V3143

1999 Dodge Intrepid
into a 40% Left Offset Deformable Barrier
TRC Test Number: 990512-2

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Table of Contents

List of Tables

List of Figures

List of Photographs

List of Photographs, Cont'd.

List of Photographs, Cont'd.

Section 1.0

Purpose and Test Procedure

Purpose and Test Summary

This 35 mph 40% left offset deformable barrier impact test has as the main objective to investigate both vehicle and occupant dynamics during a 40% left offset deformable barrier test. A secondary objective is to gather information on depowered airbags.

This test was conducted with a 1999 Dodge Intrepid that impacted a 40% left offset deformable barrier. The test vehicle contained two instrumented Hybrid III 50th percentile adult male dummies.

Section 2.0

40% Left Offset Deformable Barrier 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 eight (8) 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 40% left offset deformable barrier.

The test vehicle contained two (2) Hybrid III 50th percentile adult male 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 forty (40) 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 fourteen (14) 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 dummy and vehicle data plots. Appendix C contains the post-test dummy calibration information. Appendix D contains the miscellaneous test information.

Test Results Summary

This 40% left offset deformable barrier test was conducted at TRC on May 12, 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 1743.6 kilograms. The vehicle's impact speed was 56.5 kph. The vehicle's maximum static crush was 455 millimeters.

The driver's 15-millisecond HIC was 350 and the 36-millisecond HIC was 611. The driver's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 57.8 g. The driver's chest deflection was 42.3 millimeters. The driver's left and right femur maximum compressive forces were 5257 N and 5558 N, respectively.

The right front passenger's 15-millisecond HIC was 197 and the 36-millisecond HIC was 345. The right front passenger's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 53.2 g. The passenger's chest deflection was 19.5 millimeters. The right front passenger's left and right femur maximum compressive forces were 7592 N and 6103 N, respectively.

Data Acquisition Explanations

The Left Brake Caliper X-Axis Accelerometer, BCLXG1, lost data after approximately 75 milliseconds.

The Vehicle Rear Center Z-Axis Accelerometer, RDKZG1, recorded questionable data between approximately 15 and 100 milliseconds.

Table 1 Crash Test Summary

Test type:	40% left offset deformable barrier
Test date:	05/12/99
Test time:	2154
Ambient temperature at impact area:	22° C
Vehicle year/make/ model/body style:	1999/Dodge/Intrepid/Sedan
Vehicle test weight:	1743.6 kg
Impact angle[1]:	0°
Impact velocity[2]:	
Primary:	56.5 kph
Secondary:	56.5 kph
Maximum static crush:	455 mm
Average rebound:	N/A
Number of cameras:	
Real-time:	1
High-speed:	14
Door opening data:	
Left-front:	Easy
Right-front:	Medium

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

Table 1 Crash Test Summary, Cont'd.

Dummies:	Driver #168	Passenger #169
Type:	Hybrid III 50th percentile adult male	Hybrid III 50th percentile adult male
Location:	Left front	Right front
Restraint:	Airbag	Airbag
Number of data channels:	15	15
Front seat data:		
Seat track failure:	None	None
Seat back failure:	None	None
Visible dummy contact points:		
Head:	Airbag,	Airbag,
	A-pillar	Sun visor
Chest:	Airbag,	Airbag
	Steering wheel	
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/Sedan
Color:	Red
VIN:	2B3HD46R5XH583337
Engine data:	
Placement:	Transverse
Cylinders:	6
Displacement:	2.7 liters
Transmission data:	_4_speed, ___manual, _X_automatic, ___overdrive
Final drive:	_X_fwd, ___rwd, ___4wd
Date vehicle received:	N/A
Odometer reading:	38 miles
Dealer's name and address:	Carriage Towne Chrysler Plymouth 2815 Stratford Rd. Delaware, OH 43015-2647

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	Yes
Clock	Yes	Rear window defroster	Yes
Power door locks	Yes	Other:	None

Certification data from vehicle's label:

Vehicle manufactured by:		Chrysler Corporation
Date of manufacture:		10/98
VIN:		2B3HD46R5XH583337
GVWR:		4551 lb.
GAWR:	Front:	2595 lb.
	Rear:	2031 lb.

Table 2 Test Vehicle Information, Cont'd.

Size of tires on vehicle:	P225/60R16
Spare tire:	Space saver
Type of front seats:	Bucket

Tire & capacity data from vehicle's label:

Recommended tire size:	P225/60R16
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:	735 mm	RF:	730 mm	LR:	752 mm	RR:	753 mm
Fully loaded attitude:	LF:	723 mm	RF:	718 mm	LR:	728 mm	RR:	726 mm
Pre-test attitude:	LF:	717 mm	RF:	715 mm	LR:	705 mm	RR:	712 mm
Post-test attitude:	LF:	840 mm	RF:	700 mm	LR:	731 mm	RR:	690 mm

Table 2 Test Vehicle Information, Cont'd.

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

Right front	502.6 kg	Right rear	268.1 kg
Left front	485.3 kg	Left rear	291.7 kg
Total front weight	987.9 kg	(63.8% of total vehicle weight)	
Total rear weight	559.8 kg	(36.2% of total vehicle weight)	
Total delivered weight	1547.7 kg		

Calculation of test vehicle's target test weight:

RCLW = Rated Cargo and Luggage Weight

UDW = Unloaded Delivered Weight (1547.7 kg)

DSC[1] = Designated Seating Capacity (5)

RCLW = 52.2 kg

Target test weight = UDW + RCLW + (2 Hybrid III Dummies x 75.7 kg per dummy)

Target test weight = 1547.7 + 52.2 + 151.4 = 1751.3 kg

Weight of test vehicle with required dummies:

Right front	528.0 kg	Right rear	333.4 kg
Left front	526.6 kg	Left rear	355.6 kg
Total front weight	1054.6 kg	(60.5% of total vehicle weight)	
Total rear weight	689.0 kg	(39.5% of total vehicle weight)	
Total test weight	1743.6 kg	(0.44% under target test weight)	

Weight of ballast secured in vehicle: N/A

Components removed to meet target test weight: None

CG rearward of front wheel centerline: 1138 mm

Vehicle Wheelbase: 2880 mm

[1] The designated seating capacity is determined from the tire load label.

Table 3 Post-Impact Data

Test number:	990512-2
Test date:	05/12/99
Test time:	2154
Test type:	40% left offset deformable barrier
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:	661 mm
Exiting velocity trap:	51 mm

Test vehicle static crush:

Overall length of test vehicle:

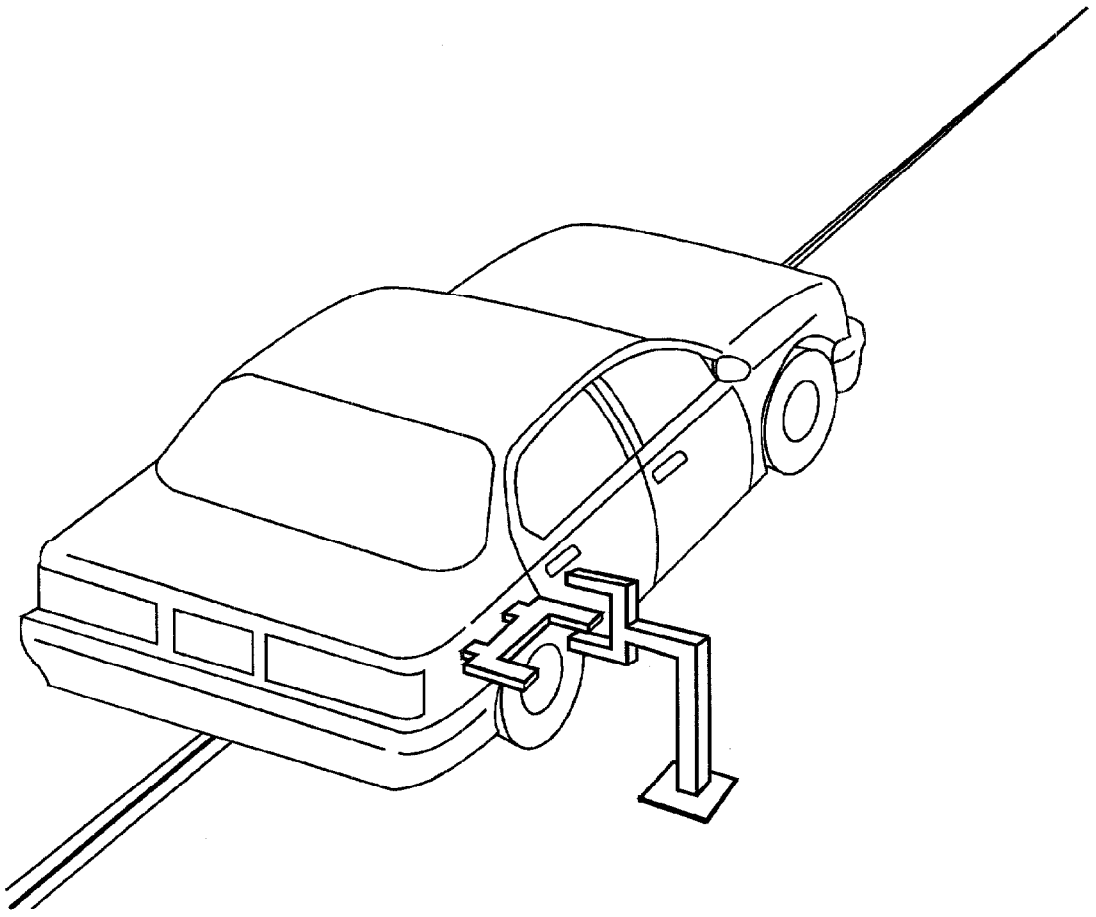
Pre-test:	L: 5022 mm	C: 5215 mm	R: 5016 mm
Post-test:	L: 4567 mm	C: 4906 mm	R: 5149 mm
Total crush:	L: 455 mm	C 309 mm	R: -133 mm
Average crush:	210 mm		

Test vehicle rebound from 40% left offset deformable barrier:

Distance from test vehicle to barrier:

Post-test:	L: N/A	C: N/A	R: N/A
Average rebound:	N/A		

Figure 1 Impact Velocity Measurement System

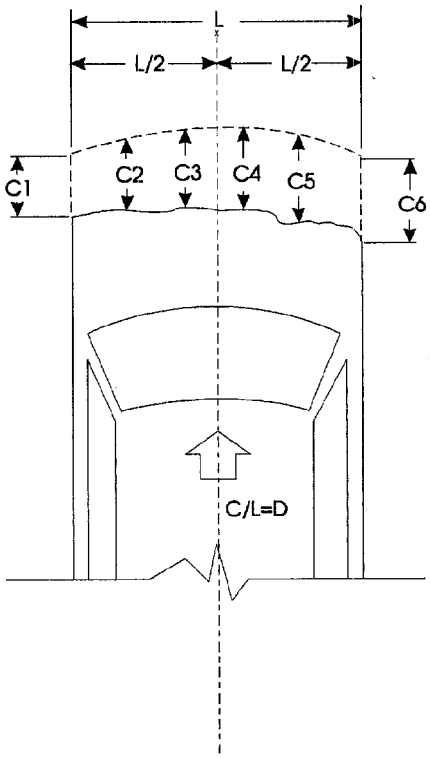


The final vane clears the final emitter/receiver pair 51 millimeters before impact.

The vanes have 610-millimeter spacing.

Figure 2 Accident Investigation Division Data for 35 mph 40% Left ODB Impact

Test date:	05/12/99
Vehicle year/make/ model/body style:	1999/Dodge/Intrepid/Sedan
VIN:	2B3HD46R5XH583337
Build date:	10/98
Test weight:	1743.6 kg
Vehicle wheelbase:	2880 mm
Maximum width:	1913 mm
Front overhang:	1070 mm



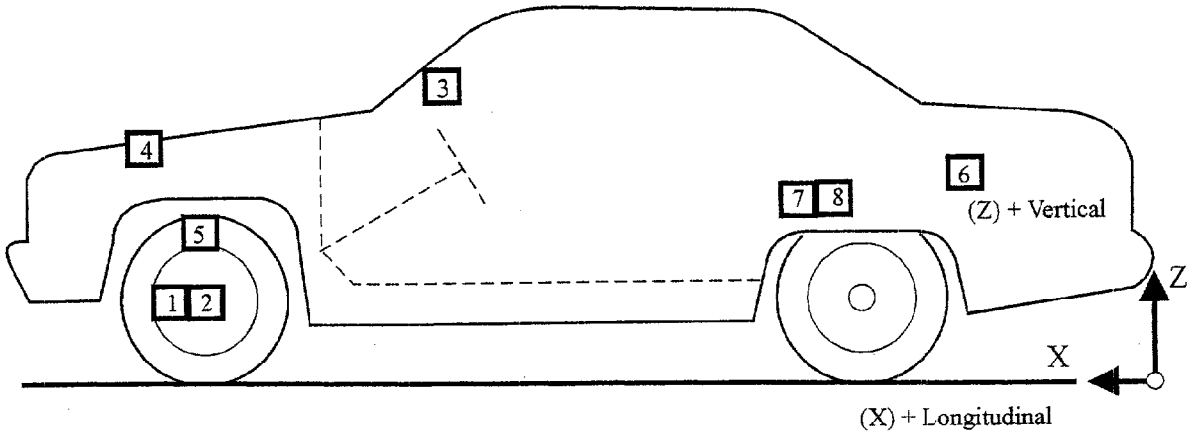
Collision Deformation Classification (CDC) Code: 12FDEW3

Crush depth measurements:	C1: 455 mm
	C2: 391 mm
	C3: 398 mm
	C4: 211 mm
	C5: 34 mm
	C6: -133 mm

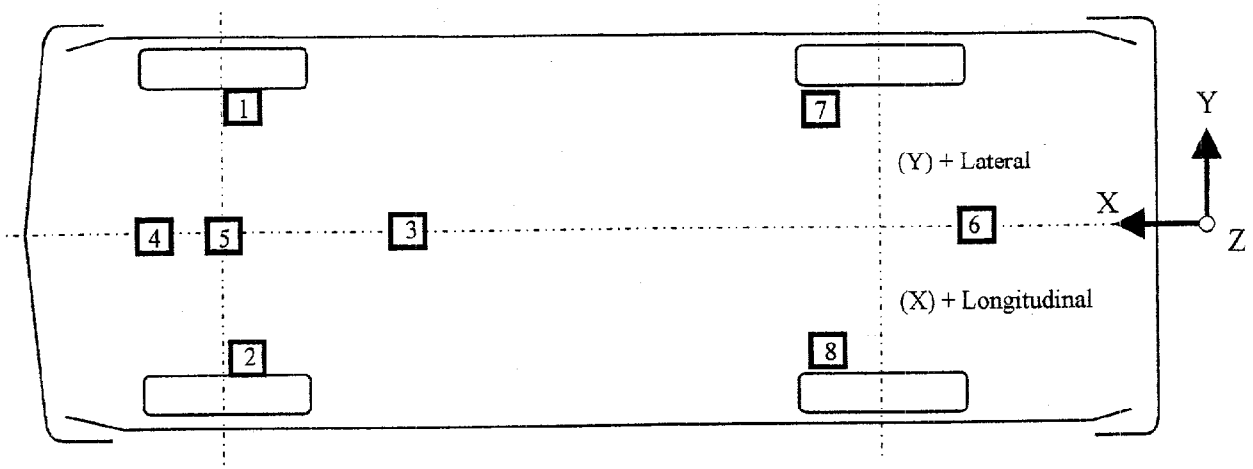
Midpoint of damage: D: Vehicle Longitudinal Centerline

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: 990512-2 No. LOCATION		X	Y	Z	POSITIVE DIRECTION		NEGATIVE DIRECTION	
1 LEFT BRAKE CALIPER	PRE	4235 mm	687 mm	341 mm				
	POST	4210 mm	620 mm	NA				
LONGITUDINAL[1]					---	---	---	---
2 RIGHT BRAKE CALIPER	PRE	4235 mm	-687 mm	336 mm				
	POST	4348 mm	-619 mm	327 mm				
LONGITUDINAL					4.5 g	@ 184.0 ms	39.3 g	@ 83.4 ms
3 INSTRUMENT PANEL CENTER	PRE	3449 mm	0 mm	887 mm				
	POST	3455 mm	0 mm	900 mm				
LONGITUDINAL					21.8 g	@ 95.7 ms	64.9 g	@ 101.8 ms
4 ENGINE TOP	PRE	4679 mm	130 mm	778 mm				
	POST	4599 mm	78 mm	789 mm				
LONGITUDINAL					11.6 g	@ 96.0 ms	58.4 g	@ 59.6 ms
5 ENGINE BOTTOM	PRE	4540 mm	-43 mm	160 mm				
	POST	4135 mm	-21 mm	217 mm				
LONGITUDINAL					1.7 g	@ 245.1 ms	39.2 g	@ 69.9 ms

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

TEST NUMBER: 990512-2 No. LOCATION		X	Y	Z	POSITIVE DIRECTION		NEGATIVE DIRECTION	
6 REAR VEHICLE CENTERLINE VERTICAL[1]	PRE	245 mm	0 mm	650 mm				
	POST	245 mm	0 mm	646 mm	---	---	---	---
7 LEFT REAR SEAT LONGITUDINAL	PRE	2140 mm	660 mm	375 mm				
	POST	2150 mm	660 mm	404 mm	2.0 g	@ 190.7 ms	25.7 g	@ 103.2 ms
8 RIGHT REAR SEAT LONGITUDINAL	PRE	2140 mm	-643 mm	368 mm				
	POST	2165 mm	-643 mm	376 mm	1.4 g	@ 202.2 ms	26.6 g	@ 89.4 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	-56.4 g	61.7 g	33.8 g	71.2 g	-57.5 g	11.9 g	20.2 g
Passenger	-46.6 g	25.9 g	35.9 g	48.9 g	-50.0 g	17.0 g	24.2 g

Maximum Femur Compressive Force

	Left Femur	Right Femur
Driver	5257 N	5558 N
Passenger	7592 N	6103 N

15-Millisecond Head Injury Criteria[1]

	HIC	Time t_1	Time t_2
Driver	350	109.6 ms	124.6 ms
Passenger	197	103.5 ms	118.6 ms

36-Millisecond Head Injury Criteria[1]

	HIC	Time t_1	Time t_2
Driver	611	92.6 ms	128.6 ms
Passenger	345	97.0 ms	131.7 ms

Chest Maximum Resultant Acceleration[2]

	Acceleration	Time t_1	Time t_2
Driver	57.8 g	100.6 ms	103.7 ms
Passenger	53.2 g	106.6 ms	109.6 ms

Maximum Chest Deflection

Driver	42.3 mm
Passenger	19.5 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. The dummy's head then rotated to the right and hit the A-pillar of the vehicle. The dummy's chest impacted the steering wheel. The dummy rebounded into the seat and the head rotated back to a normal forward position. The dummy came to rest leaning forward.

Right Front Passenger Dummy

Upon impact, the passenger dummy translated forward on the seat impacting both knees into the instrument panel. The dummy's head and chest impacted the airbag. The dummy's head impacted the sunvisor. The dummy's body rebounded back into the seat and the torso rotated toward the driver. The dummy came to rest with its body leaning to the left.

Section 4.0

Vehicle, Occupant, and Camera Measurements

Figure 4 Pre-test and Post-test Measurement Points

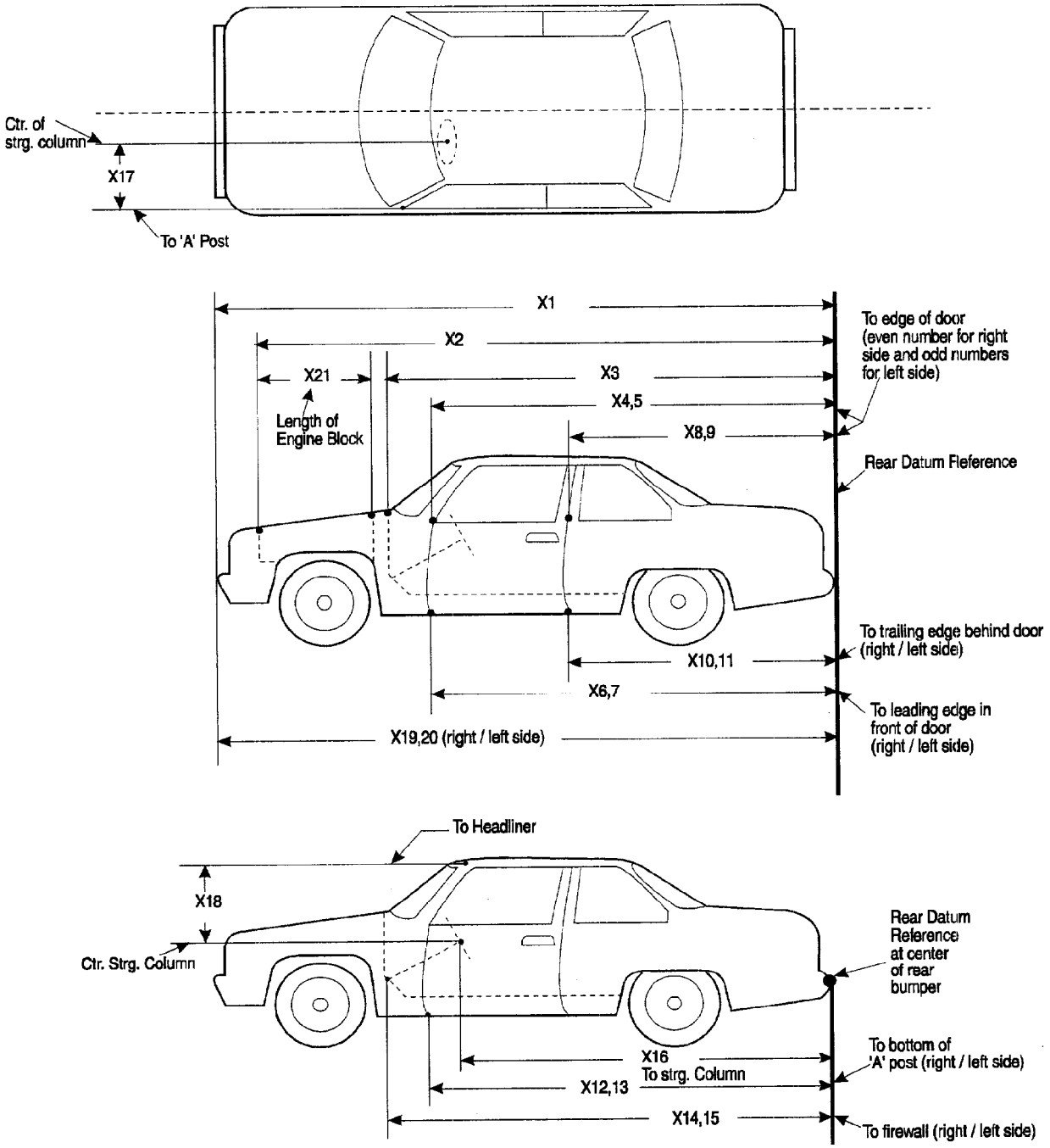


Table 6 Impacted Vehicle Measurements

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

Test Number: 990512-2

No.	Type of measurement	Pre-Test	Post-Test	Difference
X1	Total Length of Veh. at Centerline	5215	4906	309
X2	Rear Surface of Veh. to Front of Engine Block	4761	4599	162
X3	Rear Surface of Veh. to Firewall	4249	4203	46
X4	Rear Surface of Veh. to Upper Leading Edge of Right Door	3669	3670	-1
X5	Rear Surface of Veh. to Upper Leading Edge of Left Door	3682	3680	2
X6	Rear Surface of Veh. to Lower Leading Edge of Right Door	3616	3632	-16
X7	Rear Surface of Veh. to Lower Leading Edge of Left Door	3616	3625	-9
X8	Rear Surface of Veh. to Upper Trailing Edge of Right Door	2598	2594	4
X9	Rear Surface of Veh. to Upper Trailing Edge of Left Door	2597	2593	4
X10	Rear Surface of Veh. to Lower Trailing Edge of Right Door	2586	2601	-15
X11	Rear Surface of Veh. to Lower Trailing Edge of Left Door	2595	2605	-10
X12	Rear Surface of Veh. to Bottom of " A " Post on Right Side	3665	3662	3
X13	Rear Surface of Veh. to Bottom of " A " Post on Left Side	3675	3686	-11
X14	Rear Surface of Veh. to Firewall--Right Side	4279	4279	0
X15	Rear Surface of Vehicle to Firewall --Left Side	4274	4204	70
X16	Rear Surface of Veh. to Steering Wheel Center	3160	3112	48
X17	Center of Steering Column to " A " Post	295	257	38
X18	Center of Steering Column to Headliner	395	360	35
X19	Rear Surface of Veh. to Right Side of Front Bumper	5016	5149	-133
X20	Rear Surface of Veh. to Left Side of Front Bumper	5022	4567	455
X21	Length of Engine Block	530	530	0

Figure 5 Vehicle Target Locations

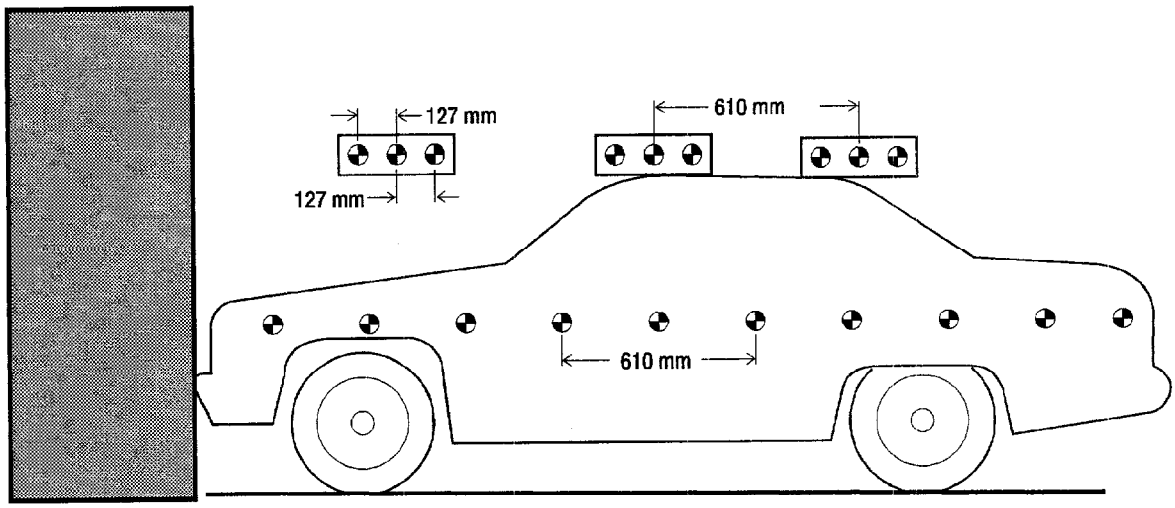


Figure 6 Dummy Measurement Locations for Front Seat Occupants

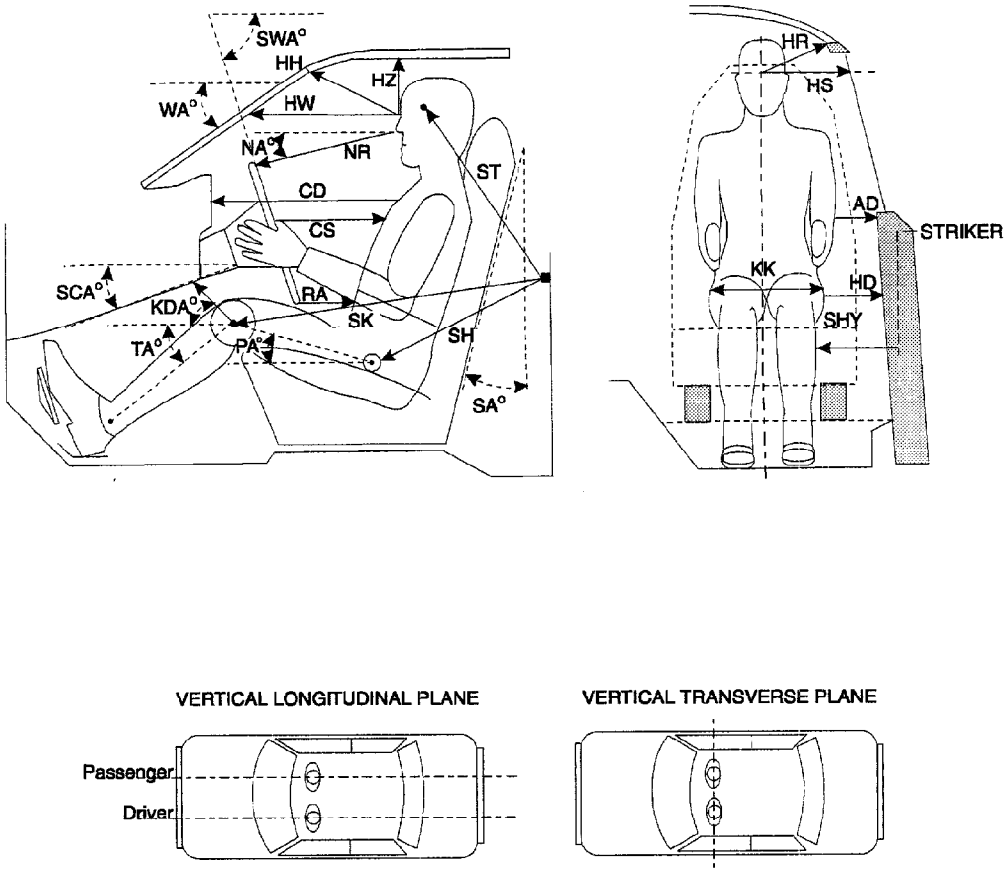


Table 7 Dummy Measurement Data For Front Seat Occupants

Designation	Type of Measurement	Driver (Serial #168)	Passenger (Serial #169)
WA	Windshield angle	20.6°	N/A
SWA	Steering wheel angle	61.4°	N/A
SCA	Steering column angle	28.6°	N/A
SA	Seat back angle	24.0°	24.0°
HZ	Head to roof	176 mm	154 mm
HH	Head to header	354 mm	351 mm
HW	Head to windshield	618 mm	573 mm
HR	Head to side header	196 mm	176 mm
NR	Nose to rim	420 mm	N/A
NA	Nose to rim angle	8.7°	N/A
CD	Chest to dash	515 mm	555 mm
CS	Steering wheel to chest	315 mm	N/A
RA	Rim to abdomen	196 mm	N/A
KDL	Left knee to dash	153 mm	191 mm
KDR	Right knee to dash	162 mm	177 mm
KDA	Outboard knee to dash angle	26.5°	12.5°
PA	Pelvic angle	25.0°	20.8°
TA	Tibial angle	40.4°	41.0°
KK	Knee to knee	320 mm	275 mm
ST[1]	Striker to head	542 mm	545 mm
	Striker to head angle	-79.9°	-86.6°
SK[1]	Striker to knee	556 mm	545 mm
	Striker to knee angle	1.6°	-4.1°
SH[1]	Striker to H-point	225 mm	195 mm
	Striker to H-point angle	37.3°	34.6°
SHY	Striker to H-point (Y dir.)	280 mm	285 mm
HS	Head to side window	320 mm	302 mm
HD	H-point to door	170 mm	173 mm
AD	Arm to door	122 mm	116 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

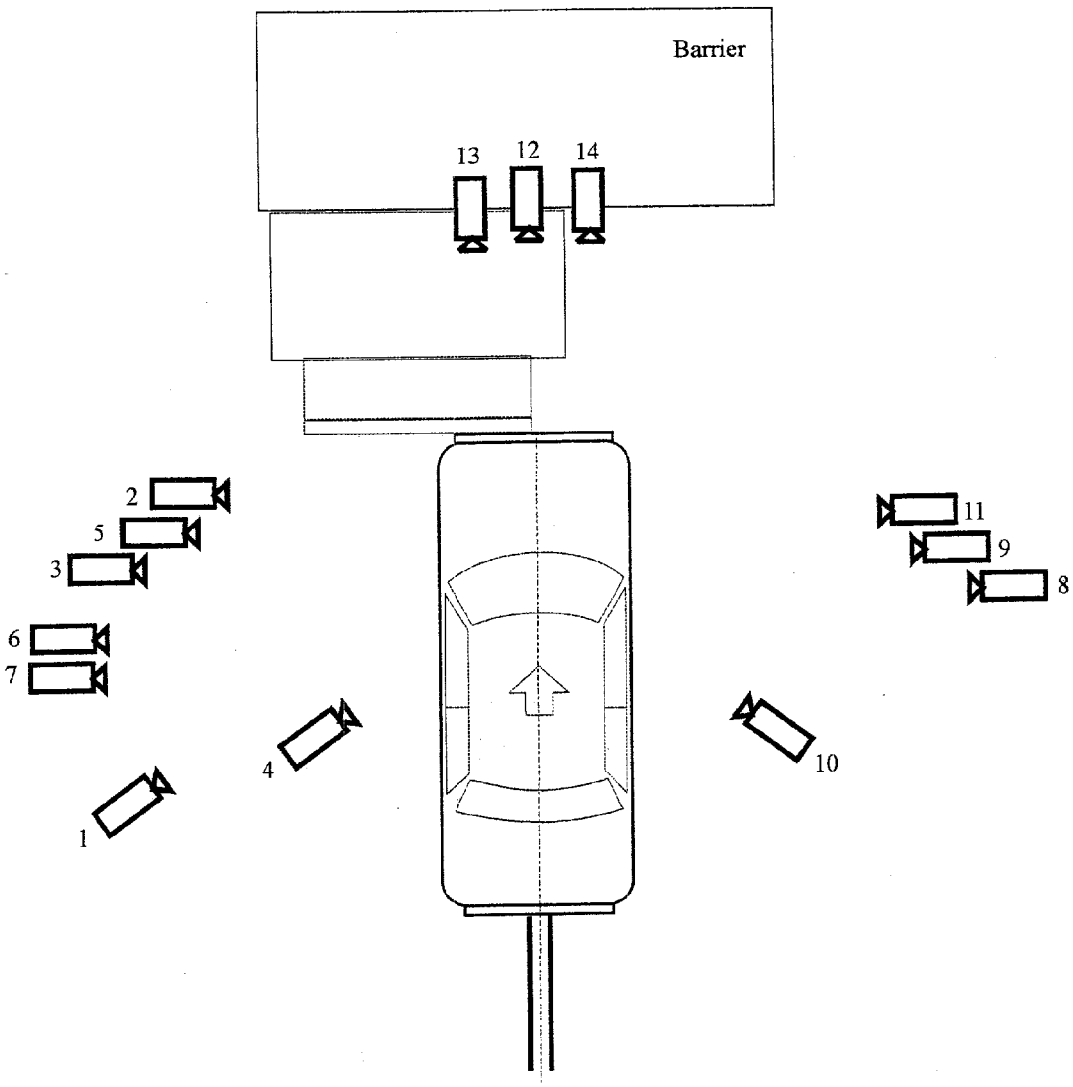


Table 8 Motion Picture Camera Locations

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

Test number: 990512-2

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	16 mm	24 frames/s
2	Left vehicle crush	3023 mm	9144 mm	762 mm	NA	NA	25 mm	1000 frames/s
3	Left windshield intrusion	2743 mm	762 mm	1092 mm	NA	NA	50 mm	1008 frames/s
4	Driver kinematics angle	3658 mm	7315 mm	1448 mm	NA	NA	25 mm	985 frames/s
5	Driver kinematics	6020 mm	2184 mm	1930 mm	NA	NA	25 mm	1005 frames/s
6	Steering column motion	4470 mm	8534 mm	2642 mm	NA	NA	25 mm	995 frames/s
7	Steering column motion	4470 mm	8534 mm	1727 mm	NA	NA	25 mm	995 frames/s
8	Right overall	3023 mm	8331 mm	965 mm	NA	NA	13 mm	1002 frames/s
9	Right windshield intrusion	2769 mm	8966 mm	1092 mm	NA	NA	50 mm	1005 frames/s
10	Passenger kinematics	6045 mm	2337 mm	2032 mm	NA	NA	25 mm	1002 frames/s
11	Passenger kinematics	3581 mm	7772 mm	1473 mm	NA	NA	25 mm	1005 frames/s
12	Windshield front view	NA	NA	NA	NA	NA	13 mm	998 frames/s
13	Driver - front view	NA	NA	NA	NA	NA	17 mm	1002 frames/s
14	Passenger - front view	NA	NA	NA	NA	NA	17 mm	1000 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

