

3783

**Vehicle Research and Test Center
2001 Dodge Grand Caravan into
Flat Frontal Barrier at 30.0 mph
TRC Inc. Test Number: 010814**

**Prepared By:
Transportation Research Center Inc.
10820 State Route 347
East Liberty, OH 43319**

**Final Report
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**Prepared For:
Vehicle Research and Test Center
P. O. Box 37
East Liberty, OH 43319**

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Test Procedure

This test was conducted in accordance with VRTC instructions for a full frontal car to stationary barrier test. Data was obtained relative to FMVSS 208, "Occupant Crash Protection" and FMVSS 301 (partial), "Fuel System Integrity," performance. An additional fuel line leakage test was also conducted per VRTC instructions.

The test vehicle, a 2001 Dodge Grand Caravan, was instrumented with nine (9) accelerometers to measure longitudinal axis accelerations. The driver's and passenger's primary and secondary airbag signals were monitored with inductive pickups. The vehicle impacted a flat frontal barrier. The vehicle's specified impact velocity range was 47.5 to 49.1 km/h.

The test vehicle contained two (2) Part 572O small adult female Hybrid III anthropomorphic test devices (dummies). The dummies were positioned in the front outboard designated seating positions according to a small female dummy placement draft procedure provided by VRTC and included in Appendix D. The driver dummy and the passenger dummy were both unbelted and were restrained with front dual stage airbags. The test vehicle also contained a Hybrid III six-year-old child dummy in a booster seat in the right rear passenger designated seating position.

Both adult dummies were instrumented with an array of twelve (12) accelerometers in the head, plus three (3) chest, and three (3) pelvis, accelerometers to measure longitudinal, lateral, and vertical accelerations, and the dummies were also instrumented with neck moment and force load cells, left and right femur load cells to measure axial forces, and chest deflection potentiometers. Both dummies were also equipped with THOR-FLX legs, which included upper and lower tibia load cells to measure forces and moments, tibia and foot accelerometers in two axes, and three (3) rotary potentiometers at each ankle to measure foot rotations about three axes. The passenger dummy also had redundant chest accelerometers. The child dummy was instrumented with three (3) head and three (3) chest accelerometers to measure longitudinal, lateral, and vertical accelerations, neck moment and force load cells, and a chest deflection potentiometer.

The 179 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 twelve (12) high-speed motion picture cameras. The pre- and post-test conditions were recorded by one (1) real-time motion picture camera.

The barrier test summary data are presented in Section 2.0. The summary of FMVSS 208 data are presented in Section 3.0. The occupant, camera, and vehicle measurements are presented in Section 4.0. The fuel system data, including a special fuel line siphoning test procedure and data, are presented in Section 5.0. 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.

Test Results Summary

This frontal barrier test was conducted by TRC Inc. on August 14, 2001.

The test vehicle, a 2001 Dodge Grand Caravan MPV, was equipped with a 3.3-liter transverse engine, automatic transmission, power steering, power brakes and dual stage front airbags. The vehicle's test weight was 2095.2 kg. The vehicle's impact speed was 48.3 km/h. The vehicle sustained 277 mm of static crush during the impact.

The driver's 36 millisecond Head Injury Criteria (HIC) was 319. The driver's 15 millisecond HIC was 191. The driver's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 67.1 g. The driver's maximum chest deflection was 57 mm. The driver's left and right femur maximum axial compressive forces were 4644 N and 5063 N, respectively. The driver dummy's neck injury calculations were as follows: NTF, 0.1; NTE, 1.8; NCF, 0.1; NCE, 0.1.

The right front passenger's 36 millisecond HIC was 596. The passenger's 15 millisecond HIC was 488. The passenger's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 61.5 g. The passenger's maximum chest deflection was 17 mm. The passenger's left and right femur maximum axial compressive forces were 4740 N and 4100 N, respectively. The right front passenger's neck injury calculations were as follows: NTF, 0.5; NTE, 0.8; NCF, 0.3; NCE, 0.7.

The right rear passenger's 36 millisecond HIC was 953. The right rear passenger's 15 millisecond HIC was 762. The right rear passenger's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 52.7 g.

Following the impact, no fluid spilled from the vehicle's fuel system prior to the static rollover test. No static rollover test was performed. A special fuel line siphoning test was performed by severing the fuel lines subsequent to the impact test and 8 g of fluid were collected in 30 minutes.

Data Acquisition Explanations

All offboard films did not record images as a result of the overhead lights not coming on during the impact event.

Table 1 Crash Test Summary

Test mode:	Flat frontal barrier		
Test date:	08/14/01		
Test time:	1603		
Ambient temperature:	22° C		
Vehicle year/make/ model/body style:	2001/Dodge/Grand Caravan/MPV		
Vehicle test weight:	2095.2 kg		
Impact angle ¹ :	0°		
Impact velocity ² :	48.3 km/h		
Maximum static crush:	277 mm		
Average rebound:	1010 mm		
Number of data channels:	179		
Number of cameras:	High-speed	12	Real-time 1
<u>Dummies:</u>	<u>Driver #416</u>	<u>Right Front Passenger #421</u>	<u>Right Rear Passenger #088</u>
Type:	Part 572O	Part 572O	H3 6YO
Location:	Left front	Right front	Right rear
Restraint:	Airbag	Airbag	Booster seat, 3-point seat belt
 <u>Seat track position for test:</u>			
Driver:	5 notches from full forward		
Right Front Passenger:	Full Forward		
 <u>Seat back position for test:</u>			
Driver:	16.6°		
Right Front Passenger:	22.8°		
 <u>Head rest position for test:</u>			
Driver:	Full Down		
Right Front Passenger:	Full Down		
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/Dodge/Grand Caravan/MPV
VIN:	2B8GP44341R213204
Model year:	2001
Body style:	4-door
Color:	White
Engine data:	
Cylinders:	6
Displacement	3.3 liters
Cylinder placement:	V
Engine placement:	Transverse
Transmission data:	<u>4</u> speed, <u> </u> manual, <u> X </u> automatic, <u> X </u> overdrive
Final drive:	<u> X </u> FWD, <u> </u> RWD, <u> </u> 4WD
Date vehicle received:	08/10/2001
Odometer reading:	76
Dealer's name	N/A
and address:	N/A
	N/A

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	None	Power door locks	Yes

Certification data from vehicle's label:

Vehicle manufactured by:	DaimlerChrysler Corporation
Date of manufacture:	11/00
VIN:	2B8GP44341R213204
GVWR:	5500 lbs. (2495 kg)
GAWR: Front:	2850 lbs. (1293 kg)
Rear:	2850 lbs. (1293 kg)

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

Tires on vehicle (mfr., line, size): Goodyear, Integrity, 215/70R15

Tire pressure with maximum capacity vehicle load:

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

Spare tire (mfr., line, size): Goodyear, Temporary, T145/90D16

Type of seats:

Front	Bucket
Rear	Second row - Bucket; Third row - Bench

Maximum width: 2000 mm

Wheelbase: 3026 mm

Location of "Recommended Tire Pressure" label:

The label was located on the drivers' door.

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

Recommended tire size: P215/70R15

Recommended cold tire pressure:

Front:	36 psi	(248 kPa)
Rear:	36 psi	(248 kPa)

Vehicle Capacity Data:

Number of Occupants (Designated seating capacity):

Front	2
Mid	2
Rear	3
Total	7

Vehicle capacity weight: N/A

Rated Cargo/Luggage Weight (RCLW) N/A

Test vehicle attitude:

Delivered attitude:	LF	767 mm;	RF	770 mm;	LR	785 mm;	RR	782 mm
Fully loaded attitude:	LF	739 mm;	RF	743 mm;	LR	766 mm;	RR	761 mm
Pre-test attitude:	LF	757 mm;	RF	757 mm;	LR	750 mm;	RR	752 mm
Post-test attitude:	LF	773 mm;	RF	795 mm;	LR	745 mm;	RR	740 mm

Table 2 General Test and Vehicle Parameter Data Cont'd

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

Right front	519.5 kg	Right rear	408.5 kg
Left front	567.0 kg	Left rear	417.5 kg
Total front weight	1086.5 kg	(56.8 % of total vehicle weight)	
Total rear weight	826.0 kg	(43.2 % of total vehicle weight)	
Total delivered weight	1912.5 kg		

Calculation of test vehicle's target test weight:

Total Delivered Weight (UDW) =	1912.5 kg
Rated Cargo/Luggage Weight (RCLW) ¹ =	45 kg
Weight of 2 Part 5720 Dummies @ 49 kg each =	98 kg
Weight of 1 Hybrid III 6 YO Dummy =	22 kg
Target test weight =	2077.5 kg

Weight of test vehicle with required dummies and 62.7 kg of cargo weight:

Right front	549.2 kg	Right rear	484.4 kg
Left front	577.6 kg	Left rear	484.0 kg
Total front weight	1126.8 kg	(53.8 % of total vehicle weight)	
Total rear weight	968.4 kg	(46.2 % of total vehicle weight)	
Total test weight	2095.2 kg	(18.2 % under target test weight)	

Weight of ballast secured in vehicle: None

Components removed to meet target test weight: Tail lights, rear AC unit, rear door trim, rear seat belts, center console, rear tire holder and rear wiper motor.

Location of Vehicle's CG: 1400 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: 010814
Test date: 08/14/01
Test time: 1603
Test type: Flat Frontal barrier
Impact angle: 0°
Ambient temperature
at impact area: 22° C
Required impact velocity range: 47.5 to 49.1 km/h

Barrier impact velocity:

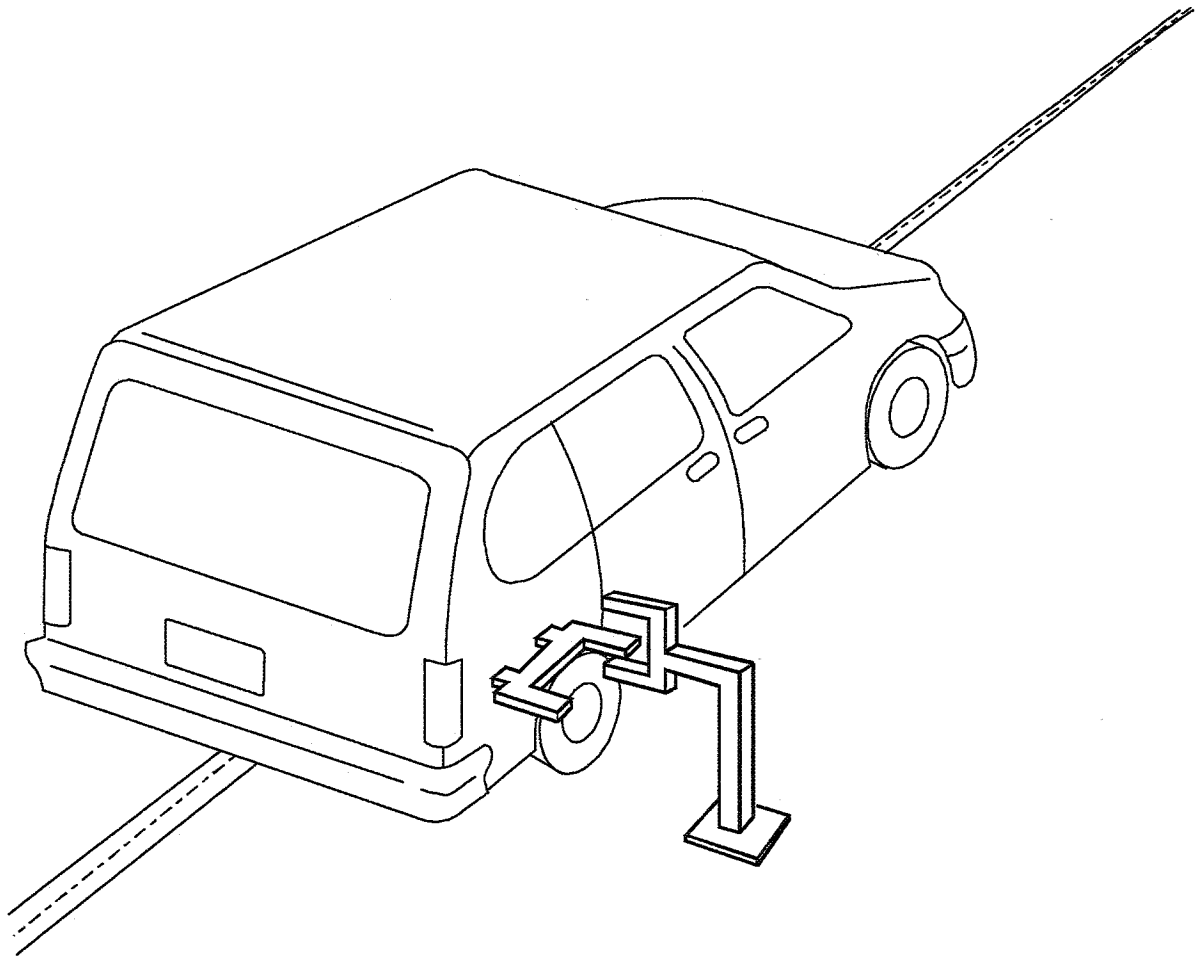
Primary: 48.3 km/h
Secondary: 48.3 km/h
Distance from vehicle to barrier:
Entering velocity trap: 661 mm
Exiting velocity trap: 51 mm

Vehicle rebound from flat rigid barrier:

Distance from test vehicle to barrier impact point:

Post-test: L 1081 mm; C 960 mm; R 988 mm
Average rebound: 1010 mm

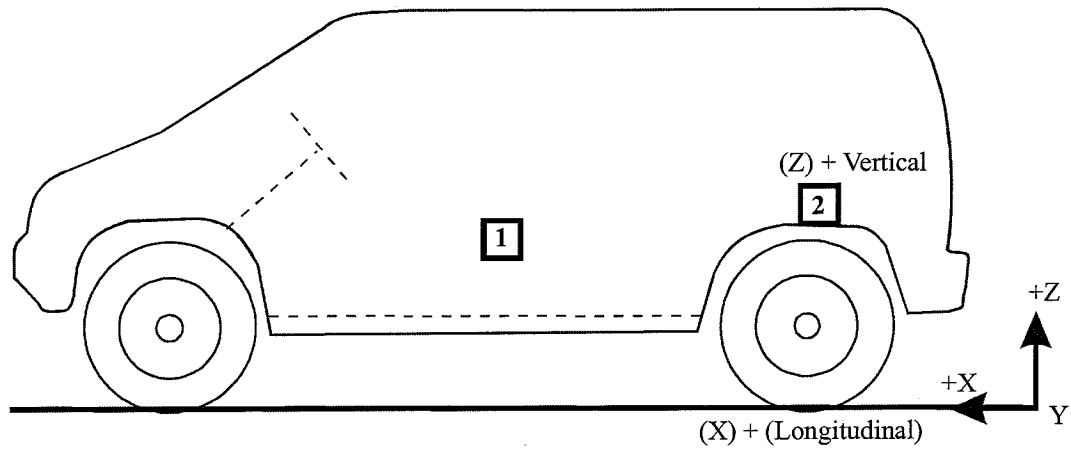
Figure 1 Impact Velocity Measurement System



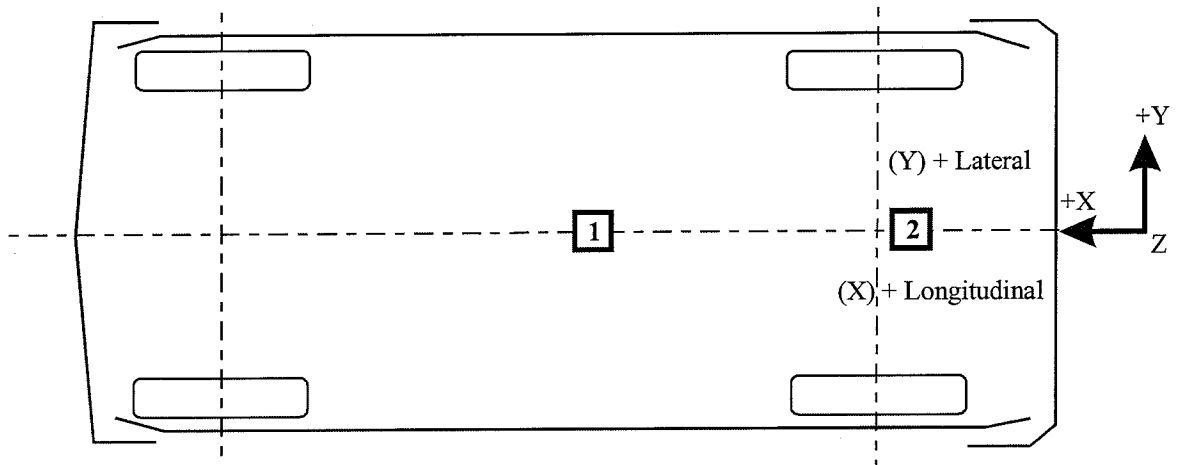
The final vane clears the final emitter/receiver pair 51 millimeters before impact.

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: 010814		POSITIVE		NEGATIVE	
No. LOCATION		DIRECTION		DIRECTION	
1	VEHICLE CENTER				
	OF GRAVITY				
	LONGITUDINAL	1.8 g	@ 121.8 ms	33.9 g	@ 41.9 ms
	LATERAL	10.9 g	@ 53.5 ms	16.4 g	@ 44.8 ms
	VERTICAL	19.8 g	@ 54.2 ms	24.7 g	@ 38.7 ms
	RESULTANT	36.6 g	@ 40.3 ms		
2	REAR DECK				
	LONGITUDINAL	2.1 g	@ 123.6 ms	35.0 g	@ 42.6 ms
	LATERAL	3.6 g	@ 44.2 ms	7.5 g	@ 51.3 ms
	VERTICAL	10.7 g	@ 41.4 ms	8.1 g	@ 49.5 ms
	RESULTANT	36.4 g	@ 42.5 ms		

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	-39.6 g	-6.5 g	-38.0 g	45.9 g ✓	-68.0 g ✓	-5.9 g	-11.3 g
Right Front Passenger	-65.4 g	-29.2 g	-20.9 g	69.2 g	-59.2 g	-6.0 g	18.1 g
Right Rear Passenger	-28.0 g	7.5 g	78.9 g	83.6 g	-52.3 g	-6.2 g	-16.0 g

	<u>Maximum Femur Compressive Force</u>	
	Left Femur	Right Femur
Driver	4644 N ✓	5063 N ✓
Right Front Passenger	4740 N ✓	4100 N ✓
Right Rear Passenger	N/A	N/A

<u>Head Injury Criteria²</u>			
36 millisecond			
	HIC	Time t ₁	Time t ₂
Driver	319 ✓	52.4 ms	88.4 ms
Right Front Passenger	596 ✓	67.0 ms	94.3 ms
Right Rear Passenger	953	66.6 ms	95.6 ms

15 millisecond			
	HIC	Time t ₁	Time t ₂
Driver	191 ✓	64.6 ms	79.7 ms
Right Front Passenger	488 ✓	74.0 ms	89.0 ms
Right Rear Passenger	762	72.3 ms	87.3 ms

Table 5 Dummy Injury Criteria Data, Cont'd.

Chest Maximum Resultant Acceleration³

	Acceleration	Time t ₁	Time t ₂
Driver	67.1 g ✓	67.5 ms	70.5 ms
Right Front Passenger	61.5 g ✓	83.9 ms	86.8 ms
Right Rear Passenger	52.7 g	62.4 ms	65.4 ms

Maximum Chest Deflection

Driver	57 mm ✓
Right Front Passenger	17 mm ✓
Right Rear Passenger	29 mm

Neck Injury Calculations (Nij)²

	NTF	NTE	NCF	NCE
Driver	0.1 ✓	1.8 ✓	0.1 ✓	0.1 ✓
Right Front Passenger	0.5 ✓	0.8 ✓	0.3 ✓	0.7 ✓
Right Rear Passenger	0.2	0.2	0.1	0.3

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>Right Front Passenger</u>	<u>Right Rear Passenger</u>
Head	Airbag, headrest	Airbag, headrest	None
Chest	Airbag	Airbag	None
Abdomen	None	None	None
Left knee	Instrument panel	Instrument panel	None
Right knee	Instrument panel	Instrument panel	None

Door opening:

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

Seat movement:

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

Glazing damage: None

Other notable impact effects: No

Section 4.0

Occupant, Camera, and Vehicle Information

Dummy Kinematic Summary

Driver Dummy

No film available, see Data Acquisition Explanations.

Right Front Passenger Dummy

No film available, see Data Acquisition Explanations.

Right Rear Passenger Dummy

Upon impact, the dummy's head rotated forward, its legs rotated upward and its arms rotated upward and rearward as the dummy was restrained by the three-point unbelt. The dummy's head rotated rearward as the dummy rebounded into the seat.

Table 7 Dummy Measurement Data For Front Seat Occupants

Designation	Type of Measurement	Driver (Serial # 416)	Passenger (Serial # 421)
WA	Windshield angle	29.4°	29.4°
SWA	Steering wheel angle	63°	NA
SCA	Steering column angle	27°	NA
SA	Seat back angle	16.6°	22.8°
HZ	Head to roof	240 mm	215 mm
HH	Head to header	347 mm	310 mm
HW	Head to windshield	726 mm	640 mm
HR	Head to side header	285 mm	259 mm
NR	Nose to rim	334 mm	NA
NA	Nose to rim angle	4.8°	NA
CD	Chest to dash	527 mm	458 mm
CS	Steering wheel to chest	254 mm	NA
RA	Rim to abdomen	136 mm	NA
KDL	Left knee to dash	136 mm	136 mm
KDR	Right knee to dash	172 mm	136 mm
KDA	Outboard knee to dash angle	50.8°	73.1°
PA	Pelvic angle	22.3°	20.8°
TA	Tibia angle	72.4°	61.2°
KK	Knee to knee	330 mm	230 mm
ST ¹	Striker to head	605 mm	632 mm
	Striker to head angle	-67.3°	-70.0°
SK ¹	Striker to knee	635 mm	673 mm
	Striker to knee angle	-7°	-10.6°
SH ¹	Striker to H-point	310 mm	346 mm
	Striker to H-point angle	-0.7°	-6.4°
SHY	Striker to H-point (Y dir.)	265 mm	278 mm
HS	Head to side window	280 mm	264 mm
HD	H-point to door	182 mm	155 mm
AD	Arm to door	175 mm	161 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.

Table 8 Dummy Measurements for Rear Seat Occupant

<u>Designation</u>	<u>Type of Measurement</u>	<u>Right Rear Passenger (Serial #088)</u>
HB	Head to closest point on front seat back	637 mm
KBL	Left knee to seat back (horizontal)	419 mm
KBR	Right knee to seat back (horizontal)	419 mm

Figure 4 Pre-Test And Post-Test Measurement Points

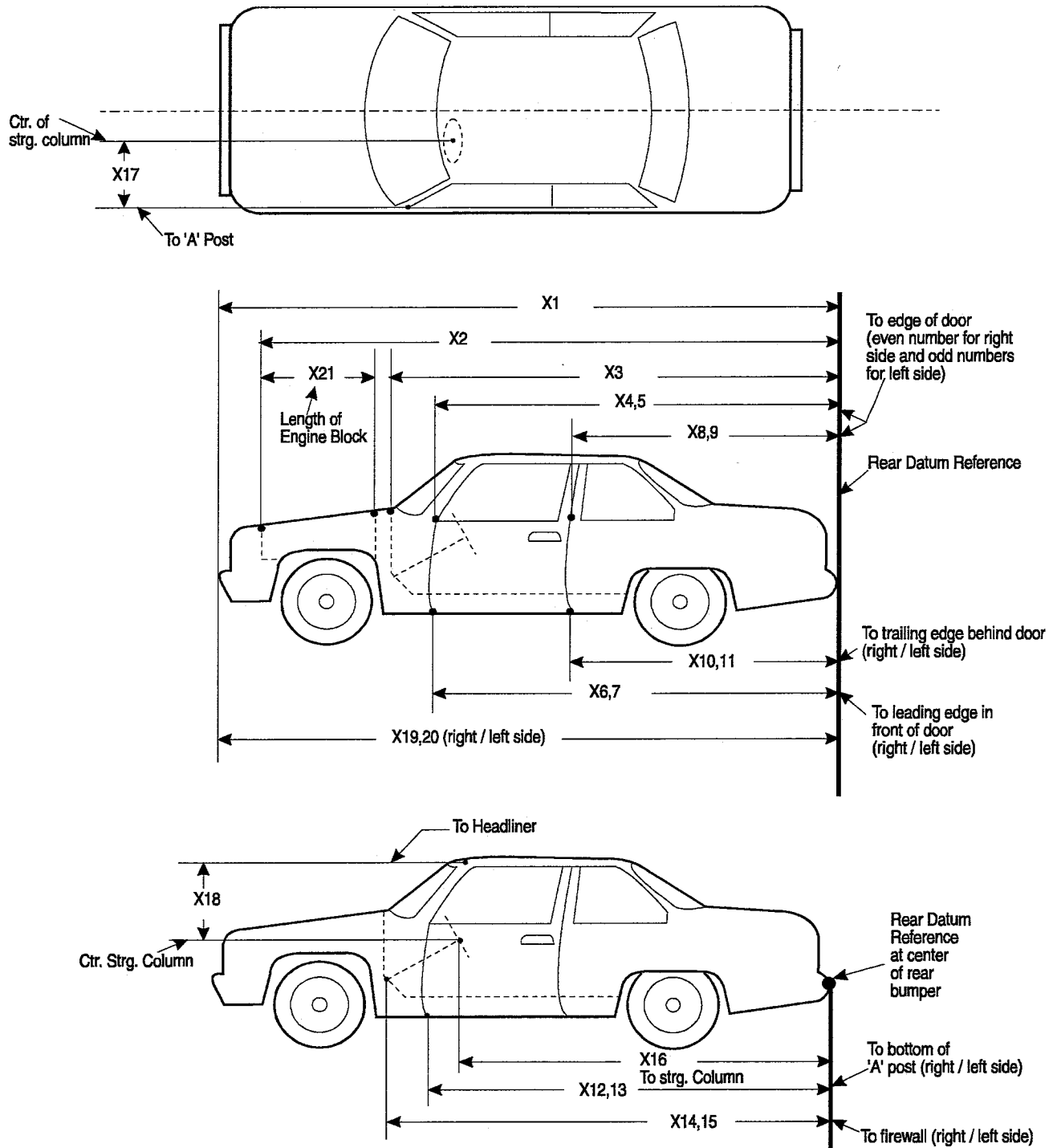


Table 9 Impacted Vehicle Measurements

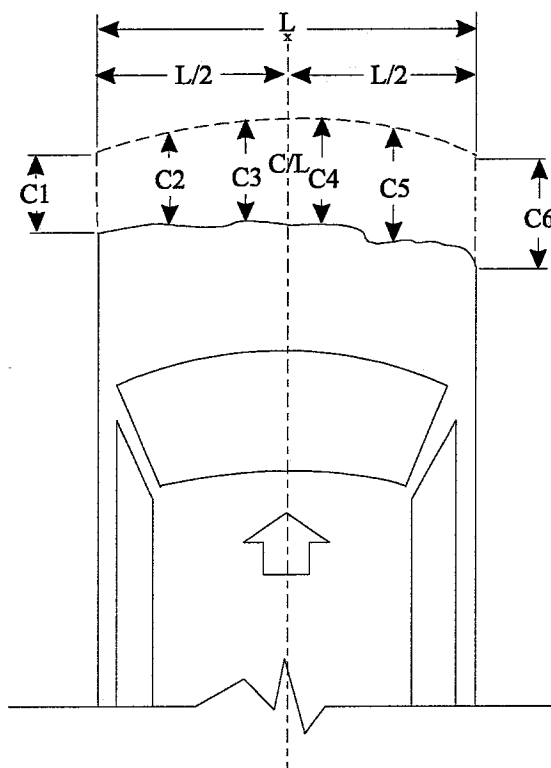
Test number: 010814

Vehicle year/make/model/body style: 2001/Dodge/Grand Caravan/MPV

No.	Type of measurement	Pre-Test	Post-Test	Difference
X1	Total Length of Vehicle at Centerline	5083	4837	246
X2	Rear Surface of Vehicle to Front of Engine Block	4481	4327	154
X3	Rear Surface of Vehicle to Firewall	4314	4302	12
X4	Rear Surface of Veh. to Upper Leading Edge of Right Door	3643	3643	0
X5	Rear Surface of Veh. to Upper Leading Edge of Left Door	3658	3652	6
X6	Rear Surface of Veh. to Lower Leading Edge of Right Door	3617	3618	-1
X7	Rear Surface of Veh. to Lower Leading Edge of Left Door	3620	3627	-7
X8	Rear Surface of Veh. to Upper Trailing Edge of Right Door	2658	2658	0
X9	Rear Surface of Veh. to Upper Trailing Edge of Left Door	2669	2662	7
X10	Rear Surface of Veh. to Lower Trailing Edge of Right Door	2660	2667	-7
X11	Rear Surface of Veh. to Lower Trailing Edge of Left Door	2668	2667	1
X12	Rear Surface of Veh. to Bottom of " A " Post on Right Side	3650	3654	-4
X13	Rear Surface of Veh. to Bottom of " A " Post on Left Side	3651	3657	-6
X14	Rear Surface of Vehicle to Firewall--Right Side	4155	4160	-5
X15	Rear Surface of Vehicle to Firewall --Left Side	4154	4193	-39
X16	Rear Surface of Vehicle to Steering Wheel Center	3219	3235	-16
X17	Center of Steering Column to " A " Post	322	300	22
X18	Center of Steering Column to Headliner	470	434	36
X19	Rear Surface of Vehicle to Right Side of Front Bumper	4885	4685	200
X20	Rear Surface of Vehicle to Left Side of Front Bumper	4885	4678	207
X21	Length of Engine Block	450	450	0
RD	Rear Surface of Vehicle to Right Side of Dash Panel	3470	3465	5
CD	Rear Surface of Vehicle to Center of Dash Panel	3465	3458	7
LD	Rear Surface of Vehicle to Left Side of Dash Panel	3460	3482	-22

All distance measurements are in millimeters.

Figure 5 Vehicle Crush



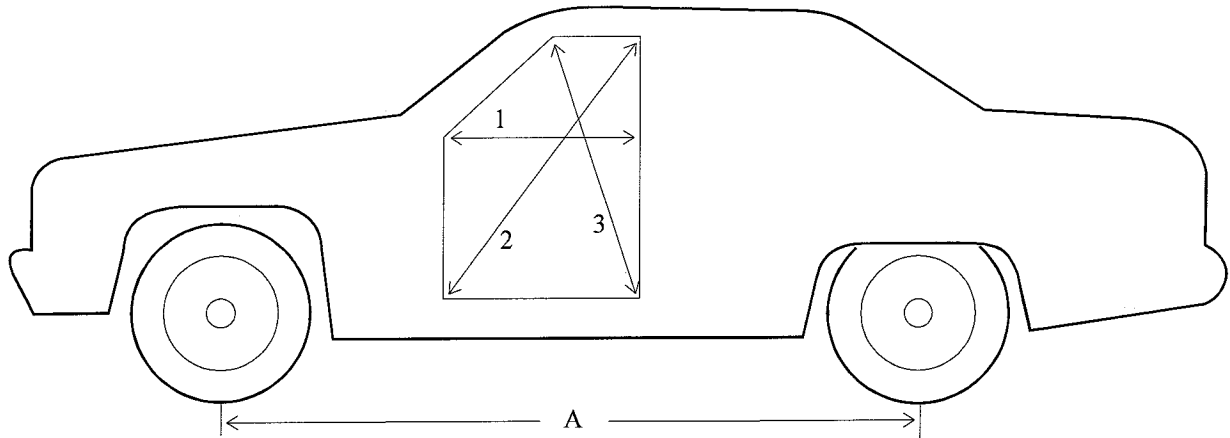
Notes: L is pre-test length of contact surface.
C1 through C6 are spaced equally apart.
CL is vehicle centerline.

Vehicle: 2001 Dodge Grand Caravan

Location	Pre-test	Post-test	Difference
L	1525 mm		
C1	4885 mm	4678 mm	207 mm
C2	5020 mm	4743 mm	277 mm
C3	5072 mm	4834 mm	238 mm
C4	5072 mm	4830 mm	242 mm
C5	5019 mm	4780 mm	239 mm
C6	4885 mm	4685 mm	200 mm
CL	5083 mm	4837 mm	246 mm

Figure 6 Vehicle Intrusion Measurements

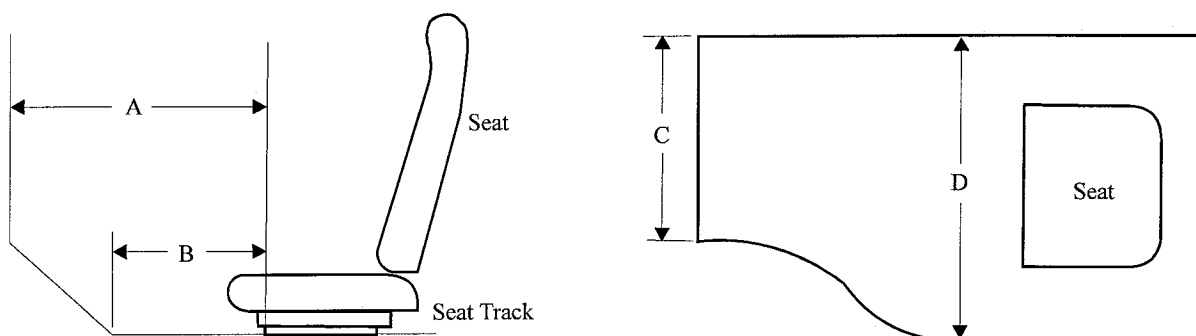
Door Opening Width



Units (mm)	Left			Right		
Measurement	1	2	3	1	2	3
Pre-Test	922 mm	1525 mm	1195 mm	949 mm	1530 mm	1205 mm
Post-Test	918 mm	1528 mm	1200 mm	946 mm	1527 mm	1215 mm
Difference	4 mm	-3 mm	-5 mm	3 mm	3 mm	-10 mm

Units (mm)	A = Wheelbase Left	A = Wheelbase Right
Pre-Test	3026 mm	3030 mm
Post-Test	2959 mm	2975 mm
Difference	67 mm	55 mm

Figure 7 Vehicle Intrusion Measurements
Static Footwell Deformation



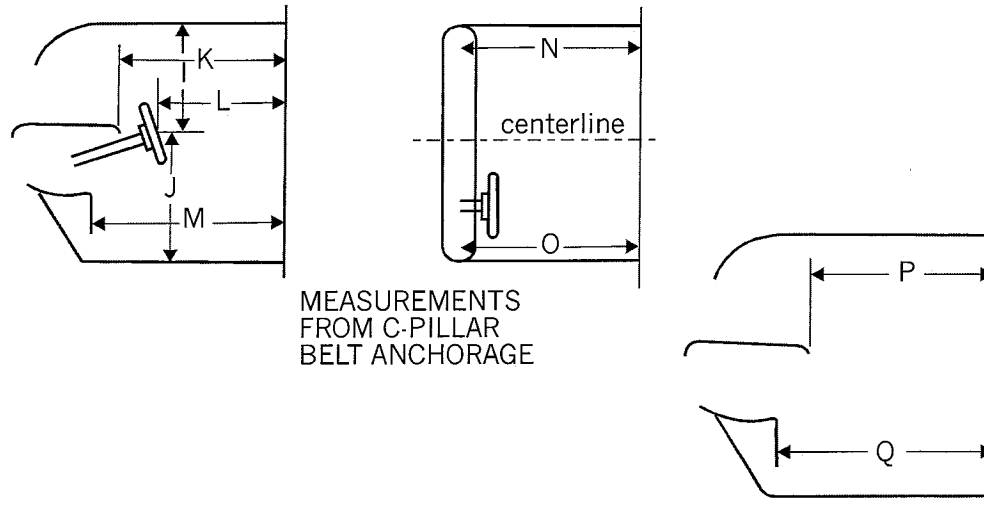
Driver's Side

Measurement	Pre-Test	Post-Test	Difference
A	820 mm	747 mm	73 mm
B	600 mm	542 mm	58 mm
C	350 mm	330 mm	20 mm
D	560 mm	565 mm	-5 mm

Passenger's Side

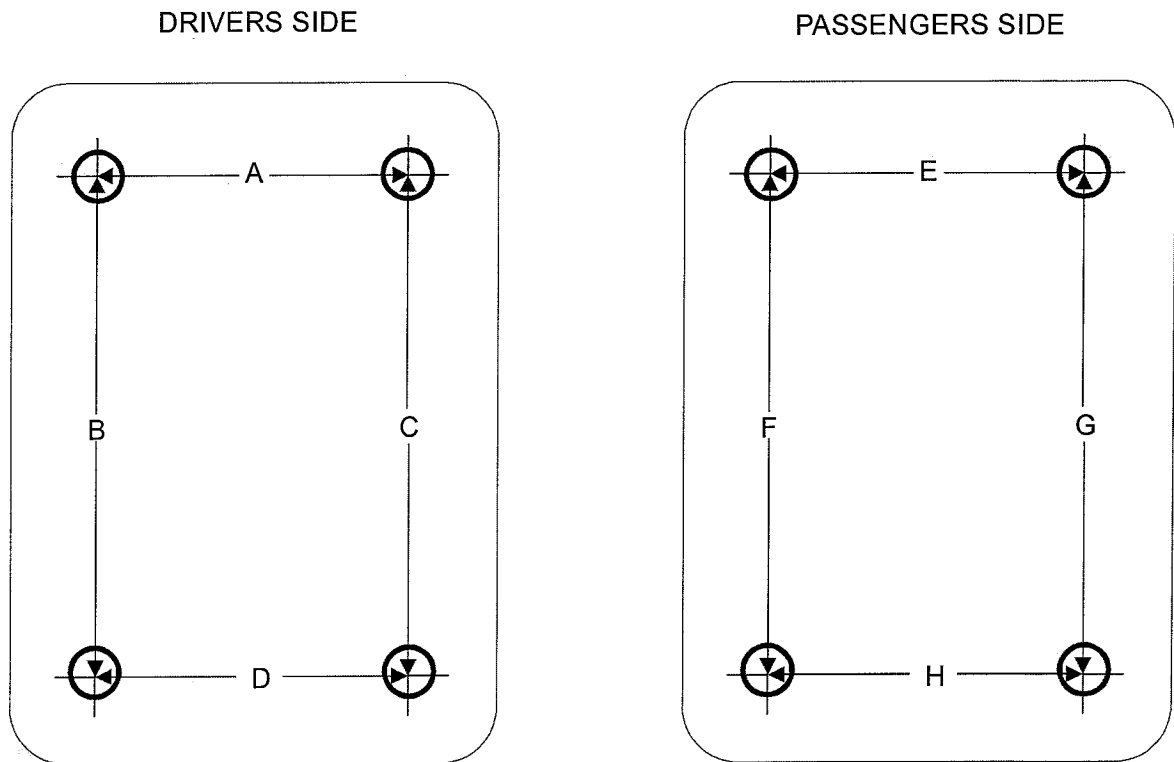
Measurement	Pre-Test	Post-Test	Difference
A	710 mm	723 mm	-13 mm
B	495 mm	557 mm	-62 mm
C	405 mm	405 mm	0 mm
D	484 mm	510 mm	-26 mm

Figure 8 Vehicle Intrusion Measurements
Static Passenger Compartment Intrusion



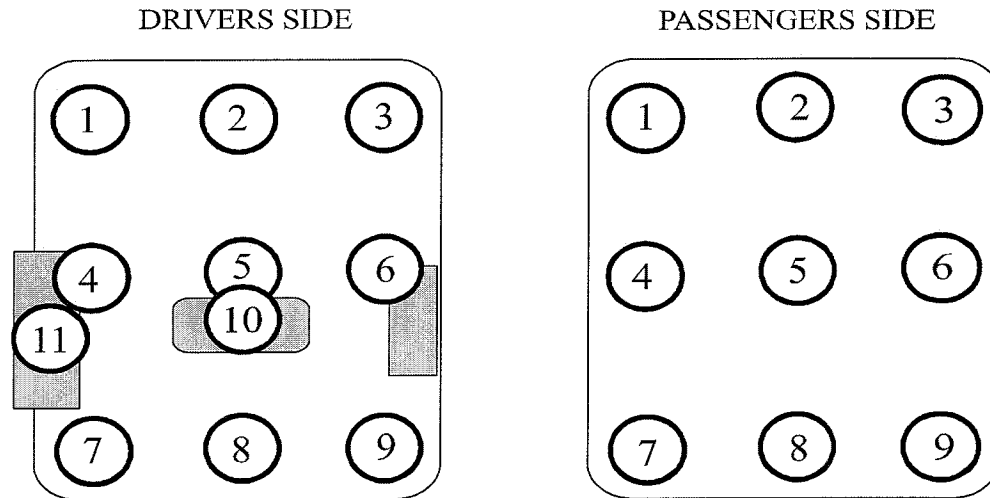
Measurement	Pre-Test	Post-Test	Difference
I	470 mm	434 mm	36 mm
J	694 mm	740 mm	-46 mm
K (driver's side)	1795 mm	1805 mm	-10 mm
L	1550 mm	1600 mm	-50 mm
M (driver's side)	1914 mm	1910 mm	4 mm
N	1766 mm	1765 mm	1 mm
O	1887 mm	1885 mm	2 mm
P (passenger's side)	1885 mm	1883 mm	2 mm
Q (passenger's side)	1990 mm	1995 mm	-5 mm

Figure 9 Floorboard Deformation



Measurement	Pre-Test	Post-Test	Difference
A	503 mm	493 mm	10 mm
B	393 mm	393 mm	0 mm
C	331 mm	337 mm	-6 mm
D	485 mm	480 mm	5 mm
E	405 mm	400 mm	5 mm
F	396 mm	400 mm	-4 mm
G	409 mm	410 mm	-1 mm
H	484 mm	483 mm	1 mm

Figure 10 Toeboard Measurements



Driver's Side Floorpan Measurements

Floorpan Location	X			Z		
	Pre-Test	Post-Test	Difference	Pre-Test	Post-Test	Difference
1	4495 mm	4480 mm	15 mm	610 mm	700 mm	-90 mm
2	4540 mm	4470 mm	70 mm	545 mm	650 mm	-105 mm
3	4520 mm	4430 mm	90 mm	515 mm	630 mm	-115 mm
4	4364 mm	4375 mm	-11 mm	470 mm	495 mm	-25 mm
5	4420 mm	N/A	N/A	429 mm	474 mm	-45 mm
6	4420 mm	4375 mm	45 mm	425 mm	488 mm	-63 mm
7	4255 mm	4265 mm	-10 mm	395 mm	390 mm	5 mm
8	4270 mm	4260 mm	10 mm	399 mm	390 mm	9 mm
9	4254 mm	4265 mm	-11 mm	402 mm	374 mm	28 mm
10	4345 mm	4350 mm	-5 mm	580 mm	618 mm	-38 mm
11	4389 mm	4400 mm	-11 mm	535 mm	563 mm	-28 mm

Passenger's Side Floorpan Measurements

Floorpan Location	X			Z		
	Pre-Test	Post-Test	Difference	Pre-Test	Post-Test	Difference
1	4540 mm	4475 mm	65 mm	535 mm	628 mm	-93 mm
2	4535 mm	4465 mm	70 mm	550 mm	635 mm	-85 mm
3	4470 mm	4465 mm	5 mm	631 mm	690 mm	-59 mm
4	4472 mm	4420 mm	52 mm	480 mm	554 mm	-74 mm
5	4490 mm	4452 mm	38 mm	501 mm	557 mm	-56 mm
6	4415 mm	4420 mm	-5 mm	578 mm	610 mm	-32 mm
7	4397 mm	4375 mm	22 mm	422 mm	452 mm	-30 mm
8	4415 mm	4400 mm	15 mm	415 mm	460 mm	-45 mm
9	4357 mm	4448 mm	-91 mm	450 mm	467 mm	-17 mm

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

Figure 11 Camera Positions

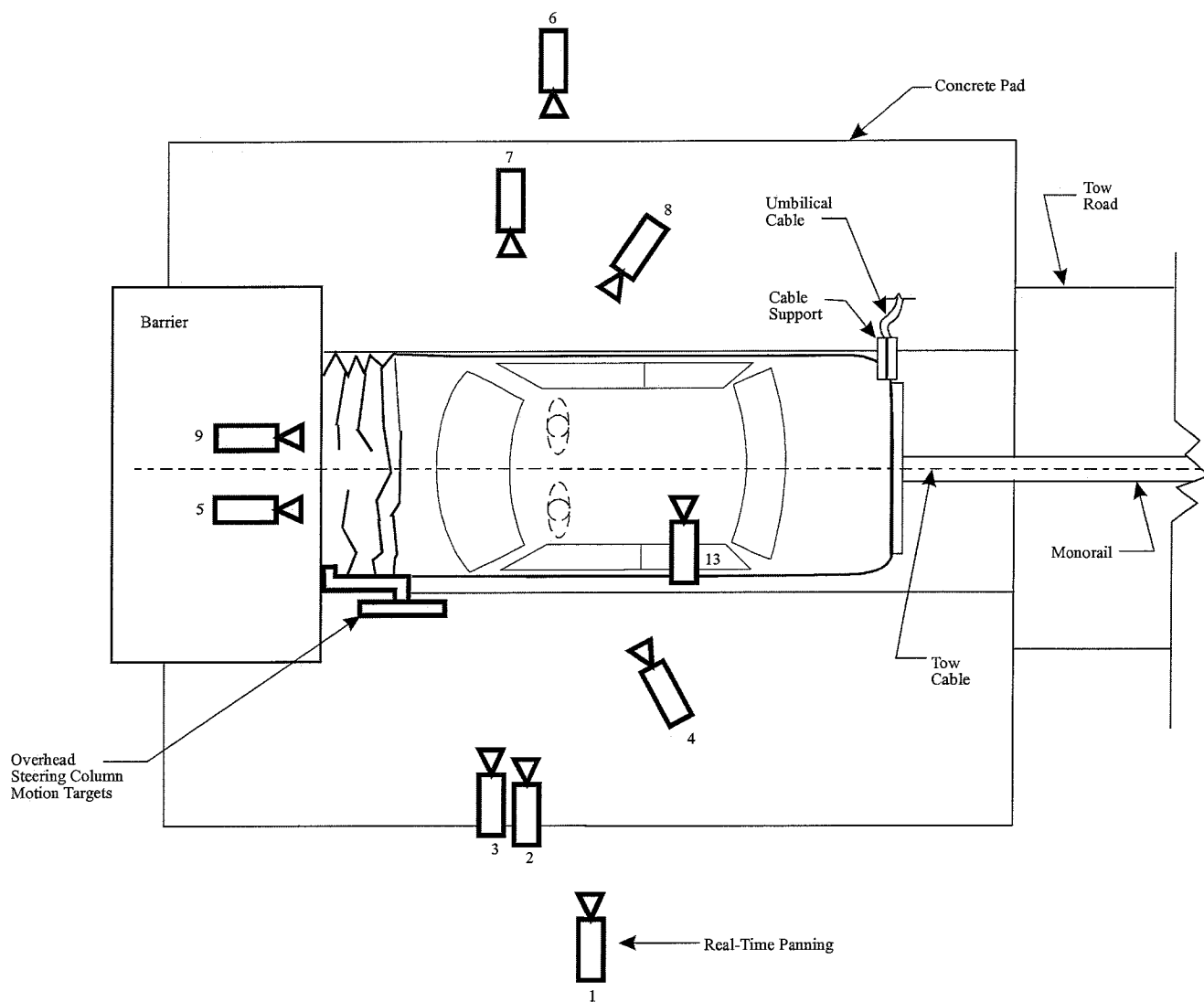


Figure 11 Camera Positions, Cont'd.

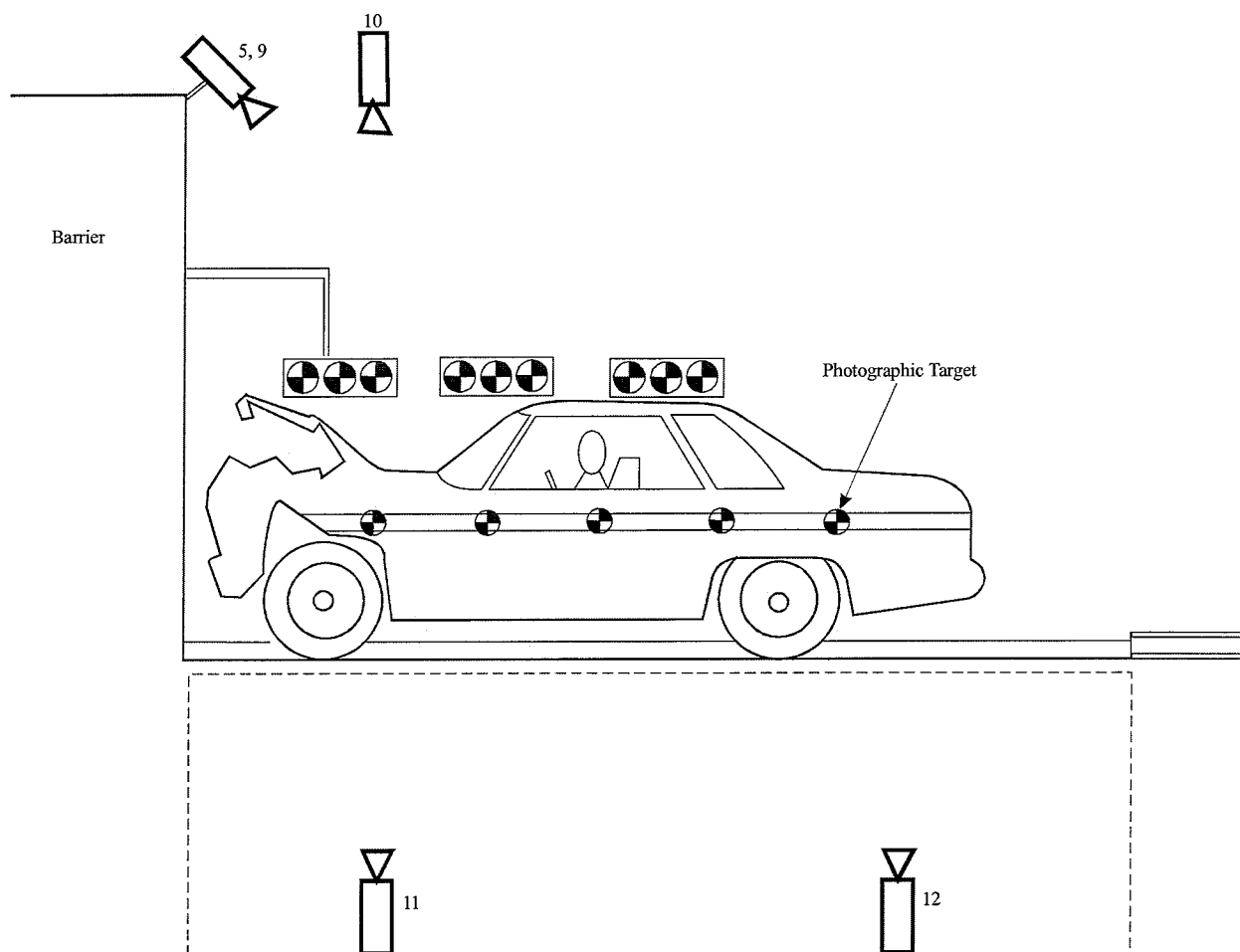


Table 10 Camera Information

Camera Number	Location	Type	Lens (mm)	Speed (fps)	Purpose of camera data
1	Panning	Bolex		24	Vehicle dynamics
2	Left perpendicular overall	Photosonic	13	N/A ¹	Vehicle crush
3	Left tight dummy	Hycam	25	N/A ¹	Dummy kinematics
4	Left angled on dummy	Photosonic	25	N/A ¹	Dummy kinematics
5	Barrier driver	Photosonic	17	N/A ¹	Dummy kinematics
6	Right perpendicular overall	Photosonic	13	N/A ¹	Dummy kinematics
7	Right tight dummy	Hycam	25	N/A ¹	Dummy kinematics
8	Right angled on dummy	Photosonic	25	N/A ¹	Dummy kinematics
9	Barrier passenger	Photosonic	17	N/A ¹	Dummy kinematics
10	Overhead	Photosonic	13	N/A ¹	Vehicle dynamics
11	Pit front	Photosonic	17	N/A ¹	Vehicle crush
12	Pit rear	Photosonic	17	N/A ¹	Vehicle crush
13	Onboard - child dummy	Photosonic	5	1002	Vehicle crush

¹ See Data Acquisition Explanations

Description Of Timing Marks On TRC High-Speed Film

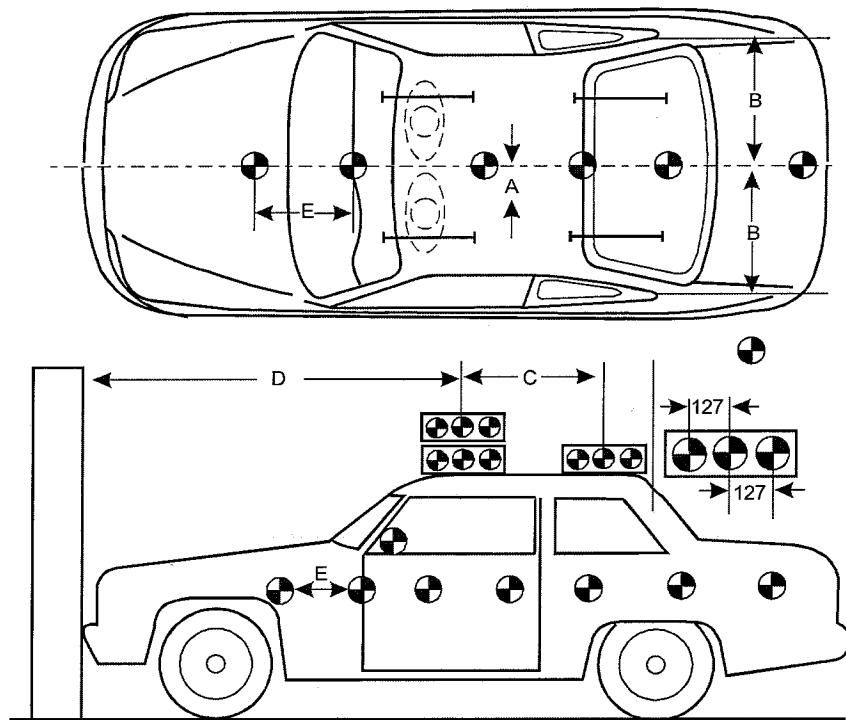
All TRC high-speed cameras are equipped with red LEDs which put timing marks on the right edge of the film. TRC uses a single timing generator to generate the timing for all cameras. This allows the timing marks to be common to all cameras. The timing marks can be used to measure camera speed (frames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

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

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

1. Every frame will have **one** LED appear in it. This indicates a *millisecond* pulse.
2. Every ten frames will have **two** LEDs appear in it. These indicate a *millisecond* pulse plus a *hundredth of a second* pulse.
3. Every one hundred frames will have **three** LEDs appear in it. These indicate a *millisecond* pulse, a *hundredth of a second* pulse, and a *tenth of a second* pulse.

Figure 12 Vehicle Reference Photo Target Locations



Measurement	Pre-Test
A	R: 415 L: 433 mm
B	N/A
C	R: 610 L: 610 mm
D	1415 mm
E ¹	300 mm

¹ The first side target is placed 600 mm from front edge of bumper, and others are at 300 mm intervals.

Section 5.0

Fuel System Test Procedure and Data

Table 11 Fuel System Data

Usable fuel system capacity:	75.7 liters (from owner's manual)
Test volume range:	69.6 - 71.2 liters (92-94% of usable)
Actual test volume:	70.4 liters (93% 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:	Tank is on left side of vehicle along frame. The neck runs out the left side of the tank and out to the left rear above the wheel well. The cap is at the end of the neck. The lines run inside both frame rails.

Table 12 FMVSS 301 Post-Impact Test Data

Test date: 08/14/01
Vehicle year/make/
model/body style: 2001/Dodge/Grand Caravan/MPV

Test requirements:

Test vehicle fuel tank filled to 92 to 94% of manufacturer's usable capacity and with electric fuel pump operating (if it will operate without engine operation). Part 572 test dummies located at each front designated seating position.

Test vehicle impact type:

- ☒ Frontal (48 km/h)
☐ Oblique (48 km/h) with ___° barrier face first contacting ___ (driver/pass.) side
☐ Rear moving barrier (48 km/h)
☐ Lateral moving barrier (32 km/h)

Fuel system fluid spillage measurements:

	<u>Test Results</u>	<u>Maximum Allowable</u>
1. From impact until vehicle motion ceases	0.0 g	28 g
2. 5-minute period after vehicle motion ceases	0.0 g	142 g
3. Next 25 minutes after 5-minute period	0.0 g	28 g/min

Fuel system fluid spillage location(s): None

Appendix A

Photographs



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

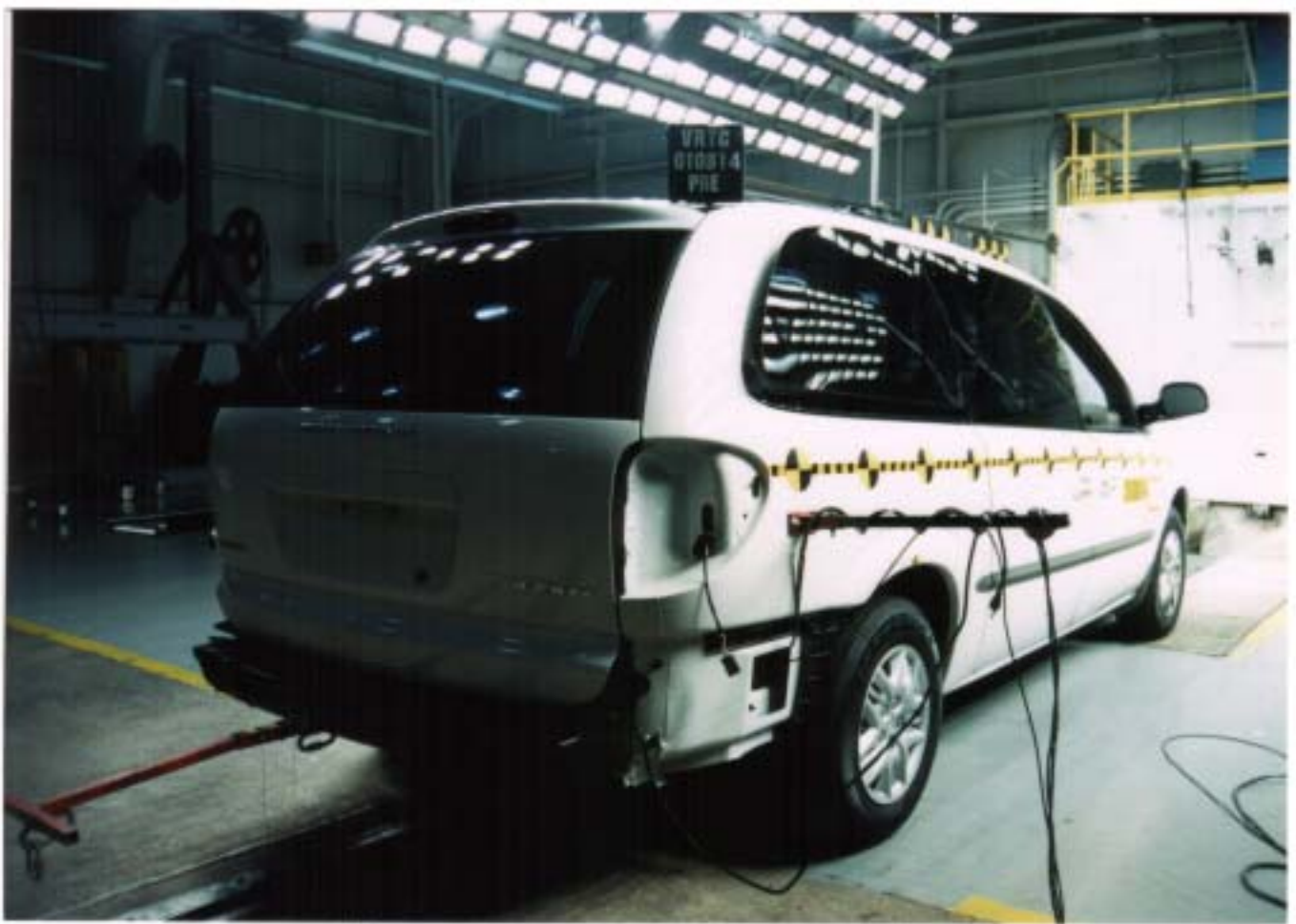


Figure A-11 Pre-Test Right Rear View



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 View

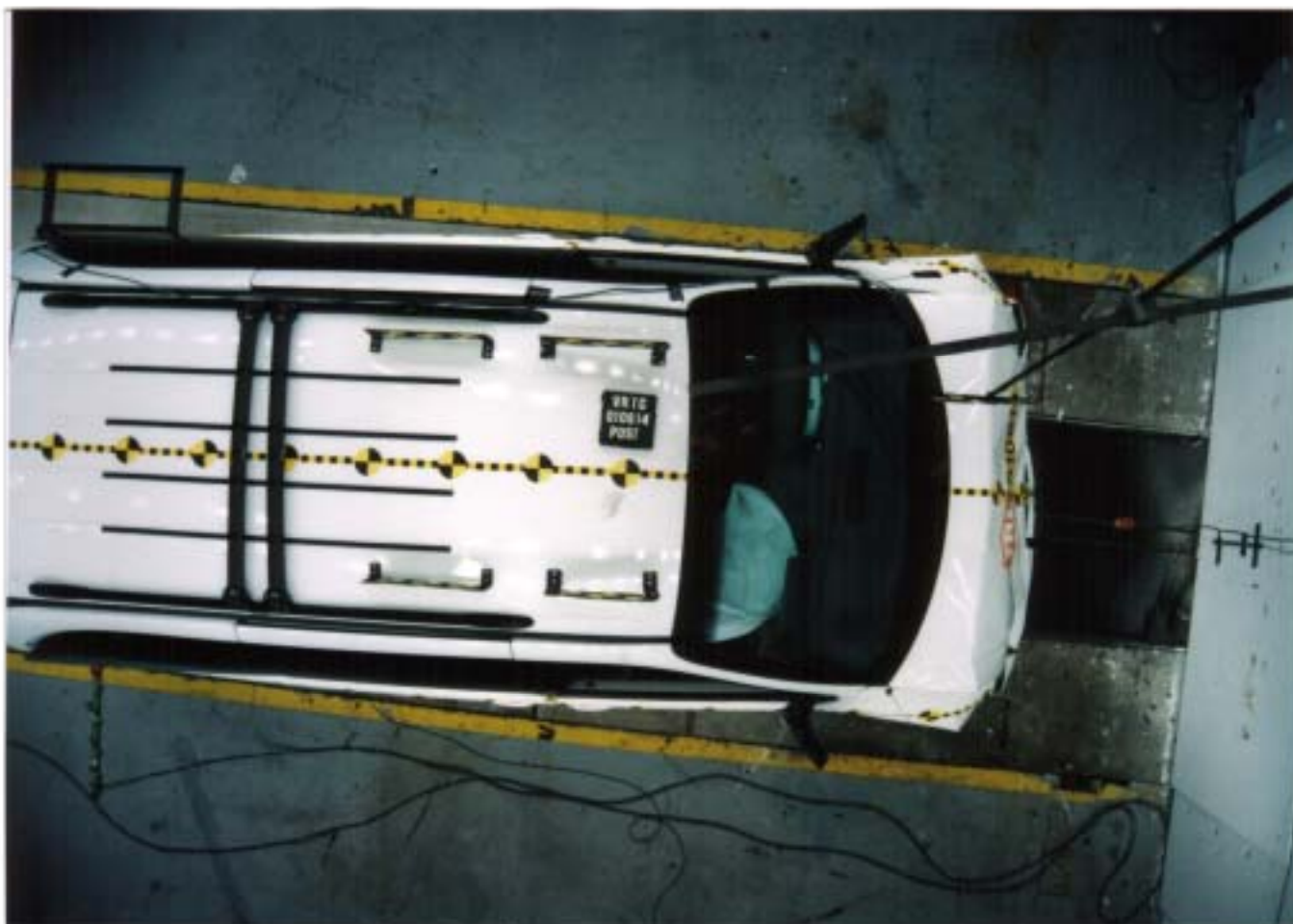


Figure A-18 Post-Test Overhead View

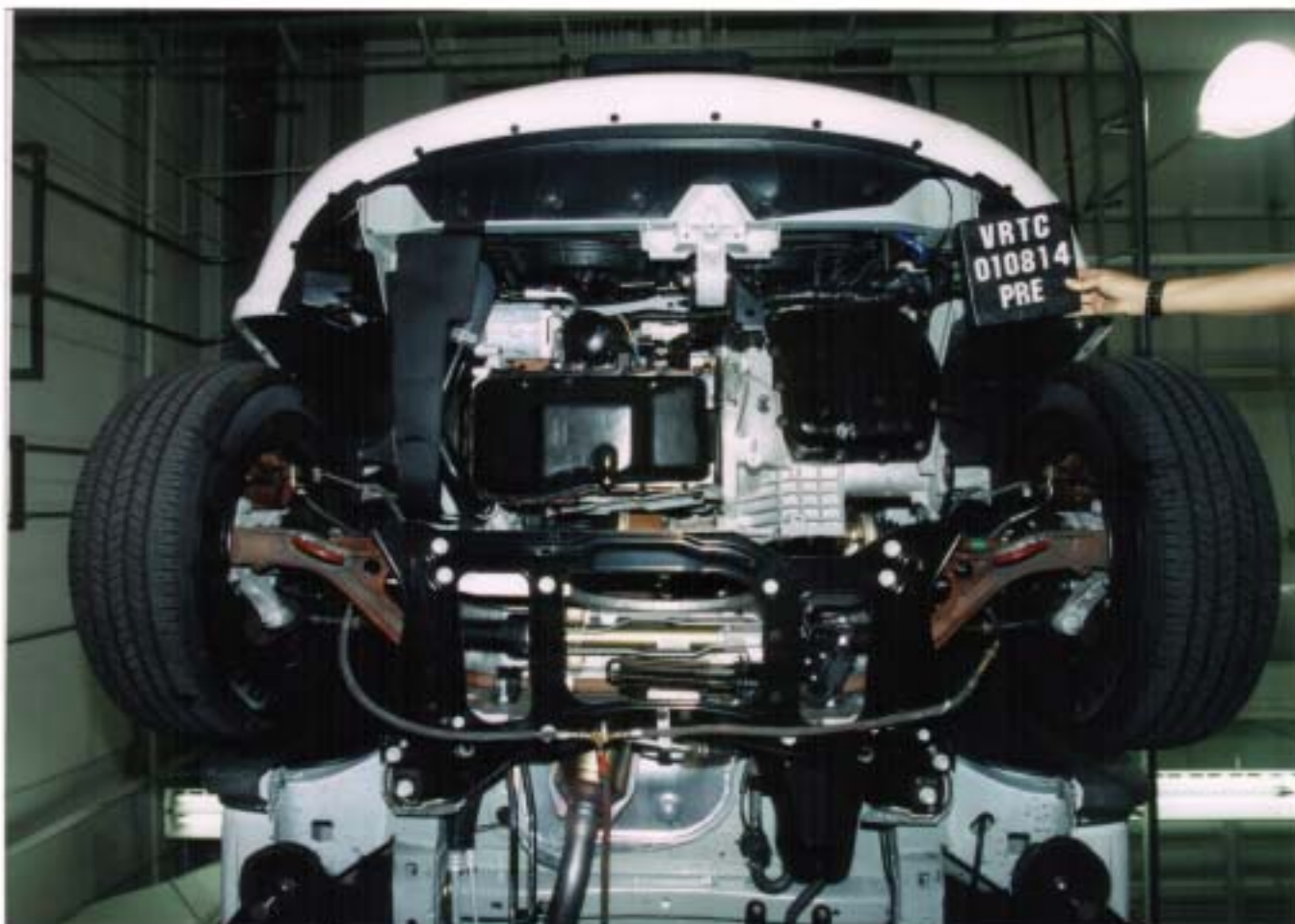


Figure A-19 Pre-Test Front Underbody View

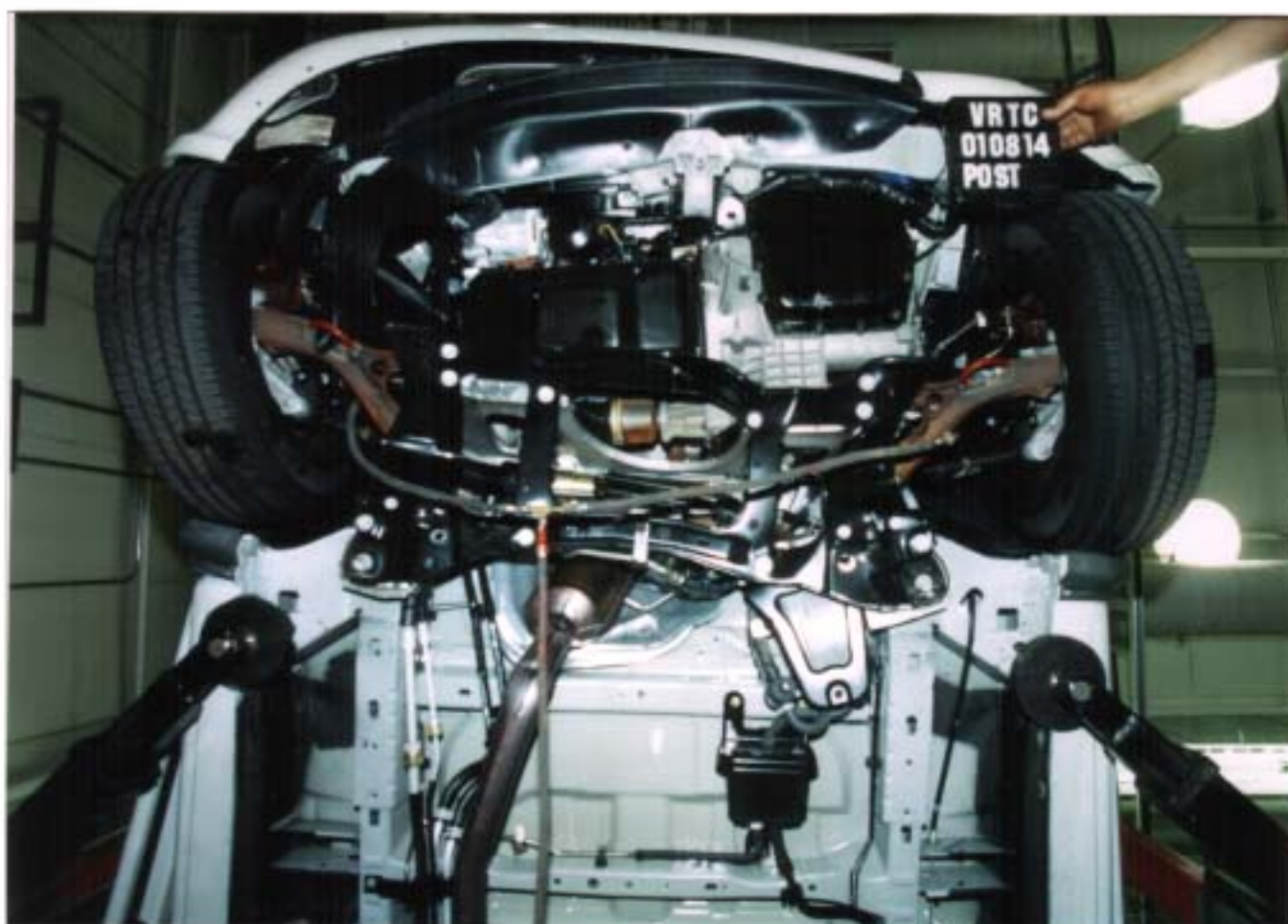


Figure A-20 Post-Test Front Underbody View

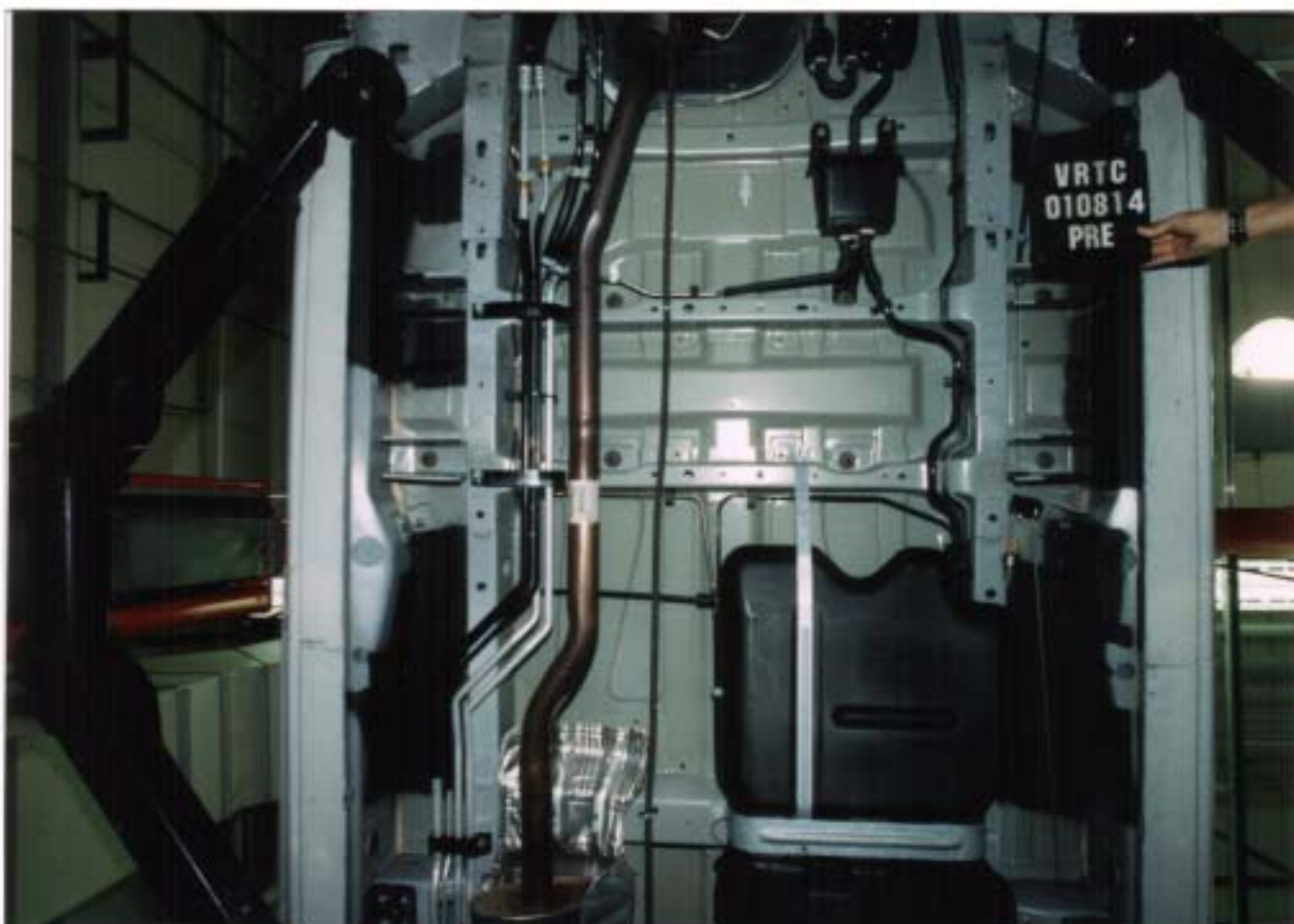


Figure A-21 Pre-Test Front Mid Underbody View

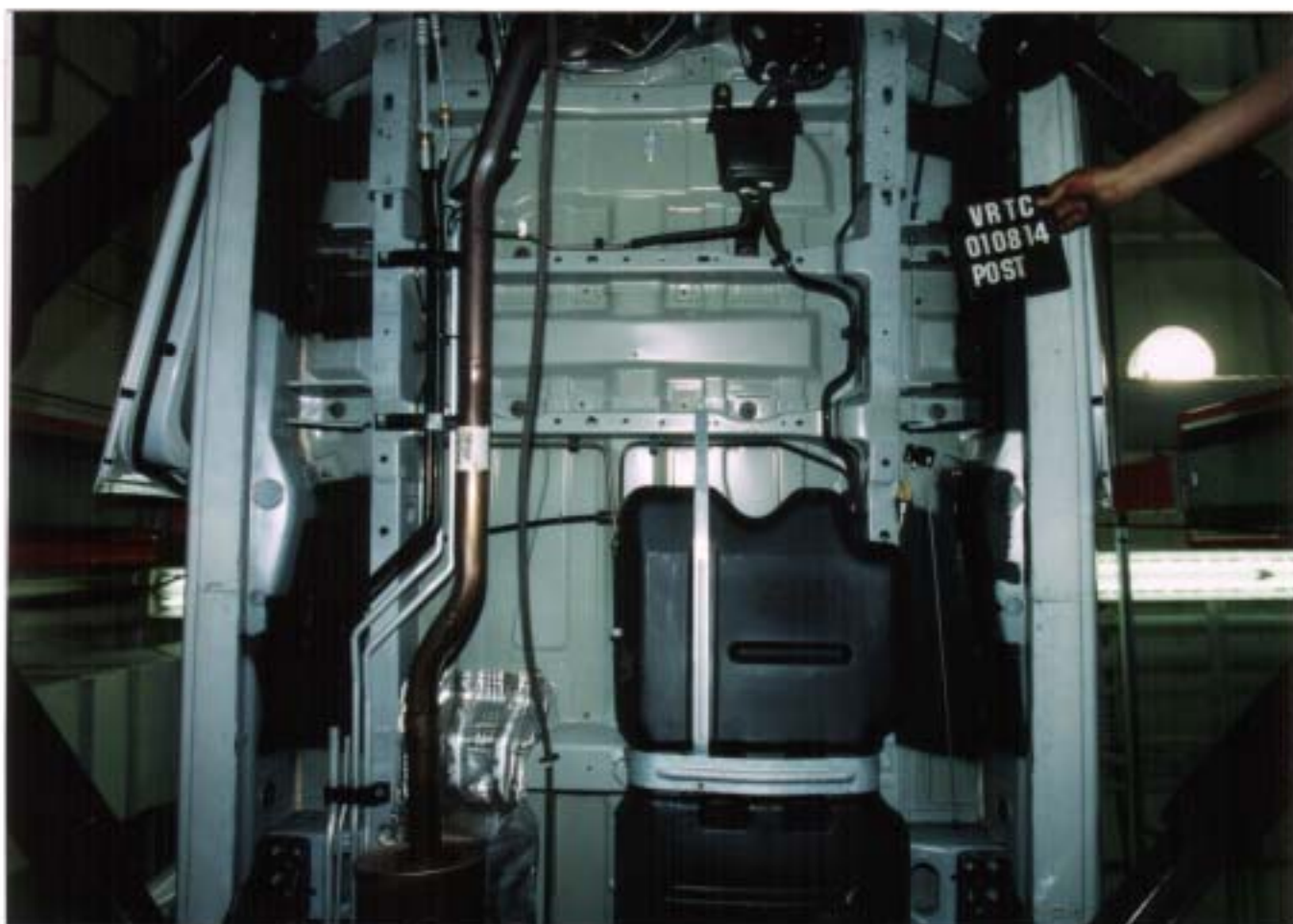


Figure A-22 Post-Test Front Mid Underbody View

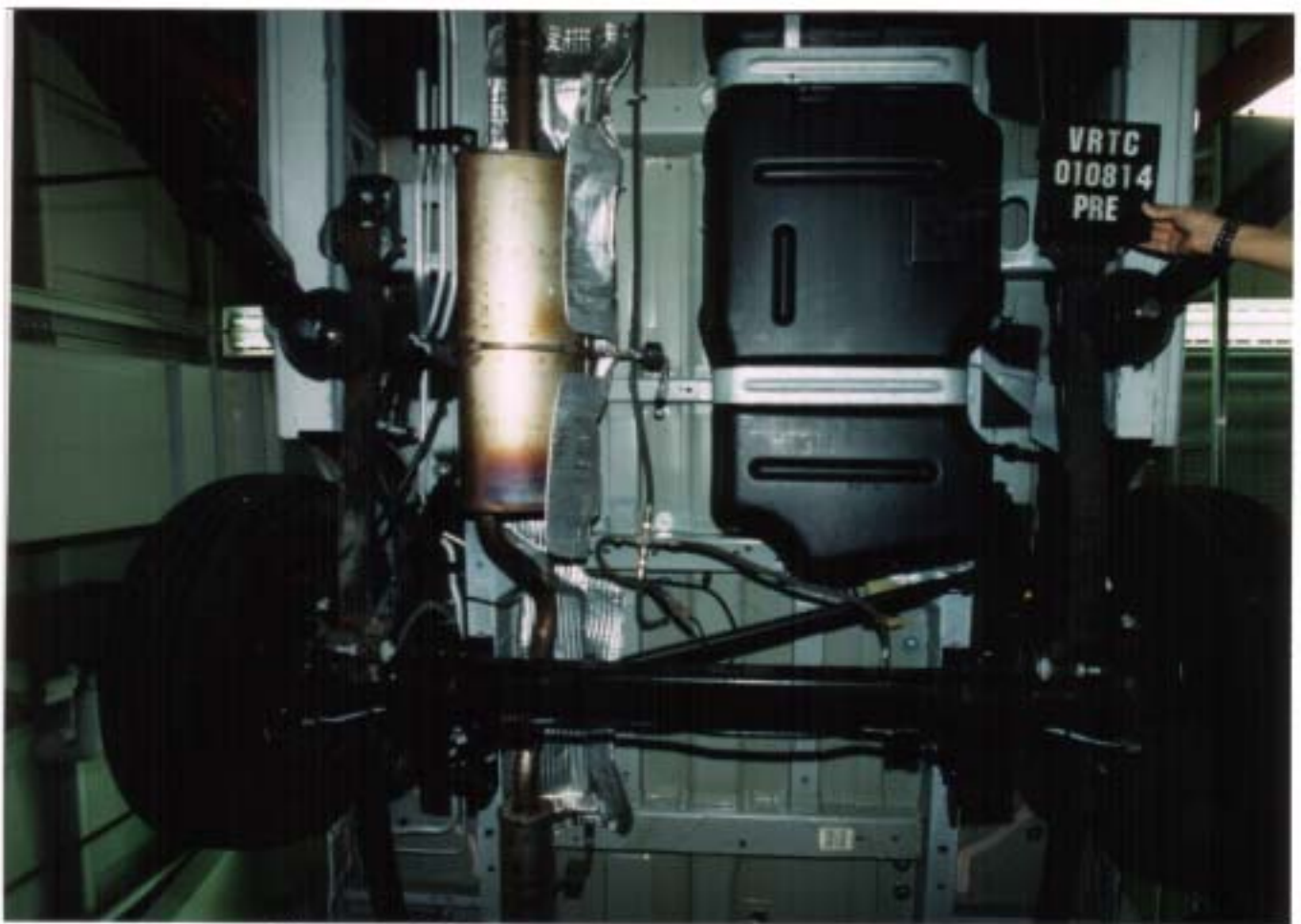


Figure A-23 Pre-Test Rear Mid Underbody View

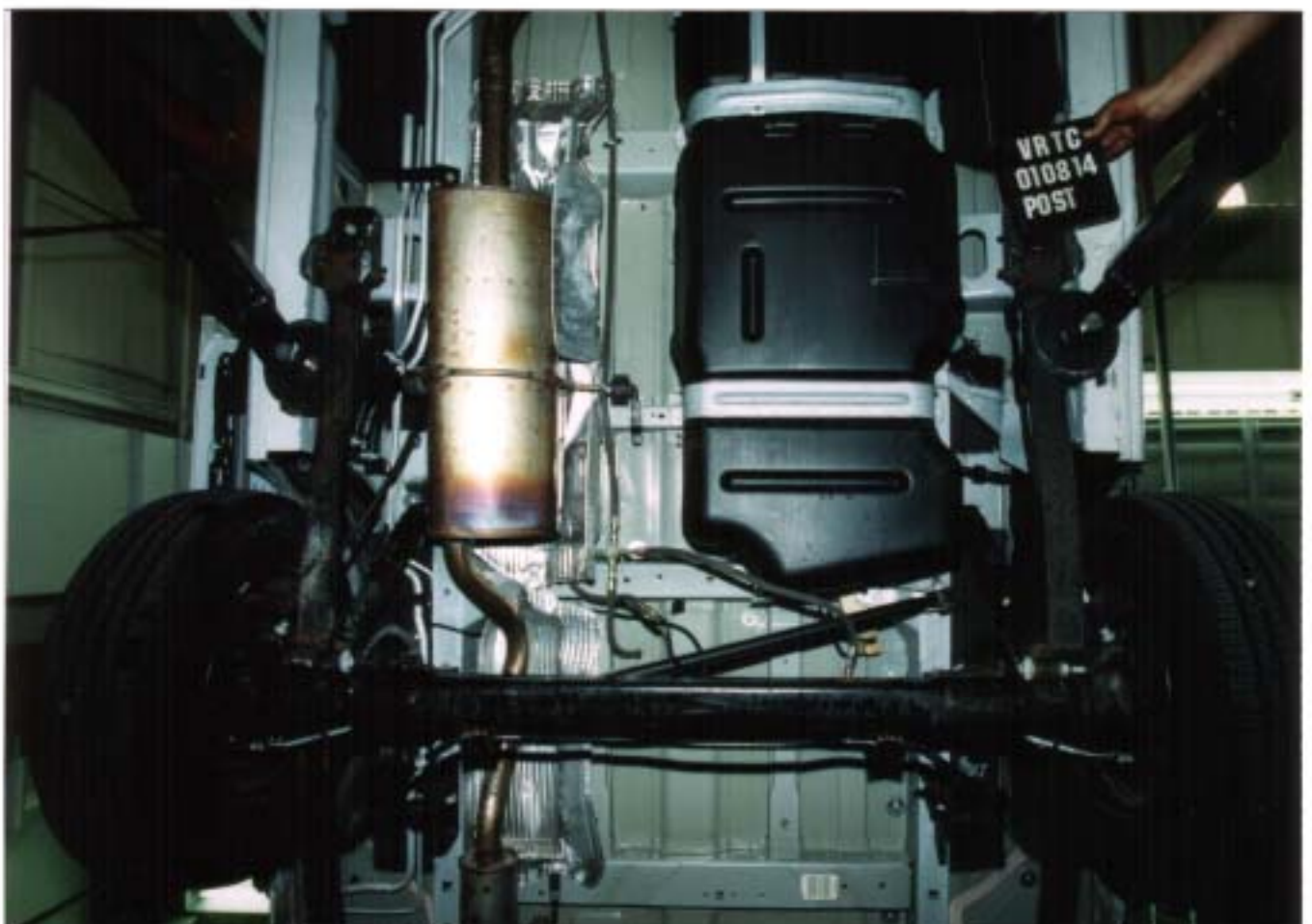


Figure A-24 Post-Test Rear Mid Underbody View

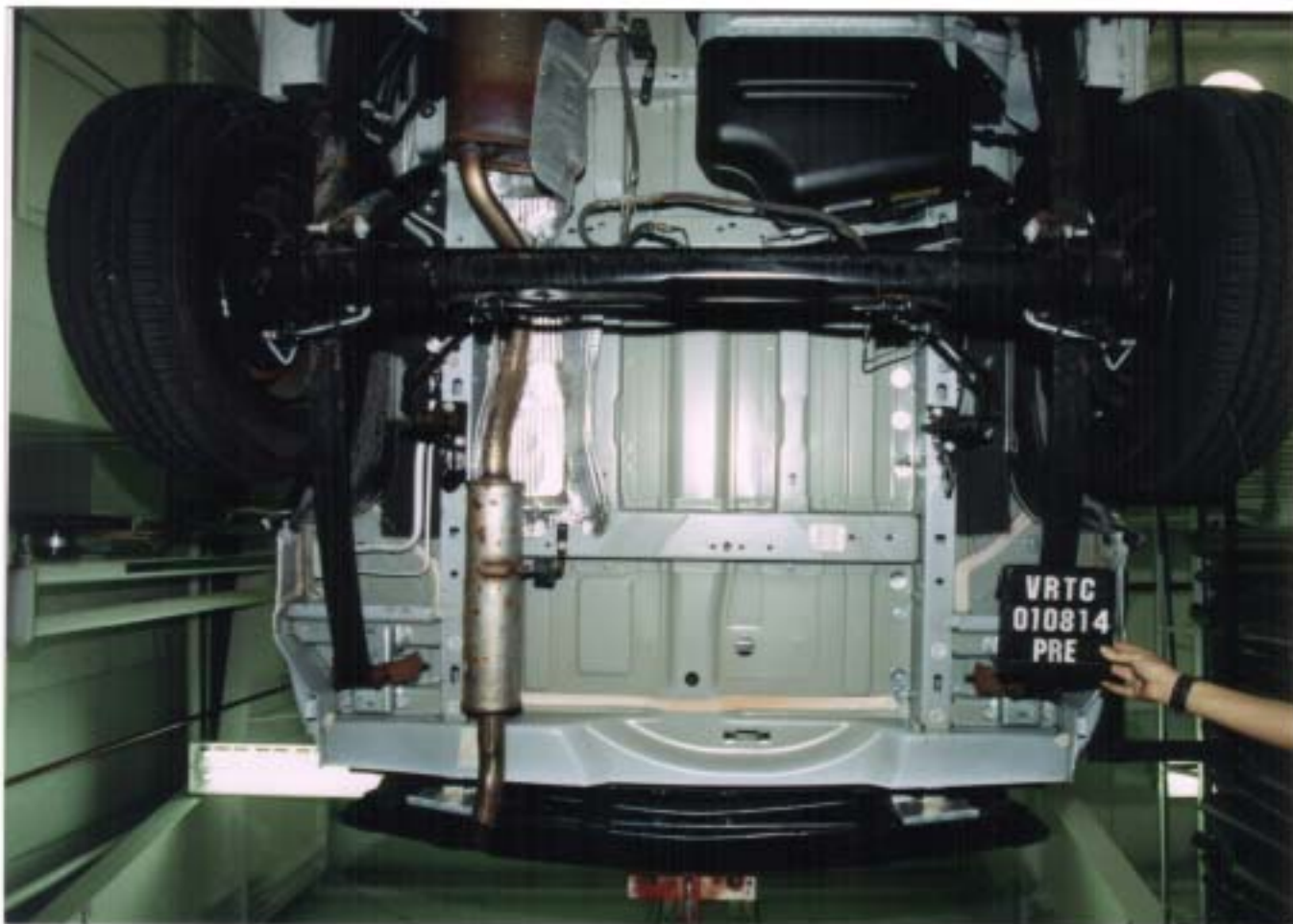


Figure A-25 Pre-Test Rear Underbody View

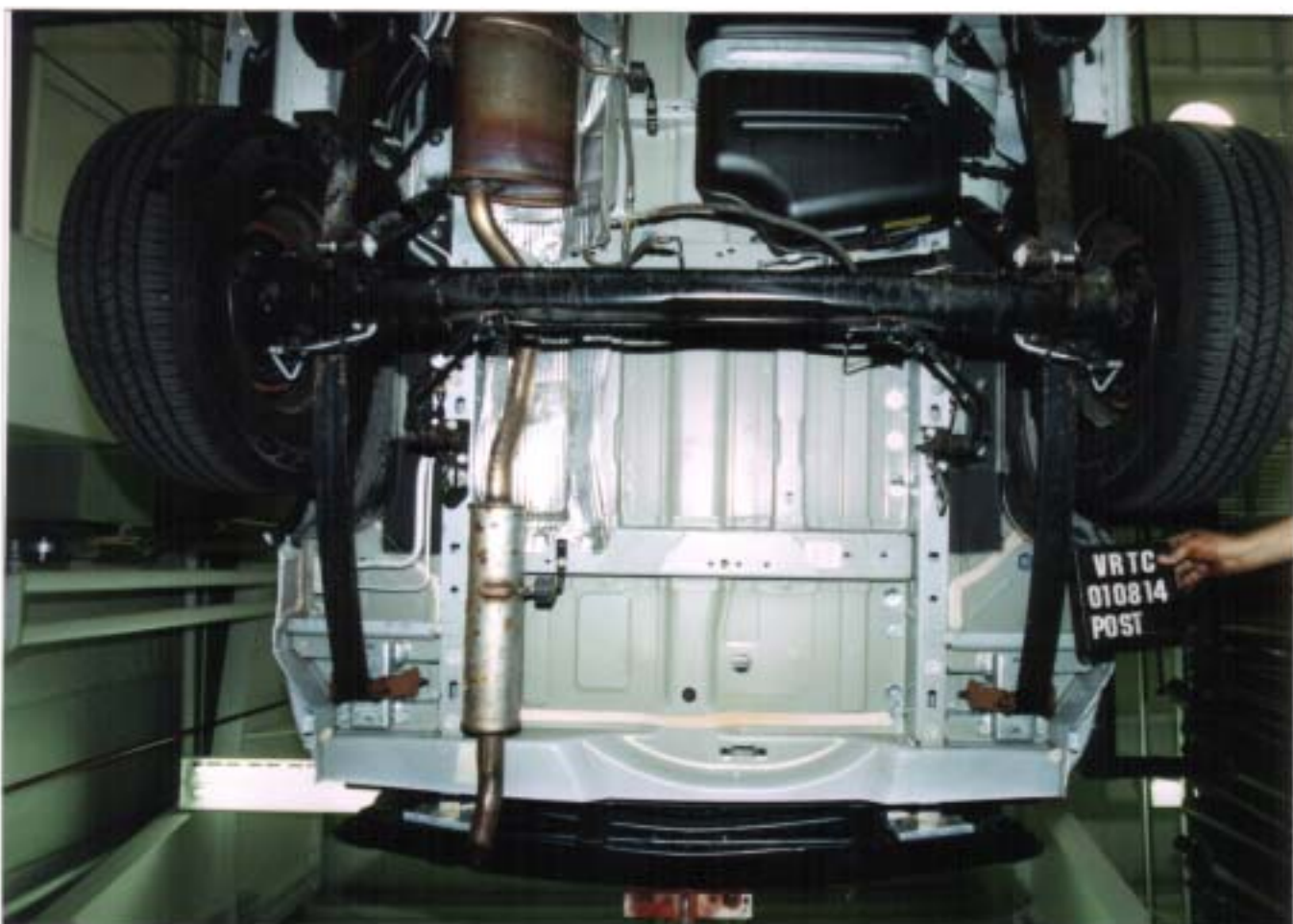


Figure A-26 Post-Test Rear Underbody View



Figure A-27 Pre-Test Engine Compartment View



Figure A-28 Post-Test Engine Compartment View



Figure A-29 Pre-Test Windshield View



Figure A-30 Post-Test Windshield View



Figure A-31 Pre-Test Left Front Windshield View



Figure A-32 Post-Test Left Front Windshield View



Figure A-33 Pre-Test Right Front Windshield View



Figure A-34 Post-Test Right Front Windshield View

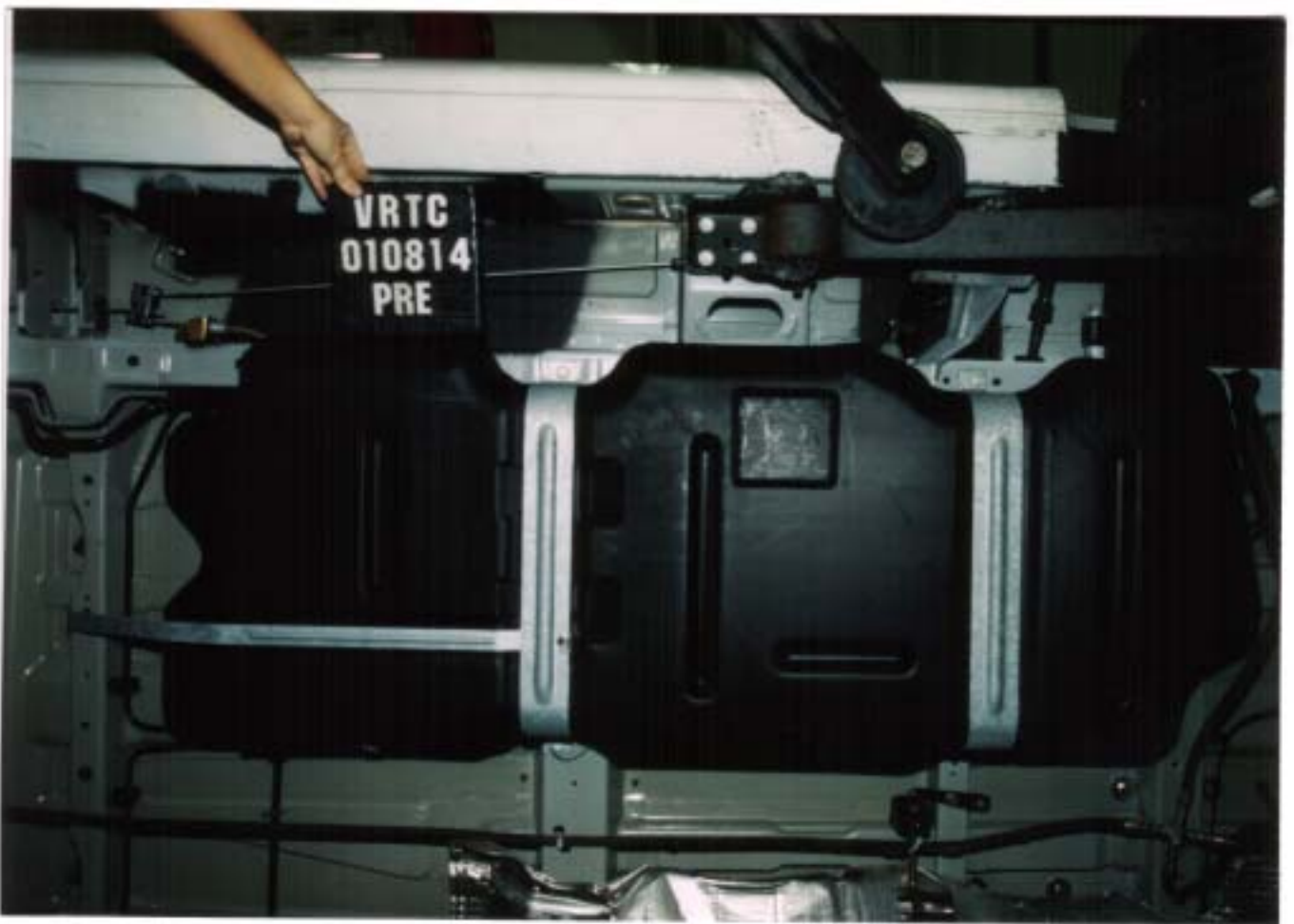


Figure A-35 Pre-Test Fuel Tank View

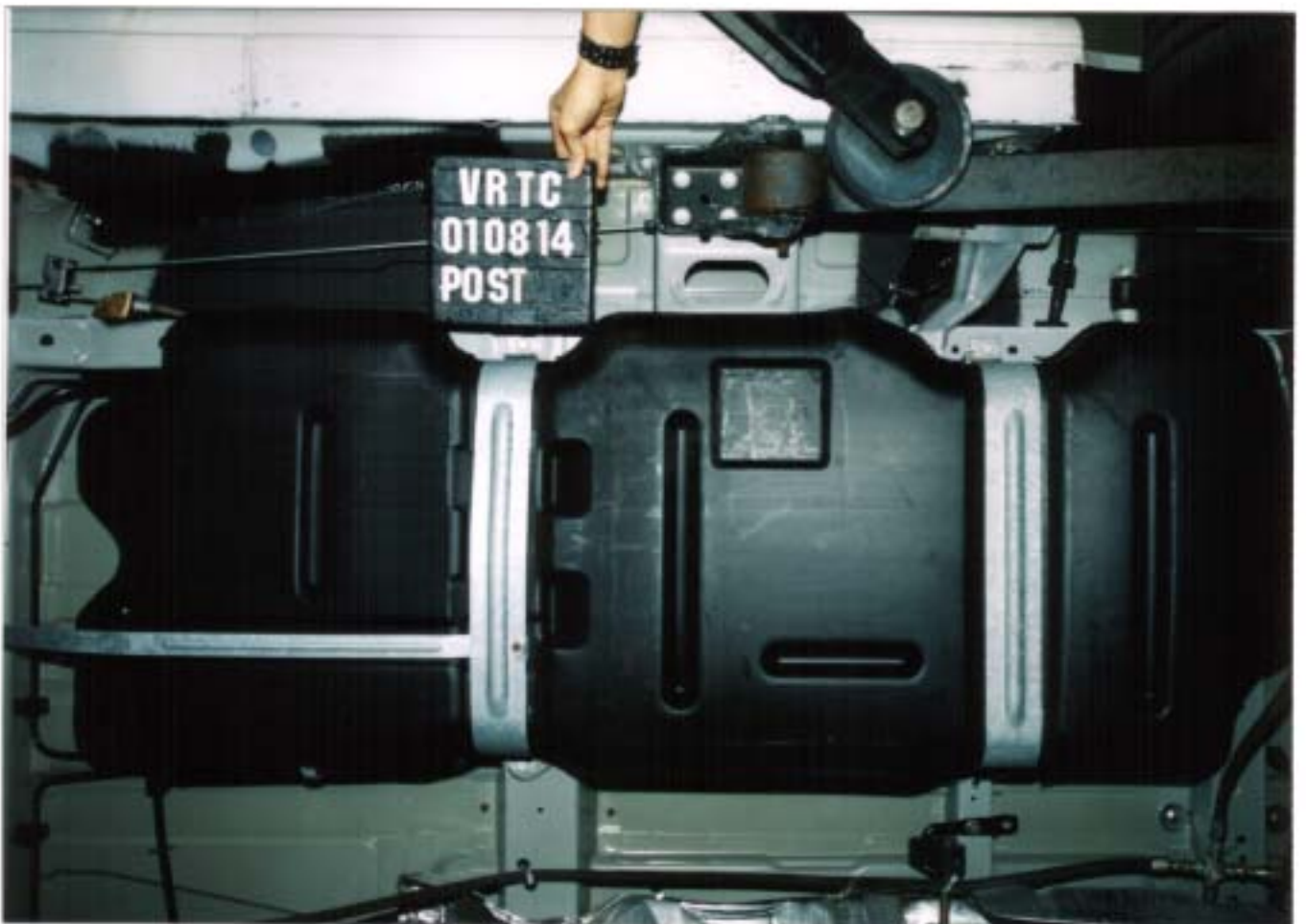


Figure A-36 Post-Test Fuel Tank View



Figure A-37 Pre-Test Fuel Lines View



Figure A-38 Post-Test Fuel Lines View

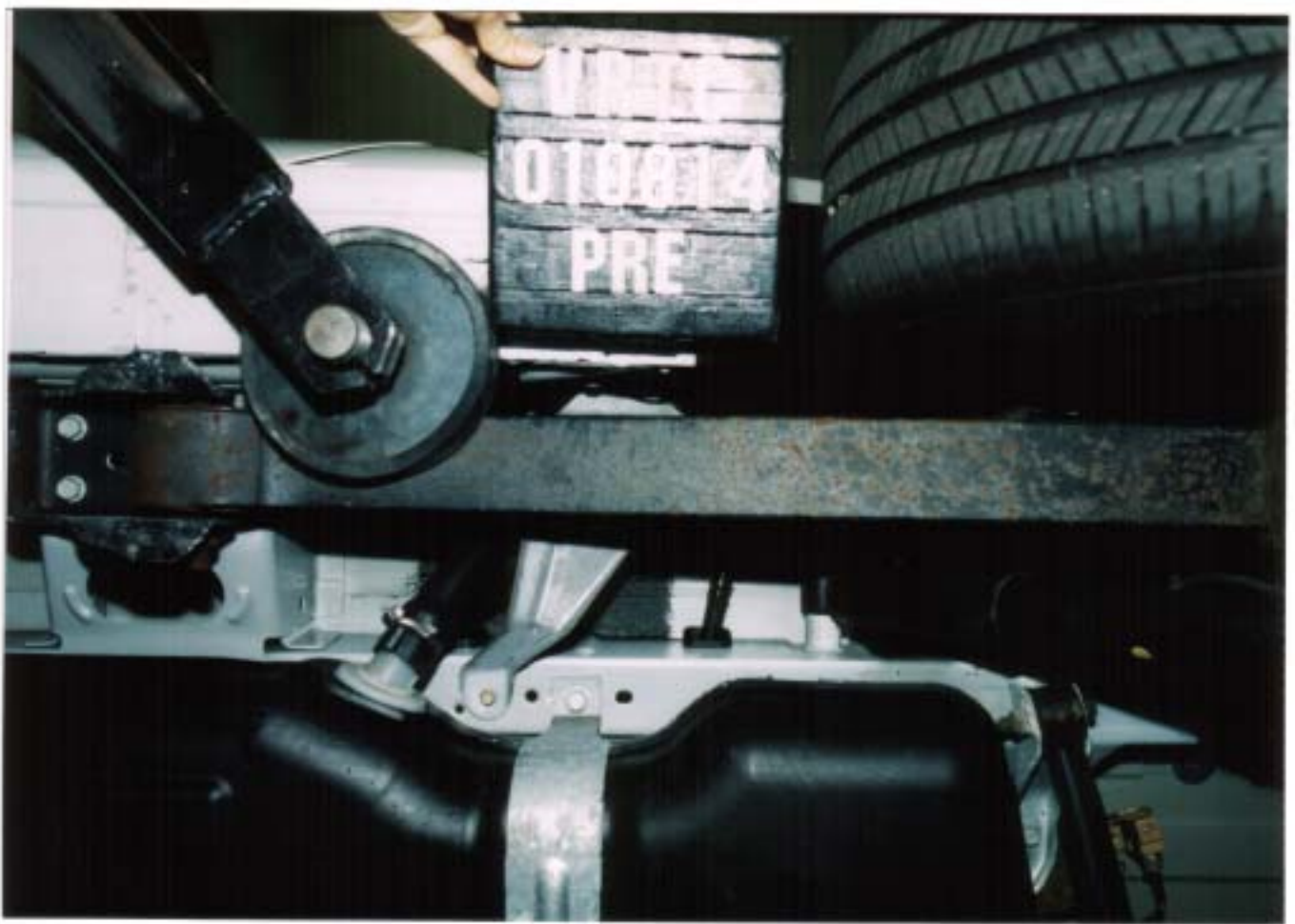


Figure A-39 Pre-Test Fuel Filler Neck View



Figure A-40 Post-Test Fuel Filler Neck View



Figure A-41 Pre-Test Fuel Filler Cap View



Figure A-42 Post-Test Fuel Filler Cap View



Figure A-43 Pre-Test Driver and Passenger Dummies Front View

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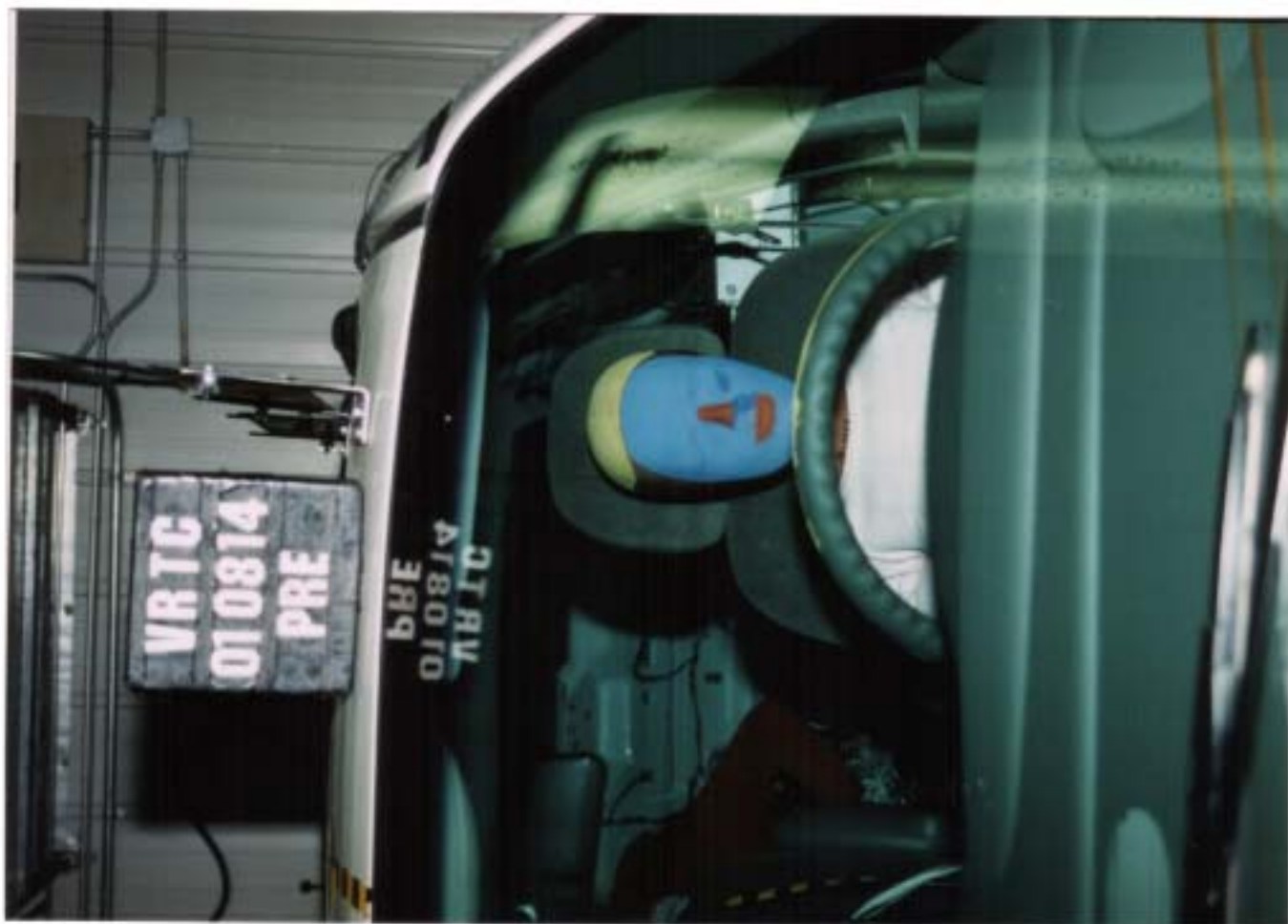


Figure A-44 Pre-Test Driver Dummy Position - View 1

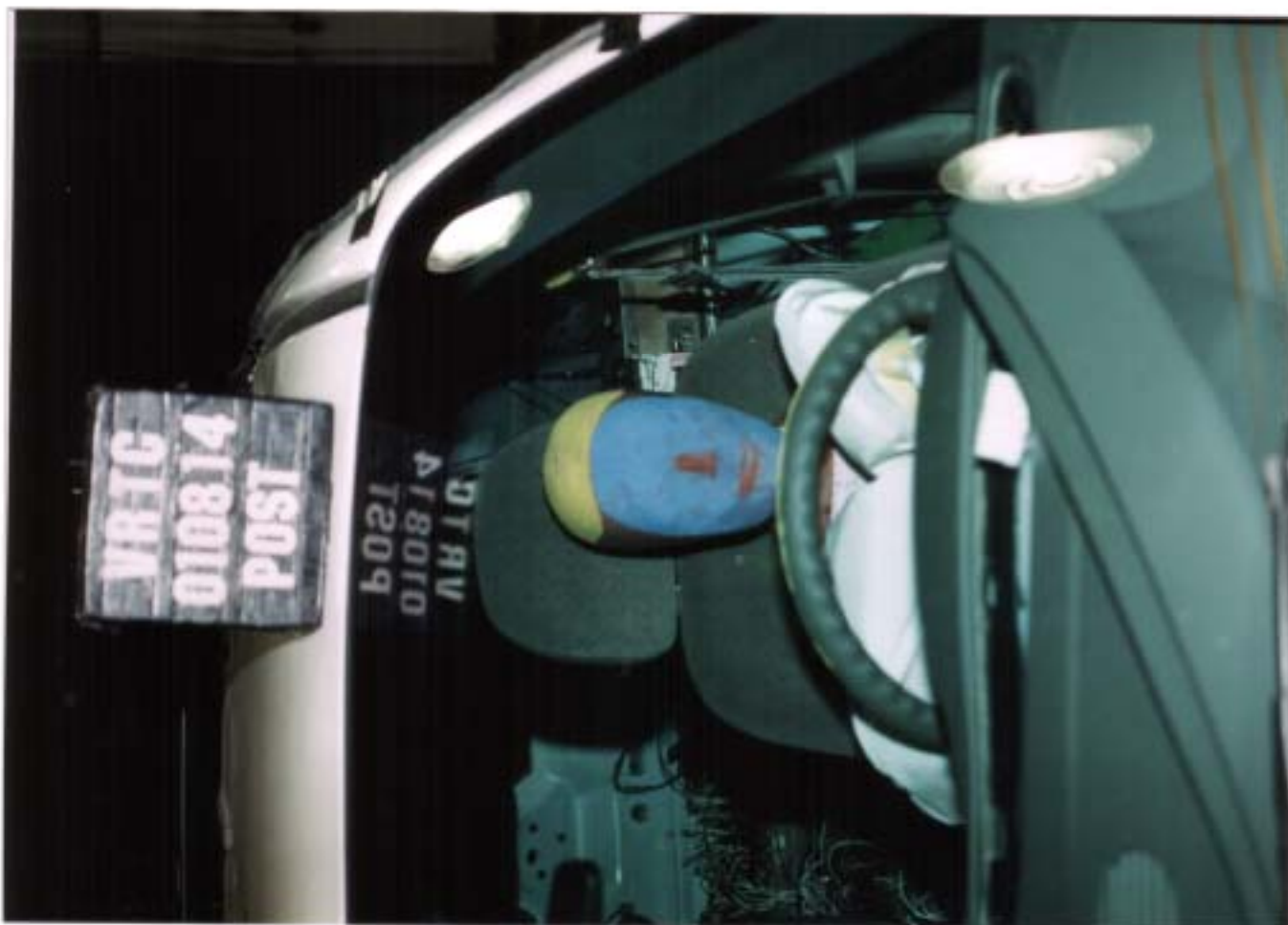


Figure A-45 Post-Test Driver Dummy Position - View 1



Figure A-46 Pre-Test Driver Dummy Position - View 2



Figure A-47 Post-Test Driver Dummy Position - View 2



Figure A-48 Pre-Test Driver Dummy & Vehicle Interior - View 1



Figure A-49 Post-Test Driver Dummy & Vehicle Interior - View 1



Figure A-50 Pre-Test Driver Dummy & Vehicle Interior - View 2



Figure A-51 Post-Test Driver Dummy & Vehicle Interior - View 2



Figure A-52 Pre-Test Passenger Dummy Position - View 1



Figure A-53 Post-Test Passenger Dummy Position - View 1



Figure A-54 Pre-Test Passenger Dummy Position - View 2



Figure A-55 Post-Test Passenger Dummy Position - View 2



Figure A-56 Pre-Test Passenger Dummy & Vehicle Interior - View 1



Figure A-57 Post-Test Passenger Dummy & Vehicle Interior - View 1



Figure A-58 Pre-Test Passenger Dummy & Vehicle Interior - View 2



Figure A-59 Post-Test Passenger Dummy & Vehicle Interior - View 2



Figure A-60 Pre-Test Right Rear Passenger Dummy & Vehicle Interior - View 1



Figure A-61 Post-Test Right Rear Passenger Dummy & Vehicle Interior - View 1



Figure A-62 Pre-Test Right Rear Passenger Dummy & Vehicle Interior - View 2



Figure A-63 Post-Test Right Rear Passenger Dummy & Vehicle Interior - View 2



Figure A-64 Post-Test Right Rear Passenger Dummy & Vehicle Interior - View 3

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Figure A-65 Post-Test Driver Dummy Overall View



Figure A-66 Post-Test Driver Dummy Head Contact - View 1



Figure A-67 Post-Test Driver Dummy Head Contact - View 2



Figure A-68 Post-Test Driver Dummy Head Contact - View 3



Figure A-69 Post-Test Driver Dummy Head Contact - View 4



Figure A-70 Post-Test Driver Dummy Chest Contact View



Figure A-75 Pre-Test Driver Knee Bolster - View 3

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Figure A-73 Pre-Test Driver Knee Bolster - View 2



Figure A-74 Post-Test Driver Knee Bolster - View 2



Figure A-71 Pre-Test Driver Knee Bolster - View 1

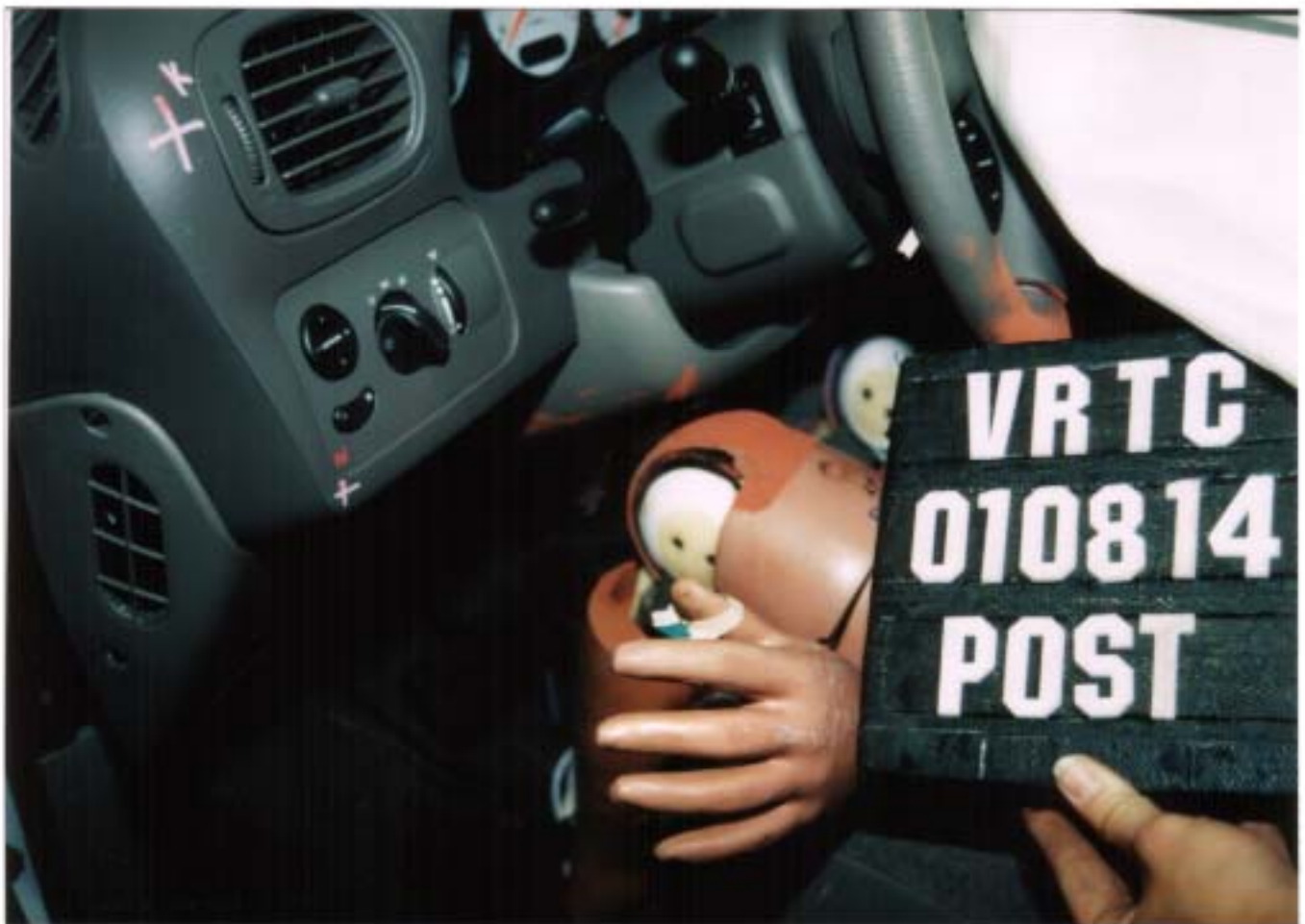


Figure A-72 Post-Test Driver Knee Bolster - View 1



Figure A-76 Post-Test Driver Dummy Knee Contact - View 1



Figure A-77 Post-Test Driver Dummy Knee Contact - View 2



Figure A-78 Post-Test Passenger Dummy Overall View

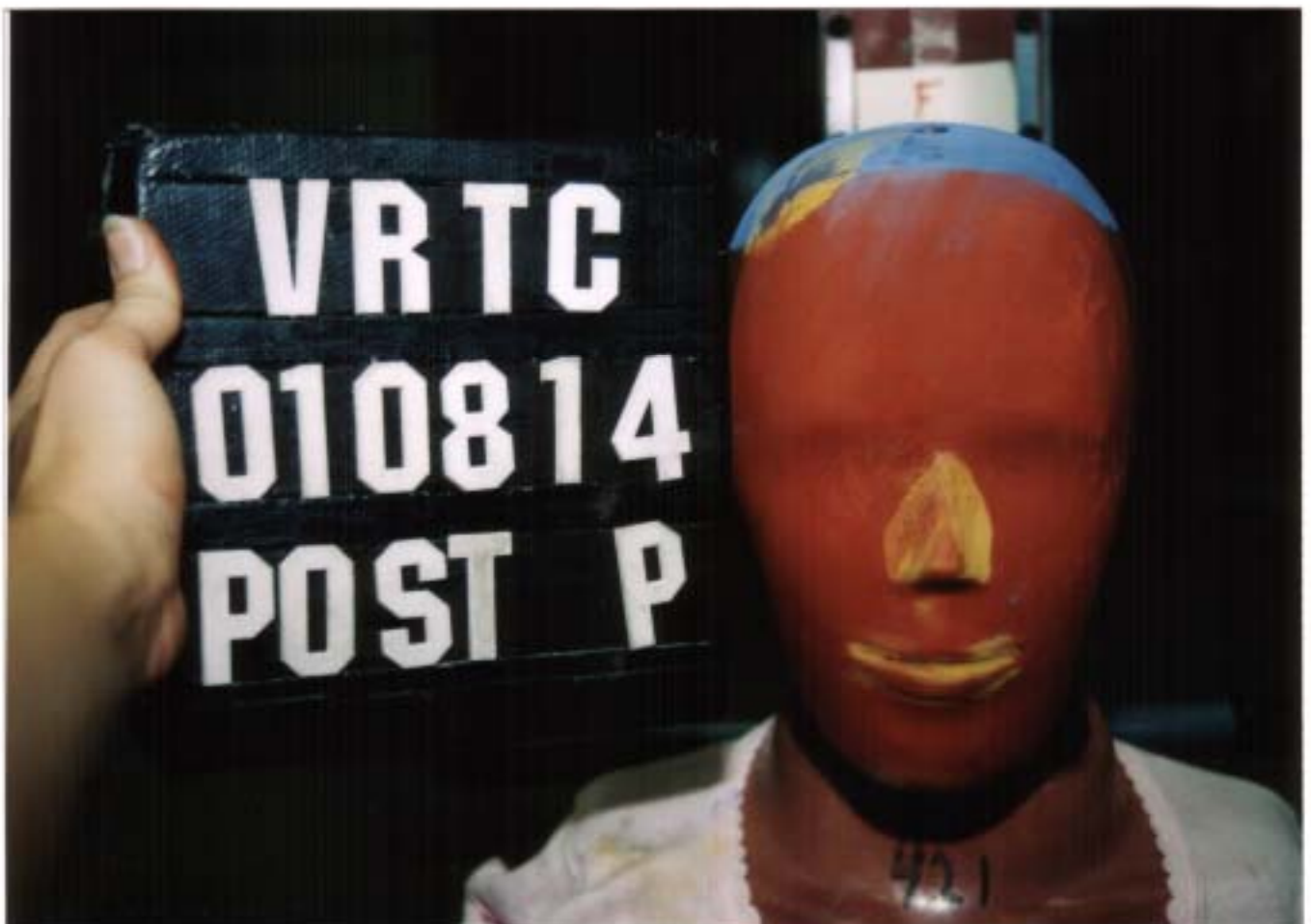


Figure A-79 Post-Test Passenger Dummy Head Contact - View 1



Figure A-80 Post-Test Passenger Dummy Head Contact - View 2



Figure A-81 Post-Test Passenger Dummy Head Contact - View 3



Figure A-82 Post-Test Passenger Dummy Knee Contact - View 1



Figure A-83 Post-Test Passenger Dummy Knee Contact - View 2



Figure A-84 Post-Test Right Rear Passenger Dummy Overall View



Figure A-85 Post-Test Right Rear Passenger Dummy Head Contact - View 1



Figure A-86 Pre-Test Vehicle Certification & Tire Load Label View

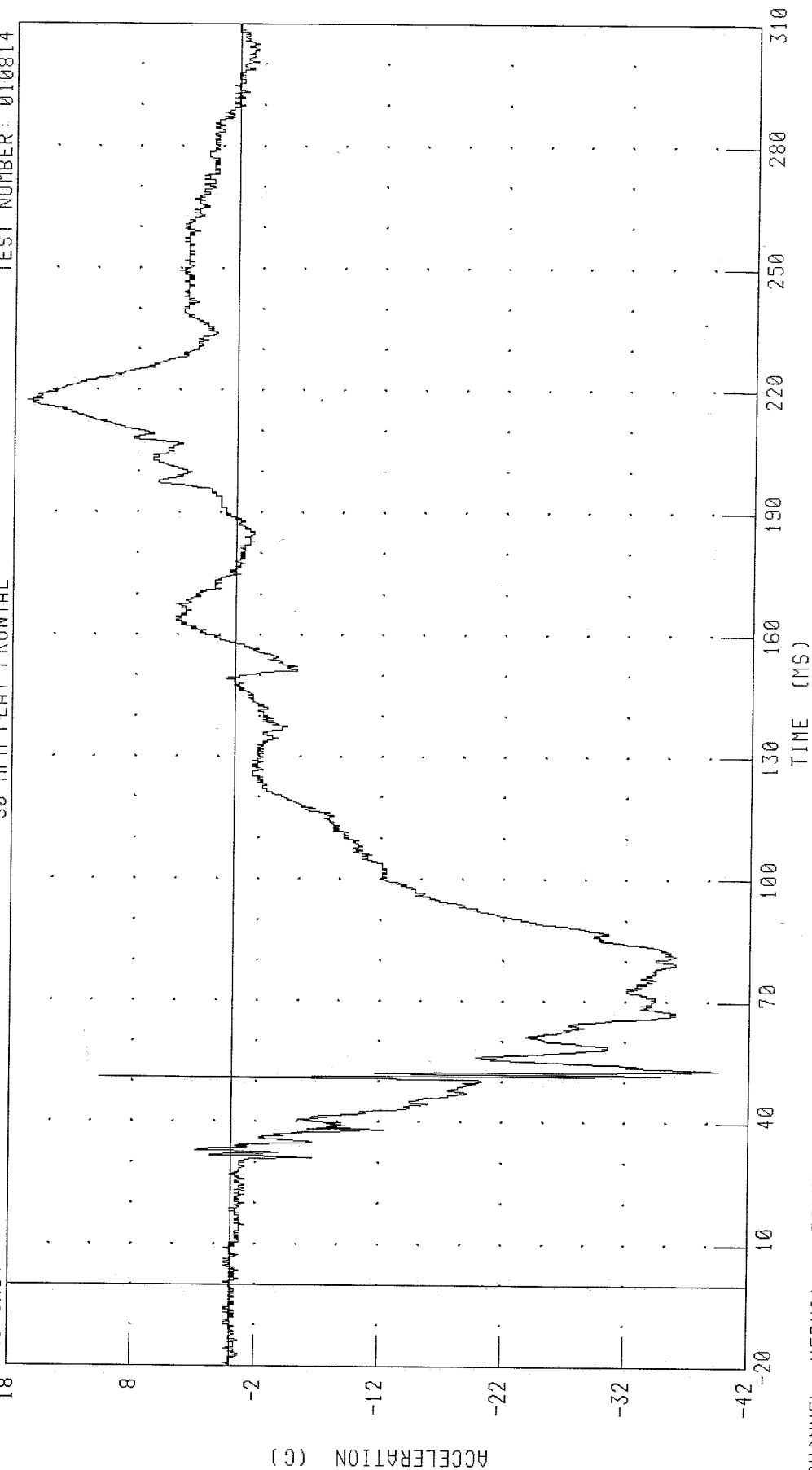
Appendix B

Data Plots

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER HEAD X-AXIS ACCELERATION
30 MPH FLAT FRONTAL

TRC INC.

