

Frontal Barrier Impact Test

**Ford Motor Company
2001 Ford Escape
NHTSA Number:
TRC Inc. Test Number: 011022**

**Prepared By:
Transportation Research Center Inc.
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East Liberty, OH 43319**



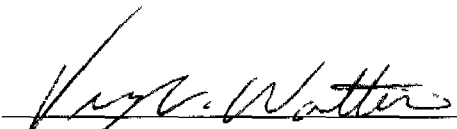
**Final Report
November 1, 2001**

**Prepared For:
U. S. Department of Transportation
Volpe National Transportation Systems Center
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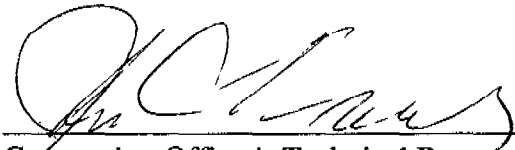
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16 Abstract A 40 km/h flat frontal rigid barrier impact test was conducted on a 2001 Ford Escape MPV, at Transportation Research Center Inc. on October 22, 2001. This test was conducted in accordance with Volpe Task Order No. 1, for the evaluation of vehicle and occupant responses. The barrier impact velocity was 40.0 km/h. The vehicle's maximum static crush was 336 millimeters. The ambient temperature was 21° C. The driver's 36 millisecond Head Injury Criteria (HIC) was 306. The driver's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 40.9 g. The driver's maximum chest deflection was 45 millimeters. The driver's left and right femur maximum axial compressive forces were 4291 N and 5204 N, respectively. The passenger's 36 millisecond HIC was 200. The passenger's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 36.1 g. The passenger's maximum chest deflection was 14 millimeters. The passenger's left and right femur maximum axial compressive forces were 5371 N and 3850 N, respectively.			
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Section 1.0

Purpose and Test Procedure

Purpose

This 40 km/h frontal barrier impact test was conducted for the Volpe National Transportation Systems Center (Volpe) by Transportation Research Center Inc. (TRC Inc.).

The purpose of this testing was to evaluate and compare vehicle and occupant responses in frontal rigid barrier crash tests conducted at various impact speeds using model year 2001 vehicles in support of the FMVSS 208 Implementation plan (May 12, 2000 interim rule). For this test, the subject vehicle was a 2001 Ford Escape.

Test Procedure

This test was conducted in accordance with Volpe's instructions for a full frontal car to rigid barrier test. Data was obtained relative to FMVSS 208, "Occupant Crash Protection" performance

The test vehicle, a 2001 Ford Escape, was instrumented with ten (10) accelerometers to measure longitudinal axis accelerations and three (3) accelerometers to measure vertical axis accelerations. The driver's and passenger's primary airbag signals were monitored with inductive pickups. The vehicle impacted a rigid flat frontal barrier. The vehicle's specified impact velocity range was 39.3 to 40.9 km/h.

The test vehicle contained two (2) Part 572E adult male Hybrid III anthropomorphic test devices (dummies). The dummies were positioned in the front outboard designated seating positions according to NHTSA Laboratory Test Procedure TP-208-10. The driver dummy and the passenger dummy were both unbelted and were restrained with front single-stage airbags.

Both dummies were instrumented with an array of twelve (12) accelerometers in the head, and three (3) accelerometers in the chest, oriented to measure longitudinal, lateral, and vertical accelerations. The dummies were also instrumented with upper and lower neck moment and force load cells, left and right femur load cells to measure axial forces, and chest deflection potentiometers. Both dummies were also instrumented upper and lower tibia load cells to measure forces and moments, and knee displacement potentiometers. The driver dummy was equipped with THOR-LX legs, which included longitudinal and lateral tibia accelerometers, three (3) foot accelerometers on each foot to measure accelerations in three (3) axes and three (3) rotary potentiometers at each ankle to measure foot rotations about three (3) axes. The passenger dummy was instrumented with three (3) foot accelerometers to measure accelerations at the heel and toe.

The 135 data channels were digitally sampled and recorded at 12,500 samples per second and processed per SAE J211 March 1995.

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 rigid barrier crash test summary data are presented in Section 2.0. The FMVSS 208 summary data are presented in Section 3.0. The occupant, camera, and vehicle 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 dummy verification data. Appendix D contains miscellaneous test information.

Section 2.0

Full Frontal Barrier Test Summary

Test Results Summary

This full frontal rigid barrier crash test was conducted by TRC Inc. on October 22, 2001

The test vehicle, a 2001 Ford Escape MPV, was equipped with a 3-liter transverse engine, automatic transmission, power steering, power brakes and driver and passenger front single-stage airbags. The vehicle's test weight was 1796.6 kg. The vehicle's impact speed was 40.0 km/h. The vehicle sustained 336 mm of static crush during the impact.

The driver's 36 millisecond Head Injury Criteria (HIC) was 306. The driver's 15 millisecond HIC was 215. The driver's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 40.9 g. The driver's maximum chest deflection was 45 mm. The driver's left and right femur maximum axial compressive forces were 4291 N and 5204 N, respectively. The driver dummy's neck injury calculations were as follows: NTF, 0.08; NTE, 0.50; NCF, 0.30; NCE, 0.62.

The right front passenger's 36 millisecond HIC was 200. The passenger's 15 millisecond HIC was 185. The passenger's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 36.1 g. The passenger's maximum chest deflection was 14 mm. The passenger's left and right femur maximum axial compressive forces were 5371 N and 3850 N, respectively. The right front passenger's neck injury calculations were as follows: NTF, 0.11; NTE, 0.13; NCF, 0.55; NCE, 0.03.

Data Acquisition Explanations

Data spikes occurred concurrently on several of the driver dummy's load cell channels at approximately 17 and 47 milliseconds. The channels affected noticeably were:

NEKYF1, driver upper neck Y-axis force

NEKZF1, driver upper neck Z-axis force

NEKZM1, driver upper neck moment about the Z-axis

The spikes in the driver's upper neck Z-axis force will affect the calculated NIJ channels, although the spike does not occur at the time of the peak NIJs.

The vehicle's engine top X-axis acceleration data channel, ENGXG1, exceeded its full scale capacity at approximately 92 milliseconds and recorded questionable data after that.

A data spike which occurs in many of the head acceleration data channels, both driver and passenger, appears to coincide with head contact with the windshield.

Table 1 Crash Test Summary

Test mode:	Flat frontal barrier			
Test date:	10/22/01			
Test time:	1416			
Ambient temperature:	21° C			
Vehicle year/make/ model/body style:	2001/Ford/Escape/MPV			
Vehicle test weight:	1796.6 kg			
Impact angle ¹ :	0°			
Impact velocity ² :	40.0 km/h			
Maximum static crush:	336 mm			
Average rebound:	528 mm			
Number of data channels:	135			
Number of cameras:	High-speed	14	Real-time	1
<u>Dummies:</u>	<u>Driver #206</u>		<u>Passenger #202</u>	
Type:	Part 572E		Part 572E	
Location:	Left front		Right front	
Restraint:	Airbag		Airbag	
<u>Seat track position for test:</u>				
Driver:	Mid			
Passenger:	Mid			
<u>Seat back position for test:</u>				
Driver:	17.5°			
Passenger:	17.5°			
<u>Head restraint position for test:</u>				
Driver:	Fixed			
Passenger:	Fixed			
Steering column position:	Mid			

¹ With respect to tow track centerline.

² Speed trap measurement (± .08 km/h accuracy)

Table 2 General Test and Vehicle Parameter Data

Vehicle year/make/
model/body style: 2001/Ford/Escape/MPV

VIN: 1FMYU041X1KL22105

Model year: 2001

Body style: 5-door MPV

Color: Green

Engine data:

 Cylinders: 6

 Displacement 3.0 liters

 Cylinder placement: V

 Engine placement: Transverse

Transmission data: 4 speed, manual, X automatic, X overdrive

 Final drive: FWD, RWD, X 4WD

Date vehicle received: 10/12/2001

Odometer reading: 554

Dealer's name White's Ford

and address: 1246 North Main Street

 Urbana, Ohio 43078

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
Other	Rear wiper	Power door locks	Yes

Certification data from vehicle's label:

Vehicle manufactured by: Ford Motor Company

Date of manufacture: 06/01

VIN: 1FMYU041X1KC22105

GVWR: 4528 lbs. (2053 kg)

GAWR: Front: 2398 lbs. (1087 kg)

 Rear: 2319 lbs. (1051 kg)

Table 2 General Test and Vehicle Parameter Data, Cont'd.

Tires on vehicle (mfr., line, size): Continental, Contitrac , P235/70R16

Tire pressure with maximum capacity vehicle load:

Front:	44 psi	(300 kPa)
Rear:	44 psi	(300 kPa)

Spare tire (mfr., line, size): Firestone, Temporary, T145/90R17

Type of seats:

Front	Bucket
Rear	Split bench

Maximum width: 1785 mm

Wheelbase: 2619 mm

Location of "Recommended Tire Pressure" label:

The label was located on the driver's door.

Data from vehicle's "Recommended Tire Pressure" label":

Recommended tire size: P215/70R16 99T, P225/70R15 100S, P235/70R16 104T

Recommended cold tire pressure:

Front:	207 kPa	(30 psi)
Rear:	207 kPa	(30 psi)

Vehicle Capacity Data:

Number of Occupants (Designated seating capacity):

Front	2
Mid	N/A
Rear	3
Total	5

Vehicle capacity weight: 899 lbs (408 kg)

Rated cargo/luggage weight N/A kg

Test vehicle attitude:

Delivered attitude:	LF	817 mm;	RF	822 mm;	LR	854 mm;	RR	859 mm
Fully loaded attitude:	LF	810 mm;	RF	810 mm;	LR	825 mm;	RR	824 mm
Pre-test attitude:	LF	795 mm;	RF	800 mm;	LR	815 mm;	RR	817 mm
Post-test attitude:	LF	798 mm;	RF	809 mm;	LR	810 mm;	RR	806 mm

Table 2 General Test and Vehicle Parameter Data Cont'd

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

Right front	463.0 kg	Right rear	316.5 kg
Left front	478.5 kg	Left rear	327.5 kg
Total front weight	941.5 kg	(59.4 % of total vehicle weight)	
Total rear weight	644.0 kg	(40.6 % of total vehicle weight)	
Total delivered weight	1585.5 kg		

Calculation of test vehicle's target test weight:

Total Delivered Weight (UDW) =	1585.5 kg
Rated Cargo/Luggage Weight (RCLW) ¹ =	68 kg
Weight of 2 Part 572E Dummies @ 76 kg each =	152 kg
Target test weight =	1805.5 kg

Weight of test vehicle with required dummies and 59.1 kg of cargo weight:

Right front	493.0 kg	Right rear	396.0 kg
Left front	507.2 kg	Left rear	400.4 kg
Total front weight	1000.2 kg	(55.7% of total vehicle weight)	
Total rear weight	796.4 kg	(44.3% of total vehicle weight)	
Total test weight	1796.6 kg	(0.5% under target test weight)	

Weight of ballast secured in vehicle: None

Components removed to meet target test weight: Rear bumper fascia, taillights, rear wiper and rear door seal.

Location of Vehicle's CG: 1161 mm rearward of front wheel centerline

¹ Cargo weight for multipurpose passenger vehicles, trucks, and buses is the vehicle's rated cargo and luggage weight from the vehicle's label or 136 kilograms, whichever is less.

Table 3 Post-Impact Data

Test number: 011022
Test date: 10/22/01
Test time: 1416
Test type: Flat frontal barrier
Impact angle: 0°
Ambient temperature
at impact area: 21° C
Required impact velocity range: 39.3 to 40.9 km/h

Barrier impact velocity:

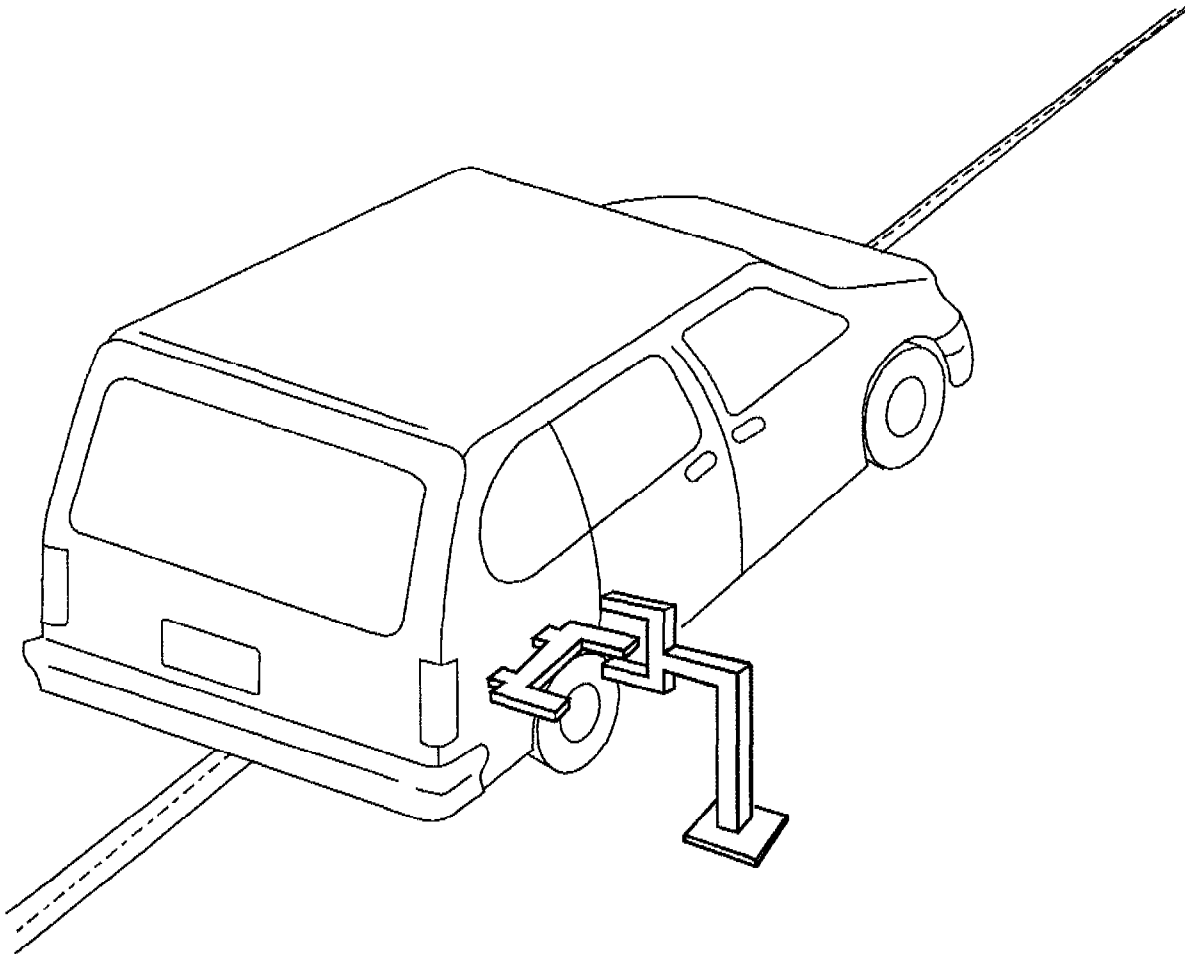
Primary: 40.0 km/h
Secondary: 40.0 km/h
Distance from vehicle to barrier:
Entering velocity trap: 356 mm
Exiting velocity trap: 51 mm

Vehicle rebound from flat rigid barrier:

Distance from test vehicle to barrier impact point:

Post-test: L 544 mm; C 506 mm; R 535 mm
Average rebound: 528 mm

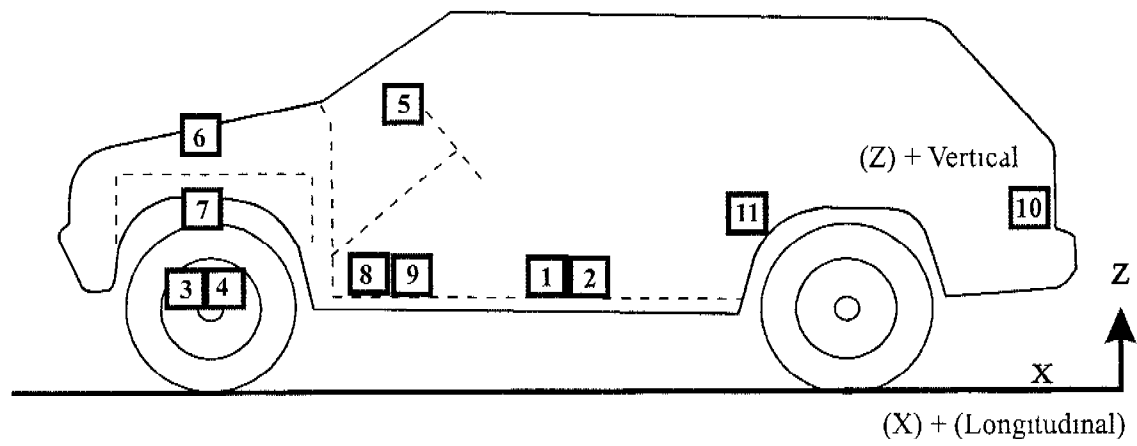
Figure 1 Impact Velocity Measurement System



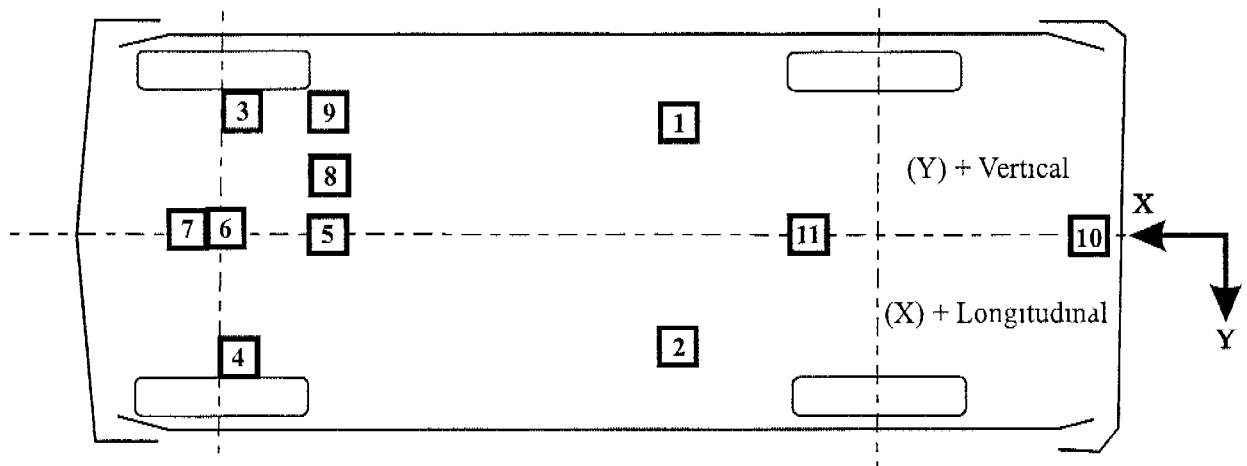
The final vane clears the final emitter/receiver pair 51 millimeters before impact.

The vanes have 305-millimeter spacing.

Figure 2 Vehicle Accelerometer Placement



Side View



Bottom View

Table 4 Vehicle Accelerometer Locations and Data Summary

TEST NUMBER: 011022 No. LOCATION	X	Y	Z	POSITIVE DIRECTION	NEGATIVE DIRECTION
1 LEFT REAR SEAT CROSSMEMBER LONGITUDINAL	1616 mm	-481 mm	580 mm	2.6 g @ 95.1 ms	38.4 g @ 45.8 ms
2 RIGHT REAR SEAT CROSSMEMBER LONGITUDINAL	1616 mm	474 mm	580 mm	3.2 g @ 96.1 ms	39.7 g @ 46.3 ms
3 FRONT BRAKE CALIPER LEFT LONGITUDINAL	3648 mm	-660 mm	343 mm	18.0 g @ 84.7 ms	47.1 g @ 45.5 ms
4 FRONT BRAKE CALIPER RIGHT LONGITUDINAL	3648 mm	660 mm	340 mm	14.2 g @ 79.3 ms	63.8 g @ 48.3 ms
5 DASH PANEL CENTER LONGITUDINAL	2928 mm	0 mm	1165 mm	11.0 g @ 74.6 ms	51.0 g @ 59.1 ms
6 ENGINE TOP LONGITUDINAL ¹	3613 mm	-65 mm	930 mm	-----	-----
7 ENGINE BOTTOM LONGITUDINAL	3751 mm	-52 mm	205 mm	30.2 g @ 41.4 ms	94.1 g @ 34.2 ms

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

TEST NUMBER: 011022 No. LOCATION	X	Y	Z	POSITIVE DIRECTION		NEGATIVE DIRECTION	
8 TOEPAN NEXT TO ACCEL LONGITUDINAL VERTICAL	3048 mm	-170 mm	389 mm	1.9 g 16.4 g	@ 116.0 ms @ 45.2 ms	40.8 g 17.7 g	@ 45.4 ms @ 73.0 ms
9 TOEPAN NEXT TO FOOTREST LONGITUDINAL VERTICAL	3058 mm	-507 mm	404 mm	1.6 g 28.7 g	@ 115.6 ms @ 42.3 ms	38.8 g 15.5 g	@ 45.4 ms @ 72.9 ms
10 REAR DECK VERTICAL	194 mm	0 mm	519 mm	11.0 g	@ 59.1 ms	24.3 g	@ 47.4 ms
11 REAR COMPARTMENT CENTER LONGITUDINAL	1051 mm	0 mm	633 mm	4.1 g	@ 93.8 ms	39.6 g	@ 46.2 ms

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

¹See DATA ACQUISITION EXPLANATIONS in Section 2.0

Section 3.0

Summary of FMVSS 208 Data

Table 5 Dummy Injury Criteria Data

<u>Maximum Acceleration¹</u>							
	Head				Chest		
	X	Y	Z	R	X	Y	Z
Driver	-61.9 g	-10.2 g	-33.2 g	62.8 g	-38.7 g	2.6 g	16.2 g
Passenger	-65.2 g	-27.5 g	35.4 g	78.0 g	-33.6 g	-2.3 g	20.4 g

<u>Maximum Femur Compressive Force</u>		
	Left Femur	Right Femur
Driver	4291 N	5204 N
Passenger	5371 N	3850 N

<u>Head Injury Criteria²</u>			
36 millisecond			
	HIC	Time t ₁	Time t ₂
Driver	306	75.6 ms	111.6 ms
Passenger	200	68.6 ms	104.2 ms

15 millisecond			
	HIC	Time t ₁	Time t ₂
Driver	215	85.4 ms	100.4 ms
Passenger	185	85.8 ms	100.8 ms

<u>Chest Maximum Resultant Acceleration³</u>			
	Acceleration	Time t ₁	Time t ₂
Driver	40.9 g	84.4 ms	87.4 ms
Passenger	36.1 g	86.2 ms	89.2 ms

Table 5 Dummy Injury Criteria Data, Cont'd.

Maximum Chest Deflection

Driver	45 mm
Passenger	14 mm

Neck Injury Calculations (Nij)²

	NTF	NTE	NCF	NCE
Driver	0.08	0.50	0.03	0.62
Passenger	0.11	0.13	0.55	0.03

¹ See Report Sign Convention in Appendix D.

² As defined in FMVSS No. 208.

³ Defined as equal to or exceeding 0.003 sec. duration.

Table 6 Post-Impact Dummy/Vehicle Data

Visible Dummy Contact Points:

	<u>Driver</u>	<u>Passenger</u>
Head	Airbag, visor, windshield	Airbag, visor, windshield
Chest	Airbag	Airbag
Abdomen	Lower steering wheel rim	None
Left knee	Instrument panel	Instrument panel
Right knee	Instrument panel	Instrument panel

Door opening:

	<u>Left</u>	<u>Right</u>
Front	Easy	Easy
Rear	Easy	Easy

Seat movement:

	<u>Seat back failure</u>	<u>Seat shift</u>
Left Front	None	None
Right Front	None	None
Left Rear	None	None
Right Rear	None	None

Glazing damage: Starburst cracking at head contact points.

Other notable impact effects: Steering column was found broken after test.

Section 4.0

Occupant, Camera, and Vehicle Information

Dummy Kinematic Summary

Driver Dummy

Upon impact, the driver dummy translated forward in the seat impacting both knees into the instrument panel. The dummy's head contacted the airbag with the neck going into extension and the head contacting the windshield. The chest contacted the airbag and the abdomen contacted the lower steering wheel rim. As the dummy rebounded, the neck flexed the head forward and then returned upright with the head contacting the sun visor. The driver dummy rebounded into the seat back and came to rest seated upright in the seat.

Right Front Passenger Dummy

Upon impact, the passenger dummy translated forward in the seat impacting both knees into the instrument panel. The dummy's neck extended the head rearward as the dummy's face and chest impacted the airbag and the head contacted the windshield. As the dummy torso rebounded into the seat back, the dummy's head rotated forward and then upright. The head contacted the sun visor. The dummy came to rest seated in the passenger's seat.

Figure 3 Dummy Measurement Locations for Front Seat Occupants

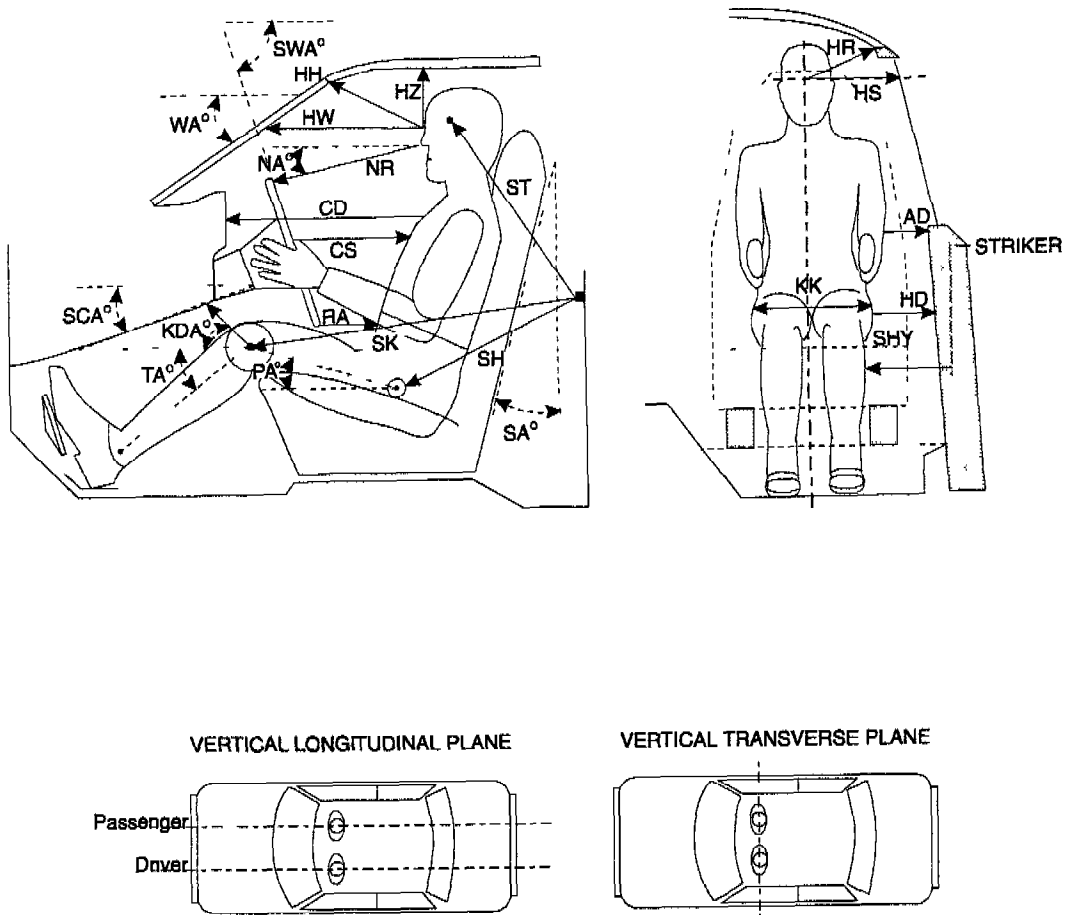


Table 7 Dummy Measurement Data For Front Seat Occupants

Designation	Type of Measurement	Driver (Serial # 206)	Passenger (Serial # 202)
WA	Windshield angle	35.2°	35.2°
SWA	Steering wheel angle	62.4°	N/A
SCA	Steering column angle	25.6°	N/A
SA	Seat back angle	17.5°	17.5°
HZ	Head to roof	213 mm	222 mm
HH	Head to header	375 mm	385 mm
HW	Head to windshield	573 mm	594 mm
HR	Head to side header	225 mm	249 mm
NR	Nose to rim	429 mm	N/A
NA	Nose to rim angle	19.7°	N/A
CD	Chest to dash	550 mm	551 mm
CS	Steering wheel to chest	309 mm	N/A
RA	Rim to abdomen	208 mm	N/A
KDL	Left knee to dash	133 mm	135 mm
KDR	Right knee to dash	133 mm	135 mm
KDA	Outboard knee to dash angle	65.7°	72.9°
PA	Pelvic angle	21.9°	21.5°
TA	Tibia angle	51.9°	53.8°
KK	Knee to knee	330 mm	270 mm
ST ¹	Striker to head	554 mm	562 mm
	Striker to head angle	-77.6°	-82.0°
SK ¹	Striker to knee	583 mm	575 mm
	Striker to knee angle	0.3°	-4.3°
SH ¹	Striker to H-point	226 mm	215 mm
	Striker to H-point angle	24.6°	24.8°
SHY	Striker to H-point (Y dir.)	180 mm	205 mm
HS	Head to side window	247 mm	254 mm
HD	H-point to door	131 mm	135 mm
AD	Arm to door	91 mm	96 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.

Descriptions of Dummy Measurements

When a level is to be used, it is to ensure that the line containing the two points described is either parallel or perpendicular to the ground. If a measurement to be made is less than 10 inches ignore the directions to use a level and approximate a level measurement. Also, when a measurement is to be taken to or from the center of a bolt on the dummy, take the measurement from the center of the bolt hole if the bolt is recessed.

The following measurements are to be made within a vertical longitudinal plane.

- * HH Head to Header, taken from the point where the dummy's nose meets his forehead (between his eyes) to the furthest point forward on the header.
- * HW Head to Windshield, taken from the point where the dummy's nose meets his forehead (between his eyes) to a point on the windshield. Use a level.
- HZ Head to Roof, taken from the point where the dummy's nose meets his forehead (between his eyes) to the point on the roof directly above it. Use a level.
- * CS Steering Wheel to Chest, taken from the center of the steering wheel hub to the dummy's chest. Use a level.
- * CD Chest to Dash, place a tape measure on the tip of the dummy's chin and rotate five inches of it downward toward the dummy to the point of contact on the transverse center of the dummy's chest. Then measure from this point to the closest point on the dashboard either between the upper part of the steering wheel between the hub and the rim, or measure to the dashboard placing the tape measure above the rim, whichever is a shorter measurement. See diagram.
- RA Steering Wheel Rim to Abdomen, taken from the bottommost point of the steering wheel rim horizontally rearward to the dummy. Use a level.
- NR Nose to Rim, taken from the tip of the dummy's nose to the closest point on the top of the steering wheel rim. Also indicate the angle this line makes with respect to the horizontal (NA).
- *¹ KDL, Left and Right Knees to Dashboard, taken from the center of the knee pivot
KDR bolt's outer surface to the closest point forward acquired by swinging the tape measure in continually larger arcs until it contacts the dashboard. Also reference the angle of this measurement with respect to the horizontal for the outboard knee (KDA). See diagram.

* Measurement used in Data Tape Reference Guide

¹ Only outboard measurement is referenced in Data Tape Reference Guide

Descriptions of Dummy Measurements, Cont'd.

SH, Striker to Hip, Knee, and Head, these measurements are to be taken in the X-
SK, Z plane measured from the forward most center point on the striker to the
ST center of the H-point, outer knee bolt, and head target. When taking this
measurement a firm device that can be rigidly connected to the striker should
be used. Use a level. The angles of these measurements with respect to the
horizontal should also be recorded. The measurement in the Y (transverse)
direction from the striker to the H-point should also be taken (SHY). See
diagram.

The following measurements are to be made within a vertical transverse plane.

- HS Head to Side Window, taken from the point where the dummy's nose meets
his forehead (between his eyes) to the outside of the side window. In order to
make this measurement, roll the window down to the exact height which
allows a level measurement. Use a level. See diagram.
- * AD Arm to Door, taken from the outer surface of the elbow pivot bolt on a Hybrid
II dummy to the first point it hits on the door. In the case of a Hybrid III
dummy, measure from the bolt on the outer biceps. When a SID is used make
the measurement from the center of the bottom of the arm segment where it
meets the dummy's torso.
- * HD H-point to Door, taken from the H-point on the dummy to the closest point on
the door. Use a level.
- * HR Head to Side Header, measure the shortest distance from the point where the
dummy's nose meets his forehead (between his eyes) to the side edge of the
header just above the window frame, directly adjacent to the dummy.
- SHY Striker to H-point, taken from a rod rigidly connected to the forward most
center point on the striker to the H-point. Use a level. See diagram.
- KK Knee to Knee, for Hybrid II dummies measure the distance between knee
pivot bolt head outer surfaces. For Hybrid III dummies measure the distance
between the outboard knee clevis flange surfaces. (This measurement may
not be exactly transverse.)

Angles

- SA Seat Back Angle, find this angle using the instructions provided by the
manufacturer. If the manufacturer doesn't provide clear instructions contact
the COTR.

* Measurement used in Data Tape Reference Guide

Descriptions of Dummy Measurements, Cont'd.

- PA Pelvic or Femur Angle, taken by inserting the pelvic angle gauge into the H-point gauging hole on the SID or the Hybrid III dummies and taking this angle with respect to the horizontal. Measure the angle of the line connecting the H-point hole and the outer knee pivot bolt hole on a Hybrid II dummy with respect to the horizontal, to find the femur angle.
- SWA Steering Wheel Angle, find this by placing a straight edge against the steering wheel rim along the longitudinal plane. Then measure the acute angle of the straight edge with respect to the horizontal.
- SCA Steering Column Angle, measured with respect to the horizontal by placing an inclinometer on the center of the underside of the steering column.
- NA Measure the angle made when taking the measurement NR with respect to the horizontal.
- KDA Knee to Dash Angle, the angle that the measurement KD is taken at with respect to the horizontal. Only get this angle for the outboard knee. See diagram.
- WA Windshield Angle, place an inclinometer along the transverse center of the windshield exterior (measurement is made with respect to horizontal).
- TA Tibia Angle, use a straight edge to connect the dummy's knee and ankle bolts. Then place an inclinometer on the straight edge and measure the angle with respect to the horizontal.

Figure 4 Pre-Test And Post-Test Measurement Points

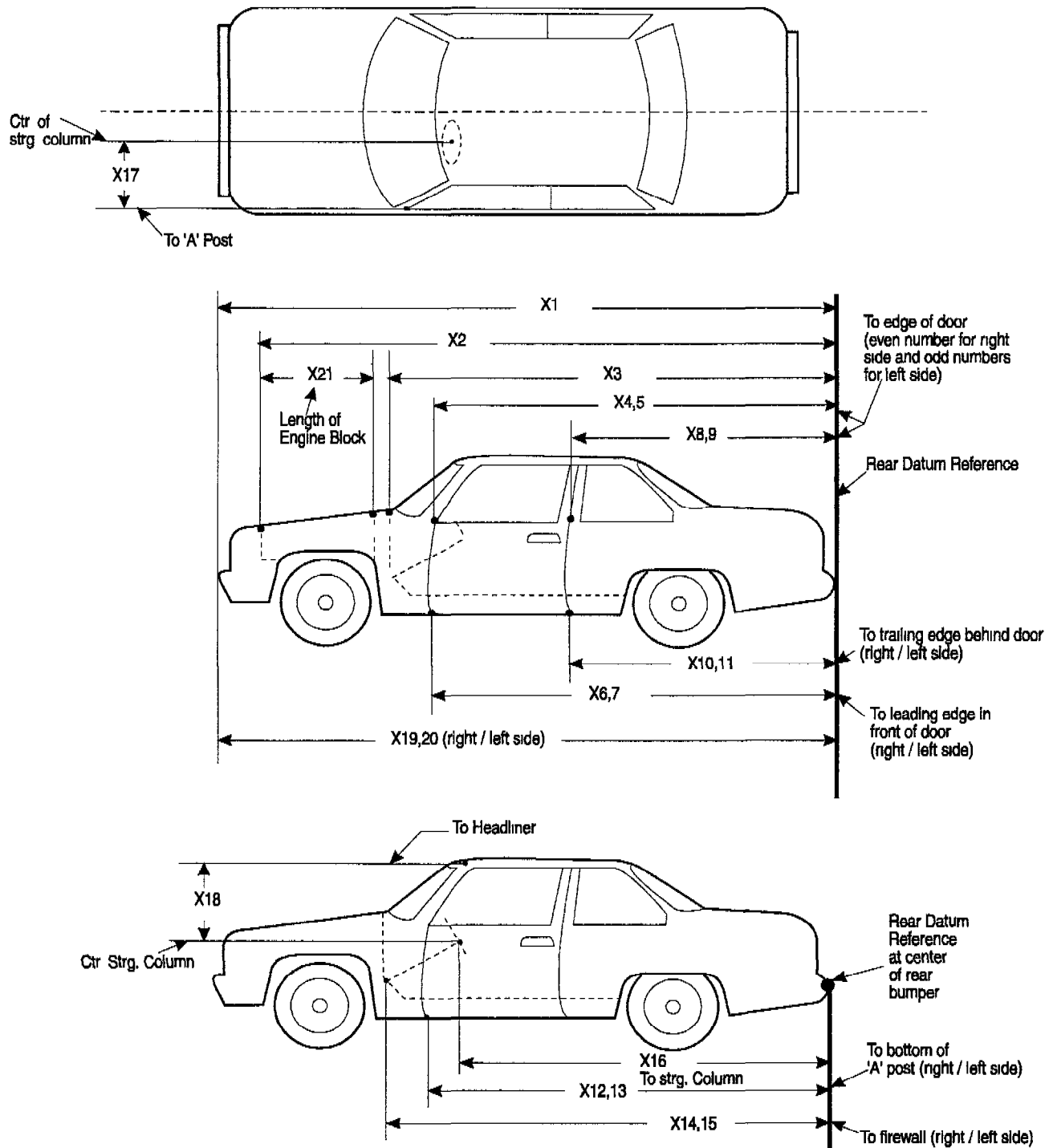


Table 8 Impacted Vehicle Measurements

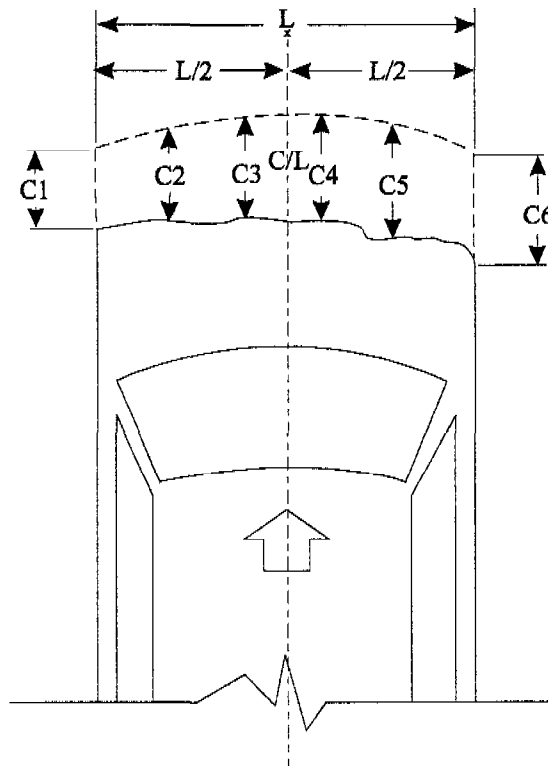
Test number: 011022

Vehicle year/make/model/body style: 2001/Ford/Escape/MPV

No	Type of measurement	Pre-Test	Post-Test	Difference
X1	Total Length of Vehicle at Centerline	4363	4052	311
X2	Rear Surface of Vehicle to Front of Engine Block	3613	N/A	N/A
X3	Rear Surface of Vehicle to Firewall	3393	3382	11
X4	Rear Surface of Veh. to Upper Leading Edge of Right Door	3000	2991	9
X5	Rear Surface of Veh. to Upper Leading Edge of Left Door	3000	3000	0
X6	Rear Surface of Veh. to Lower Leading Edge of Right Door	2952	2946	6
X7	Rear Surface of Veh. to Lower Leading Edge of Left Door	2962	2961	1
X8	Rear Surface of Veh. to Upper Trailing Edge of Right Door	2004	1995	9
X9	Rear Surface of Veh. to Upper Trailing Edge of Left Door	2003	2003	0
X10	Rear Surface of Veh. to Lower Trailing Edge of Right Door	2020	2021	-1
X11	Rear Surface of Veh. to Lower Trailing Edge of Left Door	2024	2024	0
X12	Rear Surface of Veh. to Bottom of " A " Post on Right Side	2976	2976	0
X13	Rear Surface of Veh. to Bottom of " A " Post on Left Side	2978	2982	-4
X14	Rear Surface of Vehicle to Firewall--Right Side	3448	3410	38
X15	Rear Surface of Vehicle to Firewall --Left Side	3436	3429	7
X16	Rear Surface of Vehicle to Steering Wheel Center	2591	2606	-15
X17	Center of Steering Column to " A " Post	295	400	-105
X18	Center of Steering Column to Headliner	485	615	-130
X19	Rear Surface of Vehicle to Right Side of Front Bumper	4248	4030	218
X20	Rear Surface of Vehicle to Left Side of Front Bumper	4236	4048	188
X21	Length of Engine Block	380	380	0
RD	Rear Surface of Vehicle to Right Side of Dash Panel	2876	2881	-5
CD	Rear Surface of Vehicle to Center of Dash Panel	2846	2851	-5
LD	Rear Surface of Vehicle to Left Side of Dash Panel	2858	2856	2

All distance measurements are in millimeters.

Figure 5 Vehicle Crush



Notes: L is pre-test length of contact surface.
C1 through C6 are spaced equally apart.
CL is vehicle centerline.

Vehicle: 2001 Ford Escape

Location	Pre-test	Post-test	Difference
L	1525 mm		
C1	4236 mm	4048 mm	188 mm
C2	4360 mm	4024 mm	336 mm
C3	4360 mm	4042 mm	318 mm
C4	4362 mm	4063 mm	299 mm
C5	4371 mm	4049 mm	322 mm
C6	4248 mm	4030 mm	218 mm
CL	4363 mm	4052 mm	311 mm

Table 9 Test Vehicle Frontal Profile Data

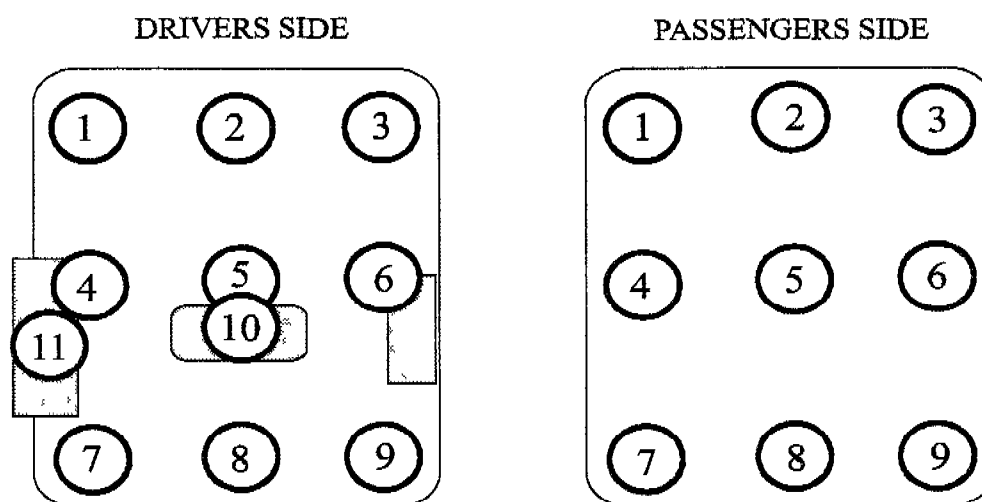
Pre-Test Profile							
		Vehicle Left			Vehicle Right		
		Point 1	Point 2	Point 3	Point 4	Point 5	Point 6
Bottom of Front Bumper	X	4213 mm	4302 mm	4319 mm	4326 mm	4315 mm	4197 mm
	Y	738 mm	453 mm	157 mm	153 mm	452 mm	742 mm
	Z	405 mm	402 mm	410 mm	408 mm	404 mm	410 mm
Top of Front Bumper	X	4211 mm	4351 mm	4357 mm	4360 mm	4331 mm	4216 mm
	Y	762 mm	449 mm	150 mm	155 mm	458 mm	763 mm
	Z	709 mm	720 mm	705 mm	703 mm	720 mm	710 mm
Center of Grille	X	4158 mm	4306 mm	4306 mm	4299 mm	4317 mm	4158 mm
	Y	755 mm	446 mm	150 mm	153 mm	443 mm	761 mm
	Z	790 mm	795 mm	781 mm	785 mm	805 mm	805 mm
Front of Hood	X	4102 mm	4247 mm	4288 mm	4288 mm	4256 mm	4106 mm
	Y	715 mm	452 mm	150 mm	152 mm	448 mm	708 mm
	Z	921 mm	867 mm	867 mm	865 mm	870 mm	925 mm

Post-Test Profile							
		Vehicle Left			Vehicle Right		
		Point 1	Point 2	Point 3	Point 4	Point 5	Point 6
Bottom of Front Bumper	X	4066 mm	4086 mm	4084 mm	4107 mm	4030 mm	4070 mm
	Y	732 mm	456 mm	157 mm	153 mm	455 mm	735 mm
	Z	520 mm	526 mm	534 mm	531 mm	521 mm	547 mm
Top of Front Bumper	X	3994 mm	4036 mm	4051 mm	4056 mm	4072 mm	4015 mm
	Y	765 mm	451 mm	150 mm	155 mm	460 mm	764 mm
	Z	809 mm	821 mm	818 mm	824 mm	841 mm	837 mm
Center of Grille	X	4027 mm	4026 mm	4021 mm	4025 mm	4017 mm	4016 mm
	Y	746 mm	461 mm	100 mm	152 mm	452 mm	733 mm
	Z	904 mm	911 mm	912 mm	916 mm	924 mm	930 mm
Front of Hood	X	3937 mm	3998 mm	4031 mm	4018 mm	4004 mm	3976 mm
	Y	720 mm	450 mm	150 mm	151 mm	445 mm	710 mm
	Z	1125 mm	1011 mm	990 mm	994 mm	1021 mm	1176 mm

Difference							
		Vehicle Left			Vehicle Right		
		Point 1	Point 2	Point 3	Point 4	Point 5	Point 6
Bottom of Front Bumper	X	147 mm	216 mm	235 mm	219 mm	285 mm	127 mm
	Y	6 mm	-3 mm	0 mm	0 mm	-3 mm	7 mm
	Z	-115 mm	-124 mm	-124 mm	-123 mm	-117 mm	-137 mm
Top of Front Bumper	X	217 mm	315 mm	306 mm	304 mm	259 mm	201 mm
	Y	-3 mm	-2 mm	0 mm	0 mm	-2 mm	-1 mm
	Z	-100 mm	-101 mm	-113 mm	-121 mm	-121 mm	-127 mm
Center of Grille	X	131 mm	280 mm	285 mm	274 mm	300 mm	142 mm
	Y	9 mm	-15 mm	50 mm	1 mm	-9 mm	28 mm
	Z	-114 mm	-116 mm	-131 mm	-131 mm	-119 mm	-125 mm
Front of Hood	X	165 mm	249 mm	257 mm	270 mm	252 mm	130 mm
	Y	-5 mm	2 mm	0 mm	1 mm	3 mm	-2 mm
	Z	-204 mm	-144 mm	-123 mm	-129 mm	-151 mm	-251 mm

Note X-axis measurements referenced forward of the rear bumper centerline Y-axis measurements are left and right of the original vehicle centerline. Y-axis measurements (6 points) divide the width of the car Z-axis (height) measurements are from the ground

Figure 6 Toeboard Measurements



Driver's Side Floorpan Measurements

Floorpan Location	X			Z		
	Pre-Test	Post-Test	Difference	Pre-Test	Post-Test	Difference
1	3182 mm	3178 mm	4 mm	550 mm	568 mm	-18 mm
2	3218 mm	3188 mm	30 mm	505 mm	550 mm	-45 mm
3	3213 mm	3178 mm	35 mm	503 mm	513 mm	-10 mm
4	3162 mm	3162 mm	0 mm	439 mm	465 mm	-26 mm
5	3158 mm	3158 mm	0 mm	438 mm	467 mm	-29 mm
6	3156 mm	3153 mm	3 mm	444 mm	457 mm	-13 mm
7	3095 mm	3095 mm	0 mm	394 mm	414 mm	-20 mm
8	3076 mm	3076 mm	0 mm	393 mm	393 mm	0 mm
9	3061 mm	3113 mm	-52 mm	389 mm	408 mm	-19 mm
10	3073 mm	3083 mm	-10 mm	560 mm	644 mm	-84 mm
11	3060 mm	3058 mm	2 mm	459 mm	475 mm	-16 mm

Passenger's Side Floorpan Measurements

Floorpan Location	X			Z		
	Pre-Test	Post-Test	Difference	Pre-Test	Post-Test	Difference
1	3253 mm	3238 mm	15 mm	510 mm	580 mm	-70 mm
2	3237 mm	3208 mm	29 mm	530 mm	591 mm	-61 mm
3	3183 mm	3178 mm	5 mm	538 mm	602 mm	-64 mm
4	3178 mm	3168 mm	10 mm	465 mm	482 mm	-17 mm
5	3173 mm	3158 mm	15 mm	465 mm	497 mm	-32 mm
6	3158 mm	3153 mm	5 mm	480 mm	527 mm	-47 mm
7	3100 mm	3095 mm	5 mm	415 mm	422 mm	-7 mm
8	3093 mm	3076 mm	17 mm	415 mm	418 mm	-3 mm
9	3113 mm	3113 mm	0 mm	90 mm	443 mm	-353 mm

Reference: +X forward from rear bumper; +Z upward from ground level

Table 10 Intrusion of Upper Instrument Panel

Pre-Test

	X	Y	Z
Driver Left Knee	2775 mm	530 mm	808 mm
Driver Right Knee	2774 mm	204 mm	824 mm
Passenger Left Knee	2764 mm	237 mm	875 mm
Passenger Right Knee	2768 mm	564 mm	825 mm

Post-Test

	X	Y	Z
Driver Left Knee	2816 mm	505 mm	920 mm
Driver Right Knee	2816 mm	200 mm	889 mm
Passenger Left Knee	2996 mm	225 mm	934 mm
Passenger Right Knee	2996 mm	545 mm	915 mm

Difference

	X	Y	Z
Driver Left Knee	-41 mm	25 mm	-112 mm
Driver Right Knee	-42 mm	4 mm	-65 mm
Passenger Left Knee	-232 mm	12 mm	-59 mm
Passenger Right Knee	-228 mm	19 mm	-90 mm

Instructions: Mark a point to be measured pre and post which is just above where the four (4) knees would be expected to contact the instrument panel.

+X: Forward from rear bumper

+Y: From centerline

+Z: Upward from ground level

Table 11 Fuel System Data

Usable fuel system capacity:	61 liters (from owner's manual)
Test volume range:	56.1 - 57.3 liters (92-94% of usable)
Actual test volume:	56.4 liters (92.5% of usable)
Test fluid type:	Stoddard
Specific gravity:	0.764
Kinematic viscosity:	0.99 centistoke
Test fluid color:	Purple
Type of fuel pump:	Electric
Did electric fuel pump operate with ignition switch "on" and the engine not operating.	Yes
Details of fuel system:	The tank is located in front of the rear suspension. The fuel filler neck runs out of the left rear of the tank with the fuel filler cap on the end of the neck opening above the wheel well. The fuel lines route along the inside of the left frame rail.

Figure 7 Camera Positions

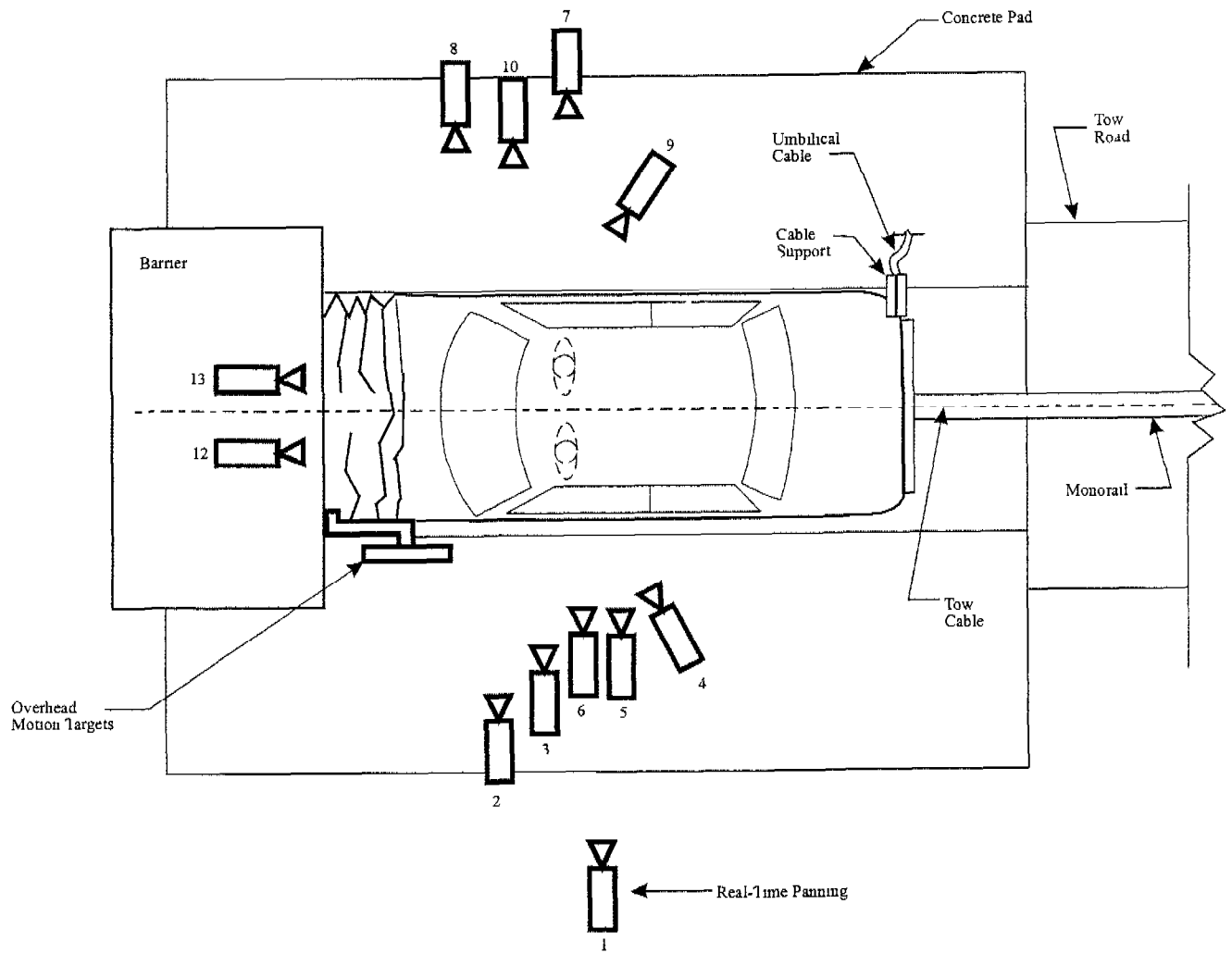


Figure 7 Camera Positions, Cont'd

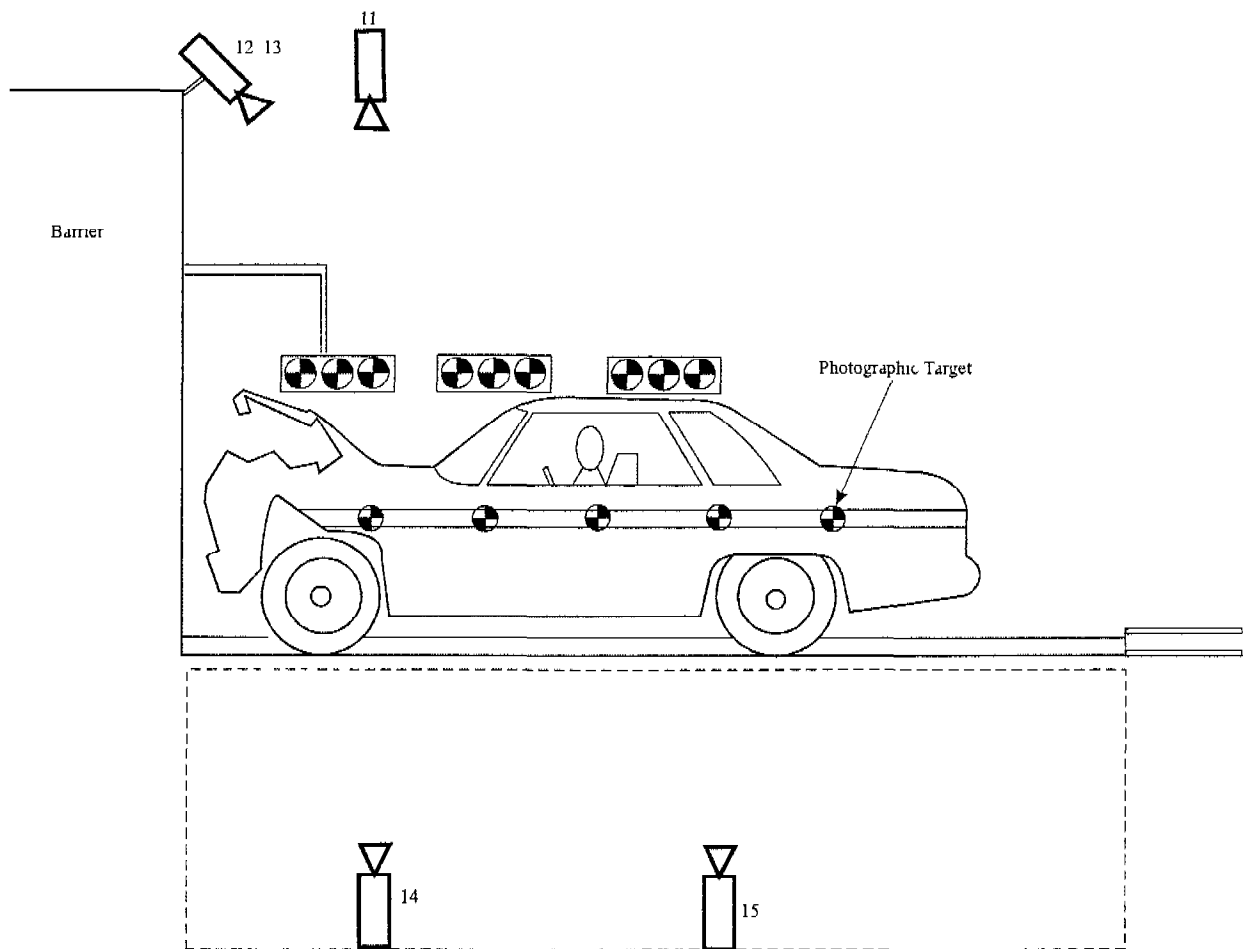


Table 12 Camera Information

No.	View	Type	Lens	Film Speed	Camera Positions ¹			Angle ²	Film Plane to Head Target
					X	Y	Z		
1	Real-time panning	Bolex		24 frames/s	N/A	N/A	N/A	N/A	N/A
2	Left side medium tight	Hycam	25 mm	1000 frames/s	1073 mm	-8252 mm	1510 mm	-5.1	7773 mm
3	Left tight dummy	Photosonic	50 mm	990 frames/s	2272 mm	-7638 mm	1300 mm	-0.6	7171 mm
4	Left angled on dummy	Photosonic	25 mm	1000 frames/s	3082 mm	-2748 mm	2210 mm	-21.6	2450 mm
5	Left steering column upper	Photosonic	25 mm	950 frames/s	2650 mm	-7257 mm	2690 mm	-13.5	6880 mm
6	Left steering column lower	Photosonic	25 mm	940 frames/s	2700 mm	-7282 mm	1630 mm	-4.6	6840 mm
7	Right side overall	Photosonic	13 mm	997 frames/s	2555 mm	7000 mm	1295 mm	-4.7	6592 mm
8	Right tight dummy	Photosonic	50 mm	1000 frames/s	1715 mm	7161 mm	1315 mm	-0.7	6750 mm
9	Right angled on dummy	Photosonic	25 mm	1000 frames/s	3180 mm	2362 mm	2307 mm	-23.6	2270 mm
10	Right side passenger	Hycam	25 mm	1010 frames/s	2140 mm	6730 mm	1530 mm	-4.1	6320 mm
11	Overhead	Photosonic	8.5 mm	1000 frames/s	520 mm	0 mm	2480 mm	-67.3	2020 mm
12	Barrier driver	Photosonic	17 mm	1000 frames/s	500 mm	-350 mm	2500 mm	-56.6	2020 mm
13	Barrier passenger	Photosonic	13 mm	1000 frames/s	493 mm	350 mm	2520 mm	-63.5	2112 mm
14	Pit front	Photosonic	17 mm	930 frames/s	1012 mm	0 mm	-940 mm	90.0	N/A
15	Pit rear	Photosonic	13 mm	1000 frames/s	2792 mm	0 mm	-940 mm	90.0	N/A

¹ +X = Film plane in front of (upstream from) barrier face

+Y = Film plane to right of monorail centerline

+Z = Film plane above ground level

² +Angle = Film plane angled upward from horizontal plane

Description Of Timing Marks On TRC Inc. High-Speed Film

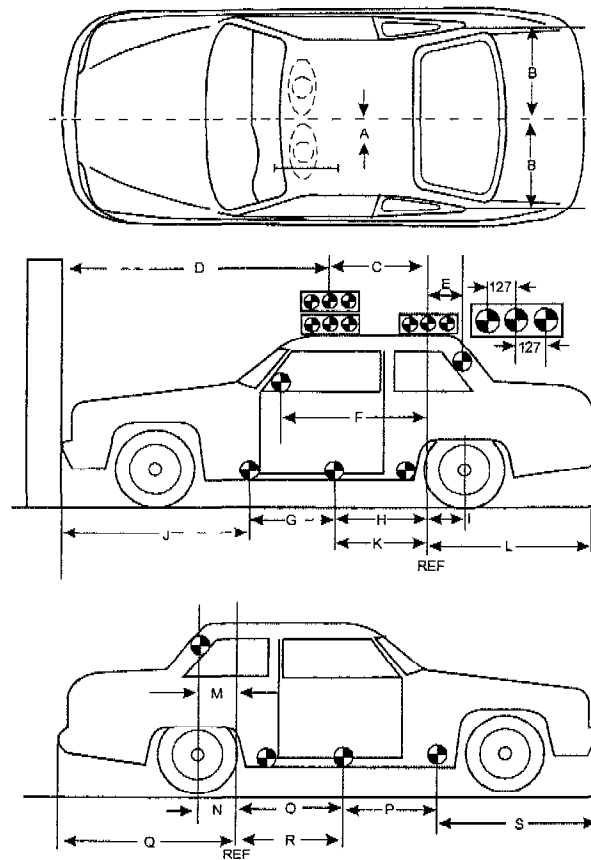
All TRC Inc. high-speed cameras are equipped with red LEDs which put timing marks on the right edge of the film. TRC Inc. uses a single timing generator to generate the timing for all cameras. This allows the timing marks to be common to all cameras. The timing marks can be used to measure camera speed (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 Photosonic 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.

Figure 8 Vehicle Reference Photo Target Locations



Measurement	Pre-Test
A	369 mm
B	655 mm
C	610 mm
D	1380 mm
E	580 mm
F	1603 mm
G	838 mm
H	837 mm
I	360 mm
J	1297 mm
K	475 mm
L	1751 mm
M	584 mm
N	367 mm
O	838 mm
P	838 mm
Q	1751 mm
R	470 mm
S	1306 mm

Additional targeting
Inch tape along the top
and sides of the vehicle
has targets placed at
300 mm intervals
except the first side
target is placed 600 mm
from front of front
bumper.

Appendix A

Photographs

V3817



Figure A-1 Pre-Test Front View



Figure A-2 Post-Test Front View



Figure A-3 Pre-Test Left Front View



Figure A-4 Post-Test Left Front View

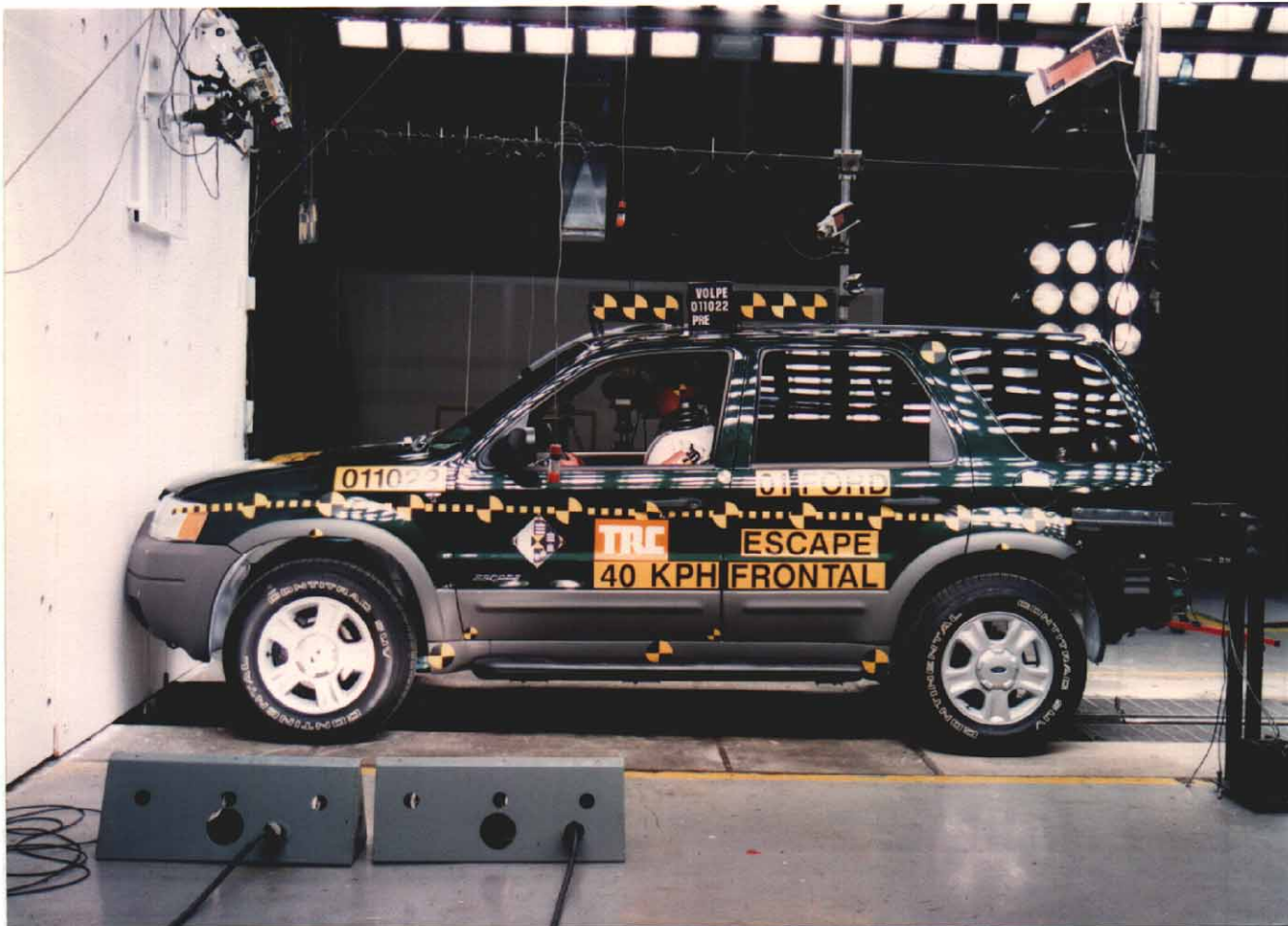


Figure A-5 Pre-Test Left Side View



Figure A-6 Post-Test Left Side View



Figure A-7 Pre-Test Left Rear View



Figure A-8 Post-Test Left Rear View

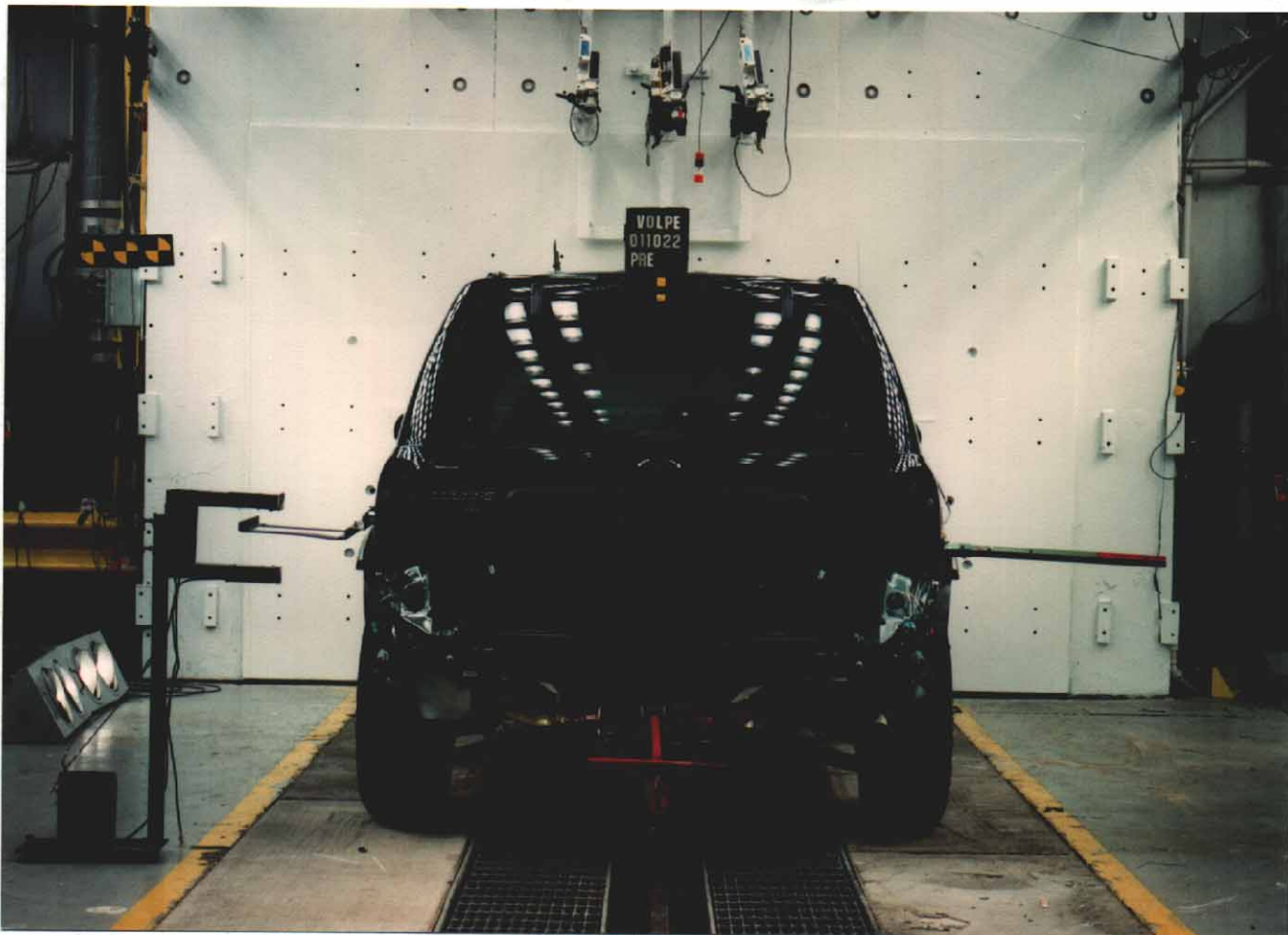


Figure A-9 Pre-Test Rear View

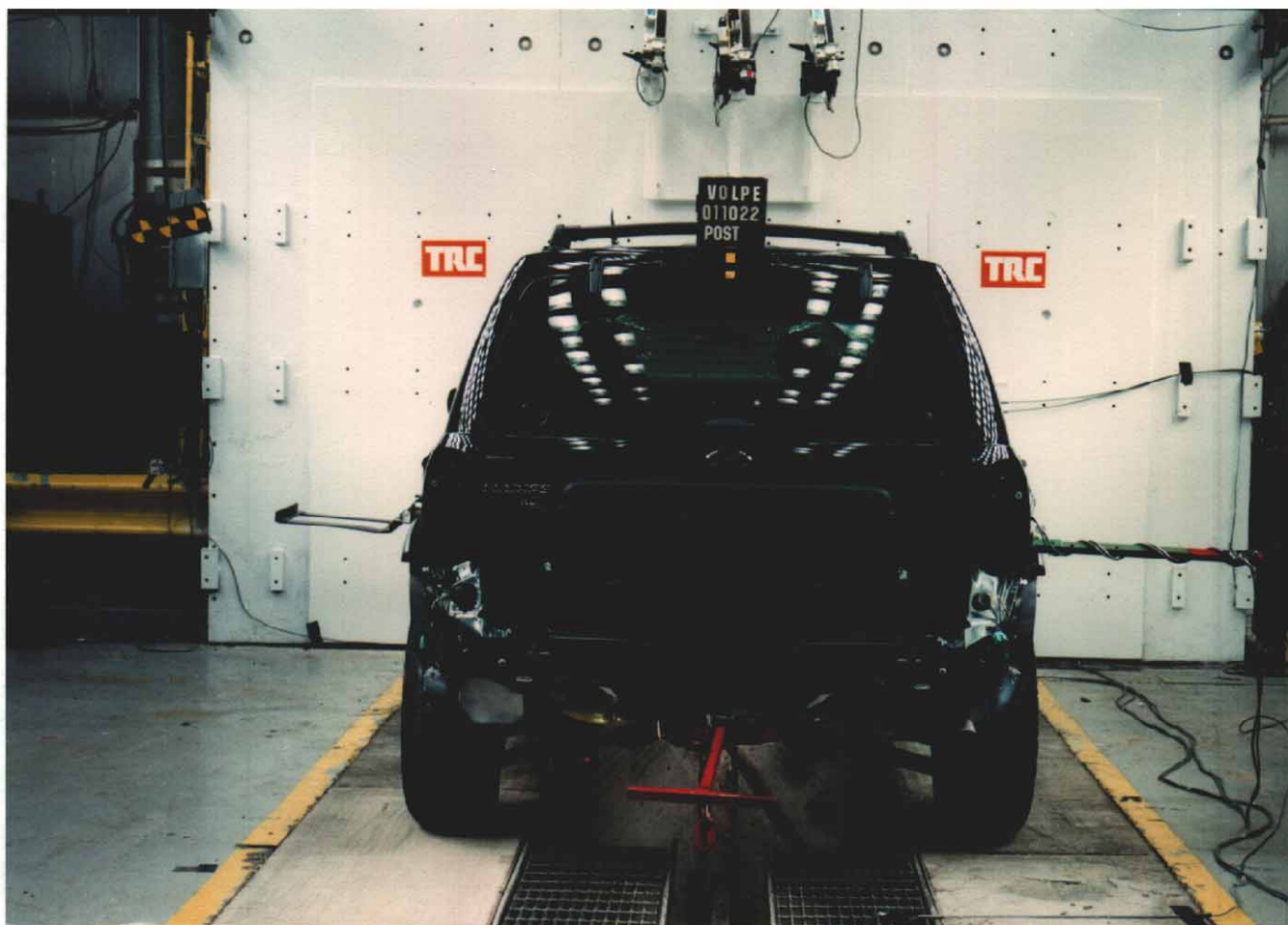


Figure A-10 Post-Test Rear View



Figure A-11 Pre-Test Right Rear View

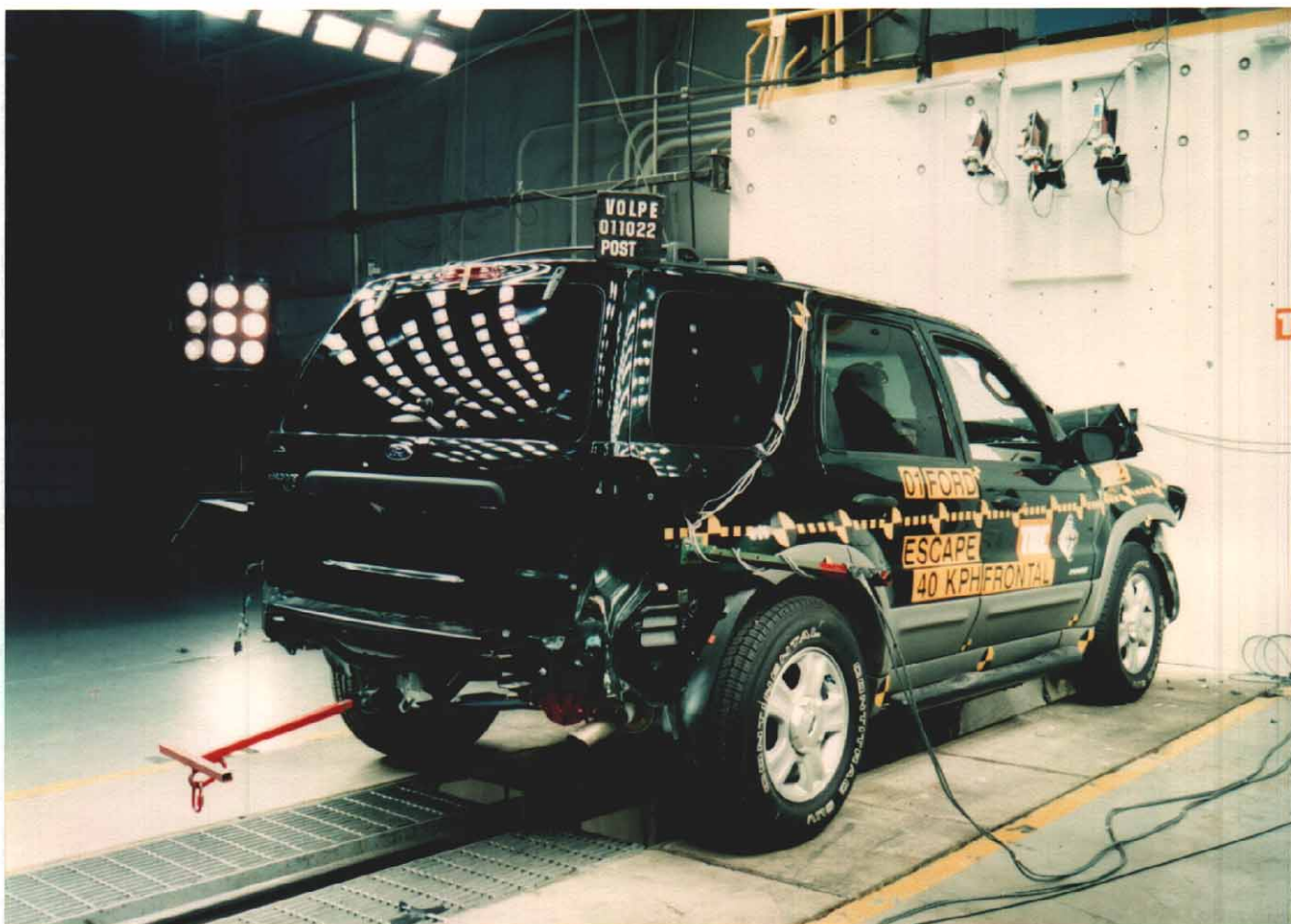


Figure A-12 Post-Test Right Rear View



Figure A-13 Pre-Test Right Side View



Figure A-14 Post-Test Right Side View



Figure A-15 Pre-Test Right Front View



Figure A-16 Post-Test Right Front View

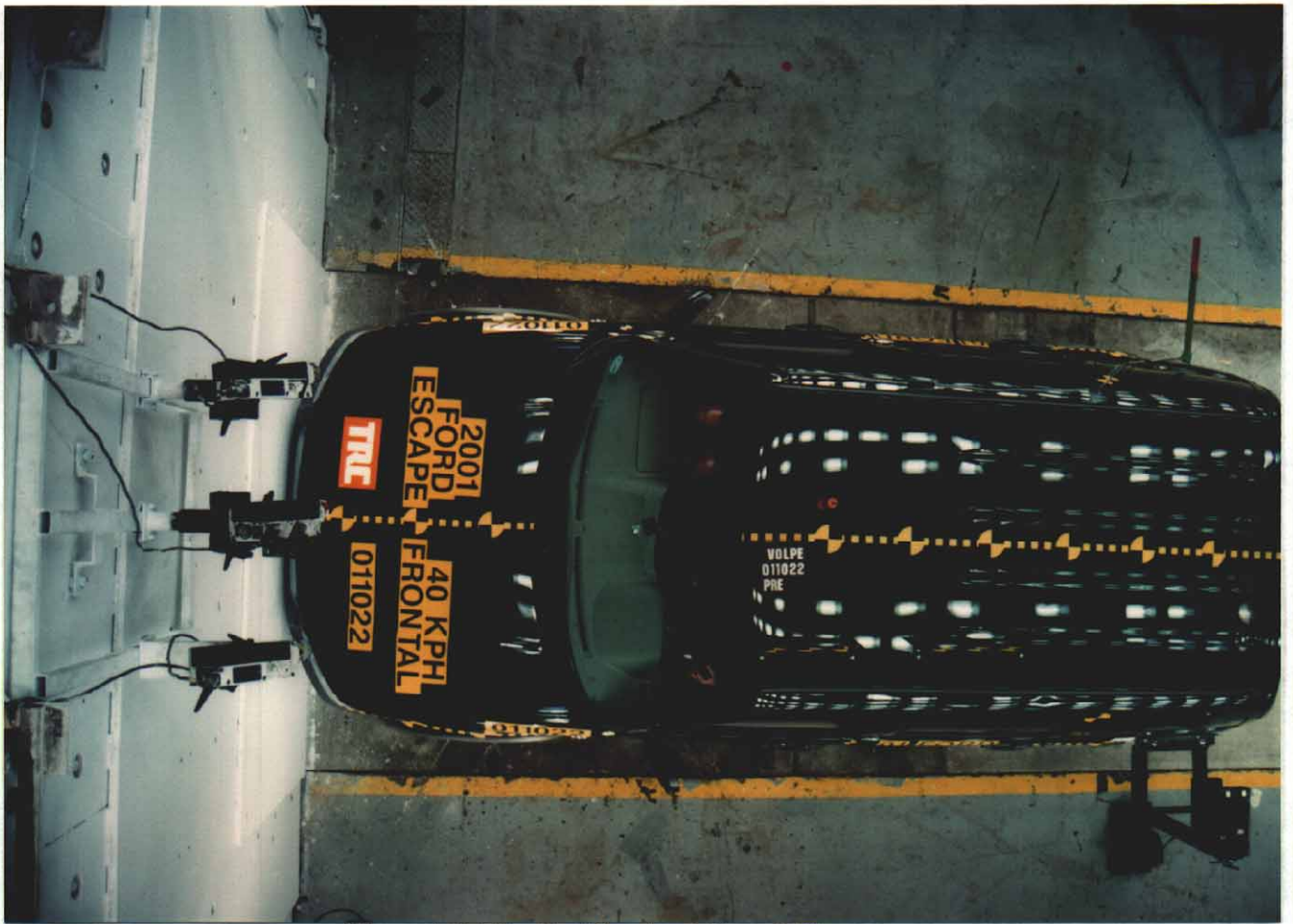


Figure A-17 Pre-Test Overhead Overall View

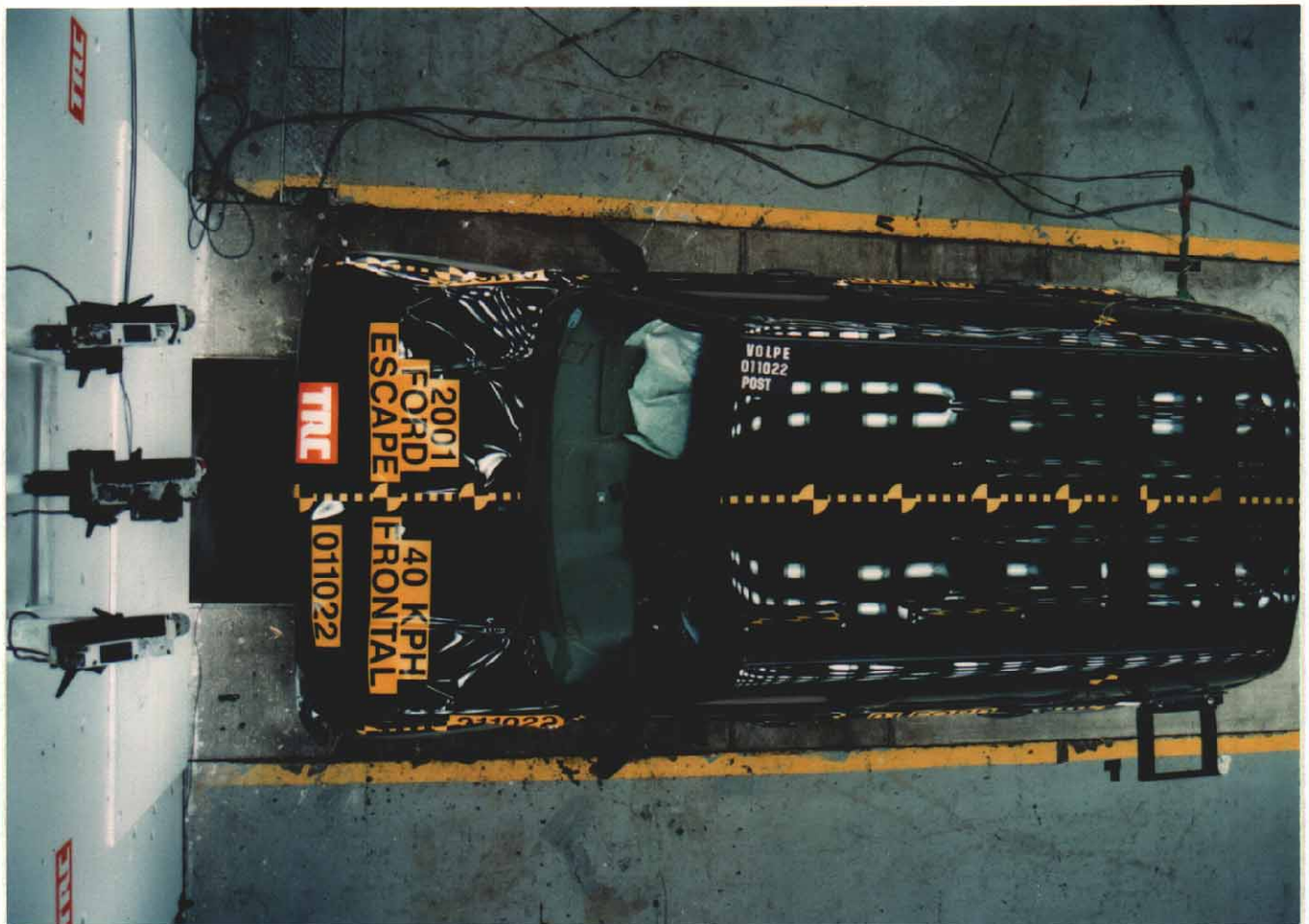


Figure A-18 Post-Test Overhead Overall View

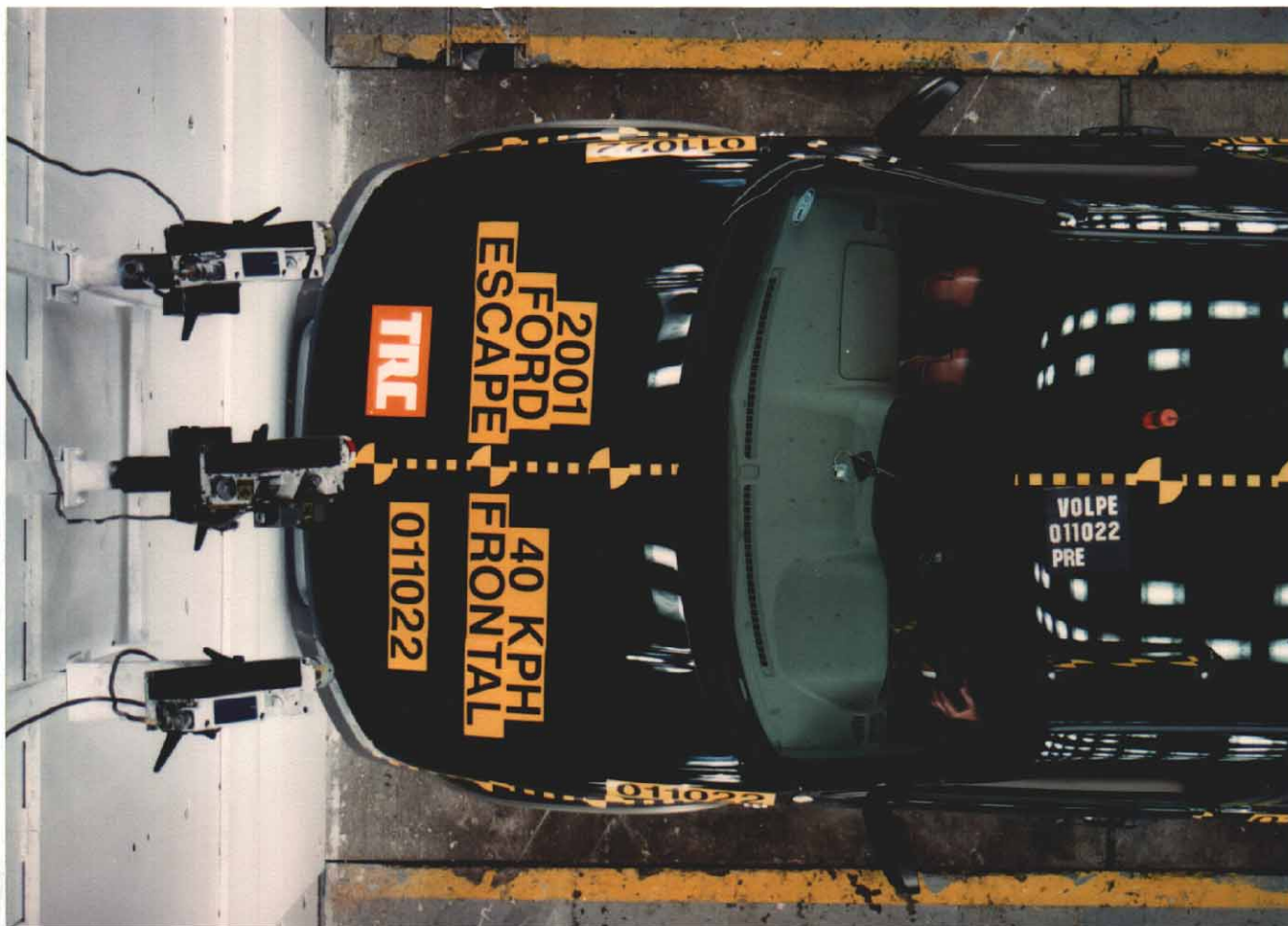


Figure A-19 Pre-Test Overhead Close-up View

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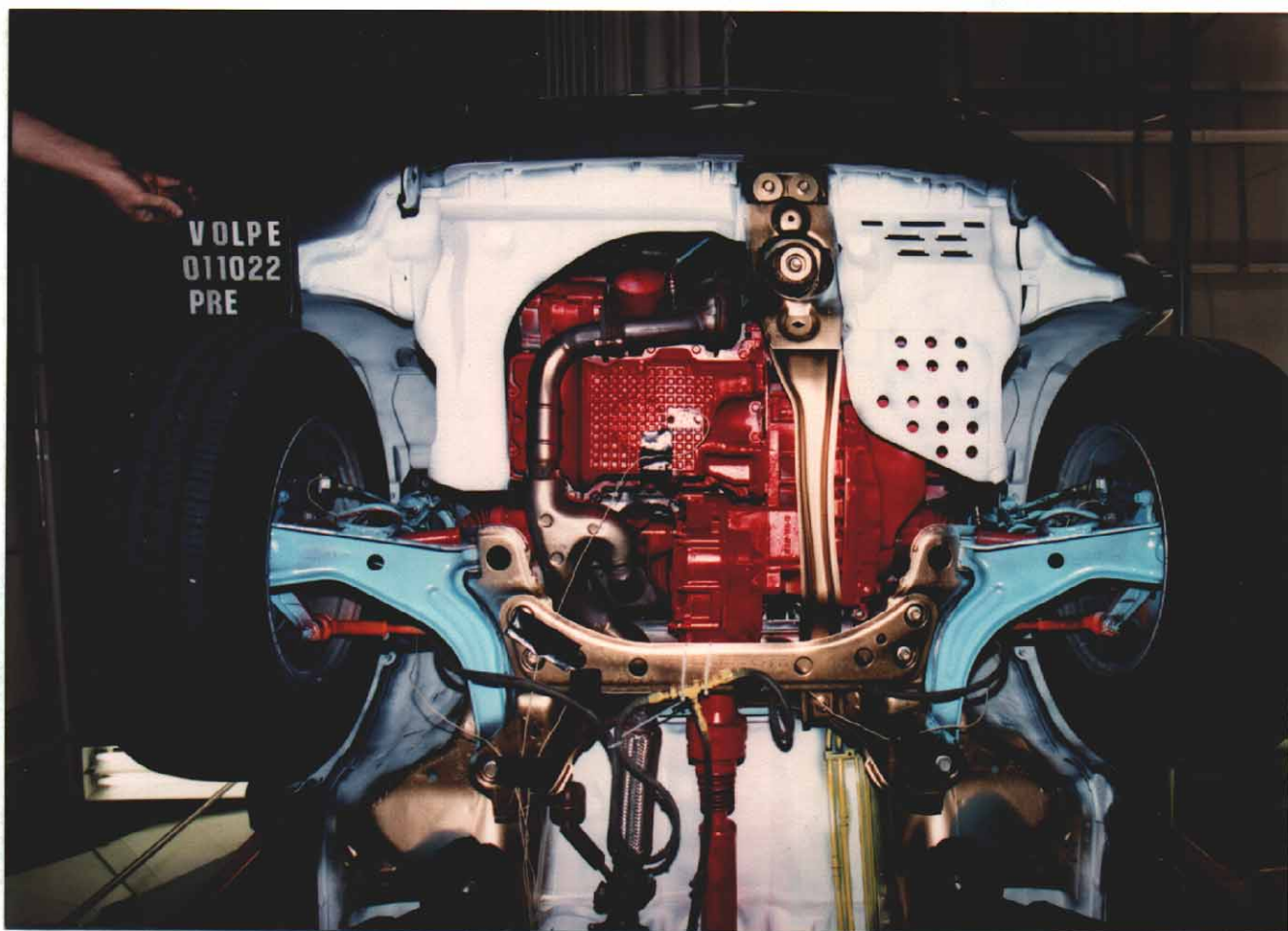


Figure A-20 Pre-Test Front Underbody View

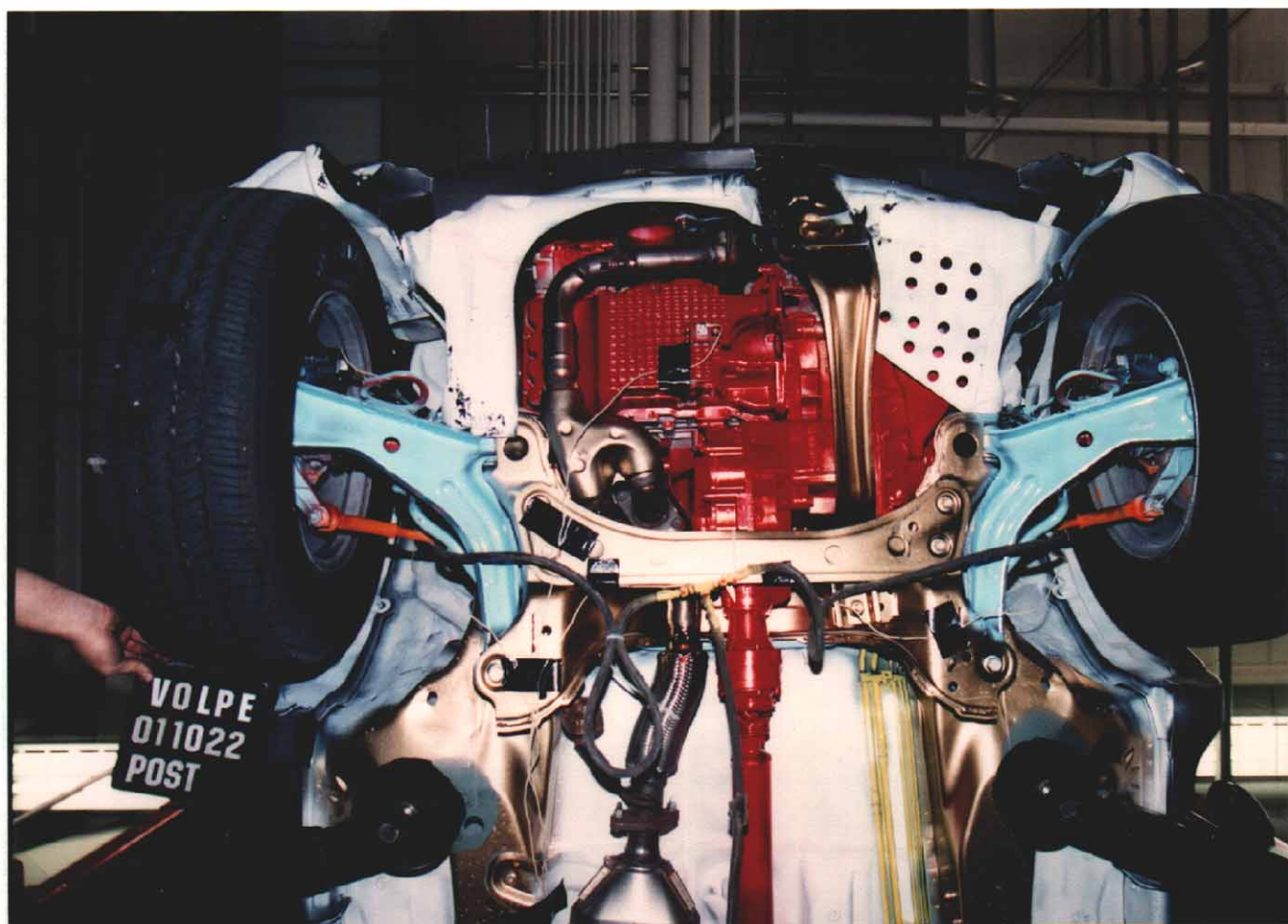


Figure A-21 Post-Test Front Underbody View

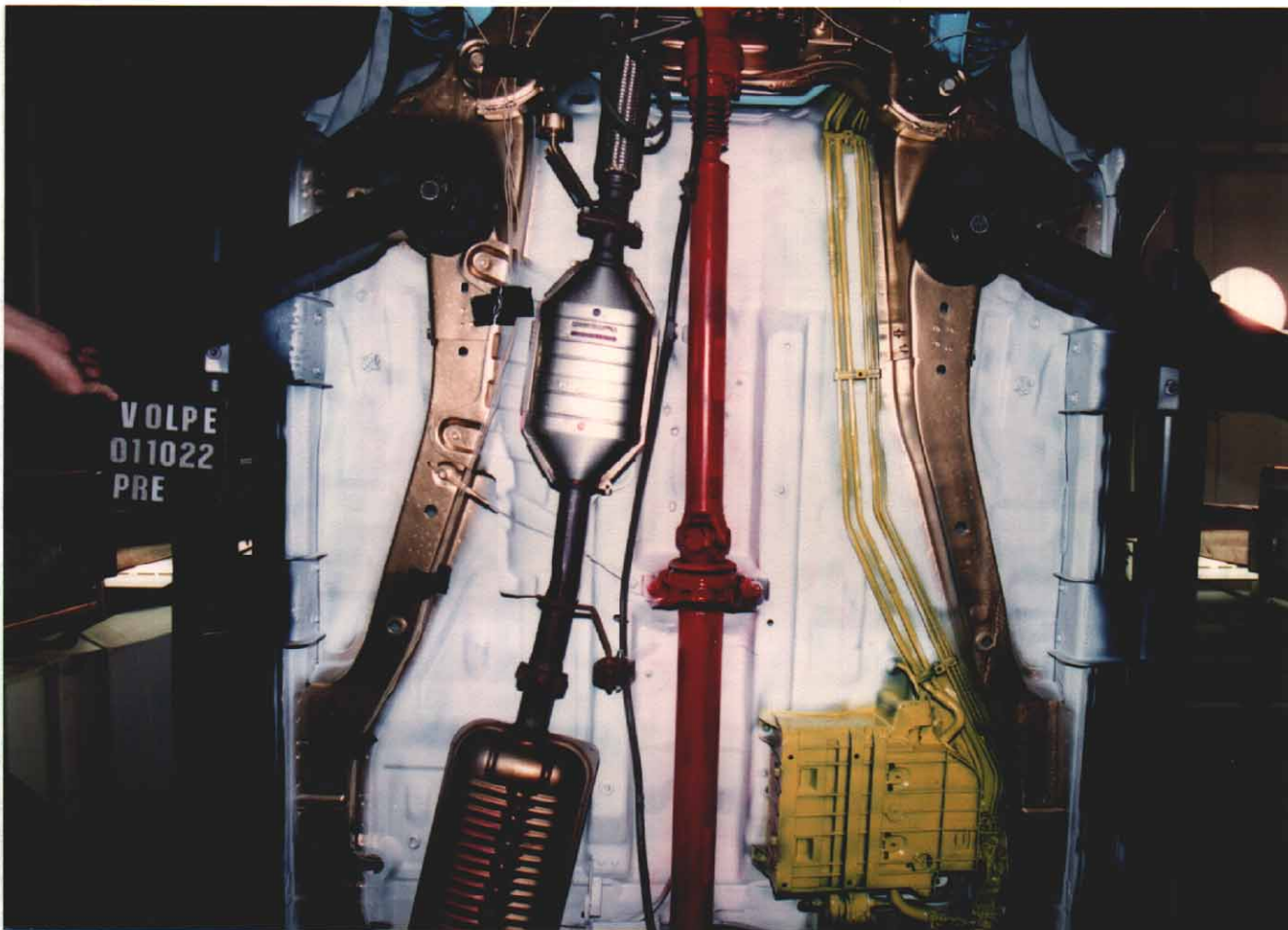


Figure A-22 Pre-Test Front Mid Underbody View

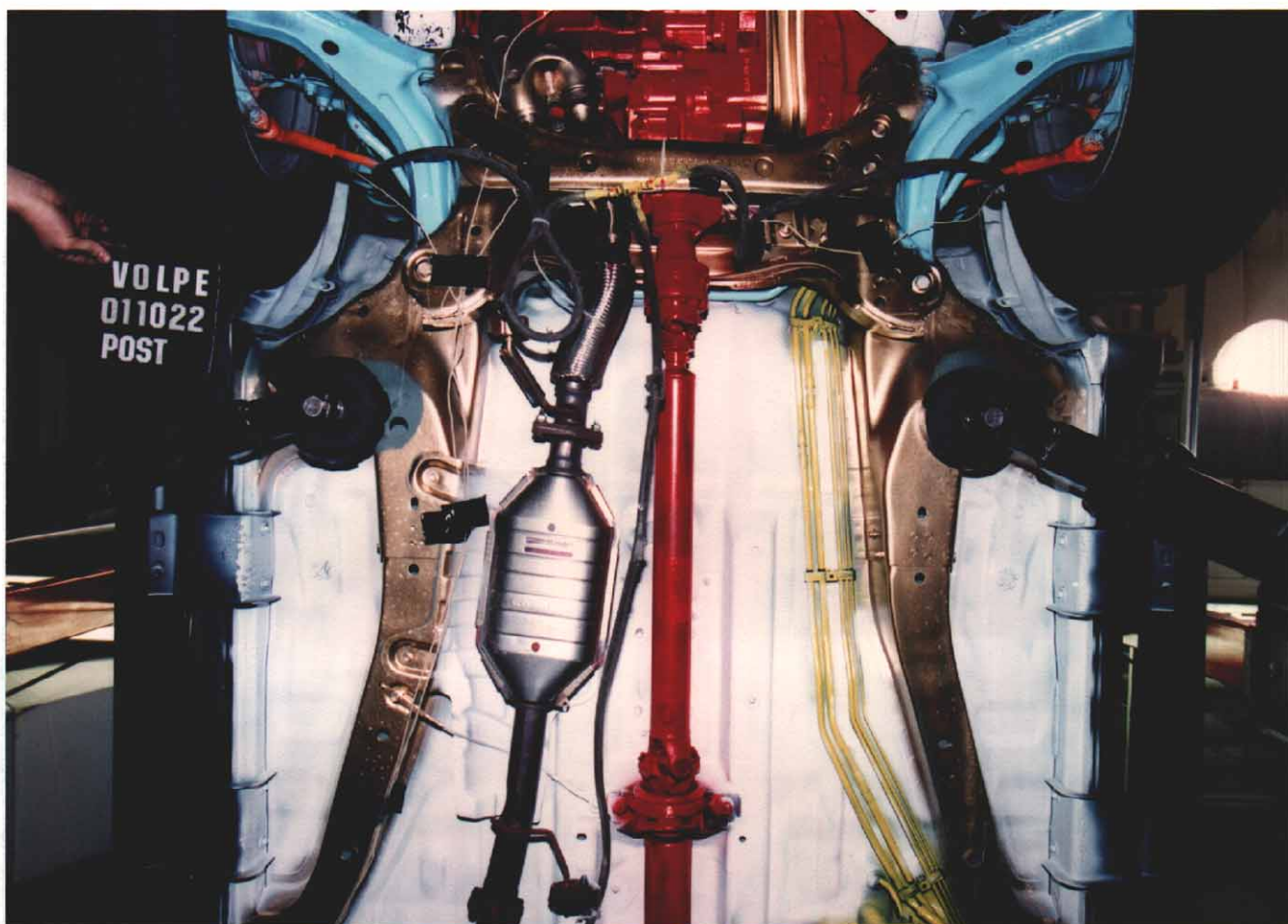


Figure A-23 Post-Test Front Mid Underbody View

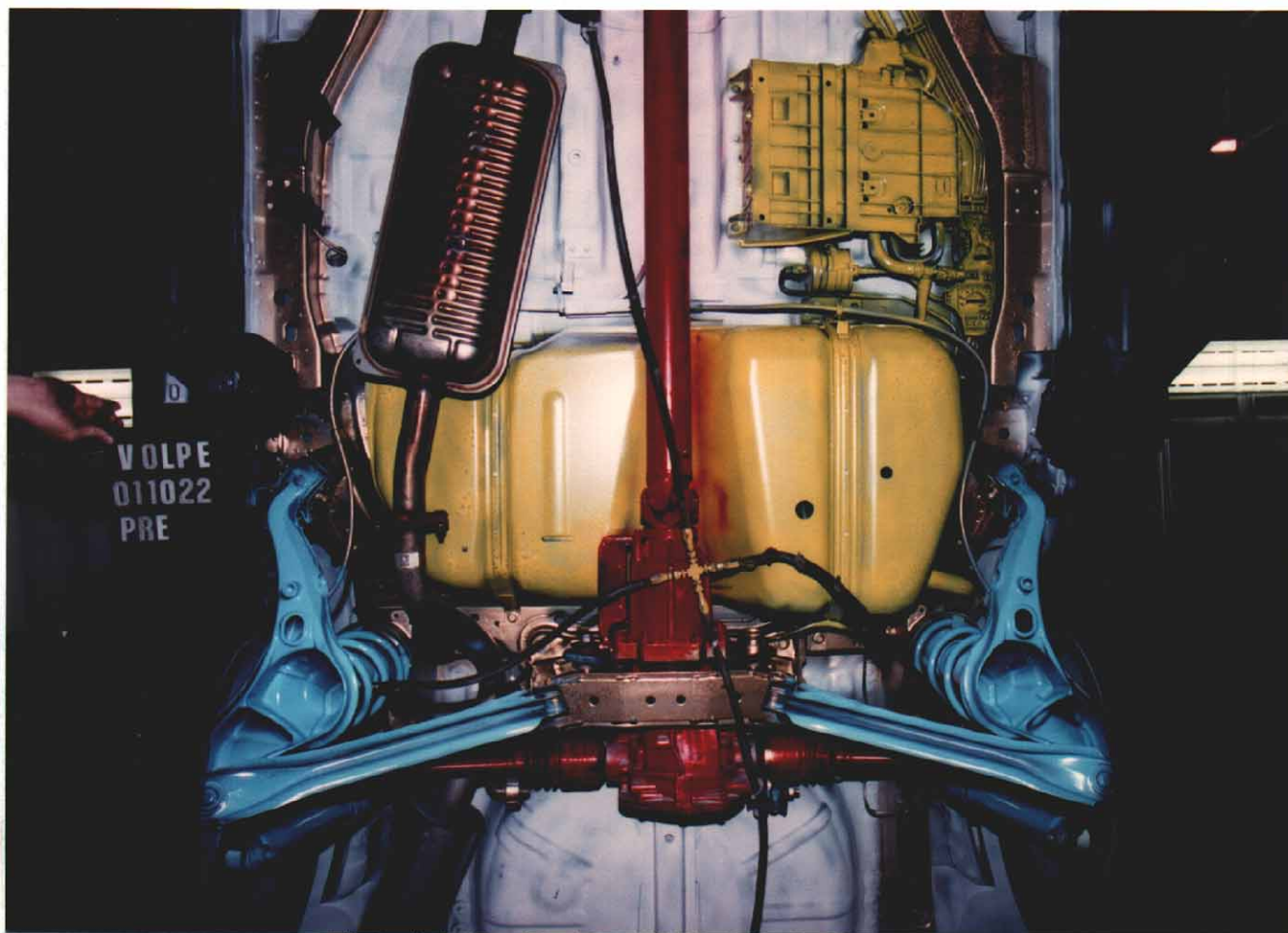


Figure A-24 Pre-Test Rear Mid Underbody View

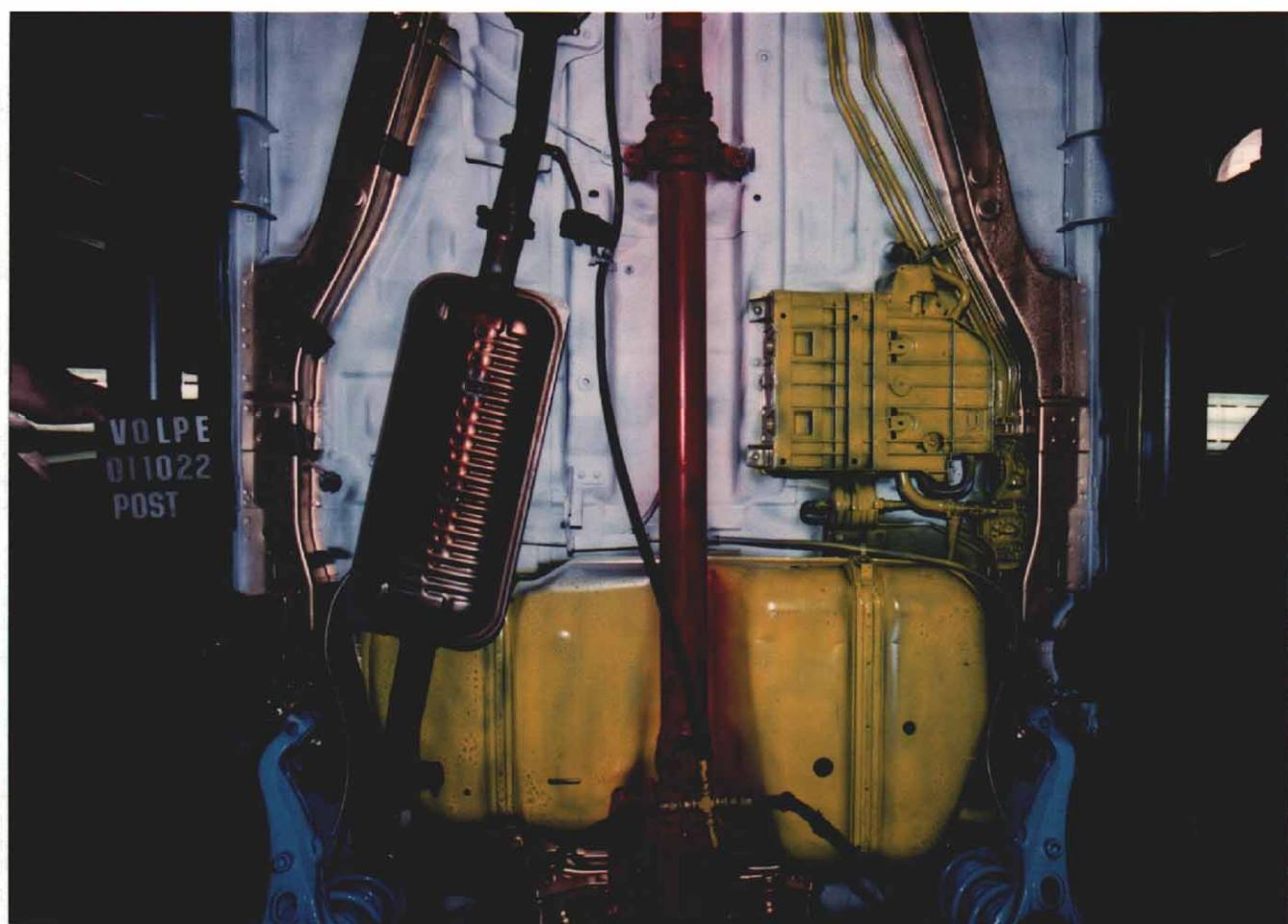


Figure A-25 Post-Test Rear Mid Underbody View

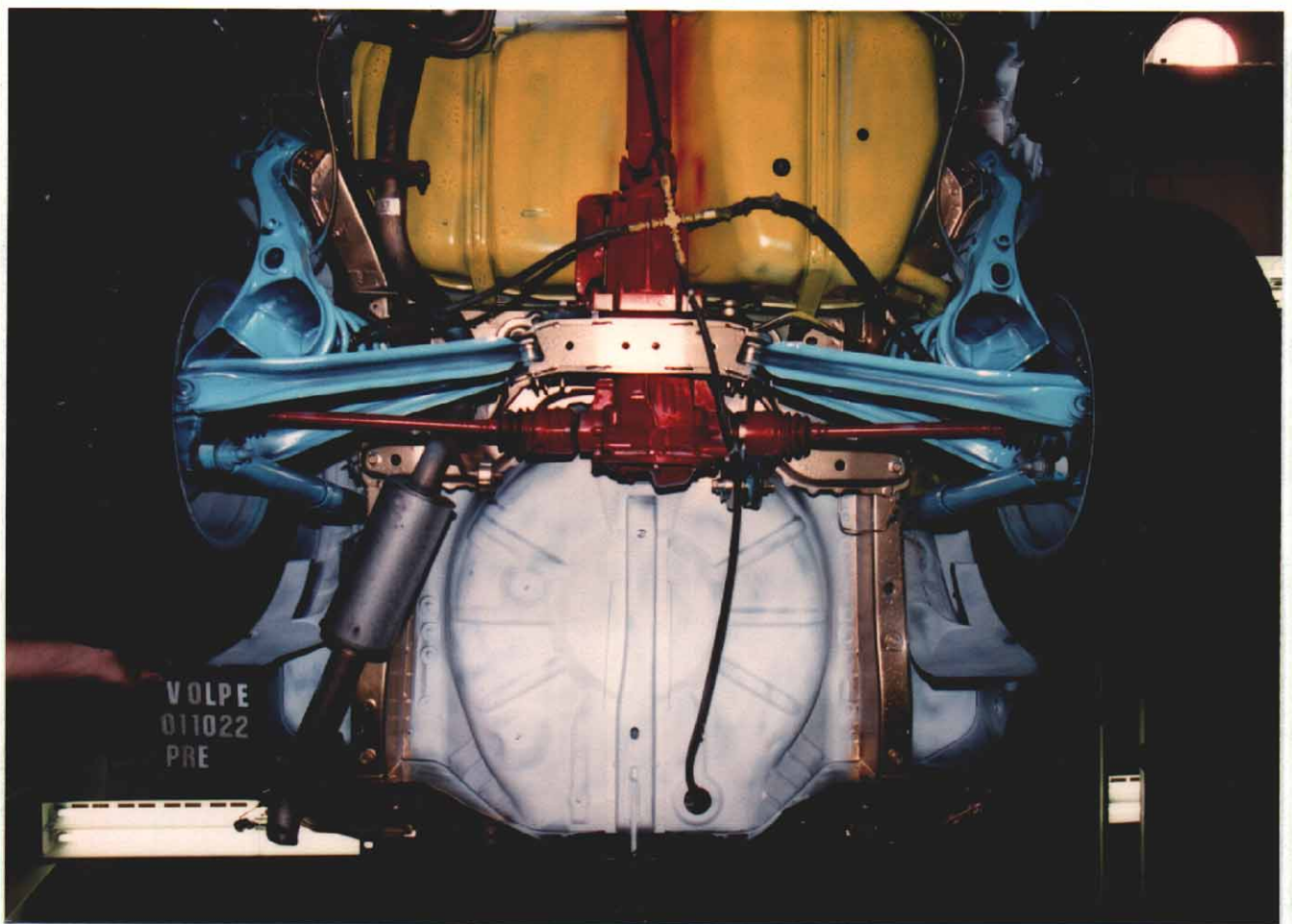


Figure A-26 Pre-Test Rear Underbody View

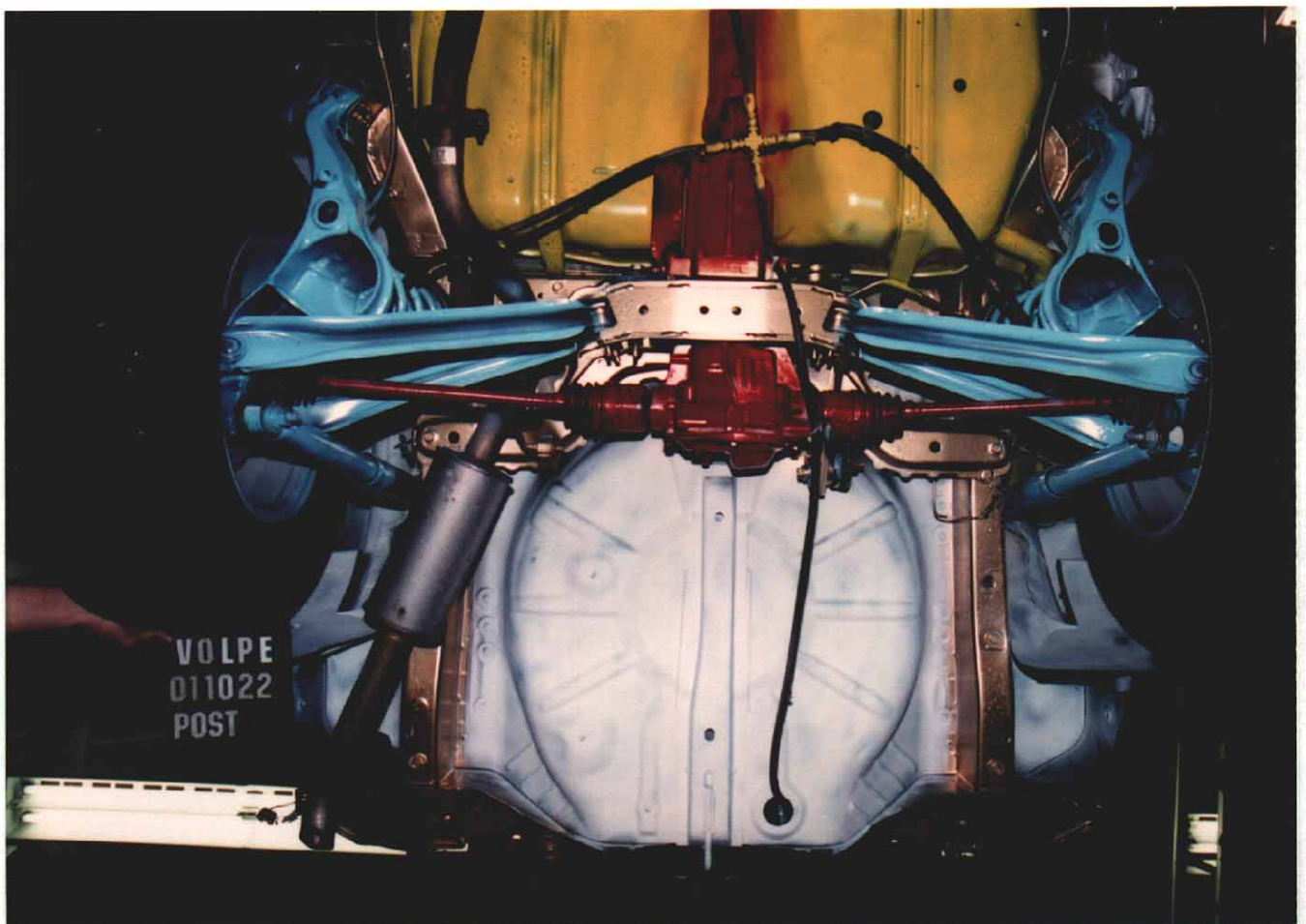


Figure A-27 Post-Test Rear Underbody View



Figure A-28 Pre-Test Fuel Filler Cap View



Figure A-29 Post-Test Fuel Filler Cap View

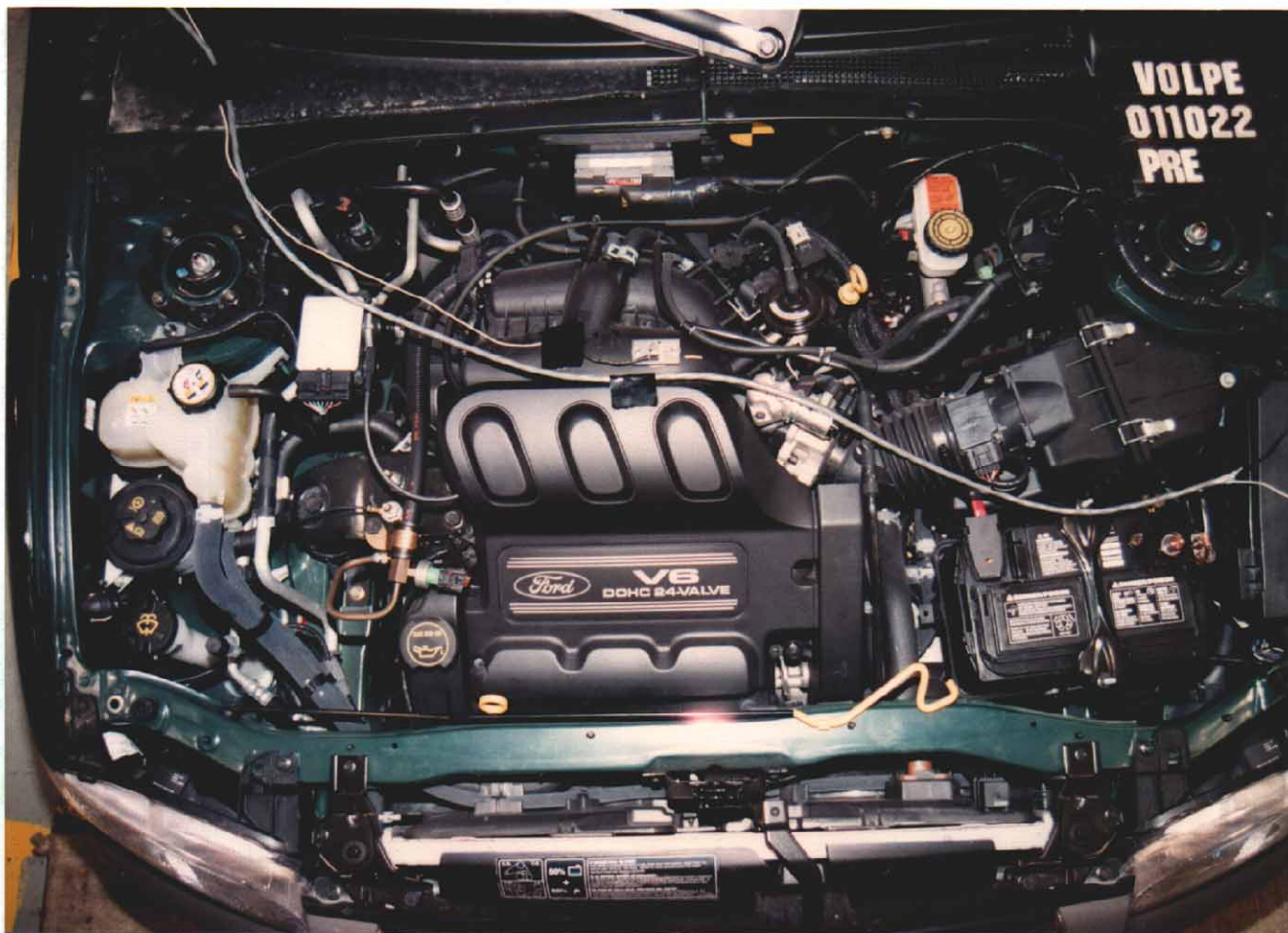


Figure A-30 Pre-Test Engine Compartment View

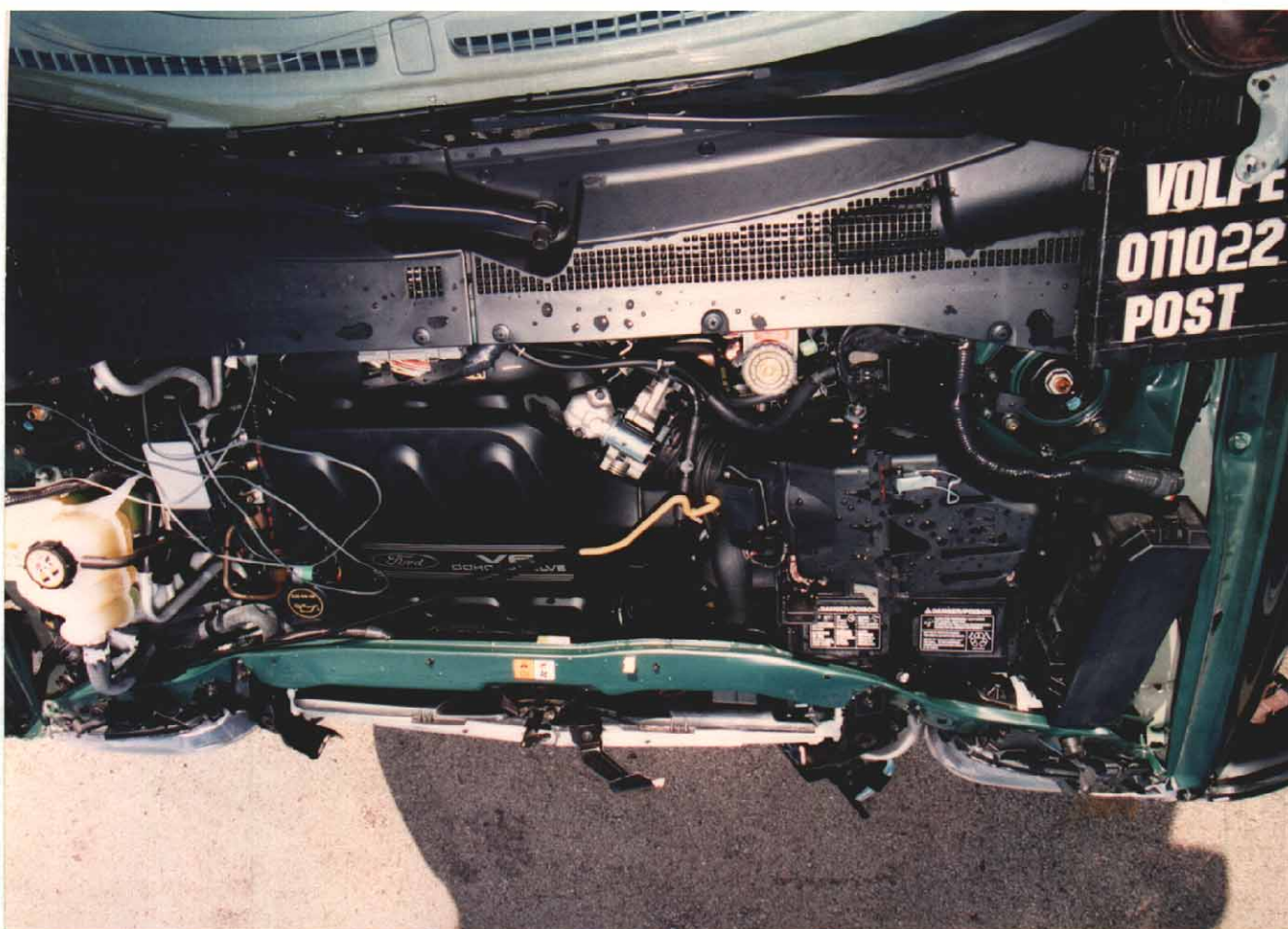


Figure A-31 Post-Test Engine Compartment View



Figure A-32 Pre-Test Windshield View

Intentionally Left Blank



Figure A-33 Pre-Test Driver and Passenger Dummies Front View

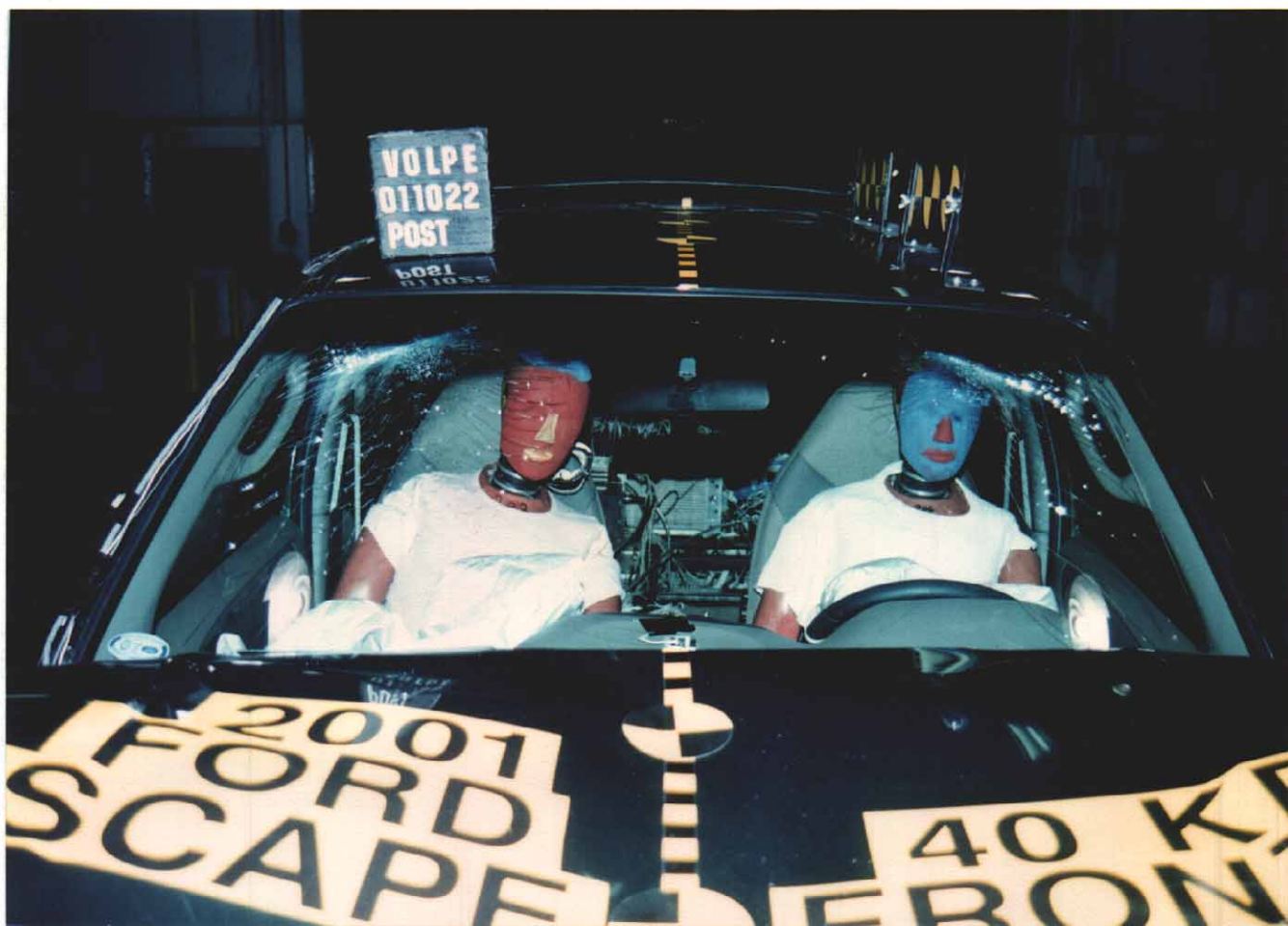


Figure A-34 Post-Test Windshield and Driver and Passenger Dummies Front View



Figure A-35 Pre-Test Driver Dummy Position - View 1



Figure A-36 Post-Test Driver Dummy Position - View 1



Figure A-37 Pre-Test Driver Dummy Position - View 2



Figure A-38 Post-Test Driver Dummy Position - View 2



Figure A-39 Pre-Test Driver Dummy & Vehicle Interior - View 1



Figure A-40 Post-Test Driver Dummy & Vehicle Interior - View 1



Figure A-41 Pre-Test Driver Dummy & Vehicle Interior - View 2



Figure A-42 Post-Test Driver Dummy & Vehicle Interior - View 2

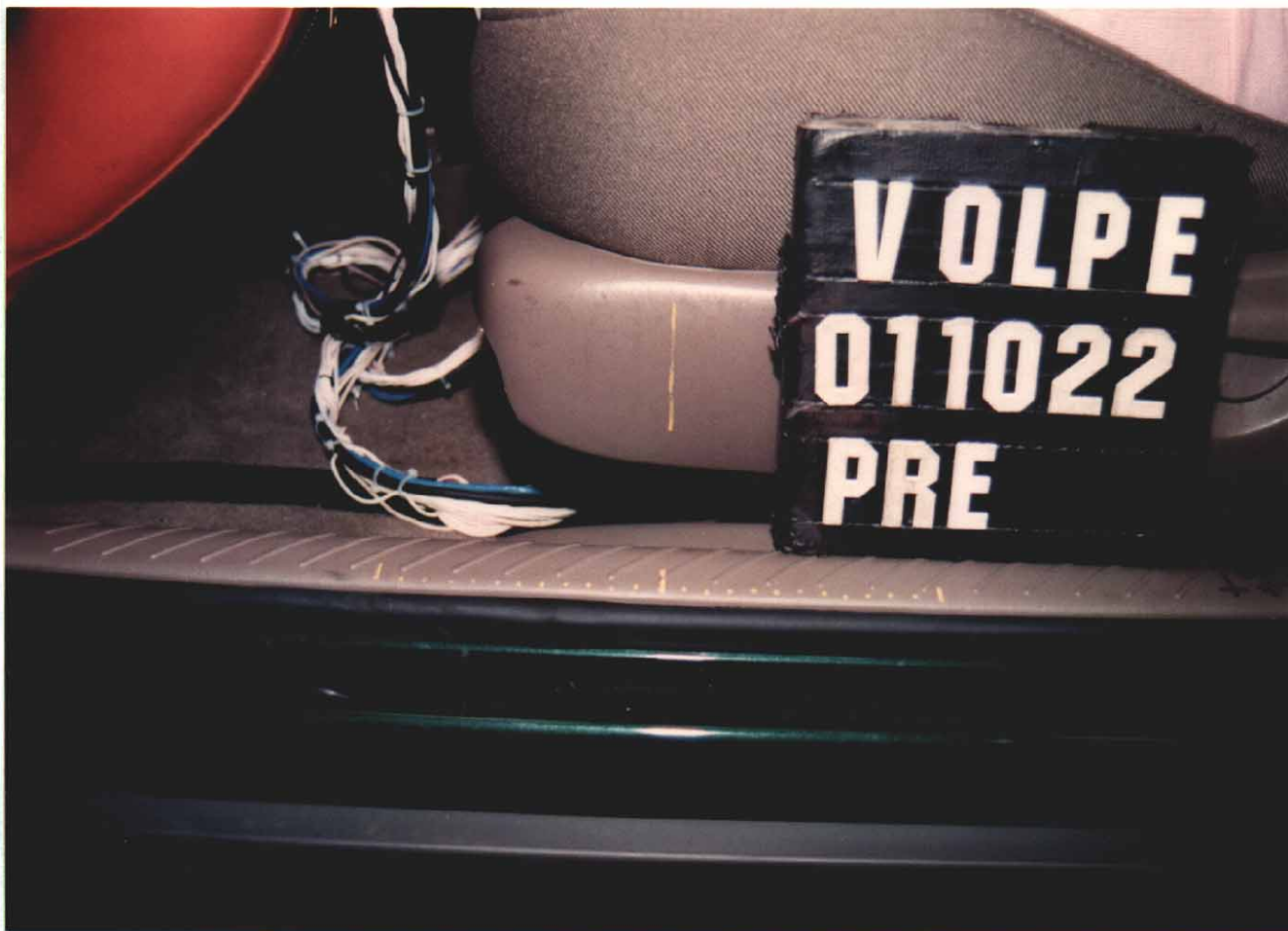


Figure A-43 Pre-Test Driver Dummy Seat Track Position View

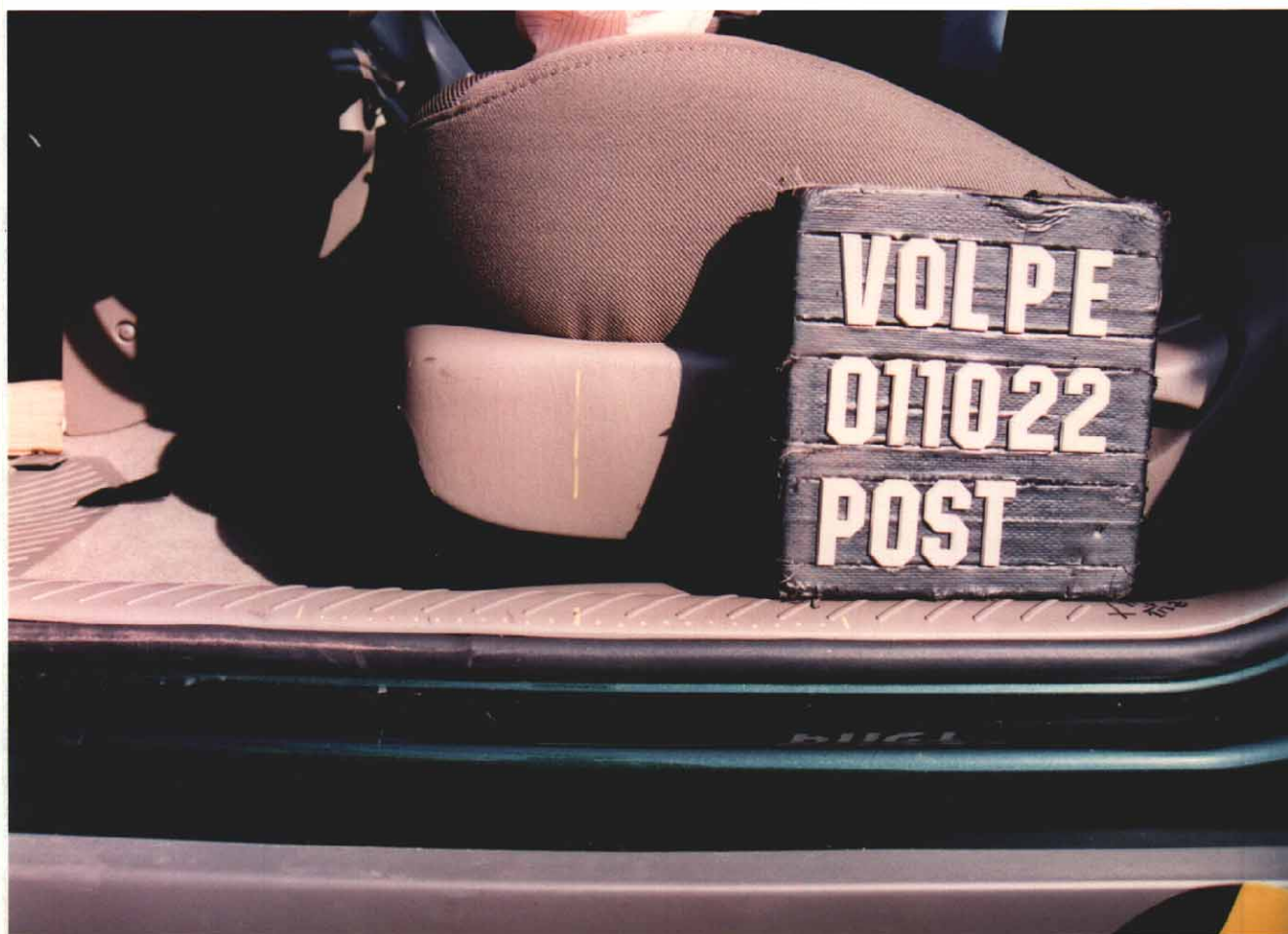


Figure A-44 Post-Test Driver Dummy Seat Track Position View



Figure A-45 Pre-Test Passenger Dummy Position - View 1

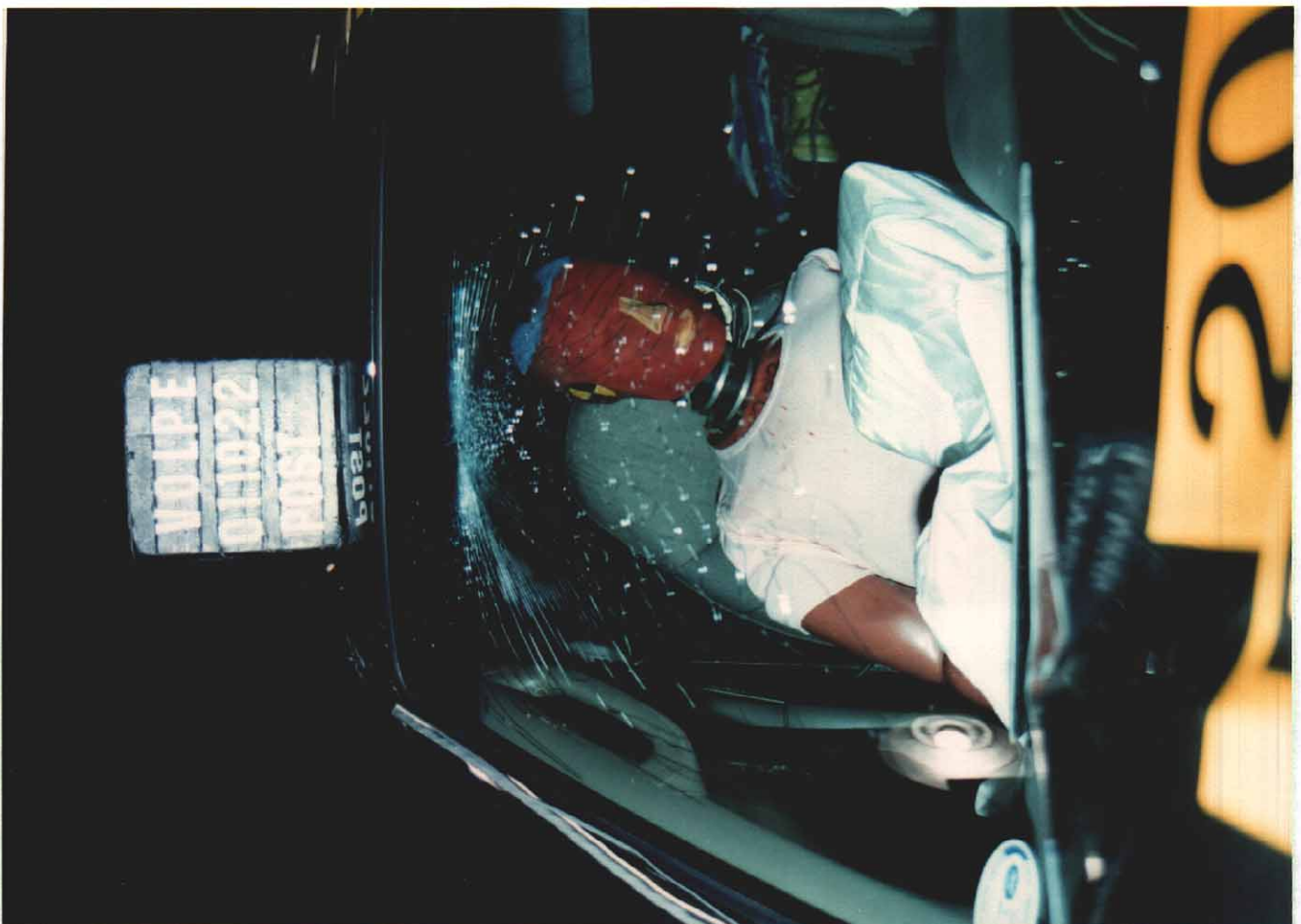


Figure A-46 Post-Test Passenger Dummy Position - View 1

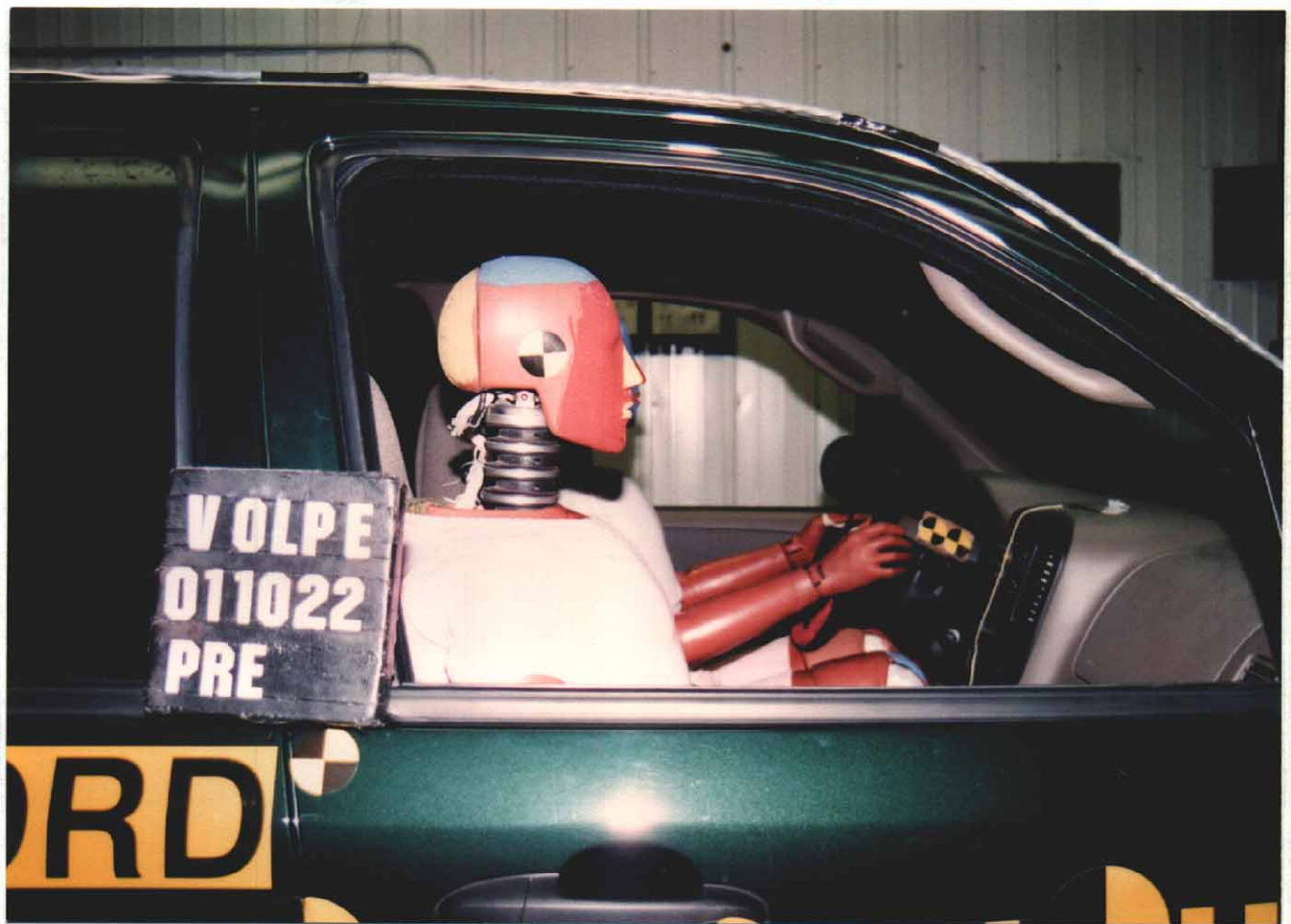


Figure A-47 Pre-Test Passenger Dummy Position - View 2

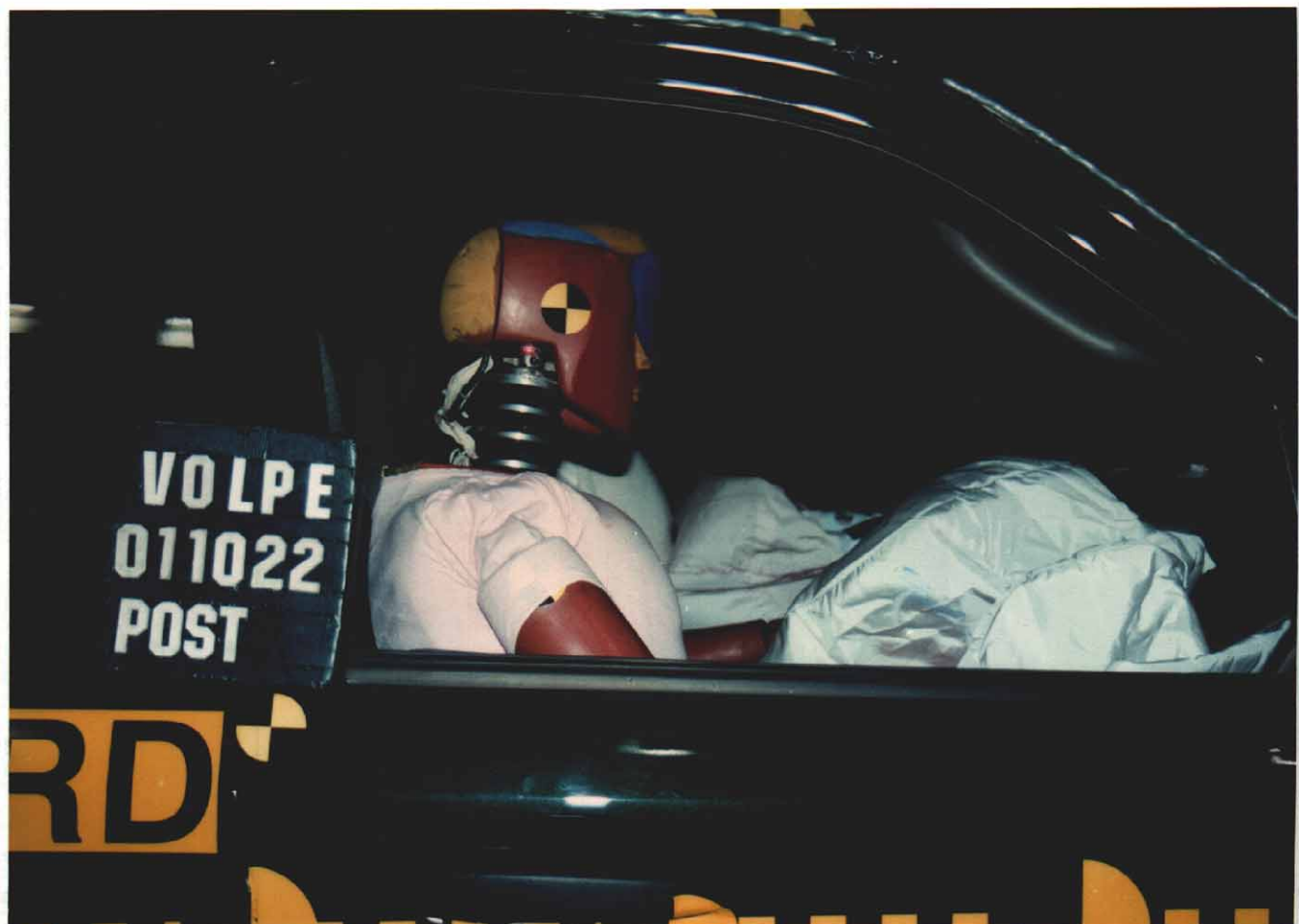


Figure A-48 Post-Test Passenger Dummy Position - View 2



Figure A-49 Pre-Test Passenger Dummy & Vehicle Interior - View 1



Figure A-50 Post-Test Passenger Dummy & Vehicle Interior - View 1



Figure A-51 Pre-Test Passenger Dummy & Vehicle Interior - View 2



Figure A-52 Post-Test Passenger Dummy & Vehicle Interior - View 2

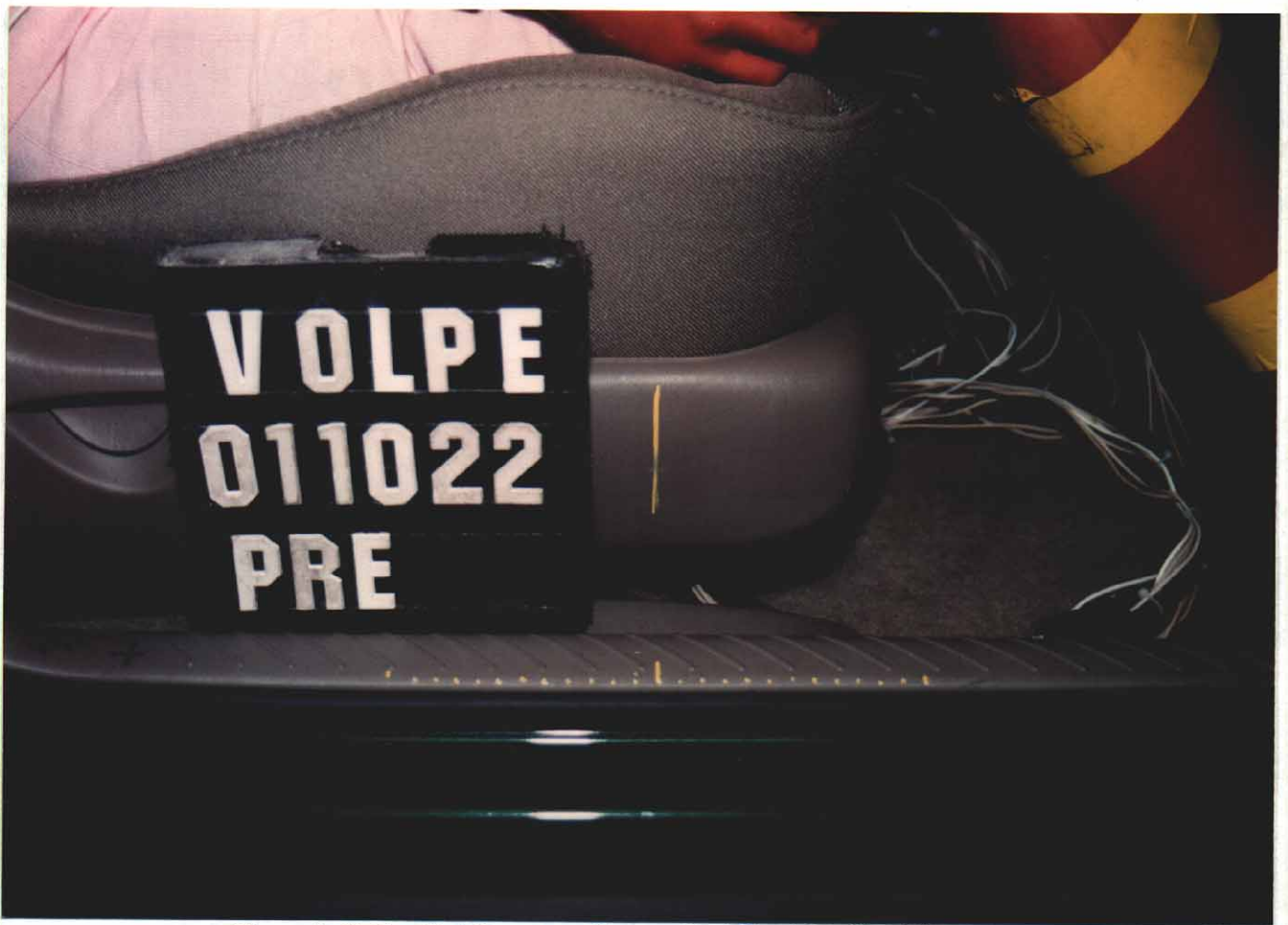


Figure A-53 Pre-Test Passenger Dummy Seat Track Position View

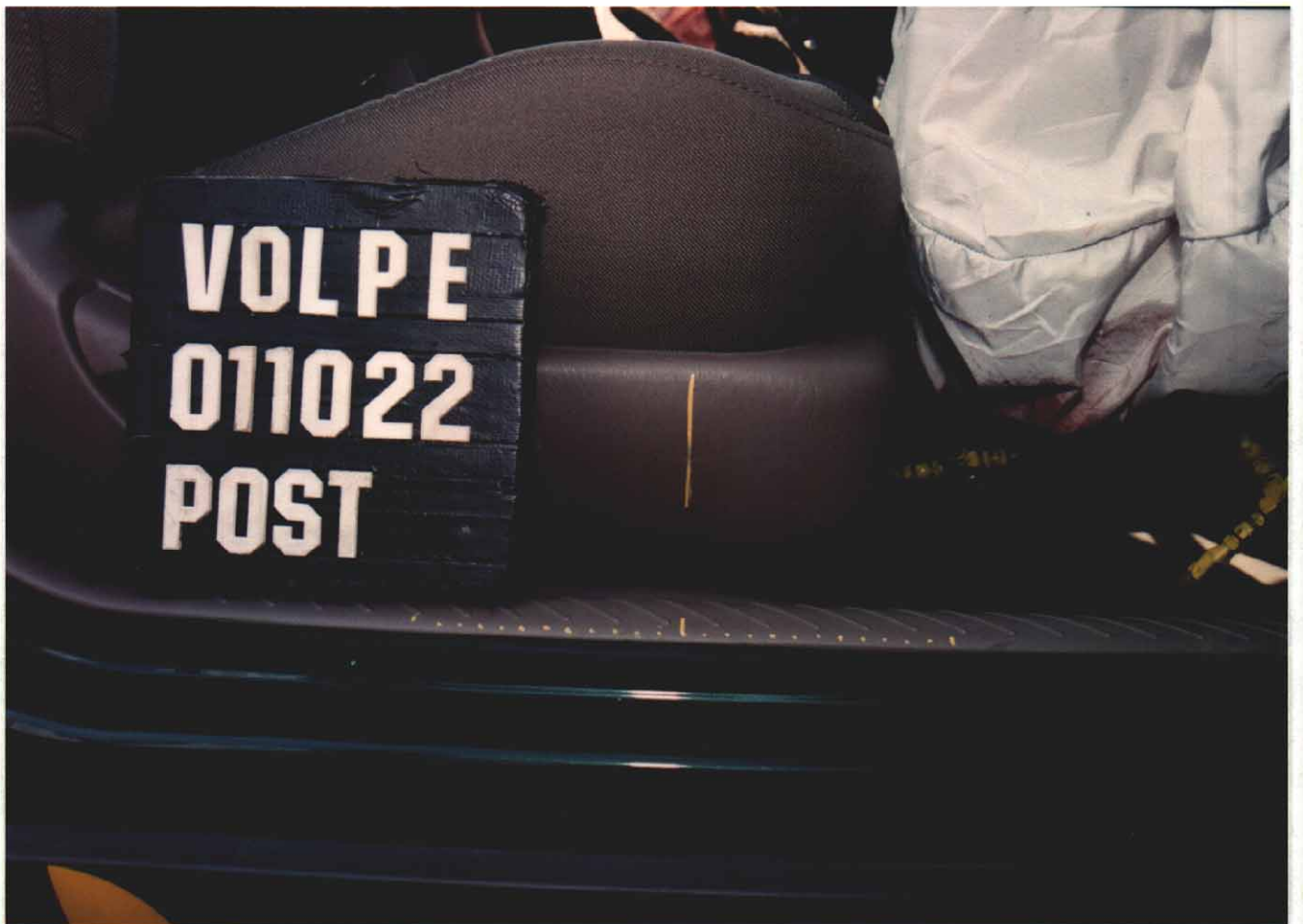


Figure A-54 Post-Test Passenger Dummy Seat Track Position View

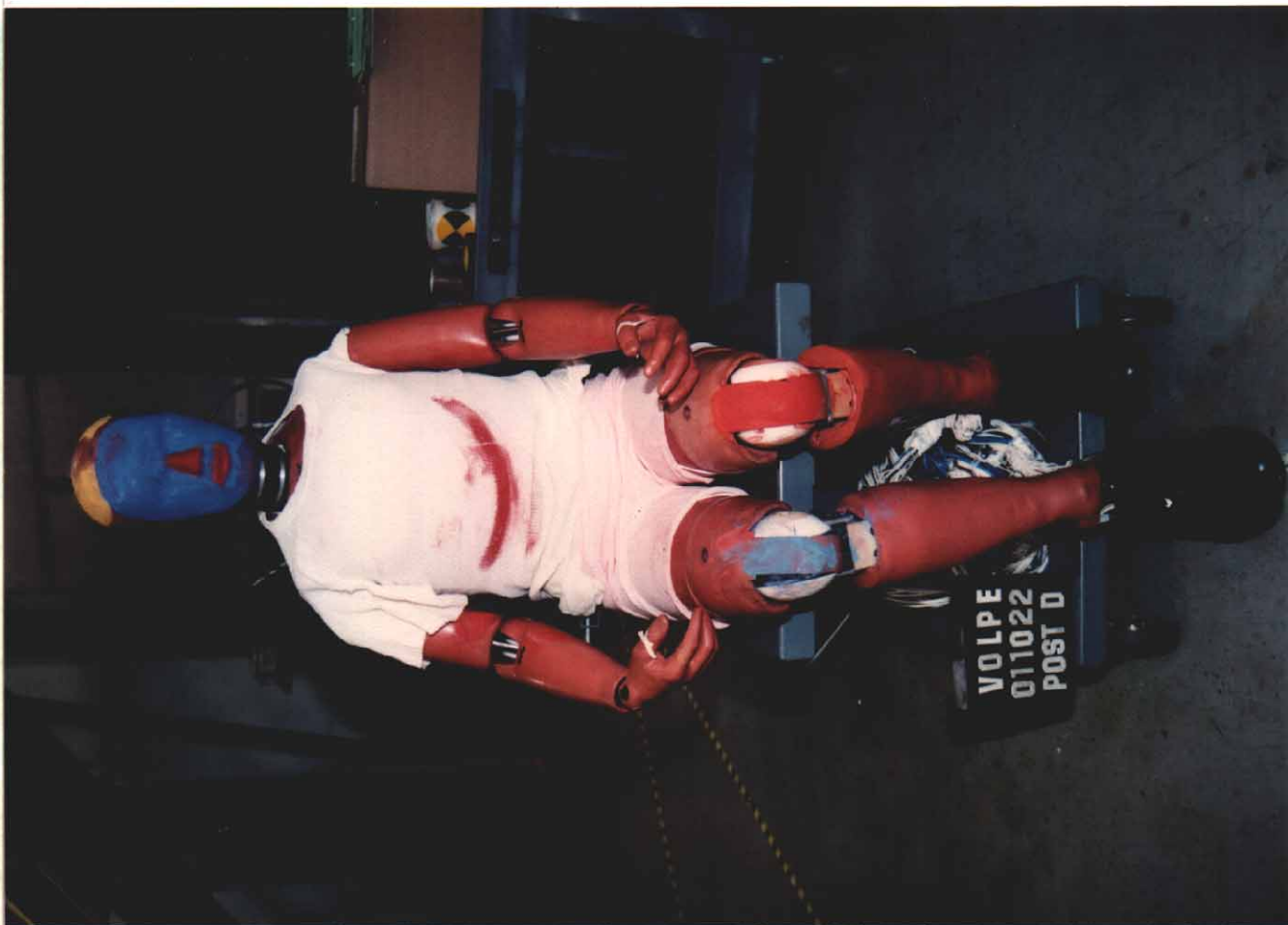


Figure A-55 Post-Test Driver Dummy Overall View

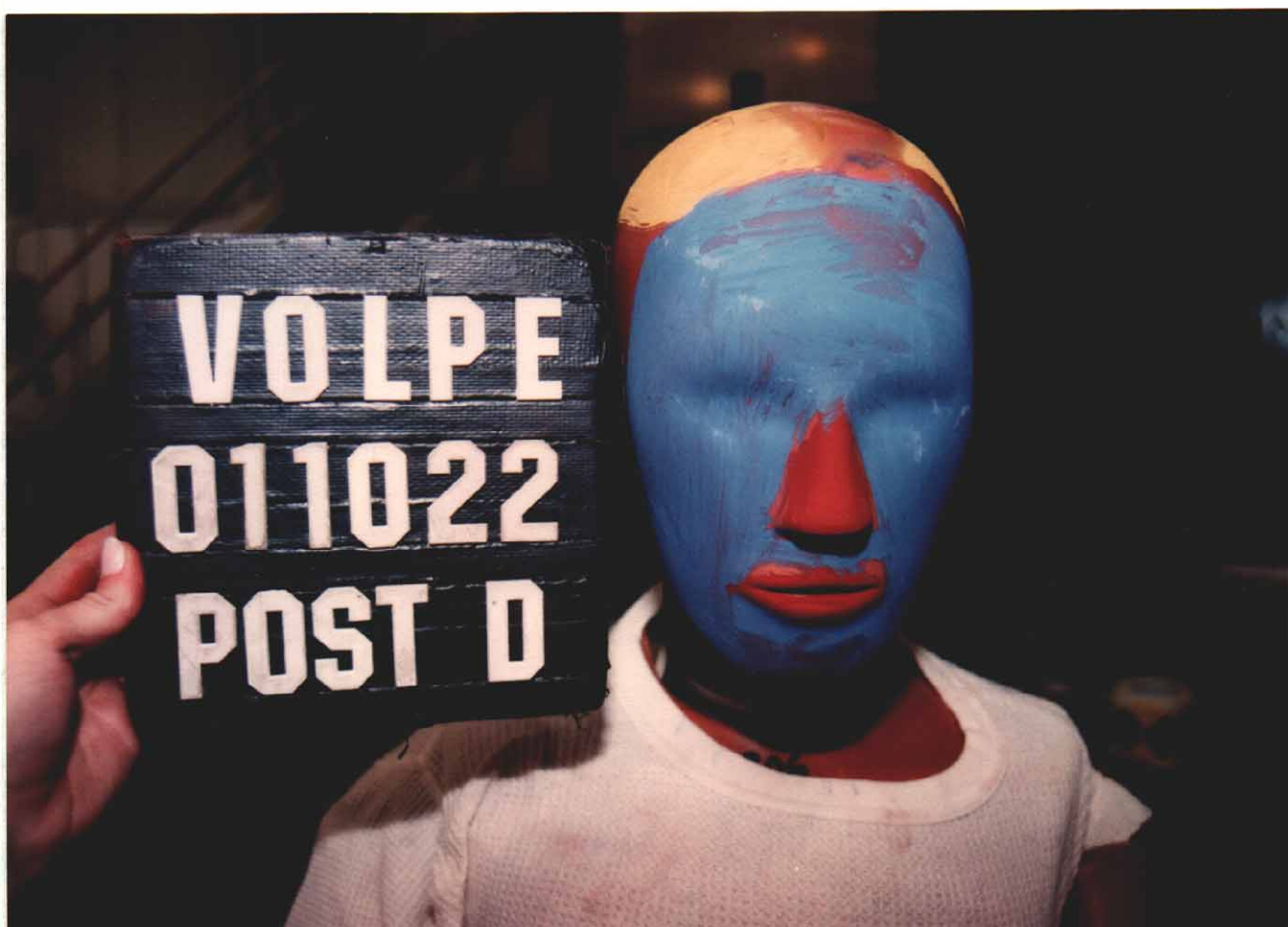


Figure A-56 Post-Test Driver Dummy Head Contact - View 1

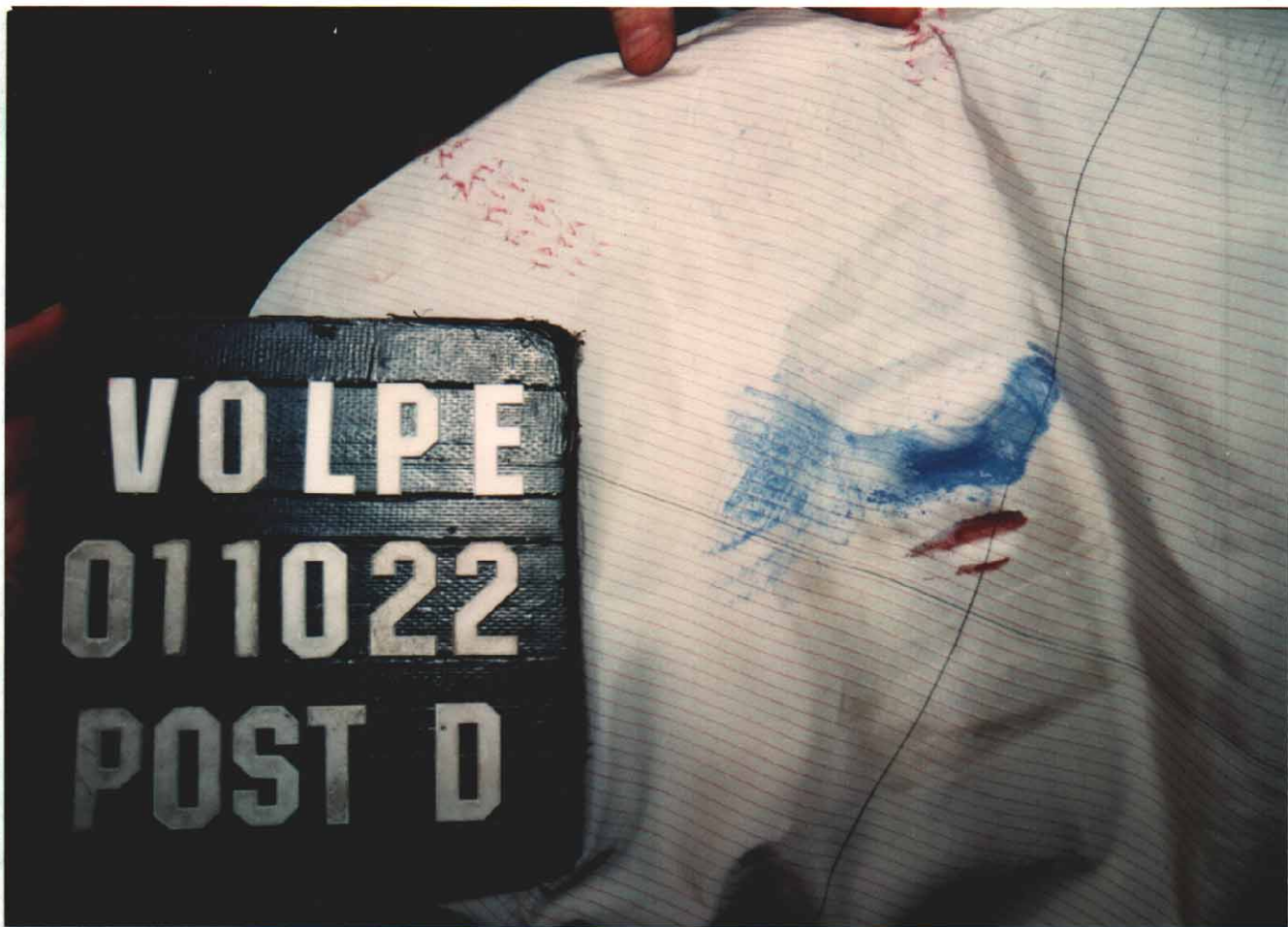


Figure A-57 Post-Test Driver Dummy Head Contact - View 2



Figure A-58 Post-Test Driver Dummy Head Contact - View 3

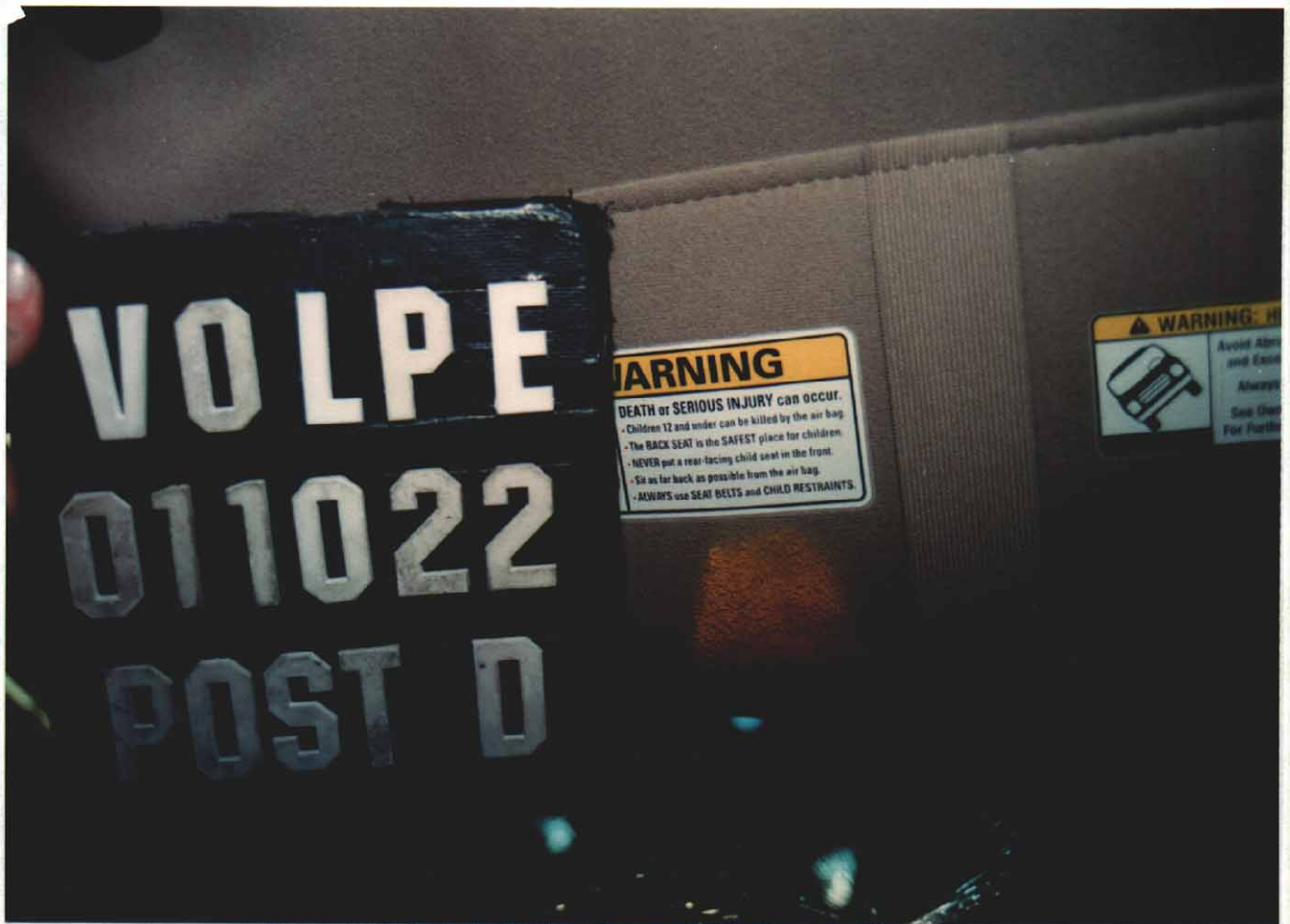


Figure A-59 Post-Test Driver Dummy Head Contact - View 4

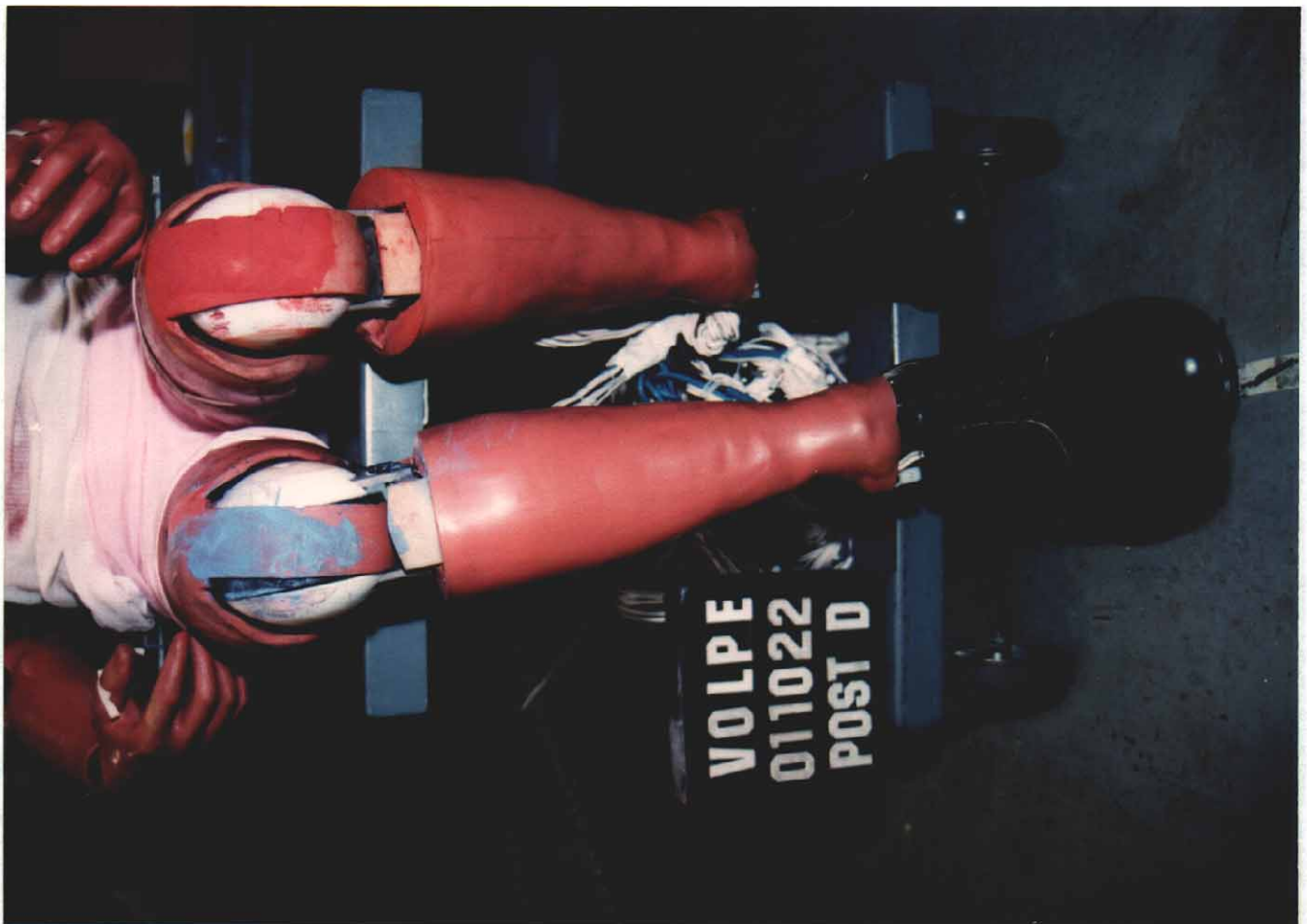


Figure A-60 Post- Test Driver Dummy Knee Contact - View 1



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

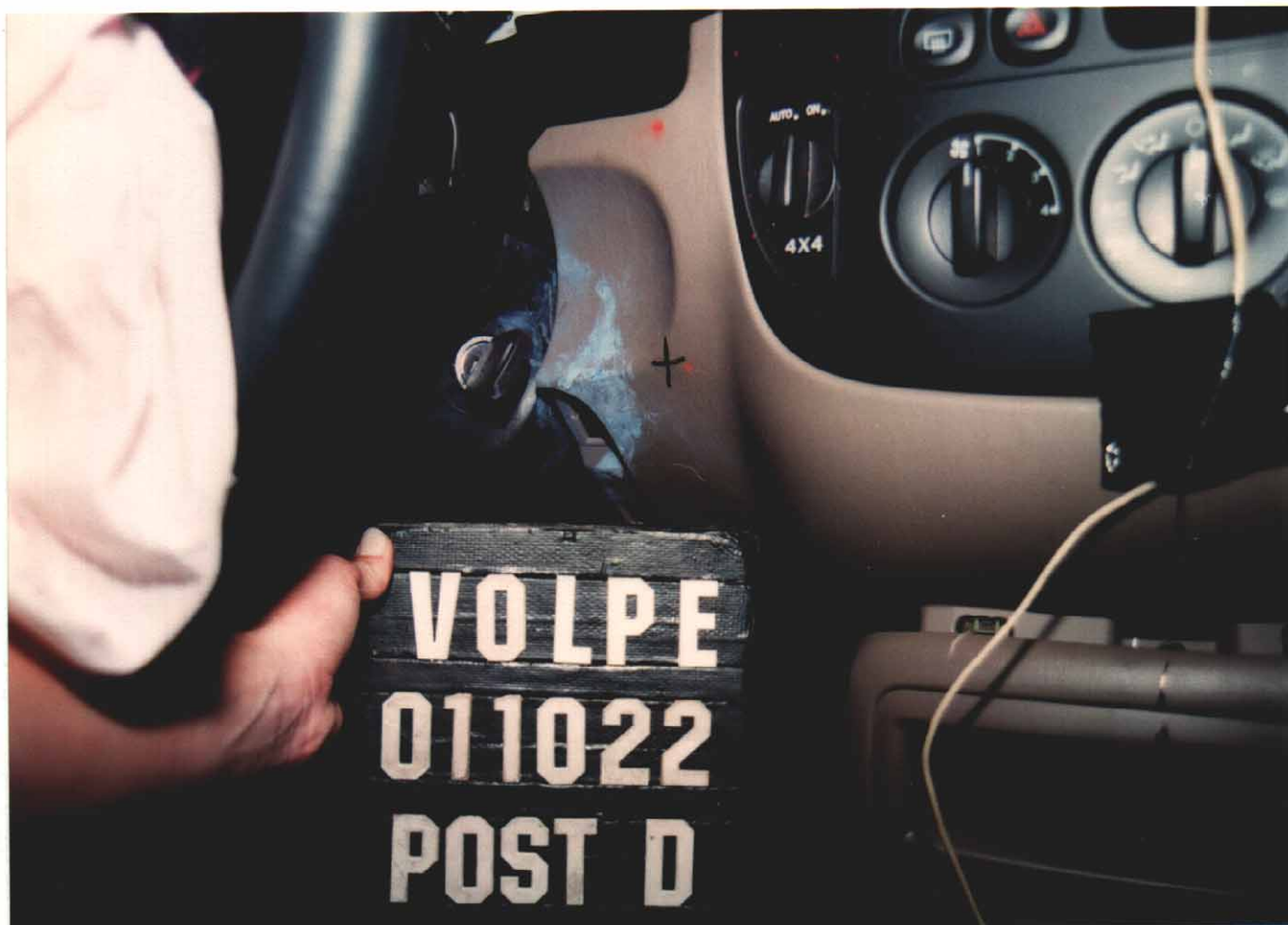


Figure A-62 Post-Test Driver Dummy Knee Contact - View 3

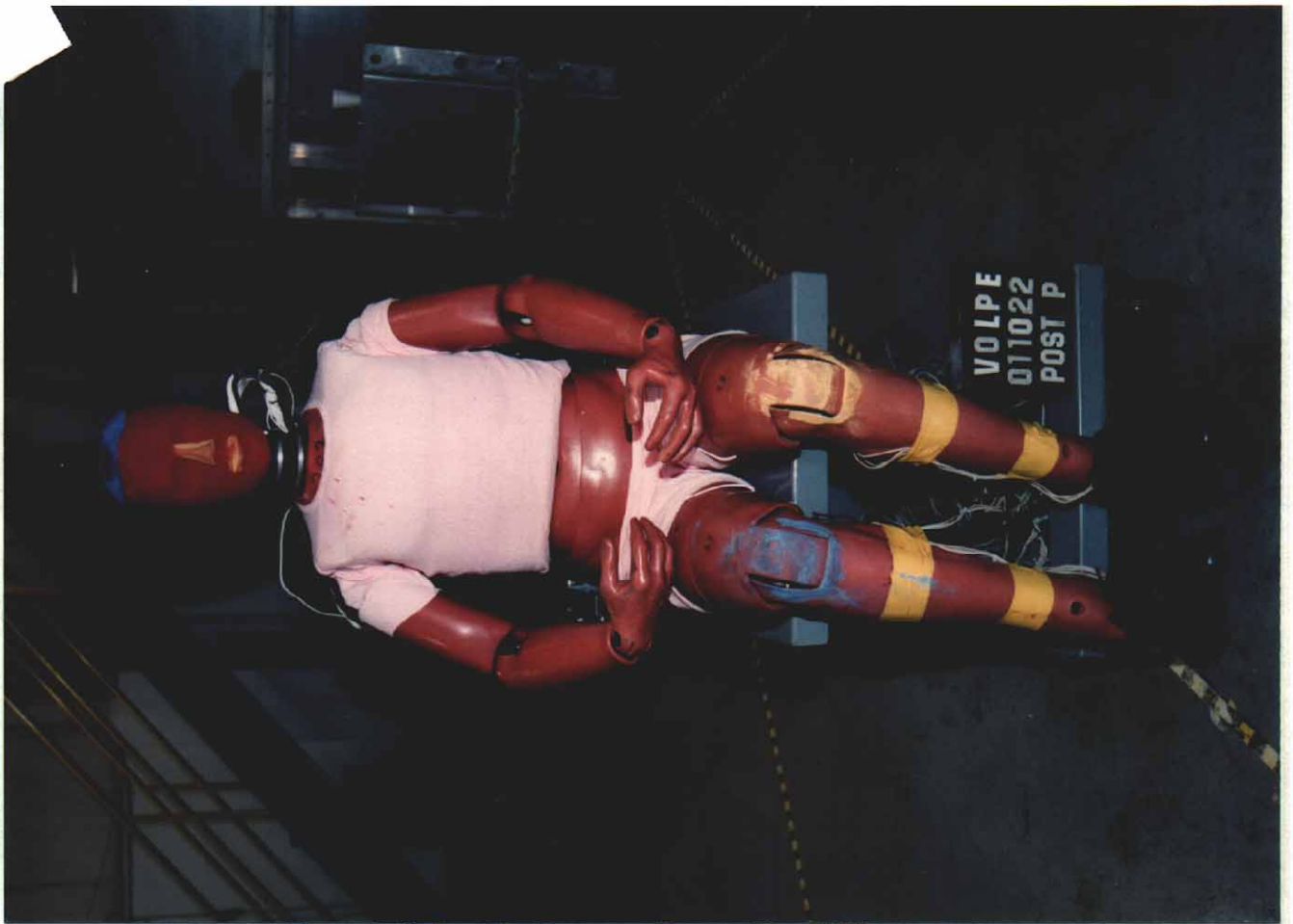


Figure A-63 Post-Test Passenger Dummy Overall View



Figure A-64 Post-Test Passenger Dummy Head Contact - View 1



Figure A-65 Post-Test Passenger Dummy Head Contact - View 2



Figure A-66 Post-Test Passenger Dummy Head Contact - View 3

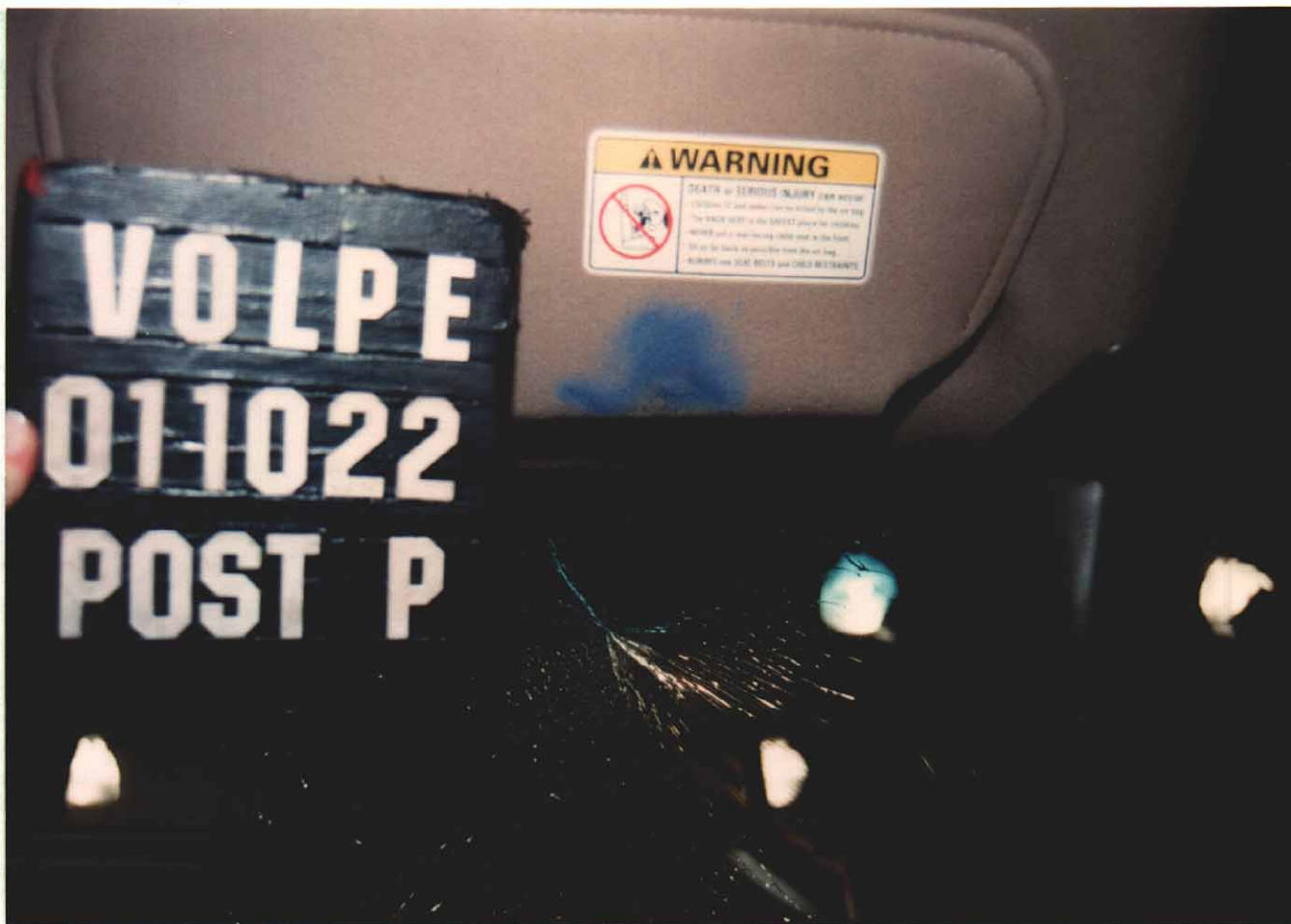


Figure A-67 Post-Test Passenger Dummy Head Contact - View 4



Figure A-68 Post-Test Passenger Dummy Knee Contact - View 1

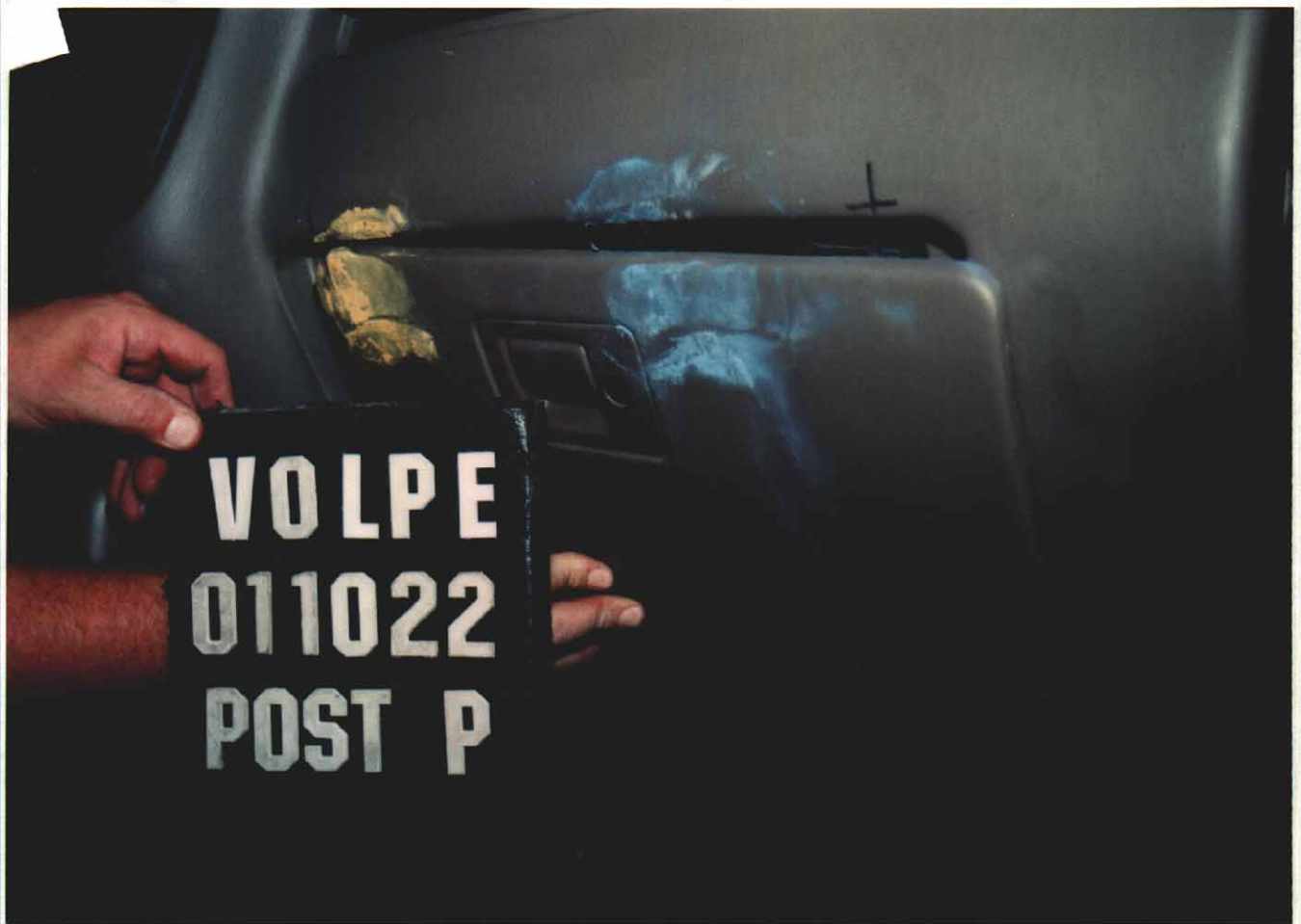


Figure A-69 Post-Test Passenger Dummy Knee Contact - View 2

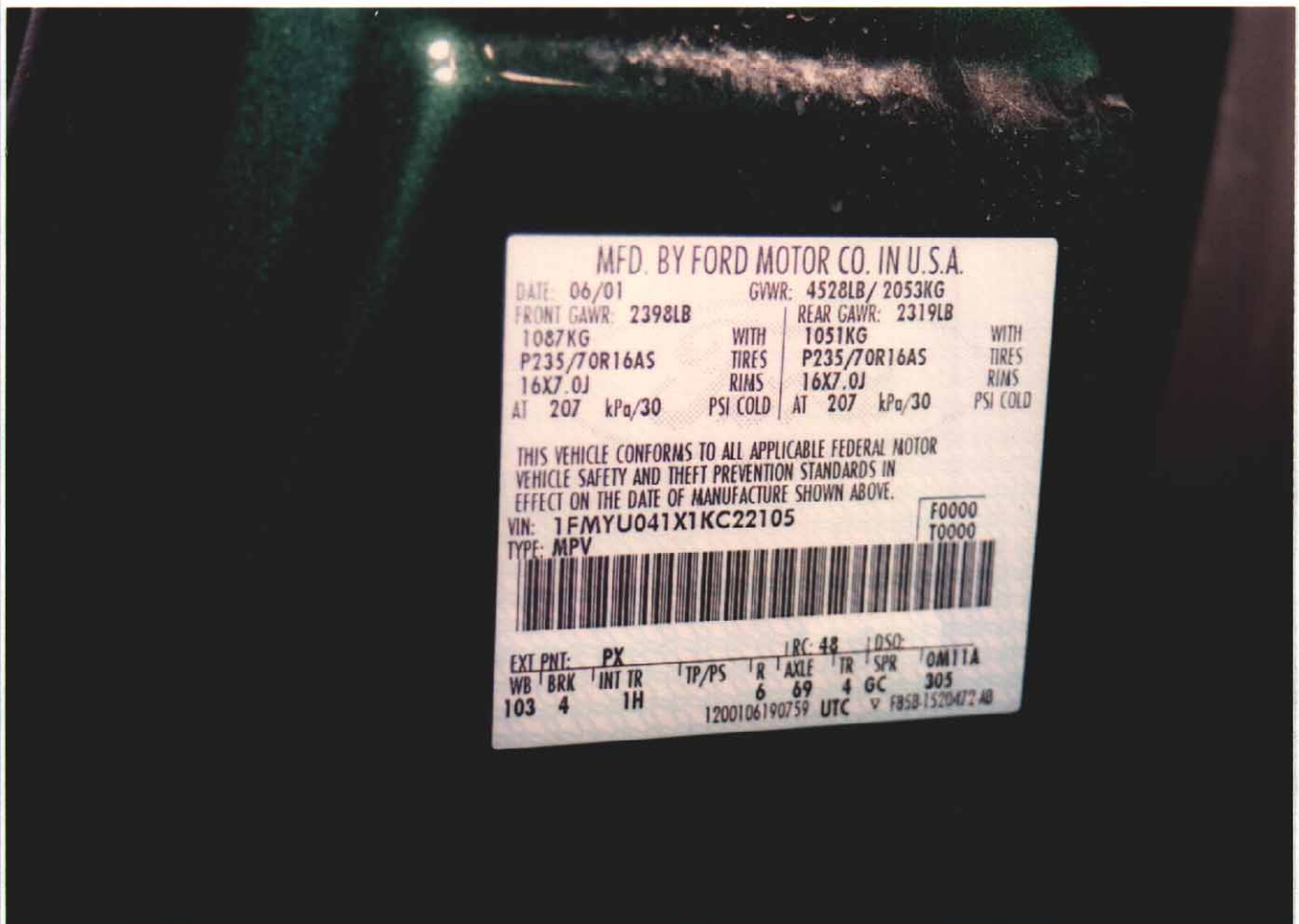


Figure A-70 Pre-Test Vehicle Certification Label View

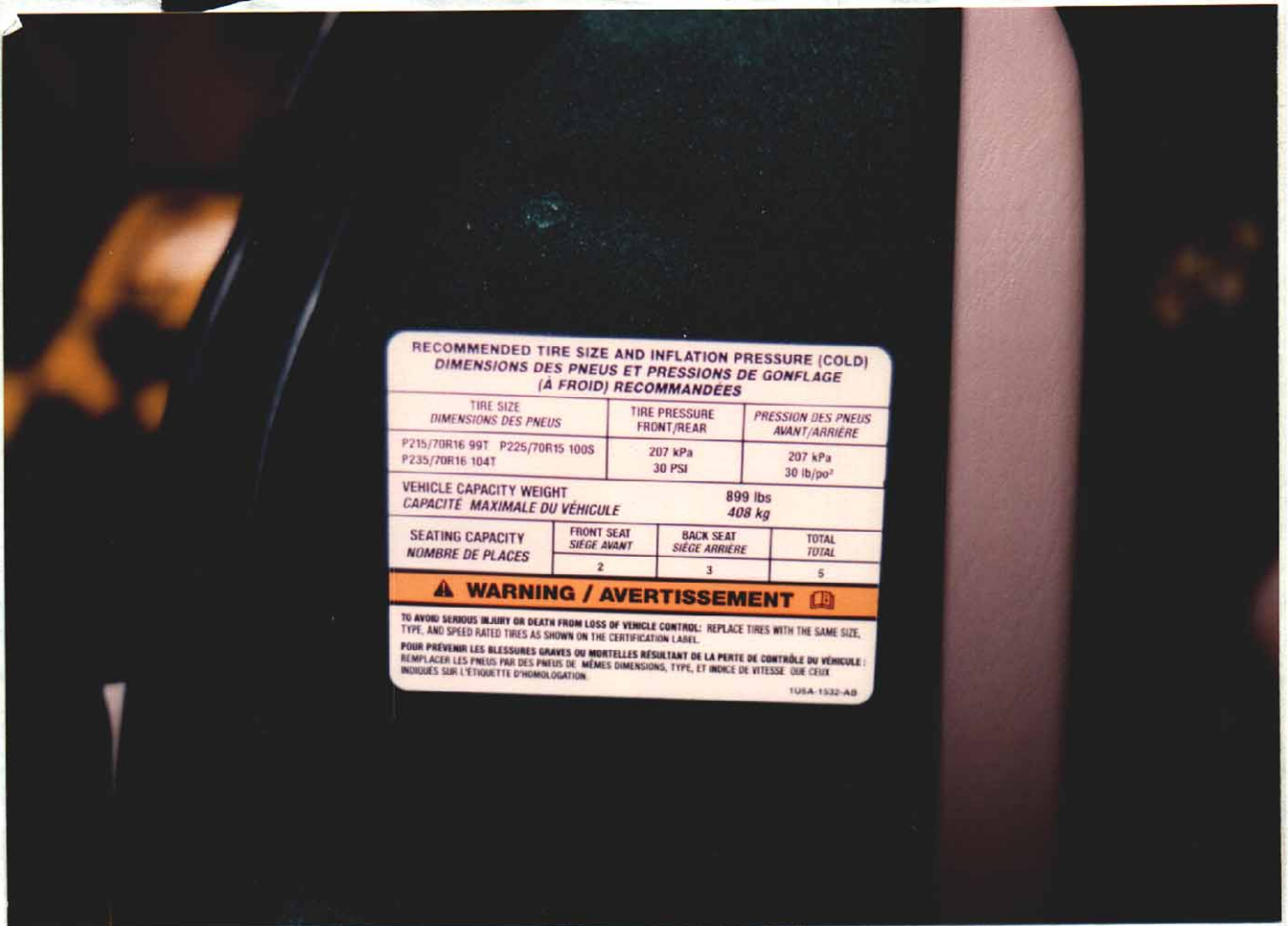


Figure A-71 Pre-Test Tire Load Label View

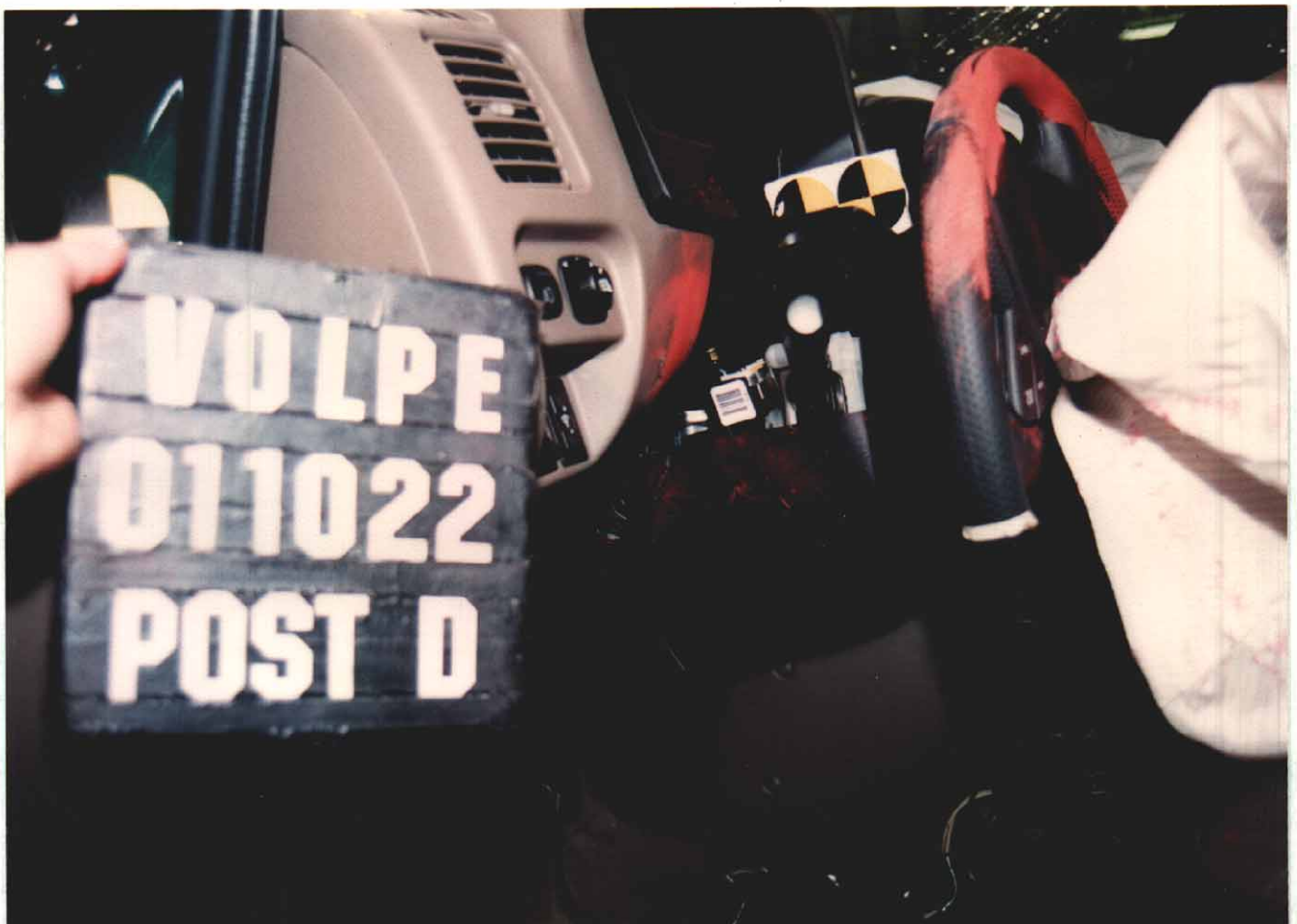


Figure A-72 Post-Test Steering Column Damage View

Appendix B

Data Plots

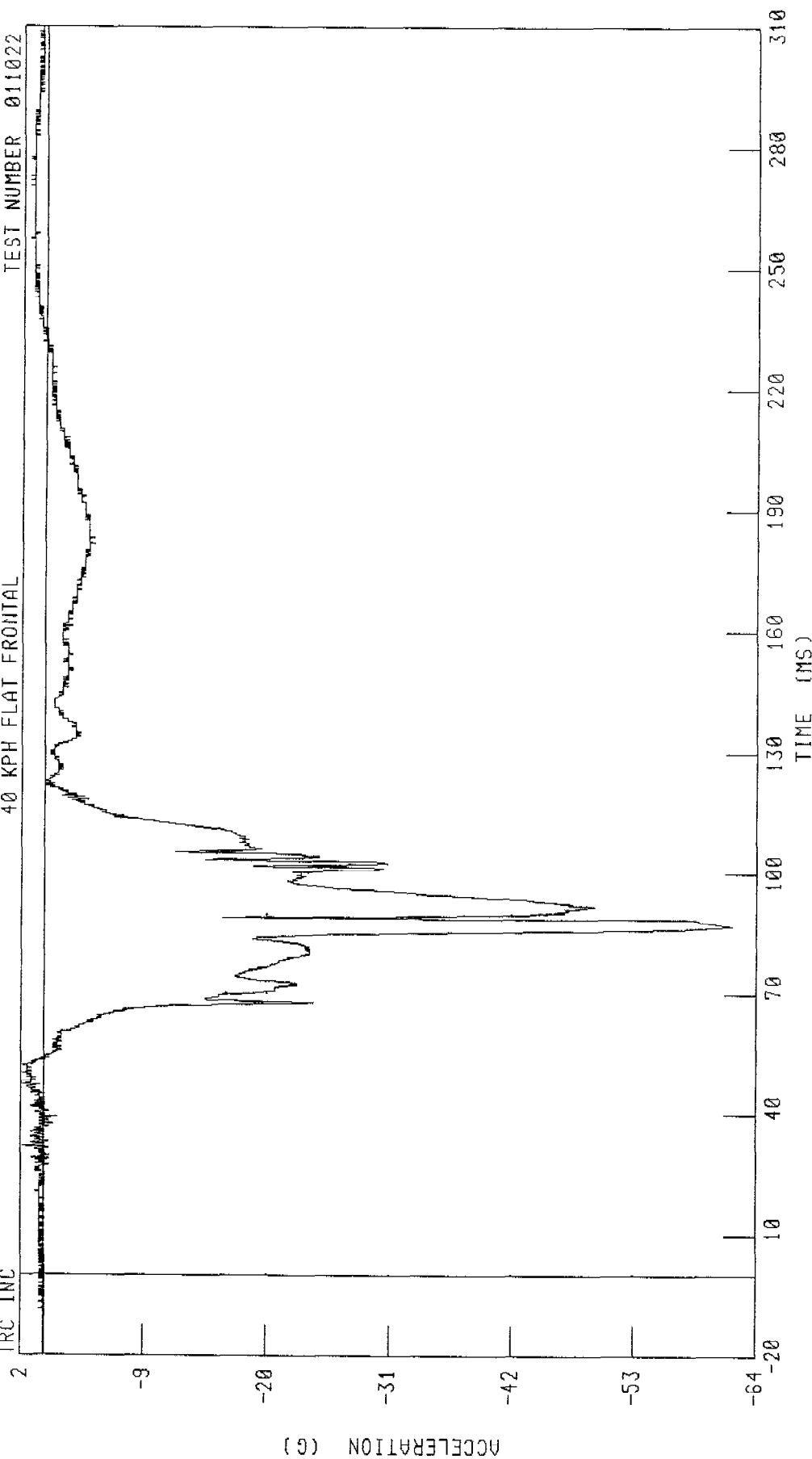
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER HEAD X-AXIS ACCELERATION