Appendix A

Photographs

Figure A-1 Pre-Test Front View

Figure A-2 Post-Test Front View

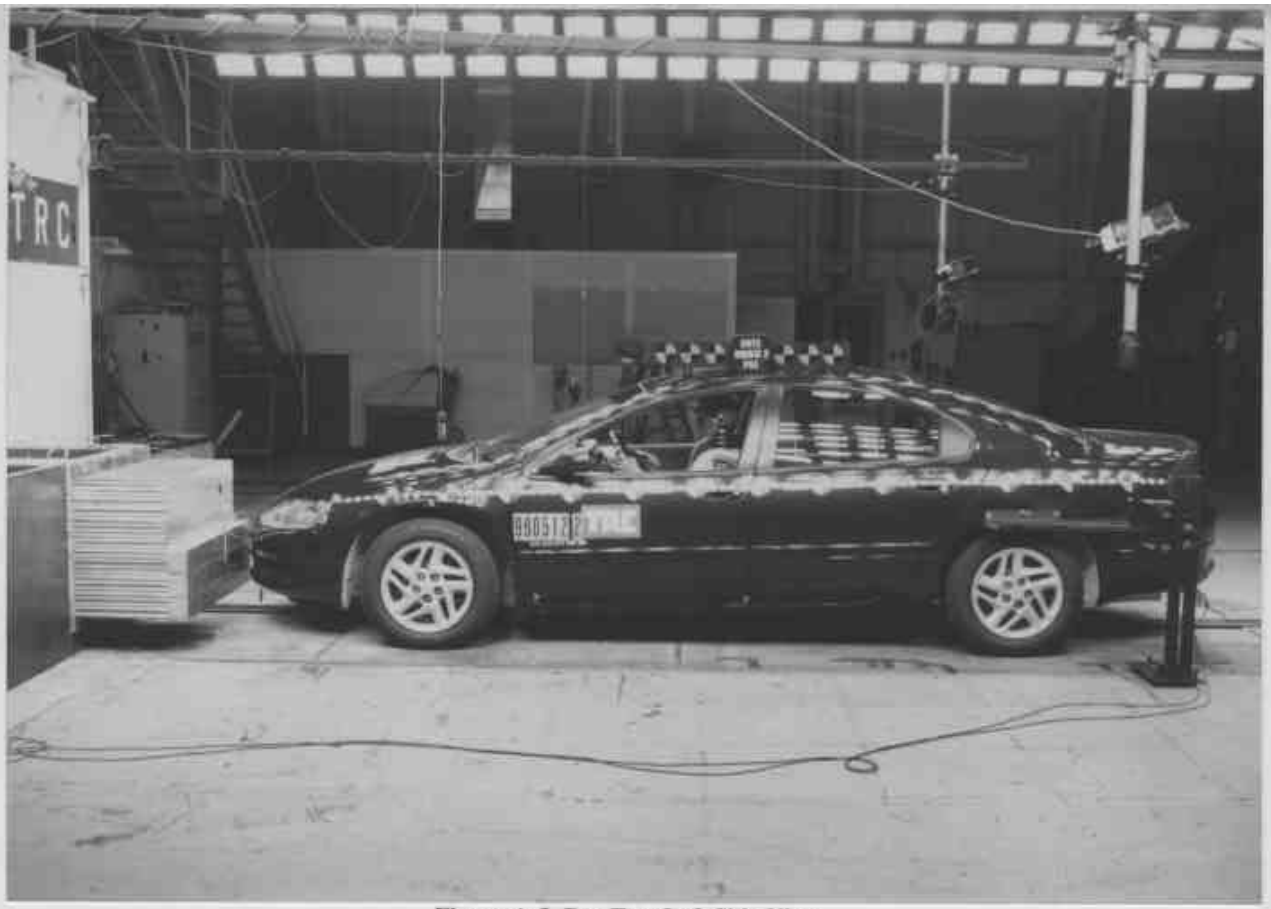


Figure A-3 Pre-Test Left Side View

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

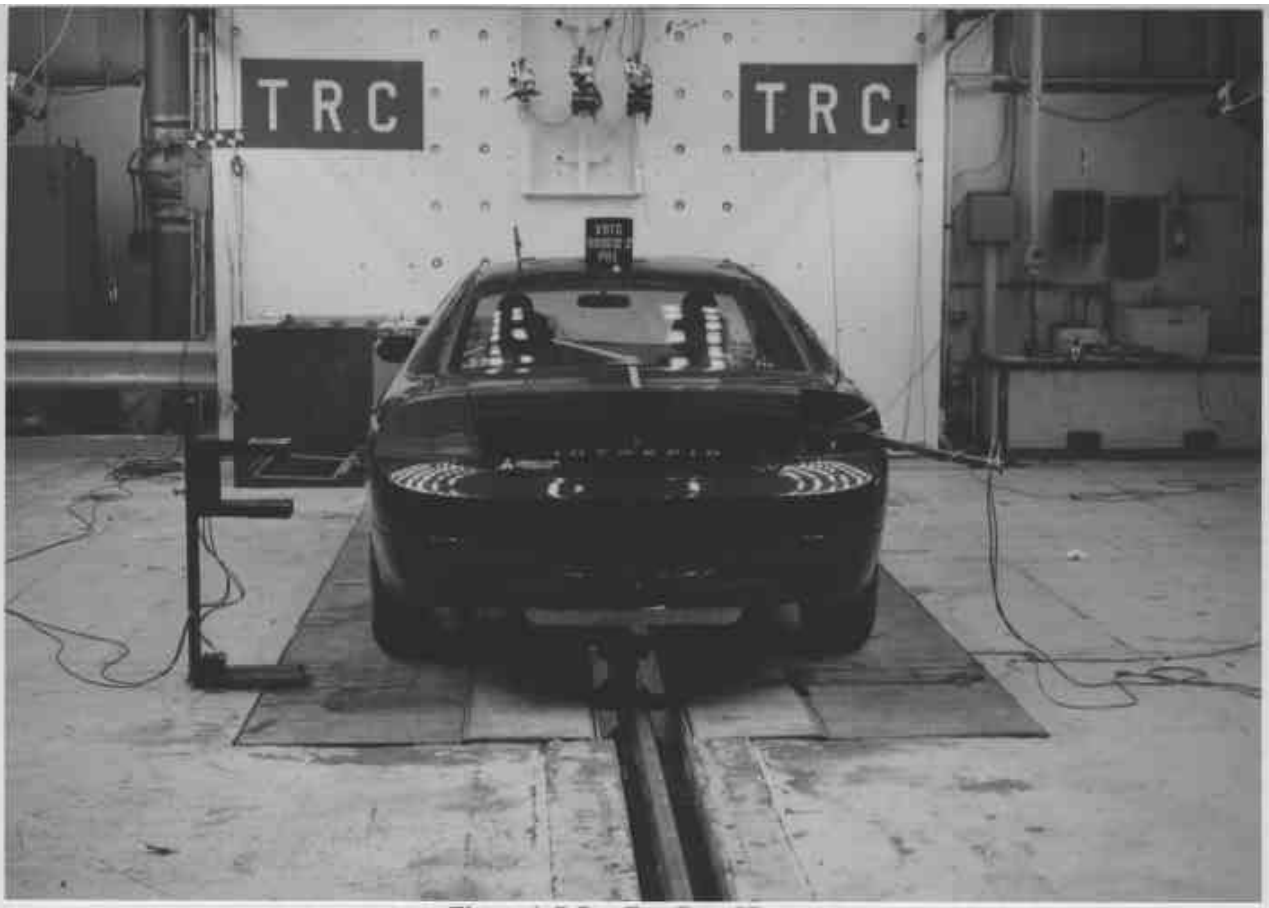


Figure A-7 Pre-Test Rear View

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

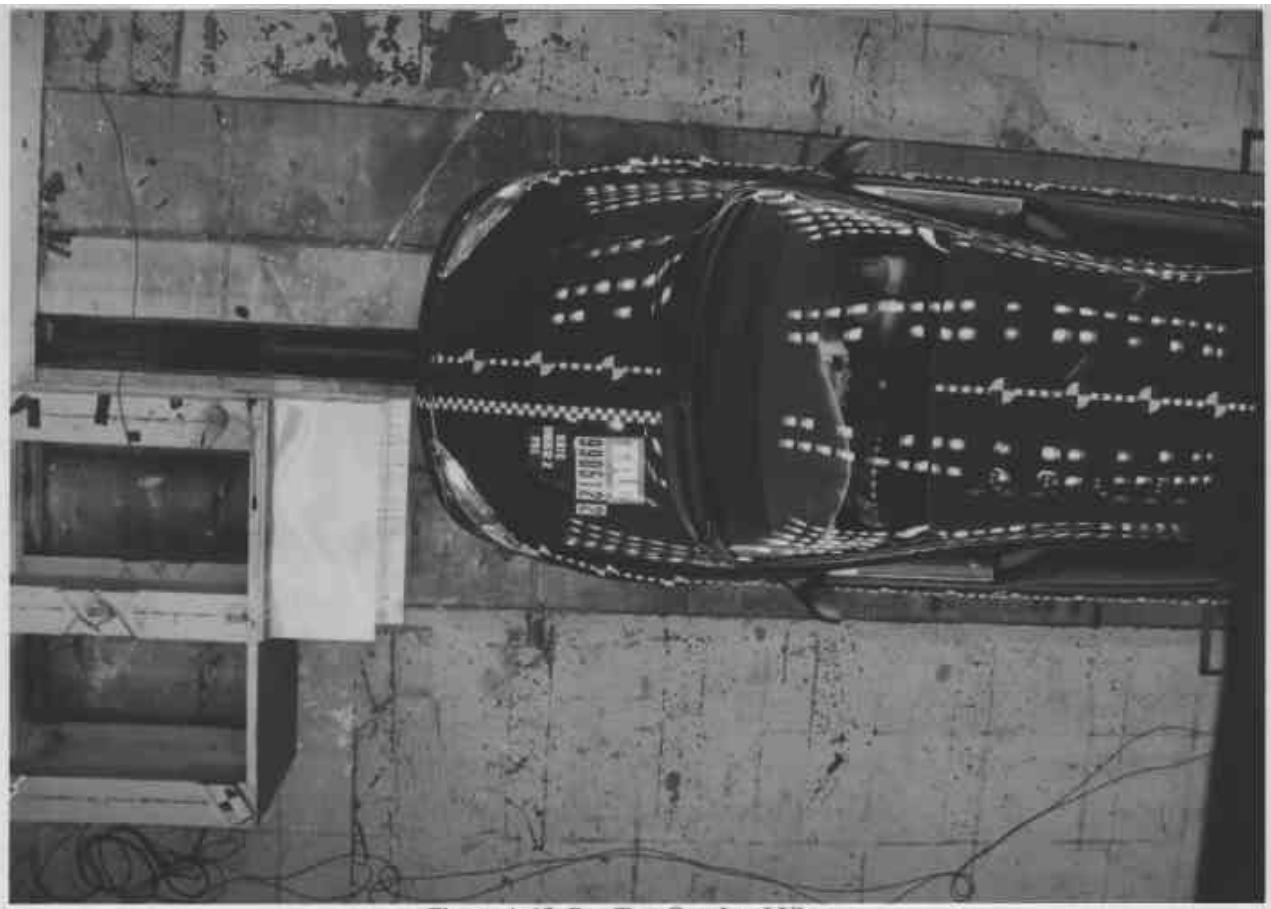


Figure A-13 Pre-Test Overhead View

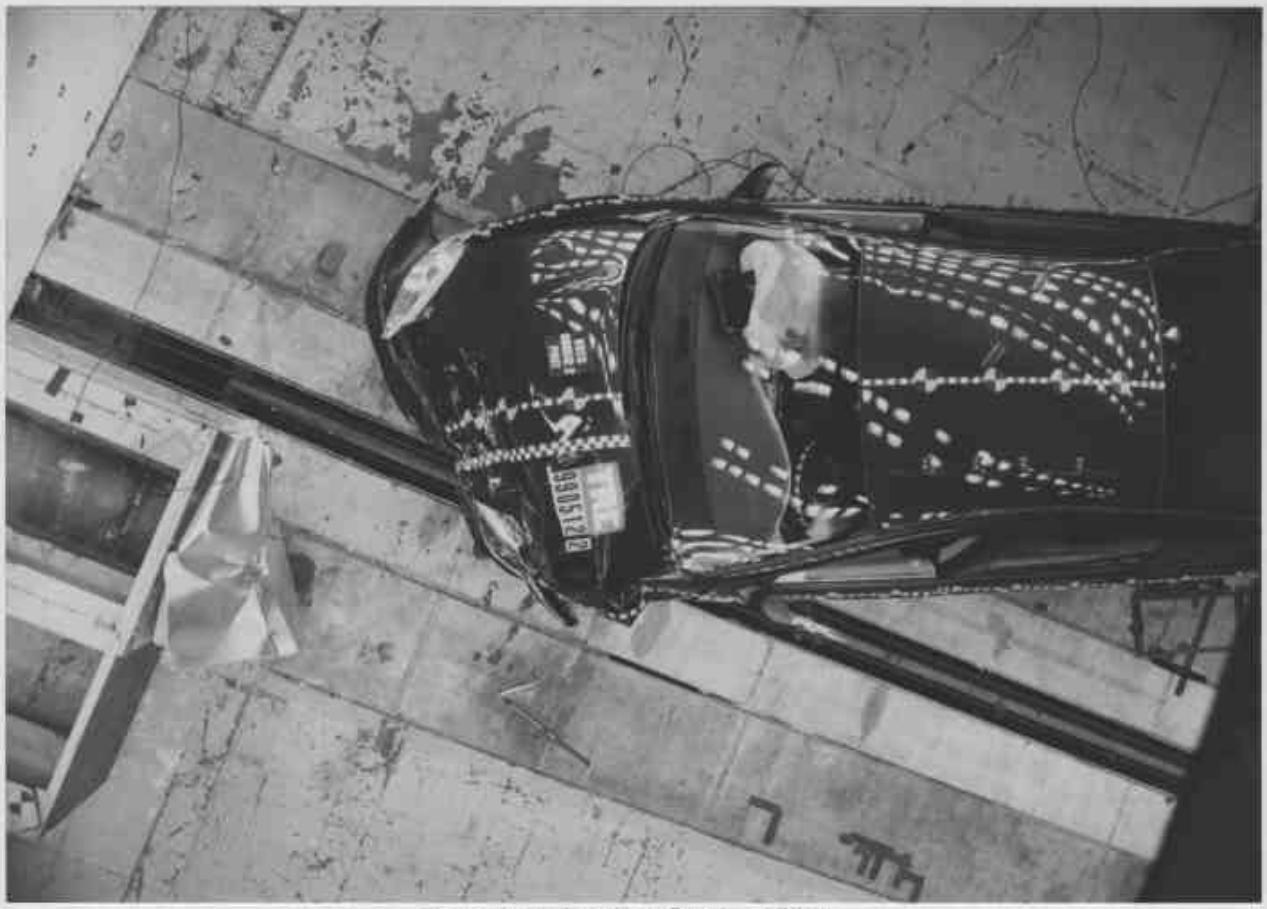


Figure A-14 Post-Test Overhead View

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

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

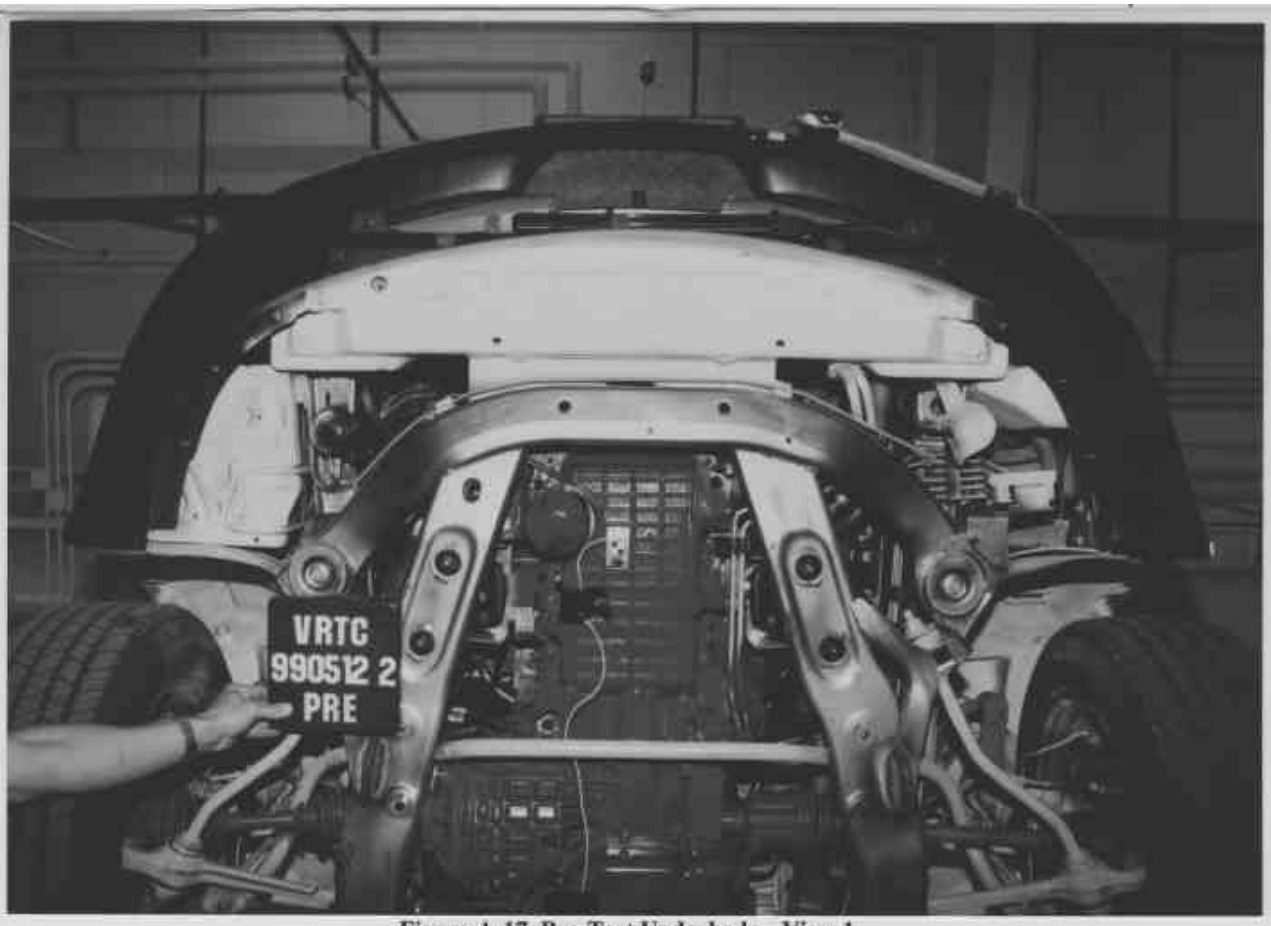


Figure A-17 Pre-Test Underbody - View 1

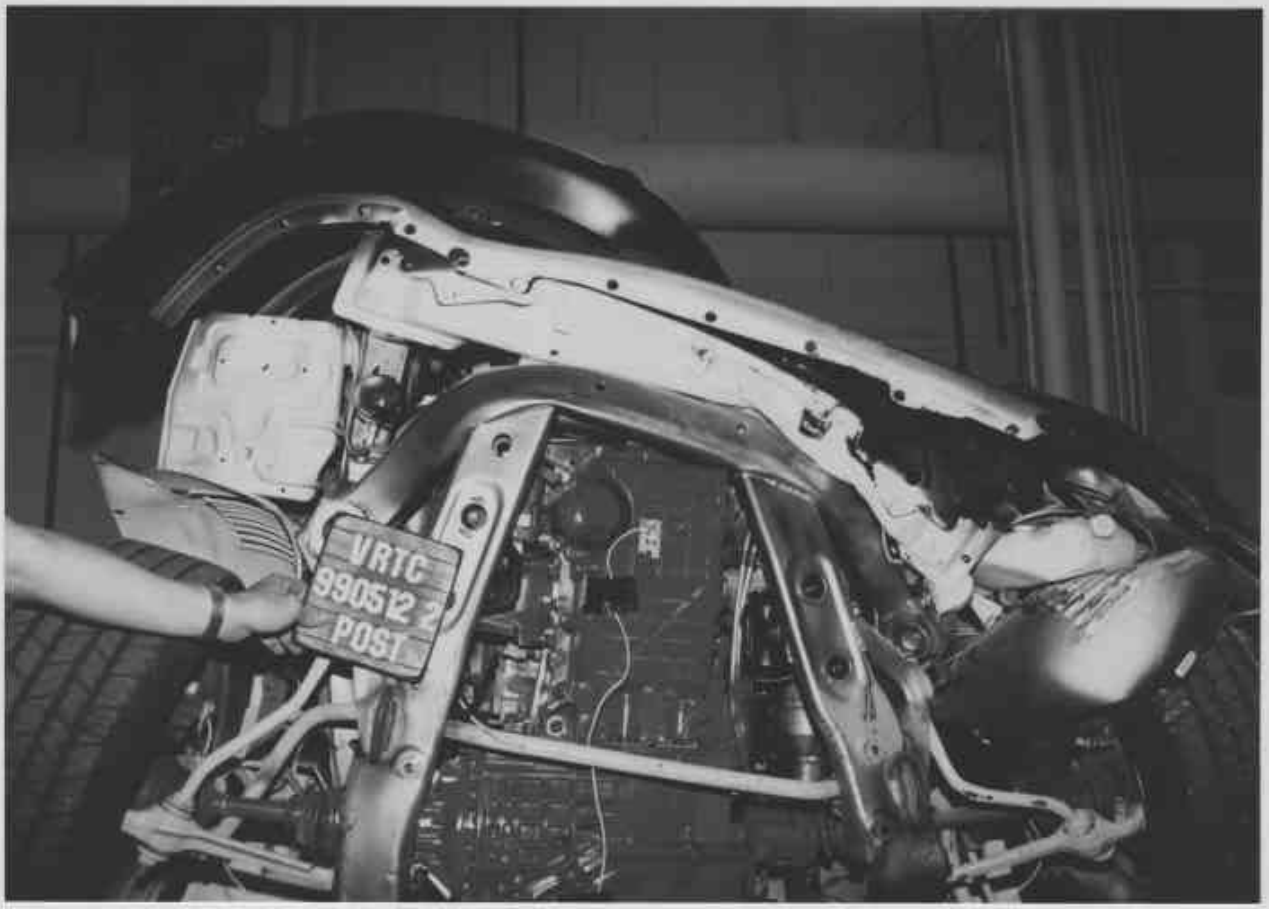


Figure A-18 Post-Test Underbody - View 1

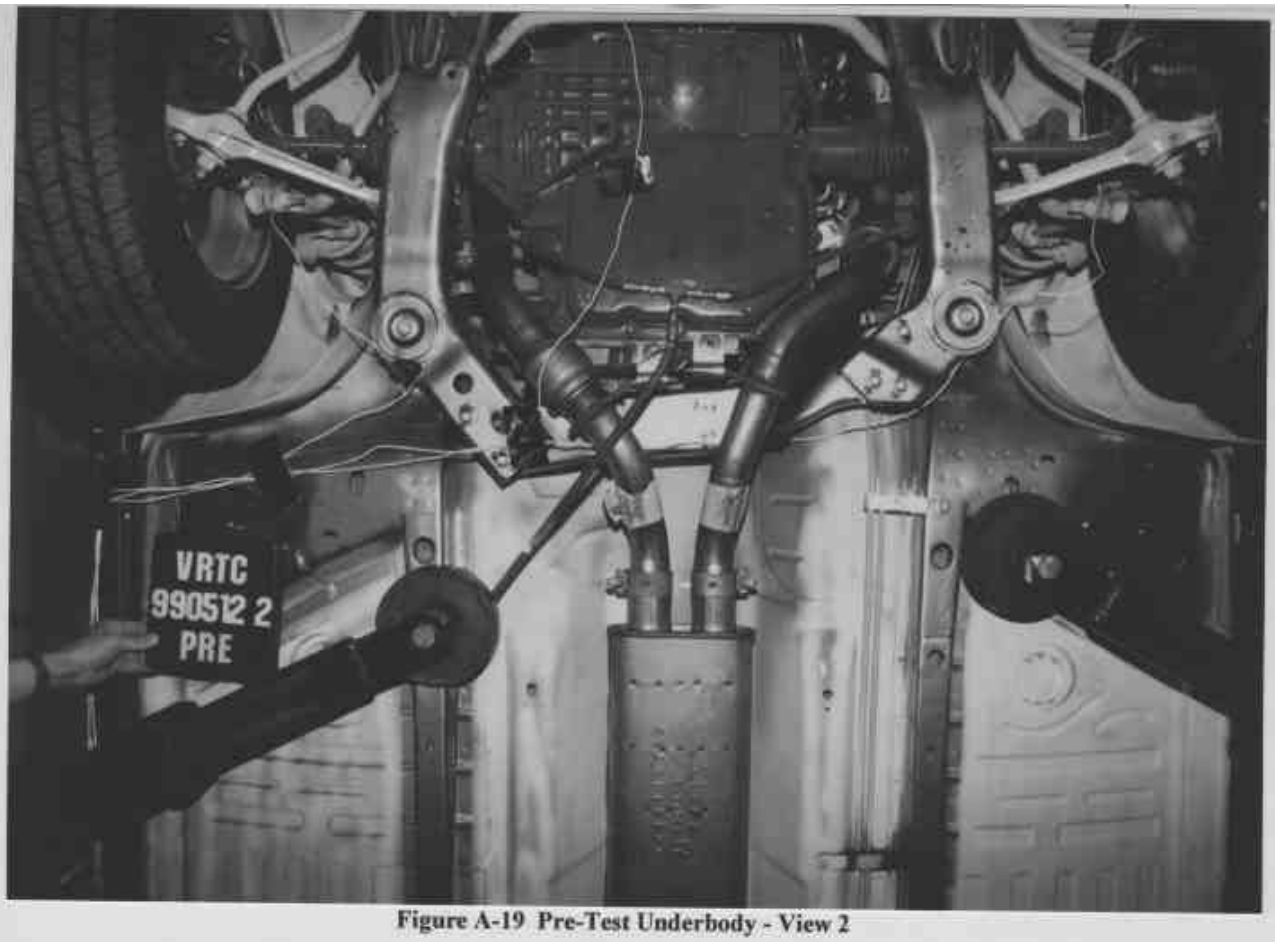


Figure A-19 Pre-Test Underbody - View 2

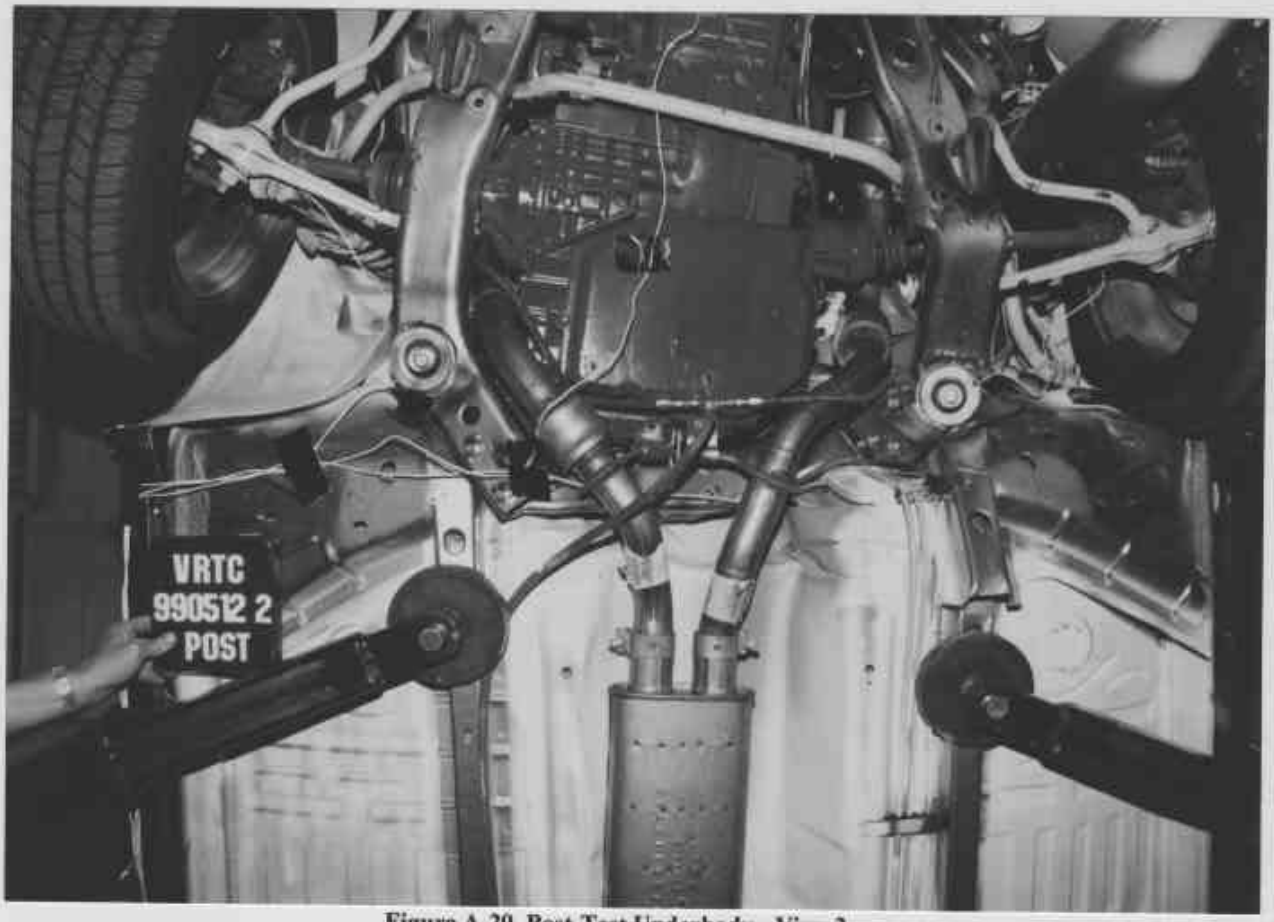


Figure A-20 Post-Test Underbody - View 2

Figure A-21 Pre-Test Underbody - View 3

Figure A-22 Post-Test Underbody - View 3

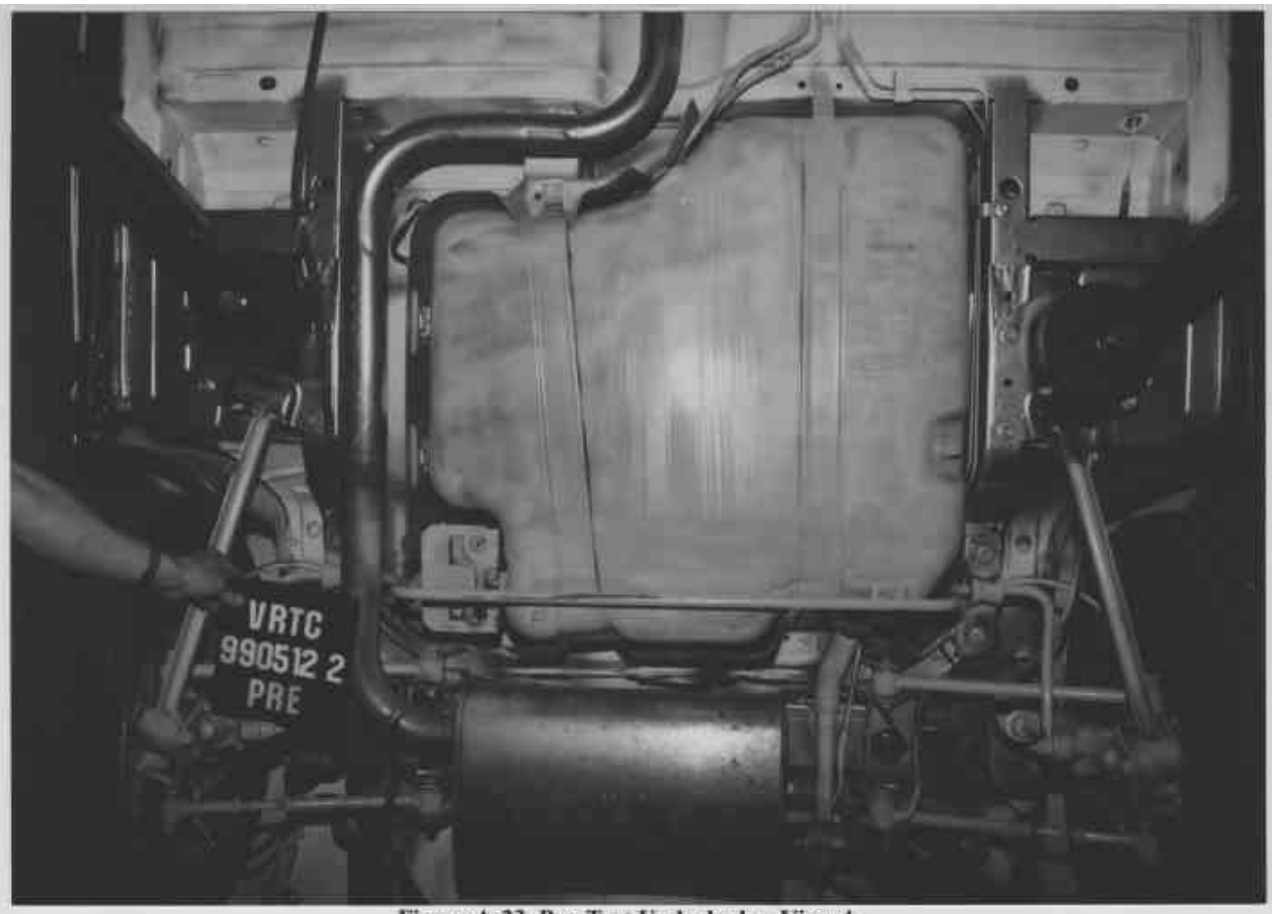


Figure A-23 Pre-Test Underbody - View 4

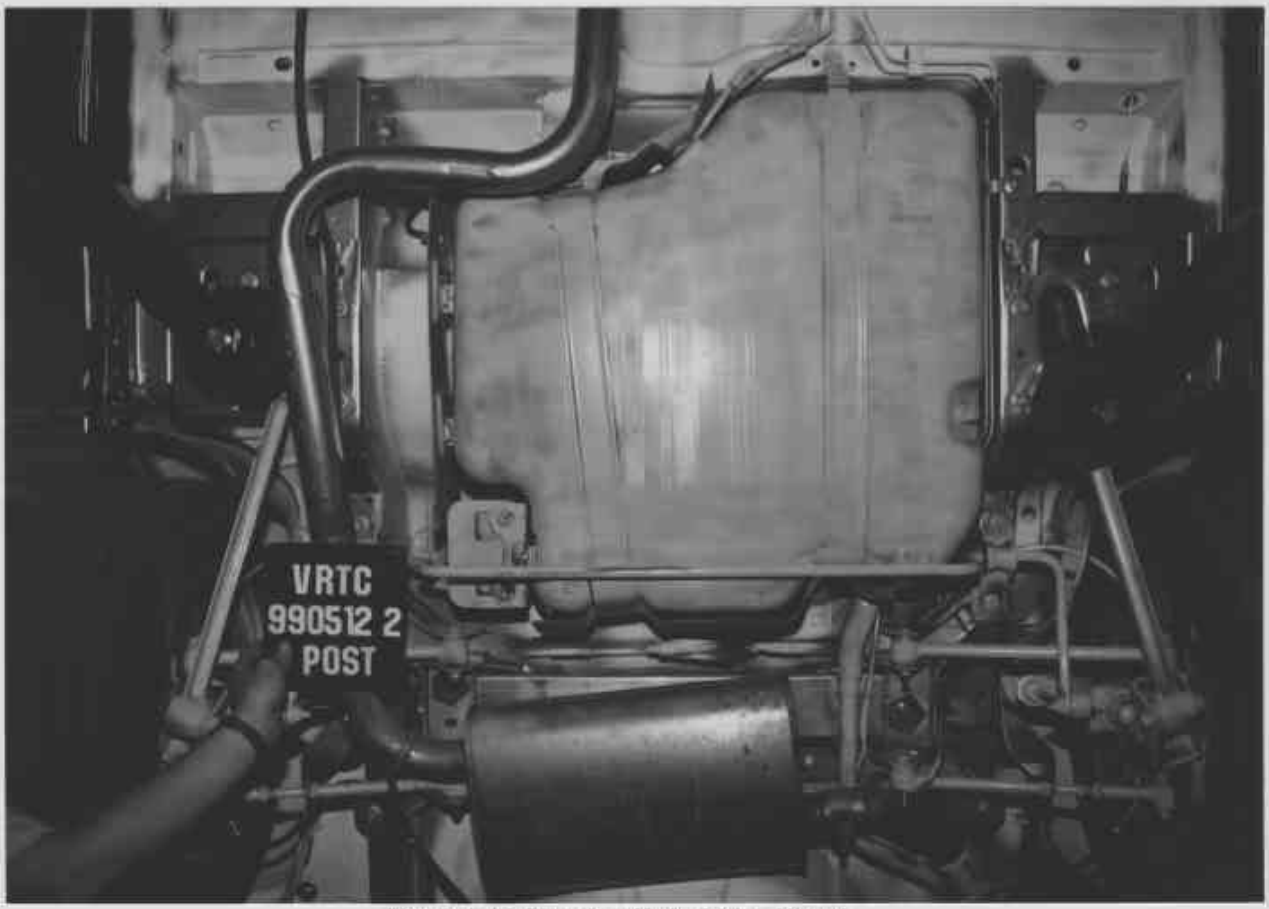


Figure A-24 Post-Test Underbody - View 4

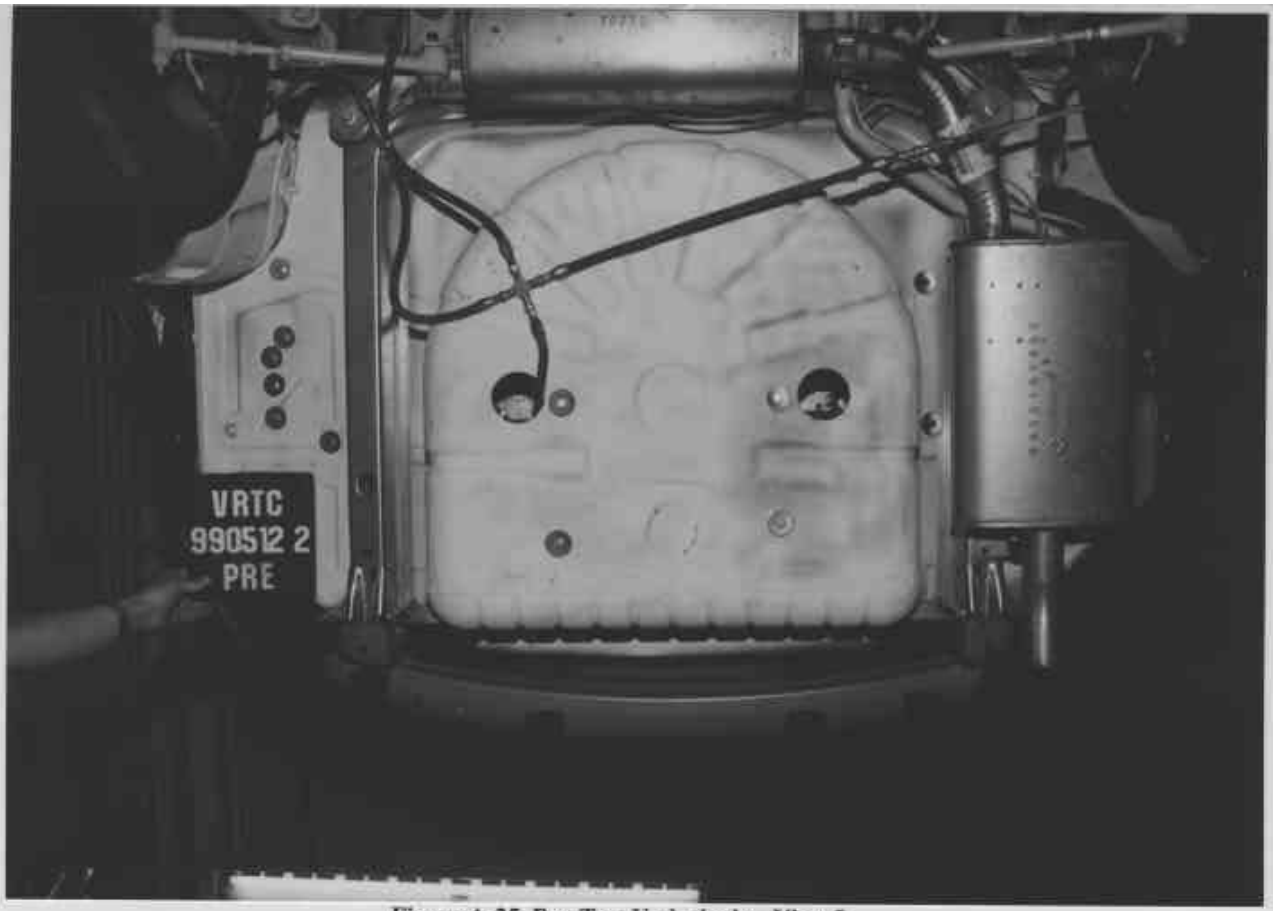


Figure A-25 Pre-Test Underbody - View 5

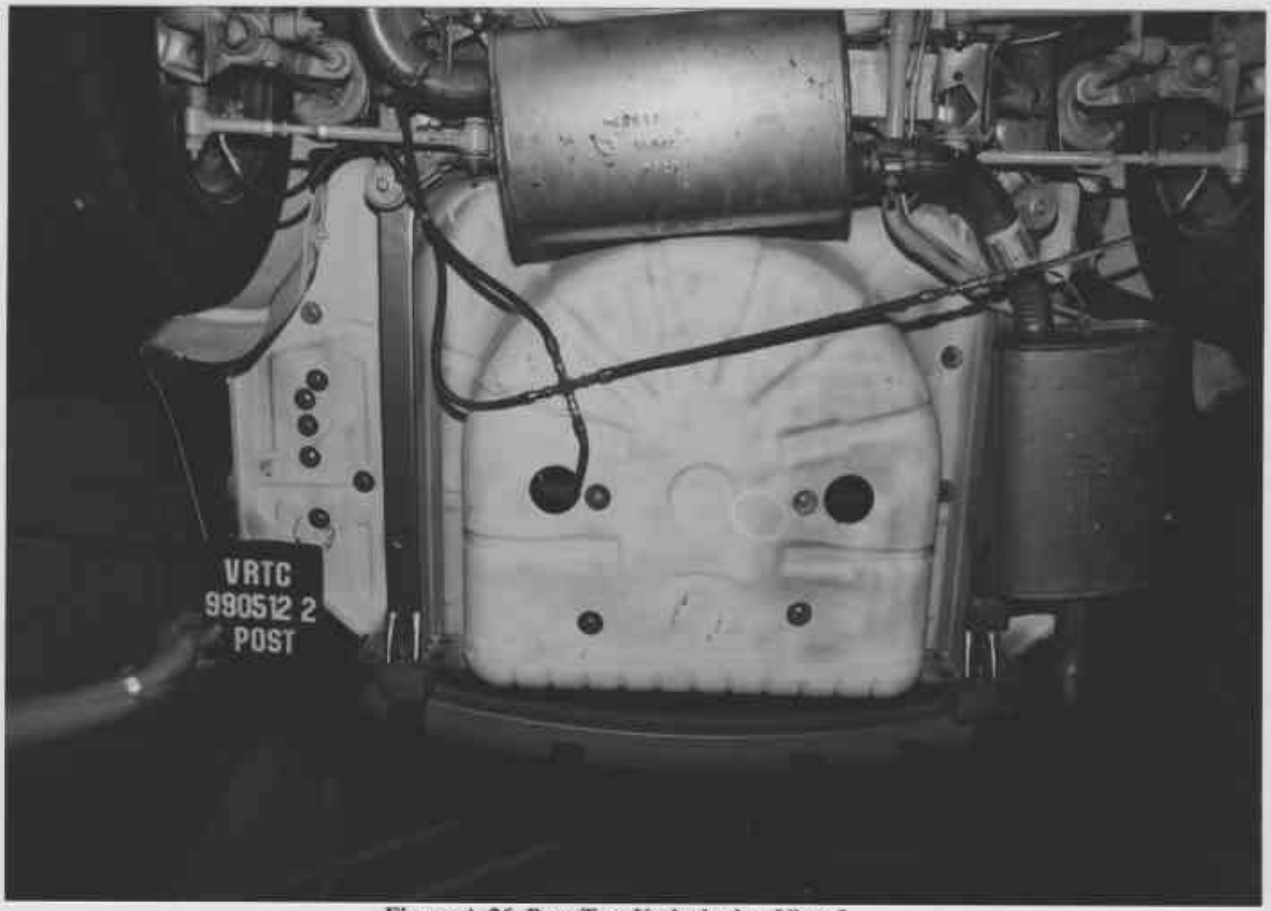


Figure A-26 Post-Test Underbody - View 5

Figure A-27 Pre-Test Engine Compartment View

Figure A-28 Post-Test Engine Compartment View

Figure A-29 Pre-Test Windshield - View 1

Figure A-30 Post-Test Windshield - View 1

Figure A-31 Pre-Test Windshield - View 2

Figure A-32 Post-Test Windshield - View 2

Figure A-33 Pre-Test Driver Dummy Windshield View

Figure A-34 Post-Test Driver Dummy Windshield View

Figure A-35 Pre-Test Passenger Dummy Windshield View

Figure A-36 Post-Test Passenger Dummy Windshield View

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

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

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

Figure A-40 Post-Test Driver Dummy Position - View 2

Figure A-41 Pre-Test Driver Dummy Position -View 3

Figure A-42 Post-Test Driver Dummy Position - View 3

Figure A-43 Pre-Test Passenger Dummy Position - View 1

Figure A-44 Post-Test Passenger Dummy Position - View 1

Figure A-45 Pre-Test Passenger Dummy Position - View 2

Figure A-46 Post-Test Passenger Dummy Position - View 2

Figure A-47 Pre-Test Passenger Dummy Position - View 3

Figure A-48 Post-Test Passenger Dummy Position - View 3

Figure A-49 Post-Test Driver Dummy View

Figure A-50 Post-Test Driver Dummy Head Contact - View 1

Figure A-51 Post-Test Driver Dummy Head Contact - View 2

Figure A-52 Post-Test Driver Dummy Head Contact - View 3

Figure A-53 Post-Test Driver Dummy Knee Contact - View 1

Figure A-54 Post-Test Driver Dummy Knee Contact - View 2

Figure A-55 Post-Test Driver Footwell Deformation View

Figure A-56 Post-Test Passenger Dummy View

Figure A-57 Post-Test Passenger Dummy Head Contact - View 1

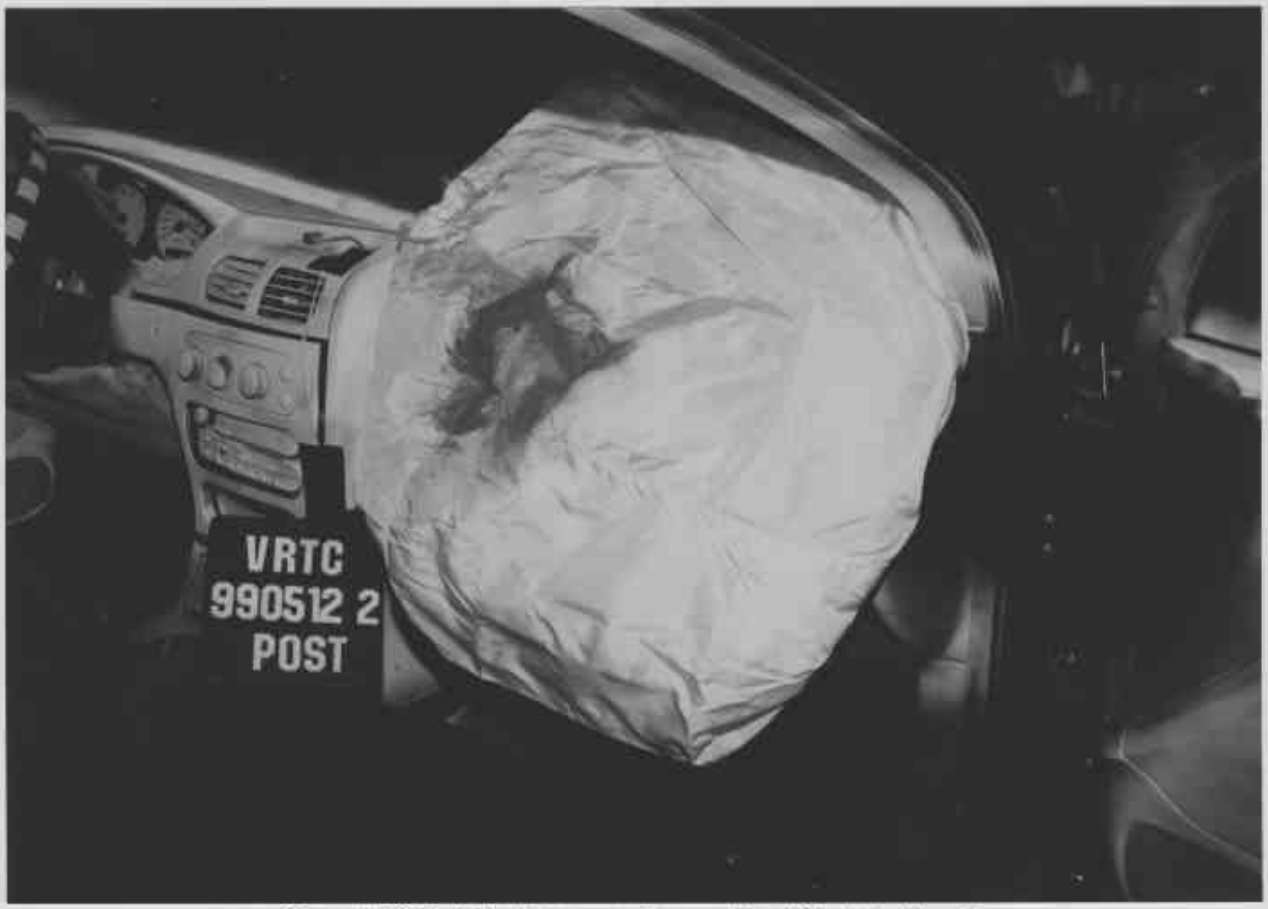


Figure A-58 Post-Test Passenger Dummy Head Contact - View 2

Figure A-59 Post-Test Passenger Dummy Head Contact - View 3

Figure A-60 Post-Test Passenger Dummy Knee Contact - View 1

Figure A-61 Post-Test Passenger Dummy Knee Contact - View 2

Figure A-62 Post-Test Passenger Footwell Deformation View

Figure A-63 Pre-Test Vehicle Certification Label View

Figure A-64 Pre-Test Vehicle Tire Information Label View

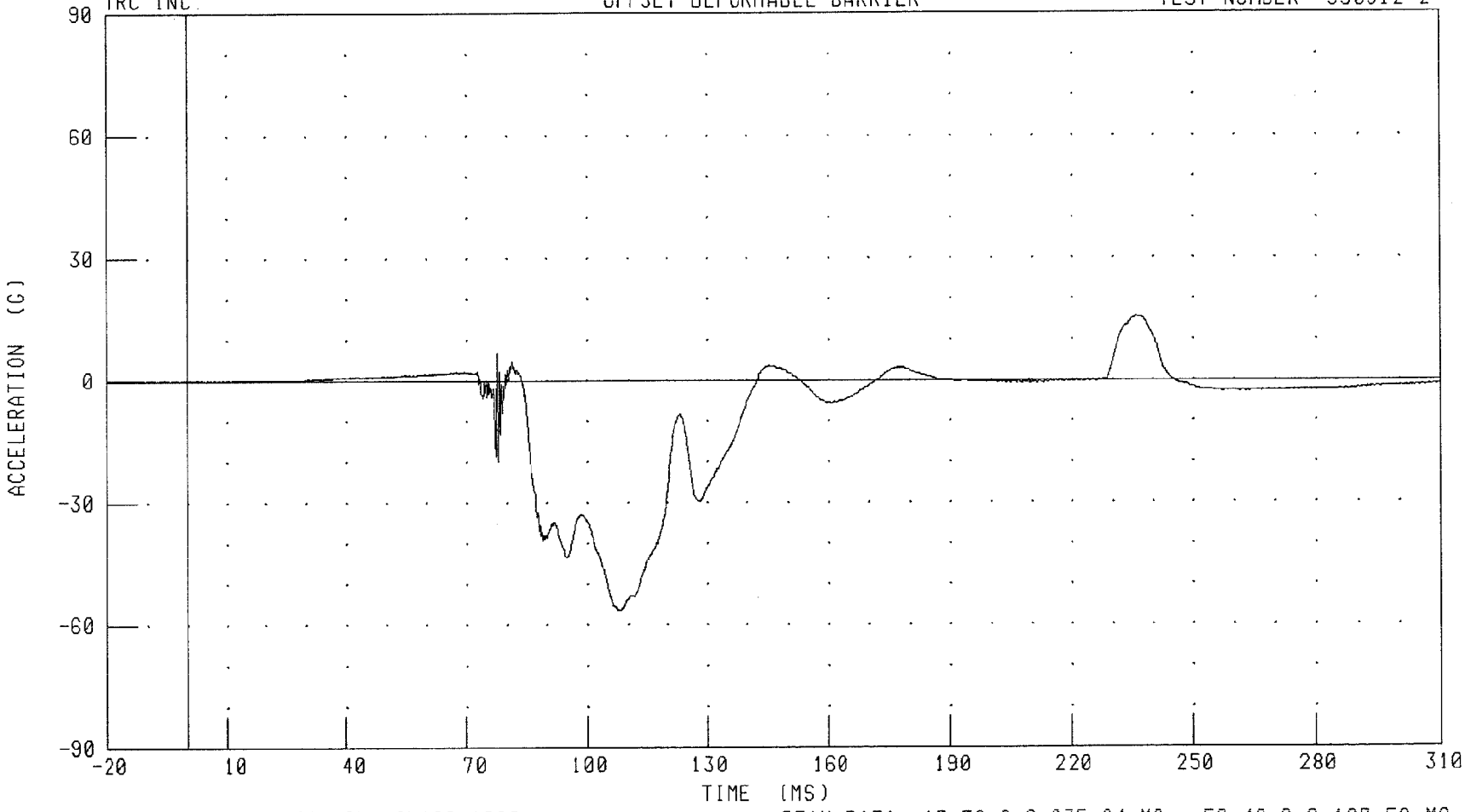
Appendix B

Data Plots

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH

DRIVER HEAD X-AXIS ACCELERATION

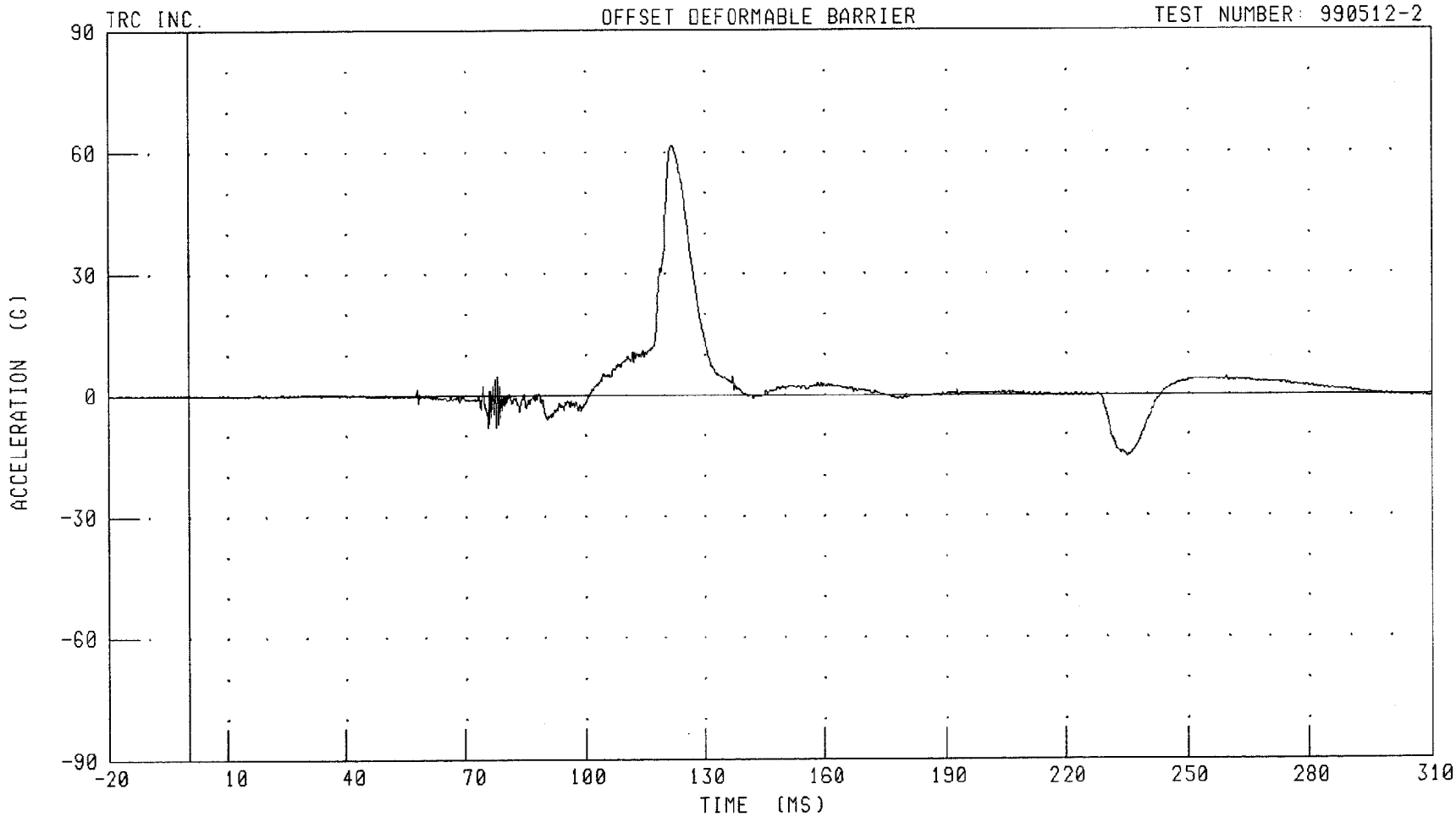
TRC INC. OFFSET DEFORMABLE BARRIER TEST NUMBER: 990512-2



CHANNEL: HEDXG1 FILTER: CH. CLASS 1000

PEAK DATA: 15.59 G @ 235.84 MS, -56.40 G @ 107.52 MS

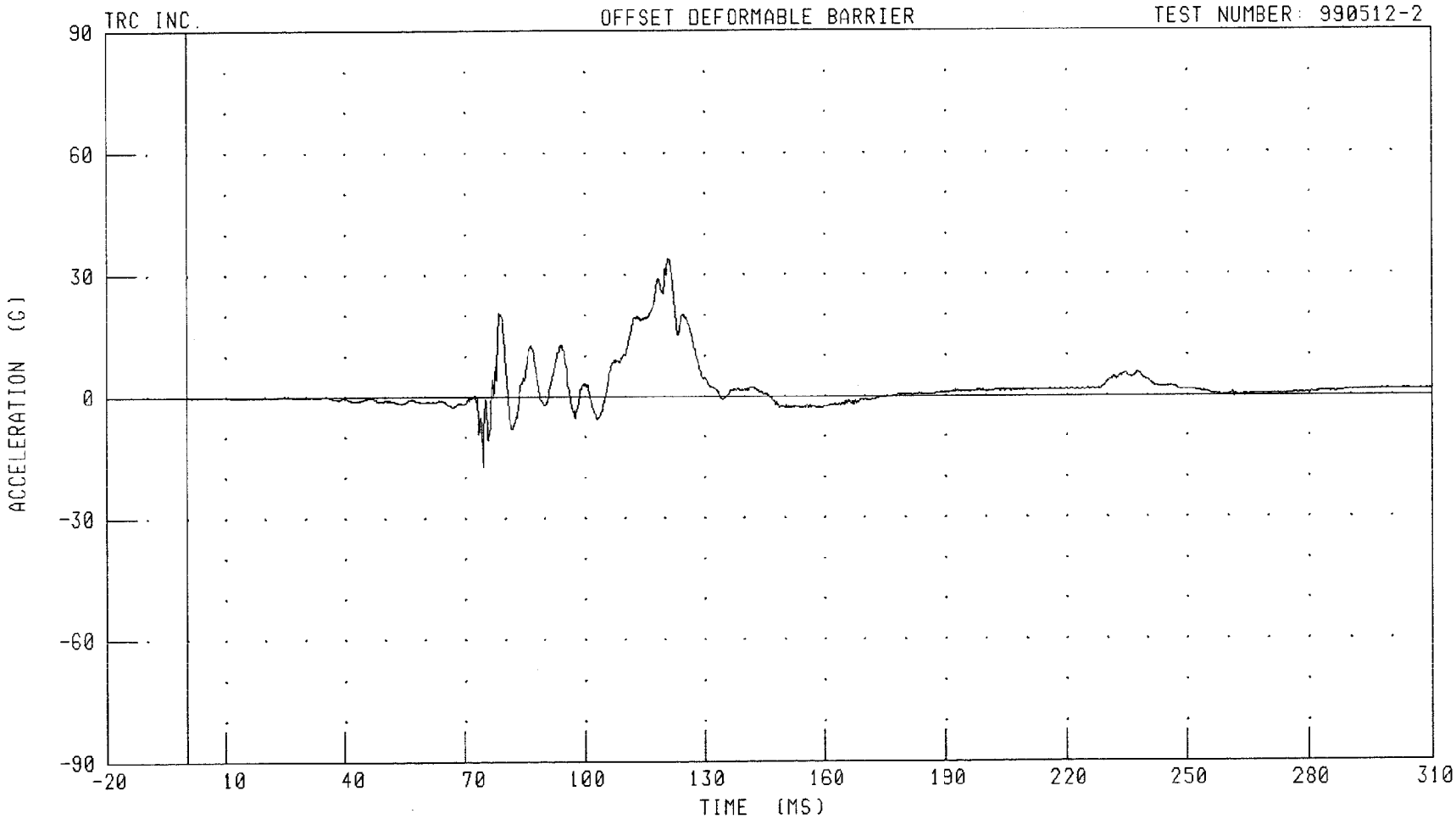
1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
DRIVER HEAD Y-AXIS ACCELERATION



CHANNEL: HEDYG1 FILTER: CH. CLASS 1000

PEAK DATA: 61.72 G @ 121.84 MS; -15.29 G @ 234.88 MS

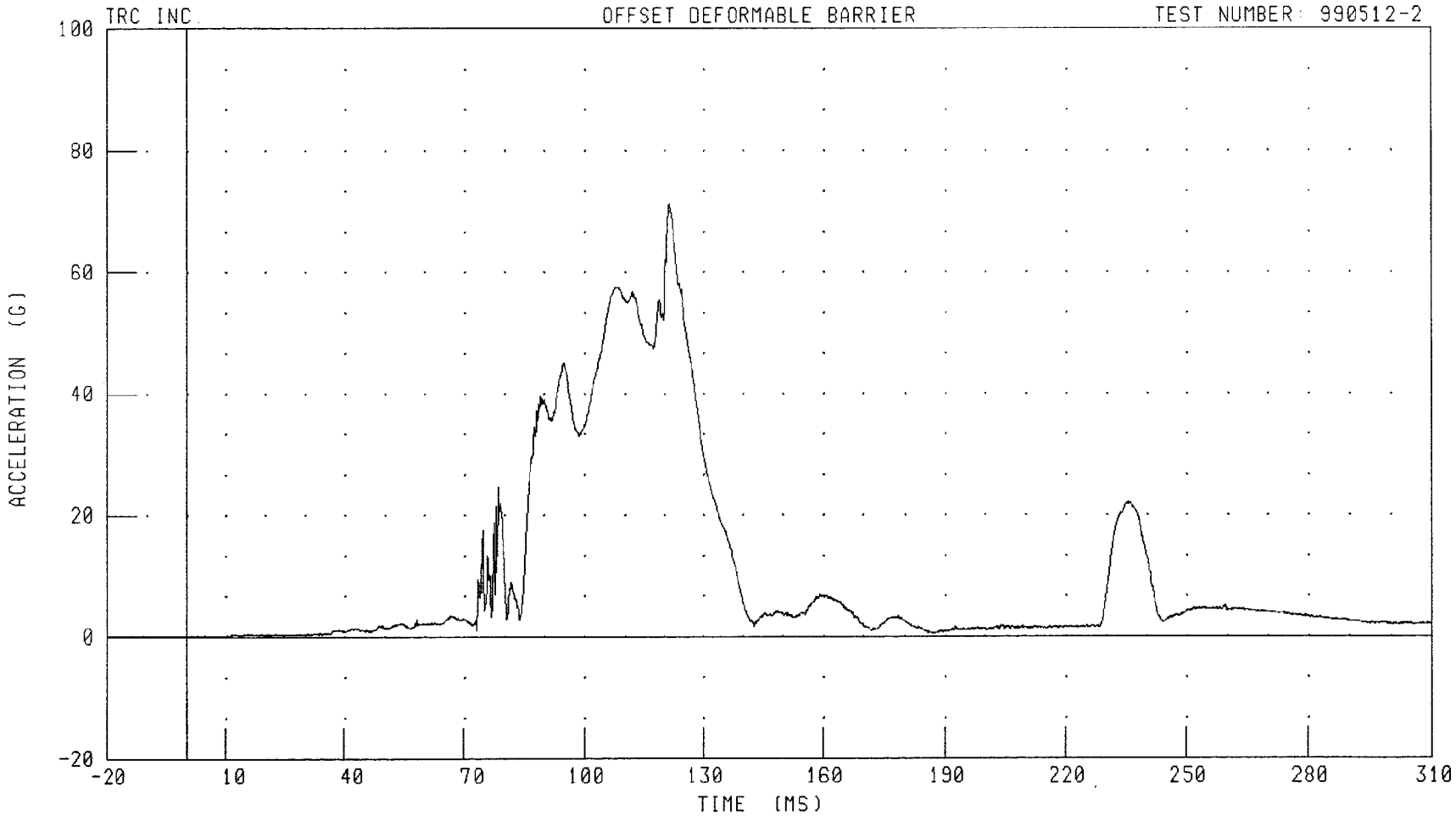
1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
DRIVER HEAD Z-AXIS ACCELERATION



CHANNEL: HEDZG1 FILTER: CH. CLASS 1000 PEAK DATA: 33.82 G @ 121.04 MS, -17.50 G @ 74.64 MS

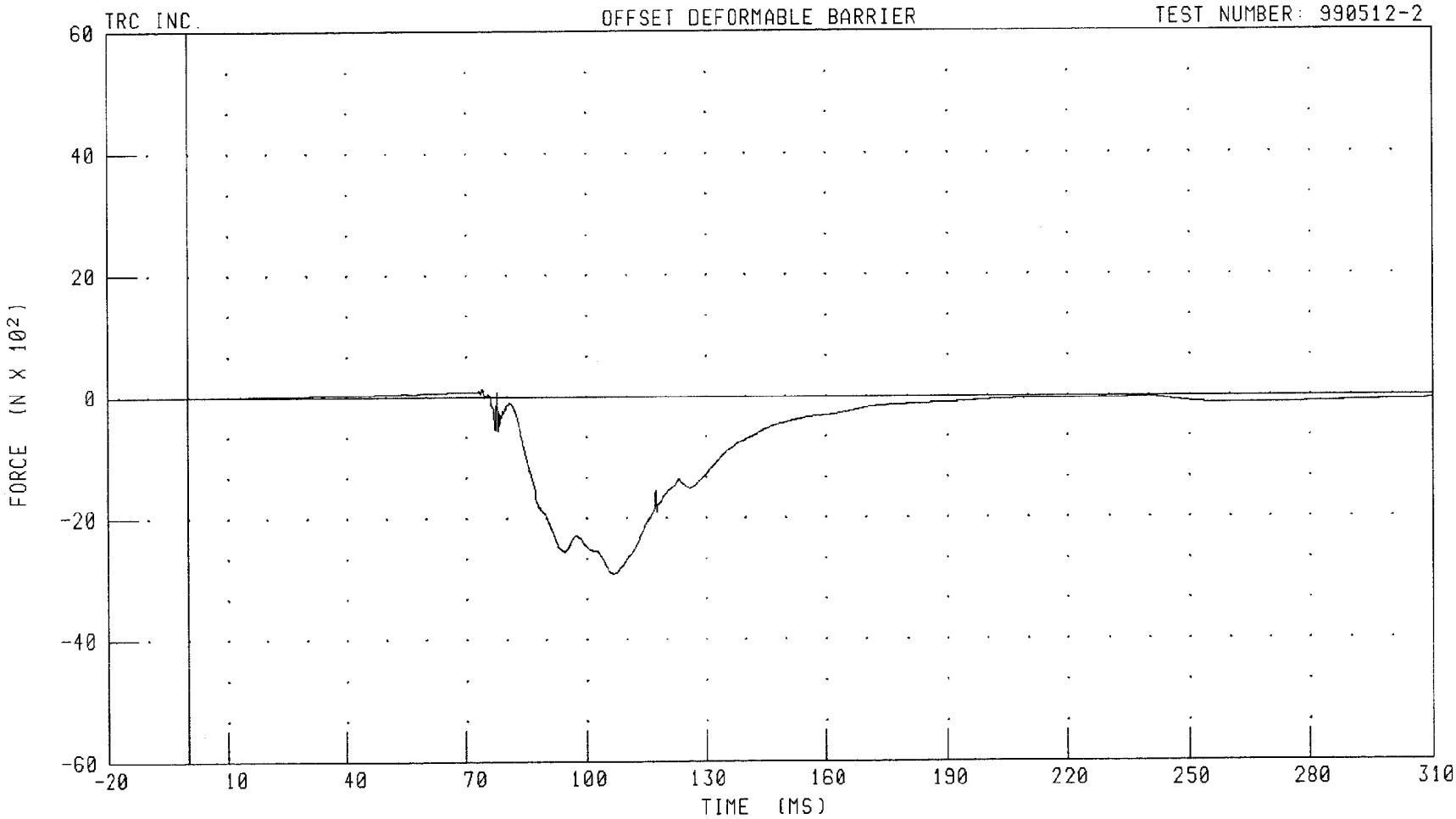
1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH

DRIVER HEAD RESULTANT ACCELERATION



CHANNEL: HEDRG1 FILTER: CH. CLASS 1000 PEAK DATA: 71.19 G @ 121.36 MS; 0.11 G @ -20.00 MS

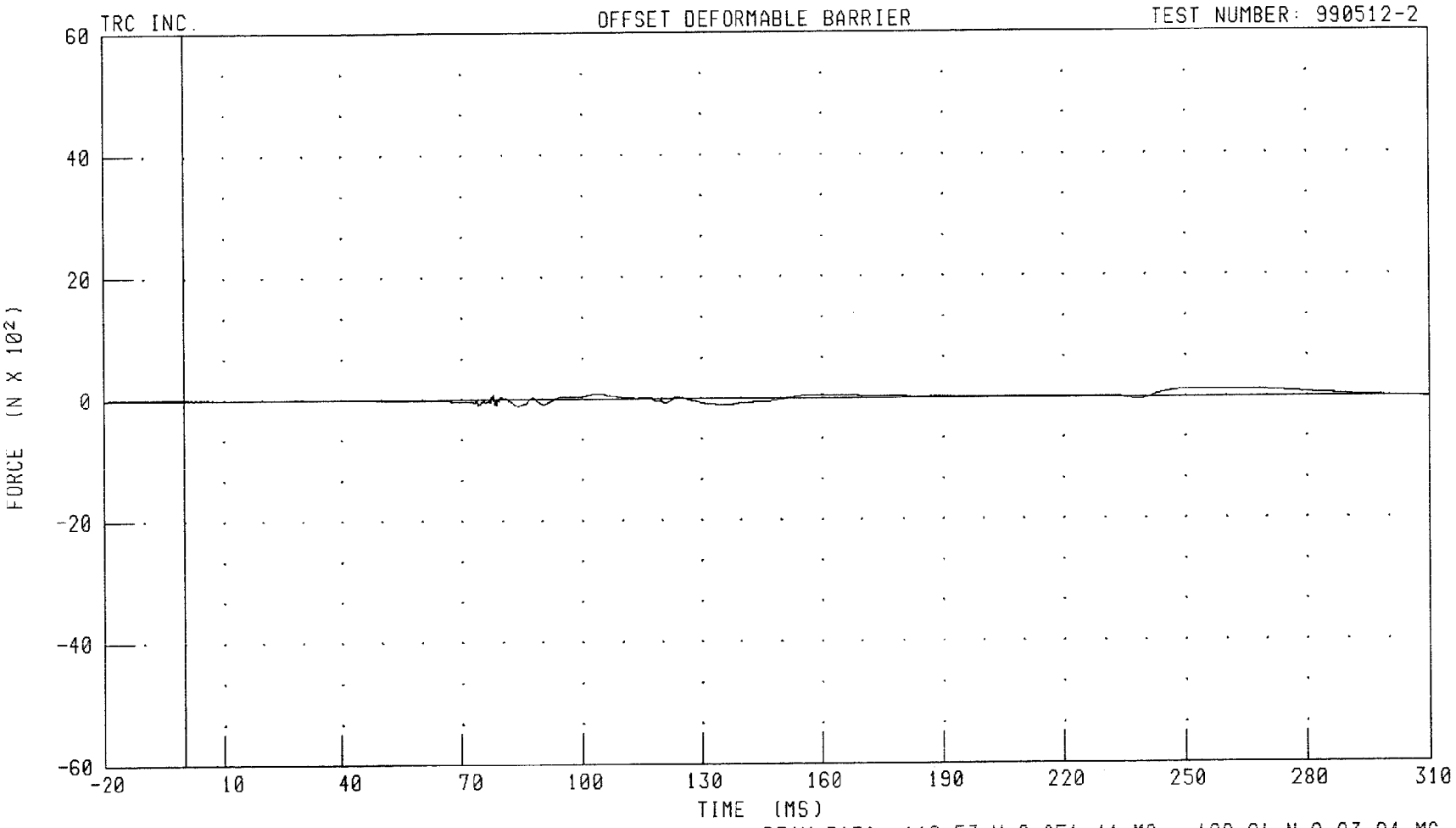
1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
DRIVER NECK X-AXIS SHEAR FORCE



CHANNEL: NEKXF1 FILTER: CH. CLASS 1000 PEAK DATA: 136.63 N @ 74.00 MS; -2916.89 N @ 106.56 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH

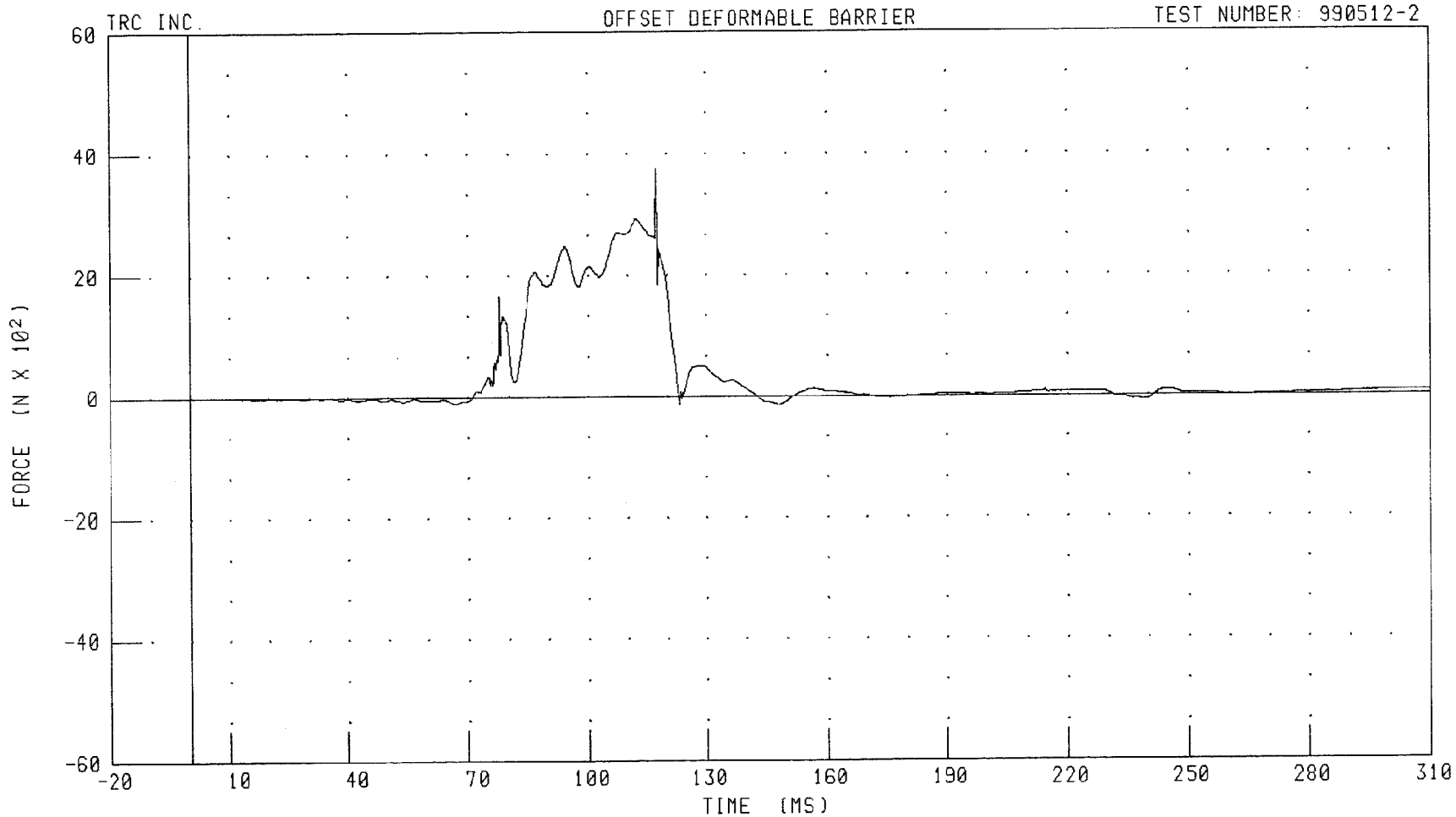
DRIVER NECK Y-AXIS SHEAR FORCE



CHANNEL: NEKYF1 FILTER: CH. CLASS 1000 PEAK DATA: 118.53 N @ 251.44 MS; -129.21 N @ 83.84 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH

DRIVER NECK Z-AXIS AXIAL FORCE



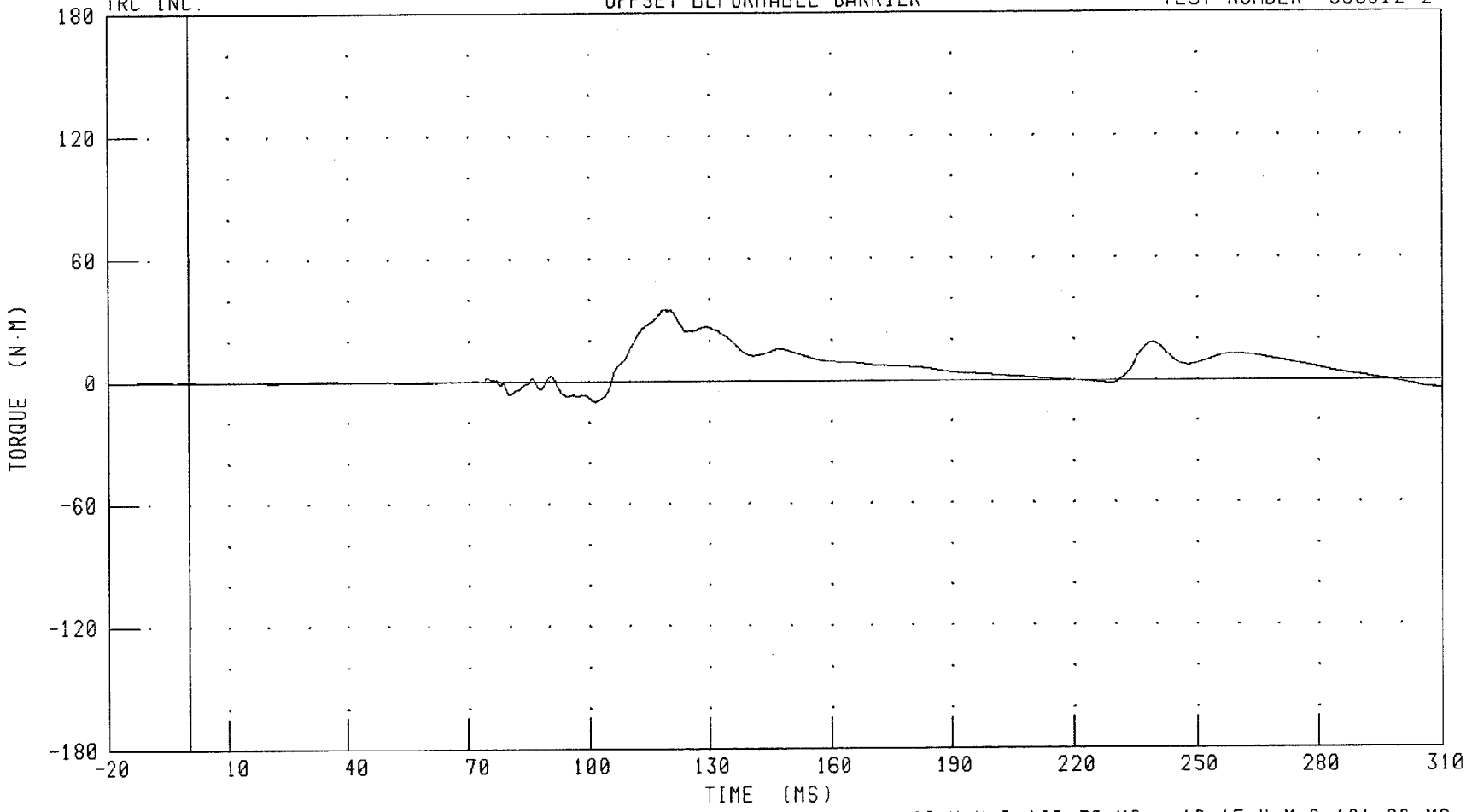
CHANNEL: NEKZF1 FILTER: CH. CLASS 1000

PEAK DATA: 3758.14 N @ 117.60 MS; -136.58 N @ 123.44 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH

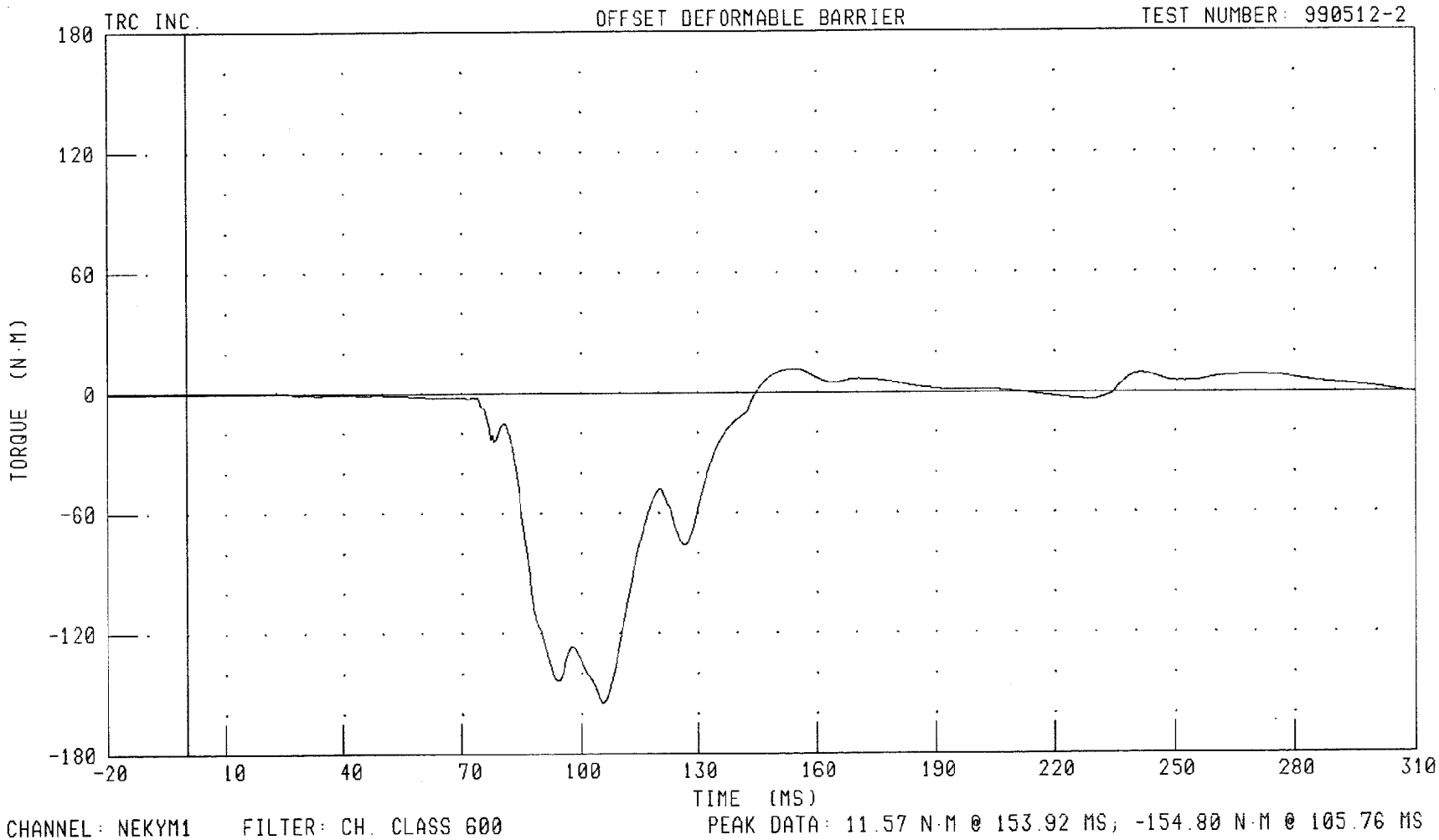
DRIVER NECK MOMENT ABOUT X AXIS

TRC INC. OFFSET DEFORMABLE BARRIER TEST NUMBER: 990512-2



CHANNEL: NEKXM1 FILTER: CH. CLASS 600 PEAK DATA: 34.89 N-M @ 120.32 MS; -10.15 N-M @ 101.68 MS

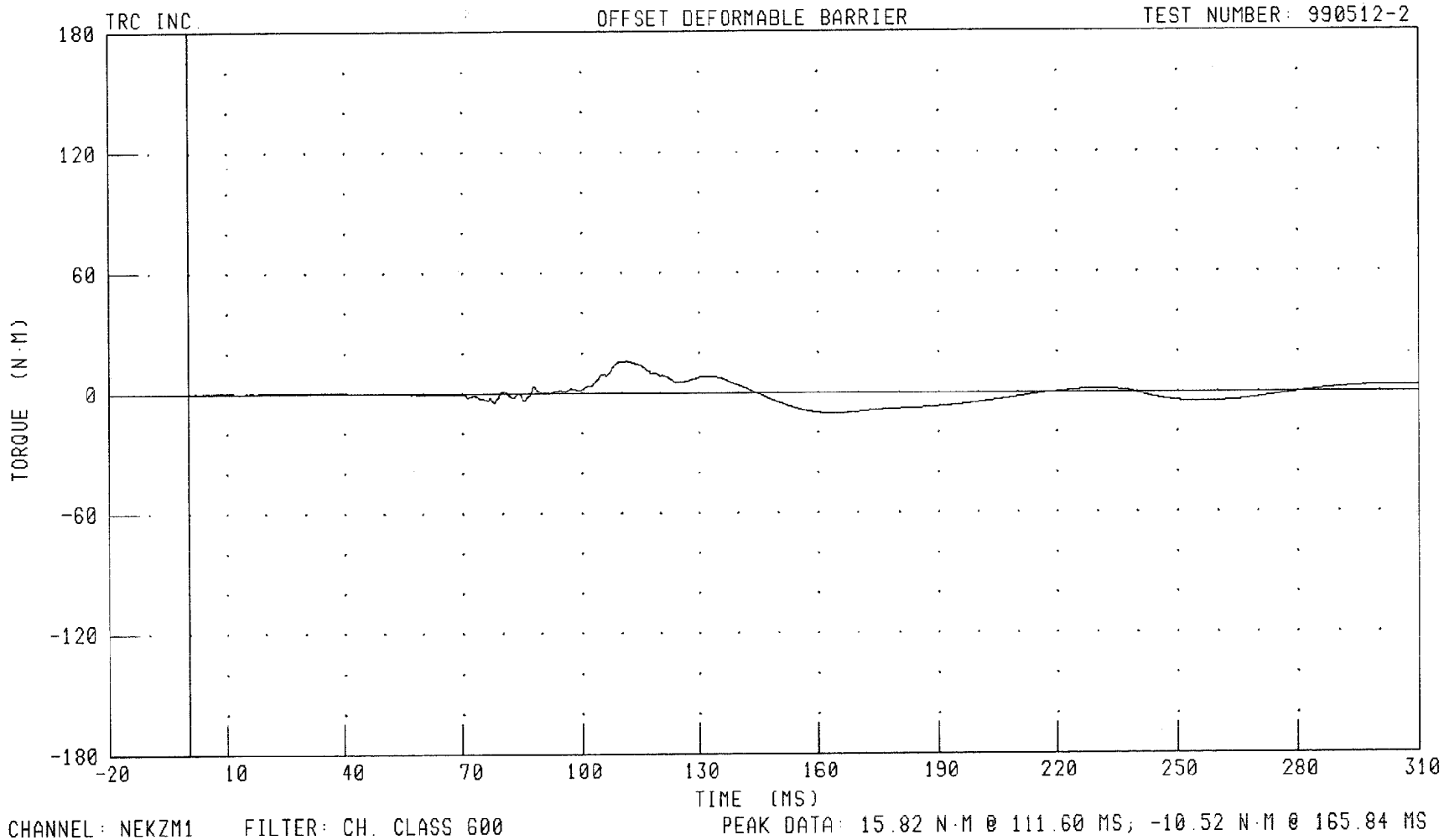
1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
DRIVER NECK MOMENT ABOUT Y AXIS



CHANNEL: NEKYM1 FILTER: CH. CLASS 600

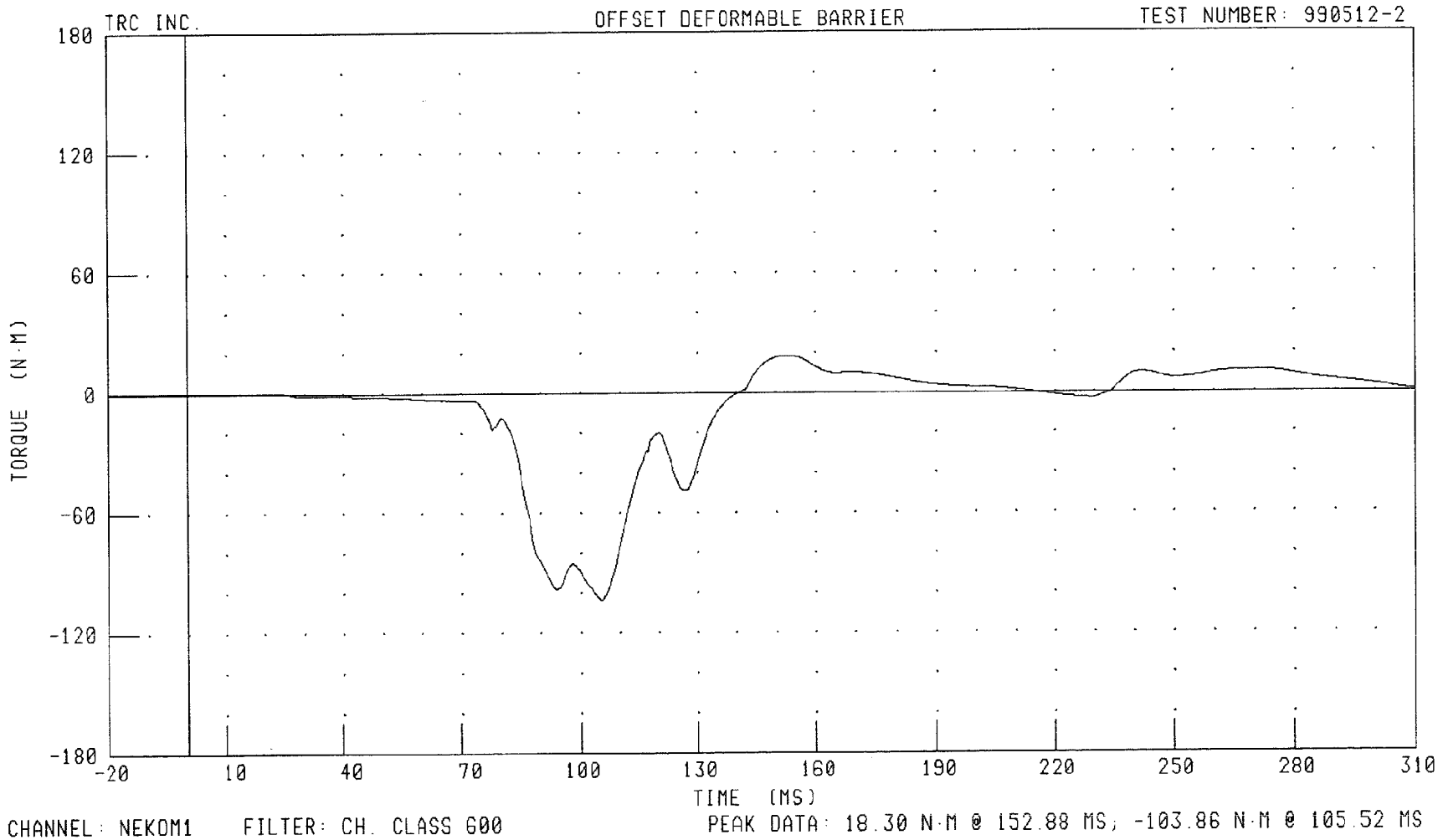
PEAK DATA: 11.57 N-M @ 153.92 MS; -154.80 N-M @ 105.76 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
DRIVER NECK MOMENT ABOUT Z AXIS



CHANNEL: NEKZM1 FILTER: CH. CLASS 600 PEAK DATA: 15.82 N-M @ 111.60 MS; -10.52 N-M @ 165.84 MS

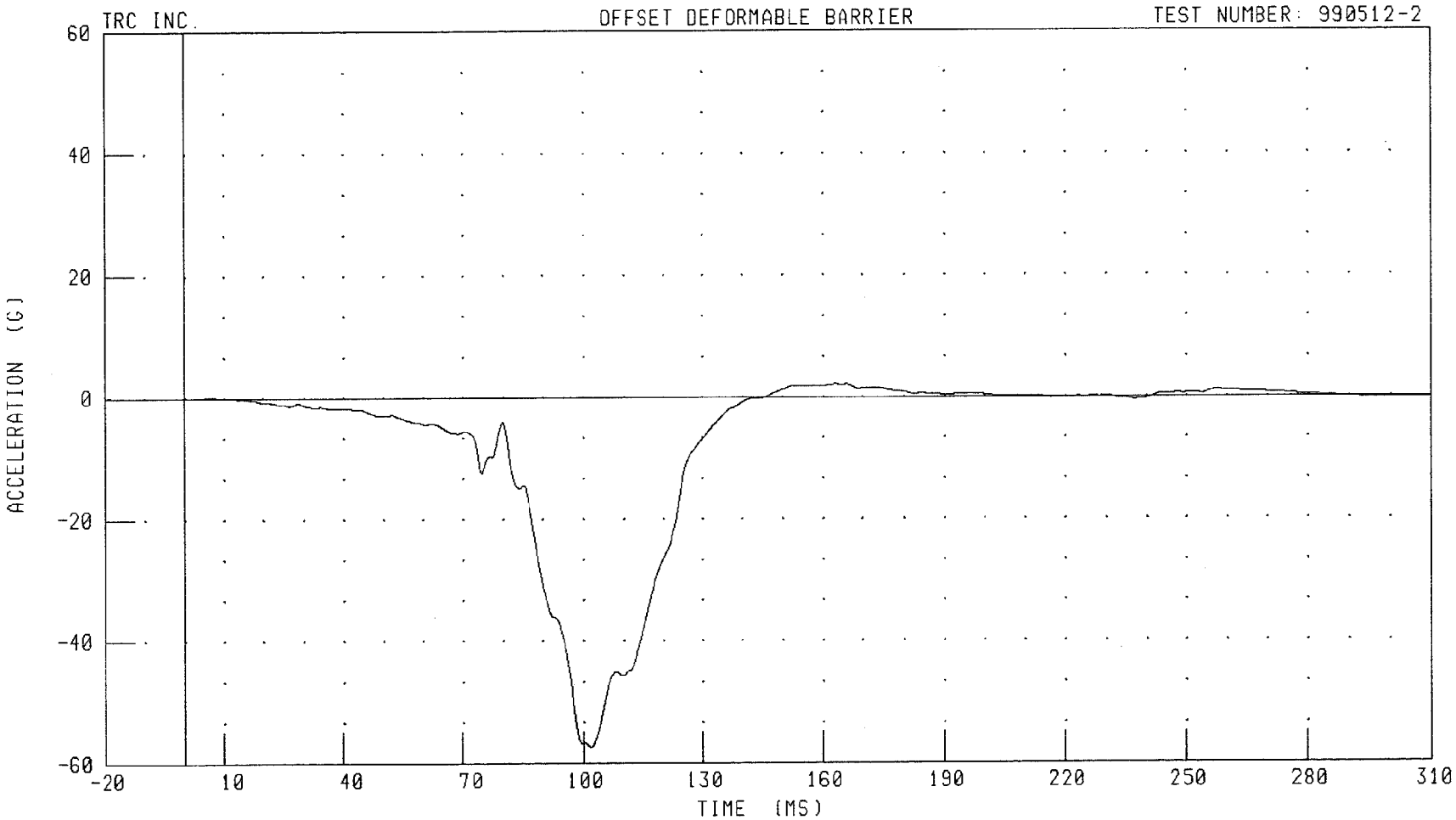
1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
DRIVER NECK OCCIPITAL CONDYLE



CHANNEL: NEKOM1 FILTER: CH. CLASS 600

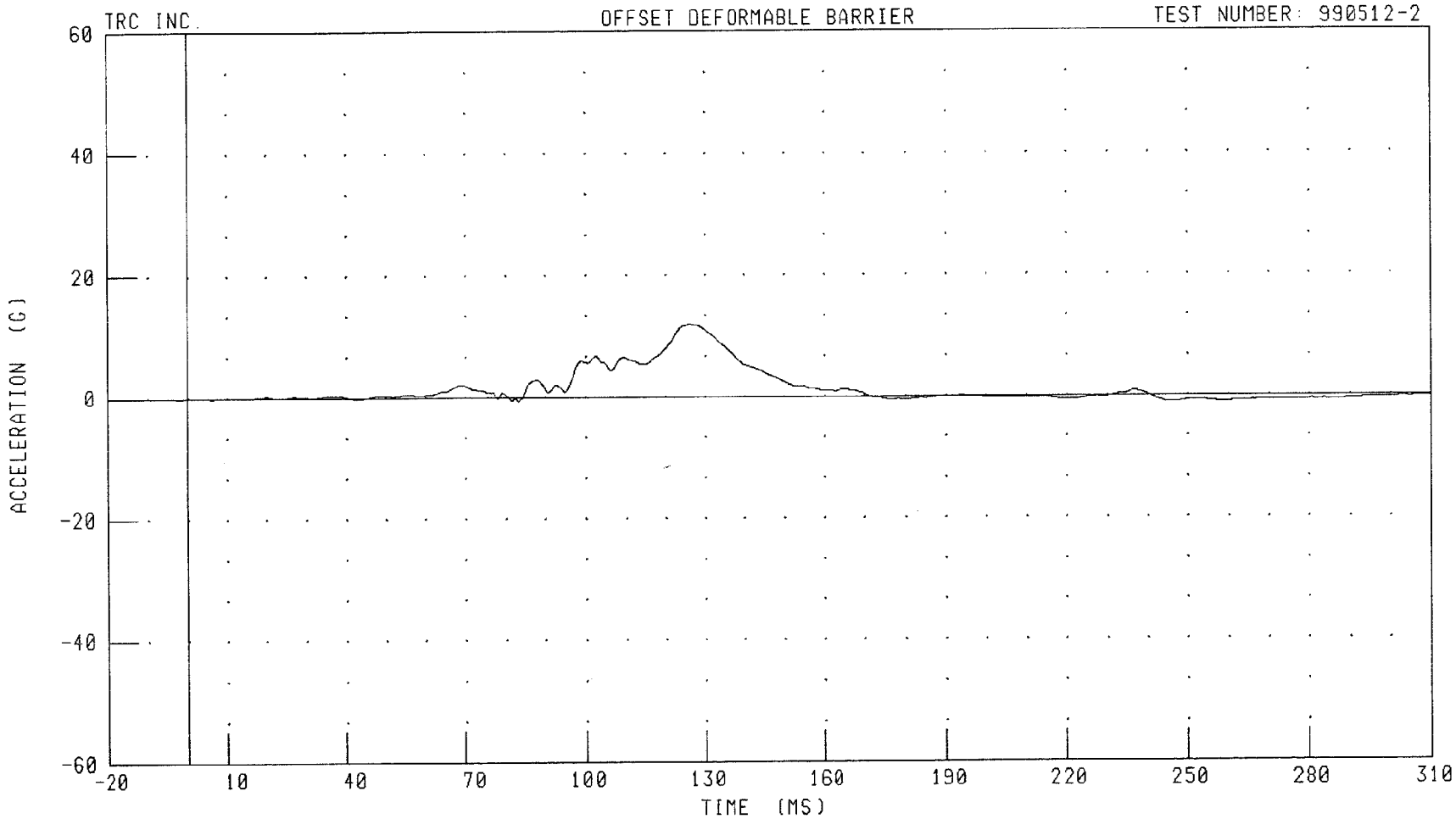
PEAK DATA: 18.30 N-M @ 152.88 MS; -103.86 N-M @ 105.52 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
DRIVER CHEST X-AXIS ACCELERATION



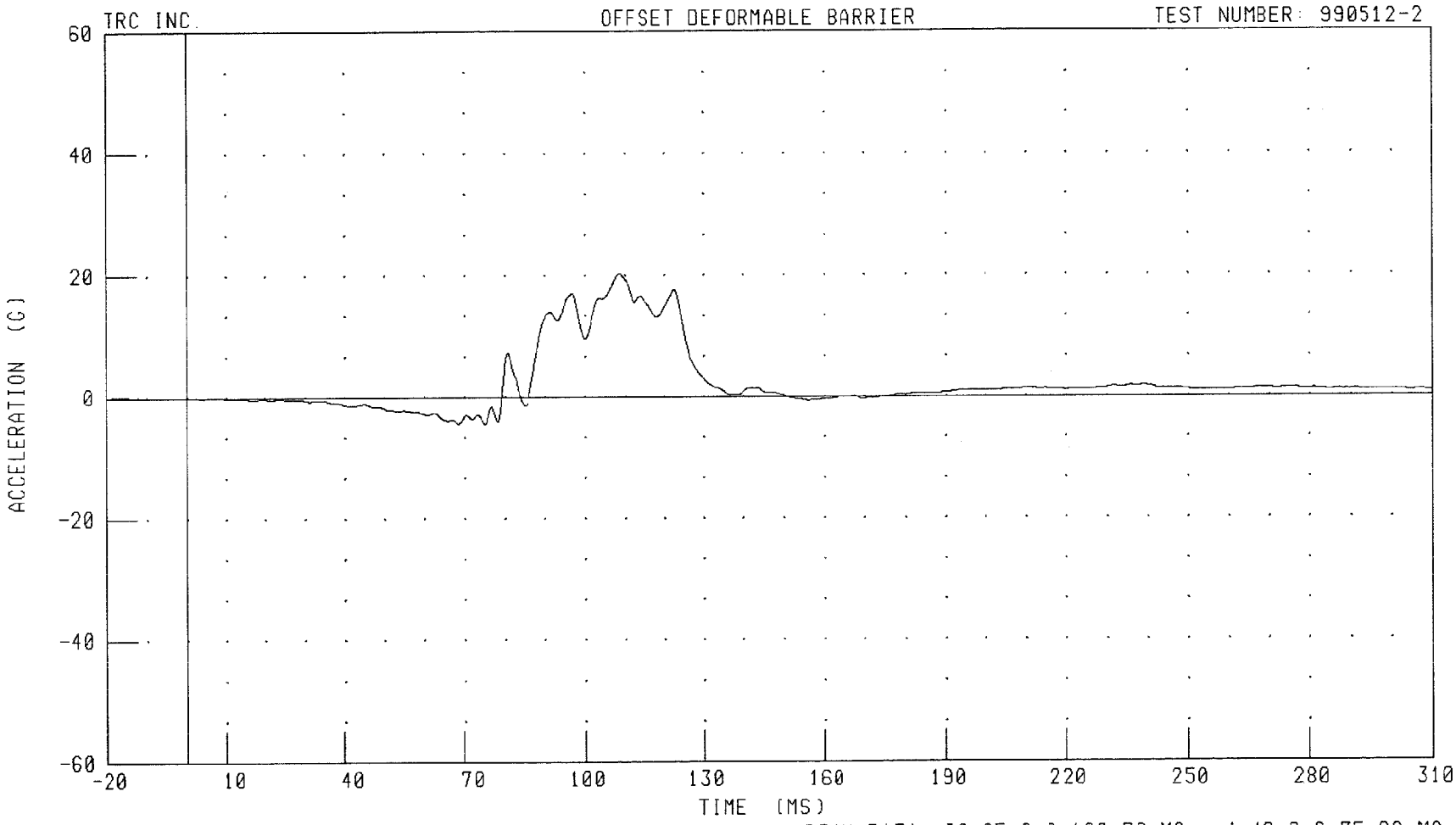
CHANNEL: CSTXG1 FILTER: CH. CLASS 180 PEAK DATA: 2.09 G @ 163.28 MS; -57.50 G @ 101.92 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
DRIVER CHEST Y-AXIS ACCELERATION