TEST NUMBER: 010814

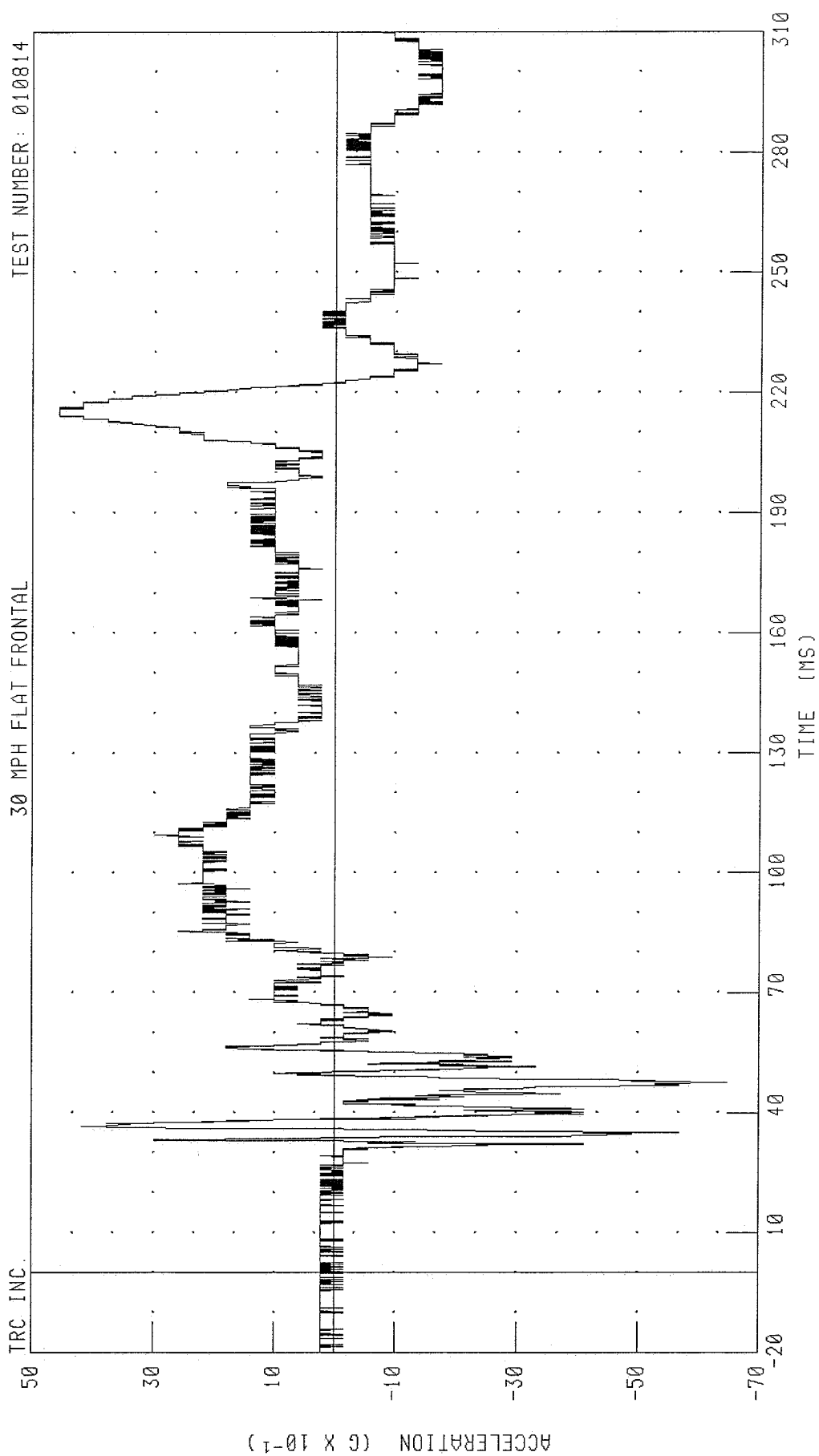


CHANNEL: HEDXC1 FILTER: CH. CLASS 1000

PEAK DATA: 16.97 G @ 217.44 MS, -39.59 G @ 52.88 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER HEAD Y-AXIS ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

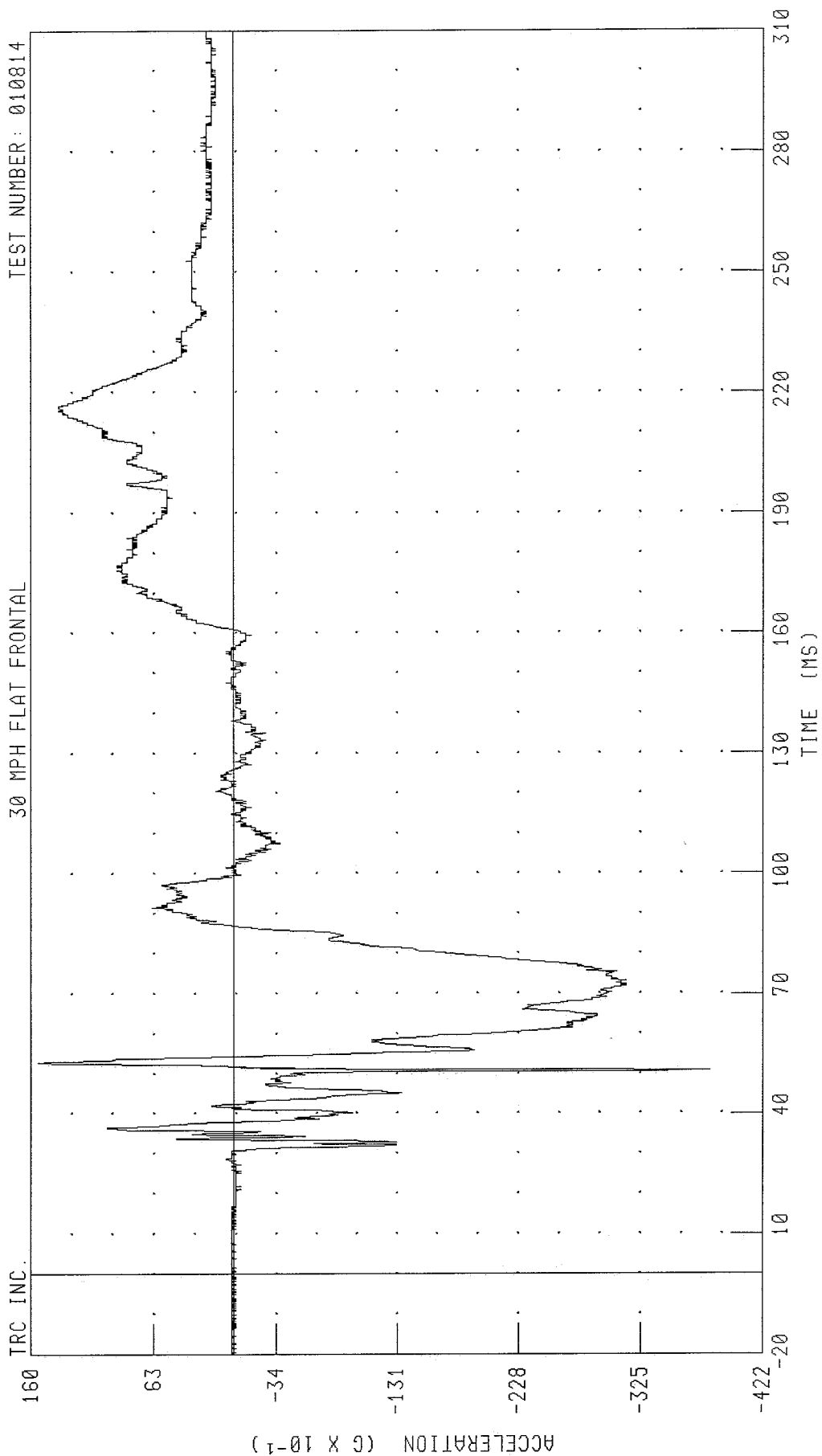


CHANNEL: HEDYG1 FILTER: CH. CLASS 1000

PEAK DATA: 4.56 G @ 214.24 MS, -6.47 G @ 47.52 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER HEAD Z-AXIS ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

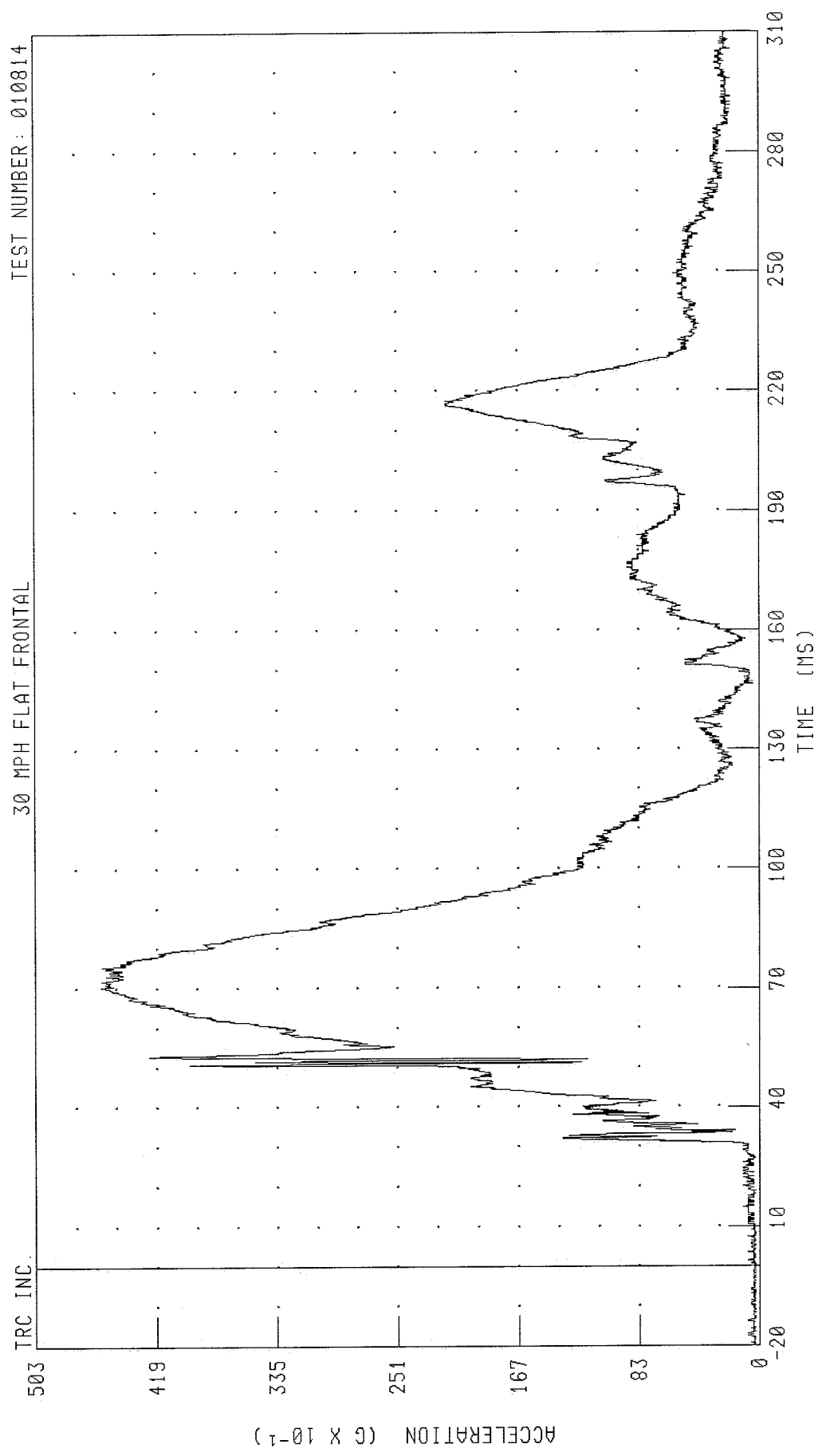


CHANNEL: HEDZG1 FILTER: CH. CLASS 1000

PEAK DATA: 15.40 G @ 52.88 MS; -38.01 G @ 50.72 MS

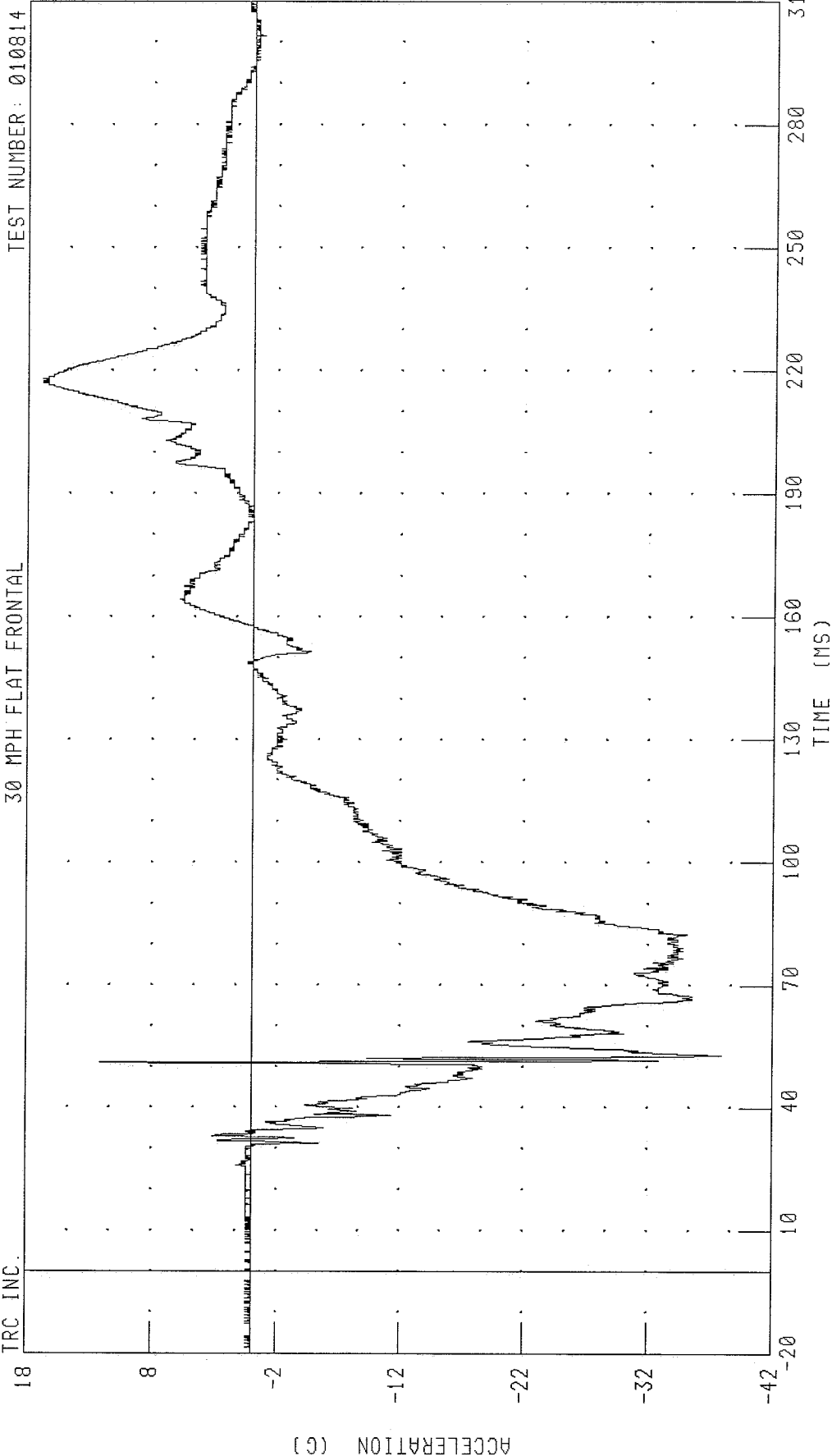
2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER HEAD RESULTANT ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814



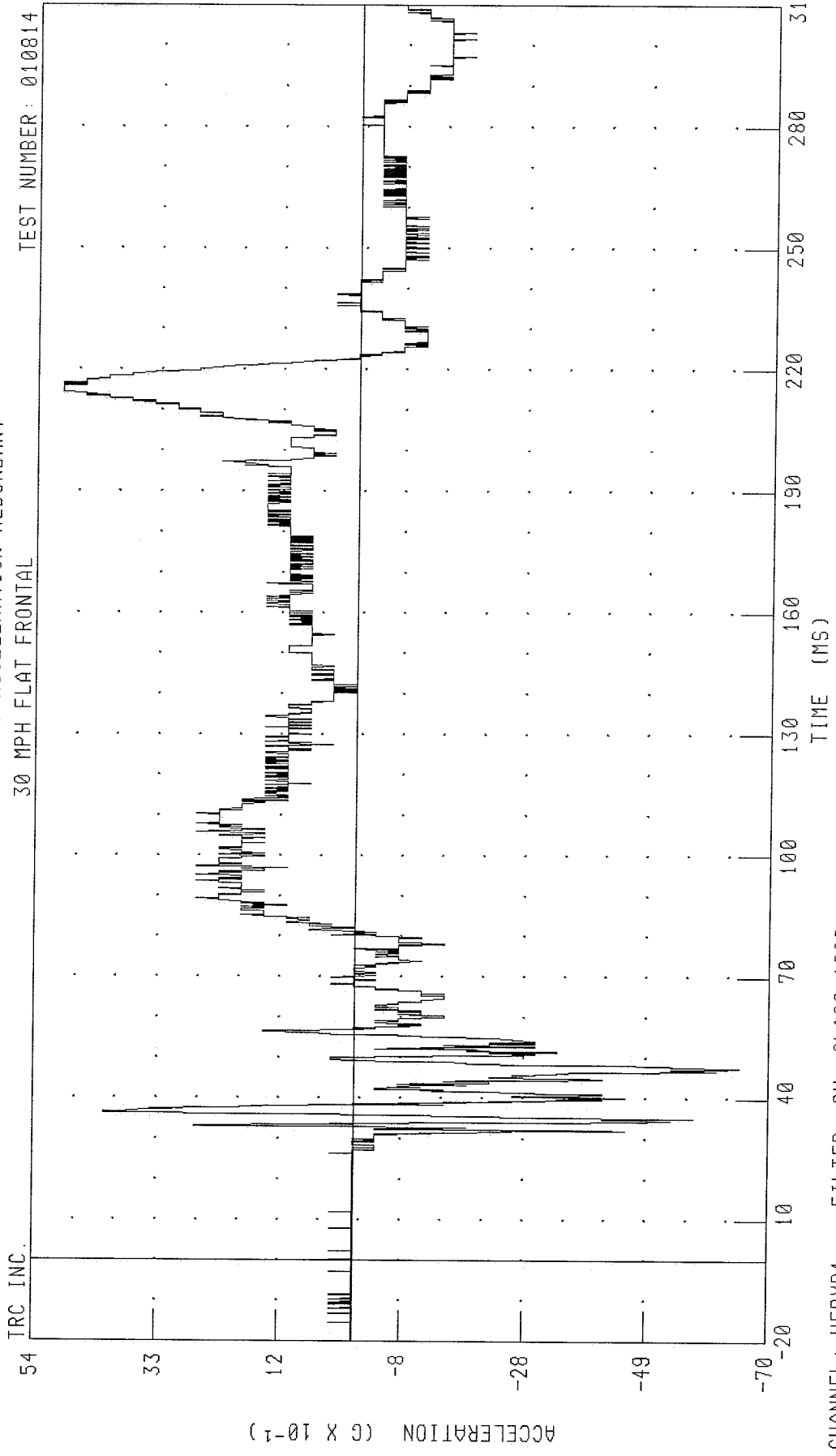
CHANNEL: HEDRG1 FILTER: CH. CLASS 1000 PEAK DATA: 45.86 G @ 70.32 MS; 0.27 G @ -18.48 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER HEAD X-AXIS ACCELERATION REDUNDANT
30 MPH FLAT FRONTAL



CHANNEL: HEDXR1 FILTER: CH. CLASS 1000
PEAK DATA: 16.80 G @ 217.04 MS; -37.92 G @ 52.88 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER HEAD Y-AXIS ACCELERATION REDUNDANT
30 MPH FLAT FRONTAL



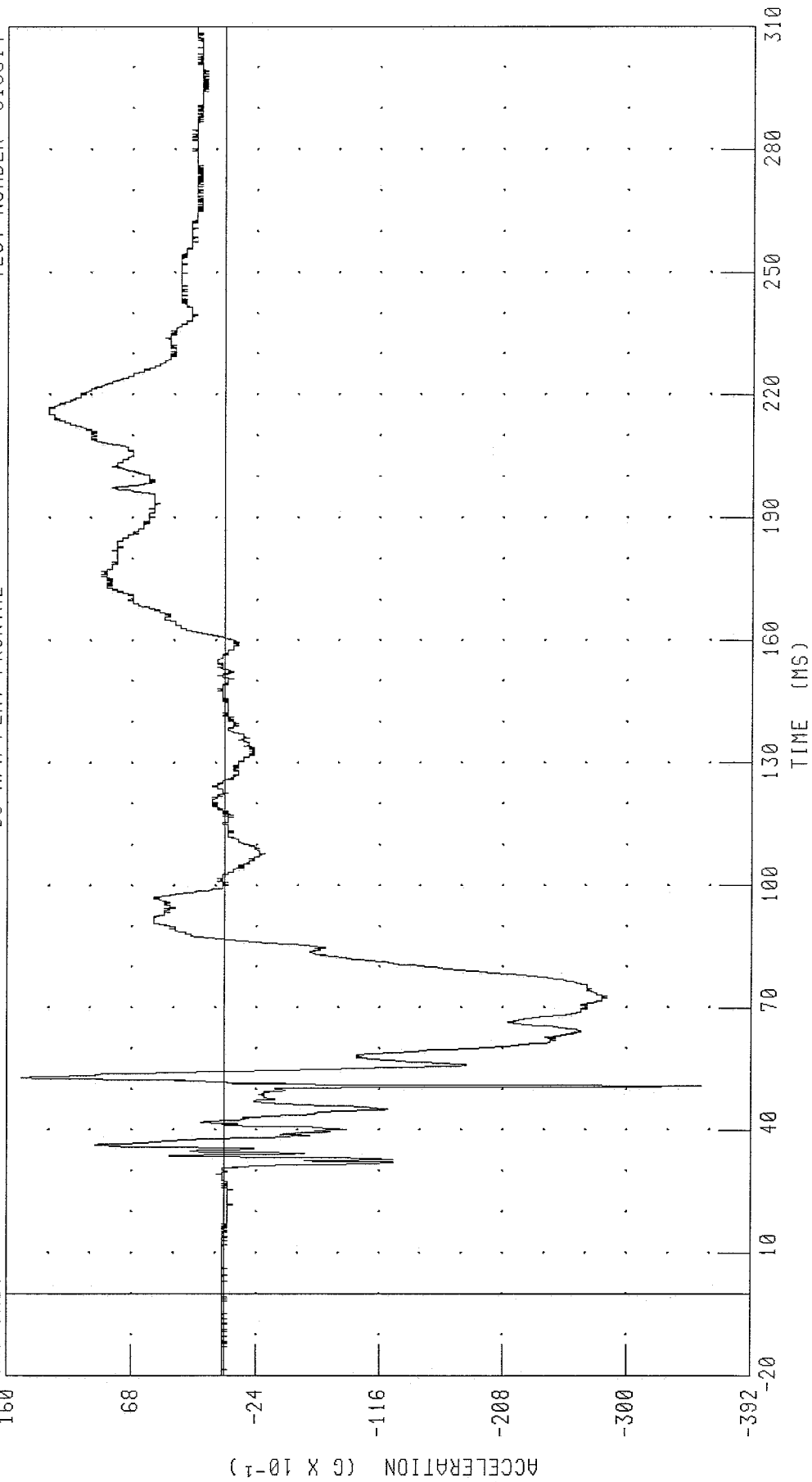
CHANNEL: HEDYR1 FILTER: CH. CLASS 1000

PEAK DATA: 5.07 G @ 214.32 MS, -6.60 G @ 47.44 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER HEAD Z-AXIS ACCELERATION REDUNDANT
30 MPH FLAT FRONTAL

TRC INC.

TEST NUMBER: 010814

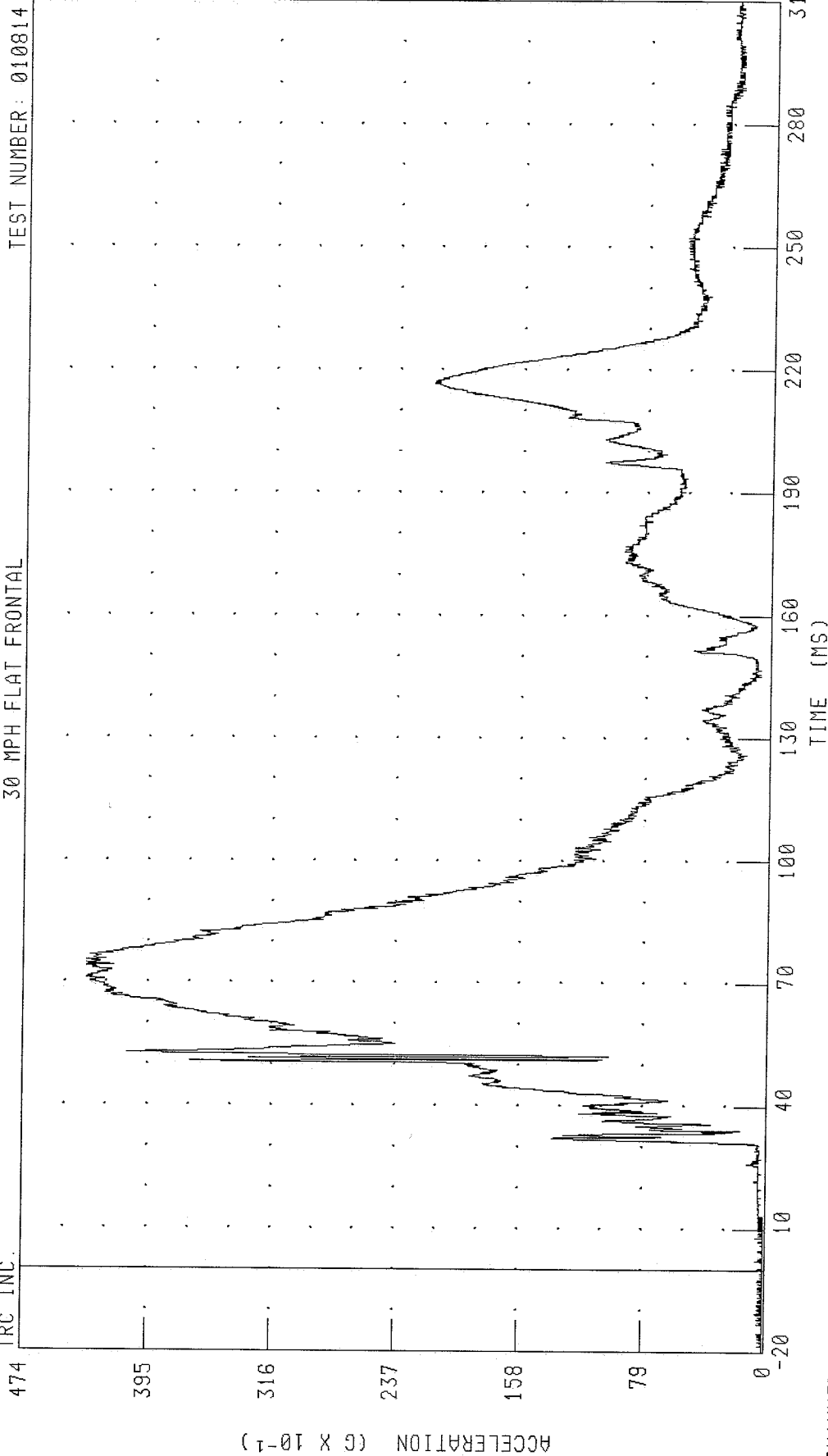


CHANNEL: HEDZR1 FILTER: CH. CLASS 1000

PEAK DATA: 14.89 G @ 52.88 MS; -35.55 G @ 50.72 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER HEAD RESULTANT ACCELERATION REDUNDANT
30 MPH FLAT FRONTAL

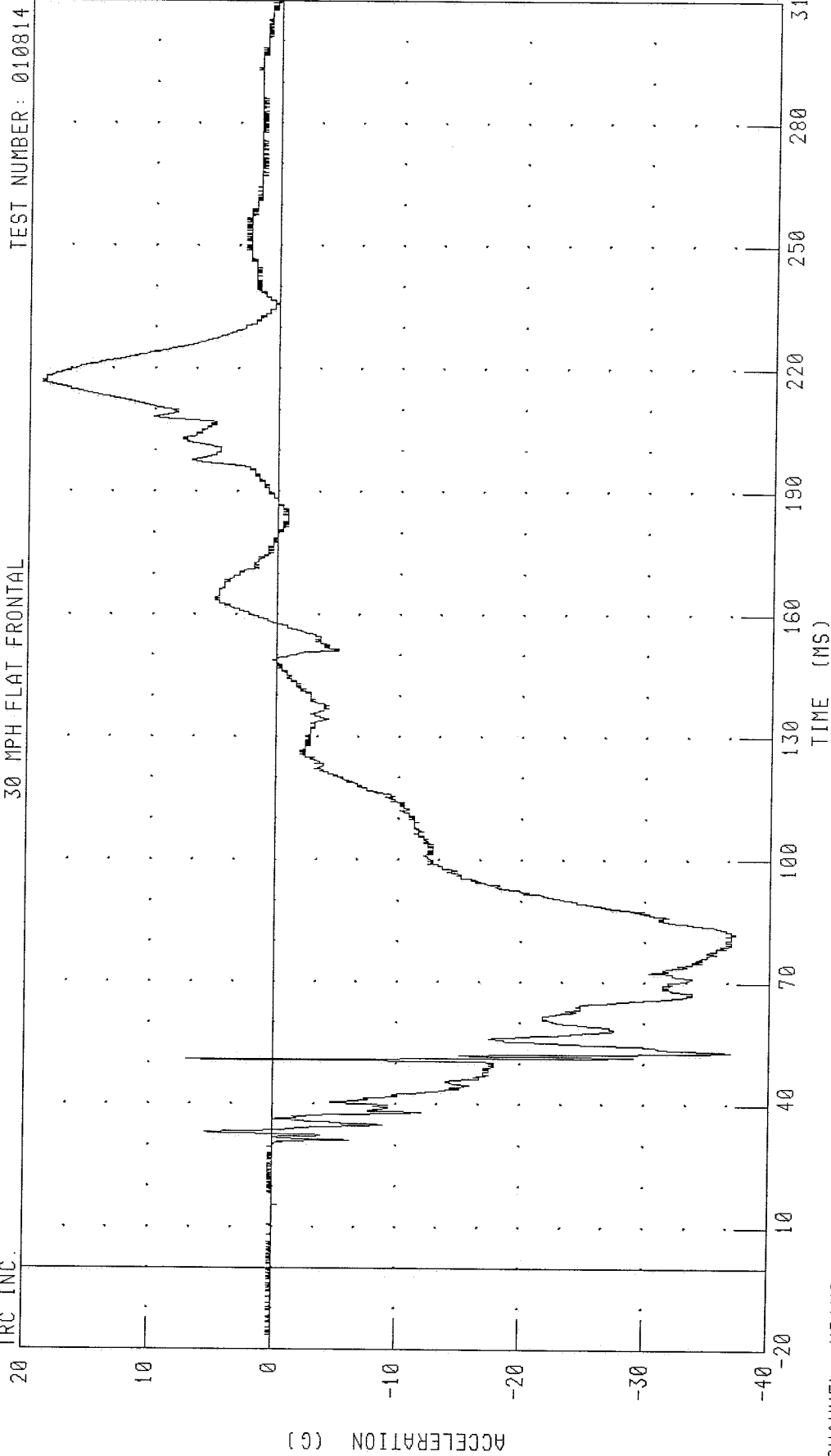
TRC INC.



CHANNEL: HEDRR1 FILTER: CH. CLASS 1000

PEAK DATA: 43.43 G @ 75.36 MS; 0.15 G @ -20.00 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER HEAD X-AXIS (LT) ACCELERATION
30 MPH FLAT FRONTAL



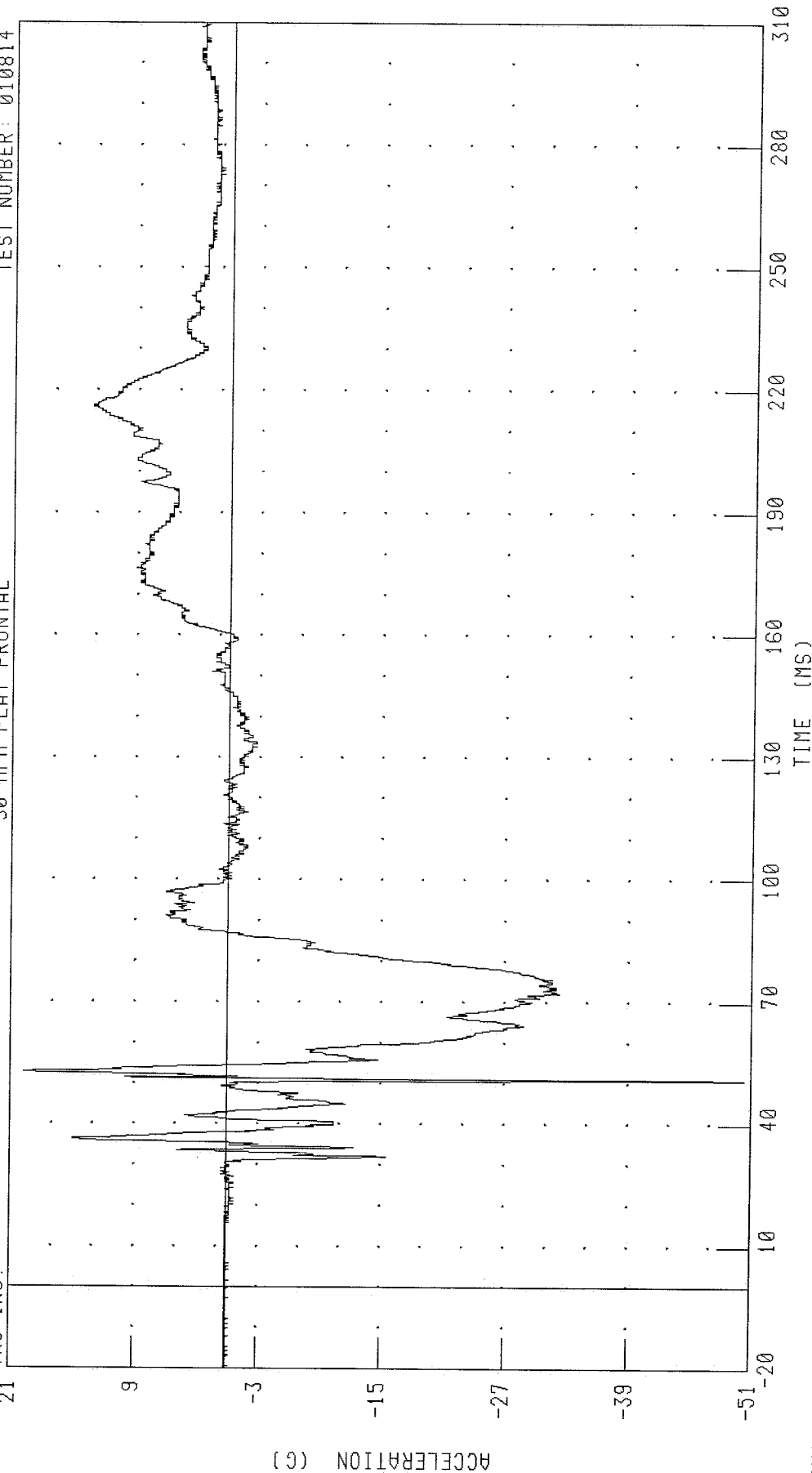
CHANNEL: HD1XC1 FILTER: CH. CLASS 1000

PEAK DATA: 19.04 G @ 216.80 MS; -37.31 G @ 81.84 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER HEAD Z-AXIS (LT) ACCELERATION
30 MPH FLAT FRONTAL

TRC INC.

TEST NUMBER: 010814



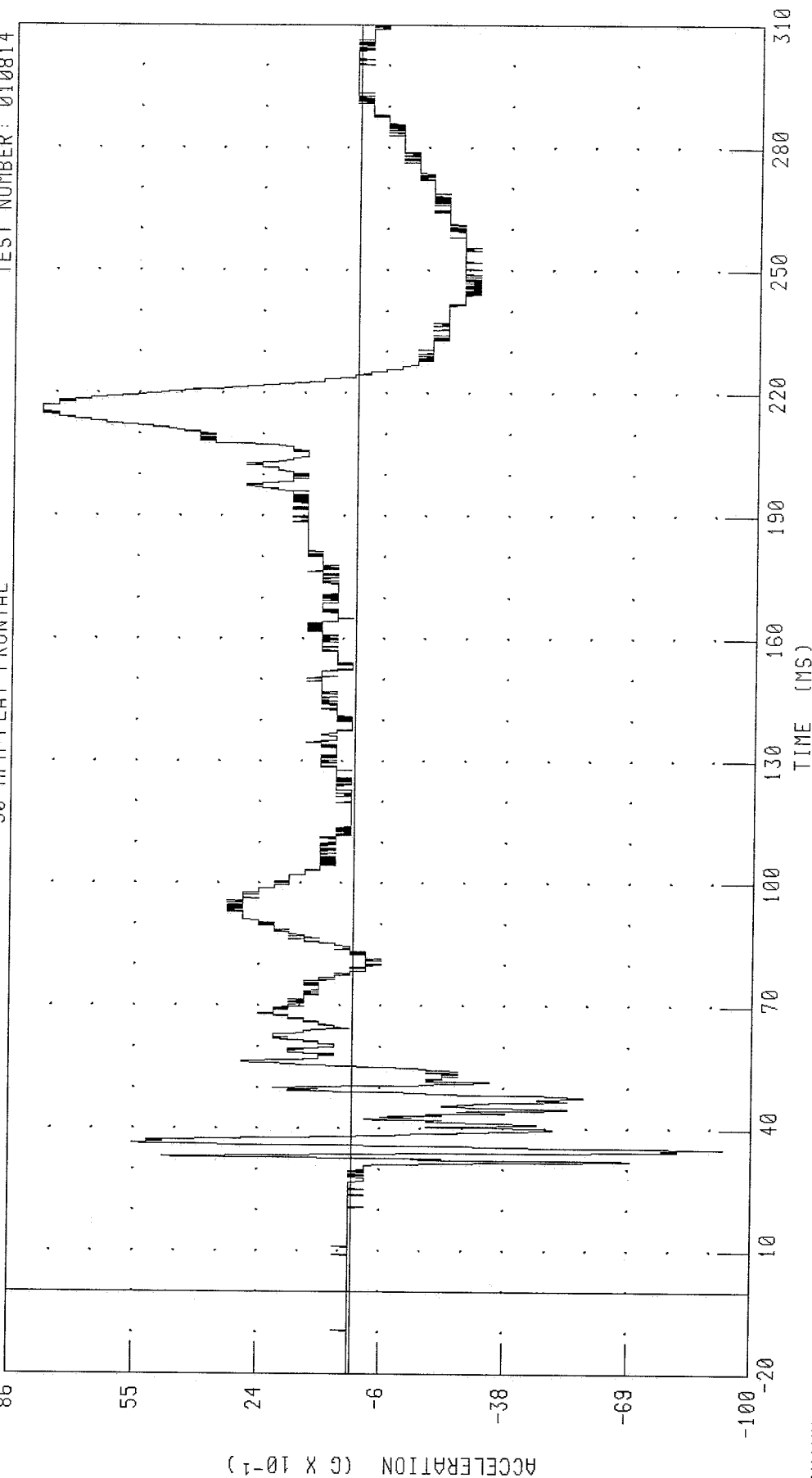
CHANNEL: HD1ZC1 FILTER: CH. CLASS 1000

PEAK DATA: 19.67 G @ 52.88 MS, -50.36 G @ 50.88 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER HEAD Y-AXIS (FT) ACCELERATION
30 MPH FLAT FRONTAL

TRC INC.

TEST NUMBER: 010814



CHANNEL: HD2Y61 FILTER: CH. CLASS 1000

PEAK DATA: 7.89 G @ 214.80 MS; -9.30 G @ 35.12 MS

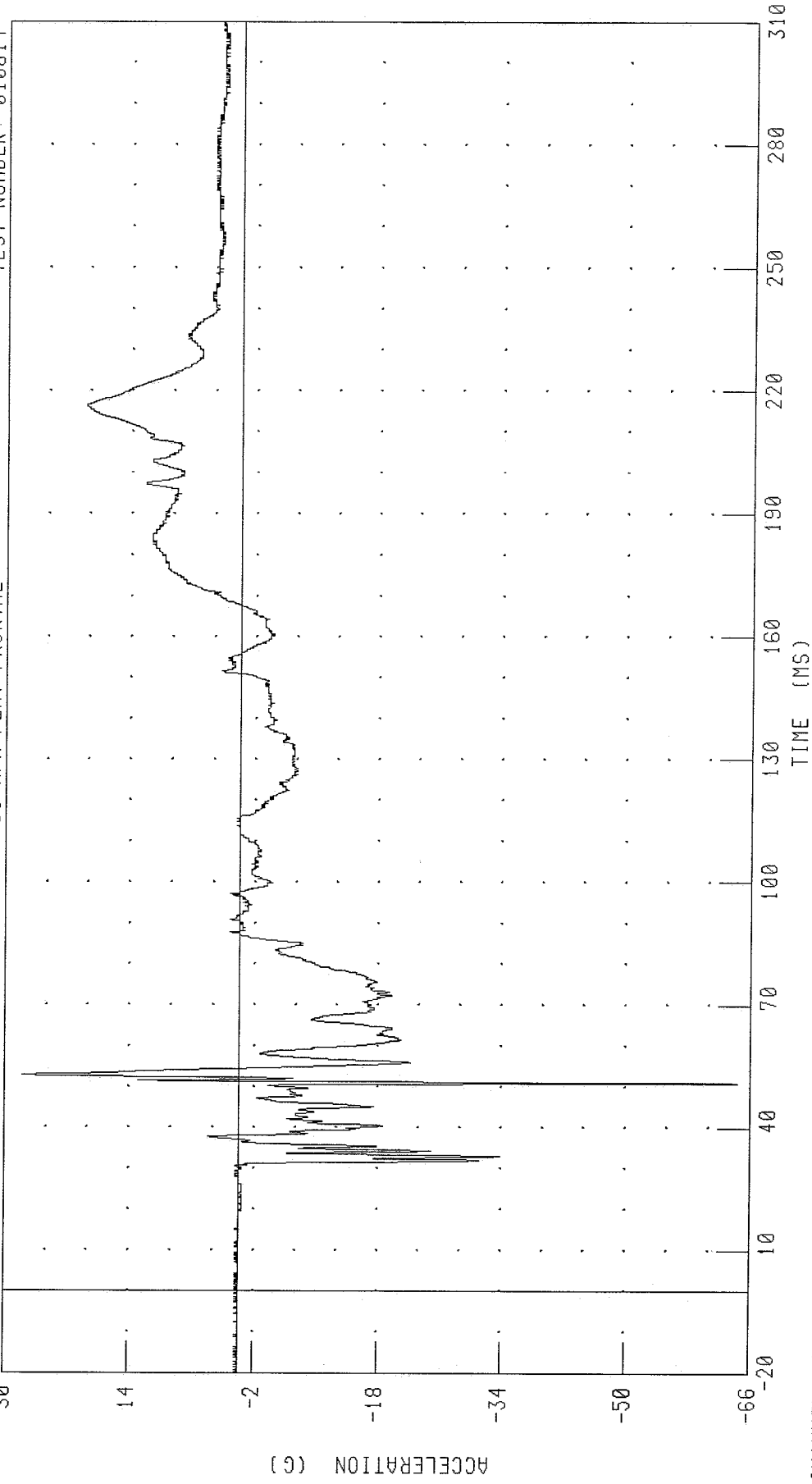
2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

DRIVER HEAD Z-AXIS (FT) ACCELERATION

TRC INC.

30 MPH FLAT FRONTAL

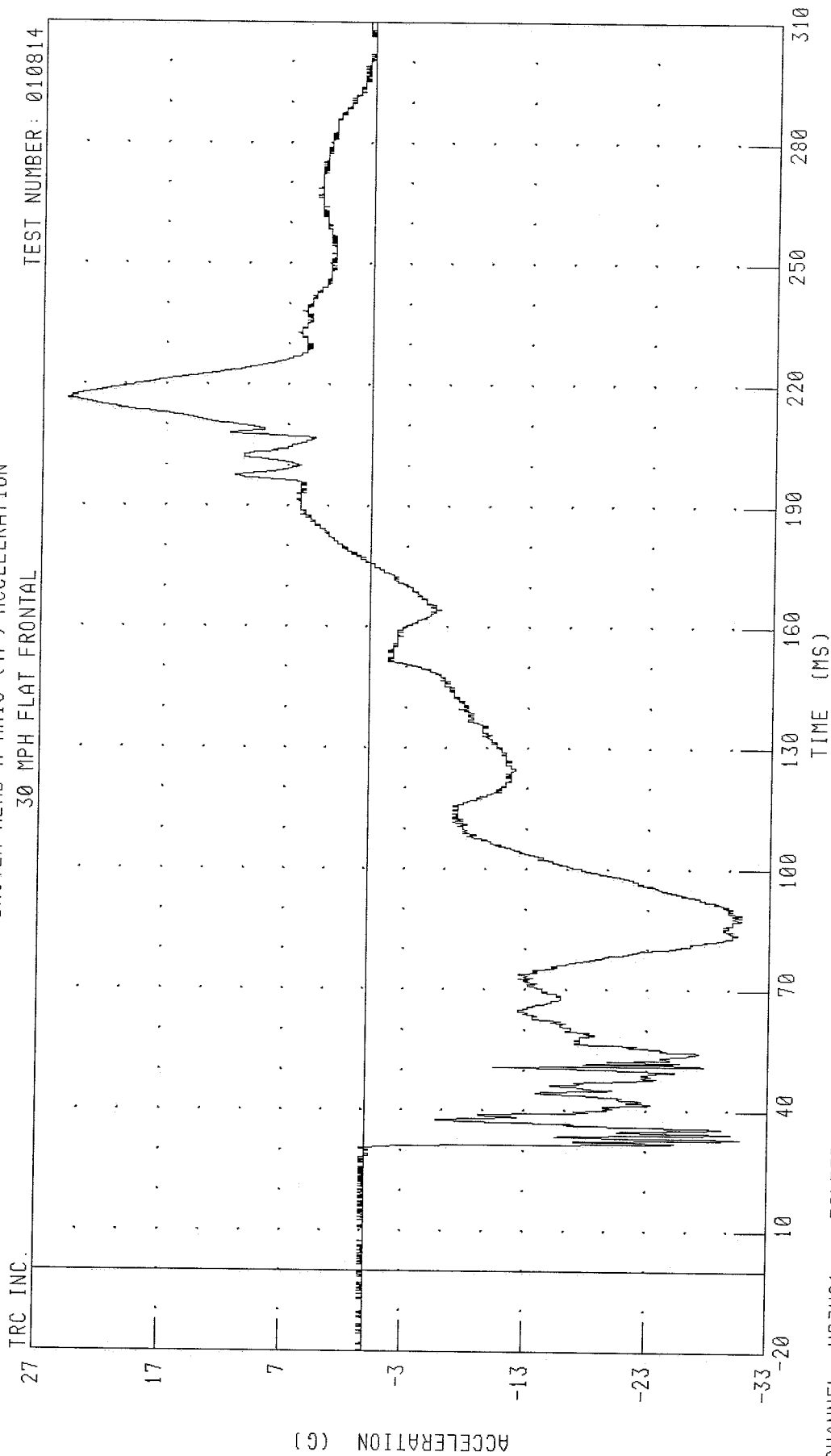
TEST NUMBER: 010814



CHANNEL: HD2ZG1 FILTER: CH. CLASS 1000

PEAK DATA: 27.69 G @ 52.88 MS; -64.34 G @ 50.88 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER HEAD X-AXIS (TP) ACCELERATION



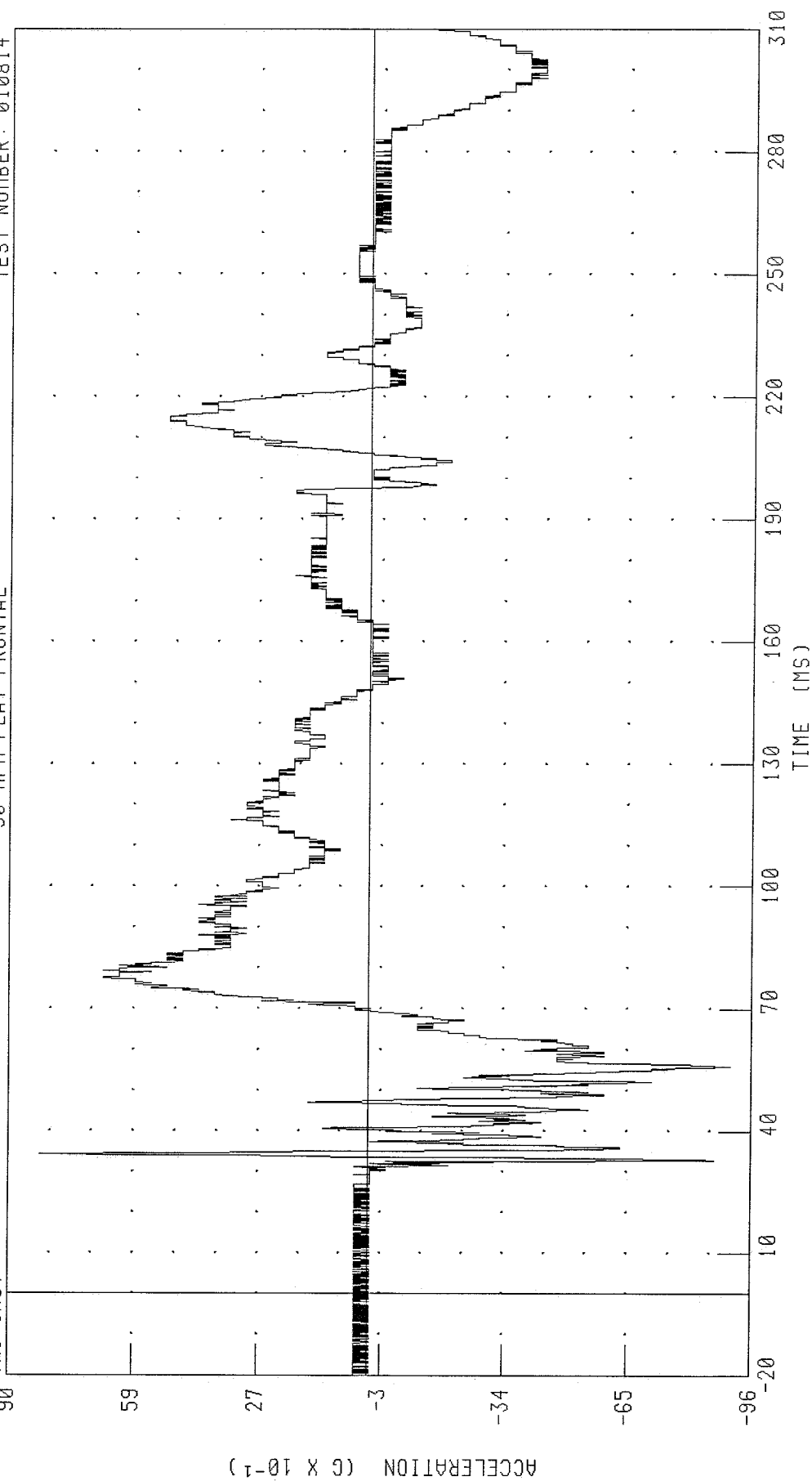
2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

DRIVER HEAD Y-AXIS (TP) ACCELERATION

TRC INC.

30 MPH FLAT FRONTAL

TEST NUMBER: 010814



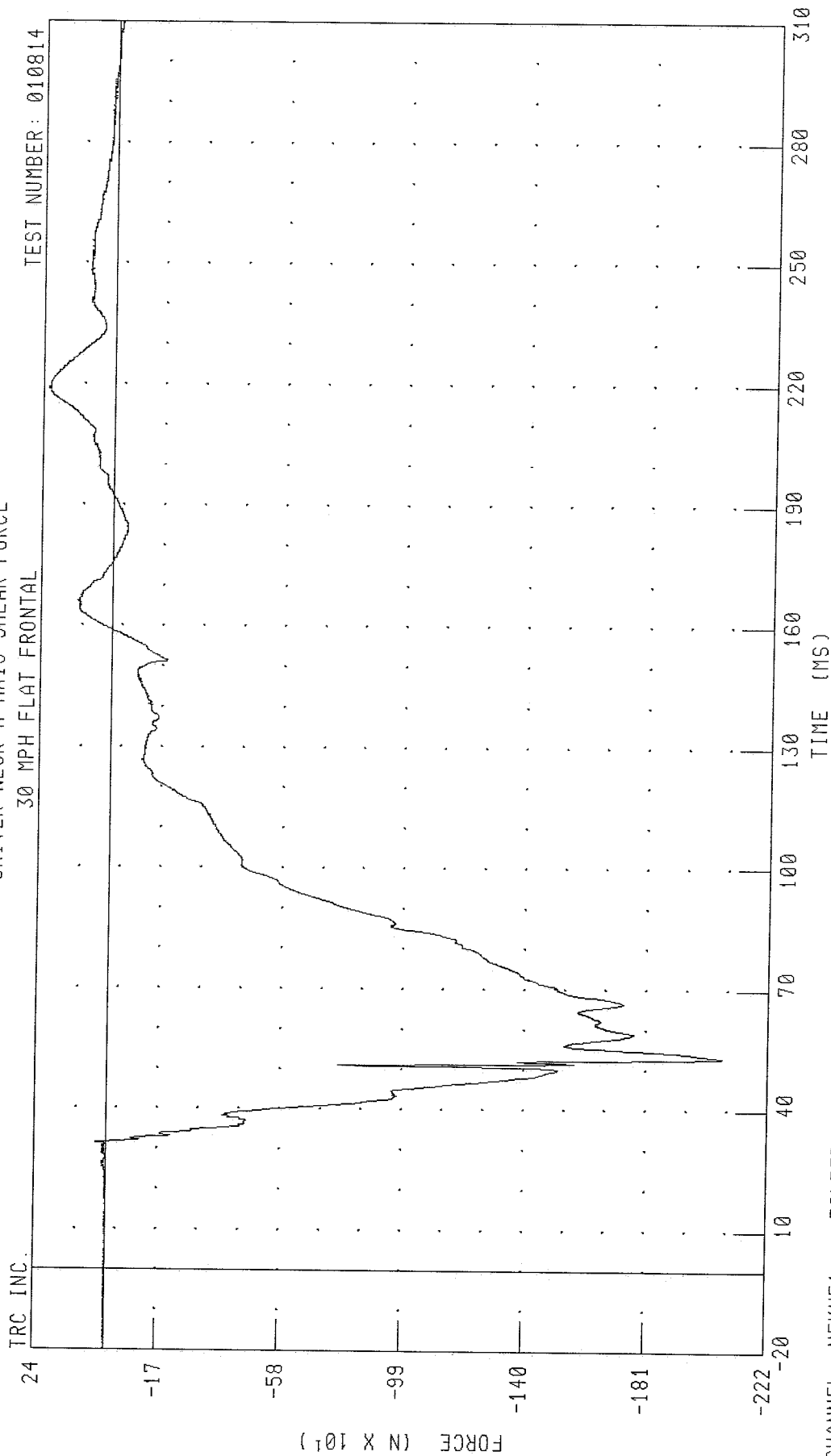
CHANNEL: HD3YC1 FILTER: CH. CLASS 1000

PEAK DATA: 8.22 G @ 34.32 MS; -9.08 G @ 55.92 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER NECK X-AXIS SHEAR FORCE
30 MPH FLAT FRONTAL

TRC INC.

TEST NUMBER: 010814



CHANNEL: NEKXF1

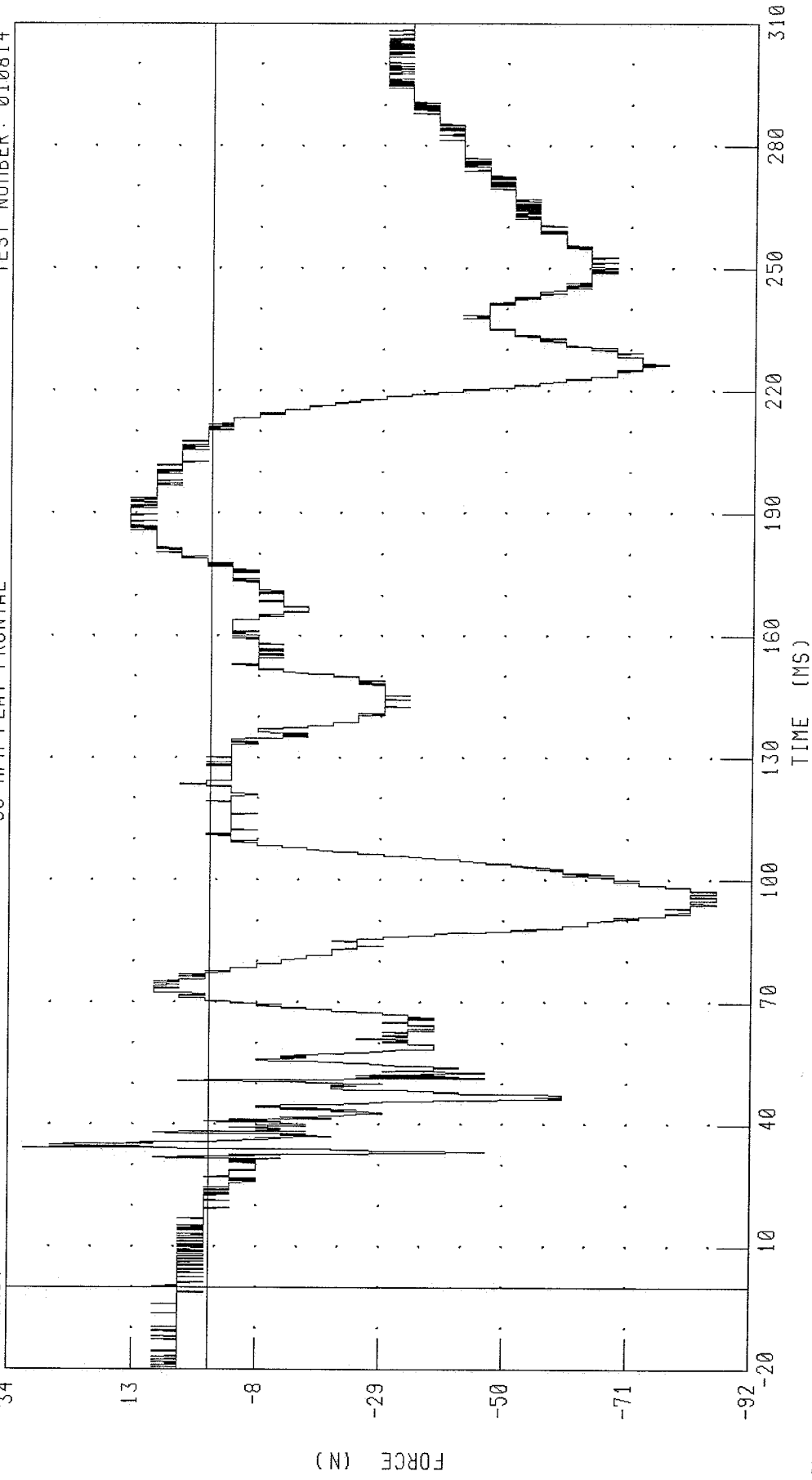
FILTER: CH. CLASS 1000

PEAK DATA: 222.23 N @ 218.72 MS, -2067.64 N @ 53.04 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER NECK Y-AXIS SHEAR FORCE
30 MPH FLAT FRONTAL

TRC INC.

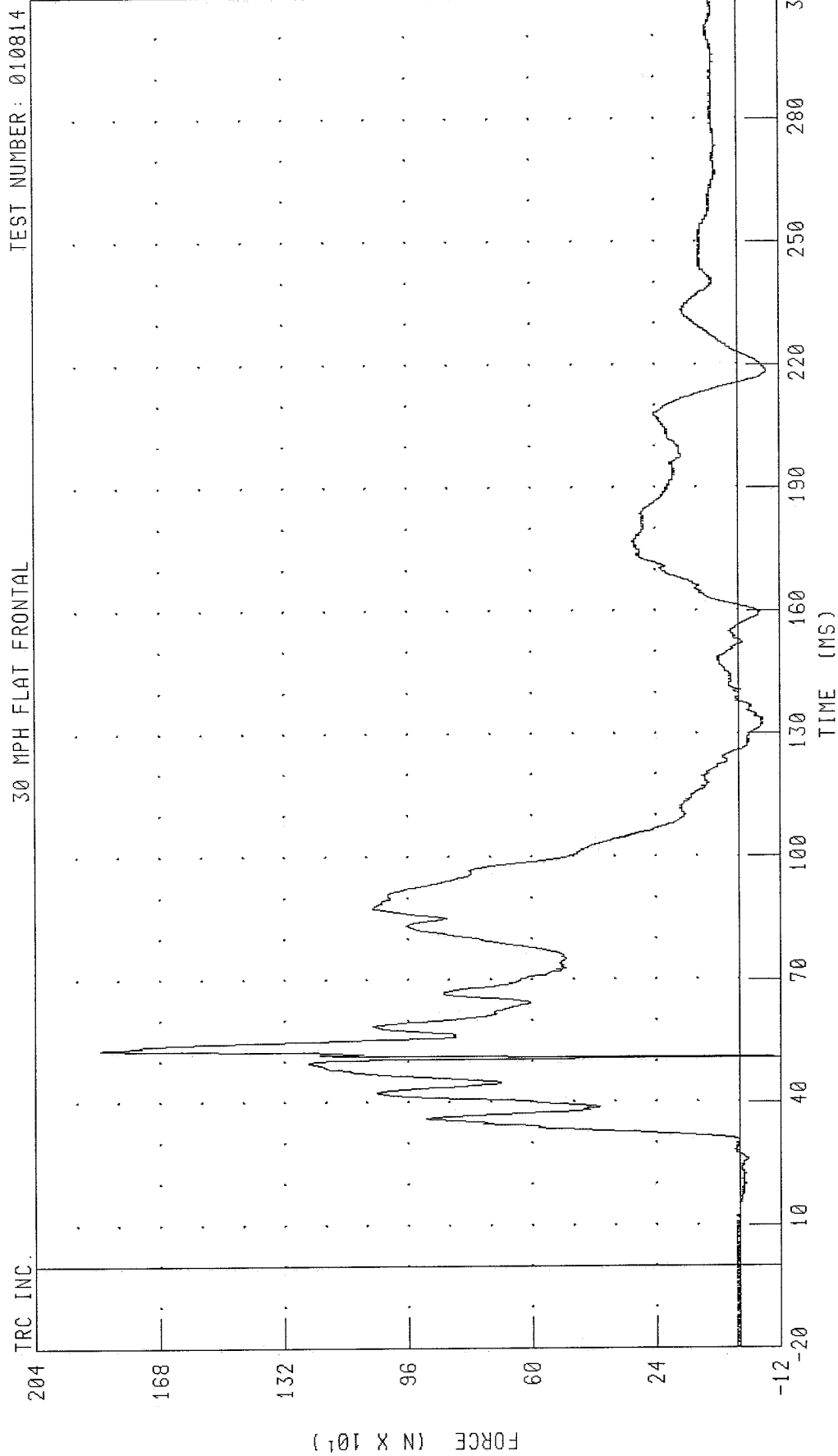
TEST NUMBER: 010814



CHANNEL: NEKYF1 FILTER: CH. CLASS 1000

PEAK DATA: 31.29 N @ 34.40 MS, -86.08 N @ 94.08 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER NECK Z-AXIS AXIAL FORCE
30 MPH FLAT FRONTAL



CHANNEL: NEKZF1 FILTER: CH. CLASS 1000

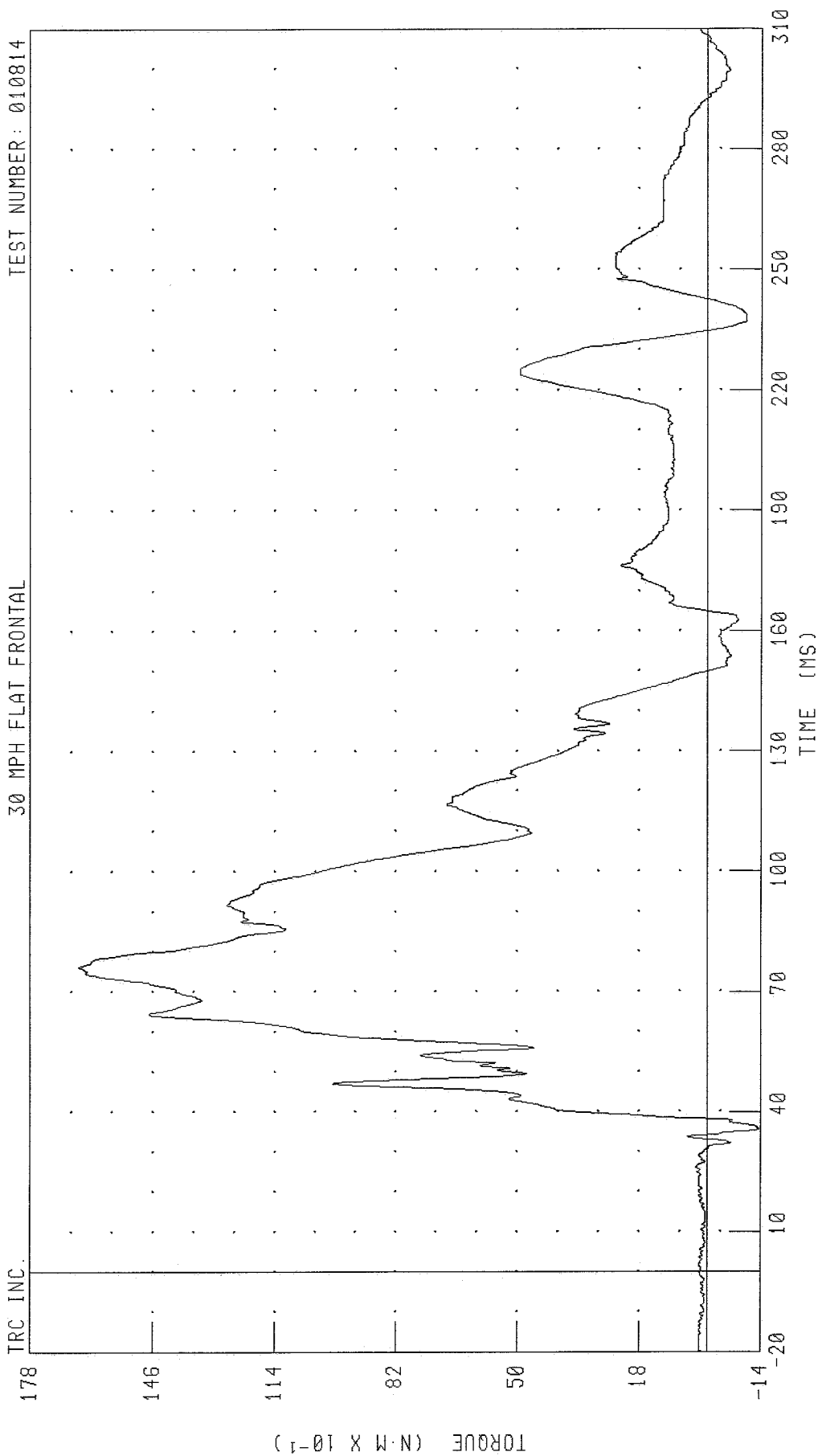
PEAK DATA: 1850.74 N @ 52.96 MS; -117.48 N @ 50.88 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

DRIVER NECK MOMENT ABOUT X AXIS

30 MPH FLAT FRONTAL

TEST NUMBER: 010814



CHANNEL: NEKXM1 FILTER: CH. CLASS 600

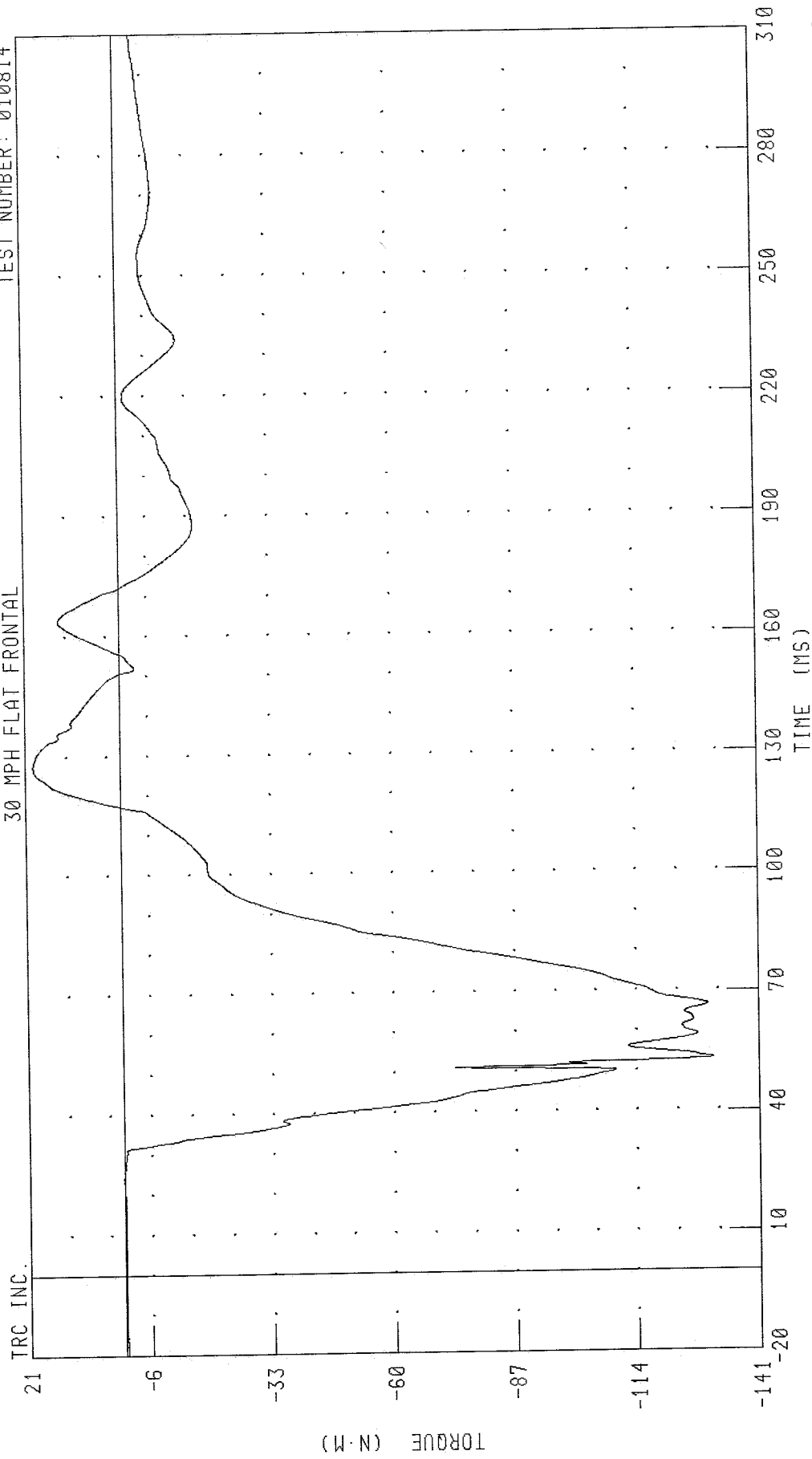
PEAK DATA: 16.52 N·m @ 76.16 ms, -1.36 N·m @ 35.68 ms

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

DRIVER NECK MOMENT ABOUT Y AXIS

30 MPH FLAT FRONTAL

TEST NUMBER: 010814



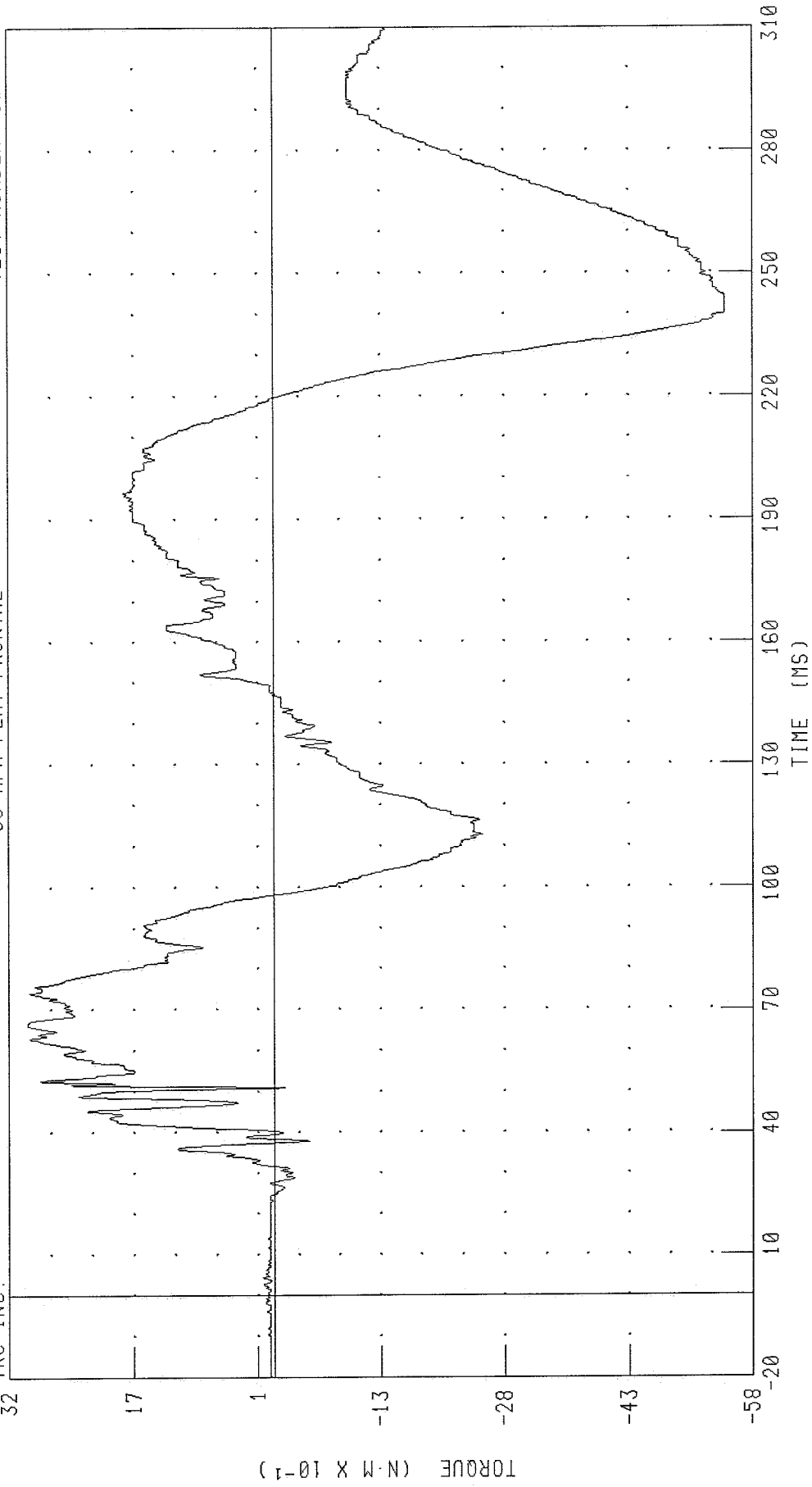
PEAK DATA: 19.36 N-M @ 127.60 MS, -131.00 N-M @ 53.12 MS

CHANNEL: NEKYM1 FILTER: CH. CLASS 600

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER NECK MOMENT ABOUT Z AXIS
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

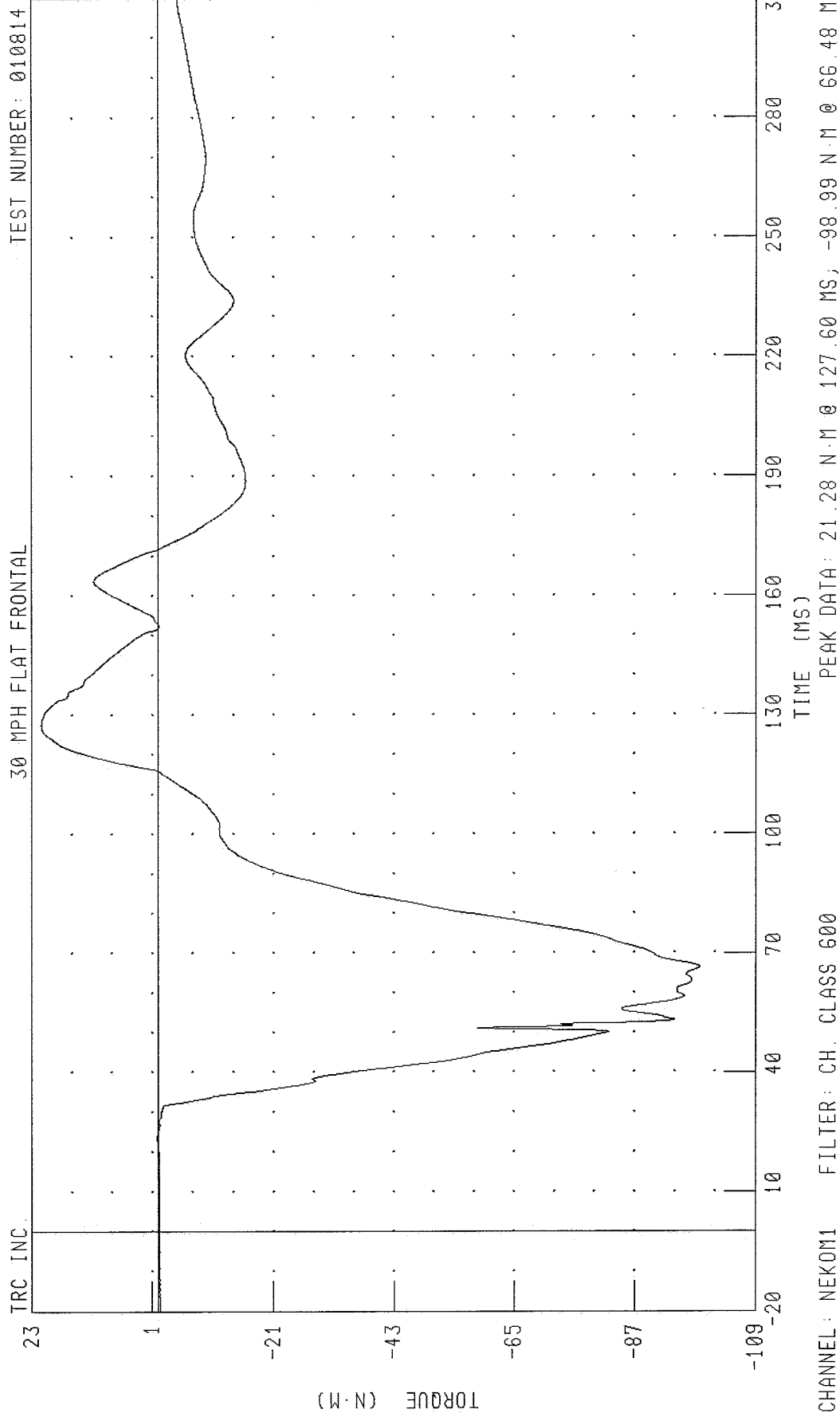
TRC INC.



CHANNEL: NEKZM1 FILTER: CH. CLASS 600

PEAK DATA: 2.98 N-M @ 66.32 MS; -5.47 N-M @ 240.16 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER NECK OCCIPITAL CONDYLE MOMENT ABOUT Y AXIS
30 MPH FLAT FRONTAL

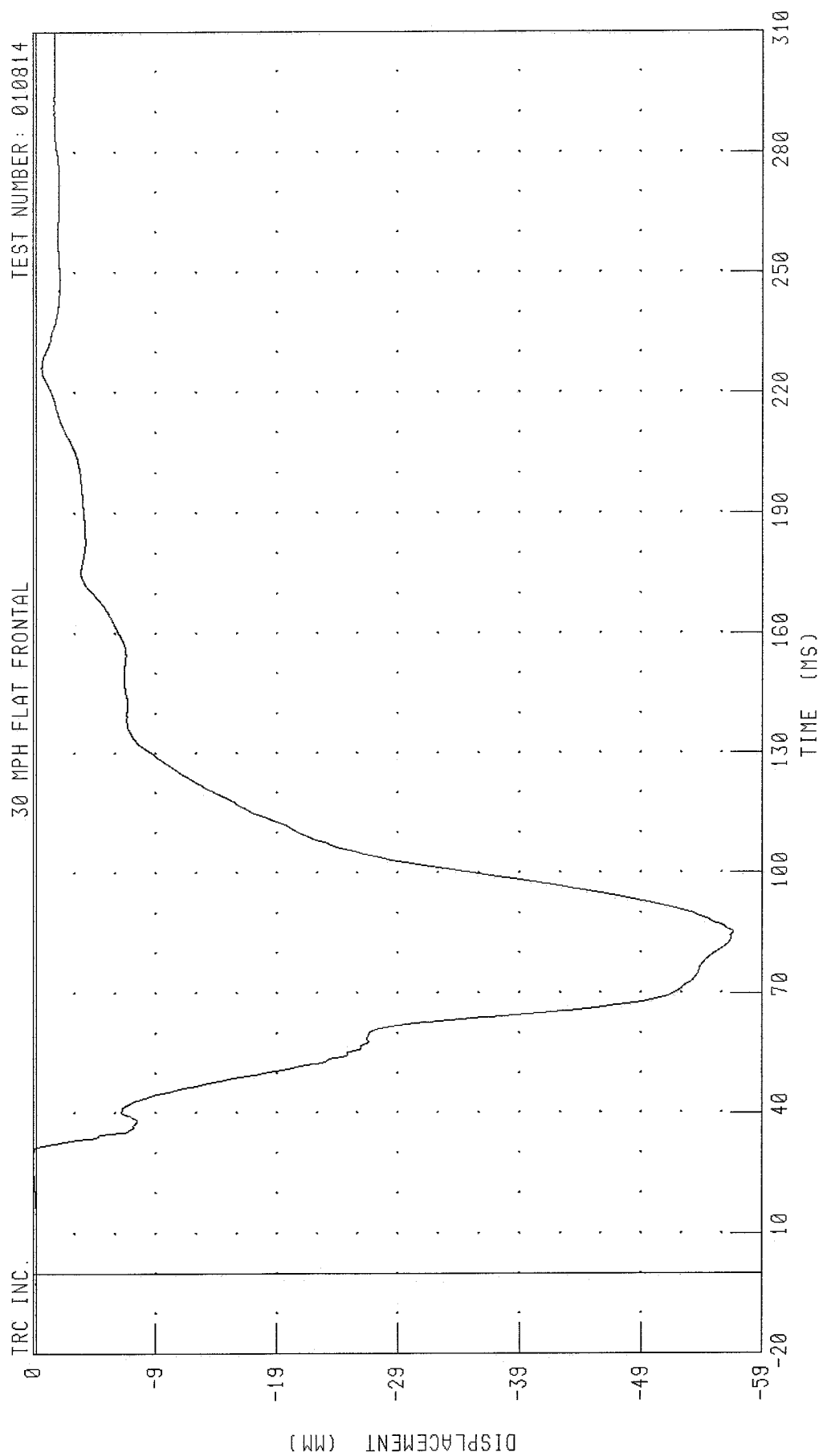


2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

DRIVER CHEST DEFLECTION

30 MPH FLAT FRONTAL

TEST NUMBER: 010814



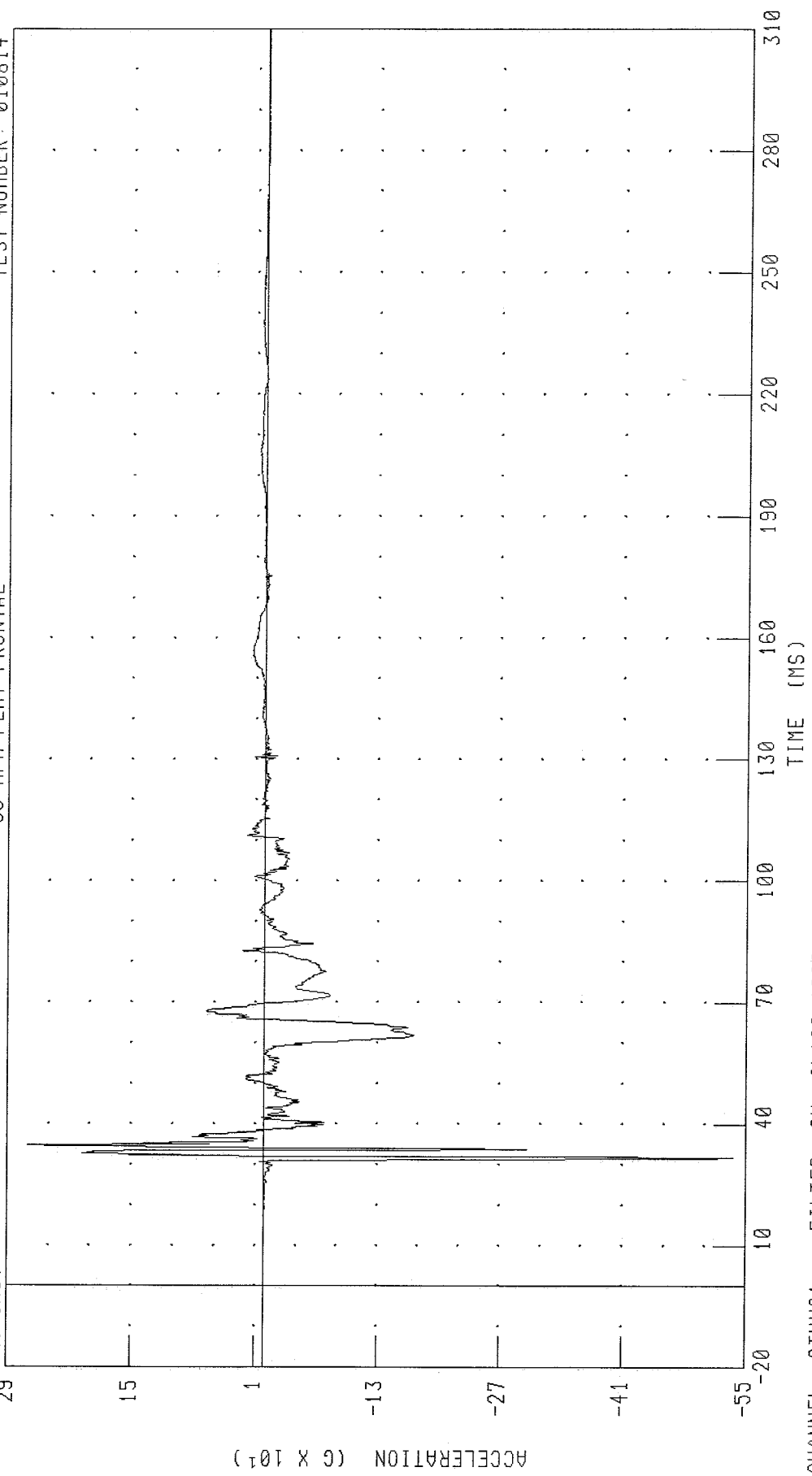
CHANNEL: CSTXD1 FILTER: CH. CLASS 600

PEAK DATA: 0.26 MM @ 27.36 MS; -57.47 MM @ 85.12 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER STERNUM UPPER X-AXIS ACCELERATION
30 MPH FLAT FRONTAL

TRC INC.

TEST NUMBER: 010814



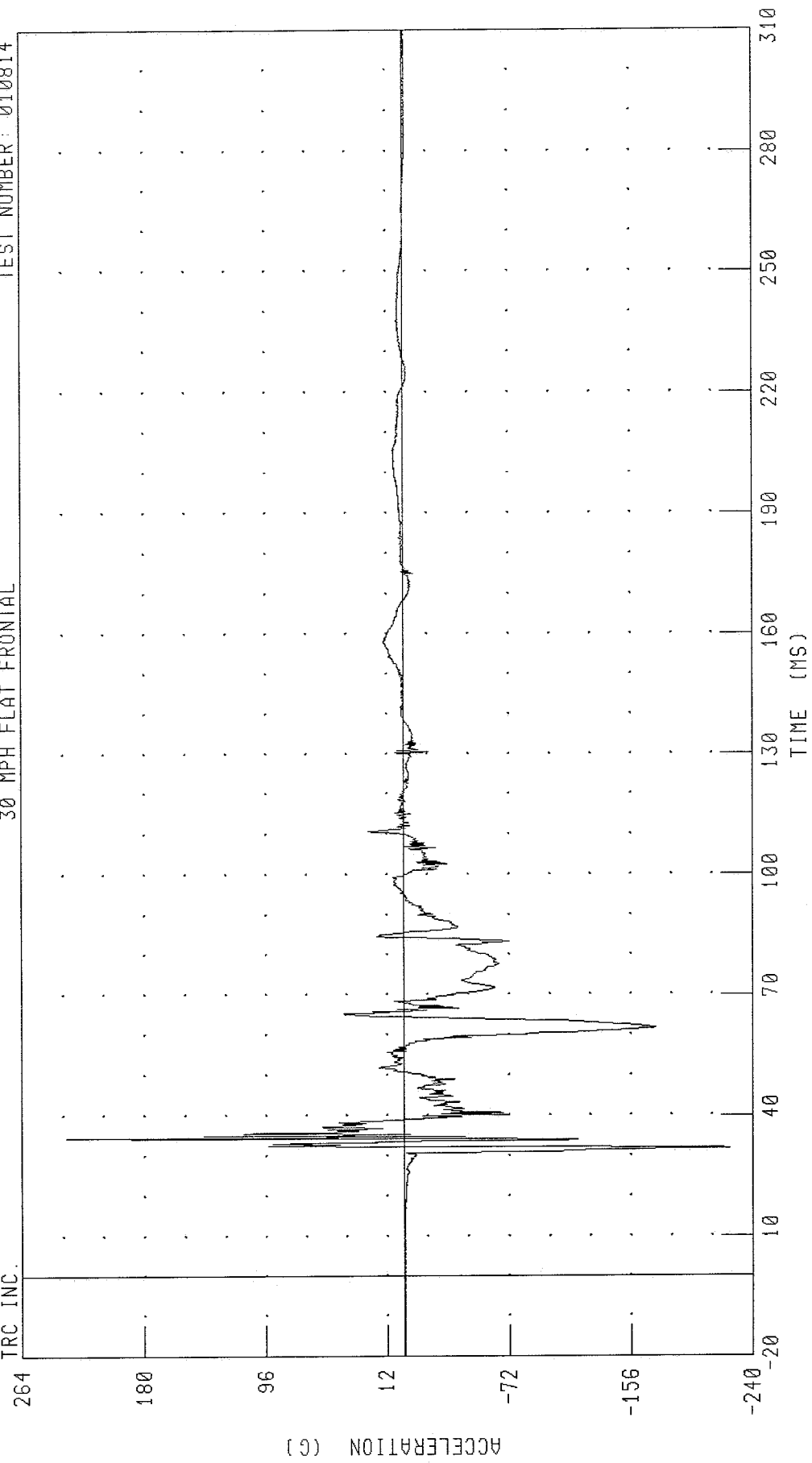
CHANNEL: STUXG1 FILTER: CH. CLASS 1000

PEAK DATA: 266.41 G @ 34.72 MS; -536.01 G @ 31.68 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER STERNUM MID X-AXIS ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

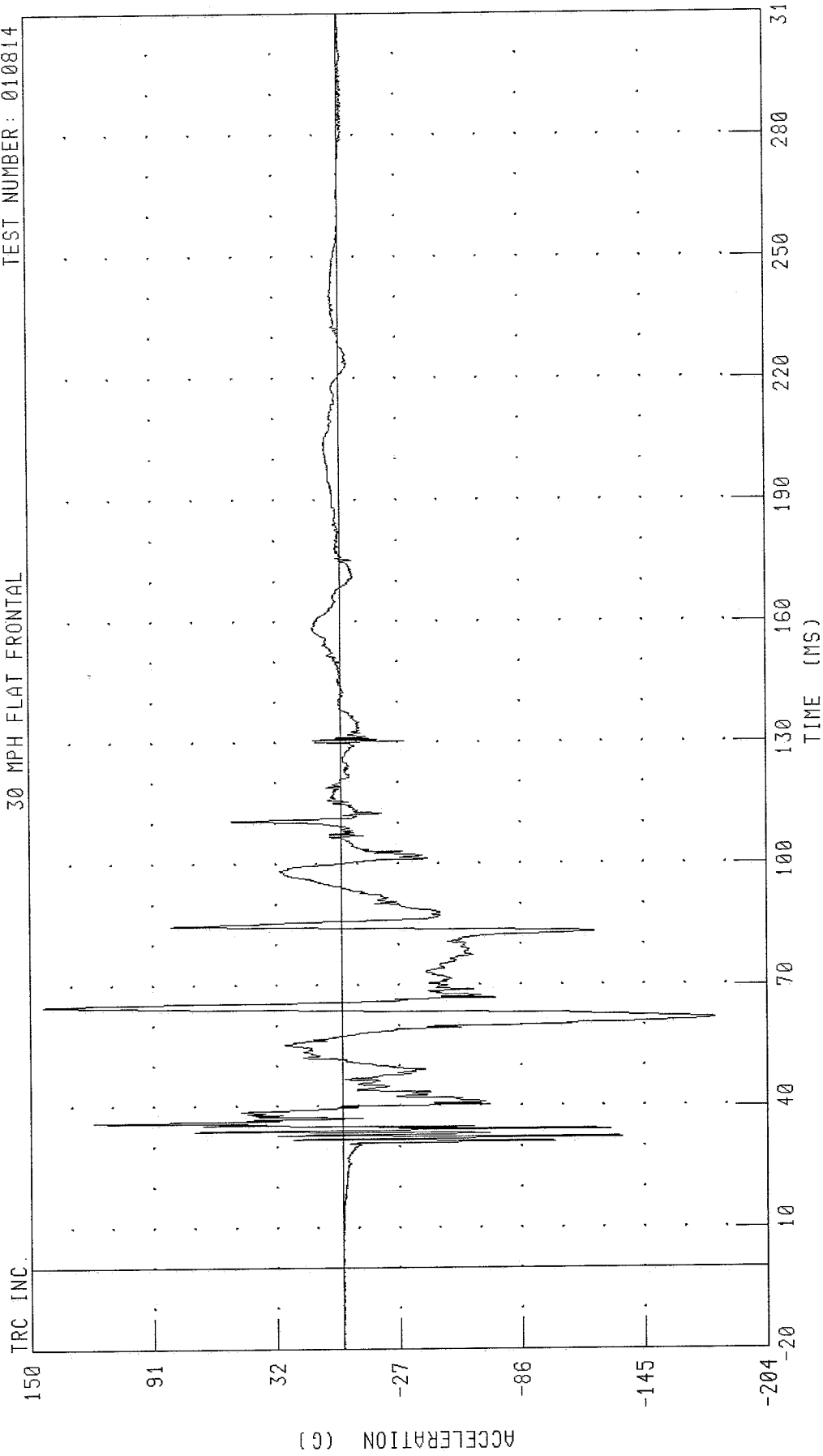
TRC INC.



CHANNEL: STMXG1 FILTER: CH. CLASS 1000
PEAK DATA: 233.83 G @ 34.48 MS, -224.42 G @ 31.84 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER STERNUM LOWER X-AXIS ACCELERATION
30 MPH FLAT FRONTAL

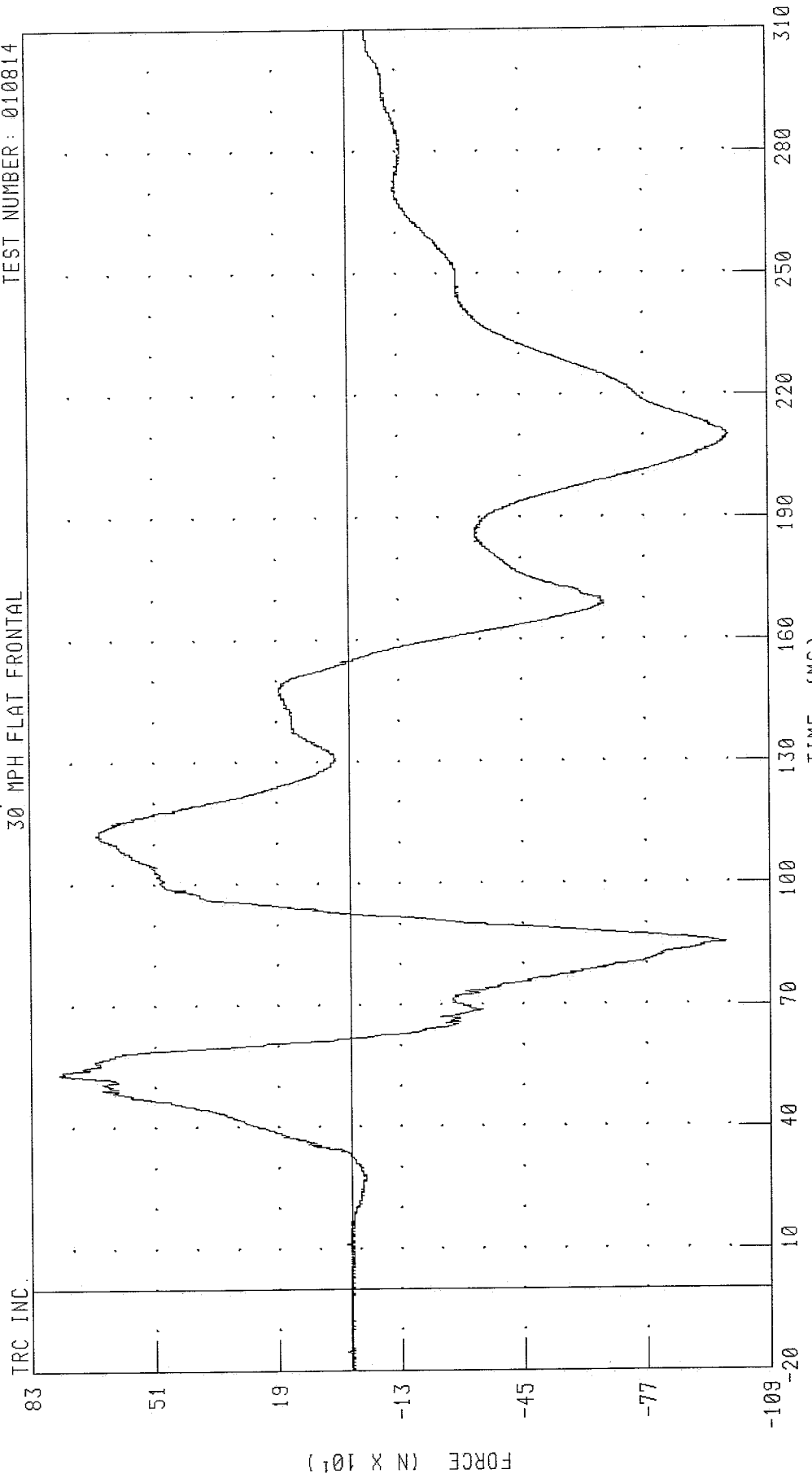
TEST NUMBER: 010814



CHANNEL: STLXG1 FILTER: CH. CLASS 1000 PEAK DATA: 143.48 G @ 64.88 MS, -179.25 G @ 143.84 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER LUMBAR X-AXIS FORCE
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

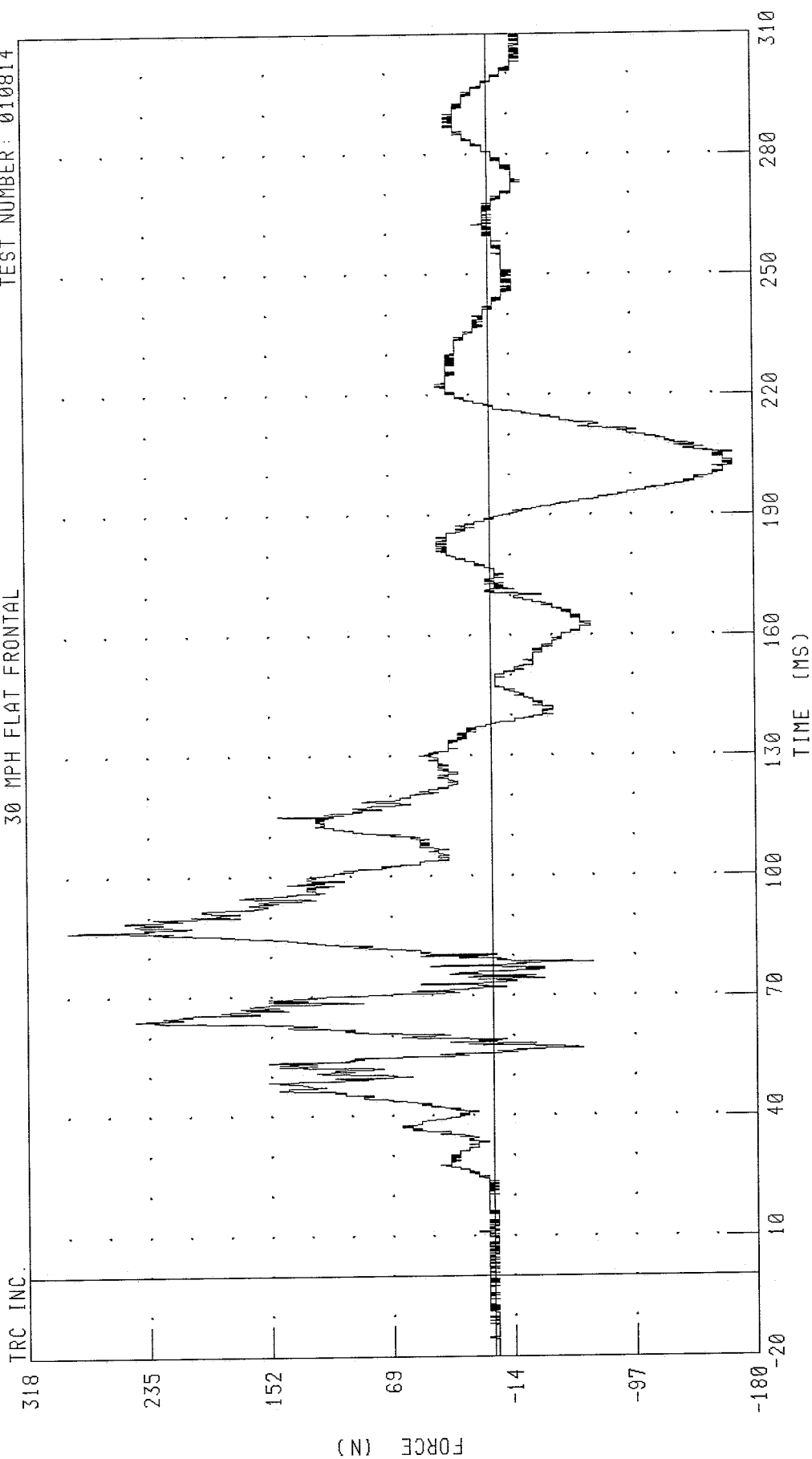


PEAK DATA: 756.67 N @ 53.04 MS; -990.00 N @ 210.00 MS

CHANNEL: LMBXF1 FILTER: CH. CLASS 1000

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER LUMBAR Y-AXIS FORCE
30 MPH FLAT FRONTAL

TEST NUMBER: 010814



CHANNEL: LMBYF1 FILTER: CH. CLASS 1000

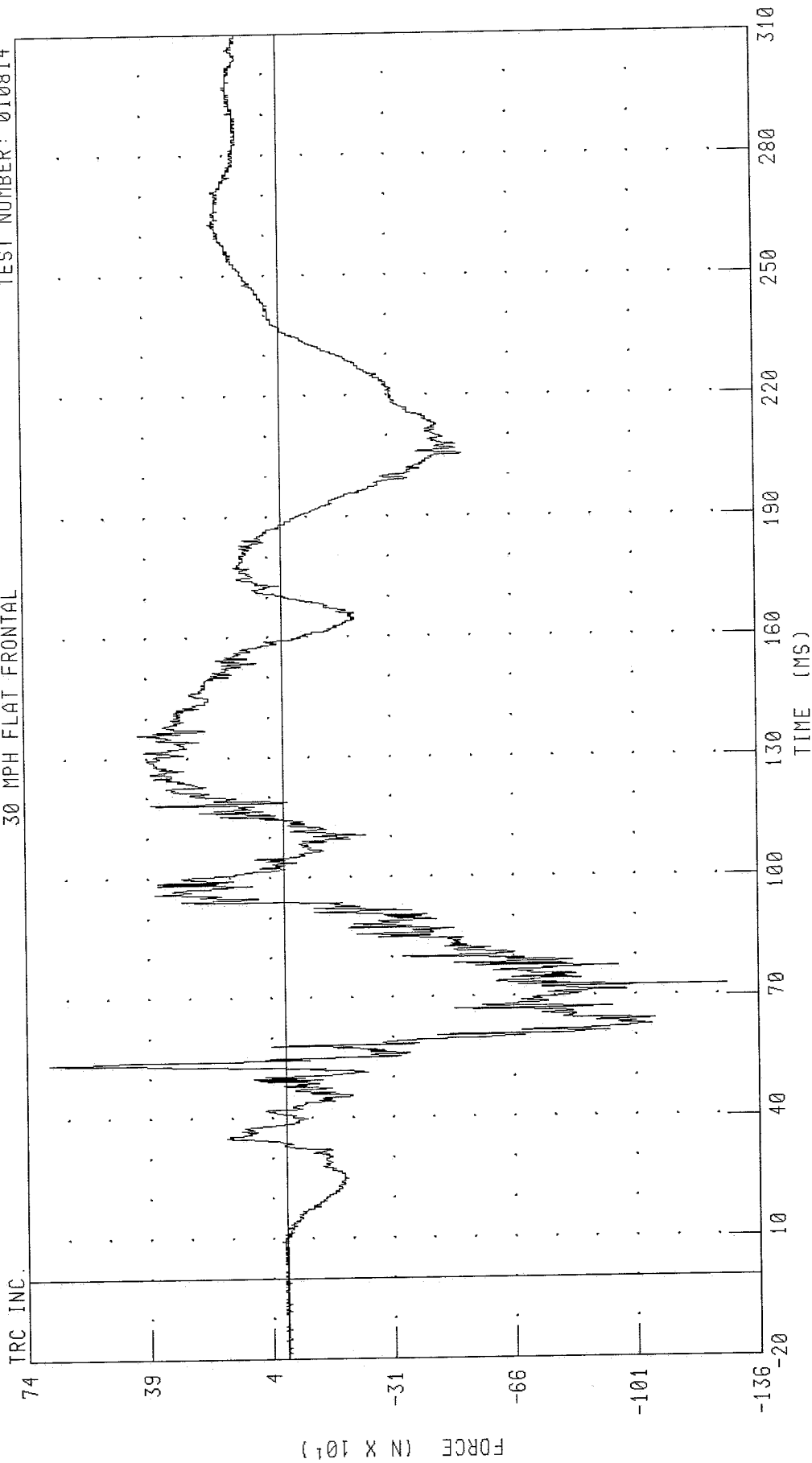
PEAK DATA: 290.26 N @ 86.48 MS; -165.89 N @ 202.00 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

DRIVER LUMBAR Z-AXIS FORCE

30 MPH FLAT FRONTAL

TEST NUMBER: 010814

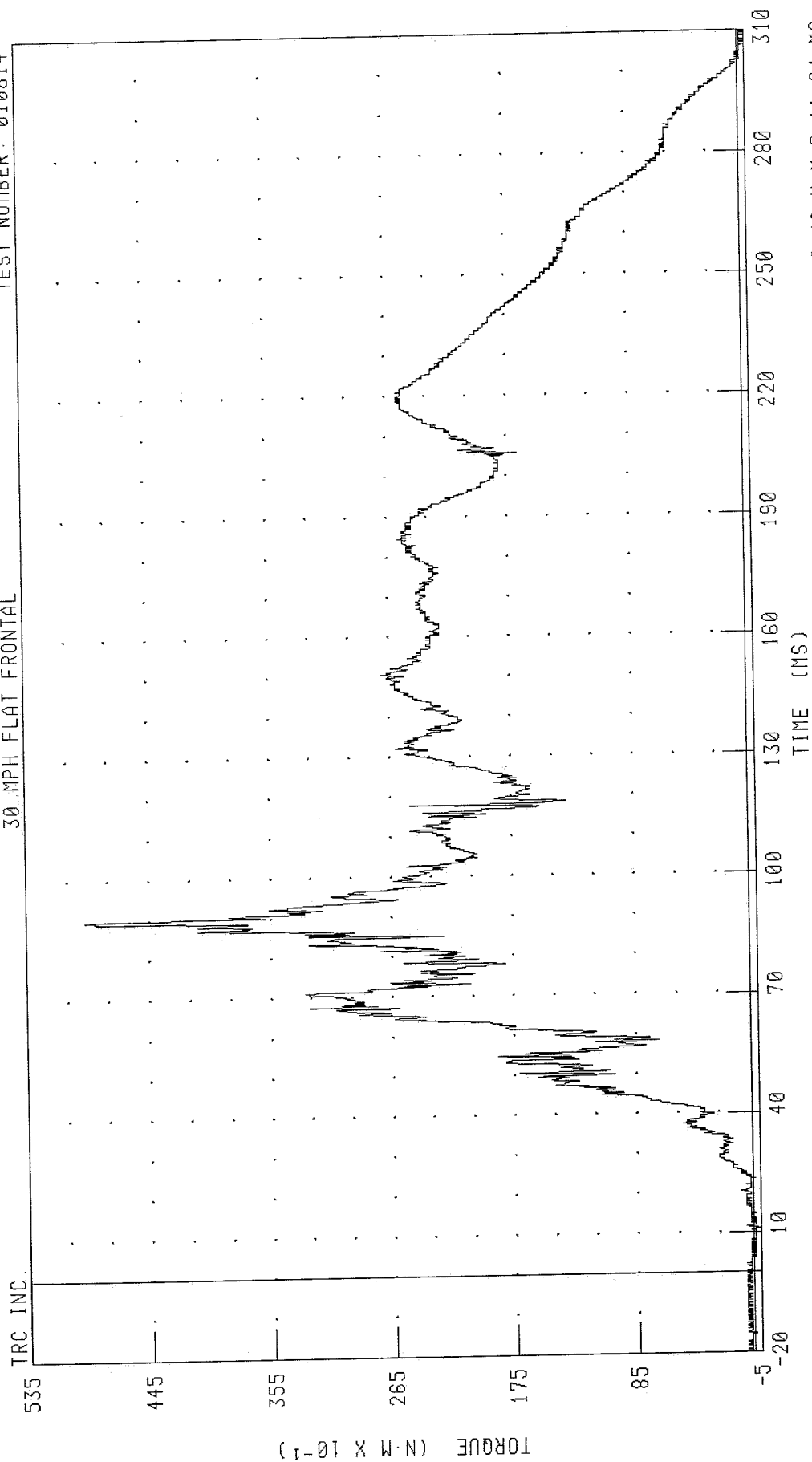


CHANNEL: LMBZF1 FILTER: CH. CLASS 1000

PEAK DATA: 674.97 N @ 53.52 MS; -1272.10 N @ 72.64 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER LUMBAR X-AXIS MOMENT
30 MPH FLAT FRONTAL

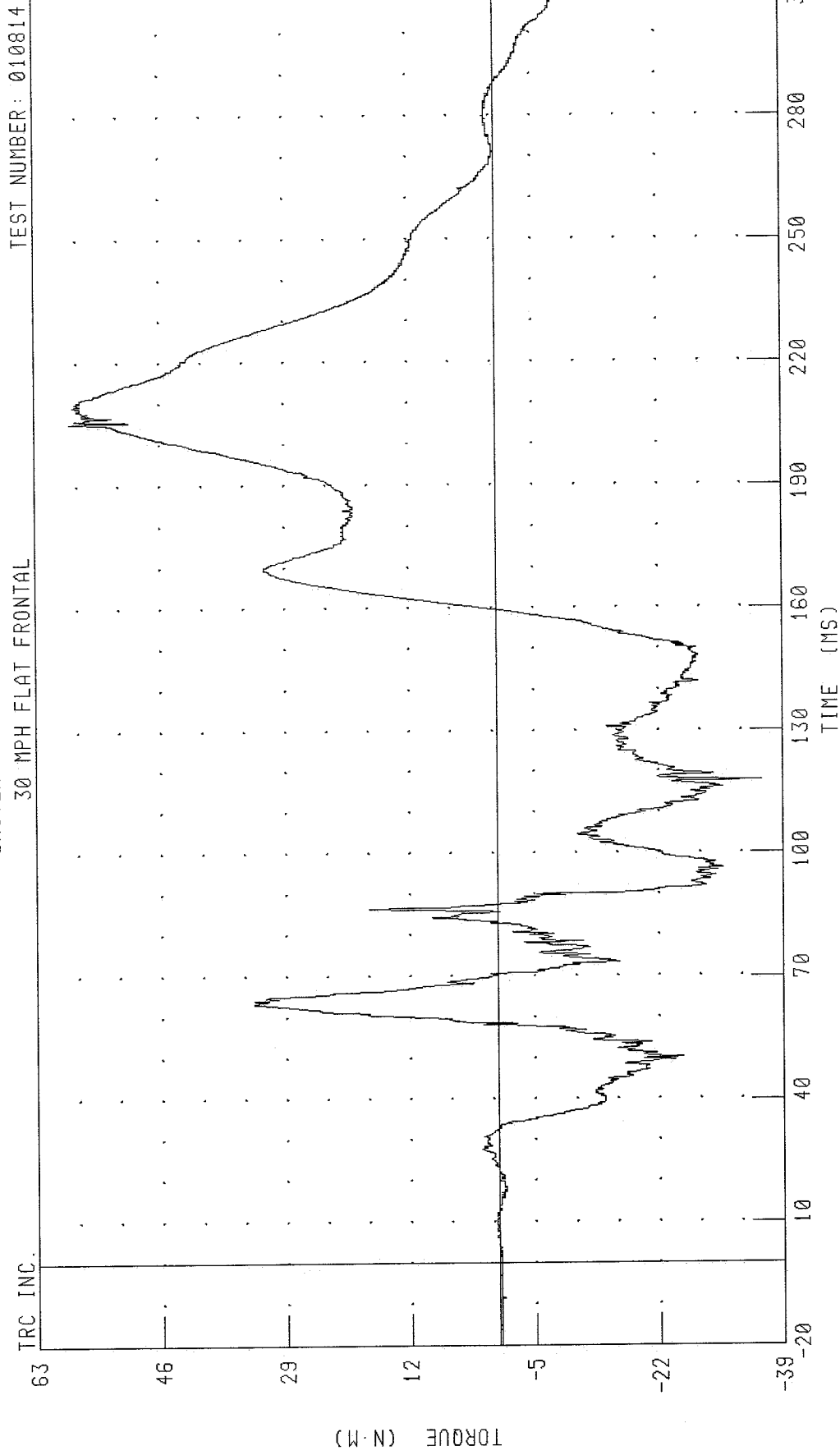
TEST NUMBER: 010814



CHANNEL: LMBXM1 FILTER: CH. CLASS 1000

PEAK DATA: 49.15 N·M @ 89.68 MS; -0.48 N·M @ 11.04 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER LUMBAR Y-AXIS MOMENT
30 MPH FLAT FRONTAL

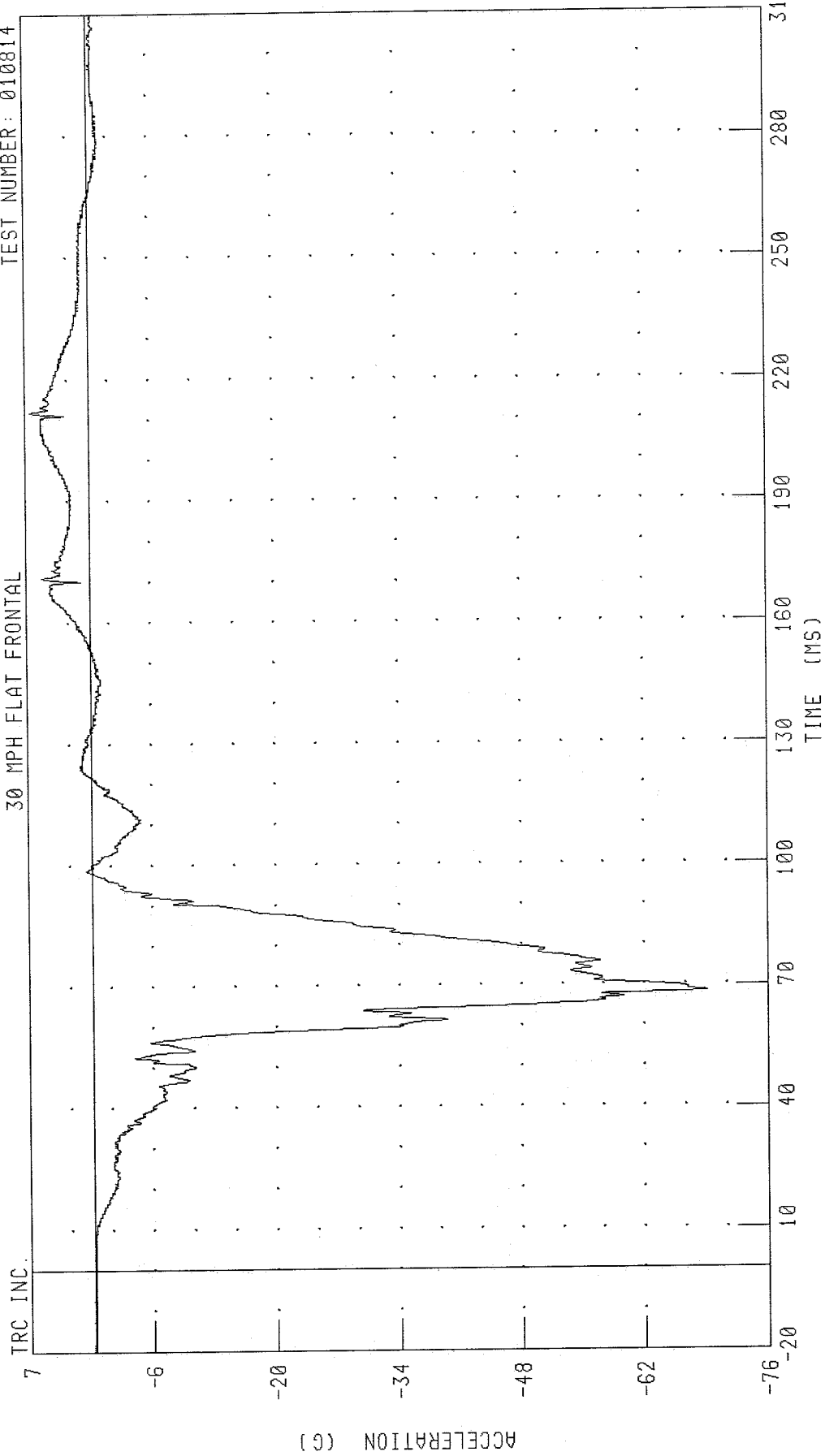


CHANNEL: LMBYM1 FILTER: CH. CLASS 1000 PEAK DATA: 58.22 N-M @ 205.28 MS; -36.10 N-M @ 117.84 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER PELVIS X-AXIS ACCELERATION

TEST NUMBER: 010814

TRC INC.