40 KPH FLAT FRONTAL

TRC INC

TEST NUMBER 011022



CHANNEL HEDXC1 FILTER CH CLASS 1000

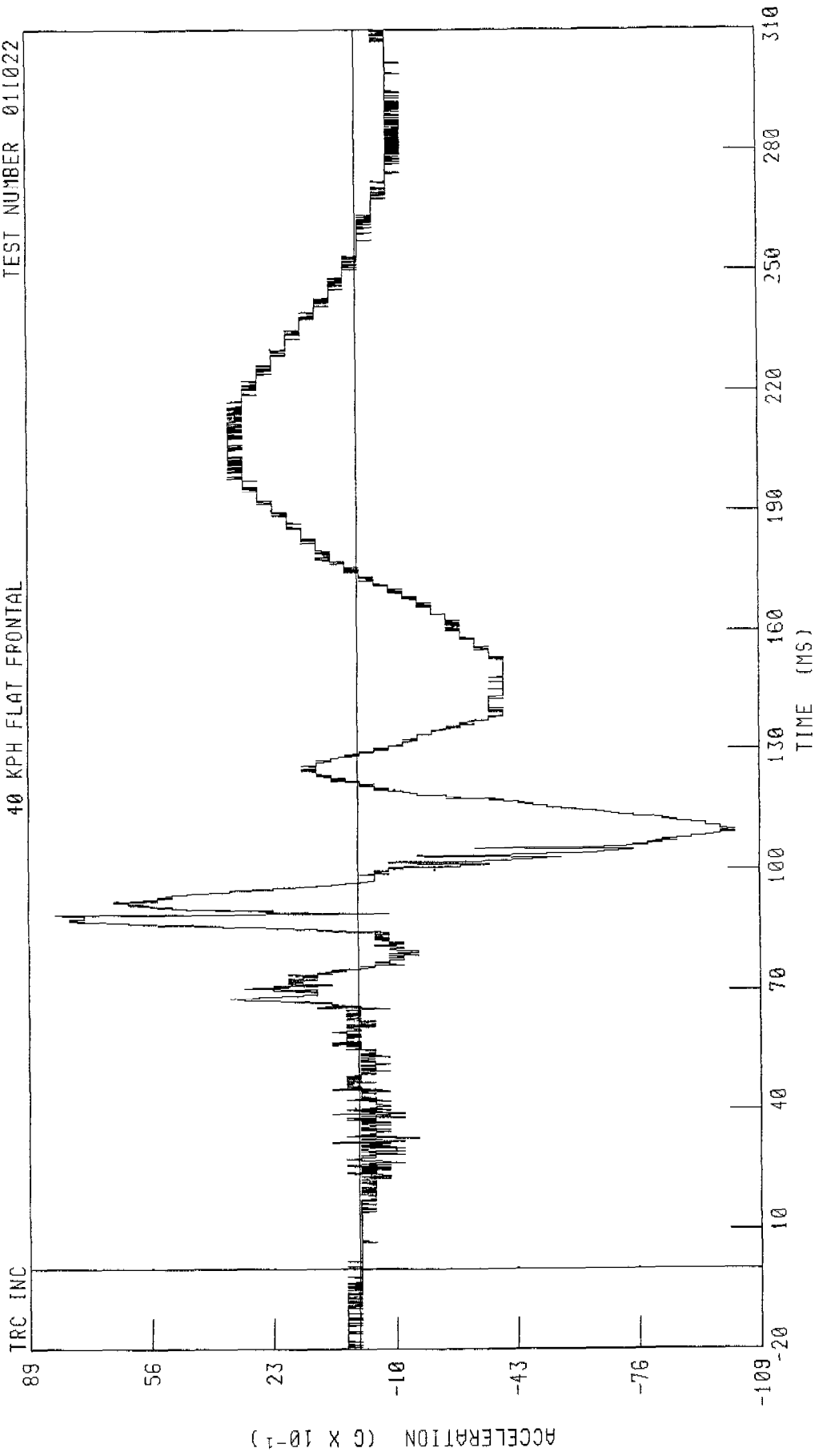
PEAK DATA 1 86 G 31 68 MS, -61 90 G 87 20 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER HEAD Y-AXIS ACCELERATION

40 KPH FLAT FRONTAL

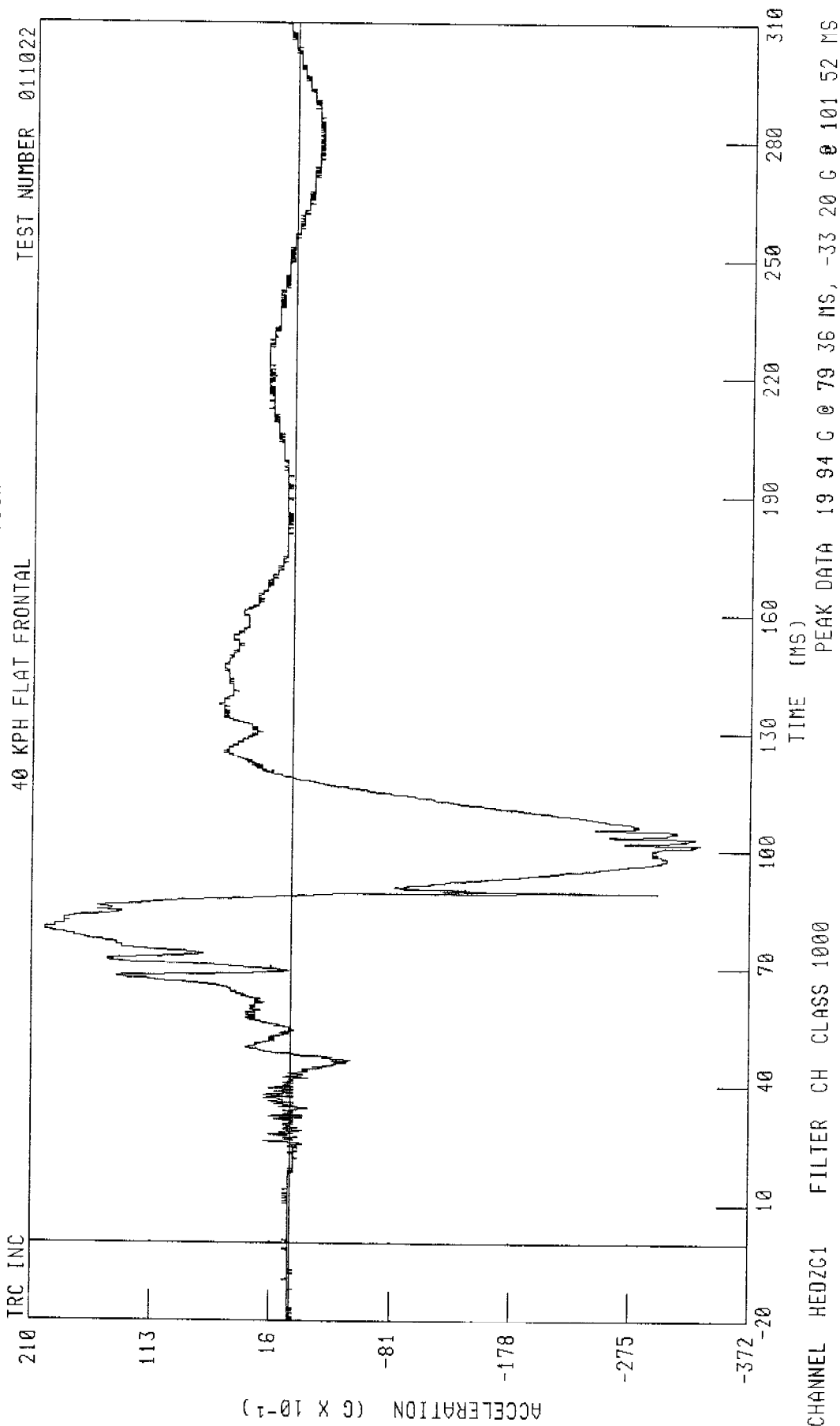
TEST NUMBER 011022



CHANNEL HEDY01 FILTER CH CLASS 1000

PEAK DATA 8 17 6 0 88 88 MS, -10 23 0 109 28 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER HEAD Z-AXIS ACCELERATION

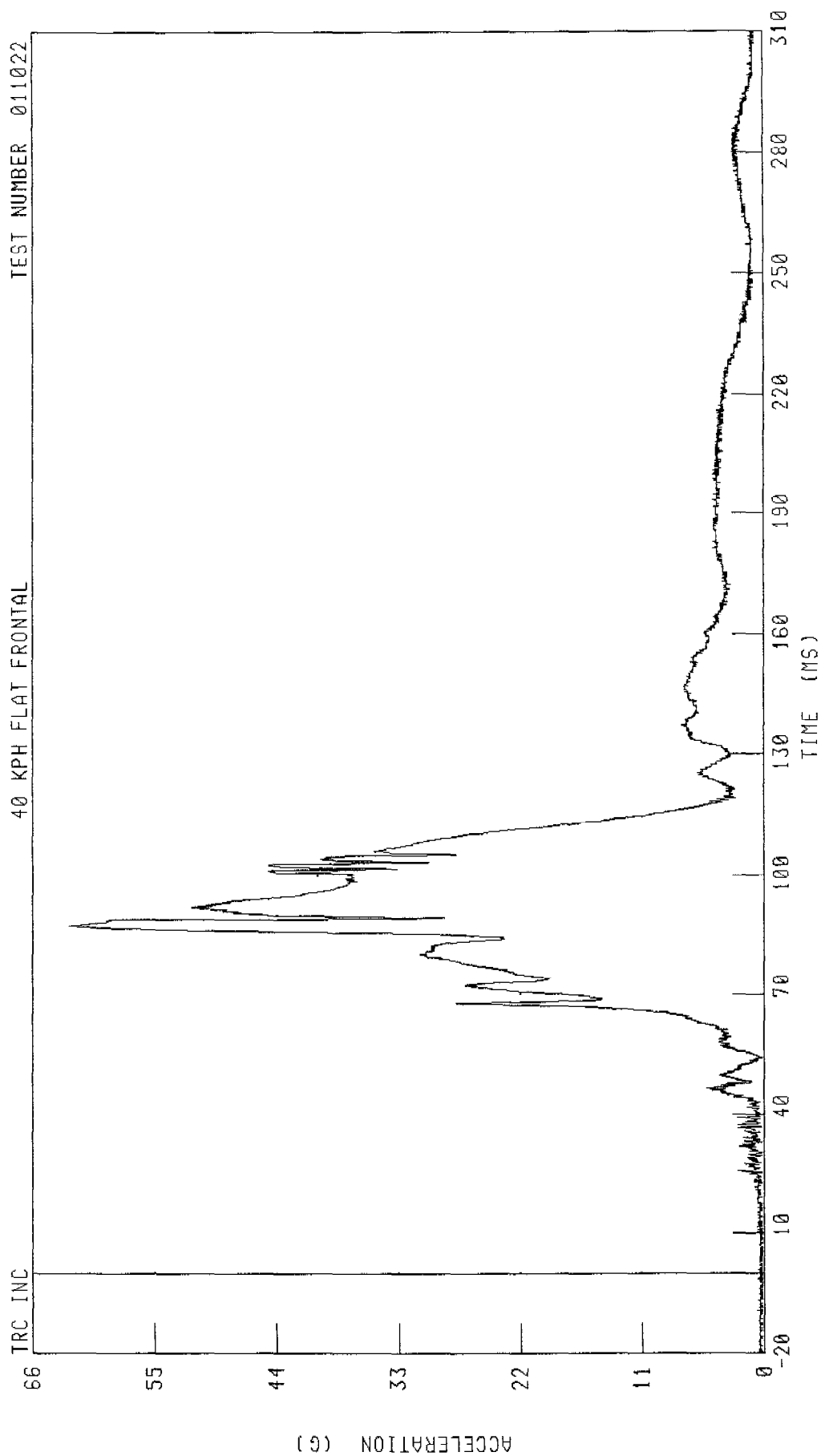


2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER HEAD RESULTANT ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL HEDRC1 FILTER CH CLASS 1000

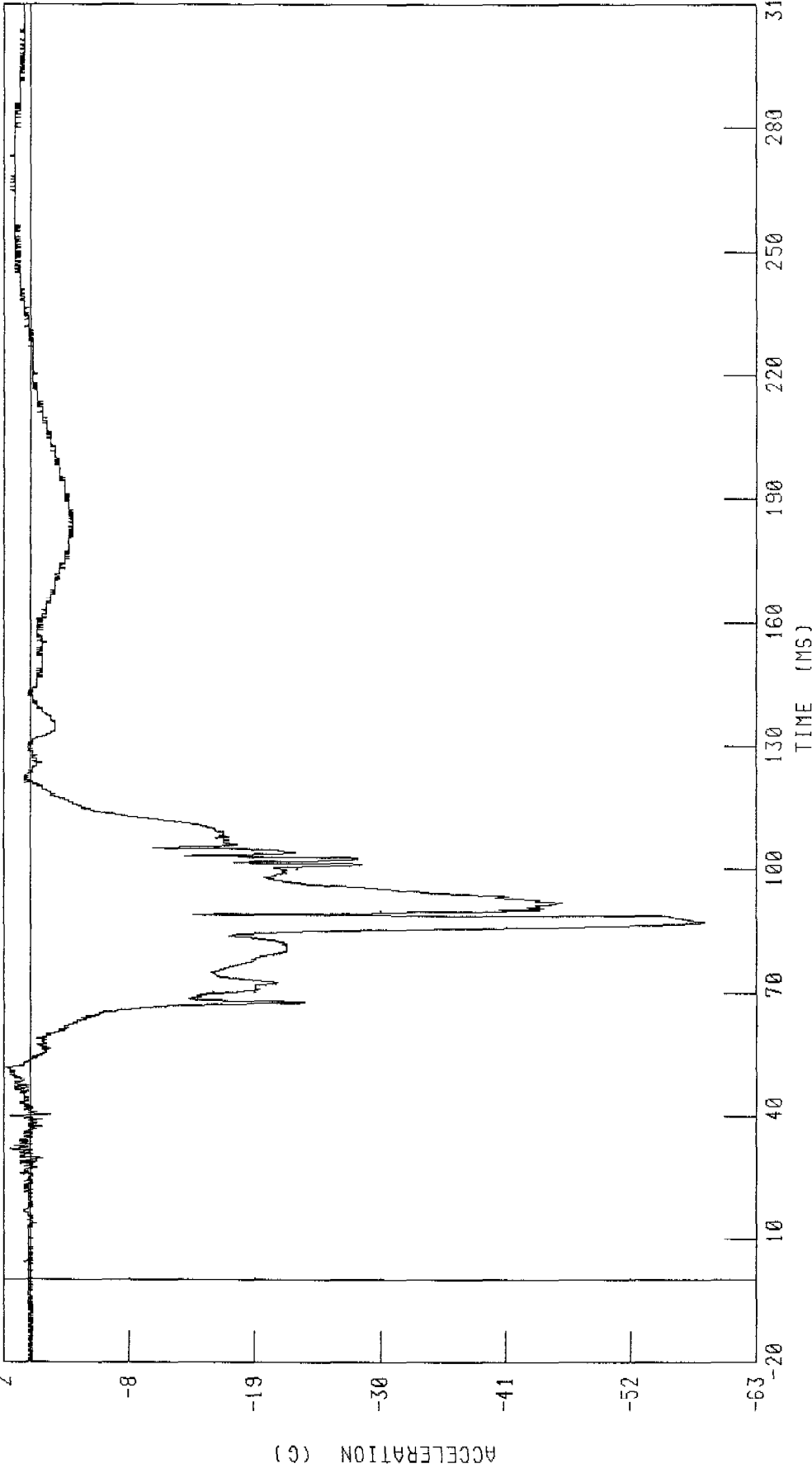
PEAK DATA 62 79 G @ 87 20 MS, 0 19 G @ -19 44 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER HEAD X-AXIS ACCELERATION REDUNDANT

TRC INC

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL HEDXR1 FILTER CH CLASS 1000

PEAK DATA 2 14 G 0 52 00 MS, -59 17 G 0 87 12 MS

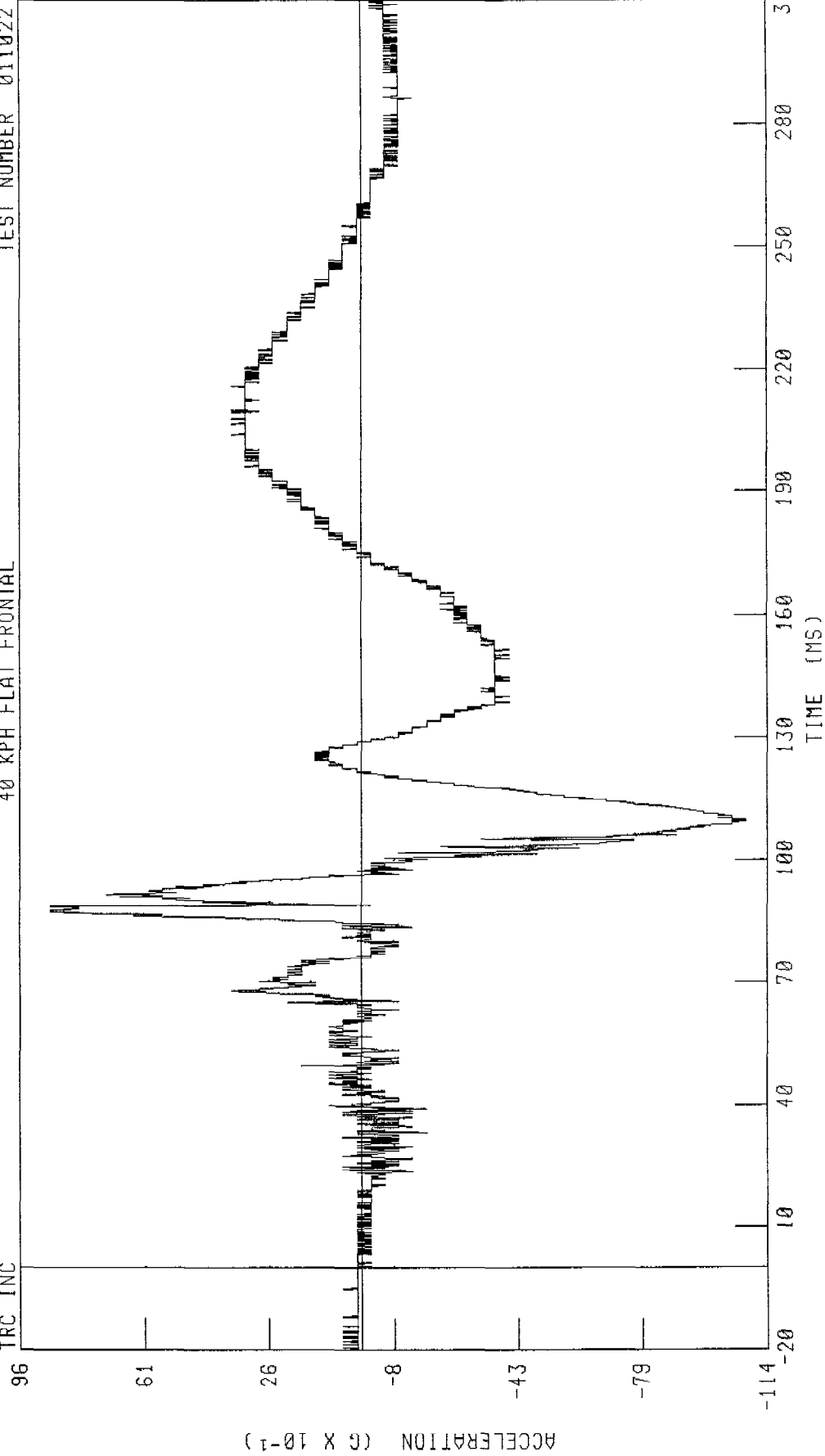
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER HEAD Y-AXIS ACCELERATION REDUNDANT

TEST NUMBER 011022

40 KPH FLAT FRONTAL

TRC INC



CHANNEL HEDYR1 FILTER CH CLASS 1000

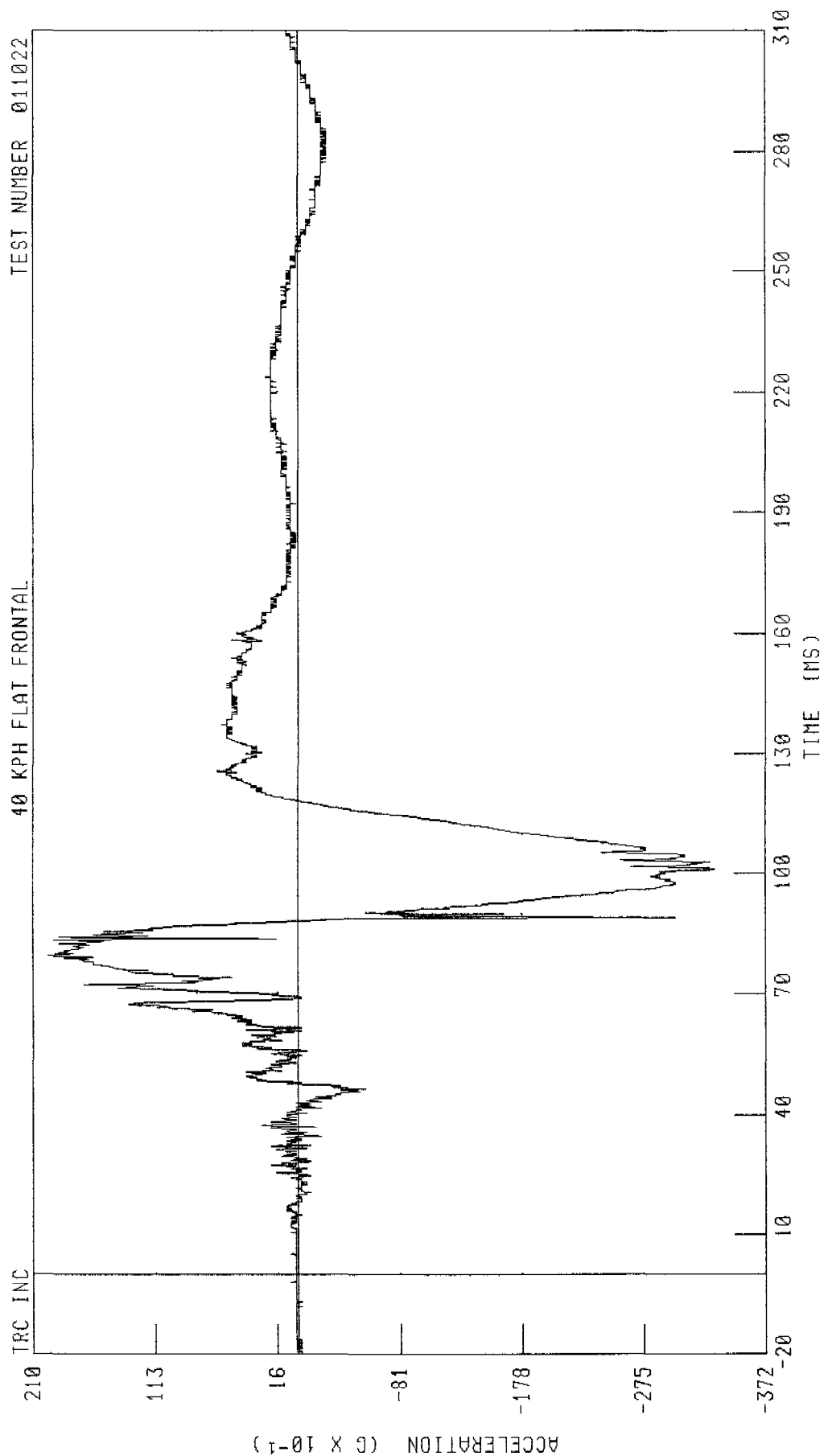
PEAK DATA 8 74 G @ 87 52 MS, -10 81 G @ 109 44 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER HEAD Z-AXIS ACCELERATION REDUNDANT

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL HEDZR1 FILTER CH CLASS 1000

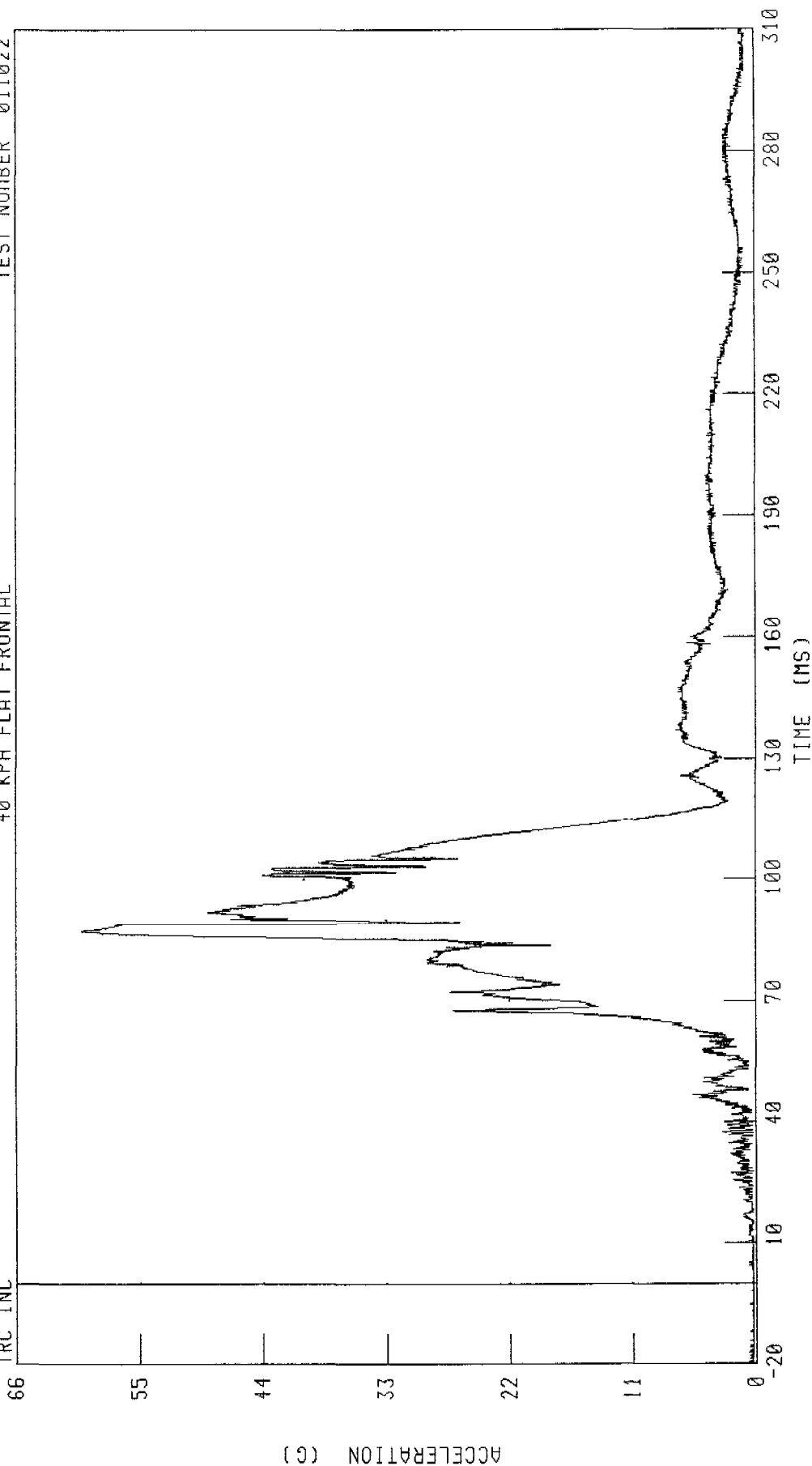
PEAK DATA 19 76 G @ 79 44 MS, -33 18 G @ 101 04 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER HEAD RESULTANT ACCELERATION REDUNDANT

TRC INC

40 KPH FLAT FRONTAL

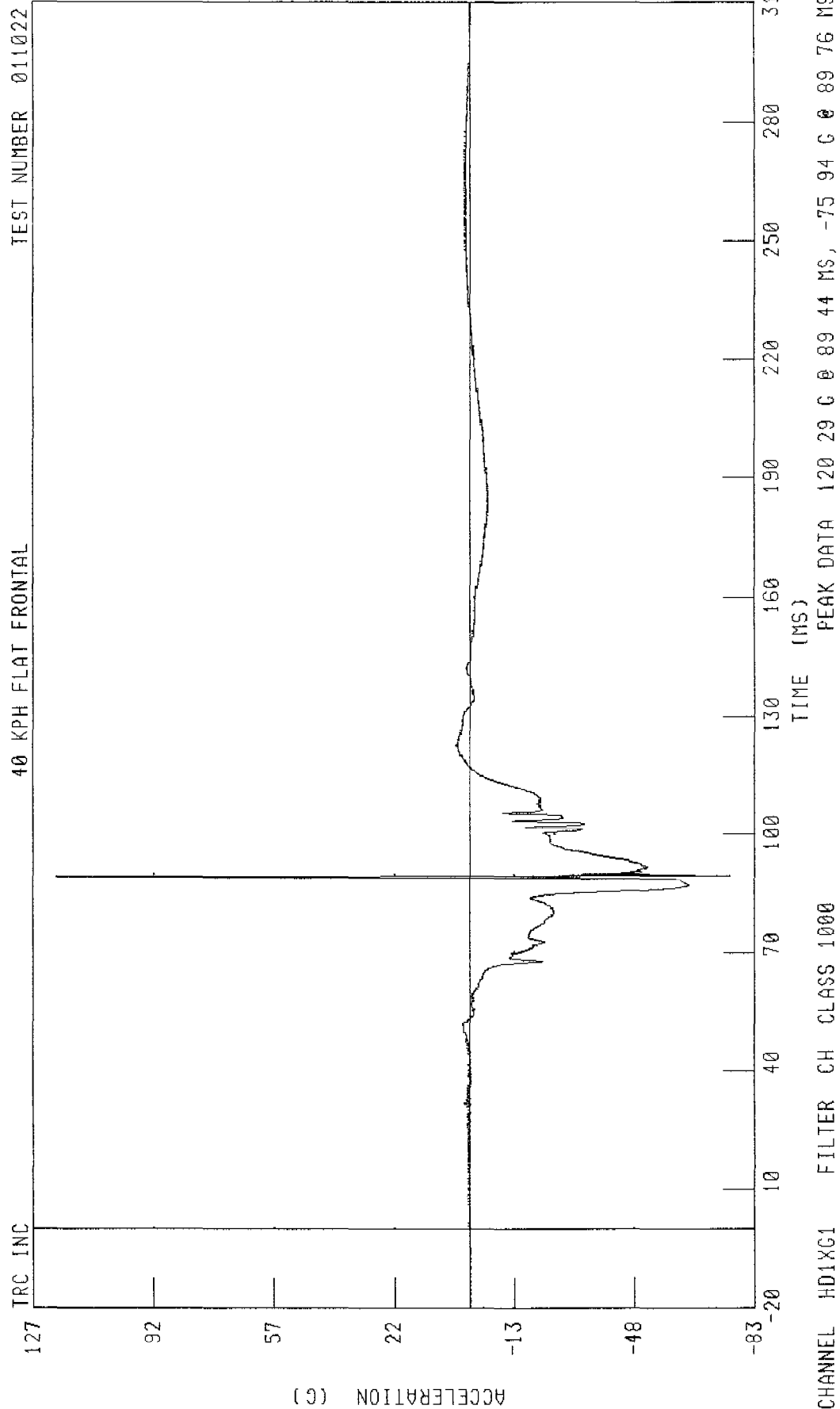
TEST NUMBER 011022



CHANNEL HEDRR1 FILTER CH CLASS 1000

PEAK DATA 60 14 G @ 87 12 MS, 0 28 G @ -20 00 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER HEAD X-AXIS (LT) ACCELERATION

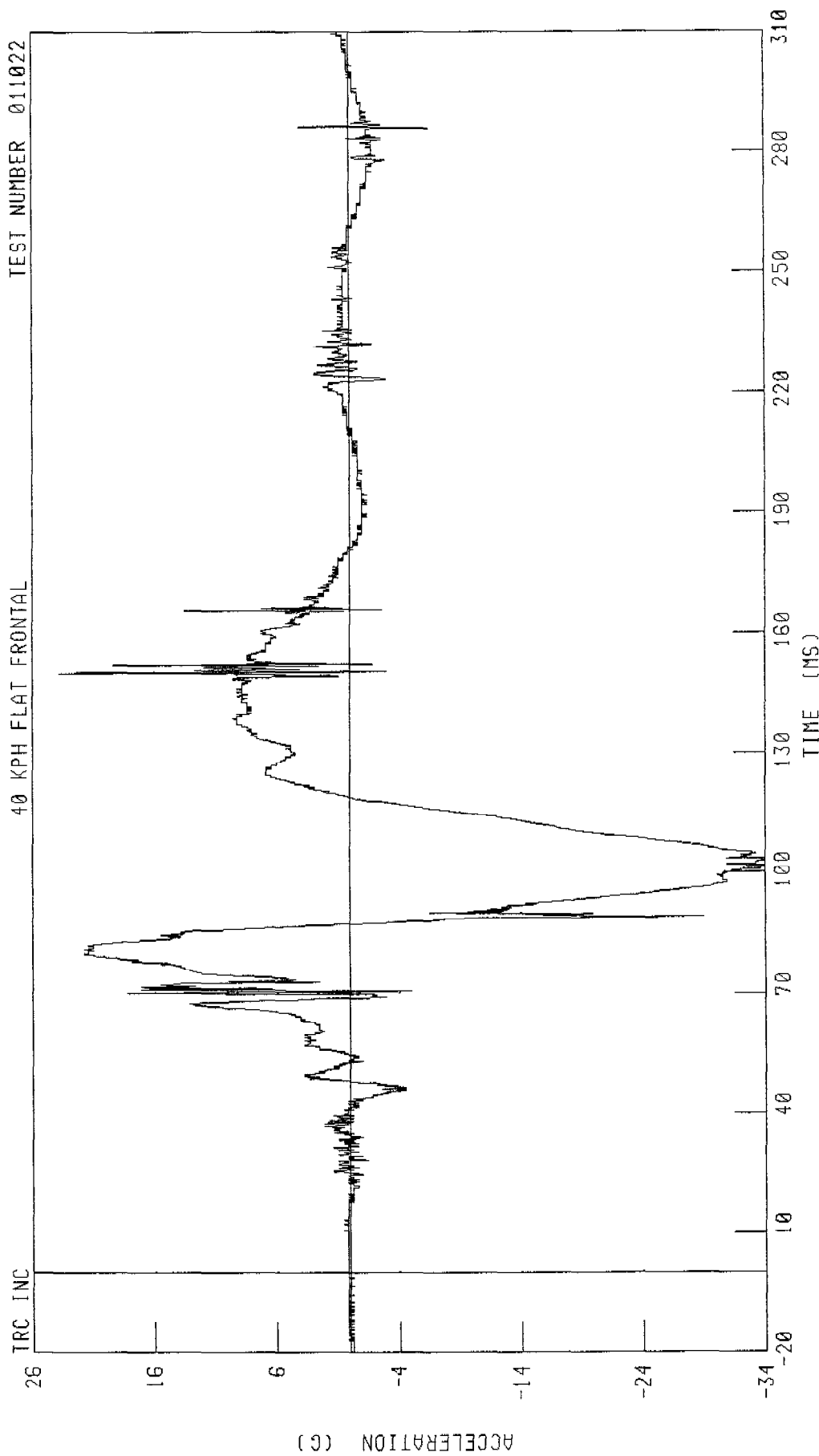


2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER HEAD Z-AXIS (LT) ACCELERATION

TEST NUMBER 011022

40 KPH FLAT FRONTAL



CHANNEL HD1ZG1 FILTER CH CLASS 1000

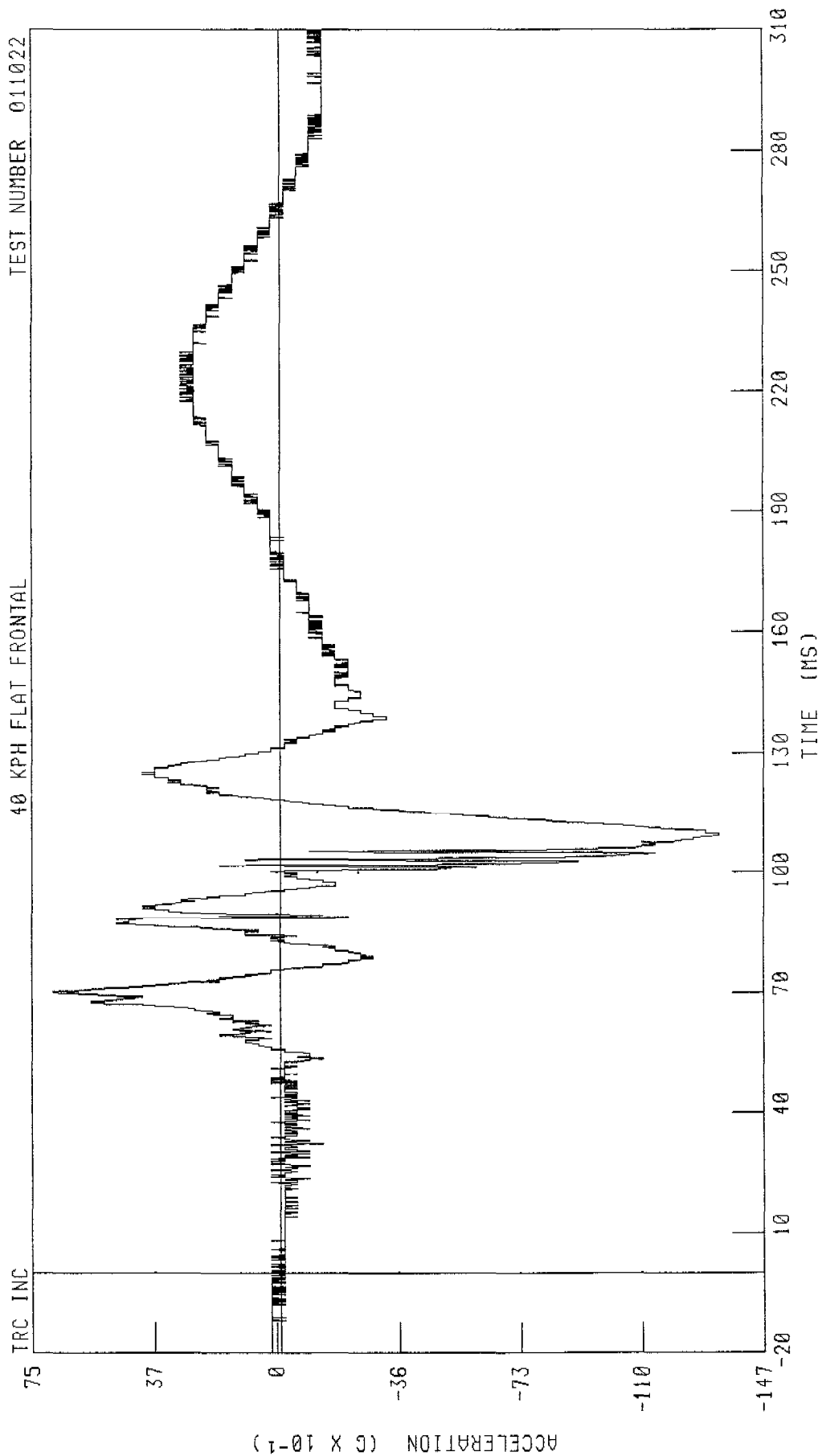
PEAK DATA 23 78 G @ 150 00 MS, -35 24 G @ 103 20 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER HEAD Y-AXIS (FT) ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL HD2YC1 FILTER CH CLASS 1000

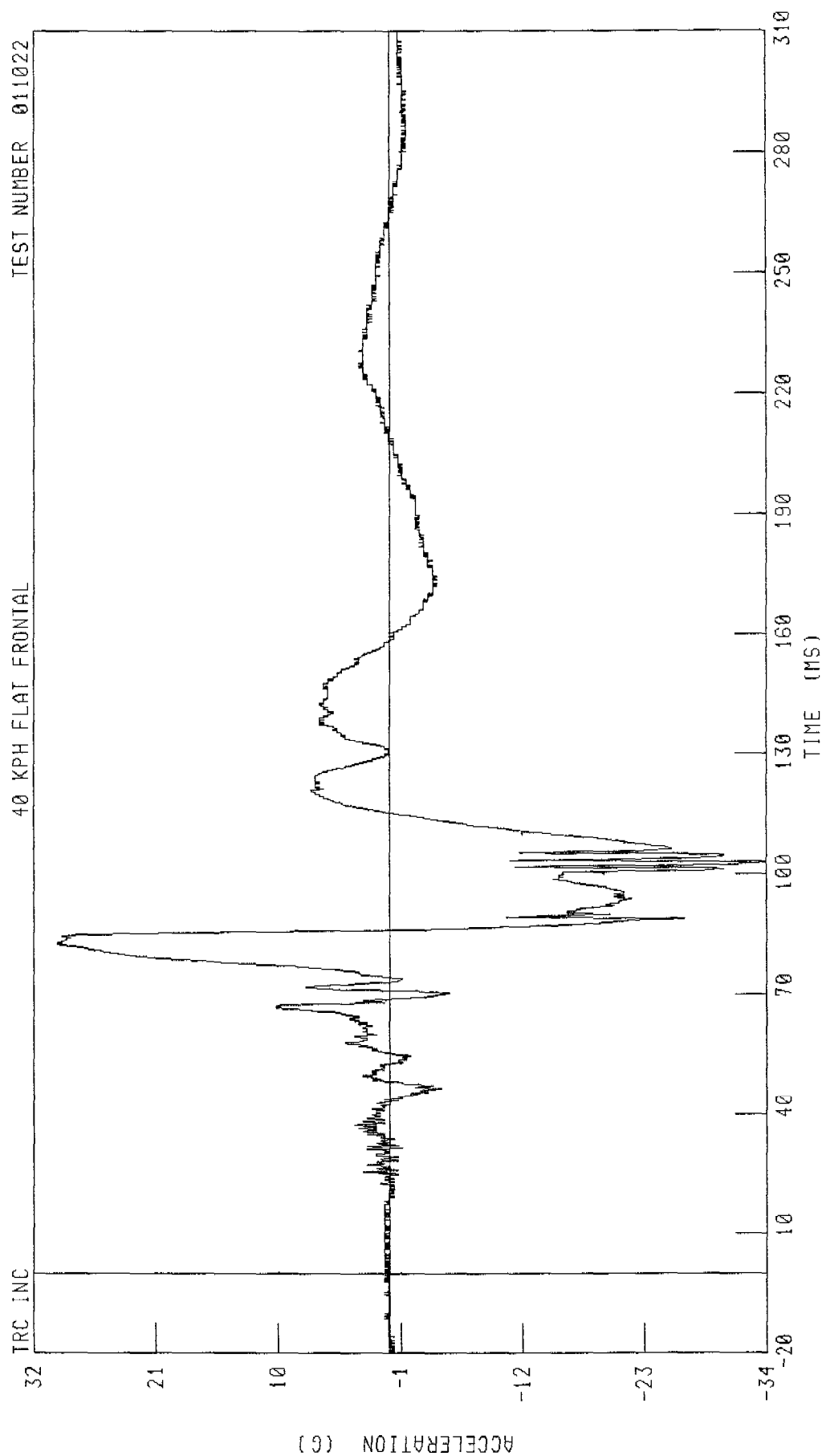
PEAK DATA 6 88 G @ 70 08 MS, -13 35 G @ 109 12 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER HEAD Z-AXIS (FT) ACCELERATION

40 KPH FLAT FRONTAL

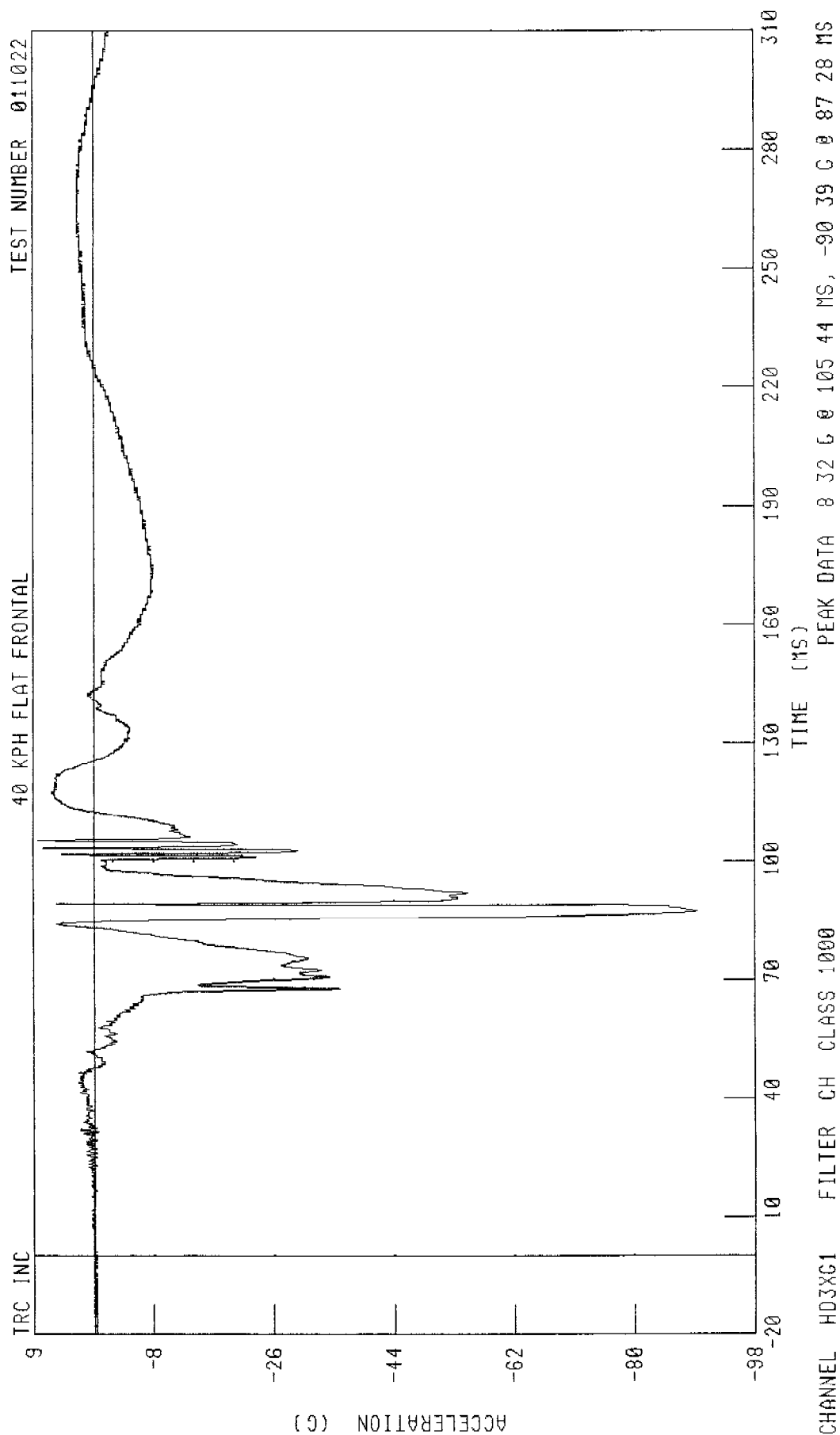
TEST NUMBER 011022



CHANNEL HD2ZG1 FILTER CH CLASS 1000

PEAK DATA 29.86 G @ 82.24 MS, -34.10 G @ 102.96 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER HEAD X-AXIS (TP) ACCELERATION

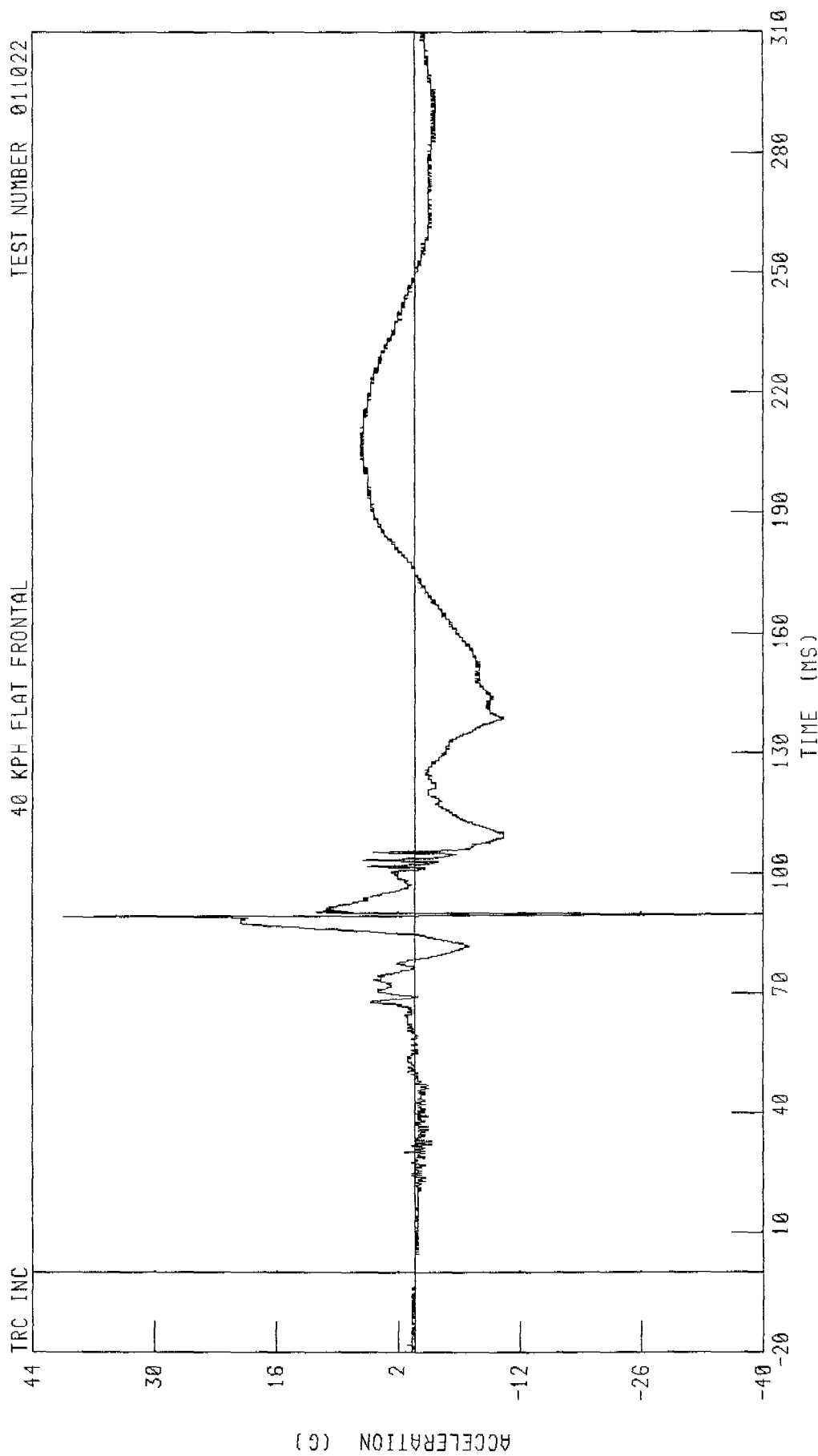


2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER HEAD Y-AXIS (TP) ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL HD3YG1 FILTER CH CLASS 1000

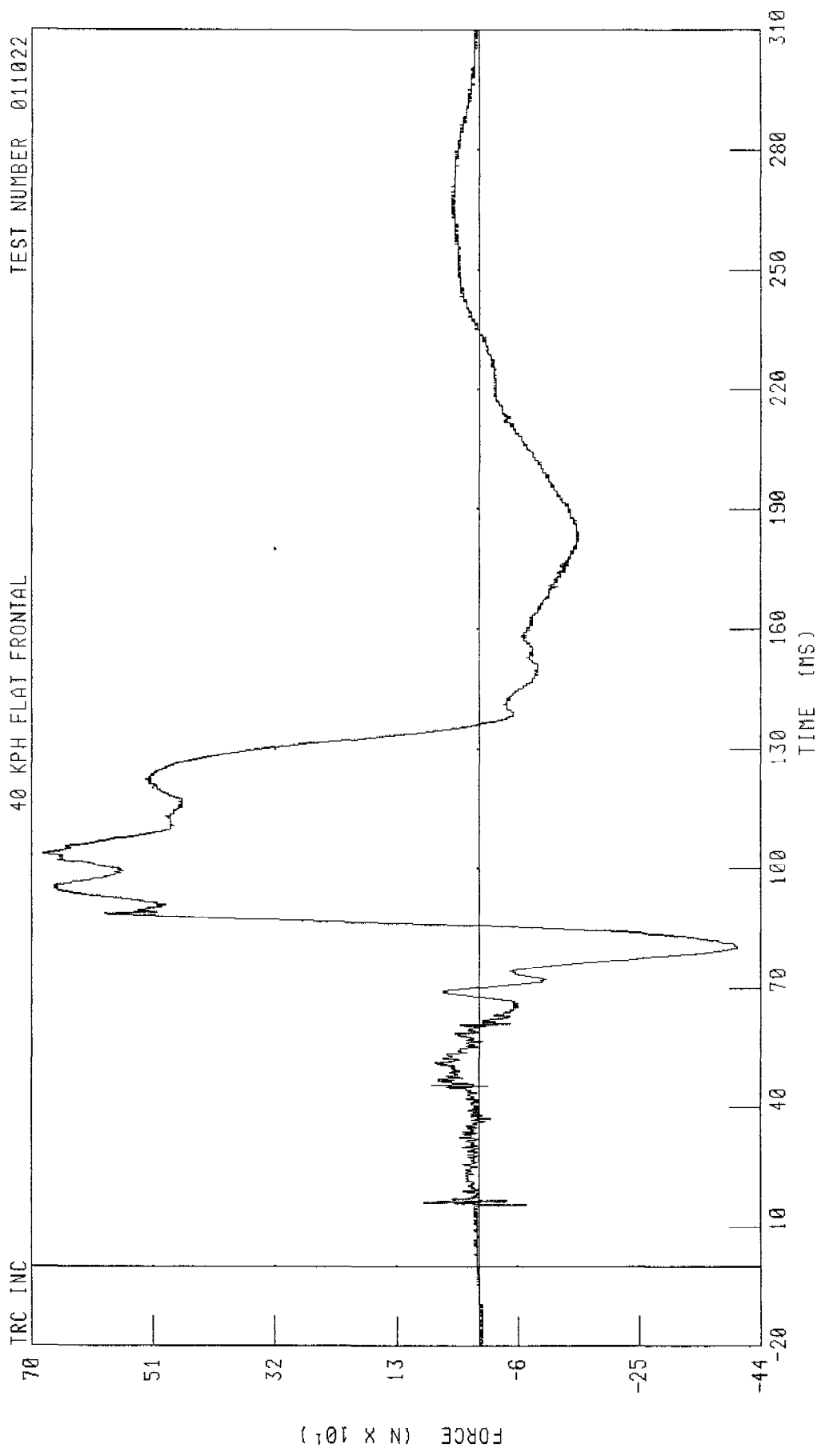
PEAK DATA 40 42 G @ 89 04 MS, -40 67 G @ 89 60 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER NECK X-AXIS SHEAR FORCE

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL NEKXF1 FILTER CH CLASS 1000

PEAK DATA 682 48 N @ 103 76 MS, -403 83 N @ 80 08 MS

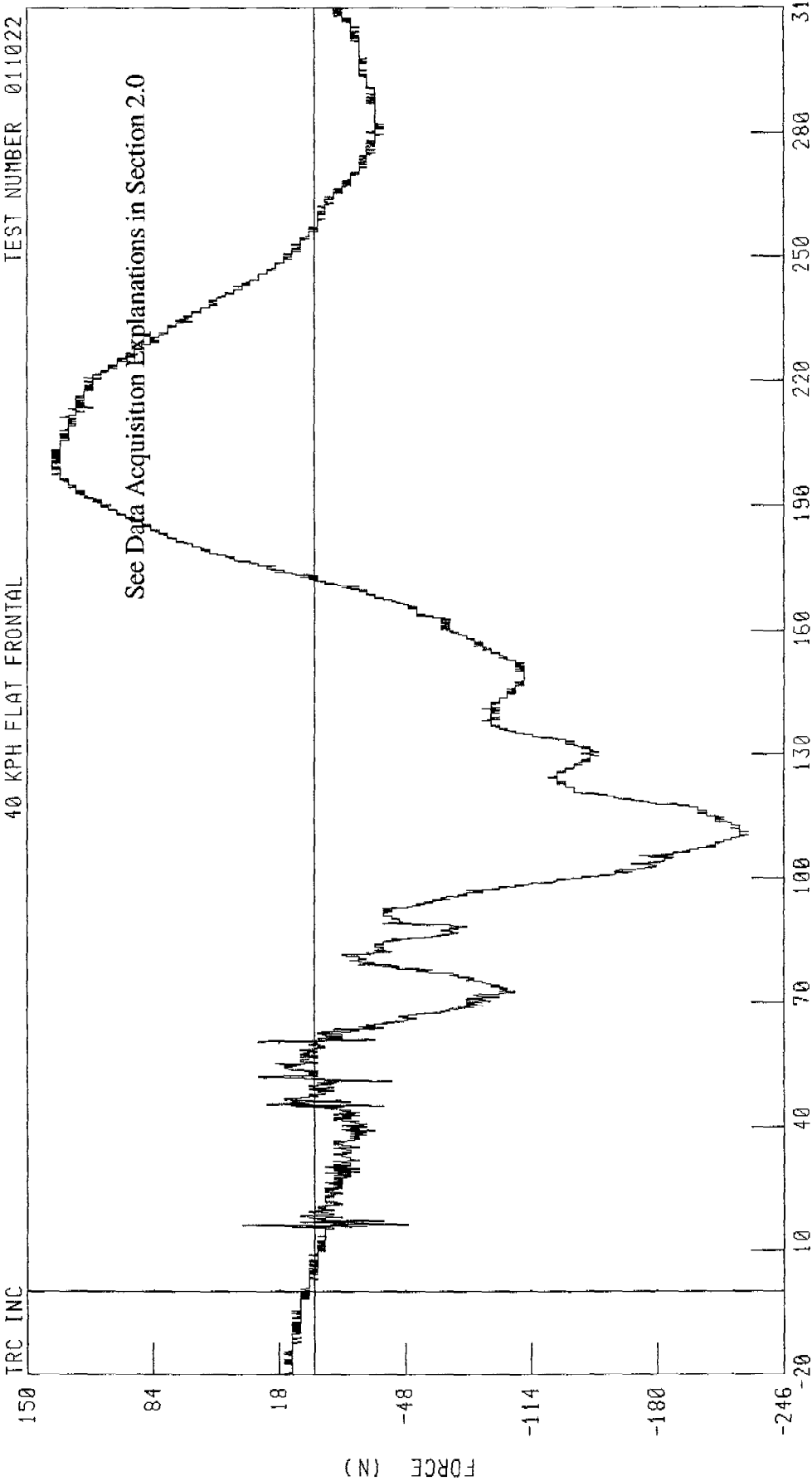
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER NECK Y-AXIS SHEAR FORCE

40 KPH FLAT FRONTAL

TEST NUMBER 011022

TRC INC



TIME (MS)

CHANNEL NEKYF1 FILTER CH CLASS 1000

PEAK DATA 137 28 N @ 197 76 MS, -227 51 N @ 110 40 MS

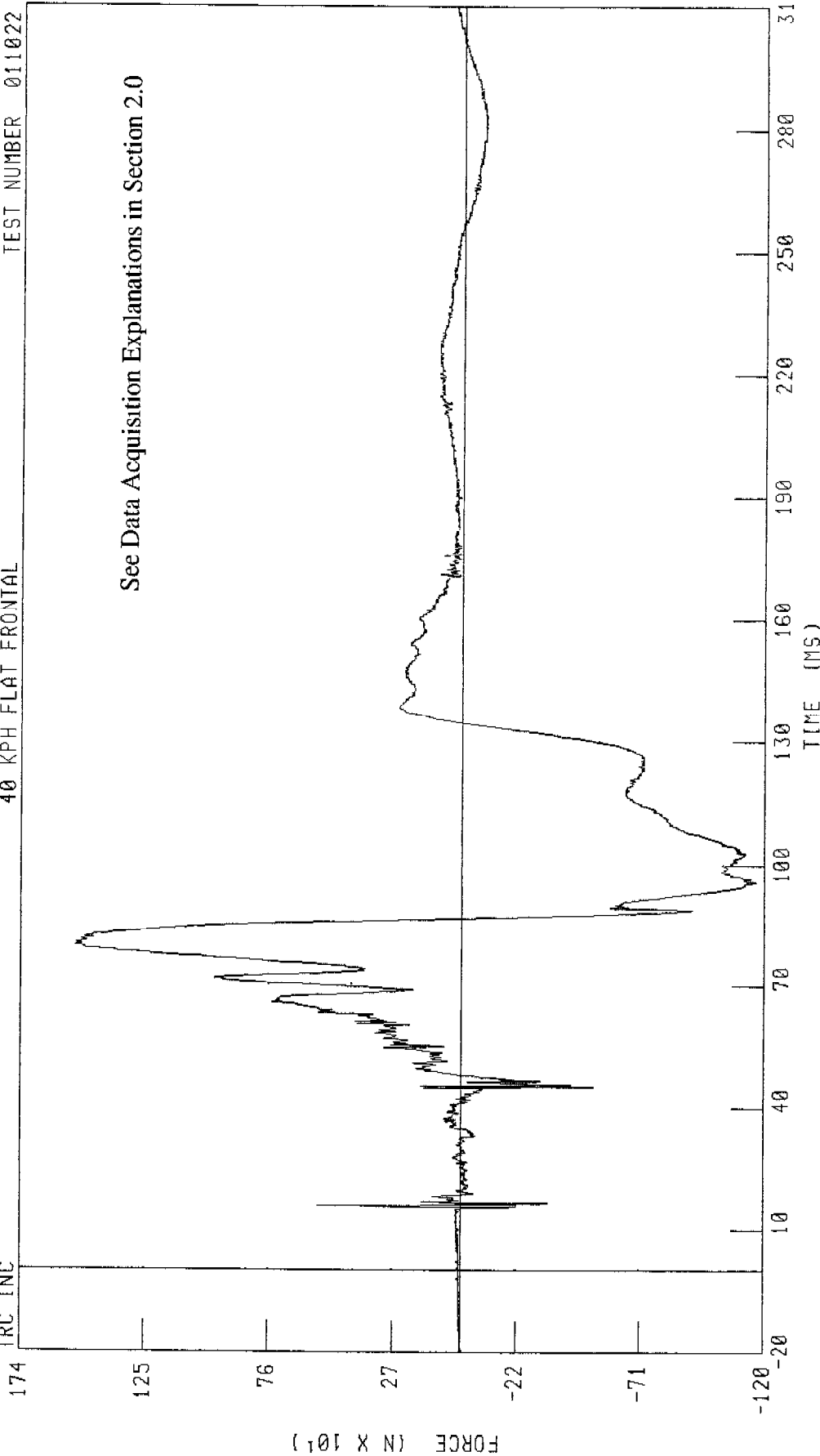
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER NECK Z-AXIS AXIAL FORCE

40 KPH FLAT FRONTAL

TEST NUMBER 011022

TRC INC

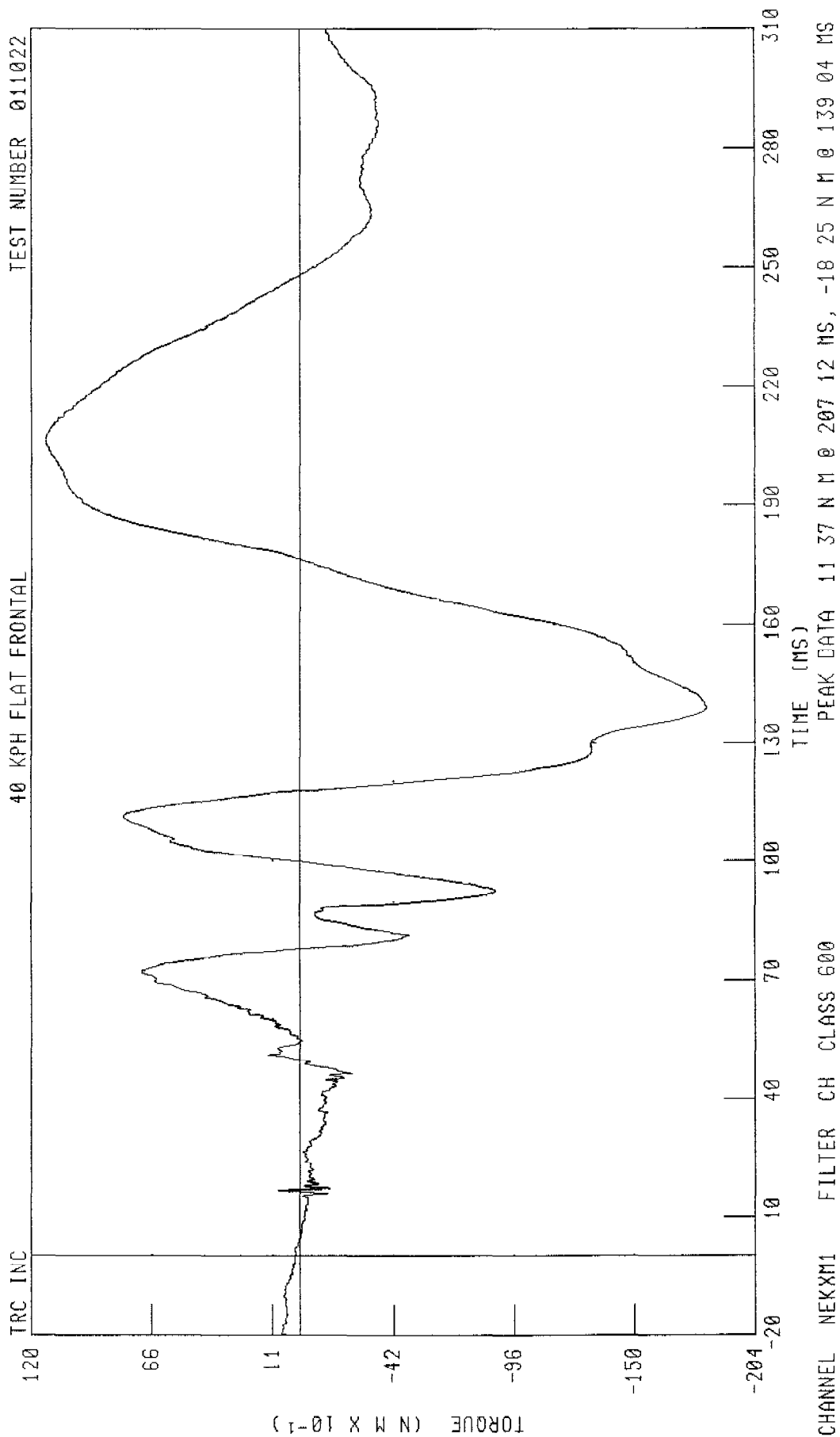


See Data Acquisition Explanations in Section 2.0

CHANNEL NEKZF1 FILTER CH CLASS 1000

PEAK DATA 1525 69 N @ 79 84 MS, -1165 82 N @ 95 76 MS

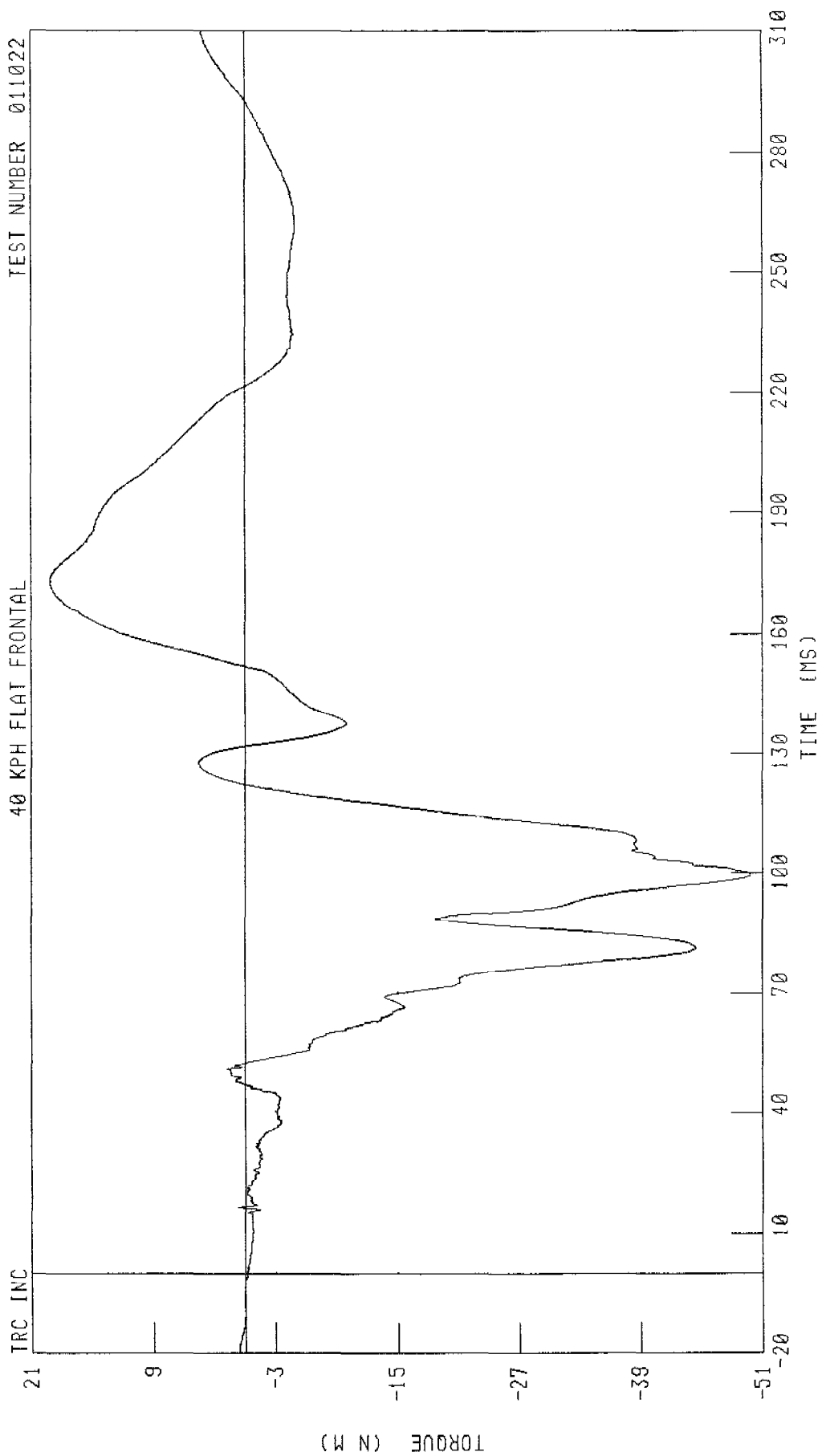
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER NECK MOMENT ABOUT X AXIS



2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER NECK MOMENT ABOUT Y AXIS

40 KPH FLAT FRONTAL TEST NUMBER 011022



TIME (MS)

PEAK DATA 19 22 N M @ 172 64 MS, -49 83 N M @ 99 76 MS

CHANNEL NEKY1 FILTER CH CLASS 600

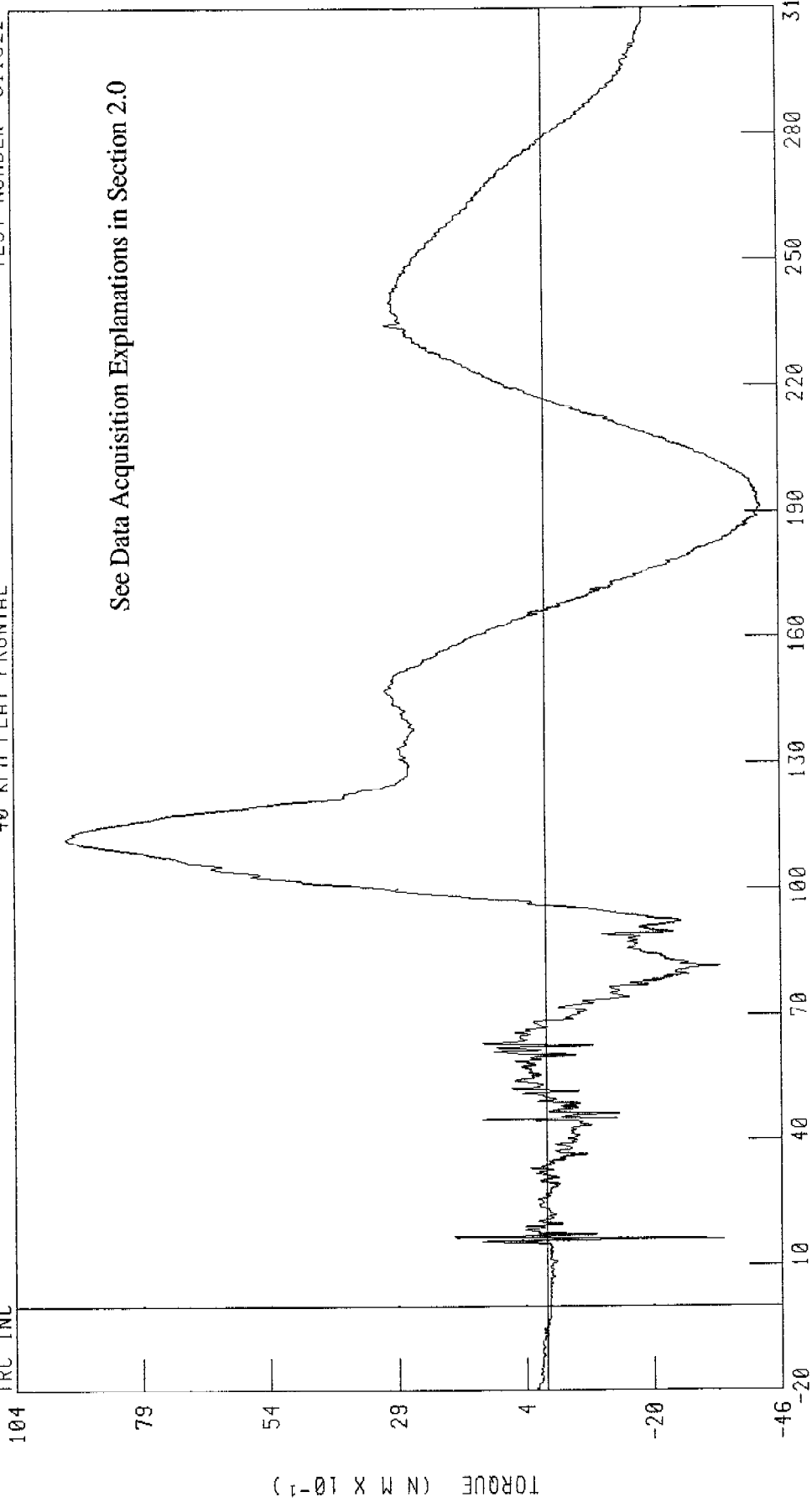
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER NECK MOMENT ABOUT Z AXIS

40 KPH FLAT FRONTAL

TEST NUMBER 011022

TRC INC



TIME (MS)

PEAK DATA 9 39 N M @ 112 32 MS, -4 26 N M @ 191 52 MS

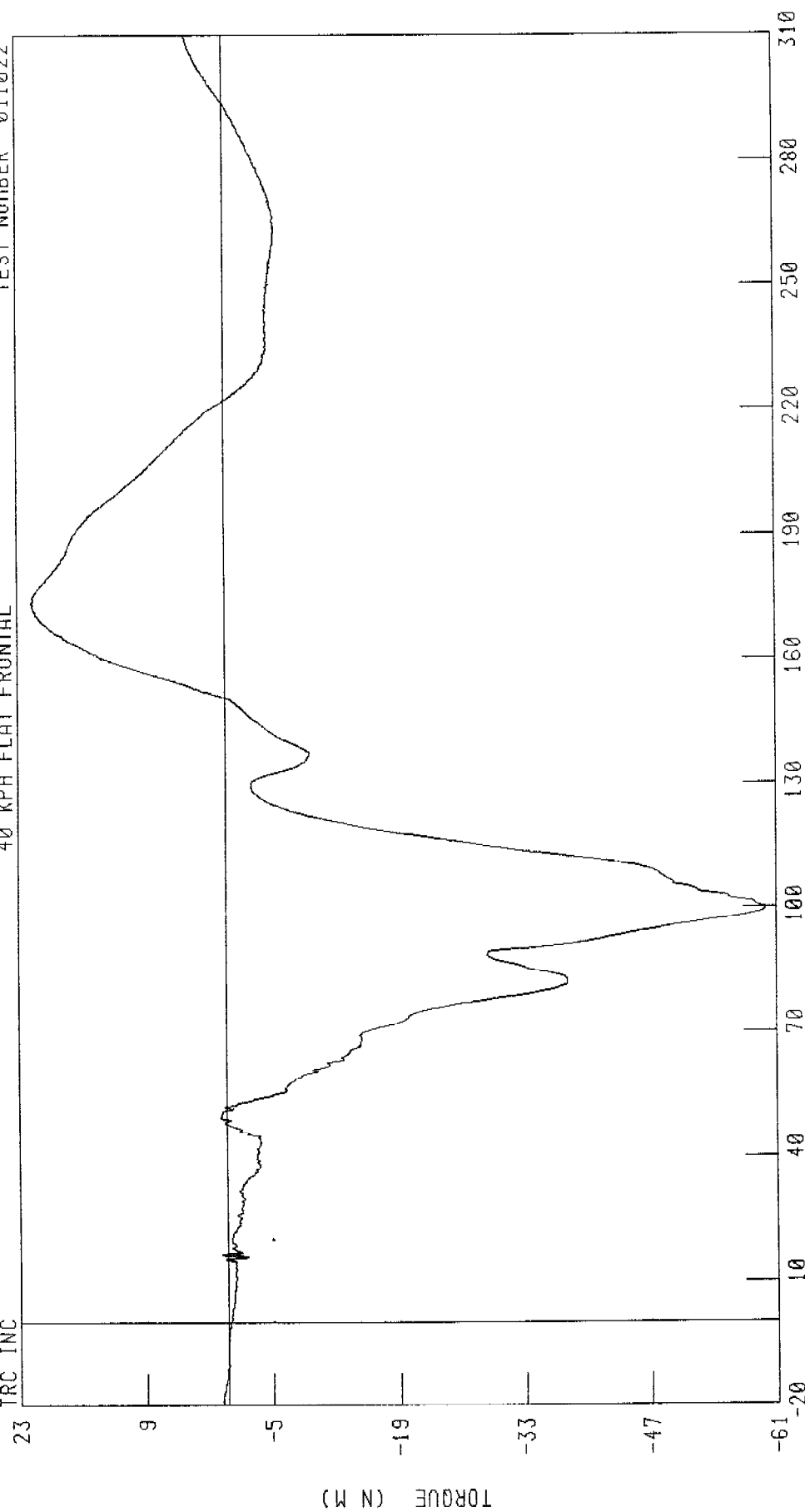
CHANNEL NEKZM1 FILTER CH CLASS 600

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER NECK OCCIPITAL CONDYLE MOMENT ABOUT Y AXIS

TEST NUMBER 011022

40 KPH FLAT FRONTAL

TRC INC



TIME (MS)

PEAK DATA 21 45 N M @ 173 68 MS, -59 84 N M @ 99 84 MS

CHANNEL NEKOM1 FILTER CH CLASS 600

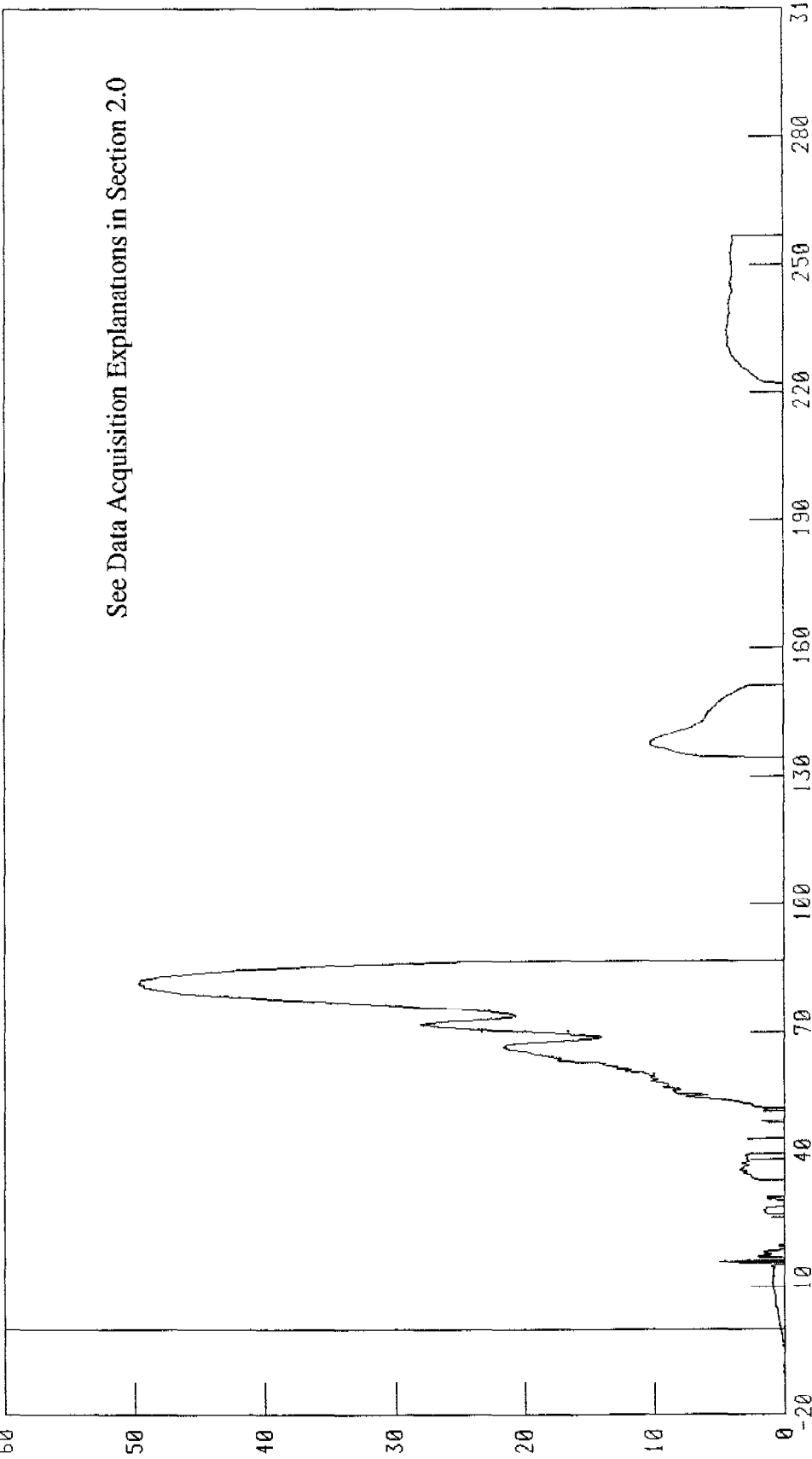
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER NECK TENSION/EXTENSION

40 KPH FLAT FRONTAL

TEST NUMBER 011022

TRC INC



TIME (MS)

PEAK DATA 0 50 --- 0 81 36 MS, 0 00 --- 0 -20 00 MS

CHANNEL NTE1 FILTER CH CLASS 600

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER NECK TENSION/FLEXION

40 KPH FLAT FRONTAL

TEST NUMBER 011022

TRC INC

See Data Acquisition Explanations in Section 2.0

(--- x 10⁻³)

TIME (MS)

PEAK DATA 0 08 --- 0 171 20 MS, 0 00 --- 0 -20 00 MS

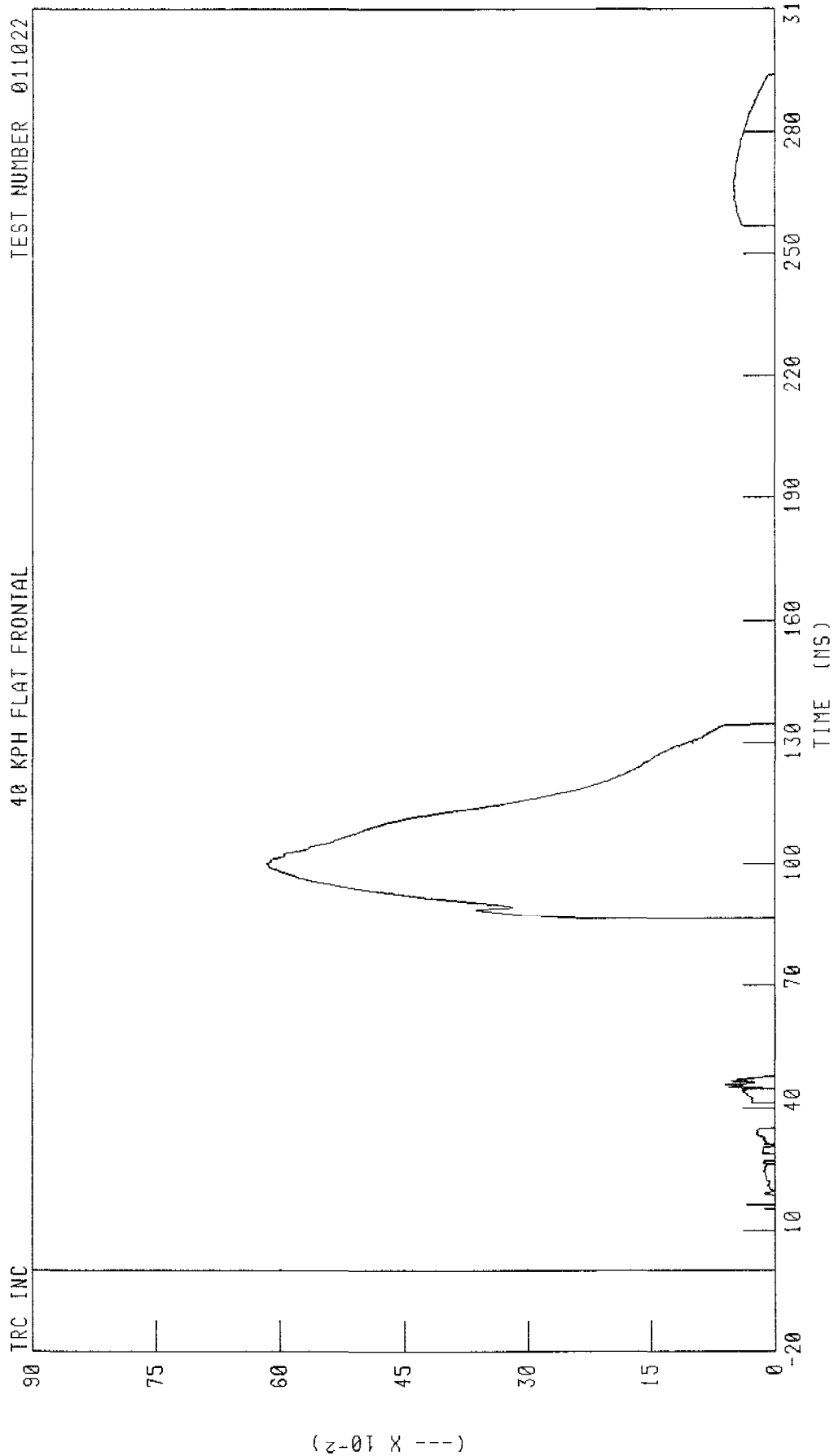
CHANNEL NTF1 FILTER CH CLASS 600

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER NECK COMPRESSION/EXTENSION

TEST NUMBER 011022

40 KPH FLAT FRONTAL



PEAK DATA 0 62 --- 0 100 24 MS, 0 00 --- 0 -20 00 MS

CHANNEL NCE1 FILTER CH CLASS 600

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER NECK COMPRESSION/FLEXION

40 KPH FLAT FRONTAL

TEST NUMBER 011022

TRC INC

See Data Acquisition Explanations in Section 2.0

(--- X 10⁻³)

TIME (MS)

PEAK DATA 0 03 --- 0 16 40 MS, 0 00 --- 0 -19 28 MS

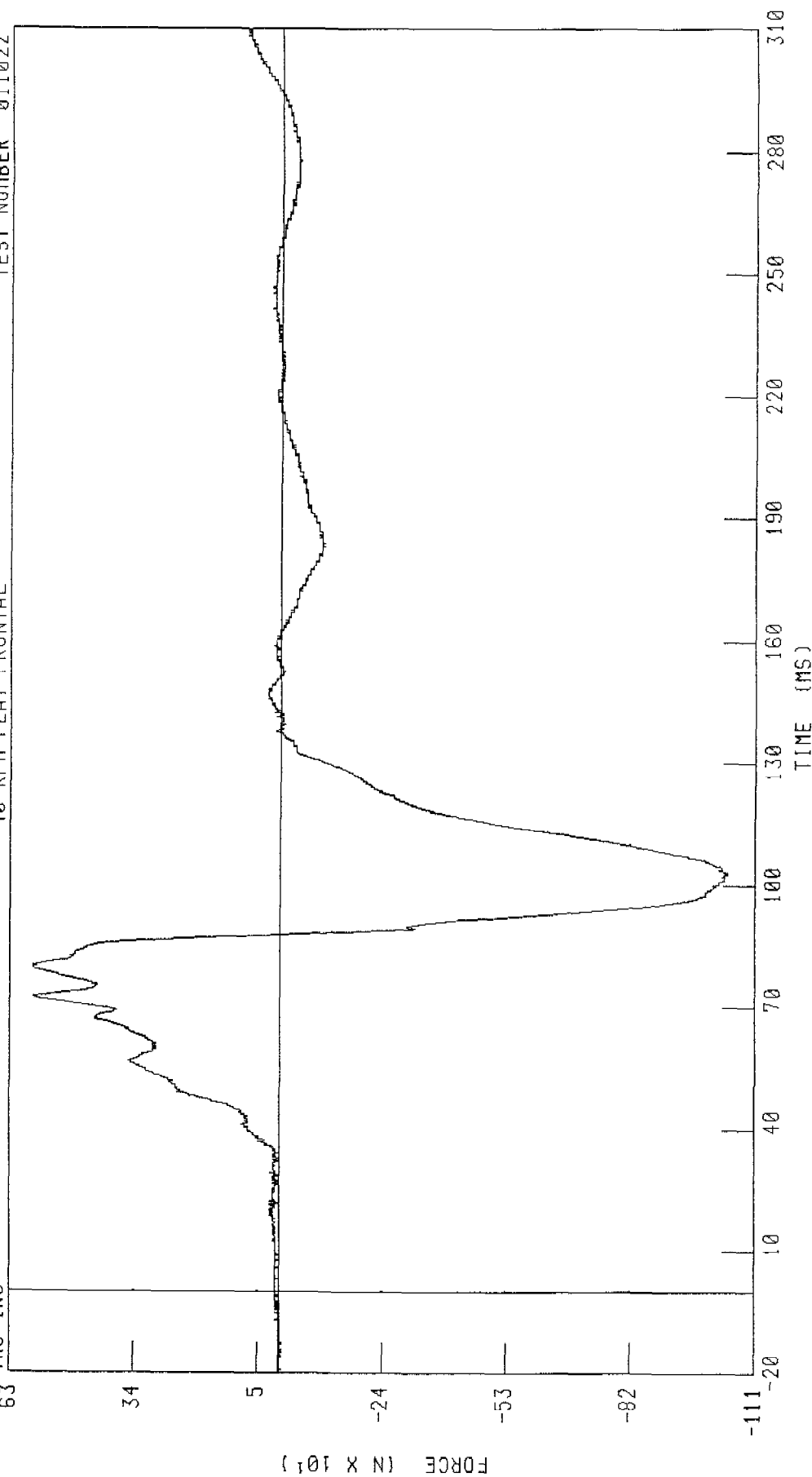
CHANNEL NCF1 FILTER CH CLASS 600

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER NECK LOWER X-AXIS SHEAR FORCE

TRC INC

40 KPH FLAT FRONTAL

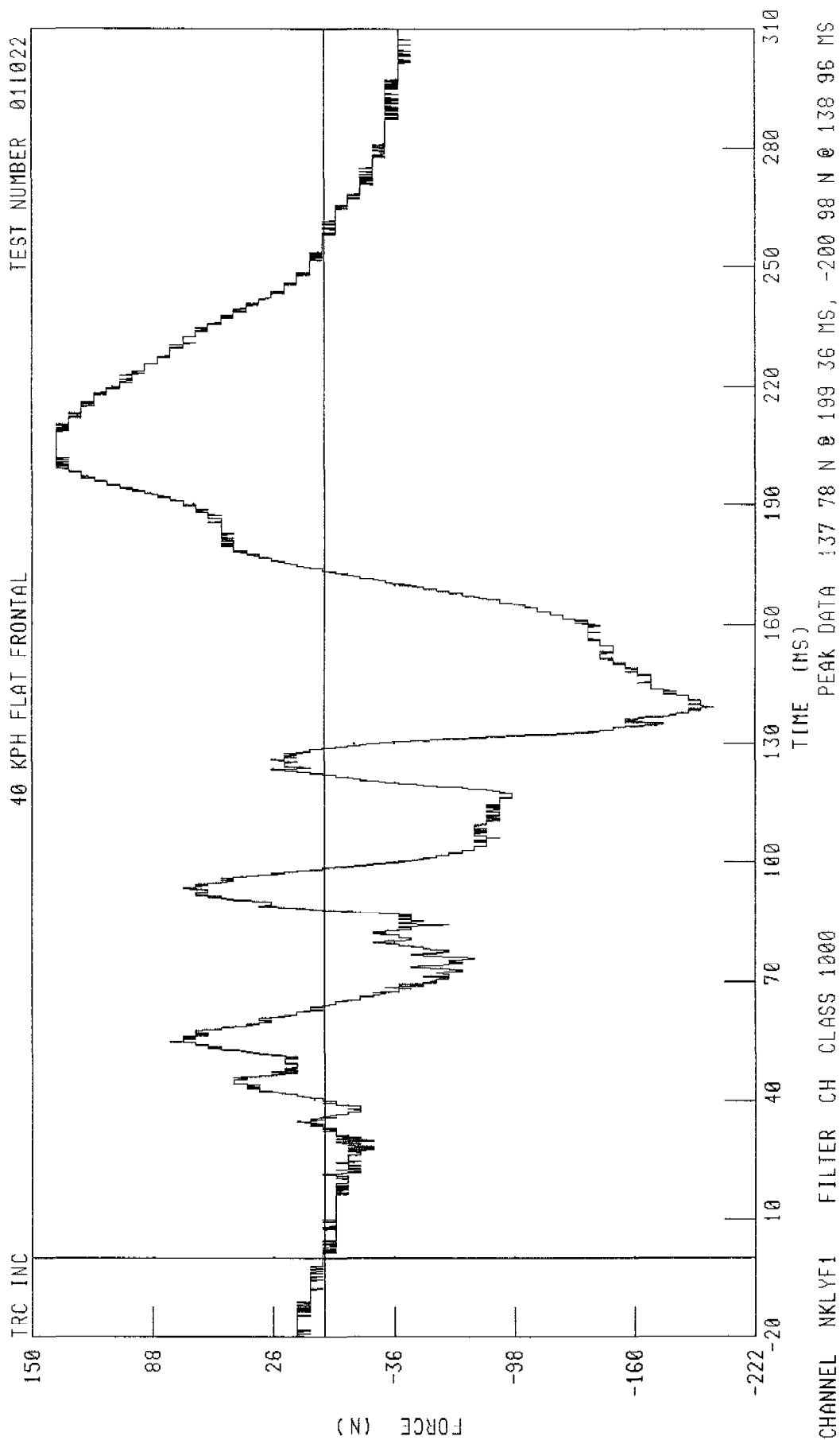
TEST NUMBER 011022



CHANNEL NKLXF1 FILTER CH CLASS 1000

PEAK DATA 575 62 N @ 72 16 MS, -1046 52 N @ 102 88 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER NECK LOWER Y-AXIS SHEAR FORCE

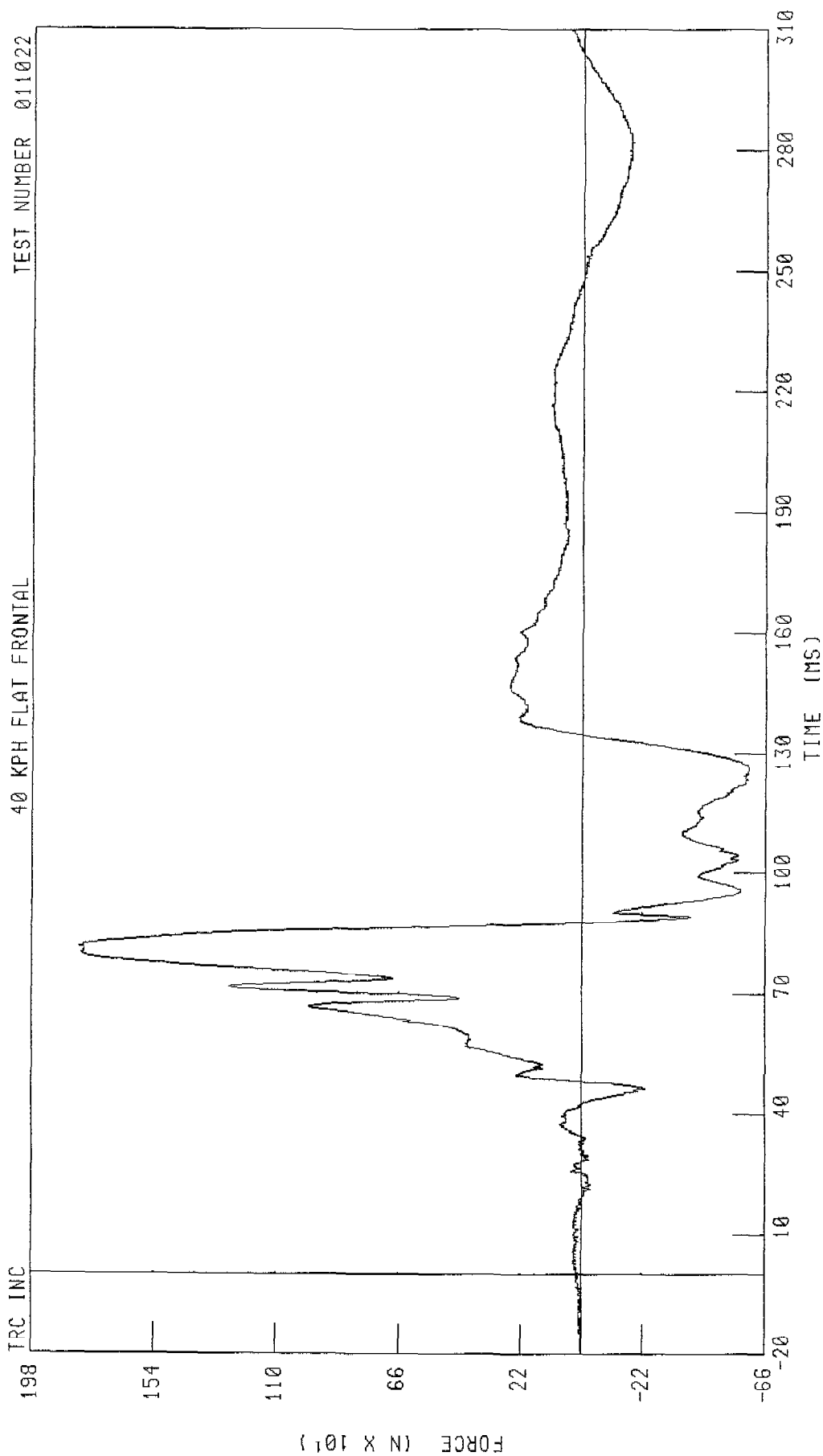


2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER NECK LOWER Z-AXIS AXIAL FORCE

40 KPH FLAT FRONTAL

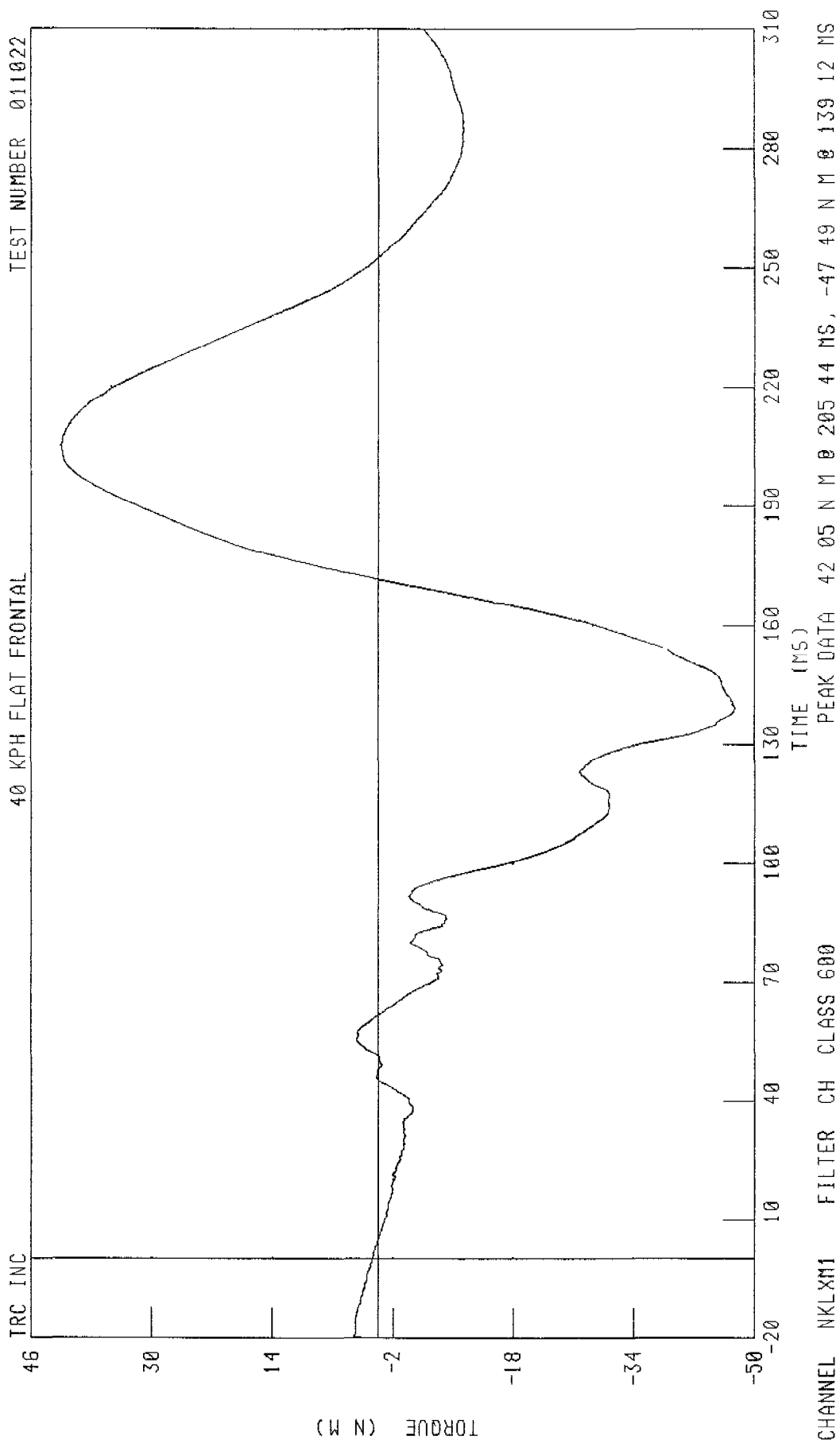
TEST NUMBER 011022



CHANNEL NKLZF1 FILTER CH CLASS 1000

PEAK DATA 1808 56 N @ 81 68 MS, -601 85 N @ 125 68 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER NECK LOWER MOMENT ABOUT X AXIS

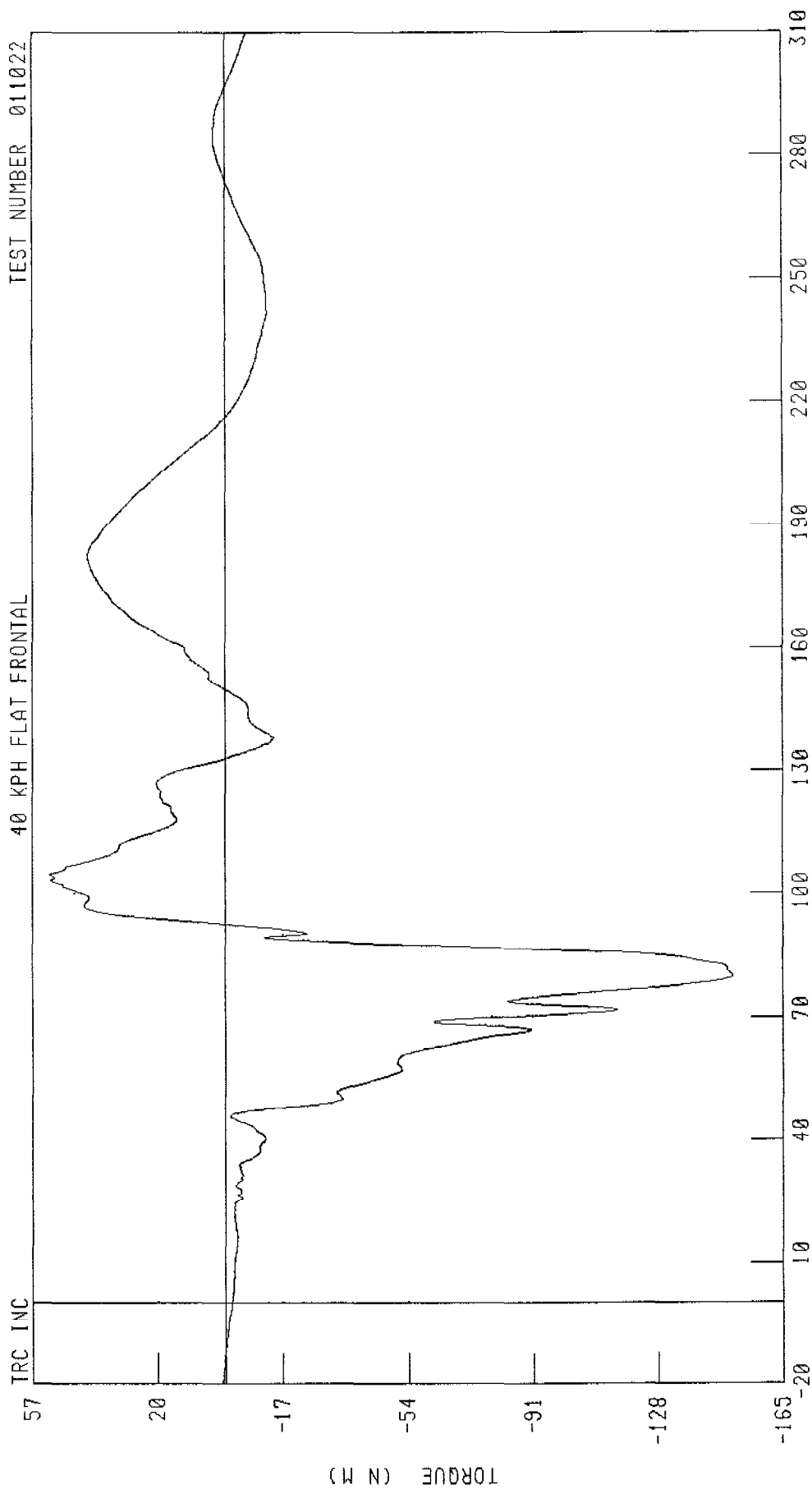


2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER NECK LOWER MOMENT ABOUT Y AXIS

40 KPH FLAT FRONTAL

TEST NUMBER 011022



TIME (MS)

PEAK DATA 51 93 N M @ 104 64 MS, -150 44 N M @ 80 08 MS

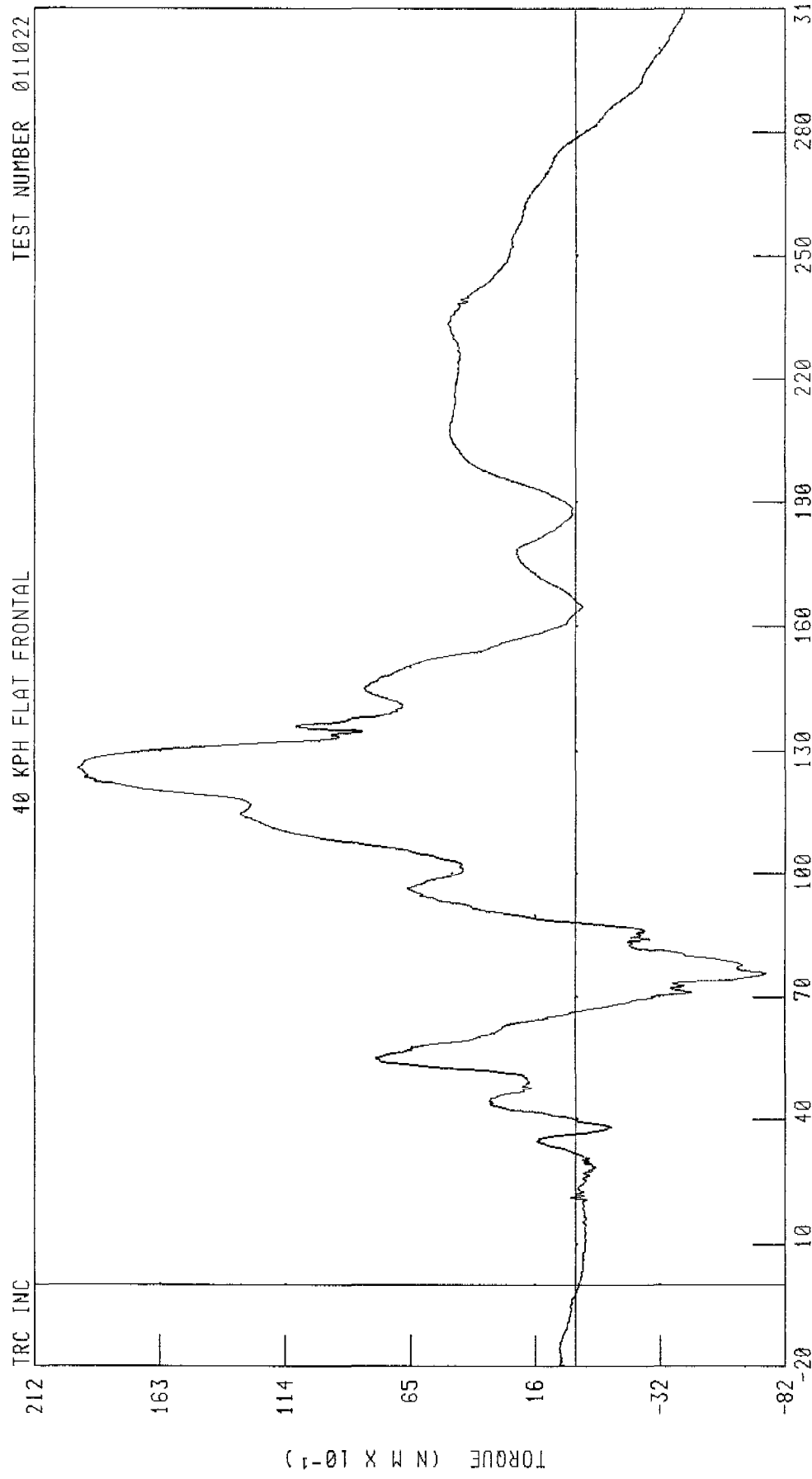
CHANNEL NKLYM1 FILTER CH CLASS 600

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER NECK LOWER MOMENT ABOUT Z AXIS

TEST NUMBER 011022

40 KPH FLAT FRONTAL



TIME (MS)

PEAK DATA 19 50 N M @ 125 84 MS, -7 47 N M @ 75 76 MS

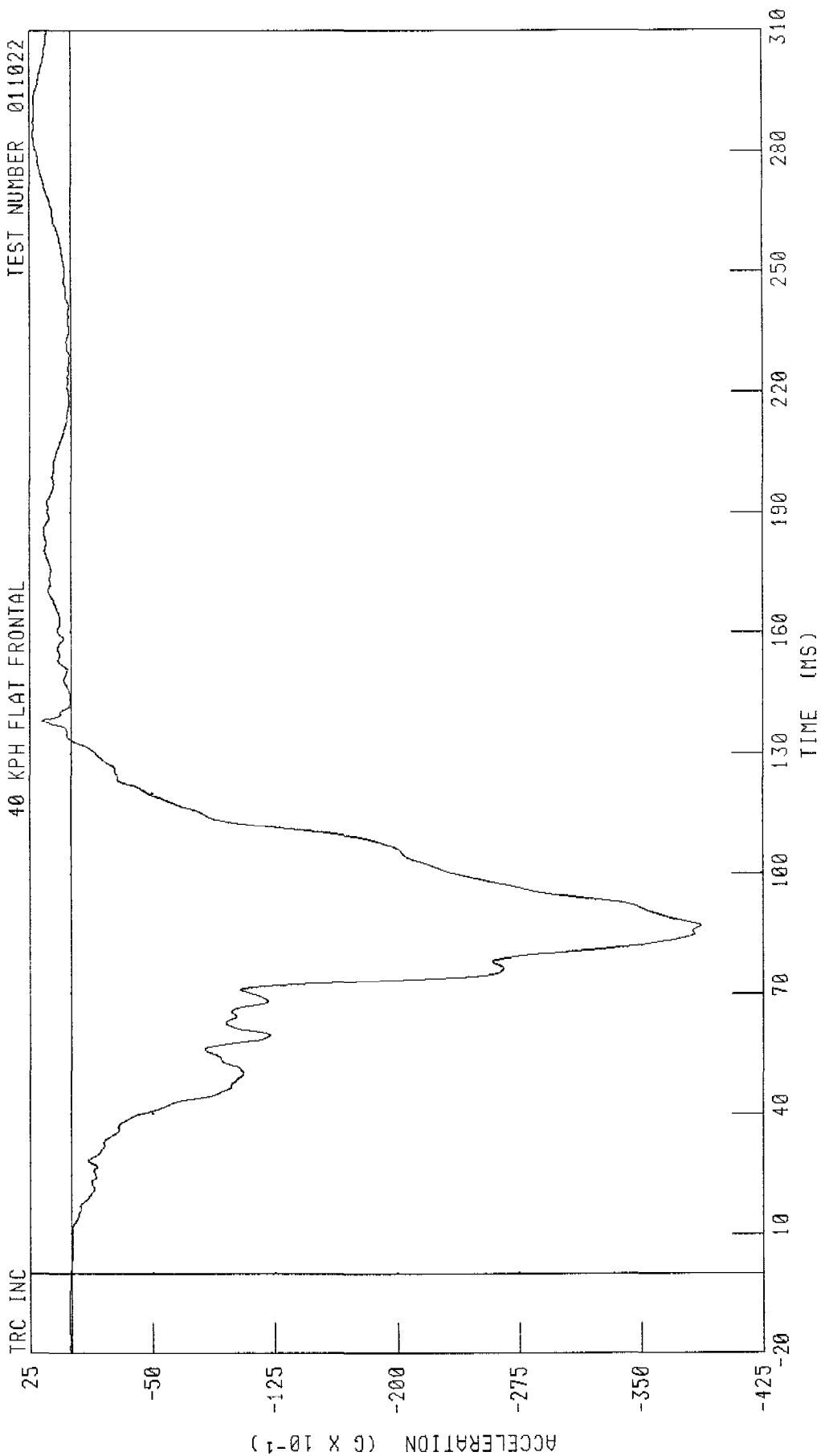
CHANNEL NKLZM1 FILTER CH CLASS 600

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER CHEST X-AXIS ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL CSTXC1 FILTER CH CLASS 180

PEAK DATA 2 32 G @ 284 24 MS, -38 67 G @ 87 04 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

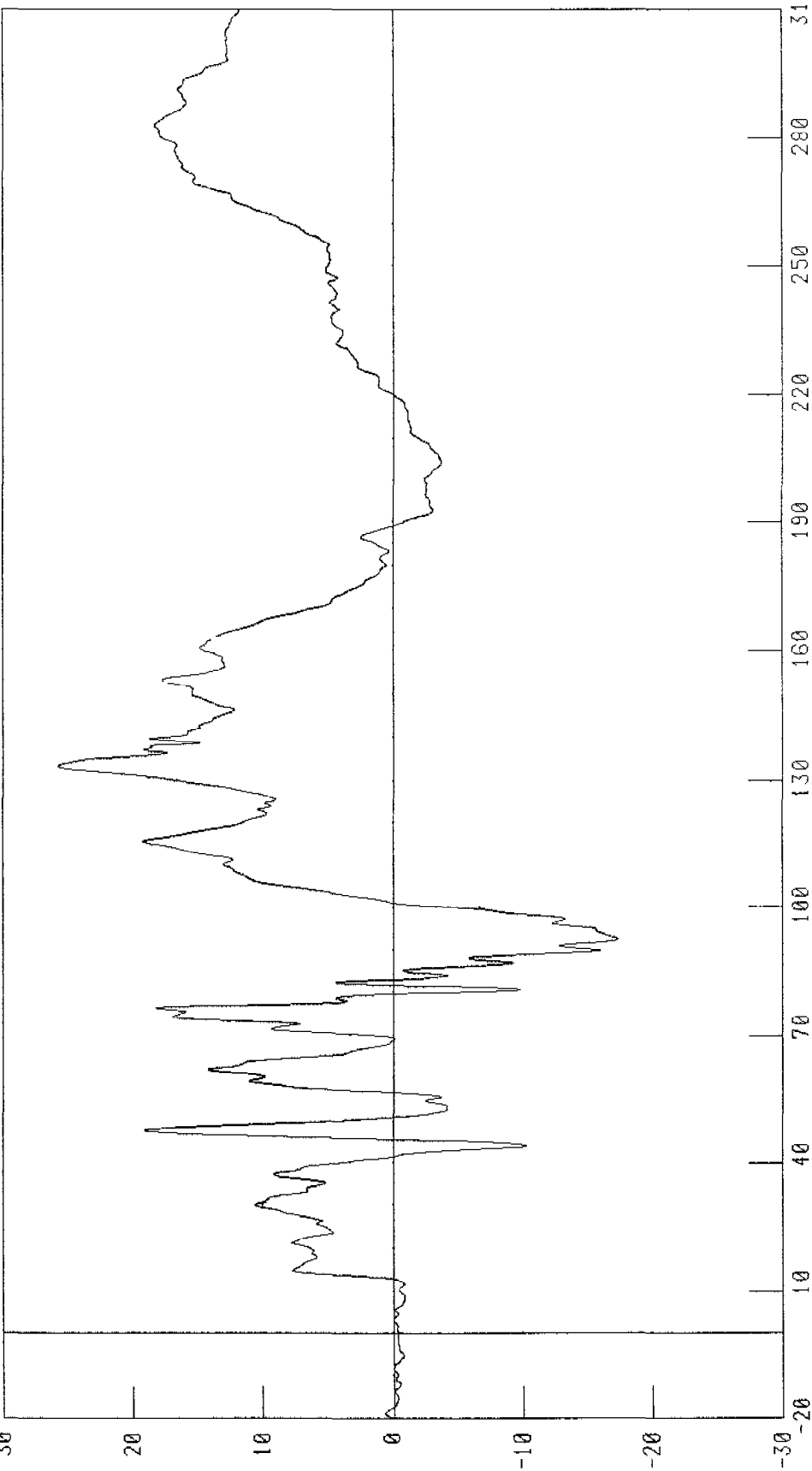
DRIVER CHEST Y-AXIS ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022

TRC INC

ACCELERATION ($G \times 10^{-1}$)

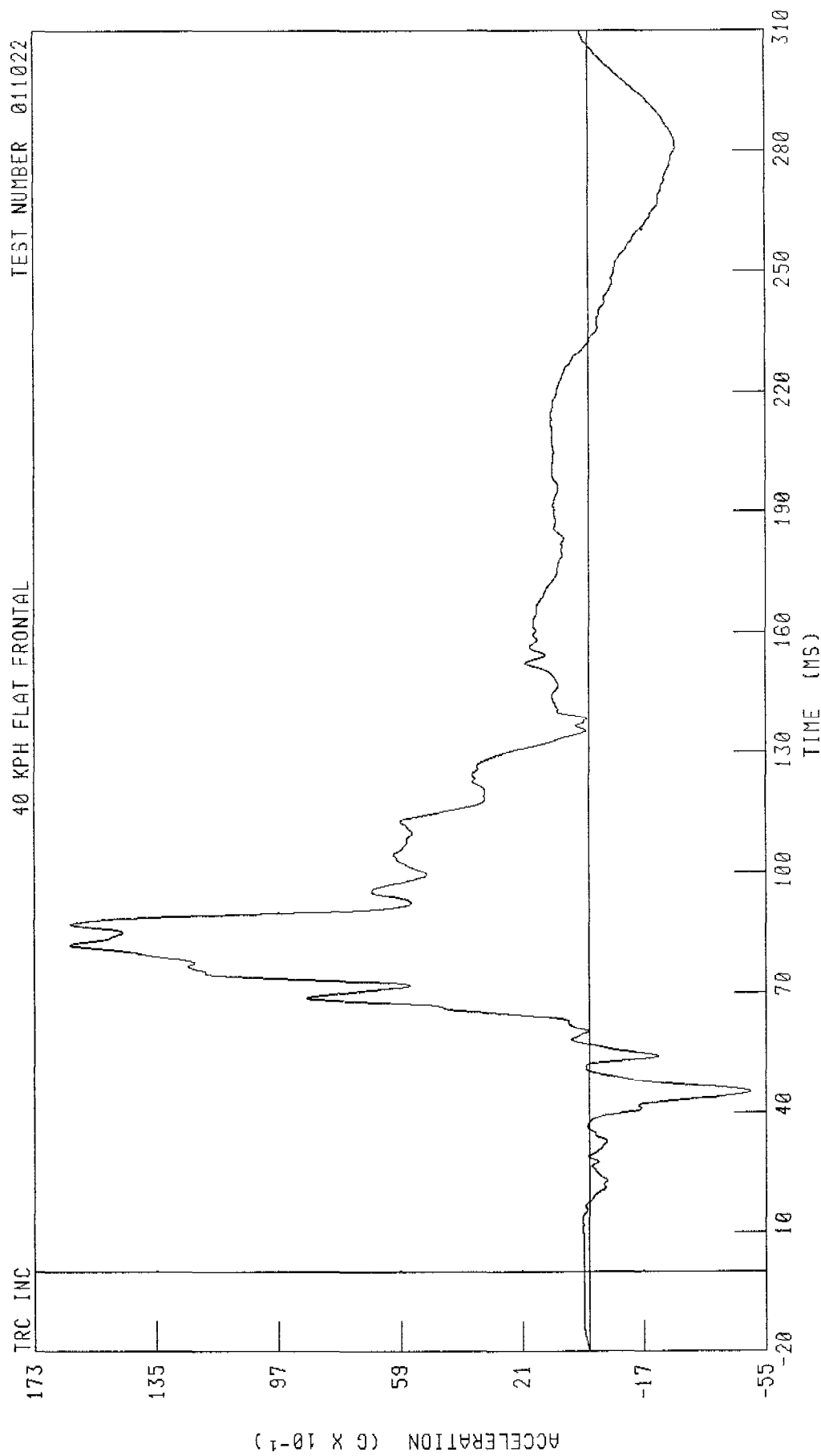


TIME (MS)

CHANNEL CSTY61 FILTER CH CLASS 180

PEAK DATA 2 58 C @ 133 28 MS, -1 74 G @ 92 64 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
 DRIVER CHEST Z-AXIS ACCELERATION
 40 KPH FLAT FRONTAL



TEST NUMBER 011022

PEAK DATA 16 18 G @ 81 92 MS, -5 03 G @ 45 20 MS

CHANNEL CSTZG1 FILTER CH CLASS 180

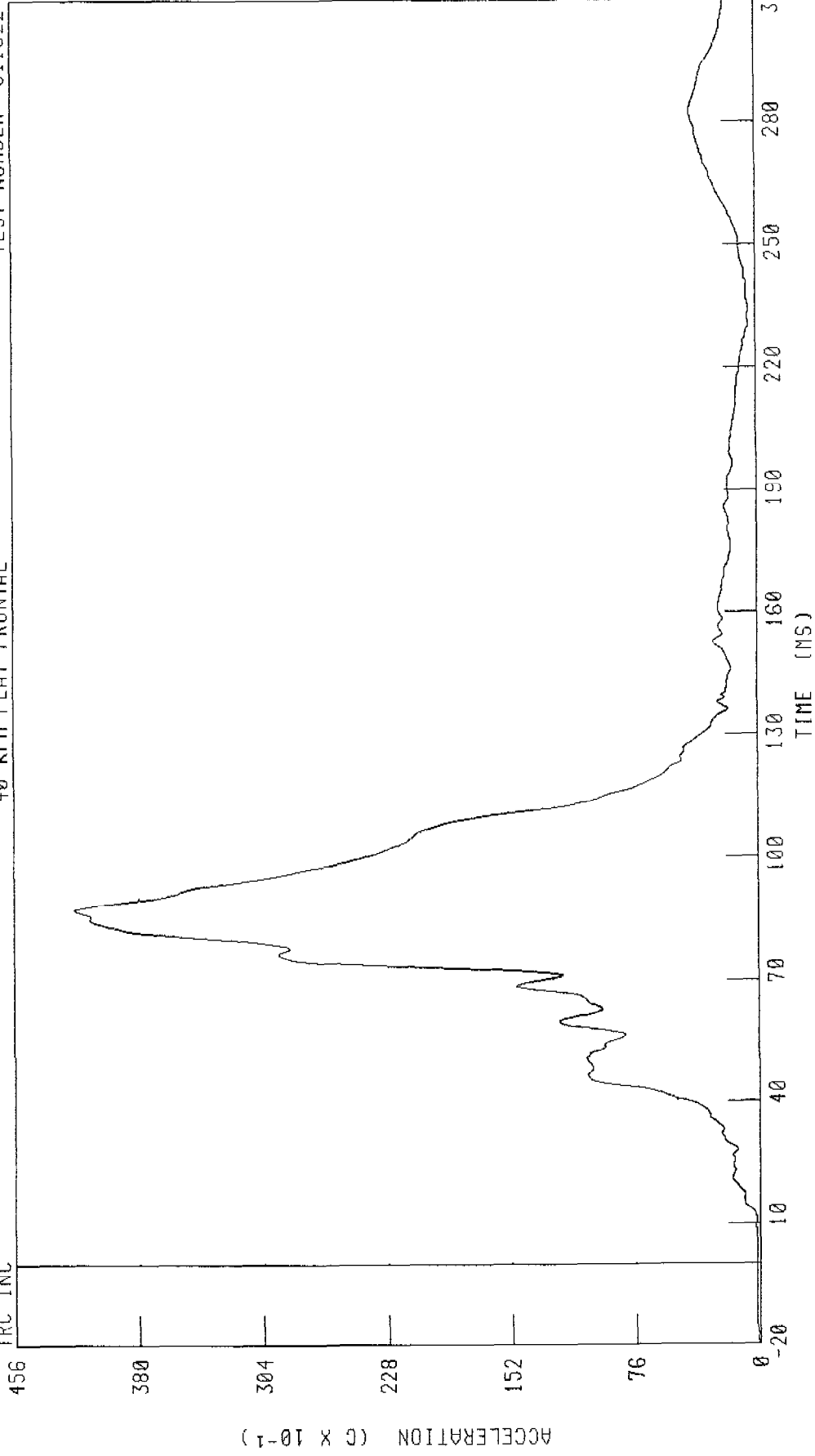
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER CHEST RESULTANT ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022

TRC INC



CHANNEL CSTRC1 FILTER CH CLASS 180

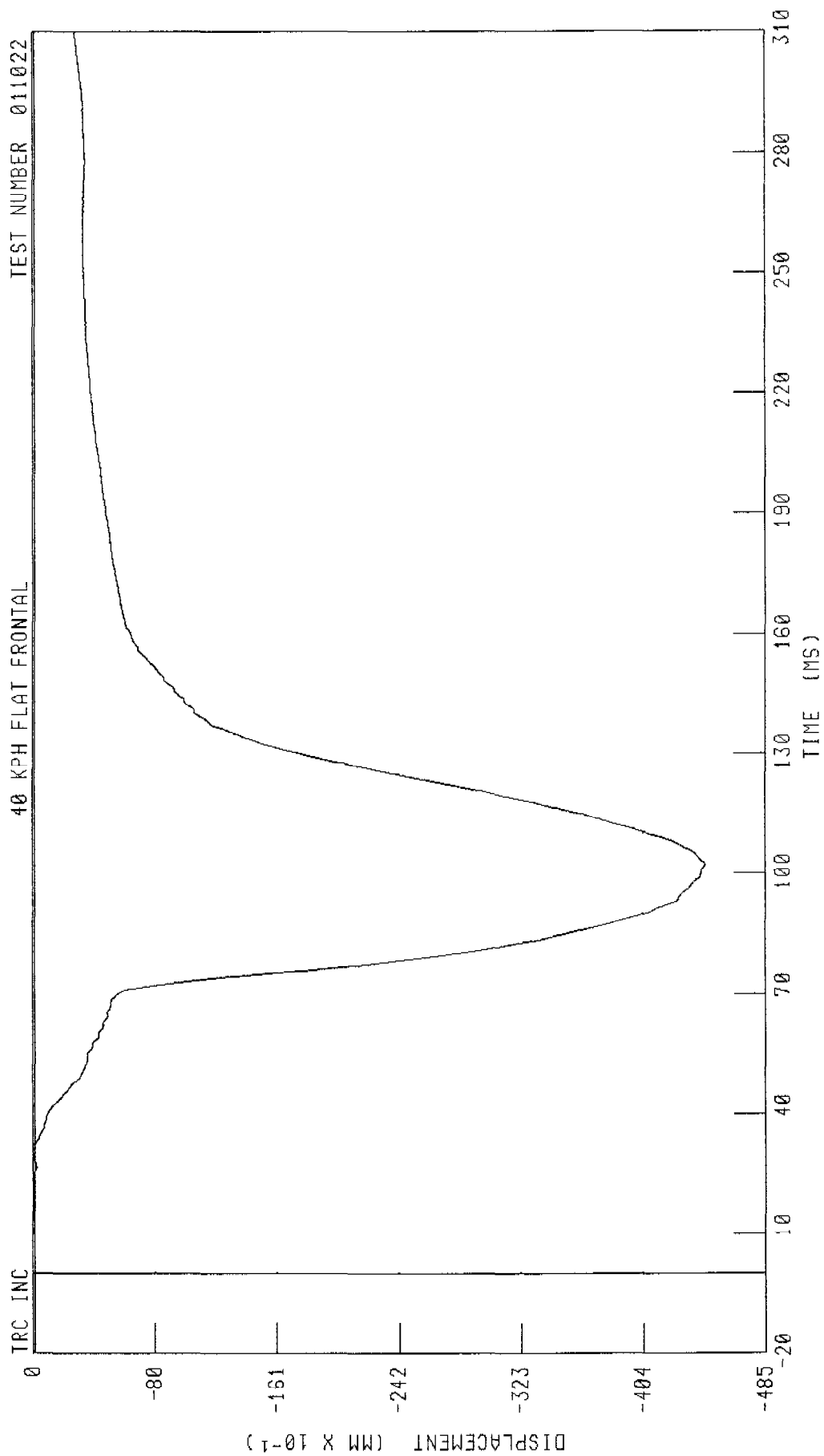
PEAK DATA 41 92 G @ 87 04 MS, 0 01 G @ -20 00 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER CHEST DEFLECTION

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL CSTXD1 FILTER CH CLASS 600

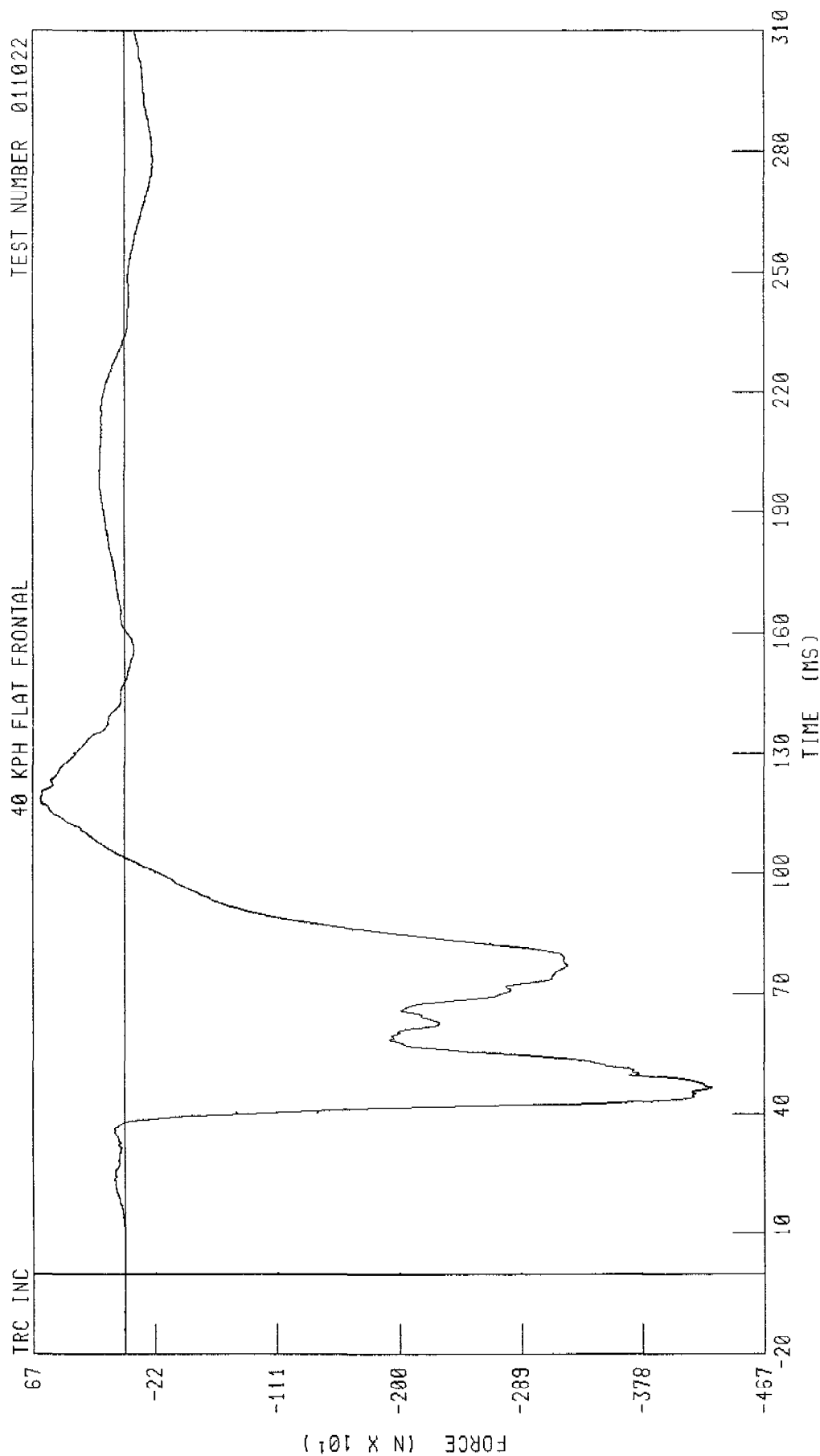
PEAK DATA 0 11 MM @ 31 60 MS, -44 51 MM @ 102 32 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER LEFT FEMUR FORCE

40 KPH FLAT FRONTAL

TEST NUMBER 011022



TIME (MS)

PEAK DATA 615 63 N @ 118 64 MS, -4290 84 N @ 46 40 MS

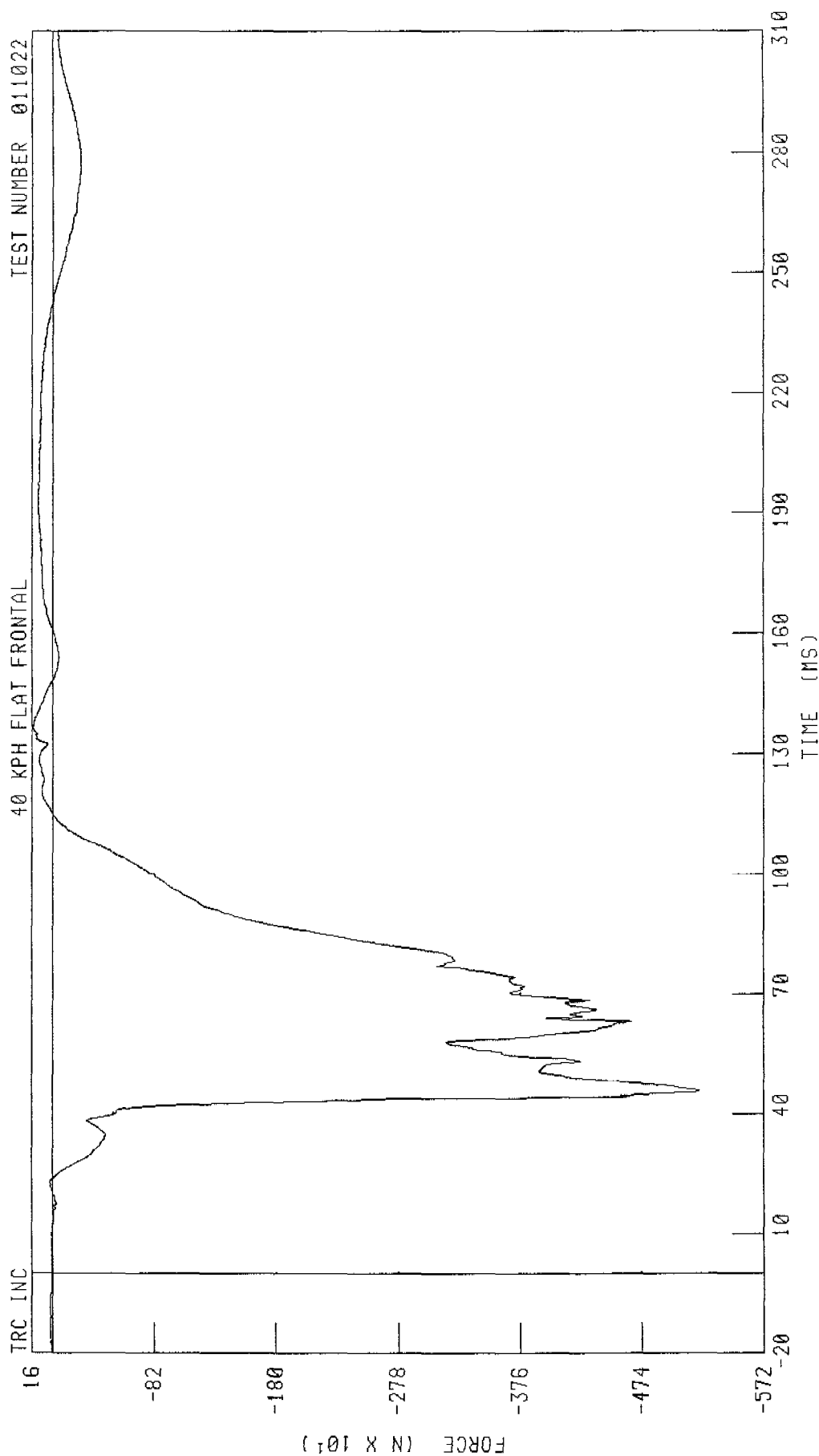
CHANNEL LFMZF1 FILTER CH CLASS 600

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER RIGHT FEMUR FORCE

40 KPH FLAT FRONTAL

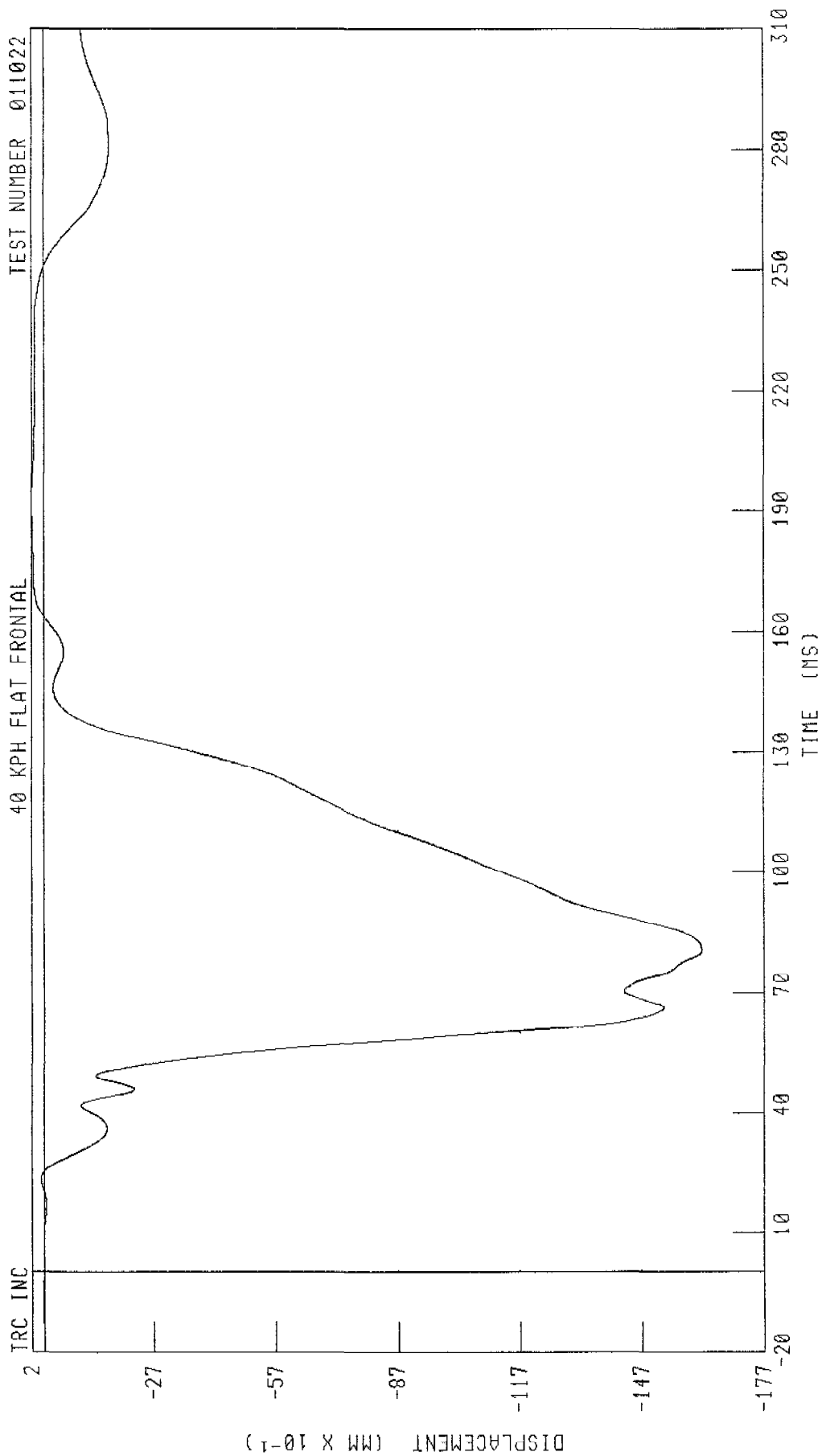
TEST NUMBER 011022



CHANNEL RFMZF1 FILTER CH CLASS 600

PEAK DATA 152 46 N 0 136 56 MS, -5203 62 N 0 45 68 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER LEFT TIBIA TO KNEE DISPLACEMENT



CHANNEL KNLXD1 FILTER CH CLASS 180

PEAK DATA 0 30 MM @ 192 72 MS, -16 17 MM @ 80 56 MS

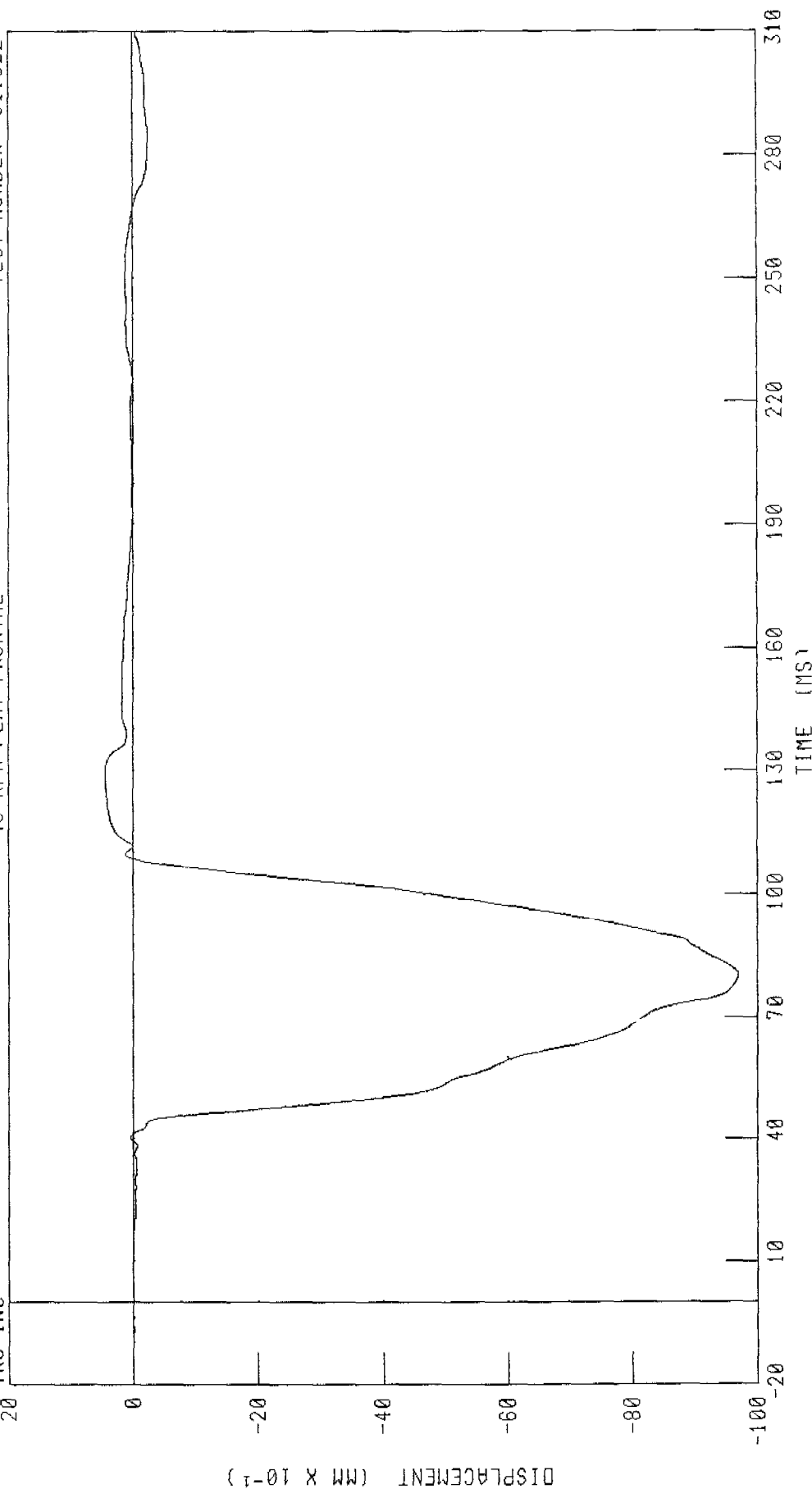
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER RIGHT TIBIA TO KNEE DISPLACEMENT

40 KPH FLAT FRONTAL

TEST NUMBER 011022

IRC INC



CHANNEL KNRXD1 FILTER CH CLASS 180

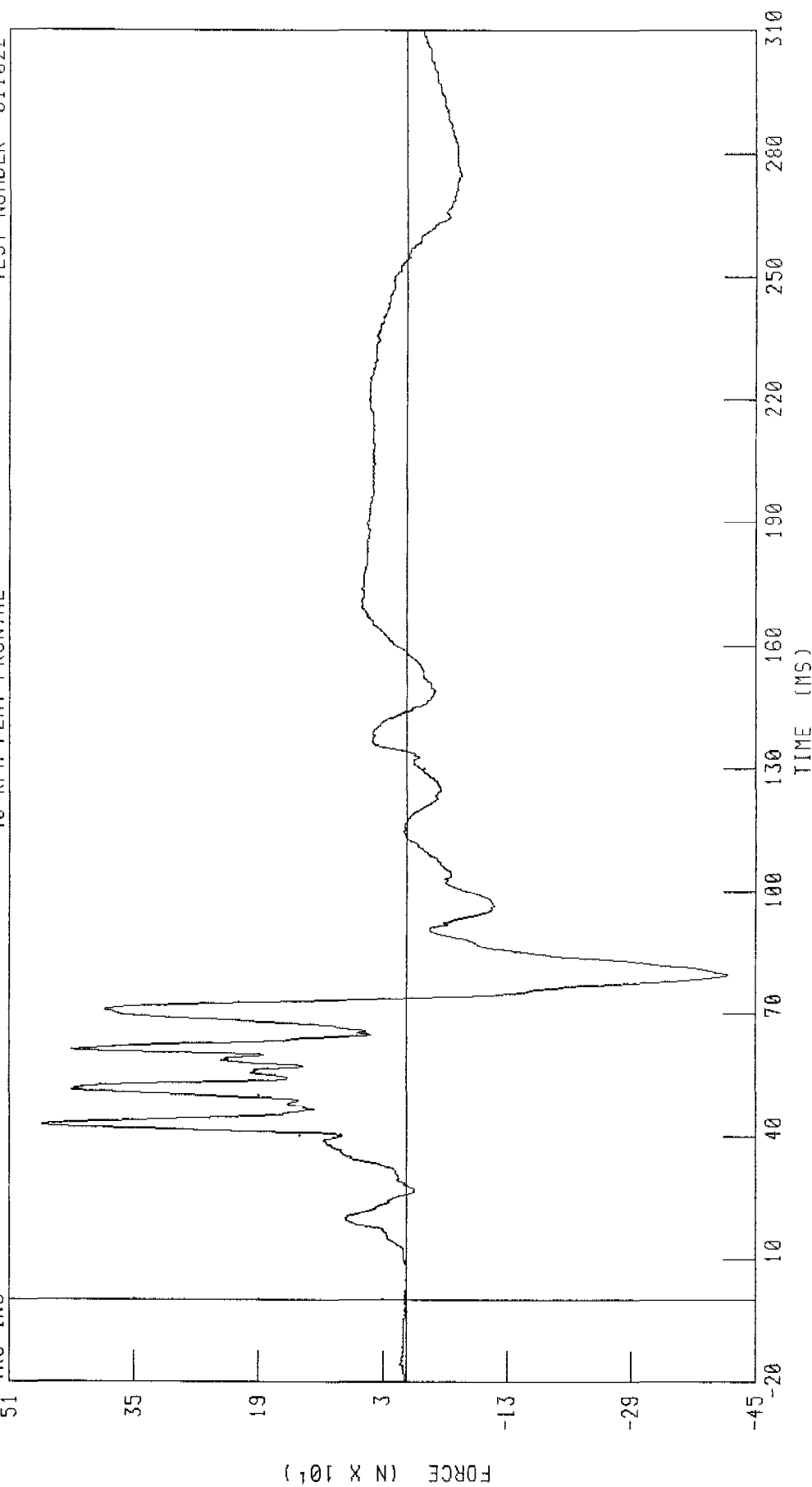
PEAK DATA 0 44 MM @ 128 80 MS, -9 70 MM @ 90 16 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
 DRIVER LEFT UPPER TIBIA X-AXIS FORCE

TRC INC

40 KPH FLAT FRONTAL

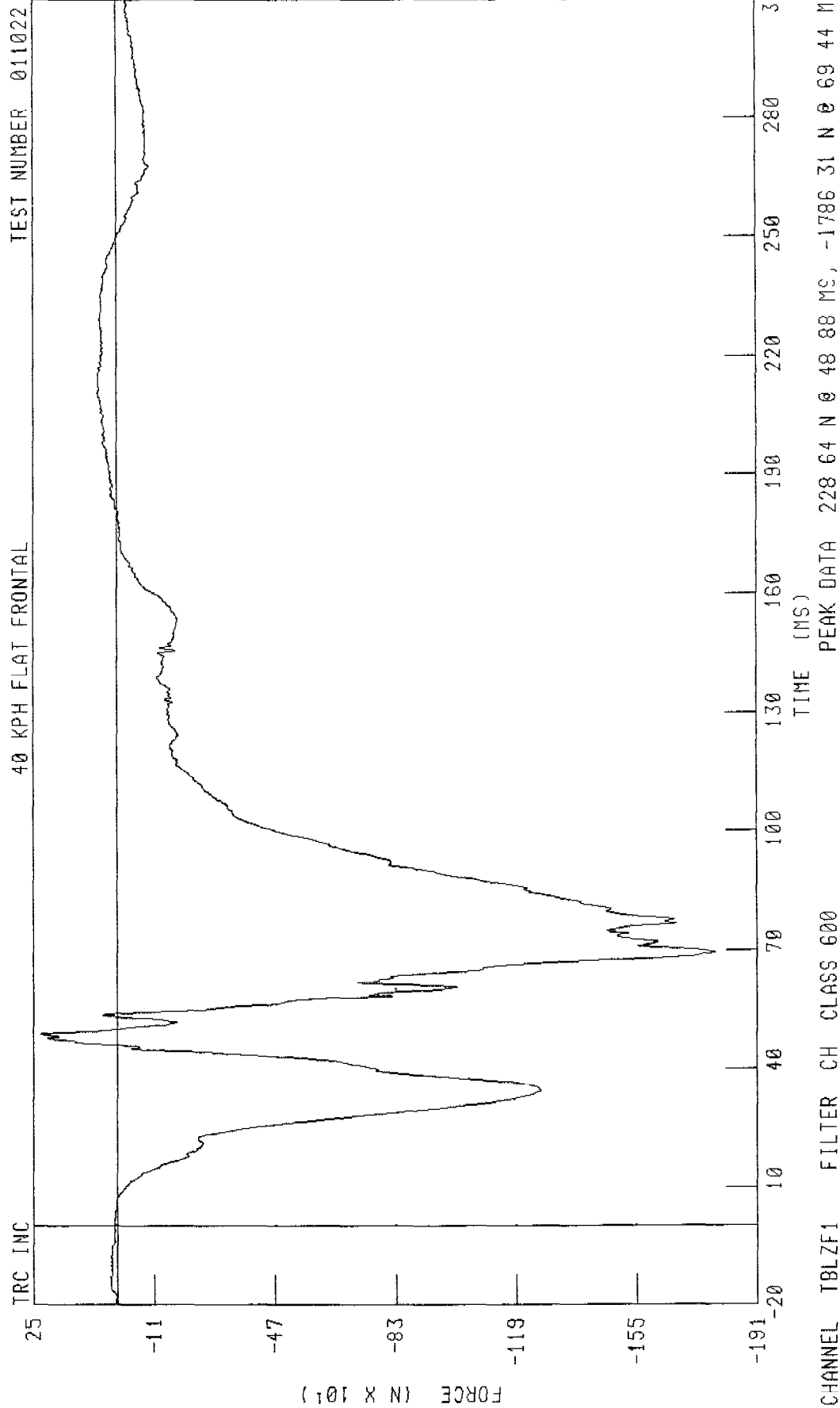
TEST NUMBER 011022



CHANNEL TBLXF1 FILTER CH CLASS 600

PEAK DATA 467 81 N @ 42 80 MS, -415 15 N @ 79 60 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER LEFT UPPER TIBIA Z-AXIS FORCE
40 KPH FLAT FRONTAL

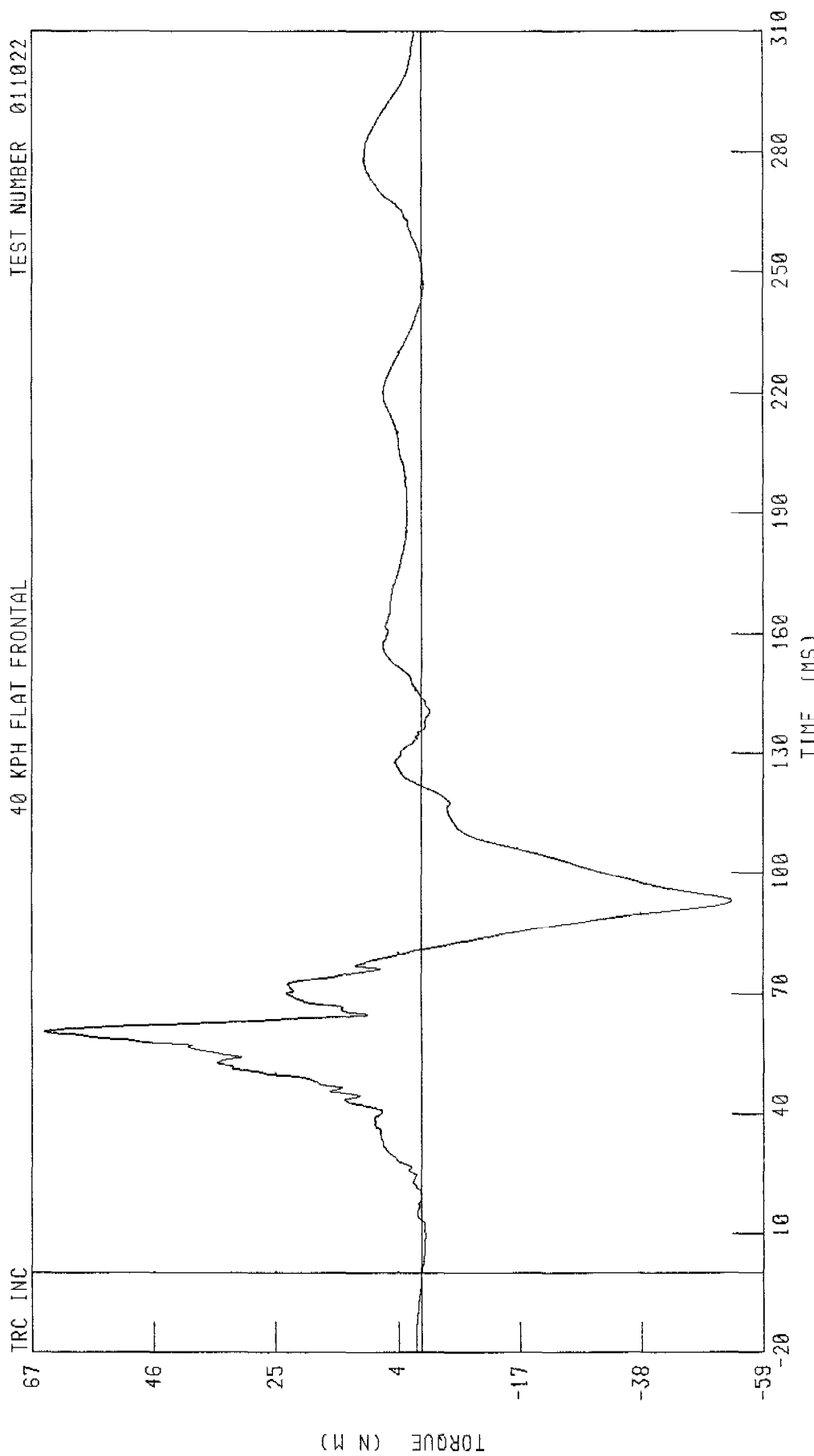


2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER LEFT UPPER TIBIA MOMENT ABOUT X AXIS

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL TBLXM1 FILTER CH CLASS 600

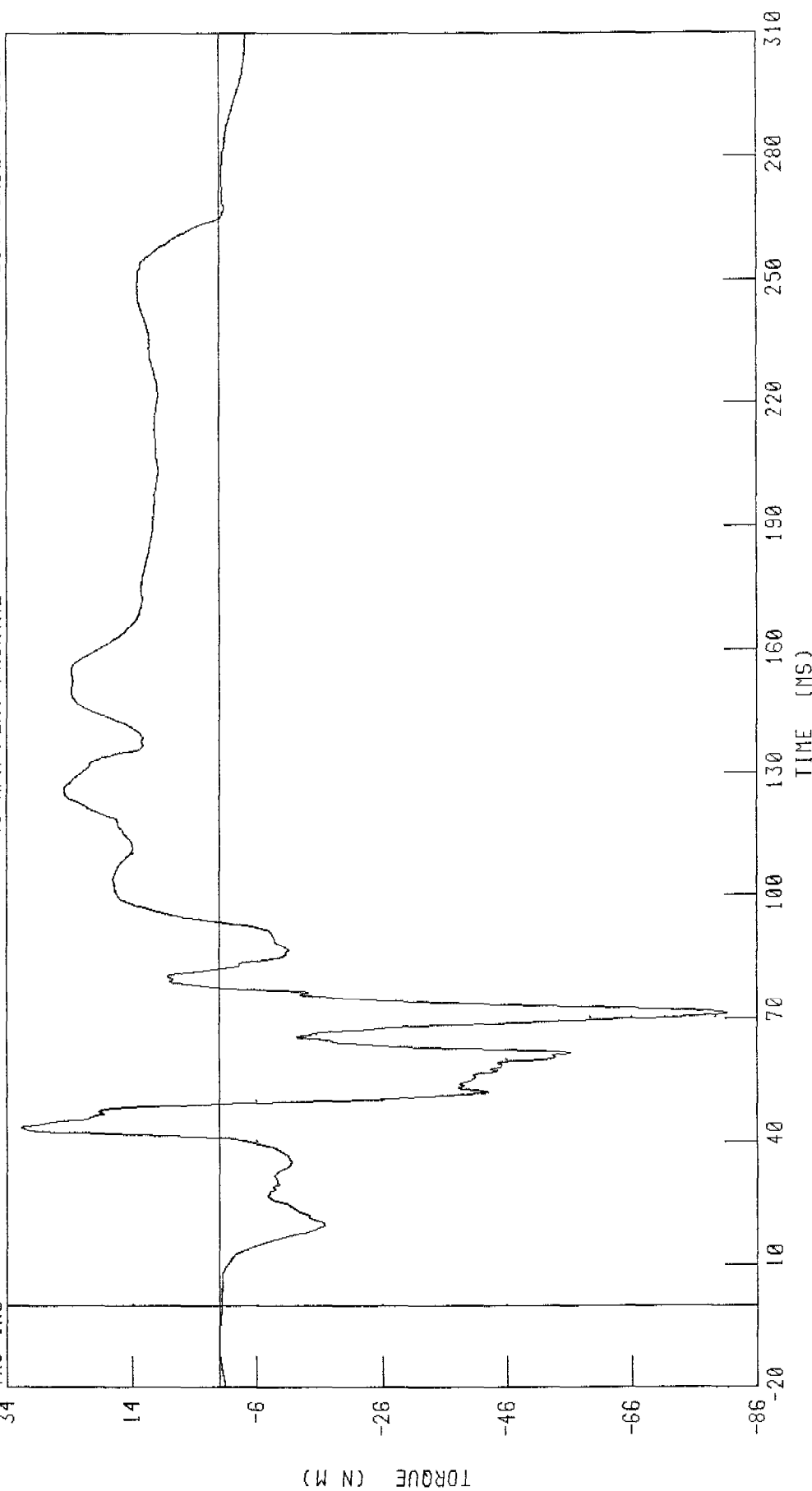
PEAK DATA 64 85 N M @ 60 32 MS, -53 73 N M @ 93 12 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER LEFT UPPER TIBIA MOMENT ABOUT Y AXIS