CHANNEL: CSTYG1 FILTER: CH. CLASS 180 PEAK DATA: 11.91 G @ 126.16 MS; -1.07 G @ 247.52 MS

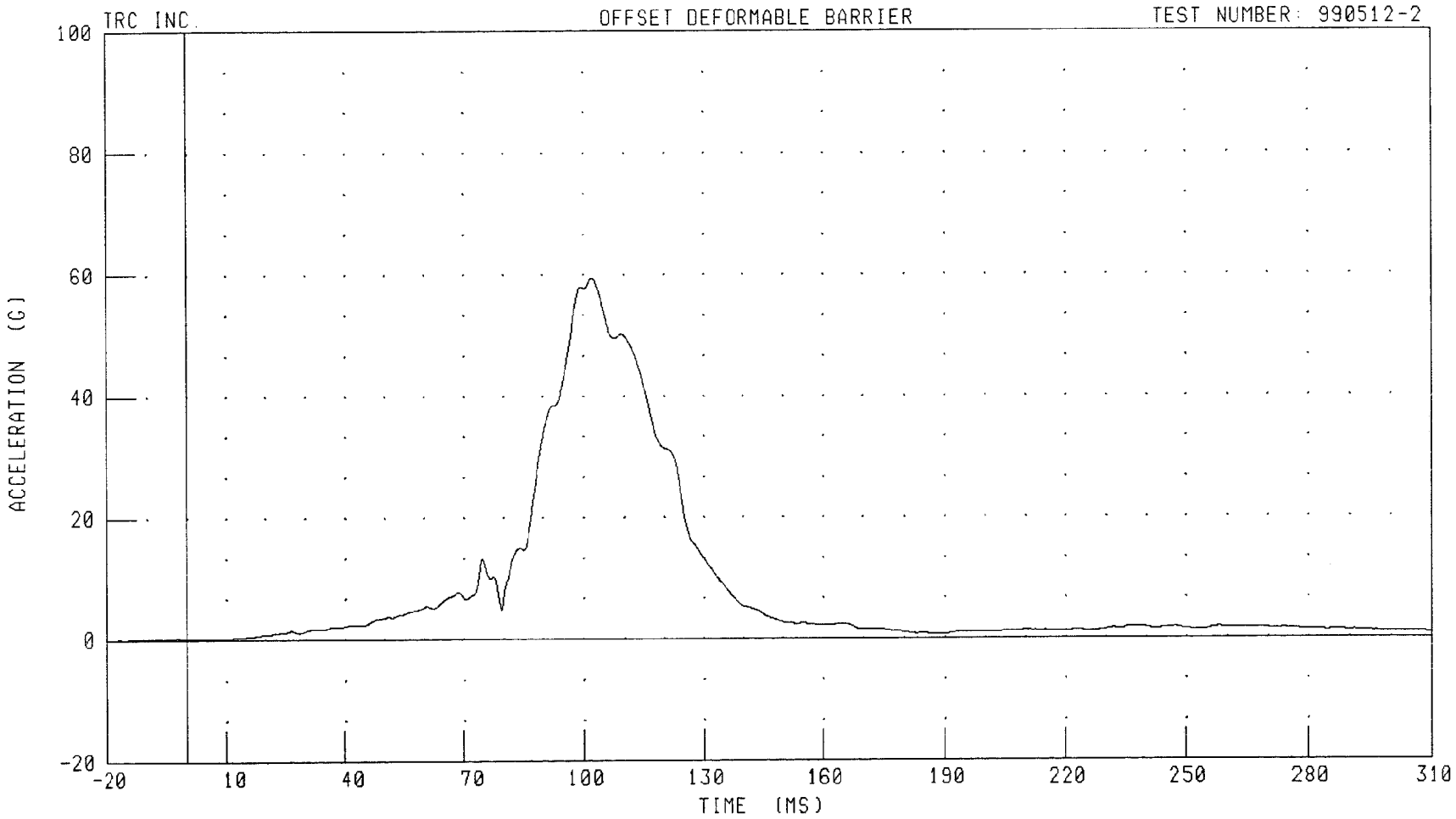
1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
DRIVER CHEST Z-AXIS ACCELERATION



CHANNEL: CSTZG1 FILTER: CH. CLASS 180 PEAK DATA: 20.25 G @ 108.72 MS; -4.48 G @ 75.20 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH

DRIVER CHEST RESULTANT ACCELERATION



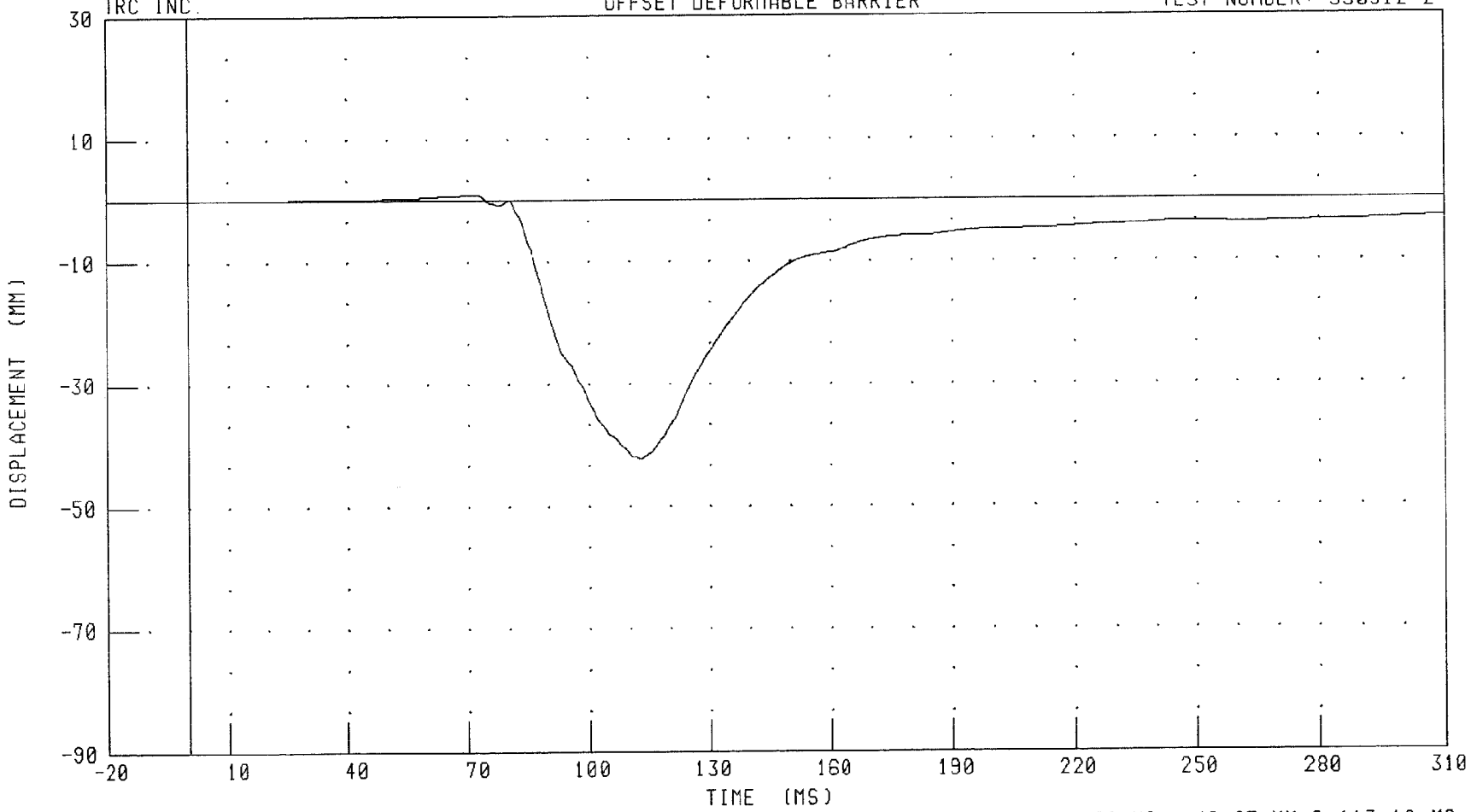
CHANNEL: CSTRG1 FILTER: CH. CLASS 180

PEAK DATA: 59.44 G @ 102.32 MS, 0.00 G @ -20.00 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH

DRIVER CHEST DEFLECTION

TRC INC. OFFSET DEFORMABLE BARRIER TEST NUMBER: 990512-2



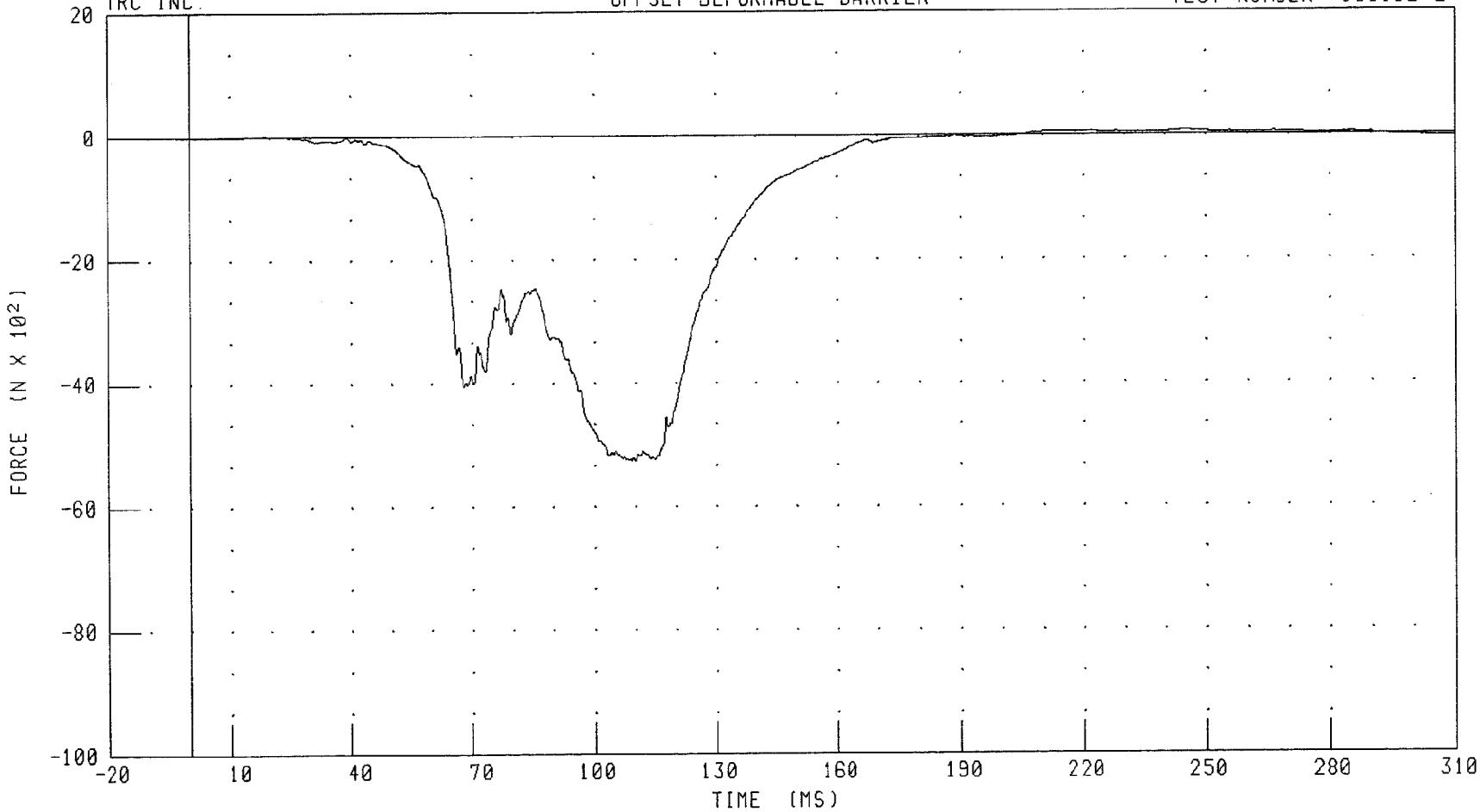
CHANNEL: CSTXD1 FILTER: CH. CLASS 180

PEAK DATA: 0.95 MM @ 71.60 MS; -42.27 MM @ 113.12 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH

DRIVER LEFT FEMUR FORCE

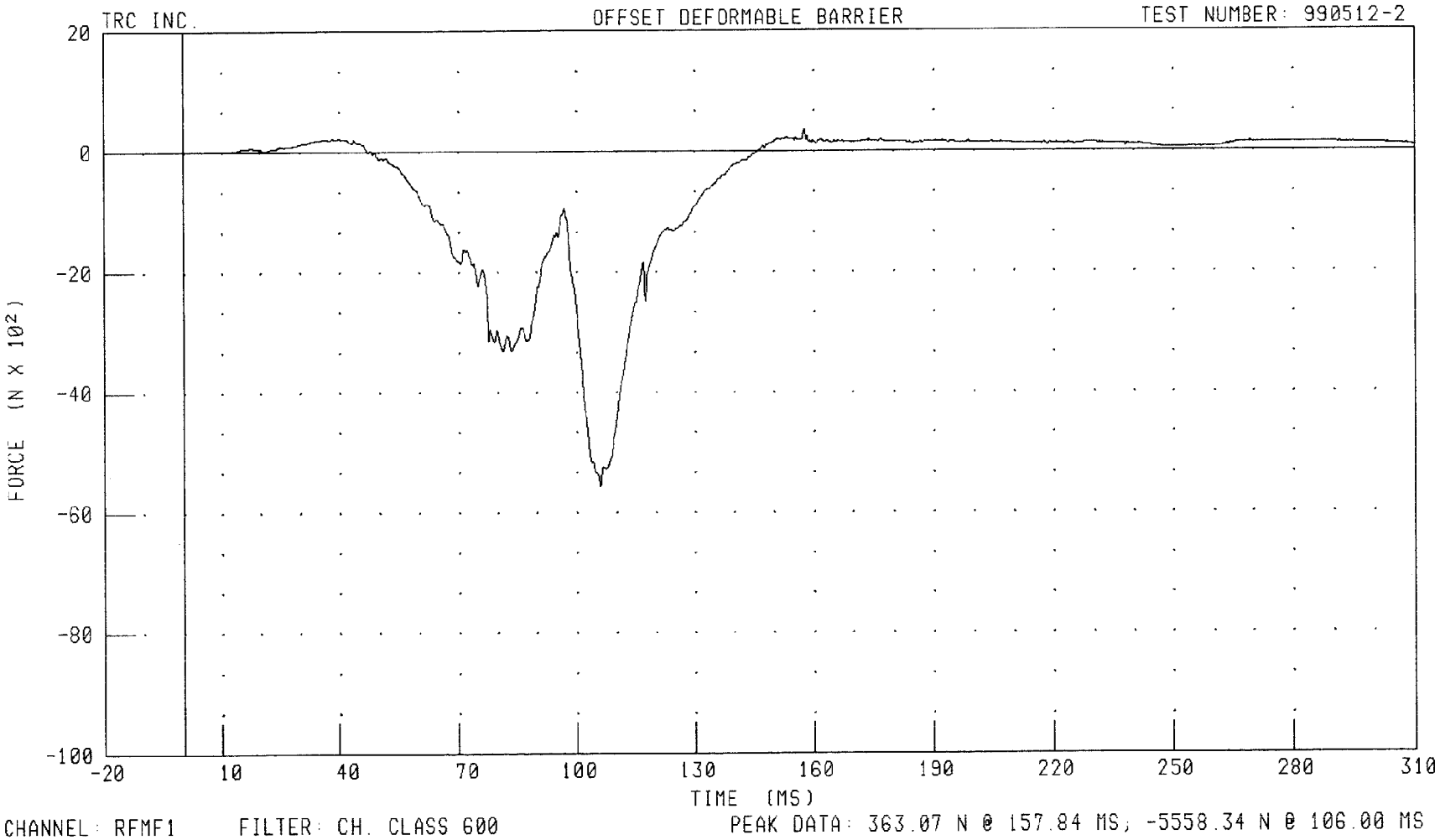
TRC INC. OFFSET DEFORMABLE BARRIER TEST NUMBER: 990512-2



CHANNEL: LFMF1 FILTER: CH. CLASS 600 PEAK DATA: 66.29 N @ 244.40 MS; -5257.09 N @ 110.08 MS

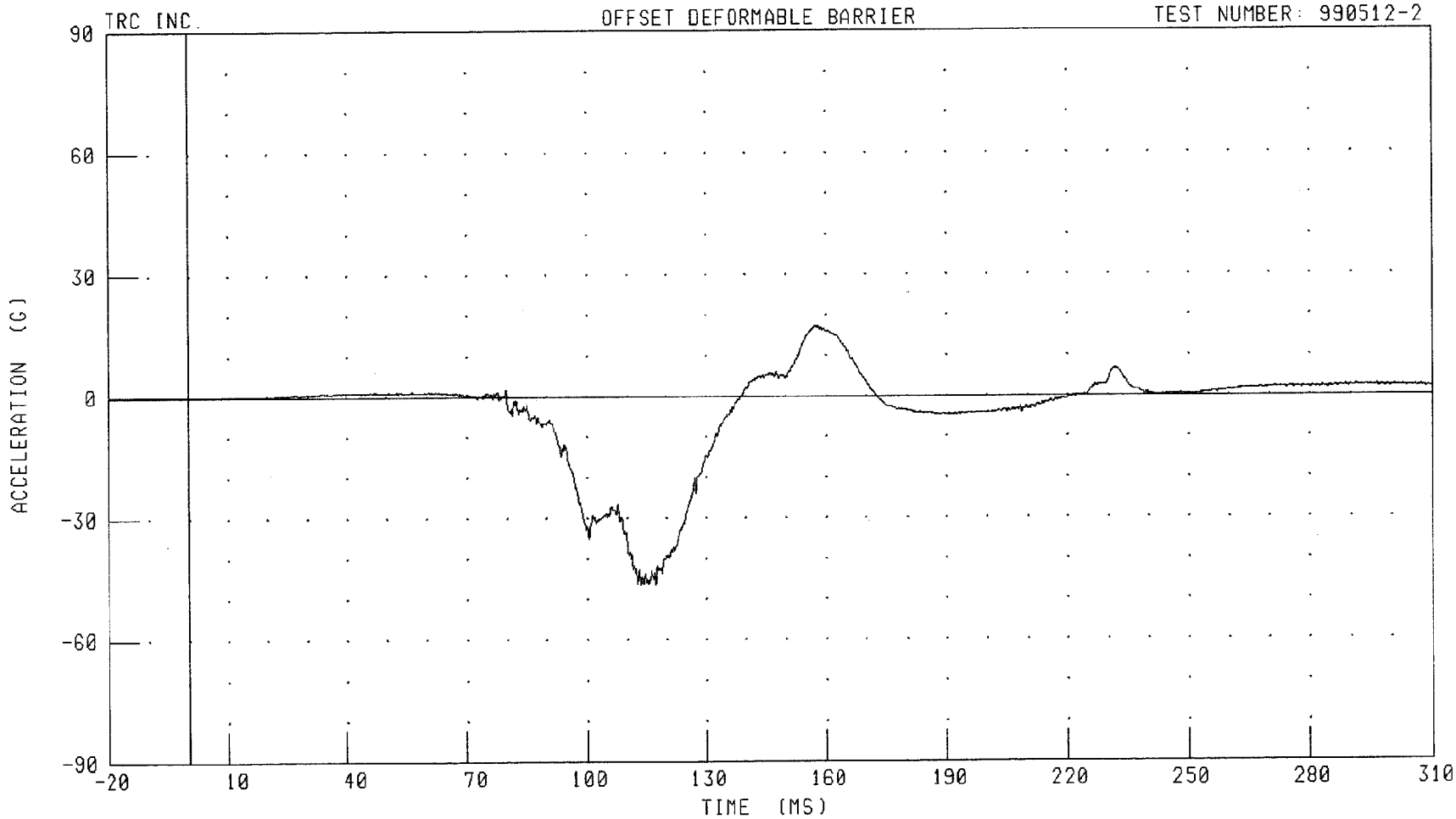
1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH

DRIVER RIGHT FEMUR FORCE



CHANNEL: RFMF1 FILTER: CH. CLASS 600 PEAK DATA: 363.07 N @ 157.84 MS; -5558.34 N @ 106.00 MS

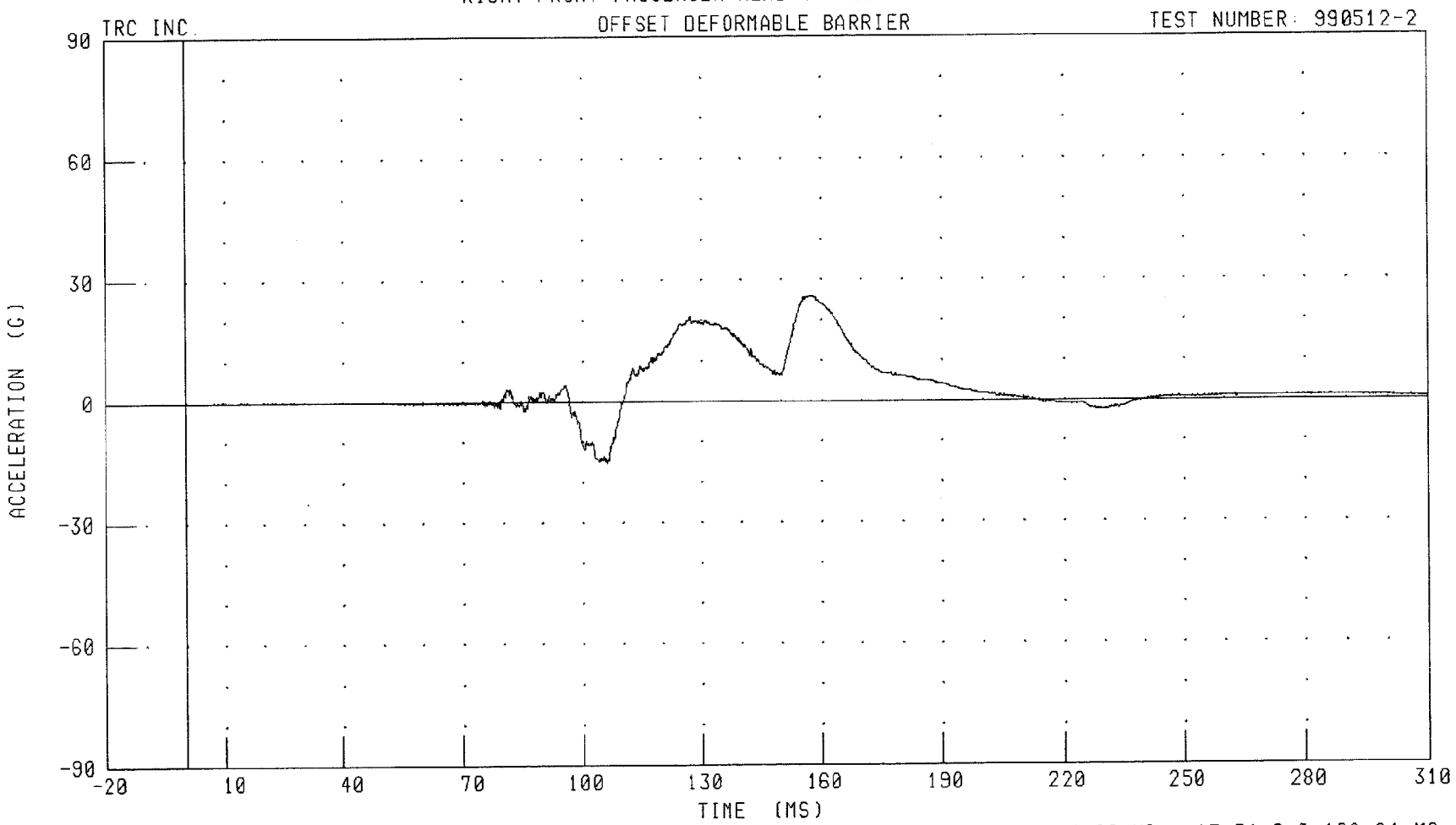
1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER HEAD X-AXIS ACCELERATION



CHANNEL: HEDXG2 FILTER: CH. CLASS 1000

PEAK DATA: 17.25 G @ 158.24 MS; -46.58 G @ 113.68 MS

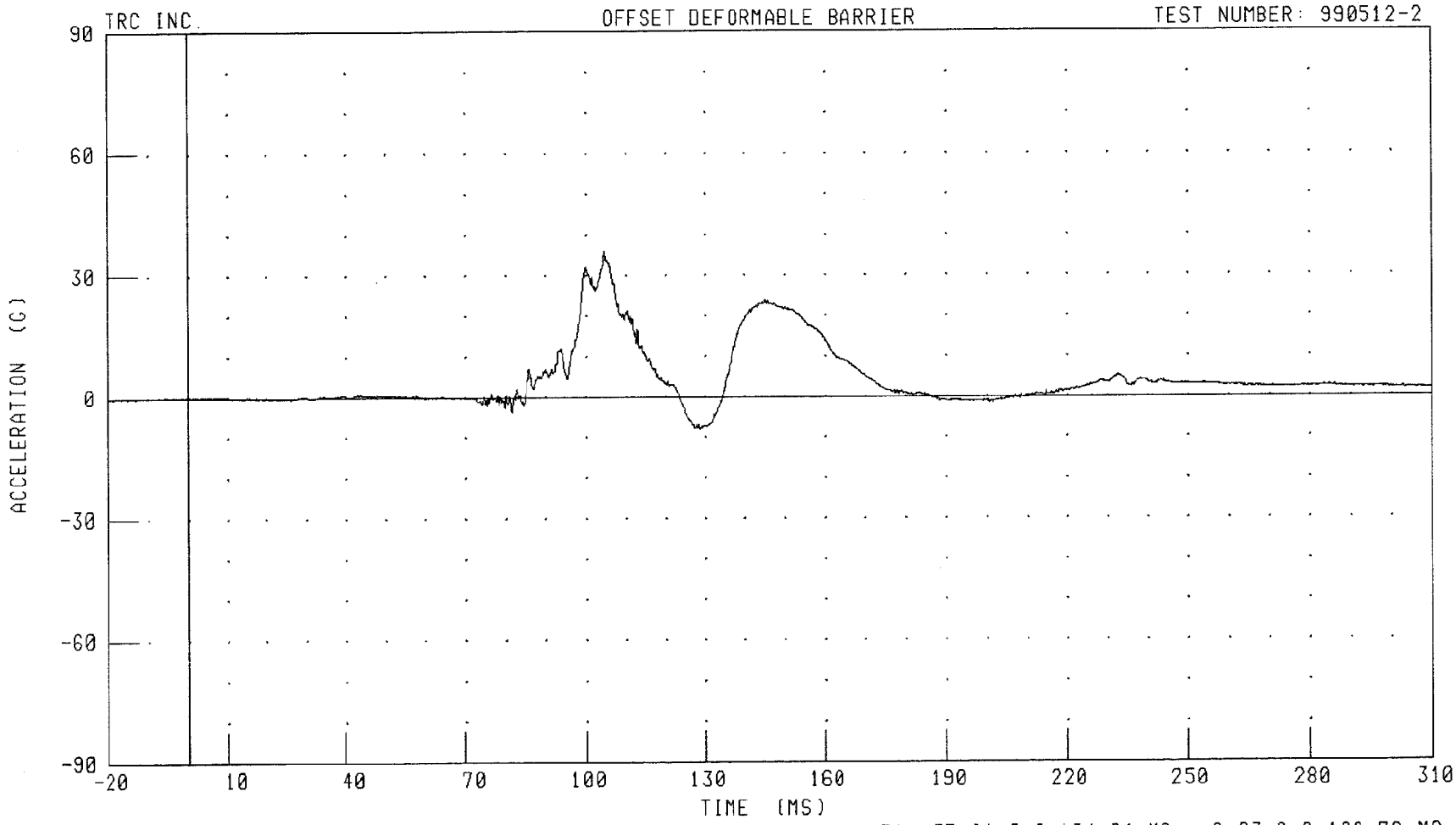
1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER HEAD Y-AXIS ACCELERATION



CHANNEL: HEDYG2 FILTER: CH. CLASS 1000

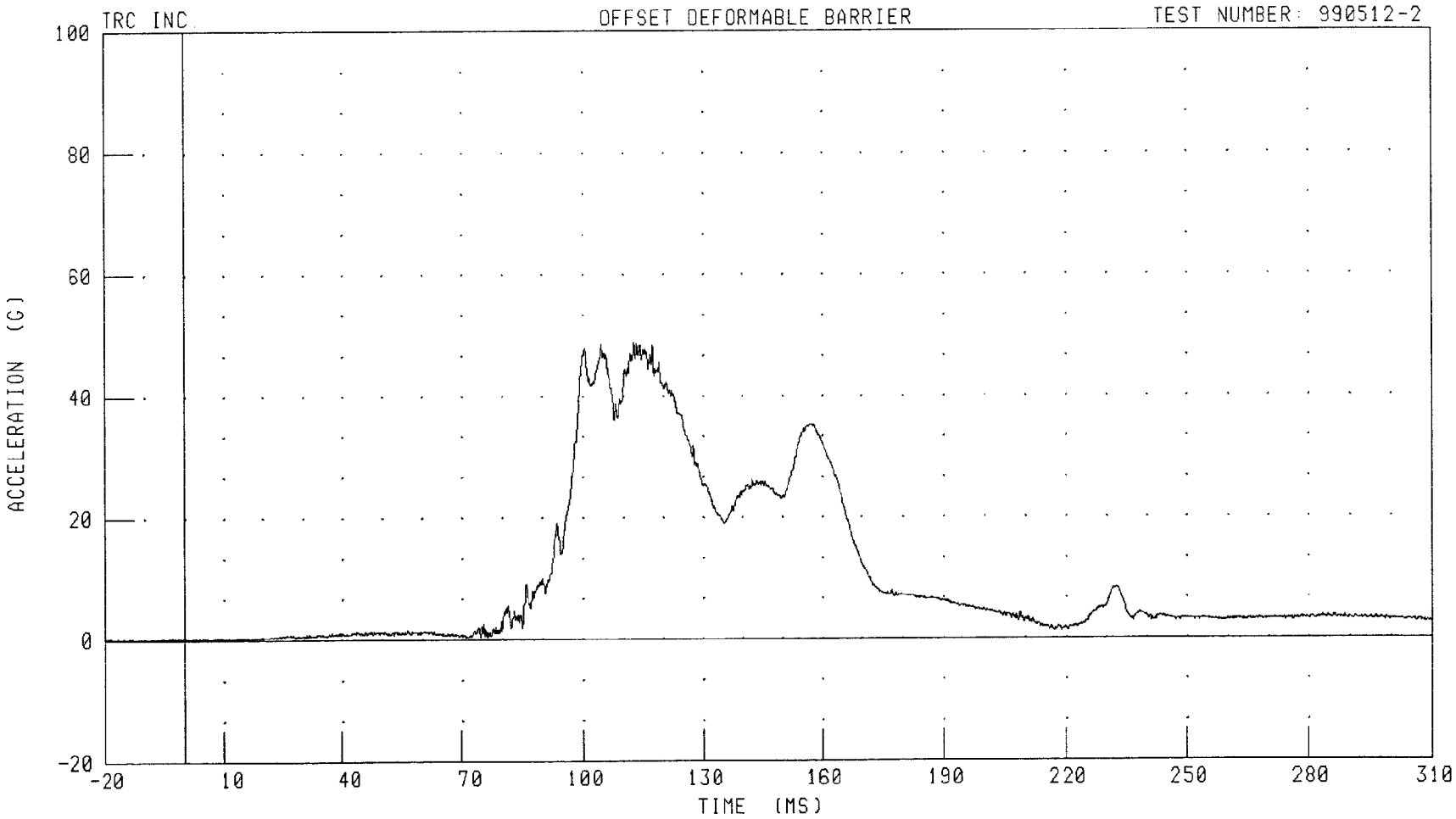
PEAK DATA: 25.86 G @ 156.96 MS; -15.34 G @ 106.24 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER HEAD Z-AXIS ACCELERATION



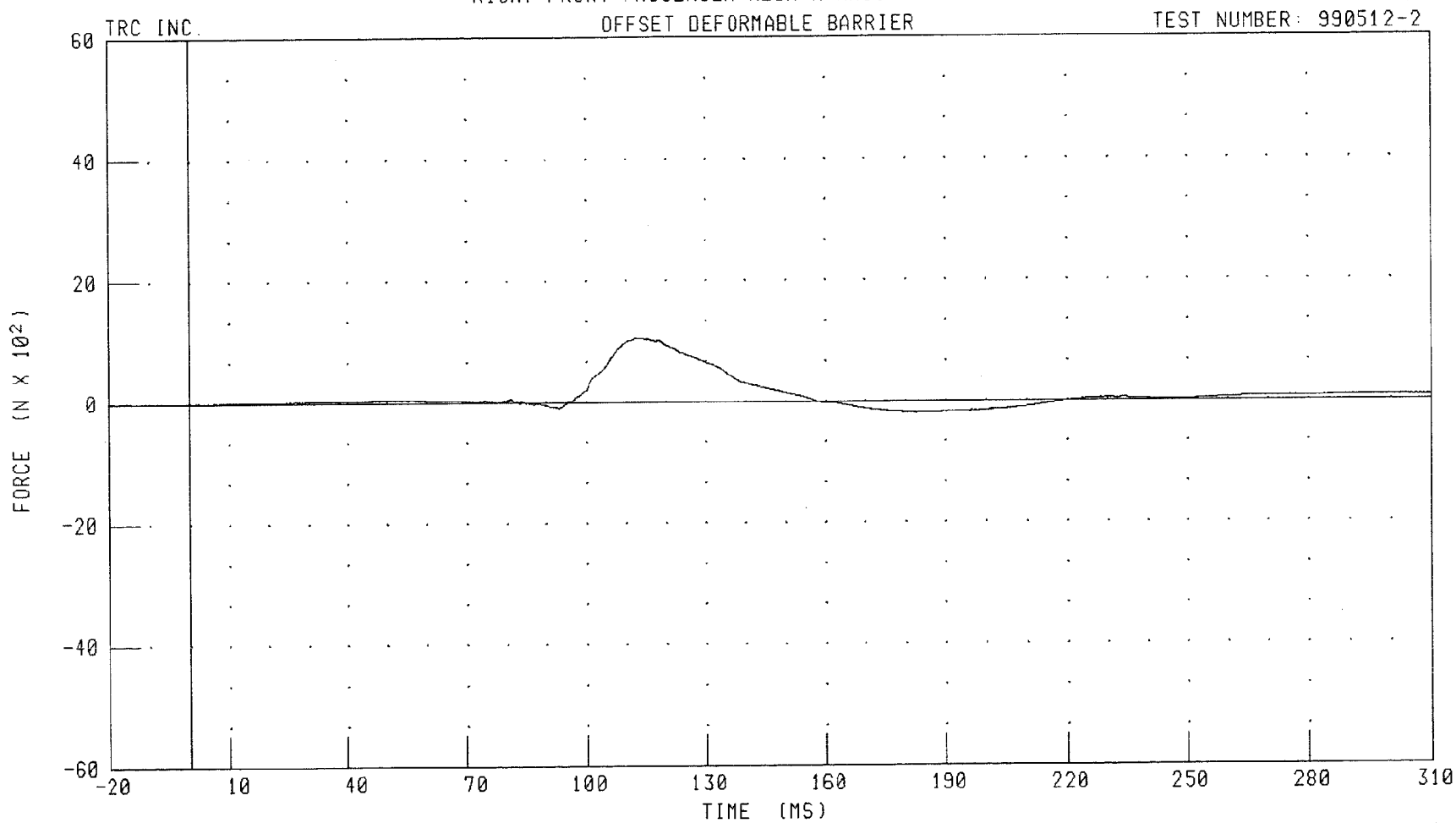
CHANNEL: HEDZG2 FILTER: CH. CLASS 1000 PEAK DATA: 35.91 G @ 104.64 MS; -8.03 G @ 128.72 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER HEAD RESULTANT ACCELERATION



CHANNEL: HEDRG2 FILTER: CH. CLASS 1000 PEAK DATA: 48.91 G @ 112.88 MS; 0.06 G @ -20.00 MS

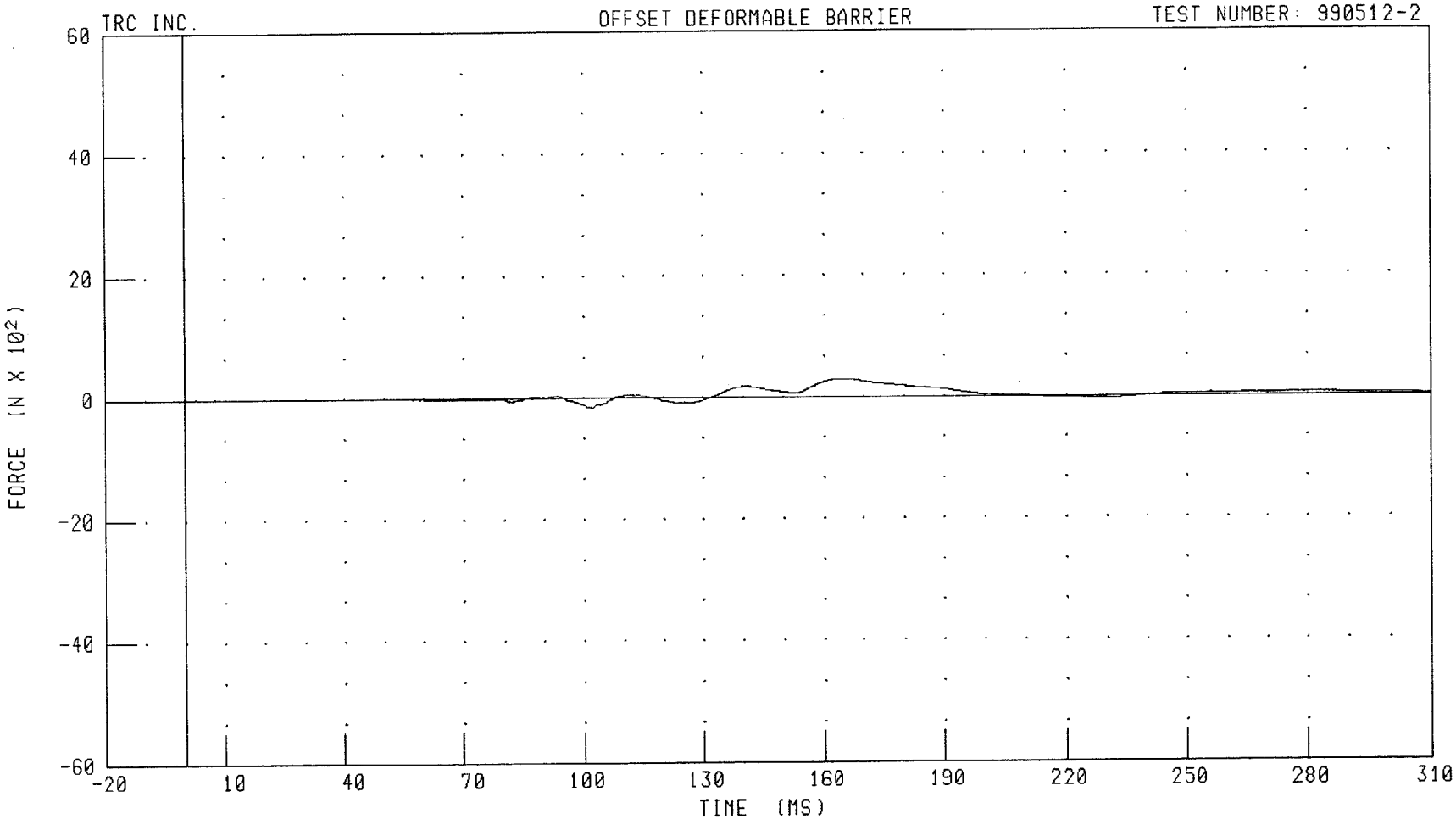
1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER NECK X-AXIS SHEAR FORCE



CHANNEL: NEKXF2 FILTER: CH. CLASS 1000

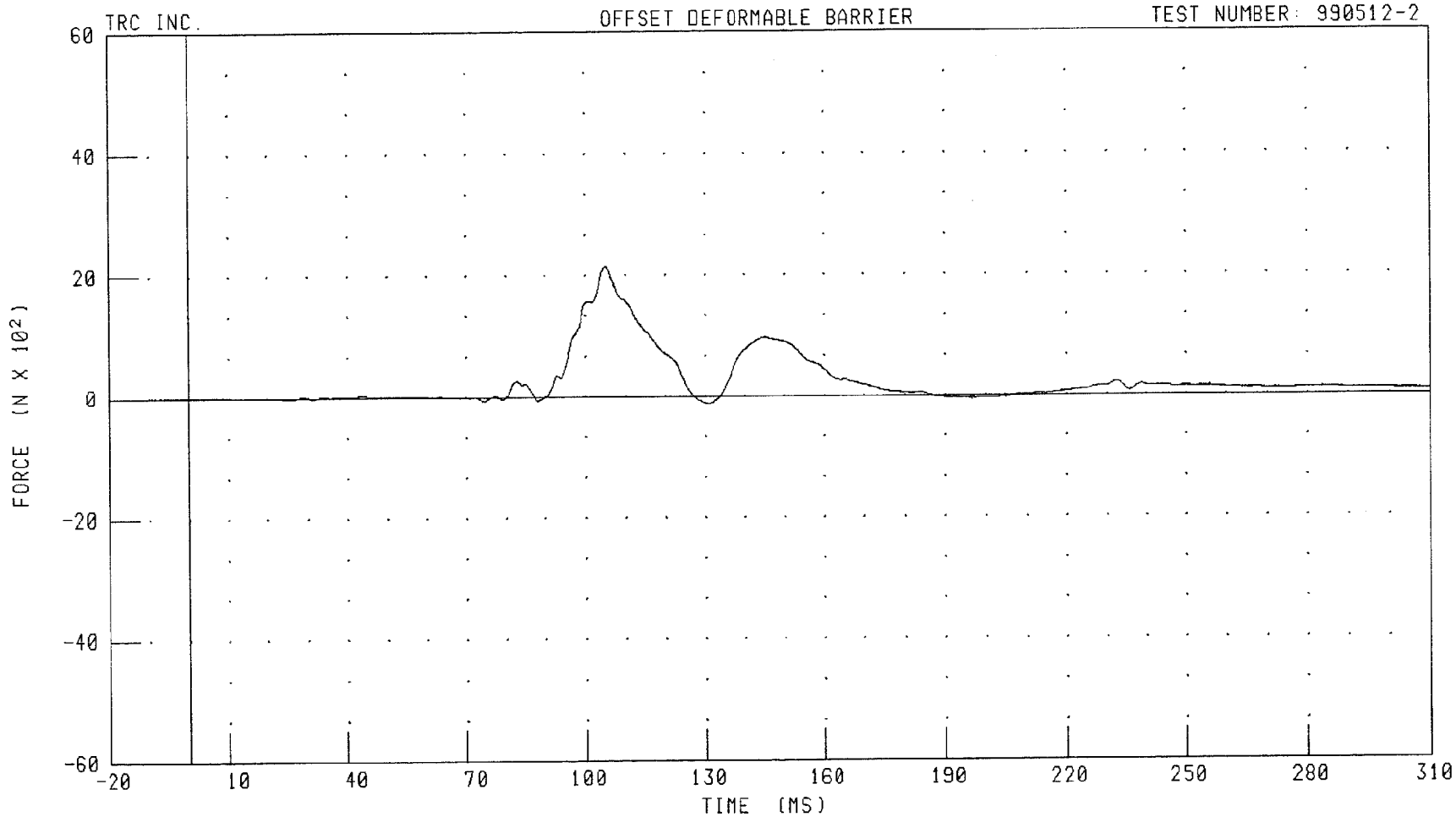
PEAK DATA: 1051.84 N @ 112.64 MS; -202.76 N @ 182.56 MS

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



CHANNEL: NEKYF2 FILTER: CH. CLASS 1000 PEAK DATA: 283.24 N @ 163.76 MS; -168.87 N @ 101.92 MS

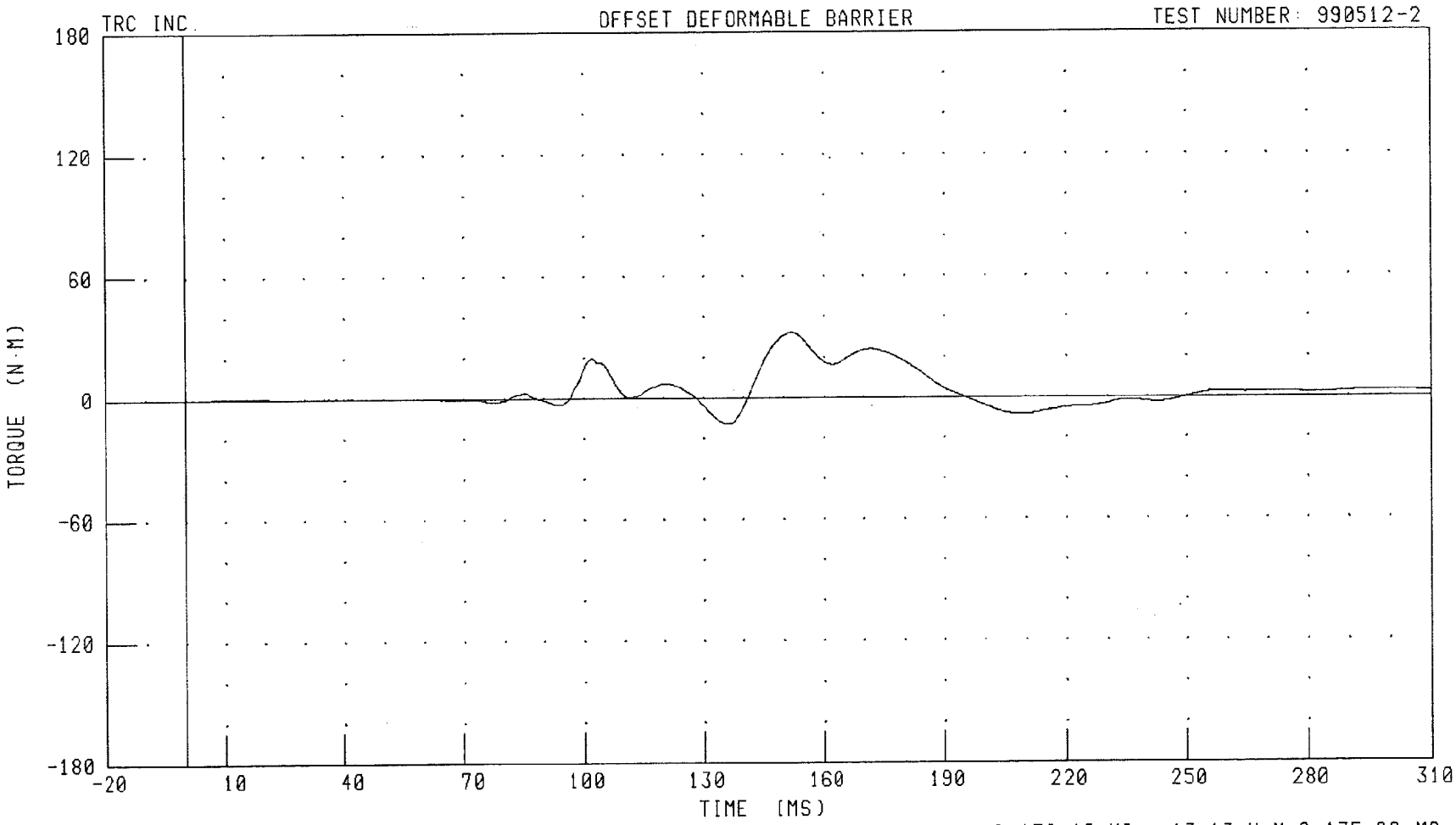
1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER NECK Z-AXIS AXIAL FORCE



CHANNEL: NEKZF2 FILTER: CH. CLASS 1000

PEAK DATA: 2141.14 N @ 105.12 MS, -126.88 N @ 130.56 MS

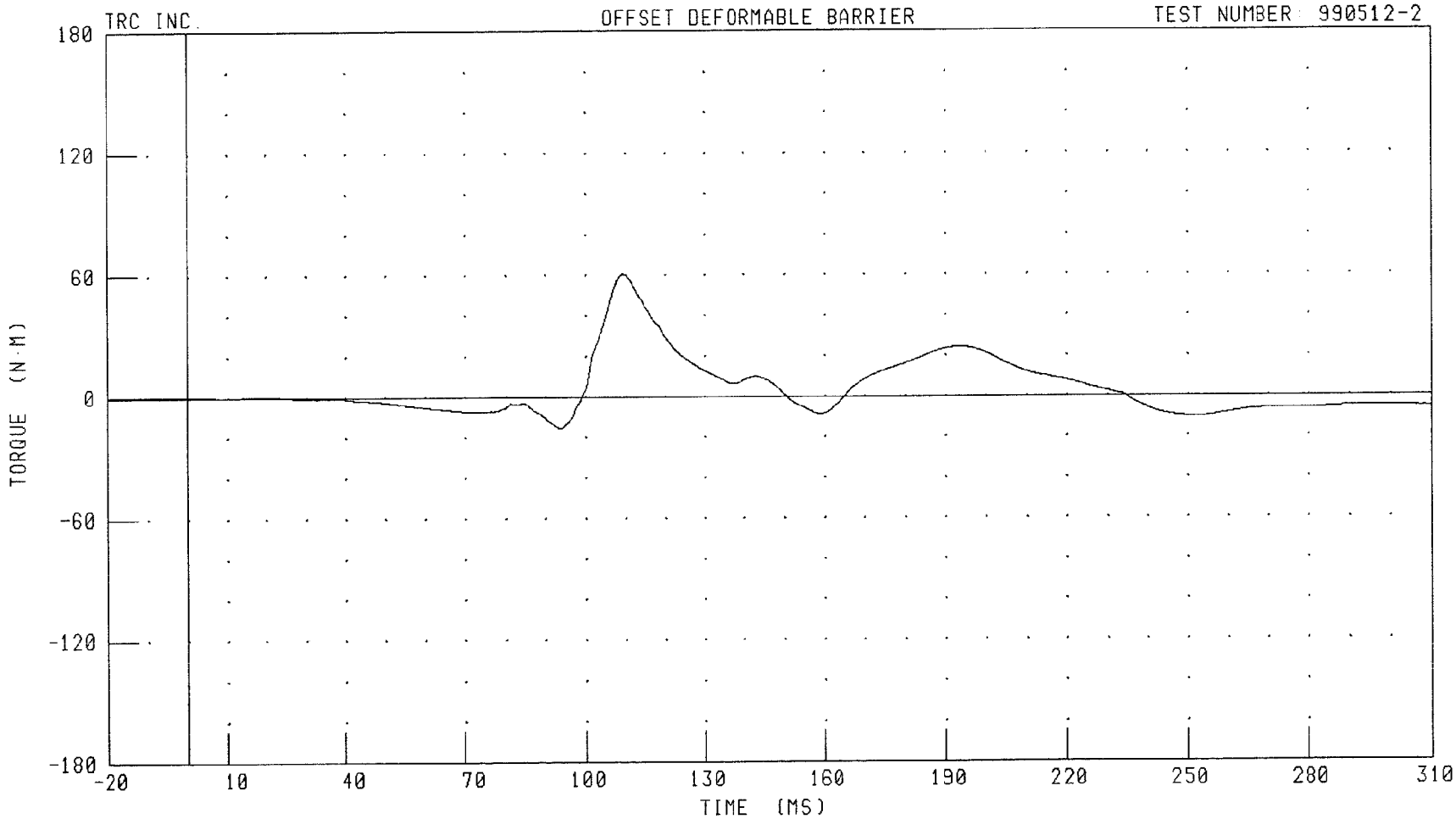
1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER NECK MOMENT ABOUT X AXIS



CHANNEL: NEKXM2 FILTER: CH. CLASS 600

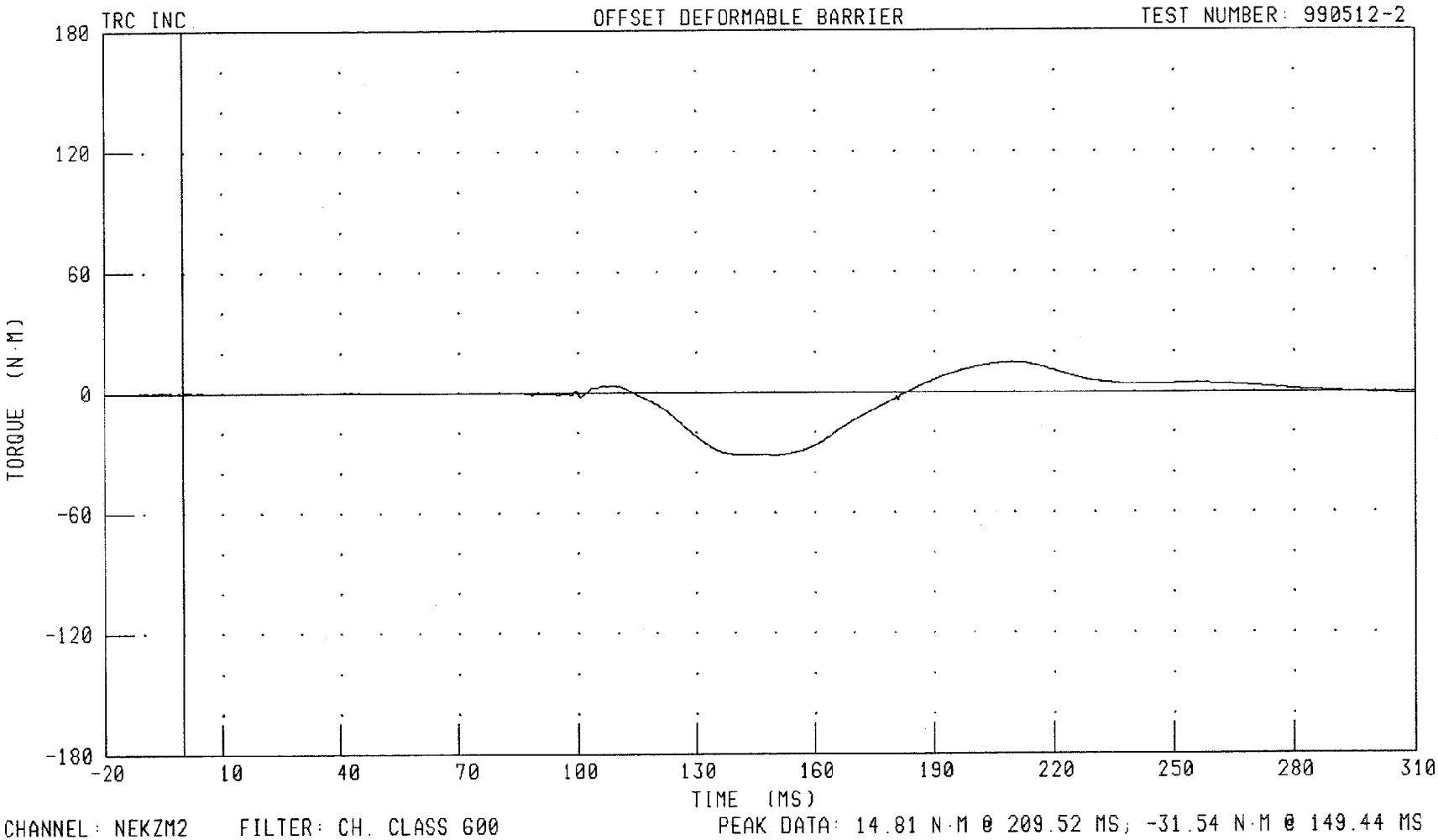
PEAK DATA: 32.10 N-M @ 152.16 MS; -13.13 N-M @ 135.92 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER NECK MOMENT ABOUT Y AXIS



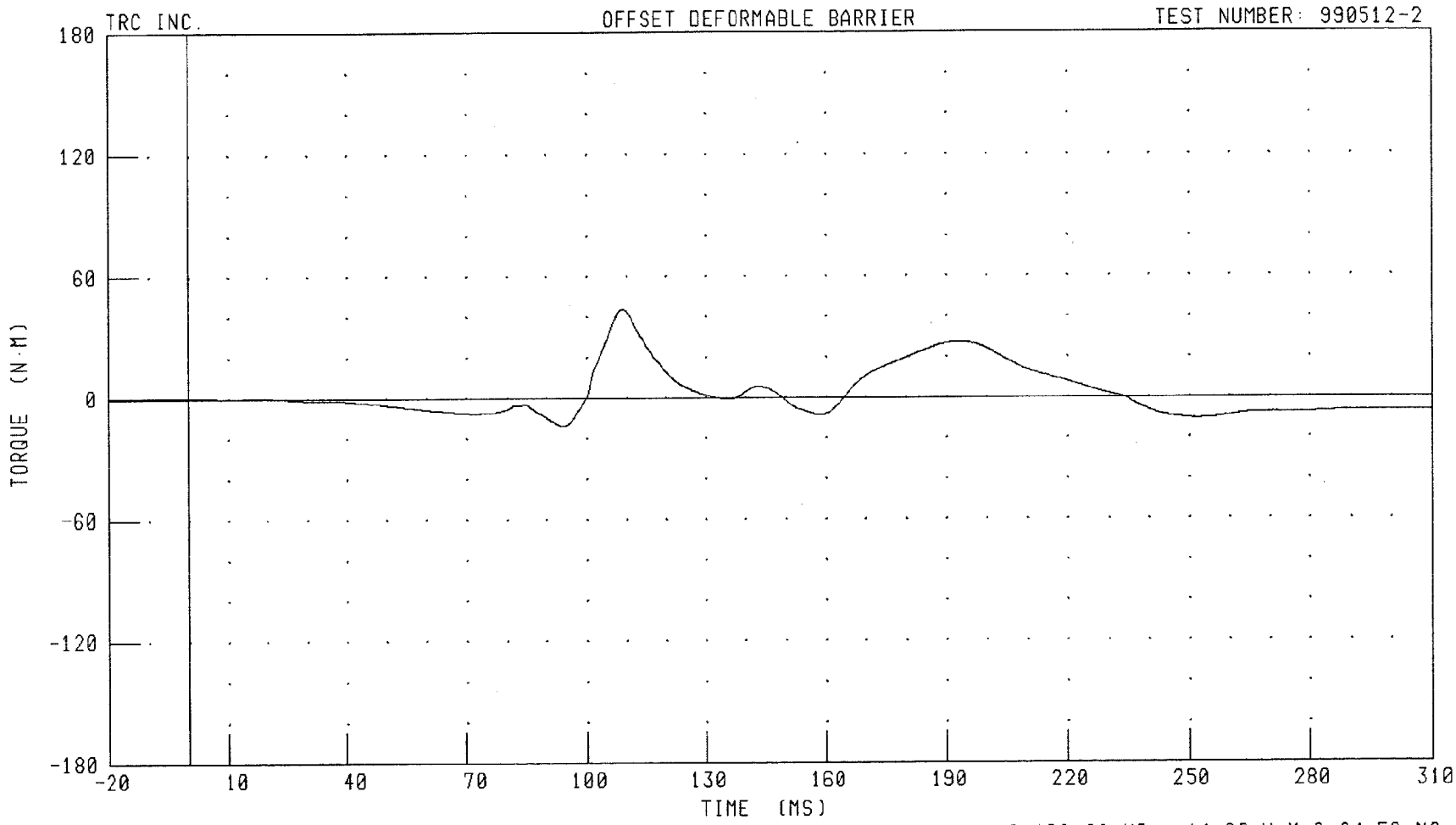
CHANNEL: NEKYM2 FILTER: CH. CLASS 600 PEAK DATA: 60.70 N-M @ 109.28 MS, -15.31 N-M @ 93.68 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER NECK MOMENT ABOUT Z AXIS



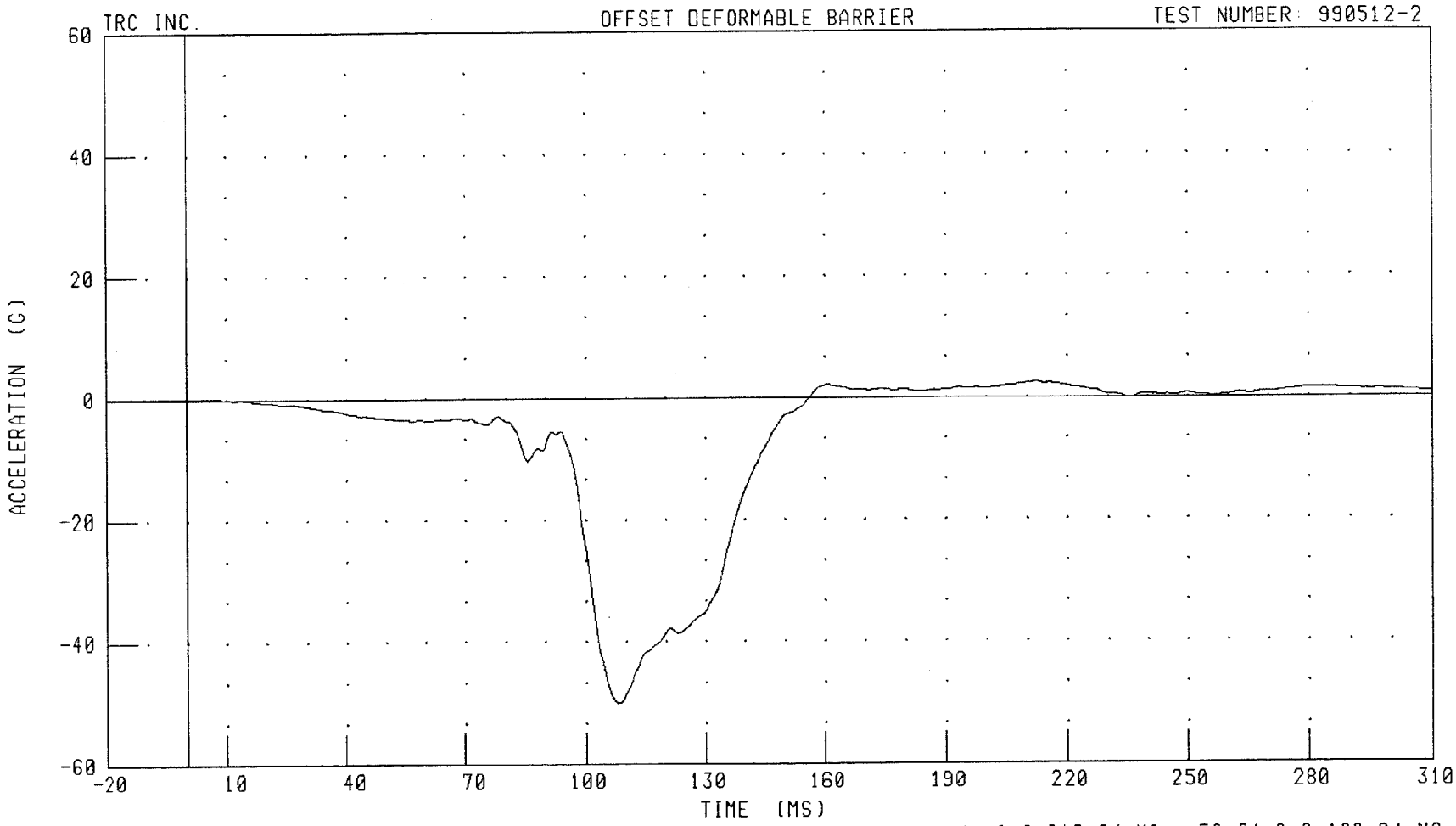
CHANNEL: NEKZM2 FILTER: CH. CLASS 600 PEAK DATA: 14.81 N·M @ 209.52 MS; -31.54 N·M @ 149.44 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER NECK OCCIPITAL CONDYLE



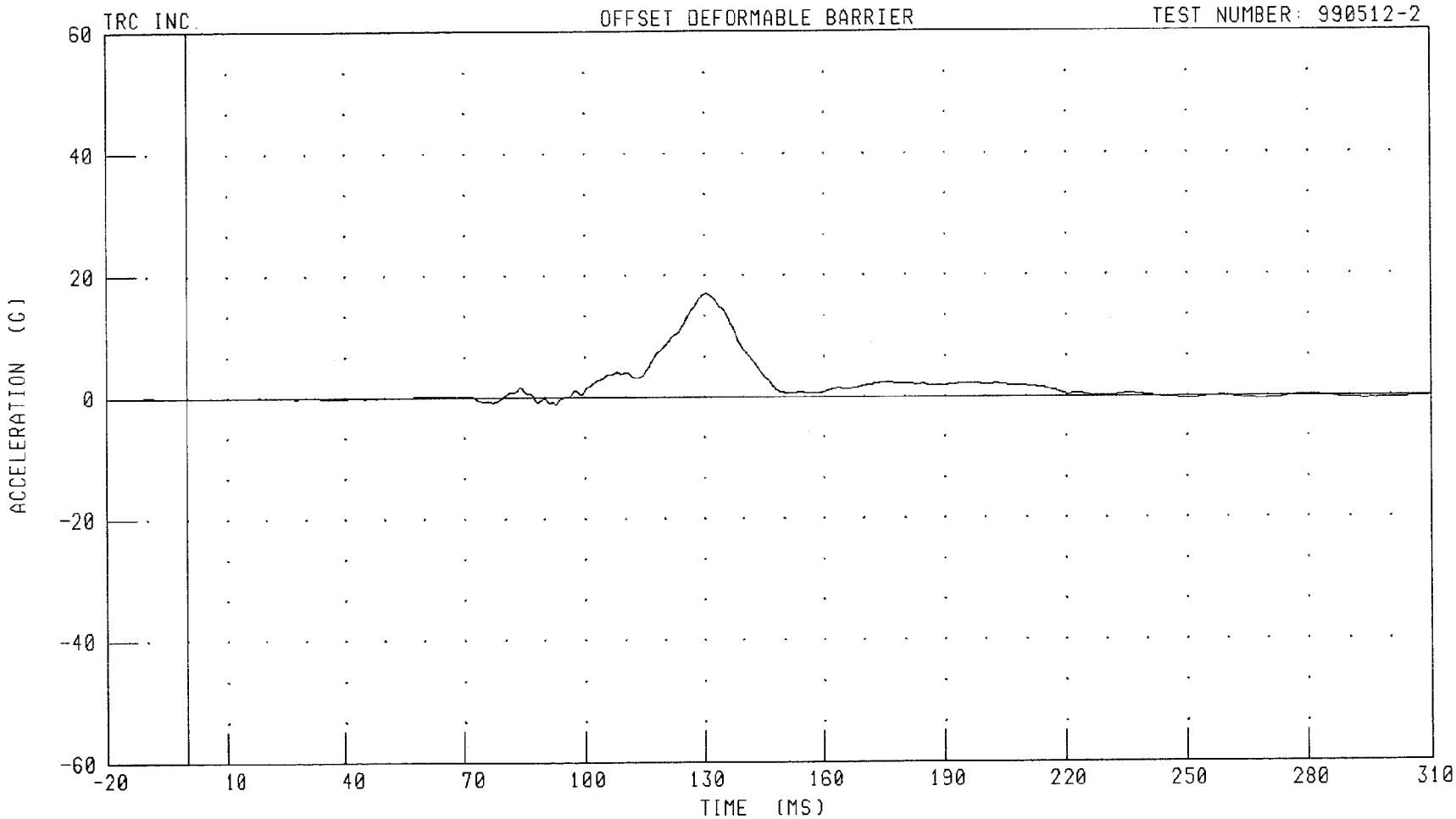
CHANNEL: NEKOM2 FILTER: CH. CLASS 600 PEAK DATA: 43.77 N-M @ 109.28 MS; -14.06 N-M @ 94.56 MS