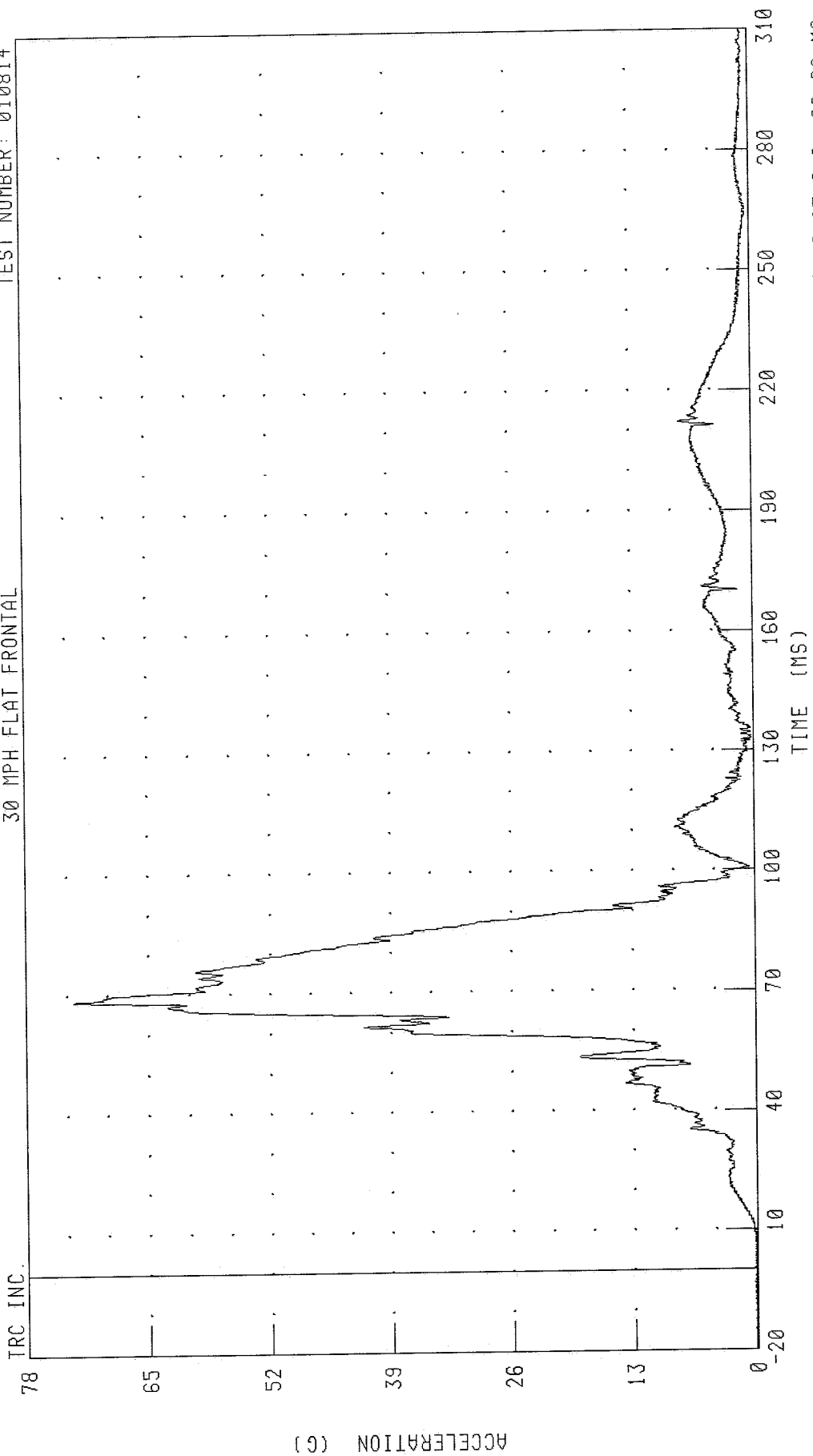


CHANNEL: PEVXC1 FILTER: CH. CLASS 1000

PEAK DATA: 6.60 G @ 212.16 MS; -69.91 G @ 68.48 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER PELVIS RESULTANT ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814



CHANNEL: PEVRG1 FILTER: CH. CLASS 1000

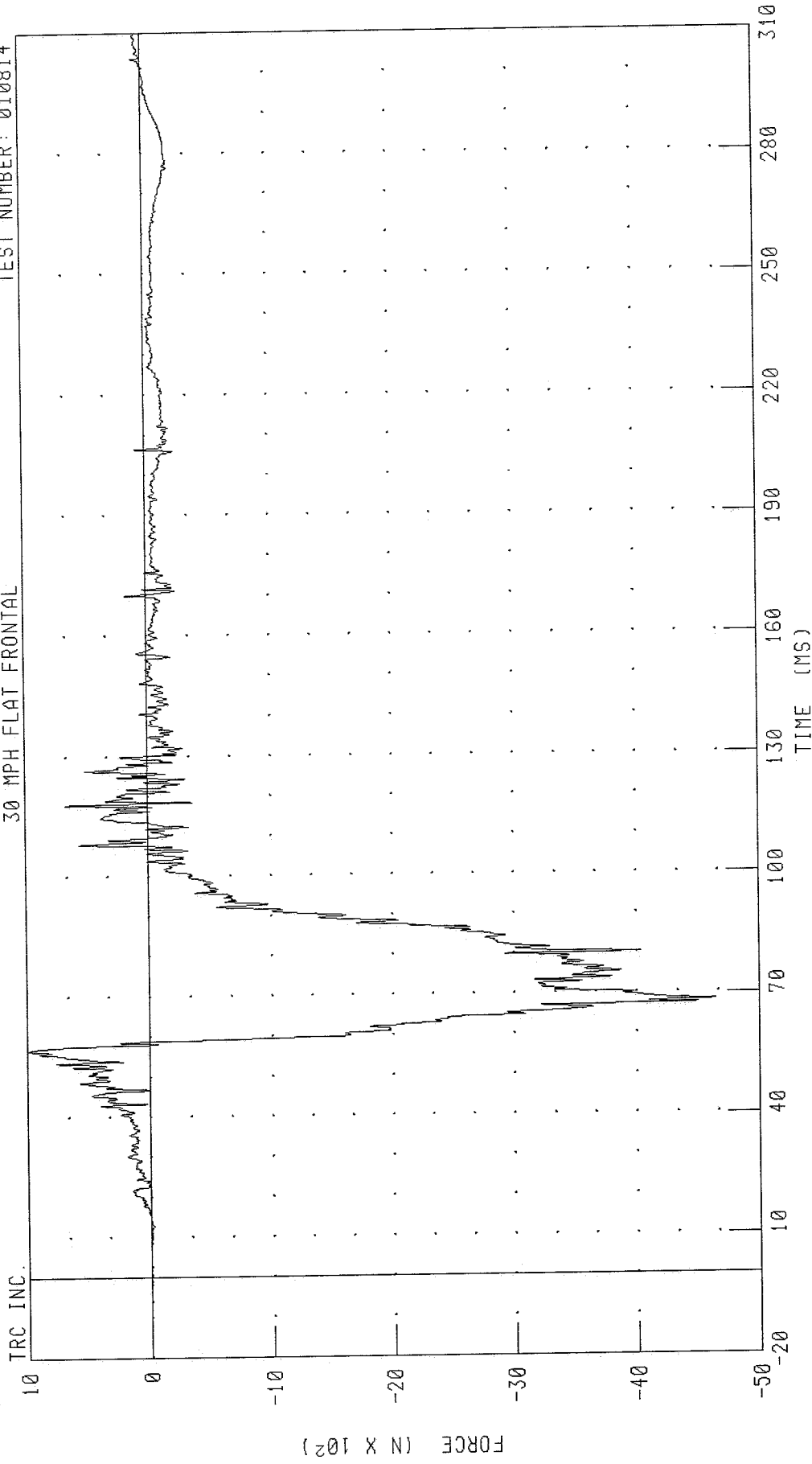
PEAK DATA: 72.91 G @ 68.48 MS; 0.07 G @ -20.00 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

DRIVER LEFT FEMUR FORCE

30 MPH FLAT FRONTAL

TEST NUMBER: 010814



CHANNEL: LFMZF1 FILTER: CH. CLASS 600

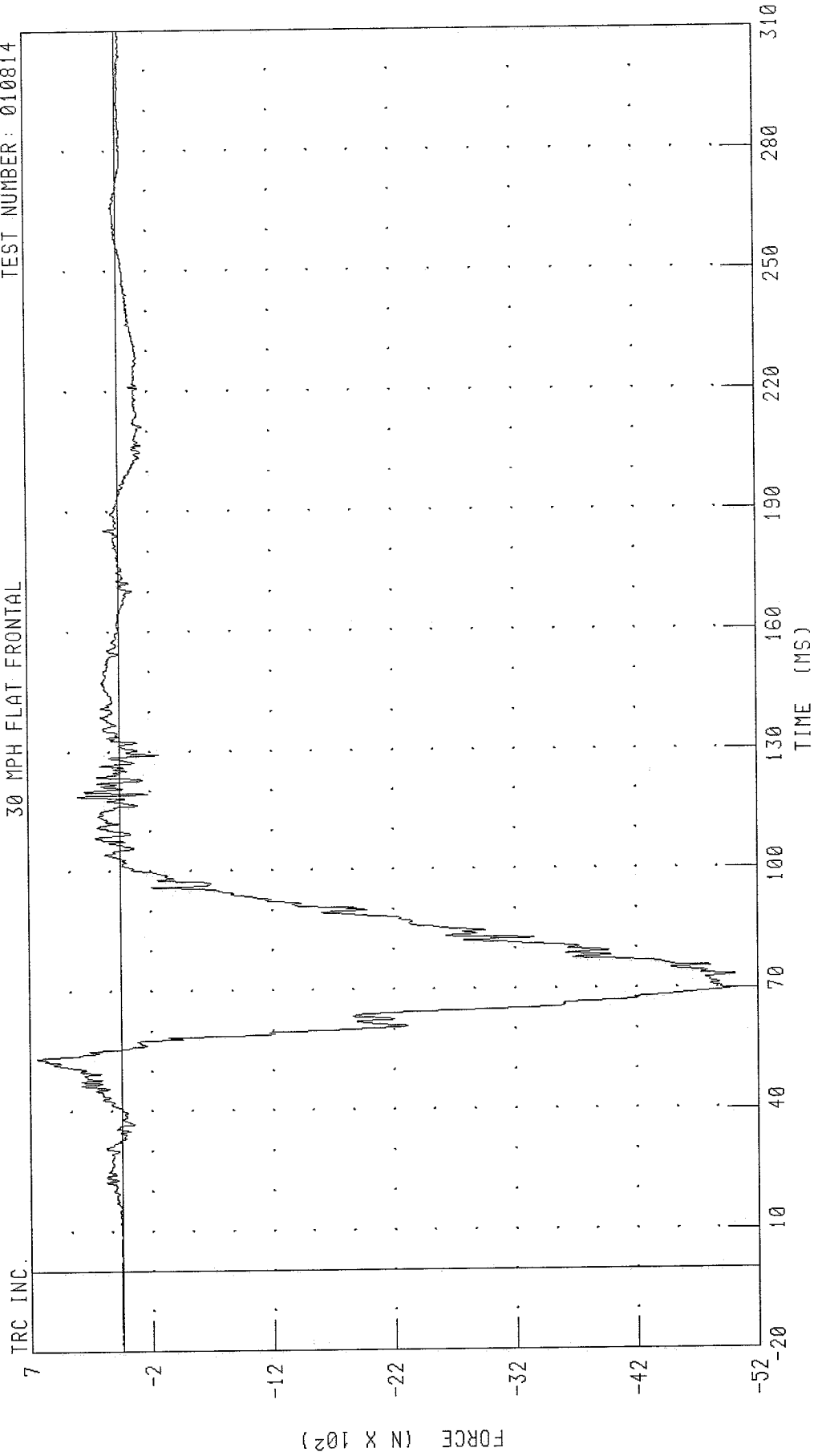
PEAK DATA: 992.89 N @ 56.64 MS, -4644.00 N @ 68.24 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

DRIVER RIGHT FEMUR FORCE

30 MPH FLAT FRONTAL

TEST NUMBER: 010814



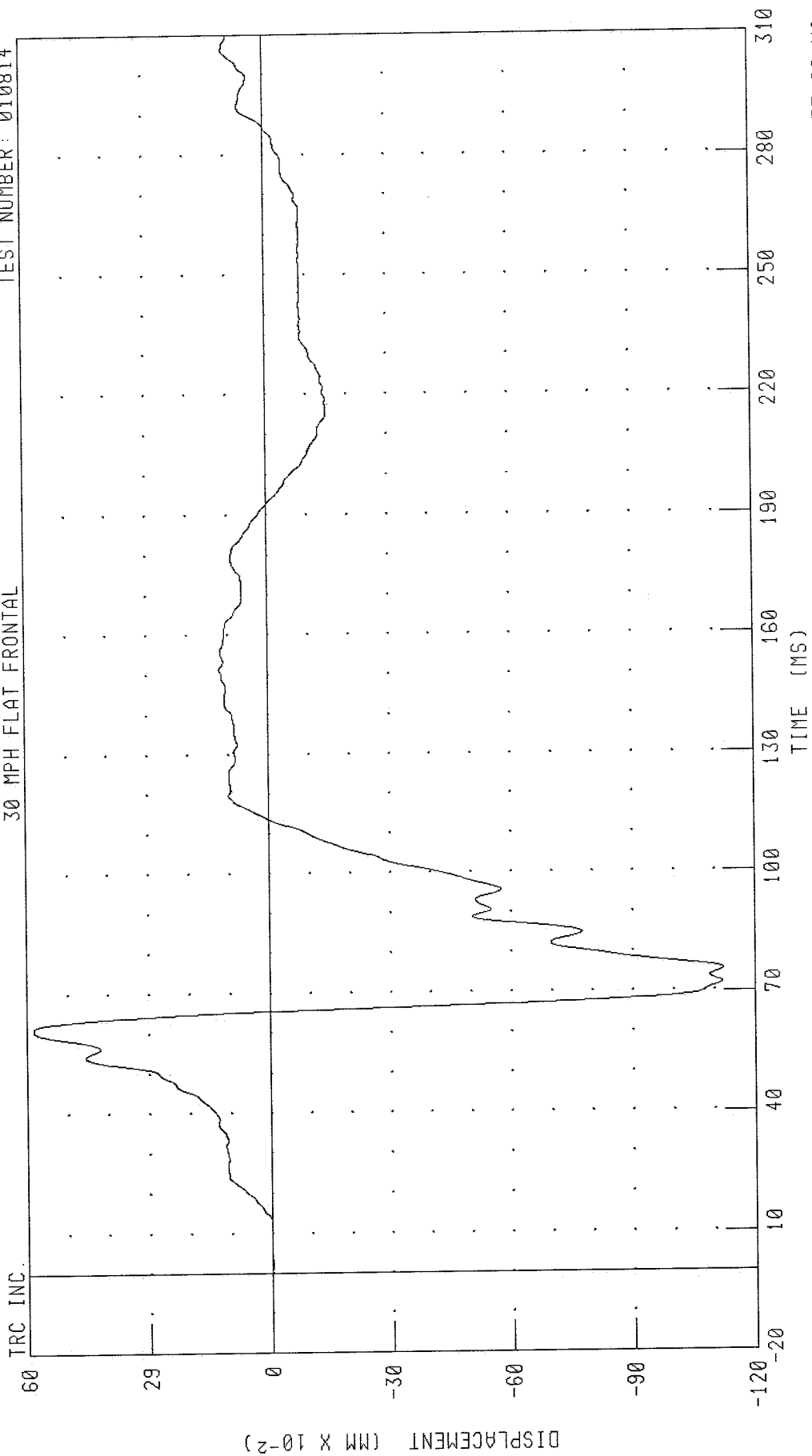
TIME (MS)

PEAK DATA: 688.70 N @ 53.28 MS; -5062.99 N @ 73.28 MS

CHANNEL: RFMZFI FILTER: CH. CLASS 600

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER LEFT KNEE DISPLACEMENT
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

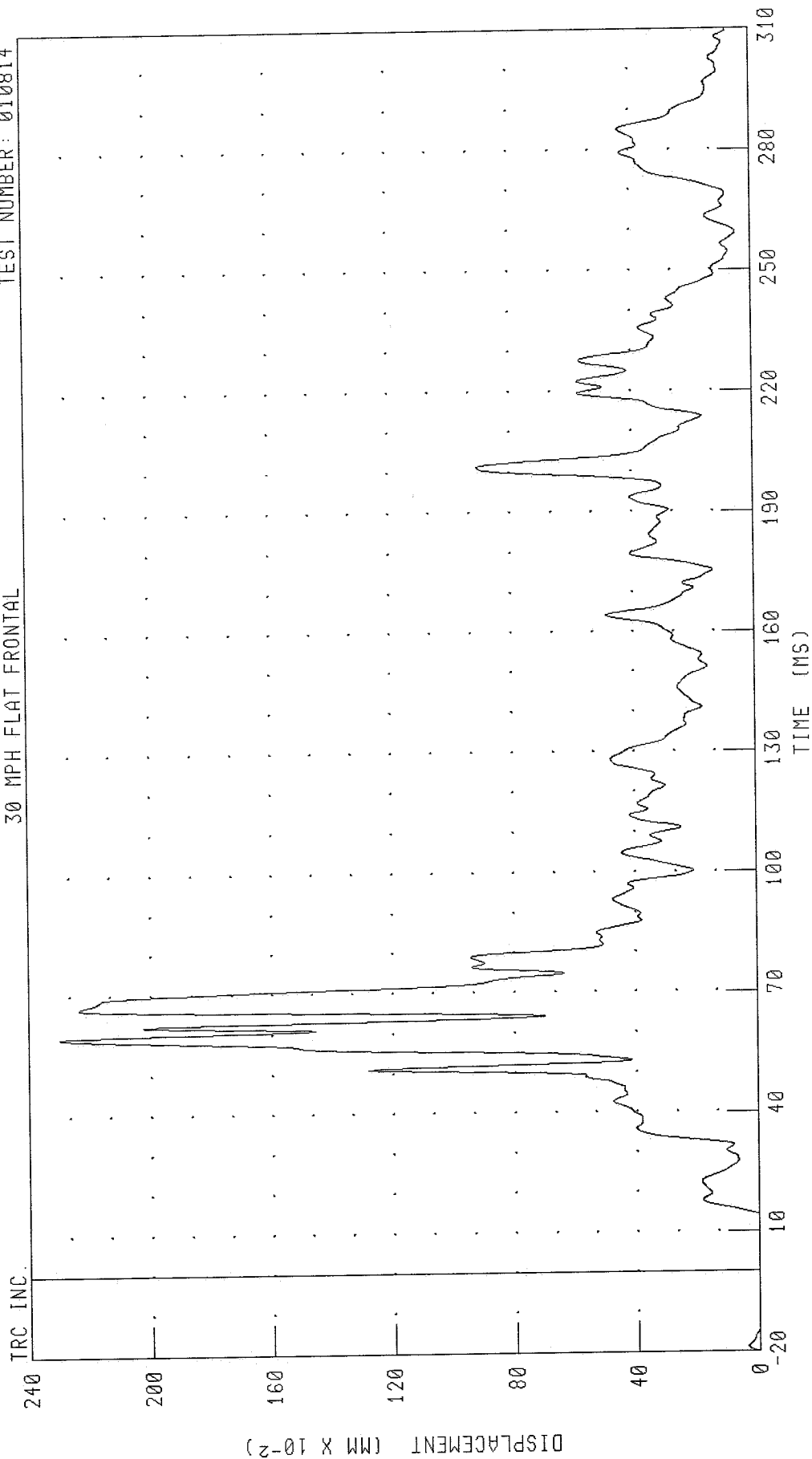


CHANNEL: KNLXD1 FILTER: CH. CLASS 180

PEAK DATA: 0.58 MM @ 61.20 MS; -1.12 MM @ 75.60 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER LEFT KNEE DISPLACEMENT
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

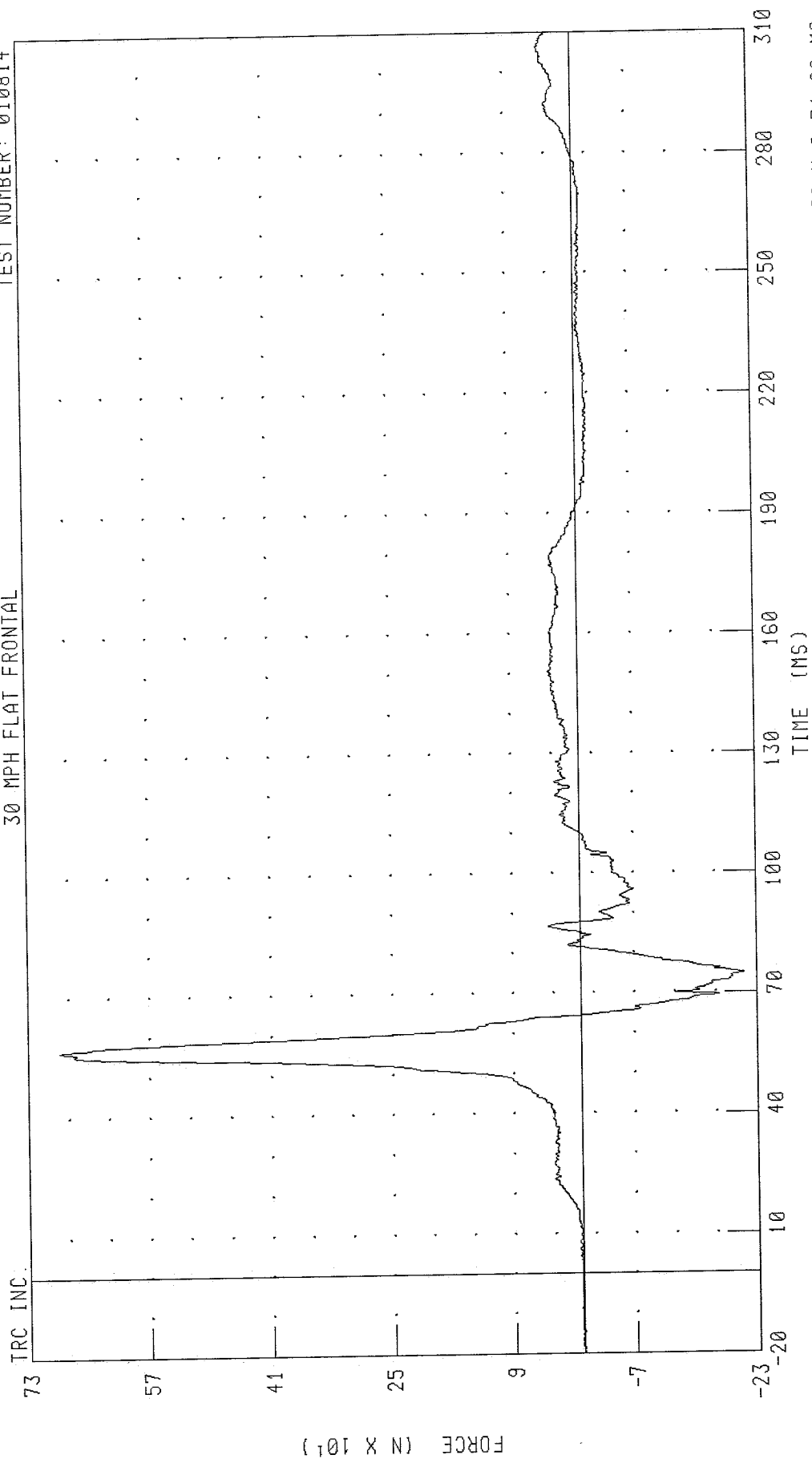


CHANNEL: KNRXD1 FILTER: CH. CLASS 180

PEAK DATA: 2.30 MM @ 59.36 MS; -0.06 MM @ 12.00 MS

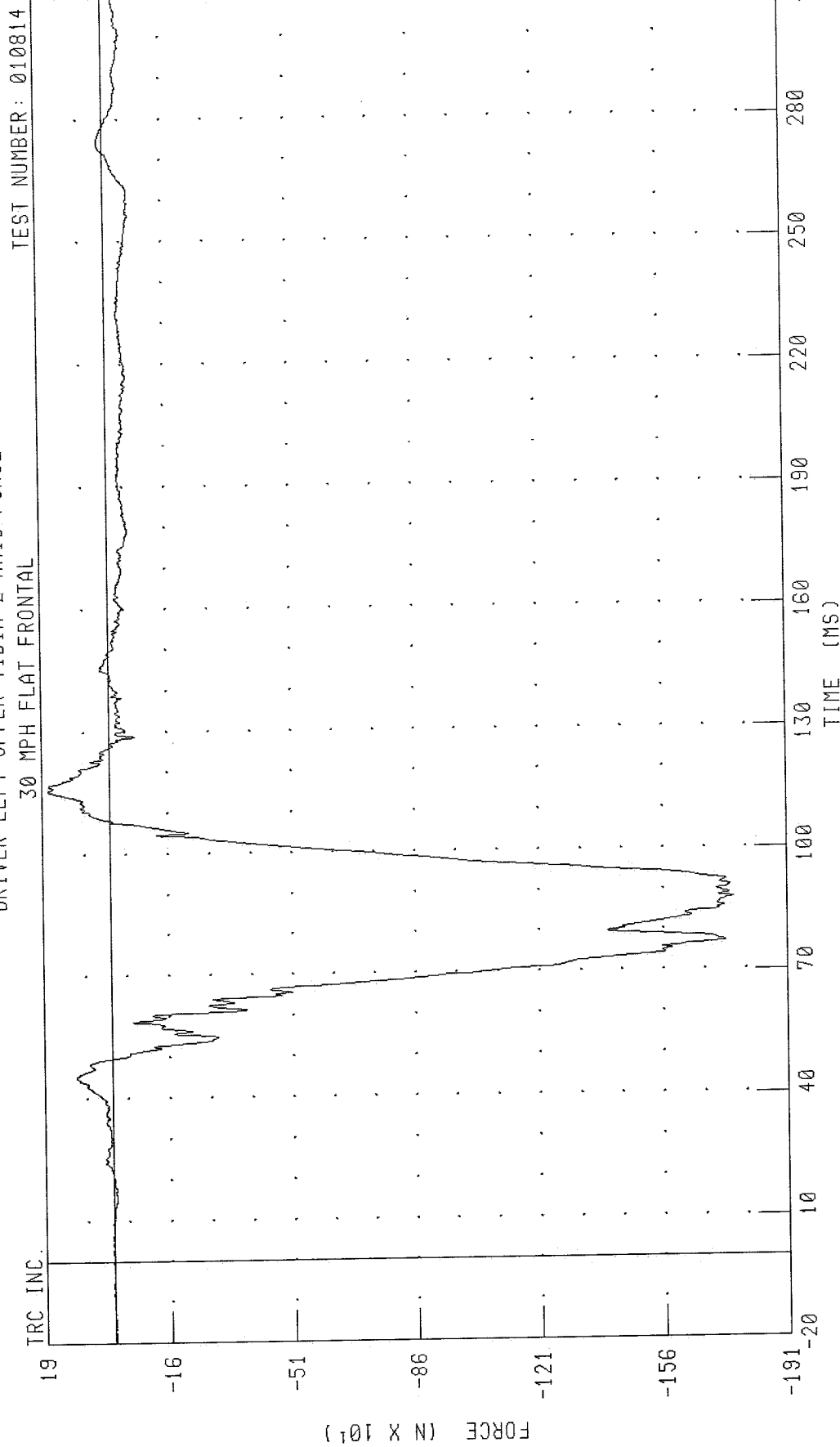
2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER LEFT UPPER TIBIA X-AXIS FORCE
30 MPH FLAT FRONTAL

TEST NUMBER: 010814



CHANNEL: TBLXF1 FILTER: CH. CLASS 600
PEAK DATA: 688.09 N @ 56.48 MS; -213.69 N @ 74.88 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER LEFT UPPER TIBIA Z-AXIS FORCE
30 MPH FLAT FRONTAL

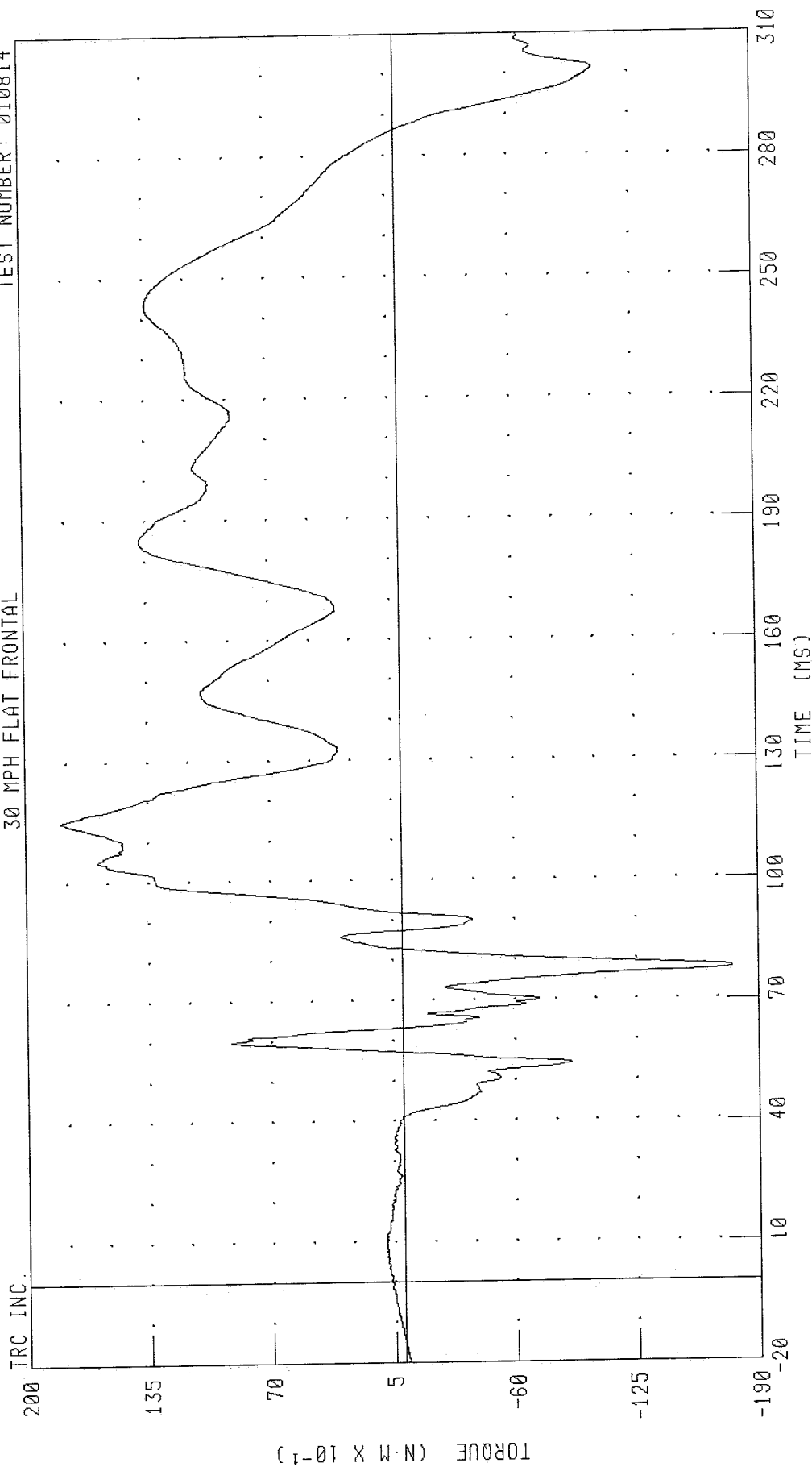


CHANNEL: TBLZF1 FILTER: CH. CLASS 600

PEAK DATA: 174.38 N @ 115.60 MS; -1758.57 N @ 87.92 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER LEFT UPPER TIBIA MOMENT ABOUT X AXIS
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

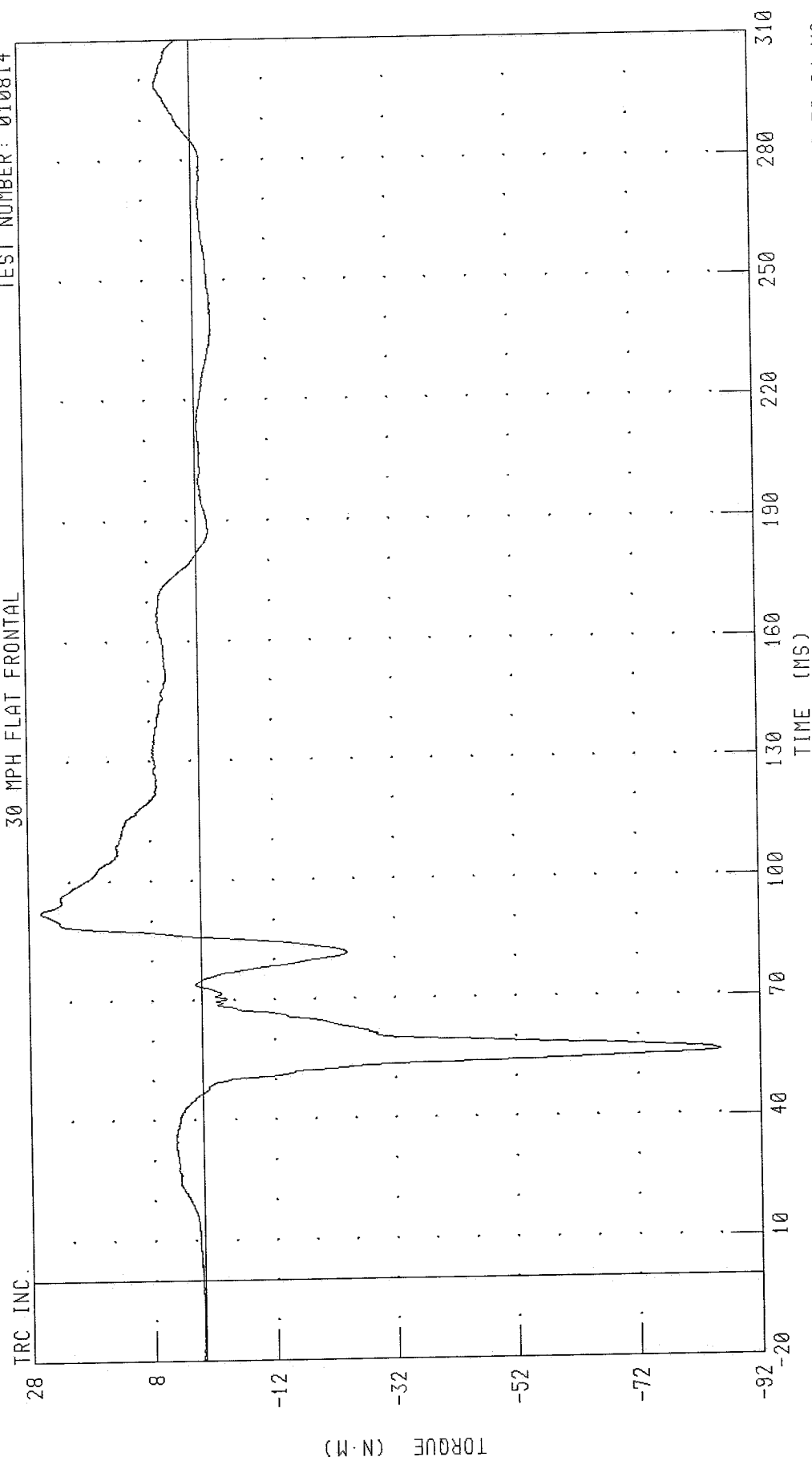


CHANNEL: TBLXM1 FILTER: CH. CLASS 600

PEAK DATA: 18.14 N·M @ 115.04 MS, -17.65 N·M @ 77.92 MS

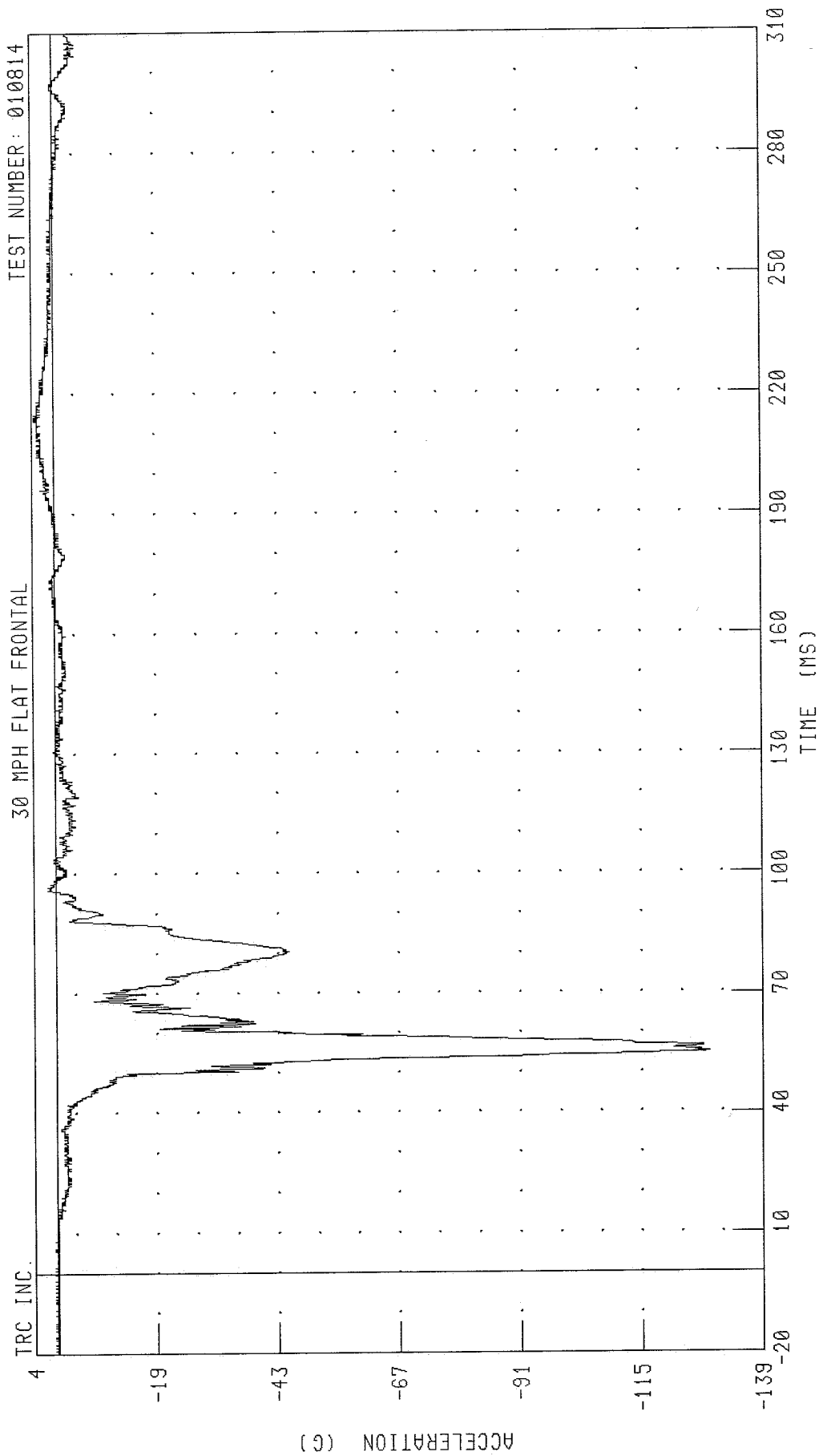
2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER LEFT UPPER TIBIA MOMENT ABOUT Y AXIS
30 MPH FLAT FRONTAL

TEST NUMBER: 010814



CHANNEL: TBLYM1 FILTER: CH. CLASS 600
PEAK DATA: 25.99 N·M @ 92.24 MS; -85.61 N·M @ 56.24 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER LEFT TIBIA X-AXIS ACCELERATION

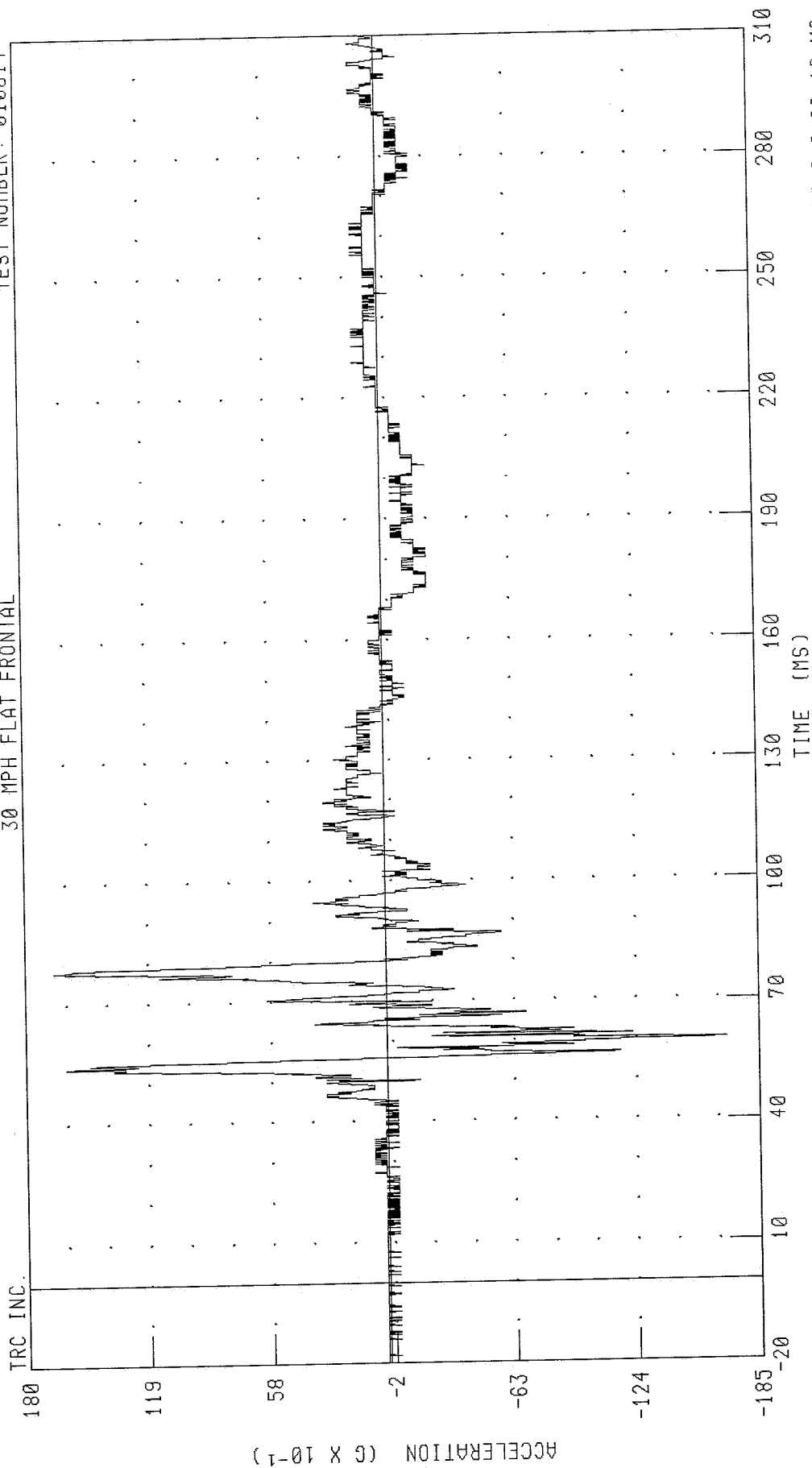


CHANNEL: TBLXG1 FILTER: CH. CLASS 1000

PEAK DATA: 3.98 G @ 213.36 MS, -129.22 G @ 55.04 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER LEFT TIBIA Y-AXIS ACCELERATION
30 MPH FLAT FRONTAL

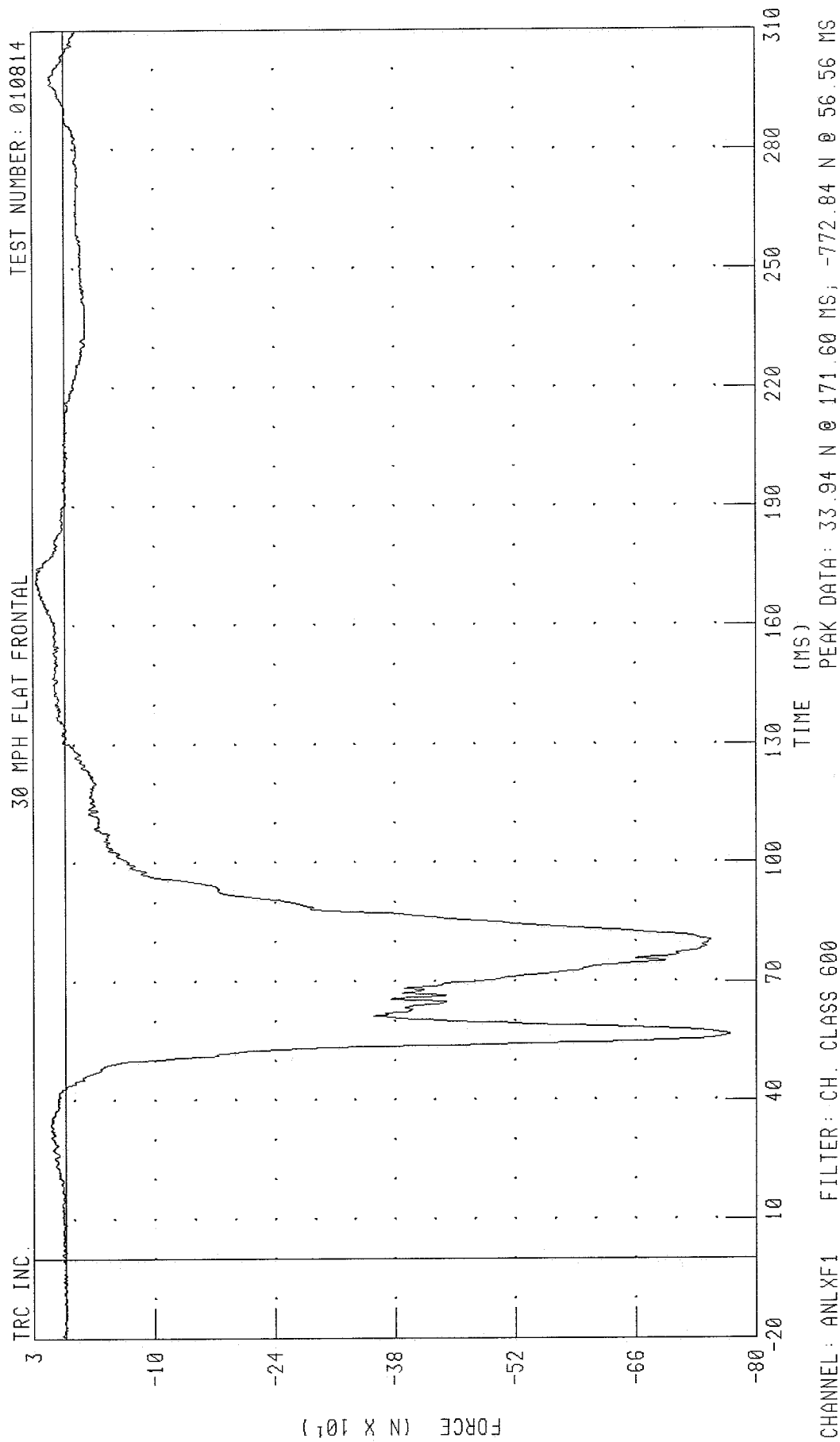
TEST NUMBER: 010814



PEAK DATA: 16.57 G @ 78.00 MS; -16.99 G @ 60.16 MS

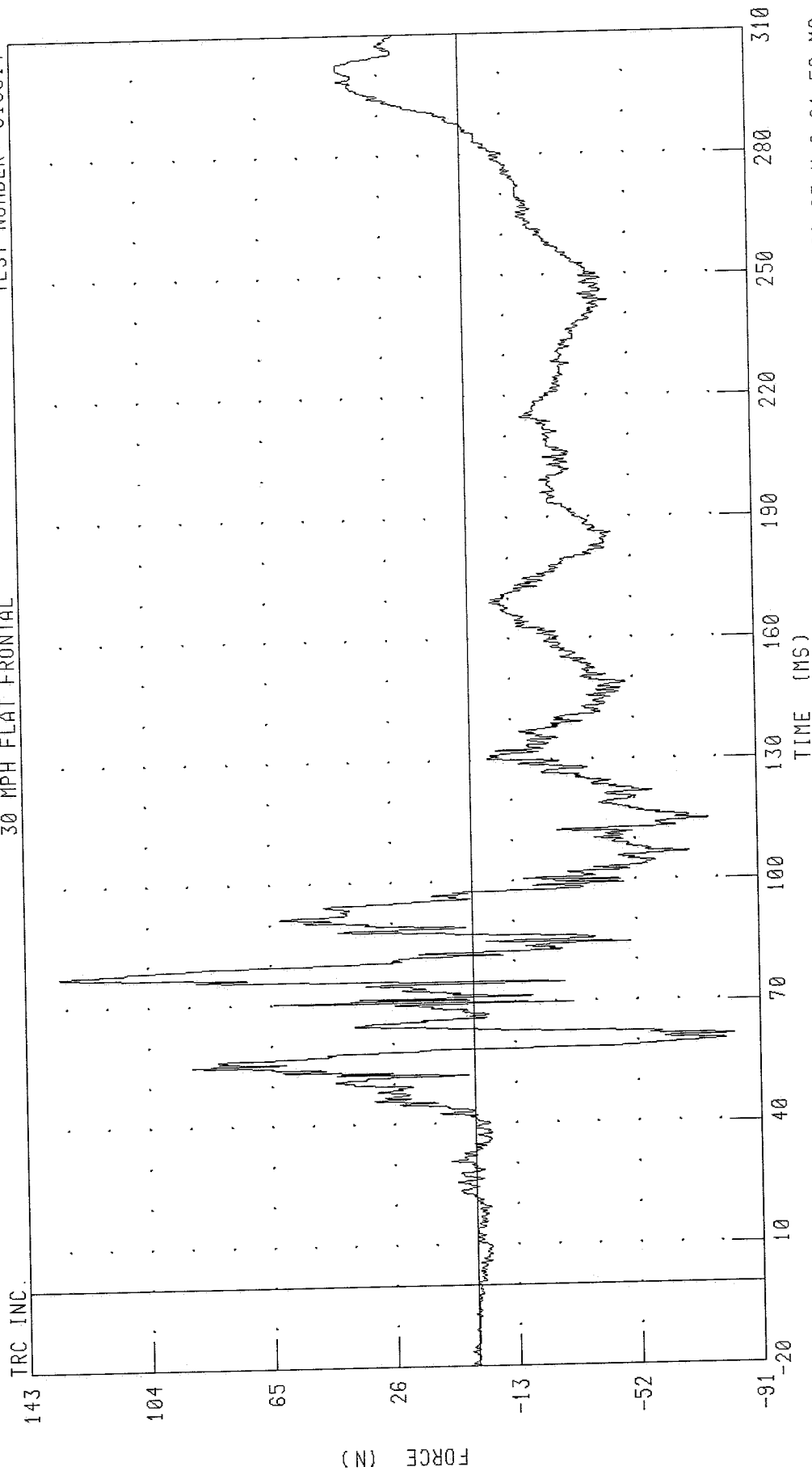
CHANNEL: TBLV01 FILTER: CH. CLASS 1000

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER LEFT LOWER TIBIA X-AXIS FORCE



2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER LEFT LOWER TIBIA Y-AXIS FORCE
30 MPH FLAT FRONTAL

TEST NUMBER: 010814



CHANNEL: ANLYF1 FILTER: CH. CLASS 600

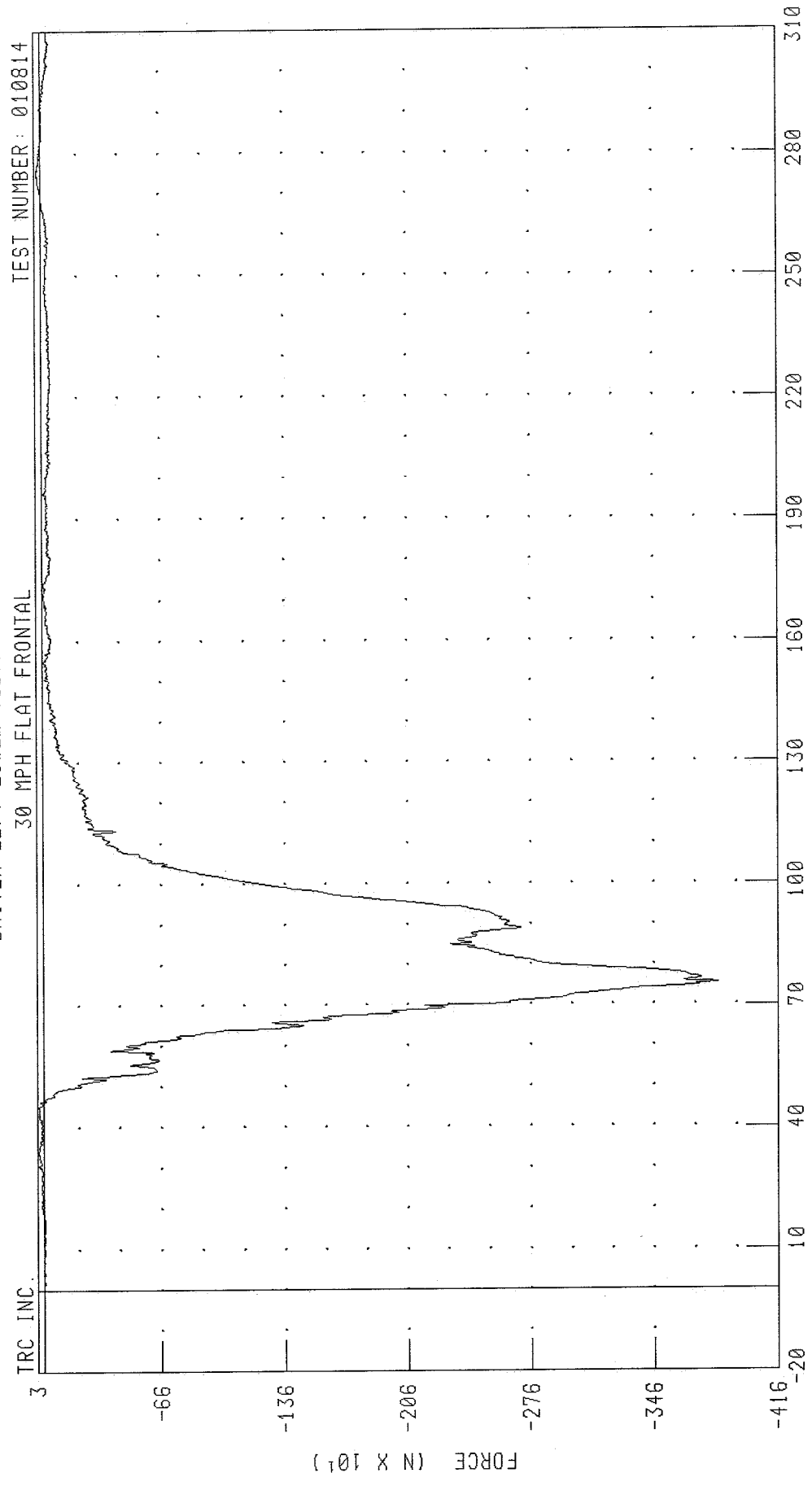
PEAK DATA: 132.20 N @ 77.44 MS; -82.83 N @ 61.52 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

DRIVER LEFT LOWER TIBIA Z-AXIS FORCE

TEST NUMBER: 010814

30 MPH FLAT FRONTAL

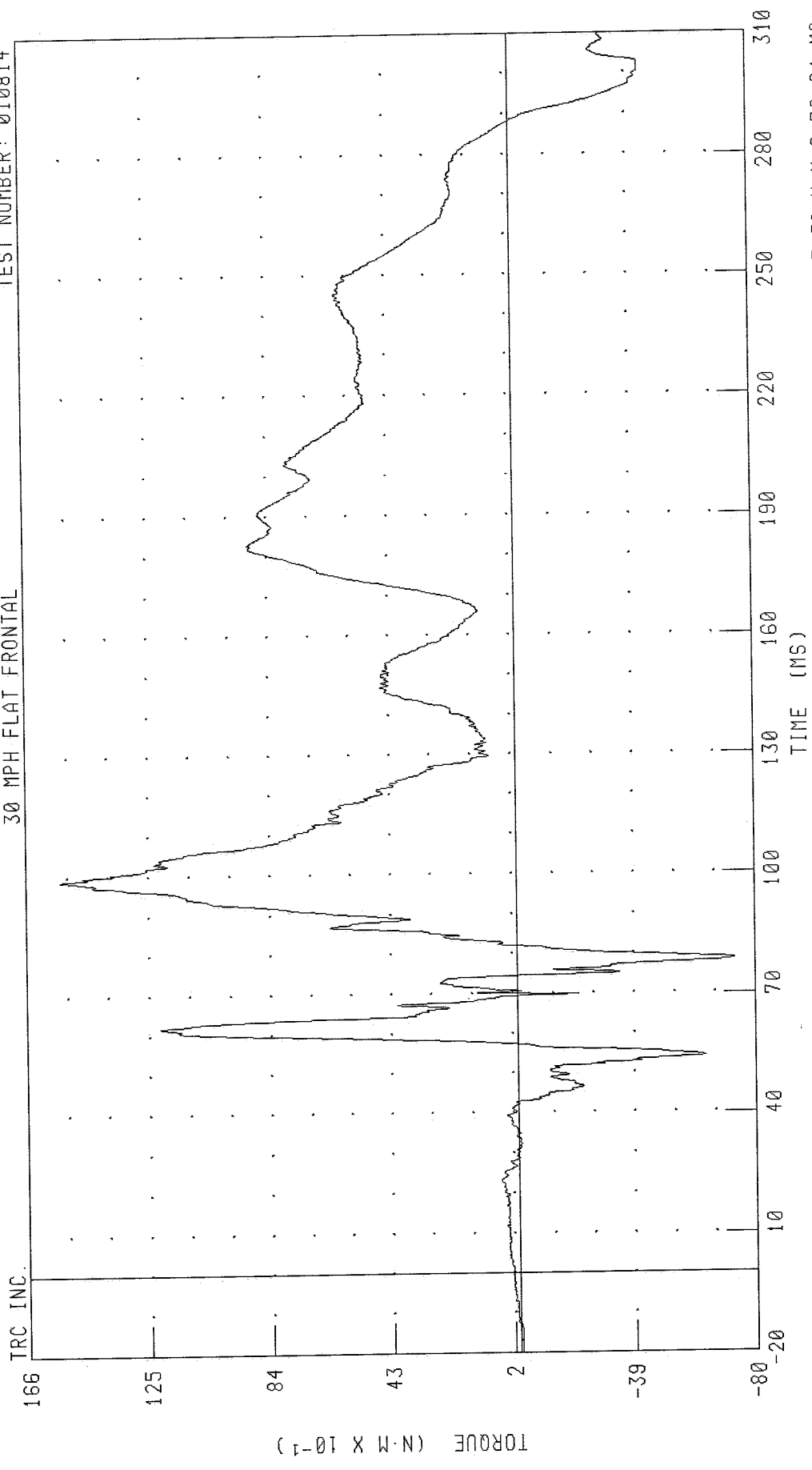


CHANNEL: ANLZF1 FILTER: CH. CLASS 600

PEAK DATA: 34.41 N @ 33.92 MS, -3827.15 N @ 75.44 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER LEFT LOWER TIBIA MOMENT ABOUT X AXIS
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

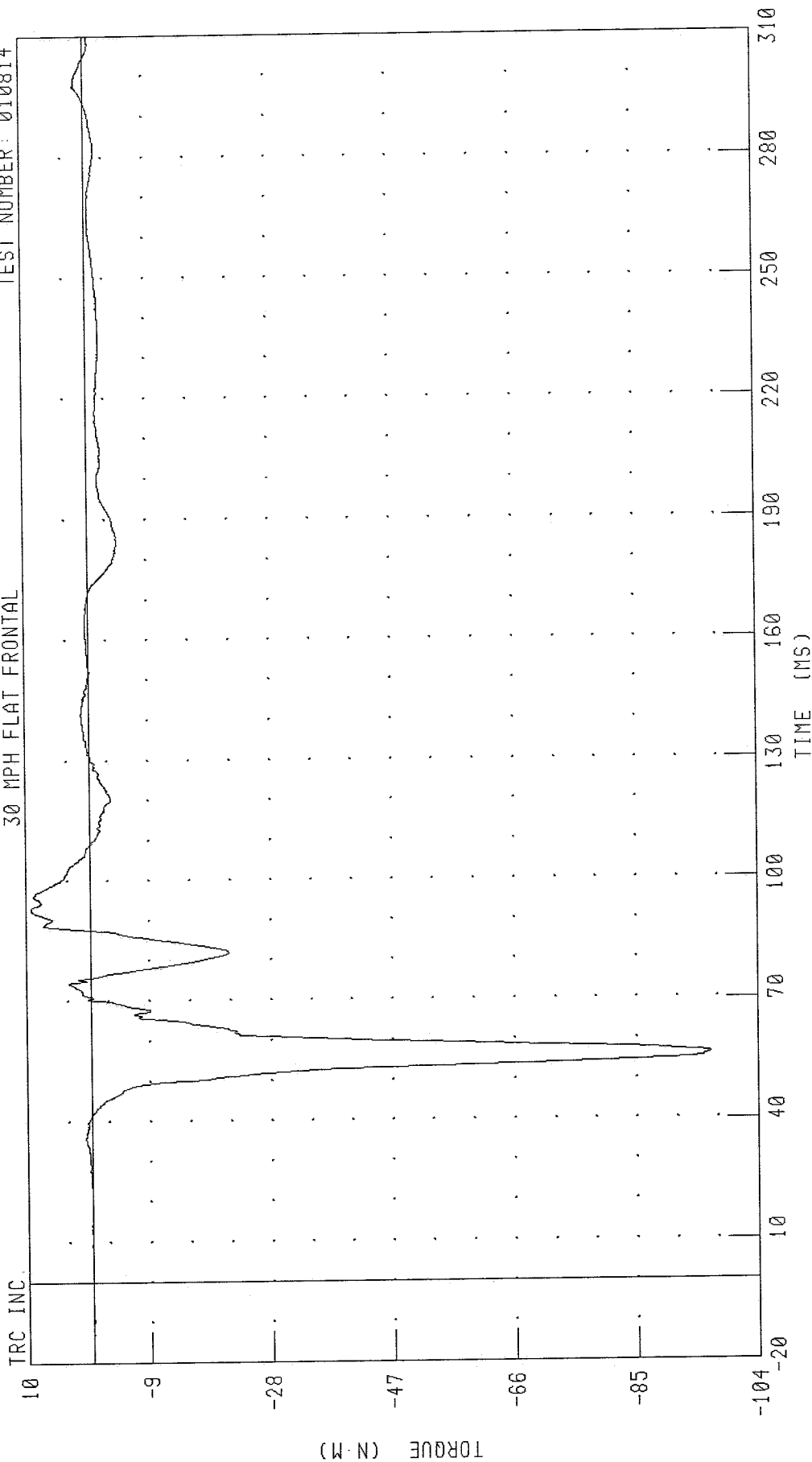


PEAK DATA: 15.45 N·M @ 98.96 MS; -7.32 N·M @ 78.64 MS

CHANNEL: ANLXM1 FILTER: CH. CLASS 600

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER LEFT LOWER TIBIA MOMENT ABOUT Y AXIS
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

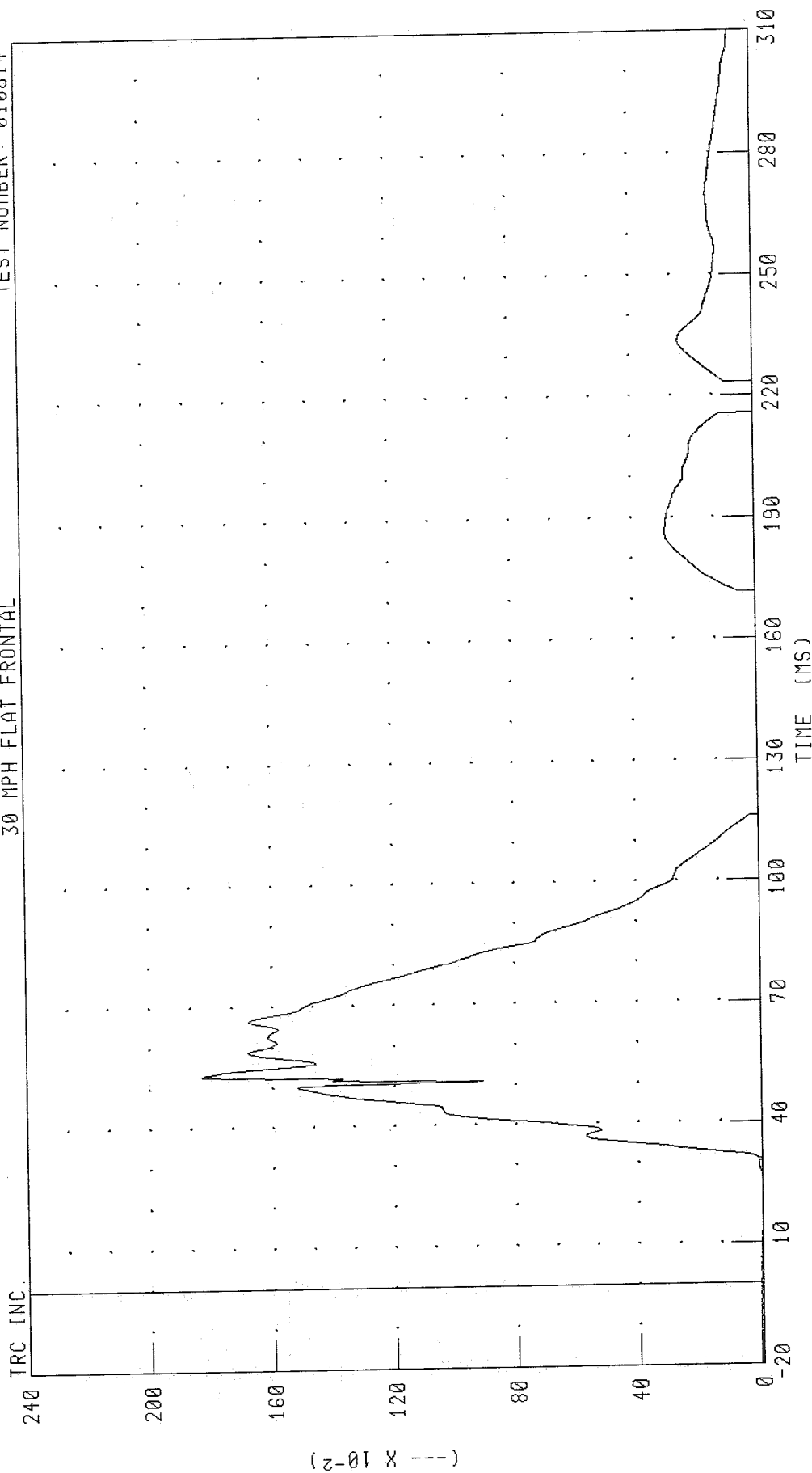


CHANNEL: ANLYM1 FILTER: CH. CLASS 600

PEAK DATA: 9.29 N-M @ 93.12 MS, -96.63 N-M @ 56.40 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
 DRIVER NECK TENSION/EXTENSION
 30 MPH FLAT FRONTAL

TEST NUMBER: 010814

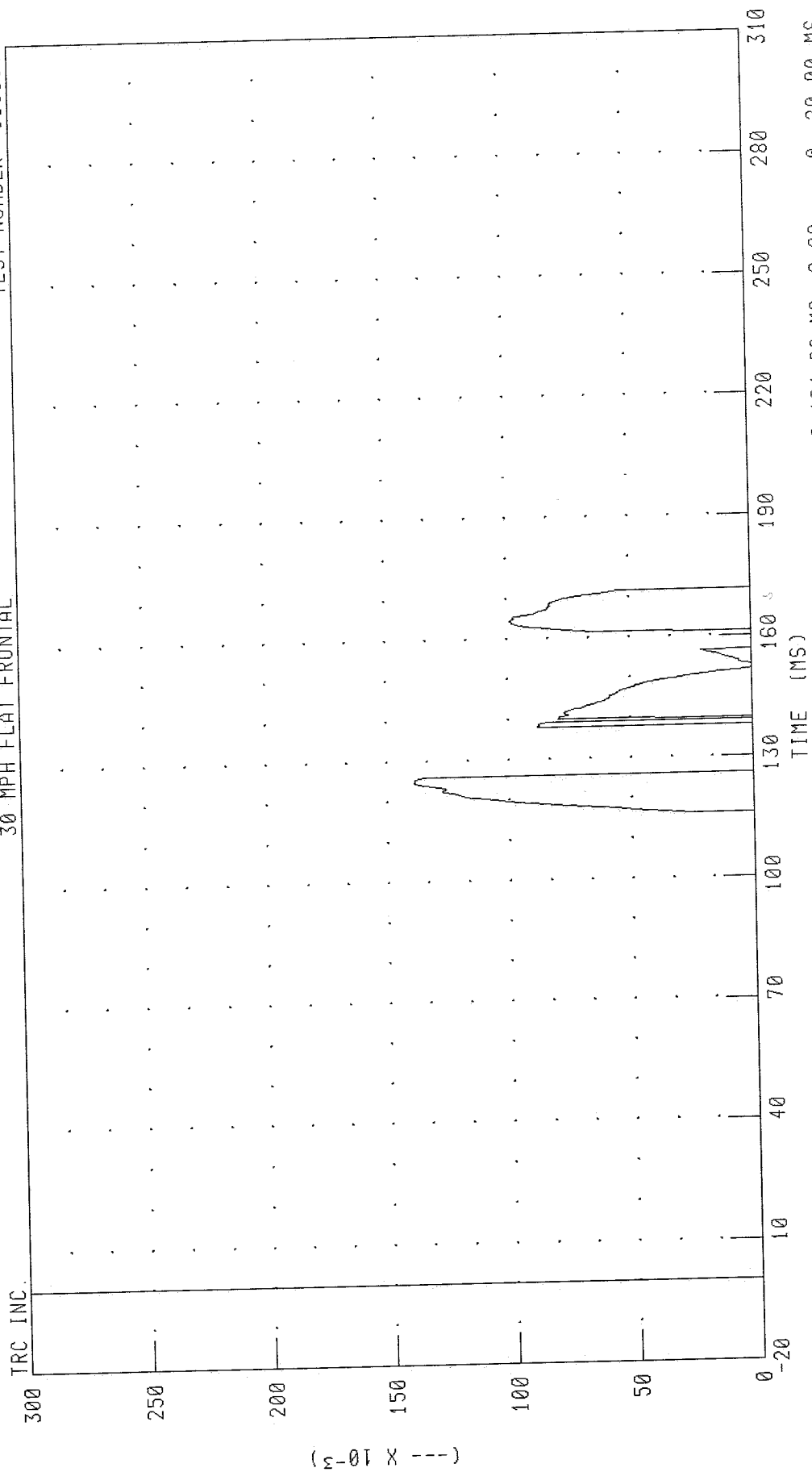


PEAK DATA: 1.83 --- @ 53.12 MS; 0.00 --- @ -11.84 MS

CHANNEL: NTE1 FILTER: CH. CLASS 600

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
 DRIVER NECK TENSION/FLEXION
 30 MPH FLAT FRONTAL

TEST NUMBER: 010814



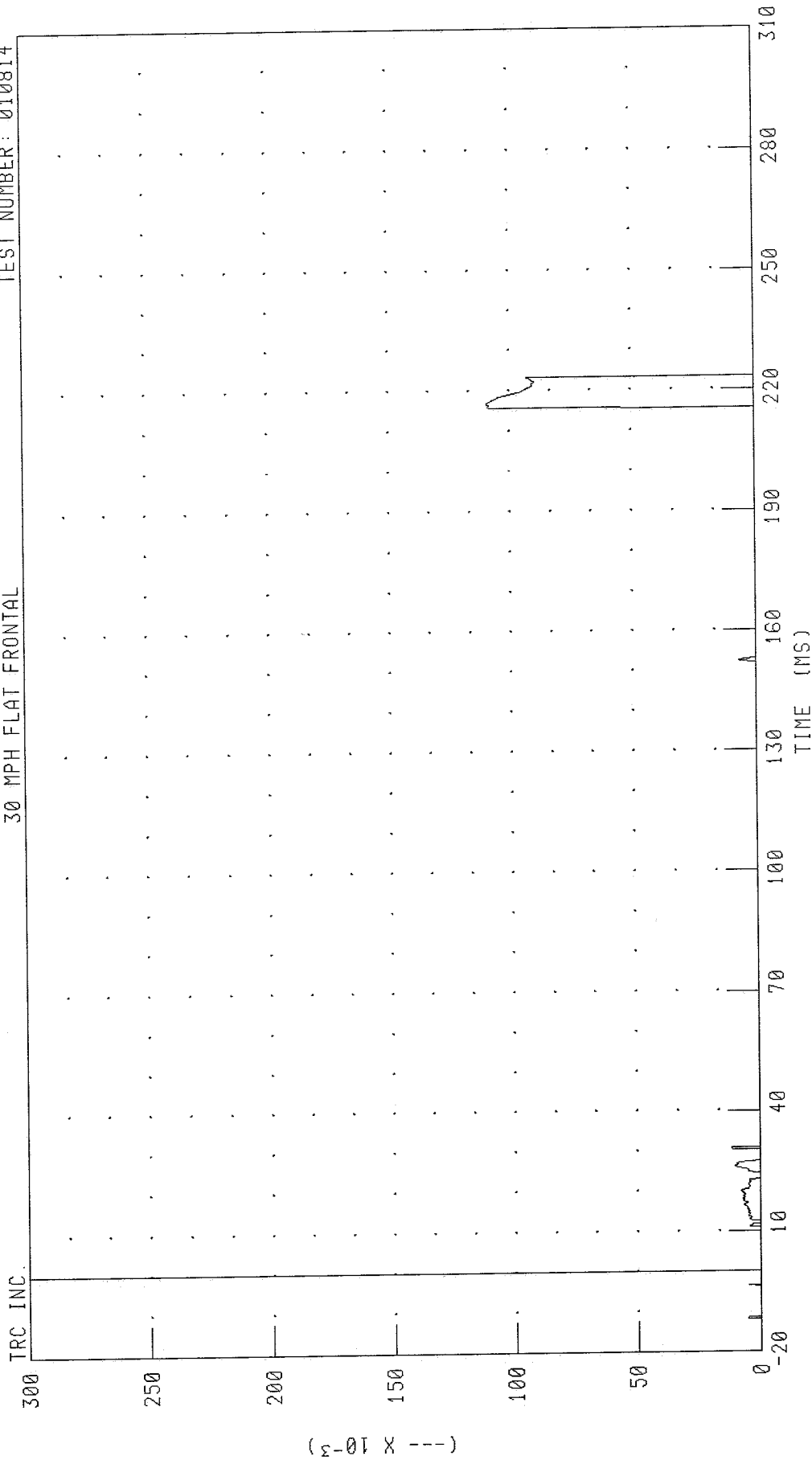
(--- X 10⁻³)

PEAK DATA: 0.14 --- @ 124.80 MS; 0.00 --- @ -20.00 MS

CHANNEL: NTF1 FILTER: CH. CLASS 600

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER NECK COMPRESSION/EXTENSION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

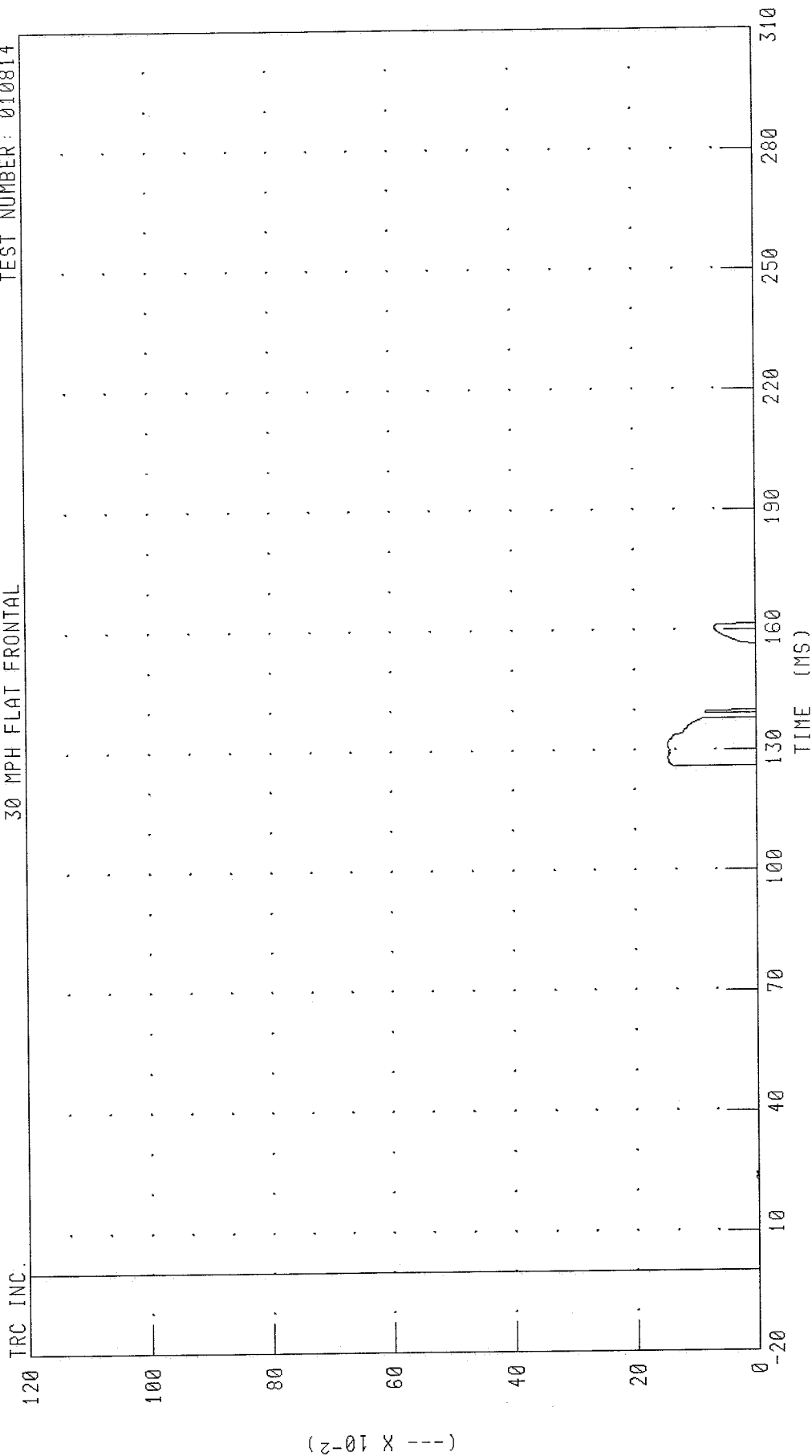


CHANNEL: NCE1 FILTER: CH. CLASS 600

PEAK DATA: 0.11 --- @ 216.80 MS; 0.00 --- @ -20.00 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
 DRIVER NECK COMPRESSION/FLEXION
 30 MPH FLAT FRONTAL

TEST NUMBER: 010814

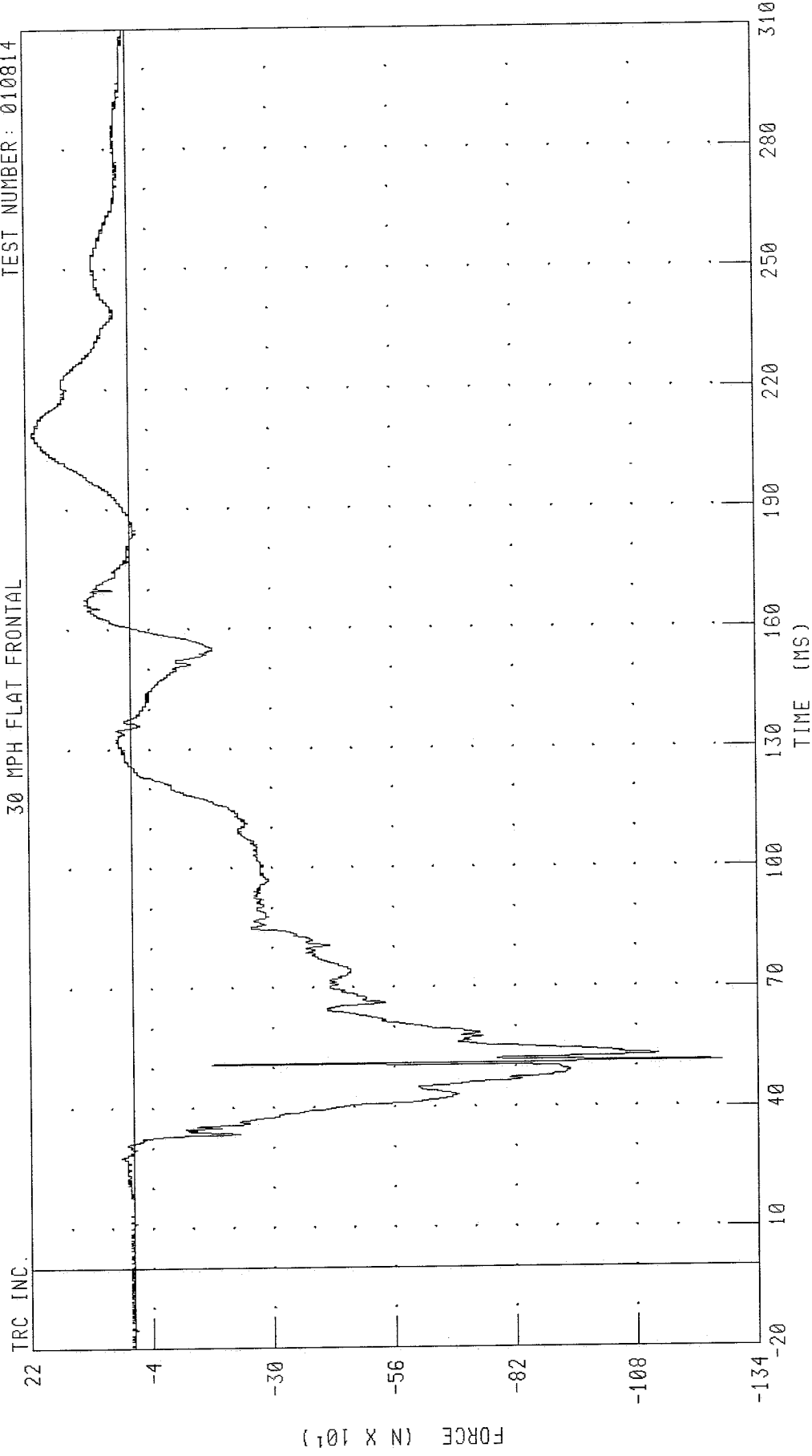


CHANNEL: NCF1 FILTER: CH. CLASS 600

PEAK DATA: 0.15 --- 0 131.52 MS, 0.00 --- 0 -20.00 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER NECK LOWER X-AXIS SHEAR FORCE
30 MPH FLAT FRONTAL

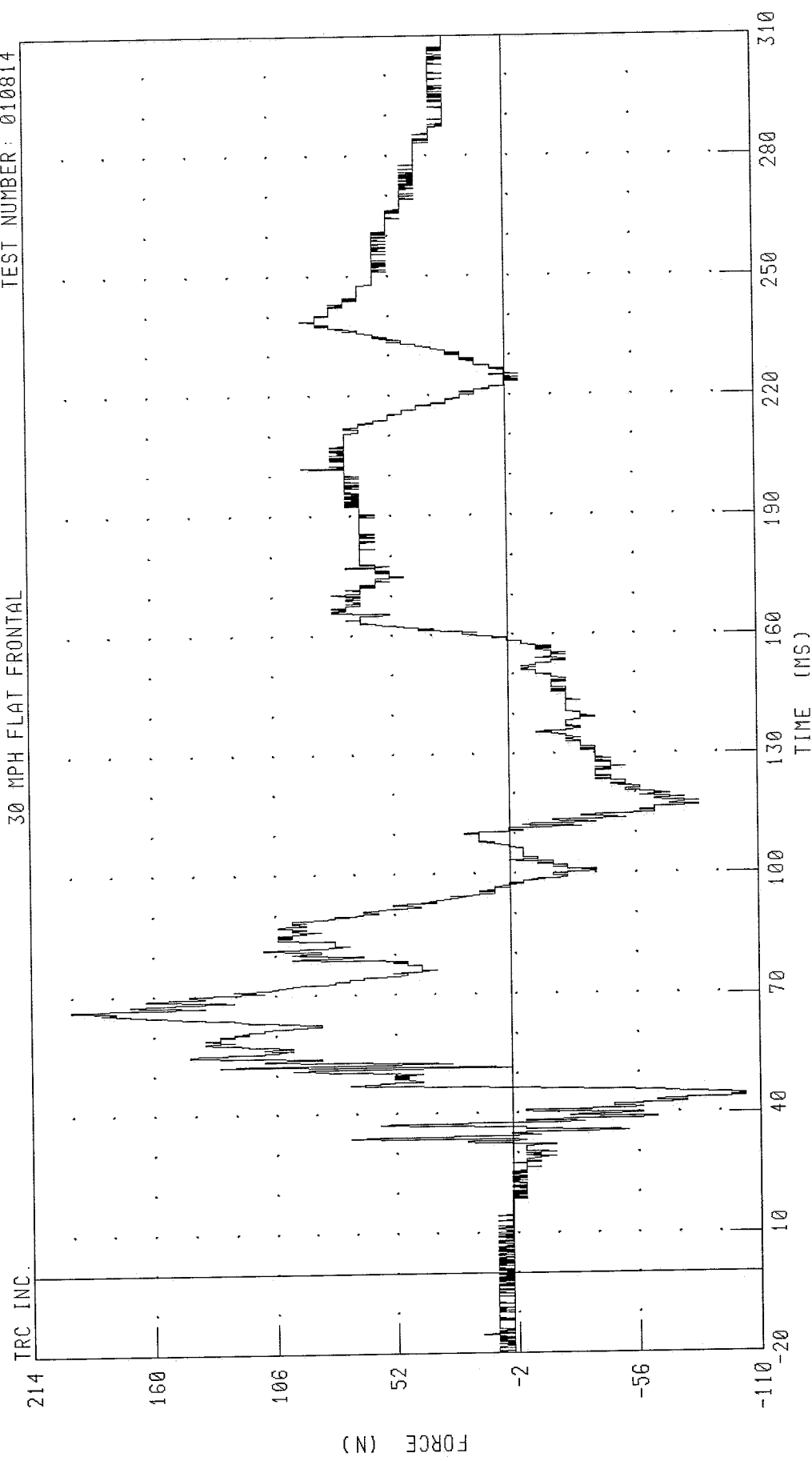
TEST NUMBER: 010814



CHANNEL: NKLXF1 FILTER: CH. CLASS 1000 PEAK DATA: 208.09 N @ 208.24 MS, -1263.79 N @ 51.44 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER NECK LOWER Y-AXIS SHEAR FORCE
30 MPH FLAT FRONTAL

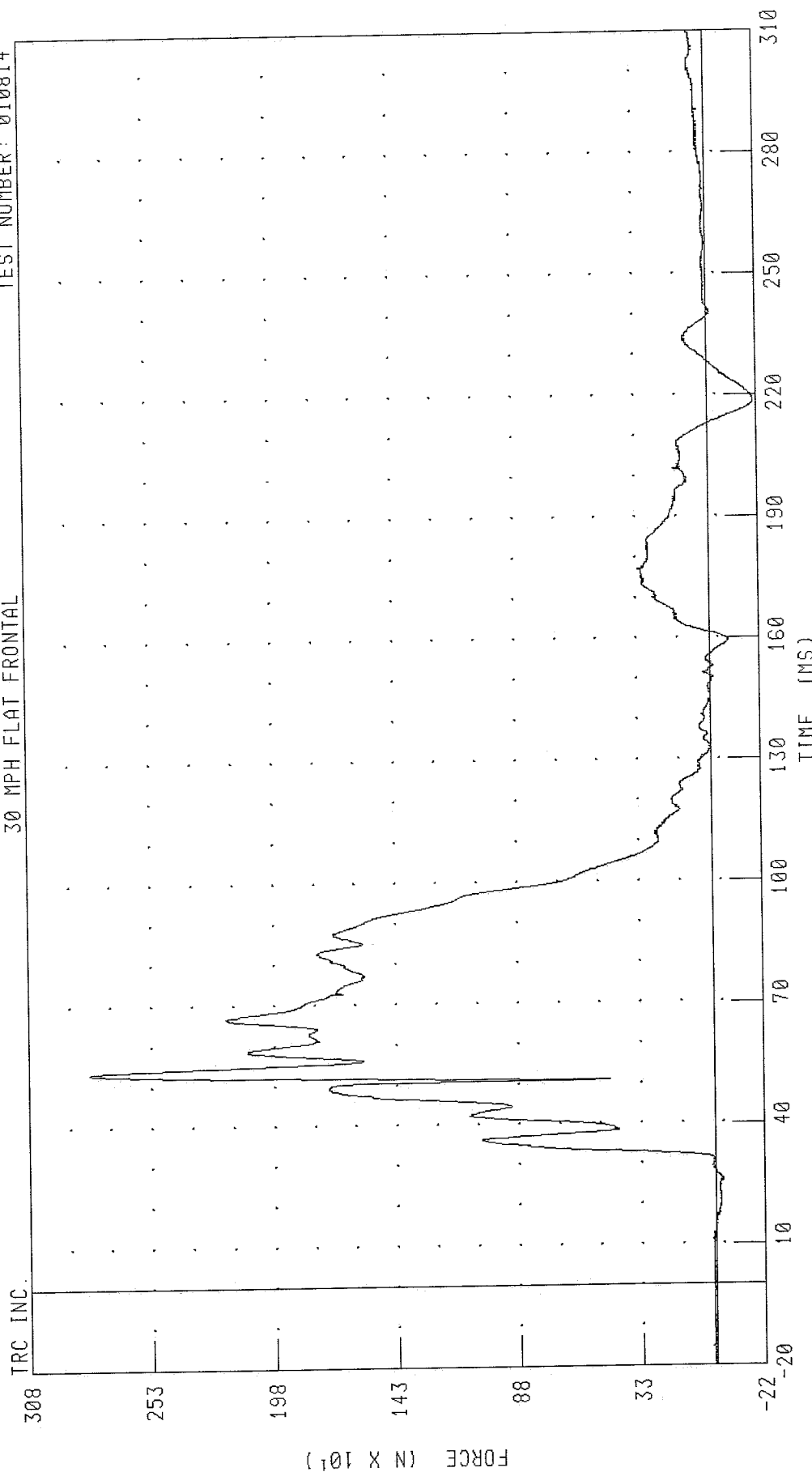
TEST NUMBER: 010814



CHANNEL: NKLYF1 FILTER: CH. CLASS 1000
PEAK DATA: 196.09 N @ 66.32 MS, -103.56 N @ 44.00 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER NECK LOWER Z-AXIS AXIAL FORCE
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

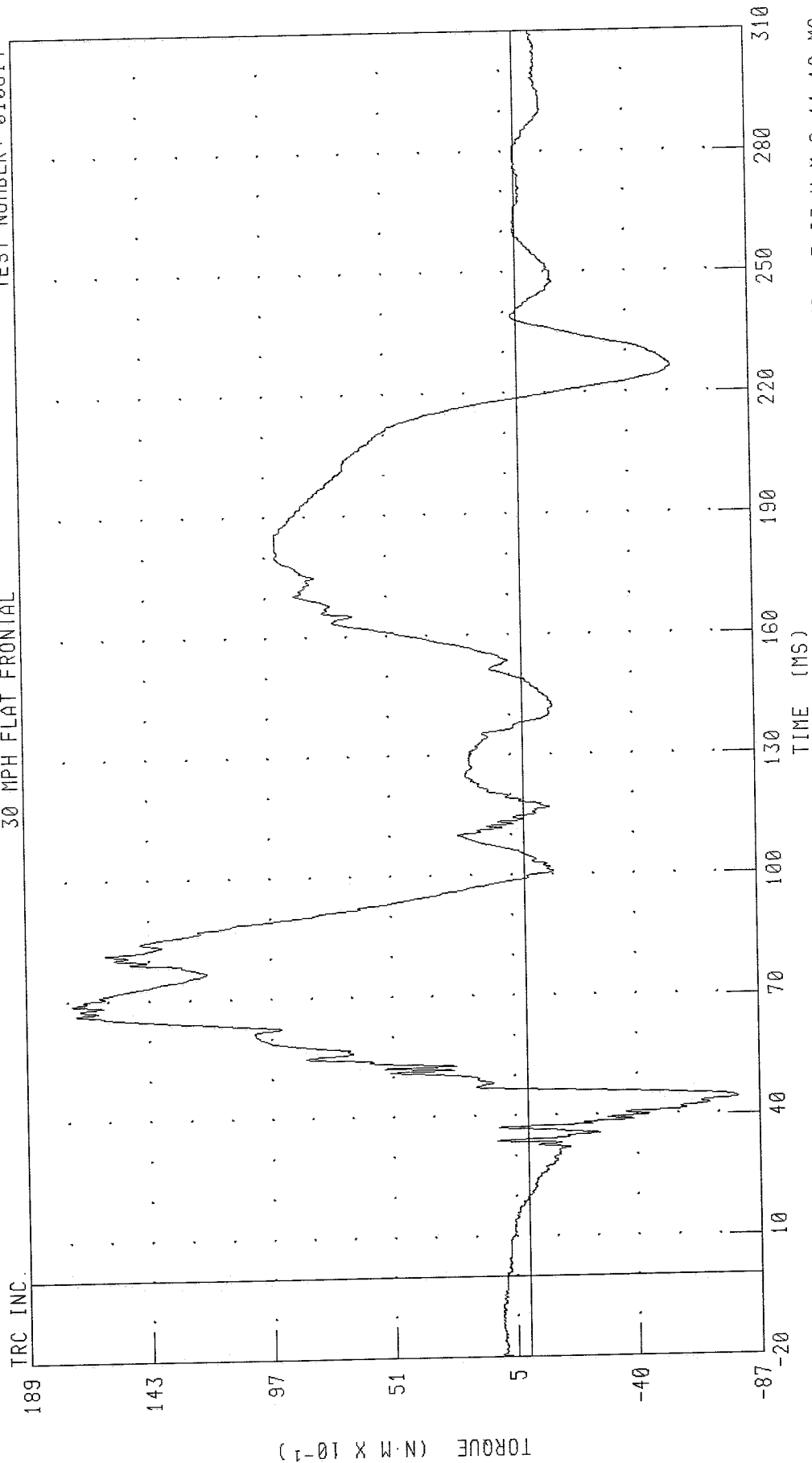


PEAK DATA: 2806.80 N @ 53.36 MS; -208.80 N @ 217.92 MS

CHANNEL: NKLZF1 FILTER: CH. CLASS 1000

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER NECK LOWER MOMENT ABOUT X AXIS
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

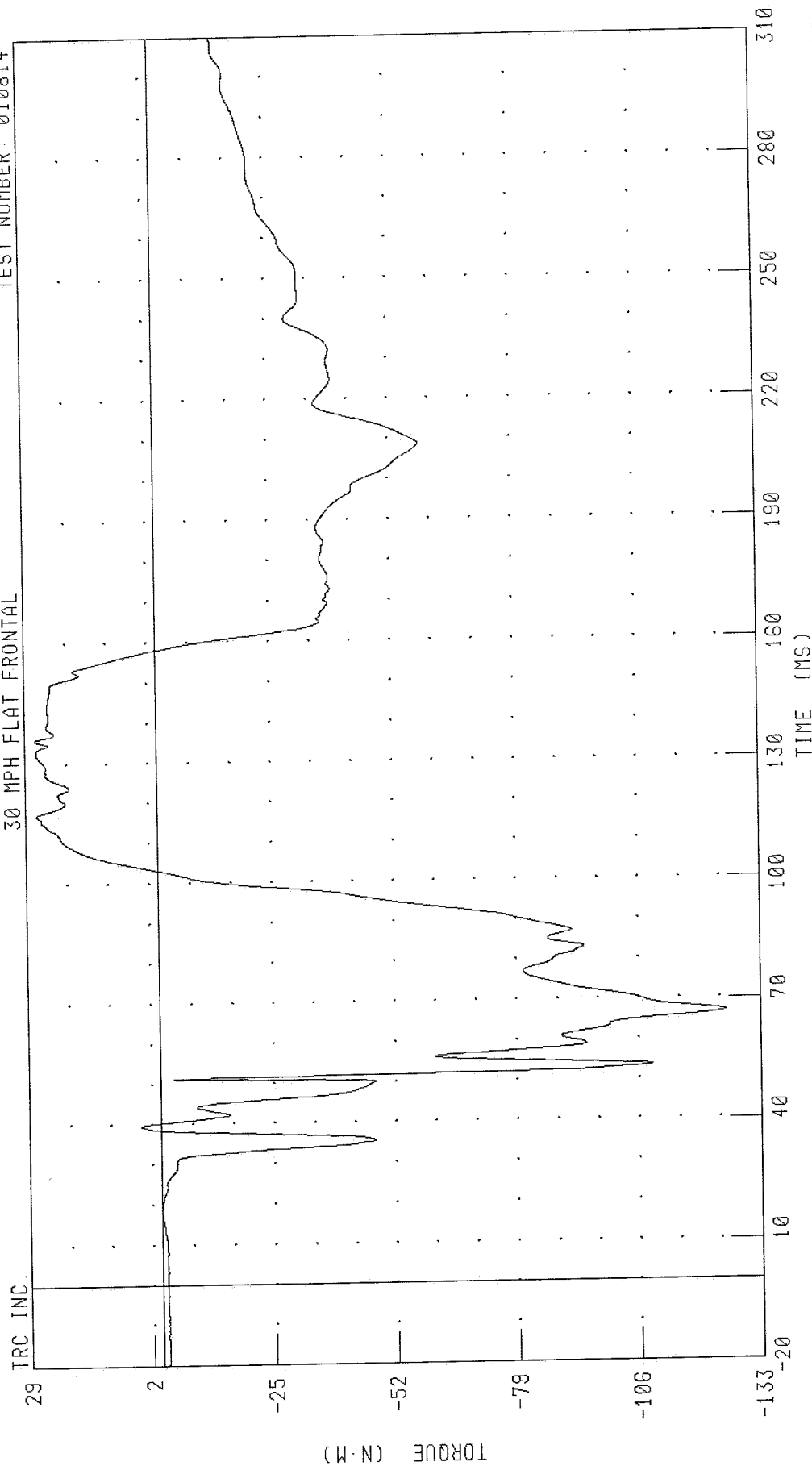


CHANNEL: NKLX01 FILTER: CH. CLASS 600

PEAK DATA: 17.18 N·M @ 69.04 MS; -7.93 N·M @ 44.16 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER NECK LOWER MOMENT ABOUT Y AXIS
30 MPH FLAT FRONTAL

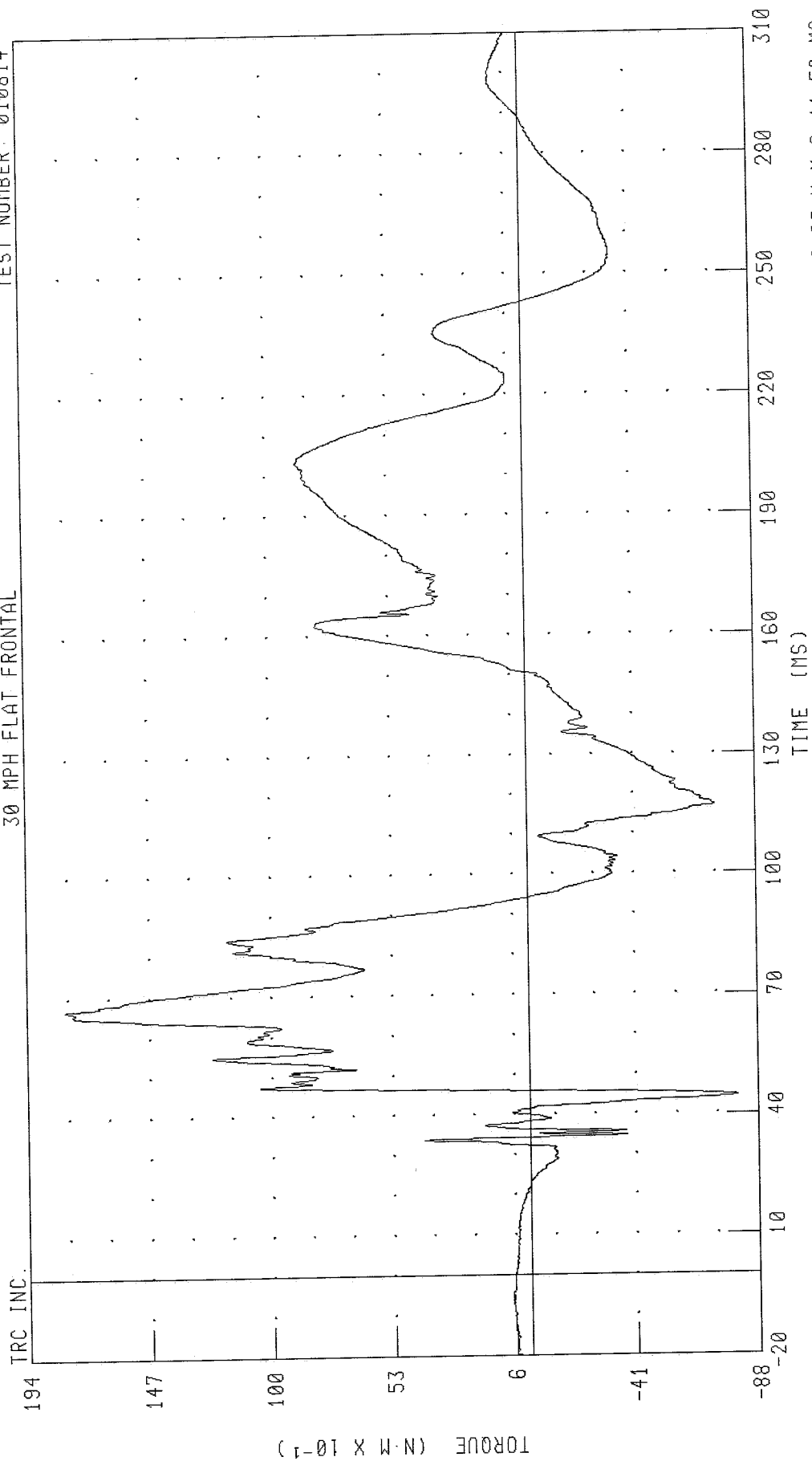
TEST NUMBER: 010814



CHANNEL: NKLYM1 FILTER: CH. CLASS 600
PEAK DATA: 26.85 N·M @ 136.08 MS; -125.37 N·M @ 66.88 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER NECK LOWER MOMENT ABOUT Z AXIS
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

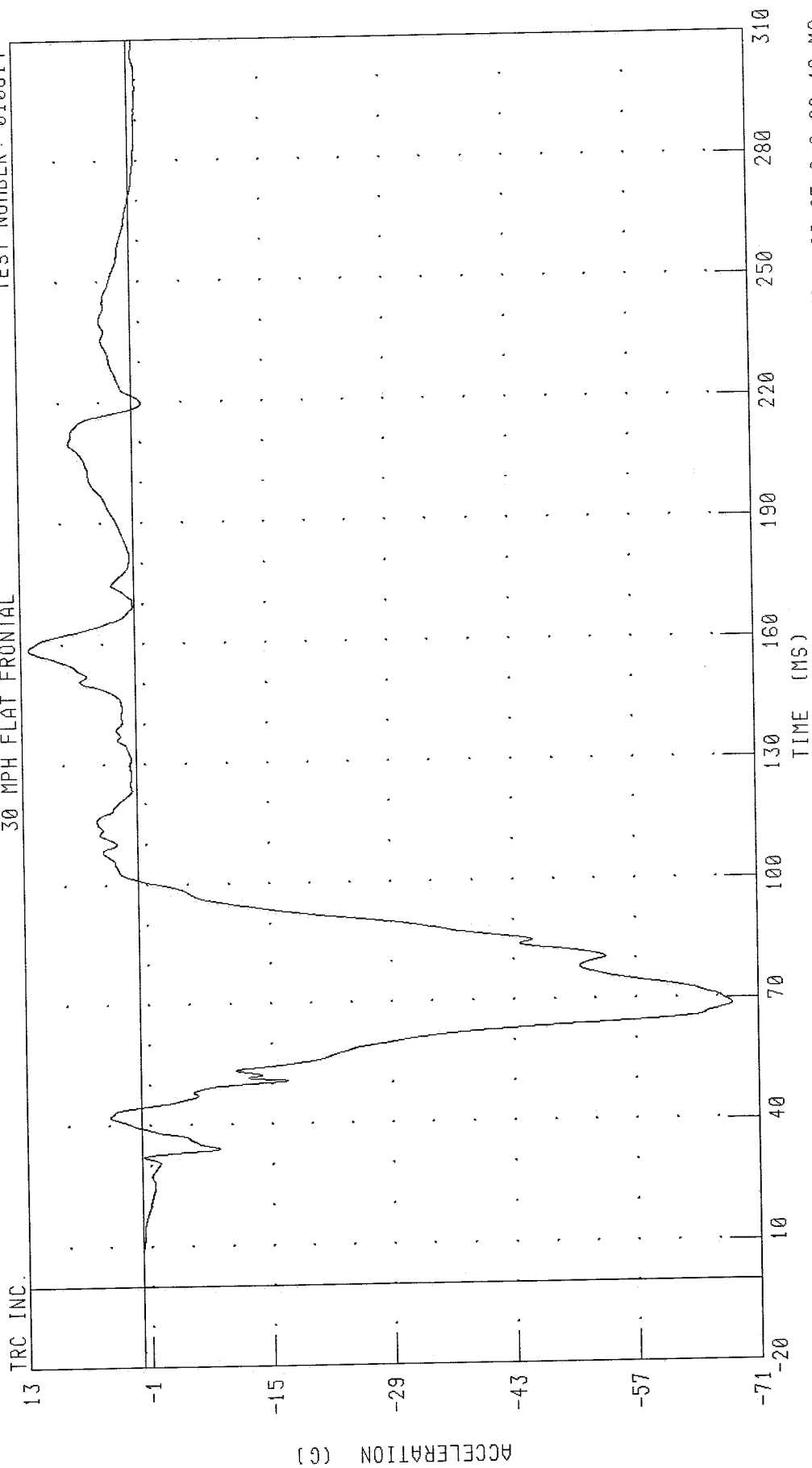


PEAK DATA: 17.94 N·M @ 66.88 MS; -8.03 N·M @ 44.56 MS

CHANNEL: NKLZM1 FILTER: CH. CLASS 600

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER CHEST X-AXIS ACCELERATION
30 MPH FLAT FRONTAL

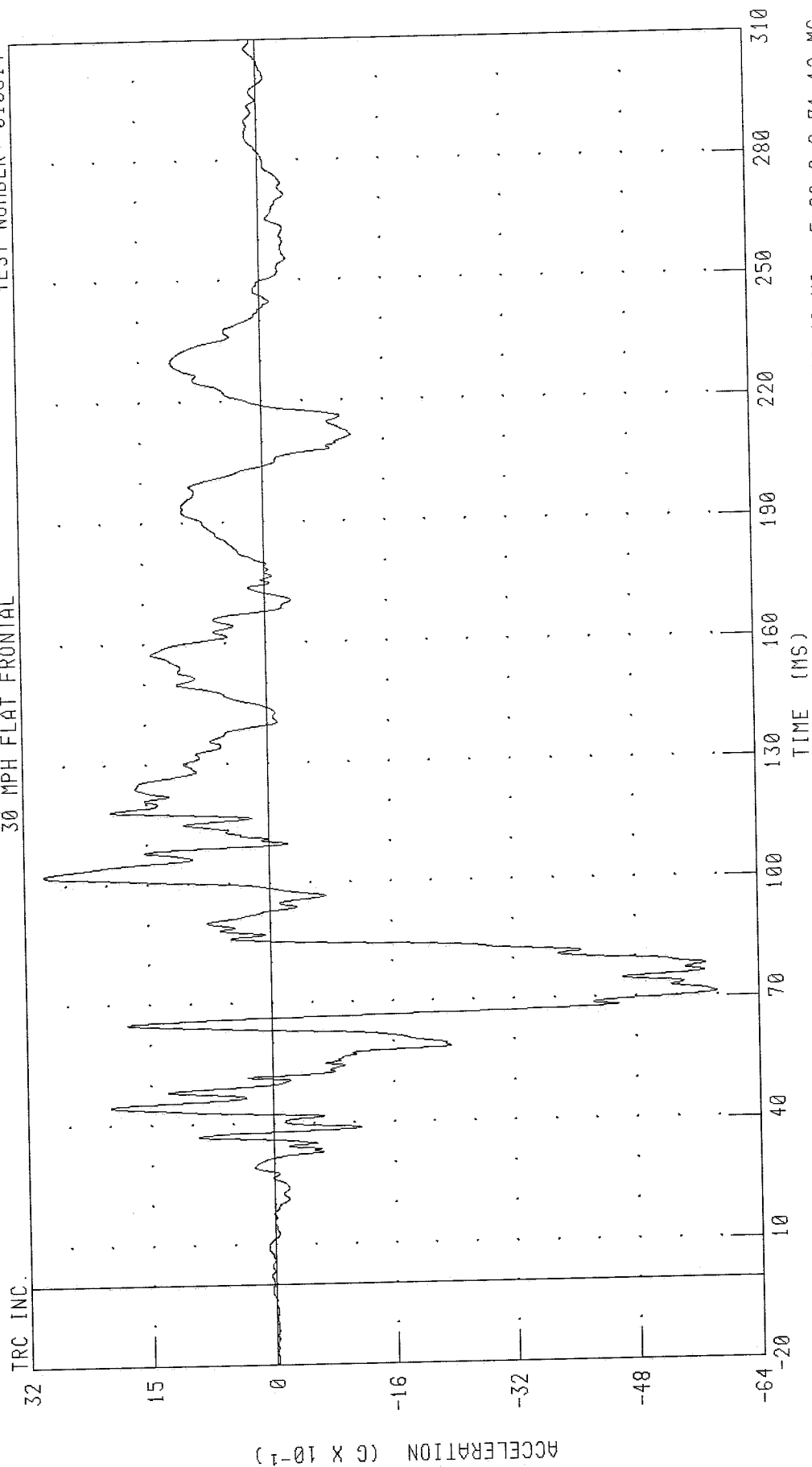
TEST NUMBER: 010814



CHANNEL: CSTXG1 FILTER: CH. CLASS 180
PEAK DATA: 12.09 G @ 158.88 MS, -68.05 G @ 68.48 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER CHEST Y-AXIS ACCELERATION
30 MPH FLAT FRONTAL

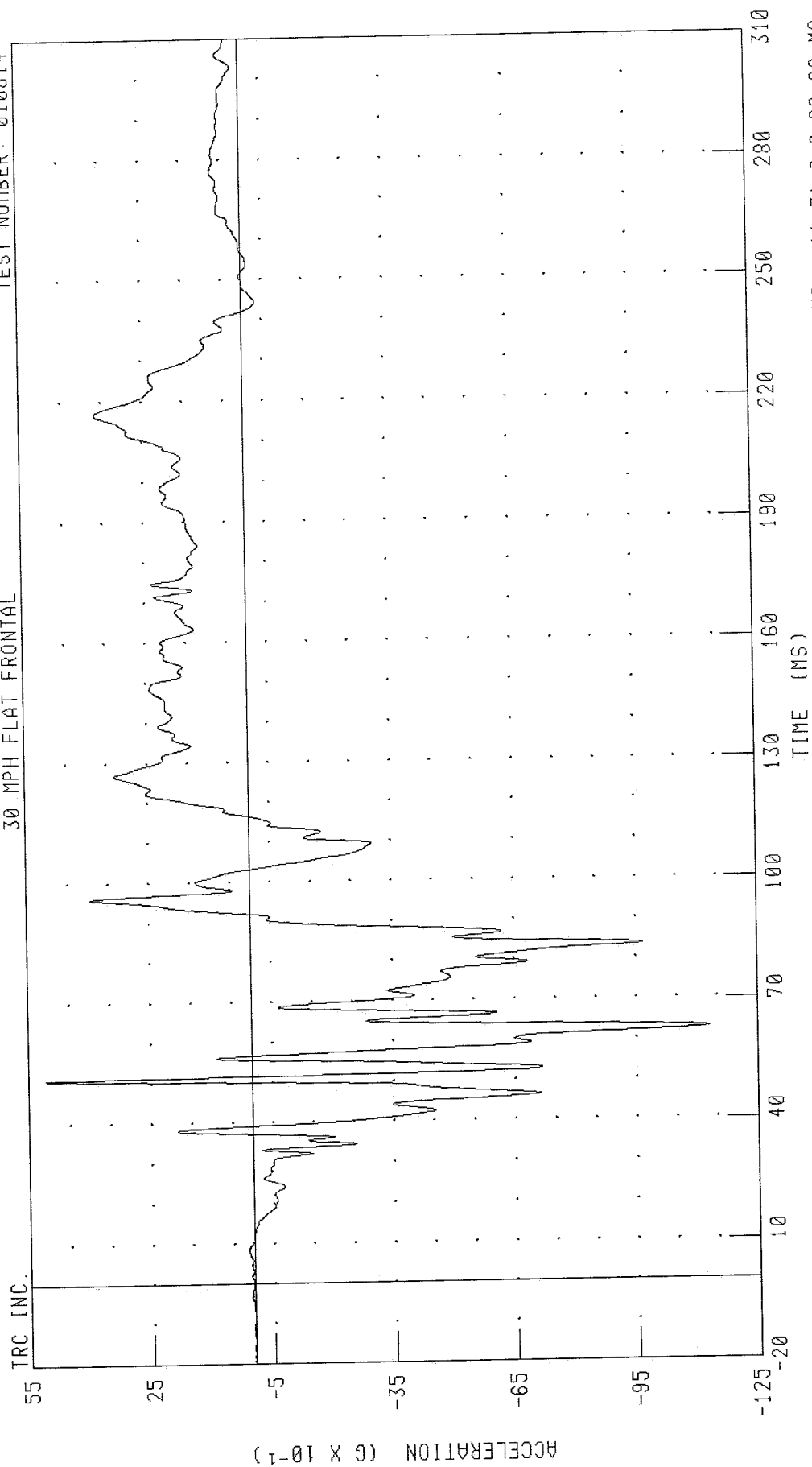
TEST NUMBER: 010814



CHANNEL: CSTVG1 FILTER: CH. CLASS 180
PEAK DATA: 2.95 G @ 102.48 MS, -5.86 G @ 71.12 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER CHEST Z-AXIS ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

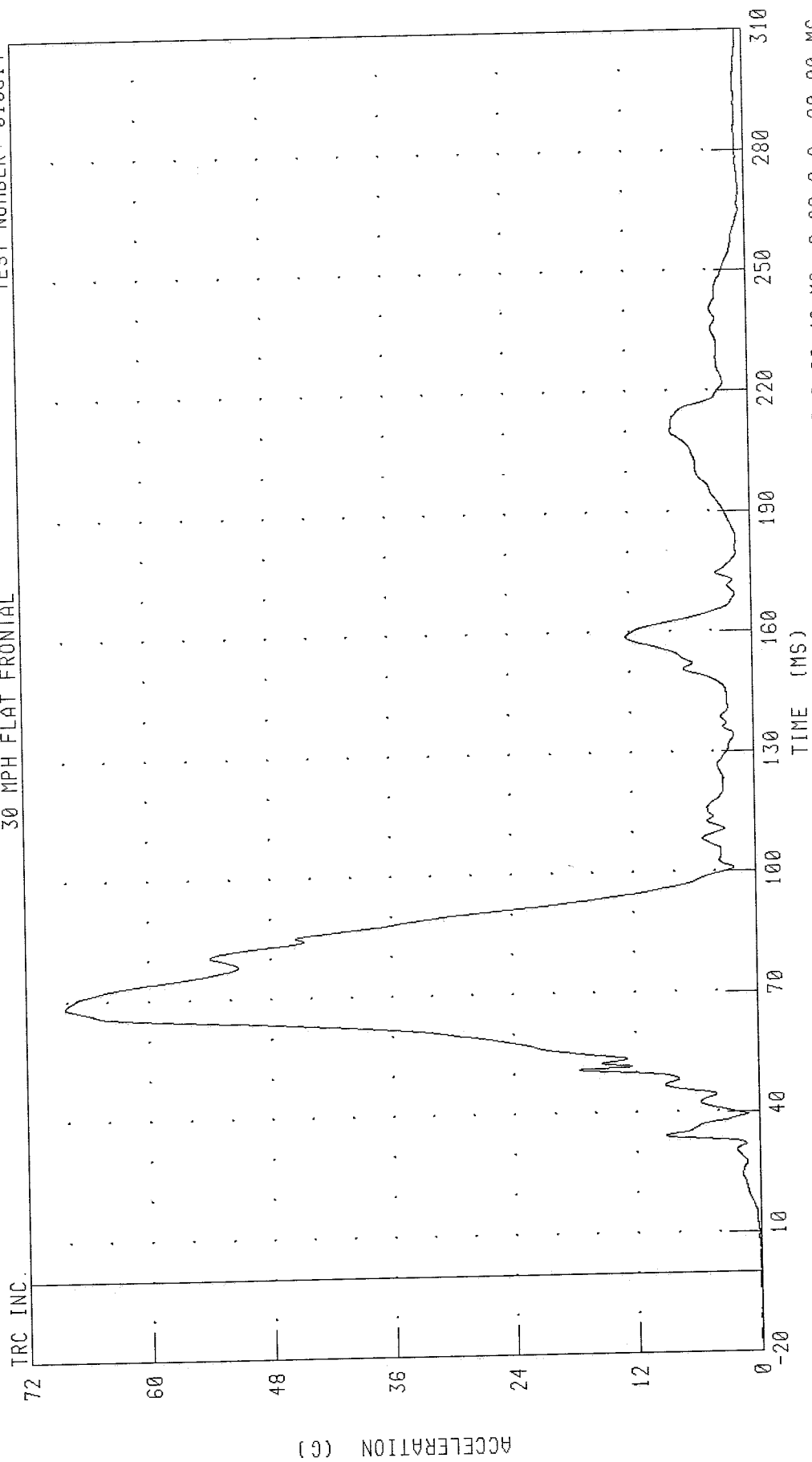


PEAK DATA: 5.06 G @ 50.96 MS; -11.31 G @ 62.80 MS

CHANNEL: CSTZG1 FILTER: CH. CLASS 180

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER CHEST RESULTANT ACCELERATION
30 MPH FLAT FRONTAL

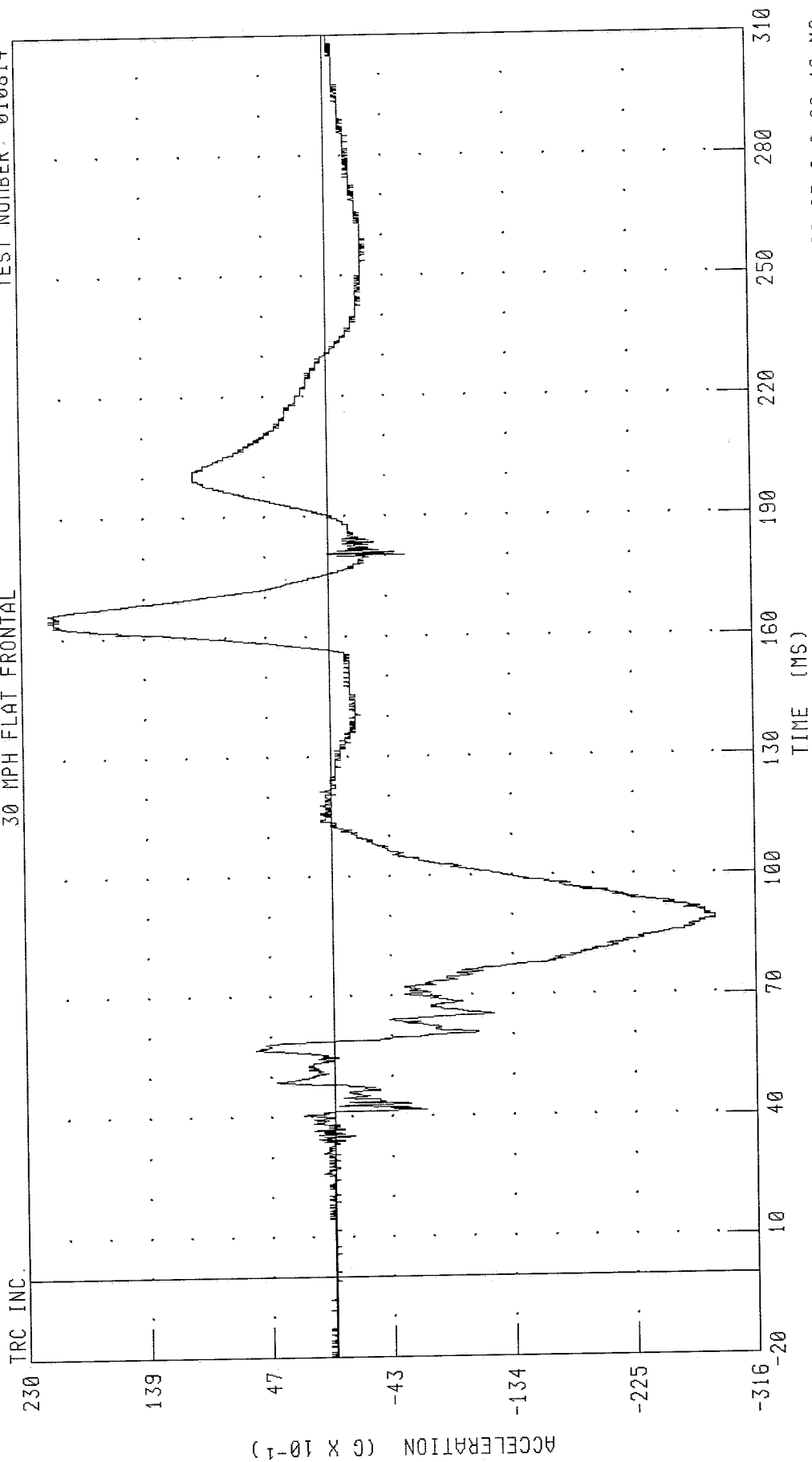
TEST NUMBER: 010814



CHANNEL: CSTR01 FILTER: CH. CLASS 180
PEAK DATA: 68.21 G @ 68.40 MS; 0.00 G @ -20.00 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER HEAD Y-AXIS ACCELERATION REDUNDANT
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

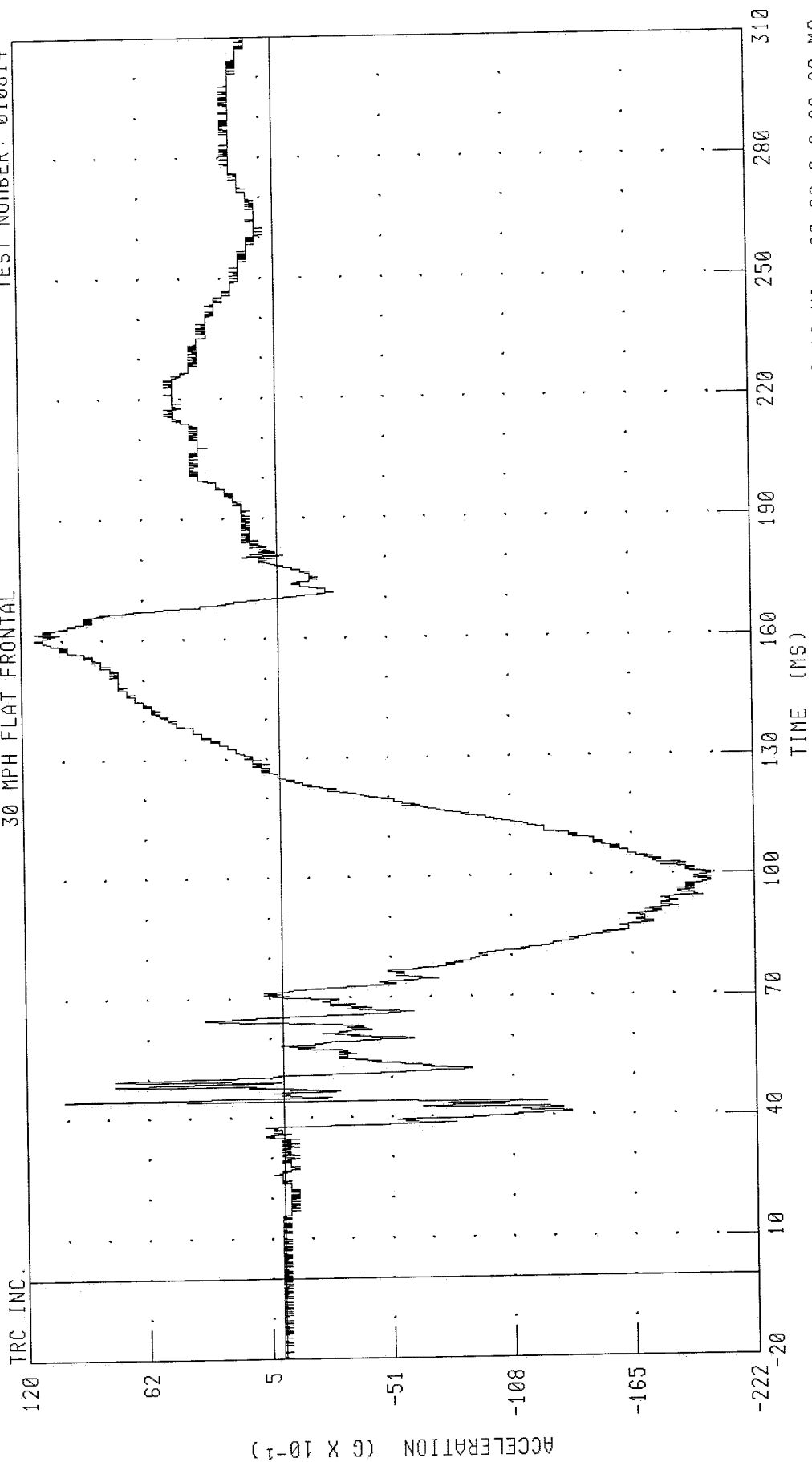


CHANNEL: HEDYR2 FILTER: CH. CLASS 1000

PEAK DATA: 21.03 G @ 164.32 MS; -28.63 G @ 88.40 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
 PASSENGER HEAD Z-AXIS ACCELERATION REDUNDANT
 30 MPH FLAT FRONTAL

