDINAL					2.0 g	@ 202.2 ms	28.4 g	@ 97.6 ms

REFERENCE: X: + FORWARD FROM REAR BUMPER
Y: + LEFTWARD FROM VEHICLE CENTERLINE
Z: + UPWARD FROM GROUND LEVEL

[1]See DATA ACQUISITION EXPLANATIONS

Section 3.0

FMVSS 208 Data

Table 5 Dummy Injury Criteria

Maximum Acceleration

	Head				Chest		
	X	Y	Z	R	X	Y	Z
Driver	-26.5 g	-9.4 g	-36.6 g	37.8 g	-34.9 g	-8.1 g	10.1 g
Passenger	-43.2 g	-28.3 g	15.4 g	49.4 g	-70.8 g	-19.2 g	17.9 g

Maximum Femur Compressive Force

	Left Femur	Right Femur
Driver	1818 N	3426 N
Passenger	3183 N	4616 N

15-millisecond Head Injury Criteria [1]

	HIC	Time t_1	Time t_2
Driver	57	102.560 ms	117.600 ms
Passenger	220	98.560 ms	113.600 ms

36-millisecond Head Injury Criteria[1]

	HIC	Time t_1	Time t_2
Driver	95	86.400 ms	122.400 ms
Passenger	298	87.600 ms	120.480 ms

Chest Maximum Resultant Acceleration[2]

	Acceleration	Time t_1	Time t_2
Driver	35.5 g	105.440 ms	108.480 ms
Passenger	56.2 g	109.680 ms	112.720 ms

Maximum Chest Deflection

Driver	34.8 mm
Passenger	9.0 mm

[1] As defined in FMVSS No. 208
[2] Defined as equal to or exceeding 0.003 sec. duration

Dummy Kinematic Summary

Driver Dummy

Upon impact, the driver dummy translated forward on the seat impacting both knees into the instrument panel. The dummy's head and chest impacted the airbag. While still forward in the seat, the dummy displaced to the right, as the torso rotated to face left. The driver dummy then rebounded back into the driver's seat. The driver dummy came to rest in an upright position, leaning to the right with its torso facing to the left. The dummy's left side was in contact with the center of the seat back, with its right shoulder close to the vehicle centerline. The dummy's head was positioned forward of and to the right of the driver's side headrest.

Right Front Passenger Dummy

Upon impact, the passenger dummy translated forward and impacted both knees into the instrument panel. The dummy's head and chest then impacted the airbag, as the dummy's head turned to the left. The dummy then rebounded rearward back into the seat. The dummy came to rest in the passenger seat, leaning slightly to the left. The dummy was bent forward from the waist, looking down at the top of the dash panel.

Section 4.0

Vehicle, Occupant, and Camera Measurements

Figure 4 Pre-test and Post-test Measurement Points

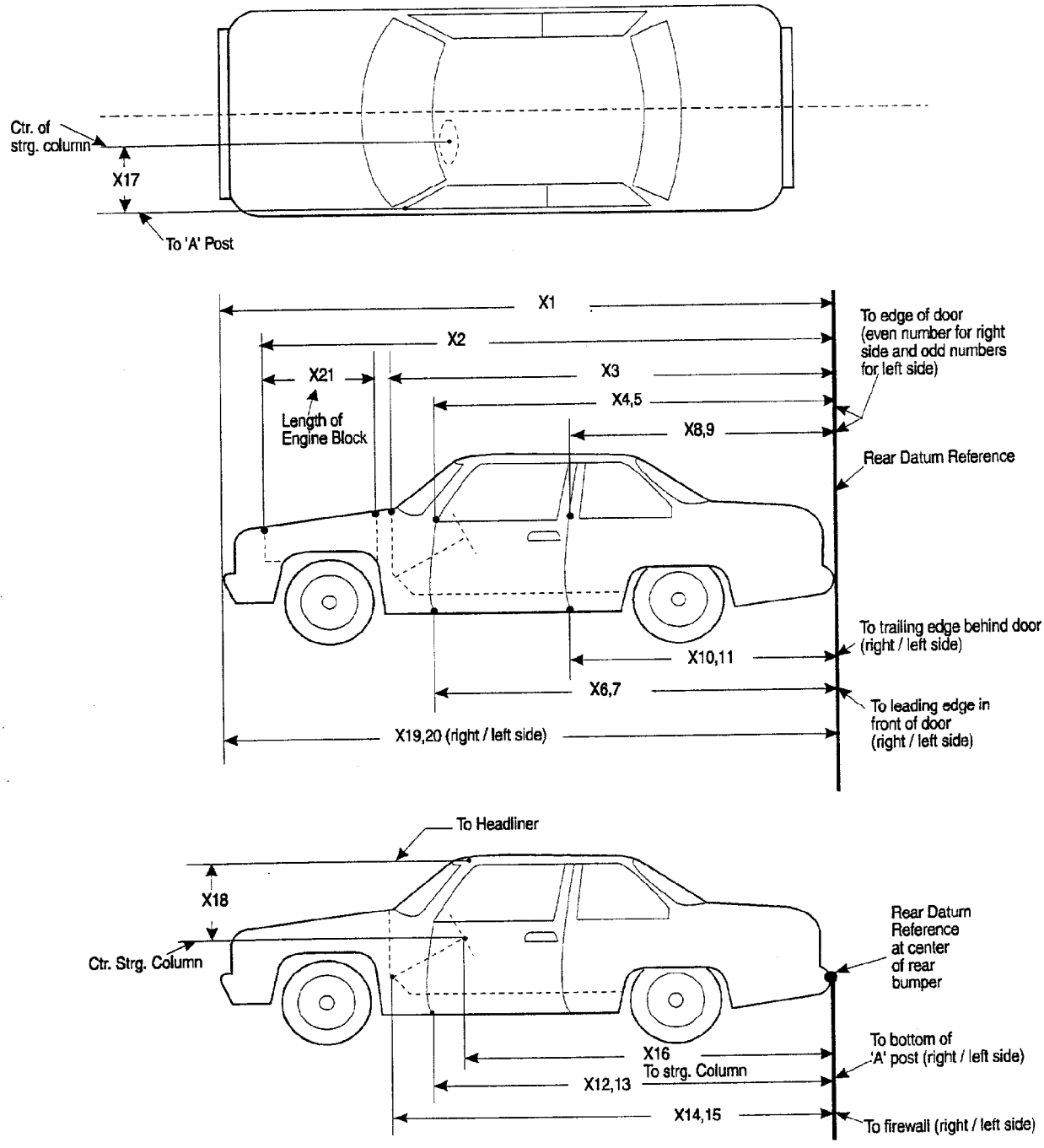


Table 6 Impacted Vehicle Measurements

Vehicle year/make/model/body style: 1999/Dodge/Intrepid

Test Number: 990809-1

No.	Type of measurement	Pre-Test	Post-Test	Difference
X1	Total Length of Veh. at Centerline	5264	5072	192
X2	Rear Surface of Veh. to Front of Engine Block	4747	4543	204
X3	Rear Surface of Veh. to Firewall	4303	4222	81
X4	Rear Surface of Veh. to Upper Leading Edge of Right Door	3738	3719	19
X5	Rear Surface of Veh. to Upper Leading Edge of Left Door	3754	3754	0
X6	Rear Surface of Veh. to Lower Leading Edge of Right Door	3676	3651	25
X7	Rear Surface of Veh. to Lower Leading Edge of Left Door	3689	3681	8
X8	Rear Surface of Veh. to Upper Trailing Edge of Right Door	2644	2626	18
X9	Rear Surface of Veh. to Upper Trailing Edge of Left Door	2660	2659	1
X10	Rear Surface of Veh. to Lower Trailing Edge of Right Door	2654	2625	29
X11	Rear Surface of Veh. to Lower Trailing Edge of Left Door	2657	2650	7
X12	Rear Surface of Veh. to Bottom of " A " Post on Right Side	3645	3638	7
X13	Rear Surface of Veh. to Bottom of " A " Post on Left Side	3662	3684	-22
X14	Rear Surface of Veh. to Firewall--Right Side	4340	4232	108
X15	Rear Surface of Vehicle to Firewall --Left Side	4330	4312	18
X16	Rear Surface of Veh. to Steering Wheel Center	3235	3229	6
X17	Center of Steering Column to " A " Post	290	350	-60
X18	Center of Steering Column to Headliner	420	414	6
X19	Rear Surface of Veh. to Right Side of Front Bumper	5055	4687	368
X20	Rear Surface of Veh. to Left Side of Front Bumper	5060	5199	-139
X21	Length of Engine Block	440	440	0

Figure 5 Vehicle Target Locations

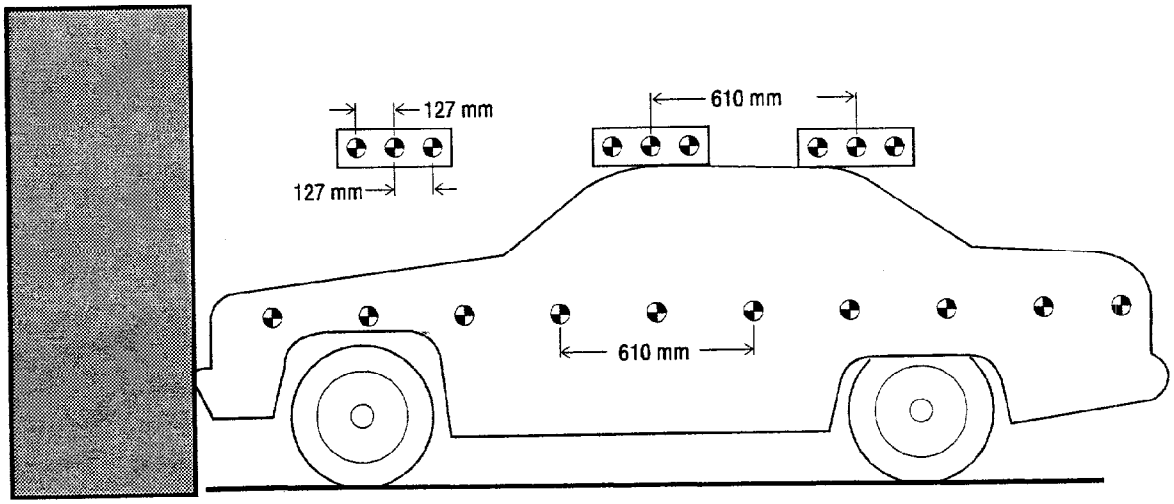


Figure 6 Dummy Measurement Locations for Front Seat Occupants

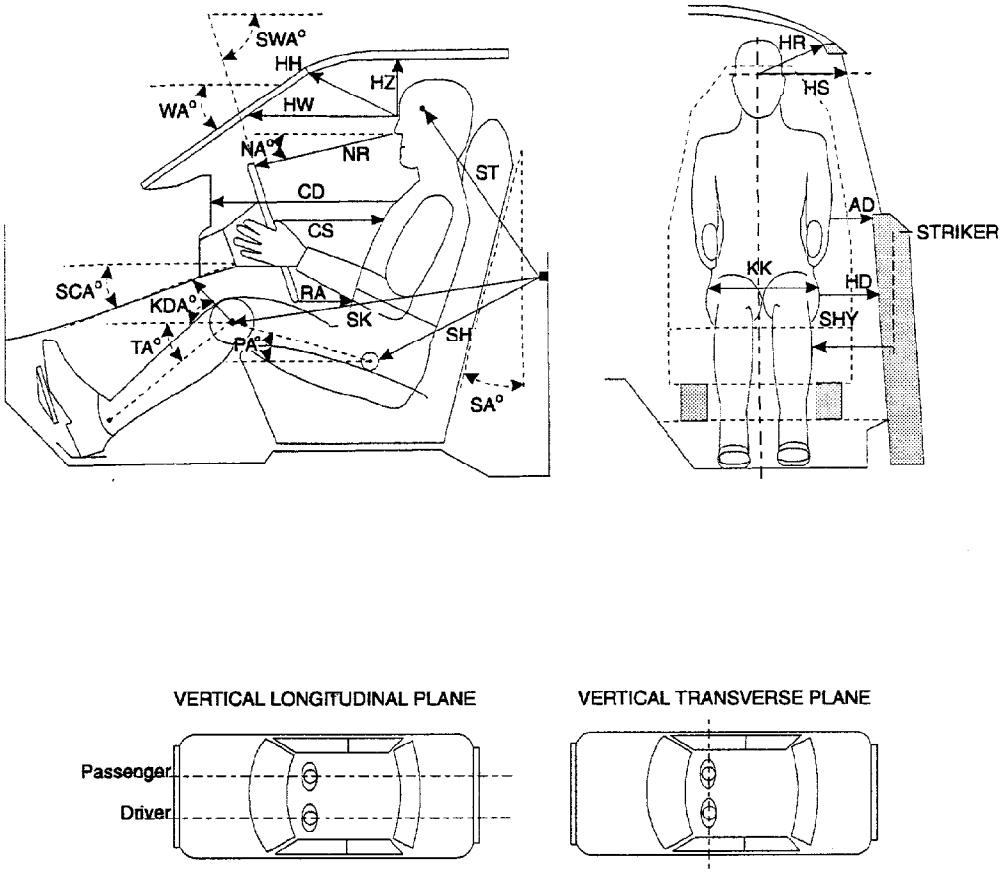


Table 7 Dummy Measurement Data For Front Seat Occupants

Designation	Type of Measurement	Driver (Serial #369)	Passenger (Serial #289)
WA	Windshield angle	24°	24°
SWA	Steering wheel angle	71°	N/A
SCA	Steering column angle	19°	N/A
SA	Seat back angle	18.7°	20°
HZ	Head to roof	194 mm	191 mm
HH	Head to header	276 mm	281 mm
HW	Head to windshield	649 mm	615 mm
HR	Head to side header	250 mm	235 mm
NR	Nose to rim	230 mm	N/A
NA	Nose to rim angle	-1.9°	N/A
CD	Chest to dash	430 mm	428 mm
CS	Steering wheel to chest	168 mm	N/A
RA	Rim to abdomen	157 mm	N/A
KDL	Left knee to dash	102 mm	122 mm
KDR	Right knee to dash	119 mm	116 mm
KDA	Outboard knee to dash angle	29°	29°
PA	Pelvic angle	22.3°	20.6°
TA	Tibial angle	52.4°	43°
KK	Knee to knee	266 mm	236 mm
ST[1]	Striker to head	470 mm	483 mm
	Striker to head angle	-70°	-69°
SK[1]	Striker to knee	637 mm	638 mm
	Striker to knee angle	1°	3°
SH[1]	Striker to H-point	345 mm	323 mm
	Striker to H-point angle	18°	23°
SHY	Striker to H-point (Y-direction)	276 mm	286 mm
HS	Head to side window	375 mm	361 mm
HD	H-point to door	250 mm	235 mm
AD	Arm to door	193 mm	174 mm

The seat back angle (SA°) is measured relative to vertical, all other angles are measured relative to horizontal.

[1] A negative angle indicates the measurement point was above the striker.

Figure 7 Camera Positions

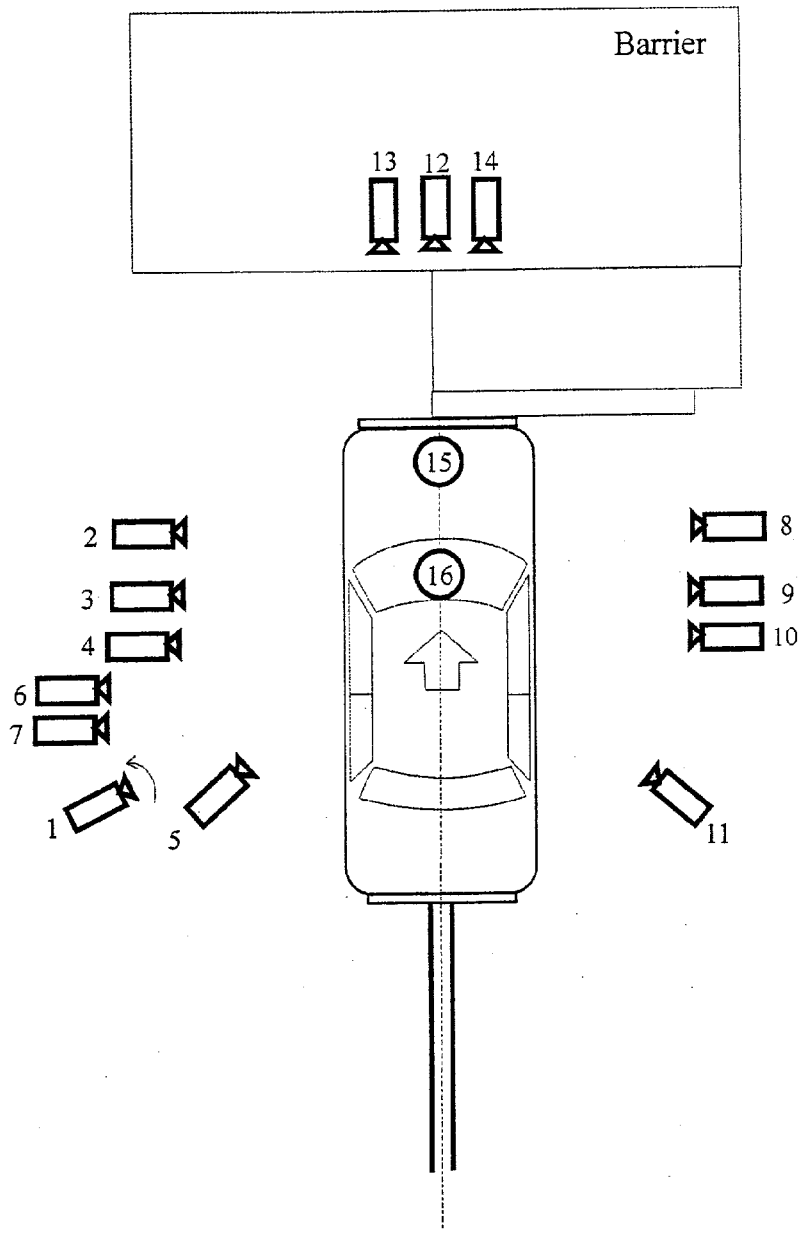


Table 8 Motion Picture Camera Locations

Vehicle year/make/model/body style: 1999/Dodge/Intrepid

Test number: 990809-1

Camera Number	View	Camera Positions[1] X	Y	Z	Camera Angle[2]	Film Plane to Head Target	Camera Lens	Film Speed
1	Real-time panning	NA	NA	NA	NA	NA	Zoom	24 frames/s
2	Left vehicle crush	2435 mm	-8400 mm	935 mm	0°	NA	25 mm	985 frames/s
3	Left windshield intrusion	995 mm	-7250 mm	1055 mm	0°	7010 mm	50 mm	955 frames/s
4	Driver kinematics	1580 mm	-7250 mm	1470 mm	-3.6°	6950 mm	25 mm	1025 frames/s
5	Driver kinematics angle	3350 mm	-2175 mm	1950 mm	-22°	2000 mm	25 mm	992 frames/s
6	Steering column upper	2690 mm	-7440 mm	2580 mm	-14.1°	7040 mm	25 mm	975 frames/s
7	Steering column lower	2690 mm	-7440 mm	1624 mm	-6.3°	6930 mm	25 mm	1002 frames/s
8	Right vehicle crush	765 mm	6200 mm	830 mm	?°	7040 mm	13 mm	975 frames/s
9	Right windshield intrusion	1080 mm	7400 mm	1060 mm	0°	7150 mm	50 mm	1000 frames/s
10	Passenger kinematics	3540 mm	1800 mm	1470 mm	-5.3°	6950 mm	25 mm	1027 frames/s
11	Passenger kinematics angle	540 mm	7300 mm	1975 mm	-22.4°	2160 mm	25 mm	992 frames/s
12	Windshield front view	-390 mm	0 mm	2300 mm	-36.4°	3950 mm	8.5 mm	1000 frames/s
13	Driver - front view	-390 mm	-380 mm	2300 mm	-30°	3950 mm	25 mm	1000 frames/s
14	Passenger - front view	-380 mm	345 mm	2300 mm	-31.3°	3950 mm	25 mm	995 frames/s
15	Overhead tight	1960 mm	0 mm	5700 mm	90°	NA	25 mm	997 frames/s
16	Overhead wide	2290 mm	0 mm	5700 mm	90°	NA	13 mm	990 frames/s
	Real-time documentation	NA	NA	NA	NA	NA	12-120 mm	24 frames/s

[1] +X: Film plane forward of barrier face
+Y: Film plane to left of monorail centerline
+Z: Film plane above ground level

[2] +Angle: Film plane angled upward from horizontal plane

Figure 8 Deformable Barrier Face Profile 1-11

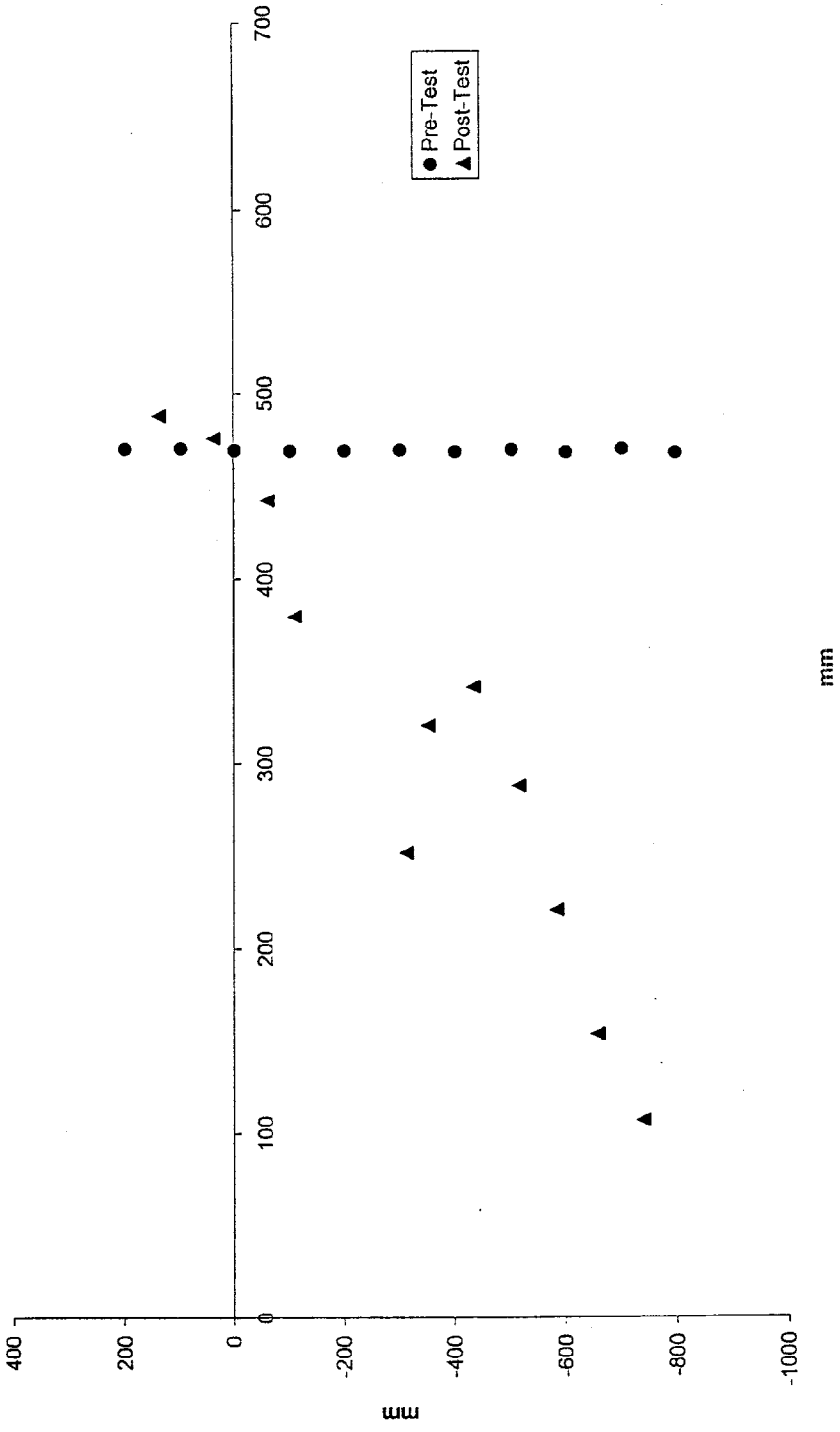


Figure 8 Deformable Barrier Face Profile 12-22

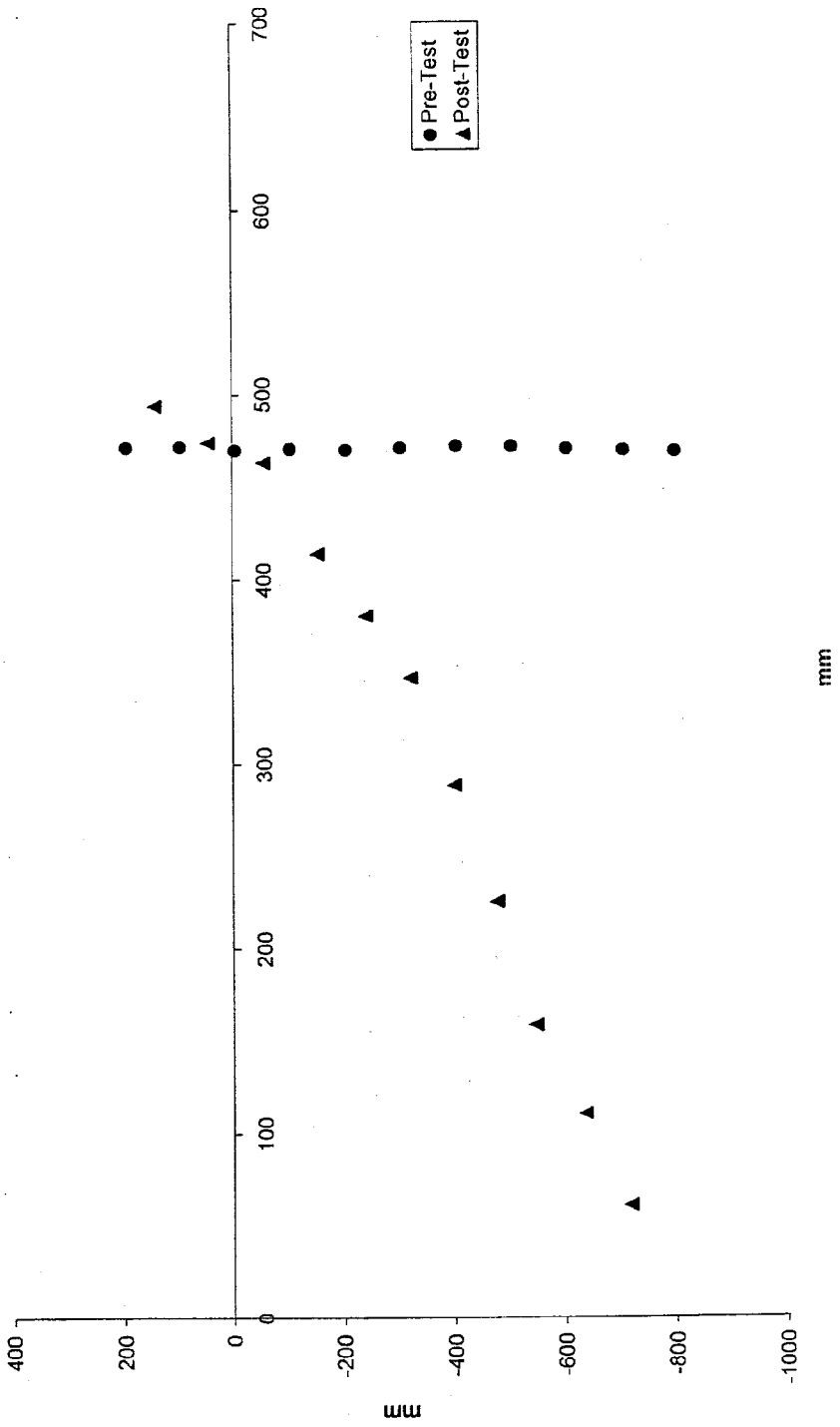


Figure 8 Deformable Barrier Face Profile 23-33

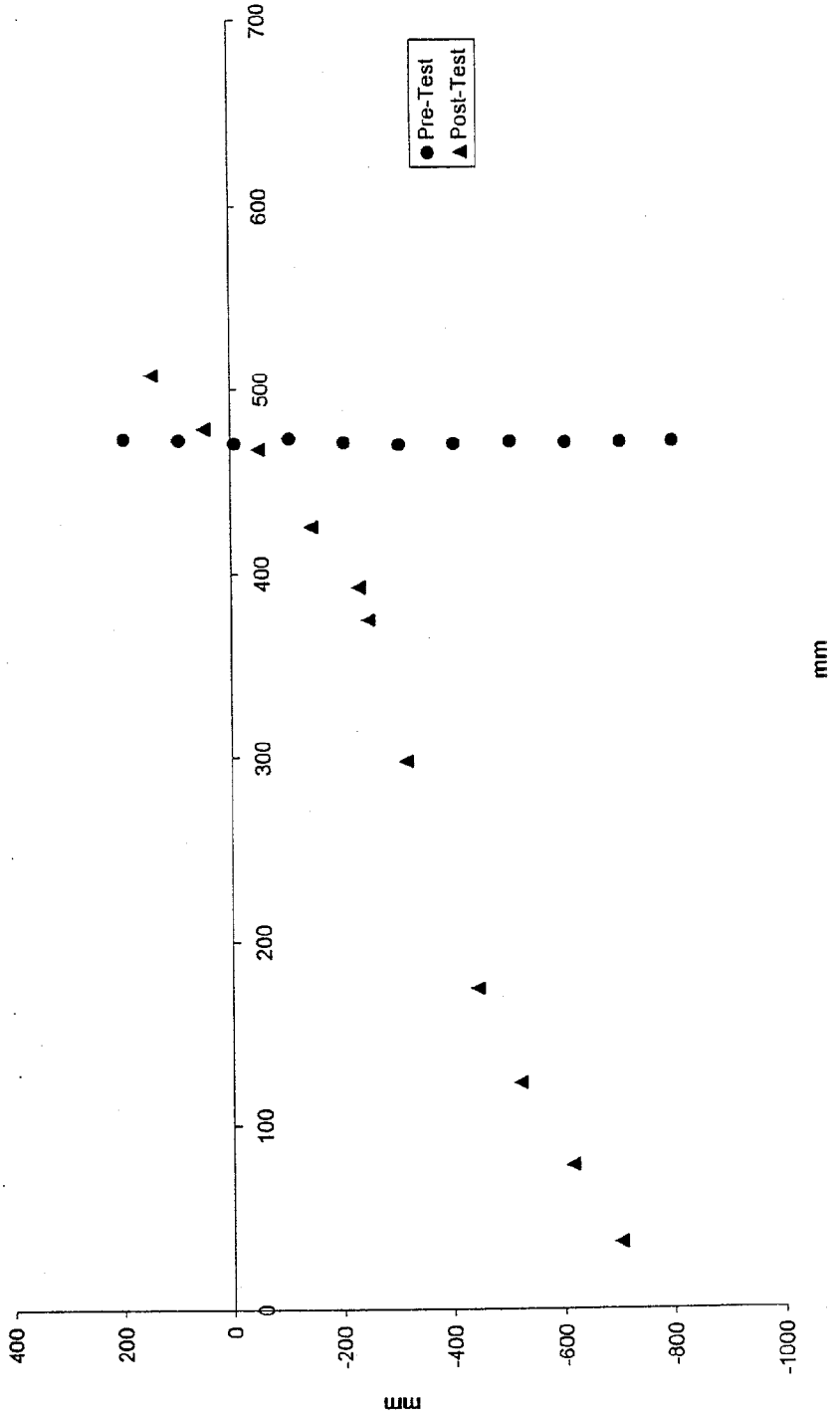


Figure 8 Deformable Barrier Face Profile 34-44

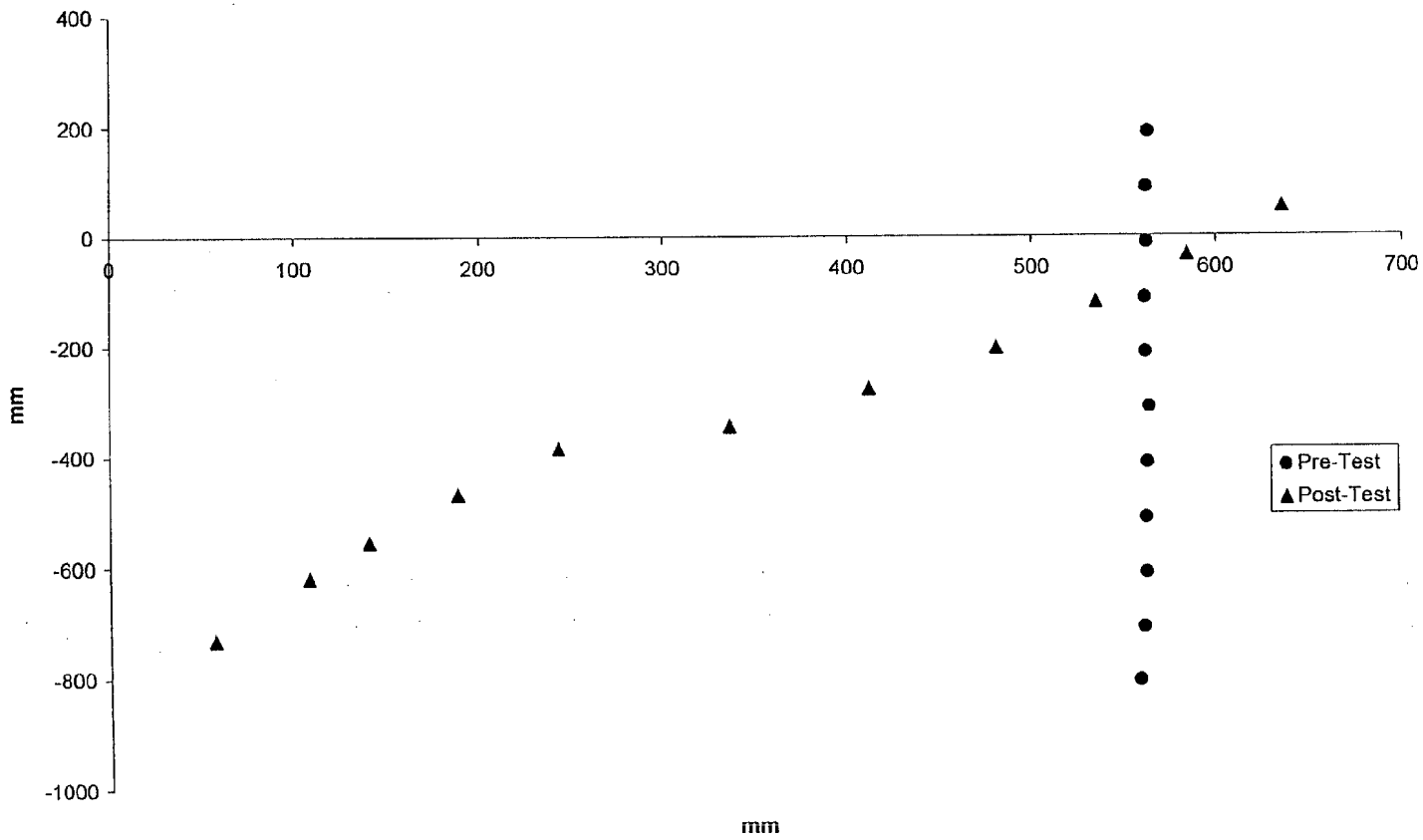


Figure 8 Deformable Barrier Face Profile 45-55

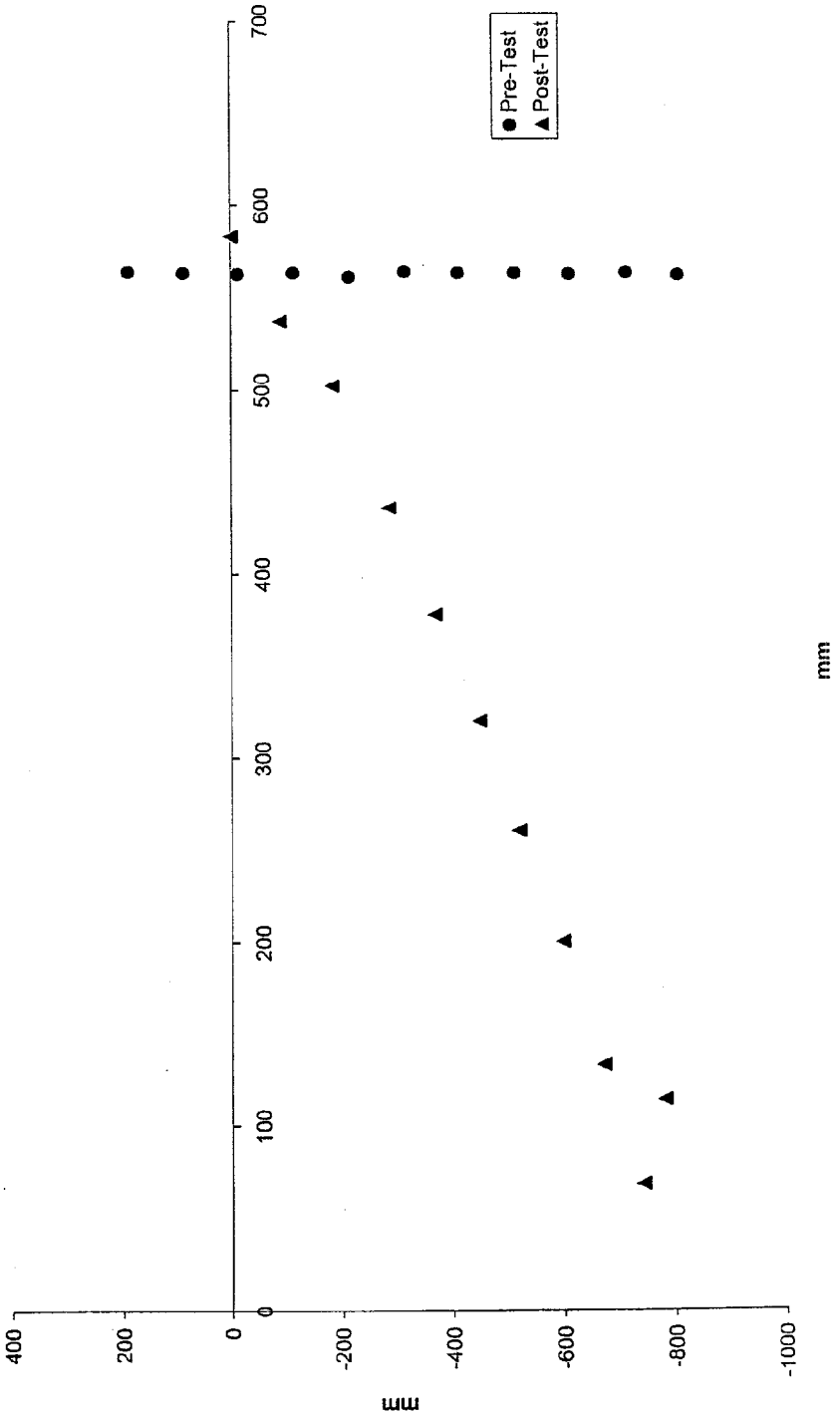


Figure 8 Deformable Barrier Face Profile 56-66

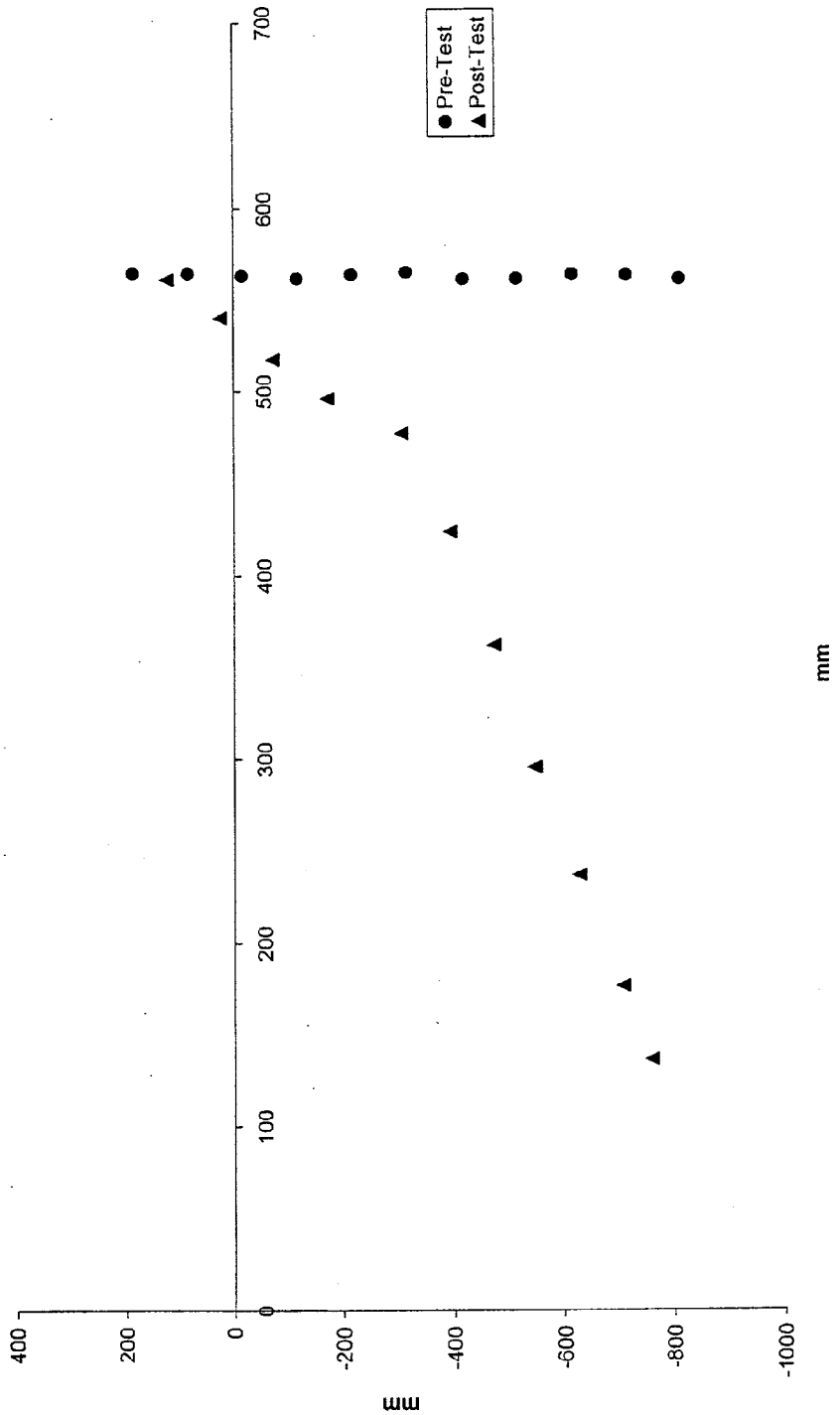


Table 9 Deformable Barrier Face Profile

Pre-Test

Index	Xmm	Ymm	Zmm
1	467.5	-796.5	672.3
2	469.9	-701.3	667.9
3	468.1	-600.9	666.5
4	469.6	-502.4	664.7
5	468.6	-400.5	664.3
6	469.5	-300.5	661.7
7	469.4	-200.1	661.4
8	469.4	-101.2	658.7
9	469.8	-0.1	658.1
10	470.7	97.8	656
11	470.5	198.8	653.2
12	468.8	-799.3	559.5
13	469.6	-706.1	559.9
14	470.5	-604.1	557.1
15	472.1	-504.4	554.4
16	472.3	-404.2	554.5
17	471.2	-303.8	551
18	470.4	-204.4	550
19	470.9	-103.9	548.3
20	470.3	-3.5	547
21	472.3	96.2	544.5
22	472.1	194.9	542.7

Post-Test

Index	Xmm	Ymm	Zmm
1	106.3	-738.5	595.9
2	153.1	-656.9	595
3	219.8	-584.1	578.6
4	287.4	-515	559.2
5	341	-432.6	552.5
6	320.6	-352.1	534
7	251.5	-312.6	476.2
8	379.7	-108.8	600.7
9	442.1	-60.4	602.5
10	476	37.5	614.7
11	488.1	137.6	620
12	60.9	-716.5	498.1
13	110.4	-635.3	495.3
14	158.1	-546.8	494.8
15	224.8	-476.6	477.6
16	288	-400.1	467.5
17	346.6	-321.3	459.4
18	380.5	-240.8	445.2
19	413.7	-153.3	474.4
20	463.1	-55.1	499.1
21	474.2	44.4	504.2
22	493.8	142.2	508.7

Difference

Index	Xmm	Ymm	Zmm
1	361.2	-58.0	76.4
2	316.8	-44.4	72.9
3	248.3	-16.8	87.9
4	182.2	12.6	105.5
5	127.6	32.1	111.8
6	148.9	51.6	127.7
7	217.9	112.5	185.2
8	89.7	7.6	58.0
9	27.7	60.3	55.6
10	-5.3	60.3	41.3
11	-17.6	61.2	33.2
12	407.9	-82.8	61.4
13	359.2	-70.8	64.6
14	312.4	-57.3	62.3
15	247.3	-27.8	76.8
16	184.3	-4.1	87.0
17	124.6	17.5	91.6
18	89.9	36.4	104.8
19	57.2	49.4	73.9
20	7.2	51.6	47.9
21	-1.9	51.8	40.3
22	-21.7	52.7	34.0

Table 9 Deformable Barrier Face Profile Cont'd.

Pre-Test			
Index	Xmm	Ymm	Zmm
23	470.5	-801.3	450
24	470.2	-707.3	448.2
25	470.2	-607.3	445
26	471.1	-507.1	443.6
27	470.1	-405.4	441.8
28	469.6	-306.1	440
29	470.9	-205.6	438.3
30	473.3	-106.1	434.8
31	470.8	-7.3	432.3
32	472.7	93.9	430.3
33	473.5	194.7	429.7
34	558	-805	342.8
35	560.2	-709	342.9
36	561.5	-610.3	337.3
37	561.3	-510.7	335.4
38	562.1	-410.5	335
39	563.4	-309.8	330.9
40	561.7	-209.6	329.8
41	561.7	-110.3	326.7
42	562.5	-10.3	324.6
43	562.7	90.1	323.6
44	563.7	190.2	319.6

Post-Test			
Index	Xmm	Ymm	Zmm
23	35.9	-701.2	407.1
24	77.9	-614.1	406.3
25	122.8	-520.2	406.6
26	173.8	-443.2	408
27	297.1	-316.3	413.6
28	374.4	-247.1	416.7
29	392.2	-230.7	417.7
30	424.8	-145.9	394.6
31	467.1	-50.6	386.9
32	478.5	48.8	389.7
33	507.9	144	395.5
34	56.9	-730.2	333.9
35	107.4	-618.6	344.7
36	139.8	-553.4	324.4
37	188.1	-466.4	330.5
38	242.7	-383.7	330.4
39	336.2	-344.5	342.9
40	411.1	-276	346.3
41	480.7	-201.7	346
42	535.1	-117.8	338.8
43	584.5	-32.1	329.1
44	635.3	54.5	321.3

Difference			
Index	Xmm	Ymm	Zmm
23	434.6	-100.1	42.9
24	392.3	-93.2	41.9
25	347.4	-87.1	38.4
26	297.3	-63.9	35.6
27	173.0	-89.1	28.2
28	95.2	-59.0	23.3
29	78.7	25.1	20.6
30	48.5	39.8	40.2
31	3.7	43.3	45.4
32	-5.8	45.1	40.6
33	-34.4	50.7	34.2
34	501.1	-74.8	8.9
35	452.8	-90.4	-1.8
36	421.7	-56.9	12.9
37	373.2	-44.3	4.9
38	319.4	-26.8	4.6
39	227.2	34.7	-12.0
40	150.6	66.4	-16.5
41	81.0	91.4	-19.3
42	27.4	107.5	-14.2
43	-21.8	122.2	-5.5
44	-71.6	135.7	-1.7

Table 9 Deformable Barrier Face Profile Cont'd.

Pre-Test			
Index	Xmm	Ymm	Zmm
45	560.7	-806.2	228.4
46	562	-713.4	226
47	561.5	-611.2	222.5
48	562.1	-512.5	221.1
49	562.3	-410.1	218.4
50	563.3	-313.4	217
51	560.7	-212.7	215.8
52	563.2	-112.5	212.2
53	562.7	-12.2	209
54	563.3	87.2	206.9
55	564.1	188.2	205.5
56	560.7	-810	121.4
57	562.7	-713.7	116.3
58	563	-615.4	116.2
59	560.9	-512.6	112.9
60	561	-415.8	112.5
61	564.5	-314.1	110.2
62	563.4	-214.4	106.5
63	561.5	-115.2	105.4
64	562.9	-14.4	102.1
65	564.2	85.9	101.8
66	564.4	186.6	97.7

Post-Test			
Index	Xmm	Ymm	Zmm
45	67.9	-741.1	220.2
46	132.7	-671	222.8
47	199.6	-597.5	226.2
48	260.1	-517.9	226.4
49	319.6	-447	227.9
50	377.4	-367.1	225.1
51	435.5	-284.5	224
52	502.1	-182.7	209.6
53	536.9	-88.4	206.1
54	583.3	-0.7	202.5
55	113.8	-779	126.2
56	136	-758	132.6
57	176.4	-706	128.8
58	236.3	-626.6	129.5
59	294.9	-545.3	126.9
60	361.5	-471	131.2
61	423.4	-391.7	132.2
62	477.1	-304.7	127.7
63	495.8	-171.3	71.9
64	517.2	-71.4	66.7
65	539.7	25.7	62.5
66	560.6	124.4	57.2

Difference			
Index	Xmm	Ymm	Zmm
45	492.8	-65.1	8.2
46	429.3	-42.4	3.2
47	361.9	-13.7	-3.7
48	302.0	5.4	-5.3
49	242.7	36.9	-9.5
50	185.9	53.7	-8.1
51	125.2	71.8	-8.2
52	61.1	70.2	2.6
53	25.8	76.2	2.9
54	-20.0	87.9	4.4
55	450.3	967.2	79.3
56	424.7	-52.0	-11.2
57	386.3	-7.7	-12.5
58	326.7	11.2	-13.3
59	266.0	32.7	-14.0
60	199.5	55.2	-18.7
61	141.1	77.6	-22.0
62	86.3	90.3	-21.2
63	65.7	56.1	33.5
64	45.7	57.0	35.4
65	24.5	60.2	39.3
66	3.8	62.2	40.5