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



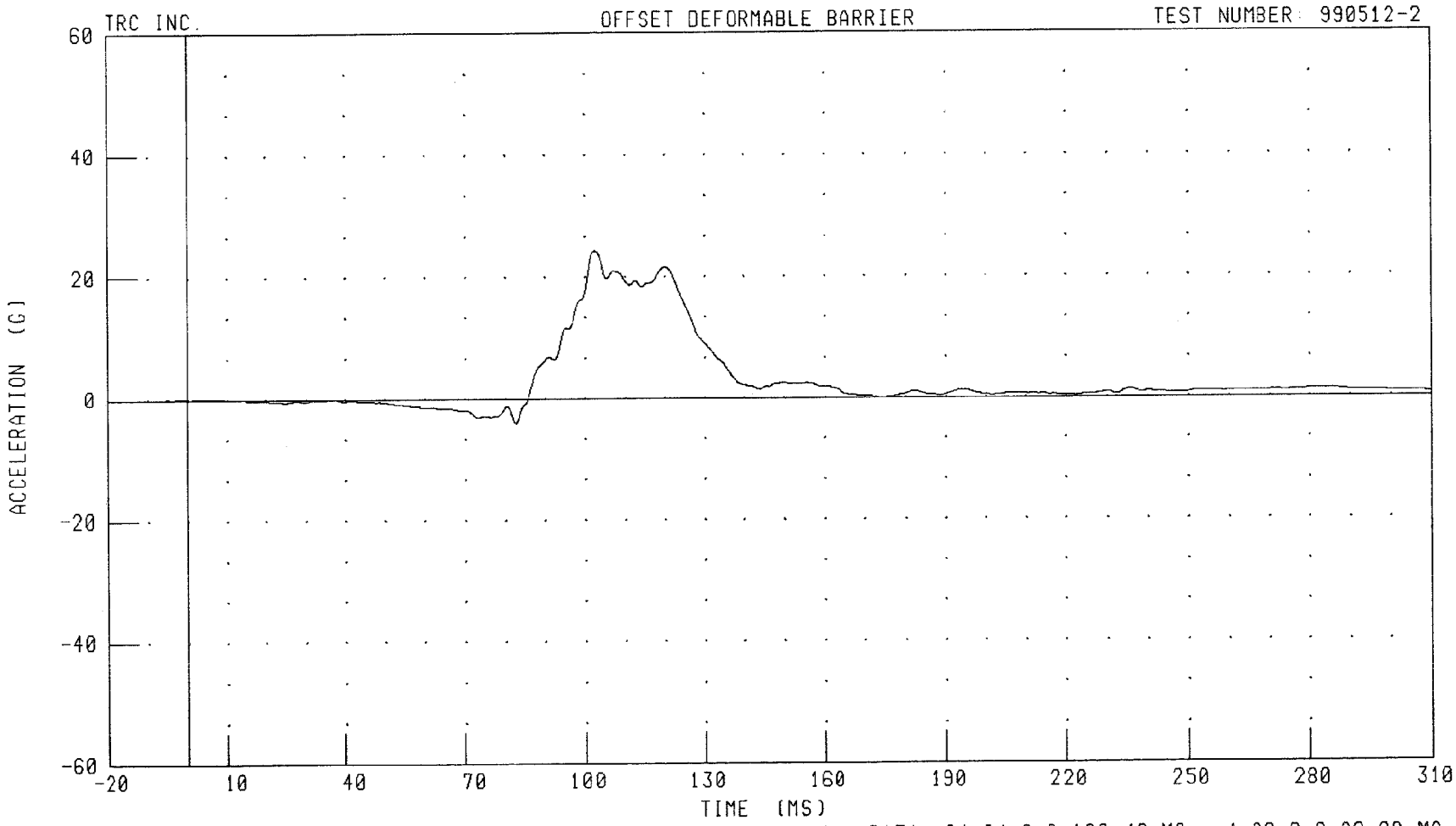
CHANNEL: CSTXG2 FILTER: CH. CLASS 180 PEAK DATA: 2.44 G @ 212.24 MS; -50.04 G @ 108.24 MS

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



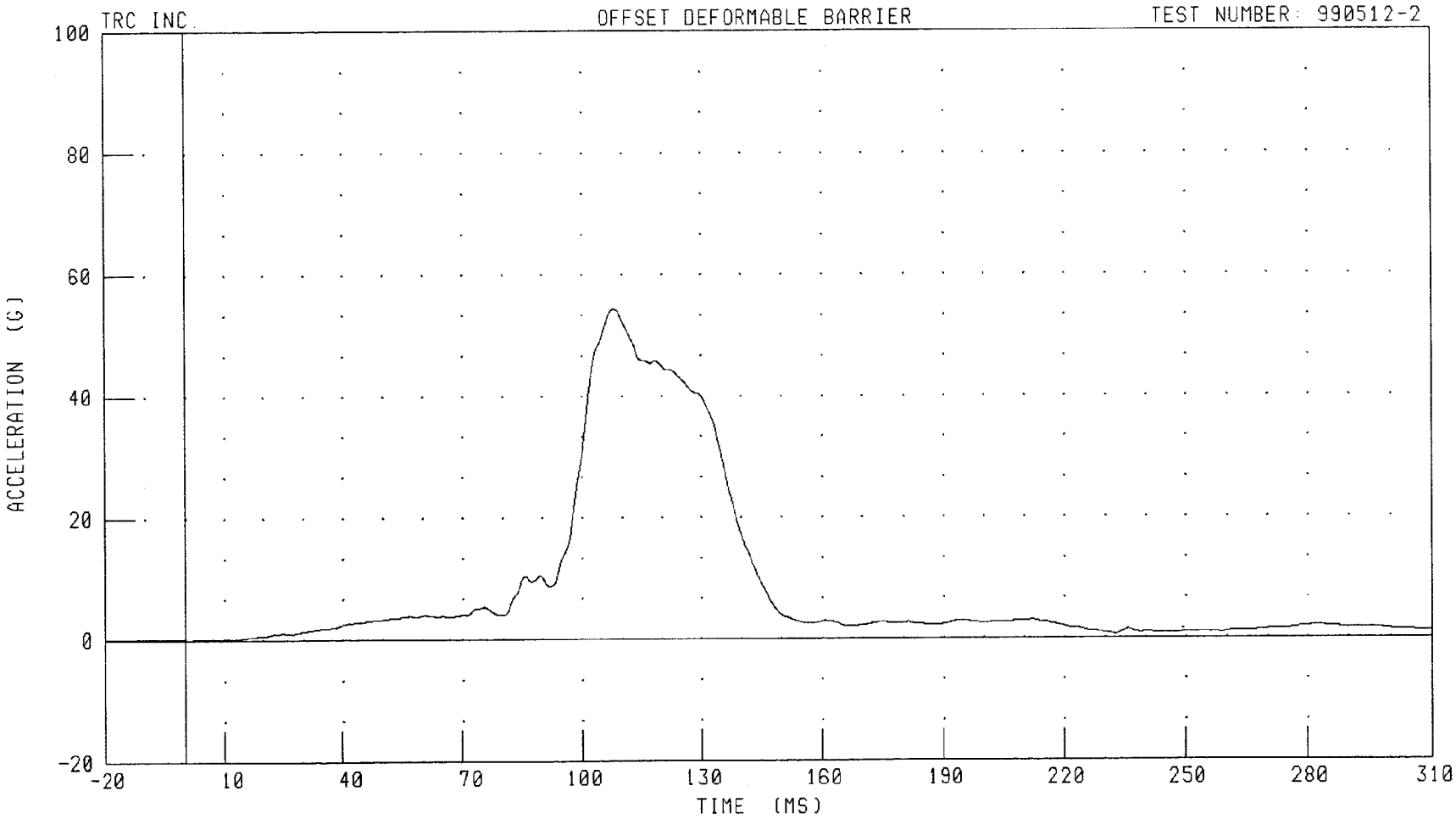
CHANNEL: CSTYG2 FILTER: CH. CLASS 180 PEAK DATA: 16.99 G @ 130.64 MS; -1.21 G @ 93.04 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER CHEST Z-AXIS ACCELERATION



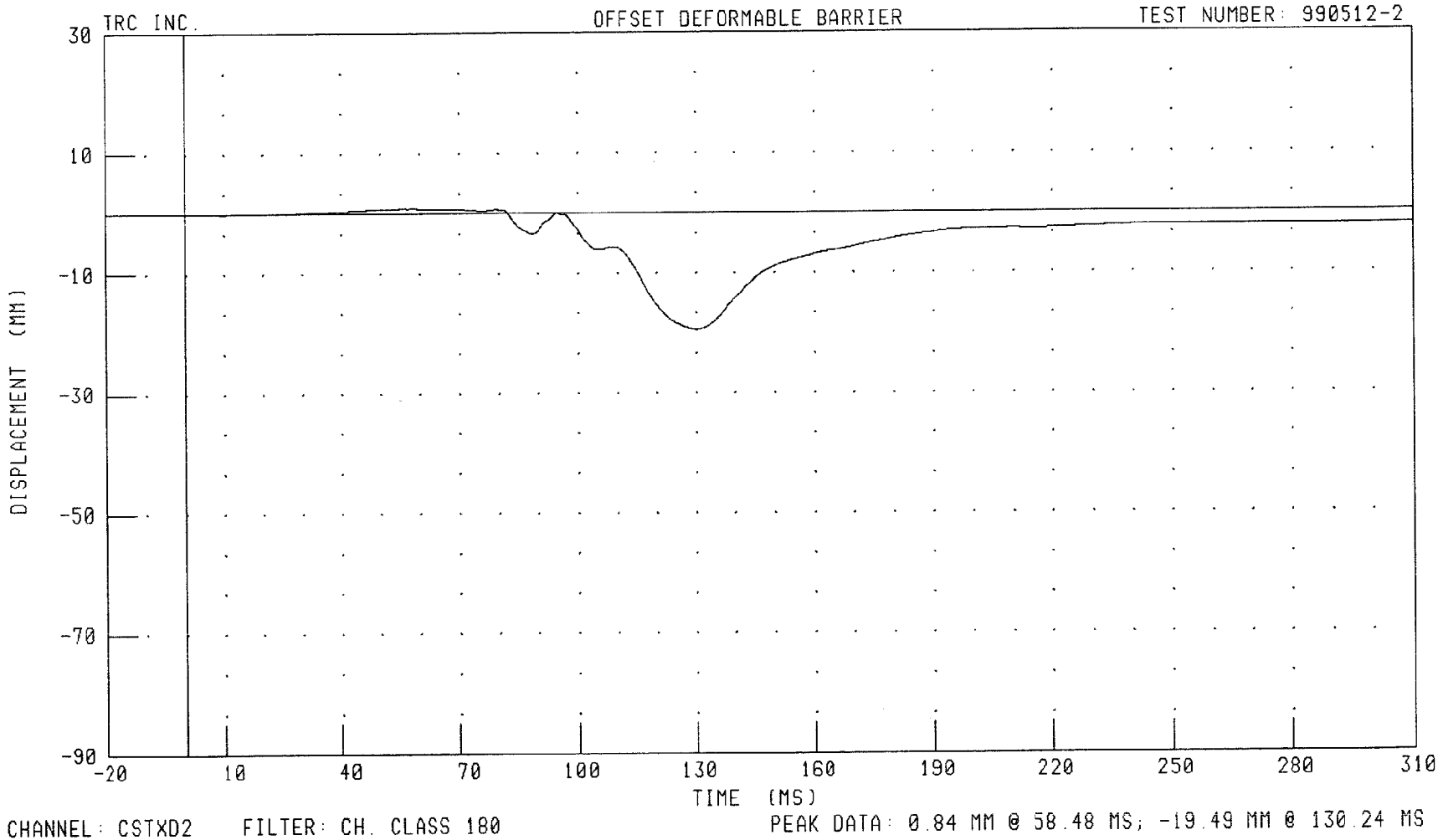
CHANNEL: CSTZG2 FILTER: CH. CLASS 180 PEAK DATA: 24.24 G @ 102.48 MS; -4.06 G @ 82.80 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER CHEST RESULTANT ACCELERATION



CHANNEL: CSTRG2 FILTER: CH. CLASS 180 PEAK DATA: 54.32 G @ 108.16 MS; 0.01 G @ -20.00 MS

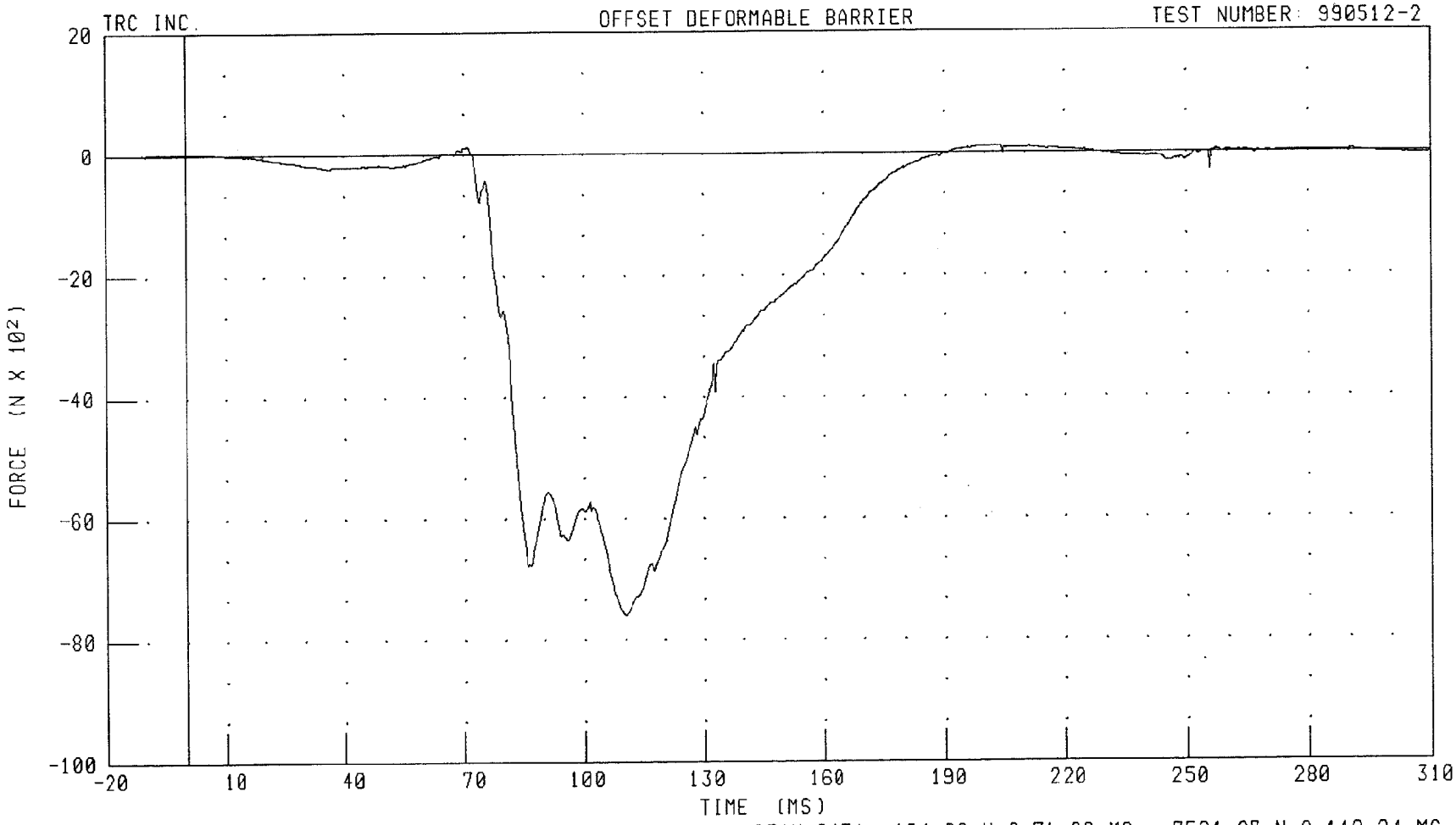
1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER CHEST DEFLECTION



CHANNEL: CSTXD2 FILTER: CH. CLASS 180

PEAK DATA: 0.84 MM @ 58.48 MS; -19.49 MM @ 130.24 MS

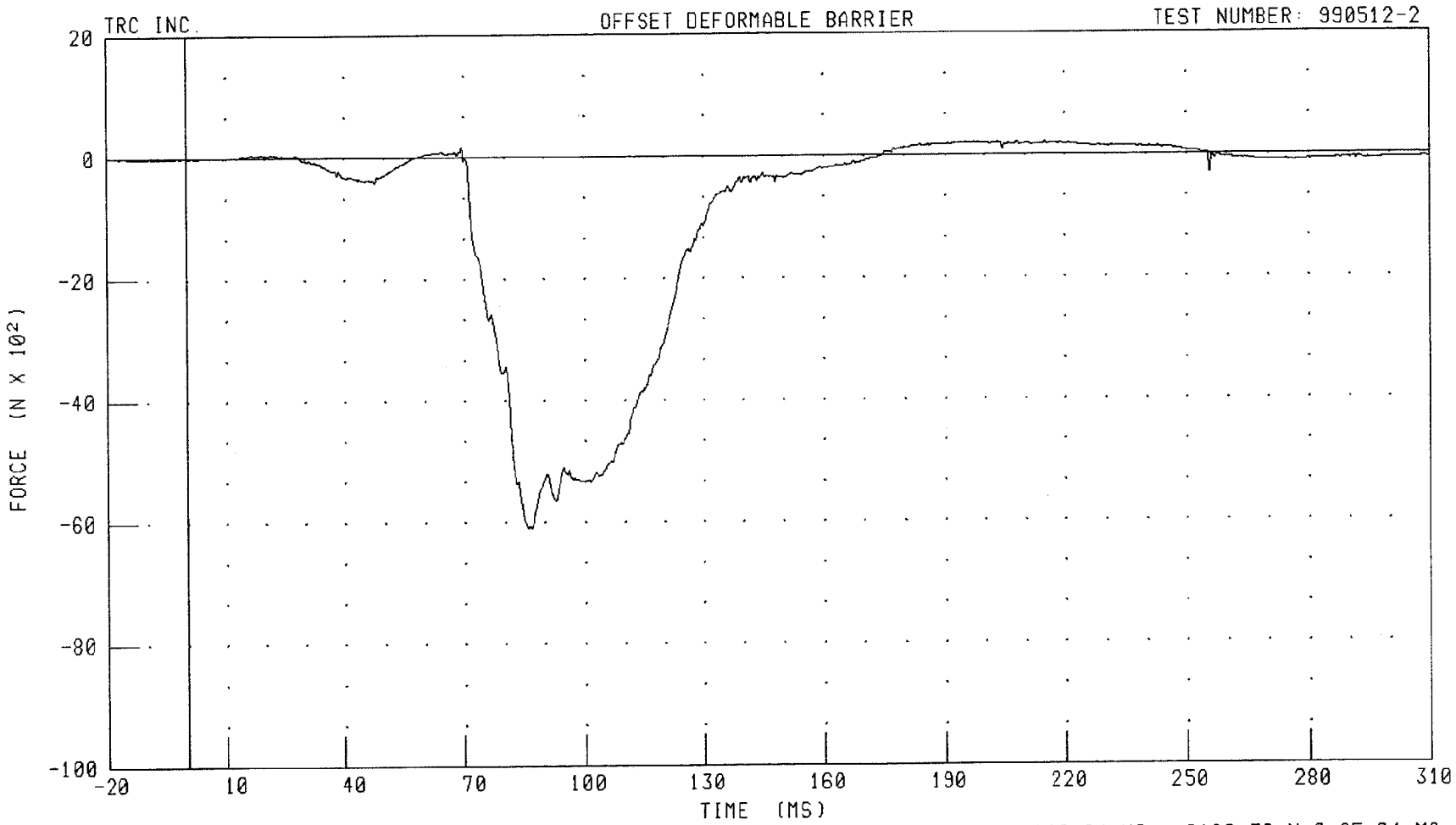
1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT FRONT PASSENGER LEFT FEMUR FORCE



CHANNEL: LFMF2 FILTER: CH. CLASS 600 PEAK DATA: 124.09 N @ 71.20 MS; -7591.87 N @ 110.24 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH

RIGHT FRONT PASSENGER RIGHT FEMUR FORCE

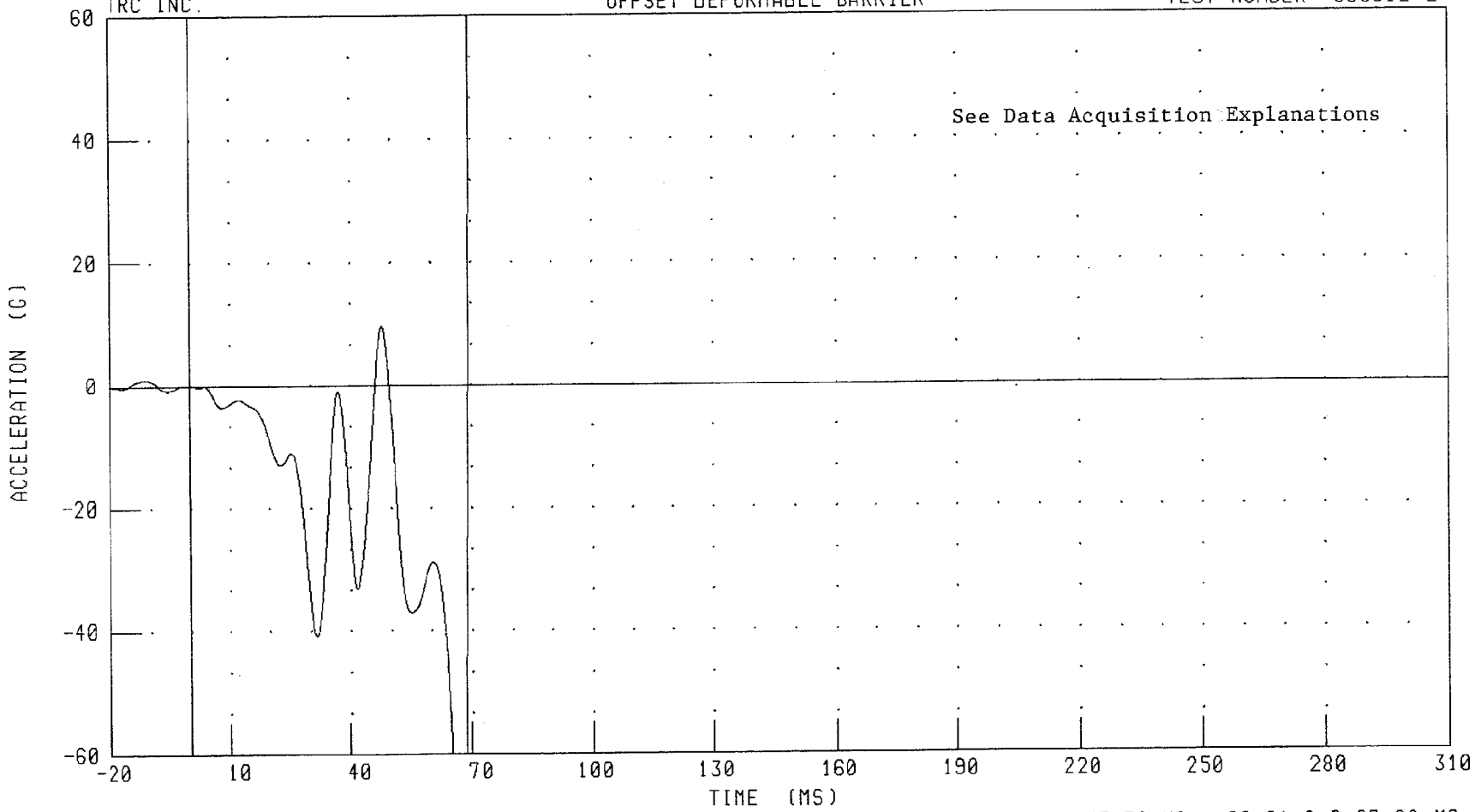


CHANNEL: RFMF2 FILTER: CH. CLASS 600 PEAK DATA: 217.30 N @ 208.24 MS; -6102.59 N @ 85.84 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH

LEFT BRAKE CALIPER X-AXIS ACCELERATION

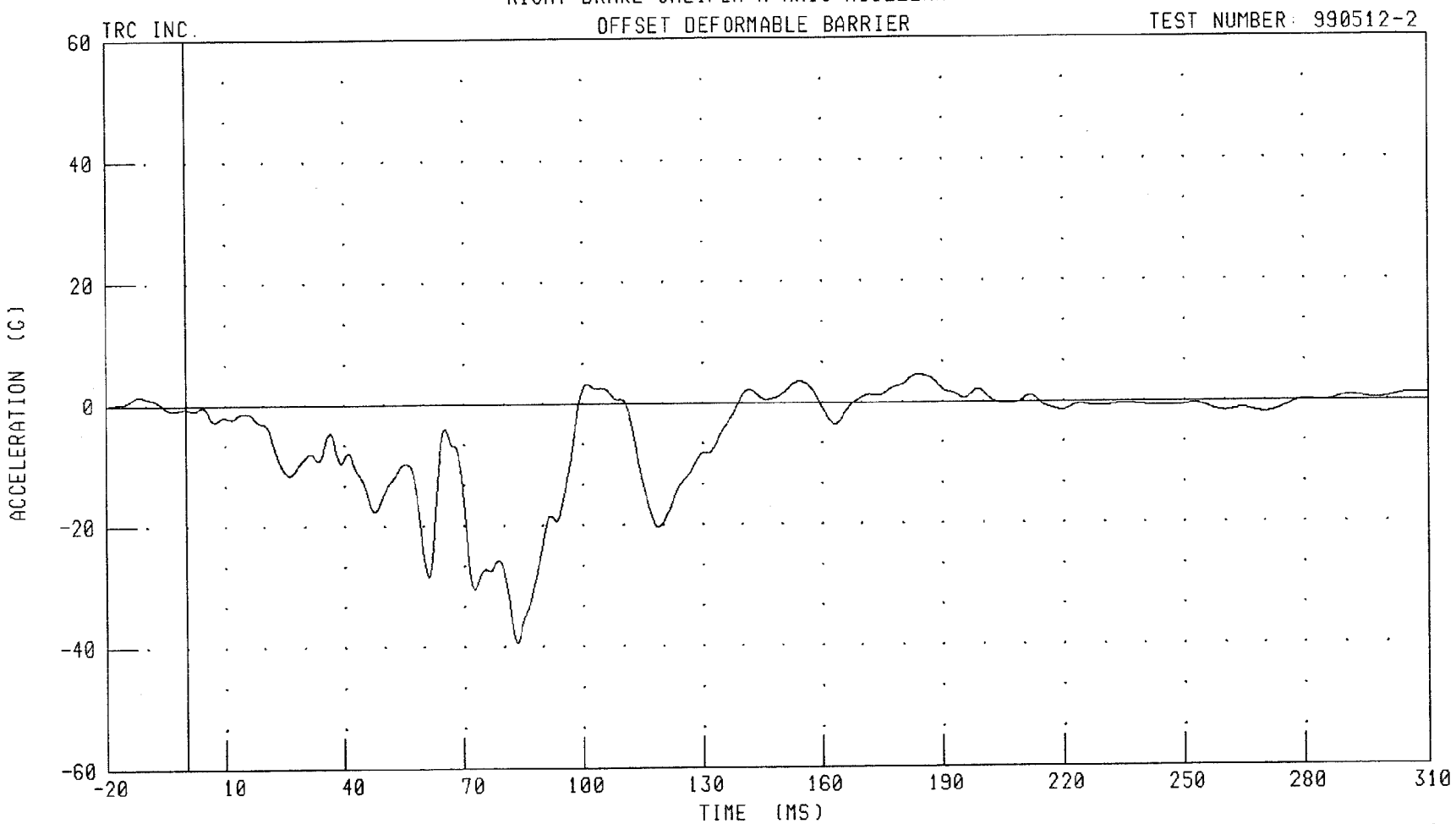
TRC INC. OFFSET DEFORMABLE BARRIER TEST NUMBER: 990512-2



CHANNEL: BCLXG1 FILTER: CH. CLASS 60

PEAK DATA: 1032.30 G @ 75.76 MS; -88.01 G @ 67.28 MS

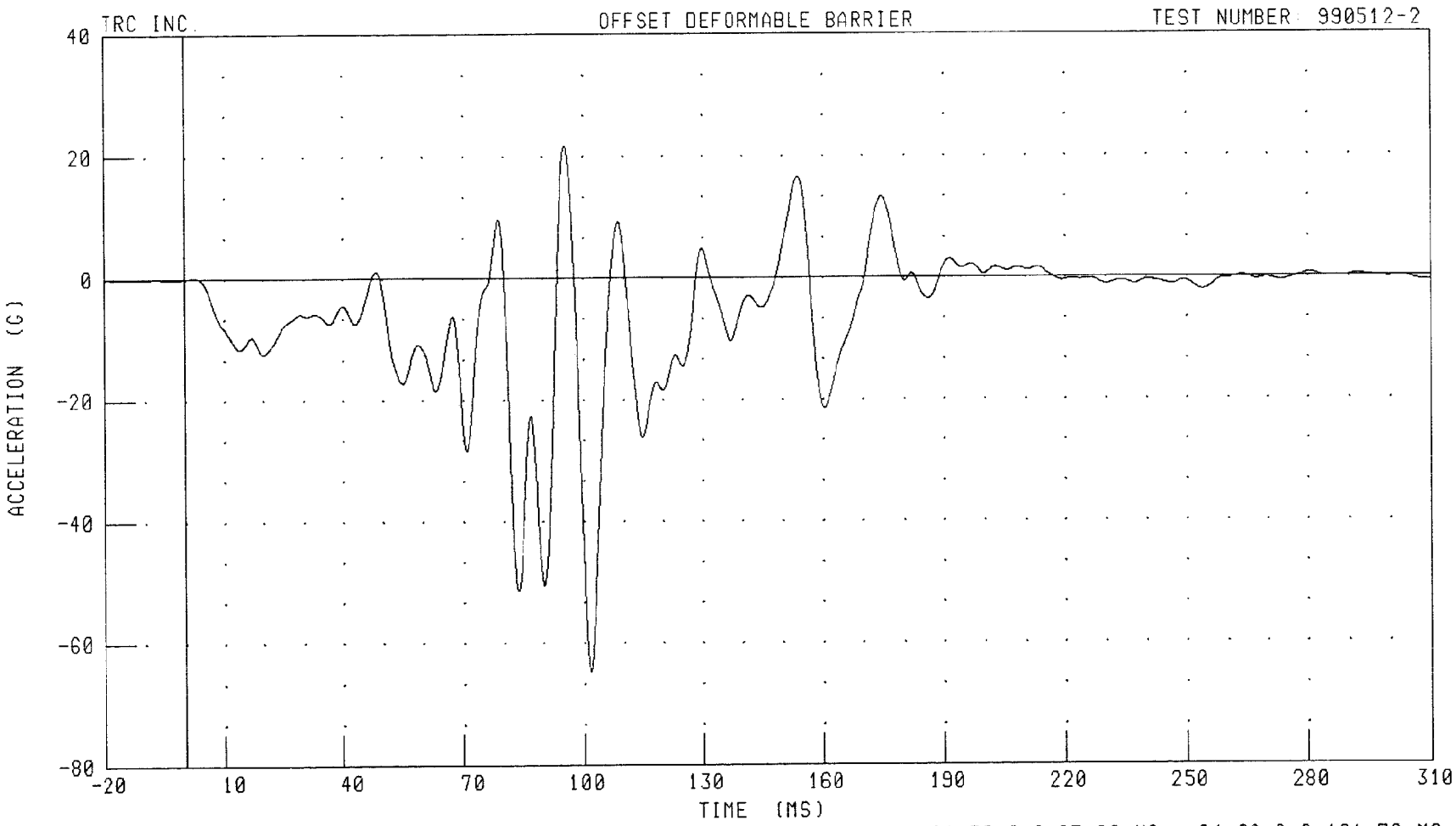
1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
RIGHT BRAKE CALIPER X-AXIS ACCELERATION



CHANNEL: BCRXG1 FILTER: CH. CLASS 60 PEAK DATA: 4.53 G @ 184.00 MS, -39.34 G @ 83.44 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH

DASH PANEL CENTER X-AXIS ACCELERATION

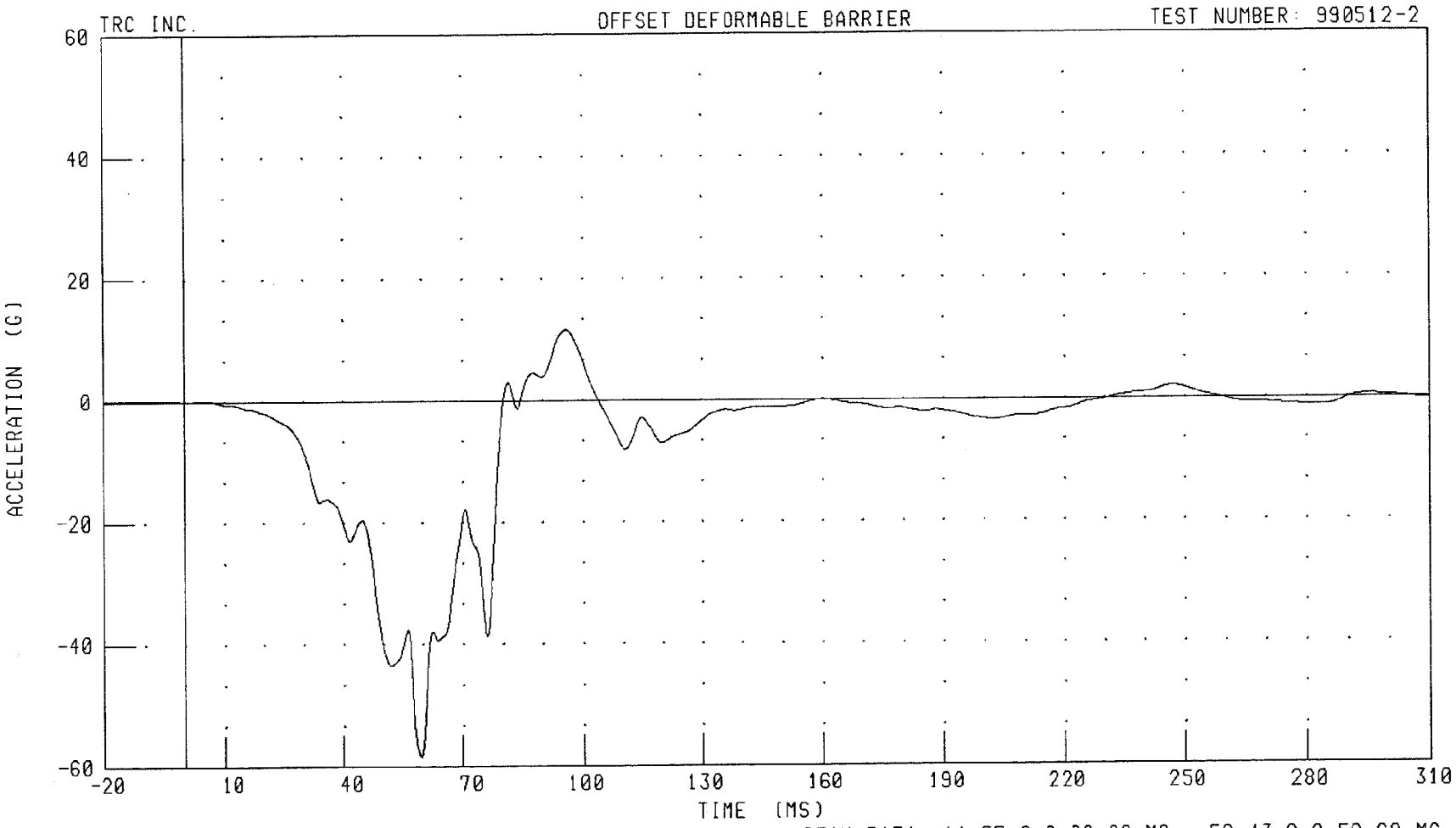


CHANNEL: DPCXG1 FILTER: CH. CLASS 60

PEAK DATA: 21.76 G @ 95.68 MS; -64.86 G @ 101.76 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH

ENGINE TOP X-AXIS ACCELERATION



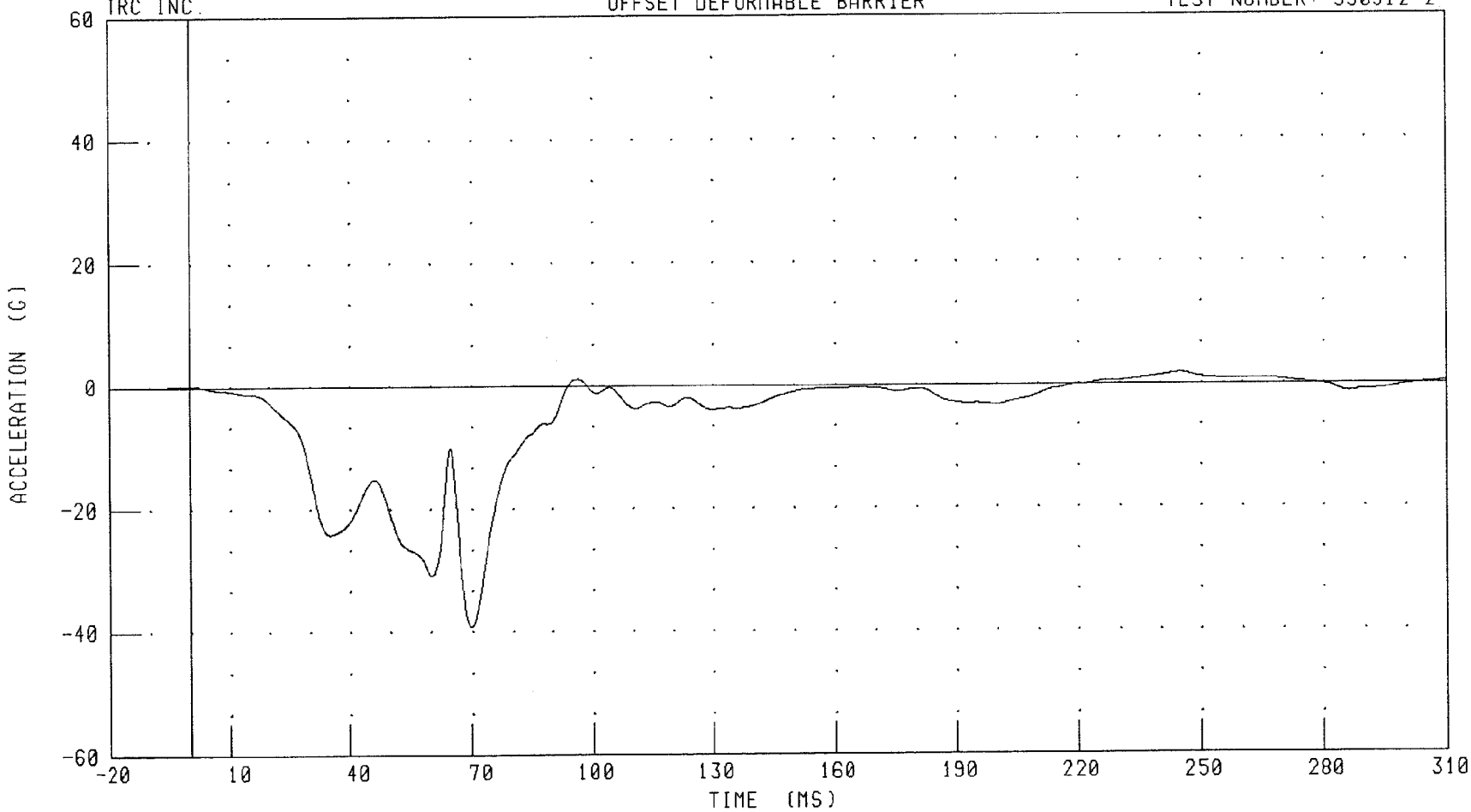
CHANNEL: ENGXG1 FILTER: CH. CLASS 60

PEAK DATA: 11.57 G @ 96.00 MS; -58.43 G @ 59.60 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH

ENGINE BOTTOM X-AXIS ACCELERATION

TRC INC. OFFSET DEFORMABLE BARRIER TEST NUMBER: 990512-2

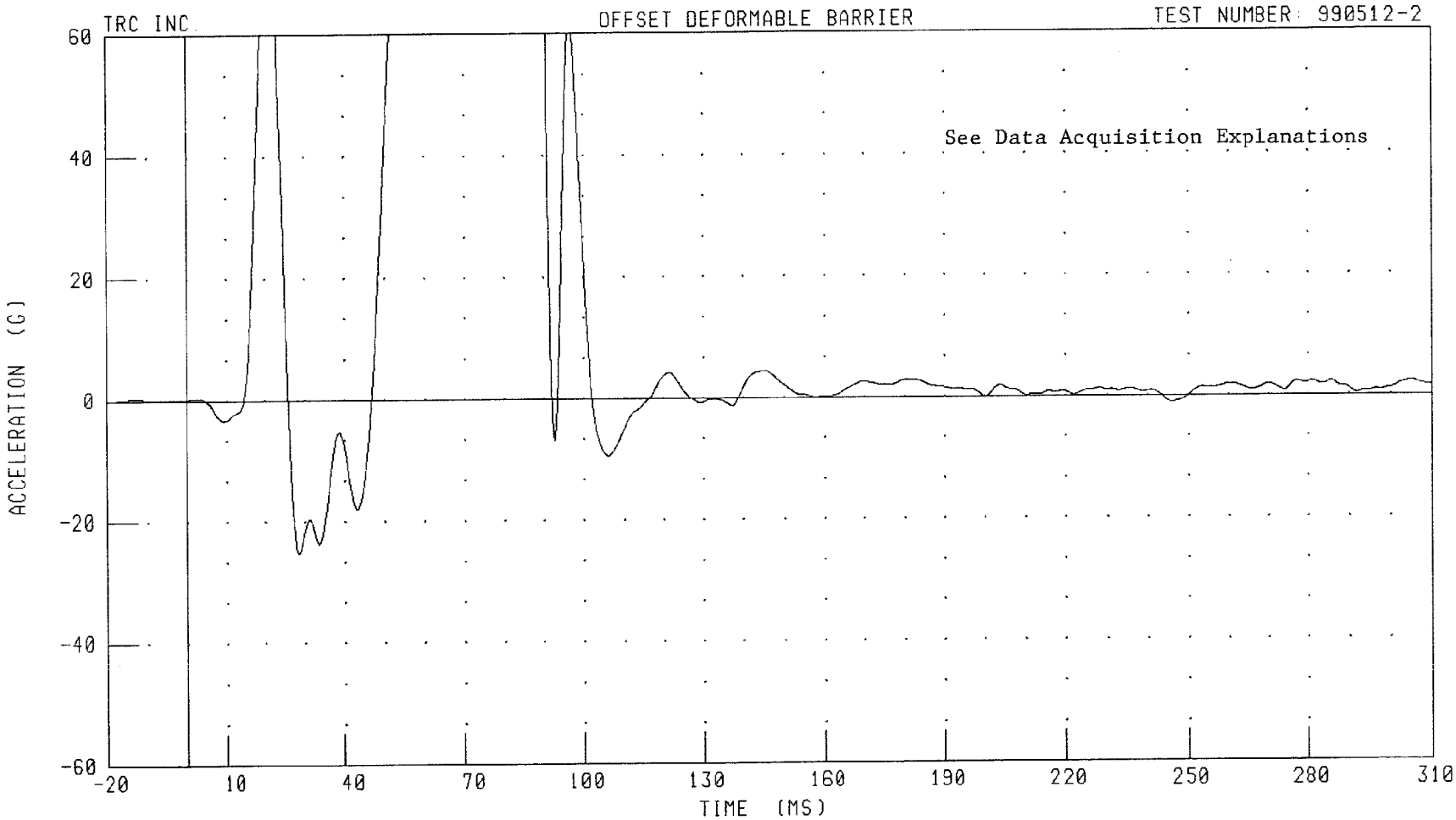


CHANNEL: ENGXG2 FILTER: CH. CLASS 60

PEAK DATA: 1.73 G @ 245.12 MS; -39.23 G @ 69.92 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH

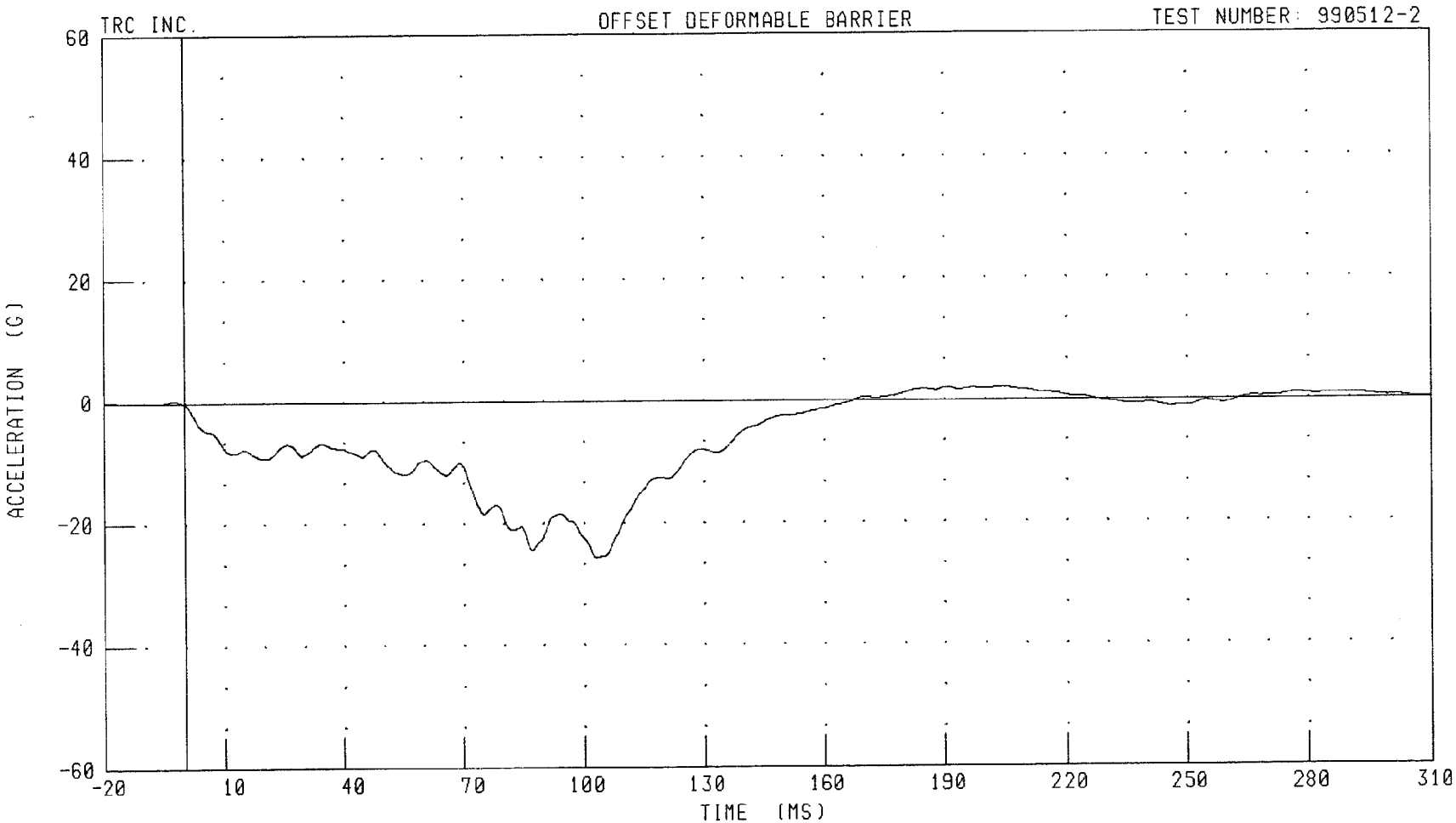
VEHICLE REAR CENTER Z-AXIS ACCELERATION



CHANNEL: RDKZG1 FILTER: CH CLASS 60

PEAK DATA: 416.08 G @ 85.36 MS; -25.29 G @ 28.64 MS

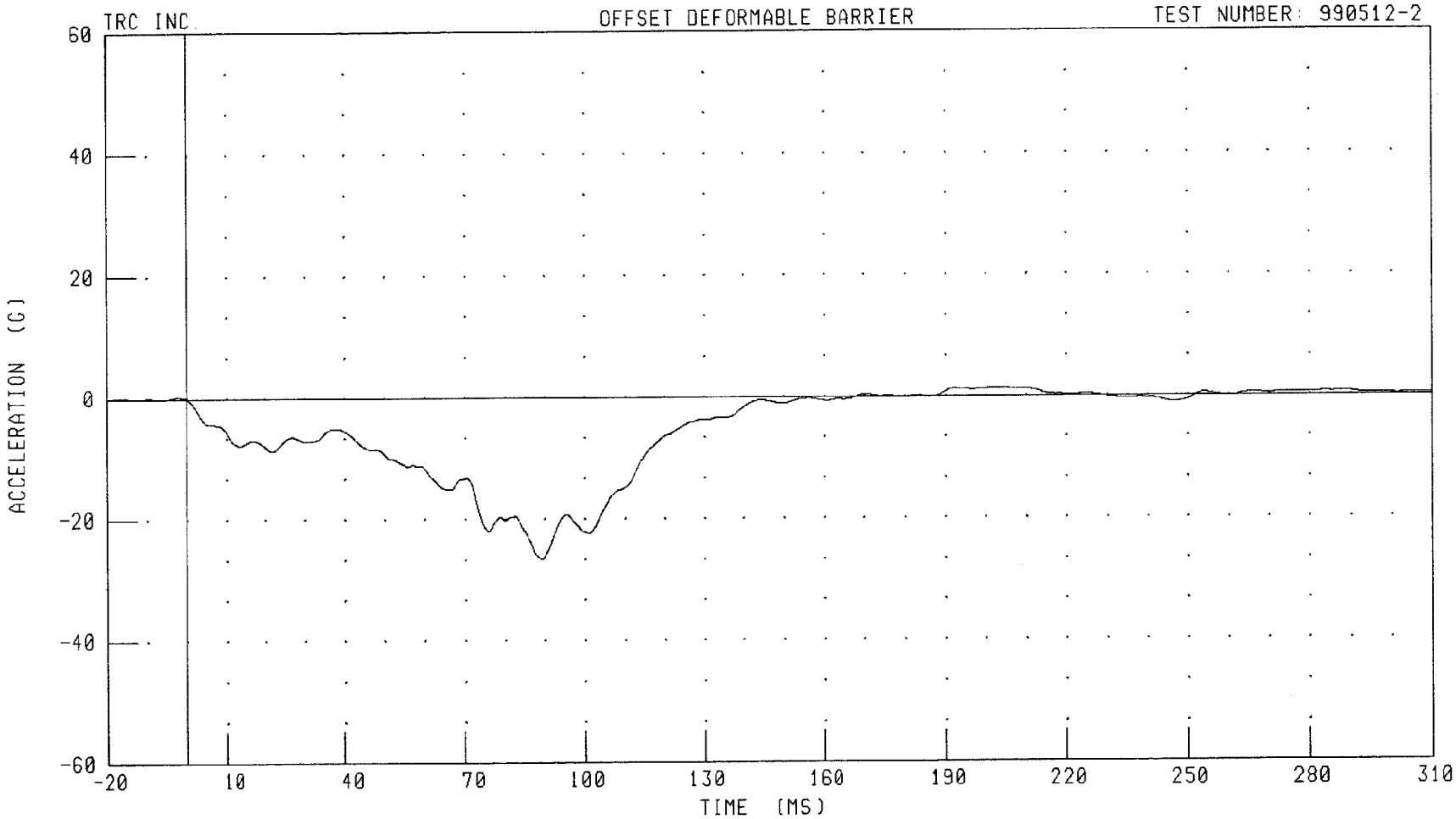
1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
LEFT REAR SEAT X-AXIS ACCELERATION



CHANNEL: TLRXG1 FILTER: CH. CLASS 60 PEAK DATA: 2.02 G @ 190.72 MS; -25.74 G @ 103.20 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH

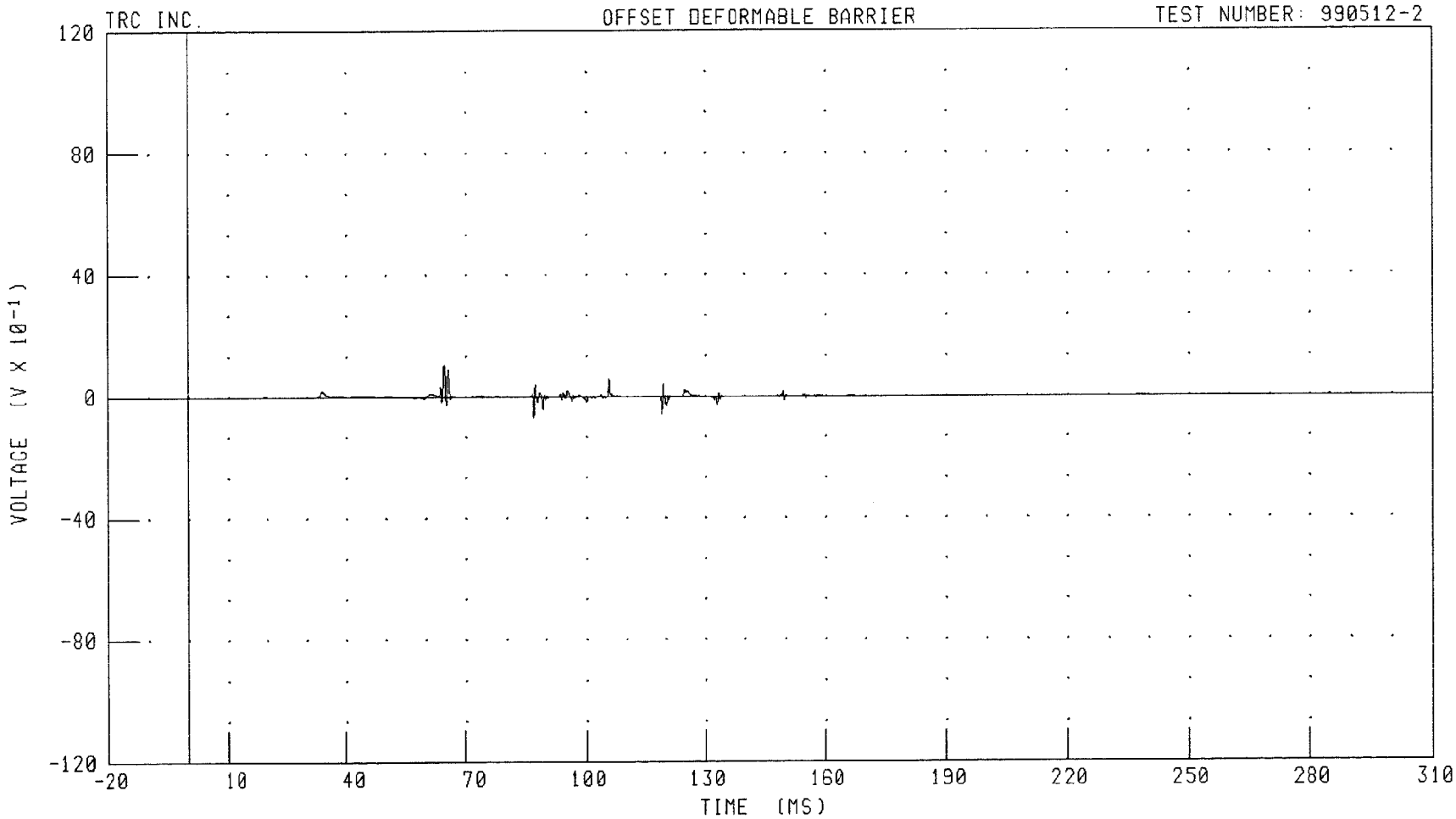
RIGHT REAR SEAT X-AXIS ACCELERATION



CHANNEL: TRRXG1 FILTER: CH. CLASS 60

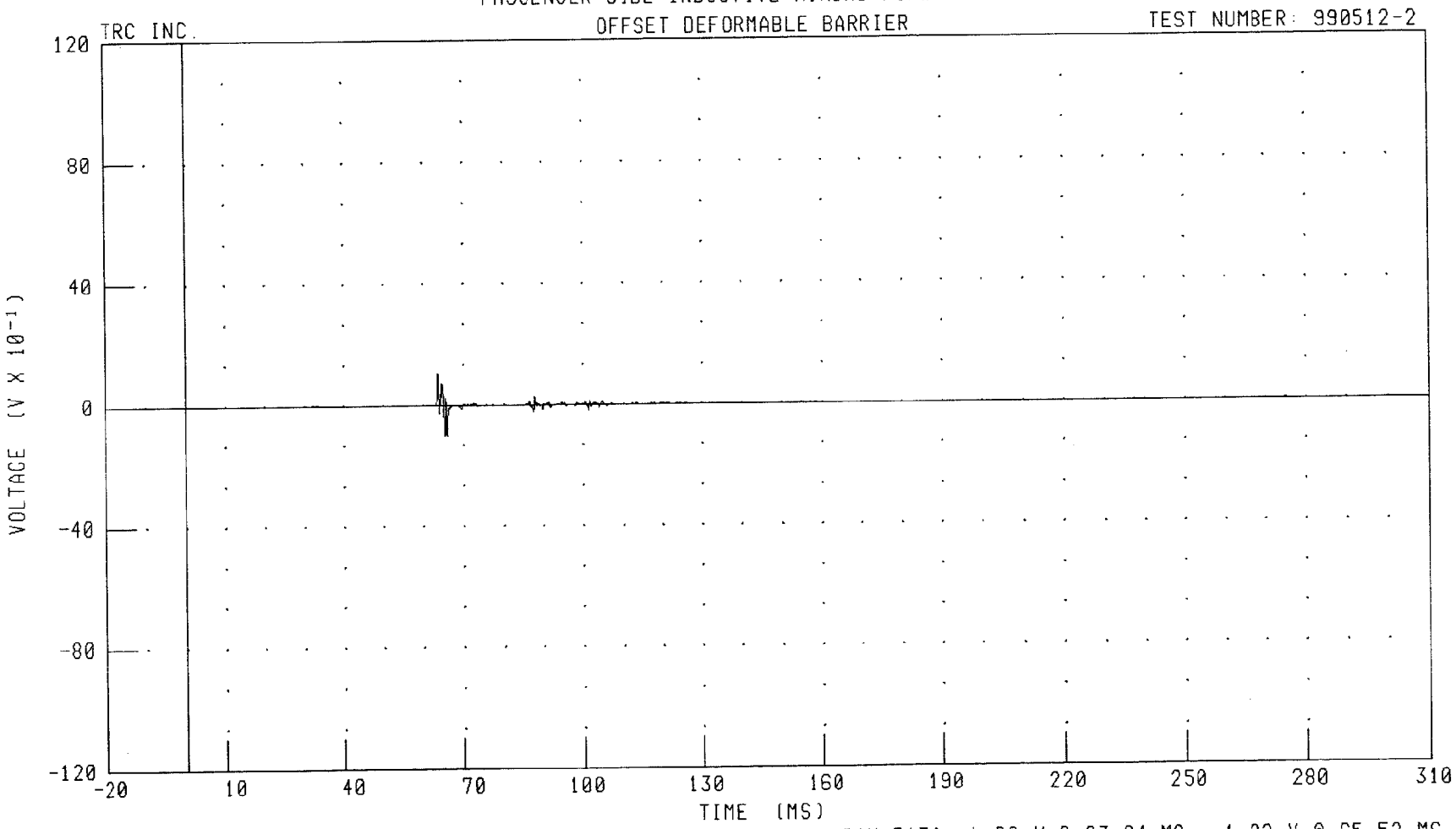
PEAK DATA: 1.36 G @ 202.16 MS; -26.60 G @ 89.44 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
DRIVER SIDE INDUCTIVE AIRBAG FIRE PICKUP



CHANNEL: ABSQ1 FILTER: CH. CLASS 1000 PEAK DATA: 1.02 V @ 64.72 MS; -0.70 V @ 86.96 MS

1999 DODGE INTREPID INTO LEFT-SIDE OFFSET DEFORMABLE BARRIER AT 35 MPH
PASSENGER SIDE INDUCTIVE AIRBAG FIRE PICKUP



CHANNEL: ABSQ2 FILTER: CH. CLASS 1000 PEAK DATA: 1.02 V @ 63.84 MS; -1.02 V @ 65.52 MS

Appendix C

Post-Test Dummy Certification

Post-Test Dummy Certification

Driver Dummy S/N 168

TRANSPORTATION RESEARCH CENTER INC.

HEAD DROP TEST

HYBRID III 50th 15-MAY-99

TRC INC. TEST NO: 168C13HD1 572E SN168 HEAD DROP CAL 13

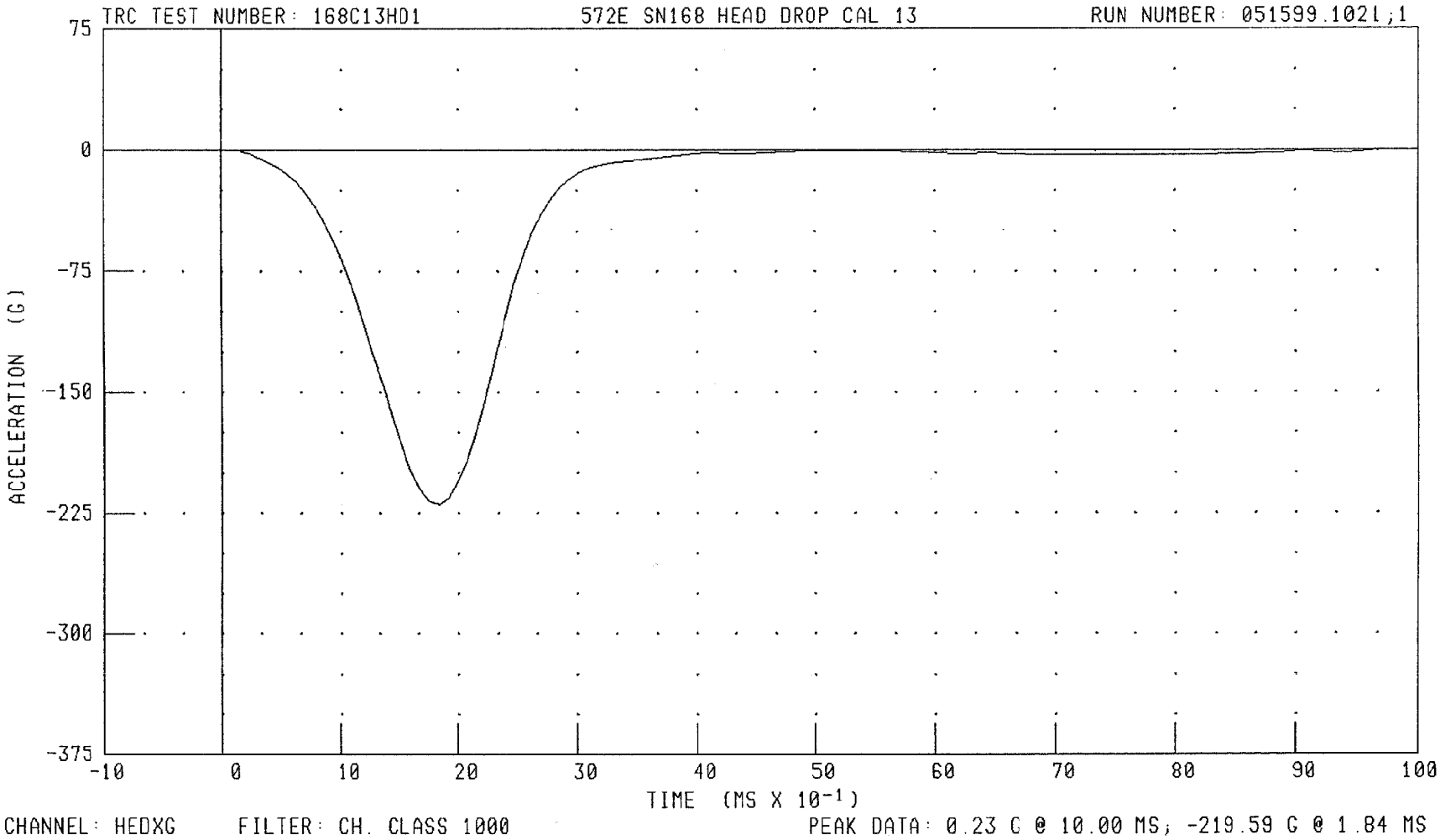
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	44.0 %
PEAK RESULTANT ACCELERATION	225 - 275 G	253.48 G
PEAK LATERAL ACCELERATION	15 G MAX	-1.56 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN By Cult

RUN NUMBER: 051599.1021;1

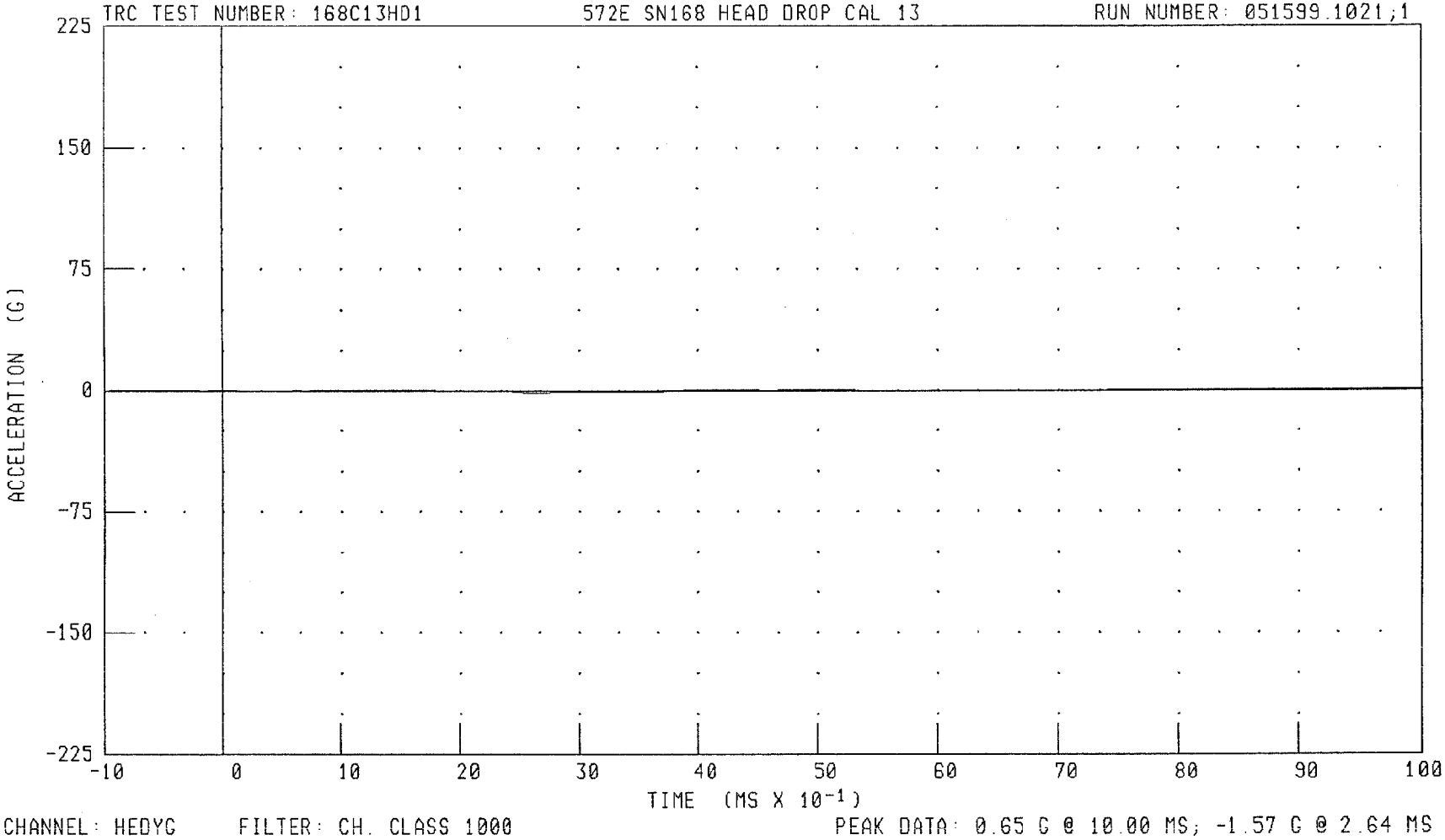
PART 572-E HYBRID III HEAD CALIBRATION
HEAD ACCELERATION X AXIS



CHANNEL: HEDXG FILTER: CH. CLASS 1000 PEAK DATA: 0.23 G @ 10.00 MS; -219.59 G @ 1.84 MS

PART 572-E HYBRID III HEAD CALIBRATION
HEAD ACCELERATION Y AXIS

TRC TEST NUMBER: 168C13HD1 572E SN168 HEAD DROP CAL 13 RUN NUMBER: 051599.1021;1

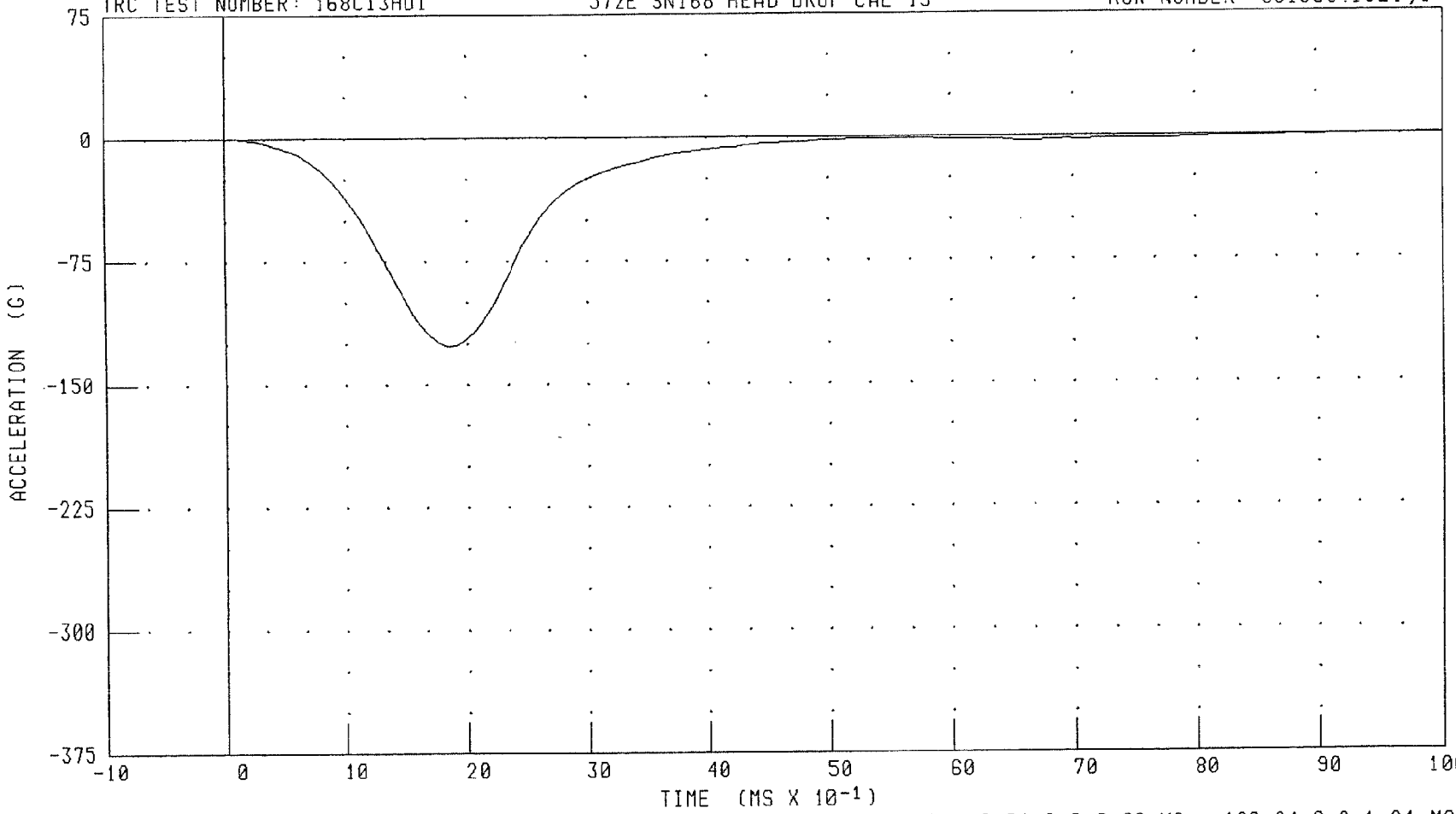


CHANNEL: HEDYC FILTER: CH. CLASS 1000 PEAK DATA: 0.65 G @ 10.00 MS; -1.57 G @ 2.64 MS

PART 572-E HYBRID III HEAD CALIBRATION

HEAD ACCELERATION Z AXIS

TRC TEST NUMBER: 168C13HD1 572E SN168 HEAD DROP CAL 13 RUN NUMBER: 051599.1021;1

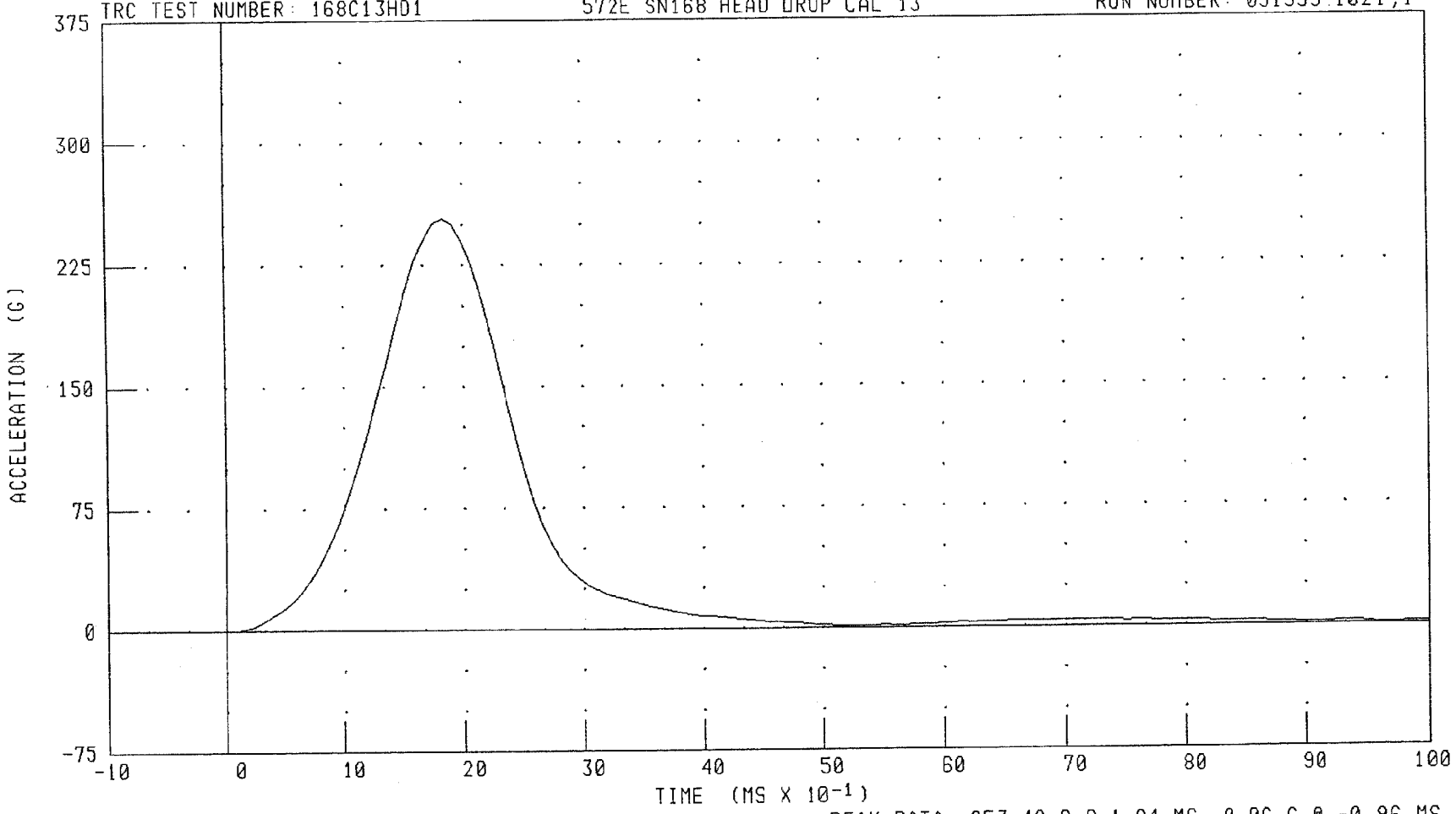


CHANNEL: HEDZG FILTER: CH. CLASS 1000 PEAK DATA: 0.81 G @ 9.92 MS; -126.64 G @ 1.84 MS

PART 572-E HYBRID III HEAD CALIBRATION
HEAD RESULTANT ACCELERATION
572E SN168 HEAD DROP CAL 13

TRC TEST NUMBER: 168C13HD1

RUN NUMBER: 051599.1021;1



CHANNEL: HEDRG FILTER: CH. CLASS 1000

PEAK DATA: 253.49 G @ 1.84 MS; 0.06 G @ -0.96 MS

TRANSPORTATION RESEARCH CENTER INC.