TEST NUMBER: 010814

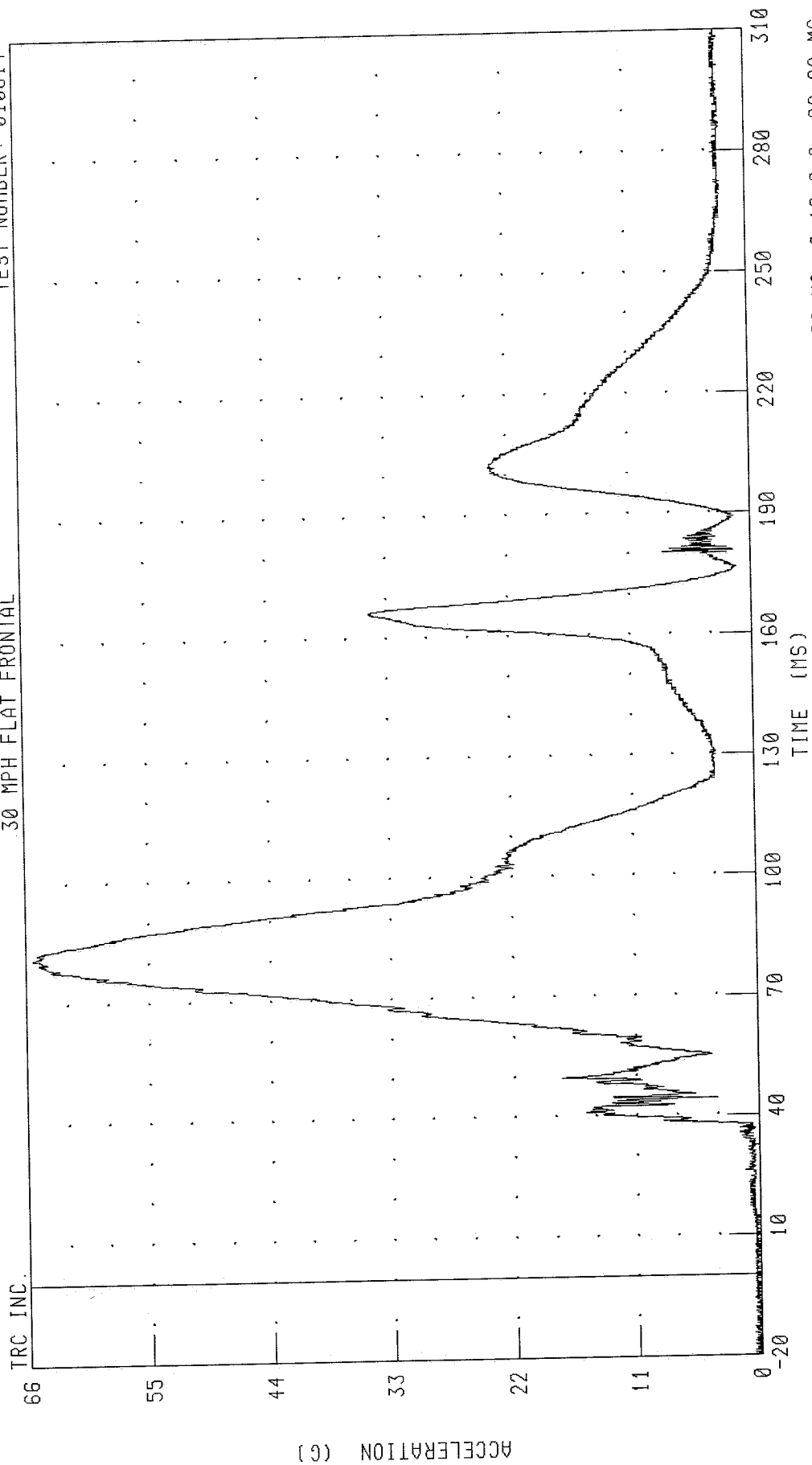


CHANNEL: HEDZR2 FILTER: CH. CLASS 1000

PEAK DATA: 11.39 G @ 160.16 MS; -20.20 G @ 98.00 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER HEAD RESULTANT ACCELERATION REDUNDANT
30 MPH FLAT FRONTAL

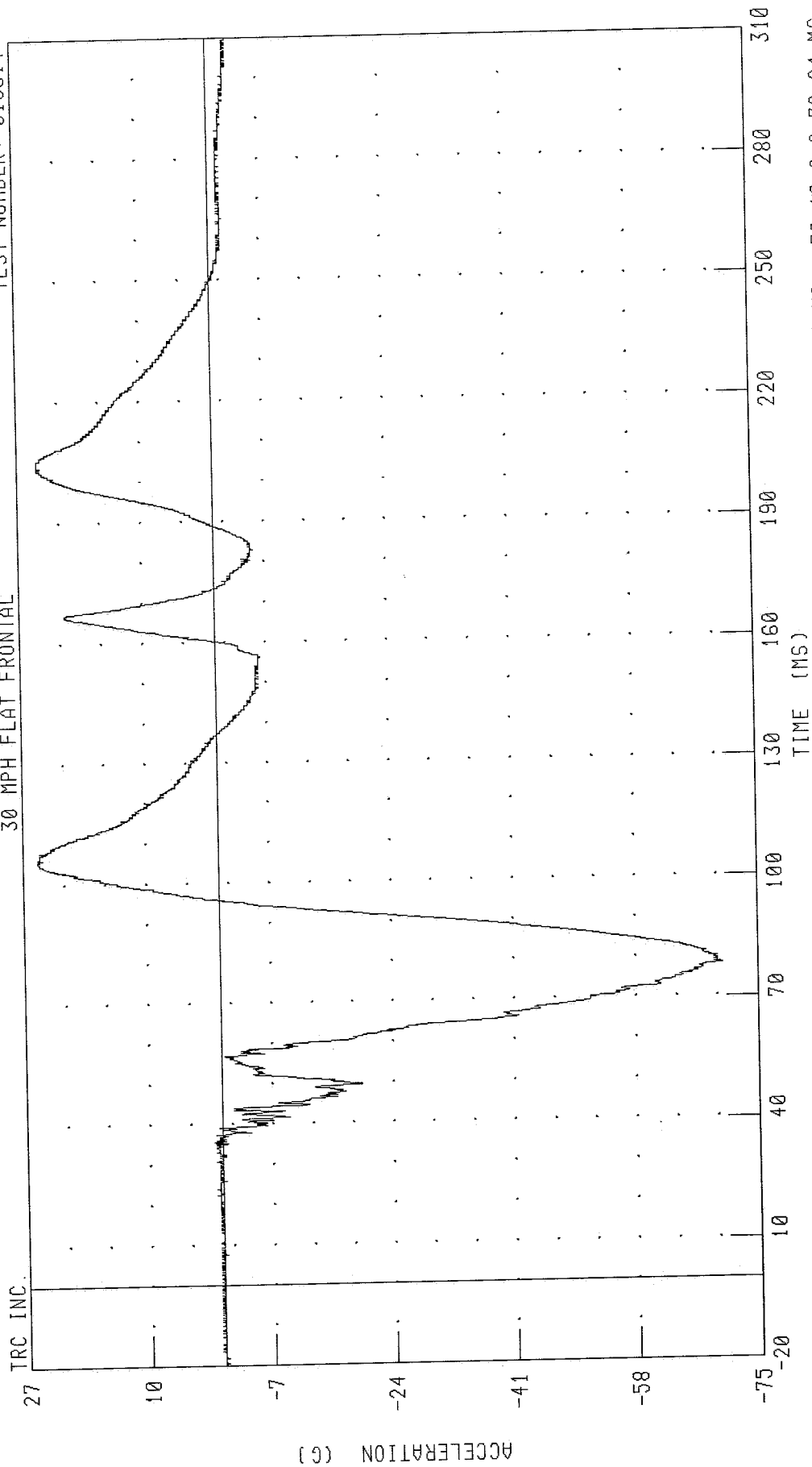
TEST NUMBER: 010814



CHANNEL: HEDRR2 FILTER: CH. CLASS 1000
PEAK DATA: 65.39 G @ 81.28 MS; 0.12 G @ -20.00 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER HEAD X-AXIS (LT) ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

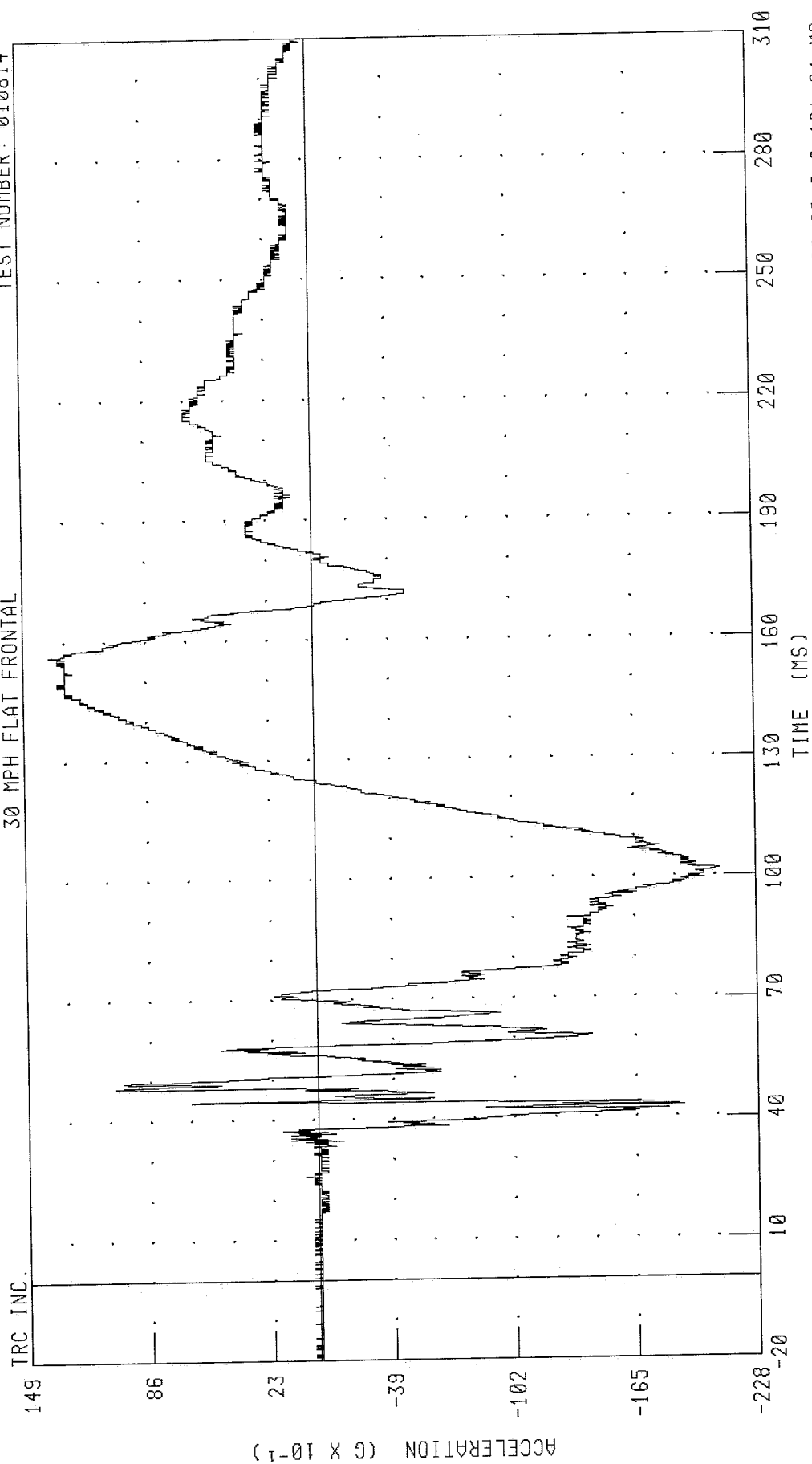


CHANNEL: HD1XG2 FILTER: CH. CLASS 1000

PEAK DATA: 25.07 G @ 105.36 MS; -70.16 G @ 78.24 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER HEAD Z-AXIS (LT) ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

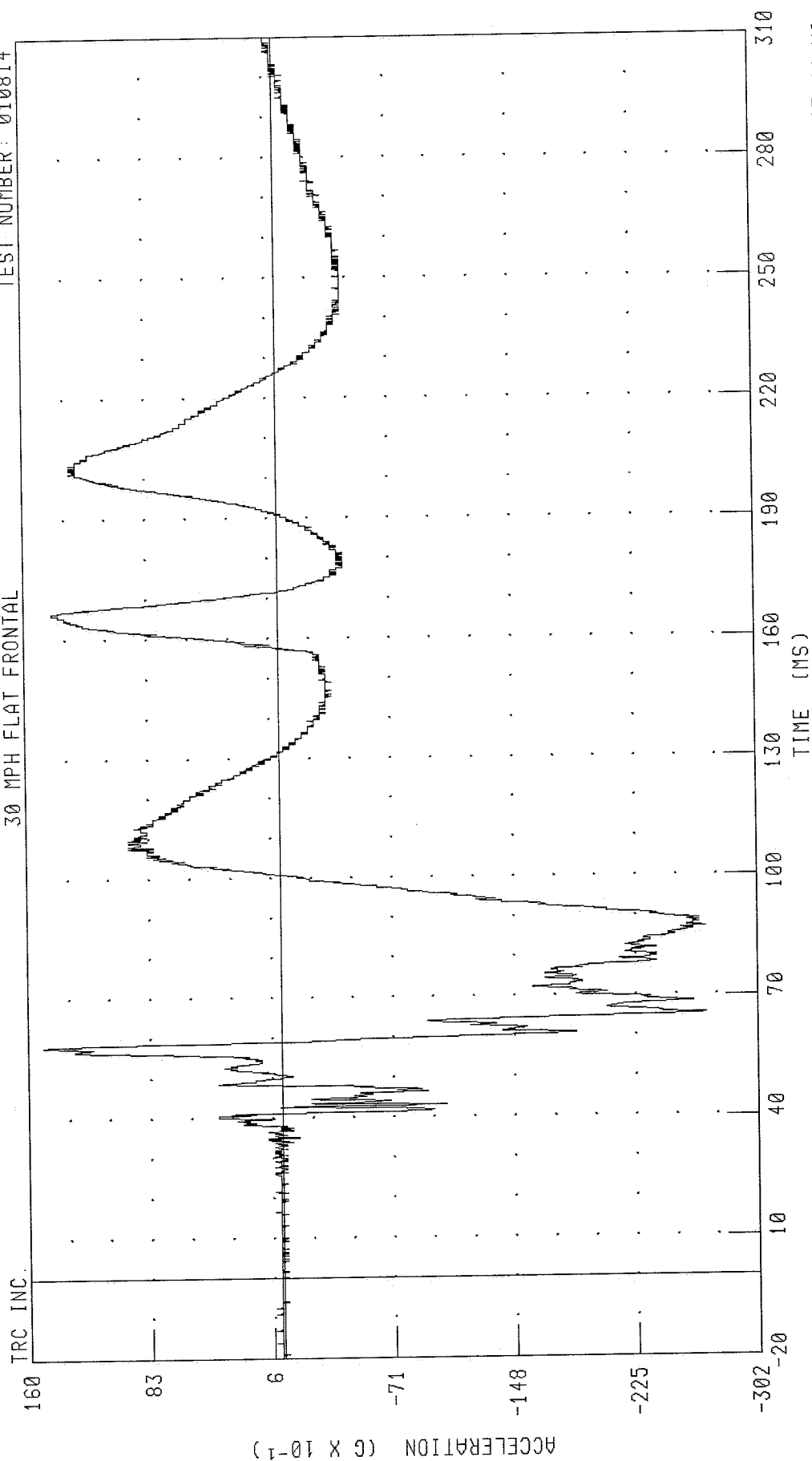


CHANNEL: HD1ZC2 FILTER: CH. CLASS 1000

PEAK DATA: 13.67 G @ 156.24 MS; -20.92 G @ 101.84 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER HEAD Y-AXIS (FT) ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

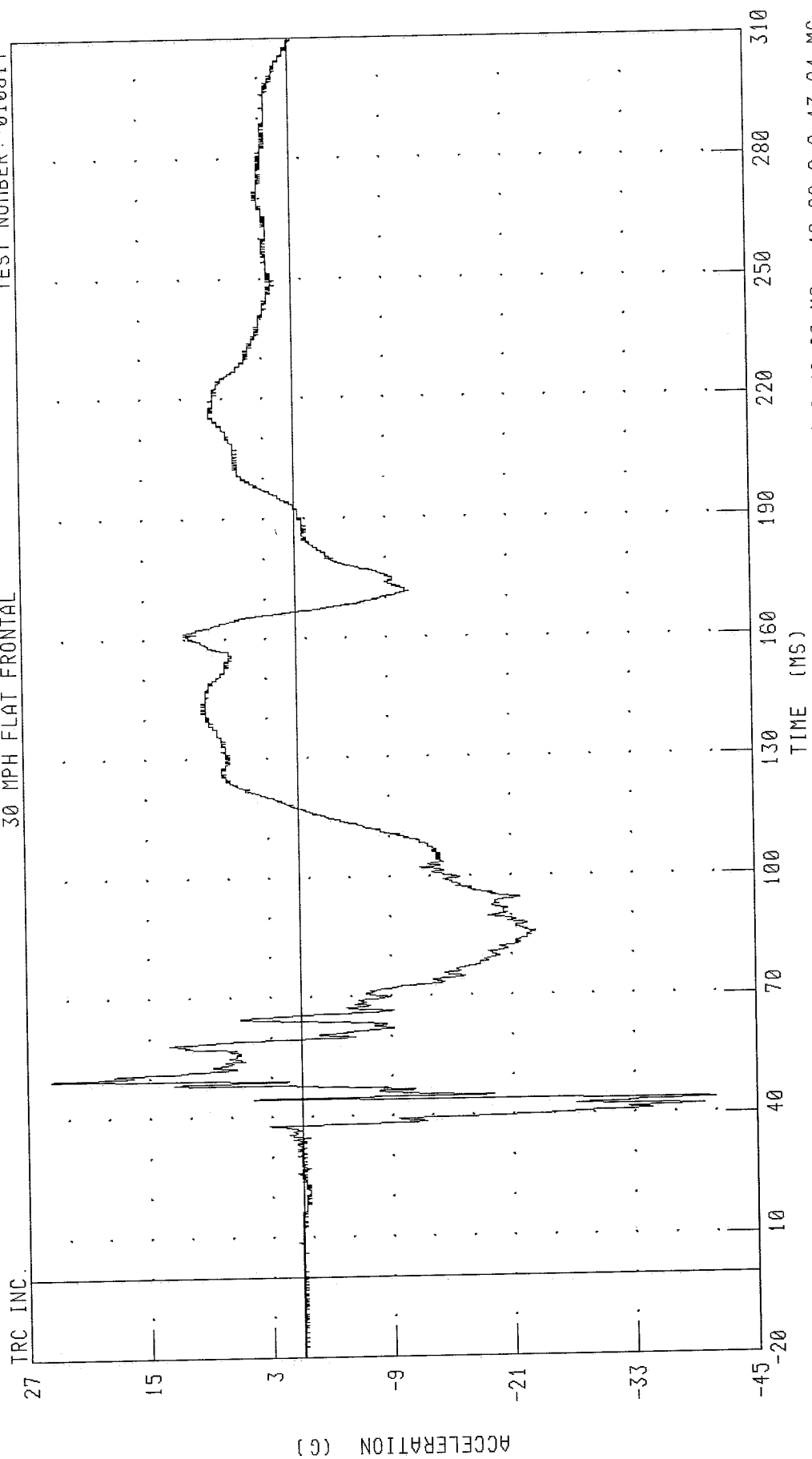


PEAK DATA: 15.04 G @ 58.00 MS; -26.97 G @ 65.44 MS

CHANNEL: HD2YG2 FILTER: CH. CLASS 1000

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER HEAD Z-AXIS (FT) ACCELERATION
30 MPH FLAT FRONTAL

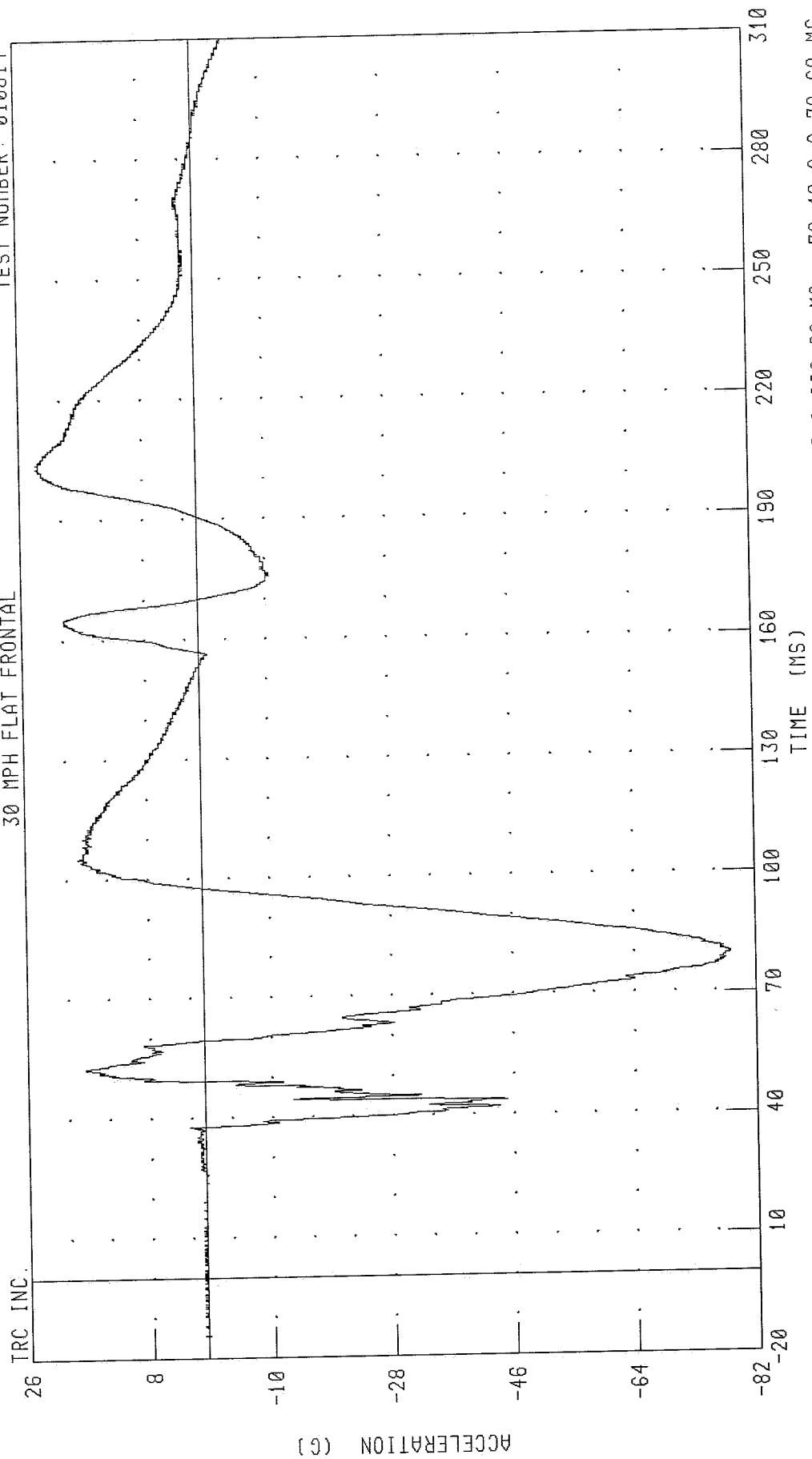
TEST NUMBER: 010814



CHANNEL: HD2ZG2 FILTER: CH. CLASS 1000
PEAK DATA: 24.73 G @ 49.68 MS; -40.96 G @ 43.84 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER HEAD X-AXIS (TP) ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

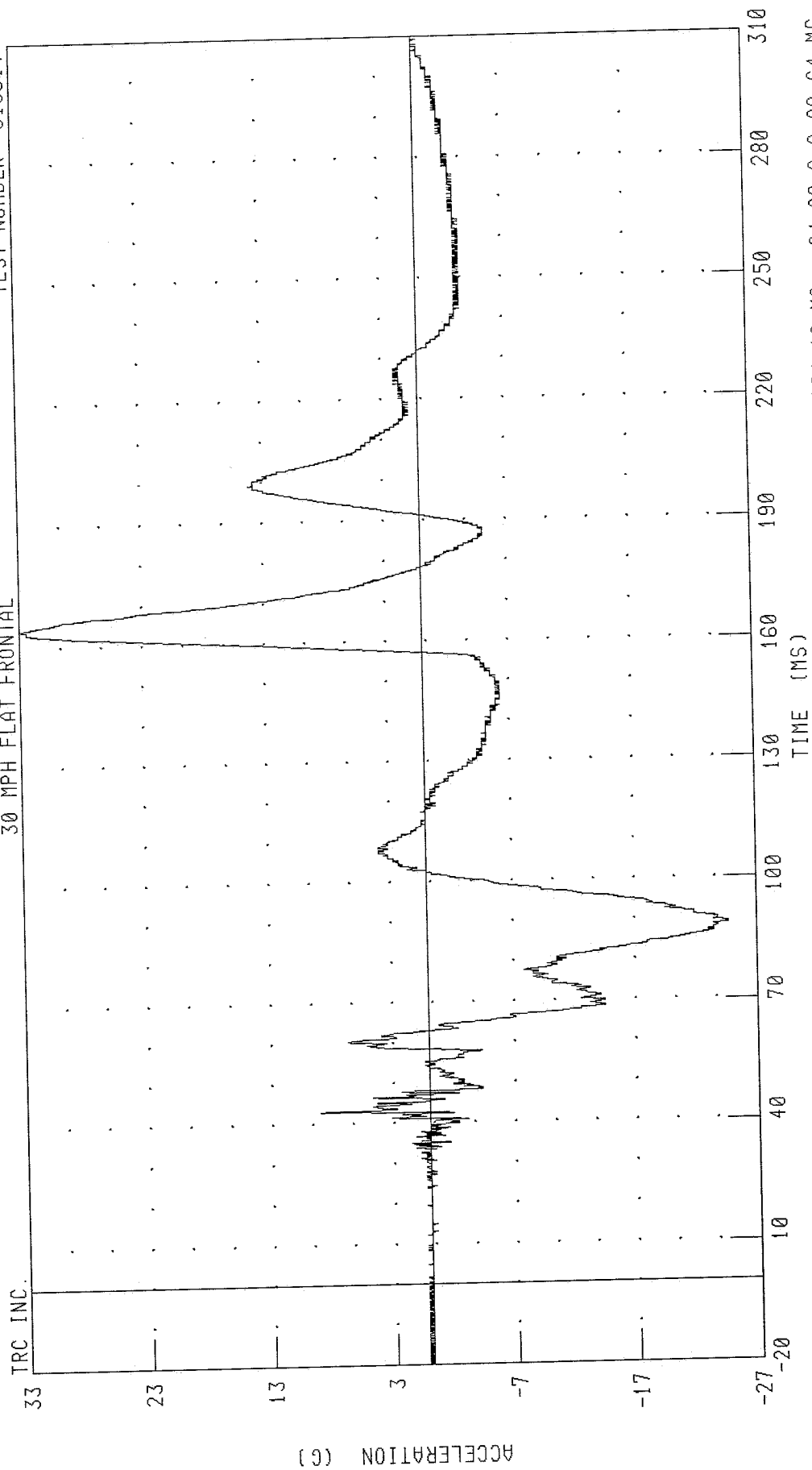


PEAK DATA: 23.67 G @ 202.88 MS; -78.40 G @ 79.68 MS

CHANNEL: HD3XC2 FILTER: CH. CLASS 1000

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER HEAD Y-AXIS (TP) ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814



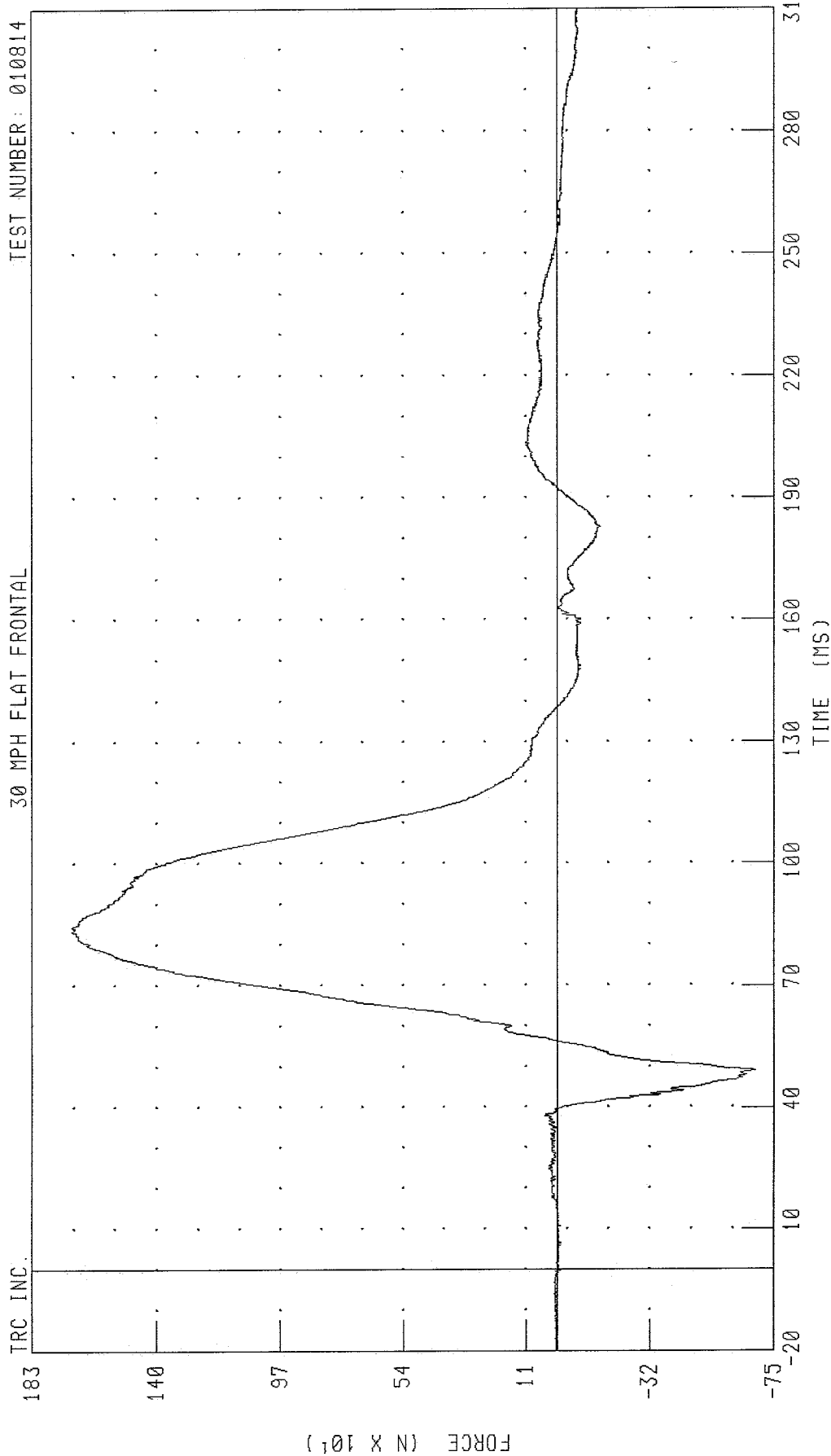
CHANNEL: HD3YG2 FILTER: CH. CLASS 1000
PEAK DATA: 32.85 G @ 164.16 MS; -24.69 G @ 88.64 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

PASSENGER NECK X-AXIS SHEAR FORCE

TEST NUMBER: 010814

30 MPH FLAT FRONTAL

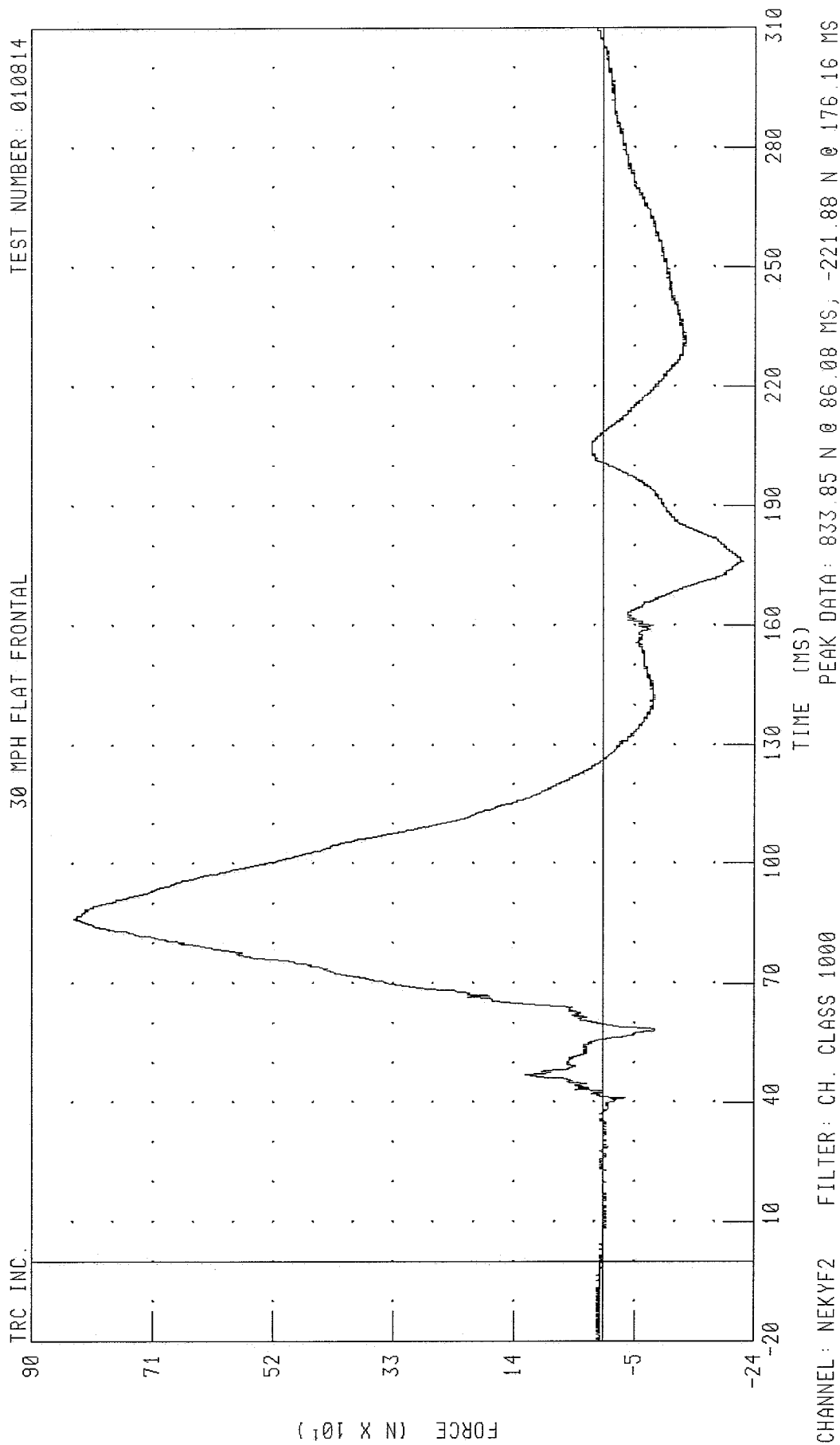


CHANNEL: NEKXF2 FILTER: CH. CLASS 1000

PEAK DATA: 1694.17 N @ 83.28 MS; -683.49 N @ 49.04 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

PASSENGER NECK Y-AXIS SHEAR FORCE



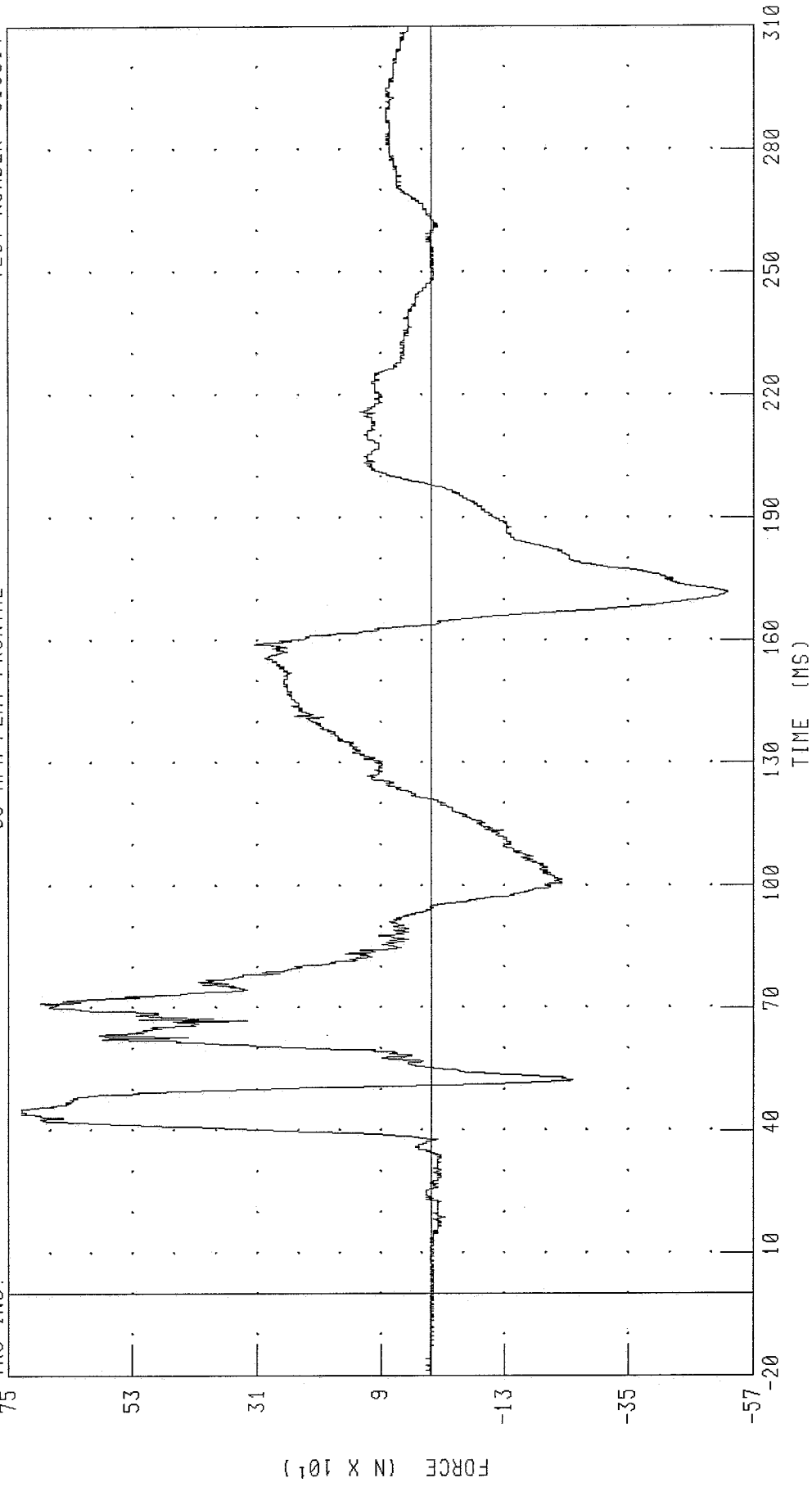
2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

PASSENGER NECK Z-AXIS AXIAL FORCE

30 MPH FLAT FRONTAL

TEST NUMBER: 010814

TRC INC.



PEAK DATA: 725.93 N @ 44.08 MS; -525.86 N @ 171.68 MS

CHANNEL: NEKZF2 FILTER: CH. CLASS 1000

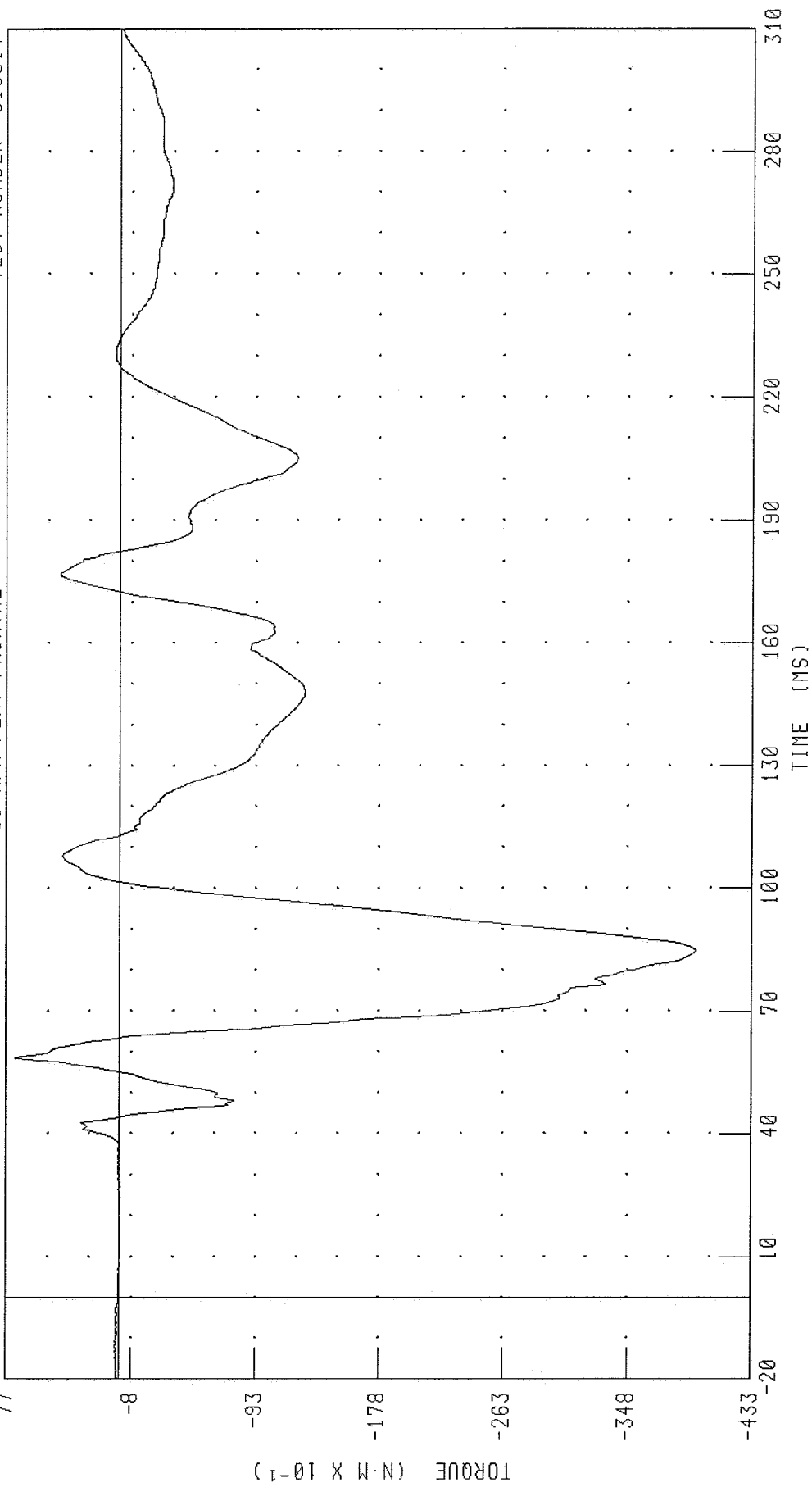
2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

PASSENGER NECK MOMENT ABOUT X AXIS

TRC INC.

30 MPH FLAT FRONTAL

TEST NUMBER: 010814



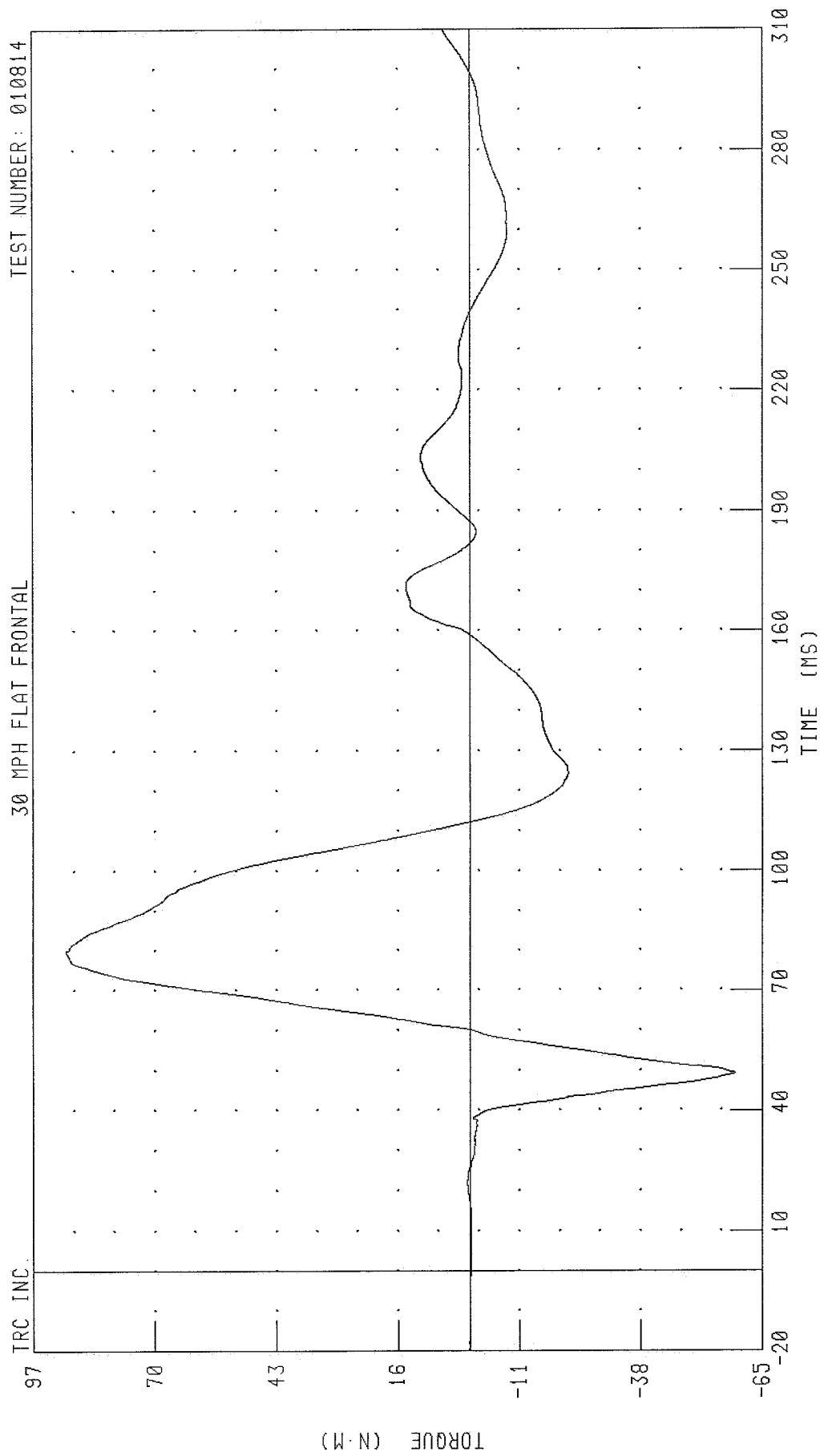
CHANNEL: NEKXM2

FILTER: CH. CLASS 600

TIME (MS)

PEAK DATA: 7.09 N·M @ 58.64 MS, -39.50 N·M @ 84.80 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER NECK MOMENT ABOUT Y AXIS



CHANNEL: NEKYM2 FILTER: CH. CLASS 600

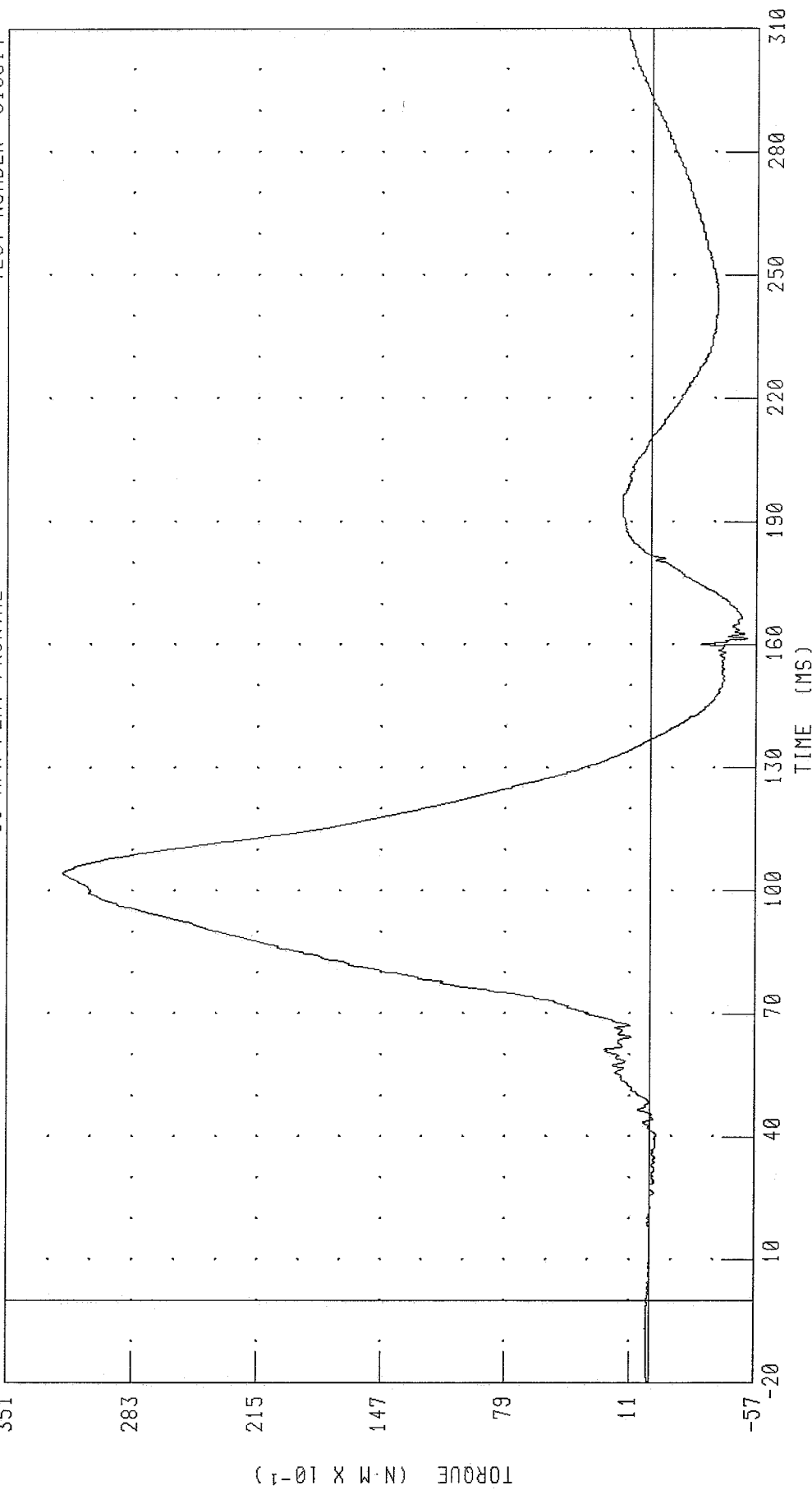
PEAK DATA: 89.79 N·M @ 79.68 MS; -59.15 N·M @ 49.28 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER NECK MOMENT ABOUT Z AXIS

TRC INC.

30 MPH FLAT FRONTAL

TEST NUMBER: 010814

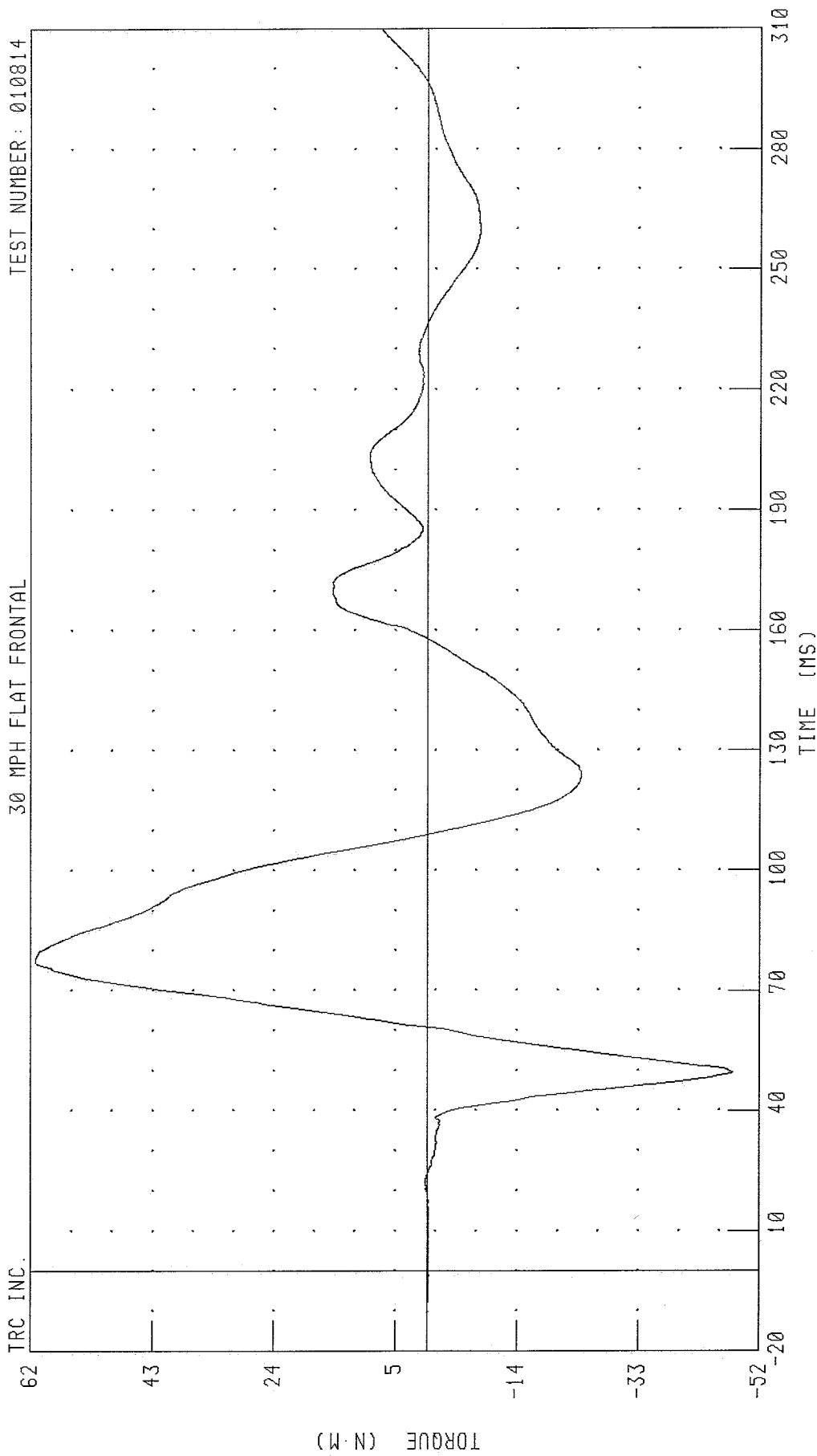


CHANNEL: NEKZM2 FILTER: CH. CLASS 600

TIME (MS)

PEAK DATA: 32.04 N·M @ 104.32 MS; -5.26 N·M @ 161.60 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER NECK OCCIPITAL CONDYLE MOMENT ABOUT Y AXIS



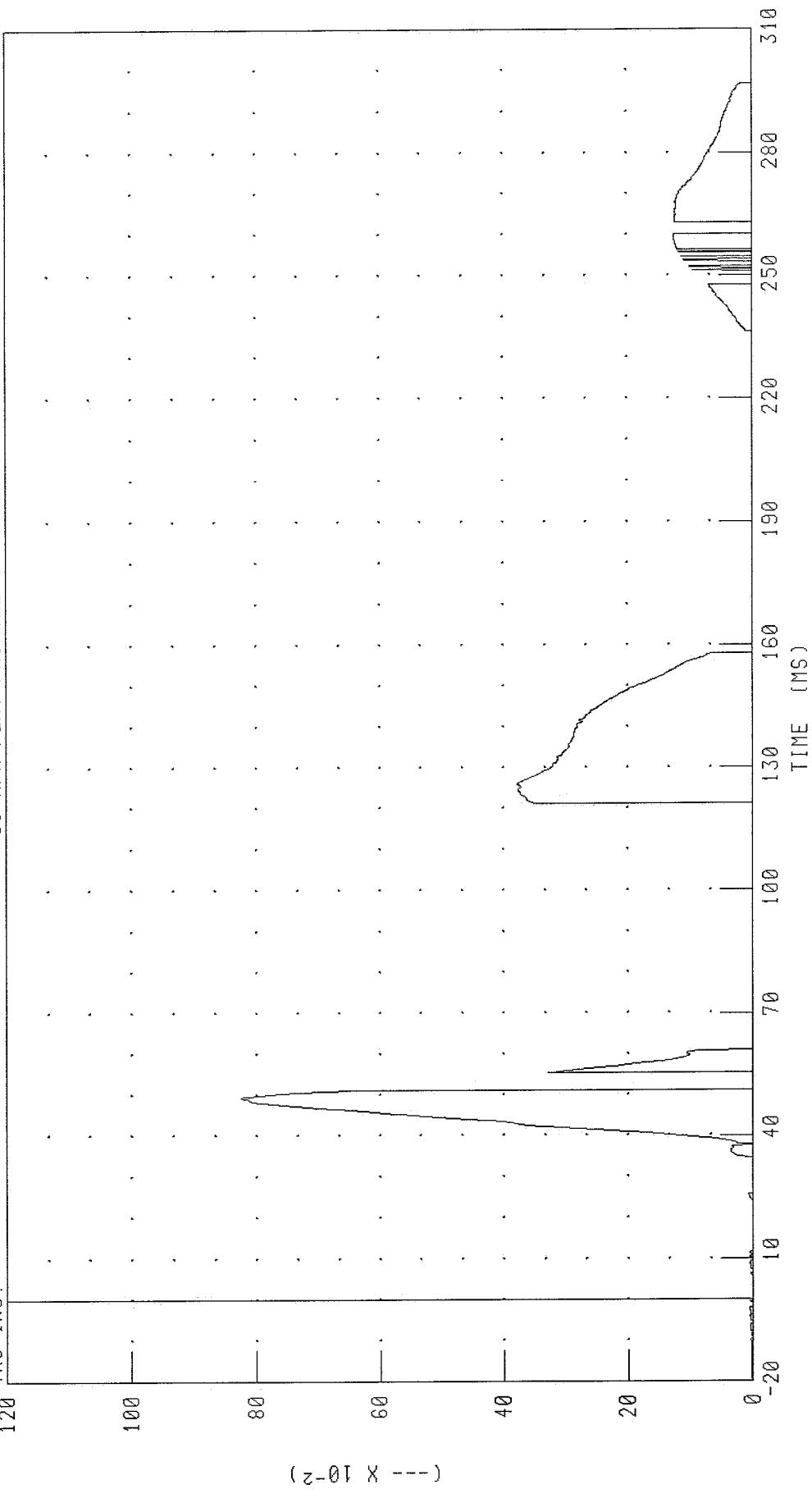
CHANNEL: NEKOM2 FILTER: CH. CLASS 600

PEAK DATA: 61.29 N·M @ 77.84 MS, -47.78 N·M @ 49.52 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
 PASSENGER NECK TENSION/EXTENSION
 30 MPH FLAT FRONTAL

TEST NUMBER: 010814

TRC INC.



CHANNEL: NTE2 FILTER: CH. CLASS 600 PEAK DATA: 0.82 --- 0 49.28 MS; 0.00 --- 0 -20 00 MS

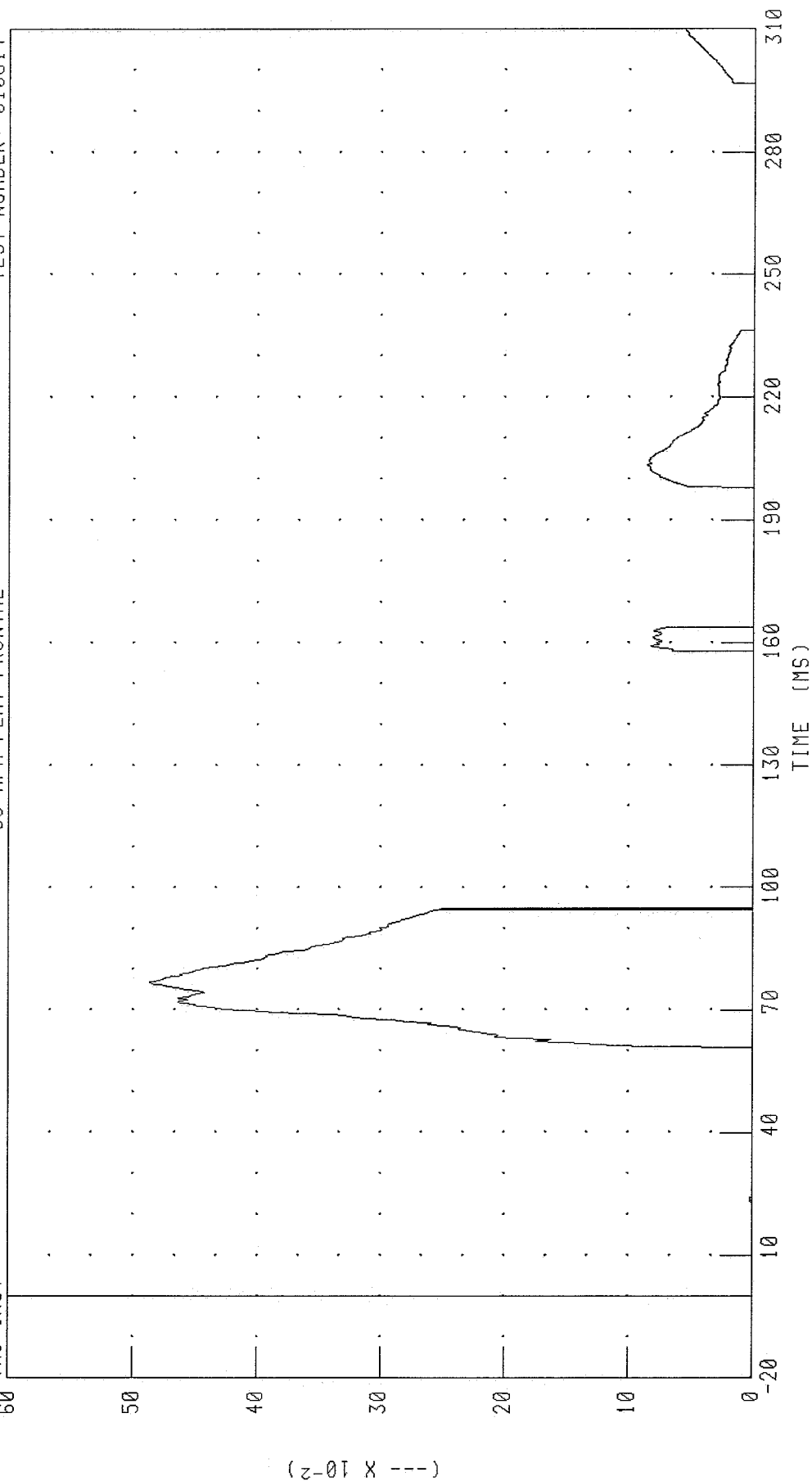
2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

PASSENGER NECK TENSION/FLEXION

TRC INC.

30 MPH FLAT FRONTAL

TEST NUMBER: 010814

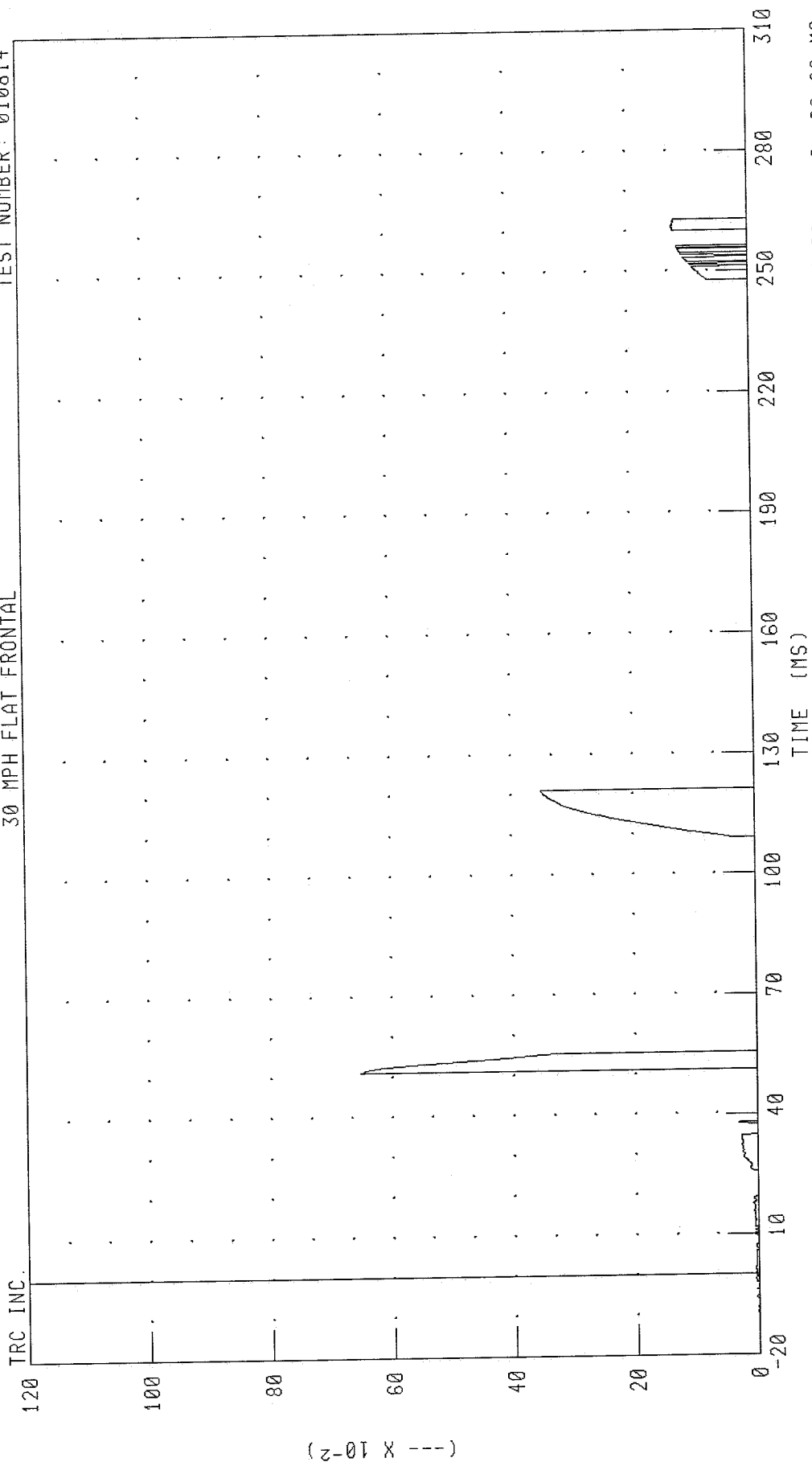


CHANNEL: NTF2 FILTER: CH. CLASS 600

PEAK DATA: 0.49 --- 0 76.88 MS; 0.00 --- 0 -19.68 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
 PASSENGER NECK COMPRESSION/EXTENSION
 30 MPH FLAT FRONTAL

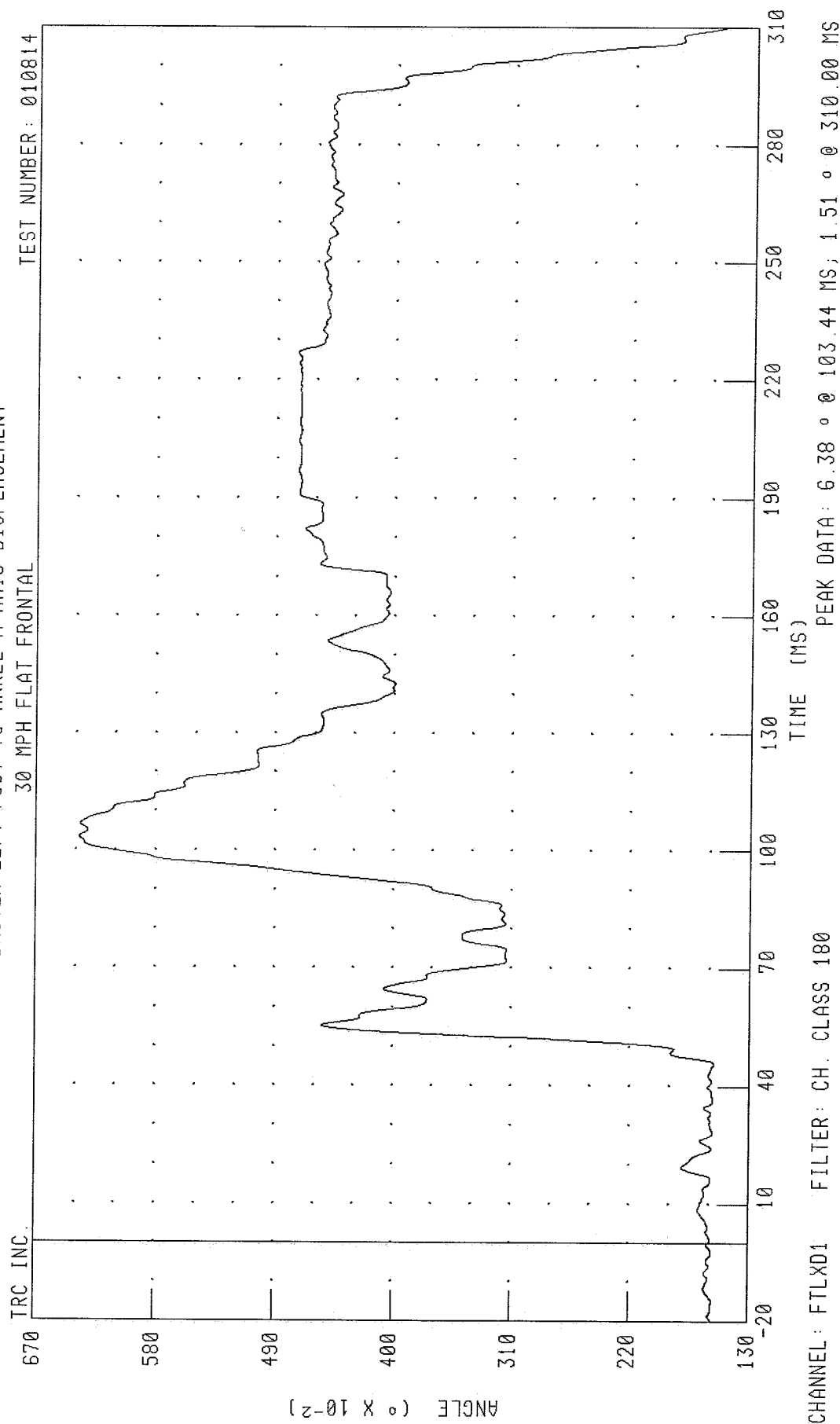
TEST NUMBER: 010814



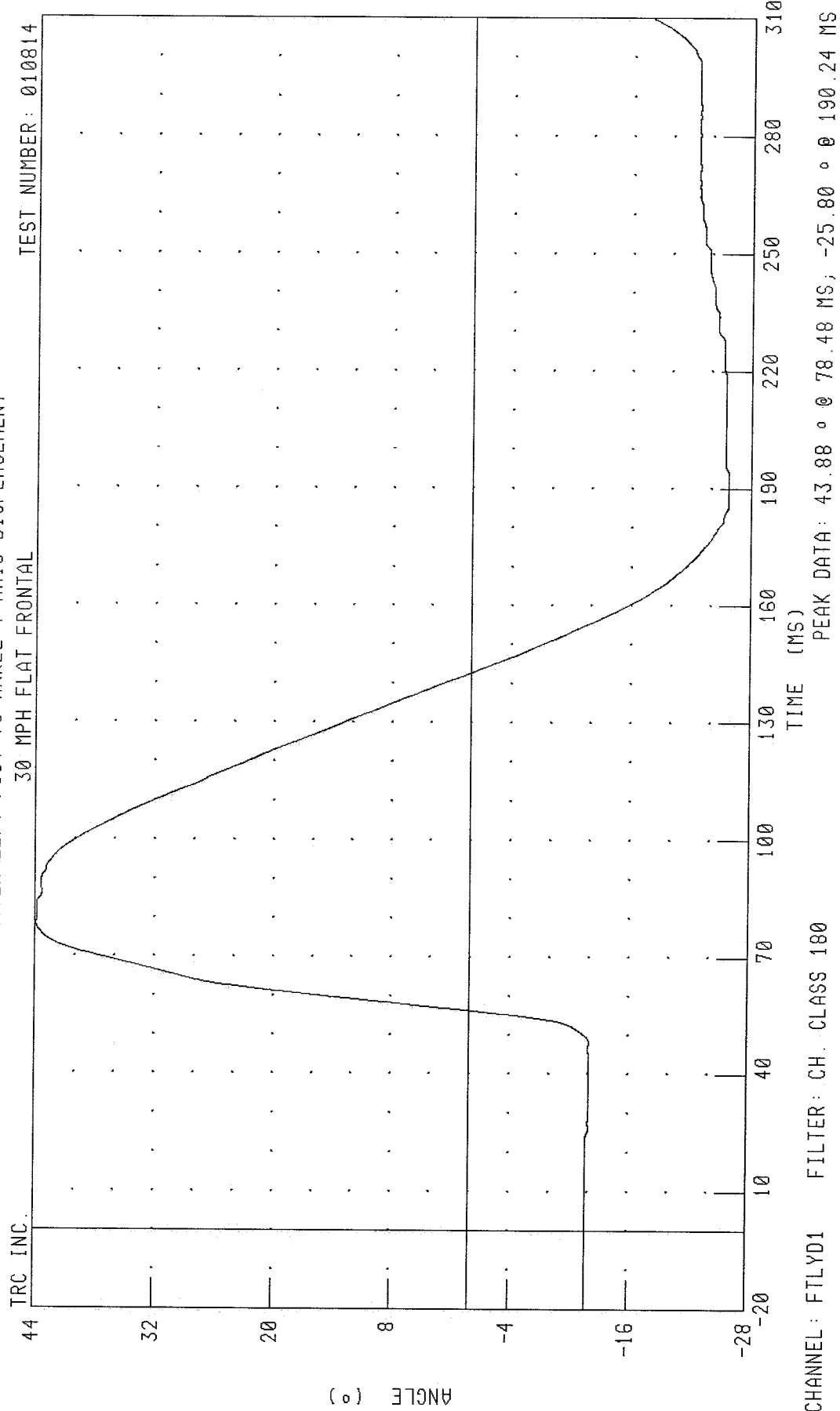
PEAK DATA: 0.65 --- 0 51.04 MS; 0.00 --- 0 -20.00 MS

CHANNEL: NCE2 FILTER: CH. CLASS 600

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER LEFT FOOT TO ANKLE X-AXIS DISPLACEMENT

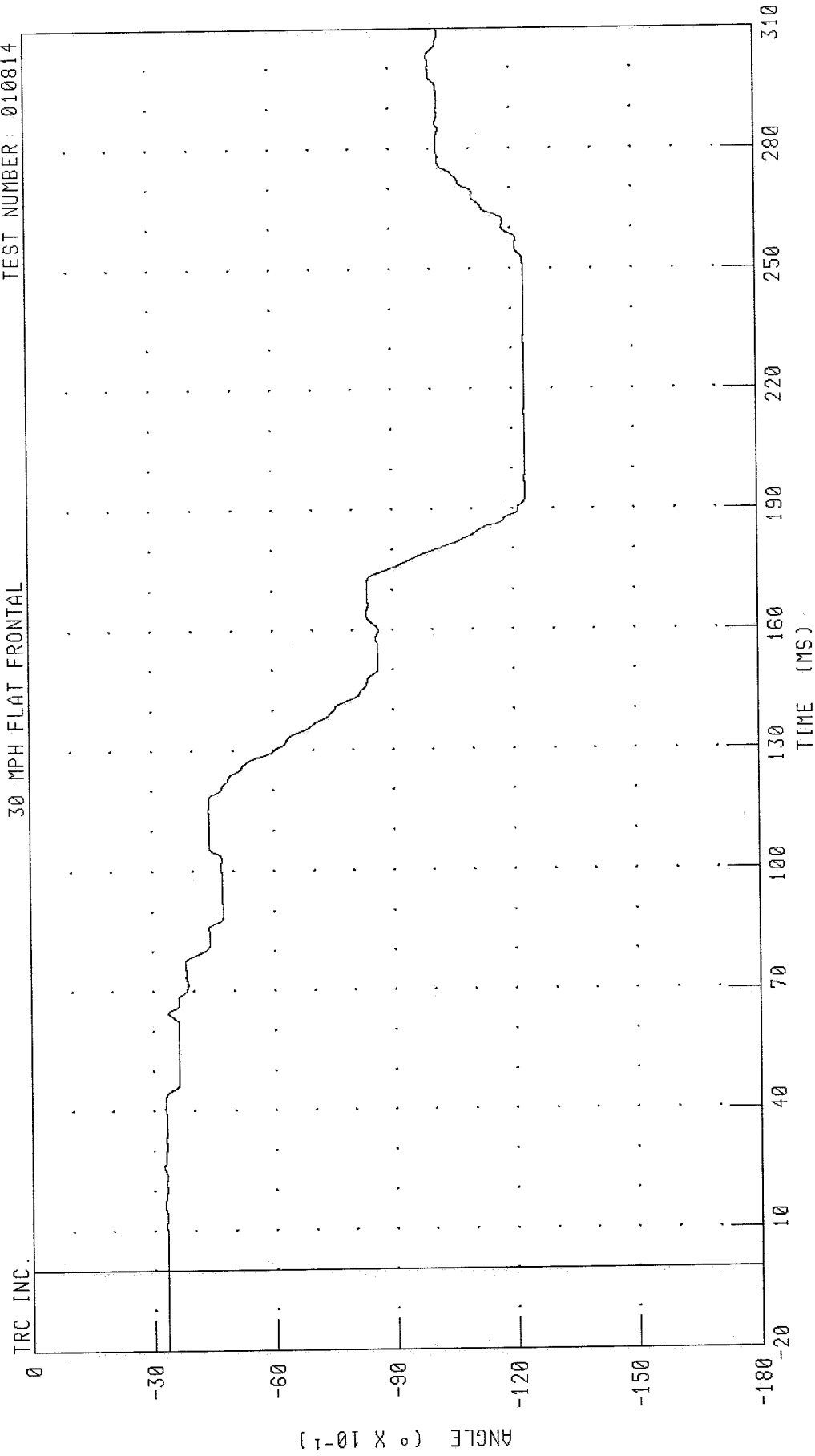


2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER LEFT FOOT TO ANKLE Y-AXIS DISPLACEMENT



2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
 DRIVER LEFT FOOT TO ANKLE Z-AXIS DISPLACEMENT
 30 MPH FLAT FRONTAL

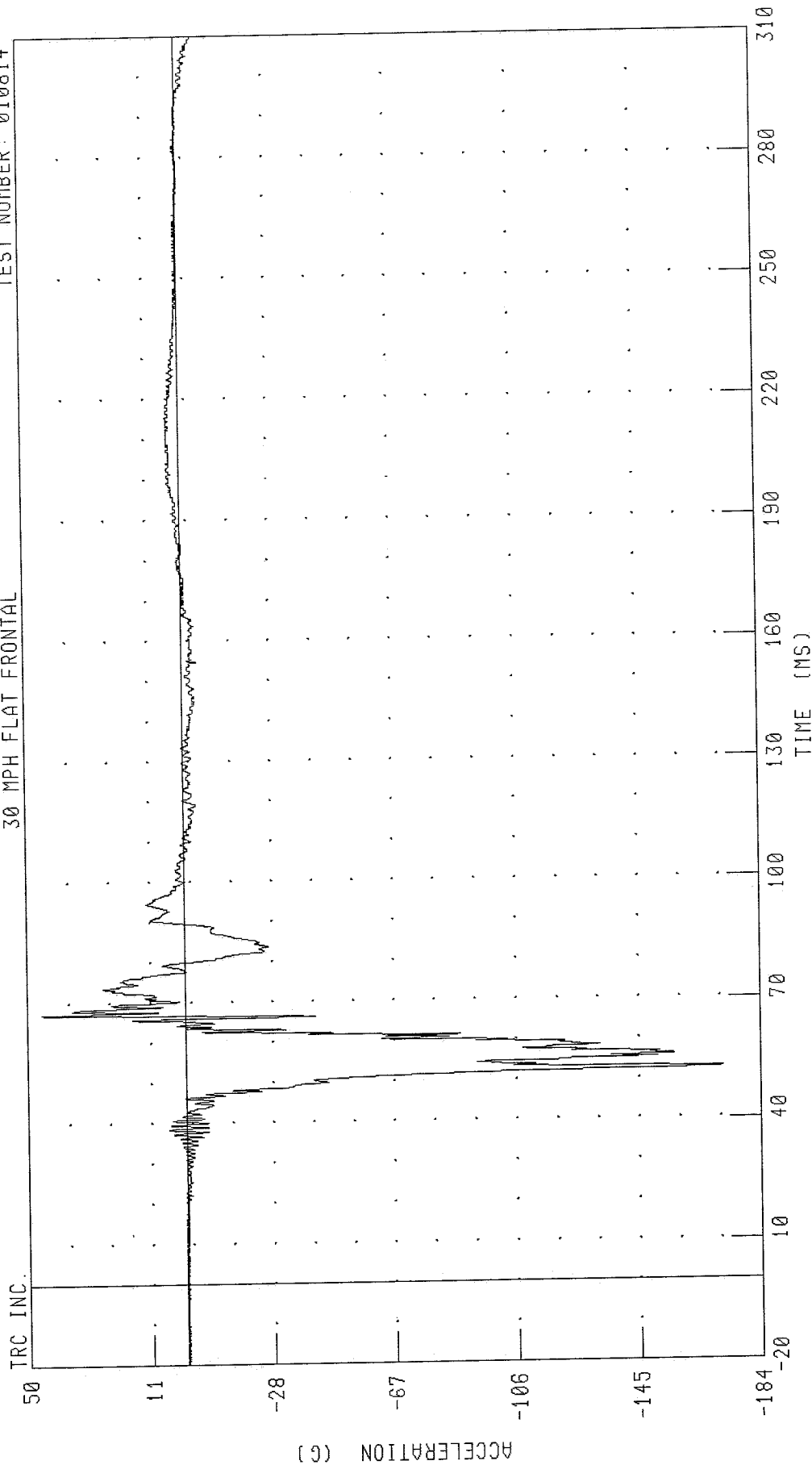
TEST NUMBER: 010814



CHANNEL: FTLZD1 FILTER: CH. CLASS 180
 PEAK DATA: -3.24 ° @ 25.92 MS; -12.31 ° @ 216.08 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
 DRIVER LEFT FOOT X-AXIS ACCELERATION
 30 MPH FLAT FRONTAL

TEST NUMBER: 010814

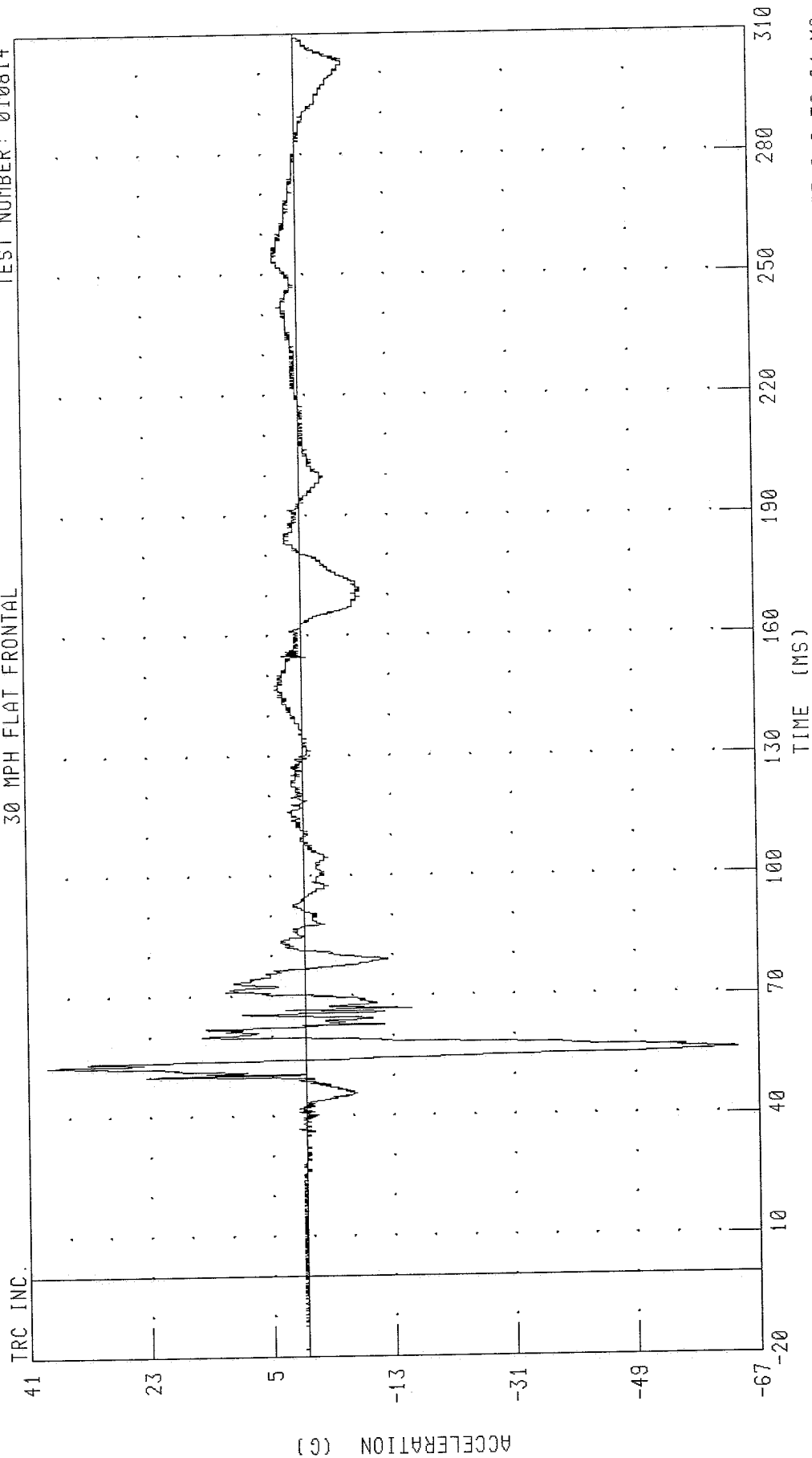


PEAK DATA: 45.53 G @ 67.28 MS; -171.97 G @ 52.80 MS

CHANNEL: FTLXG1 FILTER: CH. CLASS 1000

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER LEFT FOOT Y-AXIS ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

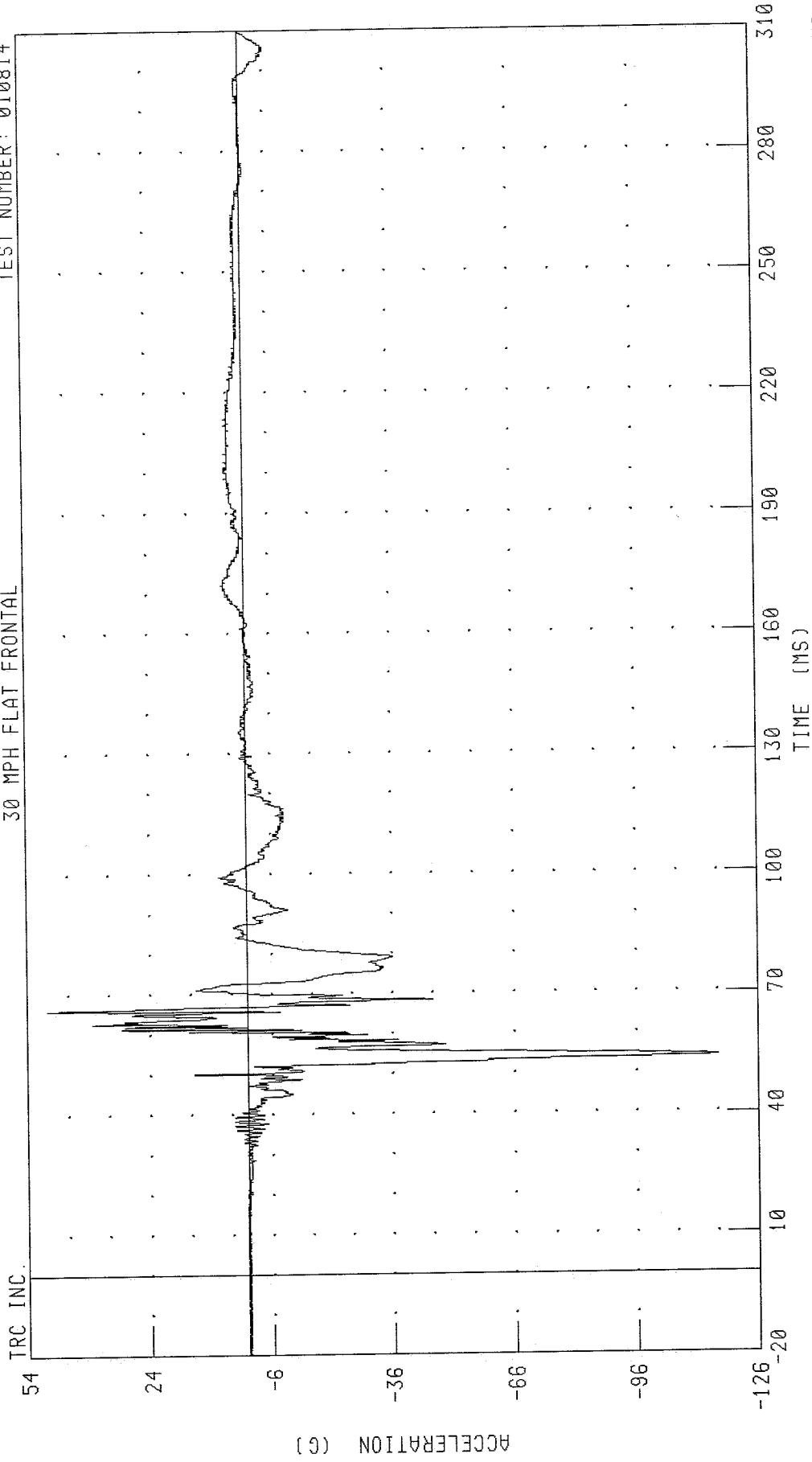


CHANNEL: FTLYG1 FILTER: CH. CLASS 1000

PEAK DATA: 38.10 G @ 52.64 MS; -63.97 G @ 56.24 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER LEFT FOOT Z-AXIS ACCELERATION
30 MPH FLAT FRONTAL

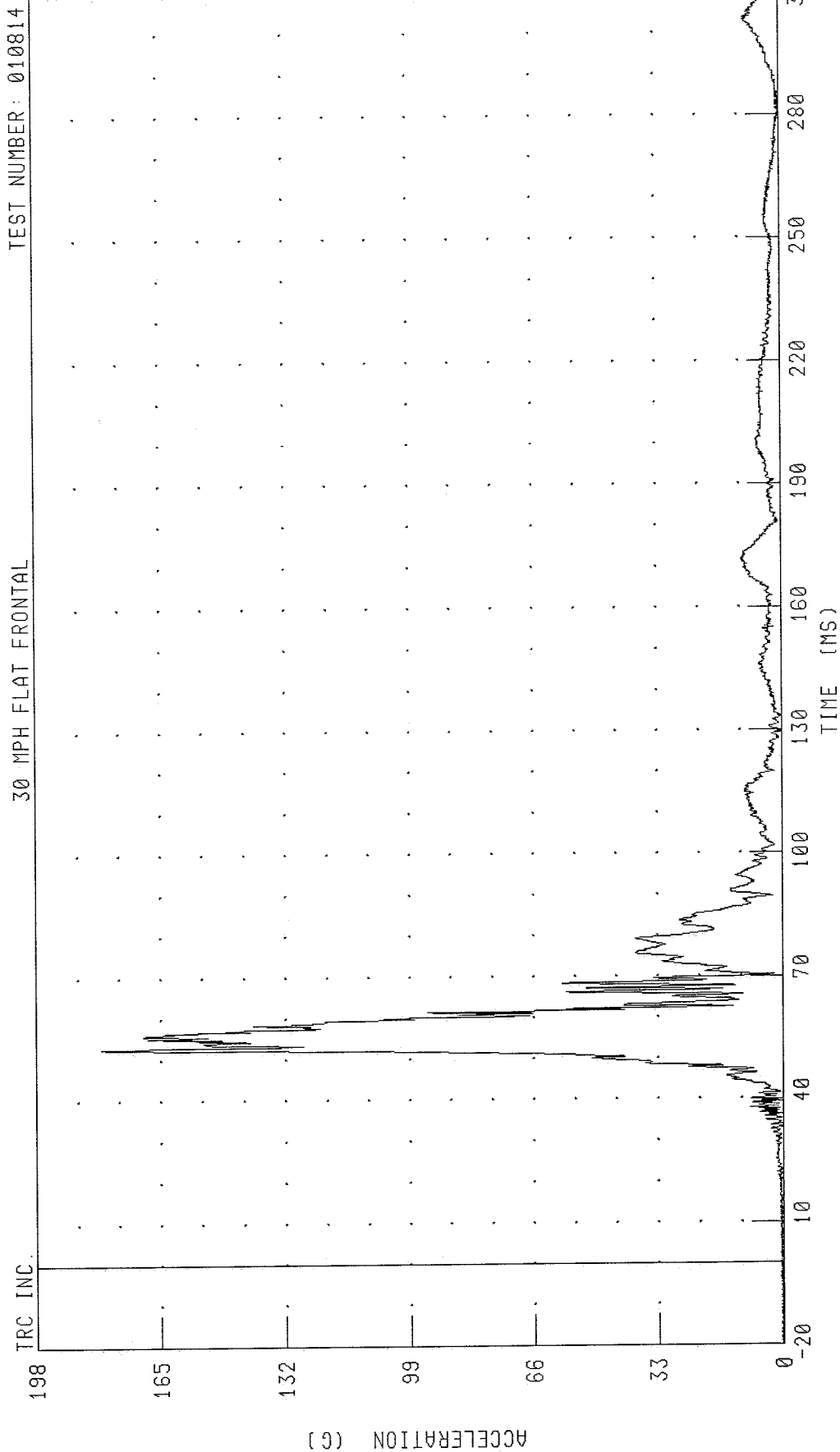
TEST NUMBER: 010814



CHANNEL: FTLZG1 FILTER: CH. CLASS 1000

PEAK DATA: 49.10 G @ 66.16 MS; -116.05 G @ 54.16 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER LEFT FOOT RESULTANT ACCELERATION
30 MPH FLAT FRONTAL

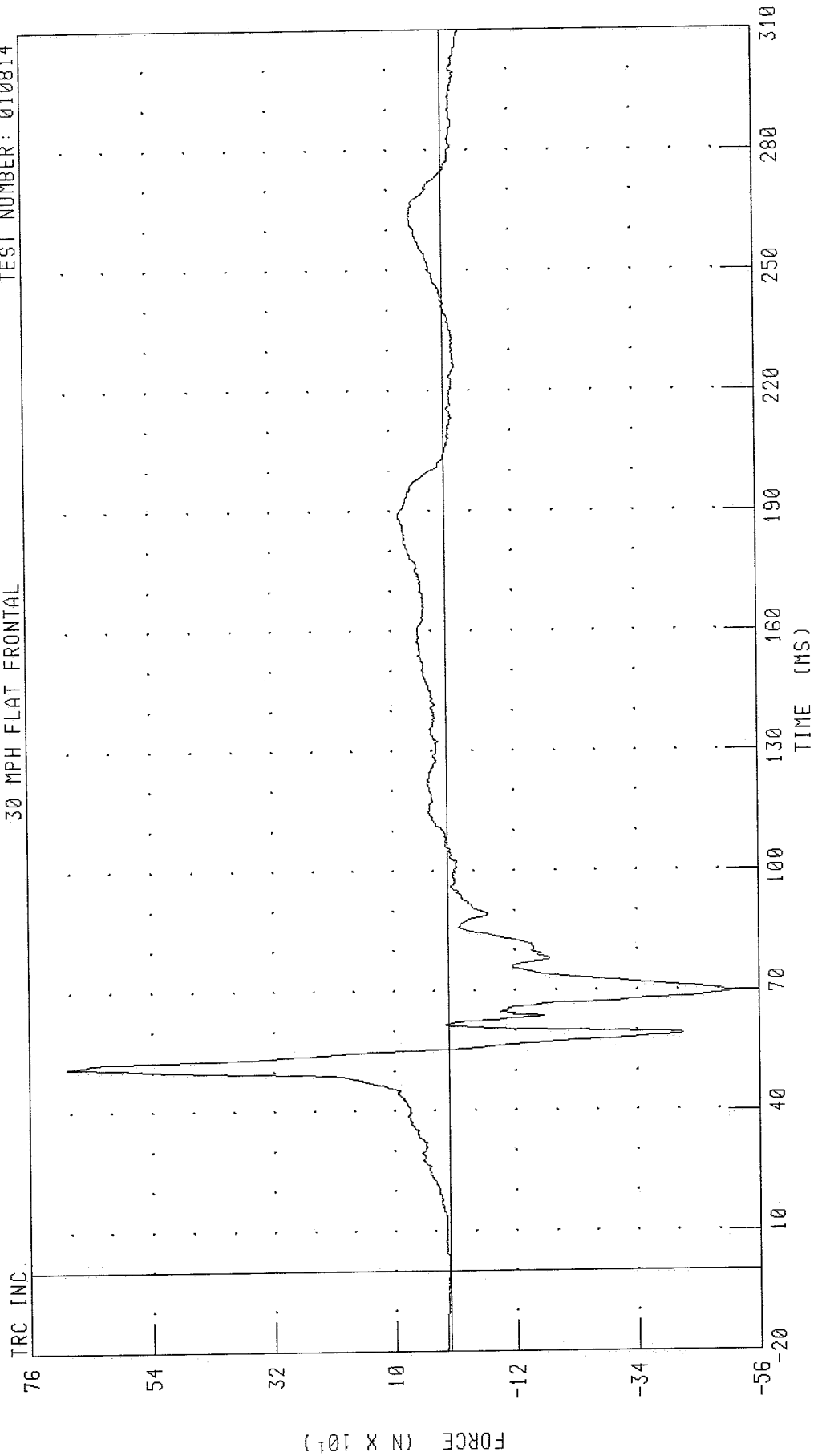


CHANNEL: FTLRG1 FILTER: CH. CLASS 1000

PEAK DATA: 180.76 G @ 52.80 MS, 0.30 G @ -20.00 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER RIGHT UPPER TIBIA X-AXIS FORCE
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

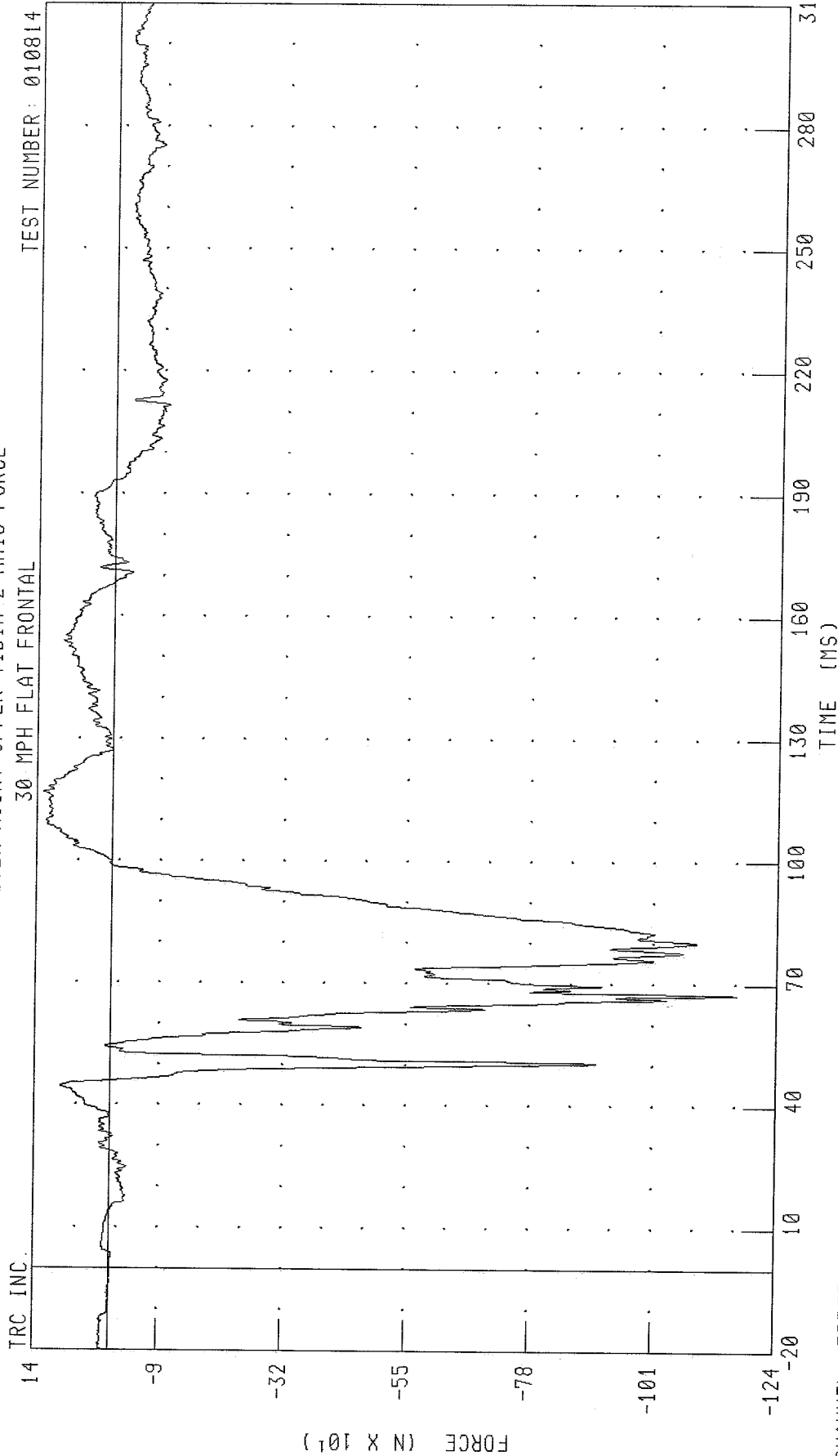


CHANNEL: TBRXF1 FILTER: CH. CLASS 600 PEAK DATA: 693.97 N @ 51.20 MS; -509.98 N @ 69.60 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

DRIVER RIGHT UPPER TIBIA Z-AXIS FORCE

TEST NUMBER: 010814

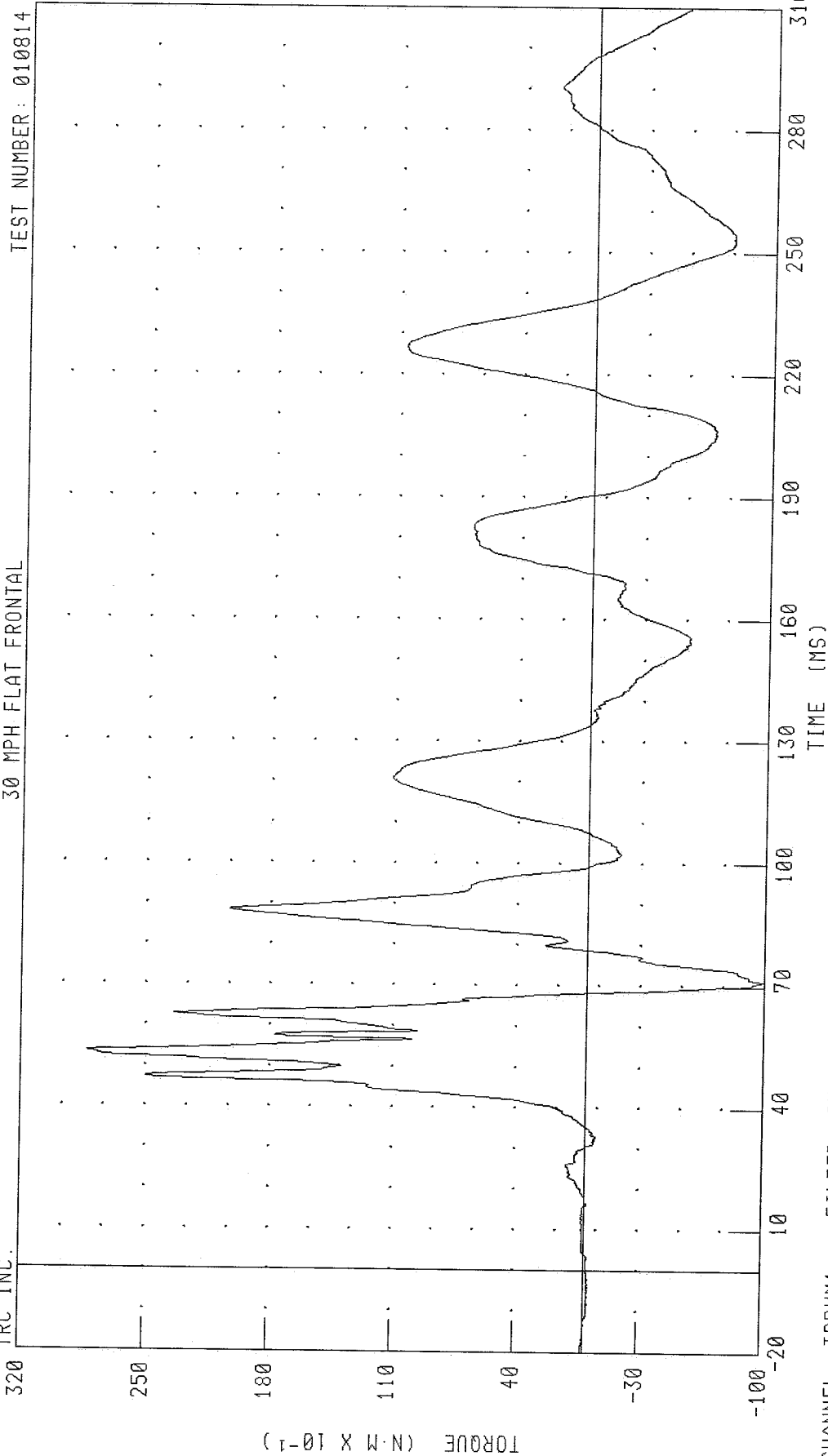


CHANNEL: TBRZF1 FILTER: CH. CLASS 600

PEAK DATA: 128.16 N @ 116.96 MS; -1166.73 N @ 67.44 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER RIGHT UPPER TIBIA MOMENT ABOUT X AXIS
30 MPH FLAT FRONTAL

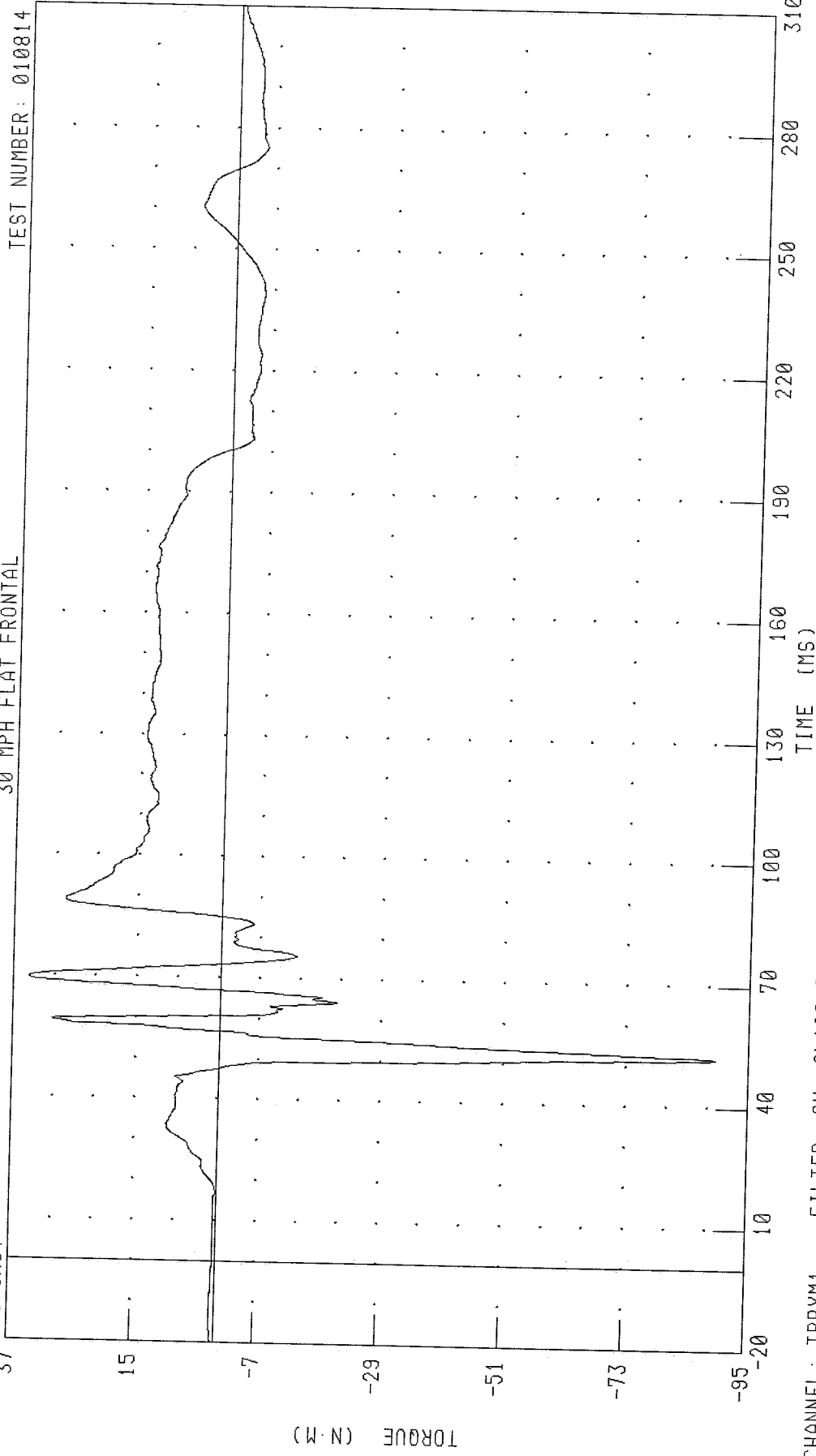
TRC INC.



CHANNEL: TBRXM1 FILTER: CH. CLASS 600

PEAK DATA: 28.29 N·M @ 53.52 MS, -9.94 N·M @ 71.12 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER RIGHT UPPER TIBIA MOMENT ABOUT Y AXIS
30 MPH FLAT FRONTAL

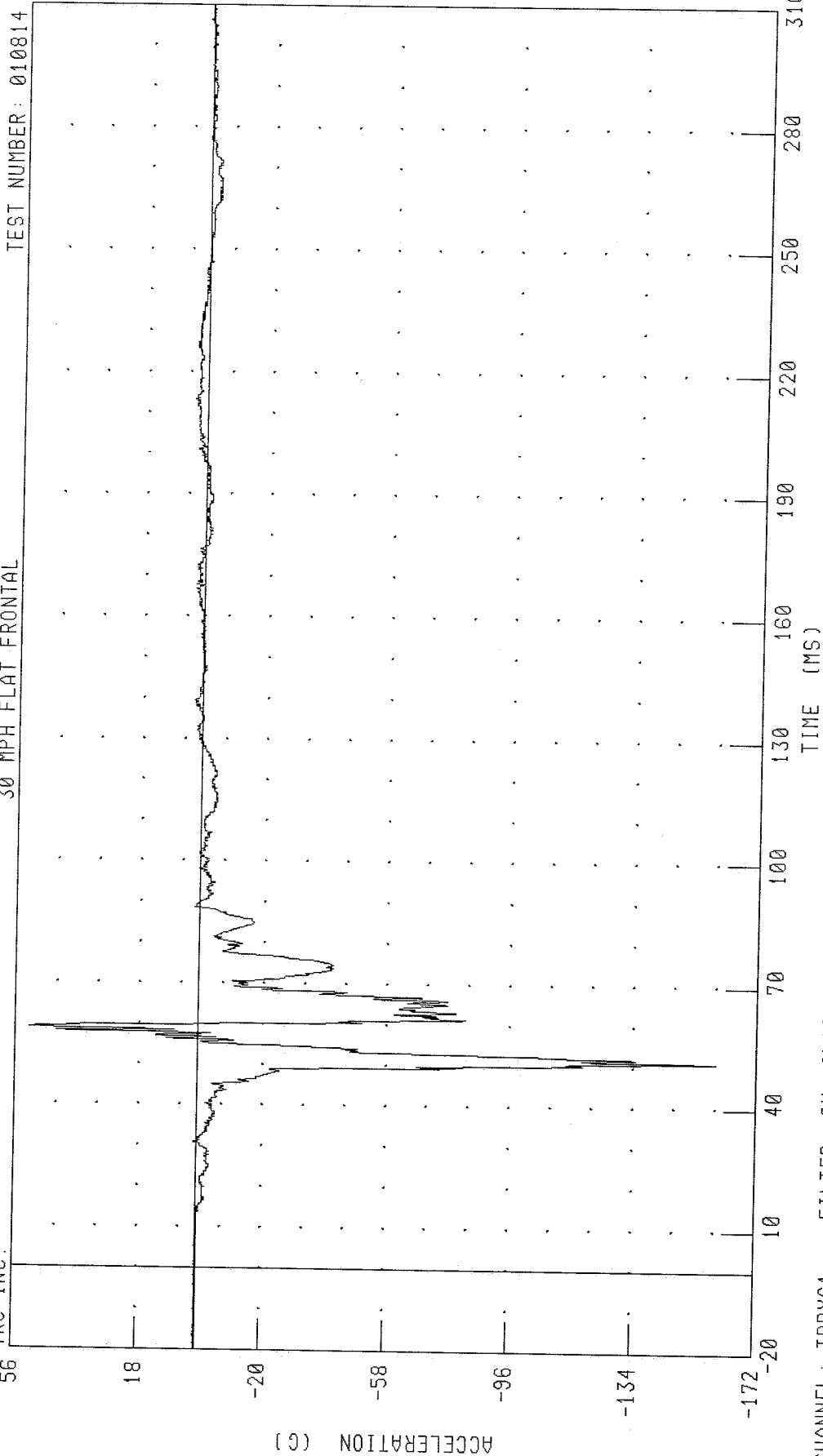


CHANNEL: TBRYM1 FILTER: CH. CLASS 600

PEAK DATA: 34.26 N·M @ 69.76 MS; -88.99 N·M @ 51.84 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER RIGHT TIBIA X-AXIS ACCELERATION
30 MPH FLAT FRONTAL

TRC INC.



CHANNEL: TBRXC1 FILTER: CH. CLASS 1000

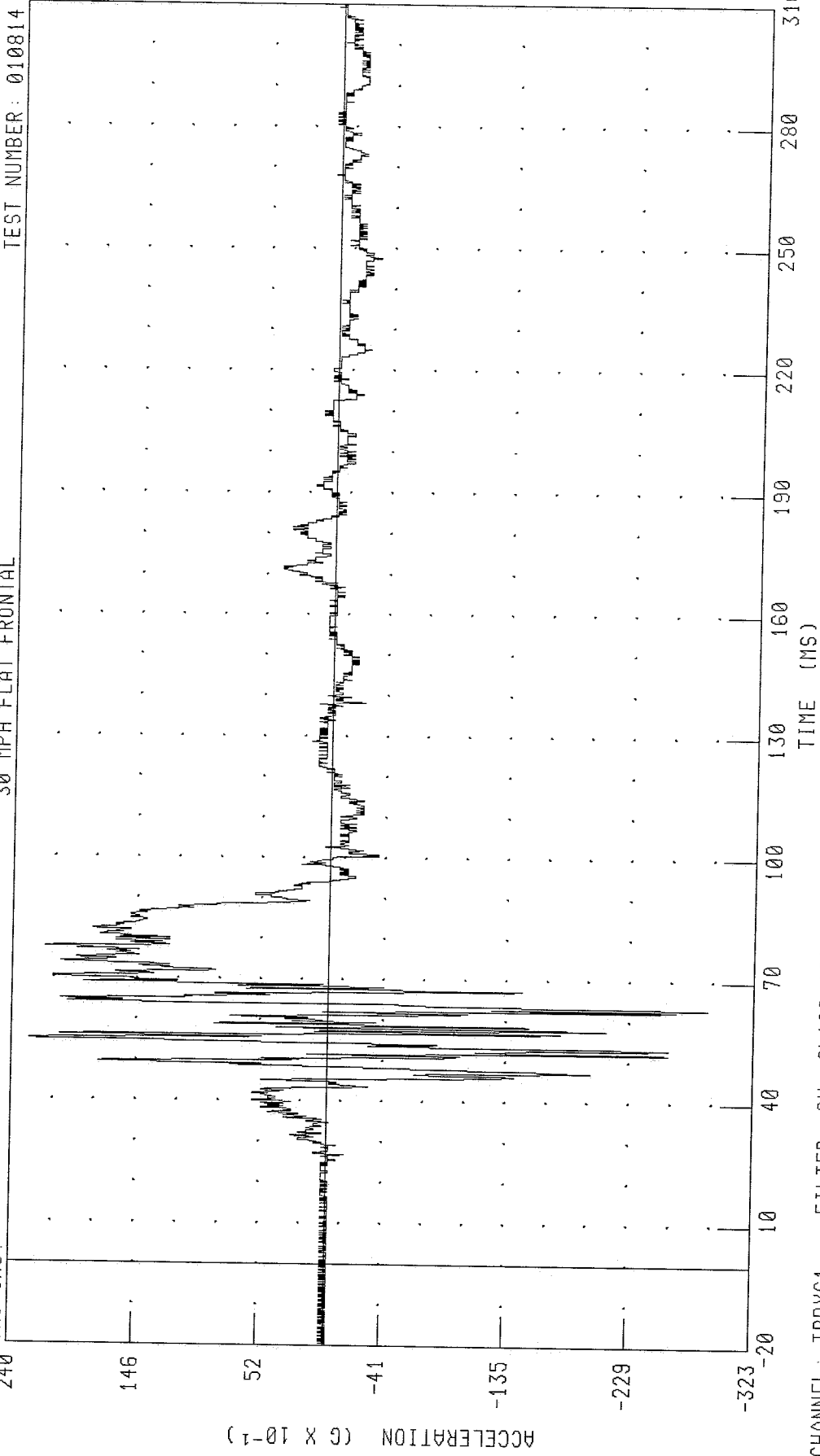
PEAK DATA: 51.75 G @ 58.96 MS, -159.48 G @ 51.12 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER RIGHT TIBIA Y-AXIS ACCELERATION

TRC INC.

TEST NUMBER: 010814

30 MPH FLAT FRONTAL



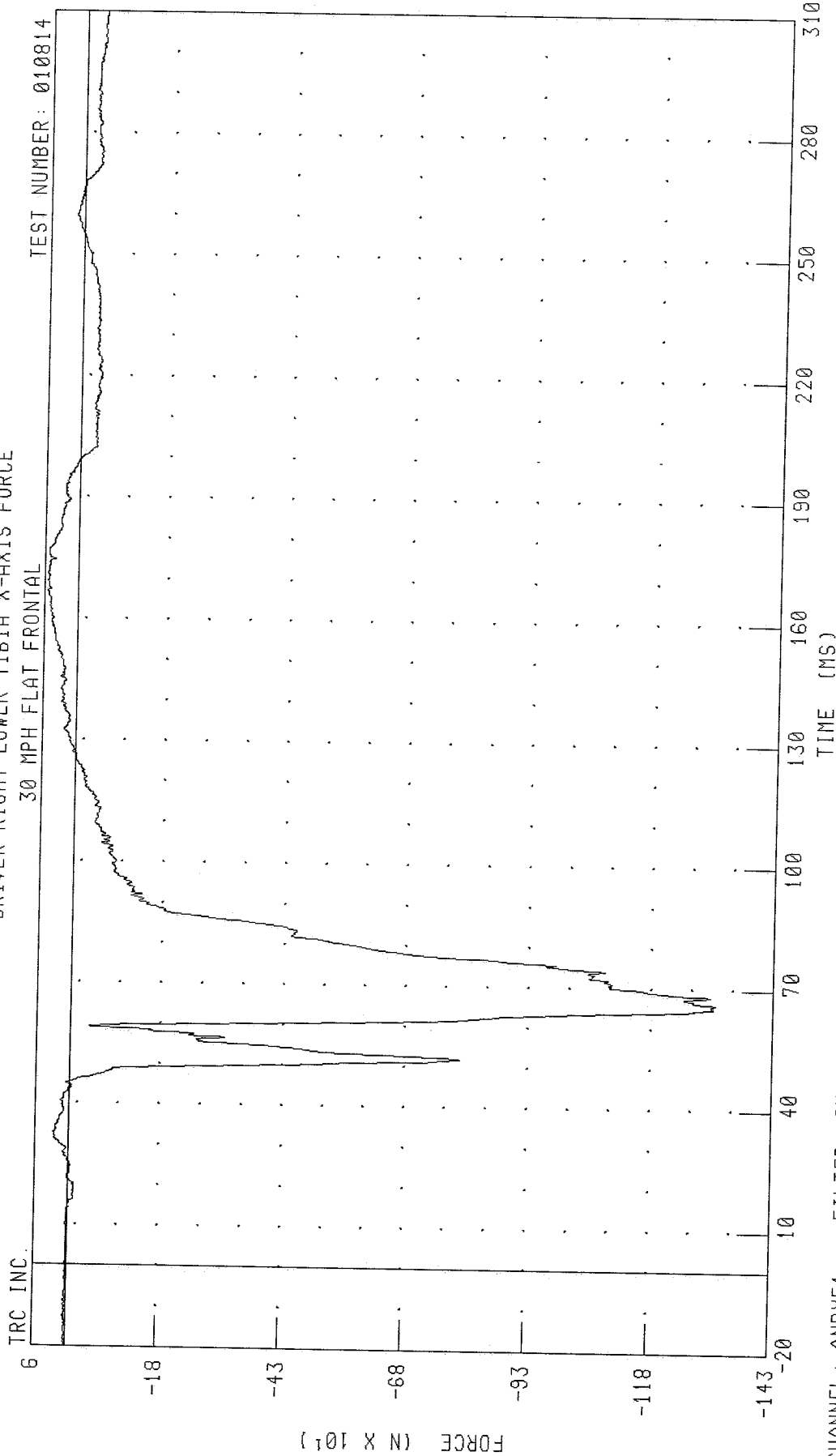
CHANNEL: TBRYG1 FILTER: CH. CLASS 1000

PEAK DATA: 22.69 G @ 55.04 MS; -28.89 G @ 63.04 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER RIGHT LOWER TIBIA X-AXIS FORCE
30 MPH FLAT FRONTAL

TRC INC.