TRC INC

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL TBLYN1 FILTER CH CLASS 600

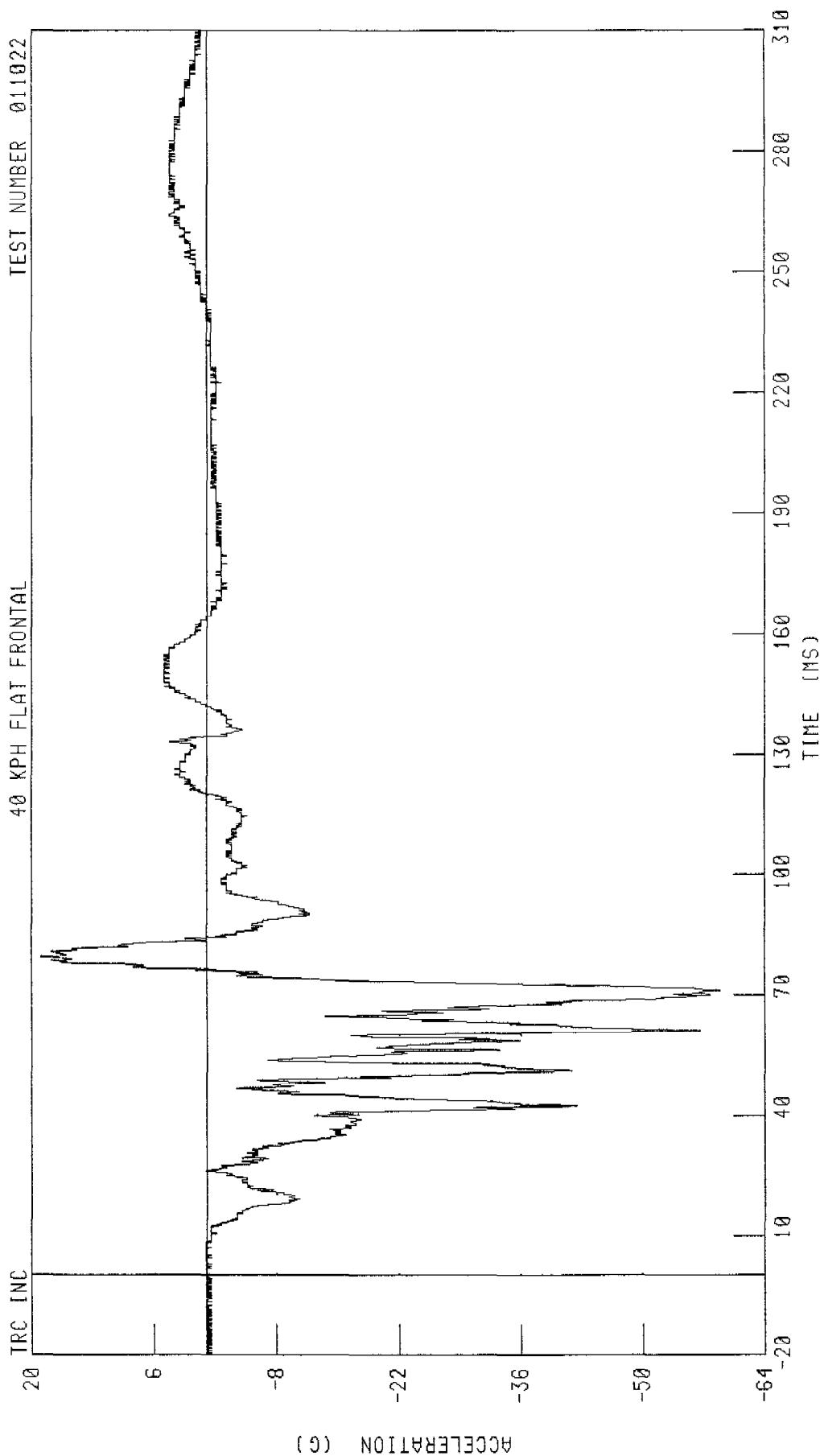
PEAK DATA 31 73 N M @ 43 36 MS, -81 25 N M @ 71 12 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER LEFT TIBIA X-AXIS ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL TBLXG1 FILTER CH CLASS 1000

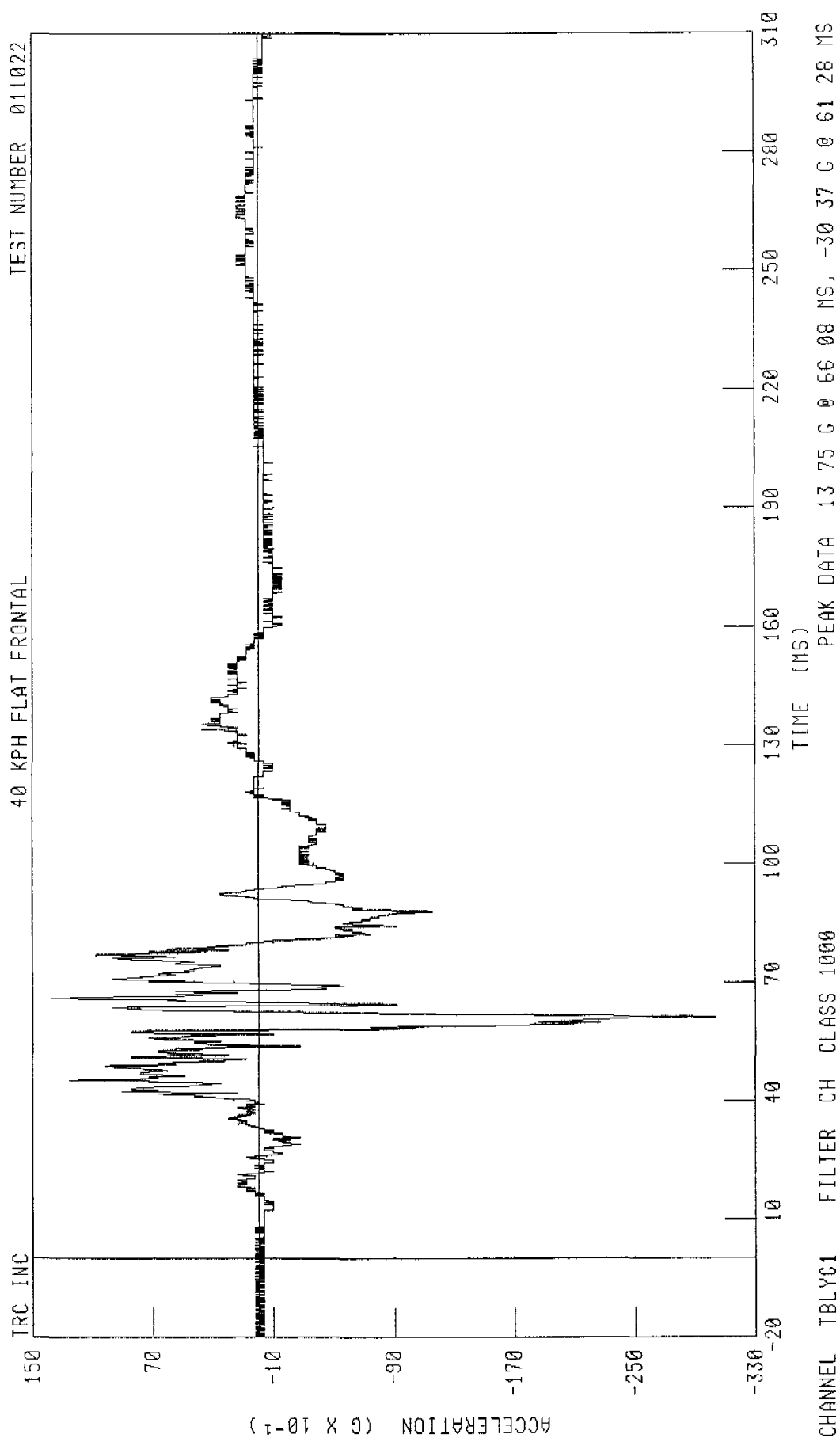
PEAK DATA 18 98 G @ 79 36 MS, -58 94 G @ 70 96 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER LEFT TIBIA Y-AXIS ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022



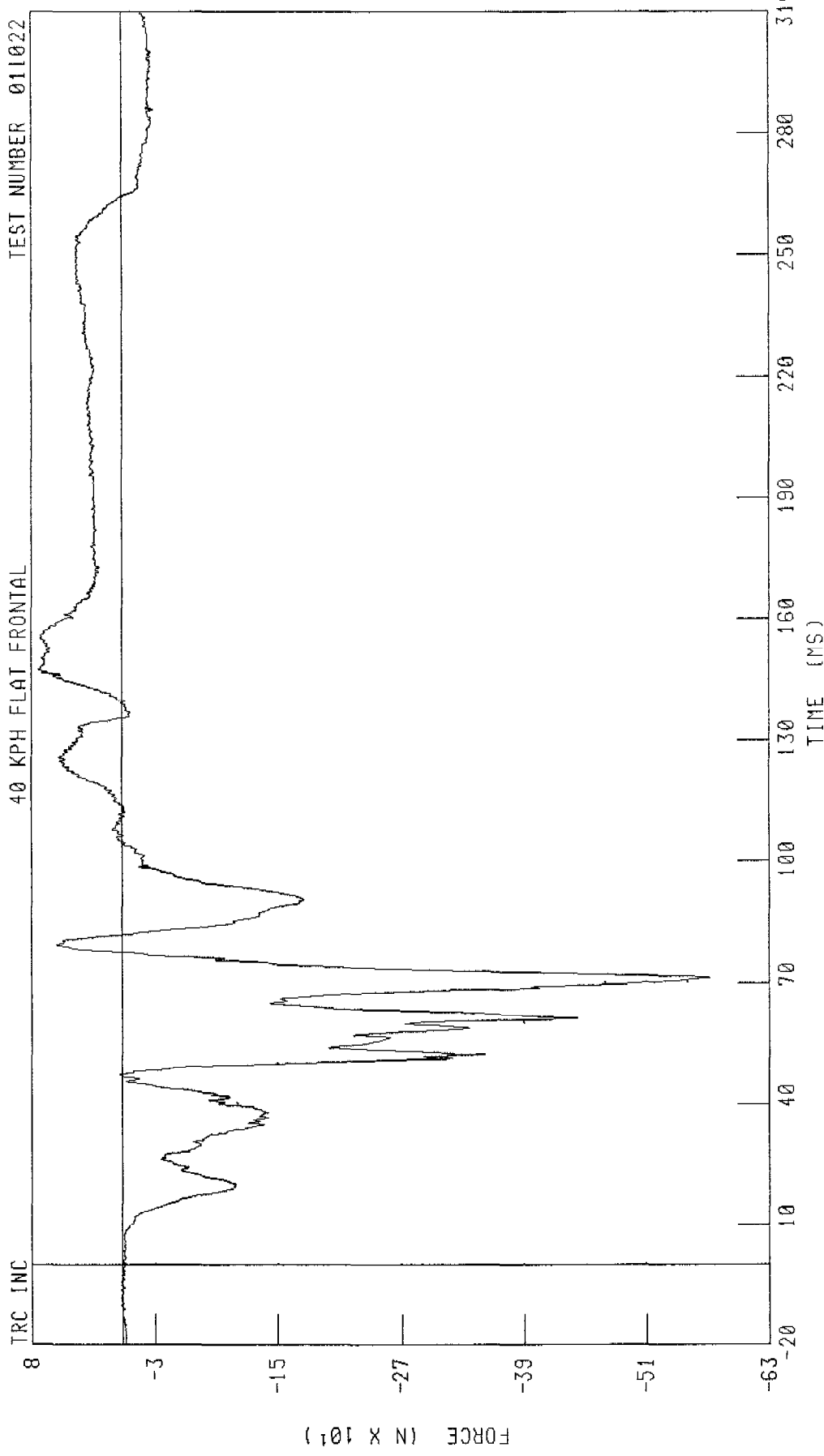
CHANNEL TBLYG1 FILTER CH CLASS 1000

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER LEFT LOWER TIBIA X-AXIS FORCE

40 KPH FLAT FRONTAL

TEST NUMBER 011022



TIME (MS)

PEAK DATA 80 87 N @ 147 44 MS, -574 05 N @ 71 28 MS

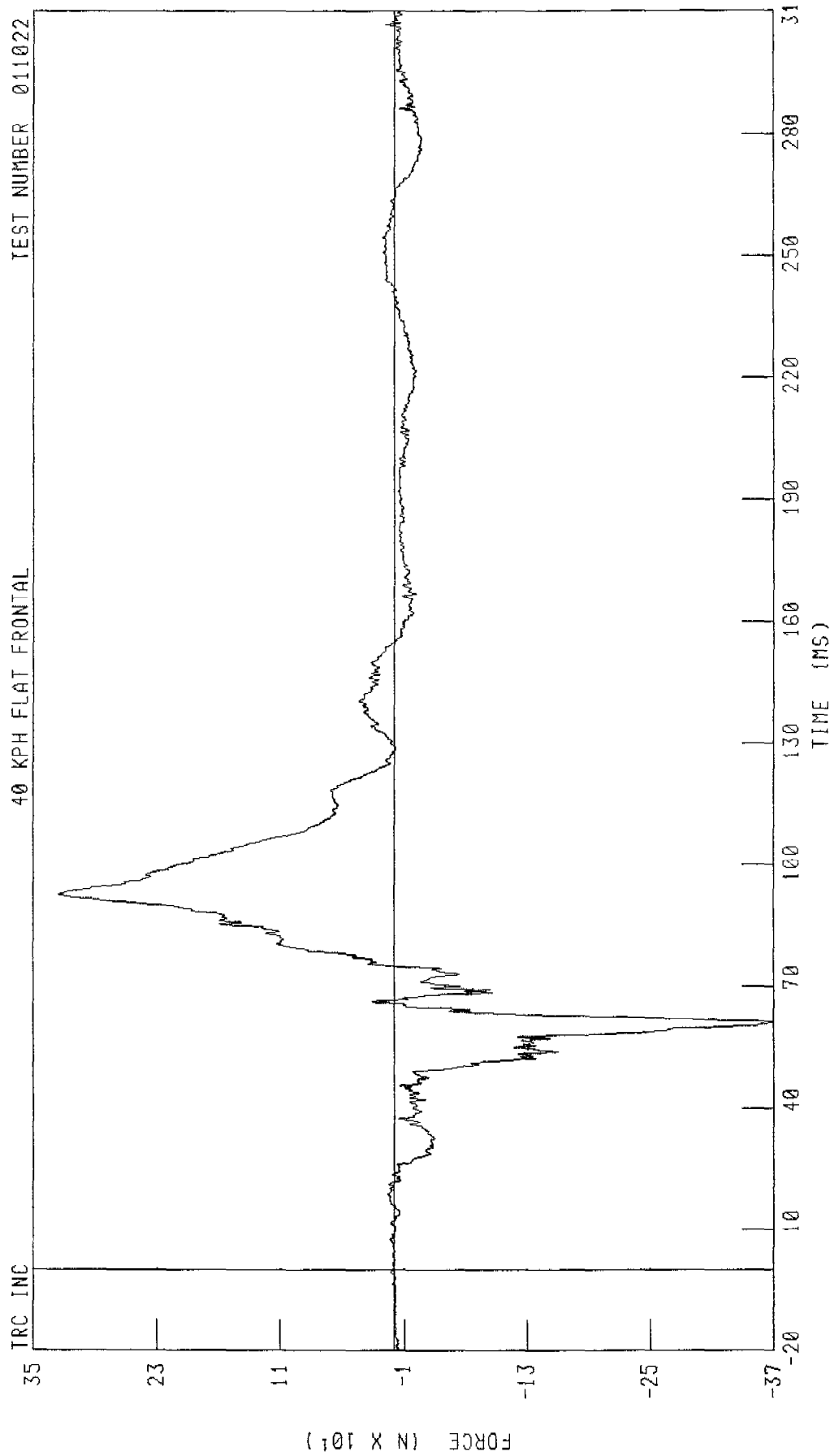
CHANNEL ANLXF1 FILTER CH CLASS 600

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER LEFT LOWER TIBIA Y-AXIS FORCE

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL ANLYF1 FILTER CH CLASS 600

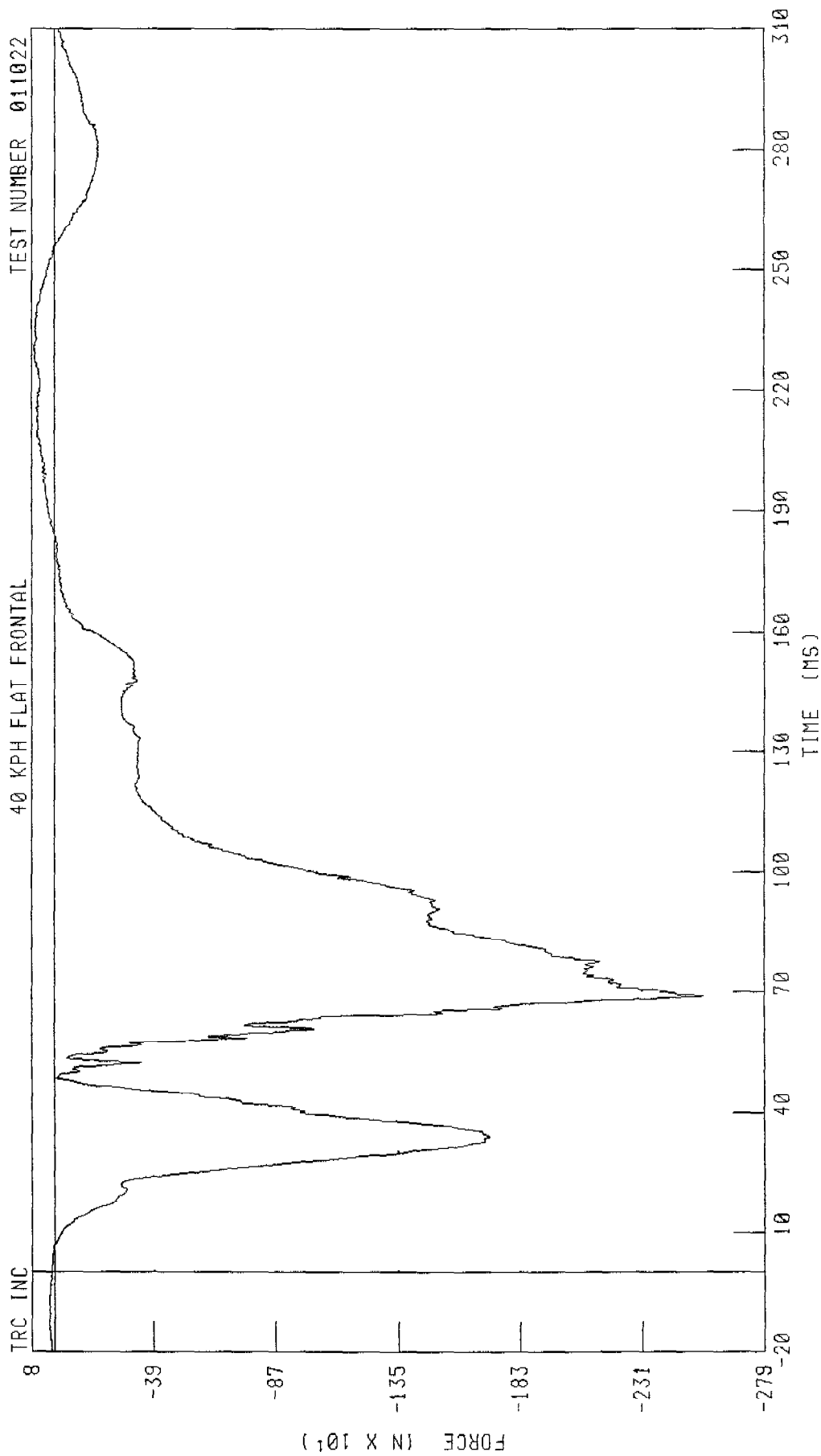
PEAK DATA 325 64 N 92 72 MS, -379 50 N 0 61 12 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER LEFT LOWER TIBIA Z-AXIS FORCE

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL ANLZF1 FILTER CH CLASS 600

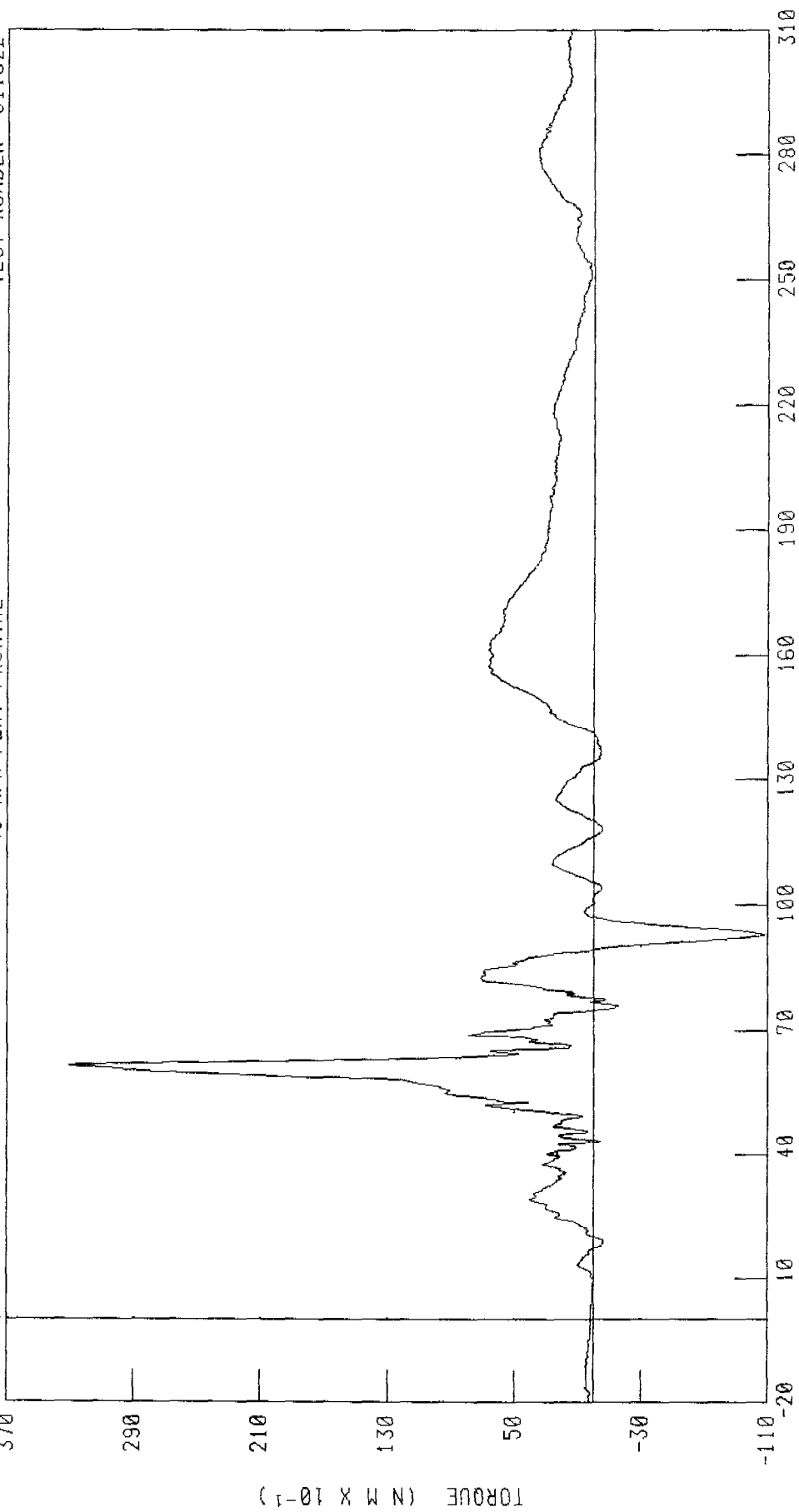
PEAK DATA 79 58 N @ 230 56 MS, -2554 58 N @ 68 80 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER LEFT LOWER TIBIA MOMENT ABOUT X AXIS

TEST NUMBER 011022

40 KPH FLAT FRONTAL

TRC INC



TIME (MS)

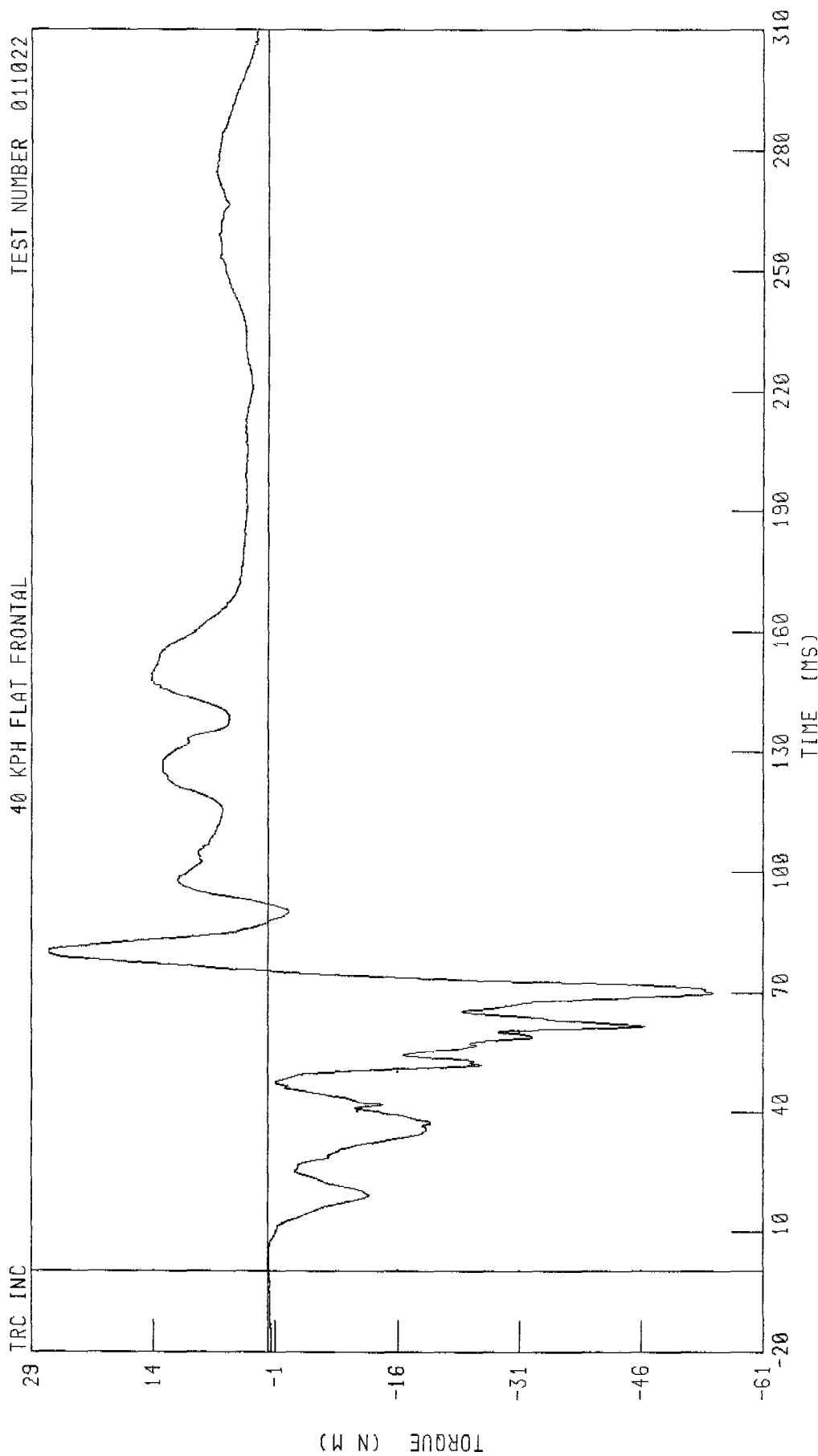
CHANNEL ANLXM1 FILTER CH CLASS 600

PEAK DATA 33 08 N M @ 61 28 MS, -10 83 N M @ 92 96 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER LEFT LOWER TIBIA MOMENT ABOUT Y AXIS

40 KPH FLAT FRONTAL

TEST NUMBER 011022



TIME (MS)

CHANNEL ANLYM1 FILTER CH CLASS 600

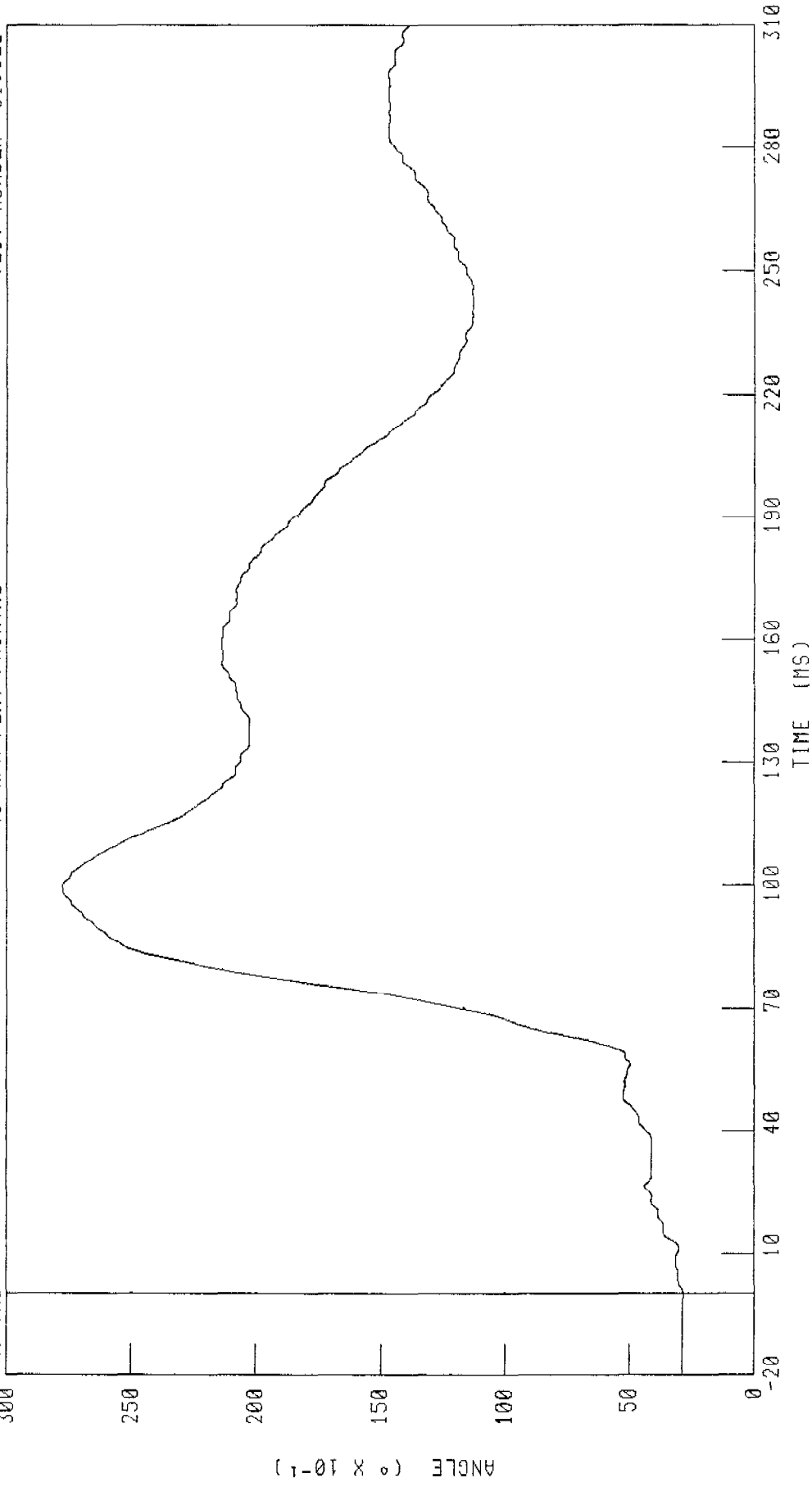
PEAK DATA 26 92 N M @ 80 32 MS, -54 92 N M @ 69 92 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER LEFT FOOT TO ANKLE X-AXIS DISPLACEMENT

TRC INC

40 KPH FLAT FRONTAL

TEST NUMBER 011022



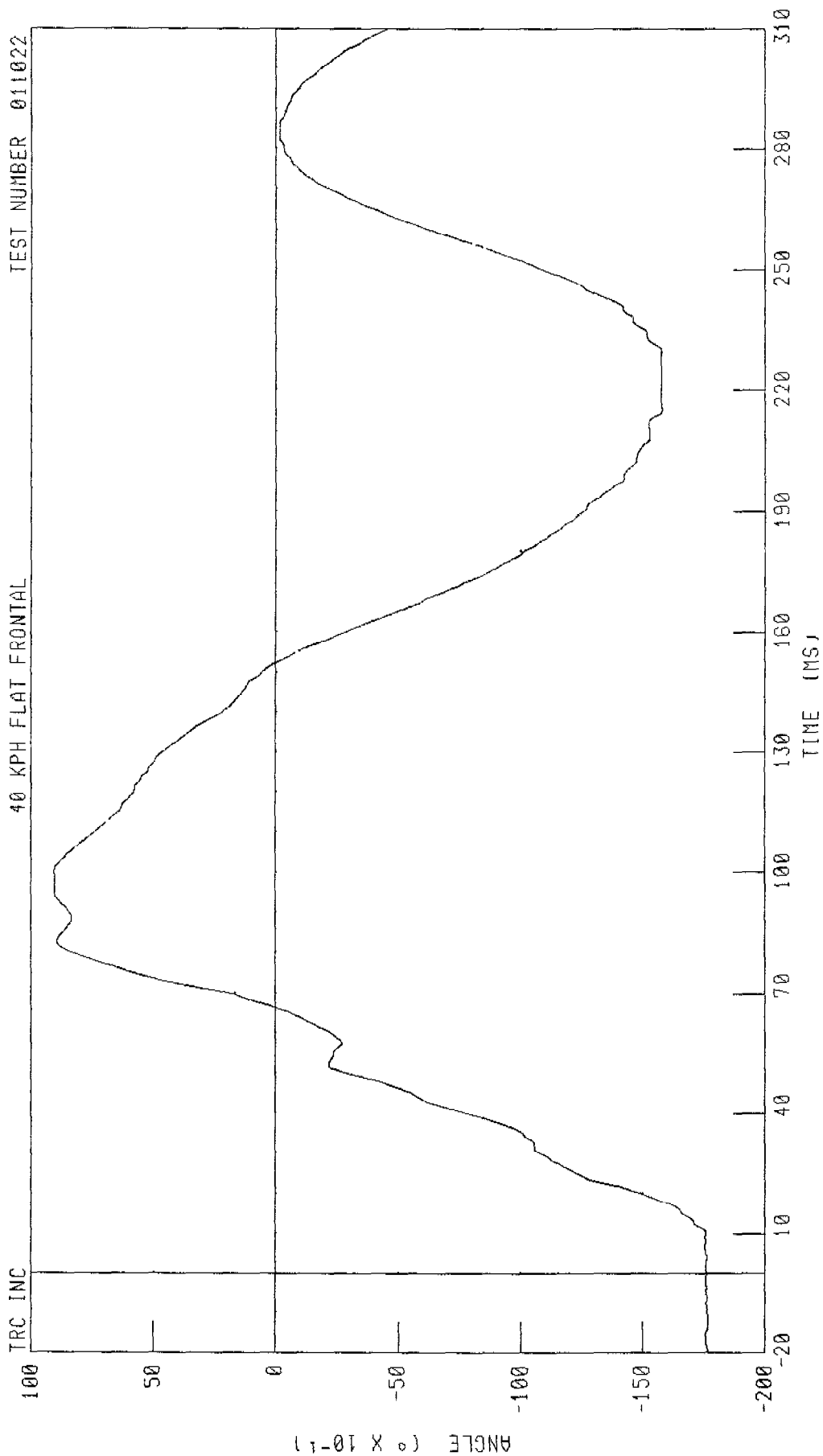
CHANNEL FTLXD1 FILTER CH CLASS 100

PEAK DATA 27 75 ° @ 98 40 MS, 2 85 ° @ -0 16 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
 DRIVER LEFT FOOT TO ANKLE Y-AXIS DISPLACEMENT

TEST NUMBER 011022

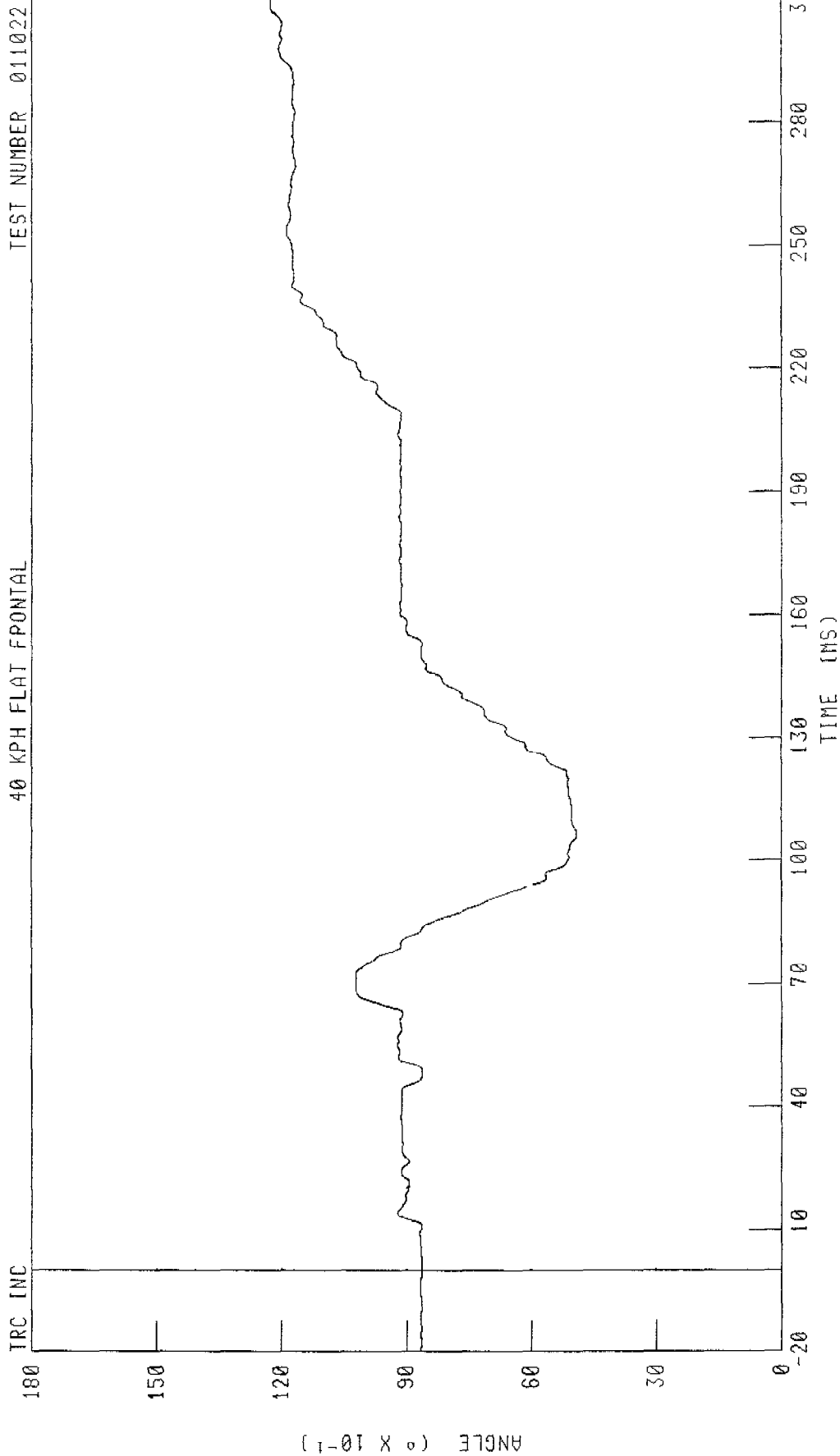
40 KPH FLAT FRONTAL



CHANNEL FTLYD1 FILTER CH CLASS 180

PEAK DATA 9 07 ° @ 99 92 MS, -17 68 ° @ -13 44 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER LEFT FOOT TO ANKLE Z-AXIS DISPLACEMENT
40 KPH FLAT FRONTAL



TEST NUMBER 011022

CHANNEL FTLZD1 FILTER CH CLASS 180

PEAK DATA 12 26 ° @ 307 68 MS, 4 92 ° @ 105 92 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER LEFT FOOT X-AXIS ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022

TRC INC

32

11

-10

-31

-52

-73

-94

ACCELERATION (G)

TIME (MS)

310

280

250

220

190

160

130

100

70

40

10

-20

CHANNEL FTLX01 FILTER CH CLASS 1000

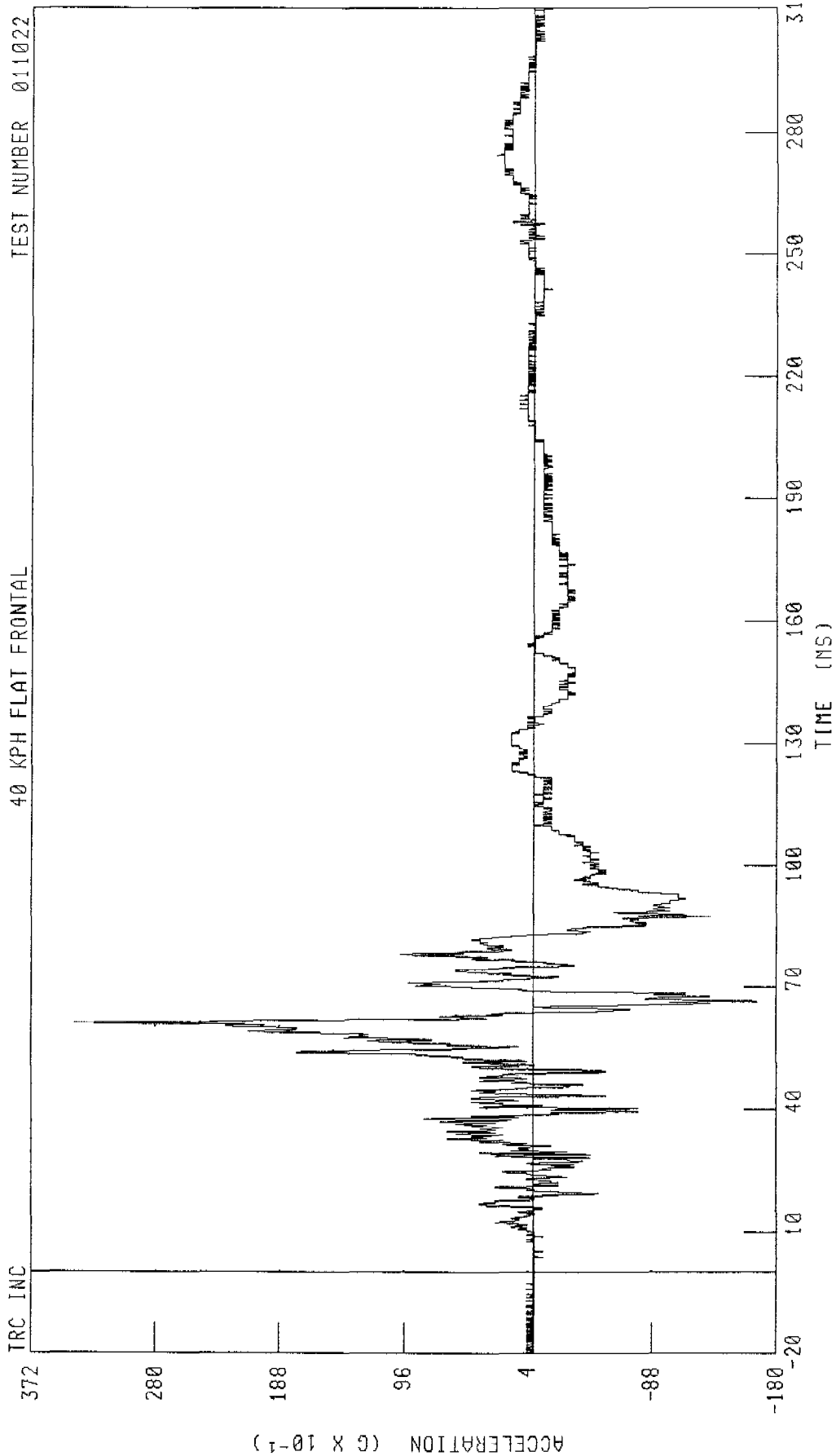
PEAK DATA 29 87 G @ 52 00 MS, -86 38 G @ 66 72 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER LEFT FOOT Y-AXIS ACCELERATION

40 KPH FLAT FRONTAL

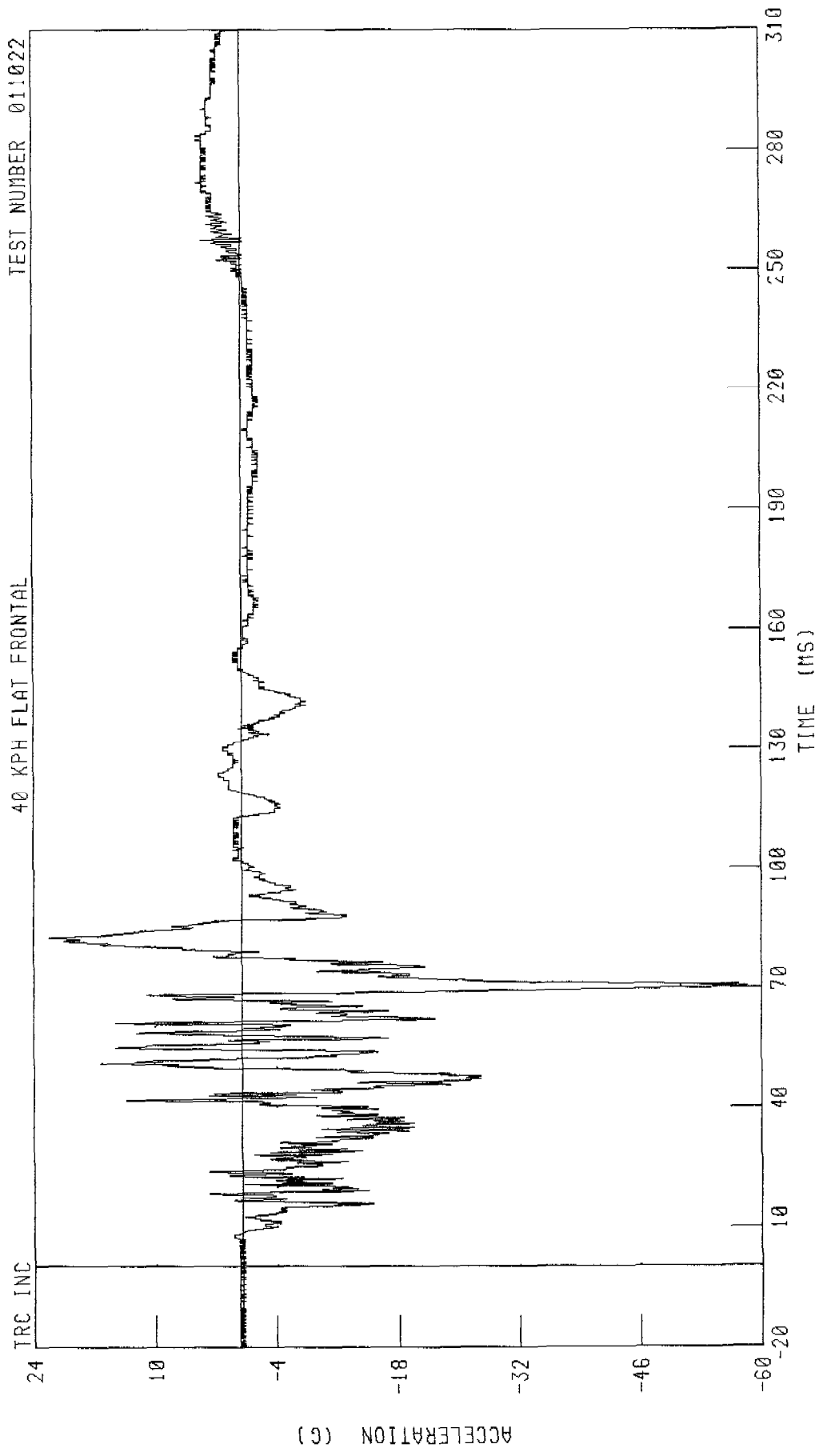
TEST NUMBER 011022



CHANNEL FTLYC1 FILTER CH CLASS 1000

PEAK DATA 34 03 G 60 96 MS, -16 62 G 66 40 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER LEFT FOOT Z-AXIS ACCELERATION

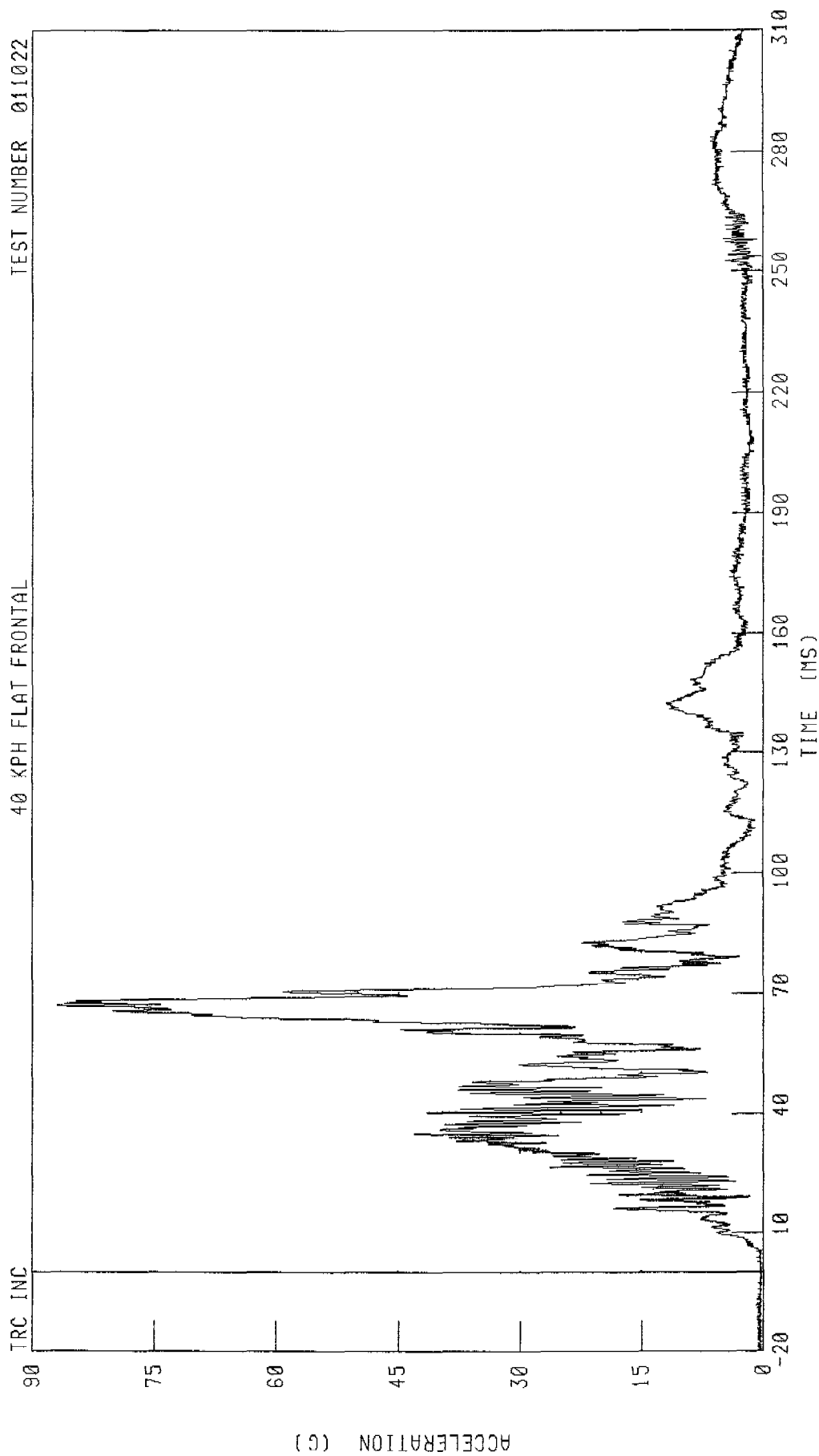


2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER LEFT FOOT RESULTANT ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL FTLRG1 FILTER CH CLASS 1000

PEAK DATA 87 04 0 66 72 MS, 0 30 0 0 -19 84 MS

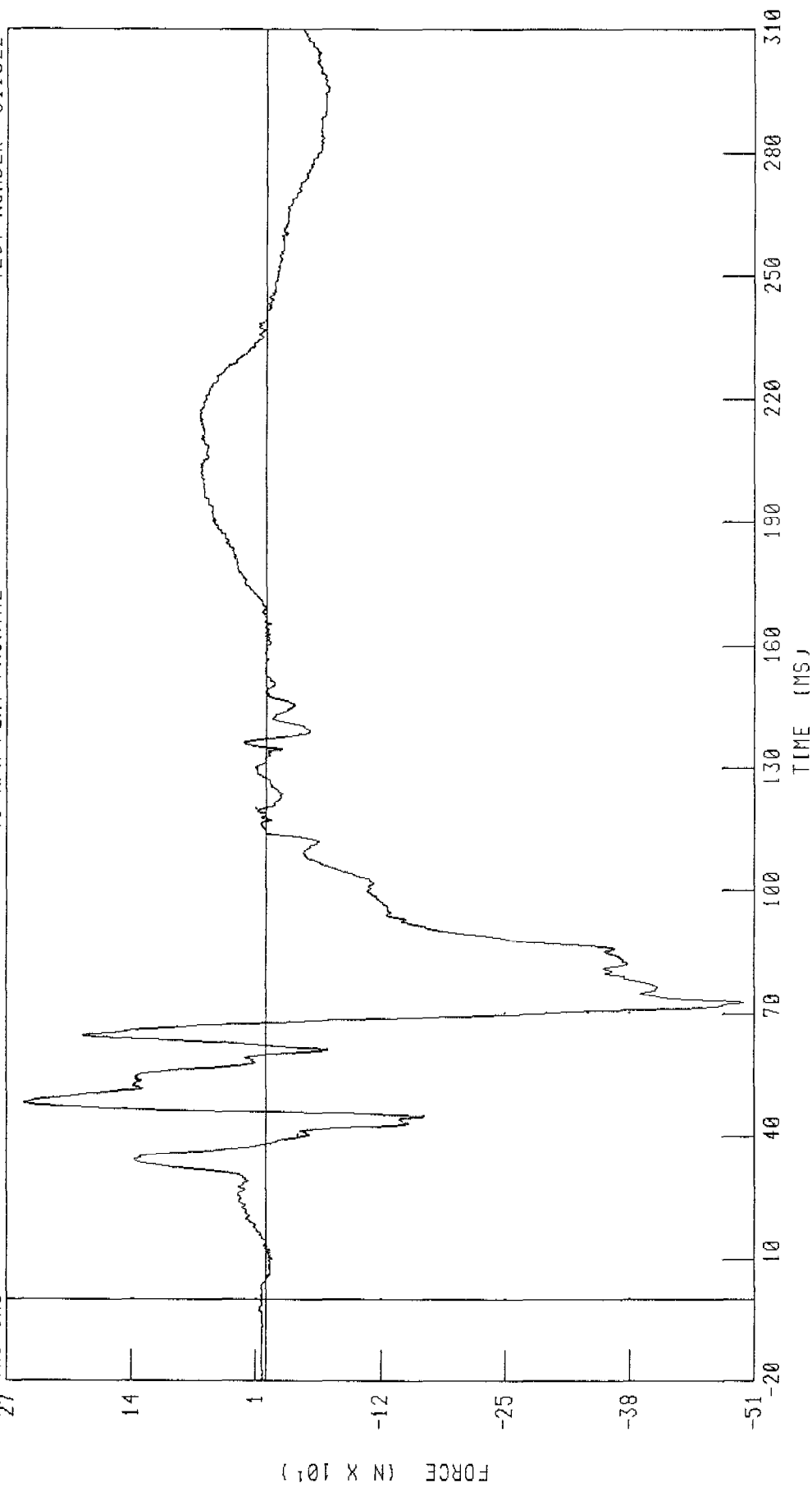
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER RIGHT UPPER TIBIA X-AXIS FORCE

40 KPH FLAT FRONTAL

TEST NUMBER 011022

TRC INC



CHANNEL TBRXF1 FILTER CH CLASS 600

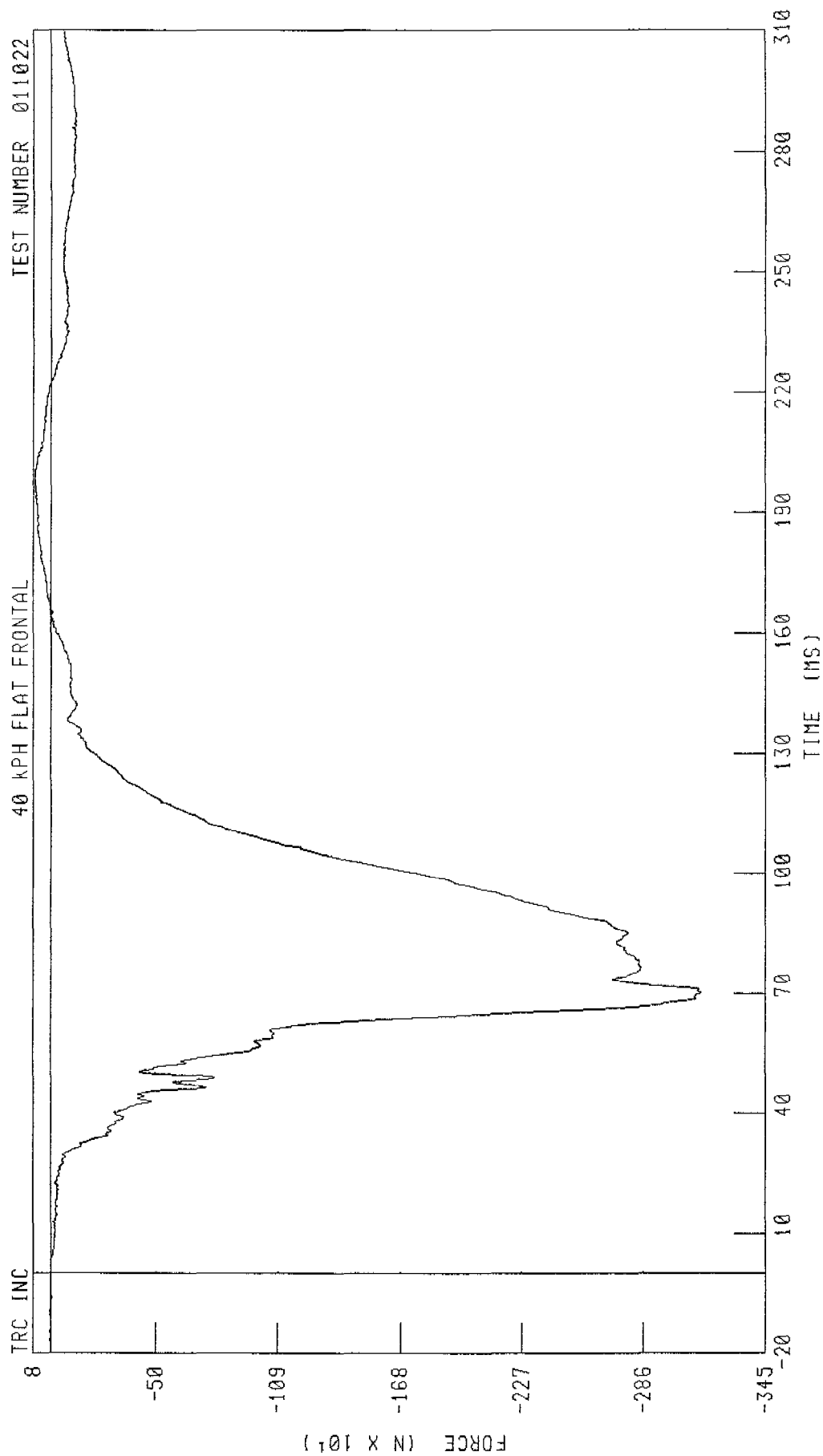
PEAK DATA 252 90 N @ 47 92 MS, -499 56 N @ 72 72 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER RIGHT UPPER TIBIA Z-AXIS FORCE

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL TBRZF1 FILTER CH CLASS 600

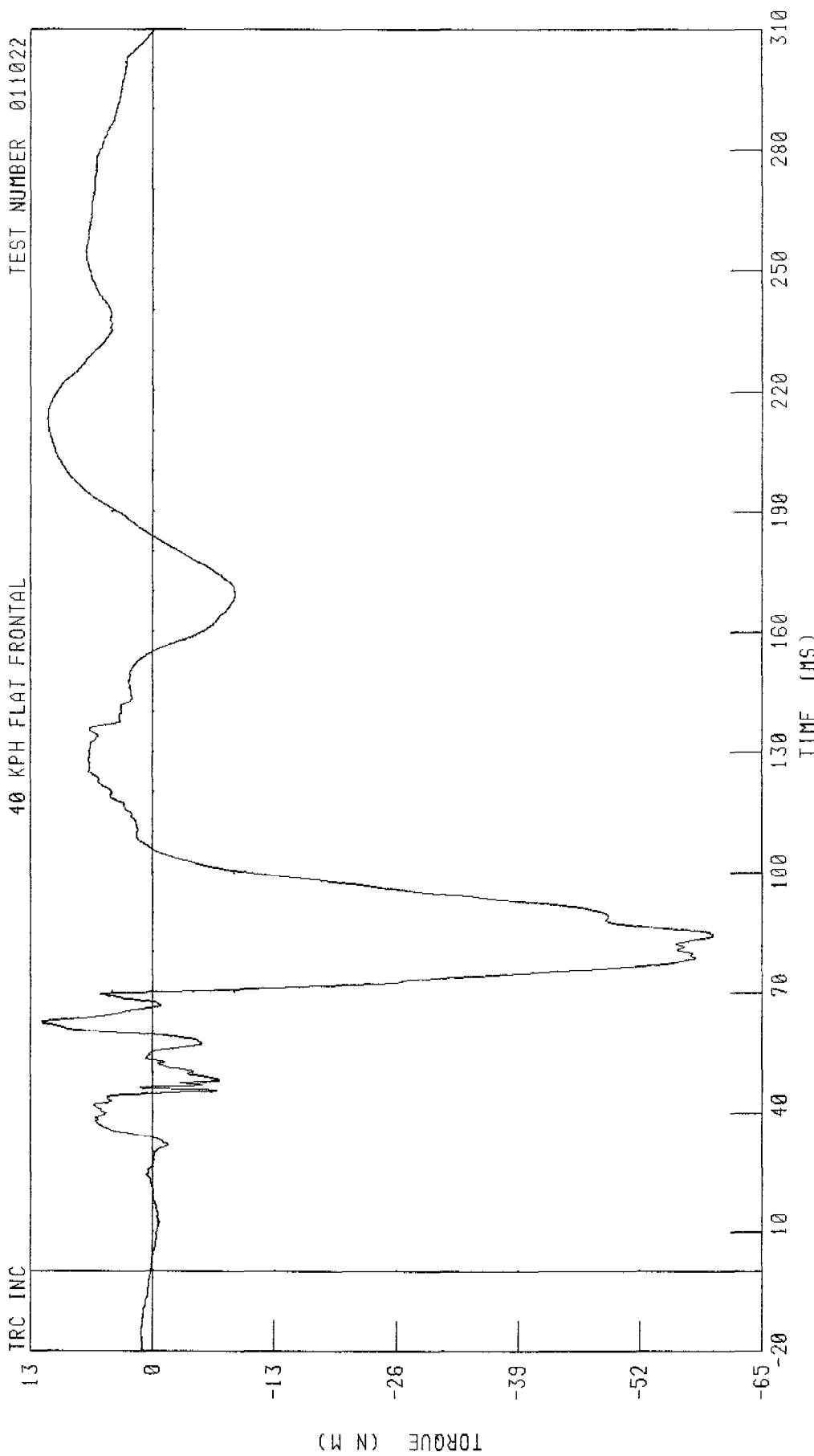
PEAK DATA 75 52 N 195 52 MS, -3146 65 N 270 16 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER RIGHT UPPER TIBIA MOMENT ABOUT X AXIS

40 KPH FLAT FRONTAL

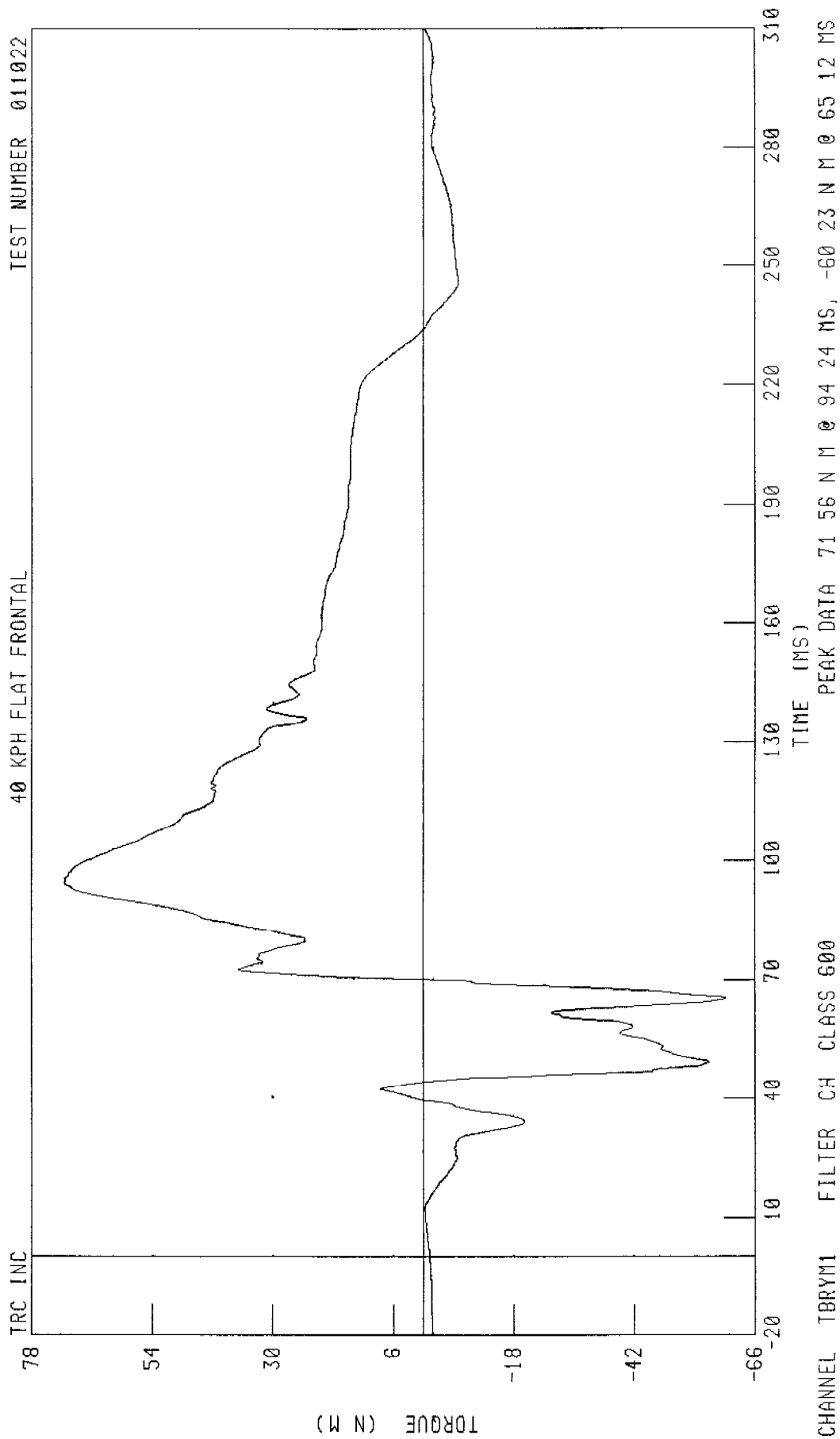
TEST NUMBER 011022



CHANNEL TBRX1 FILTER CH CLASS 600

PEAK DATA 11 87 N M 62 56 MS, -59 85 N M 84 32 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER RIGHT UPPER TIBIA MOMENT ABOUT Y AXIS

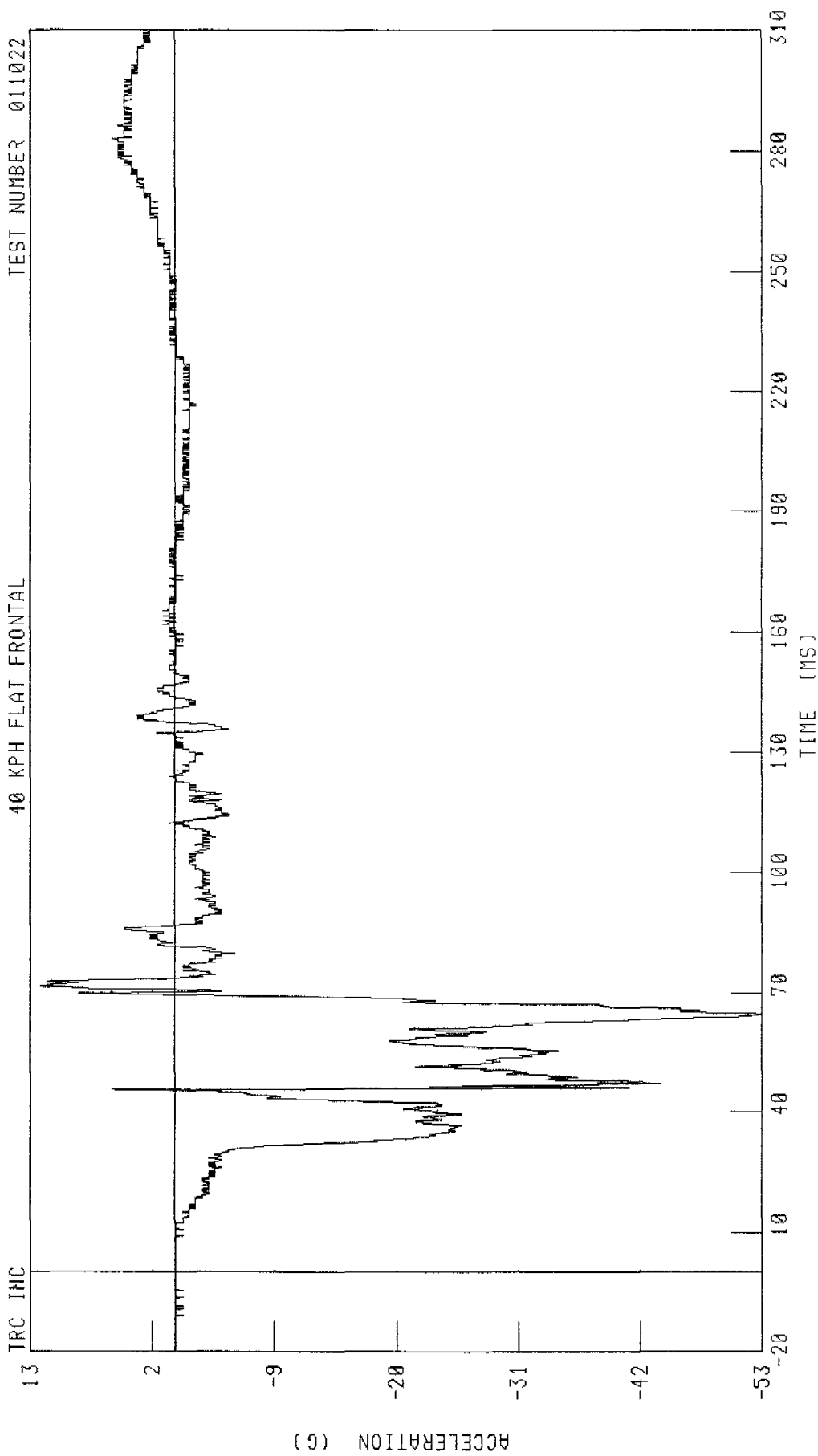


2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER RIGHT TIBIA X-AXIS ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL TBRXG1 FILTER CH CLASS 1000

PEAK DATA 12 10 G @ 71 60 MS, -53 26 G @ 64 48 MS

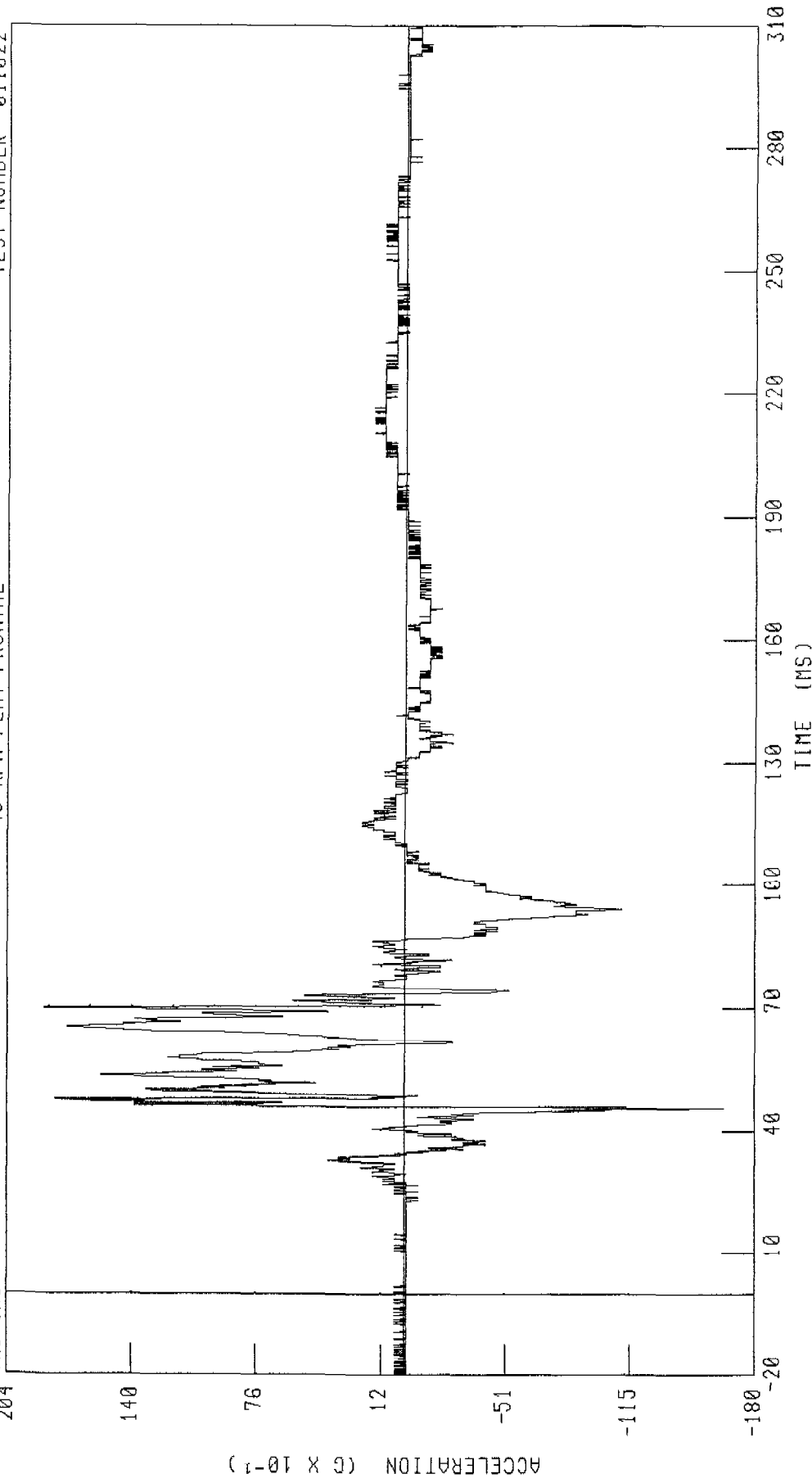
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER RIGHT TIBIA Y-AXIS ACCELERATION

TRC INC

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL TBRYG1 FILTER CH CLASS 1000

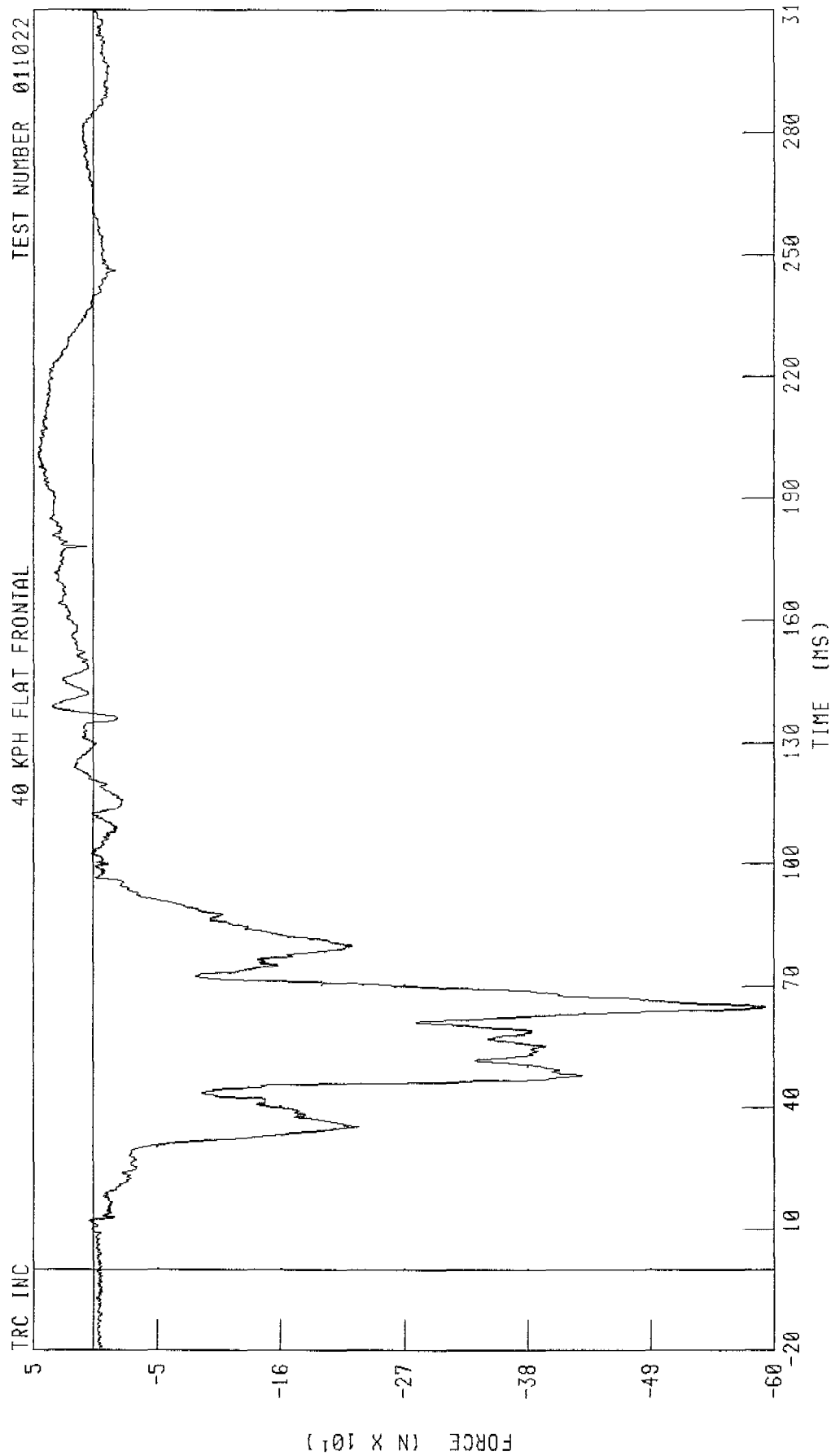
PEAK DATA 18 52 G @ 69 68 MS, -16 42 G @ 45 52 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER RIGHT LOWER TIBIA X-AXIS FORCE

40 KPH FLAT FRONTAL

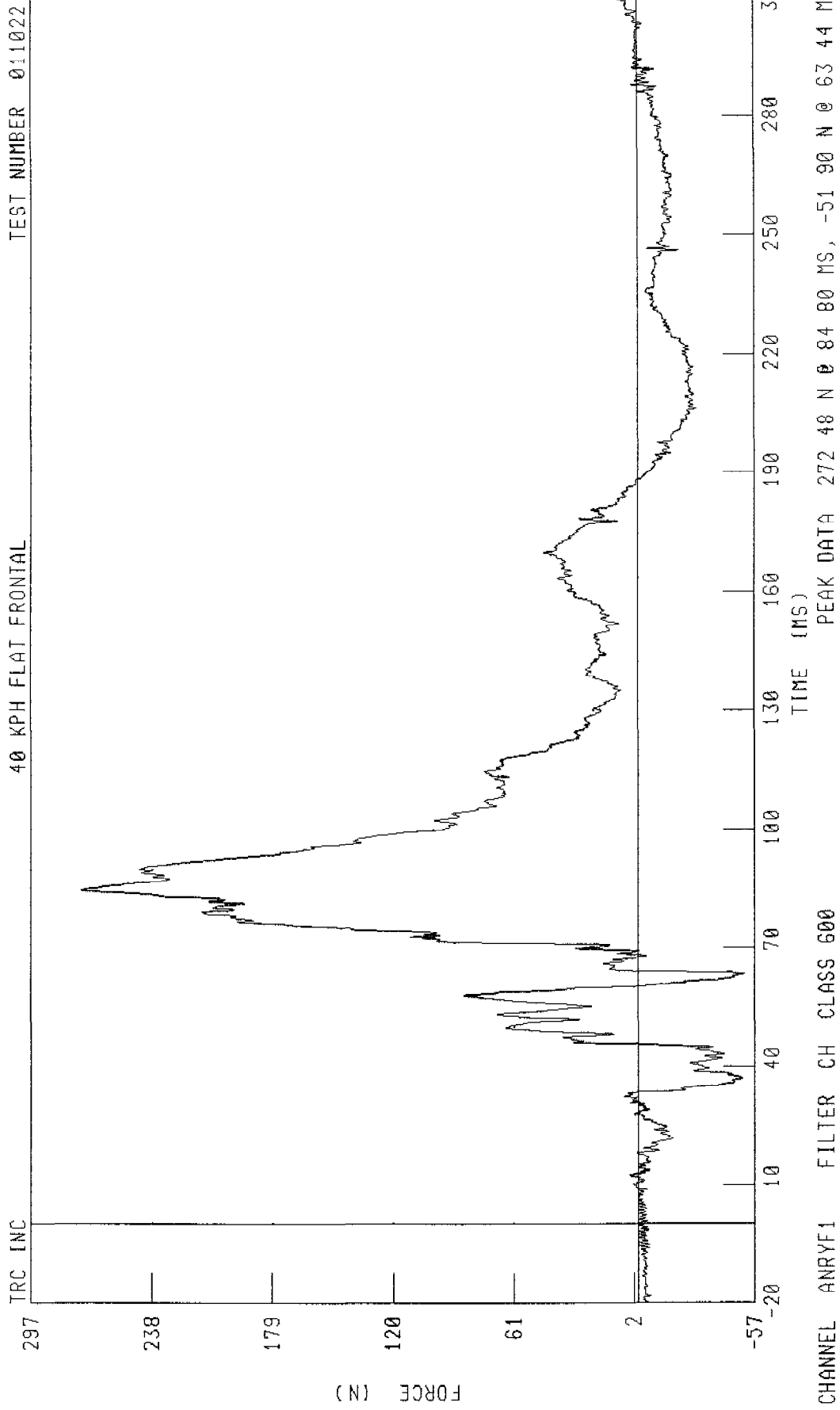
TEST NUMBER 011022



CHANNEL ANRXF1 FILTER CH CLASS 600

PEAK DATA 48 89 N @ 197 60 MS, -600 01 N @ 64 90 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER RIGHT LOWER TIBIA Y-AXIS FORCE

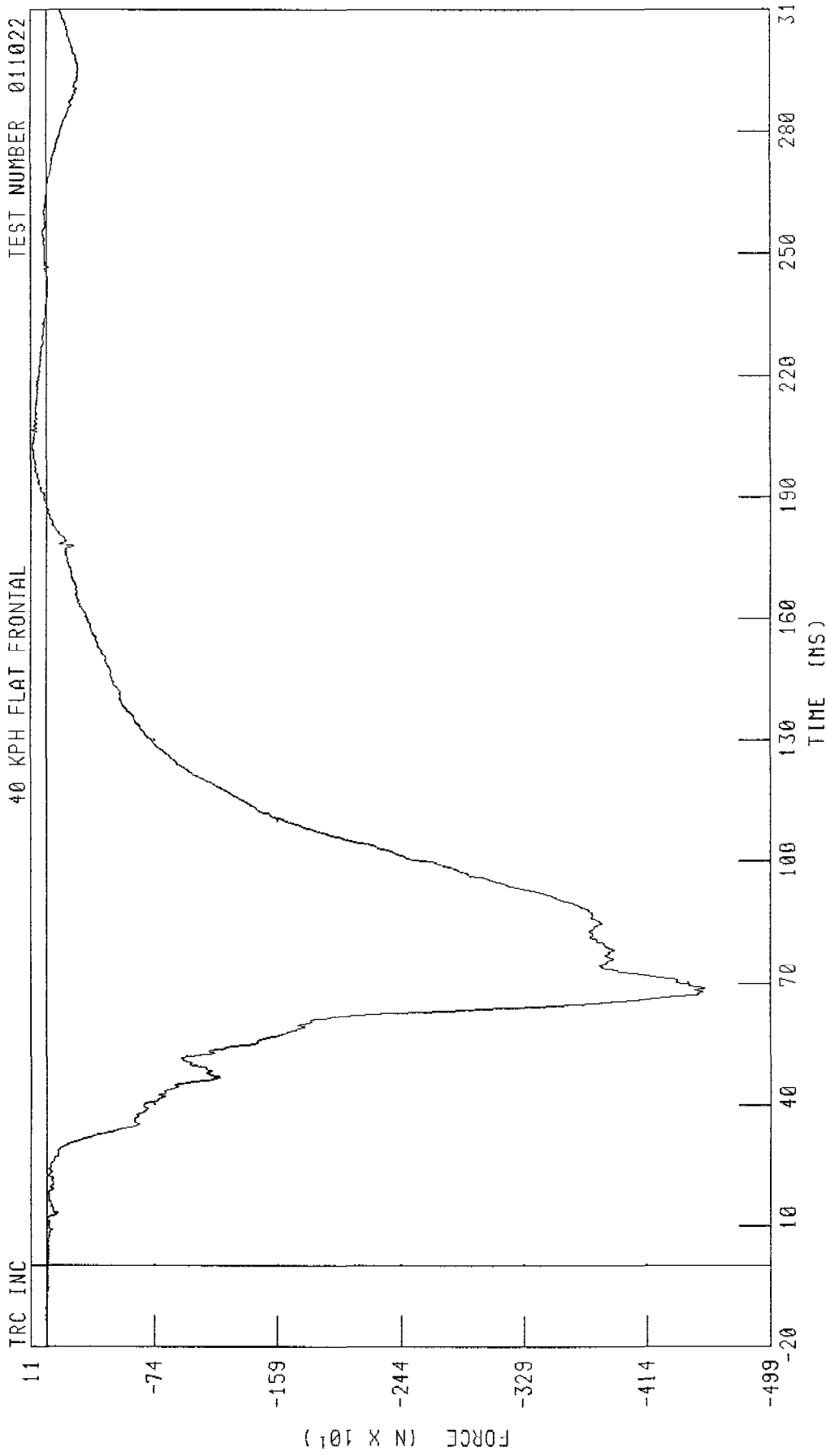


2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER RIGHT LOWER TIBIA Z-AXIS FORCE

40 KPH FLAT FRONTAL

TEST NUMBER 011022



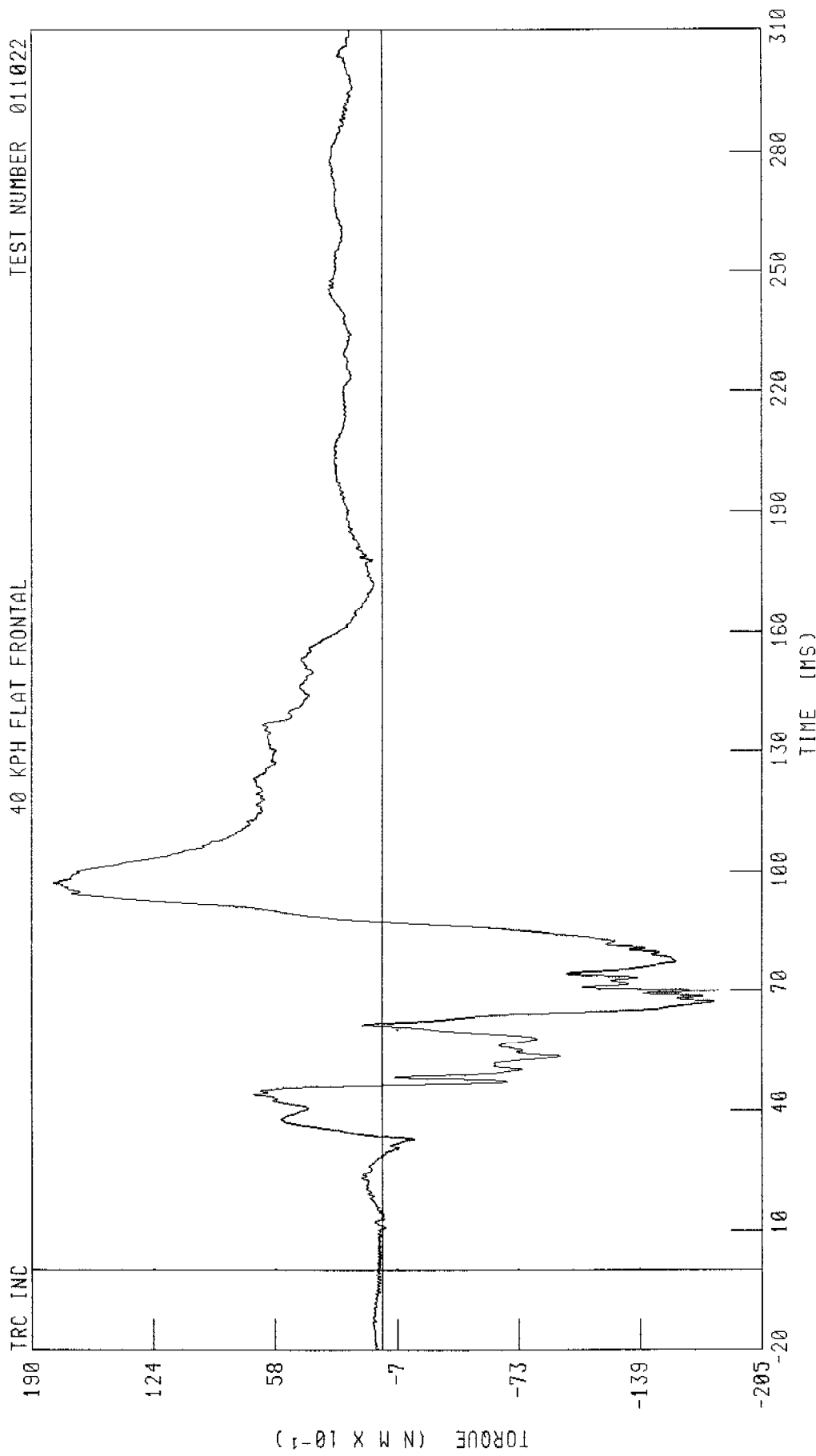
TIME (MS)

CHANNEL ANRZF1 FILTER CH CLASS 600

PEAK DATA 101 69 N @ 206 48 MS, -4535 51 N @ 68 80 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER RIGHT LOWER TIBIA MOMENT ABOUT X AXIS

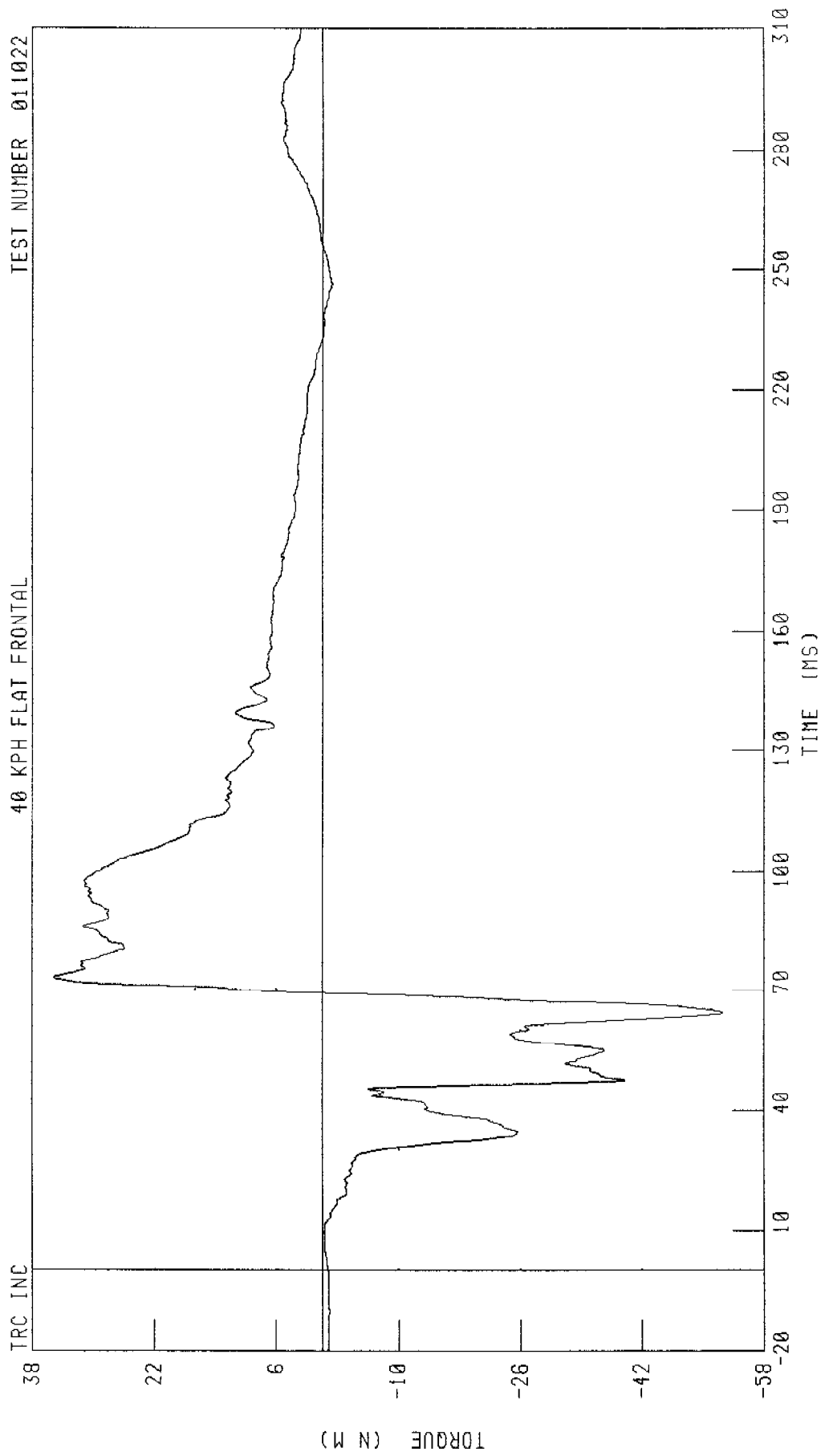
40 KPH FLAT FRONTAL TEST NUMBER 011022



CHANNEL ANRXM1 FILTER CH CLASS 600

PEAK DATA 17 82 N M @ 97 20 MS, -13 26 N M @ 69 76 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER RIGHT LOWER TIBIA MOMENT ABOUT Y AXIS



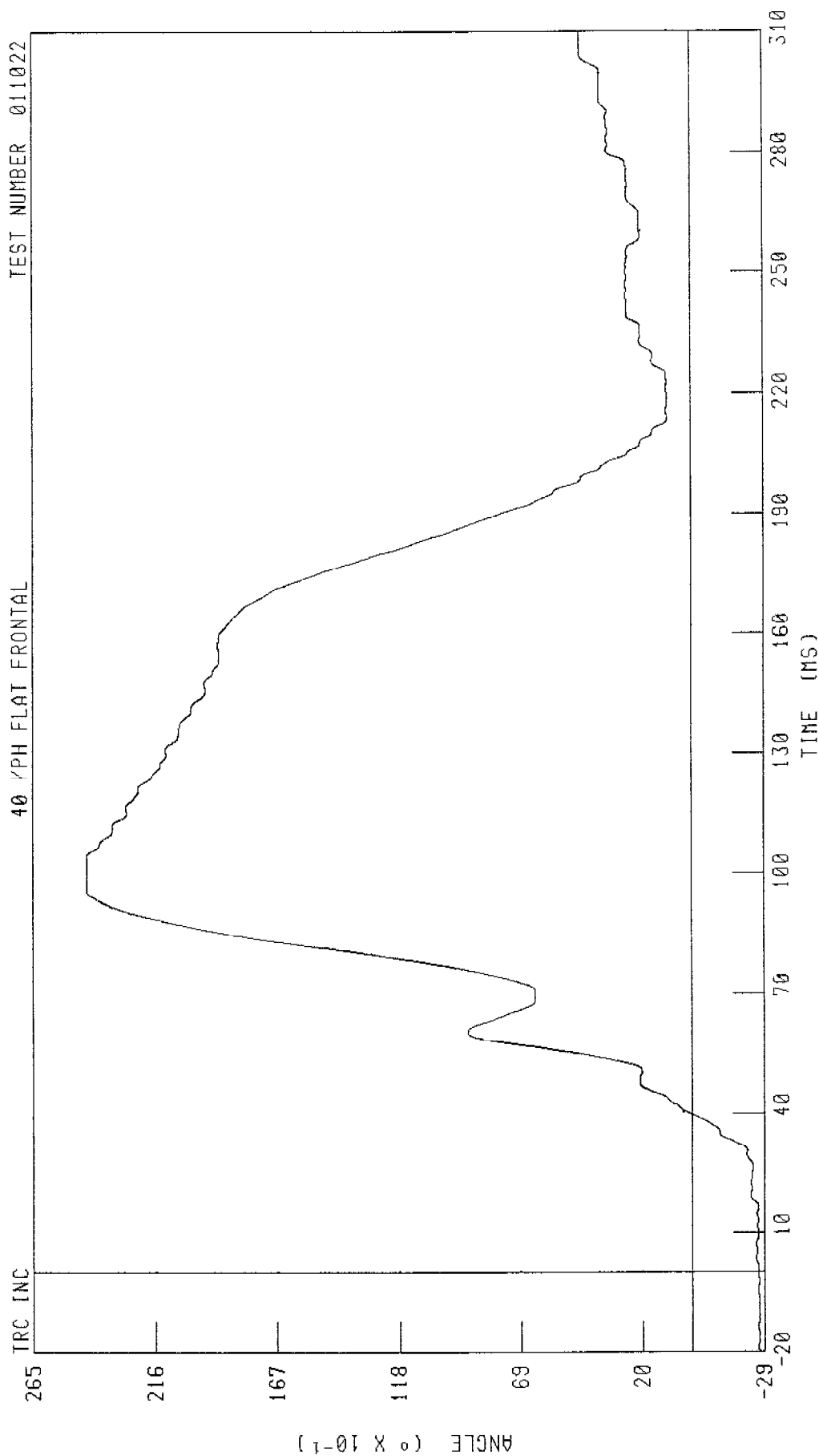
CHANNEL ANRYM1 FILTER CH CLASS 600

PEAK DATA 35 22 N M @ 73 20 MS, -52 65 N M @ 64 40 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER RIGHT FOOT TO ANKLE X-AXIS DISPLACEMENT

TEST NUMBER 011022

40 KPH FLAT FRONTAL



PEAK DATA 24 36 ° @ 95 92 MS, -2 69 ° @ -9 12 MS

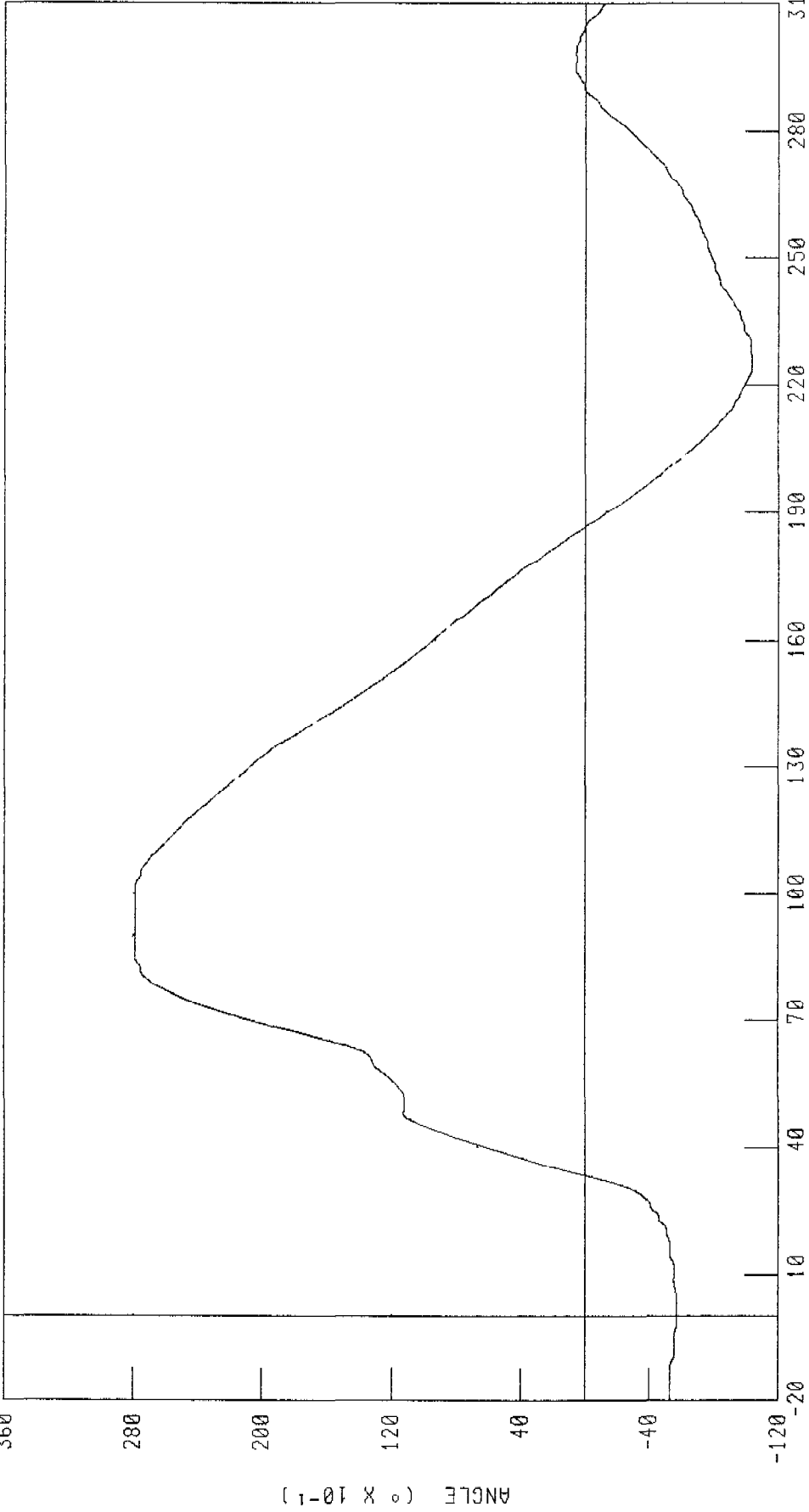
CHANNEL FTRXD1 FILTER CH CLASS 180

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
 DRIVER RIGHT FOOT TO ANKLE Y-AXIS DISPLACEMENT

TEST NUMBER 011022

40 KPH FLAT FRONTAL

TRC INC



CHANNEL FTRYD1 FILTER CH CLASS 180

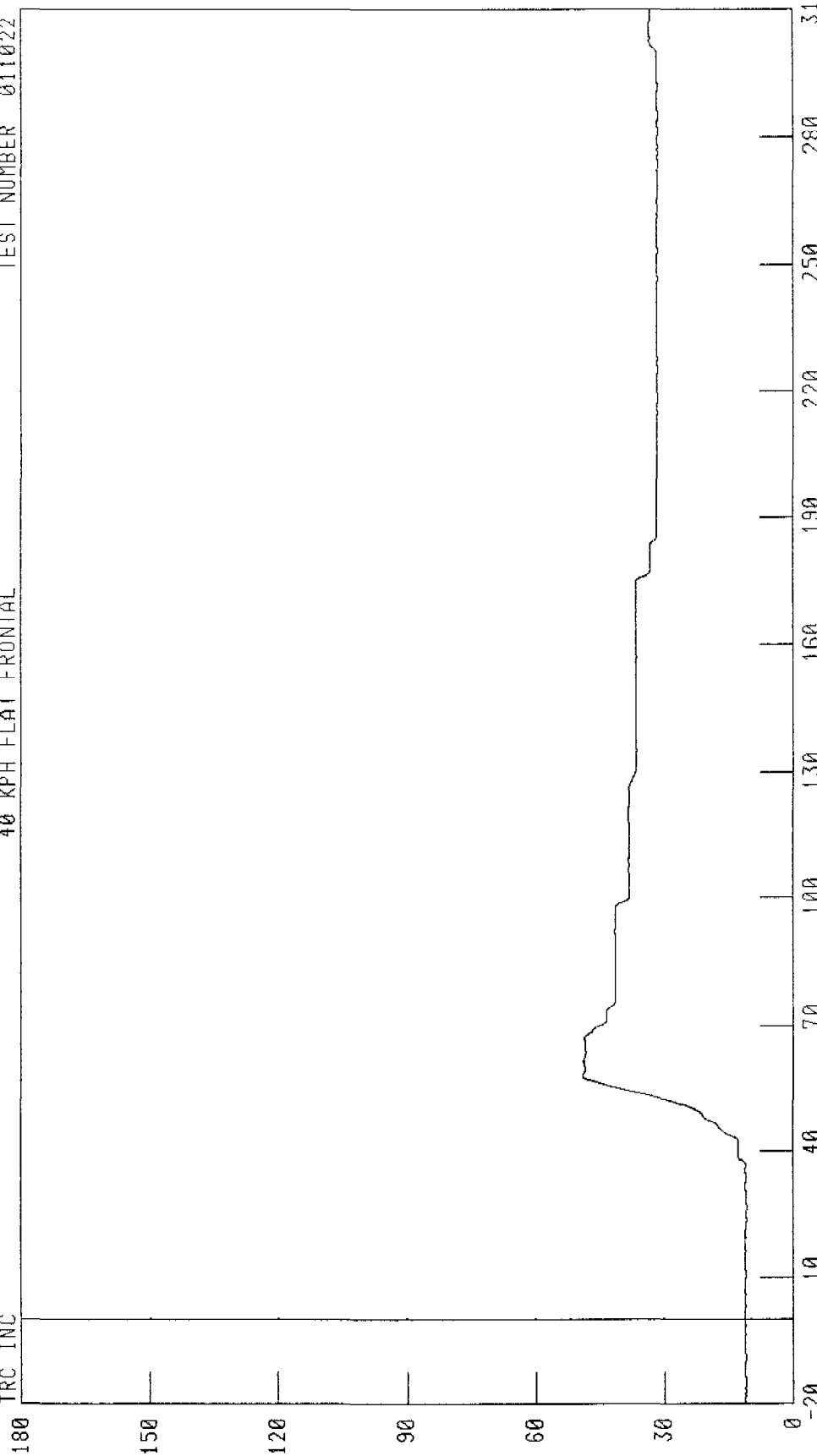
PEAK DATA 27 88 ° @ 97 68 MS, -10 39 ° @ 225 20 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER RIGHT FOOT TO ANKLE Z-AXIS DISPLACEMENT

TEST NUMBER 011022

40 KPH FLAT FRONTAL

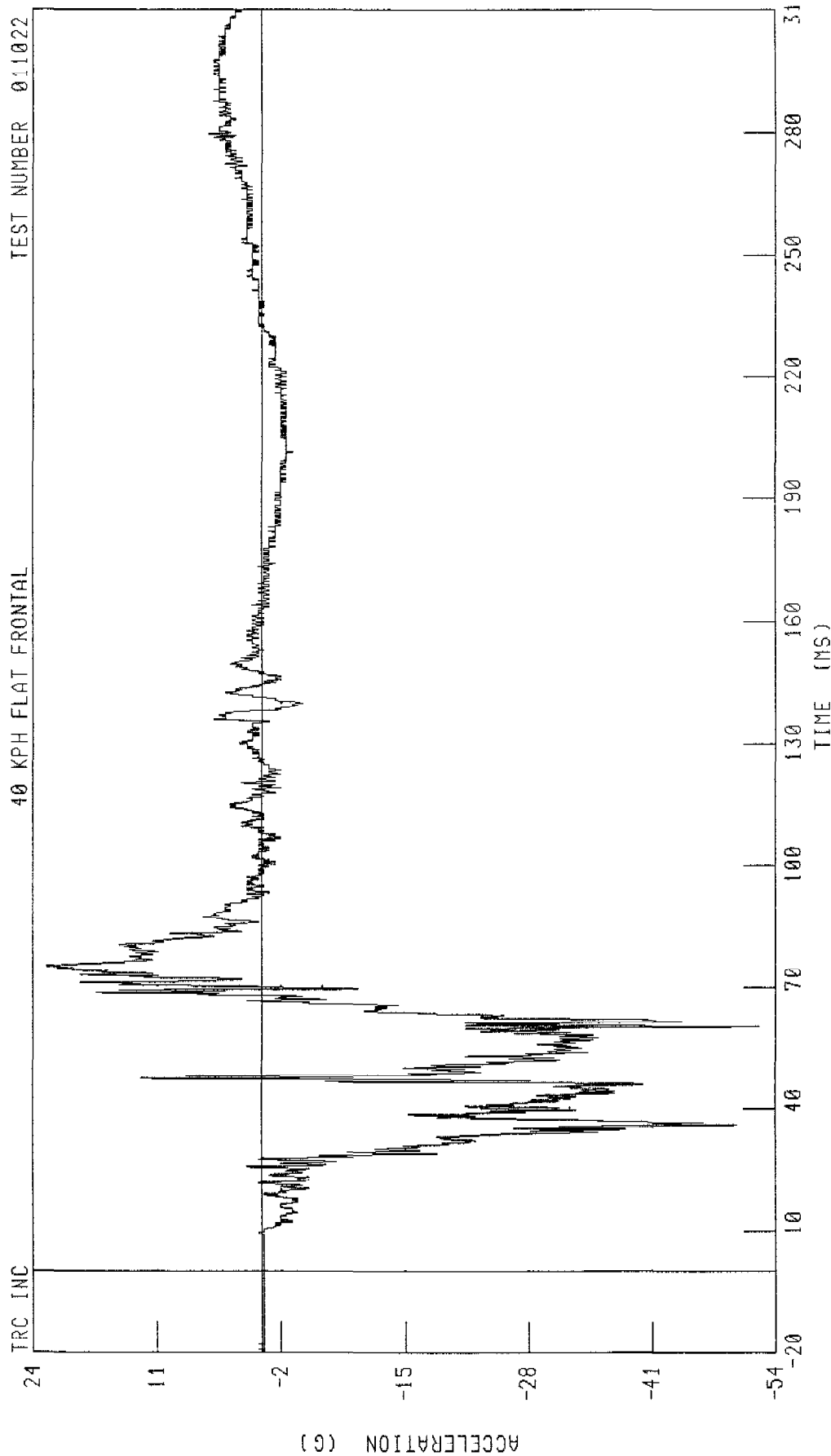
TRC INC



CHANNEL FTRZD1 FILTER CH CLASS 180

PEAK DATA 4 90 ° 0 57 34 MS, 1 06 ° 0 26 48 MS

2001 FORO ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
 DRIVER RIGHT FOOT X-AXIS ACCELERATION

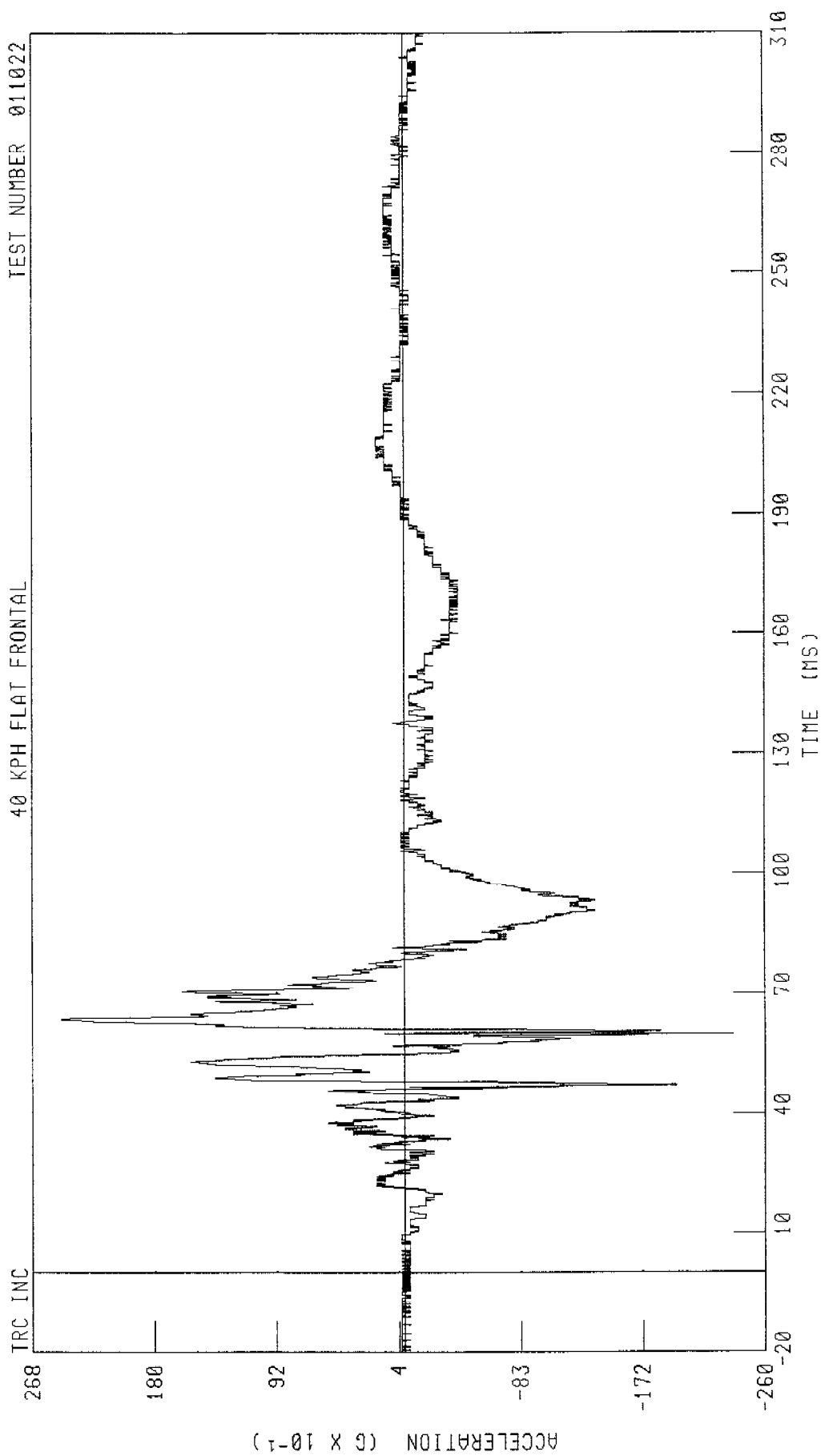


CHANNEL FIRXG1 FILTER CH CLASS 1000

PEAK DATA 22 64 6 @ 75 04 MS, -52 30 C @ 60 16 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
 DRIVER RIGHT FOOT Y-AXIS ACCELERATION
 40 KPH FLAT FRONTAL

TEST NUMBER 011022



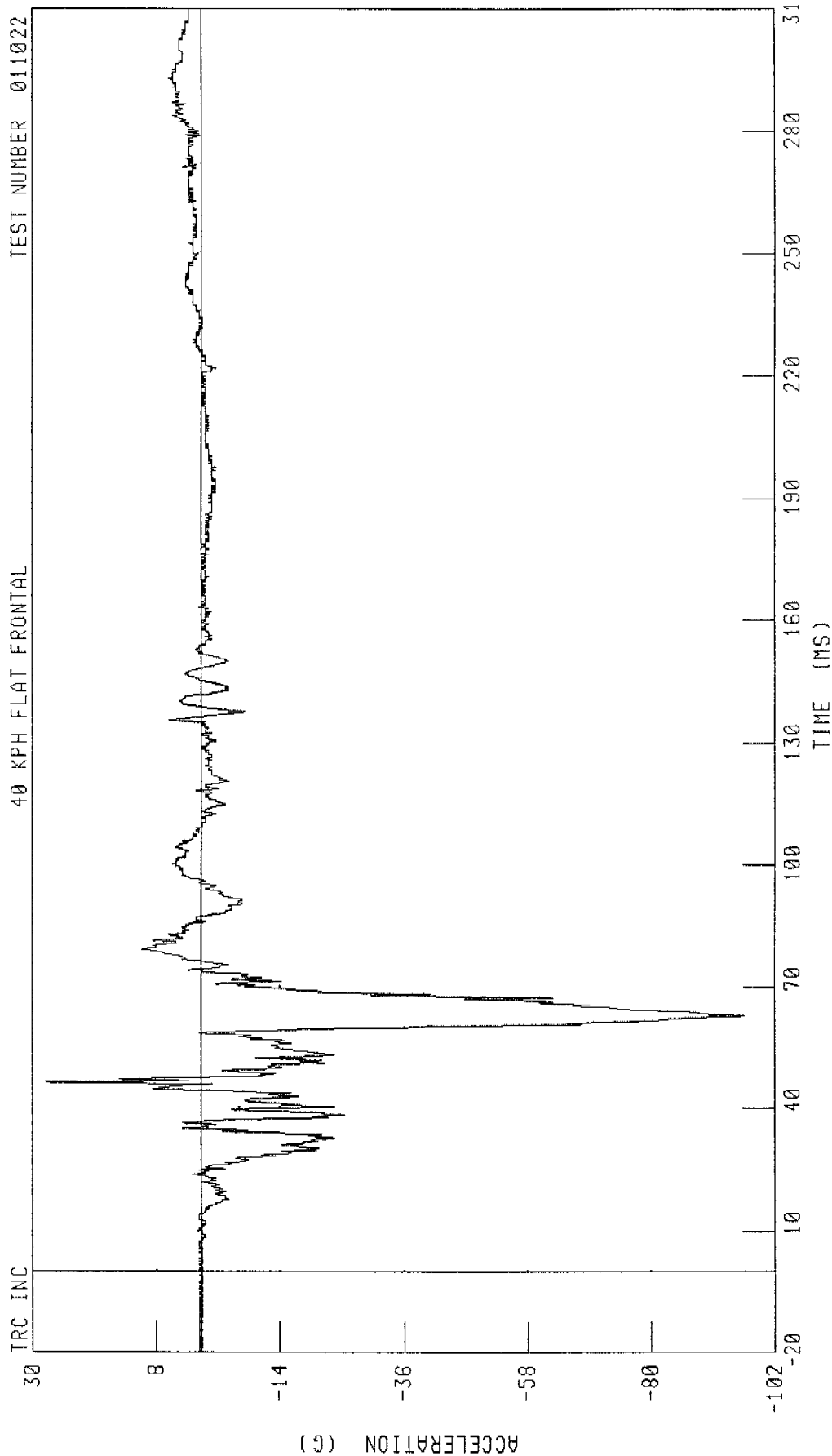
CHANNEL FTRYG1 FILTER CH CLASS 1000

PEAK DATA 24 73 G @ 63 60 MS, -23 70 G @ 60 00 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
DRIVER RIGHT FOOT Z-AXIS ACCELERATION

TEST NUMBER 011022

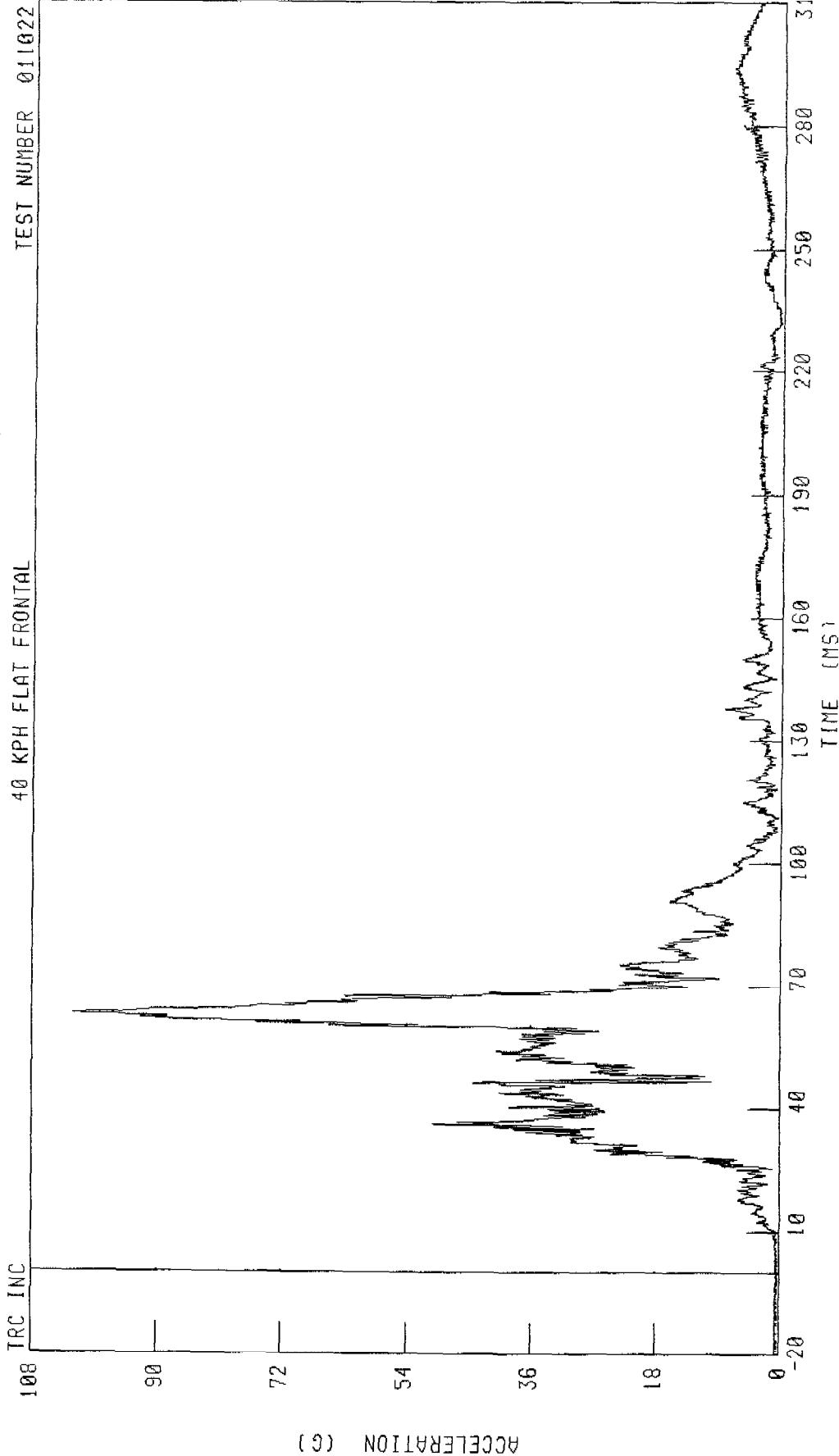
40 KPH FLAT FRONTAL



CHANNEL FTRZG1 FILTER CH CLASS 1000

PEAK DATA 27 53 G @ 46 40 MS, -96 65 G @ 62 96 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
 DRIVER RIGHT FOOT RESULTANT ACCELERATION
 40 KPH FLAT FRONTAL



CHANNEL FTRRG1 FILTER CH CLASS 1000

PEAK DATA 102 15 G @ 63 04 MS, 0 32 G @ -19 76 MS

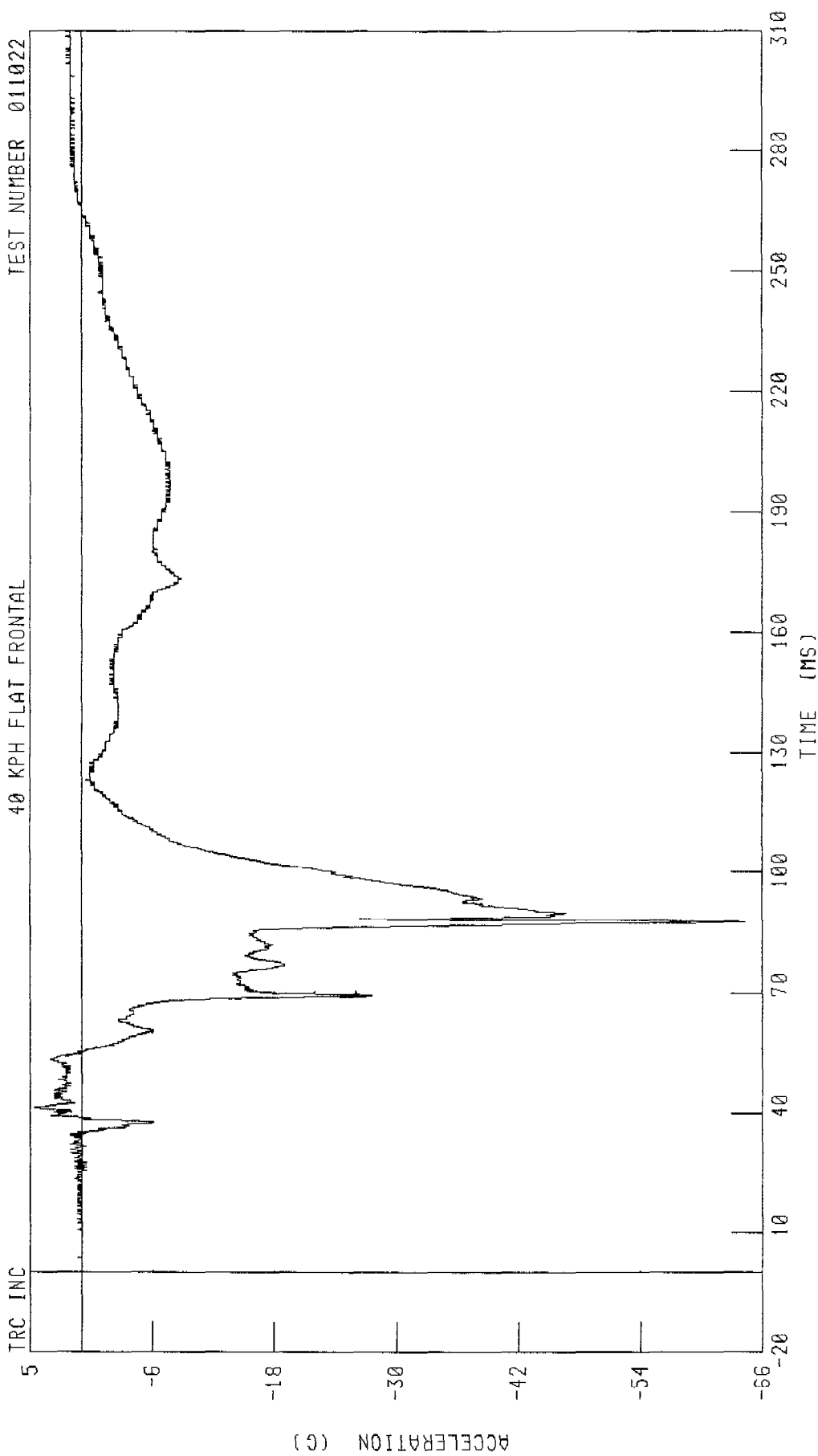
TEST NUMBER 011022

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER HEAD X-AXIS ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL HEDXC2 FILTER CH CLASS 1000

PEAK DATA 4 70 G 41 20 MS, -65 19 G 0 87 68 MS

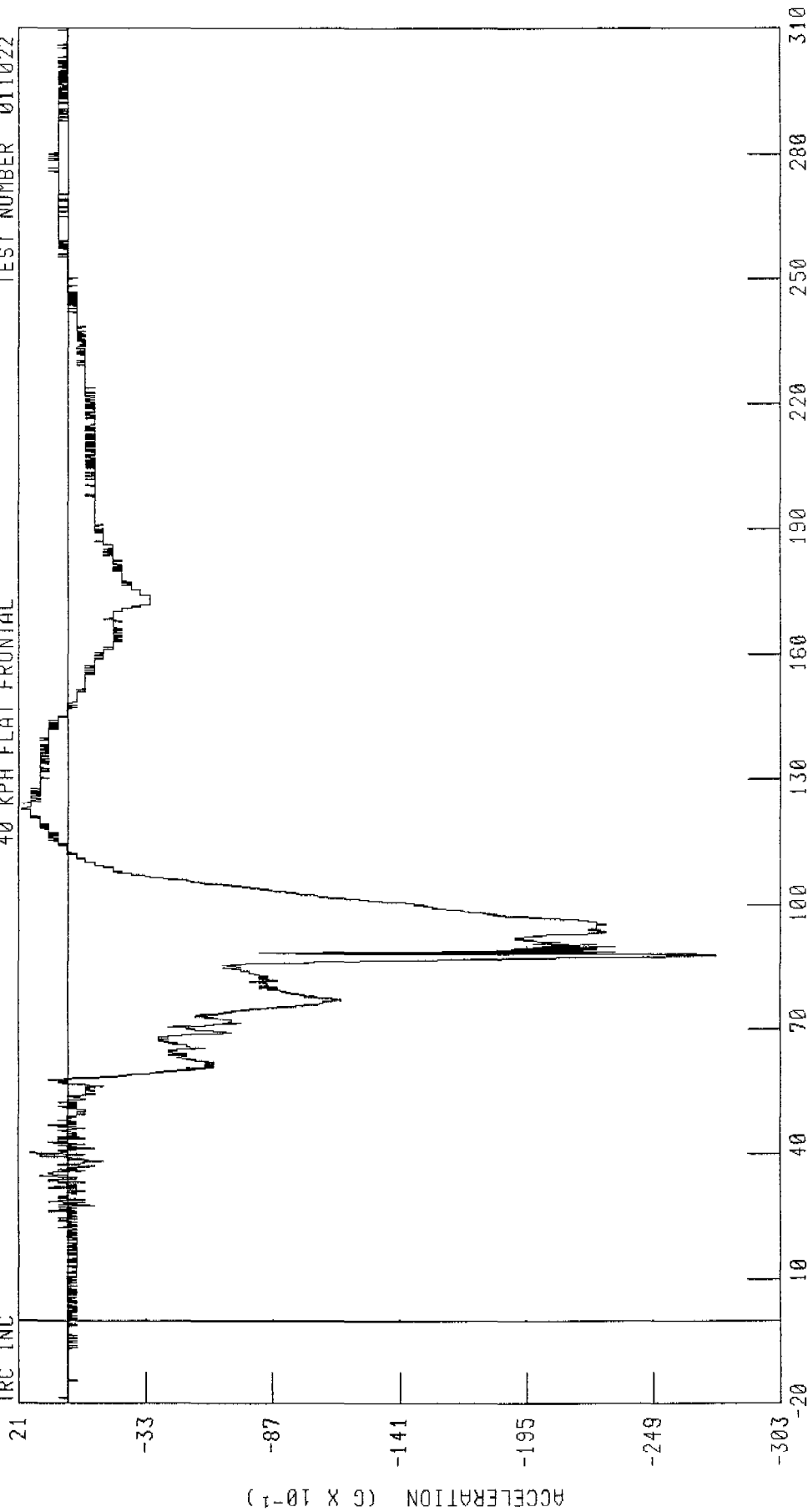
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER HEAD Y-AXIS ACCELERATION

TEST NUMBER 011022

40 KPH FLAT FRONTAL

TRC INC



TIME (MS)

CHANNEL HEDYC2 FILTER CH CLASS 1000

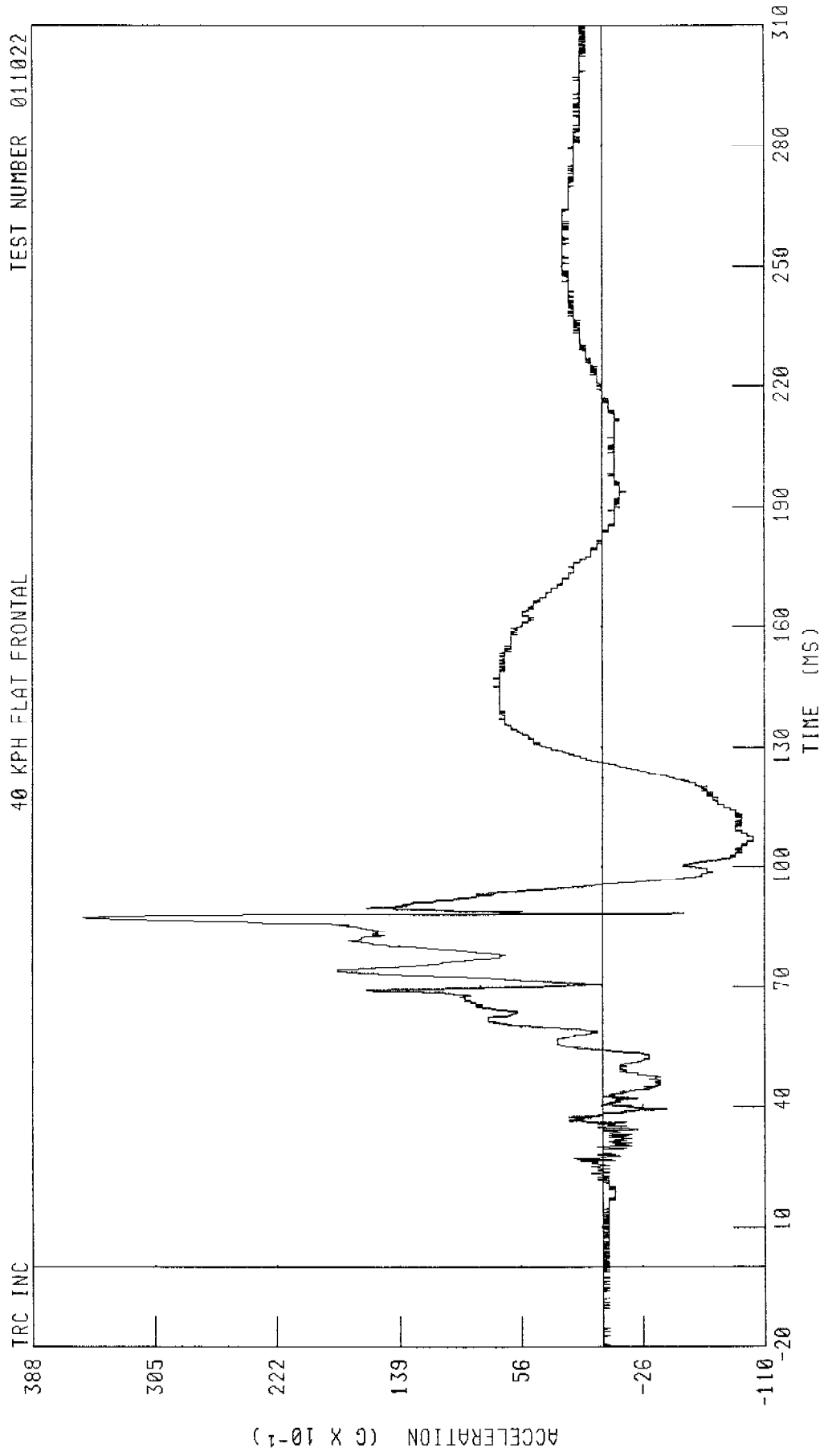
PEAK DATA 1 98 G @ 122 72 MS, -27 54 G @ 87 76 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER HEAD Z-AXIS ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL HEDZG2 FILTER CH CLASS 1000

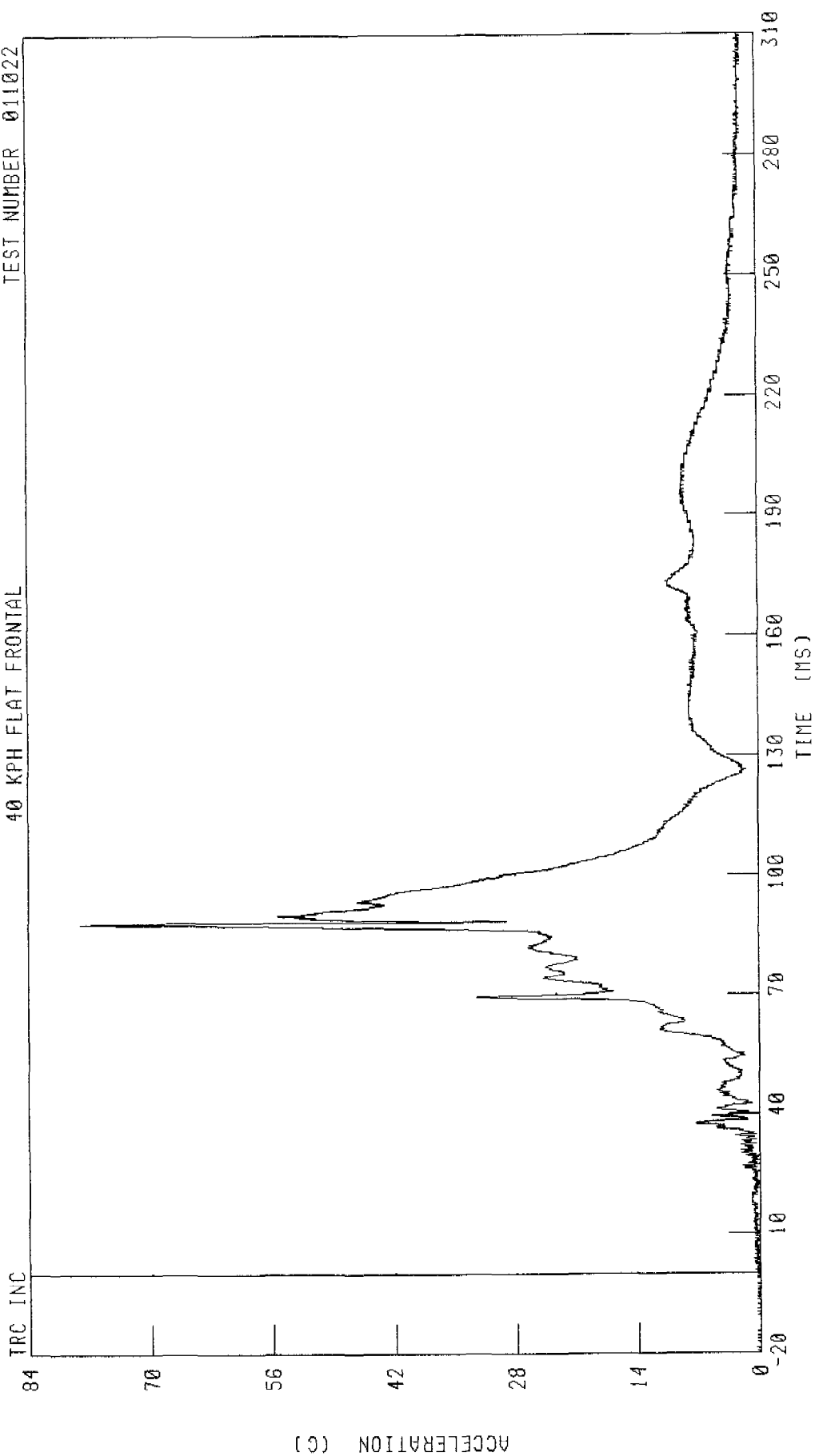
PEAK DATA 35 37 G @ 87 28 MS, -10 23 G @ 106 56 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER HEAD RESULTANT ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL HEDC2 FILTER CH CLASS 1000

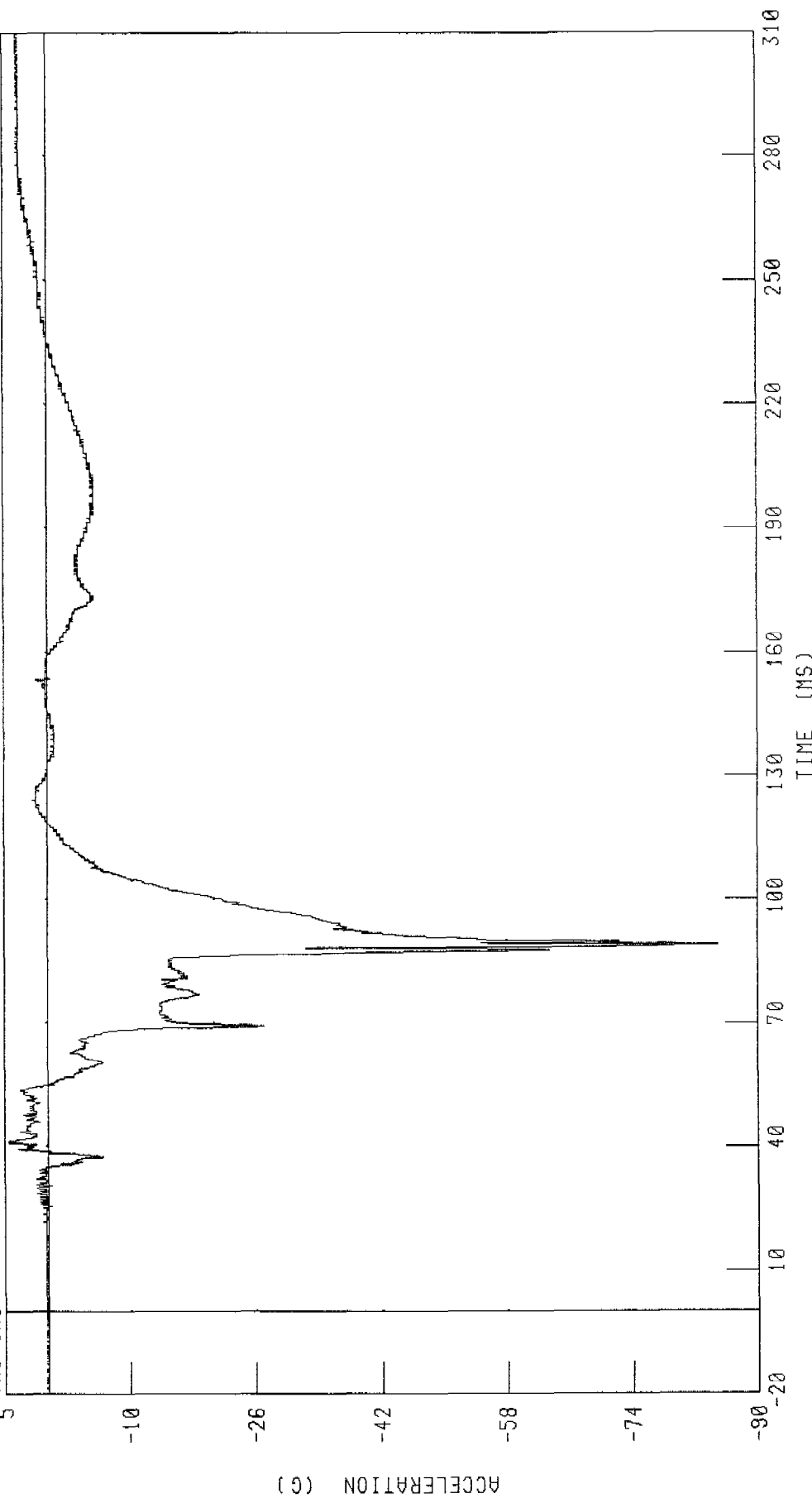
PEAK DATA 77 96 G @ 87 68 MS, 0 04 G @ -20 00 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
PASSENGER HEAD X-AXIS ACCELERATION REDUNDANT

TRC INC

40 KPH FLAT FRONTAL

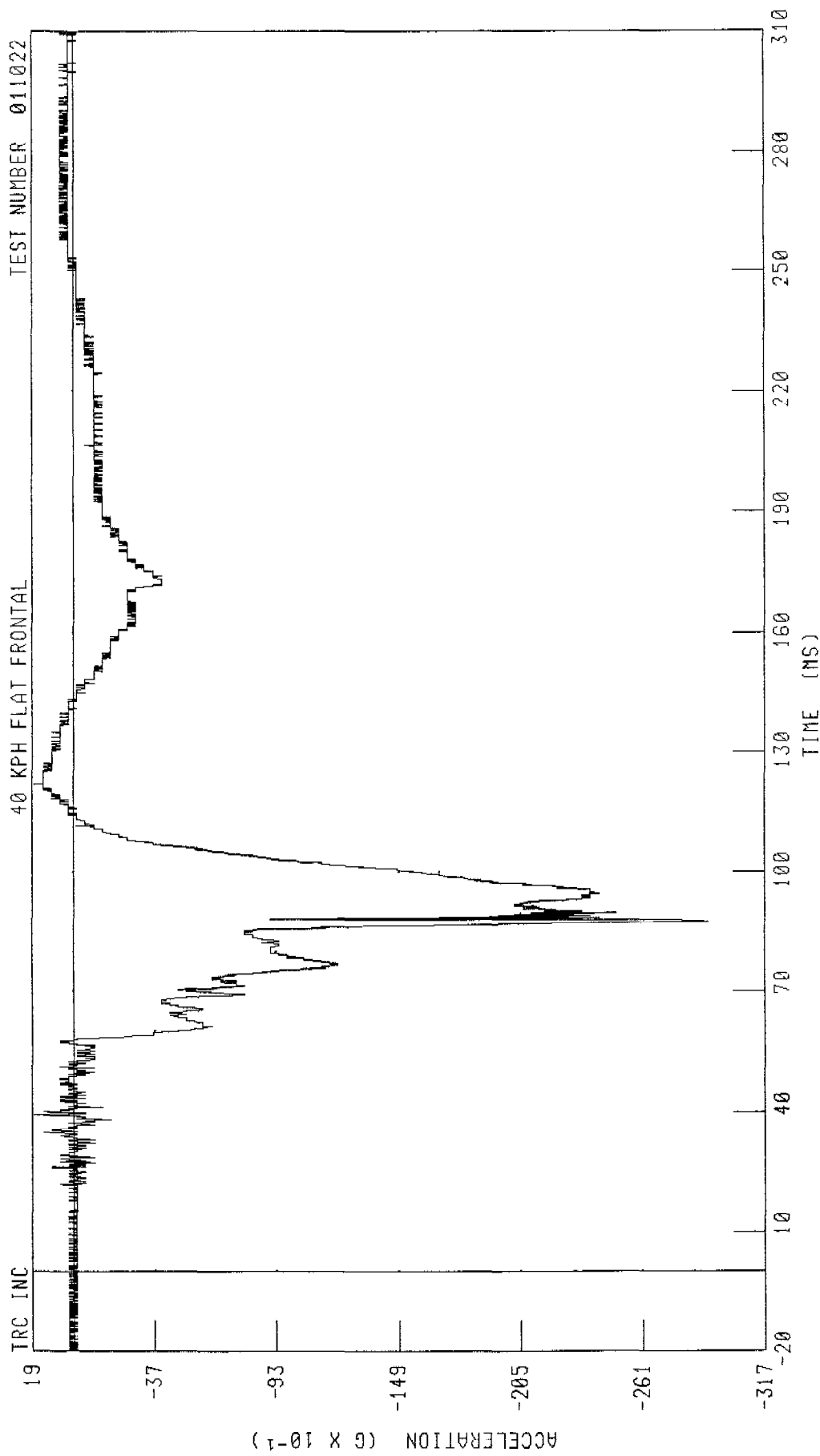
TEST NUMBER 011022



CHANNEL HEDXR2 FILTER CH CLASS 1000

PEAK DATA 5 01 G 0 41 04 MS, -85 47 G 0 88 96 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
PASSENGER HEAD Y-AXIS ACCELERATION REDUNDANT

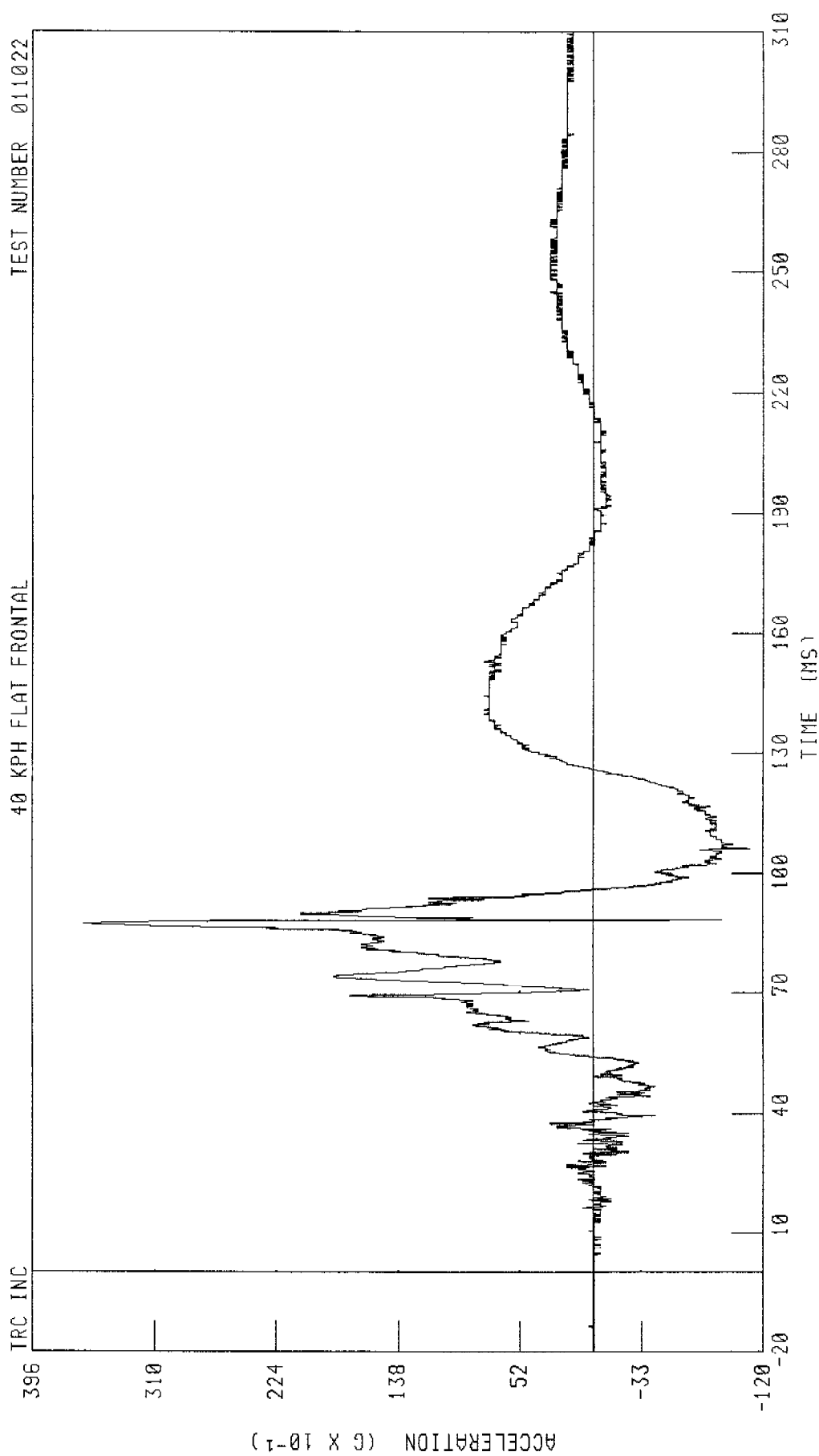


2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER HEAD Z-AXIS ACCELERATION REDUNDANT

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL HEDZR2 FILTER CH CLASS 1000

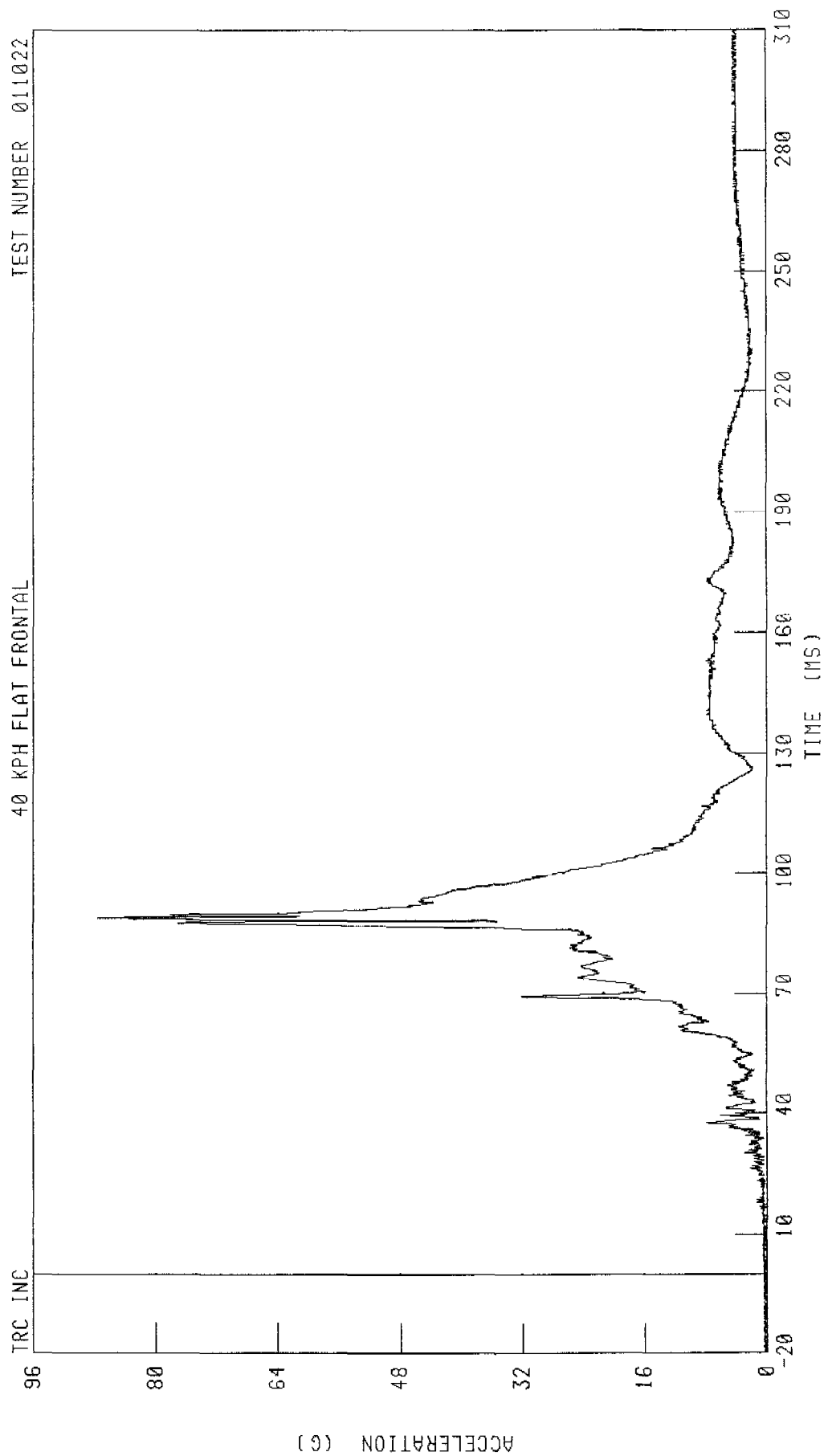
PEAK DATA 35 99 G @ 87 36 MS, -11 06 G @ 106 32 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER HEAD RESULTANT ACCELERATION REDUNDANT

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL HEDRR2 FILTER CH CLASS 1000

PEAK DATA 87 64 G @ 88 96 MS, 0 18 G @ -19 76 MS

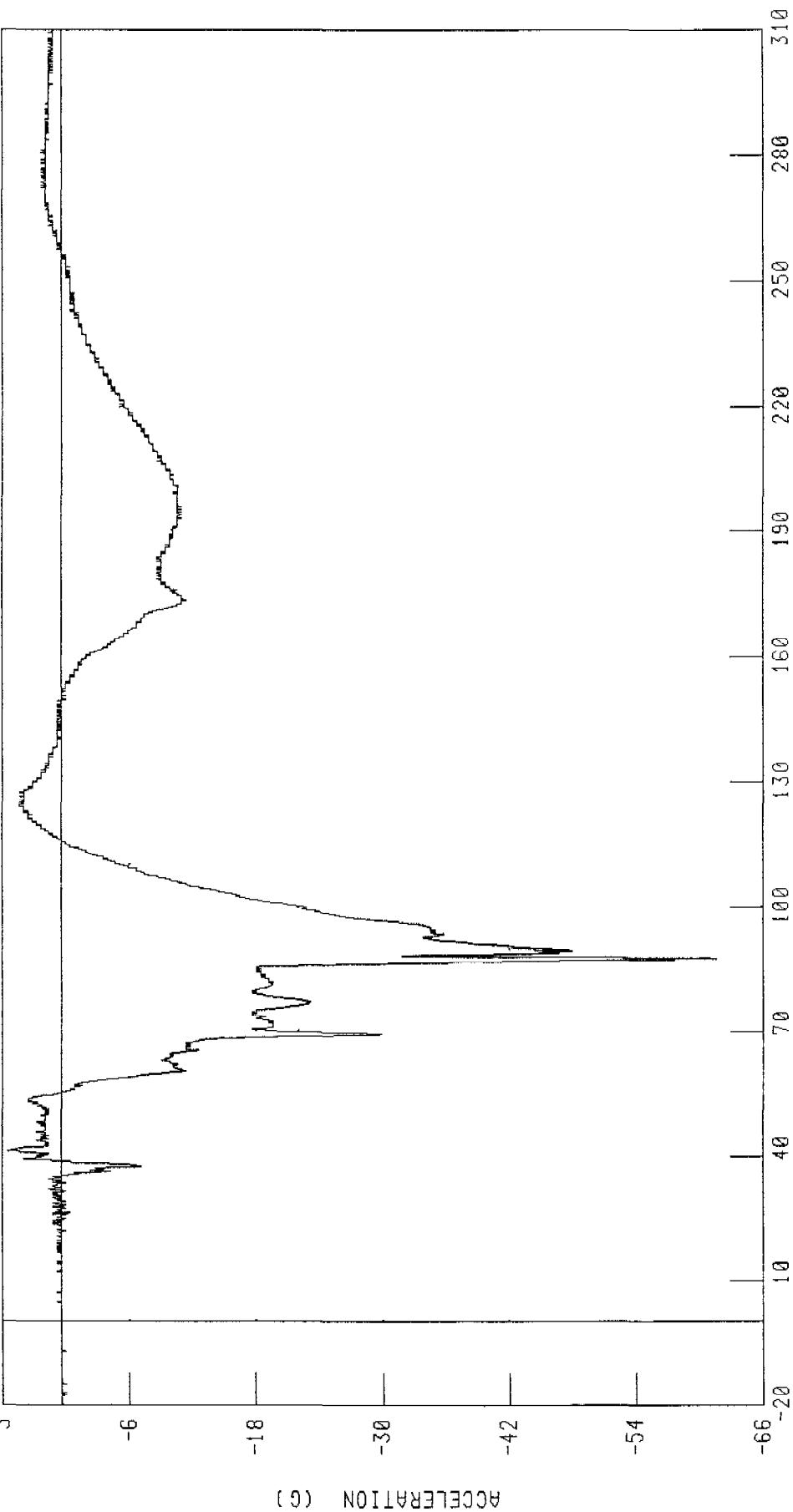
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER HEAD X-AXIS (LT) ACCELERATION

TEST NUMBER 011022

40 KPH FLAT FRONTAL

TRC INC



CHANNEL HD1XG2 FILTER CH CLASS 1000

PEAK DATA 5 14 G 41 28 MS, -62 08 G 0 87 76 MS

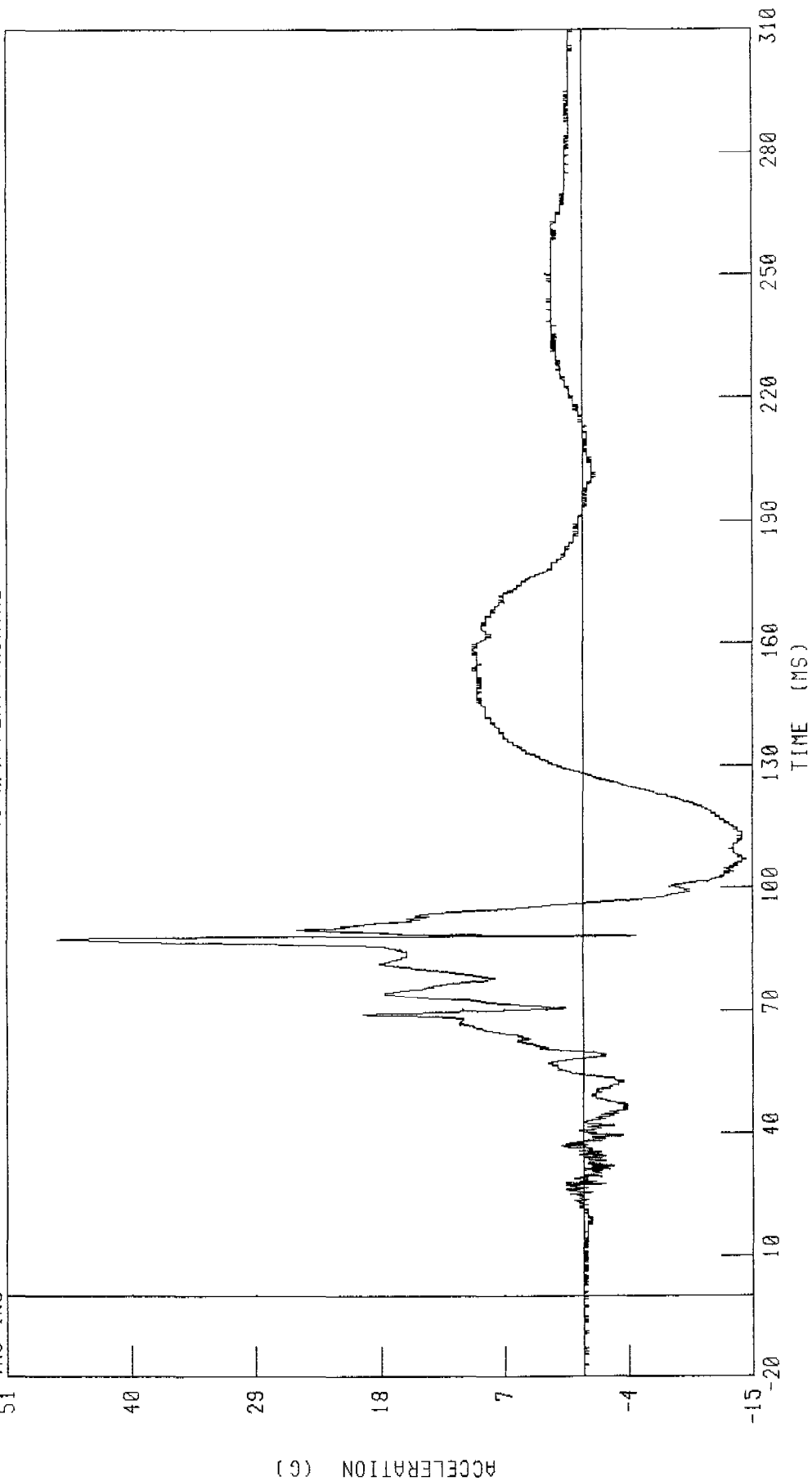
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER HEAD Z-AXIS (LT) ACCELERATION

TRC INC

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL HD1ZG2 FILTER CH CLASS 1000

PEAK DATA 46 59 G @ 87 52 MS, -14 48 G @ 106 80 MS

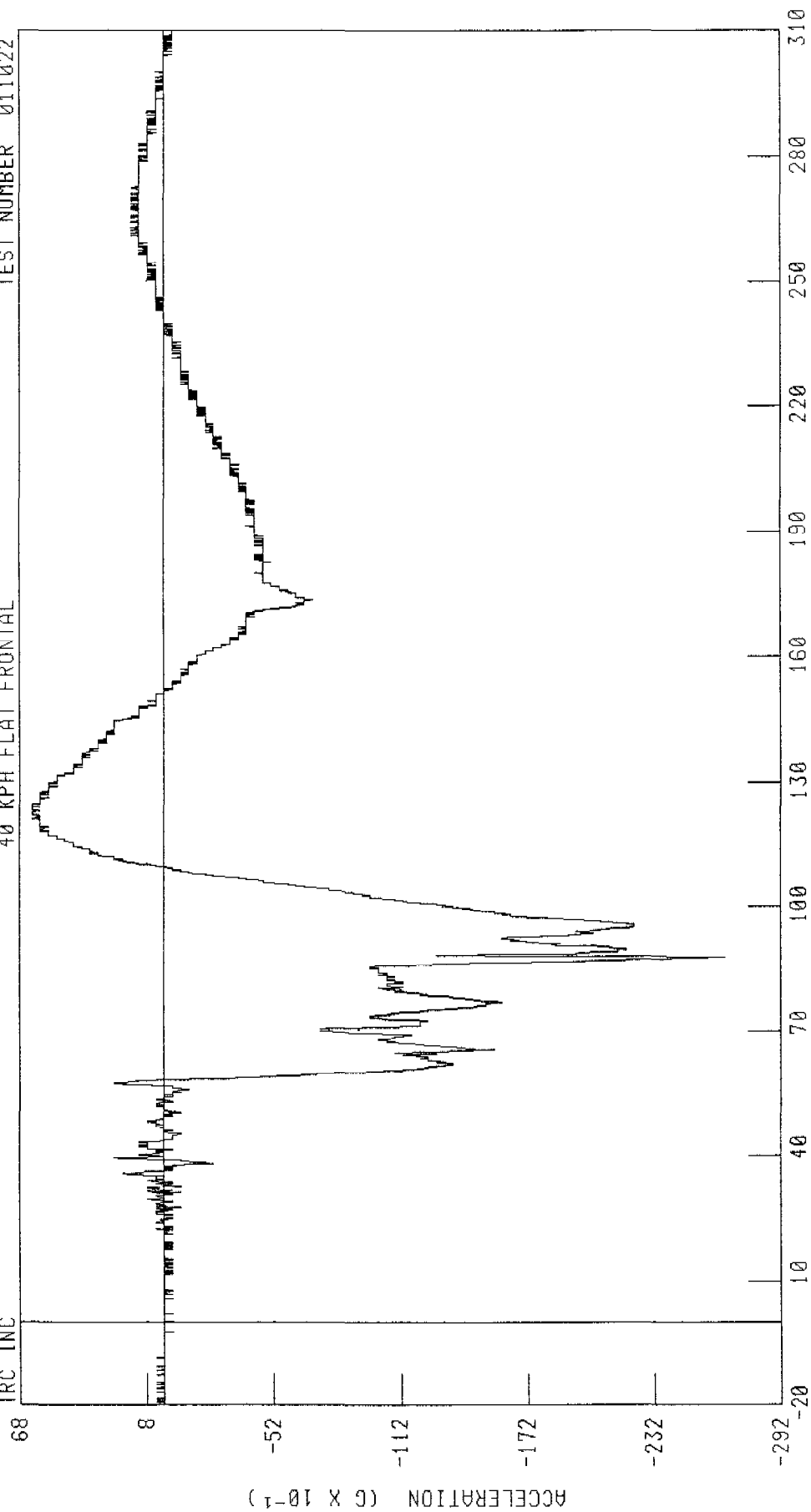
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER HEAD Y-AXIS (FT) ACCELERATION

TEST NUMBER 011022

40 KPH FLAT FRONTAL

TRC INC



CHANNEL HD2YG2 FILTER CH CLASS 1000

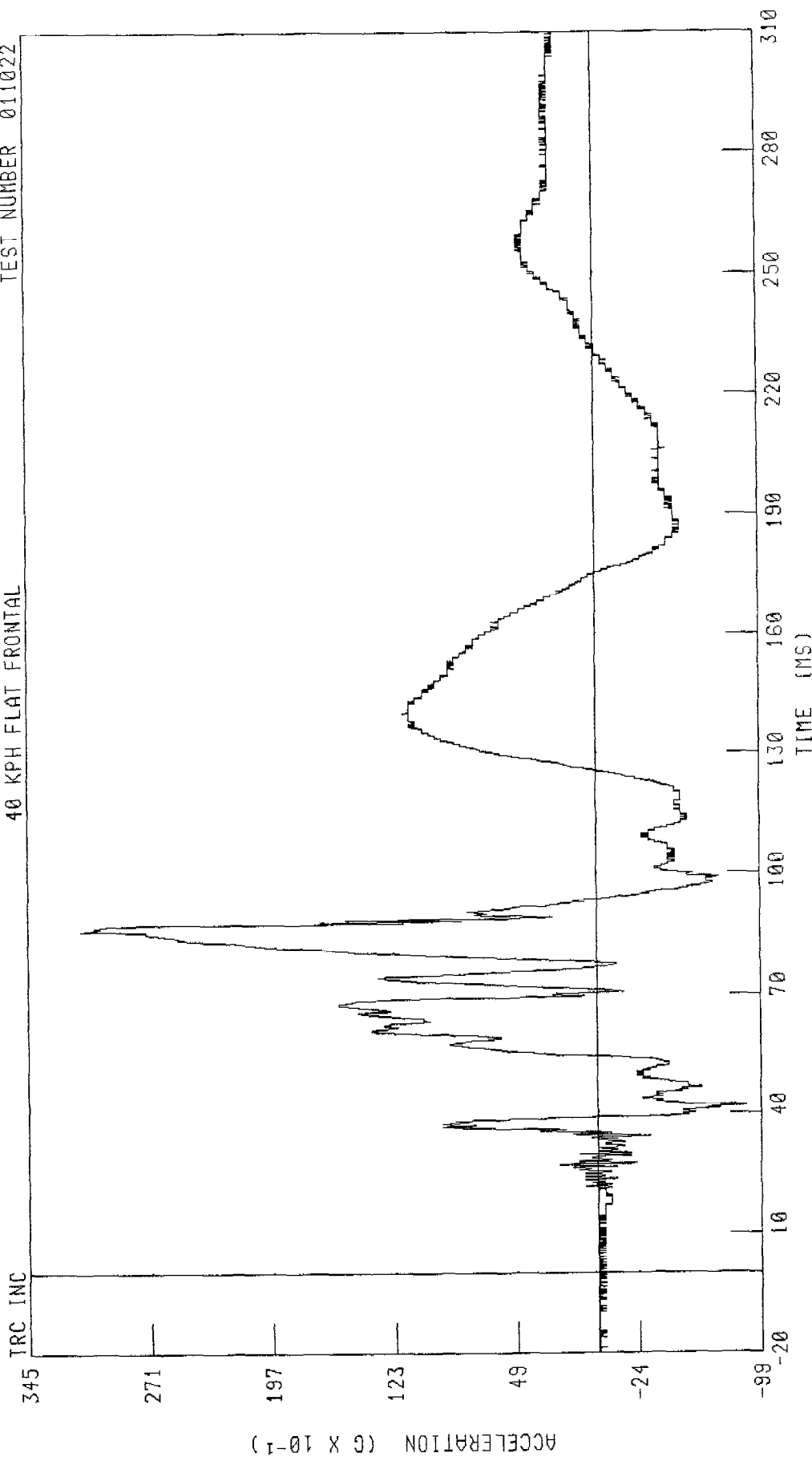
PEAK DATA 6 23 G @ 121 28 MS, -26 55 G @ 87 92 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER HEAD Z-AXIS (FT) ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL HD2ZC2 FILTER CH CLASS 1000

TIME (MS)

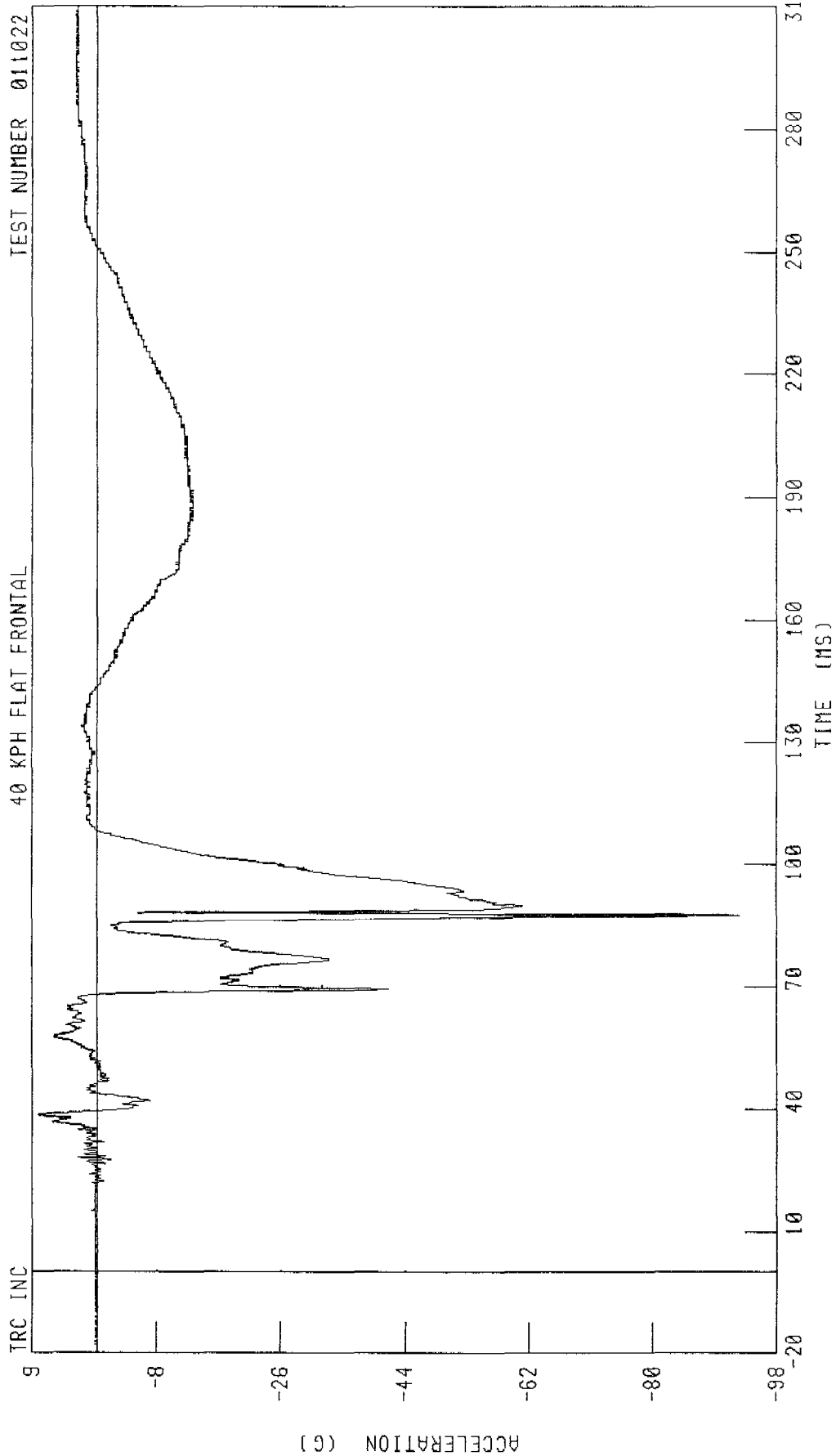
PEAK DATA 31 31 G 0 86 00 MS, -9 06 G 0 41 84 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER HEAD X-AXIS (TP) ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL HD3XG2 FILTER CH CLASS 1000

PEAK DATA 8 56 C 0 38 48 MS, -93 25 G 0 87 76 MS

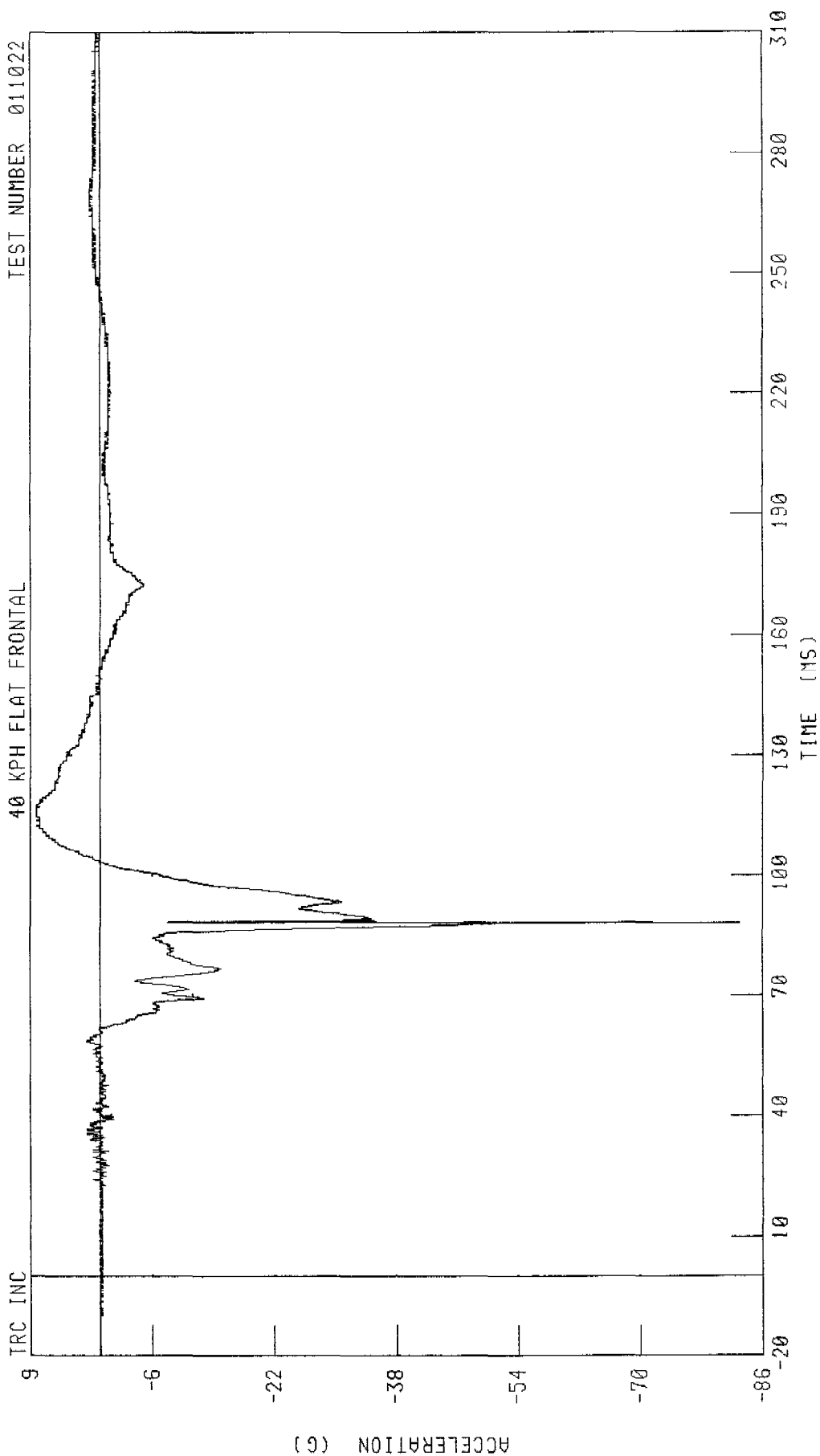
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER HEAD Y-AXIS (TP) ACCELERATION

TEST NUMBER 011022

40 KPH FLAT FRONTAL

TRC INC



CHANNEL HD3YC2 FILTER CH CLASS 1000

PEAK DATA 8 37 G @ 112 00 MS, -83 87 G @ 88 24 MS

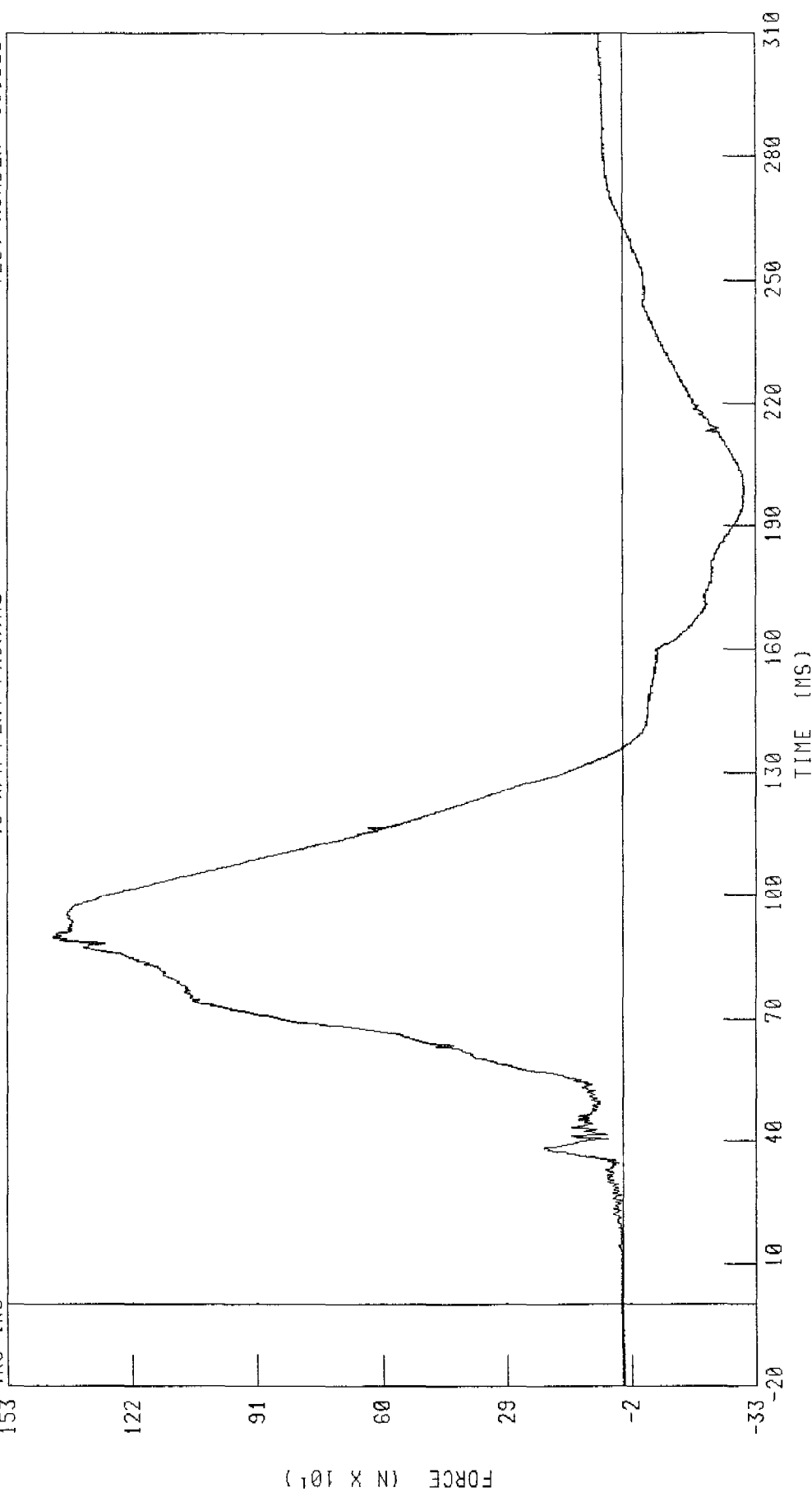
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER NECK X-AXIS SHEAR FORCE

TRC INC

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL NEKXF2 FILTER CH CLASS 1000