Figure A-1 Pre-Test Front View

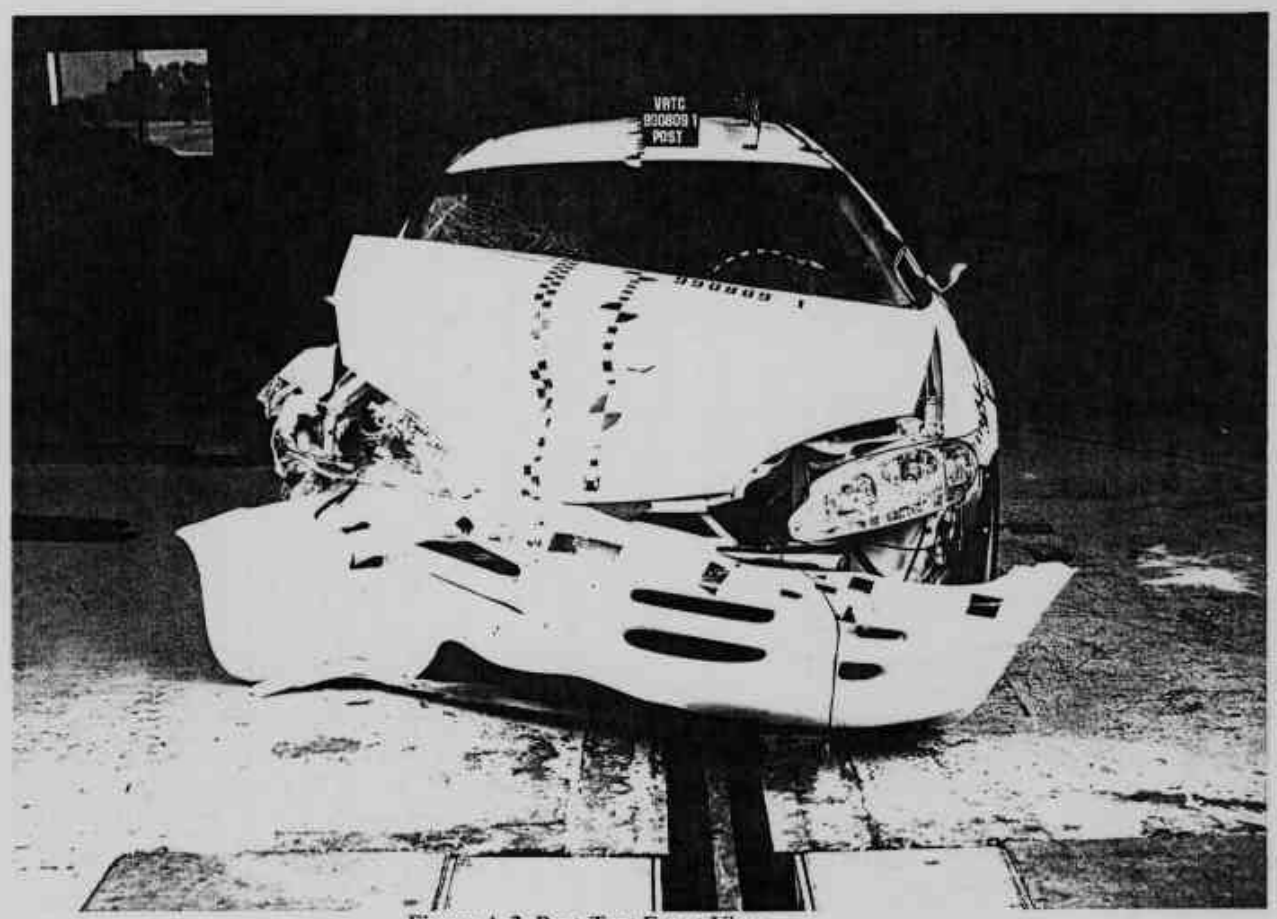


Figure A-2 Post-Test Front View

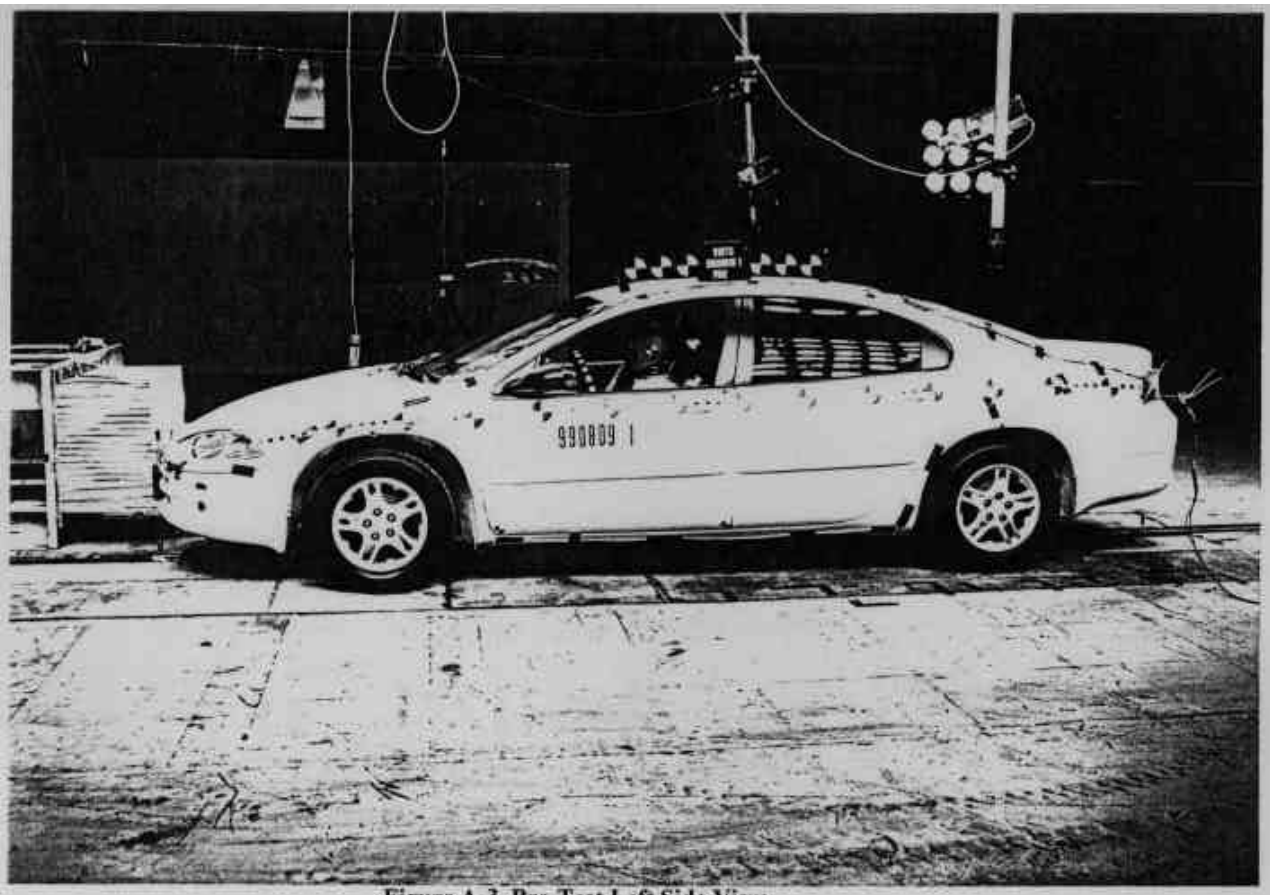


Figure A-3 Pre-Test Left Side View

Figure A-4 Post-Test Left Side View

Figure A-5 Pre-Test Left Rear Three-Quarter View

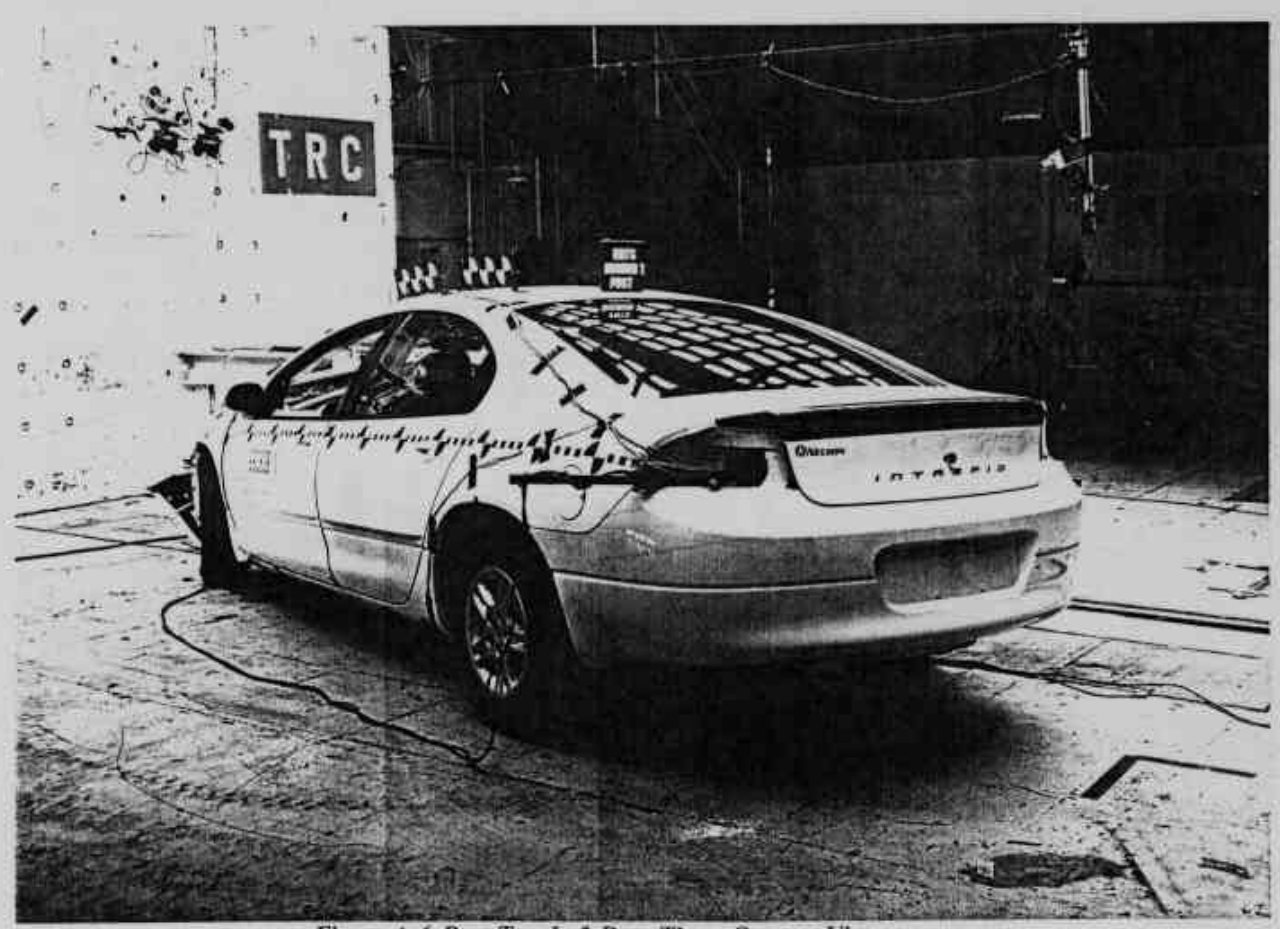


Figure A-6 Post-Test Left Rear Three-Quarter View

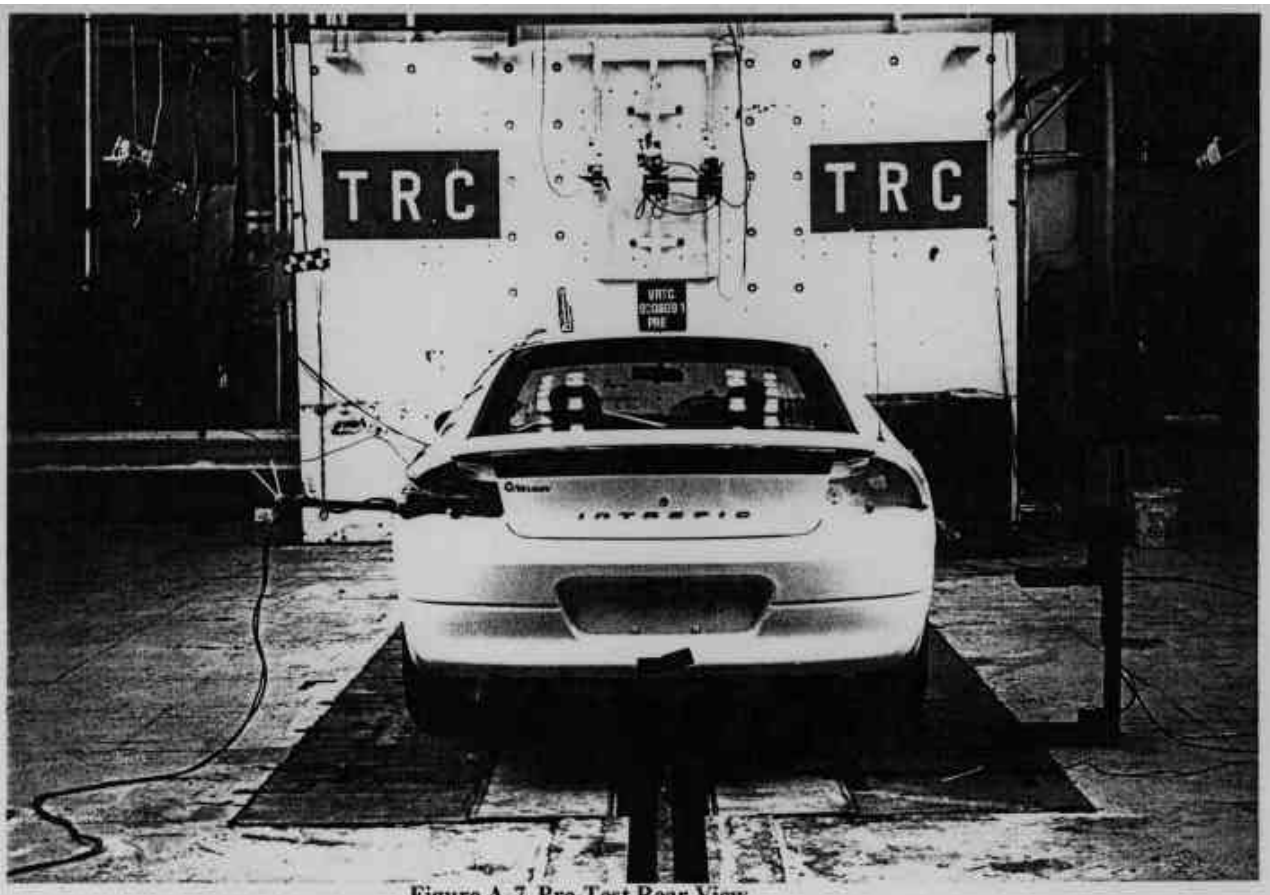


Figure A-7 Pre-Test Rear View

Figure A-8 Post-Test Rear View

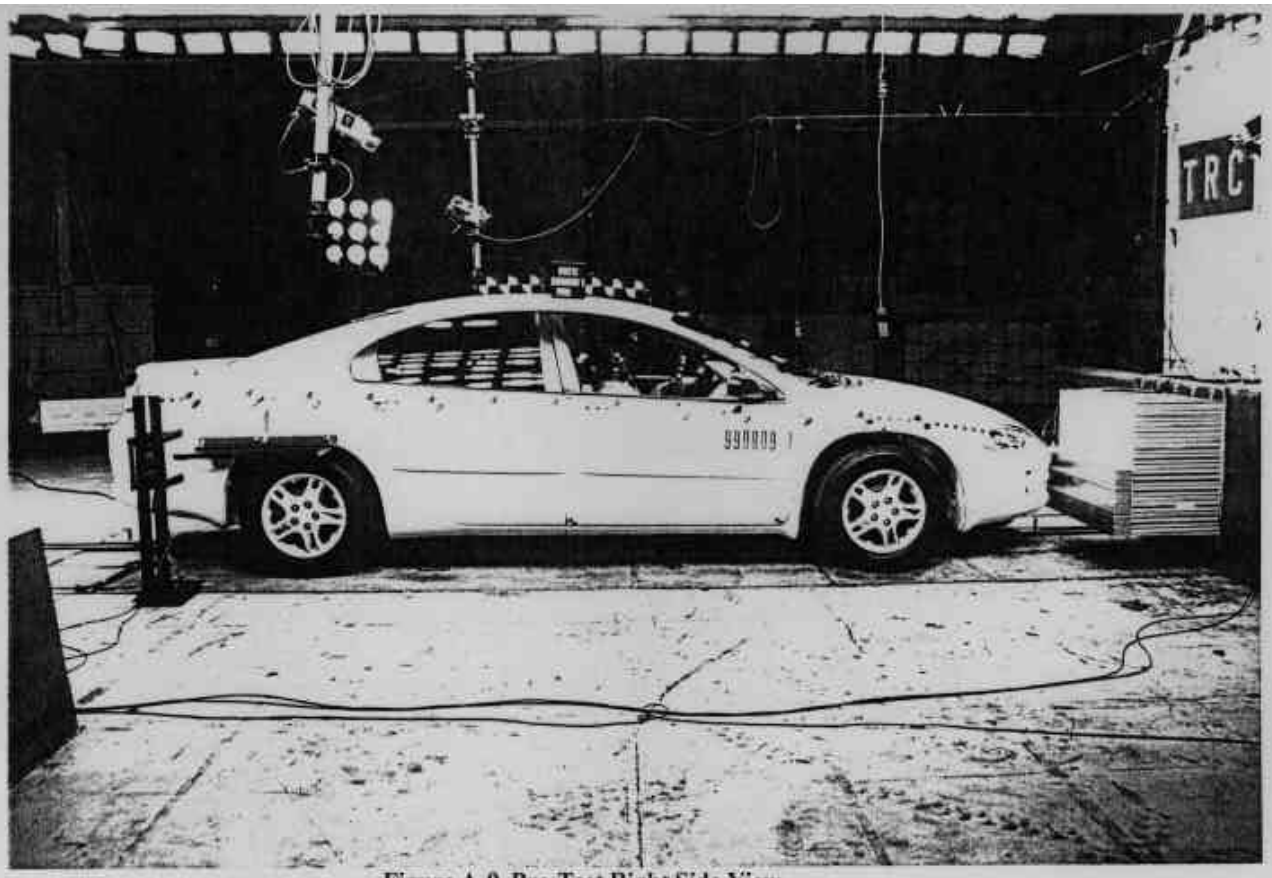


Figure A-9 Pre-Test Right Side View

Figure A-10 Post-Test Right Side View

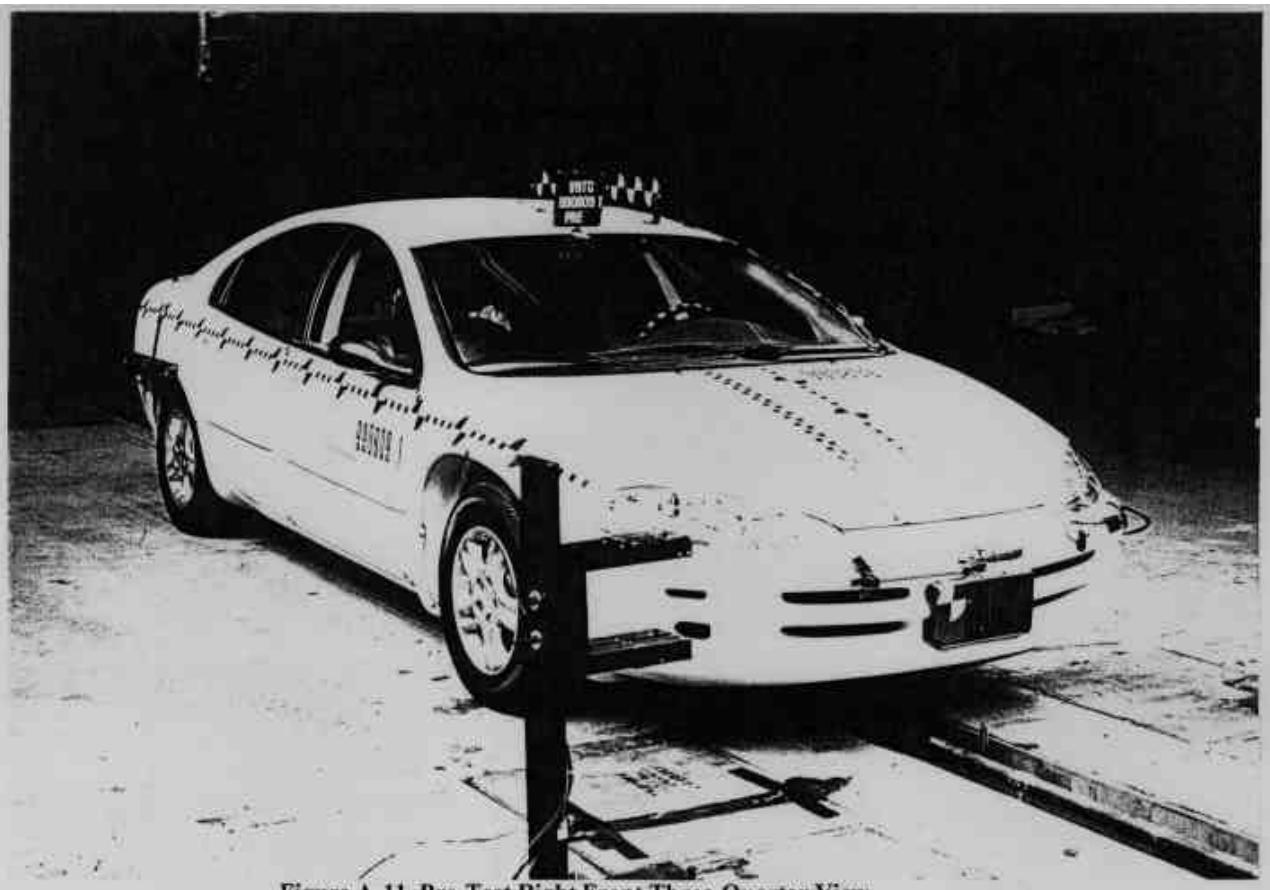


Figure A-11 Pre-Test Right Front Three-Quarter View

Figure A-12 Post-Test Right Front Three-Quarter View

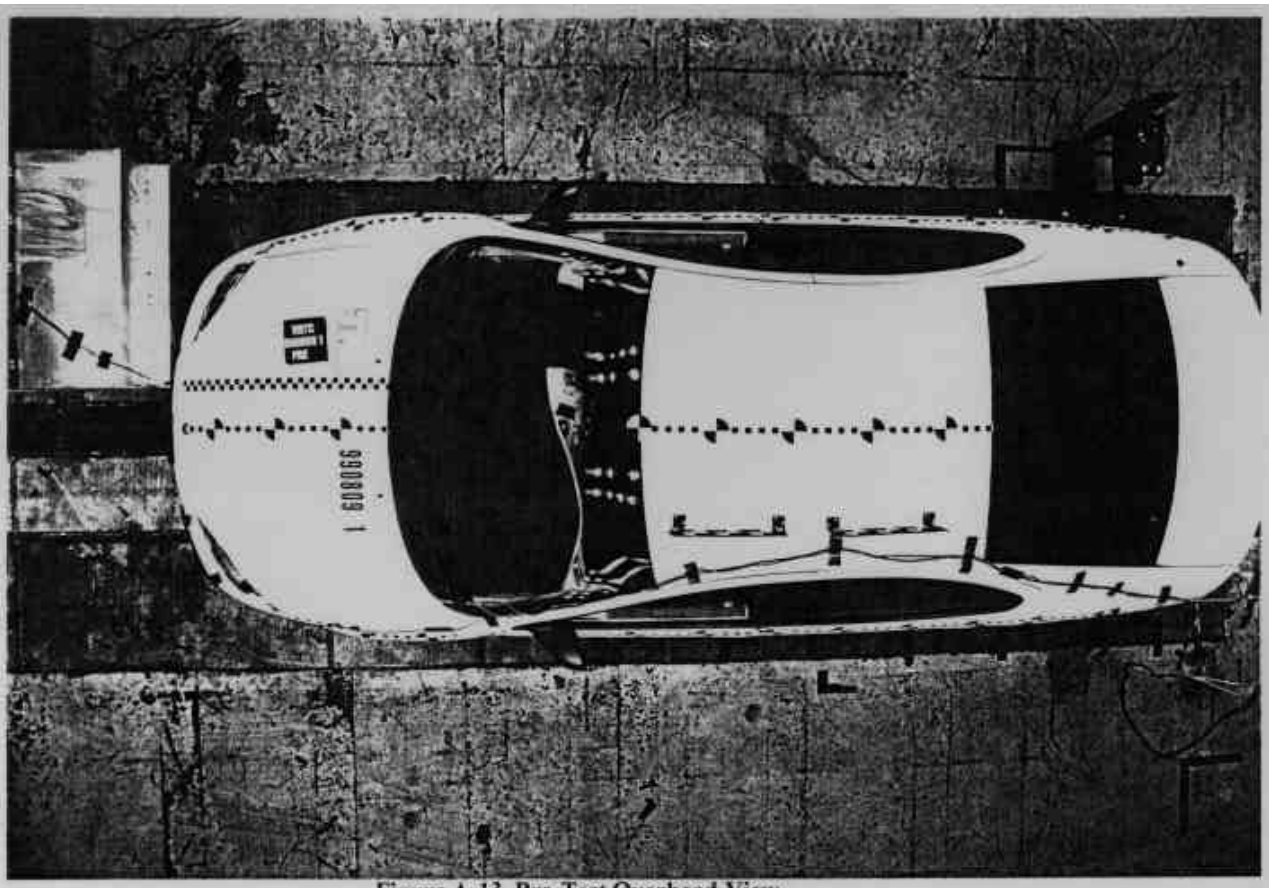


Figure A-13 Pre-Test Overhead View

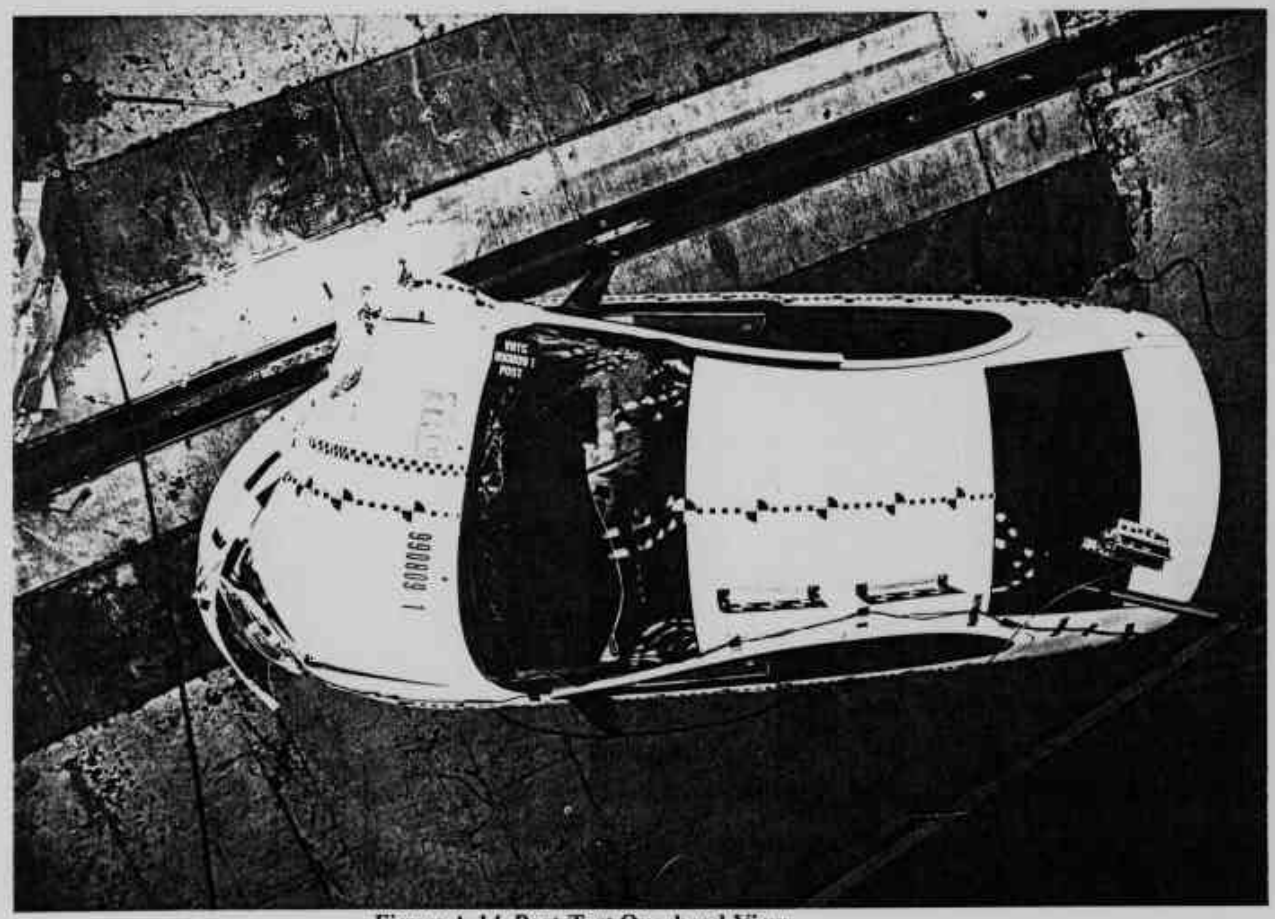


Figure A-14 Post-Test Overhead View

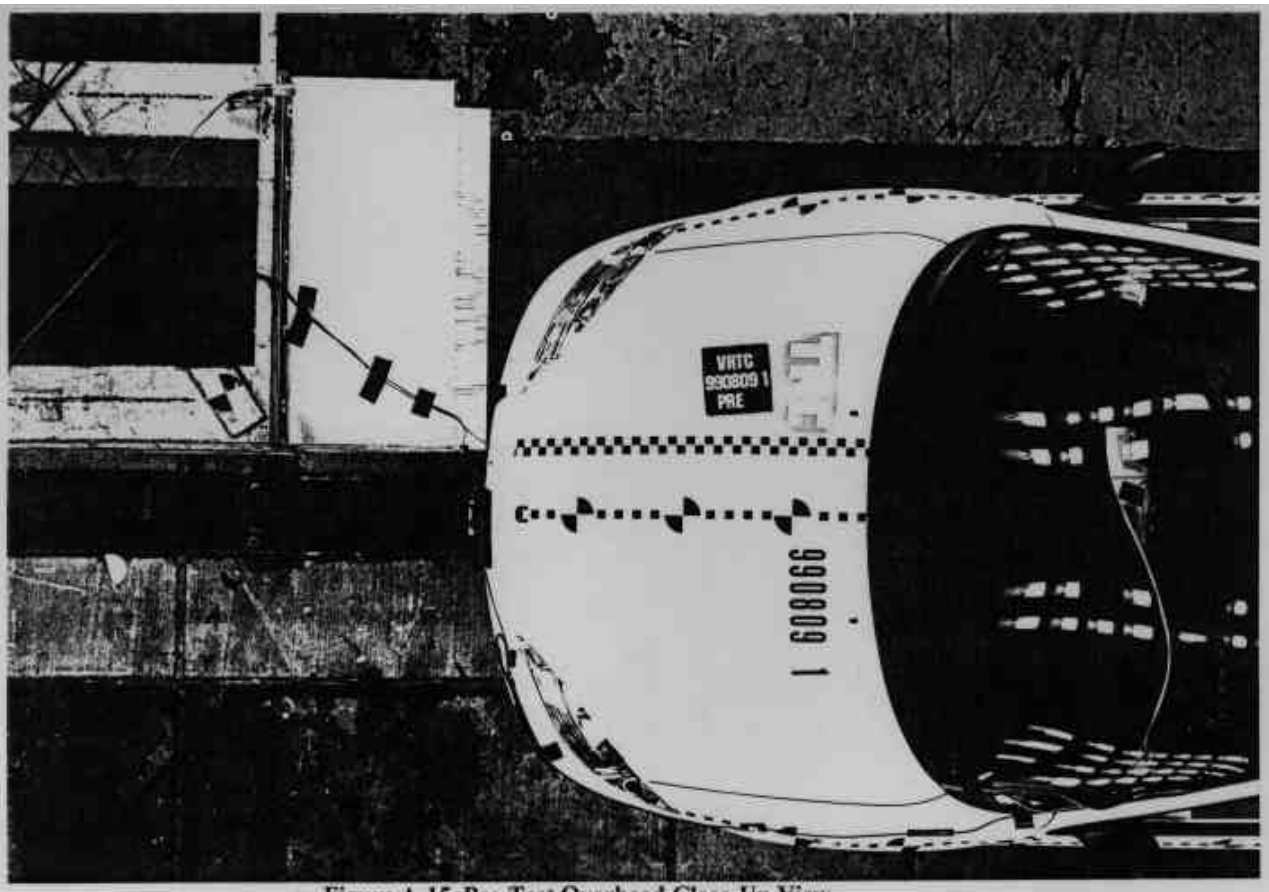


Figure A-15 Pre-Test Overhead Close-Up View

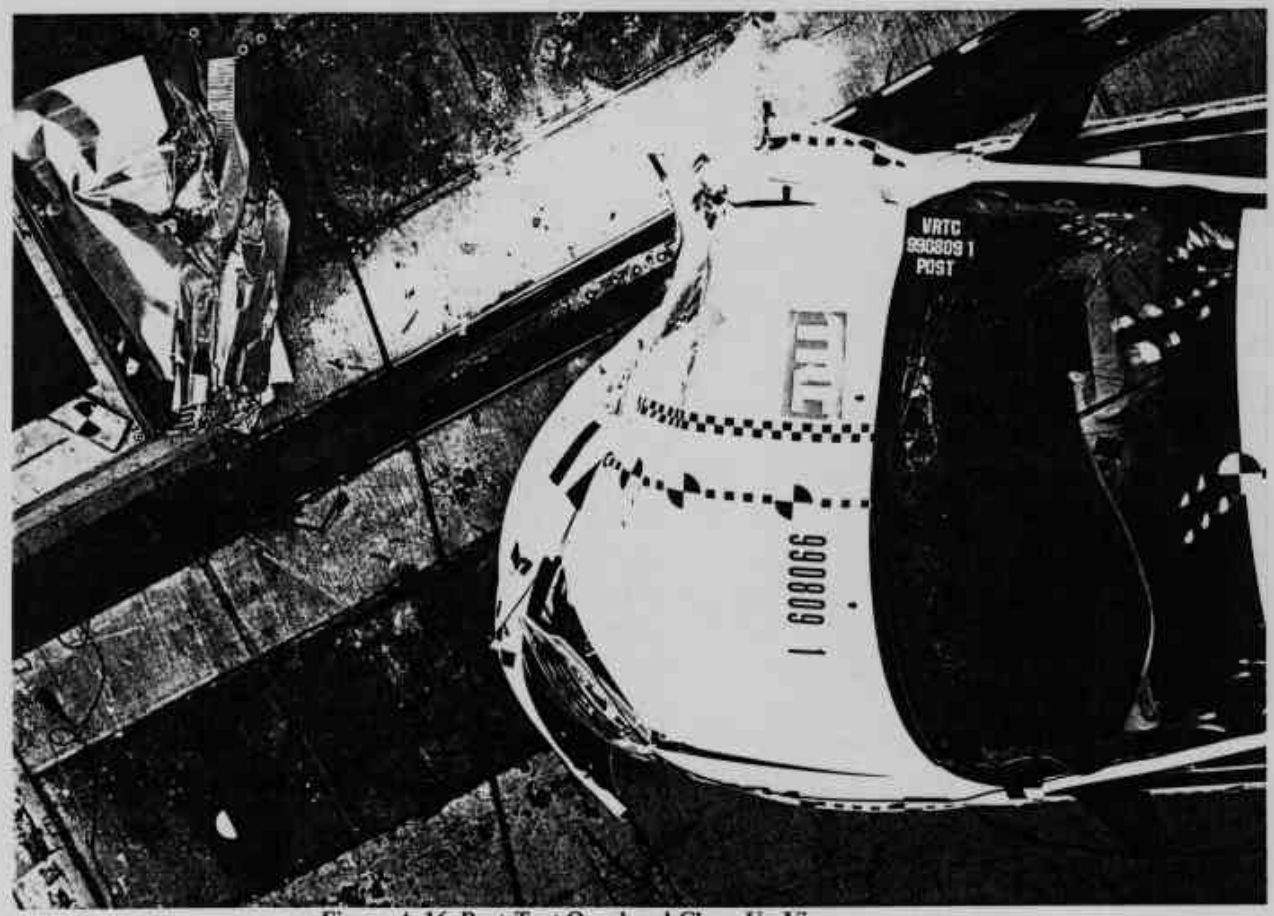


Figure A-16 Post-Test Overhead Close-Up View

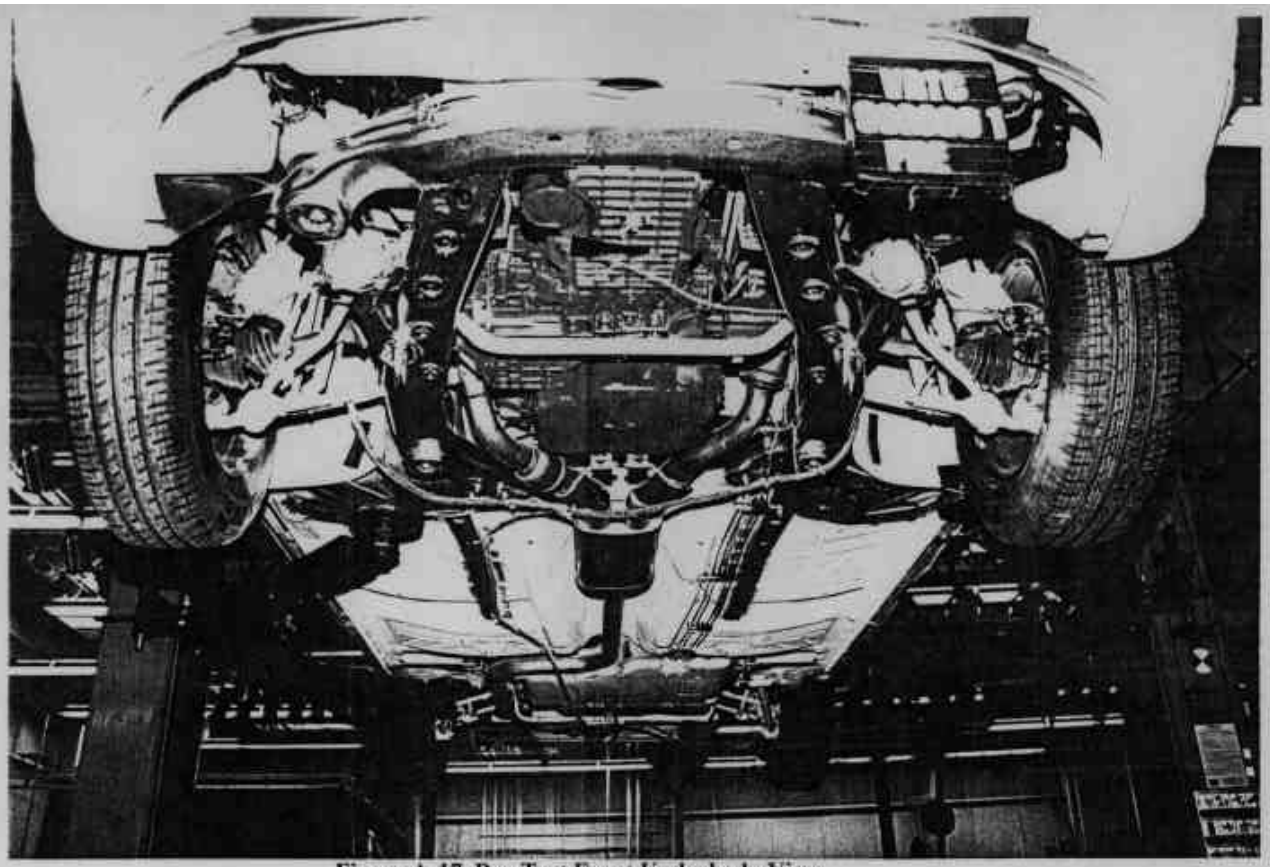


Figure A-17 Pre-Test Front Underbody View

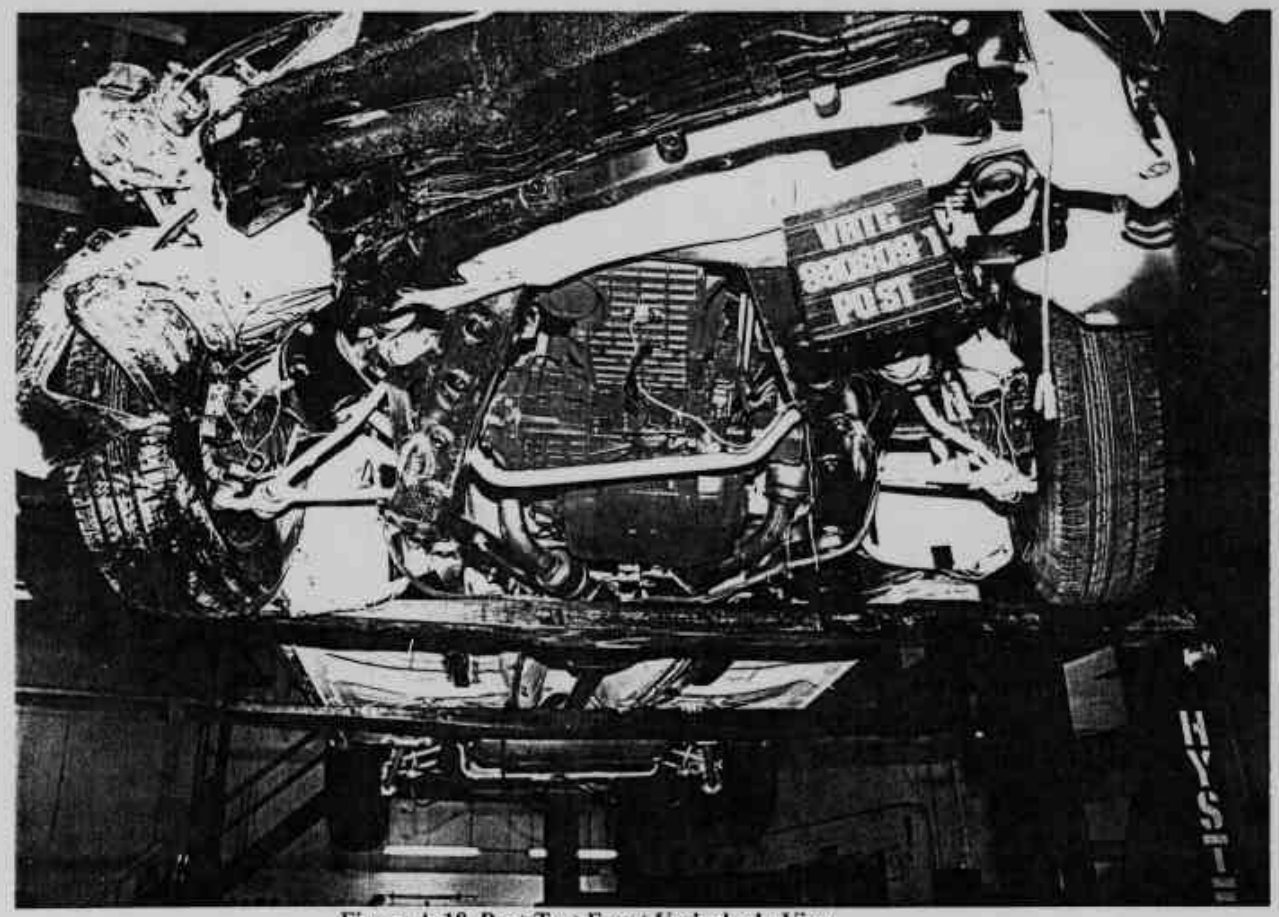


Figure A-18 Post-Test Front Underbody View

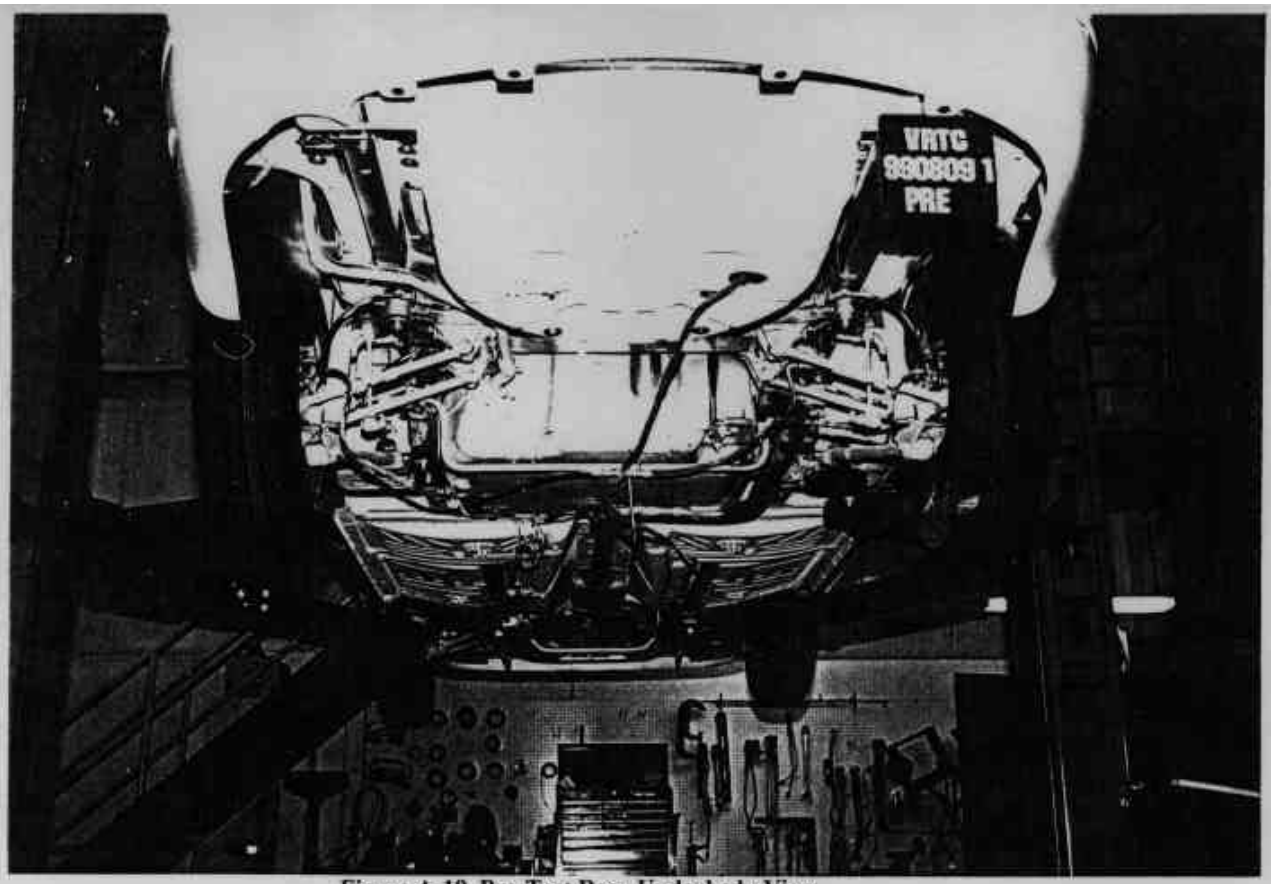


Figure A-19 Pre-Test Rear Underbody View

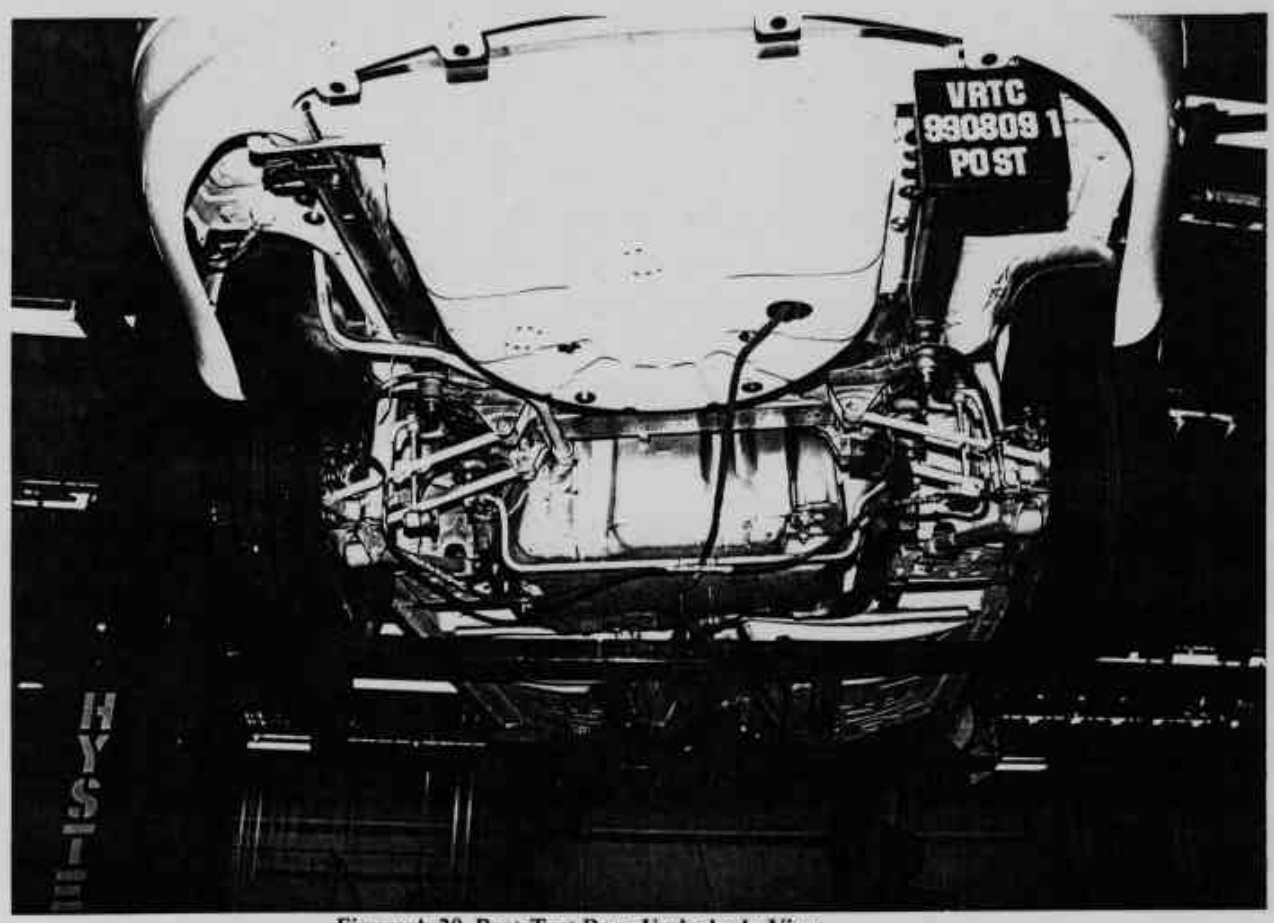


Figure A-20 Post-Test Rear Underbody View

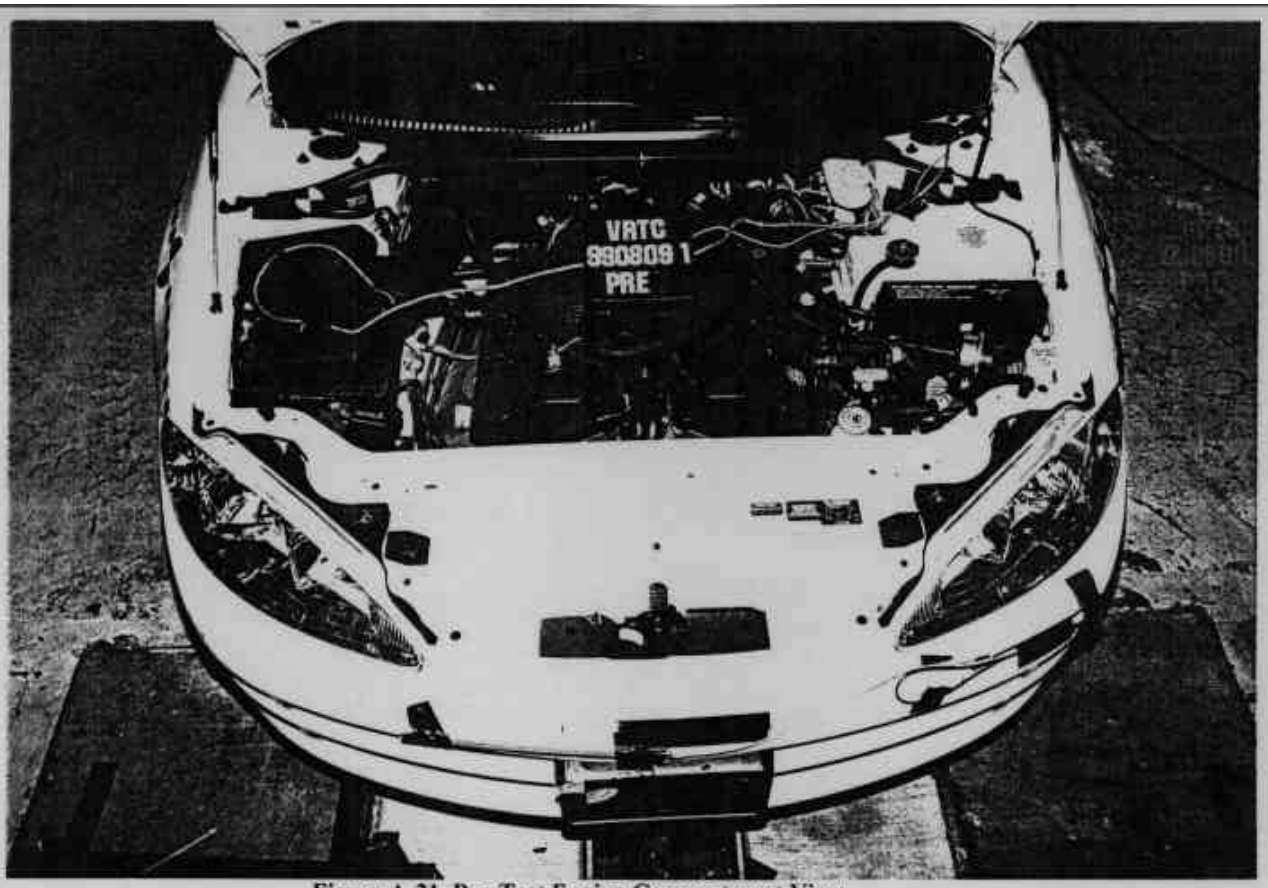


Figure A-21 Pre-Test Engine Compartment View

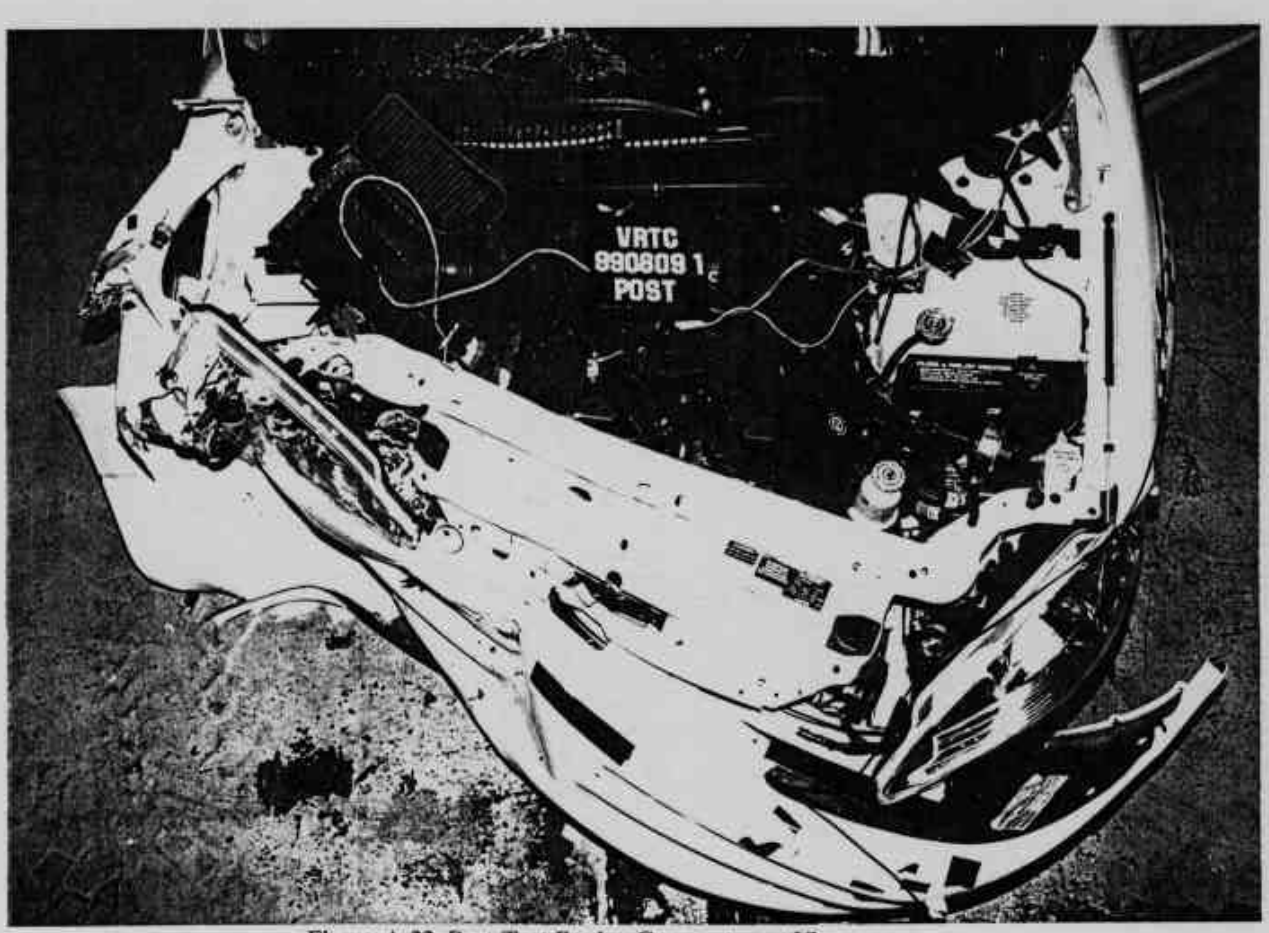


Figure A-22 Post-Test Engine Compartment View

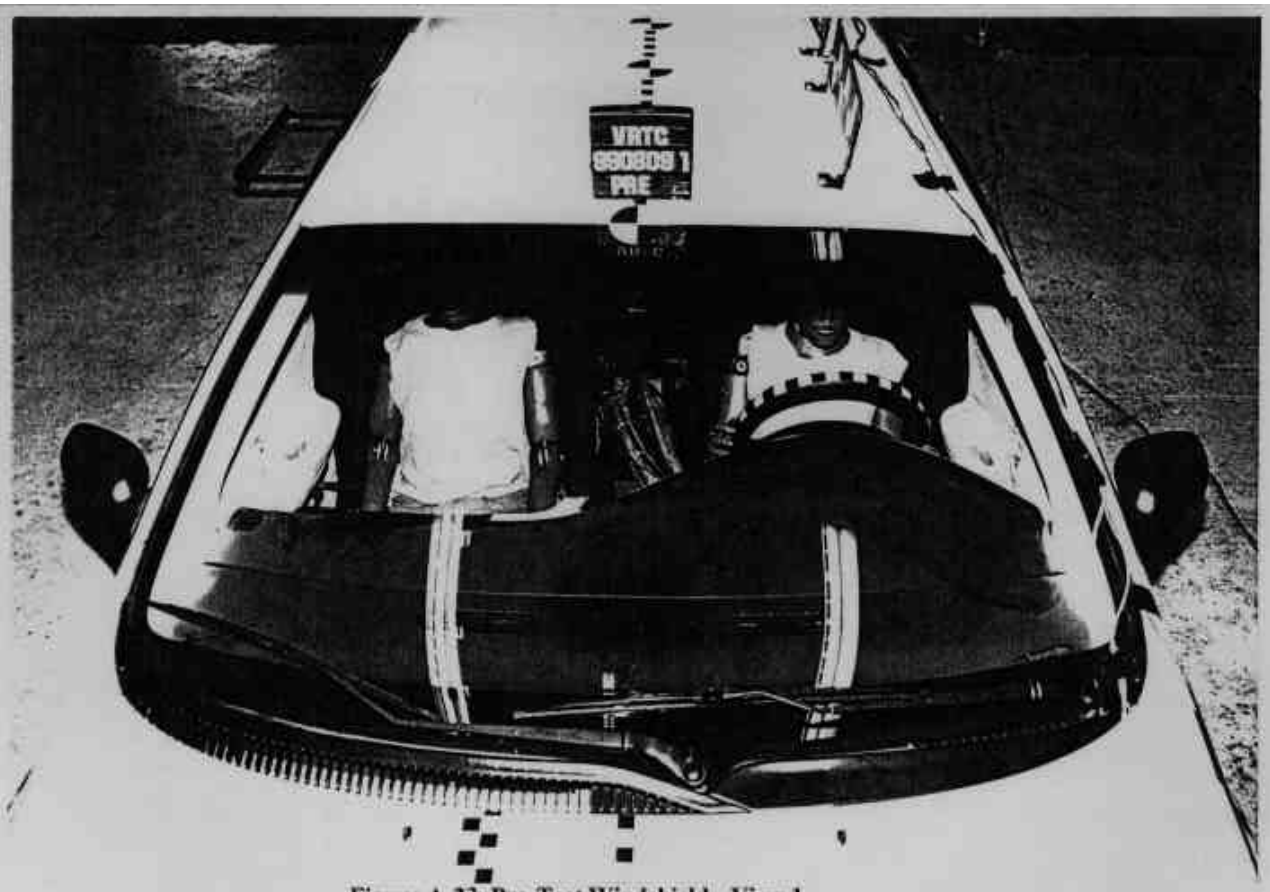


Figure A-23 Pre-Test Windshield - View 1

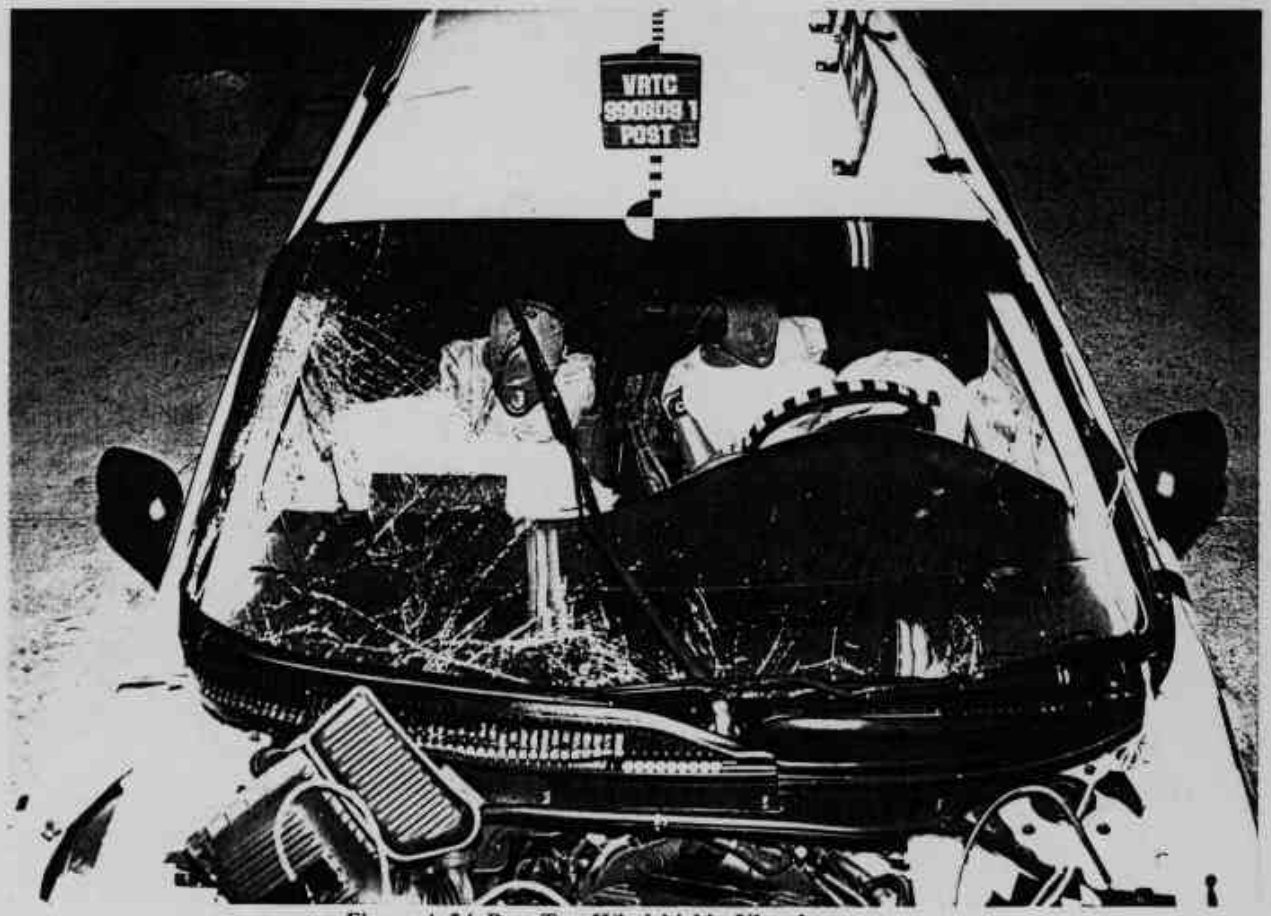


Figure A-24 Post-Test Windshield - View 1

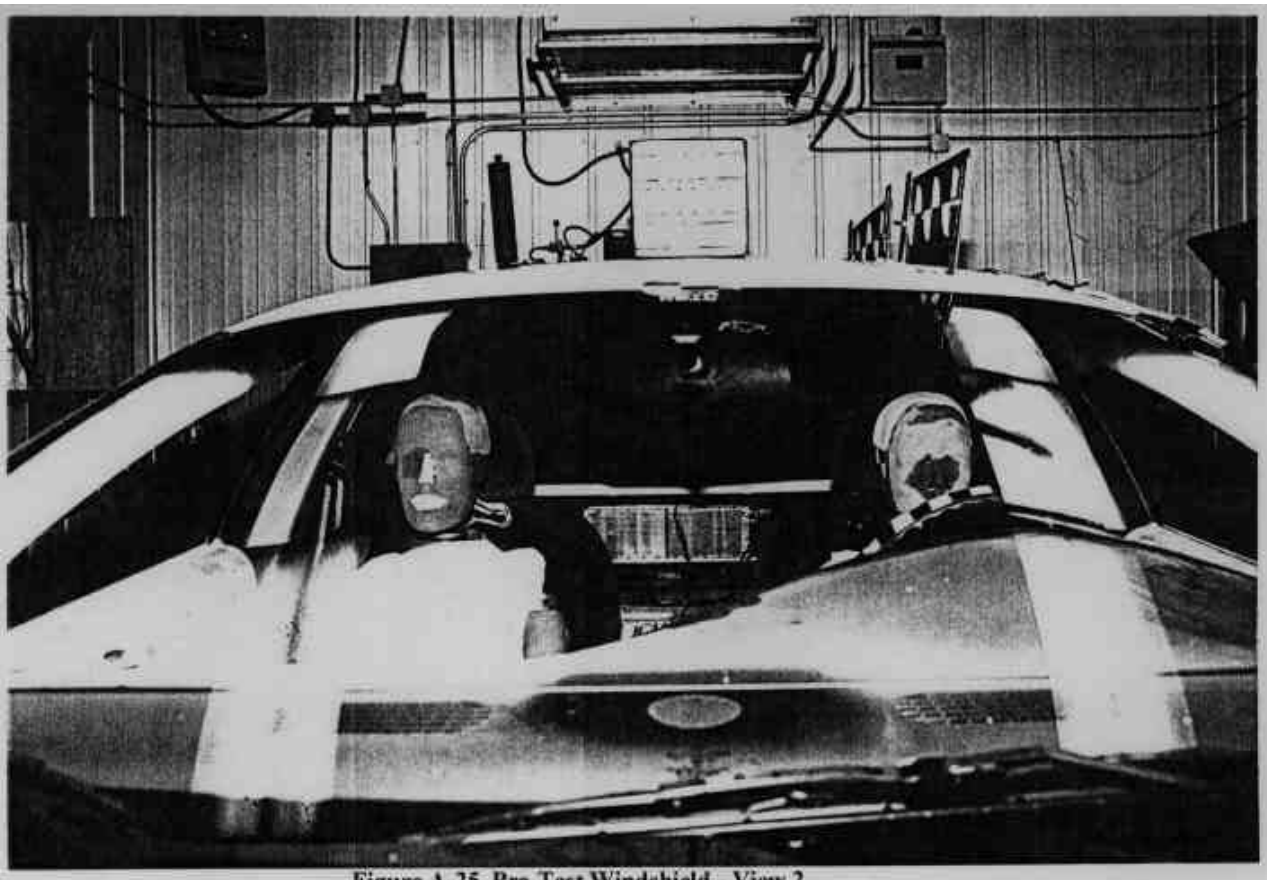


Figure A-25 Pre-Test Windshield - View 2

Figure A-26 Post-Test Windshield - View 2

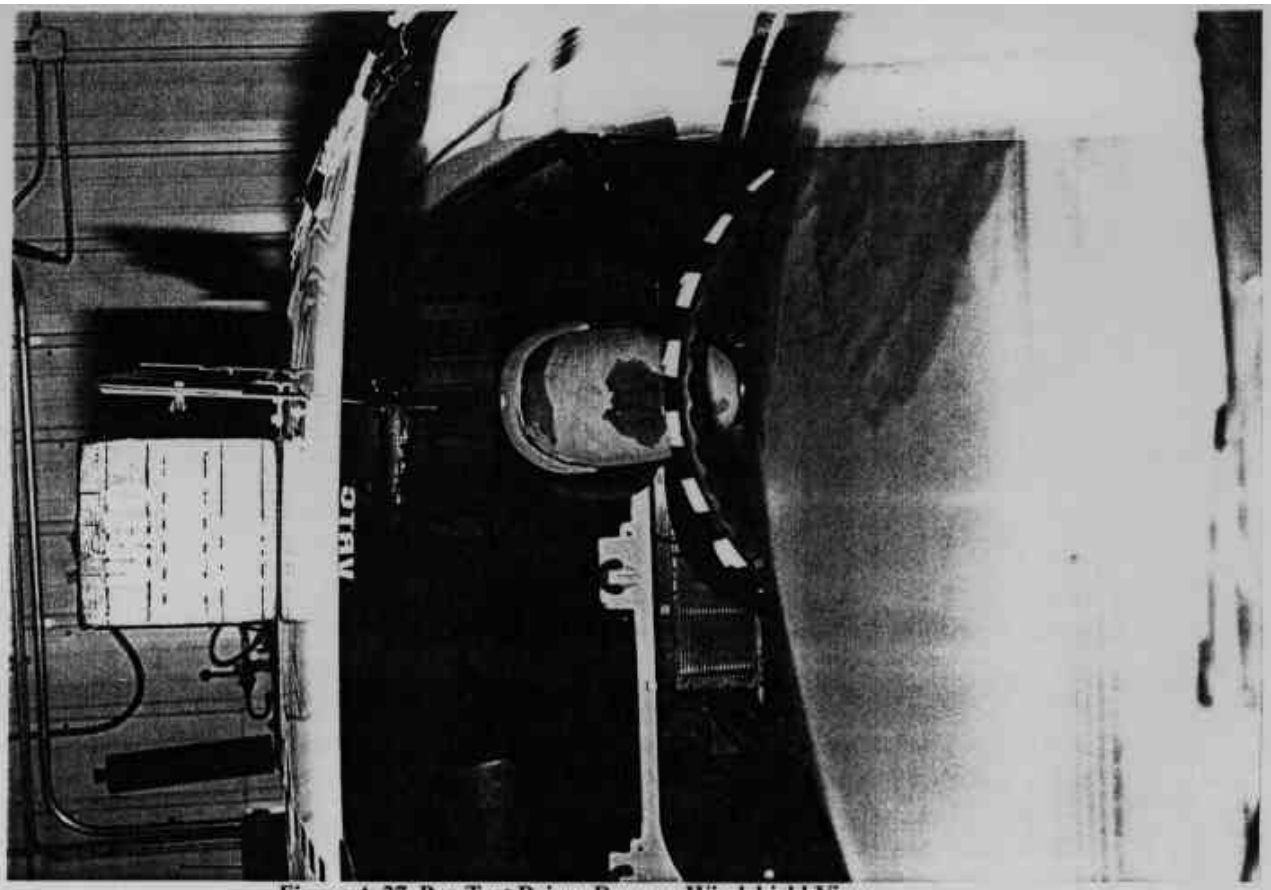


Figure A-27 Pre-Test Driver Dummy Windshield View

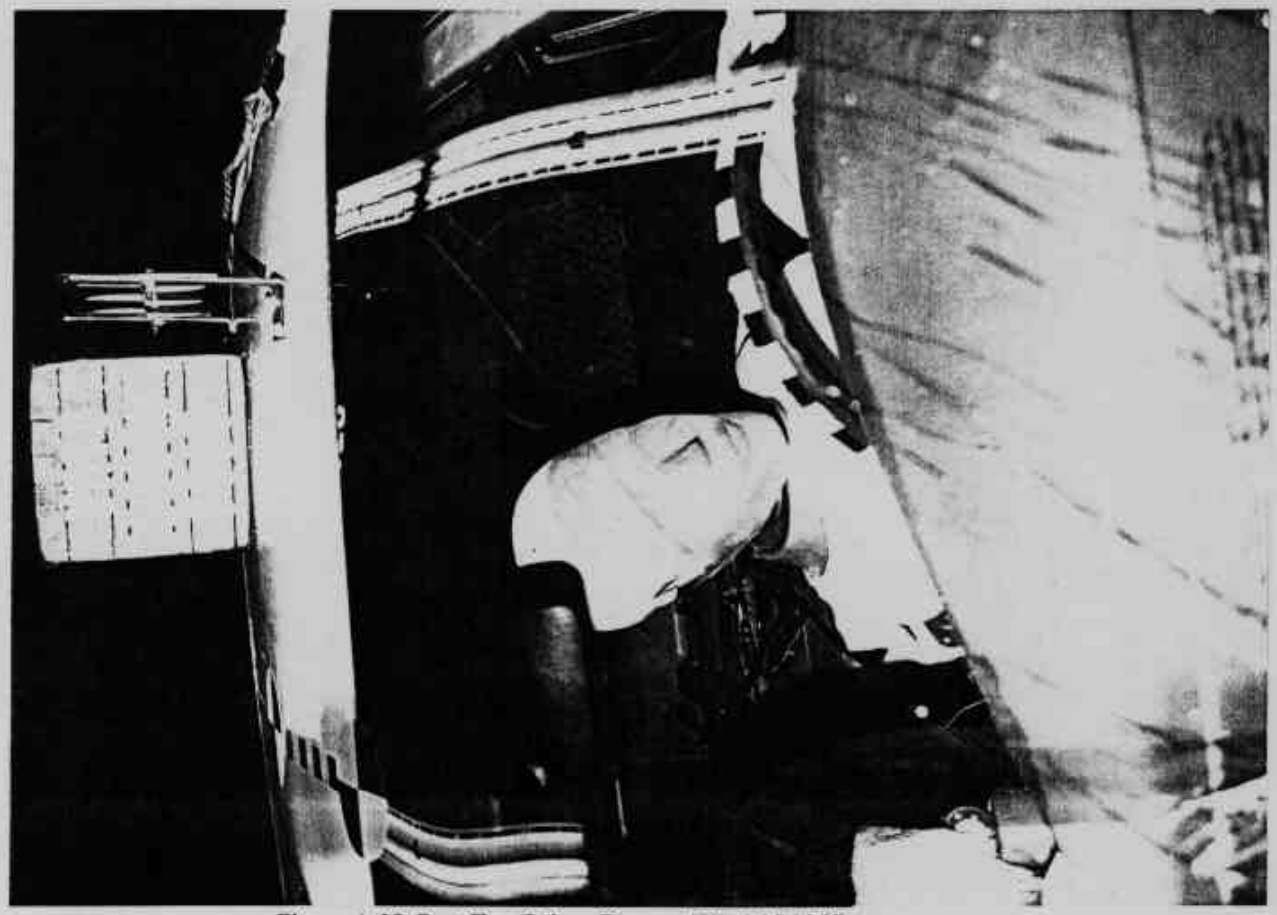


Figure A-28 Post-Test Driver Dummy Windshield View

Figure A-29 Pre-Test Passenger Dummy Windshield View

Figure A-30 Post-Test Passenger Dummy Windshield View

Figure A-31 Pre-Test Driver Dummy Position - View 1

Figure A-32 Post-Test Driver Dummy Position - View 1

Figure A-33 Pre-Test Driver Dummy Position - View 2

Figure A-34 Post-Test Driver Dummy Position - View 2

Figure A-35 Pre-Test Driver Dummy Position - View 3

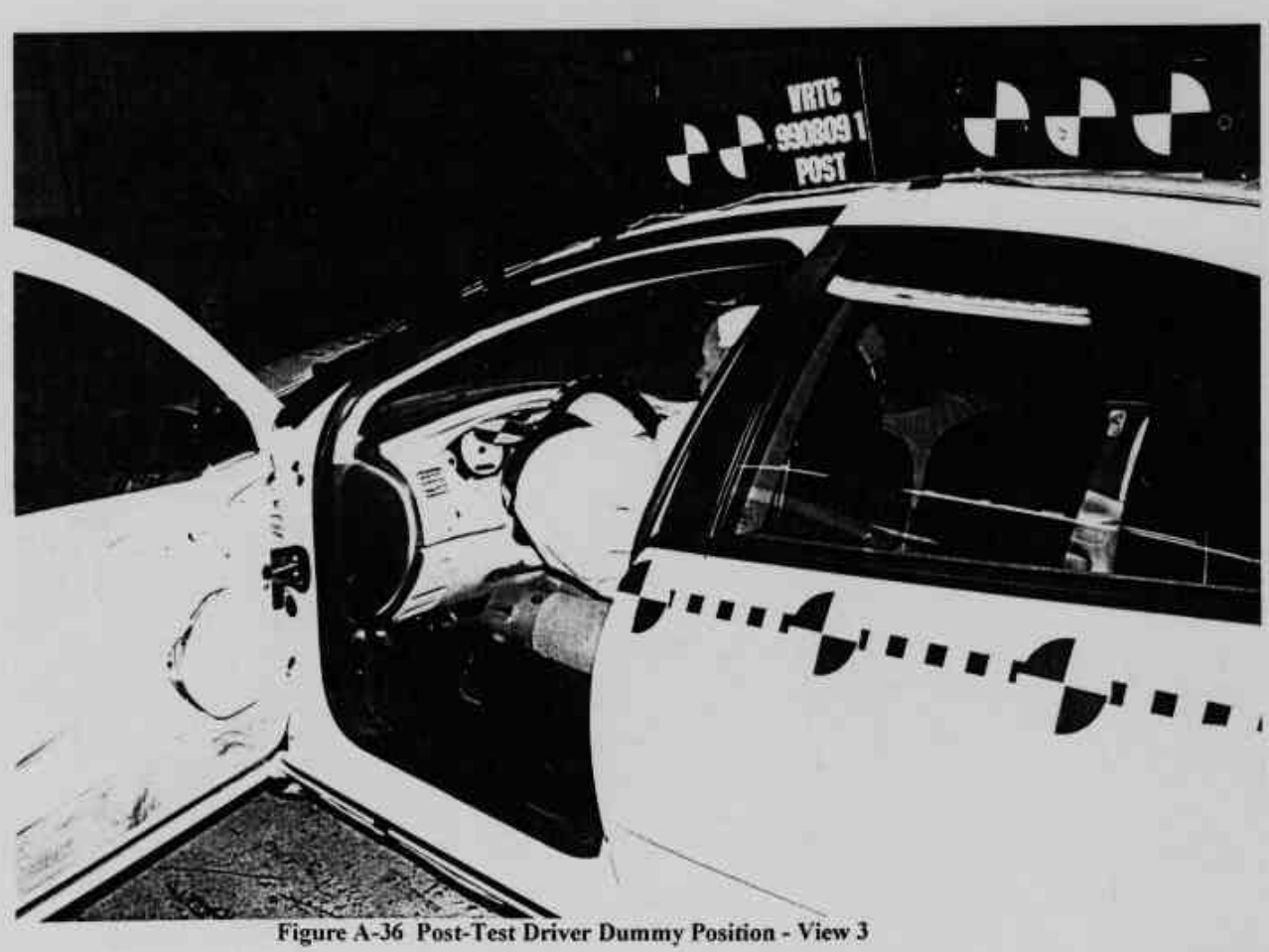


Figure A-36 Post-Test Driver Dummy Position - View 3

Figure A-37 Pre-Test Passenger Dummy Position - View 1

Figure A-38 Post-Test Passenger Dummy Position - View 1

Figure A-39 Pre-Test Passenger Dummy Position - View 2

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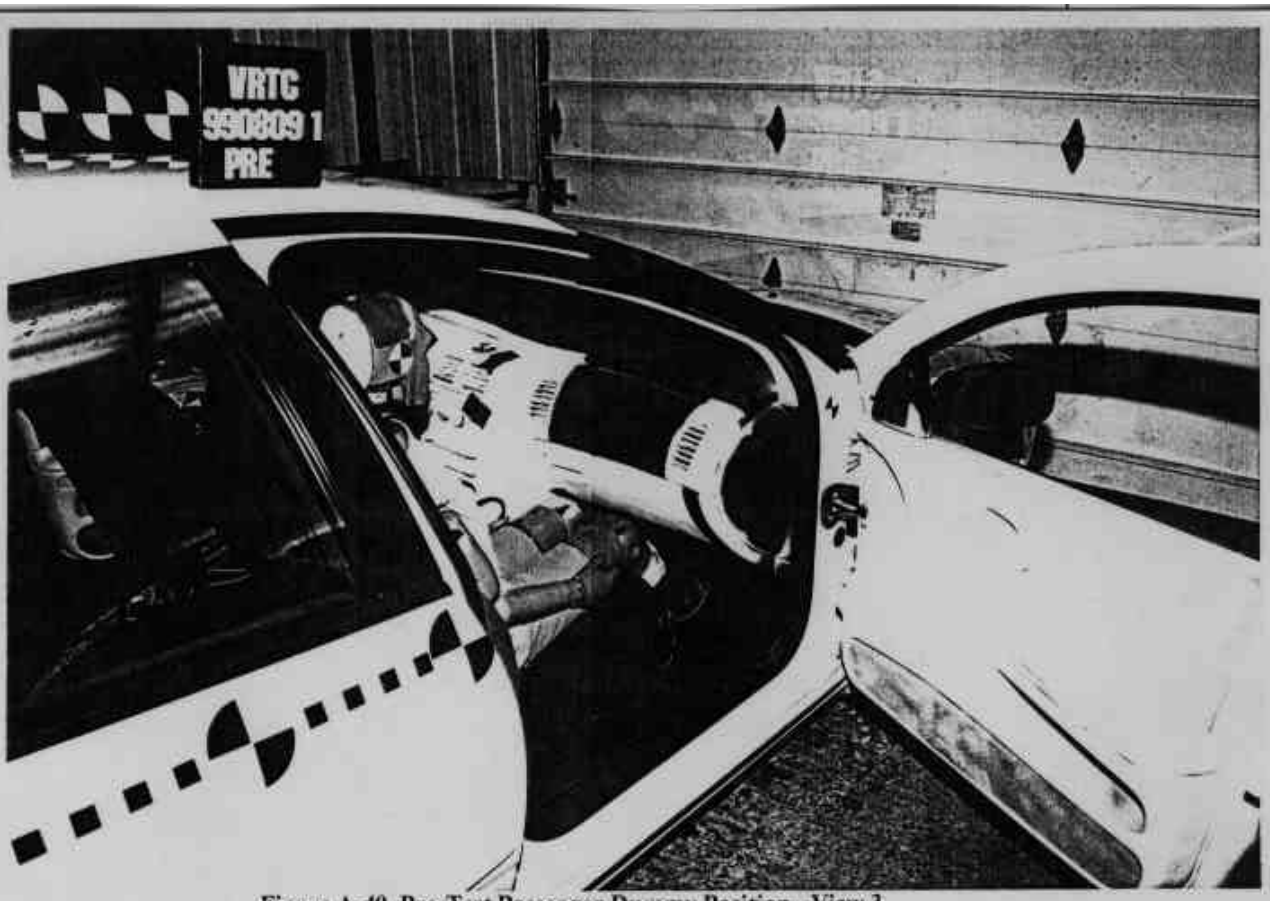

Figure A-40 Pre-Test Passenger Dummy Position - View 3

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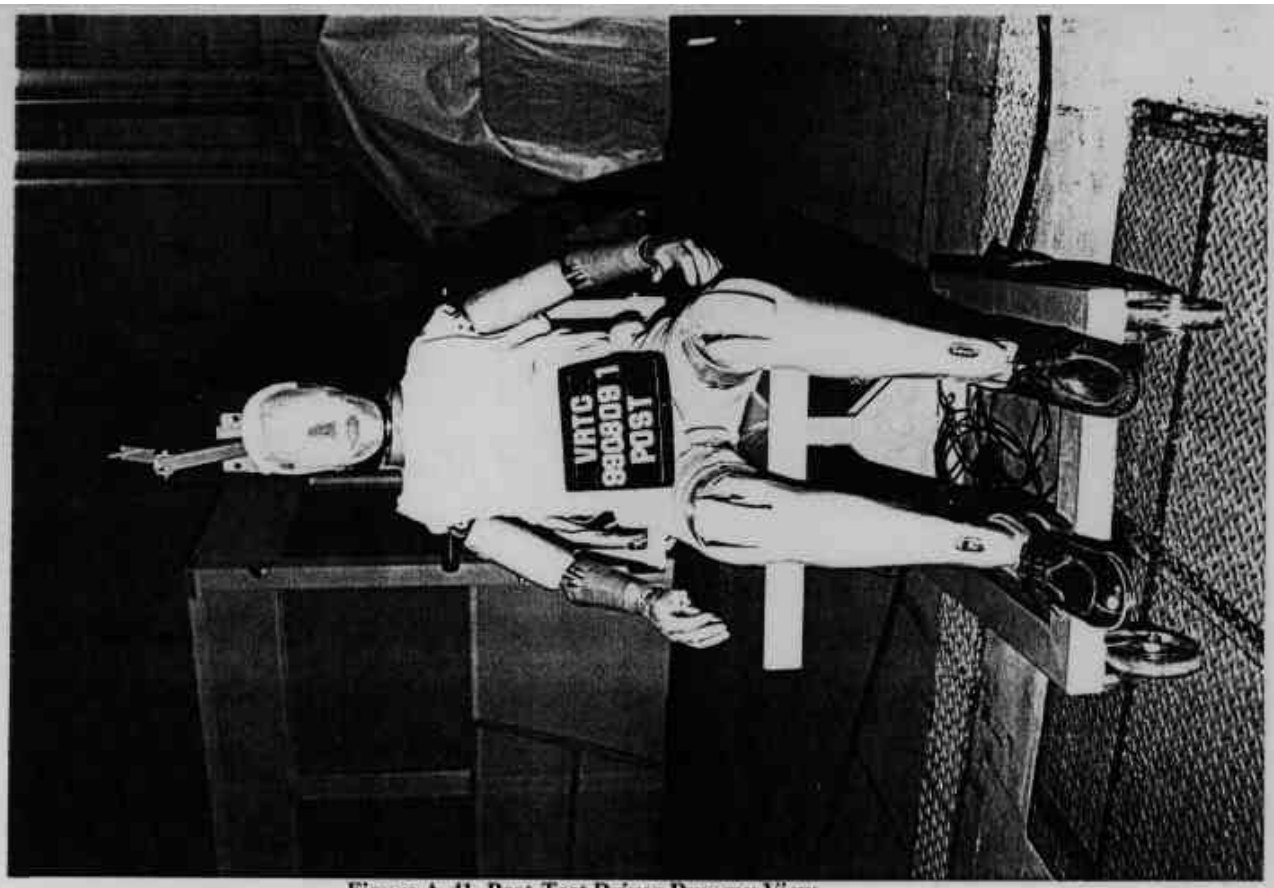


Figure A-41 Post-Test Driver Dummy View

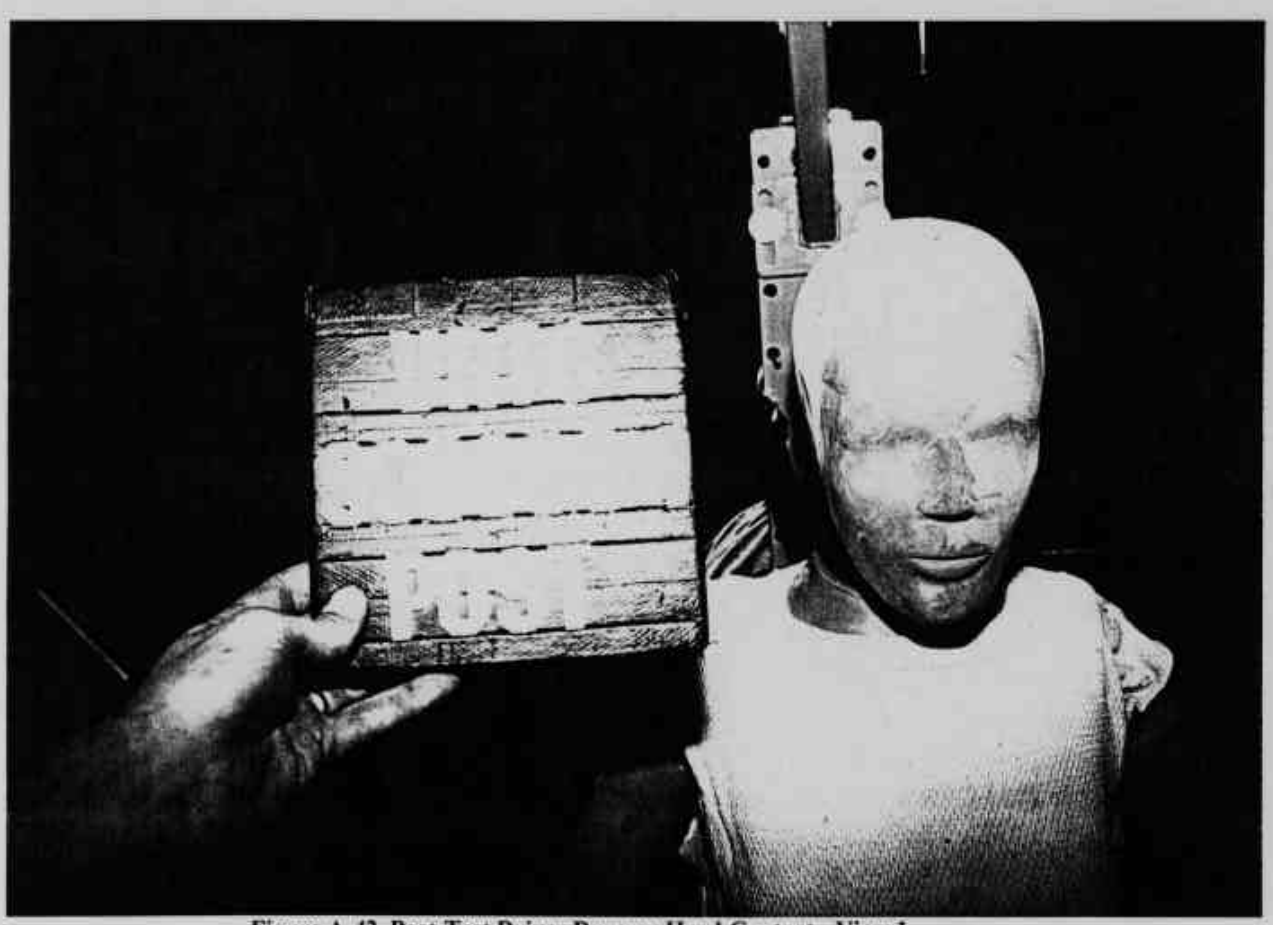


Figure A-42 Post-Test Driver Dummy Head Contact - View 1

Figure A-43 Post-Test Driver Dummy Head Contact - View 2

Figure A-44 Post-Test Driver Dummy Knee Contact - View 1

Figure A-45 Post-Test Driver Dummy Knee Contact - View 2

Figure A-46 Post-Test Driver Footwell Deformation View

Figure A-47 Post-Test Passenger Dummy View

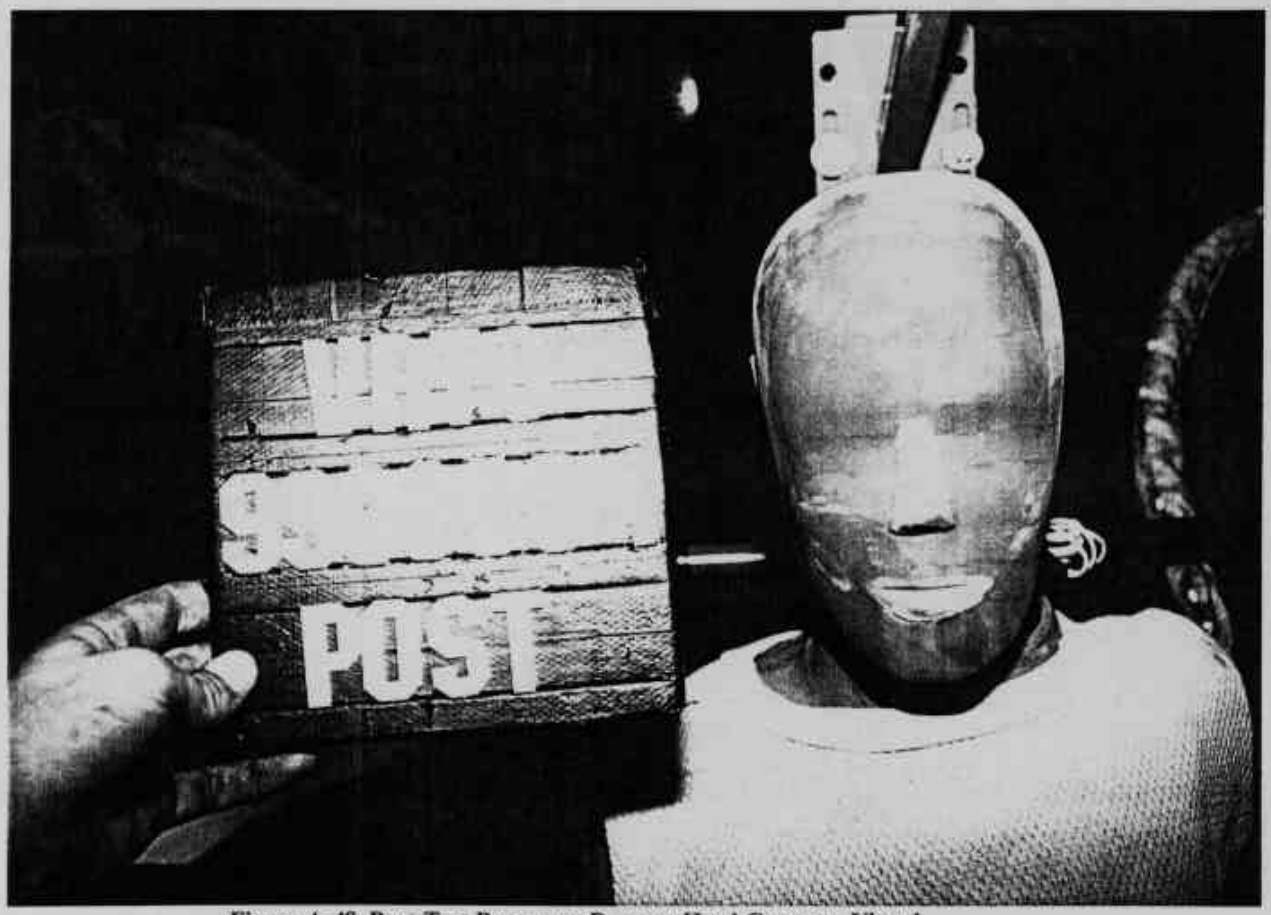


Figure A-48 Post-Test Passenger Dummy Head Contact - View 1

Figure A-49 Post-Test Passenger Dummy Head Contact - View 2

Figure A-50 Post-Test Passenger Dummy Head Contact - View 3

Figure A-51 Post-Test Passenger Dummy Knee Contact - View 1

Figure A-52 Post-Test Passenger Dummy Knee Contact - View 2

Figure A-53 Post-Test Passenger Footwell Deformation View

Intentionally Left Blank

Figure A-54 Pre-Test Fuel Cap View

Figure A-55 Post-Test Fuel Cap View

Figure A-56 Pre-Test Ballast View

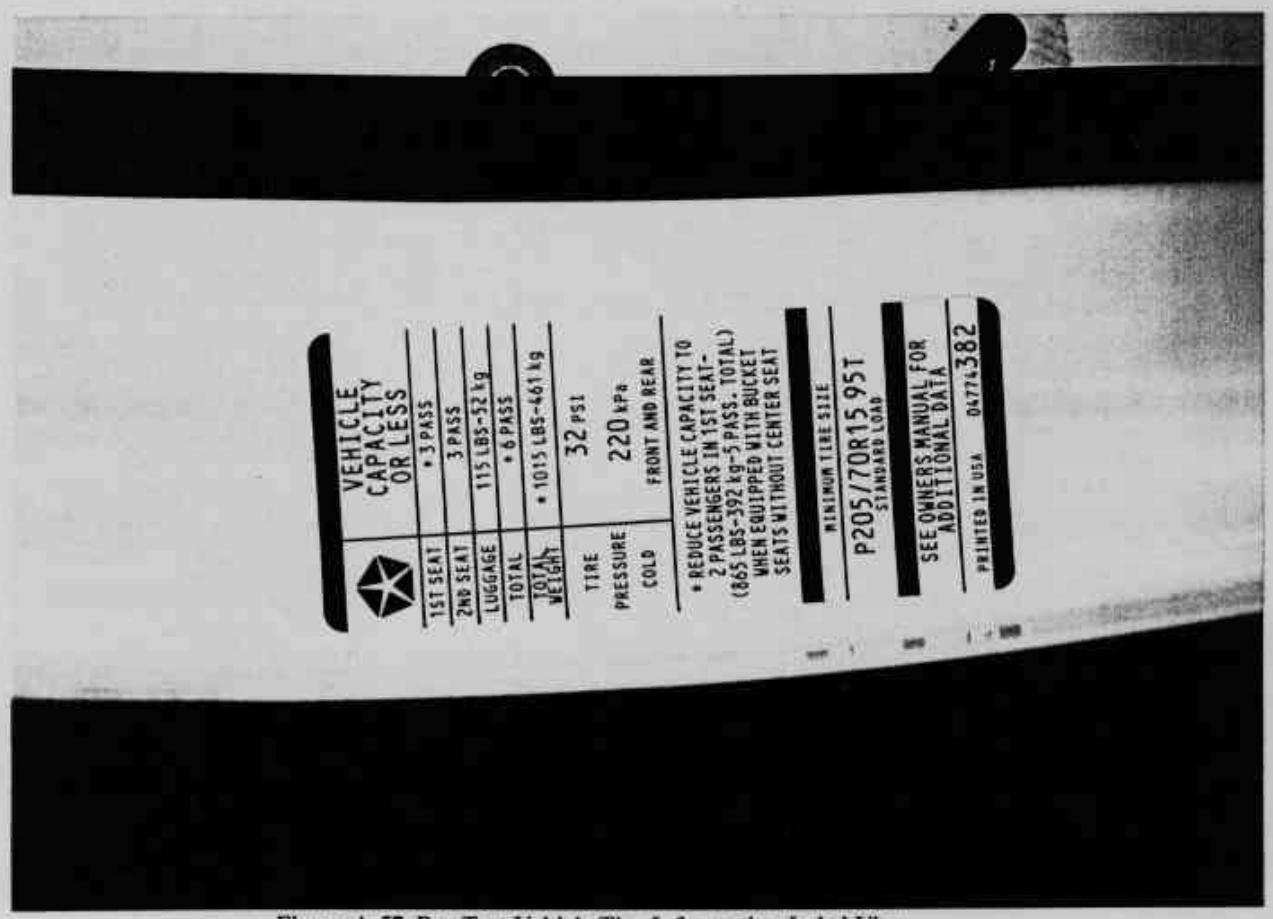


Figure A-57 Pre-Test Vehicle Tire Information Label View

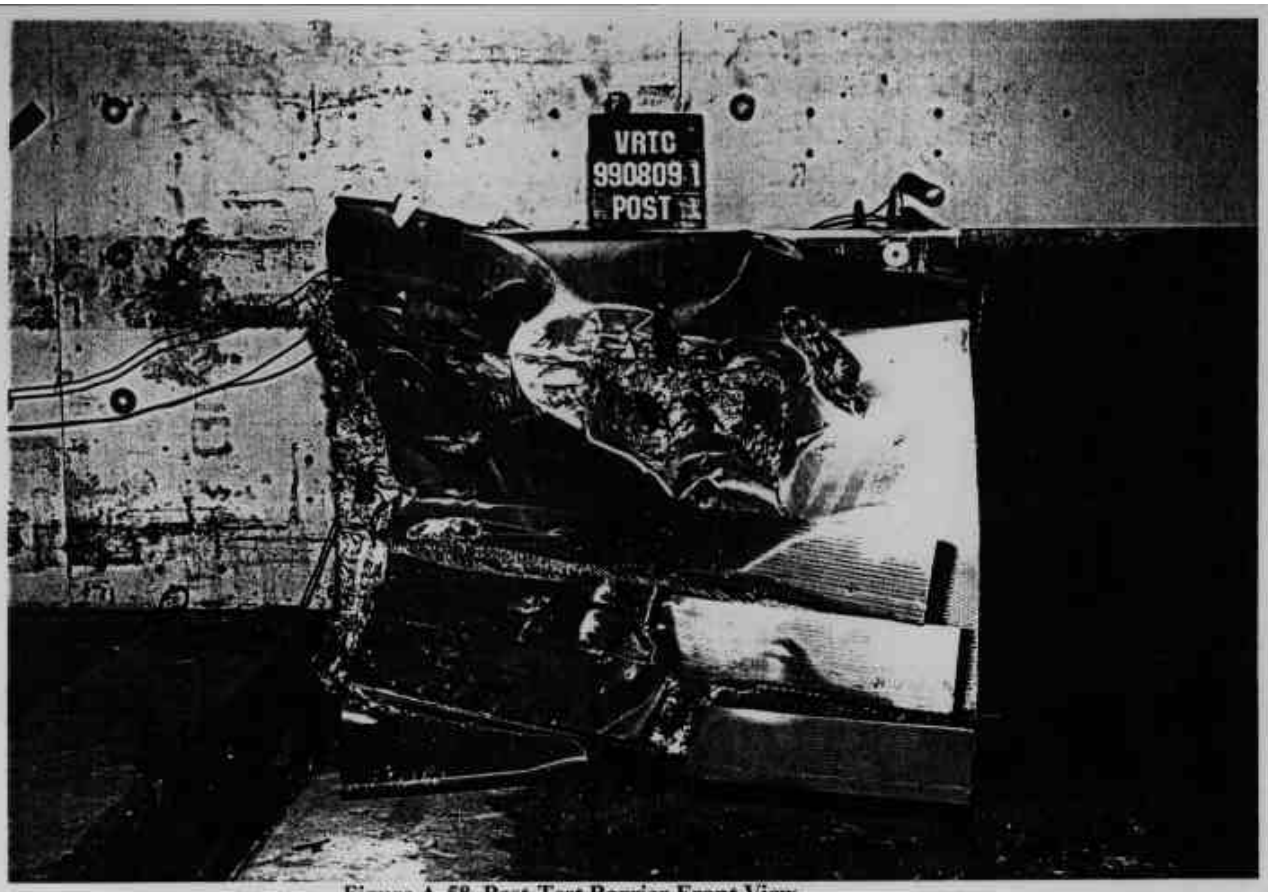


Figure A-58 Post-Test Barrier Front View

Figure A-59 Post-Test Barrier Left Side View

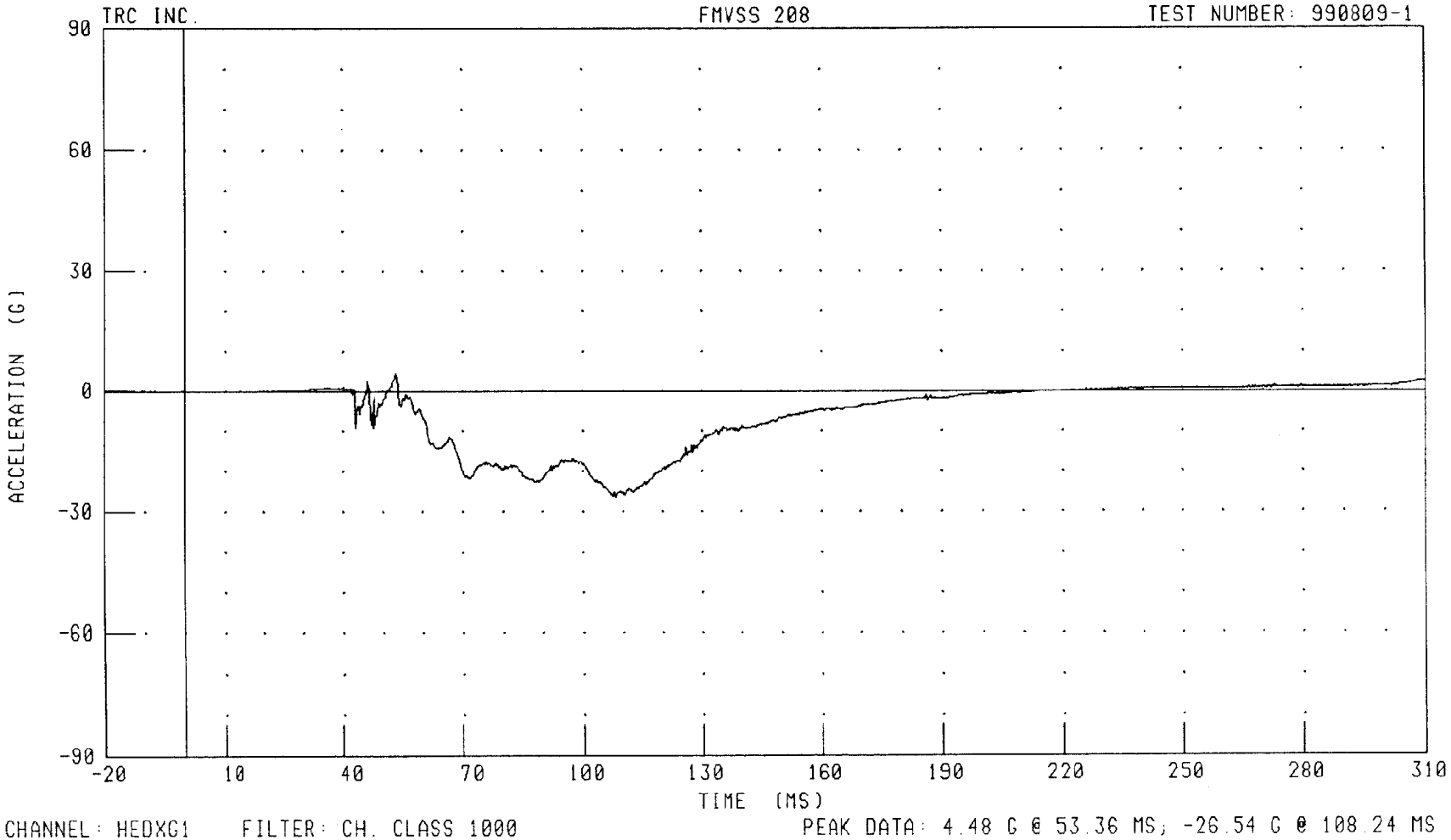
Figure A-60 Post-Test Barrier Right Side View