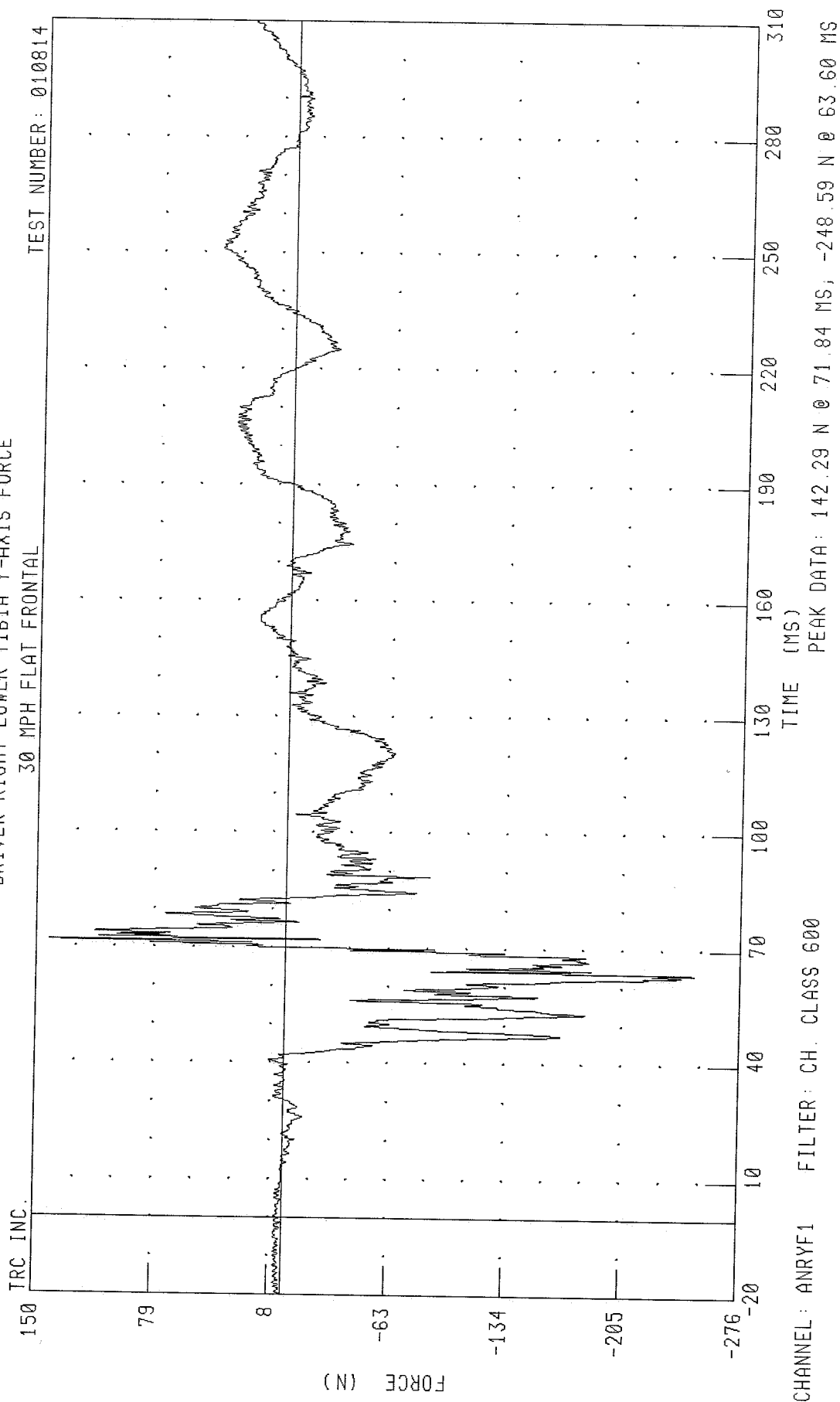
TEST NUMBER: 010814



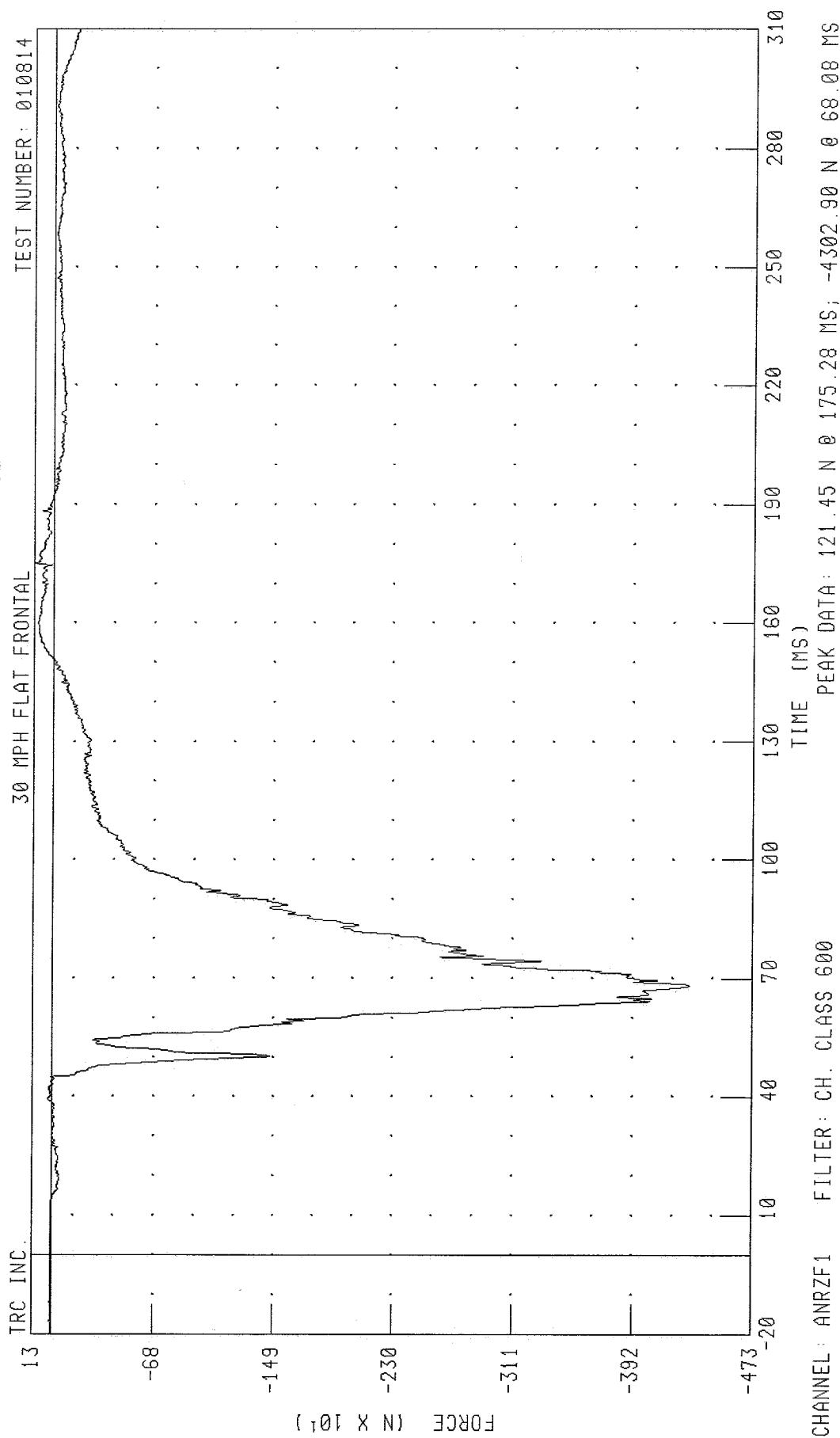
CHANNEL: ANRFX1 FILTER: CH. CLASS 600

PEAK DATA: 62.35 N @ 166.80 MS, -1313.08 N @ 66.08 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER RIGHT LOWER TIBIA Y-AXIS FORCE

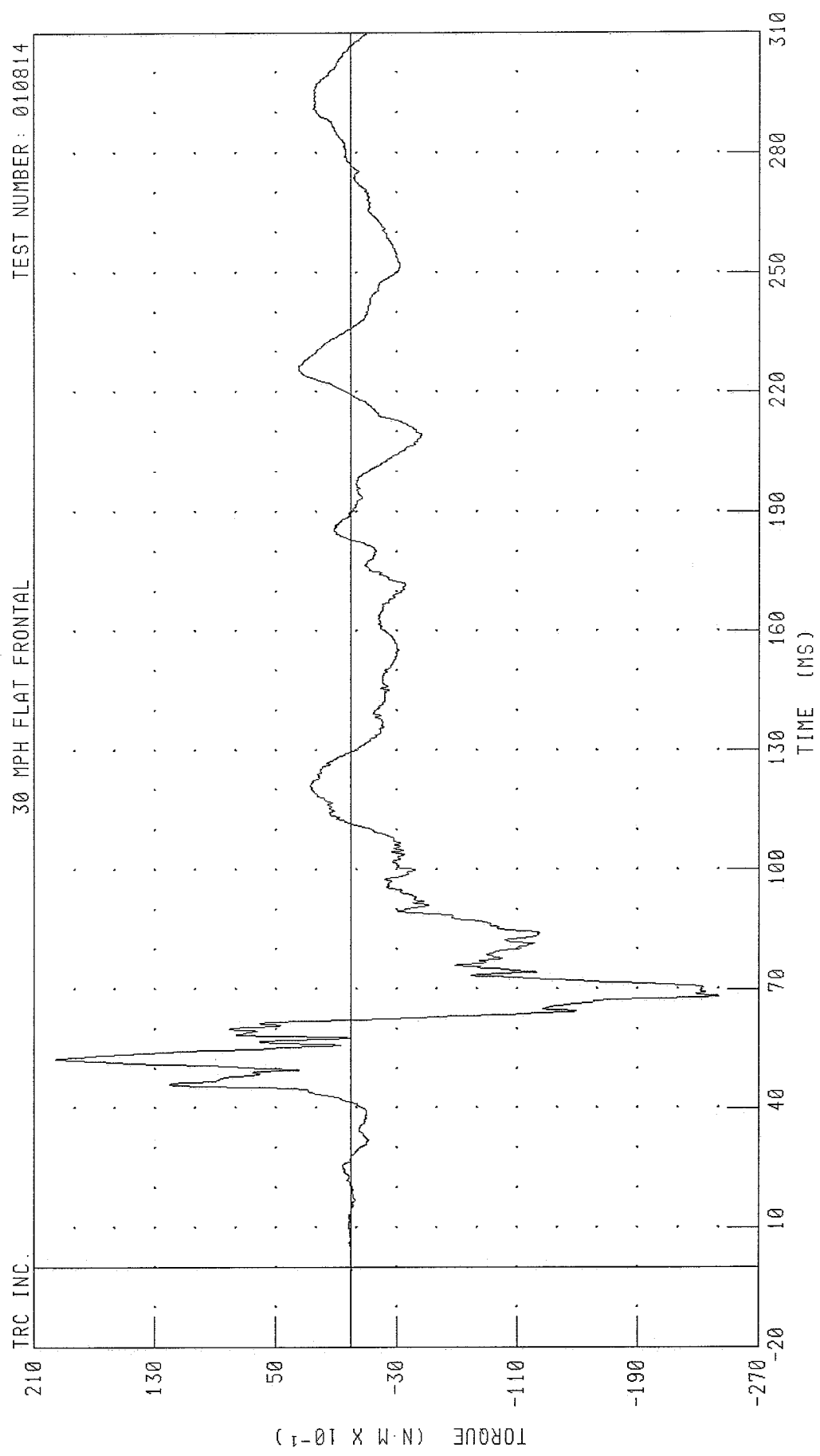


2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER RIGHT LOWER TIBIA Z-AXIS FORCE



2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER RIGHT LOWER TIBIA MOMENT ABOUT X AXIS
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

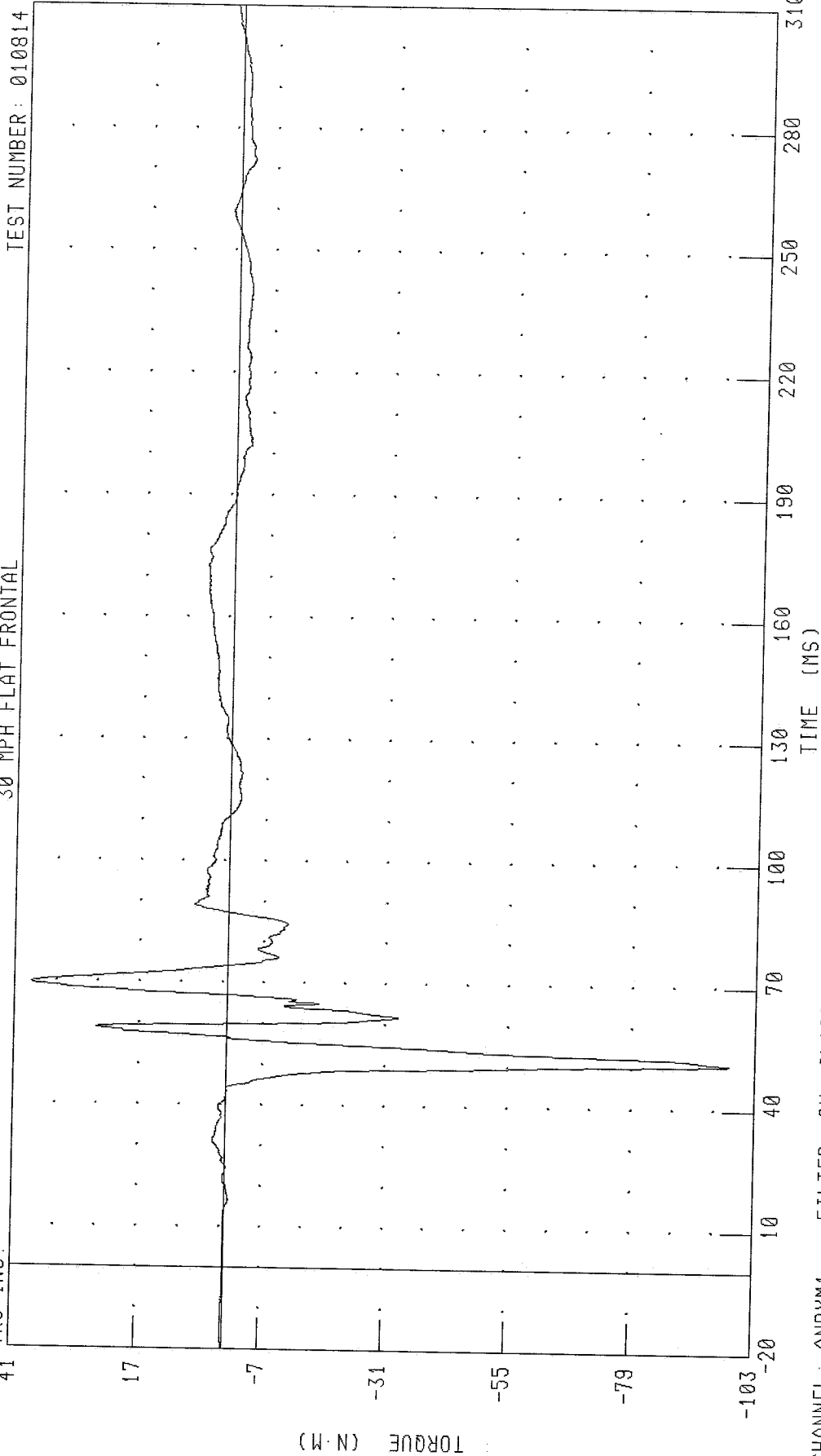


CHANNEL: ANRXM1 FILTER: CH. CLASS 600

PEAK DATA: 19.60 N·M @ 52.48 MS, -24.34 N·M @ 68.16 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER RIGHT LOWER TIBIA MOMENT ABOUT Y AXIS
30 MPH FLAT FRONTAL

TRC INC.

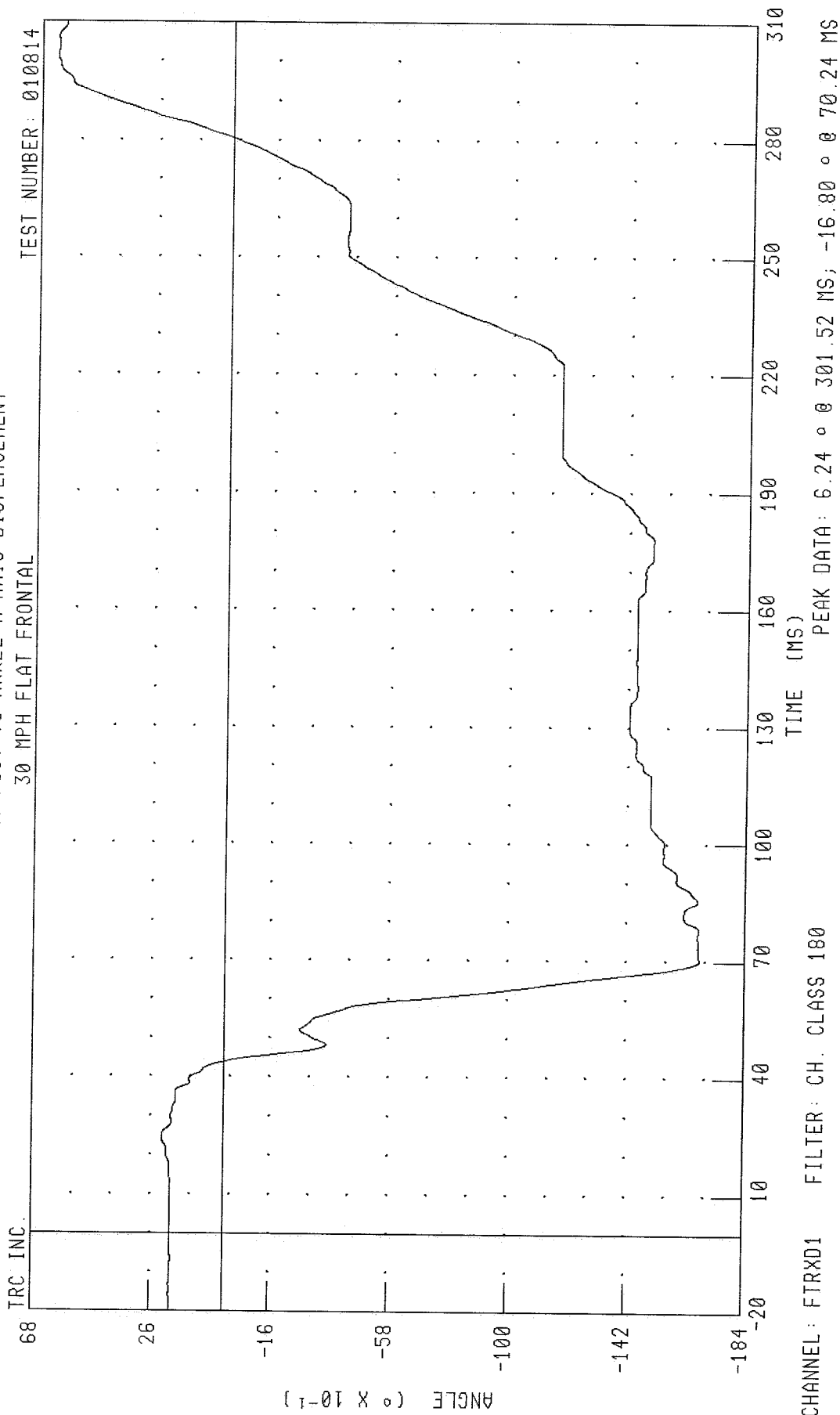


CHANNEL: ANRYM1

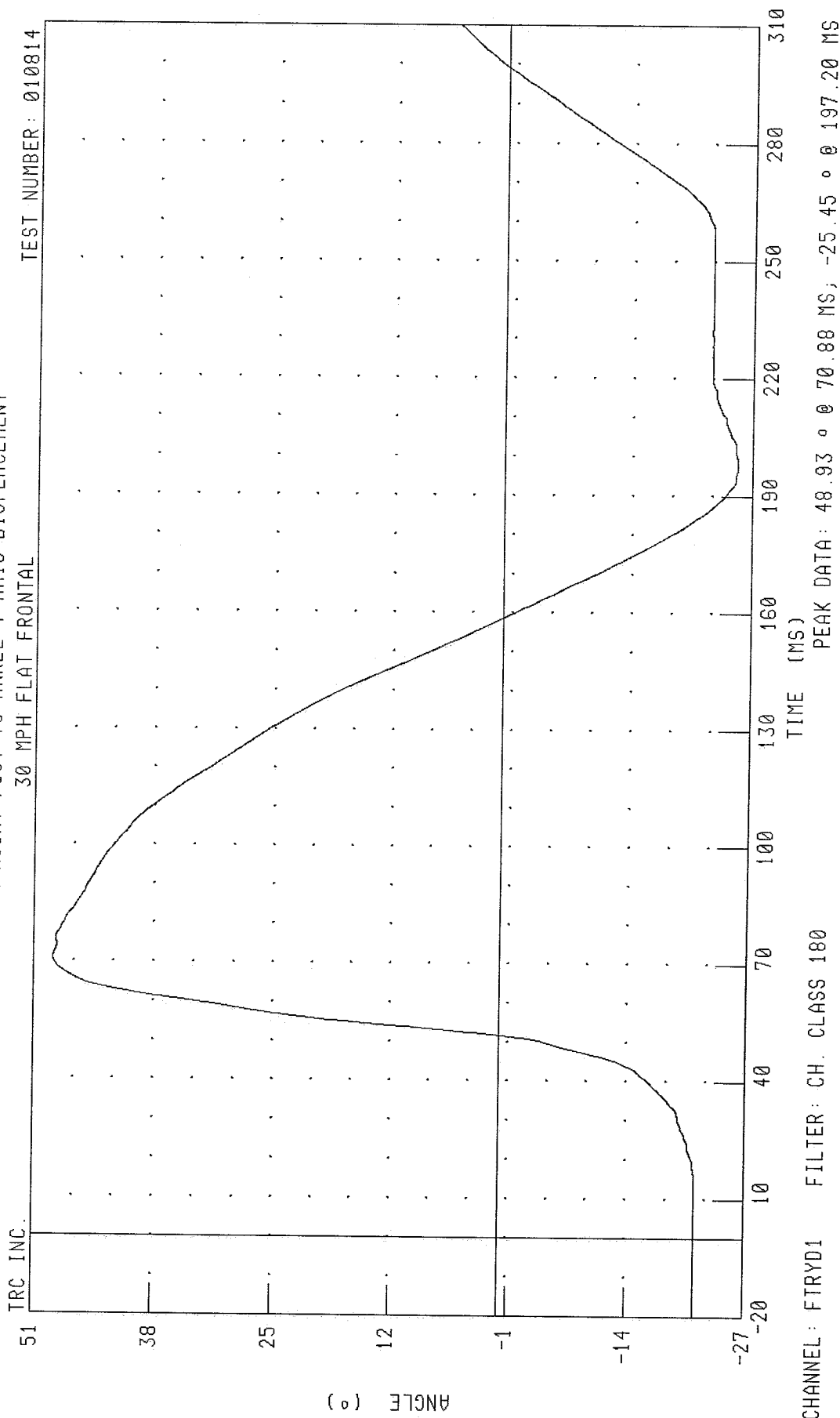
FILTER: CH. CLASS 600

PEAK DATA: 37.88 N-M @ 69.84 MS; -97.92 N-M @ 97.96 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER RIGHT FOOT TO ANKLE X-AXIS DISPLACEMENT

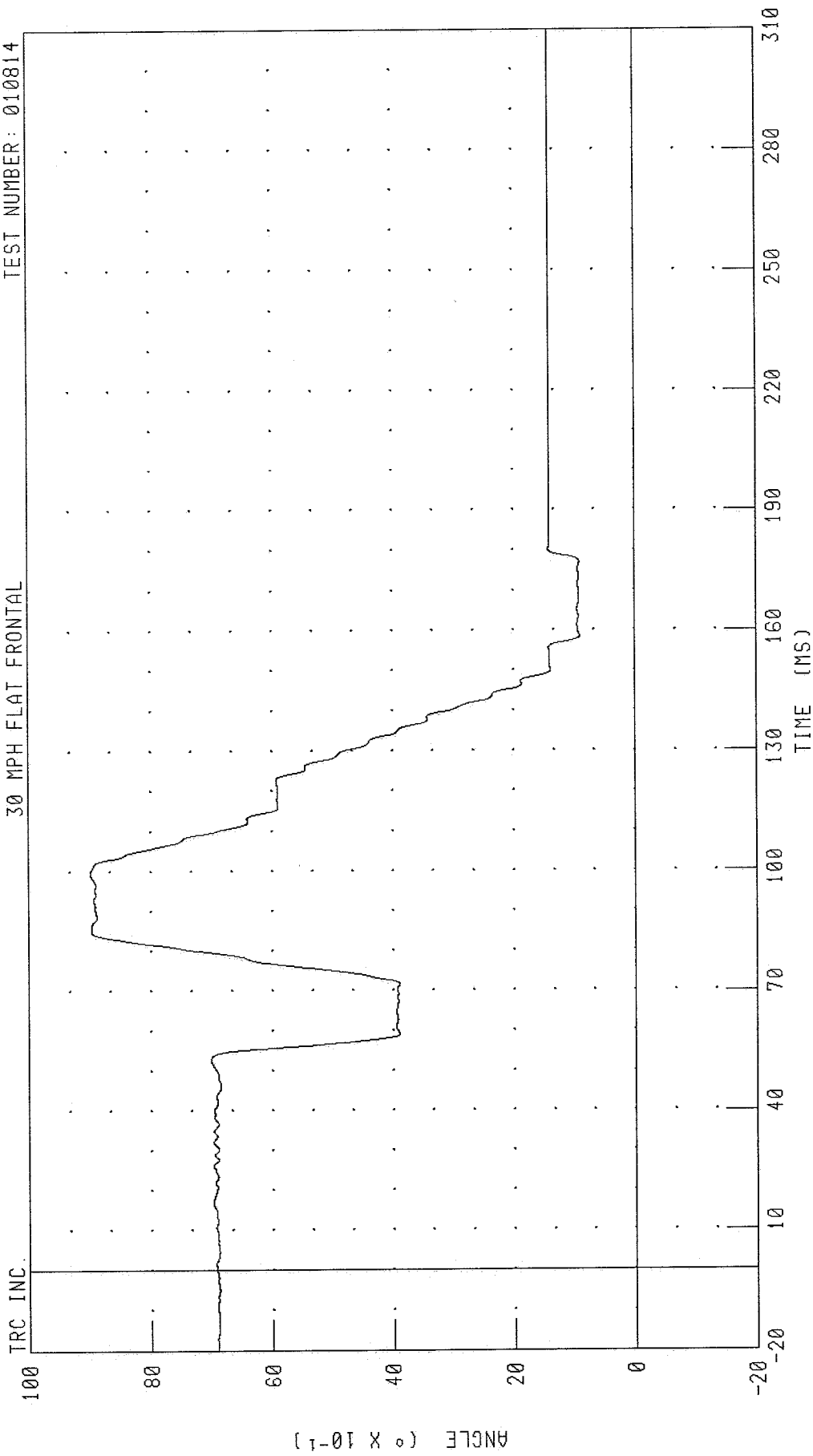


2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER RIGHT FOOT TO ANKLE Y-AXIS DISPLACEMENT



2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER RIGHT FOOT TO ANKLE Z-AXIS DISPLACEMENT
30 MPH FLAT FRONTAL

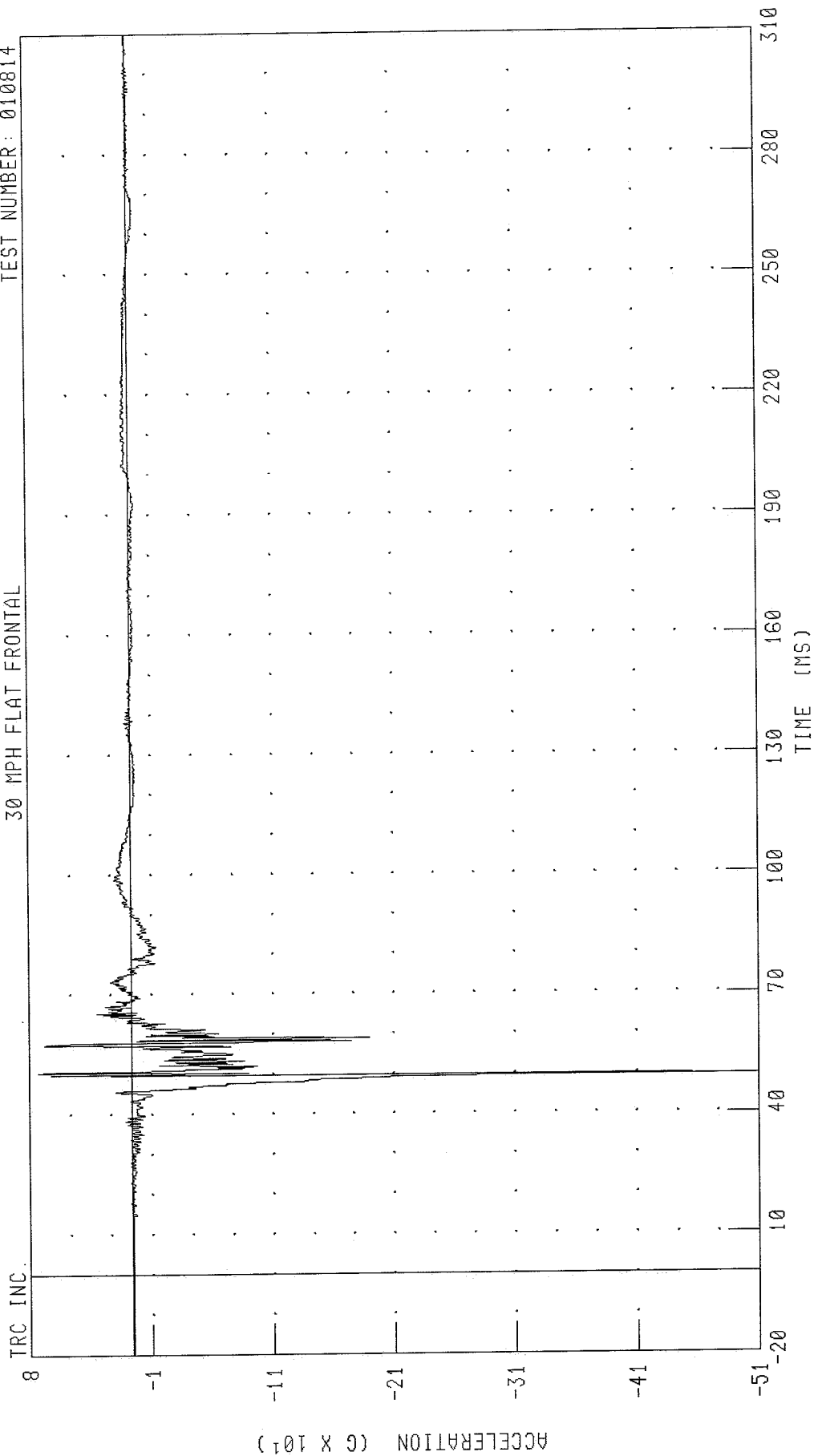
TEST NUMBER: 010814



CHANNEL: FTRZD1 FILTER: CH. CLASS 180 PEAK DATA: 8.99 ° @ 99.60 MS; 0.89 ° @ 158.56 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER RIGHT FOOT X-AXIS ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

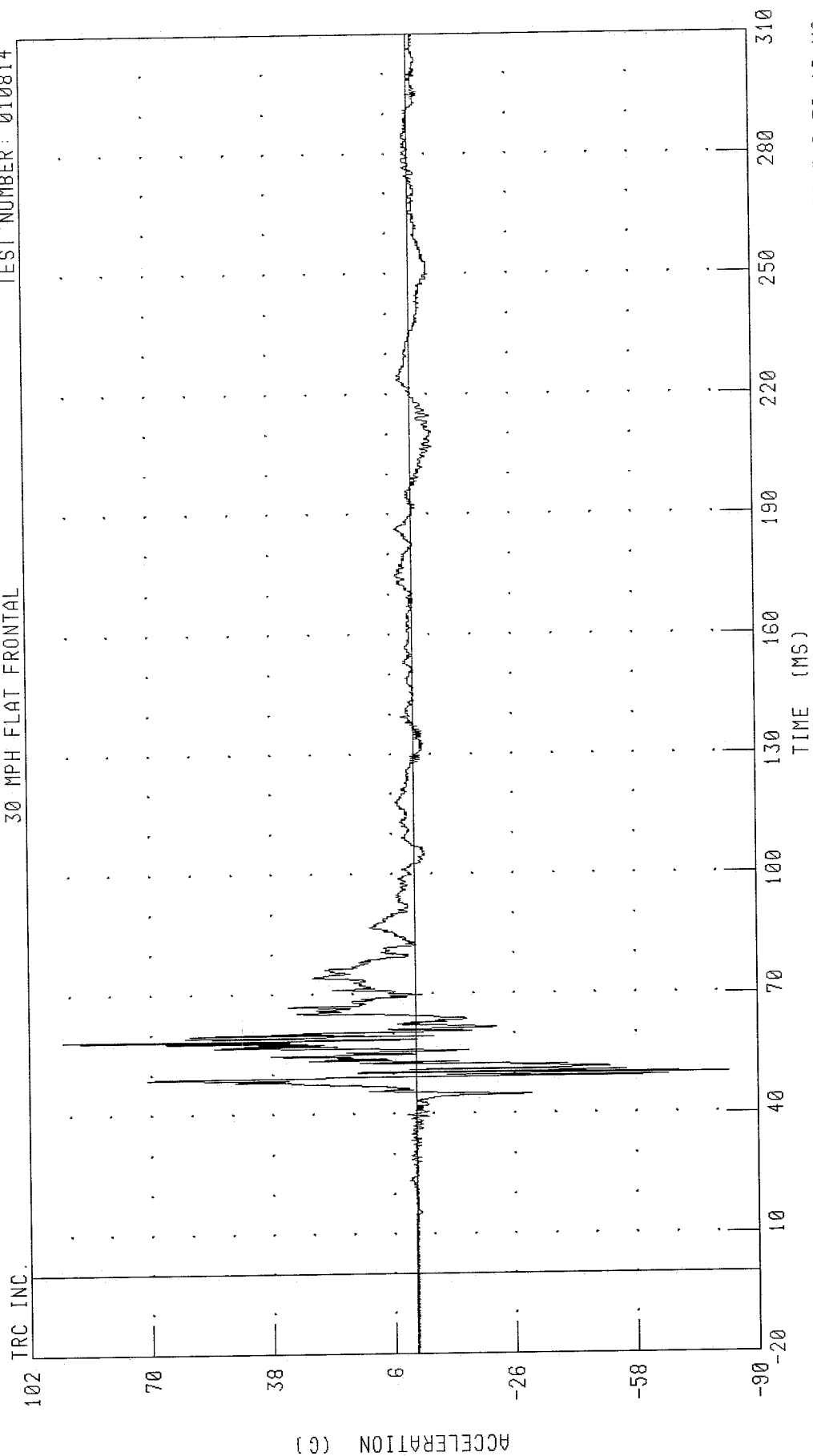


CHANNEL: FTRXG1 FILTER: CH. CLASS 1000

PEAK DATA: 76.81 G @ 50.64 MS; -520.99 G @ 49.68 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER RIGHT FOOT Y-AXIS ACCELERATION
30 MPH FLAT FRONTAL

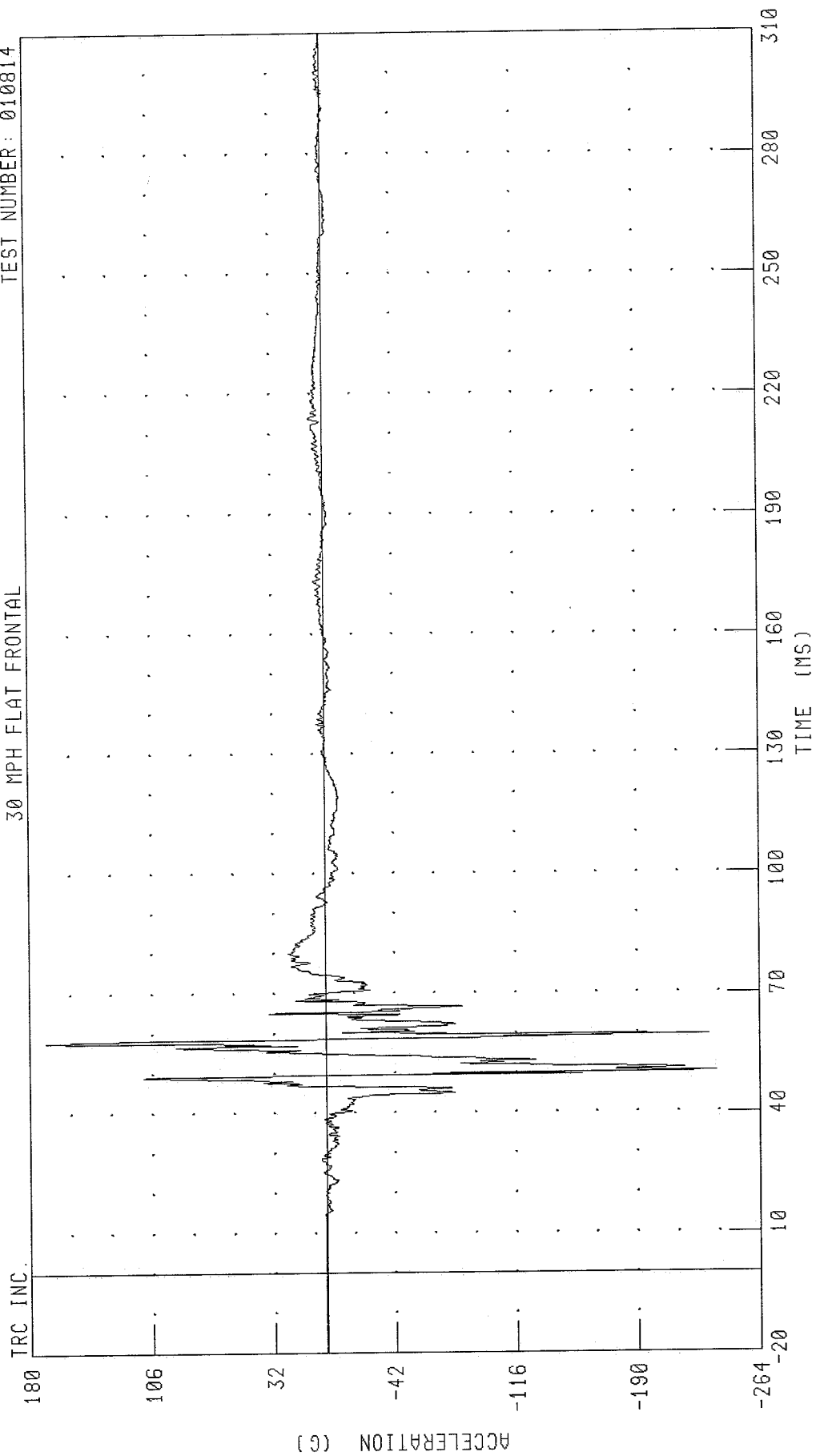
TEST NUMBER: 010814



CHANNEL: FTRYG1 FILTER: CH. CLASS 1000
PEAK DATA: 93.25 G @ 58.32 MS; -82.38 G @ 50.16 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER RIGHT FOOT Z-AXIS ACCELERATION
30 MPH FLAT FRONTAL

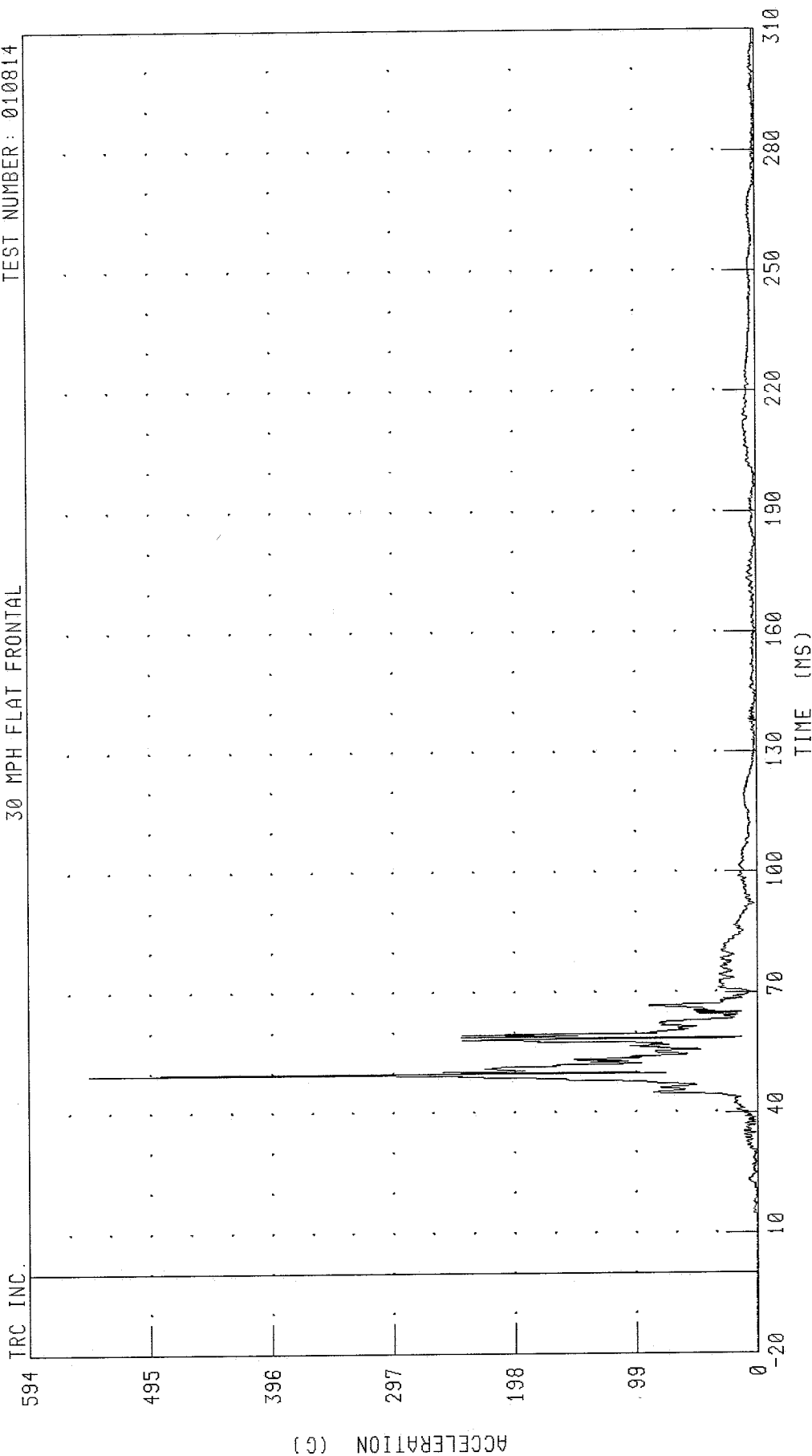
TEST NUMBER: 010814



CHANNEL: FTRZG1 FILTER: CH. CLASS 1000 PEAK DATA: 170.14 G @ 57.92 MS; -237.97 G @ 50.24 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER RIGHT FOOT RESULTANT ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

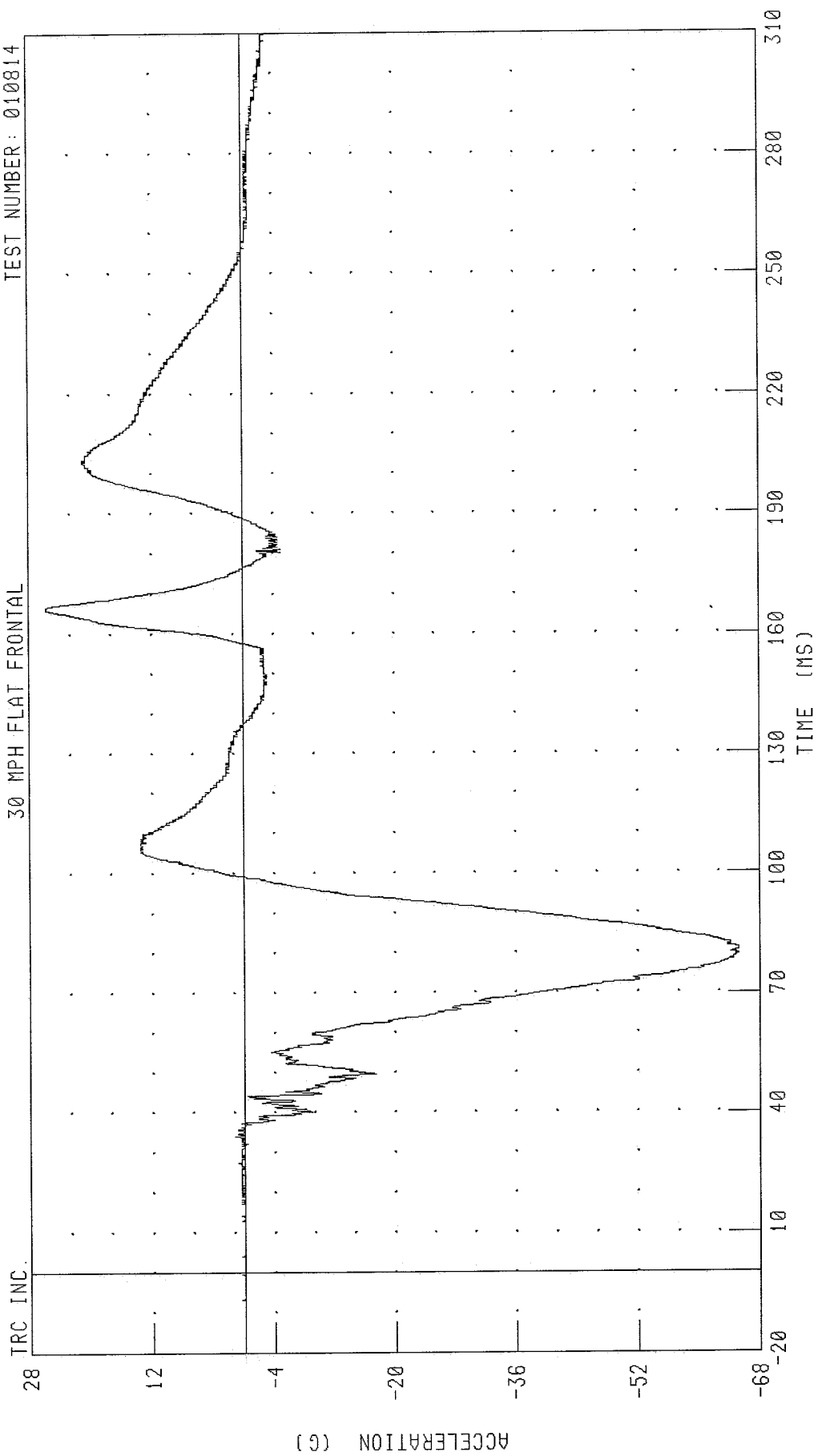


CHANNEL: FTRC1 FILTER: CH. CLASS 1000

PEAK DATA: 544.80 G @ 49.68 MS; 0.34 G @ -20.00 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER HEAD X-AXIS ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814



CHANNEL: HEDXG2 FILTER: CH. CLASS 1000

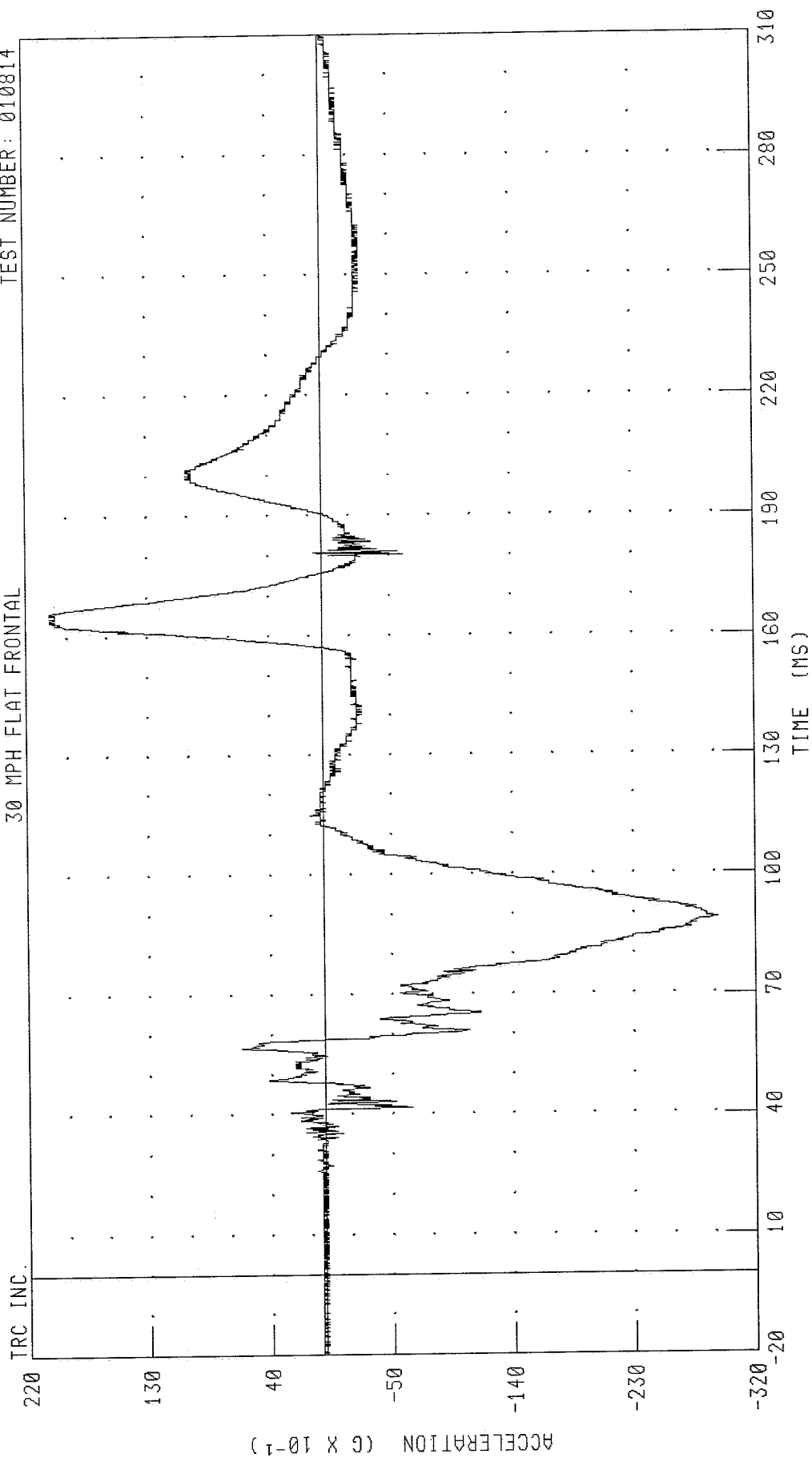
PEAK DATA: 25.66 G @ 166.16 MS; -65.35 G @ 79.44 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

PASSENGER HEAD Y-AXIS ACCELERATION

TEST NUMBER: 010814

30 MPH FLAT FRONTAL



CHANNEL: HEDYG2 FILTER: CH. CLASS 1000

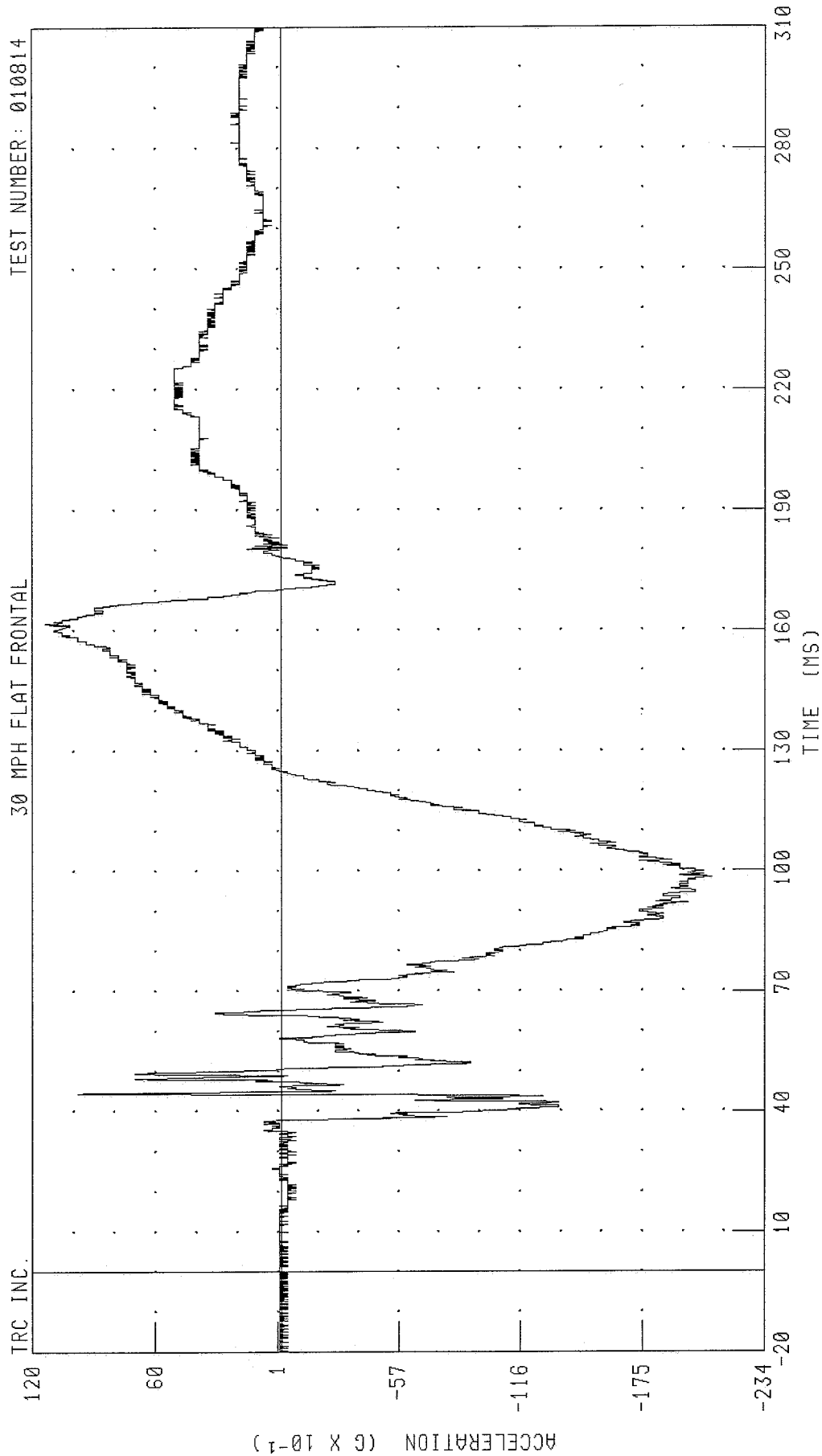
PEAK DATA: 20.28 G @ 163.76 MS; -29.25 G @ 88.96 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

PASSENGER HEAD Z-AXIS ACCELERATION

30 MPH FLAT FRONTAL

TEST NUMBER: 010814

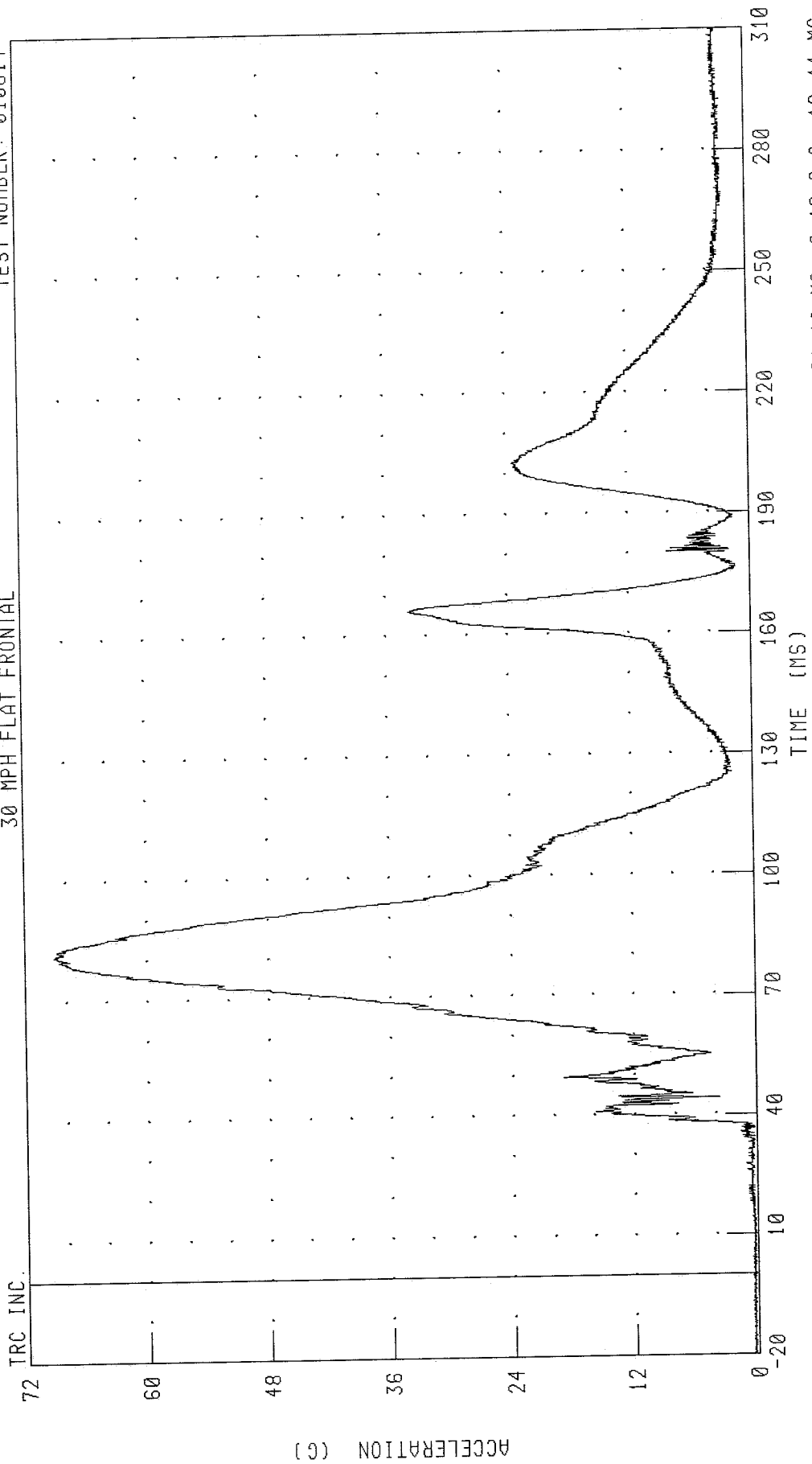


CHANNEL: HEDZG2 FILTER: CH. CLASS 1000

PEAK DATA: 11.36 G @ 161.76 MS; -20.86 G @ 98.32 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER HEAD RESULTANT ACCELERATION
30 MPH FLAT FRONTAL

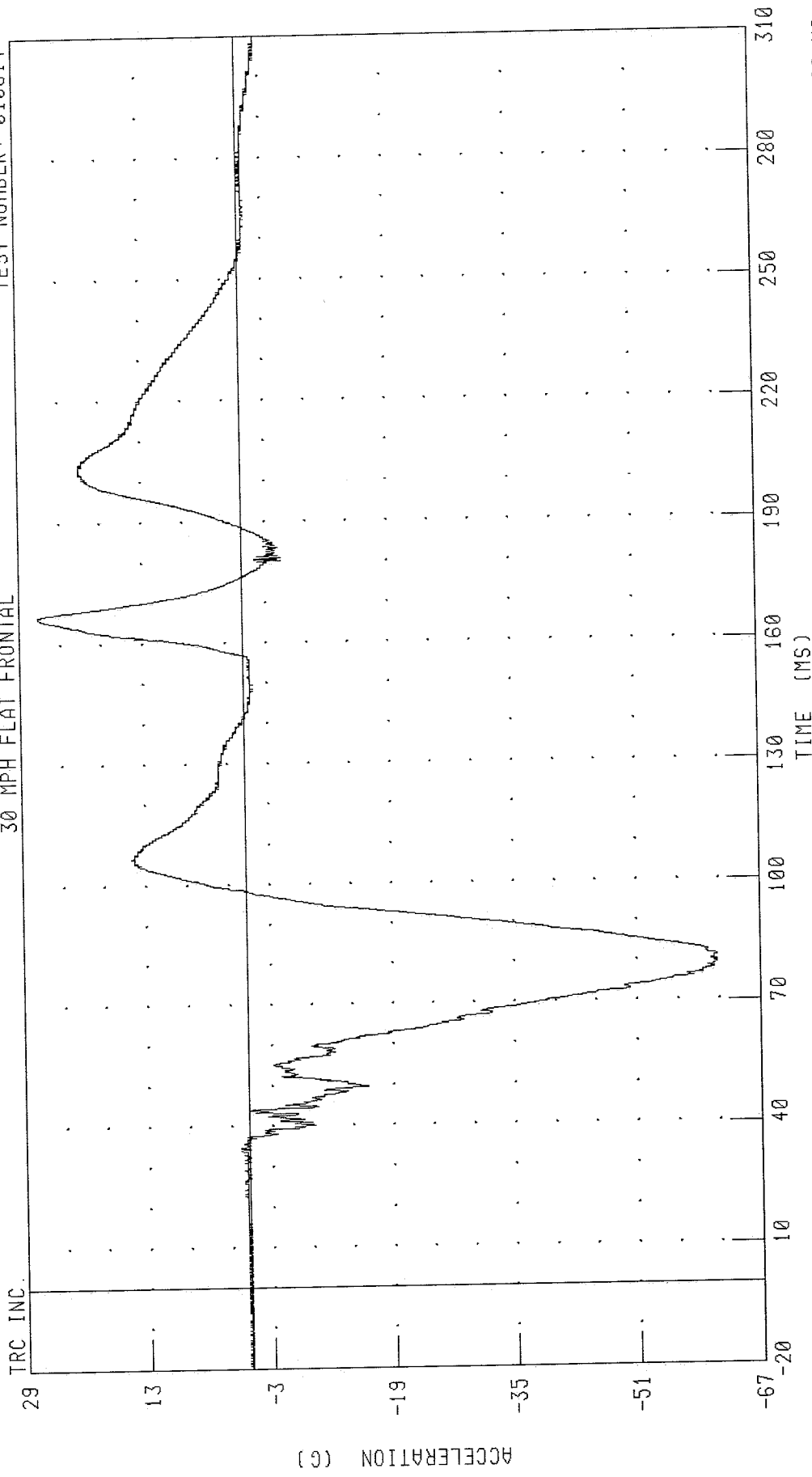
TEST NUMBER: 010814



CHANNEL: HEDRC2 FILTER: CH. CLASS 1000
PEAK DATA: 69.15 G @ 81.12 MS; 0.19 G @ -19.44 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER HEAD X-AXIS ACCELERATION REDUNDANT
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

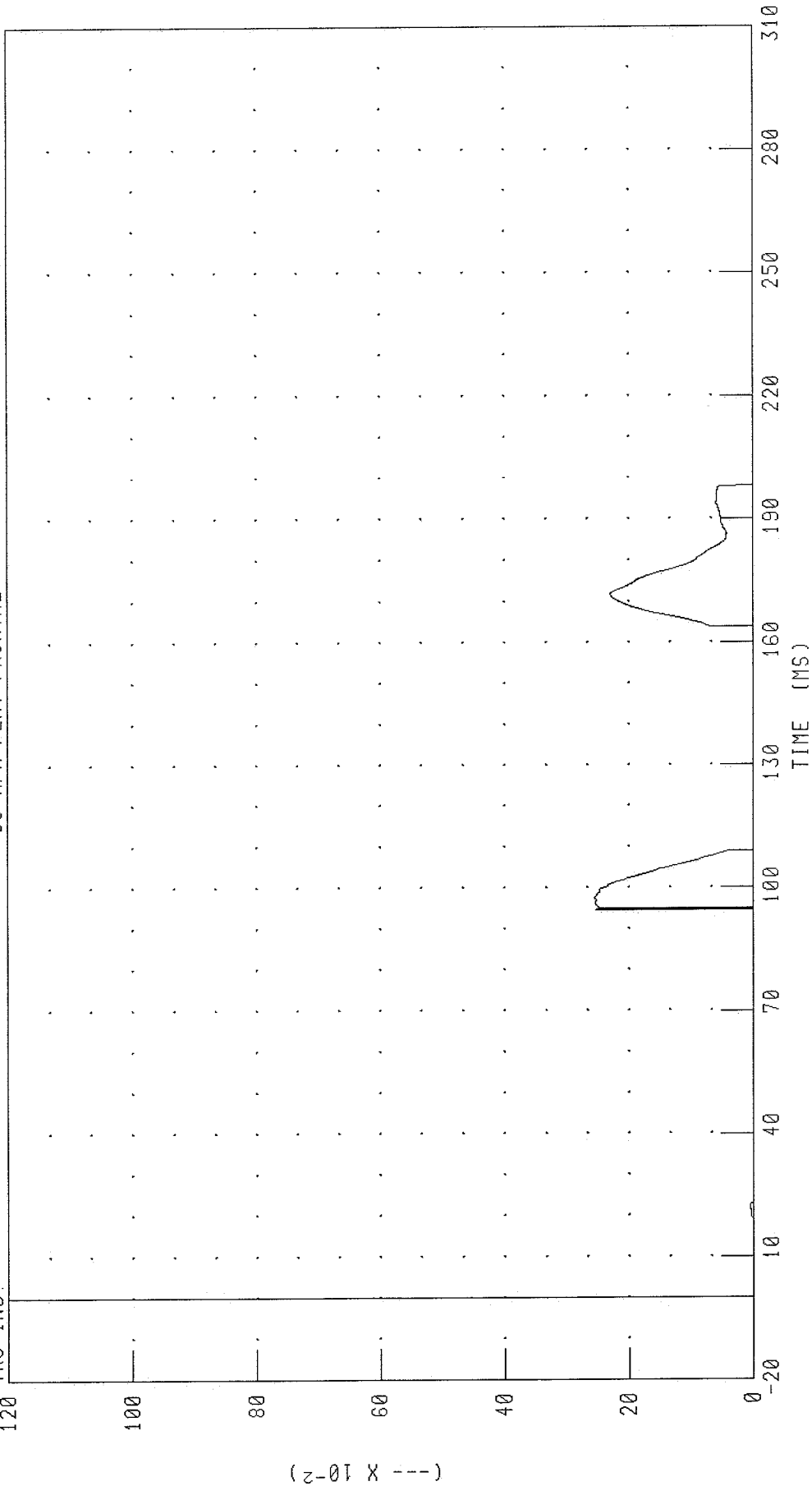


CHANNEL: HEDXR2 FILTER: CH. CLASS 1000
PEAK DATA: 26.55 G @ 166.32 MS; -61.47 G @ 79.20 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER NECK COMPRESSION/FLEXION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

TRC INC.

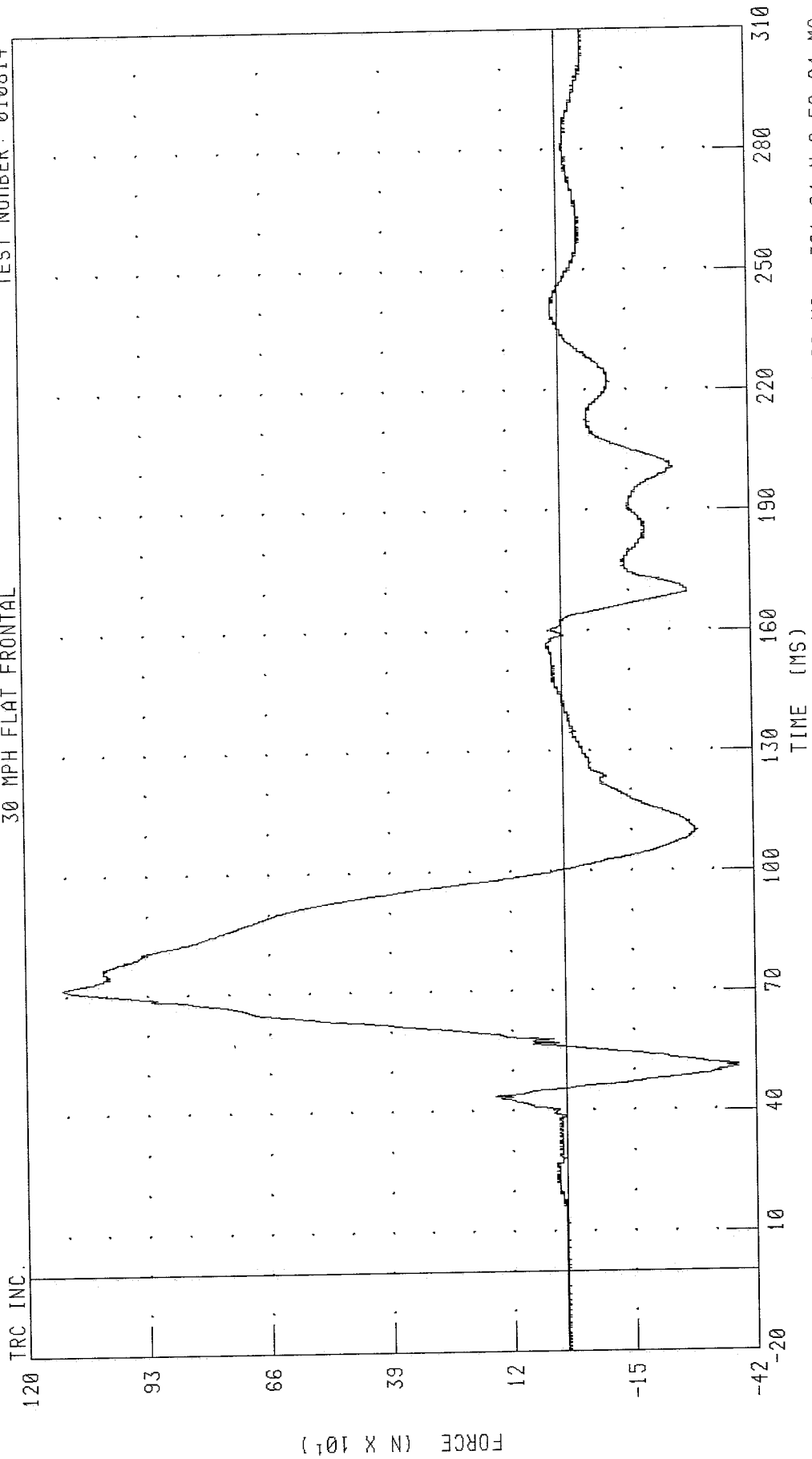


CHANNEL: NCF2 FILTER: CH. CLASS 600

PEAK DATA: 0.26 --- 0 97.52 MS; 0.00 --- 0 -20.00 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER NECK LOWER X-AXIS SHEAR FORCE
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

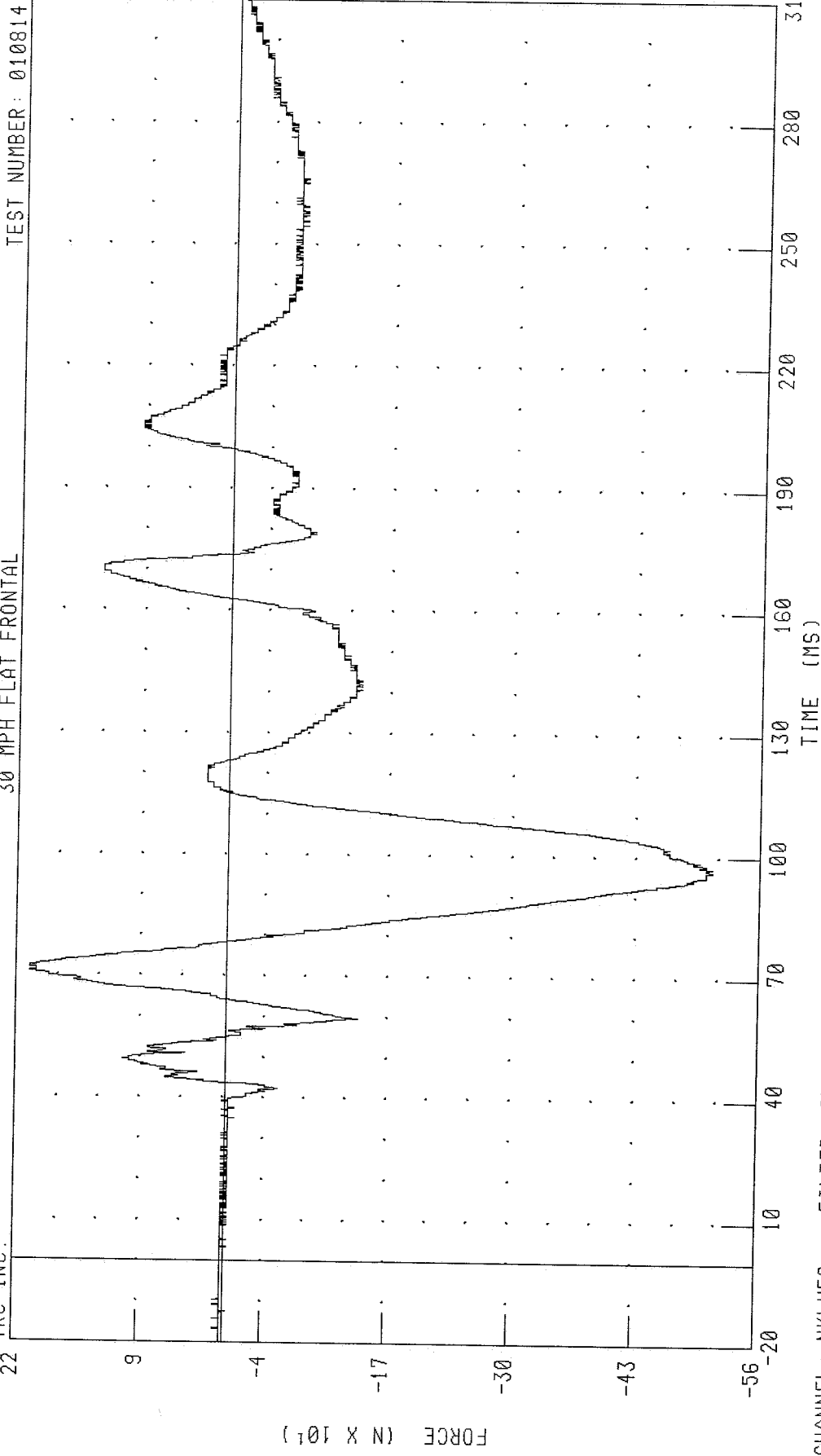


PEAK DATA: 1117.64 N @ 71.60 MS, -381.84 N @ 50.64 MS

CHANNEL: NKLXF2 FILTER: CH. CLASS 1000

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER NECK LOWER Y-AXIS SHEAR FORCE
30 MPH FLAT FRONTAL

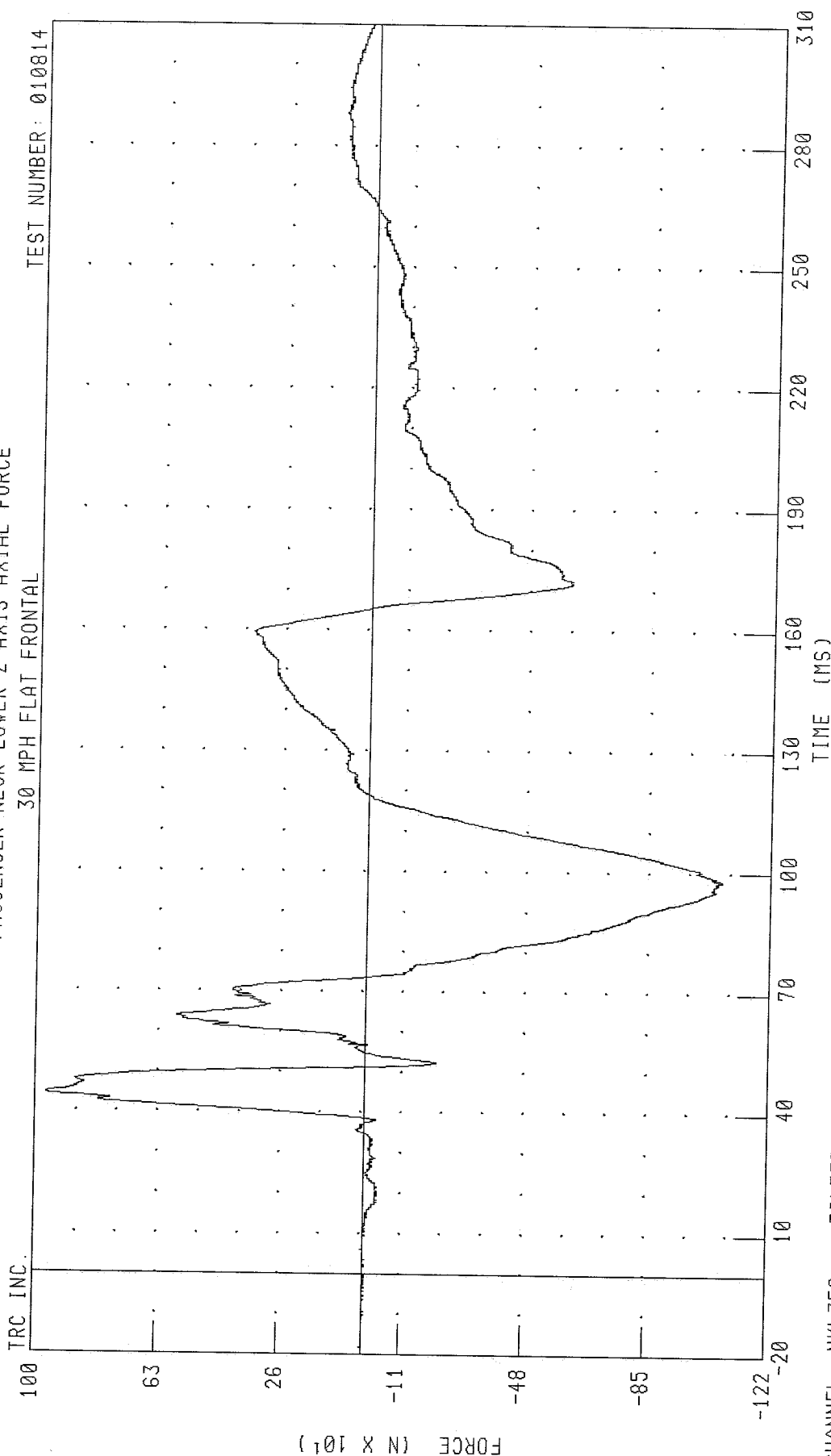
TRC INC.



CHANNEL: NKLYF2 FILTER: CH. CLASS 1000

PEAK DATA: 205.57 N @ 70.96 MS; -510.64 N @ 96.40 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER NECK LOWER Z-AXIS AXIAL FORCE

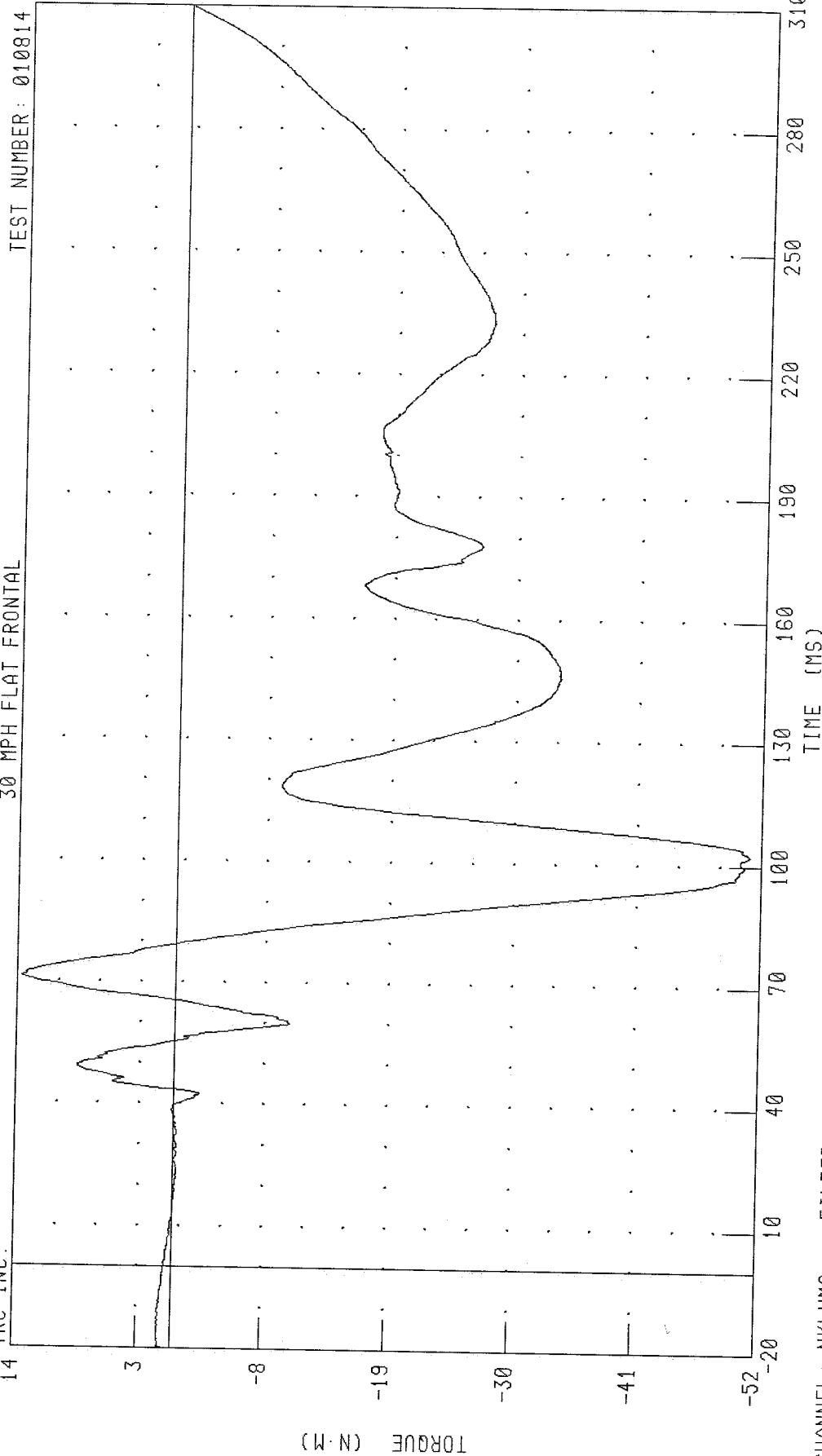


CHANNEL: NKLZF2 FILTER: CH. CLASS 1000

PEAK DATA: 965.63 N @ 44.48 MS; -1074.47 N @ 97.92 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER NECK LOWER MOMENT ABOUT X AXIS
30 MPH FLAT FRONTAL

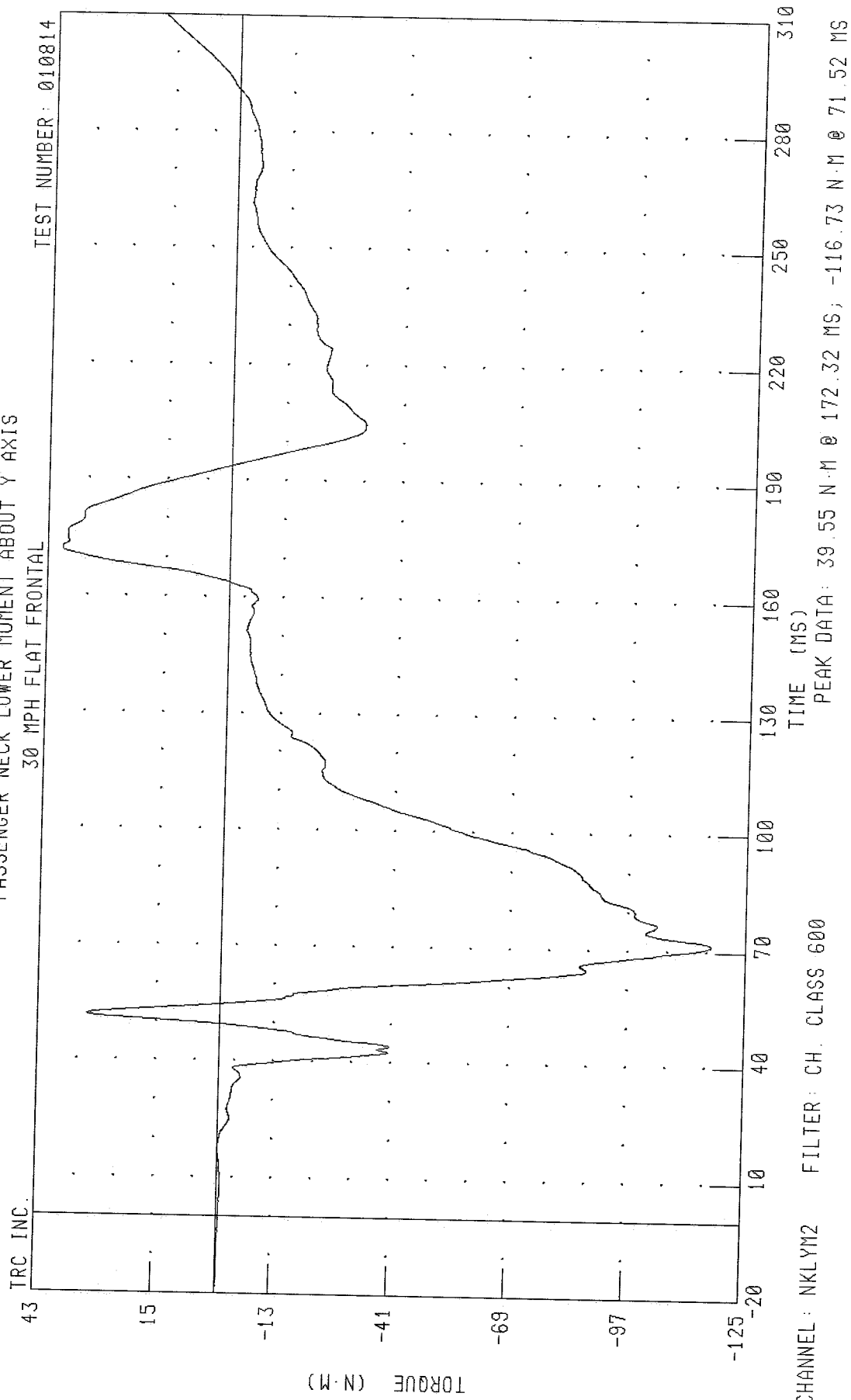
TRC INC.



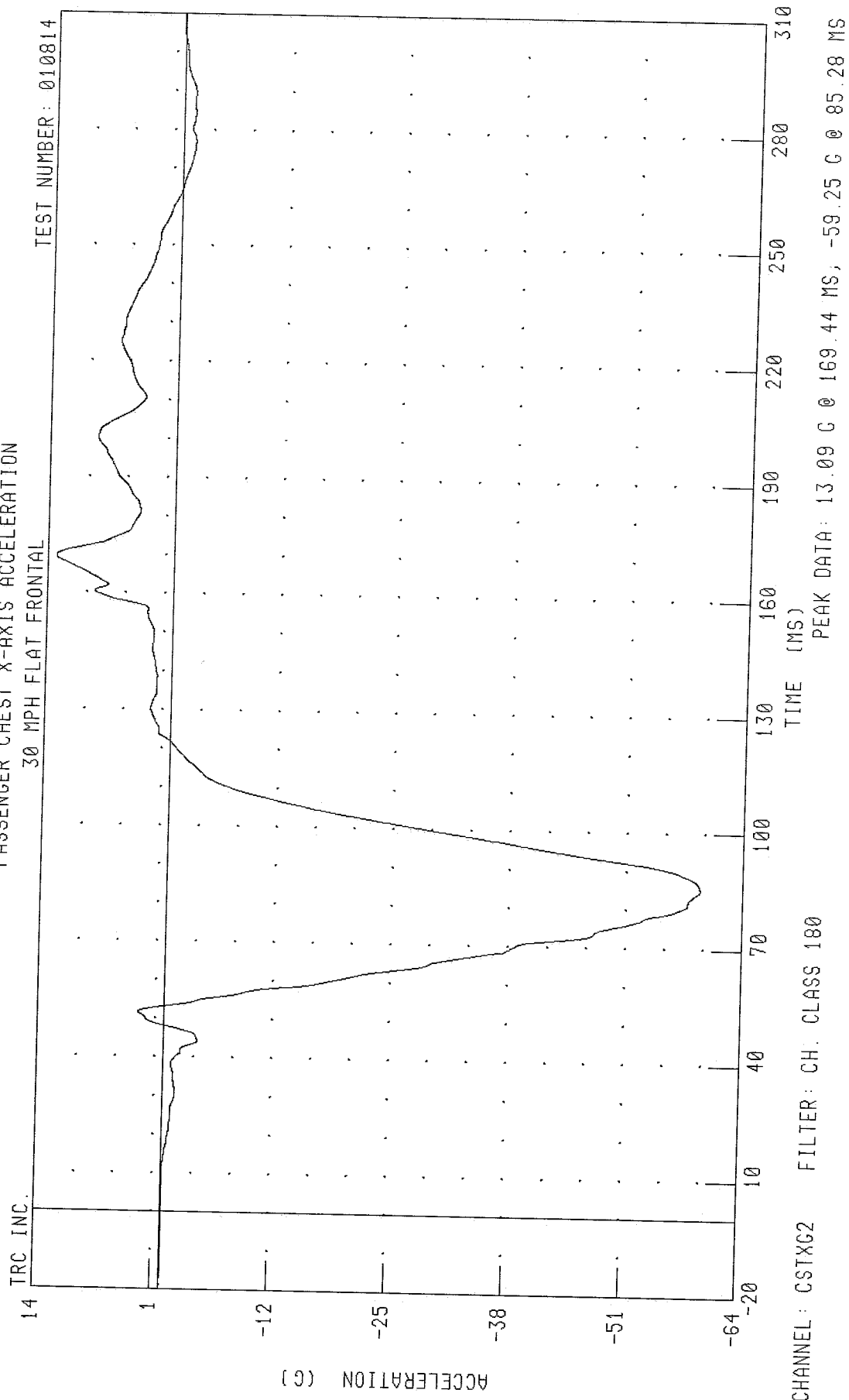
CHANNEL: NKLXM2 FILTER: CH. CLASS 600

PEAK DATA: 13.60 N·M @ 71.36 MS; -50.94 N·M @ 102.48 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER NECK LOWER MOMENT ABOUT Y AXIS



2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER CHEST X-AXIS ACCELERATION



2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

PASSENGER CHEST Y-AXIS ACCELERATION

30 MPH FLAT FRONTAL

TEST NUMBER: 010814

TRC INC.

40

23

5

-11

-28

-45

-62

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

TIME (MS)

310

280

250

220

190

160

130

100

70

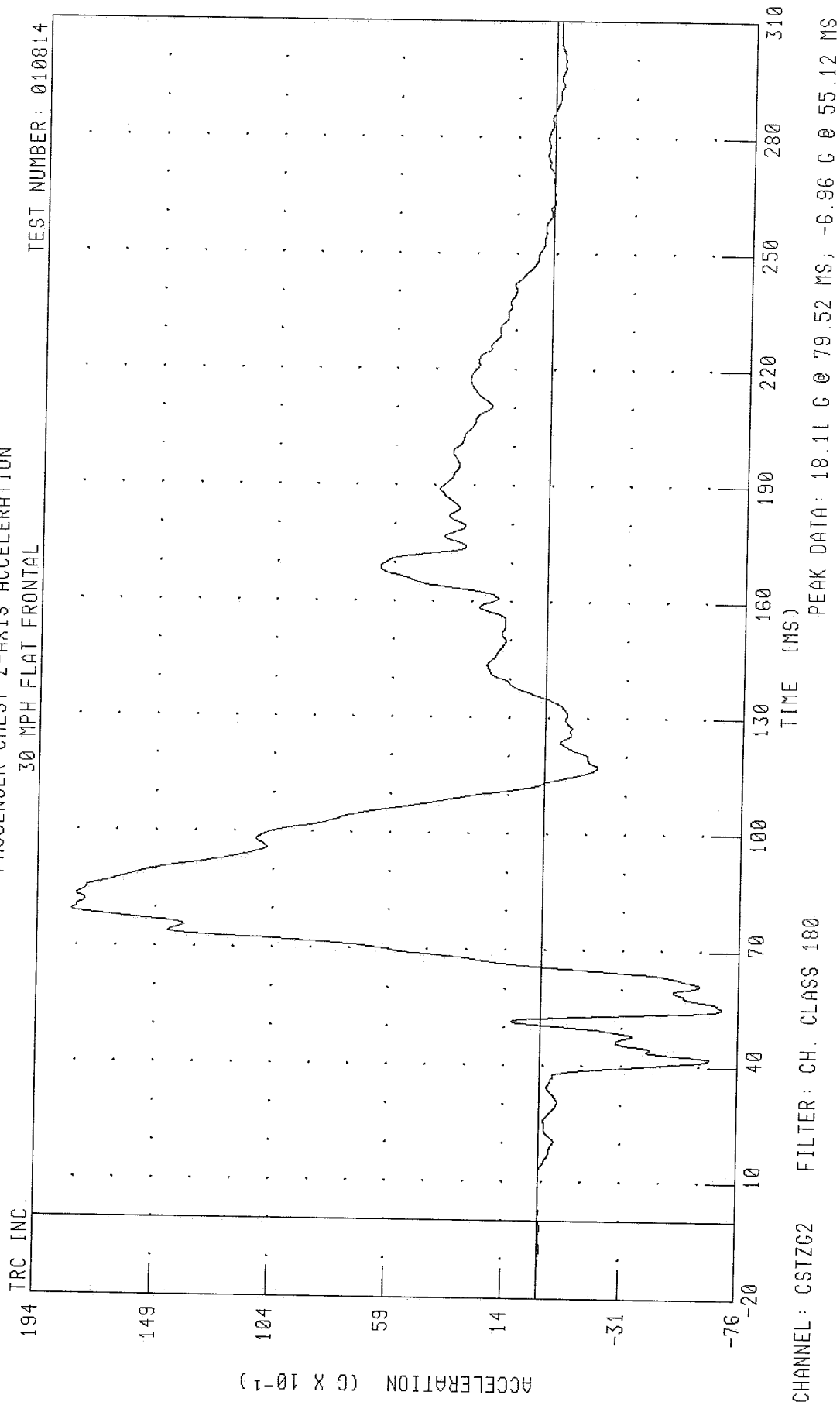
40

10

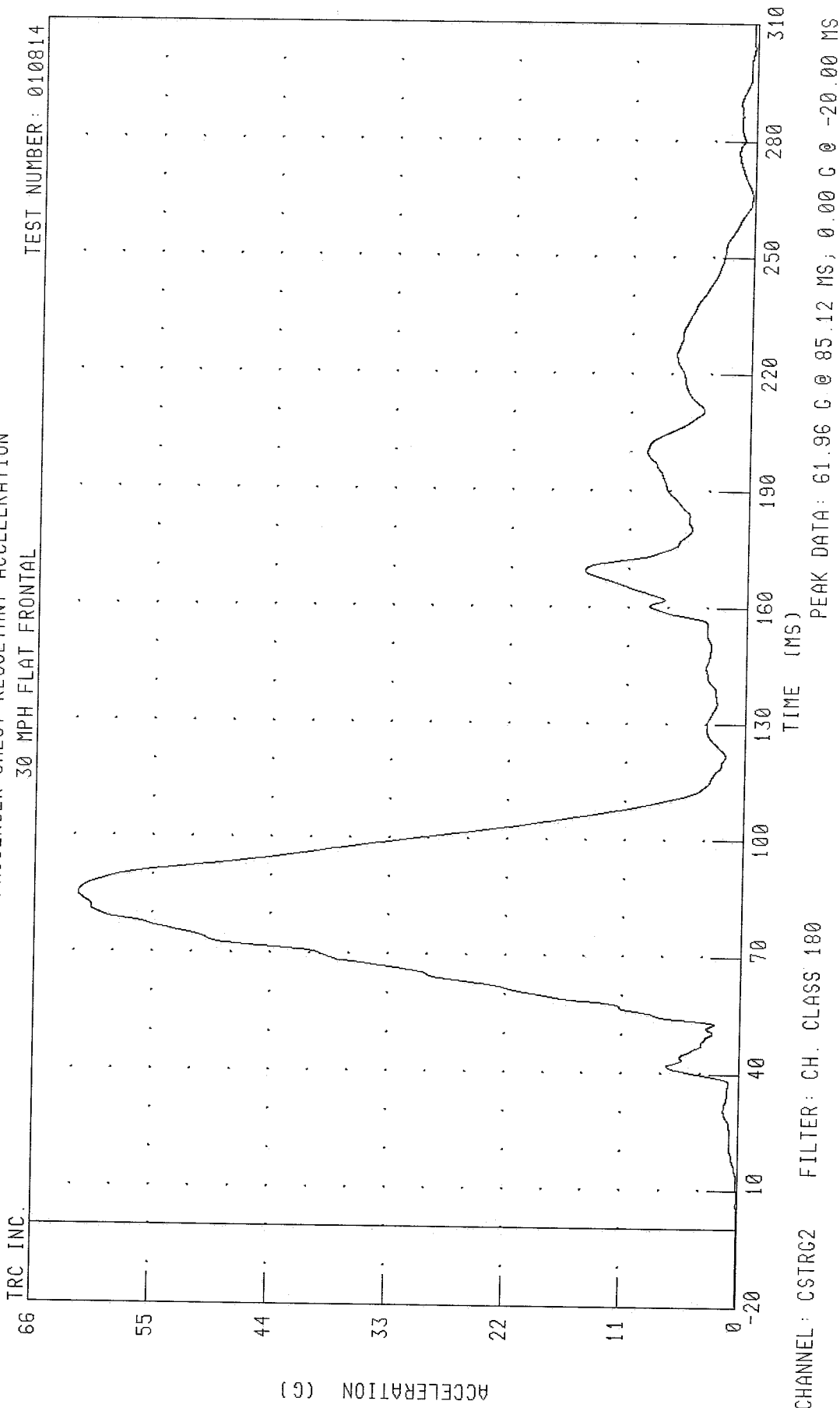
CHANNEL: CSTYG2 FILTER: CH. CLASS 180

PEAK DATA: 3.70 G @ 56.56 MS, -5.99 G @ 74.08 MS

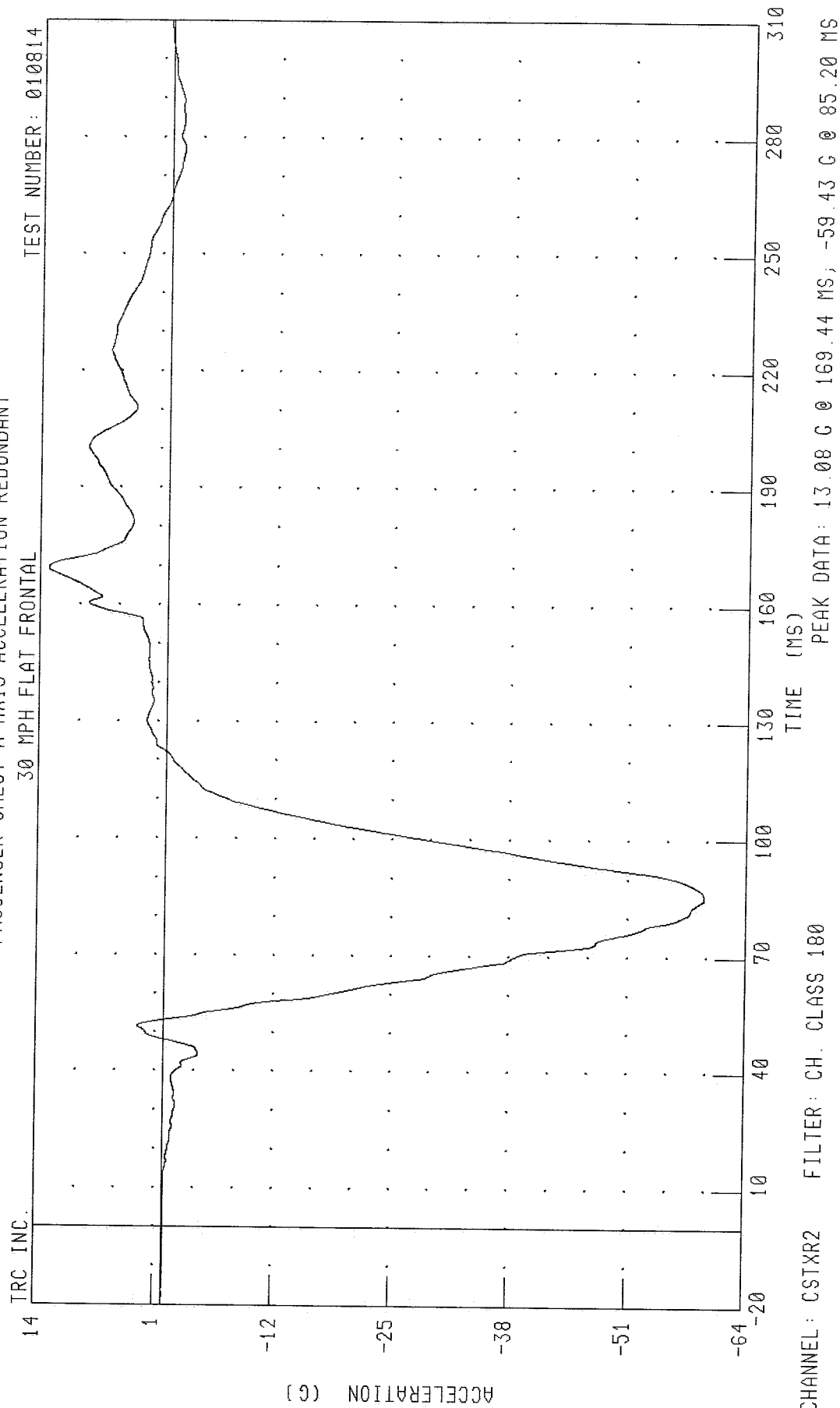
2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER CHEST Z-AXIS ACCELERATION



2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER CHEST RESULTANT ACCELERATION

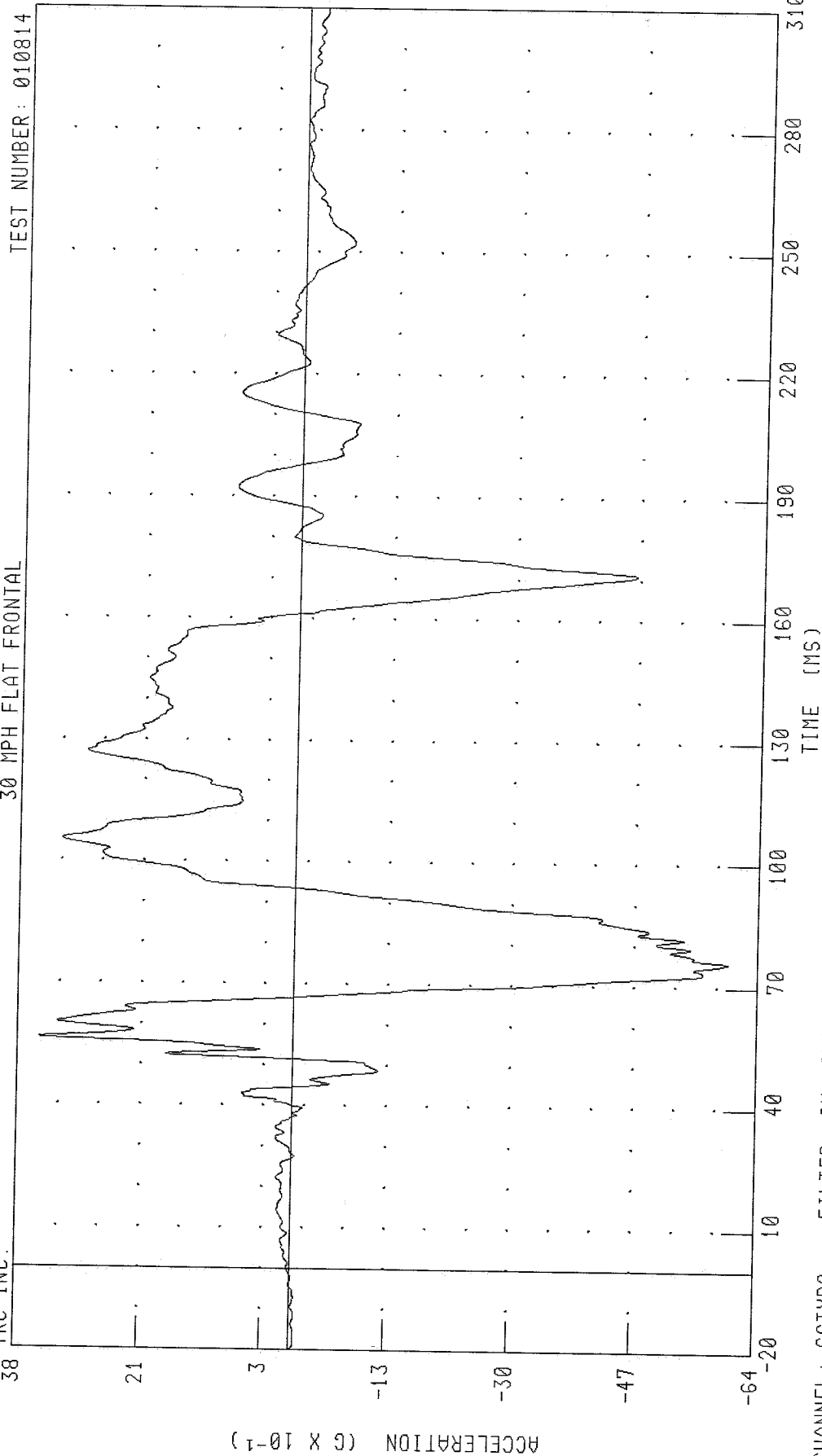


2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER CHEST X-AXIS ACCELERATION REDUNDANT



2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER CHEST Y-AXIS ACCELERATION REDUNDANT
30 MPH FLAT FRONTAL

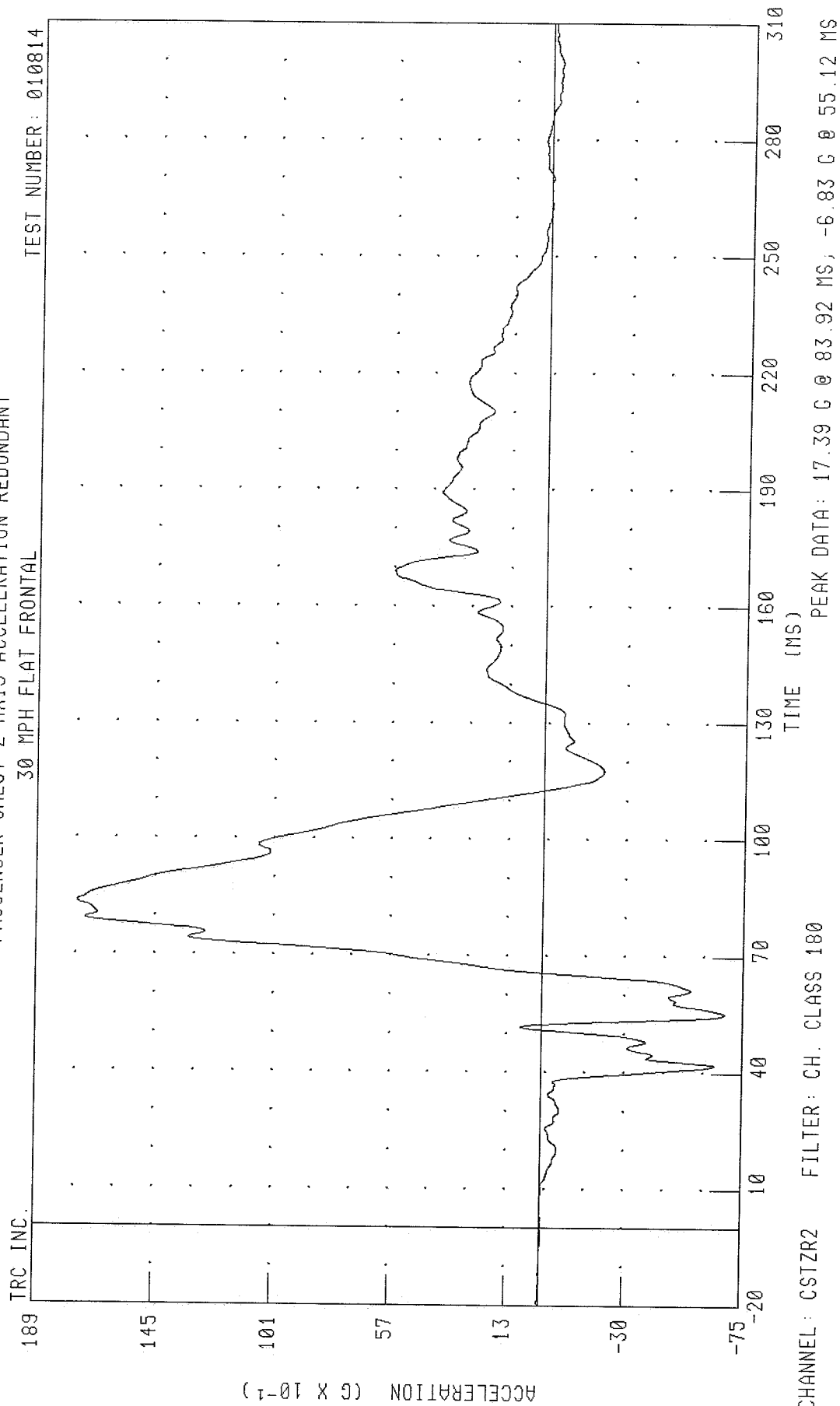
TRC INC.