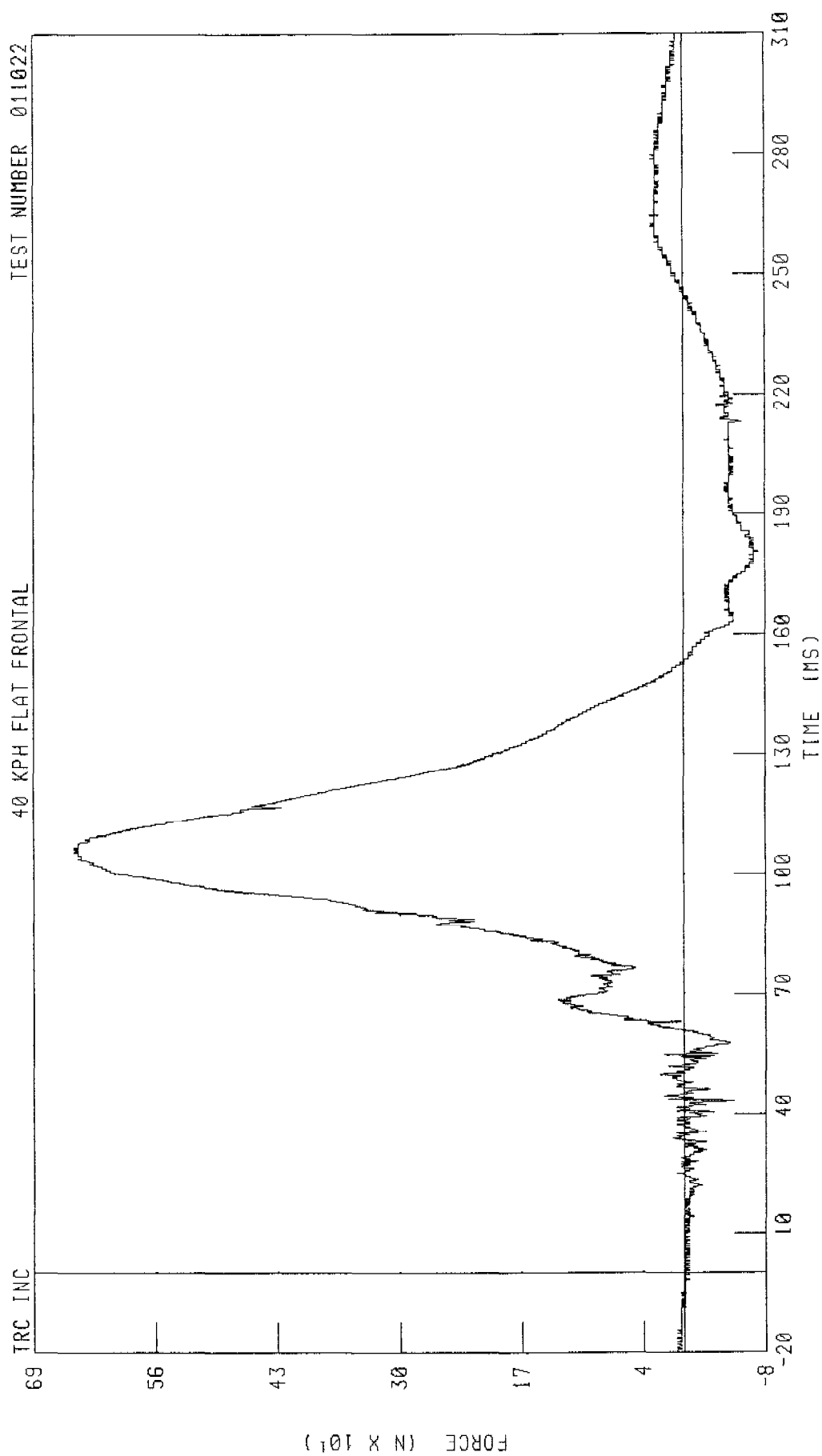
PEAK DATA 1416 85 N @ 89 76 MS, -302 48 N @ 194 72 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER NECK Y-AXIS SHEAR FORCE

40 KPH FLAT FRONTAL

TEST NUMBER 011022



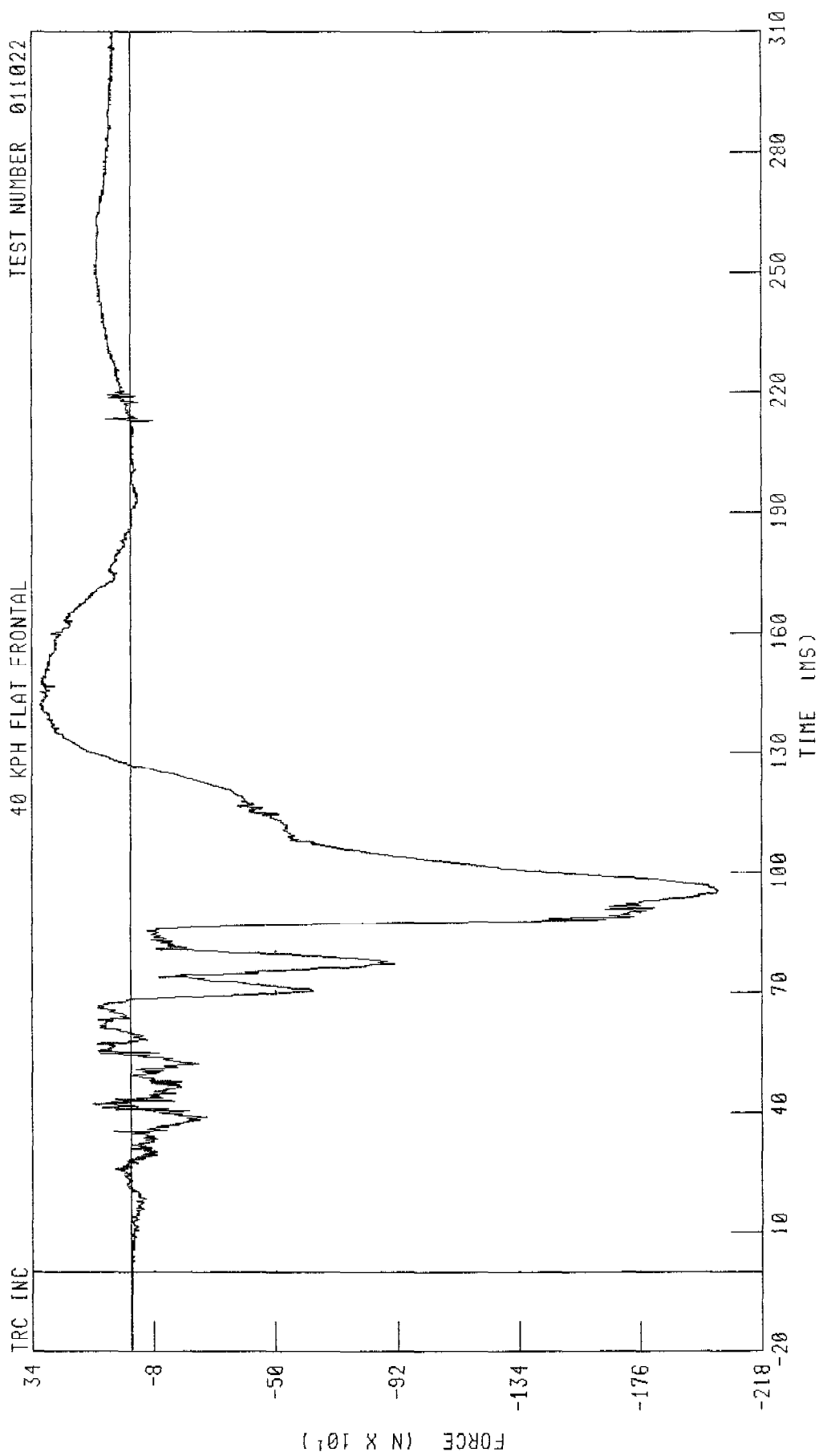
CHANNEL NEKYF2 FILTER CH CLASS 1000

PEAK DATA 650 77 N @ 105 44 MS, -79 37 N @ 180 64 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER NECK Z-AXIS AXIAL FORCE

40 KPH FLAT FRONTAL TEST NUMBER 011022



CHANNEL NEKF2 FILTER CH CLASS 1000

PEAK DATA 313 85 N @ 142 00 MS, -2031 23 N @ 95 20 MS

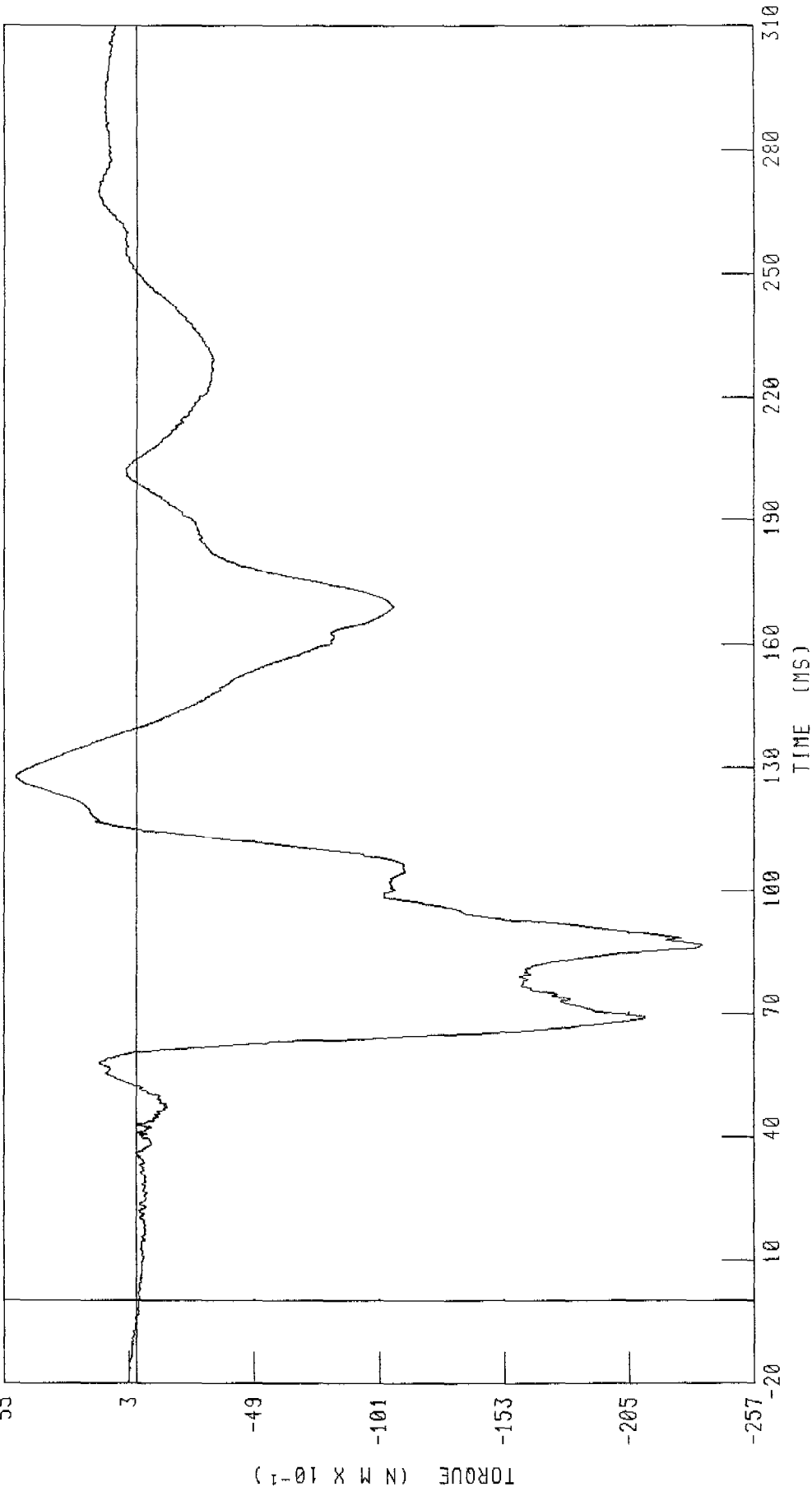
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER NECK MOMENT ABOUT X AXIS

TRC INC

40 KPH FLAT FRONTAL

TEST NUMBER 011022



TIME (MS)

CHANNEL NEKX2 FILTER CH CLASS 600

PEAK DATA 5 02 N M 0 127 76 MS, -23 55 N M 0 87 04 MS

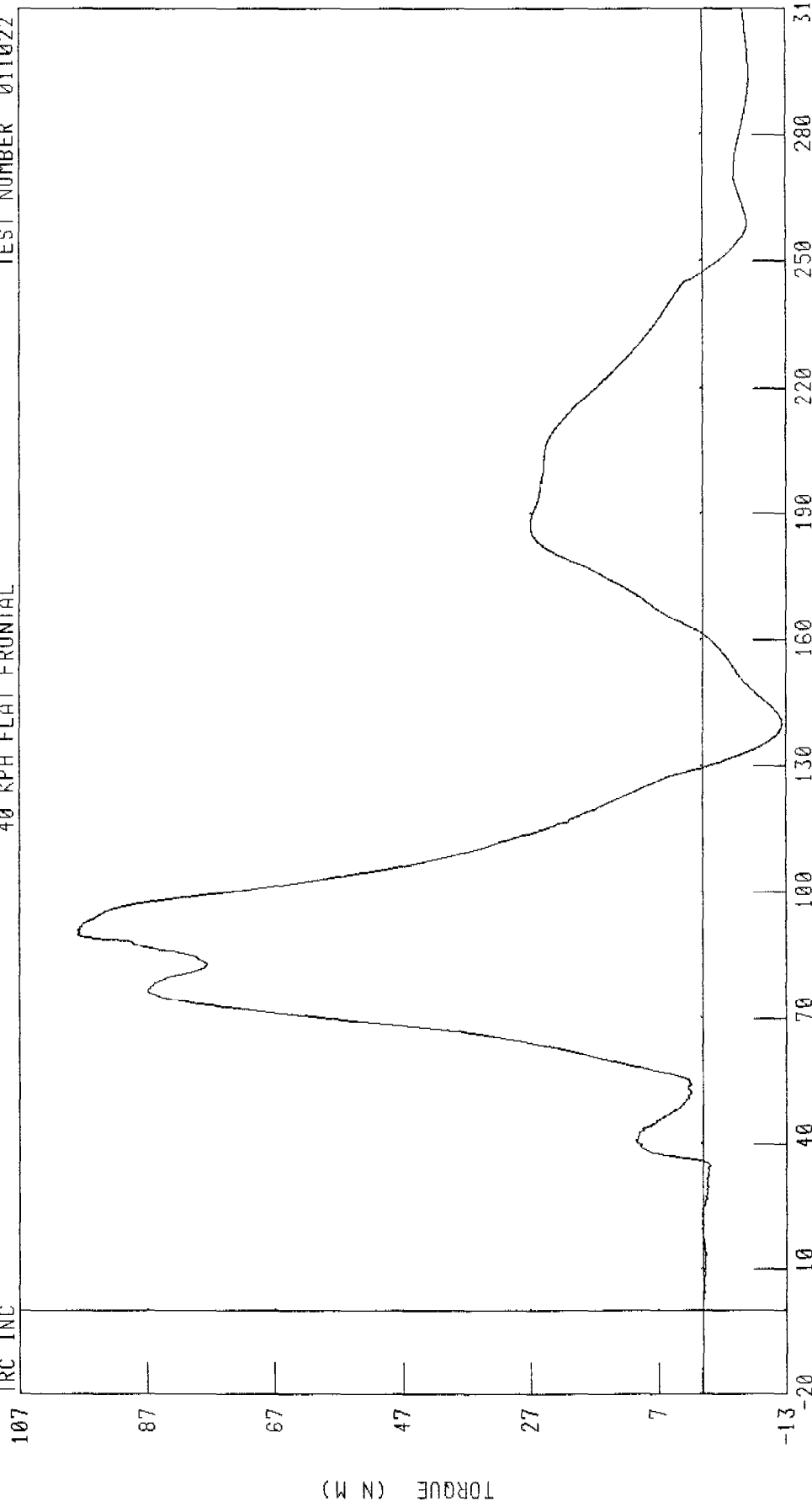
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER NECK MOMENT ABOUT Y AXIS

TEST NUMBER 011022

40 KPH FLAT FRONTAL

TRC INC



TIME (MS)

CHANNEL NEKYH2 FILTER CH CLASS 600

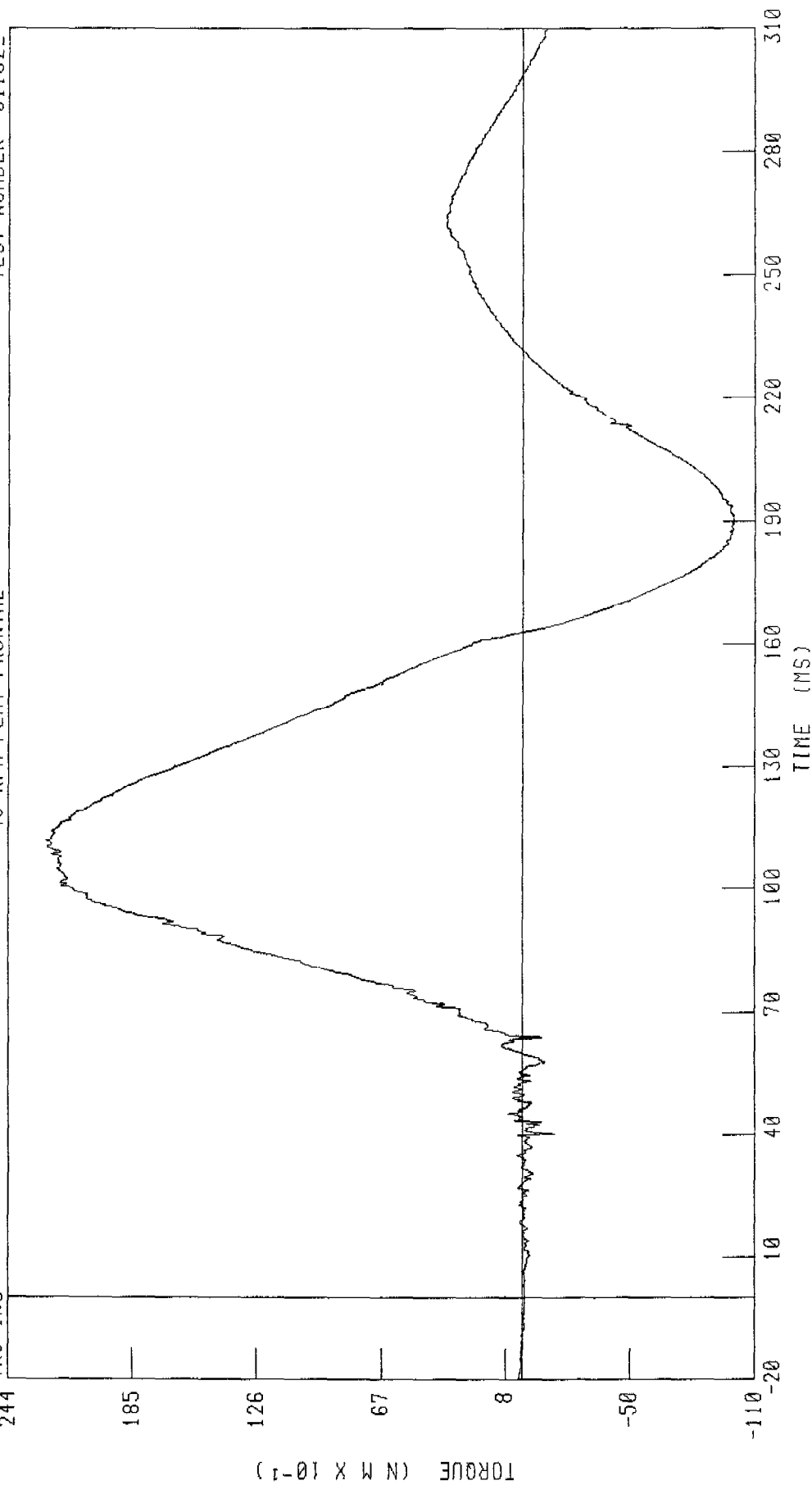
PEAK DATA 97 91 N M @ 89 84 MS, -12 42 N M @ 140 32 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
PASSENGER NECK MOMENT ABOUT Z AXIS

TRC INC

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL NEKZM2 FILTER CH CLASS 600

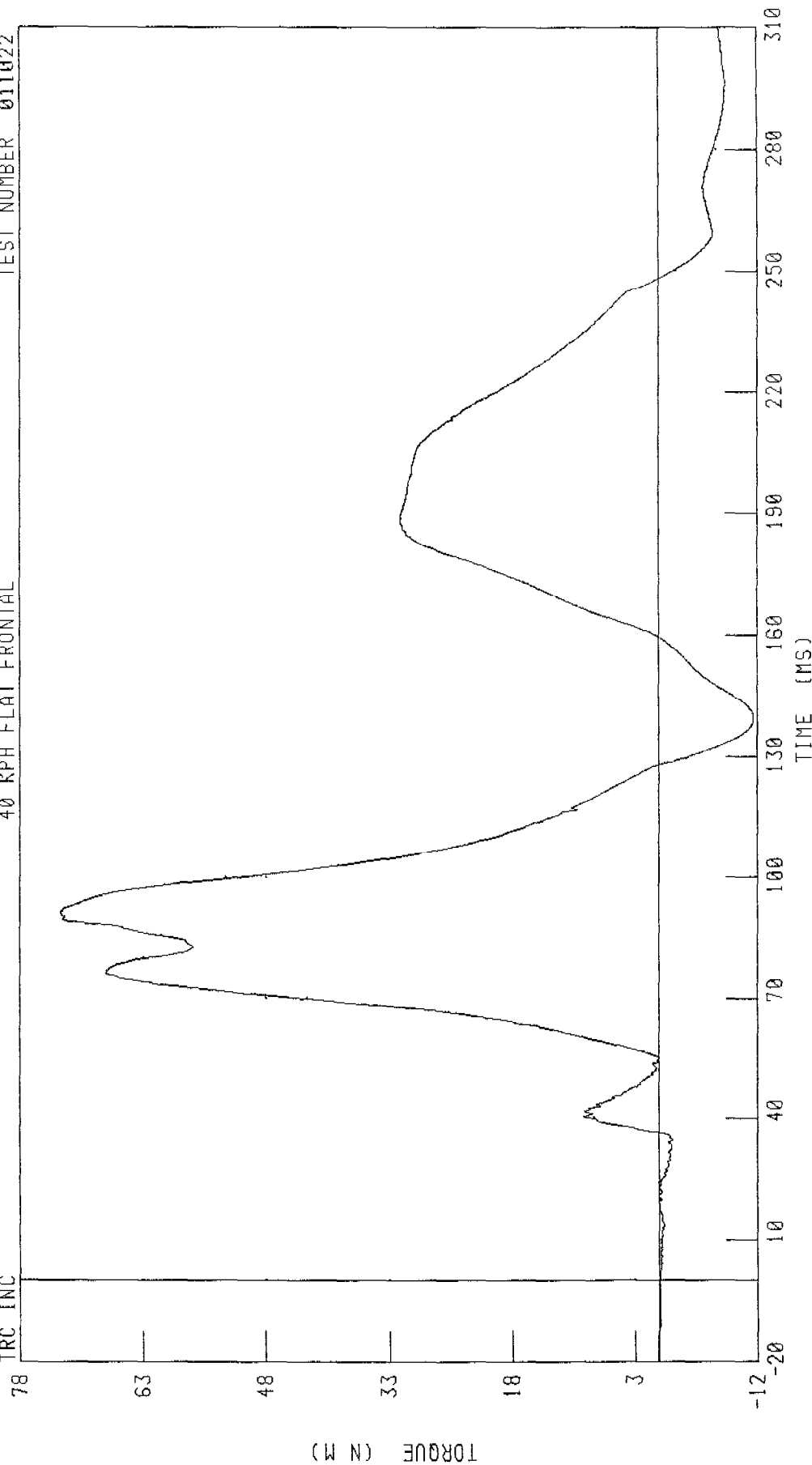
PEAK DATA 22 59 N M 0 111 68 MS, -10 02 N M 0 190 88 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
PASSENGER NECK OCCIPITAL CONDYLE MOMENT ABOUT Y AXIS

TEST NUMBER 011022

40 KPH FLAT FRONTAL

TRC INC



CHANNEL NEKOM2 FILTER CH CLASS 600

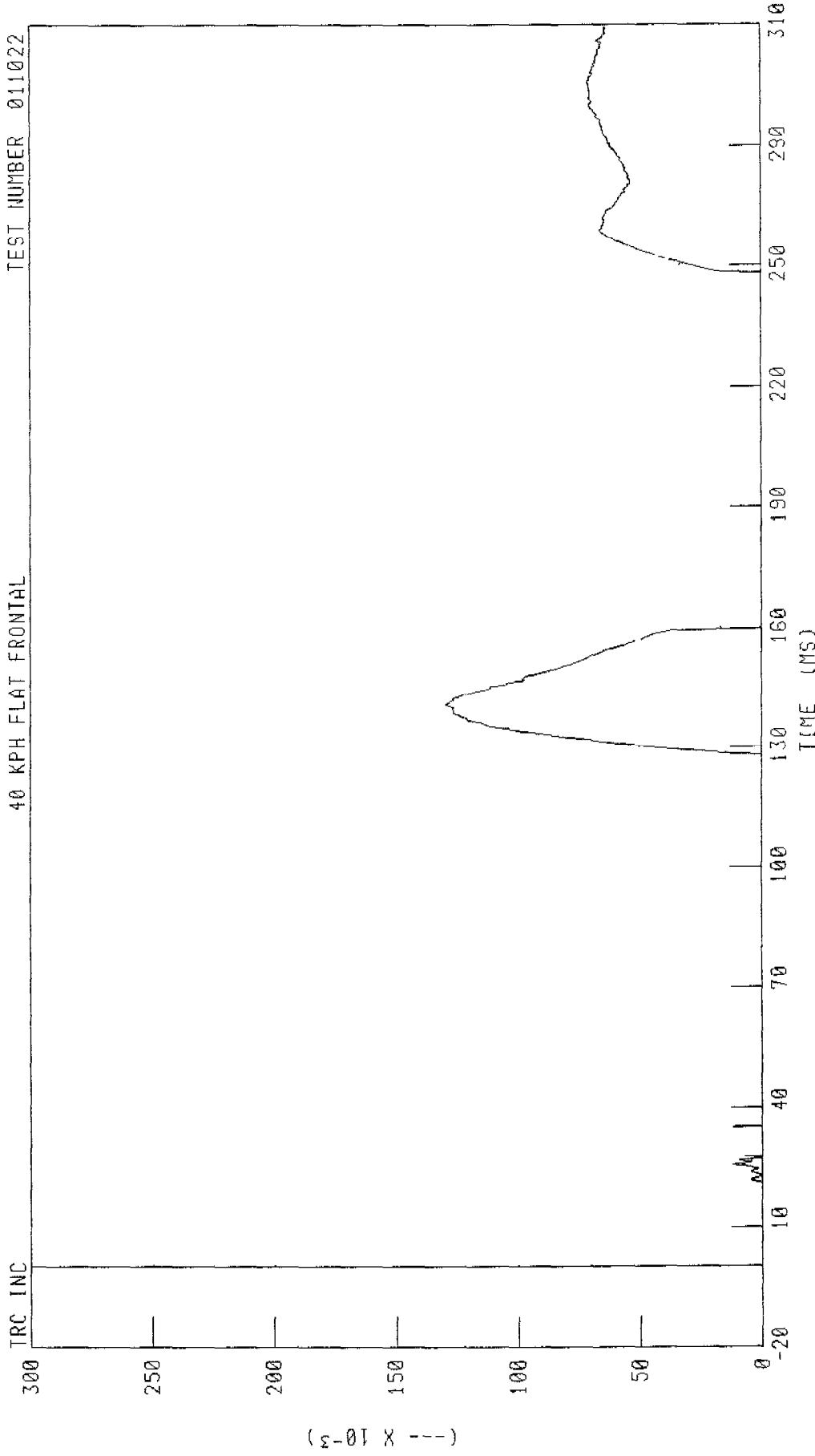
PEAK DATA 73 13 N M 0 91 44 MS, -11 54 N M 0 139 44 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER NECK TENSION/EXTENSION

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL NTE2 FILTER CH CLASS 500

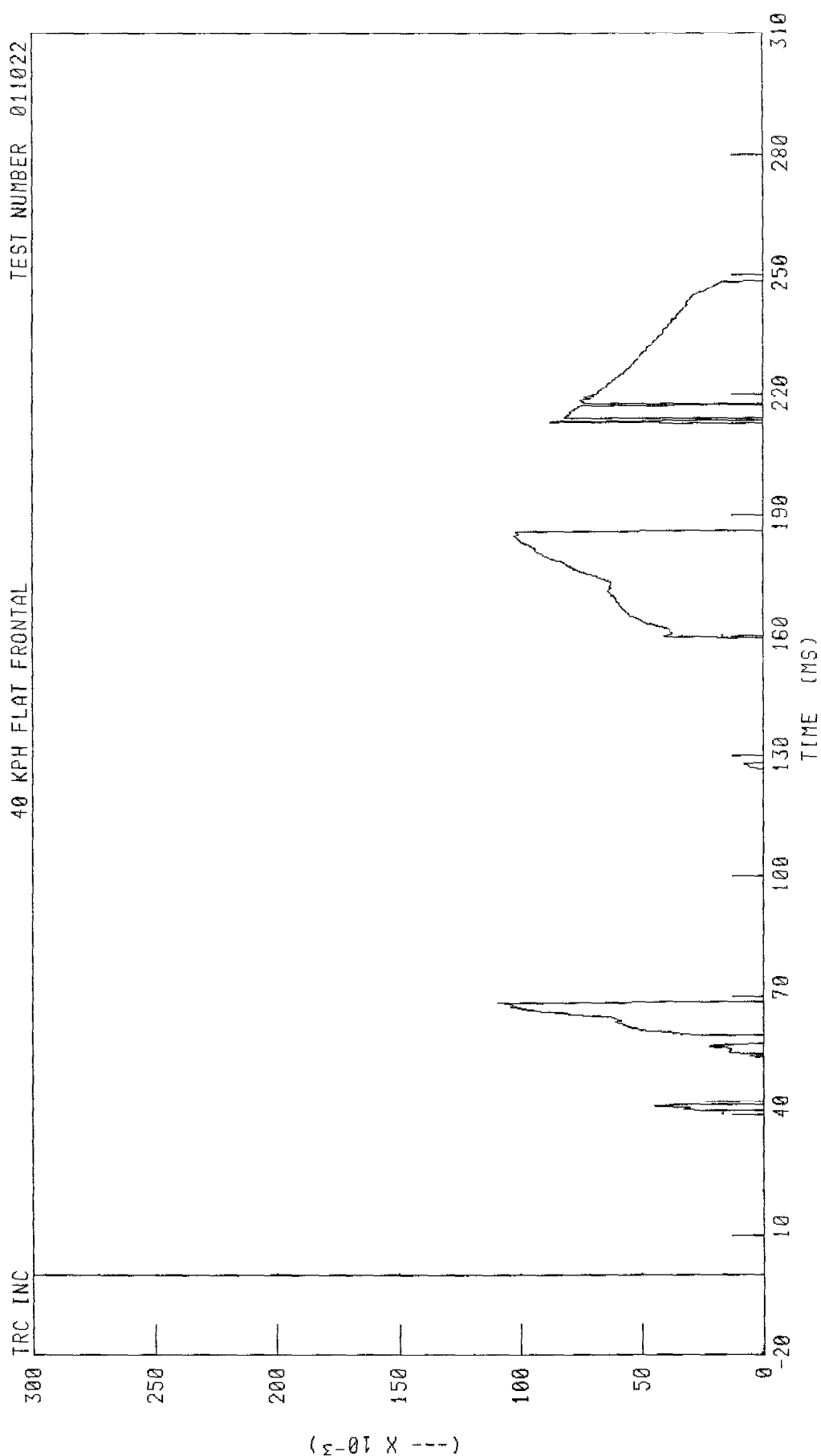
PEAK DATA 0 13 --- 0 140 72 MS, 0 00 --- 0 -20 00 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER NECK TENSION/FLEXION

40 KPH FLAT FRONTAL

TEST NUMBER 011022



TIME (MS)

CHANNEL NTF2 FILTER CH CLASS 600

PEAK DATA 0 11 --- 0 68 16 MS, 0 00 --- 0 -19 52 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
PASSENGER NECK COMPRESSION/EXTENSION

TEST NUMBER 011022

40 KPH FLAT FRONTAL

TRC INC

300

250

200

150

100

50

0

(--- x 10⁻³)

-20

10

40

70

100

130

160

190

220

250

280

310

TIME (MS)

CHANNEL NCE2

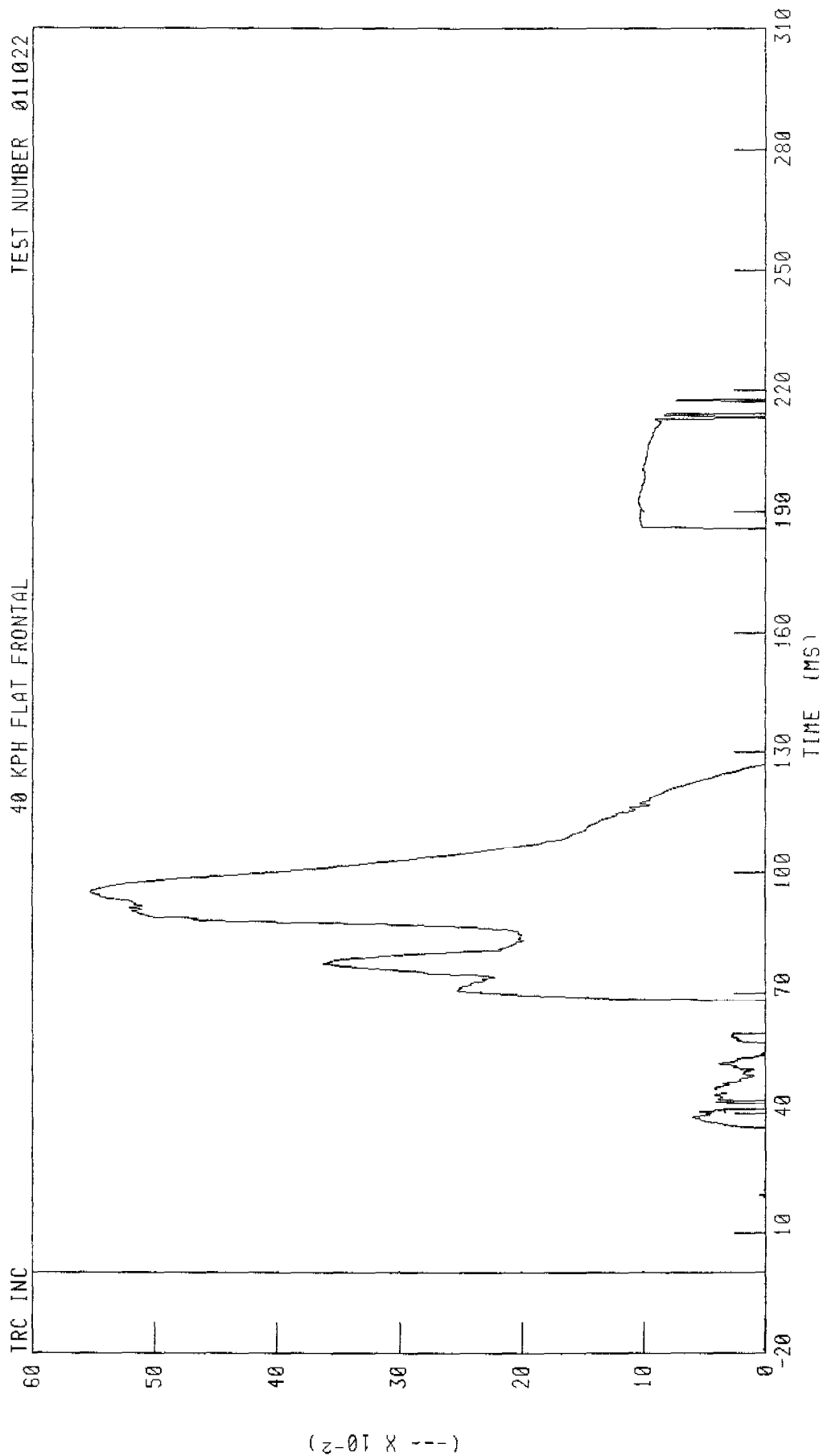
FILTER CH CLASS 600

PEAK DATA 0 02 --- 0 35 68 MS, 0 00 --- 0 -20 00 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
PASSENGER NECK COMPRESSION/FLEXION

TEST NUMBER 011022

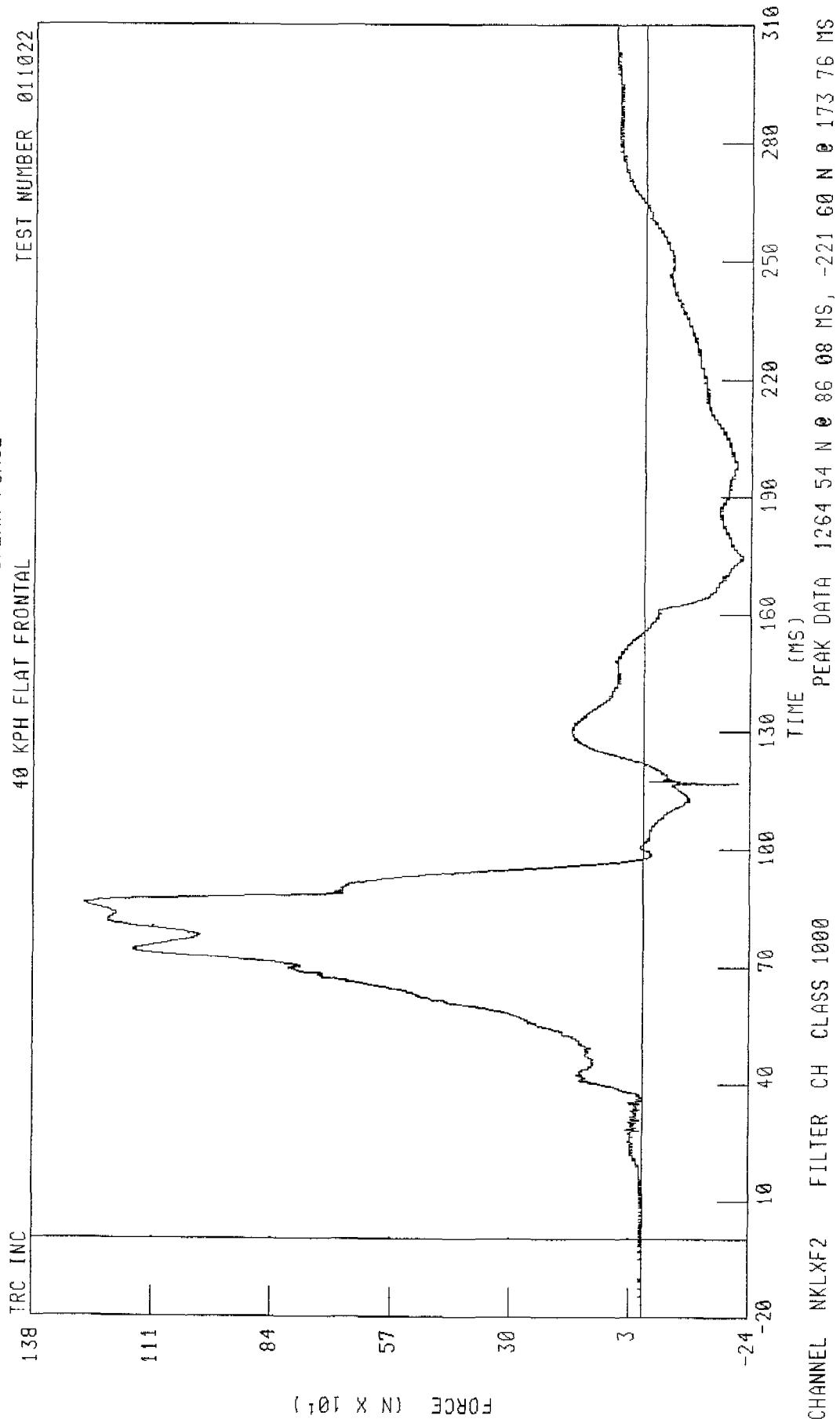
40 KPH FLAT FRONTAL



CHANNEL NCF2 FILTER CH CLASS 600

(--- X 10⁻²)

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
 PASSENGER NECK LOWER X-AXIS SHEAR FORCE
 40 KPH FLAT FRONTAL

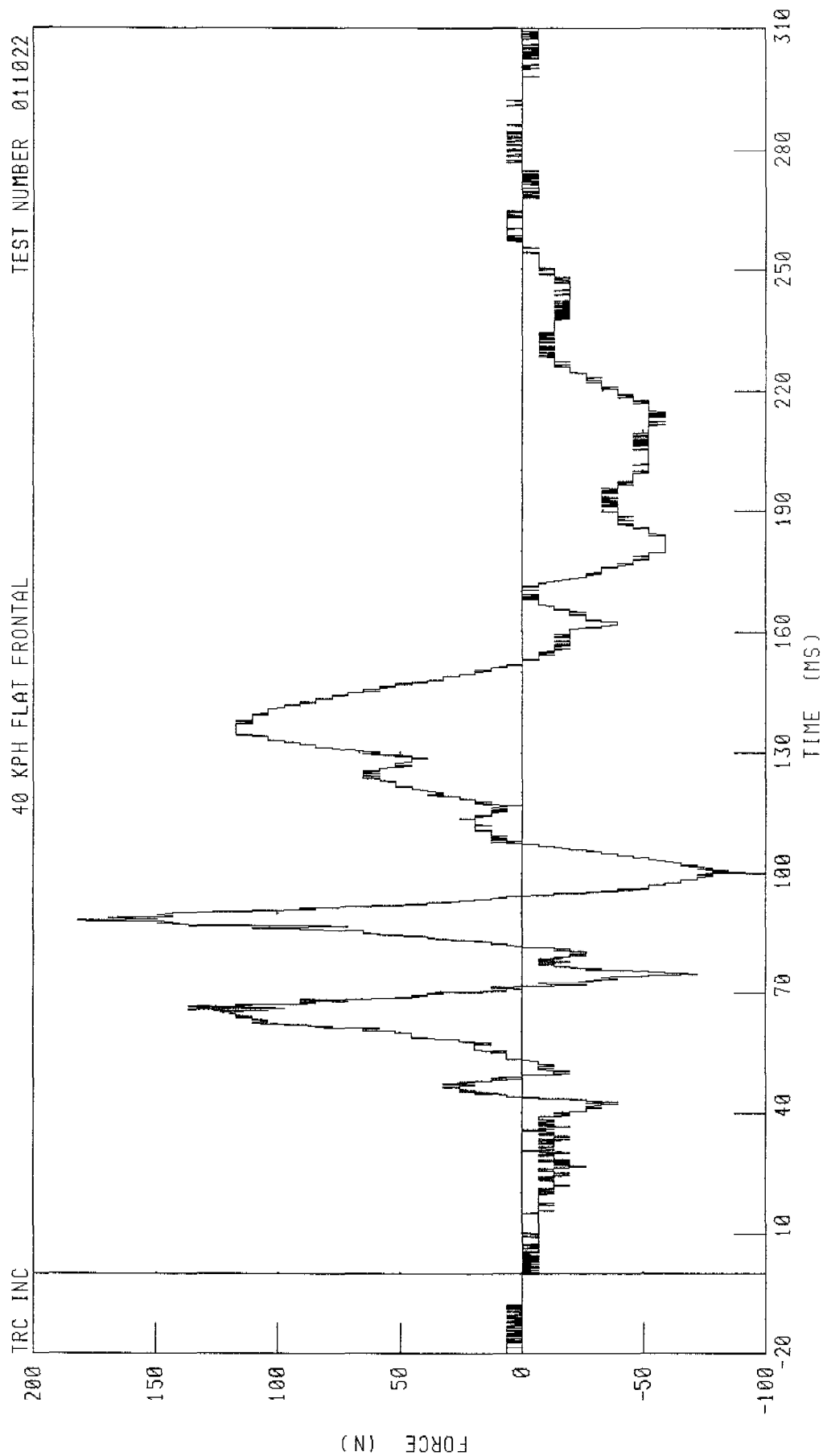


2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER NECK LOWER Y-AXIS SHEAR FORCE

40 KPH FLAT FRONTAL

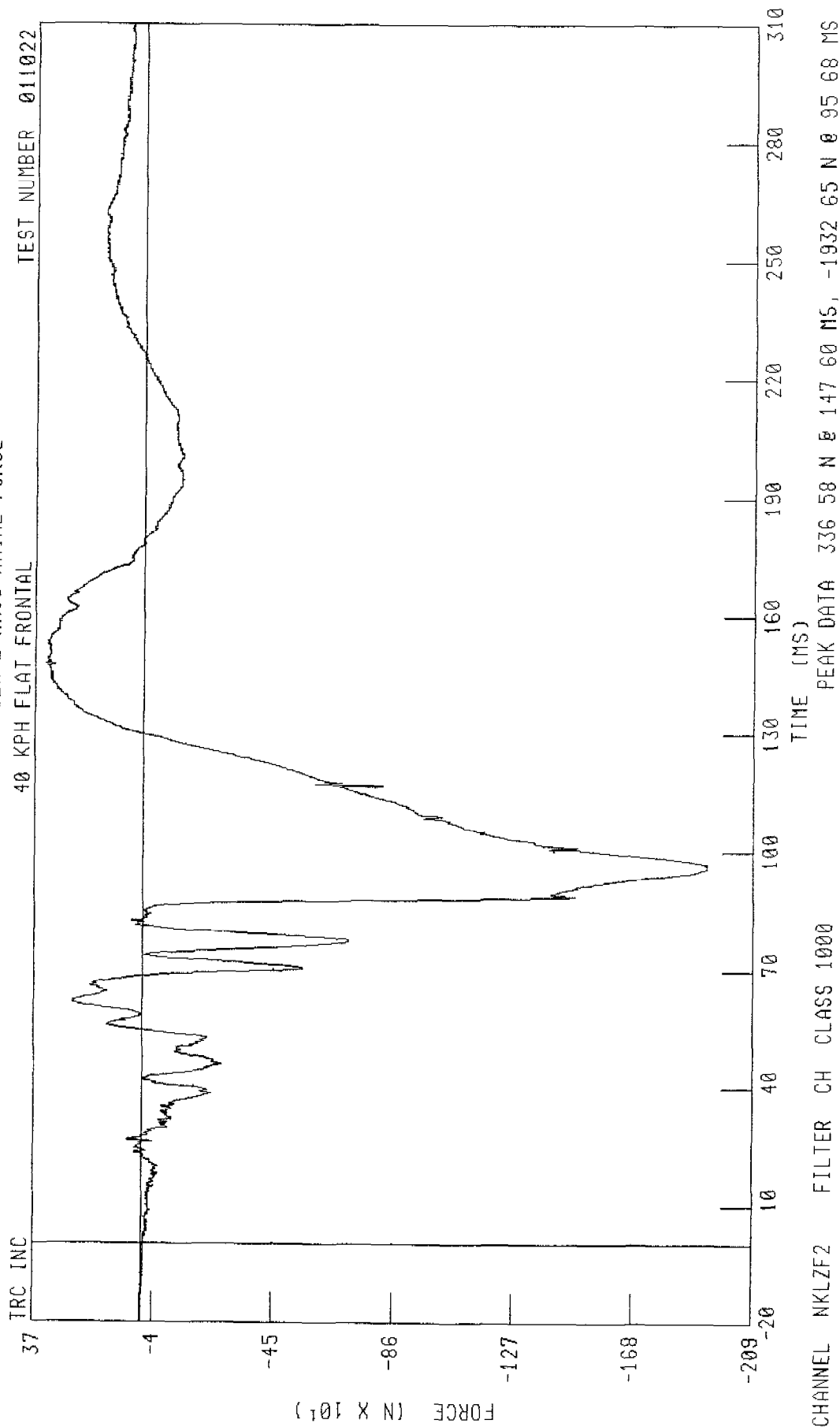
TEST NUMBER 011022



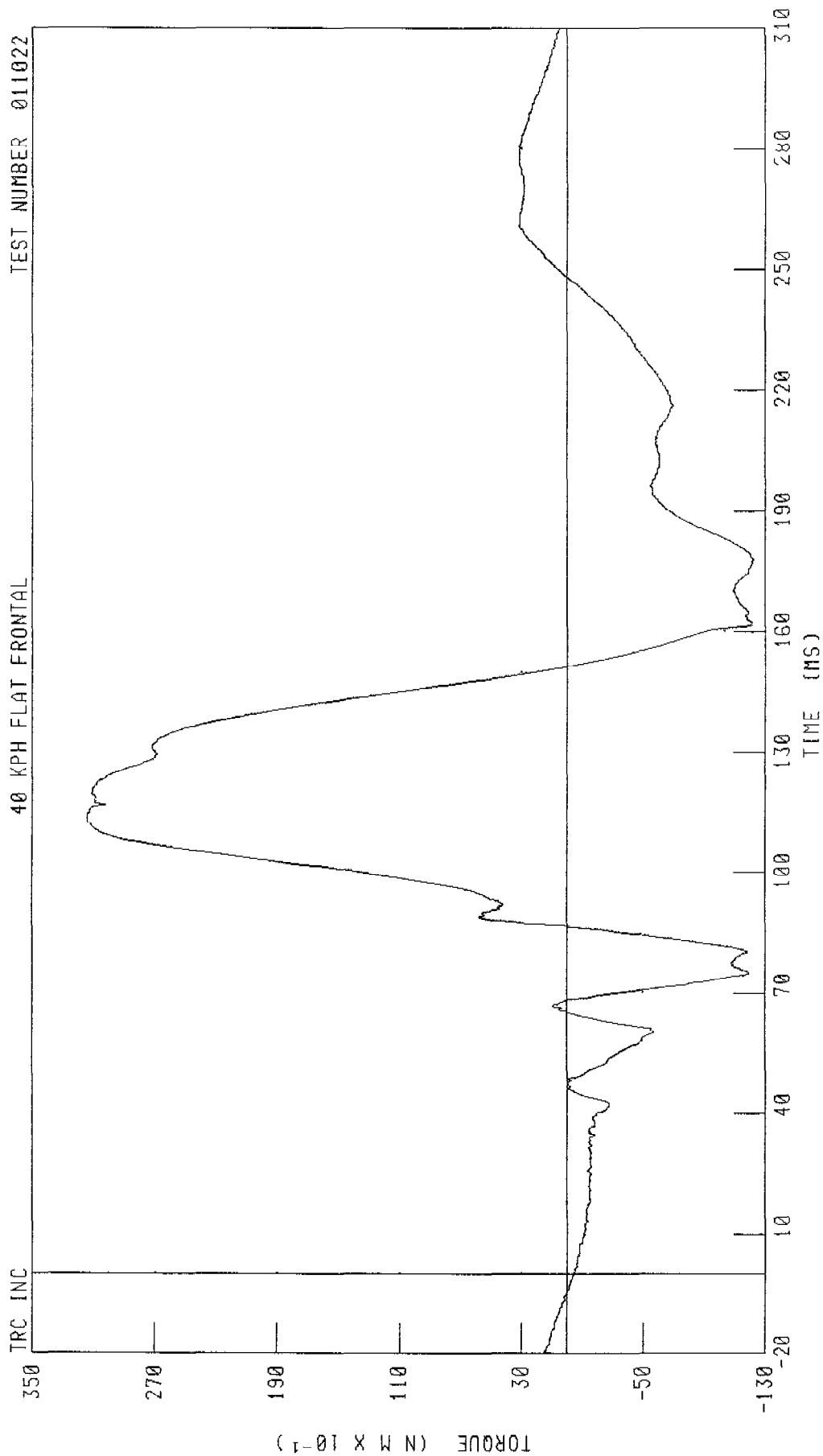
CHANNEL NKLYF2 FILTER CH CLASS 1000

PEAK DATA 182 06 N 0 88 32 MS, -91 43 N 0 100 16 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
PASSENGER NECK LOWER Z-AXIS AXIAL FORCE



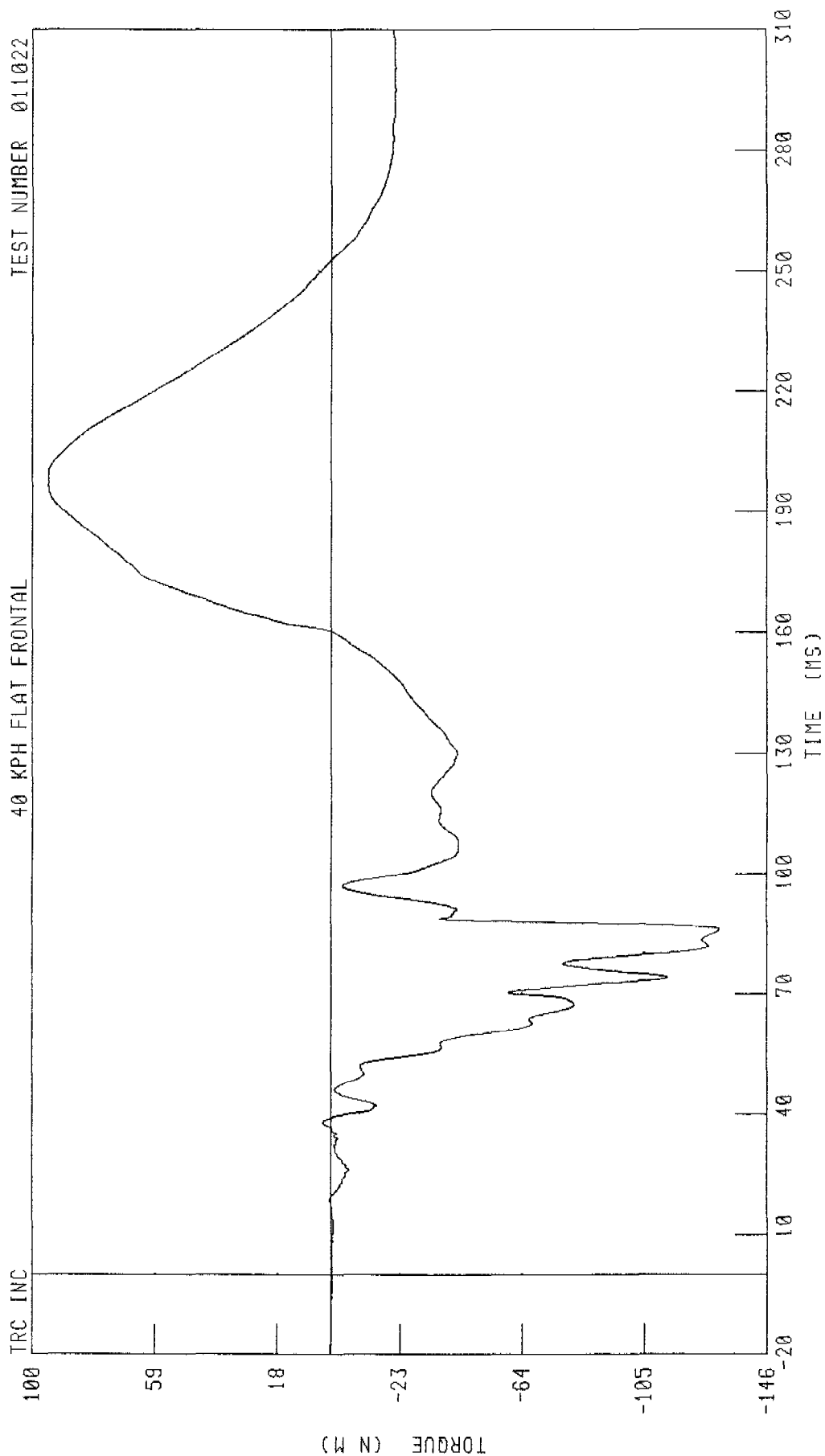
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
PASSENGER NECK LOWER MOMENT ABOUT X AXIS



CHANNEL NKLX2 FILTER CH CLASS 600

PEAK DATA 31 44 N M 0 114 16 MS, -12 25 N M 0 162 08 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
PASSENGER NECK LOWER MOMENT ABOUT Y AXIS



CHANNEL NKLYM2 FILTER CH CLASS 600

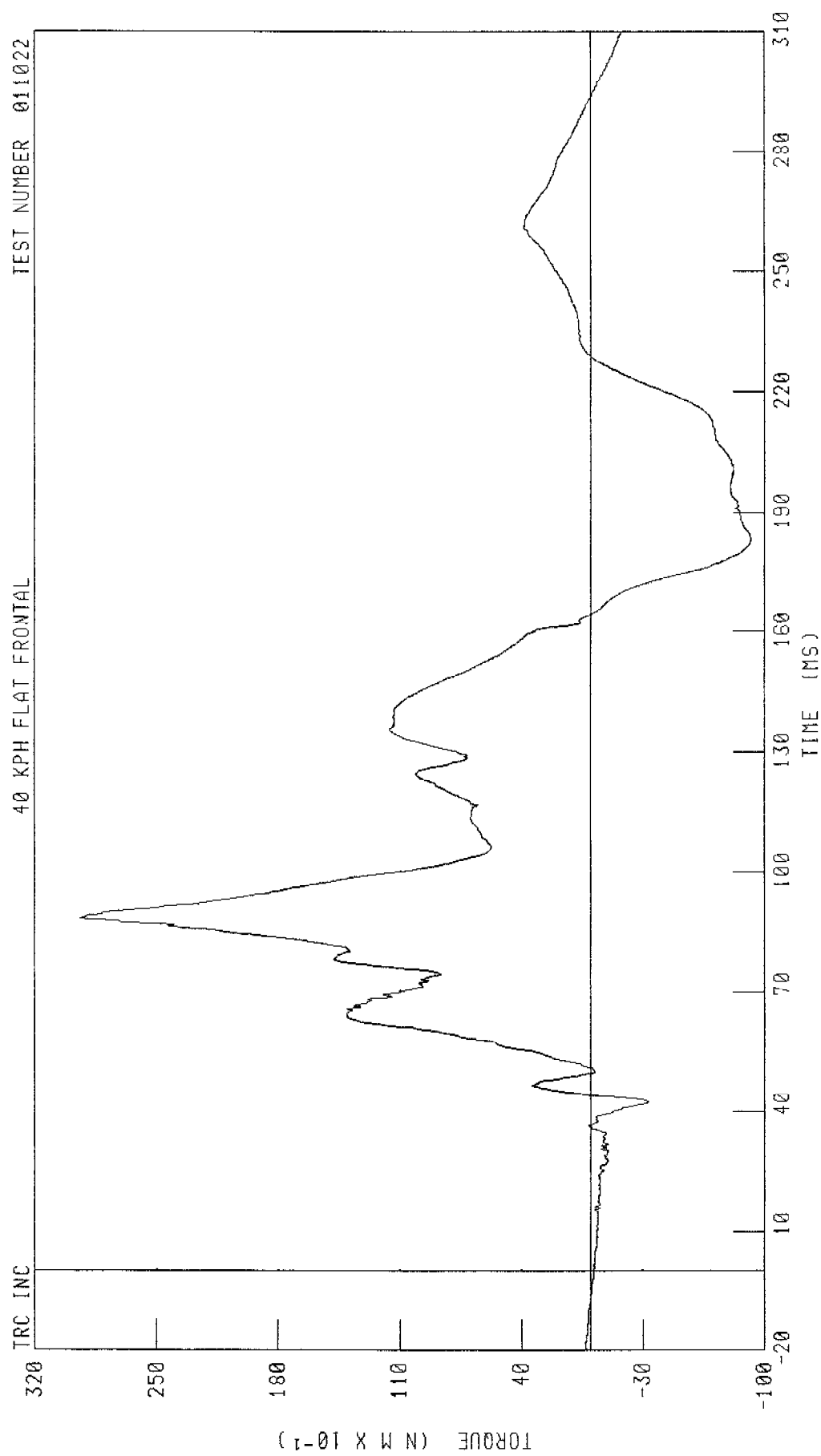
PEAK DATA 94 72 N M @ 196 48 MS, -130 20 N M @ 85 92 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER NECK LOWER MOMENT ABOUT Z AXIS

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL NKLZM2 FILTER CH CLASS 600

PEAK DATA 29 40 N M @ 88 40 MS, -9 25 N M @ 183 36 MS

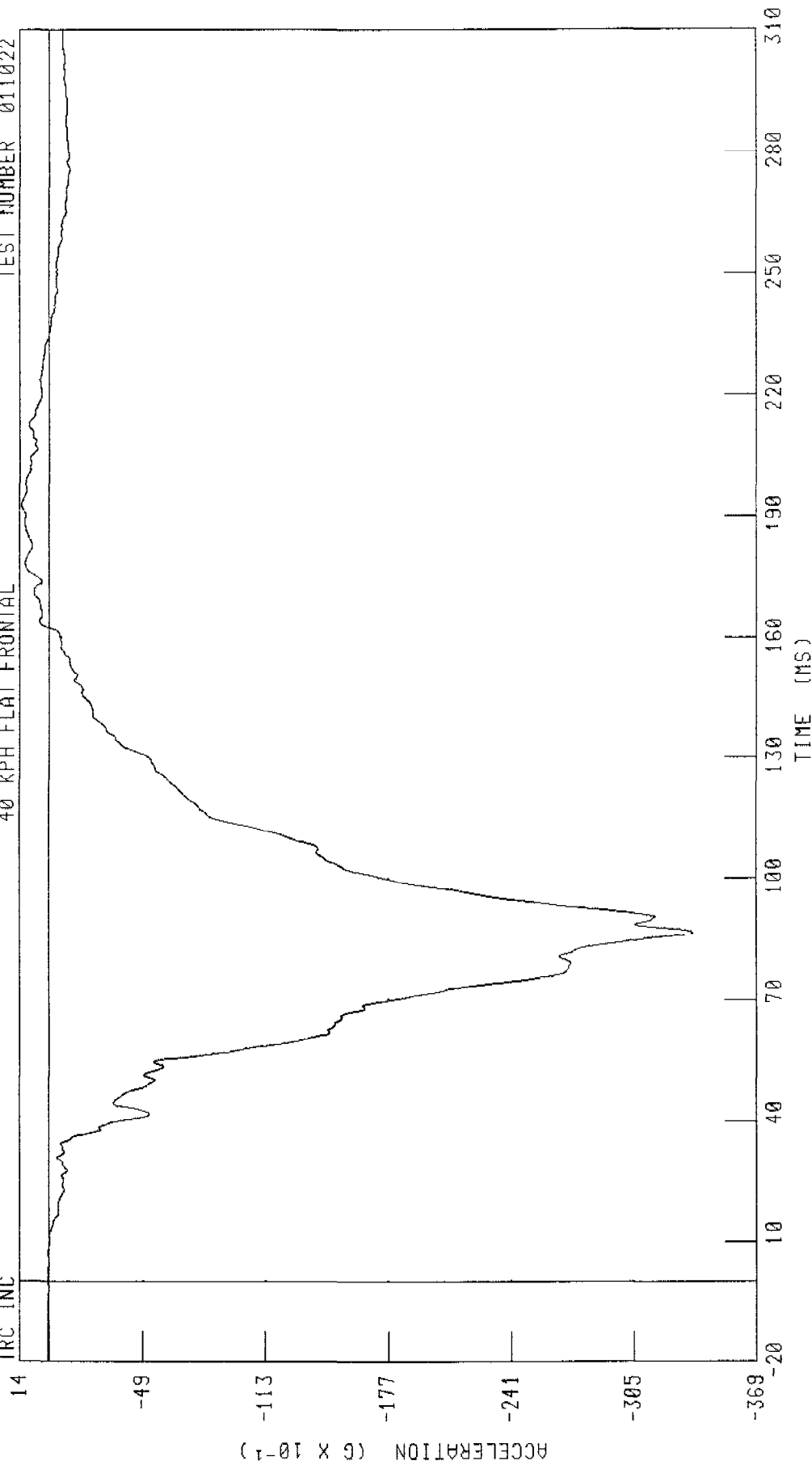
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER CHEST X-AXIS ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022

TRC INC



TIME (MS)

CHANNEL CSTXC2 FILTER CH CLASS 180

PEAK DATA 1 40 G @ 192 64 MS -33 59 G @ 86 56 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

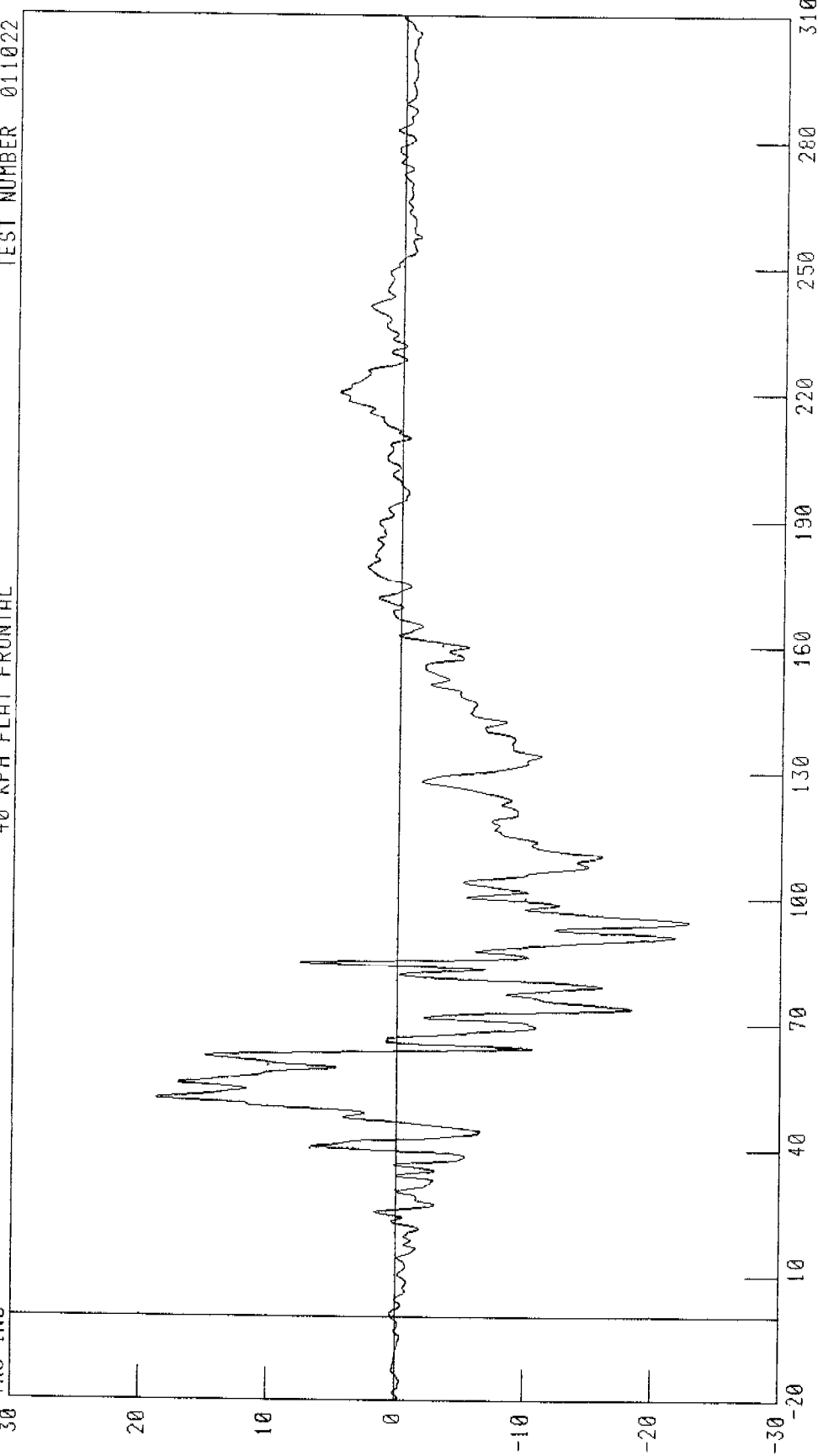
PASSENGER CHEST Y-AXIS ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022

TRC INC

ACCELERATION ($G \times 10^{-1}$)



TIME (MS)

CHANNEL CSTYC2 FILTER CH CLASS 180

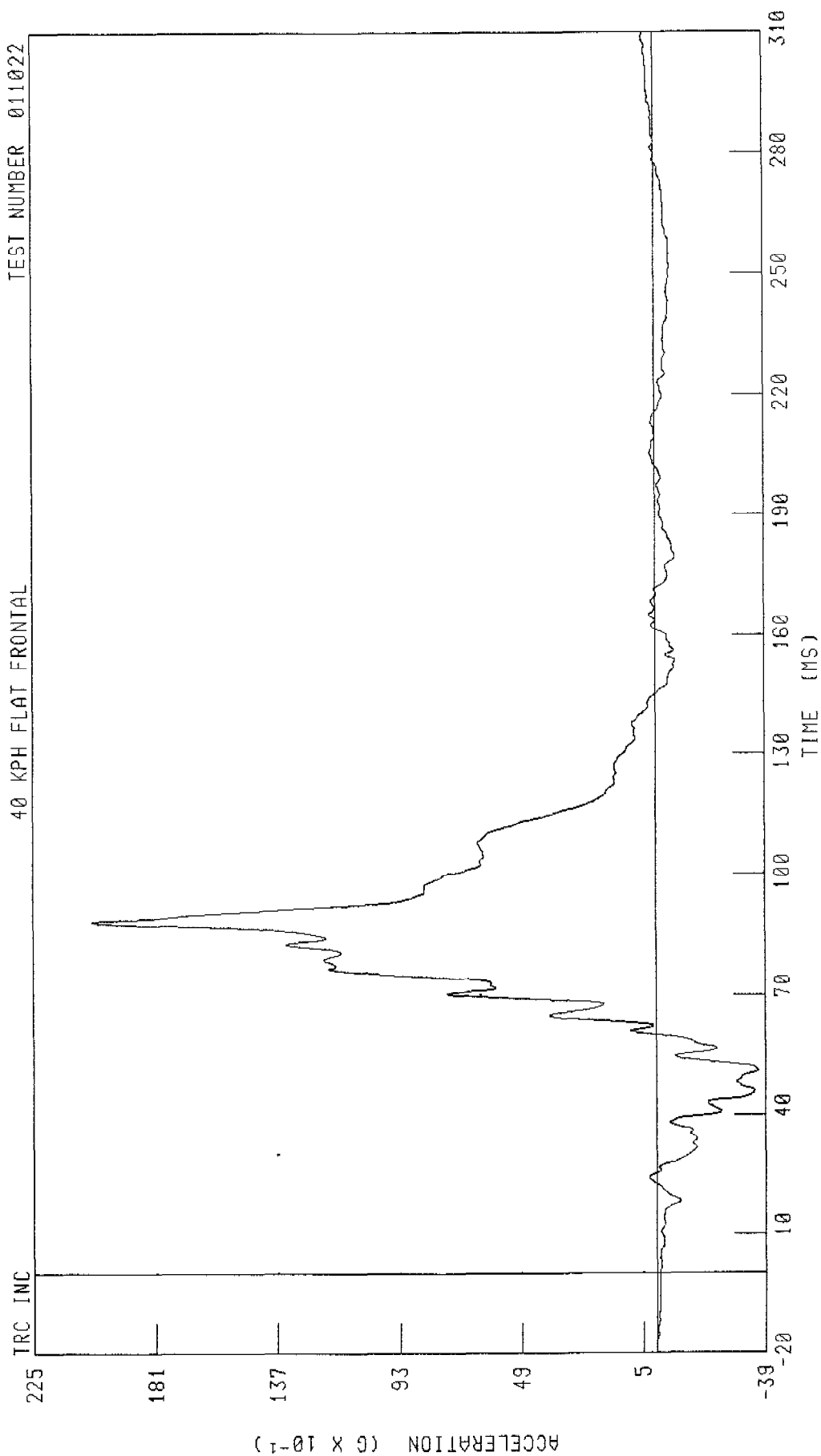
PEAK DATA 1 88 G @ 52 08 MS, -2 28 G @ 94 32 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER CHEST Z-AXIS ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL CSTG2 FILTER CH CLASS 180

PEAK DATA 20 39 G @ 88 24 MS, -3 63 G @ 50 96 MS

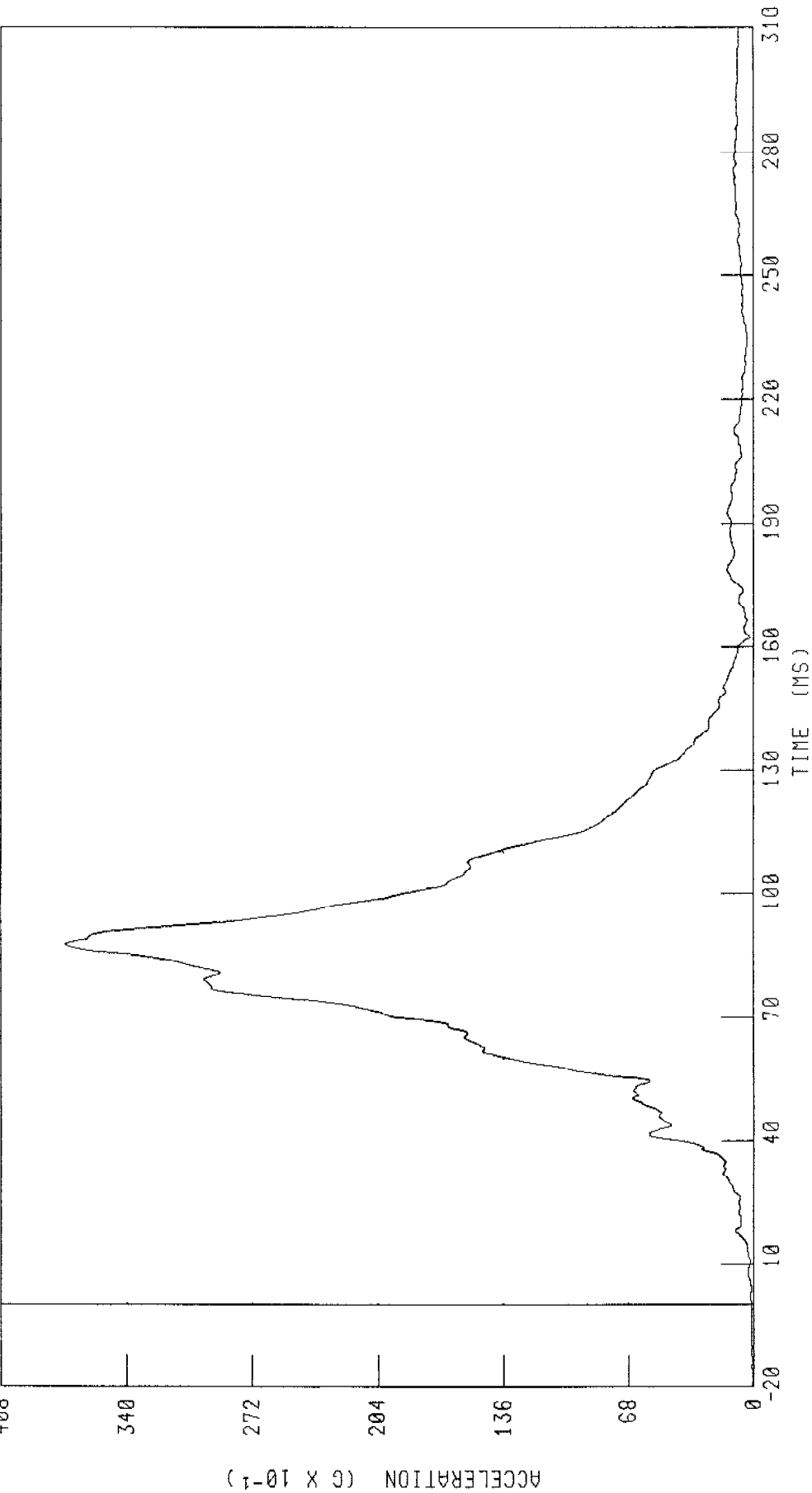
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER CHEST RESULTANT ACCELERATION

TEST NUMBER 011022

40 KPH FLAT FRONTAL

TRC INC



CHANNEL CSTRC2 FILTER CH CLASS 180

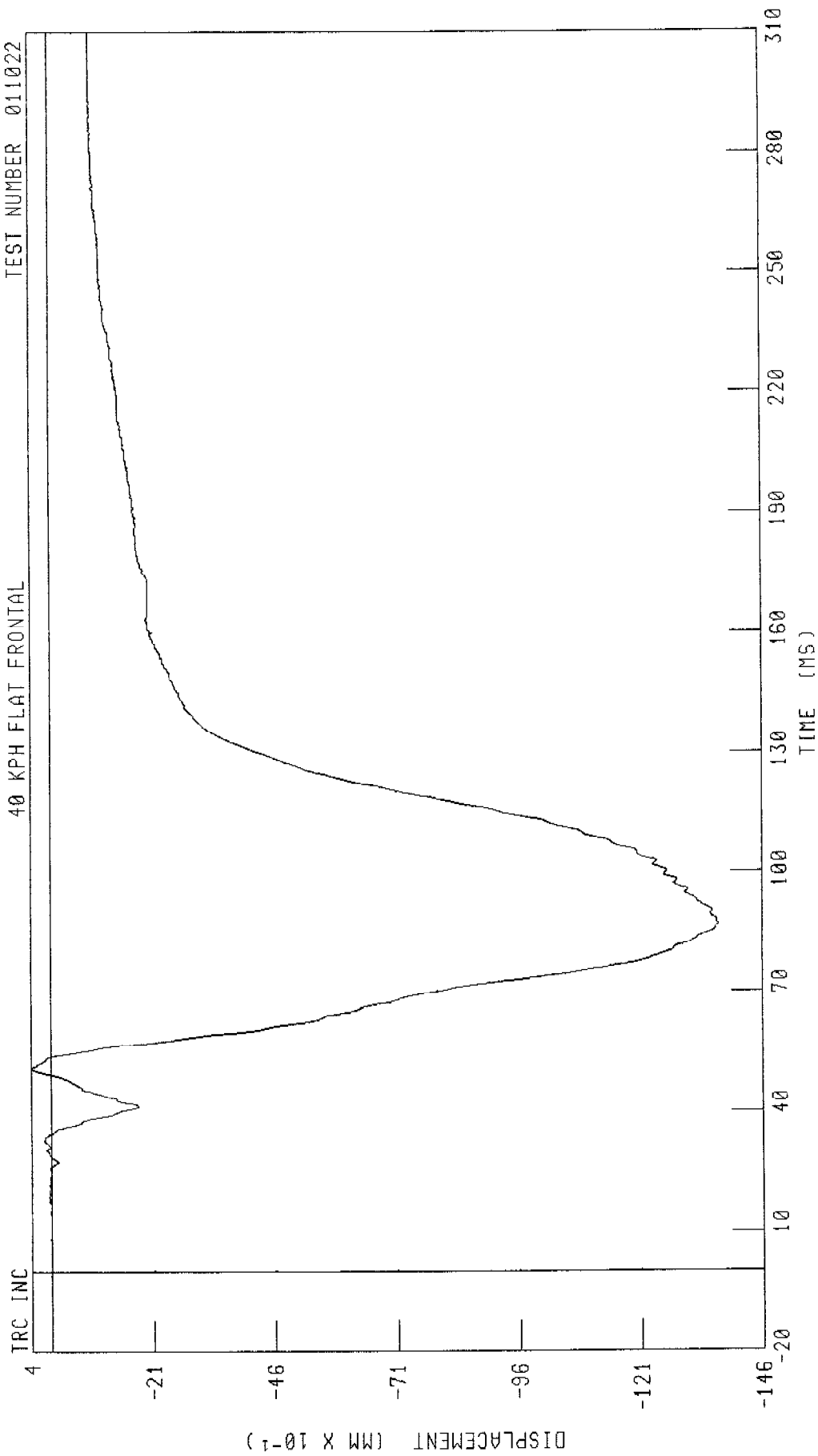
PEAK DATA 37 34 C @ 87 68 MS, 0 00 C @ -20 00 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER CHEST DEFLECTION

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL CSTXD2 FILTER CH CLASS 600

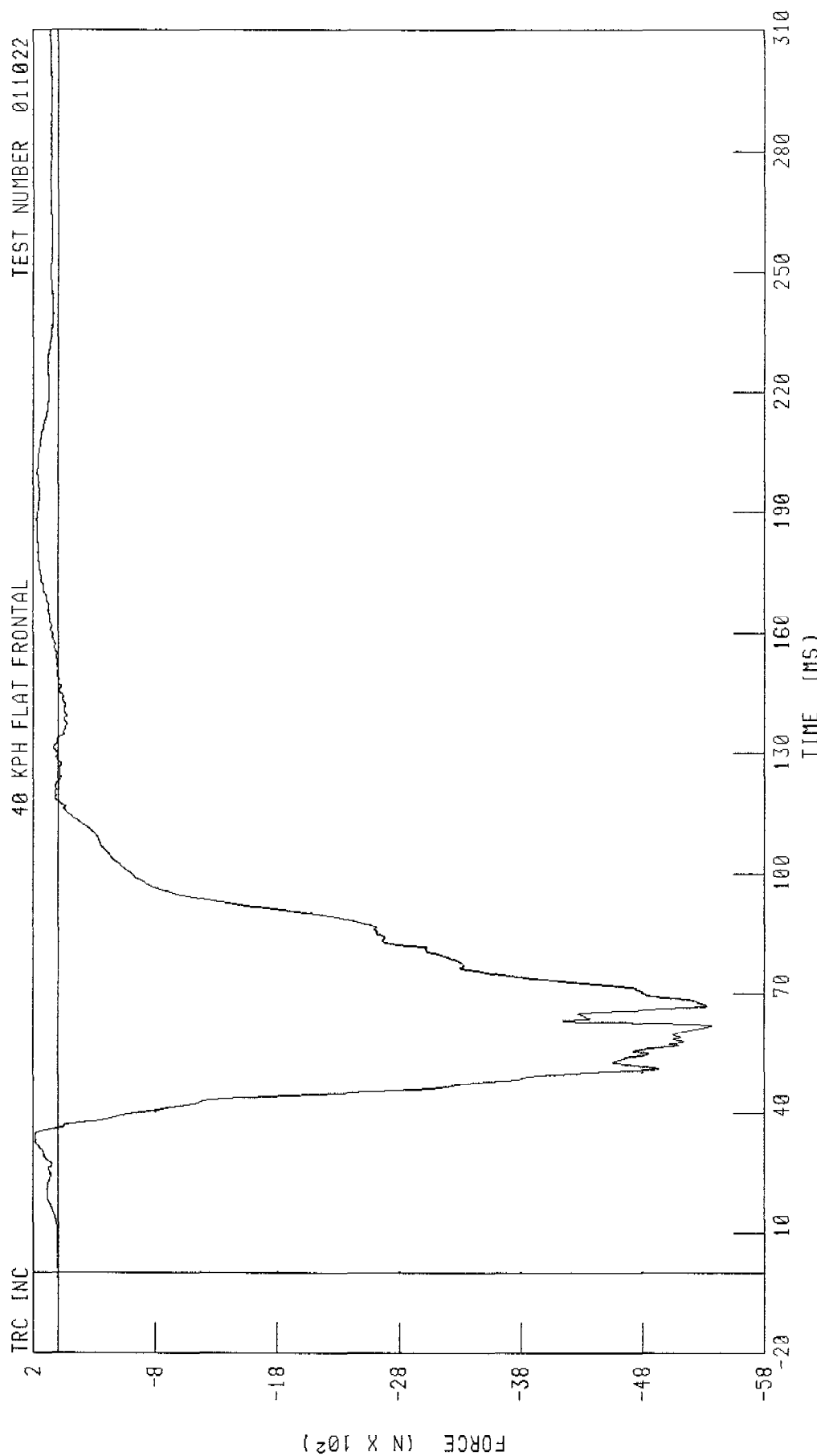
PEAK DATA 0 42 MM @ 50 96 MS, -13 71 MM @ 86 64 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER LEFT FEMUR FORCE

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL LFMZF2 FILTER CH CLASS 600

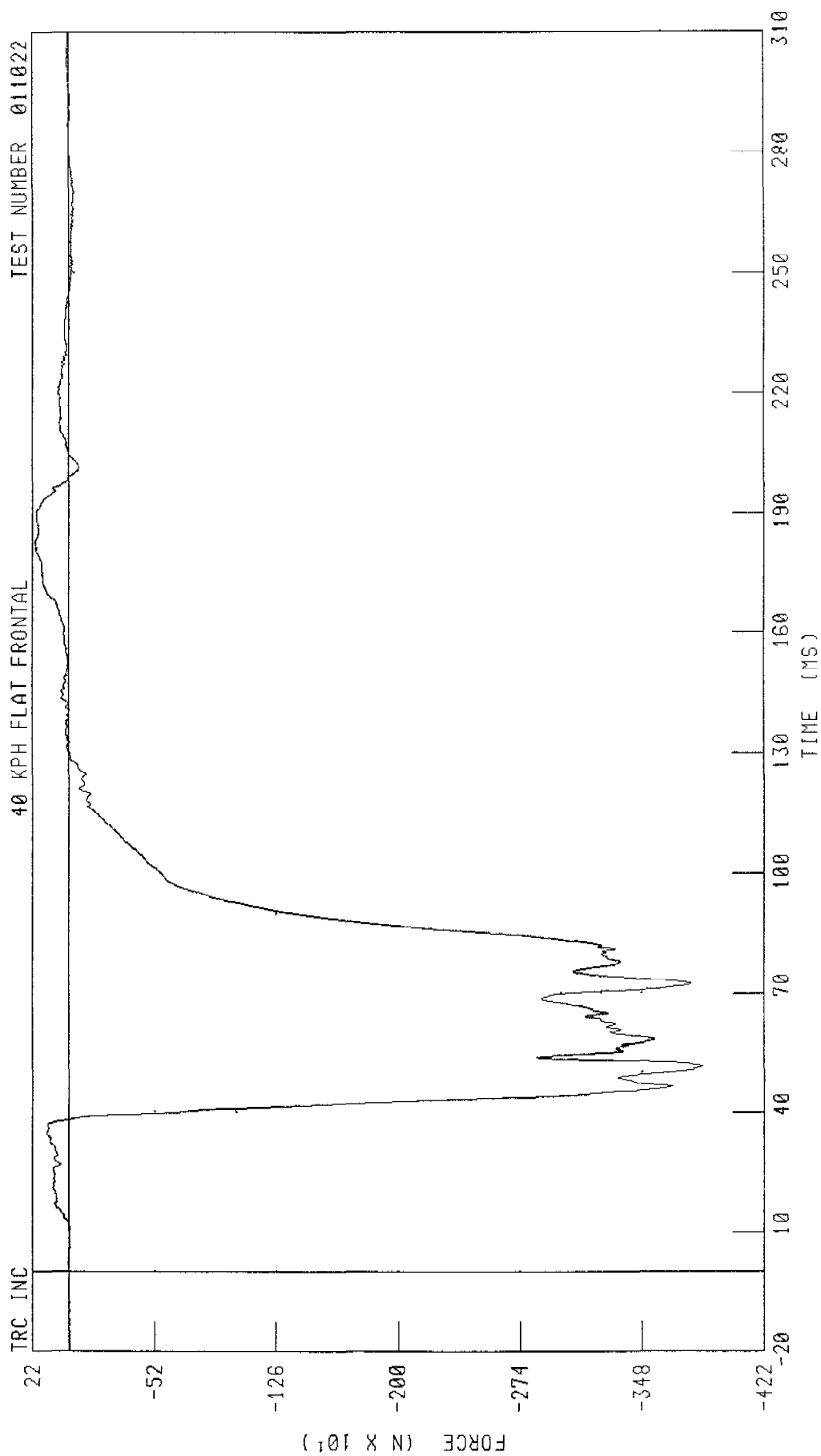
PEAK DATA 189 03 N @ 34 16 MS, -5370 59 N @ 61 84 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER RIGHT FEMUR FORCE

40 KPH FLAT FRONTAL

TEST NUMBER 011022



TIME (MS)

CHANNEL RFMZF2 FILTER CH CLASS 600

PEAK DATA 206 34 N @ 182 64 MS, -3849 92 N @ 51 60 MS

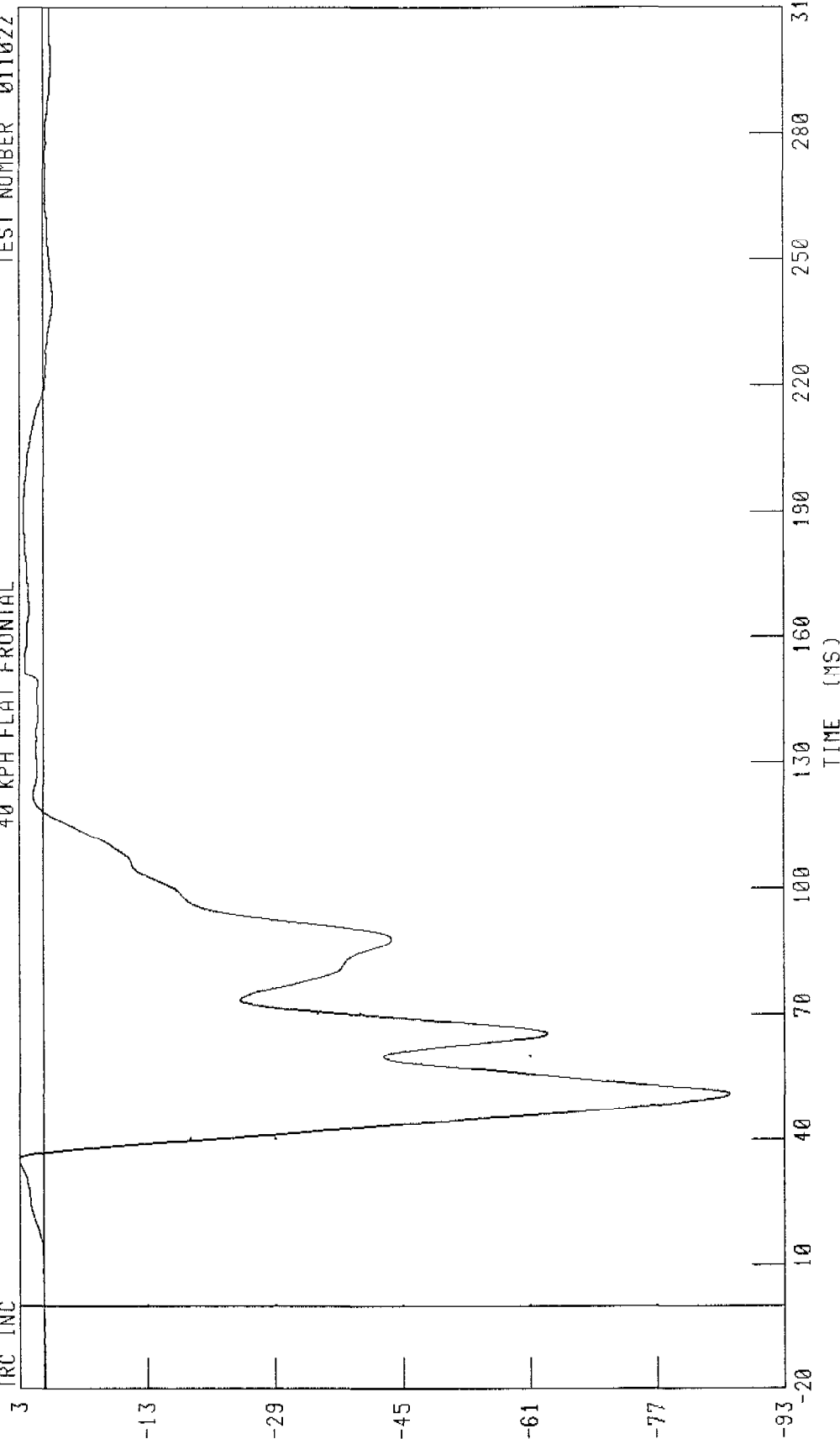
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
PASSENGER LEFT TIBIA TO KNEE DISPLACEMENT

TRC INC

40 KPH FLAT FRONTAL

TEST NUMBER 011022

DISPLACEMENT (MM X 10⁻¹)

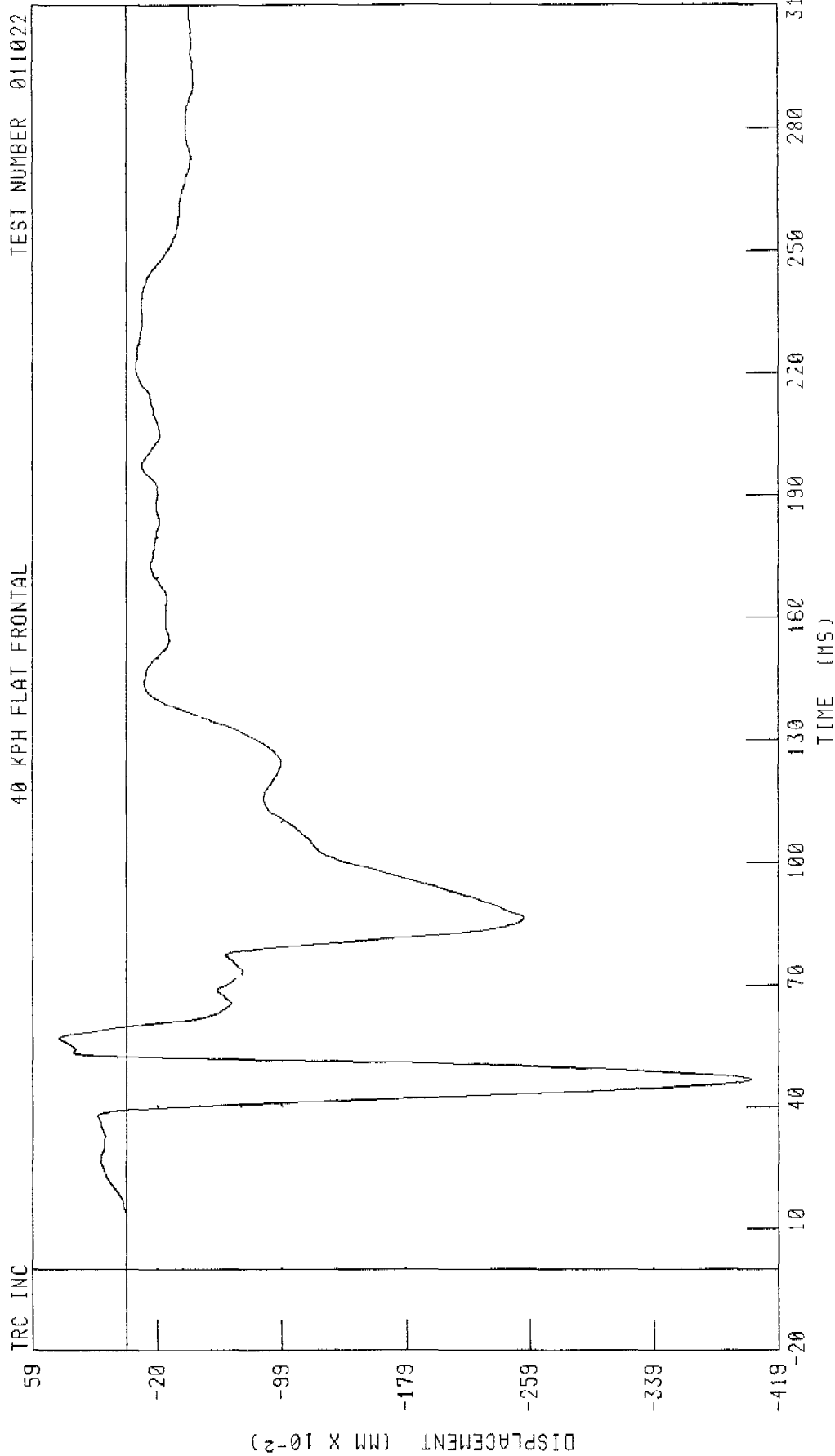


CHANNEL KNLXD2 FILTER CH CLASS 180

PEAK DATA 0 31 MM @ 35 12 MS, -6 62 MM @ 50 80 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
 PASSENGER RIGHT TIBIA TO KNEE DISPLACEMENT
 40 KPH FLAT FRONTAL

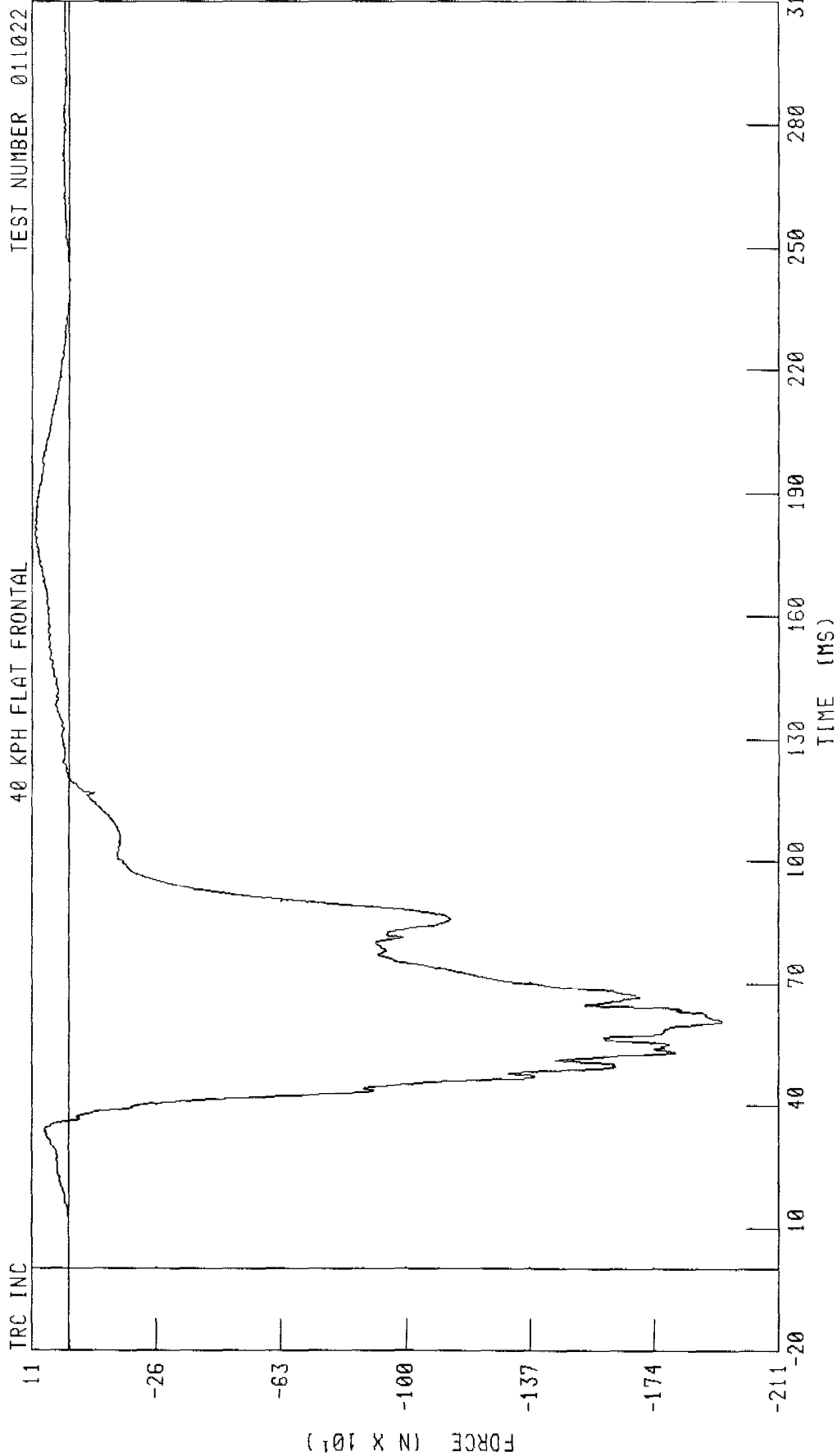
TEST NUMBER 011022



PEAK DATA 0 43 MM @ 56 96 MS, -4 03 MM @ 46 64 MS

CHANNEL KNRXD2 FILTER CH CLASS 180

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
PASSENGER LEFT UPPER TIBIA X-AXIS FORCE



CHANNEL TBLXF2 FILTER CH CLASS 600

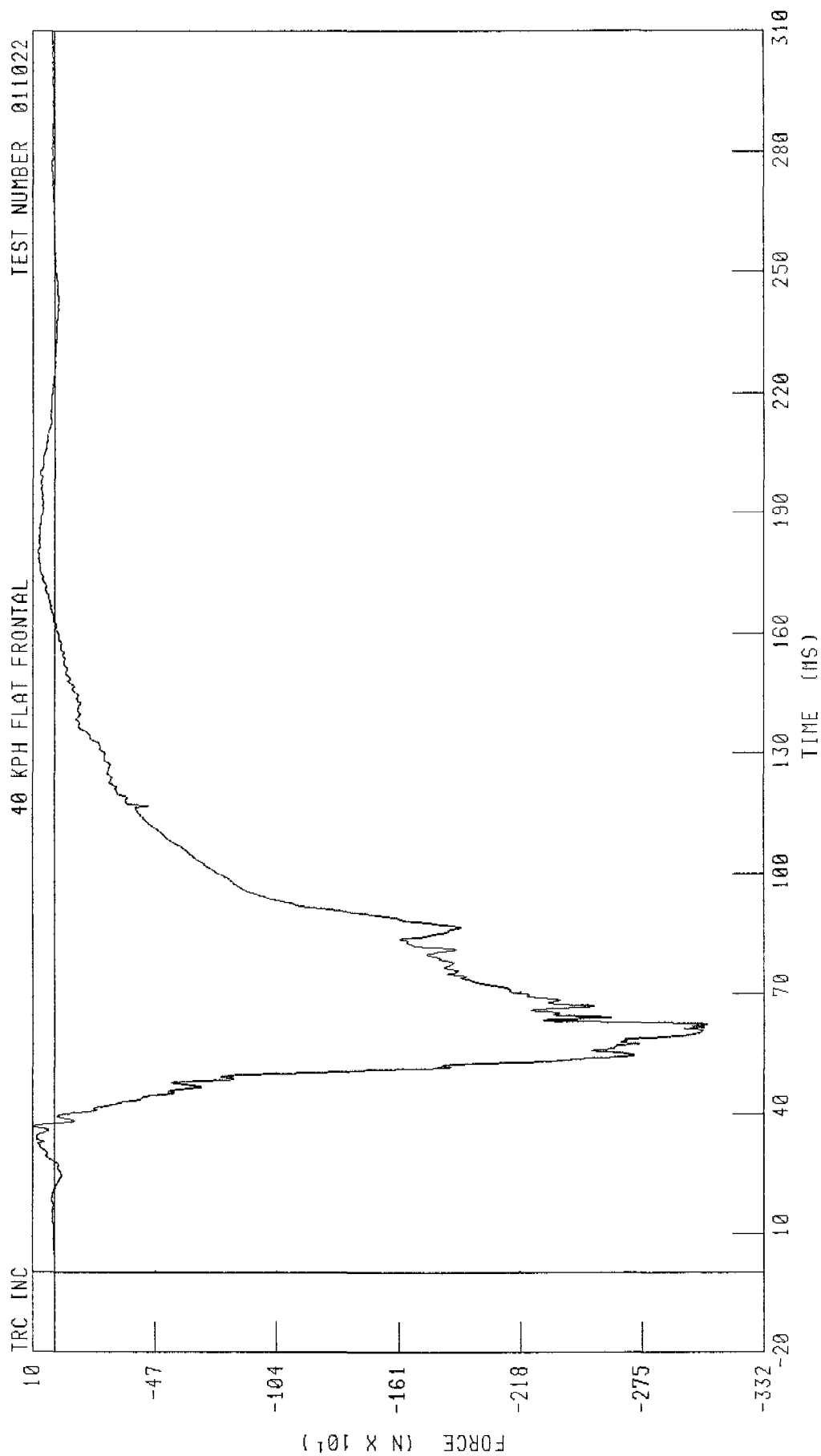
PEAK DATA 100 99 N @ 181 84 MS, -1941 83 N @ 60 72 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER LEFT UPPER TIBIA Z-AXIS FORCE

40 KPH FLAT FRONTAL

TEST NUMBER 011022

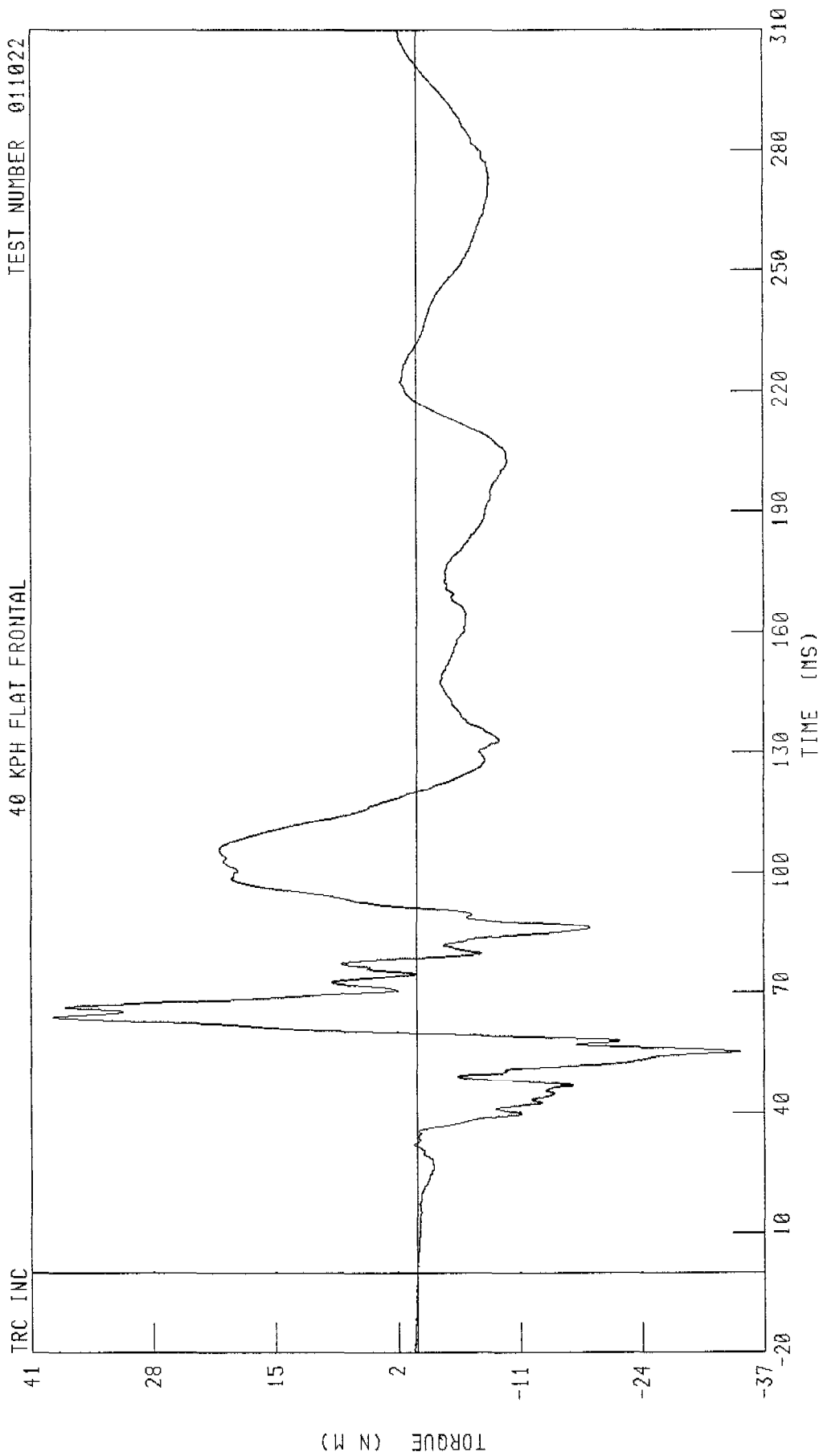


TIME (MS)

CHANNEL TBLZF2 FILTER CH CLASS 600

PEAK DATA 98 89 N @ 36 80 MS, -3056 56 N @ 62 24 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
PASSENGER LEFT UPPER TIBIA MOMENT ABOUT X AXIS

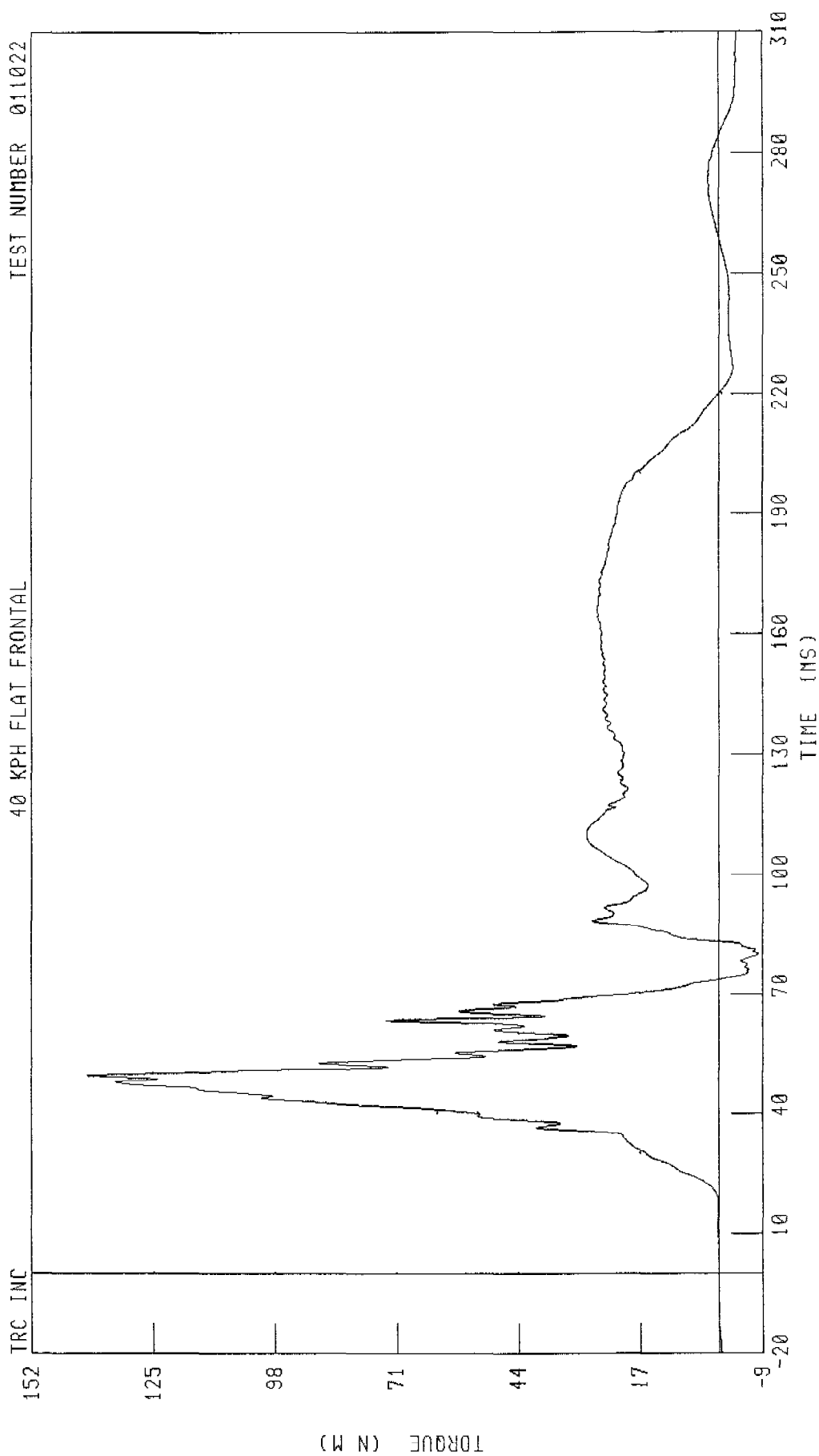


CHANNEL TBLX12 FILTER CH CLASS 600

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
PASSENGER LEFT UPPER TIBIA MOMENT ABOUT Y AXIS

40 KPH FLAT FRONTAL

TEST NUMBER 011022



TIME (MS)

CHANNEL TBLYM2 FILTER CH CLASS 600

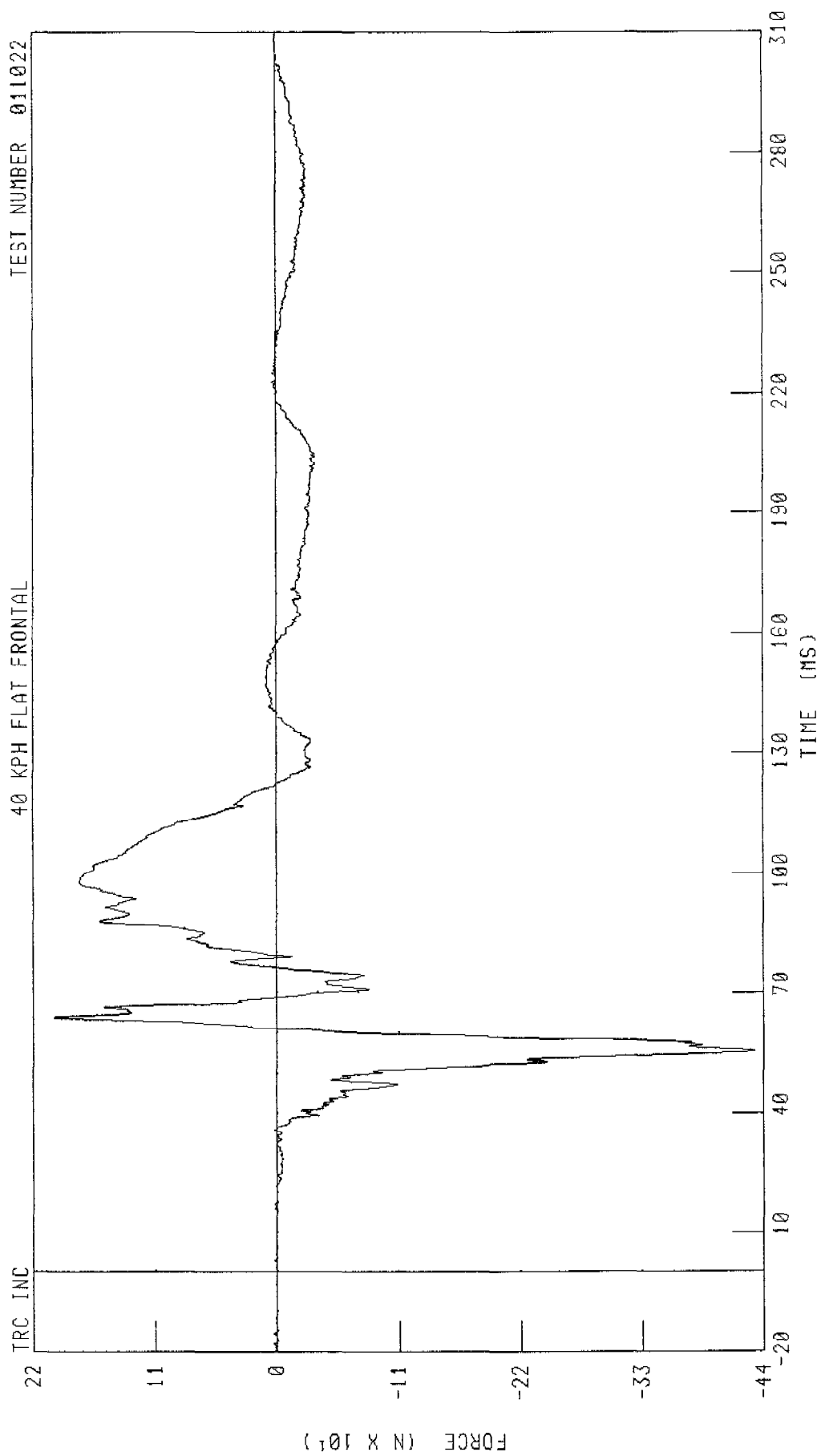
PEAK DATA 140 22 N M @ 49 44 MS, -8 65 N M @ 80 16 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER LEFT LOWER TIBIA X-AXIS FORCE

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL ANLXF2 FILTER CH CLASS 600

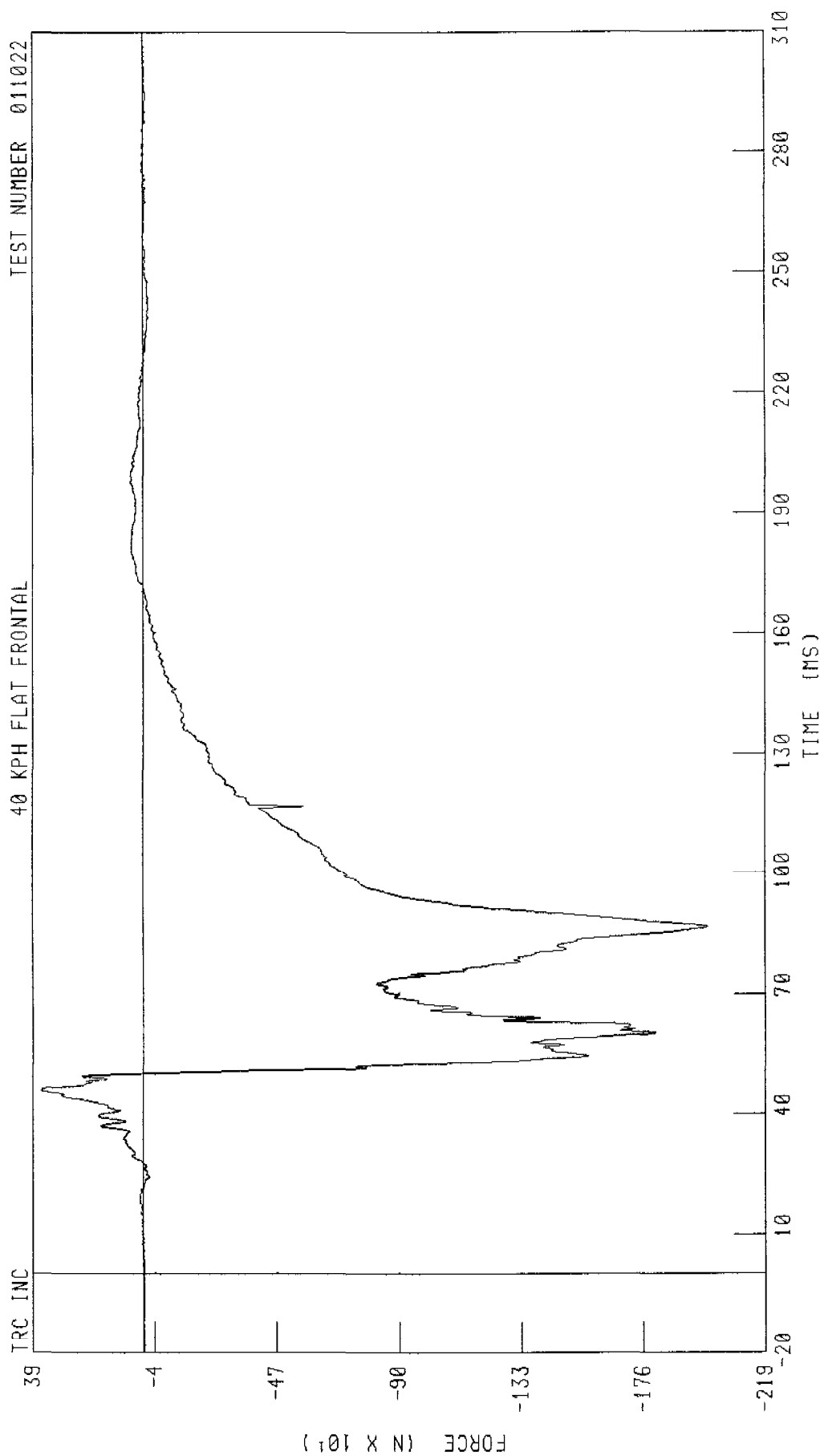
PEAK DATA 201 38 N @ 63 84 MS, -431 81 N @ 55 44 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER LEFT LOWER TIBIA Z-AXIS FORCE

40 KPH FLAT FRONTAL

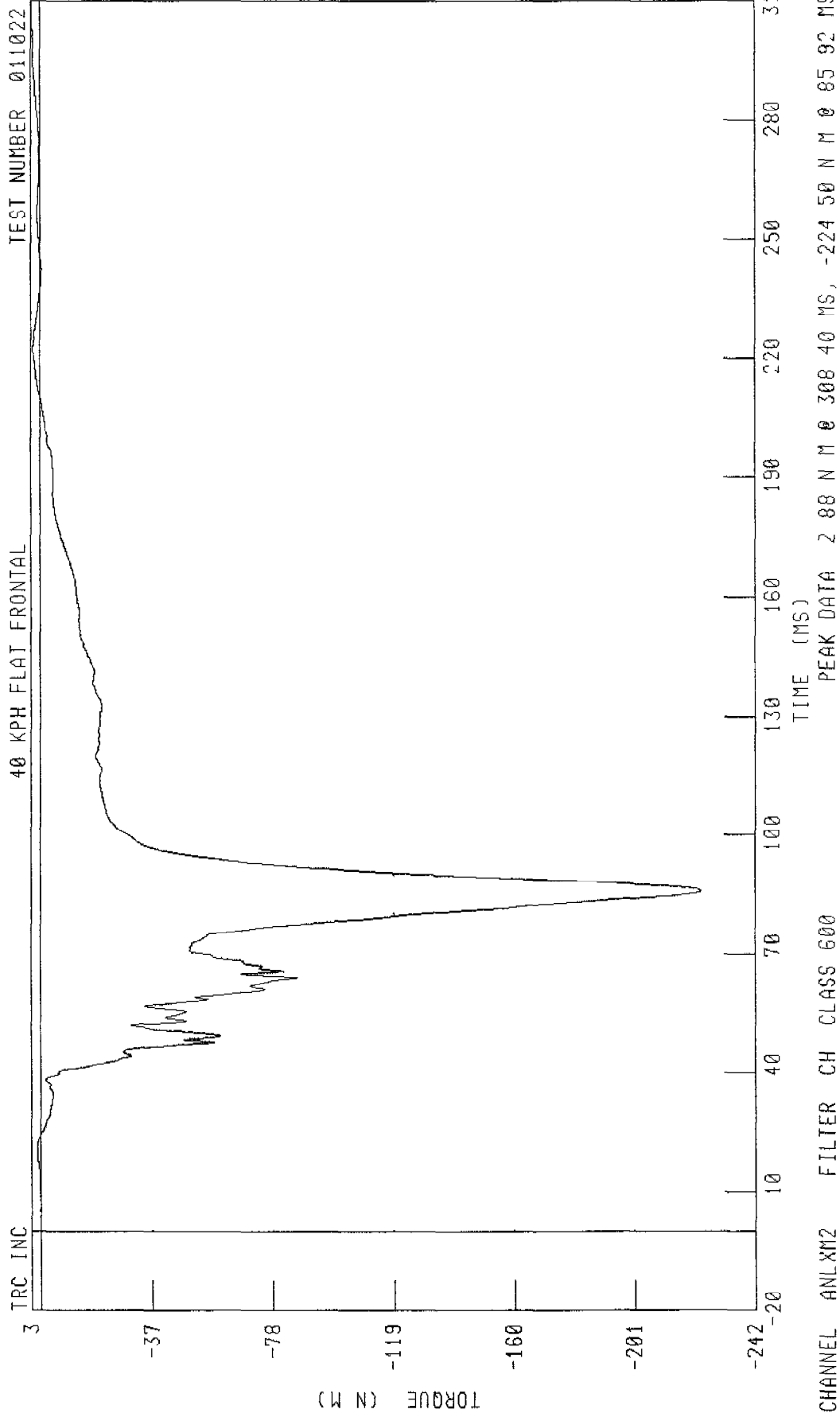
TEST NUMBER 011022



PEAK DATA 360 47 N @ 45 68 MS, -1989 60 N @ 86 72 MS

CHANNEL ANLZF2 FILTER CH CLASS 600

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
PASSENGER LEFT LOWER TIBIA MOMENT ABOUT X AXIS

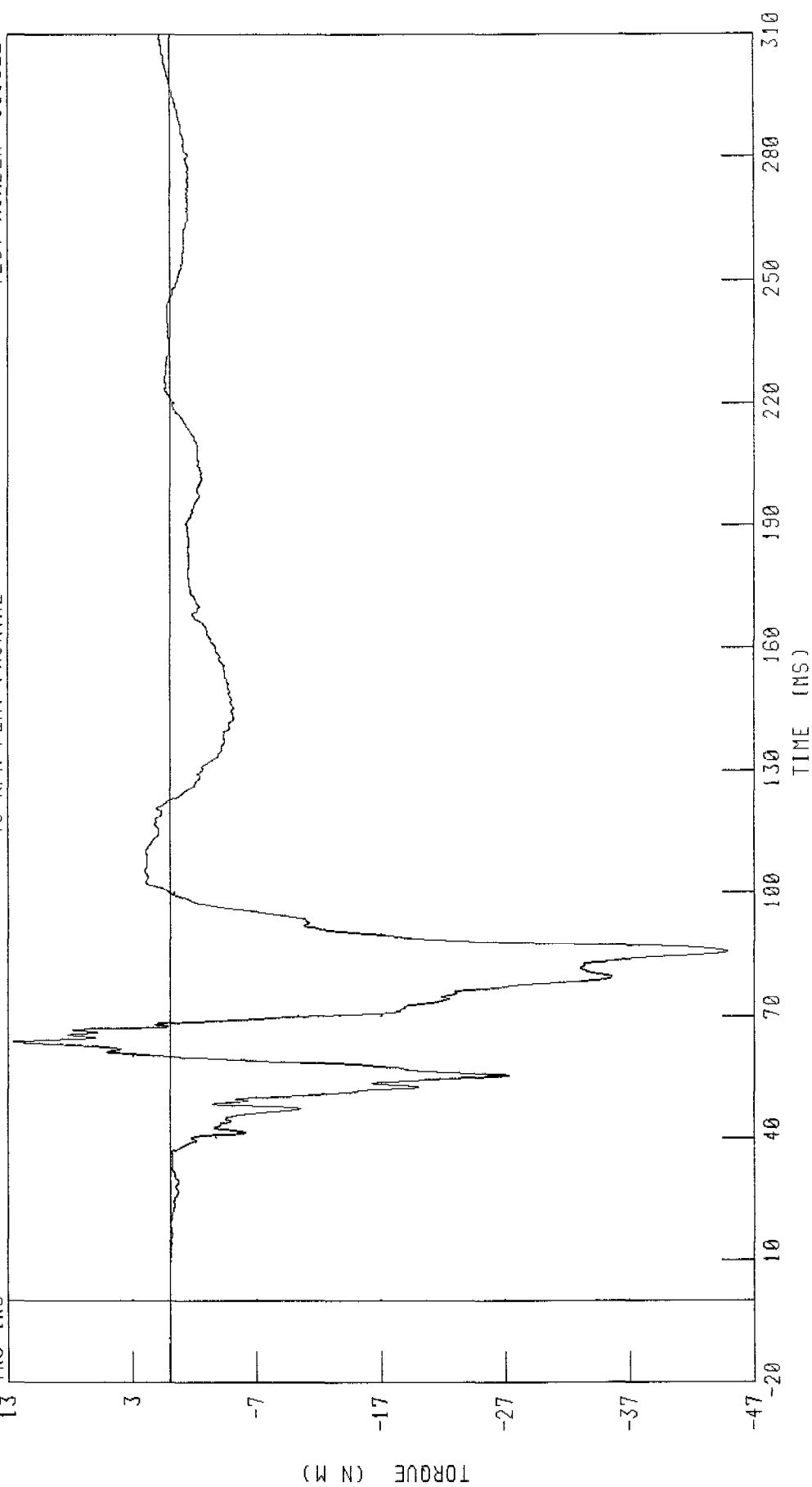


2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
PASSENGER LEFT LOWER TIBIA MOMENT ABOUT Y AXIS

TRC INC
13

40 KPH FLAT FRONTAL

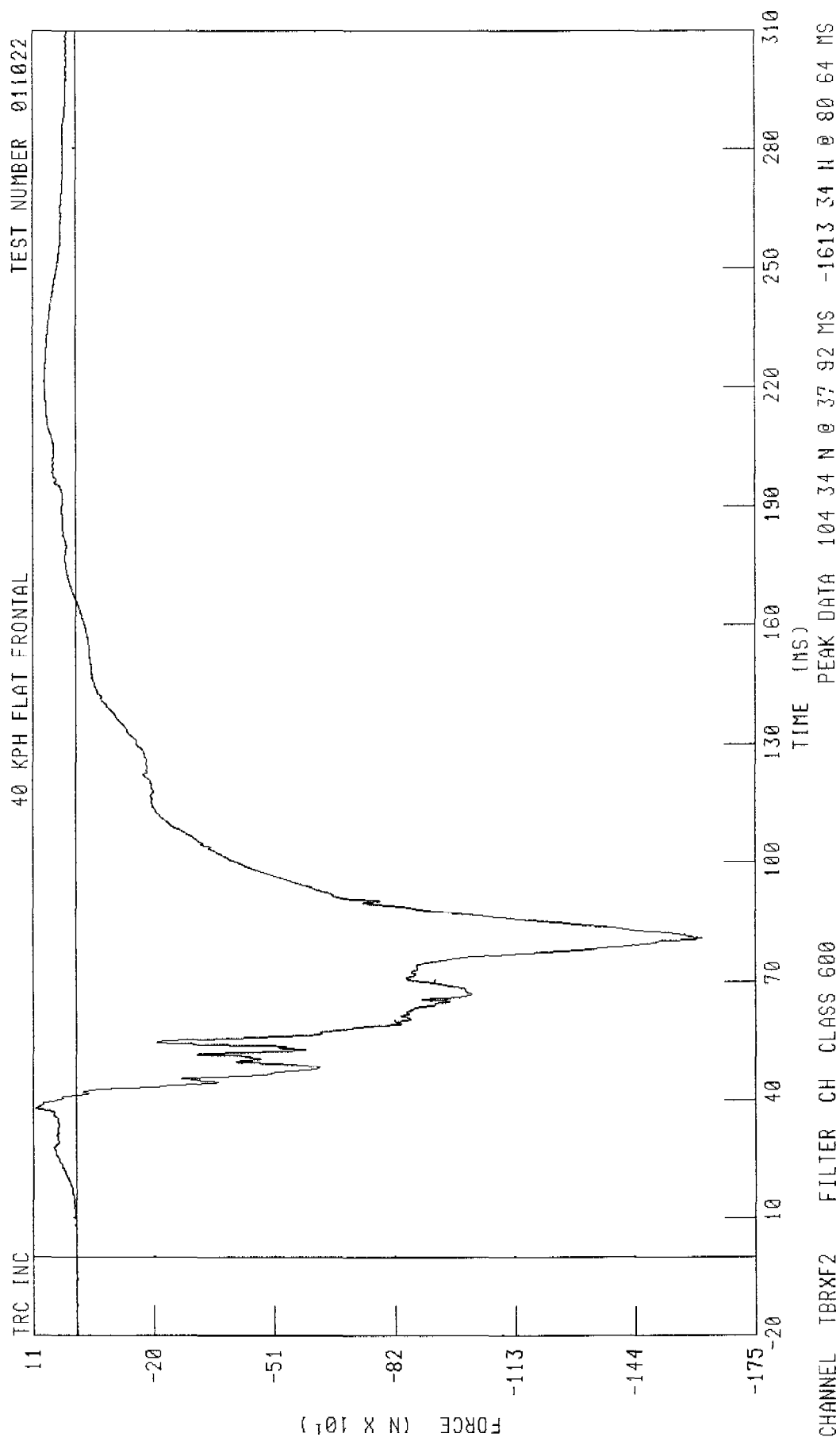
TEST NUMBER 011022



CHANNEL ANLYN2 FILTER CH CLASS 600

PEAK DATA 12 62 N M @ 63 84 MS, -44 86 N M @ 85 60 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
PASSENGER RIGHT UPPER TIBIA X-AXIS FORCE

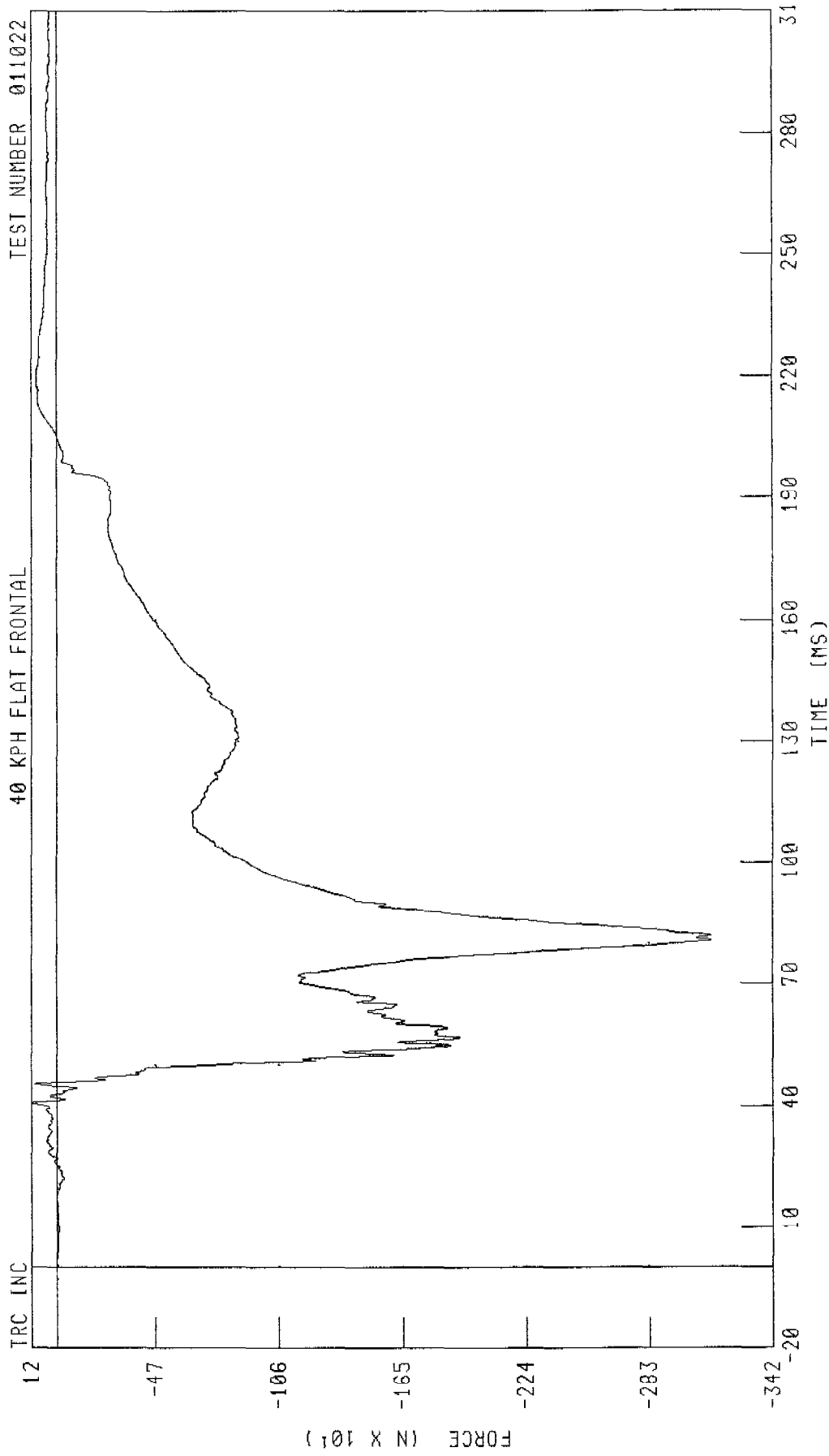


2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER RIGHT UPPER TIBIA Z-AXIS FORCE

40 KPH FLAT FRONTAL

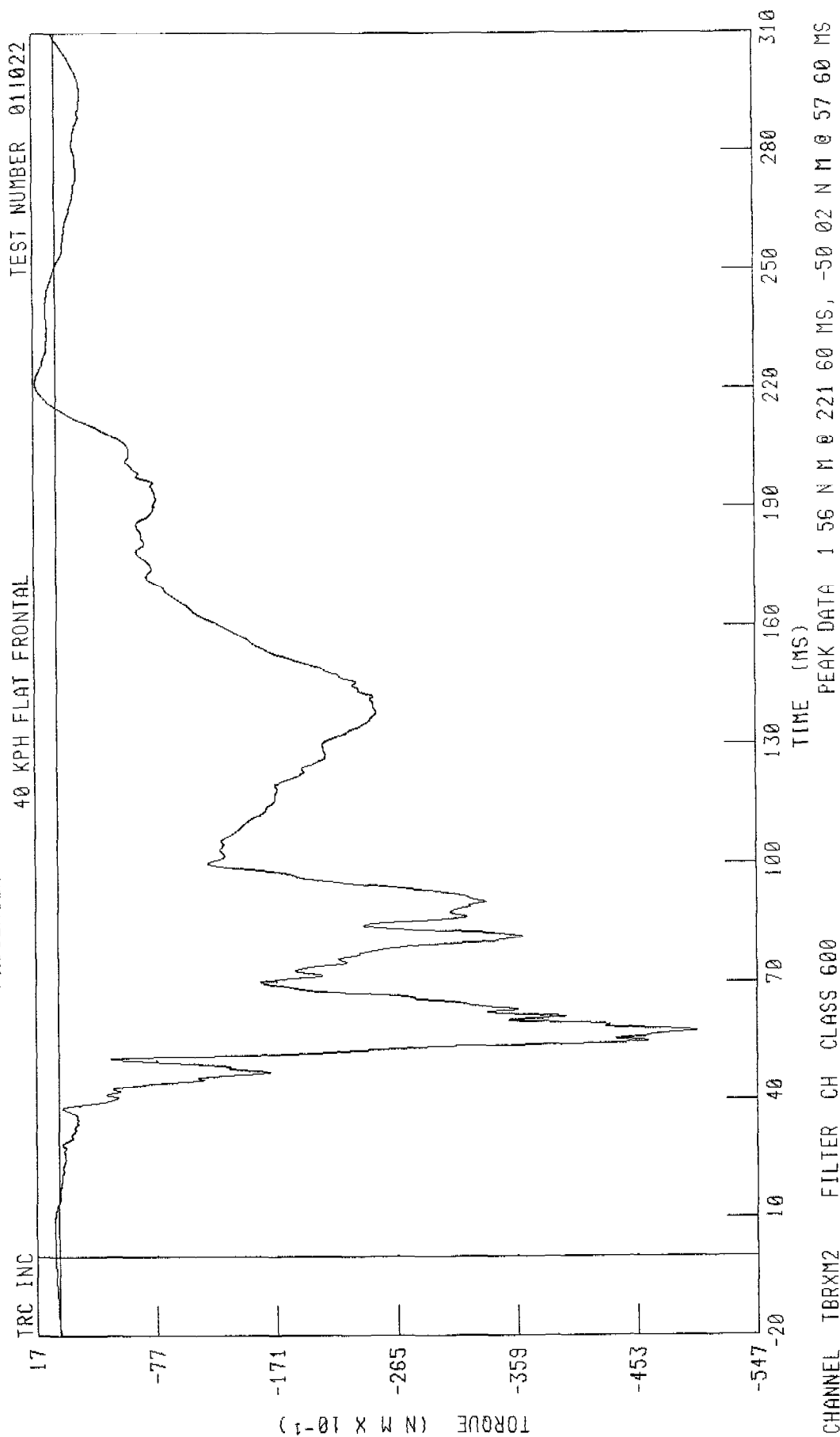
TEST NUMBER 011022



CHANNEL TBRZF2 FILTER CH CLASS 600

PEAK DATA 117 91 N @ 40 64 MS, -3127 86 N @ 80 80 MS

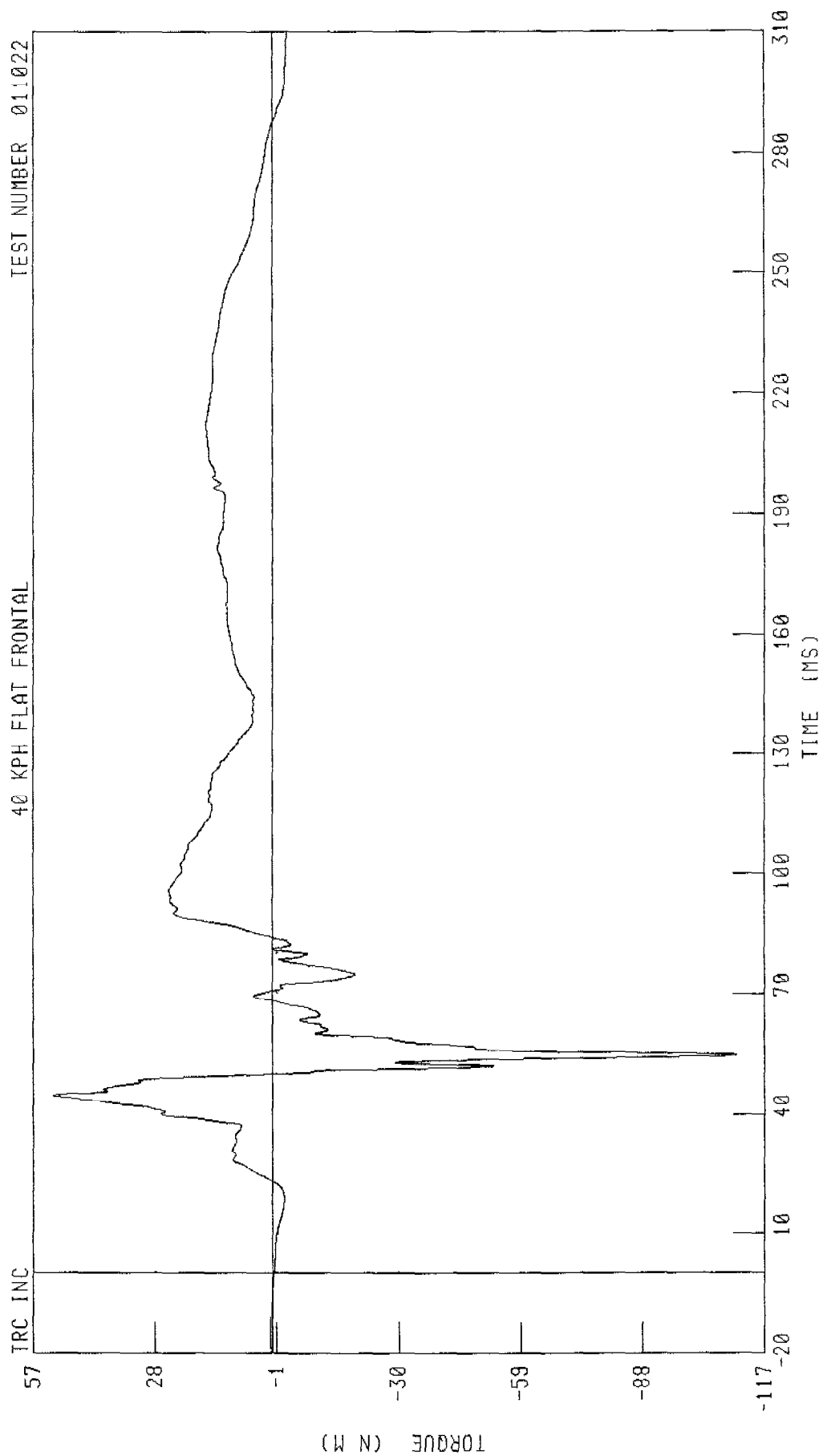
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
PASSENGER RIGHT UPPER TIBIA MOMENT ABOUT X AXIS



2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
PASSENGER RIGHT UPPER TIBIA MOMENT ABOUT Y AXIS

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL TBRYM2 FILTER CH CLASS 600

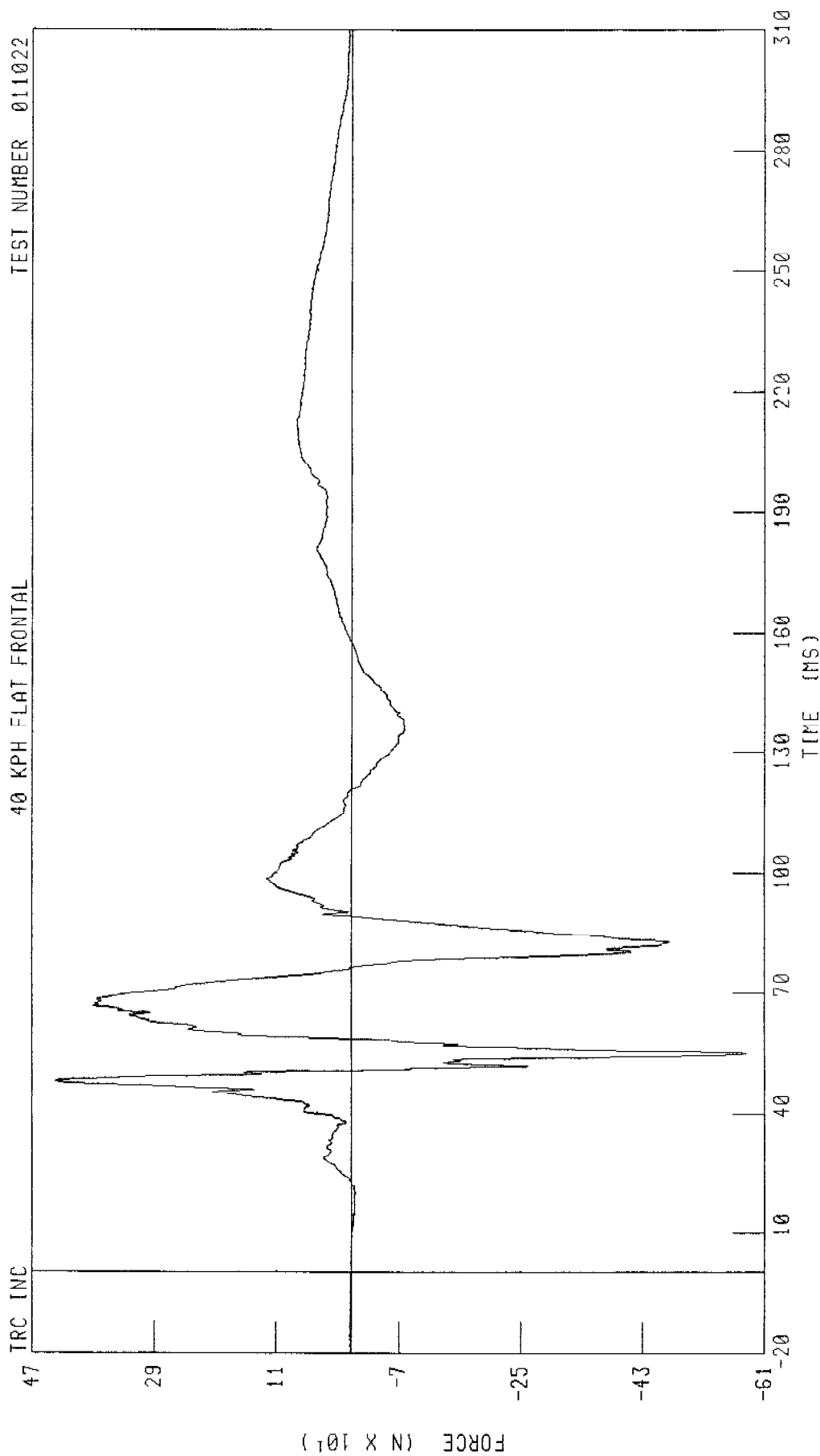
PEAK DATA 52 39 N M @ 44 72 MS, -110 37 N M @ 54 72 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER RIGHT LOWER TIBIA X-AXIS FORCE

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL ANR2X2 FILTER CH CLASS 600

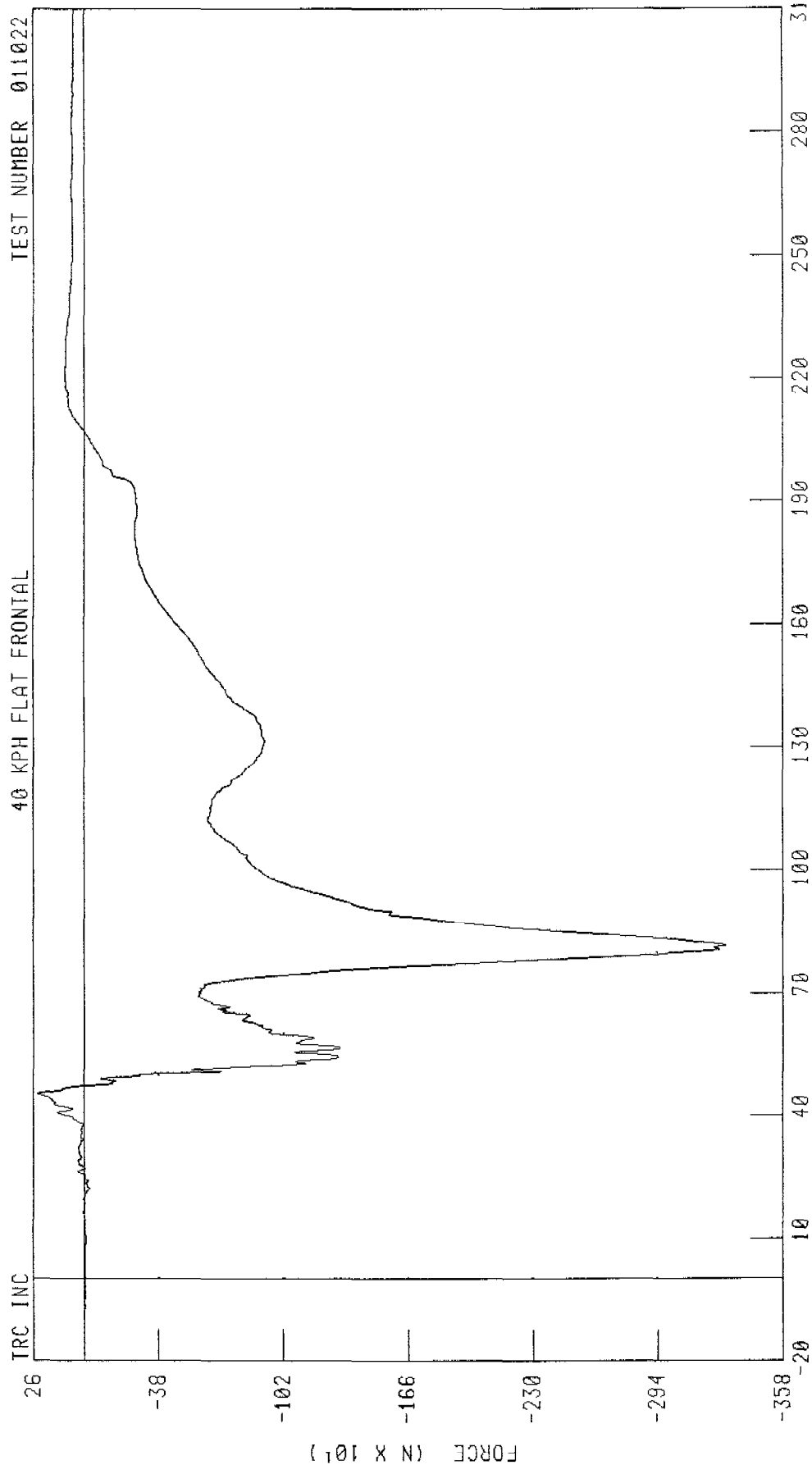
PEAK DATA 435 36 N @ 48 08 MS, -583 27 N @ 54 88 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER RIGHT LOWER TIBIA Z-AXIS FORCE

TEST NUMBER 011022

40 KPH FLAT FRONTAL

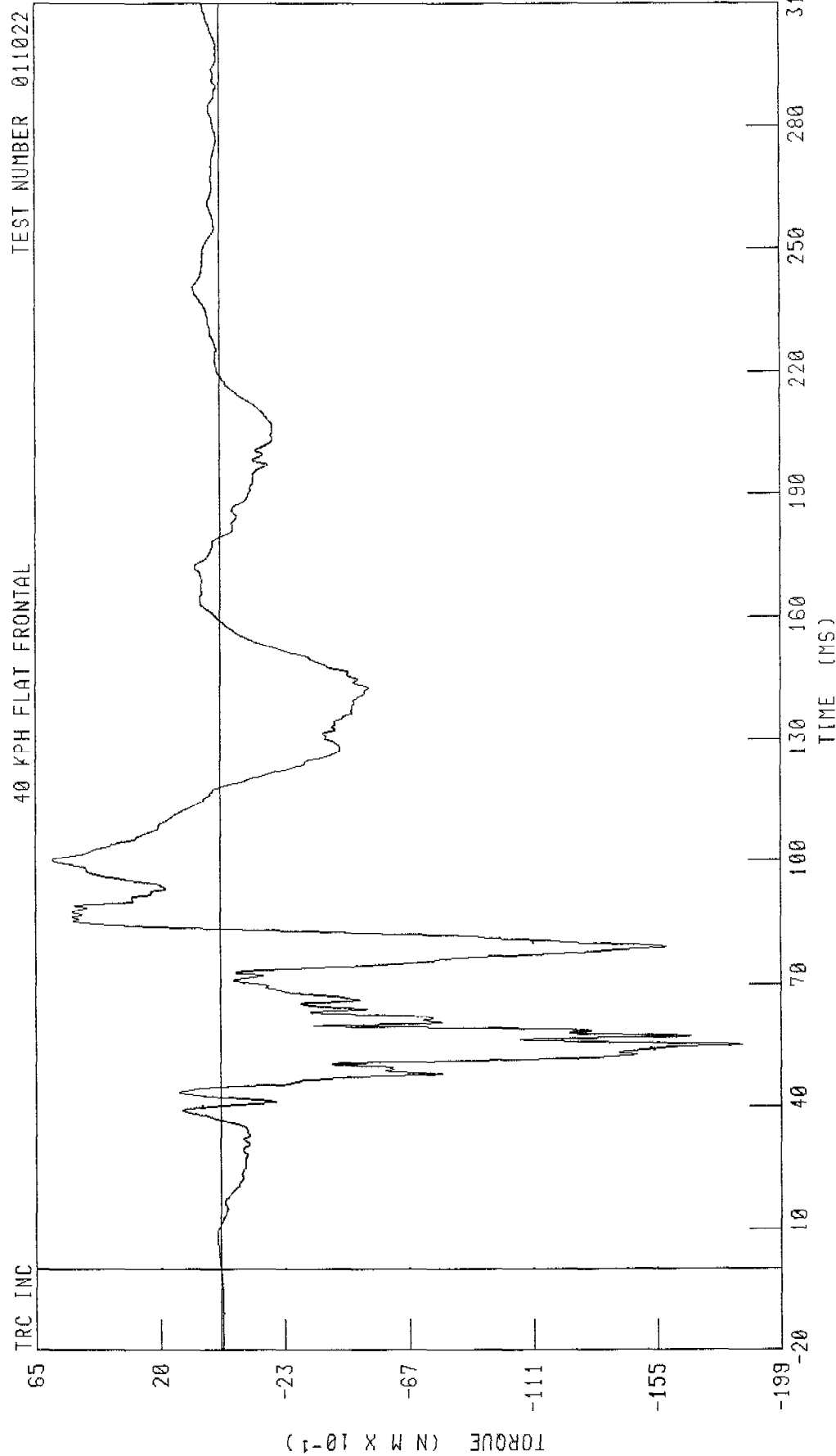


TIME (MS)

PEAK DATA 238 36 N @ 45 28 MS, -3288 98 N @ 81 76 MS

CHANNEL ANRZF2 FILTER CH CLASS 600

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
PASSENGER RIGHT LOWER TIBIA MOMENT ABOUT X AXIS



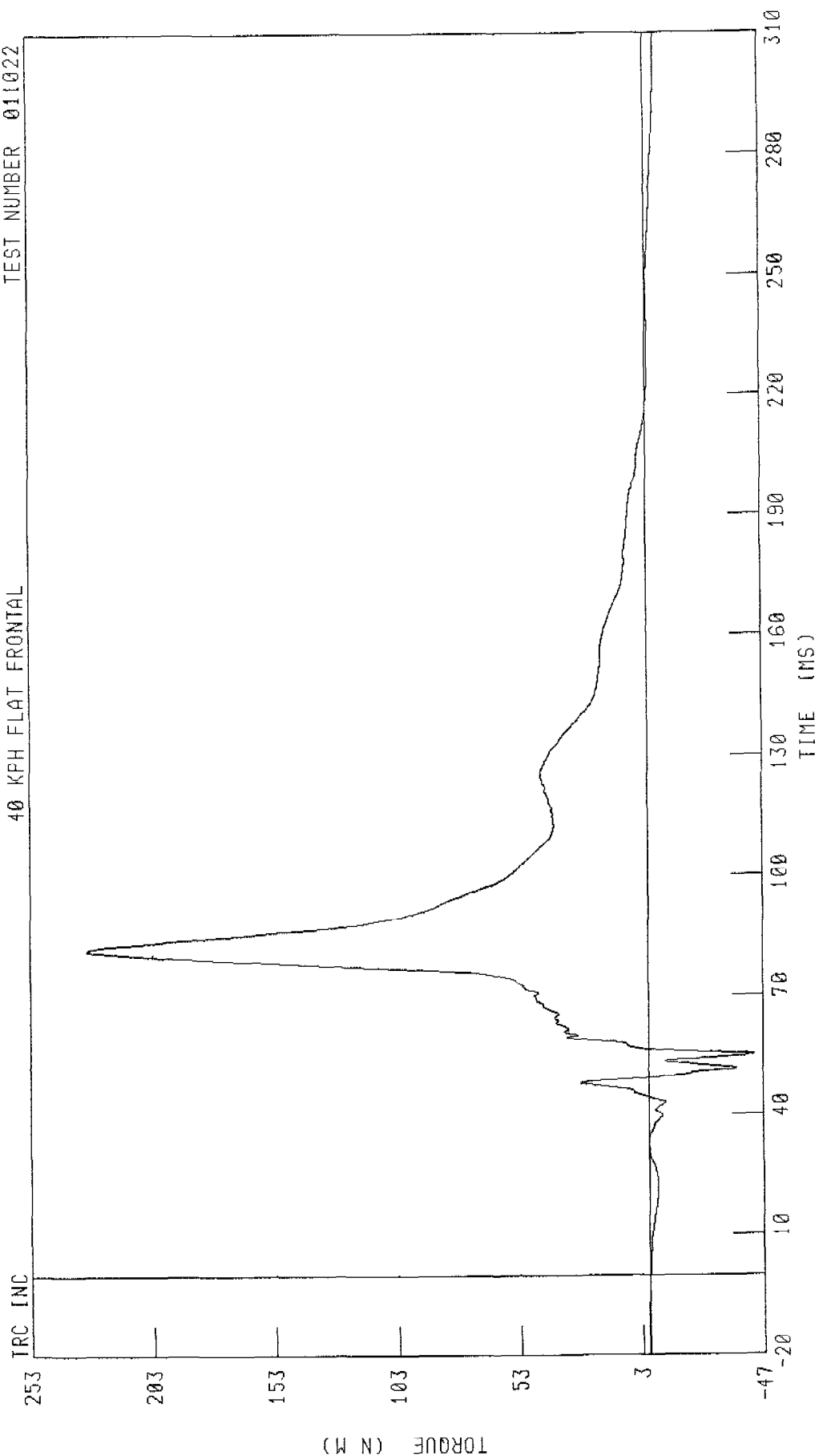
PEAK DATA 5 92 N M @ 100 32 MS, -18 53 N M @ 55 20 MS

CHANNEL ANR XM2 FILTER CH CLASS 600

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
PASSENGER RIGHT LOWER TIBIA MOMENT ABOUT Y AXIS

TEST NUMBER 011022

40 KPH FLAT FRONTAL



CHANNEL ANRYM2 FILTER CH CLASS 600

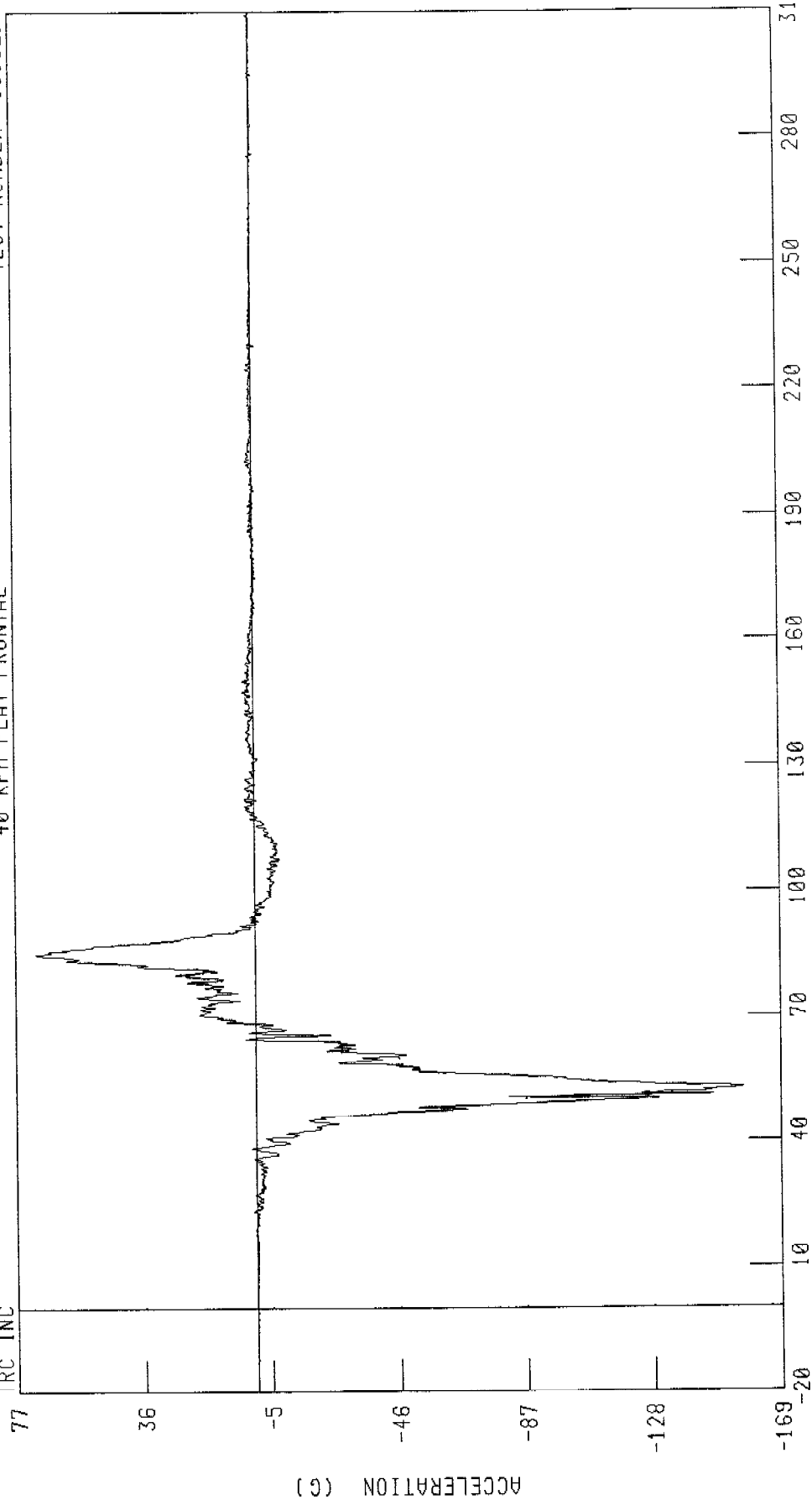
PEAK DATA 229 78 N M @ 81 20 MS, -43 25 N M @ 55 04 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
PASSENGER LEFT FOOT HEEL X-AXIS ACCELERATION

TEST NUMBER 011022

40 KPH FLAT FRONTAL

TRC INC



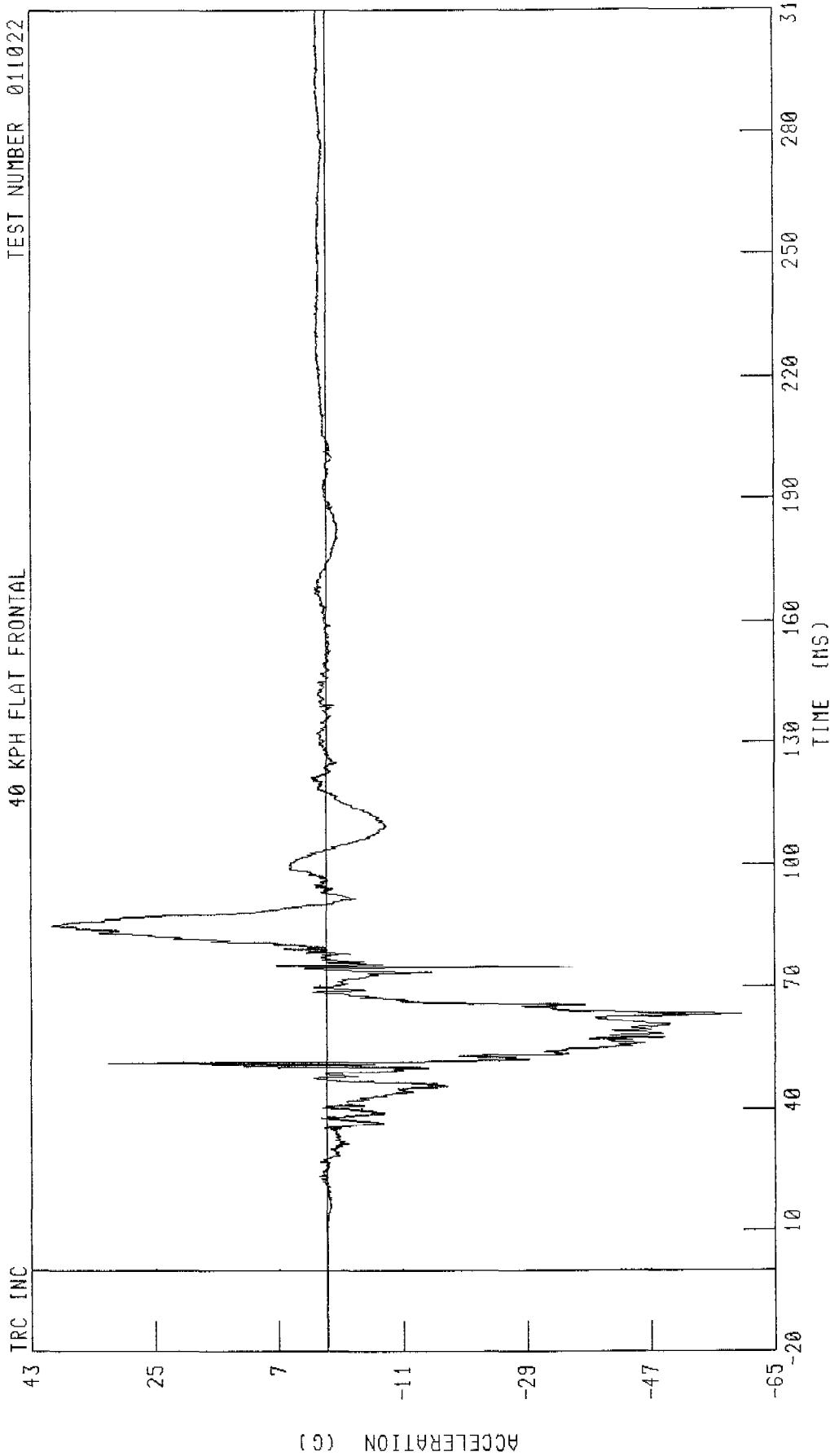
CHANNEL FLHXC2 FILTER CH CLASS 1000
PEAK DATA 70 32 G @ 85 04 MS, -156 74 G @ 52 80 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER LEFT FOOT HEEL Z-AXIS ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL FLHZG2 FILTER CH CLASS 1000

PEAK DATA 39 98 G @ 84 96 MS, -60 14 G @ 63 28 MS

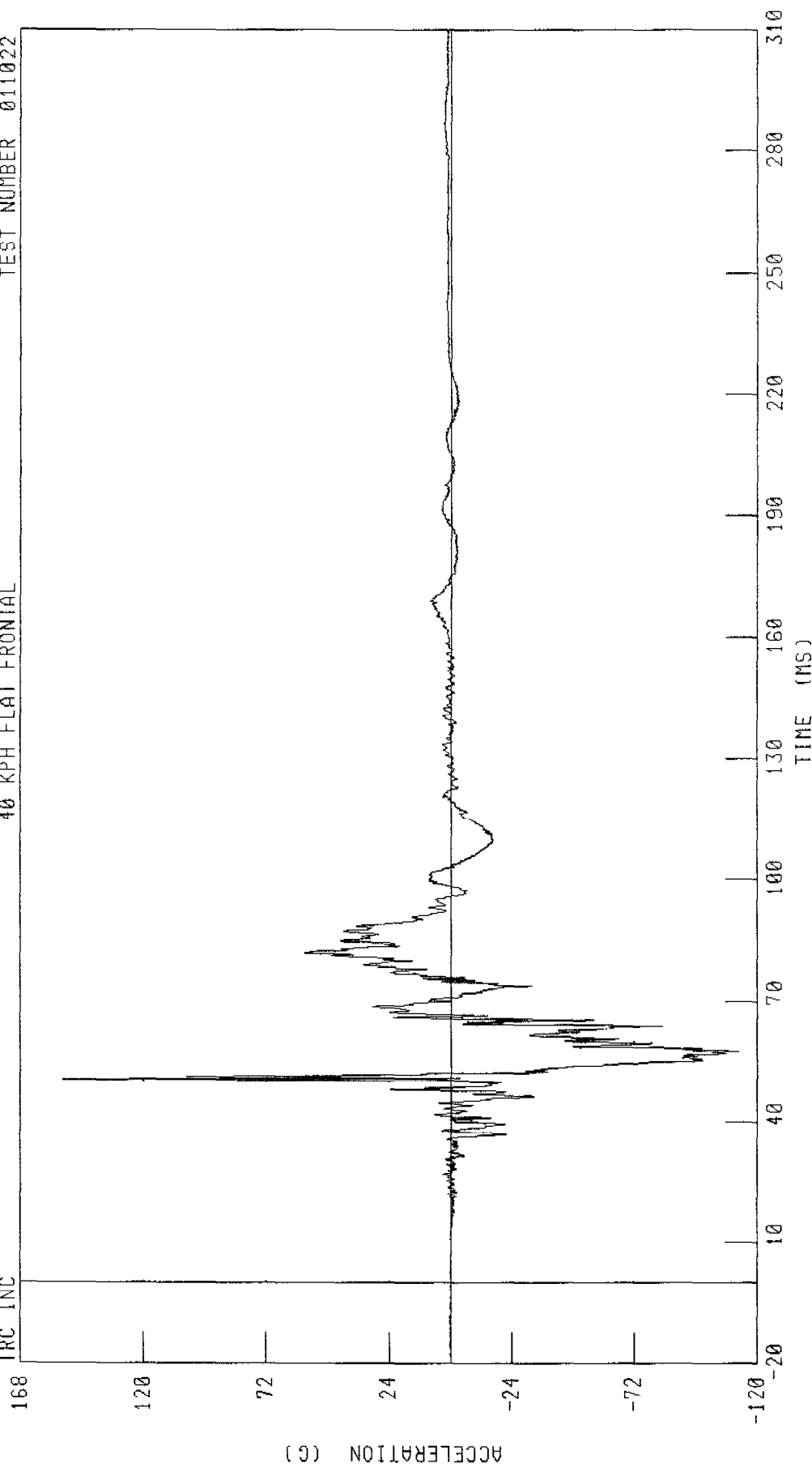
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER LEFT FOOT IOE Z-AXIS ACCELERATION

TEST NUMBER 011022

40 KPH FLAT FRONTAL

TRC INC



CHANNEL FLTZG2 FILTER CH CLASS 1000

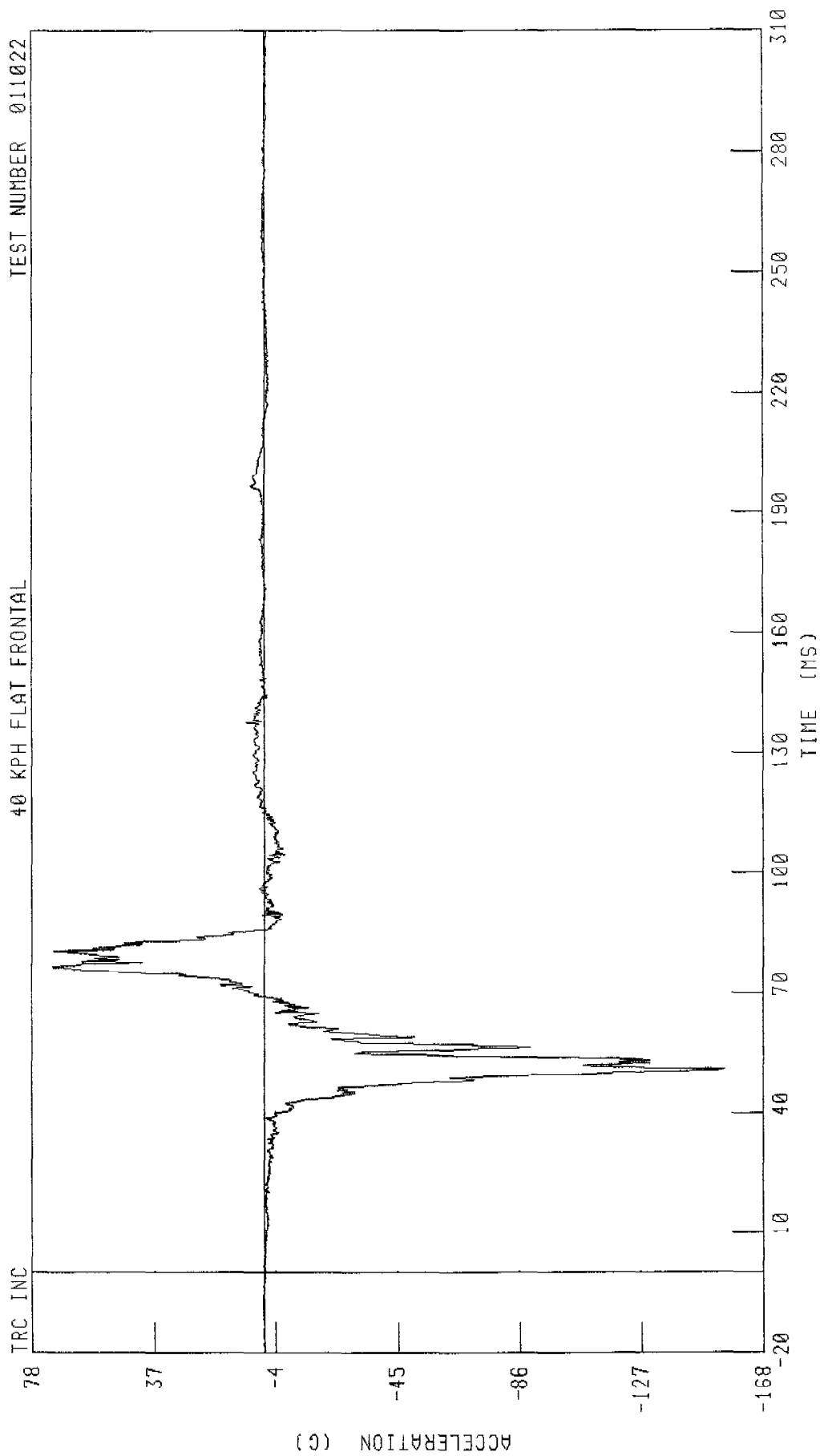
PEAK DATA 151 44 G @ 50 56 MS, -112 65 G @ 57 68 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER RIGHT FOOT HEEL X-AXIS ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022



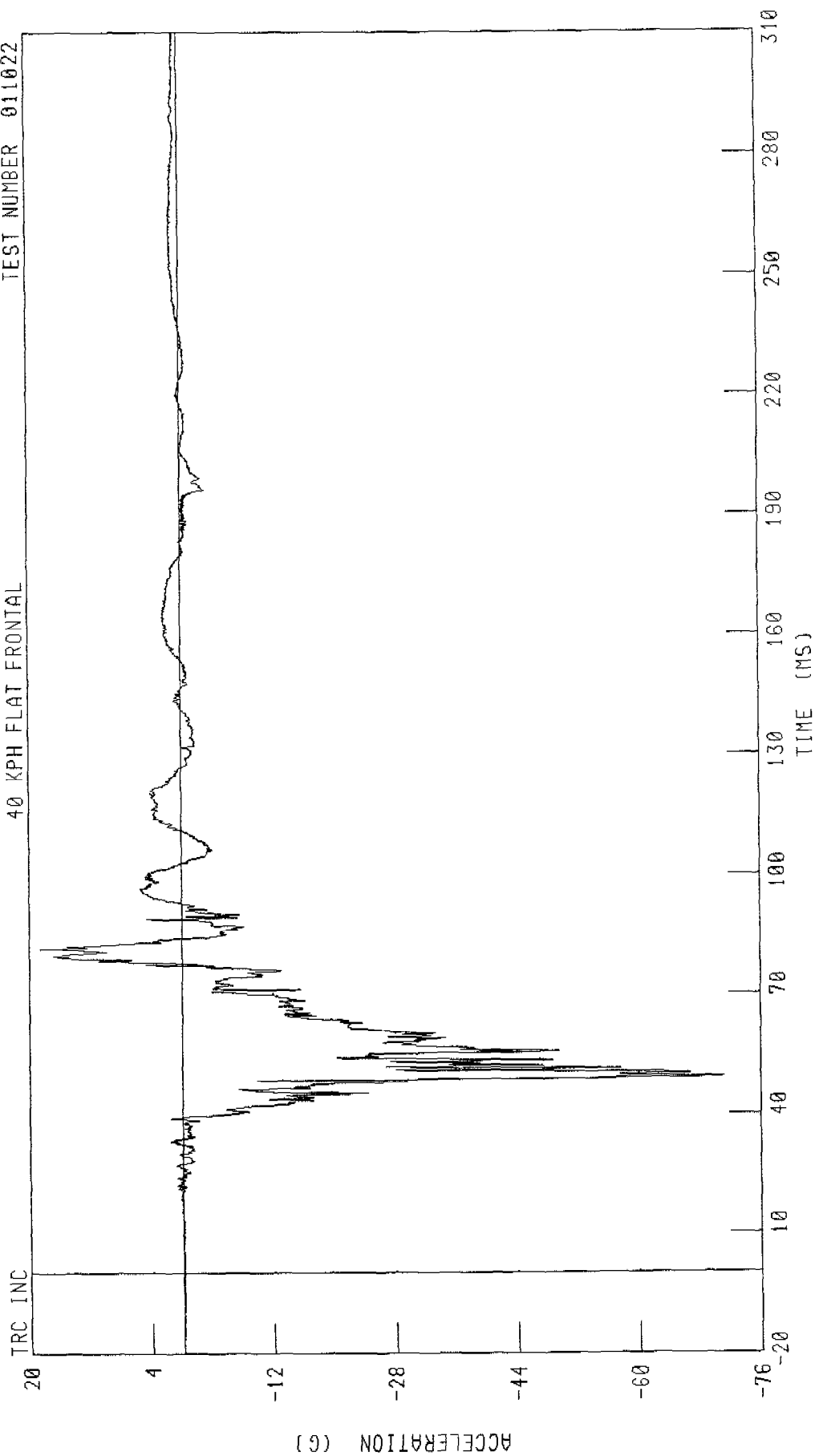
CHANNEL FRHXC2 FILTER CH CLASS 1000

PEAK DATA 71 22 G @ 76 64 MS, -155 12 G @ 50 80 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
PASSENGER RIGHT FOOT HEEL Z-AXIS ACCELERATION

TEST NUMBER 011022

40 KPH FLAT FRONTAL



PEAK DATA 18 50 G @ 81 60 MS, -71 15 G @ 49 20 MS

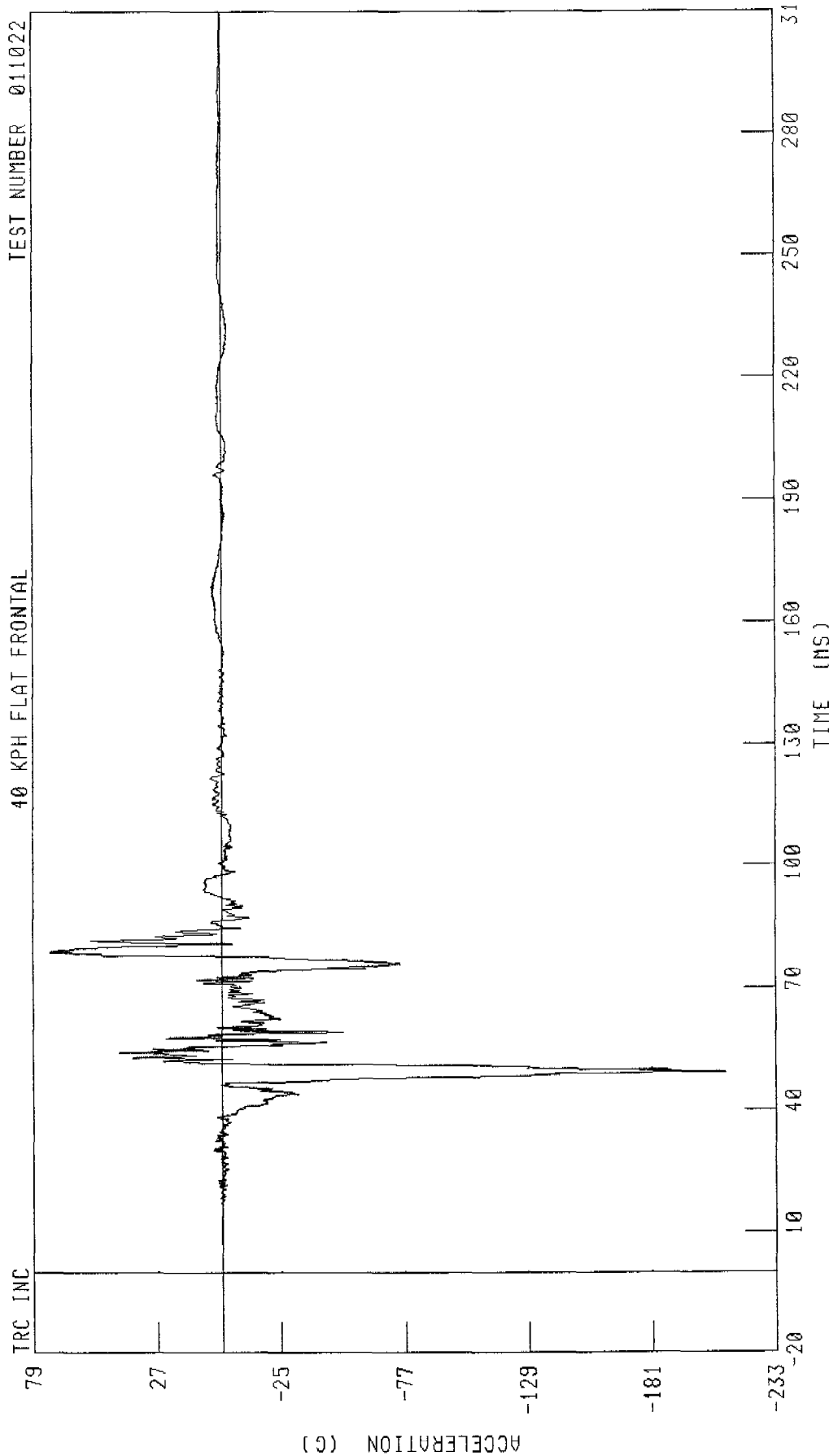
CHANNEL FRHZG2 FILTER CH CLASS 1000

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
PASSENGER RIGHT FOOT TOE Z-AXIS ACCELERATION

TEST NUMBER 011022

40 KPH FLAT FRONTAL

TRC INC



CHANNEL FRTZG2 FILTER CH CLASS 1000

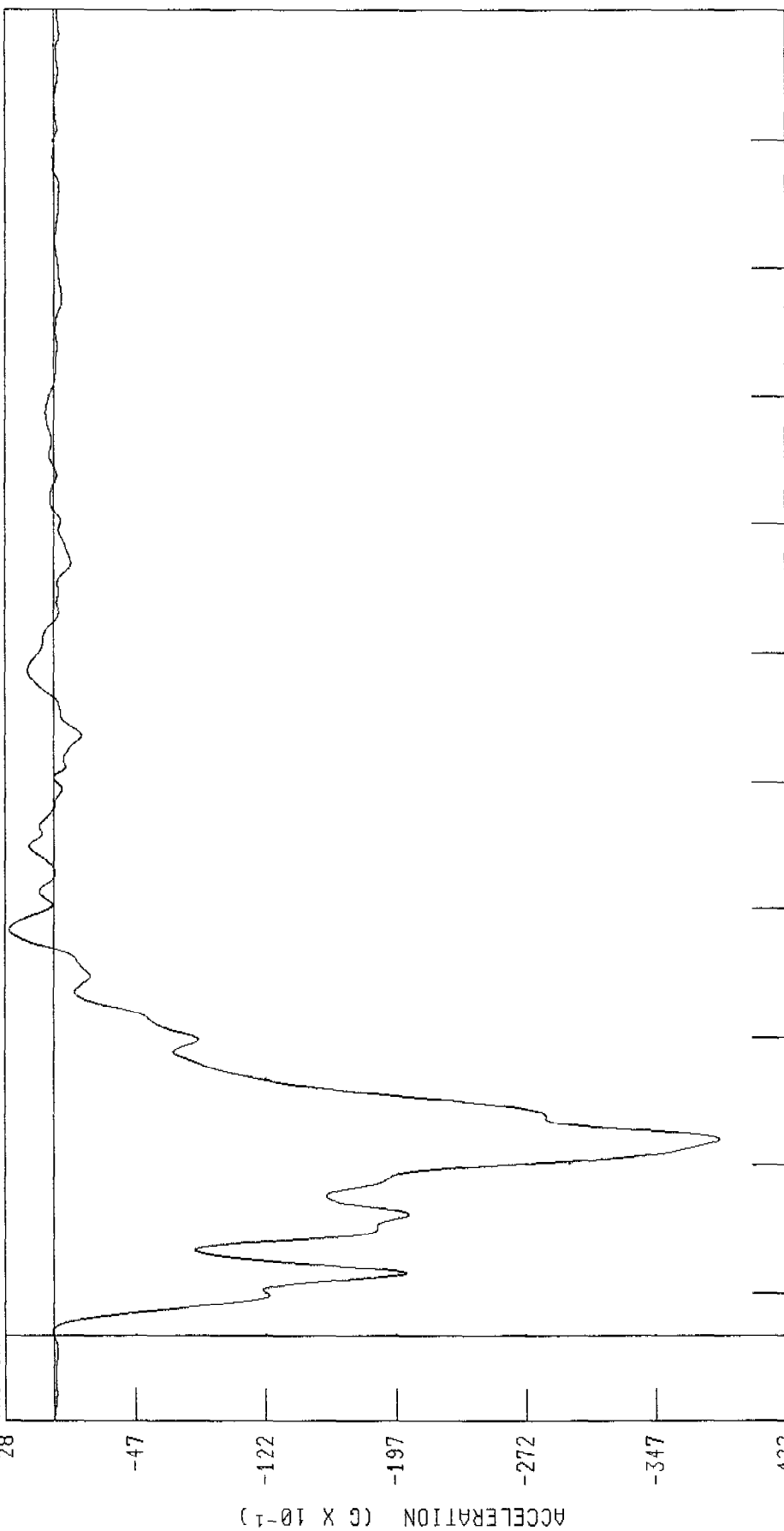
PEAK DATA 72 16 C @ 78 88 MS, -211 94 C @ 49 12 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
LEFT REAR SEAT CROSSMEMBER X-AXIS ACCELERATION