Appendix B

Data Plots

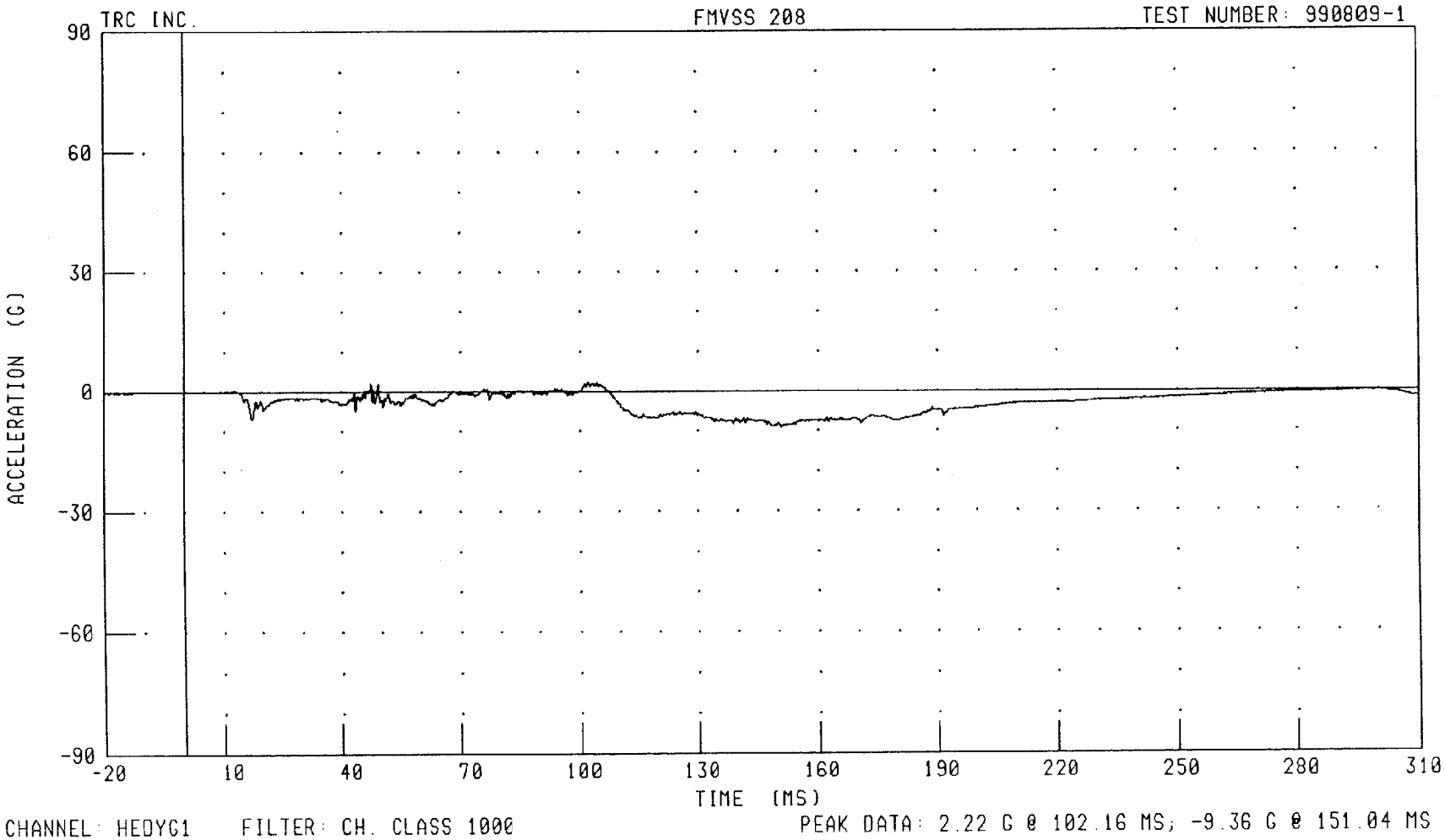
1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH

DRIVER HEAD X-AXIS ACCELERATION



CHANNEL: HEDXG1 FILTER: CH. CLASS 1000 PEAK DATA: 4.48 G @ 53.36 MS; -26.54 G @ 108.24 MS

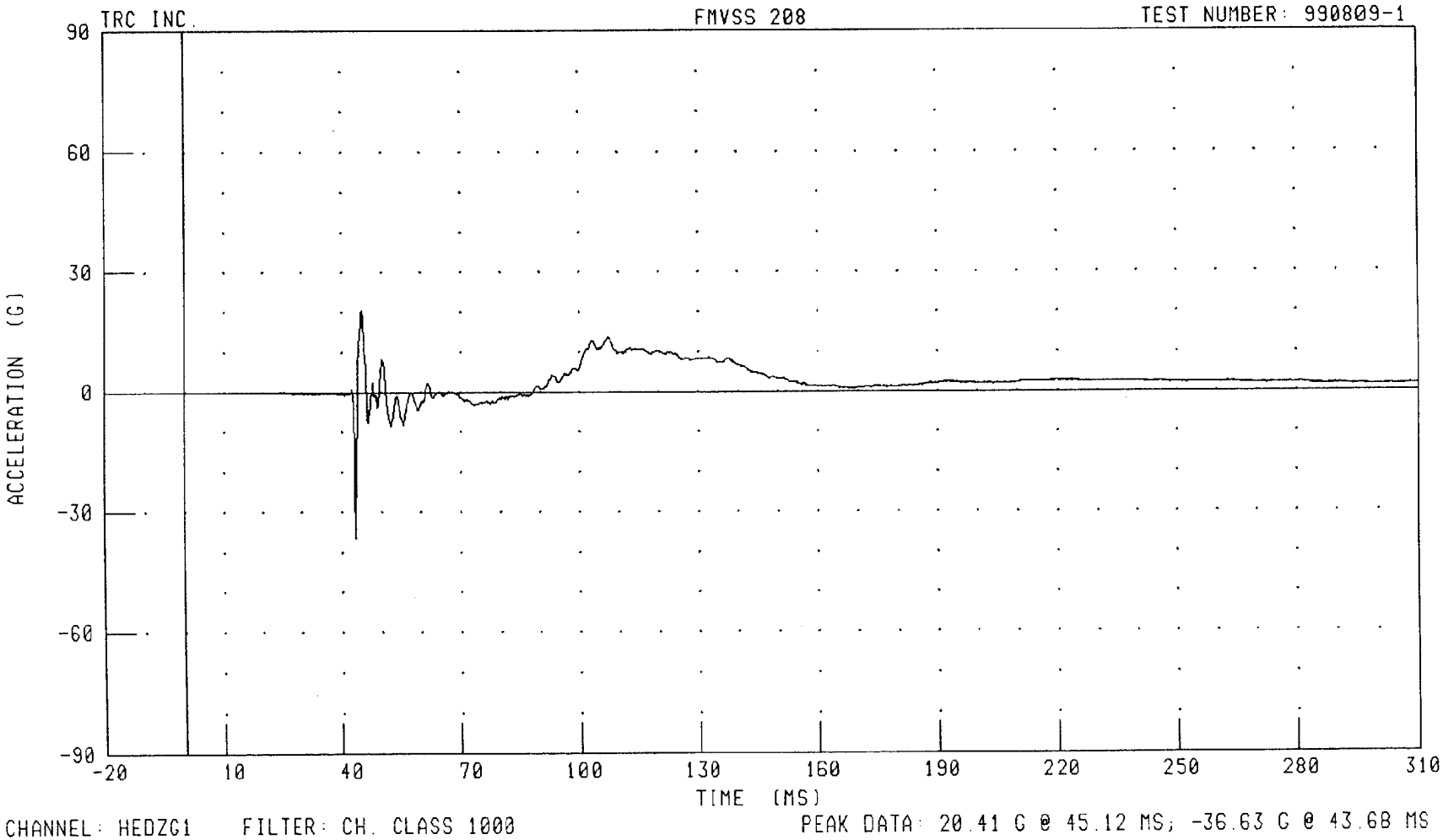
1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
DRIVER HEAD Y-AXIS ACCELERATION



CHANNEL: HEDYG1 FILTER: CH. CLASS 1000 PEAK DATA: 2.22 G @ 102.16 MS; -9.36 G @ 151.04 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH

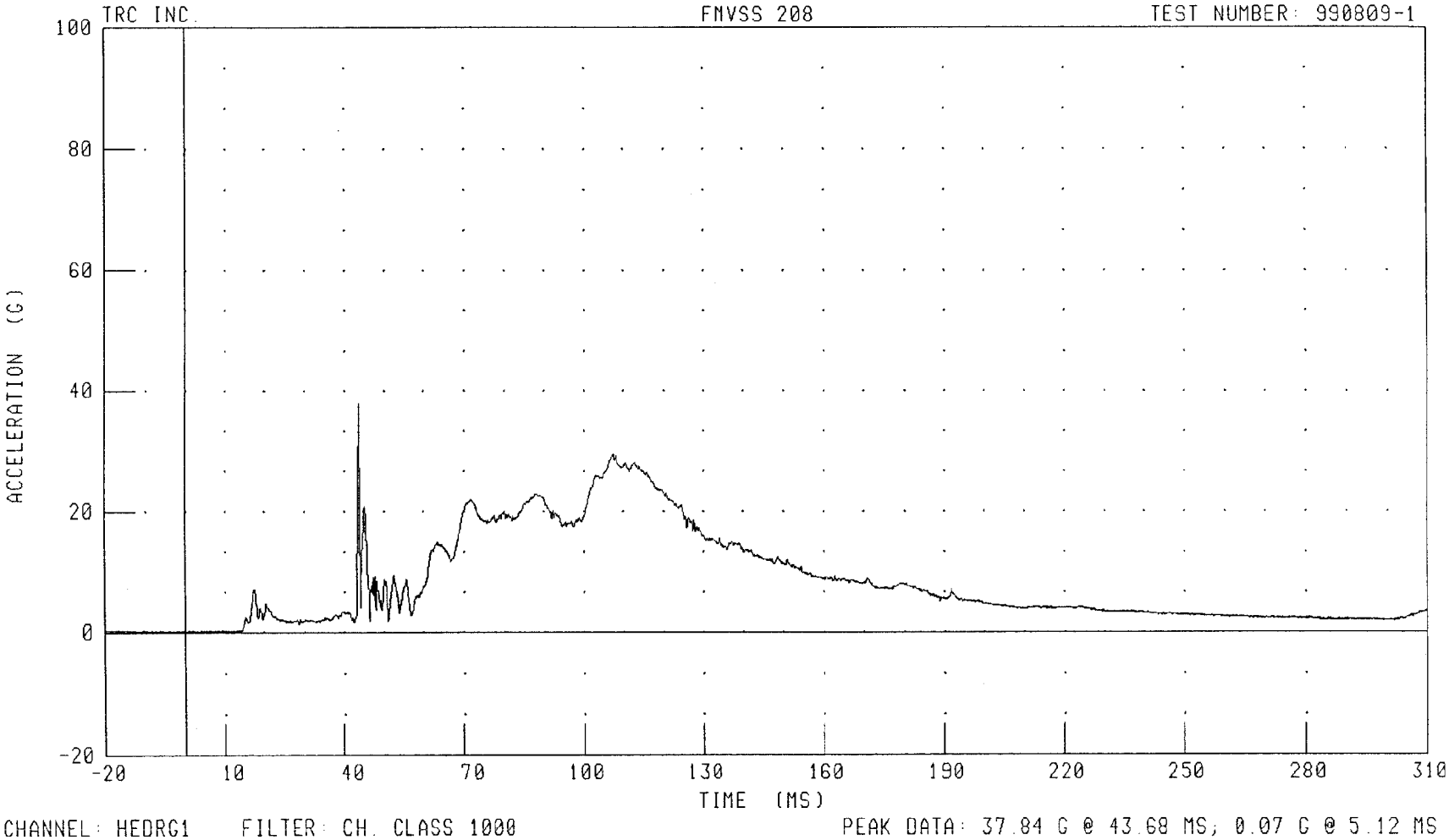
DRIVER HEAD Z-AXIS ACCELERATION



CHANNEL: HEDZG1 FILTER: CH. CLASS 1000 PEAK DATA: 20.41 G @ 45.12 MS; -36.63 G @ 43.68 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH

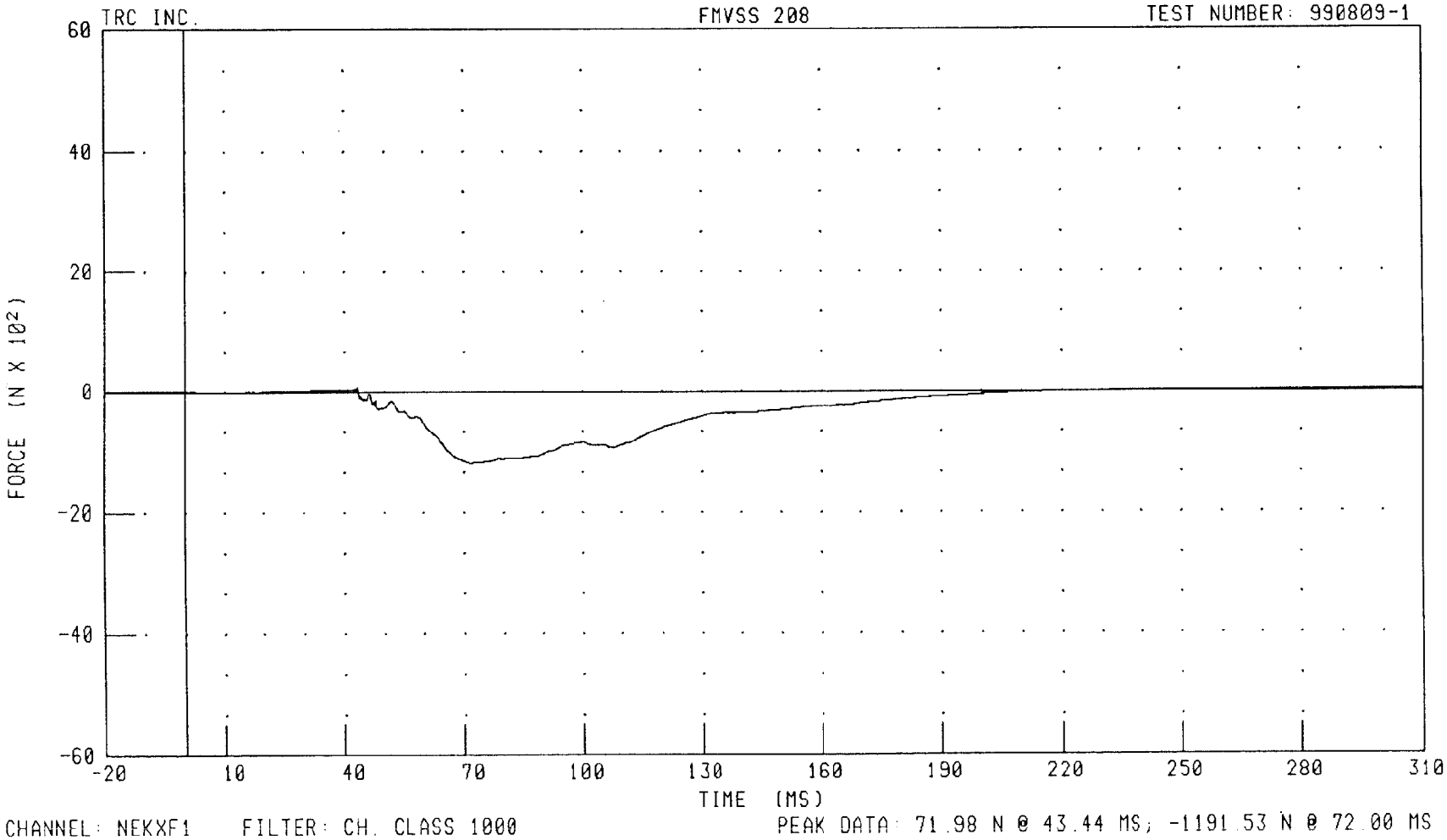
DRIVER HEAD RESULTANT ACCELERATION



CHANNEL: HEDRG1 FILTER: CH. CLASS 1000 PEAK DATA: 37.84 G @ 43.68 MS; 0.07 G @ 5.12 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH

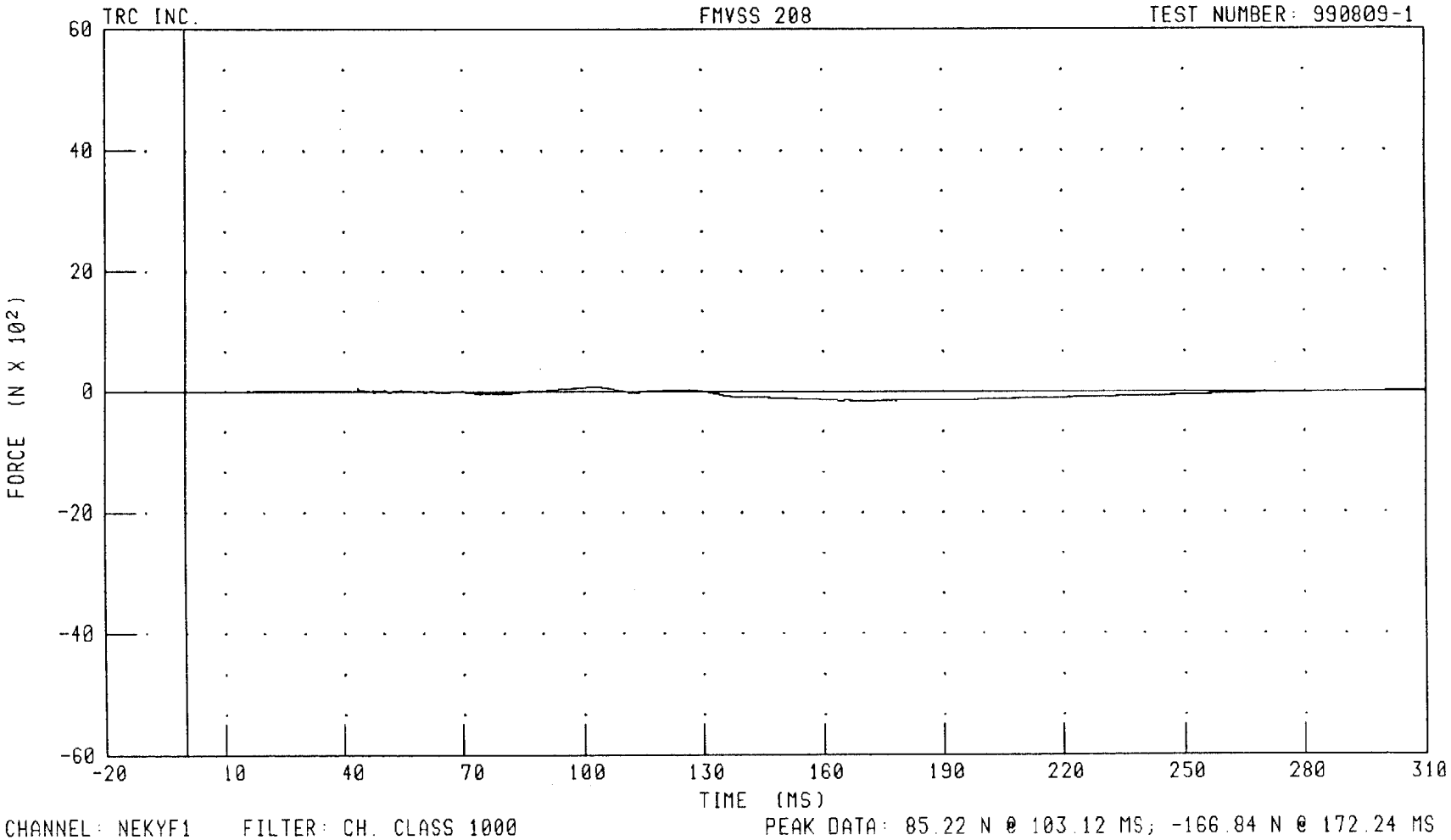
DRIVER NECK X-AXIS SHEAR FORCE



CHANNEL: NEKXF1 FILTER: CH. CLASS 1000

PEAK DATA: 71.98 N @ 43.44 MS; -1191.53 N @ 72.00 MS

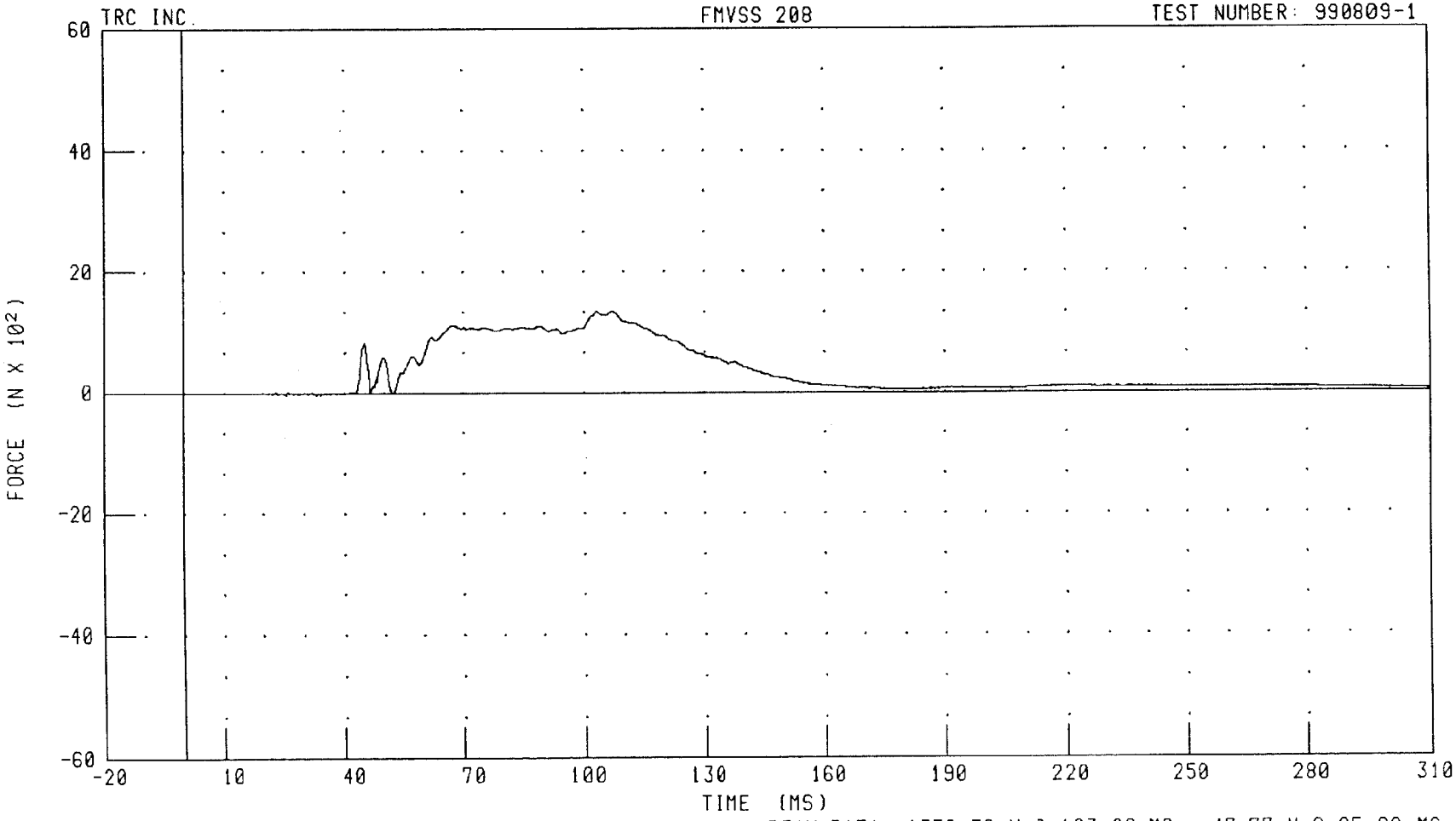
1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
DRIVER NECK Y-AXIS SHEAR FORCE



CHANNEL: NEKYF1 FILTER: CH. CLASS 1000 PEAK DATA: 85.22 N @ 103.12 MS; -166.84 N @ 172.24 MS

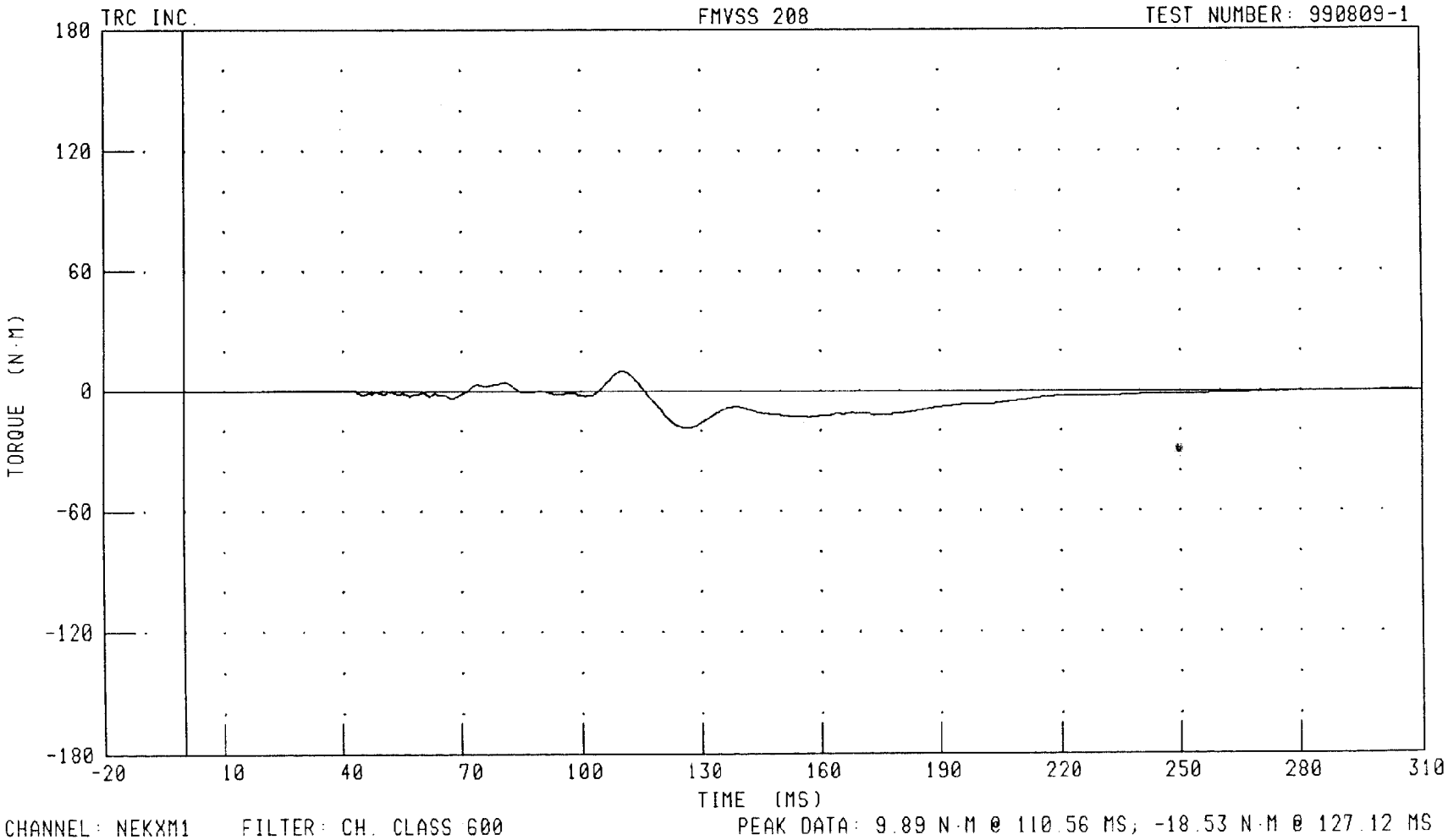
1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH

DRIVER NECK Z-AXIS AXIAL FORCE



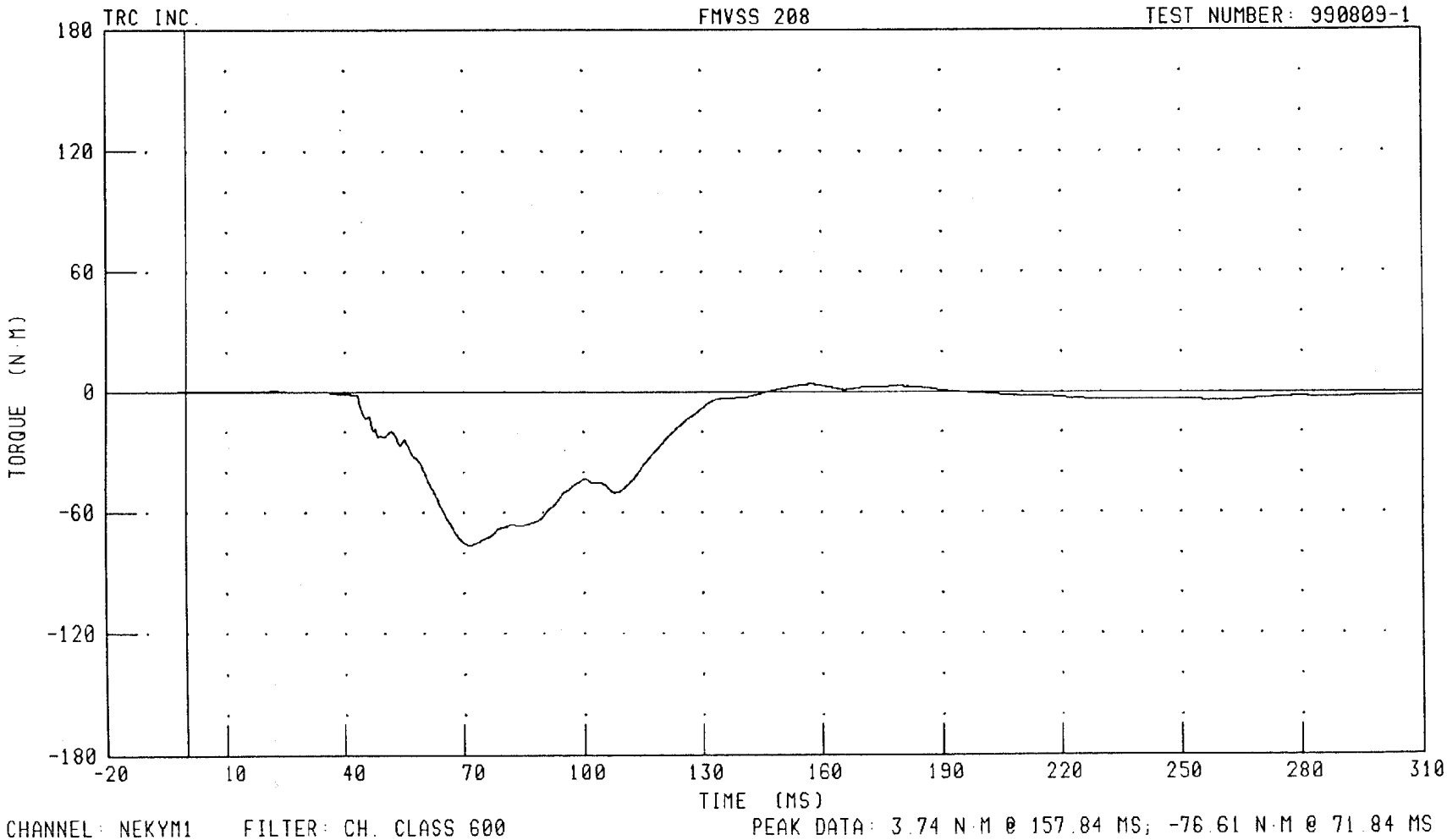
CHANNEL: NEKZF1 FILTER: CH. CLASS 1000 PEAK DATA: 1339.72 N @ 103.28 MS; -47.77 N @ 25.68 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
DRIVER NECK MOMENT ABOUT X AXIS



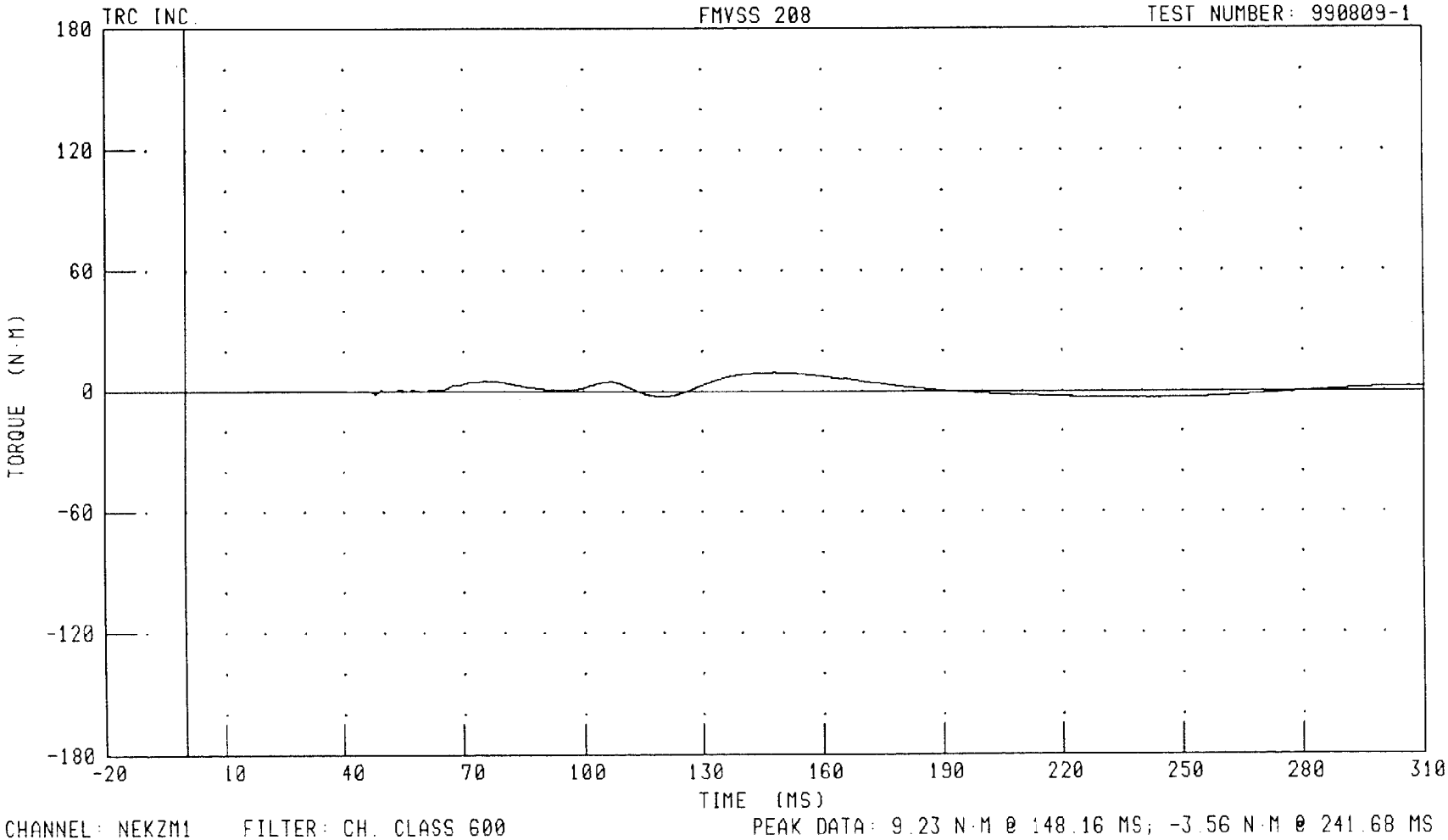
CHANNEL: NEKXM1 FILTER: CH. CLASS 600 PEAK DATA: 9.89 N-M @ 110.56 MS; -18.53 N-M @ 127.12 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
DRIVER NECK MOMENT ABOUT Y AXIS



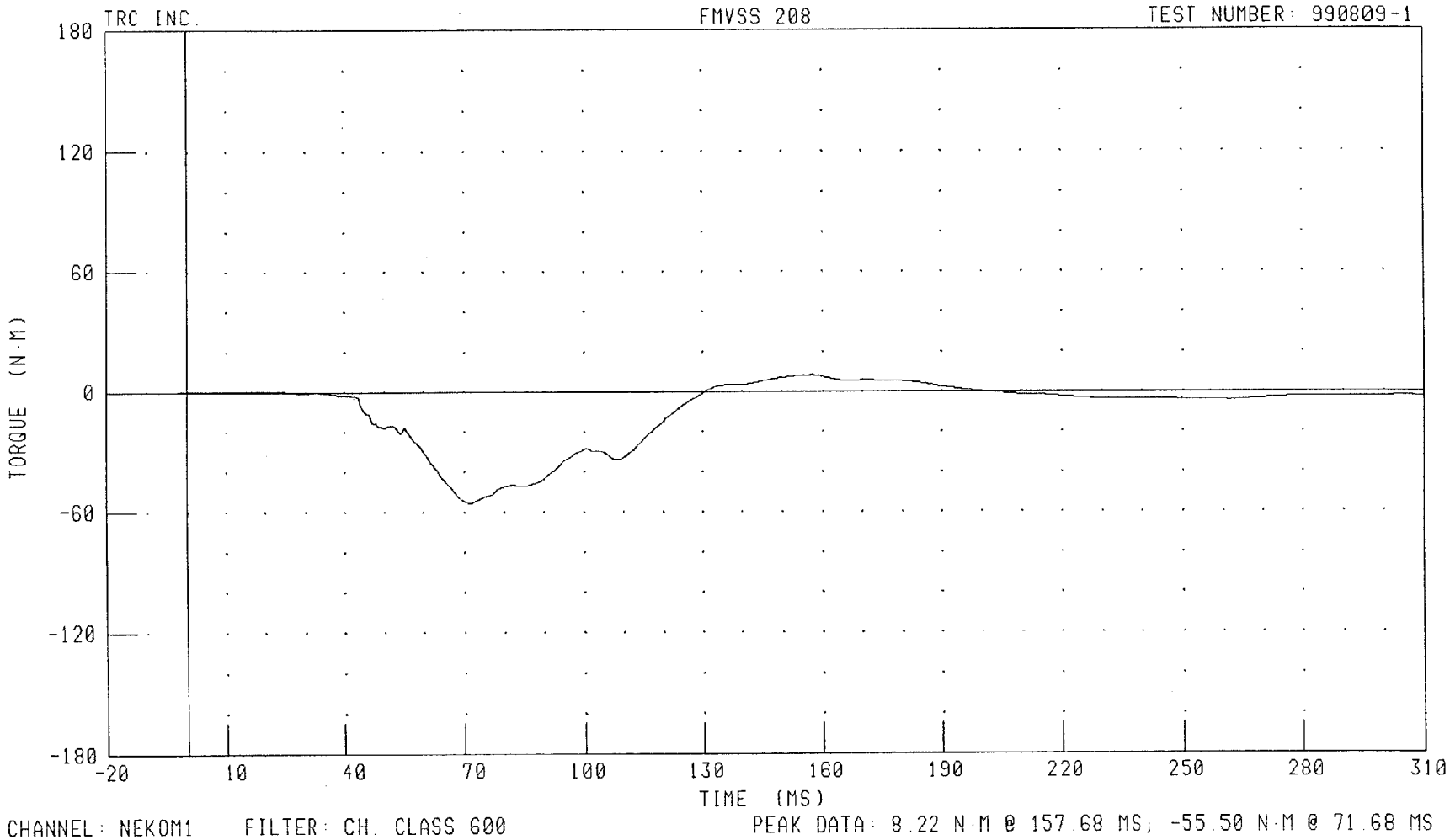
CHANNEL: NEKYM1 FILTER: CH. CLASS 600 PEAK DATA: 3.74 N-M @ 157.84 MS; -76.61 N-M @ 71.84 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
DRIVER NECK MOMENT ABOUT Z AXIS



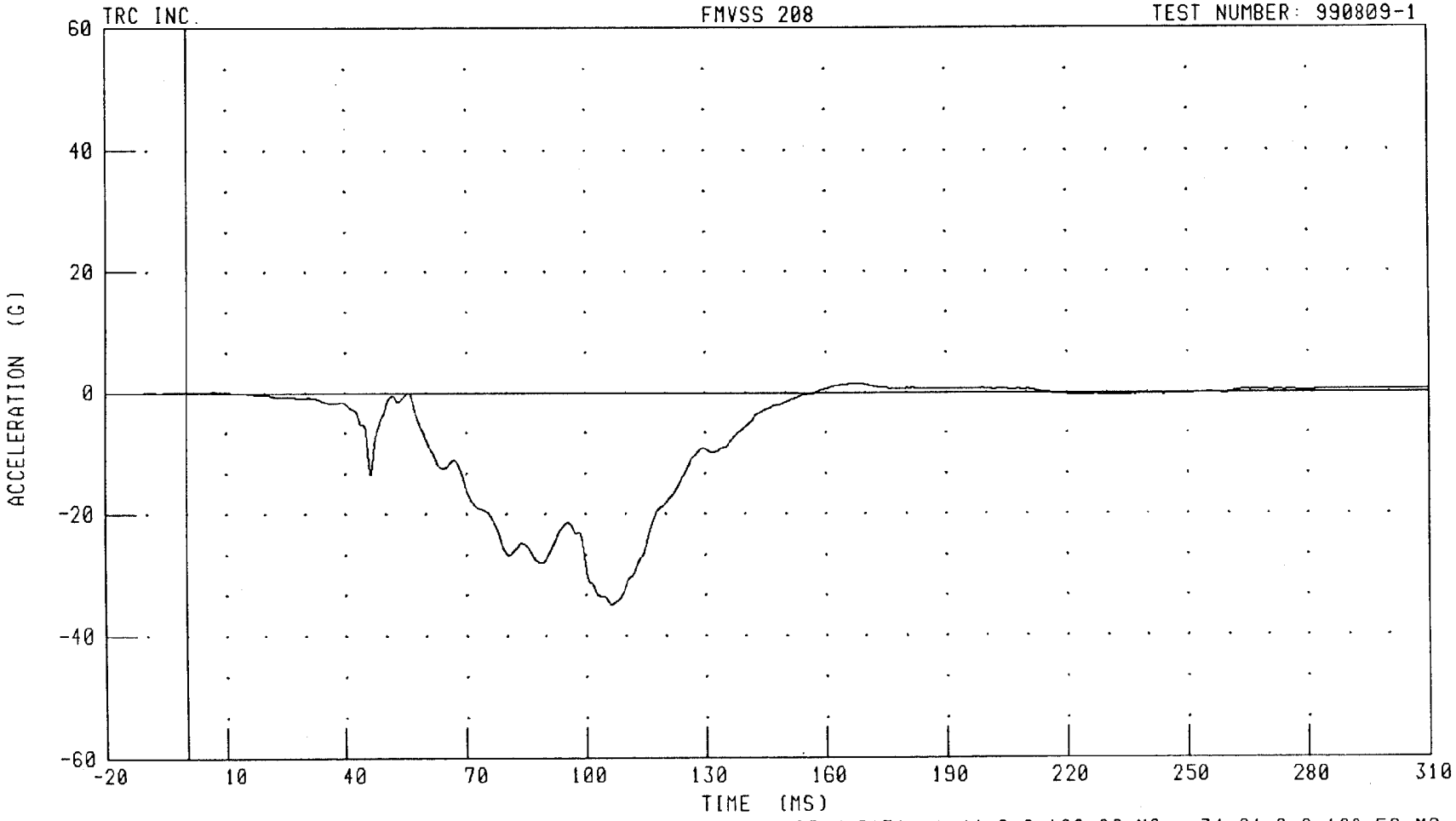
CHANNEL: NEKZM1 FILTER: CH. CLASS 600 PEAK DATA: 9.23 N-M @ 148.16 MS; -3.56 N-M @ 241.68 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
DRIVER NECK OCCIPITAL CONDYLE MOMENT ABOUT Y AXIS



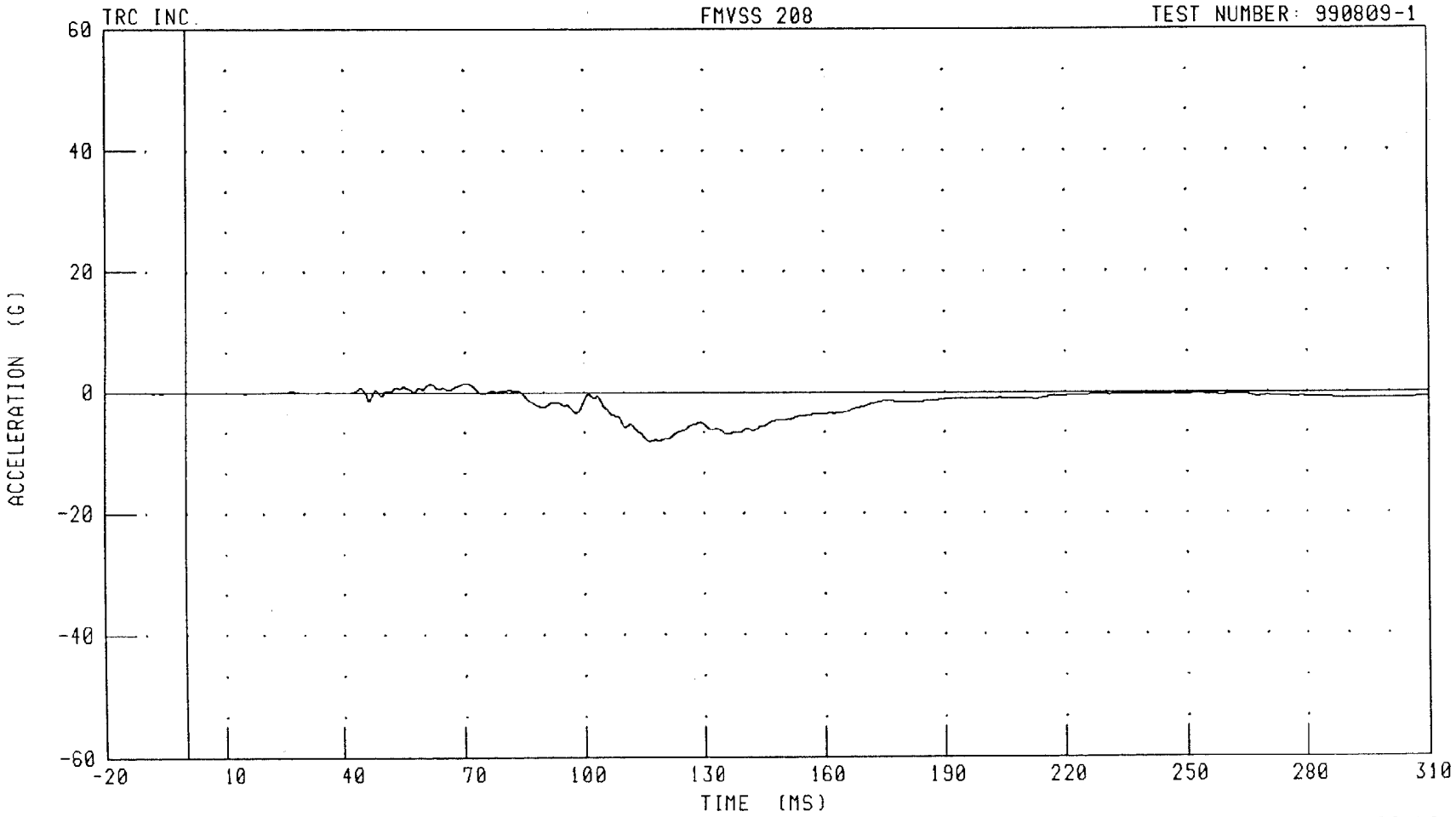
CHANNEL: NEKOM1 FILTER: CH. CLASS 600 PEAK DATA: 8.22 N-M @ 157.68 MS; -55.50 N-M @ 71.68 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
DRIVER CHEST X-AXIS ACCELERATION



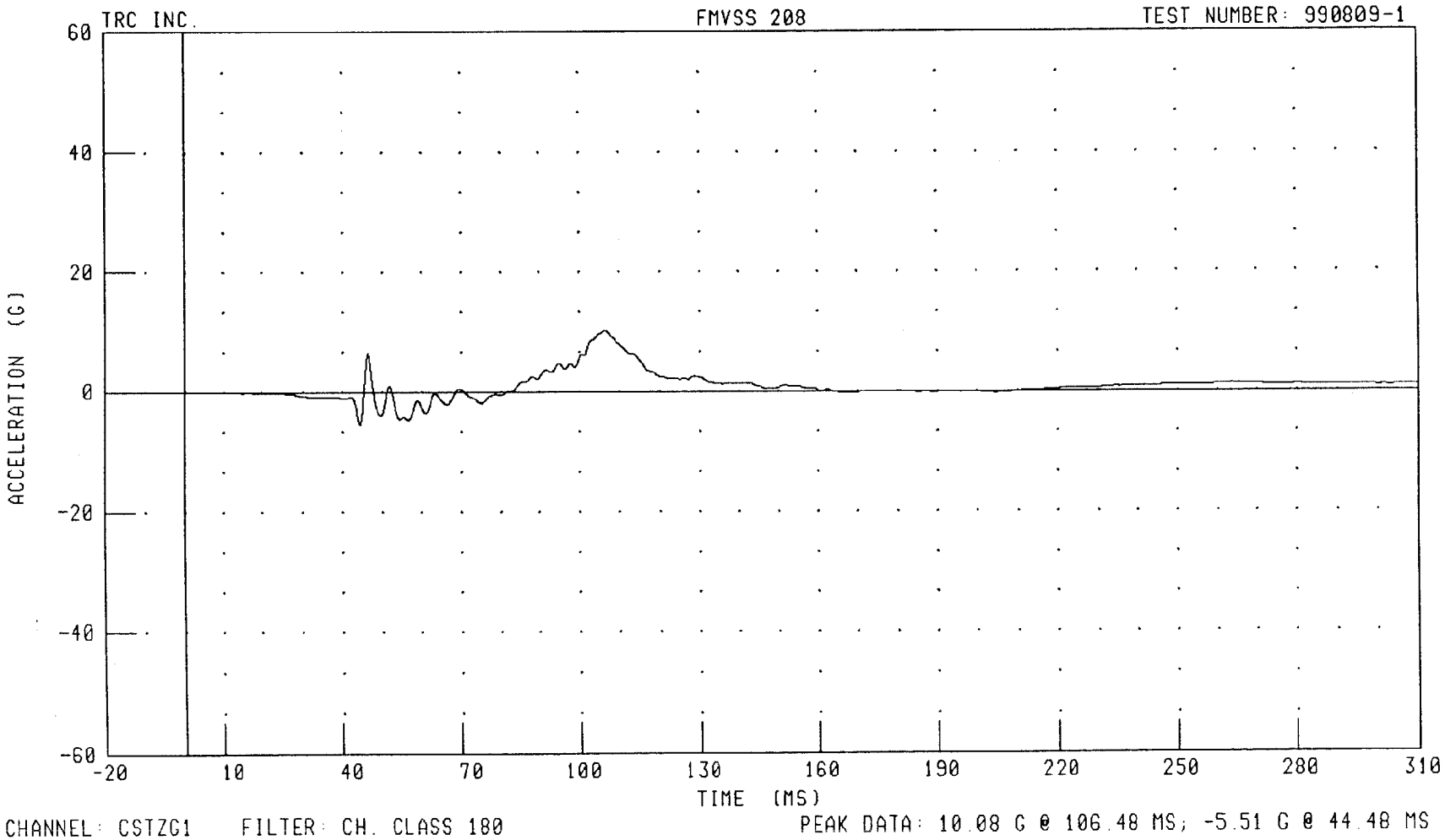
CHANNEL: CSTXG1 FILTER: CH. CLASS 180 PEAK DATA: 1.44 G @ 166.88 MS, -34.94 G @ 106.56 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
DRIVER CHEST Y-AXIS ACCELERATION



CHANNEL: CSTYG1 FILTER: CH. CLASS 180 PEAK DATA: 1.49 G @ 70.24 MS; -8.13 G @ 116.72 MS

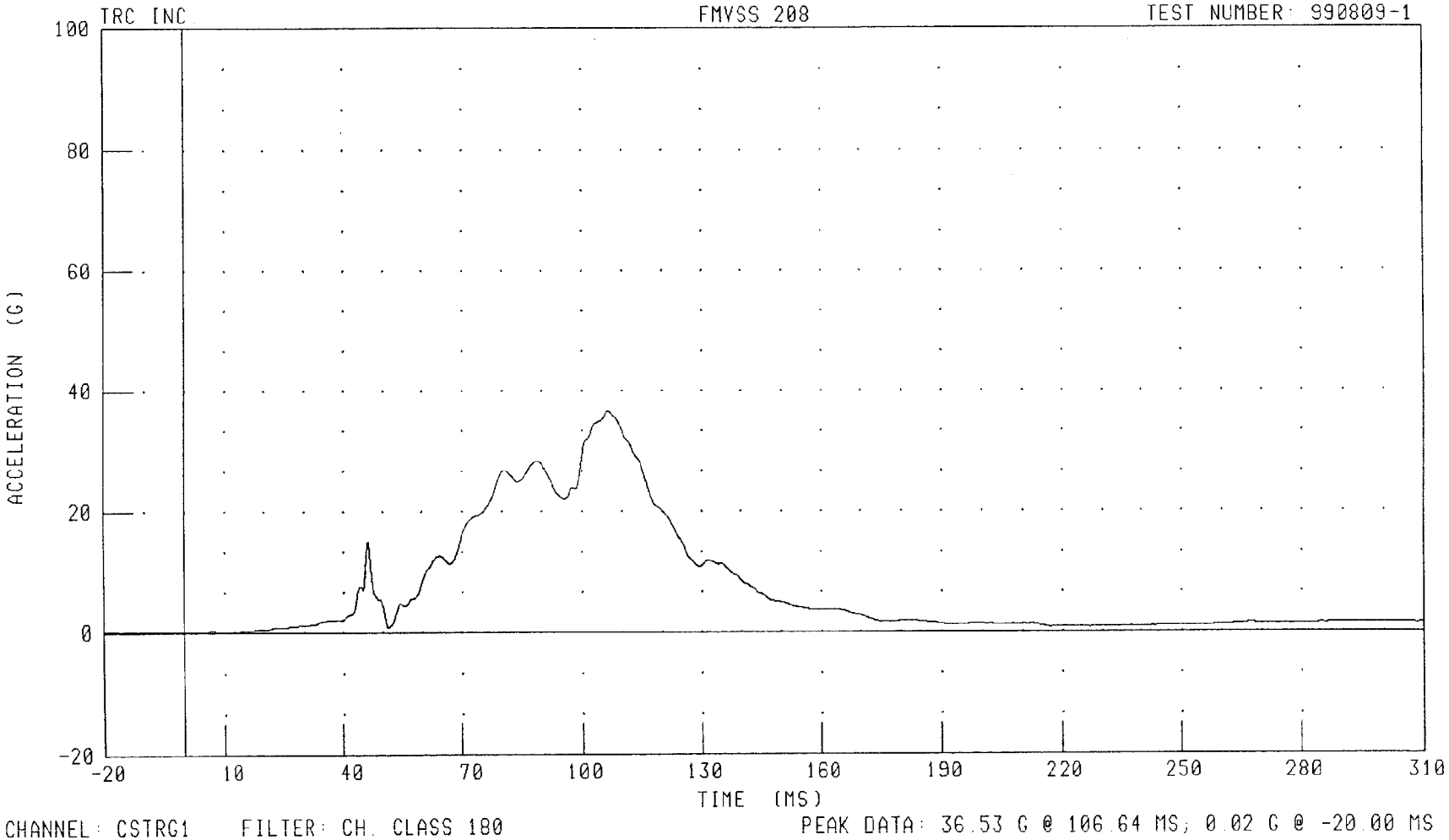
1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
DRIVER CHEST Z-AXIS ACCELERATION



CHANNEL: CSTZG1 FILTER: CH. CLASS 180 PEAK DATA: 10.08 G @ 106.48 MS; -5.51 G @ 44.48 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH

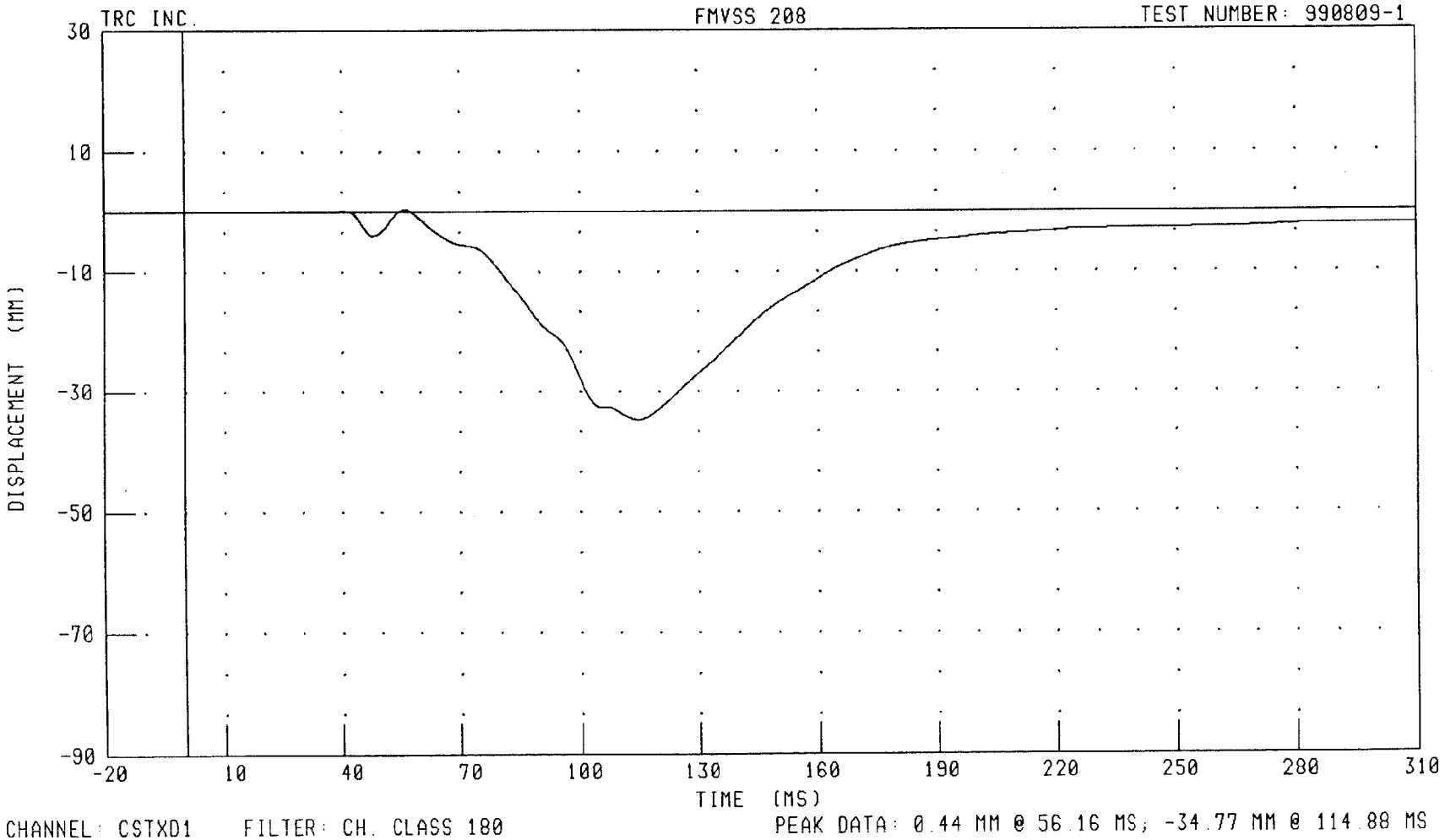
DRIVER CHEST RESULTANT ACCELERATION



CHANNEL: CSTRG1 FILTER: CH. CLASS 180 PEAK DATA: 36.53 G @ 106.64 MS; 0.02 G @ -20.00 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH

DRIVER CHEST DEFLECTION

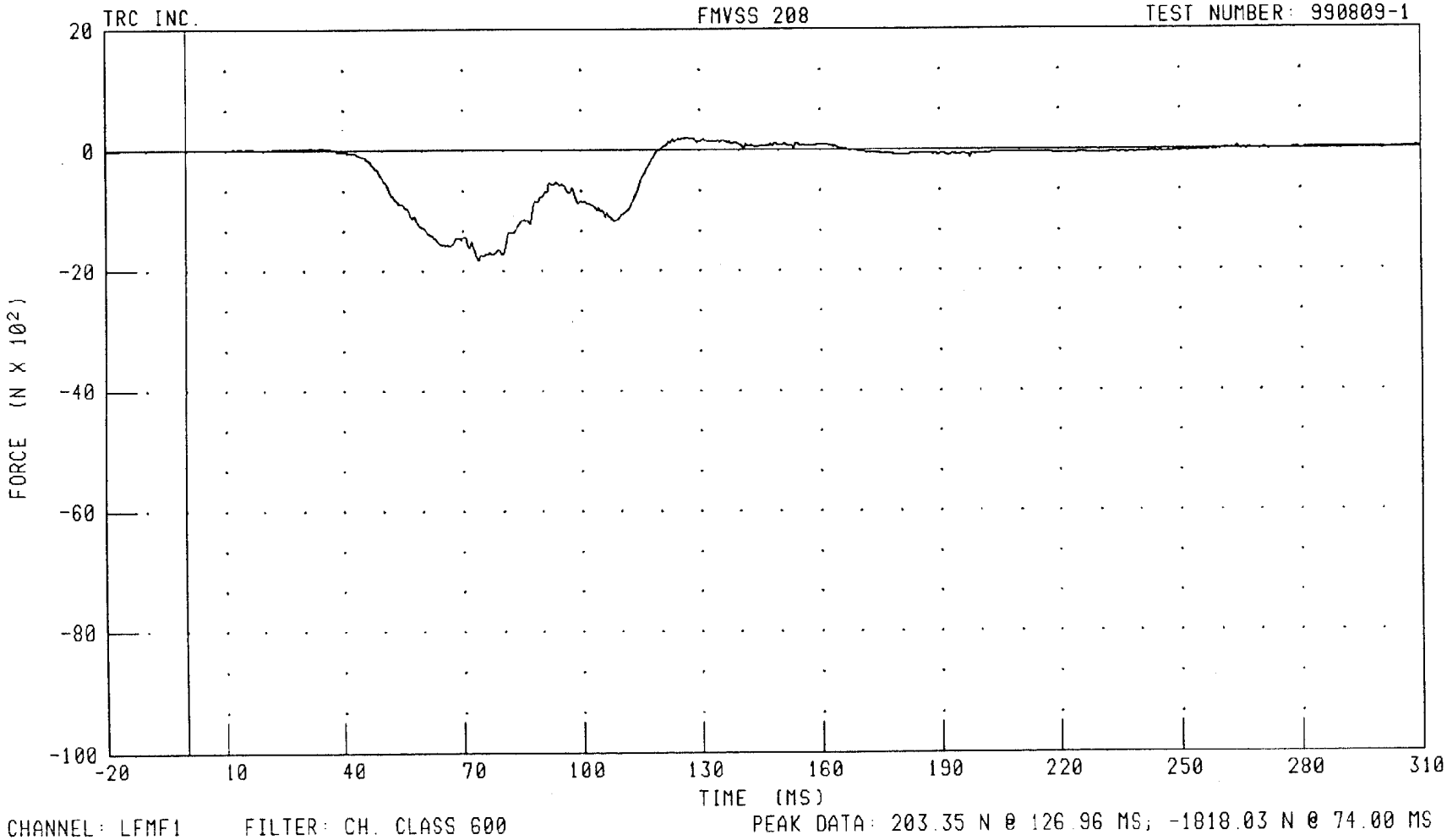


CHANNEL: CSTXD1 FILTER: CH. CLASS 180

PEAK DATA: 0.44 MM @ 56.16 MS; -34.77 MM @ 114.88 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH

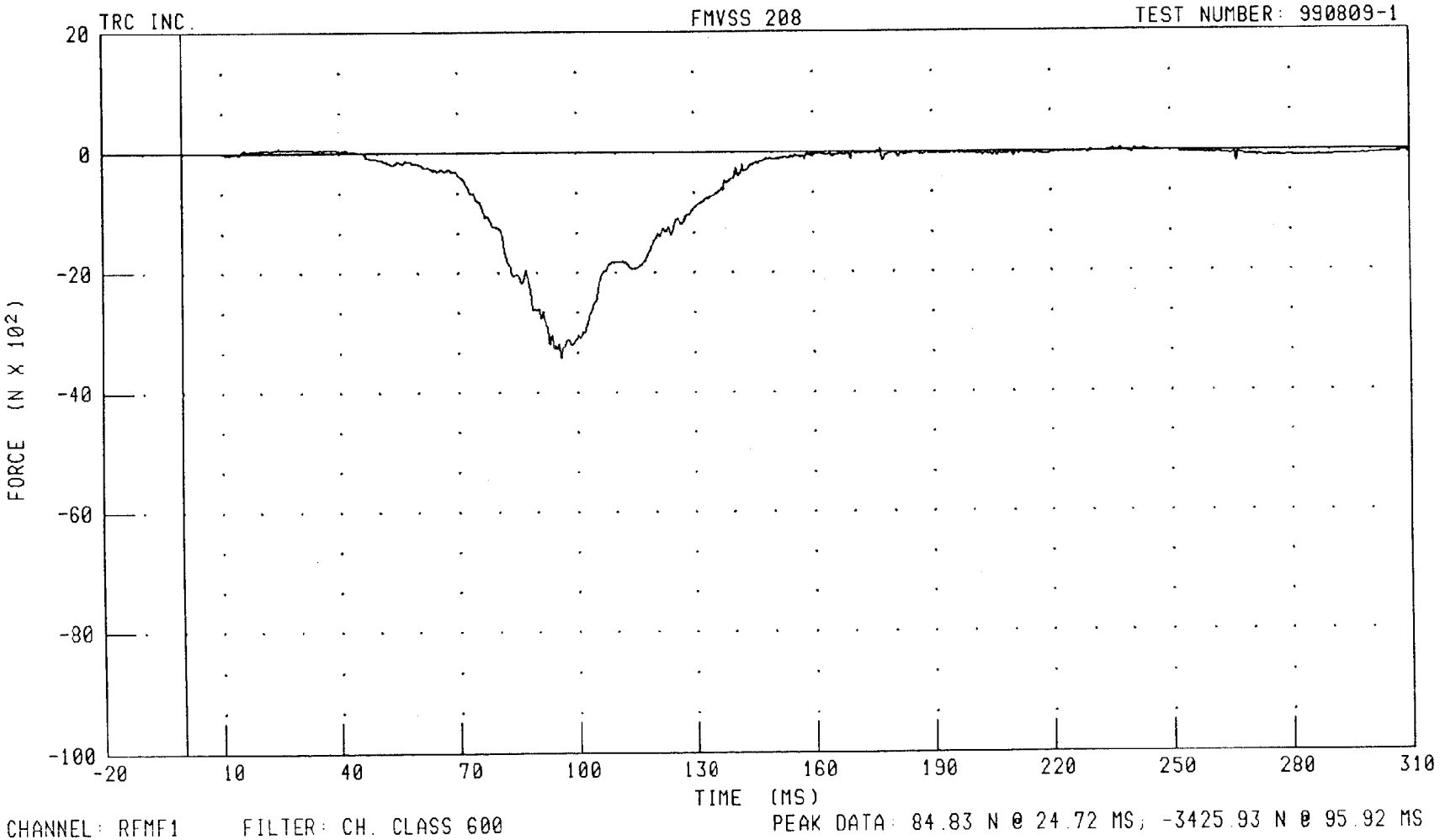
DRIVER LEFT FEMUR FORCE



CHANNEL: LFMF1 FILTER: CH. CLASS 600 PEAK DATA: 203.35 N @ 126.96 MS; -1818.03 N @ 74.00 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH

DRIVER RIGHT FEMUR FORCE

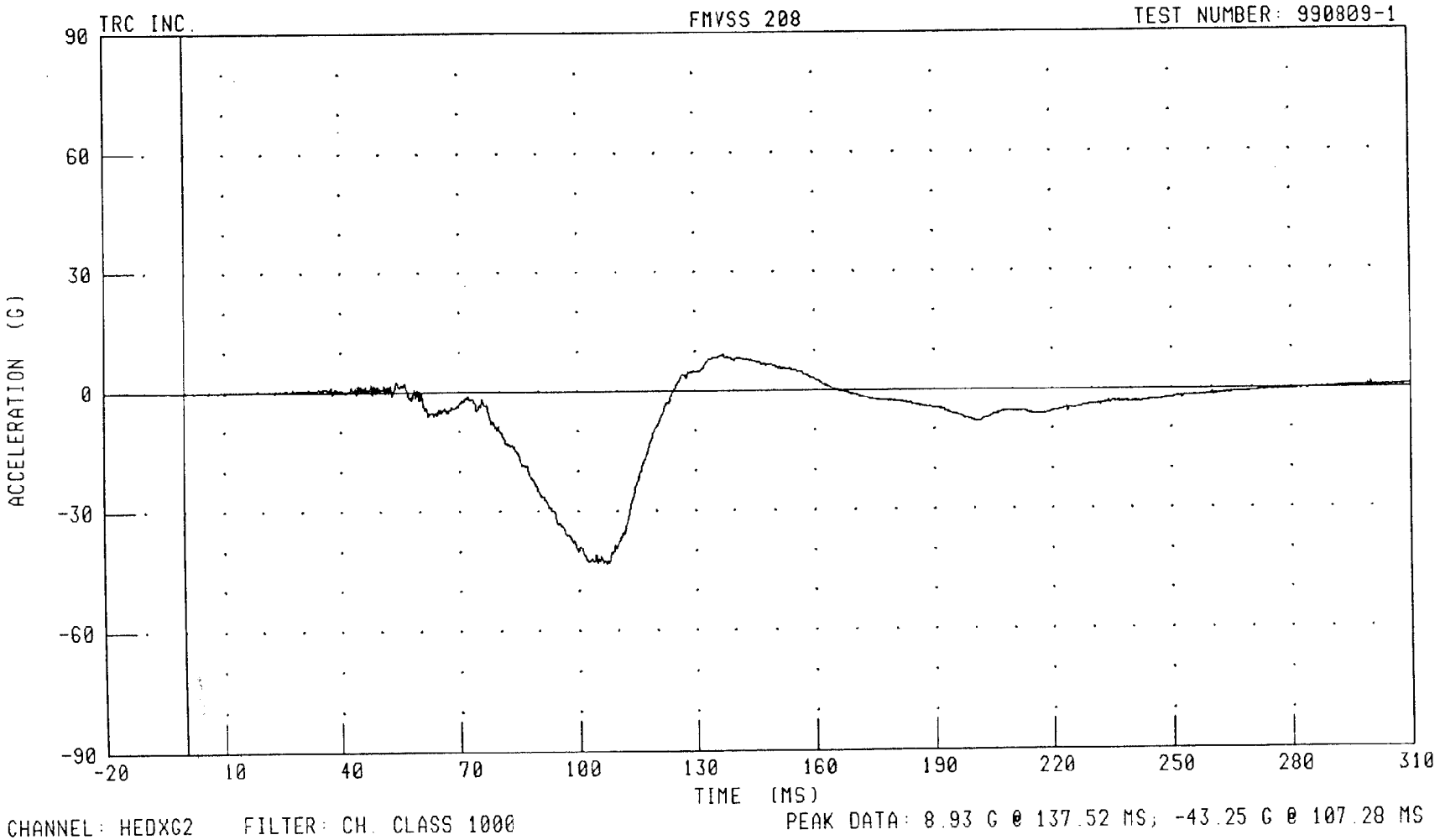


CHANNEL: RFMF1 FILTER: CH. CLASS 600

PEAK DATA: 84.83 N @ 24.72 MS; -3425.93 N @ 95.92 MS

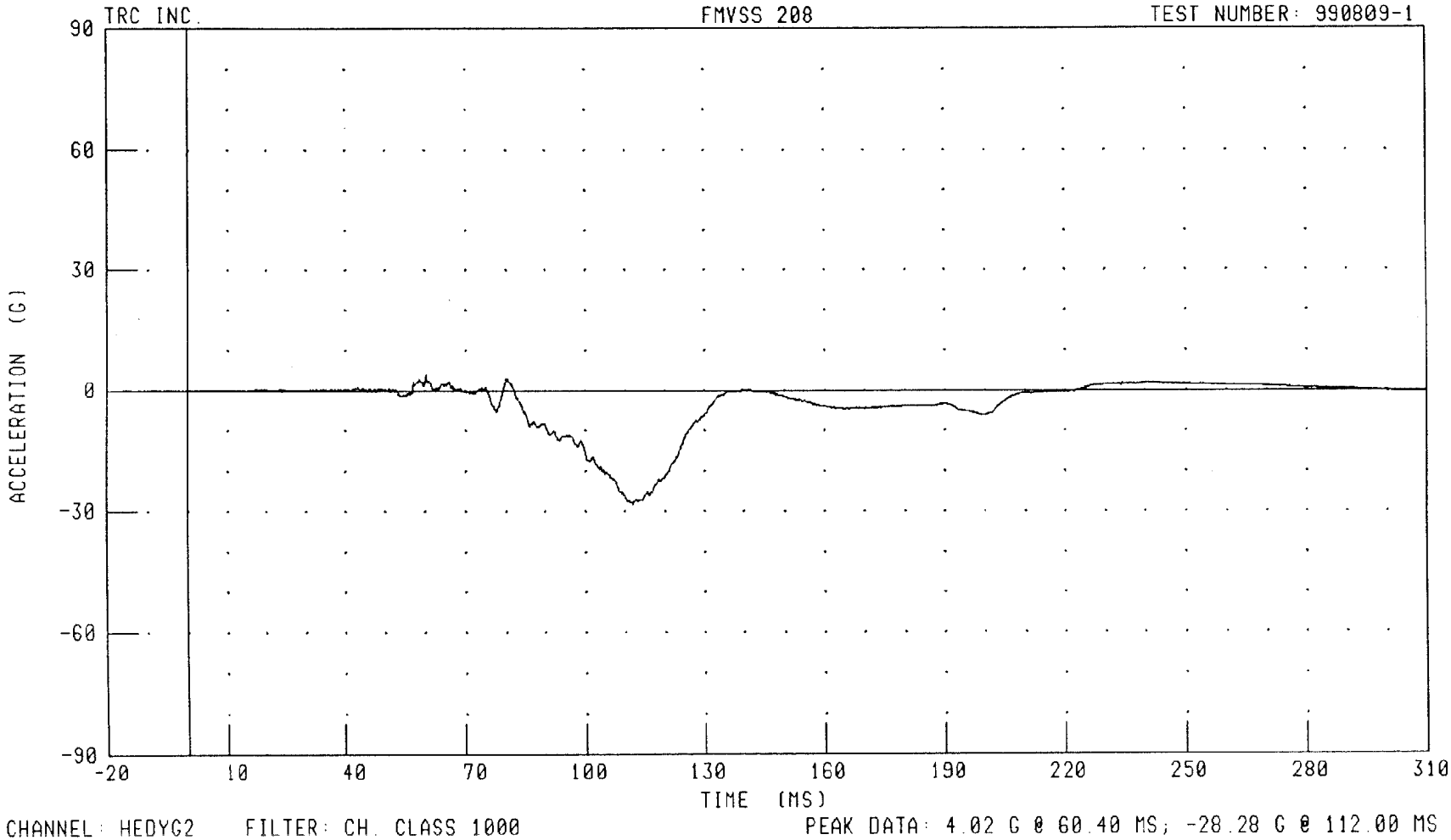
1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH

RIGHT FRONT PASSENGER HEAD X-AXIS ACCELERATION



CHANNEL: HEDXG2 FILTER: CH. CLASS 1000 PEAK DATA: 8.93 G @ 137.52 MS; -43.25 G @ 107.28 MS

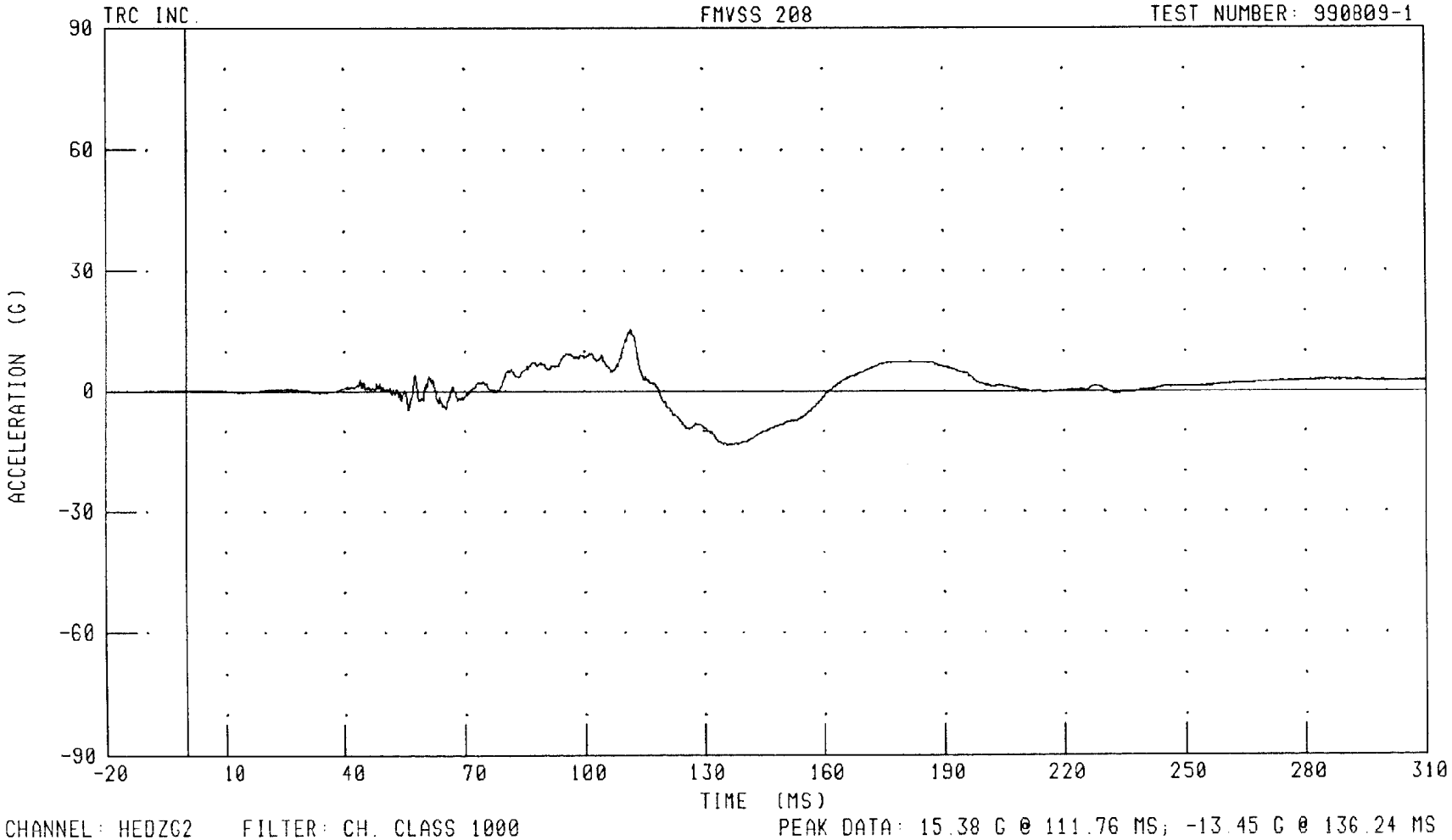
1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER HEAD Y-AXIS ACCELERATION



CHANNEL: HEDYG2 FILTER: CH. CLASS 1000 PEAK DATA: 4.02 G @ 60.40 MS; -28.28 G @ 112.00 MS

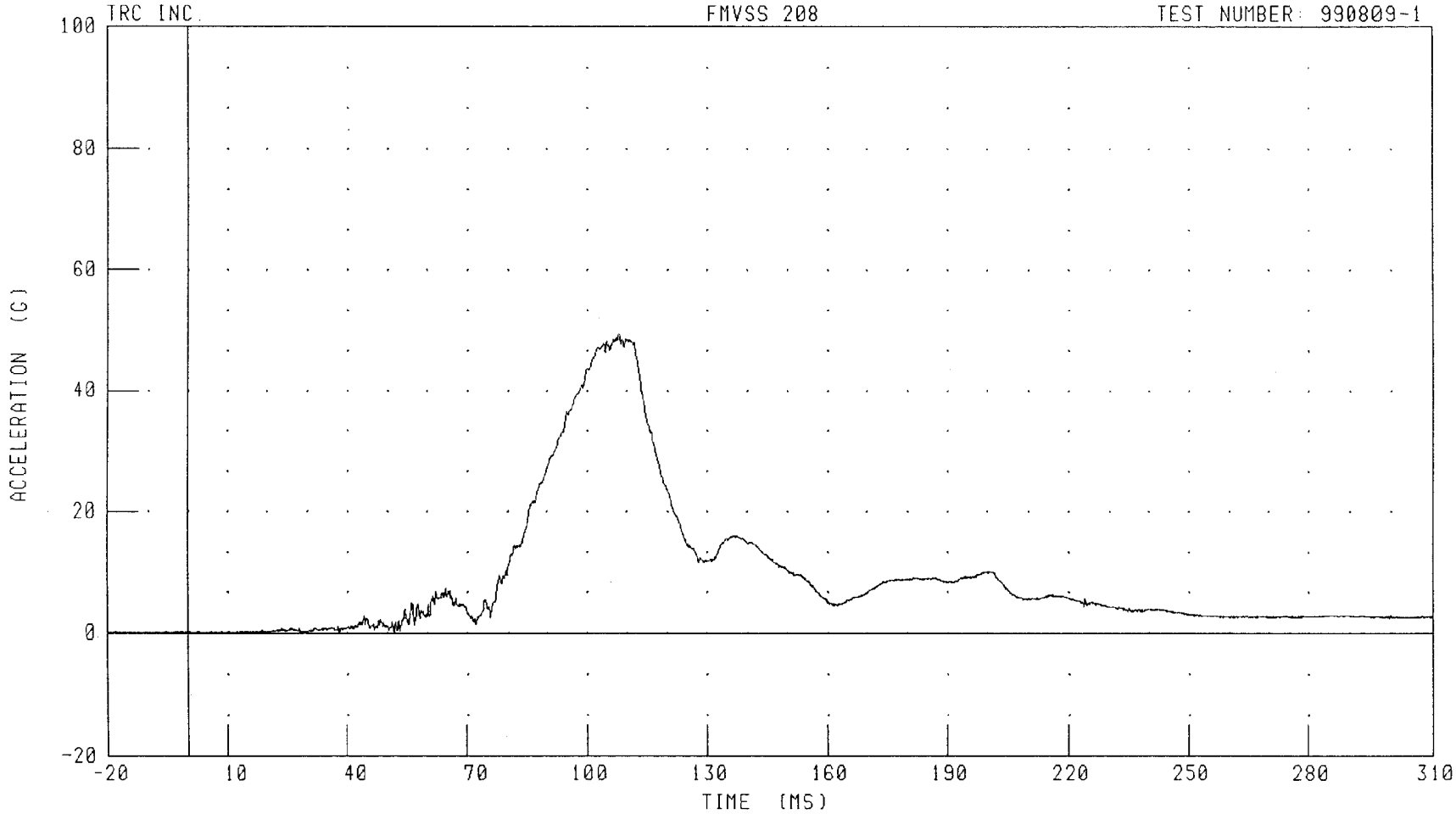
1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH

RIGHT FRONT PASSENGER HEAD Z-AXIS ACCELERATION



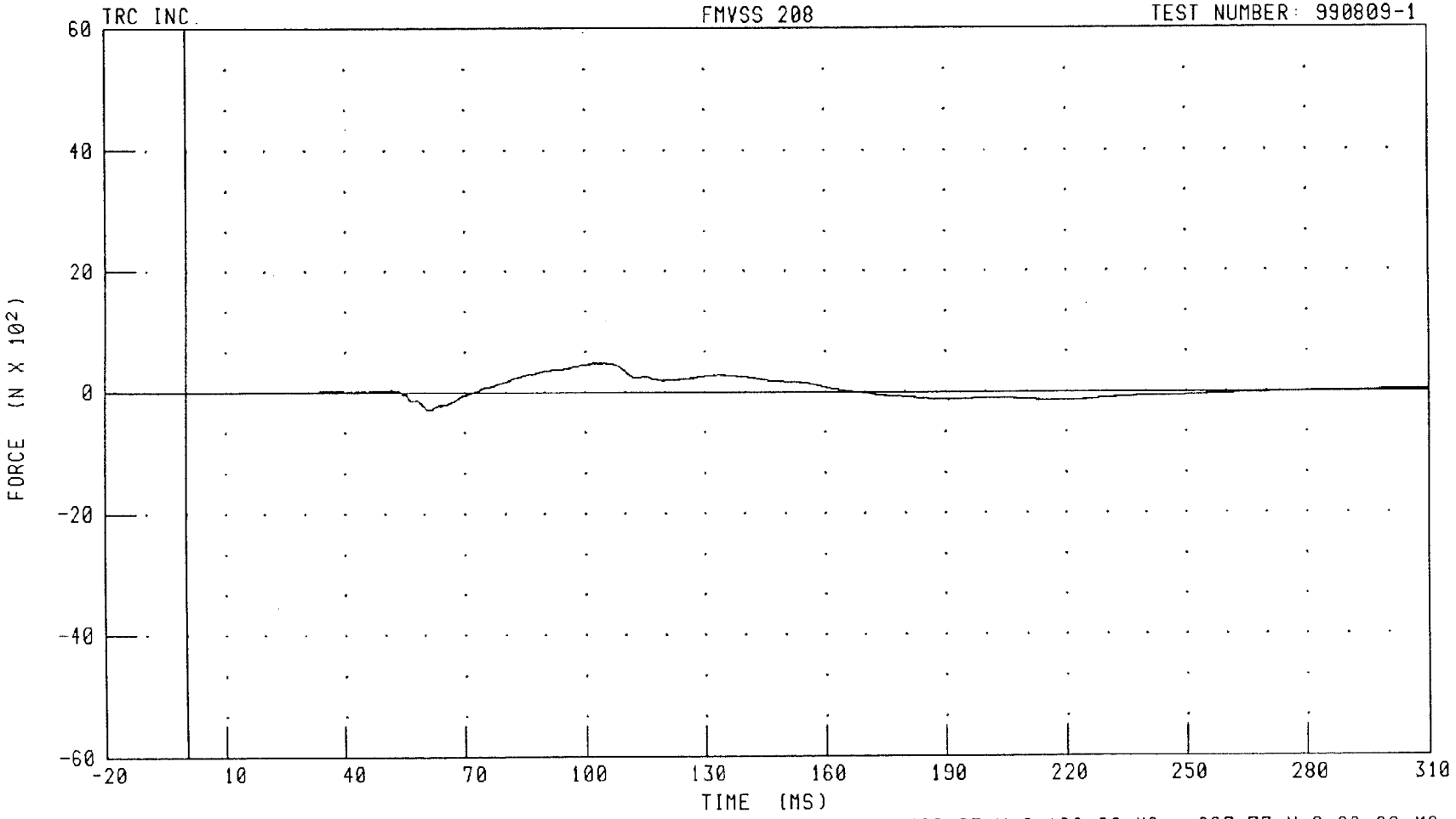
CHANNEL: HEDZG2 FILTER: CH. CLASS 1000 PEAK DATA: 15.38 G @ 111.76 MS; -13.45 G @ 136.24 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER HEAD RESULTANT ACCELERATION



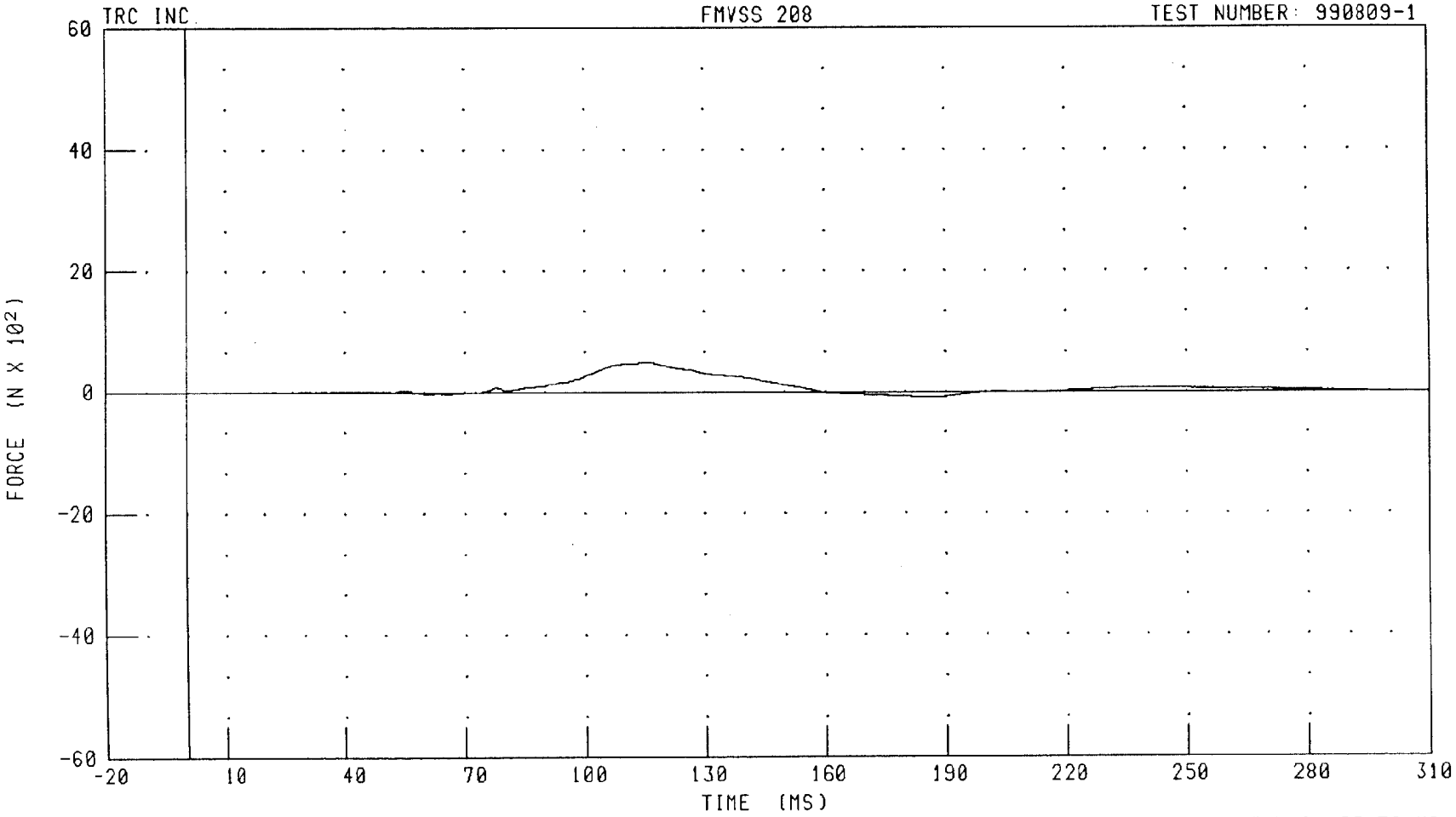
CHANNEL: HEDRC2 FILTER: CH. CLASS 1000 PEAK DATA: 49.42 G @ 108.00 MS; 0.14 G @ -18.64 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER NECK X-AXIS SHEAR FORCE



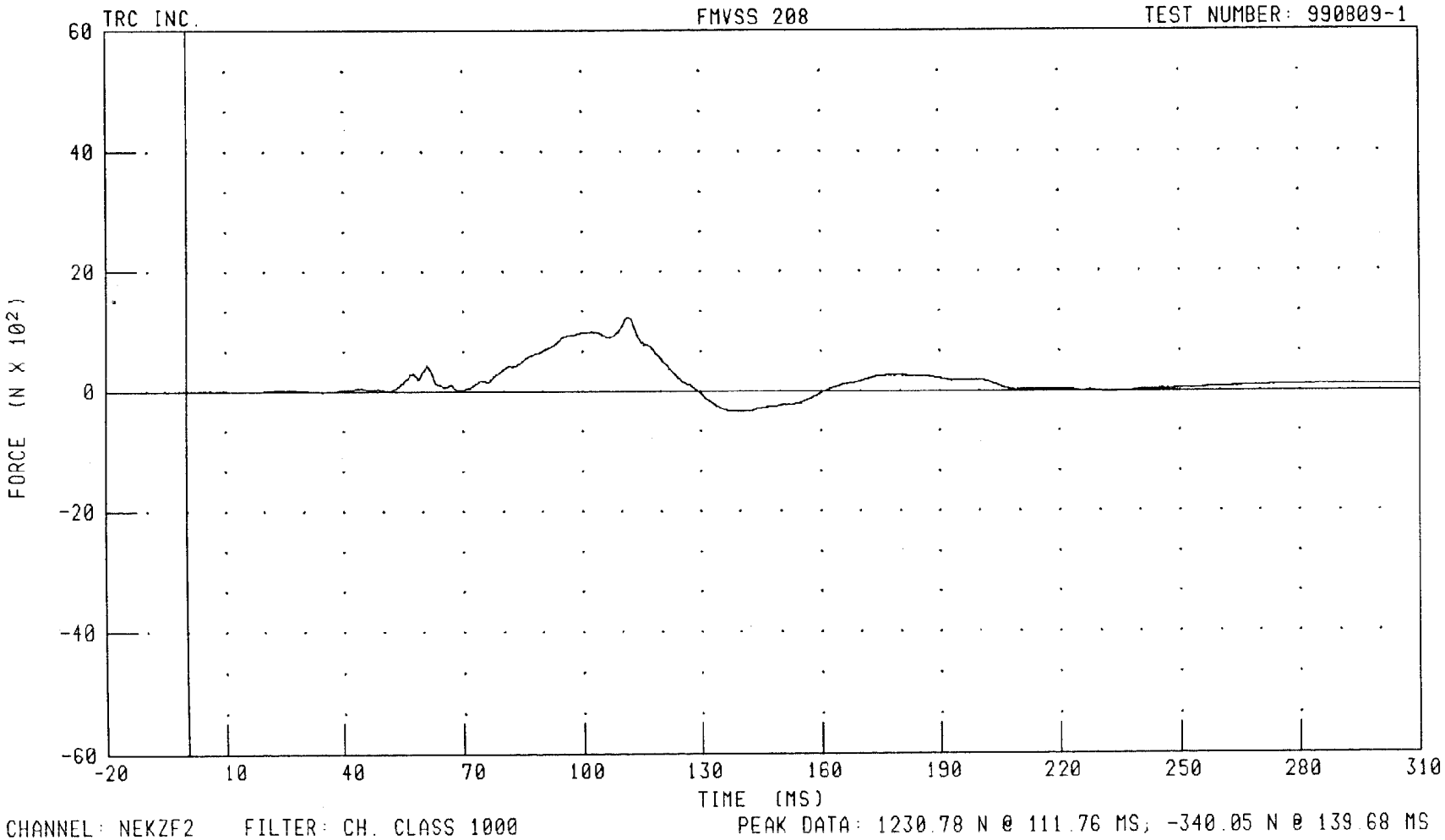
CHANNEL: NEKXF2 FILTER: CH. CLASS 1000 PEAK DATA: 480.25 N @ 102.00 MS; -297.77 N @ 60.88 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER NECK Y-AXIS SHEAR FORCE



CHANNEL: NEKYF2 FILTER: CH. CLASS 1000 PEAK DATA: 491.16 N @ 115.84 MS; -90.55 N @ 183.36 MS

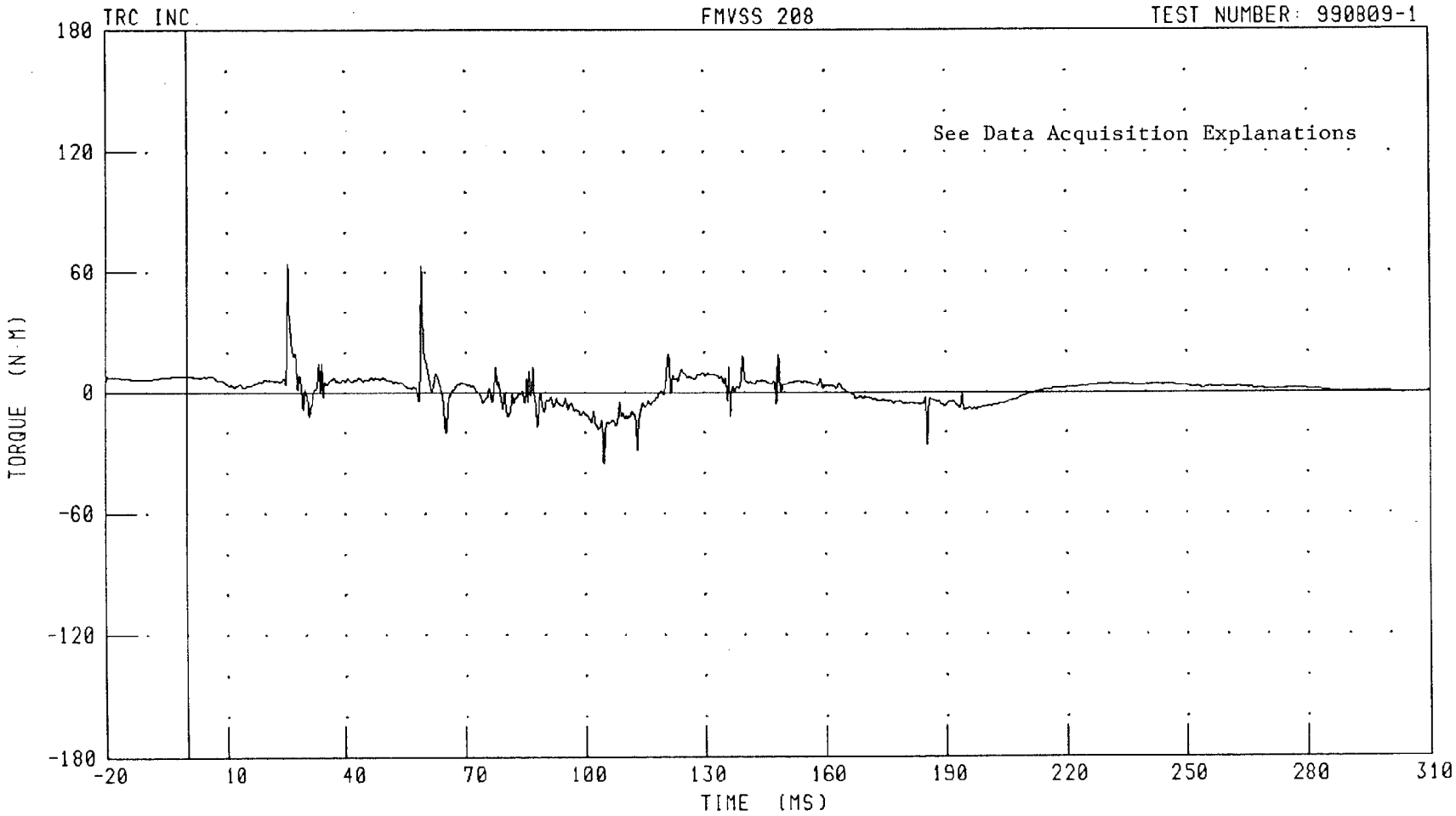
1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER NECK Z-AXIS AXIAL FORCE



CHANNEL: NEKZF2 FILTER: CH. CLASS 1000 PEAK DATA: 1230.78 N @ 111.76 MS; -340.05 N @ 139.68 MS

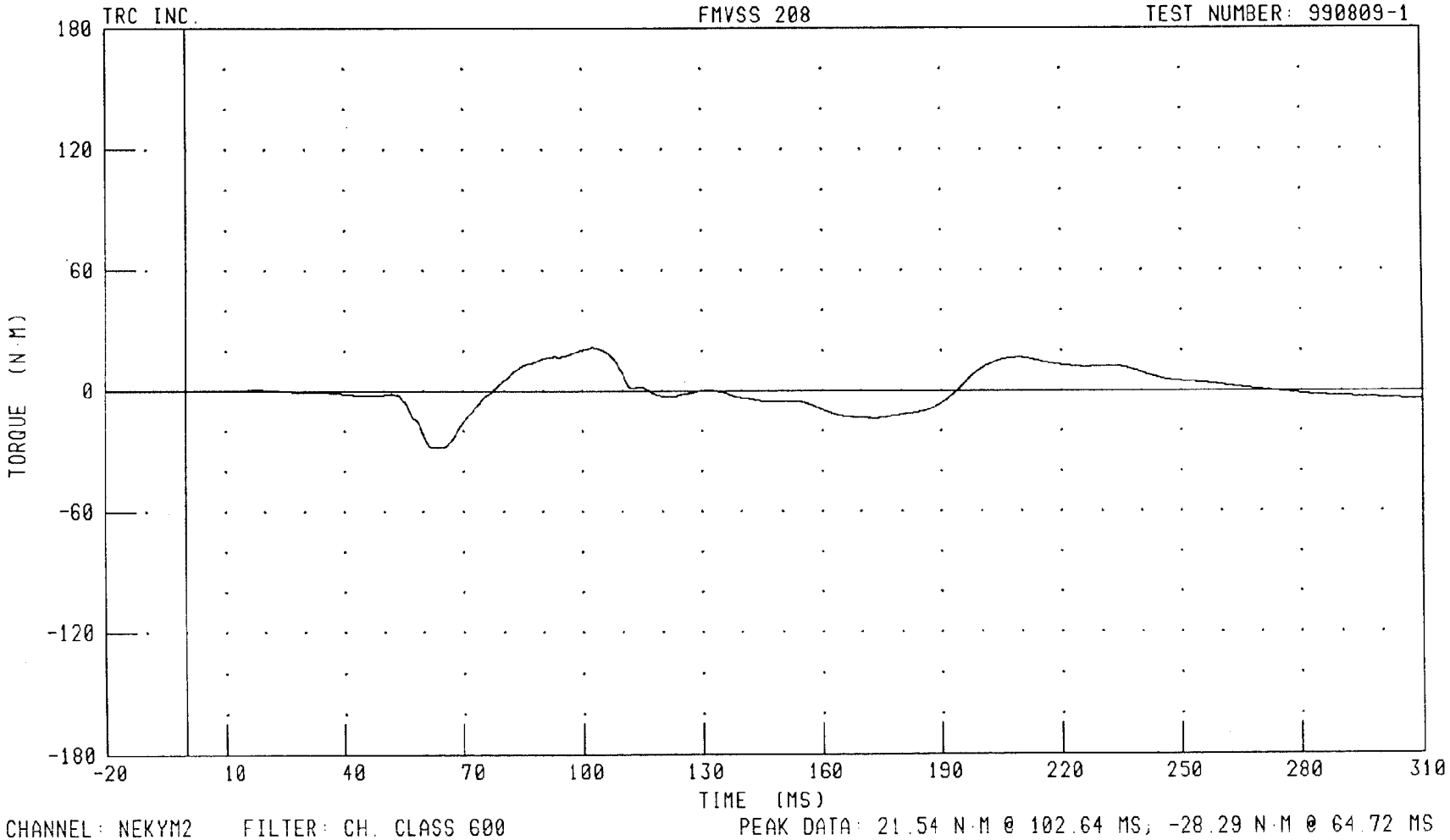
1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH

RIGHT FRONT PASSENGER NECK MOMENT ABOUT X AXIS



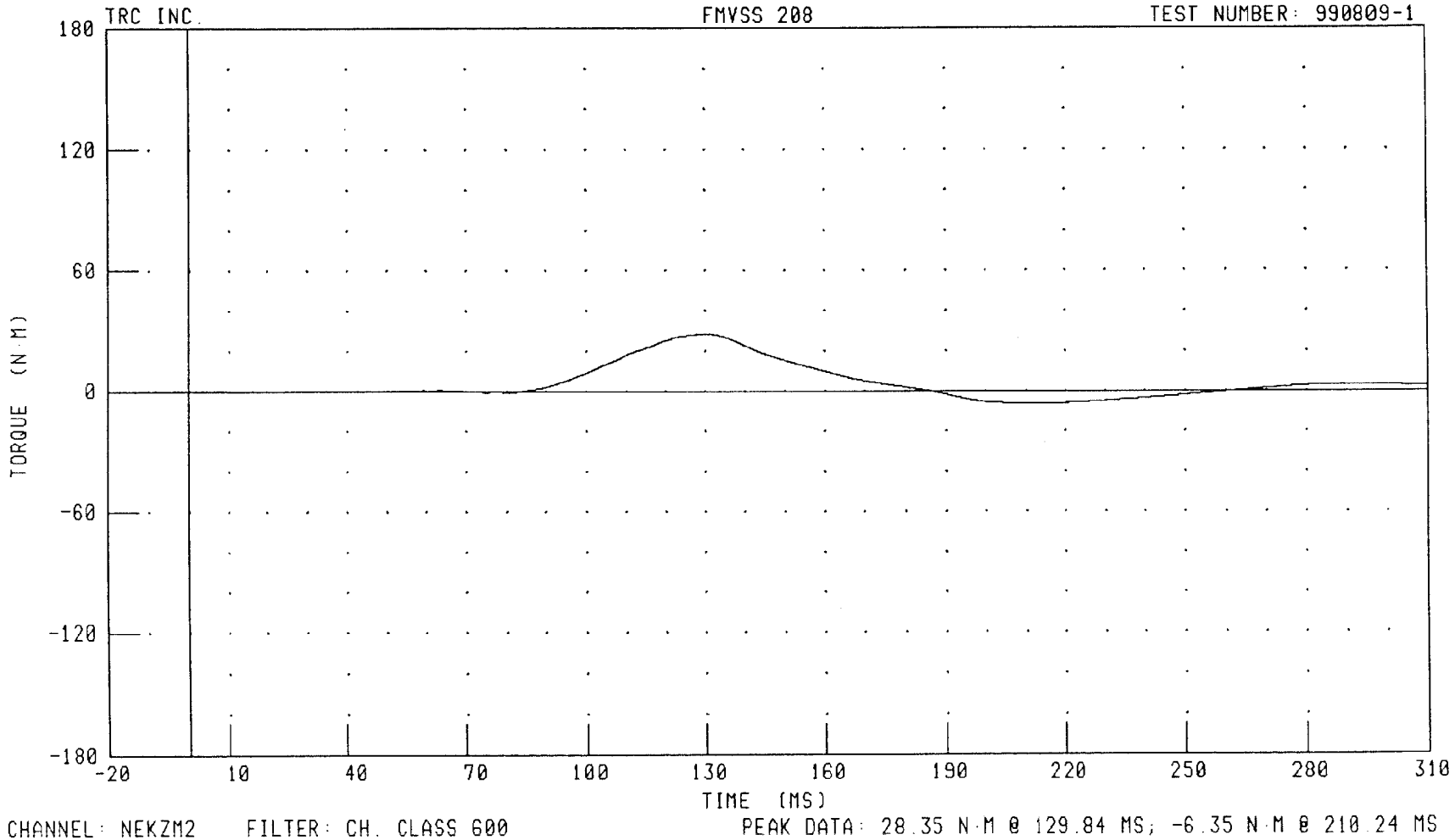
CHANNEL: NEKXM2 FILTER: CH. CLASS 600 PEAK DATA: 64.29 N-M @ 25.76 MS; -35.38 N-M @ 104.88 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER NECK MOMENT ABOUT Y AXIS



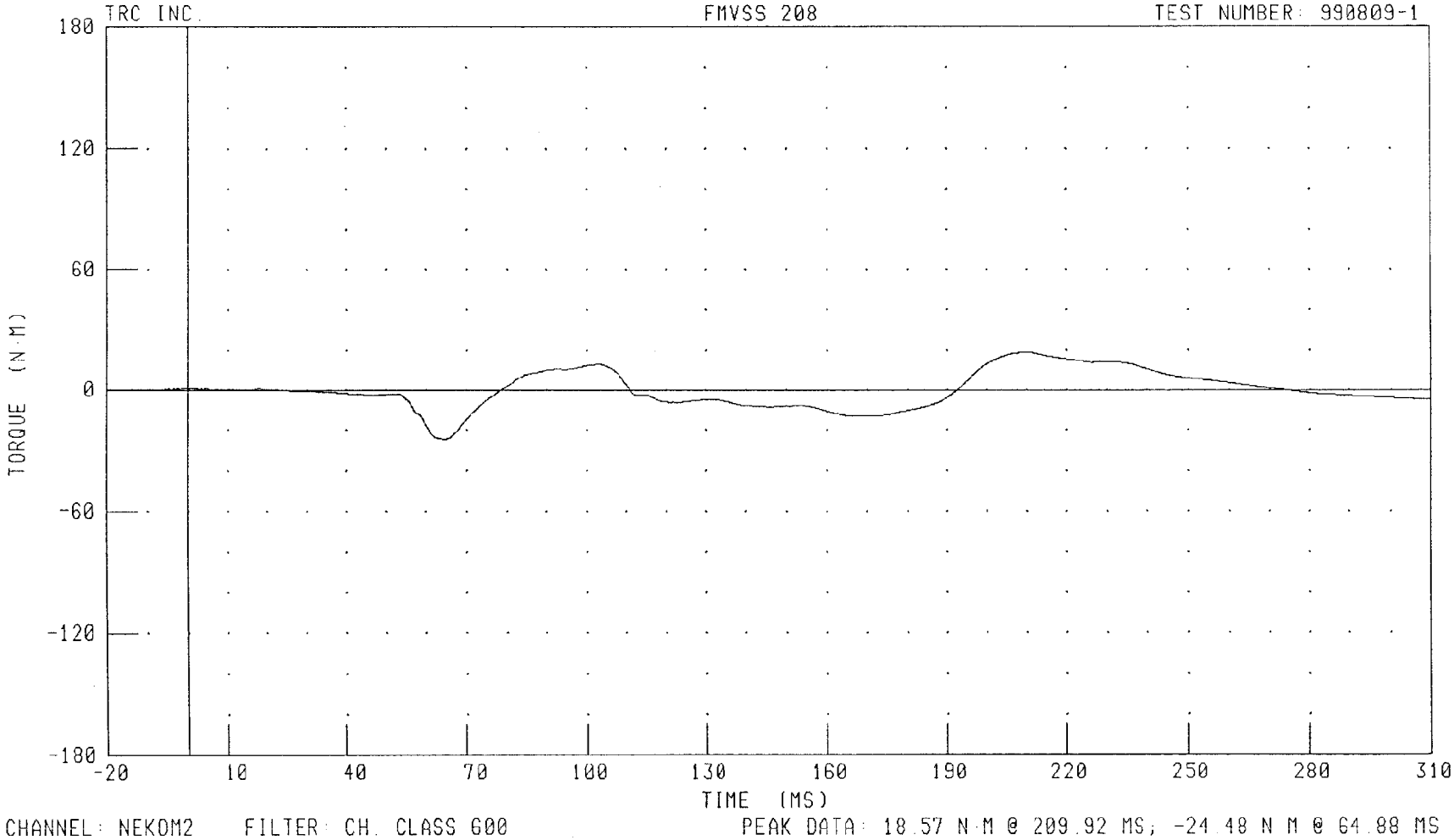
CHANNEL: NEKYM2 FILTER: CH. CLASS 600 PEAK DATA: 21.54 N-M @ 102.64 MS, -28.29 N-M @ 64.72 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER NECK MOMENT ABOUT Z AXIS



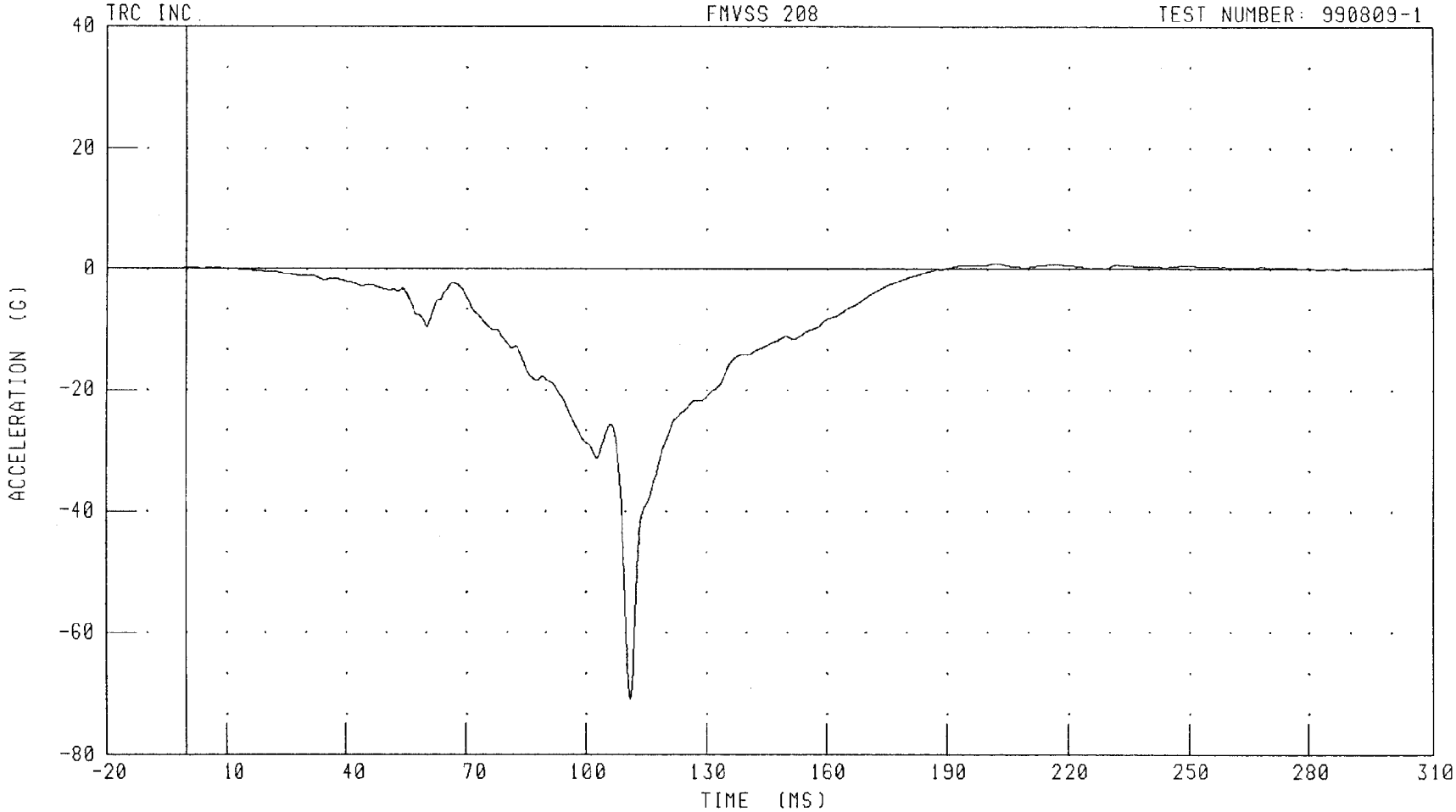
CHANNEL: NEKZM2 FILTER: CH. CLASS 600 PEAK DATA: 28.35 N-M @ 129.84 MS; -6.35 N-M @ 210.24 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER NECK OCCIPITAL CONDYLE MOMENT ABOUT Y AXIS



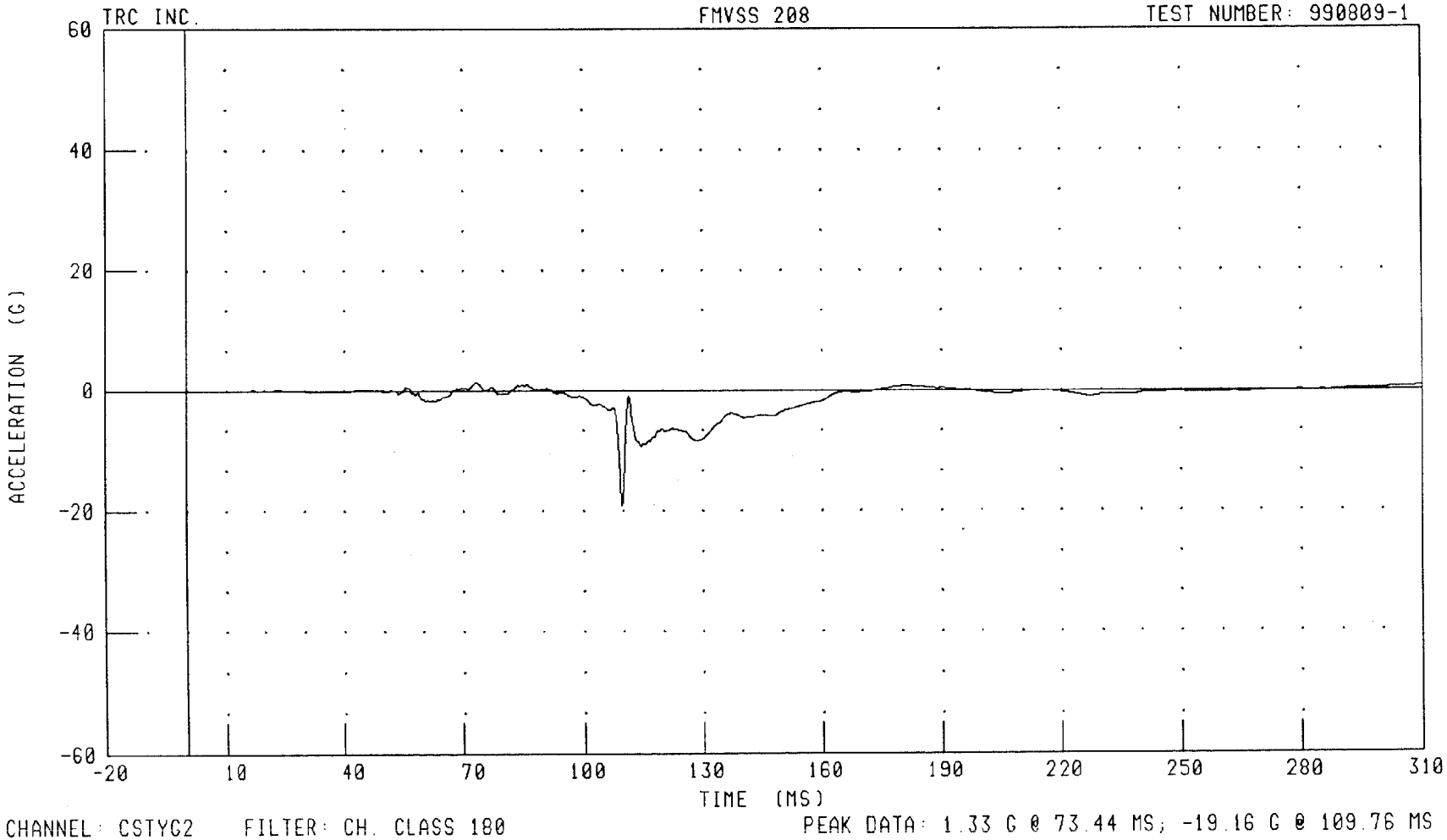
CHANNEL: NEKOM2 FILTER: CH. CLASS 600 PEAK DATA: 18.57 N-M @ 209.92 MS; -24.48 N M @ 64.88 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER CHEST X-AXIS ACCELERATION



CHANNEL: CSTXG2 FILTER: CH. CLASS 180 PEAK DATA: 0.93 G @ 201.76 MS, -70.80 G @ 111.28 MS

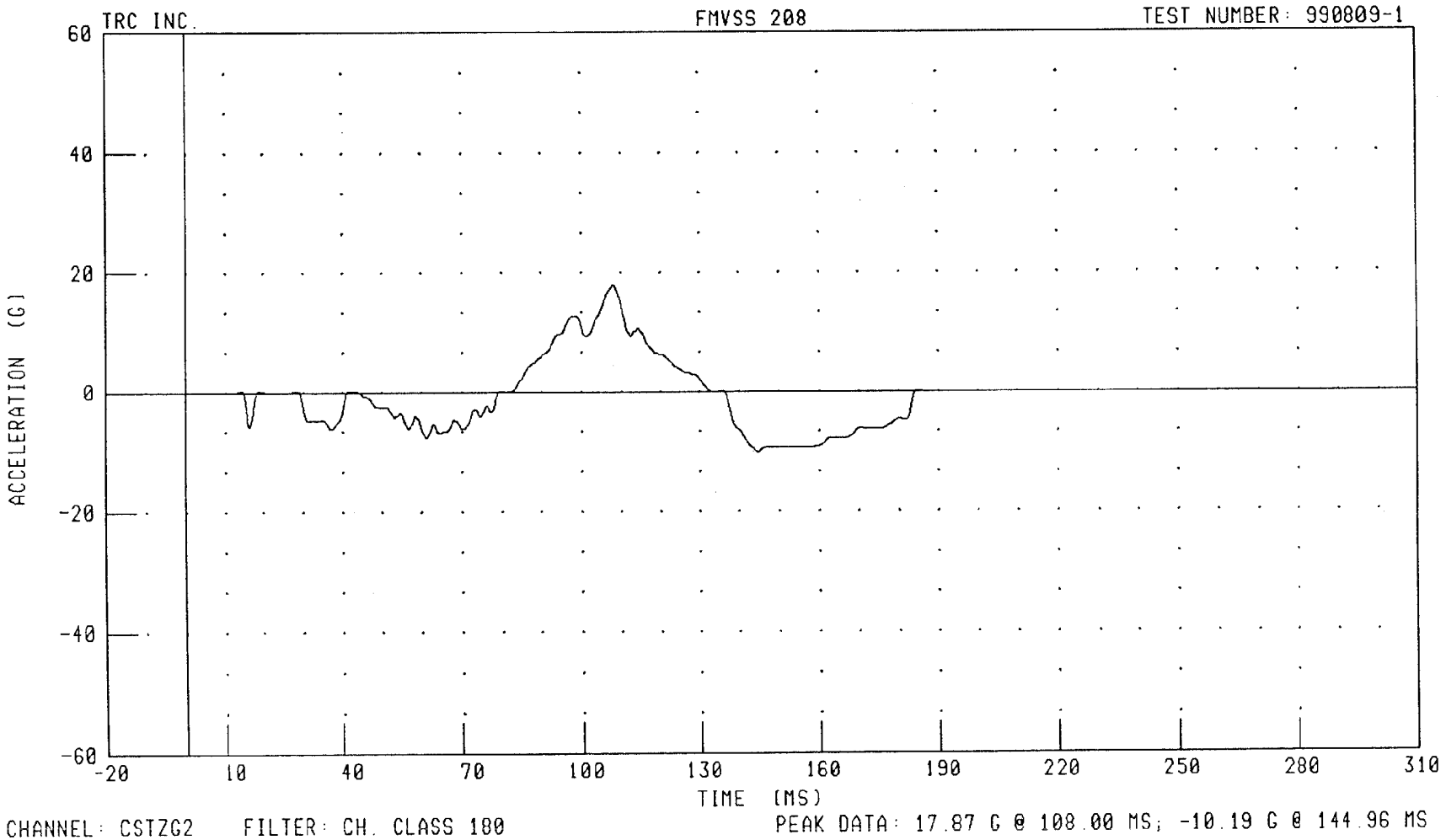
1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER CHEST Y-AXIS ACCELERATION



CHANNEL: CSTYG2 FILTER: CH. CLASS 180 PEAK DATA: 1.33 G @ 73.44 MS; -19.16 G @ 109.76 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH

RIGHT FRONT PASSENGER CHEST Z-AXIS ACCELERATION

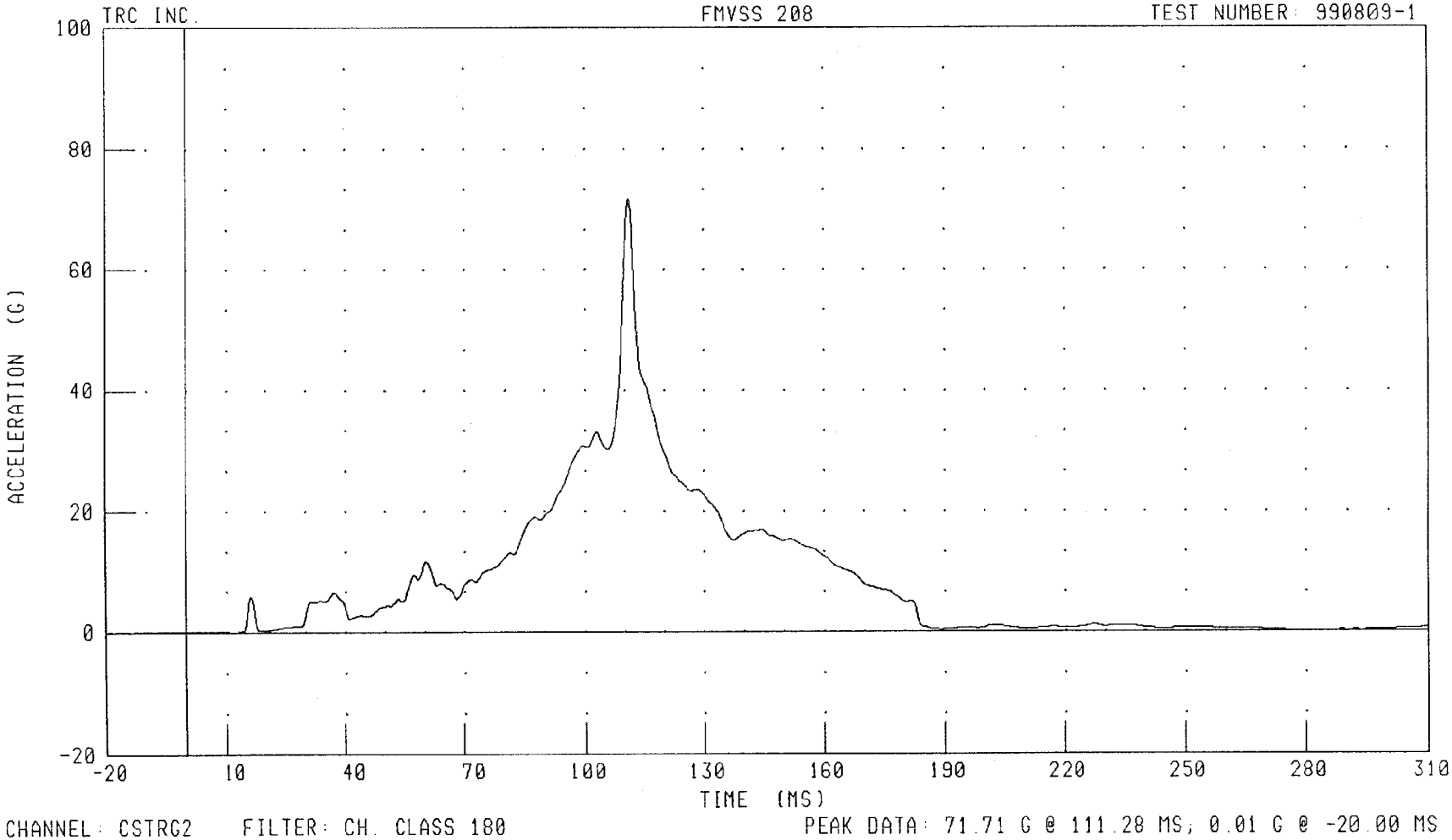


CHANNEL: CSTZG2 FILTER: CH. CLASS 180

PEAK DATA: 17.87 G @ 108.00 MS; -10.19 G @ 144.96 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH

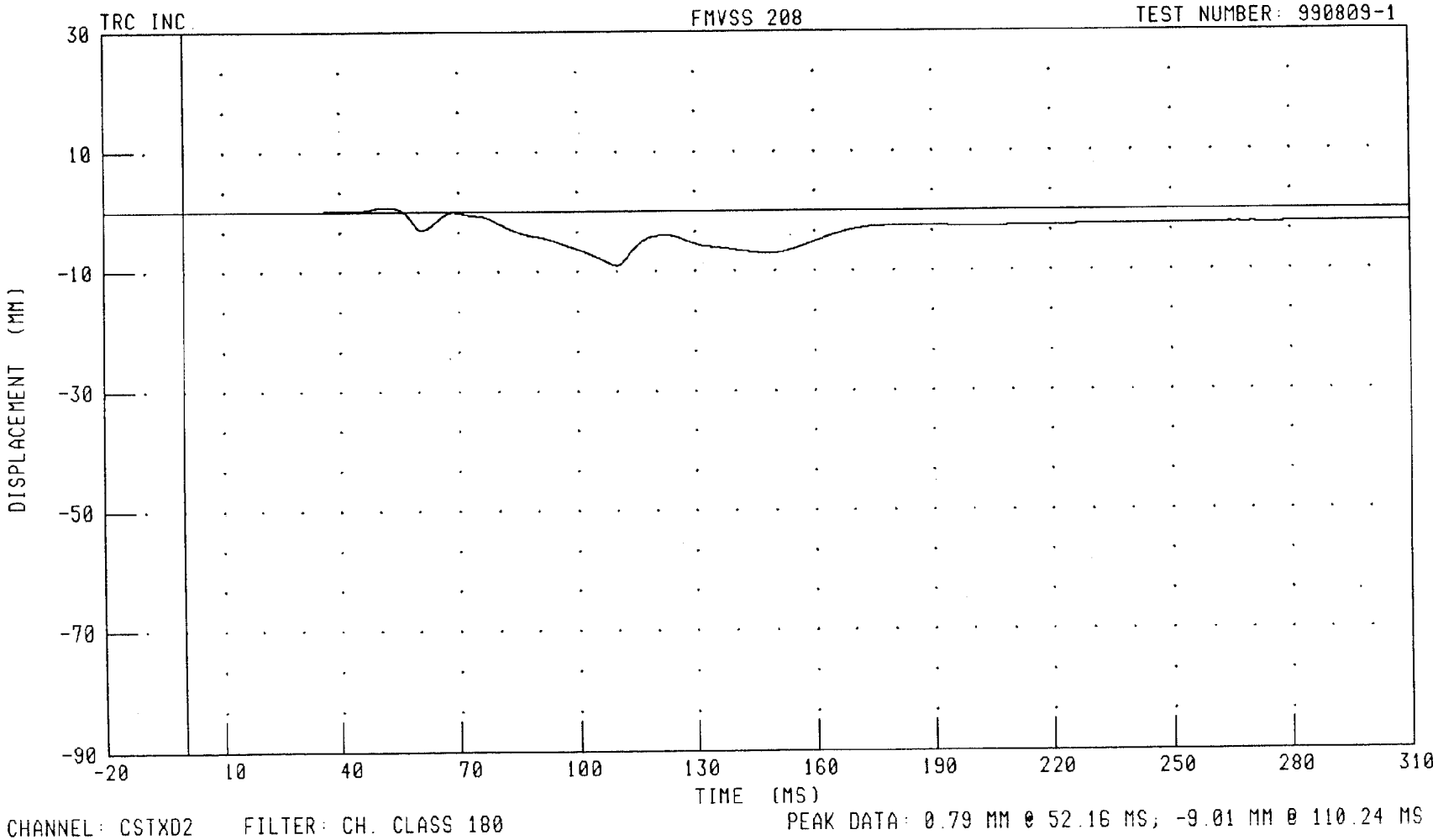
RIGHT FRONT PASSENGER CHEST RESULTANT ACCELERATION



CHANNEL: CSTRG2 FILTER: CH. CLASS 180 PEAK DATA: 71.71 G @ 111.28 MS, 0.01 G @ -20.00 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH

RIGHT FRONT PASSENGER CHEST DEFLECTION

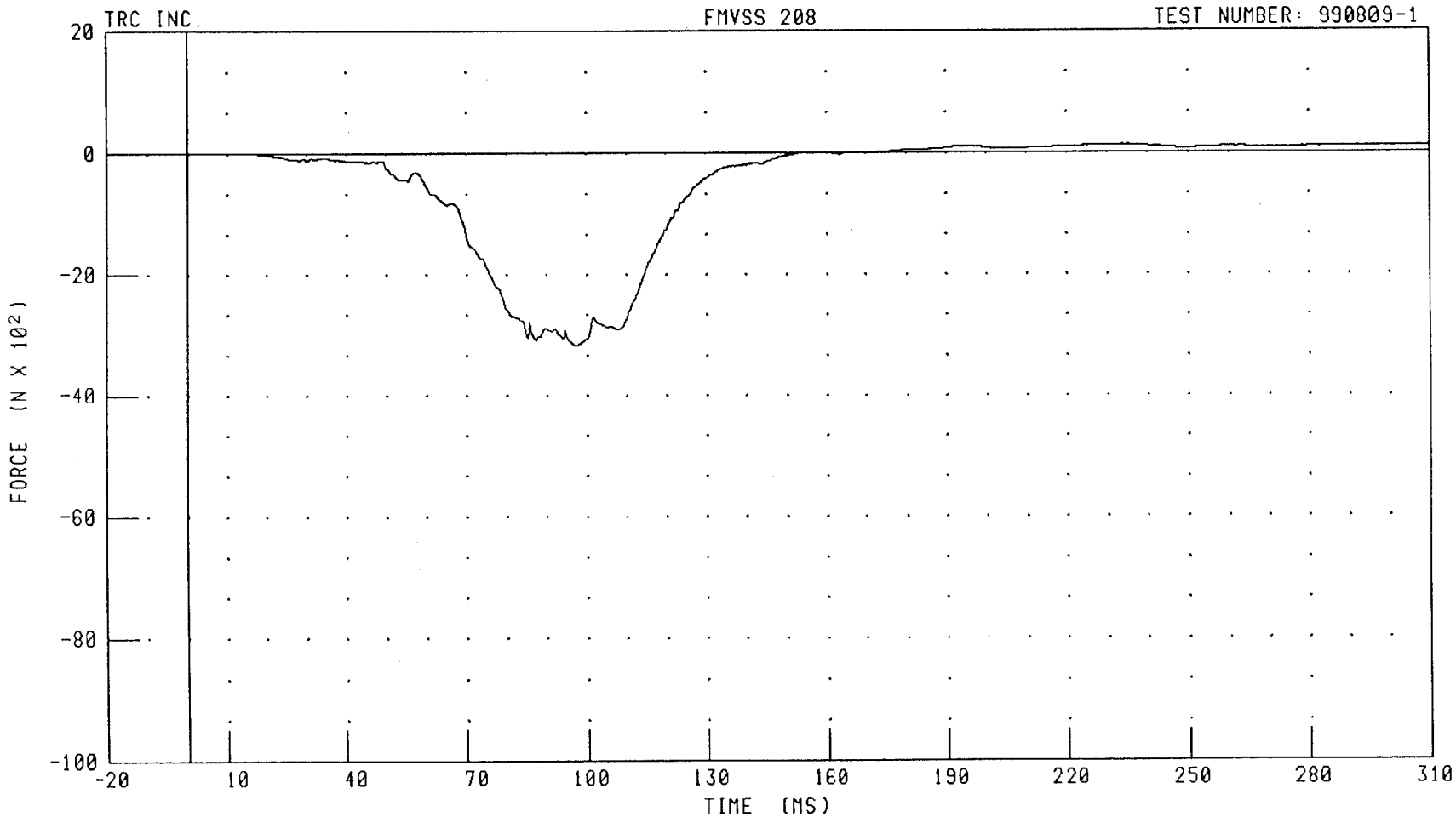


CHANNEL: CSTXD2 FILTER: CH. CLASS 180

PEAK DATA: 0.79 MM @ 52.16 MS; -9.01 MM @ 110.24 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH

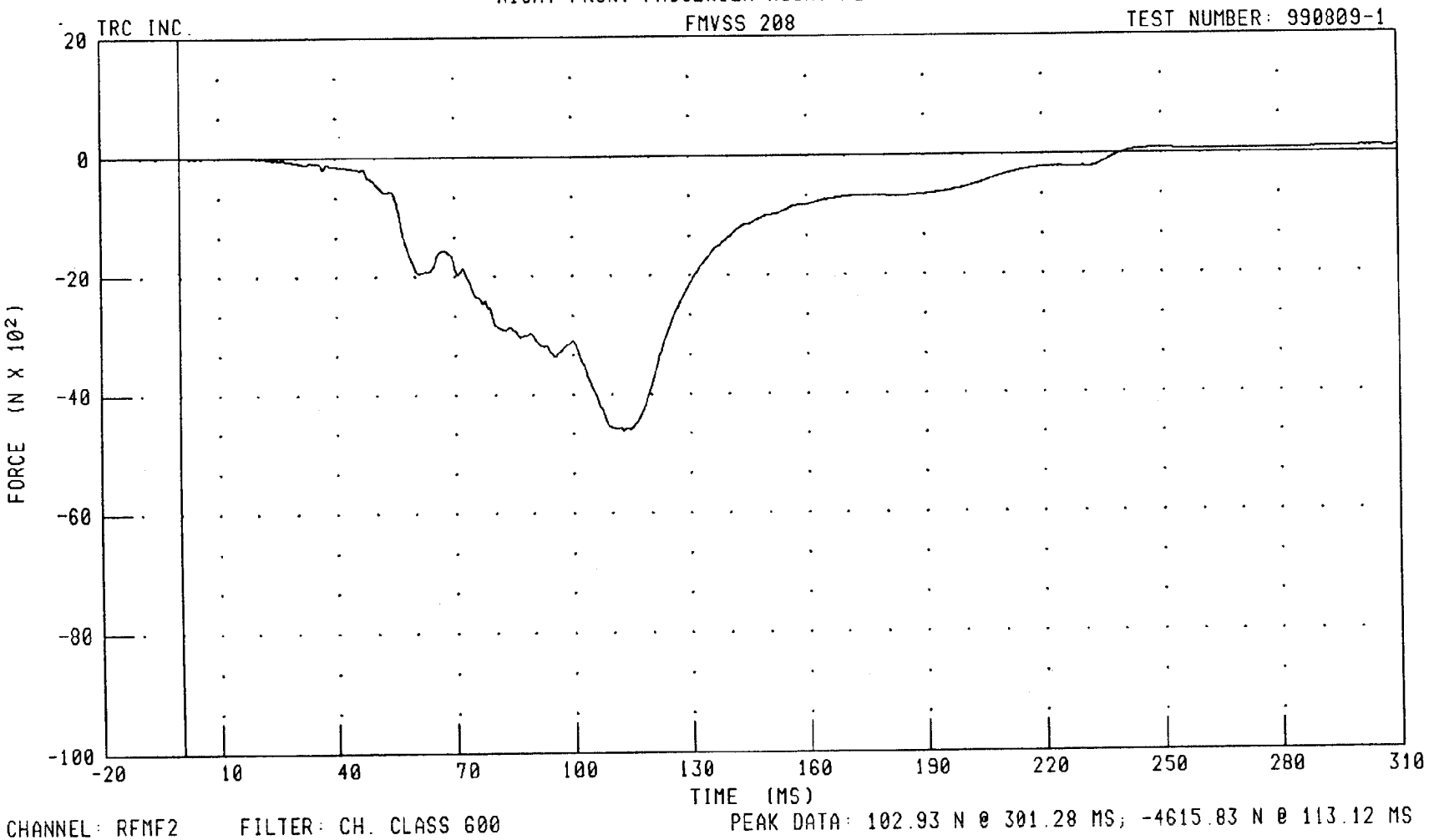
RIGHT FRONT PASSENGER LEFT FEMUR FORCE



CHANNEL: LFMF2 FILTER: CH. CLASS 600 PEAK DATA: 132.96 N @ 233.92 MS; -3182.85 N @ 97.52 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH

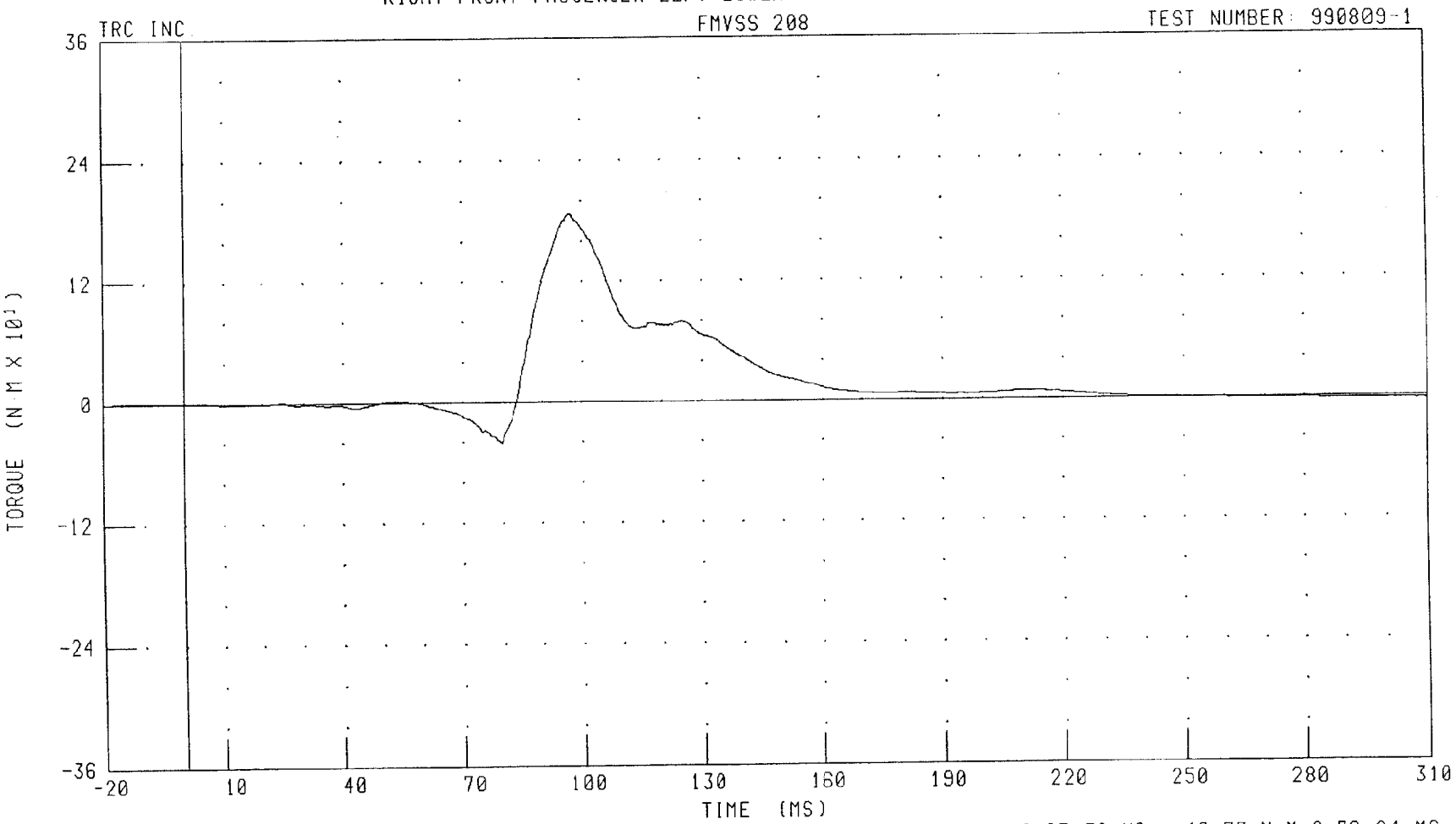
RIGHT FRONT PASSENGER RIGHT FEMUR FORCE



CHANNEL: RFMF2 FILTER: CH. CLASS 600

PEAK DATA: 102.93 N @ 301.28 MS; -4615.83 N @ 113.12 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER LEFT LOWER TIBIA MOMENT ABOUT Y AXIS

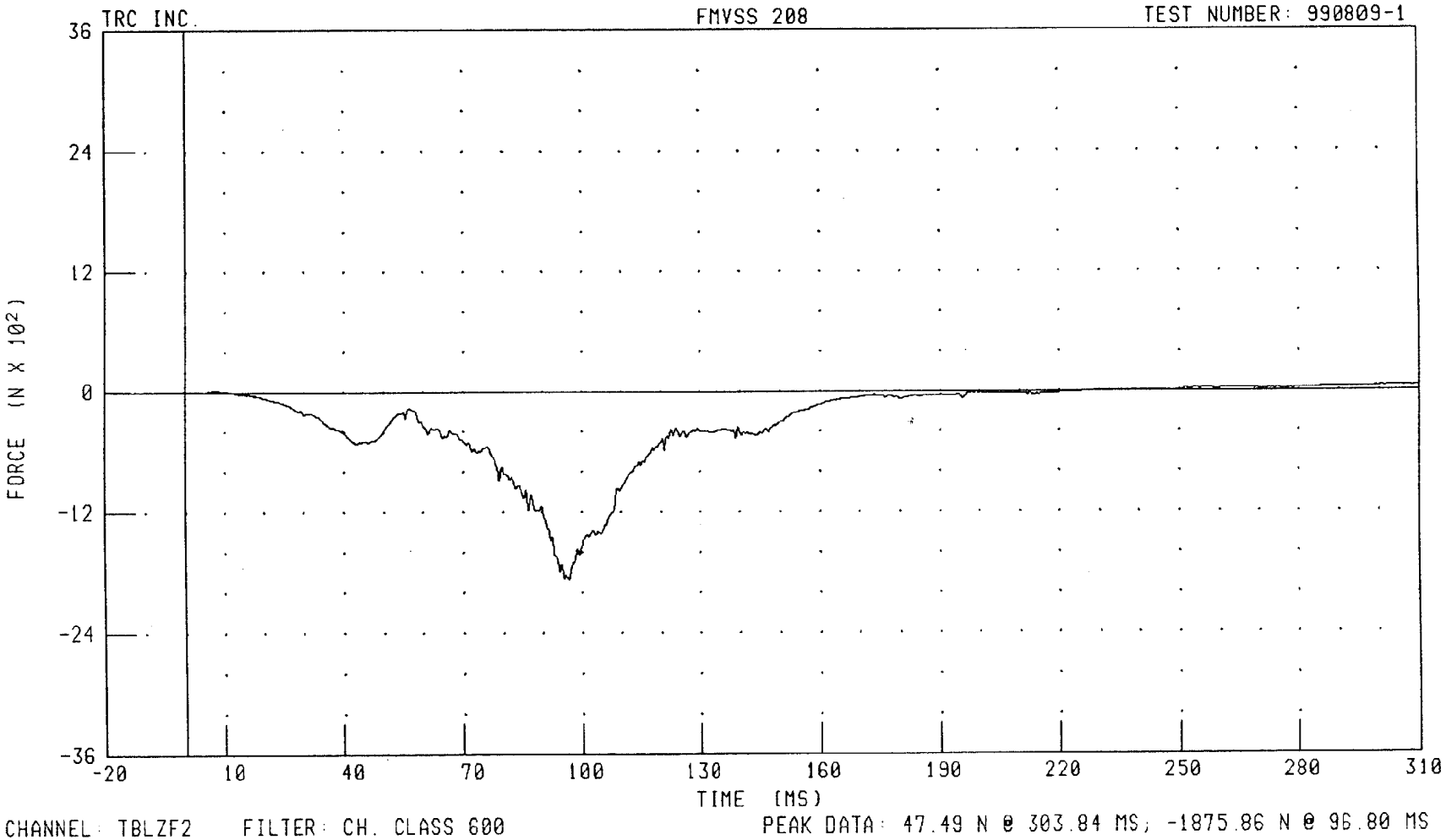


CHANNEL: ANLYM2 FILTER: CH. CLASS 600

PEAK DATA: 187.04 N M @ 97.36 MS; -40.77 N M @ 79.84 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH

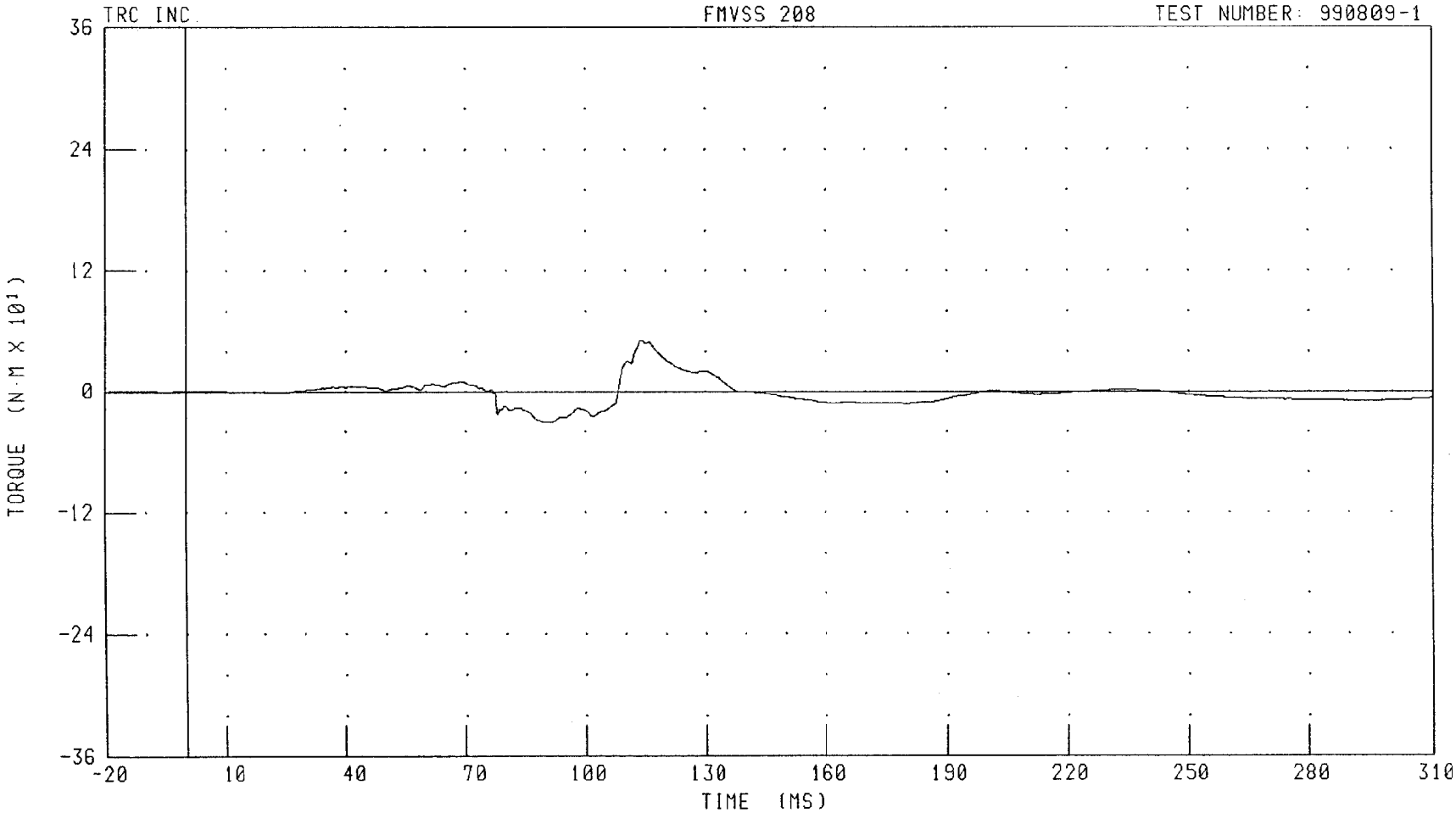
RIGHT FRONT PASSENGER LEFT TIBIA Z-AXIS FORCE