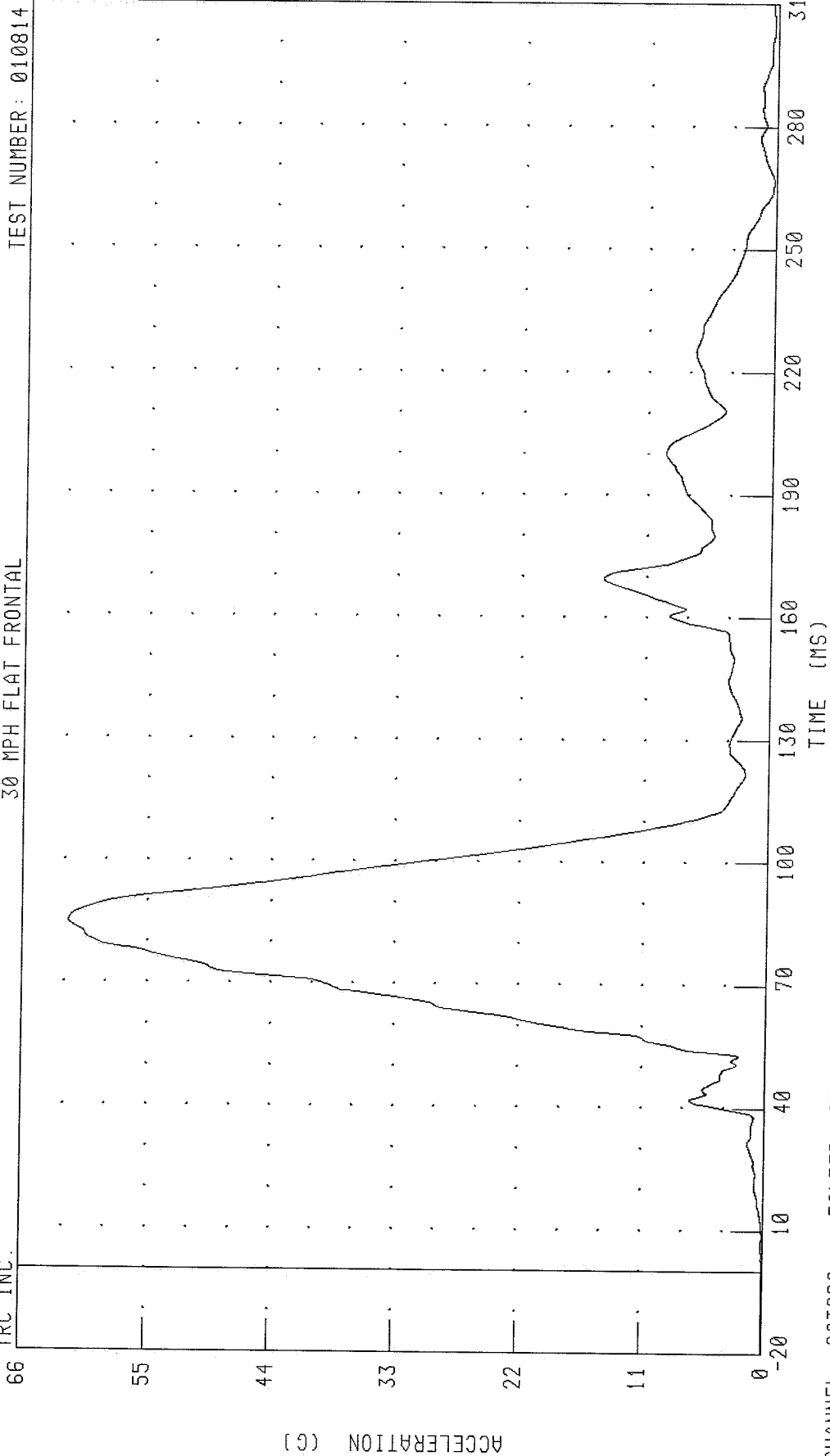
CHANNEL: CSTYR2 FILTER: CH. CLASS 180

PEAK DATA: 3.51 G @ 56.56 MS; -5.98 G @ 75.84 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER CHEST Z-AXIS ACCELERATION REDUNDANT



2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER CHEST RESULTANT ACCELERATION REDUNDANT
30 MPH FLAT FRONTAL



CHANNEL: CSTR2 FILTER: CH. CLASS 180

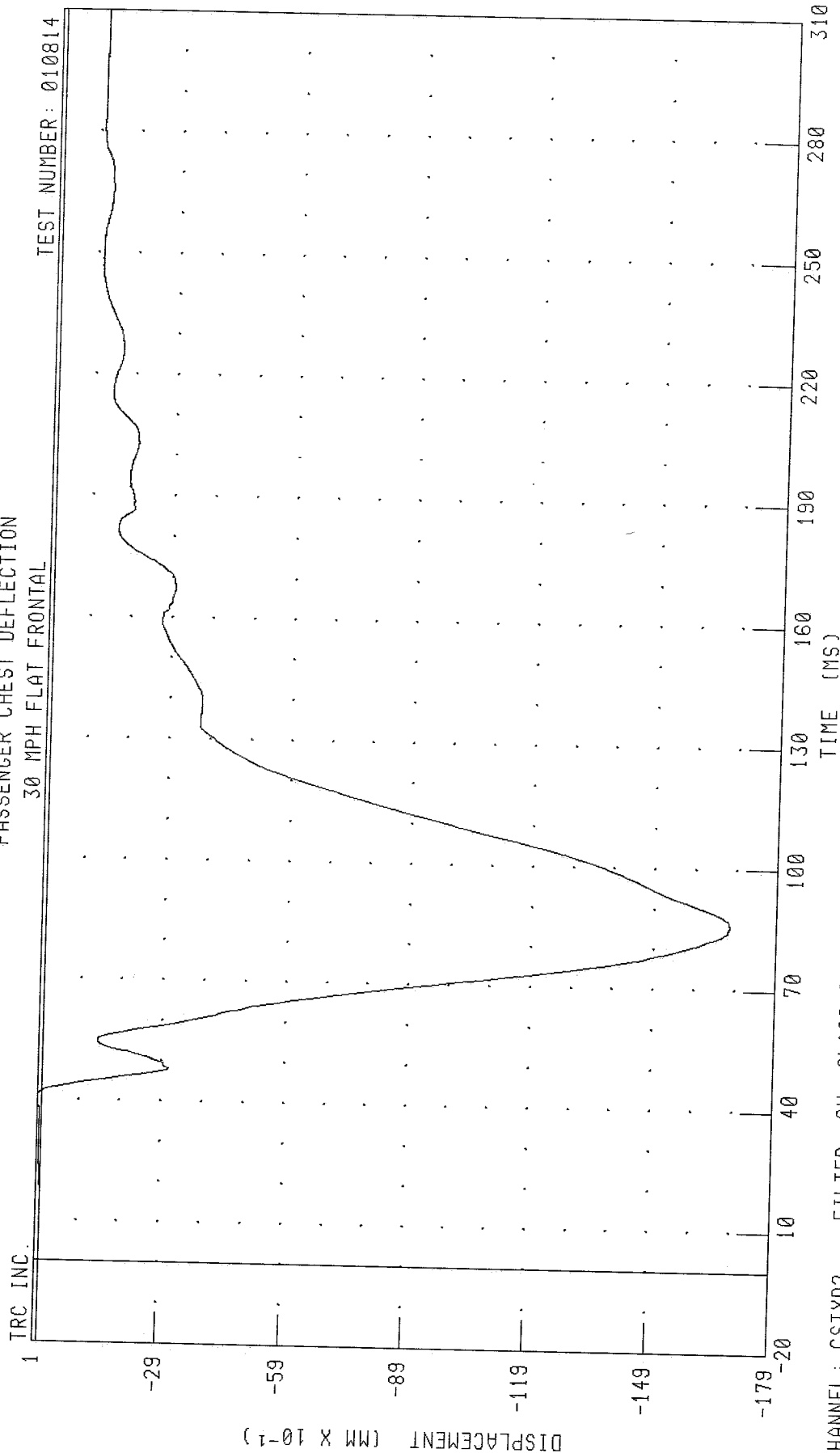
PEAK DATA: 61.99 G @ 85.12 MS; 0.01 G @ -20.00 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

PASSENGER CHEST DEFLECTION

30 MPH FLAT FRONTAL

TEST NUMBER: 010814

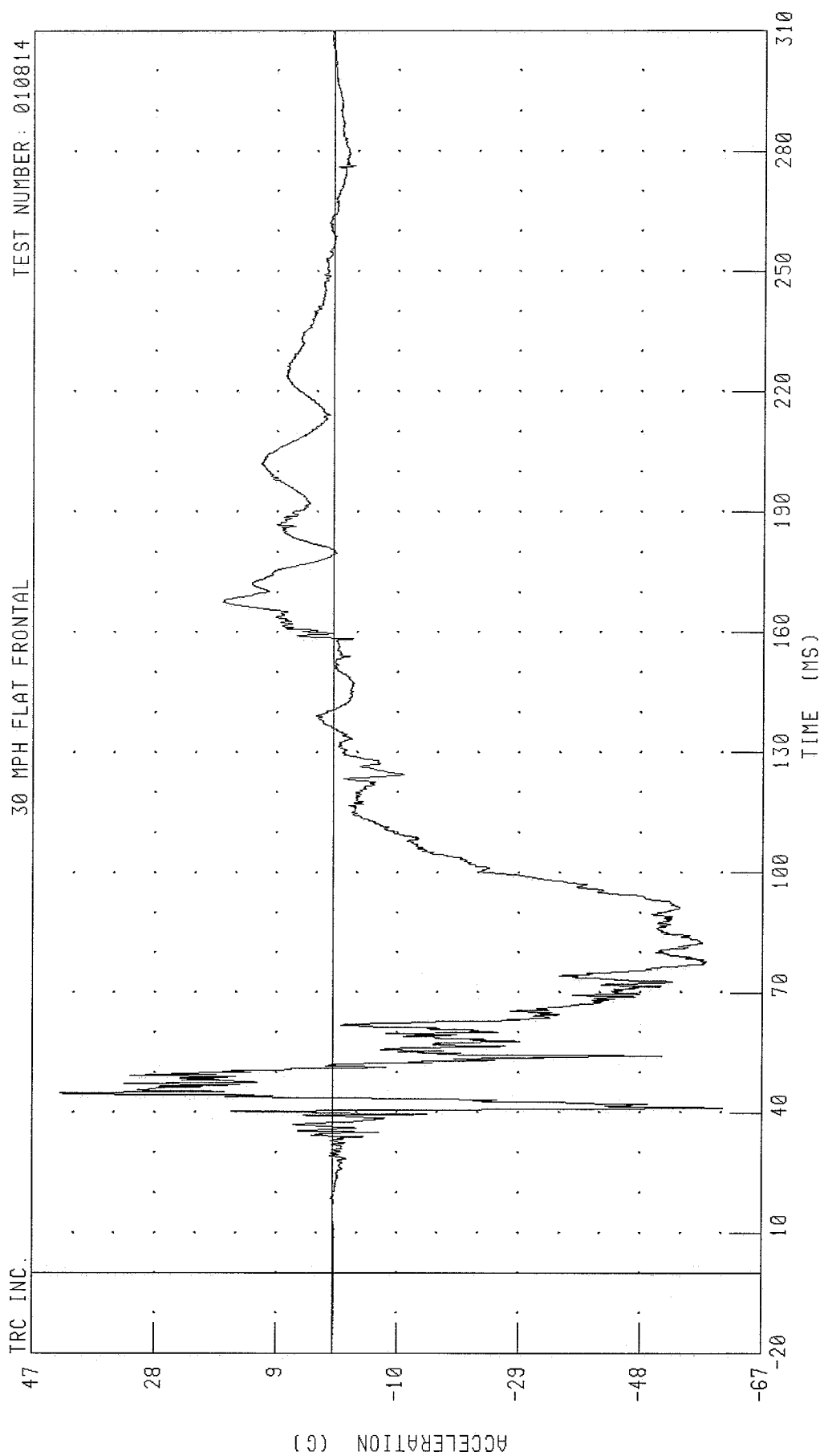


CHANNEL: CSTXD2 FILTER: CH. CLASS 600

PEAK DATA: 0.12 MM @ 39.28 MS; -16.76 MM @ 85.84 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER STERNUM UPPER X-AXIS ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814



CHANNEL: STUXG2 FILTER: CH. CLASS 1000

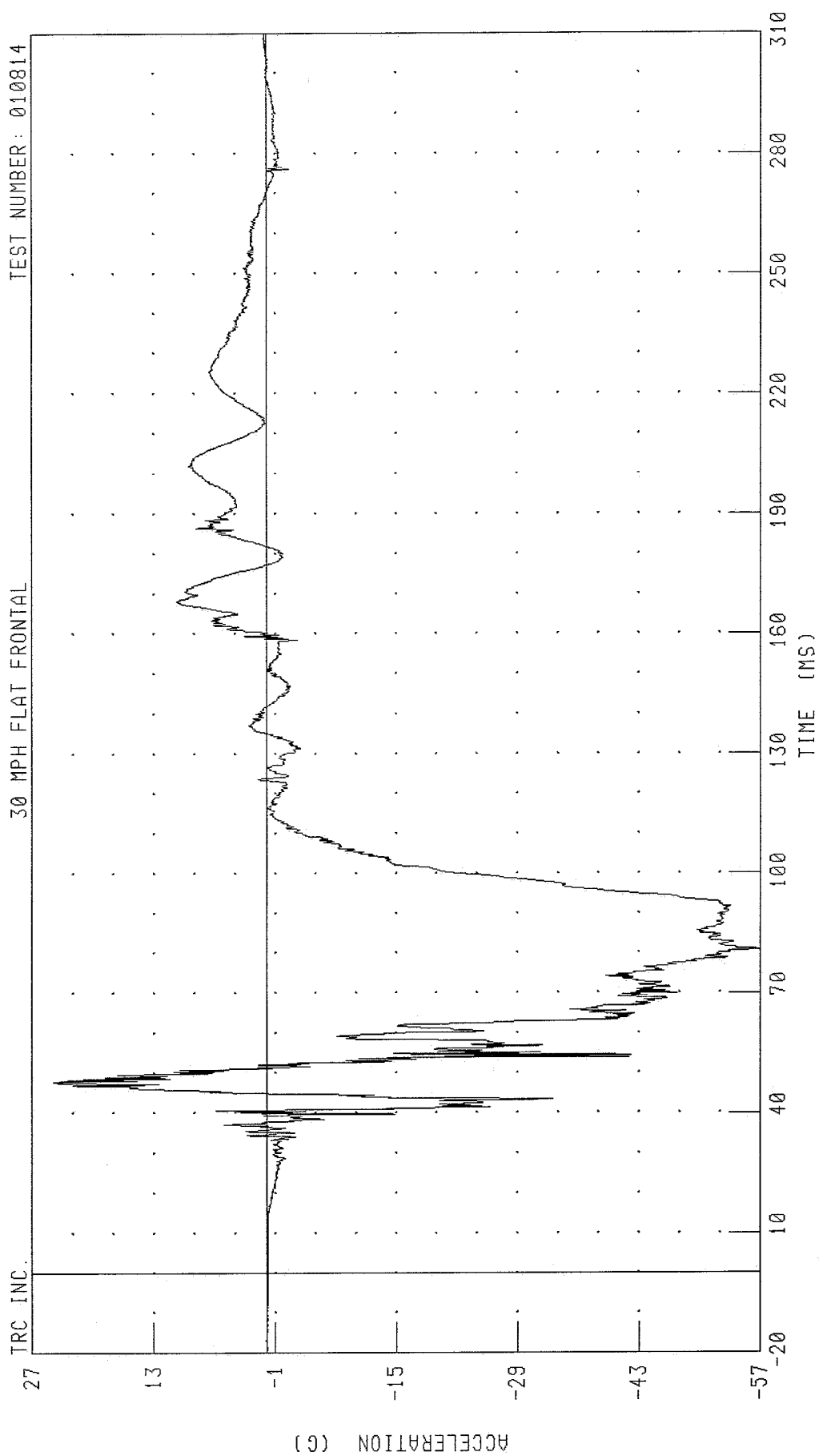
PEAK DATA: 42.75 G @ 44.88 MS, -60.96 G @ 41.28 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

PASSENGER STERNUM MID X-AXIS ACCELERATION

TEST NUMBER: 010814

30 MPH FLAT FRONTAL

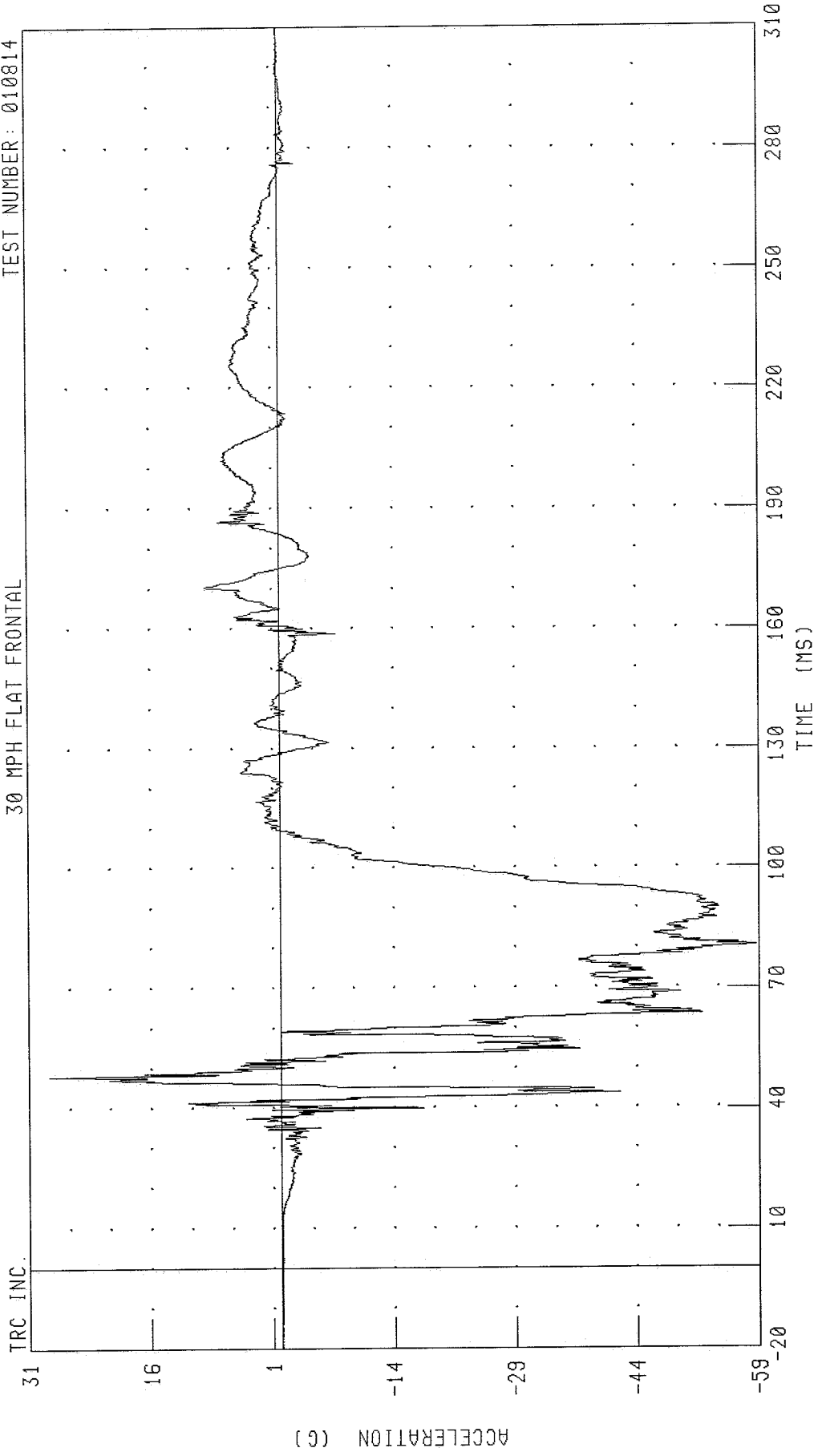


CHANNEL: STMXG2 FILTER: CH. CLASS 1000

PEAK DATA: 24.56 G @ 47.84 MS; -57.09 G @ 80.80 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER STERNUM LOWER X-AXIS ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814



CHANNEL: STLXG2 FILTER: CH. CLASS 1000

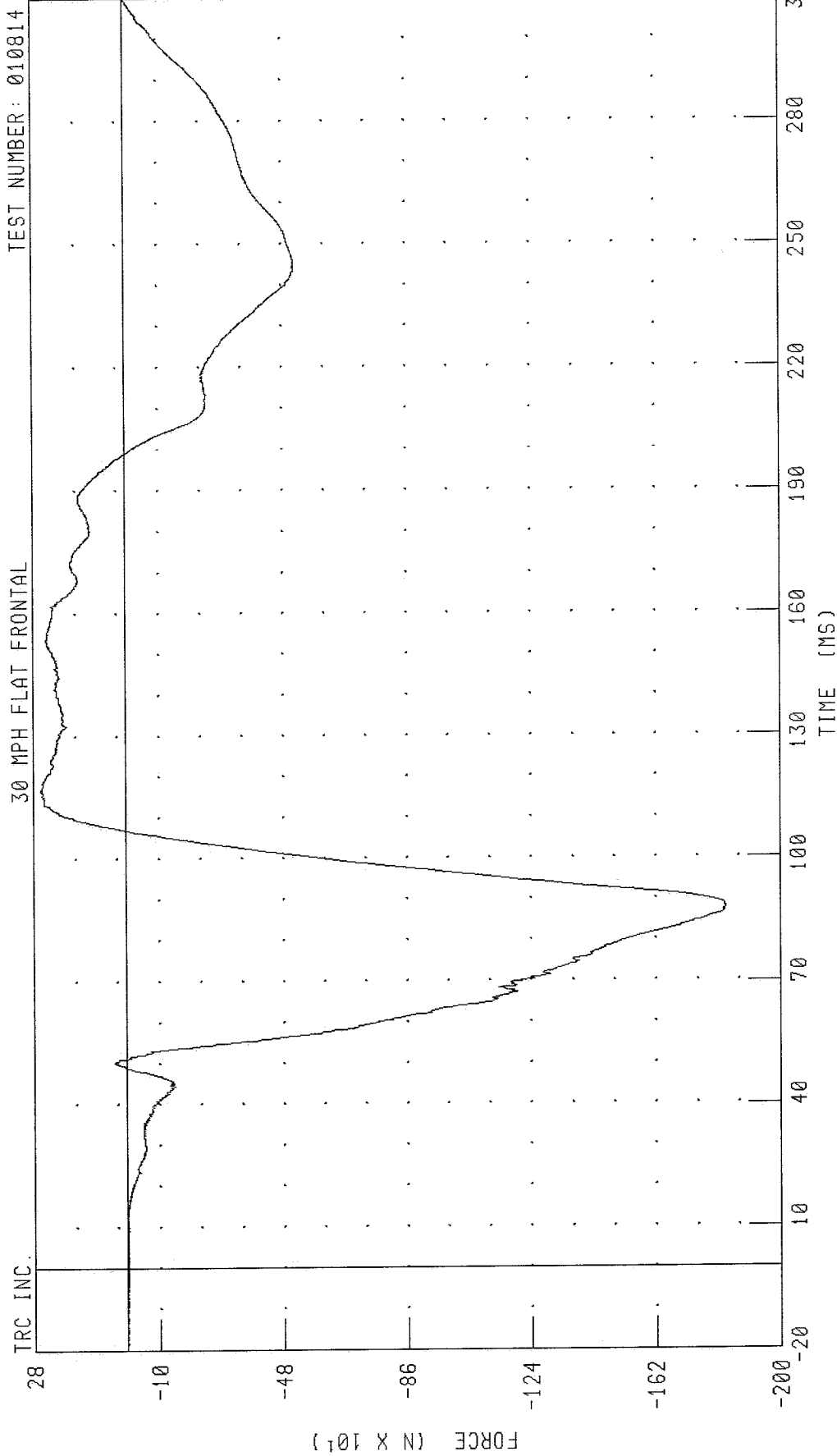
PEAK DATA: 28.54 G @ 48.08 MS; -58.63 G @ 80.56 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

PASSENGER LUMBAR X-AXIS FORCE

TEST NUMBER: 010814

30 MPH FLAT FRONTAL

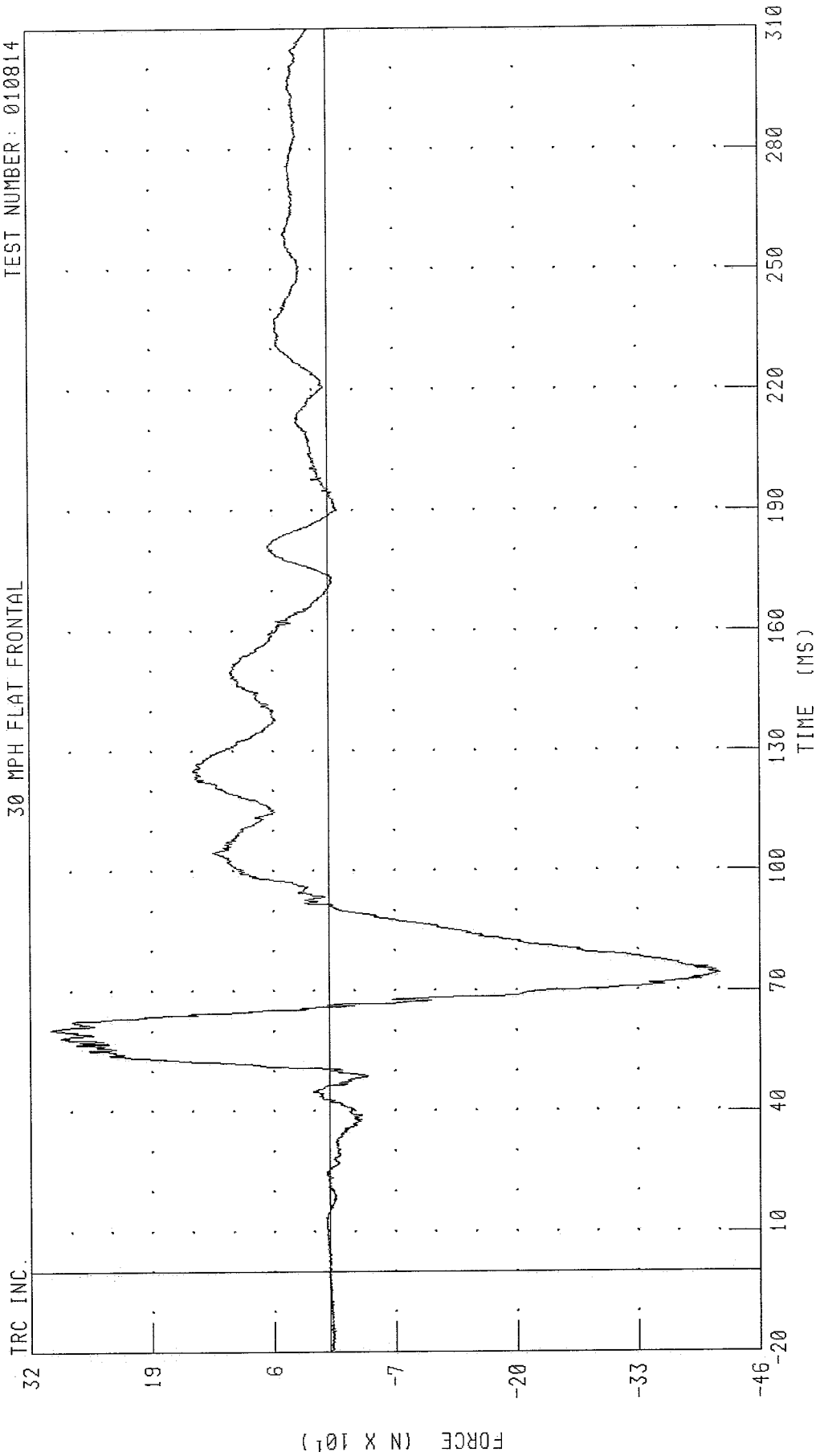


CHANNEL: LMBXF2 FILTER: CH. CLASS 1000

PEAK DATA: 257.23 N @ 117.12 MS; -1834.61 N @ 87.84 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LUMBAR Y-AXIS FORCE
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

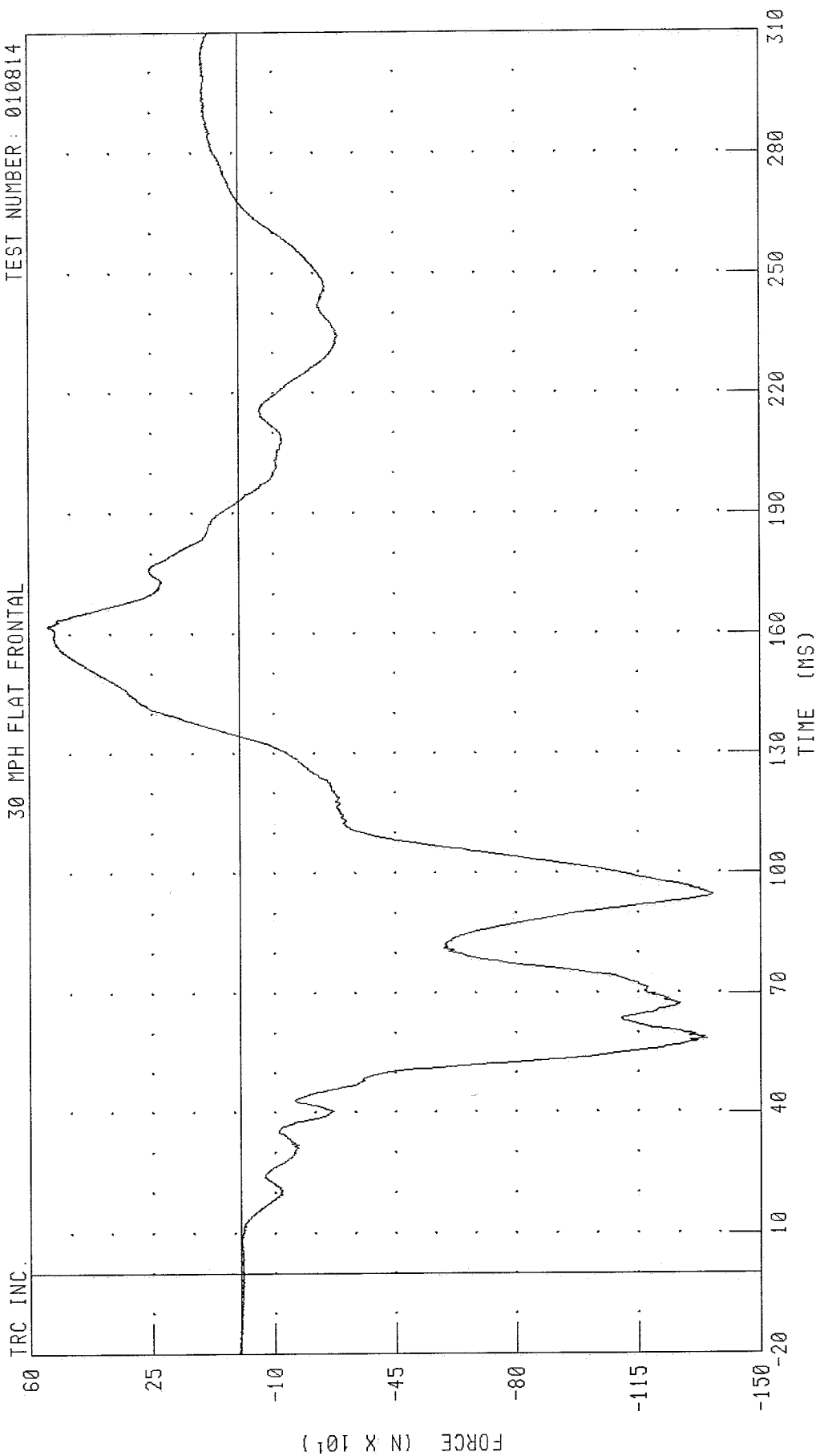


CHANNEL: LMBYF2 FILTER: CH. CLASS 1000

PEAK DATA: 298.39 N @ 60.56 MS; -417.84 N @ 74.24 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LUMBAR Z-AXIS FORCE
30 MPH FLAT FRONTAL

TEST NUMBER: 010814



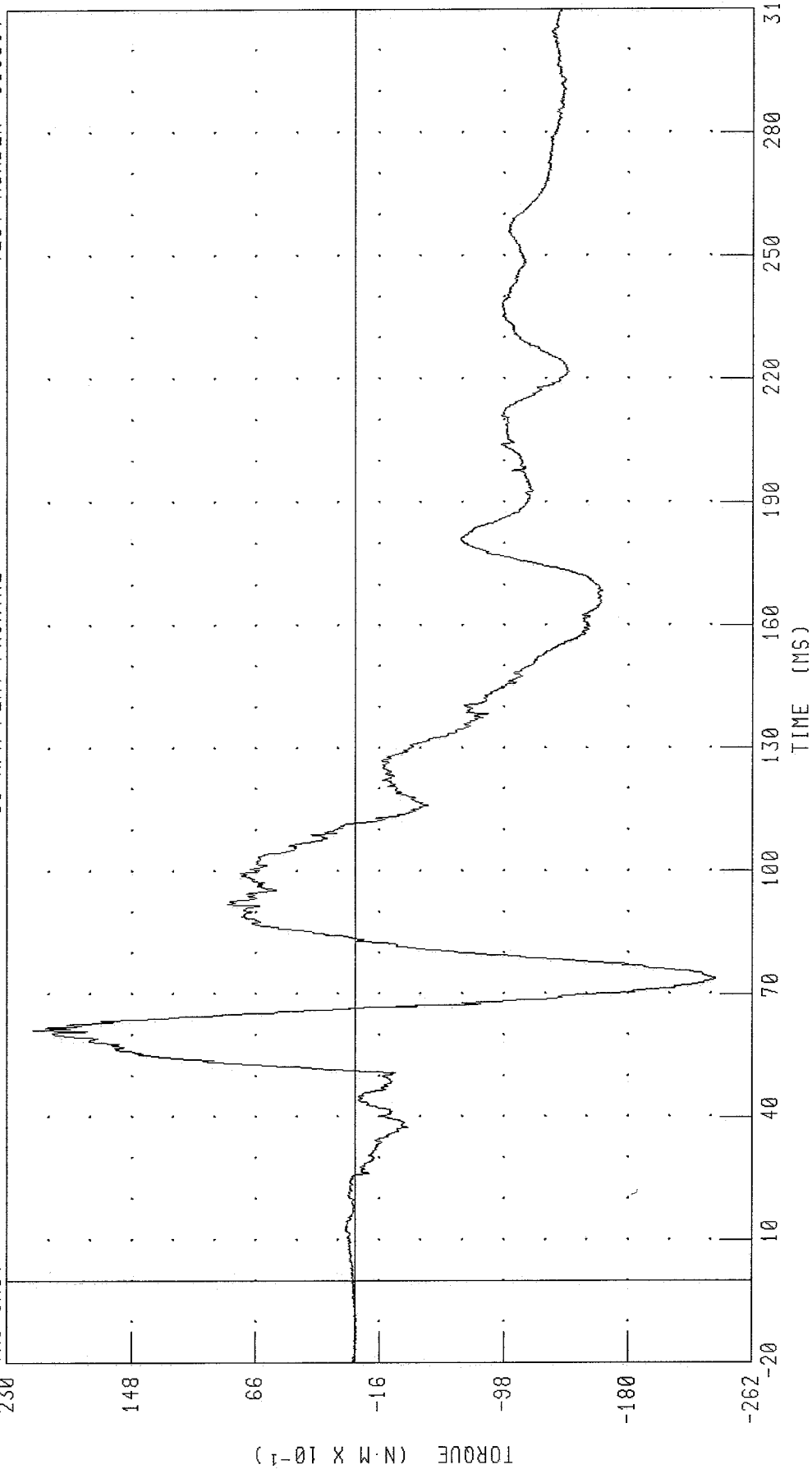
CHANNEL: LMBZF2 FILTER: CH. CLASS 1000

PEAK DATA: 547.83 N @ 162.16 MS; -1363.65 N @ 94.64 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LUMBAR X-AXIS MOMENT
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

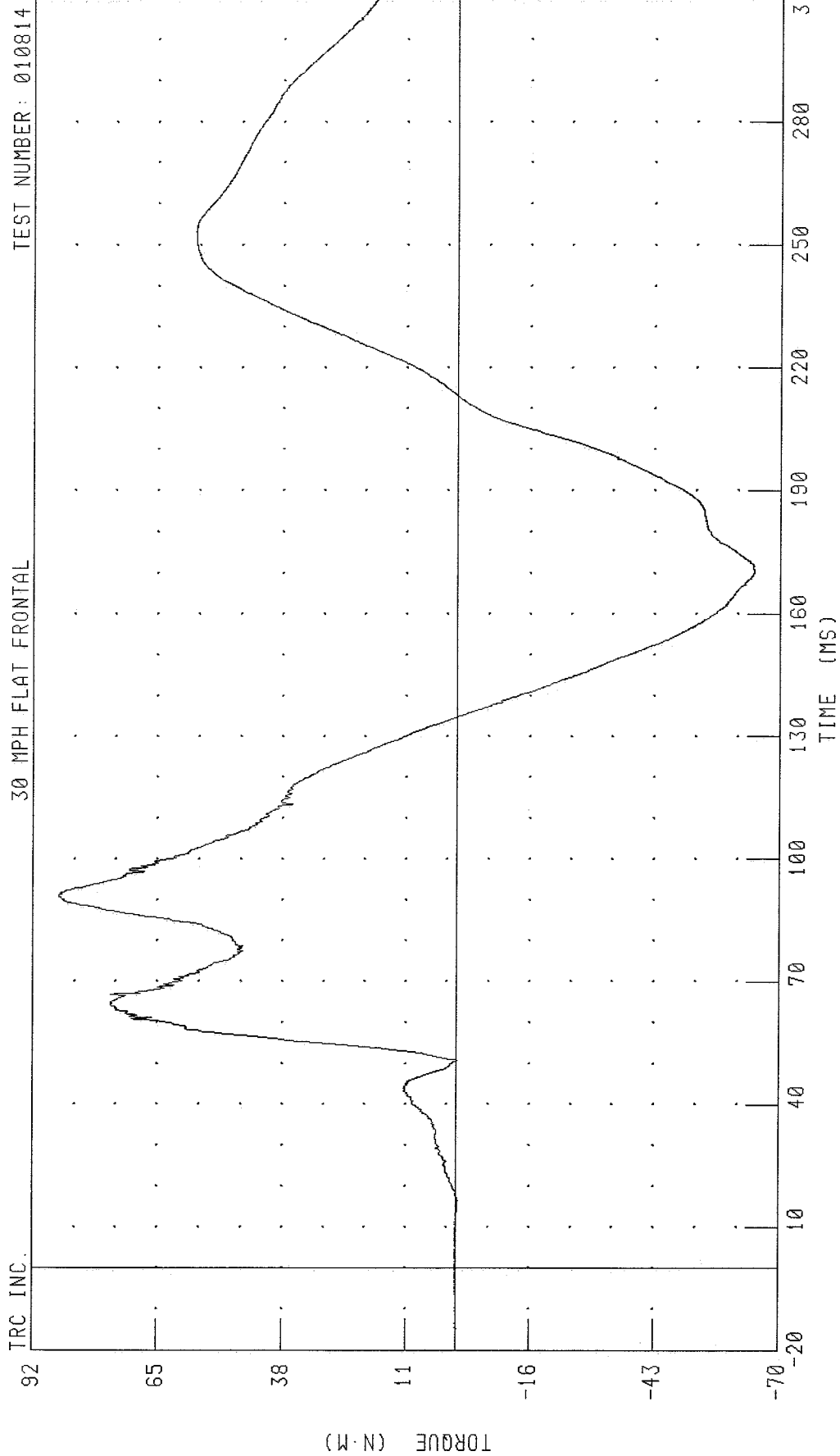
TRC INC.



CHANNEL: LMBXM2 FILTER: CH. CLASS 1000

PEAK DATA: 21.29 N·M @ 61.20 MS; -23.80 N·M @ 73.76 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LUMBAR Y-AXIS MOMENT
30 MPH FLAT FRONTAL

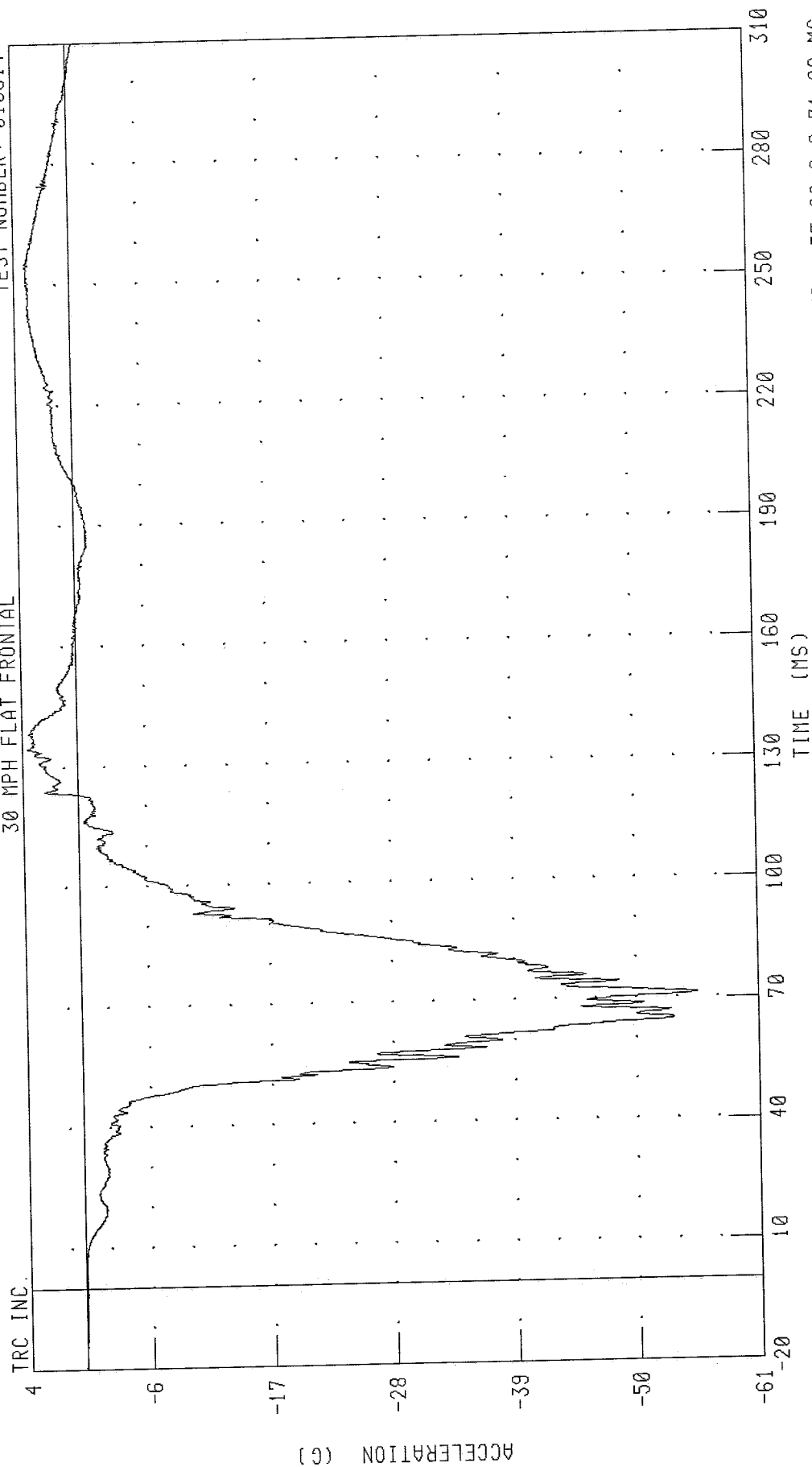


CHANNEL: LMBYM2 FILTER: CH. CLASS 1000

PEAK DATA: 86.39 N-M @ 91.04 MS, -64.52 N-M @ 170.48 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER PELVIS X-AXIS ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

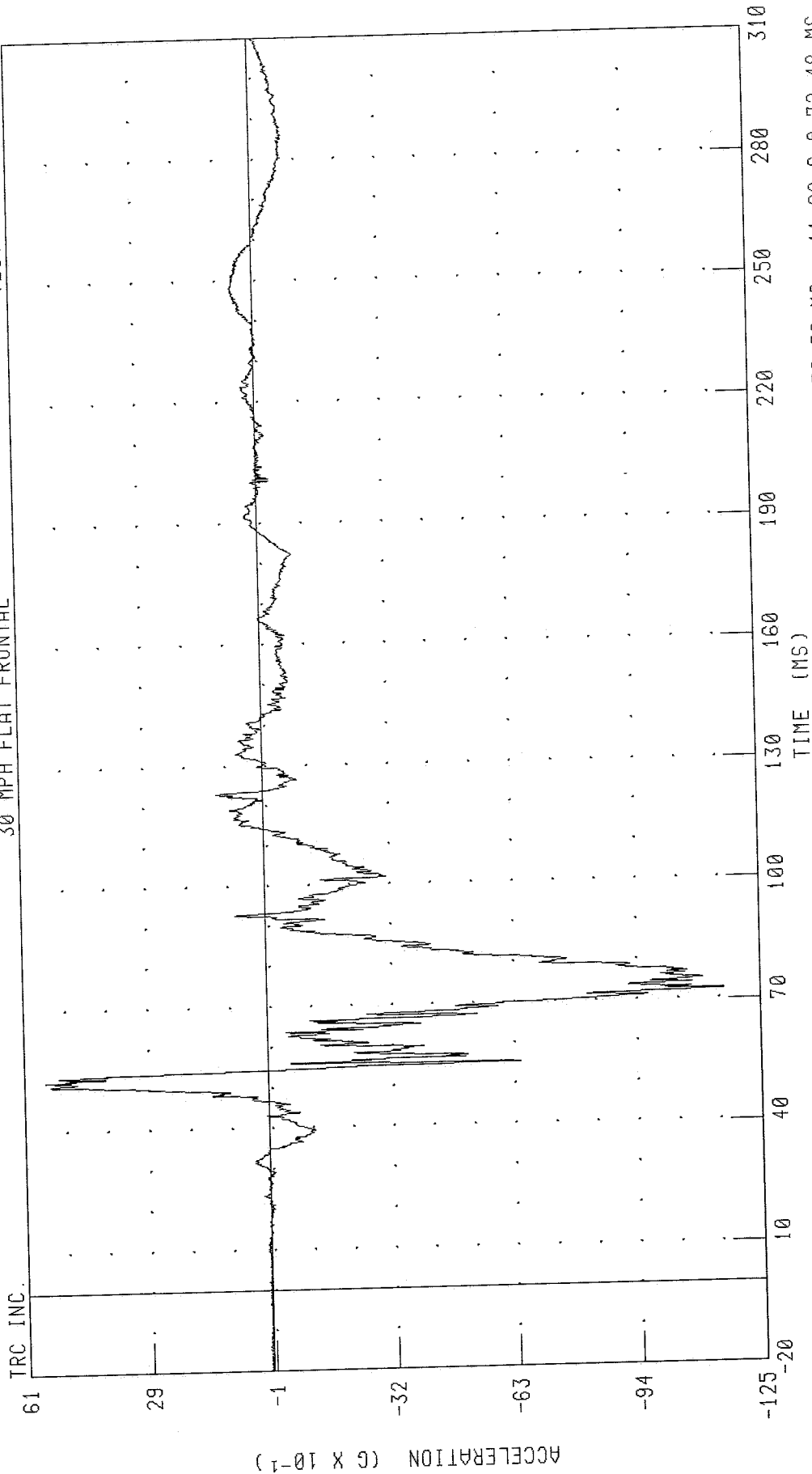


PEAK DATA: 4.49 G @ 134.80 MS; -55.66 G @ 71.28 MS

CHANNEL: PEVXG2 FILTER: CH. CLASS 1000

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER PELVIS Y-AXIS ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814



PEAK DATA: 5.58 G @ 52.32 MS; -11.60 G @ 72.48 MS

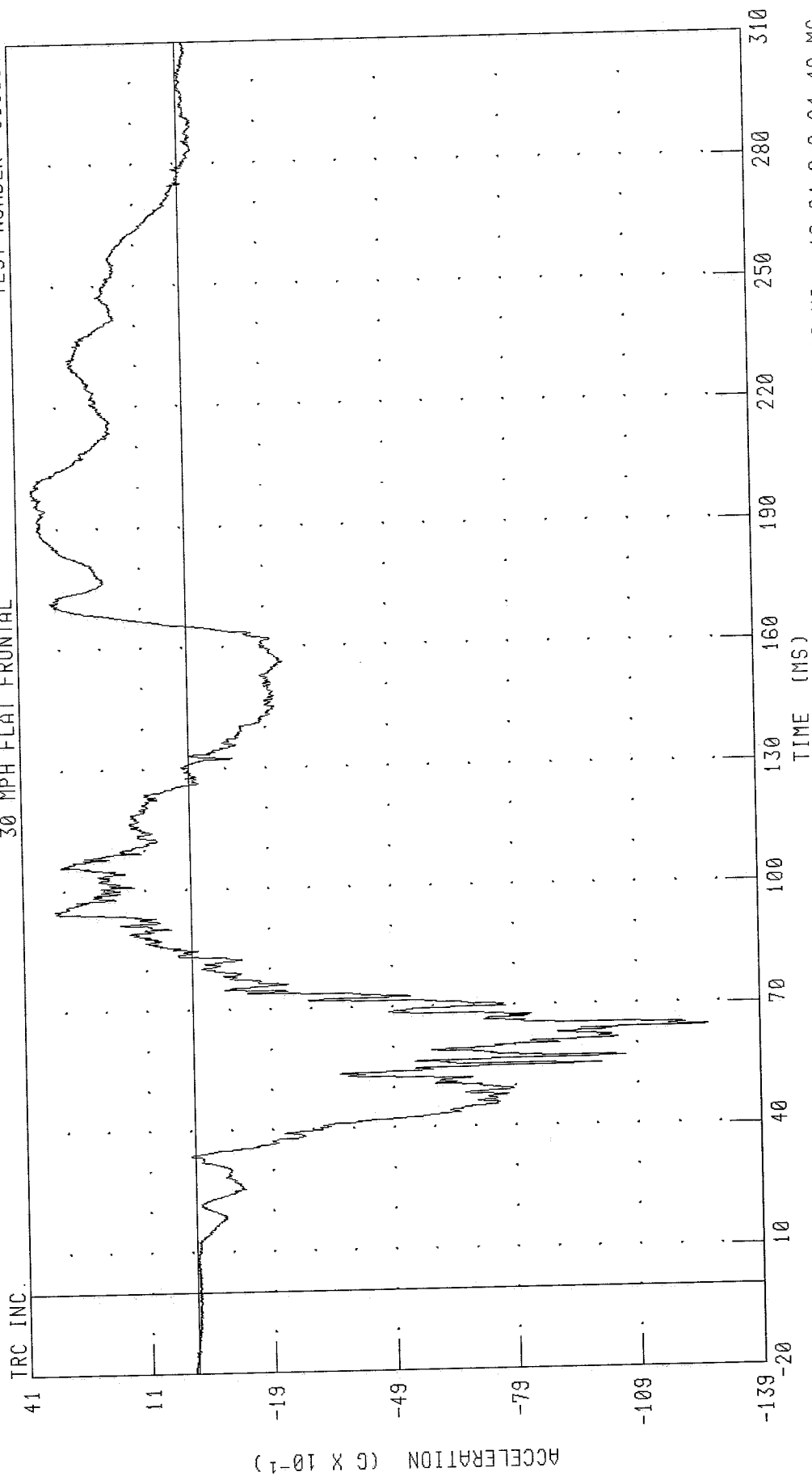
CHANNEL: PEVYG2 FILTER: CH. CLASS 1000

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

PASSENGER PELVIS Z-AXIS ACCELERATION

30 MPH FLAT FRONTAL

TEST NUMBER: 010814

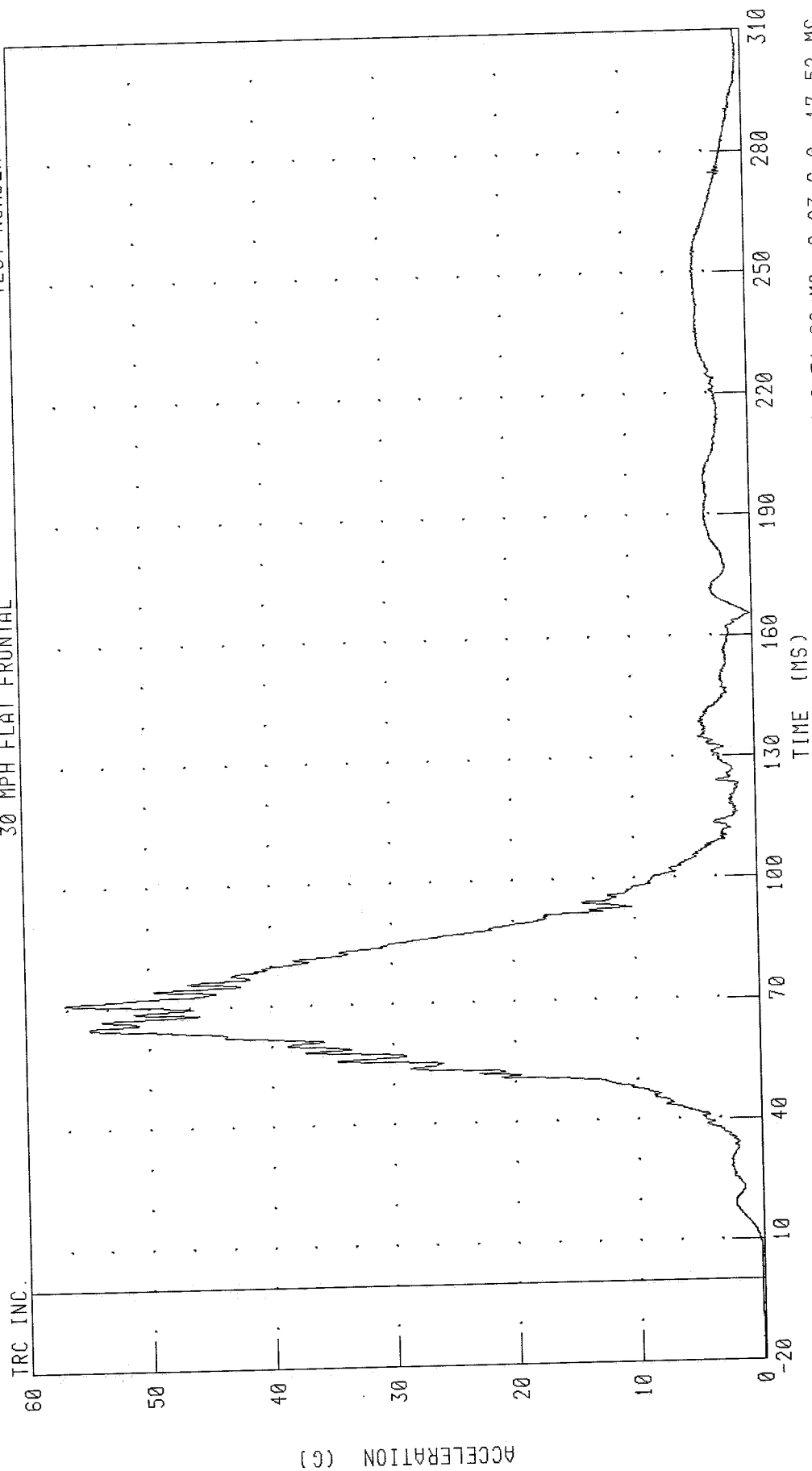


PEAK DATA: 3.73 G @ 199.12 MS; -12.64 G @ 64.48 MS

CHANNEL: PEVZG2 FILTER: CH. CLASS 1000

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER PELVIS RESULTANT ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

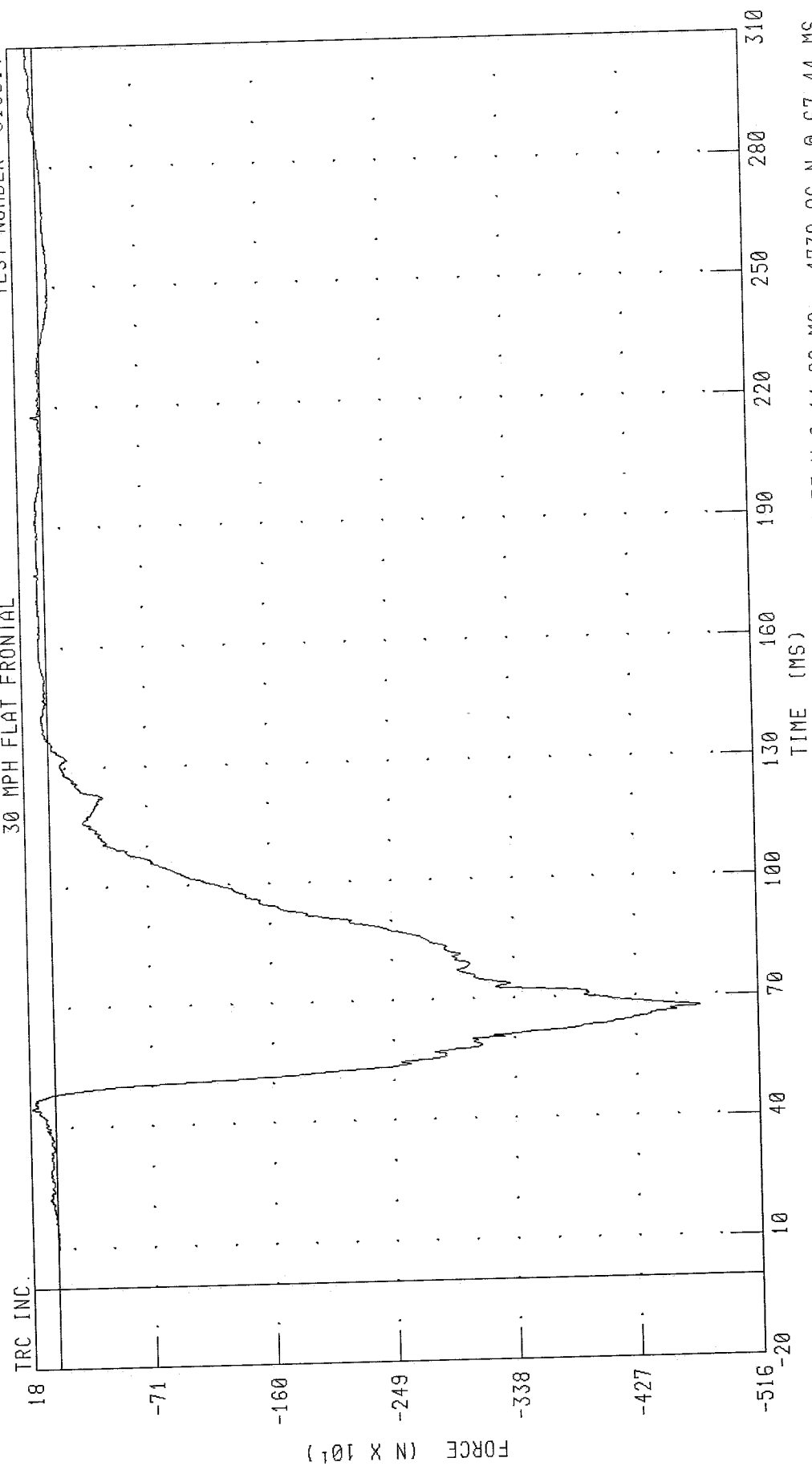


PEAK DATA: 56.78 G @ 71.28 MS; 0.03 G @ -17.52 MS

CHANNEL: PEVRG2 FILTER: CH. CLASS 1000

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LEFT FEMUR FORCE
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

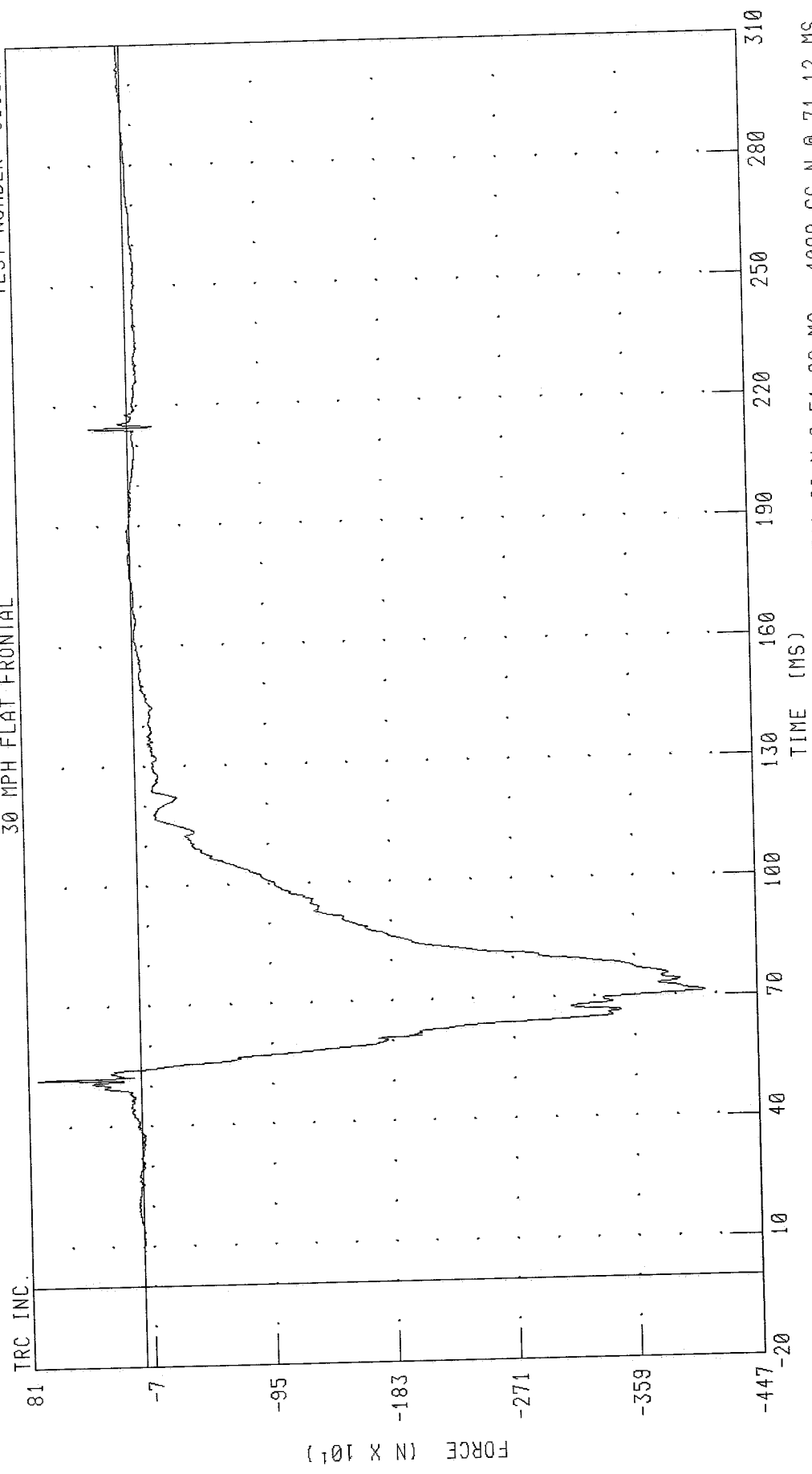


PEAK DATA: 164.57 N @ 44.80 MS; -4739.96 N @ 67.44 MS

CHANNEL: LFMZF2 FILTER: CH. CLASS 600

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER RIGHT FEMUR FORCE
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

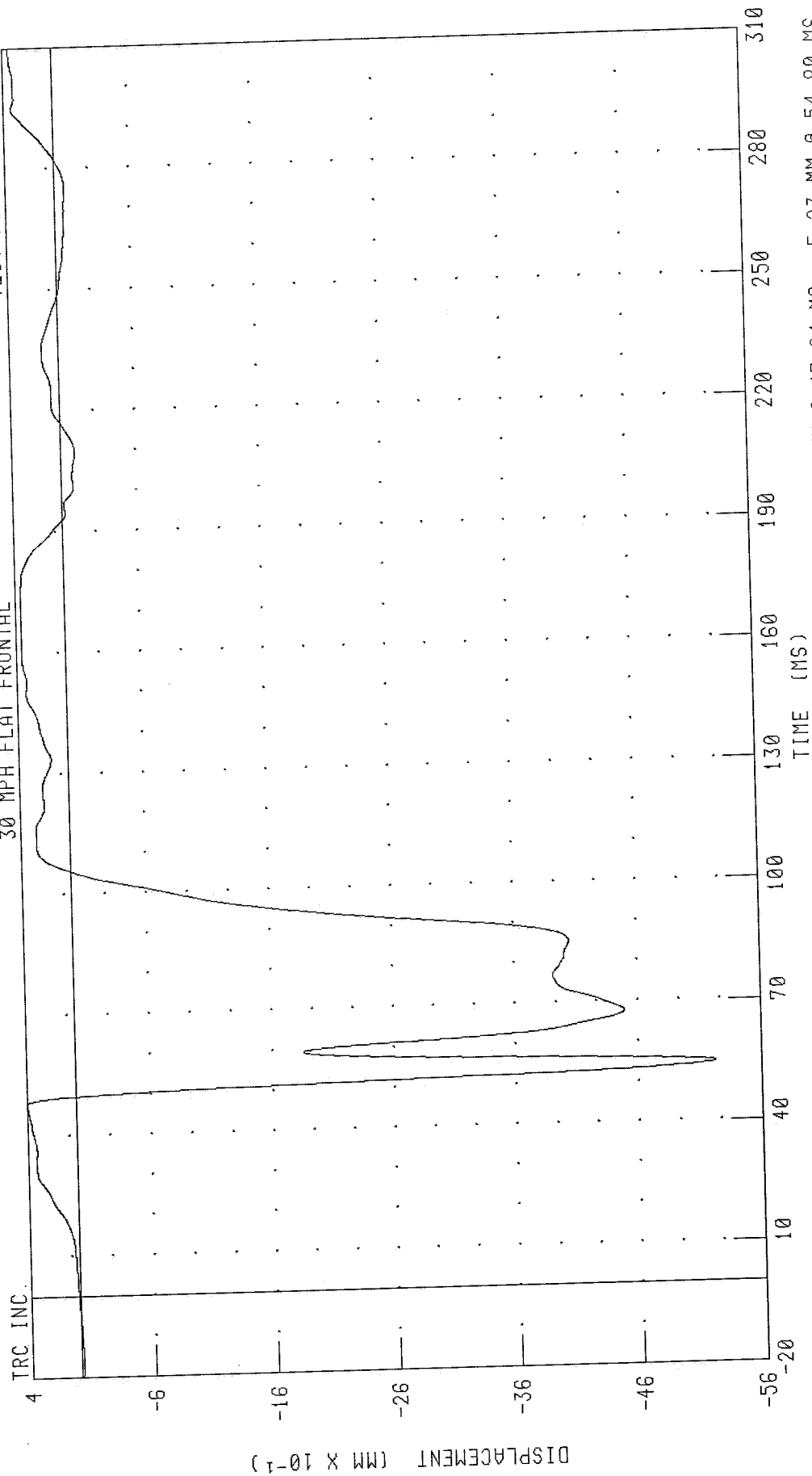


CHANNEL: RFMZF2 FILTER: CH. CLASS 600

PEAK DATA: 741.68 N @ 51.92 MS; -4099.66 N @ 71.12 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LEFT KNEE DISPLACEMENT
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

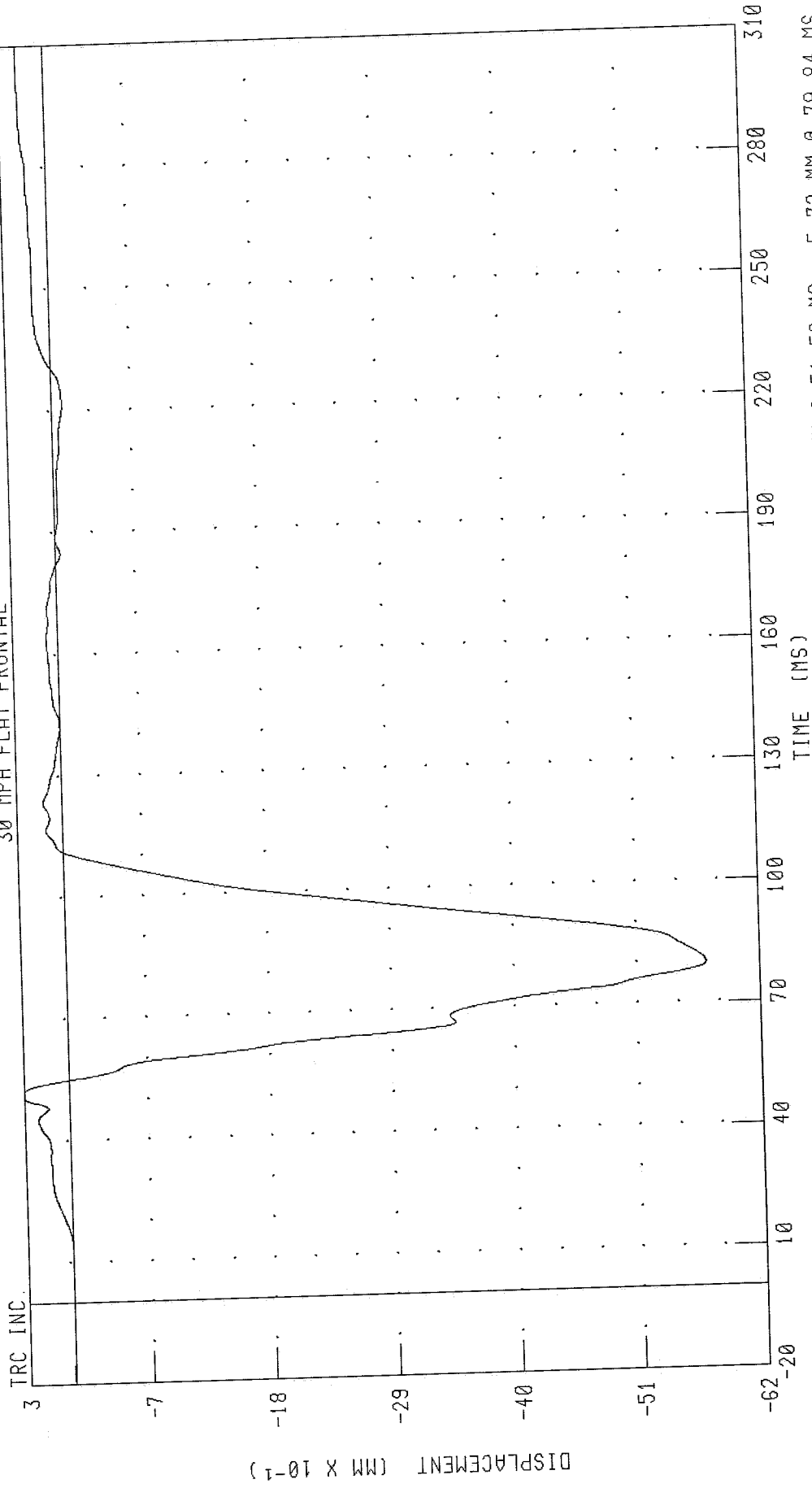


PEAK DATA: 0.41 MM @ 47.84 MS; -5.23 MM @ 54.80 MS

CHANNEL: KNLXD2 FILTER: CH. CLASS 180

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LEFT KNEE DISPLACEMENT
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

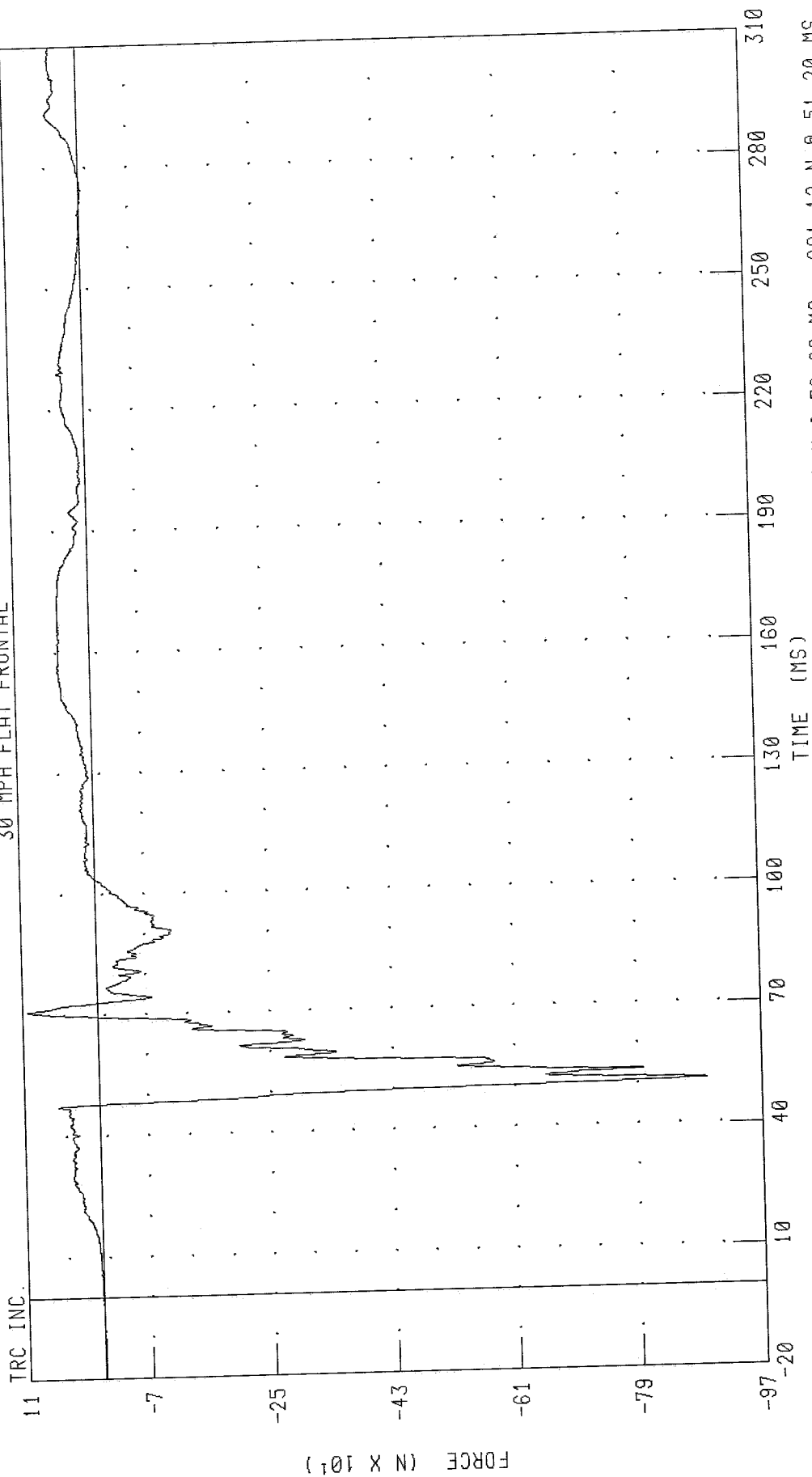


PEAK DATA: 0.43 MM @ 51.52 MS; -5.72 MM @ 79.84 MS

CHANNEL: KNRXD2 FILTER: CH. CLASS 180

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LEFT UPPER TIBIA X-AXIS FORCE
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

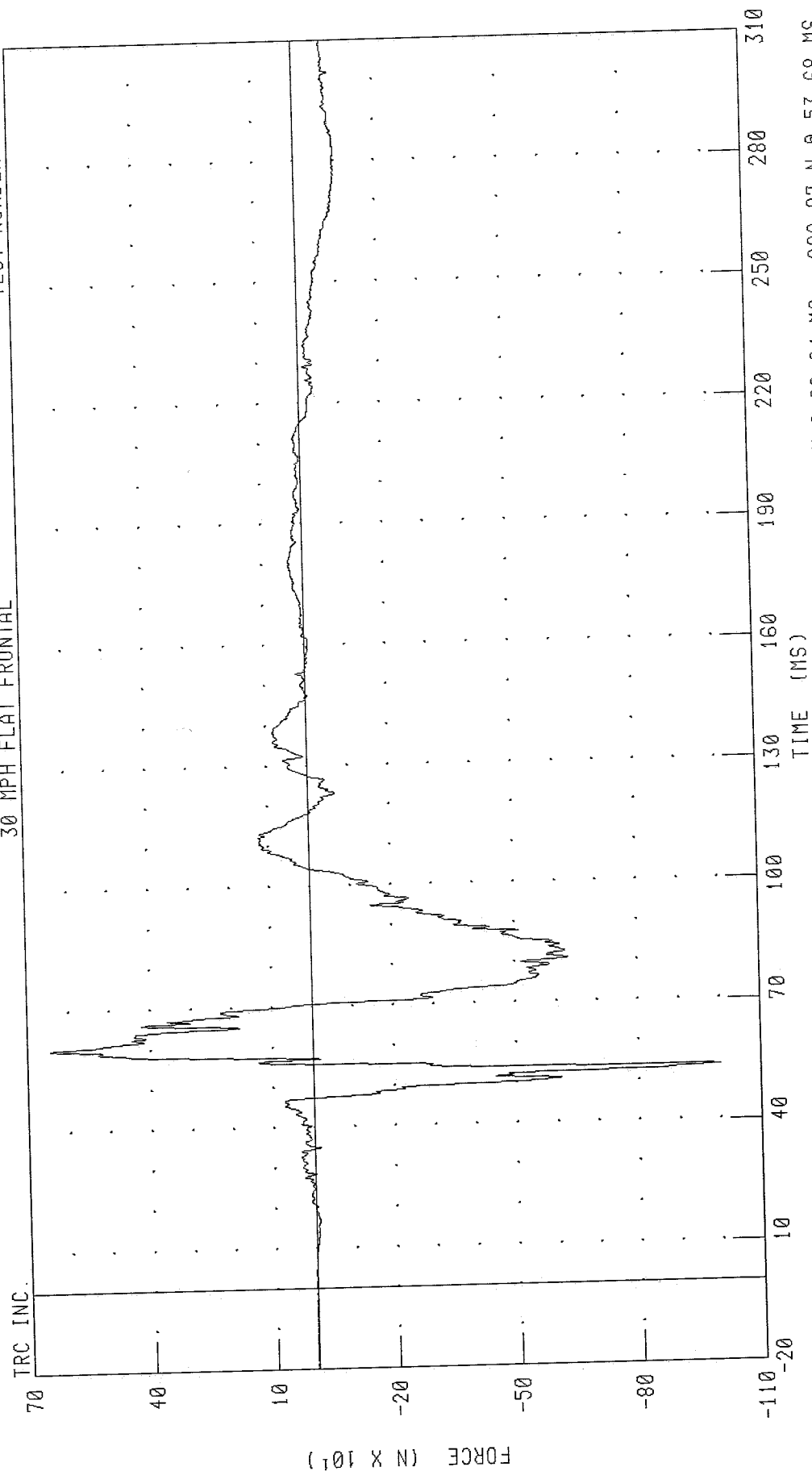


PEAK DATA: 102.70 N @ 70.96 MS; -891.12 N @ 51.20 MS

CHANNEL: TBLXF2 FILTER: CH. CLASS 600

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LEFT UPPER TIBIA Z-AXIS FORCE
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

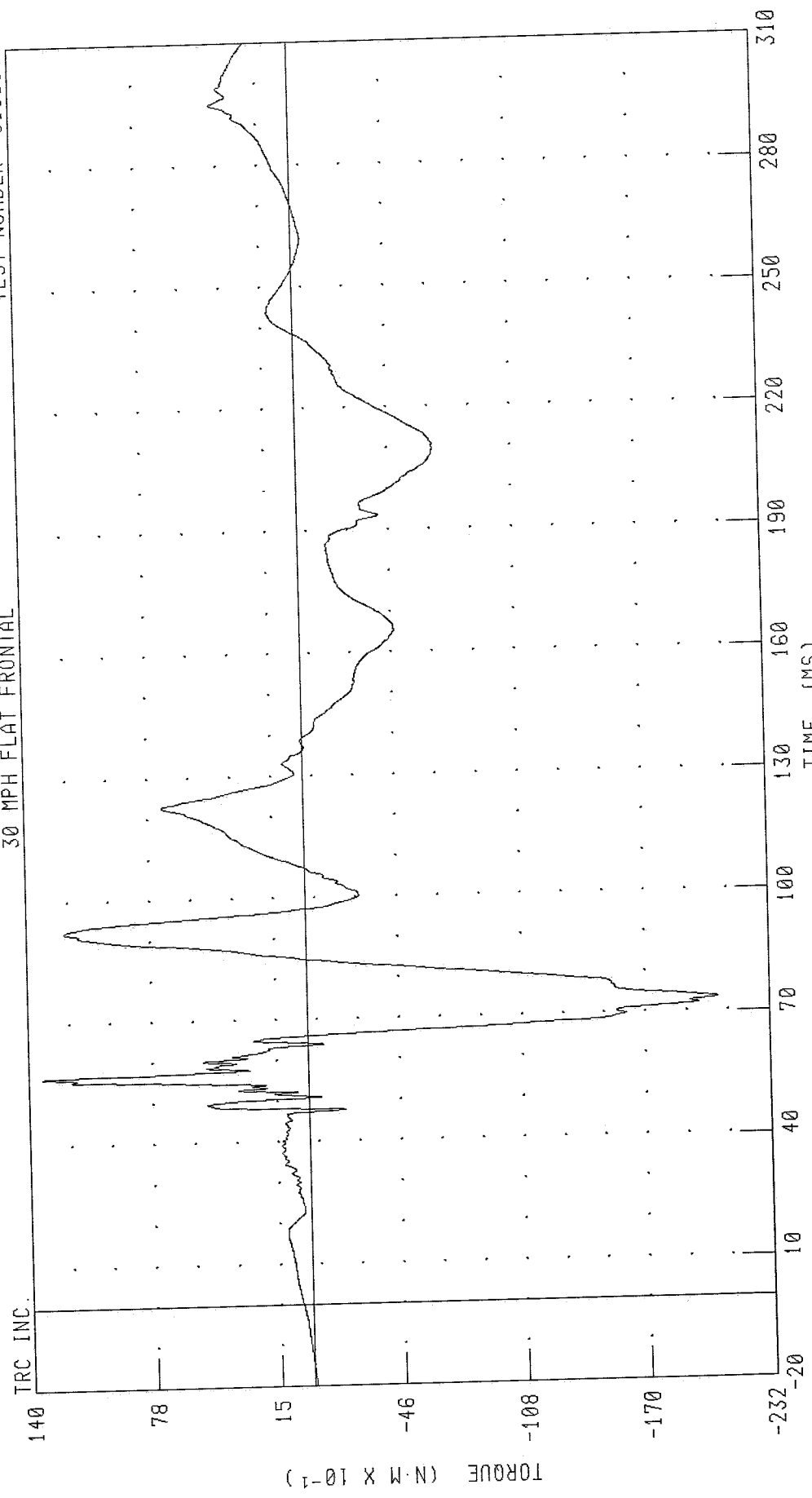


PEAK DATA: 645.39 N @ 60.24 MS; -999.97 N @ 53.68 MS

CHANNEL: TBLZF2 FILTER: CH. CLASS 600

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LEFT UPPER TIBIA MOMENT ABOUT X AXIS
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

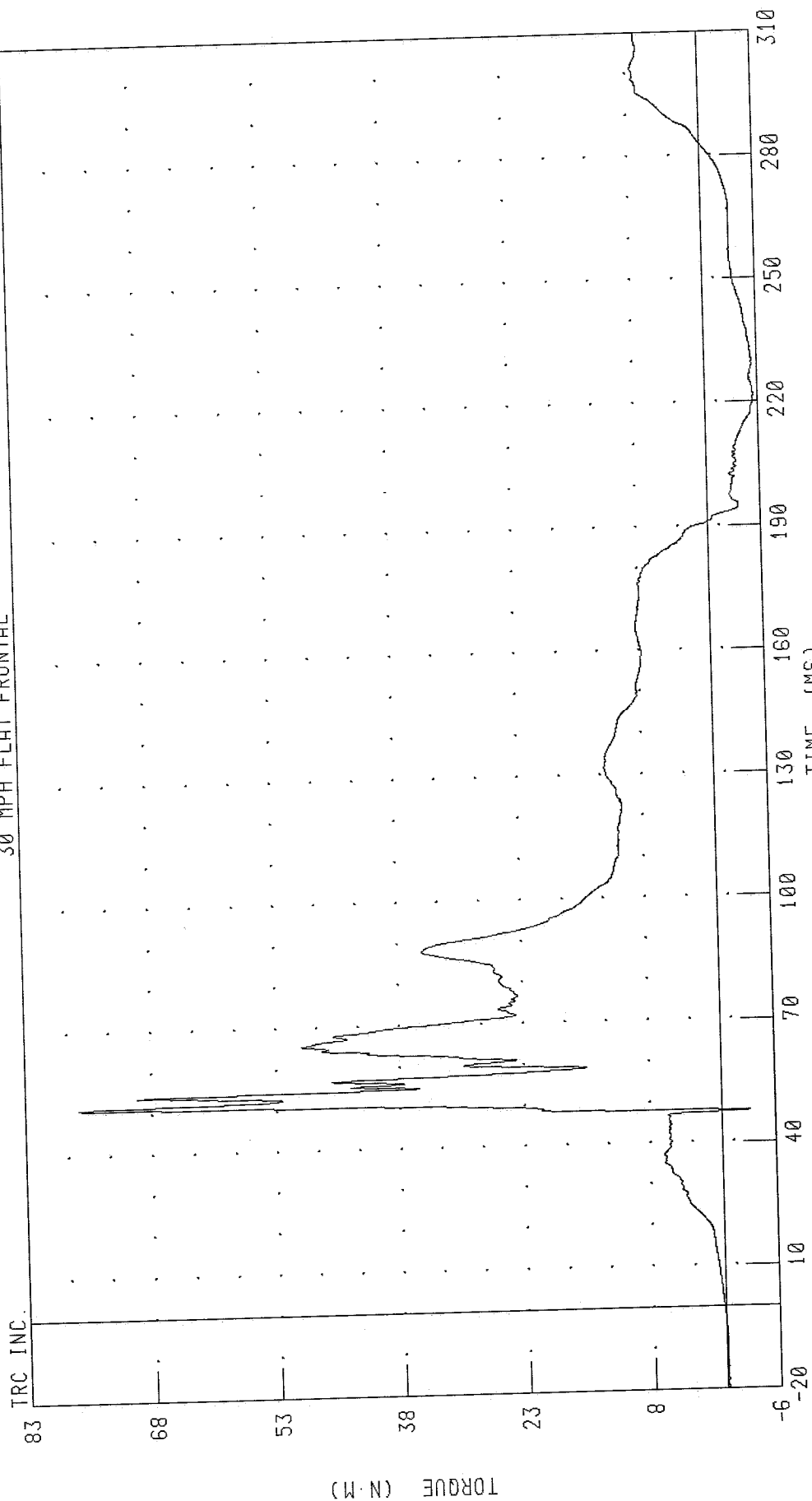


PEAK DATA: 13.30 N·M @ 56.48 MS; -20.65 N·M @ 73.52 MS

CHANNEL: TBLXM2 FILTER: CH. CLASS 600

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LEFT UPPER TIBIA MOMENT ABOUT Y AXIS
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

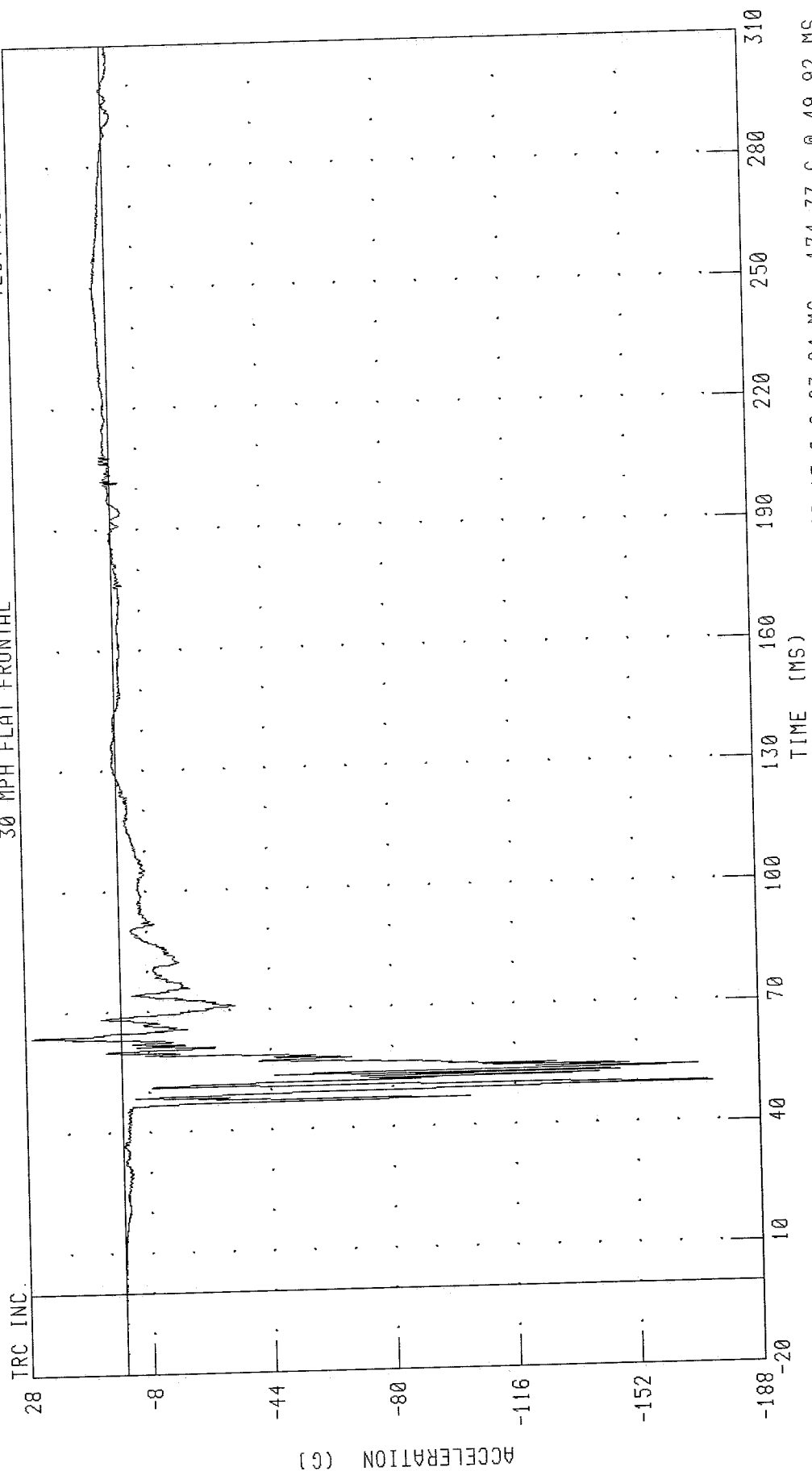


PEAK DATA: 77.32 N-M @ 51.28 MS; -5.87 N-M @ 221.68 MS

CHANNEL: TBLYM2 FILTER: CH. CLASS 600

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LEFT TIBIA X-AXIS ACCELERATION
30 MPH FLAT FRONTAL

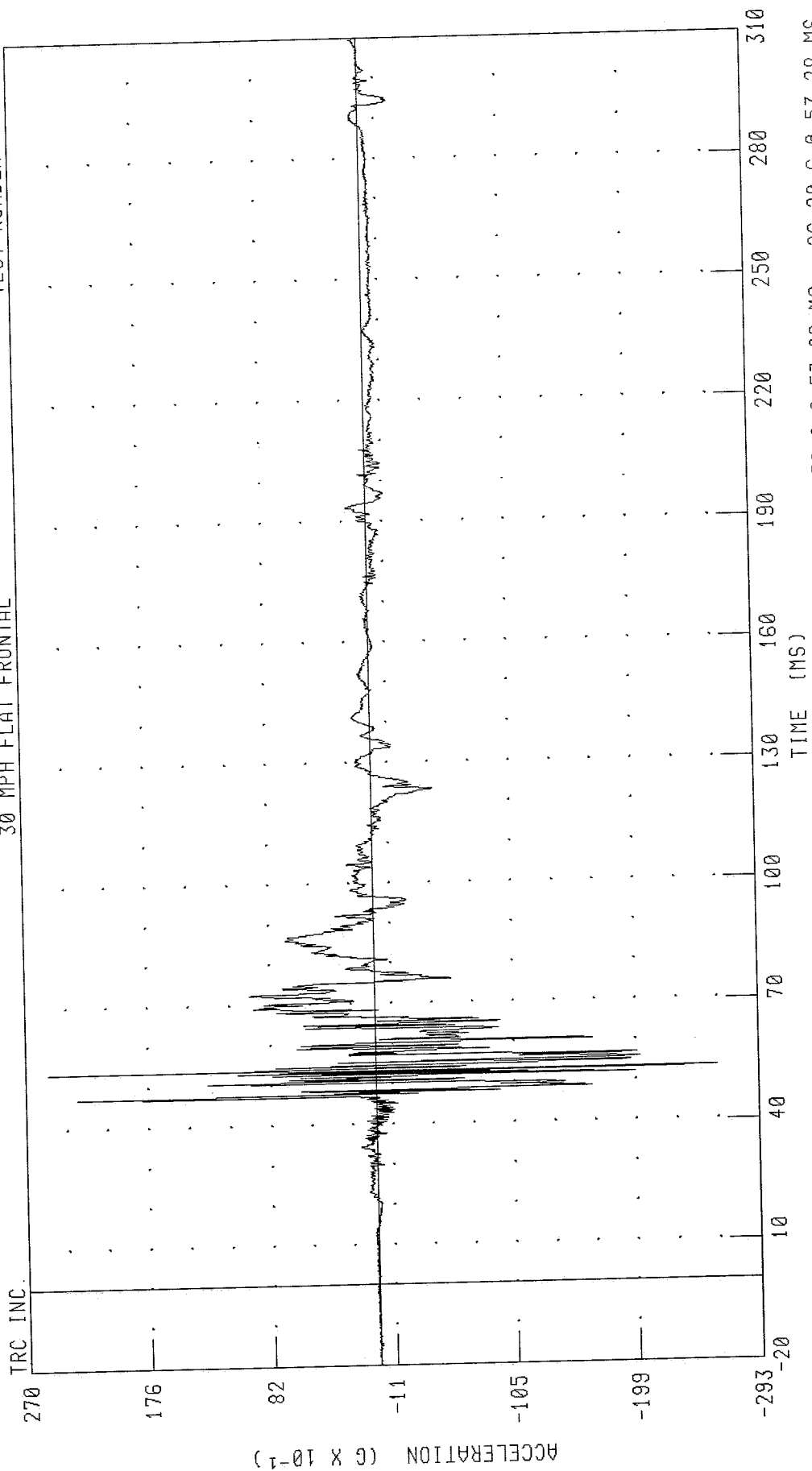
TEST NUMBER: 010814



CHANNEL: TBLXG2 FILTER: CH. CLASS 1000

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LEFT TIBIA Y-AXIS ACCELERATION
30 MPH FLAT FRONTAL

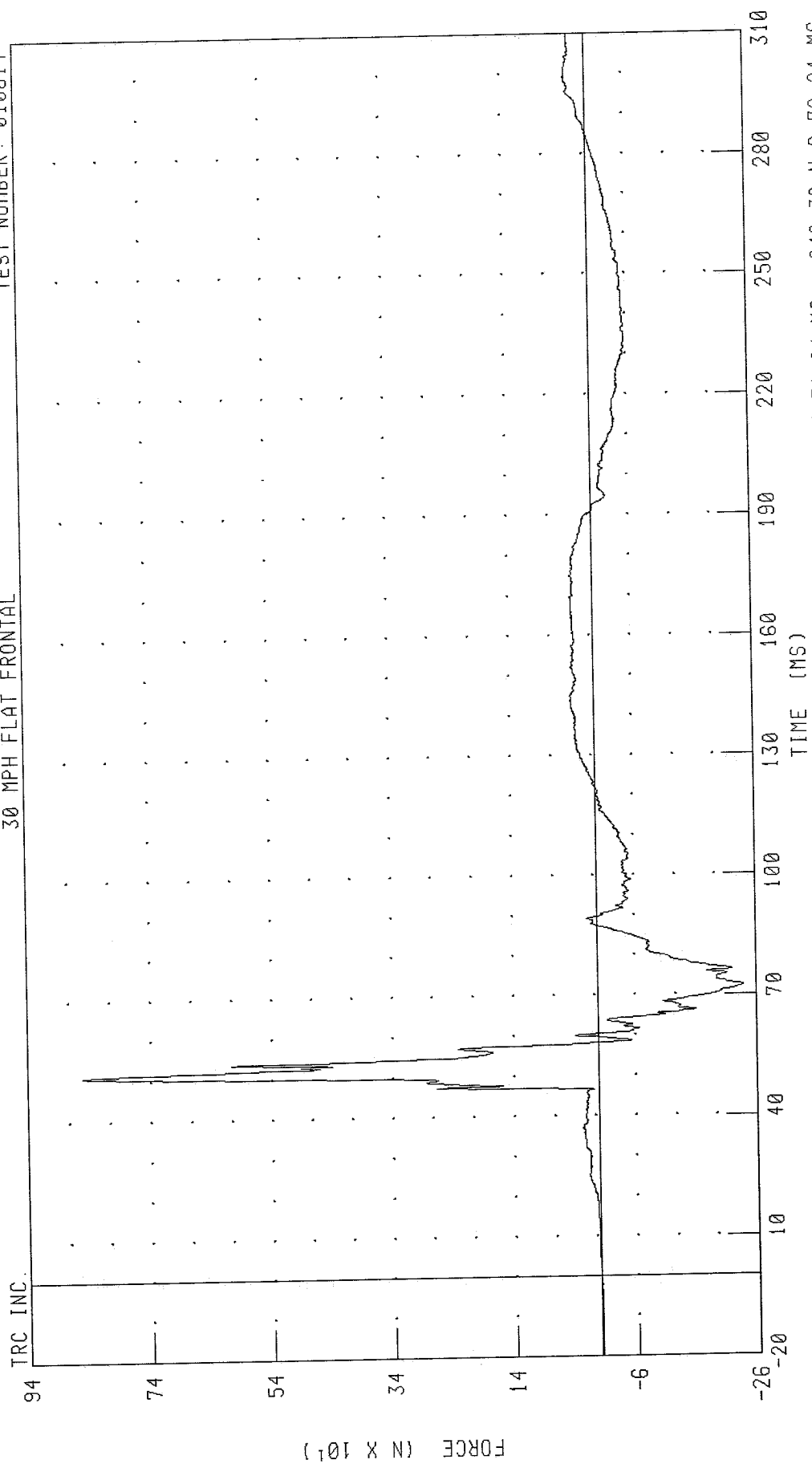
TEST NUMBER: 010814



CHANNEL: TBLYG2 FILTER: CH. CLASS 1000

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LEFT LOWER TIBIA X-AXIS FORCE
30 MPH FLAT FRONTAL

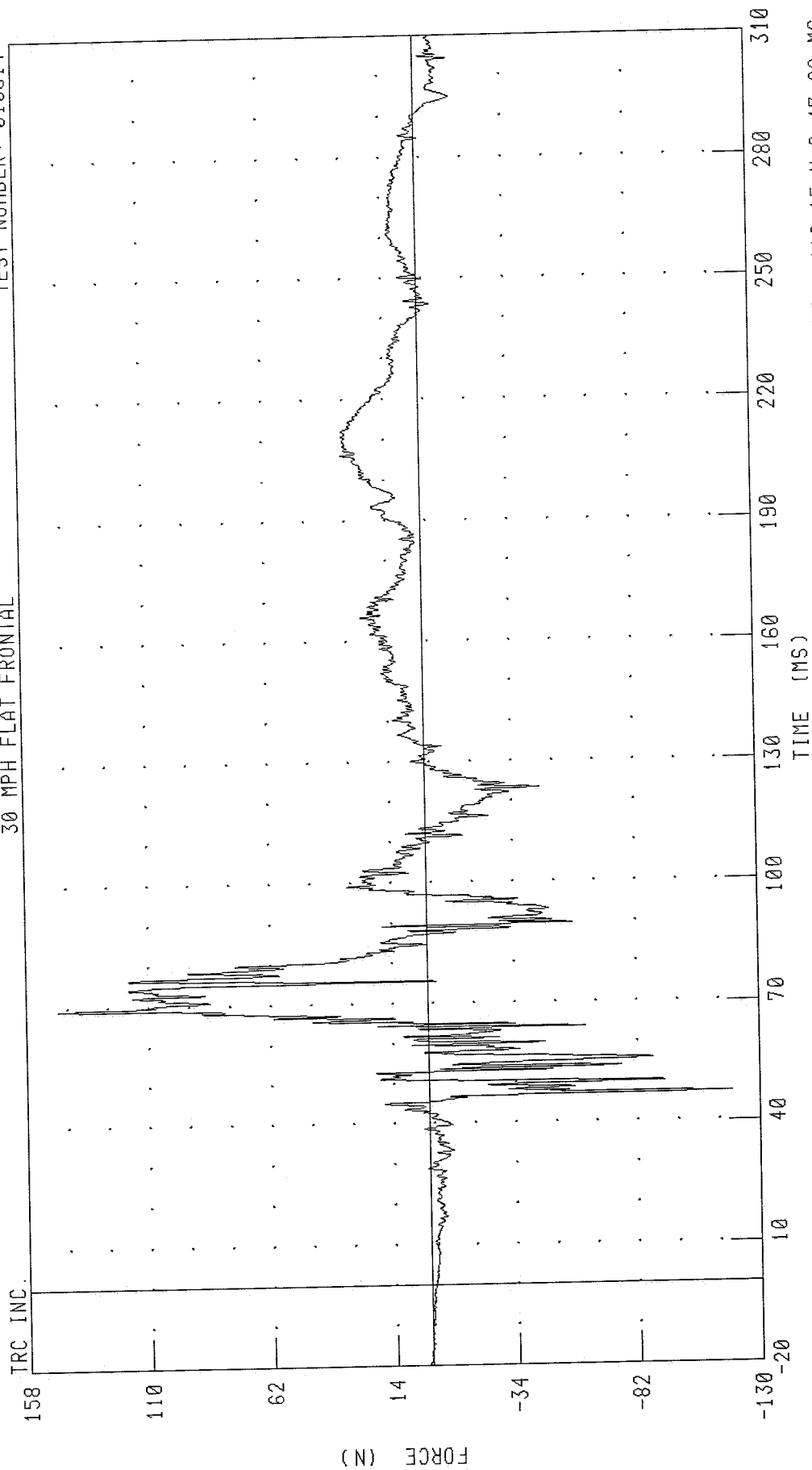
TEST NUMBER: 010814



CHANNEL: ANLXF2 FILTER: CH. CLASS 600
PEAK DATA: 851.23 N @ 51.04 MS; -240.38 N @ 72.24 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LEFT LOWER TIBIA Y-AXIS FORCE
30 MPH FLAT FRONTAL

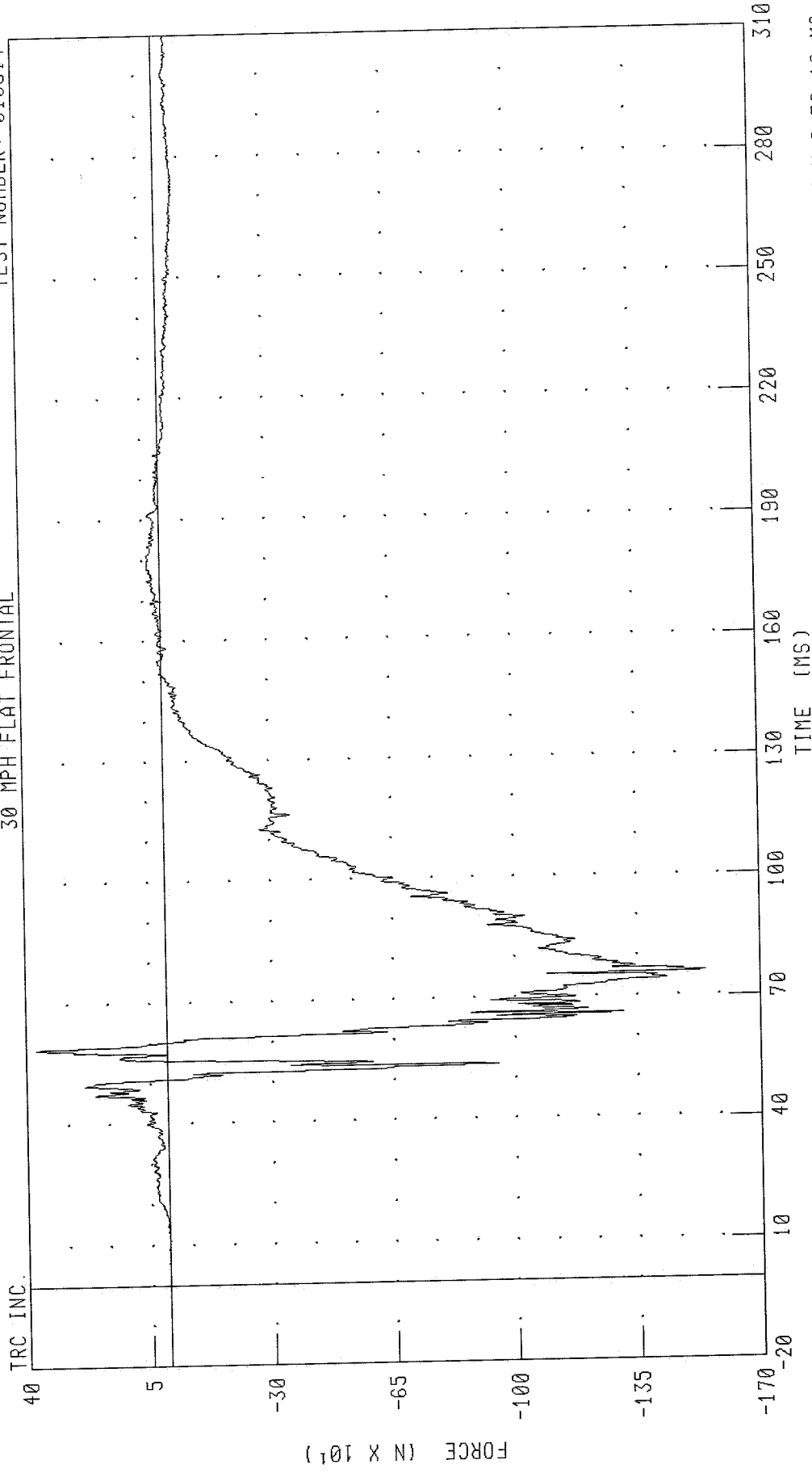
TEST NUMBER: 010814



CHANNEL: ANLYF2 FILTER: CH. CLASS 600
PEAK DATA: 145.52 N @ 69.36 MS; -119.15 N @ 47.28 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LEFT LOWER TIBIA Z-AXIS FORCE
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

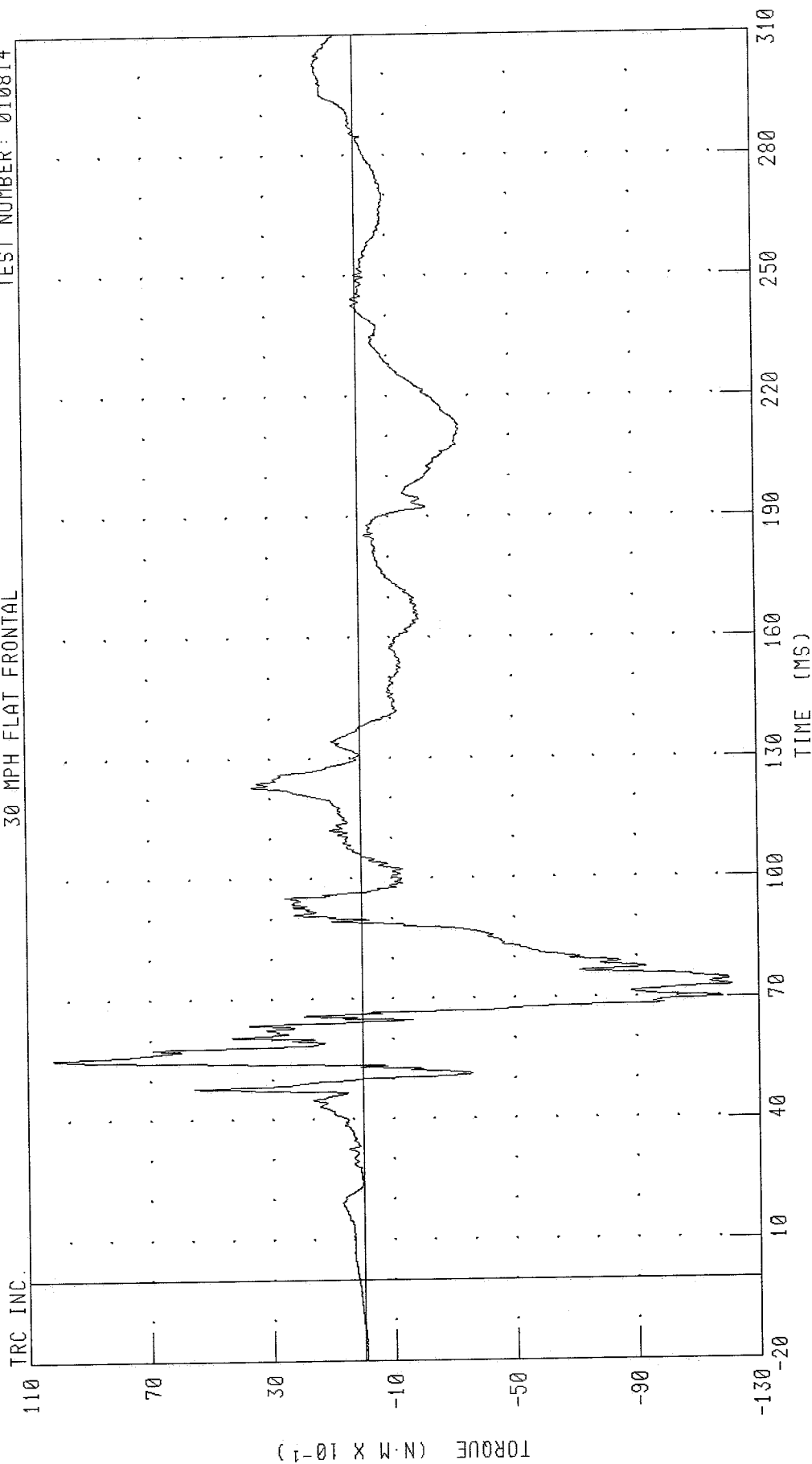


PEAK DATA: 370.52 N @ 58.80 MS, -1544.24 N @ 76.16 MS

CHANNEL: ANLZF2 FILTER: CH. CLASS 600

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LEFT LOWER TIBIA MOMENT ABOUT X AXIS
30 MPH FLAT FRONTAL

TEST NUMBER: 010814



PEAK DATA: 10.16 N·M @ 55.28 MS; -12.13 N·M @ 72.96 MS

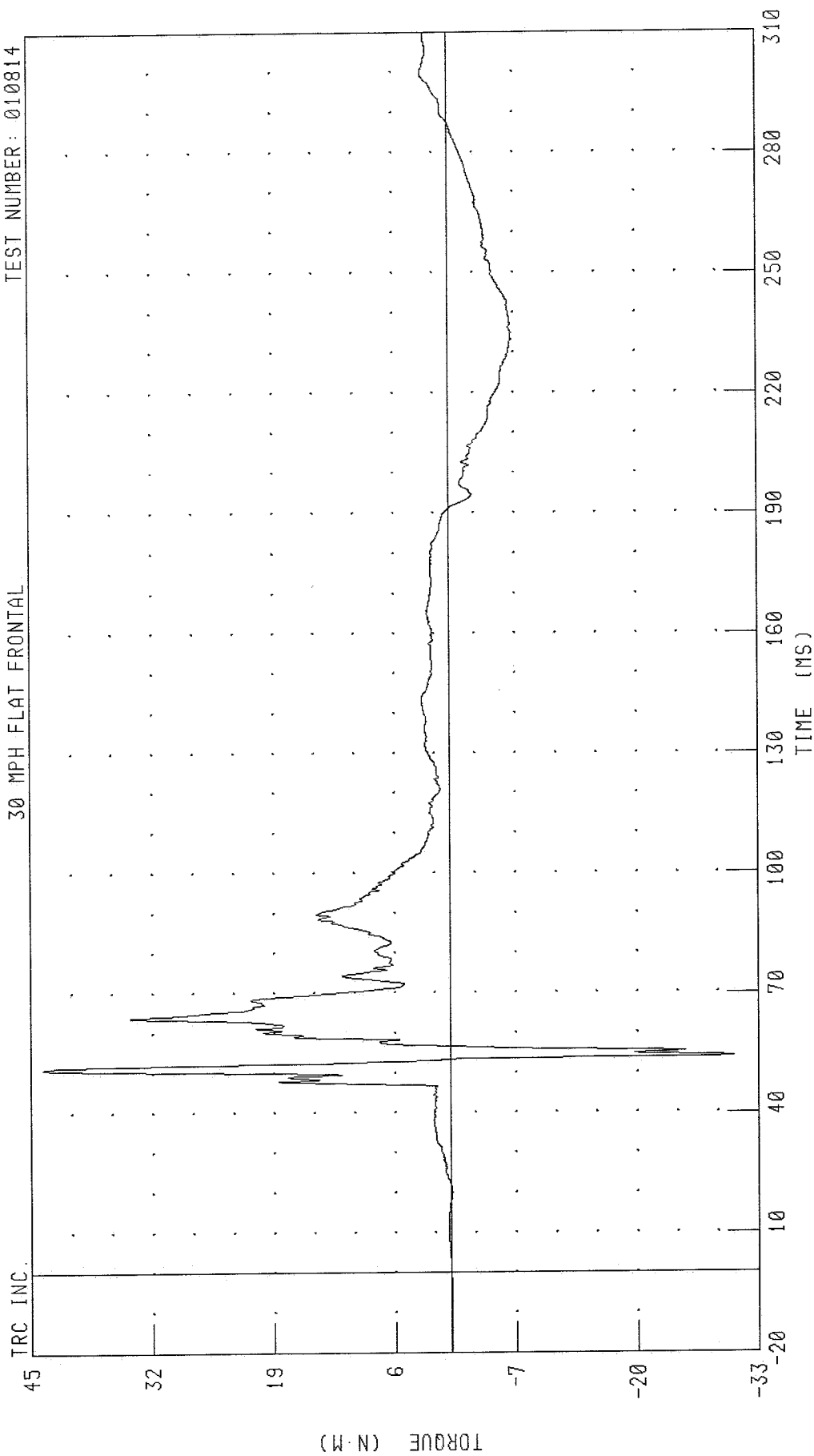
CHANNEL: ANLXM2 FILTER: CH. CLASS 600

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

PASSENGER LEFT LOWER TIBIA MOMENT ABOUT Y AXIS

30 MPH FLAT FRONTAL

TEST NUMBER: 010814

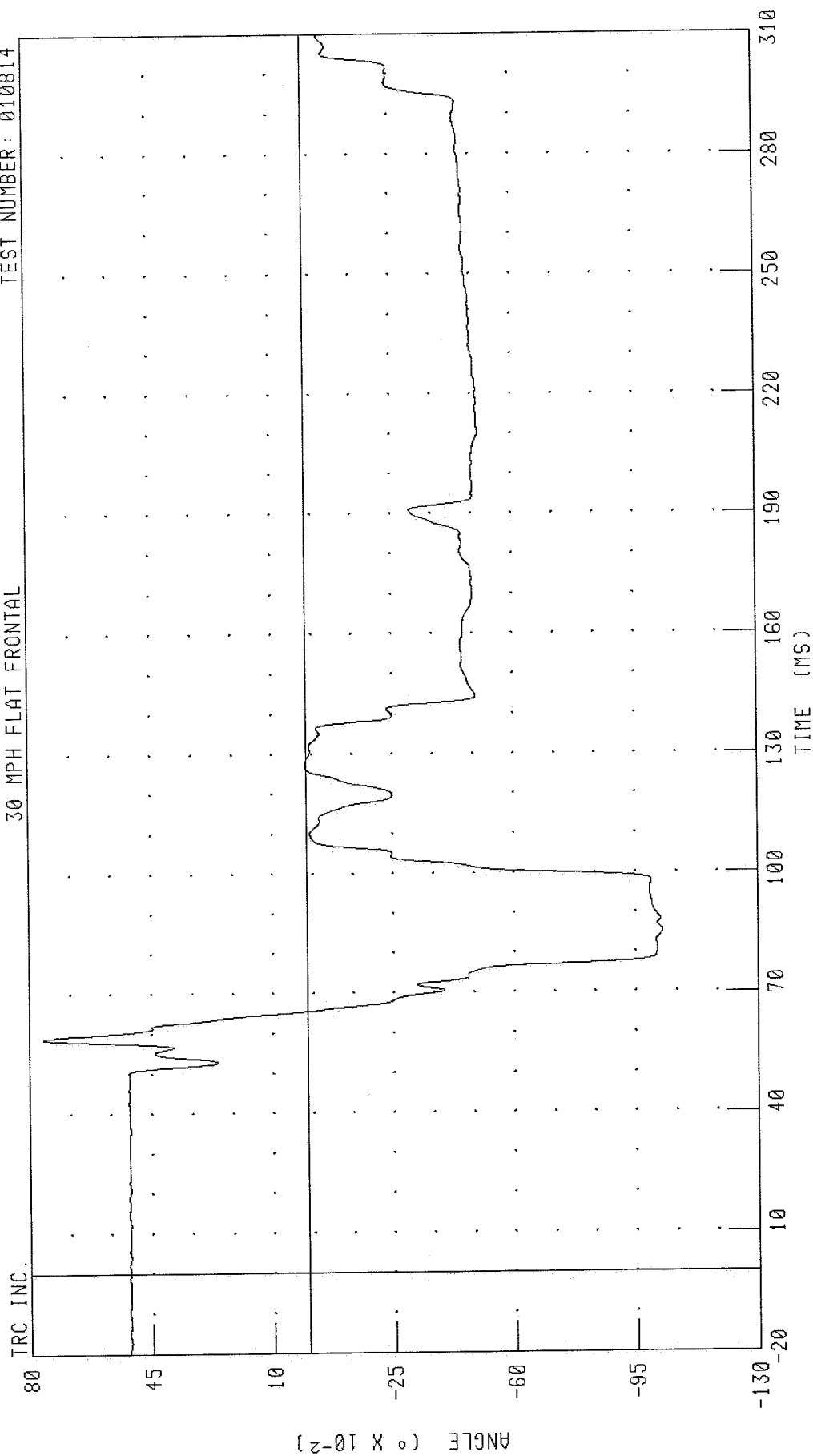


CHANNEL: ANLYM2 FILTER: CH. CLASS 600

PEAK DATA: 43.74 N·M @ 51.12 MS; -30.36 N·M @ 54.16 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LEFT FOOT TO ANKLE X-AXIS DISPLACEMENT
30 MPH FLAT FRONTAL

TEST NUMBER: 010814



CHANNEL: FTLXD2 FILTER: CH. CLASS 180

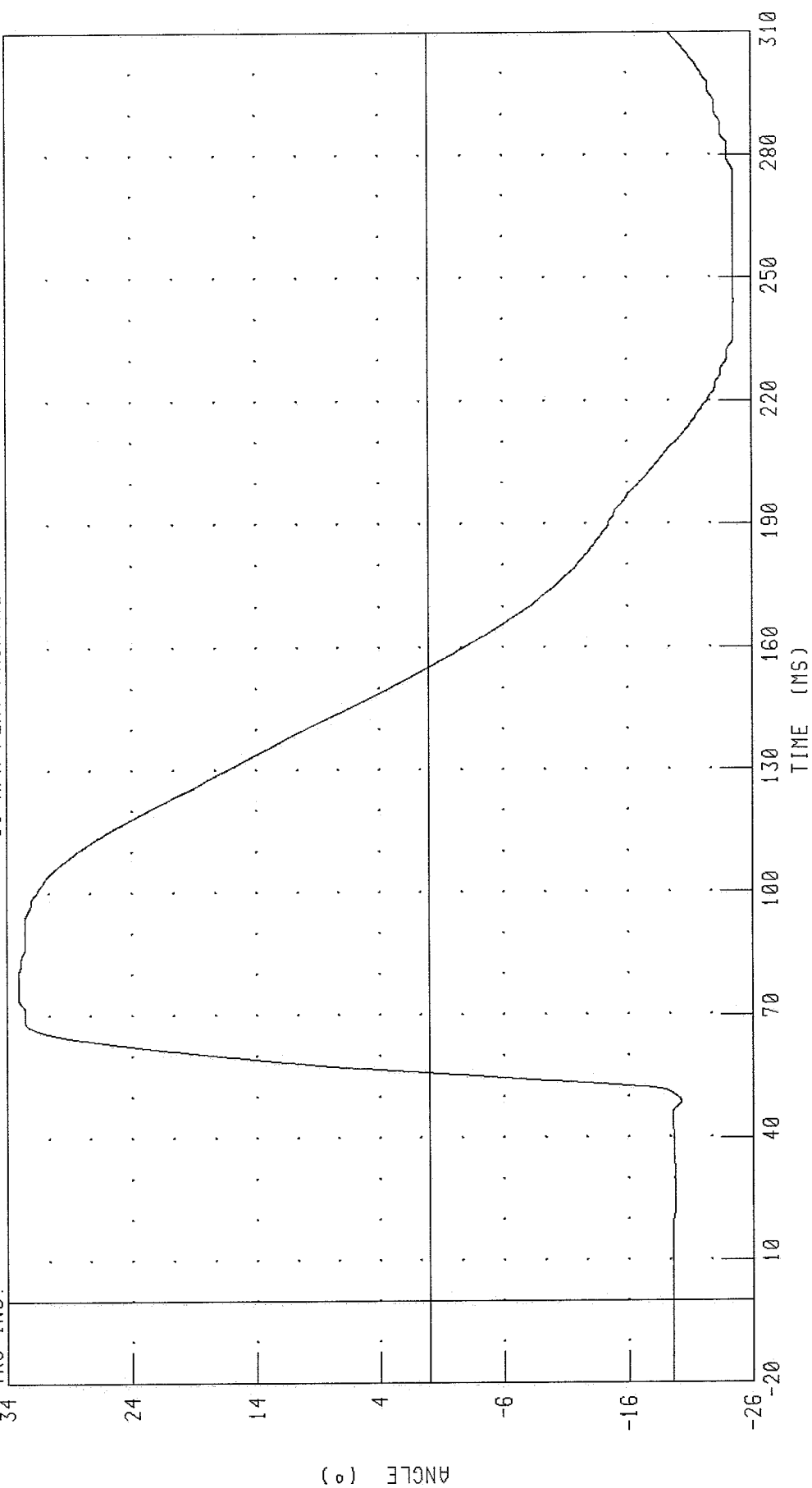
PEAK DATA: 0.76 ° @ 58.88 MS, -1.03 ° @ 85.44 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LEFT FOOT TO ANKLE Y-AXIS DISPLACEMENT

TRC INC.

30 MPH FLAT FRONTAL

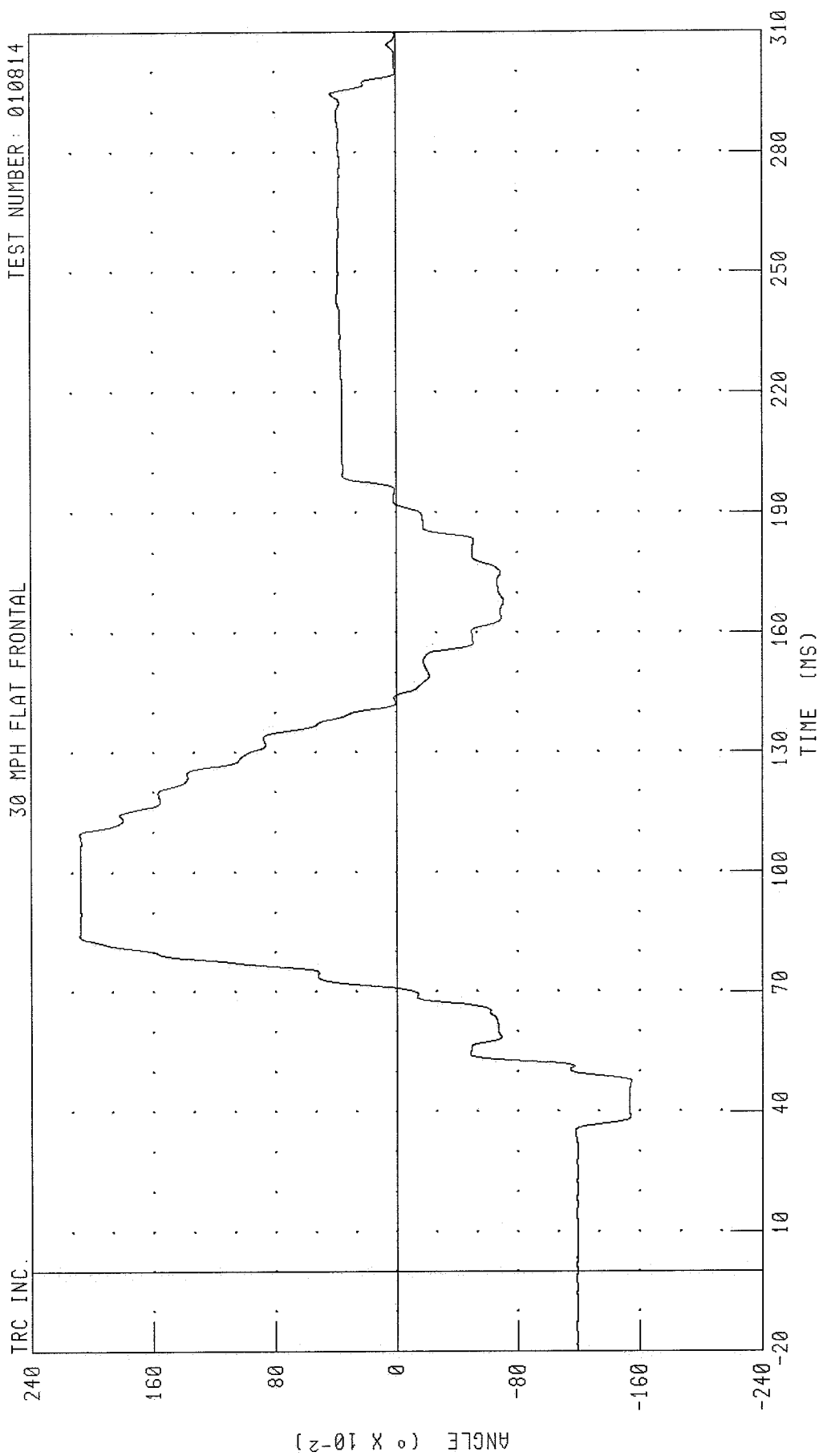
TEST NUMBER: 010814



CHANNEL: FTLYD2 FILTER: CH. CLASS 180

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LEFT FOOT TO ANKLE Z-AXIS DISPLACEMENT
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

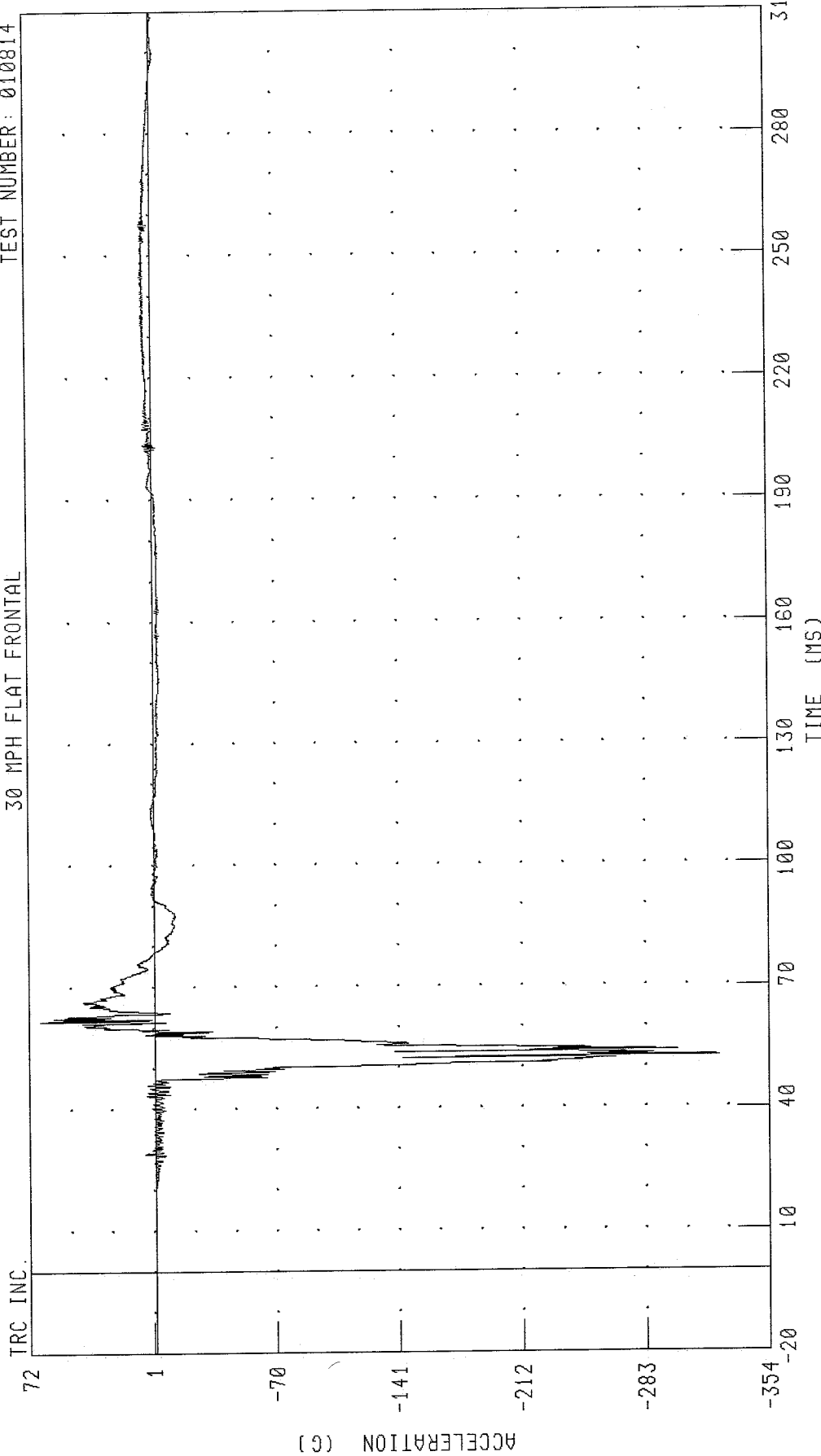


CHANNEL: FTLZD2 FILTER: CH. CLASS 180

PEAK DATA: 2.08 ° @ 109.44 MS; -1.55 ° @ 47.52 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LEFT FOOT X-AXIS ACCELERATION
30 MPH FLAT FRONTAL

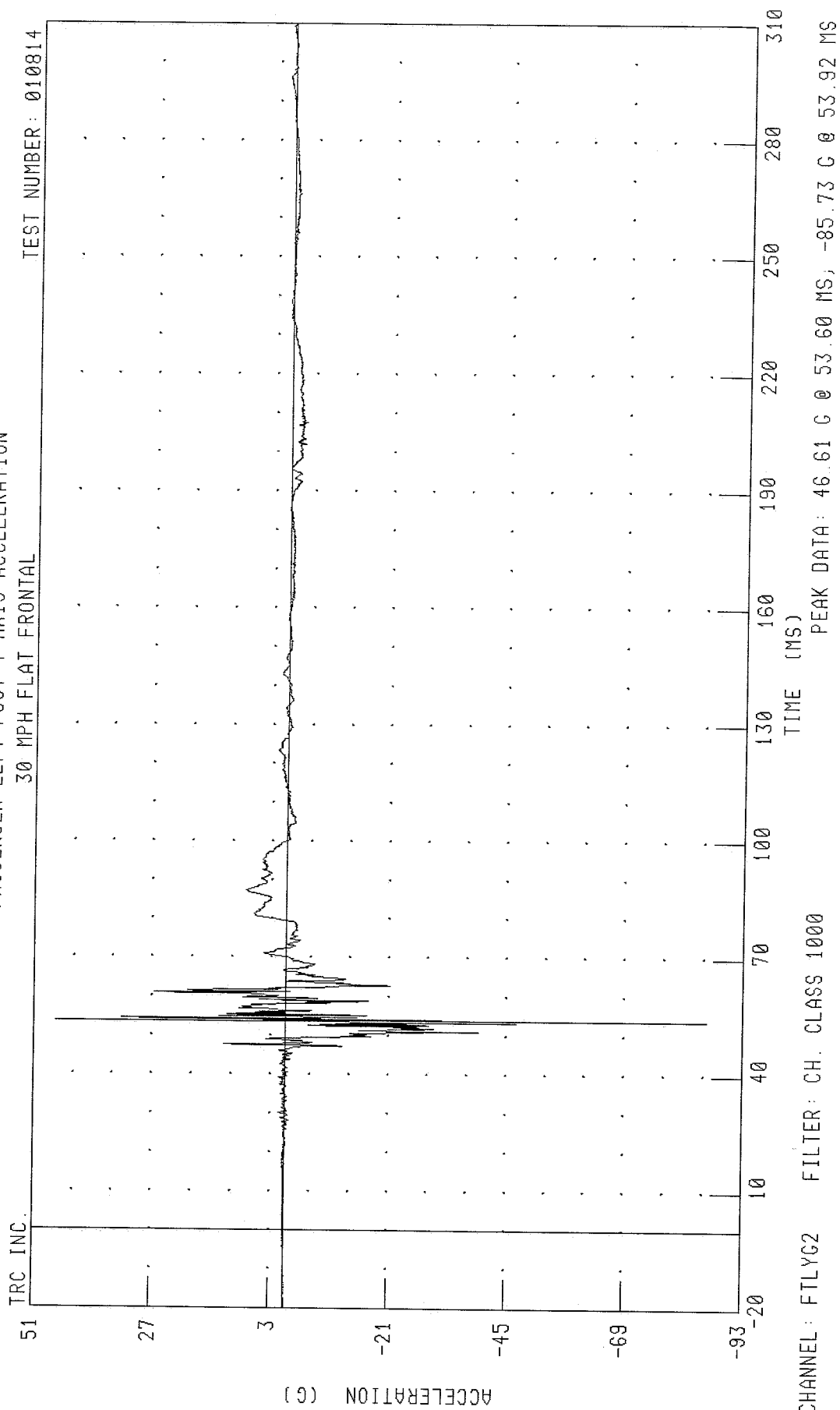
TEST NUMBER: 010814



CHANNEL: FTLXG2 FILTER: CH. CLASS 1000

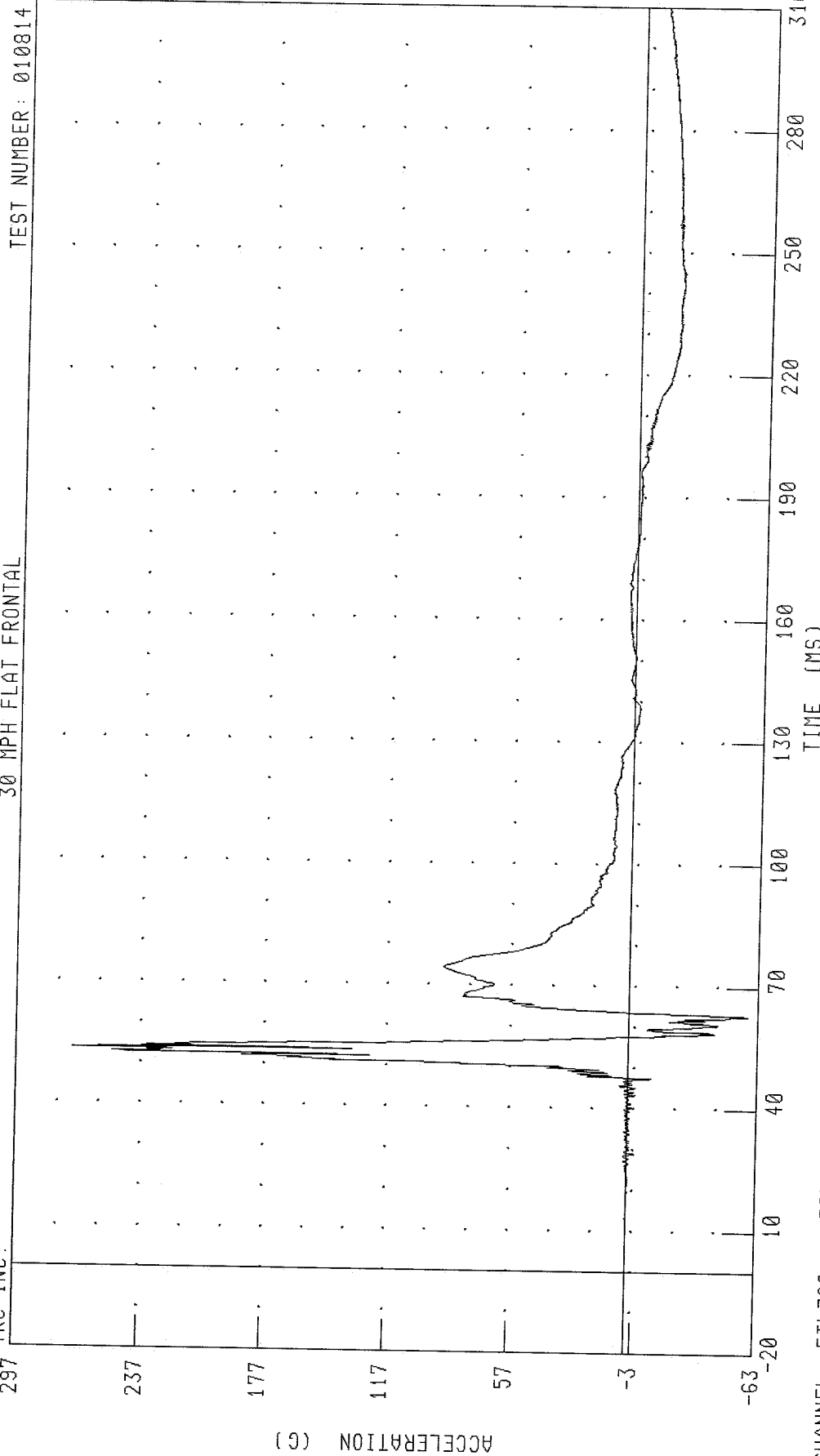
PEAK DATA: 65.80 G @ 61.84 MS; -325.01 G @ 52.72 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LEFT FOOT Y-AXIS ACCELERATION



2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LEFT FOOT Z-AXIS ACCELERATION
30 MPH FLAT FRONTAL

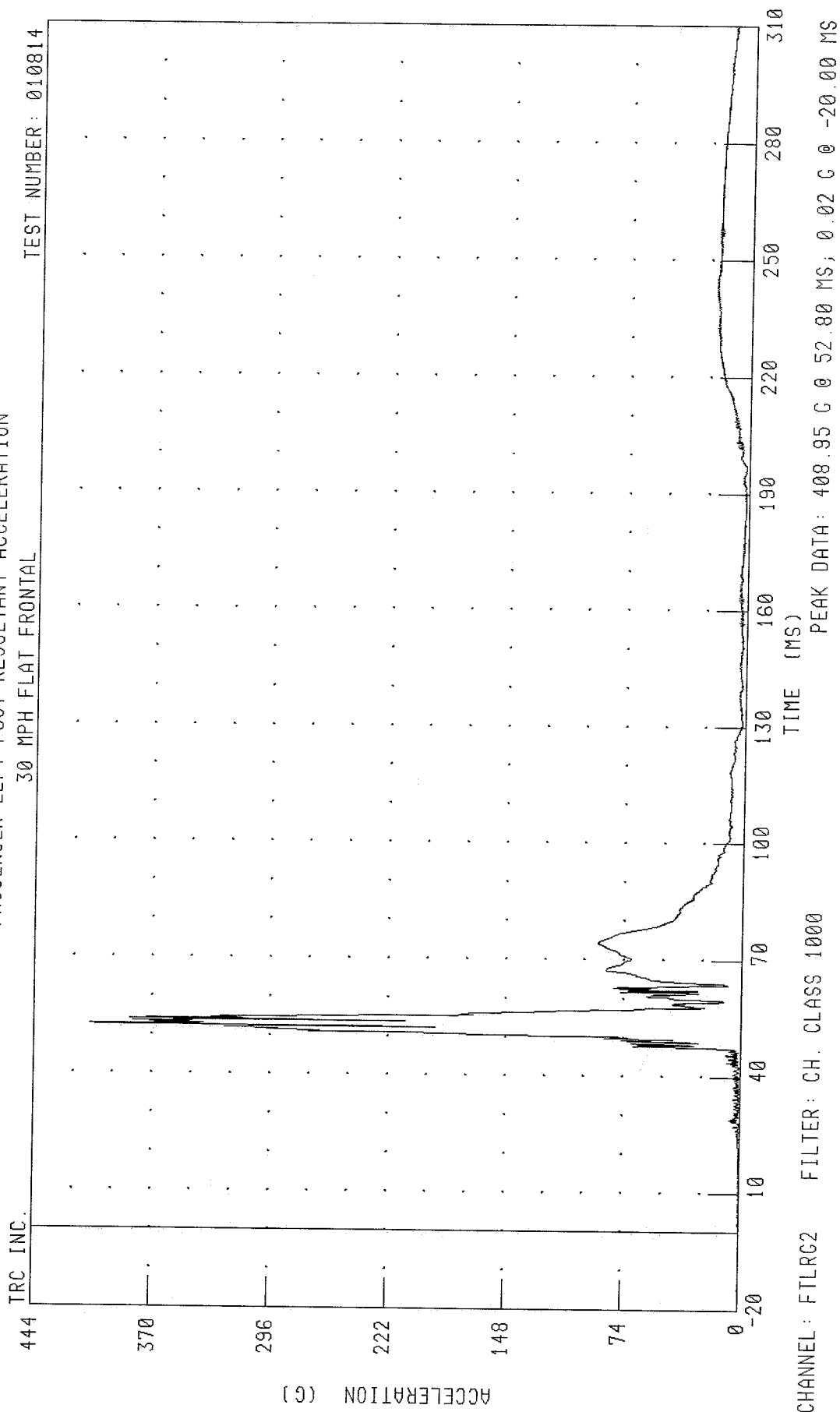
TRC INC.