TEST NUMBER 011022

40 KPH FLAT FRONTAL

TRC INC

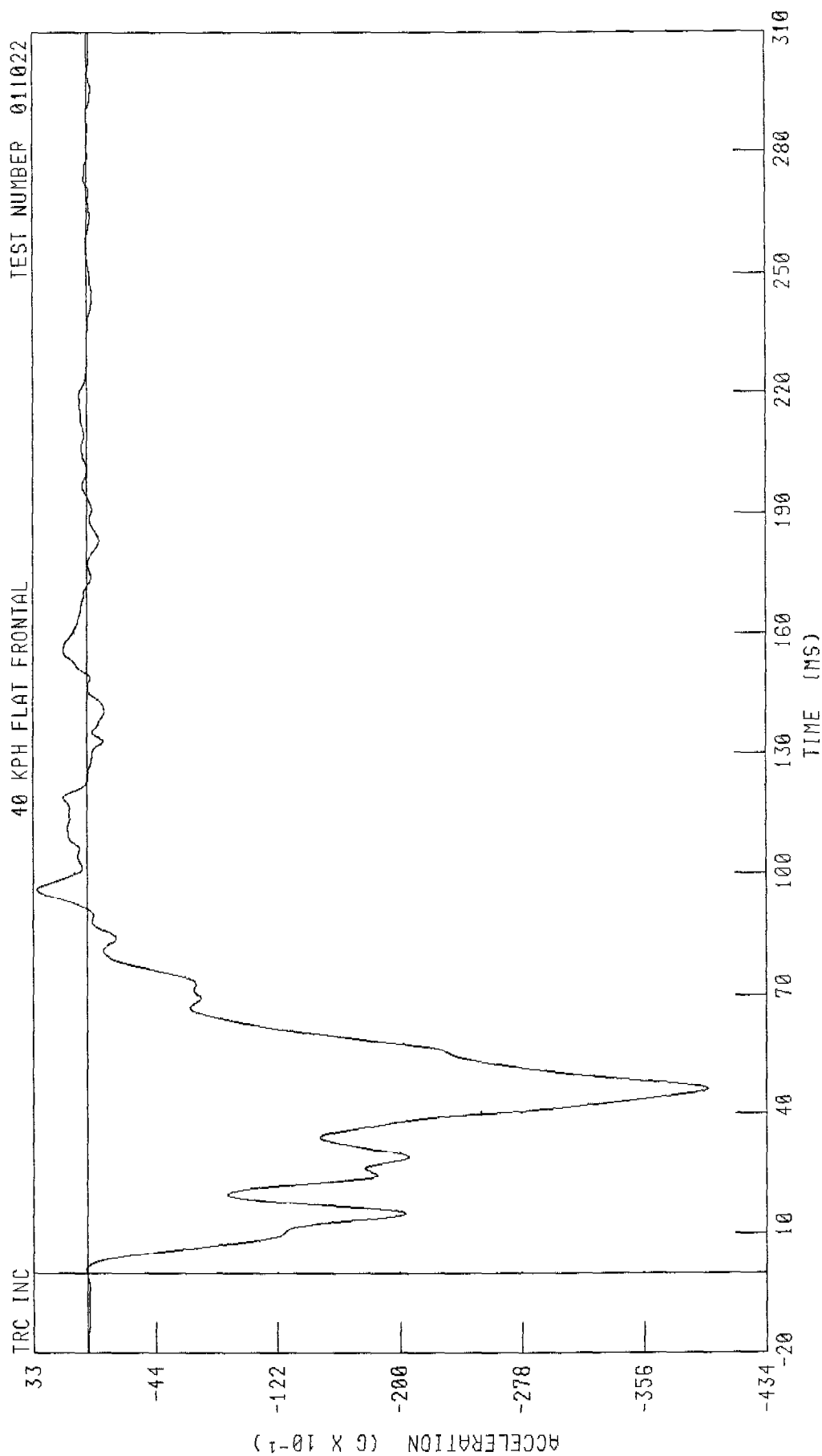


CHANNEL LRSXG1 FILTER CH CLASS 60
PEAK DATA 2 57 0 95 12 MS, -38 40 0 45 84 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
 RIGHT REAR SEAT CROSSMEMBER X-AXIS ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL RRSXG1 FILTER CH CLASS 60

TIME (MS)

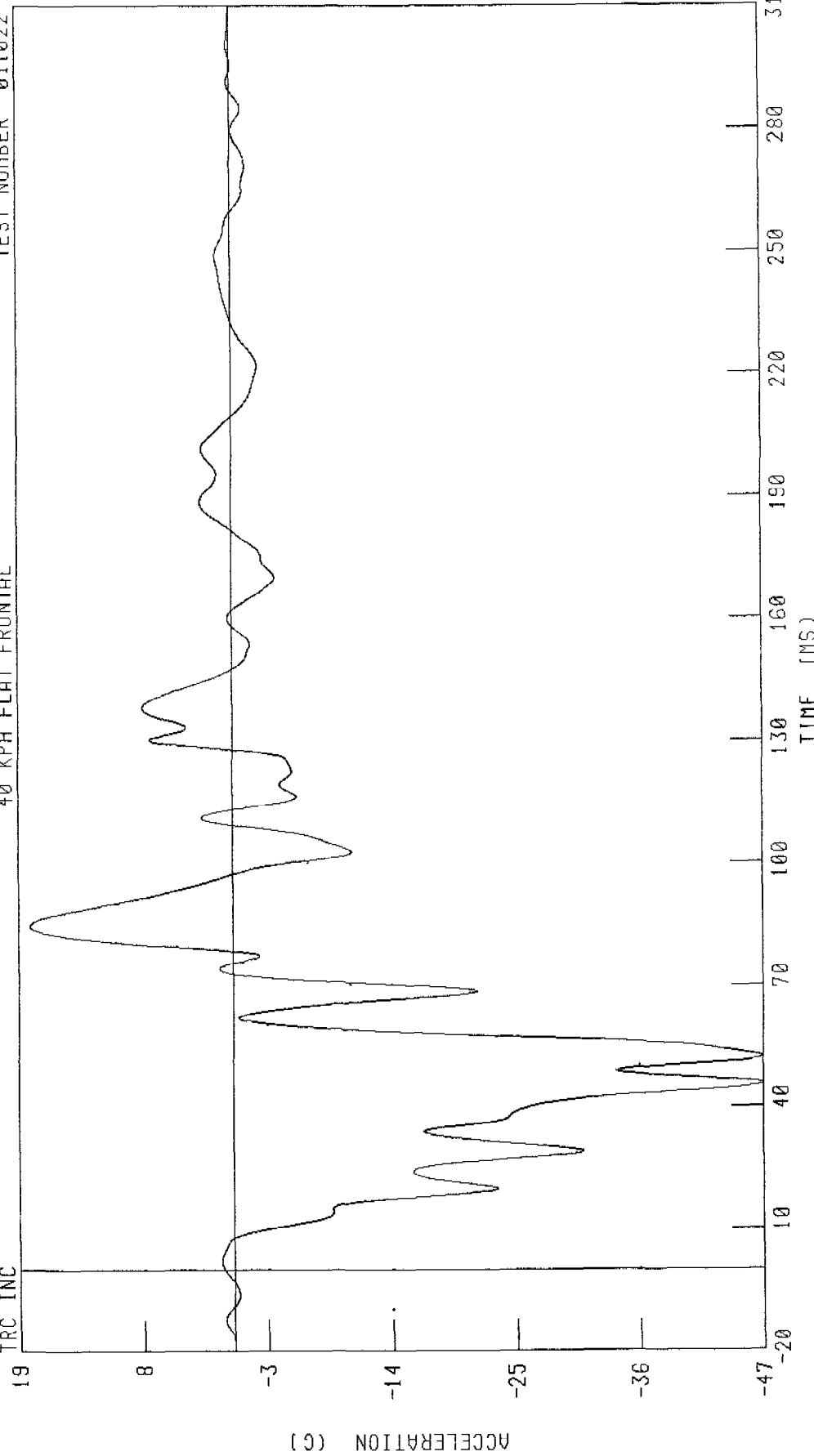
PEAK DATA 3 16 G @ 96 08 MS, -39 68 G @ 46 32 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
FRONT BRAKE CALIPER LEFT X-AXIS ACCELERATION

TEST NUMBER 011022

40 KPH FLAT FRONTAL

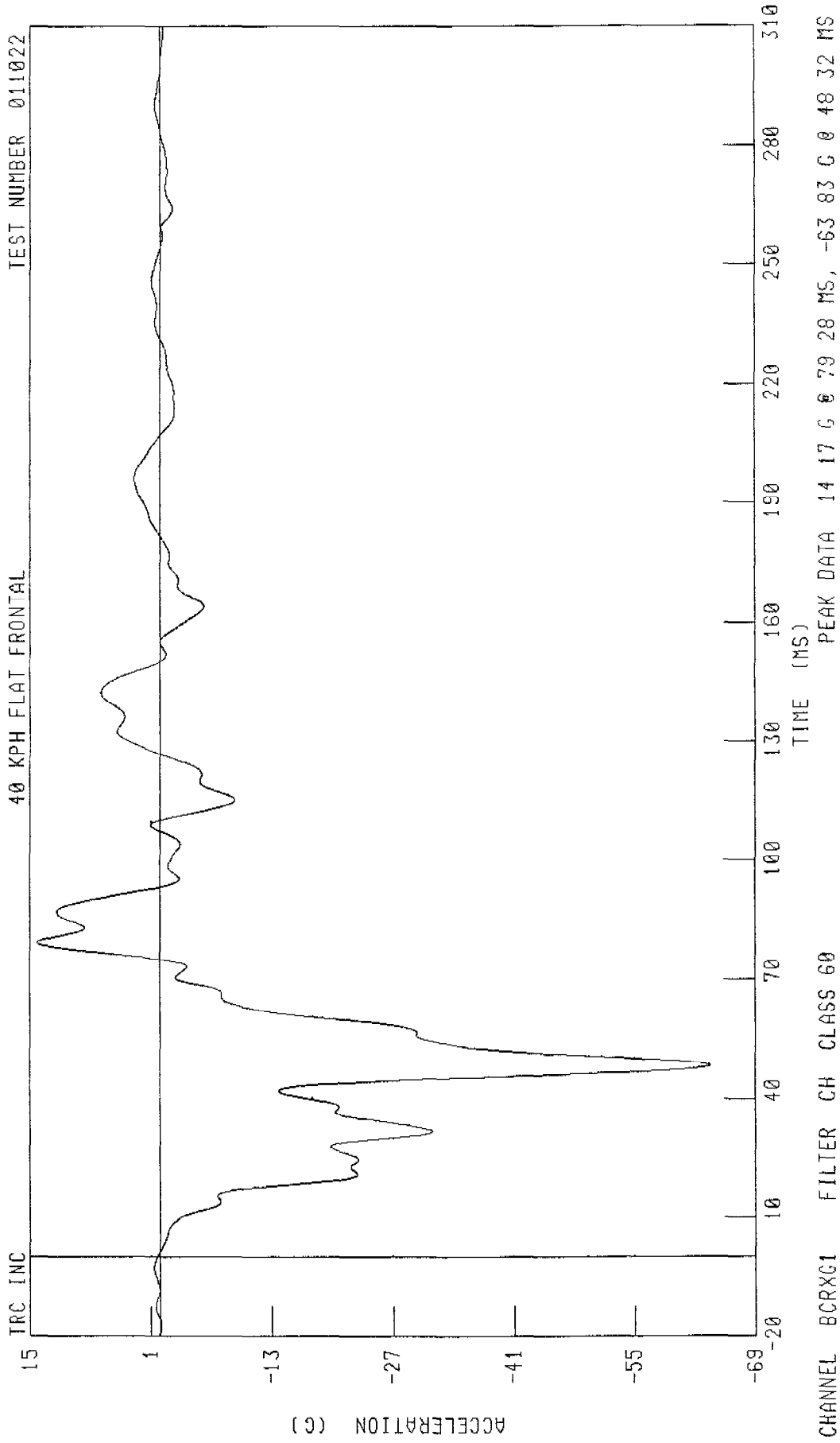
TRC INC



PEAK DATA 18 03 G @ 84 72 MS, -47 09 G @ 45 52 MS

CHANNEL BCLXG1 FILTER CH CLASS 60

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
FRONT BRAKE CALIPER RIGHT X-AXIS ACCELERATION



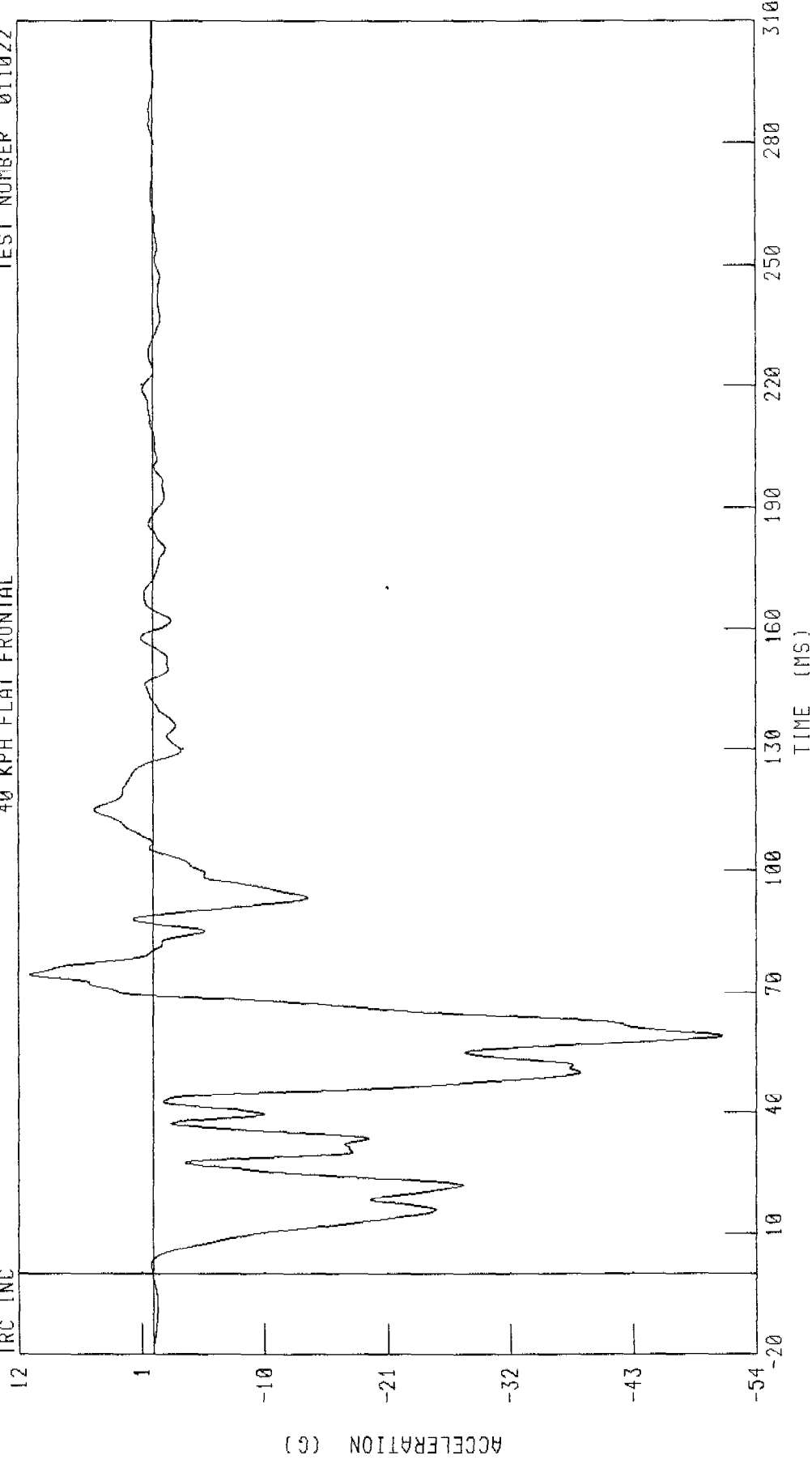
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DASH PANEL CENTER X-AXIS ACCELERATION

TEST NUMBER 011022

40 KPH FLAT FRONTAL

TRC INC



PEAK DATA 10 99 G 0 74 56 MS -50 99 G 0 59 12 MS

CHANNEL DPCXG1 FILTER CH CLASS 60

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

ENGINE TOP X-AXIS ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022

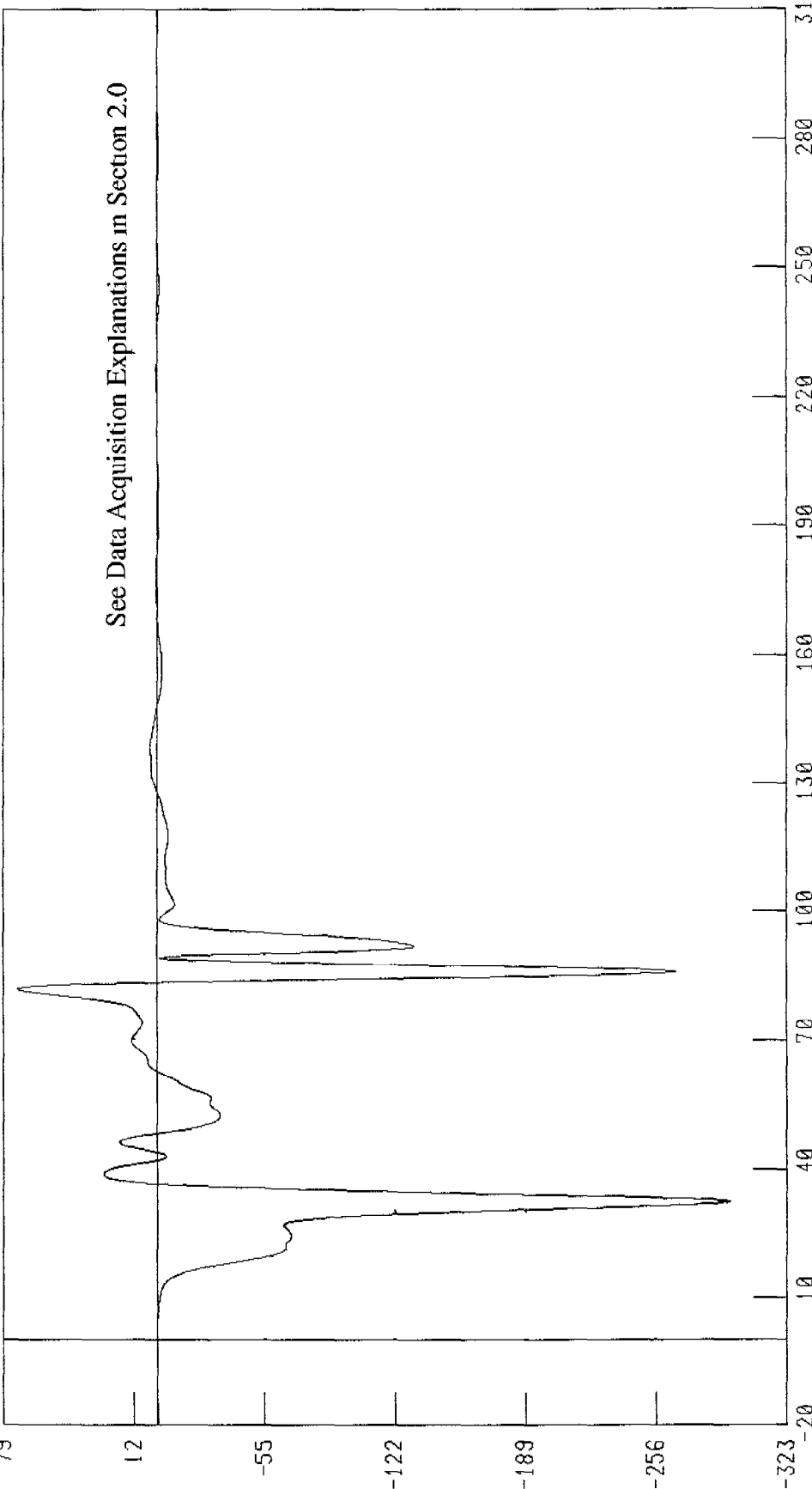
TRC INC

See Data Acquisition Explanations in Section 2.0

ACCELERATION (G)

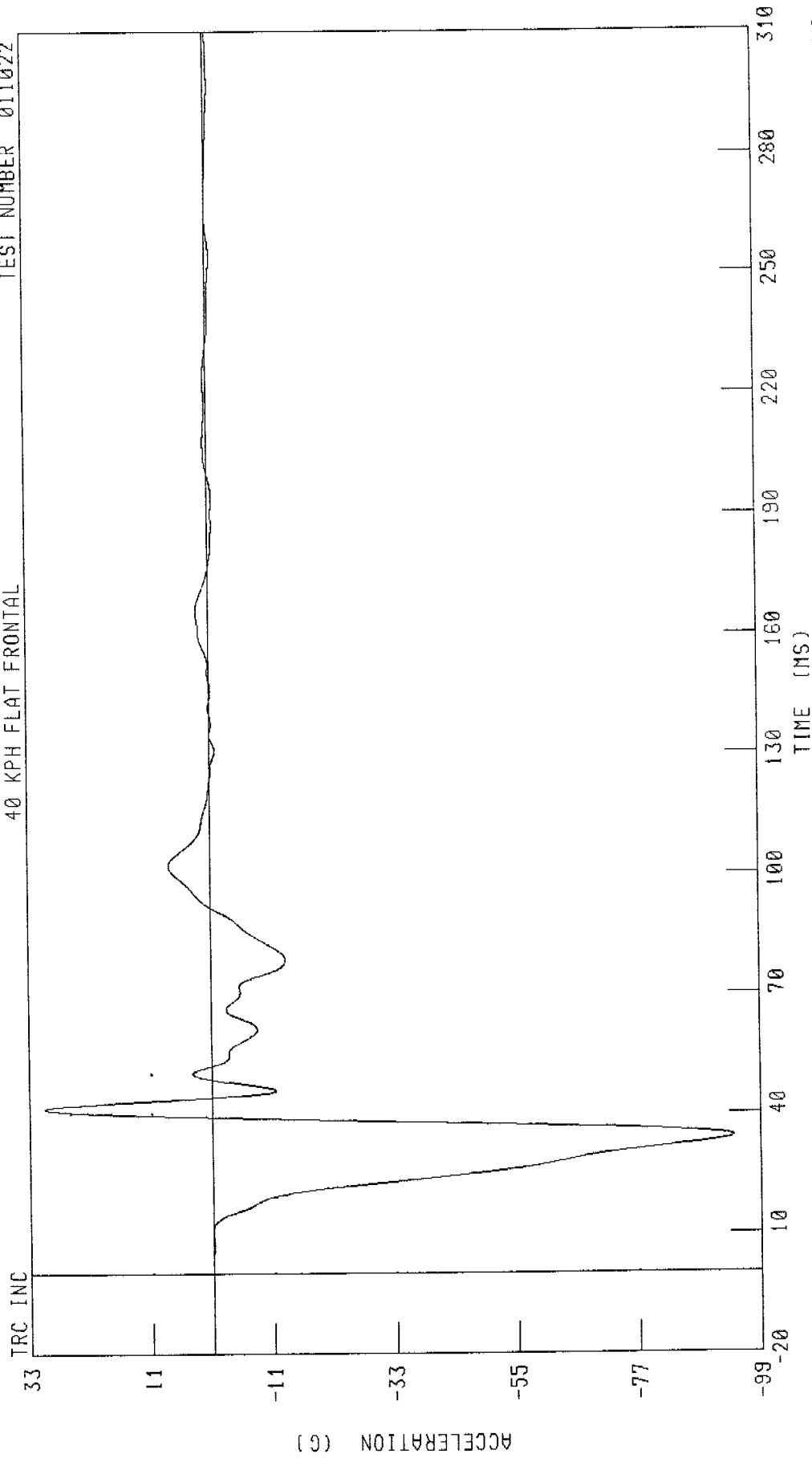
TIME (MS)

CHANNEL ENGXC1 FILTER CH CLASS 60 PEAK DATA 72 00 G 81 92 MS, -294 29 G 0 32 32 MS



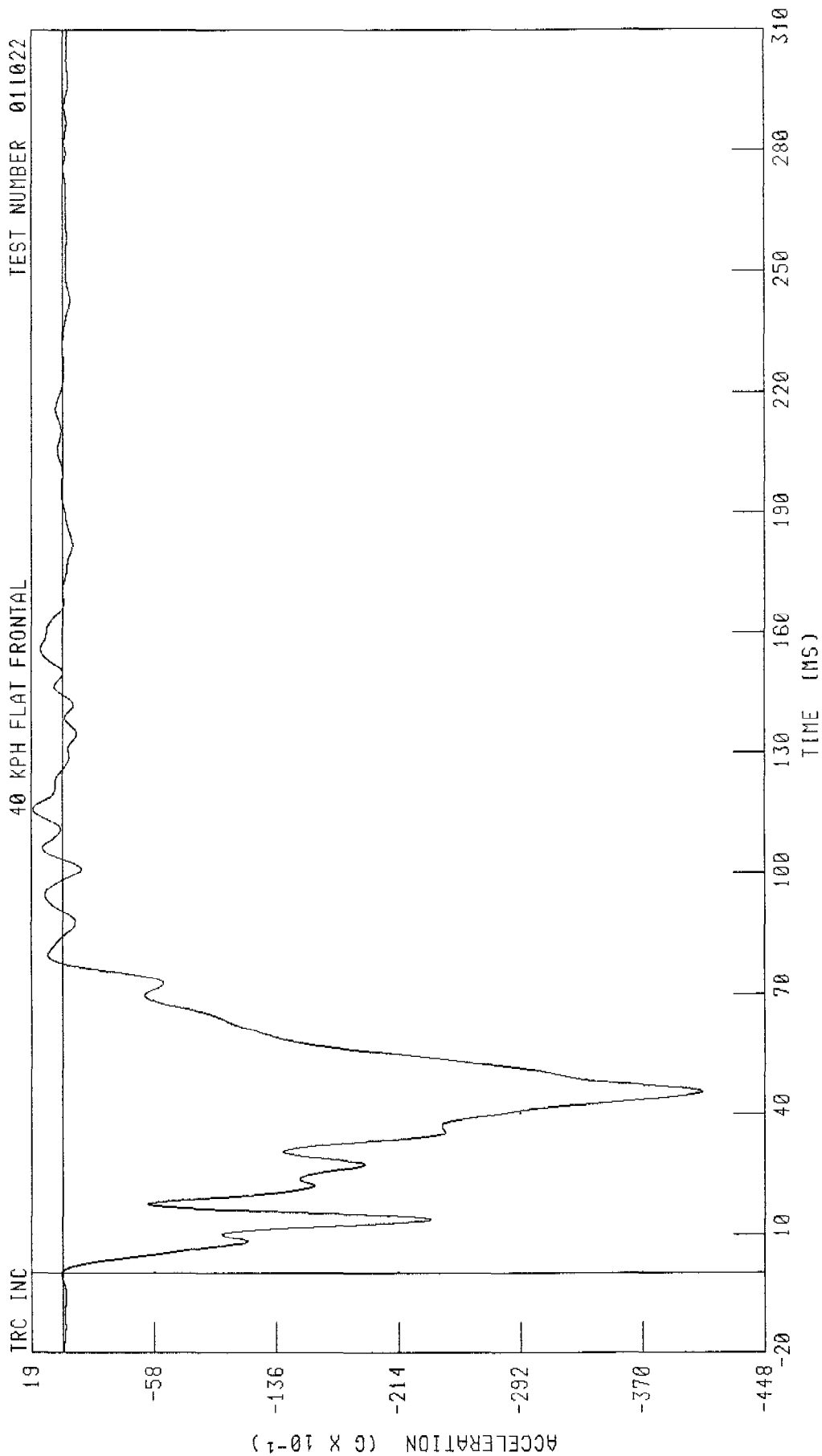
2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
ENGINE BOTTOM X-AXIS ACCELERATION
40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL ENGXC2 FILTER CH CLASS 60 PEAK DATA 30 24 0 @ 41 36 MS, -94 12 0 @ 34 24 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
TOEPAN NEXT TO ACCELERATOR X-AXIS ACCELERATION



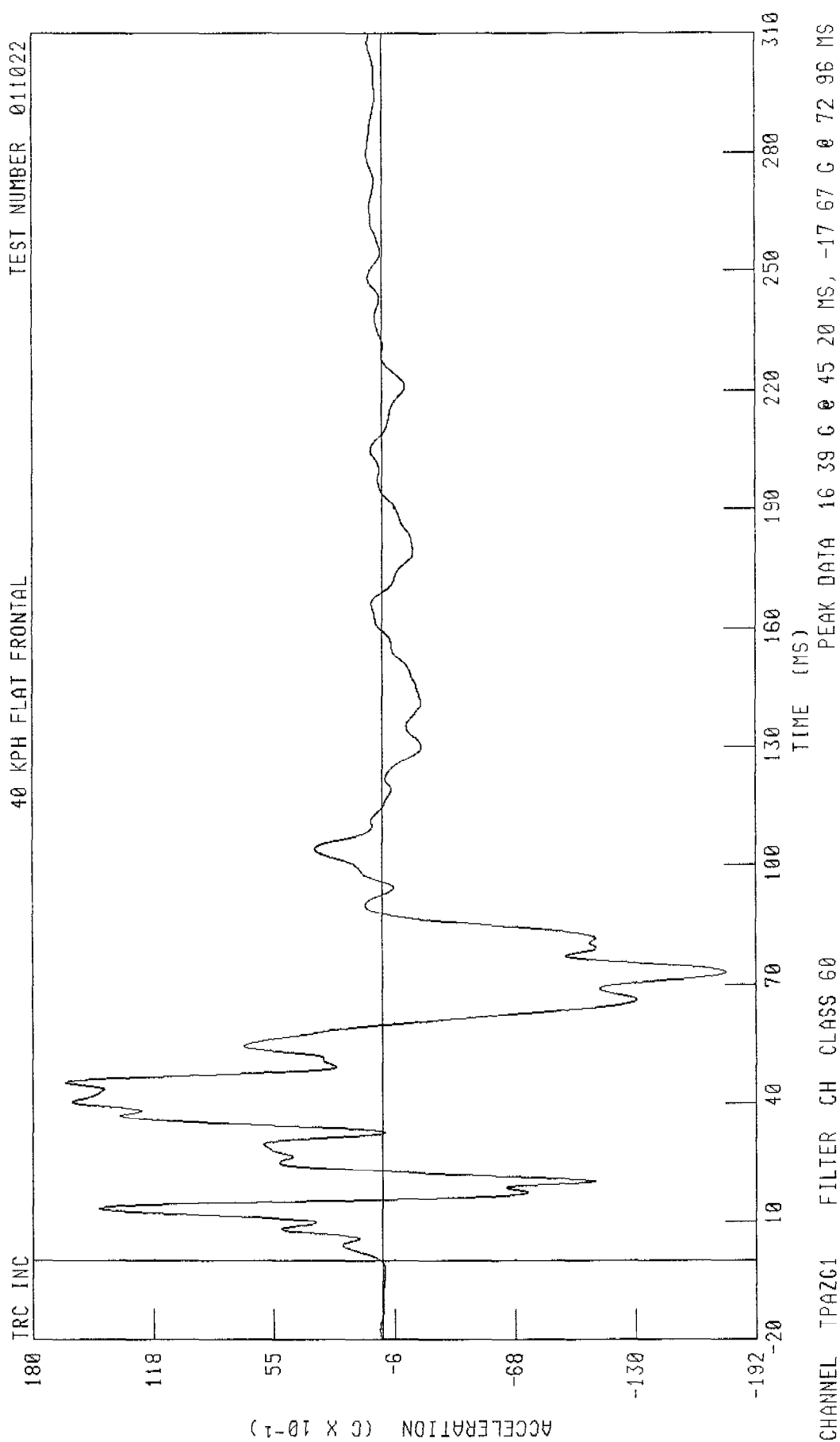
CHANNEL TPXG1 FILTER CH CLASS 60

PEAK DATA 1 91 G @ 116 00 MS, -40 82 G @ 45 44 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
TOEPAN NEXT TO ACCELERATOR Z-AXIS ACCELERATION

TEST NUMBER 011022

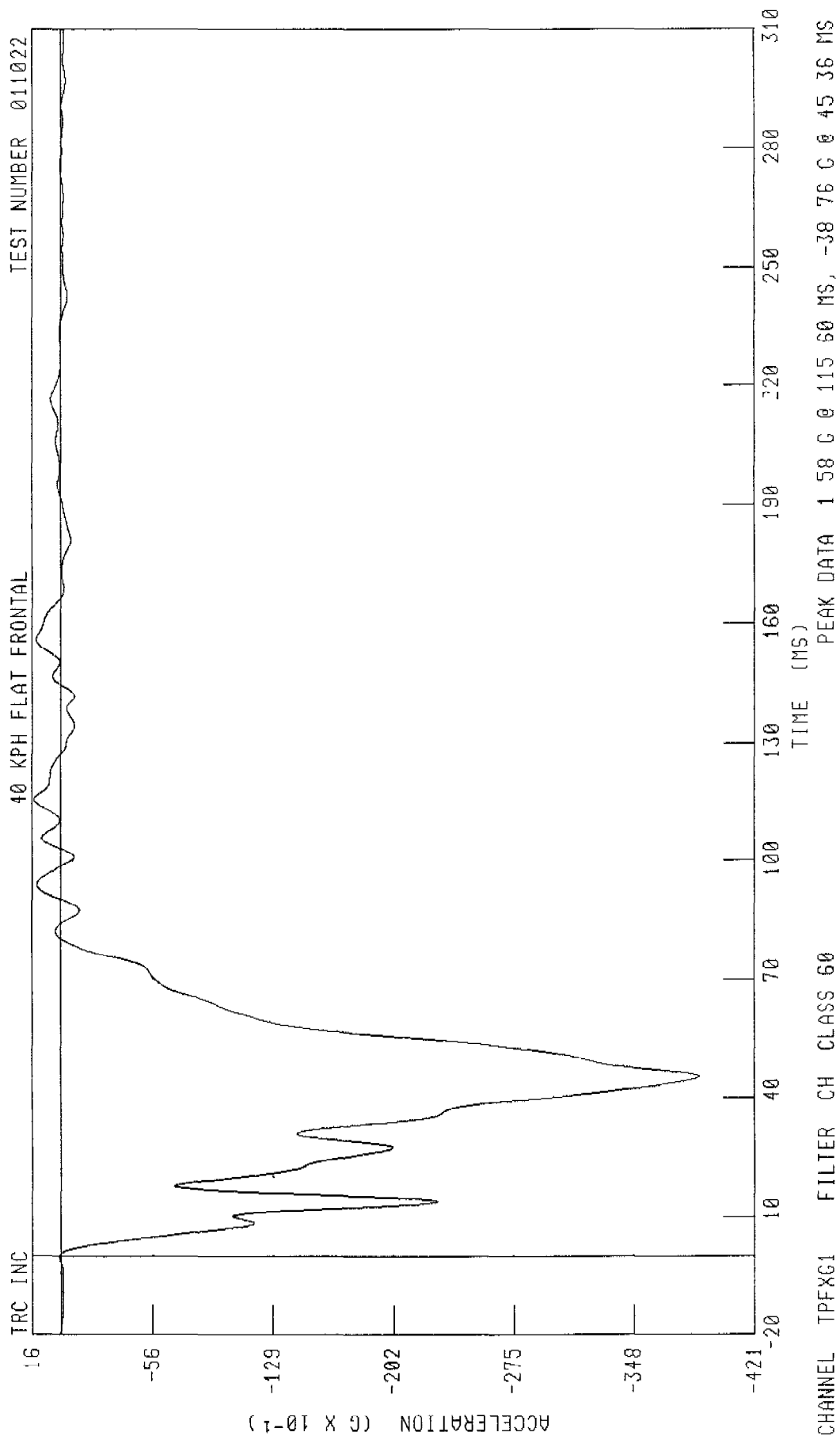
40 KPH FLAT FRONTAL



CHANNEL TPAZG1 FILTER CH CLASS 60

PEAK DATA 16 39 G @ 45 20 MS, -17 67 G @ 72 96 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
TOEPAN NEXT TO FOOTREST X-AXIS ACCELERATION

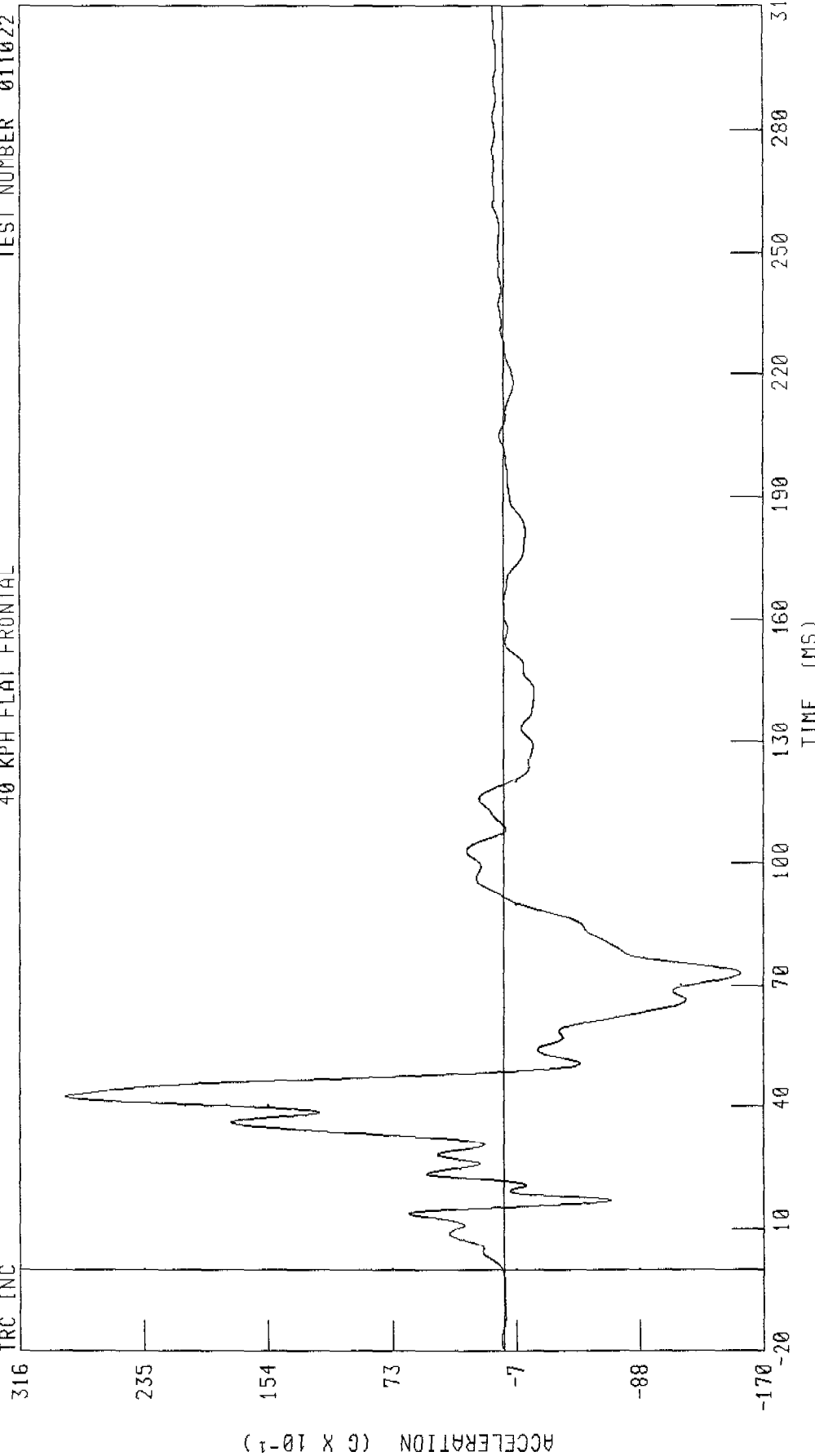


2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH
TOEPAN NEXT TO FOOTREST Z-AXIS ACCELERATION

TEST NUMBER 011022

40 KPH FLAT FRONTAL

TRC INC



PEAK DATA 28 67 G @ 42 32 MS, -15 52 G @ 72 88 MS

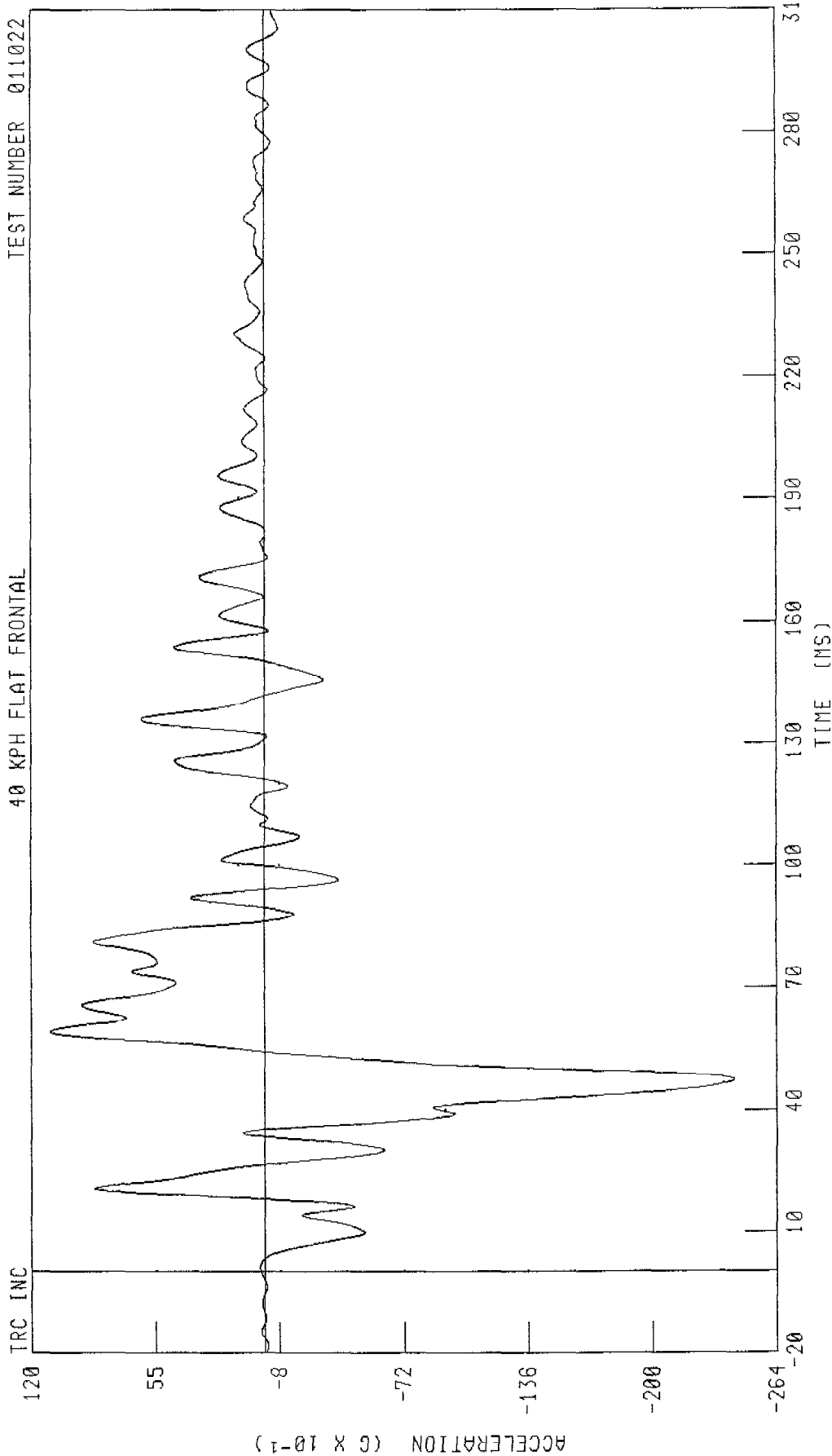
CHANNEL TPFZG1 FILTER CH CLASS 60

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

REAR DECK Z-AXIS ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL RDKZG1 FILTER CH CLASS 60

TIME (MS)

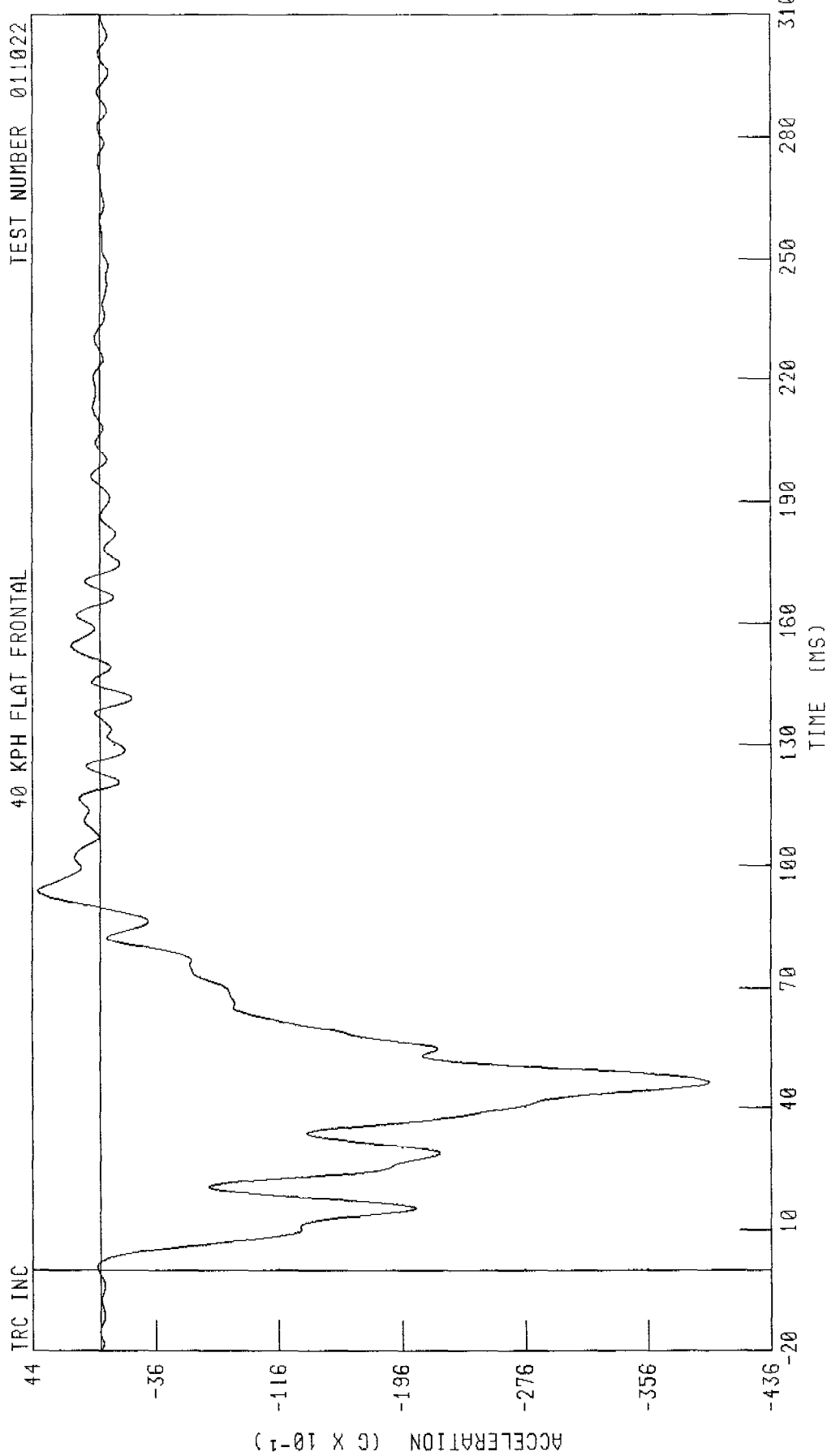
PEAK DATA 11 02 G @ 59 12 MS, -24 26 G @ 47 44 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

REAR COMPARTMENT CENTER X-AXIS ACCELERATION

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL RDCXG1 FILTER CH CLASS 60

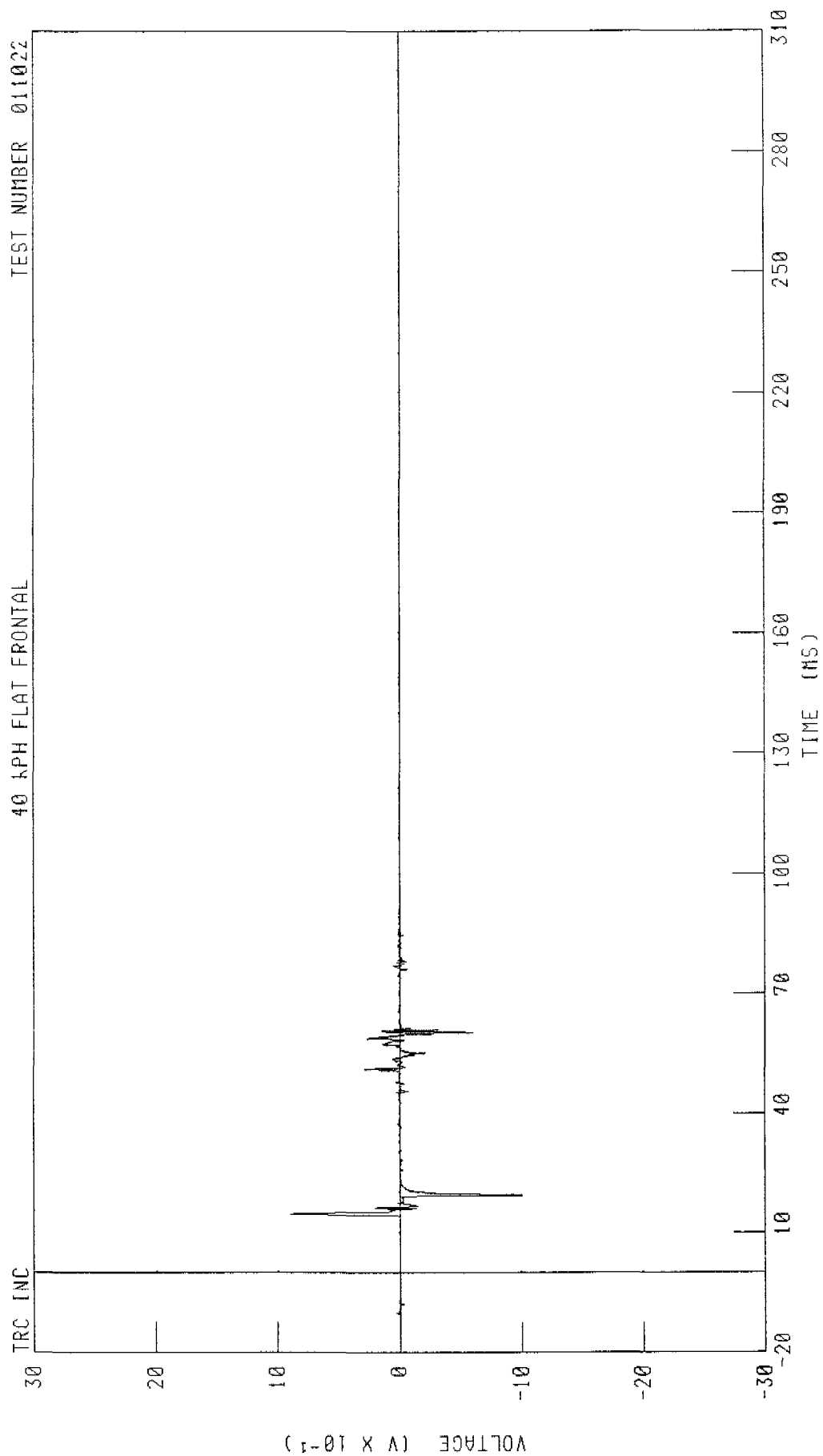
PEAK DATA 4 08 C 0 93 84 MS, -39 58 C 0 46 16 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

DRIVER AIRBAG EVENT

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL DABET1 FILTER CH CLASS 1000

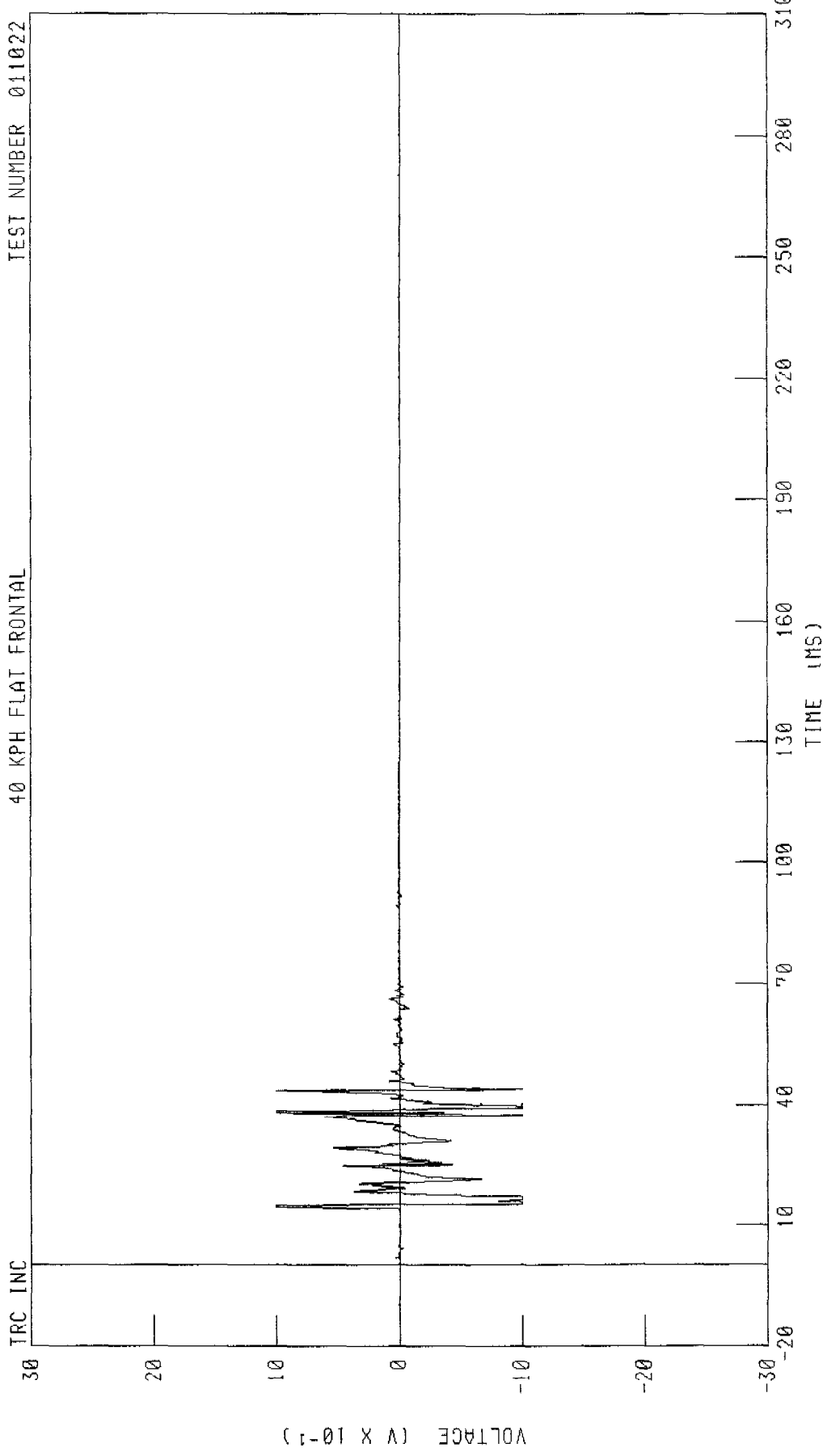
PEAK DATA 0 90 / 0 14 48 MS, -1 00 V @ 19 12 MS

2001 FORD ESCAPE INTO FLAT FRONTAL BARRIER AT 40 KPH

PASSENGER AIRBAG EVENT

40 KPH FLAT FRONTAL

TEST NUMBER 011022



CHANNEL PABET1 FILTER CH CLASS 1000

PEAK DATA 1 00 V @ 14 48 MS, -1 00 V @ 15 36 MS

Appendix C

Dummy Configuration and Performance Verification Data

Pre-Test Dummy Configuration and Performance Verification Data

Driver Dummy S/N: 206

TRANSPORTATION RESEARCH CENTER INC.
HYBRID III EXTERNAL DIMENSIONS

206

18-OCT-01

TRC INC. TEST NO: 206C07ED1 572E SN206 EXT.DIMENSION CAL07

TEST PARAMETER	(DIMEN.)	SPECIFICATION	TEST RESULTS
LOCATION FOR CHEST CIRCUMFERENCE (AA)		429 - 434 MM	432. MM
LOCATION FOR WAIST CIRCUMFERENCE (BB)		226 - 231 MM	229. MM
CHEST CIRCUMFERENCE (Y)		970 -1001 MM	973. MM
WAIST CIRCUMFERENCE (Z)		836 - 866 MM	853. MM
CHEST DEPTH (O)		213 - 229 MM	224. MM
H-POINT HEIGHT (C)		84 - 89 MM	86. MM
H-POINT FROM SEATBACK (D)		135 - 140 MM	137. MM
SKULL CAP TO BACKLINE (H)		41 - 46 MM	43. MM
TOTAL SITTING HEIGHT (A)		879 - 889 MM	886. MM
THIGH CLEARANCE (F)		140 - 155 MM	145. MM
BUTTOCK KNEE LENGTH (K)		579 - 605 MM	597. MM
BUTTOCK POPLITEAL LENGTH (N)		452 - 478 MM	470. MM
POPLITEAL HEIGHT (L)		429 - 455 MM	439. MM
KNEE PIVOT HEIGHT (M)		485 - 500 MM	490. MM
FOOT LENGTH (P)		252 - 267 MM	254. MM
FOOT BREADTH (W)		91 - 107 MM	102. MM
SHOULDER PIVOT FROM BACKLINE (E)		84 - 94 MM	91. MM
SHOULDER BREADTH (V)		422 - 437 MM	434. MM
SHOULDER PIVOT HEIGHT (B)		506 - 521 MM	516. MM
ELBOW REST HEIGHT (J)		191 - 211 MM	206. MM
SHOULDER-ELBOW LENGTH (I)		330 - 345 MM	343. MM
BACK OF ELBOW TO WRIST PIVOT (G)		290 - 305 MM	297. MM

572E SN206 EXT.DIMENSION CAL07

DUMMY MEETS SPECIFICATIONS

TECHNICIAN

[Signature]

RUN NUMBER: 101801.1221

TRANSPORTATION RESEARCH CENTER INC.

HEAD DROP TEST

HYBRID III 50th

16-OCT-01

TRC INC.

TEST NO: 206C07HD1

572E SN206 HEAD DROP CAL 07

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	42.0 %
PEAK RESULTANT ACCELERATION	225 - 275 G	267.13 G
PEAK LATERAL ACCELERATION	15 G MAX	12.13 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

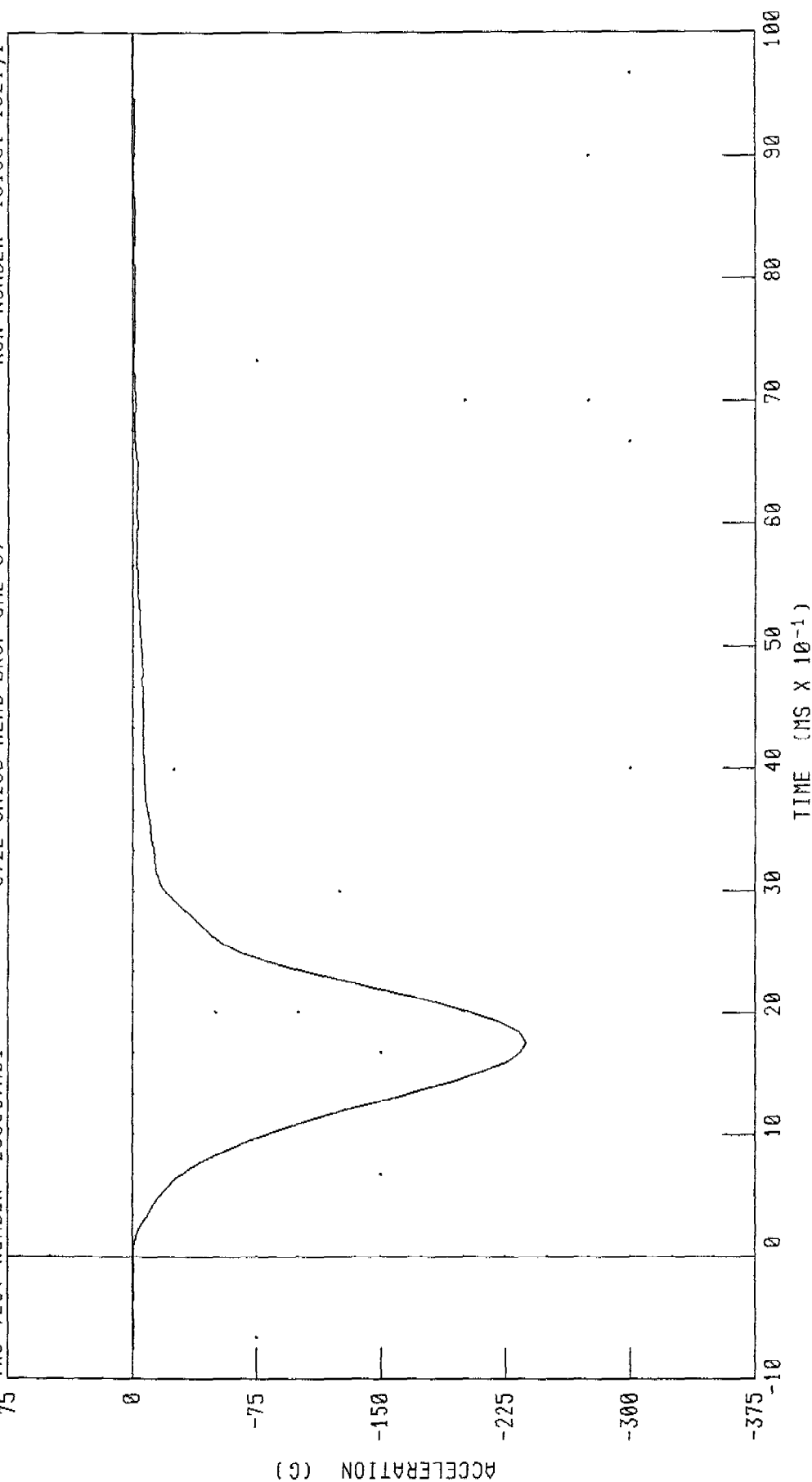
TECHNICIAN *J. H. Smith*

RUN NUMBER: 101601.1021;1

HEAD ACCELERATION X AXIS

RUN NUMBER 101601 1021,1

75 TRC TEST NUMBER 206C07HD1



CHANNEL	HEDXC	FILTER	CH	CLASS	1000
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PEAK DATA -0 02 G 0 -0 88 MS, -237 42 G 0 1 76 MS

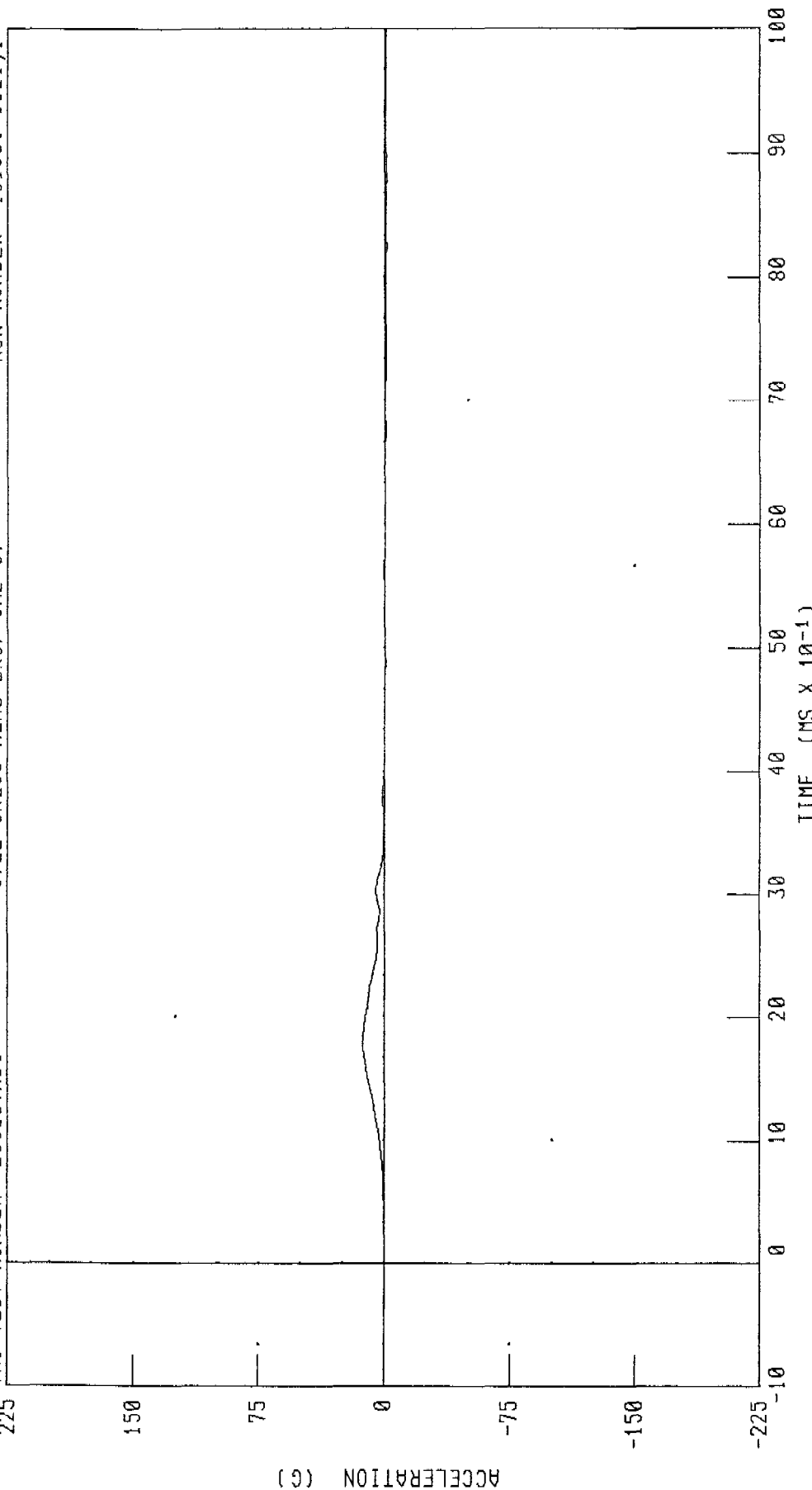
PART 572-E HYBRID III HEAD CALIBRATION

HEAD ACCELERATION Y AXIS

TRC TEST NUMBER 206C07HD1

572E SN206 HEAD DROP CAL 07

RUN NUMBER 101601 1021,1



PEAK DATA 12 13 0 0 1 76 MS, -1 35 0 0 8 96 MS

CHANNEL HEDYC FILTER CH CLASS 1000

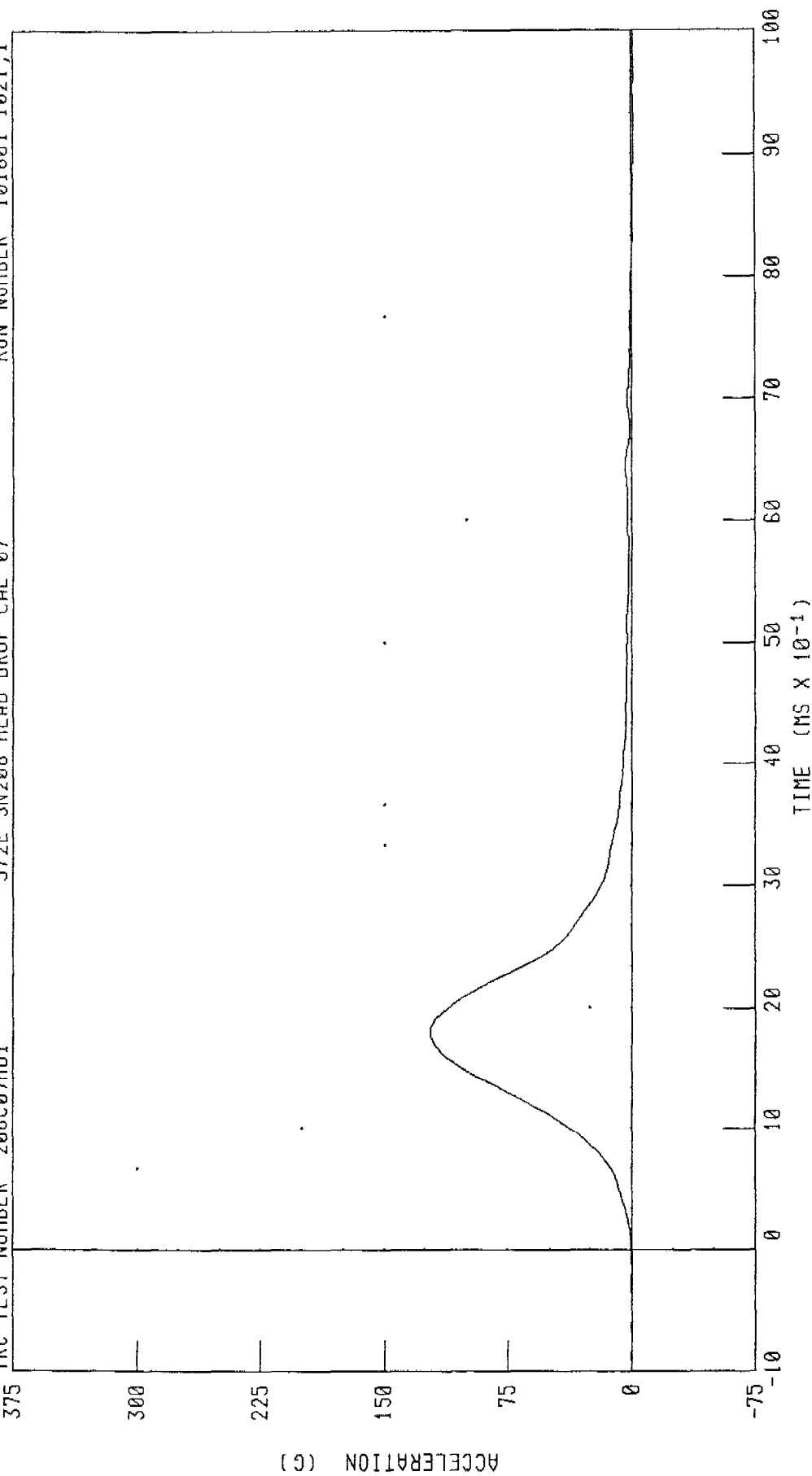
PART 572-E HYBRID III HEAD CALIBRATION

HEAD ACCELERATION Z AXIS

TRC TEST NUMBER 206C07HD1

572E SN206 HEAD DROP CAL 07

RUN NUMBER 101601 1021,1



CHANNEL HEDZG FILTER CH CLASS 1000

PEAK DATA 121 82 G 1 76 MS, -1 38 G 9 76 MS

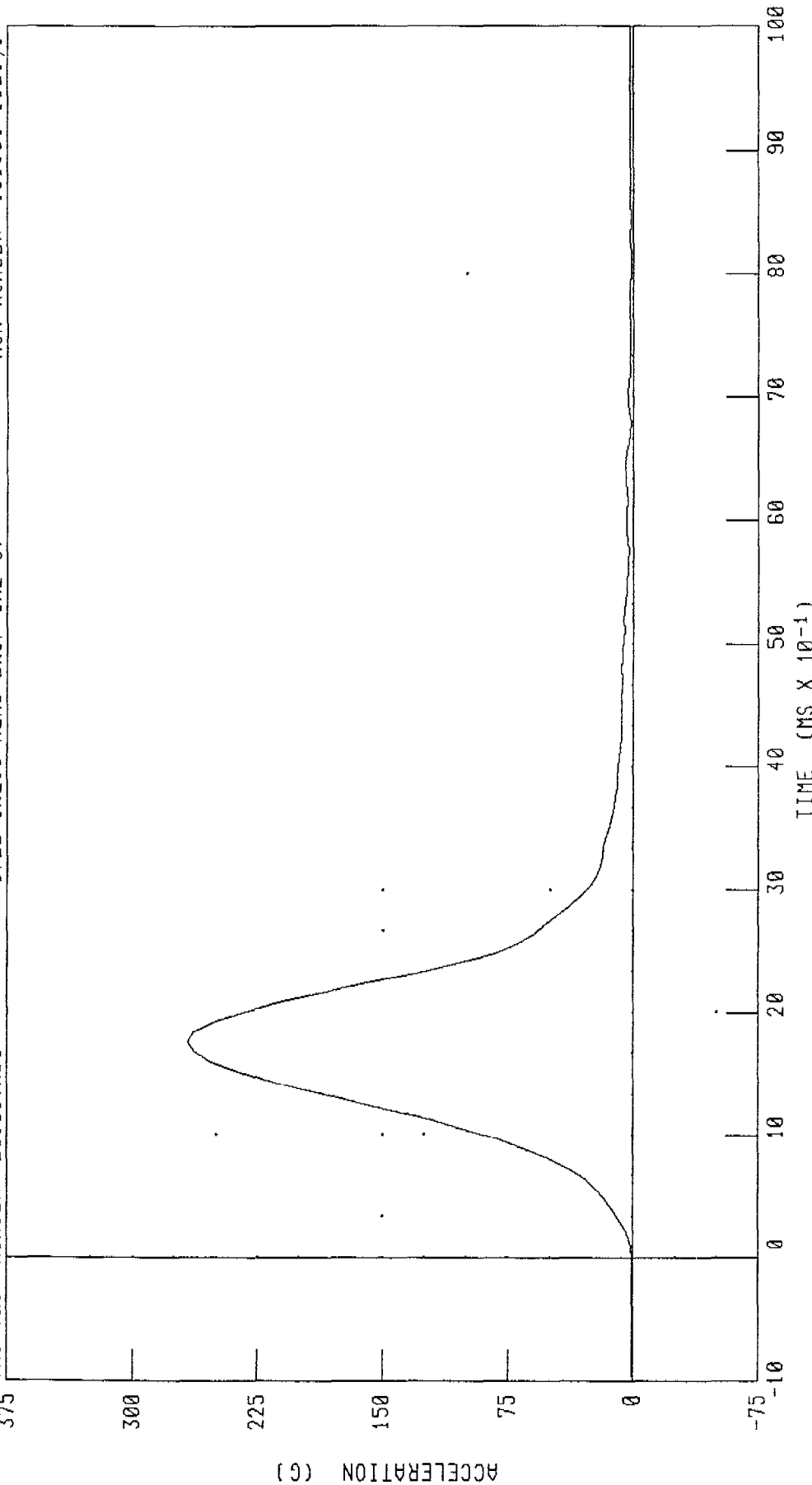
PART 572-E HYBRID III HEAD CALIBRATION

HEAD RESULTANT ACCELERATION

572E SN206 HEAD DROP CAL 07

TRC TEST NUMBER 206C07HD1

RUN NUMBER 101601 1021,1



CHANNEL HEDRG

FILTER CH CLASS 1000

PEAK DATA 267 13 G 0 1 76 MS, 0 19 G 0 -0 48 MS

TRANSPORTATION RESEARCH CENTER INC.

HYBRID III 50th

17-OCT-01

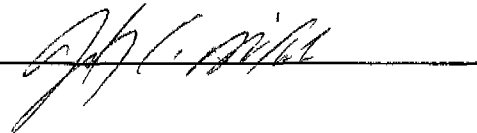
NECK FLEXION TEST - 6 CHANNEL TRANSDUCER

TRC INC. TEST NO: 206C07NF3 572E SN206 NECK FLEXION CAL07

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6-22.2 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY		10 - 70 %	33.0 %
IMPACT VELOCITY		6.89 - 7.13 M/S	6.99 M/S
PENDULUM DECELERATION	10 MS	22.50 - 27.50 G	25.08 G
	20 MS	17.60 - 22.60 G	22.53 G
	30 MS	12.50 - 18.50 G	16.93 G
MAX PENDULUM G		29 G MAX	25.75 G
MAX PENDULUM G ABOVE 30 MS		29 G MAX	16.84 G
DECELERATION-TIME CURVE DECAY TIME TO 5 G		34 - 42 MS	38.00 MS
D PLANE	MAX	64 - 78 DEG.	74.28 DEG.
ROTATION	TIME	57 - 64 MS	61.12 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MAX	88.2 - 108.5 NM	99.90 NM
	TIME	47 - 58 MS	50.56 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		113 - 128 MS	119.92 MS
POSITIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		97 - 107 MS	102.48 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 101701.1247;2

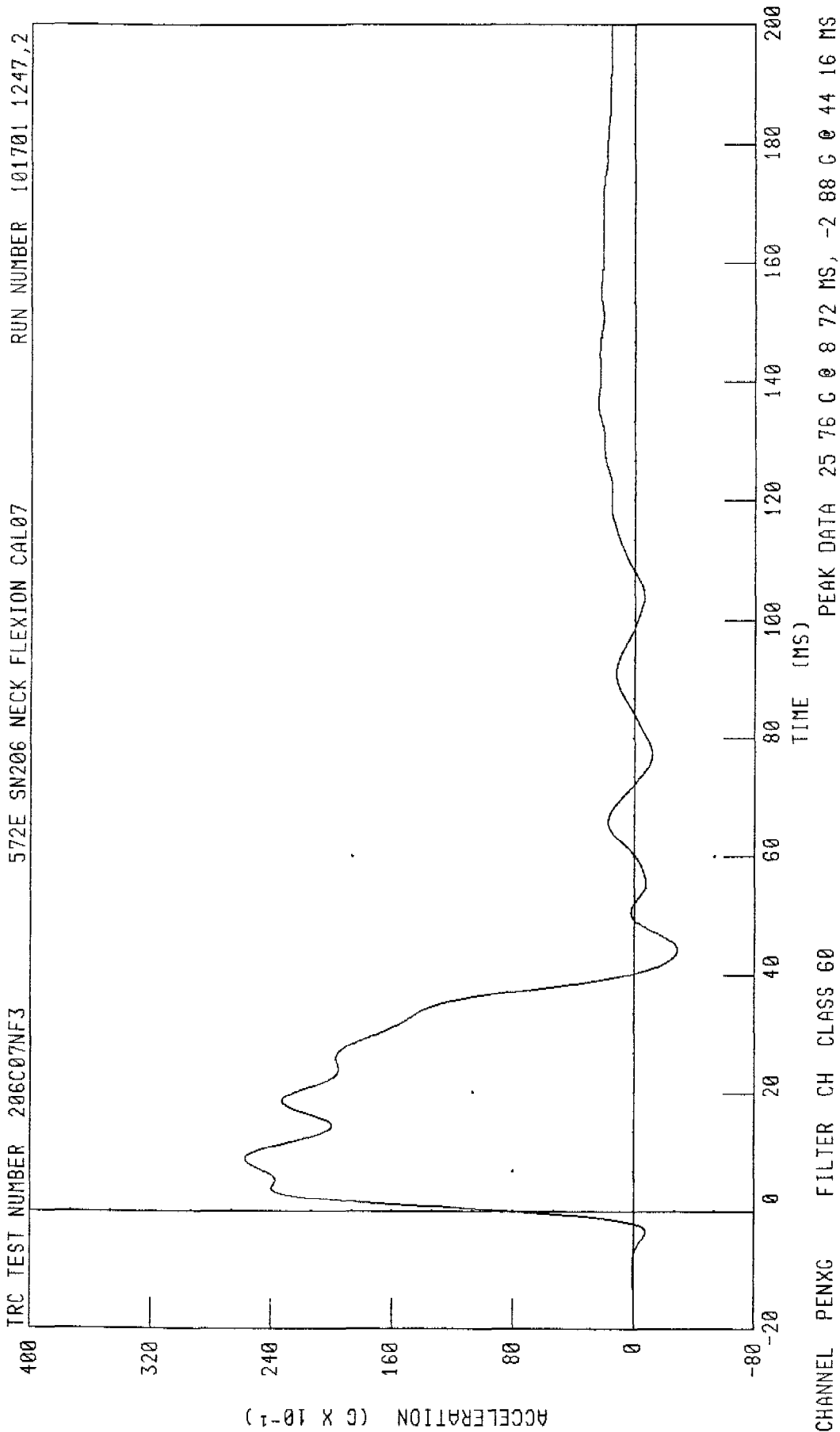
PART 572-E HYBRID III NECK FLEXION CALIBRATION

PENDULUM DECELERATION

TRC TEST NUMBER 206C07NF3

572E SN206 NECK FLEXION CAL07

RUN NUMBER 101701 1247,2



CHANNEL PENXG FILTER CH CLASS 60

PART 572-E HYBRID III NECK FLEXION CALIBRATION

ROTATION ABOUT BASE OF NECK

572E SN206 NECK FLEXION CAL07

TRC TEST NUMBER 206C07NF3

120

90

60

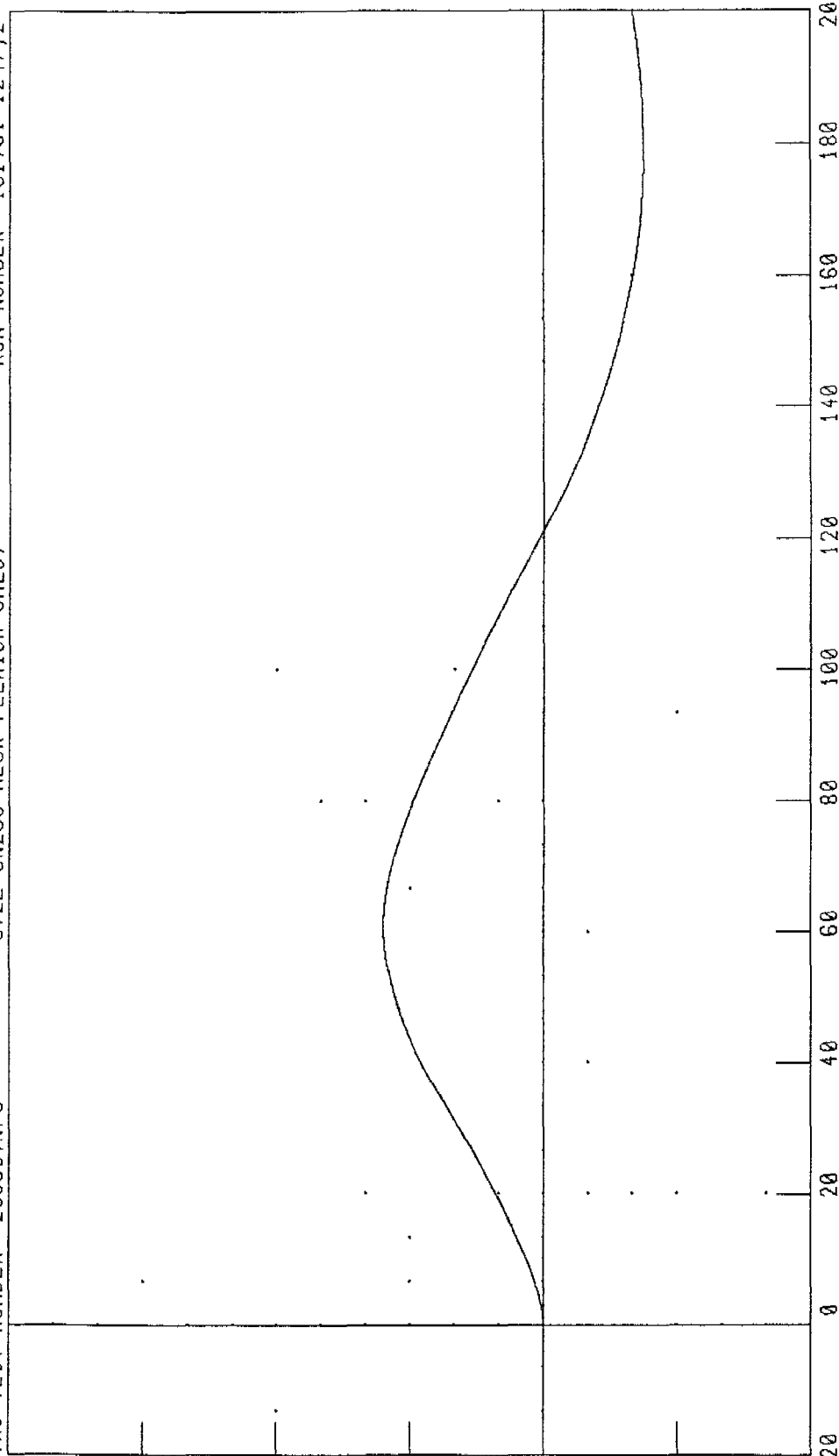
30

0

-30

-60

ANGLE (°)



TIME (MS)

PEAK DATA 35 92 ° @ 60 80 MS, -22 61 ° @ 178 72 MS

CHANNEL BETA FILTER CH CLASS 60

RUN NUMBER 101701 1247,2

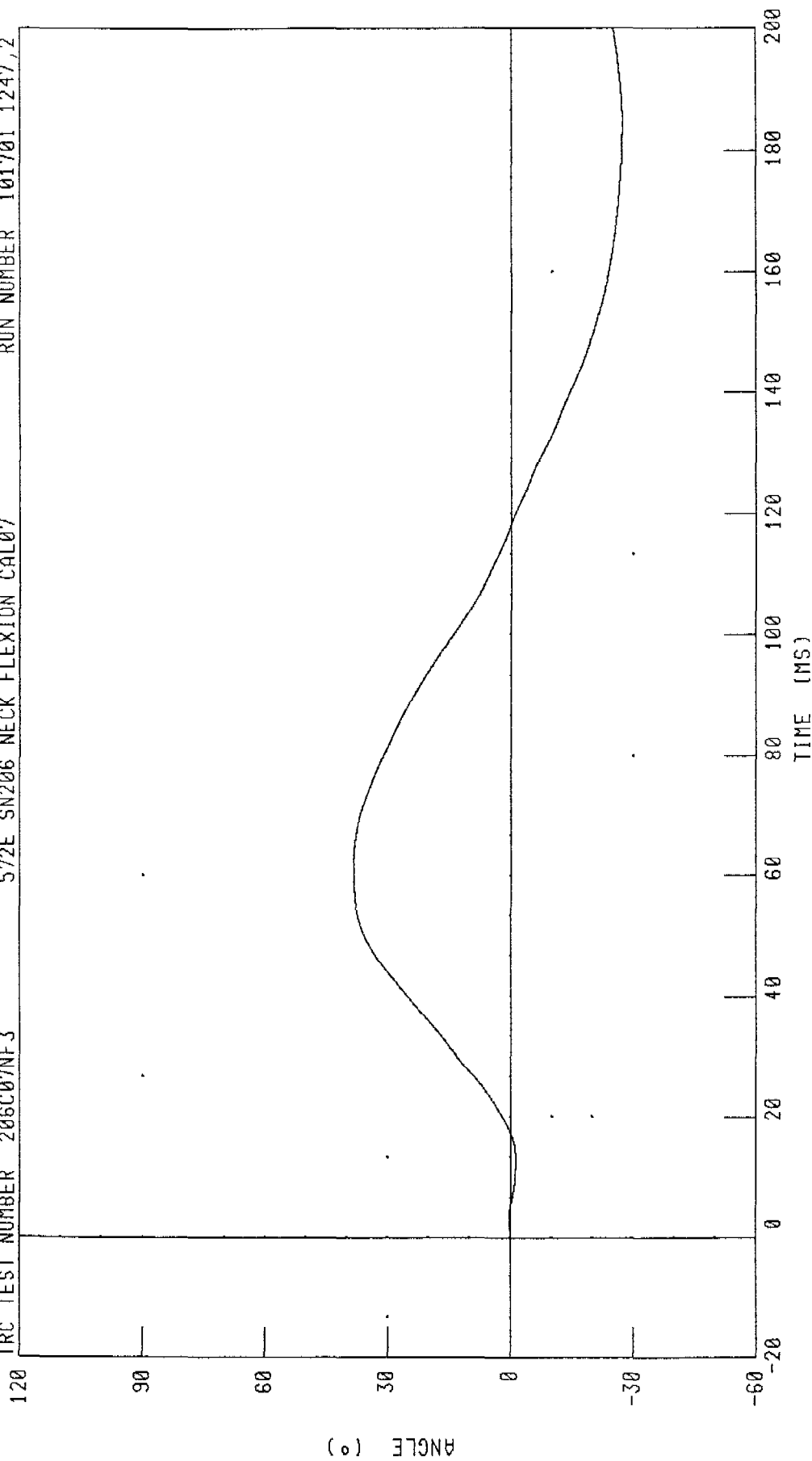
PART 572-E HYBRID III NECK FLEXION CALIBRATION

ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER 206C07NF3

572E SN206 NECK FLEXION CAL07

RUN NUMBER 101701 1247,2



CHANNEL THETA

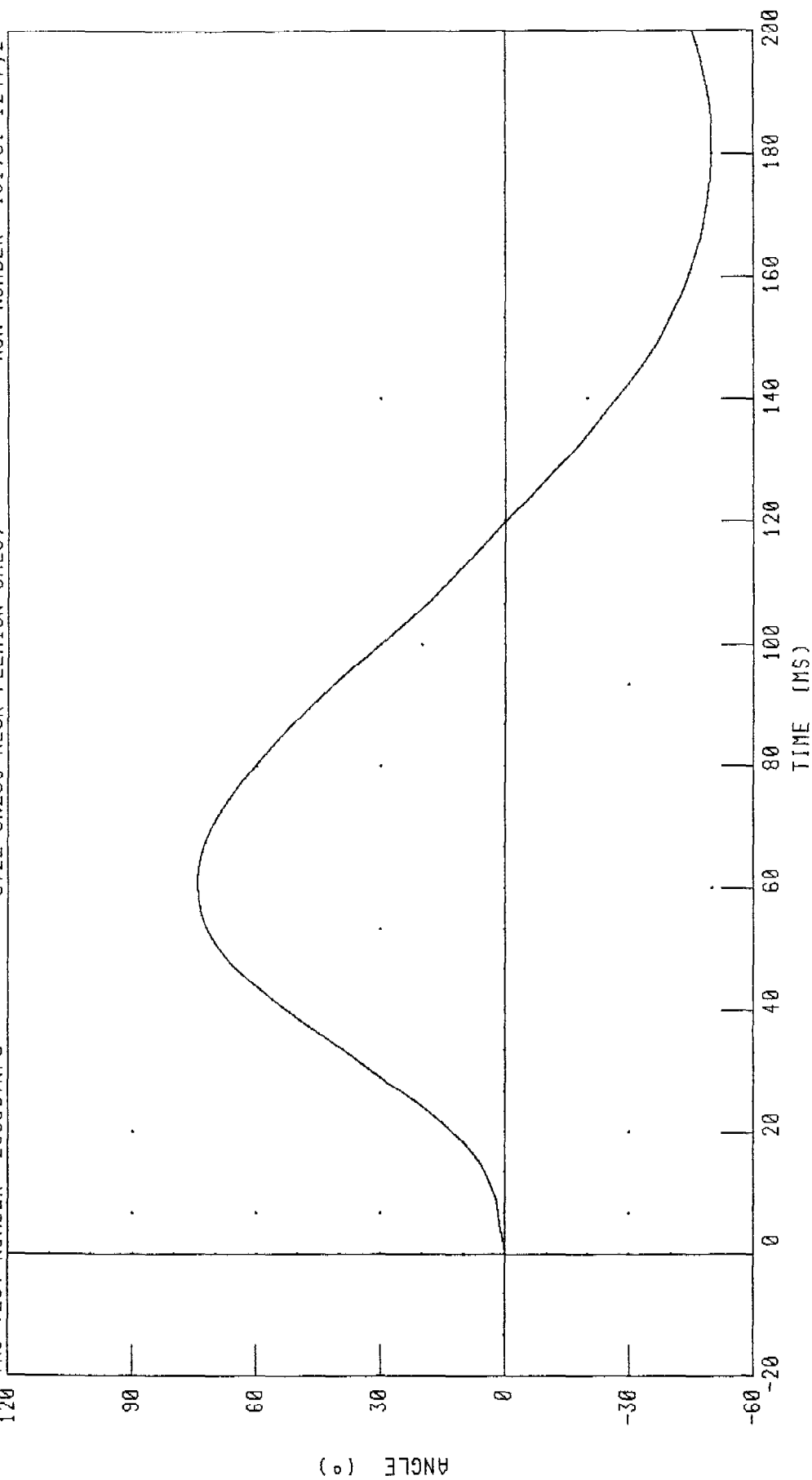
FILTER CH CLASS 60

PEAK DATA 38 37 ° @ 61 44 MS, -27 42 ° @ 184 88 MS

PART 572-E HYBRID III NECK FLEXION CALIBRATION

TOTAL ROTATION

TRC TEST NUMBER 206C07NF3 572E SN206 NECK FLEXION CAL07 RUN NUMBER 101701 1247,2



CHANNEL TOTAL FILTER CH CLASS 60

PEAK DATA 74 29 ° @ 61 12 MS, -49 94 ° @ 182 32 MS

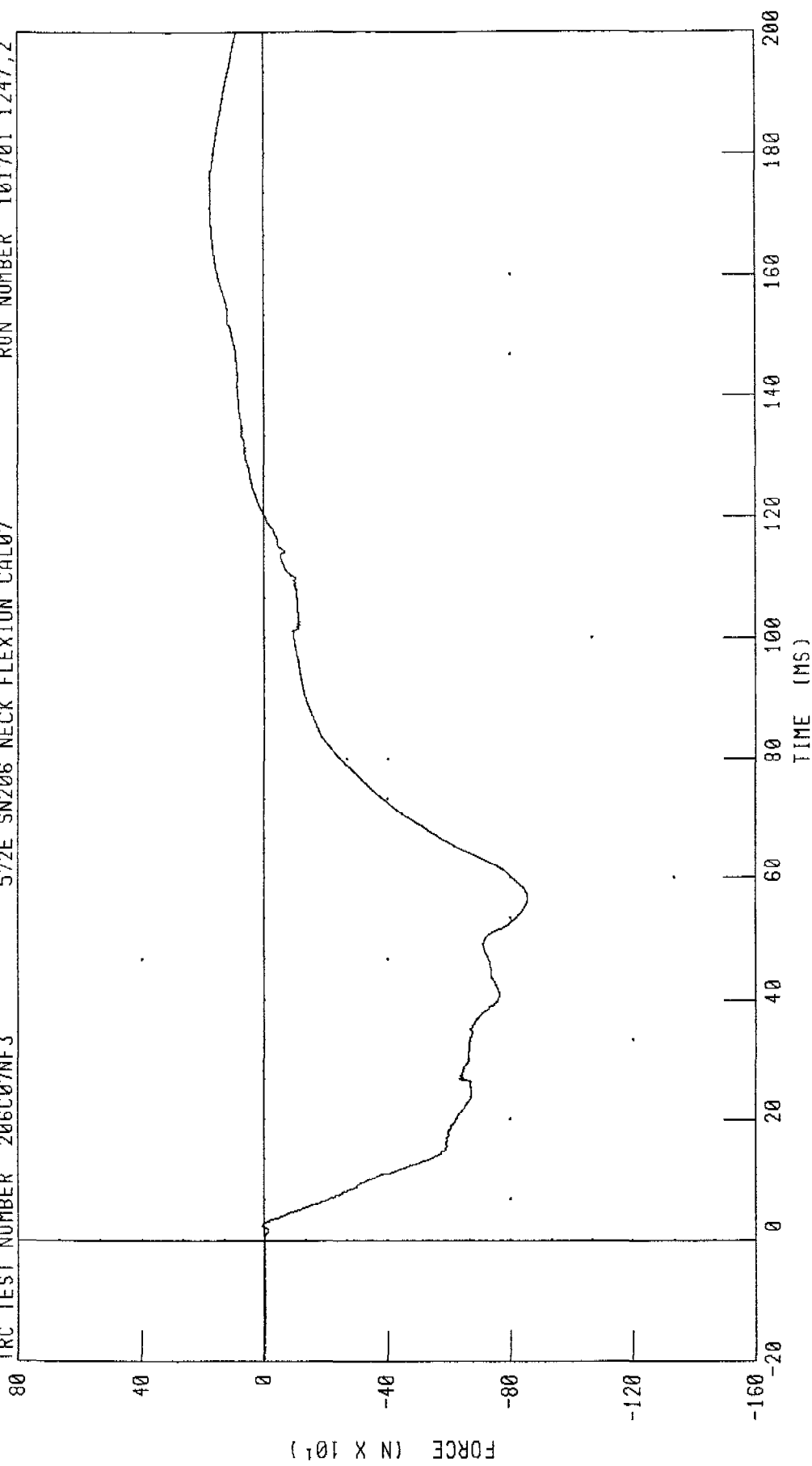
PART 572-E HYBRID III NECK FLEXION CALIBRATION

NECK FORCE X AXIS

TRC TEST NUMBER 206C07NF3

572E SN206 NECK FLEXION CAL07

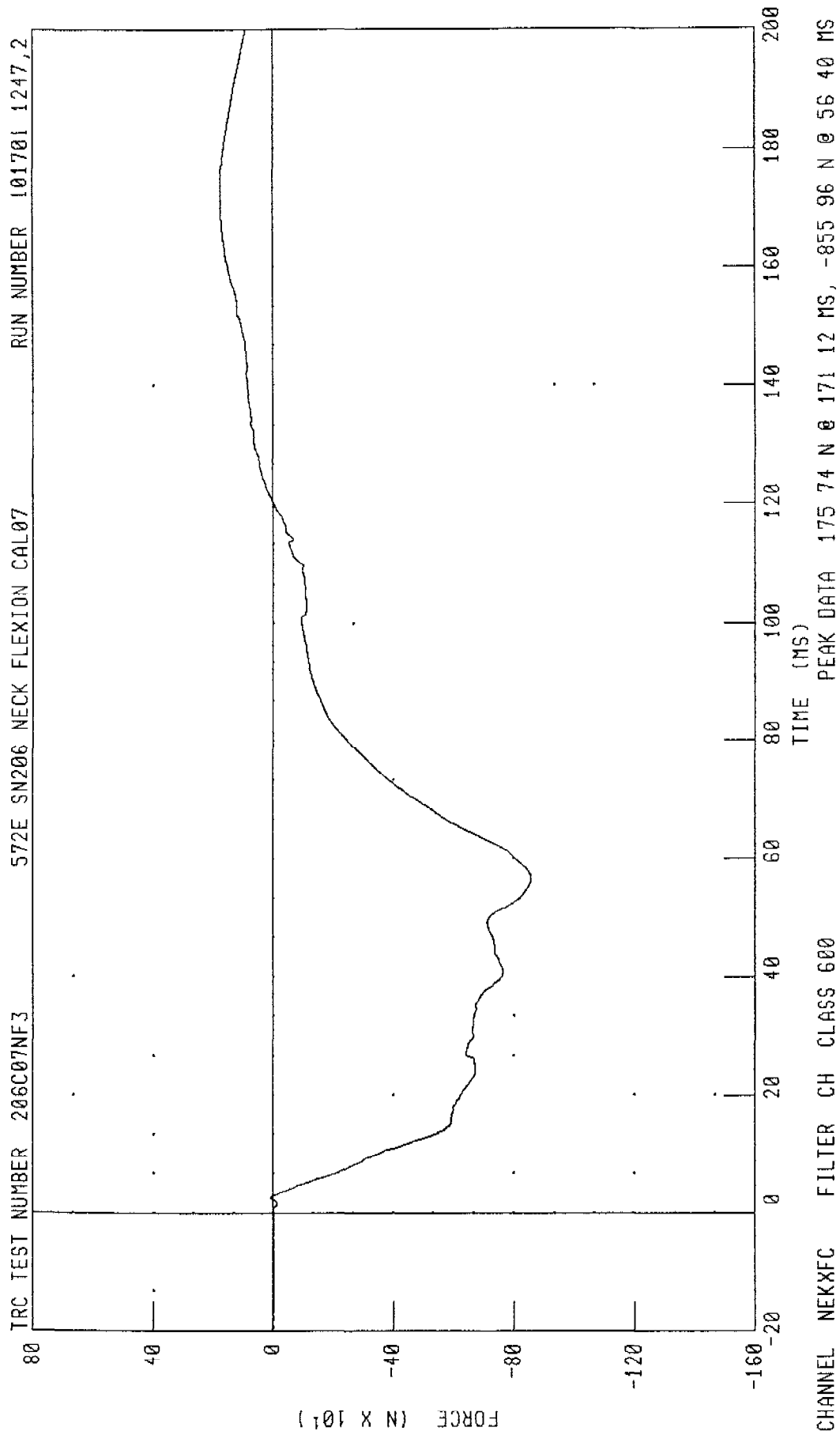
RUN NUMBER 101701 1247,2



CHANNEL NEKXF FILTER CH CLASS 1000 PEAK DATA 176 33 N @ 176 08 MS, -856 20 N @ 56 40 MS

PART 572-E HYBRID III NECK FLEXION CALIBRATION

NECK FORCE X AXIS FILTERED FOR USE IN OCCIPITAL MOMENT CALCULATION



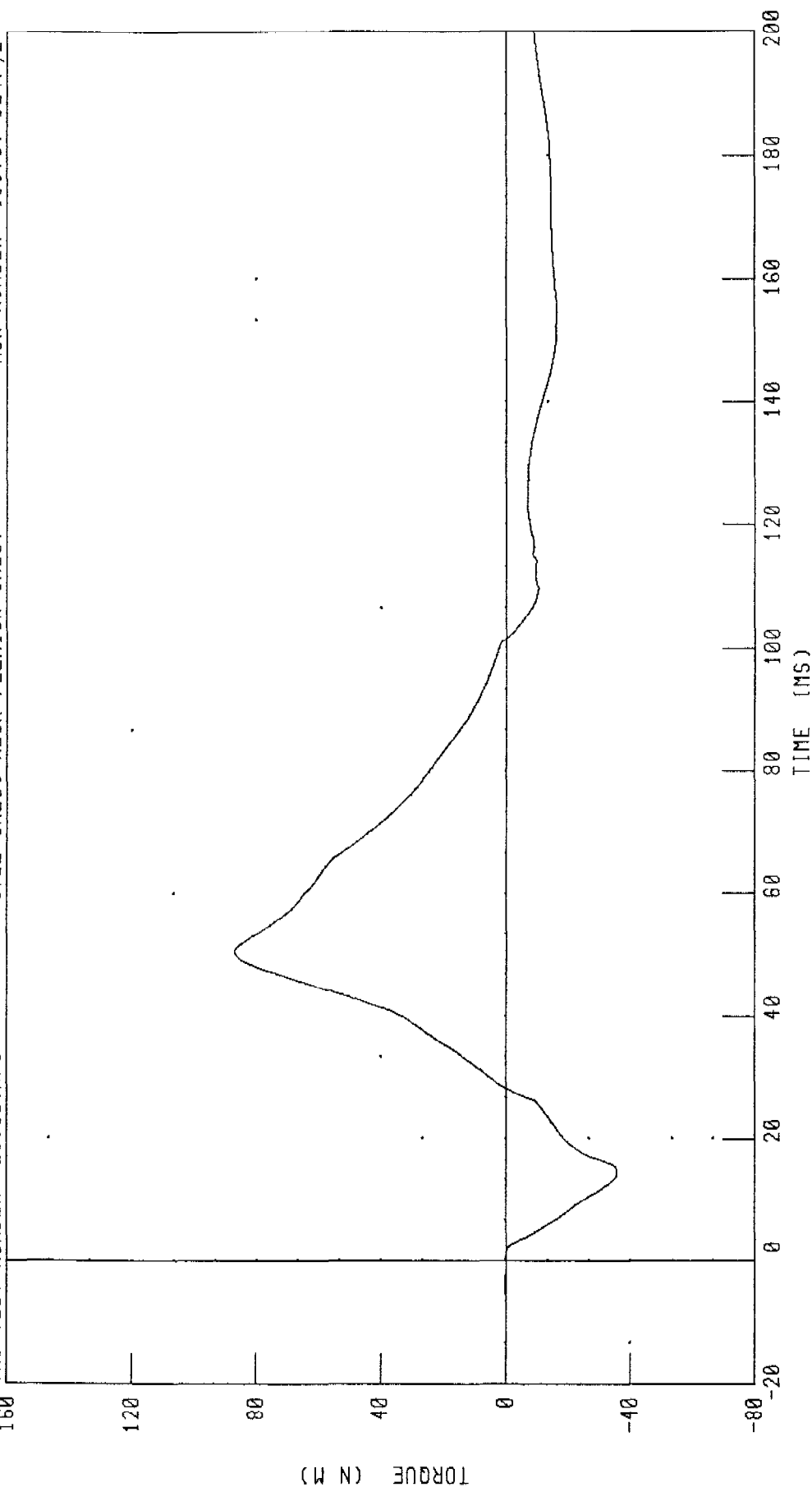
PART 572-E HYBRID III NECK FLEXION CALIBRATION

NECK MOMENT Y AXIS

TRC TEST NUMBER 206C07NF3

572E SN206 NECK FLEXION CAL07

RUN NUMBER 101701 1247,2



TIME (MS)

CHANNEL NEKYM FILTER CH CLASS 600

PEAK DATA 87 01 N M 0 50 40 MS, -35 79 N M 0 14 48 MS

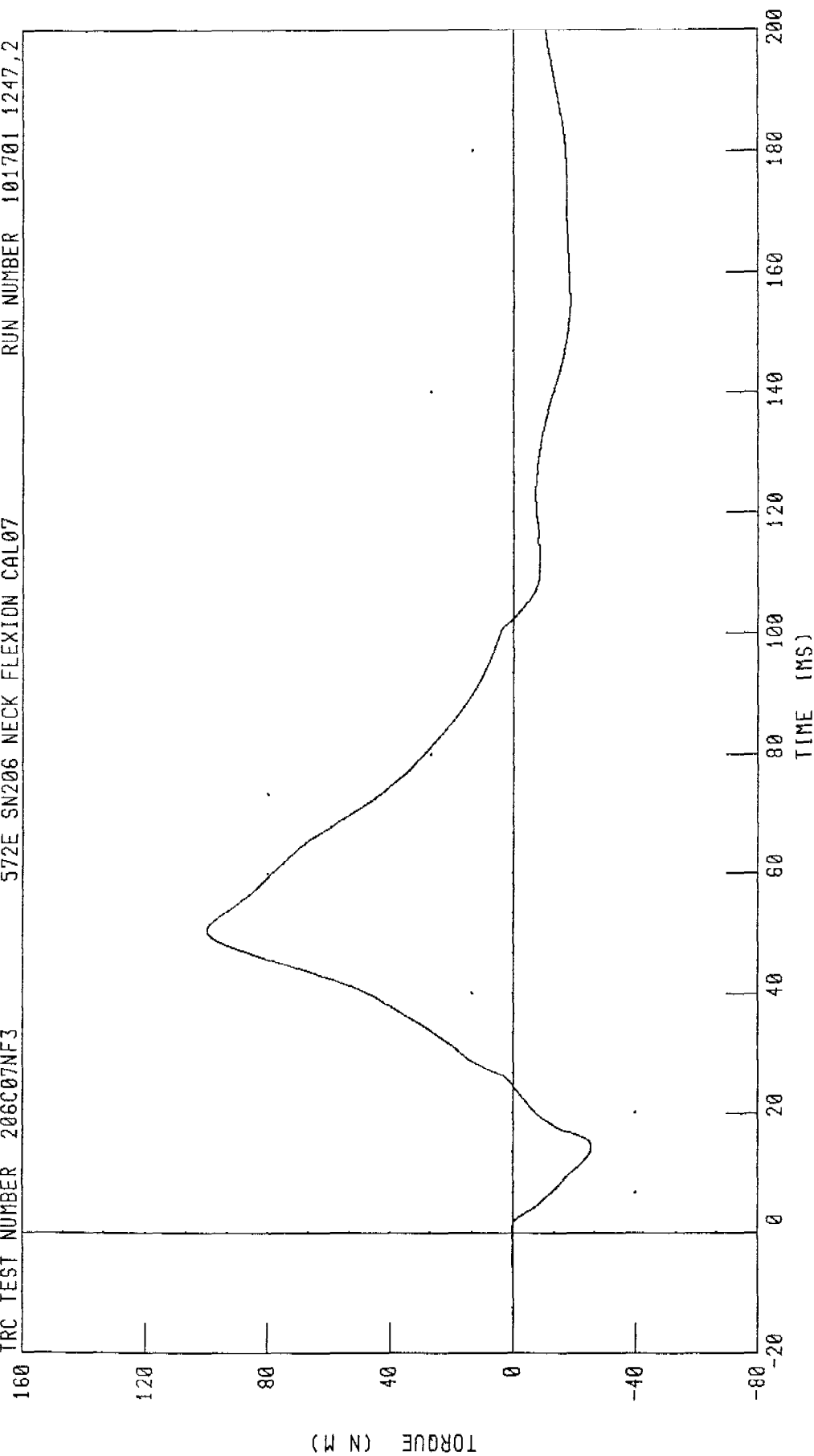
PART 572-E HYBRID III NECK FLEXION CALIBRATION

TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER 206C07NF3

572E SN206 NECK FLEXION CAL07

RUN NUMBER 101701 1247,2



TIME (MS)

PEAK DATA 99 90 N M 0 50 56 MS, -25 59 N M 0 14 24 MS

CHANNEL NEKOM FILTER CH CLASS 600

TRANSPORTATION RESEARCH CENTER INC.

HYBRID III 50th

17-OCT-01

NECK EXTENSION TEST - 6 CHANNEL TRANSDUCER

TRC INC.

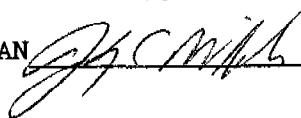
TEST NO: 206C07NE2

572E SN206 NECK EXT CAL07

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6 - 22.2 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY		10 - 70 %	33.0 %
IMPACT VELOCITY		5.95 - 6.19 M/S	6.05 M/S
PENDULUM DECELERATION	10 MS	17.20 - 21.20 G	19.14 G
	20 MS	14.00 - 19.00 G	18.39 G
	30 MS	11.00 - 16.00 G	15.93 G
MAX PENDULUM G		22 G MAX	19.61 G
MAX PENDULUM G ABOVE 30 MS		22 G MAX	15.85 G
DECELERATION-TIME CURVE DECAY TIME TO 5 G		38 - 46 MS	40.32 MS
D PLANE	MAX	81 - 106 DEG.	95.66 DEG.
ROTATION	TIME	72 - 82 MS	77.92 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MIN	-80.0/-52.9 NM	-73.55 NM
	TIME	65 - 79 MS	72.56 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		147 - 174 MS	158.24 MS
NEGATIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		120 - 148 MS	145.28 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 101701.1355;1

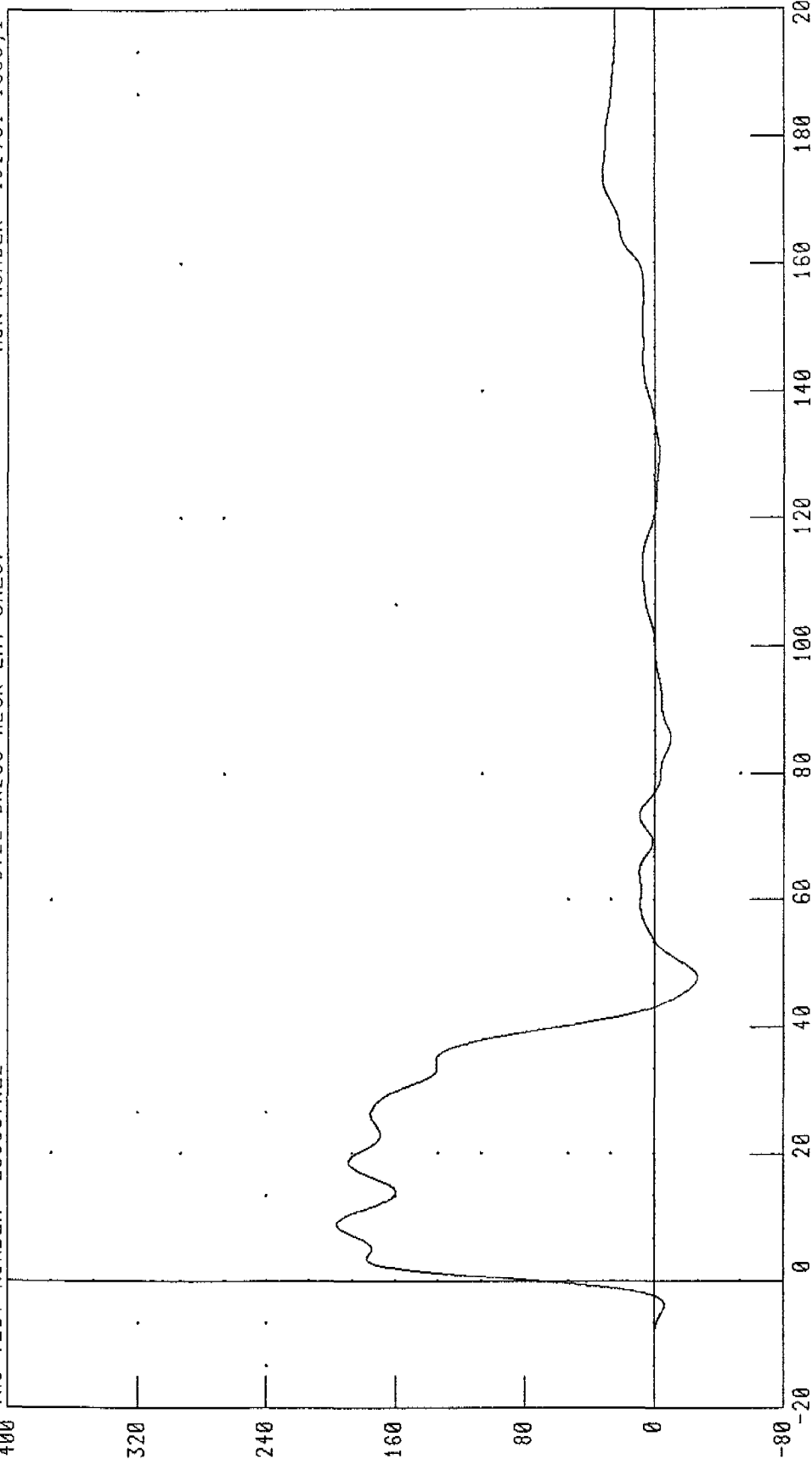
PART 572-E HYBRID III NECK EXTENSION CALIBRATION

PENDULUM DECELERATION

TRC TEST NUMBER 206C07NE2

572E SN206 NECK EXT CAL07

RUN NUMBER 101701 1355,1



PEAK DATA

19 62 C @ 8 88 MS, -2 66 C @ 47 76 MS

CHANNEL PENXC FILTER CH CLASS 60

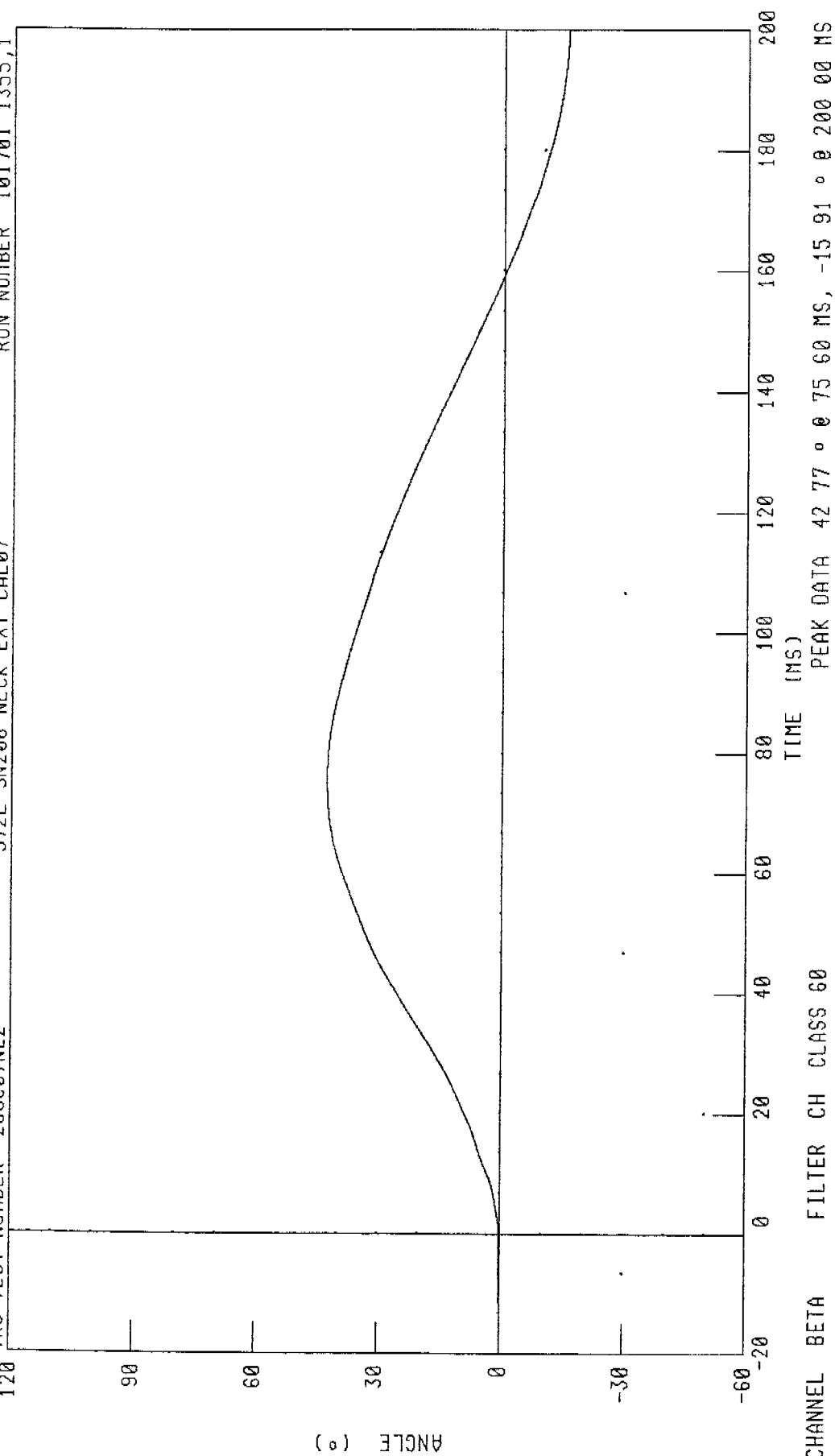
PART 572-E HYBRID III NECK EXTENSION CALIBRATION

ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER 206C07NE2

572E SN206 NECK EXT CAL07

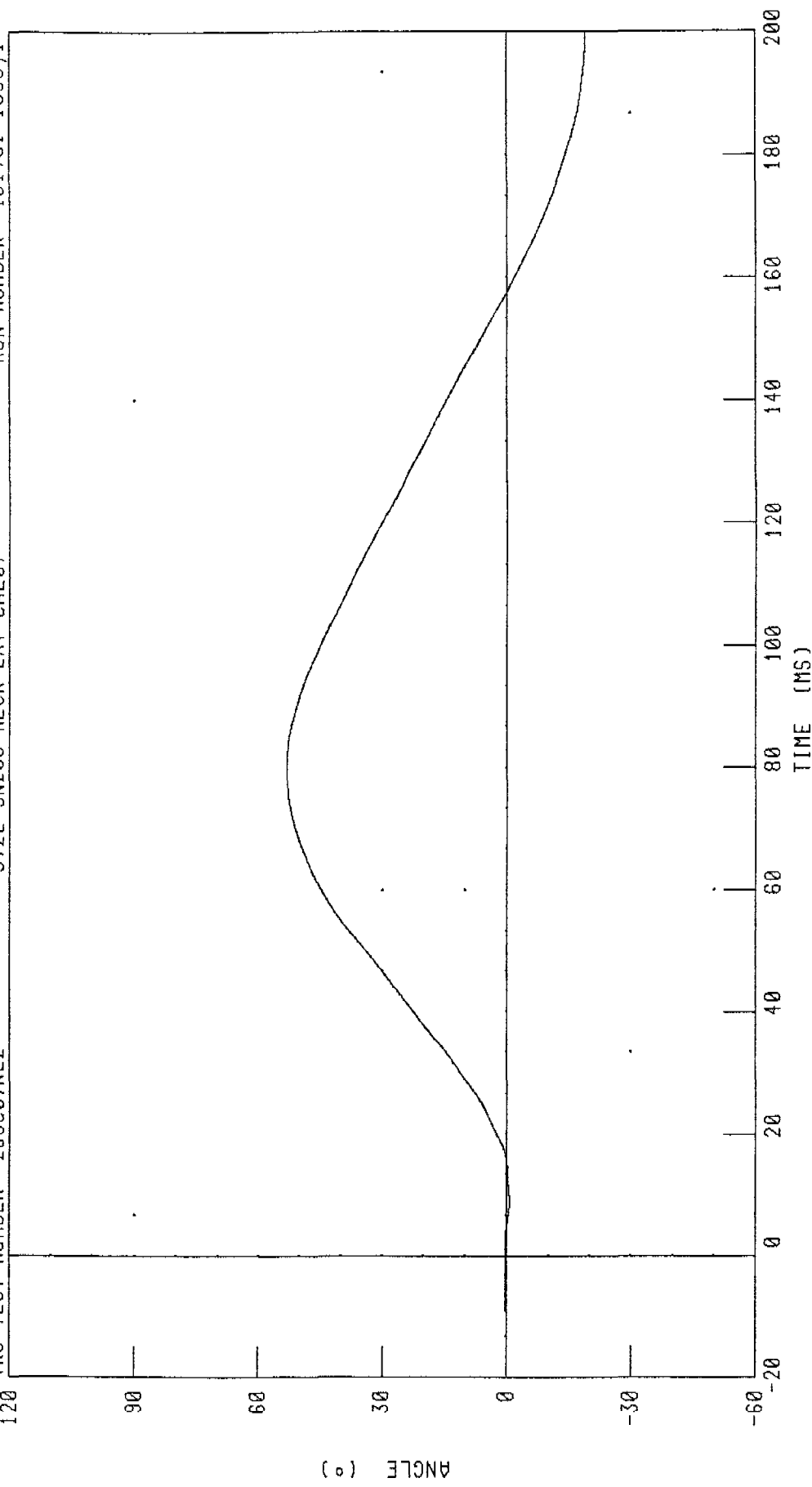
RUN NUMBER 101701 1355,1



CHANNEL BETA FILTER CH CLASS 60

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

TRC TEST NUMBER 206C07NE2 572E SN206 NECK EXT CAL07 RUN NUMBER 101701 1355,1



CHANNEL THETA FILTER CH CLASS 60 PEAK DATA 53 02 ° @ 80 00 MS, -19 15 ° @ 200 00 MS

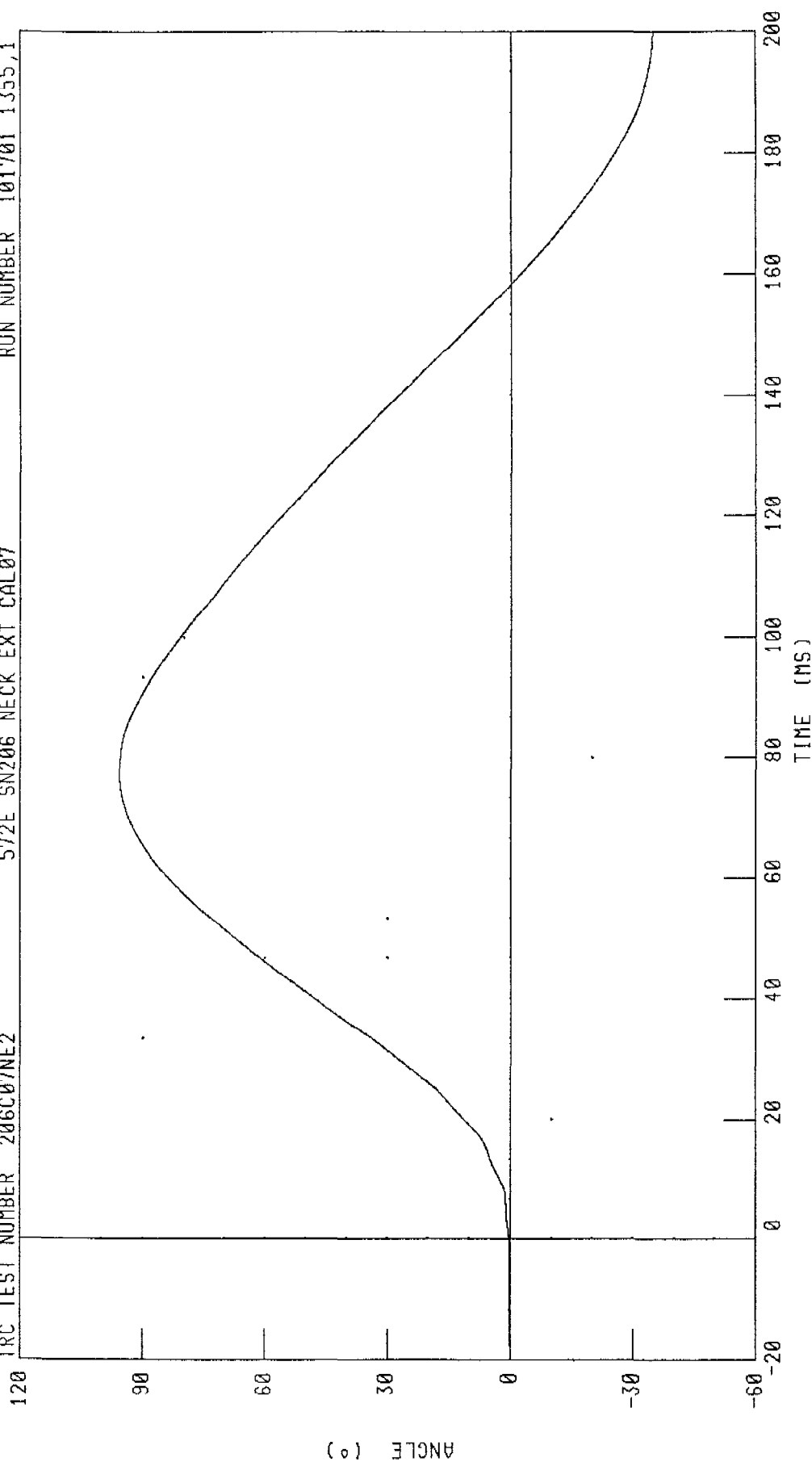
PART 572-E HYBRID III NECK EXTENSION CALIBRATION

TOTAL ROTATION

TRC TEST NUMBER 206C07NE2

572E SN206 NECK EXT CAL07

RUN NUMBER 101701 1355,1



TIME (MS)

CHANNEL TOTAL FILTER CH CLASS 60

PEAK DATA 95 67 ° @ 77 92 MS, -35 06 ° @ 200 00 MS

PART 572-E HYBRID III NECK EXTENSION CALIBRATION

NECK FORCE X AXIS

TRC TEST NUMBER 206C07NE2

572E SN206 NECK EXT CAL07

RUN NUMBER 101701 1355,1

160

120

80

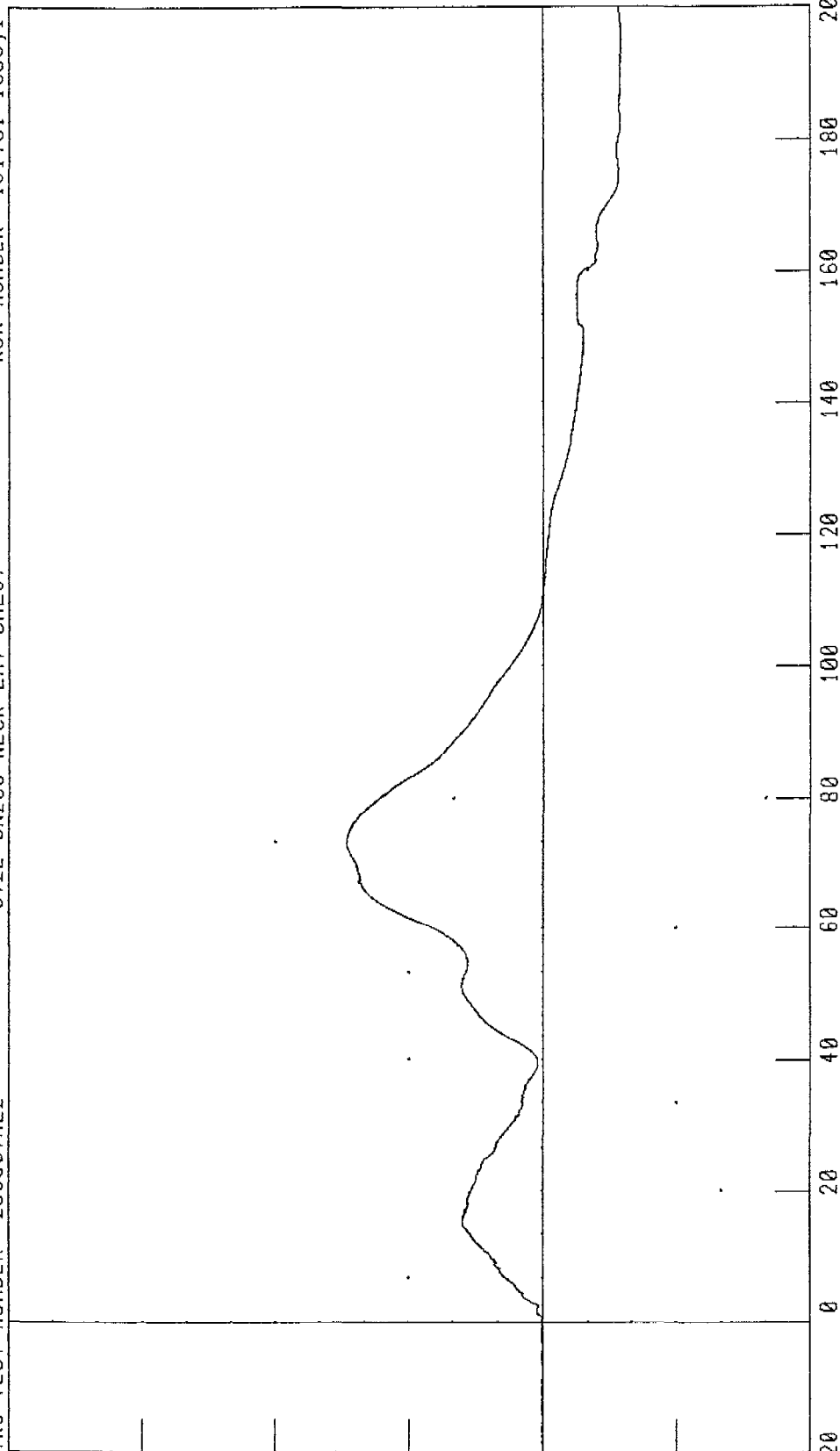
40

0

-40

-80

FORCE (N X 10¹)



TIME (MS)

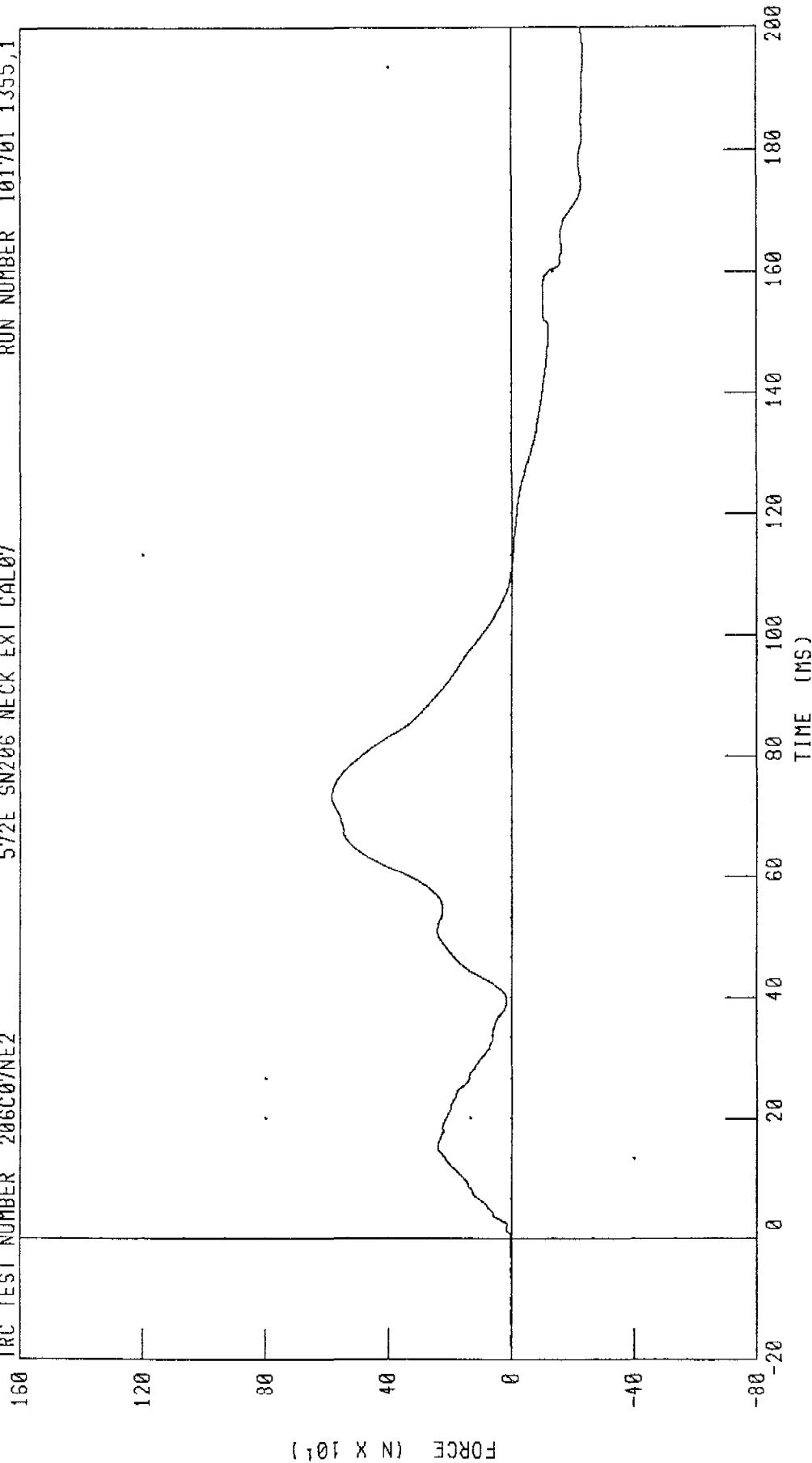
CHANNEL NEKXF FILTER CH CLASS 1000

PEAK DATA 585 07 N @ 73 28 MS, -235 09 N @ 194 80 MS

PART 572-E HYBRID III NECK EXTENSION CALIBRATION

NECK FORCE X AXIS FILTERED FOR USE IN OCCIPITAL MOMENT CALCULATION

TRC TEST NUMBER 206C07NE2 572E SN206 NECK EXT CAL07 RUN NUMBER 101701 1355,1



CHANNEL NEKXFC FILTER CH CLASS 600

PEAK DATA 584 75 N @ 73 28 MS, -234 89 N @ 195 44 MS

PART 572-E HYBRID III NECK EXTENSION CALIBRATION

NECK MOMENT Y AXIS

572E SN206 NECK EXT CAL07

RUN NUMBER 101701 1355,1

IRC TEST NUMBER 206C07NE2

80

40

0

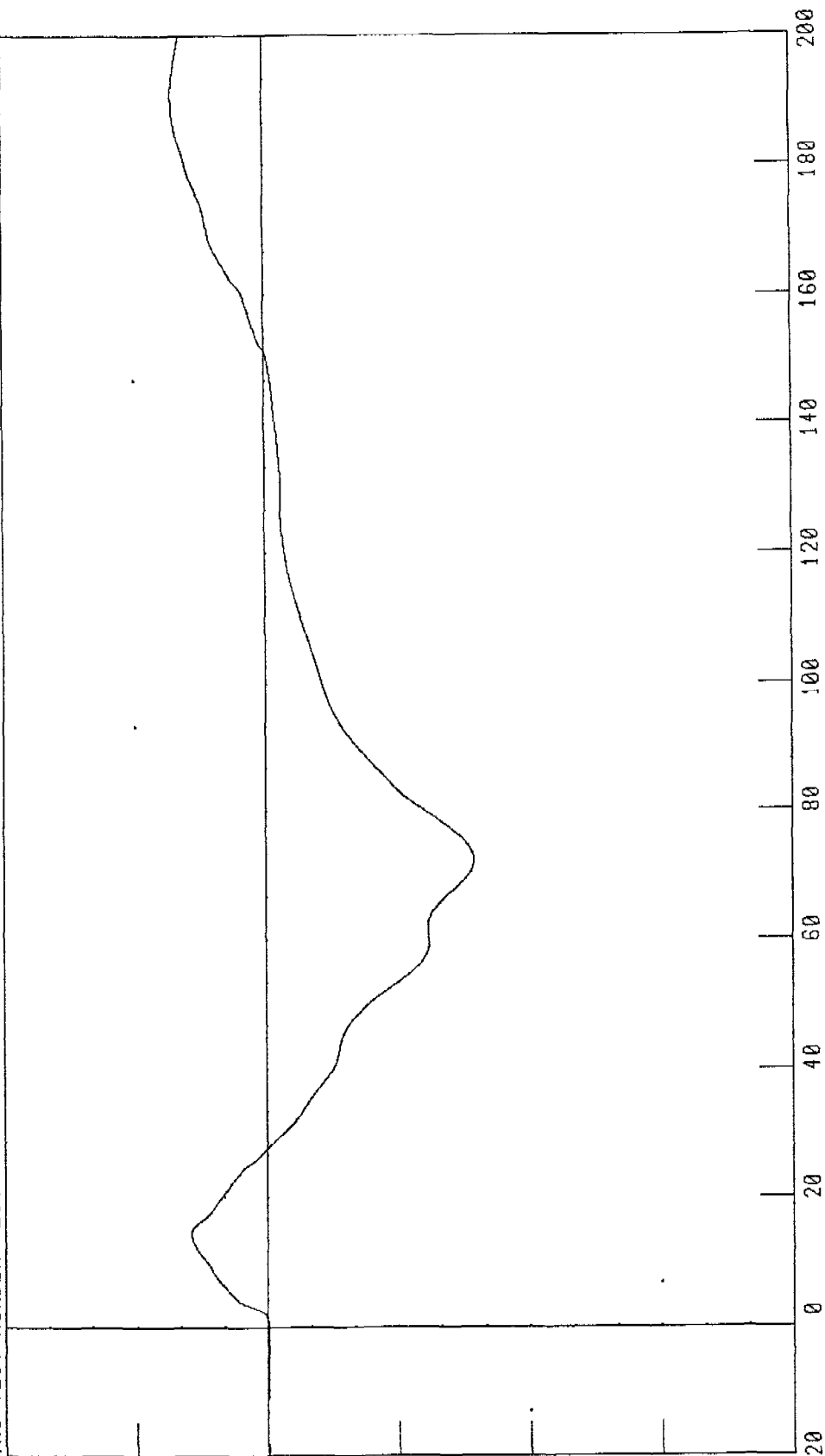
-40

-80

-120

-160

TORQUE (N M)



TIME (MS)

PEAK DATA 28 16 N M @ 190 72 MS, -63 21 N M @ 72 32 MS

CHANNEL NEKYM FILTER CH CLASS 600

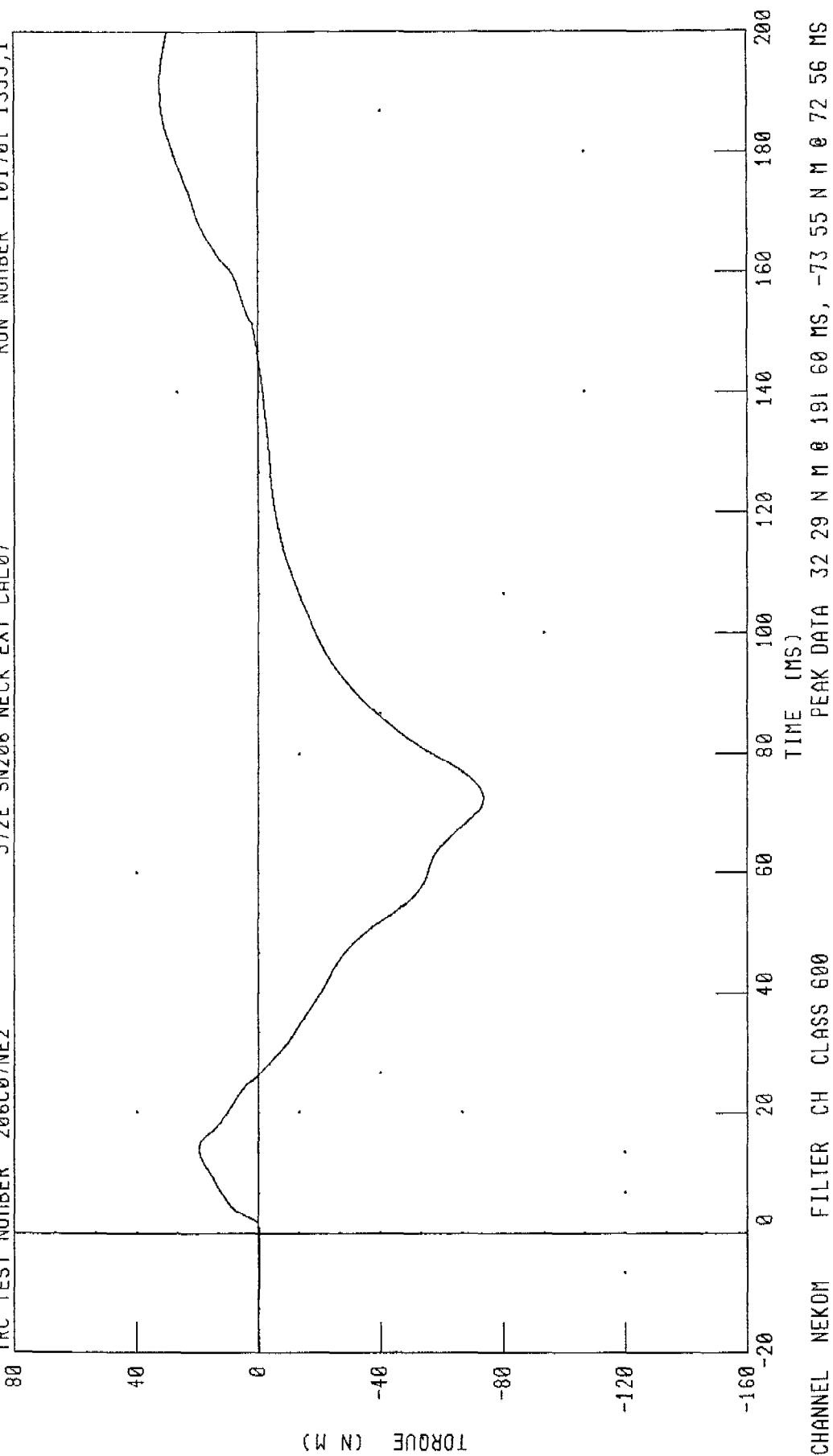
PART 572-E HYBRID III NECK EXTENSION CALIBRATION

TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER 206C07NE2

572E SN206 NECK EXT CAL07

RUN NUMBER 101701 1355,1



CHANNEL NEKOM FILTER CH CLASS 600

PEAK DATA 32 29 N M @ 191 60 MS, -73 55 N M @ 72 56 MS

TRANSPORTATION RESEARCH CENTER INC.

THORAX IMPACT TEST

HYBRID III 50th

18-OCT-01

TRC INC.

TEST NO: 206C07TH1

572E SN206 H.S.THORAX CAL07

TEST PARAMETER	HIGH SPEED TEST	TEST RESULTS
	SPECIFICATION	
TEMPERATURE	20.6-22.2 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	28.0 %
PENDULUM VELOCITY	6.59 - 6.83 M/S	6.59 M/S
MAXIMUM DEFLECTION	63.5 - 72.6 MM	64.2 MM
MAXIMUM RESISTIVE FORCE	5159 - 5894 N	5872. N
INTERNAL HYSTERESIS	69% - 85%	71.7%

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 101801.0809;1

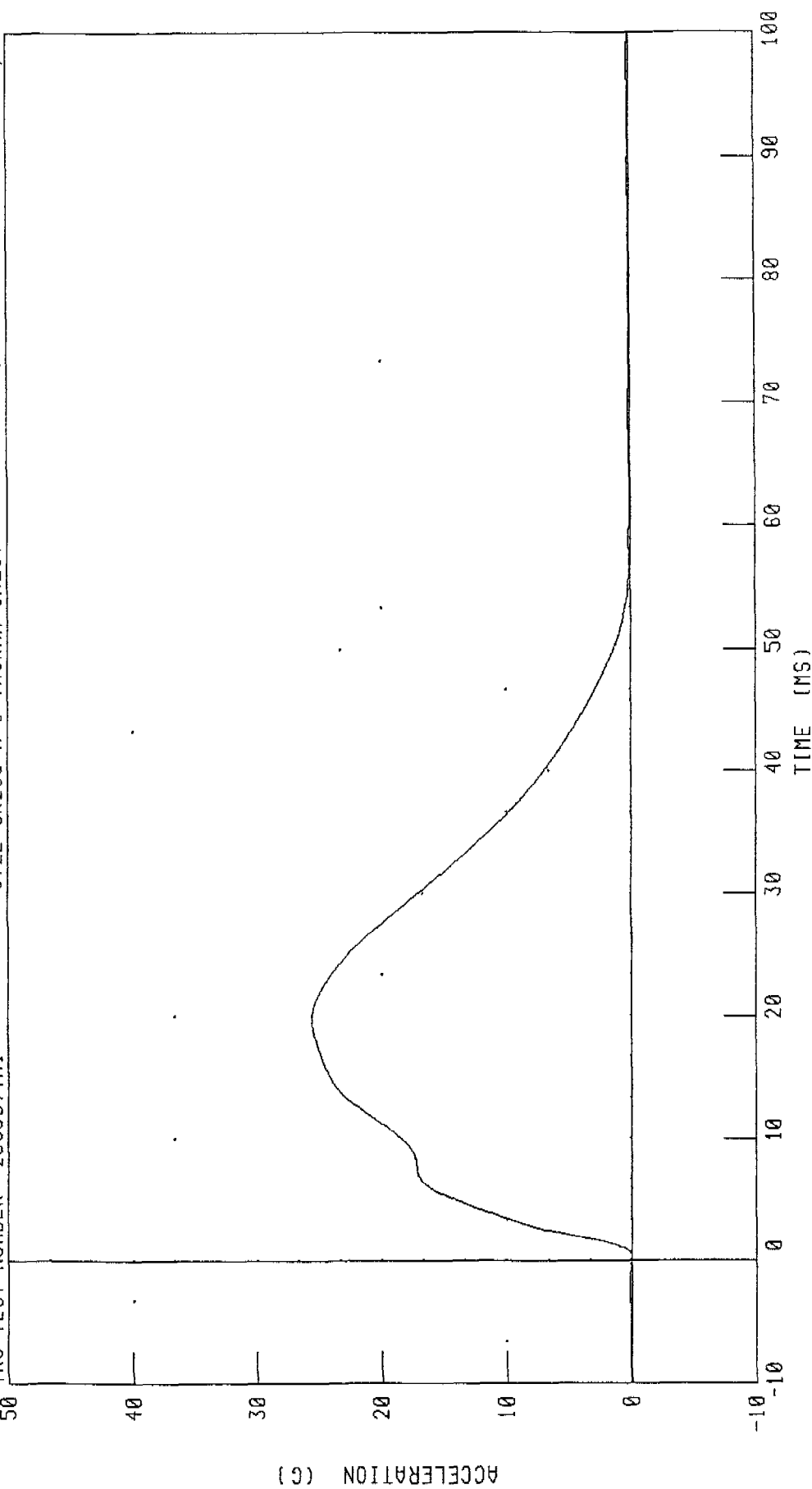
PART 572-E HYBRID III THORAX CALIBRATION

PENDULUM DECELERATION

TRC TEST NUMBER 206C07TH1

572E SN206 H S THORAX CAL07

RUN NUMBER 101801 0812,1

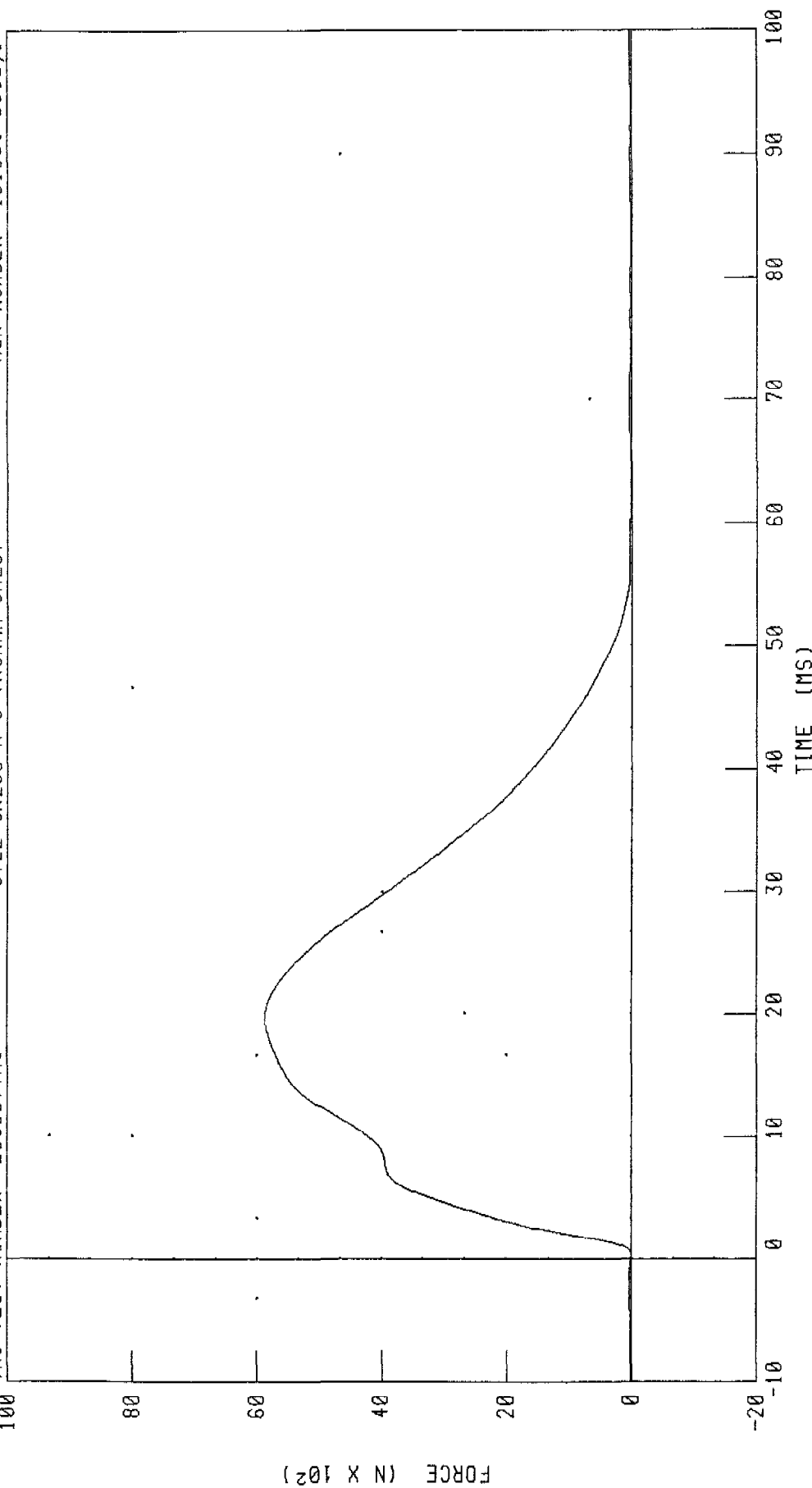


CHANNEL PENXC FILTER CH CLASS 180 PEAK DATA 25 64 G 19 68 MS, -0 01 G 0 0 24 MS

PART 572-E HYBRID III THORAX CALIBRATION

PENDULUM FORCE

TRC TEST NUMBER 206C07TH1 572E SN206 H S THORAX CAL07 RUN NUMBER 101001 0812,1



CHANNEL PENXF FILTER CH CLASS 180 PEAK DATA 5872 77 N 0 19 68 MS, -2 81 N 0 0 24 MS

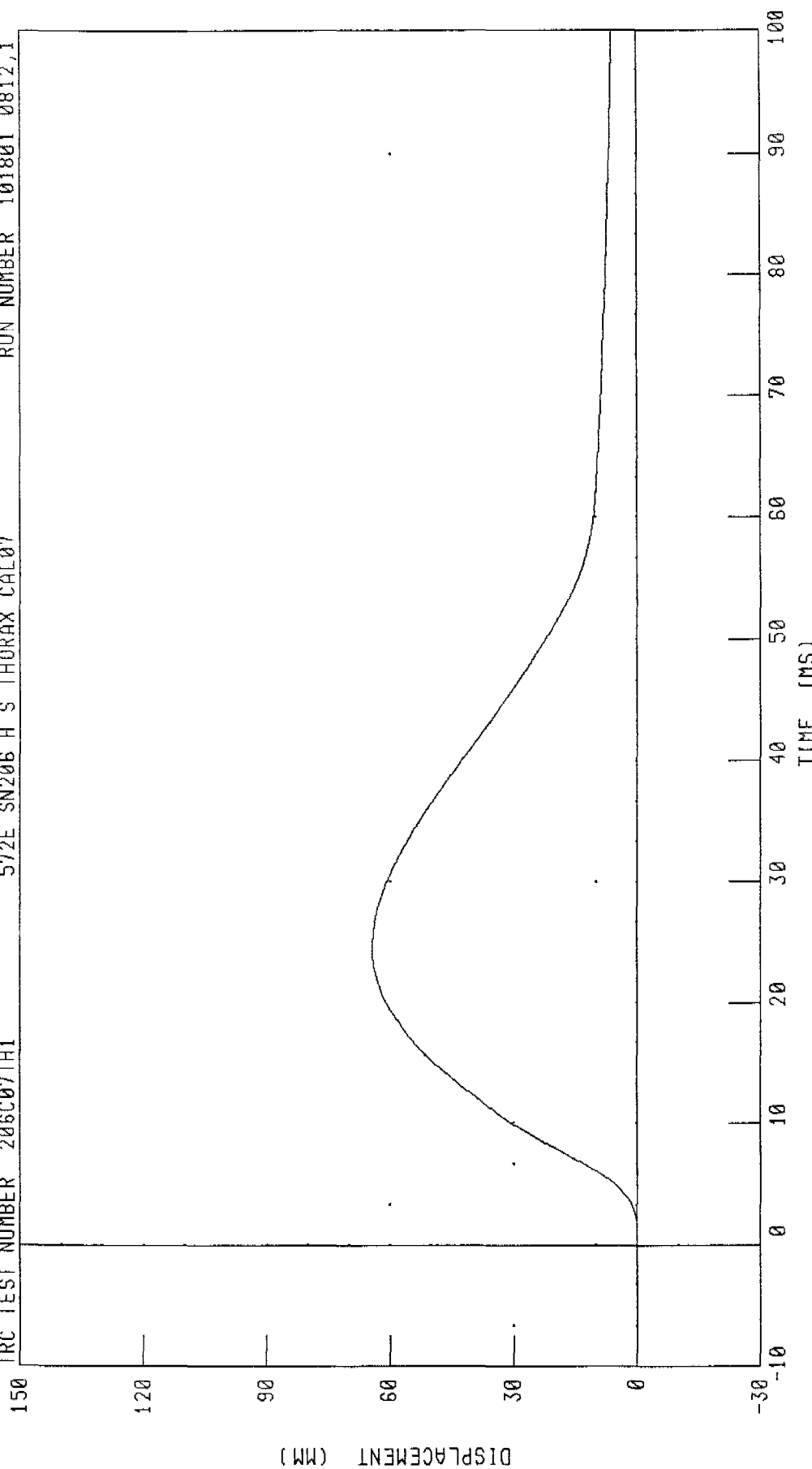
PART 572-E HYBRID III THORAX CALIBRATION

STERNUM DISPLACEMENT

TRC TEST NUMBER 206C07TH1

572E SN206 H S THORAX CAL07

RUN NUMBER 101801 0812,1



CHANNEL CSTXD FILTER CH CLASS 180

PEAK DATA 64 21 MM @ 24 24 MS, -0 02 MM @ 1 28 MS

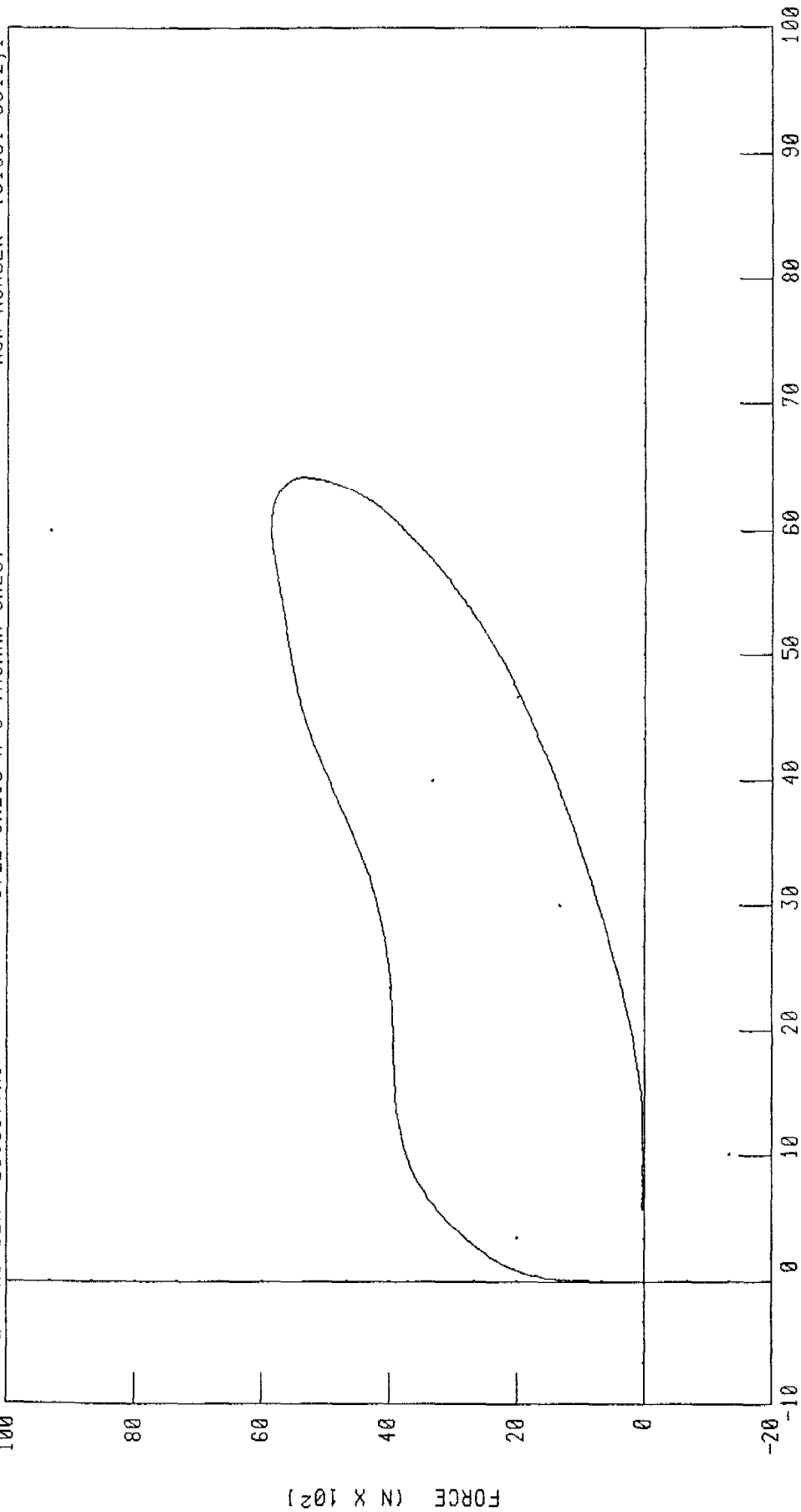
PART 572-E HYBRID III THORAX CALIBRATION

CHEST DISPLACEMENT VS PENDULUM FORCE

TRC TEST NUMBER 206C07TH1

572E SN206 H S THORAX CAL07

RUN NUMBER 101801 0812,1



CHANNEL CSTXD
PENXF

FILTER CH CLASS 180
CH CLASS 180

DISPLACEMENT (MM)

PEAK DATA

5872 77 N 0 19 68 MS, -2 81 N 0 0 24 MS
64 21 MM 0 24 24 MS, -0 02 MM 0 1 28 MS

Transportation Research Center Inc

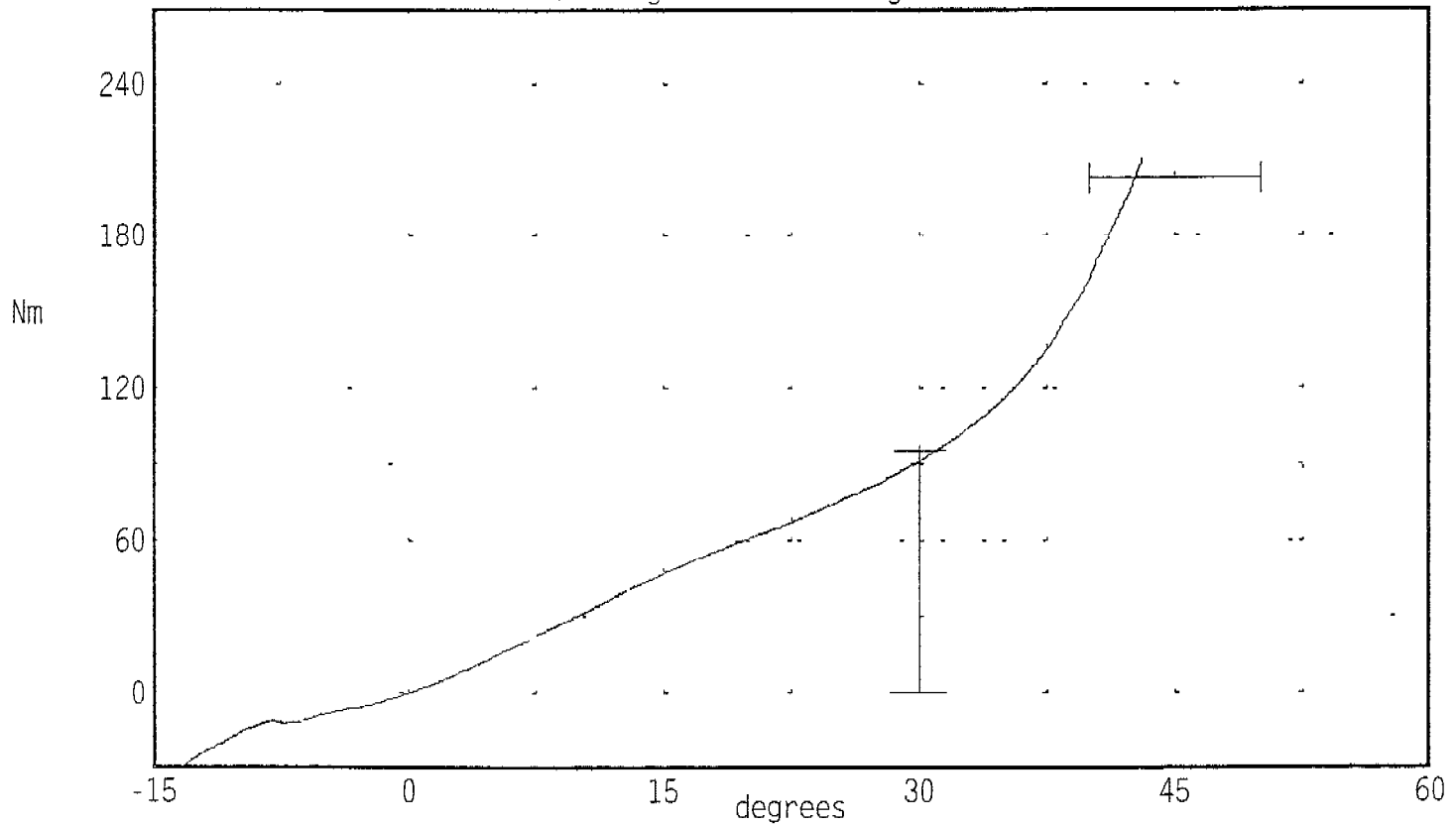
Hybrid III Hip Range of Motion

Serial Number: 206L
Test Number: 206C07
Comments

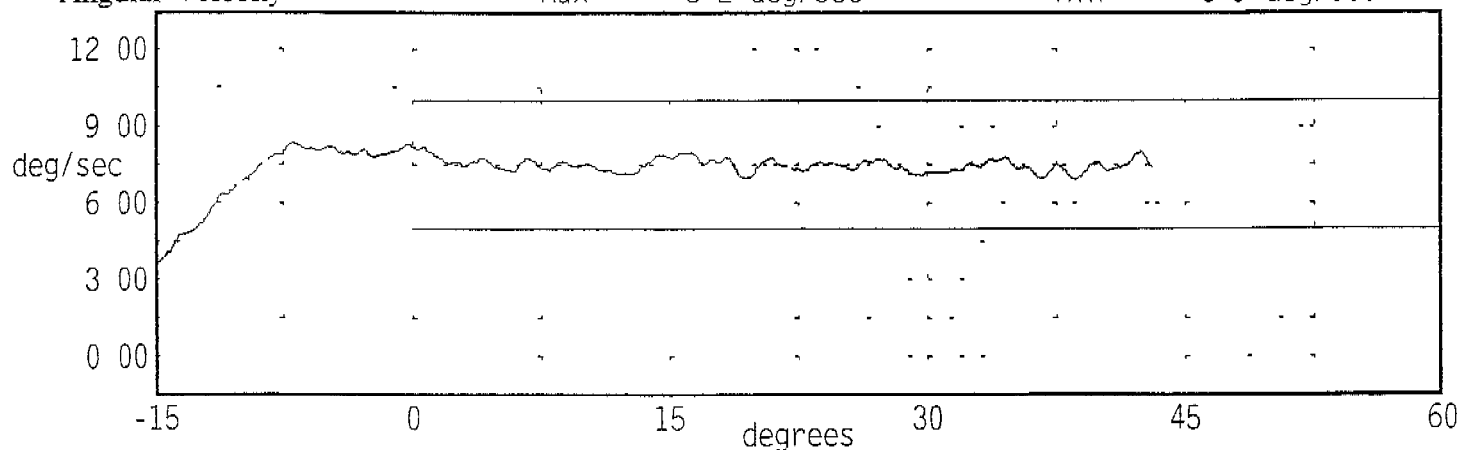
Date: 10/16/2001
Time: 09:26

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.7 °C Pass
Humidity	10 - 70	41 % Pass
Moment at 30 deg	<= 94.9	91.2 Nm Pass
Angle at 203 Nm	40.0 - 50.0	42.7 deg Pass
Average Velocity	5.0 - 10.0	7.5 deg/sec Pass

Moment About H-Point
Peak Moment 210.8 Nm at 43.1 deg
Peak Angle 43.1 deg at 210.8 Nm



Angular Velocity Max 8.2 deg/sec Min 6.9 deg/sec



Transportation Research Center Inc

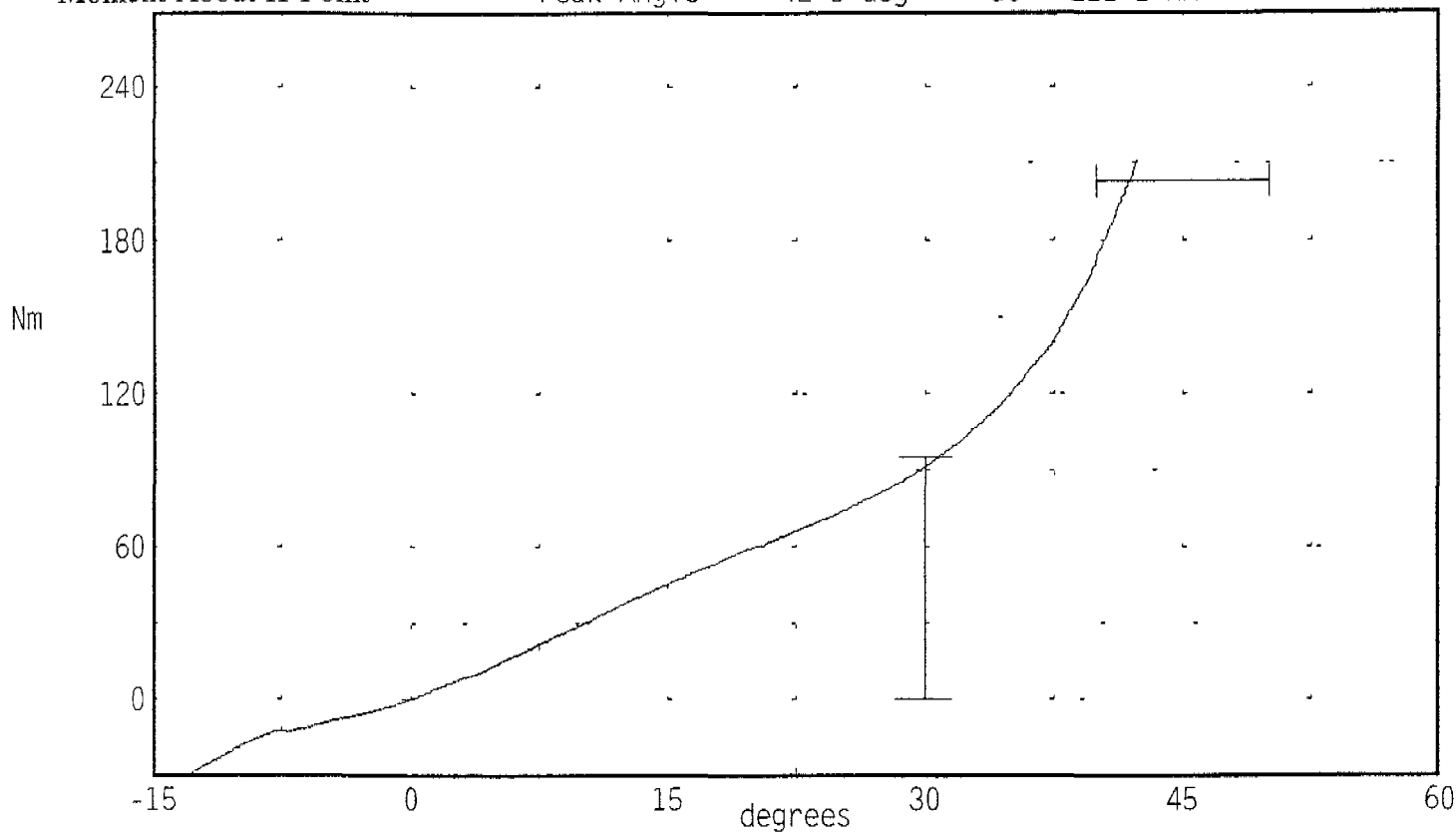
Hybrid III Hip Range of Motion

Serial Number 206R
Test Number. 206C07
Comments

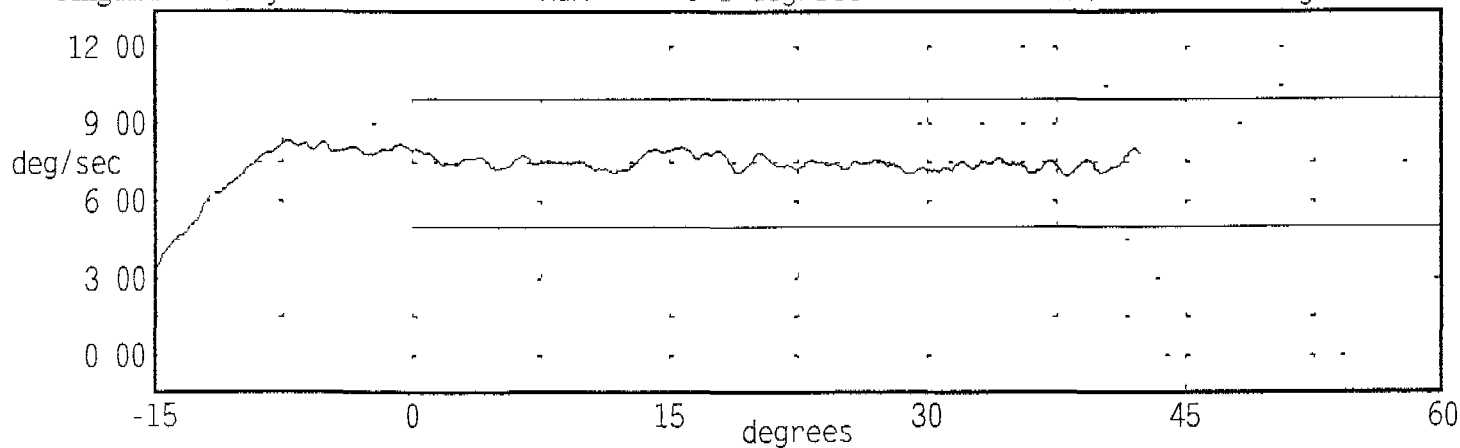
Date: 10/16/2001
Time: 09:33

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.7 °C Pass
Humidity	10 - 70	41 % Pass
Moment at 30 deg	<= 94.9	91.0 Nm Pass
Angle at 203 Nm	40.0 - 50.0	41.9 deg Pass
Average Velocity	5.0 - 10.0	7.5 deg/sec Pass

Moment About H-Point
Peak Moment 211.1 Nm at 42.3 deg
Peak Angle 42.3 deg at 211.1 Nm



Angular Velocity Max 8.1 deg/sec Min 6.9 deg/sec



TRANSPORTATION RESEARCH CENTER INC.

LEFT KNEE IMPACT TEST

HYBRID III 50th

17-OCT-01

TRC INC.

TEST NO: 206C07LK1

572E SN206 LEFT KNEE CAL 07

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	34.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.09 M/S
PEAK KNEE IMPACT FORCE 5.0 KG PENDULUM	4715 - 5782 N	5725.1 N

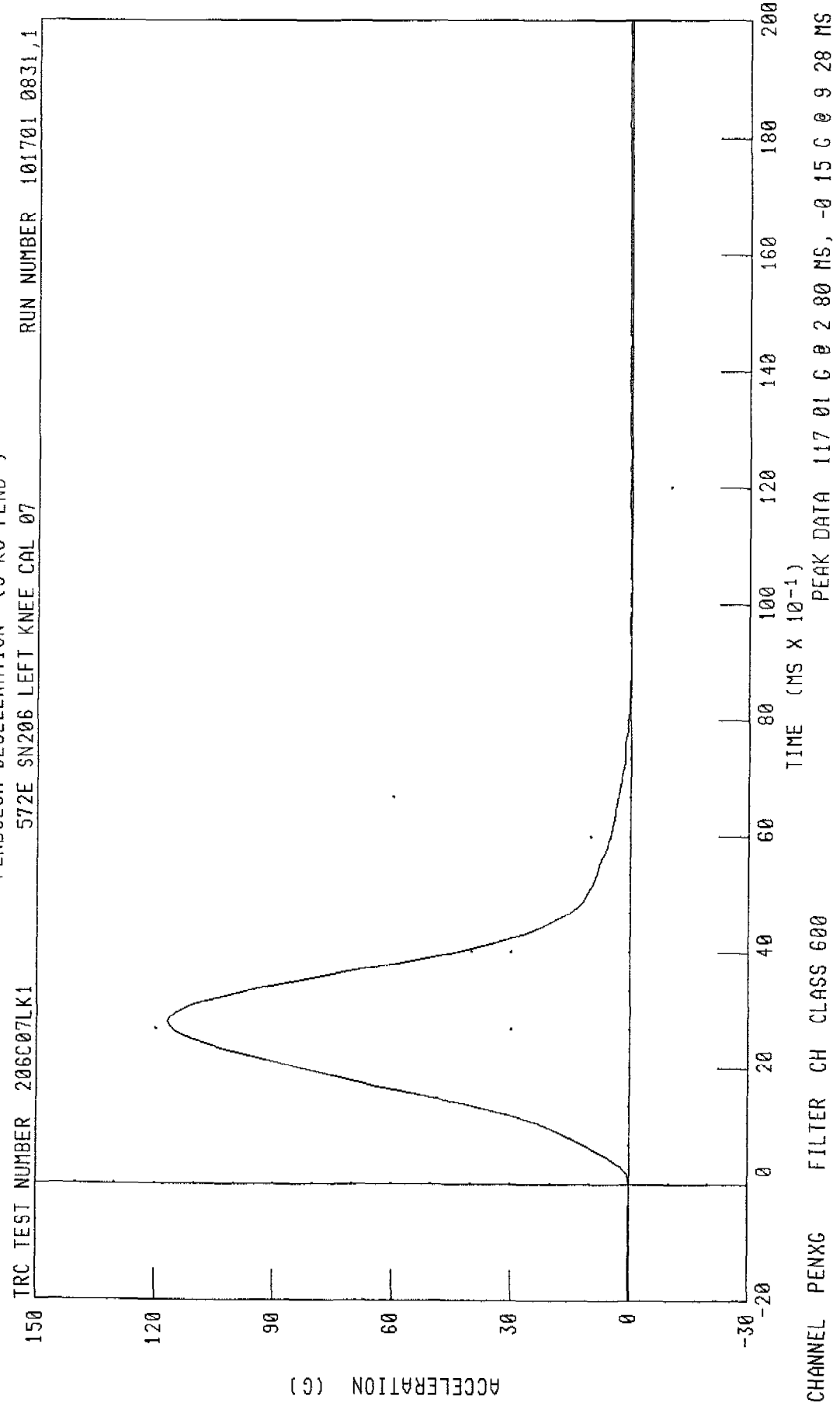
TEST MEETS SPECIFICATIONS

TECHNICIAN

[Signature]

RUN NUMBER: 101701.0830;1

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



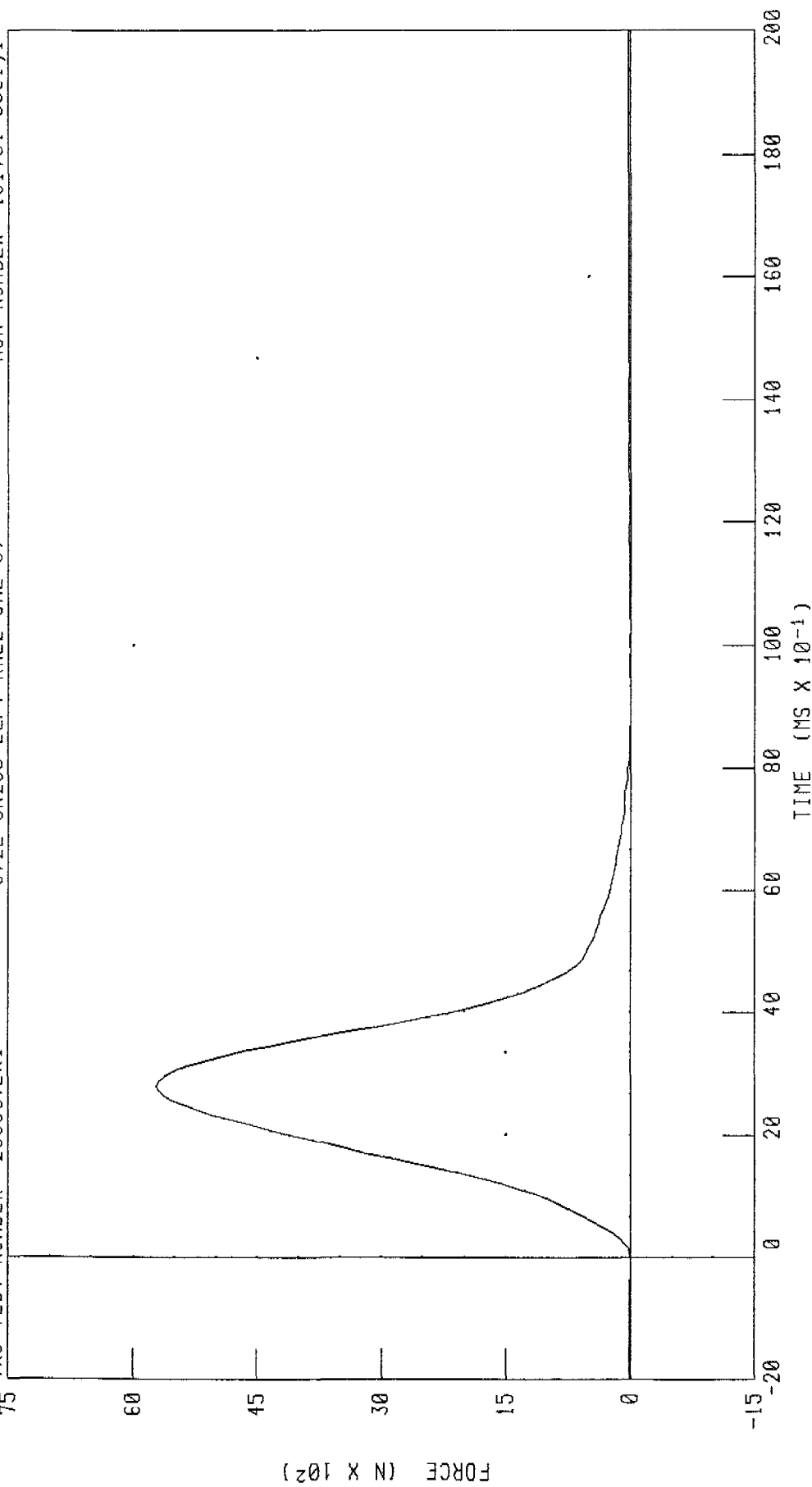
PART 572-E HYBRID III LEFT KNEE CALIBRATION

PENDULUM FORCE (5 KG PEND)

TRC TEST NUMBER 206C07LK1

572E SN206 LEFT KNEE CAL 07

RUN NUMBER 101701 0831,1



CHANNEL PENXF FILTER CH CLASS 600

PEAK DATA 5725 19 N @ 2 80 MS, -7 21 N @ 9 28 MS

TRANSPORTATION RESEARCH CENTER INC.

RIGHT KNEE IMPACT TEST

HYBRID III 50th

17-OCT-01

TRC INC.