CHANNEL: TBLZF2 FILTER: CH. CLASS 600

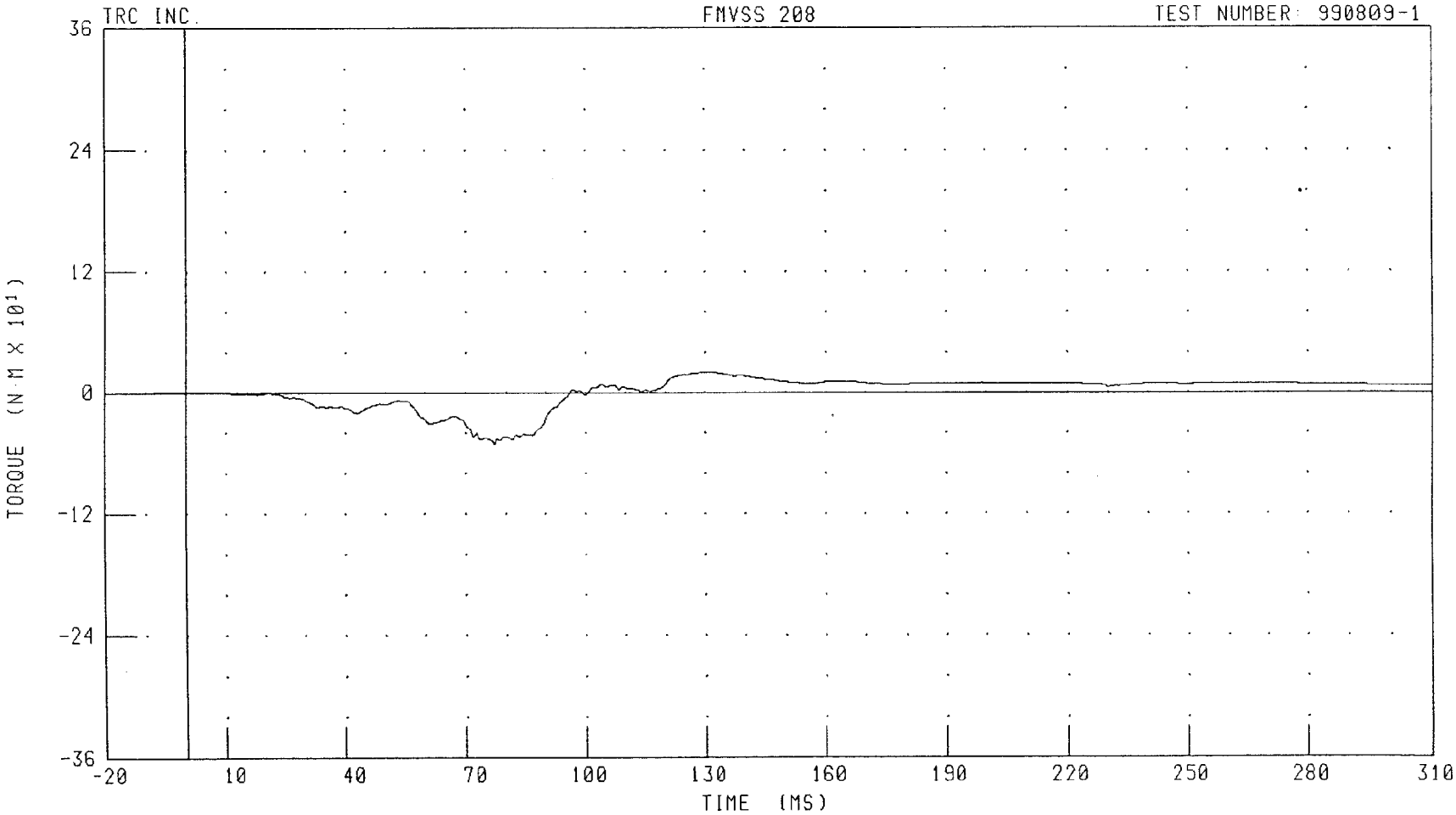
PEAK DATA: 47.49 N @ 303.84 MS; -1875.86 N @ 96.80 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER RIGHT UPPER TIBIA MOMENT ABOUT X AXIS



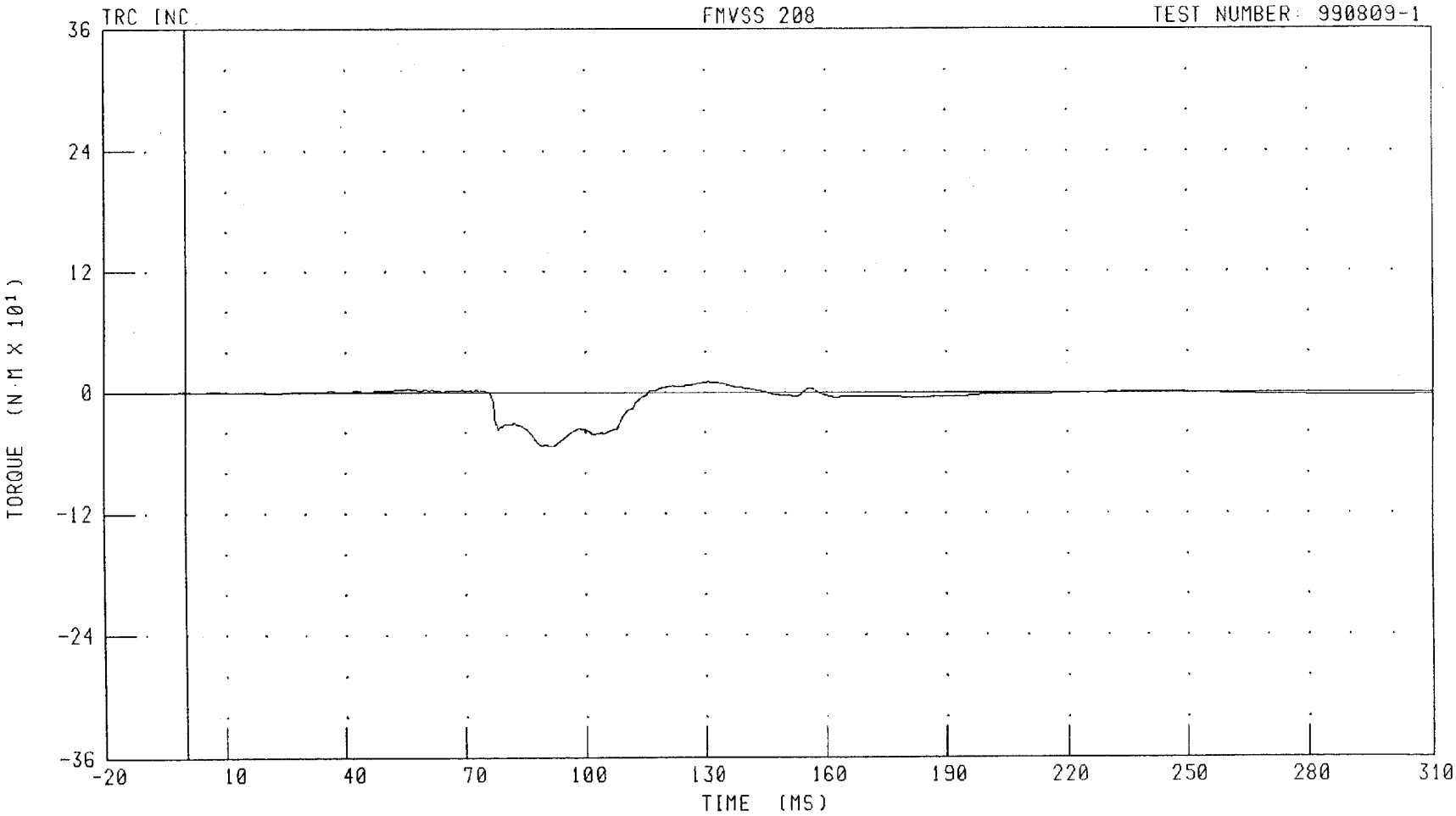
CHANNEL: TBRXM2 FILTER: CH. CLASS 600 PEAK DATA: 50.76 N-M @ 114.16 MS; -31.31 N-M @ 90.80 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER RIGHT UPPER TIBIA MOMENT ABOUT Y AXIS



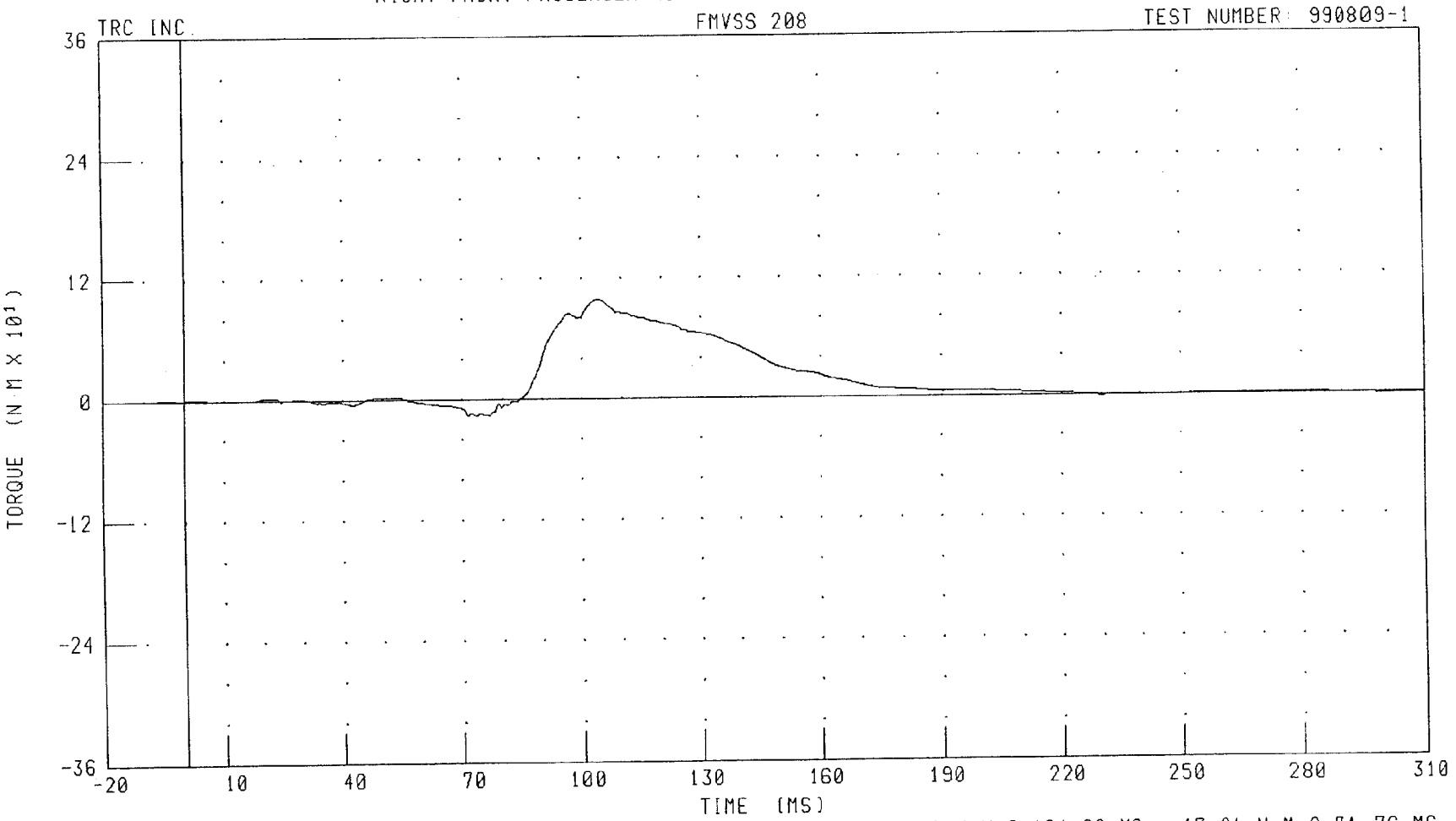
CHANNEL: TBRYM2 FILTER: CH. CLASS 600 PEAK DATA: 20.15 N-M @ 130.24 MS; -50.94 N-M @ 77.36 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER RIGHT LOWER TIBIA MOMENT ABOUT X AXIS



CHANNEL: ANRXM2 FILTER: CH. CLASS 600 PEAK DATA: 10.29 N-M @ 130.80 MS; -53.67 N-M @ 91.60 MS

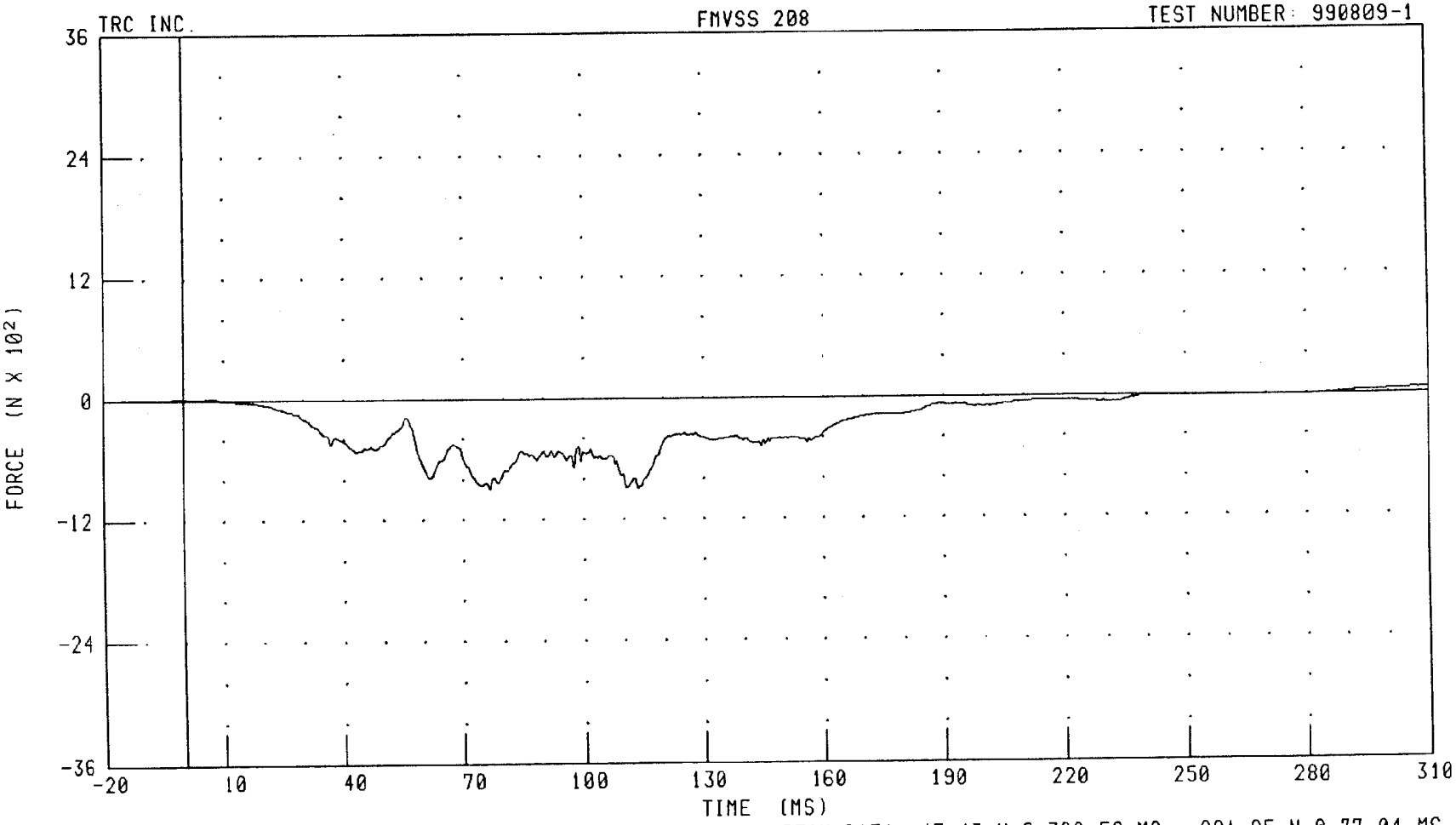
1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER RIGHT LOWER TIBIA MOMENT ABOUT Y AXIS



CHANNEL: ANRYM2 FILTER: CH. CLASS 600

PEAK DATA: 98.42 N-M @ 104.00 MS; -17.21 N-M @ 71.76 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER RIGHT TIBIA Z-AXIS FORCE

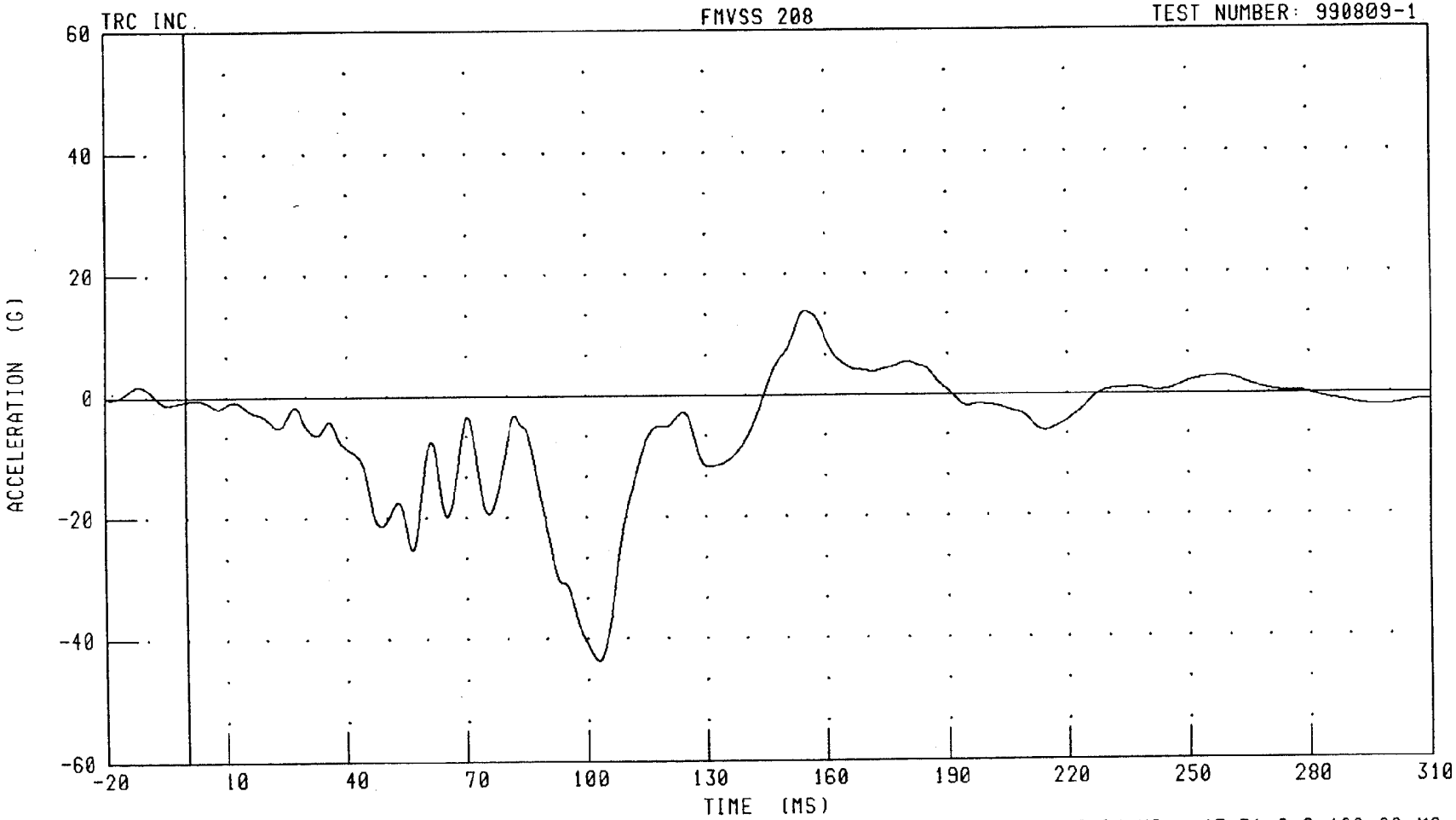


CHANNEL: TBRZF2 FILTER: CH. CLASS 600

PEAK DATA: 45.43 N @ 308.56 MS; -901.85 N @ 77.04 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH

LEFT BRAKE CALIPER X-AXIS ACCELERATION

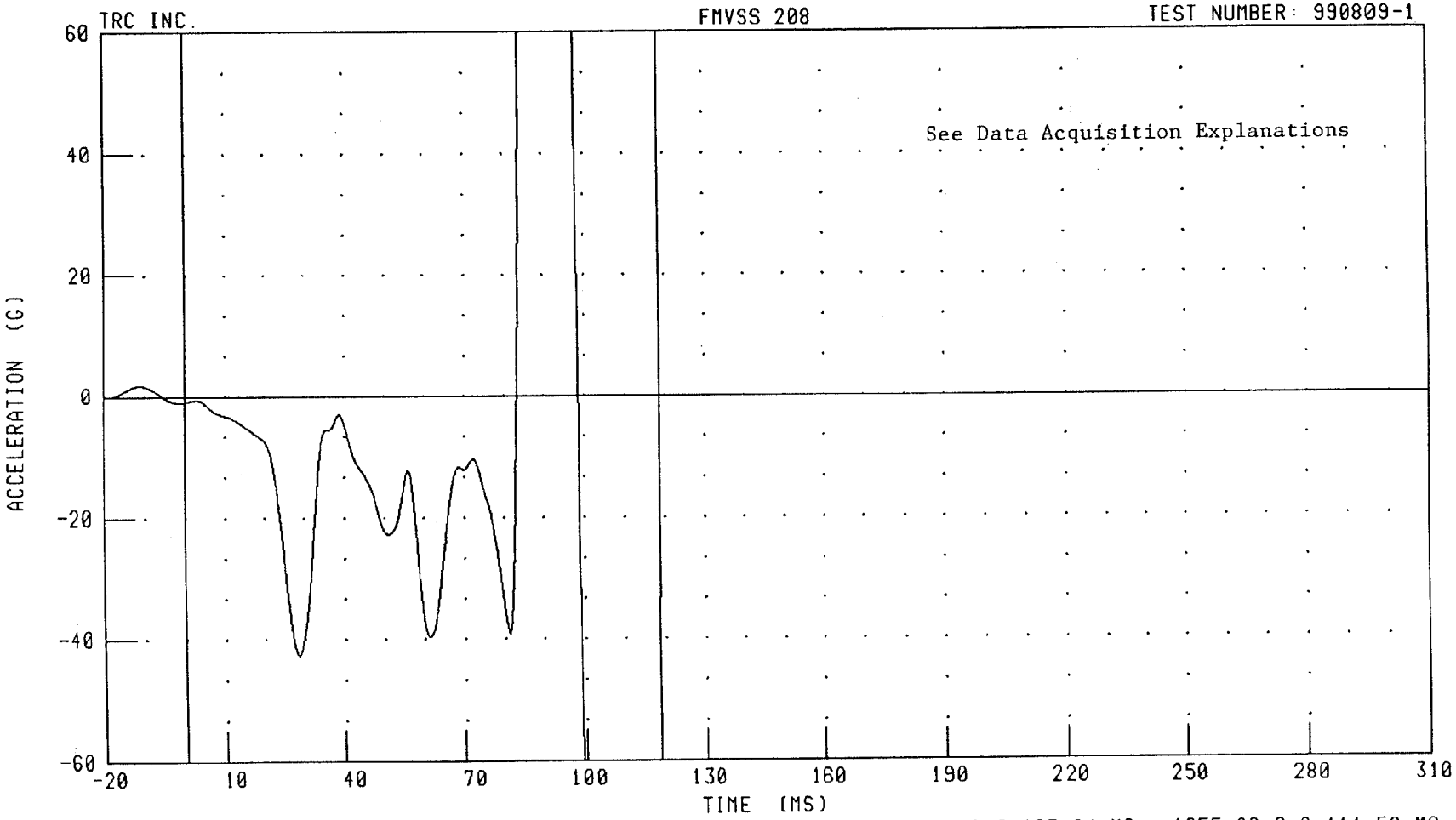


CHANNEL: BCLXG1 FILTER: CH. CLASS 60

PEAK DATA: 13.89 G @ 155.04 MS; -43.71 G @ 102.96 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH

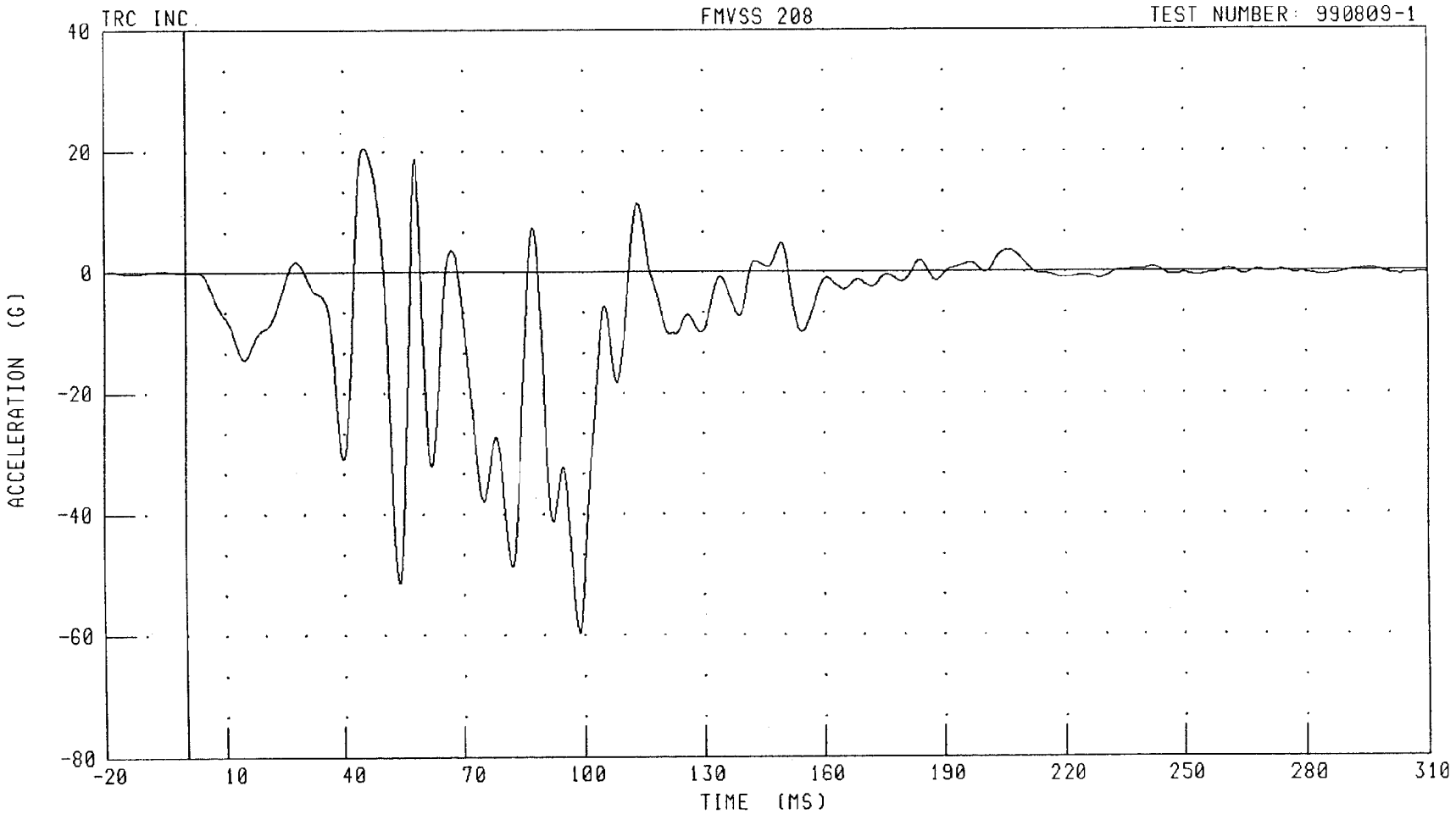
RIGHT BRAKE CALIPER X-AXIS ACCELERATION



CHANNEL: BCRXG1 FILTER: CH. CLASS 60

PEAK DATA: 1055.21 G @ 123.04 MS; -1055.26 G @ 114.56 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
DASH PANEL CENTER X-AXIS ACCELERATION

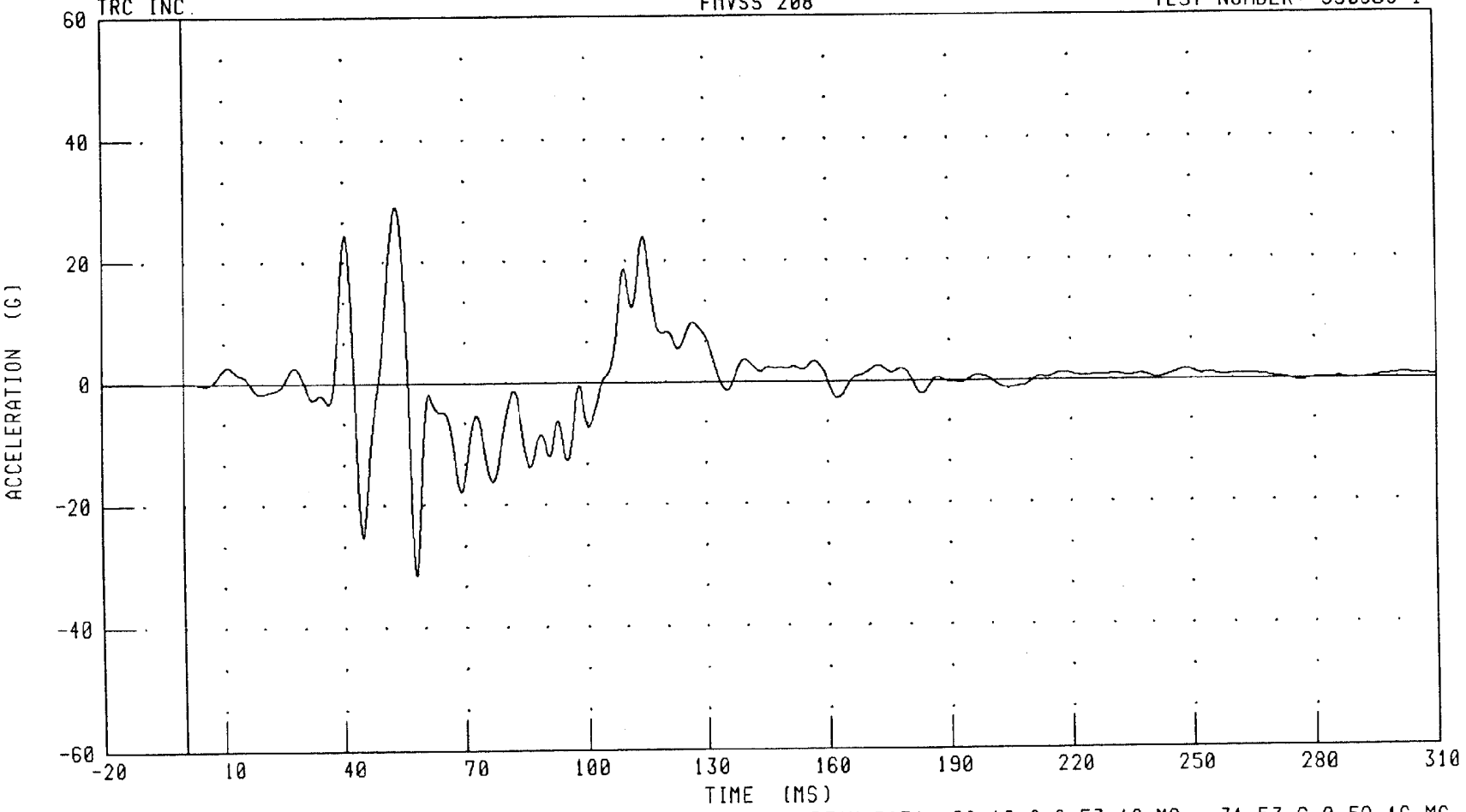


CHANNEL: DPCXG1 FILTER: CH. CLASS 60 PEAK DATA: 20.63 G @ 45.20 MS; -59.65 G @ 98.88 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH

DASH PANEL CENTER Y-AXIS ACCELERATION

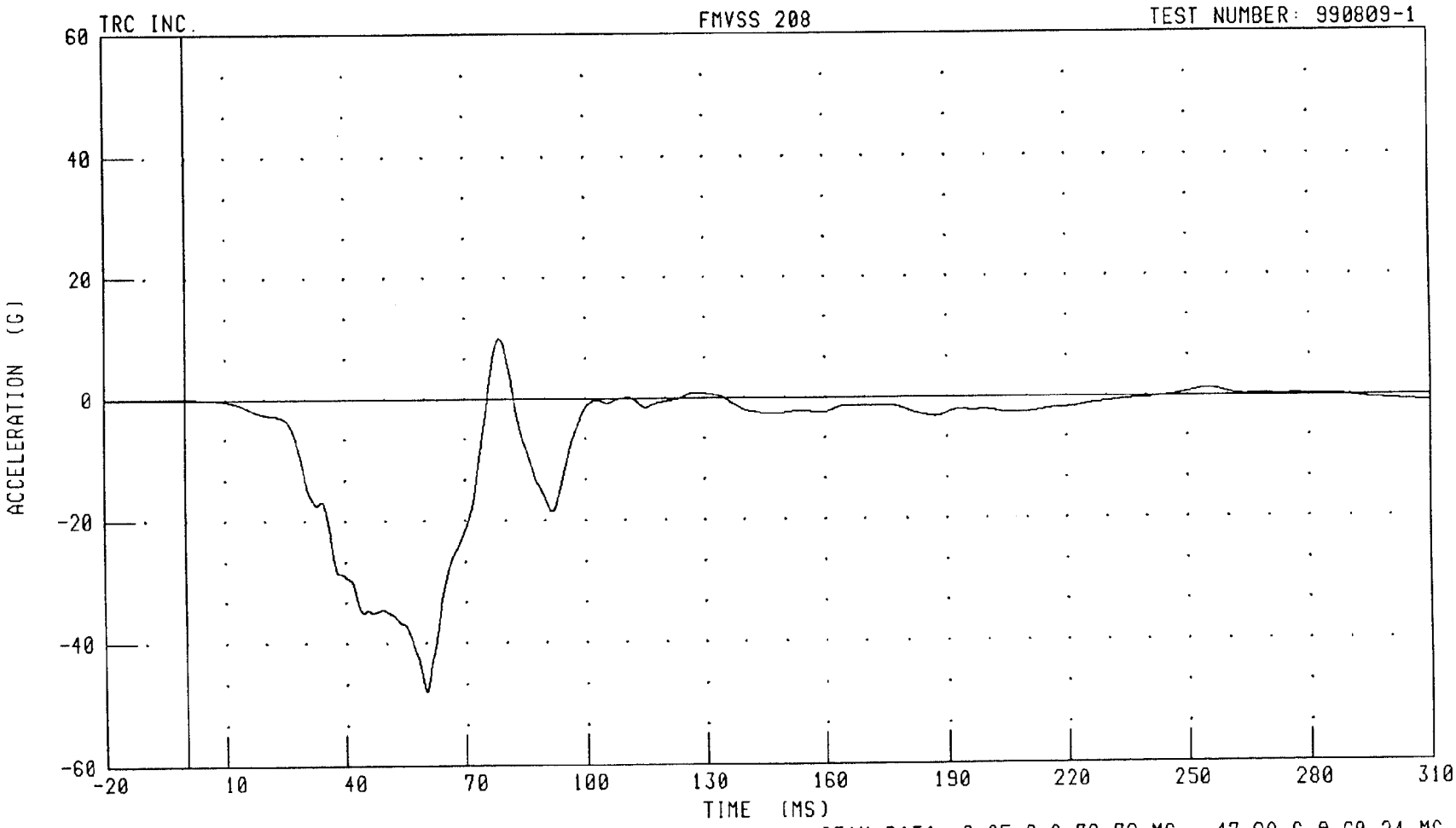
TRC INC. FMVSS 208 TEST NUMBER: 990809-1



CHANNEL: DPCYG1 FILTER: CH. CLASS 60 PEAK DATA: 29.12 G @ 53.12 MS; -31.53 G @ 58.16 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH

ENGINE TOP X-AXIS ACCELERATION

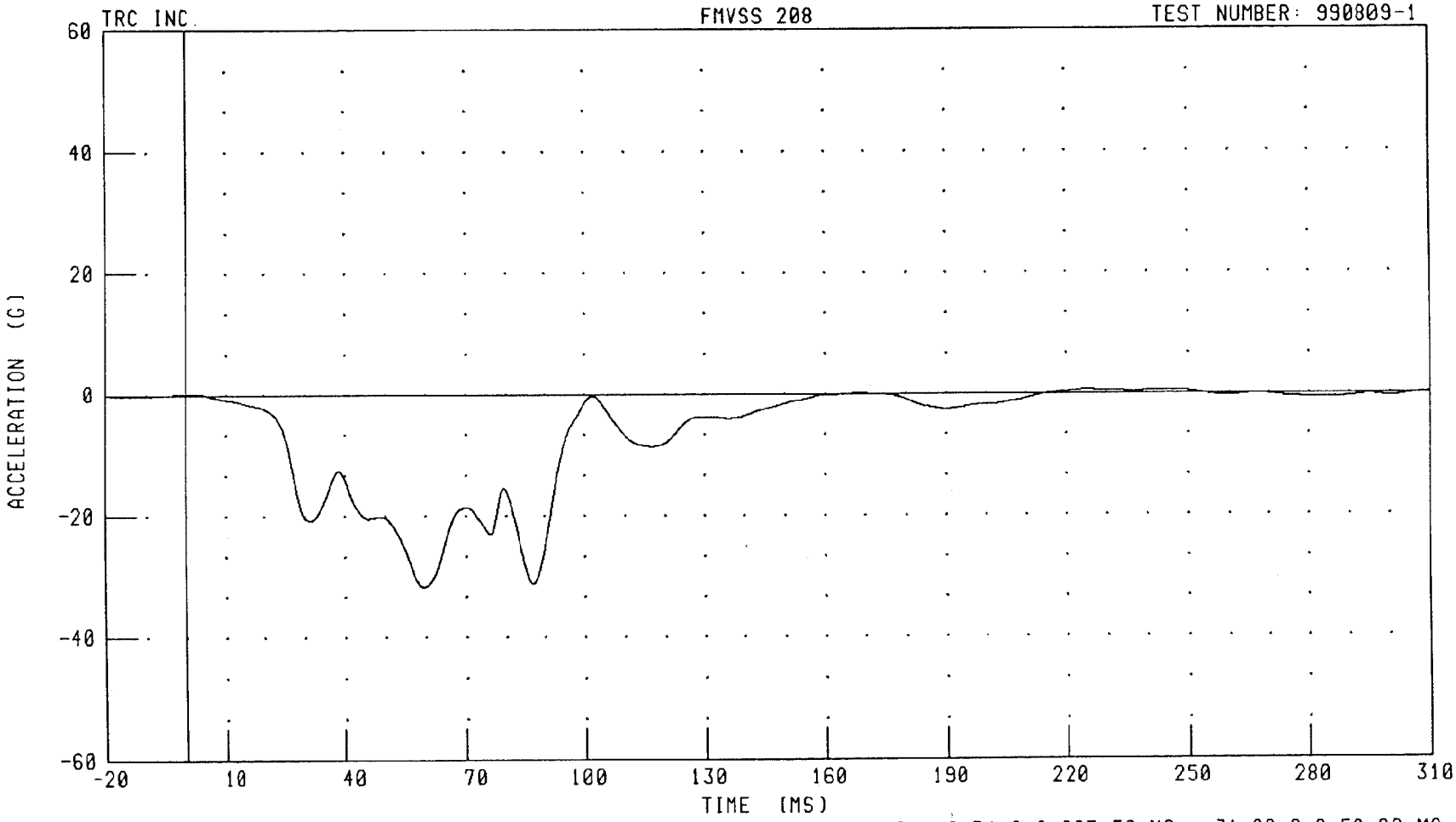


CHANNEL: ENGXG1 FILTER: CH. CLASS 60

PEAK DATA: 9.85 G @ 78.72 MS; -47.99 G @ 60.24 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH

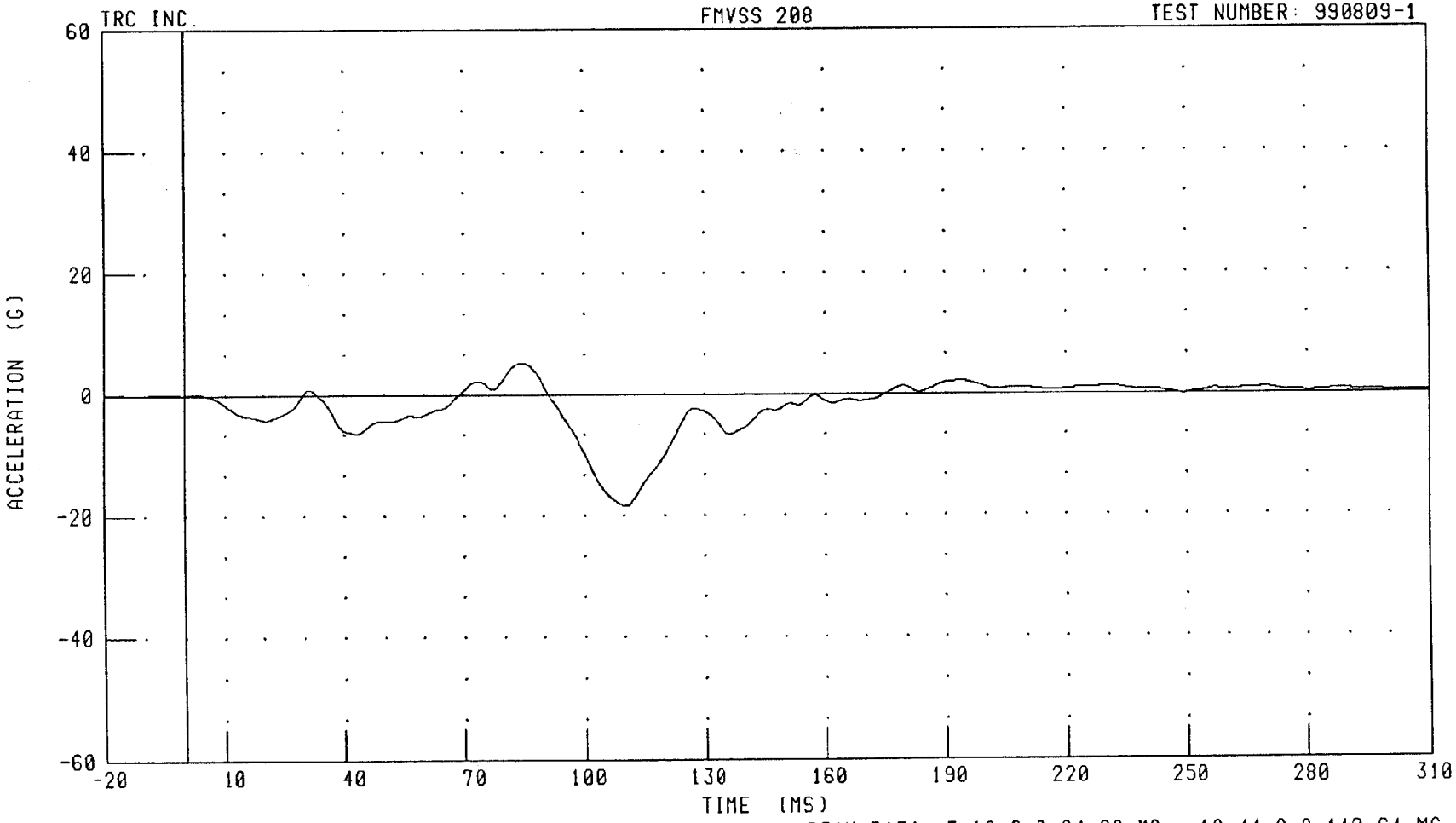
ENGINE BOTTOM X-AXIS ACCELERATION



CHANNEL: ENGXG2 FILTER: CH. CLASS 60

PEAK DATA: 0.54 G @ 225.52 MS; -31.69 G @ 59.68 MS

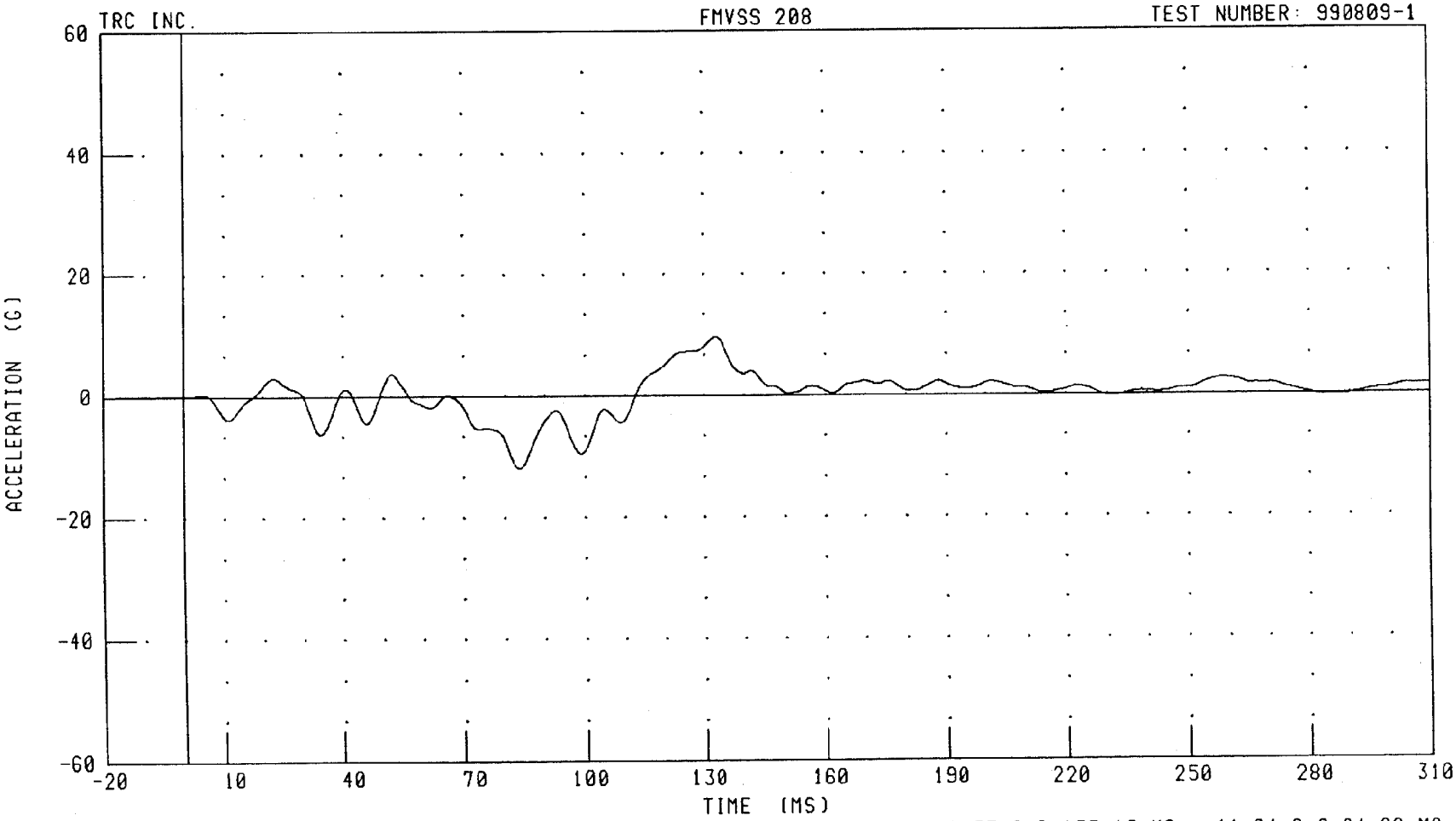
1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
VEHICLE REAR CENTER Y-AXIS ACCELERATION



CHANNEL: RDKYG1 FILTER: CH. CLASS 60

PEAK DATA: 5.18 G @ 84.80 MS, -18.44 G @ 110.64 MS

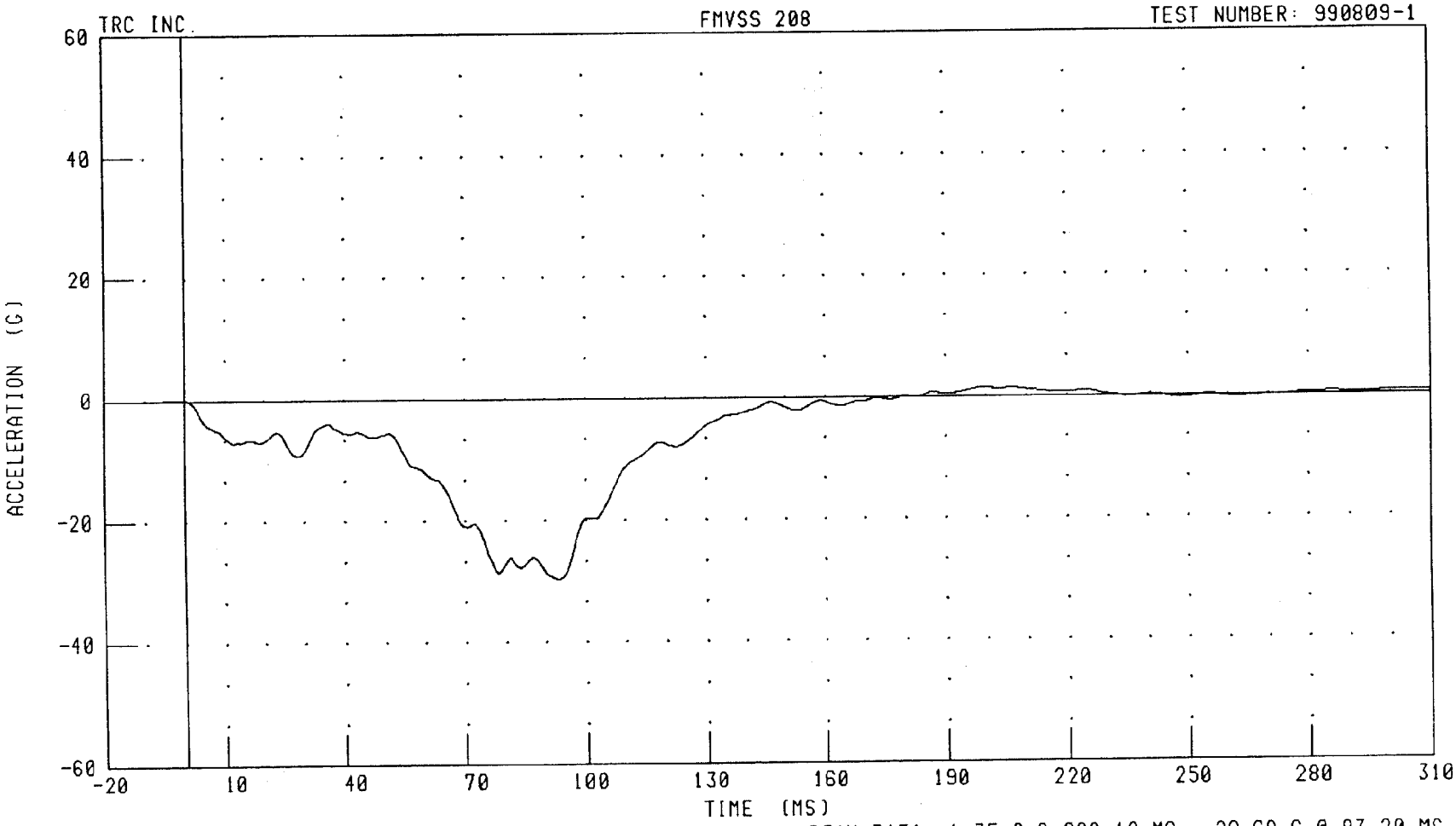
1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
VEHICLE REAR CENTER Z-AXIS ACCELERATION



CHANNEL: RDKZG1 FILTER: CH. CLASS 60

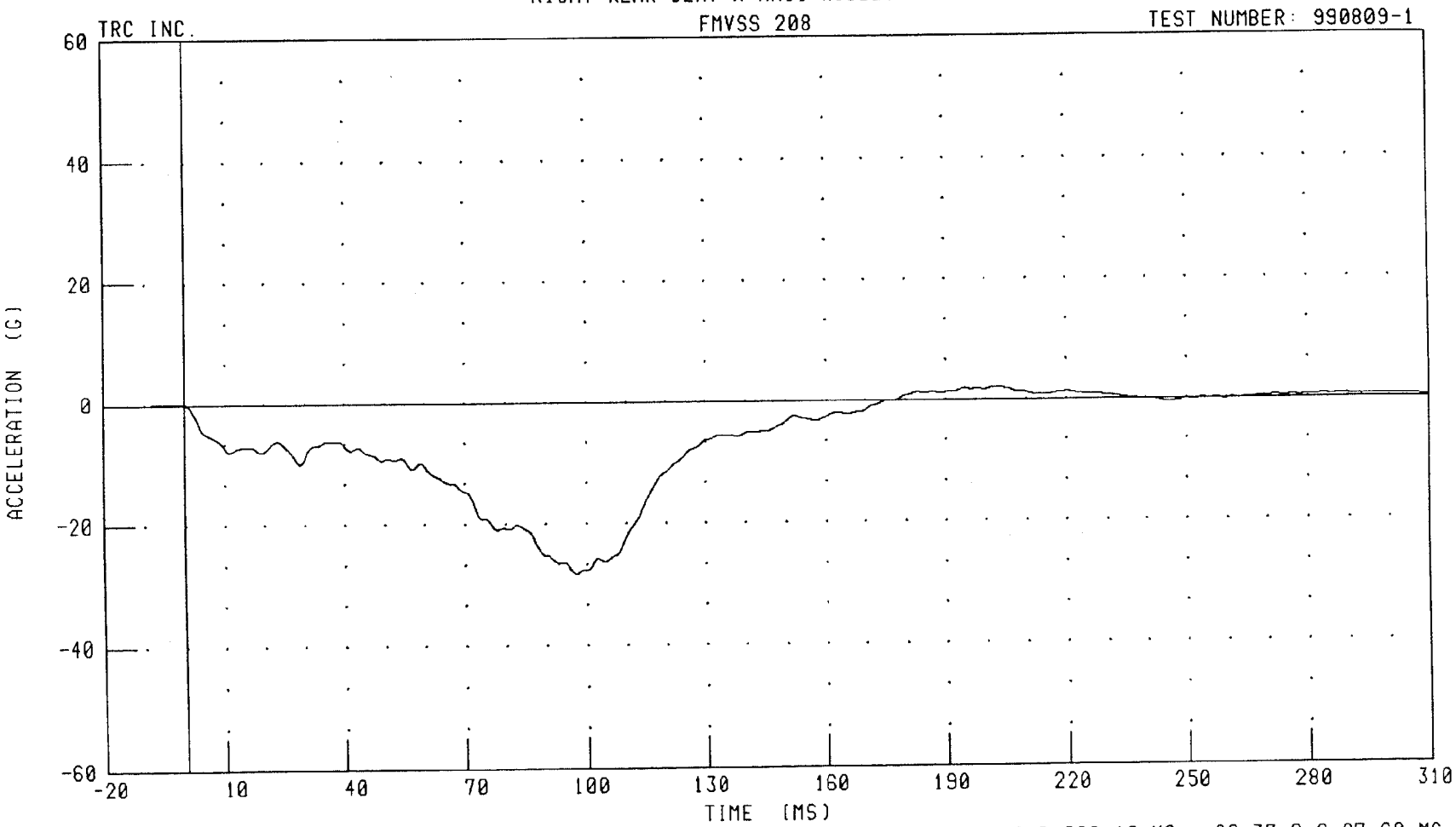
PEAK DATA: 9.55 G @ 133.12 MS; -11.94 G @ 84.00 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
LEFT REAR SEAT X-AXIS ACCELERATION



CHANNEL: TLRXC1 FILTER: CH. CLASS 60 PEAK DATA: 1.35 G @ 200.16 MS; -29.69 G @ 93.20 MS

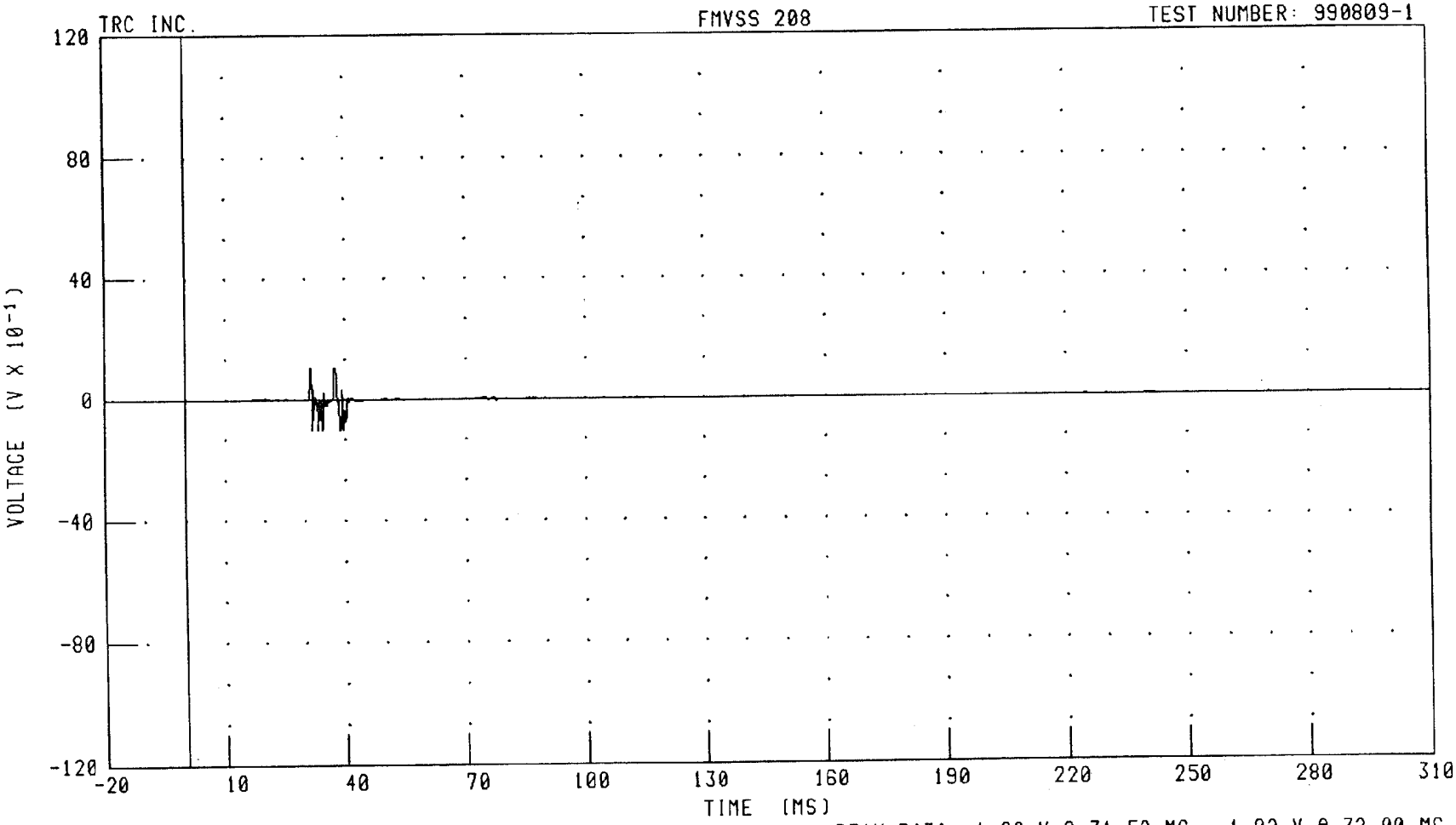
1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT REAR SEAT X-AXIS ACCELERATION



CHANNEL: TRRXG1 FILTER: CH. CLASS 60

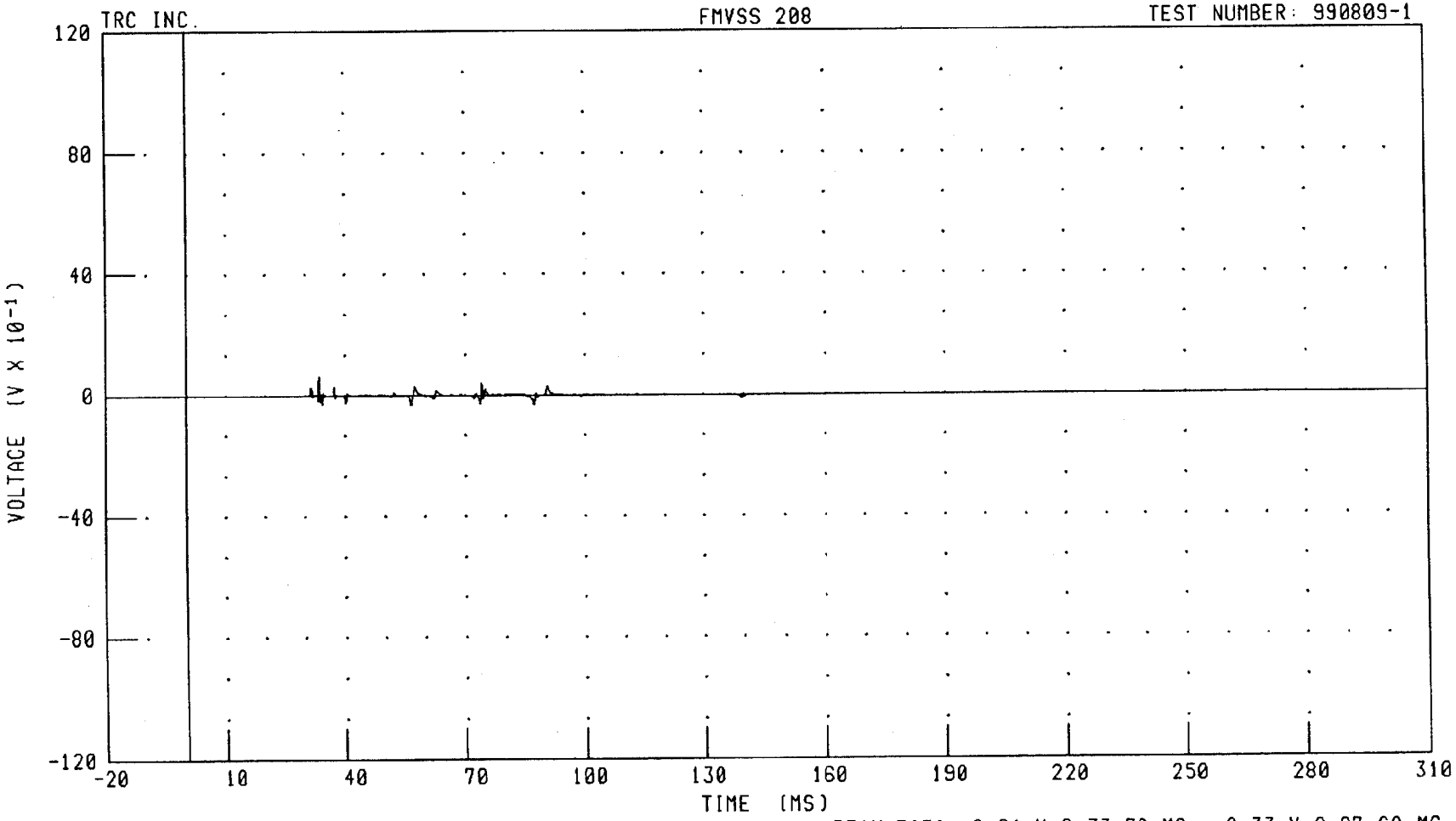
PEAK DATA: 2.04 G @ 202.16 MS; -28.37 G @ 97.60 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
DRIVER SIDE INDUCTIVE AIRBAG FIRE PICKUP



CHANNEL: ABSQ1 FILTER: CH. CLASS 1000 PEAK DATA: 1.02 V @ 31.52 MS; -1.02 V @ 32.00 MS

1999 DODGE INTREPID INTO 40% RIGHT OFFSET DEFORMABLE BARRIER AT 35 MPH
PASSENGER SIDE INDUCTIVE AIRBAG FIRE PICKUP



CHANNEL: ABSG2 FILTER: CH. CLASS 1000 PEAK DATA: 0.61 V @ 33.76 MS; -0.33 V @ 87.68 MS

Appendix C

Dummy Certification

Pre-Test Dummy Certification

Driver Dummy S/N 369

TRANSPORTATION RESEARCH CENTER INC.

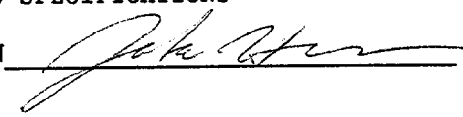
HEAD DROP TEST

HYBRID III SMALL FEMALE 06-AUG-99

TRC INC. TEST NO: 369C4HD1 S.FEMALE SN369 HEAD DROP CAL4

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	55.0 %
PEAK RESULTANT ACCELERATION	250 - 300 G	278.00 G
PEAK LATERAL ACCELERATION	15 G MAX	-6.03 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

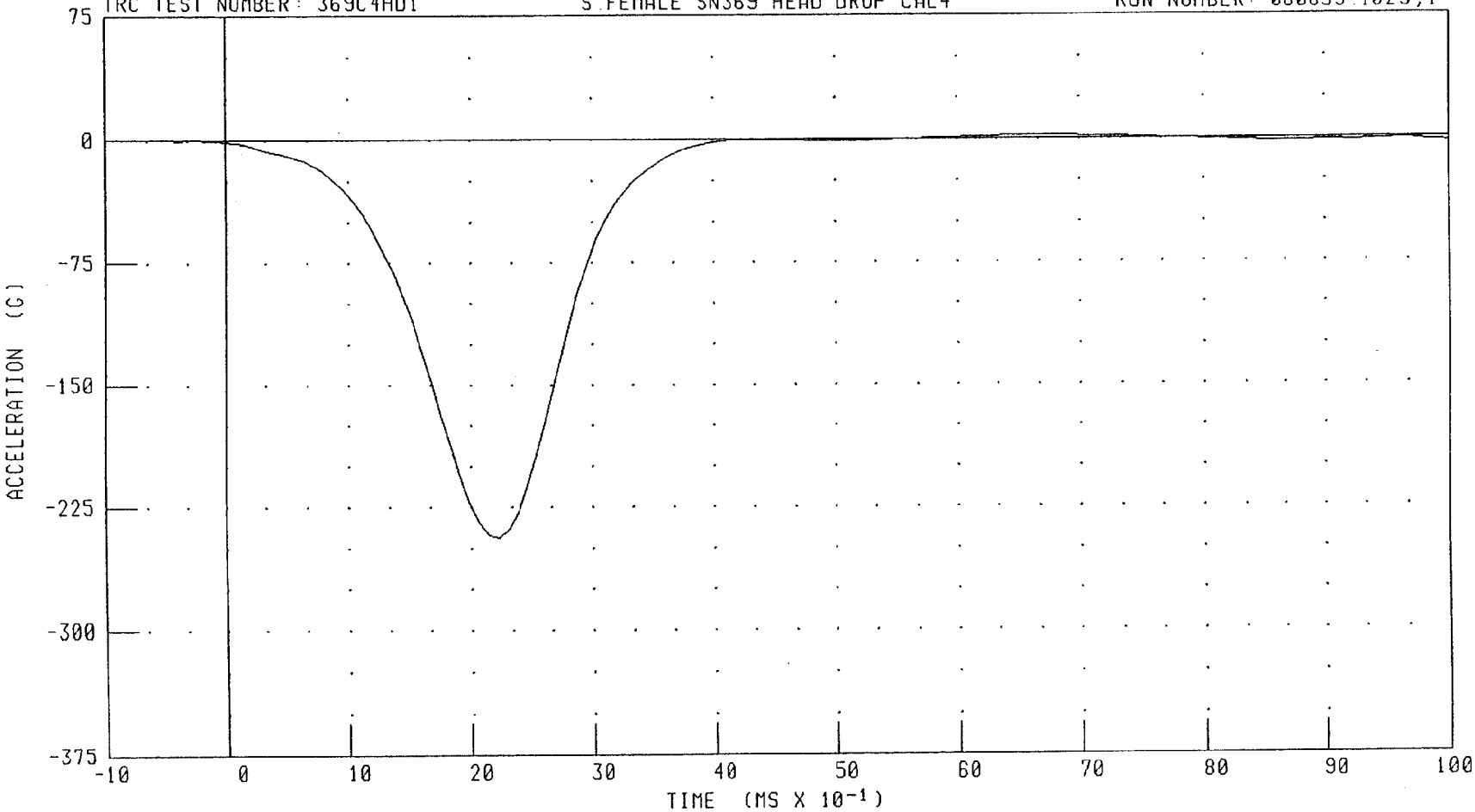
TEST MEETS SPECIFICATIONS

TECHNICIAN  RUN NUMBER: 080699.1022;1

SMALL FEMALE HYBRID III HEAD CALIBRATION

HEAD ACCELERATION X AXIS

TRC TEST NUMBER: 369C4HD1 S.FEMALE SN369 HEAD DROP CAL4 RUN NUMBER: 080699.1023;1

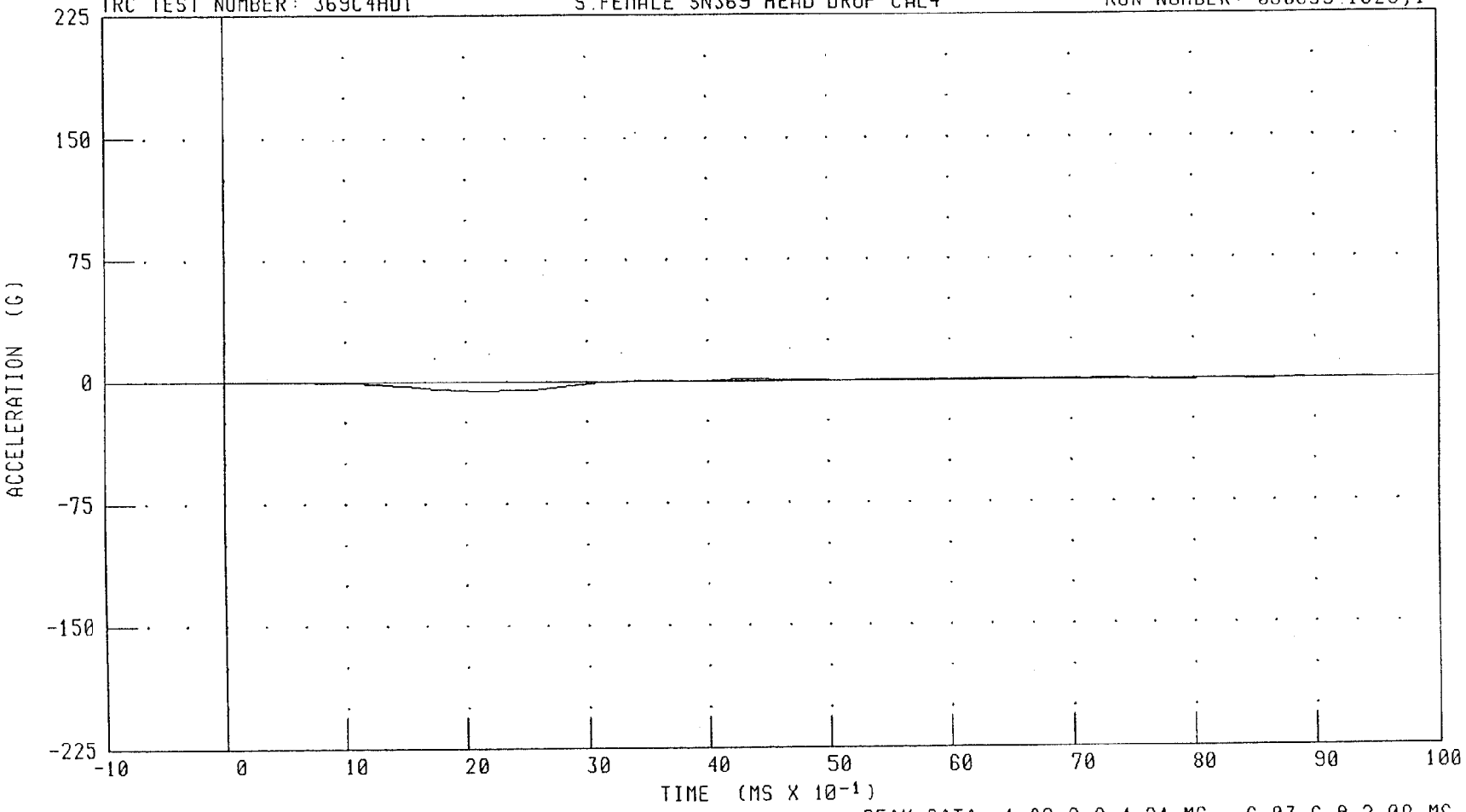


CHANNEL: HEDXG FILTER: CH. CLASS 1000 PEAK DATA: 2.02 G @ 6.64 MS; -243.45 G @ 2.24 MS

SMALL FEMALE HYBRID III HEAD CALIBRATION

HEAD ACCELERATION Y AXIS

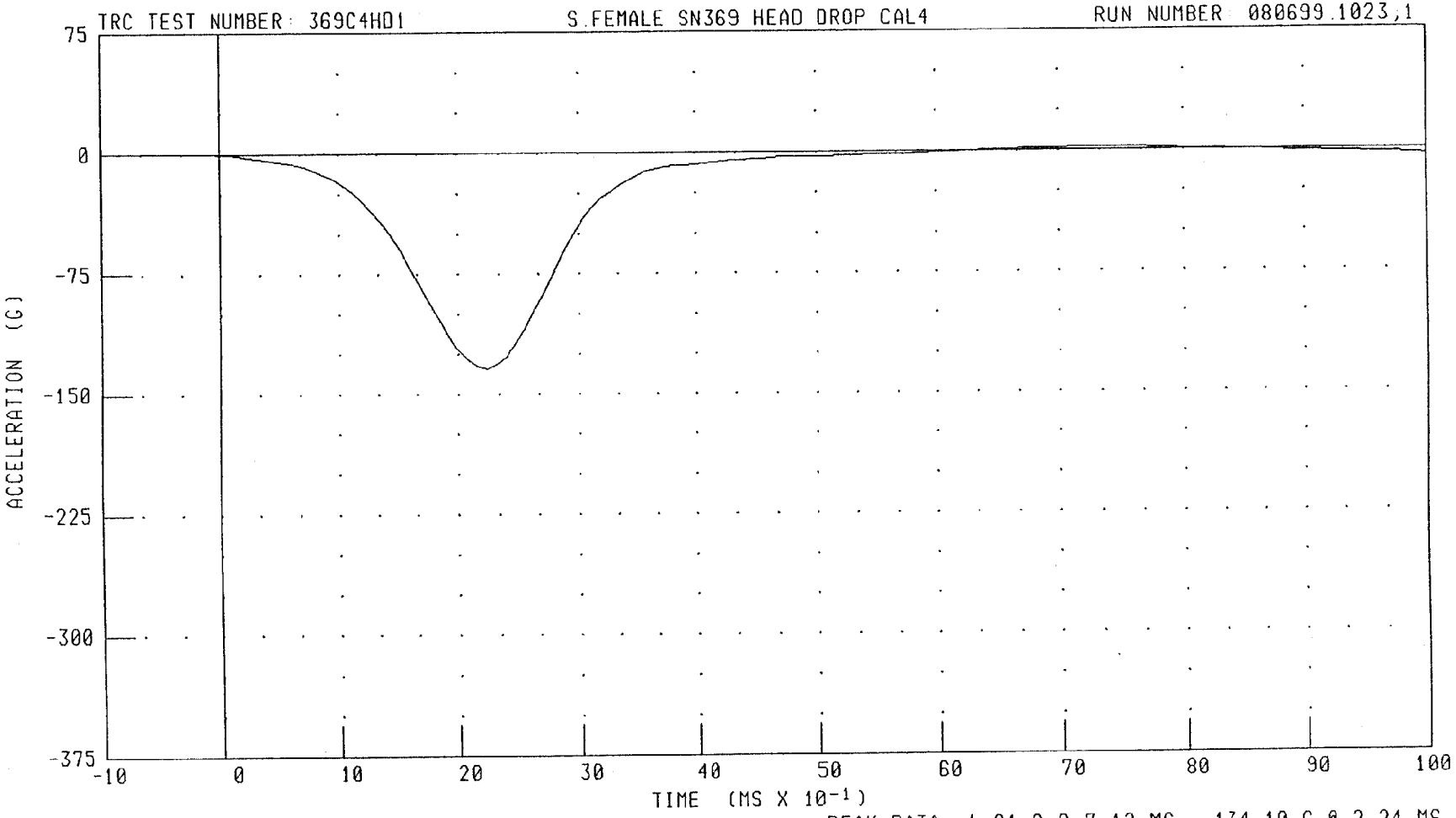
TRC TEST NUMBER: 369C4HD1 S.FEMALE SN369 HEAD DROP CAL4 RUN NUMBER: 080699.1023;1



CHANNEL: HEDYG FILTER: CH. CLASS 1000 PEAK DATA: 1.02 G @ 4.24 MS; -6.03 G @ 2.08 MS

SMALL FEMALE HYBRID III HEAD CALIBRATION

HEAD ACCELERATION Z AXIS

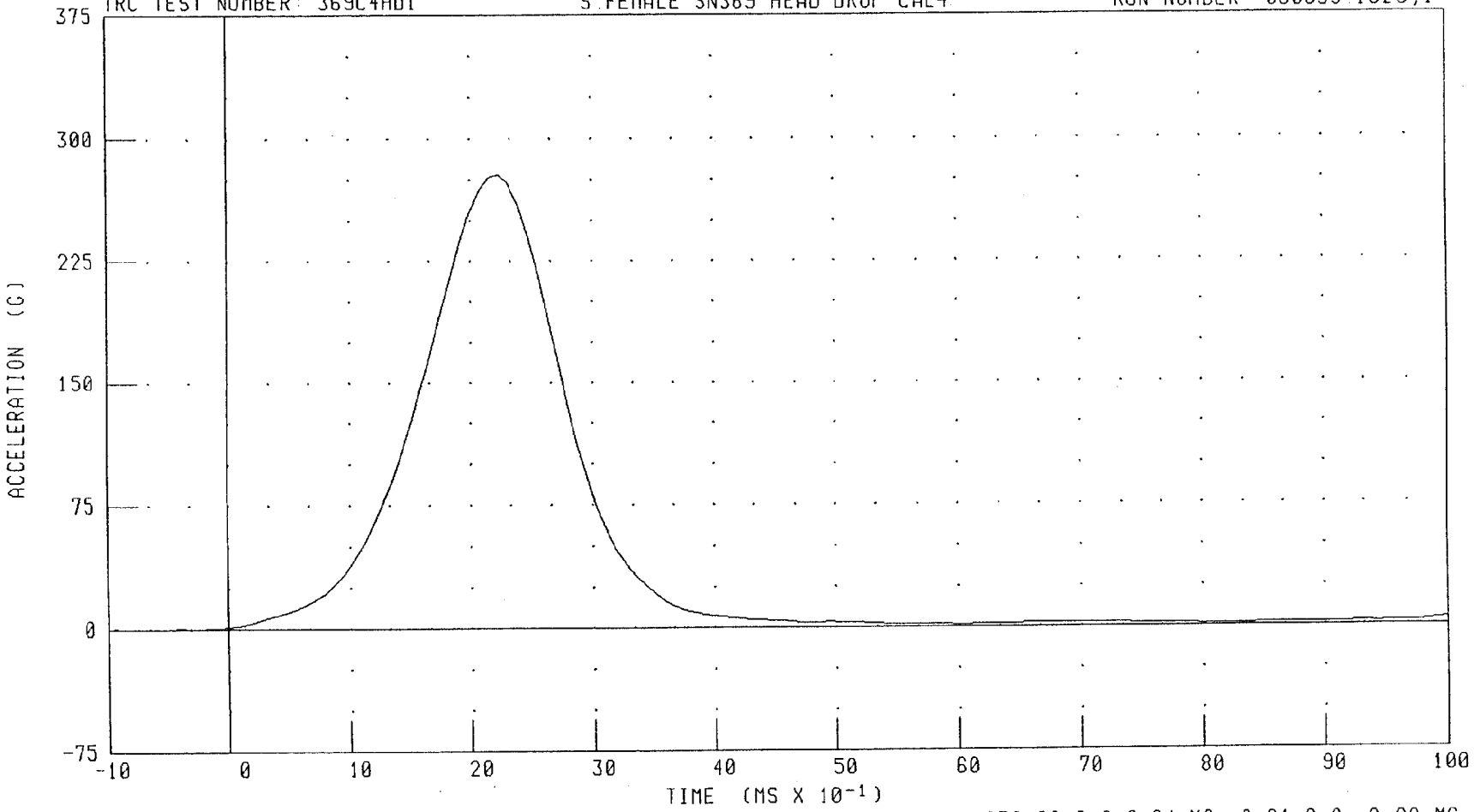


CHANNEL: HEDZG FILTER: CH. CLASS 1000

PEAK DATA: 1.81 G @ 7.12 MS; -134.10 G @ 2.24 MS

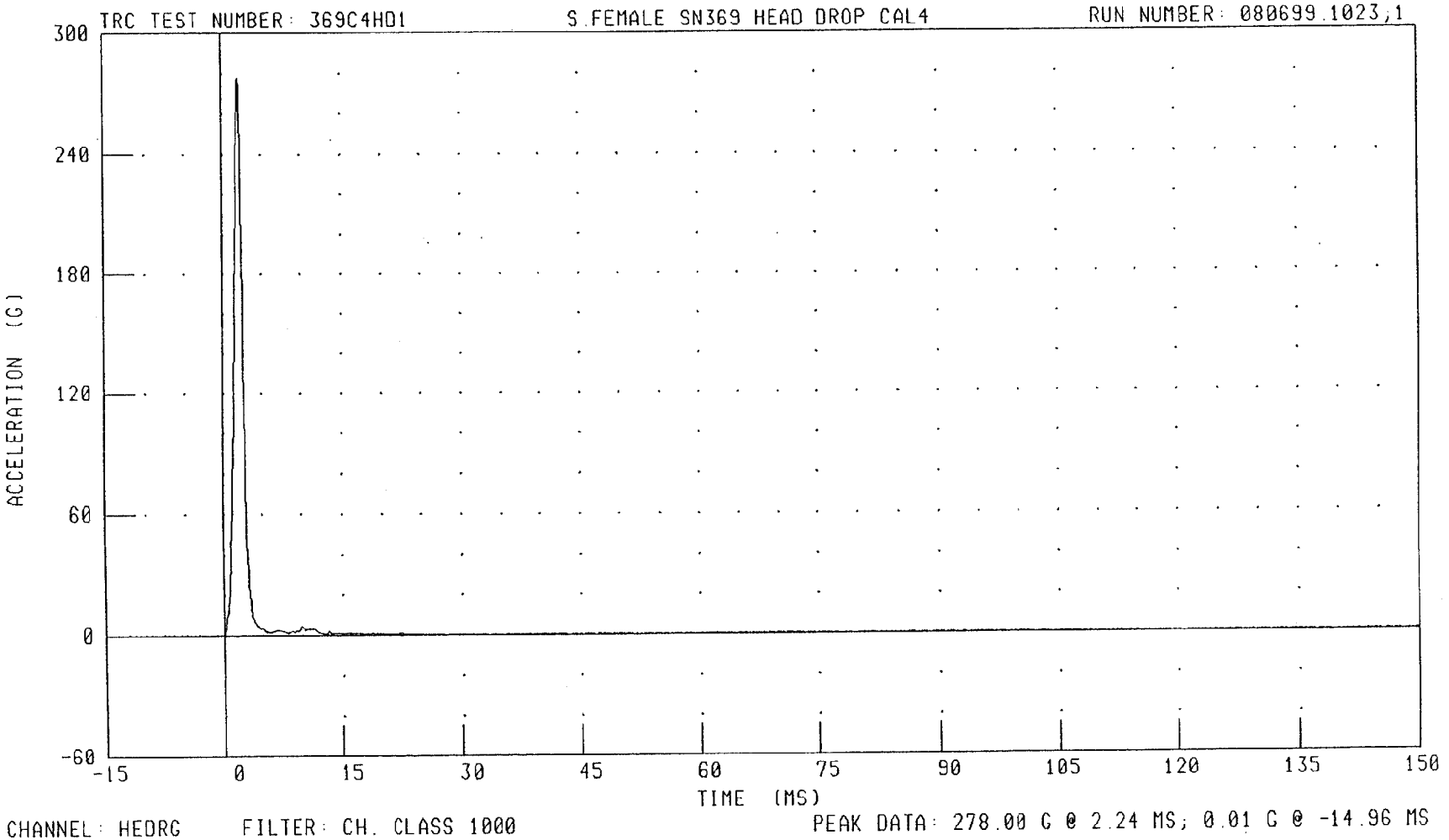
SMALL FEMALE HYBRID III HEAD CALIBRATION
HEAD RESULTANT ACCELERATION

TRC TEST NUMBER: 369C4HD1 S.FEMALE SN369 HEAD DROP CAL4 RUN NUMBER: 080699.1023,1



CHANNEL: HEDRG FILTER: CH. CLASS 1000 PEAK DATA: 278.00 G @ 2.24 MS; 0.01 G @ -0.88 MS

SMALL FEMALE HYBRID III HEAD CALIBRATION
CHECK PLOT - HEAD RESULTANT ACCELERATION



CHANNEL: HEDRG FILTER: CH. CLASS 1000 PEAK DATA: 278.00 G @ 2.24 MS; 0.01 G @ -14.96 MS

TRANSPORTATION RESEARCH CENTER INC.