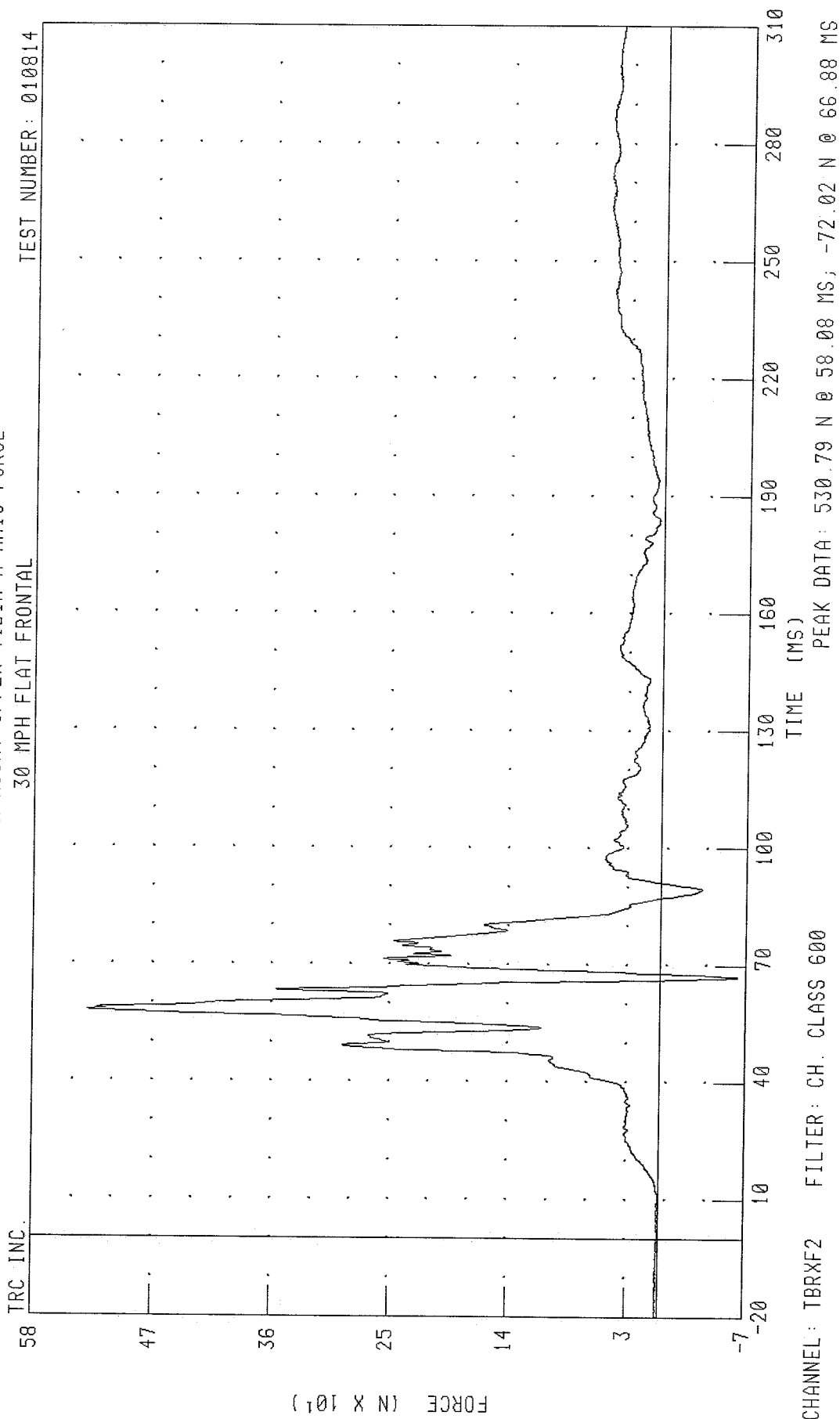
CHANNEL: FTLZG2 FILTER: CH. CLASS 1000

PEAK DATA: 270.40 G @ 53.68 MS; -57.78 G @ 62.88 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER LEFT FOOT RESULTANT ACCELERATION

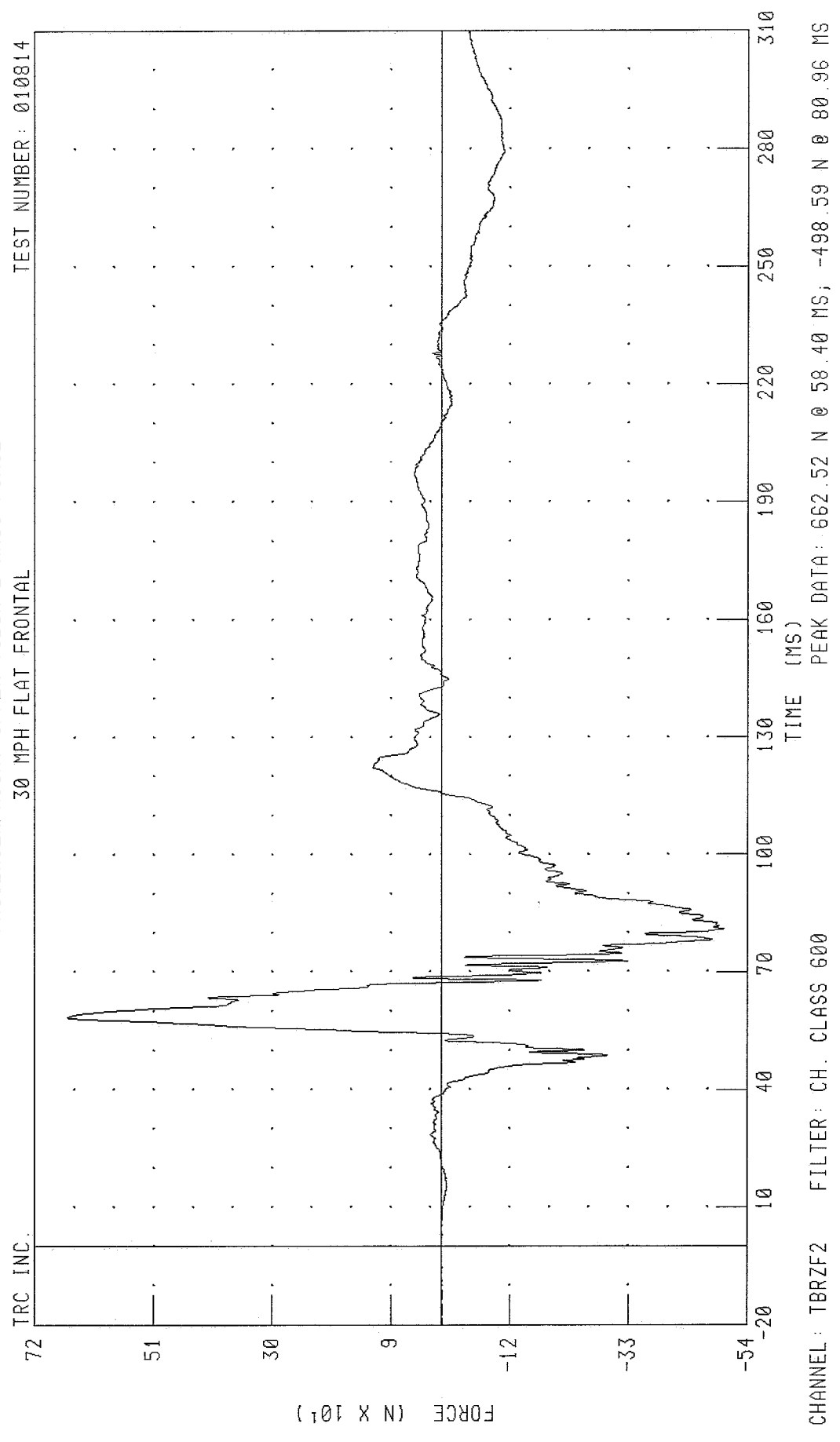


2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER RIGHT UPPER TIBIA X-AXIS FORCE

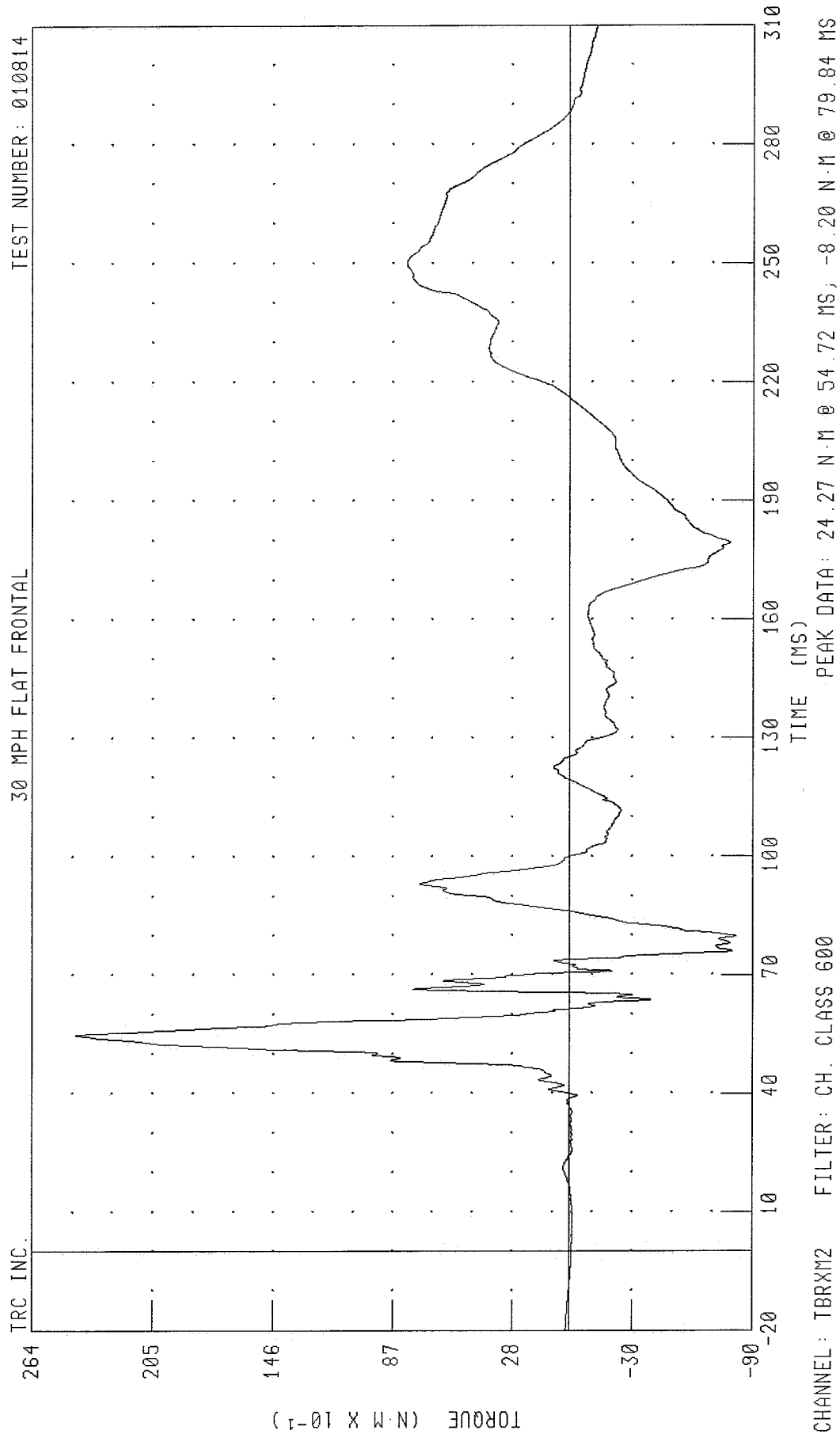


2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

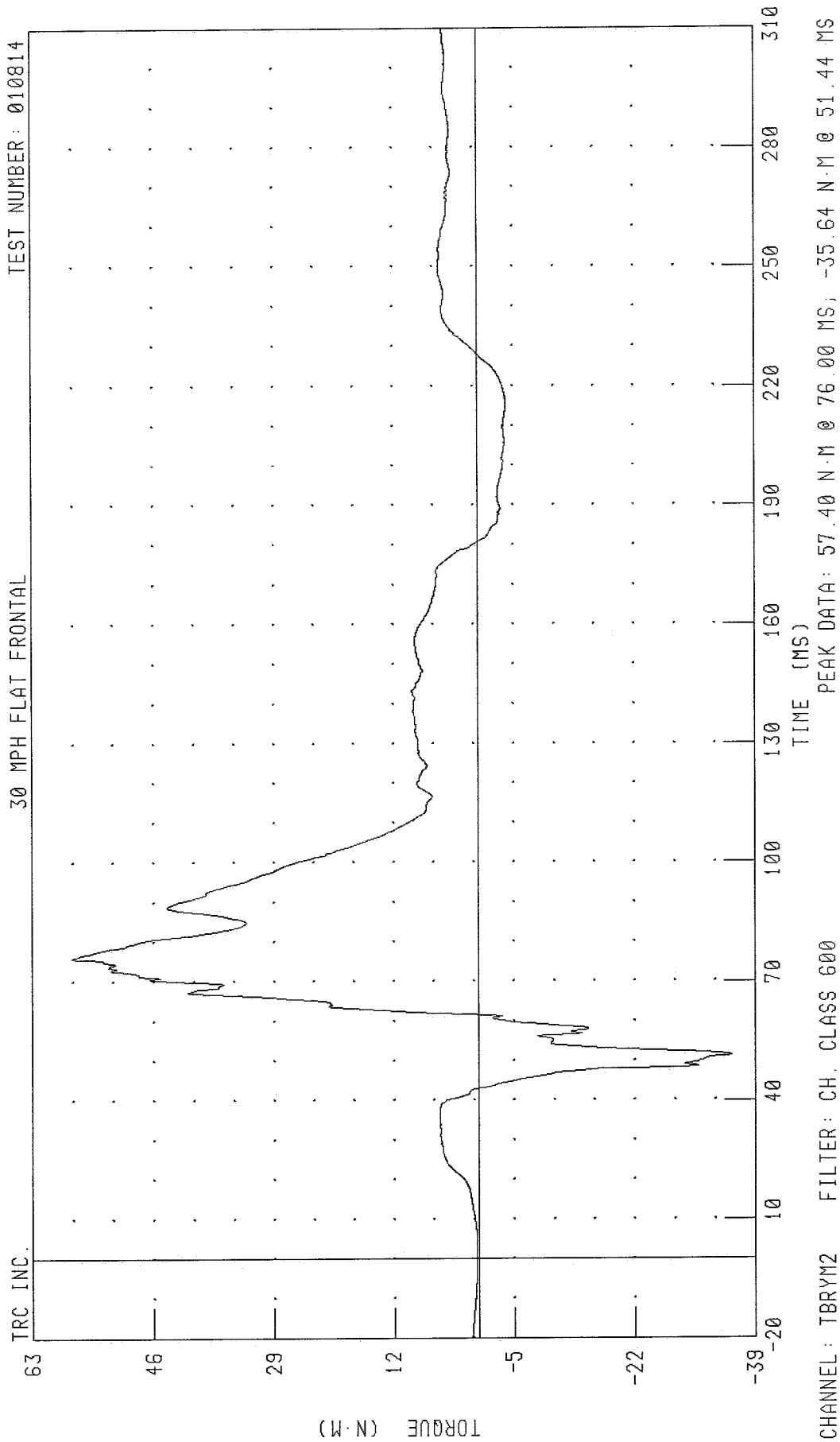
PASSENGER RIGHT UPPER TIBIA Z-AXIS FORCE



2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER RIGHT UPPER TIBIA MOMENT ABOUT X AXIS



2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER RIGHT UPPER TIBIA MOMENT ABOUT Y AXIS

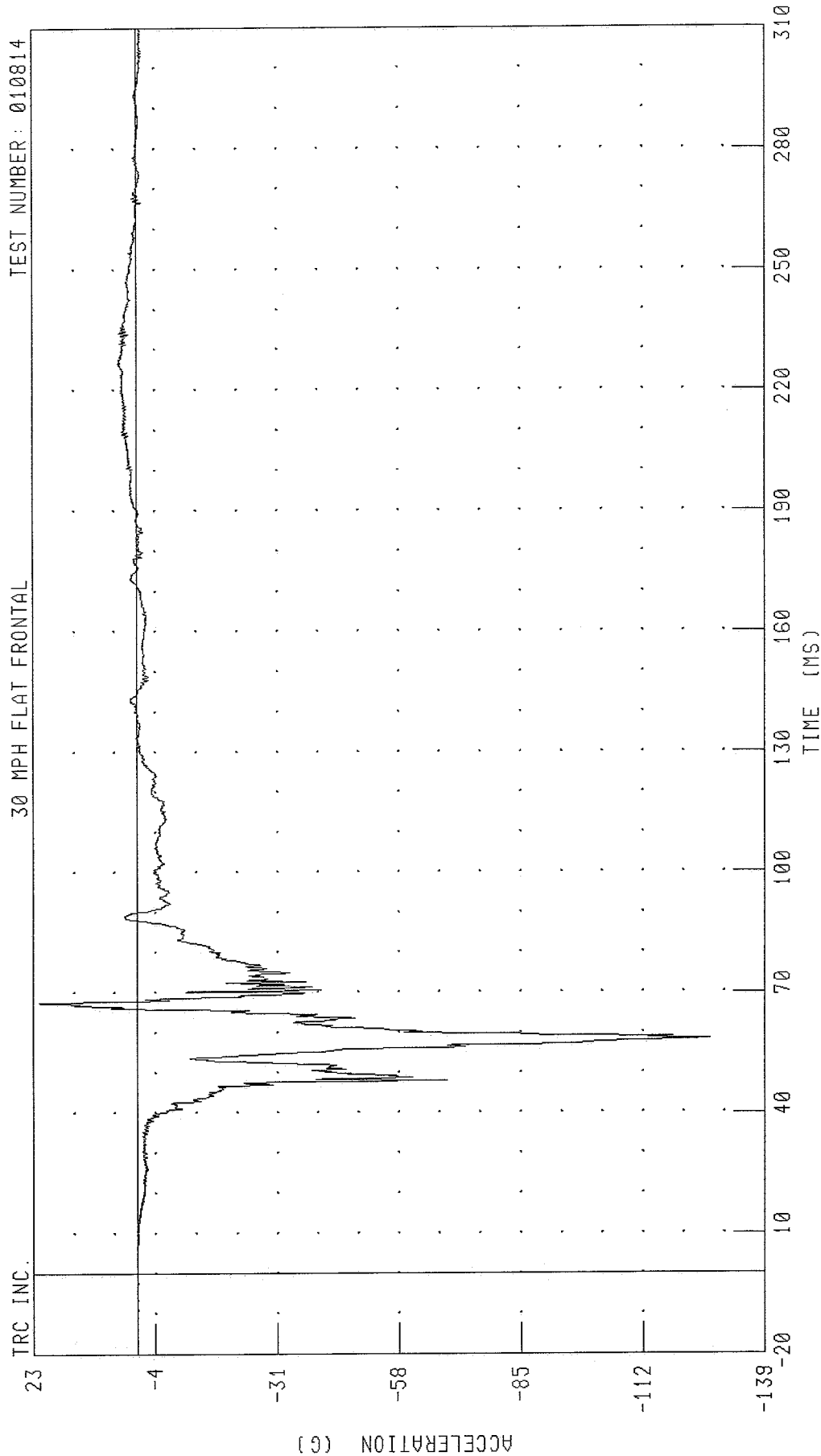


2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

PASSENGER RIGHT TIBIA X-AXIS ACCELERATION

30 MPH FLAT FRONTAL

TEST NUMBER: 010814



CHANNEL: TBRXC2 FILTER: CH. CLASS 1000

PEAK DATA: 21.60 G @ 67.52 MS; -126.84 G @ 58.40 MS

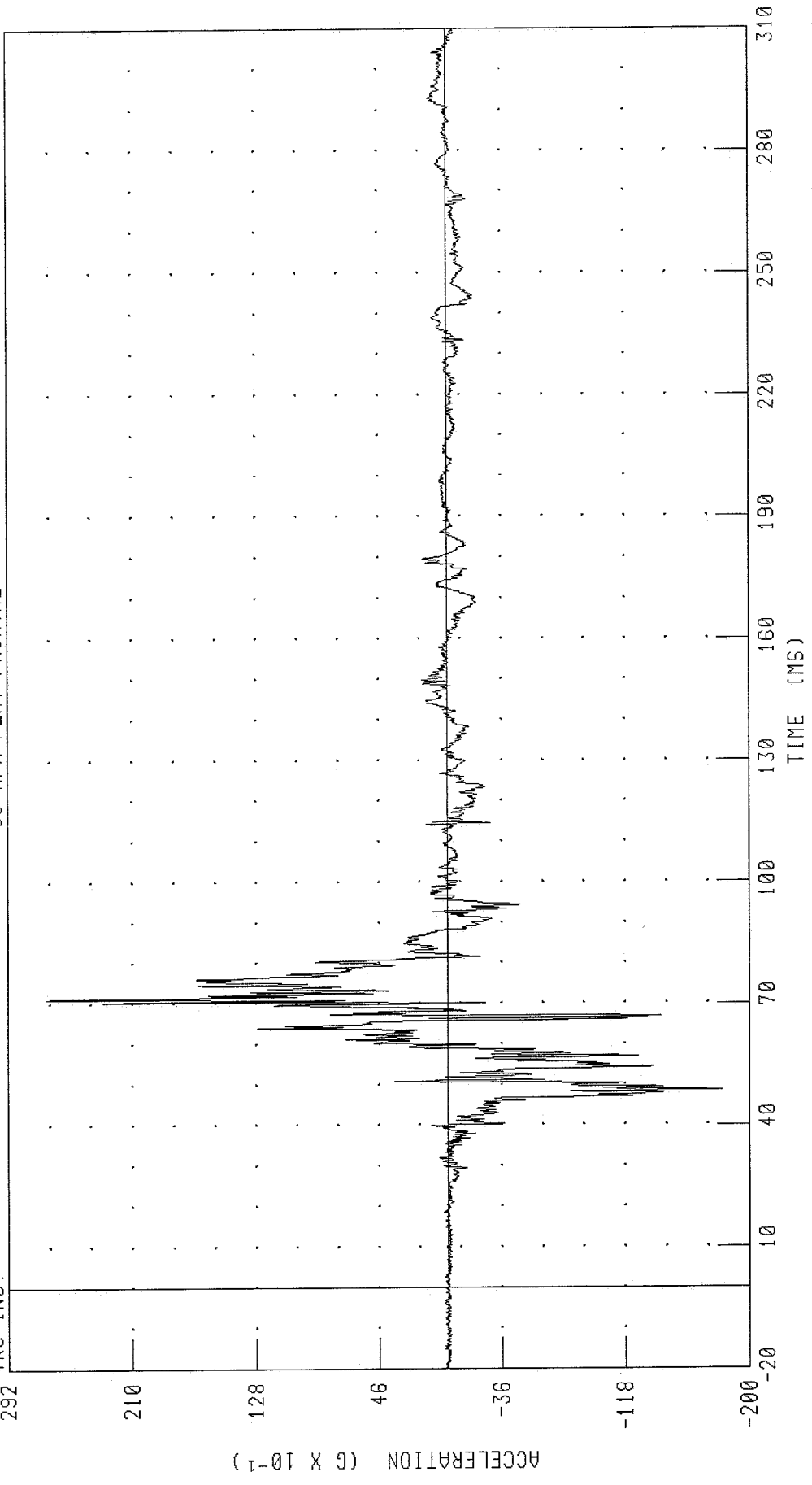
2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

PASSENGER RIGHT TIBIA Y-AXIS ACCELERATION

TEST NUMBER: 010814

30 MPH FLAT FRONTAL

TRC INC.



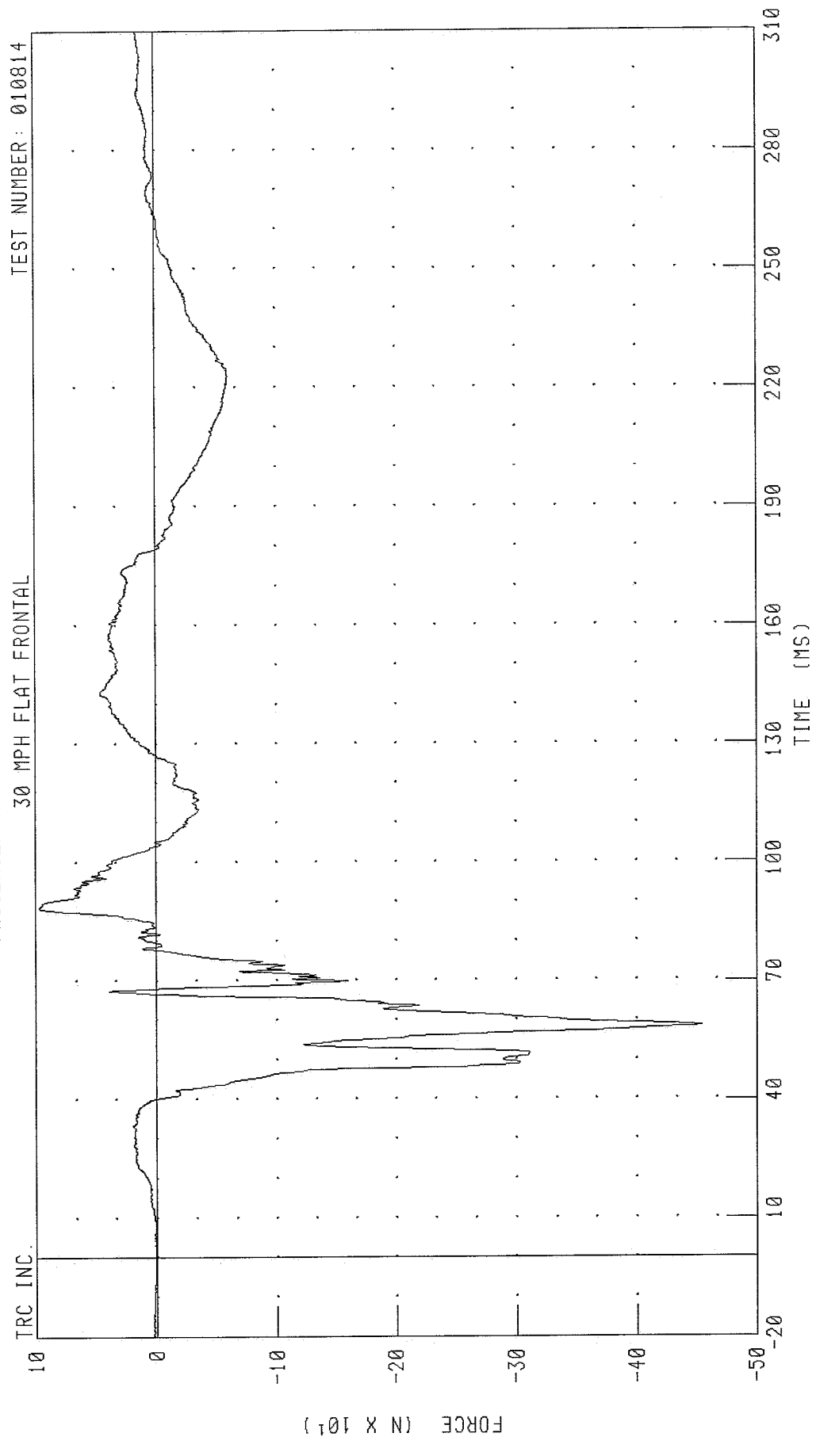
CHANNEL: TBRYG2 FILTER: CH. CLASS 1000 PEAK DATA: 26.64 G @ 71.28 MS; -18.20 G @ 48.56 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

PASSENGER RIGHT LOWER TIBIA X-AXIS FORCE

TEST NUMBER: 010814

30 MPH FLAT FRONTAL

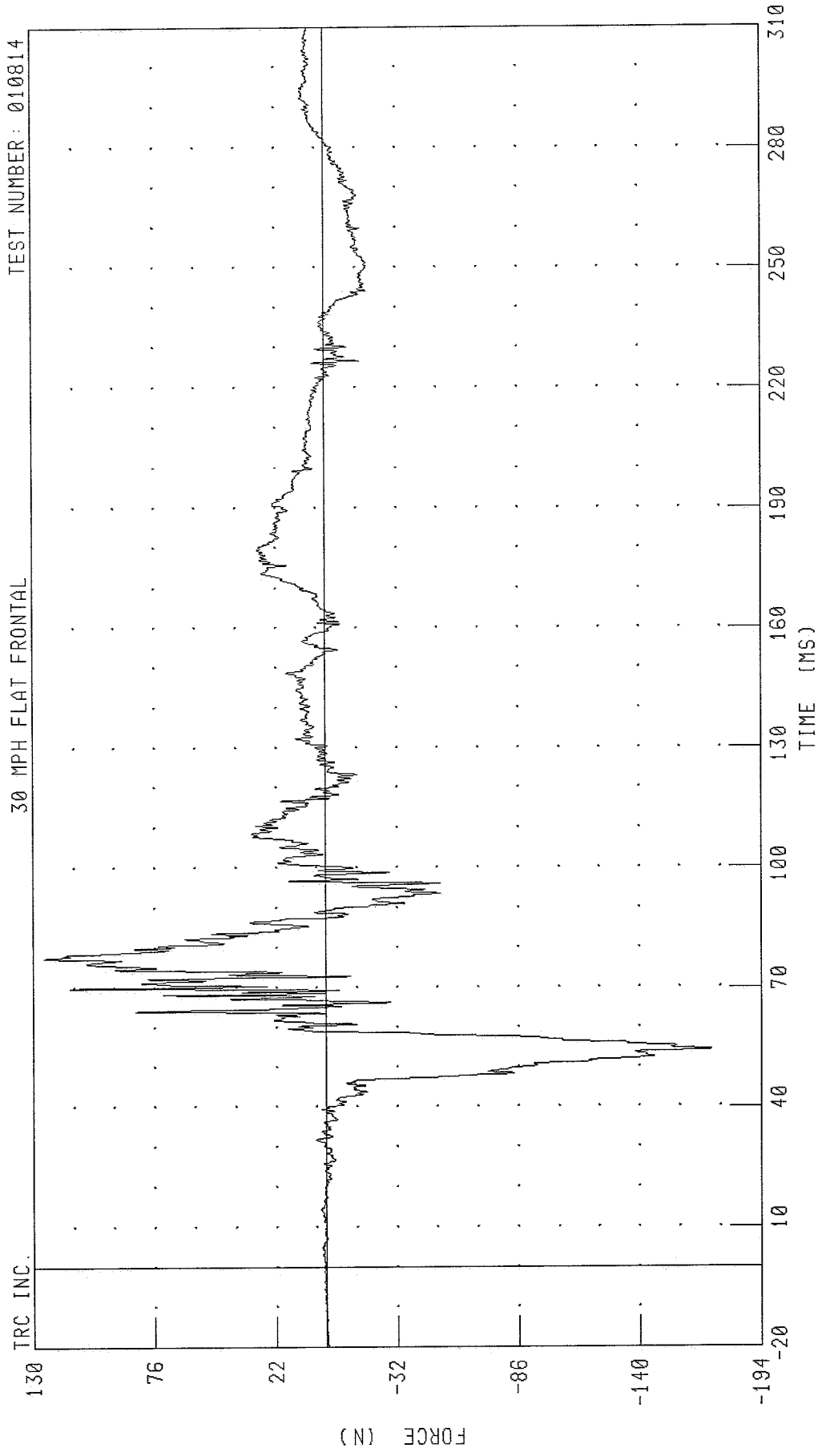


CHANNEL: ANRUF2 FILTER: CH. CLASS 600

PEAK DATA: 97.23 N @ 88.48 MS; -454.36 N @ 58.40 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

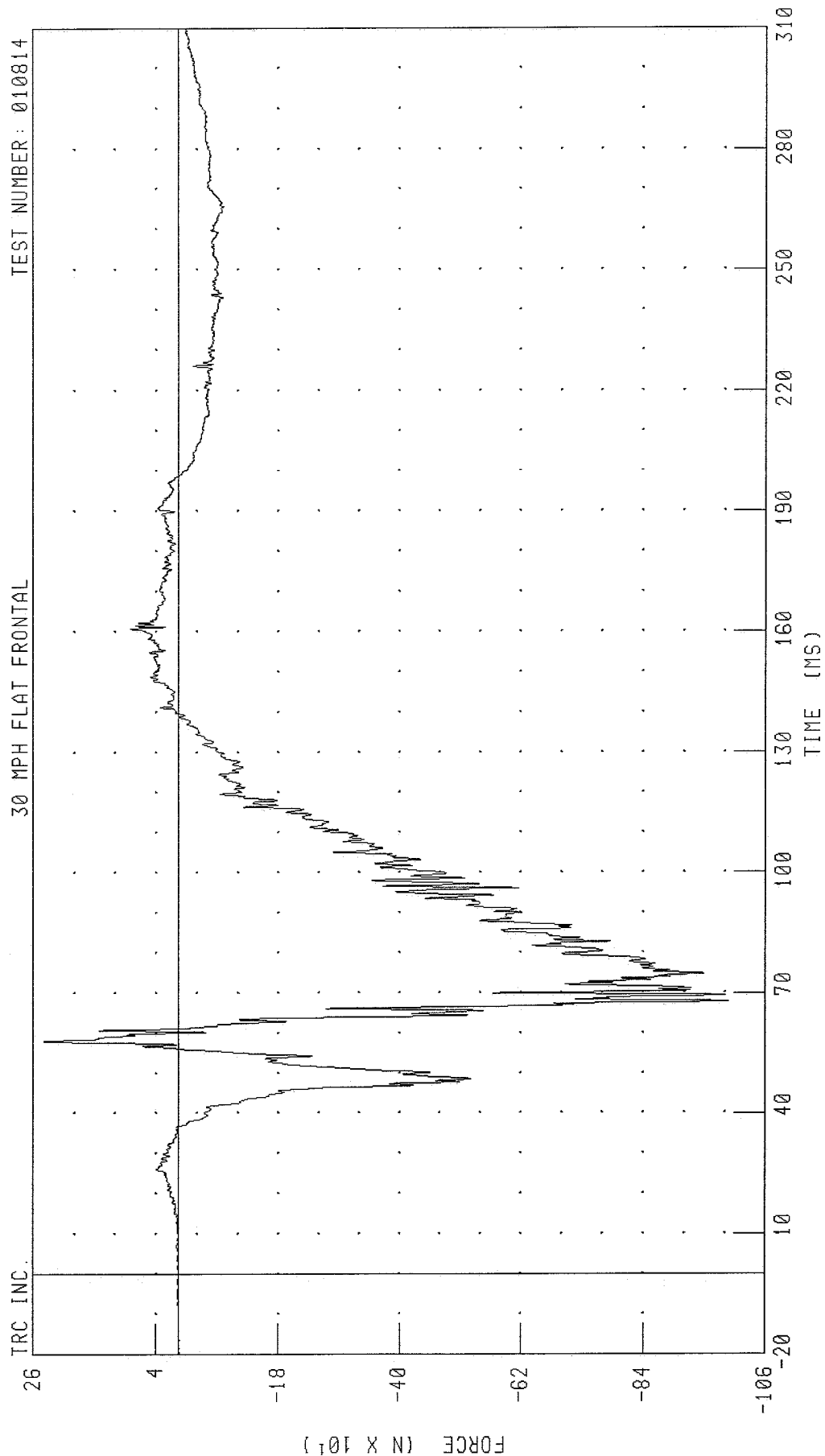
PASSENGER RIGHT LOWER TIBIA Y-AXIS FORCE



CHANNEL: ANRYF2 FILTER: CH. CLASS 600

PEAK DATA: 125.16 N @ 77.60 MS; -172.13 N @ 54.32 MS

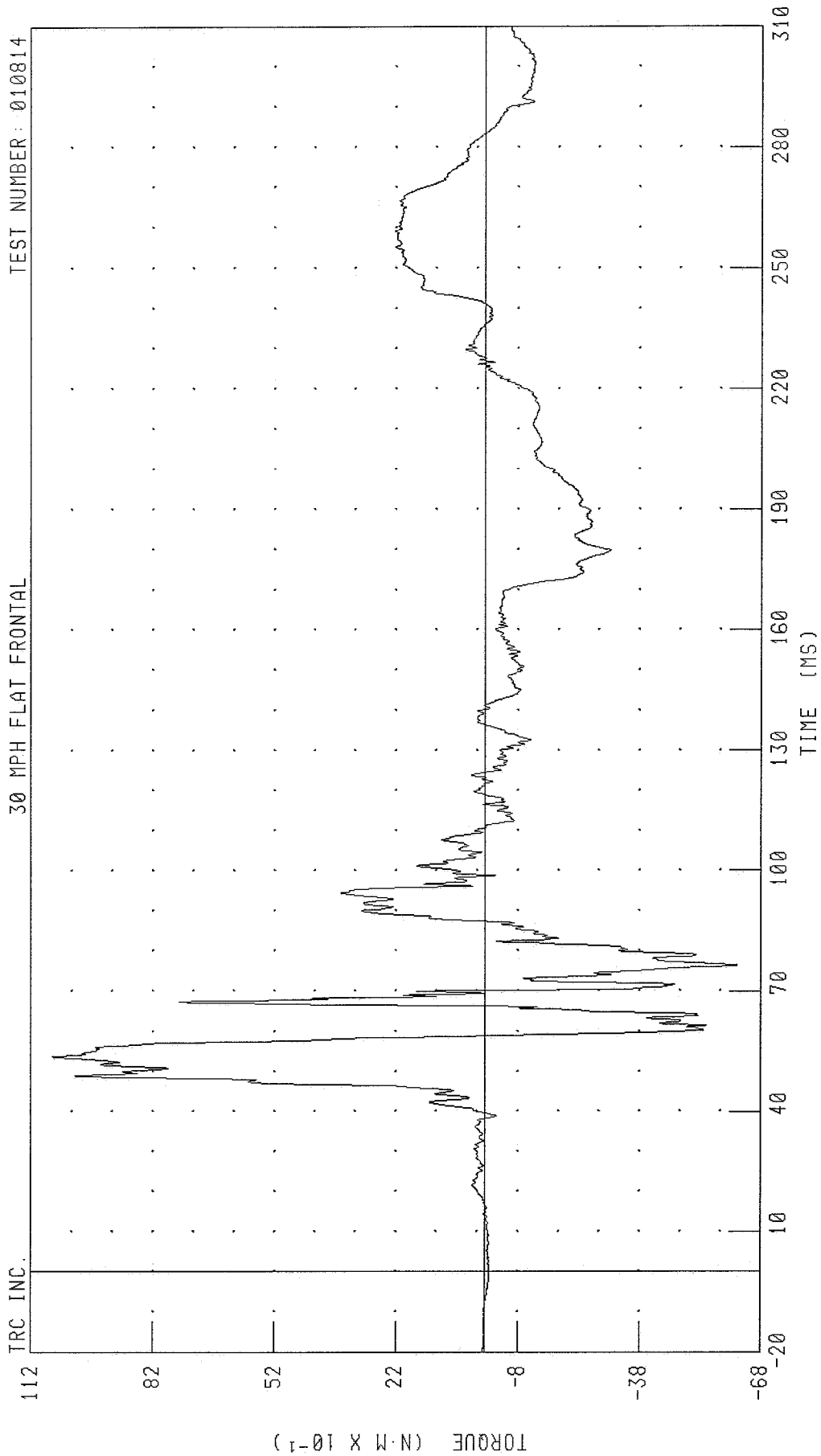
2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER RIGHT LOWER TIBIA Z-AXIS FORCE



CHANNEL: ANRZF2 FILTER: CH. CLASS 600

PEAK DATA: 239.78 N @ 58.08 MS, -992.92 N @ 67.84 MS

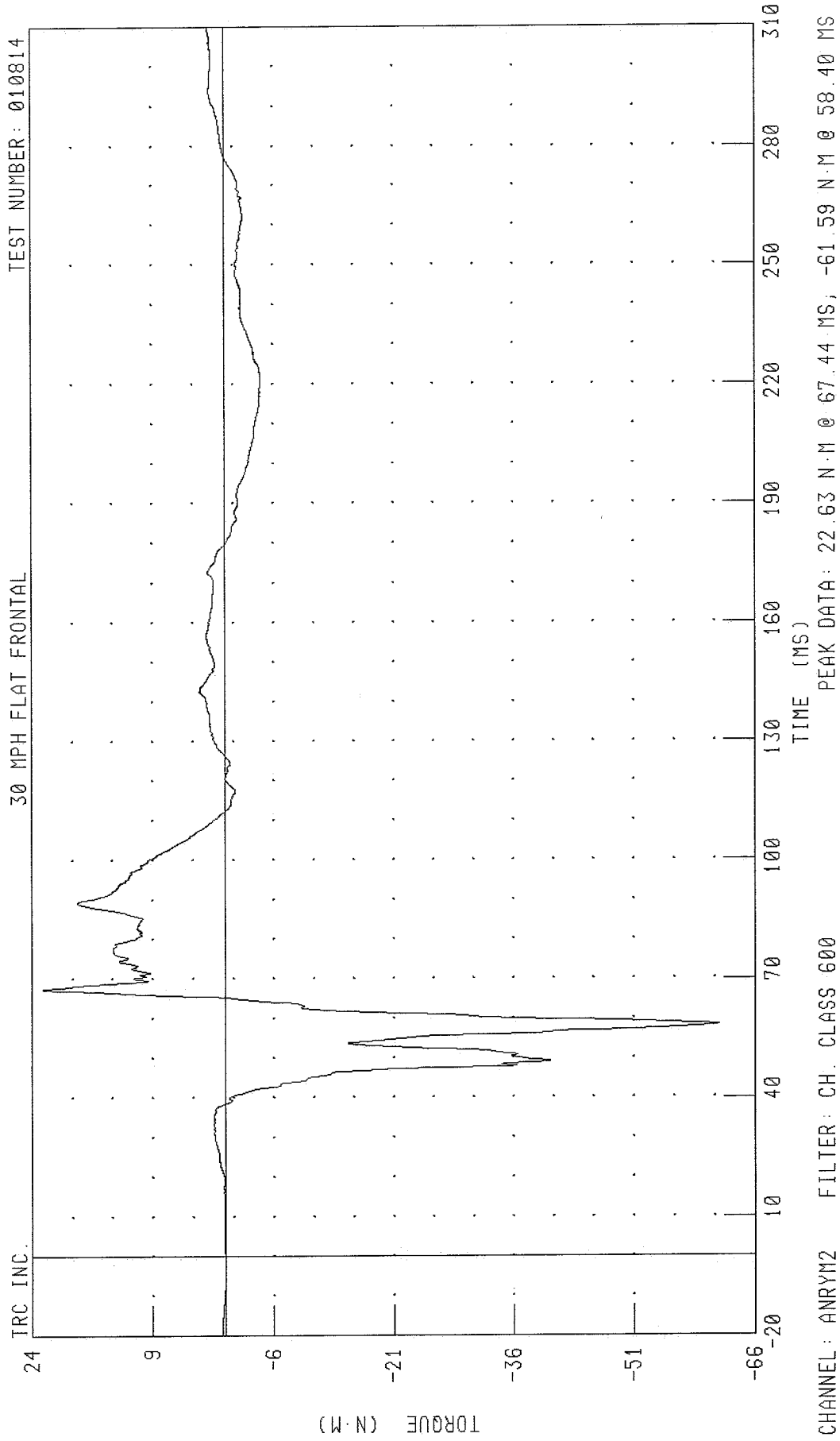
2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER RIGHT LOWER TIBIA MOMENT ABOUT X AXIS



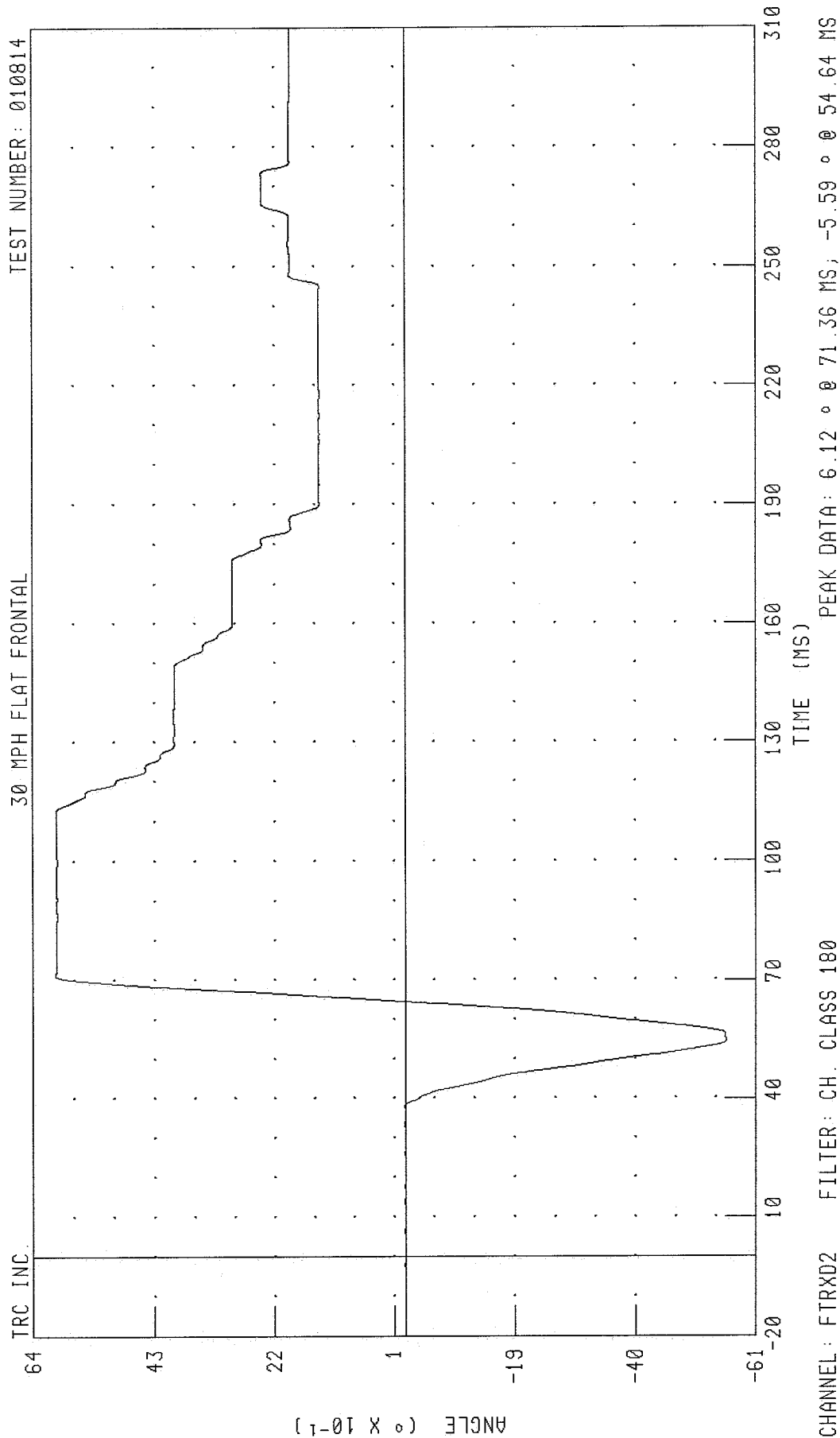
CHANNEL: ANRXM2 FILTER: CH. CLASS 600

PEAK DATA: 10.66 N·M @ 53.76 MS; -6.22 N·M @ 76.32 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER RIGHT LOWER TIBIA MOMENT ABOUT Y AXIS



2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER RIGHT FOOT TO ANKLE X-AXIS DISPLACEMENT

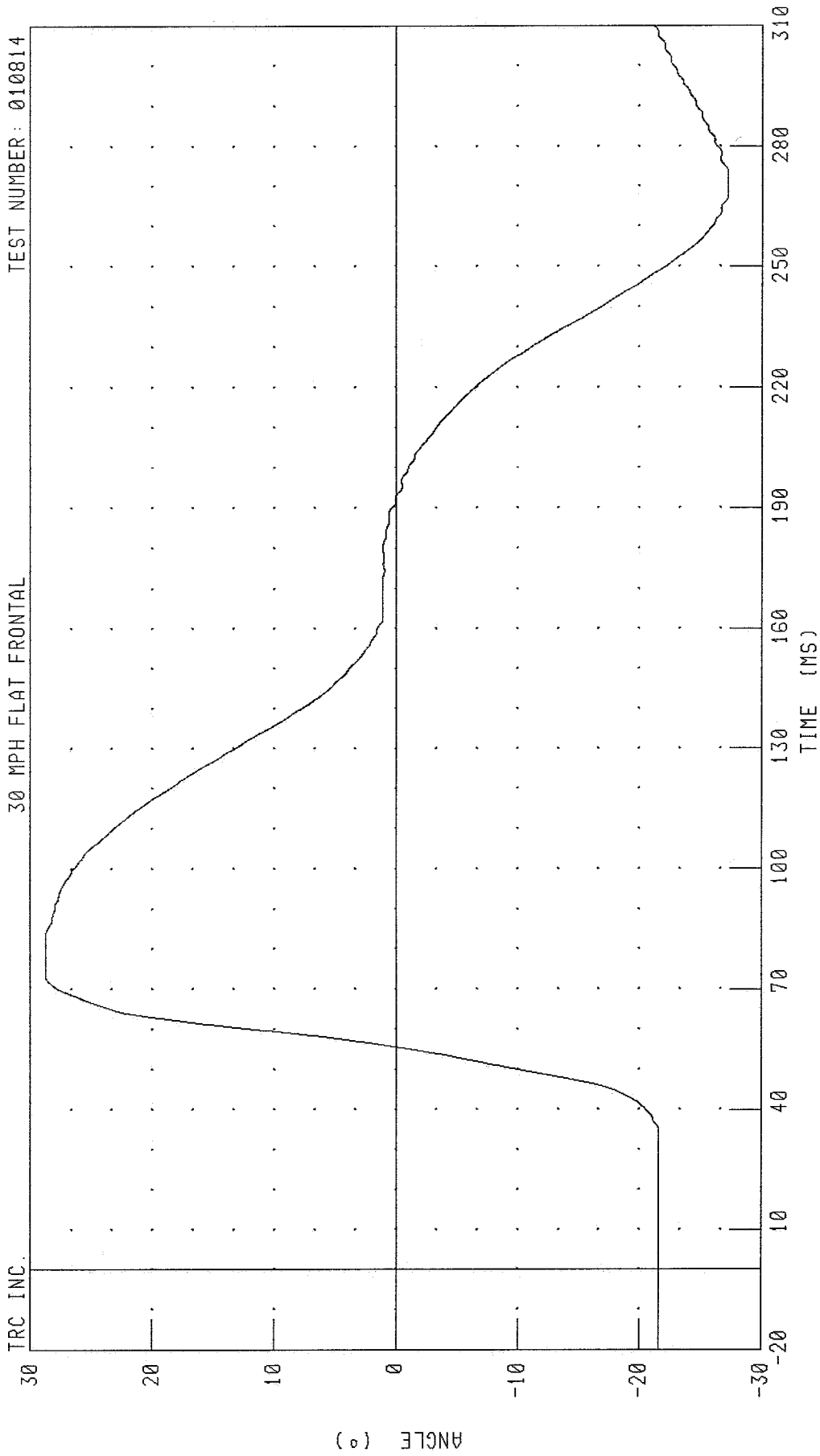


2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

PASSENGER RIGHT FOOT TO ANKLE Y-AXIS DISPLACEMENT

TEST NUMBER: 010814

30 MPH FLAT FRONTAL



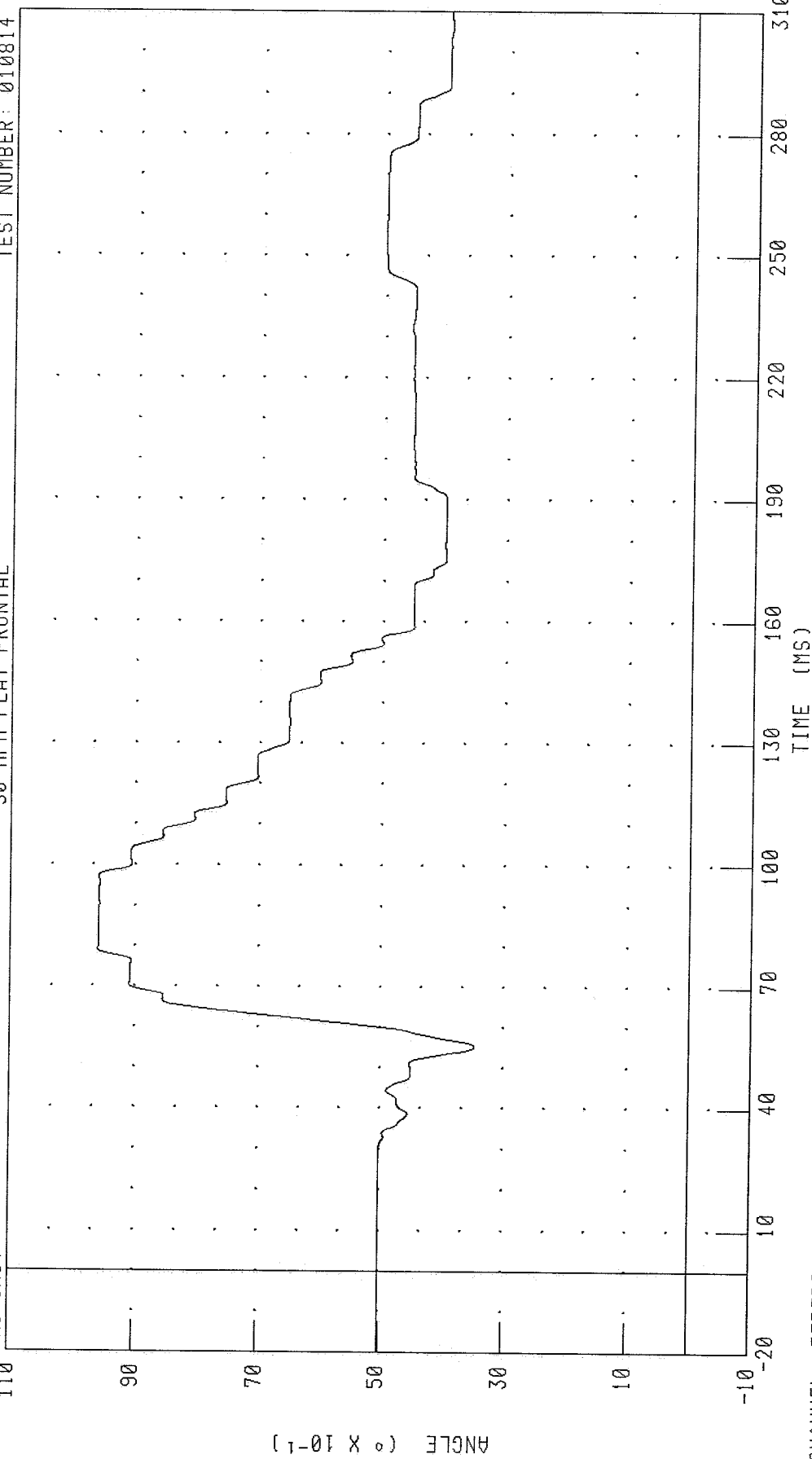
CHANNEL: FTRYD2 FILTER: CH. CLASS 180

PEAK DATA: 28.74 ° @ 73.44 MS; -27.28 ° @ 267.44 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER RIGHT FOOT TO ANKLE Z-AXIS DISPLACEMENT
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

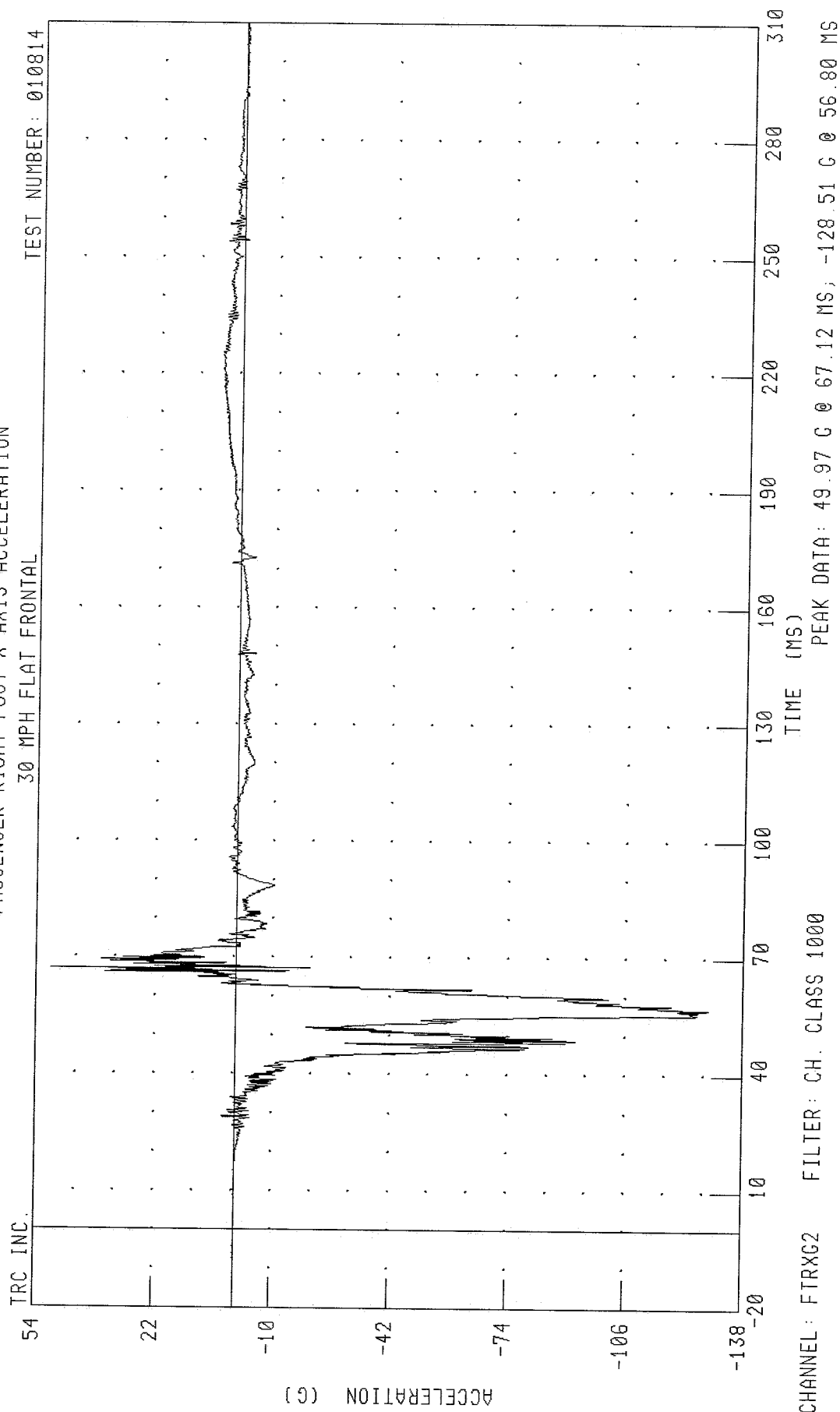
TRC INC.



CHANNEL: FTRZD2 FILTER: CH. CLASS 180

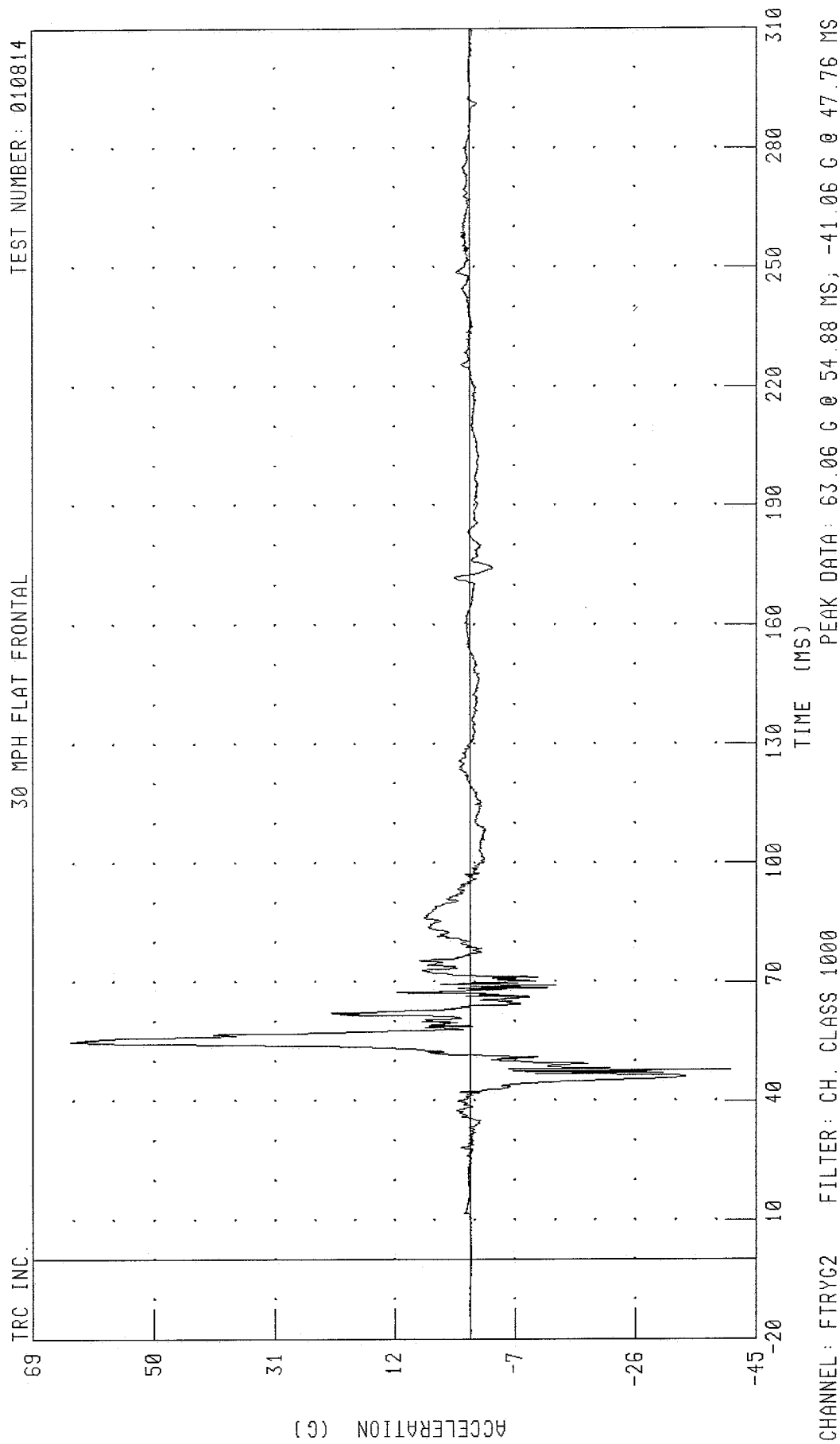
PEAK DATA: 9.59 ° @ 79.28 MS; 3.46 ° @ 55.28 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER RIGHT FOOT X-AXIS ACCELERATION



2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

PASSENGER RIGHT FOOT Y-AXIS ACCELERATION

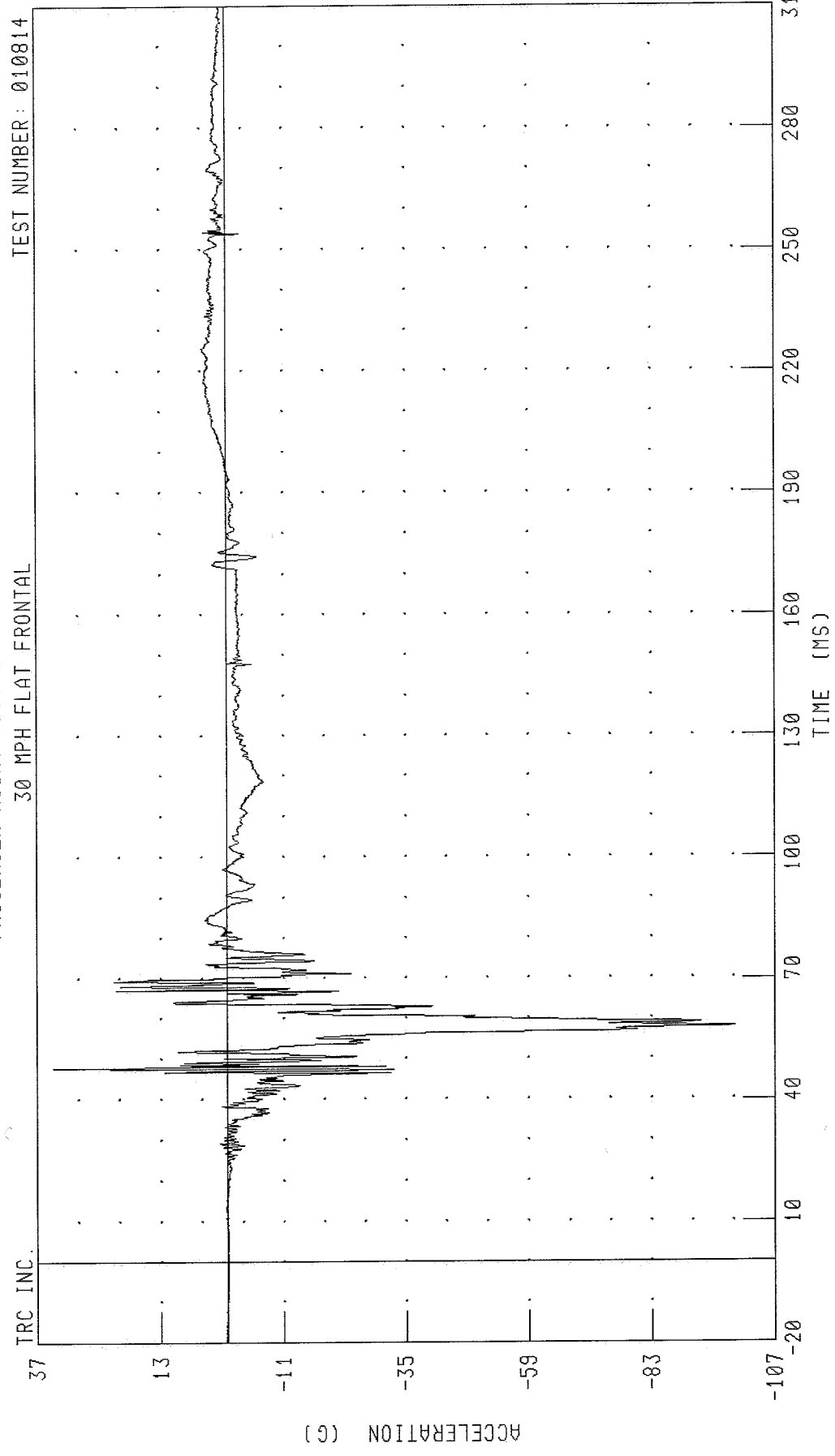


2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

PASSENGER RIGHT FOOT Z-AXIS ACCELERATION

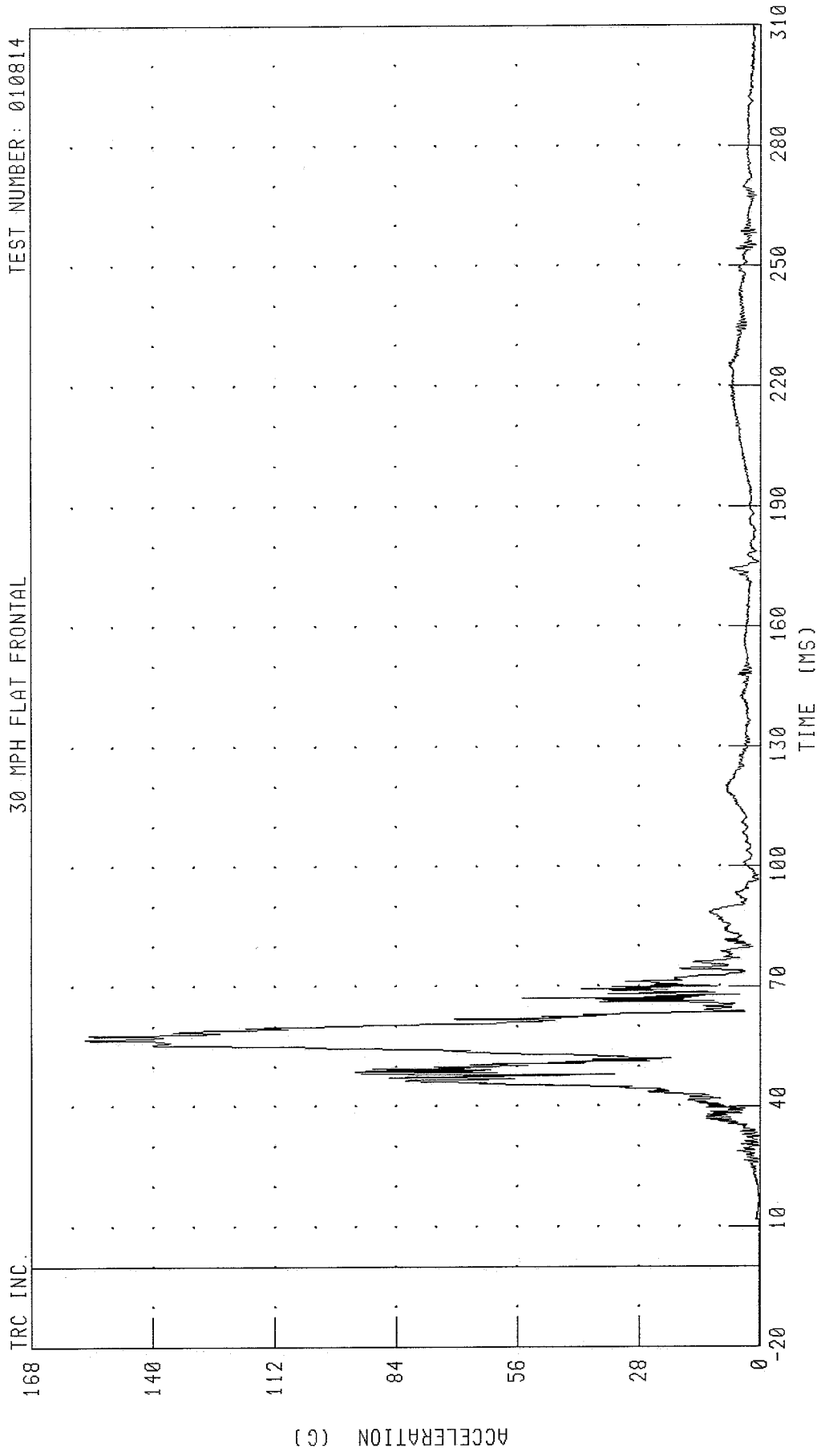
TEST NUMBER: 010814

30 MPH FLAT FRONTAL



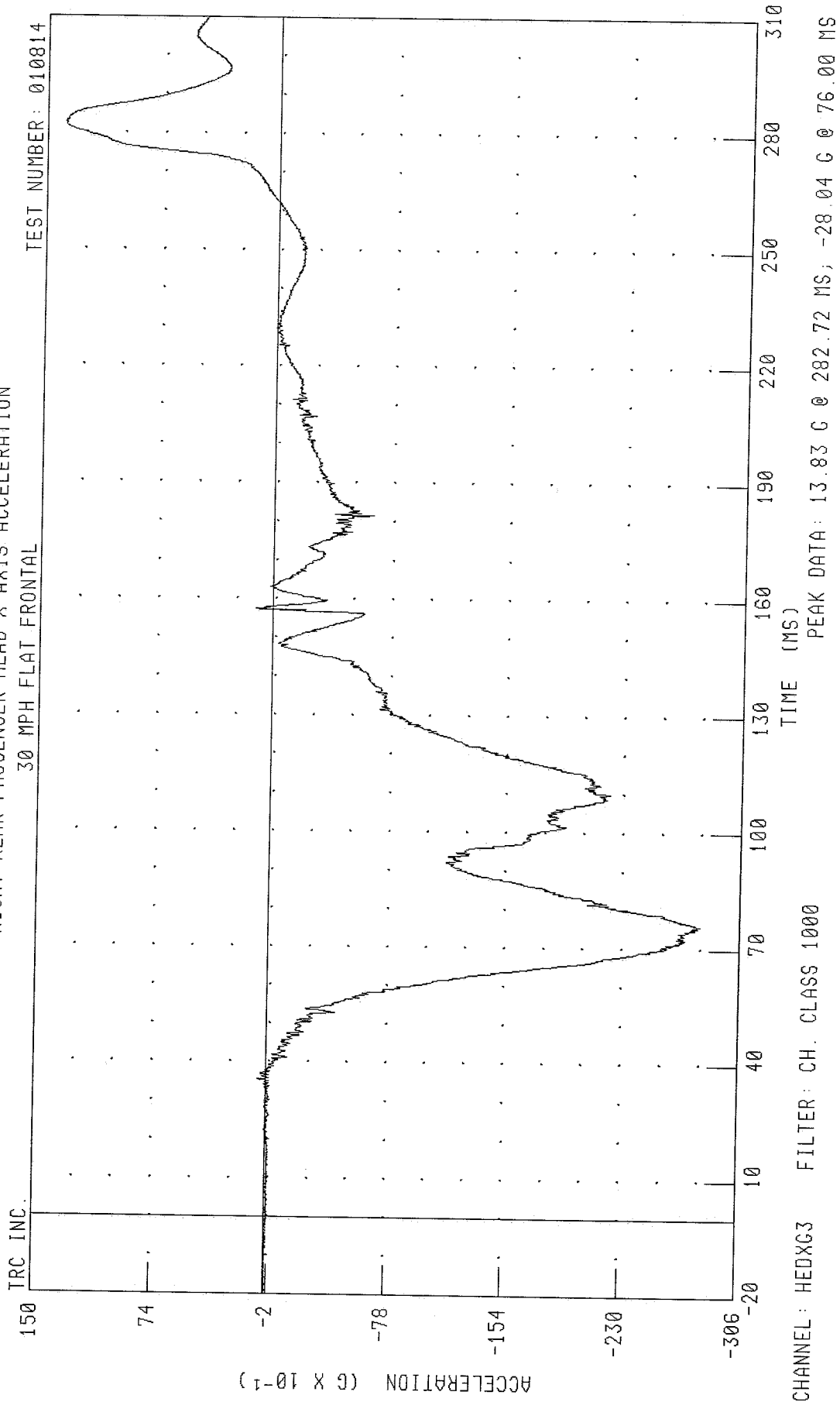
CHANNEL: FTRZG2 FILTER: CH. CLASS 1000 PEAK DATA: 33.79 G @ 47.76 MS; -99.37 G @ 57.84 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER RIGHT FOOT RESULTANT ACCELERATION



CHANNEL: FTRRC2 FILTER: CH. CLASS 1000

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
RIGHT REAR PASSENGER HEAD X-AXIS ACCELERATION



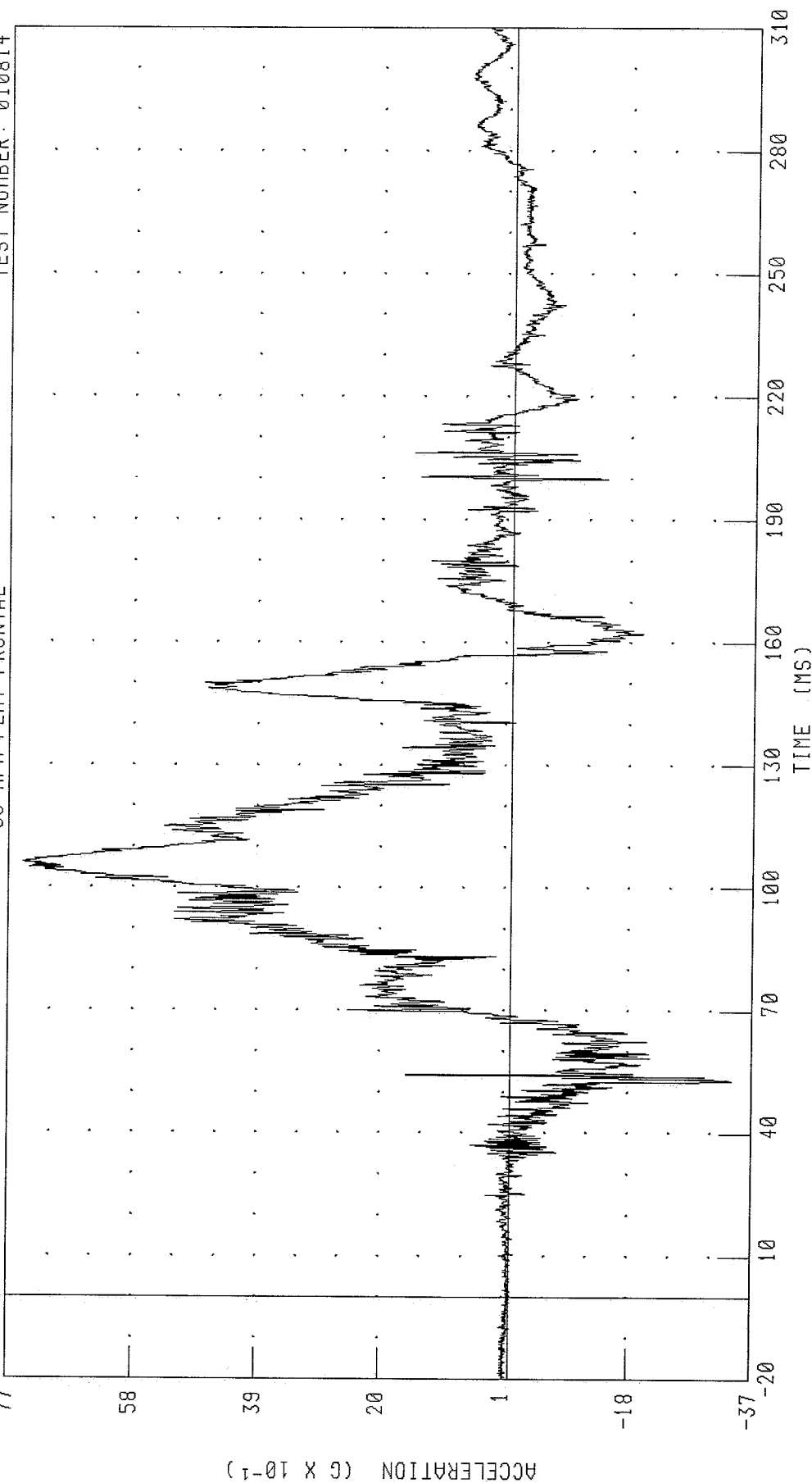
2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

RIGHT REAR PASSENGER HEAD Y-AXIS ACCELERATION

TRC INC.

30 MPH FLAT FRONTAL

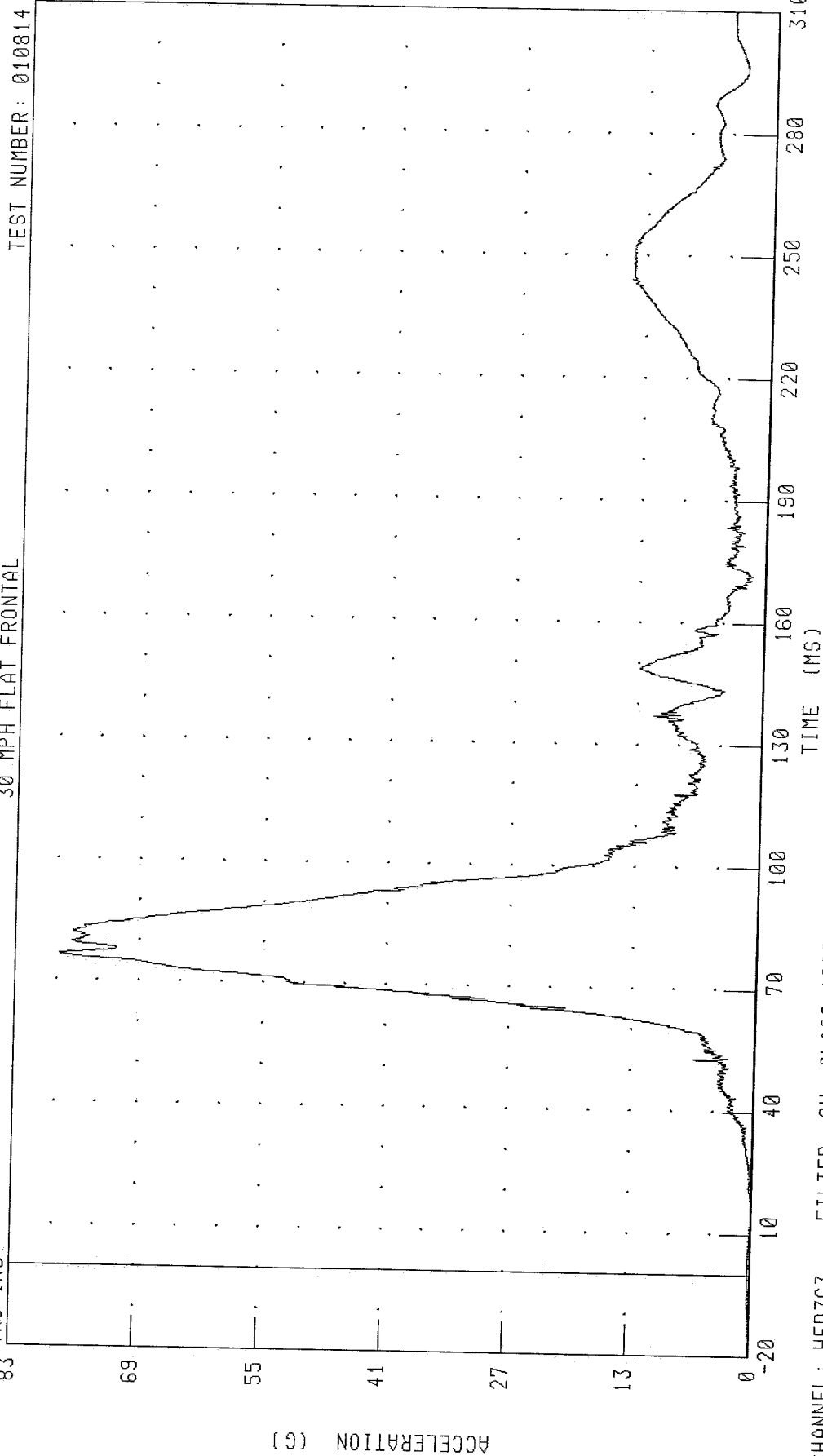
TEST NUMBER: 010814



CHANNEL: HEDYG3 FILTER: CH. CLASS 1000

PEAK DATA: 7.48 G @ 106.08 MS; -3.39 G @ 52.88 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
RIGHT REAR PASSENGER HEAD Z-AXIS ACCELERATION
30 MPH FLAT FRONTAL

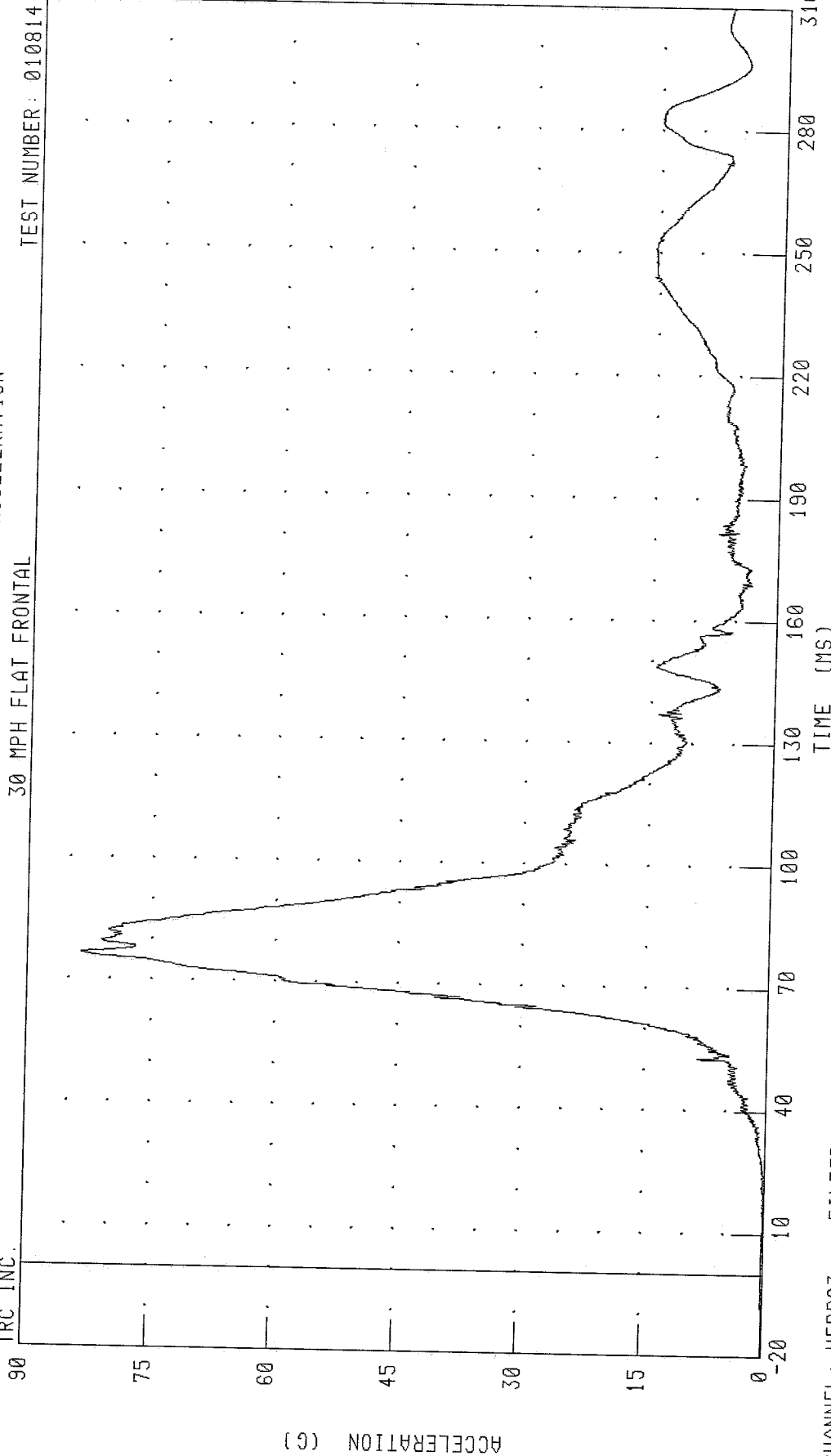


CHANNEL: HEDZG3 FILTER: CH. CLASS 1000

PEAK DATA: 78.92 G @ 76.64 MS, -0.14 G @ 15.20 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
RIGHT REAR PASSENGER HEAD RESULTANT ACCELERATION

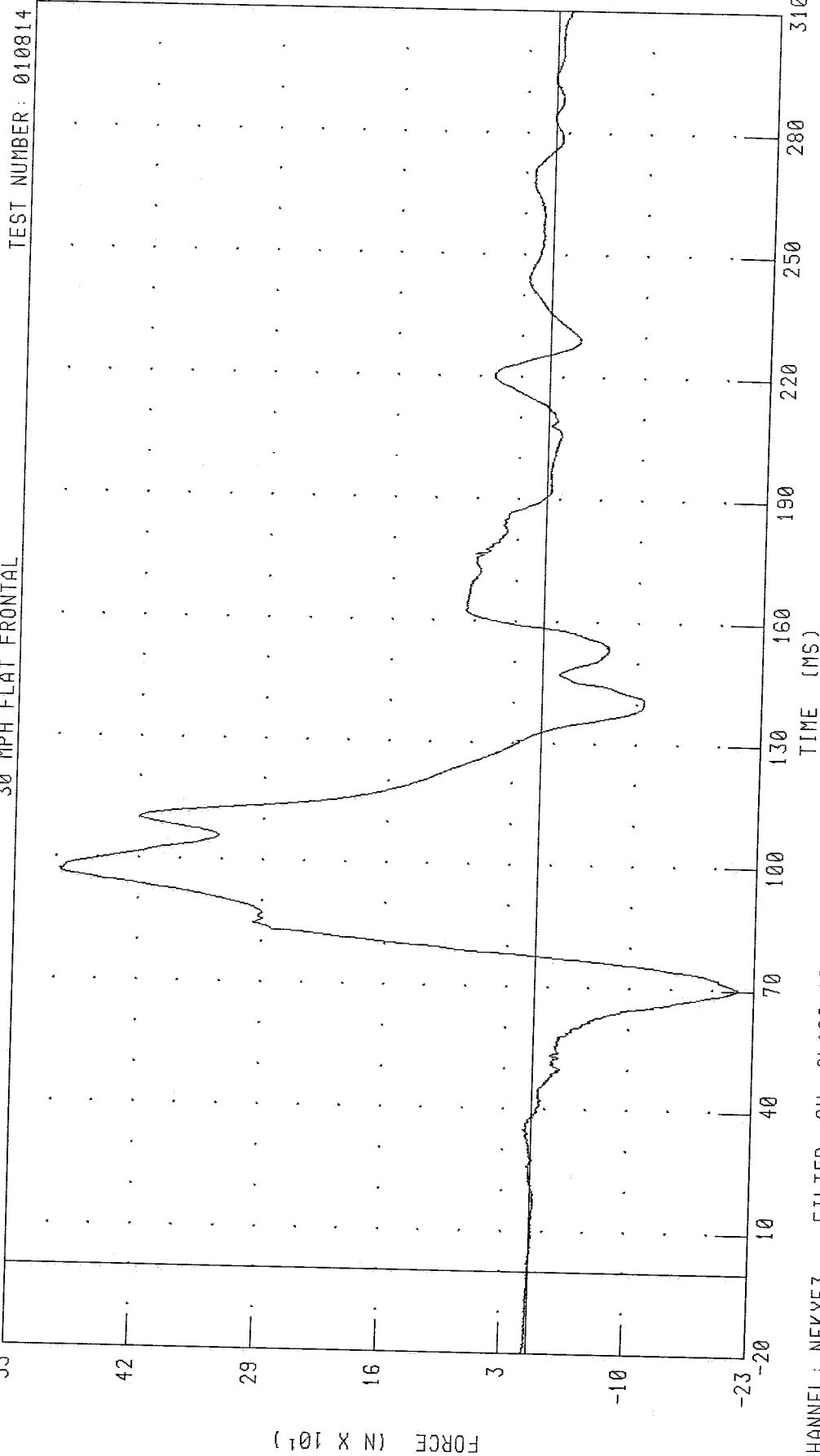
TRC INC.



CHANNEL: HEDRG3 FILTER: CH. CLASS 1000

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
RIGHT REAR PASSENGER NECK X-AXIS SHEAR FORCE

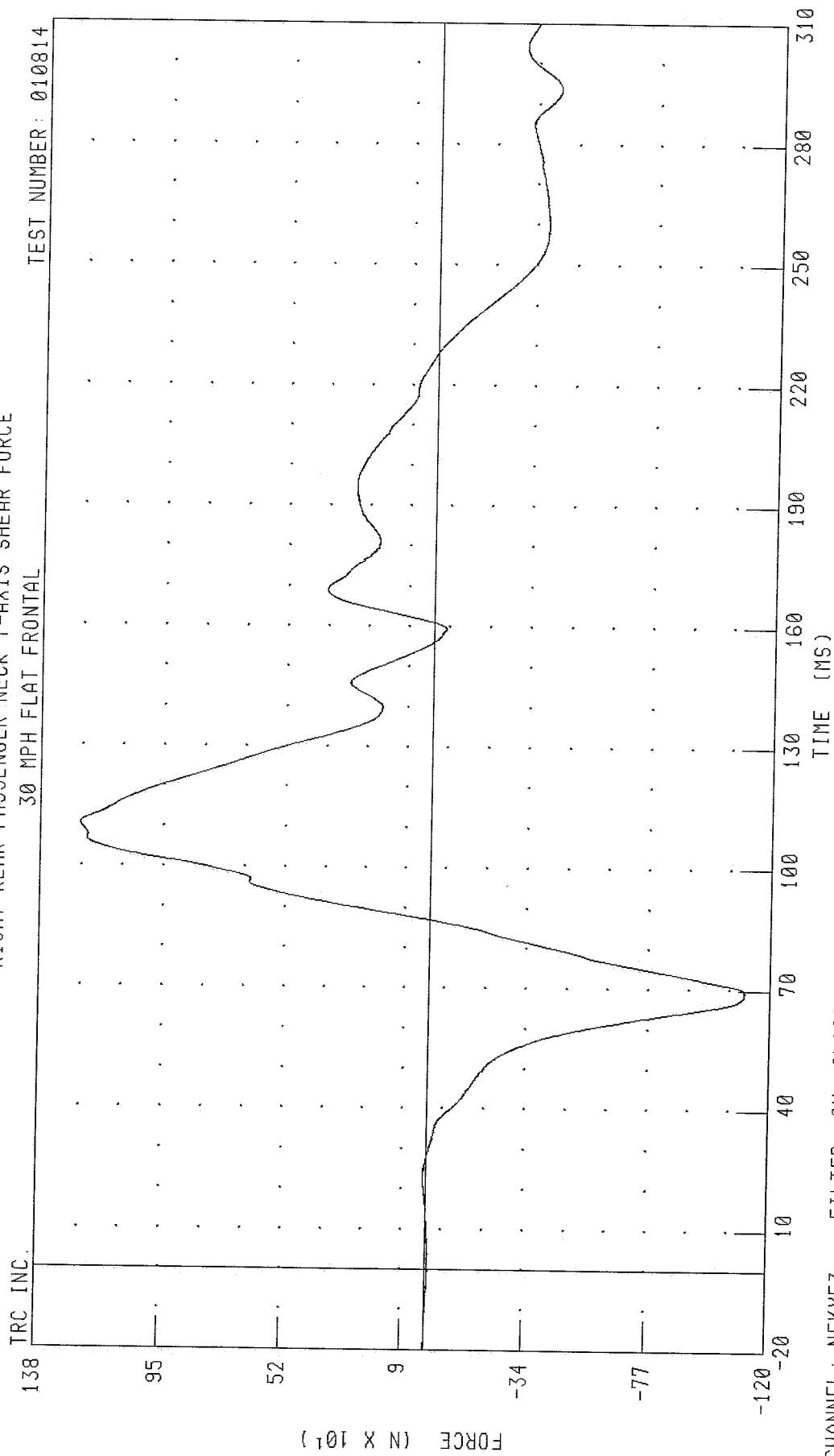
TRC INC.



CHANNEL: NEKXF3 FILTER: CH. CLASS 1000

PEAK DATA: 502.55 N @ 97.20 MS; -213.25 N @ 70.16 MS

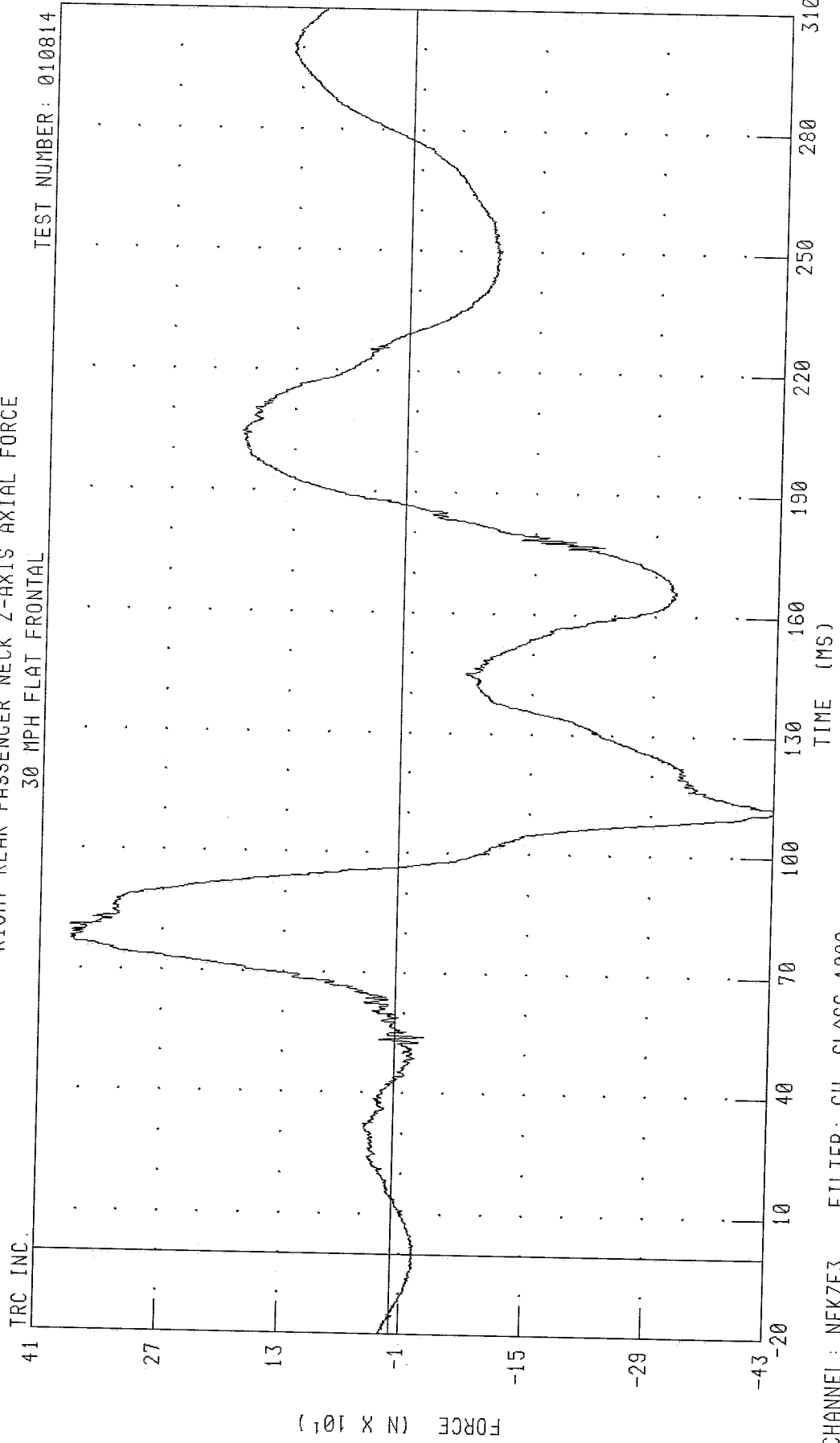
2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
RIGHT REAR PASSENGER NECK Y-AXIS SHEAR FORCE



CHANNEL: NEKYF3 FILTER: CH. CLASS 1000

PEAK DATA: 1243.71 N @ 110.64 MS; -1111.92 N @ 69.20 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
RIGHT REAR PASSENGER NECK Z-AXIS AXIAL FORCE
30 MPH FLAT FRONTAL

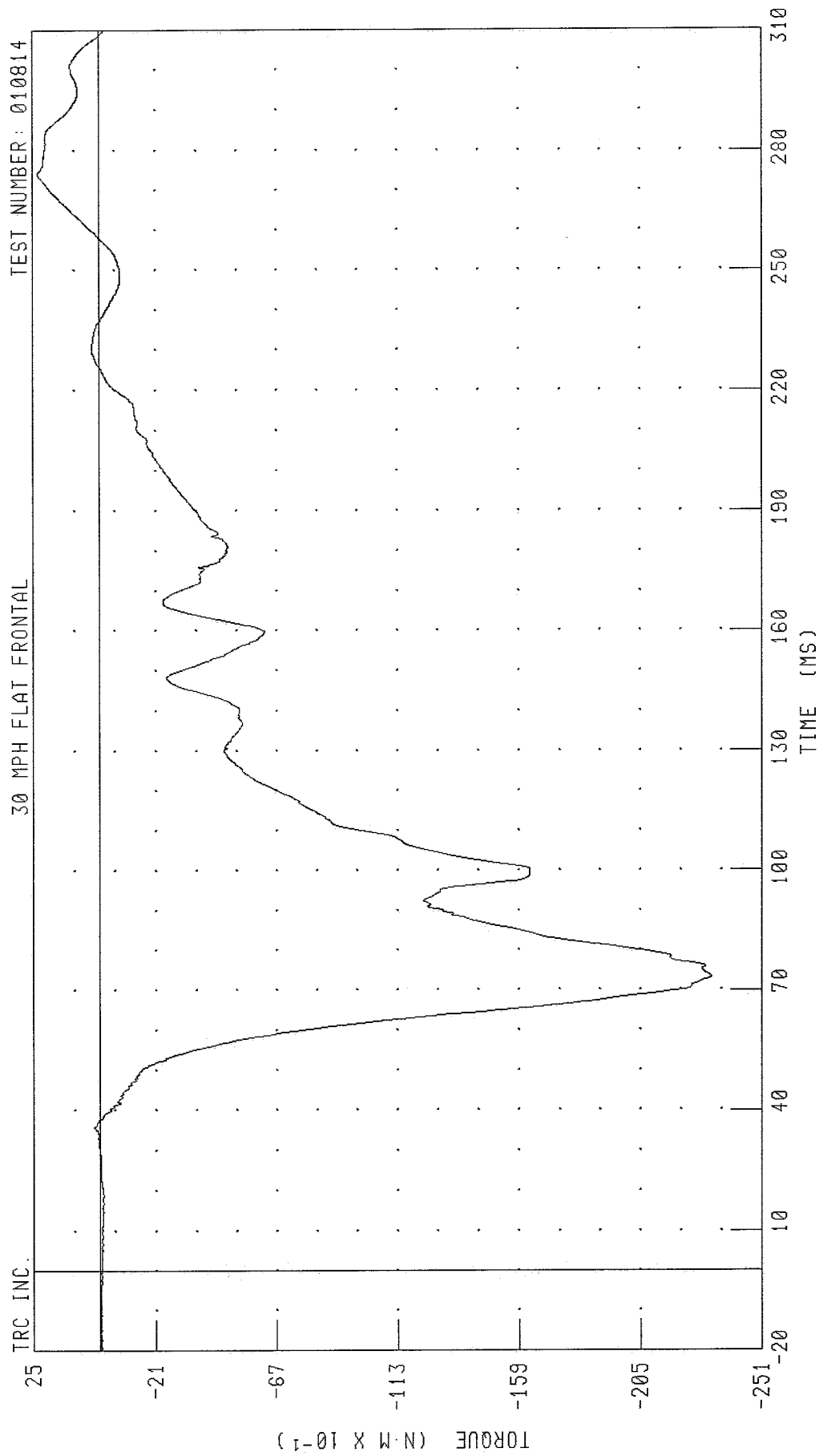


CHANNEL: NEKZF3 FILTER: CH. CLASS 1000

PEAK DATA: 376.29 N @ 81.12 MS; -432.05 N @ 111.28 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
RIGHT REAR PASSENGER NECK MOMENT ABOUT X AXIS
30 MPH FLAT FRONTAL

TEST NUMBER: 010814



CHANNEL: NEKXN3 FILTER: CH. CLASS 600

PEAK DATA: 2.32 N·M @ 274.24 MS; -23.19 N·M @ 73.36 MS

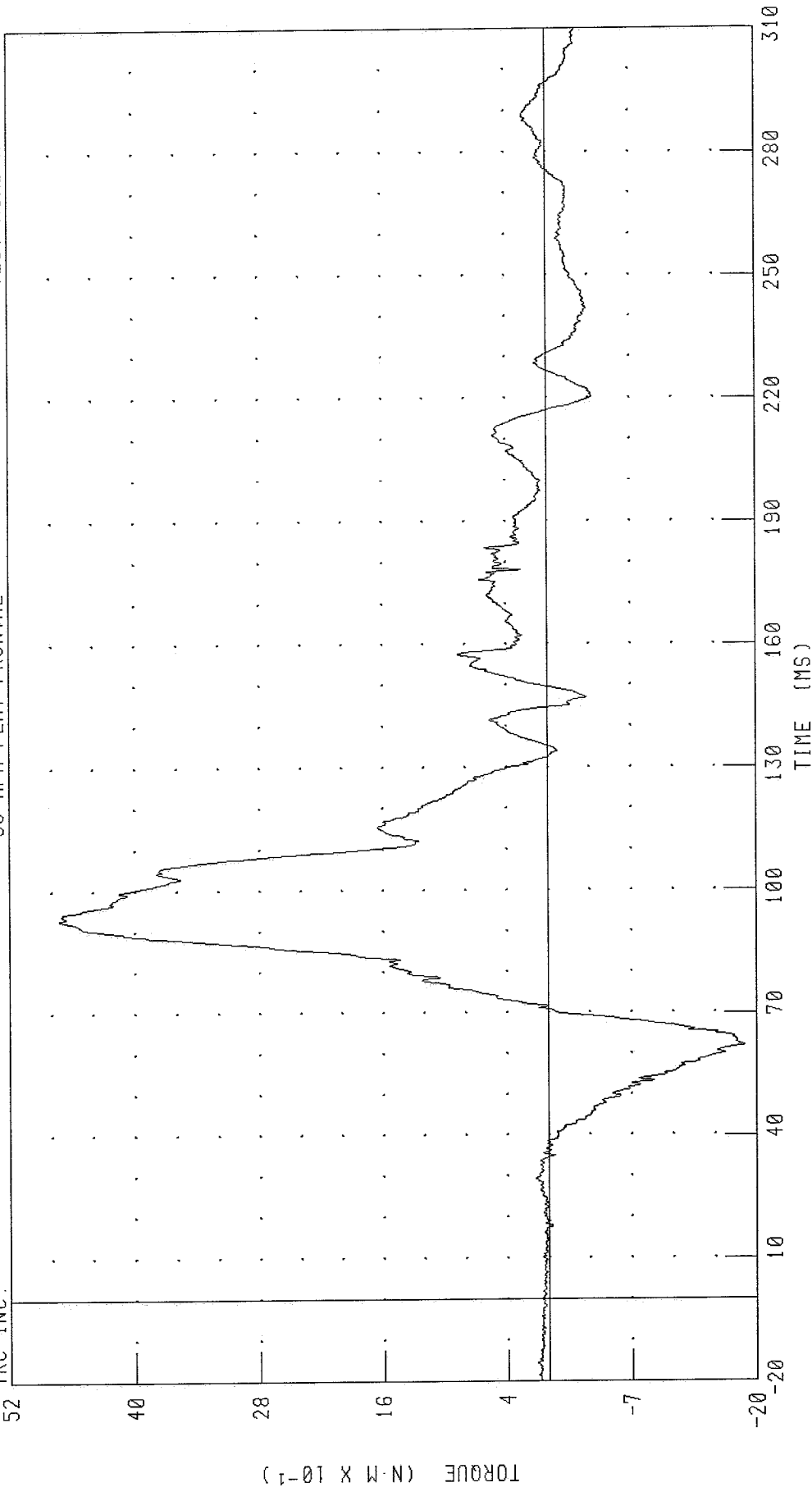
2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

RIGHT REAR PASSENGER NECK MOMENT ABOUT Y AXIS

TEST NUMBER: 010814

30 MPH FLAT FRONTAL

TRC INC.