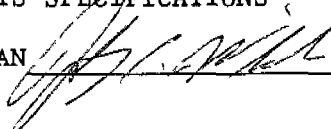
TEST NO: 206C07RK2

572E SN207 RIGHT KNEE CAL 07

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	34.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.10 M/S
PEAK KNEE IMPACT FORCE 5.0 KG PENDULUM	4715 - 5782 N	4891.3 N

TEST MEETS SPECIFICATIONS

TECHNICIAN

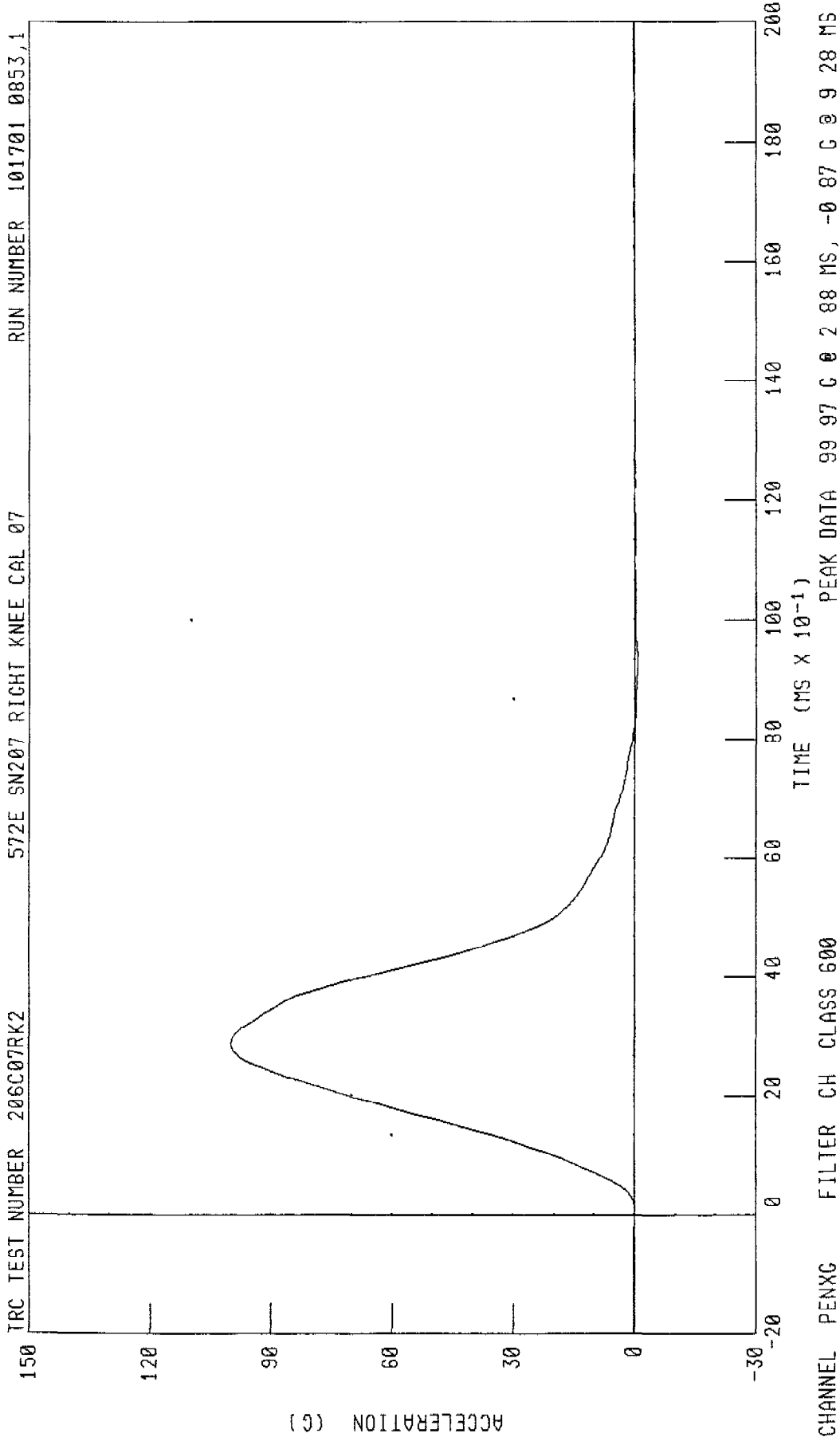


RUN NUMBER: 101701.0853;1

PART 572-E HYBRID III RIGHT KNEE CALIBRATION

PENDULUM DECELERATION (5 KG PEND)

TRC TEST NUMBER 206C07RK2 572E SN207 RIGHT KNEE CAL 07 RUN NUMBER 101701 0853,1



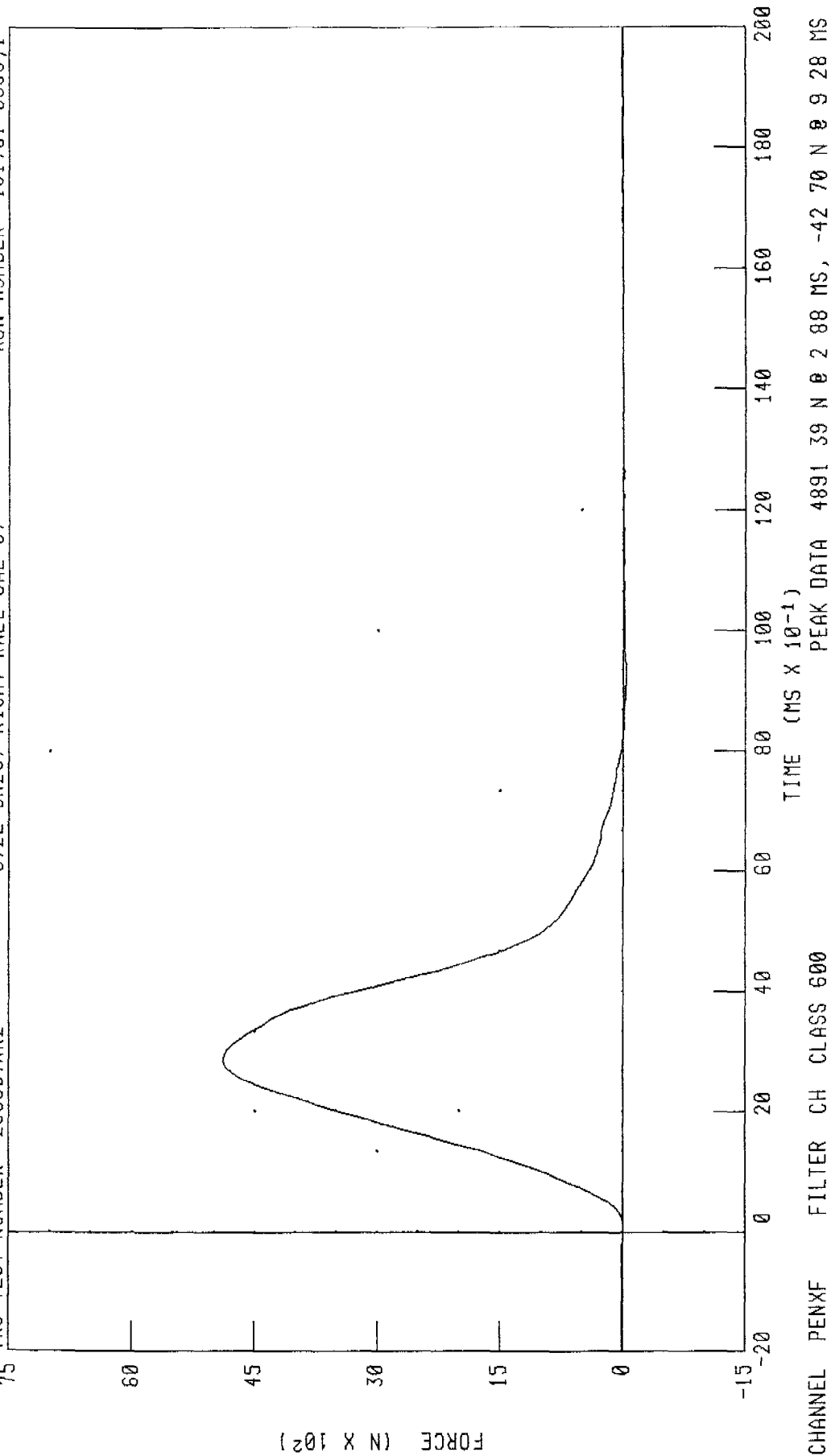
PART 572-E HYBRID III RIGHT KNEE CALIBRATION

PENDULUM FORCE (5 KG PEND)

TRC TEST NUMBER 206C07RK2

572E SN207 RIGHT KNEE CAL 07

RUN NUMBER 101701 0853.1



CHANNEL PENXF FILTER CH CLASS 600 PEAK DATA 4891 39 N 0 2 88 MS, -42 70 N 0 9 28 MS

TRANSPORTATION RESEARCH CENTER INC.

KNEE SLIDER TEST

HYBRID III 50th

16-OCT-01

LEFT KNEE
TRC INC.

TEST NO: 206C07LS1

572E SN206 LEFT SLIDER CAL 07

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	38.0 %
PENDULUM VELOCITY	2.70-2.80 M/S	2.76 M/S
FORCE AT 10.0 MM DISPLACEMENT	1259 - 1721 N	1377. N
FORCE AT 18.0 MM DISPLACEMENT	2268 - 3096 N	2454. N

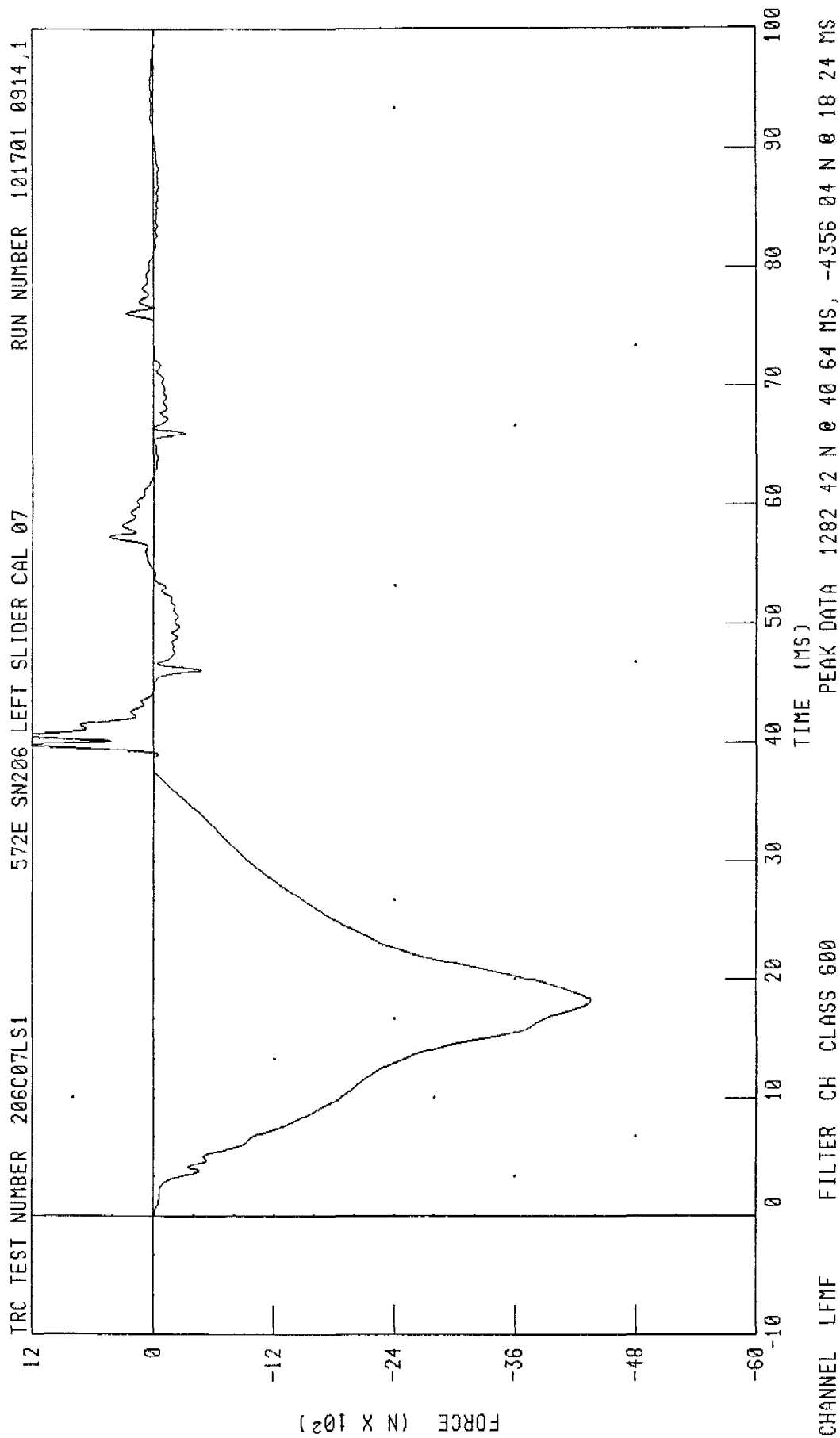
TEST MEETS SPECIFICATIONS,

TECHNICIAN *[Signature]*

RUN NUMBER: 101601.1509;1

PART 572-E HYBRID III LEFT KNEE SLIDER CALIBRATION

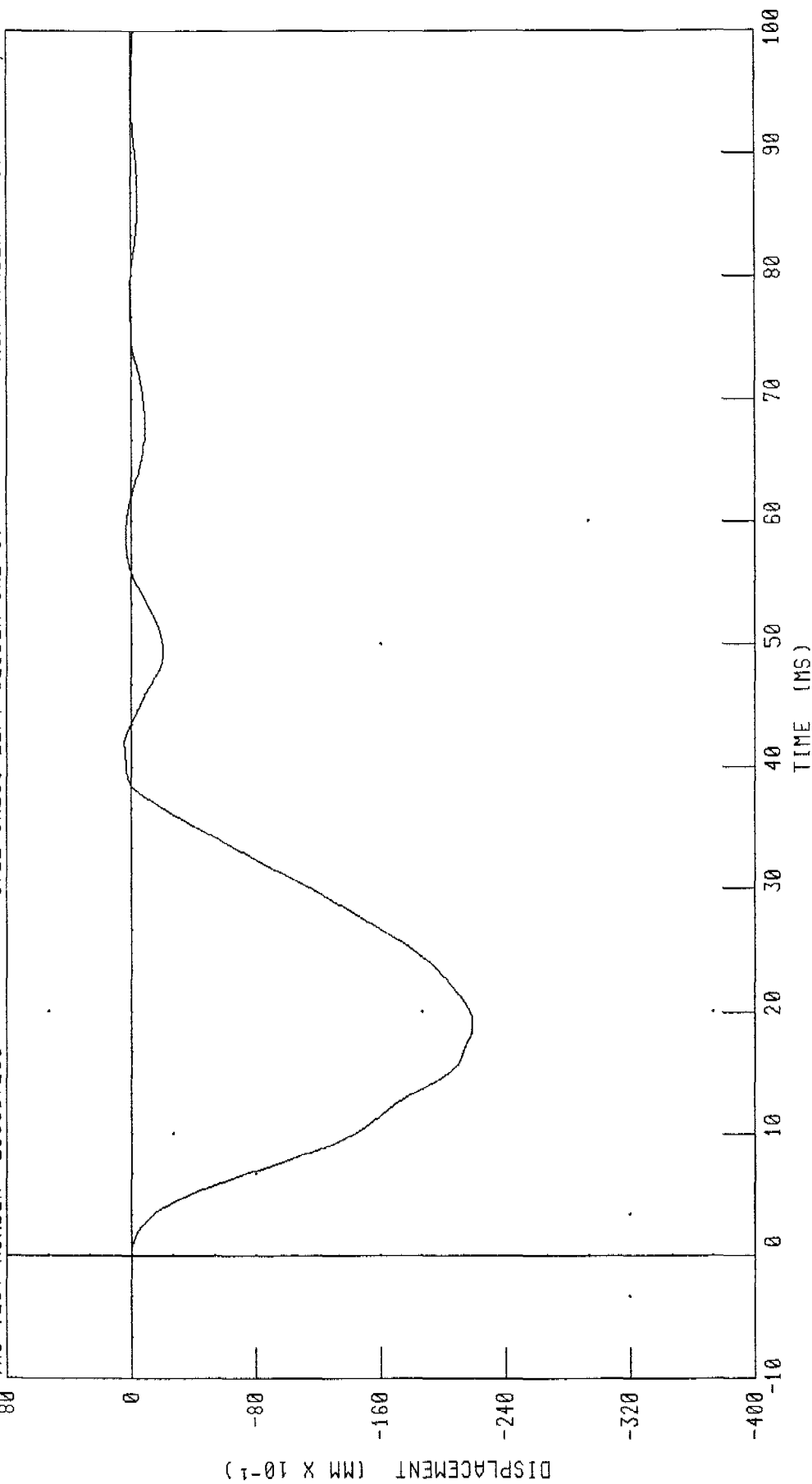
LEFT FEMUR FORCE



PART 572-E HYBRID III LEFT KNEE SLIDER CALIBRATION

LEFT KNEE DISPLACEMENT

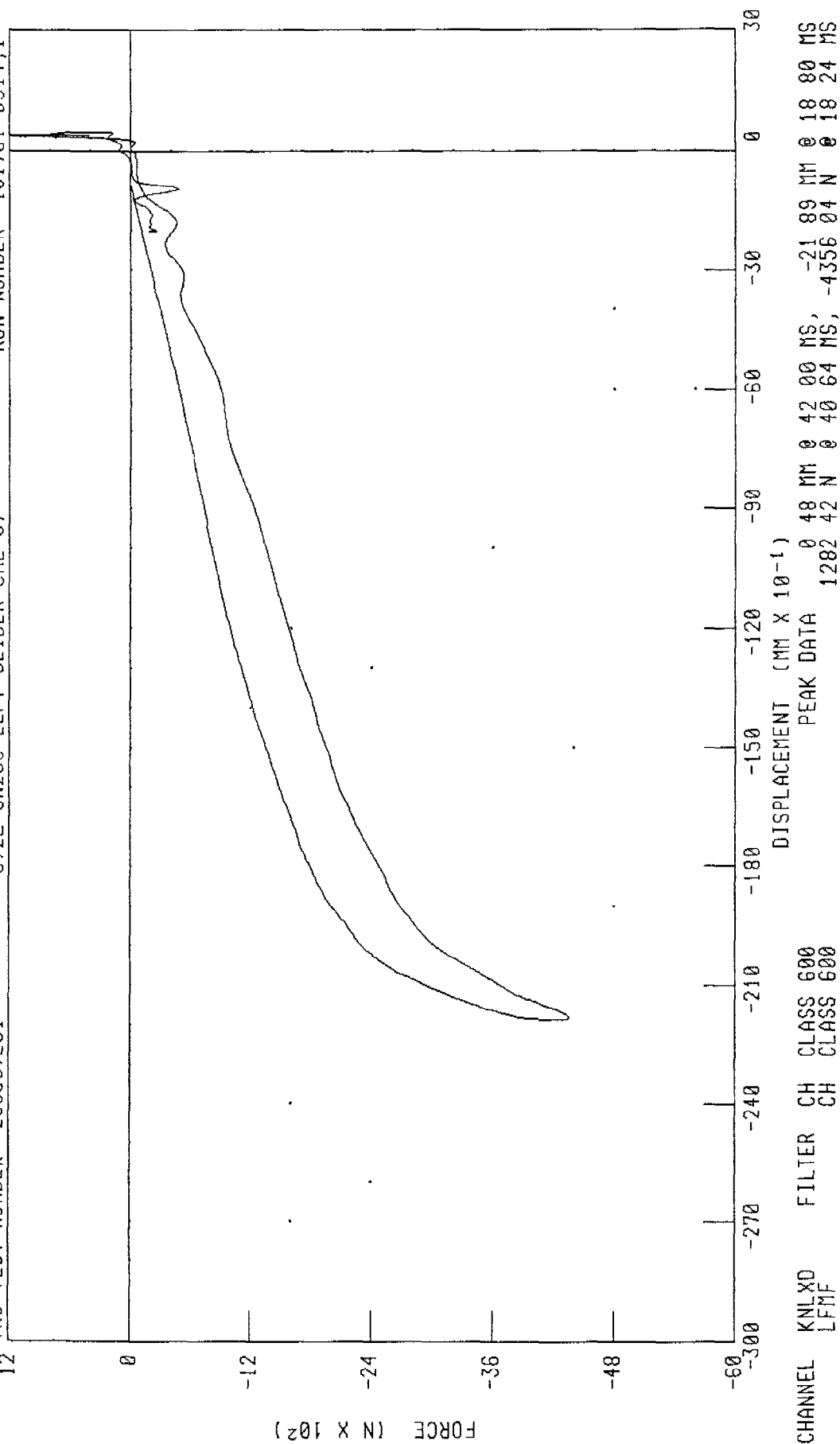
TRC TEST NUMBER 206C07LS1 572E SN206 LEFT SLIDER CAL 07 RUN NUMBER 101701 0914,1



CHANNEL KNLXD FILTER CH CLASS 600 PEAK DATA 0 48 MM @ 42 00 MS, -21 89 MM @ 18 80 MS

PART 572-E HYBRID III LEFT KNEE SLIDER CALIBRATION
LEFT KNEE DISPLACEMENT VS FEMUR FORCE

TRC TEST NUMBER 206C07LS1 572E SN206 LEFT SLIDER CAL 07 RUN NUMBER 101701 0914,1



TRANSPORTATION RESEARCH CENTER INC.

KNEE SLIDER TEST

HYBRID III 50th

16-OCT-01

RIGHT KNEE

TRC INC.

TEST NO: 206C07RS1

572E SN206 RIGHT SLIDER CAL 07

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	40.0 %
PENDULUM VELOCITY	2.70-2.80 M/S	2.76 M/S
FORCE AT 10.0 MM DISPLACEMENT	1259 - 1721 N	1587. N
FORCE AT 18.0 MM DISPLACEMENT	2268 - 3096 N	3040. N

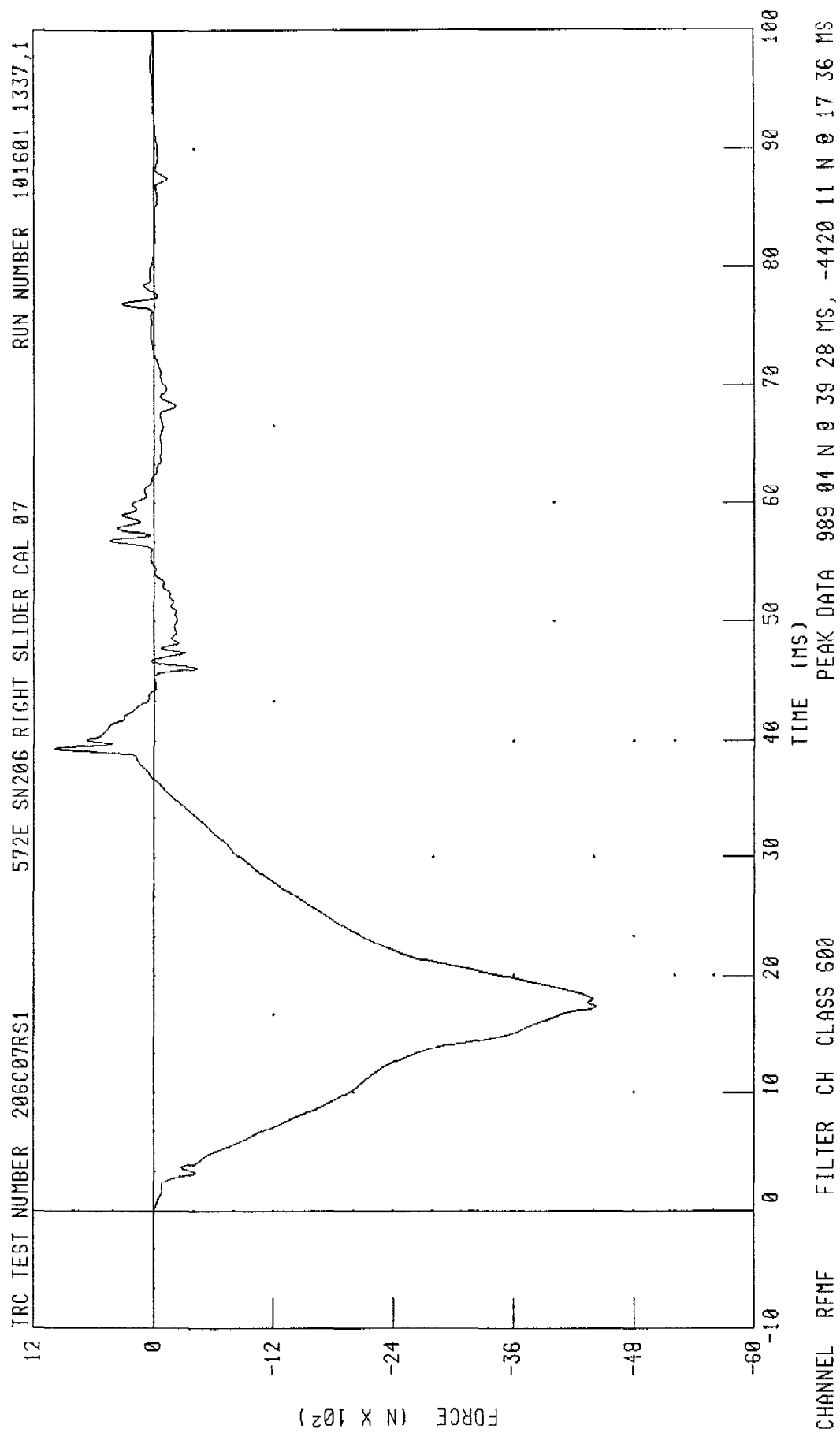
TEST MEETS SPECIFICATIONS

TECHNICIAN *John M. [Signature]*

RUN NUMBER: 101601.1337;1

PART 572-E HYBRID III RIGHT KNEE SLIDER CALIBRATION

RIGHT FEMUR FORCE



TRC TEST NUMBER 206C07RS1 572E SN206 RIGHT SLIDER CAL 07 RUN NUMBER 101601 1337,1

CHANNEL RFMF FILTER CH CLASS 600

PEAK DATA 989 04 N 0 39 28 MS, -4420 11 N 0 17 36 MS

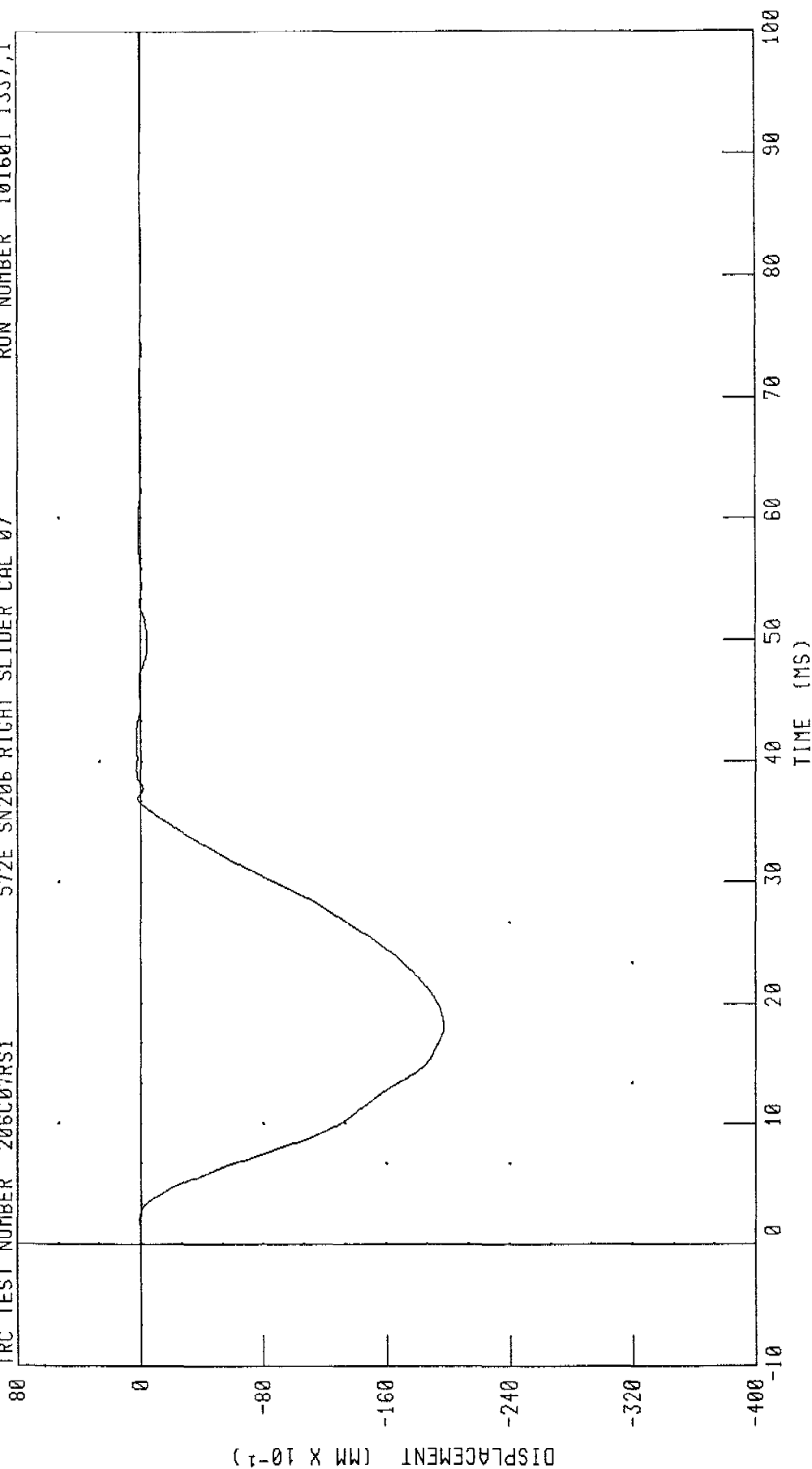
PART 572-E HYBRID III RIGHT KNEE SLIDER CALIBRATION

RIGHT KNEE DISPLACEMENT

TRC TEST NUMBER 206C07RS1

572E SN206 RIGHT SLIDER CAL 07

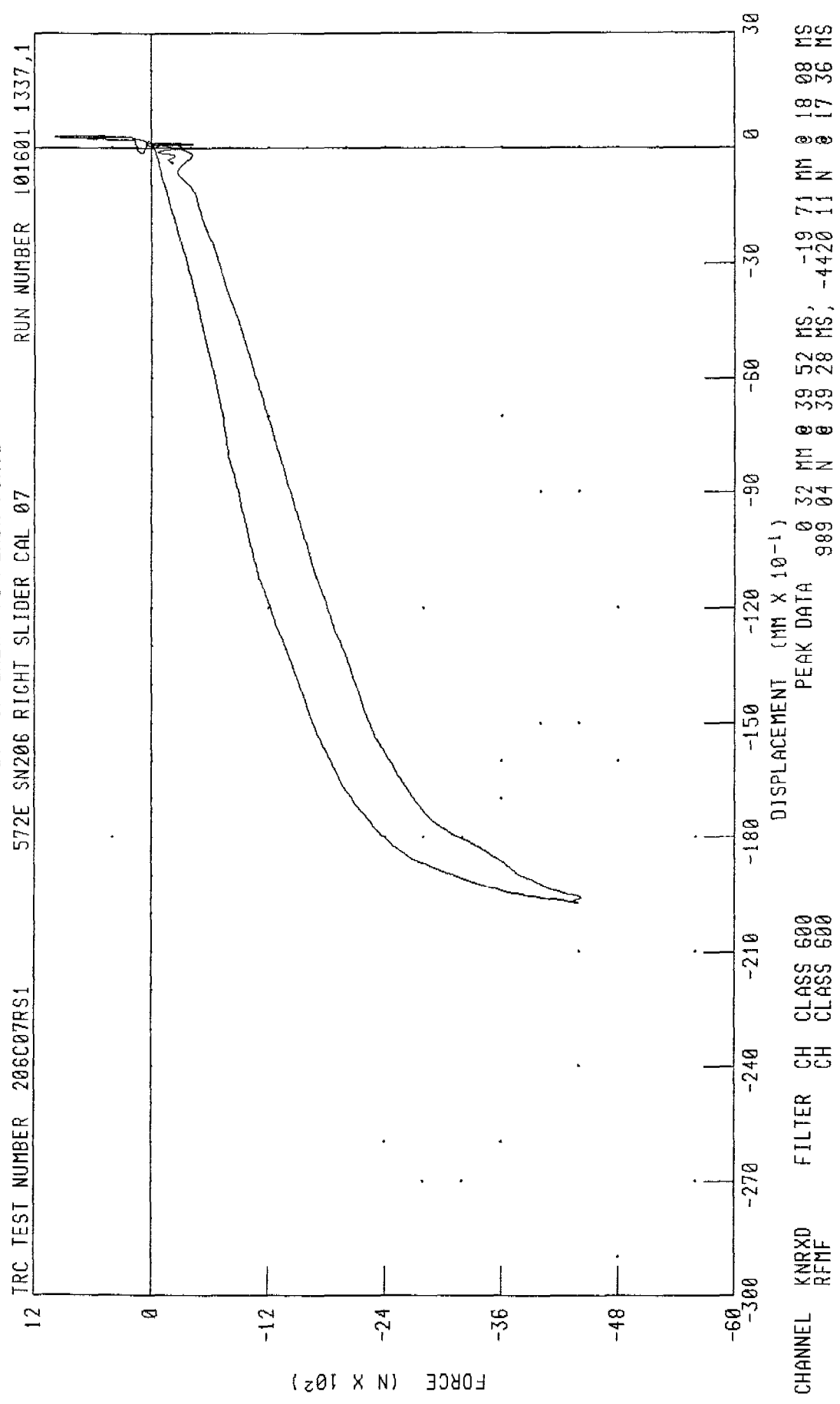
RUN NUMBER 101601 1337,1



CHANNEL KNRXD FILTER CH CLASS 600

PEAK DATA 0 32 MM @ 39 52 MS, -19 71 MM @ 18 08 MS

PART 572-E HYBRID III RIGHT KNEE SLIDER CALIBRATION
 RIGHT KNEE DISPLACEMENT VS FEMUR FORCE



Pre-Test Dummy Configuration and Performance Verification Data

Passenger Dummy S/N: 202

TRANSPORTATION RESEARCH CENTER INC.
HYBRID III EXTERNAL DIMENSIONS

202

18-OCT-01

TRC INC. TEST NO: 202C08ED1 572E SN202 EXT.DIMENSION CAL08

TEST PARAMETER	(DIMEN.)	SPECIFICATION	TEST RESULTS
LOCATION FOR CHEST CIRCUMFERENCE (AA)		429 - 434 MM	432. MM
LOCATION FOR WAIST CIRCUMFERENCE (BB)		226 - 231 MM	229. MM
CHEST CIRCUMFERENCE (Y)		970 -1001 MM	993. MM
WAIST CIRCUMFERENCE (Z)		836 - 866 MM	856. MM
CHEST DEPTH (O)		213 - 229 MM	226. MM
H-POINT HEIGHT (C)		84 - 89 MM	86. MM
H-POINT FROM SEATBACK (D)		135 - 140 MM	137. MM
SKULL CAP TO BACKLINE (H)		41 - 46 MM	43. MM
TOTAL SITTING HEIGHT (A)		879 - 889 MM	886. MM
THIGH CLEARANCE (F)		140 - 155 MM	145. MM
BUTTOCK KNEE LENGTH (K)		579 - 605 MM	597. MM
BUTTOCK POPLITEAL LENGTH (N)		452 - 478 MM	470. MM
POPLITEAL HEIGHT (L)		429 - 455 MM	447. MM
KNEE PIVOT HEIGHT (M)		485 - 500 MM	488. MM
FOOT LENGTH (P)		252 - 267 MM	254. MM
FOOT BREADTH (W)		91 - 107 MM	102. MM
SHOULDER PIVOT FROM BACKLINE (E)		84 - 94 MM	91. MM
SHOULDER BREADTH (V)		422 - 437 MM	434. MM
SHOULDER PIVOT HEIGHT (B)		506 - 521 MM	516. MM
ELBOW REST HEIGHT (J)		191 - 211 MM	203. MM
SHOULDER-ELBOW LENGTH (I)		330 - 345 MM	333. MM
BACK OF ELBOW TO WRIST PIVOT (G)		290 - 305 MM	297. MM

572E SN202 EXT.DIMENSION CAL08

DUMMY MEETS SPECIFICATIONS

TECHNICIAN

RUN NUMBER: 101801.1019

TRANSPORTATION RESEARCH CENTER INC.

HEAD DROP TEST

HYBRID III 50th

16-OCT-01

TRC INC.

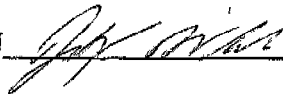
TEST NO: 202C08HD1

572E SN202 HEAD DROP CAL 08

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	39.0 %
PEAK RESULTANT ACCELERATION	225 - 275 G	246.64 G
PEAK LATERAL ACCELERATION	15 G MAX	12.15 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 101601.1327;2

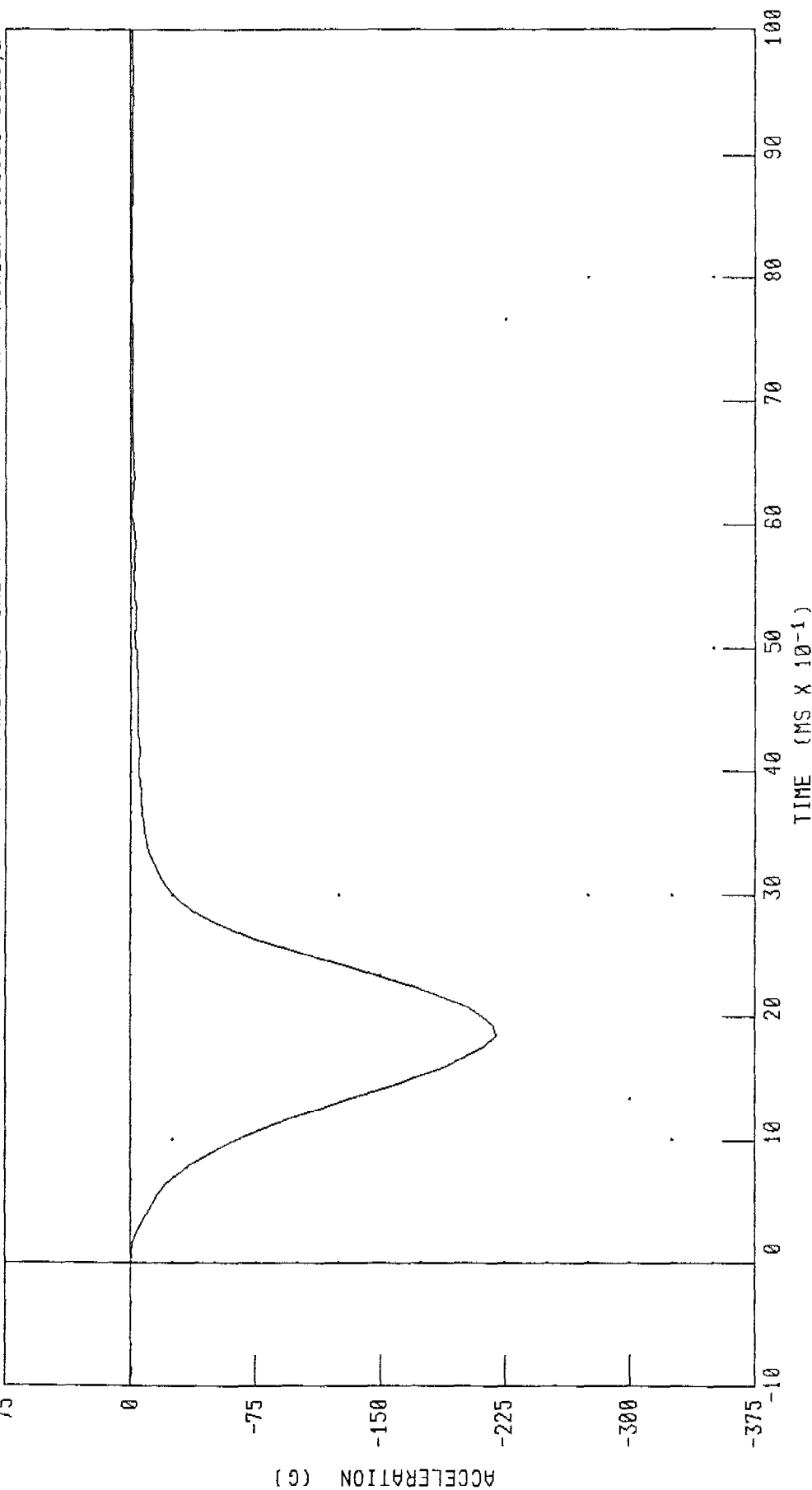
PART 572-E HYBRIO III HEAD CALIBRATION

HEAD ACCELERATION X AXIS

TRC TEST NUMBER 202C08HD1

572E SN202 HEAD DROP CAL 08

RUN NUMBER 101601 1329,2



CHANNEL HEDXC FILTER CH CLASS 1000

PEAK DATA 0 08 G @ -0 40 MS, -219 29 G @ 1 84 MS

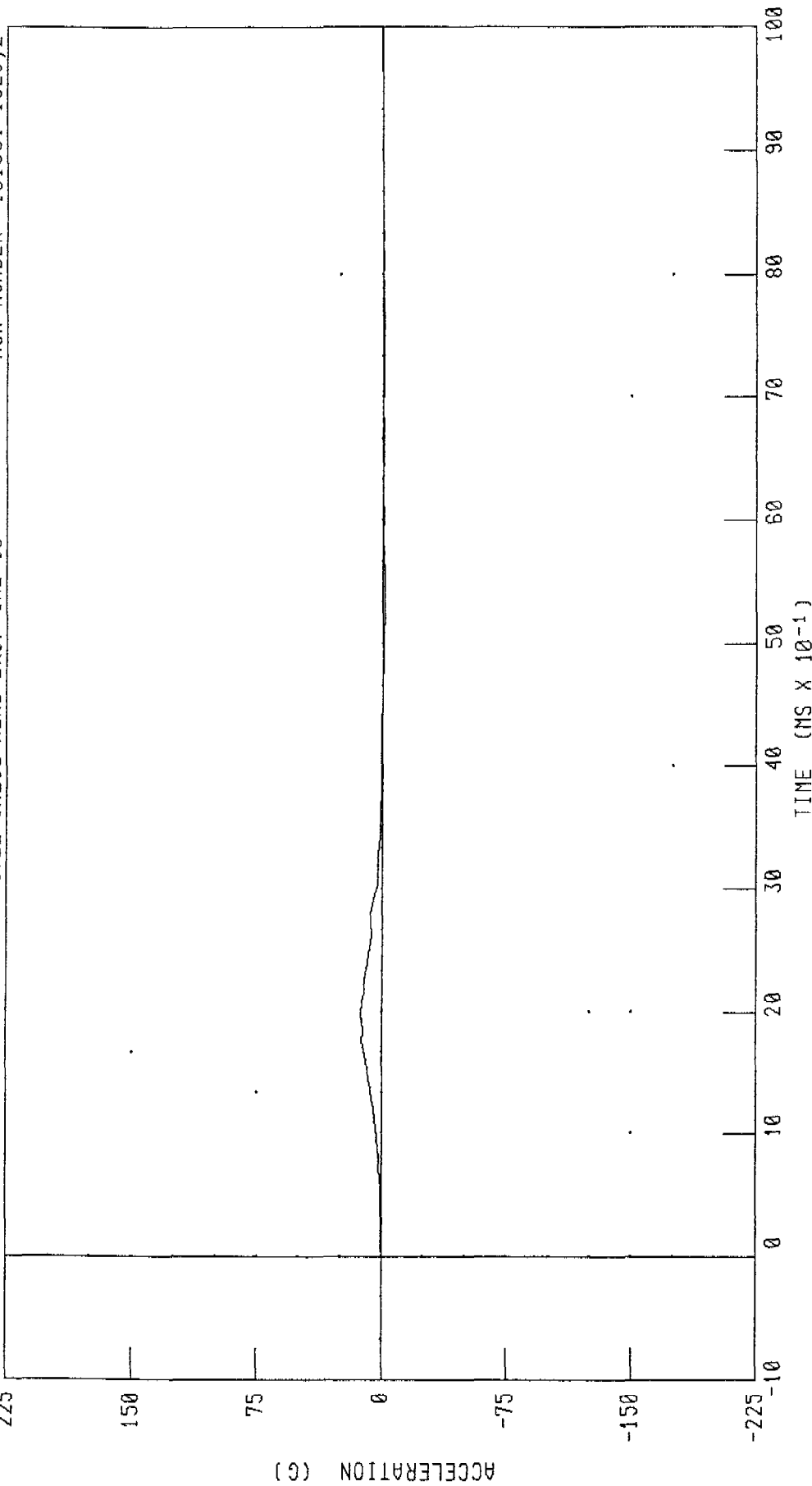
PART 572-E HYBRID III HEAD CALIBRATION

HEAD ACCELERATION Y AXIS

TRC TEST NUMBER 202C08HD1

572E SN202 HEAD DROP CAL 08

RUN NUMBER 101601 1329,2



CHANNEL HEDYG FILTER CH CLASS 1000

PEAK DATA 12 15 G @ 2 00 MS, -1 53 G @ 5 44 MS

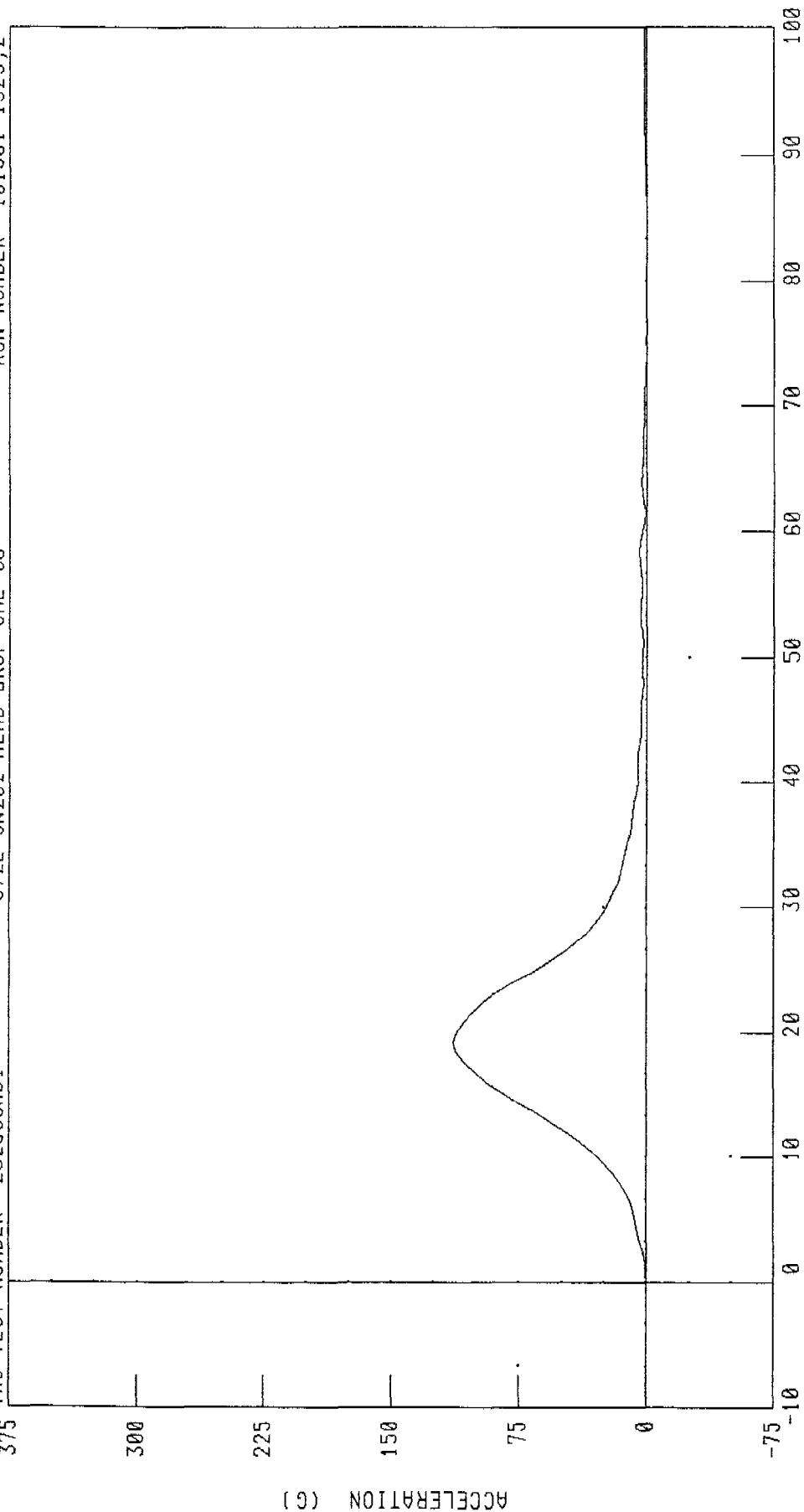
PART 572-E HYBRID III HEAD CALIBRATION

HEAD ACCELERATION Z AXIS

TRC TEST NUMBER 202C08HD1

572E SN202 HEAD DROP CAL 08

RUN NUMBER 101601 1329,2



CHANNEL HEDZG FILTER CH CLASS 1000

PEAK DATA 113 85 G @ 1 92 MS, -0 33 G @ 7 68 MS

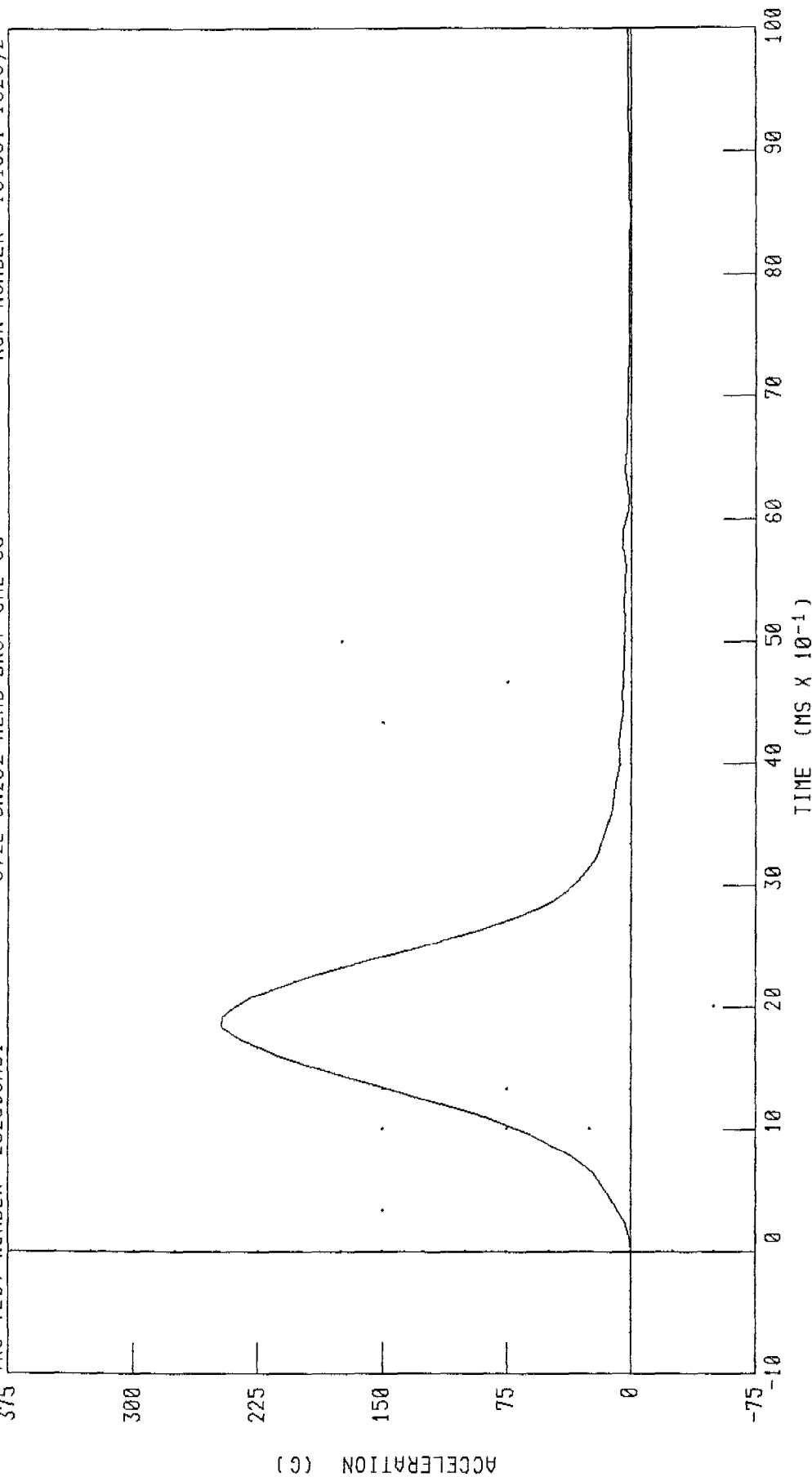
PART 572-E HYBRID III HEAD CALIBRATION

HEAD RESULTANT ACCELERATION

572E SN202 HEAD DROP CAL 08

RUN NUMBER 101601 1329,2

TRC TEST NUMBER 202C08HD1



CHANNEL HEDRG

FILTER CH CLASS 1000

TIME (MS X 10⁻¹)

PEAK DATA 246 65 G 0 1 84 MS, 0 03 G 0 -0 80 MS

TRANSPORTATION RESEARCH CENTER INC.

HYBRID III 50th

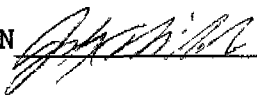
17-OCT-01

NECK FLEXION TEST - 6 CHANNEL TRANSDUCER

TRC INC. TEST NO: 202C08NF1 572E SN202 NECK FLEXION CAL08

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6-22.2 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY		10 - 70 %	31.0 %
IMPACT VELOCITY		6.89 - 7.13 M/S	6.99 M/S
PENDULUM DECELERATION	10 MS	22.50 - 27.50 G	25.56 G
	20 MS	17.60 - 22.60 G	22.57 G
	30 MS	12.50 - 18.50 G	18.10 G
MAX PENDULUM G		29 G MAX	26.20 G
MAX PENDULUM G ABOVE 30 MS		29 G MAX	18.02 G
DECELERATION-TIME CURVE DECAY TIME TO 5 G		34 - 42 MS	36.40 MS
D PLANE	MAX	64 - 78 DEG.	72.23 DEG.
ROTATION	TIME	57 - 64 MS	61.12 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MAX	88.2 - 108.5 NM	98.00 NM
	TIME	47 - 58 MS	49.68 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		113 - 128 MS	118.96 MS
POSITIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		97 - 107 MS	101.04 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 101701.1458;2

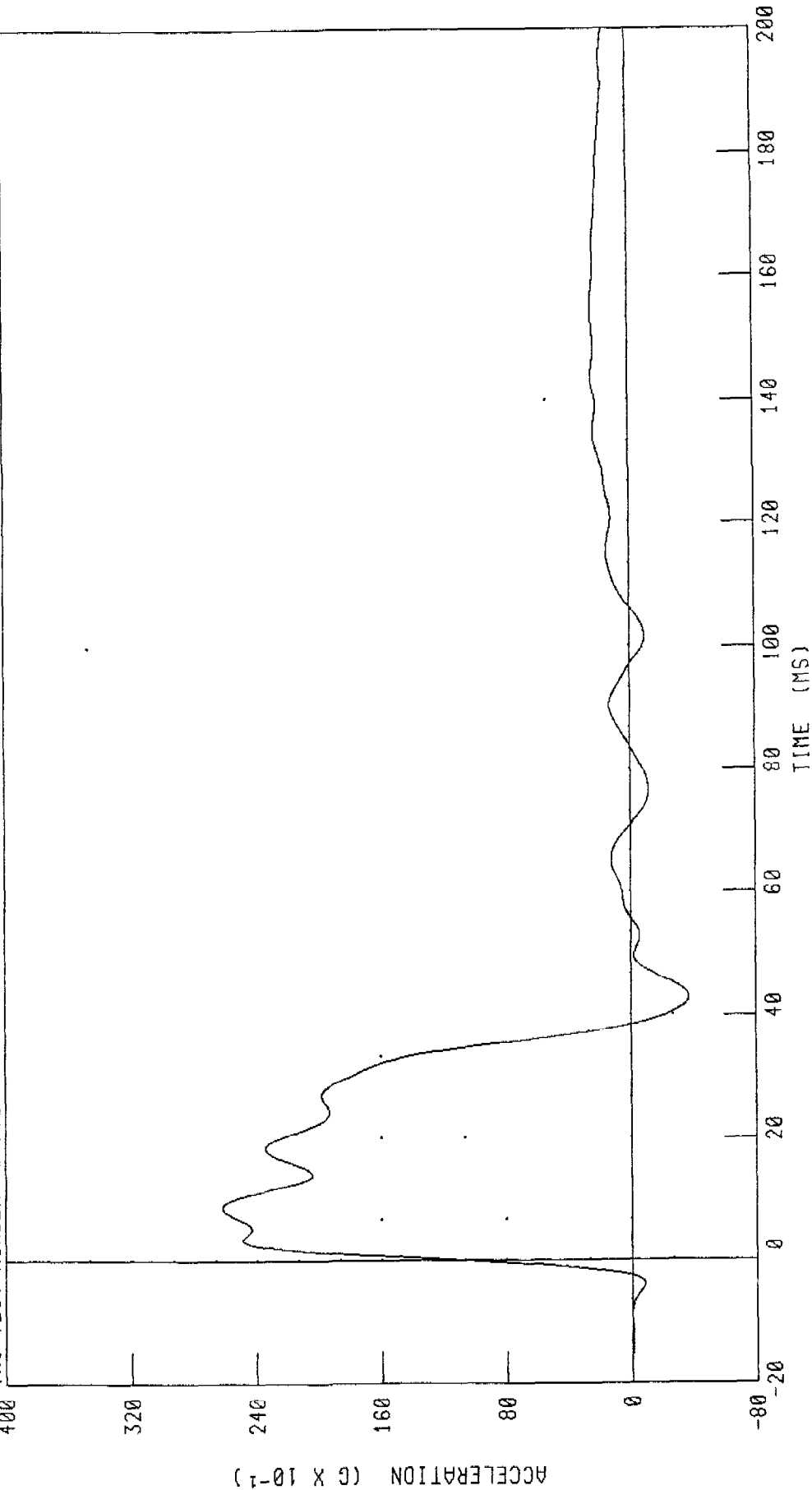
PART 572-E HYBRID III NECK FLEXION CALIBRATION

PENDULUM DECELERATION

TRC TEST NUMBER 202C08NF1

572E SN202 NECK FLEXION CAL08

RUN NUMBER 101701 1459.2



CHANNEL PENXC FILTER CH CLASS 60

PEAK DATA 26 20 G 0 8 80 MS, -3 70 G 0 42 88 MS

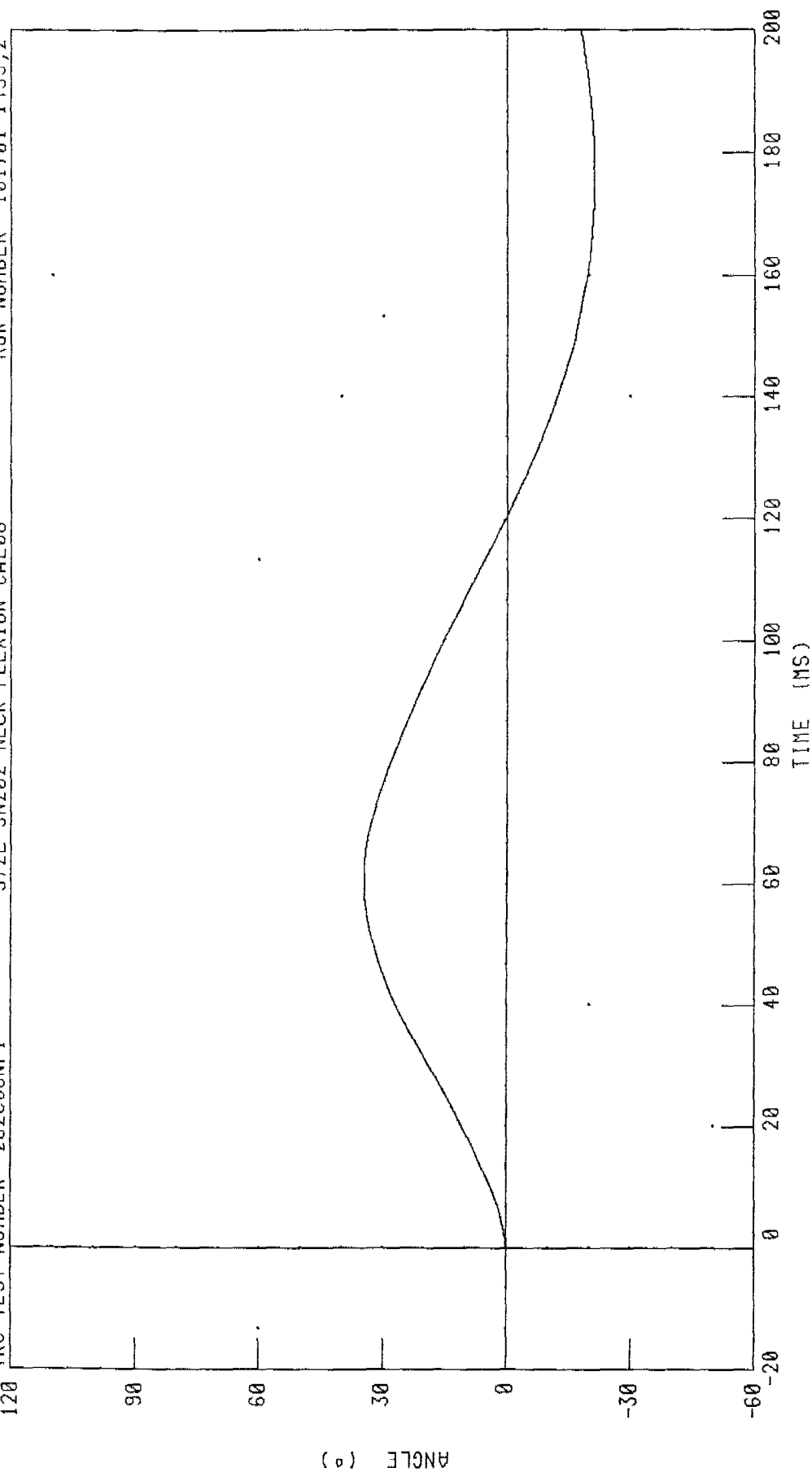
PART 572-E HYBRID III NECK FLEXION CALIBRATION

ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER 202C00NF1

572E SN202 NECK FLEXION CAL08

RUN NUMBER 101701 1459,2



PEAK DATA 34 55 ° @ 60 72 MS, -21 21 ° @ 176 00 MS

CHANNEL BETA FILTER CH CLASS 60

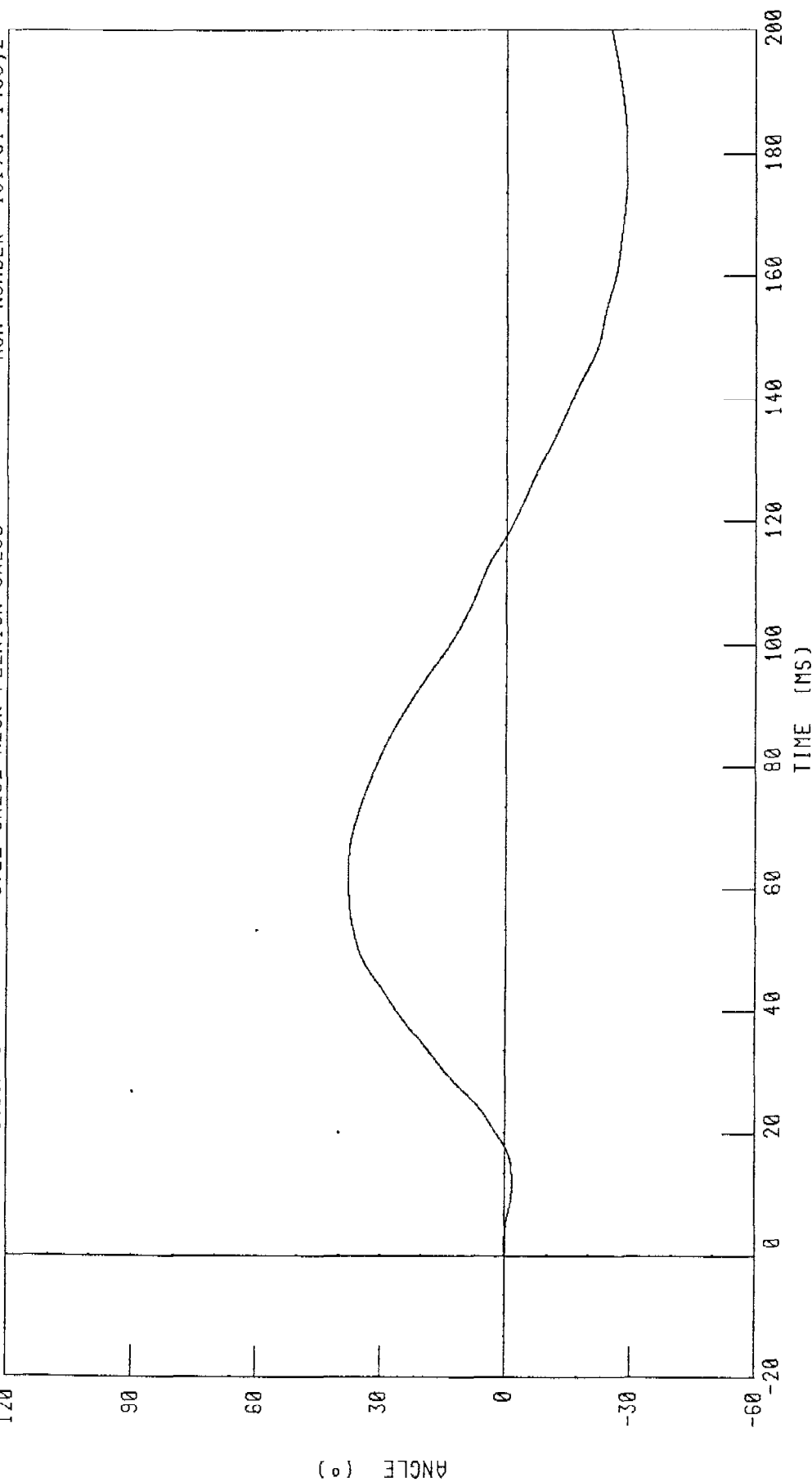
PART 572-E HYBRID III NECK FLEXION CALIBRATION

ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER 202C08NF1

572E SN202 NECK FLEXION CAL08

RUN NUMBER 101701 1459,2



CHANNEL THETA FILTER CH CLASS 60

PEAK DATA 37 70 ° 0 63 20 MS, -29 15 ° 0 181 04 MS

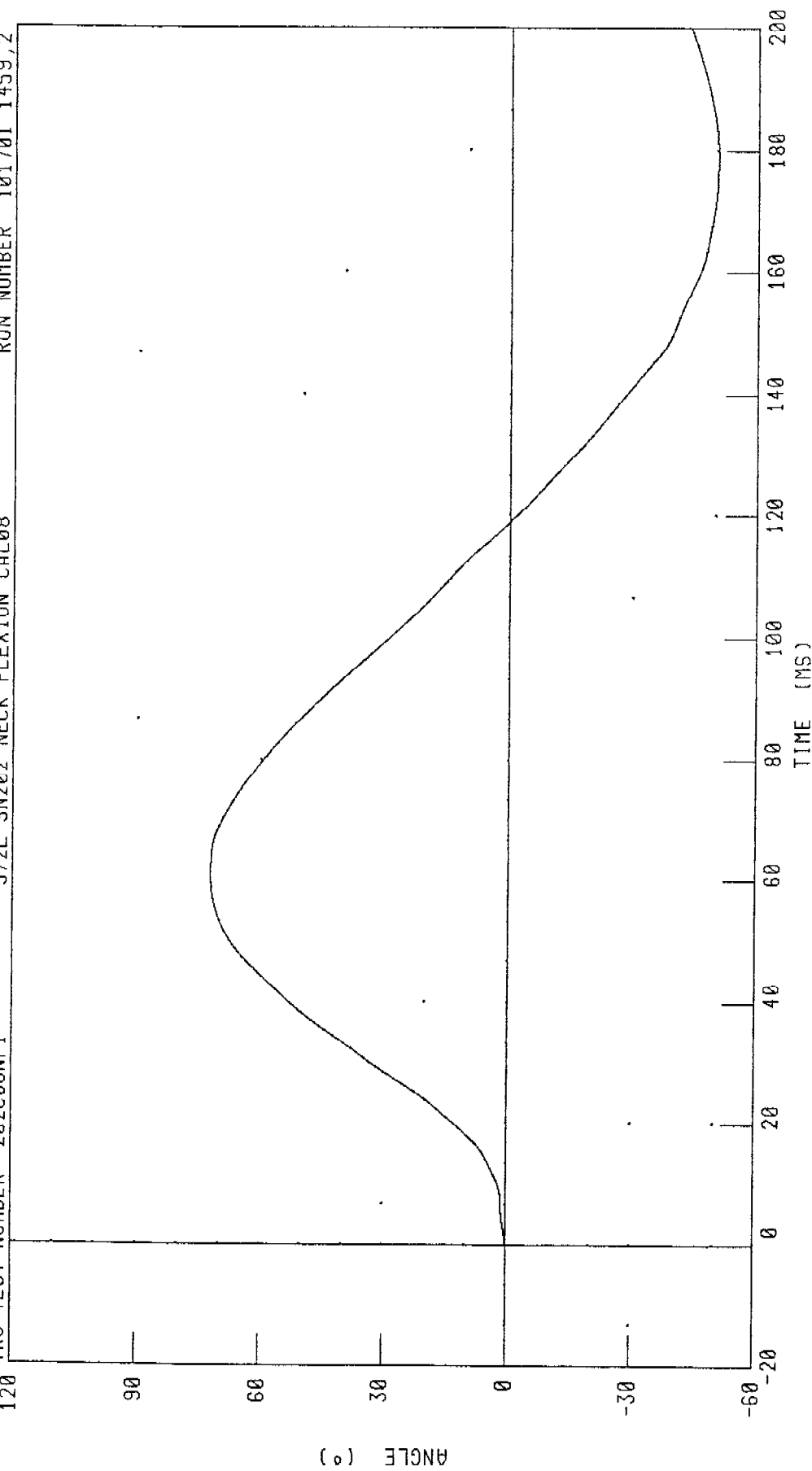
PART 572-E HYBRID III NECK FLEXION CALIBRATION

TOTAL ROTATION

TRC TEST NUMBER 202C08NF1

572E SN202 NECK FLEXION CAL08

RUN NUMBER 101701 1459,2



CHANNEL TOTAL FILTER CH CLASS 60 PEAK DATA 72 24 ° @ 61 12 MS, -50 29 ° @ 179 84 MS

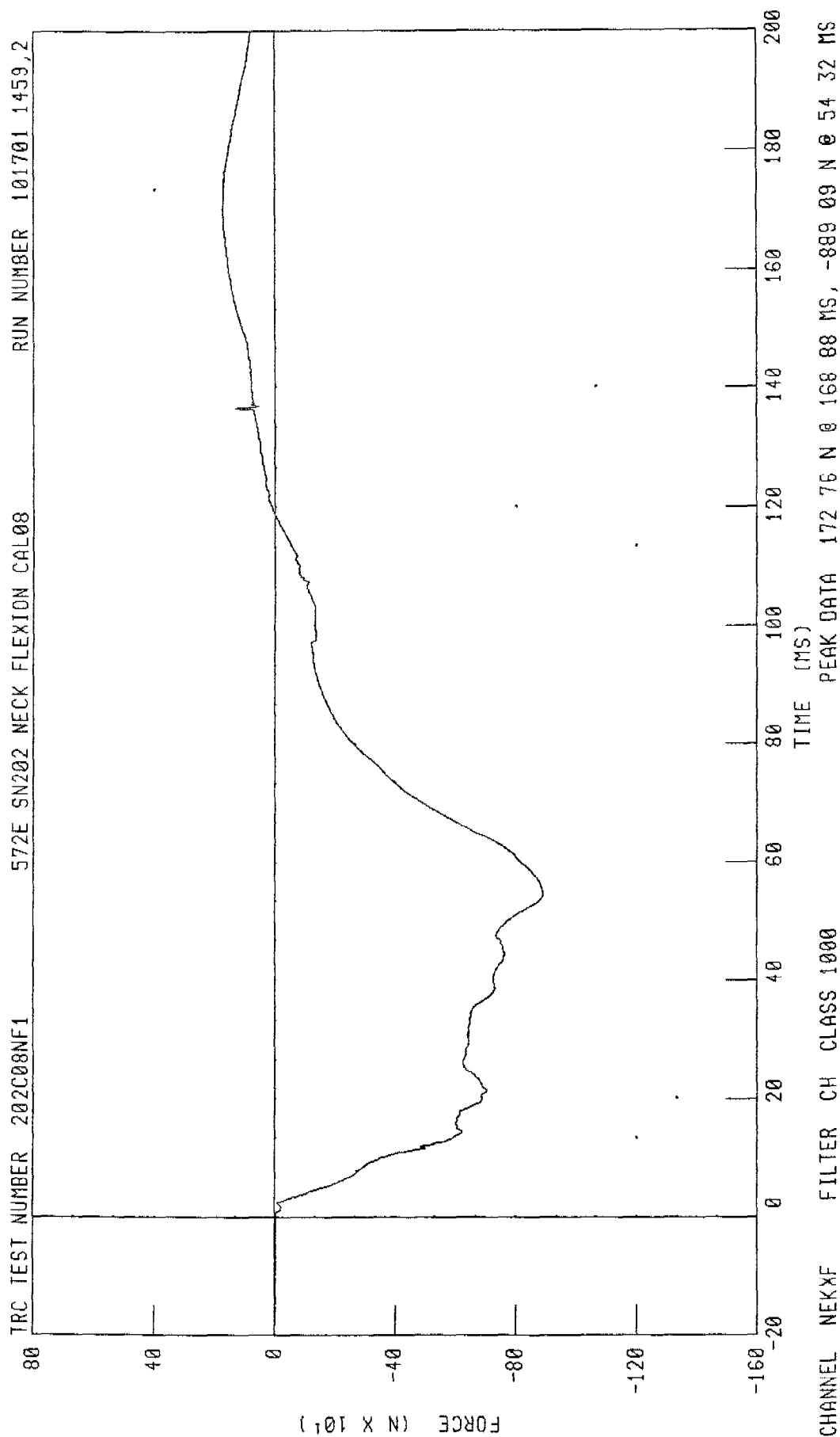
PART 572-E HYBRID III NECK FLEXION CALIBRATION

NECK FORCE X AXIS

TRC TEST NUMBER 202C08NF1

572E SN202 NECK FLEXION CAL08

RUN NUMBER 101701 1459,2

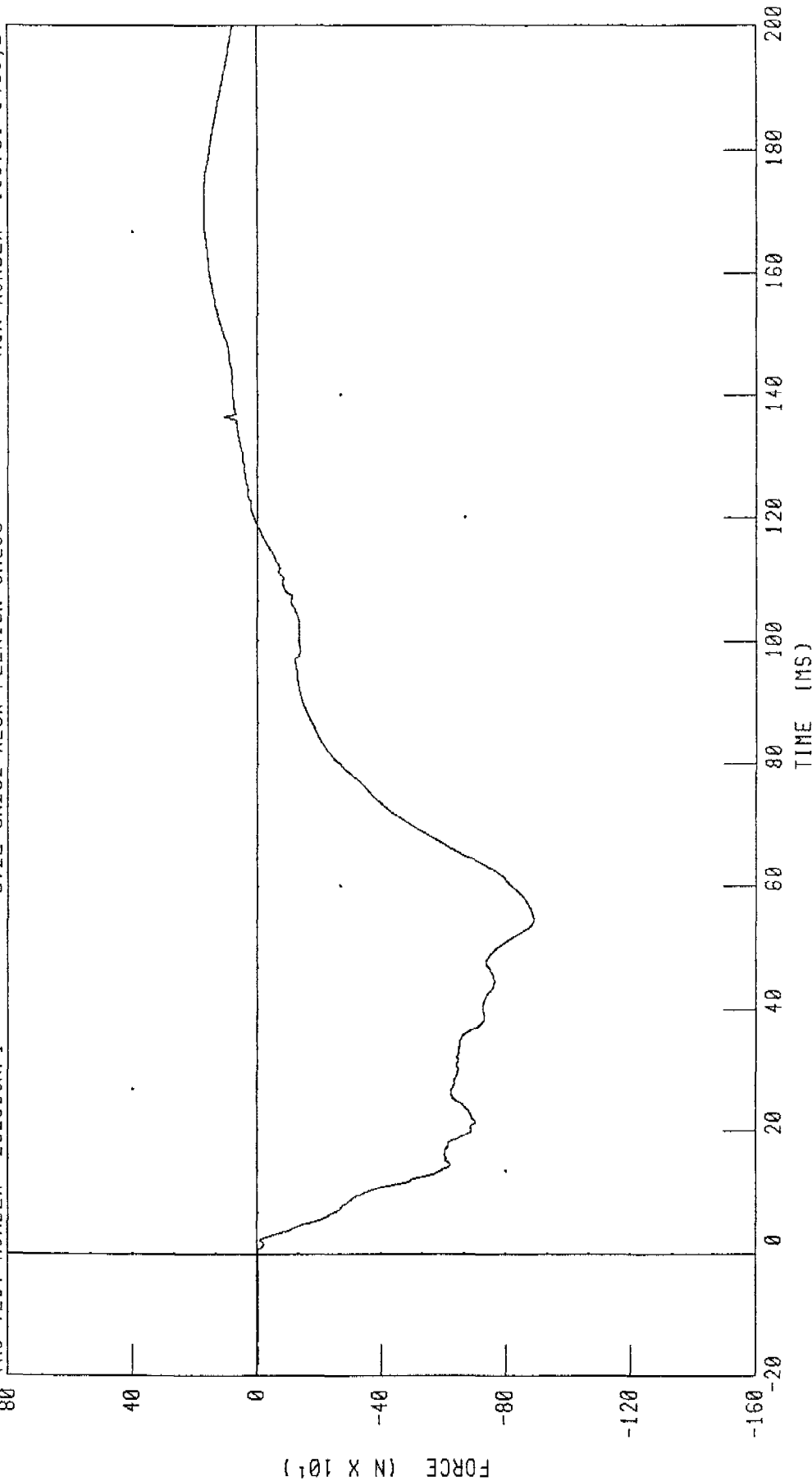


CHANNEL NEKXF FILTER CH CLASS 1000

PART 572-E HYBRID III NECK FLEXION CALIBRATION

NECK FORCE X AXIS FILTERED FOR USE IN OCCIPITAL MOMENT CALCULATION

TRC TEST NUMBER 202008NF1 572E SN202 NECK FLEXION CAL08 RUN NUMBER 101701 1459,2



CHANNEL NEKXFC FILTER CH CLASS 600 PEAK DATA 172 26 N @ 168 72 MS, -889 10 N @ 54 56 MS

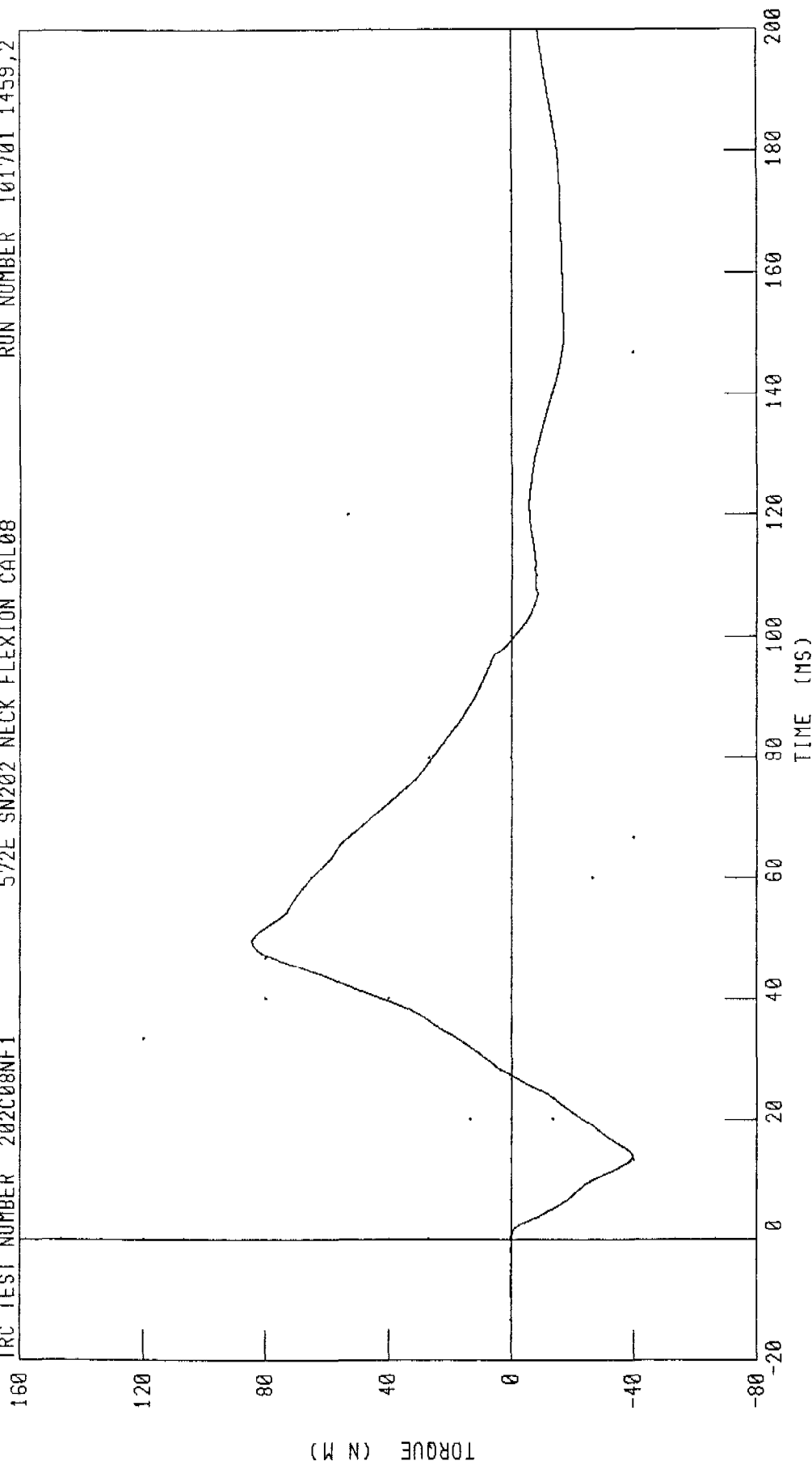
PART 572-E HYBRID III NECK FLEXION CALIBRATION

NECK MOMENT Y AXIS

TRC TEST NUMBER 202C08NF1

572E SN202 NECK FLEXION CAL08

RUN NUMBER 101701 1459,2



TIME (MS)

CHANNEL NEKYM FILTER CH CLASS 600 PEAK DATA 84 42 N M @ 49 52 MS, -39 62 N M @ 13 92 MS

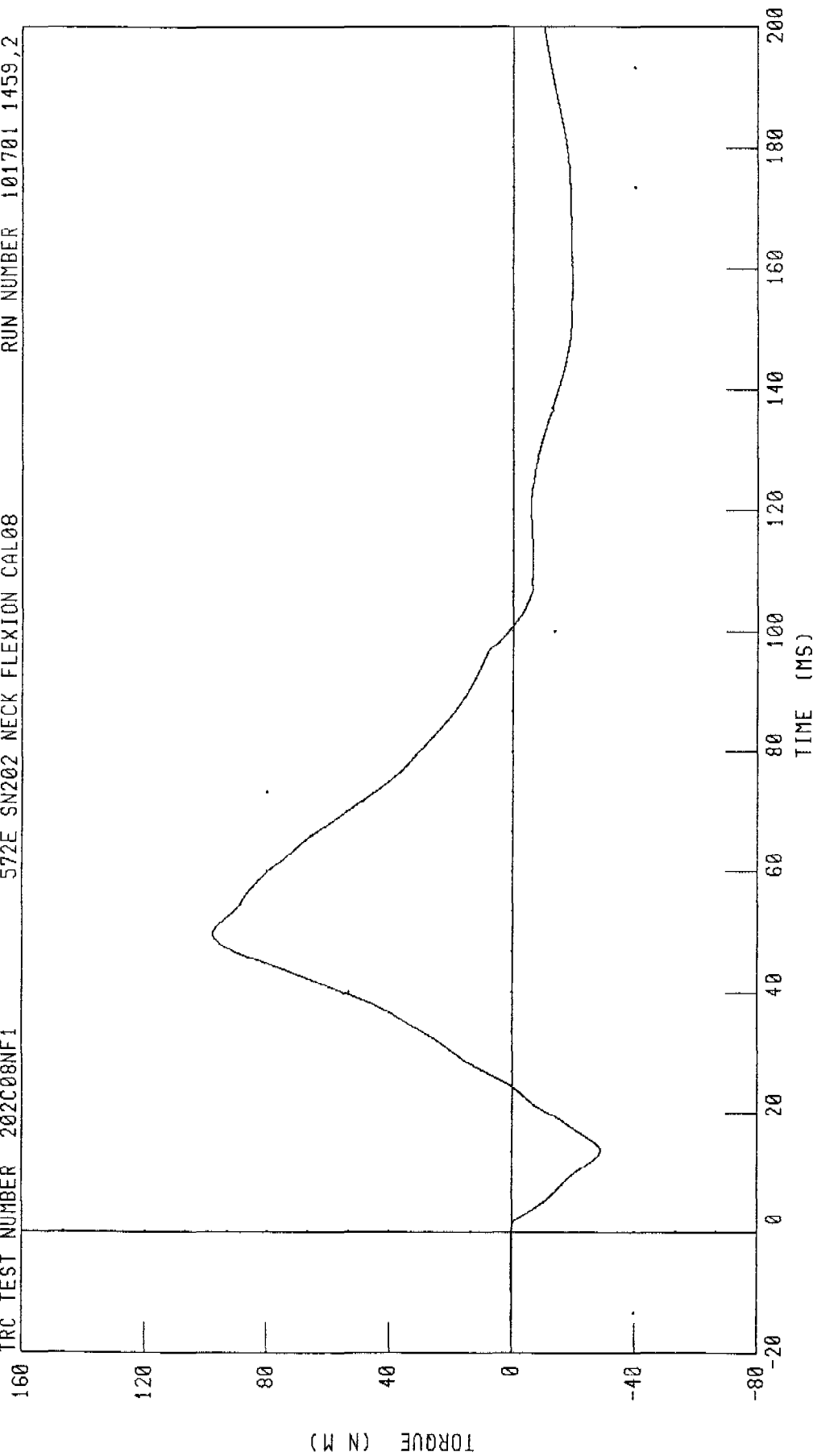
PART 572-E HYBRID III NECK FLEXION CALIBRATION

TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER 202C08NF1

572E SN202 NECK FLEXION CAL08

RUN NUMBER 101701 1459,2



CHANNEL NEKOM FILTER CH CLASS 600

PEAK DATA 98 00 N M @ 49 68 MS, -28 88 N M @ 13 68 MS

TRANSPORTATION RESEARCH CENTER INC.

HYBRID III 50th

17-OCT-01

NECK EXTENSION TEST - 6 CHANNEL TRANSDUCER

TRC INC.

TEST NO: 202C08NE2

572E SN202 NECK EXT CAL08

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6 - 22.2 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY		10 - 70 %	31.0 %
IMPACT VELOCITY		5.95 - 6.19 M/S	6.05 M/S
PENDULUM DECELERATION	10 MS	17.20 - 21.20 G	19.92 G
	20 MS	14.00 - 19.00 G	18.01 G
	30 MS	11.00 - 16.00 G	15.92 G
MAX PENDULUM G		22 G MAX	20.47 G
MAX PENDULUM G ABOVE 30 MS		22 G MAX	15.84 G
DECELERATION-TIME CURVE DECAY TIME TO 5 G		38 - 46 MS	38.56 MS
D PLANE	MAX	81 - 106 DEG.	96.63 DEG.
ROTATION	TIME	72 - 82 MS	76.40 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MIN	-80.0/-52.9 NM	-76.44 NM
	TIME	65 - 79 MS	70.08 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		147 - 174 MS	153.12 MS
NEGATIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		120 - 148 MS	136.08 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 101701.1603;1

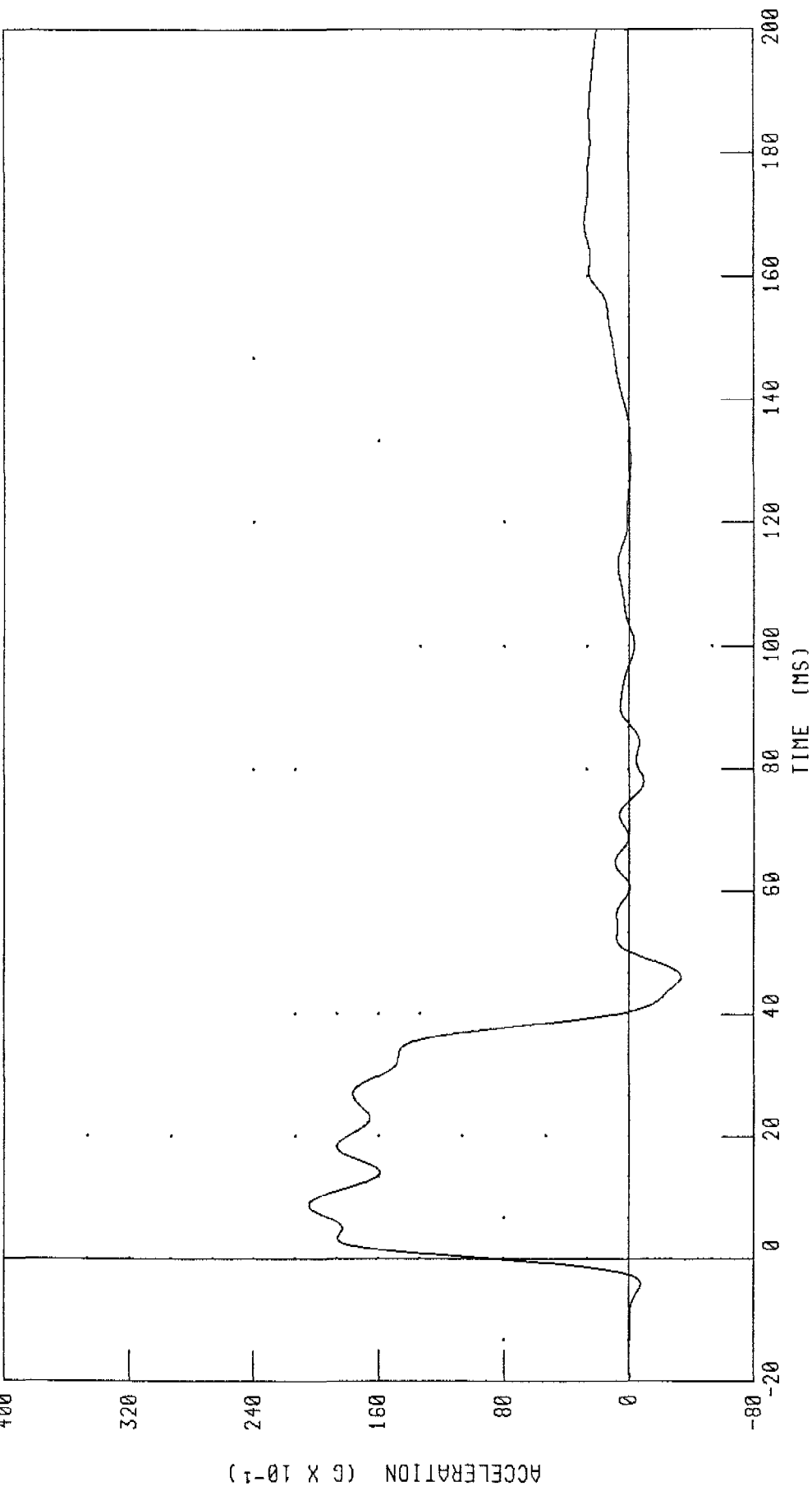
PART 572-E HYBRID III NECK EXTENSION CALIBRATION

PENDULUM DECELERATION

TRC TEST NUMBER 202C00NE2

572E SN202 NECK EXT CAL08

RUN NUMBER 101701 1603,1



CHANNEL PENXC FILTER CH CLASS 60 PEAK DATA 20 47 G 0 8 80 MS, -3 33 G 0 46 00 MS

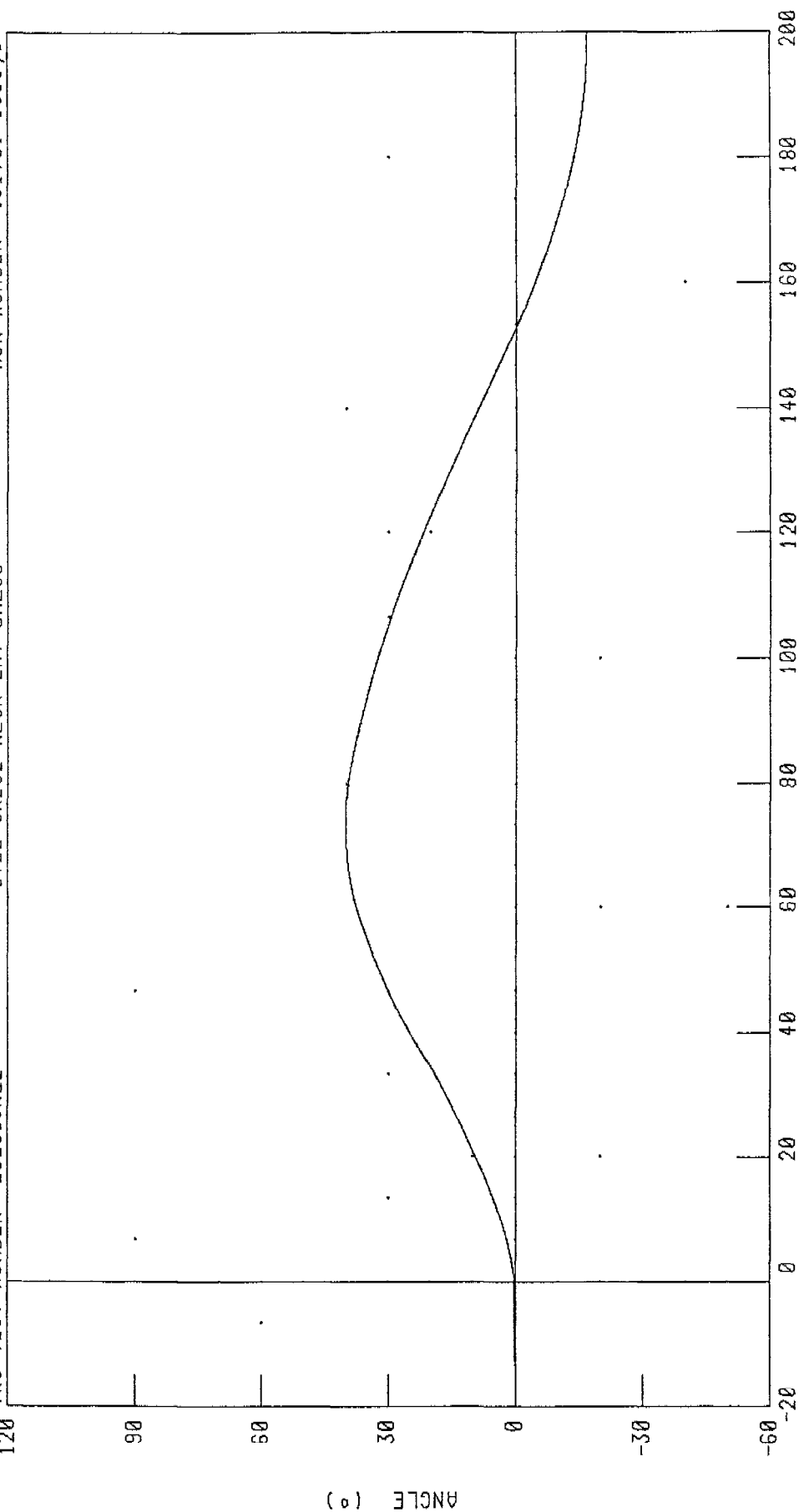
PART 572-E HYBRID III NECK EXTENSION CALIBRATION

ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER 202C08NE2

572E SN202 NECK EXT CAL08

RUN NUMBER 101701 1603,1



TIME (MS)

CHANNEL BETA FILTER CH CLASS 60 PEAK DATA 40 12 ° @ 74 32 MS, -16 80 ° @ 198 88 MS

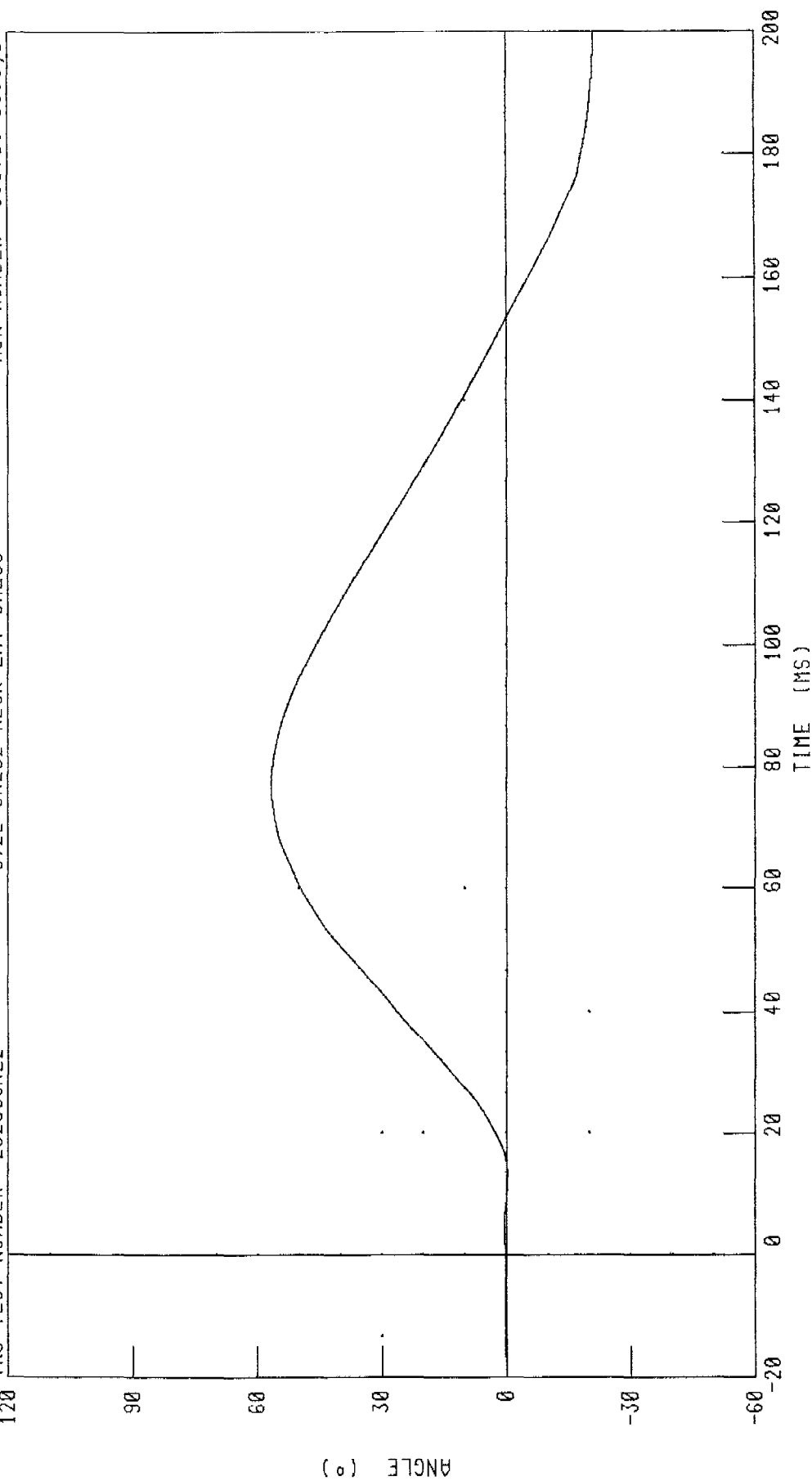
PART 572-E HYBRID III NECK EXTENSION CALIBRATION

ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER 202C08NE2

572E SN202 NECK EXT CAL08

RUN NUMBER 101701 1603,1



PEAK DATA 56 62 ° @ 77 76 MS, -21 09 ° @ 200 00 MS

CHANNEL THETA FILTER CH CLASS 60

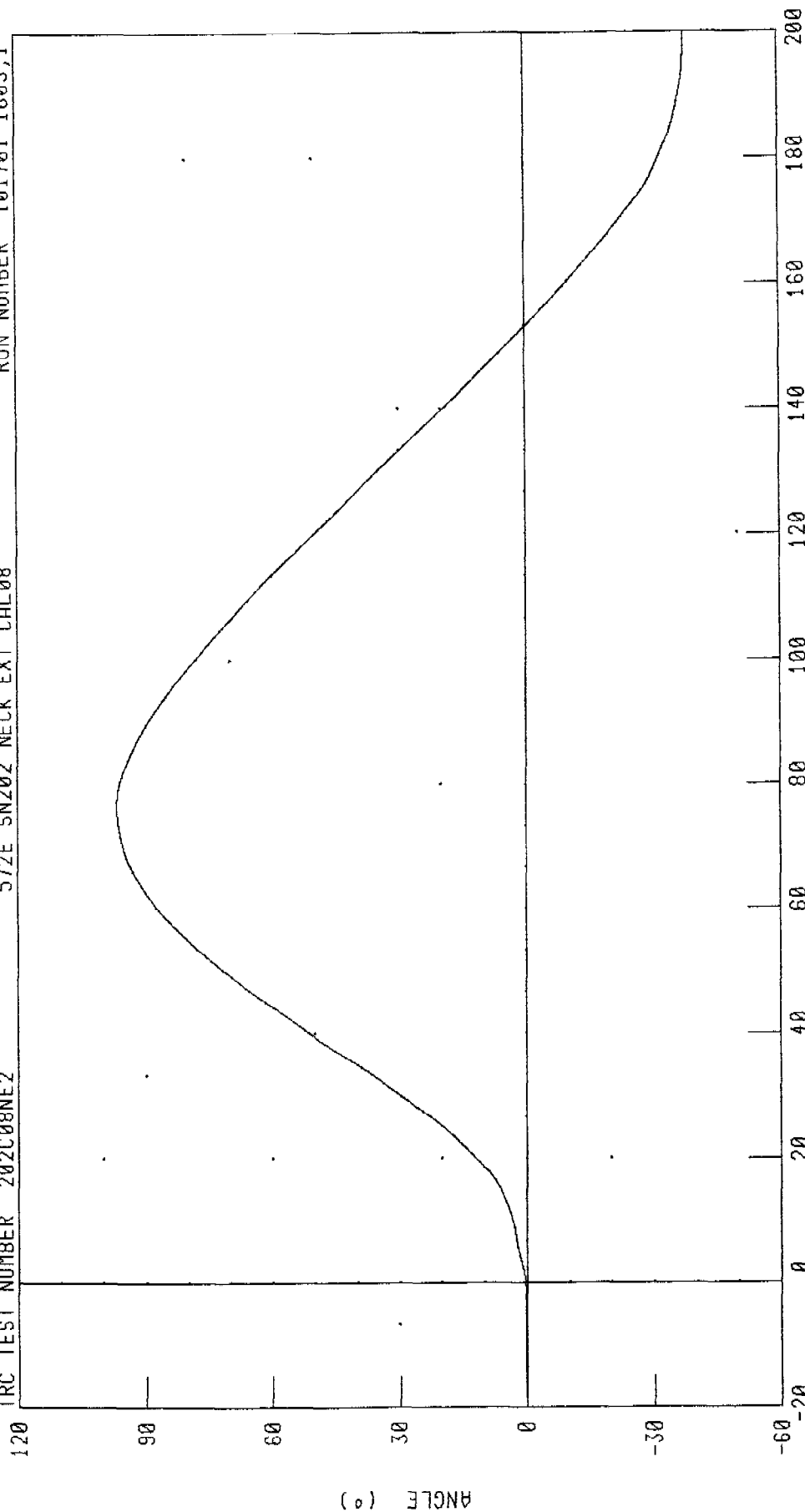
PART 572-E HYBRJD III NECK EXTENSION CALIBRATION

TOTAL ROTATION

TRC TEST NUMBER 202C00NE2

572E SN202 NECK EXT CAL08

RUN NUMBER 101701 1603,1



TIME (MS)

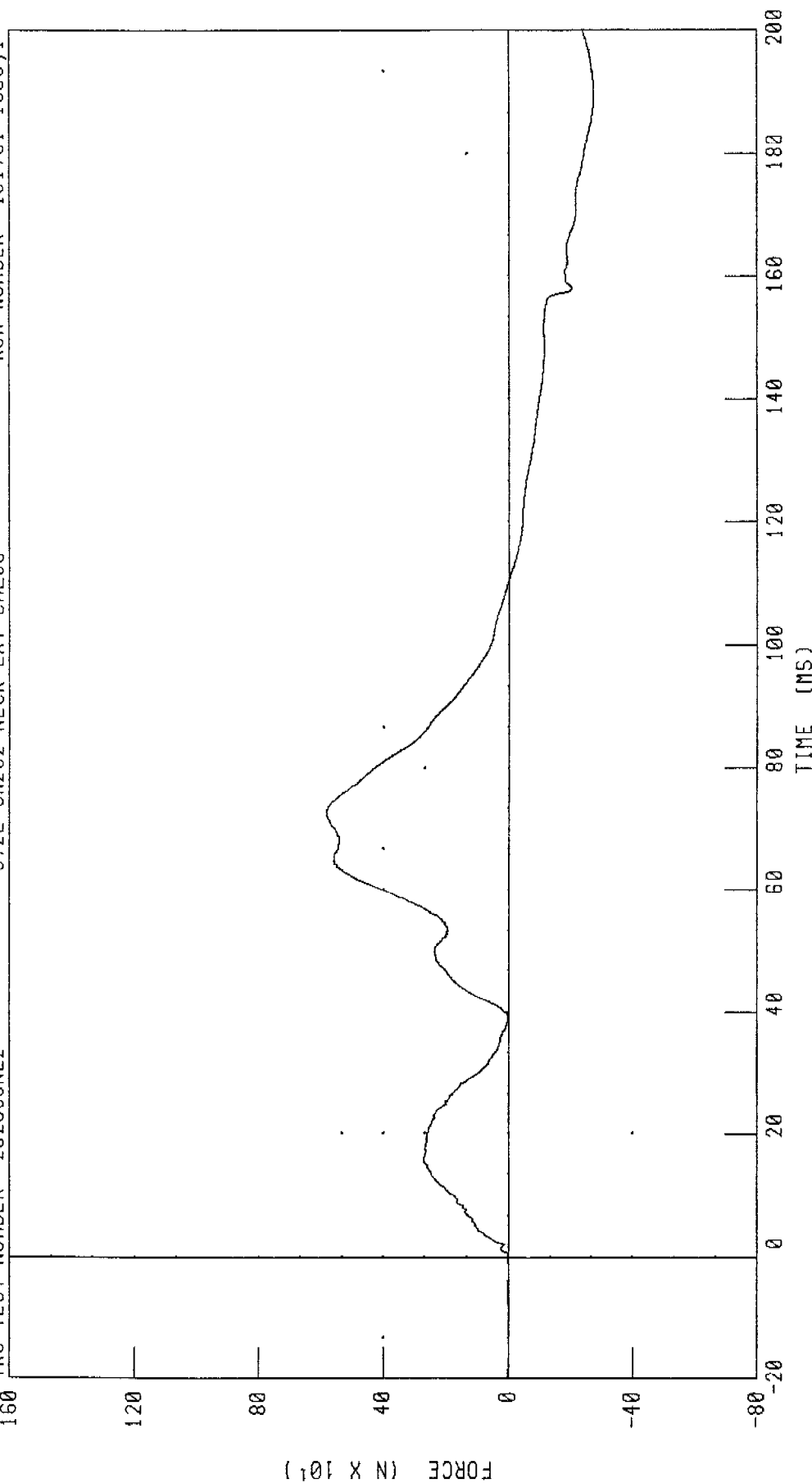
PEAK DATA 96 63 ° @ 76 40 MS, -37 89 ° @ 199 92 MS

CHANNEL TOTAL FILTER CH CLASS 60

PART 572-E HYBRID III NECK EXTENSION CALIBRATION

NECK FORCE X AXIS

TRC TEST NUMBER 202C08NE2 572E SN202 NECK EXT CAL08 RUN NUMBER 101701 1603,1

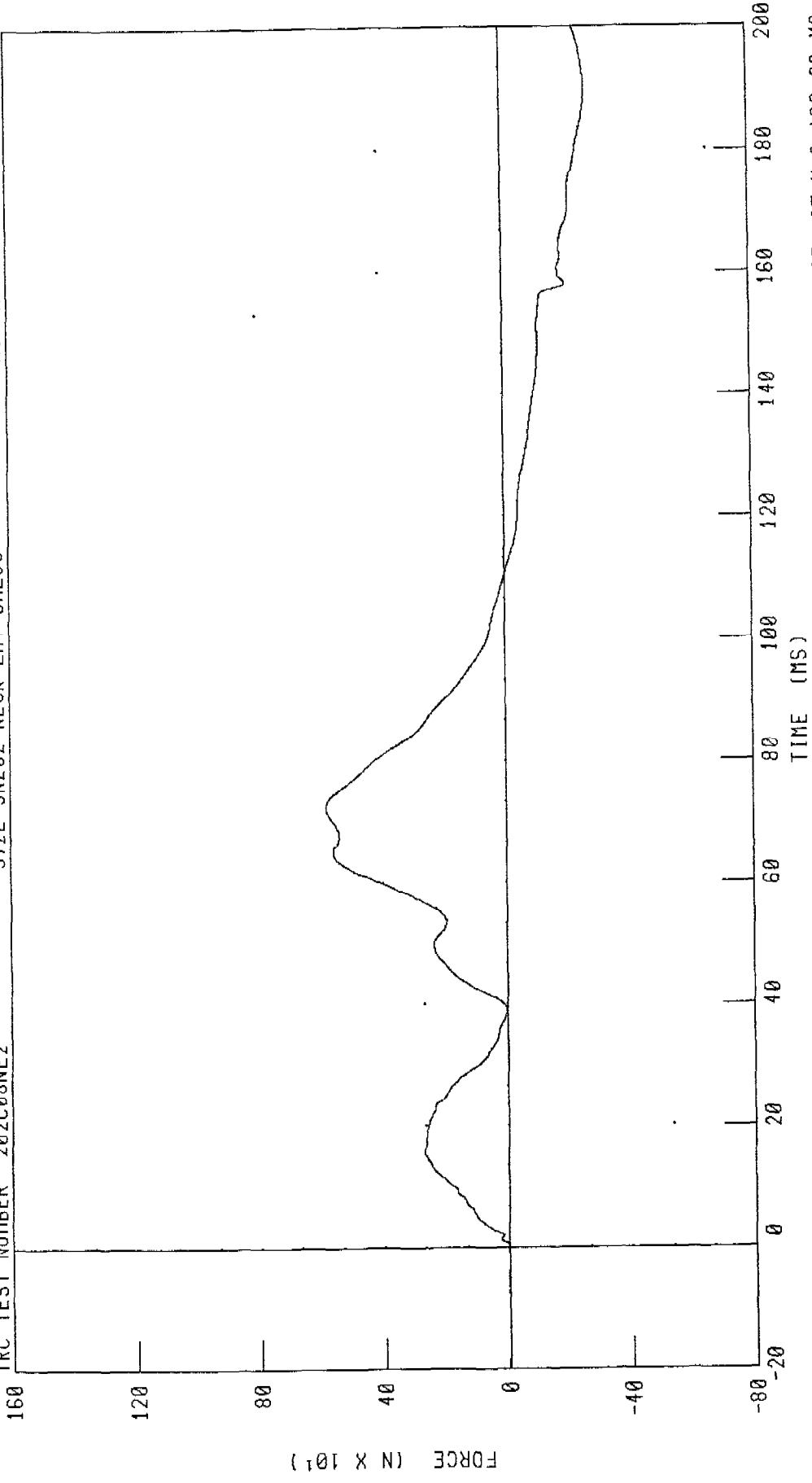


CHANNEL NEKXF FILTER CH CLASS 1000

PEAK DATA 582 62 N 0 72 64 MS, -275 95 N 0 189 04 MS

PART 572-E HYBRID III NECK EXTENSION CALIBRATION
NECK FORCE X AXIS FILTERED FOR USE IN OCCIPITAL MOMENT CALCULATION

TRC TEST NUMBER 202C08NE2 572E SN202 NECK EXT CAL08 RUN NUMBER 101701 1603,1



CHANNEL NEKXFC FILTER CH CLASS 600 PEAK DATA 582 43 N @ 72 48 MS, -275 67 N @ 189 20 MS

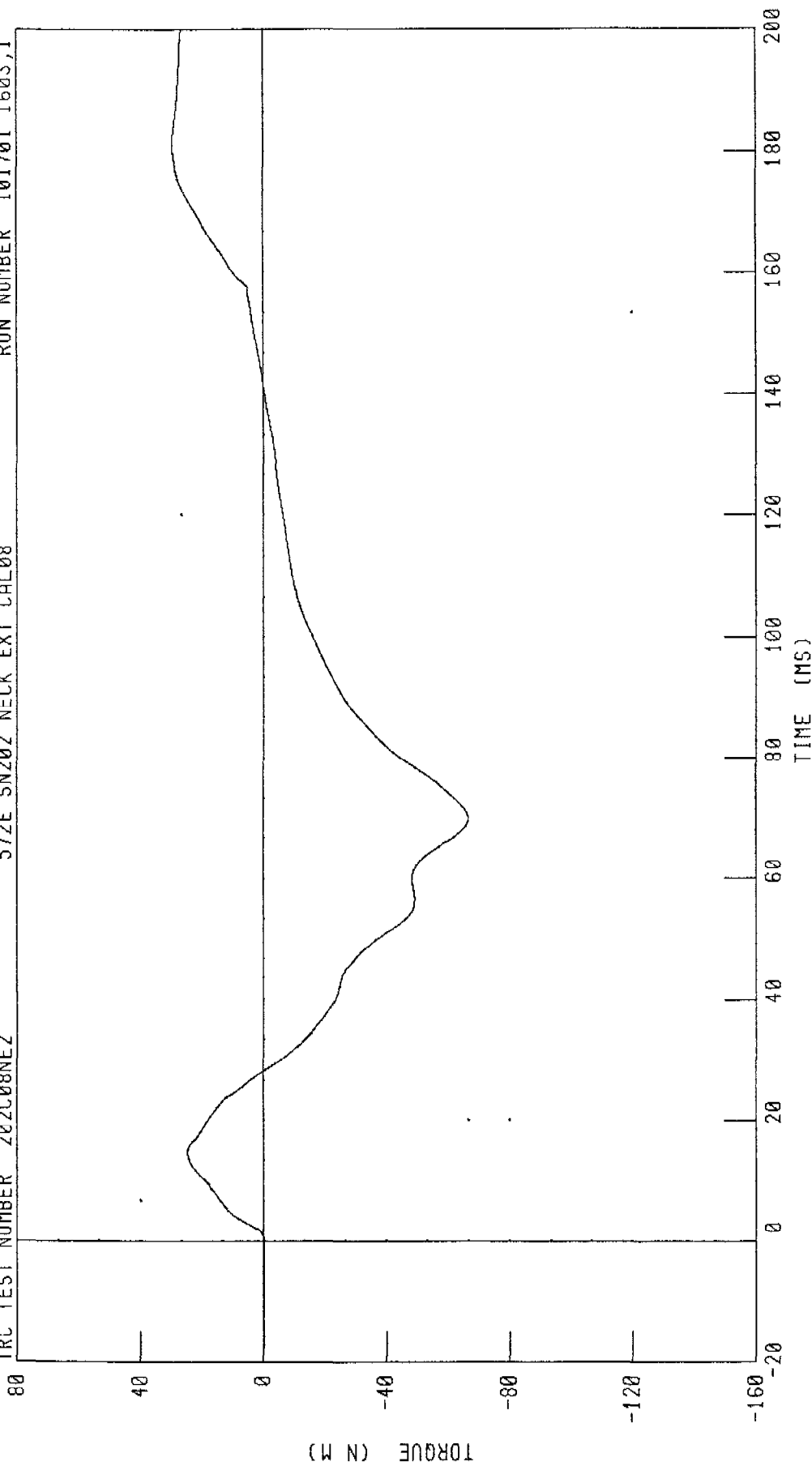
PART 572-E HYBRID III NECK EXTENSION CALIBRATION

NECK MOMENT Y AXIS

TRC TEST NUMBER 202C00NE2

572E SN202 NECK EXT CAL08

RUN NUMBER 101701 1603,1



CHANNEL NEKYM FILTER CH CLASS 600 PEAK DATA 29 63 N M @ 180 96 MS, -66 57 N M @ 70 00 MS

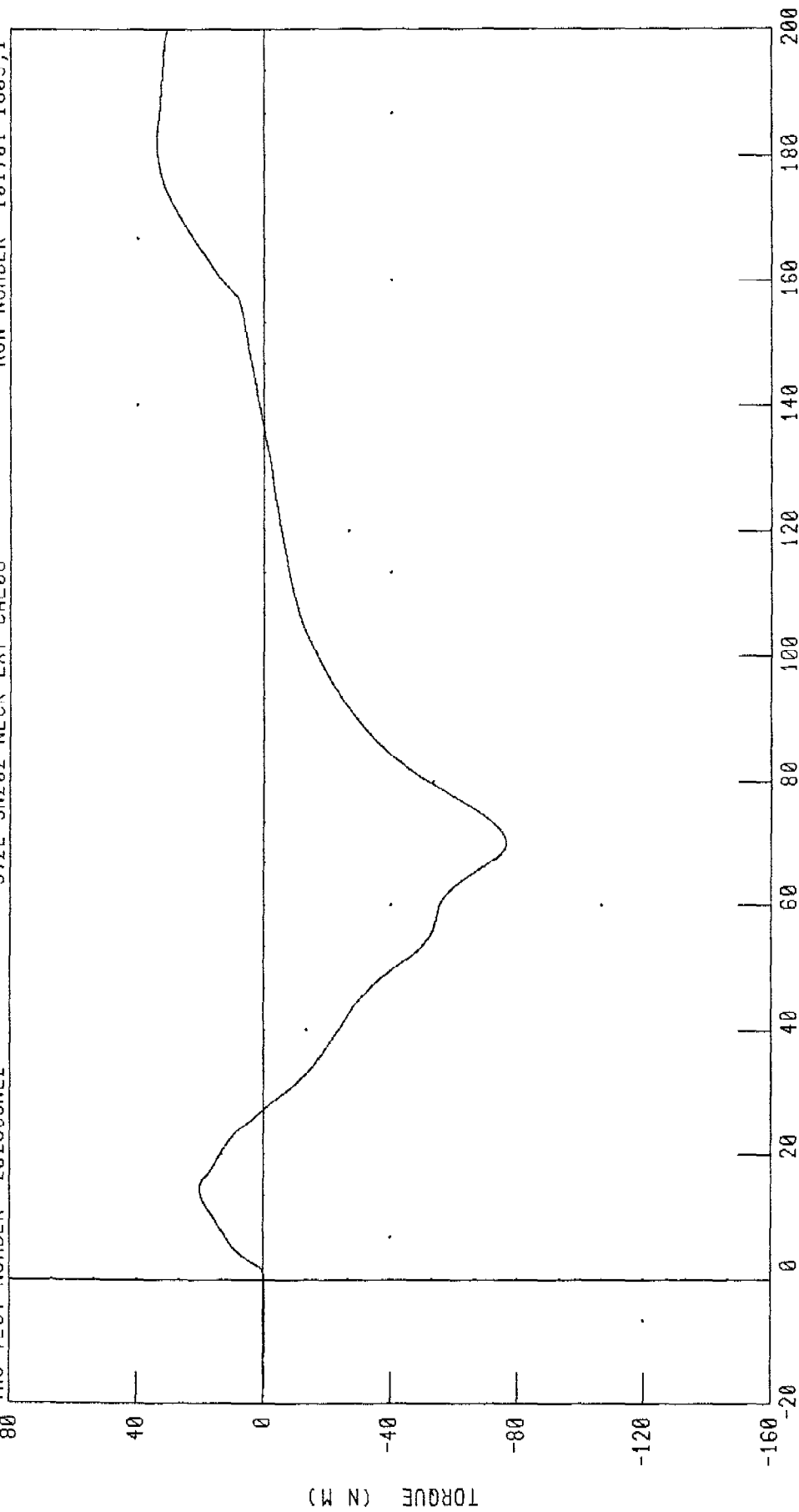
PART 572-E HYBRID III NECK EXTENSION CALIBRATION

TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER 202C08NE2

572E SN202 NECK EXT CAL08

RUN NUMBER 101701 1603,1



TIME (MS)

CHANNEL NEK01 FILTER CH CLASS 600 PEAK DATA 34 06 N M @ 182 00 MS, -76 44 N M @ 70 08 MS

TRANSPORTATION RESEARCH CENTER INC.

THORAX IMPACT TEST

HYBRID III 50th

18-OCT-01

TRC INC.

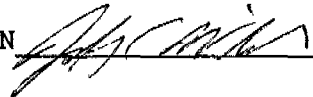
TEST NO: 202C08TH1

572E SN202 H.S.THORAX CAL08

TEST PARAMETER	HIGH SPEED TEST	TEST RESULTS
	SPECIFICATION	
TEMPERATURE	20.6-22.2 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	28.0 %
PENDULUM VELOCITY	6.59 - 6.83 M/S	6.59 M/S
MAXIMUM DEFLECTION	63.5 - 72.6 MM	65.4 MM
MAXIMUM RESISTIVE FORCE	5159 - 5894 N	5665. N
INTERNAL HYSTERESIS	69% - 85%	72.1%

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 101801.1338;1

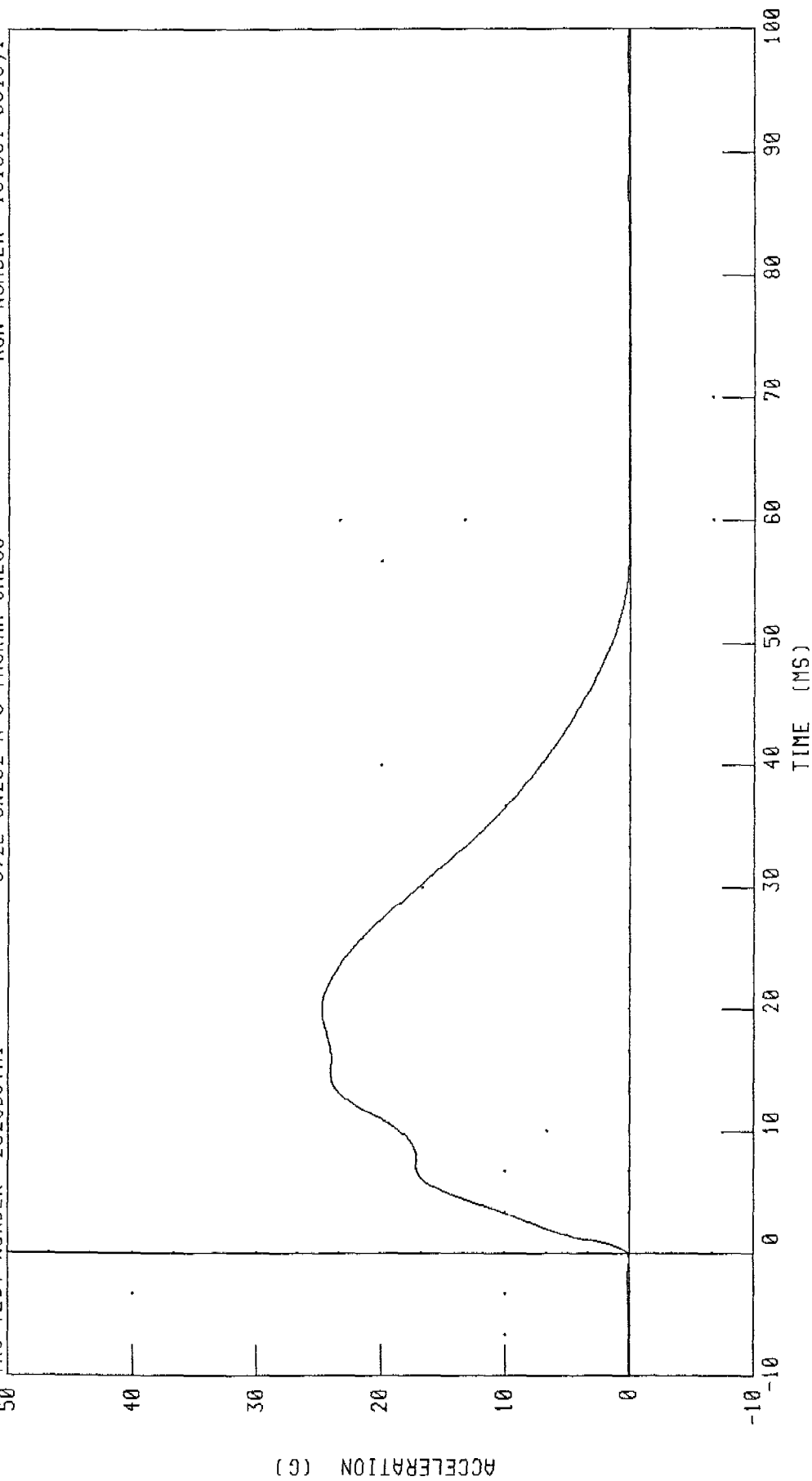
PART 572-E HYBRID III THORAX CALIBRATION

PENDULUM DECELERATION

TRC TEST NUMBER 202C08TH1

572E SN202 H S THORAX CAL08

RUN NUMBER 101801 0919,1



CHANNEL PENXG FILTER CH CLASS 180 PEAK DATA 24 73 G 19 92 MS, 0 00 G 0 -0 48 MS

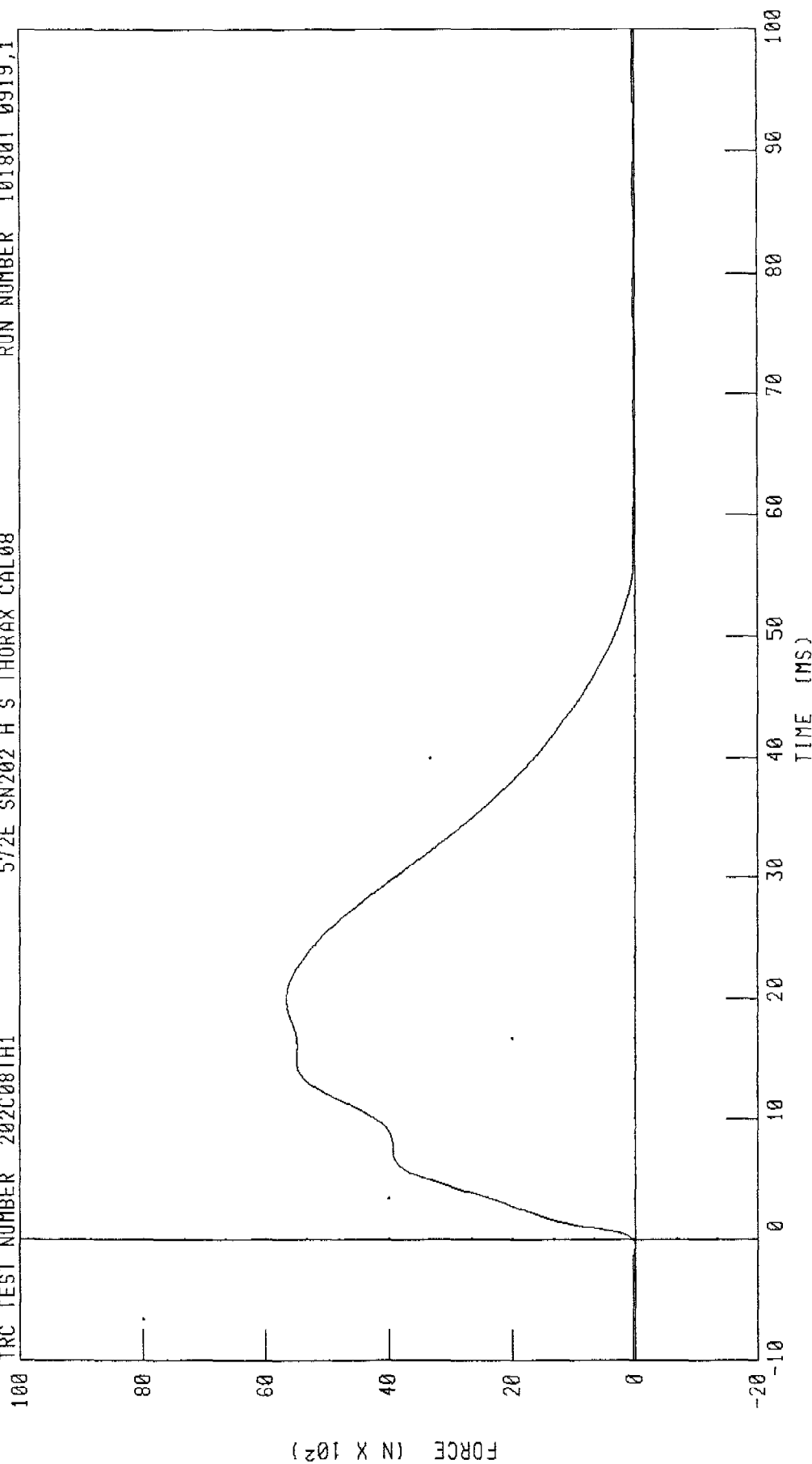
PART 572-E HYBRID III THORAX CALIBRATION

PENDULUM FORCE

TRC TEST NUMBER 202C08TH1

572E SN202 H S THORAX CAL08

RUN NUMBER 101801 0919,1



PEAK DATA 5665 56 N 0 19 92 MS, -0 52 N 0 -0 48 MS

CHANNEL PENXF FILTER CH CLASS 180

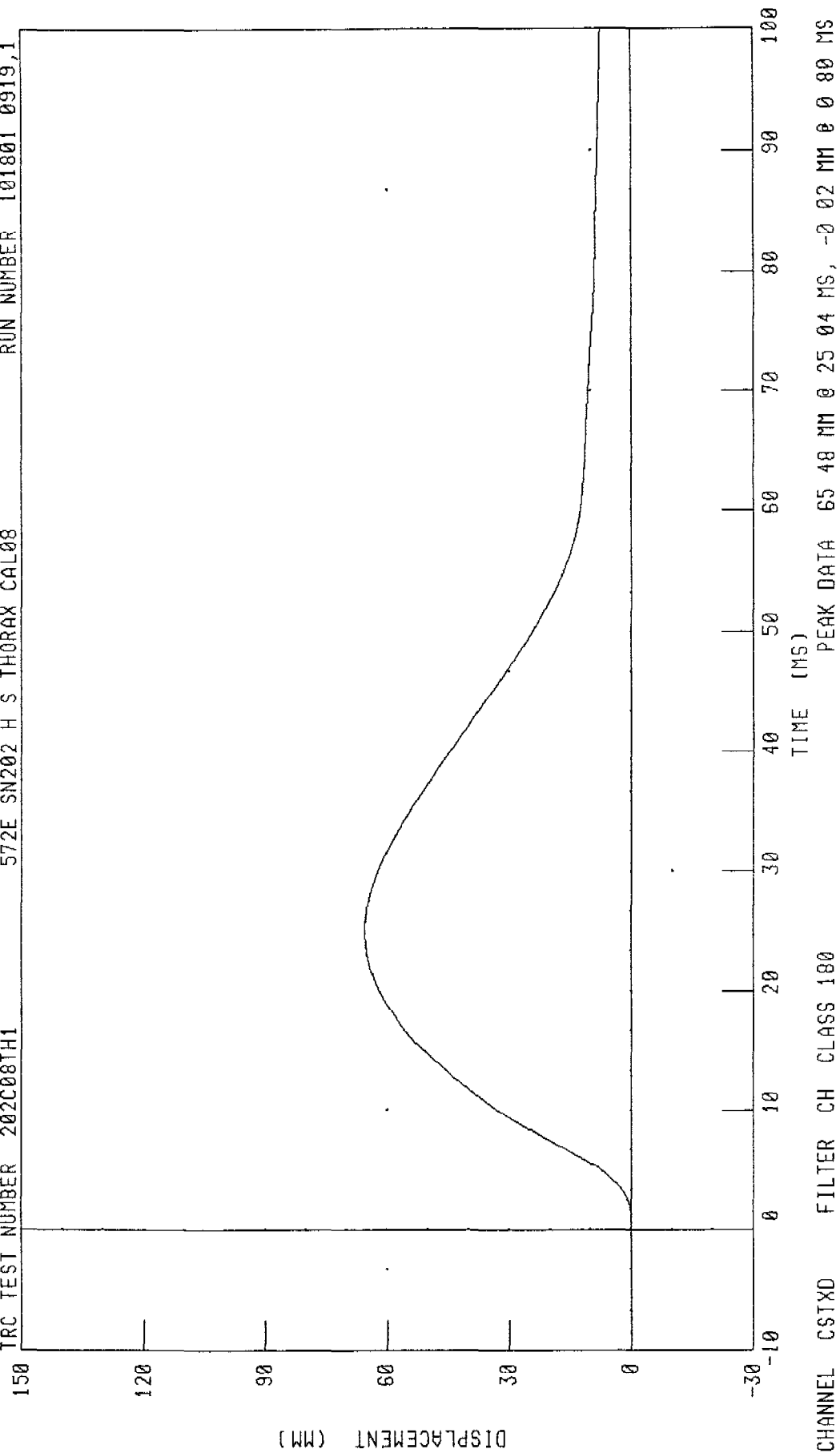
PART 572-E HYBRID III THORAX CALIBRATION

STERNUM DISPLACEMENT

TRC TEST NUMBER 202C08TH1

572E SN202 H S THORAX CAL08

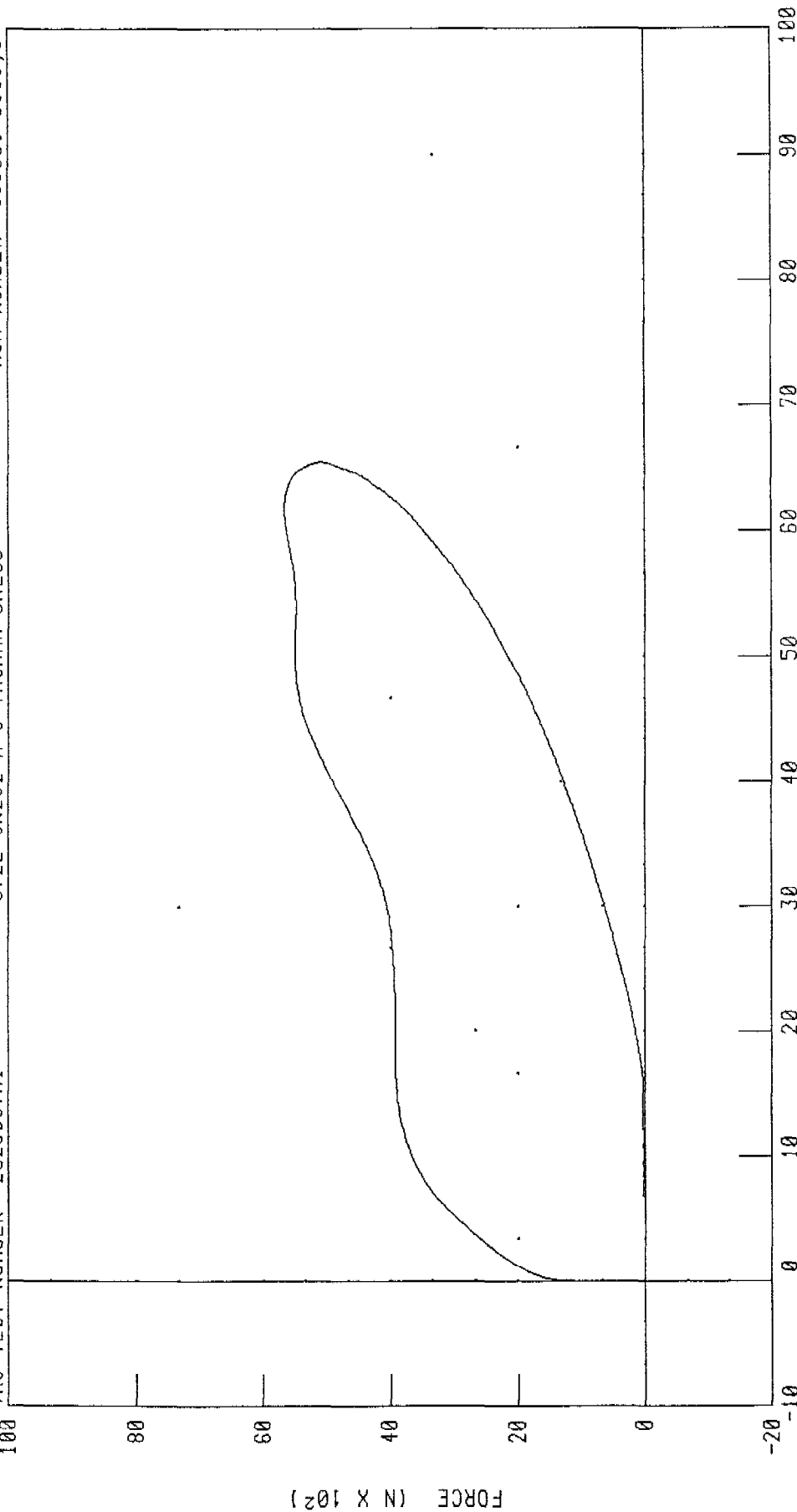
RUN NUMBER 101801 0919,1



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

TRC TEST NUMBER 202C08TH1 RUN NUMBER 101801 0919,1

572E SN202 H S THORAX CAL08



DISPLACEMENT (MM)

PEAK DATA
65 48 MM @ 25 04 MS, -0 02 MM @ 0 80 MS
5665 56 N @ 19 92 MS, -0 52 N @ -0 48 MS

CHANNEL CSTXD
PENXF
FILTER CH CLASS 180
CH CLASS 180

Transportation Research Center Inc

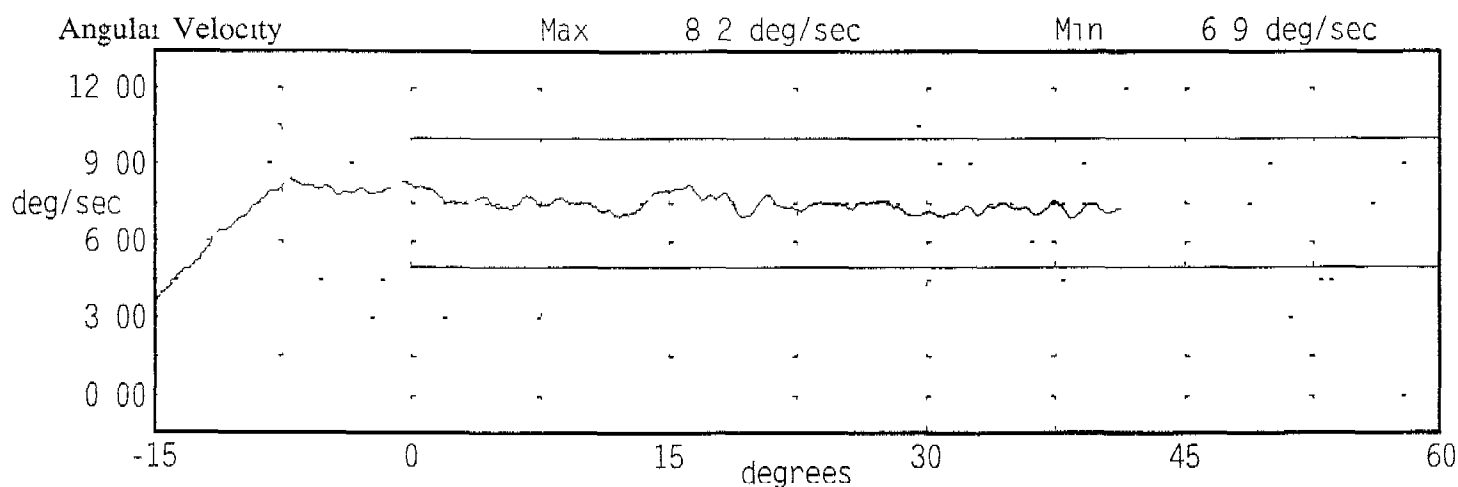
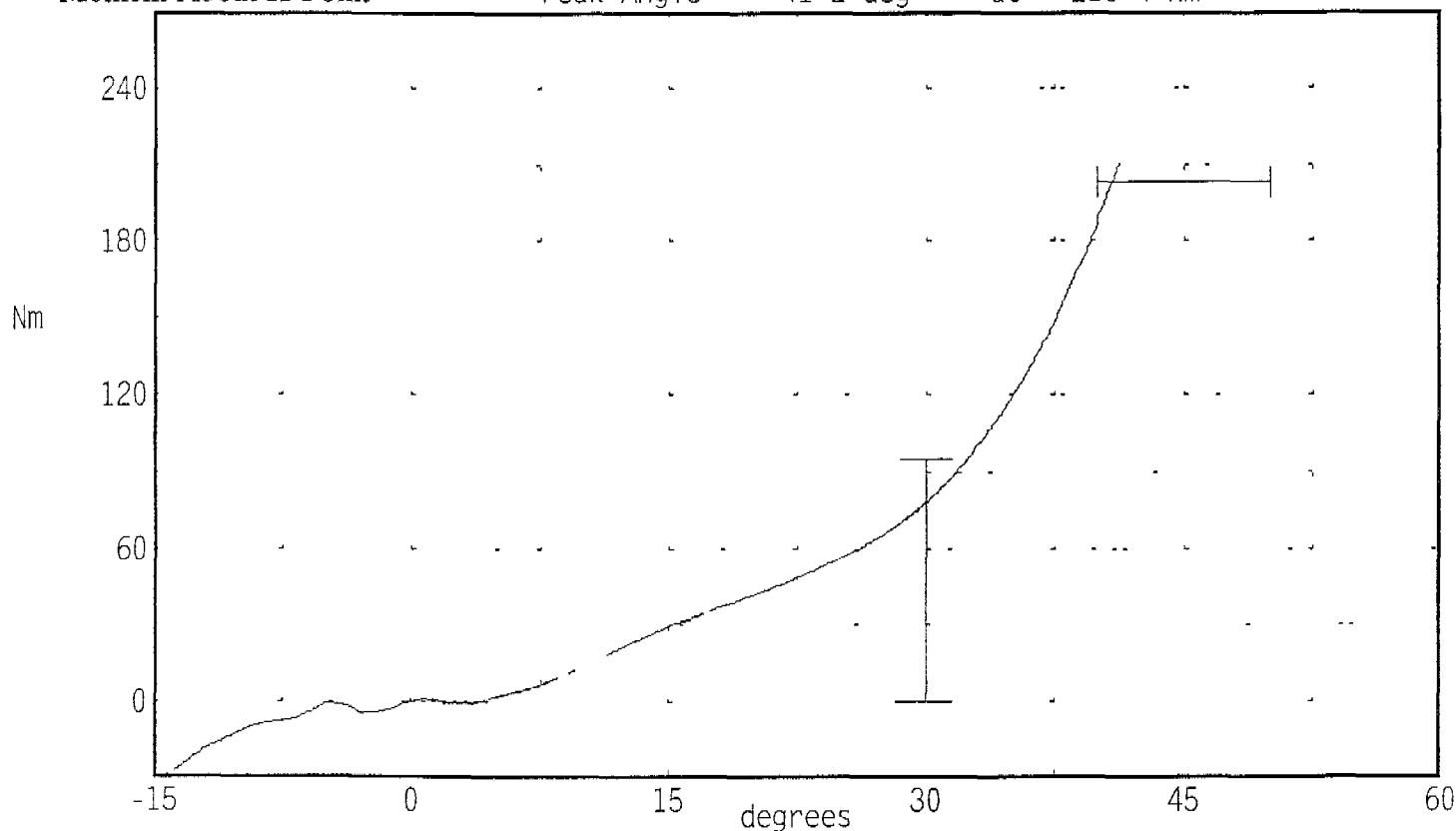
Hybrid III Hip Range of Motion

Serial Number 202L
Test Number 202C08
Comments

Date 10/16/2001
Time 09:10

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.7 °C Pass
Humidity	10 - 70	41 % Pass
Moment at 30 deg	<= 94.9	78.2 Nm Pass
Angle at 203 Nm	40.0 - 50.0	40.8 deg Pass
Average Velocity	5.0 - 10.0	7.5 deg/sec Pass

Moment About H-Point
Peak Moment 210.4 Nm at 41.2 deg
Peak Angle 41.2 deg at 210.4 Nm



Transportation Research Center Inc

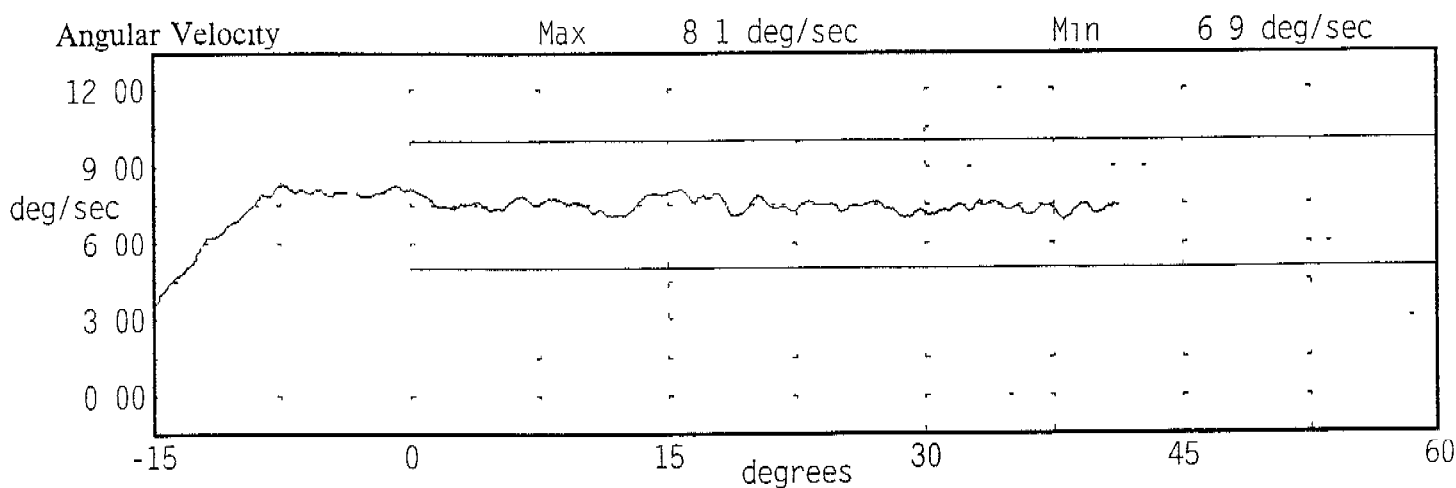
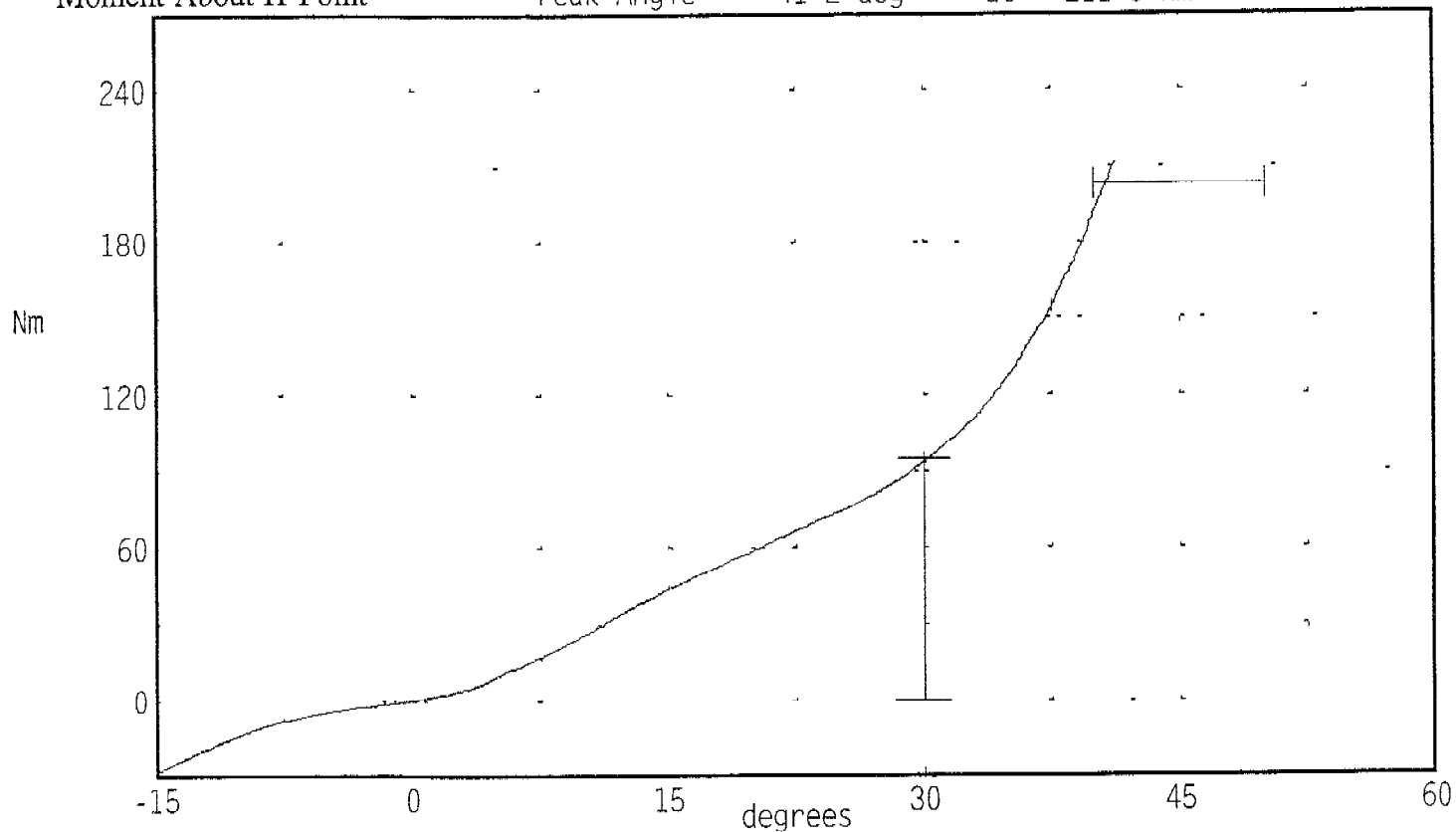
Hybrid III Hip Range of Motion

Serial Number. 202R
Test Number 202C08
Comments

Date 10/16/2001
Time 09.06

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.7 °C Pass
Humidity	10 - 70	41 % Pass
Moment at 30 deg	<= 94.9	93.5 Nm Pass
Angle at 203 Nm	40.0 - 50.0	40.7 deg Pass
Average Velocity	5.0 - 10.0	7.5 deg/sec Pass

Moment About H-Point
Peak Moment 211.5 Nm at 41.2 deg
Peak Angle 41.2 deg at 211.5 Nm



TRANSPORTATION RESEARCH CENTER INC.

LEFT KNEE IMPACT TEST

HYBRID III 50th

17-OCT-01

TRC INC.

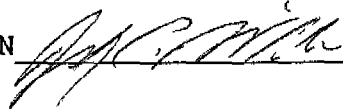
TEST NO: 202C08LK1

572E SN202 LEFT KNEE CAL 08

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	35.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.10 M/S
PEAK KNEE IMPACT FORCE 5.0 KG PENDULUM	4715 - 5782 N	5123.4 N

TEST MEETS SPECIFICATIONS

TECHNICIAN



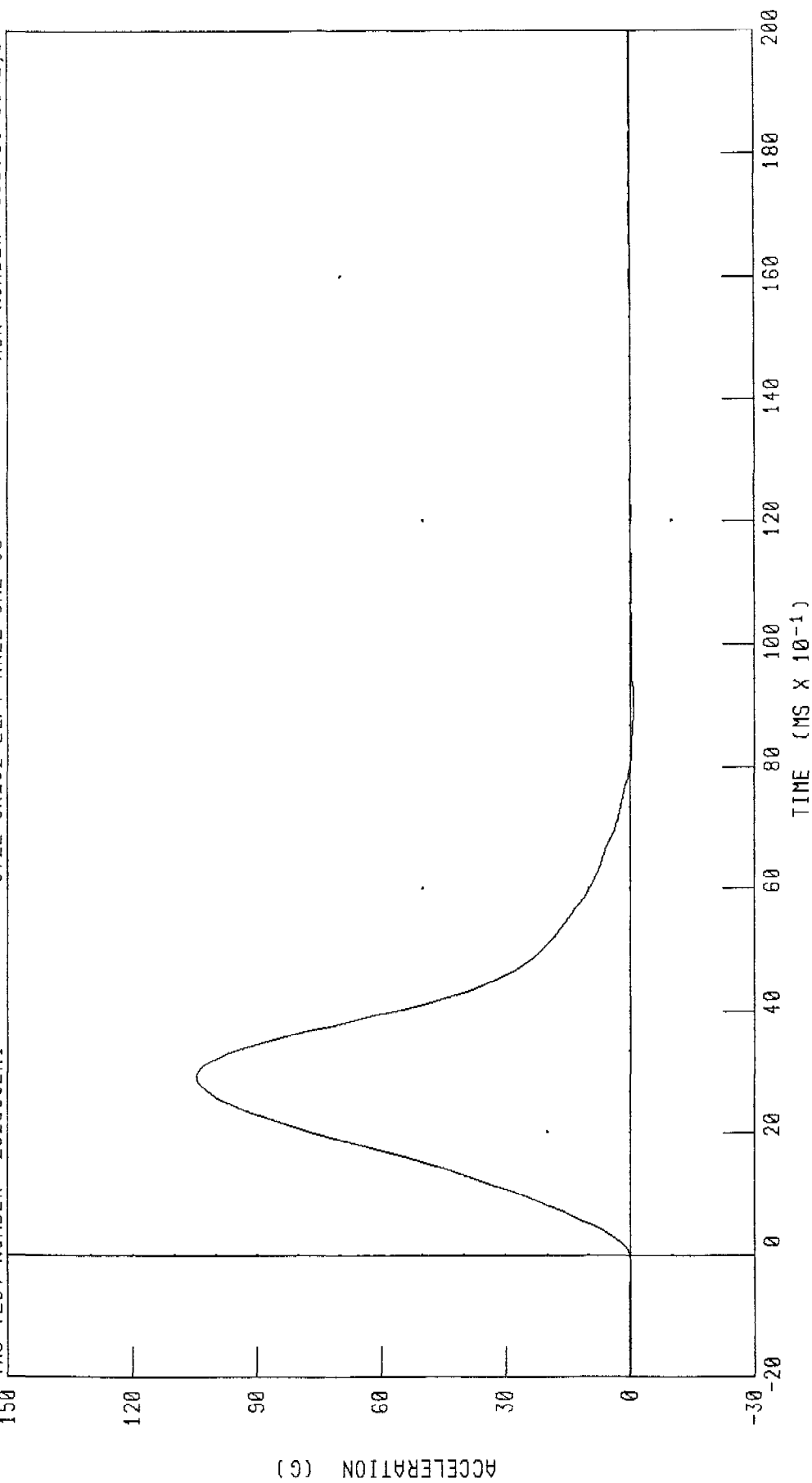
RUN NUMBER: 101701.0841;1

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

TRC TEST NUMBER 202C08LK1

572E SN202 LEFT KNEE CAL 08

RUN NUMBER 101701 0842,1



CHANNEL PENXC FILTER CH CLASS 600 PEAK DATA 104 71 C 0 2 96 MS, -0 81 C 0 9 12 MS

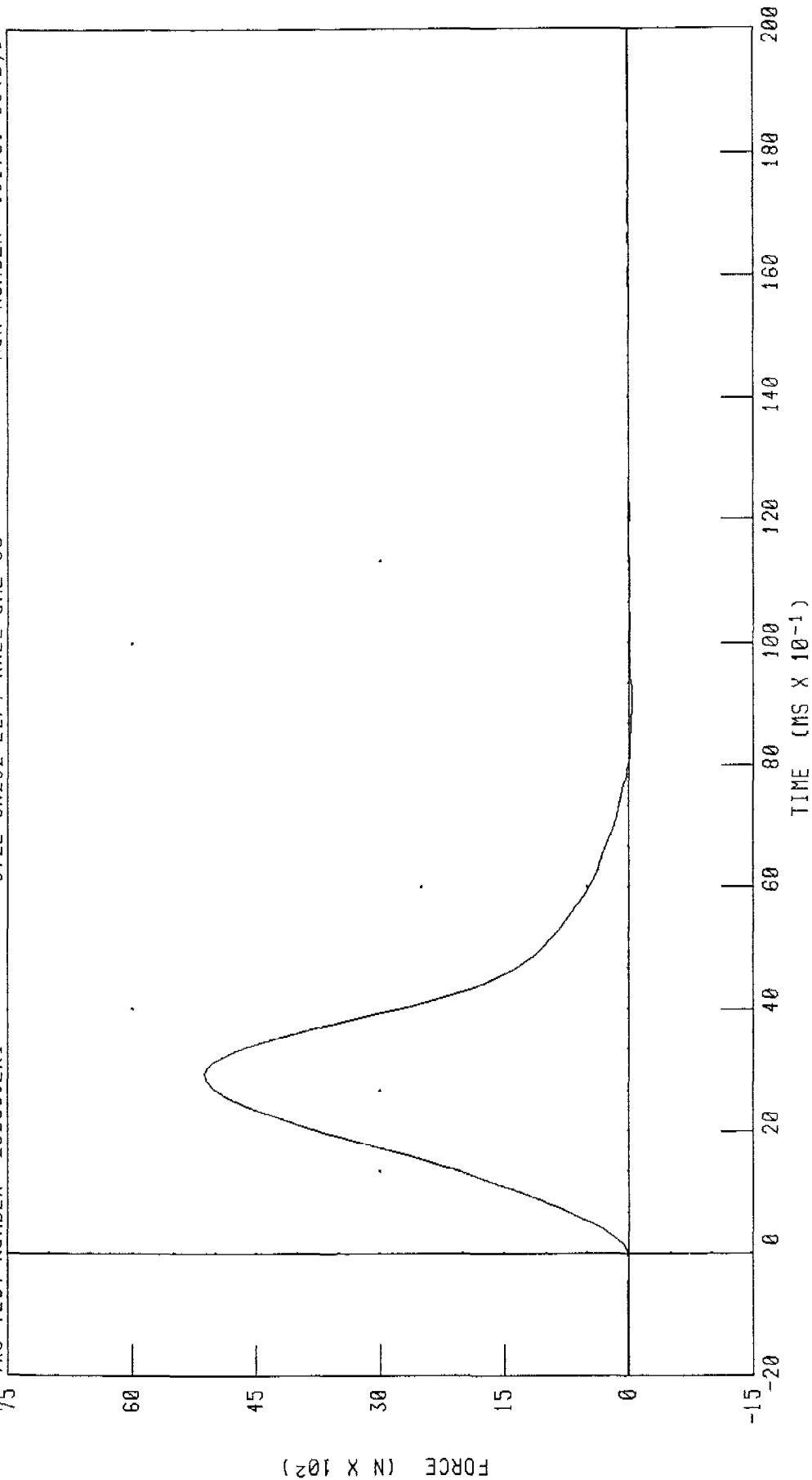
PART 572-E HYBRID III LEFT KNEE CALIBRATION

PENDULUM FORCE (5 KG PEND)

TRC TEST NUMBER 202C08LK1

572E SN202 LEFT KNEE CAL 08

RUN NUMBER 101701 0842,1



CHANNEL PENXF FILTER CH CLASS 600

PEAK DATA 5123 47 N 0 2 96 MS, -39 39 N 0 9 12 MS

TRANSPORTATION RESEARCH CENTER INC.

RIGHT KNEE IMPACT TEST

HYBRID III 50th

17-OCT-01

TRC INC.

TEST NO: 202C08RK1

572E SN202 RIGHT KNEE CAL 08

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	35.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.10 M/S
PEAK KNEE IMPACT FORCE 5.0 KG PENDULUM	4715 - 5782 N	5441.5 N

TEST MEETS SPECIFICATIONS

TECHNICIAN

[Signature]

RUN NUMBER: 101701.0844;1

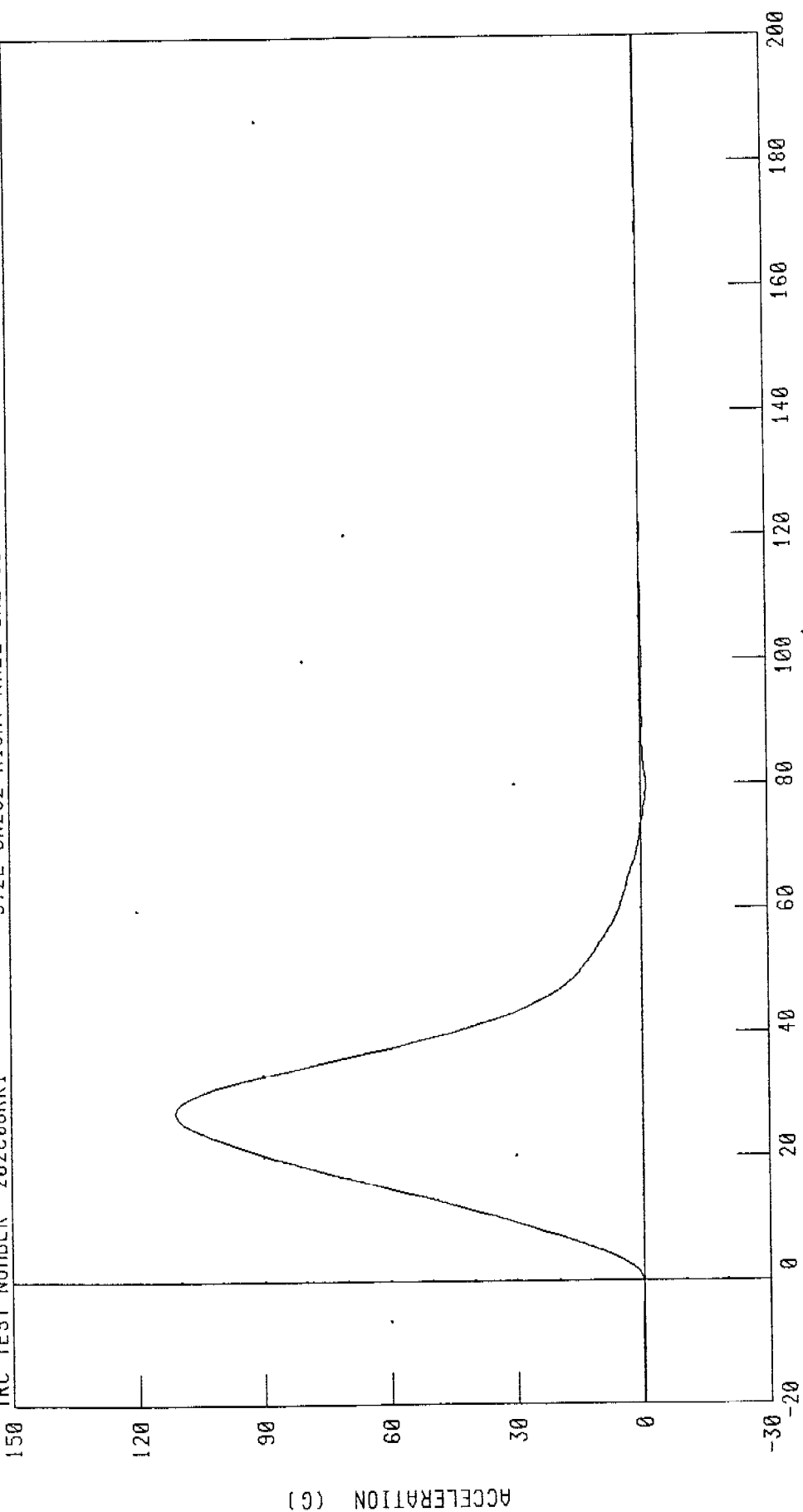
PART 572-E HYBRID III RIGHT KNEE CALIBRATION

PENDULUM DECELERATION (5 KG PEND)

TRC TEST NUMBER 202C08RK1

572E SN202 RIGHT KNEE CAL 08

RUN NUMBER 101701 0844,1



TIME (MS X 10⁻¹)

PEAK DATA 111 22 G 0 2 72 MS, -1 29 G 0 8 00 MS

CHANNEL PENXC FILTER CH CLASS 600

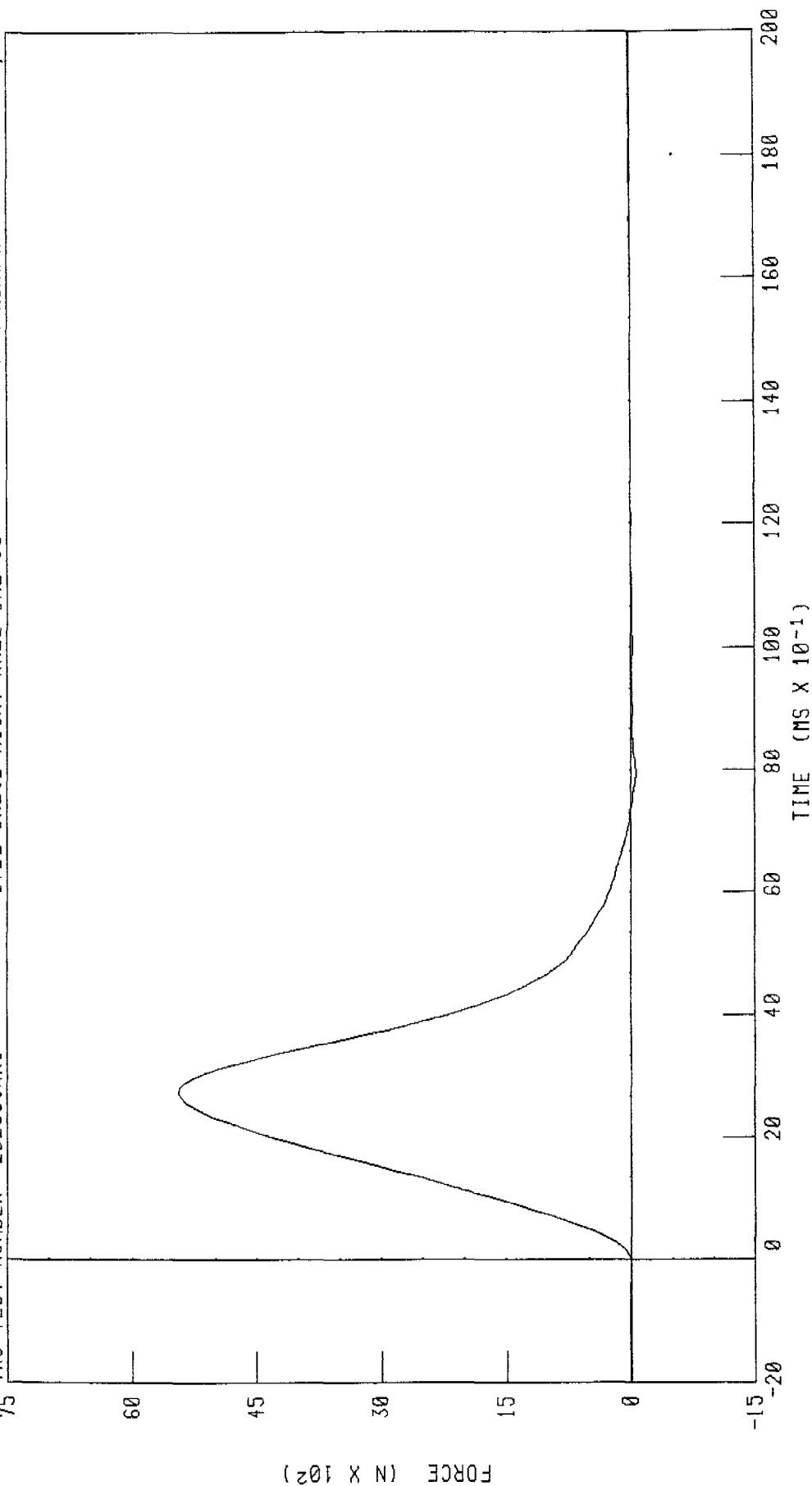
PART 572-E HYBRID III RIGHT KNEE CALIBRATION

PENDULUM FORCE (5 KG PEND)

TRC TEST NUMBER 202C08RK1

572E SN202 RIGHT KNEE CAL 08

RUN NUMBER 101701 0844,1



PEAK DATA 5441 58 N 0 2 72 MS, -63 04 N 0 8 00 MS

CHANNEL PENXF FILTER CH CLASS 600

TRANSPORTATION RESEARCH CENTER INC.

KNEE SLIDER TEST

HYBRID III 50th

16-OCT-01

LEFT KNEE

TRC INC.

TEST NO: 202C08LS1

572E SN202 LEFT SLIDER CAL 08

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	39.0 %
PENDULUM VELOCITY	2.70-2.80 M/S	2.76 M/S
FORCE AT 10.0 MM DISPLACEMENT	1259 - 1721 N	1509. N
FORCE AT 18.0 MM DISPLACEMENT	2268 - 3096 N	2808. N

TEST MEETS SPECIFICATIONS

TECHNICIAN

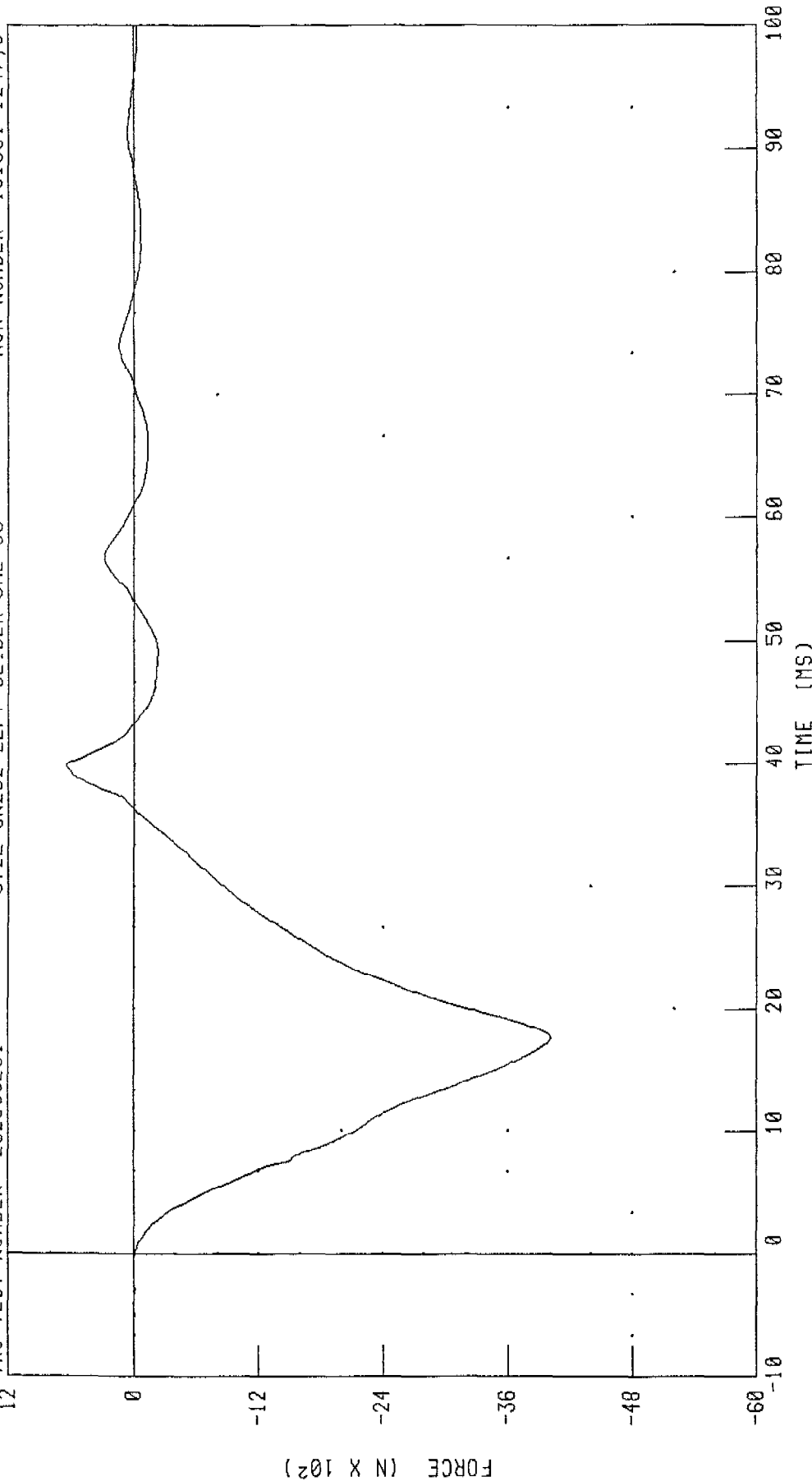


RUN NUMBER: 101601.1243;1

PART 572-E HYBRID III LEFT KNEE SLIDER CALIBRATION

LEFT FEMUR FORCE

TRC TEST NUMBER 202C08LS1 572E SN202 LEFT SLIDER CAL 08 RUN NUMBER 101601 1247,3

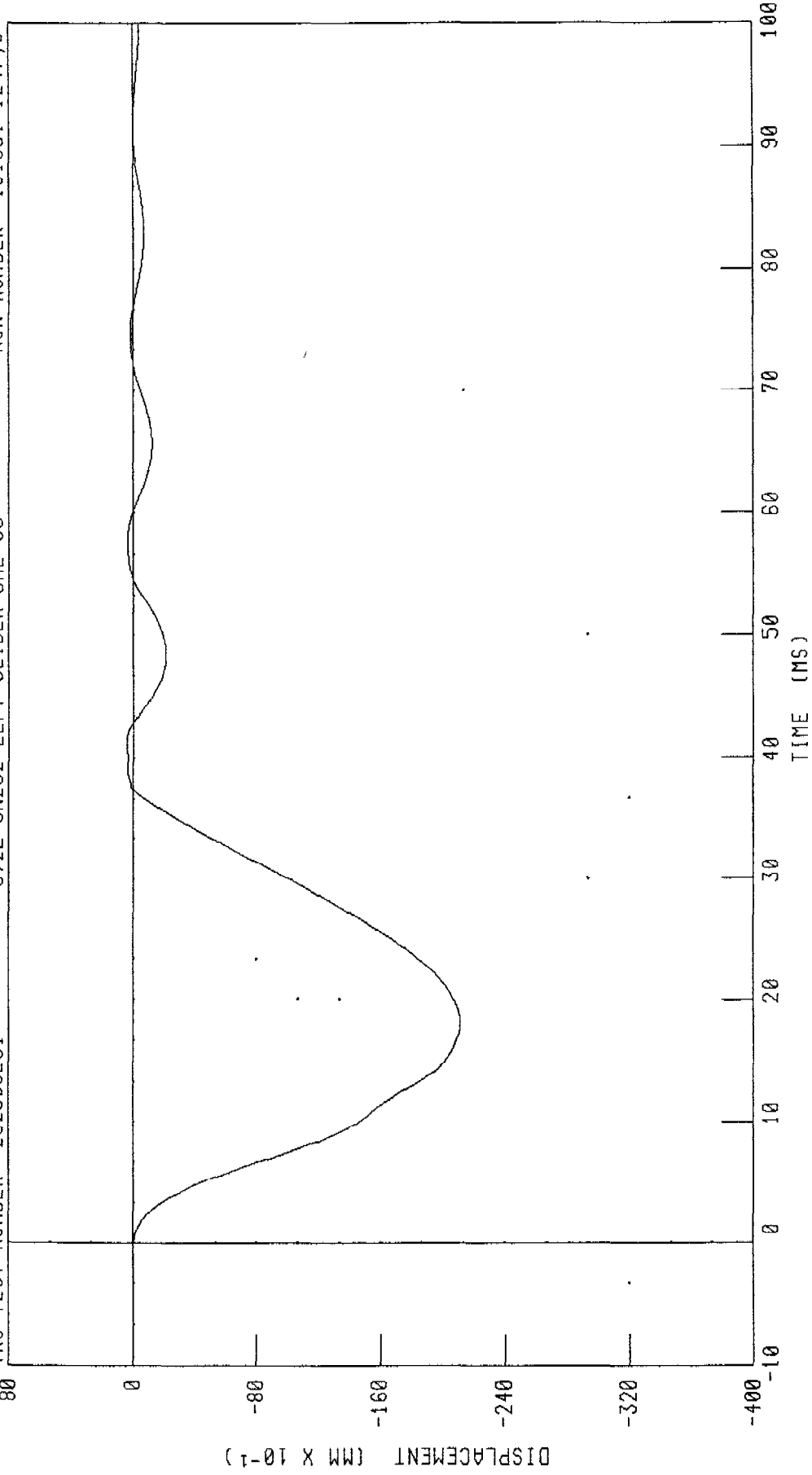


CHANNEL LFMF FILTER CH CLASS 600 PEAK DATA 653 97 N @ 39 84 MS, -4007 86 N @ 17 60 MS

PART 572-E HYBRID III LEFT KNEE SLIDER CALIBRATION

LEFT KNEE DISPLACEMENT

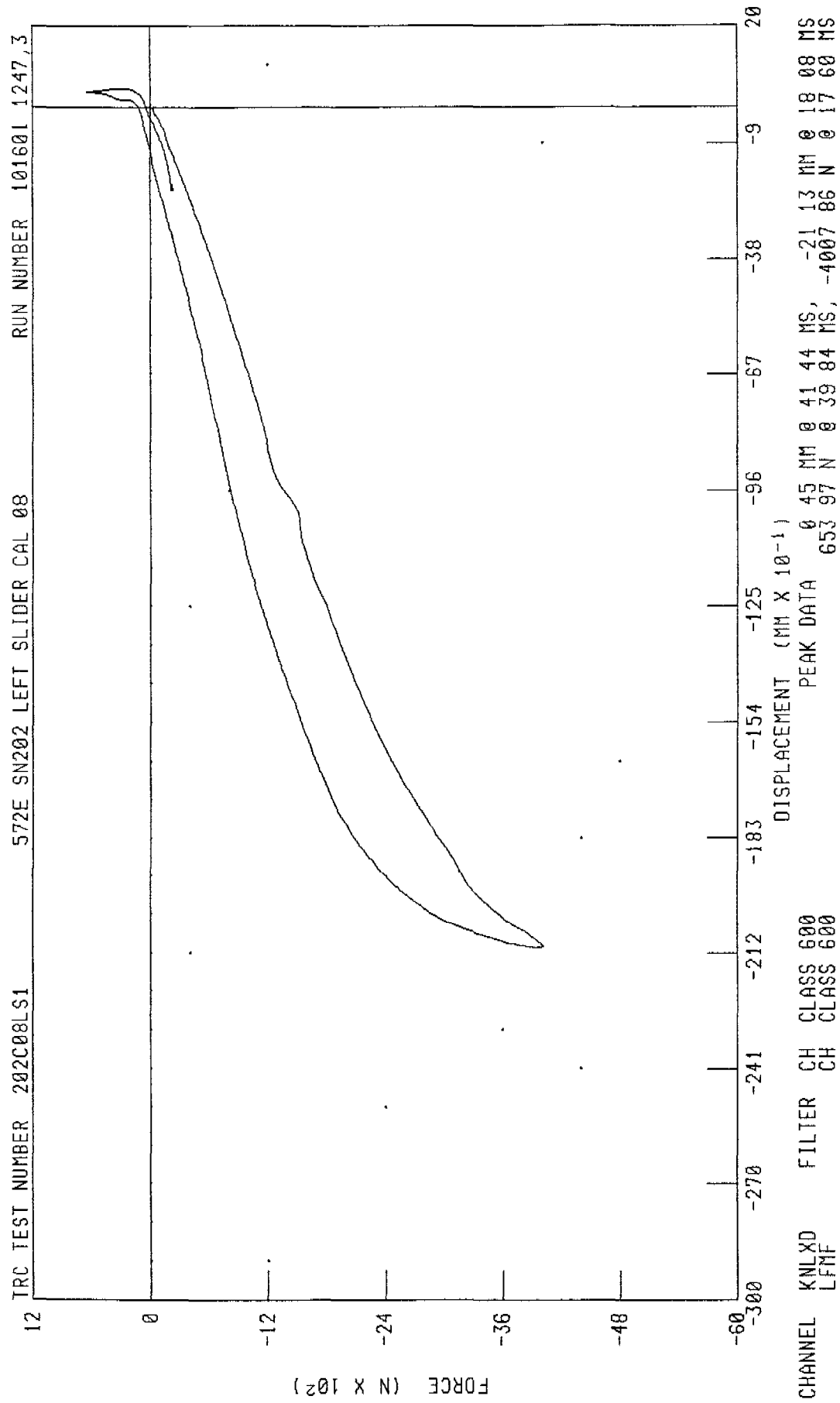
TRC TEST NUMBER 202C08LS1 572E SN202 LEFT SLIDER CAL 08 RUN NUMBER 101601 1247,3



CHANNEL KNLXD FILTER CH CLASS 600 PEAK DATA 0 45 MM 0 41 44 MS, -21 13 MM 0 18 08 MS

PART 572-E HYBRID III LEFT KNEE SLIDER CALIBRATION

LEFT KNEE DISPLACEMENT VS FEMUR FORCE



TRANSPORTATION RESEARCH CENTER INC.

KNEE SLIDER TEST

HYBRID III 50th

16-OCT-01

RIGHT KNEE

TRC INC.

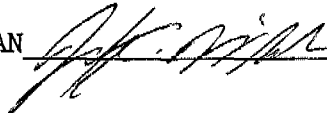
TEST NO: 202C08RS1

572E SN202 RIGHT SLIDER CAL 08

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	39.0 %
PENDULUM VELOCITY	2.70-2.80 M/S	2.76 M/S
FORCE AT 10.0 MM DISPLACEMENT	1259 - 1721 N	1306. N
FORCE AT 18.0 MM DISPLACEMENT	2268 - 3096 N	2568. N

TEST MEETS SPECIFICATIONS

TECHNICIAN

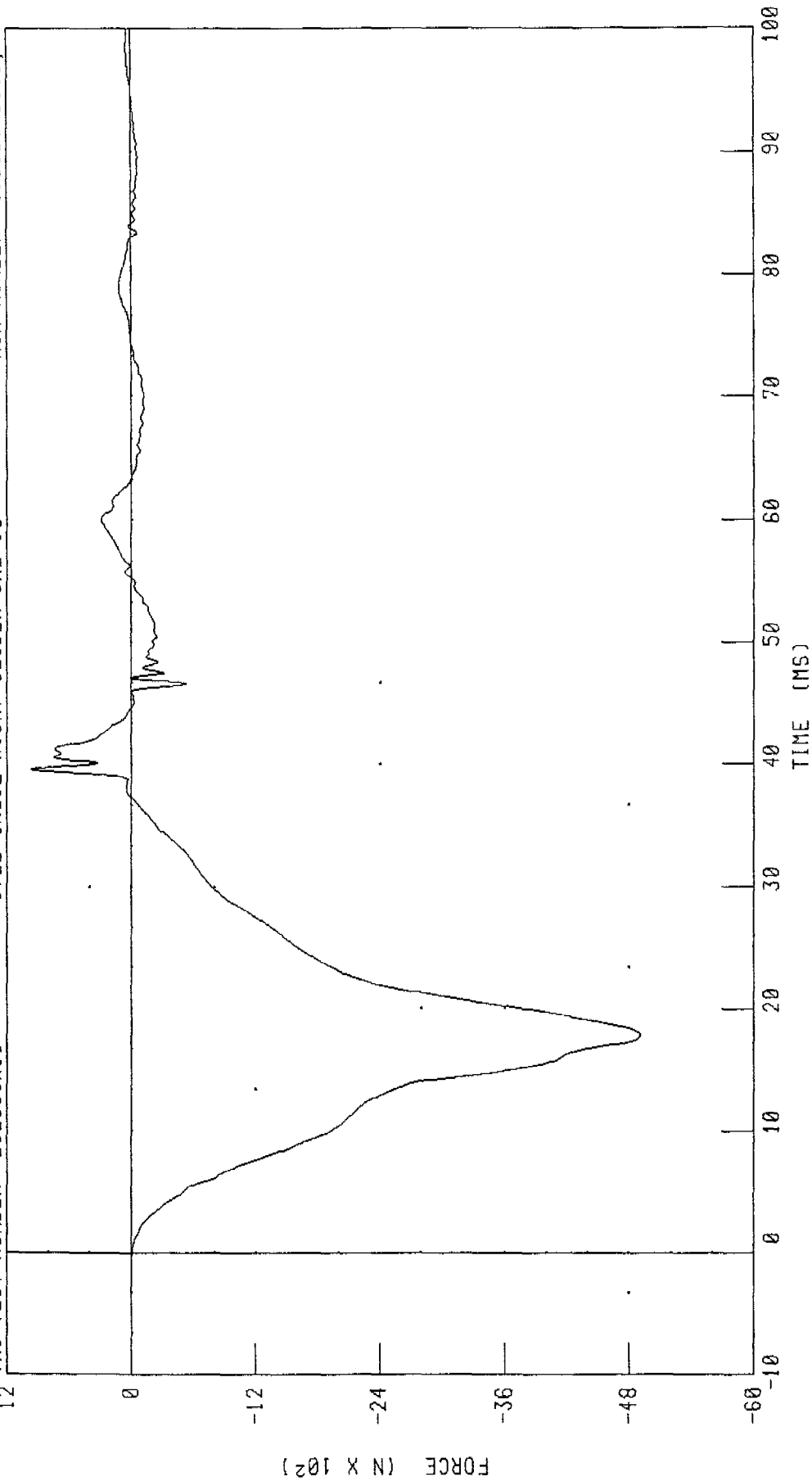


RUN NUMBER: 101601.1301;1

PART 572-E HYBRID III RIGHT KNEE SLIDER CALIBRATION

RIGHT FEMUR FORCE

TRC TEST NUMBER 202C08RS1 572E SN202 RIGHT SLIDER CAL 08 RUN NUMBER 101601 1338,2



CHANNEL RFMF FILTER CH CLASS 600

PEAK DATA 971 14 N @ 39 60 MS, -4902 21 N @ 17 84 MS

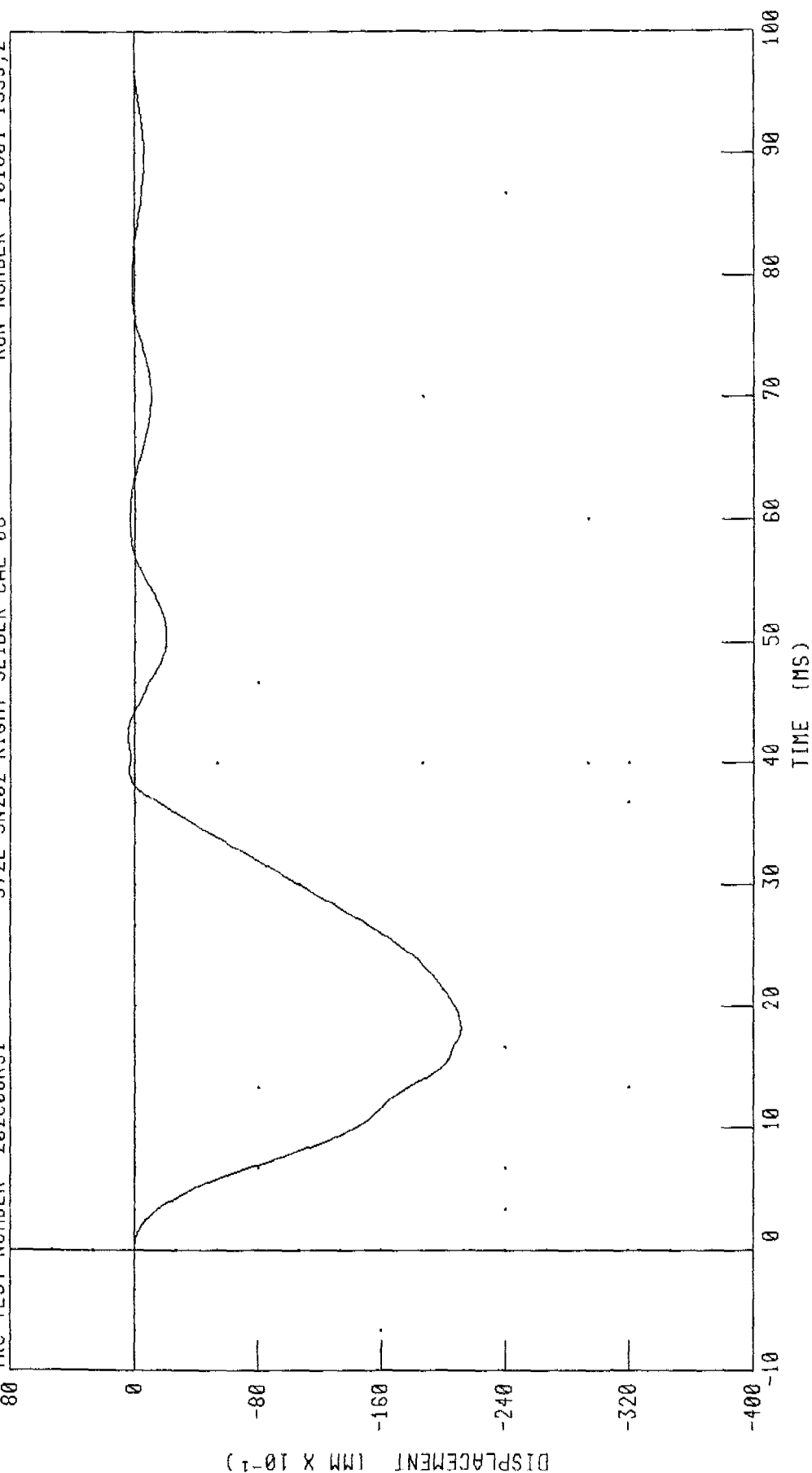
PART 572-E HYBRID III RIGHT KNEE SLIDER CALIBRATION

RIGHT KNEE DISPLACEMENT

TRC TEST NUMBER 202C08RS1

572E SN202 RIGHT SLIDER CAL 08

RUN NUMBER 101601 1338,2



CHANNEL KNRXD FILTER CH CLASS 600

PEAK DATA 0 42 MM 0 42 40 MS, -21 15 MM 0 18 16 MS

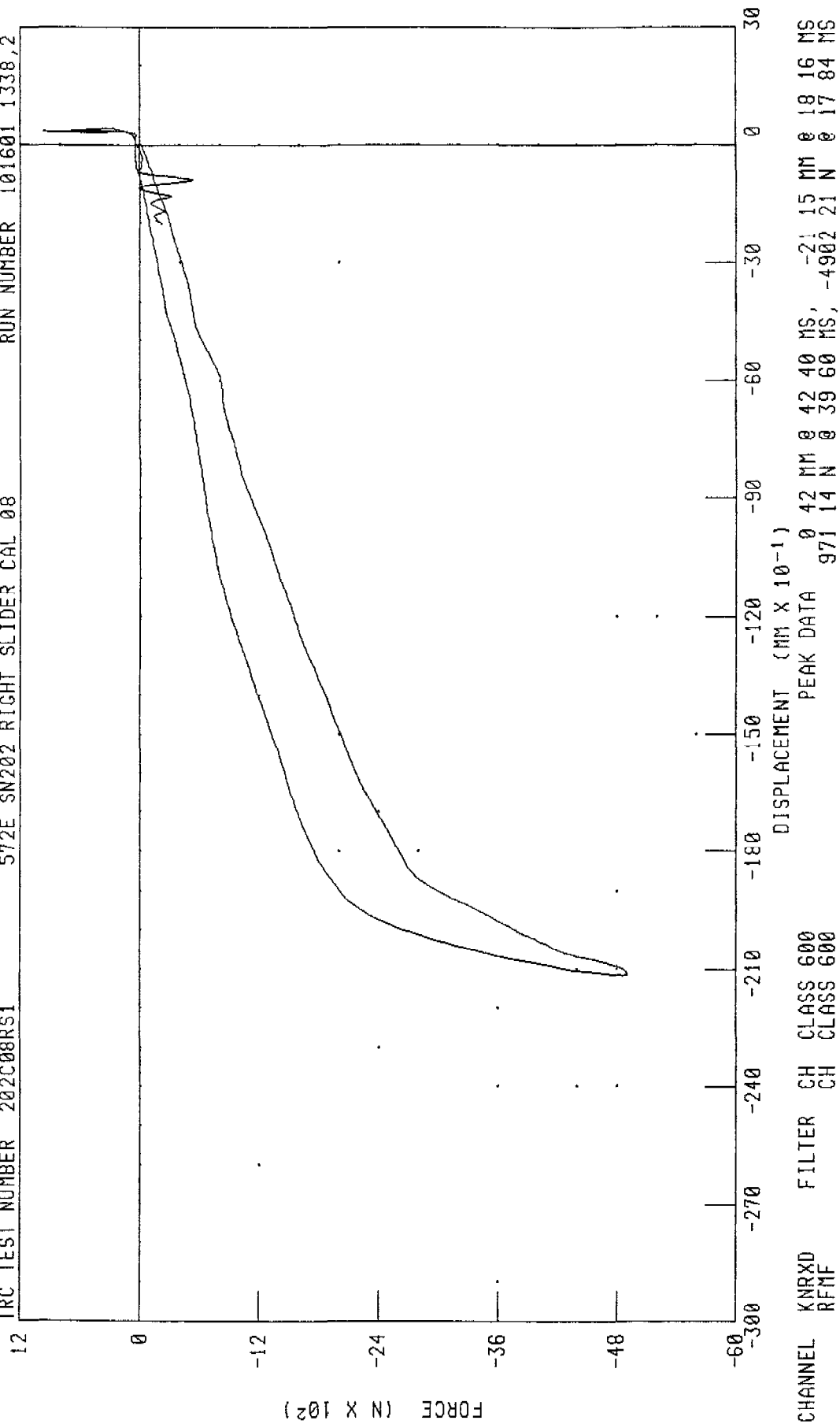
PART 572-E HYBRID III RIGHT KNEE SLIDER CALIBRATION

RIGHT KNEE DISPLACEMENT VS FEMUR FORCE

TRC TEST NUMBER 202C08RS1

572E SN202 RIGHT SLIDER CAL 08

RUN NUMBER 101601 1338,2



Post-Test Dummy Configuration and Performance Verification Data

Driver Dummy S/N: 206

TRANSPORTATION RESEARCH CENTER INC.
HYBRID III EXTERNAL DIMENSIONS

206

25-OCT-01

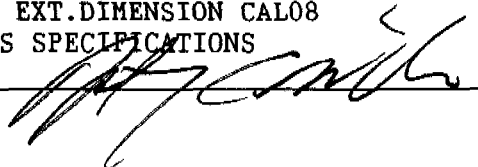
TRC INC. TEST NO: 206C08ED1 572E SN206 EXT.DIMENSION CAL08

TEST PARAMETER	(DIMEN.)	SPECIFICATION	TEST RESULTS
LOCATION FOR CHEST CIRCUMFERENCE (AA)		429 - 434 MM	432. MM
LOCATION FOR WAIST CIRCUMFERENCE (BB)		226 - 231 MM	229. MM
CHEST CIRCUMFERENCE (Y)		970 -1001 MM	993. MM
WAIST CIRCUMFERENCE (Z)		836 - 866 MM	856. MM
CHEST DEPTH (O)		213 - 229 MM	224. MM
H-POINT HEIGHT (C)		84 - 89 MM	86. MM
H-POINT FROM SEATBACK (D)		135 - 140 MM	137. MM
SKULL CAP TO BACKLINE (H)		41 - 46 MM	43. MM
TOTAL SITTING HEIGHT (A)		879 - 889 MM	881. MM
THIGH CLEARANCE (F)		140 - 155 MM	150. MM
BUTTOCK KNEE LENGTH (K)		579 - 605 MM	597. MM
BUTTOCK POPLITEAL LENGTH (N)		452 - 478 MM	470. MM
POPLITEAL HEIGHT (L)		429 - 455 MM	447. MM
KNEE PIVOT HEIGHT (M)		485 - 500 MM	500. MM
FOOT LENGTH (P)		252 - 267 MM	254. MM
FOOT BREADTH (W)		91 - 107 MM	102. MM
SHOULDER PIVOT FROM BACKLINE (E)		84 - 94 MM	89. MM
SHOULDER BREADTH (V)		422 - 437 MM	434. MM
SHOULDER PIVOT HEIGHT (B)		506 - 521 MM	516. MM
ELBOW REST HEIGHT (J)		191 - 211 MM	208. MM
SHOULDER-ELBOW LENGTH (I)		330 - 345 MM	345. MM
BACK OF ELBOW TO WRIST PIVOT (G)		290 - 305 MM	297. MM

572E SN206 EXT.DIMENSION CAL08

DUMMY MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 102501.0858

TRANSPORTATION RESEARCH CENTER INC.