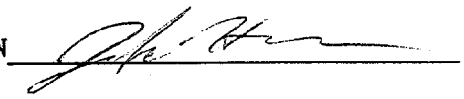
HYBRID III SMALL FEMALE 06-AUG-99

NECK FLEXION TEST - 6 CHANNEL TRANSDUCER

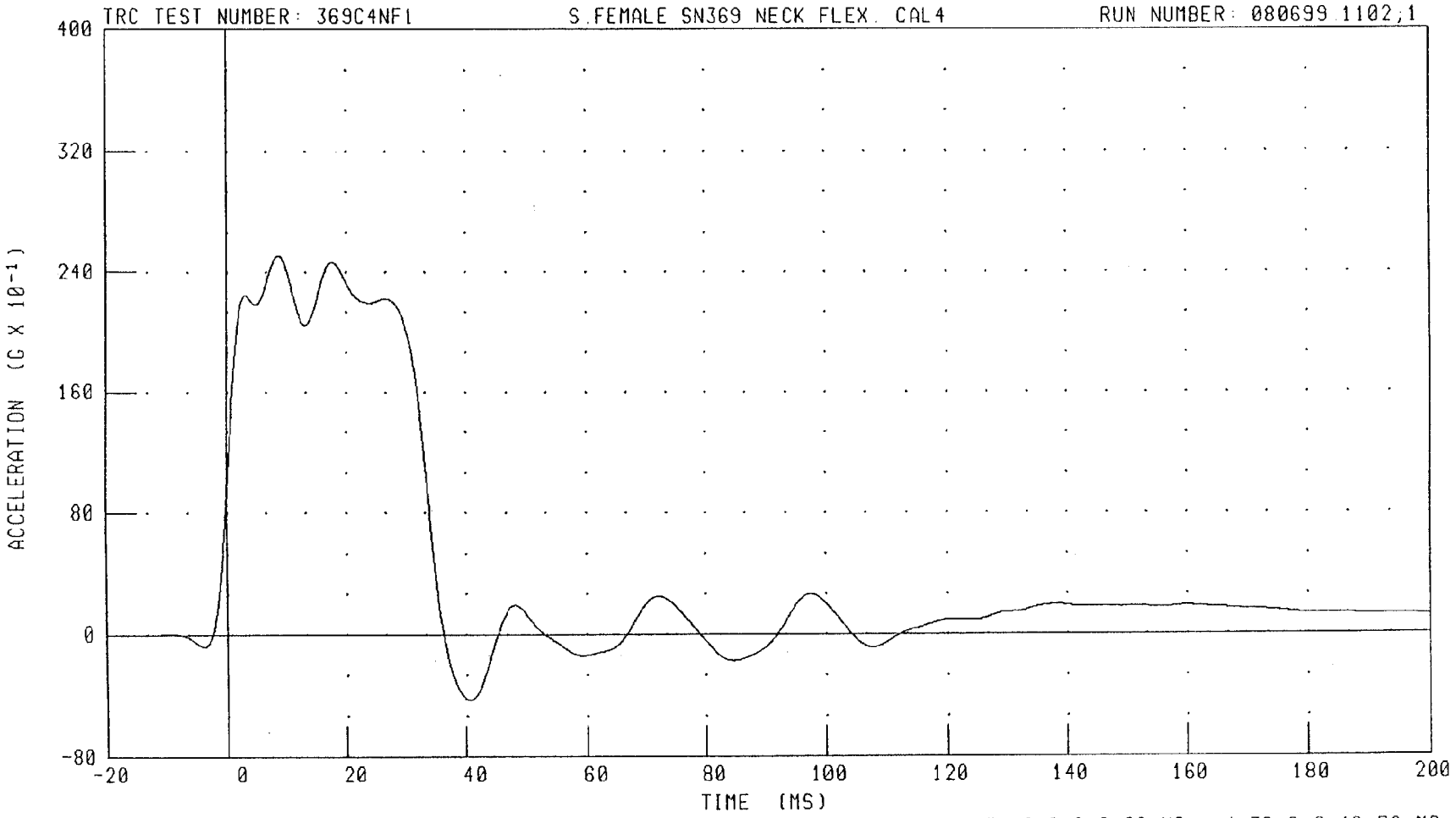
TRC INC. TEST NO: 369C4NF1 S.FEMALE SN369 NECK FLEX. CAL4

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6-22.2 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY		10 - 70 %	55.0 %
IMPACT VELOCITY		6.89 - 7.13 M/S	7.06 M/S
INTEGRATED PENDULUM VELOCITY	10 MS	2.1 - 2.5 M/S	2.19 M/S
	20 MS	4.0 - 5.0 M/S	4.42 M/S
	30 MS	5.8 - 7.0 M/S	6.58 M/S
PEAK D-PLANE ROTATION		80 - 92 DEG.	80.82 DEG.
PEAK MOMENT ABOUT OCCIPITAL CONDYLE DURING ROTATION INT		69 - 83 NM	74.15 NM
POSITIVE MOMENT DECAY TIME FROM TO TO 10 NM		80 - 100 MS	88.16 MS

TEST MEETS SPECIFICATIONS

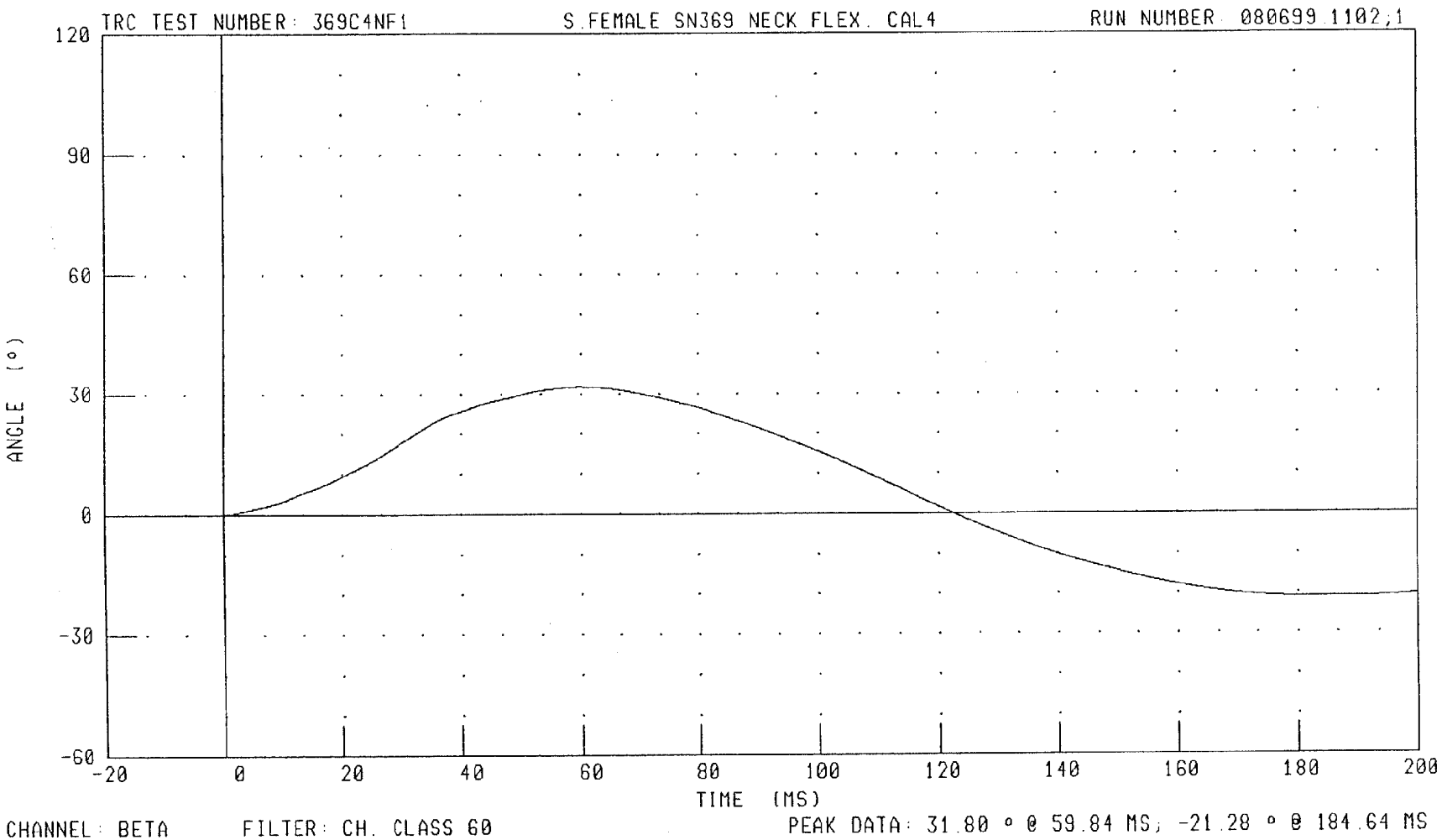
TECHNICIAN  RUN NUMBER: 080699.1050;1

SMALL FEMALE HYBRID III NECK FLEXION CALIBRATION
PENDULUM DECELERATION



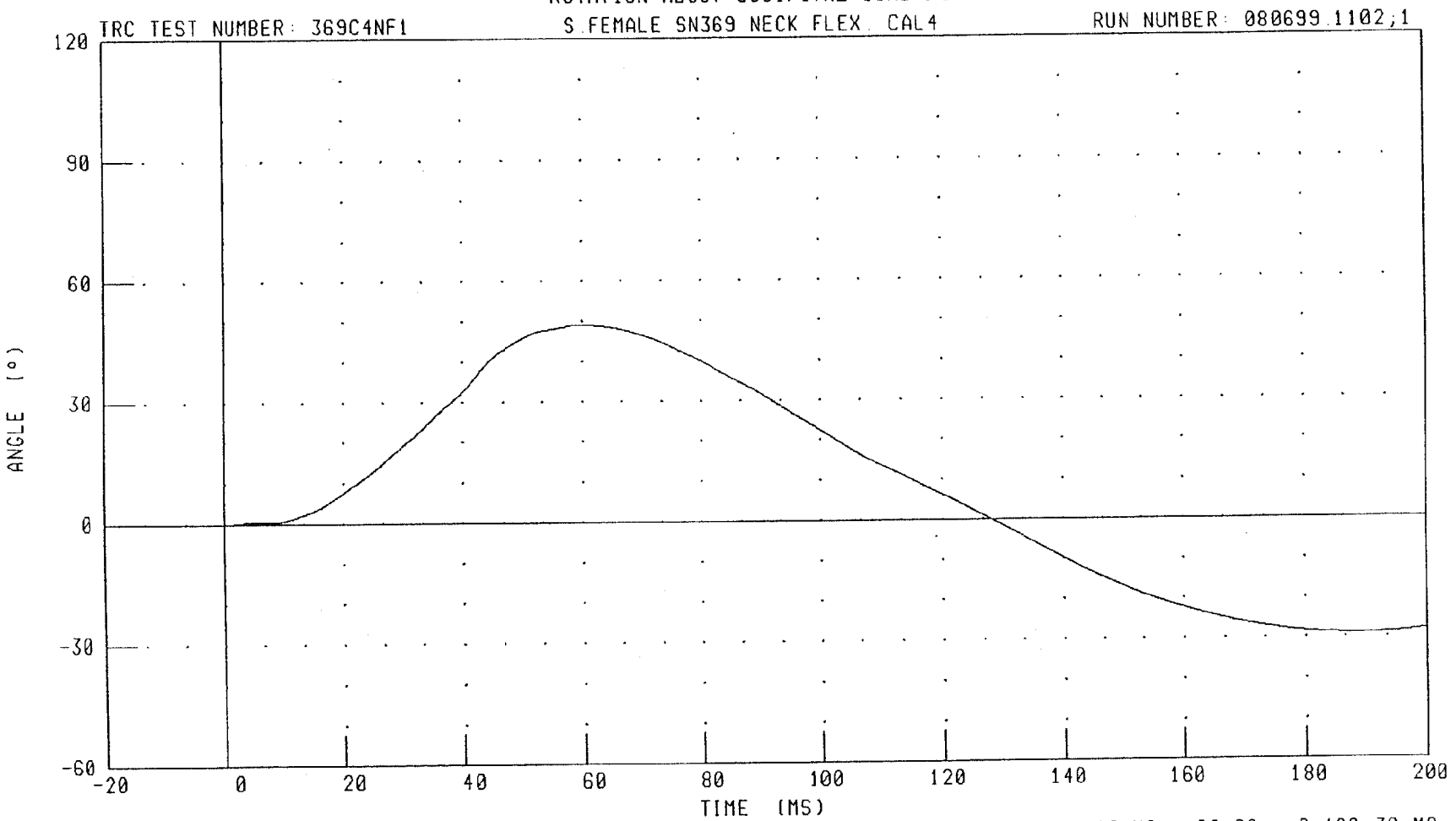
CHANNEL: PENXG FILTER: CH. CLASS 60 PEAK DATA: 25.12 G @ 8.80 MS, -4.30 G @ 40.72 MS

SMALL FEMALE HYBRID III NECK FLEXION CALIBRATION
ROTATION ABOUT BASE OF NECK



CHANNEL: BETA FILTER: CH. CLASS 60 PEAK DATA: 31.80 ° @ 59.84 MS; -21.28 ° @ 184.64 MS

SMALL FEMALE HYBRID III NECK FLEXION CALIBRATION
ROTATION ABOUT OCCIPITAL CONDYLE

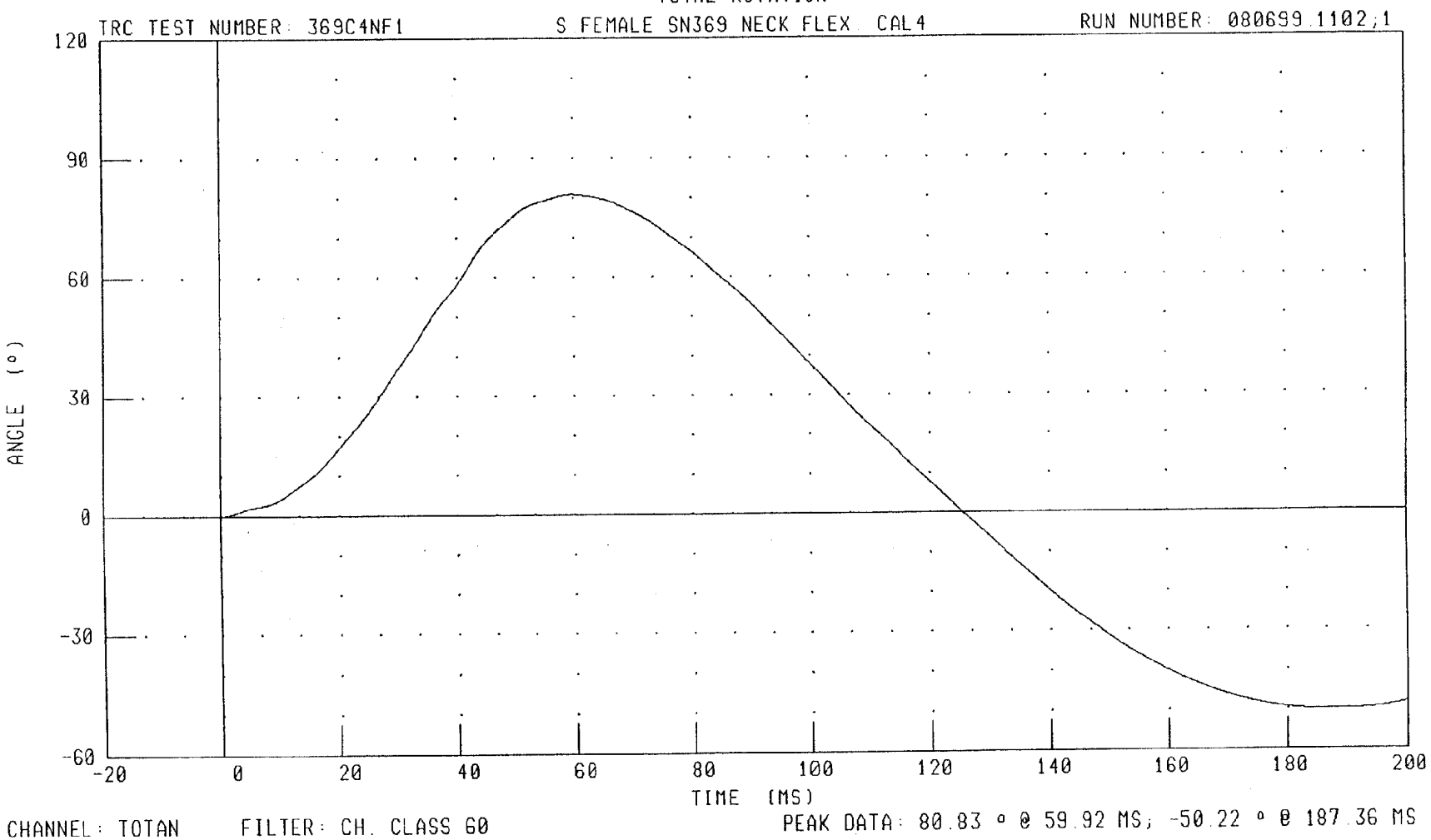


CHANNEL: THETA FILTER: CH. CLASS 60

PEAK DATA: 49.03 ° @ 59.92 MS; -28.98 ° @ 189.36 MS

SMALL FEMALE HYBRID III NECK FLEXION CALIBRATION

TOTAL ROTATION



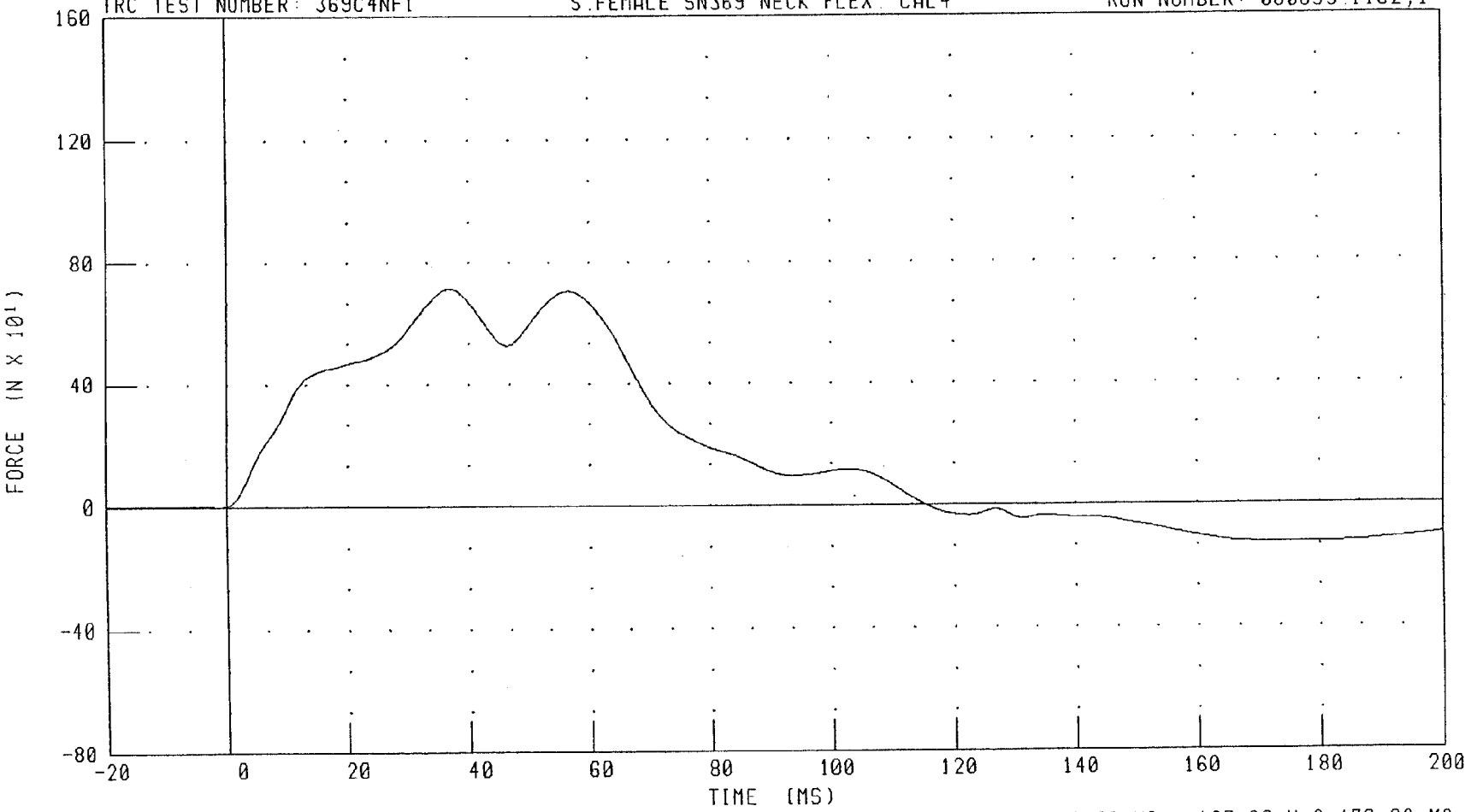
CHANNEL: TOTAN FILTER: CH. CLASS 60

PEAK DATA: 80.83 ° @ 59.92 MS; -50.22 ° @ 187.36 MS

SMALL FEMALE HYBRID III NECK FLEXION CALIBRATION

NECK FORCE X AXIS

TRC TEST NUMBER: 369C4NF1 S.FEMALE SN369 NECK FLEX. CAL4 RUN NUMBER: 080699.1102;1



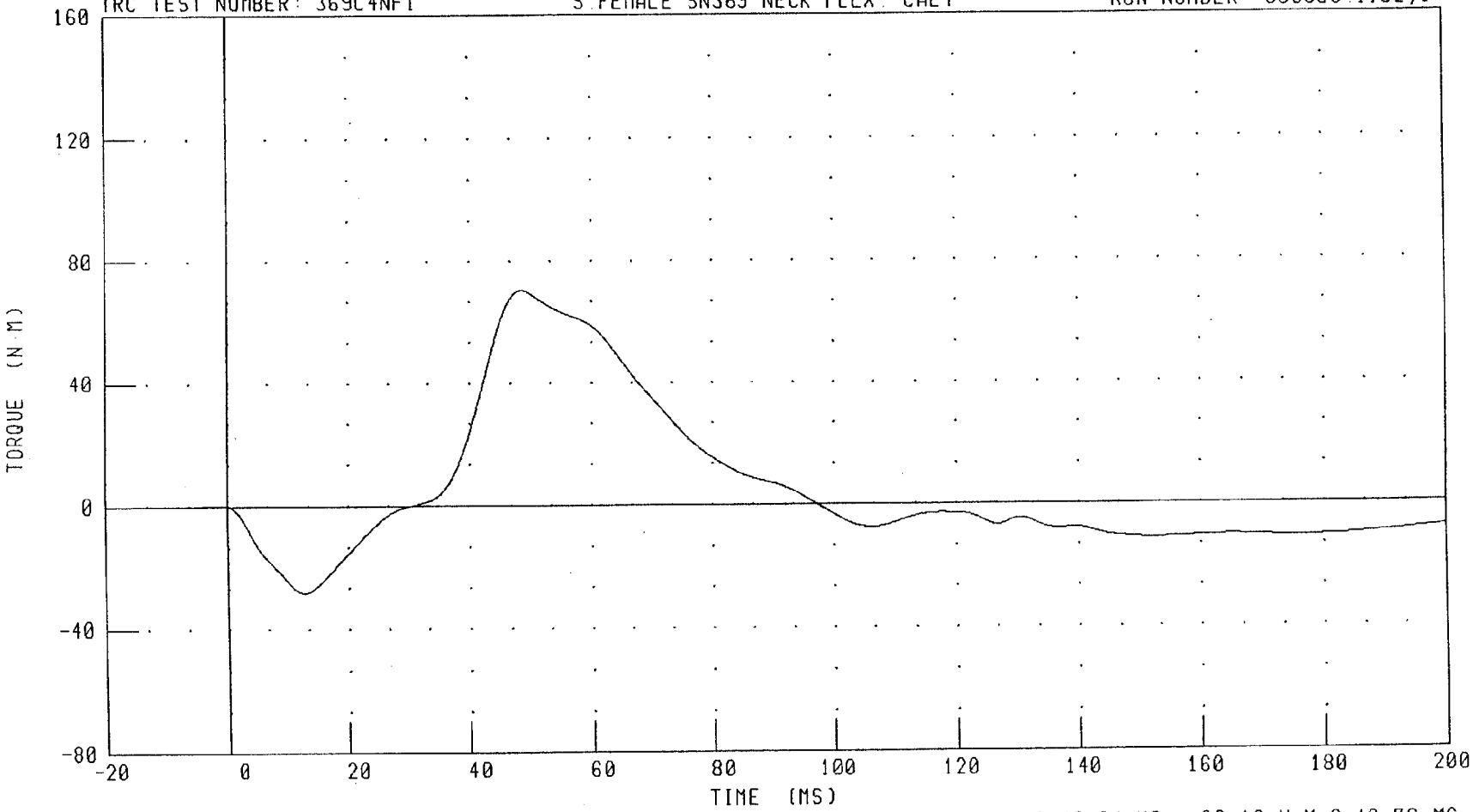
CHANNEL: NEKXF FILTER: CH. CLASS 60

PEAK DATA: 713.75 N @ 36.96 MS; -127.86 N @ 178.08 MS

SMALL FEMALE HYBRID III NECK FLEXION CALIBRATION

NECK MOMENT Y AXIS

TRC TEST NUMBER: 369C4NF1 S FEMALE SN369 NECK FLEX. CAL4 RUN NUMBER: 080699.1102,1



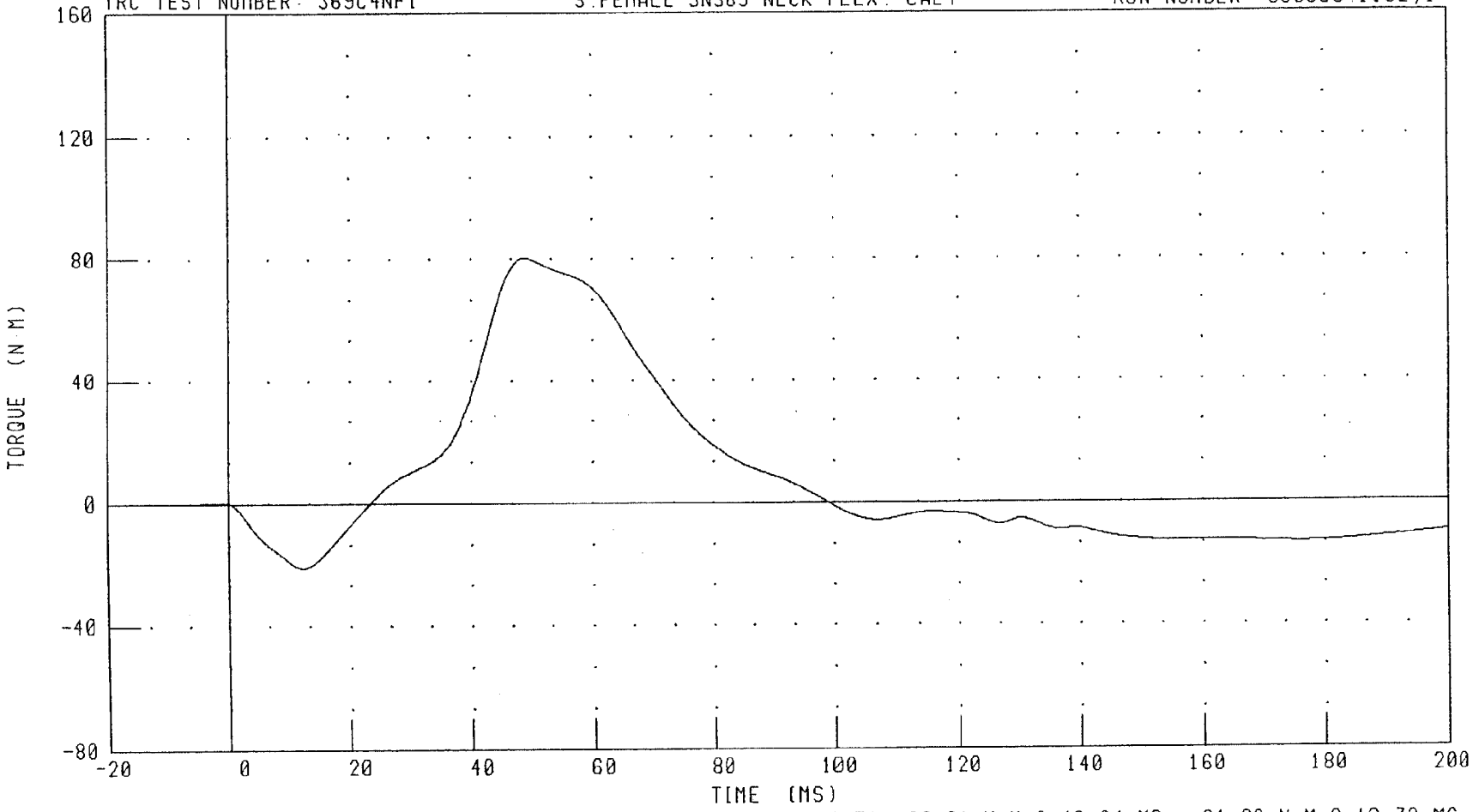
CHANNEL: NEKYM FILTER: CH. CLASS 60

PEAK DATA: 70.26 N-M @ 48.64 MS; -28.19 N-M @ 12.72 MS

SMALL FEMALE HYBRID III NECK FLEXION CALIBRATION

TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: 369C4NF1 S.FEMALE SN369 NECK FLEX. CAL4 RUN NUMBER: 080699.1102;1



CHANNEL: NEKOM FILTER: CH. CLASS 60 PEAK DATA: 80.21 N.M @ 49.04 MS; -21.00 N.M @ 12.32 MS

TRANSPORTATION RESEARCH CENTER INC.

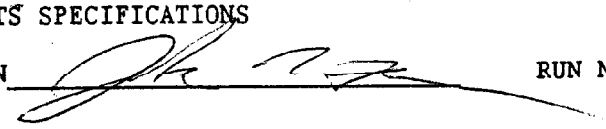
HYBRID III SMALL FEMALE 06-AUG-99

NECK EXTENSION TEST - 6 CHANNEL TRANSDUCER

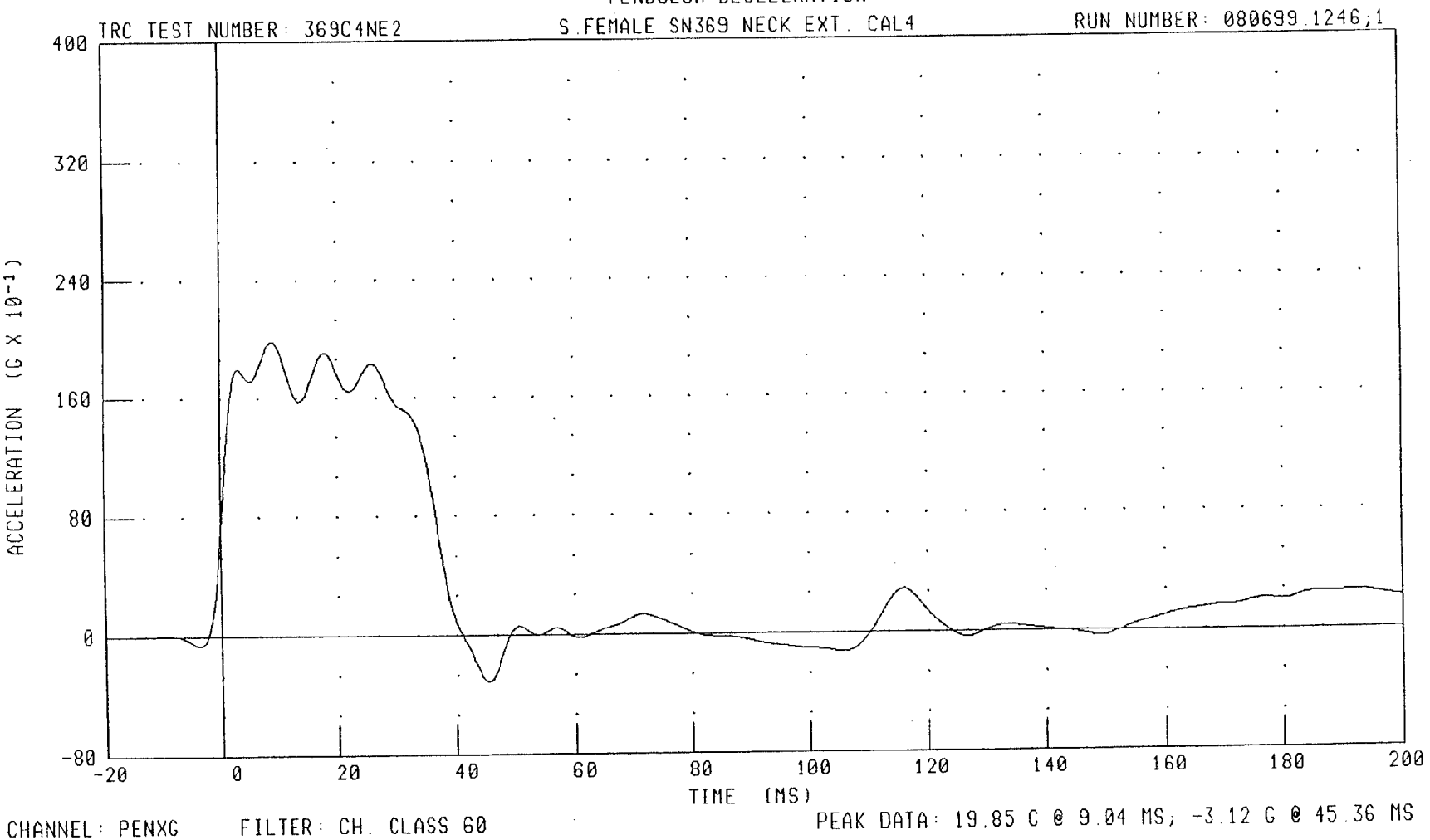
TRC INC. TEST NO: 369C4NE2 S.FEMALE SN369 NECK EXT. CAL4

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6 - 22.2 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY		10 - 70 %	55.0 %
IMPACT VELOCITY		5.95 - 6.19 M/S	6.05 M/S
INTEGRATED PENDULUM VELOCITY	10 MS	1.5 - 1.9 M/S	1.71 M/S
	20 MS	3.1 - 3.9 M/S	3.44 M/S
	30 MS	4.6 - 5.6 M/S	5.12 M/S
PEAK D-PLANE ROTATION		97 - 109 DEG.	103.35 DEG.
PEAK MOMENT ABOUT OCCIPITAL CONDYLE DURING ROTTION INT		-55 \ -69 NM	-56.00 NM
NEGATIVE MOMENT DECAY TIME FROM TO TO -10 NM		94 - 114 MS	109.04 MS

TEST MEETS SPECIFICATIONS

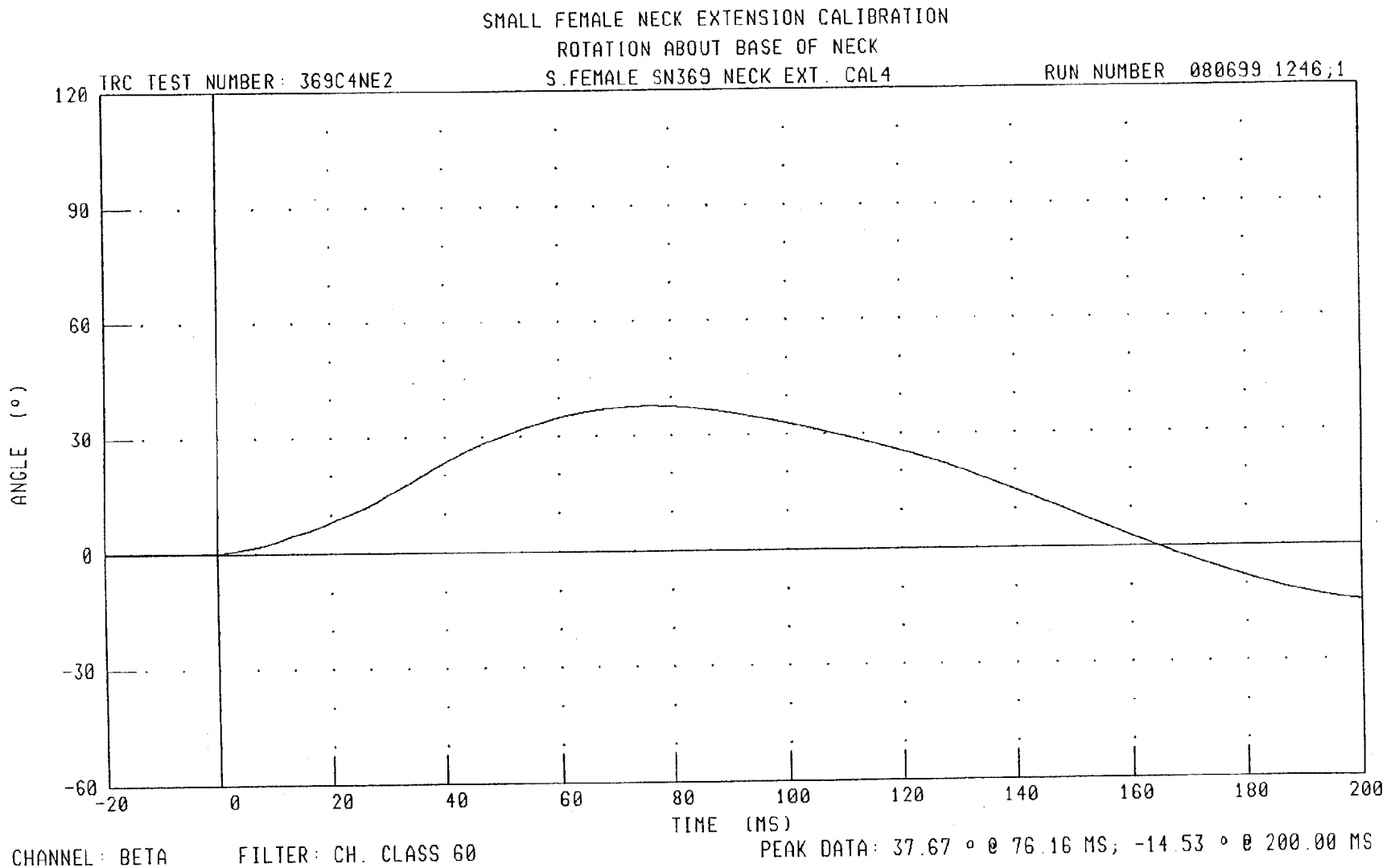
TECHNICIAN  RUN NUMBER: 080699.1236;1

SMALL FEMALE NECK EXTENSION CALIBRATION
PENDULUM DECELERATION

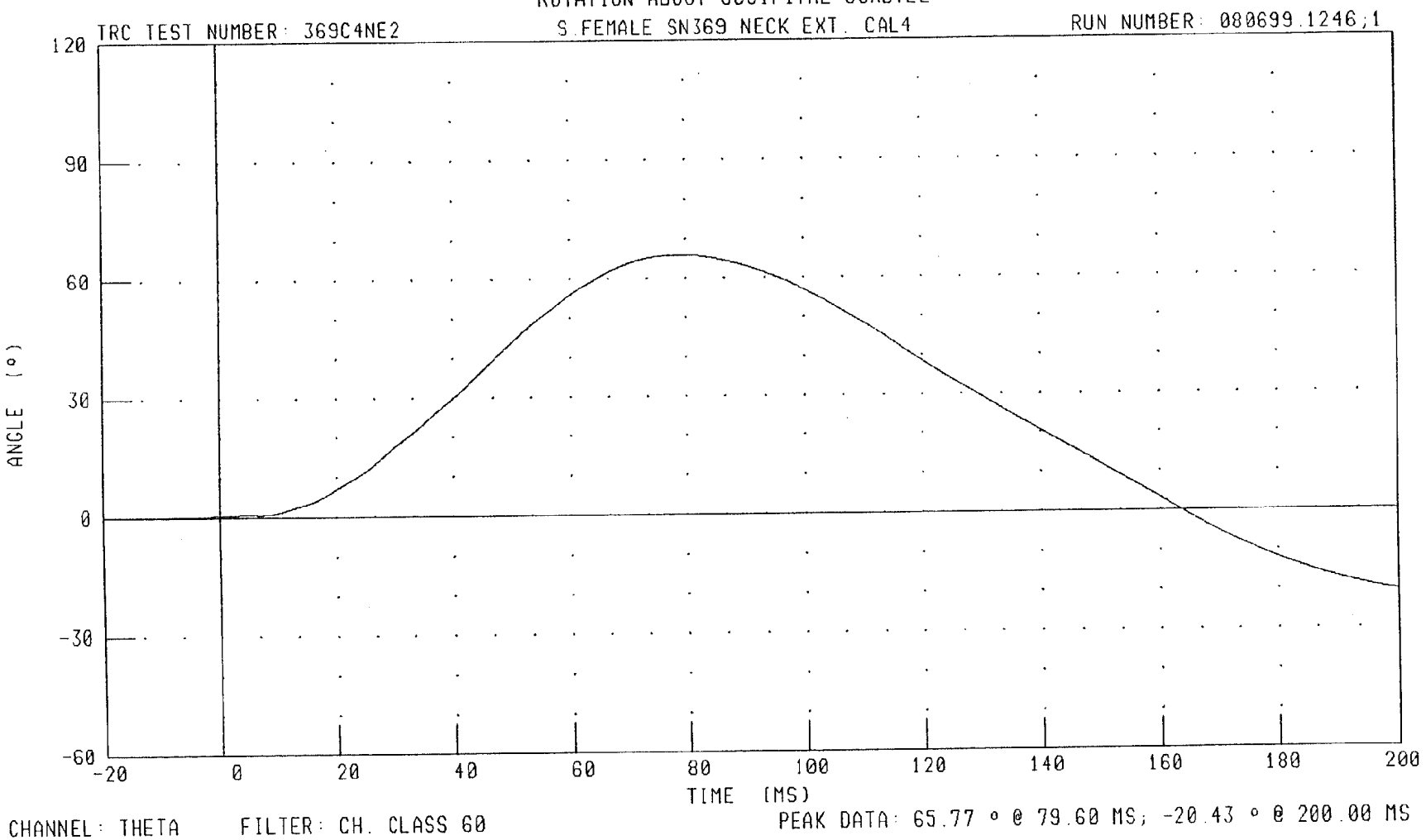


CHANNEL: PENXG FILTER: CH. CLASS 60

PEAK DATA: 19.85 G @ 9.04 MS; -3.12 G @ 45.36 MS


SMALL FEMALE NECK EXTENSION CALIBRATION
ROTATION ABOUT BASE OF NECK
TRC TEST NUMBER: 369C4NE2
S.FEMALE SN369 NECK EXT. CAL4
RUN NUMBER 080699 1246;1
ANGLE (°)
120
90
60
30
0
-30
-60
-20
0
20
40
60
80
100
120
140
160
180
200
TIME (MS)
CHANNEL: BETA
FILTER: CH. CLASS 60
PEAK DATA: 37.67 ° @ 76.16 MS; -14.53 ° @ 200.00 MS

SMALL FEMALE NECK EXTENSION CALIBRATION
ROTATION ABOUT OCCIPITAL CONDYLE



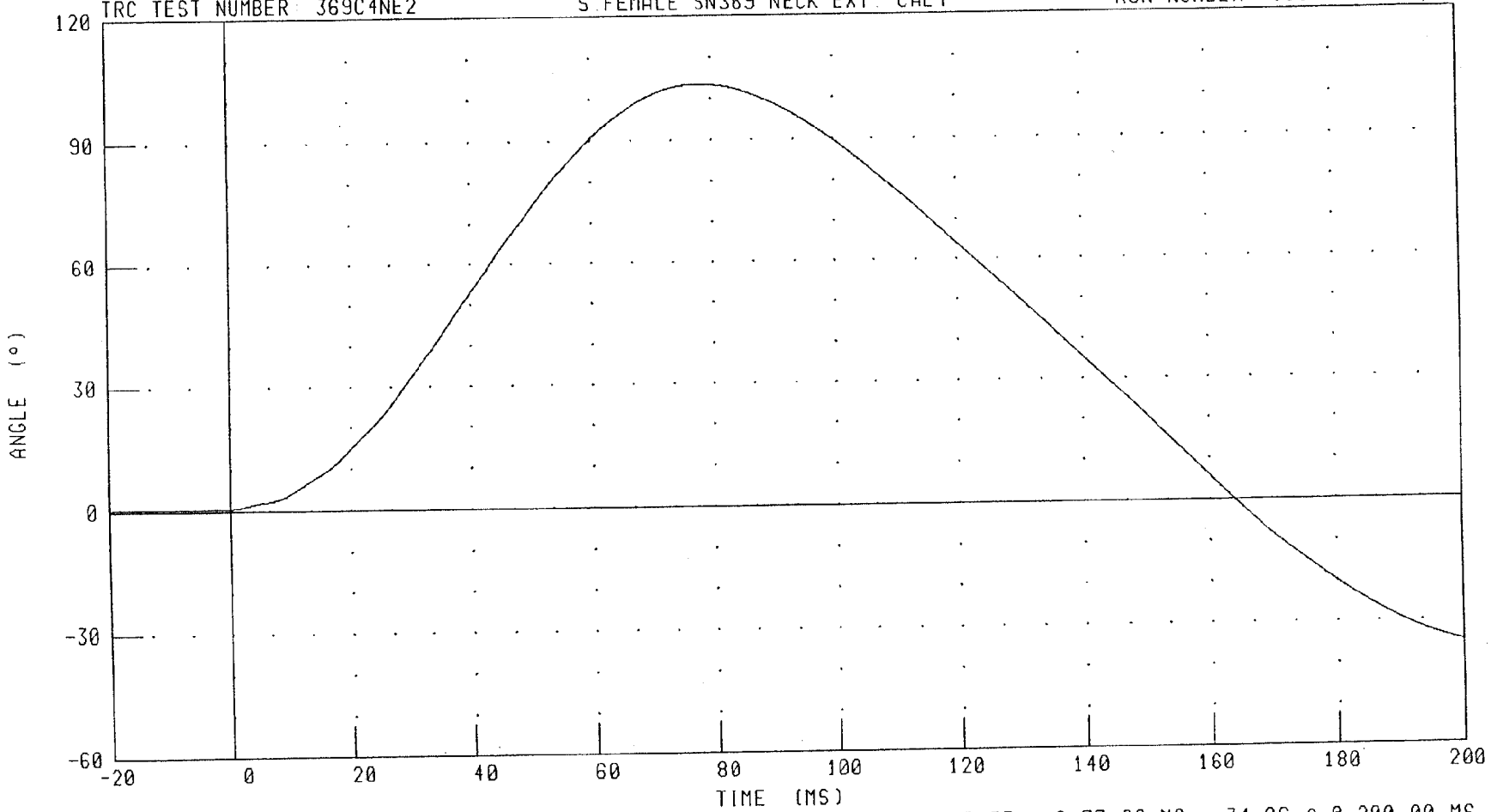
CHANNEL: THETA FILTER: CH. CLASS 60

PEAK DATA: 65.77 ° @ 79.60 MS; -20.43 ° @ 200.00 MS

SMALL FEMALE NECK EXTENSION CALIBRATION

TOTAL ROTATION

TRC TEST NUMBER: 369C4NE2 S.FEMALE SN369 NECK EXT. CAL4 RUN NUMBER: 080699.1246;1



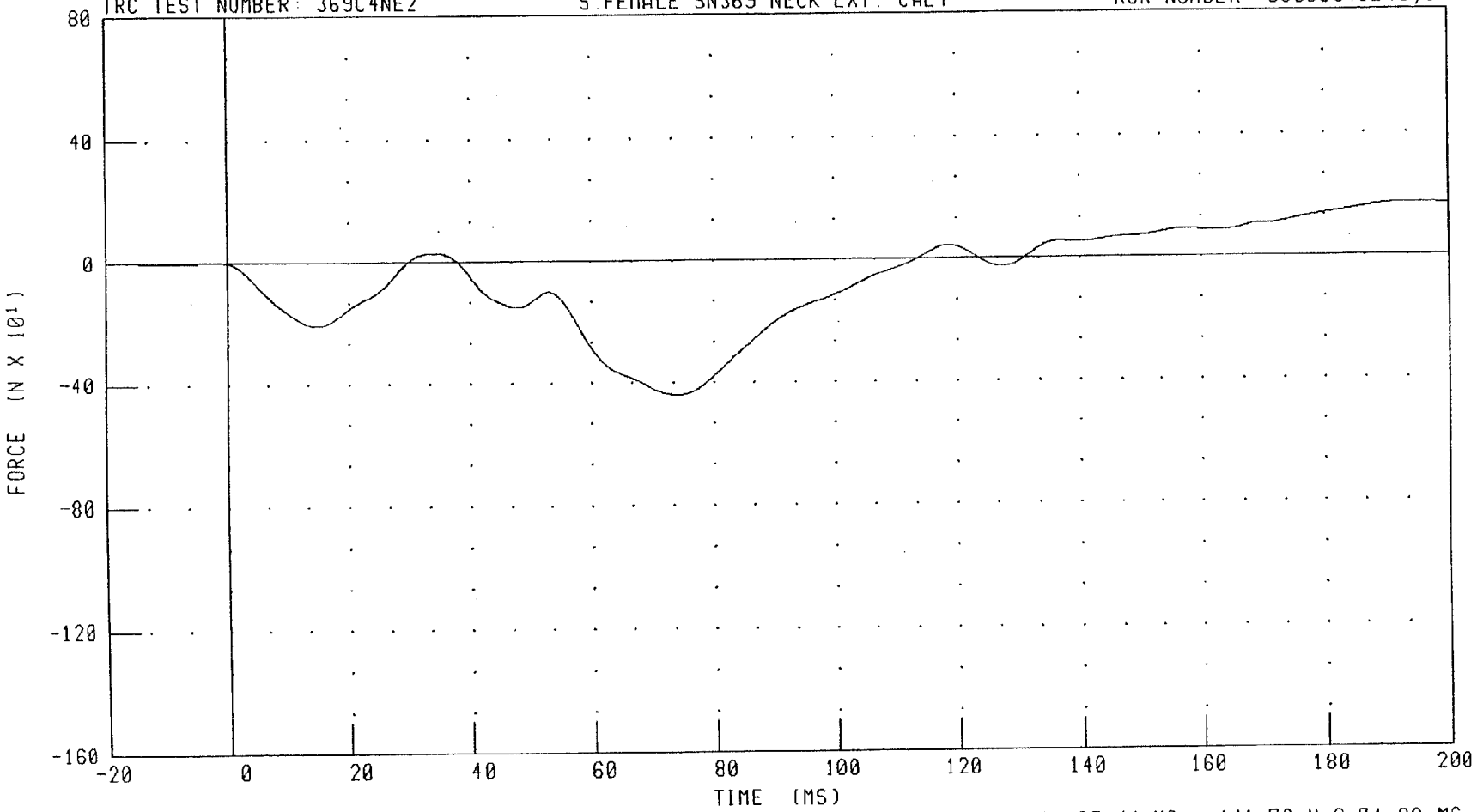
CHANNEL: TOTAN FILTER: CH. CLASS 60

PEAK DATA: 103.35 ° @ 77.92 MS; -34.96 ° @ 200.00 MS

SMALL FEMALE NECK EXTENSION CALIBRATION

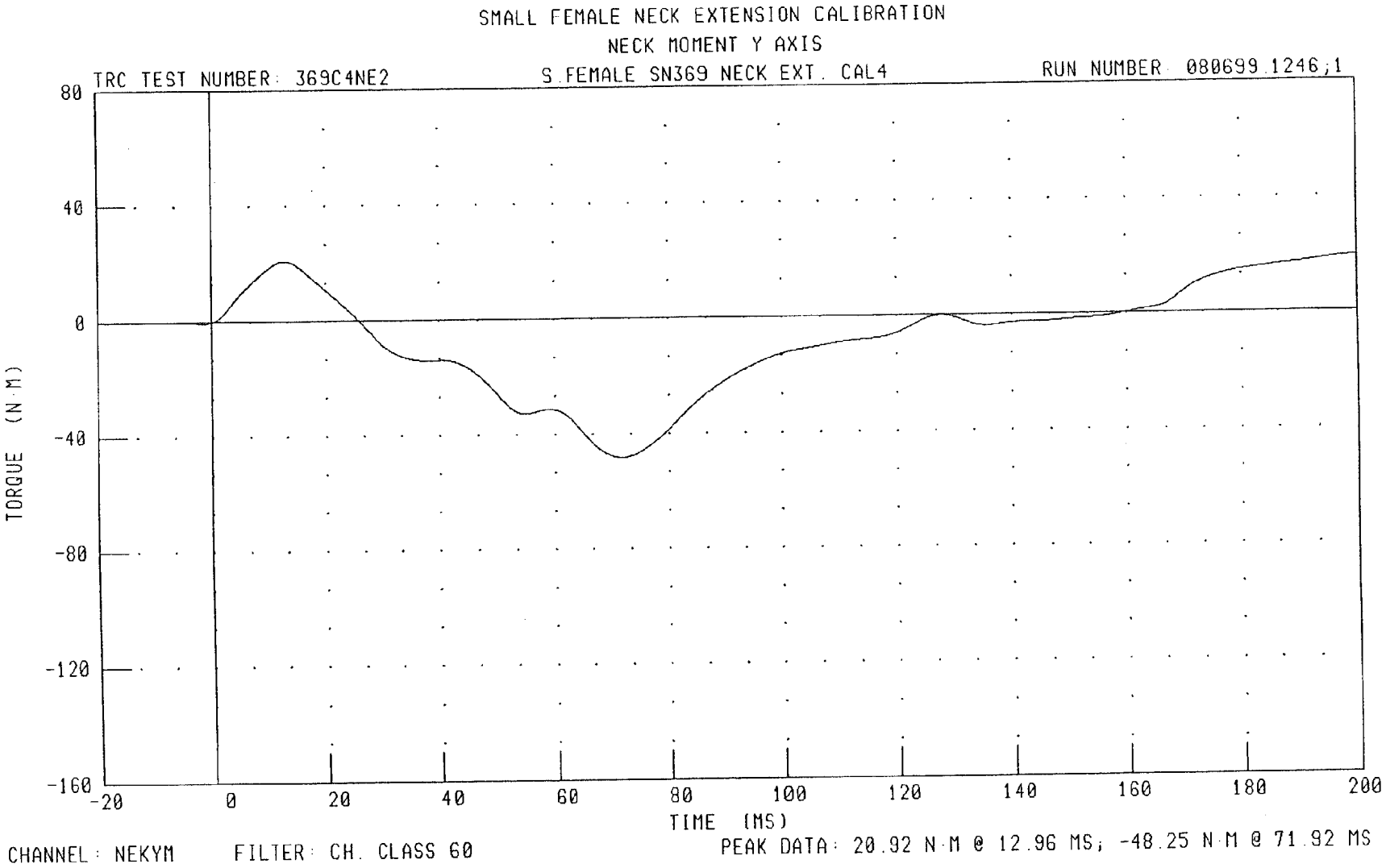
NECK FORCE X AXIS

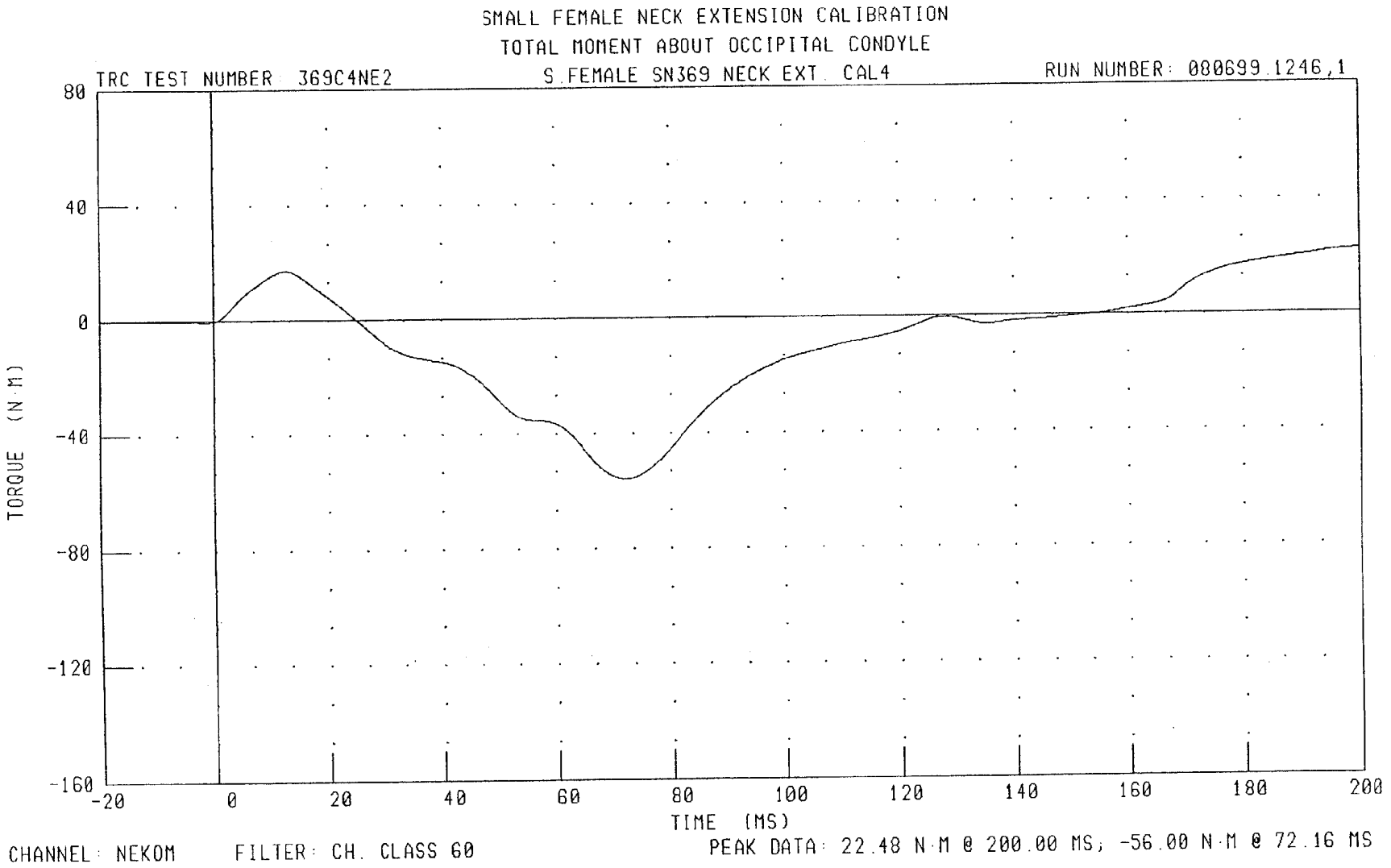
TRC TEST NUMBER: 369C4NE2 S.FEMALE SN369 NECK EXT. CAL4 RUN NUMBER: 080699.1246;1



CHANNEL: NEKXF FILTER: CH. CLASS 60

PEAK DATA: 171.07 N @ 193.44 MS; -441.76 N @ 74.08 MS


SMALL FEMALE NECK EXTENSION CALIBRATION
NECK MOMENT Y AXIS
TRC TEST NUMBER: 369C4NE2
S.FEMALE SN369 NECK EXT. CAL4
RUN NUMBER: 080699.1246;1
80
40
0
-40
-80
-120
-160
TORQUE (N-M)
-20
0
20
40
60
80
100
120
140
160
180
200
TIME (MS)
CHANNEL: NEKYM
FILTER: CH. CLASS 60
PEAK DATA: 20.92 N-M @ 12.96 MS; -48.25 N-M @ 71.92 MS


SMALL FEMALE NECK EXTENSION CALIBRATION
TOTAL MOMENT ABOUT OCCIPITAL CONDYLE
TRC TEST NUMBER: 369C4NE2
S.FEMALE SN369 NECK EXT. CAL4
RUN NUMBER: 080699.1246,1
80
40
0
-40
-80
-120
-160
TORQUE (N.M)
-20
0
20
40
60
80
100
120
140
160
180
200
TIME (MS)
CHANNEL: NEKOM
FILTER: CH. CLASS 60
PEAK DATA: 22.48 N.M @ 200.00 MS; -56.00 N.M @ 72.16 MS

TRANSPORTATION RESEARCH CENTER INC.

THORAX IMPACT TEST

HYBRID III SMALL FEMALE 06-AUG-99

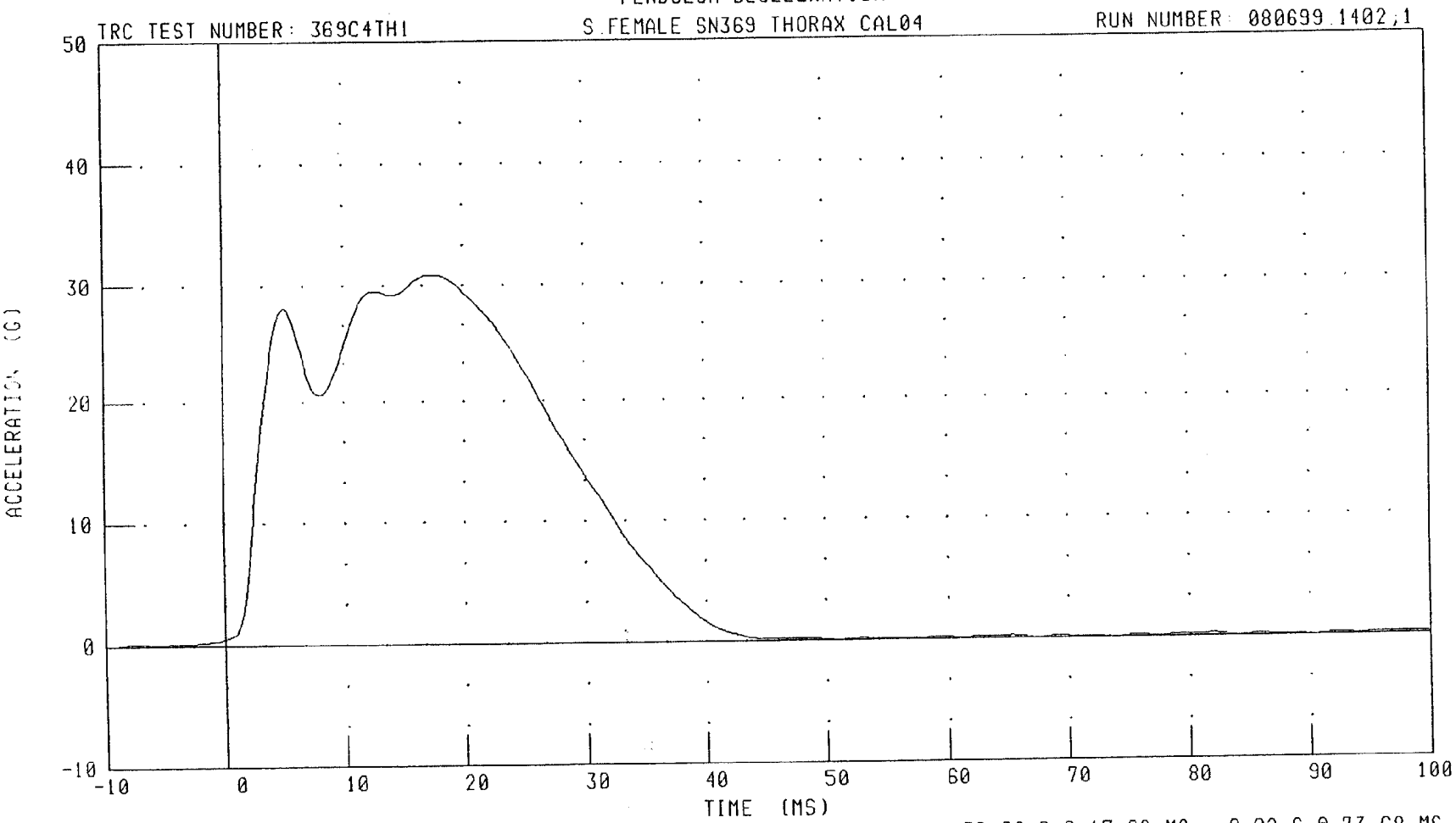
TRC INC. TEST NO: 369C4TH1 S.FEMALE SN369 THORAX CAL04

TEST PARAMETER	HIGH SPEED TEST SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6-22.2 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	55.0 %
PENDULUM VELOCITY	6.59 - 6.83 M/S	6.68 M/S
MAXIMUM DEFLECTION	48 - 55 MM	53.1 MM
MAXIMUM RESISTIVE FORCE	3900 - 4400 N	4229. N
INTERNAL HYSTERESIS	69% - 85%	72.2%

TEST MEETS SPECIFICATIONS

TECHNICIAN _____ RUN NUMBER: 080699.1353;1

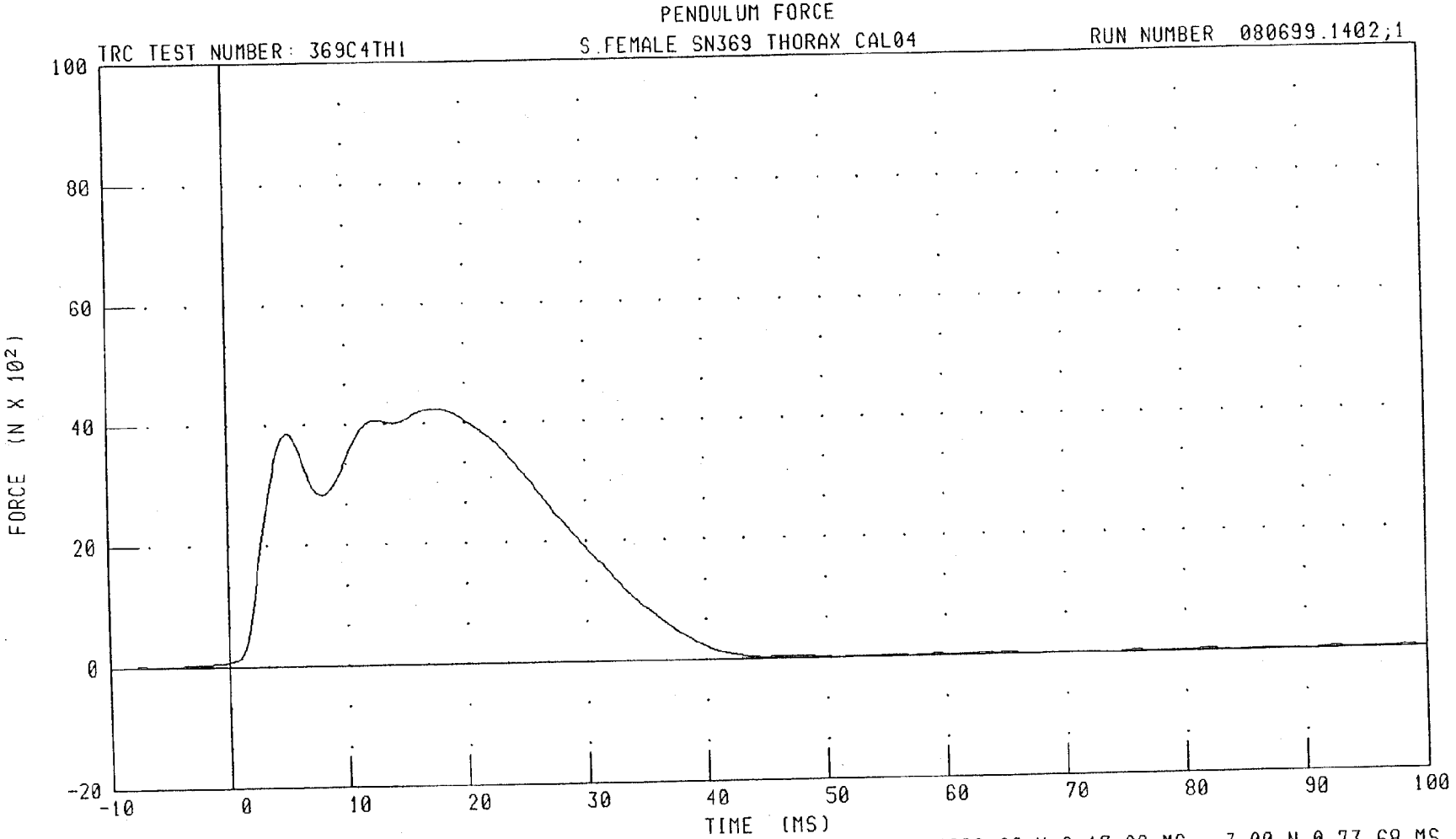
SMALL FEMALE THORAX CALIBRATION
PENDULUM DECELERATION



CHANNEL: PENXG FILTER: CH. CLASS 180

PEAK DATA: 30.82 G @ 17.20 MS; -0.02 G @ 73.68 MS

SMALL FEMALE THORAX CALIBRATION
PENDULUM FORCE

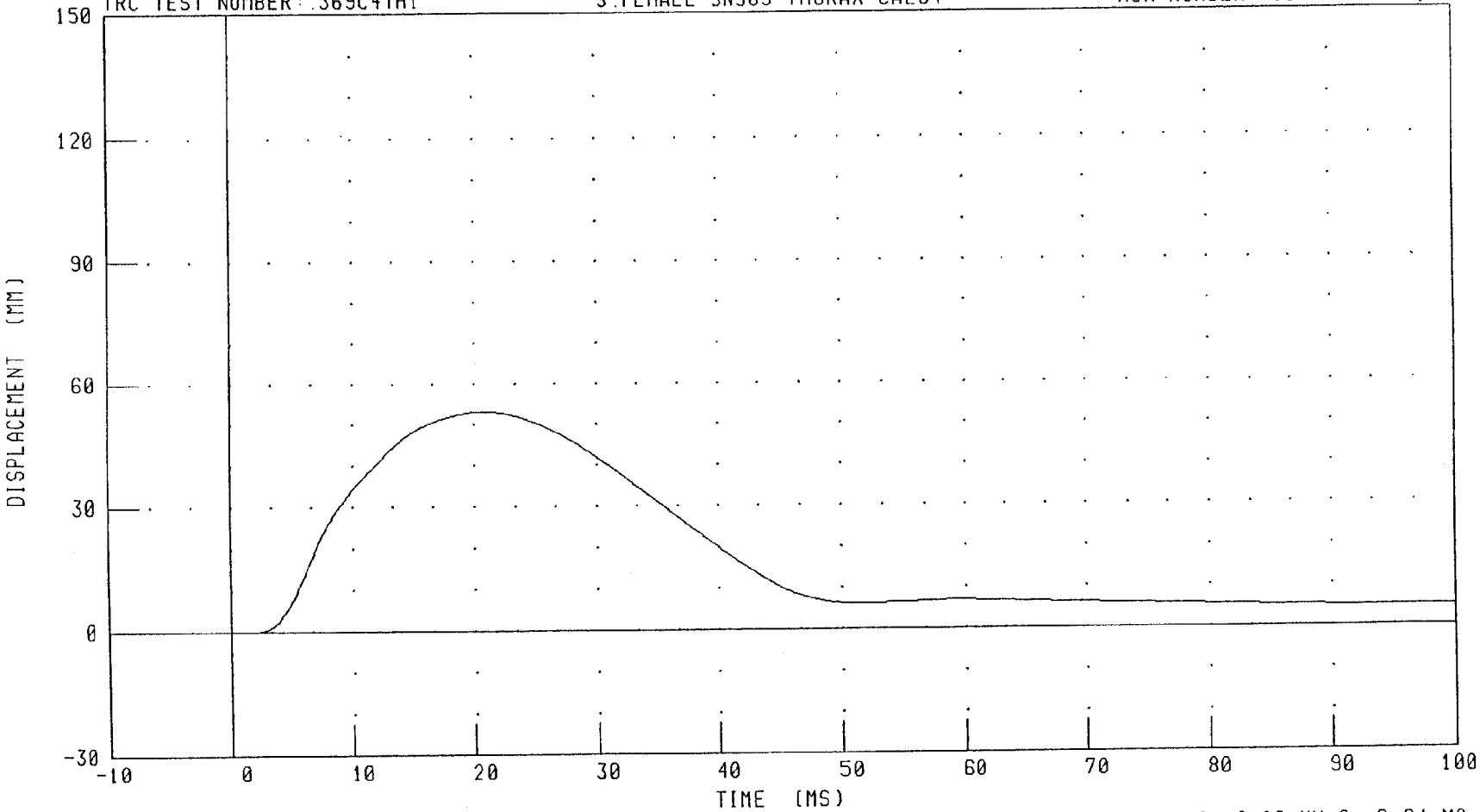


CHANNEL: PENXF FILTER: CH. CLASS 180

PEAK DATA: 4229.62 N @ 17.20 MS; -3.00 N @ 73.68 MS

SMALL FEMALE THORAX CALIBRATION
STERNUM DISPLACEMENT

TRC TEST NUMBER: .369C4TH1
S.FEMALE SN369 THORAX CAL04
RUN NUMBER: 080699.1402;1



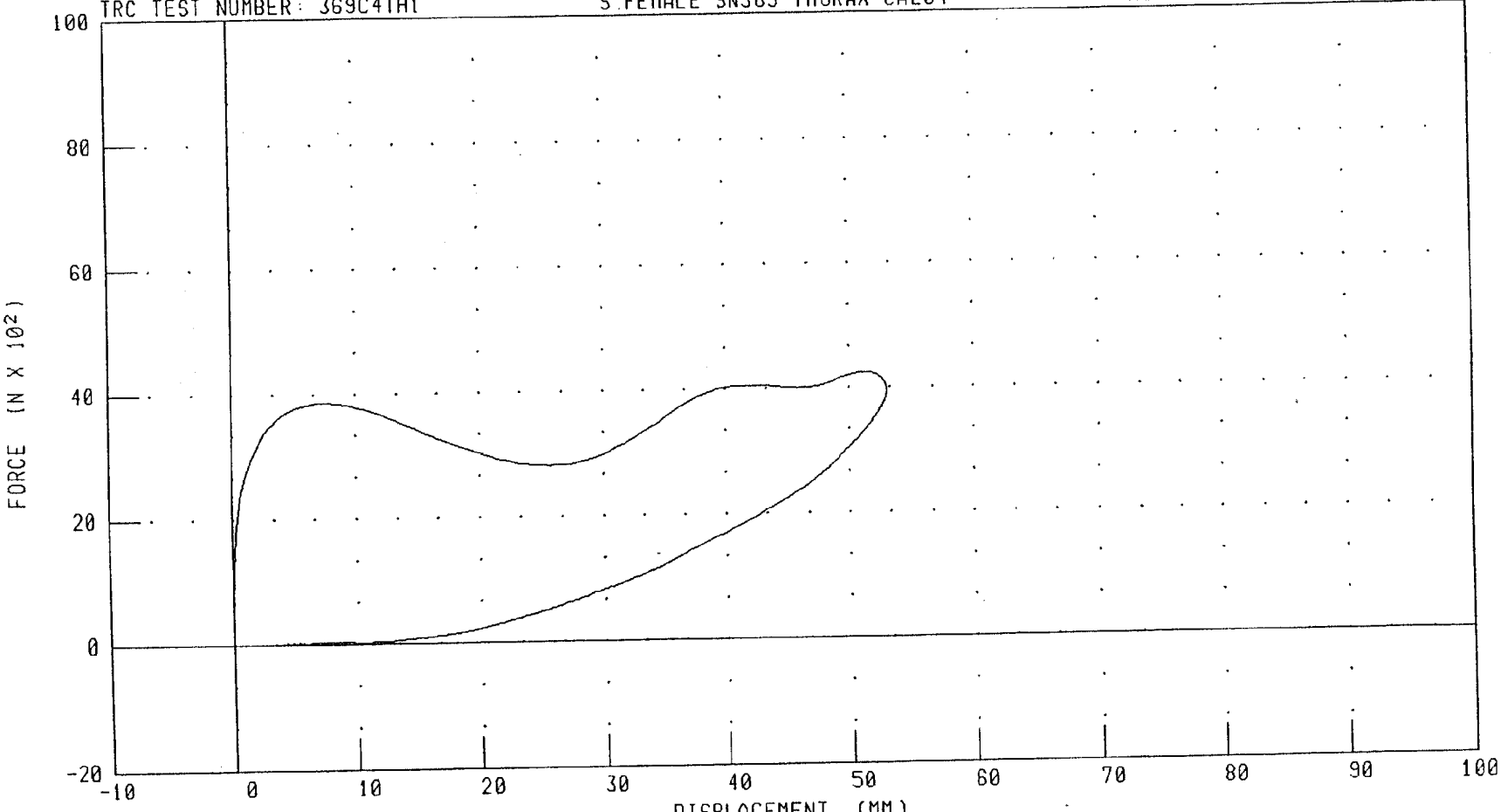
CHANNEL: CSTXD FILTER: CH. CLASS 180

PEAK DATA: 53.15 MM @ 20.80 MS; 0.00 MM @ -6.24 MS

SMALL FEMALE THORAX CALIBRATION
CHEST DISPLACEMENT VS PENDULUM FORCE
S FEMALE SN369 THORAX CAL04

TRC TEST NUMBER: 369C4TH1

RUN NUMBER: 080699.1402;1



CHANNEL: CSTXD
PENXF

FILTER: CH. CLASS 180
CH. CLASS 180

PEAK DATA: 53.15 MM @ 20.80 MS; 0.00 MM @ -6.24 MS
4229.62 N @ 17.20 MS; -3.00 N @ 73.68 MS

TRANSPORTATION RESEARCH CENTER INC.