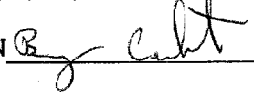
HYBRID III 50th 15-MAY-99

NECK FLEXION TEST - 6 CHANNEL TRANSDUCER

TRC INC. TEST NO: 168C13NF1 572E SN168 NECK FLEXION CAL13

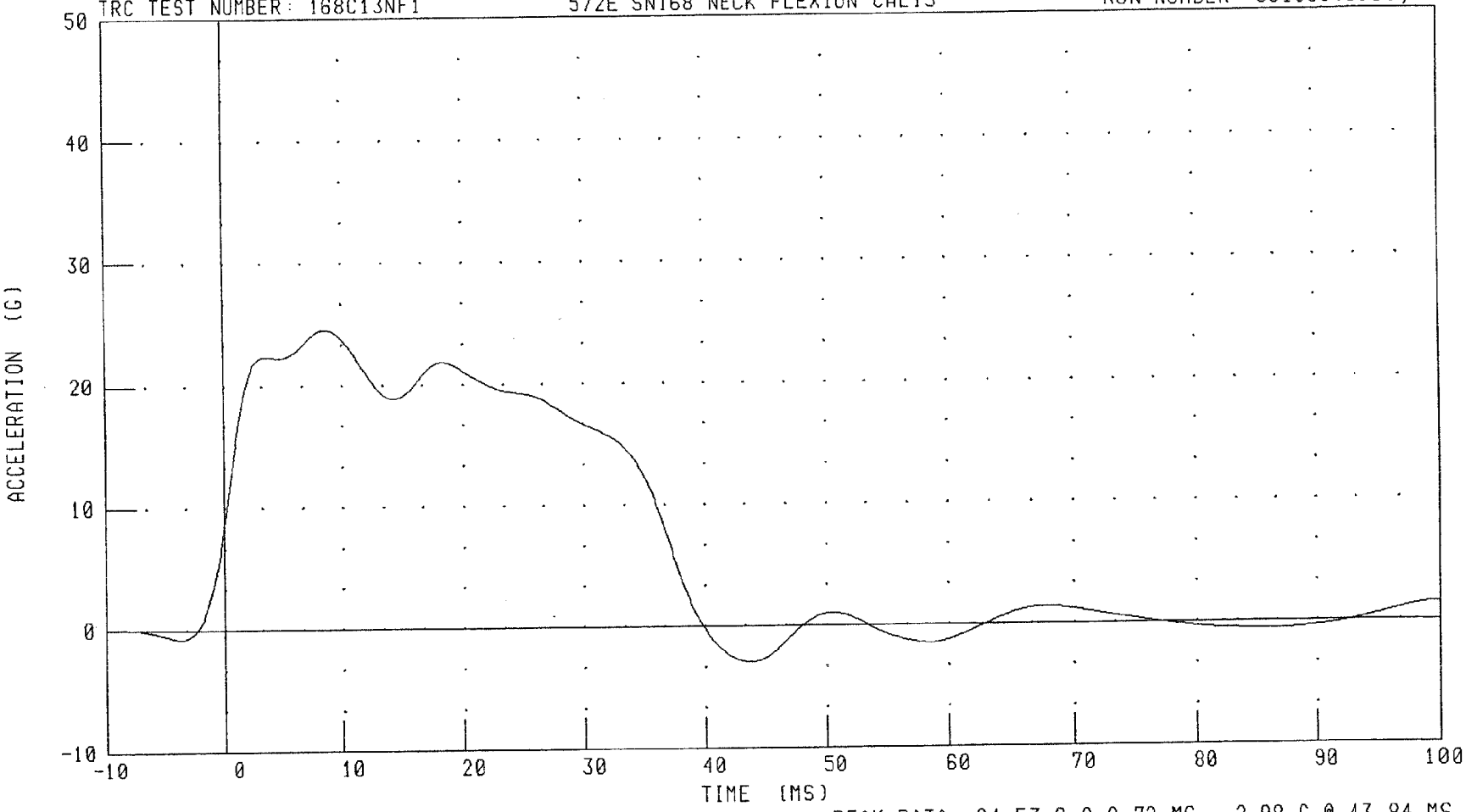
TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6-22.2 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY		10 - 70 %	44.0 %
IMPACT VELOCITY		6.89 - 7.13 M/S	6.99 M/S
PENDULUM DECELERATION	10 MS	22.50 - 27.50 G	23.84 G
	20 MS	17.60 - 22.60 G	21.12 G
	30 MS	12.50 - 18.50 G	16.65 G
MAX PENDULUM G		29 G MAX	24.53 G
MAX PENDULUM G ABOVE 30 MS		29 G MAX	16.62 G
DECELERATION-TIME CURVE DECAY TIME TO 5 G		34 - 42 MS	37.68 MS
D PLANE ROTATION	MAX	64 - 78 DEG.	74.39 DEG.
	TIME	57 - 64 MS	58.80 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MAX	88.2 - 108.5 NM	94.69 NM
	TIME	47 - 58 MS	50.16 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		113 - 128 MS	114.64 MS
POSITIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		97 - 107 MS	102.48 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN  RUN NUMBER: 051599.1102;1

PART 572-E HYBRID III THORAX CALIBRATION
PENDULUM DECELERATION

TRC TEST NUMBER: 168C13NF1 572E SN168 NECK FLEXION CAL13 RUN NUMBER: 051599.1110;1

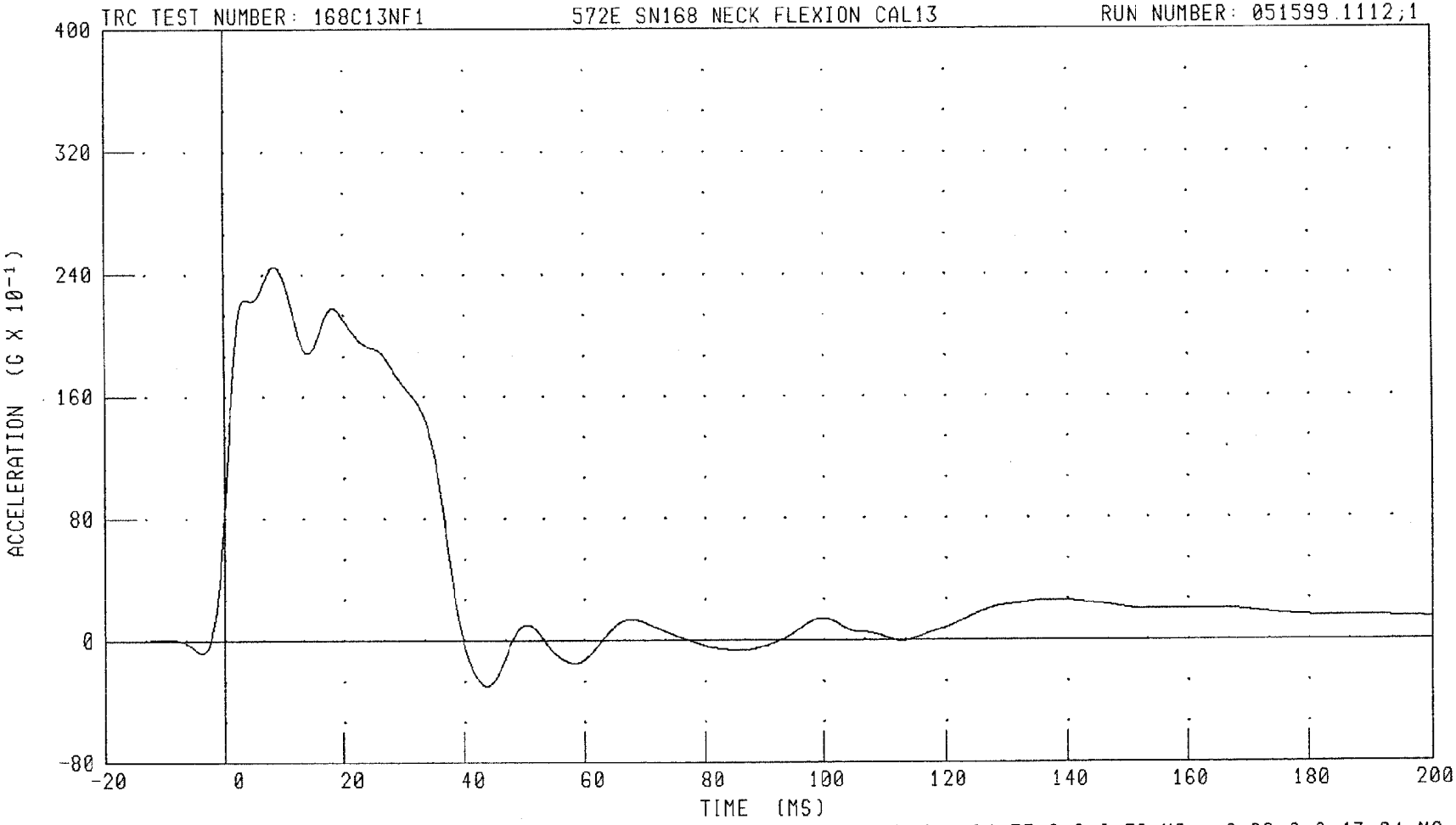


CHANNEL: PENXG FILTER: CH. CLASS 60 PEAK DATA: 24.53 G @ 8.72 MS; -2.98 G @ 43.84 MS

PART 572-E HYBRID III NECK FLEXION CALIBRATION

PENDULUM DECELERATION

TRC TEST NUMBER: 168C13NF1 572E SN168 NECK FLEXION CAL13 RUN NUMBER: 051599.1112;1

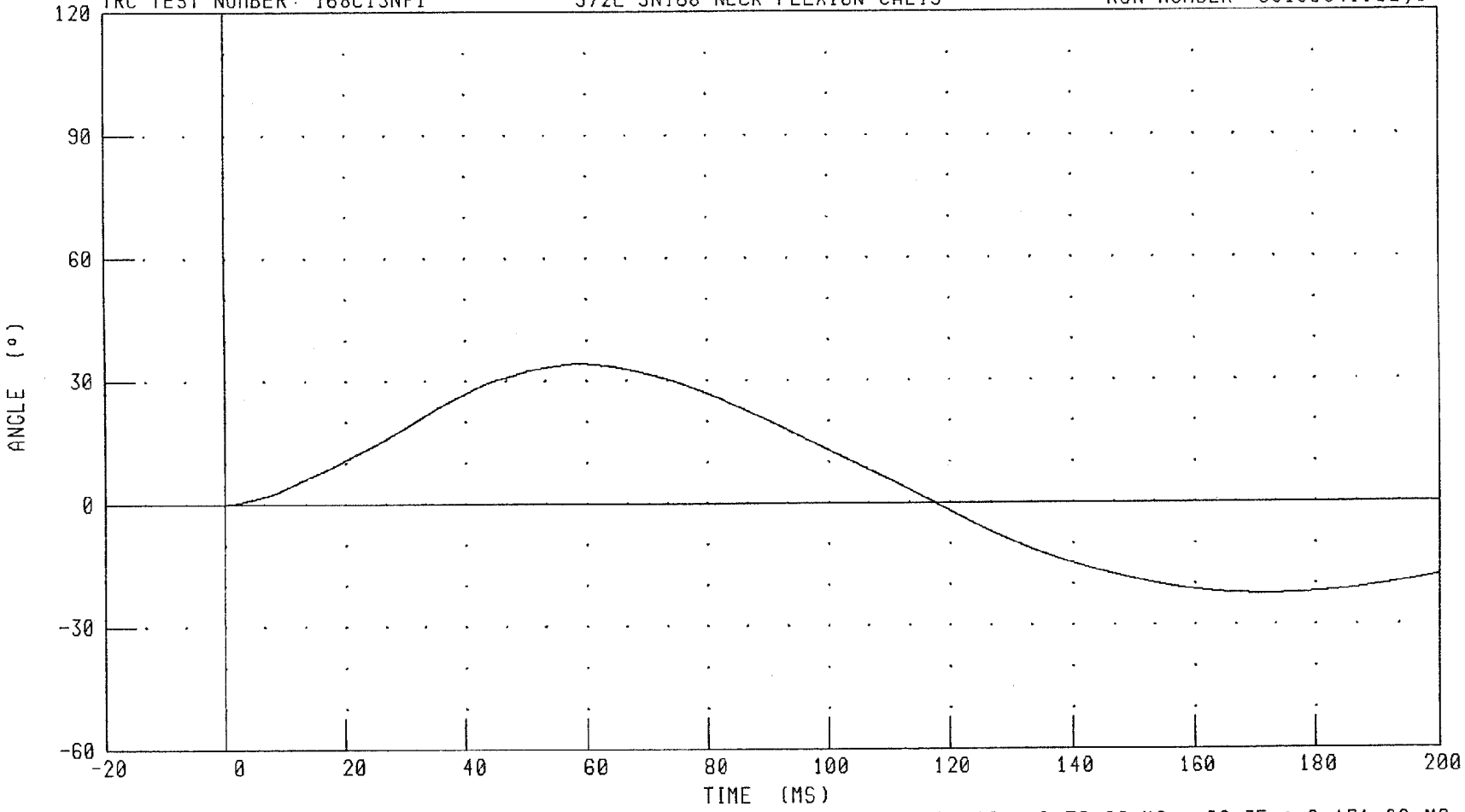


CHANNEL: PENXG FILTER: CH. CLASS 60 PEAK DATA: 24.53 G @ 8.72 MS; -2.98 G @ 43.84 MS

PART 572-E HYBRID III NECK FLEXION CALIBRATION

ROTATION ABOUT BASE OF NECK

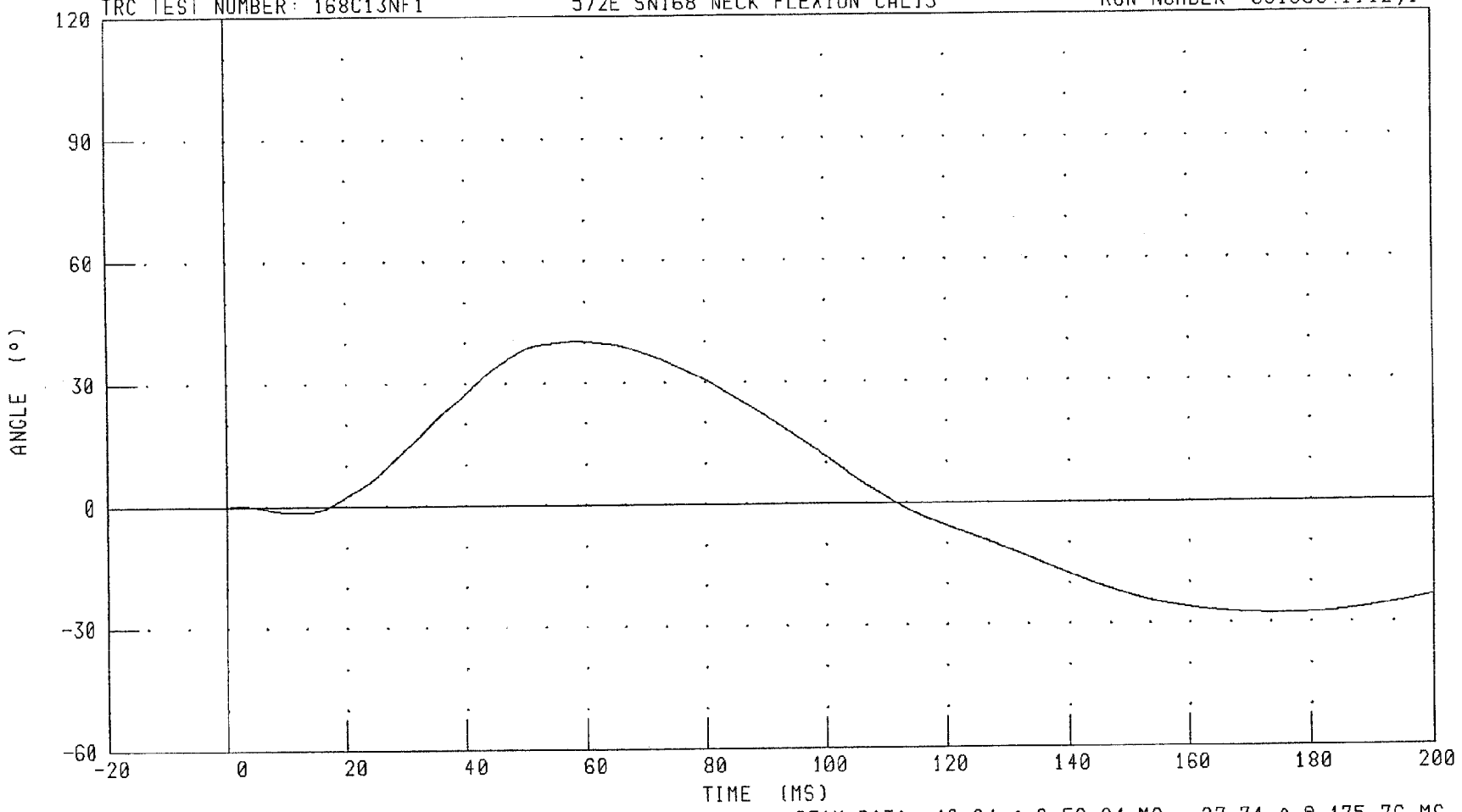
TRC TEST NUMBER: 168C13NF1 572E SN168 NECK FLEXION CAL13 RUN NUMBER: 051599.1112;1



CHANNEL: BETA FILTER: CH. CLASS 60 PEAK DATA: 34.16 ° @ 58.96 MS; -22.35 ° @ 171.92 MS

PART 572-E HYBRID III NECK FLEXION CALIBRATION
ROTATION ABOUT OCCIPITAL CONDYLE

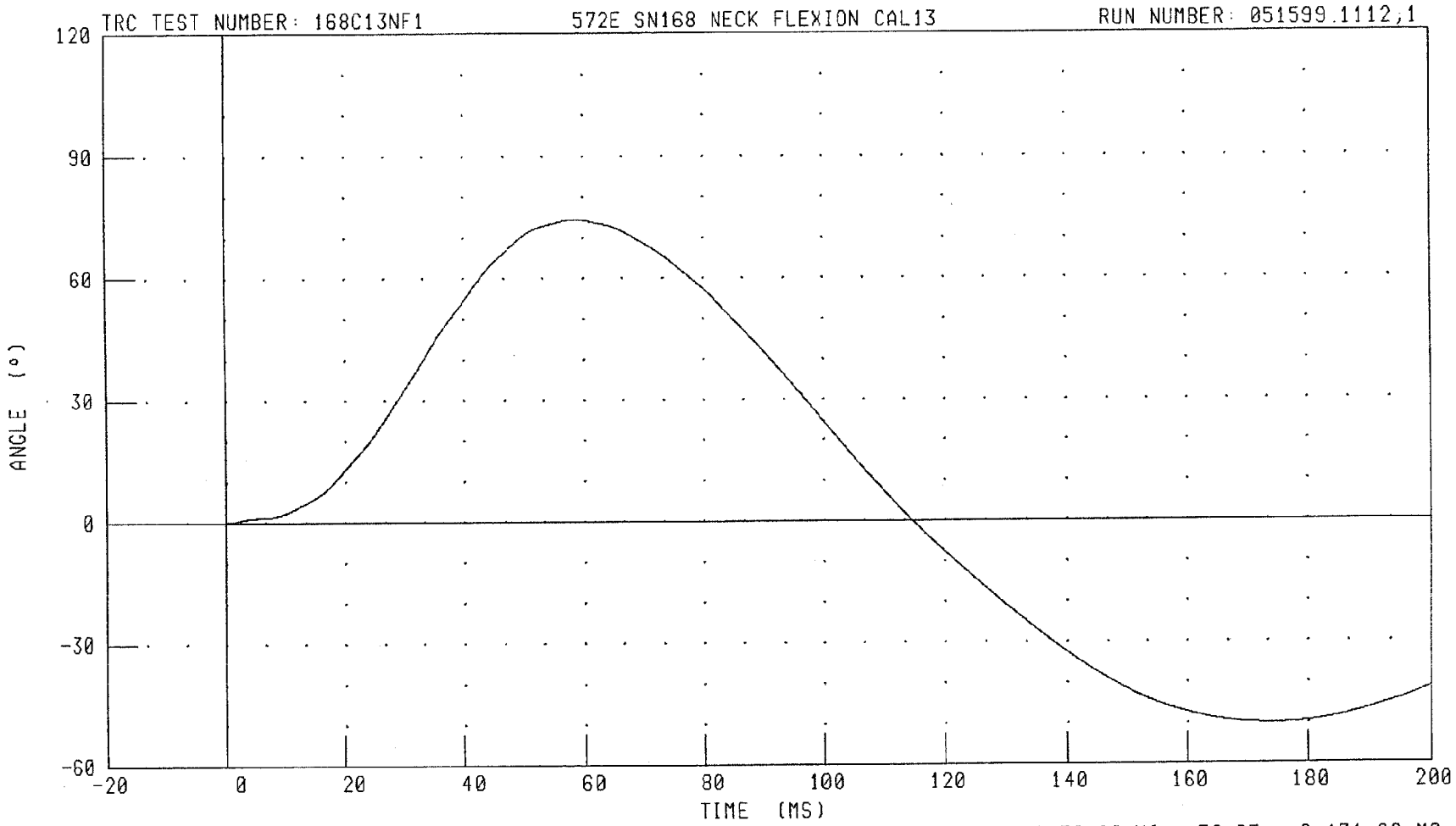
TRC TEST NUMBER: 168C13NF1 572E SN168 NECK FLEXION CAL13 RUN NUMBER: 051599.1112;1



CHANNEL: THETA FILTER: CH. CLASS 60 PEAK DATA: 40.24 ° @ 58.64 MS; -27.74 ° @ 175.76 MS

PART 572-E HYBRID III NECK FLEXION CALIBRATION

TOTAL ROTATION

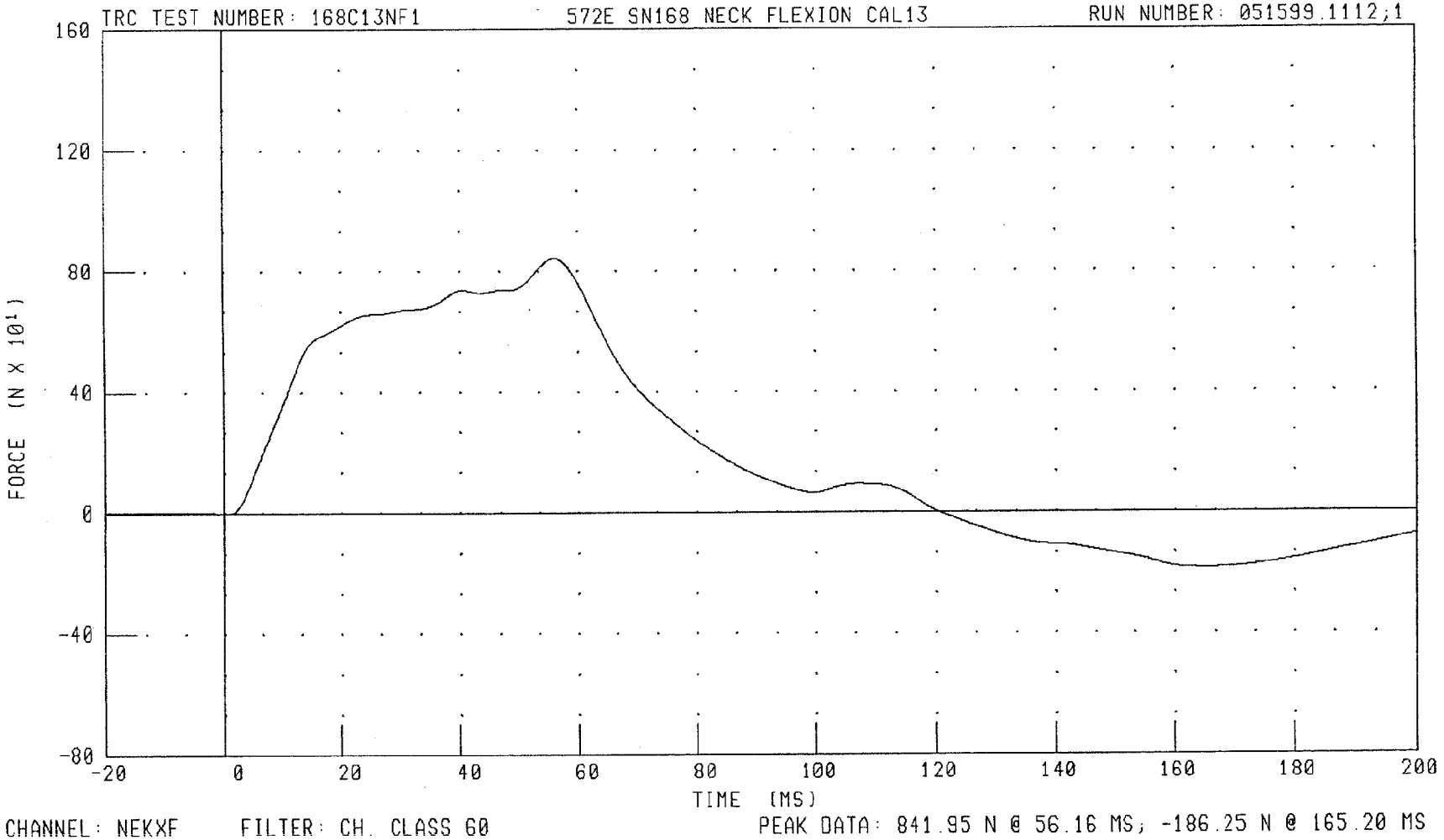


CHANNEL: TOTAN FILTER: CH. CLASS 60

PEAK DATA: 74.40 ° @ 58.80 MS; -50.05 ° @ 174.08 MS

PART 572-E HYBRID III NECK FLEXION CALIBRATION

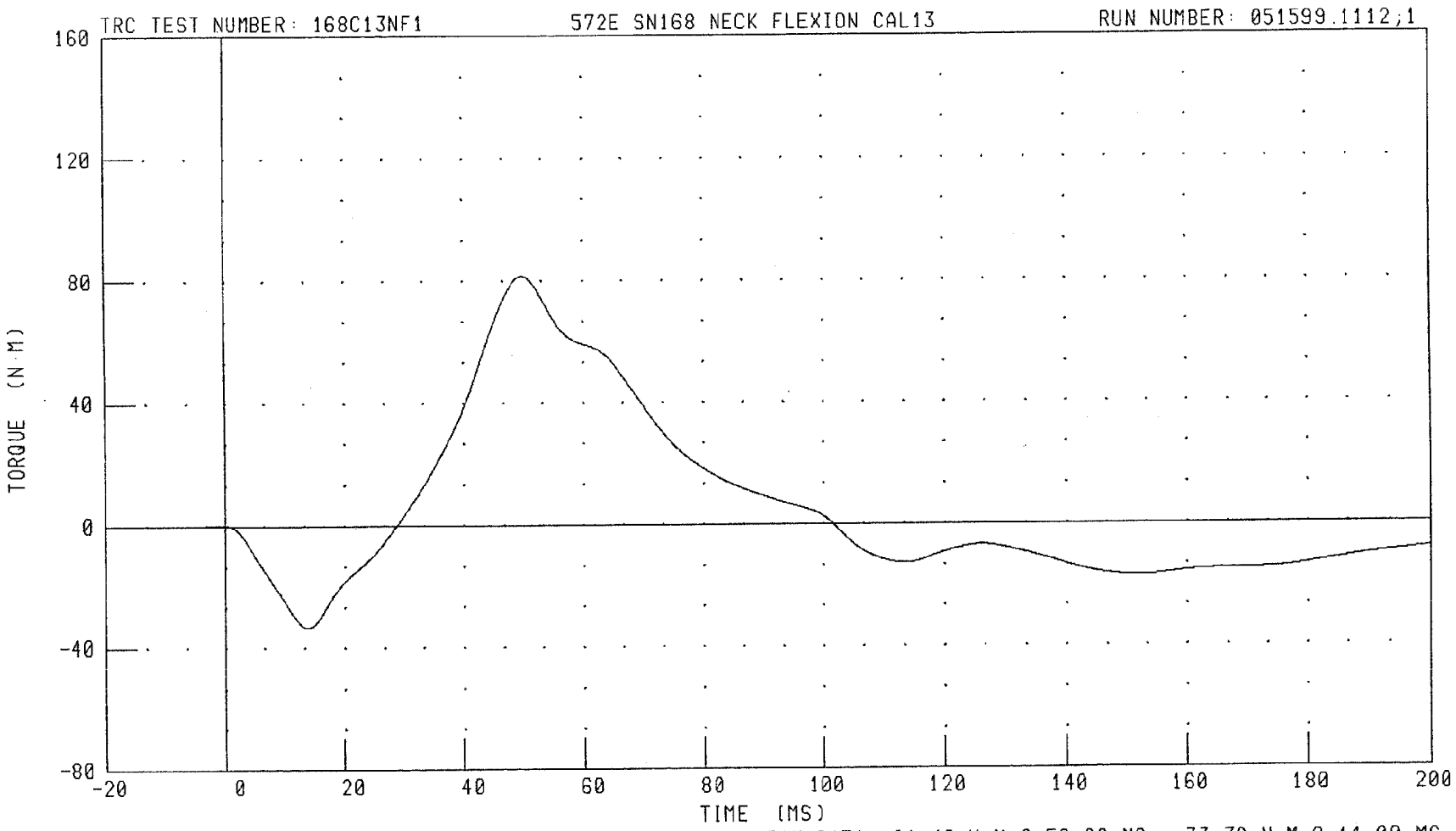
NECK FORCE X AXIS



CHANNEL: NEKXF FILTER: CH. CLASS 60

PEAK DATA: 841.95 N @ 56.16 MS; -186.25 N @ 165.20 MS

PART 572-E HYBRID III NECK FLEXION CALIBRATION
NECK MOMENT Y AXIS

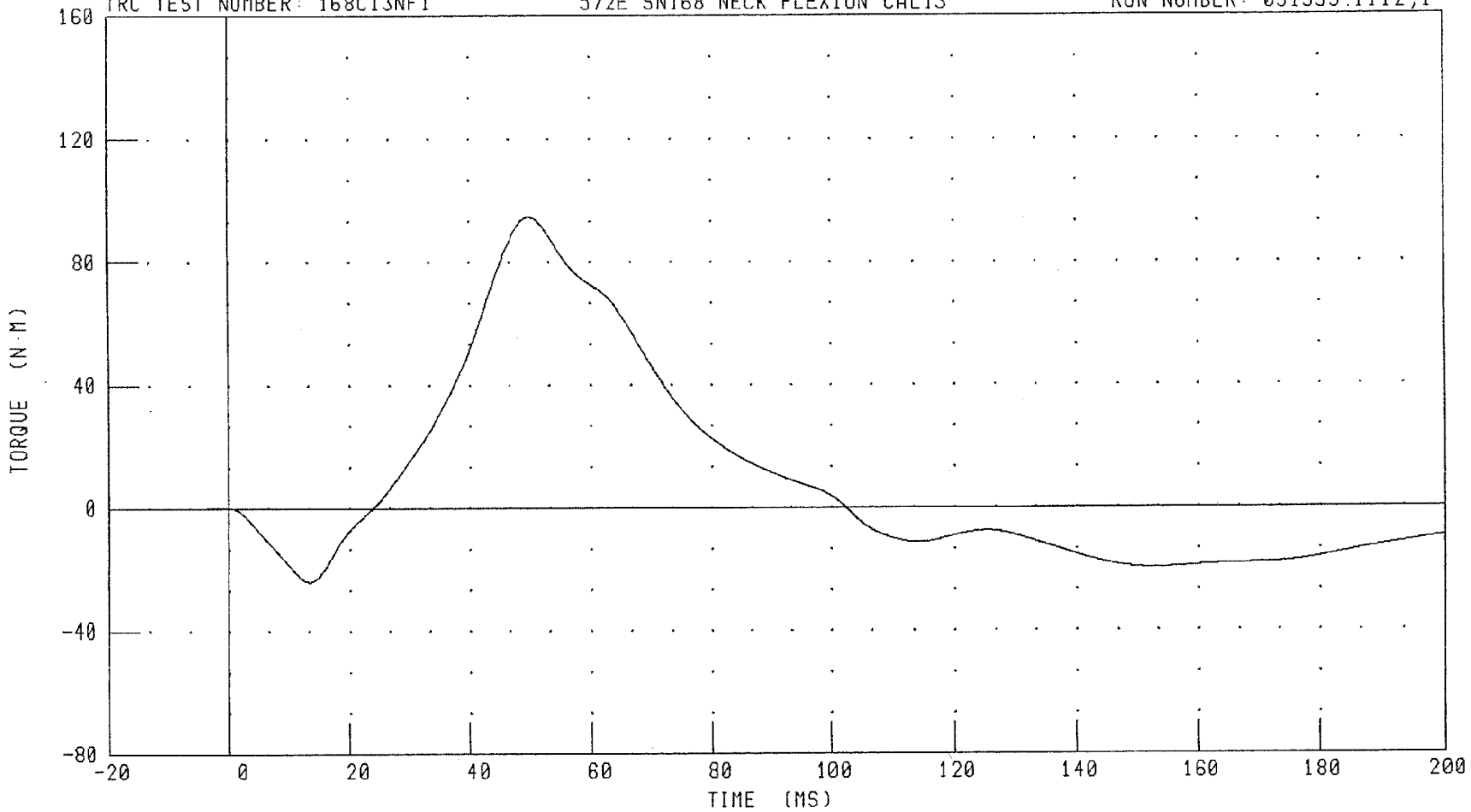


CHANNEL: NEKYM FILTER: CH. CLASS 60

PEAK DATA: 81.46 N·M @ 50.08 MS; -33.38 N·M @ 14.00 MS

PART 572-E HYBRID III NECK FLEXION CALIBRATION
TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: 168C13NF1 572E SN168 NECK FLEXION CAL13 RUN NUMBER: 051599.1112;1



CHANNEL: NEKOM FILTER: CH. CLASS 60 PEAK DATA: 94.69 N·M @ 50.16 MS; -24.02 N·M @ 13.52 MS

TRANSPORTATION RESEARCH CENTER INC.

HYBRID III 50th 15-MAY-99

NECK EXTENSION TEST - 6 CHANNEL TRANSDUCER

TRC INC. TEST NO: 168C13NE1 572E SN168 NECK EXT CAL13

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6 - 22.2 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY		10 - 70 %	44.0 %
IMPACT VELOCITY		5.95 - 6.19 M/S	6.05 M/S
PENDULUM DECELERATION	10 MS	17.20 - 21.20 G	18.40 G
	20 MS	14.00 - 19.00 G	16.78 G
	30 MS	11.00 - 16.00 G	15.13 G
MAX PENDULUM G		22 G MAX	19.18 G
MAX PENDULUM G ABOVE 30 MS		22 G MAX	15.11 G
DECELERATION-TIME CURVE DECAY TIME TO 5 G		38 - 46 MS	40.40 MS
D PLANE ROTATION	MAX	81 - 106 DEG.	94.61 DEG.
	TIME	72 - 82 MS	76.32 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MIN	-80.0/-52.9 NM	-65.20 NM
	TIME	65 - 79 MS	70.80 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		147 - 174 MS	156.00 MS
NEGATIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		120 - 148 MS	143.68 MS

TEST MEETS SPECIFICATIONS

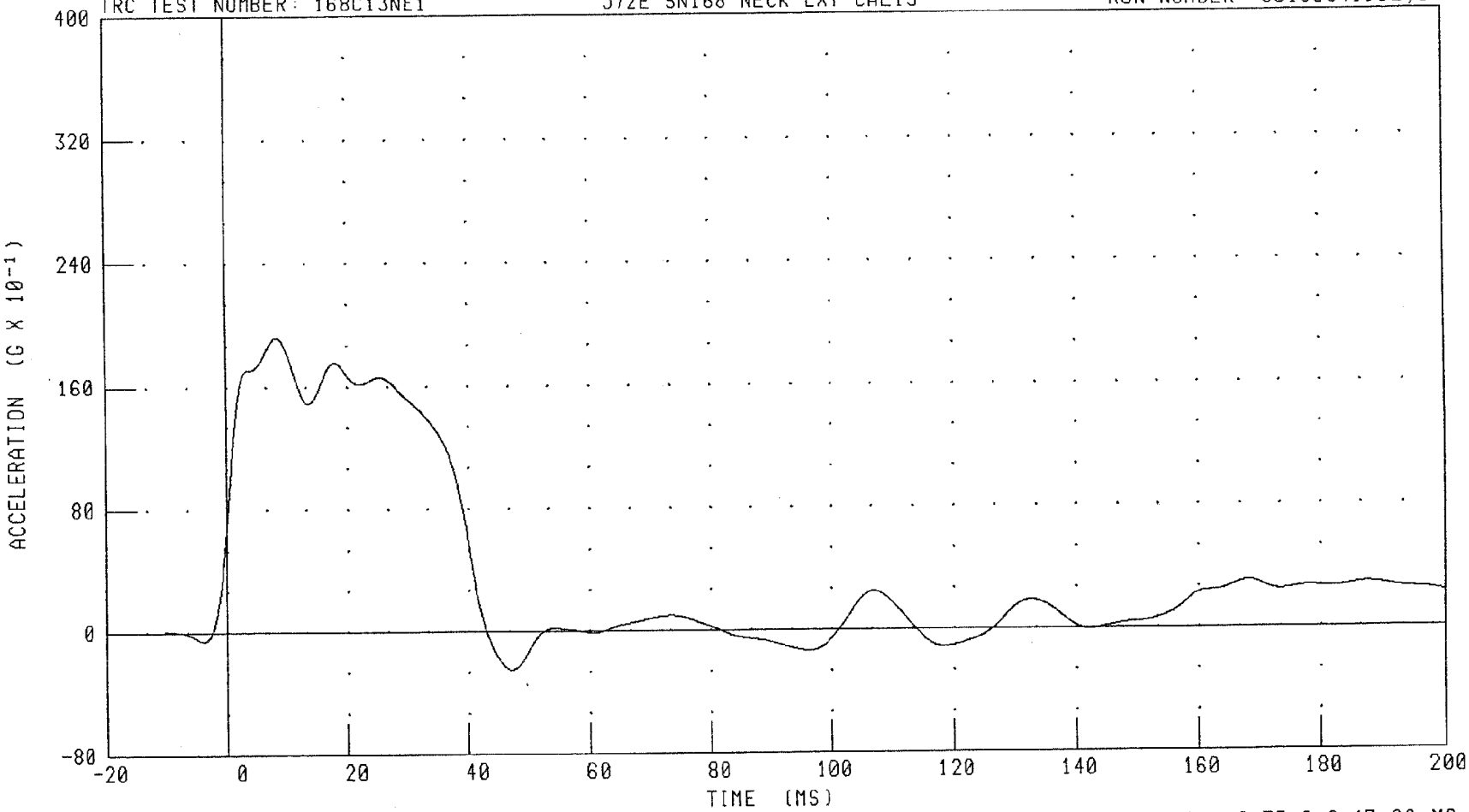
TECHNICIAN By Calvt

RUN NUMBER: 051599.1131;1

PART 572-E HYBRID III NECK EXTENSION CALIBRATION

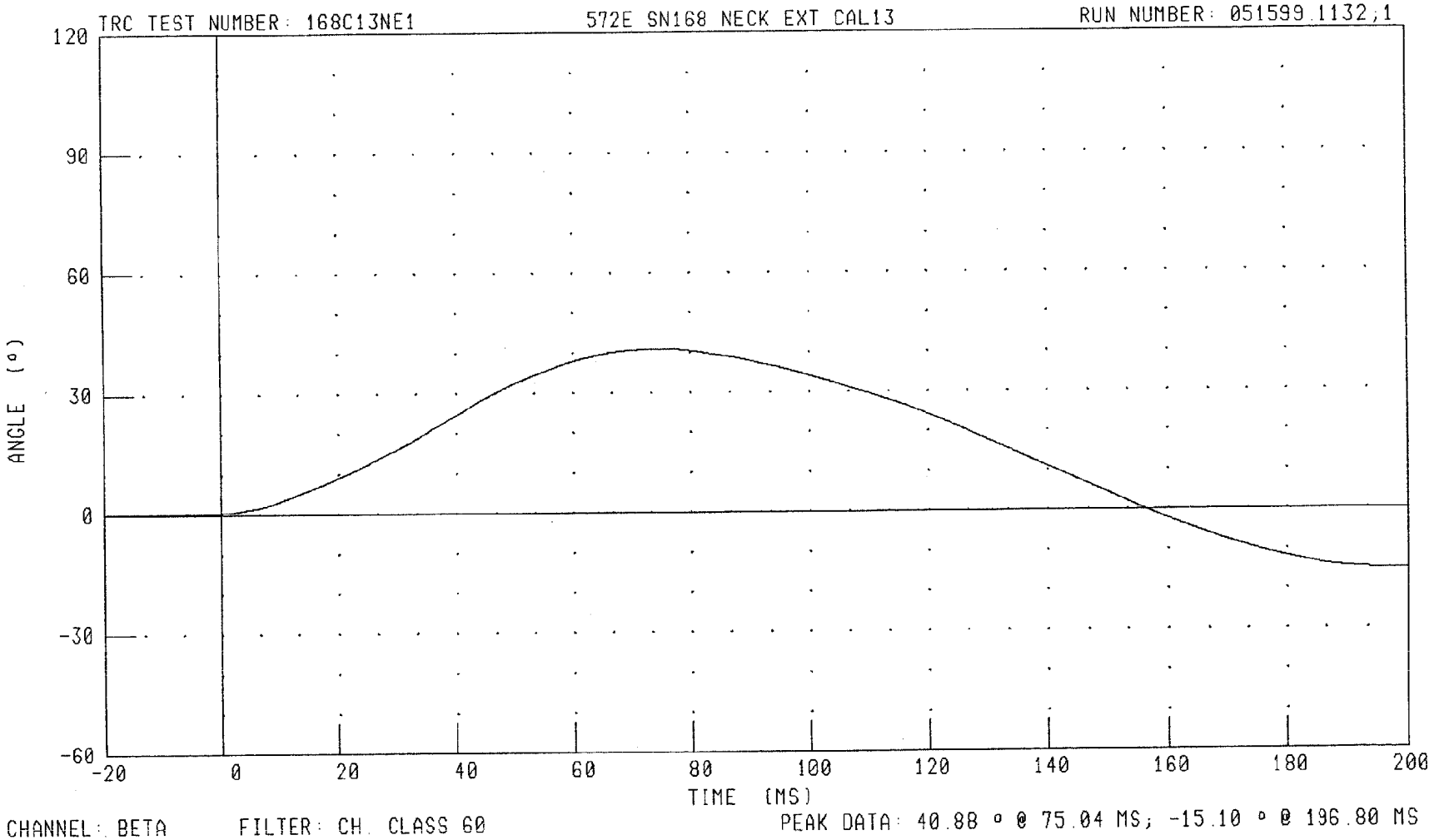
PENDULUM DECELERATION

TRC TEST NUMBER: 168C13NE1 572E SN168 NECK EXT CAL13 RUN NUMBER: 051599.1132;1



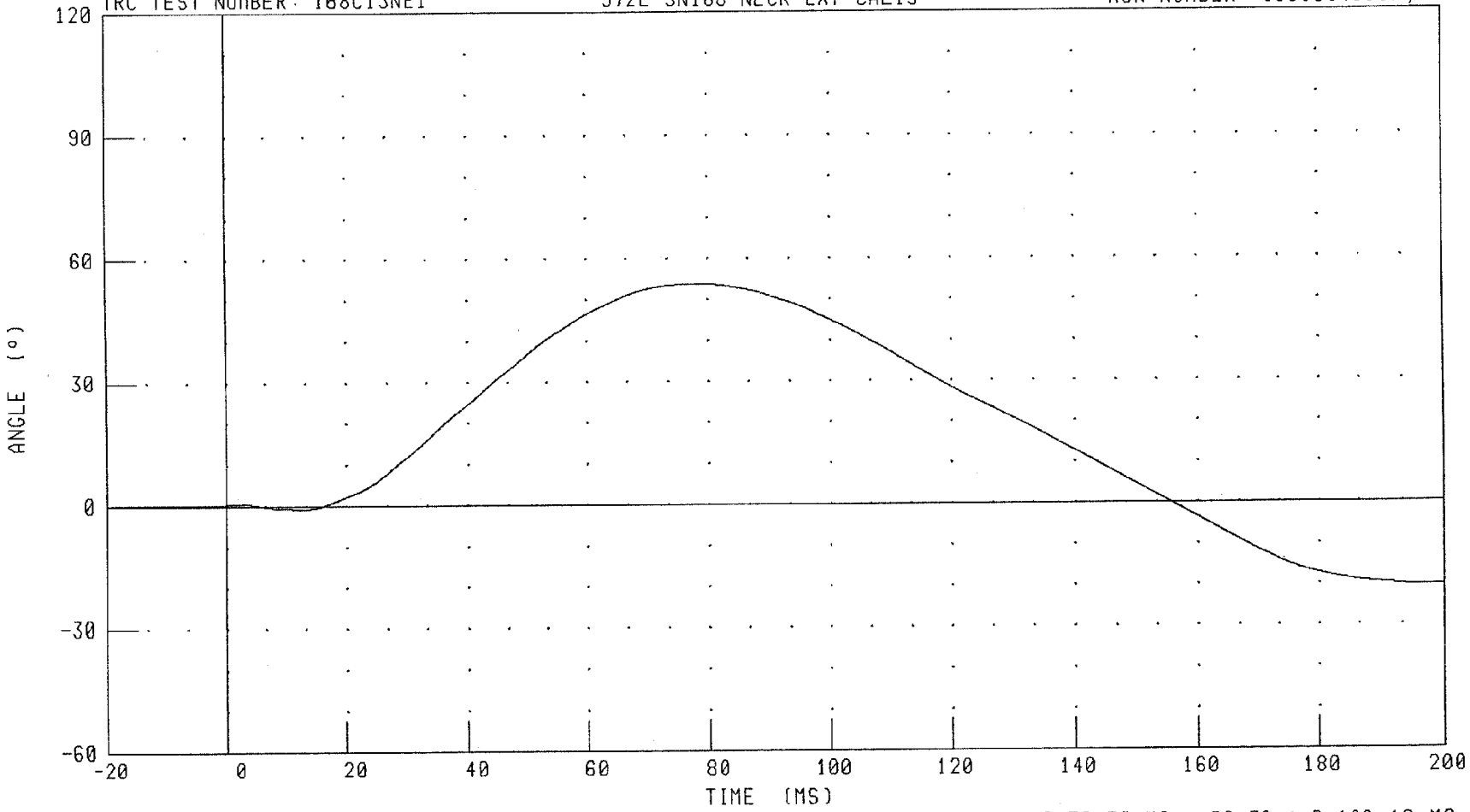
CHANNEL: PENXG FILTER: CH. CLASS 60 PEAK DATA: 19.19 G @ 8.48 MS; -2.53 G @ 47.28 MS

PART 572-E HYBRID III NECK EXTENSION CALIBRATION
ROTATION ABOUT BASE OF NECK



PART 572-E HYBRID III NECK EXTENSION CALIBRATION
ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: 168C13NE1 572E SN168 NECK EXT CAL13 RUN NUMBER: 051599.1132;1



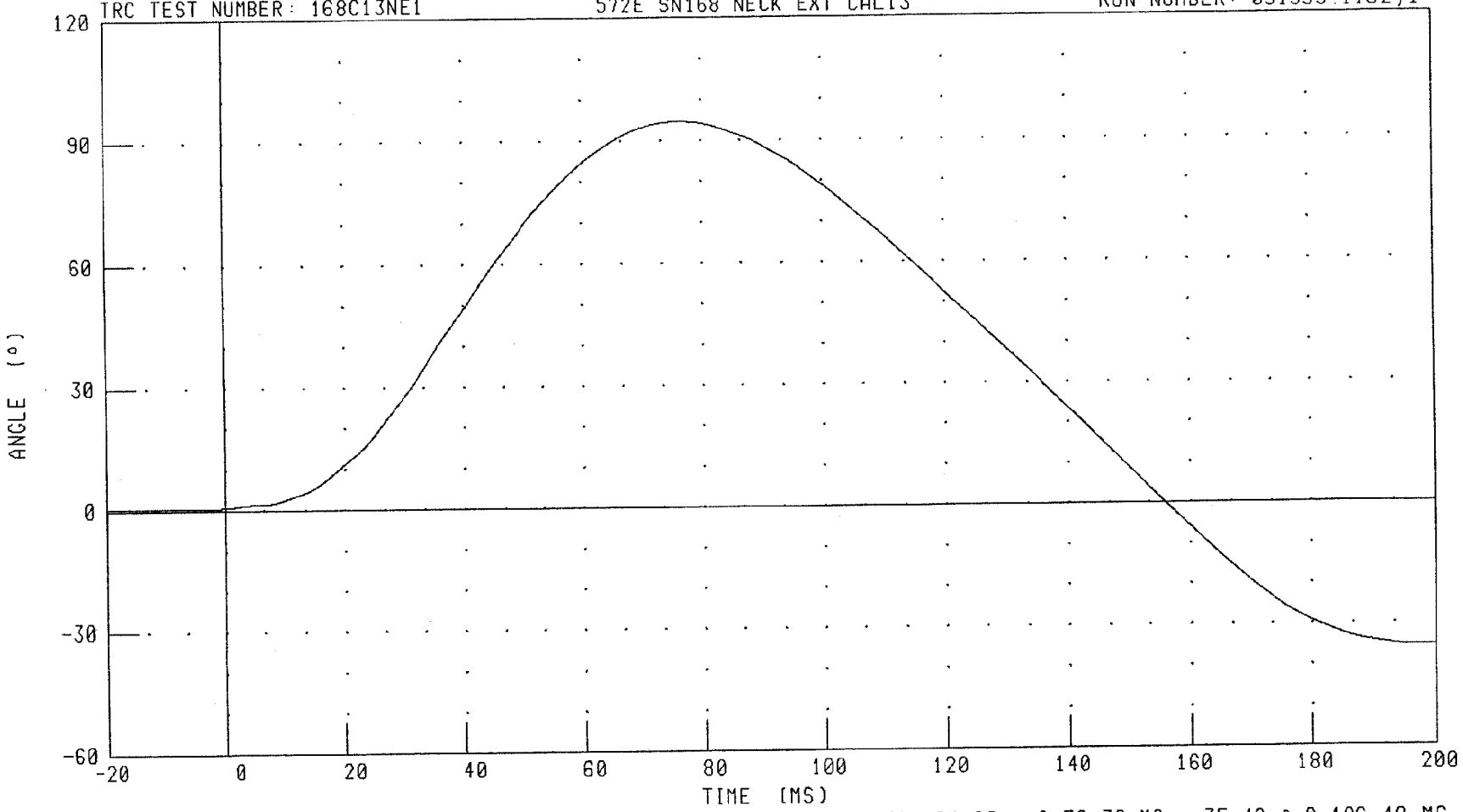
CHANNEL: THETA FILTER: CH. CLASS 60

PEAK DATA: 53.80 ° @ 78.32 MS; -20.39 ° @ 196.16 MS

PART 572-E HYBRID III NECK EXTENSION CALIBRATION

TOTAL ROTATION

TRC TEST NUMBER: 168C13NE1 572E SN168 NECK EXT CAL13 RUN NUMBER: 051599.1132;1



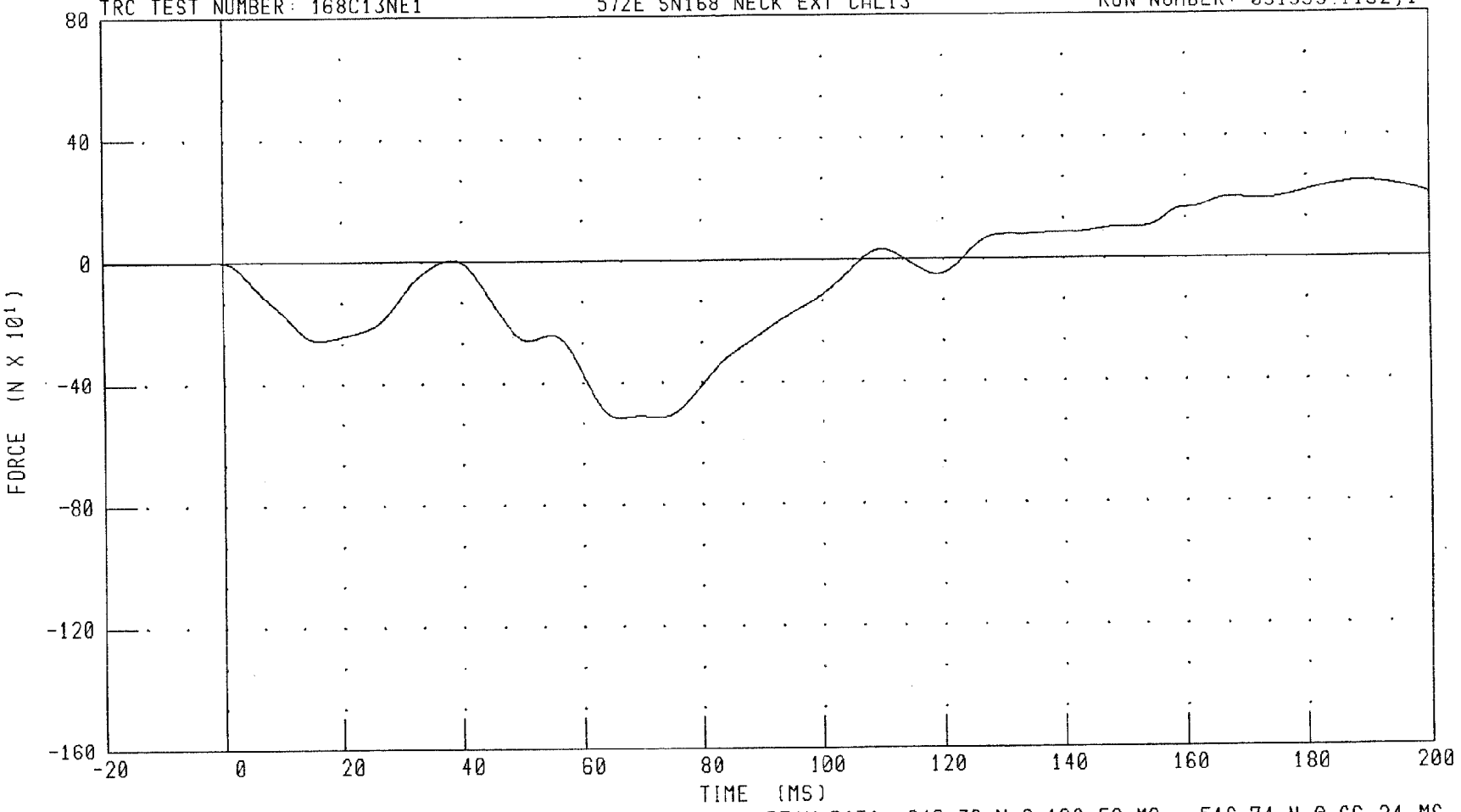
CHANNEL: TOTAN FILTER: CH. CLASS 60

PEAK DATA: 94.62 ° @ 76.32 MS; -35.49 ° @ 196.48 MS

PART 572-E HYBRID III NECK EXTENSION CALIBRATION

NECK FORCE X AXIS

TRC TEST NUMBER: 168C13NE1 572E SN168 NECK EXT CAL13 RUN NUMBER: 051599.1132;1



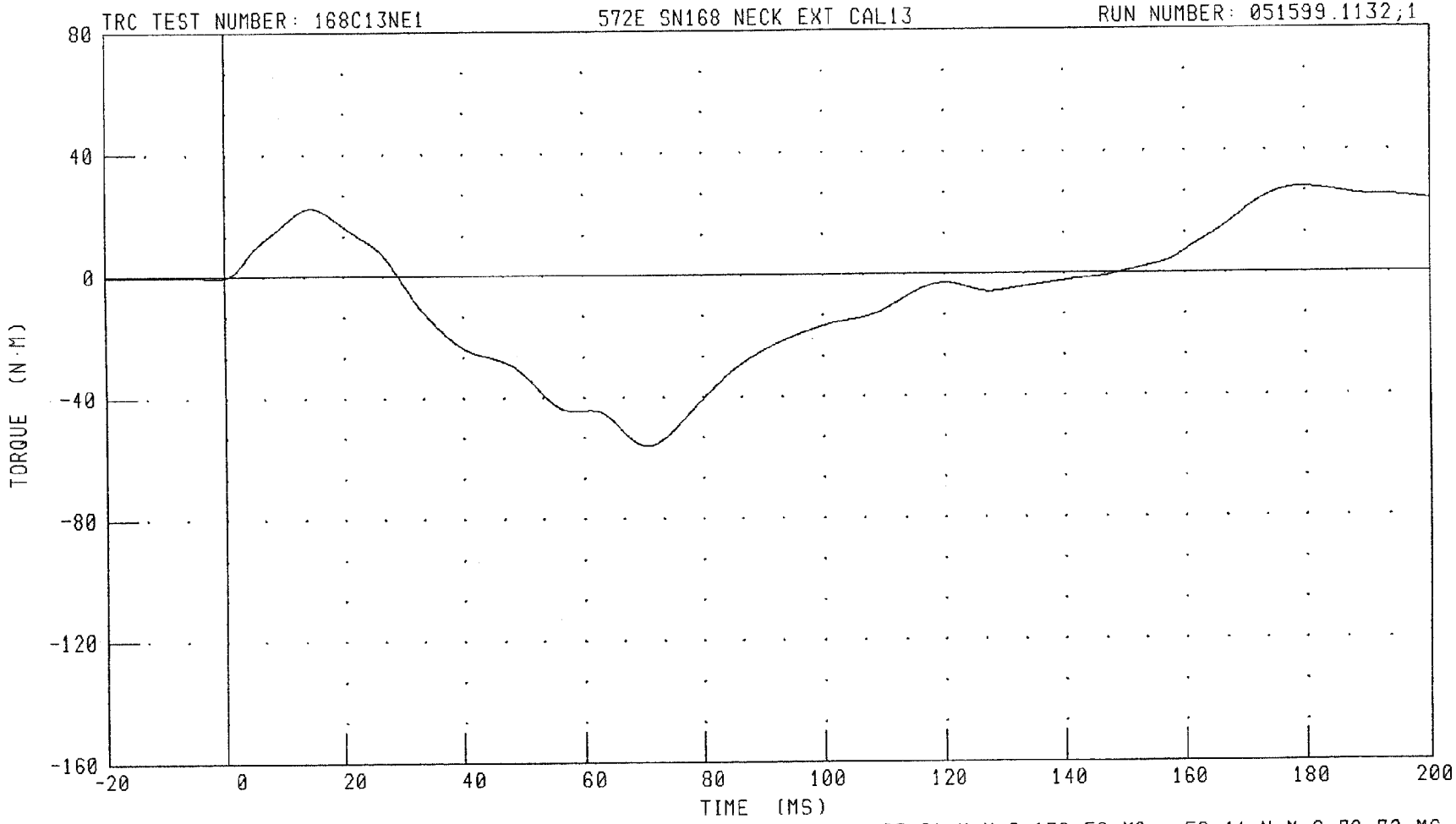
CHANNEL: NEKXF FILTER: CH. CLASS 60

PEAK DATA: 249.36 N @ 189.52 MS; -516.74 N @ 66.24 MS

PART 572-E HYBRID III NECK EXTENSION CALIBRATION

NECK MOMENT Y AXIS

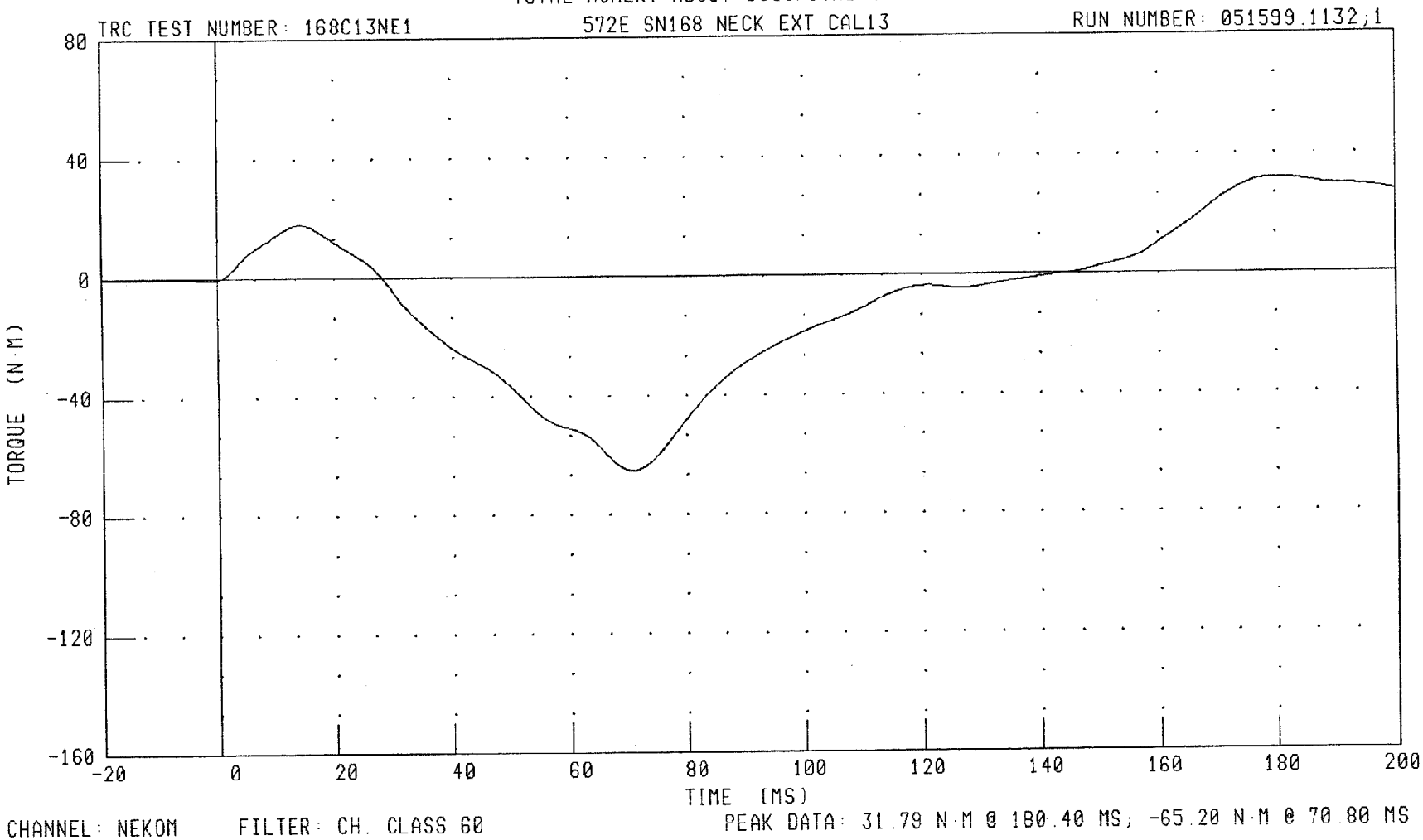
TRC TEST NUMBER: 168C13NE1 572E SN168 NECK EXT CAL13 RUN NUMBER: 051599.1132;1



CHANNEL: NEKYM FILTER: CH. CLASS 60

PEAK DATA: 27.91 N·M @ 179.52 MS; -56.11 N·M @ 70.72 MS

PART 572-E HYBRID III NECK EXTENSION CALIBRATION
TOTAL MOMENT ABOUT OCCIPITAL CONDYLE



CHANNEL: NEKOM FILTER: CH. CLASS 60

PEAK DATA: 31.79 N-M @ 180.40 MS; -65.20 N-M @ 70.80 MS

TRANSPORTATION RESEARCH CENTER INC.