HEAD DROP TEST

HYBRID III 50th

23-OCT-01

TRC INC.

TEST NO: 206C08HD1

572E SN206 HEAD DROP CAL 08

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	60.0 %
PEAK RESULTANT ACCELERATION	225 - 275 G	270.77 G
PEAK LATERAL ACCELERATION	15 G MAX	3.01 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 102301.1311;1

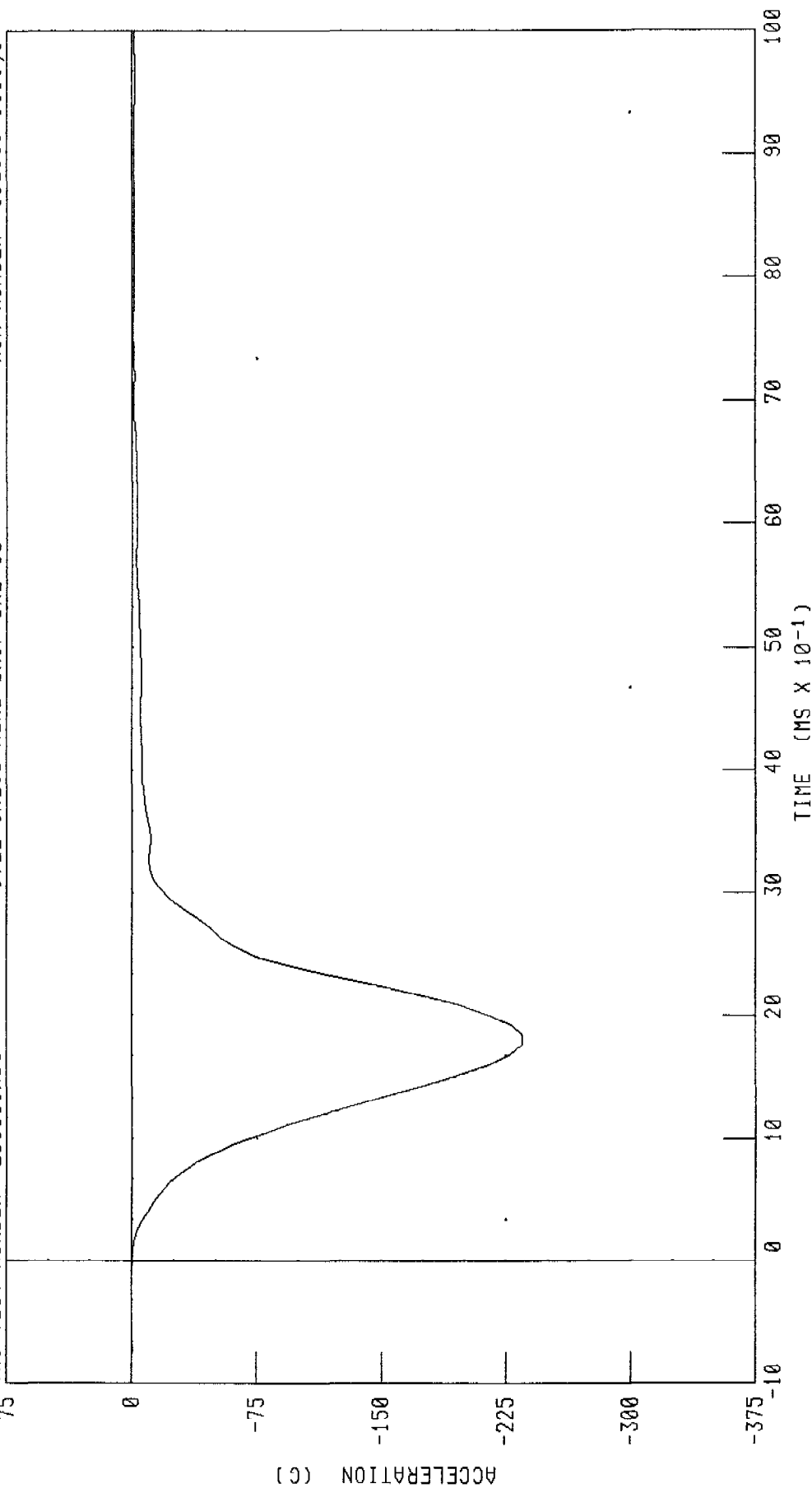
PART 572-E HYBRID III HEAD CALIBRATION

HEAD ACCELERATION X AXIS

TRC TEST NUMBER 206C08HD1

572E SN206 HEAD DROP CAL 08

RUN NUMBER 102301 1311,1



CHANNEL HEDXC FILTER CH CLASS 1000

PEAK DATA 0 06 G 0 -0 48 MS, -234 89 G 0 1 84 MS

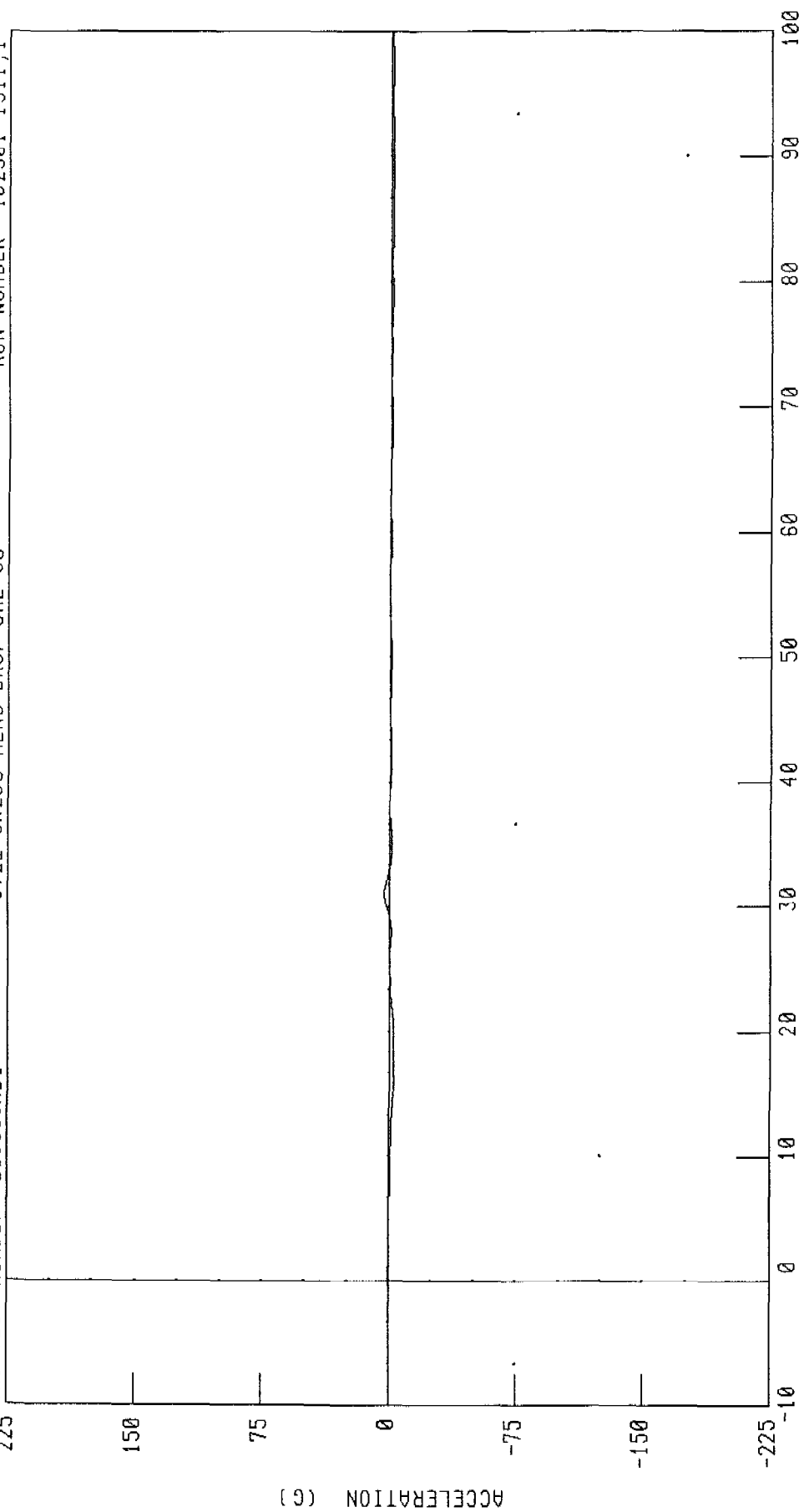
PART 572-E HYBRID III HEAD CALIBRATION

HEAD ACCELERATION Y AXIS

TRC TEST NUMBER 206C08HD1

572E SN206 HEAD DROP CAL 08

RUN NUMBER 102301 1311,1



PEAK DATA 3 01 G @ 3 12 MS, -2 87 G @ 1 84 MS

CHANNEL HEDYC FILTER CH CLASS 1000

PART 572-E HYBRID III HEAD CALIBRATION

HEAD ACCELERATION Z AXIS

572E SN206 HEAD DROP CAL 08

TRC TEST NUMBER 206C08HD1

375

300

225

150

75

0

-75

-10

0

10

20

30

40

50

60

70

80

90

100

TIME (MS X 10⁻¹)

PEAK DATA 134 68 C 0 1 84 MS, -1 01 G 0 9 12 MS

CHANNEL HEDZG FILTER CH CLASS 1000

RUN NUMBER 102301 1311,1

ACCELERATION (G)

375

300

225

150

75

0

-75

-10

0

10

20

30

40

50

60

70

80

90

100

TIME (MS X 10⁻¹)

PEAK DATA 134 68 C 0 1 84 MS, -1 01 G 0 9 12 MS

CHANNEL HEDZG FILTER CH CLASS 1000

RUN NUMBER 102301 1311,1

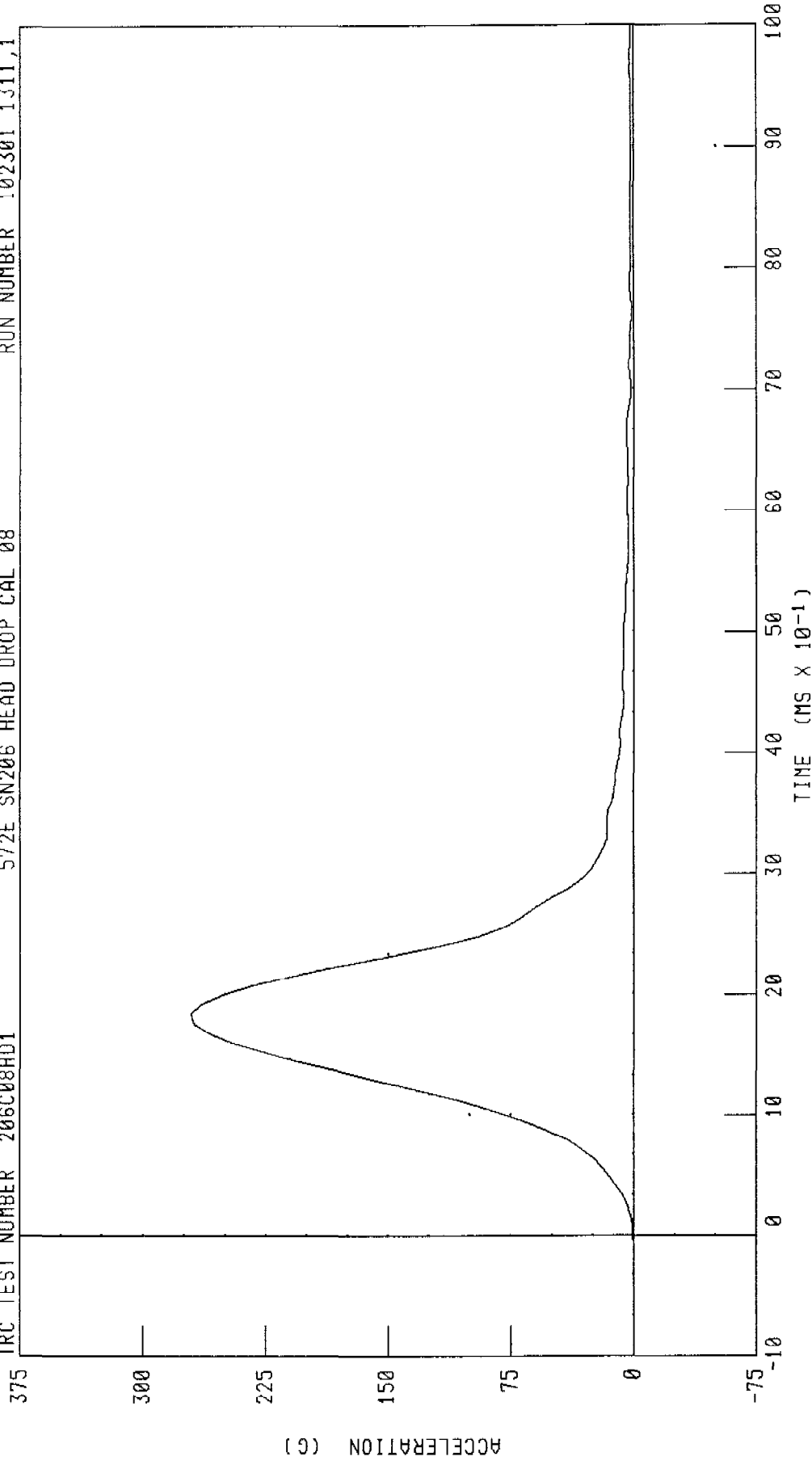
PART 572-E HYBRID III HEAD CALIBRATION

HEAD RESULTANT ACCELERATION

572E SN206 HEAD DROP CAL 08

TRC TEST NUMBER 206C08HD1

RUN NUMBER 102301 1311,1



CHANNEL HEDRC FILTER CH CLASS 1000

PEAK DATA 270 78 G 0 1 84 MS, 0 03 G 0 -0 96 MS

TRANSPORTATION RESEARCH CENTER INC.

HYBRID III 50th

24-OCT-01

NECK FLEXION TEST - 6 CHANNEL TRANSDUCER

TRC INC. TEST NO: 206C08NF1 572E SN206 NECK FLEXION CAL08

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6-22.2 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY		10 - 70 %	60.0 %
IMPACT VELOCITY		6.89 - 7.13 M/S	6.93 M/S
PENDULUM DECELERATION	10 MS	22.50 - 27.50 G	24.67 G
	20 MS	17.60 - 22.60 G	21.53 G
	30 MS	12.50 - 18.50 G	18.44 G
MAX PENDULUM G		29 G MAX	25.46 G
MAX PENDULUM G ABOVE 30 MS		29 G MAX	18.35 G
DECELERATION-TIME CURVE DECAY TIME TO 5 G		34 - 42 MS	37.76 MS
D PLANE	MAX	64 - 78 DEG.	73.70 DEG.
ROTATION	TIME	57 - 64 MS	60.16 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MAX	88.2 - 108.5 NM	98.38 NM
	TIME	47 - 58 MS	50.96 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		113 - 128 MS	121.68 MS
POSITIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		97 - 107 MS	103.60 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN *JP C. Miller*

RUN NUMBER: 102401.1105;2

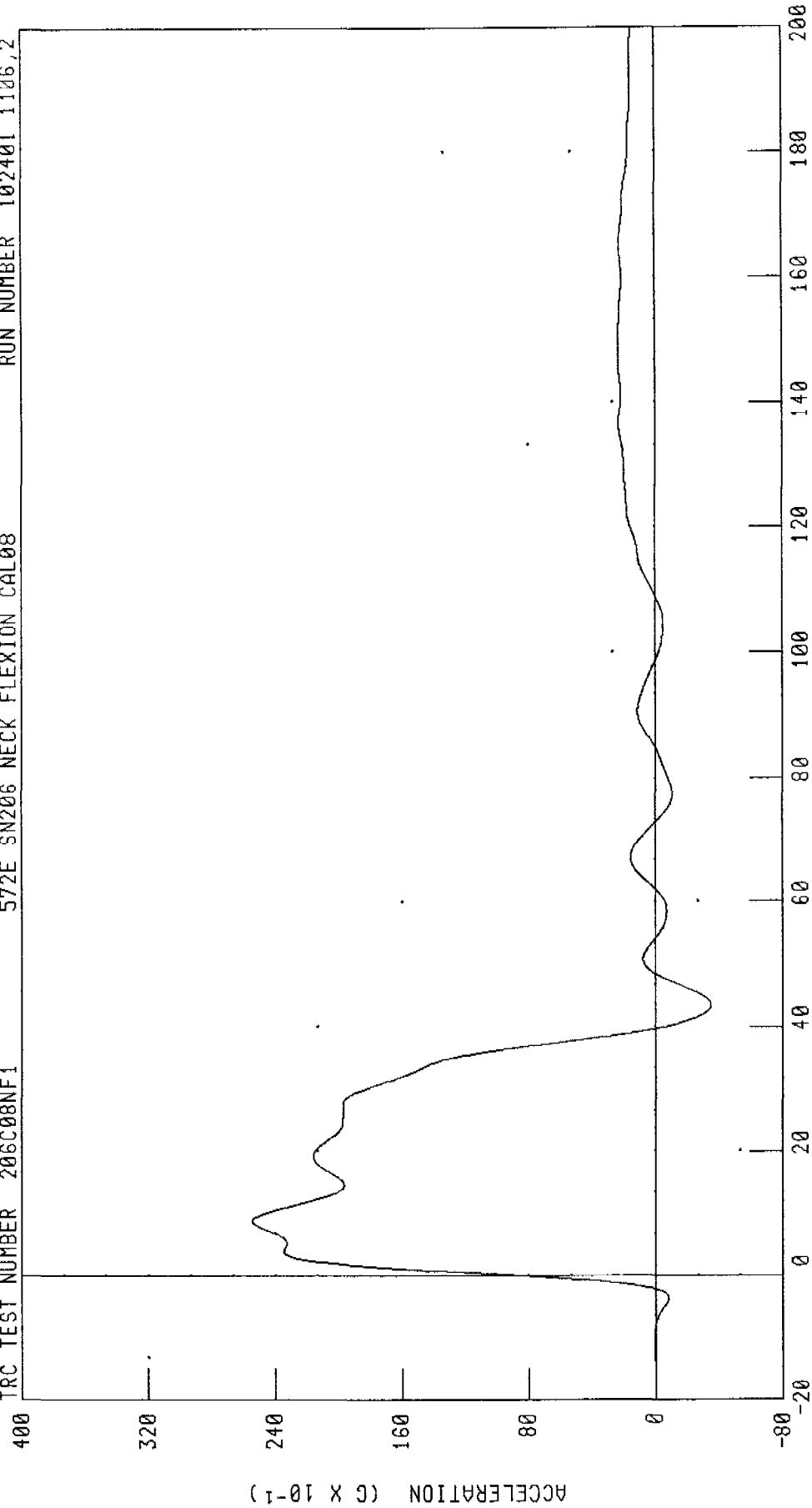
PART 572-E HYBRID III NECK FLEXION CALIBRATION

PENDULUM DECELERATION

TRC TEST NUMBER 206C08NF1

572E SN206 NECK FLEXION CAL08

RUN NUMBER 102401 1106,2



CHANNEL PENXC

FILTER CH CLASS 60

PEAK DATA 25 46 G 0 8 72 MS, -3 50 G 0 43 52 MS

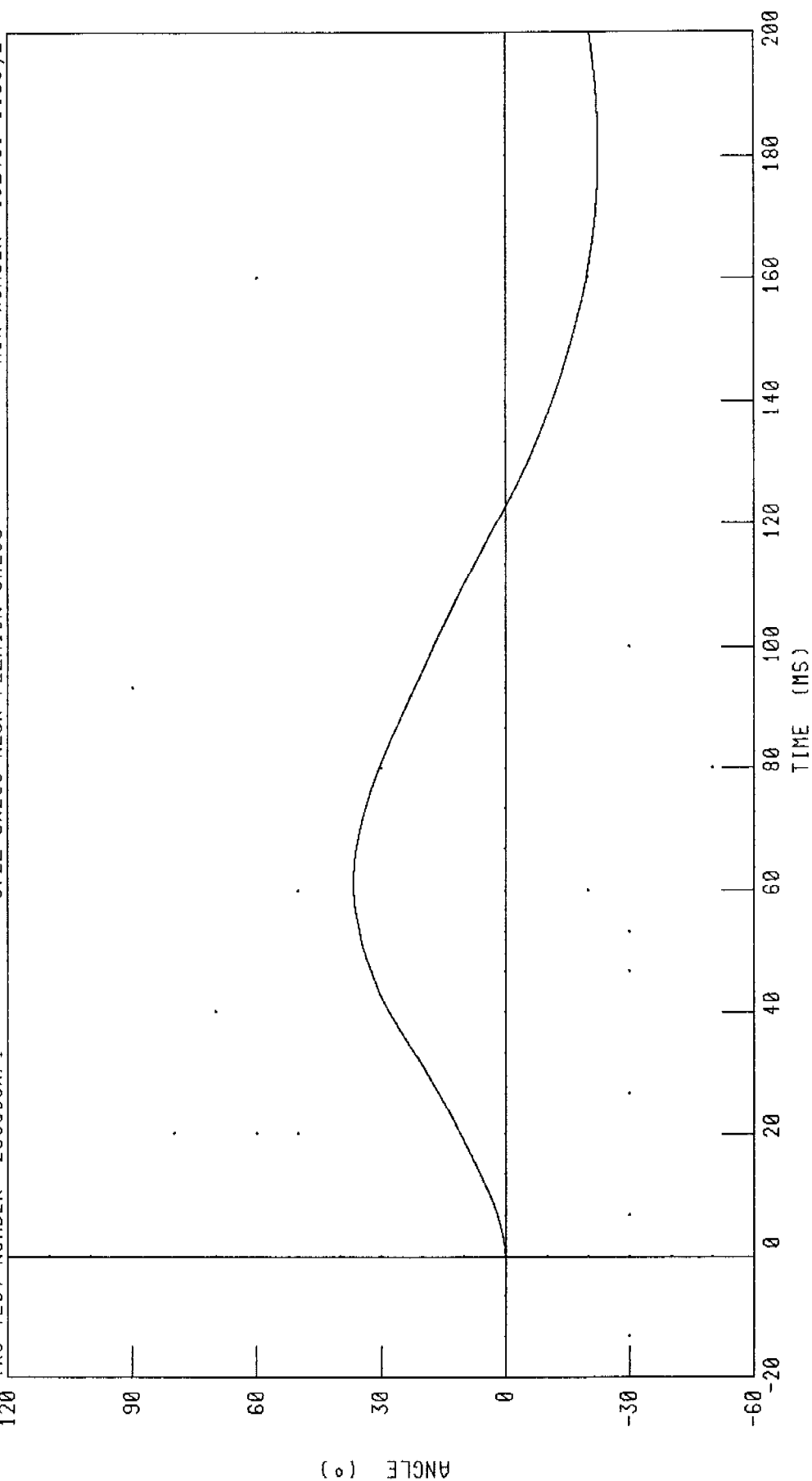
PART 572-E HYBRID III NECK FLEXION CALIBRATION

ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER 206C08NF1

572E SN206 NECK FLEXION CAL08

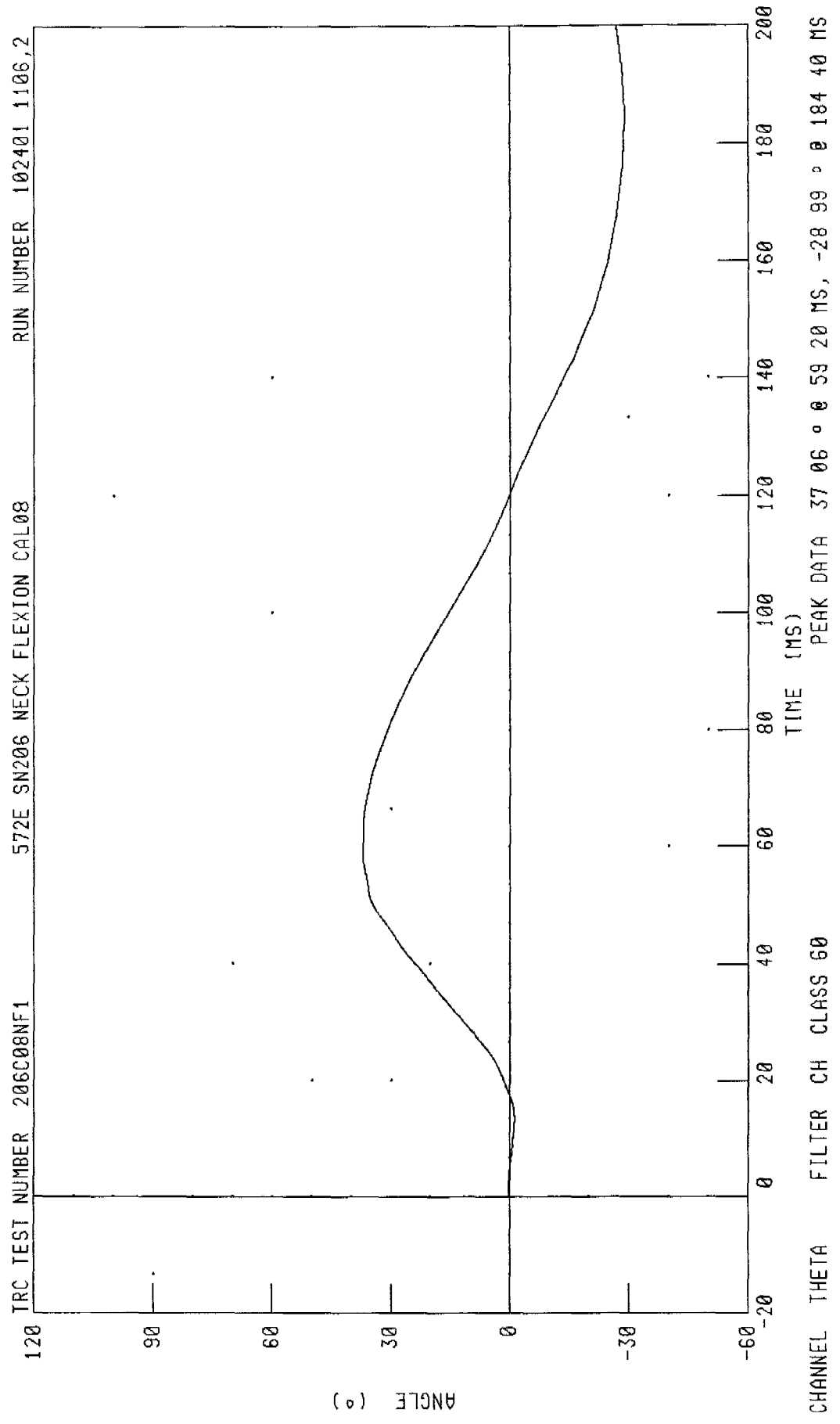
RUN NUMBER 102401 1106,2



PEAK DATA 36 68 ° @ 61 12 MS, -22 48 ° @ 181 28 MS

CHANNEL BETA FILTER CH CLASS 60

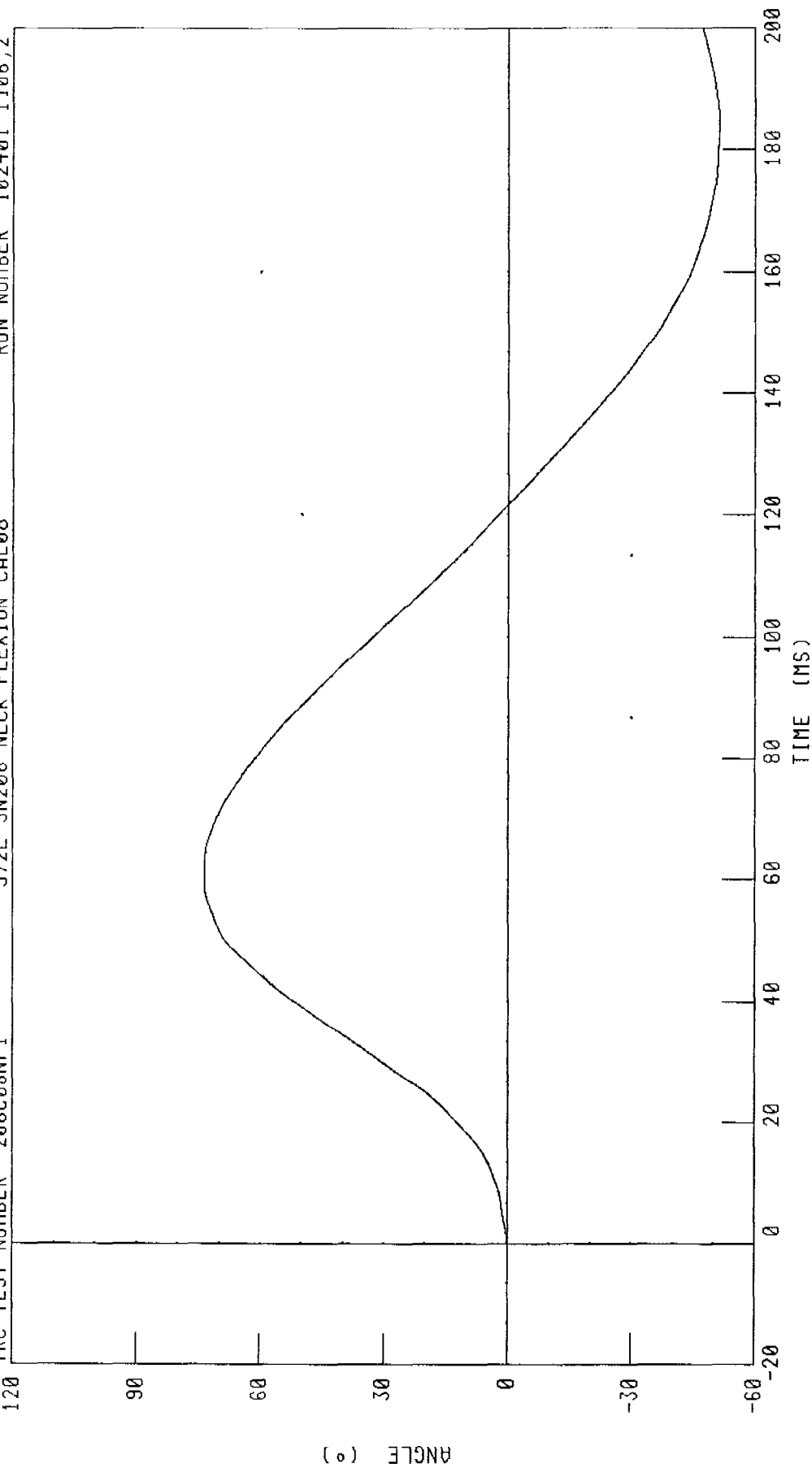
PART 572-E HYBRID III NECK FLEXION CALIBRATION
 ROTATION ABOUT OCCIPITAL CONDYLE



PART 572-E HYBRID III NECK FLEXION CALIBRATION

TOTAL ROTATION

TRC TEST NUMBER 206C08NF1 572E SN206 NECK FLEXION CAL08 RUN NUMBER 102401 1106,2



CHANNEL TOTAL FILTER CH CLASS 60 PEAK DATA 73 71 ° @ 60 16 MS, -51 43 ° @ 183 76 MS

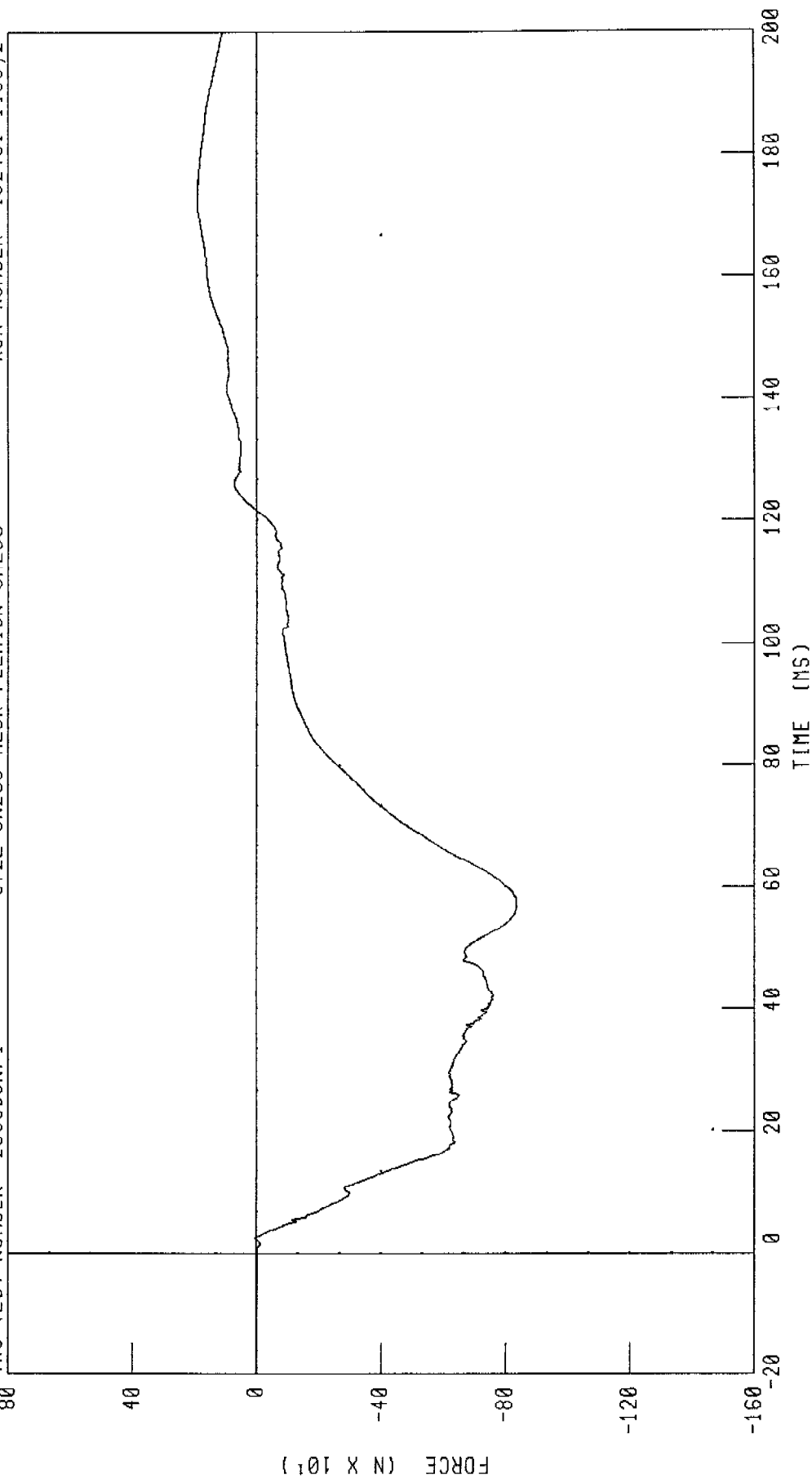
PART 572-E HYBRID III NECK FLEXION CALIBRATION

NECK FORCE X AXIS

TRC TEST NUMBER 206C08NF1

572E SN206 NECK FLEXION CAL08

RUN NUMBER 102401 1106,2



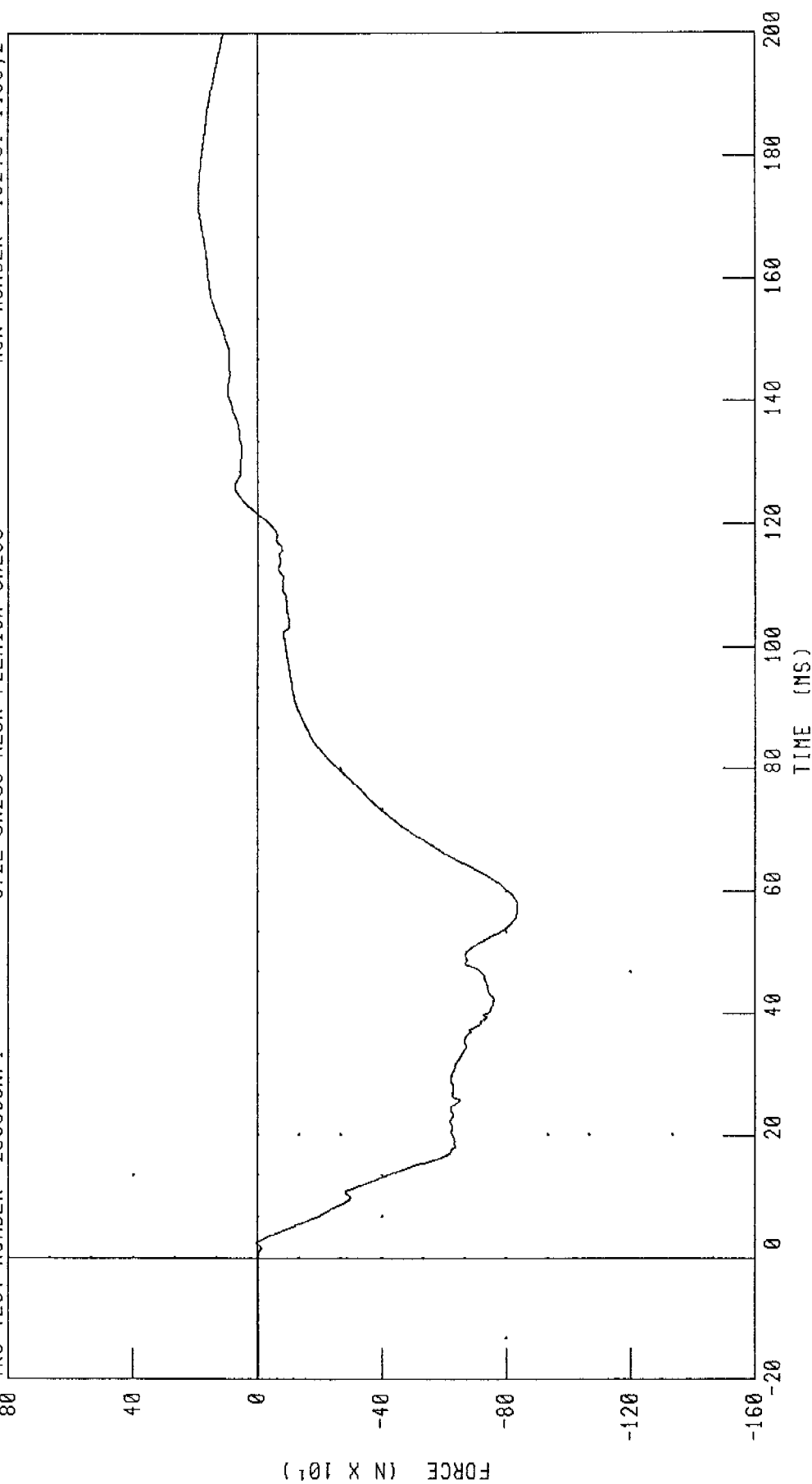
CHANNEL NEKXF FILTER CH CLASS 1000

PEAK DATA 191 94 N 0 172 00 MS, -836 79 N 0 56 80 MS

PART 572-E HYBRID III NECK FLEXION CALIBRATION

NECK FORCE X AXIS FILTERED FOR USE IN OCCIPITAL MOMENT CALCULATION

TRC TEST NUMBER 206C08NF1 572E SN206 NECK FLEXION CAL08 RUN NUMBER 102401 1106,2



CHANNEL NEKXFC FILTER CH CLASS 600 PEAK DATA 191 66 N @ 172 00 MS, -836 53 N @ 56 96 MS

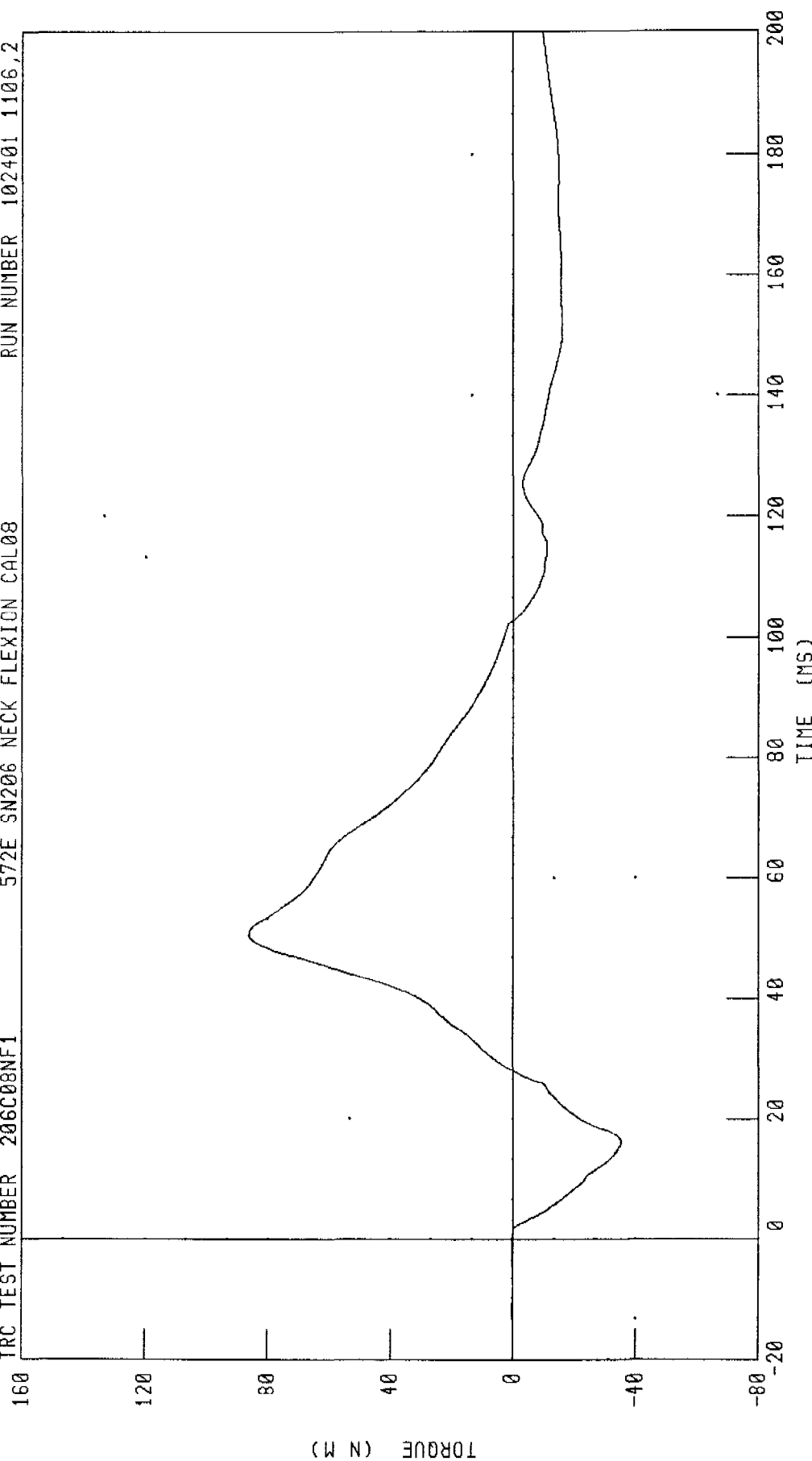
PART 572-E HYBRID III NECK FLEXION CALIBRATION

NECK MOMENT Y AXIS

TRC TEST NUMBER 206C08NF1

572E SN206 NECK FLEXION CAL08

RUN NUMBER 102401 1106,2



PEAK DATA 86 08 N M 0 50 56 MS, -35 37 N M 0 16 16 MS

CHANNEL NEKYM FILTER CH CLASS 600

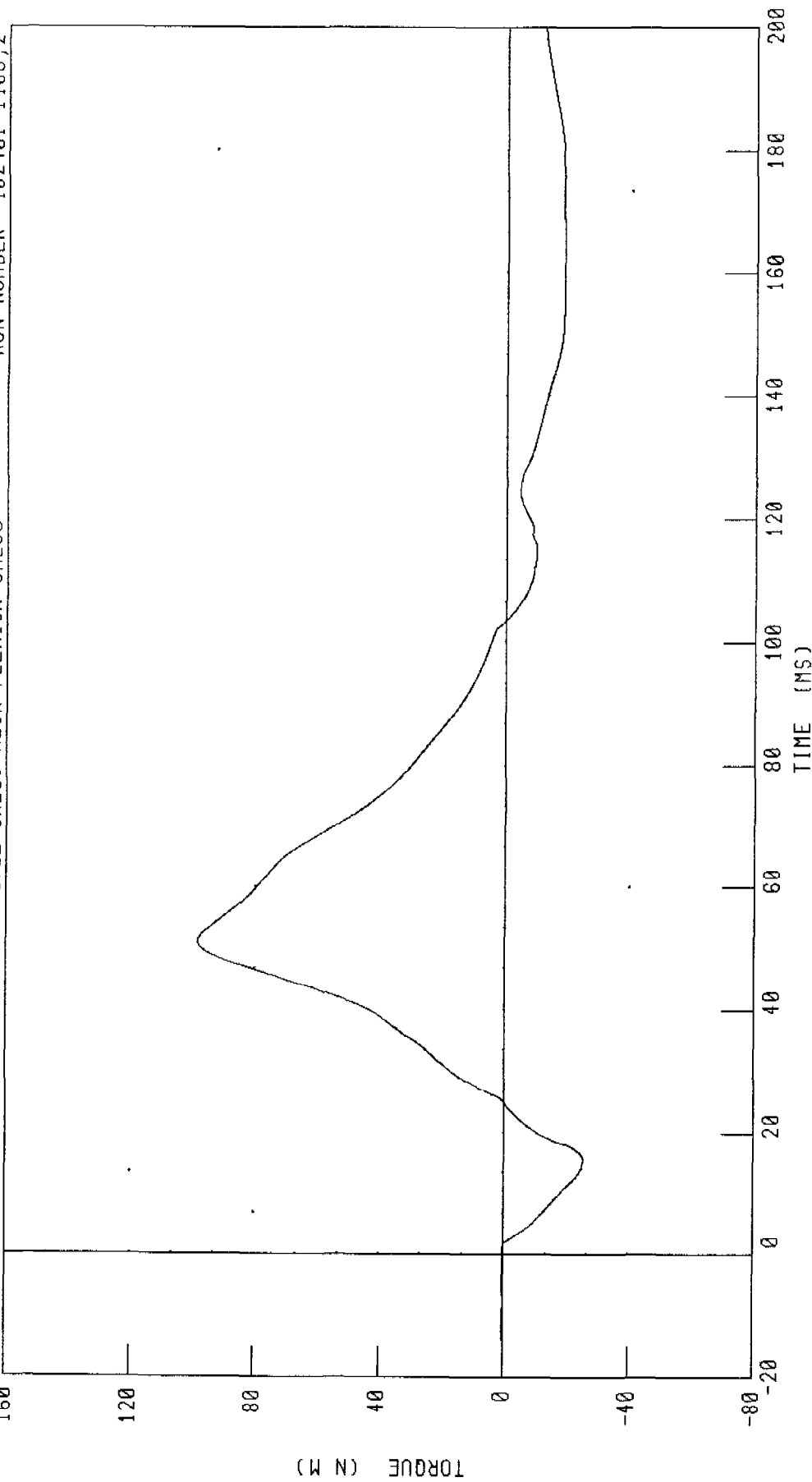
PART 572-E HYBRID III NECK FLEXION CALIBRATION

TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER 206C08NF1

572E SN206 NECK FLEXION CAL08

RUN NUMBER 102401 1106,2



TIME (MS)

CHANNEL NEKOM

FILTER CH CLASS 600

PEAK DATA 98 38 N M @ 50 96 MS, -25 50 N M @ 15 36 MS

TRANSPORTATION RESEARCH CENTER INC.

HYBRID III 50th

24-OCT-01

NECK EXTENSION TEST - 6 CHANNEL TRANSDUCER

TRC INC. TEST NO: 206C08NE1 572E SN206 NECK EXT CAL08

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6 - 22.2 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY		10 - 70 %	61.0 %
IMPACT VELOCITY		5.95 - 6.19 M/S	6.00 M/S
PENDULUM DECELERATION	10 MS	17.20 - 21.20 G	18.30 G
	20 MS	14.00 - 19.00 G	17.81 G
	30 MS	11.00 - 16.00 G	15.58 G
MAX PENDULUM G		22 G MAX	18.44 G
MAX PENDULUM G ABOVE 30 MS		22 G MAX	15.56 G
DECELERATION-TIME CURVE DECAY TIME TO 5 G		38 - 46 MS	41.60 MS
D PLANE	MAX	81 - 106 DEG.	99.35 DEG.
ROTATION	TIME	72 - 82 MS	79.52 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MIN	-80.0/-52.9 NM	-67.86 NM
	TIME	65 - 79 MS	74.00 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		147 - 174 MS	160.64 MS
NEGATIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		120 - 148 MS	146.88 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN _____

RUN NUMBER: 102401.1225;1

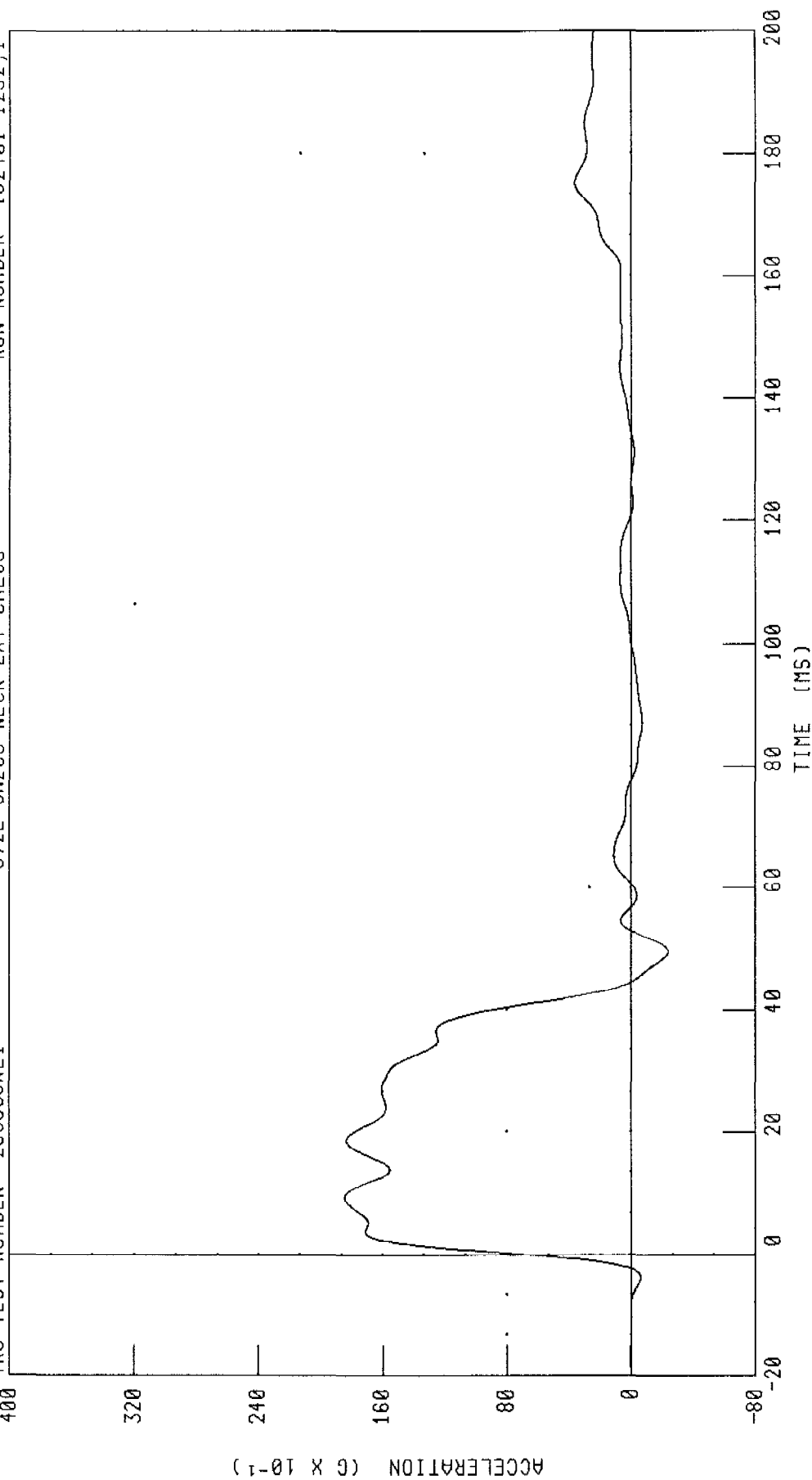
PART 572-E HYBRID III NECK EXTENSION CALIBRATION

PENDULUM DECELERATION

TRC TEST NUMBER 206C08NE1

572E SN206 NECK EXT CAL08

RUN NUMBER 102401 1232,1



PEAK DATA 18 45 G 0 9 28 MS, -2 38 G 0 49 60 MS

CHANNEL PENXC FILTER CH CLASS 60

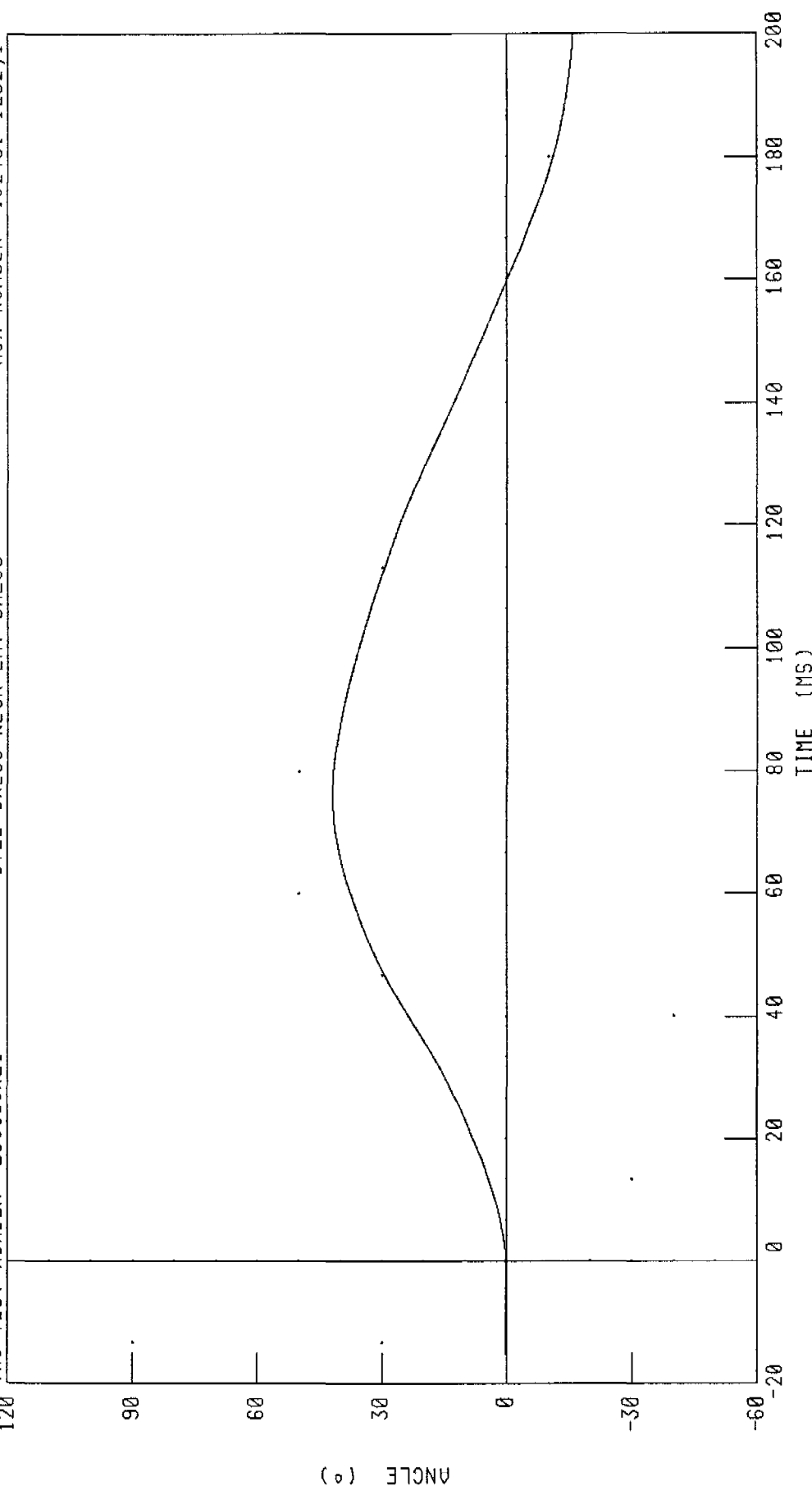
PART 572-E HYBRID III NECK EXTENSION CALIBRATION

ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER 206C08NE1

572E SN206 NECK EXT CAL08

RUN NUMBER 102401 1232,1



PEAK DATA 41 79 ° @ 77 44 MS, -15 97 ° @ 200 00 MS

CHANNEL BETA FILTER CH CLASS 60

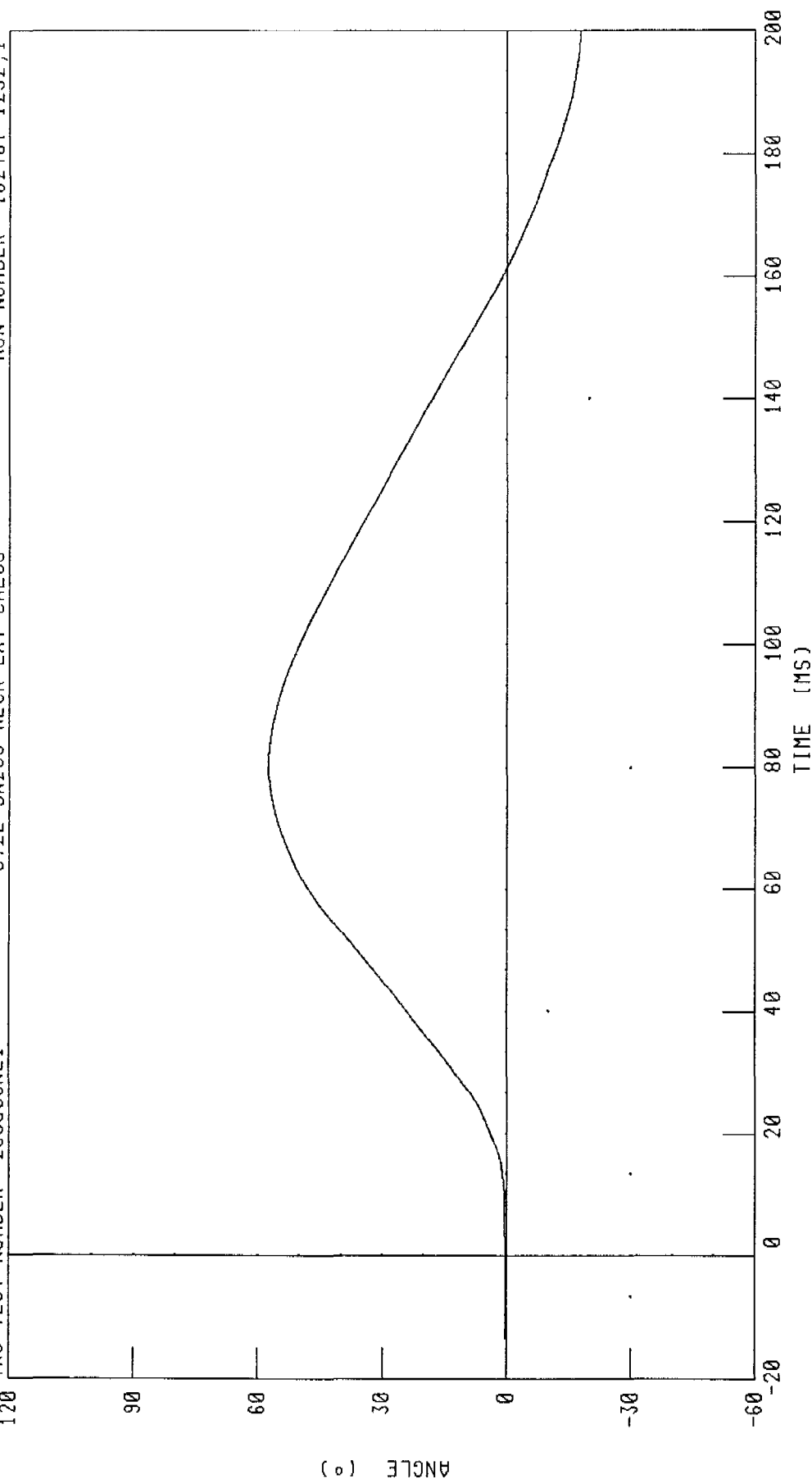
PART 572-E HYBRID III NECK EXTENSION CALIBRATION

ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER 206C08NE1

572E SN206 NECK EXT CAL08

RUN NUMBER 102401 1232,1



CHANNEL THETA FILTER CH CLASS 60 PEAK DATA 57 61 ° @ 80 16 MS, -17 88 ° @ 200 00 MS

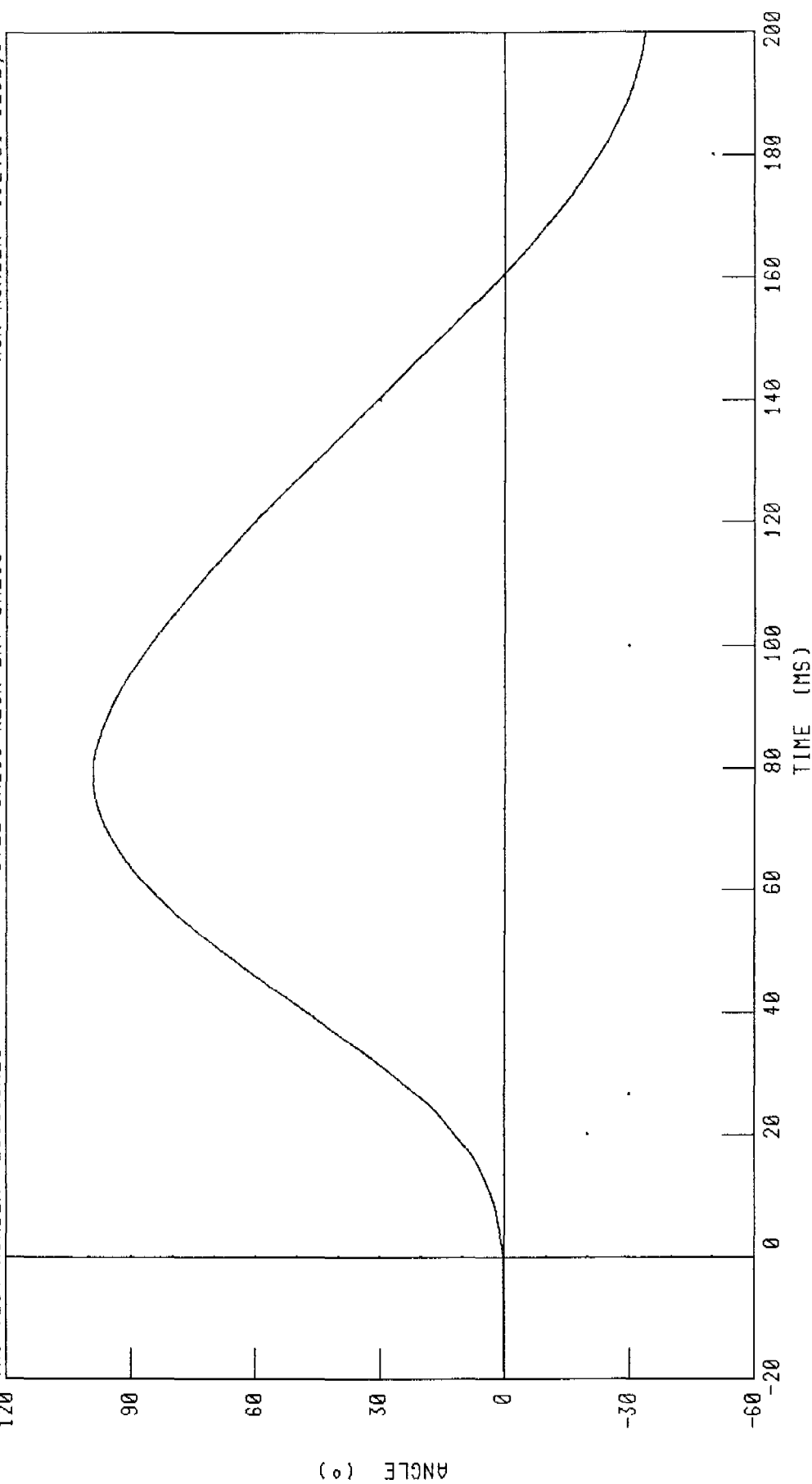
PART 572-E HYBRID III NECK EXTENSION CALIBRATION

TOTAL ROTATION

TRC TEST NUMBER 206C08NE1

572E SN206 NECK EXT CAL08

RUN NUMBER 102401 1232,1



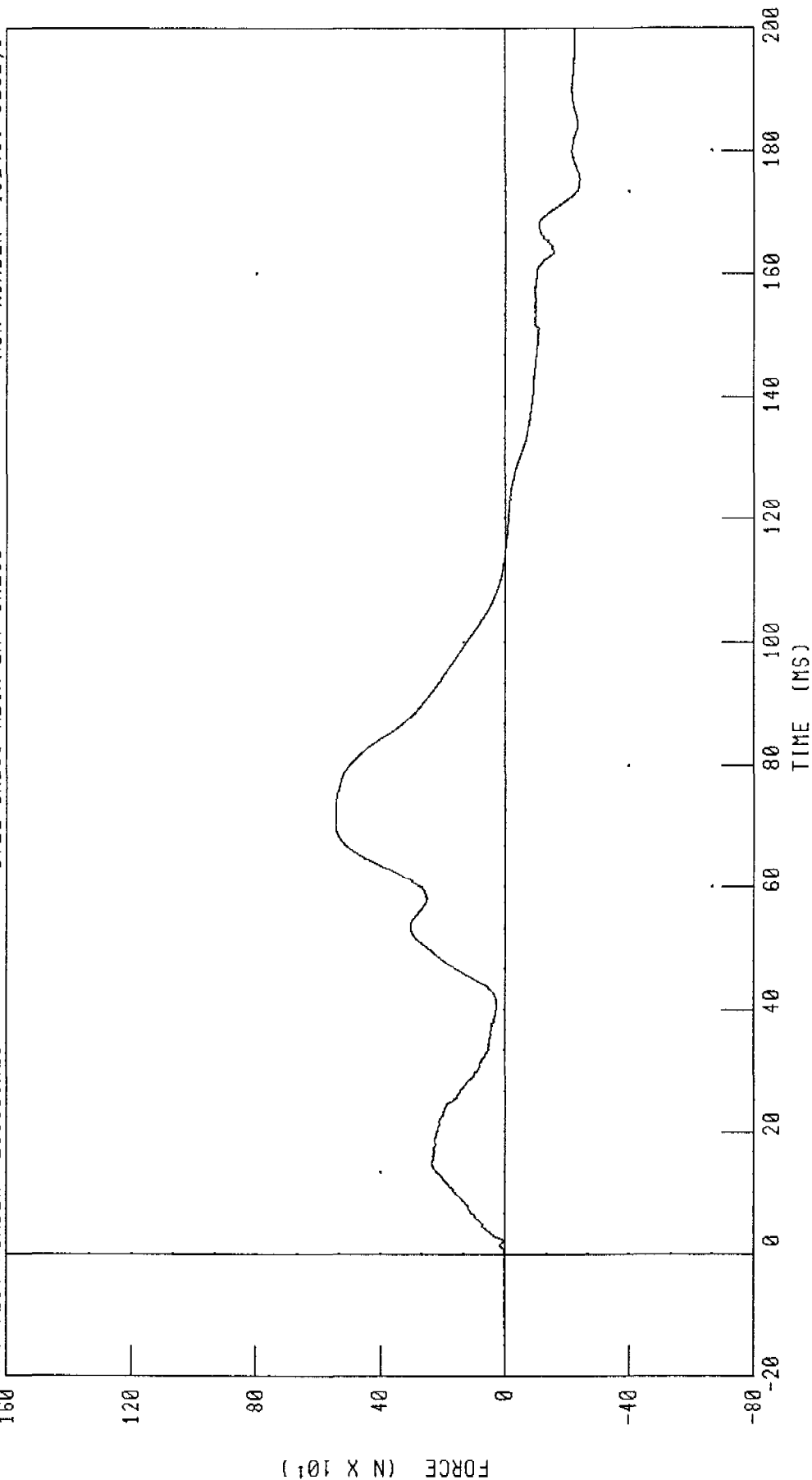
CHANNEL TOTAL FILTER CH CLASS 60

PEAK DATA 99 36 ° @ 79 52 MS, -33 86 ° @ 200 00 MS

PART 572-E HYBRID III NECK EXTENSION CALIBRATION

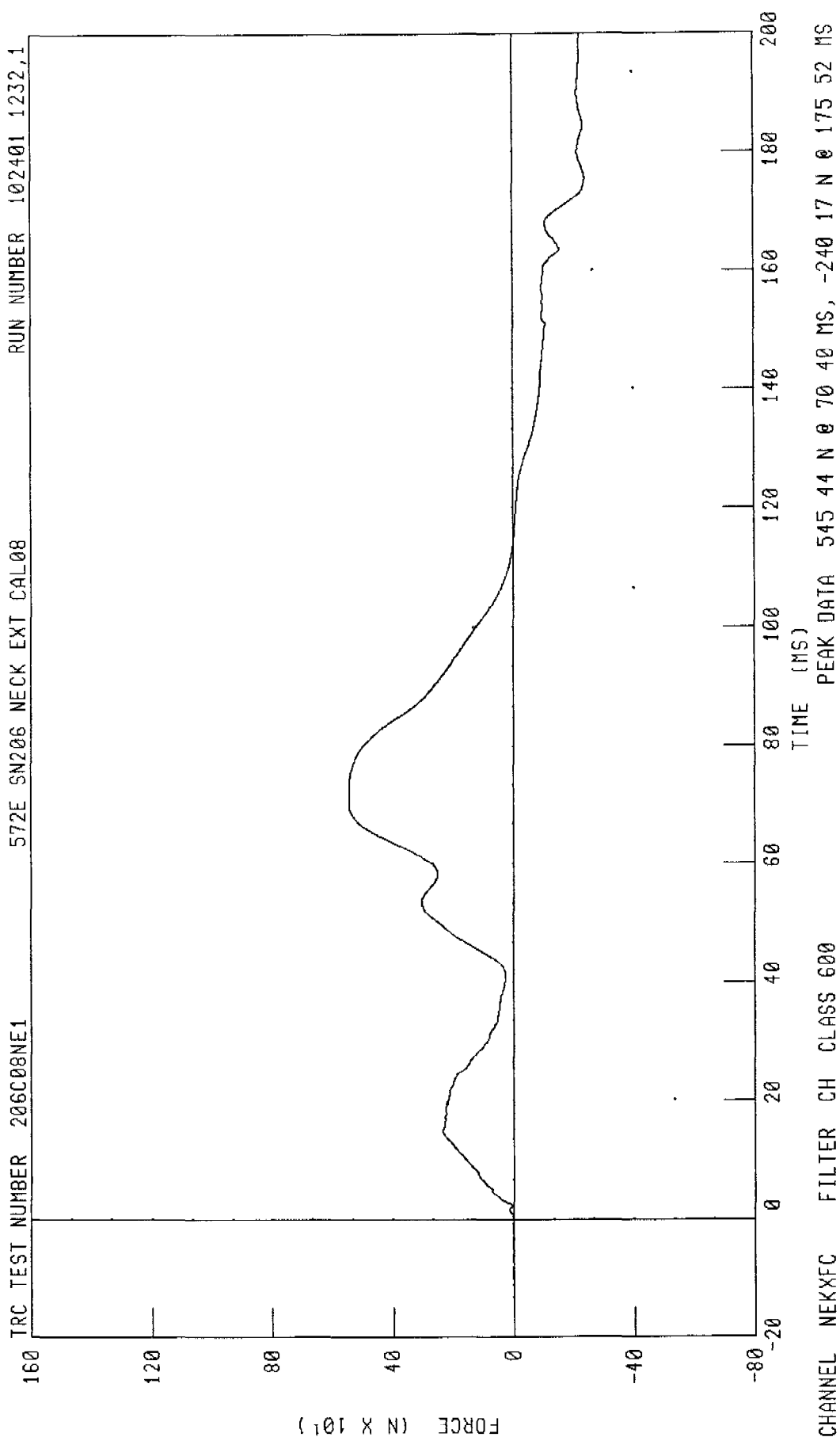
NECK FORCE X AXIS

TRC TEST NUMBER 206C00NE1 572E SN206 NECK EXT CAL08 RUN NUMBER 102401 1232,1



CHANNEL NEKXF FILTER CH CLASS 1000 PEAK DATA 545 87 N @ 70 24 MS, -240 62 N @ 175 44 MS

PART 572-E HYBRID III NECK EXTENSION CALIBRATION
NECK FORCE X AXIS FILTERED FOR USE IN OCCIPITAL MOMENT CALCULATION



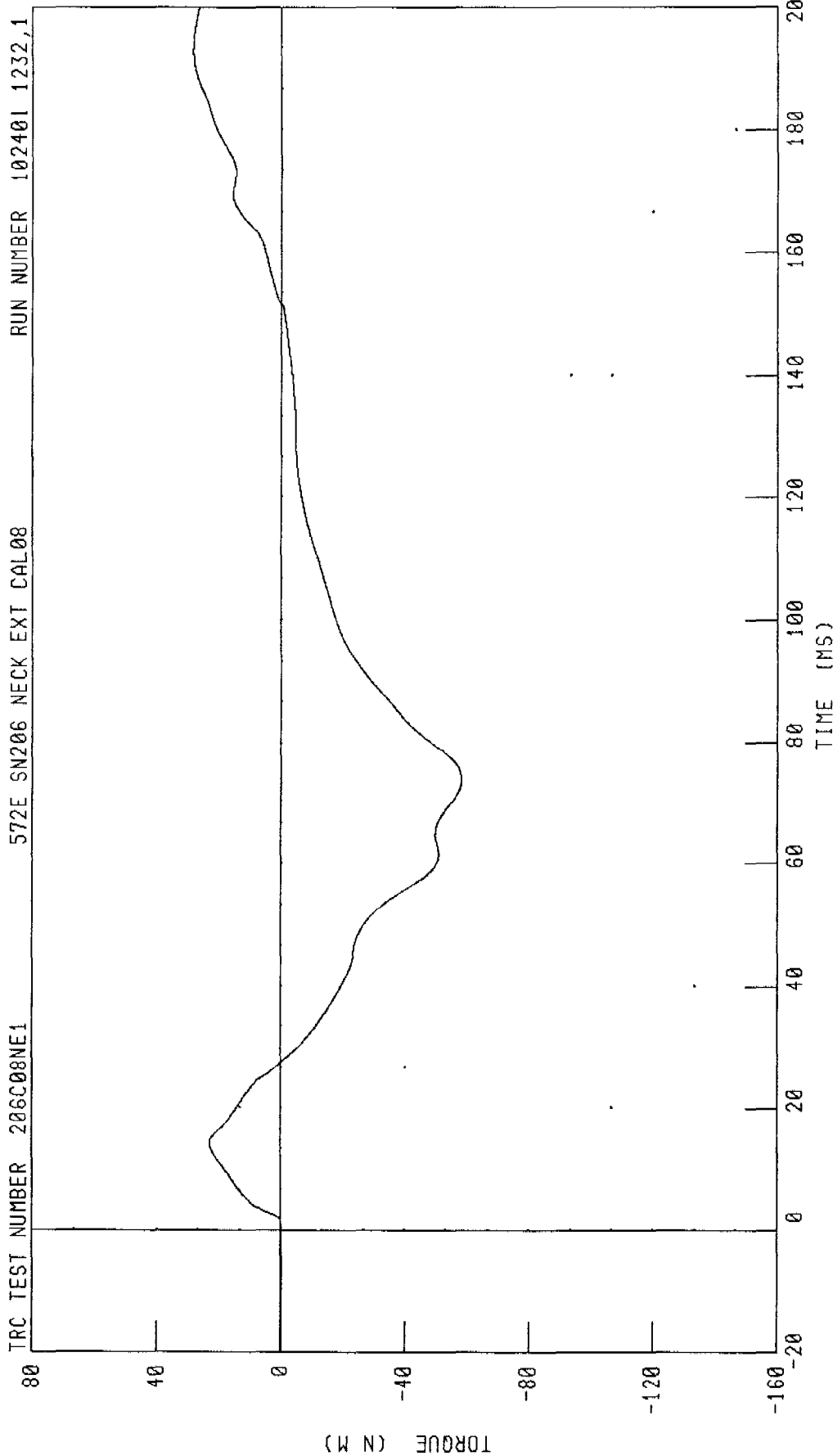
PART 572-E HYBRID III NECK EXTENSION CALIBRATION

NECK MOMENT Y AXIS

TRC TEST NUMBER 206C08NE1

572E SN206 NECK EXT CAL08

RUN NUMBER 102401 1232,1



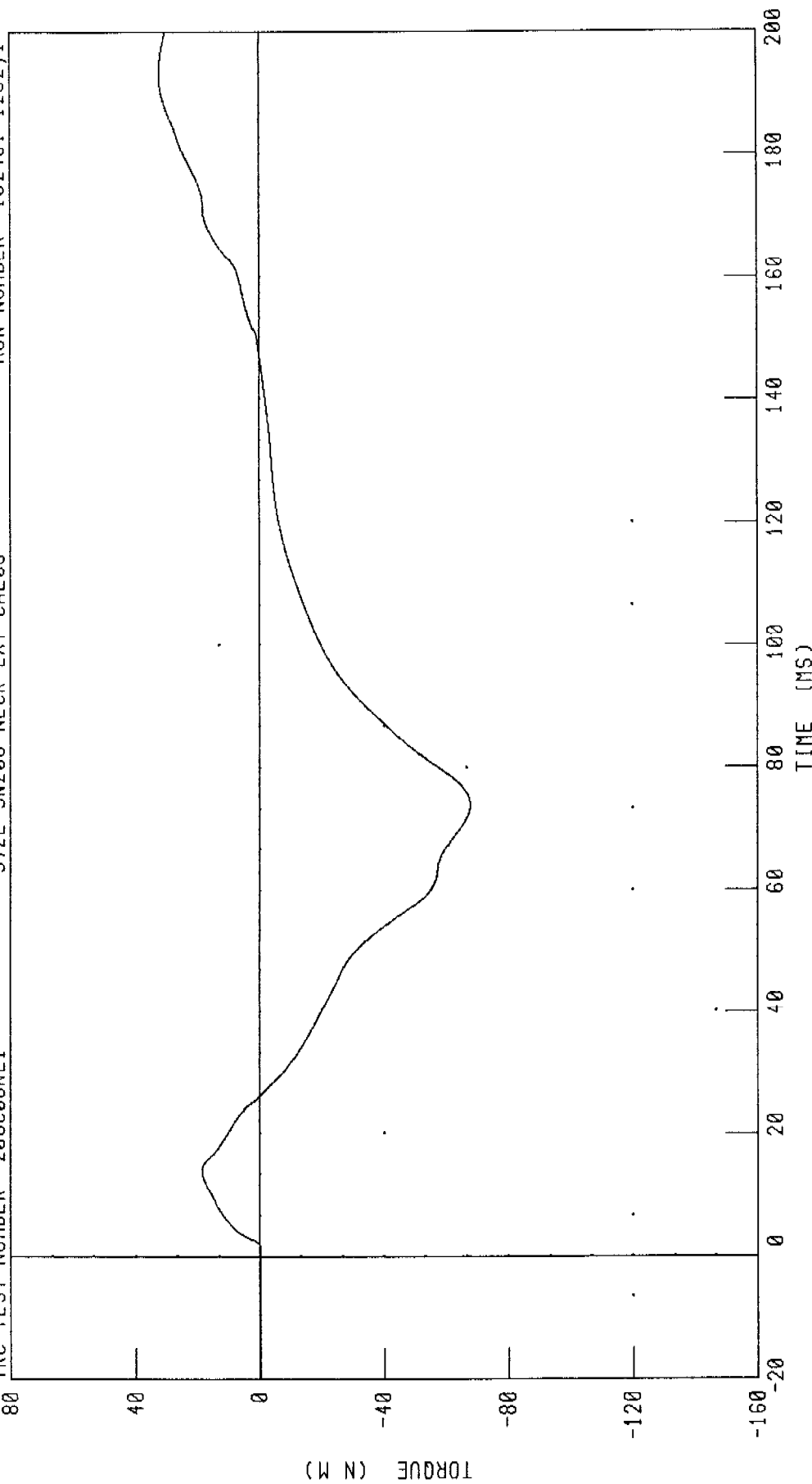
PEAK DATA 28 45 N M 0 192 72 MS, -58 21 N M 0 73 92 MS

CHANNEL NEKYM FILTER CH CLASS 600

PART 572-E HYBRID III NECK EXTENSION CALIBRATION

TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER 206C08NE1 572E SN206 NECK EXT CAL08 RUN NUMBER 102401 1232,1



PEAK DATA 32 37 N M @ 193 92 MS, -67 86 N M @ 74 00 MS

CHANNEL NEKOM FILTER CH CLASS 600

TRANSPORTATION RESEARCH CENTER INC.

THORAX IMPACT TEST

HYBRID III 50th

24-OCT-01

TRC INC.

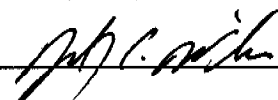
TEST NO: 206C08TH1

572E SN206 H.S.THORAX CAL08

TEST PARAMETER	HIGH SPEED TEST	TEST RESULTS
	SPECIFICATION	
TEMPERATURE	20.6-22.2 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	62.0 %
PENDULUM VELOCITY	6.59 - 6.83 M/S	6.59 M/S
MAXIMUM DEFLECTION	63.5 - 72.6 MM	65.3 MM
MAXIMUM RESISTIVE FORCE	5159 - 5894 N	5778. N
INTERNAL HYSTERESIS	69% - 85%	71.7%

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 102401.1453;1

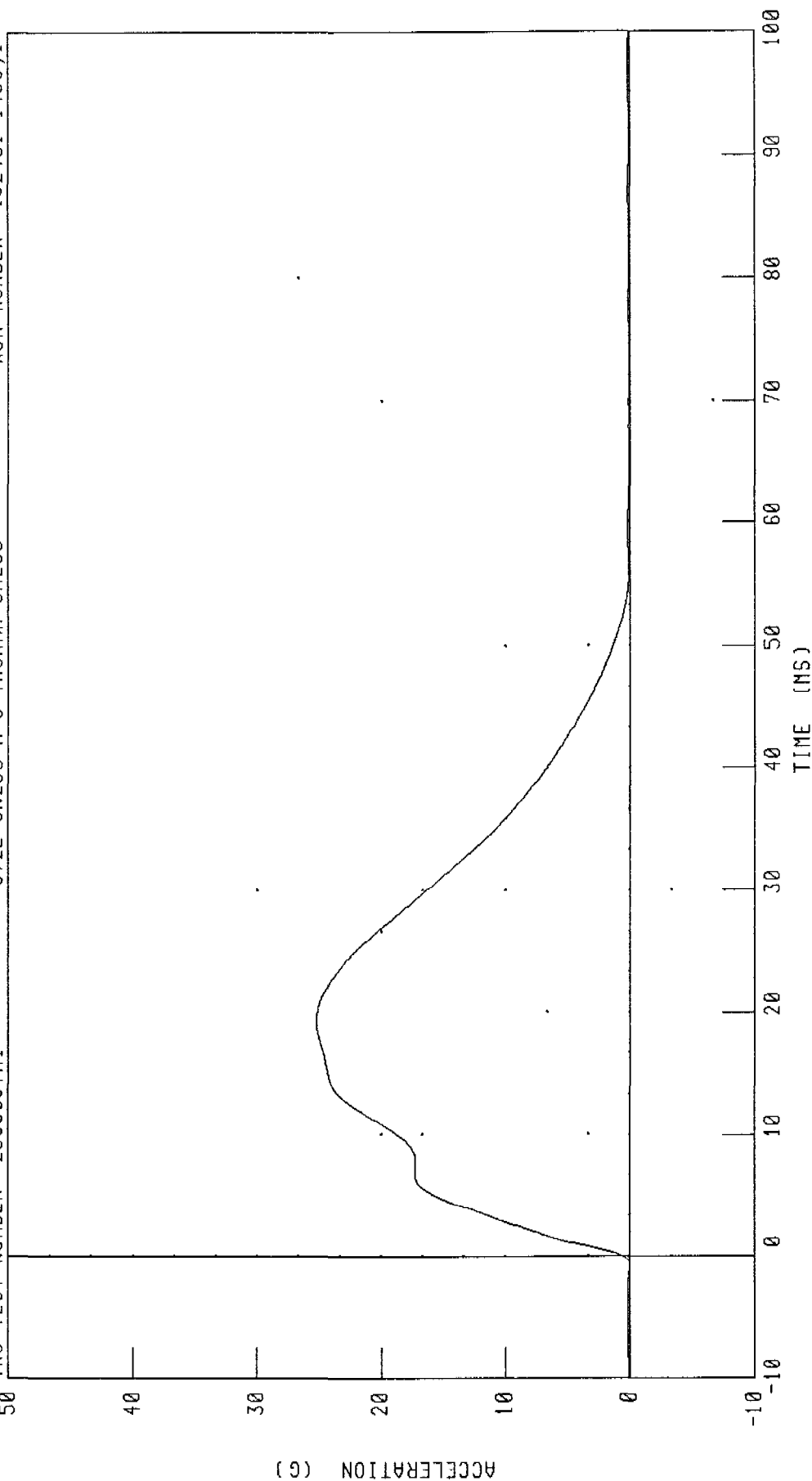
PART 572-E HYBRID III THORAX CALIBRATION

PENDULUM DECELERATION

TRC TEST NUMBER 206C08TH1

572E SN206 H S THORAX CAL08

RUN NUMBER 102401 1455,1



CHANNEL PENXC FILTER CH CLASS 180

PEAK DATA 25 22 6 0 19 36 MS, -0 02 G 0 -0 80 MS

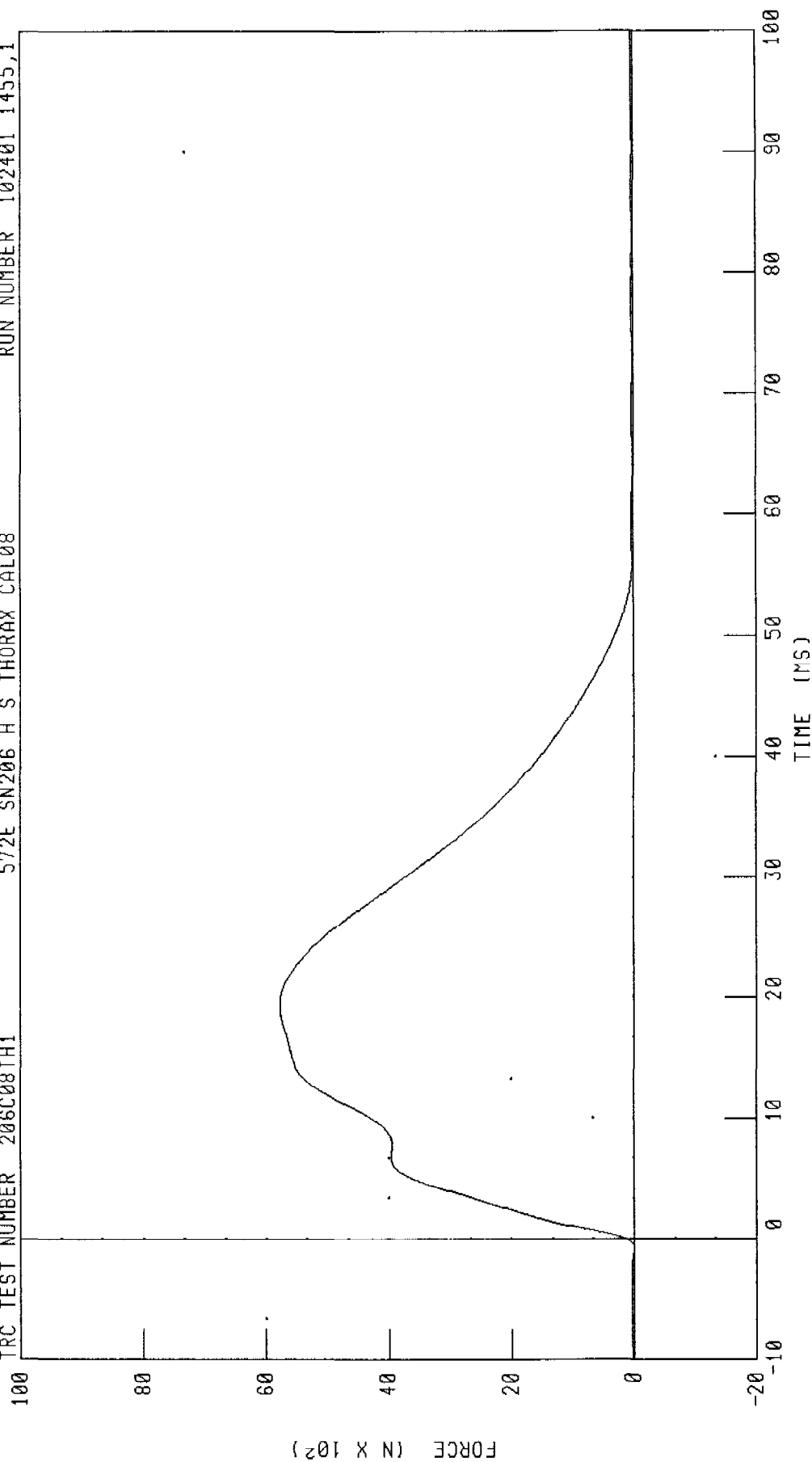
PART 572-E HYBRID III THORAX CALIBRATION

PENDULUM FORCE

TRC TEST NUMBER 206C08TH1

572E SN206 H S THORAX CAL08

RUN NUMBER 102401 1455,1



CHANNEL PENXF FILTER CH CLASS 180

PEAK DATA 5778 05 N 0 19 36 MS, -5 46 N 0 -0 80 MS

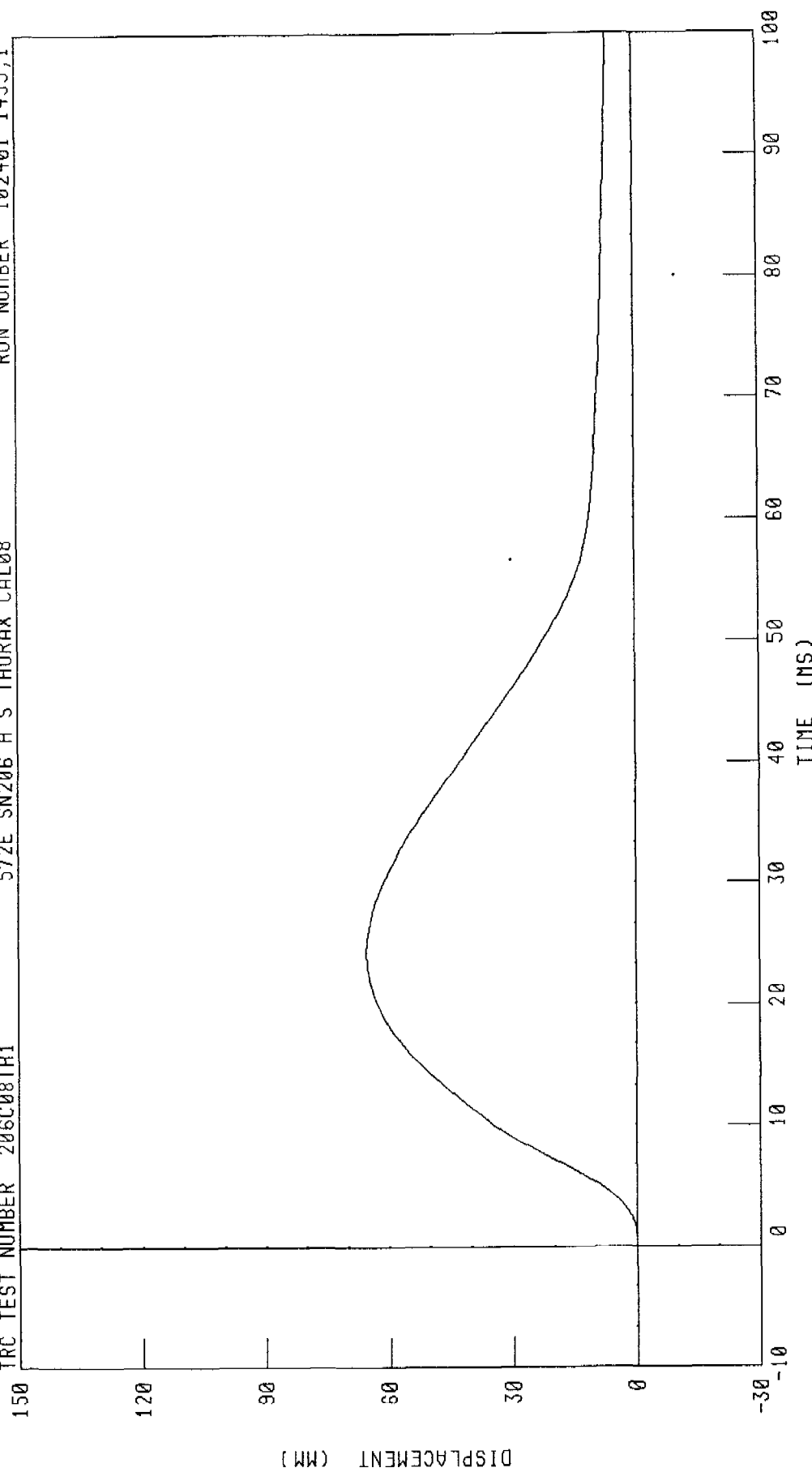
PART 572-E HYBRID III THORAX CALIBRATION

STERNUM DISPLACEMENT

TRC TEST NUMBER 206C08TH1

572E SN206 H S THORAX CAL08

RUN NUMBER 102401 1455,1



CHANNEL CSTXD FILTER CH CLASS 180

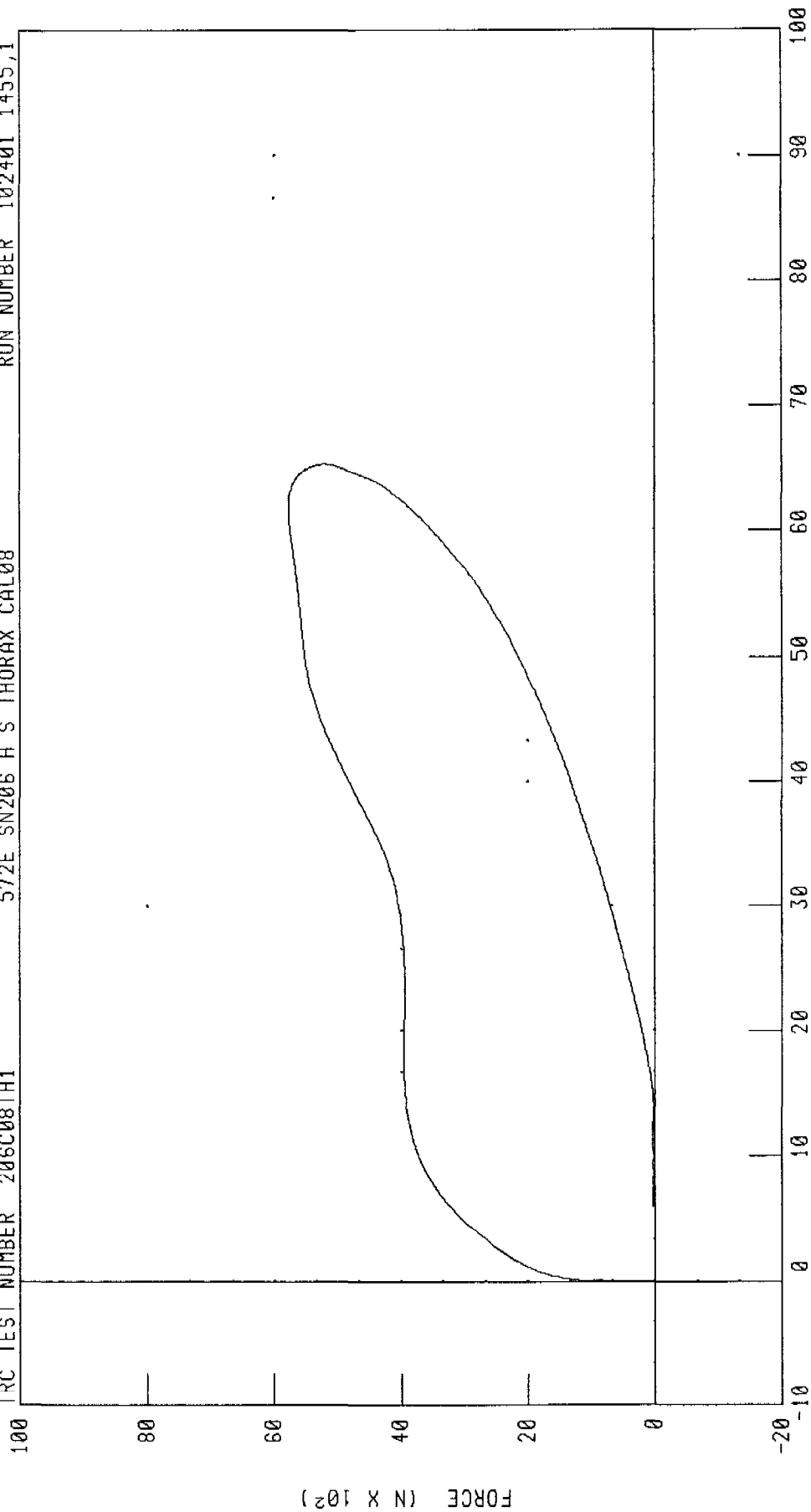
PEAK DATA 65 39 MM @ 24 32 MS, -0 02 MM @ 0 32 MS

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

TRC TEST NUMBER 206C08TH1

572E SN206 H S THORAX CAL08

RUN NUMBER 102401 1455,1



CHANNEL CSTXD
PENXF

FILTER CH CLASS 180
CH CLASS 180

DISPLACEMENT (MM)
PEAK DATA

65 39 MM @ 24 32 MS, -0 02 MM @ 0 32 MS
5778 05 N @ 19 36 MS, -5 46 N @ -0 80 MS

Transportation Research Center Inc

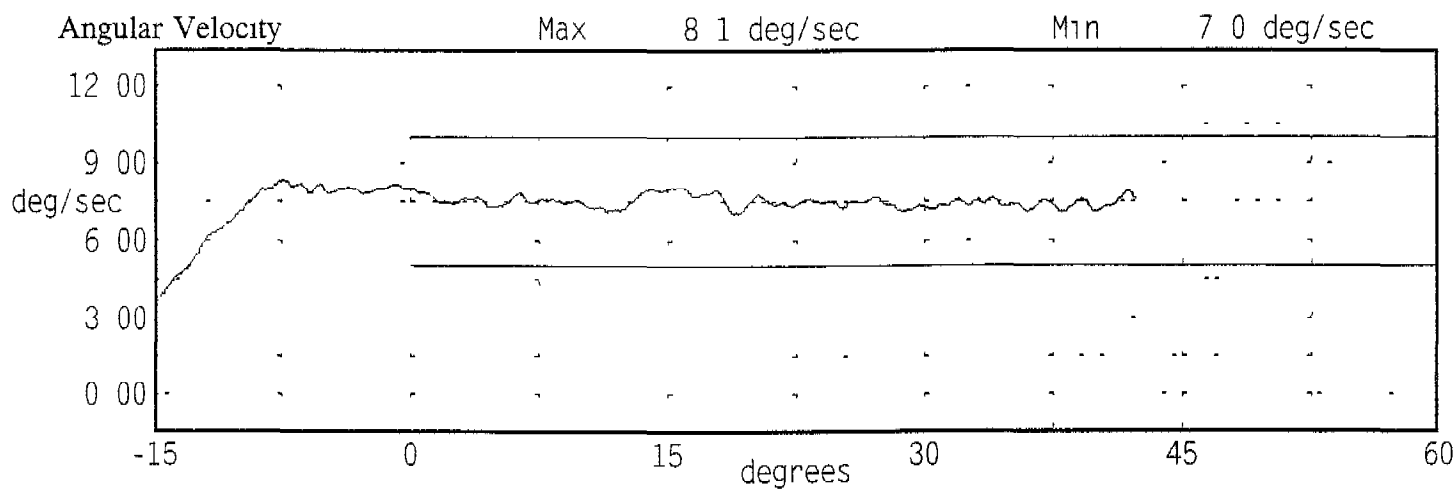
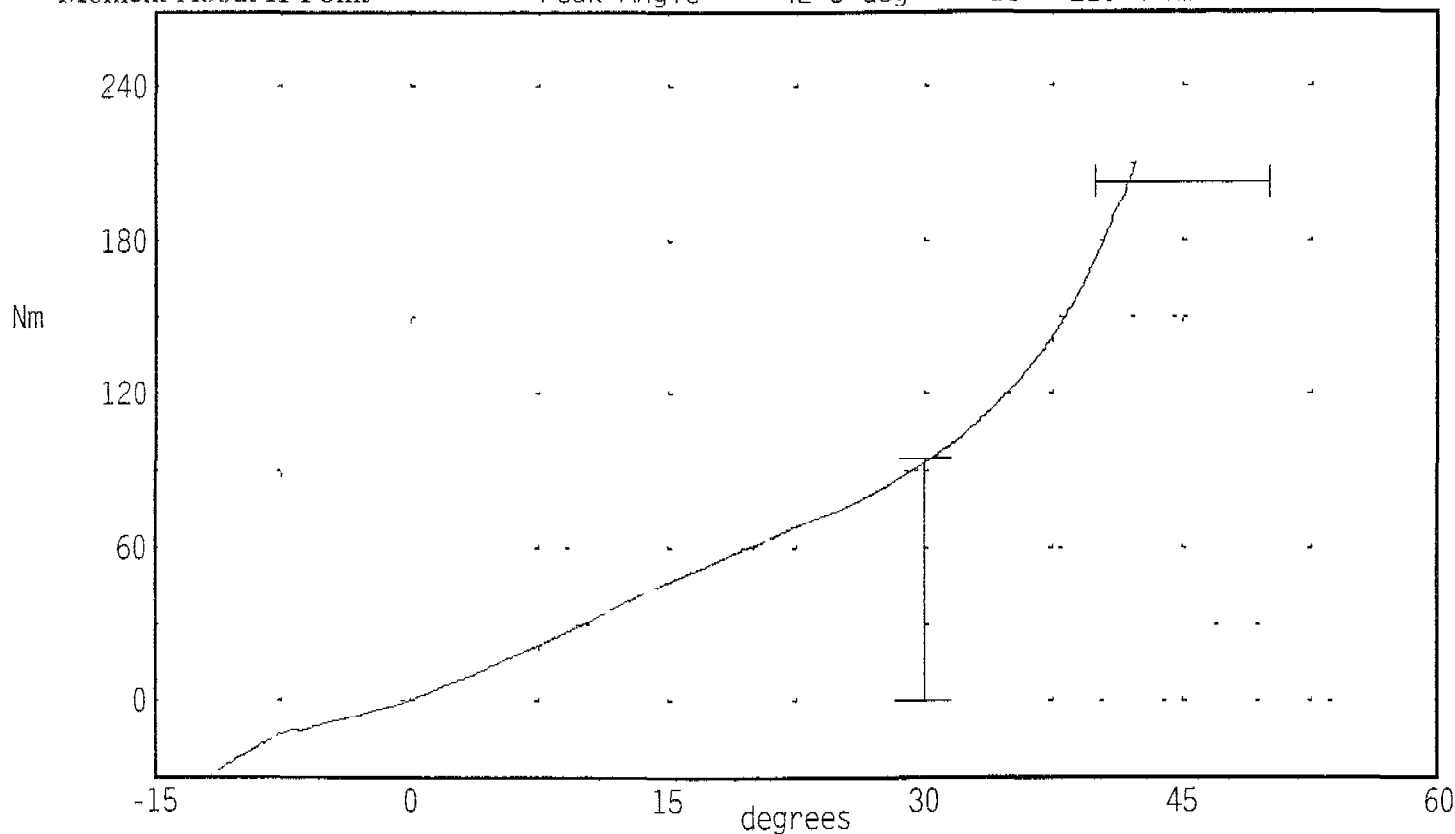
Hybrid III Hip Range of Motion

Serial Number. 206R
Test Number 206C08
Comments

Date 10/23/2001
Time. 11:47

TEST PARAMETER	SPECIFICATION	TEST RESULTS	
Temperature	18.9 - 25.6	21.7 °C	Pass
Humidity	10 - 70	60 %	Pass
Moment at 30 deg	<= 94.9	92.9 Nm	Pass
Angle at 203 Nm	40.0 - 50.0	42.0 deg	Pass
Average Velocity	5.0 - 10.0	7.5 deg/sec	Pass

Moment About H-Point
Peak Moment 210.4 Nm at 42.3 deg
Peak Angle 42.3 deg at 210.4 Nm



Transportation Research Center Inc

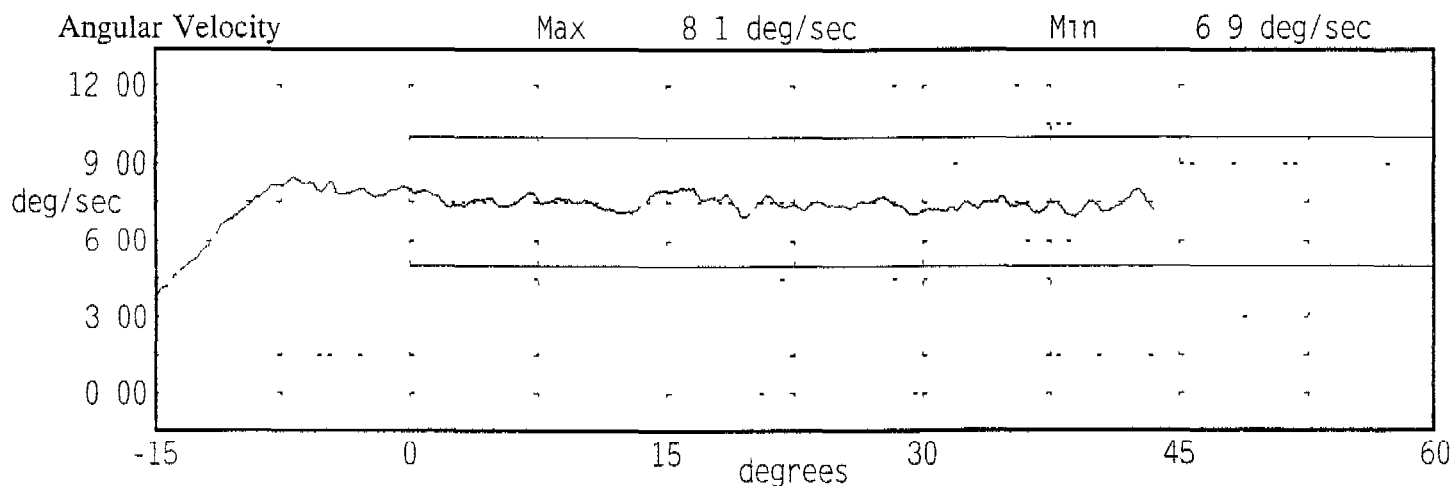
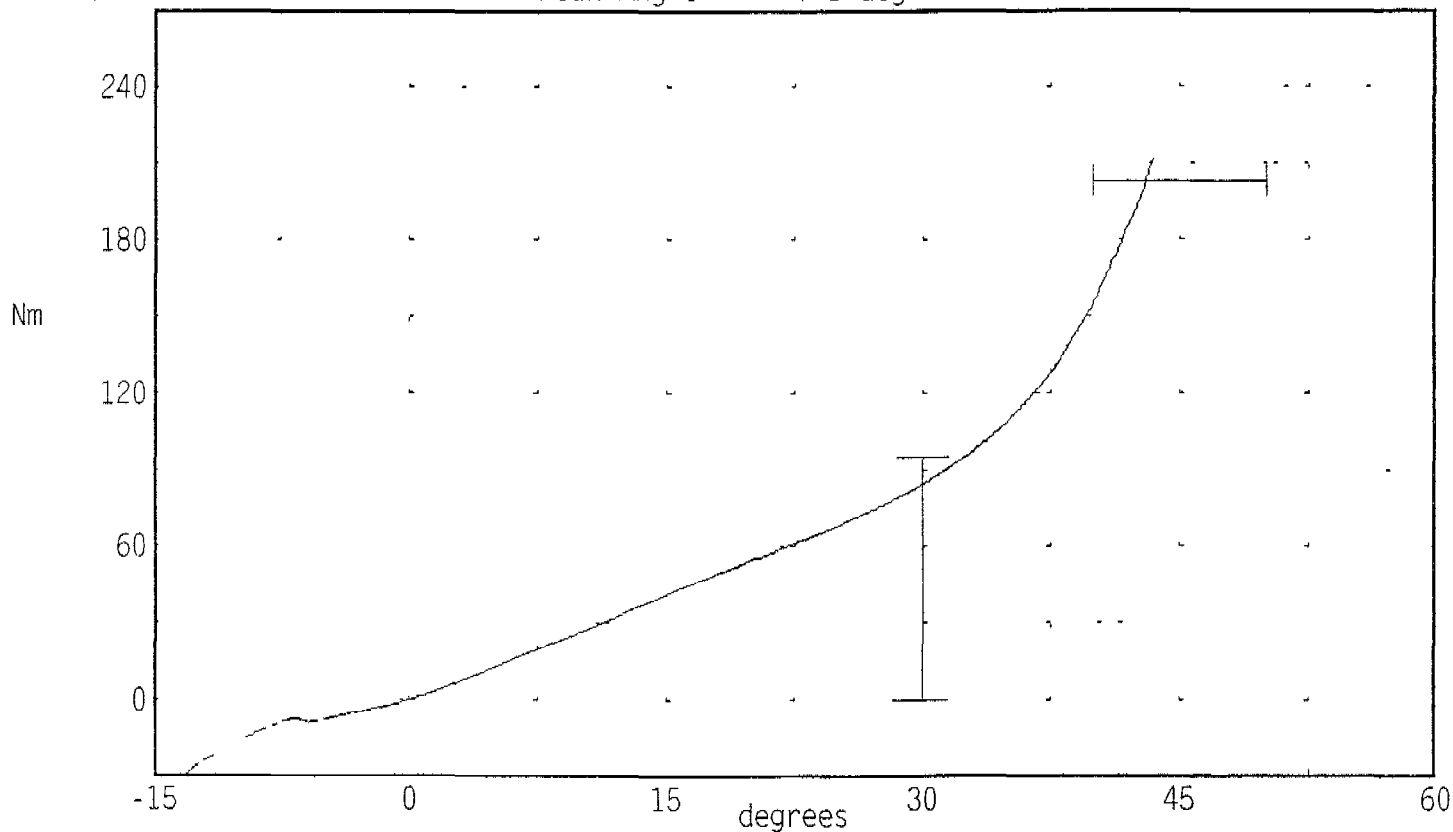
Hybrid III Hip Range of Motion

Serial Number 206L
Test Number 206C08
Comments:

Date 10/23/2001
Time 11 31

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.7 °C Pass
Humidity	10 - 70	60 % Pass
Moment at 30 deg	<= 94.9	84.7 Nm Pass
Angle at 203 Nm	40.0 - 50.0	43.1 deg Pass
Average Velocity	5.0 - 10.0	7.5 deg/sec Pass

Moment About H-Point
Peak Moment 211.4 Nm at 43.5 deg
Peak Angle 43.5 deg at 211.4 Nm



TRANSPORTATION RESEARCH CENTER INC.

LEFT KNEE IMPACT TEST

HYBRID III 50th

23-OCT-01

TRC INC.

TEST NO: 206C08LK1

572E SN206 LEFT KNEE CAL 08

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	60.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.10 M/S
PEAK KNEE IMPACT FORCE 5.0 KG PENDULUM	4715 - 5782 N	5462.3 N

TEST MEETS SPECIFICATIONS

TECHNICIAN

[Signature]

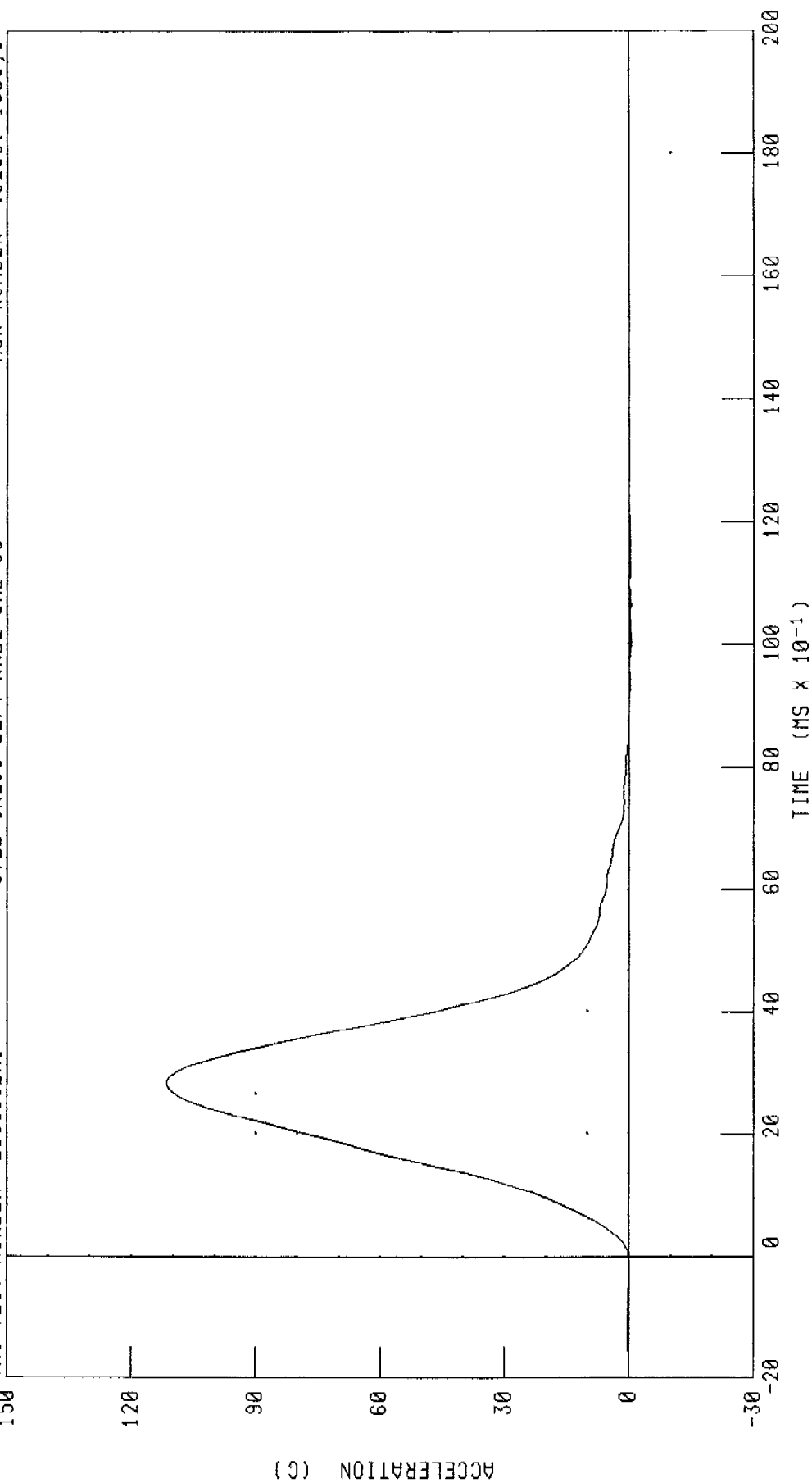
RUN NUMBER: 102301.1333;3

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

TRC TEST NUMBER 206C08LK1

572E SN206 LEFT KNEE CAL 08

RUN NUMBER 102301 1333,3



CHANNEL PENXC FILTER CH CLASS 600

PEAK DATA 111 64 0 2 80 MS, -0 49 0 10 08 MS

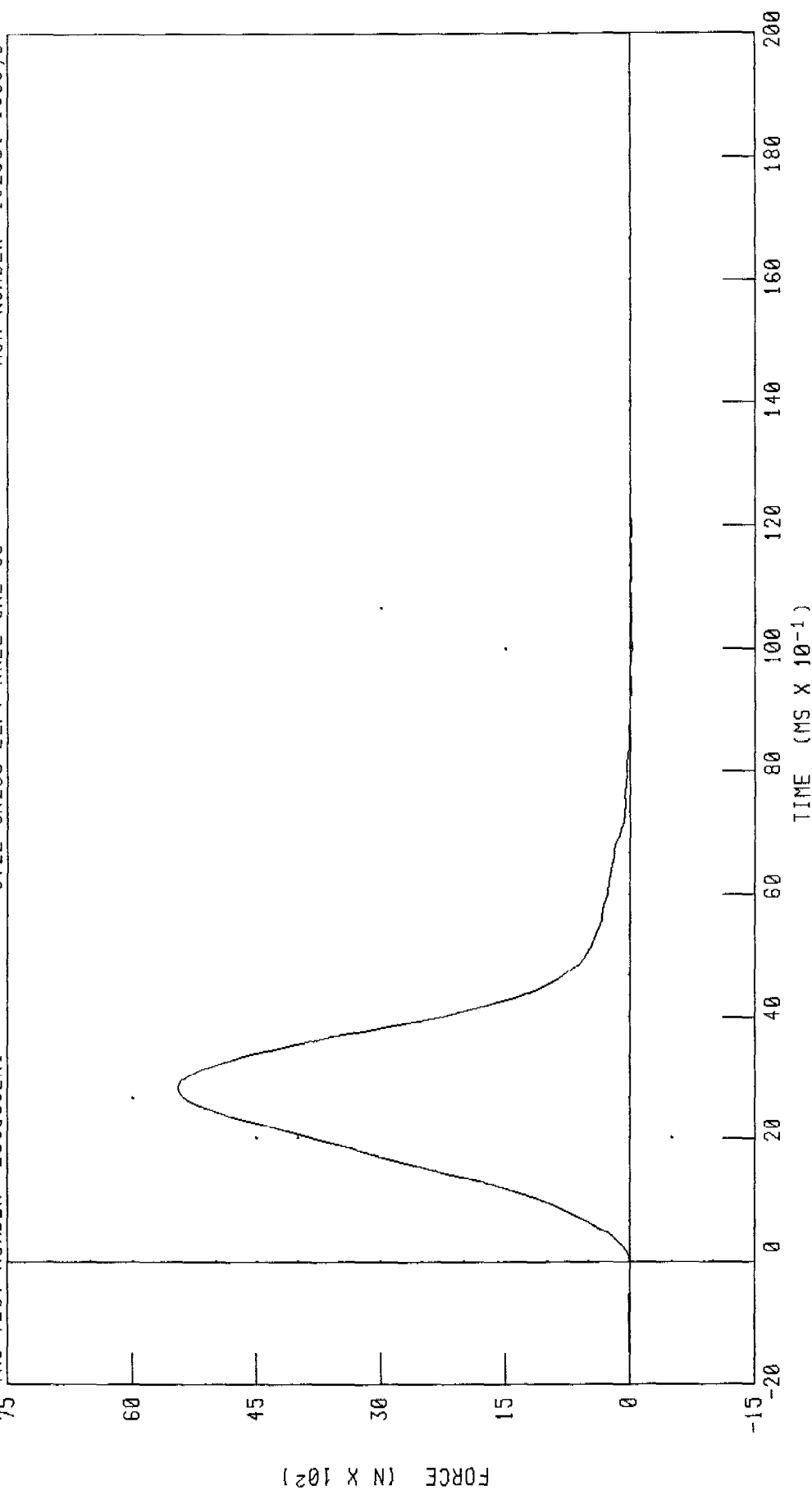
PART 572-E HYBRID III LEFT KNEE CALIBRATION

PENDULUM FORCE (5 KG PEND)

TRC TEST NUMBER 206C08LK1

572E SN206 LEFT KNEE CAL 08

RUN NUMBER 102301 1333,3



TIME (MS X 10⁻¹)

CHANNEL PENXF FILTER CH CLASS 600

PEAK DATA 5462 36 N @ 2 80 MS, -23 92 N @ 10 08 MS

TRANSPORTATION RESEARCH CENTER INC.

RIGHT KNEE IMPACT TEST

HYBRID III 50th

23-OCT-01

TRC INC.

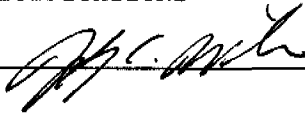
TEST NO: 206C08RK1

572E SN206 RIGHT KNEE CAL 08

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	60.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.13 M/S
PEAK KNEE IMPACT FORCE 5.0 KG PENDULUM	4715 - 5782 N	5393.0 N

TEST MEETS SPECIFICATIONS

TECHNICIAN



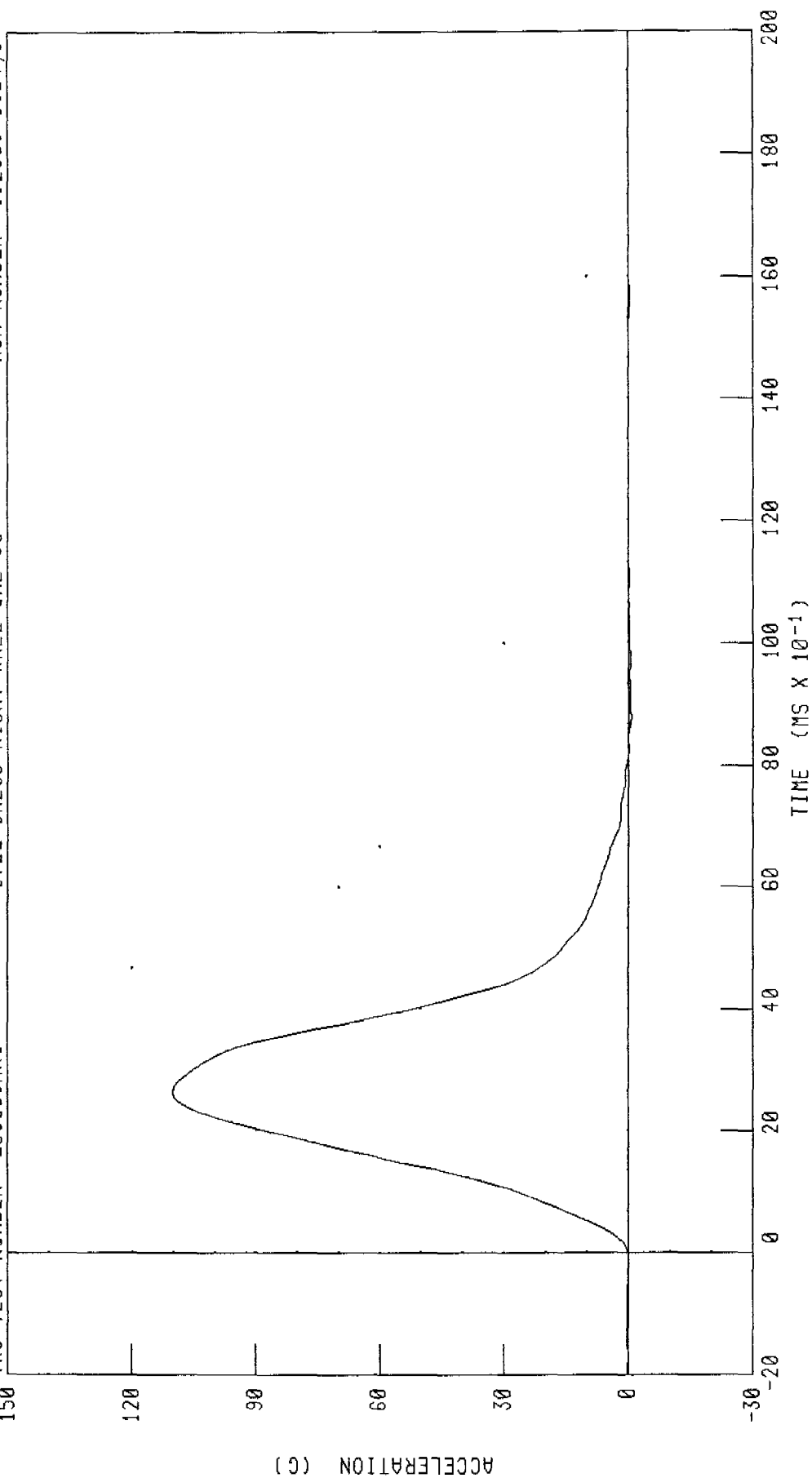
RUN NUMBER: 102301.1123;1

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

TRC TEST NUMBER 206C08RK1

572E SN206 RIGHT KNEE CAL 08

RUN NUMBER 102301 1124,1



CHANNEL PENXG FILTER CH CLASS 600

TIME (MS X 10⁻¹)

PEAK DATA 110 22 G 0 2 64 MS, -0 70 G 0 8 80 MS

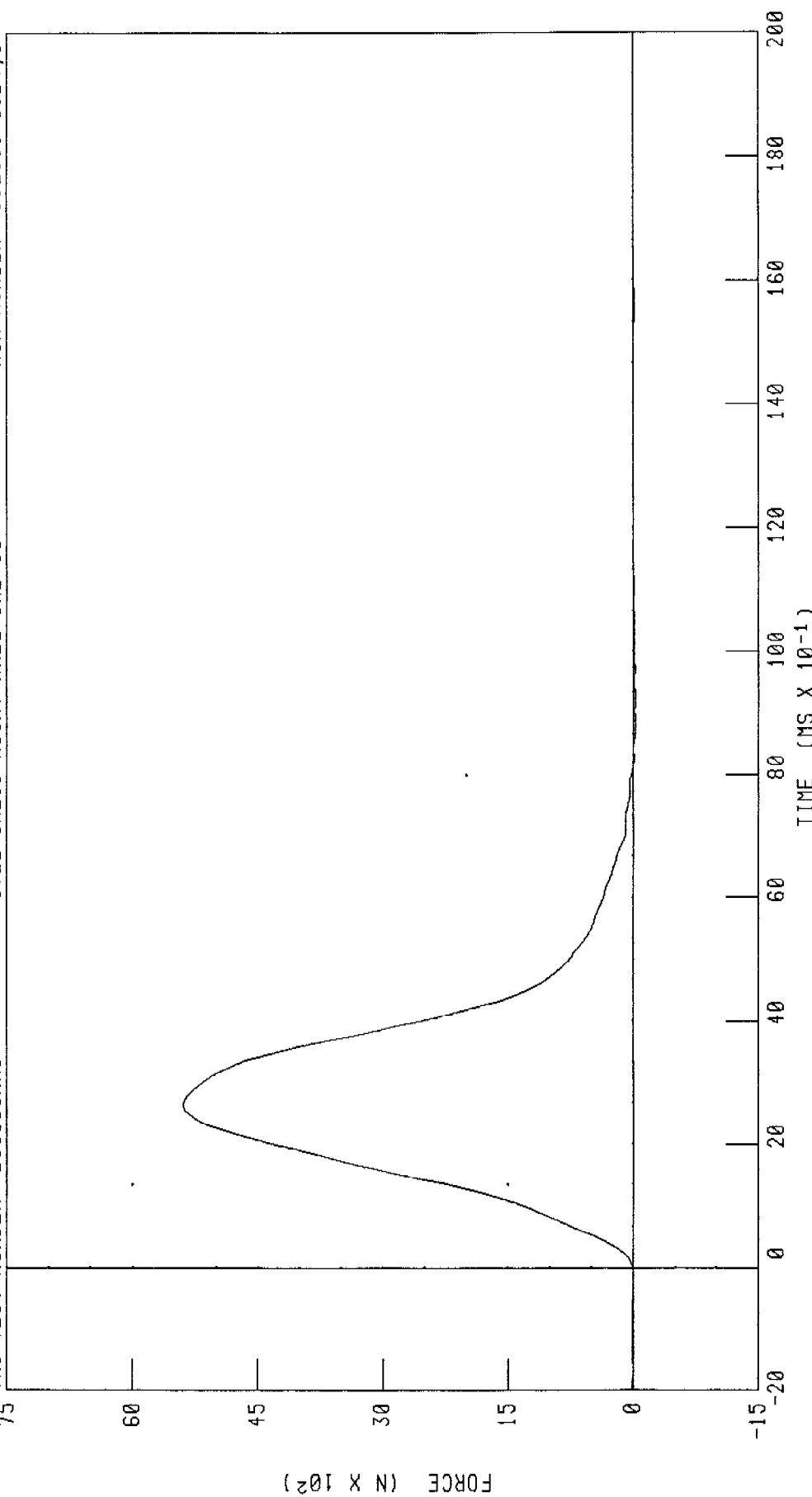
PART 572-E HYBRID III RIGHT KNEE CALIBRATION

PENDULUM FORCE (5 KG PEND)

TRC TEST NUMBER 206C08RK1

572E SN206 RIGHT KNEE CAL 08

RUN NUMBER 102301 1124,1



PEAK DATA 5393 00 N 0 2 64 MS, -34 21 N 0 8 80 MS

CHANNEL PENXF FILTER CH CLASS 600

TRANSPORTATION RESEARCH CENTER INC.

KNEE SLIDER TEST

HYBRID III 50th

23-OCT-01

LEFT KNEE

TRC INC.

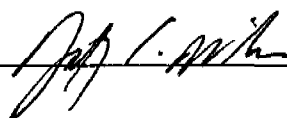
TEST NO: 206C08LS1

572E SN206 LEFT SLIDER CAL 08

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	61.0 %
PENDULUM VELOCITY	2.70-2.80 M/S	2.80 M/S
FORCE AT 10.0 MM DISPLACEMENT	1259 - 1721 N	1334. N
FORCE AT 18.0 MM DISPLACEMENT	2268 - 3096 N	2374. N

TEST MEETS SPECIFICATIONS

TECHNICIAN

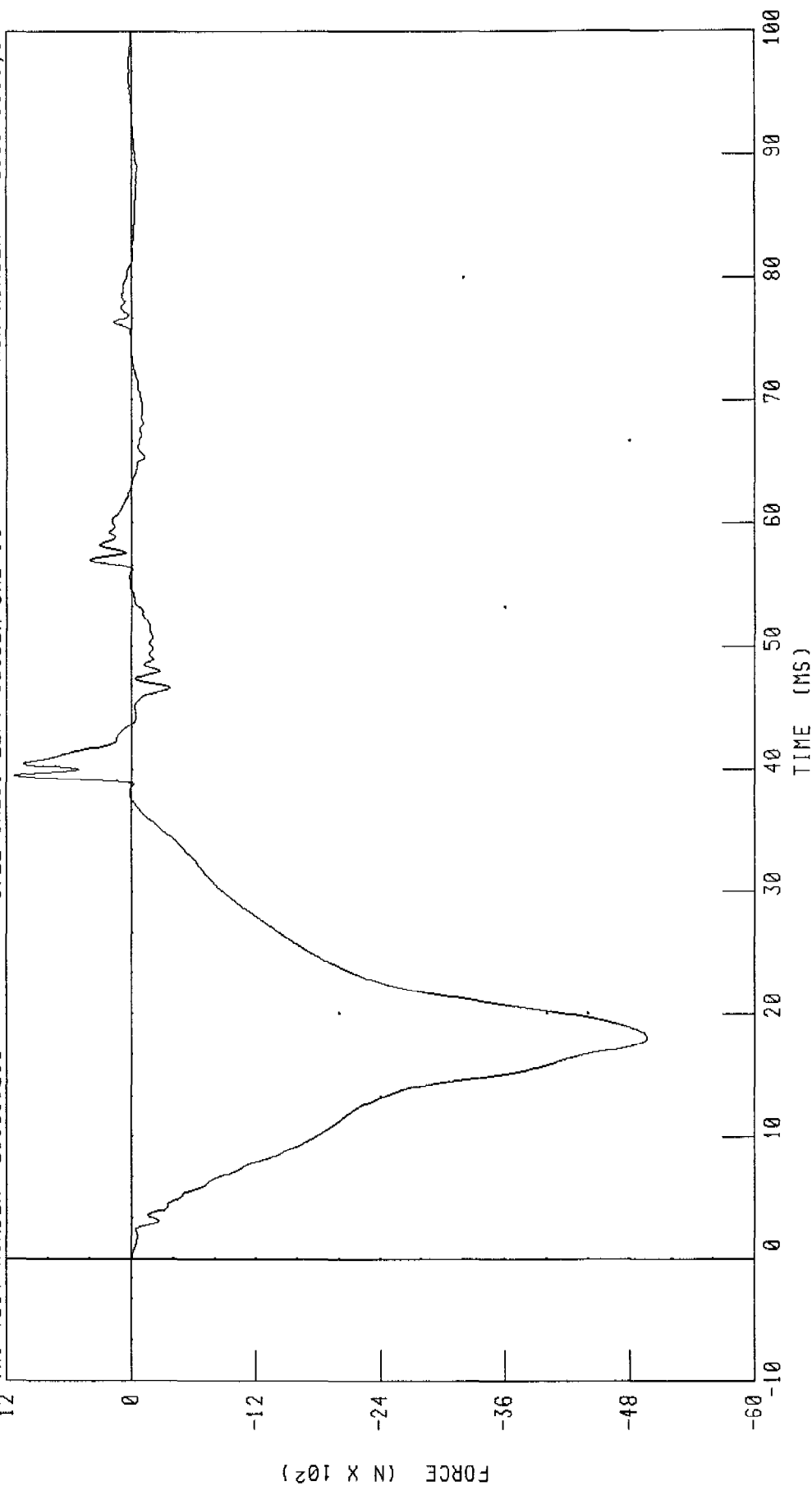


RUN NUMBER: 102301.1448;1

PART 572-E HYBRID III LEFT KNEE SLIDER CALIBRATION

LEFT FEMUR FORCE

TRC TEST NUMBER 206C08LS1 572E SN206 LEFT SLIDER CAL 08 RUN NUMBER 102301 1515,3



CHANNEL LFMF FILTER CH CLASS 600

PEAK DATA 1129 37 N 0 39 52 MS, -4966 09 N 0 18 00 MS

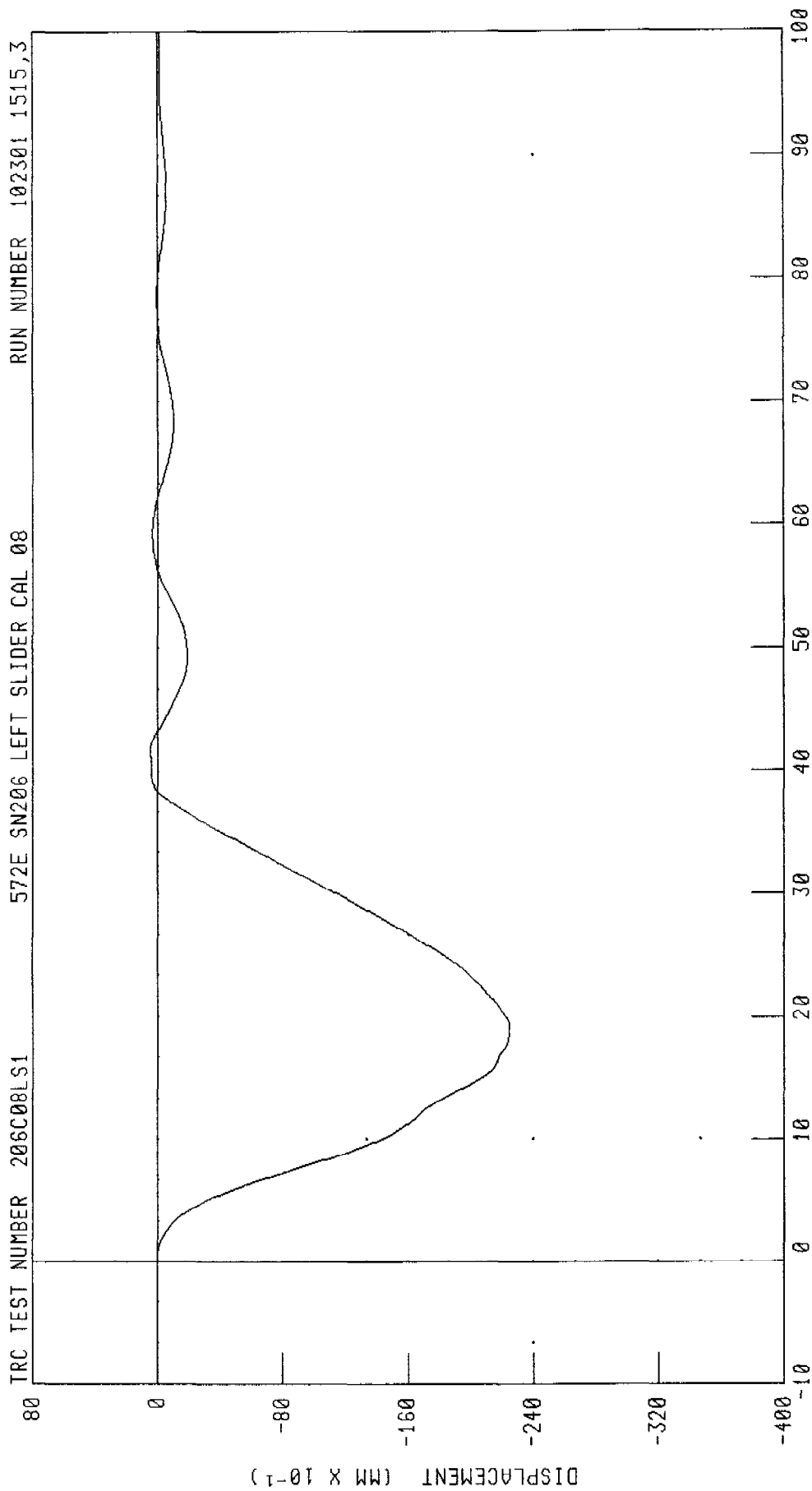
PART 572-E HYBRID III LEFT KNEE SLIDER CALIBRATION

LEFT KNEE DISPLACEMENT

TRC TEST NUMBER 206C08LS1

572E SN206 LEFT SLIDER CAL 08

RUN NUMBER 102301 1515,3



CHANNEL KNLXD

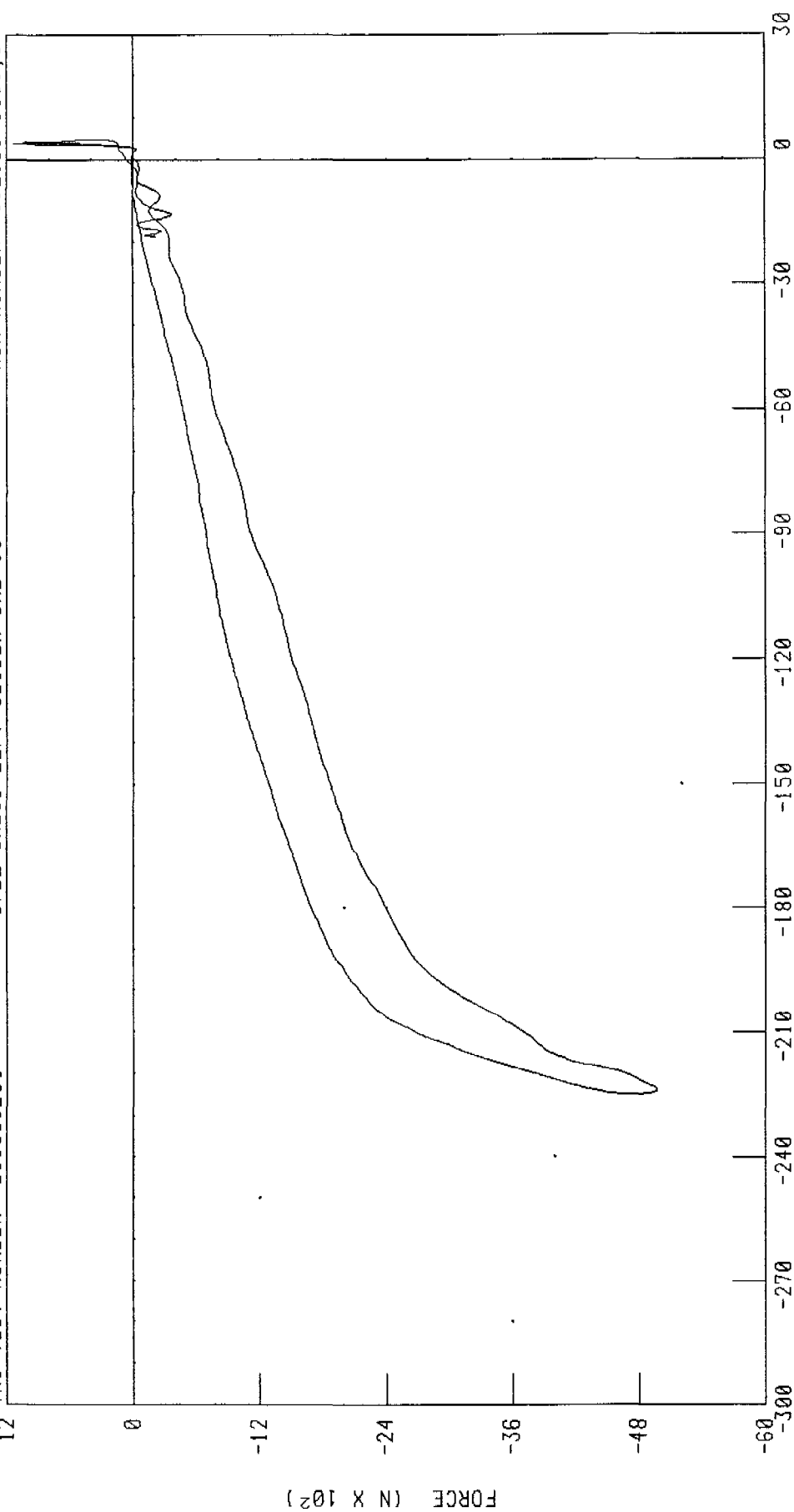
FILTER CH CLASS 600

PEAK DATA 0 50 MM @ 41 68 MS, -22 49 MM @ 19 20 MS

PART 572-E HYBRID III LEFT KNEE SLIDER CALIBRATION

LEFT KNEE DISPLACEMENT VS FEMUR FORCE

TRC TEST NUMBER 206C08LS1 572E SN206 LEFT SLIDER CAL 08 RUN NUMBER 102301 1515,3



DISPLACEMENT (MM X 10⁻¹)

CHANNEL KNLXD LFMF FILTER CH CLASS 600 CH CLASS 600

PEAK DATA 0 50 MM @ 41 68 MS, -22 49 MM @ 19 20 MS
1129 37 N @ 39 52 MS, -4966 09 N @ 18 00 MS

TRANSPORTATION RESEARCH CENTER INC.

KNEE SLIDER TEST

HYBRID III 50th

23-OCT-01

RIGHT KNEE

TRC INC.

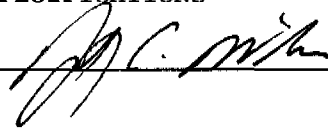
TEST NO: 206C08RS1

572E SN206 RIGHT SLIDER CAL 08

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	59.0 %
PENDULUM VELOCITY	2.70-2.80 M/S	2.80 M/S
FORCE AT 10.0 MM DISPLACEMENT	1259 - 1721 N	1593. N
FORCE AT 18.0 MM DISPLACEMENT	2268 - 3096 N	3039. N

TEST MEETS SPECIFICATIONS

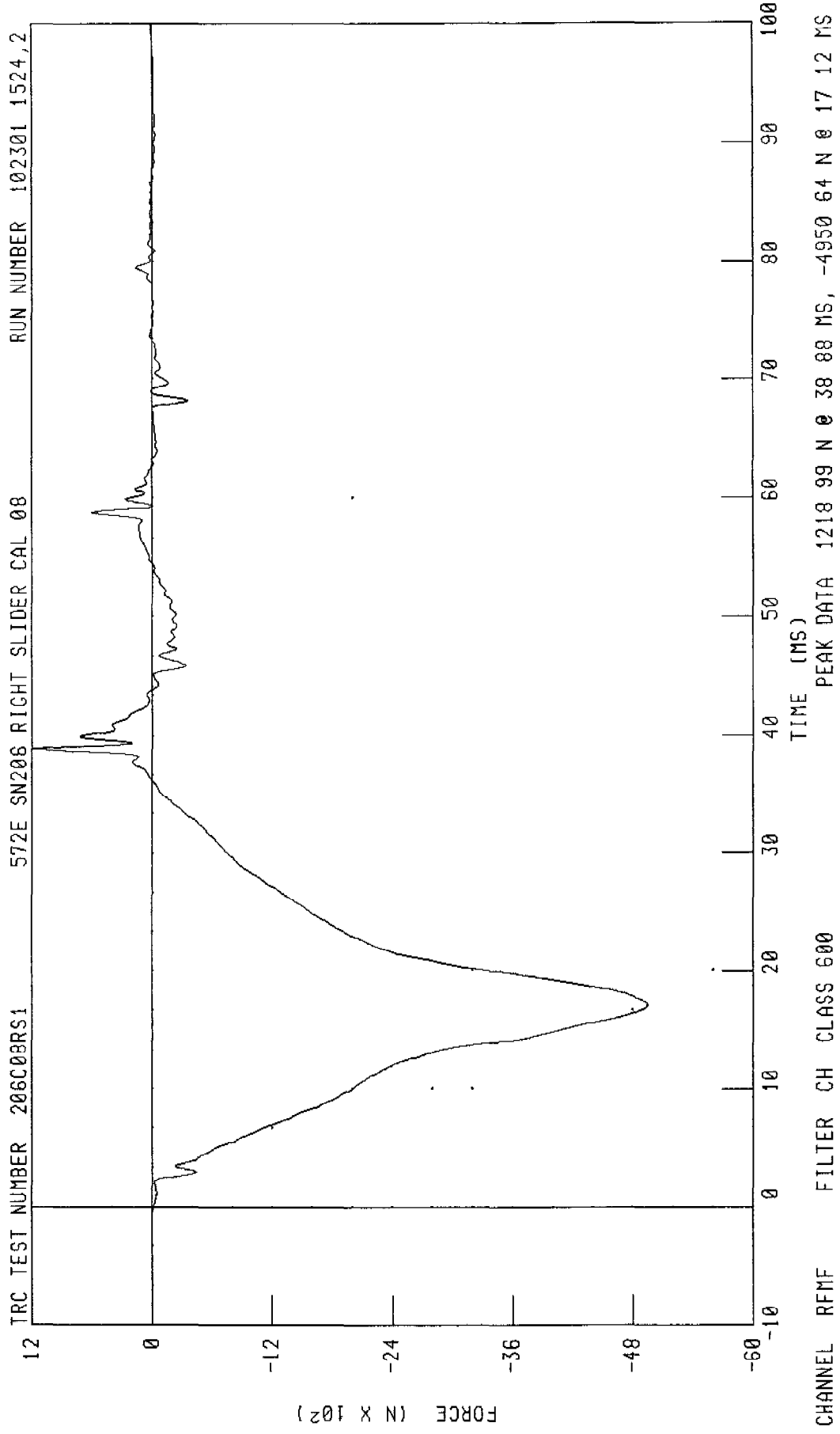
TECHNICIAN



RUN NUMBER: 102301.1522;1

PART 572-E HYBRID III RIGHT KNEE SLIDER CALIBRATION

RIGHT FEMUR FORCE

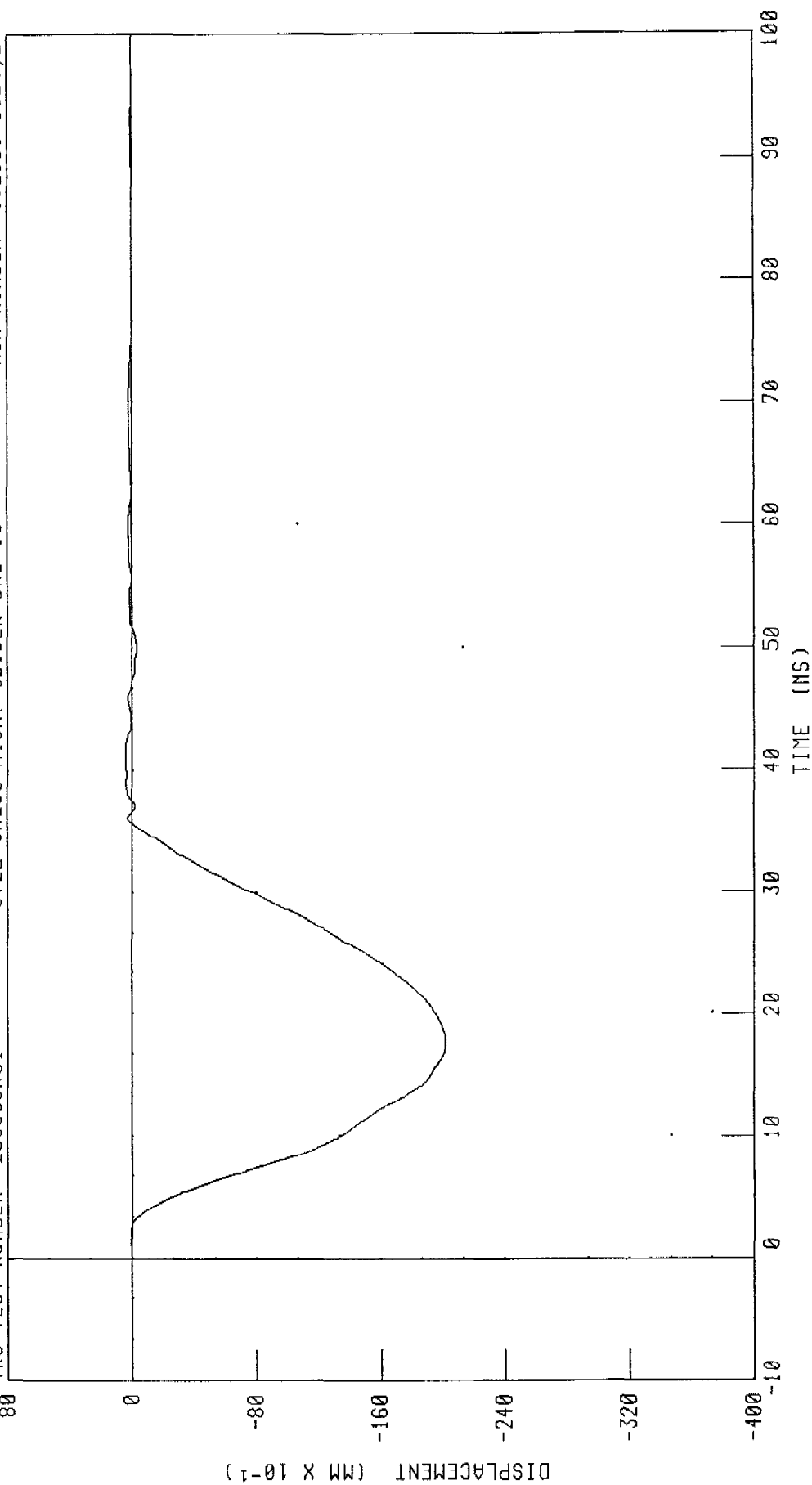


CHANNEL RFMF FILTER CH CLASS 600

PART 572-E HYBRID III RIGHT KNEE SLIDER CALIBRATION

RIGHT KNEE DISPLACEMENT

TRC TEST NUMBER 206C08RS1 572E SN206 RIGHT SLIDER CAL 08 RUN NUMBER 102301 1524,2



CHANNEL KNRXD FILTER CH CLASS 600 PEAK DATA 0 44 MM 0 38 88 MS, -20 19 MM 0 17 68 MS

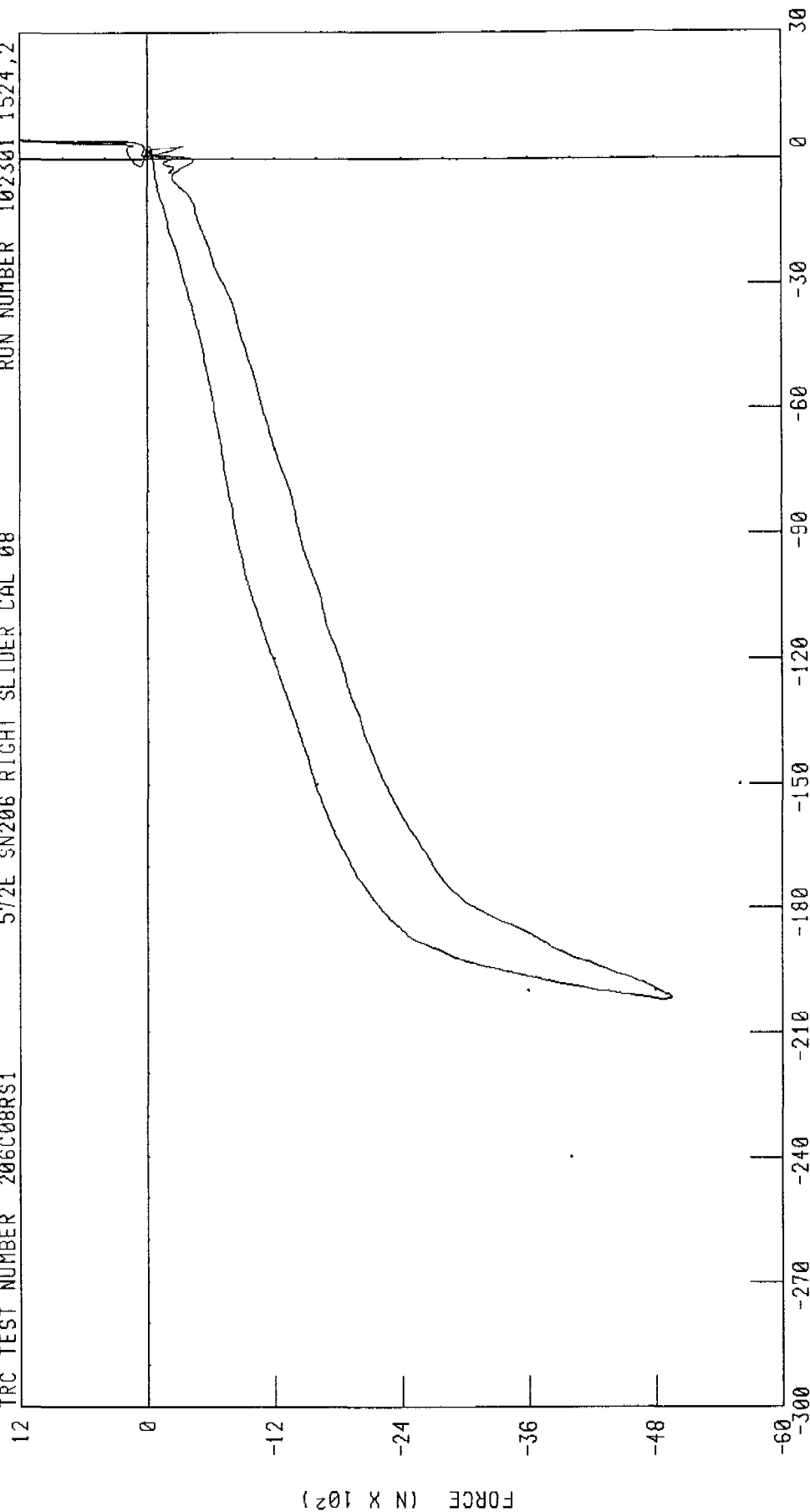
PART 572-E HYBRID III RIGHT KNEE SLIDER CALIBRATION

RIGHT KNEE DISPLACEMENT VS FEMUR FORCE

TRC TEST NUMBER 206C08RS1

572E SN206 RIGHT SLIDER CAL 08

RUN NUMBER 102301 1524,2



DISPLACEMENT (MM X 10⁻¹)

CHANNEL KNRXD FILTER CH CLASS 600
RFMF CH CLASS 600

PEAK DATA 0 44 MM @ 38 88 MS, -20 19 MM @ 17 68 MS
1218 99 N @ 38 88 MS, -4950 64 N @ 17 12 MS

Post-Test Dummy Configuration and Performance Verification Data

Passenger Dummy S/N: 202

TRANSPORTATION RESEARCH CENTER INC.
HYBRID III EXTERNAL DIMENSIONS

202

24-OCT-01

TRC INC. TEST NO: 202C09ED1 572E SN202 EXT.DIMENSION CAL09

TEST PARAMETER	(DIMEN.)	SPECIFICATION	TEST RESULTS
LOCATION FOR CHEST CIRCUMFERENCE (AA)		429 - 434 MM	432. MM
LOCATION FOR WAIST CIRCUMFERENCE (BB)		226 - 231 MM	229. MM
CHEST CIRCUMFERENCE (Y)		970 - 1001 MM	993. MM
WAIST CIRCUMFERENCE (Z)		836 - 866 MM	856. MM
CHEST DEPTH (O)		213 - 229 MM	224. MM
H-POINT HEIGHT (C)		84 - 89 MM	86. MM
H-POINT FROM SEATBACK (D)		135 - 140 MM	135. MM
SKULL CAP TO BACKLINE (H)		41 - 46 MM	46. MM
TOTAL SITTING HEIGHT (A)		879 - 889 MM	886. MM
THIGH CLEARANCE (F)		140 - 155 MM	142. MM
BUTTOCK KNEE LENGTH (K)		579 - 605 MM	589. MM
BUTTOCK POPLITEAL LENGTH (N)		452 - 478 MM	467. MM
POPLITEAL HEIGHT (L)		429 - 455 MM	447. MM
KNEE PIVOT HEIGHT (M)		485 - 500 MM	495. MM
FOOT LENGTH (P)		252 - 267 MM	254. MM
FOOT BREADTH (W)		91 - 107 MM	102. MM
SHOULDER PIVOT FROM BACKLINE (E)		84 - 94 MM	91. MM
SHOULDER BREADTH (V)		422 - 437 MM	432. MM
SHOULDER PIVOT HEIGHT (B)		506 - 521 MM	511. MM
ELBOW REST HEIGHT (J)		191 - 211 MM	201. MM
SHOULDER-ELBOW LENGTH (I)		330 - 345 MM	333. MM
BACK OF ELBOW TO WRIST PIVOT (G)		290 - 305 MM	300. MM

572E SN202 EXT.DIMENSION CAL09

DUMMY MEETS SPECIFICATIONS

TECHNICIAN

RUN NUMBER: 102401.1342

TRANSPORTATION RESEARCH CENTER INC.

HEAD DROP TEST

HYBRID III 50th

23-OCT-01

TRC INC.

TEST NO: 202C09HD1

572E SN202 HEAD DROP CAL 09

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	59.0 %
PEAK RESULTANT ACCELERATION	225 - 275 G	251.08 G
PEAK LATERAL ACCELERATION	15 G MAX	3.13 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN

[Signature]

RUN NUMBER: 102301.1115;1

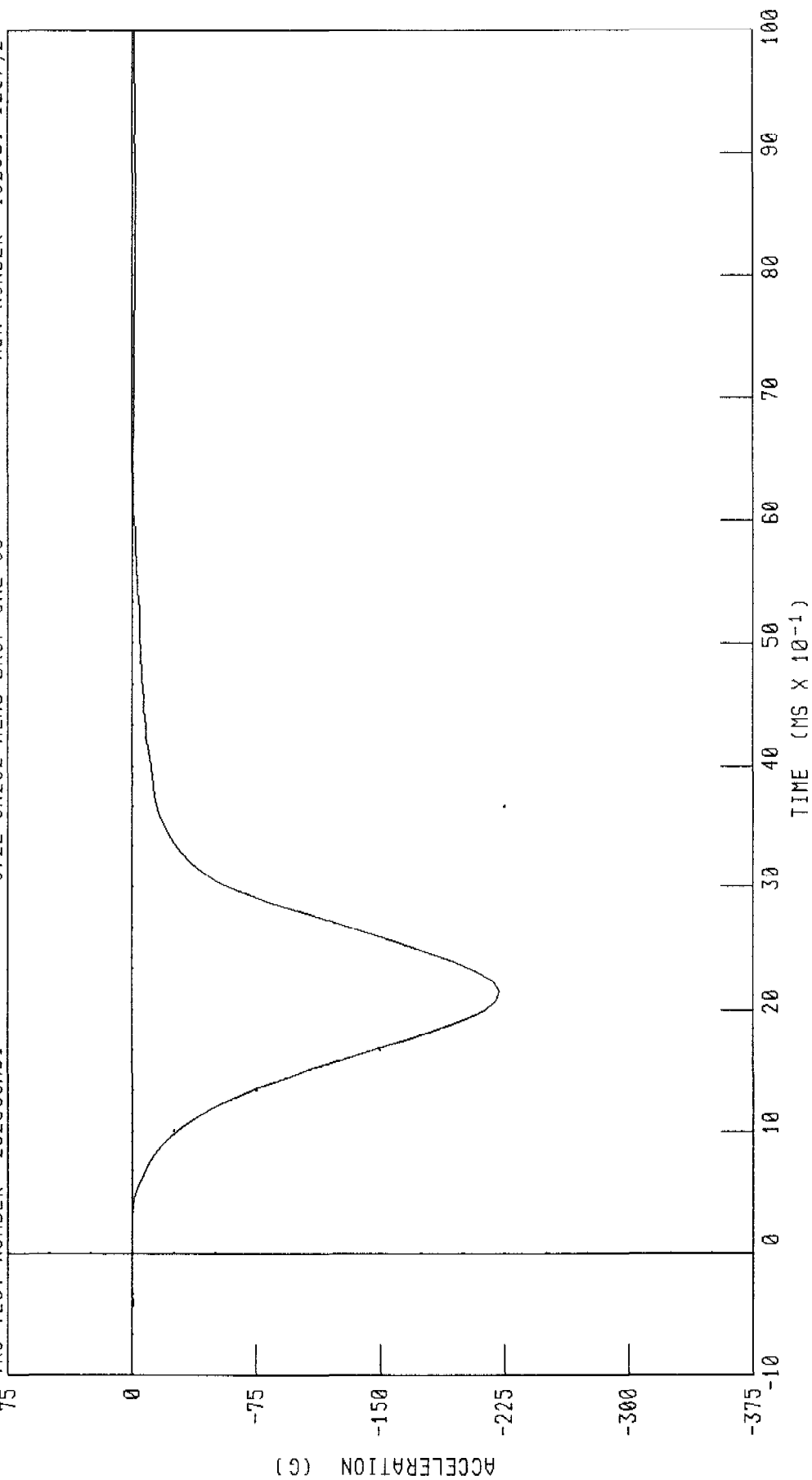
PART 572-E HYBRID III HEAD CALIBRATION

HEAD ACCELERATION X AXIS

TRC TEST NUMBER 202C09HD1

572E SN202 HEAD DROP CAL 09

RUN NUMBER 102301 1257,2



PEAK DATA 0 15 G @ -0 88 MS, -221 82 G @ 2 16 MS

CHANNEL HEDXC FILTER CH CLASS 1000

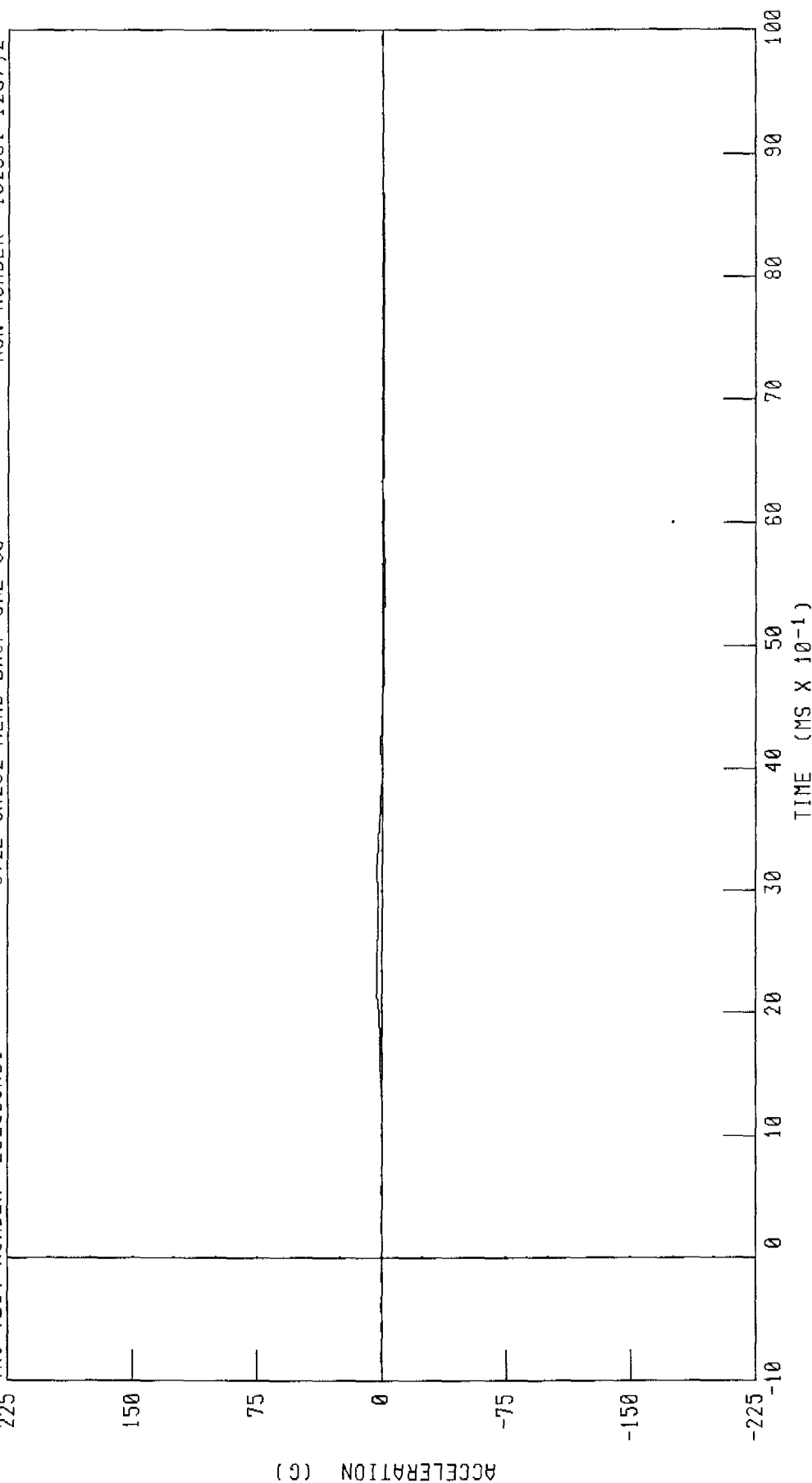
PART 572-E HYBRID III HEAD CALIBRATION

HEAD ACCELERATION Y AXIS

TRC TEST NUMBER 202C09HD1

572E SN202 HEAD DROP CAL 09

RUN NUMBER 102301 1257,2



CHANNEL HEDYC FILTER CH CLASS 1000

PEAK DATA 3 14 C 0 2 40 MS, -1 40 C 0 5 36 MS

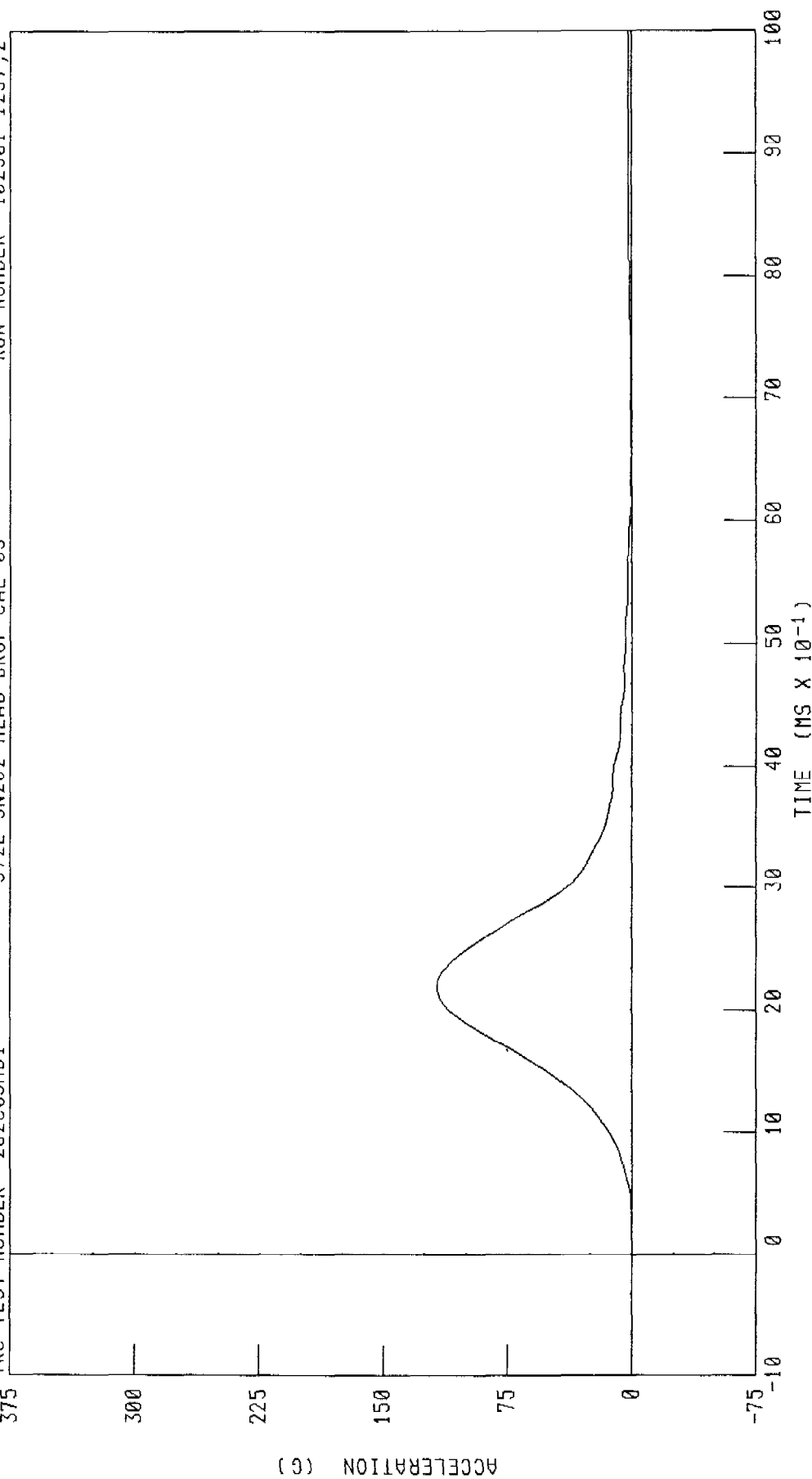
PART 572-E HYBRID III HEAD CALIBRATION

HEAD ACCELERATION Z AXIS

TRC TEST NUMBER 202C09HD1

572E SN202 HEAD DROP CAL 09

RUN NUMBER 102301 1257,2



CHANNEL HEDZC FILTER CH CLASS 1000

PEAK DATA 117 62 G 2 16 MS, -0 06 G 0 -0 64 MS

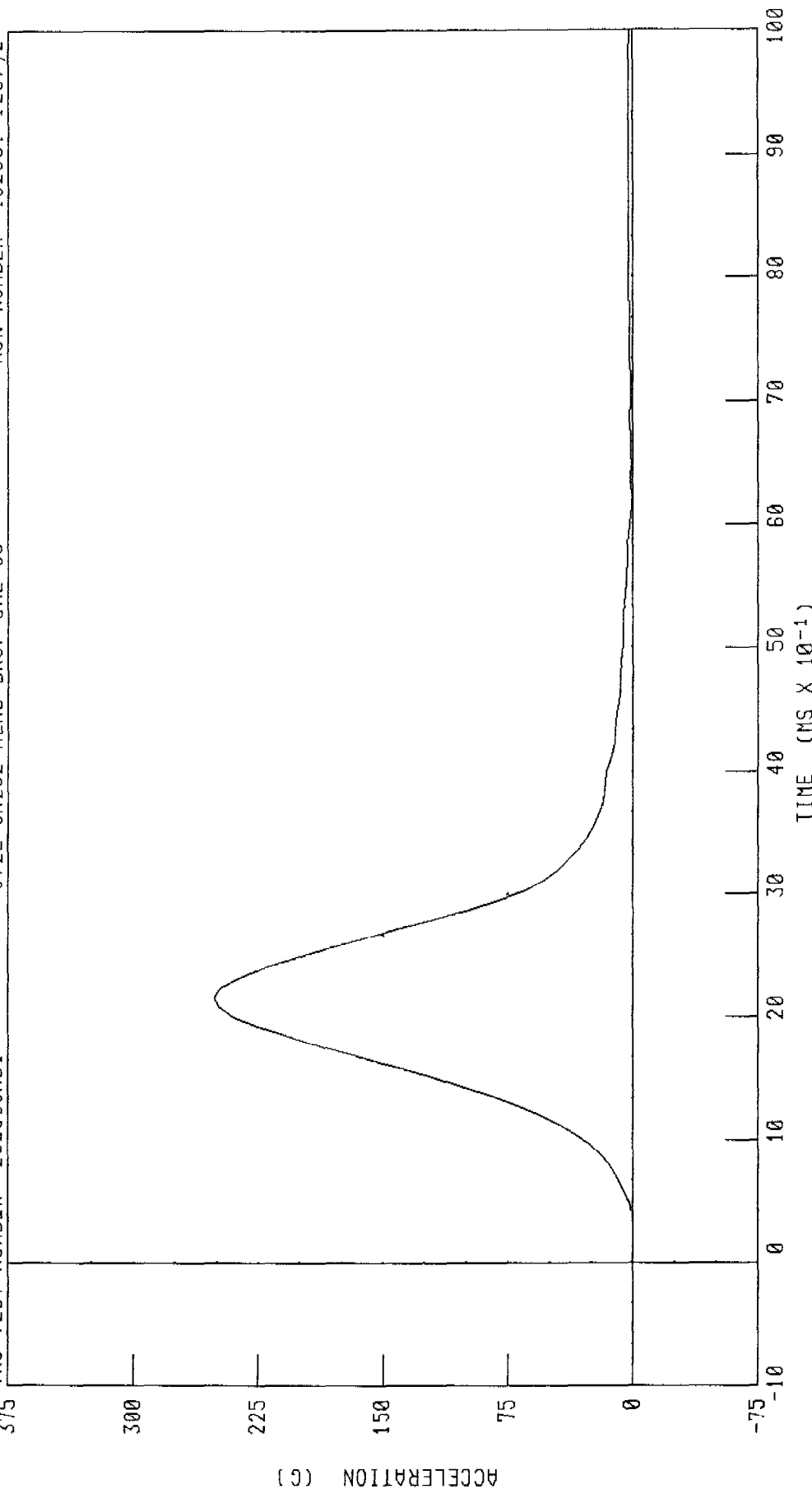
PART 572-E HYBRID III HEAD CALIBRATION

HEAD RESULTANT ACCELERATION

TRC TEST NUMBER 202C09HD1

572E SN202 HEAD DROP CAL 09

RUN NUMBER 102301 1257,2



CHANNEL HEDRG FILTER CH CLASS 1000

PEAK DATA 251 09 G @ 2 16 MS, 0 04 G @ -0 96 MS

TRANSPORTATION RESEARCH CENTER INC.