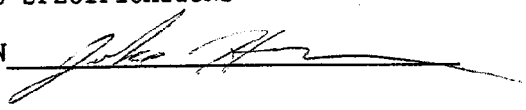
RIGHT KNEE IMPACT TEST

HYBRID III SMALL FEMALE 06-AUG-99

TRC INC. TEST NO: 369C4RK1 S.FEMALE SN369 R.KNEE CAL4

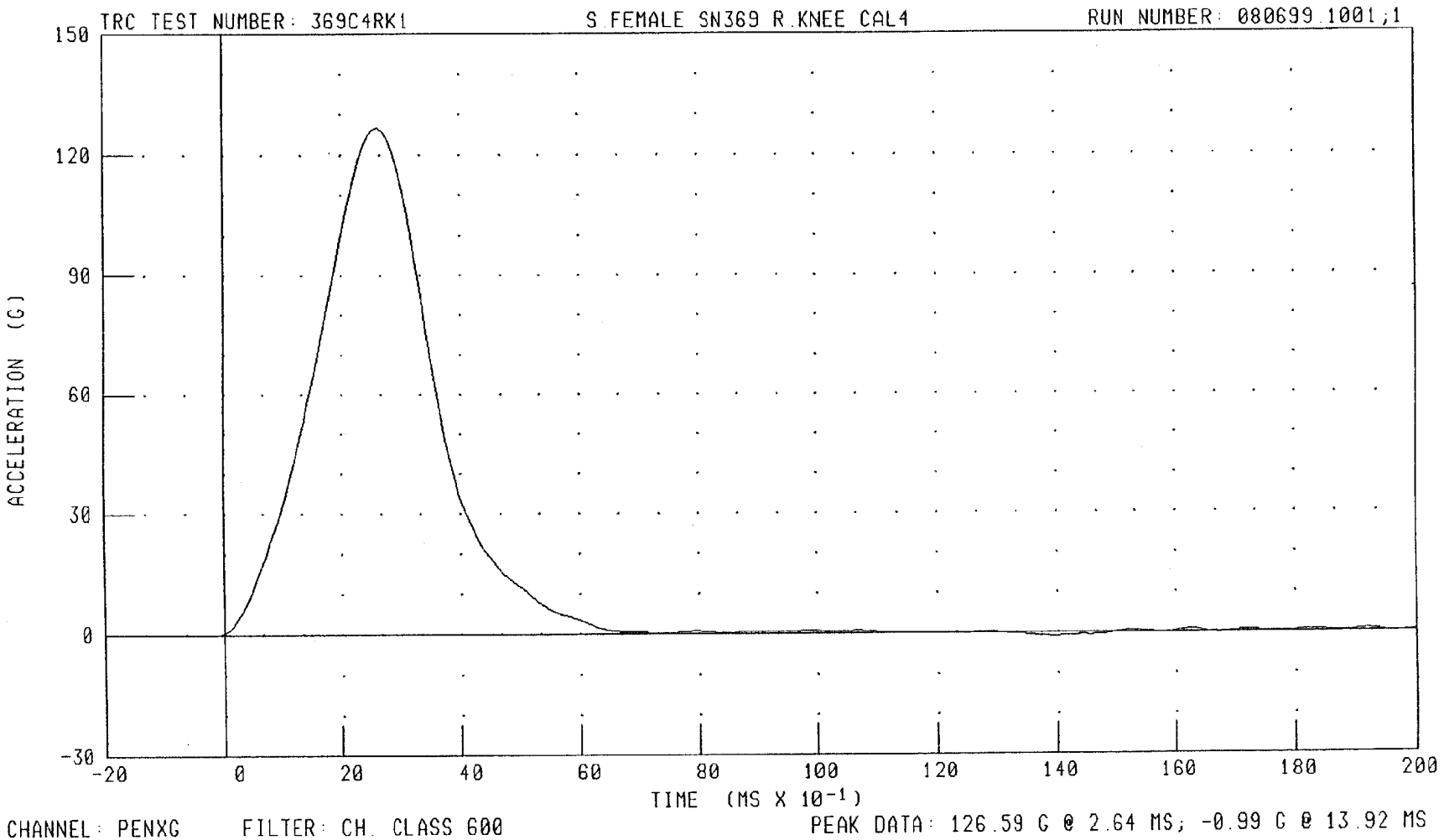
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	55.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.09 M/S
PEAK KNEE IMPACT FORCE 3.0 KG PENDULUM	3360 - 4080 N	3716.2 N

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 080699.1001;1

SMALL FEMALE HYBRID III RIGHT KNEE CALIBRATION
PENDULUM DECELERATION (5 KG PEND.)



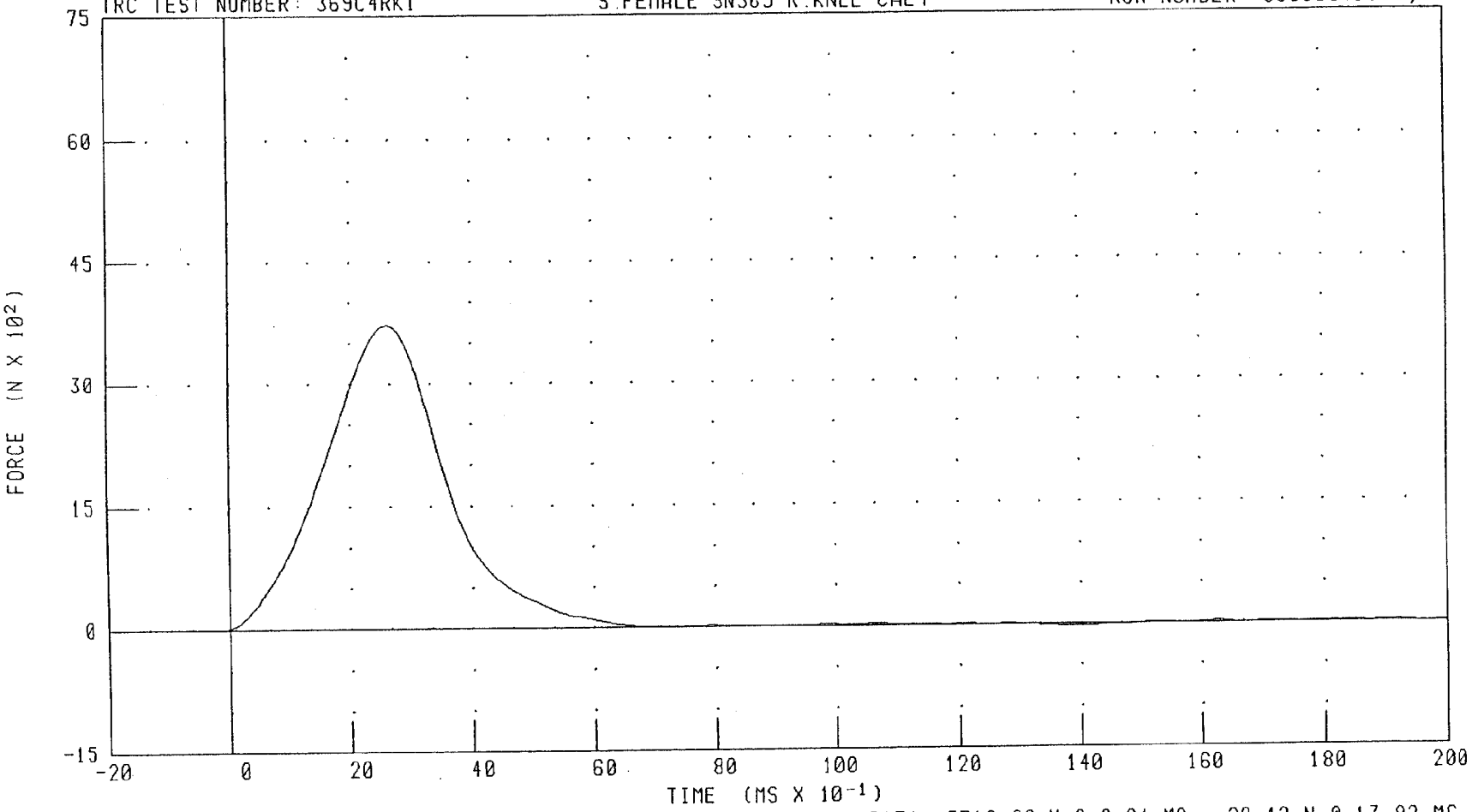
CHANNEL: PENXG FILTER: CH. CLASS 600

PEAK DATA: 126.59 G @ 2.64 MS; -0.99 G @ 13.92 MS

SMALL FEMALE HYBRID III RIGHT KNEE CALIBRATION

PENDULUM FORCE (5 KG PEND.)

TRC TEST NUMBER: 369C4RK1 S.FEMALE SN369 R.KNEE CAL4 RUN NUMBER: 080699.1001;1



CHANNEL: PENXF FILTER: CH. CLASS 600 PEAK DATA: 3716.29 N @ 2.64 MS; -29.12 N @ 13.92 MS

TRANSPORTATION RESEARCH CENTER INC.

LEFT KNEE IMPACT TEST

HYBRID III SMALL FEMALE 06-AUG-99

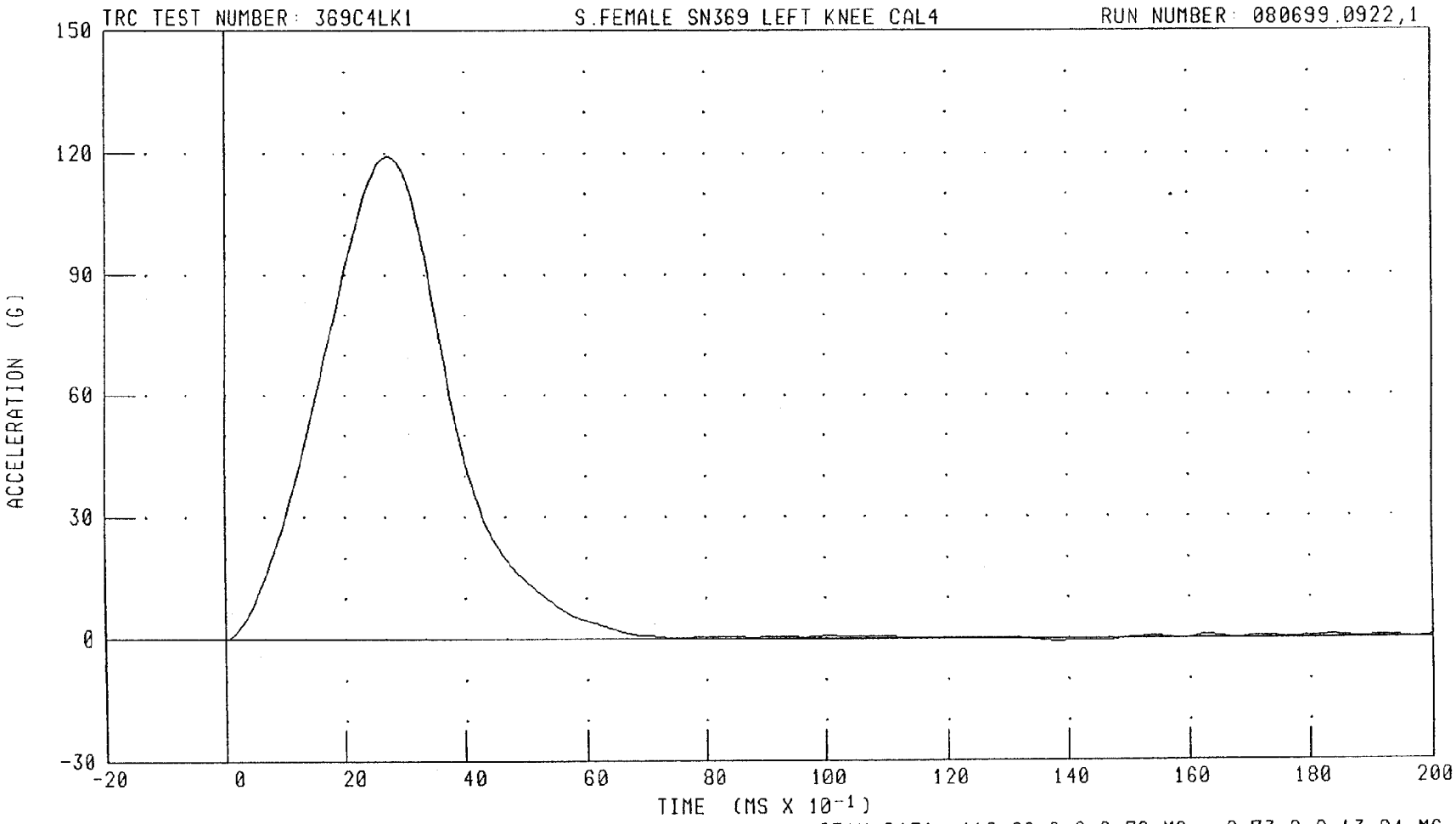
TRC INC. TEST NO: 369C4LK1 S.FEMALE SN369 LEFT KNEE CAL4

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	55.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.09 M/S
PEAK KNEE IMPACT FORCE 3.0 KG PENDULUM	3360 - 4080 N	3501.0 N

TEST MEETS SPECIFICATIONS

TECHNICIAN _____ RUN NUMBER: 080699.0921;1

SMALL FEMALE HYBRID III LEFT KNEE CALIBRATION
PENDULUM DECELERATION (5 KG PEND.)

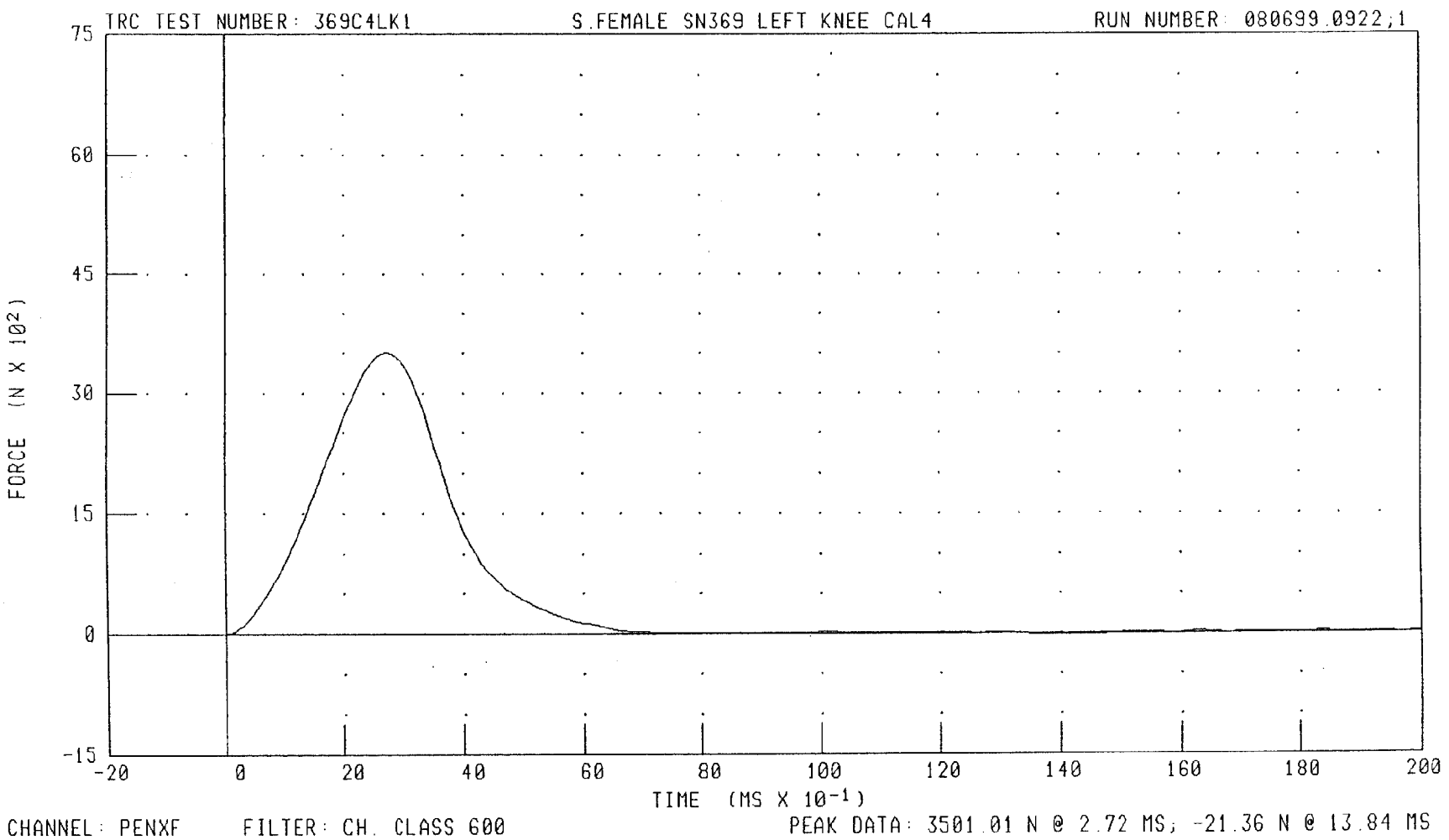


CHANNEL: PENXC FILTER: CH. CLASS 600

PEAK DATA: 119.26 G @ 2.72 MS; -0.73 G @ 13.84 MS

SMALL FEMALE HYBRID III LEFT KNEE CALIBRATION

PENDULUM FORCE (5 KG PEND.)



CHANNEL: PENXF FILTER: CH. CLASS 600

PEAK DATA: 3501.01 N @ 2.72 MS; -21.36 N @ 13.84 MS

Pre-Test Dummy Certification

Passenger Dummy S/N 289

TRANSPORTATION RESEARCH CENTER INC.

HEAD DROP TEST

HYBRID III SMALL FEMALE 12-JUL-99

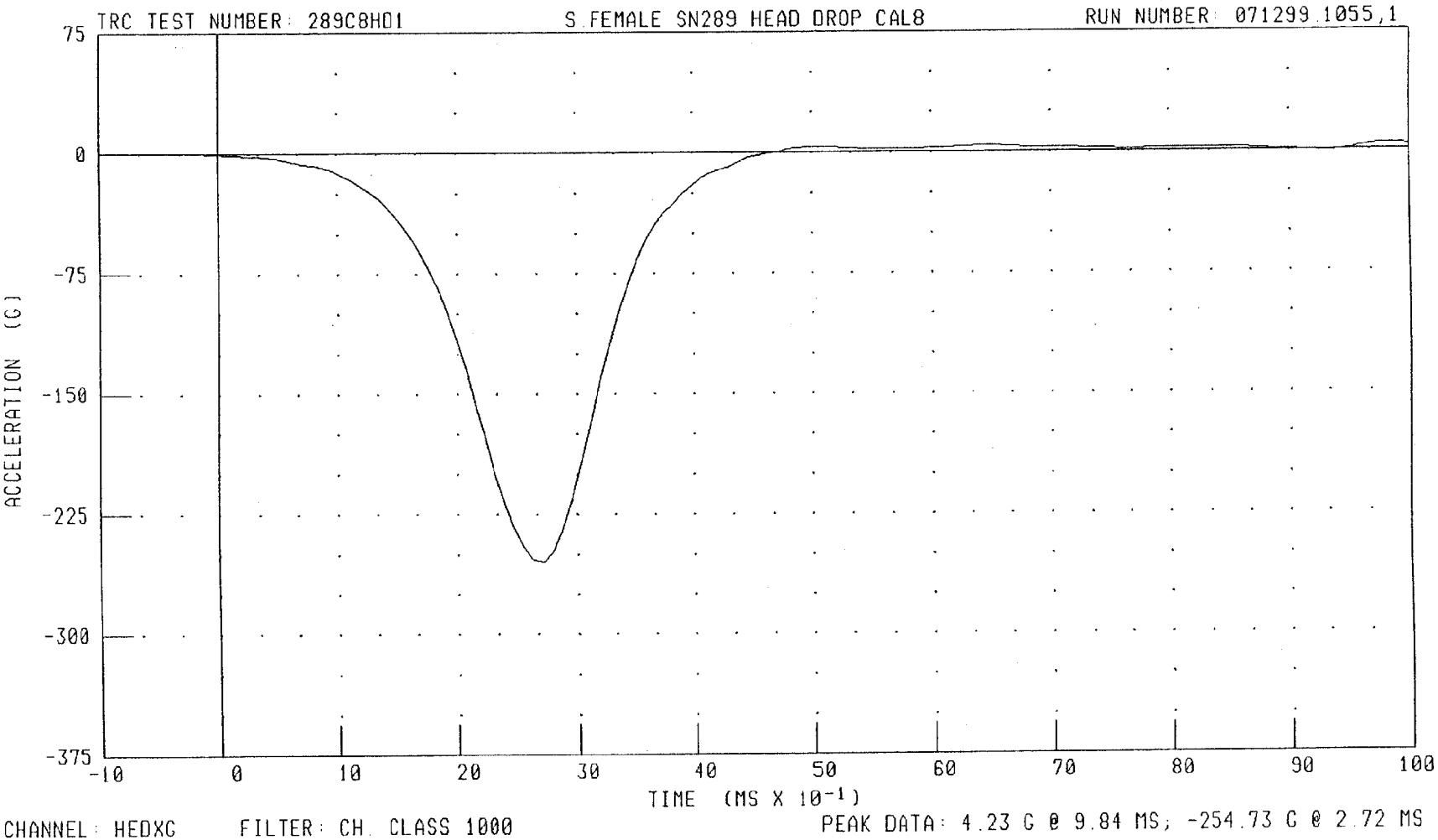
TRC INC. TEST NO: 289C8HD1 S.FEMALE SN289 HEAD DROP CAL8

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	44.0 %
PEAK RESULTANT ACCELERATION	250 - 300 G	291.83 G
PEAK LATERAL ACCELERATION	15 G MAX	-3.64 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS NHTSA SPECIFICATIONS

TECHNICIAN Kevin Watkins RUN NUMBER: 071299.1053;1

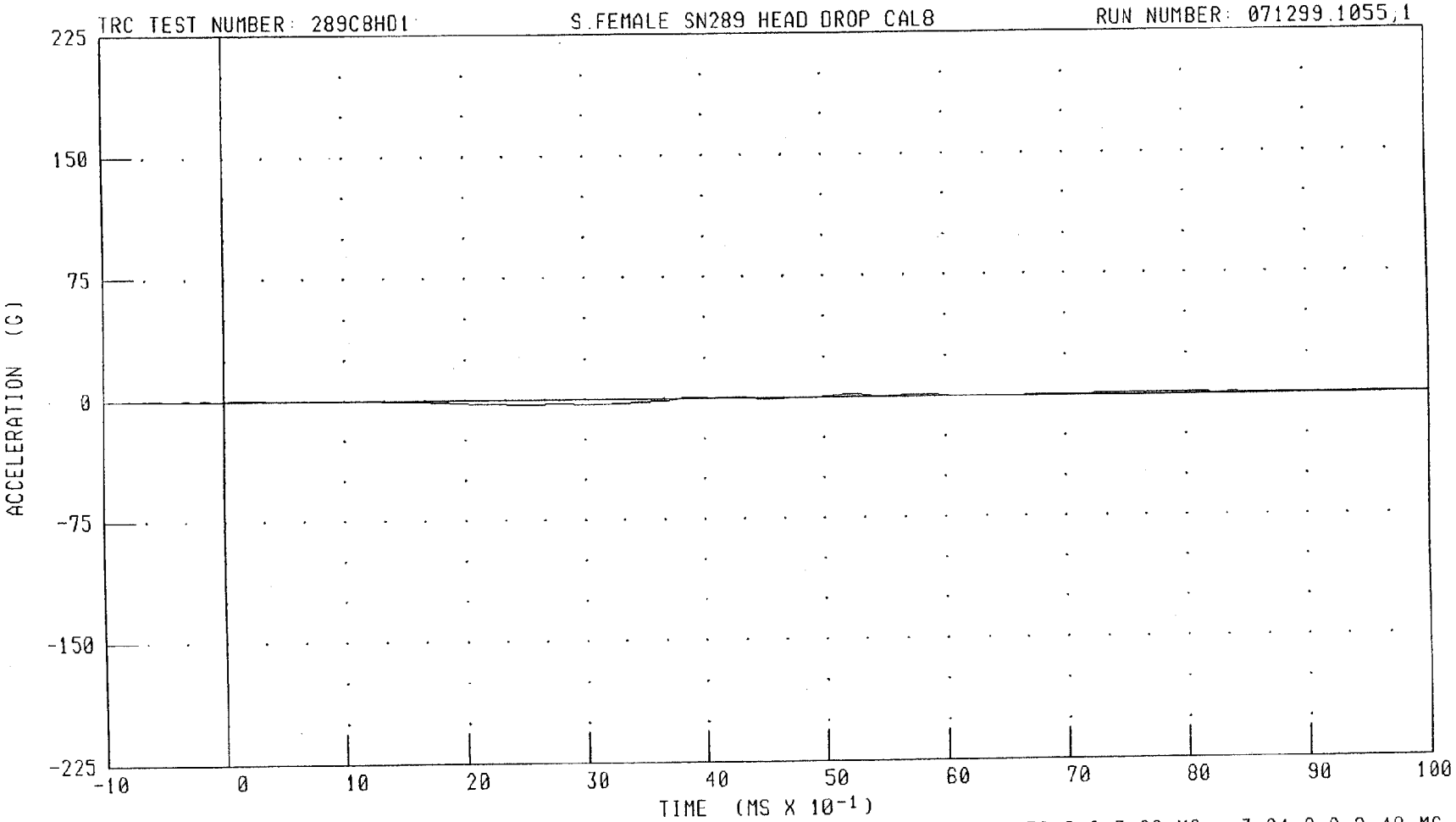
SMALL FEMALE HYBRID III HEAD CALIBRATION
HEAD ACCELERATION X AXIS



CHANNEL: HEDXC FILTER: CH. CLASS 1000

PEAK DATA: 4.23 G @ 9.84 MS; -254.73 G @ 2.72 MS

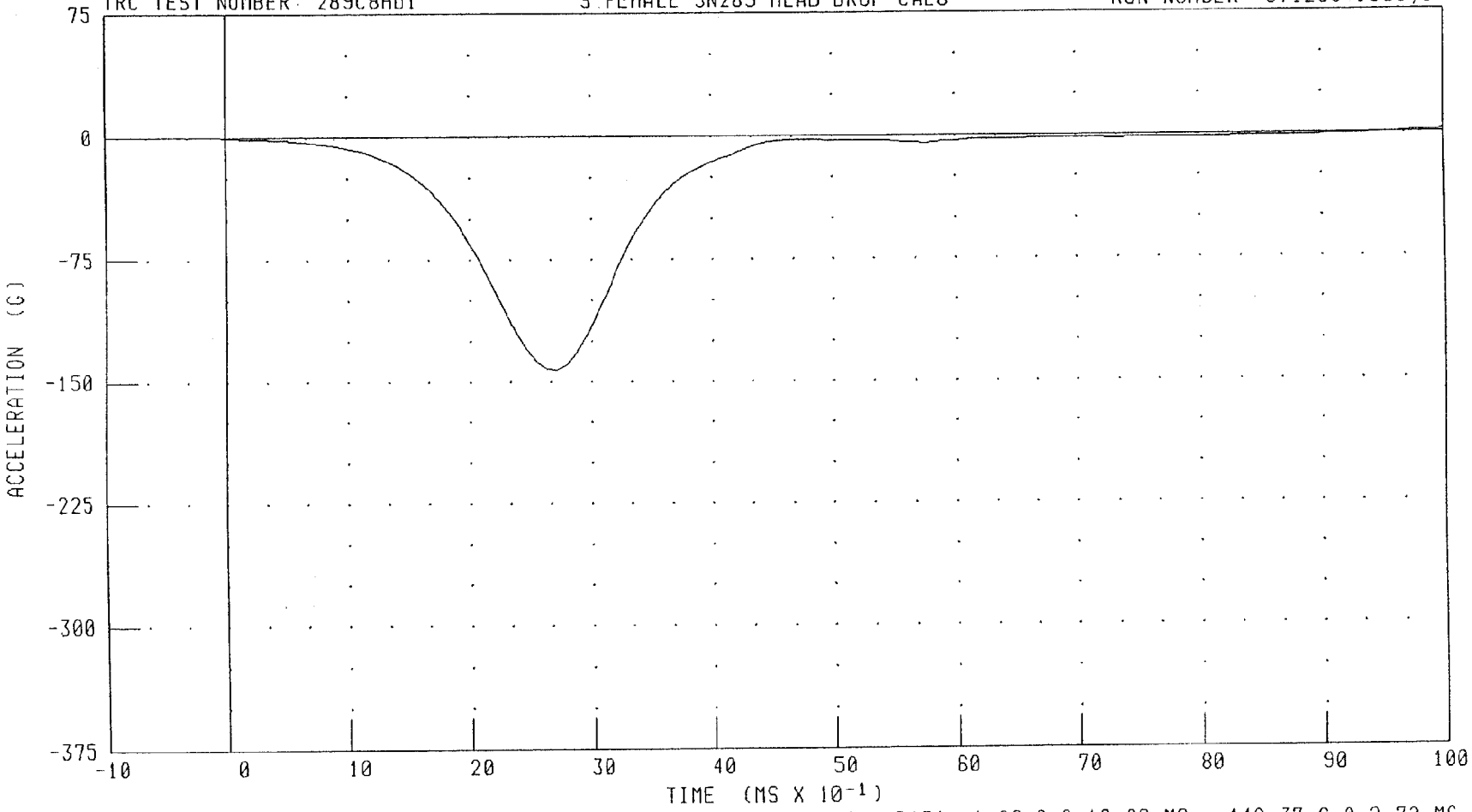
SMALL FEMALE HYBRID III HEAD CALIBRATION
HEAD ACCELERATION Y AXIS



SMALL FEMALE HYBRID III HEAD CALIBRATION

HEAD ACCELERATION Z AXIS

TRC TEST NUMBER: 289C8HD1 S FEMALE SN289 HEAD DROP CAL8 RUN NUMBER: 071299 1055;1

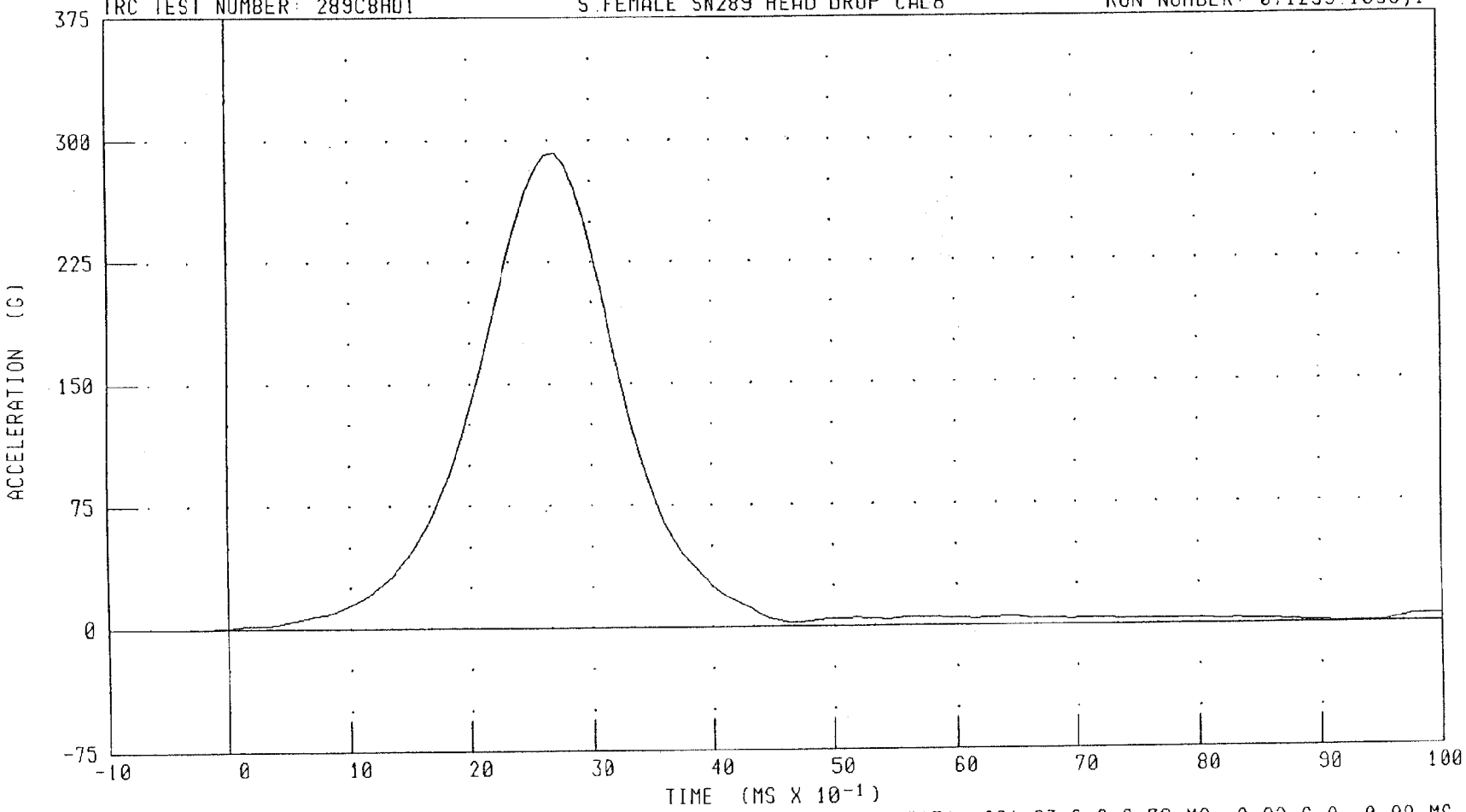


CHANNEL: HEDZG FILTER: CH. CLASS 1000 PEAK DATA: 1.82 G @ 10.00 MS; -142.37 G @ 2.72 MS

SMALL FEMALE HYBRID III HEAD CALIBRATION

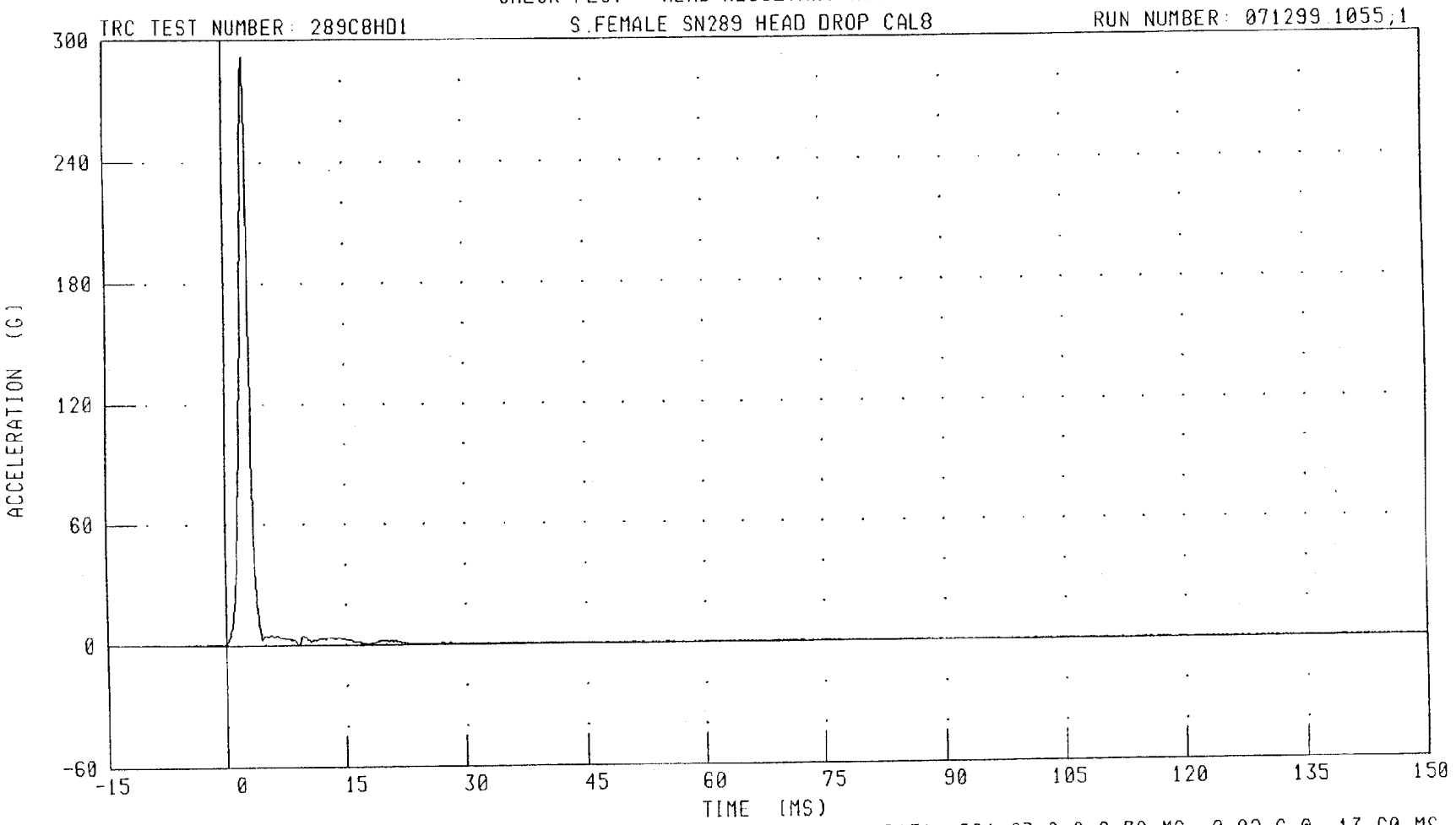
HEAD RESULTANT ACCELERATION

TRC TEST NUMBER: 289C8HD1 S.FEMALE SN289 HEAD DROP CAL8 RUN NUMBER: 071299.1055;1



CHANNEL: HEDRG FILTER: CH. CLASS 1000 PEAK DATA: 291.83 G @ 2.72 MS; 0.02 G @ -0.88 MS

SMALL FEMALE HYBRID III HEAD CALIBRATION
CHECK PLOT - HEAD RESULTANT ACCELERATION



TRANSPORTATION RESEARCH CENTER INC.

HYBRID III SMALL FEMALE 12-JUL-99

NECK FLEXION TEST - 6 CHANNEL TRANSDUCER

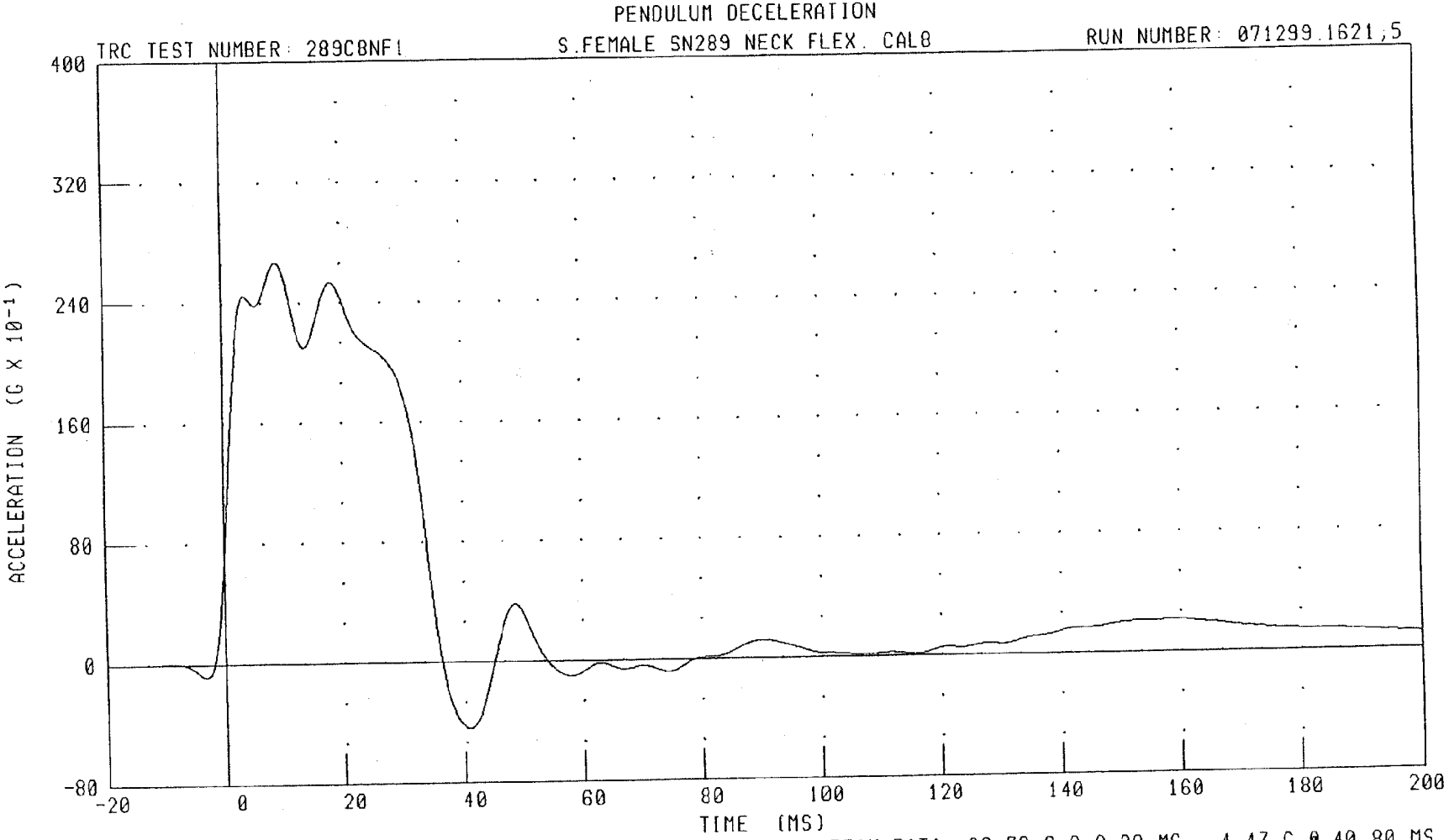
TRC INC. TEST NO: 289C8NF1 S.FEMALE SN289 NECK FLEX. CAL8

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6-22.2 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY		10 - 70 %	44.0 %
IMPACT VELOCITY		6.89 - 7.13 M/S	7.06 M/S
INTEGRATED PENDULUM VELOCITY	10 MS	2.1 - 2.5 M/S	2.23 M/S
	20 MS	4.0 - 5.0 M/S	4.54 M/S
	30 MS	5.8 - 7.0 M/S	6.61 M/S
PEAK D-PLANE ROTATION		80 - 92 DEG.	87.02 DEG.
PEAK MOMENT ABOUT OCCIPITAL CONDYLE DURING ROTATION INT		69 - 83 NM	72.03 NM
POSITIVE MOMENT DECAY TIME FROM TO TO 10 NM		80 - 100 MS	94.40 MS

TEST MEETS NHTSA SPECIFICATIONS

TECHNICIAN Kevin Watkins RUN NUMBER: 071299.1600;5

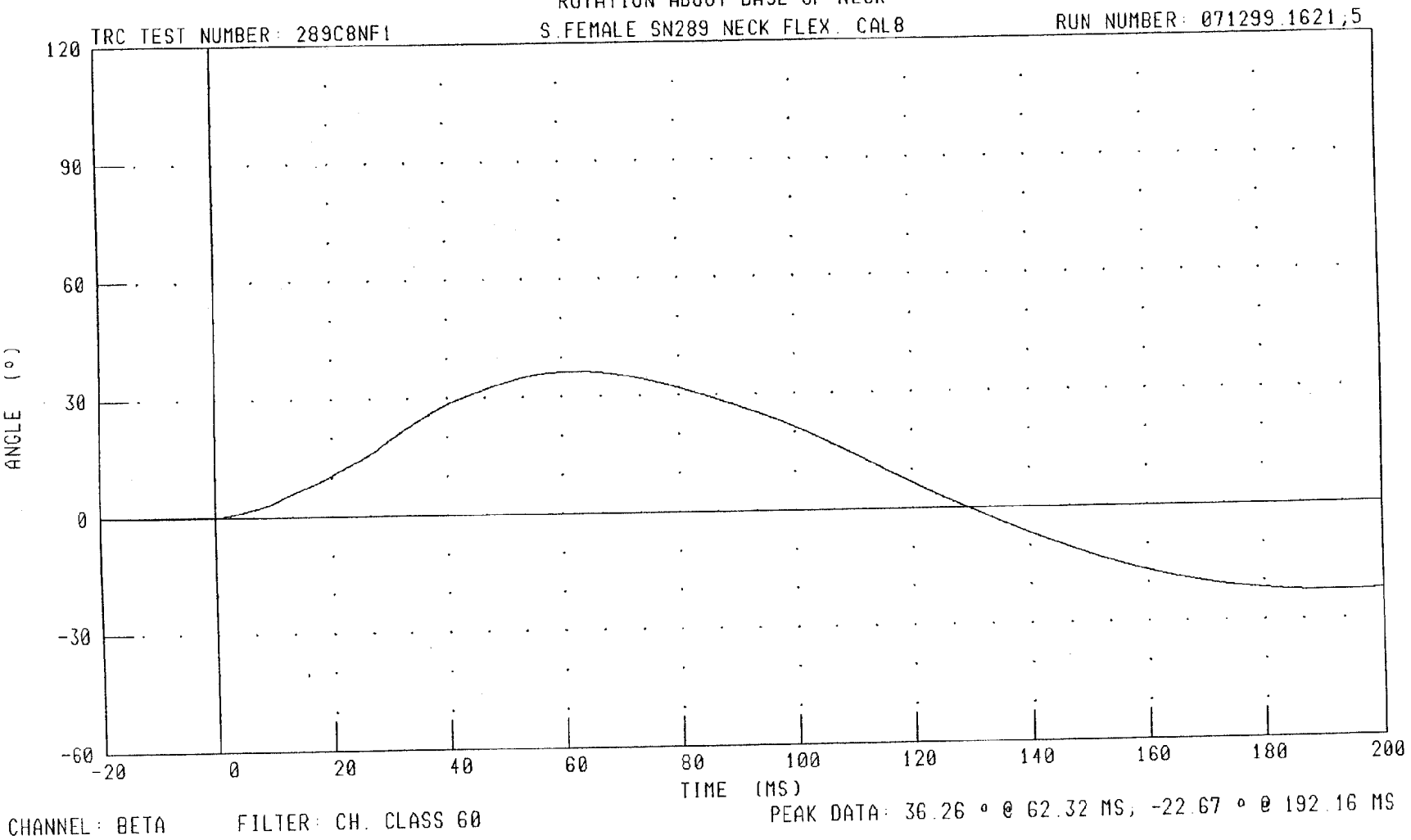
SMALL FEMALE HYBRID III NECK FLEXION CALIBRATION
PENDULUM DECELERATION



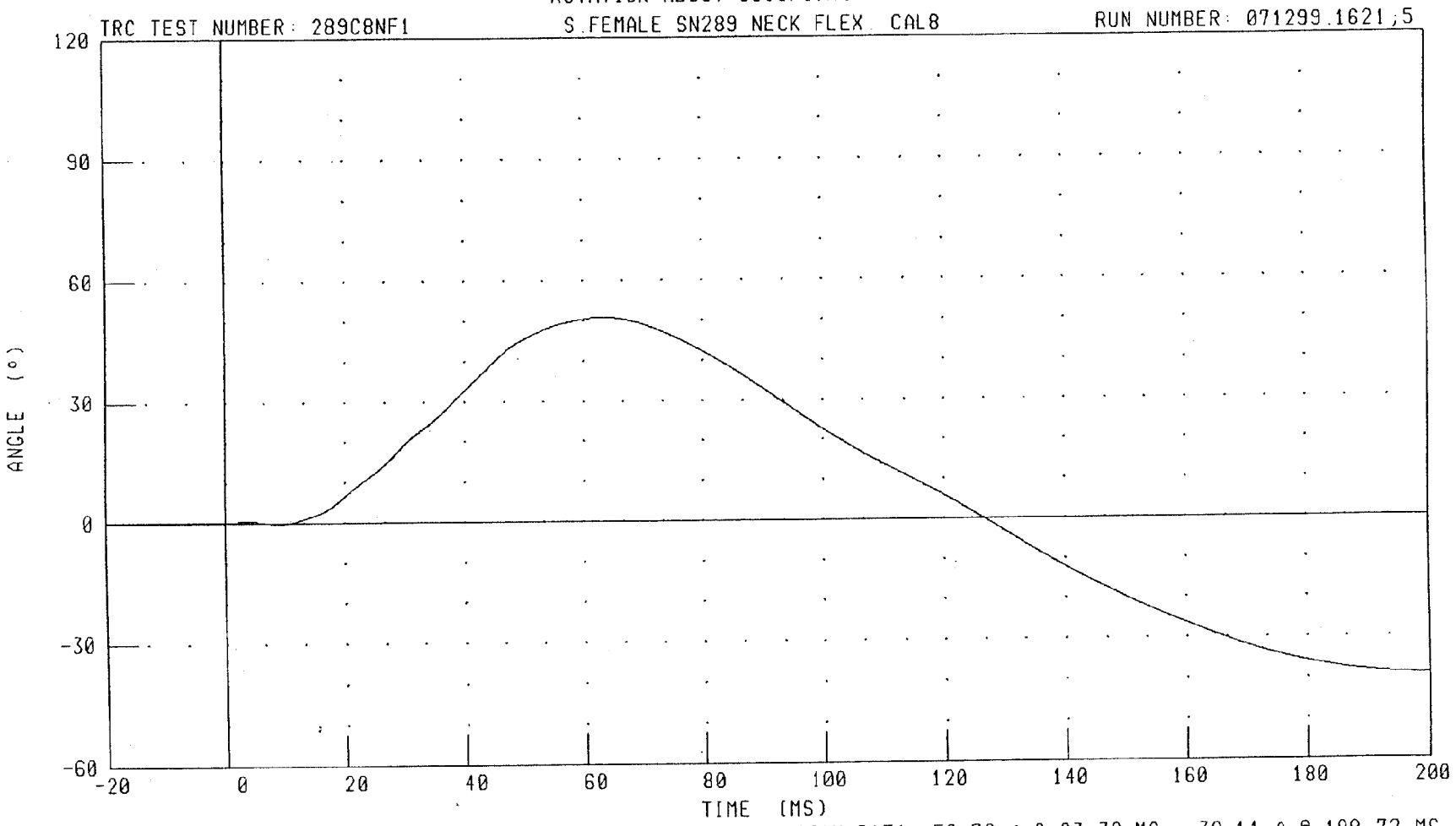
CHANNEL: PENXG FILTER: CH. CLASS 60

PEAK DATA: 26.70 G @ 9.28 MS; -4.43 G @ 40.80 MS

SMALL FEMALE HYBRID III NECK FLEXION CALIBRATION
ROTATION ABOUT BASE OF NECK

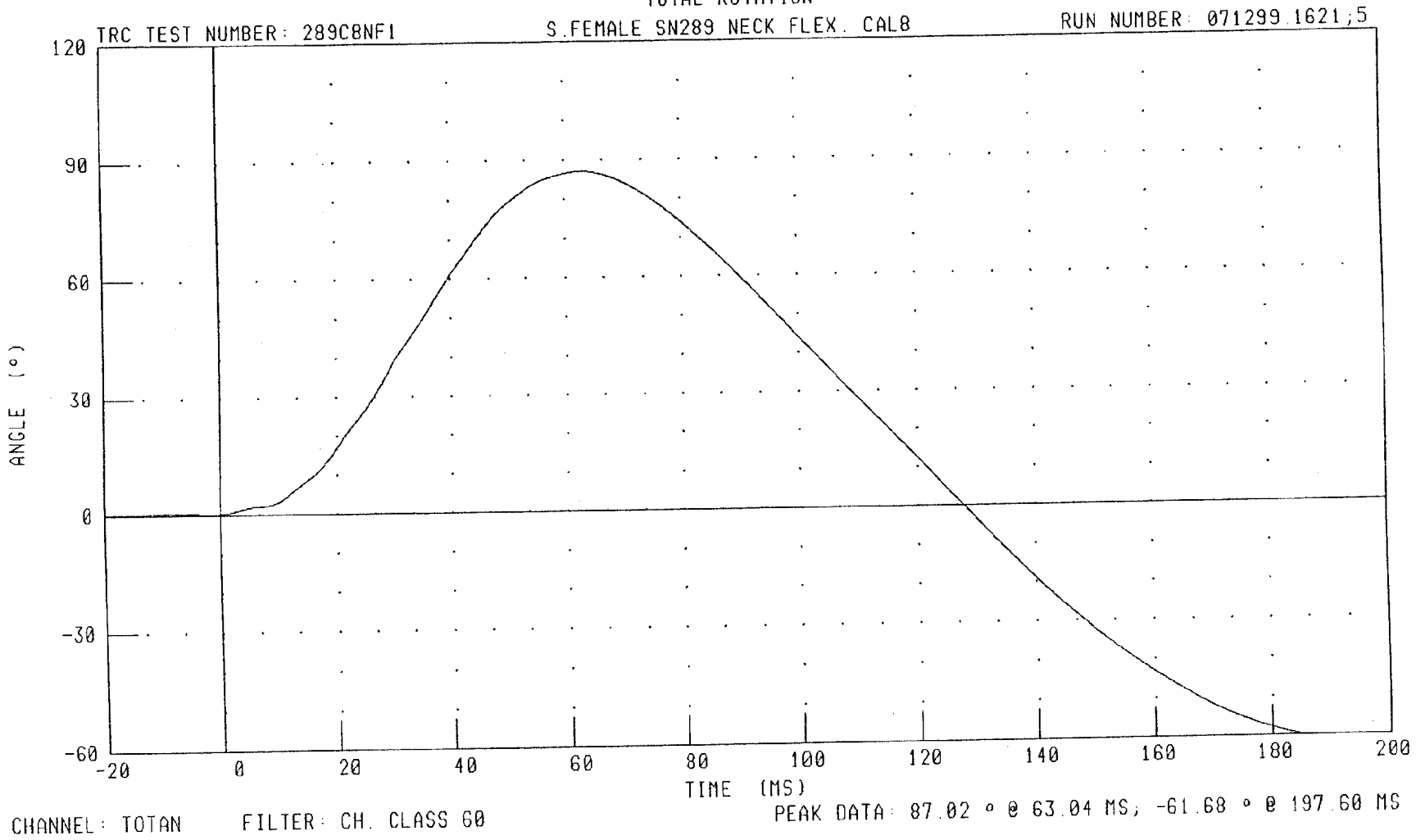


SMALL FEMALE HYBRID III NECK FLEXION CALIBRATION
ROTATION ABOUT OCCIPITAL CONDYLE



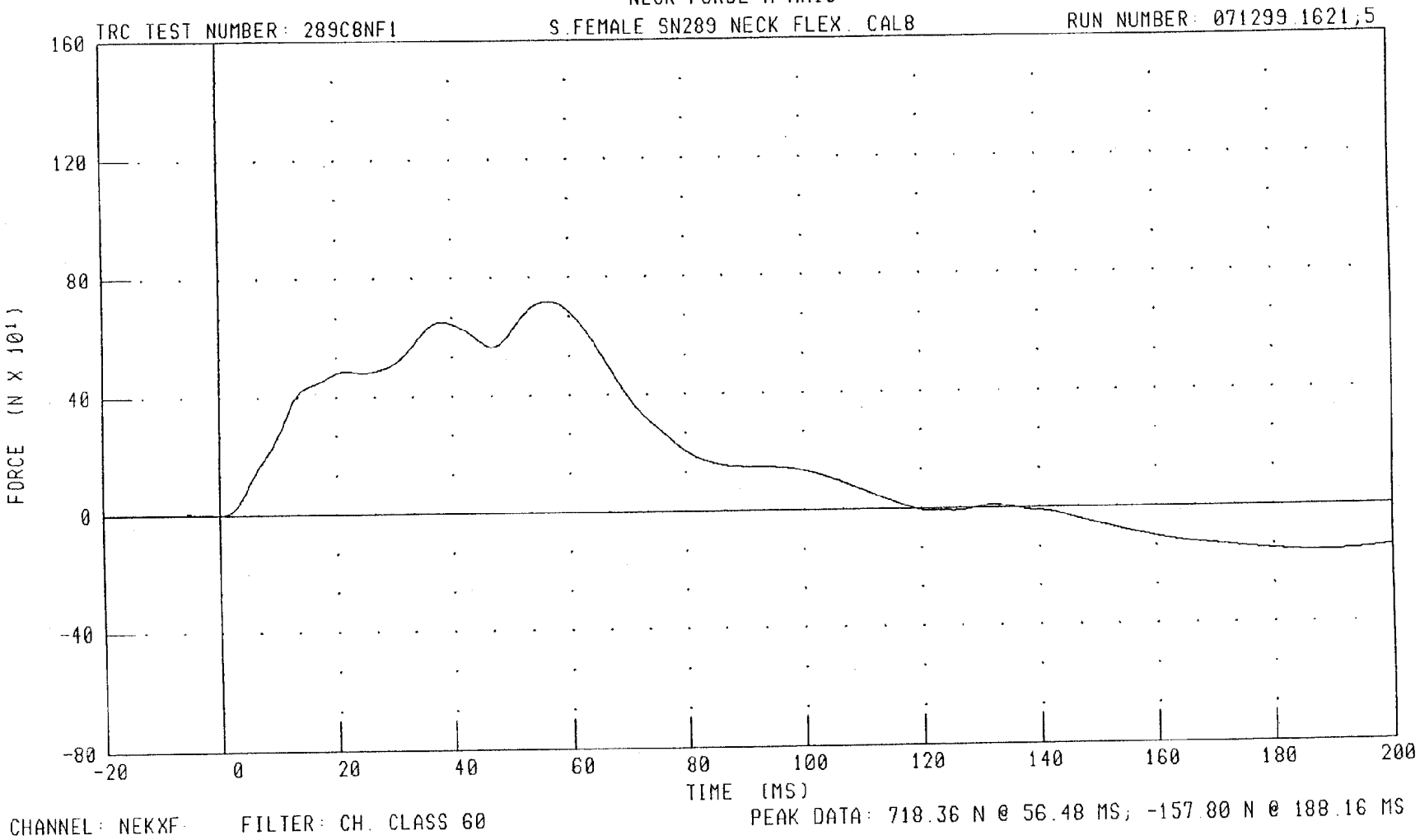
SMALL FEMALE HYBRID III NECK FLEXION CALIBRATION

TOTAL ROTATION



SMALL FEMALE HYBRID III NECK FLEXION CALIBRATION

NECK FORCE X AXIS

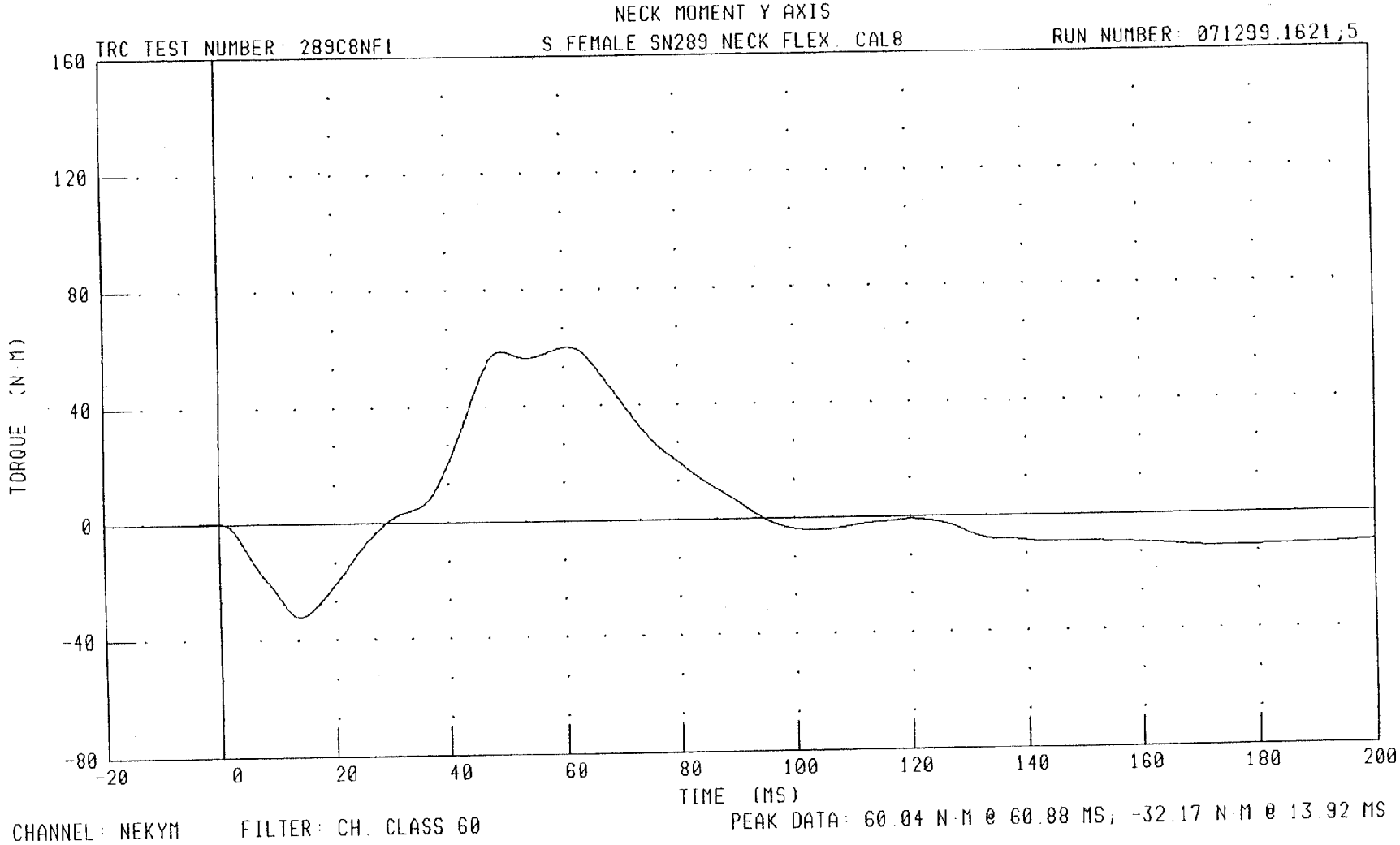


CHANNEL: NEKXF FILTER: CH. CLASS 60

PEAK DATA: 718.36 N @ 56.48 MS; -157.80 N @ 188.16 MS

SMALL FEMALE HYBRID III NECK FLEXION CALIBRATION

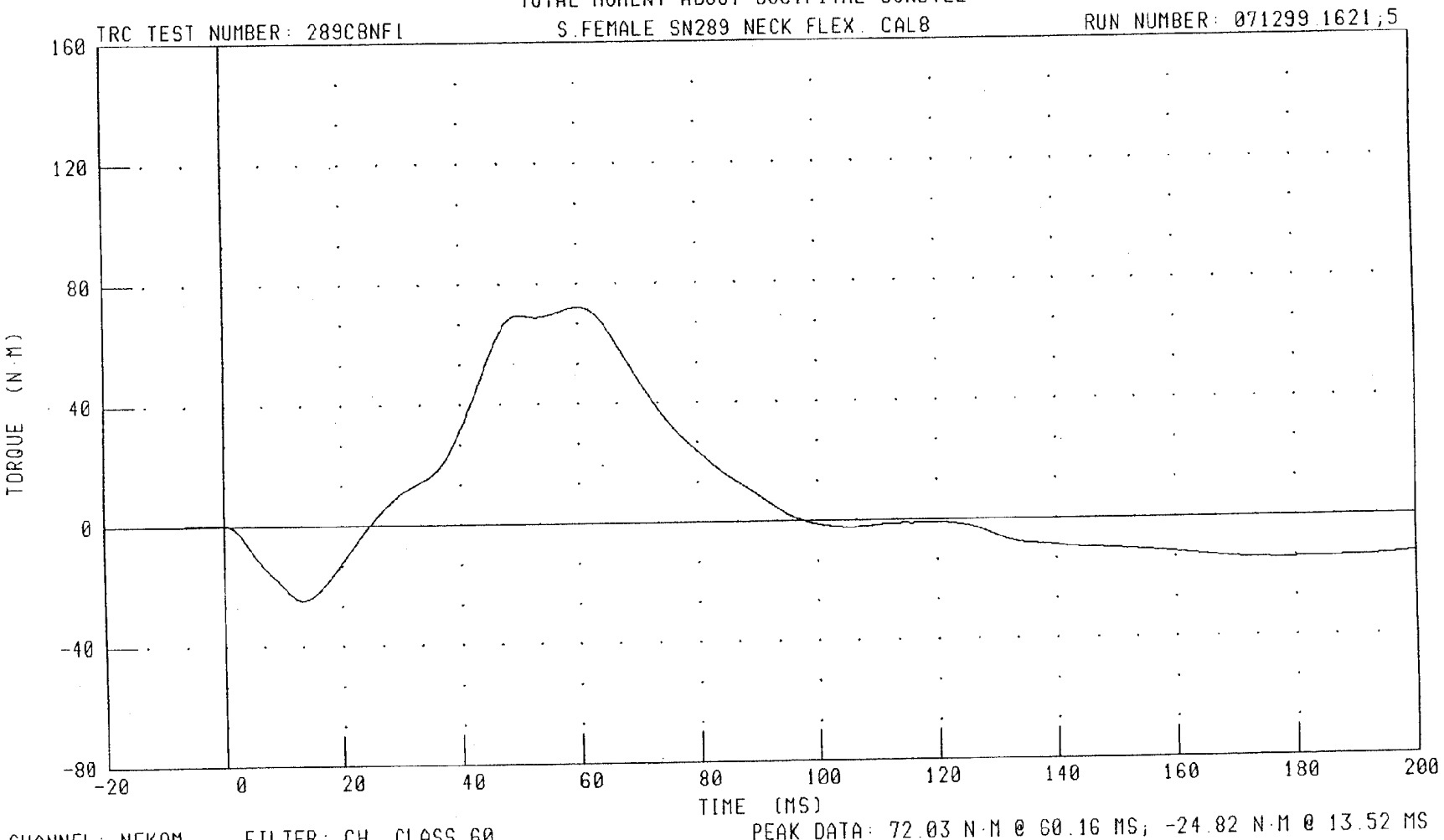
NECK MOMENT Y AXIS



CHANNEL: NEKYM FILTER: CH. CLASS 60

PEAK DATA: 60.04 N.M @ 60.88 MS; -32.17 N.M @ 13.92 MS

SMALL FEMALE HYBRID III NECK FLEXION CALIBRATION
TOTAL MOMENT ABOUT OCCIPITAL CONDYLE



CHANNEL: NEKOM FILTER: CH. CLASS 60

PEAK DATA: 72.03 N-M @ 60.16 MS; -24.82 N-M @ 13.52 MS

TRANSPORTATION RESEARCH CENTER INC.