THORAX IMPACT TEST

HYBRID III 50th 16-MAY-99

TRC INC. TEST NO: 168C13TH2 572E SN168 H.S.THORAX CAL13

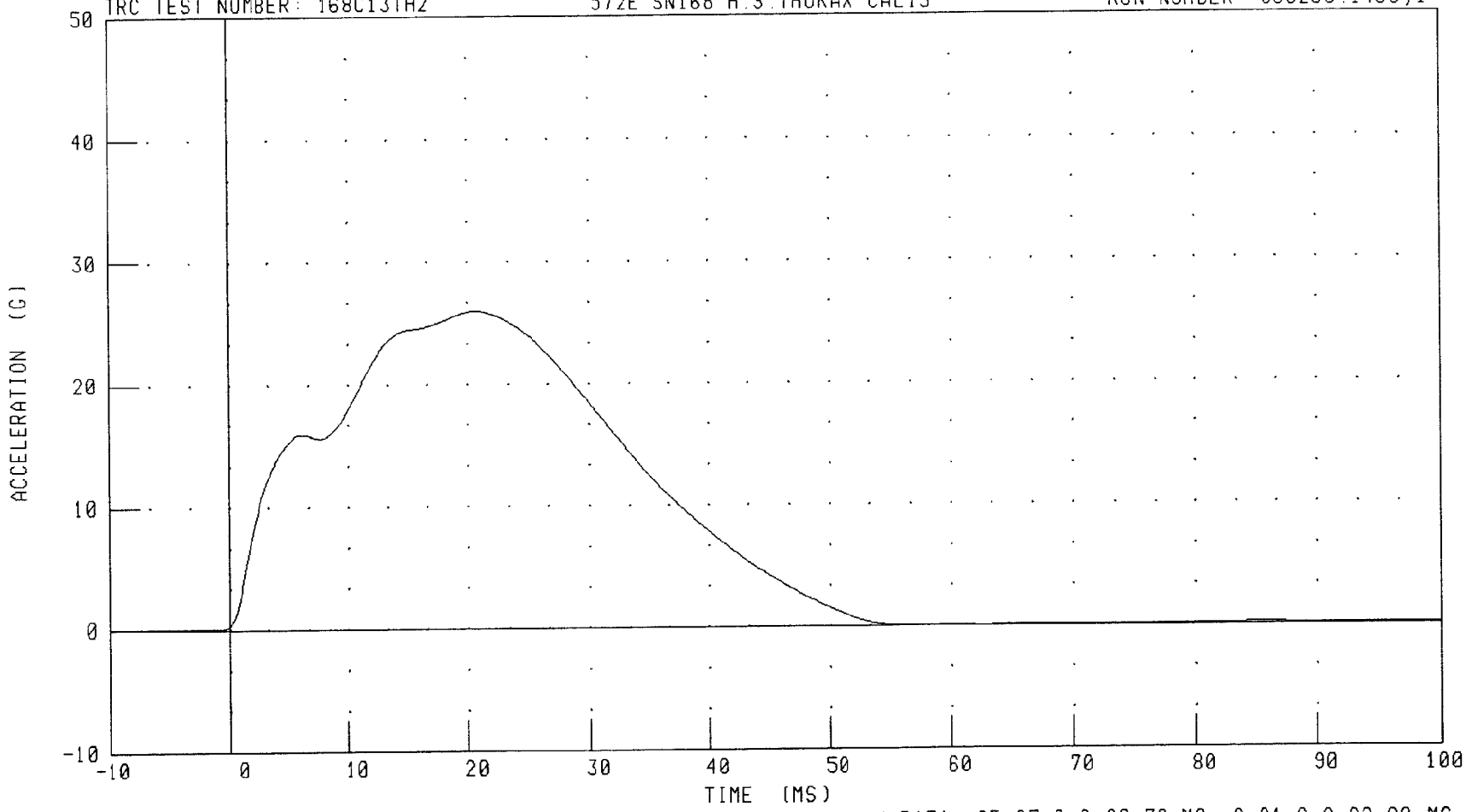
TEST PARAMETER	HIGH SPEED TEST SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6-22.2 DEG. C	22.2 DEG. C
RELATIVE HUMIDITY	10 - 70 %	44.0 %
PENDULUM VELOCITY	6.59 - 6.83 M/S	6.62 M/S
MAXIMUM DEFLECTION	63.5 - 72.6 MM	69.6 MM
MAXIMUM RESISTIVE FORCE	5159 - 5894 N	5948. N *
INTERNAL HYSTERESIS	69% - 85%	68.5% *

* TEST DOES NOT MEET SPECIFICATIONS

TECHNICIAN Todd Dresback RUN NUMBER: 051599.0720;1

PART 572-E HYBRID III THORAX CALIBRATION
PENDULUM DECELERATION

TRC TEST NUMBER: 168C13TH2 572E SN168 H.S.THORAX CAL13 RUN NUMBER: 060299.1433;1

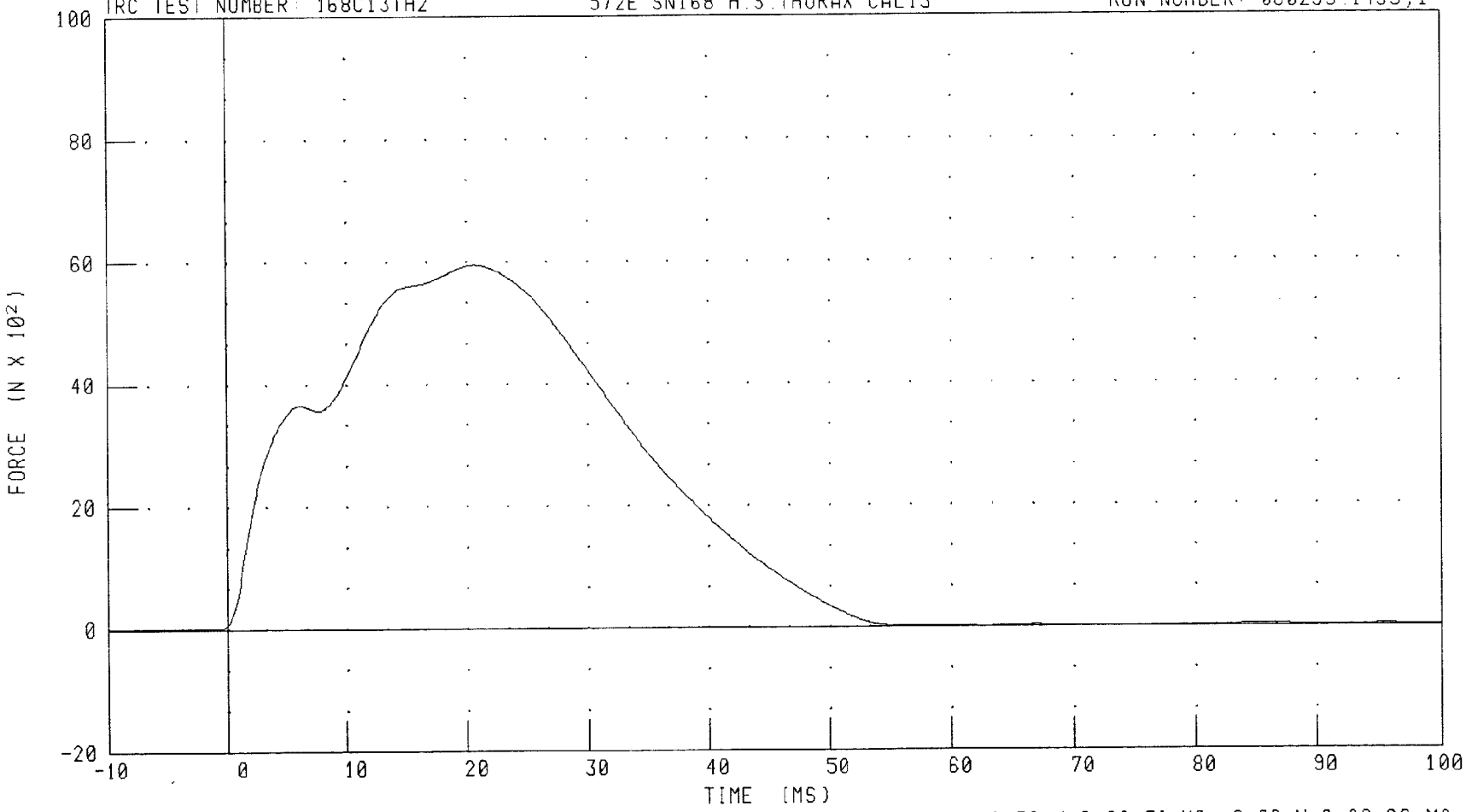


CHANNEL: PENXG FILTER: CH. CLASS 180 PEAK DATA: 25.97 G @ 20.72 MS; 0.01 G @ 62.80 MS

PART 572-E HYBRID III THORAX CALIBRATION

PENDULUM FORCE

TRC TEST NUMBER: 168C13TH2 572E SN168 H.S.THORAX CAL13 RUN NUMBER: 060299.1433,1

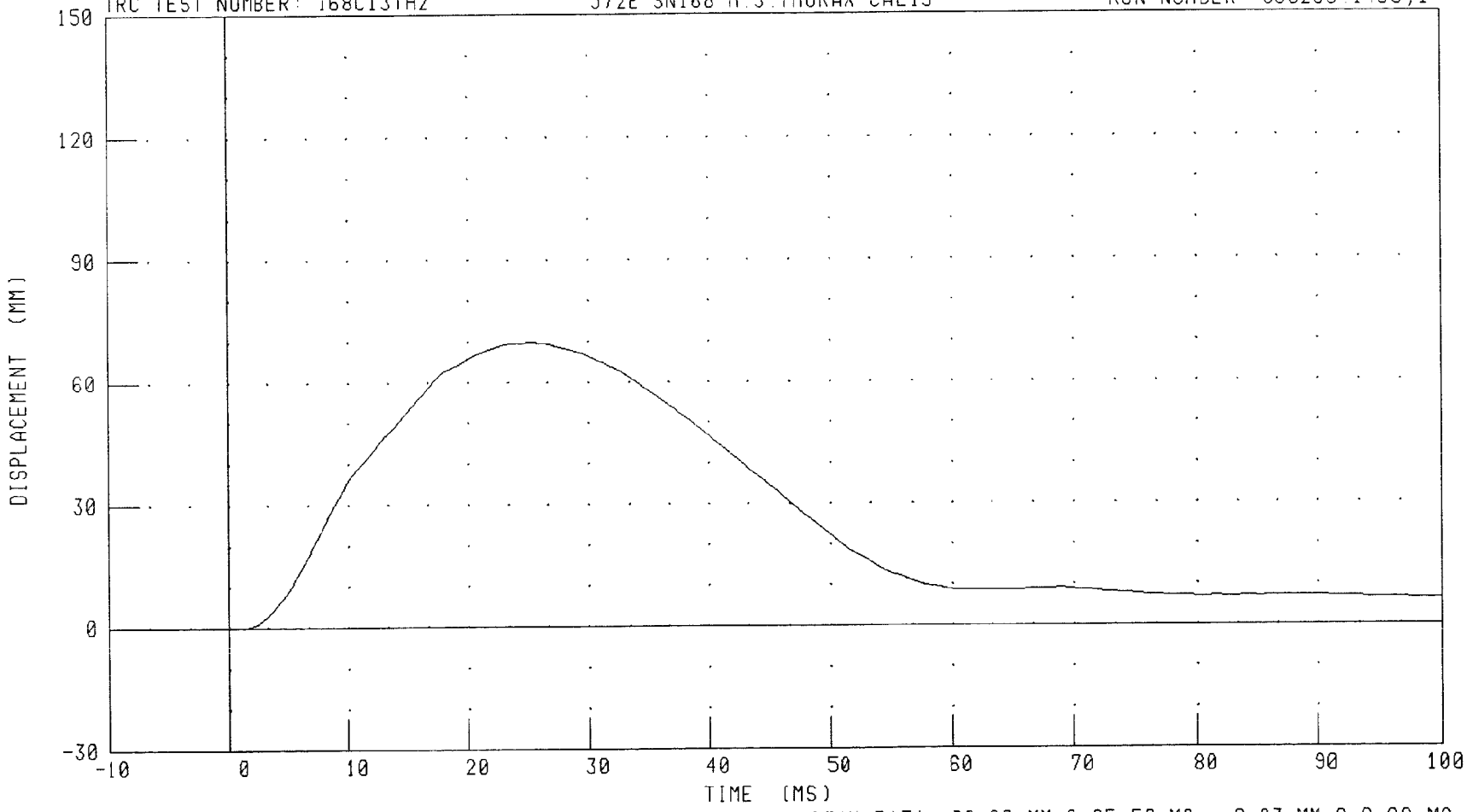


CHANNEL: PENXF FILTER: CH. CLASS 180 PEAK DATA: 5948.52 N @ 20.72 MS; 2.00 N @ 62.80 MS

PART 572-E HYBRID III THORAX CALIBRATION

STERNUM DISPLACEMENT

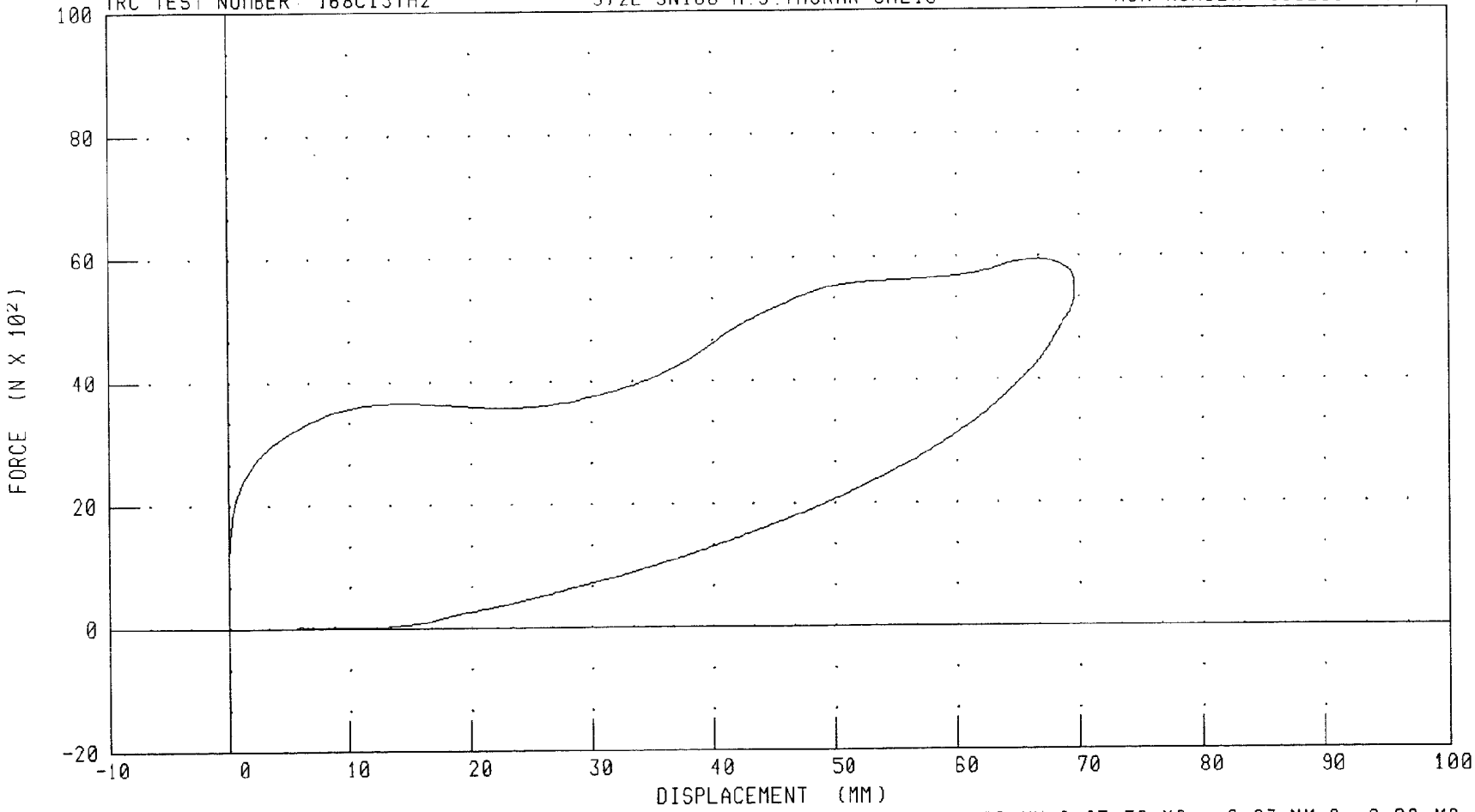
TRC TEST NUMBER: 168C13TH2 572E SN168 H.S.THORAX CAL13 RUN NUMBER: 060299.1433;1



CHANNEL: CSTXD FILTER: CH. CLASS 180 PEAK DATA: 69.68 MM @ 25.52 MS; -0.03 MM @ 0.96 MS

PART 572-E HYBRID III THORAX CALIBRATION
CHEST DISPLACEMENT VS PENDULUM FORCE

TRC TEST NUMBER: 168C13TH2 572E SN168 H.S.THORAX CAL13 RUN NUMBER: 060299 1433;1



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

PEAK DATA: 69.68 MM @ 25.52 MS; -0.03 MM @ 0.96 MS
5948.52 N @ 20.72 MS; 2.00 N @ 62.80 MS

TRANSPORTATION RESEARCH CENTER INC.

RIGHT HIP JOINT FEMUR FLEXION TEST

HYBRID III PART 572E 15-MAY-99

TRC INC. TEST NO: 168C13HR1 572E SN 168 HIPFLEX CAL 13

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	44.0 %
ROTATION RATE	5 - 10 deg/sec	YES
TORQUE @ 30 deg ROTATION	<= 94.9 Nm	64.9 Nm
ROTATION @ 203.4 Nm TORQUE	40 - 50 deg.	46.1 deg.

TEST MEETS SPECIFICATIONS

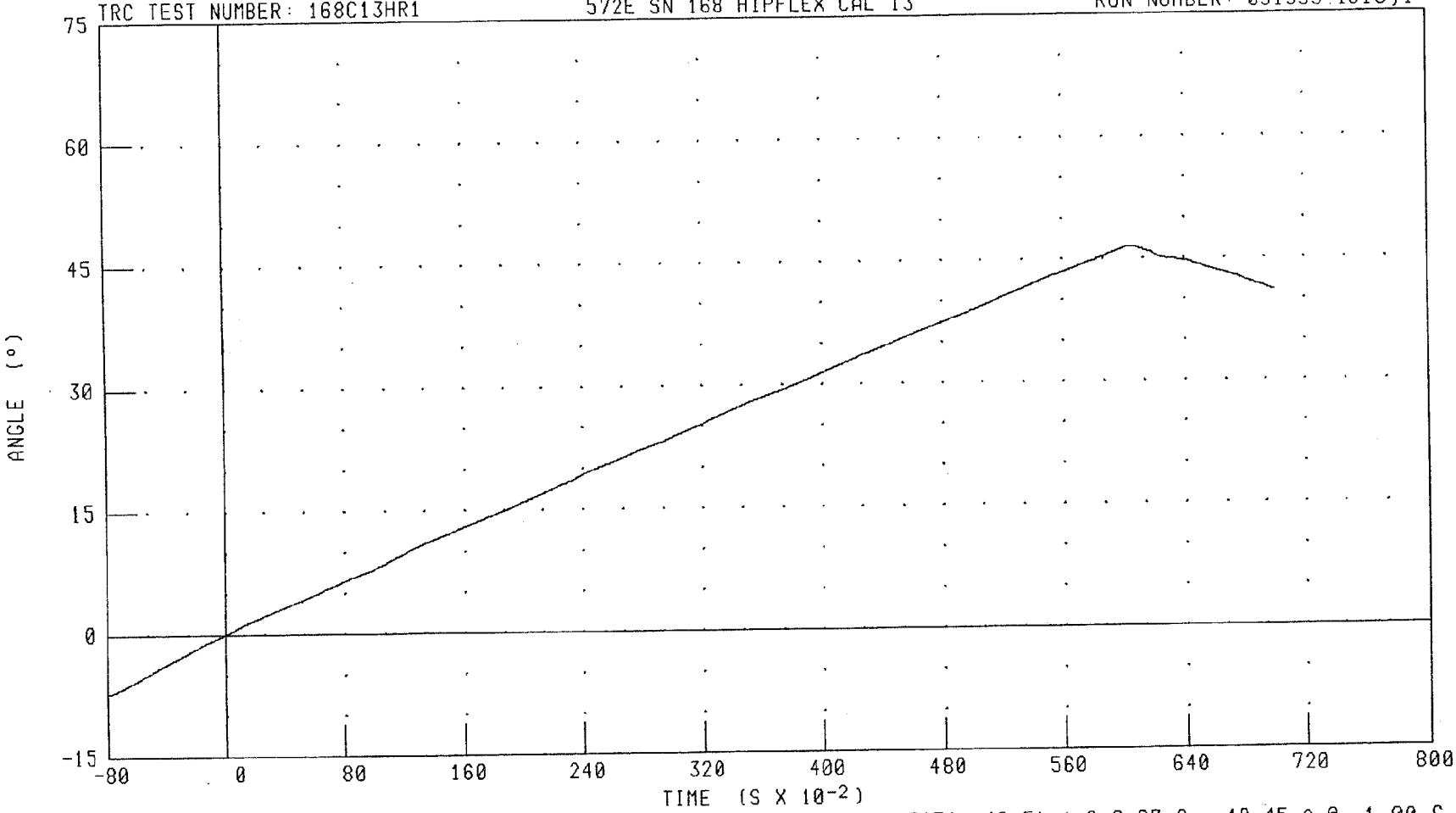
TECHNICIAN By Carl A

RUN NUMBER: 051599.1017;1

HYBRID III HIP FLEXION VERIFICATION - 0 DEGREES
RIGHT HIP FLEXION ROTATION
572E SN 168 HIPFLEX CAL 13

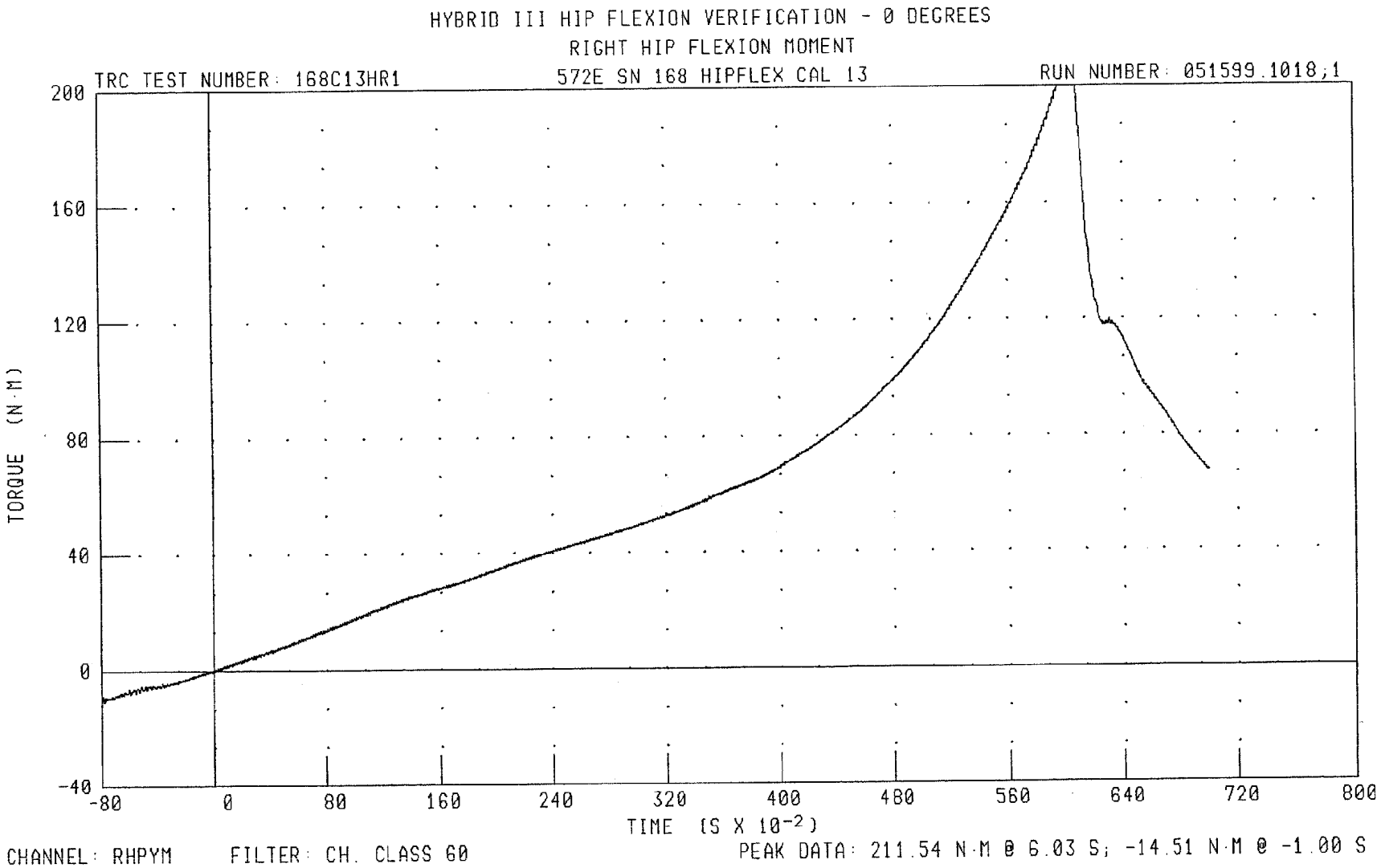
TRC TEST NUMBER: 168C13HR1

RUN NUMBER: 051599.1018;1



CHANNEL: RHPXD FILTER: CH. CLASS 60

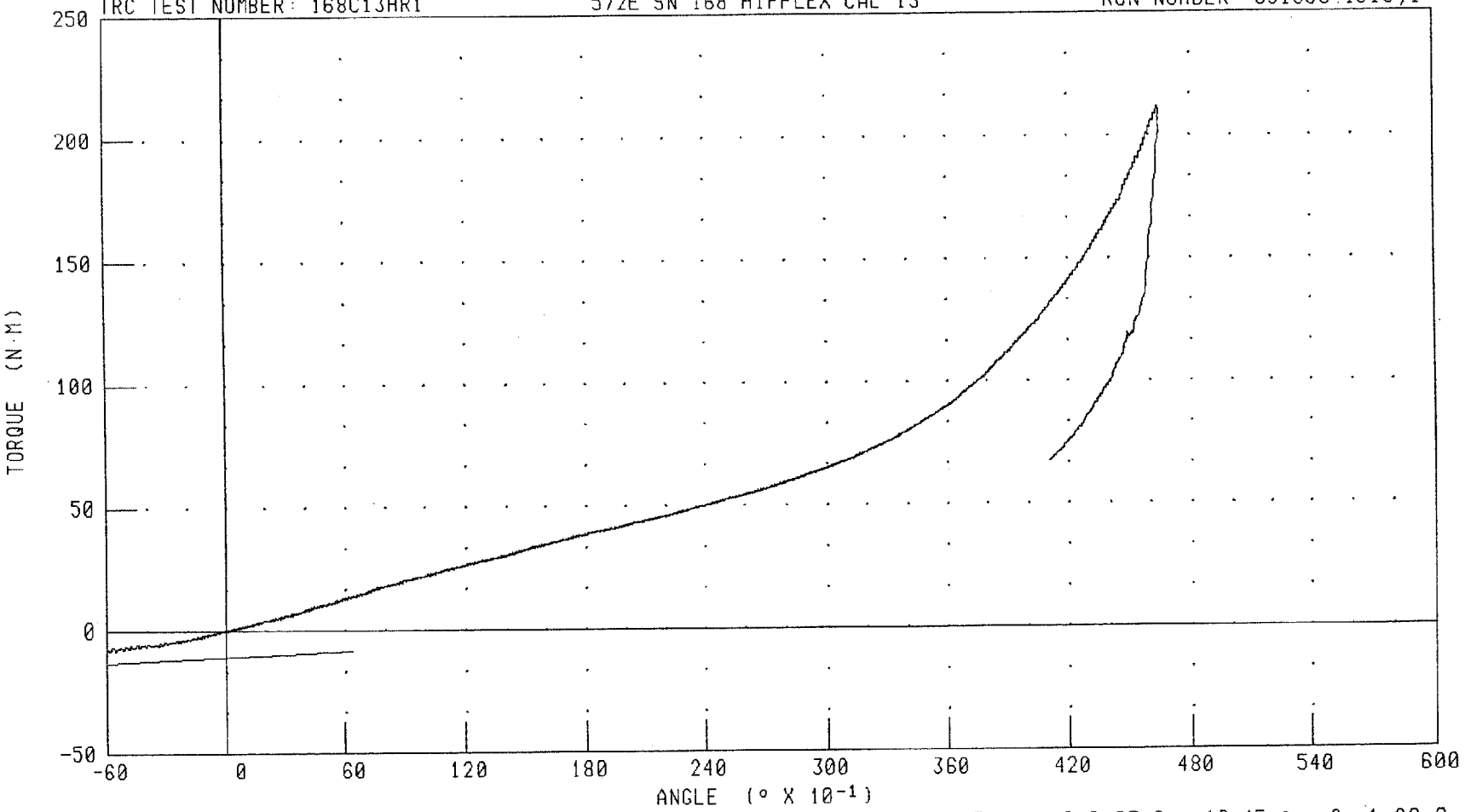
PEAK DATA: 46.51 ° @ 6.07 S; -10.45 ° @ -1.00 S


HYBRID III HIP FLEXION VERIFICATION - 0 DEGREES
RIGHT HIP FLEXION MOMENT
TRC TEST NUMBER: 168C13HR1
572E SN 168 HIPFLEX CAL 13
RUN NUMBER: 051599.1018;1
TORQUE (N·M)
200
160
120
80
40
0
-40
-80
0
80
160
240
320
400
480
560
640
720
800
TIME (S X 10-2)
CHANNEL: RHPYM
FILTER: CH. CLASS 60
PEAK DATA: 211.54 N·M @ 6.03 S; -14.51 N·M @ -1.00 S

HYBRID III HIP FLEXION VERIFICATION - 0 DEGREES

RIGHT HIP FLEXION MOMENT VS ROTATION ANGLE

TRC TEST NUMBER: 168C13HR1 572E SN 168 HIPFLEX CAL 13 RUN NUMBER: 051599.1018;1



CHANNEL: RHPXD FILTER: CH. CLASS 60

RHPYM CH. CLASS 60

PEAK DATA: 46.51 ° @ 6.07 S; -10.45 ° @ -1.00 S

211.54 N·M @ 6.03 S; -14.51 N·M @ -1.00 S

TRANSPORTATION RESEARCH CENTER INC.

LEFT HIP JOINT FEMUR FLEXION TEST

HYBRID III PART 572E 15-MAY-99

TRC INC. TEST NO: 168C13HL1 572E SN 168 HIPFLEX CAL 13

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	44.0 %
ROTATION RATE	5 - 10 deg/sec	YES
TORQUE @ 30 deg ROTATION	<= 94.9 Nm	61.7 Nm
ROTATION @ 203.4 Nm TORQUE	40 - 50 deg.	43.8 deg.

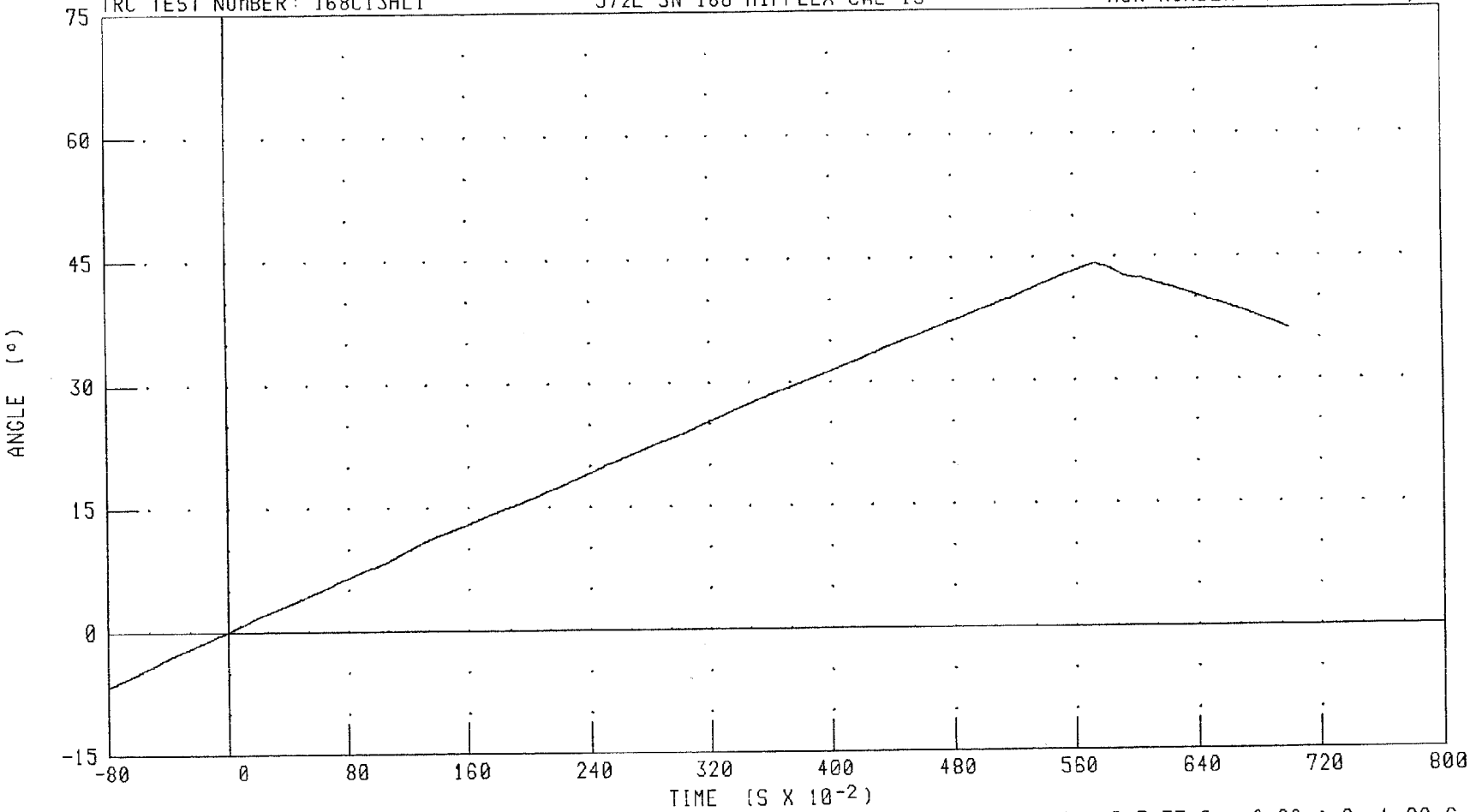
TEST MEETS SPECIFICATIONS

TECHNICIAN _____ RUN NUMBER: 051599.1016;1

HYBRID III HIP FLEXION VERIFICATION - 0 DEGREES

LEFT HIP FLEXION ROTATION

TRC TEST NUMBER: 168C13HL1 572E SN 168 HIPFLEX CAL 13 RUN NUMBER: 051599.1016;1



CHANNEL: LHPXD FILTER: CH. CLASS 60

PEAK DATA: 44.14 ° @ 5.75 S; -9.92 ° @ -1.00 S

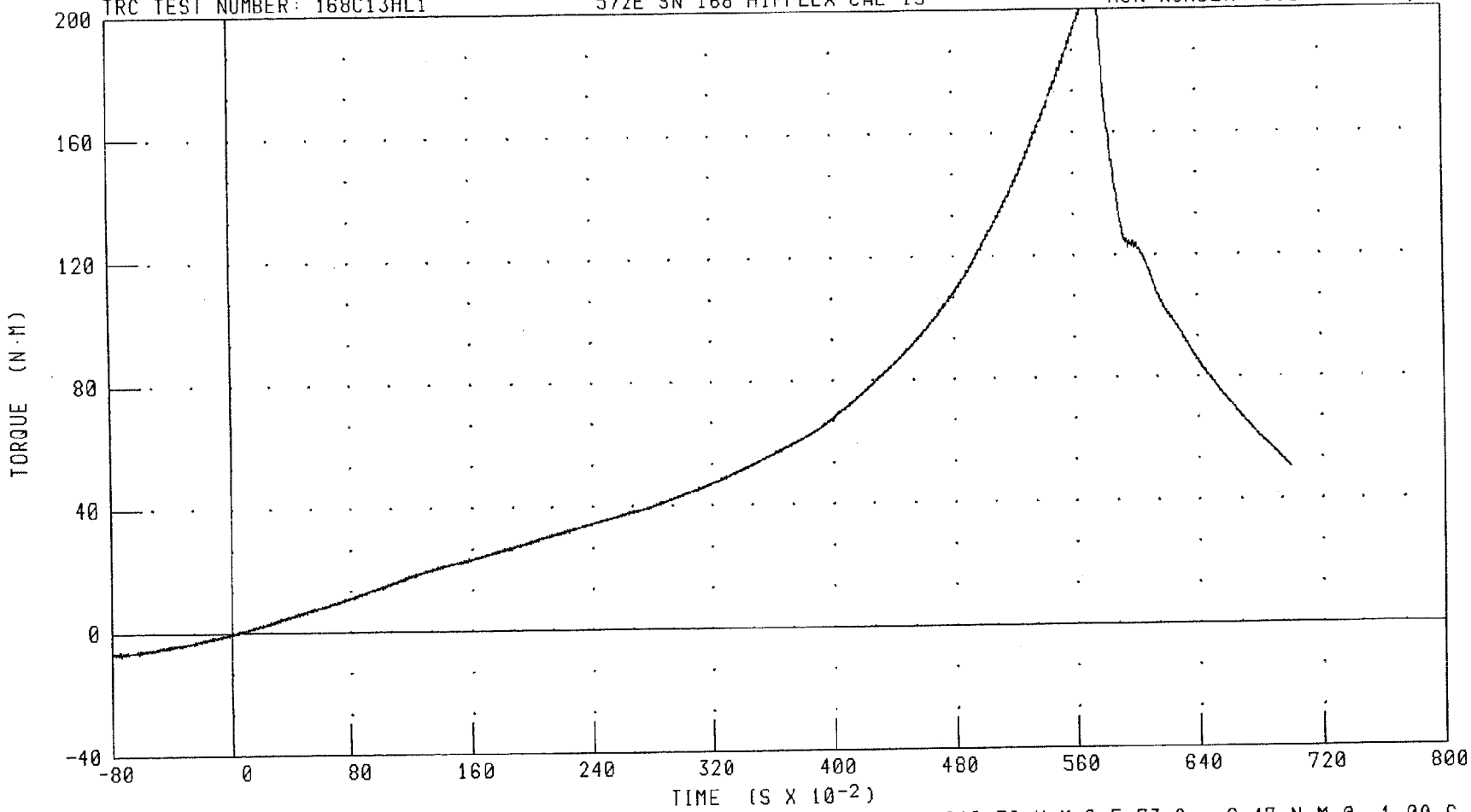
HYBRID III HIP FLEXION VERIFICATION - 0 DEGREES

LEFT HIP FLEXION MOMENT

TRC TEST NUMBER: 168C13HL1

572E SN 168 HIPFLEX CAL 13

RUN NUMBER: 051599.1016;1



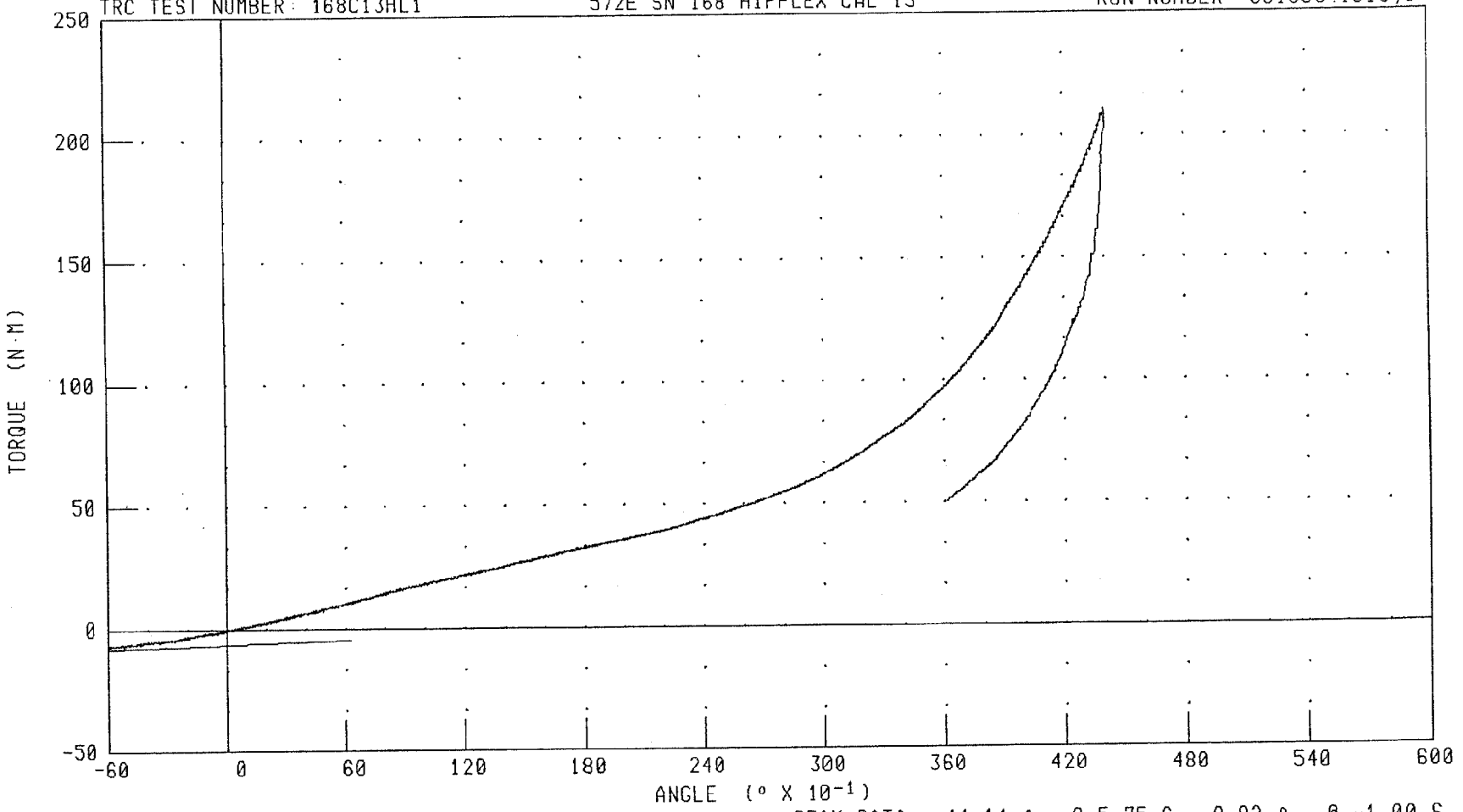
CHANNEL: LHPYM FILTER: CH. CLASS 60

PEAK DATA: 210.58 N·M @ 5.73 S; -9.47 N·M @ -1.00 S

HYBRID III HIP FLEXION VERIFICATION - 0 DEGREES

LEFT HIP FLEXION MOMENT VS ROTATION ANGLE

TRC TEST NUMBER: 168C13HL1 572E SN 168 HIPFLEX CAL 13 RUN NUMBER: 051599.1016;1



CHANNEL: LHPXD FILTER: CH. CLASS 60

LHPYM CH. CLASS 60

PEAK DATA: 44.14 ° @ 5.75 S; -9.92 ° @ -1.00 S

210.58 N·M @ 5.73 S; -9.47 N·M @ -1.00 S

TRANSPORTATION RESEARCH CENTER INC.

RIGHT KNEE IMPACT TEST

HYBRID III 50th 14-MAY-99

TRC INC. TEST NO: 168C13RK1 572E SN168 RIGHT KNEE CAL 13

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	44.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.11 M/S
PEAK KNEE IMPACT FORCE 5.0 KG PENDULUM	4715 - 5782 N	5543.1 N

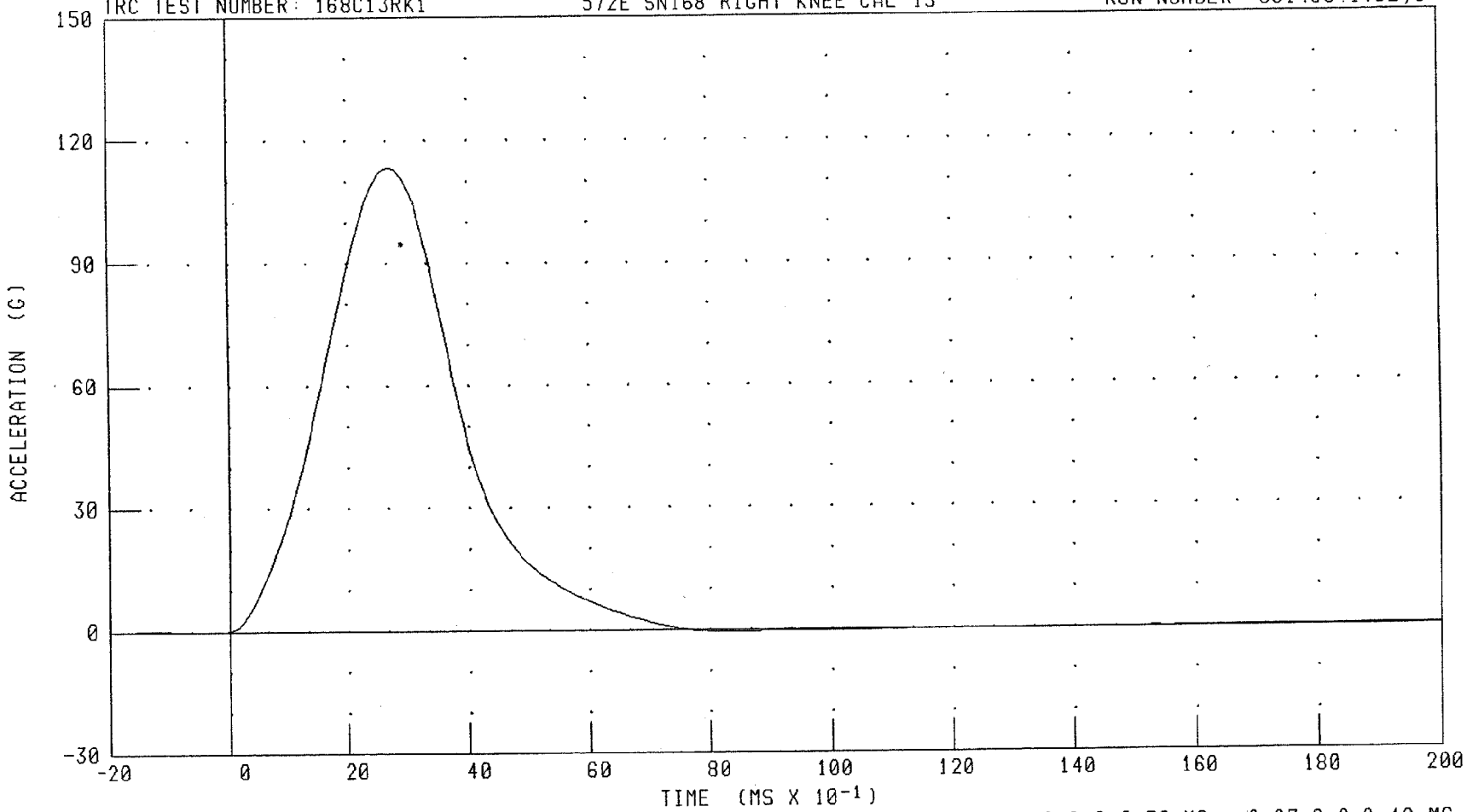
TEST MEETS SPECIFICATIONS

TECHNICIAN By Cubt

RUN NUMBER: 051499.1451;1

PART 572-E HYBRID III RIGHT KNEE CALIBRATION
PENDULUM DECELERATION (5 KG PEND.)

TRC TEST NUMBER: 168C13RK1
572E SN168 RIGHT KNEE CAL 13
RUN NUMBER: 051499.1452;1



CHANNEL: PENXG FILTER: CH. CLASS 600

PEAK DATA: 113.29 G @ 2.72 MS; -0.67 G @ 8.40 MS

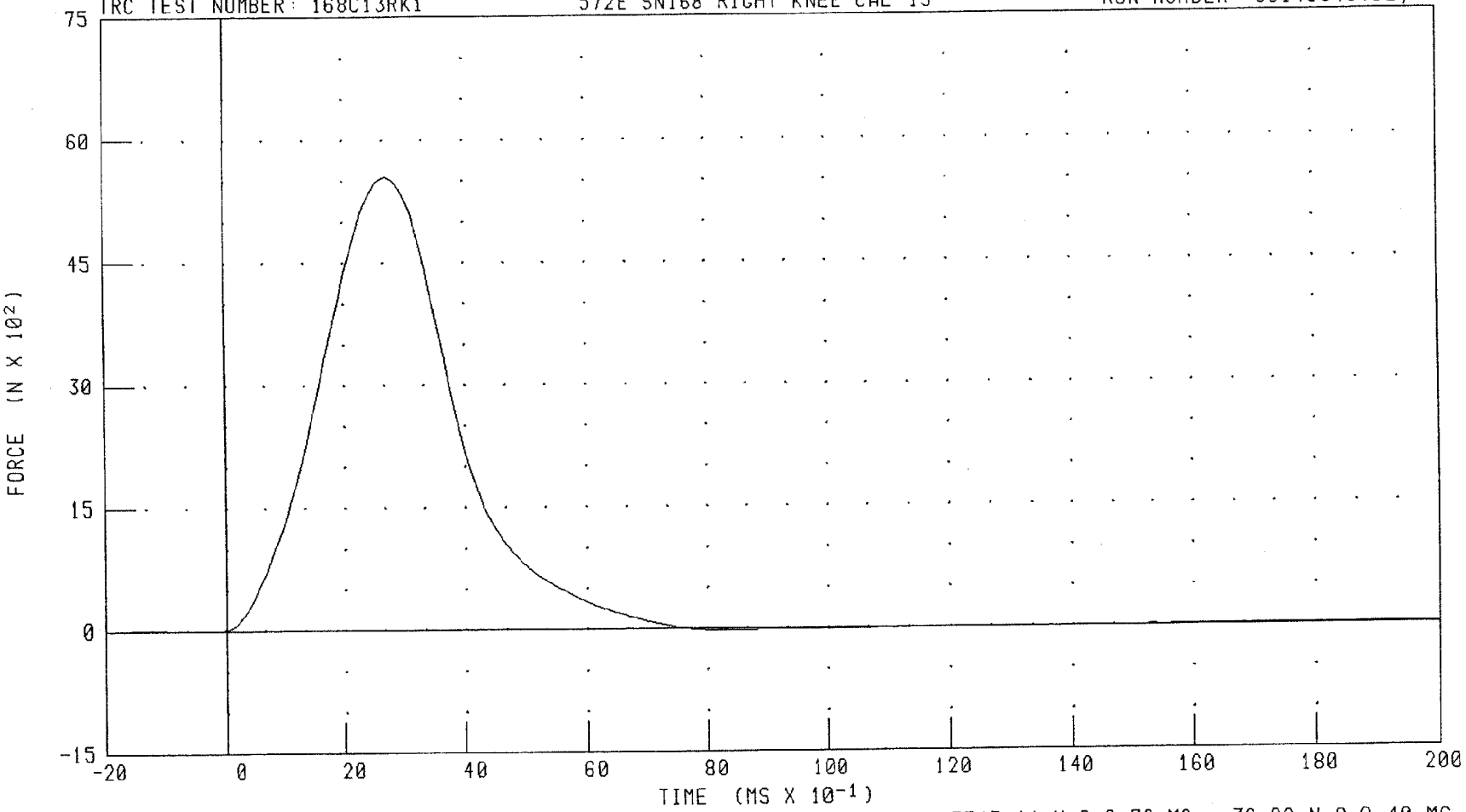
PART 572-E HYBRID III RIGHT KNEE CALIBRATION

PENDULUM FORCE (5 KG PEND.)

TRC TEST NUMBER: 168C13RK1

572E SN168 RIGHT KNEE CAL 13

RUN NUMBER: 051499.1452;1



CHANNEL: PENXF FILTER: CH. CLASS 600

PEAK DATA: 5543.11 N @ 2.72 MS; -32.89 N @ 8.40 MS

TRANSPORTATION RESEARCH CENTER INC.

LEFT KNEE IMPACT TEST

HYBRID III 50th 14-MAY-99

TRC INC. TEST NO: 168C13LK1 572E SN168 LEFT KNEE CAL 13

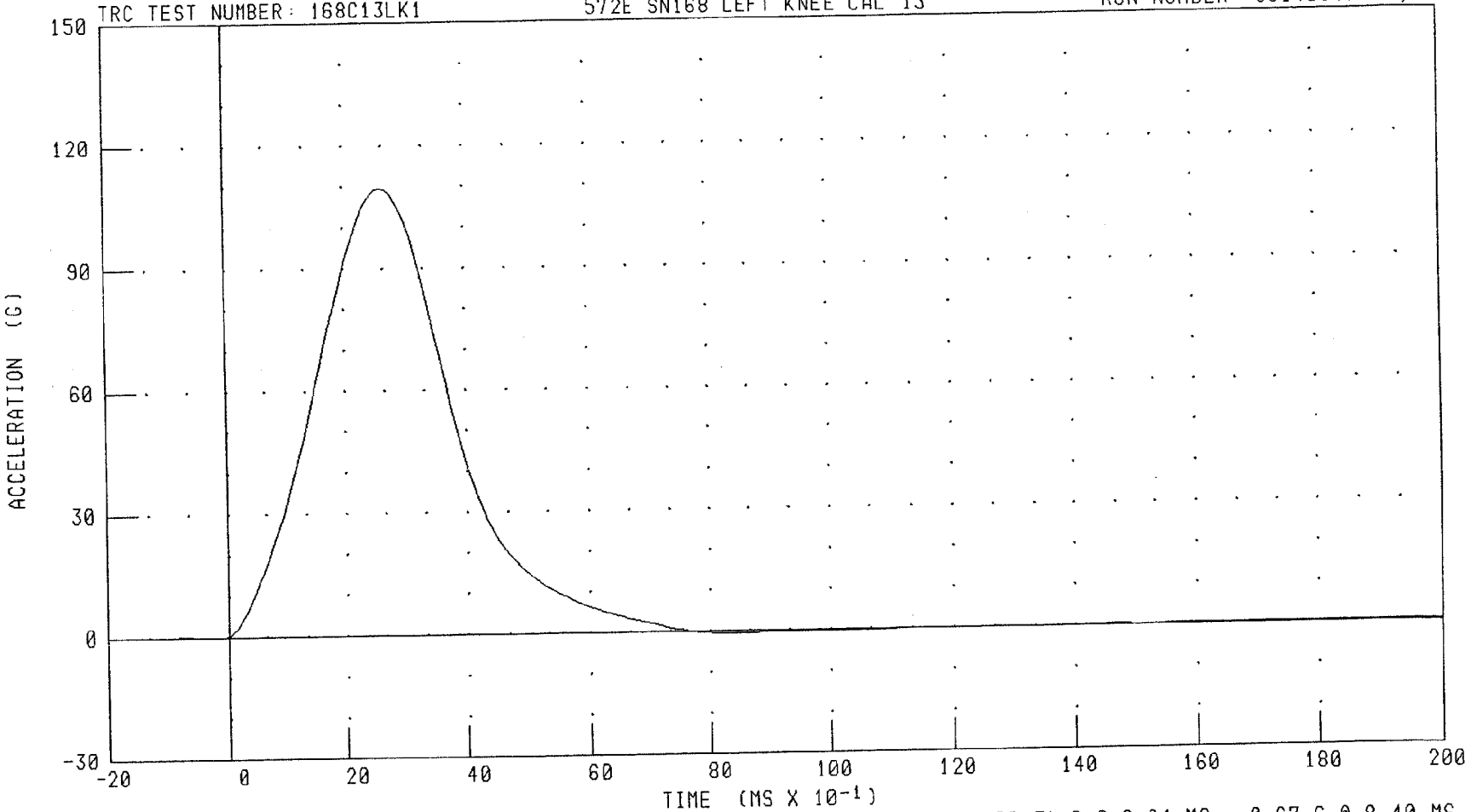
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	44.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.11 M/S
PEAK KNEE IMPACT FORCE 5.0 KG PENDULUM	4715 - 5782 N	5358.2 N

TEST MEETS SPECIFICATIONS

TECHNICIAN _____ RUN NUMBER: 051499.1448;1

PART 572-E HYBRID III LEFT KNEE CALIBRATION
PENDULUM DECELERATION (5 KG PEND.)

TRC TEST NUMBER: 168C13LK1
572E SN168 LEFT KNEE CAL 13
RUN NUMBER: 051499.1448;1



CHANNEL: PENXG FILTER: CH. CLASS 600

PEAK DATA: 109.51 G @ 2.64 MS; -0.67 G @ 8.40 MS

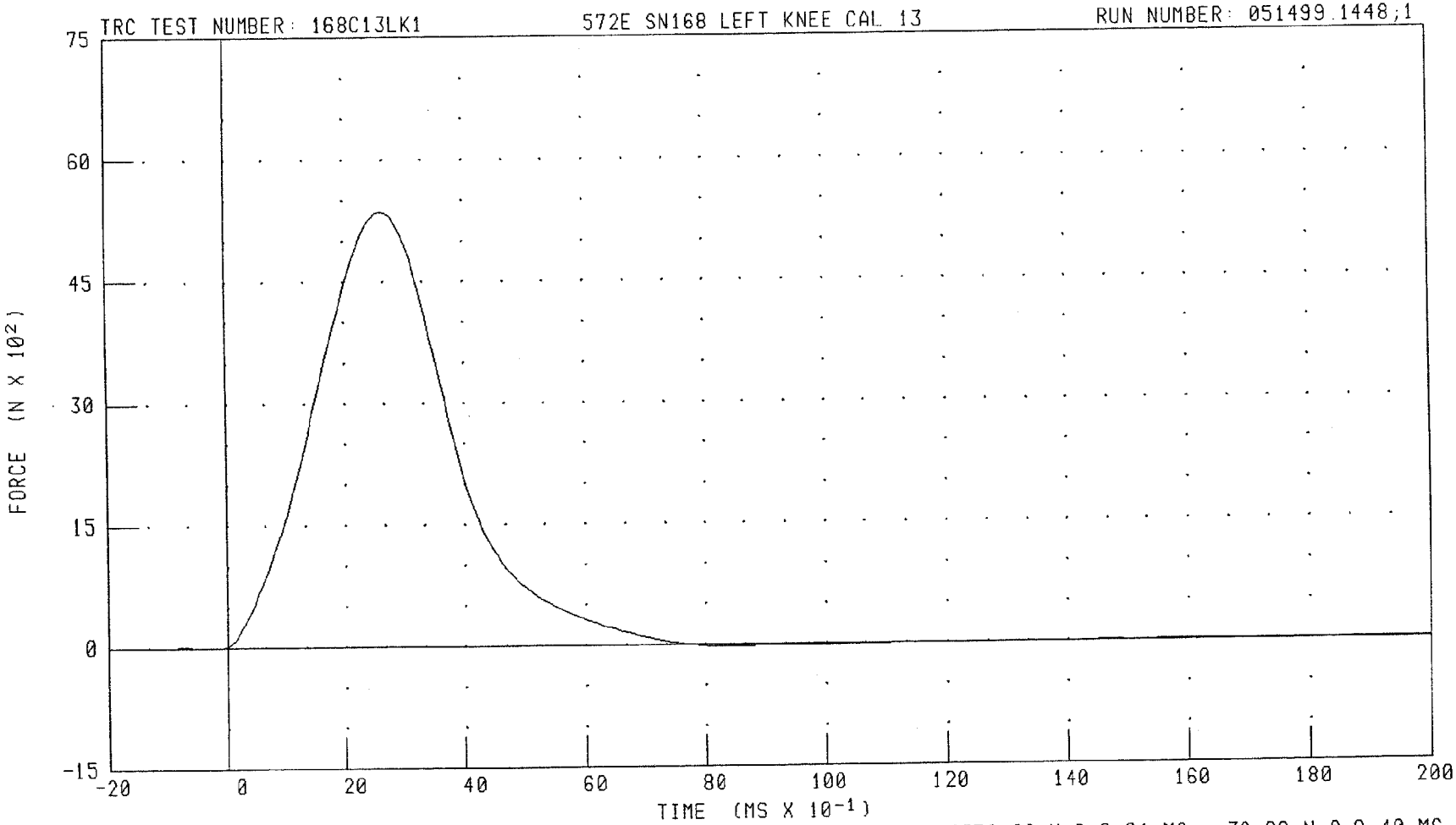
PART 572-E HYBRID III LEFT KNEE CALIBRATION

PENDULUM FORCE (5 KG PEND.)

TRC TEST NUMBER: 168C13LK1

572E SN168 LEFT KNEE CAL 13

RUN NUMBER: 051499.1448;1



CHANNEL: PENXF FILTER: CH. CLASS 600

PEAK DATA: 5358.28 N @ 2.64 MS; -32.69 N @ 8.40 MS

Post-Test Dummy Certification

Passenger Dummy S/N 169

TRANSPORTATION RESEARCH CENTER INC.

HEAD DROP TEST

HYBRID III 50th 15-MAY-99

TRC INC. TEST NO: 169C11HD1 572E SN169 HEAD DROP CAL 11

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	44.0 %
PEAK RESULTANT ACCELERATION	225 - 275 G	254.37 G
PEAK LATERAL ACCELERATION	15 G MAX	1.61 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

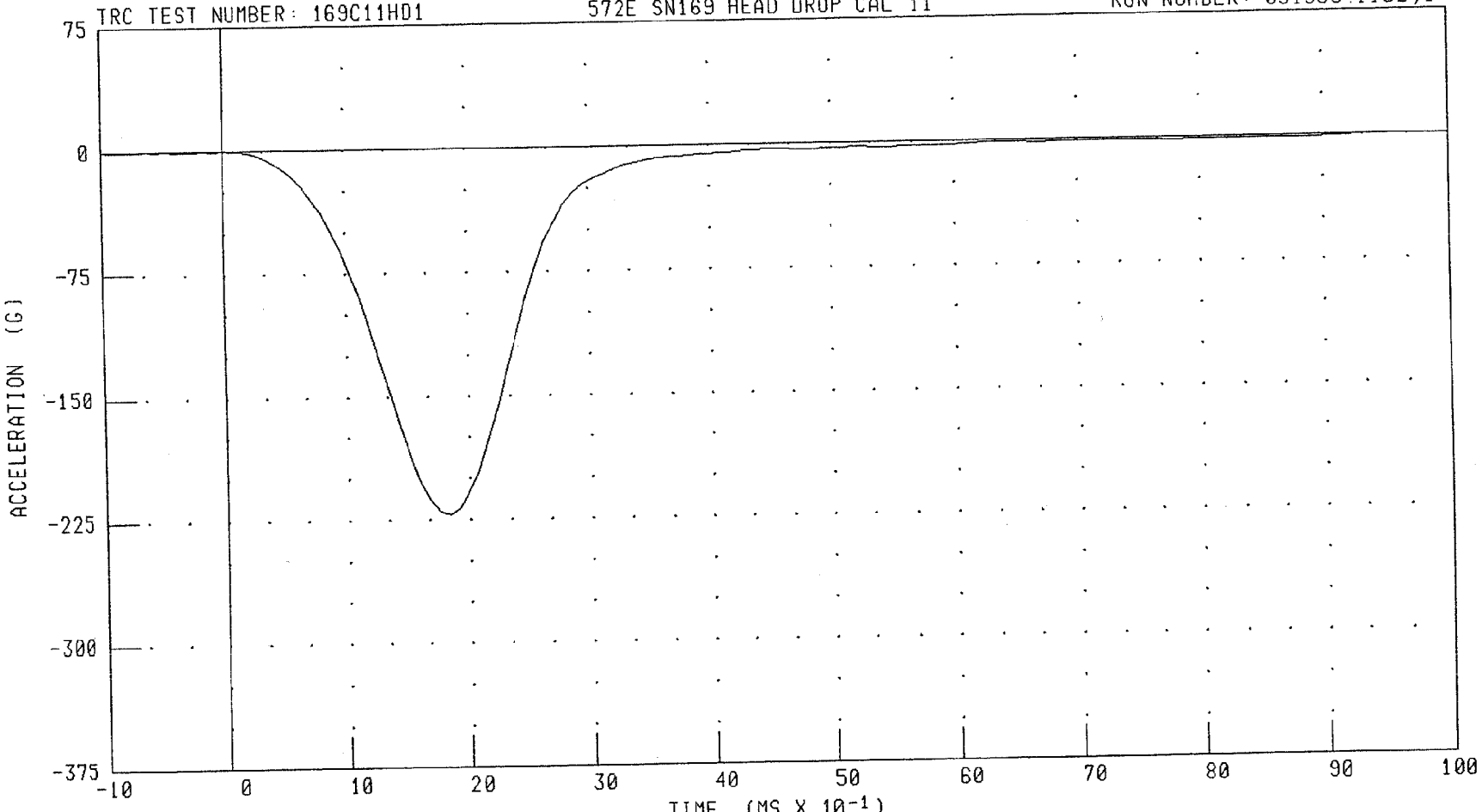
TECHNICIAN By Colt

RUN NUMBER: 051599.1152;1

PART 572-E HYBRID III HEAD CALIBRATION
HEAD ACCELERATION X AXIS
572E SN169 HEAD DROP CAL 11

TRC TEST NUMBER: 169C11HD1

RUN NUMBER: 051599.1152;1



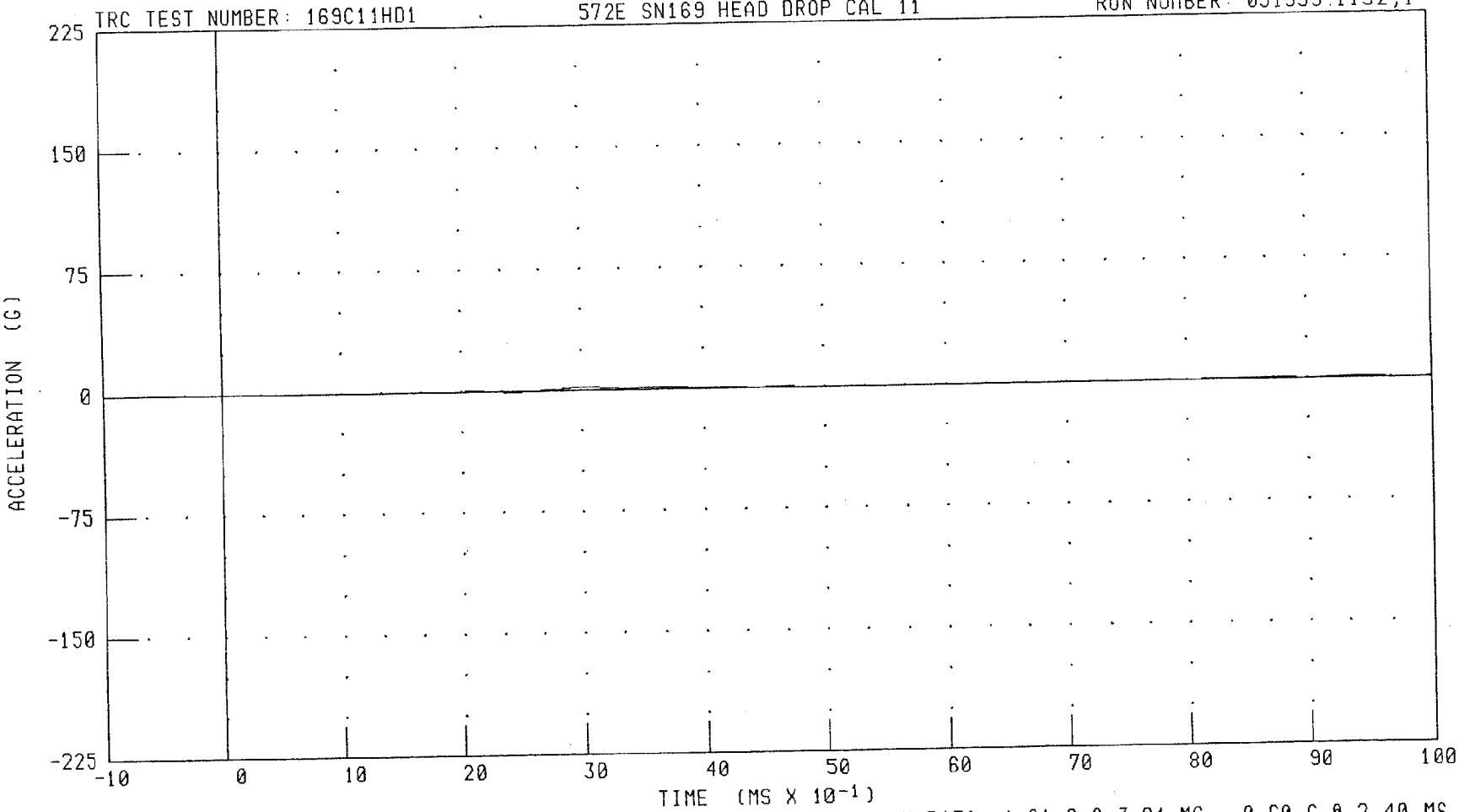
CHANNEL: HEDXG FILTER: CH. CLASS 1000

PEAK DATA: 0.26 G @ 10.00 MS; -221.85 G @ 1.84 MS

PART 572-E HYBRID III HEAD CALIBRATION
HEAD ACCELERATION Y AXIS
572E SN169 HEAD DROP CAL 11

TRC TEST NUMBER: 169C11HD1

RUN NUMBER: 051599.1152;1



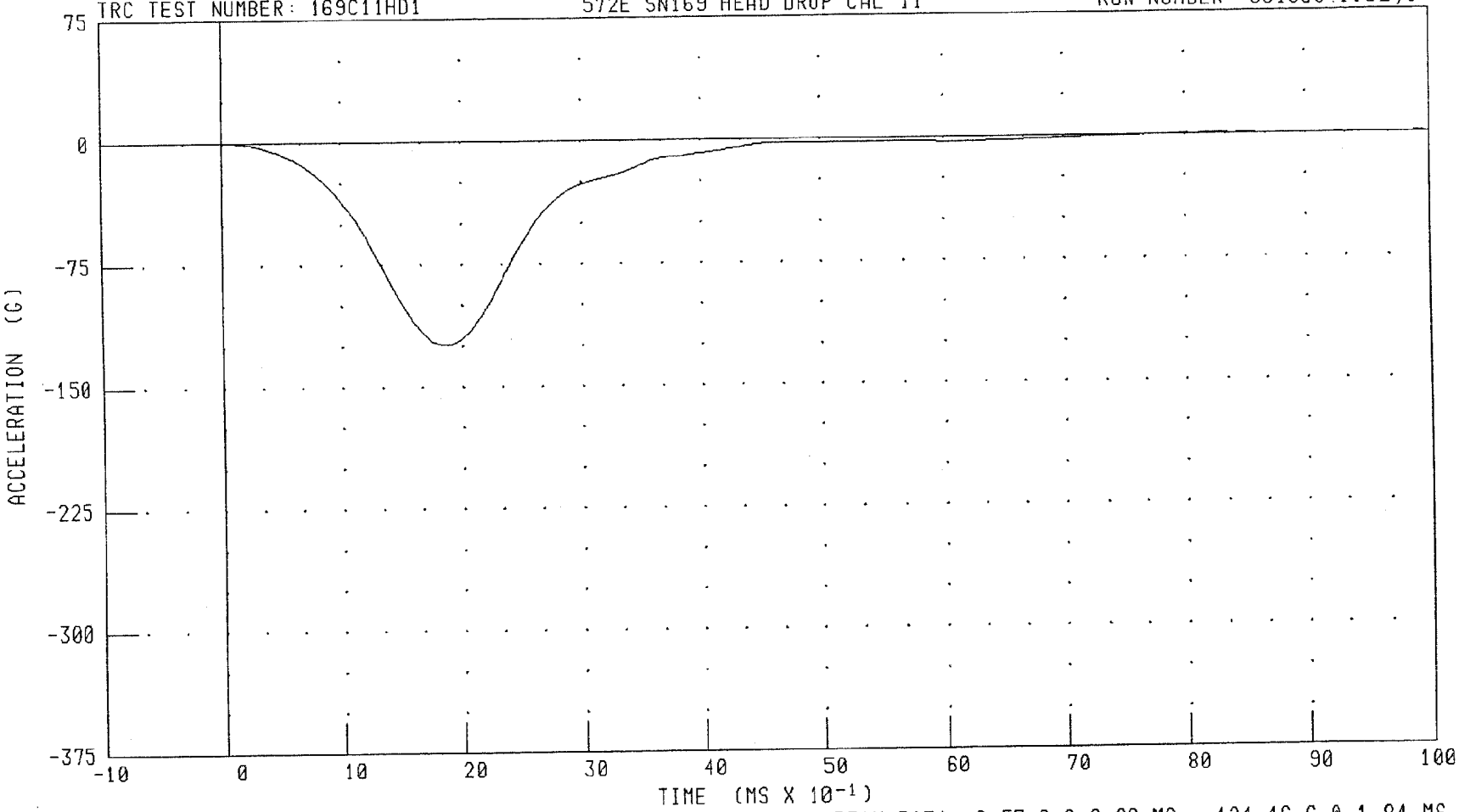
CHANNEL: HEDYG FILTER: CH. CLASS 1000

PEAK DATA: 1.61 G @ 3.04 MS; -0.60 G @ 2.40 MS

PART 572-E HYBRID III HEAD CALIBRATION

HEAD ACCELERATION Z AXIS

TRC TEST NUMBER: 169C11HD1 572E SN169 HEAD DROP CAL 11 RUN NUMBER: 051599.1152;1

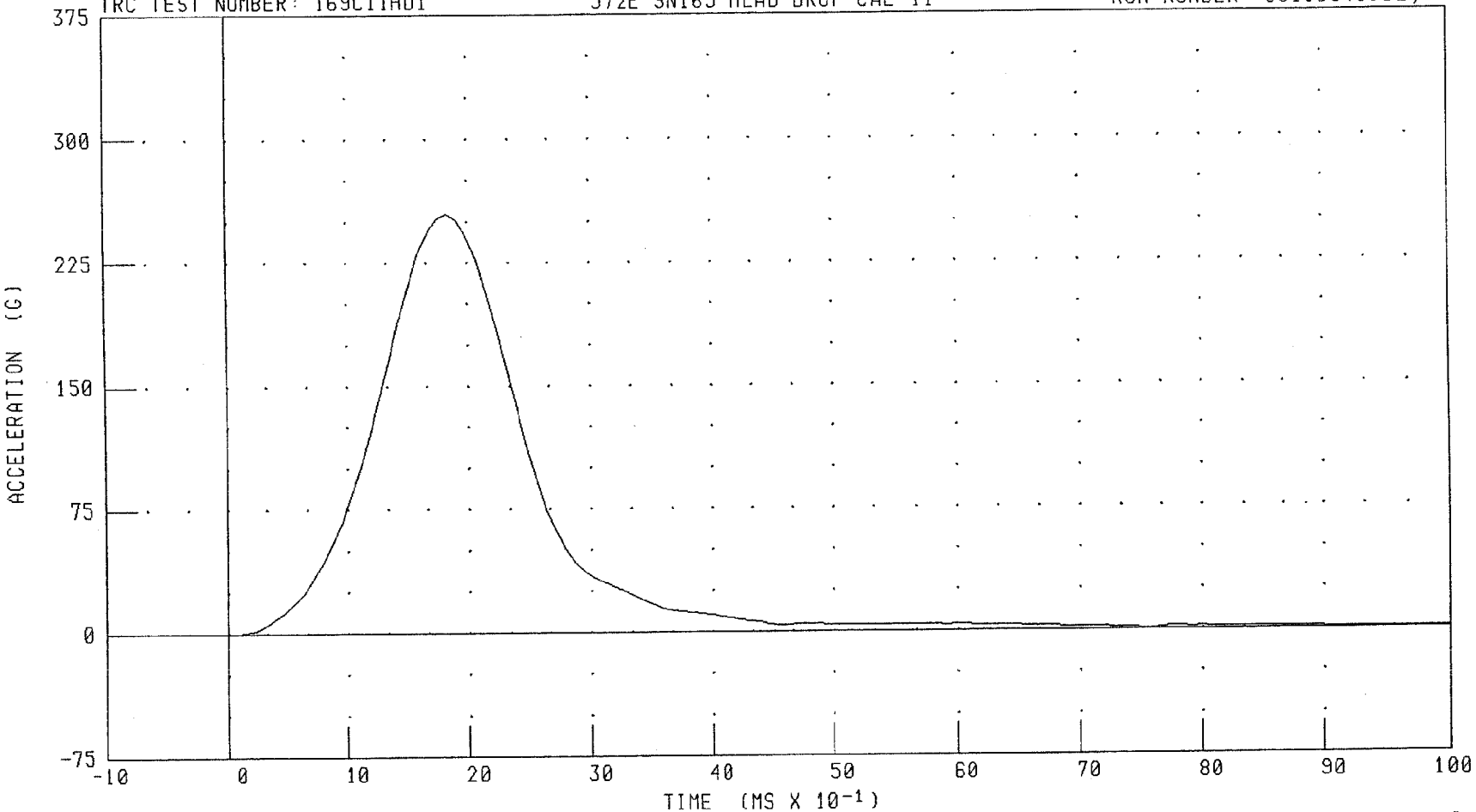


CHANNEL: HEDZG FILTER: CH. CLASS 1000

PEAK DATA: 0.57 G @ 8.00 MS; -124.46 G @ 1.84 MS

PART 572-E HYBRID III HEAD CALIBRATION
HEAD RESULTANT ACCELERATION

TRC TEST NUMBER: 169C11HD1
572E SN169 HEAD DROP CAL 11
RUN NUMBER: 051599.1152;1



CHANNEL: HEDRC FILTER: CH. CLASS 1000

PEAK DATA: 254.37 G @ 1.84 MS; 0.07 G @ -0.64 MS

TRANSPORTATION RESEARCH CENTER INC.