HYBRID III 50th

24-OCT-01

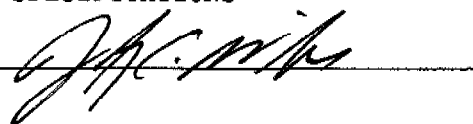
NECK FLEXION TEST - 6 CHANNEL TRANSDUCER

TRC INC. TEST NO: 202C09NF1 572E SN202 NECK FLEXION CAL09

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6-22.2 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY		10 - 70 %	62.0 %
IMPACT VELOCITY		6.89 - 7.13 M/S	6.93 M/S
PENDULUM DECELERATION	10 MS	22.50 - 27.50 G	26.63 G
	20 MS	17.60 - 22.60 G	22.26 G
	30 MS	12.50 - 18.50 G	18.24 G
MAX PENDULUM G		29 G MAX	27.39 G
MAX PENDULUM G ABOVE 30 MS		29 G MAX	18.16 G
DECELERATION-TIME CURVE DECAY TIME TO 5 G		34 - 42 MS	36.00 MS
D PLANE	MAX	64 - 78 DEG.	72.64 DEG.
ROTATION	TIME	57 - 64 MS	59.28 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MAX	88.2 - 108.5 NM	105.26 NM
	TIME	47 - 58 MS	49.12 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		113 - 128 MS	115.20 MS
POSITIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		97 - 107 MS	97.76 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 102401.0905;1

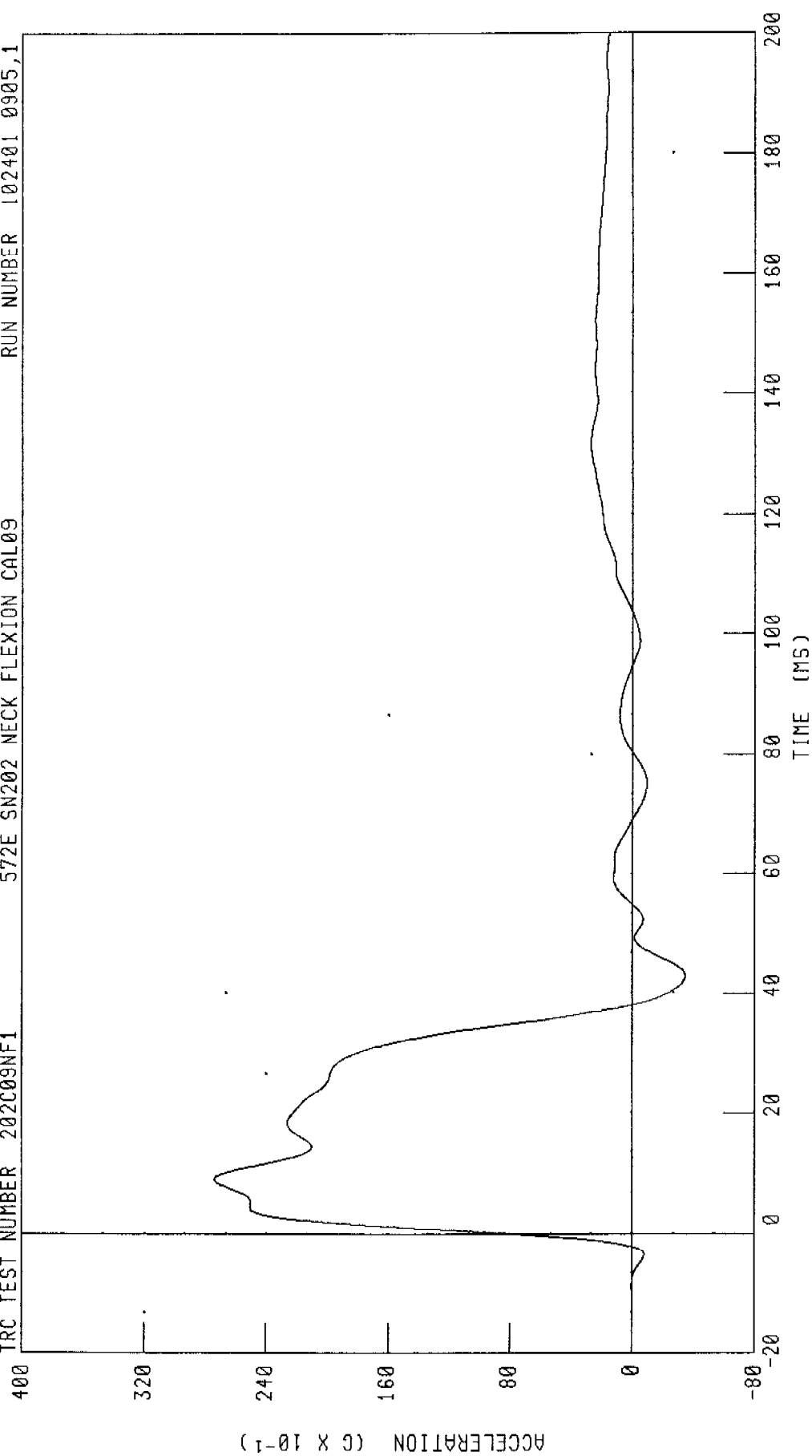
PART 572-E HYBRID III NECK FLEXION CALIBRATION

PENDULUM DECELERATION

TRC TEST NUMBER 202009NF1

572E SN202 NECK FLEXION CAL09

RUN NUMBER 102401 0905,1



CHANNEL PENXC FILTER CH CLASS 60

PEAK DATA 27 39 G @ 88 MS, -3 45 G @ 43 04 MS

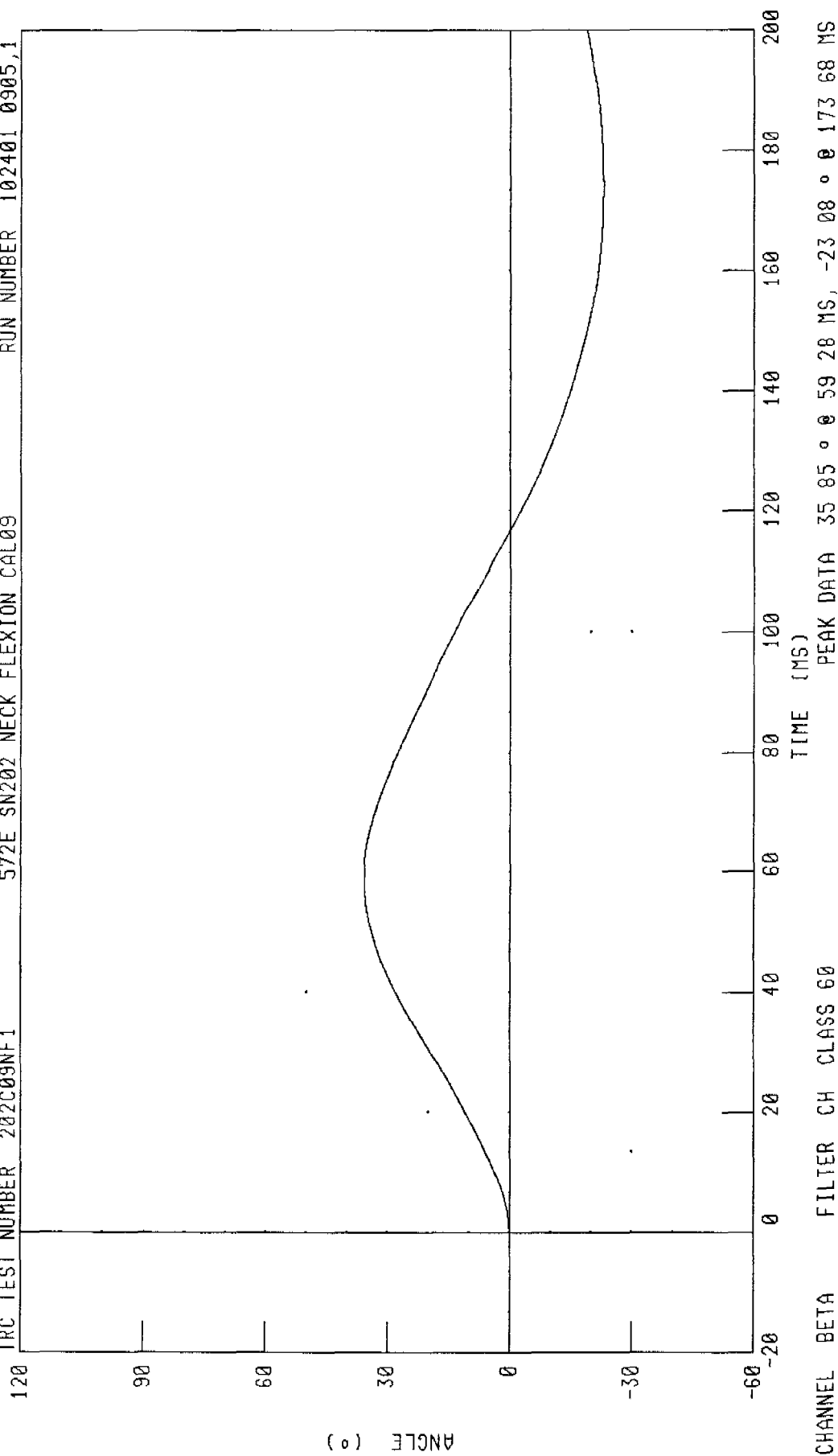
PART 572-E HYBRID III NECK FLEXION CALIBRATION

ROTATION ABOUT BASE OF NECK

572E SN202 NECK FLEXION CAL09

TRC TEST NUMBER 202C09NF1

RUN NUMBER 102401 0905,1

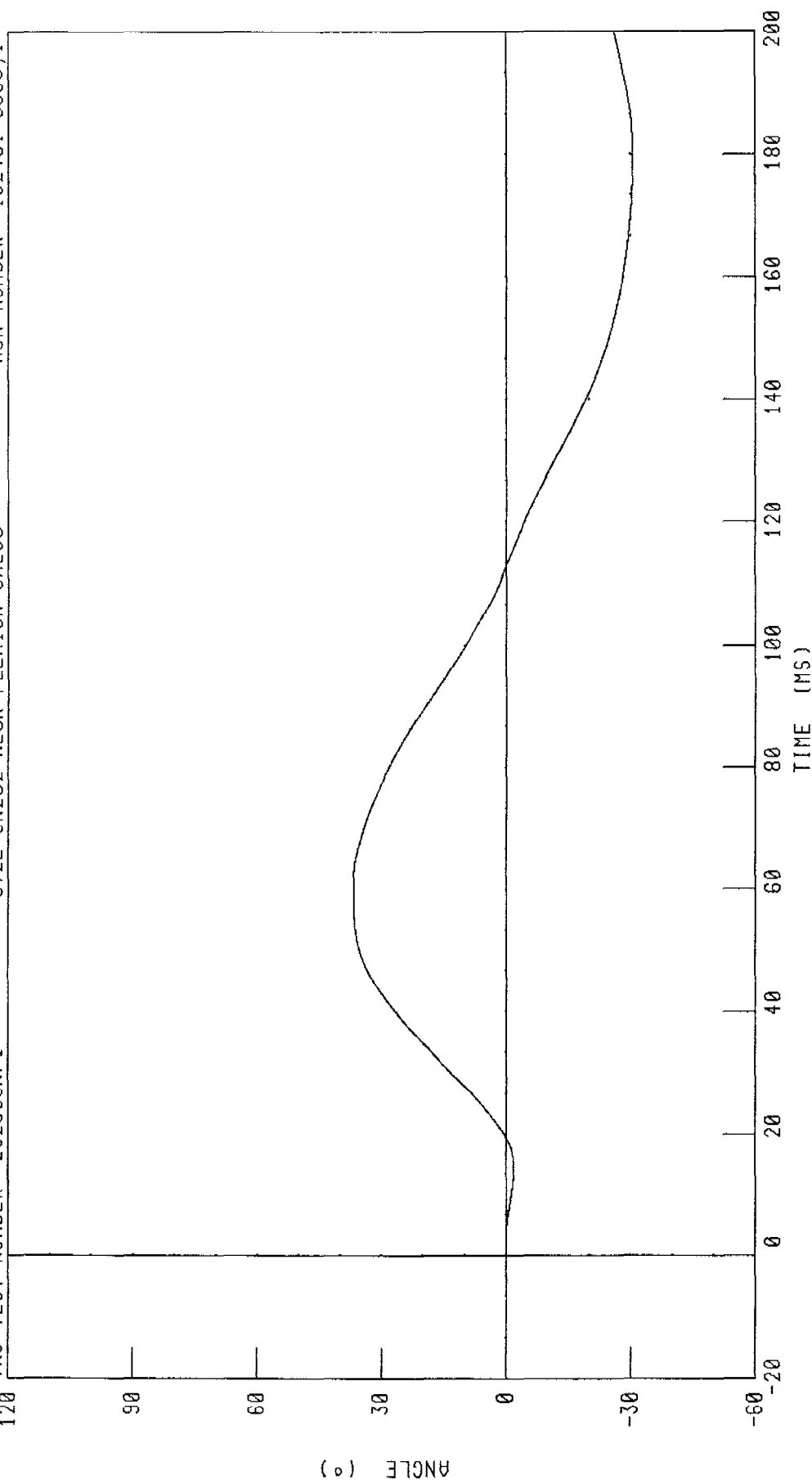


PART 572-E HYBRID III NECK FLEXION CALIBRATION
 ROTATION ABOUT OCCIPITAL CONDYLE

IRC TEST NUMBER 202C09NF1

572E SN202 NECK FLEXION CAL09

RUN NUMBER 102401 0905,1



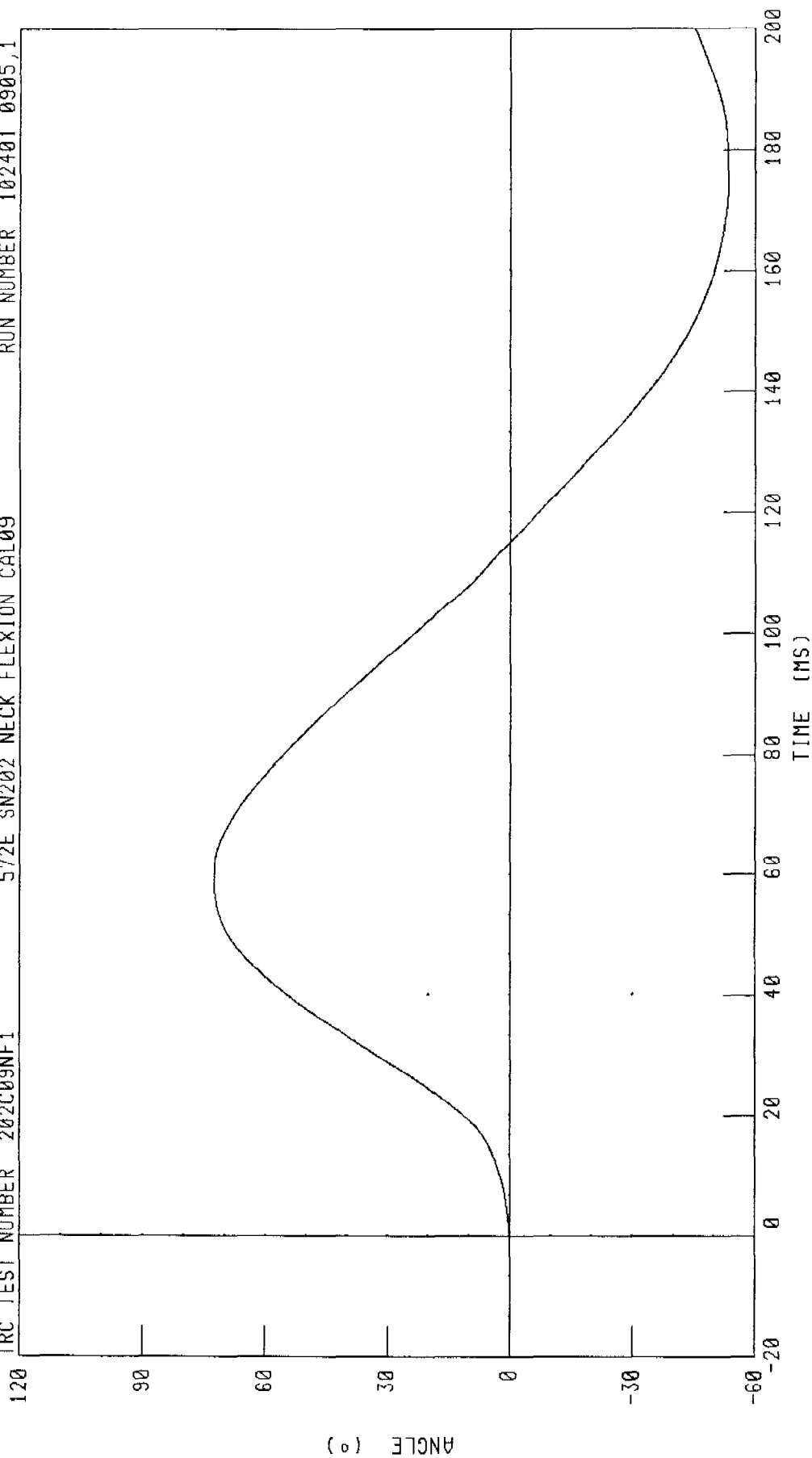
PEAK DATA 36 79 ° 0 59 28 MS, -30 51 ° 0 178 56 MS

CHANNEL THETA FILTER CH CLASS 60

PART 572-E HYBRID III NECK FLEXION CALIBRATION

TOTAL ROTATION

TRC TEST NUMBER 202C09NF1 572E SN202 NECK FLEXION CAL09 RUN NUMBER 102401 0905,1



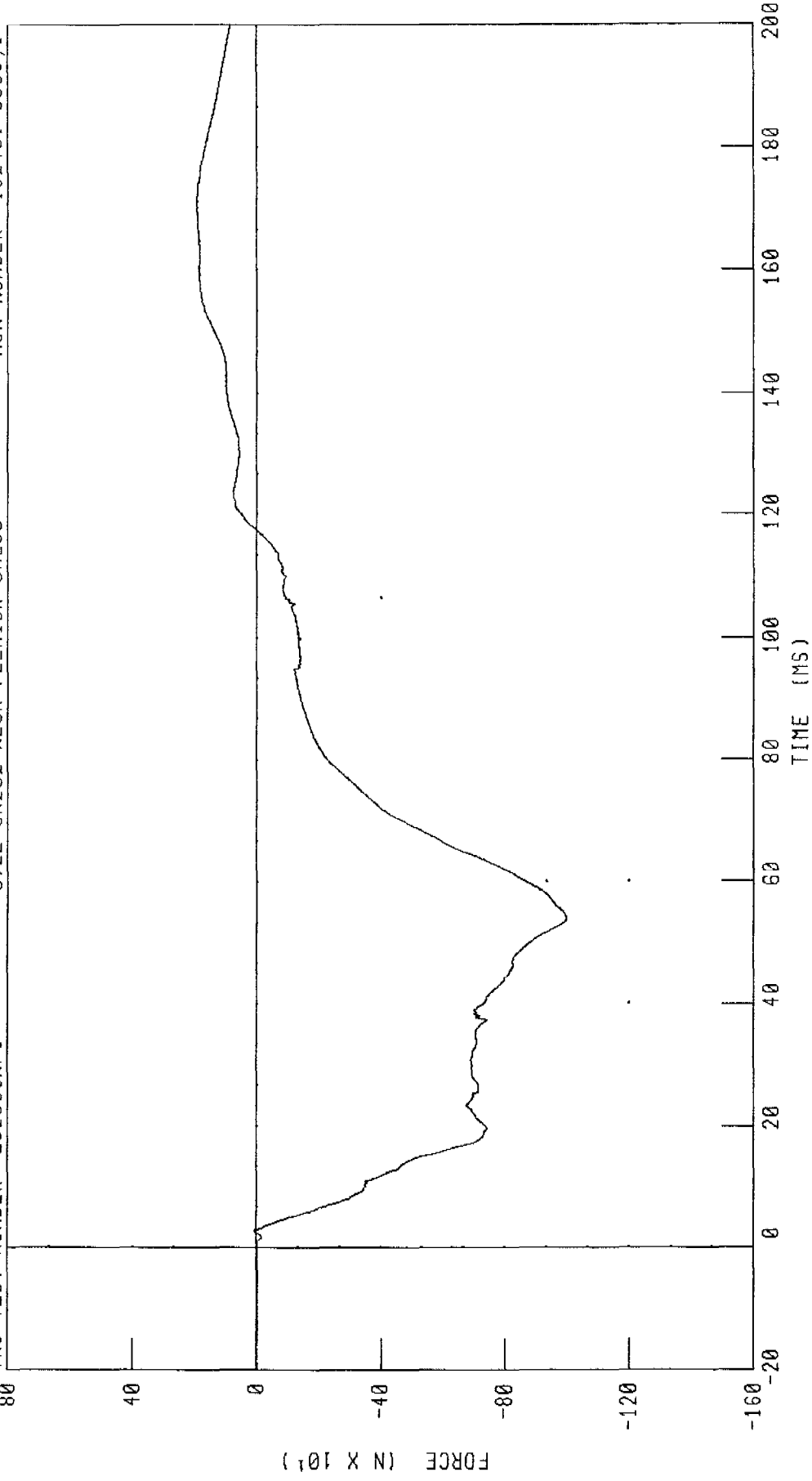
PEAK DATA 72 64 ° @ 59 28 MS, -53 53 ° @ 176 24 MS

CHANNEL TOTAL FILTER CH CLASS 60

PART 572-E HYBRID III NECK FLEXION CALIBRATION

NECK FORCE X AXIS

TRC TEST NUMBER 202C09NF1 572E SN202 NECK FLEXION CAL09 RUN NUMBER 102401 0905,1



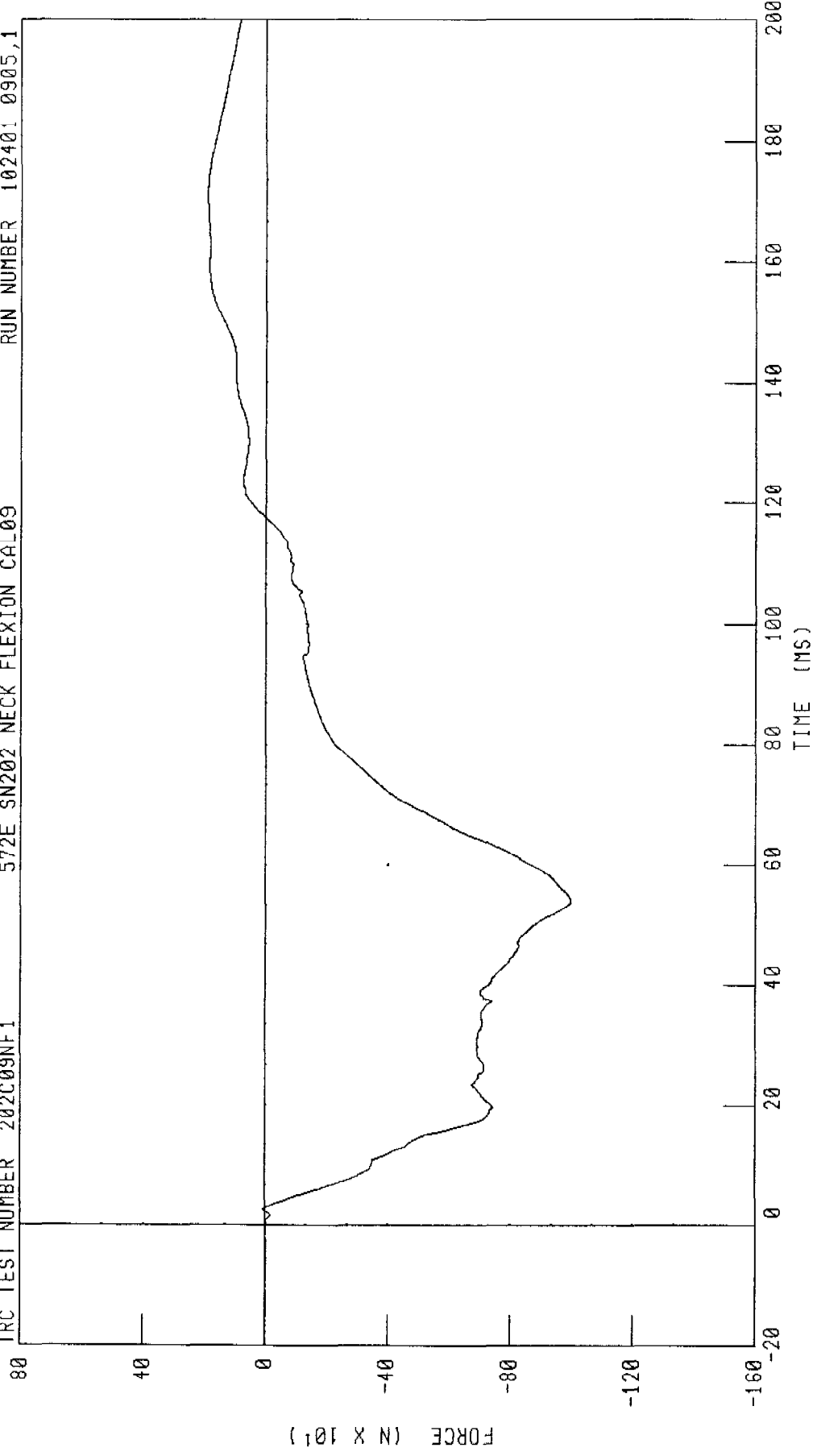
CHANNEL NEKXF FILTER CH CLASS 1000

PEAK DATA 193 97 N @ 169 84 MS, -998 32 N @ 54 16 MS

PART 572-E HYBRID III NECK FLEXION CALIBRATION

NECK FORCE X AXIS FILTERED FOR USE IN OCCIPITAL MOMENT CALCULATION

TRC TEST NUMBER 202C09NF1 572E SN202 NECK FLEXION CAL09 RUN NUMBER 102401 0905,1



CHANNEL NEKXFC FILTER CH CLASS 600

PEAK DATA 193 89 N @ 170 00 MS, -997 88 N @ 54 16 MS

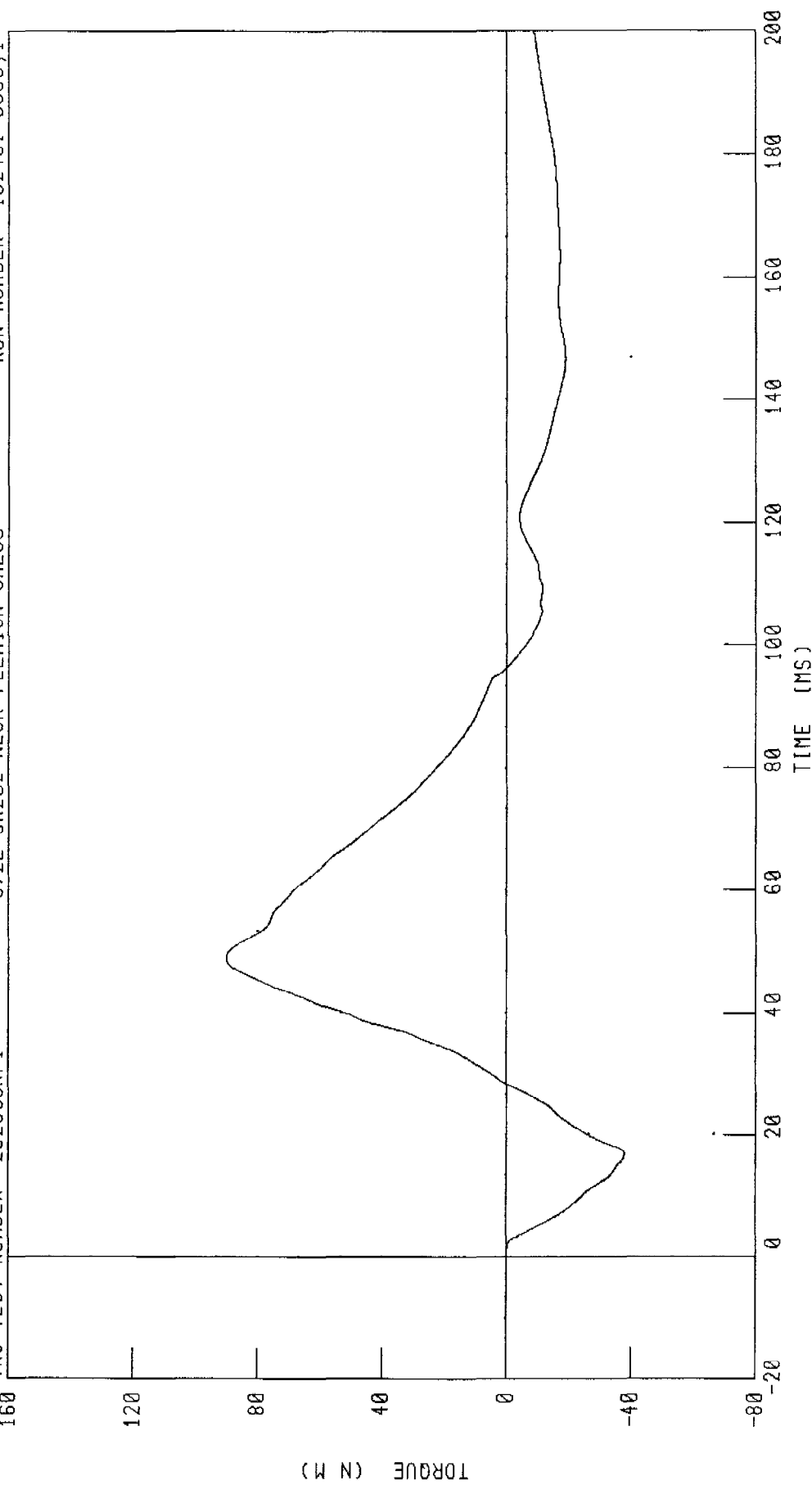
PART 572-E HYBRID III NECK FLEXION CALIBRATION

NECK MOMENT Y AXIS

TRC TEST NUMBER 202C09NF1

572E SN202 NECK FLEXION CAL09

RUN NUMBER 102401 0905,1



CHANNEL NEKYM FILTER CH CLASS 600

PEAK DATA 90 06 N M @ 48 96 MS, -38 00 N M @ 16 88 MS

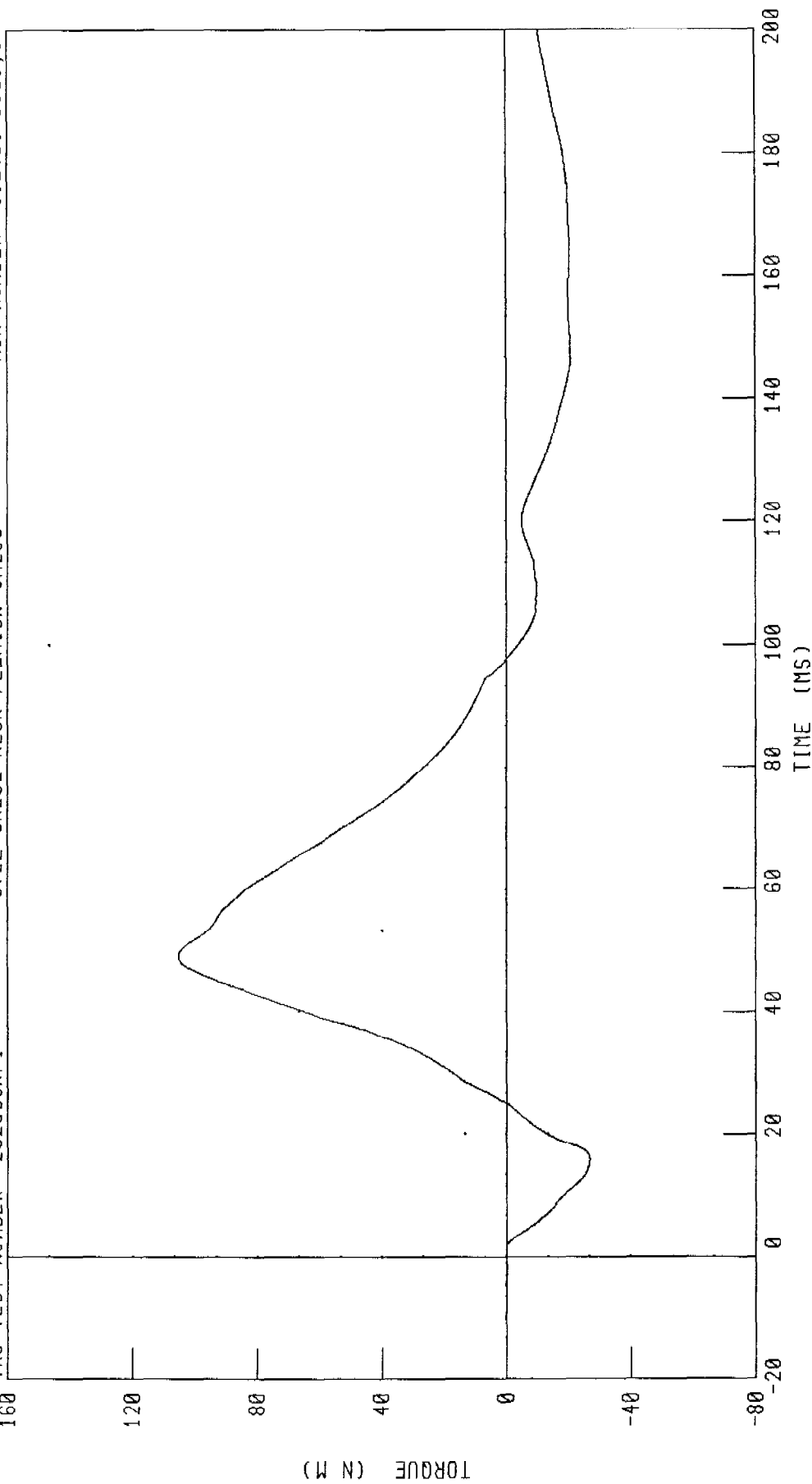
PART 572-E HYBRID III NECK FLEXION CALIBRATION

TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER 202C09NF1

572E SN202 NECK FLEXION CAL09

RUN NUMBER 102401 0905,1



PEAK DATA 105 26 N M @ 49 12 MS, -26 71 N M @ 15 84 MS

CHANNEL NEKOM FILTER CH CLASS 600

TRANSPORTATION RESEARCH CENTER INC.

HYBRID III 50th

24-OCT-01

NECK EXTENSION TEST - 6 CHANNEL TRANSDUCER

TRC INC.

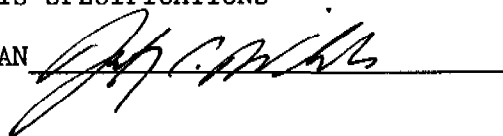
TEST NO: 202C09NE1

572E SN202 NECK EXT CAL09

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6 - 22.2 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY		10 - 70 %	60.0 %
IMPACT VELOCITY		5.95 - 6.19 M/S	6.05 M/S
PENDULUM DECELERATION	10 MS	17.20 - 21.20 G	18.90 G
	20 MS	14.00 - 19.00 G	17.57 G
	30 MS	11.00 - 16.00 G	15.48 G
MAX PENDULUM G		22 G MAX	19.04 G
MAX PENDULUM G ABOVE 30 MS		22 G MAX	15.41 G
DECELERATION-TIME CURVE DECAY TIME TO 5 G		38 - 46 MS	41.36 MS
D PLANE	MAX	81 - 106 DEG.	97.33 DEG.
ROTATION	TIME	72 - 82 MS	78.24 MS
MOMENT ABOUT OCCIPITAL CONDYLE	MIN	-80.0/-52.9 NM	-68.16 NM
	TIME	65 - 79 MS	73.44 MS
ROTATION ANGLE-TIME CURVE DECAY TIME TO ZERO		147 - 174 MS	156.72 MS
NEGATIVE MOMENT-TIME CURVE DECAY TIME TO ZERO		120 - 148 MS	142.08 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 102401.1003;1

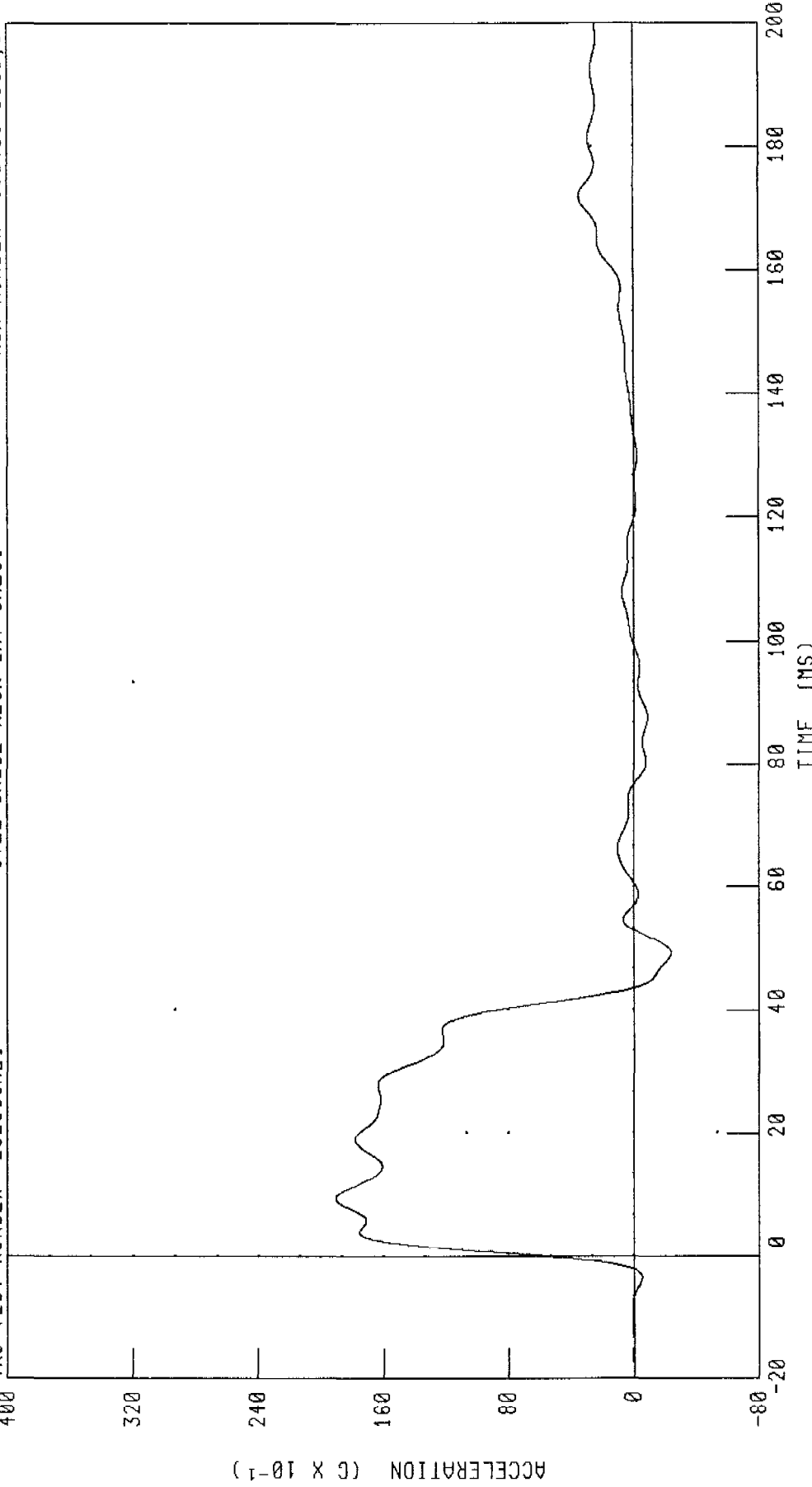
PART 572-E HYBRID III NECK EXTENSION CALIBRATION

PENDULUM DECELERATION

TRC TEST NUMBER 202C09NE1

572E SN202 NECK EXT CAL09

RUN NUMBER 102401 1003,1



CHANNEL PENXC FILTER CH CLASS 60

PEAK DATA 19 05 G 0 9 36 MS, -2 38 G 0 49 28 MS

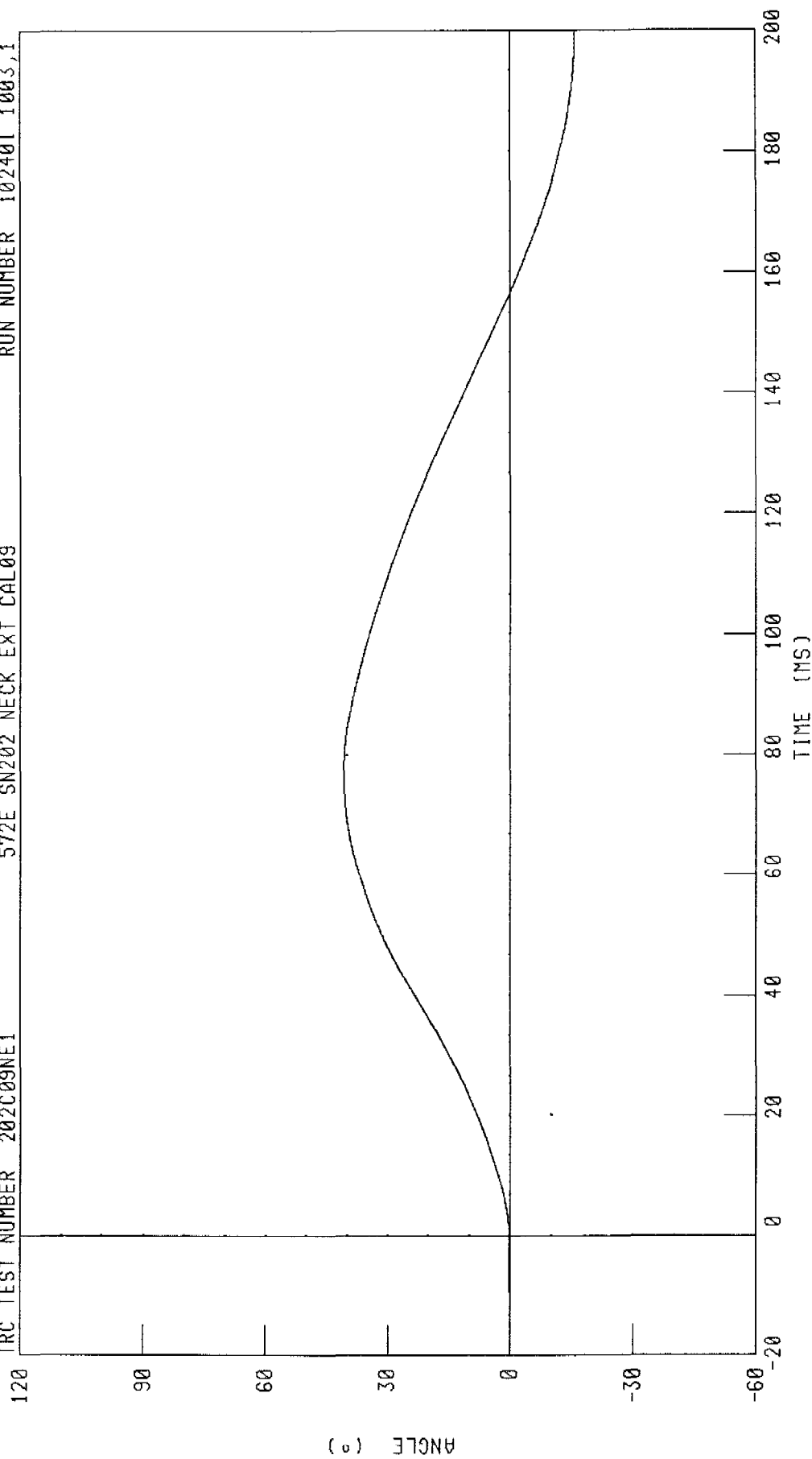
PART 572-E HYBRID III NECK EXTENSION CALIBRATION

ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER 202C09NE1

572E SN202 NECK EXT CAL09

RUN NUMBER 102401 1003,1



CHANNEL BETA FILTER CH CLASS 60

PEAK DATA 40 78 ° @ 76 08 MS, -15 92 ° @ 200 00 MS

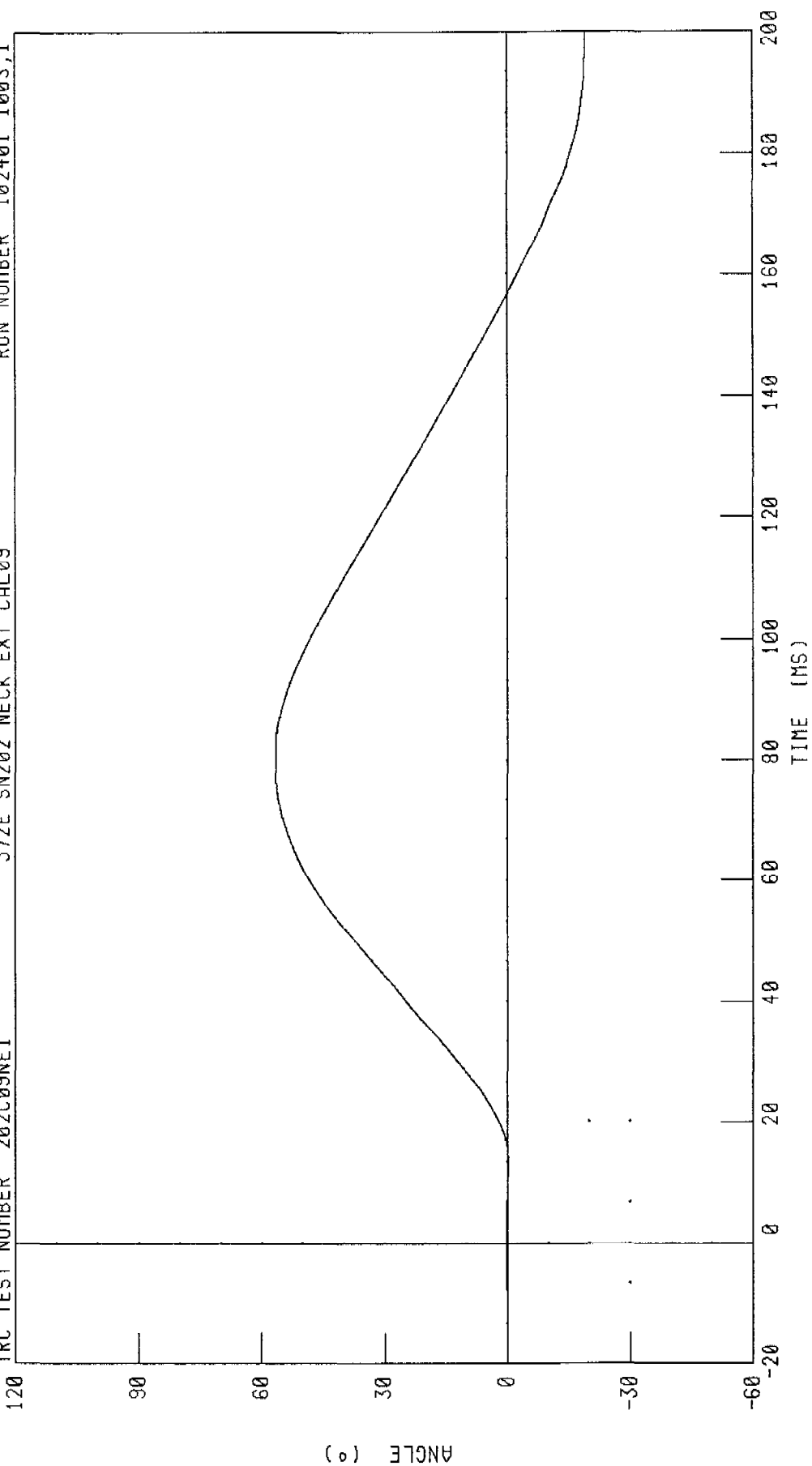
PART 572-E HYBRID III NECK EXTENSION CALIBRATION

ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER 202C09NE1

572E SN202 NECK EXT CAL09

RUN NUMBER 102401 1003,1



PEAK DATA 56 65 ° 0 80 64 MS, -19 17 ° 0 200 00 MS

CHANNEL THETA FILTER CH CLASS 60

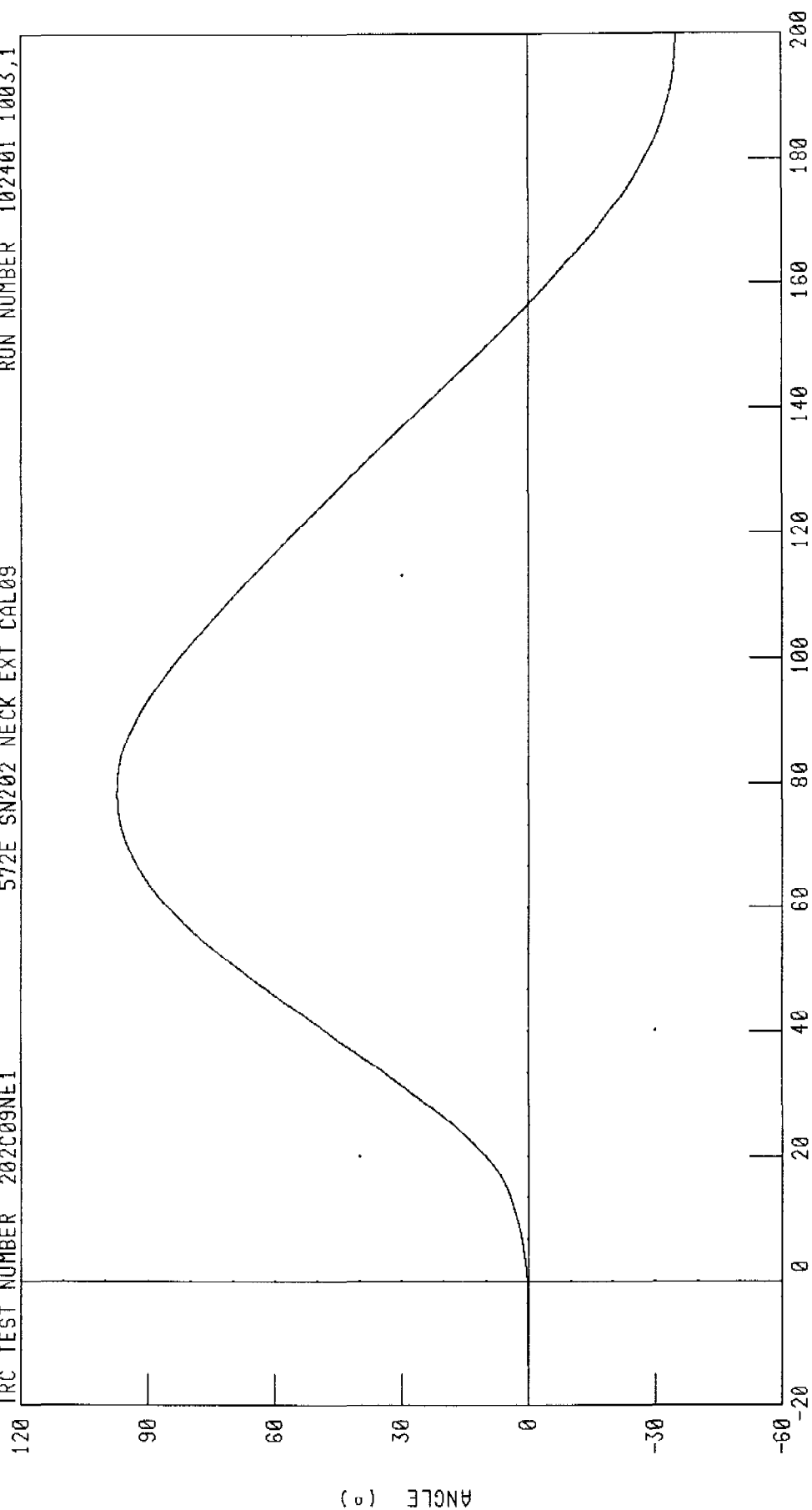
PART 572-E HYBRID III NECK EXTENSION CALIBRATION

TOTAL ROTATION

TRC TEST NUMBER 202C09NE1

572E SN202 NECK EXT CAL09

RUN NUMBER 102401 1003,1



TIME (MS)

CHANNEL TOTAL FILTER CH CLASS 60 PEAK DATA 97 33 ° @ 78 24 MS, -35 09 ° @ 200 00 MS

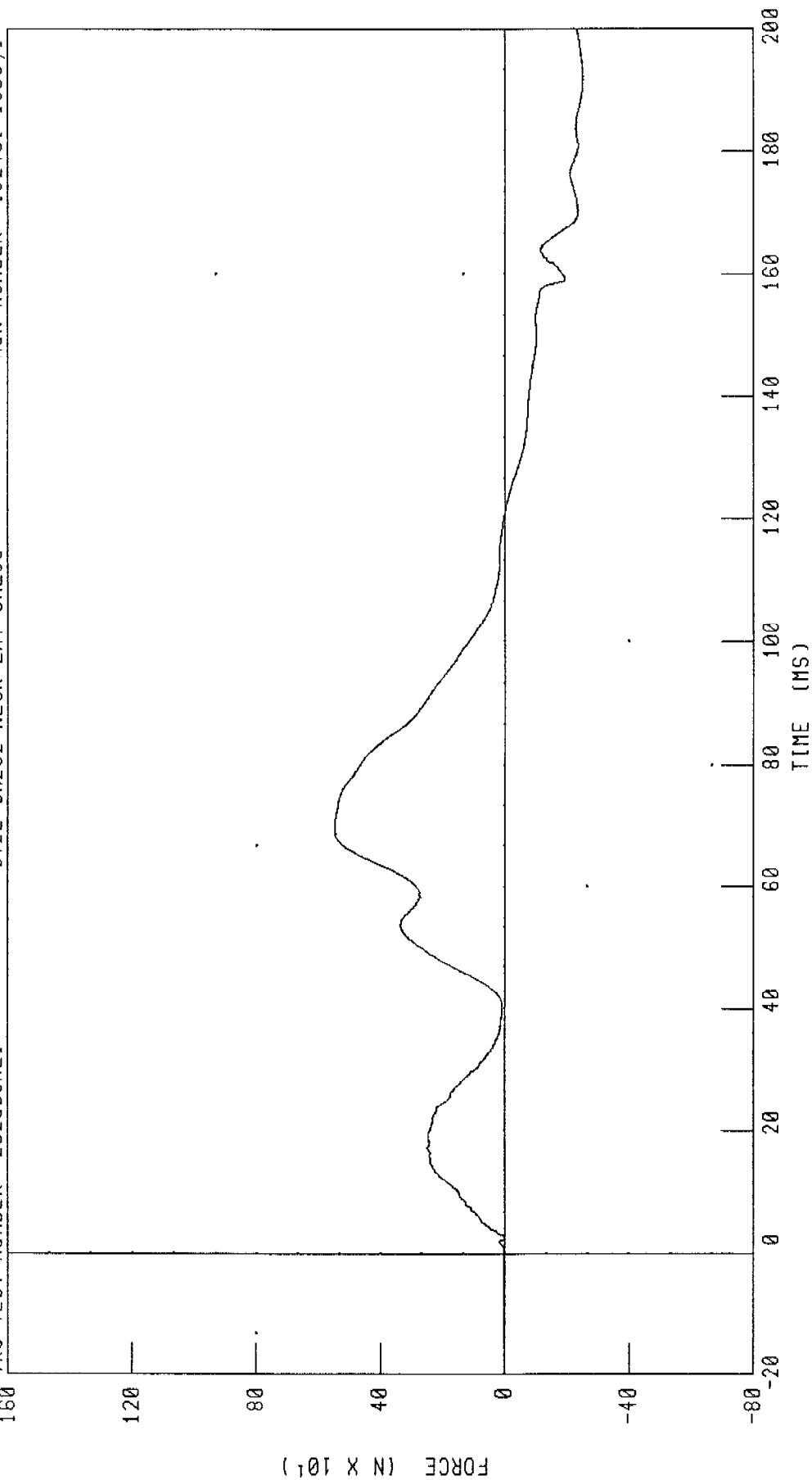
PART 572-E HYBRID III NECK EXTENSION CALIBRATION

NECK FORCE X AXIS

TRC TEST NUMBER 202C09NE1

572E SN202 NECK EXT CAL09

RUN NUMBER 102401 1003,1

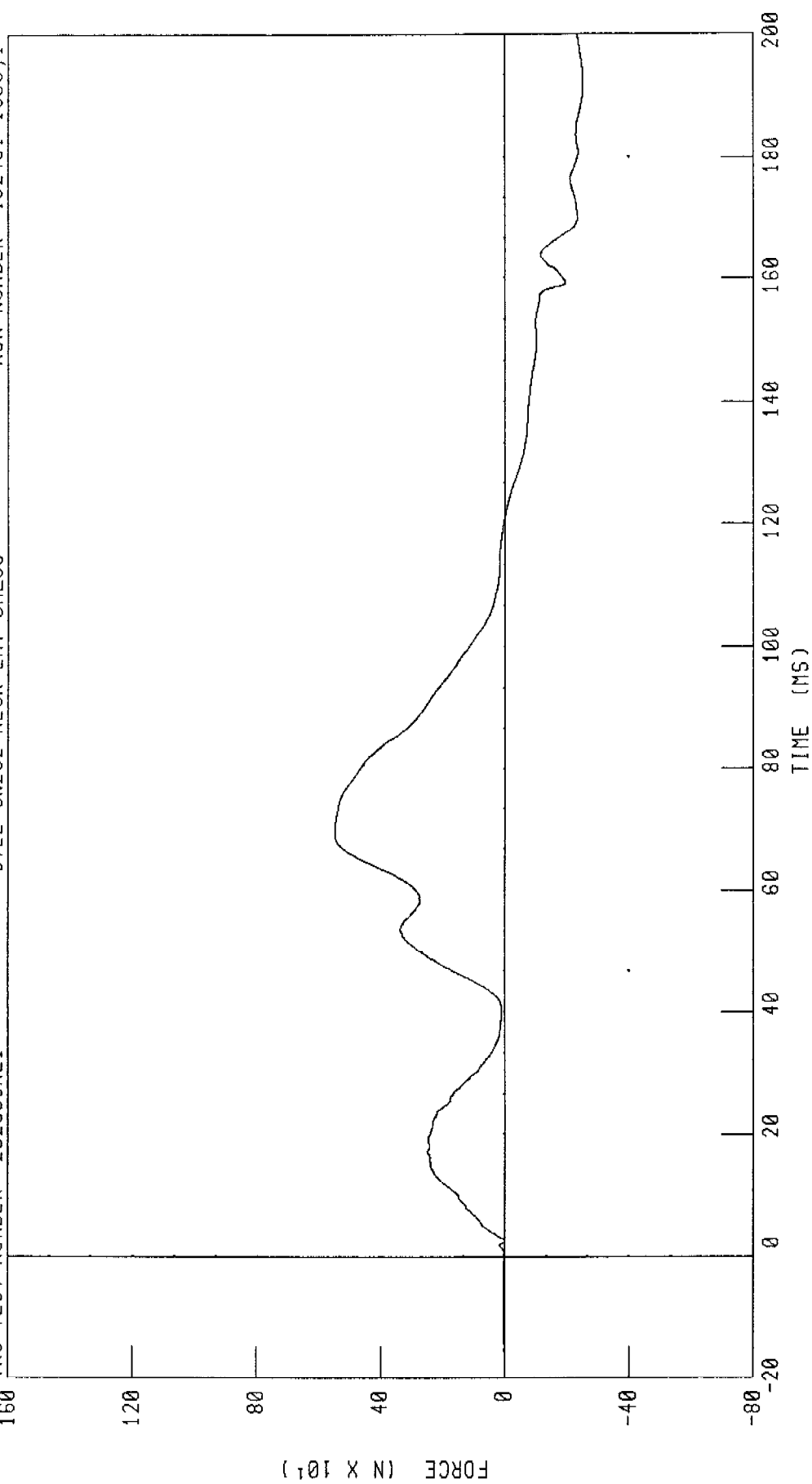


CHANNEL NEKXF FILTER CH CLASS 1000

PEAK DATA 549 03 N 0 69 52 MS, -253 51 N 0 191 84 MS

PART 572-E HYBRID III NECK EXTENSION CALIBRATION
NECK FORCE X AXIS FILTERED FOR USE IN OCCIPITAL MOMENT CALCULATION

IRC TEST NUMBER 202C09NE1 572E SN202 NECK EXT CAL09 RUN NUMBER 102401 1003,1



CHANNEL NEKXFC FILTER CH CLASS 600

PEAK DATA 548 65 N @ 69 92 MS, -253 18 N @ 192 24 MS

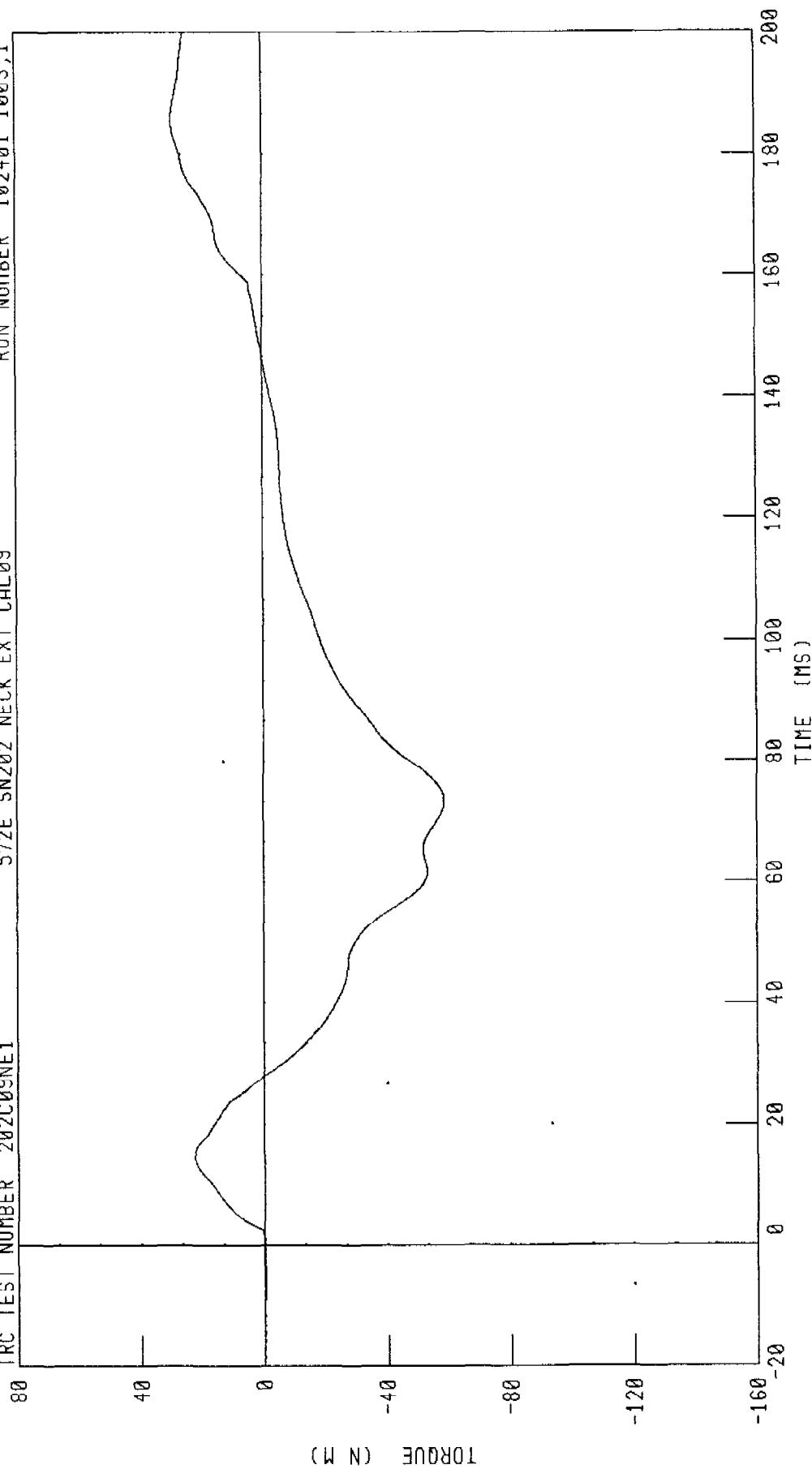
PART 572-E HYBRID III NECK EXTENSION CALIBRATION

NECK MOMENT Y AXIS

TRC TEST NUMBER 202C09NE1

572E SN202 NECK EXT CAL09

RUN NUMBER 102401 1003,1



PEAK DATA 29 61 N M 0 185 68 MS, -58 60 N M 0 73 52 MS

CHANNEL NEKYM FILTER CH CLASS 600

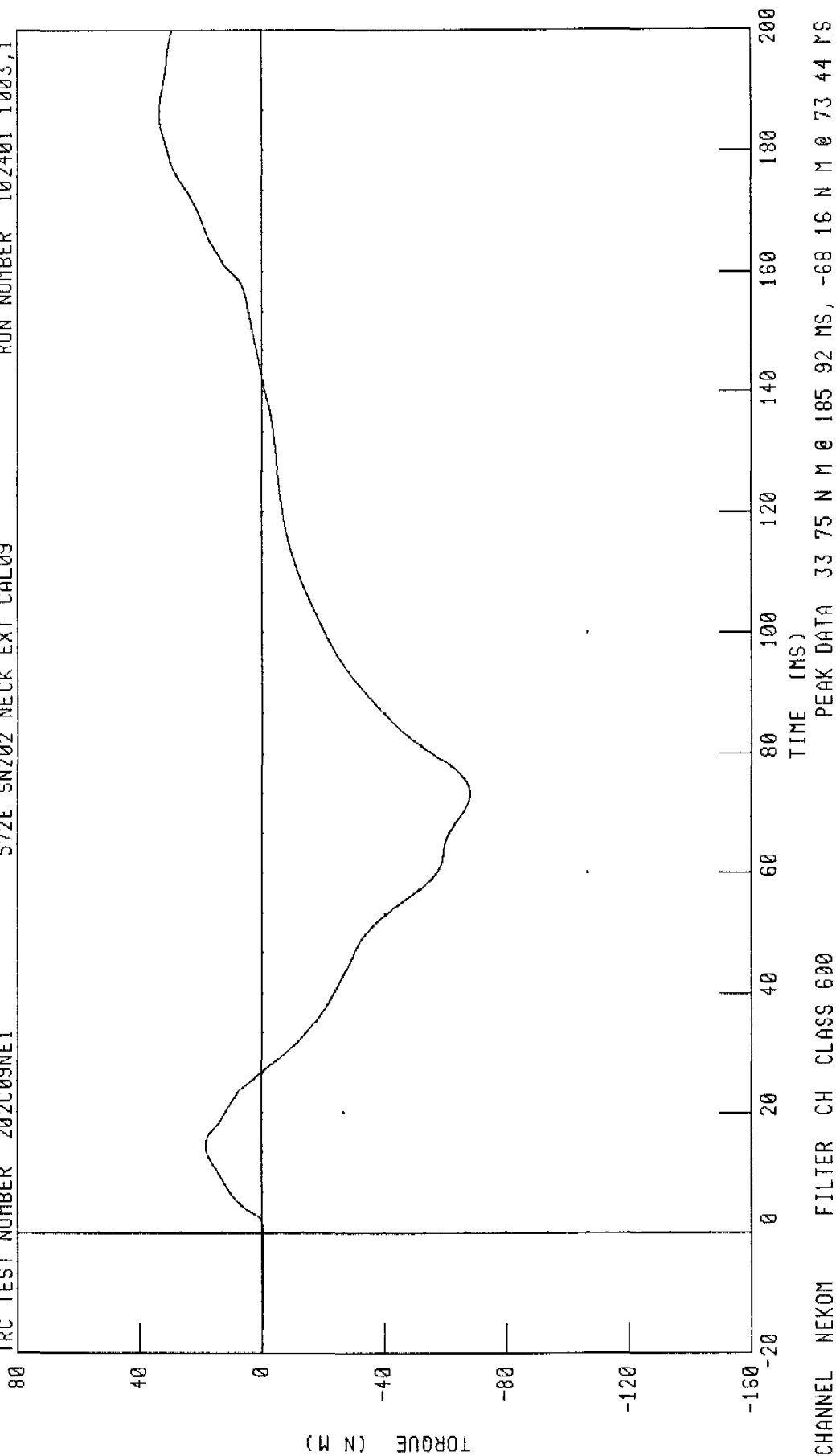
PART 572-E HYBRID III NECK EXTENSION CALIBRATION

TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER 202C09NE1

572E SN202 NECK EXT CAL09

RUN NUMBER 102401 1003,1



CHANNEL NEKOM FILTER CH CLASS 600

TRANSPORTATION RESEARCH CENTER INC.

THORAX IMPACT TEST

HYBRID III 50th

24-OCT-01

TRC INC.

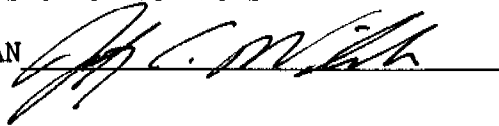
TEST NO: 202C09TH1

572E SN202 H.S.THORAX CAL09

TEST PARAMETER	HIGH SPEED TEST	TEST RESULTS
	SPECIFICATION	
TEMPERATURE	20.6-22.2 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	59.0 %
PENDULUM VELOCITY	6.59 - 6.83 M/S	6.59 M/S
MAXIMUM DEFLECTION	63.5 - 72.6 MM	67.8 MM
MAXIMUM RESISTIVE FORCE	5159 - 5894 N	5802. N
INTERNAL HYSTERESIS	69% - 85%	70.9%

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 102401.1255;1

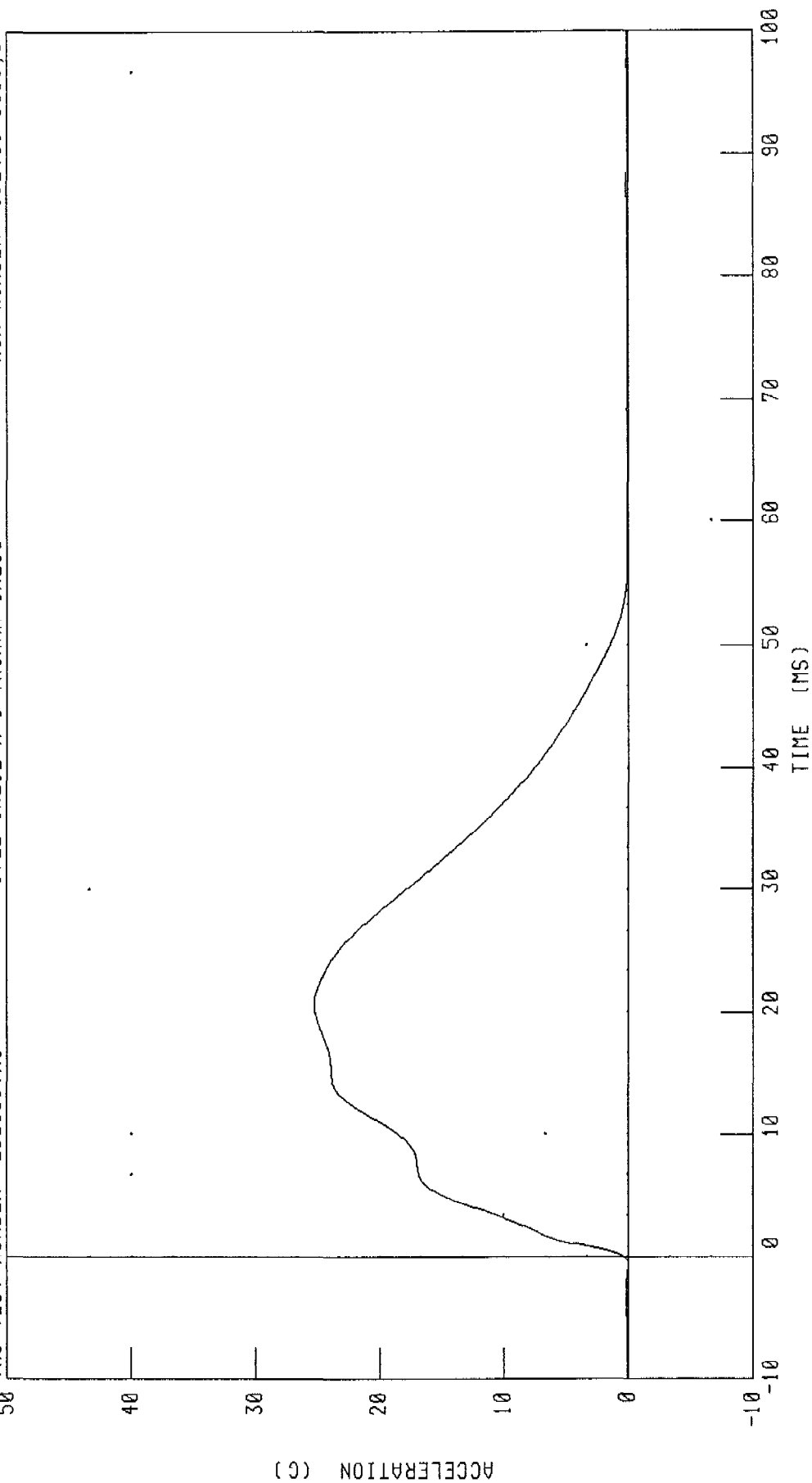
PART 572-E HYBRID III THORAX CALIBRATION

PENDULUM DECELERATION

TRC TEST NUMBER 202C09TH1

572E SN202 H S THORAX CAL09

RUN NUMBER 102401 1328,1



CHANNEL PENXG FILTER CH CLASS 180

PEAK DATA 25 33 G 20 64 MS, -0 04 G 0 -0 64 MS

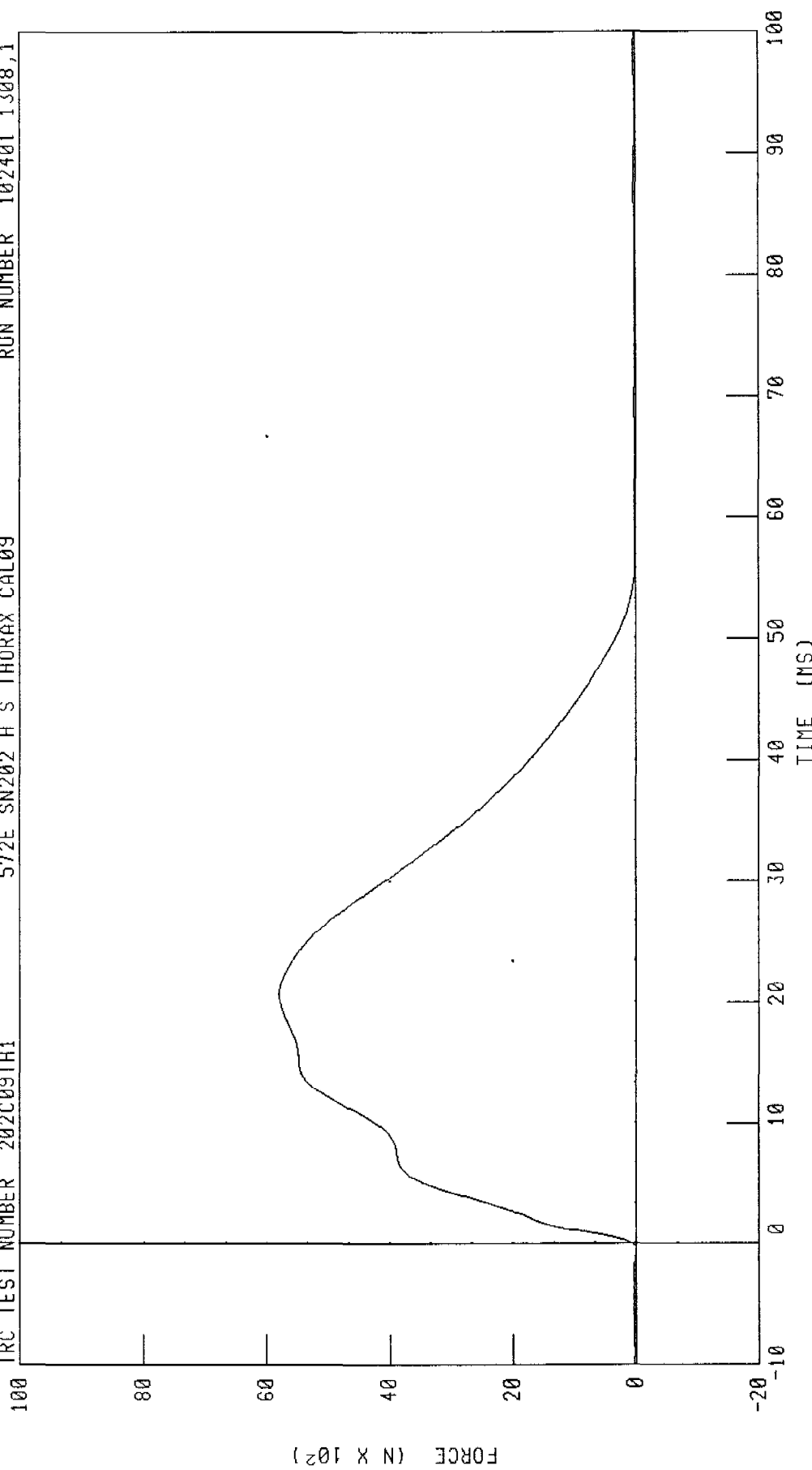
PART 572-E HYBRID III THORAX CALIBRATION

PENDULUM FORCE

TRC TEST NUMBER 202C09TH1

572E SN202 H S THORAX CAL09

RUN NUMBER 102401 1308,1



CHANNEL PENXF FILTER CH CLASS 180

PEAK DATA 5802 18 N 0 20 64 MS, -8 64 N 0 -0 64 MS

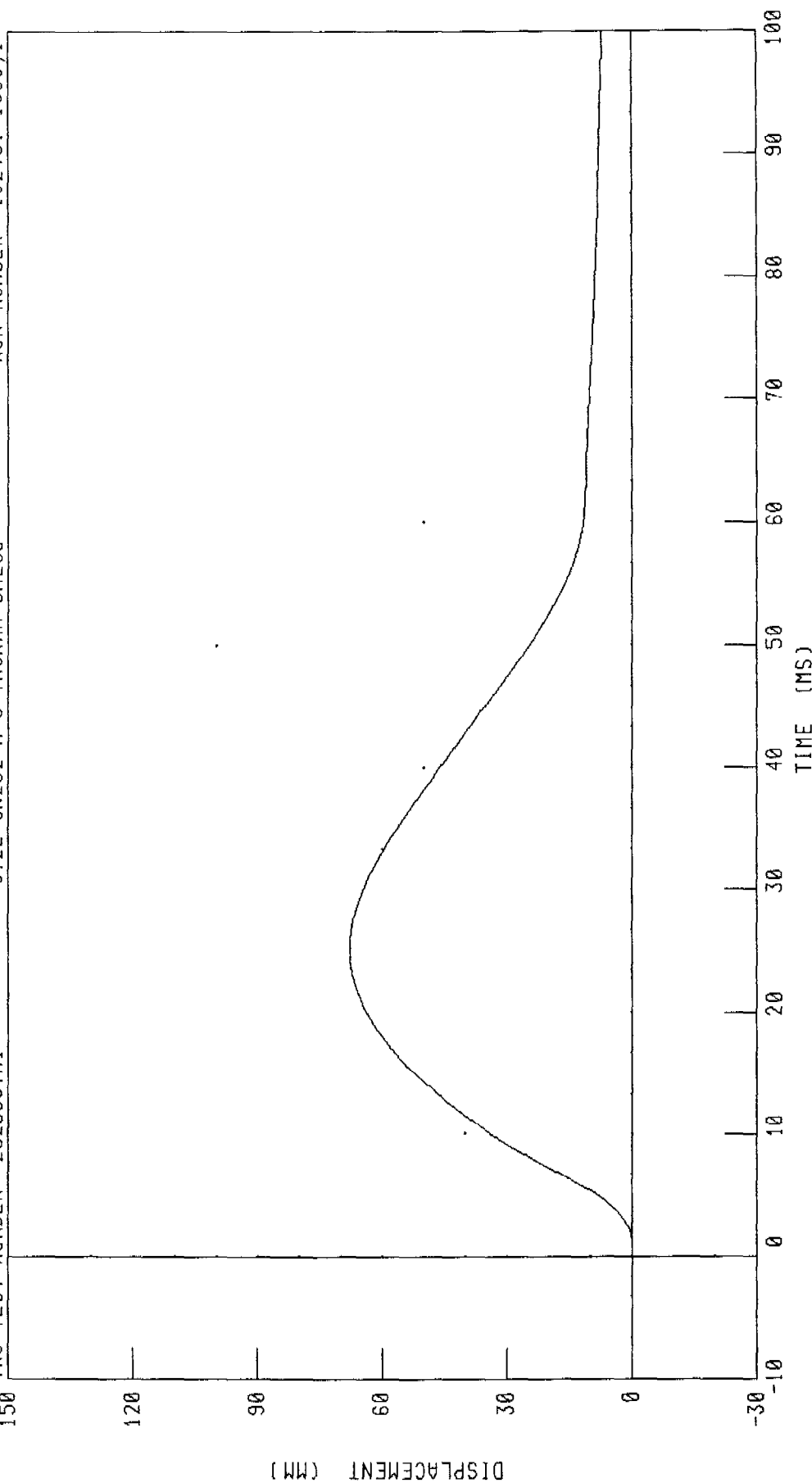
PART 572-E HYBRID III THORAX CALIBRATION

STERNUM DISPLACEMENT

TRC TEST NUMBER 202C09TH1

572E SN202 H S THORAX CAL09

RUN NUMBER 102401 1308,1



CHANNEL CSTXD FILTER CH CLASS 180

PEAK DATA 67 81 MM @ 25 20 MS, -0 03 MM @ 0 80 MS

PART 572-E HYBRID III THORAX CALIBRATION

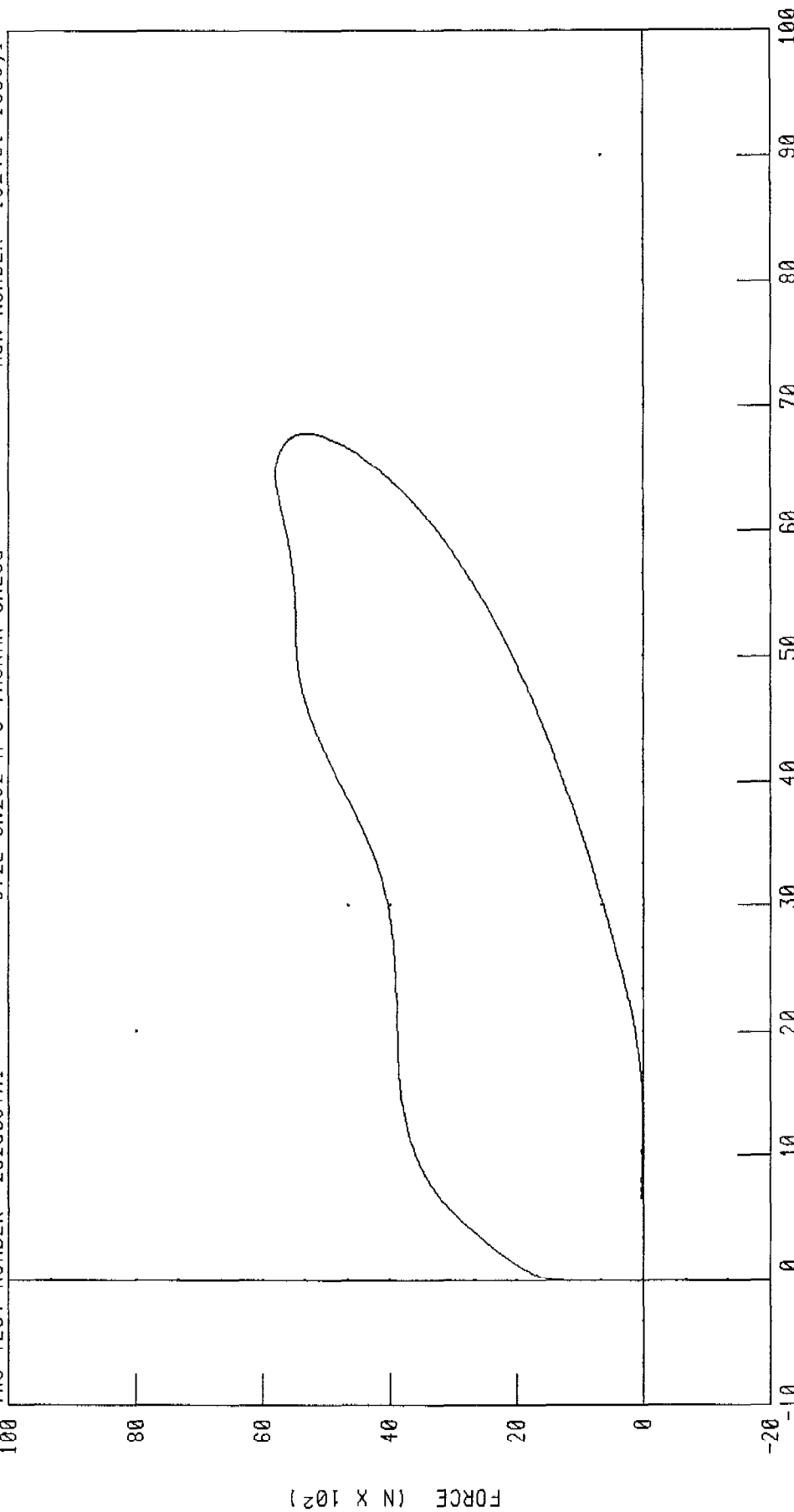
CHEST DISPLACEMENT VS PENDULUM FORCE

TRC TEST NUMBER 202C09TH1

572E SN202 H S THORAX CAL09

RUN NUMBER 102401

1308,1



CHANNEL CSTXD FILTER CH CLASS 180
 PENXF CH CLASS 180
 DISPLACEMENT (MM)
 PEAK DATA
 67 81 MM @ 25 20 MS, -0 03 MM @ 0 80 MS
 5802 18 N @ 20 64 MS, -8 64 N @ -0 64 MS

Transportation Research Center Inc

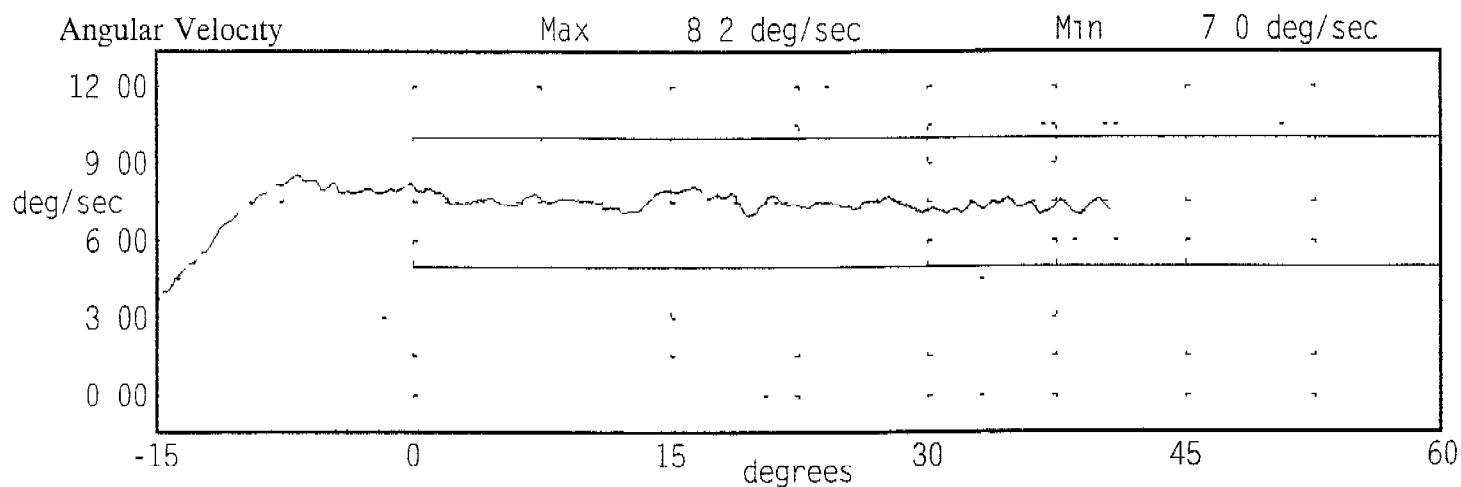
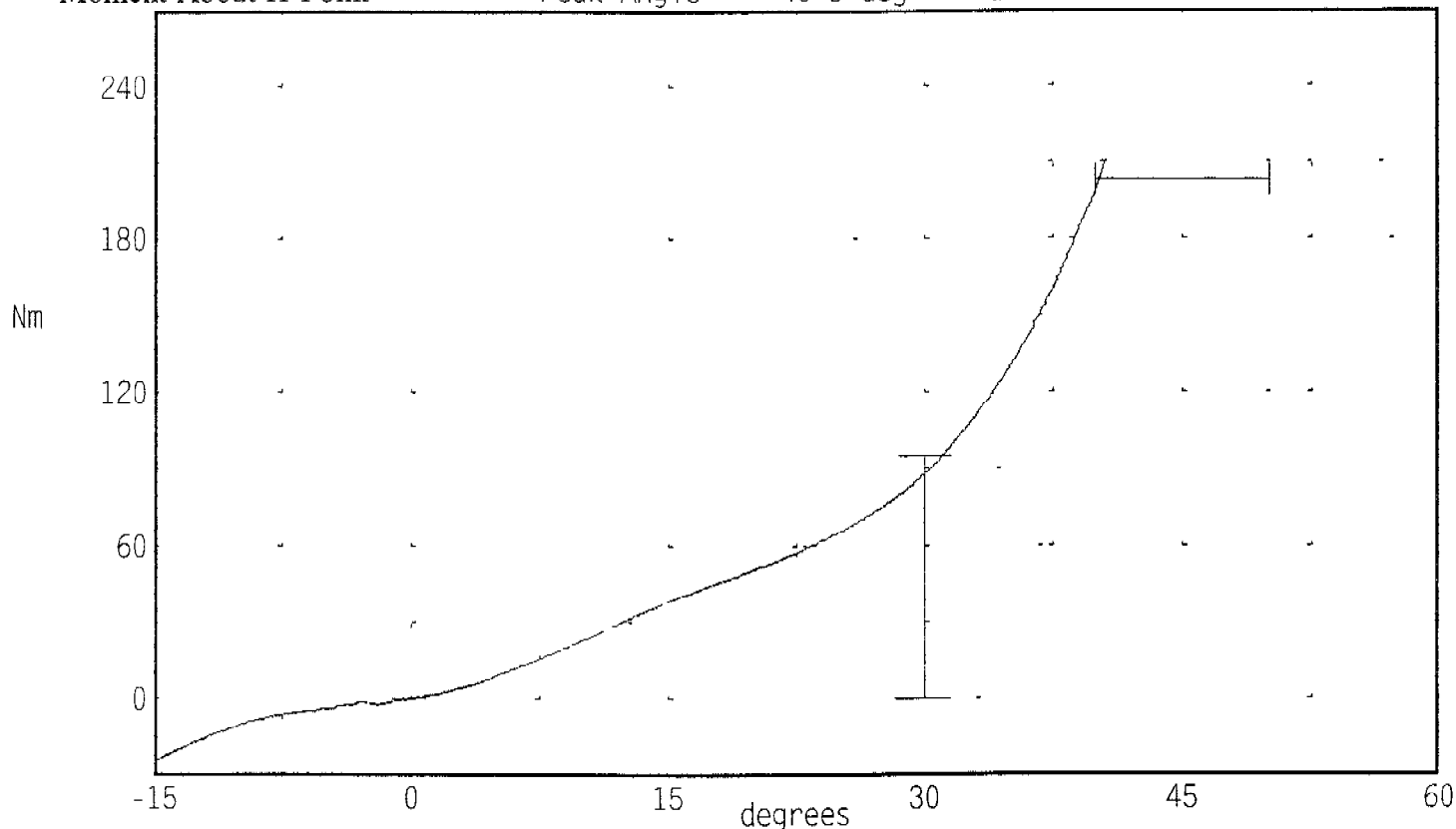
Hybrid III Hip Range of Motion

Serial Number 202L
Test Number 202C09
Comments

Date 10/23/2001
Time 09:51

TEST PARAMETER	SPECIFICATION	TEST RESULTS	
Temperature	18.9 - 25.6	21.7 °C	Pass
Humidity	10 - 70	61 %	Pass
Moment at 30 deg	<= 94.9	87.9 Nm	Pass
Angle at 203 Nm	40.0 - 50.0	40.2 deg	Pass
Average Velocity	5.0 - 10.0	7.5 deg/sec	Pass

Moment About H-Point
Peak Moment 210.7 Nm at 40.5 deg
Peak Angle 40.5 deg at 210.7 Nm



Transportation Research Center Inc

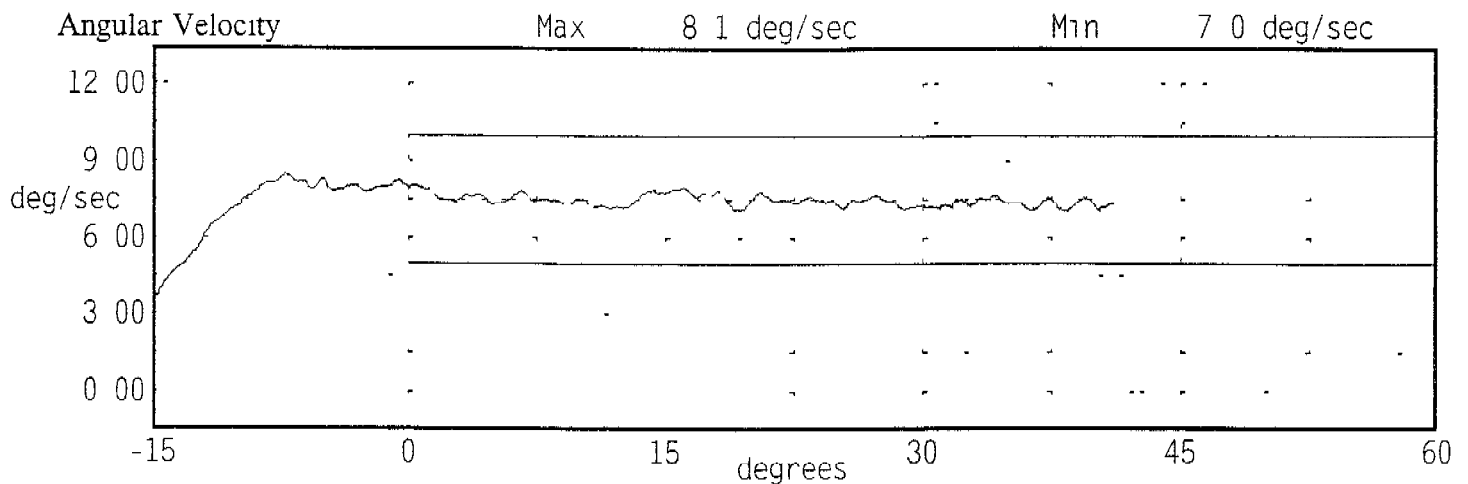
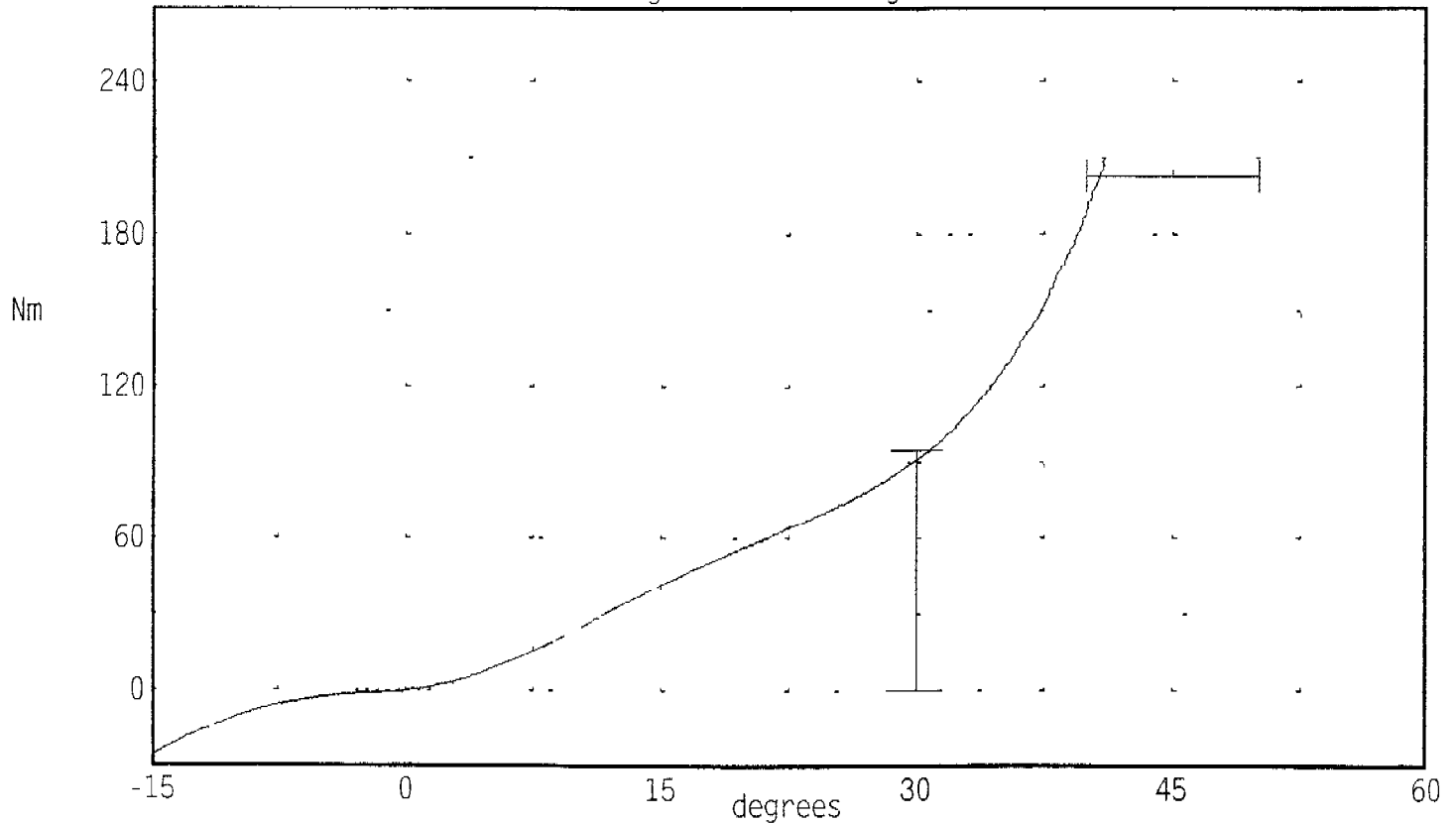
Hybrid III Hip Range of Motion

Serial Number 202R
Test Number 202C09
Comments

Date 10/23/2001
Time 09:44

TEST PARAMETER	SPECIFICATION	TEST RESULTS	
Temperature	18.9 - 25.6	21.7 °C	Pass
Humidity	10 - 70	61 %	Pass
Moment at 30 deg	<= 94.9	90.9 Nm	Pass
Angle at 203 Nm	40.0 - 50.0	40.8 deg	Pass
Average Velocity	5.0 - 10.0	7.5 deg/sec	Pass

Moment About H-Point
Peak Moment 210.2 Nm at 41.1 deg
Peak Angle 41.1 deg at 210.2 Nm



TRANSPORTATION RESEARCH CENTER INC.

LEFT KNEE IMPACT TEST

HYBRID III 50th

23-OCT-01

TRC INC.

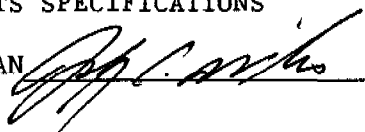
TEST NO: 202C09LK1

572E SN202 LEFT KNEE CAL 09

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	58.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.10 M/S
PEAK KNEE IMPACT FORCE 5.0 KG PENDULUM	4715 - 5782 N	5111.6 N

TEST MEETS SPECIFICATIONS

TECHNICIAN



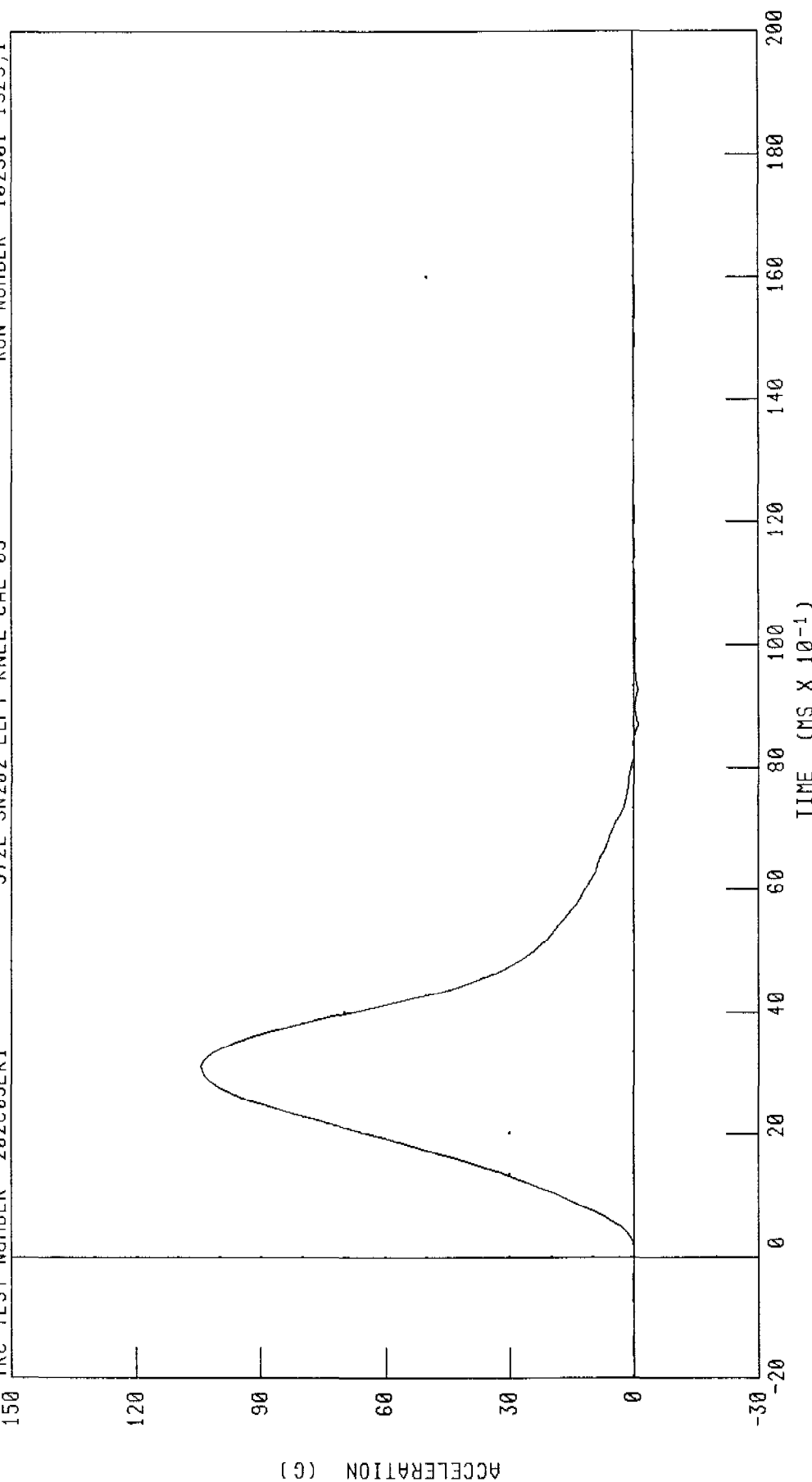
RUN NUMBER: 102301.1323;1

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

TRC TEST NUMBER 202C09LK1

572E SN202 LEFT KNEE CAL 09

RUN NUMBER 102301 1323,1



CHANNEL PENXC FILTER CH CLASS 600

PEAK DATA 104 47 G 0 3 12 MS, -1 03 G 0 8 72 MS

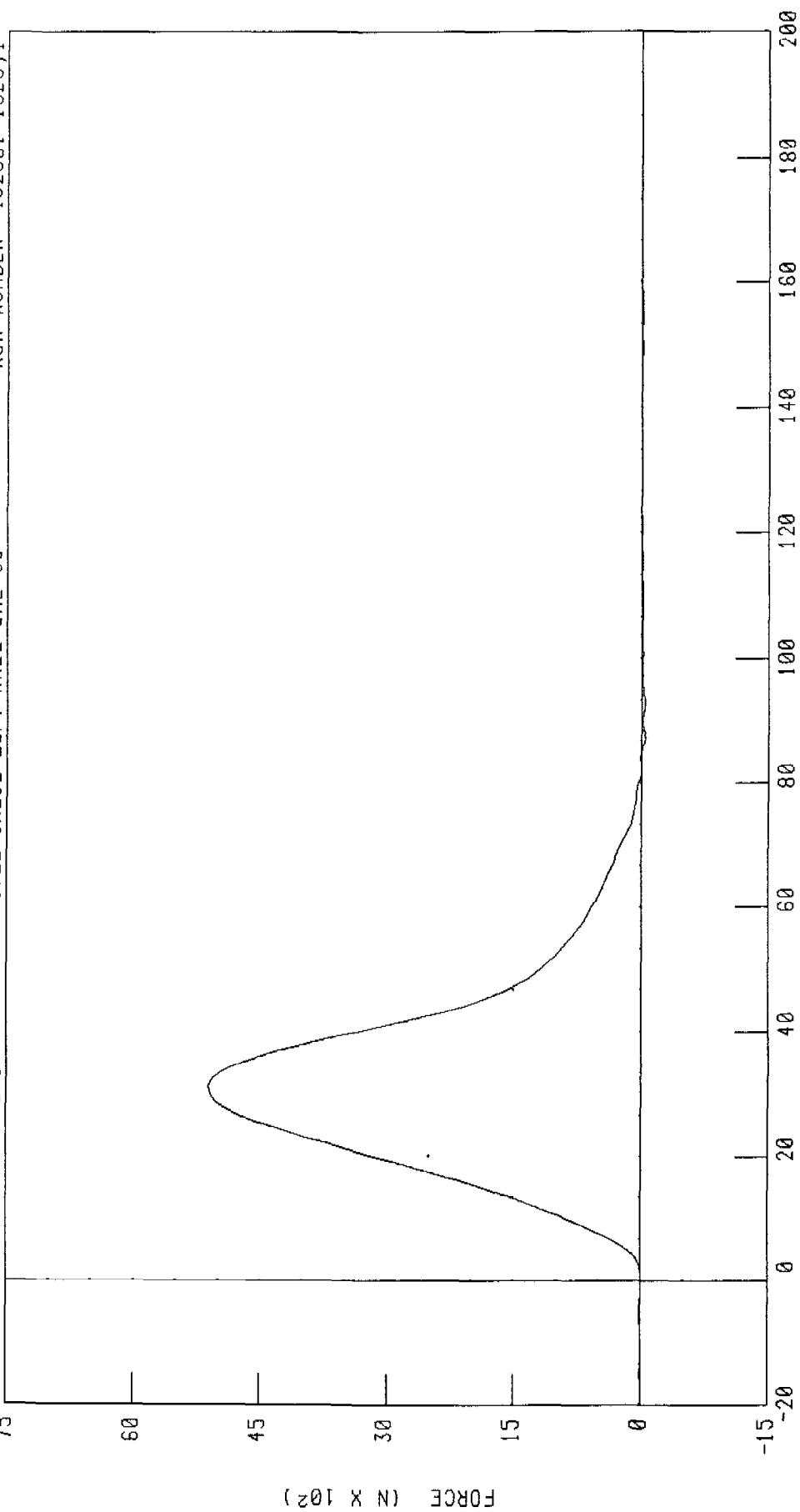
PART 572-E HYBRID III LEFT KNEE CALIBRATION

PENDULUM FORCE (5 KG PEND)

TRC TEST NUMBER 202C09LK1

572E SN202 LEFT KNEE CAL 09

RUN NUMBER 102301 1323,1



TIME (MS X 10⁻¹)

CHANNEL PENXF FILTER CH CLASS 600

PEAK DATA 5111 64 N 0 3 12 MS, -50 37 N 0 8 72 MS

TRANSPORTATION RESEARCH CENTER INC.

RIGHT KNEE IMPACT TEST

HYBRID III 50th

23-OCT-01

TRC INC.

TEST NO: 202C09RK1

572E SN202 RIGHT KNEE CAL 09

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	59.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.13 M/S
PEAK KNEE IMPACT FORCE 5.0 KG PENDULUM	4715 - 5782 N	5525.0 N

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 102301.1119;1

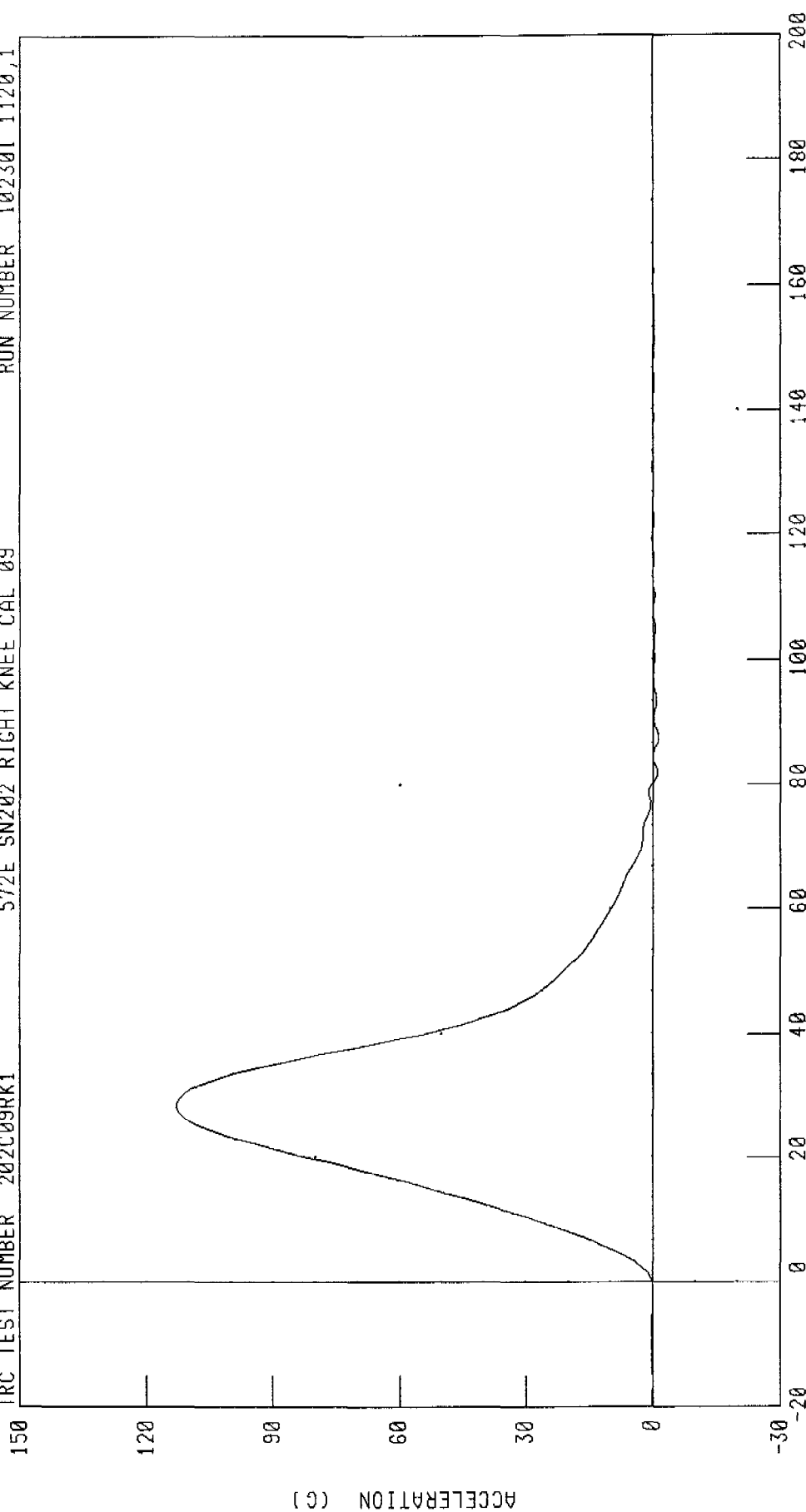
PART 572-E HYBRID III RIGHT KNEE CALIBRATION

PENDULUM DECELERATION (5 KG PEND)

TRC TEST NUMBER 202C09RK1

572E SN202 RIGHT KNEE CAL 09

RUN NUMBER 102301 1120,1



TIME (MS X 10⁻¹)

CHANNEL PENXC FILTER CH CLASS 600

PEAK DATA 112 92 G 2 80 MS, -1 41 G 0 8 72 MS

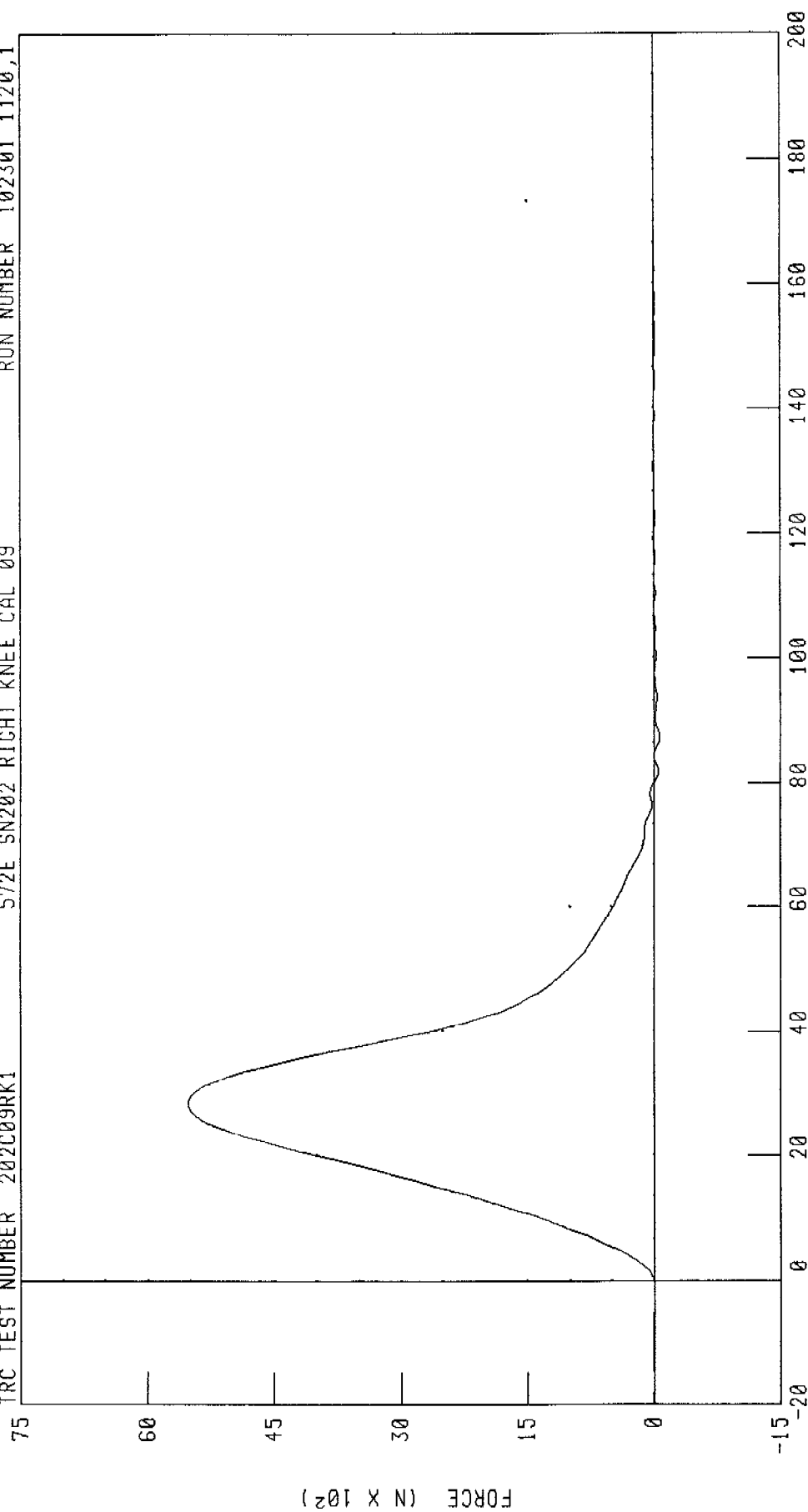
PART 572-E HYBRID III RIGHT KNEE CALIBRATION

PENDULUM FORCE (5 KG PEND)

TRC TEST NUMBER 202C09RK1

572E SN202 RIGHT KNEE CAL 09

RUN NUMBER 102301 1120,1



TIME (MS X 10⁻¹)

CHANNEL PENXF FILTER CH CLASS 600

PEAK DATA 5525 03 N 0 2 80 MS, -68 88 N 0 8 72 MS

TRANSPORTATION RESEARCH CENTER INC.

KNEE SLIDER TEST

HYBRID III 50th

24-OCT-01

LEFT KNEE

TRC INC.

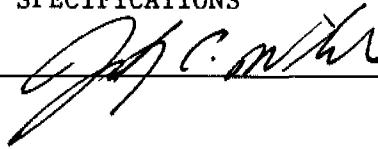
TEST NO: 202C09LS1

572E SN202 LEFT SLIDER CAL 09

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	60.0 %
PENDULUM VELOCITY	2.70-2.80 M/S	2.80 M/S
FORCE AT 10.0 MM DISPLACEMENT	1259 - 1721 N	1451. N
FORCE AT 18.0 MM DISPLACEMENT	2268 - 3096 N	2850. N

TEST MEETS SPECIFICATIONS

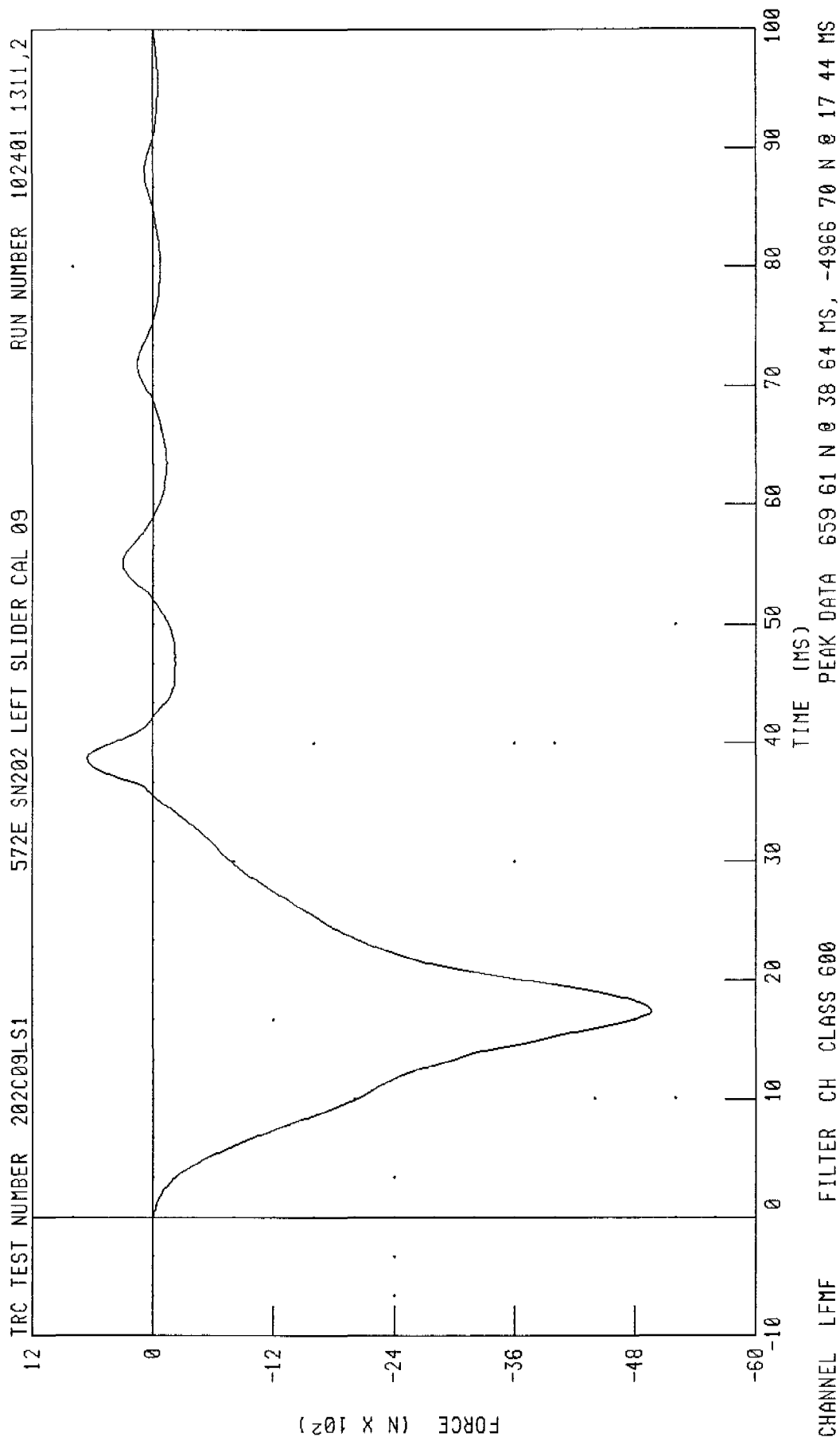
TECHNICIAN



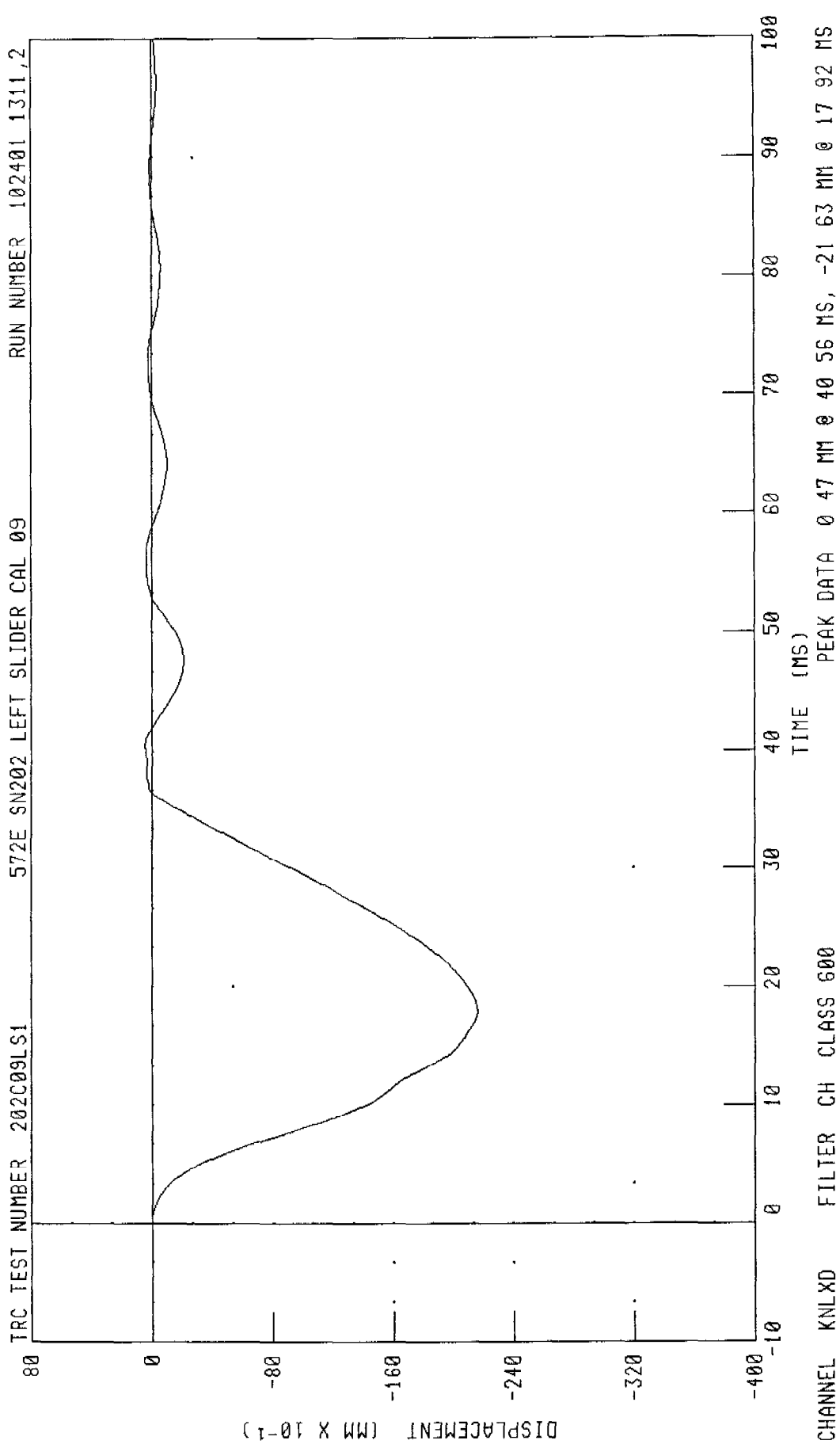
RUN NUMBER: 102401.0759;1

PART 572-E HYBRID III LEFT KNEE SLIDER CALIBRATION

LEFT FEMUR FORCE



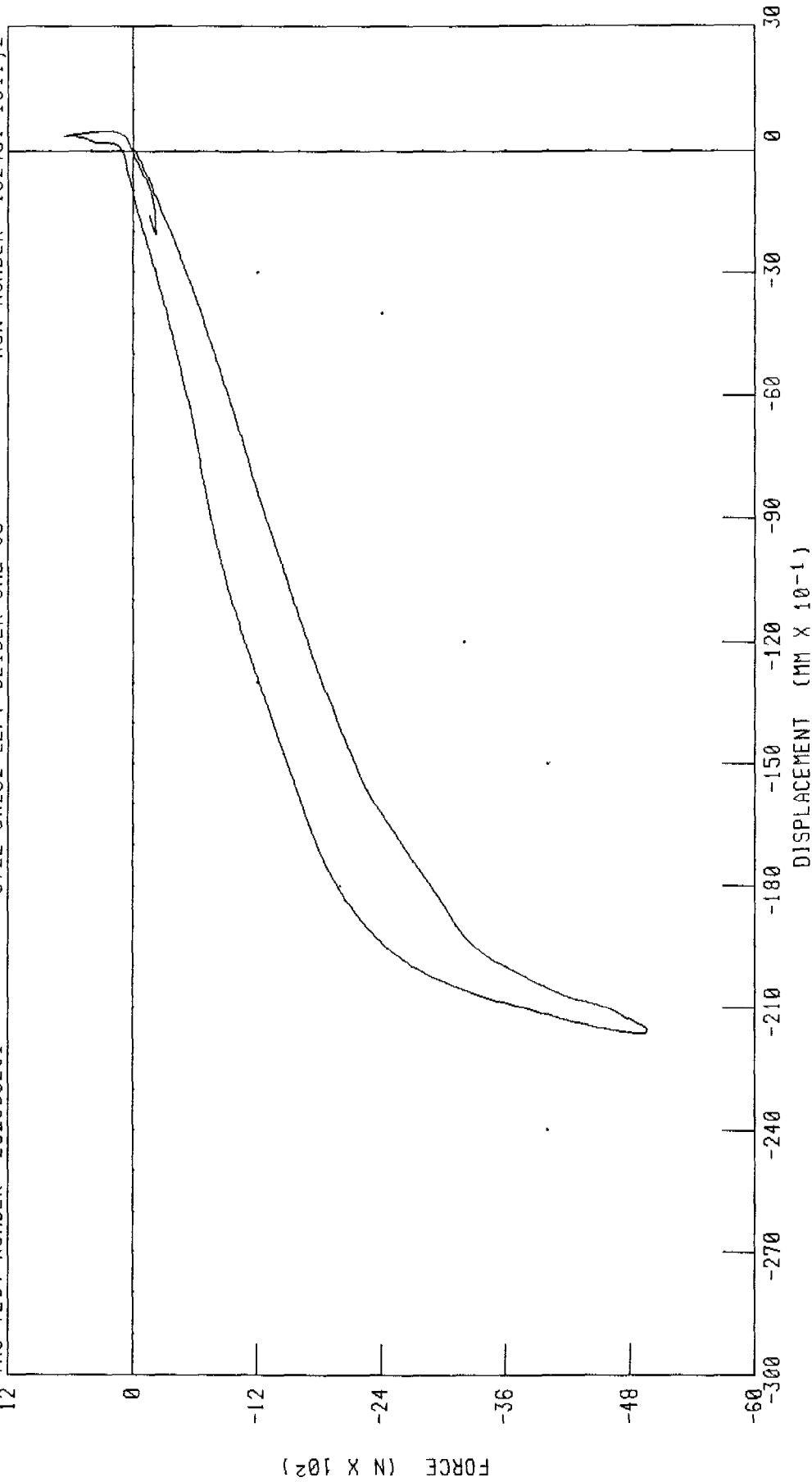
PART 572-E HYBRID III LEFT KNEE SLIDER CALIBRATION
LEFT KNEE DISPLACEMENT



PART 572-E HYBRID III LEFT KNEE SLIDER CALIBRATION

LEFT KNEE DISPLACEMENT VS FEMUR FORCE

TRC TEST NUMBER 202C09LS1 572E SN202 LEFT SLIDER CAL 09 RUN NUMBER 102401 1311,2



CHANNEL KNLXD FILTER CH CLASS 600 DISPLACEMENT (mm x 10⁻¹) PEAK DATA -21 63 MM @ 17 92 MS
 LFMF CH CLASS 600 659 61 N @ 38 64 MS, -4966 70 N @ 17 44 MS

TRANSPORTATION RESEARCH CENTER INC.

KNEE SLIDER TEST

HYBRID III 50th

24-OCT-01

RIGHT KNEE

TRC INC.

TEST NO: 202C09RS1

572E SN202 RIGHT SLIDER CAL 09

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	59.0 %
PENDULUM VELOCITY	2.70-2.80 M/S	2.80 M/S
FORCE AT 10.0 MM DISPLACEMENT	1259 - 1721 N	1281. N
FORCE AT 18.0 MM DISPLACEMENT	2268 - 3096 N	2327. N

TEST MEETS SPECIFICATIONS

TECHNICIAN

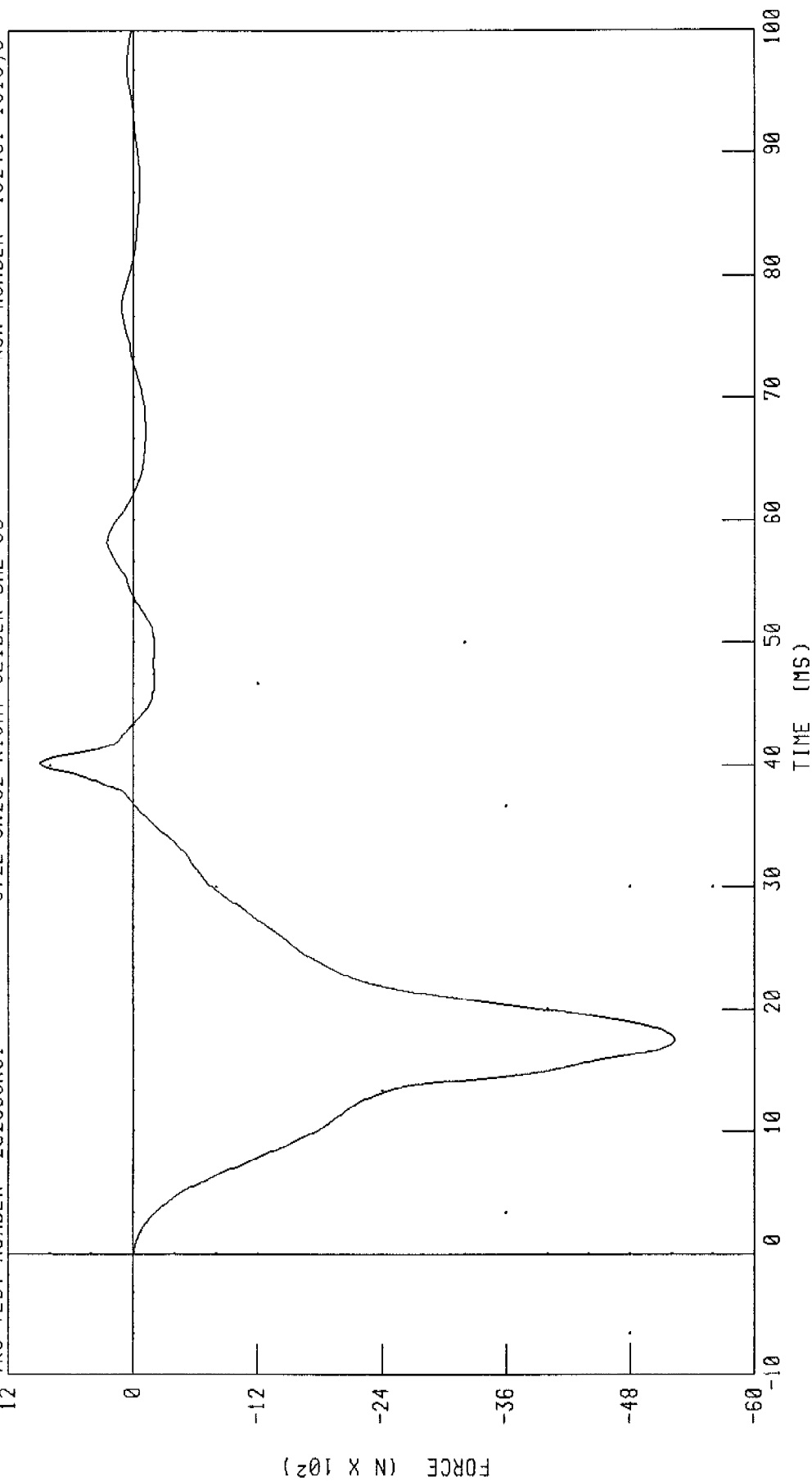


RUN NUMBER: 102401.0840;1

PART 572-E HYBRID III RIGHT KNEE SLIDER CALIBRATION

RIGHT FEMUR FORCE

TRC TEST NUMBER 202C09RS1 572E SN202 RIGHT SLIDER CAL 09 RUN NUMBER 102401 1315,3



CHANNEL RFMF FILTER CH CLASS 600 PEAK DATA 895 02 N 0 40 24 MS, -5227 09 N 0 17 52 MS

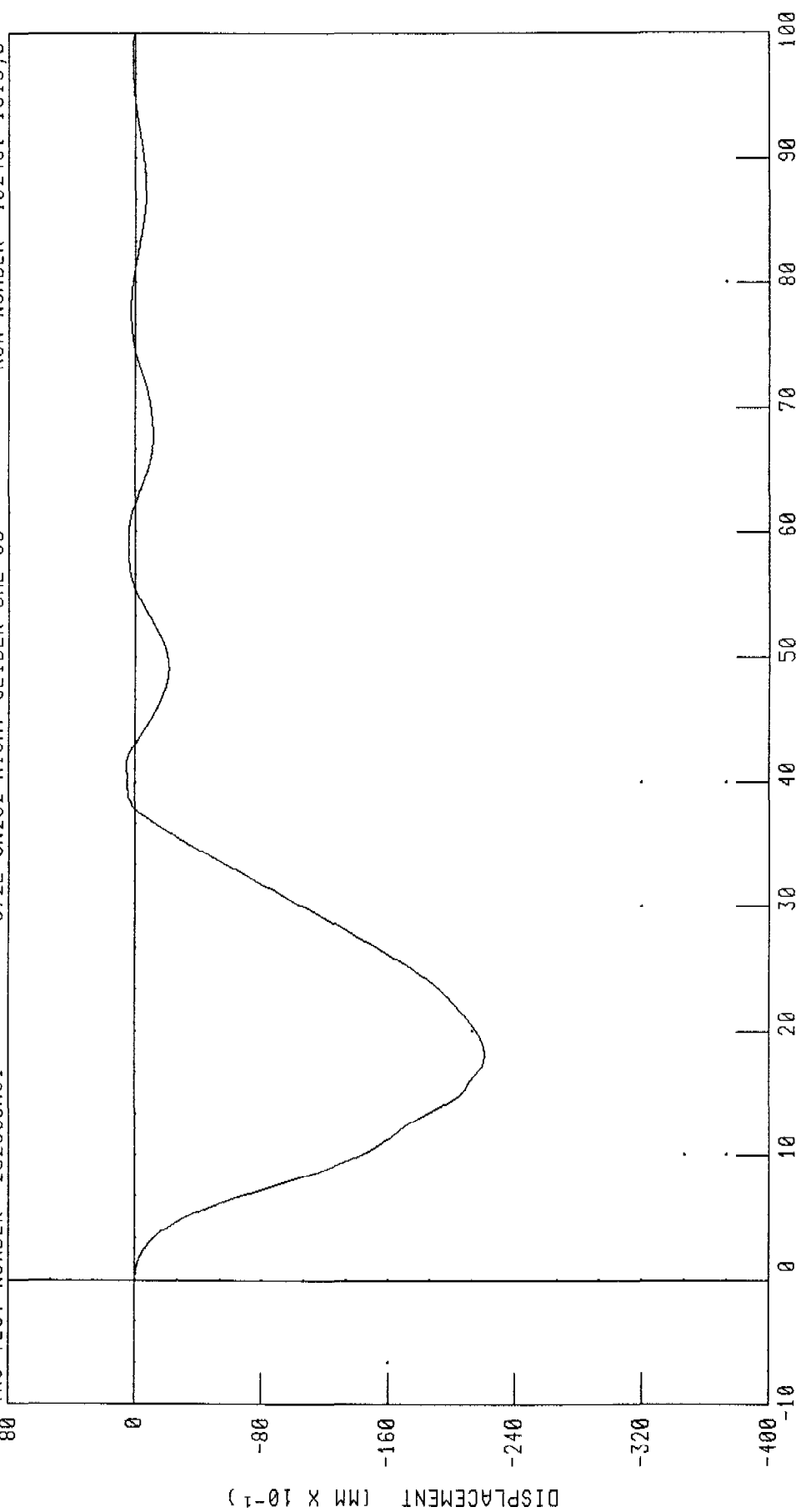
PART 572-E HYBRID III RIGHT KNEE SLIDER CALIBRATION

RIGHT KNEE DISPLACEMENT

TRC TEST NUMBER 202C09RS1

572E SN202 RIGHT SLIDER CAL 09

RUN NUMBER 102401 1315,3



TIME (MS)

CHANNEL KNRXD FILTER CH CLASS 600

PEAK DATA 0 57 MM @ 41 44 MS, -22 11 MM @ 18 16 MS

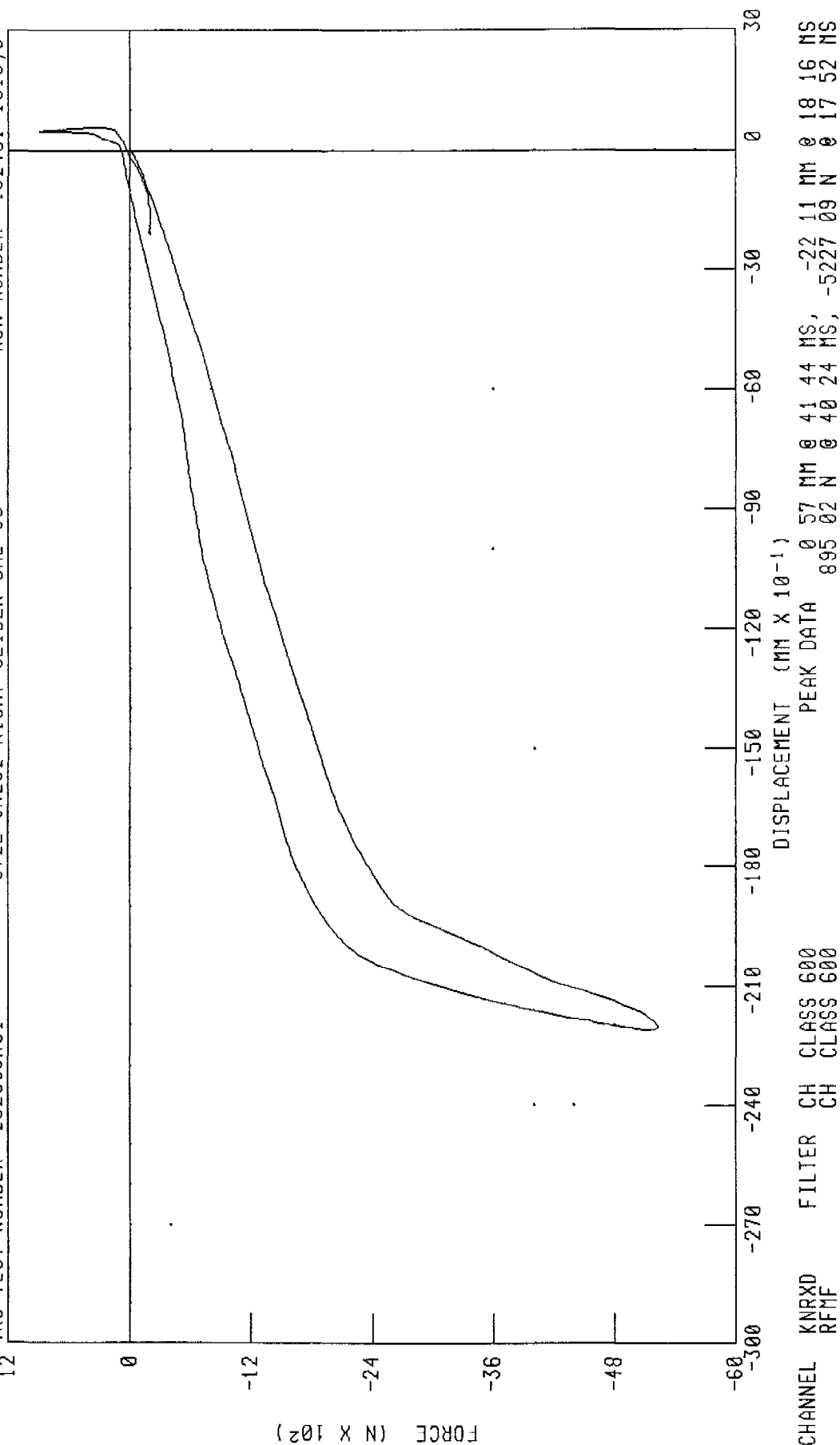
PART 572-E HYBRID III; RIGHT KNEE SLIDER CALIBRATION

RIGHT KNEE DISPLACEMENT VS FEMUR FORCE

TRC TEST NUMBER 202C09RS1

572E SN202 RIGHT SLIDER CAL 09

RUN NUMBER 102401 1315,3



Appendix D

Test Equipment and Instrumentation Calibration Information

Report Sign Convention
SAE J211 MAR95¹

<u>Accelerometers:</u>	+X: Forward
	+Y: Rightward
	+Z: Downward
<u>Potentiometers:</u>	+Chest longitudinal deflection: Outward
	+Chest lateral deflection: Leftward
	+Seat belt displacement: Outward
	+Seat belt extension: Elongation
	+Knee slider displacement: Distance between femur and tibia increased (in relation to a seated dummy)
<u>Rotation potentiometers:</u>	
	+About the X-axis: Left foot-eversion Right foot-inversion
	+About the Y-axis: Left/right foot-dorsiflexion
	+About the Z-axis: Left foot-internal Right foot-external
<u>Load cells:</u>	+Femur force: Tension
	+Seat belt force: Tension
	+Barrier force: Tension
<u>Neck load cells:</u>	+X force: Head pushed rearward
	+Y force: Head pushed leftward
	+Z force: Head pulled 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
<u>Tibia load cells:</u>	+X force: Ankle forward, knee rearward
	+Y force: Ankle rightward, knee leftward
	+Z force: Tension
	+X moment: Bottom of tibia moving leftward
	+Y moment: Bottom of tibia moving rearward

¹ The chest deflection and knee slider displacement presented in the dummy certification in Appendix C are opposite of J211 polarity.

Frequency Response Classes
SAE J211 MAR95

<u>Typical Test Measurements</u>	<u>Channel Class</u>
Vehicle Structural Accelerations for use in:	
Total vehicle comparison	60
Collision simulation input	60
Component analysis	600
Integration for velocity or displacement	180
Barrier Face Forces	60
Belt Restraint System Loads	60
Anthropomorphic Test Device	
Head accelerations (linear and angular)	1000
Neck	
Forces	1000
Moments	600
Thorax	
Spine accelerations	180
Rib accelerations	1000
Sternum accelerations	1000
Deflections	180
Lumbar	
Forces	1000
Moments	1000
Pelvis	
Accelerations	1000
Forces	1000
Moments	1000
Femur/Knee/Tibia/Ankle	
Forces	600
Moments	600
Displacements	180
Sled Accelerations	60
Steering Column Loads	600
Head form Accelerations	1000

The direction column on the following sheets describes the transducer output as mounted and wired in the test location. See Report Sign Convention sheet for description of data output as presented in the report: channels were adjusted in post-acquisition processing to conform to J211 MAR95.

Dummy 206v Type HIII 50TH VOLPE (NHTSA) - 206 HY BRID III 50TH (DKS 10-15-01) J211

Chsname	Location	Model	Name	Manufacturer	Sens./mV/V/U	Fullscale	Caldate	TRC Dir
HEDXG	Head Accel X	EGE-73B6Q-20	01G25-N01	Entran	0 01864 G	2000	08/10/2001	Fwd
HEDYG	Head Accel Y	EGE-73B6Q-20	01G25-N14	Entran	0 01879 G	2000	08/10/2001	Lft
HEDZG	Head Accel Z	EGE-73B6Q-20	01G25-N08	Entran	0 02344 G	2000	08/10/2001	Up
HEDXR	Head Accel Red X 1014	7264C-2K 2-18	P12566	Endevco	0 0194 G	2000	08/28/2001	Rwd
HFDYR	Head Accel Red Y M1	7264-2000TZ	J38075	Endevco	0 02664 G	2000	05/15/2001	Rgt
HEDZR	Head Accel Red Z 1018	7264C-2KLC-2-	P17858	Endevco	0 01301 G	2000	08/28/2001	Up
HD1XG	Head (LT) Accel X	EGE-73B6Q-20	01G25-N06	Entran	0 02364 G	2000	08/10/2001	Fwd
HD1ZG	Head (LT) Accel Z	EGE-73B6Q-20	01G25-N05	Entran	0 01955 G	2000	08/10/2001	Up
HD2YG	Head (FT) Accel Y	EGE-73B6Q-20	01G25-N04	Entran	0 01977 G	2000	08/10/2001	Lft
HD2ZG	Head (FT) Accel Z	EGE 73B6Q-20	01G25-N13	Entran	0 01991 G	2000	08/10/2001	Up
HD3XG	Head (TP) Accel X	EGE-73B6Q-20	01G25-N09	Entran	0 01334 G	2000	08/10/2001	Fwd
HD3YG	Head (TP) Accel Y	EGE-73B6Q-20	01G25-N16	Entran	0 01877 G	2000	08/10/2001	Lft
NEKXF	Neck Force X	1716A	1716A-858-FX	Denton	0 000193719 N	8896 4	08/16/2001	Hd Fd Cst Rr
NEKYP	Neck Force Y	1716A	1716A-858-FY	Denton	0 000186907 N	8896 4	08/16/2001	Hd Lt Cst Rt
NEKZF	Neck Force Z	1716A	1716A-858-FZ	Denton	0 000096144 N	13344 6	08/16/2001	Hd Up Cst Dn
NEKXM	Neck Moment X	1716A	1716A-858-MX	Denton	0 005827965 NM	282 5	08/16/2001	Rt Ear to Rt Shld
NEKYM	Neck Moment Y	1716A	1716A-858-MY	Denton	0 005966726 NM	282 5	08/16/2001	Chn to Strnm
NEKZM	Neck Moment Z	1716A	1716A 858-MZ	Denton	0 008246372 NM	282 5	08/16/2001	Chn to Lt Shld
NKLXF	Lwr Neck Force X	1794A	1794A-216-FX	Denton	0 000140056 N	13344 6	07/05/2001	Hd Fd Cst Rr
NKLYP	Lwr Neck Force Y	1794A	1794A-216 FY	Denton	0 000137546 N	13344 6	07/05/2001	Hd Lt Cst Rt
NKLZF	Lwr Neck Force Z	1794A	1794A-216-FZ	Denton	0 000069773 N	13344 6	07/05/2001	Hd Up Cst Dn
NKLXM	Lwr Neck Moment X	1794A	1794A 216-MX	Denton	0 00389115 NM	452	07/05/2001	Rt Ear to Rt Shld
NKLYM	Lwr Neck Moment Y	1794A	1794A-216 MY	Denton	0 003775 NM	452	07/05/2001	Chn to Strnm
NKLZM	Lwr Neck Moment Z	1794A	1794A-216 MZ	Denton	0 006764823 NM	452	07/05/2001	Chn to Lt Shld
CSTXG	Chest Accel X	7264-2000TZ	ACCM9	Endevco	0 02826 G	2000	08/24/2001	Fwd
CSTYG	Chest Accel Y	7264-2000TZ	J15368	Endevco	0 03531 G	2000	08/24/2001	Lft

Chsname	Location	Model	Name	Manufacturer	Sens./mV/V/L	Fullscale	Caldate	TRC Dir
CSTZG	Chest Accel Z	7264-2000TZ	I20184	Endevco	0 02521 G	2000	08/24/2001	Up
CSTXD	Chest Deflection X	14CB1-2847	14CB1 2847-206	Servo	1 1403262 MM	100	09/07/2001	Strm Awav Frm Spn
LFMZP	Left Femur Force Z	2121	2121-0160	Denton	0 000098324 N	13344 6	08/24/2001	Knee Fd Pel Rr
RFMZP	Right Femur Force Z	2121	2121 0161	Denton	0 000099718 N	13344 6	08/24/2001	Knee Fd,Pel Rrxt
KNLXD	Left Knee Displacement	150-0121VR	150-0121VR 13741	SpaceAge	23 39429 MM	40	11/30/2000	Tib Rr Hld Fem
TBLXF	Left Upper Tibia Force X LC8	4353J	4353J-82-FX	Denton	0 00017107 N	11120	08/03/2001	Tib Fd,Knee Rr
TBLZF	Left Upper Tibia Force Z LC15	4353J	4353J-82-FZ	Denton	0 000095631 N	11120	08/03/2001	Tib Dn Knee Up
TBLXM	Left Upper Tibia Moment X LC17	4353J	4353J-82-MX	Denton	0 00075411 NM	395 4	08/03/2001	Ank Lt Hld Knee
TBLYM	Left Upper Tibia Moment Y LC01	4353J	4353J-82-MY	Denton	0 00075411 NM	395 4	08/03/2001	Ank Fd Hld Knee
TBLXG	Left Tibia Accel X	EGE-73B6Q-20	01G19 F02	Entran	0 01925 G	2000	08/21/2001	Fwd
TBLYG	Left Tibia Accel Y	EGE-73B6Q-20	01H02-N02	Entran	0 02125 G	2000	08/21/2001	Rt
ANLXF	Left Lower Tibia Force X LC23	4929J	4929J-87-FX	Denton	0 00017264 N	11120	12/22/2000	Ank Fd,Knee Rr
ANLYF	Left Lower Tibia Force Y LC16	4929J	4929J-87-FY	Denton	0 00017608 N	11120	12/22/2000	Ank Rt Knee Lft
ANLZF	Left Lower Tibia Force Z LC19	4929J	4929J-87-FZ	Denton	0 000093856 N	11120	12/22/2000	Ank Dn Knee Up
ANLXM	Left Lower Tibia Moment X LC26	4929J	4929J-87-MX	Denton	0 00075904 NM	395 4	12/22/2000	Ank Lt Hld Knee
ANLYM	Left Lower Tibia Moment Y LC18	4929J	4929J-87-MY	Denton	0 00075879 NM	395 4	12/22/2000	Ank Fd Hld Knee
FTLAD	Left Foot Disp X POT4	PD210 4B	PD210-4B-AK-060	CONTELEC	3 1541 DE	318	07/31/2001	Eversion
FTLYD	Left Foot Disp Y POT5	PD210-4B	PD210-4B-AK 061	CONTELEC	3 1679 DE	318	07/31/2001	Dorsiflexion
FTLZD	Left Foot Disp Z POT6	PD210 4B	PD210-4B-AK-062	CONTELEC	3 1819 DE	318	07/31/2001	Internal Rotation
FTLXG	Left Foot Accel X	EGE-73B6Q-20	01H02-N05	Entran	0 02077 G	2000	08/21/2001	Fwd
FTLYG	Left Foot Accel Y	7264-2000TZ	138856	Endevco	0 02426 G	2000	05/23/2001	Rt
FTLZG	Left Foot Accel Z	EGE-73B6Q-20	01H02-N01	Entran	0 02164 G	2000	08/21/2001	Dn
KNRAD	Right Knee Displacement	150-0121VL	150 0121VL-18123	SpaceAge	23 66 MM	40	04/26/2001	Tib Rr Hld Fem
TBRXF	Right Upper Tibia Force X LC10	4353J	4353J-81-FX	Denton	0 00016929 N	11120	08/03/2001	Tib Fd Knee Rr
TBRZF	Right Upper Tibia Force Z LC14	4353J	4353J-81-FZ	Denton	0 000094724 N	11120	08/03/2001	Tib Dn Knee Up
TBRXM	Right Upper Tibia Moment X LC13	4353J	4353J-81-MX	Denton	0 00073122 NM	395 4	08/03/2001	Ank Lt Hld Knee
TBRYM	Right Upper Tibia Moment Y LC22	4353J	4353J-81-MY	Denton	0 00073572 NM	395 4	08/03/2001	Ank Fd Hld Knee
TBRXG	Right Tibia Accel X	EGE-73B6Q-20	01H02 N07	Entran	0 02142 G	2000	08/21/2001	Fwd

Chsname	Location	Model	Name	Manufacturer	Sens./mV/V/°	Fullscale	Caldate	TRC Dir
TBRYG	Right Tibia Accel Y	EGF 73B6Q 20 01H02-N03		Entran	0 02147 G	2000	08/21/2001	Rt
ANRXF	Right Lower Tibia Force X	LC28 4929J	4929J-86-FX	Denton	0 0001716 N	11120	12/22/2000	Ank Fd Knee Rt
ANRYF	Right Lower Tibia Force Y	LC20 4929J	4929J-86-FY	Denton	0 0001746 N	11120	12/22/2000	Ank Rt Knee Lft
ANRZF	Right Lower Tibia Force Z	LC9 4929J	4929J-86-FZ	Denton	0 000095461 N	11120	12/22/2000	Ank Dn Knee Up
ANRXM	Right Lower Tibia Moment X	LC11 4929J	4929J-86-MX	Denton	0 0074837 NM	395 4	12/22/2000	Ank L Hld Knee
ANRYM	Right Lower Tibia Moment Y	LC02 4929J	4929J-86-MY	Denton	0 0073843 NM	395 4	12/22/2000	Ank Fd Hld Knee
FTRXD	Right Foot Disp X	POT1 PD210-4B	PD210-4B-AK-057	CONTELEC	3 1631 DE	318	07/31/2001	Inersion
FTRYD	Right Foot Disp Y	POT2 PD210-4B	PD210-4B-AK-058	CONTELEC	3 1586 DE	318	07/31/2001	Dorsiflexion
FTRZD	Right Foot Disp Z	POT3 PD210-4B	PD210-4B-AK-059	CONTELEC	3 1497 DE	318	07/31/2001	External Rotation
ITRXG	Right Foot Accel X	7264 2000TZ	J38857	Endevco	0 02945 G	2000	05/23/2001	Fwd
FTRYG	Right Foot Accel Y	7264-2000TZ	I38787	Endevco	0 02316 G	2000	05/24/2001	Rt
FTRZG	Right Foot Accel Z	EGE-73B6Q 20 01G19-F05		Entran	0 0177 G	2000	08/21/2001	Dn

Dummy 202v **Type** HIII 50TH **Description** VOLPE (NHTSA) - 202 HYBRID III 50TH (DKS 10-23-01) J211

Chsname	Location	Model	Name	Manufacturer	Sens./mV/V/U	Fullscale	Caldate	TRC Dir
HEDXG	Head Accel X	EGE-73B6Q-20	01G25-N07	Entran	0.02208 G	2000	08/10/2001	Fwd
HEDYG	Head Accel Y	EGE-73B6Q-20	01G25-N20	Entran	0.02011 G	2000	08/10/2001	Lft
HEDZG	Head Accel Z	EGE-73B6Q-20	01G25-N17	Entran	0.01957 G	2000	08/10/2001	Up
HEDXR	Head Accel Red X VRTC10	7264C-2KLC-2-	P15951	Endevco	0.01358 G	2000	08/28/2001	Rwd
HEDYR	Head Accel Red Y VRTC3	7264-2000TZ	I36709	Endevco	0.03594 G	2000	10/22/2001	Rgt
HEDZR	Head Accel Red Z VRTC9	7264C-2KLC-2-	P16899	Endevco	0.015 G	2000	08/28/2001	Up
HD1XG	Head (LT) Accel X	EGE-73B6Q-20	01G19-F03	Entran	0.02156 G	2000	08/10/2001	Fwd
HD1ZG	Head (LT) Accel Z	EGE-73B6Q-20	01G25-N18	Entran	0.01906 G	2000	08/10/2001	Up
HD2YG	Head (FT) Accel Y	EGE-73B6Q-20	01G25-N10	Entran	0.02248 G	2000	08/10/2001	Lft
HD2ZG	Head (FT) Accel Z	EGE-73B6Q-20	01G25-N03	Entran	0.01933 G	2000	08/10/2001	Up
HD3XG	Head (TP) Accel X	EGE-73B6Q-20	01G25-N15	Entran	0.02019 G	2000	08/10/2001	Fwd
HD3YG	Head (TP) Accel Y	EGE-73B6Q-20	01G25-N02	Entran	0.01968 G	2000	08/10/2001	Lft
NEKXF	Neck Force X	1716	1716-0628-FX	Denton	0.000192033 N	8896.4	08/16/2001	Hd Fd Cst Rr
NEKYF	Neck Force Y	1716	1716-0628-FY	Denton	0.000184075 N	8896.4	08/16/2001	Hd Lt Cst Rt
NEKZF	Neck Force Z	1716	1716-0628-FZ	Denton	0.00008605 N	13344.6	08/16/2001	Hd Up.Cst Dn
NEKXM	Neck Moment X	1716	1716-0628-MX	Denton	0.005770973 NM	282.5	08/16/2001	Rt Ear to Rt Shld
NEKYM	Neck Moment Y	1716	1716-0628-MY	Denton	0.005887788 NM	282.5	08/16/2001	Chn to Strmm
NFKZM	Neck Moment Z	1716	1716-0628-MZ	Denton	0.008187257 NM	282.5	08/16/2001	Chn to Lt Shld
NKLXF	Lwr Neck Force X	1794A	1794A-215-FX	Denton	0.000140236 N	13344.6	07/05/2001	Hd Fd Cst Rr
NKLYF	Lwr Neck Force Y	1794A	1794A-215-FY	Denton	0.000137853 N	13344.6	07/05/2001	Hd Lt Cst Rt
NKLZF	Lwr Neck Force Z	1794A	1794A-215-FZ	Denton	0.000069204 N	13344.6	07/05/2001	Hd Up Cst Dn
NKLXM	Lwr Neck Moment X	1794A	1794A-215-MX	Denton	0.003864601 NM	452	07/05/2001	Rt Ear to Rt Shld
NKLYM	Lwr Neck Moment Y	1794A	1794A-215-MY	Denton	0.003795796 NM	452	07/05/2001	Chn to Strmm
NKLZM	Lwr Neck Moment Z	1794A	1794A-215-MZ	Denton	0.006828982 NM	452	07/05/2001	Chn to Lt Shld
CSTXG	Chest Accel X	7264-2000TZ	A1460	Endevco	0.02863 G	2000	08/24/2001	Fwd
CS1YG	Chest Accel Y	7264-2000TZ	I14404	Endevco	0.028 G	2000	08/24/2001	Lft

Chsname	Location	Model	Name	Manufacturer	Sens./mV/V/U	Fullscale	Caldate	TRC Dn
CSTZG	Chest Accel Z	7264-2000TZ	J14144	Endevco	0 03795 G	2000	08/24/2001	Up
CSTXD	Chest Deflection X	14CBI-2847	14CBI-2847-0137	Servo	1 1347019 MM	100	09/07/2001	Strm Away Fm Spn
LFMZF	Left Femur Force Z	2121	2121-0226	Denton	0 000098729 N	1334 6	08/24/2001	Knee Fd Pel Rr
RPMZF	Right Femur Force Z	2121	2121-0227	Denton	0 000098759 N	13344 6	08/24/2001	Knee Fd Pel Rxt
KNLXD	Left Knee Displacement	150-0121VR	150-0121VR-13739	SpaceAge	23 10643 MM	40	11/30/2000	Tib Rr Hld Fem
TBLXF	Left Upper Tibia Force X	3115	3115-199-FX	Denton	0 000172571 N	11120	03/02/2001	Tib Rr, Knee Fd
TBLZF	Left Upper Tibia Force Z	3115	3115-199-FZ	Denton	0 000095782 N	11120 5	03/02/2001	Tib Dn Knee Up
TBLXM	Left Upper Tibia Moment X	3115	3115-199-MX	Denton	0 007356348 NM	395 5	03/02/2001	Tib Rr Hld Knee
TBLYM	Left Upper Tibia Moment Y	3115	3115-199-MY	Denton	0 007476226 NM	395 5	03/02/2001	Tib Fd Hld Knee
ANLXF	Left Lower Tibia Force X	3287	3287-128-FX	Denton	0 000174361 N	11120 5	03/05/2001	Ank Rr Knee Fd
ANLZF	Left Lower Tibia Force Z	3287	3287-128-FZ	Denton	0 000096879 N	11120 5	03/05/2001	Ank Dn Knee Up
ANLXM	Left Lower Tibia Moment X	3287	3287-128-MX	Denton	0 007693474 NM	395 4	03/05/2001	Ank Rt Hld Knee
ANLYM	Left Lower Tibia Moment Y	3287	3287-128-MY	Denton	0 007630753 NM	395 4	03/05/2001	Ank Fd Hld Knee
FLHXG	Left Foot-Heel Accel X	7264-2KM5T	J27387	Endevco	0 0241 G	2000	08/24/2001	Fwd
FLHZG	Left Foot-Heel Accel Z	7264 2KM5T	J27553	Endevco	0 02754 G	2000	08/24/2001	Dwn
FLTZG	Left Foot-Toe Accel Z	7264-2KM5T	J27474	Endevco	0 02712 G	2000	08/24/2001	Up
KNRDX	Right Knee Displacement	150-0121VL	150-0121VL-13723	SpaceAge	23 5714 MM	40	11/30/2000	Tib Rr Hld Fem
TBRXF	Right Upper Tibia Force X	3115	3115-200-FX	Denton	0 000170179 N	11120	03/05/2001	Tib Rr, Knee Fd
TBRZF	Right Upper Tibia Force Z	3115	3115-200-FZ	Denton	0 000094433 N	11120	03/05/2001	Tib Dn Knee Up
TBRXM	Right Upper Tibia Moment X	3115	3115-200-MX	Denton	0 007369499 NM	395 5	03/05/2001	Tib Rr Hld Knee
TBRYM	Right Upper Tibia Moment Y	3115	3115-200-MY	Denton	0 007401618 NM	395 5	03/05/2001	Tib Fd Hld Knee
ANRXF	Right Lower Tibia Force X	3287	3287-129-FX	Denton	0 000173435 N	11120 5	03/07/2001	Ank Rr Knee Fd
ANRZF	Right Lower Tibia Force Z	3287	3287-129-FZ	Denton	0 000096573 N	11120 5	03/07/2001	Ank Dn Knee Up
ANRXM	Right Lower Tibia Moment X	3287	3287-129-MX	Denton	0 007584977 NM	395 4	03/07/2001	Ank Rt Hld Knee
ANRYM	Right Lower Tibia Moment Y	3287	3287-129-MY	Denton	0 007643146 NM	395 4	03/07/2001	Ank Fd Hld Knee
FRHXG	Right Foot-Heel Accel X	7264-2000T	J17976	Endevco	0 02777 G	2000	08/24/2001	Fwd
FRHZG	Right Foot-Heel Accel Z	7264-2000TZ	J38801	Endevco	0 02707 G	2000	05/23/2001	Dwn
FRTZG	Right Foot-Toe Accel Z	7264-2KM51	J28727	Endevco	0 02393 G	2000	08/24/2001	Up

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Name of Test			011022	System		MINIDAU	Name of DAU			DAU6			
Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol.	Cal. Date/Status	Group	Mfg.	Model			
6001	J27387	FLHXG2	Left Foot-Heel Accel X	Fwd	1180 267404 G	+	08/24/2001	OK	202v	Endevco	7264-2KM5T		
6002	J27553	FLHZG2	Left Foot-Heel Accel Z	Dwn	1239 409343 G	+	08/24/2001	OK	202v	Endevco	7264-2KM5T		
6003	J27474	FLTZG2	Left Foot-Toe Accel Z	Up	1179 941002 G	-	08/24/2001	OK	202v	Endevco	7264-2KM5T		
6004	3115-200-FX	TBRXF2	Right Upper Tibia Force X	Tib	8901 174054 N	-	03/05/2001	OK	202v	Denton	3115		
6005	3115-200-FZ	TBRZF2	Right Upper Tibia Force Z	Tib	8902 846419 N	+	03/05/2001	OK	202v	Denton	3115		
6006	3115-200-MX	TBRXM2	Right Upper Tibia Moment X	Tib	282 4209370 NM	-	03/05/2001	OK	202v	Denton	3115		
6007	3115-200-MY	TBRYM2	Right Upper Tibia Moment Y	Tib	282 3431198 NM	+	03/05/2001	OK	202v	Denton	3115		
6008	3287-129-FX	ANRXP2	Right Lower Tibia Force X	Ank	8891 911521 N	-	03/07/2001	OK	202v	Denton	3287		
6009	3287-129-FZ	ANRZF2	Right Lower Tibia Force Z	Ank	8895 451137 N	+	03/07/2001	OK	202v	Denton	3287		
6010	3287-129-MX	ANRXM2	Right Lower Tibia Moment X	Ank	282 4345300 NM	-	03/07/2001	OK	202v	Denton	3287		
6011	3287-129-MY	ANRYM2	Right Lower Tibia Moment Y	Ank	281 4626992 NM	+	03/07/2001	OK	202v	Denton	3287		
6012	J17976	FRHXG2	Right Foot-Heel Accel X	Fwd	1229 144160 G	+	08/24/2001	OK	202v	Endevco	7264-2000T		
6013	J38801	FRHZG2	Right Foot-Heel Accel Z	Dwn	1182 120428 G	+	05/23/2001	OK	202v	Endevco	7264-2000TZ		
6014	J28727	FRTZG2	Right Foot-Toe Accel Z	Up	1188 652087 G	-	08/24/2001	OK	202v	Endevco	7264-2KM5T		
6015	J35805	LRXSG	LEFT REAR SEAT	FWD	1006 605850 G	+	07/11/2001	OK	-1	Endevco	7264-2000TZ		
6016	J27868	RRXSG	RIGHT REAR SEAT	FWD	988 2262111 G	+	05/22/2001	OK	-1	Endevco	7264-2000TZ		
6017	J37120	BCLXG	FRONT BRAKE CALIPER LEFT	FWD	979 1547140 G	+	09/07/2001	OK	-1	Endevco	7264-2000TZ		
6018	J37957	BCRXG	FRONT BRAKE CALIPER	FWD	1025 394536 G	+	08/13/2001	OK	-1	Endevco	7264-2000TZ		
6019	J37159	DPCXG	DASHBOARD CENTER X-AXIS	FWD	992 7097874 G	+	05/29/2001	OK	-1	Endevco	7264-2000TZ		
6020	J27913	ENGXG2	BOTTOM ENGINE X-AXIS	FWD	1003 921568 G	+	08/10/2001	OK	-1	Endevco	7264-2000TZ		
6021	J37655	TPAXG	TOEPAN (NEXT TO	FWD	984 1233229 G	+	09/07/2001	OK	-1	Endevco	7264-2000TZ		
6022	J38076	TPAZG	TOEPAN (NEXT TO	UP	1011 677764 G	-	09/07/2001	OK	-1	Endevco	7264-2000TZ		
6023	J35809	TPFXG	TOEPAN (NEXT TO FOOT	FWD	985 6389327 G	+	07/12/2001	OK	-1	Endevco	7264-2000TZ		
6024	J36496	TPFZG	TOEPAN (NEXT TO FOOT	UP	1014 182711 G	-	06/13/2001	OK	-1	Endevco	7264-2000TZ		
6025	J37170	RDKZG	REAR DECK Z-AXIS	UP	980 2232305 G	-	08/10/2001	OK	-1	Endevco	7264-2000TZ		
6026	J36201	RDCXG	REAR COMPARTMENT	FWD	1019 575044 G	+	08/30/2001	OK	-1	Endevco	7264-2000TZ		
6027	IP1	DABET1	DRIVER AIRBAG EVENT	6	1 003921568 V	+	06/15/2000	---	-1	FLUKE	Y8101A		
6028	IP2	PABET1	PASSENGER AIRBAG EVENT	- F	1 003921568 V	+	06/15/2000	---	-1	FLUKE	Y8101A		

Digital and System Channel Report

2001-10-22 10 32 34

Name of Test		011022	System		K3600	Name of DAU		DAU3	description	
enabled Channel			Short Name			Type			Data File	
Yes		3500	DIG0			dig0			DAT33500	
									KM3650 Sequencer	

bit position	bit selector	short name	long name	description
MSB = bit 15	1	EVENT	EVENT	
bit 14	0			
bit 13	0			
bit 12	0			
bit 11	0			
bit 10	0			
bit 09	0			
bit 08	0			
bit 07	0			
bit 06	0			
bit 05	0			
bit 04	0			
bit 03	0			
bit 02	0			
bit 01	0			
LSB = bit 00	0			

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Name of Test 011022 System K3600 Name of DAU DAU3

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol.	Cal. Date/Status	Group	Mfg.	Model
3000	EVENT	SYNC3	SYNC		10 24	+	11/20/2000	OK	TRC	Event
3001	01G25-N01	HEDXG1	Head Accel X	Fwd	796 1684393G	+	08/10/2001	OK	Entran	EGE-73B6Q-2000J
3002	01G25-N14	HEDYG1	Head Accel Y	Lft	801 4275428G	-	08/10/2001	OK	Entran	EGE-73B6Q-2000J
3003	01G25-N08	HEDZG1	Head Accel Z	Up	794 2910331G	-	08/10/2001	OK	Entran	EGE-73B6Q-2000J
3004	P12566	HEDXR1	Head Accel Red X	Rwd	799 7500781G	-	08/28/2001	OK	Endevco	7264C-2K-2-180
3005	J38075	HEDYR1	Head Accel Red Y	Rgt	800 8008008G	+	05/15/2001	OK	Endevco	7264-2000TZ
3006	P17858	HEDZR1	Head Accel Red Z	Up	803 1498533G	-	08/28/2001	OK	Endevco	7264C-2KLC-2-24
3007	01G25-N06	HD1XG1	Head (LT) Accel X	Fwd	802 1557936G	+	08/10/2001	OK	Entran	EGE-73B6Q-2000J
3008	01G25-N05	HD1ZG1	Head (LT) Accel Z	Up	805 8233326G	-	08/10/2001	OK	Entran	EGE-73B6Q-2000J
3009	01G25-N04	HD2YG1	Head (FT) Accel Y	Lft	796 8561534G	-	08/10/2001	OK	Entran	EGE-73B6Q-2000J
3010	01G25-N13	HD2ZG1	Head (FT) Accel Z	Up	803 6162732G	-	08/10/2001	OK	Entran	EGE-73B6Q-2000J
3011	01G25-N09	HD3XG1	Head (TP) Accel X	Fwd	802 2312055G	+	08/10/2001	OK	Entran	EGE-73B6Q-2000J
3012	01G25-N16	HD3YG1	Head (TP) Accel Y	Lft	802 2814879G	-	08/10/2001	OK	Entran	EGE-73B6Q-2000J
3013	1716A-858-FX	NEKXF1	Neck Force X	Hd	8899 001770N	-	08/16/2001	OK	Entran	EGE-73B6Q-2000J
3014	1716A-858-FY	NEKYF1	Neck Force Y	Hd	8893 929399N	-	08/16/2001	OK	Denton	1716A
3015	1716A-858-FZ	NEKZF1	Neck Force Z	Hd	13346 73011N	+	08/16/2001	OK	Denton	1716A
3016	1716A-858-MX	NEKXM1	Neck Moment X	Rt Ear	282 4832082NM	-	08/16/2001	OK	Denton	1716A
3017	1716A-858-MY	NEKYM1	Neck Moment Y	Chn	282 7321336NM	+	08/16/2001	OK	Denton	1716A
3018	1716A-858-MZ	NEKZM1	Neck Moment Z	Chn	282 2177713NM	+	08/16/2001	OK	Denton	1716A
3019	1794A-216-FX	NKLYF1	Lwr Neck Force X	Hd	13341 89994N	-	07/05/2001	OK	Denton	1794A
3020	1794A-216-FY	NKLYF1	Lwr Neck Force Y	Hd	13341 90342N	+	07/05/2001	OK	Denton	1794A
3021	1794A-216-FZ	NKLYF1	Lwr Neck Force Z	Hd	13341 96739N	+	07/05/2001	OK	Denton	1794A
3022	1794A-216-MX	NKLYM1	Lwr Neck Moment X	Rt Ear	339 1253559NM	-	07/05/2001	OK	Denton	1794A
3023	1794A-216-MY	NKLYM1	Lwr Neck Moment Y	Chn	339 0728476NM	+	07/05/2001	OK	Denton	1794A
3024	1794A-216-MZ	NKLYM1	Lwr Neck Moment Z	Chn	181 0661391NM	+	07/05/2001	OK	Denton	1794A
3025	ACCM9	CSTXG1	Chest Accel X	Fwd	398 1863854G	+	08/24/2001	OK	Endevco	7264-2000TZ
3026	J15368	CSTYG1	Chest Accel Y	Lft	397 2641535G	-	08/24/2001	OK	Endevco	7264-2000TZ
3027	J20184	CSTZG1	Chest Accel Z	Up	398 2235496G	-	08/24/2001	OK	Endevco	7264-2000TZ
3028	14CB1-2847-206	CSTXD1	Chest Deflection X	Strum	99 77651813MM	+	09/07/2001	OK	Servo	14CB1-2847
3029	2121-0160	LFMZFI	Left Femur Force Z	Knee	13351 98438N	+	08/24/2001	OK	Denton	2121

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3030	2121-0161	RFMZFI	Right Femur Force Z	Knee	13336 30969N	+	08/24/2001	OK	206v	Denton	2121
3031	150-0121VR-13741	KNLXD1	Left Knee Displacement	Tib	43 77136472MM	-	11/30/2000	OK	206v	SpaceAge	150-0121VR
3032	150-0121VL-18123	KNRDXD1	Right Knee Displacement	Tib	43 27979712MM	-	04/26/2001	OK	206v	SpaceAge	150-0121VL
3033	4353J-82-FX	TBLXF1	Left Upper Tibia Force X LC8	Tib	8894 284909N	+	08/03/2001	OK	206v	Denton	4353J
3034	4353J-82-FZ	TBLZF1	Left Upper Tibia Force Z LC15	Tib	8893 542249N	+	08/03/2001	OK	206v	Denton	4353J
3035	4353J-82-MX	TBLXM1	Left Upper Tibia Moment X	Ank	281 7203495NM	+	08/03/2001	OK	206v	Denton	4353J
3036	4353J-82-MY	TBLYM1	Left Upper Tibia Moment Y LC01	Ank	281 7203495NM	+	08/03/2001	OK	206v	Denton	4353J
3037	01G19-F02	TBLXG1	Left Tibia Accel X	Fwd	1208 972845G	+	08/21/2001	OK	206v	Entran	EGE-73B6Q-2000J
3038	01H02-N02	TBLYG1	Left Tibia Accel Y	Rt	1204 705882G	+	08/21/2001	OK	206v	Entran	EGE-73B6Q-2000J
3039	4929J-87-FX	ANLXF1	Left Lower Tibia Force X LC23	Ank	8892 680629N	+	12/22/2000	OK	206v	Denton	4929J
3040	4929J-87-FY	ANLYF1	Left Lower Tibia Force Y LC16	Ank	8892 260537N	+	12/22/2000	OK	206v	Denton	4929J
3041	4929J-87-FZ	ANLZF1	Left Lower Tibia Force Z LC19	Ank	8902 242252N	+	12/22/2000	OK	206v	Denton	4929J
3042	4929J-87-MX	ANLXM1	Left Lower Tibia Moment X	Ank	282 2327432NM	+	12/22/2000	OK	206v	Denton	4929J
3043	4929J-87-MY	ANLYM1	Left Lower Tibia Moment Y LC18	Ank	281 7363244NM	+	07/31/2001	OK	206v	CONTELEC	PD210-4B
3044	PD210-4B-AK-060	FTLXD1	Left Foot Disp X POT4	Evers	324 6567959DEG	+	07/31/2001	OK	206v	CONTELEC	PD210-4B
3045	PD210-4B-AK-061	FTLYD1	Left Foot Disp Y POT5	Dorsif	323 2425265DEG	+	07/31/2001	OK	206v	CONTELEC	PD210-4B
3046	PD210-4B-AK-062	FTLZD1	Left Foot Disp Z POT6	Intern	321 8202960DEG	+	07/31/2001	OK	206v	CONTELEC	PD210-4B
3047	01H02-N05	FTLXG1	Left Foot Accel X	Fwd	1202 484822G	+	08/21/2001	OK	206v	Entran	EGE-73B6Q-2000J
3048	J38856	FTLYG1	Left Foot Accel Y	Rt	1205 982805G	+	05/23/2001	OK	206v	Endevco	7264-2000TZ
3049	01H02-N01	FTLZG1	Left Foot Accel Z	Dn	1213 327645G	+	08/21/2001	OK	206v	Entran	EGE-73B6Q-2000J
3050	4353J-81-FX	TBRXF1	Right Upper Tibia Force X LC10	Tib	8895 282373N	+	08/03/2001	OK	206v	Denton	4353J
3051	4353J-81-FZ	TBRZF1	Right Upper Tibia Force Z LC14	Tib	8904 739944N	+	08/03/2001	OK	206v	Denton	4353J
3052	4353J-81-MX	TBRXM1	Right Upper Tibia Moment X	Ank	281 7704894NM	+	08/03/2001	OK	206v	Denton	4353J
3053	4353J-81-MY	TBRYM1	Right Upper Tibia Moment Y	Ank	281 7477428NM	+	08/03/2001	OK	206v	Denton	4353J
3054	01H02-N07	TBRXG1	Right Tibia Accel X	Fwd	1195 144724G	+	08/21/2001	OK	206v	Entran	EGE-73B6Q-2000J
3055	01H02-N03	TBRYG1	Right Tibia Accel Y	Rt	1192 361434G	+	08/21/2001	OK	206v	Entran	EGE-73B6Q-2000J
3056	4929J-86-FX	ANRXF1	Right Lower Tibia Force X LC28	Ank	8893 242872N	+	12/22/2000	OK	206v	Denton	4929J
3057	4929J-86-FY	ANRYF1	Right Lower Tibia Force Y LC20	Ank	8899 596215N	+	12/22/2000	OK	206v	Denton	4929J
3058	4929J-86-FZ	ANRZF1	Right Lower Tibia Force Z LC9	Ank	8894 605062N	+	12/22/2000	OK	206v	Denton	4929J
3059	4929J-86-MX	ANRXM1	Right Lower Tibia Moment X	Ank	282 1251795NM	+	12/22/2000	OK	206v	Denton	4929J
3060	4929J-86-MY	ANRYM1	Right Lower Tibia Moment Y	Ank	281 8548559NM	+	12/22/2000	OK	206v	Denton	4929J
3061	PD210-4B-AK-057	FTRXD1	Right Foot Disp X POT1	Iners	323 7330466DEG	+	07/31/2001	OK	206v	CONTELEC	PD210-4B
3062	PD210-4B-AK-058	FTRYD1	Right Foot Disp Y POT2	Dorsif	324 1942632DEG	+	07/31/2001	OK	206v	CONTELEC	PD210-4B
3063	PD210-4B-AK-059	FTRZD1	Right Foot Disp Z POT3	Extern	325 1103279DEG	+	07/31/2001	OK	206v	CONTELEC	PD210-4B
3064	J38857	FTRXG1	Right Foot Accel X	Fwd	1198 993033G	+	05/23/2001	OK	206v	Endevco	7264-2000TZ

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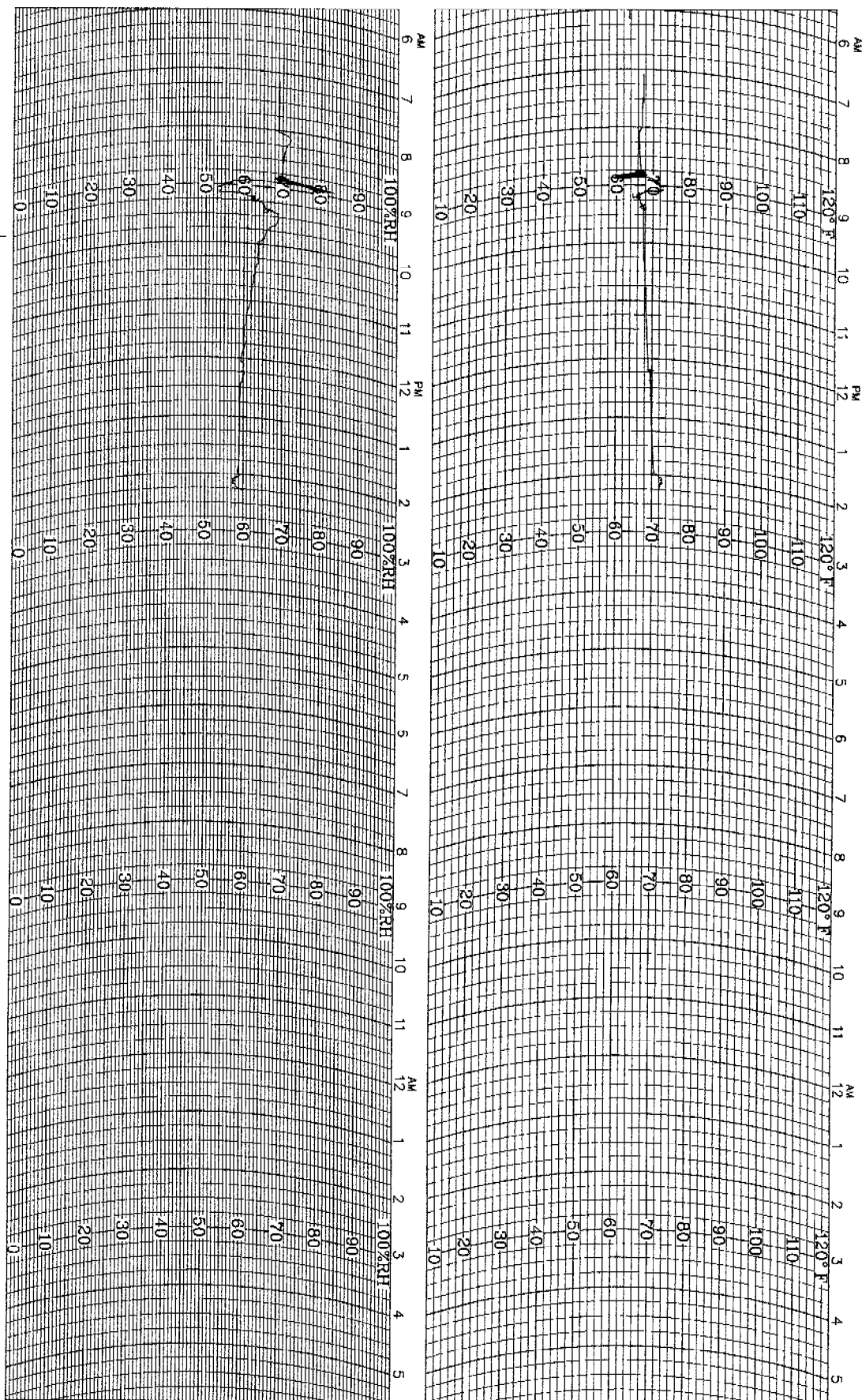
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3065	J38787	FTRYG1	Right Foot Accel Y	Rt	1194 977360G		OK	206v	Endevco	7264-2000TZ
3066	01G19-F05	FTRZG1	Right Foot Accel Z	Dn	1205 273069G		OK	206v	Entran	EGE-73B6Q-2000J
3067	01G25-N07	HEDXG2	Head Accel X	Fwd	799 6001999G		OK	202v	Entran	EGE-73B6Q-2000J
3068	01G25-N20	HEDYG2	Head Accel Y	Lft	795 6240676G		OK	202v	Entran	EGE-73B6Q-2000J
3069	01G25-N17	HEDZG2	Head Accel Z	Up	804 9998034G		OK	202v	Entran	EGE-73B6Q-2000J
3070	P15951	HEDXR2	Head Accel Red X	Rwd	802 1809294G		OK	202v	Endevco	7264C-2KLC-2-24
3071	J36709	HEDYR2	Head Accel Red Y	Rgt	791 4425276G		OK	-1	Endevco	7264-2000TZ
3072	P16899	HEDZR2	Head Accel Red Z	Up	803 1372549G		OK	202v	Endevco	7264C-2KLC-2-24
3073	01G19-F03	HD1XG2	Head (LT) Accel X	Fwd	805 0061318G		OK	202v	Entran	EGE-73B6Q-2000J
3074	01G25-N18	HD1ZG2	Head (LT) Accel Z	Up	801 8668462G		OK	202v	Entran	EGE-73B6Q-2000J
3075	01G25-N10	HD2YG2	Head (FT) Accel Y	Lft	799 1509021G		OK	202v	Entran	EGE-73B6Q-2000J
3076	01G25-N03	HD2ZG2	Head (FT) Accel Z	Up	802 6462242G		OK	202v	Entran	EGE-73B6Q-2000J
3077	01G25-N15	HD3XG2	Head (TP) Accel X	Fwd	805 0504335G		OK	202v	Entran	EGE-73B6Q-2000J
3078	01G25-N02	HD3YG2	Head (TP) Accel Y	Lft	800 5003126G		OK	202v	Entran	EGE-73B6Q-2000J
3079	1716-0628-FX	NEKXF2	Neck Force X	Hd	8902 198370N		OK	202v	Entran	EGE-73B6Q-2000J
3080	1716-0628-FY	NEKYF2	Neck Force Y	Hd	8900 719815N		OK	202v	Denton	1716
3081	1716-0628-FZ	NEKZF2	Neck Force Z	Hd	13340 87231N		OK	202v	Denton	1716
3082	1716-0628-MX	NEKXM2	Neck Moment X	Rt Ear	282 5473708NM		OK	202v	Denton	1716
3083	1716-0628-MY	NEKYM2	Neck Moment Y	Chn	282 3365349NM		OK	202v	Denton	1716
3084	1716-0628-MZ	NEKZM2	Neck Moment Z	Chn	282 3305064NM		OK	202v	Denton	1716
3085	1794A-215-FX	NKLYF2	Lwr Neck Force X	Hd	13349 13467N		OK	202v	Denton	1794A
3086	1794A-215-FY	NKLYF2	Lwr Neck Force Y	Hd	13336 09067N		OK	202v	Denton	1794A
3087	1794A-215-FZ	NKLYF2	Lwr Neck Force Z	Hd	13354 54201N		OK	202v	Denton	1794A
3088	1794A-215-MX	NKLYM2	Lwr Neck Moment X	Rt Ear	338 8352162NM		OK	202v	Denton	1794A
3089	1794A-215-MY	NKLYM2	Lwr Neck Moment Y	Chn	338 9097203NM		OK	202v	Denton	1794A
3090	1794A-215-MZ	NKLYM2	Lwr Neck Moment Z	Chn	181 0979990NM		OK	202v	Denton	1794A
3091	AJ460	CSTXG2	Chest Accel X	Fwd	401 8727899G		OK	202v	Endevco	7264-2000TZ
3092	J14404	CSTYG2	Chest Accel Y	Lft	401 8838304G		OK	202v	Endevco	7264-2000TZ
3093	J14144	CSTZG2	Chest Accel Z	Up	402 7294358G		OK	202v	Endevco	7264-2000TZ
3094	14CB1-2847-0137	CSTXD2	Chest Deflection X	Stmm	100 2710736MM		OK	202v	Servo	14CB1-2847
3095	2121-0226	LFMZP2	Left Femur Force Z	Knee	13348 55329N		OK	202v	Denton	2121
3096	2121-0227	RFMZP2	Right Femur Force Z	Knee	13344 49840N		OK	202v	Denton	2121
3097	150-0121VR-13739	KNLXD2	Left Knee Displacement	Tib	44 3166856MM		OK	202v	SpaceAge	150-0121VR
3098	150-0121VL-13723	KNRXD2	Right Knee Displacement	Tib	43 44247689MM		OK	202v	SpaceAge	150-0121VL
3099	3115-199-FX	TBLXF2	Left Upper Tibia Force X	Tib	8896 236237N		OK	202v	Denton	3115

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3100	3115-199-FZ	TBLZF2	Left Upper Tibia Force Z	Tib	8894 296188N	+	03/02/2001	OK	202v	Denton	3115
3101	3115-199-MX	TBLXM2	Left Upper Tibia Moment X	Tib	281 7803744NM	-	03/02/2001	OK	202v	Denton	3115
3102	3115-199-MY	TBLYM2	Left Upper Tibia Moment Y	Tib	281 8261359NM	+	03/02/2001	OK	202v	Denton	3115
3103	3287-128-FX	ANLXF2	Left Lower Tibia Force X	Ank	8898 292344N	-	03/05/2001	OK	202v	Denton	3287
3104	3287-128-FZ	ANLZF2	Left Lower Tibia Force Z	Ank	8897 210561N	+	03/05/2001	OK	202v	Denton	3287
3105	3287-128-MX	ANLXM2	Left Lower Tibia Moment X	Ank	281 9911428NM	-	03/05/2001	OK	202v	Denton	3287
3106	3287-128-MY	ANLYM2	Left Lower Tibia Moment Y	Ank	281 9198189NM	+	03/05/2001	OK	202v	Denton	3287
3107	J34528	ENGXG1	TOP ENGINE X-AXIS	FWD	993 0563637G	+	07/17/2001	OK	-1	Endevco	7264-2000TZ




Weather Measure
WEATHERtronics
 Division of QUALIMETRICS Inc

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