HYBRID III SMALL FEMALE 12-JUL-99

NECK EXTENSION TEST - 6 CHANNEL TRANSDUCER

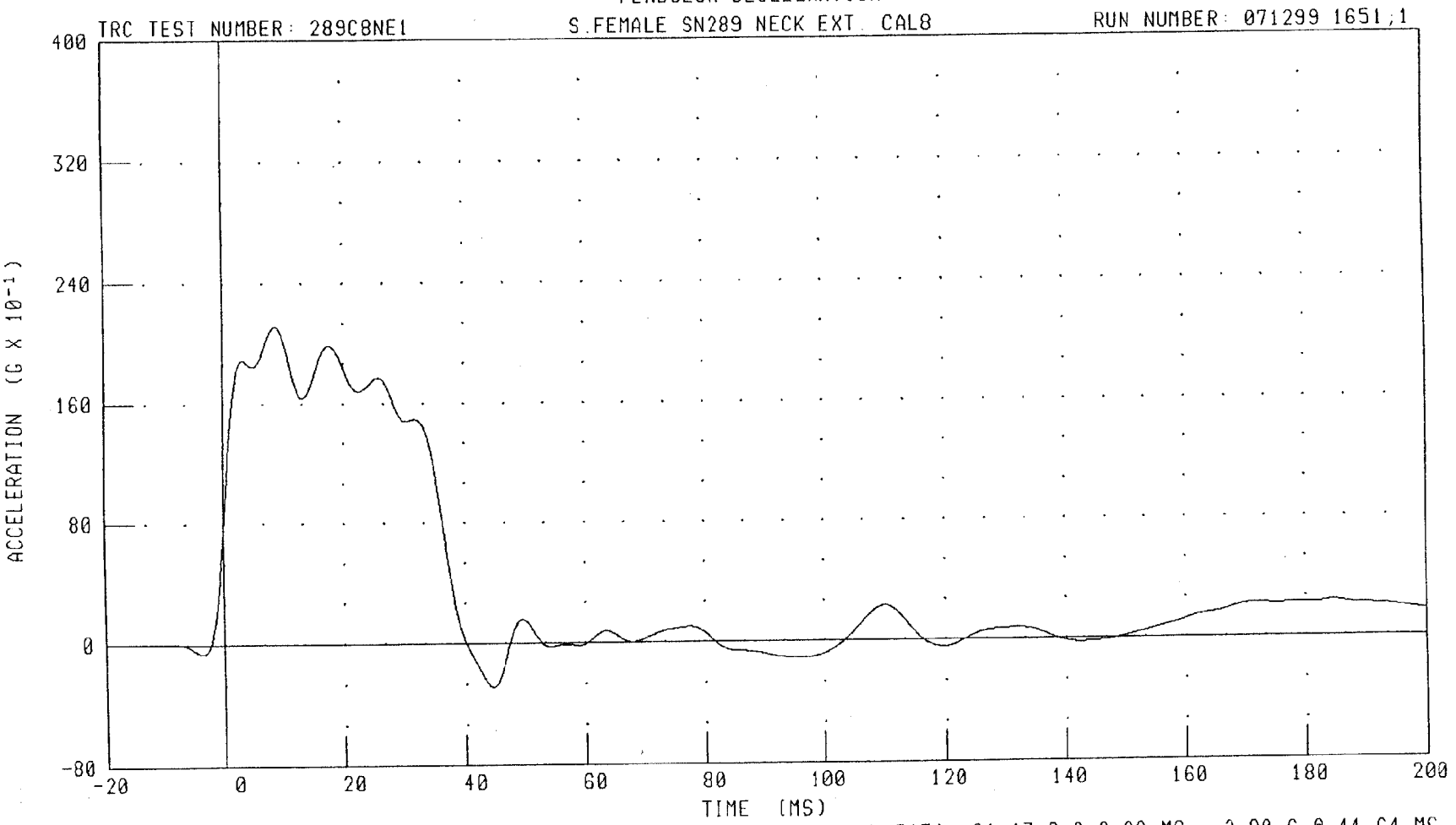
TRC INC. TEST NO: 289C8NE1 S.FEMALE SN289 NECK EXT. CAL8

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6 - 22.2 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY		10 - 70 %	44.0 %
IMPACT VELOCITY		5.95 - 6.19 M/S	6.14 M/S
INTEGRATED PENDULUM VELOCITY	10 MS	1.5 - 1.9 M/S	1.83 M/S
	20 MS	3.1 - 3.9 M/S	3.63 M/S
	30 MS	4.6 - 5.6 M/S	5.29 M/S
PEAK D-PLANE ROTATION		97 - 109 DEG.	106.53 DEG.
PEAK MOMENT ABOUT OCCIPITAL CONDYLE DURING ROTATION INT		-55 / -69 NM	-67.39 NM
NEGATIVE MOMENT DECAY TIME FROM TO TO -10 NM LEVEL		94 - 114 MS	103.76 MS

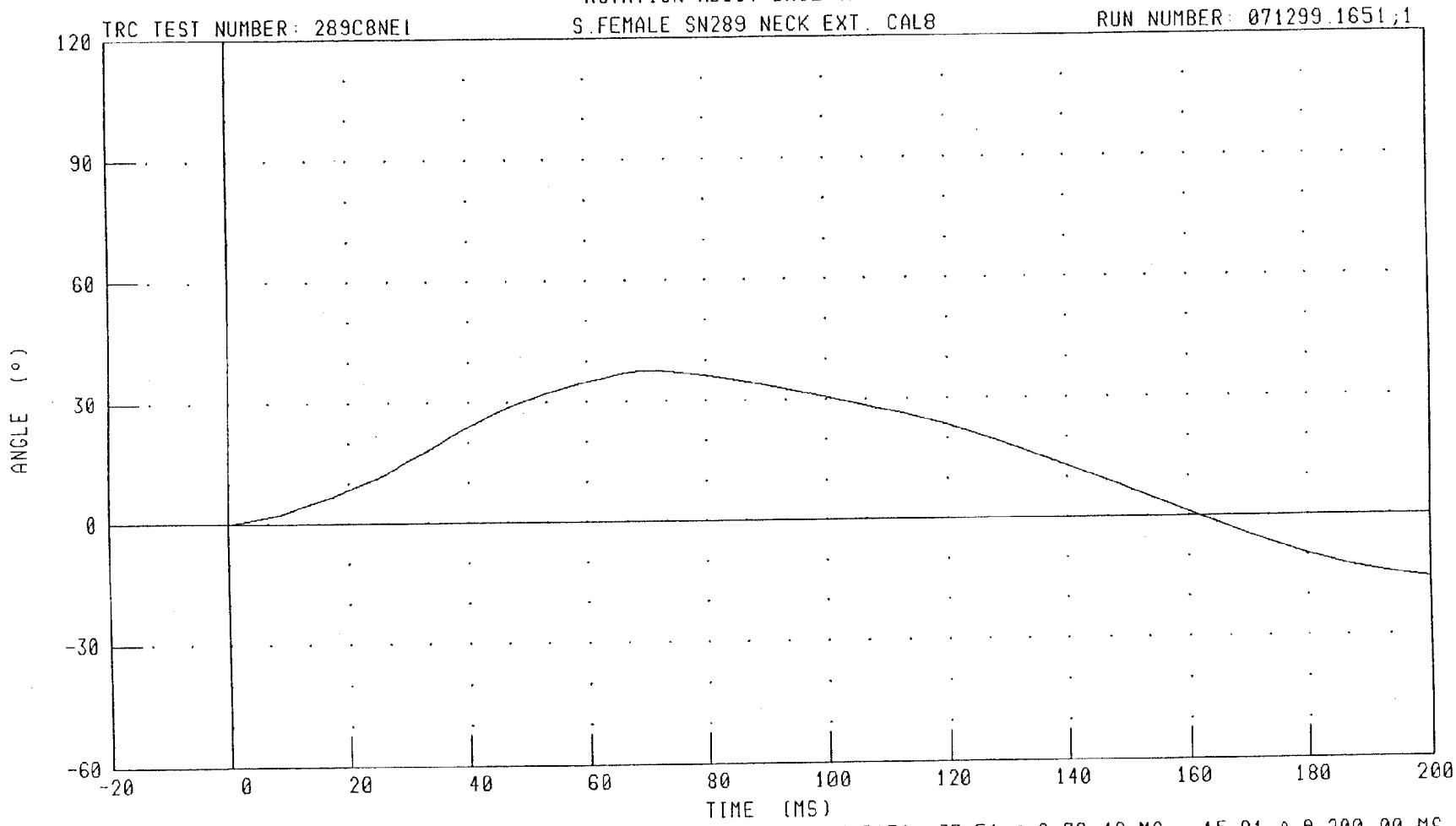
TEST MEETS NHTSA SPECIFICATIONS

TECHNICIAN Kevin Watkins RUN NUMBER: 071299.1643;1

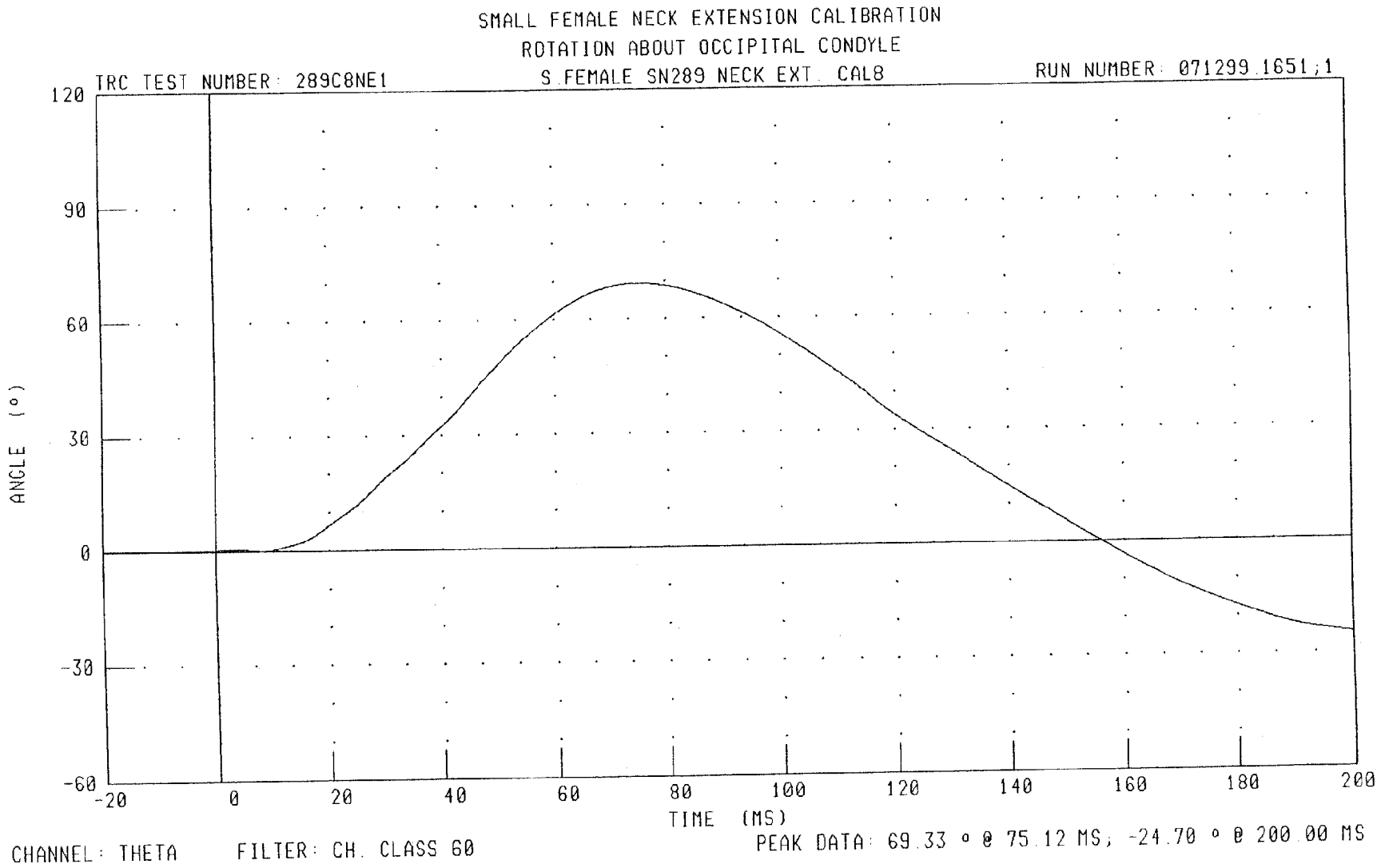
SMALL FEMALE NECK EXTENSION CALIBRATION
PENDULUM DECELERATION



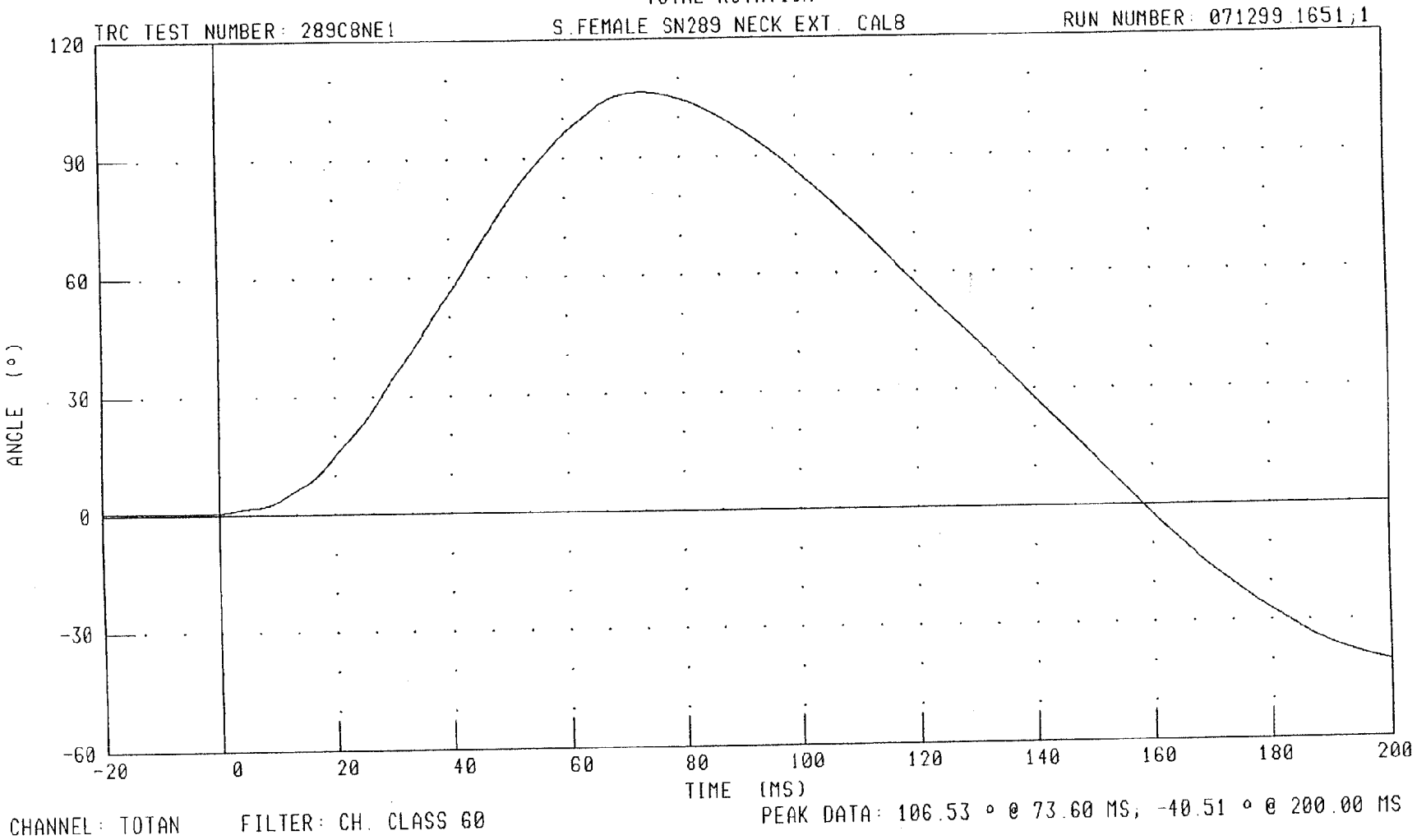
SMALL FEMALE NECK EXTENSION CALIBRATION
ROTATION ABOUT BASE OF NECK



CHANNEL: BETA FILTER: CH. CLASS 60 PEAK DATA: 37.51 ° @ 70.48 MS; -15.81 ° @ 200.00 MS


SMALL FEMALE NECK EXTENSION CALIBRATION
ROTATION ABOUT OCCIPITAL CONDYLE
TRC TEST NUMBER: 289C8NE1
S FEMALE SN289 NECK EXT. CAL8
RUN NUMBER: 071299.1651;1
120
90
60
30
0
-30
-60
ANGLE (°)
-20
0
20
40
60
80
100
120
140
160
180
200
TIME (MS)
CHANNEL: THETA
FILTER: CH. CLASS 60
PEAK DATA: 69.33 ° @ 75.12 MS; -24.70 ° @ 200.00 MS

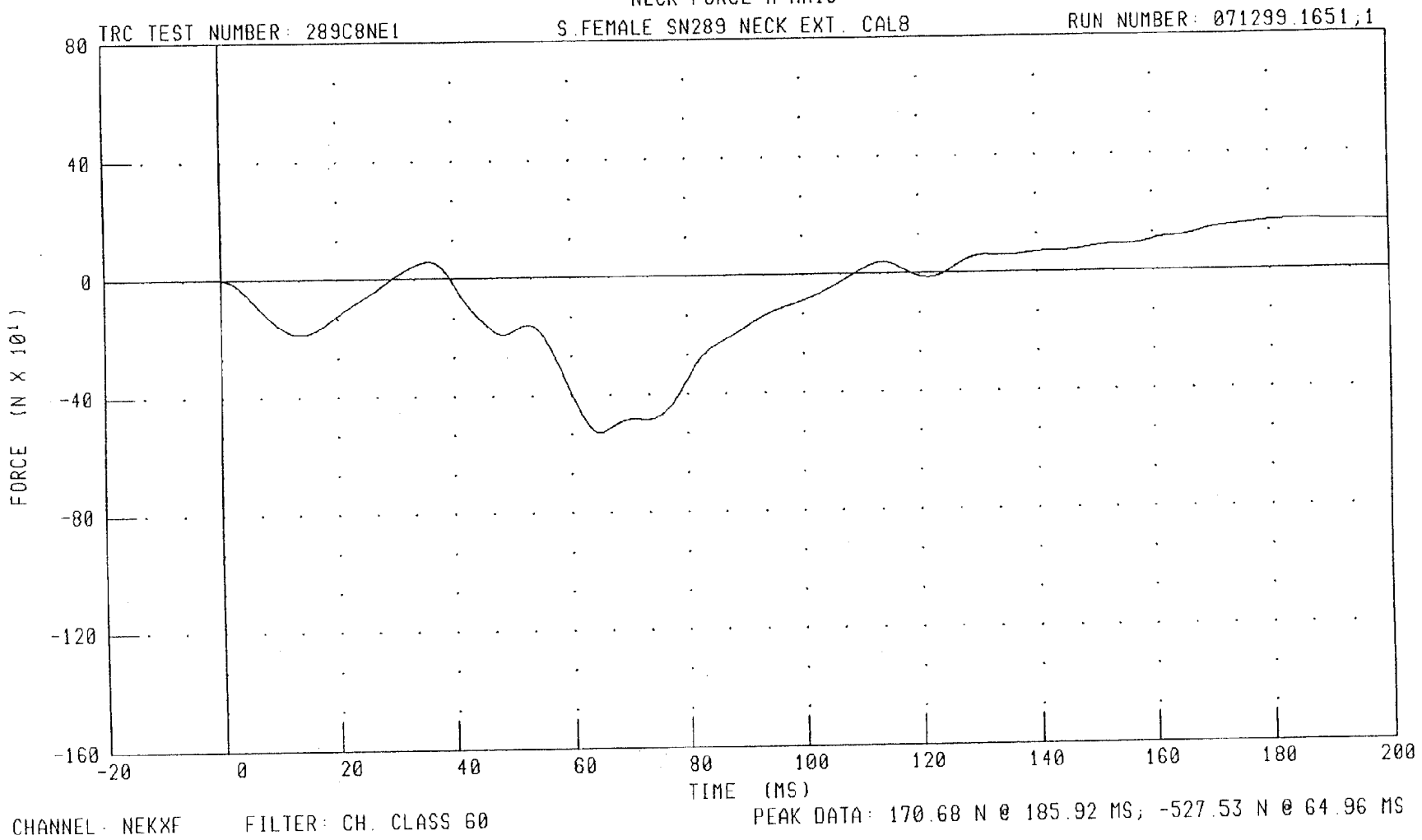
SMALL FEMALE NECK EXTENSION CALIBRATION
TOTAL ROTATION



CHANNEL: TOTAN FILTER: CH. CLASS 60

PEAK DATA: 106.53 ° @ 73.60 MS; -40.51 ° @ 200.00 MS

SMALL FEMALE NECK EXTENSION CALIBRATION
NECK FORCE X AXIS

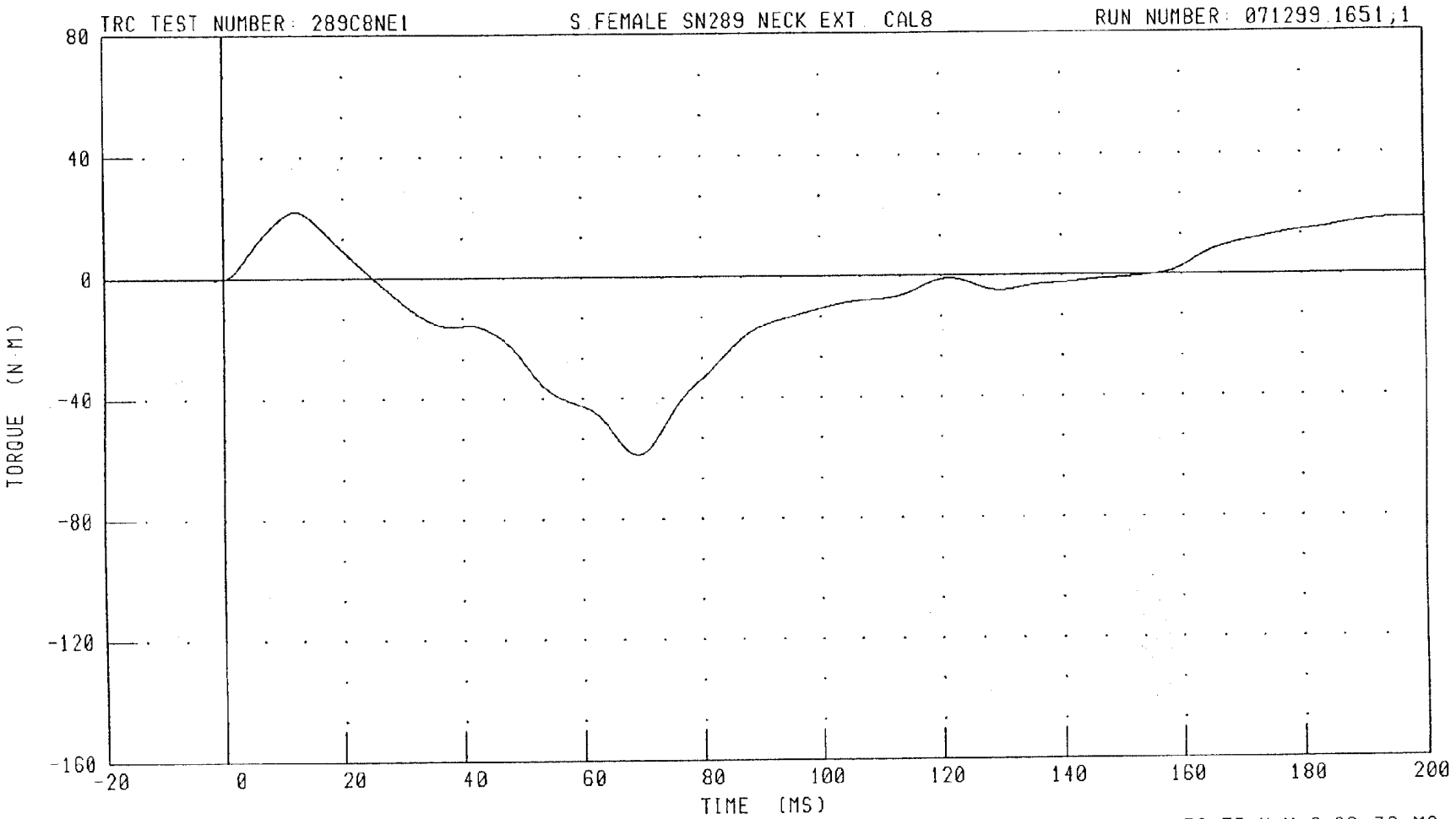


CHANNEL: NEKXF FILTER: CH. CLASS 60

PEAK DATA: 170.68 N @ 185.92 MS; -527.53 N @ 64.96 MS

SMALL FEMALE NECK EXTENSION CALIBRATION

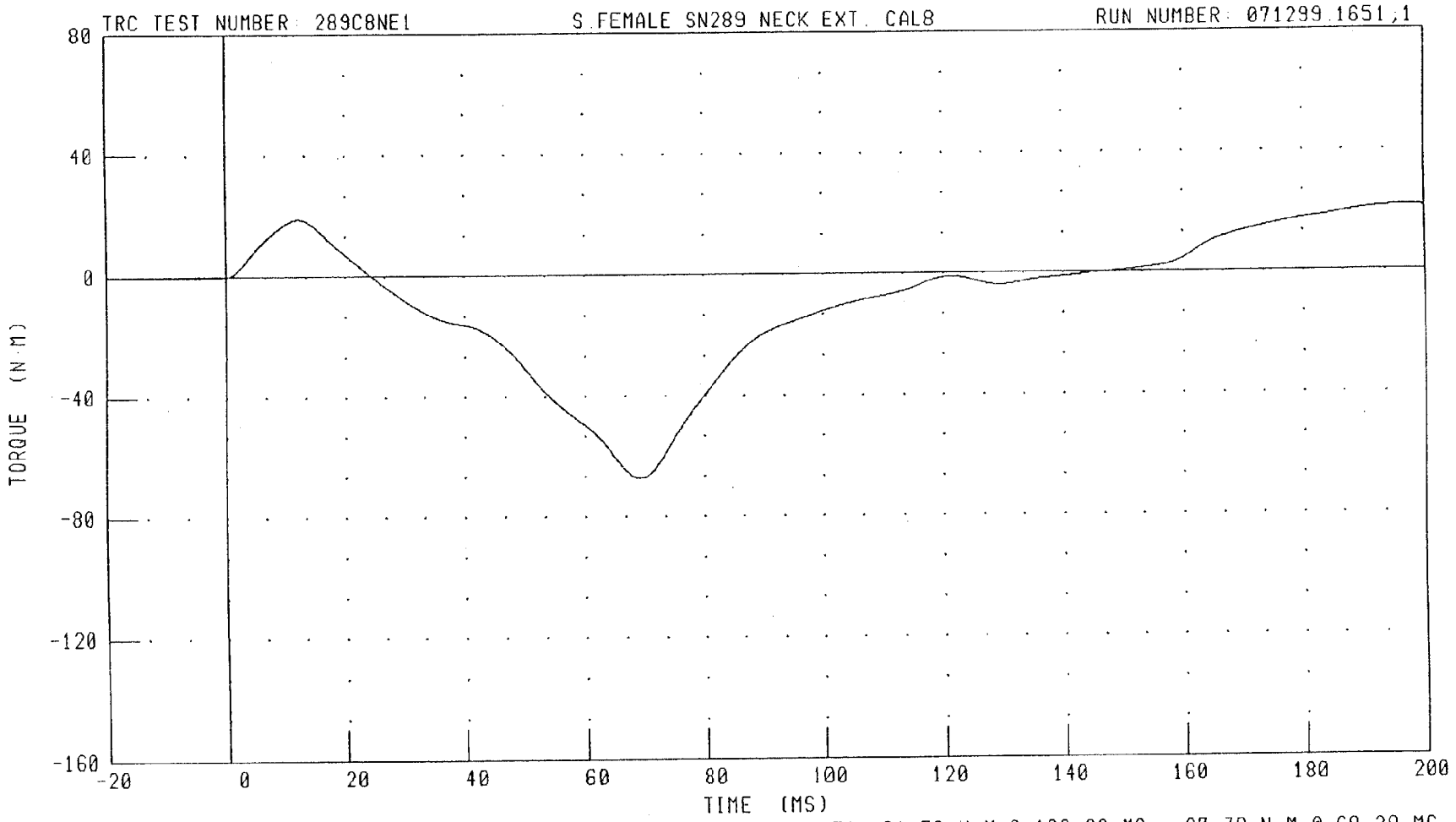
NECK MOMENT Y AXIS



CHANNEL: NEKYM FILTER: CH CLASS 60

PEAK DATA: 22.24 N-M @ 12.32 MS; -58.73 N-M @ 69.36 MS

SMALL FEMALE NECK EXTENSION CALIBRATION
TOTAL MOMENT ABOUT OCCIPITAL CONDYLE



CHANNEL: NEKOM FILTER: CH. CLASS 60

PEAK DATA: 21.52 N-M @ 196.88 MS; -67.39 N-M @ 69.28 MS

TRANSPORTATION RESEARCH CENTER INC.

THORAX IMPACT TEST

HYBRID III SMALL FEMALE 13-JUL-99

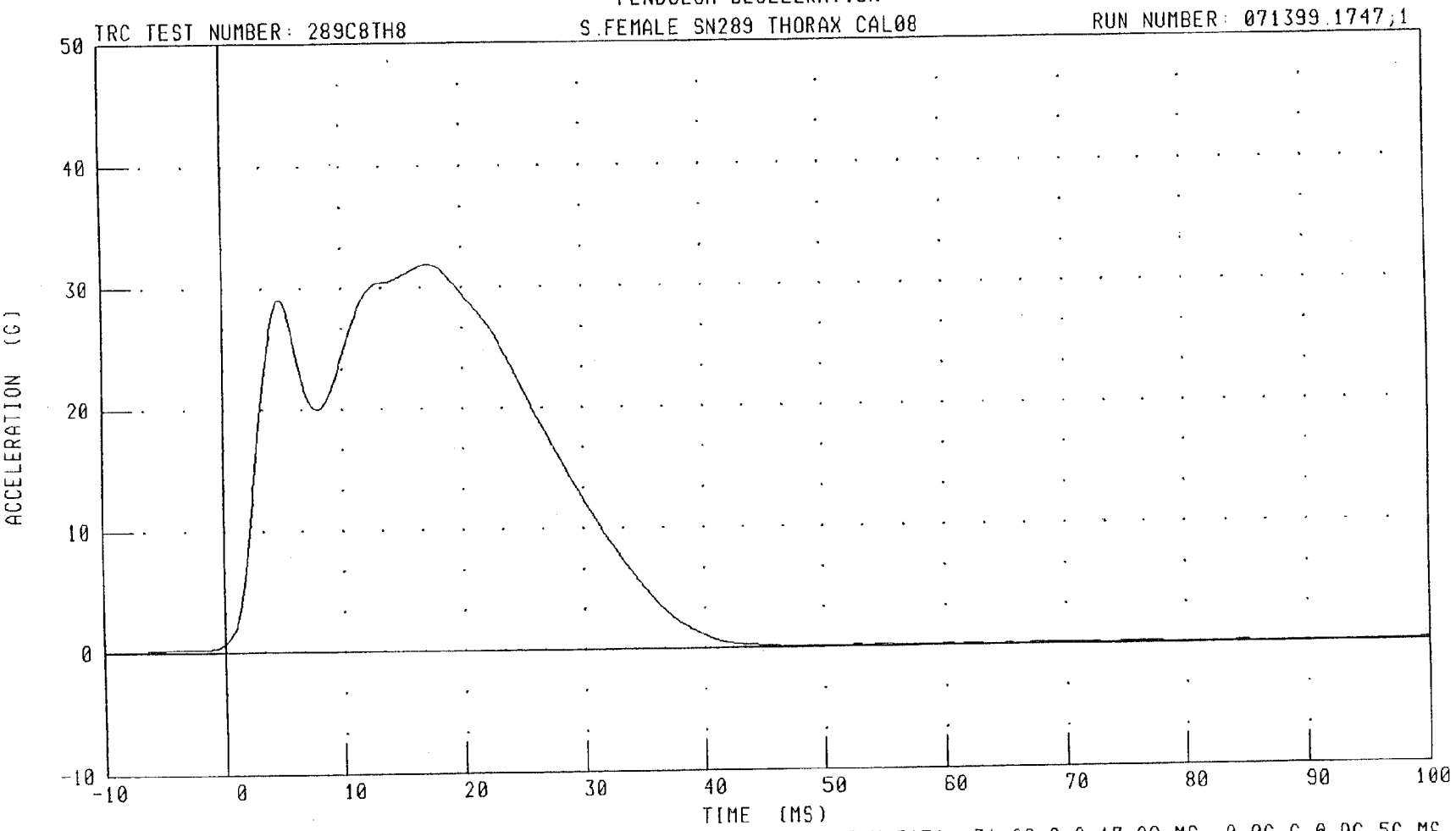
TRC INC. TEST NO: 289C8TH8 S.FEMALE SN289 THORAX CAL08

TEST PARAMETER	HIGH SPEED TEST SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6-22.2 DEG. C	22.2 DEG. C
RELATIVE HUMIDITY	10 - 70 %	44.0 %
PENDULUM VELOCITY	6.59 - 6.83 M/S	6.65 M/S
MAXIMUM DEFLECTION	48 - 55 MM	54.2 MM
MAXIMUM RESISTIVE FORCE WITHIN DEFLECTION CORRIDOR	3900 - 4400 N	4377. N
INTERNAL HYSTERESIS	69% - 85%	72.0%

TEST MEETS NHTSA SPECIFICATIONS

TECHNICIAN Kevin Watkins RUN NUMBER: 071399.1745;1

SMALL FEMALE THORAX CALIBRATION
PENDULUM DECELERATION

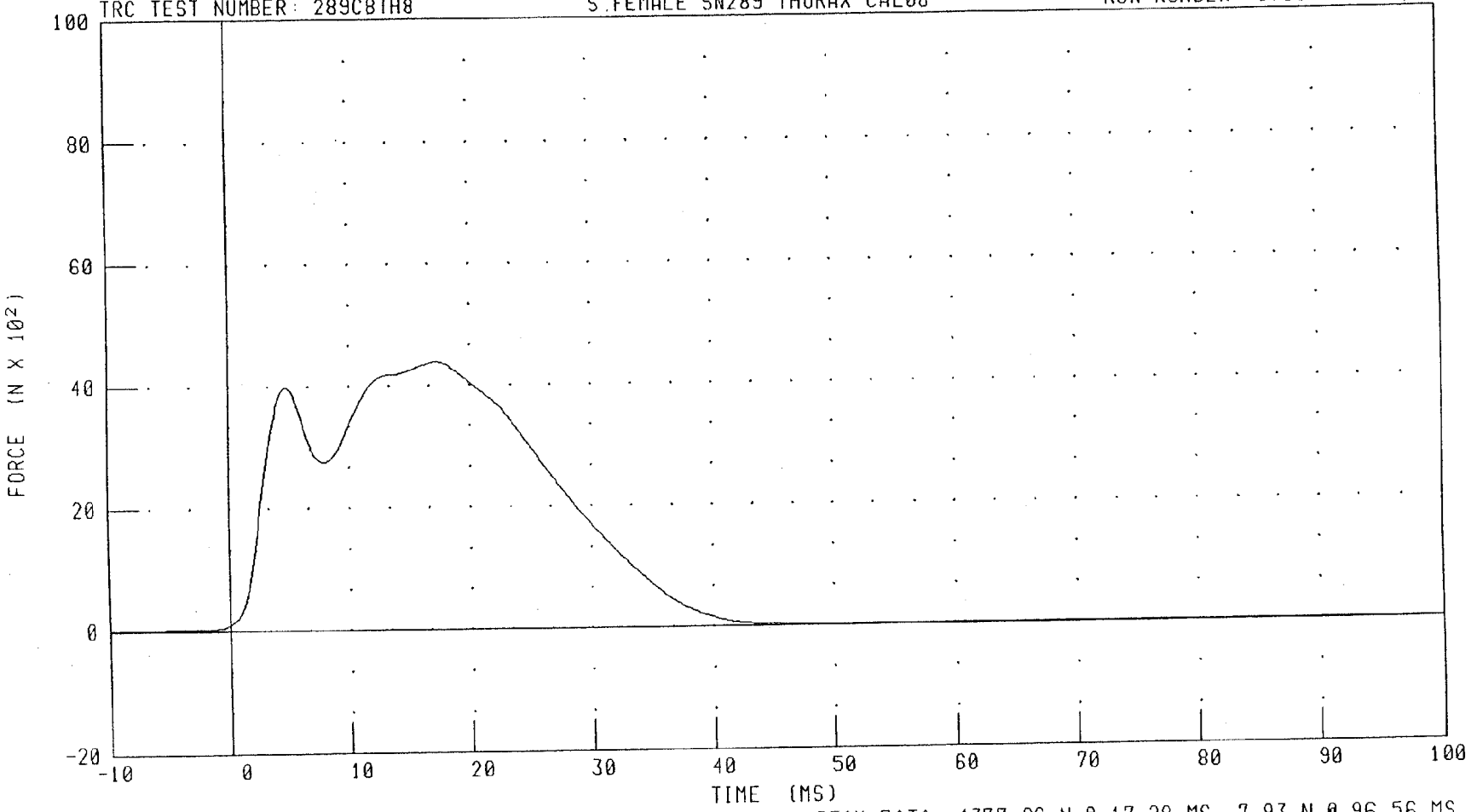


CHANNEL: PENXG FILTER: CH. CLASS 180

PEAK DATA: 31.90 G @ 17.28 MS, 0.06 G @ 96.56 MS

SMALL FEMALE THORAX CALIBRATION
PENDULUM FORCE

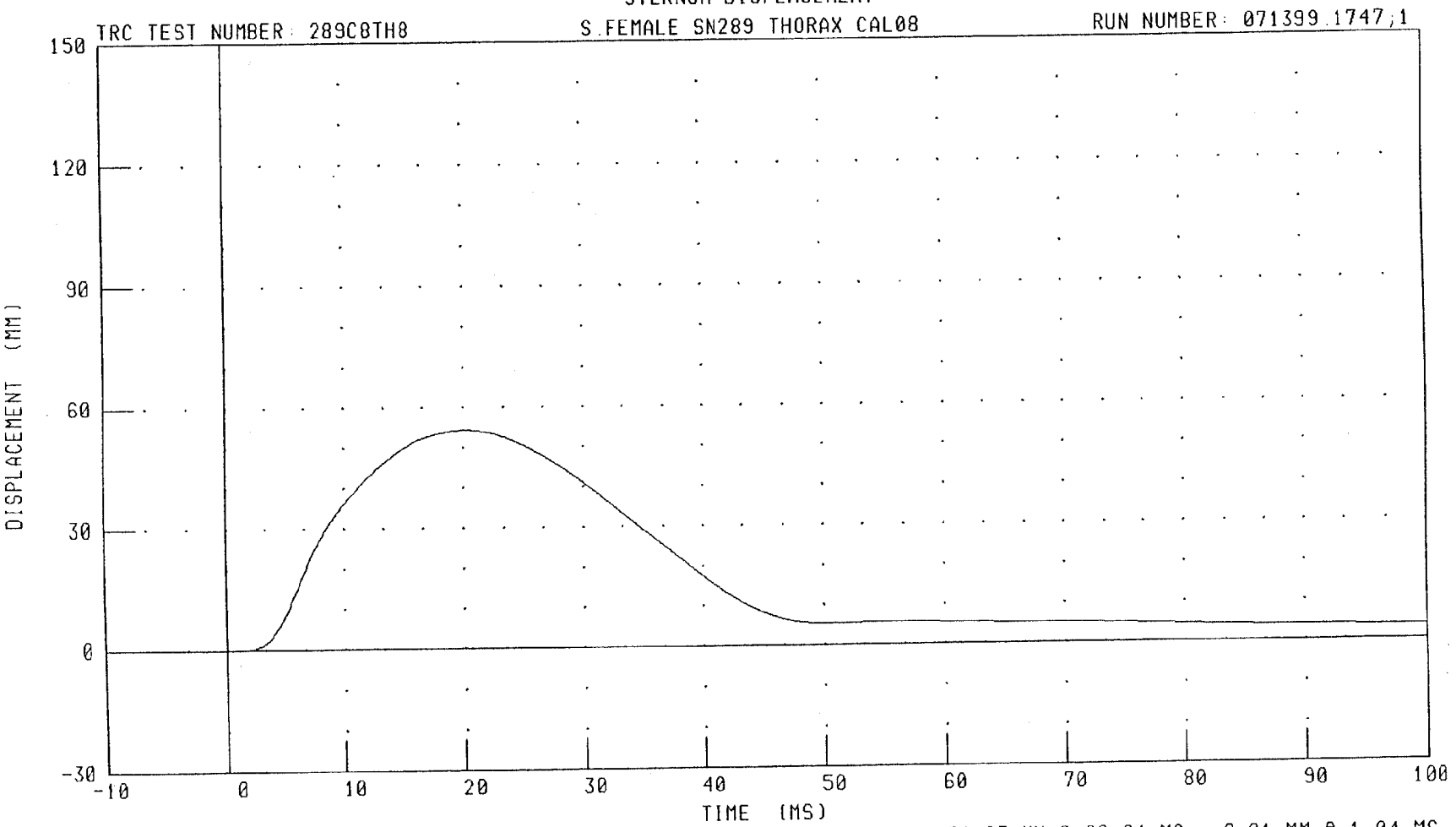
TRC TEST NUMBER: 289C8TH8 S.FEMALE SN289 THORAX CAL08 RUN NUMBER: 071399.1747;1



CHANNEL: PENXF FILTER: CH. CLASS 180

PEAK DATA: 4377.96 N @ 17.28 MS; 7.93 N @ 96.56 MS

SMALL FEMALE THORAX CALIBRATION
STERNUM DISPLACEMENT

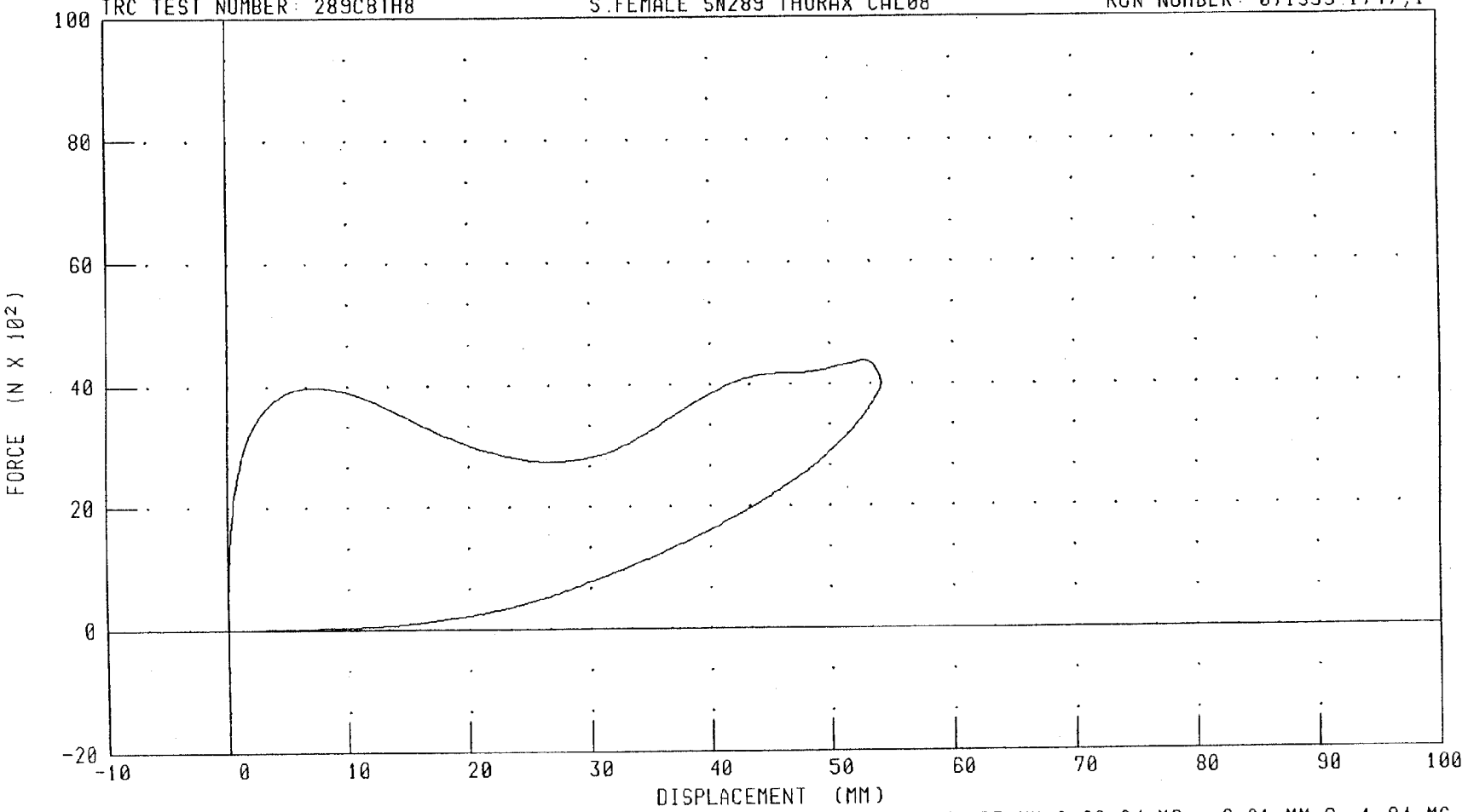


CHANNEL: CSTXD FILTER: CH. CLASS 180

PEAK DATA: 54.23 MM @ 20.24 MS; -0.01 MM @ 1.04 MS

SMALL FEMALE THORAX CALIBRATION
CHEST DISPLACEMENT VS PENDULUM FORCE

TRC TEST NUMBER: 289C8TH8 S.FEMALE SN289 THORAX CAL08 RUN NUMBER: 071399.1747;1



CHANNEL: CSTXD FILTER: CH. CLASS 180
PENXF CH. CLASS 180

PEAK DATA: 54.23 MM @ 20.24 MS; -0.01 MM @ 1.04 MS
4377.96 N @ 17.28 MS; 7.93 N @ 96.56 MS

TRANSPORTATION RESEARCH CENTER INC.

RIGHT KNEE IMPACT TEST

HYBRID III SMALL FEMALE 12-JUL-99

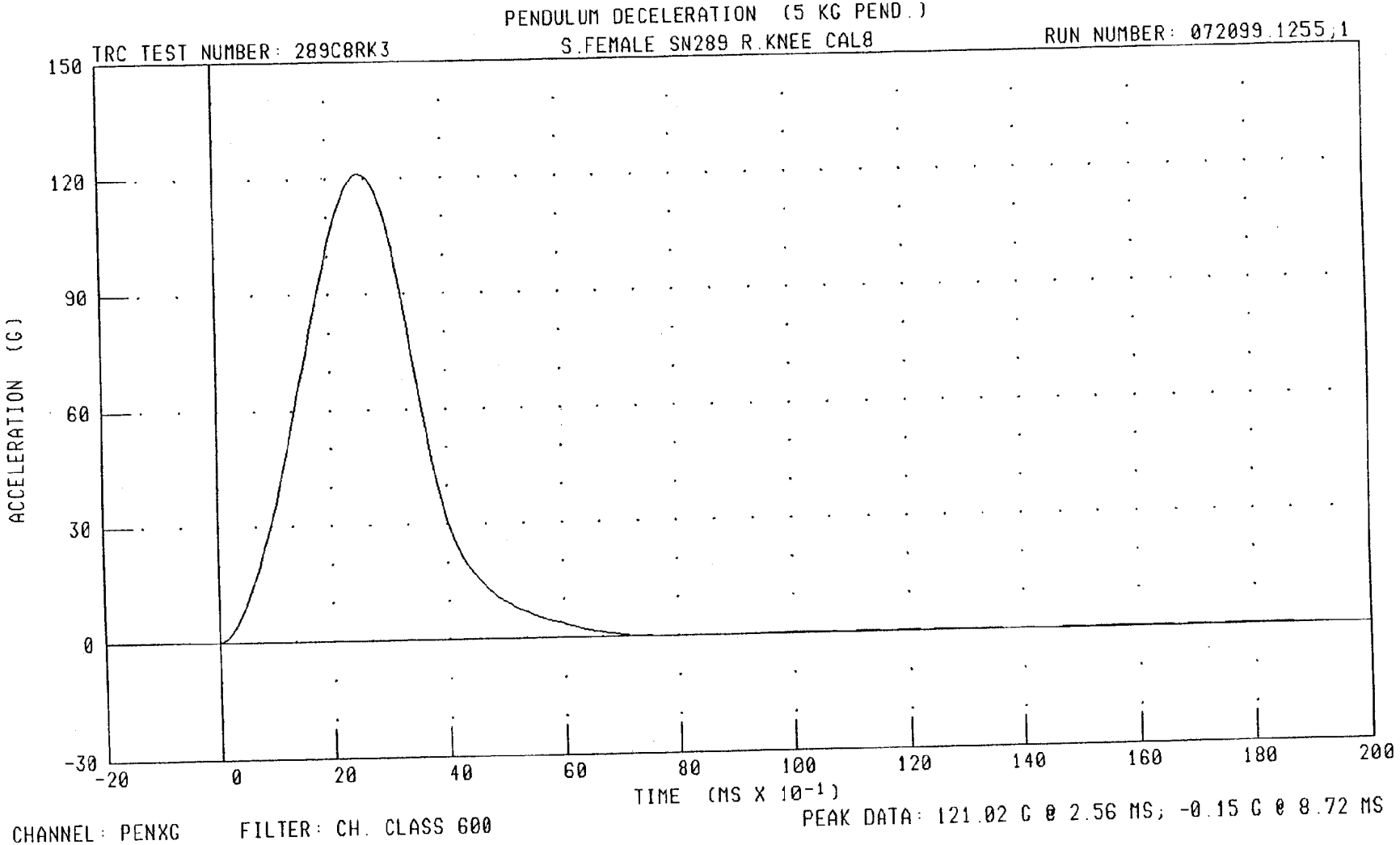
TRC INC. TEST NO: 289C8RK3 S.FEMALE SN289 R.KNEE CAL8

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	44.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.07 M/S
PEAK KNEE IMPACT FORCE 3.0 KG PENDULUM	3360 - 4080 N	3552.7 N

TEST MEETS NHTSA SPECIFICATIONS

TECHNICIAN Kevin Watkins RUN NUMBER: 071299.1232;1

SMALL FEMALE HYBRID III RIGHT KNEE CALIBRATION
PENDULUM DECELERATION (5 KG PEND.)



TRANSPORTATION RESEARCH CENTER INC.

LEFT KNEE IMPACT TEST

HYBRID III SMALL FEMALE 12-JUL-99

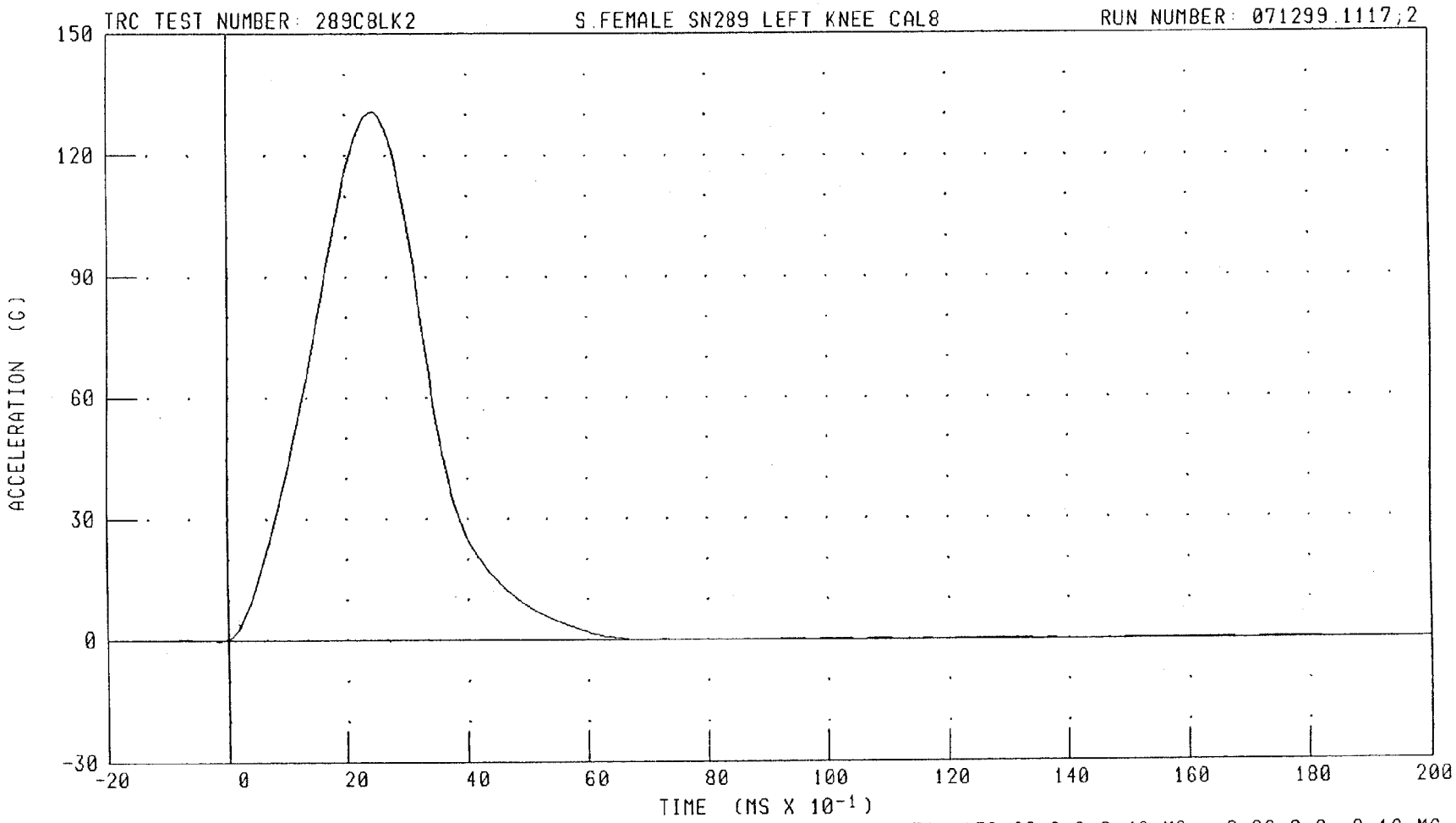
TRC INC. TEST NO: 289C8LK2 S.FEMALE SN289 LEFT KNEE CAL8

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	44.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.07 M/S
PEAK KNEE IMPACT FORCE 3.0 KG PENDULUM	3360 - 4080 N	3836.4 N

TEST MEETS NHTSA SPECIFICATIONS

TECHNICIAN Kevin Watkins RUN NUMBER: 071299.1116;2

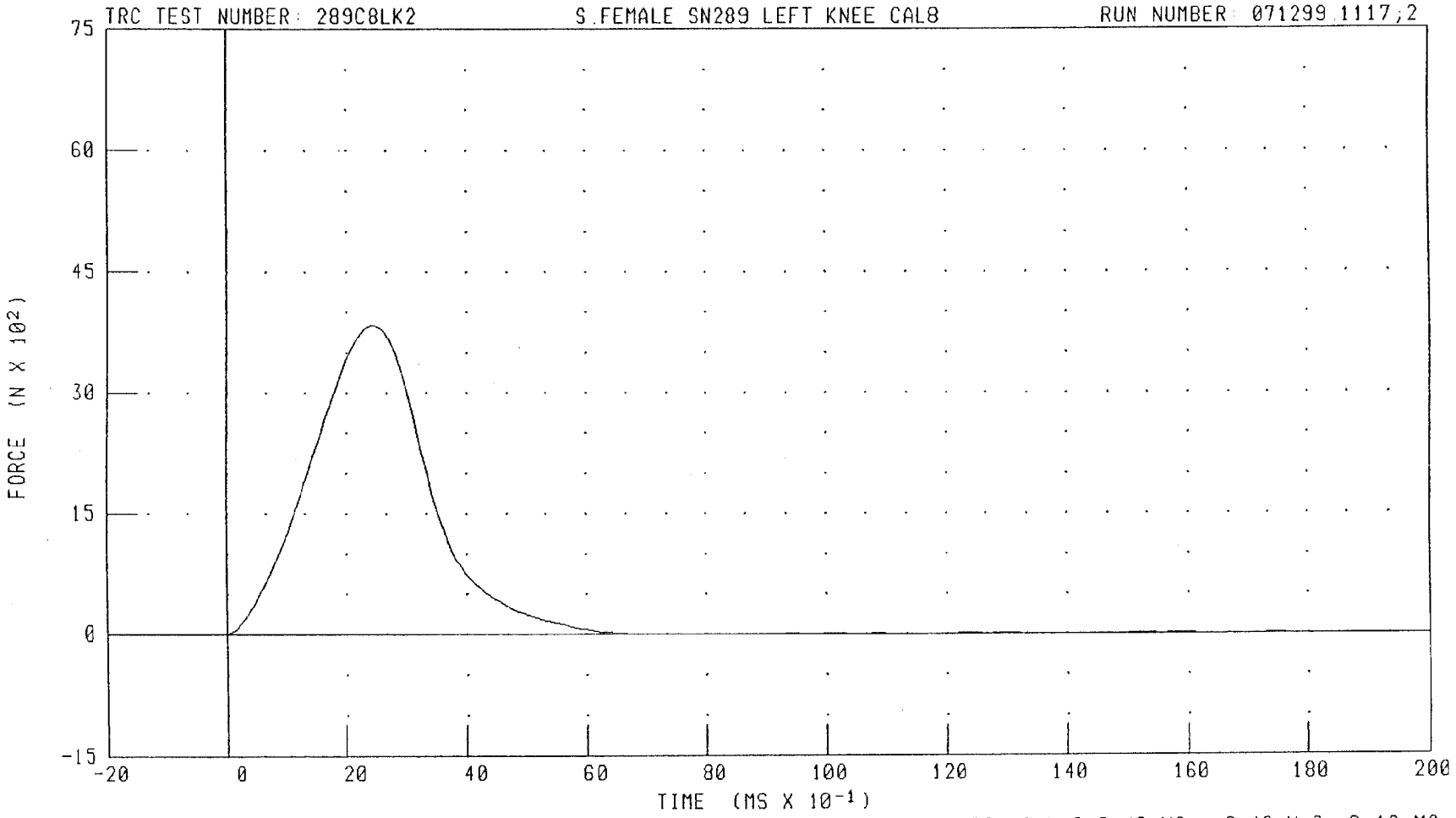
SMALL FEMALE HYBRID III LEFT KNEE CALIBRATION
PENDULUM DECELERATION (5 KG PEND.)



CHANNEL: PENXG FILTER: CH. CLASS 600 PEAK DATA: 130.68 G @ 2.48 MS; -0.22 G @ -0.16 MS

SMALL FEMALE HYBRID III LEFT KNEE CALIBRATION

PENDULUM FORCE (5 KG PEND.)



CHANNEL: PENXF FILTER: CH. CLASS 600 PEAK DATA: 3836.49 N @ 2.48 MS; -6.48 N @ -0.16 MS

Appendix D

Miscellaneous Test Information

Dummy Sign Convention

Accelerometers:	+X: Forward	
	+Y: Rightward	
	+Z: Downward	
Potentiometers:	+Chest longitudinal deflection:	Outward
Load cells:	+Femur force:	Tension
Neck load cells:	+X force:	Head rearward
	+Y force:	Head leftward
	+Z force:	Head upward (tension on neck)
	+X moment:	Left ear rotating toward left shoulder
	+Y moment:	Chin rotating toward chest
	+Z moment:	Chin rotating toward left shoulder

Filtering Data

J211 MAR95

Load Cell Barrier Forces Class 60

Vehicle Structural Accelerations Class 60

Occupant

Head Accelerometer Class 1000

Neck Class 60

Chest Accelerometer Class 180

Chest Deflection Class 180

Femur Force Class 600

Sternum Accelerometer Class 180

Lower Leg Class 600

TRANSDUCER INFORMATION

5th Female HYBRID III DUMMY SERIAL NO.: _369t____; MFR.: _____; SEATING POSITION: ____PASS_____

PROJECT-SEGMENT NO.: ____096017 1511_____; ENGINEER: _____PG_____; TEST DATE: ____8-9-99_____

MNEMONIC PARAMETER BEING MEASURED	TYPE OF TRANSDUCER	MODEL NO.	SERIAL NO.	MFR.	SENSITIVITY	CAL DUE DATE	FULL SCALE (ENGR. UNITS) DESIRED	ACTUAL	DIRECTION OF POSITIVE POLARITY	CABLE NO.
HEDXG HAP	HEAD X-AXIS ACCEL.	7264	A20FJ	End.	.2563 mv/g at 10 volts	12-2-1999	400 g		Rear	A20FJ
HEDYG HLR	HEAD Y-AXIS ACCEL.	"	A31FJ	"	.2683 mv/g at 10 volts	"	400 g		Left	A31FJ
HEDZG HIS	HEAD Z-AXIS ACCEL.	"	CL95H	"	.2822 mv/g at 10 volts	"	400 g		Up	CL95H
NEKXF NFX	NECK X-AXIS SHEAR FORCE	1716A	0534	DEN	1.7247 mv/v at 2000 lbs.	12-2-1999	2,000 lbs. 9,000 N			FX
NEKYF NFY	NECK Y-AXIS SHEAR FORCE	"	"	"	1.6643 mv/v at 2000 lbs.	"	2,000 lbs. 9,000 N			FY
NEKZF NFZ	NECK Z-AXIS AXIAL FORCE	"	"	"	1.1561 mv/v at 3000 lbs.	"	3,000 lbs. 13,500 N			FZ
NEKXM NMX	NECK MOMENT ABOUT X AXIS	"	"	"	1.6355 mv/v at 2500 in. lbs.	"	200 ft·lbs 275 N·m			MX
NEKYM NMY	NECK MOMENT ABOUT Y AXIS	"	"	"	1.6430 mv/v at 2500 in. lbs.	"	200 ft·lbs 275 N·m			MY
NEKZM NMZ	NECK MOMENT ABOUT Z AXIS	"	"	"	2.3186 mv/v at 2500 in. lbs.	"	200 ft·lbs 275 N·m			MZ

TRANSDUCER INFORMATION

5th Female HYBRID III DUMMY SERIAL NO.: _369t____; MFR.: _____; SEATING POSITION: ____PASS_____

PROJECT-SEGMENT NO.: ____096017 1511_____; ENGINEER: _____PG_____; TEST DATE: ____8-9-99_____

MNEMONIC PARAMETER BEING MEASURED	TYPE OF TRANSDUCER	MODEL NO.	SERIAL NO.	MFR.	SENSITIVITY	CAL DUE DATE	FULL SCALE (ENGR. UNITS) DESIRED	ACTUAL	DIRECTION OF POSITIVE POLARITY	CABLE NO.
CSTXG CAP	CHEST X-AXIS ACCEL.	7264	A72JJ	End.	.2773 mv/g at 10 volts	12-2-1999	400 g		Forward	A72JJ
CSTYG CLR	CHEST Y-AXIS ACCEL.	"	A69JJ	"	.2702 mv/g at 10 volts	"	400 g		Left	A69JJ
CSTZG CIS	CHEST Z-AXIS ACCEL.	"	A34FJ	"	.2565 mv/g at 10 volts	"	400 g		Up	A34FJ
CSTXD CAPD	CHEST DEFLECTION	14CB1-2897	1188	Bourn	43.6 mv/v/in	"	6 inch 150 mm		Extension	1188
PEVXG PAP	PELVIS X-AXIS ACCEL.	7264	CY31H	End.	.2031 mv/g at 10 volts	"	400 g		Rear	C14981
PEVYG PLR	PELVIS Y-AXIS ACCEL.	"	A51JJ	"	.2917 mv/g at 10 volts	"	400 g		Left	C15183
PEVZG PIS	PELVIS Z-AXIS ACCEL.	"	A75JJ	"	.2695 mv/g at 10 volts	"	400 g		Up	C15184
LFMF LF	LEFT FEMUR FORCE	2430	1006	DEN	0.9459 mv/v at 3000 lbs.	12-2-1999	1300 Kg 3,000 lbs. 13,500 N		Extension	1518
RFMF RF	RIGHT FEMUR FORCE	"	1007	"	0.9114 mv/v at 3000 lbs.	"	1300 Kg 3,000 lbs. 13,500 N		Extension	71

TRANSDUCER INFORMATION

5th Female HYBRID III DUMMY SERIAL NO.: _369t___; MFR.: _____; SEATING POSITION: ____PASS_____

PROJECT-SEGMENT NO.: ____096017 1511_____; ENGINEER: _____PG_____; TEST DATE: ____8-9-99_____

MNEMONIC PARAMETER BEING MEASURED	TYPE OF TRANSDUCER	MODEL NO.	SERIAL NO.	MFR.	SENSITIVITY	CAL DUE DATE	FULL SCALE (ENGR. UNITS) DESIRED	ACTUAL	DIRECTION OF POSITIVE POLARITY	CABLE NO.
STMXG	STERNUM MID X - AXIS ACCEL.	7264	AGRH9	End.	.2481 mv/g at 10 volts	12-2-1999	800gs		Fwd	AGRH9
SPMXG	SPINE MID X - AXIS ACCEL.	"	AGRG5	"	.2241 mv/g at 10 volts	"	400gs		Rwd	AGRG5

Vehicle Instrumentation Placement

Vehicle year/make/model/body style: 1999/Dodge/Intrepid

Test number: 990809-1

Number	Location	Axis	Manufacturer	Model	S/N	Orientation (+ Sensing)
1	Left Brake Caliper	X	Endevco	7264-2000T	J28750	Forward
2	Right Brake Caliper	X	Endevco	7264-2000T	J27892	Forward
3	Instrument Panel	X	Endevco	7264-2000T	J27718	Forward
	Center	Y	Endevco	7264-2000T	J27794	Left
4	Engine Top	X	Endevco	7264-2000T	J20036	Rearward
5	Engine Bottom	X	Endevco	7264-2000T	J29440	Forward
6	Rear Vehicle	Y	Endevco	7264-2000T	J27659	Left
	Centerline	Z	Endevco	7264-2000T	J14405	Up
7	Left Rear Seat	X	Endevco	7264-2000T	J27720	Rearward
8	Right Rear Seat	X	Endevco	7264-2000T	J27800	Forward
9	Driver Airbag	N/A	Fluke	Y8101A	IP1	N/A
10	Passenger Airbag	N/A	Fluke	Y8101A	IP2	N/A

Description Of Timing Marks On TRC High-Speed Film

All TRC high-speed cameras are equipped with red LEDs which put timing marks on the right edge of the film. TRC uses a single timing generator to generate the timing for all cameras. This allows the timing marks to be common to all cameras. The timing marks can be used to measure camera speed (frames per second) or to locate a point in time before or after the time-zero event.

The timing marks appear on the film as small red marks on the right edge of the film. Round marks are left by the Photo-Sonics and Stalex cameras while horizontal bars are left by the Hycam, Locam, and Fastax II cameras.

The timing generator puts out a pulse for every millisecond plus it generates additional pulses for hundredths and tenths of seconds. To explain this further, we can use an example of a camera running at 1000 frames per second.

1. Every frame will have **one** LED appear in it. This indicates a *millisecond* pulse.

2. Every ten frames will have **two** LEDs appear in it. These indicate a *millisecond* pulse plus a *hundredth of a second* pulse.

3. Every one hundred frames will have **three** LEDs appear in it. These indicate a *millisecond* pulse, a *hundredth of a second* pulse, and a *tenth of a second* pulse.

Accelerometer Information

Engineer: Rhule
Test Date: Feb-98
Dummy S/N: 289
Type: 5th female

Mnemonic Parameter Being Measured	Description	Model Number	Serial Number	Mfr.	Sensitivity Mv/g @100 Hz	Cal Due Date	Full-Scale Desired G	Direction Of Positive Polarity
CSTXG	Chest X	7264	J20599	Endevco	0.2054	10/07/99	200	FWD
CSTYG	Chest Y	7264	J20580	Endevco	0.2237	10/07/99	200	LEFT
CSTZG	Chest Z	7264	EH88J	Endevco	0.2833	10/07/99	200	UP
STTXG	Sternum top X	7264	J20569	Endevco	0.2179	10/07/99	2000	FWD
STMXG	Sternum middle X	7264	J20064	Endevco	0.2279	10/07/99	2000	FWD
STBXG	Sternum bottom X	7264	J20570	Endevco	0.2230	10/07/99	2000	FWD
SPTXG	Spine top X	7264	J19872	Endevco	0.2406	10/07/99	200	REAR
SPMXG	Spine middle X	7264	J19877	Endevco	0.2472	10/07/99	200	REAR
SPBXG	Spine bottom X	7264	J19890	Endevco	0.2267	10/07/99	200	REAR
HEDXG	Head X	7264	J20165	Endevco	0.2225	10/07/99	200	REAR
HEDYG	Head Y	7264	J19865	Endevco	0.2129	10/07/99	200	LEFT
HEDZG	Head Z	7264	J19934	Endevco	0.2452	10/07/99	200	UP
PEVXG	Pelvis X	7264	CY06H	Endevco	0.3020	10/07/99	200	REAR
PEVYG	Pelvis Y	7264	AGAC4	Endevco	0.2385	10/07/99	200	LEFT
PEVZG	Pelvis Z	7264	BF65J	Endevco	0.3357	10/07/99	200	UP
PEVYGA	Pelvis Y	7264	J20218	Endevco	0.2473	10/27/99	200	RIGHT

Accelerometer Information

Engineer: Rhule
Test Date: Feb-98
Dummy S/N: 289
Type: Hybrid III 5th percentile

Mnemonic Parameter Being Measured	Description	Model Number	Serial Number	Sensitivity (mV/V)	Cal Due Date	Full-Scale Desired G	Direction Of Positive Polarity
	Neck Load Cell						
NEKXF	Neck X-force	1716	425	1.6944 @ 2,000 lbs	10/07/99	2000	Head forward/chest rearward
NEKYF	Neck Y-force	1716	425	1.6421 @ 2,000 lbs	10/07/99	2000	Head left/chest right
NEKZF	Neck Z-force	1716	425	1.1515 @ 3,000 lbs	10/07/99	3000	Head up/chest down
NEKXM	Neck X-moment	1716	425	1.5817 @ 2500 in-lbs	10/07/99	2500	Right ear to right shoulder
NEKYM	Neck Y-moment	1716	425	1.6308 @ 2500 in-lbs	10/07/99	2500	Chin forward to sternum
NEKZM	Neck Z-moment	1716	425	2.2688 @ 2500 in-lbs	10/07/99	2500	Chin to left shoulder
	Femur Load Cells						
	Left femur						
LFMXF	Left femur X-force	1914	0259	1.9091 @ 3000 lbs	10/07/99	3000	Knee upward/upper femur down
LFMYF	Left femur Y-force	1914	0259	1.9105 @ 3000 lbs	10/07/99	3000	Knee left/upper femur right
LFMZF	Left femur Z-force	1914	0259	1.1840 @ 5000 lbs	10/07/99	5000	Knee forward/pelvis rearward
LFMXM	Left femur X-moment	1914	0259	1.4989 @ 3000 in-lbs	10/07/99	3000	Knee left, hold upper femur in place
LFMYM	Left femur Y-moment	1914	0259	1.5040 @ 3000 in-lbs	10/07/99	3000	Knee up, hold upper femur in place
LFMZM	Left femur Z-moment	1914	0259	2.6742 @ 3000 in-lbs	10/07/99	3000	Twist knee to right, hold up femur
	Right femur						
RFMXF	Right femur X-force	1914	0257	1.9130 @ 3000 lbs	10/07/99	3000	Knee upward/upper femur down
RFMYF	Right femur Y-force	1914	0257	1.9299 @ 3000 lbs	10/07/99	3000	Knee left/upper femur right
RFMZF	Right femur Z-force	1914	0257	1.1926 @ 5000 lbs	10/07/99	5000	Knee forward/pelvis rearward
RFMXM	Right femur X-moment	1914	0257	1.4705 @ 3000 in-lbs	10/07/99	3000	Knee left, hold upper femur in place
RFMYM	Right femur Y-moment	1914	0257	1.5124 @ 3000 in-lbs	10/07/99	3000	Knee up, hold upper femur in place
RFMZM	Right femur Z-moment	1914	0257	2.5006 @ 3000 in-lbs	10/07/99	3000	Twist knee to right, hold up femur

Accelerometer Information

Engineer: Rhule
Test Date: Feb-98
Dummy S/N: 289
Type: Hybrid III 5th percentile

Mnemonic Parameter Being Measured	Description	Model Number	Serial Number	Sensitivity	Cal Due Date	Full-Scale Desired G	Direction Of Positive Polarity
	Chest Pot						
CSTXD	Chest deflection		019/289	42.26 mV/V/inch	10/08/99	3 in	
	Knee slider						
KNLXD	Left knee slider deflection		019/289	39.07403 mV/V/mm	04/13/98	20 mm	
KNRXD	Right knee slider deflection		019/289	40.07792 mV/V/mm	04/13/98	20 mm	

TRANSDUCER INFORMATION

5th Female HYBRID III DUMMY SERIAL NO.: _289v___; MFR.: _____; SEATING POSITION: ___DR_____

PROJECT-SEGMENT NO.: __096017-1511_____; ENGINEER: ____PG_____; TEST DATE: __08-9-99_____

MNEMONIC PARAMETER BEING MEASURED	TYPE OF TRANSDUCER	MODEL NO.	SERIAL NO.	MFR.	SENSITIVITY	CAL DATE	FULL SCALE (ENGR. UNITS) DESIRED	ACTUAL	DIRECTION OF POSITIVE POLARITY	CABLE NO.
KNLLF	LEFT KNEE LEFT SENSOR FORCE	1587	-LEFT	DEN	1.2872mv/v at 2000 lb.	1997	2,000 lbs. 9,000 N			-LEFT
KNLMF	LEFT KNEE RIGHT SENSOR FORCE	"	-RIGHT	"	1.2866 mv/v at 2000 lb.	"	2,000 lbs. 9,000 N			-RIGHT
KNRMF	RIGHT KNEE LEFT SENSOR FORCE	"	-LEFT	"	1.3049 mv/v at 2000 lb.	"	2,000 lbs. 9,000 N			-LEFT
KNRLF	RIGHT KNEE RIGHT SENSOR FORCE	"	-RIGHT	"	1.2844 mv/v at 2000 lb.	"	2,000 lbs. 9,000 N			-RIGHT
KNLXD	LEFT KNEE DISPLACEMENT	8TC1-2702	018L V	SERVO	981.2 mv/v/in	8-11-1999	1 inch 25 mm			018L
KNRXD	RIGHT KNEE DISPLACEMENT	"	018R V	"	1016 mv/v/in	"	1 inch 25 mm			018R
TBLXF	LEFT UPPER TIBIA X AXIS FORCE	3115	265-FX V	DEN	1.9815 mv/v at 2500 lb.	8-11-1999	2,500 lbs. 11,000 N			265-FX
TBLXM	LEFT UPPER TIBIA MOMENT ABOUT X AXIS	"	265-MX	"	2.9510 mv/v at 3500 in-lb.	"	300 ft·lbs 400 N·m			265-MX
TBLYM	LEFT UPPER TIBIA MOMENT ABOUT Y AXIS	"	265-MY	"	3.0172 mv/v at 3500 in-lb.	"	300 ft·lbs 400 N·m			265-MY

TRANSDUCER INFORMATION

5th Female HYBRID III DUMMY SERIAL NO.: _289v____; MFR.: _____; SEATING POSITION: ____DR_____

PROJECT-SEGMENT NO.: ___096017-1511_____; ENGINEER: ____PG_____; TEST DATE: 08-9-99 _____

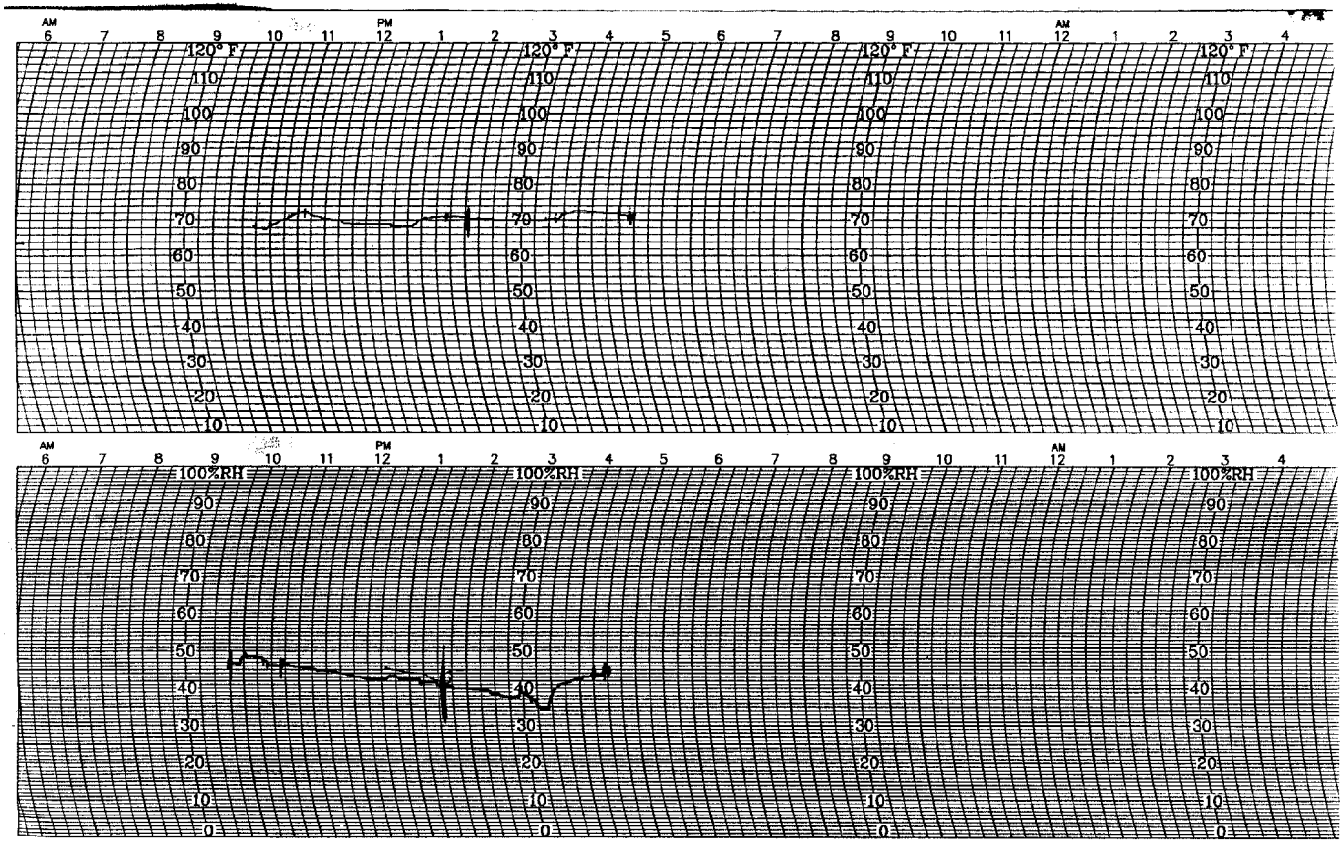
MNEMONIC PARAMETER BEING MEASURED	TYPE OF TRANSDUCER	MODEL NO.	SERIAL NO.	MFR.	SENSITIVITY	CAL DATE	FULL SCALE (ENGR. UNITS) DESIRED	ACTUAL	DIRECTION OF POSITIVE POLARITY	CABLE NO.
TBLZF	LEFT UPPER TIBIA Z AXIS FORCE	3115	265-FZ	DEN	1.1181 mv/v at 2500 lb.	8-11-1999	2,500 lbs. 11,000 N			265-FZ
TBRXF	RIGHT UPPER TIBIA X AXIS FORCE	"	266-FX V	"	1.9341 mv/v at 2500 lb.	"	2,500 lbs. 11,000 N			266-FX
TBRXM	RIGHT UPPER TIBIA MOMENT ABOUT X AXIS	"	266-MX	"	2.9020 mv/v at 3500 in-lb.	"	300 ft·lbs 400 N·m			266-MX
TBRYM	RIGHT UPPER TIBIA MOMENT ABOUT Y AXIS	"	266-MY	"	2.9367 mv/v at 3500 in-lb.	"	300 ft·lbs 400 N·m			266-MY
TBRZF	RIGHT UPPER TIBIA Z AXIS FORCE	"	266-FZ	"	1.0885 mv/v at 2500 lb.	"	2,500 lbs. 11,000 N			266-FZ
ANLXF	LEFT LOWER TIBIA X-AXIS FORCE	3287	178-FX V	"	1.9204 mv/v at 2500 lb.	"	2,500 lbs. 11,000 N			178-FX
ANLZF	LEFT LOWER TIBIA Z-AXIS FORCE	"	178-FZ	"	1.0526 mv/v at 2500 lb.	"	2,500 lbs. 11,000 N			178-FZ
ANLXM	LEFT LOWER TIBIA MOMENT ABOUT X AXIS	"	178-MX	"	2.9612 mv/v at 3500 in-lb.	"	300 ft·lbs 400 N·m			178-MX
ANLYM	LEFT LOWER TIBIA MOMENT ABOUT Y AXIS	"	178-MY	"	2.9779 mv/v at 3500 in - lb.	"	300 ft·lbs 400 N·m			178-MY

TRANSDUCER INFORMATION

5th Female HYBRID III DUMMY SERIAL NO.: _289v____; MFR.: _____; SEATING POSITION: _____DR_____

PROJECT-SEGMENT NO.: ____096017-1511_____; ENGINEER: _____PG_____; TEST DATE: __08-9-99_____

MNEMONIC PARAMETER BEING MEASURED	TYPE OF TRANSDUCER	MODEL NO.	SERIAL NO.	MFR.	SENSITIVITY	CAL DATE	FULL SCALE (ENGR. UNITS) DESIRED	ACTUAL	DIRECTION OF POSITIVE POLARITY	CABLE NO.
ANRXF	RIGHT LOWER TIBIA X-AXIS FORCE	3287	179-FX V	"	1.9645 mv/v at 2500 lb.	8-11-1999	2,500 lbs. 11,000 N			179-FX
ANRZF	RIGHT LOWER TIBIA Z-AXIS FORCE	"	179-FZ	"	1.0327 mv/v at 2500 lb.	"	2,500 lbs. 11,000 N			179-FZ
ANRXM	RIGHT LOWER TIBIA MOMENT ABOUT X AXIS	"	179-MX	"	2.9819 mv/v at 3500 in-lb.	"	300 ft-lbs 400 N·m			179-MX
ANRYM	RIGHT LOWER TIBIA MOMENT ABOUT Y AXIS	"	179-MY	"	3.0247 mv/v at 3500 in - lb.	"	300 ft·lbs 400 N·m			179-MY


AM
6 7 8 9 10 11
PM
12 1 2 3 4 5 6 7 8 9 10 11
AM
12 1 2 3 4
120° F
110
100
90
80
70
60
50
40
30
20
10
100%RH
90
80
70
60
50
40
30
20
10
0