HYBRID III 50th 17-MAY-99

NECK FLEXION TEST - 6 CHANNEL TRANSDUCER

TRC INC. TEST NO: 169C11NF1 572E SN169 NECK FLEXION CAL11

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6-22.2 DEG. C	22.2 DEG. C
RELATIVE HUMIDITY		10 - 70 %	44.0 %
IMPACT VELOCITY		6.89 - 7.13 M/S	6.99 M/S
PENDULUM DECELERATION	10 MS	22.50 - 27.50 G	22.50 G
	20 MS	17.60 - 22.60 G	20.42 G
	30 MS	12.50 - 18.50 G	15.65 G
MAX PENDULUM G		29 G MAX	23.01 G
MAX PENDULUM G ABOVE 30 MS		29 G MAX	15.61 G
DECELERATION-TIME CURVE DECAY TIME TO 5 G		34 - 42 MS	40.40 MS
D PLANE ROTATION	MAX	64 - 78 DEG.	74.59 DEG.
	TIME	57 - 64 MS	61.44 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MAX	88.2 - 108.5 NM	92.99 NM
	TIME	47 - 58 MS	53.44 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		113 - 128 MS	117.52 MS
POSITIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		97 - 107 MS	105.76 MS

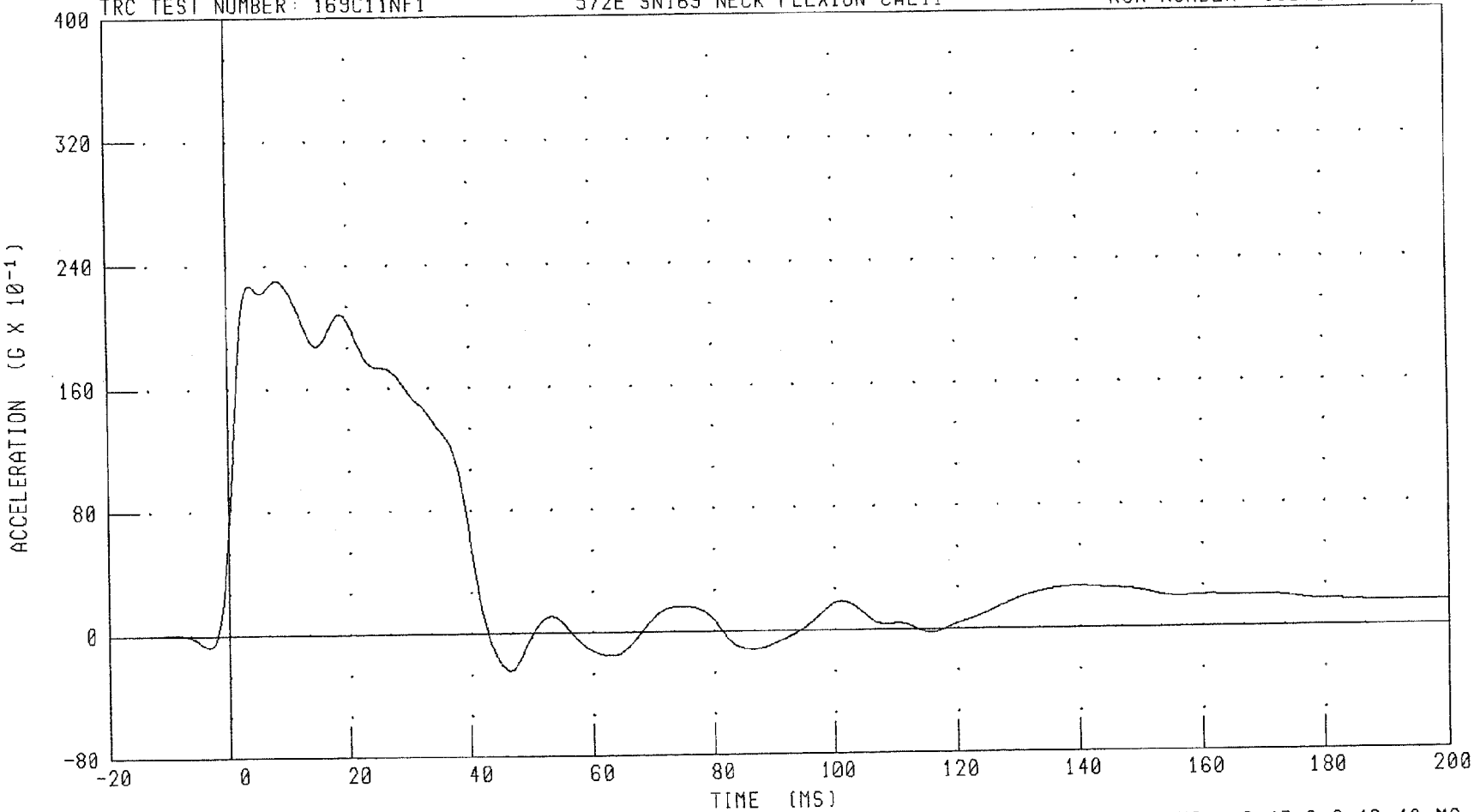
TEST MEETS SPECIFICATIONS

TECHNICIAN _____ RUN NUMBER: 051799.0824;2

PART 572-E HYBRID III NECK FLEXION CALIBRATION

PENDULUM DECELERATION

TRC TEST NUMBER: 169C11NF1 572E SN169 NECK FLEXION CAL11 RUN NUMBER: 051799.0824;2

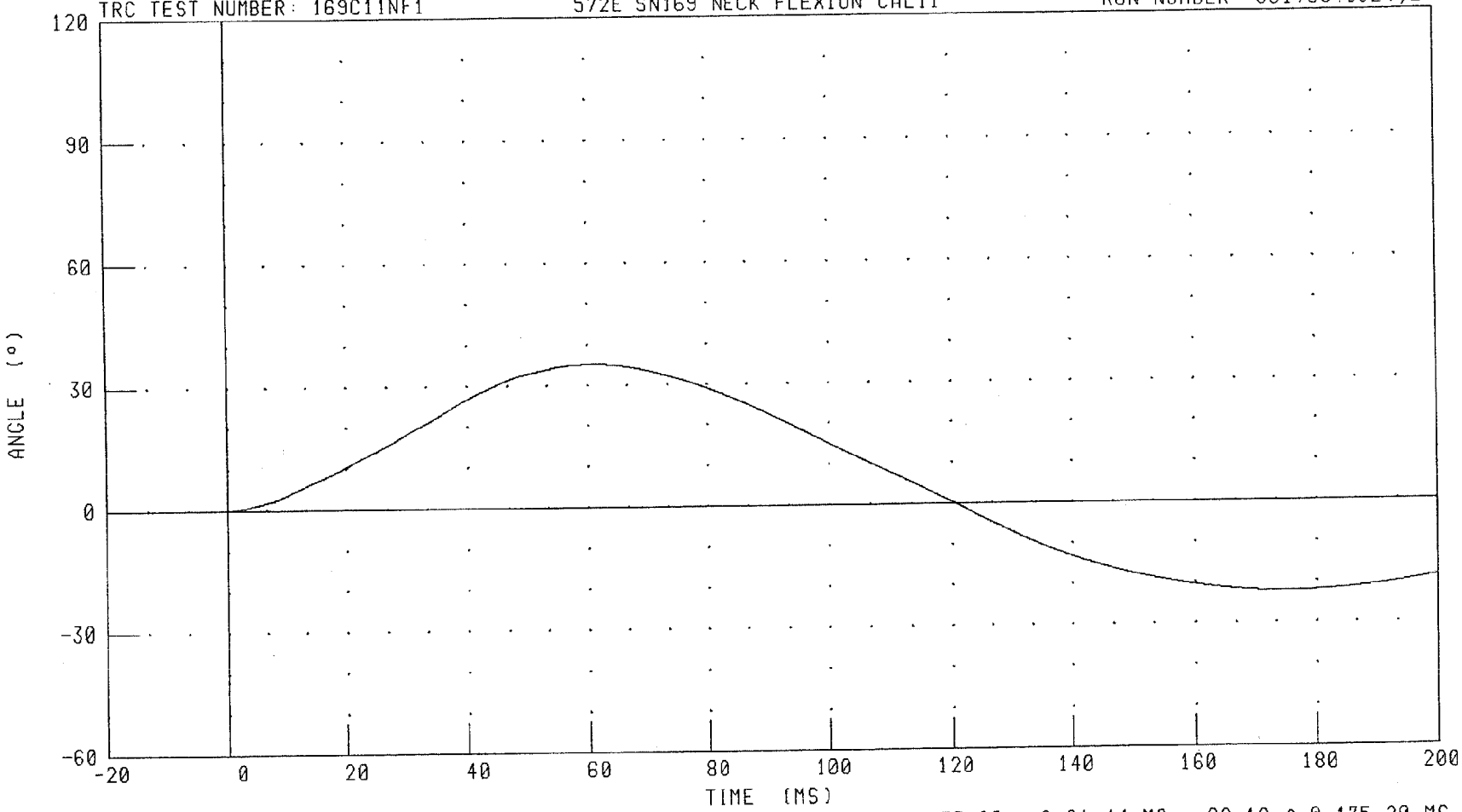


CHANNEL: PENXC FILTER: CH. CLASS 60

PEAK DATA: 23.02 G @ 8.48 MS, -2.43 G @ 46.40 MS

PART 572-E HYBRID III NECK FLEXION CALIBRATION
ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER: 169C11NF1
572E SN169 NECK FLEXION CAL11
RUN NUMBER: 051799.0824;2

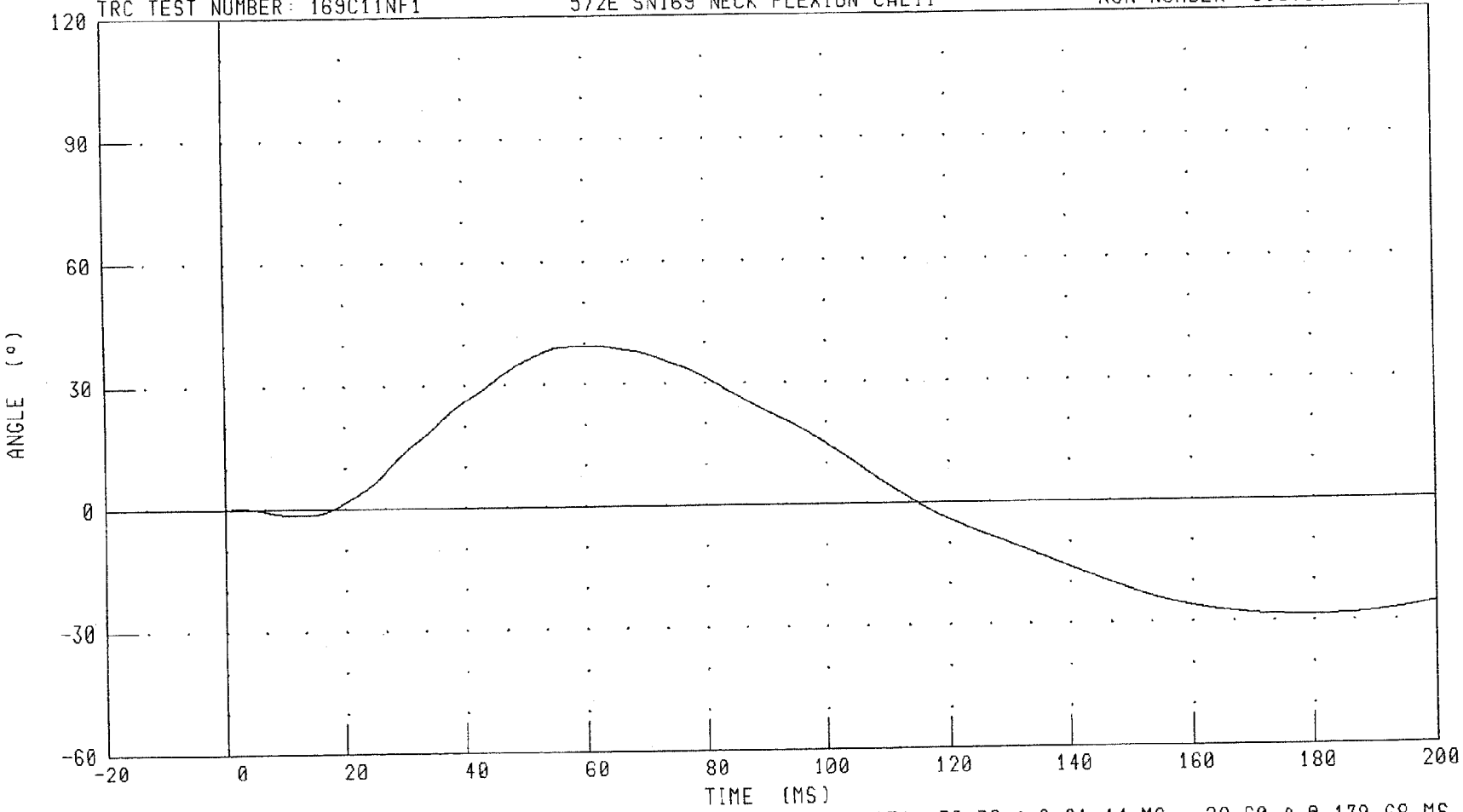


CHANNEL: BETA FILTER: CH. CLASS 60

PEAK DATA: 35.20 ° @ 61.44 MS; -22.19 ° @ 175.20 MS

PART 572-E HYBRID III NECK FLEXION CALIBRATION
ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: 169C11NF1
572E SN169 NECK FLEXION CAL11
RUN NUMBER: 051799.0824;2



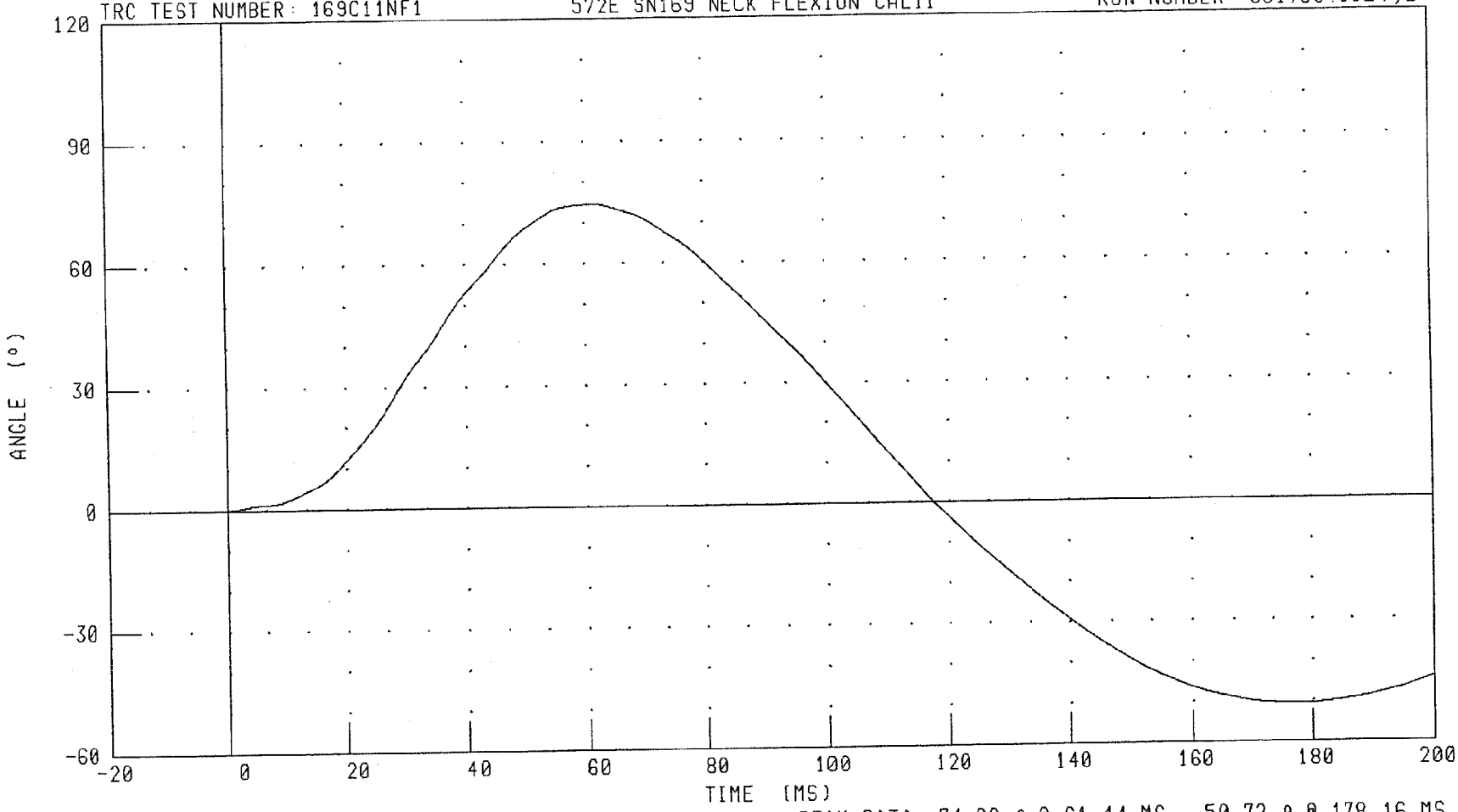
CHANNEL: THETA FILTER: CH. CLASS 60

PEAK DATA: 39.39 ° @ 61.44 MS; -28.60 ° @ 179.68 MS

PART 572-E HYBRID III NECK FLEXION CALIBRATION

TOTAL ROTATION

TRC TEST NUMBER: 169C11NF1 572E SN169 NECK FLEXION CAL11 RUN NUMBER: 051799.0824;2



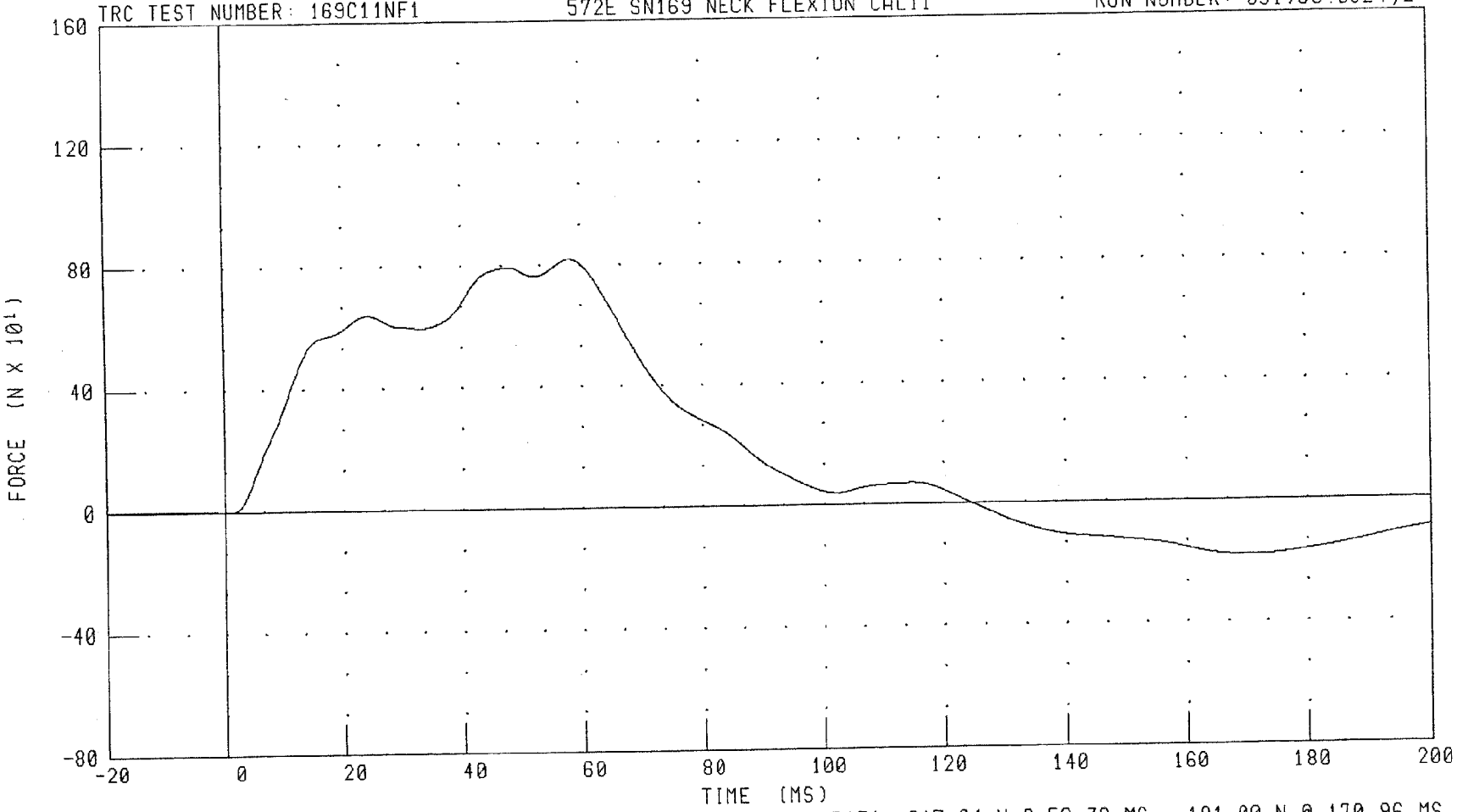
CHANNEL: TOTAN FILTER: CH. CLASS 60

PEAK DATA: 74.60 ° @ 61.44 MS; -50.72 ° @ 178.16 MS

PART 572-E HYBRID III NECK FLEXION CALIBRATION

NECK FORCE X AXIS

TRC TEST NUMBER: 169C11NF1 572E SN169 NECK FLEXION CAL11 RUN NUMBER: 051799.0824;2



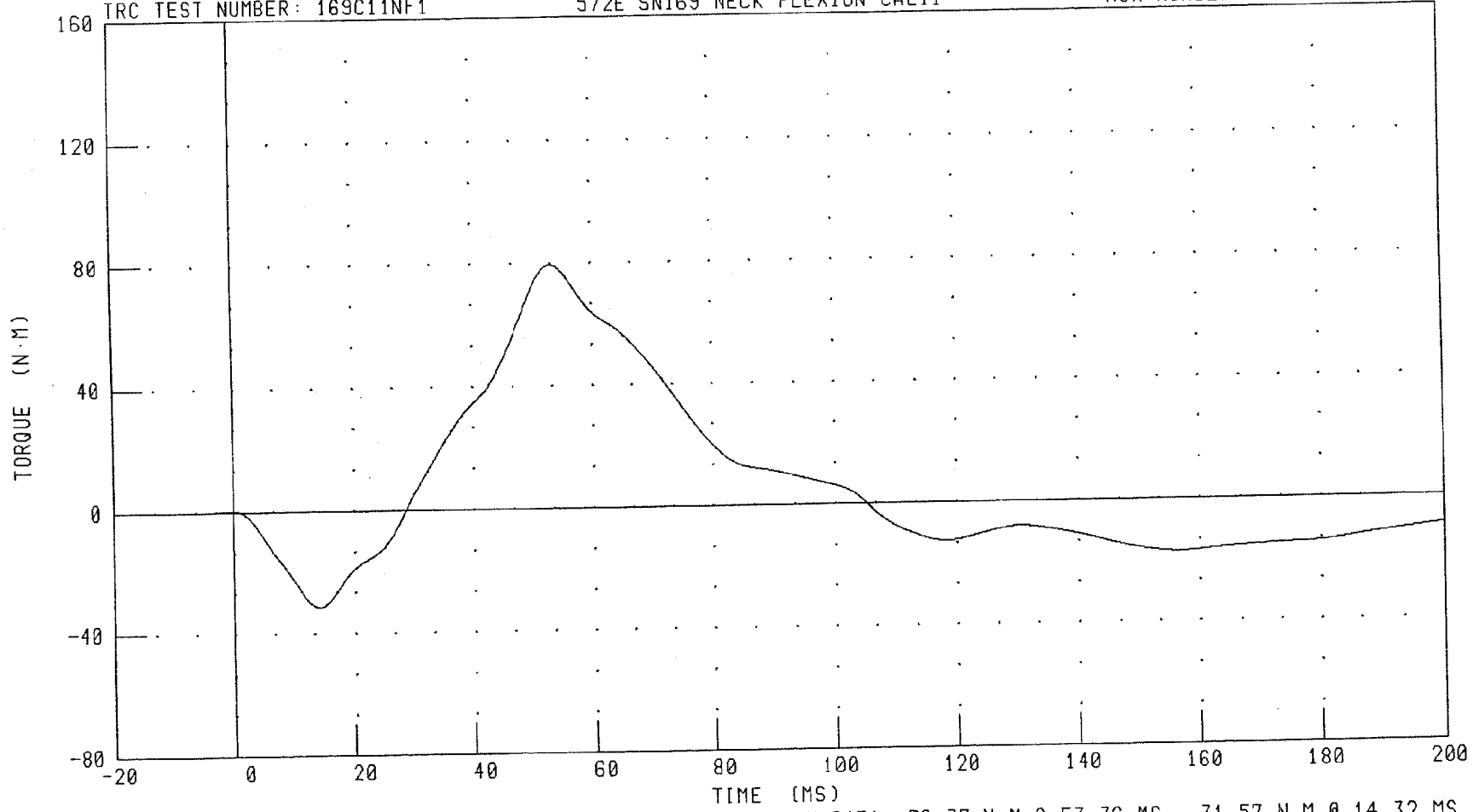
CHANNEL: NEKXF FILTER: CH. CLASS 60

PEAK DATA: 817.94 N @ 58.32 MS; -181.00 N @ 170.96 MS

PART 572-E HYBRID III NECK FLEXION CALIBRATION

NECK MOMENT Y AXIS

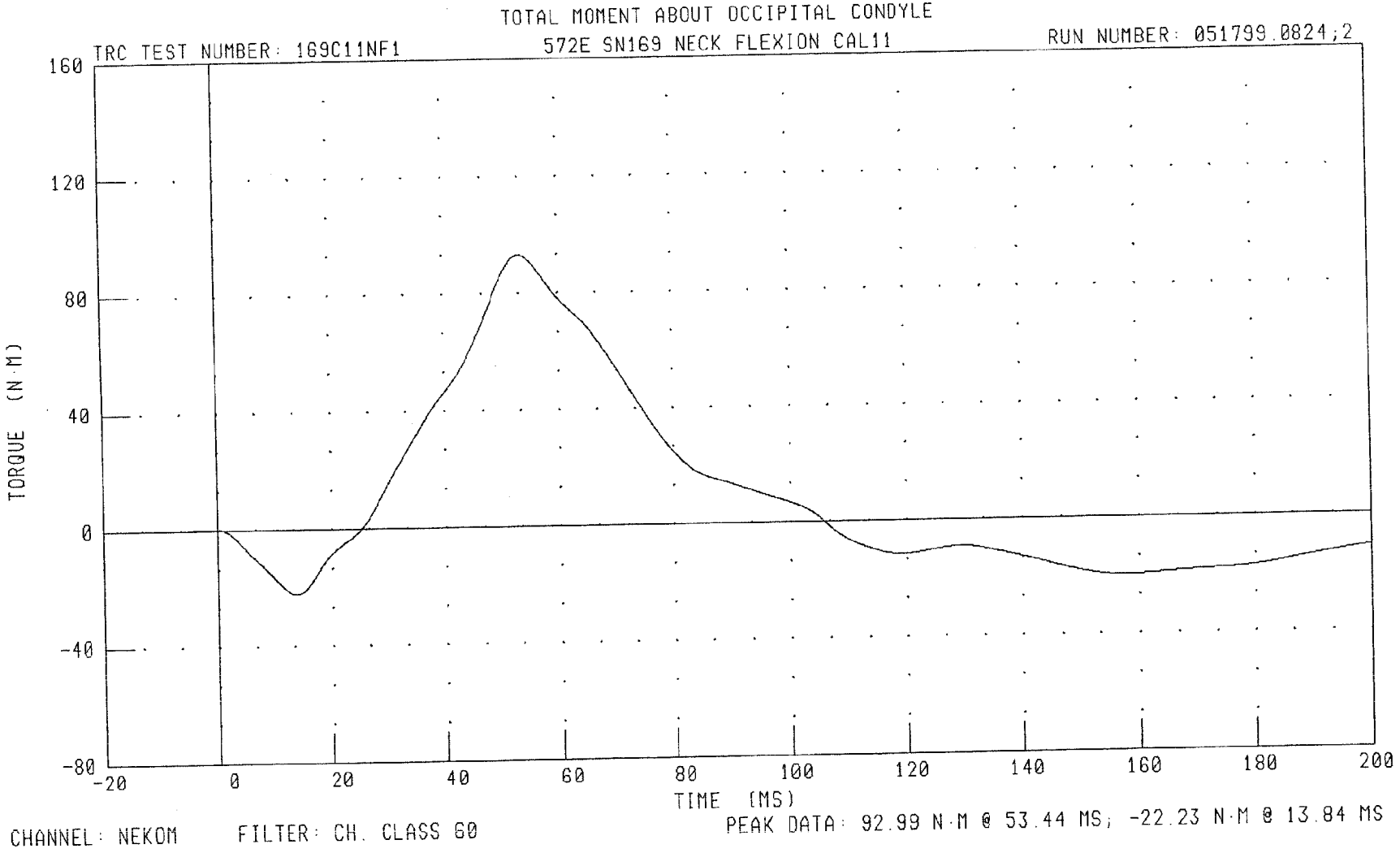
TRC TEST NUMBER: 169C11NF1 572E SN169 NECK FLEXION CAL11 RUN NUMBER: 051799.0824,2



CHANNEL: NEKYM FILTER: CH. CLASS 60

PEAK DATA: 79.37 N-M @ 53.36 MS; -31.57 N-M @ 14.32 MS

PART 572-E HYBRID III NECK FLEXION CALIBRATION
TOTAL MOMENT ABOUT OCCIPITAL CONDYLE



CHANNEL: NEKOM FILTER: CH. CLASS 60

PEAK DATA: 92.99 N·M @ 53.44 MS; -22.23 N·M @ 13.84 MS

TRANSPORTATION RESEARCH CENTER INC.

HYBRID III 50th 17-MAY-99

NECK EXTENSION TEST - 6 CHANNEL TRANSDUCER

TRC INC. TEST NO: 169C11NE1 572E SN 169 NECK EXT CAL11

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	6.05 M/S
PENDULUM DECELERATION	10 MS	17.20 - 21.20 G	18.43 G
	20 MS	14.00 - 19.00 G	17.17 G
	30 MS	11.00 - 16.00 G	15.22 G
MAX PENDULUM G		22 G MAX	19.16 G
MAX PENDULUM G ABOVE 30 MS		22 G MAX	15.16 G
DECELERATION-TIME CURVE DECAY TIME TO 5 G		38 - 46 MS	39.44 MS
D PLANE ROTATION	MAX	81 - 106 DEG.	97.63 DEG.
	TIME	72 - 82 MS	75.84 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MIN	-80.0/-52.9 NM	-68.81 NM
	TIME	65 - 79 MS	70.88 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		147 - 174 MS	156.96 MS
NEGATIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		120 - 148 MS	147.12 MS

TEST MEETS SPECIFICATIONS

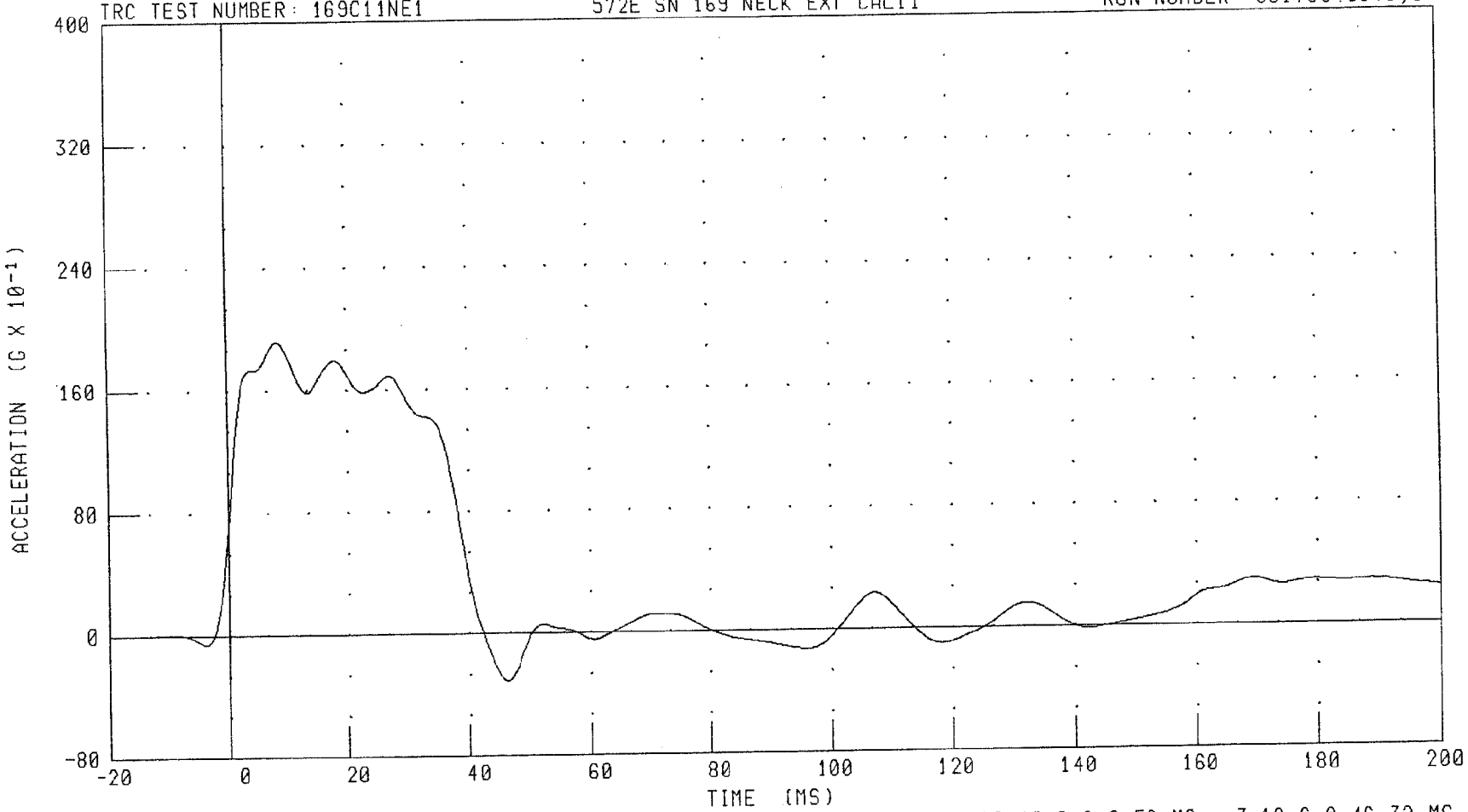
TECHNICIAN By Calt

RUN NUMBER: 051799.0844;1

PART 572-E HYBRID III NECK EXTENSION CALIBRATION

PENDULUM DECELERATION

TRC TEST NUMBER: 169C11NE1 572E SN 169 NECK EXT CAL11 RUN NUMBER: 051799.0845;1

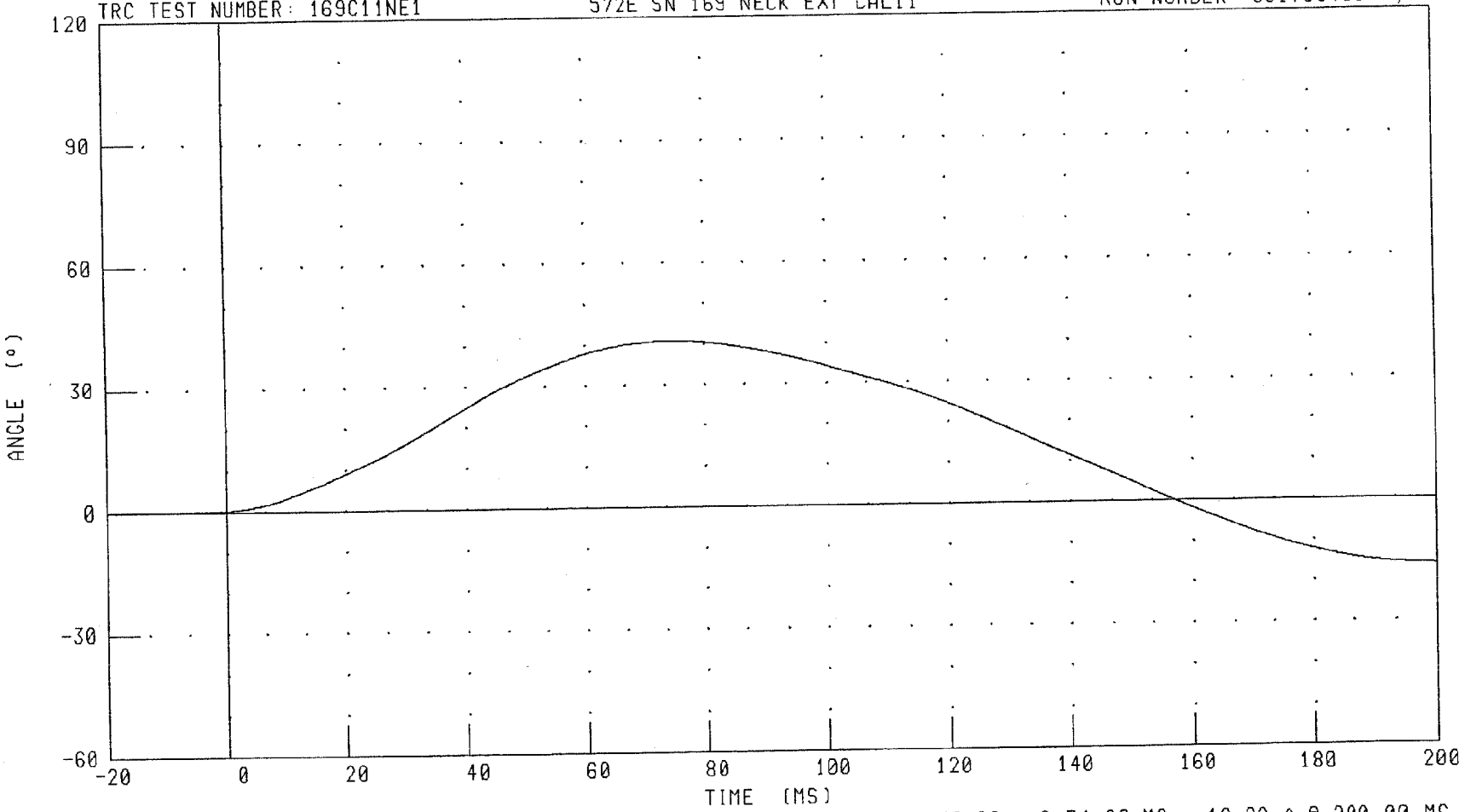


CHANNEL: PENXG FILTER: CH. CLASS 60

PEAK DATA: 19.16 G @ 8.56 MS; -3.10 G @ 46.32 MS

PART 572-E HYBRID III NECK EXTENSION CALIBRATION
ROTATION ABOUT BASE OF NECK

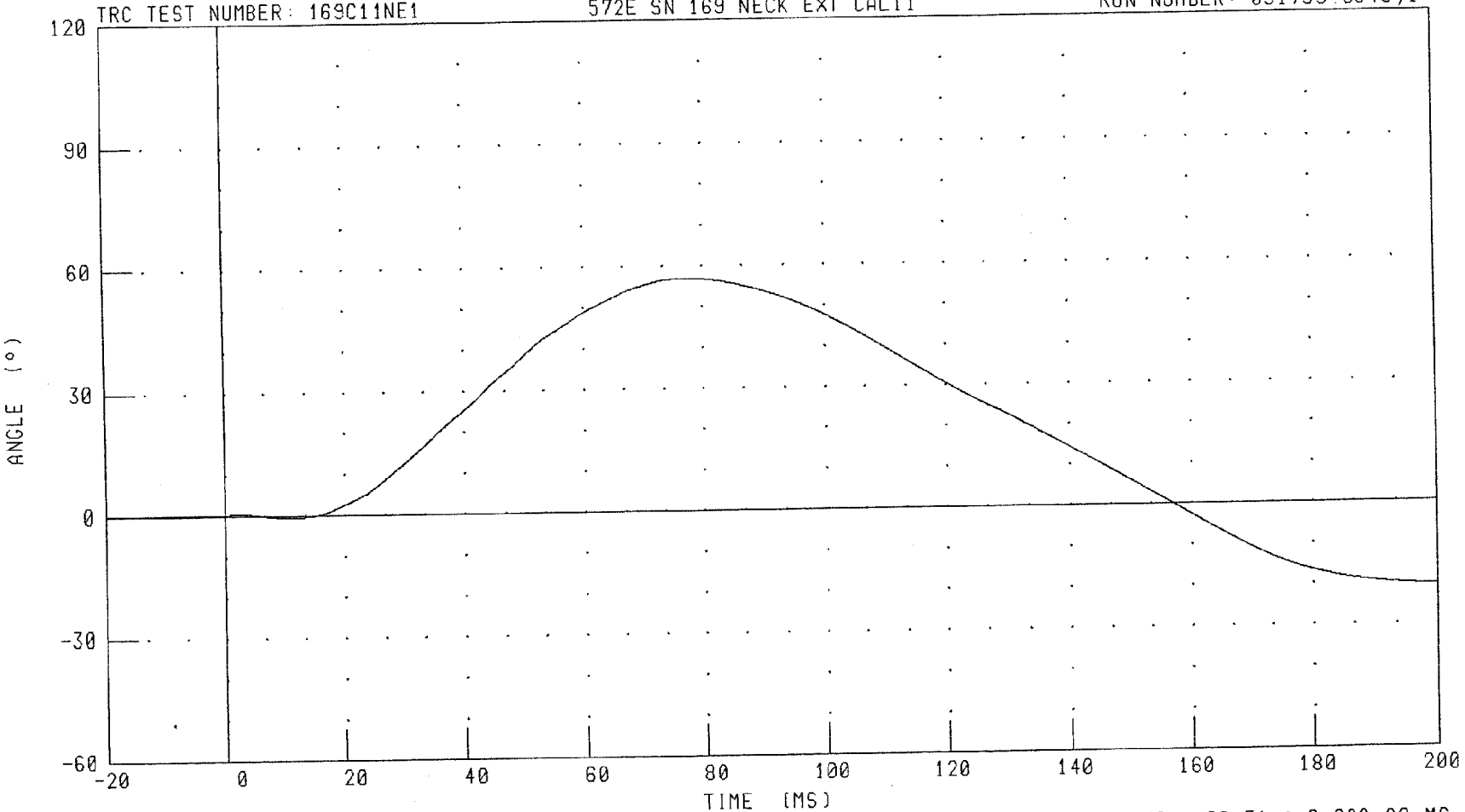
TRC TEST NUMBER: 169C11NE1
572E SN 169 NECK EXT CAL11
RUN NUMBER: 051799.0845;1



CHANNEL: BETA
FILTER: CH. CLASS 60
PEAK DATA: 40.90 ° @ 74.80 MS; -16.22 ° @ 200.00 MS

PART 572-E HYBRID III NECK EXTENSION CALIBRATION
ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: 169C11NE1
572E SN 169 NECK EXT CAL11
RUN NUMBER: 051799.0845;1



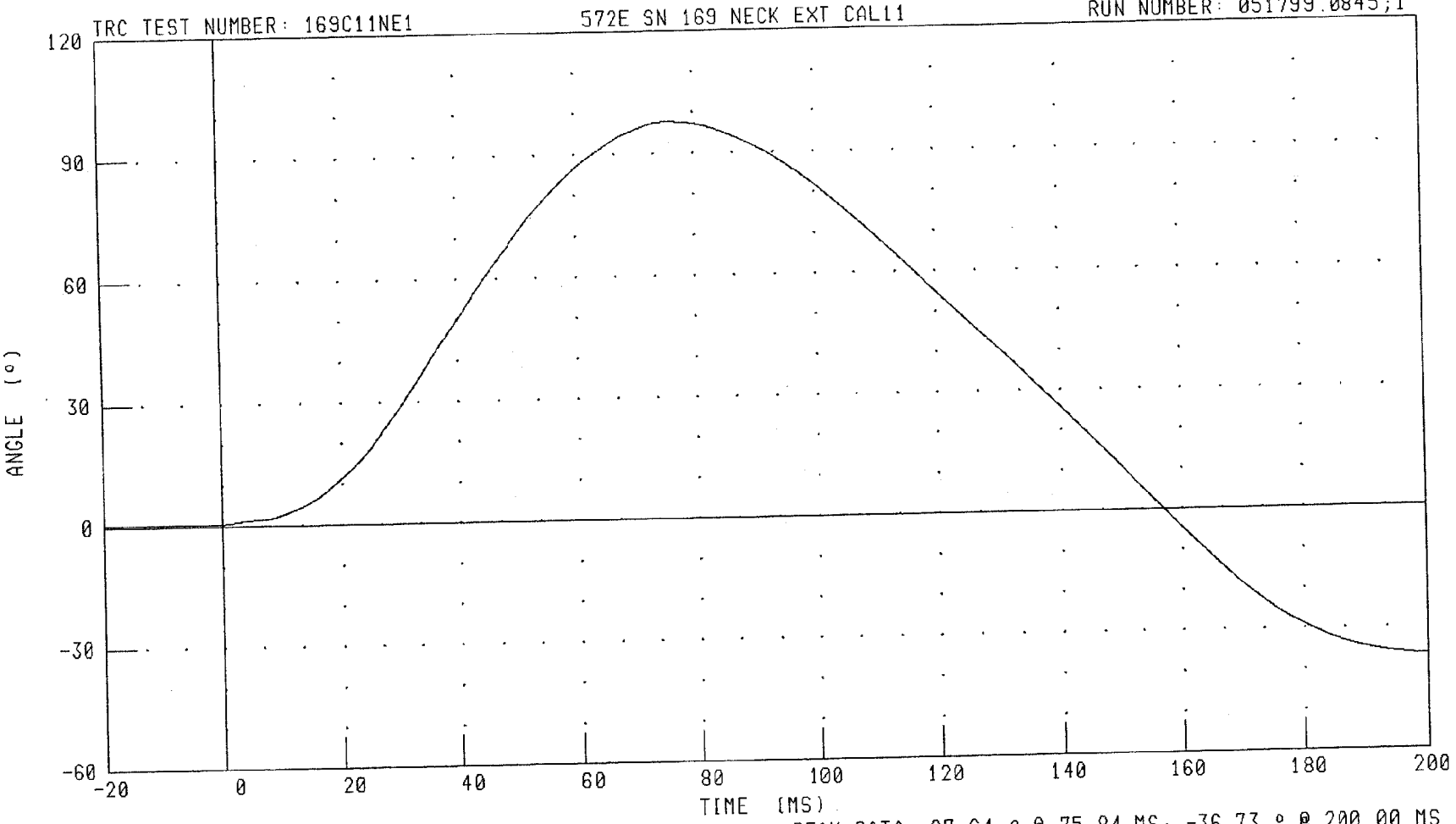
CHANNEL: THETA FILTER: CH. CLASS 60

PEAK DATA: 56.80 ° @ 77.68 MS; -20.51 ° @ 200.00 MS

PART 572-E HYBRID III NECK EXTENSION CALIBRATION

TOTAL ROTATION

TRC TEST NUMBER: 169C11NE1 572E SN 169 NECK EXT CAL11 RUN NUMBER: 051799.0845;1



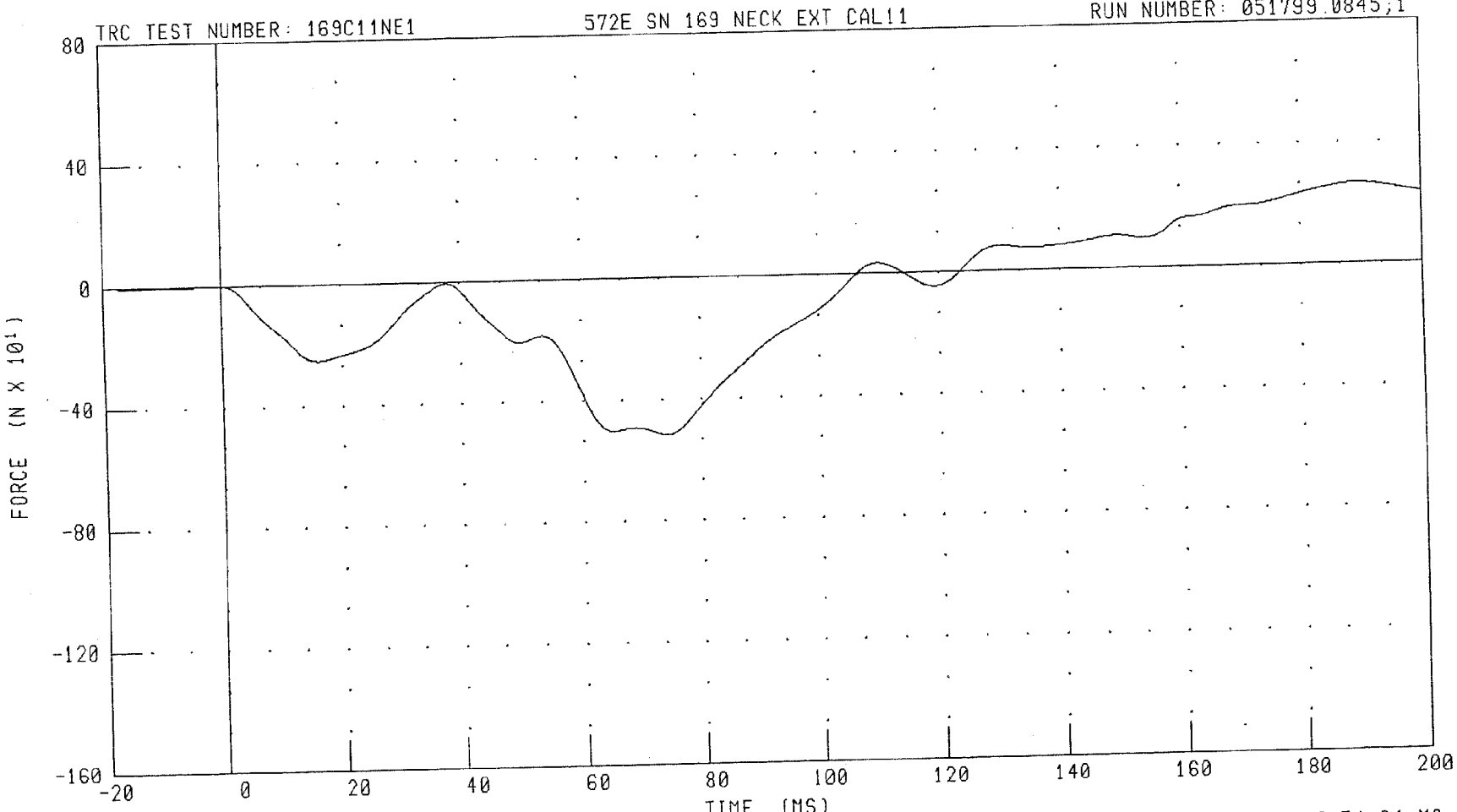
CHANNEL: TOTAN FILTER: CH. CLASS 60

PEAK DATA: 97.64 ° @ 75.84 MS; -36.73 ° @ 200.00 MS

PART 572-E HYBRID III NECK EXTENSION CALIBRATION

NECK FORCE X AXIS

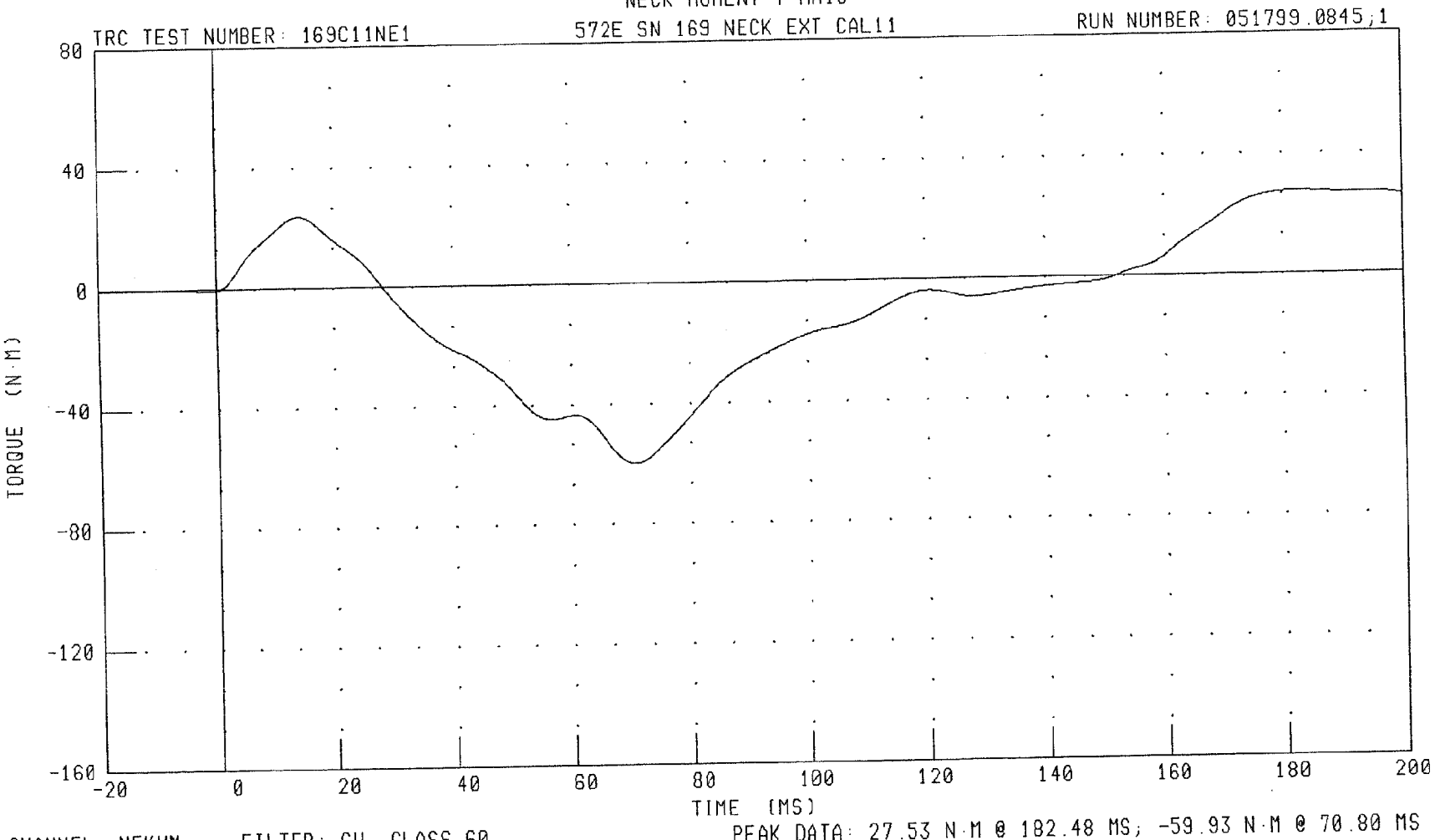
TRC TEST NUMBER: 169C11NE1 572E SN 169 NECK EXT CAL11 RUN NUMBER: 051799.0845;1



CHANNEL: NEKXF FILTER: CH. CLASS 60

PEAK DATA: 265.40 N @ 189.68 MS; -517.38 N @ 74.24 MS

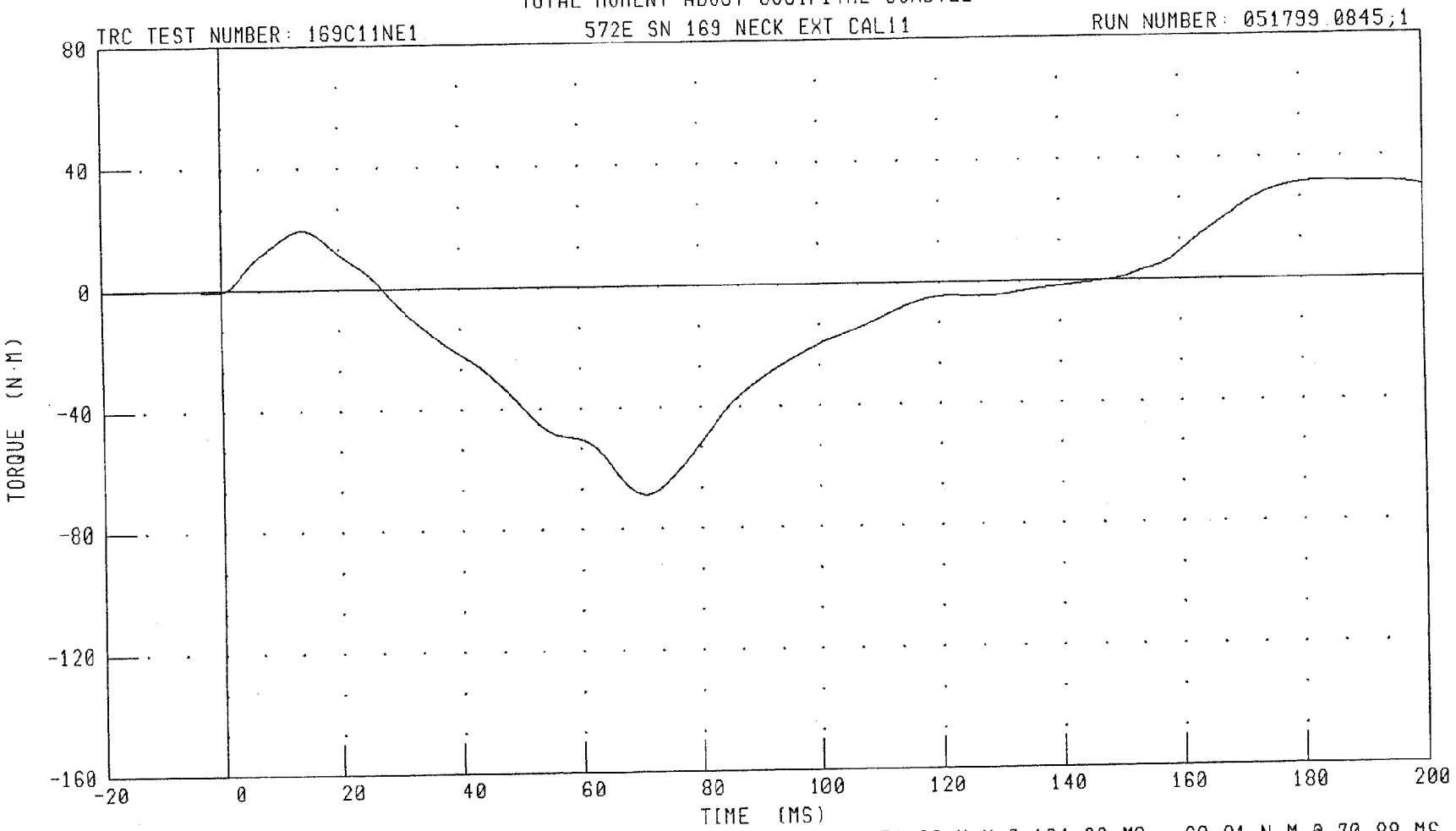
PART 572-E HYBRID III NECK EXTENSION CALIBRATION
NECK MOMENT Y AXIS



CHANNEL: NEKYM FILTER: CH. CLASS 60

PEAK DATA: 27.53 N-M @ 182.48 MS; -59.93 N-M @ 70.80 MS

PART 572-E HYBRID III NECK EXTENSION CALIBRATION
TOTAL MOMENT ABOUT OCCIPITAL CONDYLE



CHANNEL: NEKOM FILTER: CH. CLASS 60

PEAK DATA: 31.96 N-M @ 184.08 MS; -68.81 N-M @ 70.88 MS

TRANSPORTATION RESEARCH CENTER INC.

THORAX IMPACT TEST

HYBRID III 50th 17-MAY-99

TRC INC. TEST NO: 169C11TH1 572E SN169 H.S.THORAX CAL11

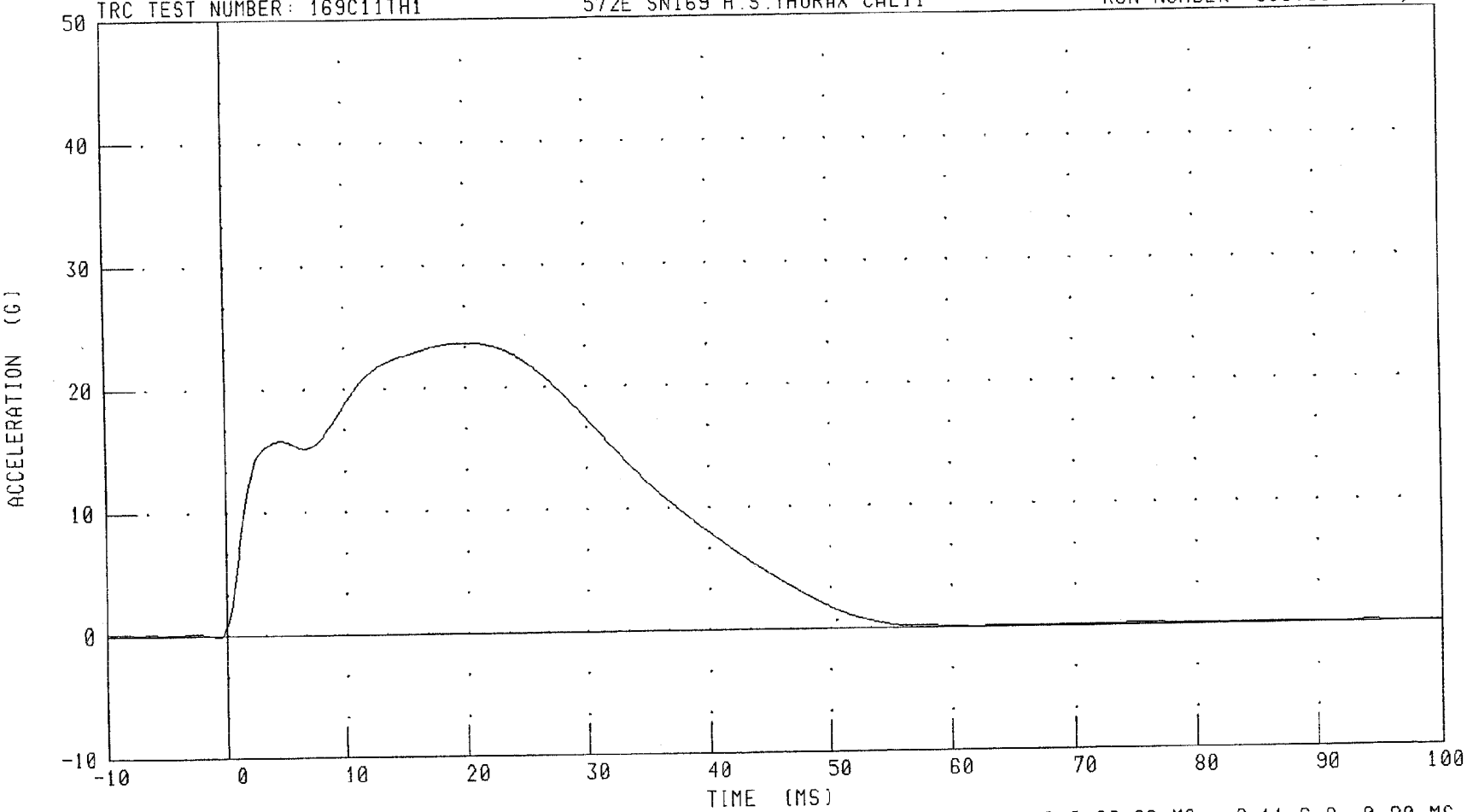
TEST PARAMETER	HIGH SPEED TEST SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6-22.2 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	44.0 %
PENDULUM VELOCITY	6.59 - 6.83 M/S	6.59 M/S
MAXIMUM DEFLECTION	63.5 - 72.6 MM	70.9 MM
MAXIMUM RESISTIVE FORCE	5159 - 5894 N	5415. N
INTERNAL HYSTERESIS	69% - 85%	71.2%

TEST MEETS SPECIFICATIONS

TECHNICIAN _____ RUN NUMBER: 051799.1042;1

PART 572-E HYBRID III THORAX CALIBRATION
PENDULUM DECELERATION

TRC TEST NUMBER: 169C11TH1
572E SN169 H.S.THORAX CAL11
RUN NUMBER: 051799.1042;1



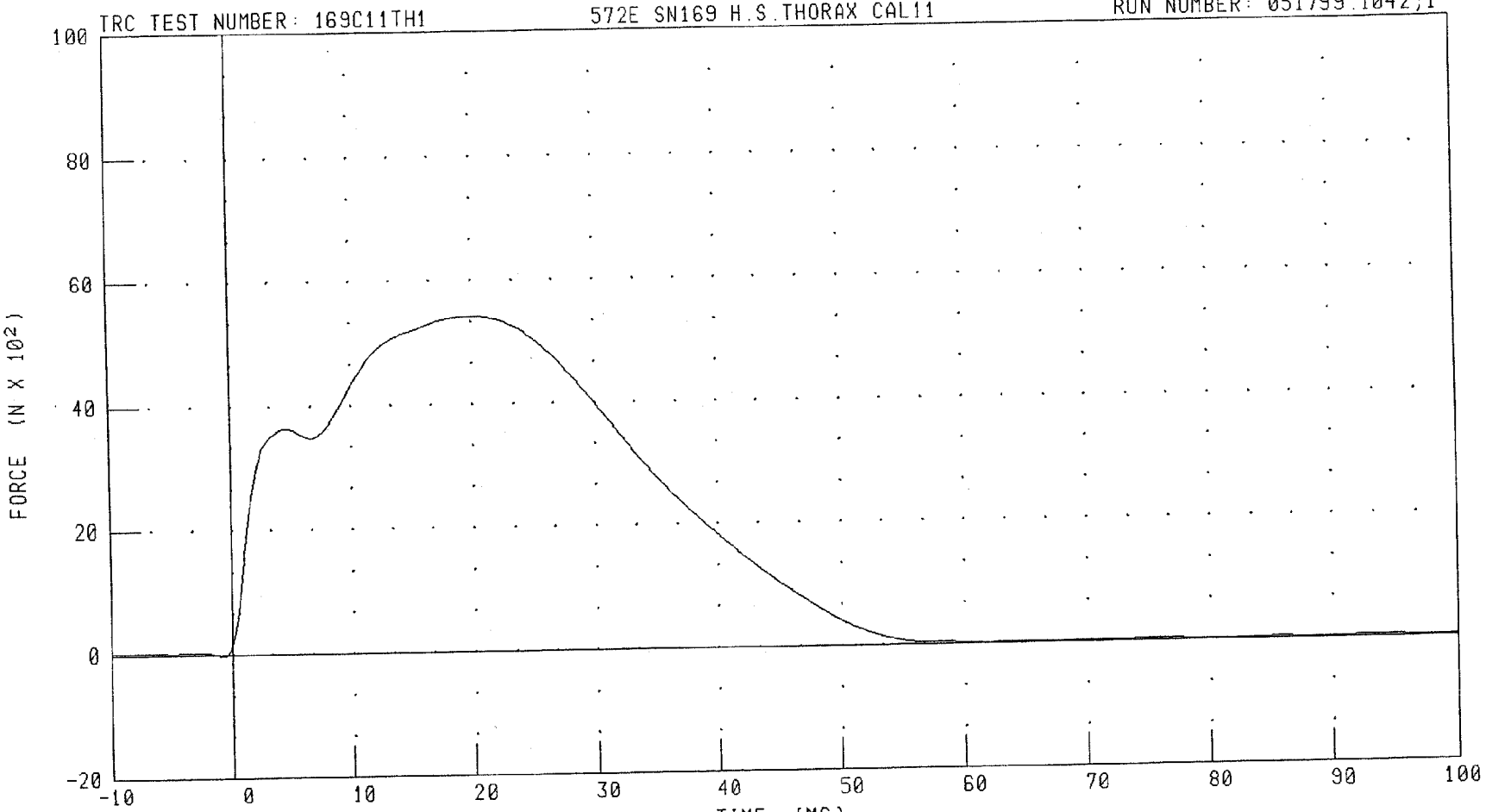
CHANNEL: PENXG FILTER: CH. CLASS 180

PEAK DATA: 23.64 G @ 20.00 MS; -0.11 G @ -0.80 MS

PART 572-E HYBRID III THORAX CALIBRATION

PENDULUM FORCE

TRC TEST NUMBER: 169C11TH1 572E SN169 H.S.THORAX CAL11 RUN NUMBER: 051799.1042;1

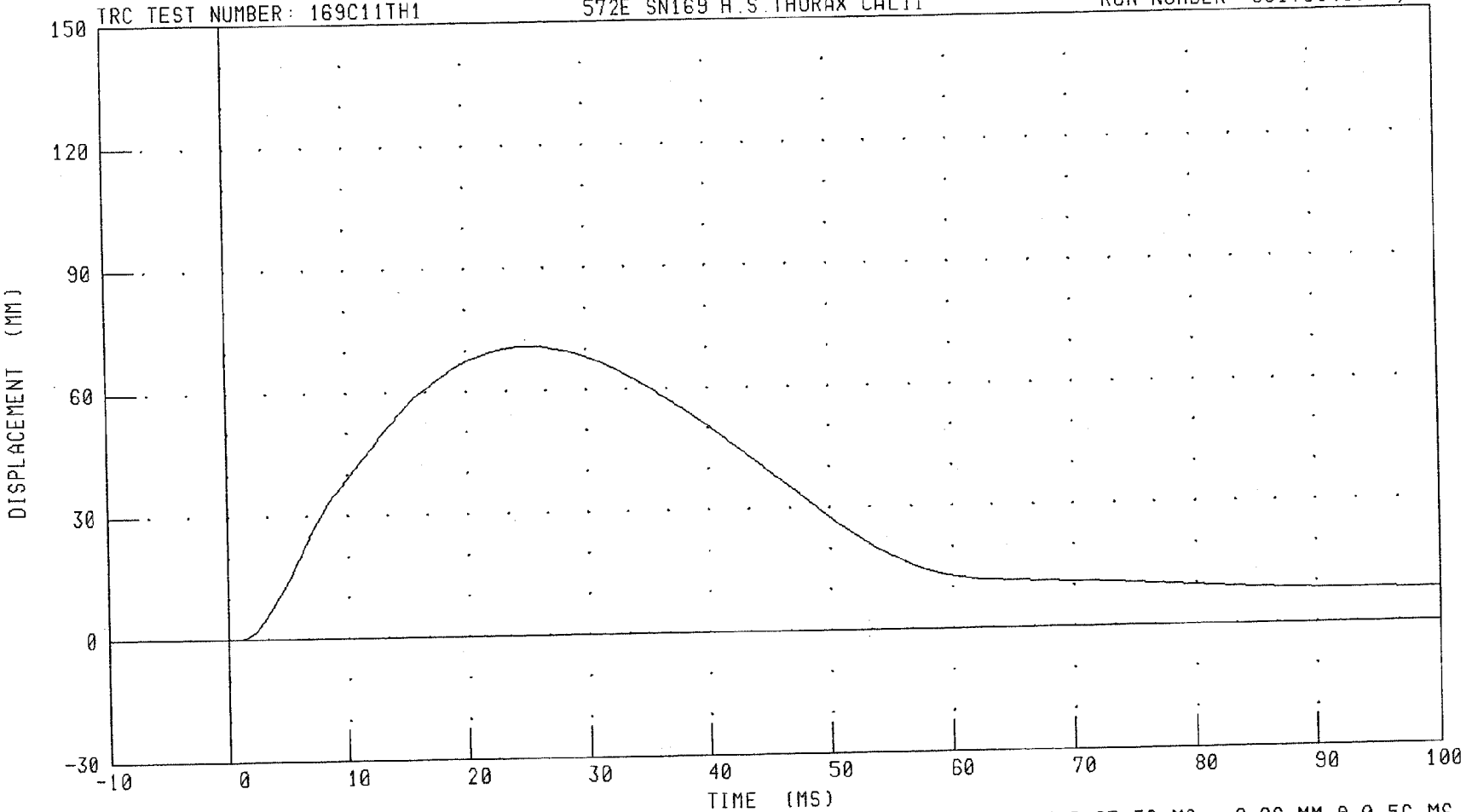


CHANNEL: PENXF FILTER: CH. CLASS 180

PEAK DATA: 5415.62 N @ 20.00 MS; -25.14 N @ -0.80 MS

PART 572-E HYBRID III THORAX CALIBRATION
STERNUM DISPLACEMENT

TRC TEST NUMBER: 169C11TH1
572E SN169 H.S THORAX CAL11
RUN NUMBER: 051799.1042;1



CHANNEL: CSTXD FILTER: CH. CLASS 180

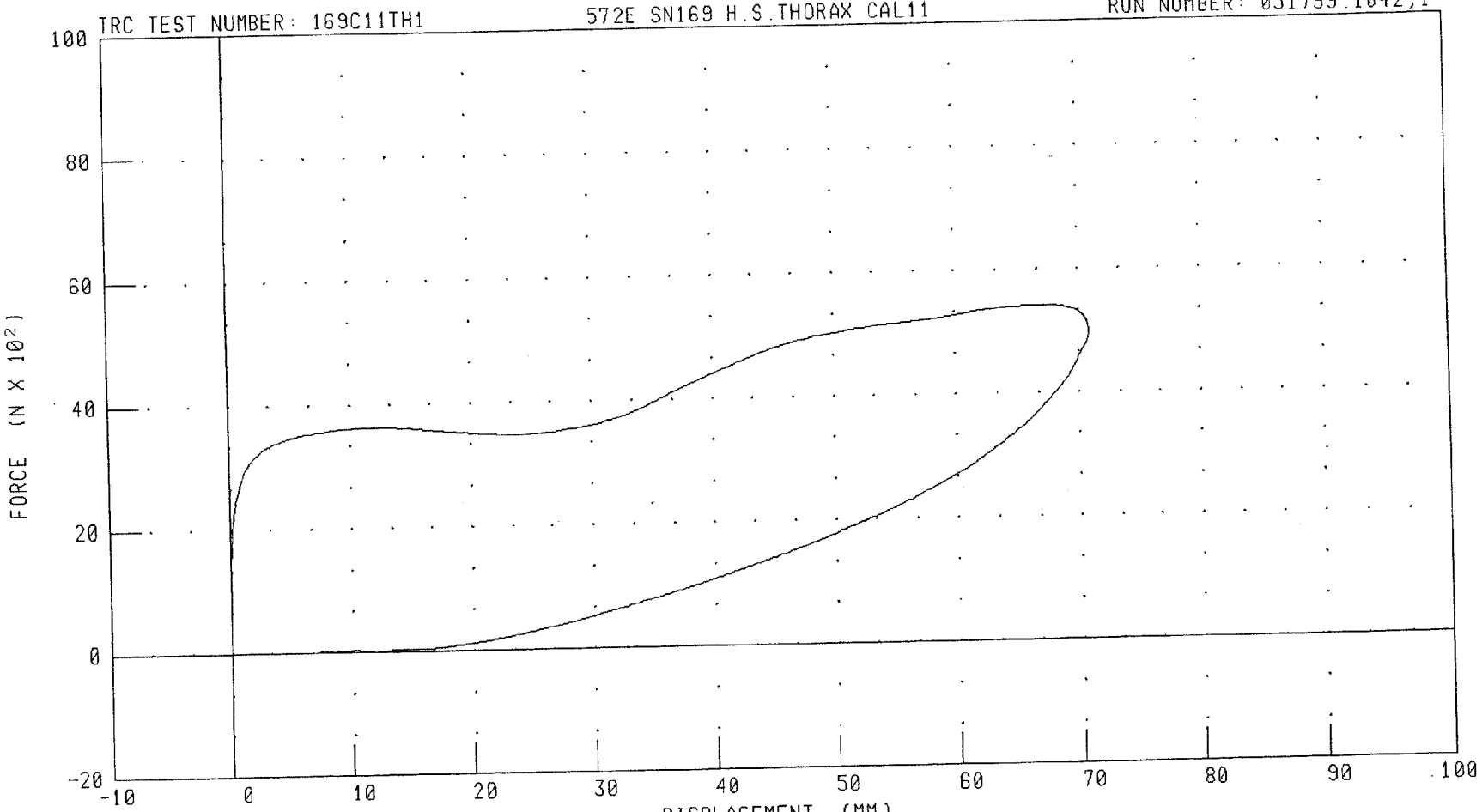
PEAK DATA: 70.93 MM @ 25.52 MS; -0.06 MM @ 0.56 MS

PART 572-E HYBRID III THORAX CALIBRATION
CHEST DISPLACEMENT VS PENDULUM FORCE

TRC TEST NUMBER: 169C11TH1

572E SN169 H.S.THORAX CAL11

RUN NUMBER: 051799.1042;1



CHANNEL: CSTXD
PENXF

FILTER: CH. CLASS 180
CH. CLASS 180

PEAK DATA: 70.93 MM @ 25.52 MS; -0.06 MM @ 0.56 MS
5415.62 N @ 20.00 MS; -25.14 N @ -0.80 MS

TRANSPORTATION RESEARCH CENTER INC.

RIGHT HIP JOINT FEMUR FLEXION TEST

HYBRID III PART 572E 17-MAY-99

TRC INC. TEST NO: 169C11HR1 572E SN 169 HIPFLEX CAL 11

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	44.0 %
ROTATION RATE	5 - 10 deg/sec	YES
TORQUE @ 30 deg ROTATION	<= 94.9 Nm	67.4 Nm
ROTATION @ 203.4 Nm TORQUE	40 - 50 deg.	45.5 deg.

TEST MEETS SPECIFICATIONS

TECHNICIAN By Cult

RUN NUMBER: 051799.0835;1

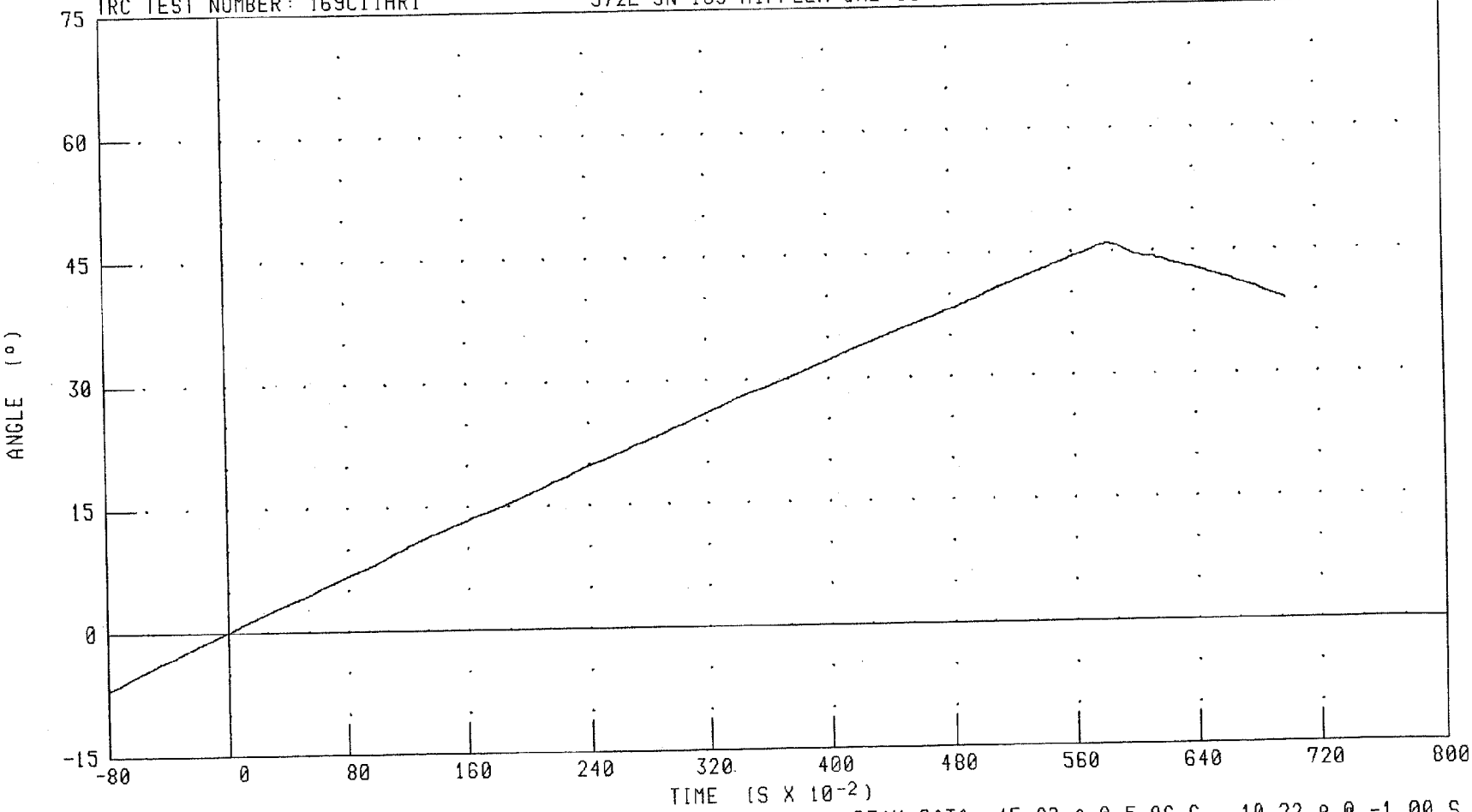
HYBRID III HIP FLEXION VERIFICATION - 0 DEGREES

RIGHT HIP FLEXION ROTATION

TRC TEST NUMBER: 169C11HR1

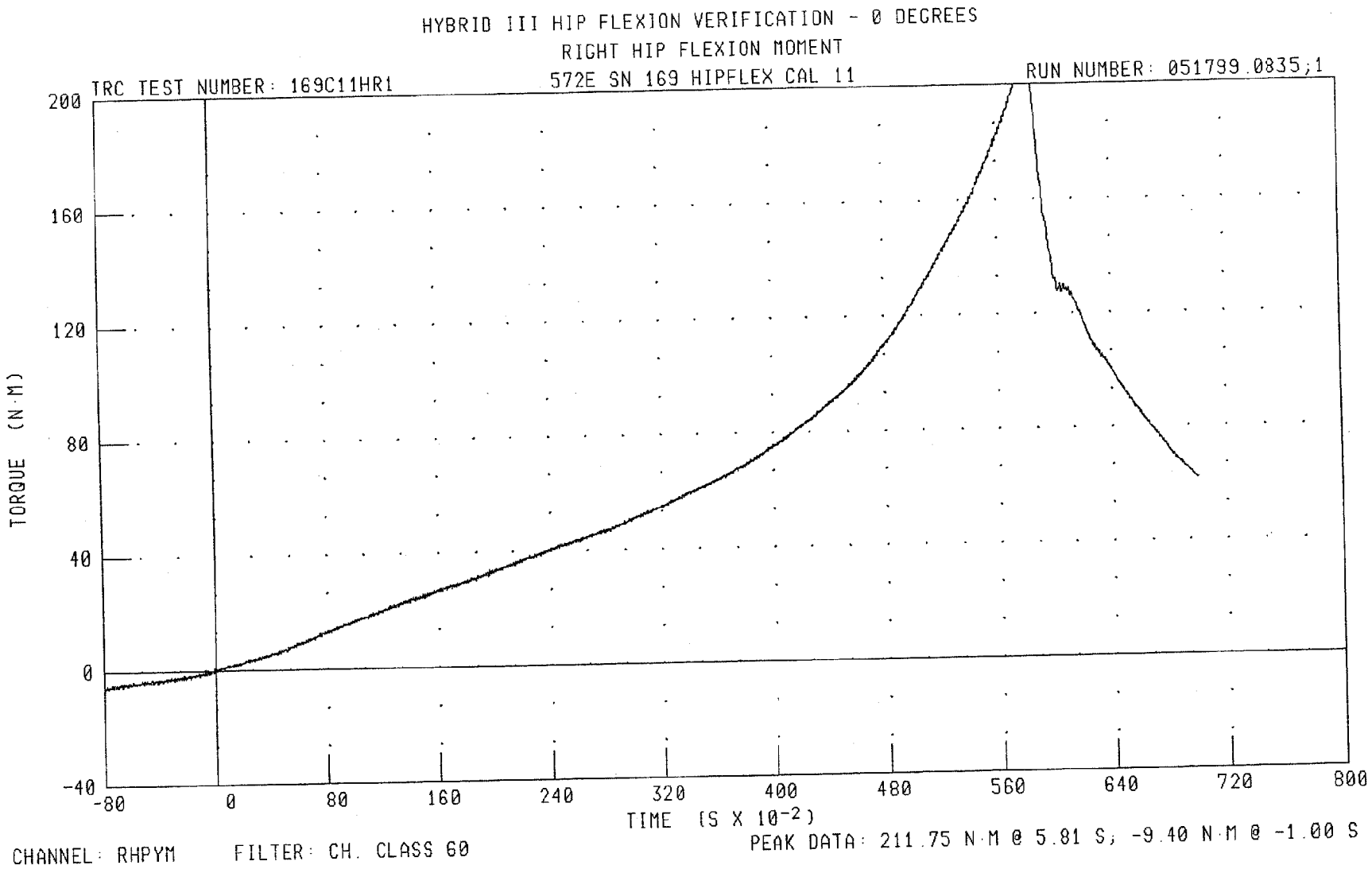
572E SN 169 HIPFLEX CAL 11

RUN NUMBER: 051799.0835;1



CHANNEL: RHPXD FILTER: CH. CLASS 60

PEAK DATA: 45.92 ° @ 5.86 S; -10.22 ° @ -1.00 S


HYBRID III HIP FLEXION VERIFICATION - 0 DEGREES
RIGHT HIP FLEXION MOMENT
572E SN 169 HIPFLEX CAL 11
TRC TEST NUMBER: 169C11HR1
RUN NUMBER: 051799.0835;1
TORQUE (N·M)
200
160
120
80
40
0
-40
-80
0
80
160
240
320
400
480
560
640
720
800
TIME (S X 10-2)
CHANNEL: RHPYM
FILTER: CH. CLASS 60
PEAK DATA: 211.75 N·M @ 5.81 S; -9.40 N·M @ -1.00 S

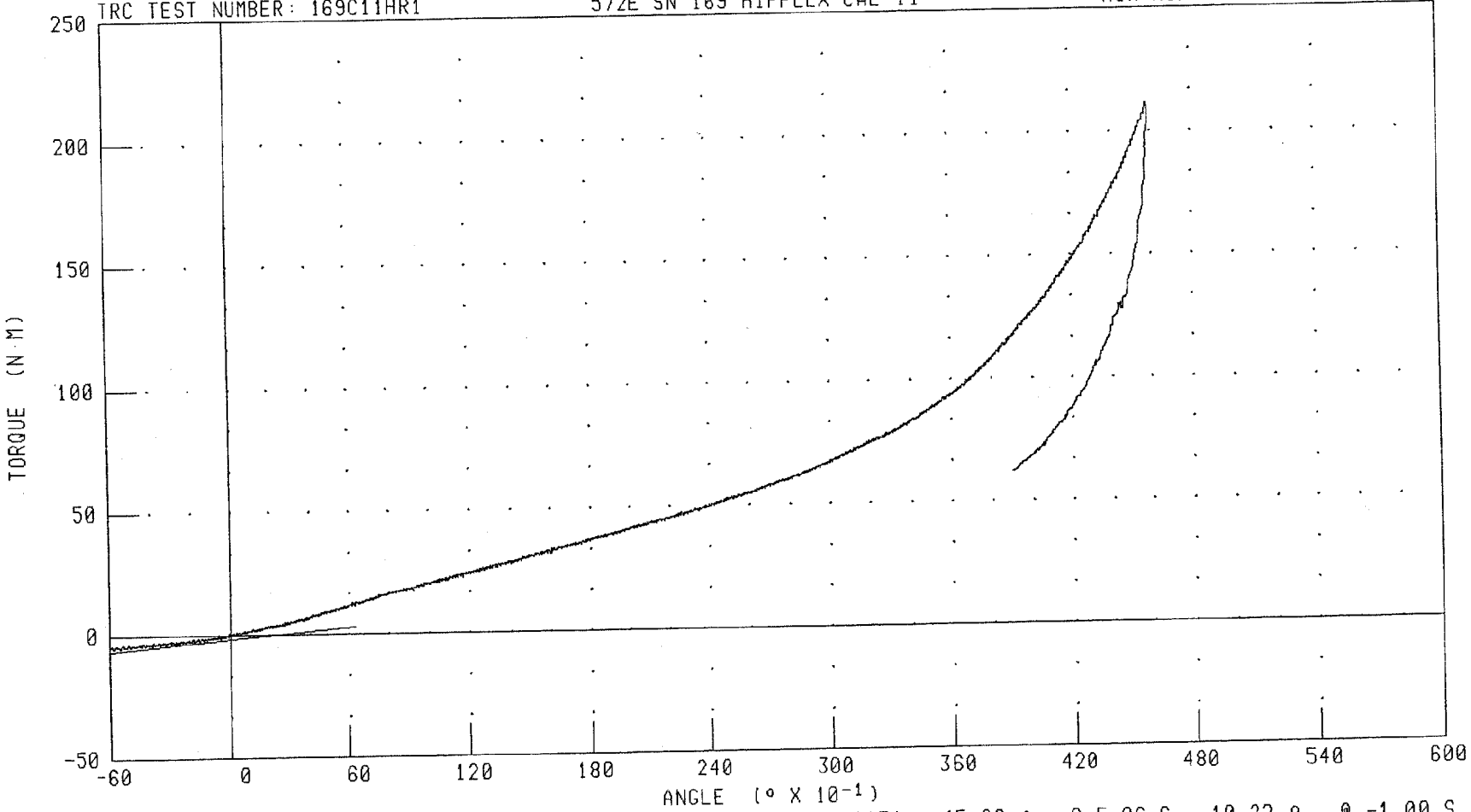
HYBRID III HIP FLEXION VERIFICATION - 0 DEGREES

RIGHT HIP FLEXION MOMENT VS ROTATION ANGLE

TRC TEST NUMBER: 169C11HR1

572E SN 169 HIPFLEX CAL 11

RUN NUMBER: 051799.0835;1



CHANNEL: RHPXD
RHPYM

FILTER: CH. CLASS 60
CH. CLASS 60

PEAK DATA: 45.92 ° @ 5.86 S; -10.22 ° @ -1.00 S
211.75 N·M @ 5.81 S; -9.40 N·M @ -1.00 S

TRANSPORTATION RESEARCH CENTER INC.

LEFT HIP JOINT FEMUR FLEXION TEST

HYBRID III PART 572E 17-MAY-99

TRC INC. TEST NO: 169C11HL1 572E SN 169 HIPFLEX CAL 11

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	44.0 %
ROTATION RATE	5 - 10 deg/sec	YES
TORQUE @ 30 deg ROTATION	<= 94.9 Nm	55.2 Nm
ROTATION @ 203.4 Nm TORQUE	40 - 50 deg.	45.4 deg.

TEST MEETS SPECIFICATIONS

TECHNICIAN By Calt

RUN NUMBER: 051799.0830;1

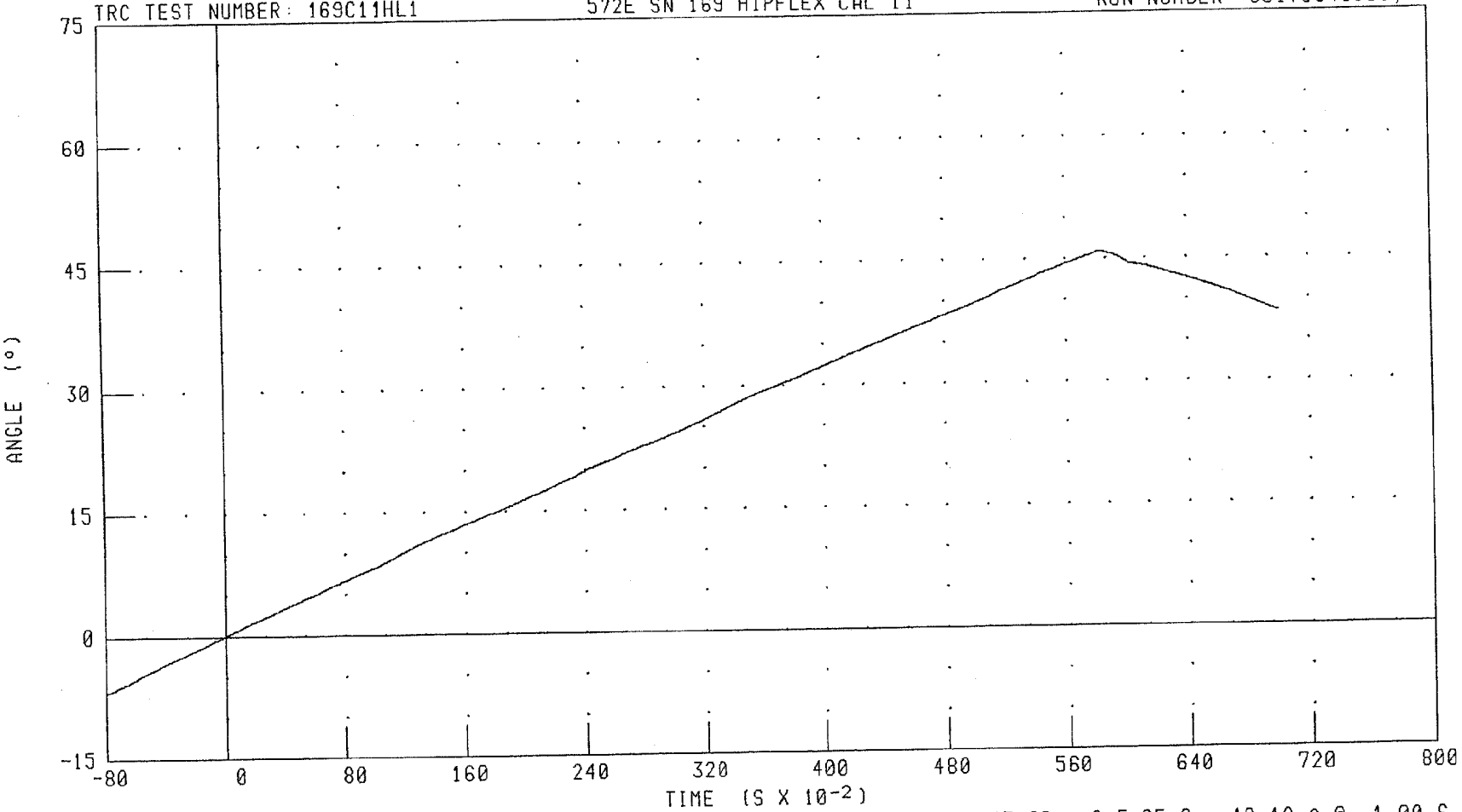
HYBRID III HIP FLEXION VERIFICATION - 0 DEGREES

LEFT HIP FLEXION ROTATION

TRC TEST NUMBER: 169C11HL1

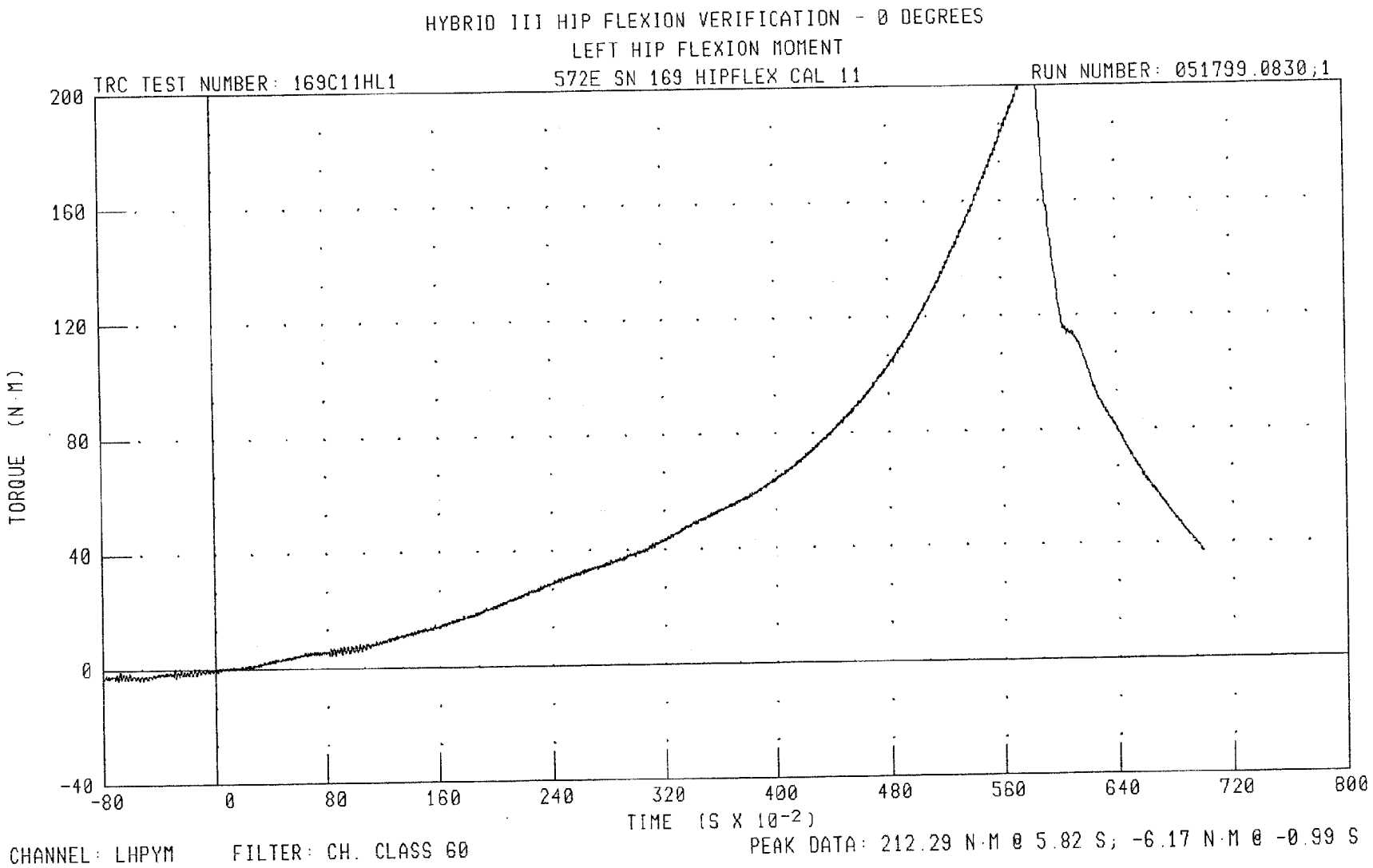
572E SN 169 HIPFLEX CAL 11

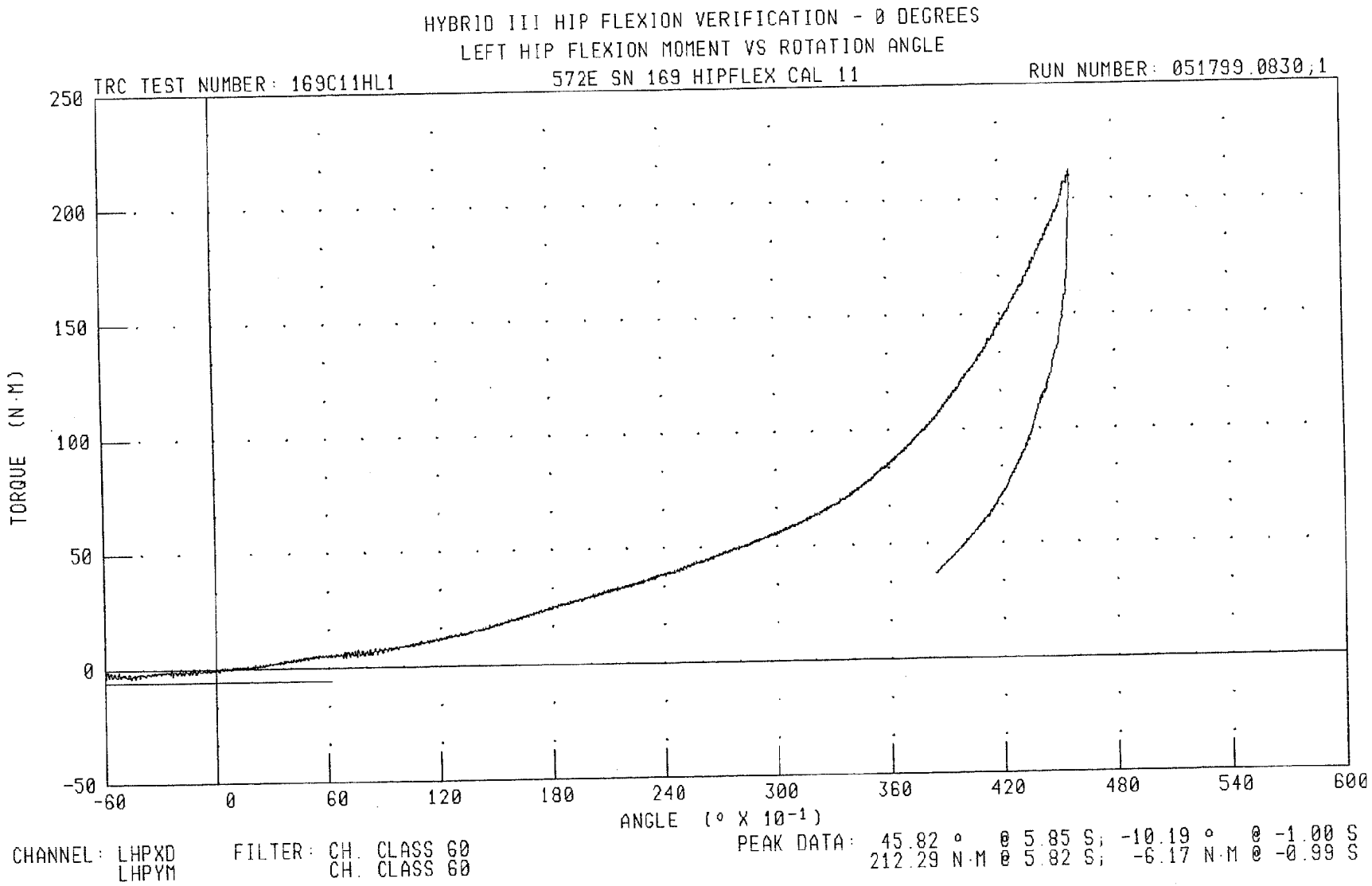
RUN NUMBER: 051799.0830;1



CHANNEL: LHPXD FILTER: CH. CLASS 60

PEAK DATA: 45.82 ° @ 5.85 S; -10.19 ° @ -1.00 S


HYBRID III HIP FLEXION VERIFICATION - 0 DEGREES
LEFT HIP FLEXION MOMENT
TRC TEST NUMBER: 169C11HL1
572E SN 169 HIPFLEX CAL 11
RUN NUMBER: 051799.0830;1
TORQUE (N·M)
200
160
120
80
40
0
-40
-80
0
80
160
240
320
400
480
560
640
720
800
TIME (S X 10-2)
CHANNEL: LHPYM
FILTER: CH. CLASS 60
PEAK DATA: 212.29 N·M @ 5.82 S; -6.17 N·M @ -0.99 S


HYBRID III HIP FLEXION VERIFICATION - 0 DEGREES
LEFT HIP FLEXION MOMENT VS ROTATION ANGLE
TRC TEST NUMBER: 169C11HL1
572E SN 169 HIPFLEX CAL 11
RUN NUMBER: 051799.0830;1
250
200
150
100
50
0
-50
TORQUE (N·M)
-60
0
60
120
180
240
300
360
420
480
540
600
ANGLE (° X 10⁻¹)
CHANNEL: LHPXD
LHPYM
FILTER: CH. CLASS 60
CH. CLASS 60
PEAK DATA: 45.82 ° @ 5.85 S; -10.19 ° @ -1.00 S
212.29 N·M @ 5.82 S; -6.17 N·M @ -0.99 S

TRANSPORTATION RESEARCH CENTER INC.

RIGHT KNEE IMPACT TEST

HYBRID III 50th 14-MAY-99

TRC INC. TEST NO: 169C11RK1 572E SN169 RIGHT KNEE CAL 11

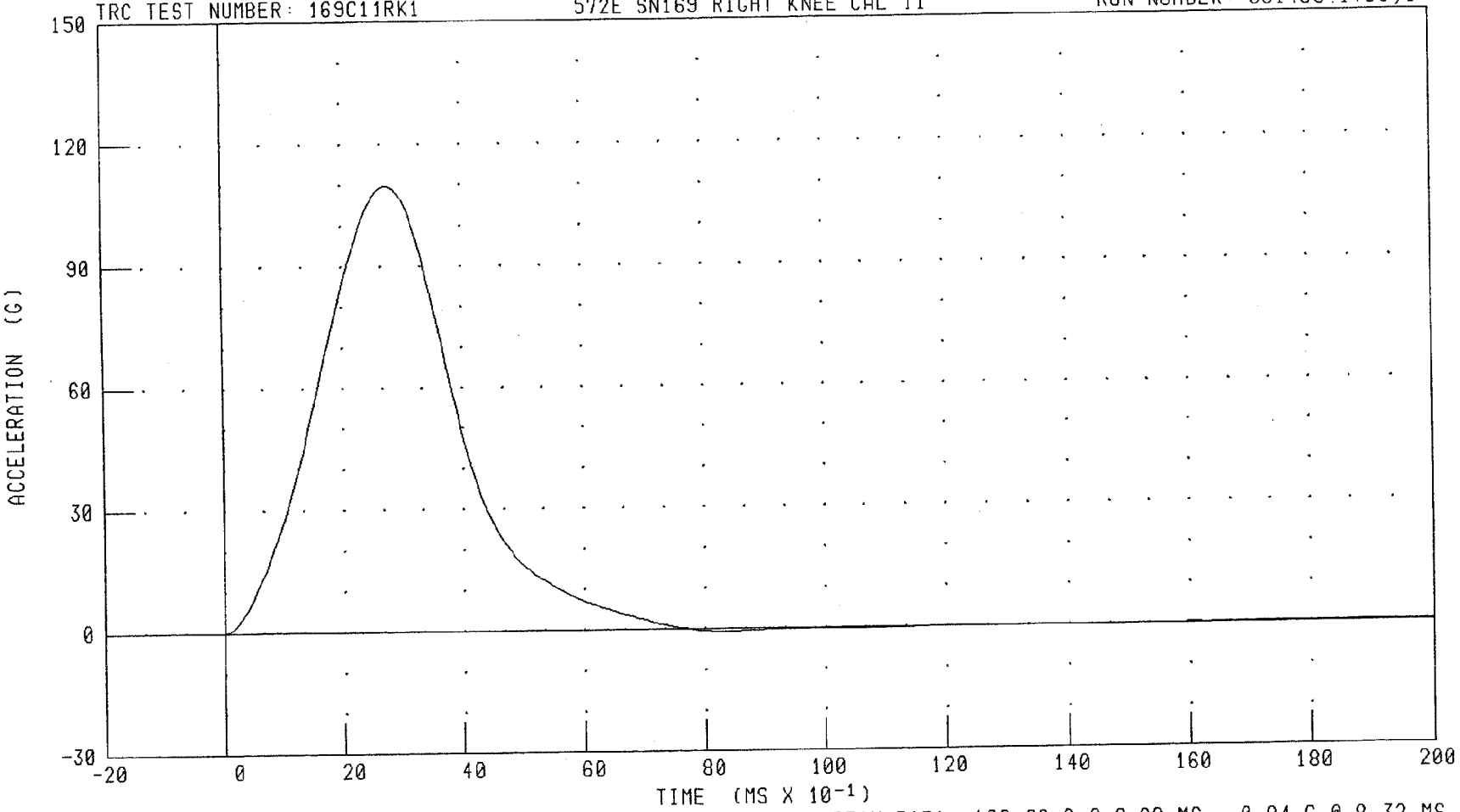
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	44.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.11 M/S
PEAK KNEE IMPACT FORCE 5.0 KG PENDULUM	4715 - 5782 N	5365.6 N

TEST MEETS SPECIFICATIONS

TECHNICIAN _____ RUN NUMBER: 051499.1458;1

PART 572-E HYBRID III RIGHT KNEE CALIBRATION
PENDULUM DECELERATION (5 KG PEND.)

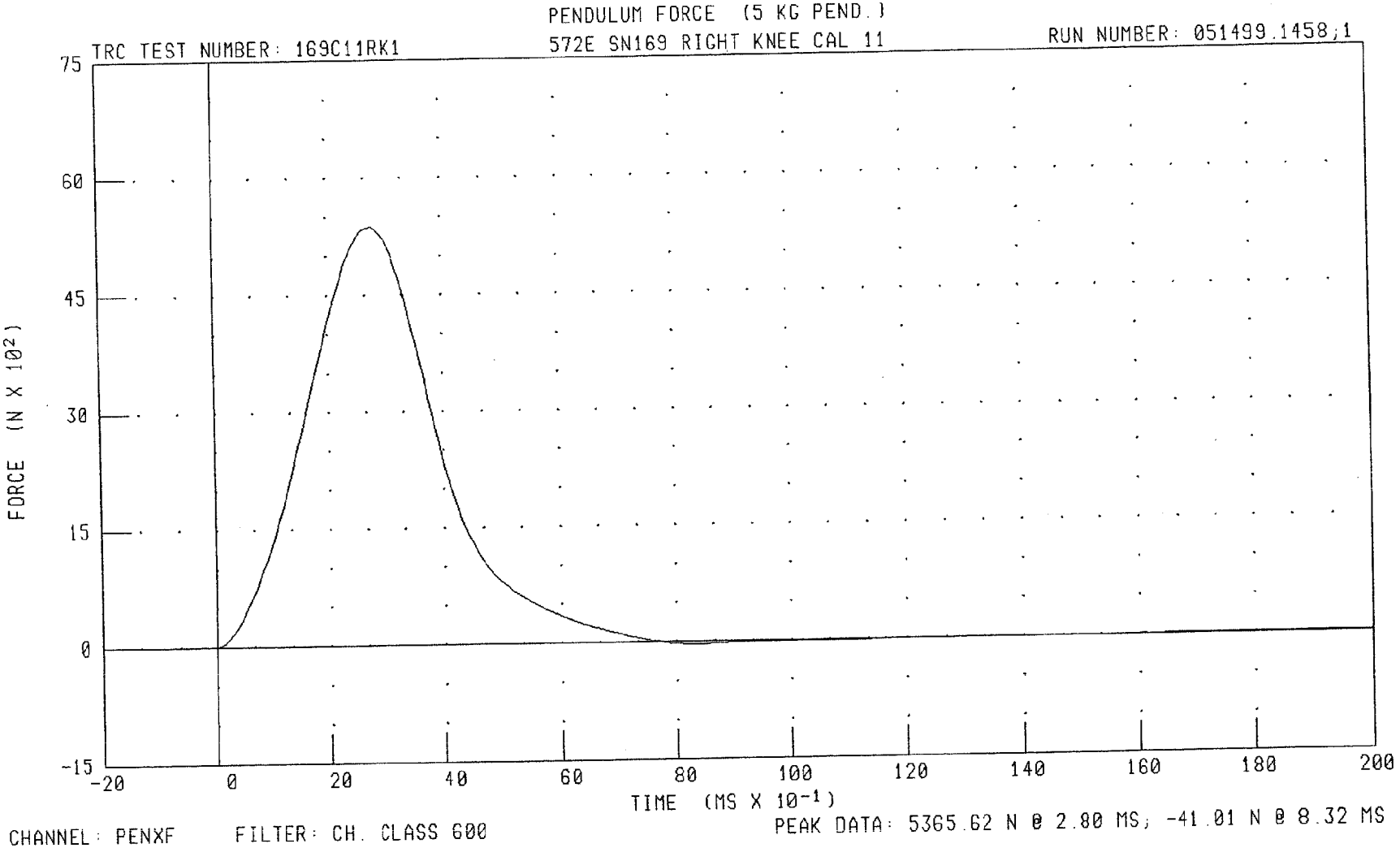
TRC TEST NUMBER: 169C11RK1
572E SN169 RIGHT KNEE CAL 11
RUN NUMBER: 051499.1458;1



CHANNEL: PENXG FILTER: CH. CLASS 600

PEAK DATA: 109.66 G @ 2.80 MS; -0.84 G @ 8.32 MS

PART 572-E HYBRID III RIGHT KNEE CALIBRATION
PENDULUM FORCE (5 KG PEND.)



CHANNEL: PENXF FILTER: CH. CLASS 600

PEAK DATA: 5365.62 N @ 2.80 MS; -41.01 N @ 8.32 MS

TRANSPORTATION RESEARCH CENTER INC.

LEFT KNEE IMPACT TEST

HYBRID III 50th 14-MAY-99

TRC INC. TEST NO: 169C11LK1 572E SN169 LEFT KNEE CAL 11

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	44.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.11 M/S
PEAK KNEE IMPACT FORCE 5.0 KG PENDULUM	4715 - 5782 N	5339.2 N

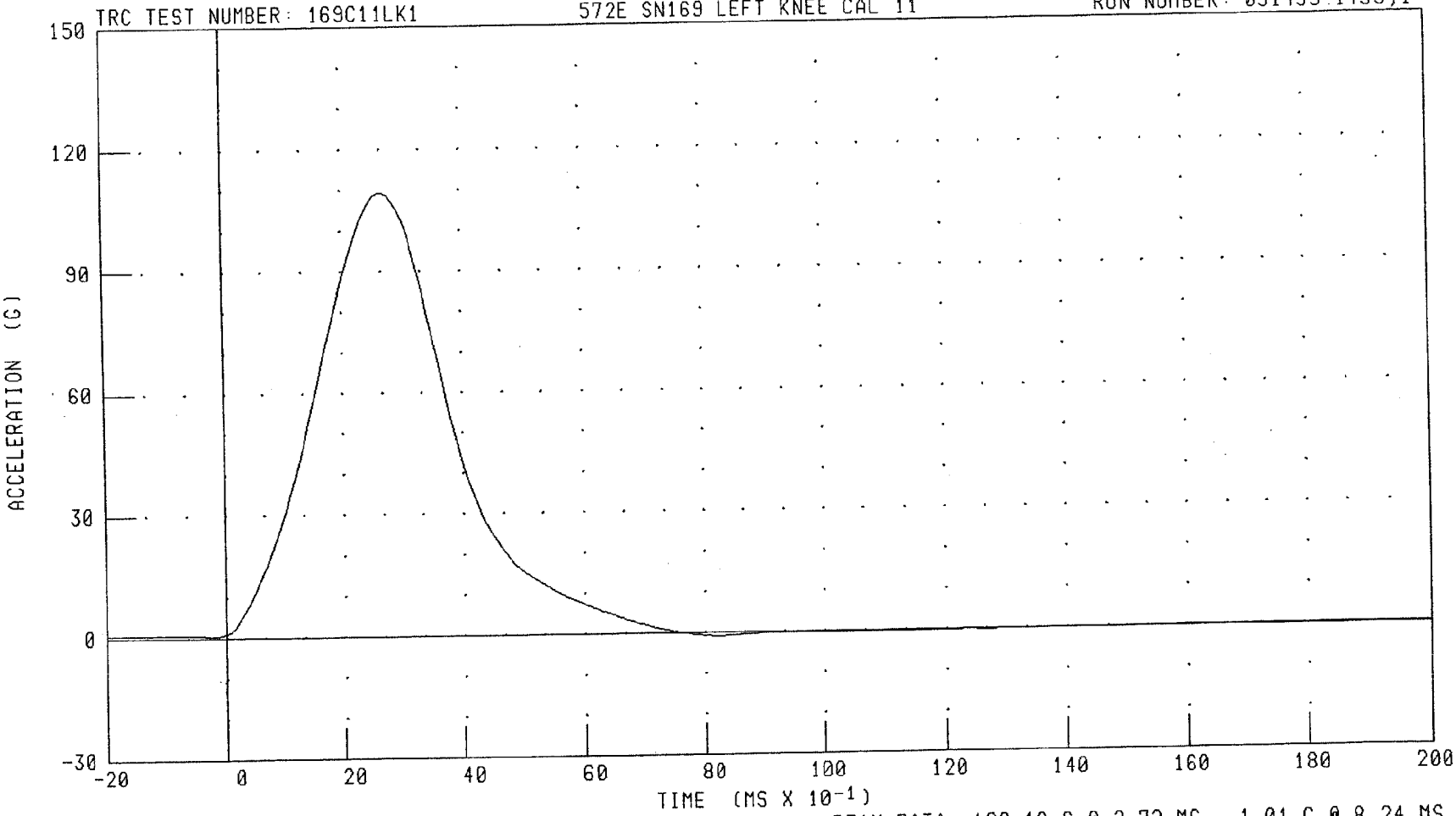
TEST MEETS SPECIFICATIONS

TECHNICIAN By Cult

RUN NUMBER: 051499.1455;1

PART 572-E HYBRID III LEFT KNEE CALIBRATION
PENDULUM DECELERATION (5 KG PEND.)

TRC TEST NUMBER: 169C11LK1
572E SN169 LEFT KNEE CAL 11
RUN NUMBER: 051499.1455;1

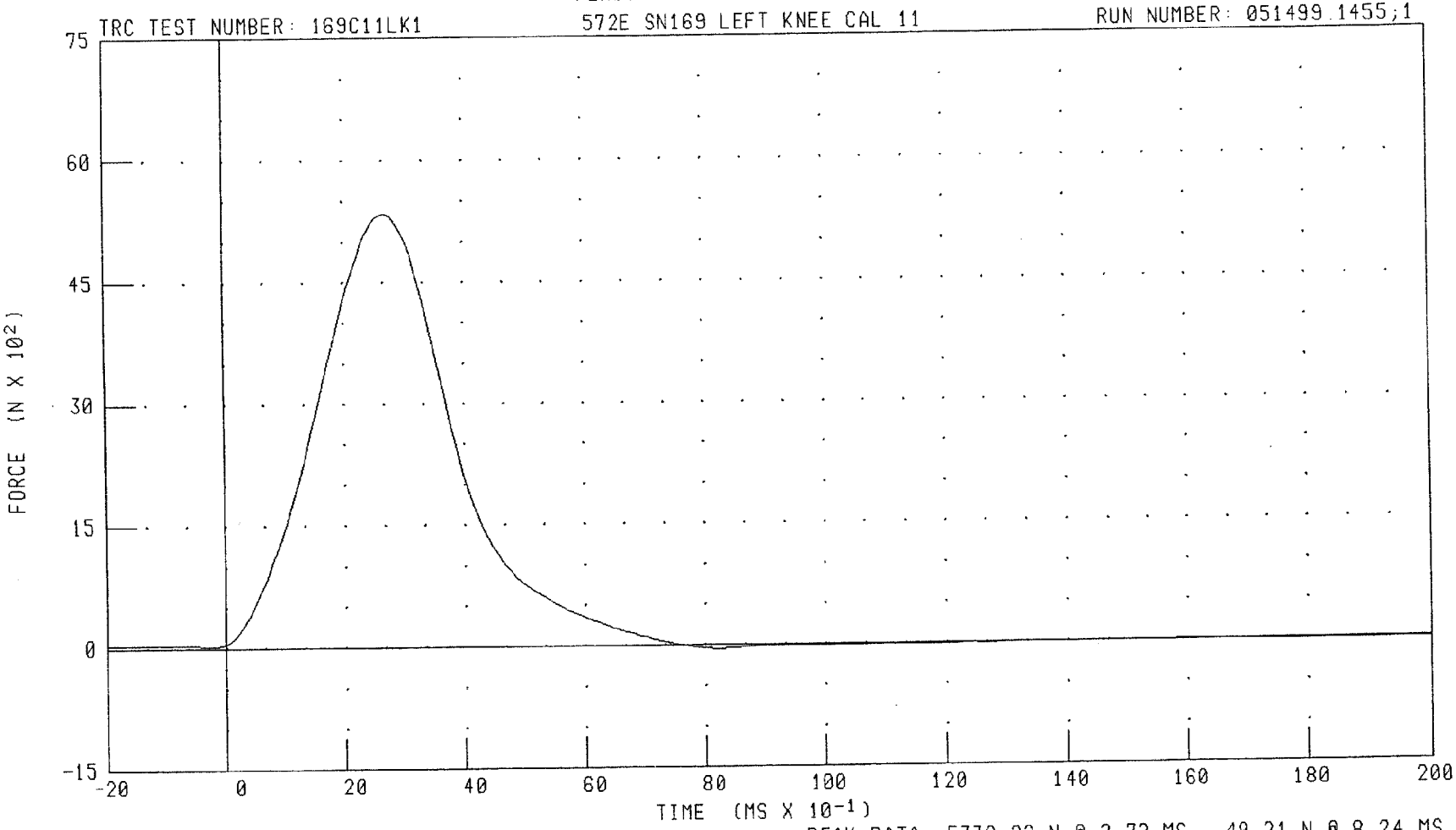


CHANNEL: PENXG FILTER: CH. CLASS 600

PEAK DATA: 109.12 G @ 2.72 MS; -1.01 G @ 8.24 MS

PART 572-E HYBRID III LEFT KNEE CALIBRATION
PENDULUM FORCE (5 KG PEND.)

TRC TEST NUMBER: 169C11LK1
572E SN169 LEFT KNEE CAL 11
RUN NUMBER: 051499.1455;1



CHANNEL: PENXF FILTER: CH. CLASS 600

PEAK DATA: 5339.22 N @ 2.72 MS; -49.21 N @ 8.24 MS

Appendix D

Miscellaneous Test Information

Vehicle Instrumentation Placement

Test Number 990512-2

Number	Location	Axis	Manufacturer	Model	S/N	Orientation (+ Sensing)
1	Left Brake Caliper	X	Entran	EGE-73BQE0-200	99A28-Z07	Forward
2	Right Brake Caliper	X	Entran	EGE-73BQE0-200	99A28-Z15	Forward
3	Instrument Panel Center	X	Entran	EGE-73BQE0-200	99A28-Z08	Forward
4	Engine Top	X	Entran	EGE-73BQE0-200	99A28-Z18	Forward
5	Engine Bottom	X	Entran	EGE-73BQE0-200	99A28-Z21	Forward
6	Vehicle Rear Center	Z	Endevco	7264-2000TZ	J25023	Up
7	Left Rear Seat Crossmember	X	Entran	EGE-73BQE0-200	99A28-Z04	Forward
8	Right Rear Seat Crossmember	X	Entran	EGE-73BQE0-200	99A28-Z23	Forward
9	Driver Airbag	N/A	Fluke	Y8101A	IP1	N/A
10	Passenger Airbag	N/A	Fluke	Y8101A	IP2	N/A

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

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.

TRANSDUCER INFORMATION

HYBRID III DUMMY SERIAL NO.: _168v_____; MFR.: _____; SEATING POSITION: __DR_____

PROJECT-SEGMENT NO.: _____096017 1318_____; ENGINEER: _____JJ_____; TEST DATE: ____5-6-99_____

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	J19535	End.	.2649 mv/g at 10 volts	8-3-1999	400 g		Rear	J19535
HEDYG HLR	HEAD Y-AXIS ACCEL.	"	J19548	"	.2192 mv/g at 10 volts	"	400 g		Left	J19548
HEDZG HIS	HEAD Z-AXIS ACCEL.	"	J27913	"	.2527 mv/g at 10 volts	9-5-99	400 g		Up	J27913
NEKXF NFX*	NECK X-AXIS SHEAR FORCE	1716A	0853	Dento n.	1.7387 MV/V @ 2000 LBS	8-3-1999	900 Kg 2,000 lbs. 9,000 N			FX
NEKYF NFY*	NECK Y-AXIS SHEAR FORCE	"	"	"	1.6587 MV/V @2000 LBS	"	900 Kg 2,000 lbs. 9,000 N			FY
NEKZF NFZ*	NECK Z-AXIS AXIAL FORCE	"	"	"	1.2806 MV/V @3000 LBS	"	1300 Kg 3,000 lbs. 13,500 N			FZ
NEKXM NMX*	NECK MOMENT ABOUT X AXIS	"	"	"	1.6595 MV/V @2500 IN- LBS	"	30 Kgm 200 ft·lbs 275 N·m			MX
NEKYM NMY*	NECK MOMENT ABOUT Y AXIS	"	"	"	1.6596 MV/V @2500 IN-LBS	"	30 Kgm 200 ft·lbs 275 N·m			MY
NEKZM NMZ*	NECK MOMENT ABOUT Z AXIS	"	"	"	2.3663 MV/V @2500 IN-LBS	"	30 Kgm 200 ft·lbs 275 N·m			MZ

TRANSDUCER INFORMATION

HYBRID III DUMMY SERIAL NO.: _168v_____; MFR.: _____; SEATING POSITION: __DR_____

PROJECT-SEGMENT NO.: _____096017 1318_____; ENGINEER: _____JJ_____; TEST DATE: ____5-6-99_____

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	J20011	End.	.2324 mv/g at 10 volts	8-3-1999	400 g		Forward	J20011
CSTYG CLR	CHEST Y-AXIS ACCEL.	"	J20001	"	.2709 mv/g at 10 volts	"	400 g		Left	J20001
CSTZG CIS	CHEST Z-AXIS ACCEL.	"	J20438	"	.2313 mv/g at 10 volts	"	400 g		Up	J20438
CSTXD CAPD	CHEST DEFLECTION	14CB1-2847	168	SERV	27.89 mv/v /in	8-3-1999	6 inch 150 mm			168
PEVXG PAP	PELVIS X-AXIS ACCEL.						400 g			
PEVYG PLR	PELVIS Y-AXIS ACCEL.						400 g			
PEVZG PIS	PELVIS Z-AXIS ACCEL.						400 g			
LFMF LF	LEFT FEMUR FORCE	2430	726	DENT	0.9495 mv/v at 3000 lbs.	8-3-1999	1300 Kg 3,000 lbs. 13,500 N			726
RFMF RF	RIGHT FEMUR FORCE	"	741	"	0.9030 mv/v at 3000 lbs.	"	1300 Kg 3,000 lbs. 13,500 N			741

TRANSDUCER INFORMATION

HYBRID III DUMMY SERIAL NO.: _169v_____; MFR.: _____; SEATING POSITION: __PASS_____

PROJECT-SEGMENT NO.: _____096017 1318_____; ENGINEER: _____JJ_____; TEST DATE: ____5-6-99_____

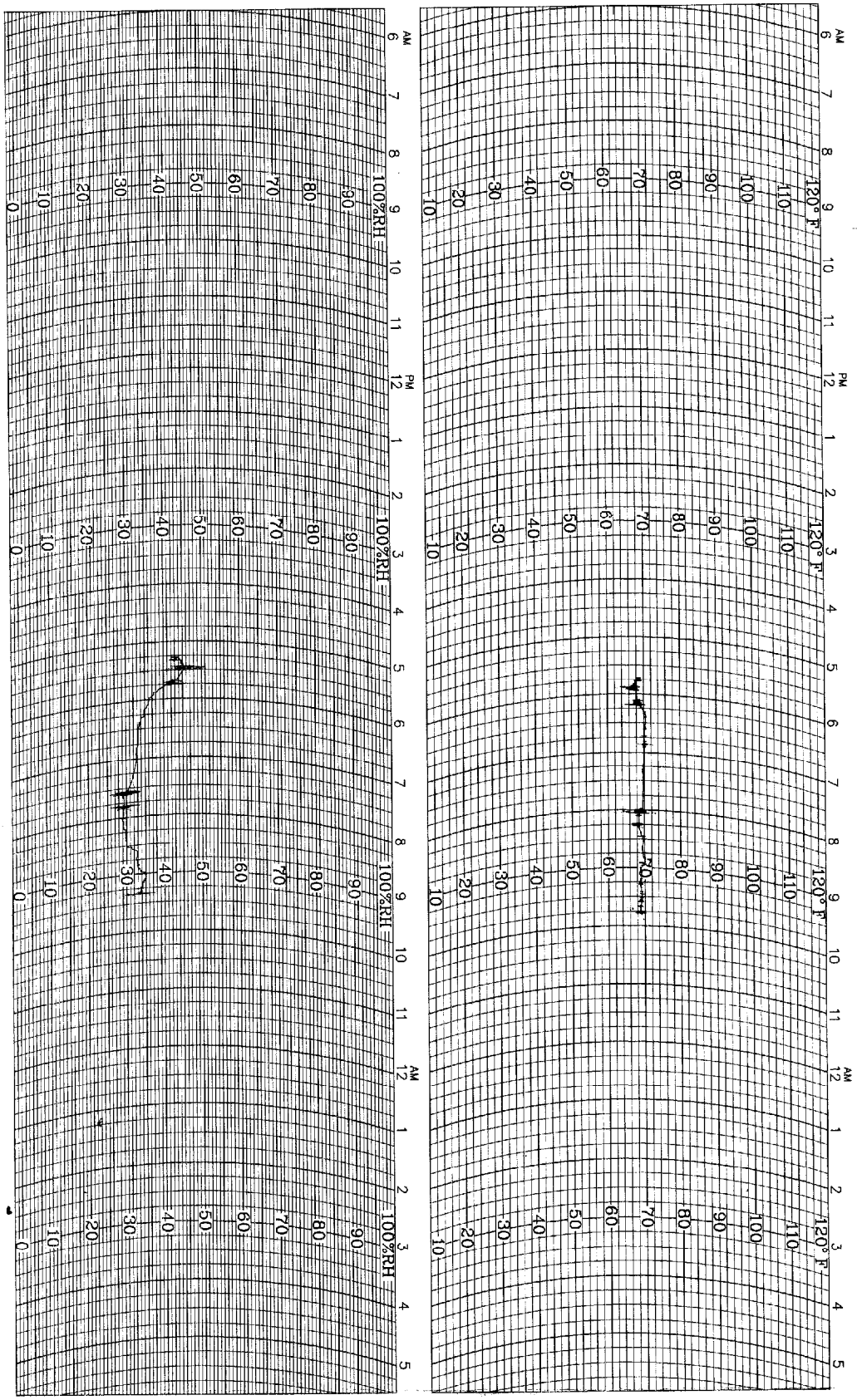
MNEMONIC PARAMETER BEING MEASURED	TYPE OF TRANSDUCER	MODEL NO.	SERIAL NO.	MFR.	SENSITIVITY	CAL DUE DATE	FULL SCALE (ENGR. UNITS) DESIRED	ACTUAL	DIRECTION OF POSITIVE POLARITY	CABLE NO.
HEDXG HAP	HEAD X-AXIS ACCEL.	7264	J21935	End.	.2409 mv/g at 10 volts	8-3-1999	400 g		Rear	J21935
HEDYG HLR	HEAD Y-AXIS ACCEL.	"	J23912	"	.2827 mv/g at 10 volts	"	400 g		Left	J23912
HEDZG HIS	HEAD Z-AXIS ACCEL.	"	J23810	"	.2826 mv/g at 10 volts	"	400 g		Up	J23810
NEKXF NFX*	NECK X-AXIS SHEAR FORCE	1716	0106	Dento n.	1.7167 MV/V @ 2000 LBS	8-3-1999	900 Kg 2,000 lbs. 9,000 N			FX
NEKYF NFY*	NECK Y-AXIS SHEAR FORCE	"	"	"	1.6802 MV/V @2000 LBS	"	900 Kg 2,000 lbs. 9,000 N			FY
NEKZF NFZ*	NECK Z-AXIS AXIAL FORCE	"	"	"	1.2943 MV/V @3000 LBS	"	1300 Kg 3,000 lbs. 13,500 N			FZ
NEKXM NMX*	NECK MOMENT ABOUT X AXIS	"	"	"	1.6148 MV/V @2500 IN- LBS	"	30 Kgm 200 ft·lbs 275 N·m			MX
NEKYM NMY*	NECK MOMENT ABOUT Y AXIS	"	"	"	1.6205 MV/V @2500 IN-LBS	"	30 Kgm 200 ft·lbs 275 N·m			MY
NEKZM NMZ*	NECK MOMENT ABOUT Z AXIS	"	"	"	2.2982 MV/V @2500 IN-LBS	"	30 Kgm 200 ft·lbs 275 N·m			MZ

TRANSDUCER INFORMATION

HYBRID III DUMMY SERIAL NO.: _169v_____; MFR.: _____; SEATING POSITION: __PASS_____

PROJECT-SEGMENT NO.: _____096017 1318_____; ENGINEER: _____JJ_____; TEST DATE: ____5-6-99_____

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	J23914	End.	.2528 mv/g at 10 volts	8-3-1999	400 g		Forward	J23914
CSTYG CLR	CHEST Y-AXIS ACCEL.	"	J23808	"	.2843 mv/g at 10 volts	"	400 g		Left	J23808
CSTZG CIS	CHEST Z-AXIS ACCEL.	"	J23774	"	.2405 mv/g at 10 volts	"	400 g		Up	J23774
CSTXD CAPD	CHEST DEFLECTION	14CB1-2847	169	SERV	28.26 mv/v /in	8-3-1999	6 inch 150 mm			169
PEVXG PAP	PELVIS X-AXIS ACCEL.						400 g			
PEVYG PLR	PELVIS Y-AXIS ACCEL.						400 g			
PEVZG PIS	PELVIS Z-AXIS ACCEL.						400 g			
LFMF LF	LEFT FEMUR FORCE	2430	96661	GSE	0.8816 mv/v at 3000 lbs.	8-3-1999	1300 Kg 3,000 lbs. 13,500 N			D105
RFMF RF	RIGHT FEMUR FORCE	"	96662	"	0.8605 mv/v at 3000 lbs.	"	1300 Kg 3,000 lbs. 13,500 N			709



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ECN 2717
6-9-87

STATION_____ DATE ON_____ DATE OFF_____