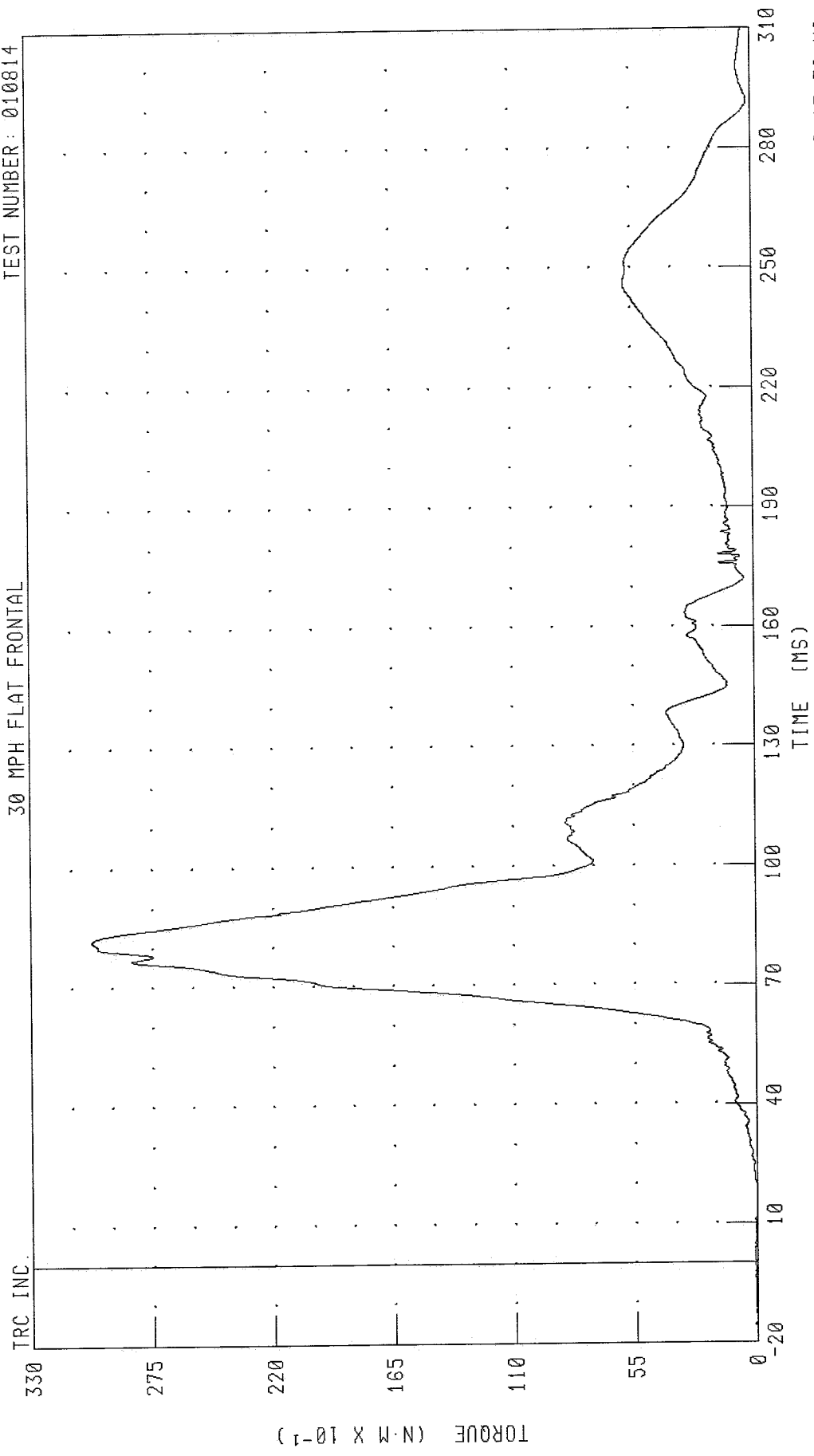


CHANNEL: NEKYM3 FILTER: CH. CLASS 600

PEAK DATA: 4.73 N·m @ 92.88 MS, -1.89 N·m @ 62.00 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
RIGHT REAR PASSENGER NECK MOMENT ABOUT Z AXIS
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

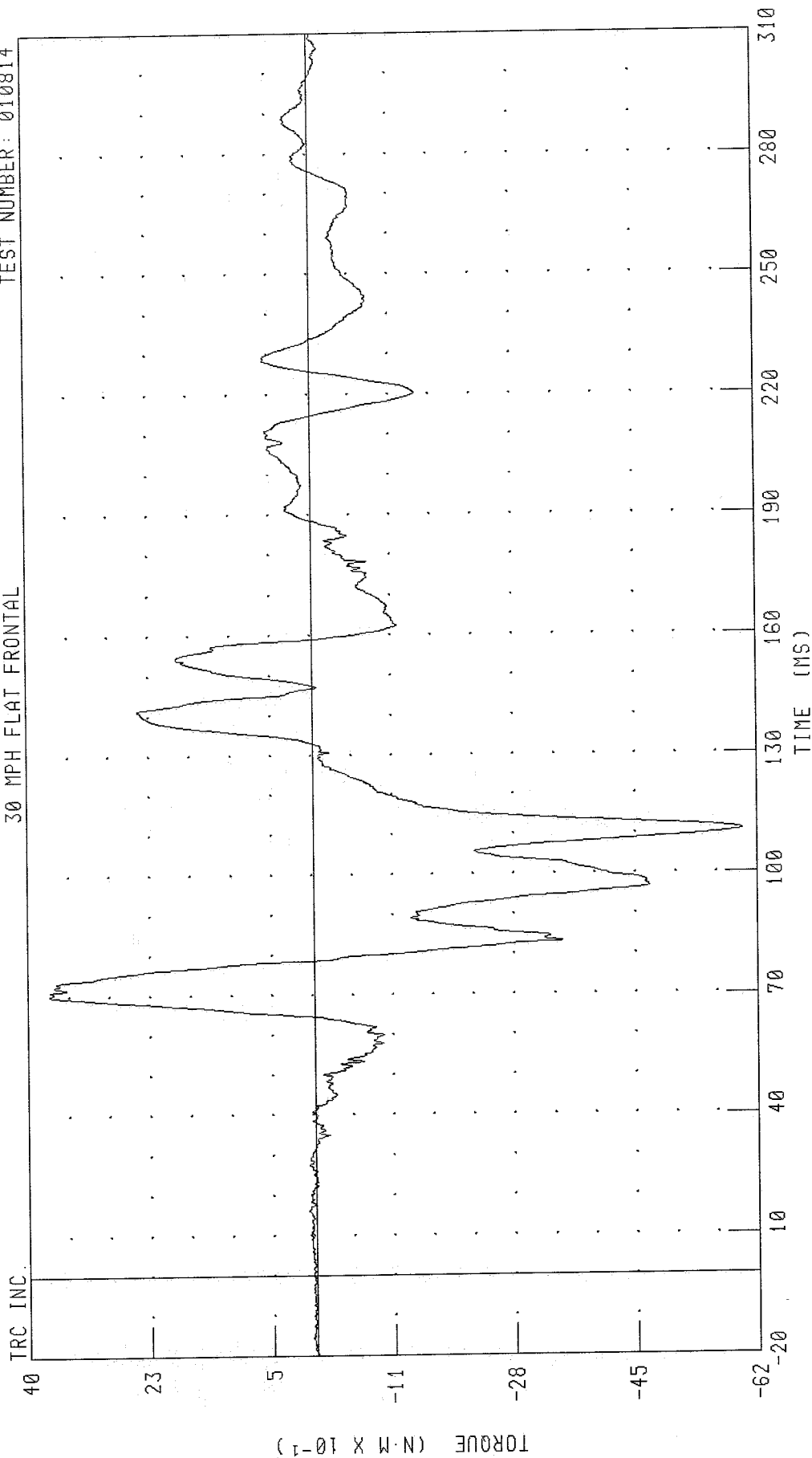


CHANNEL: NEKZM3 FILTER: CH. CLASS 600

PEAK DATA: 30.26 N·m @ 81.68 ms, -0.05 N·m @ 15.36 ms

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
RIGHT REAR PASSENGER NECK OCCIPITAL CONDYLE MOMENT ABOUT Y AXIS
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

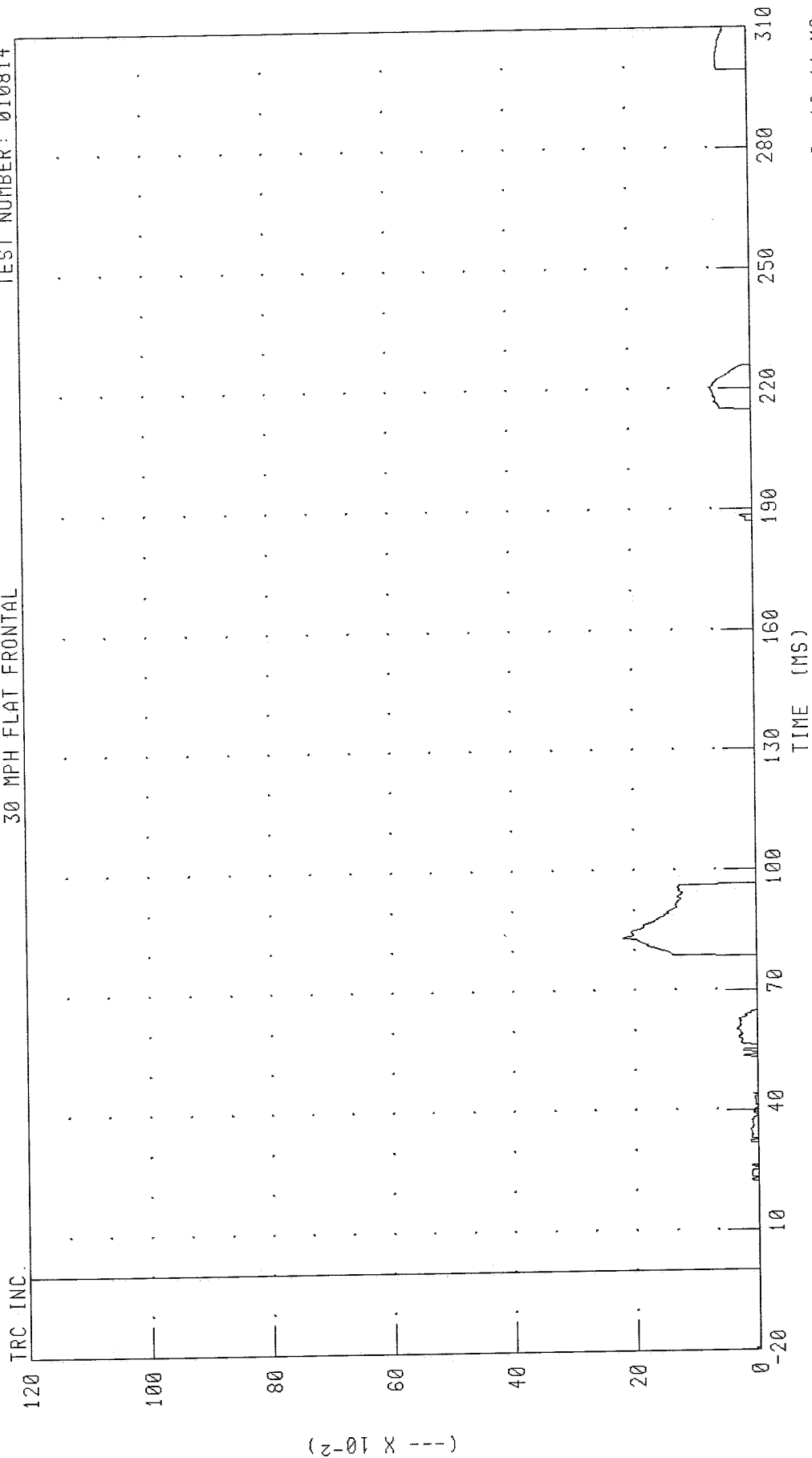


CHANNEL: NEKOM3 FILTER: CH. CLASS 600

PEAK DATA: 3.71 N·M @ 70.24 MS; -6.01 N·M @ 110.96 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
 RIGHT REAR PASSENGER NECK TENSION/EXTENSION
 30 MPH FLAT FRONTAL

TEST NUMBER: 010814



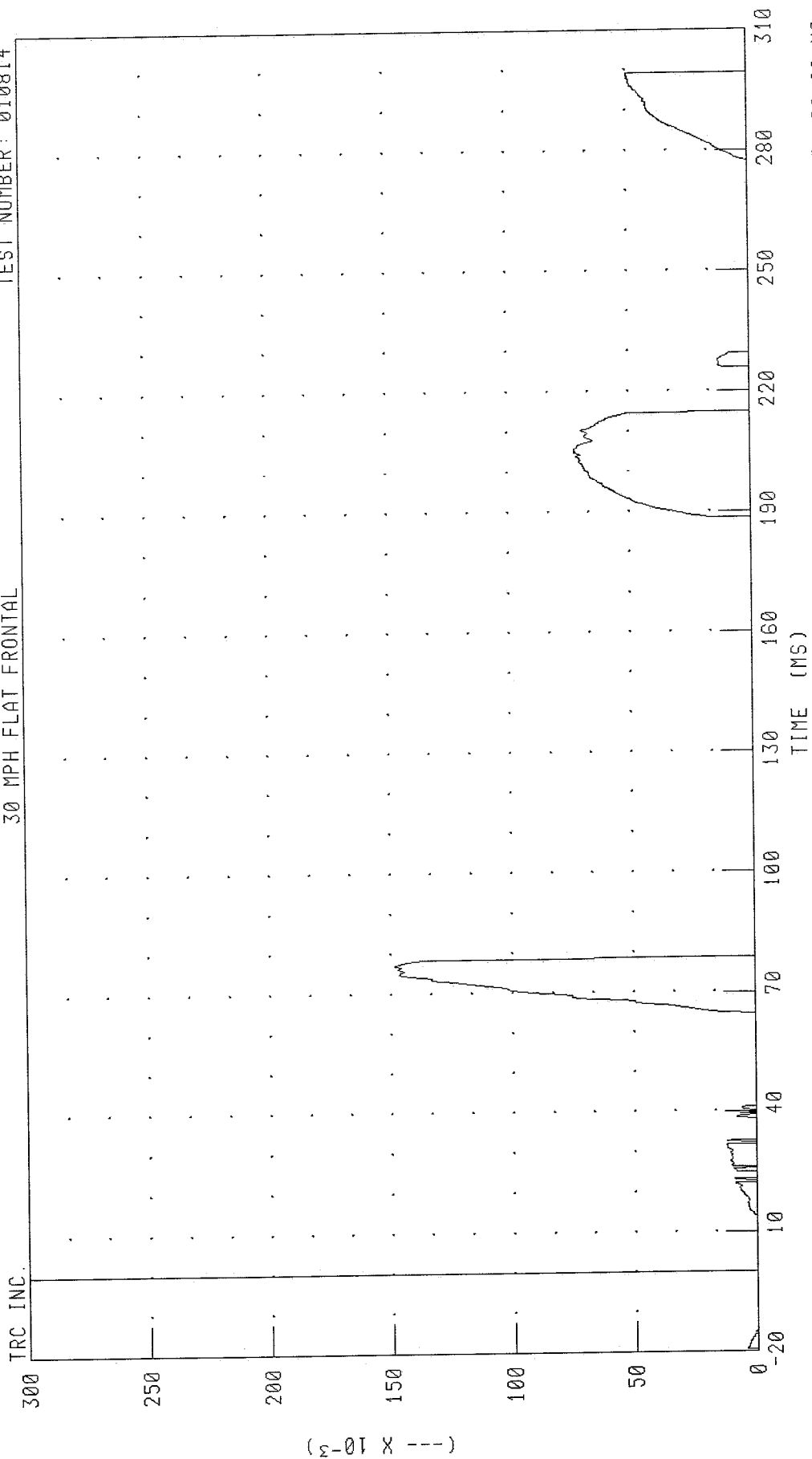
(--- X 10⁻²)

CHANNEL: NTE3 FILTER: CH. CLASS 600

PEAK DATA: 0.22 --- 0 83.20 MS; 0.00 --- 0 -19.44 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
 RIGHT REAR PASSENGER NECK TENSION/FLEXION

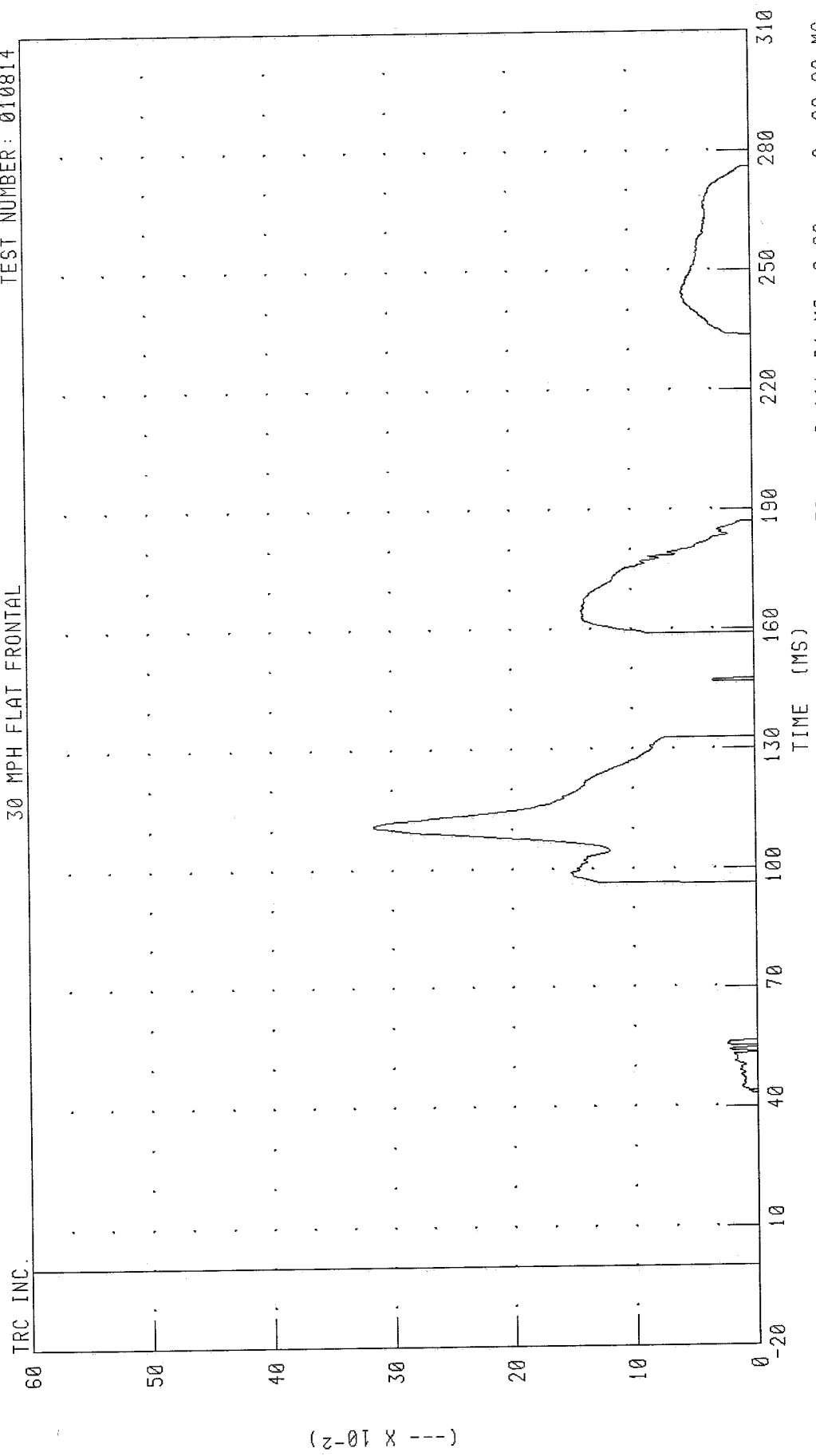
TEST NUMBER: 010814



CHANNEL: NTF3 FILTER: CH. CLASS 600

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
RIGHT REAR PASSENGER NECK COMPRESSION/EXTENSION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

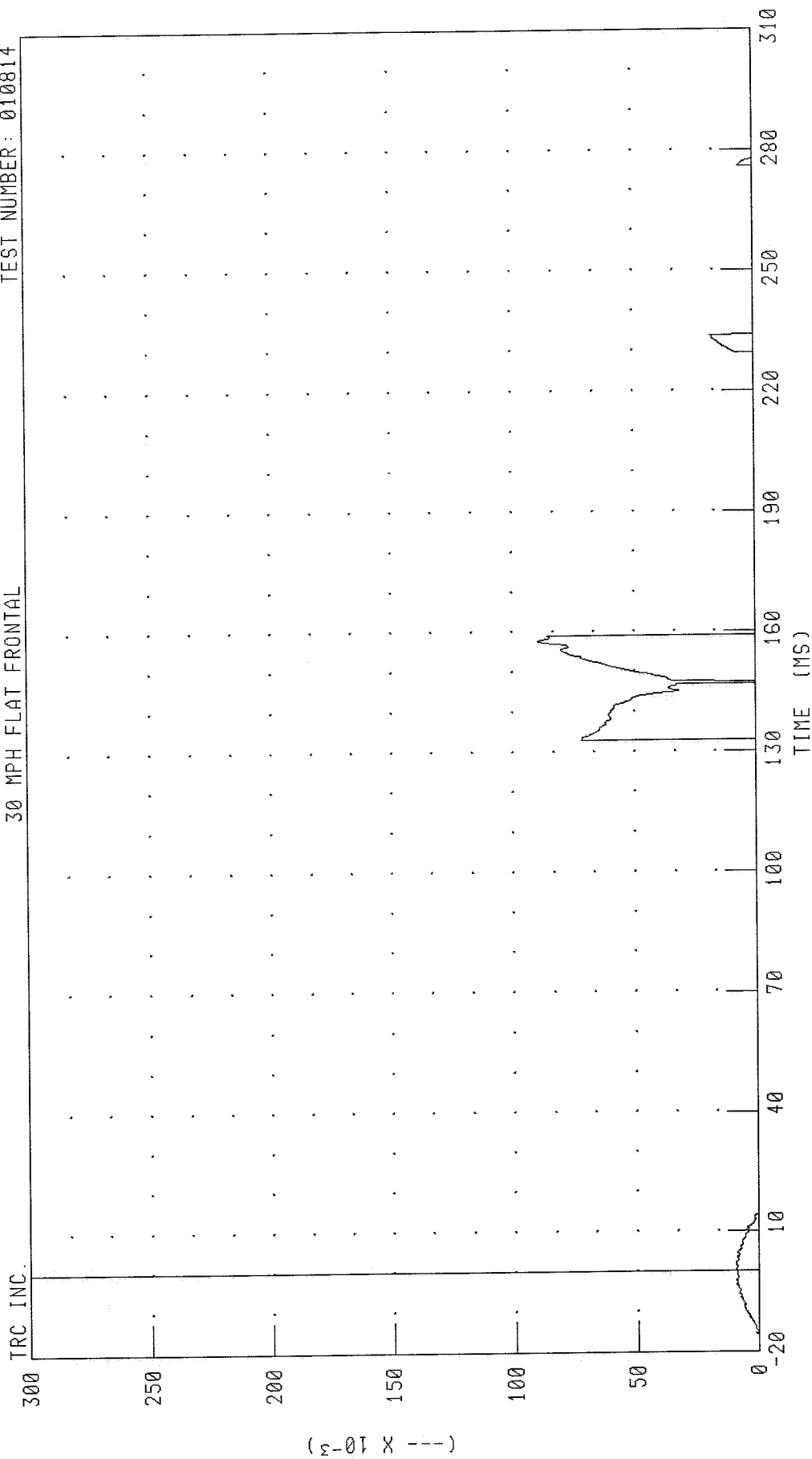


CHANNEL: NCE3 FILTER: CH. CLASS 600 PEAK DATA: 0.32 --- 0 111.04 MS; 0.00 --- 0 -20.00 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
RIGHT REAR PASSENGER NECK COMPRESSION/FLEXION

TEST NUMBER: 010814

30 MPH FLAT FRONTAL

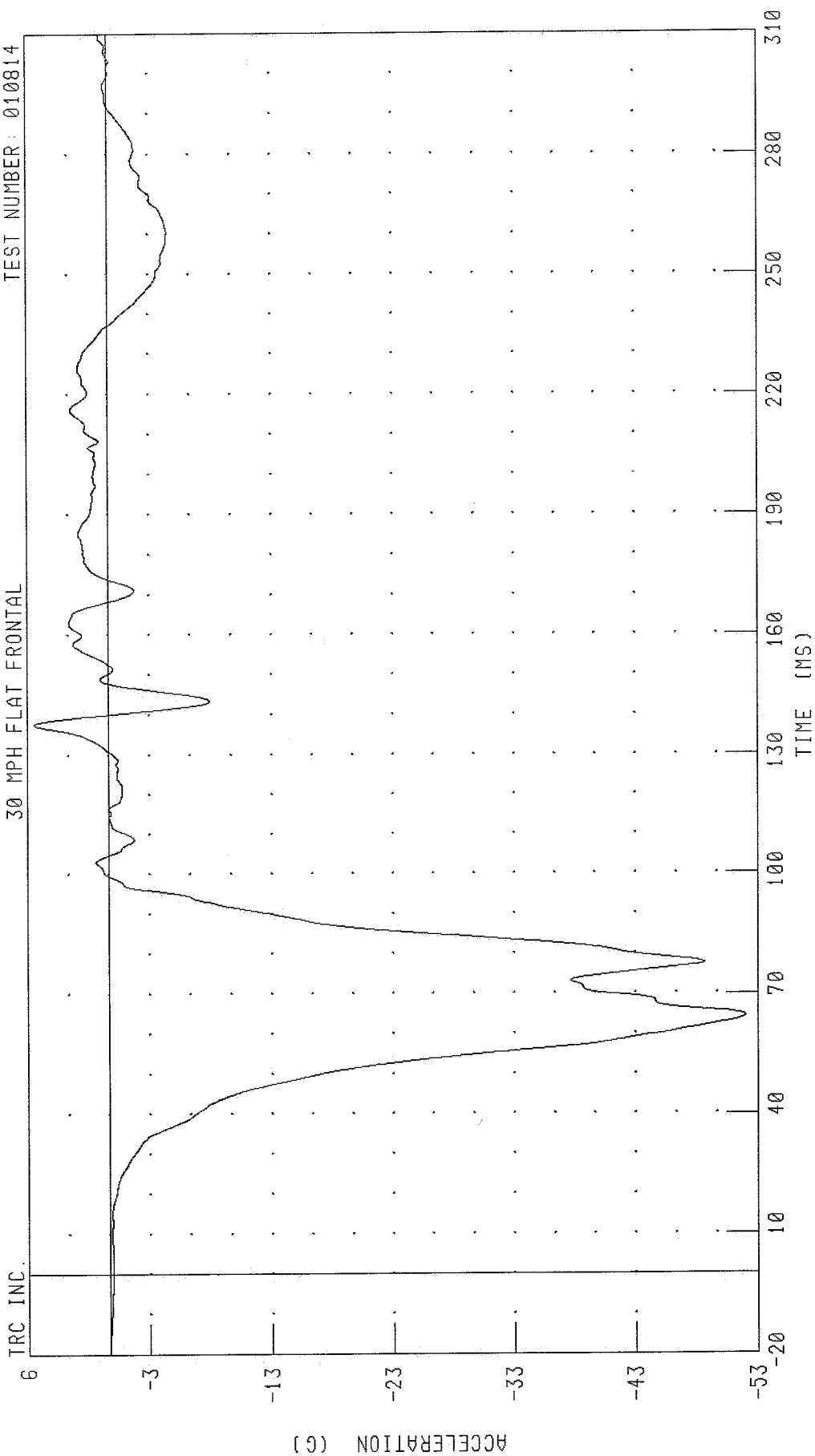


CHANNEL: NCF3 FILTER: CH. CLASS 600

PEAK DATA: 0.09 --- 0 157.68 MS; 0.00 --- 0 -20.00 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
RIGHT REAR PASSENGER CHEST X-AXIS ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

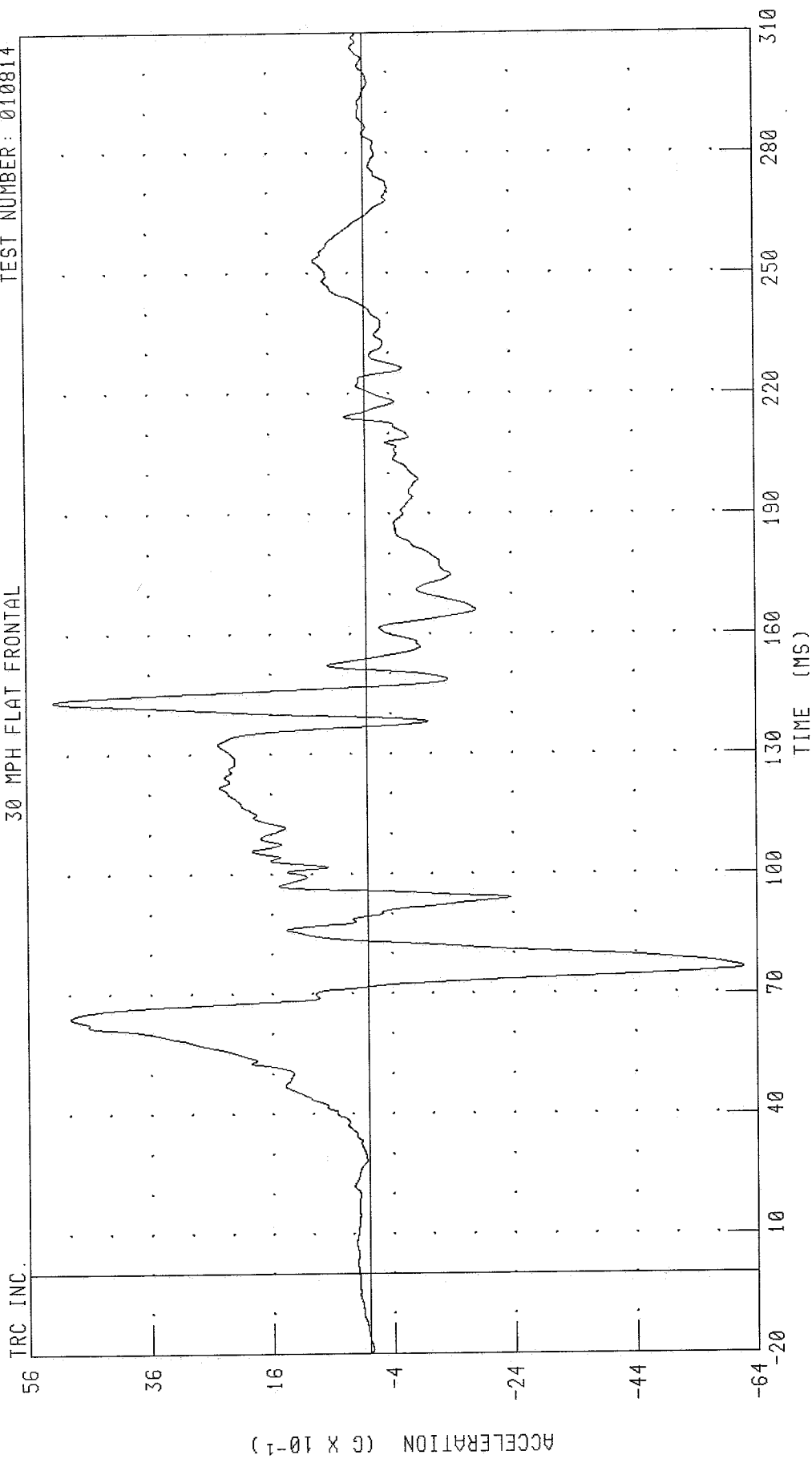


CHANNEL: CSTXG3 FILTER: CH. CLASS 180

PEAK DATA: 6.14 G @ 137.76 MS, -52.34 G @ 64.32 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
RIGHT REAR PASSENGER CHEST Y-AXIS ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814



CHANNEL: CSTVC3 FILTER: CH. CLASS 180

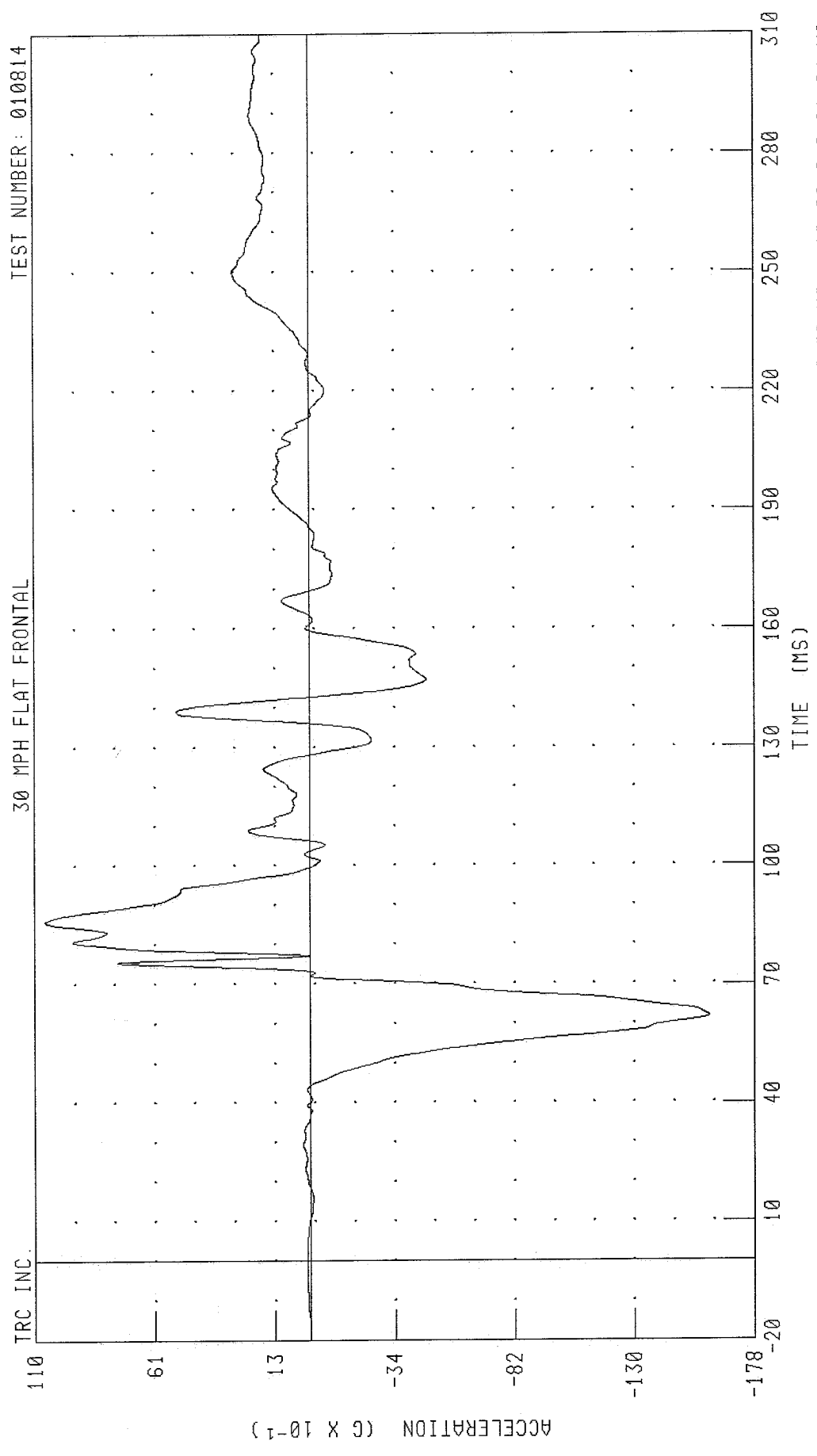
PEAK DATA: 5.16 G @ 143.28 MS; -6.18 G @ 76.32 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

RIGHT REAR PASSENGER CHEST Z-AXIS ACCELERATION

TEST NUMBER: 010814

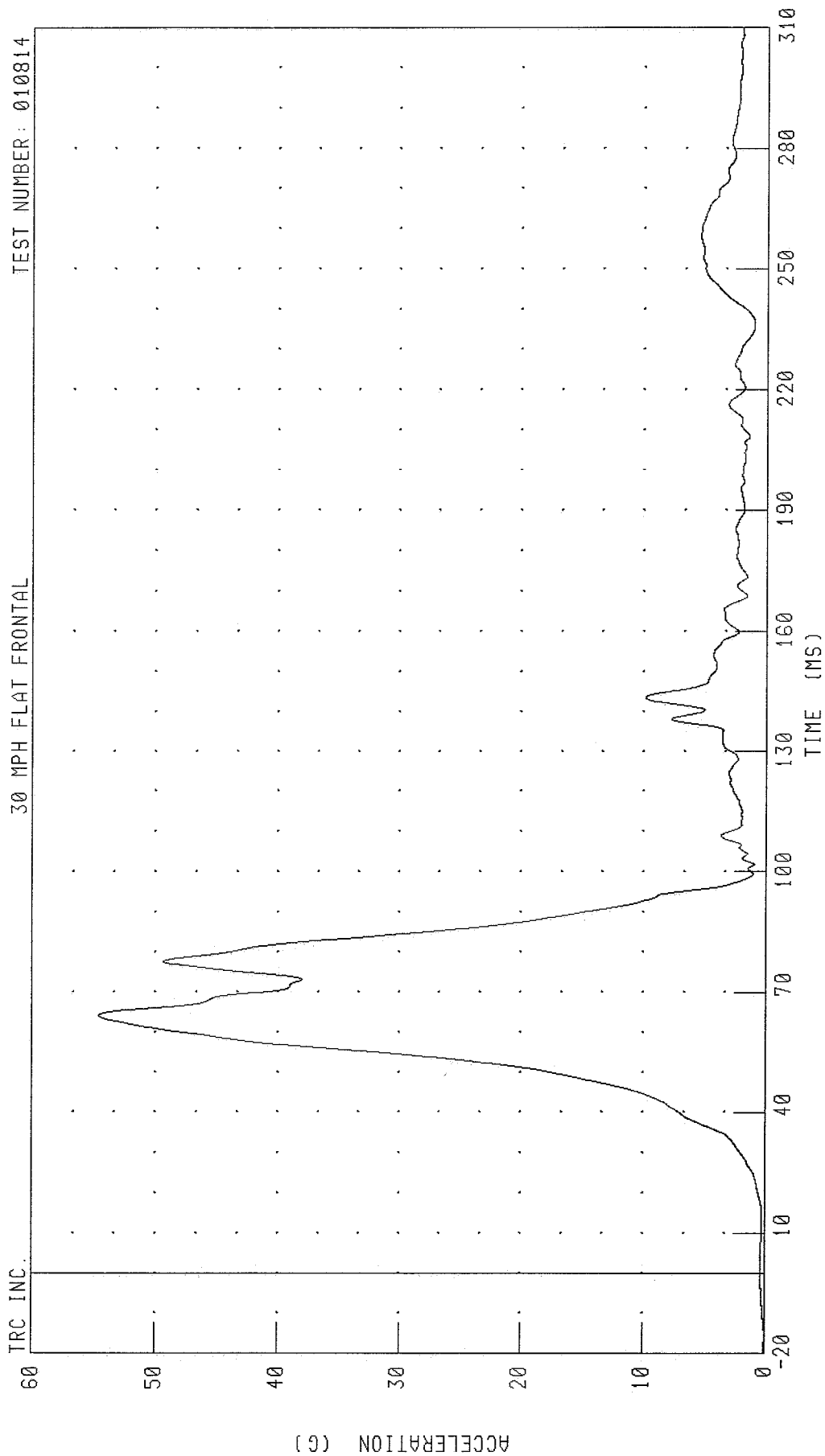
30 MPH FLAT FRONTAL



CHANNEL: CSTZG3 FILTER: CH. CLASS 180

PEAK DATA: 10.59 G @ 85.76 MS; -16.02 G @ 61.84 MS

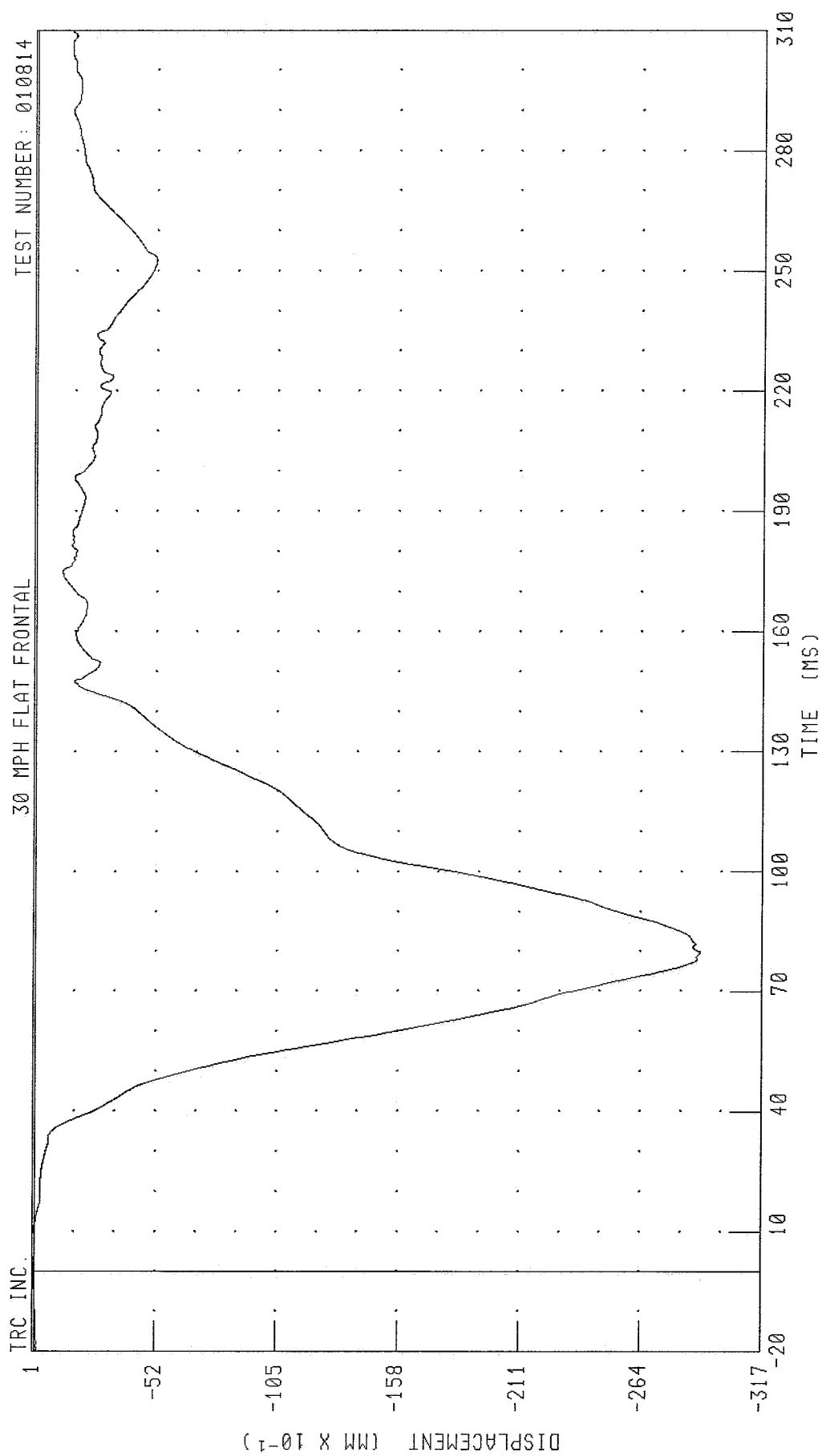
2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
RIGHT REAR PASSENGER CHEST RESULTANT ACCELERATION



CHANNEL: CSTRG3 FILTER: CH. CLASS 180

PEAK DATA: 54.60 G @ 64.08 MS; 0.01 G @ -20.00 MS

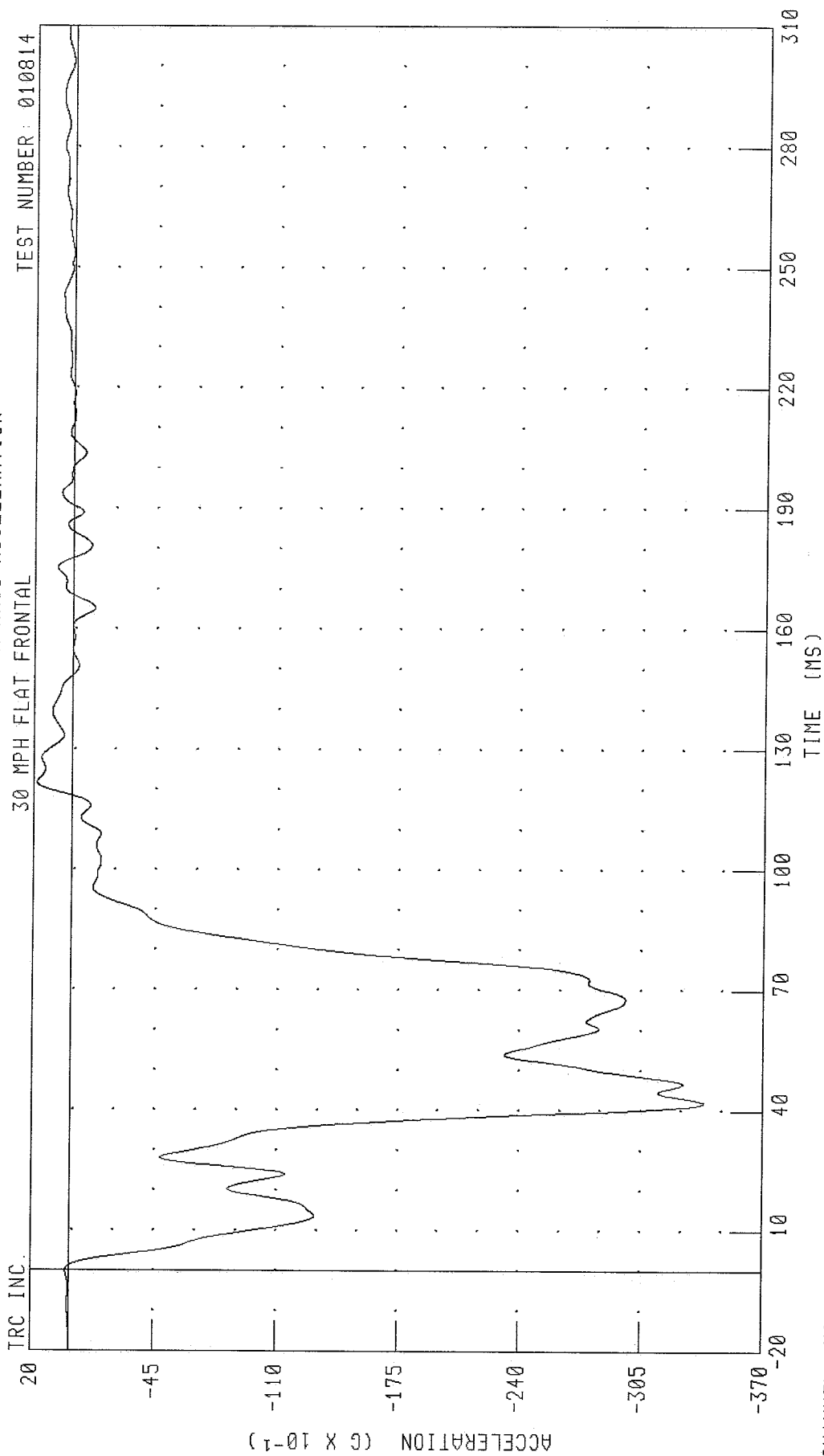
2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
RIGHT REAR PASSENGER CHEST DEFLECTION



CHANNEL: CSTXD3 FILTER: CH. CLASS 600

PEAK DATA: 0.12 MM @ 7.28 MS; -29.00 MM @ 79.76 MS

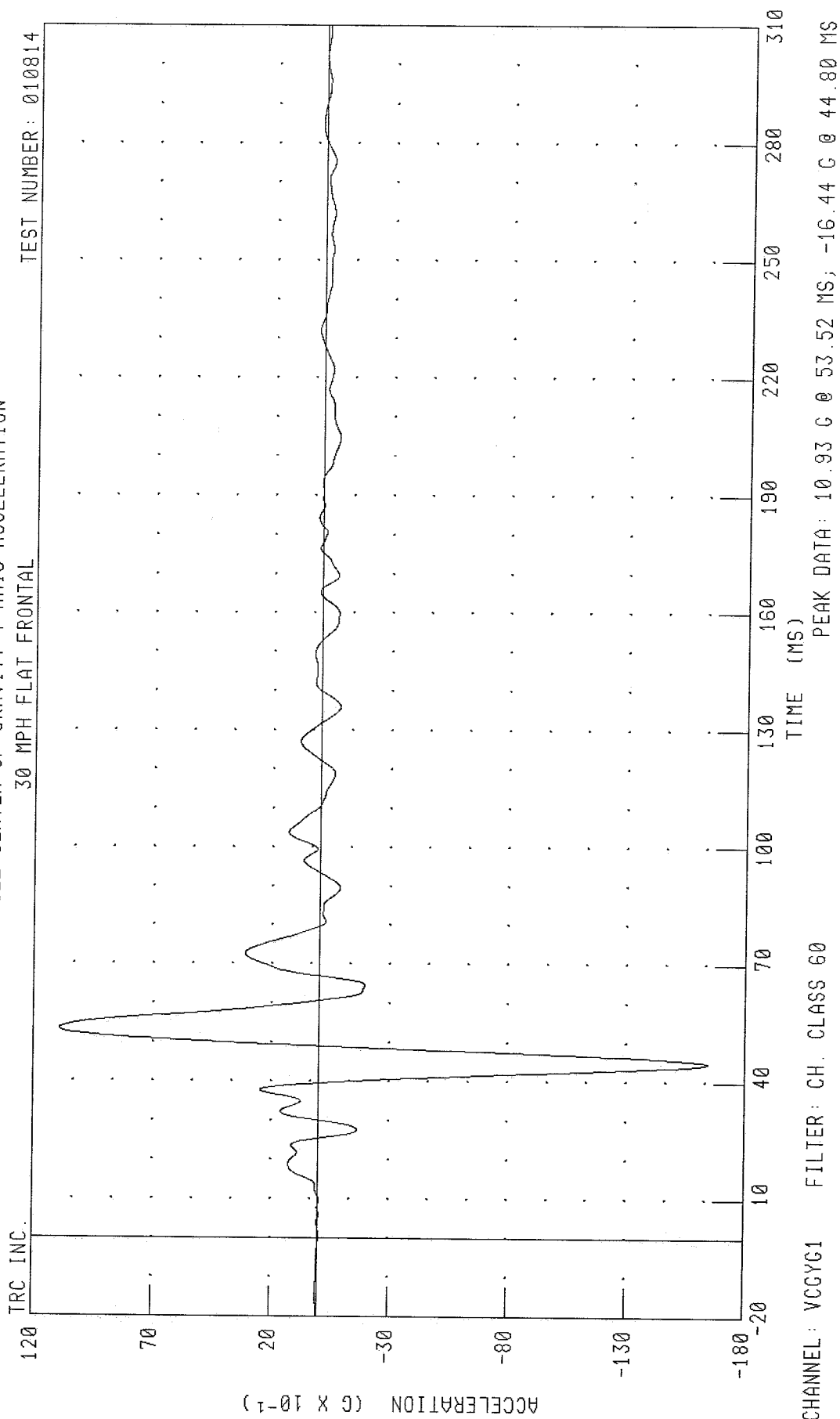
2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
VEHICLE CENTER OF GRAVITY X-AXIS ACCELERATION
30 MPH FLAT FRONTAL



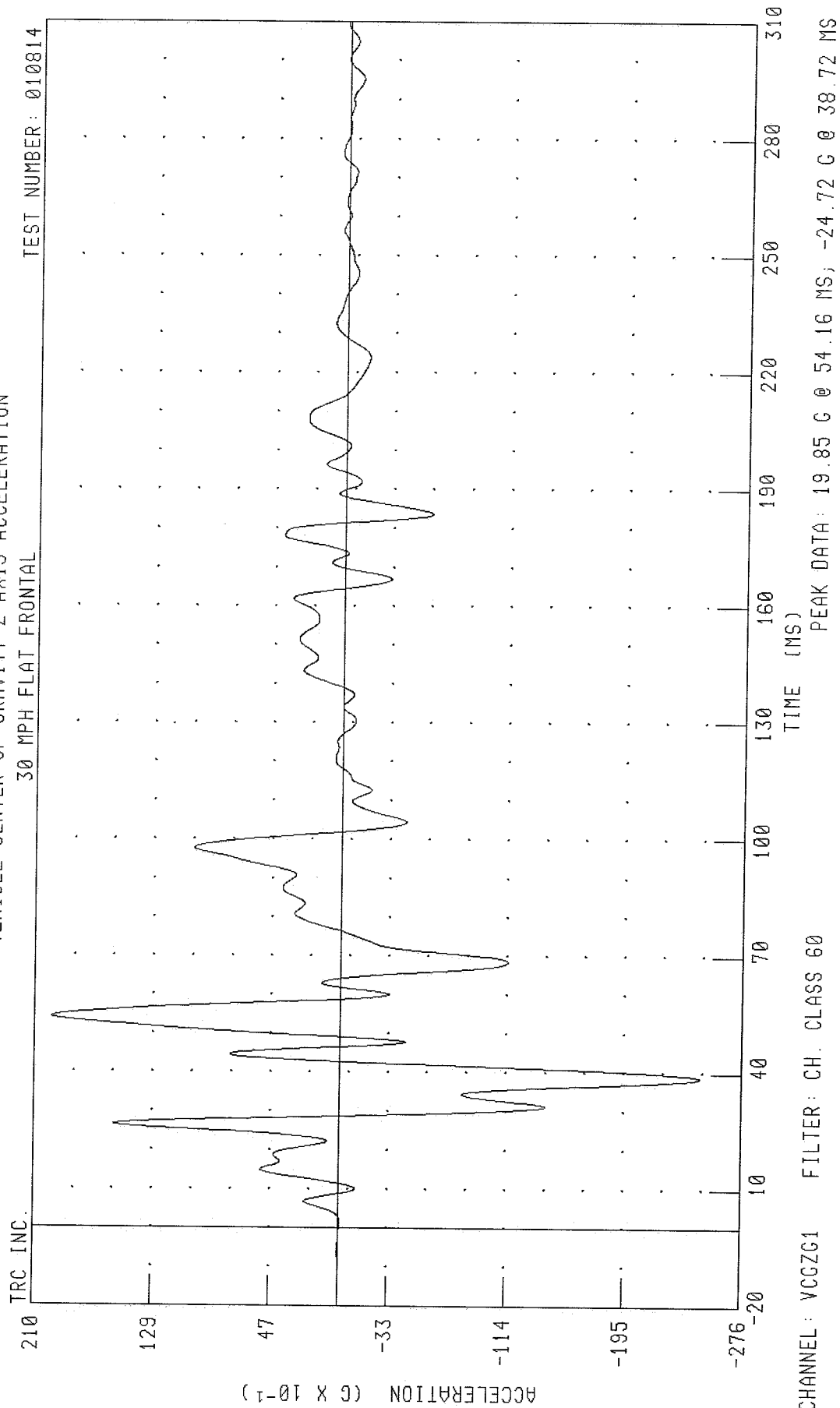
CHANNEL: VCGXG1 FILTER: CH. CLASS 60

PEAK DATA: 1.84 G @ 121.76 MS; -33.88 G @ 41.92 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
VEHICLE CENTER OF GRAVITY Y-AXIS ACCELERATION

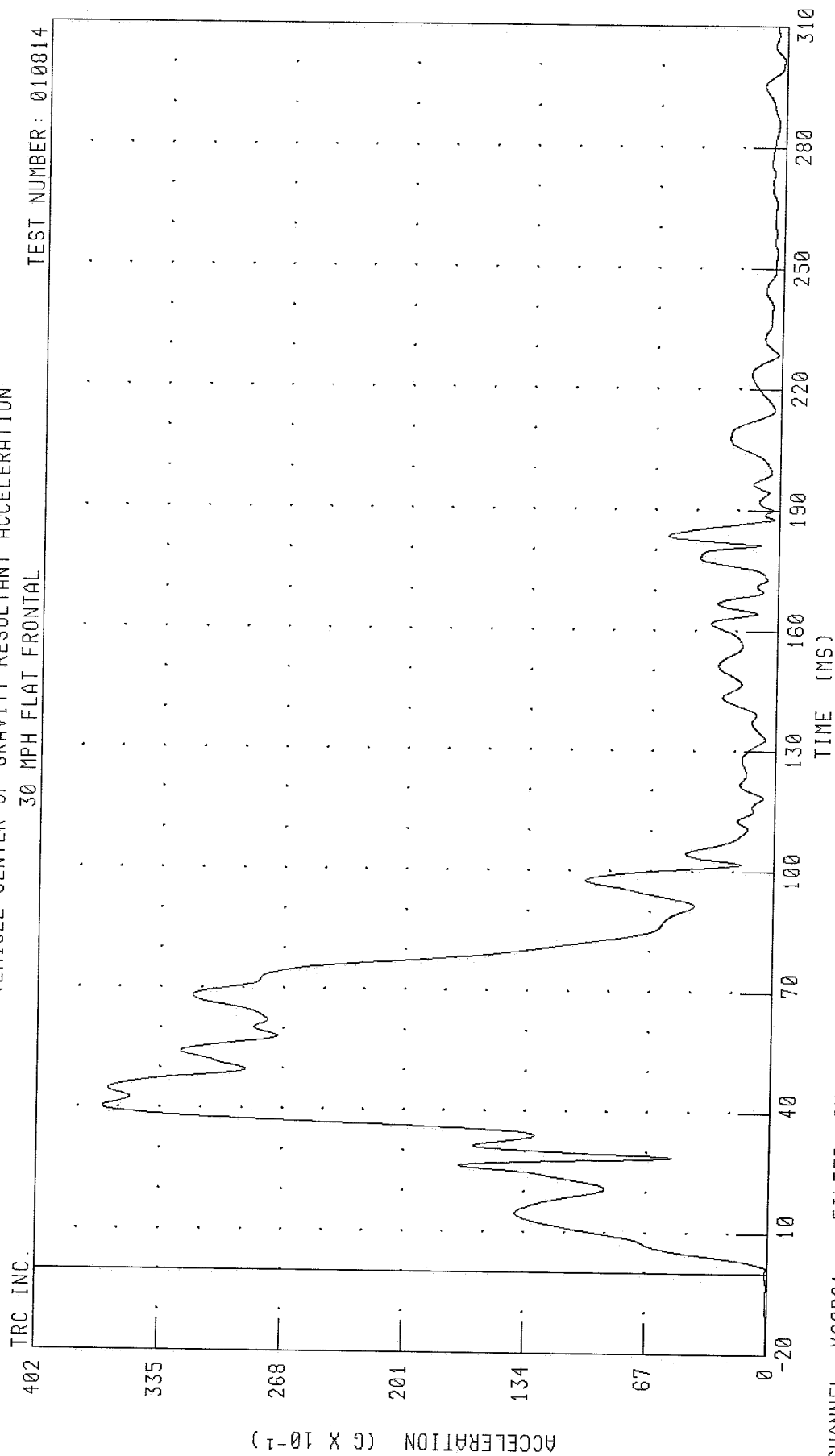


2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
VEHICLE CENTER OF GRAVITY Z-AXIS ACCELERATION



2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
VEHICLE CENTER OF GRAVITY RESULTANT ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814



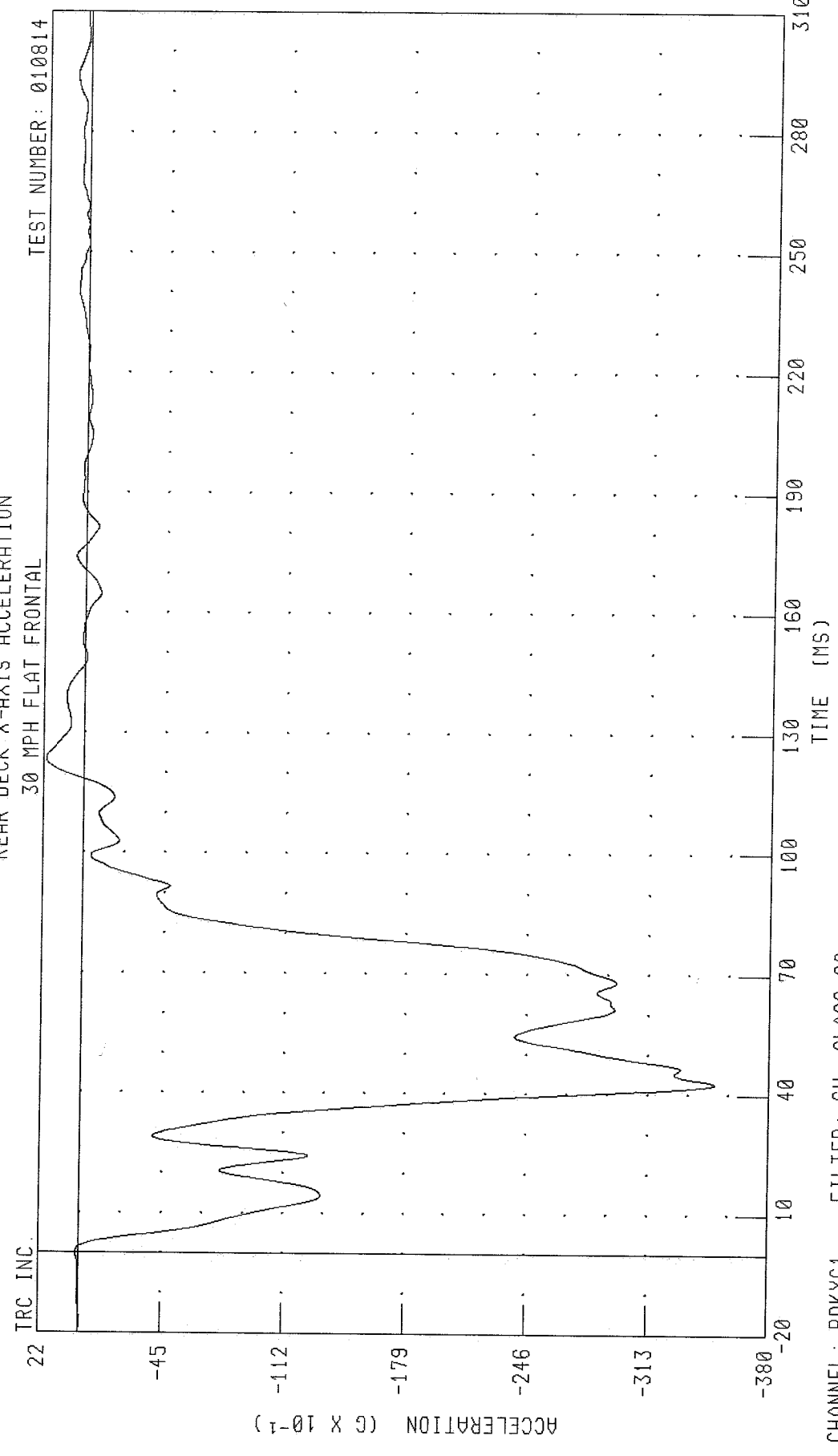
CHANNEL: VCGRG1 FILTER: CH. CLASS 60

PEAK DATA: 36.61 G @ 40.32 MS; 0.02 G @ -20.00 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

REAR DECK X-AXIS ACCELERATION

30 MPH FLAT FRONTAL
TEST NUMBER: 010814



CHANNEL: RDKXC1 FILTER: CH. CLASS 60
PEAK DATA: 2.06 G @ 123.60 MS; -34.99 G @ 42.64 MS

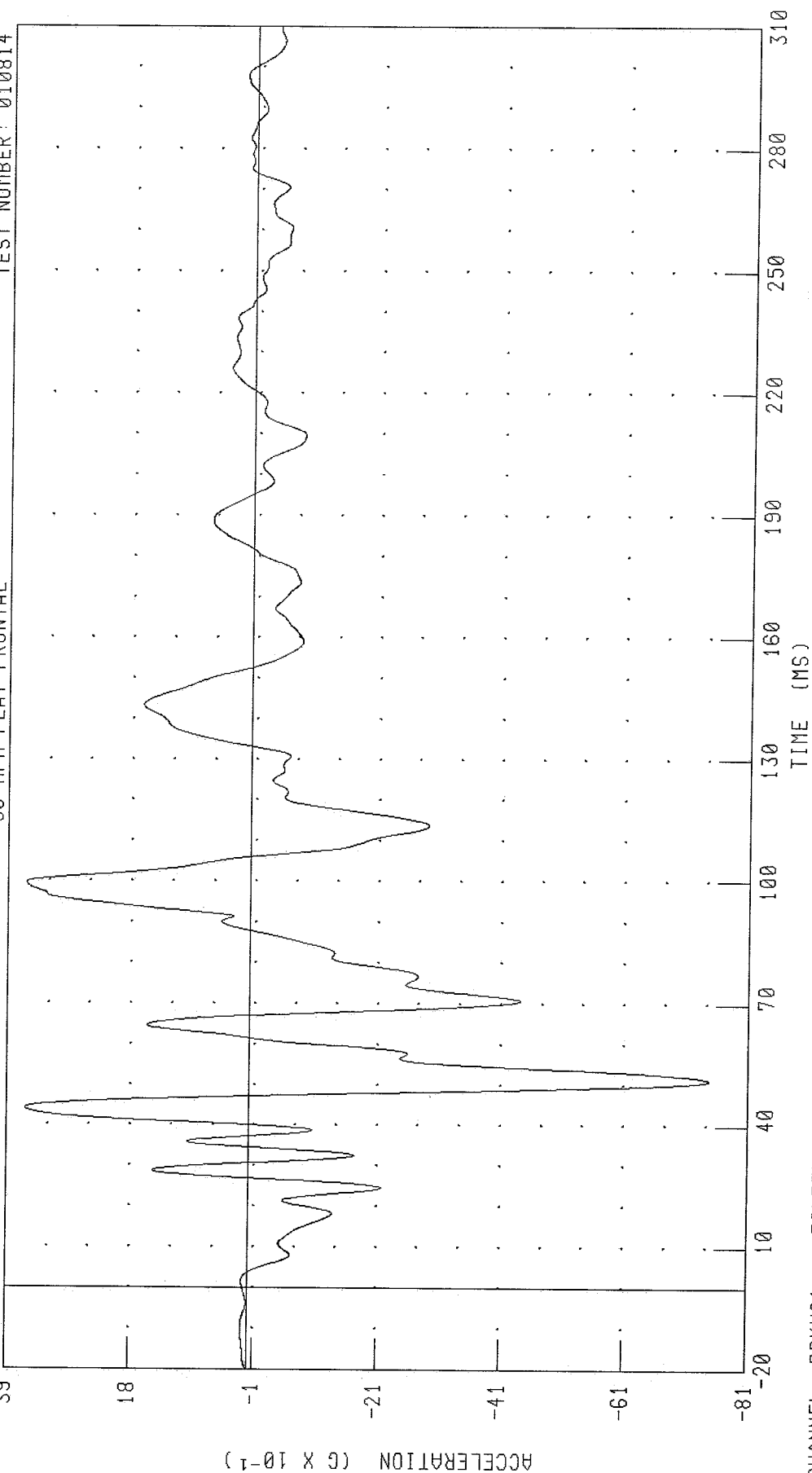
2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

REAR DECK Y-AXIS ACCELERATION

TRC INC.

30 MPH FLAT FRONTAL

TEST NUMBER: 010814

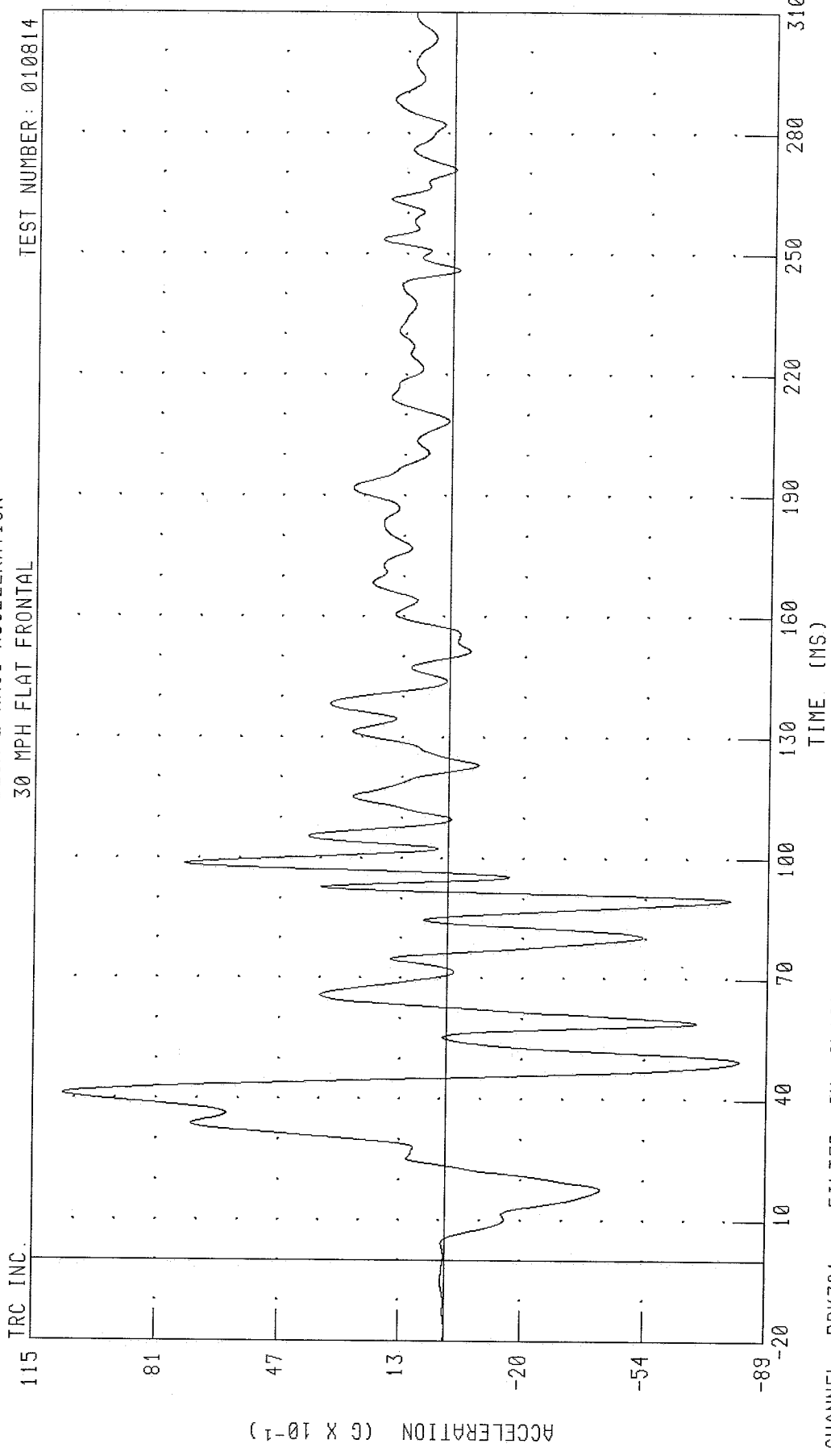


CHANNEL: RDKYC1 FILTER: CH. CLASS 60

PEAK DATA: 3.60 G @ 44.16 MS; -7.48 G @ 51.28 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
REAR DECK Z-AXIS ACCELERATION
30 MPH FLAT FRONTAL

TEST NUMBER: 010814



CHANNEL: RDKZG1 FILTER: CH. CLASS 60
PEAK DATA: 10.67 G @ 41.36 MS; -8.14 G @ 49.52 MS

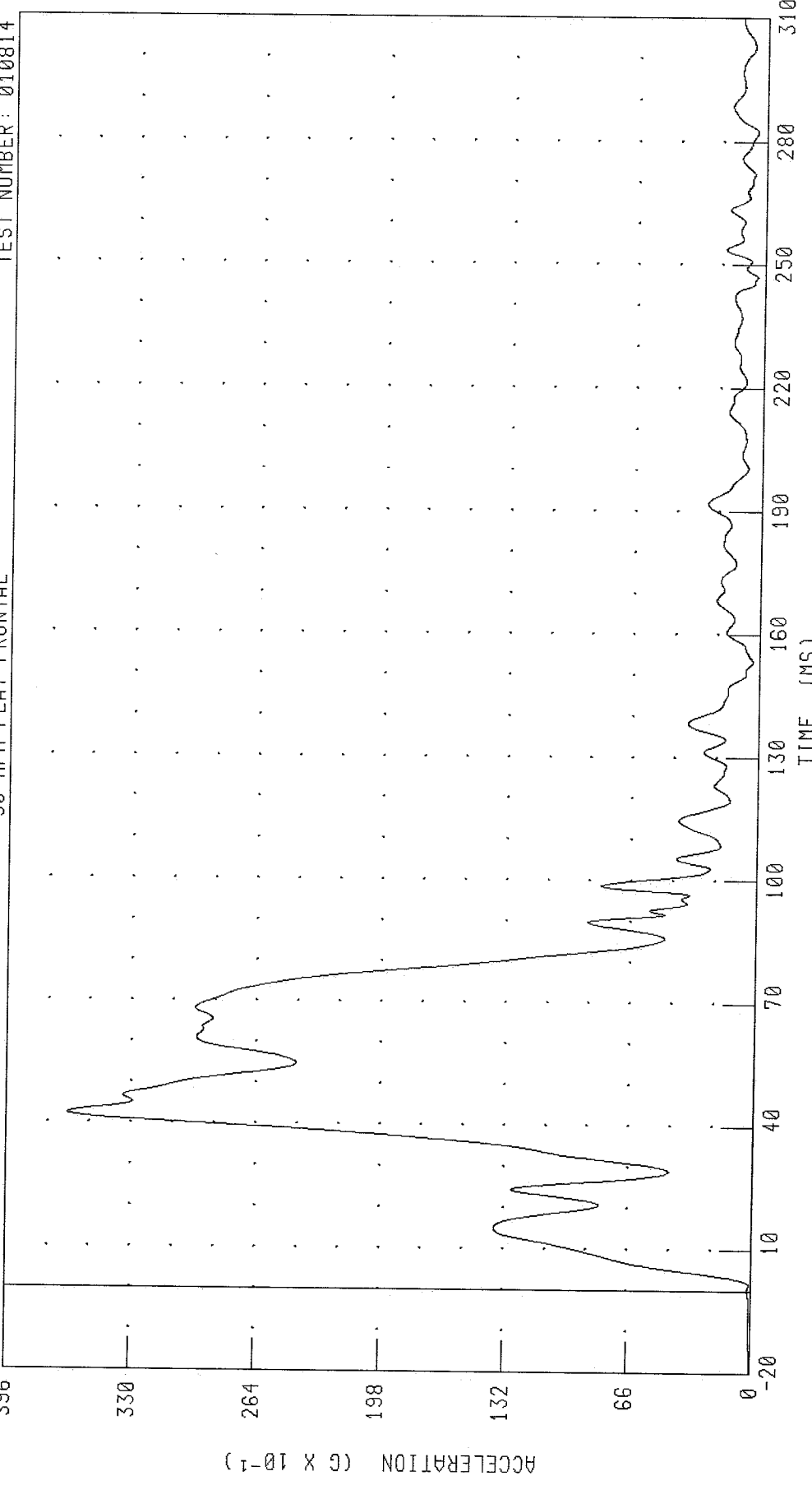
2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH

REAR DECK RESULTANT ACCELERATION

TEST NUMBER: 010814

30 MPH FLAT FRONTAL

TRC INC.



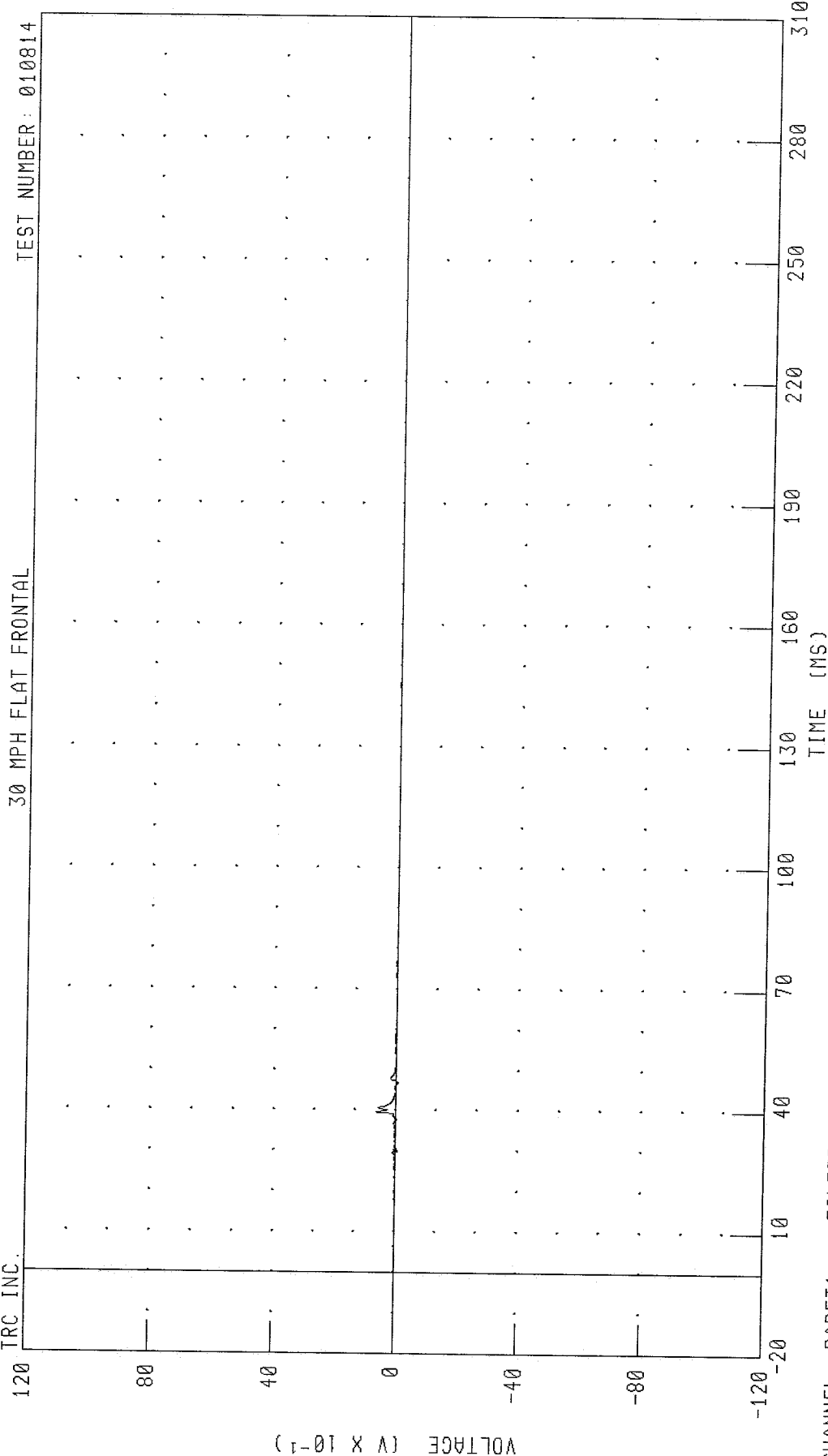
CHANNEL: RDKRC1 FILTER: CH. CLASS 60

PEAK DATA: 36.36 G @ 42.48 MS; 0.02 G @ -19.76 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER AIRBAG EVENT PRIMARY
30 MPH FLAT FRONTAL

TRC INC.

TEST NUMBER: 010814



CHANNEL: DABET1 FILTER: CH. CLASS 1000

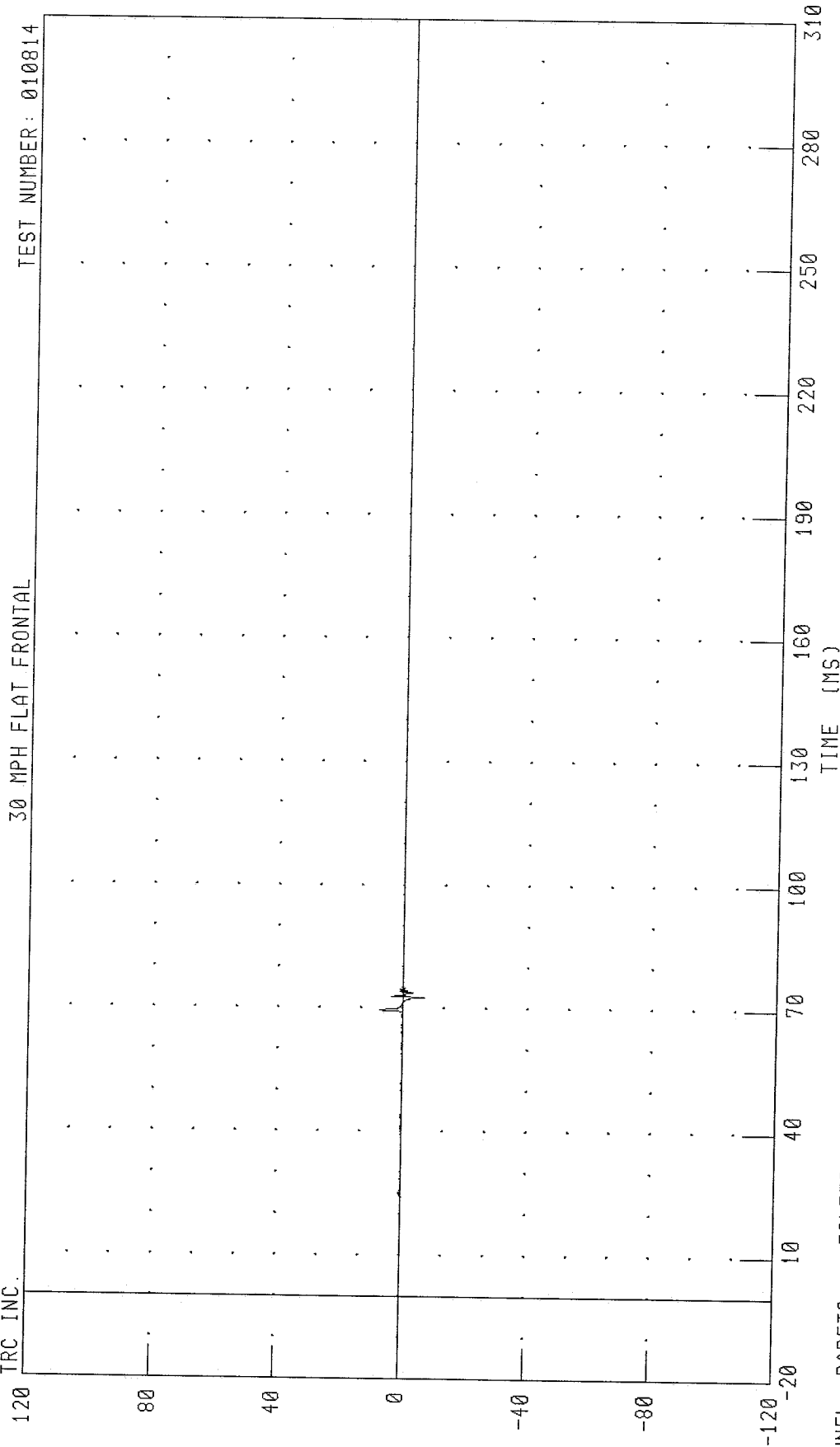
PEAK DATA: 0.64 V @ 39.60 MS; -0.08 V @ 46.88 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
DRIVER AIRBAG EVENT SECONDARY
30 MPH FLAT FRONTAL

TRC INC.

TEST NUMBER: 010814

VOLTAGE (V X 10⁻¹)



CHANNEL: DABET2 FILTER: CH. CLASS 1000

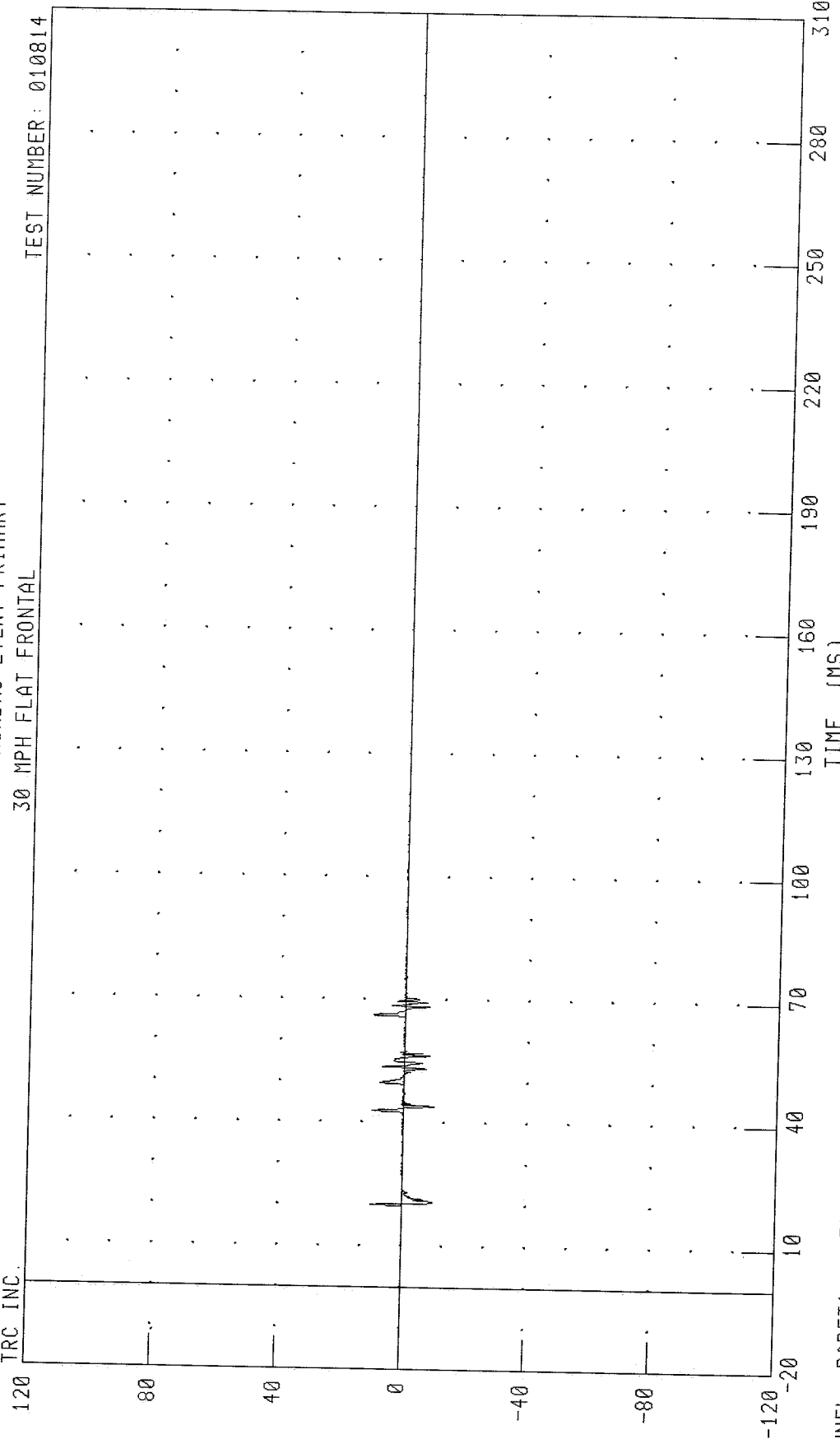
PEAK DATA: 0.74 V @ 69.60 MS, -0.68 V @ 72.72 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER AIRBAG EVENT PRIMARY
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

TRC INC.

VOLTAGE (V X 10⁻¹)



CHANNEL: PABET1

FILTER: CH. CLASS 1000

TIME (MS)

PEAK DATA: 1.00 V @ 20.08 MS; -1.00 V @ 20.64 MS

2001 DODGE GRAND CARAVAN INTO FLAT FRONTAL BARRIER AT 30 MPH
PASSENGER AIRBAG EVENT SECONDARY
30 MPH FLAT FRONTAL

TEST NUMBER: 010814

TRC INC.

120

80

40

0

-40

-80

-120

VOLTAGE (V X 10⁻¹)

CHANNEL: PABET2

FILTER: CH. CLASS 1000

TIME (MS)

310

280

250

220

190

160

130

100

70

40

10

PEAK DATA: 1.00 V @ 20.72 MS; -1.00 V @ 20.16 MS

Appendix C

Dummy Configuration and Performance Verification Data

Pre-Test Dummy Configuration and Performance Verification Data

Driver Dummy S/N: 416

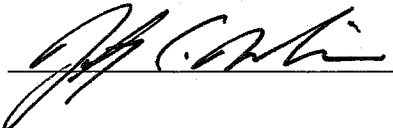
**TRANSPORTATION RESEARCH CENTER INC.
HYBRID III SMALL FEMALE EXTERNAL DIMENSIONS
SN: 416 MFG:FTSS**

DATE: 31-Jul-01

TRC INC. TEST NO: 416C09ED1 5720 SN416EXT. DIMENSION CAL09

TEST PARAMETER	DIMEN.	SPECIFICATION	TEST RESULTS
Total Sitting Height	A	774.7 - 800.1 MM	792.48 MM
Shoulder Pivot Height	B	431.8 - 457.2 MM	447.04 MM
Hip Pivot Height	C	81.3 - 86.3 MM	83.82 MM
Hip Pivot from Backline	D	144.8 - 149.8 MM	147.32 MM
Shoulder Pivot from Backline	E	68.6 - 83.8 MM	73.66 MM
Thigh Clearance	F	119.4 - 134.6 MM	127 MM
Back of Elbow to Wrist Pivot	G	243.9 - 259.1 MM	248.92 MM
Head Back from Backline	H	40.7 - 45.7 MM	45.72 MM
Shoulder to Elbow Length	I	276.8 - 297.2 MM	294.64 MM
Elbow Rest Height	J	182.8 - 203.2 MM	193.04 MM
Buttock to Knee Length	K	520.7 - 546.1 MM	530.86 MM
Popliteal Height	L	355.6 - 376 MM	363.22 MM
Knee to Floor Height	M	393.7 - 419.1 MM	403.86 MM
Buttock Popliteal Length	N	414 - 439.4 MM	431.8 MM
Chest Depth	O	175.3 - 190.5 MM	182.88 MM
Foot Length	P	218.5 - 233.7 MM	228.6 MM
Buttock to Knee Pivot Length	R	457.2 - 482.6 MM	472.44 MM
Head Breadth	S	137.1 - 147.3 MM	139.7 MM
Head Depth	T	177.8 - 188 MM	185.42 MM
Hip Breadth	U	299.7 - 314.9 MM	307.34 MM
Shoulder Breadth	V	350.5 - 365.7 MM	353.06 MM
Foot Breadth	W	78.8 - 94 MM	88.9 MM
Head Circumference	X	528.3 - 548.7 MM	535.94 MM
Chest Circumference with Jacket	Y	850.9 - 881.3 MM	871.22 MM
Waist Circumference	Z	759.5 - 789.9 MM	777.24 MM
Ref Location for Chest Circumference	AA	299.7 - 309.9 MM	304.8 MM
Ref Location for Waist Circumference	BB	160 - 170.2 MM	165.1 MM

DUMMY MEETS SPECIFICATION

TECHNICIAN: 

TRANSPORTATION RESEARCH CENTER INC.

HEAD DROP TEST

HYBRID III SMALL FEMALE

18-JUL-01

TRC INC.

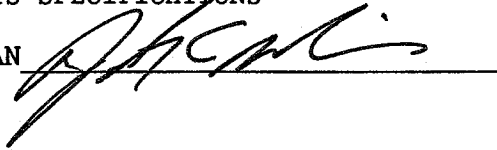
TEST NO: 416C09HD6

572 0 SN416 HEAD DROP CAL 09

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	22.2 DEG. C
RELATIVE HUMIDITY	10 - 70 %	56.0 %
PEAK RESULTANT ACCELERATION	250 - 300 G	257.52 G
PEAK LATERAL ACCELERATION	15 G MAX	-1.95 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 071901.1100;1

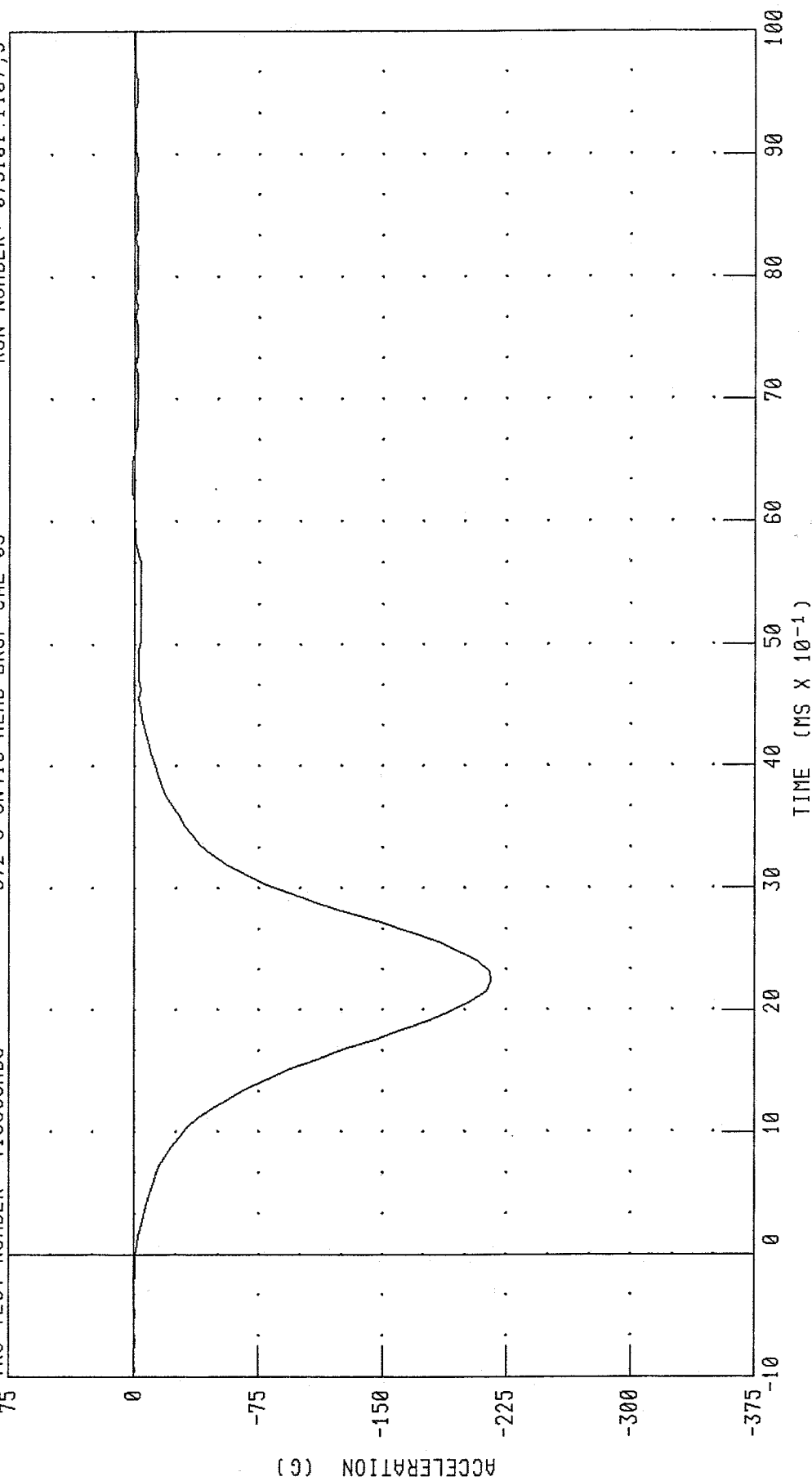
PART 572-0 HYBRID III SMALL FEMALE - HEAD CALIBRATION

HEAD ACCELERATION X AXIS

TRC TEST NUMBER: 416C09HD6

572 0 SN416 HEAD DROP CAL 09

RUN NUMBER: 073101.1107,5



CHANNEL: HEDXC FILTER: CH. CLASS 1000

TIME (MS X 10⁻¹)

PEAK DATA: 1.30 G @ 6.24 MS, -215.76 G @ 2.24 MS

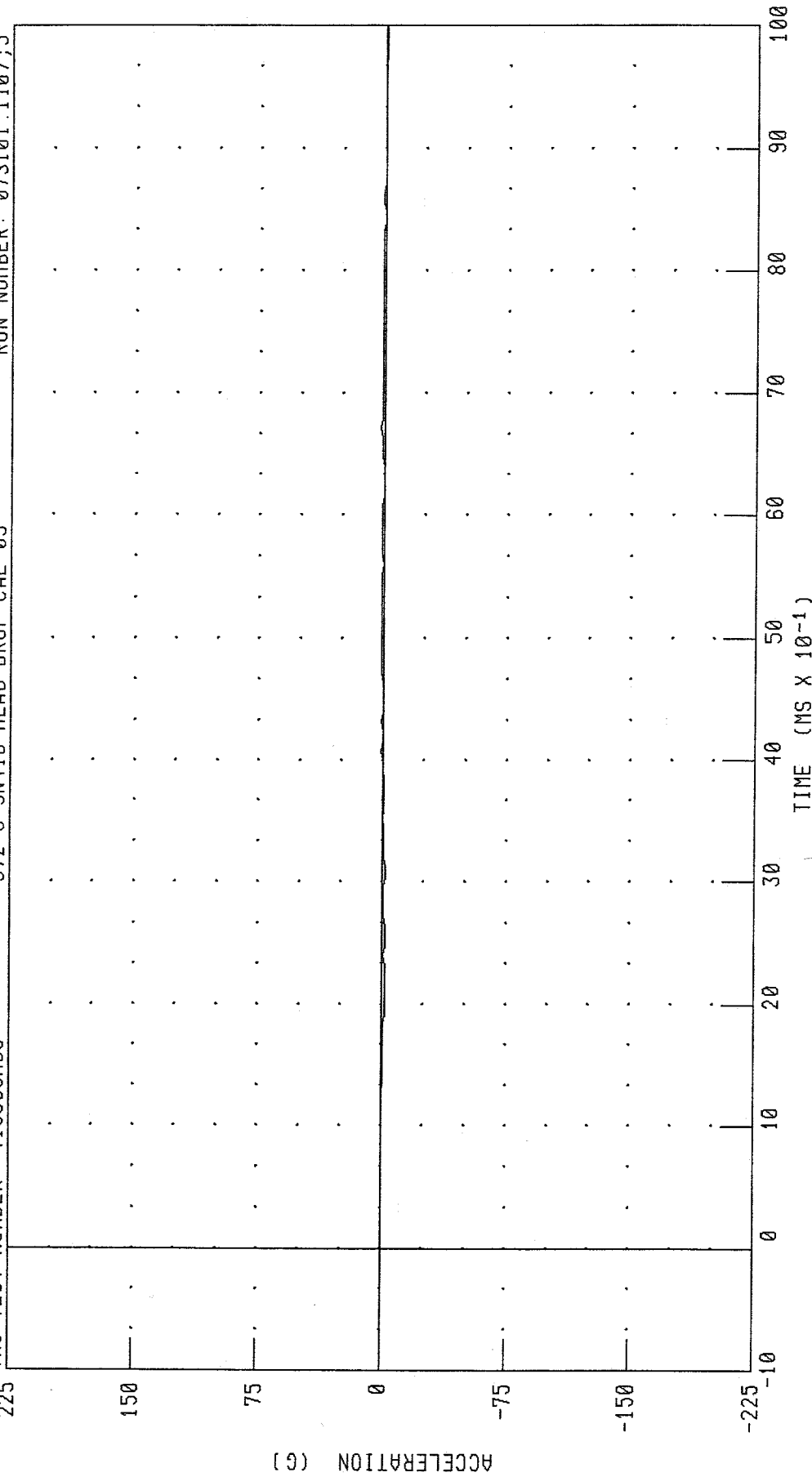
PART 572-0 HYBRID III SMALL FEMALE - HEAD CALIBRATION

HEAD ACCELERATION Y AXIS

TRC TEST NUMBER: 416C09HD6

572 0 SN416 HEAD DROP CAL 09

RUN NUMBER: 073101.1107;5



CHANNEL: HEDYC FILTER: CH. CLASS 1000

PEAK DATA: 1.96 G @ 6.72 MS, -1.92 G @ 1.92 MS

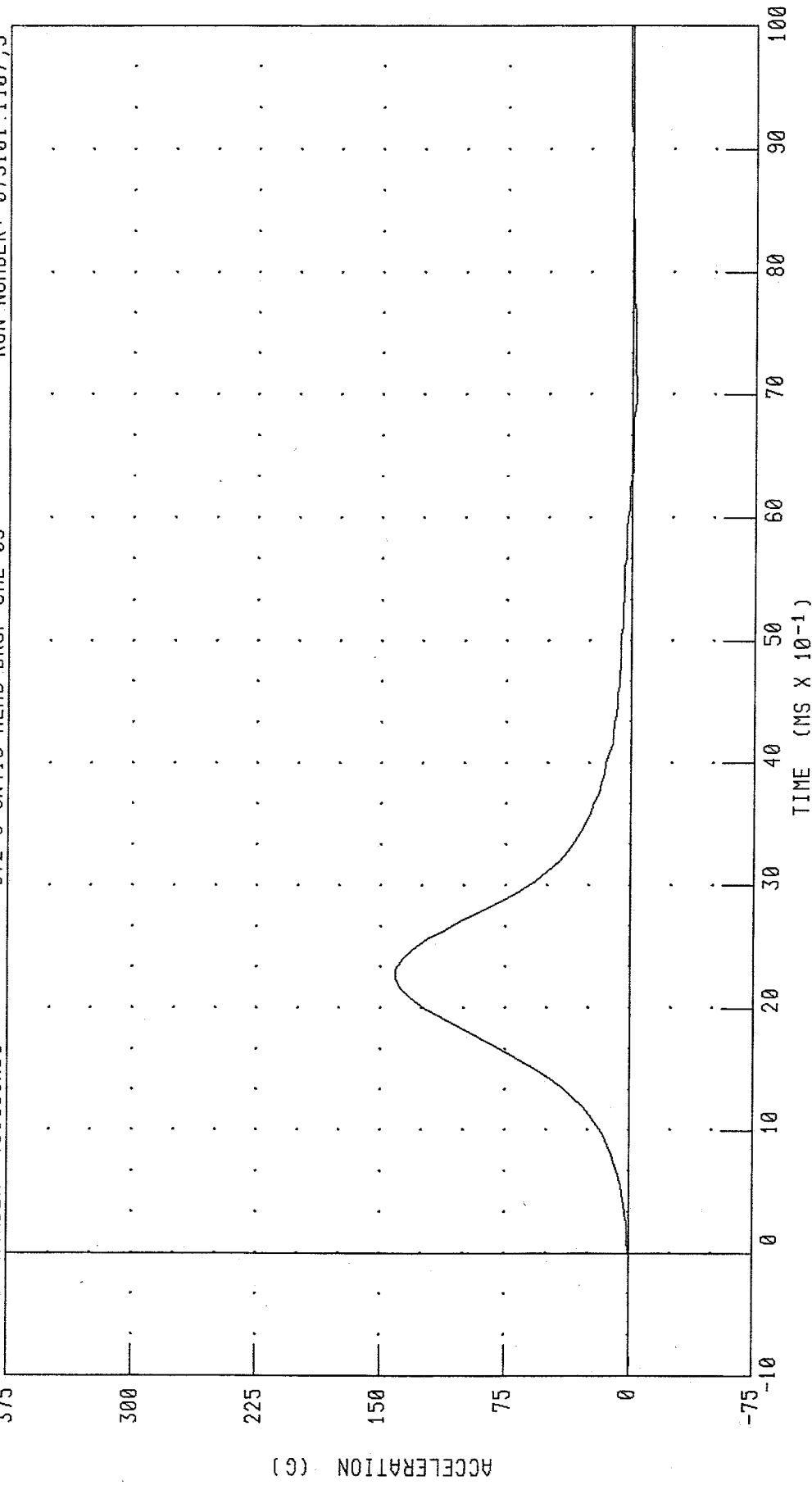
PART 572-0 HYBRID III SMALL FEMALE - HEAD CALIBRATION

HEAD ACCELERATION Z AXIS

TRC TEST NUMBER: 416C09HD6

572 0 SN416 HEAD DROP CAL 09

RUN NUMBER: 073101.1107;5



CHANNEL: HEDZG FILTER: CH. CLASS 1000

PEAK DATA: 140.58 G @ 2.24 MS; -2.77 G @ 6.96 MS

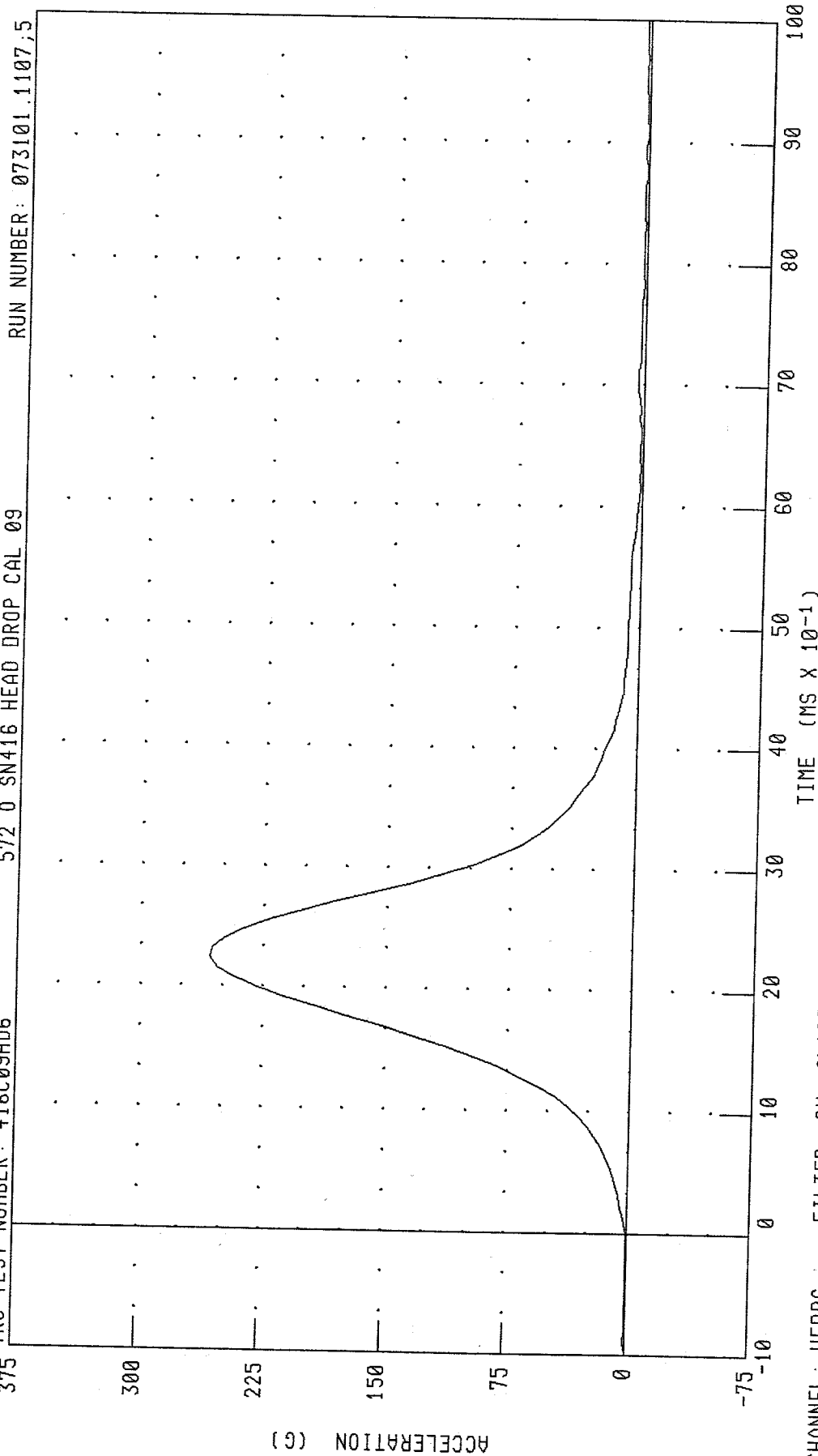
PART 572-0 HYBRID III SMALL FEMALE - HEAD CALIBRATION

HEAD RESULTANT ACCELERATION

TRC TEST NUMBER: 416C09HD6

572 0 SN416 HEAD DROP CAL 09

RUN NUMBER: 073101.1107,5



CHANNEL: HEDRG FILTER: CH. CLASS 1000

PEAK DATA: 257.52 G @ 2.24 MS; 0.37 G @ -0.80 MS

TRANSPORTATION RESEARCH CENTER INC.

HYBRID III SMALL FEMALE

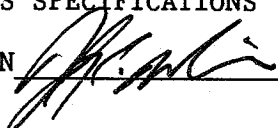
19-JUL-01

NECK FLEXION TEST - 6 CHANNEL TRANSDUCER

TRC INC. TEST NO: 416C09NF1 572 0 SN416 NECK FLEX. CAL09

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6-22.2 DEG. C	22.2 DEG. C
RELATIVE HUMIDITY		10 - 70 %	60.0 %
IMPACT VELOCITY		6.89 - 7.13 M/S	7.12 M/S
INTEGRATED PENDULUM VELOCITY	10 MS	2.1 - 2.5 M/S	2.20 M/S
	20 MS	4.0 - 5.0 M/S	4.36 M/S
	30 MS	5.8 - 7.0 M/S	6.36 M/S
PEAK D-PLANE ROTATION		78 - 96 DEG.	82.52 DEG.
PEAK MOMENT DURING ROTATION INTERVAL		69 - 83 NM	80.57 NM
POSITIVE MOMENT DECAY TIME TO 10 NM		80 - 100 MS	87.60 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 071901.1010;1

	msec	TOTAL (deg)	Min, Max values =	52.454 @	90.0000	82.525 @	60.4800
976	40.0000 -->	58.387	58.727	58.897	59.068	59.240	59.756
986	40.8000 -->	60.102	60.448	60.622	60.796	60.970	61.493
996	41.6000 -->	61.841	62.016	62.365	62.540	62.714	63.237
1006	42.4000 -->	63.586	63.933	64.107	64.281	64.454	64.973
1016	43.2000 -->	65.318	65.662	65.834	66.006	66.178	66.691
1026	44.0000 -->	67.032	67.203	67.543	67.712	67.881	68.387
1036	44.8000 -->	68.722	68.888	69.220	69.385	69.548	69.874
1046	45.6000 -->	70.354	70.512	70.824	70.978	71.130	71.580
1056	46.4000 -->	71.871	72.014	72.296	72.434	72.570	72.967
1066	47.2000 -->	73.223	73.348	73.593	73.713	73.831	74.175
1076	48.0000 -->	74.395	74.503	74.714	74.818	74.920	75.218
1086	48.8000 -->	75.410	75.505	75.692	75.784	75.875	76.144
1096	49.6000 -->	76.320	76.407	76.580	76.666	76.751	77.005
1106	50.4000 -->	77.173	77.256	77.422	77.505	77.587	77.833
1116	51.2000 -->	77.996	78.076	78.238	78.318	78.398	78.637
1126	52.0000 -->	78.794	78.873	79.028	79.106	79.183	79.411
1136	52.8000 -->	79.560	79.634	79.707	79.780	79.851	79.886
1146	53.6000 -->	80.267	80.333	80.463	80.527	80.589	80.132
1156	54.4000 -->	80.887	80.943	81.053	81.106	81.158	80.771
1166	55.2000 -->	81.402	81.448	81.536	81.578	81.620	81.308
1176	56.0000 -->	81.809	81.844	81.910	81.941	81.972	81.737
1186	56.8000 -->	82.108	82.132	82.178	82.200	82.220	82.057
1196	57.6000 -->	82.310	82.325	82.354	82.367	82.380	82.277
1206	58.4000 -->	82.432	82.441	82.449	82.463	82.470	82.413
1216	59.2000 -->	82.496	82.500	82.506	82.512	82.515	82.487
1226	60.0000 -->	82.521	82.523	82.524	82.525	82.525	82.518
1236	60.8000 -->	82.523	82.523	82.522	82.519	82.516	82.525
1246	61.6000 -->	82.506	82.503	82.496	82.493	82.488	82.511
1256	62.4000 -->	82.462	82.456	82.441	82.433	82.425	82.474
1266	63.2000 -->	82.374	82.362	82.349	82.322	82.307	82.396
1276	64.0000 -->	82.219	82.178	82.156	82.133	82.109	82.257
1286	64.8000 -->	81.976	81.947	81.885	81.853	81.820	82.032
1296	65.6000 -->	81.641	81.603	81.524	81.484	81.443	81.715
1306	66.4000 -->	81.228	81.183	81.092	81.045	80.999	81.316
1316	67.2000 -->	80.758	80.708	80.608	80.558	80.507	80.855
1326	68.0000 -->	80.249	80.197	80.092	80.039	79.986	80.353
1336	68.8000 -->	79.717	79.663	79.554	79.499	79.444	79.825
1346	69.6000 -->	79.165	79.108	78.994	78.937	78.879	79.277
1356	70.4000 -->	78.584	78.524	78.402	78.340	78.278	78.703
1366	71.2000 -->	77.957	77.891	77.758	77.690	77.621	78.087
1376	72.0000 -->	77.267	77.194	77.046	76.971	76.895	77.411
1386	72.8000 -->	76.503	76.423	76.260	76.177	76.093	76.662
1396	73.6000 -->	75.665	75.578	75.400	75.311	75.220	75.839
1406	74.4000 -->	74.761	74.667	74.479	74.384	74.288	74.946
1416	75.2000 -->	73.804	73.706	73.509	73.411	73.311	73.999
1426	76.0000 -->	72.811	72.710	72.508	72.407	72.305	73.012
1436	76.8000 -->	71.795	71.693	71.487	71.385	71.282	72.000
1446	77.6000 -->	70.766	70.663	70.456	70.353	70.249	71.897
1456	78.4000 -->	69.731	69.628	69.420	69.316	69.212	70.973
1466	79.2000 -->	68.691	68.586	68.377	68.272	68.167	69.939
							68.899
							67.852
							67.746

[DUMMY.416C09]416C09NF1D.RAD:1									
TRC INC. 416C09NF1 01200									
TOTAL Deltax = 0.080000 msec									
572 O SN416 NECK FLEX. CAL09 7.1 m/sec									
Npts = 8000; IPO = 476; Filter = BLPP 100/ 250/ -16									
Page 2									
19-JUL-01 10:13									
msec	TOTAL	(deg	)	Min, Max values =	52.454 @	90.0000	82.525 @	60.4800	
1476	80.0000 -->	67.640	67.535	67.429	67.322	67.216	67.109	66.896	66.788
1486	80.8000 -->	66.573	66.465	66.357	66.249	66.140	66.031	65.922	65.812
1496	81.6000 -->	65.482	65.371	65.260	65.149	65.037	64.925	64.813	64.700
1506	82.4000 -->	64.360	64.246	64.132	64.017	63.902	63.787	63.671	63.555
1516	83.2000 -->	63.205	63.087	62.969	62.851	62.733	62.614	62.495	62.375
1526	84.0000 -->	62.015	61.894	61.773	61.651	61.529	61.407	61.284	61.161
1536	84.8000 -->	60.791	60.667	60.542	60.418	60.293	60.168	60.043	59.917
1546	85.6000 -->	59.540	59.414	59.287	59.161	59.034	58.907	58.780	58.653
1556	86.4000 -->	58.270	58.142	58.014	57.886	57.758	57.629	57.501	57.372
1566	87.2000 -->	56.986	56.857	56.727	56.598	56.469	56.340	56.210	56.081
1576	88.0000 -->	55.692	55.562	55.433	55.303	55.173	55.044	54.914	54.784
1586	88.8000 -->	54.395	54.265	54.135	54.006	53.876	53.747	53.617	53.488
1596	89.6000 -->	53.100	52.970	52.841	52.712	52.583	52.454	52.325	52.196

572 O SN416 NECK FLEX. CAL09 7.1 m/sec
Npts = 8000; IPO = 476; Filter = BLPP 1000/ 2500/ -16

	msec	NEKOM (N-m	)	Min, Max values =	36.022 @	72.3200	80.571 @	51.2000
1104	50.2400 -->	79.802	79.941	80.058	80.152	80.229	80.297	80.361
1114	51.0400 -->	80.540	80.561	80.571	80.571	80.564	80.552	80.538
1124	51.8400 -->	80.411	80.343	80.264	80.177	80.085	79.984	79.874
1134	52.6400 -->	79.399	79.281	79.168	79.056	78.942	78.823	78.697
1144	53.4400 -->	78.139	78.002	77.868	77.732	77.592	77.448	77.302
1154	54.2400 -->	76.710	76.550	76.382	76.212	76.046	75.885	75.724
1164	55.0400 -->	75.038	74.861	74.687	74.518	74.354	74.192	74.031
1174	55.8400 -->	73.328	73.140	72.945	72.744	72.537	72.325	72.115
1184	56.6400 -->	71.321	71.115	70.903	70.689	70.473	70.258	70.044
1194	57.4400 -->	69.202	68.976	68.744	68.510	68.277	68.054	67.842
1204	58.2400 -->	67.011	66.798	66.590	66.387	66.185	65.978	65.760
1214	59.0400 -->	64.834	64.613	64.398	64.185	63.972	63.756	63.539
1224	59.8400 -->	62.670	62.454	62.235	62.014	61.791	61.570	61.353
1234	60.6400 -->	60.488	60.271	60.060	59.855	59.654	59.453	59.251
1244	61.4400 -->	58.440	58.238	58.039	57.841	57.644	57.451	57.263
1254	62.2400 -->	56.592	56.434	56.274	56.115	55.959	55.804	55.648
1264	63.0400 -->	55.048	54.925	54.812	54.703	54.597	54.492	54.391
1274	63.8400 -->	54.004	53.896	53.785	53.673	53.565	53.465	53.373
1284	64.6400 -->	52.998	52.900	52.798	52.694	52.594	52.500	52.411
1294	65.4400 -->	52.038	51.939	51.831	51.710	51.576	51.435	51.291
1304	66.2400 -->	50.718	50.572	50.425	50.280	50.137	49.994	49.848
1314	67.0400 -->	49.188	49.013	48.836	48.657	48.475	48.290	48.102
1324	67.8400 -->	47.358	47.172	46.978	46.777	46.577	46.381	46.191
1334	68.6400 -->	45.462	45.277	45.093	44.912	44.730	44.546	44.358
1344	69.4400 -->	43.566	43.357	43.155	42.967	42.787	42.603	42.411
1354	70.2400 -->	41.618	41.424	41.225	41.017	40.803	40.590	40.382
1364	71.0400 -->	39.517	39.295	39.076	38.863	38.655	38.447	38.239
1374	71.8400 -->	37.371	37.146	36.920	36.695	36.470	36.247	36.022

572 O SN416 NECK FLEX. CAL09 7.1 m/sec
Npts = 8000; IP0 = 476; Filter = BLP 1000/ 2500/ -16

```
[DUMMY.416C09J416C09NF1D.RAD;1
TRC. INC. 416C09NF1 01200
NEKOM Deltax = 0.080000 msec
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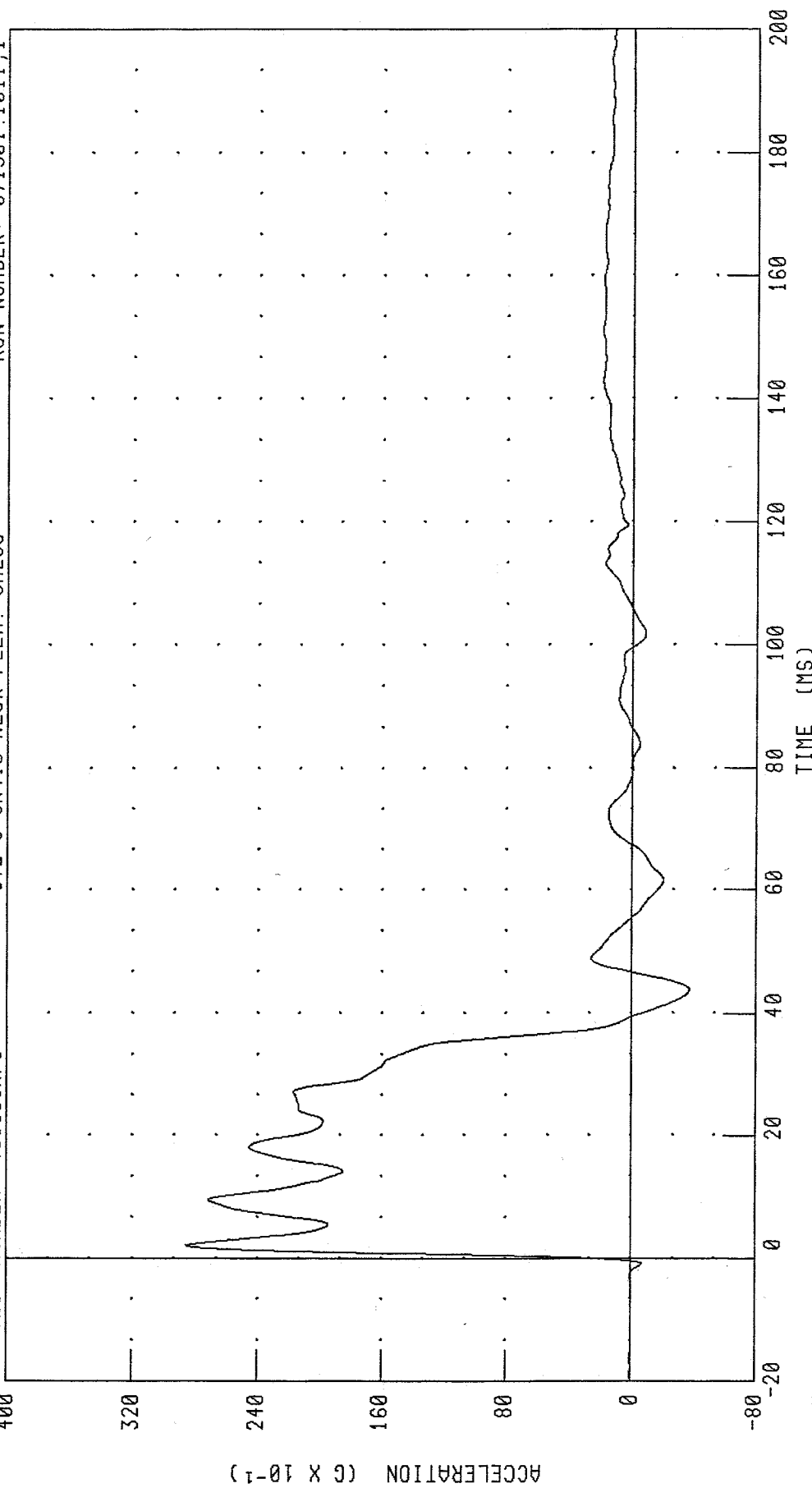
PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

PENDULUM DECELERATION

TRC TEST NUMBER: 416C09NF1

572 0 SN416 NECK FLEX. CAL09

RUN NUMBER: 071901.1011.1



CHANNEL: PENXC

FILTER: CH. CLASS 180

PEAK DATA: 28.54 G @ 2.08 MS, -3.71 G @ 43.84 MS

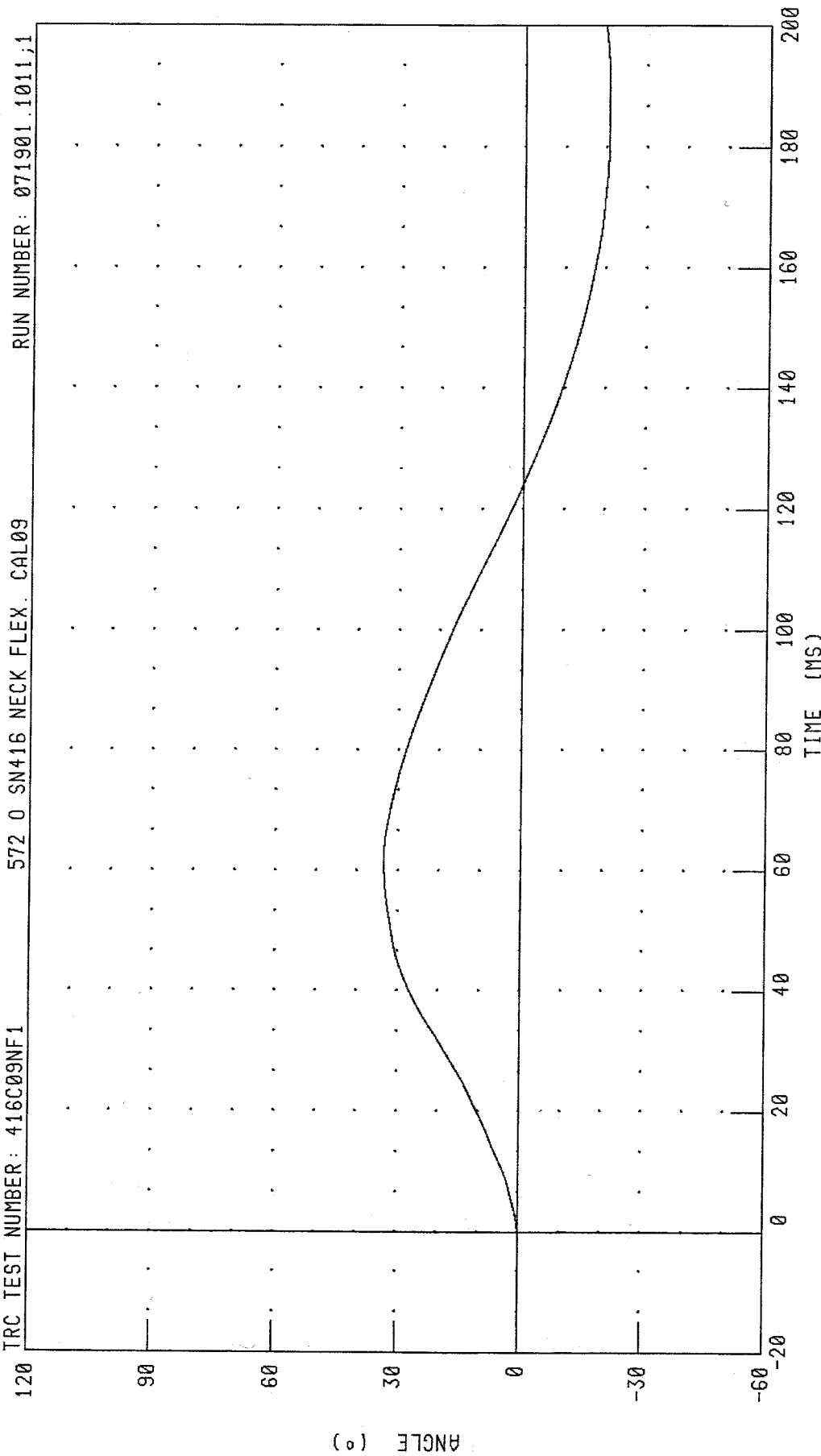
PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER: 416C09NF1

572 0 SN416 NECK FLEX. CAL09

RUN NUMBER: 071901.1011;1



CHANNEL: BETA

FILTER: CH. CLASS 60

TIME (MS)

PEAK DATA: 33.42 ° @ 62.16 MS; -20.78 ° @ 184.80 MS

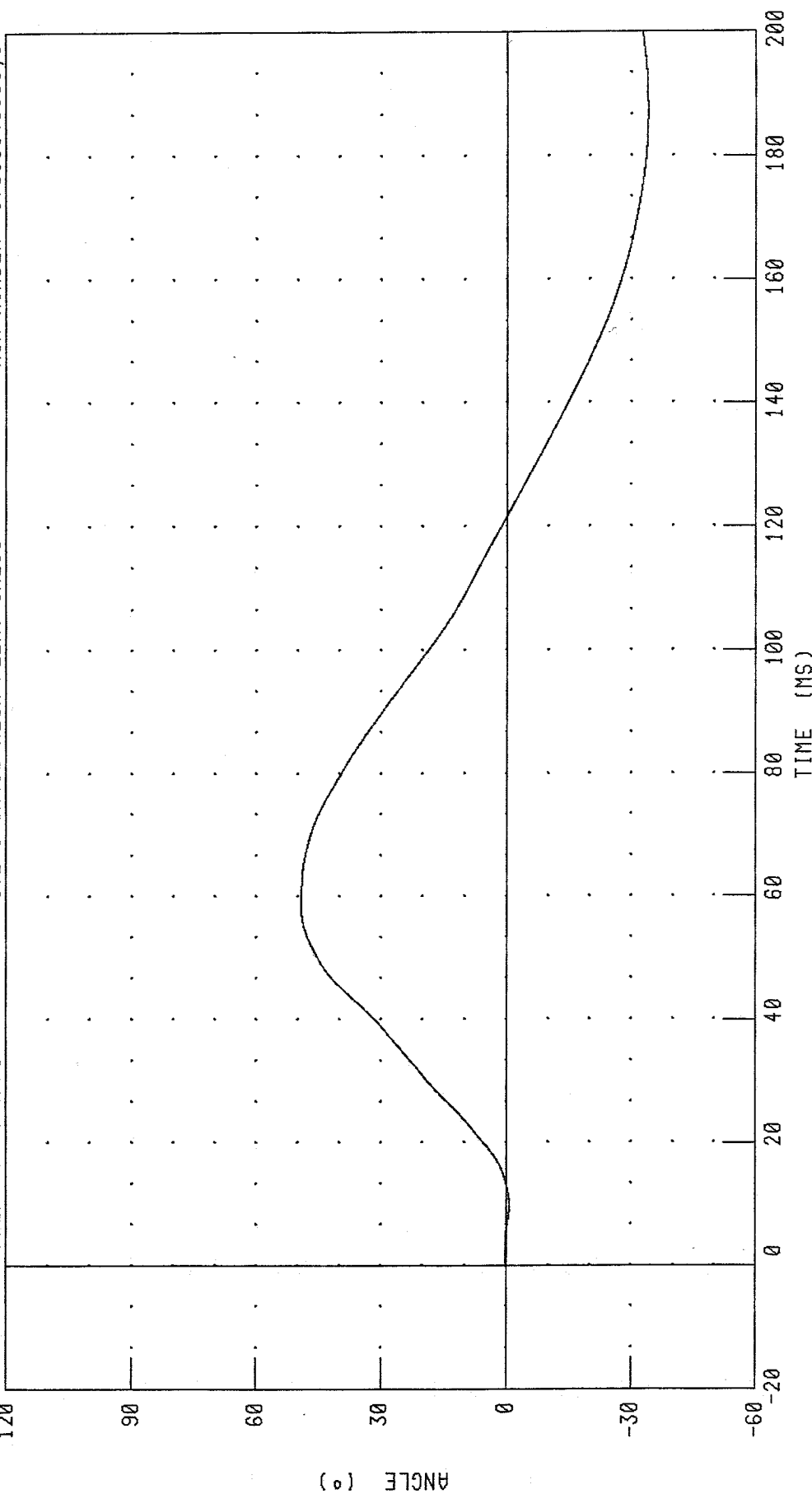
PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: 416C09NF1

572 0 SN416 NECK FLEX. CAL09

RUN NUMBER: 071901.1011;1

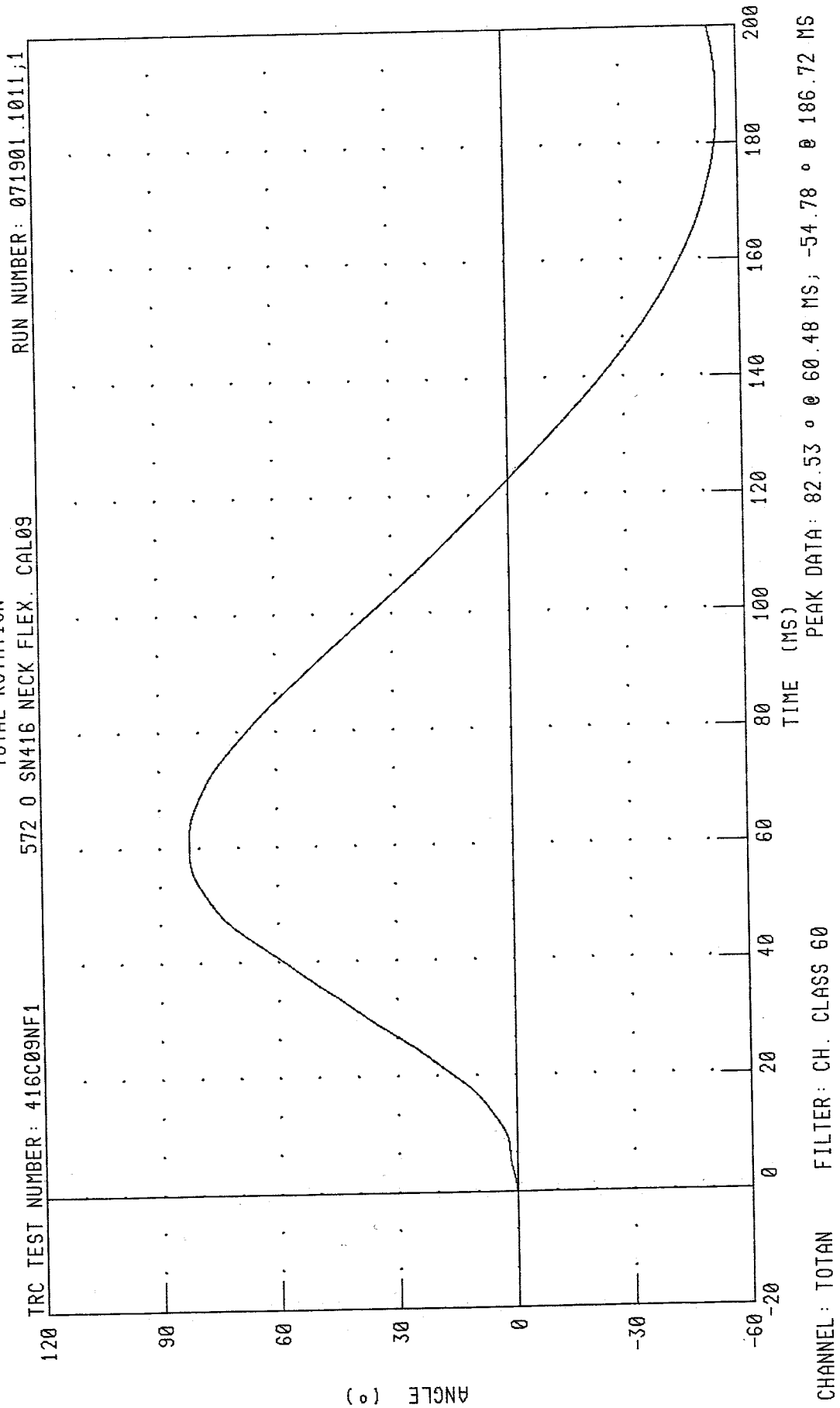


CHANNEL: THETA FILTER: CH. CLASS 60

PEAK DATA: 49.20 ° @ 58.72 MS; -34.01 ° @ 187.20 MS

PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

TOTAL ROTATION



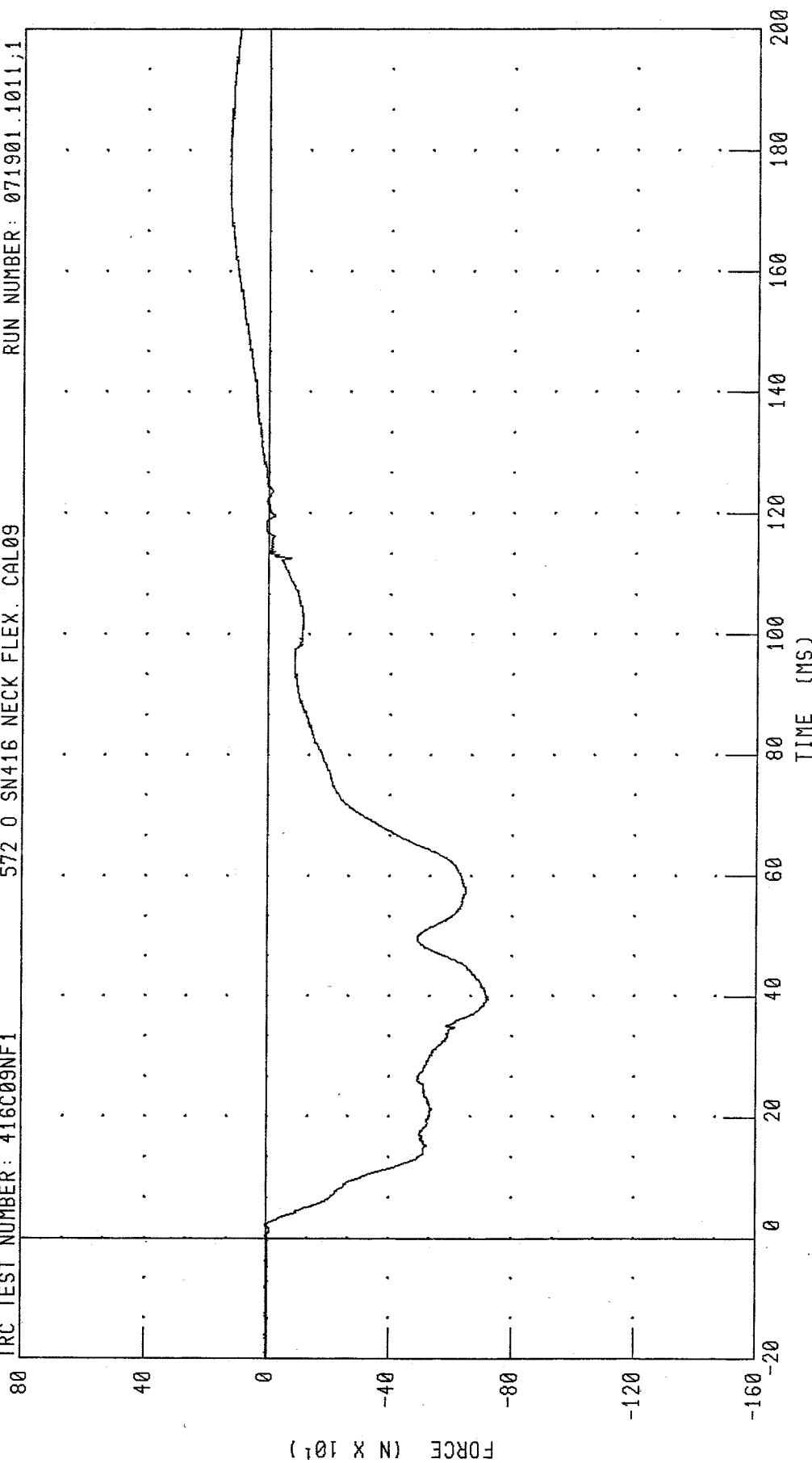
PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

NECK FORCE X AXIS

TRC TEST NUMBER: 416C09NF1

572 0 SN416 NECK FLEX. CAL09

RUN NUMBER: 071901.1011;1



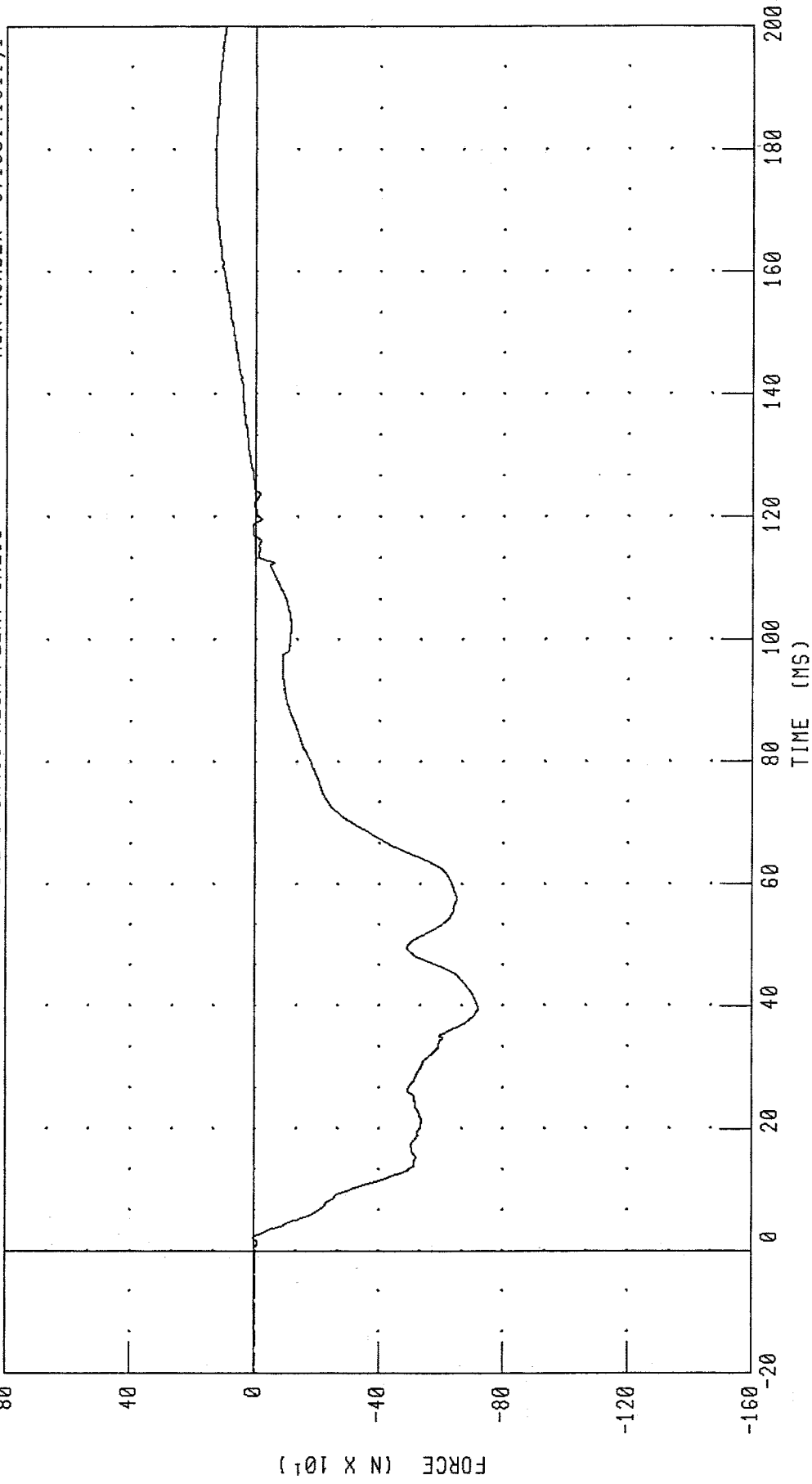
CHANNEL: NEKXF FILTER: CH. CLASS 1000

PEAK DATA: 134.25 N @ 172.88 MS, -721.73 N @ 39.44 MS

PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

NECK FORCE X AXIS FILTERED FOR USE IN OCCIPITAL MOMENT CALCULATION

TRC TEST NUMBER: 416C09NF1 572 0 SN416 NECK FLEX. CAL09 RUN NUMBER: 071901.1011.1



CHANNEL: NEKXFC FILTER: CH. CLASS 600

PEAK DATA: 131.66 N @ 172.96 MS; -720.12 N @ 39.52 MS

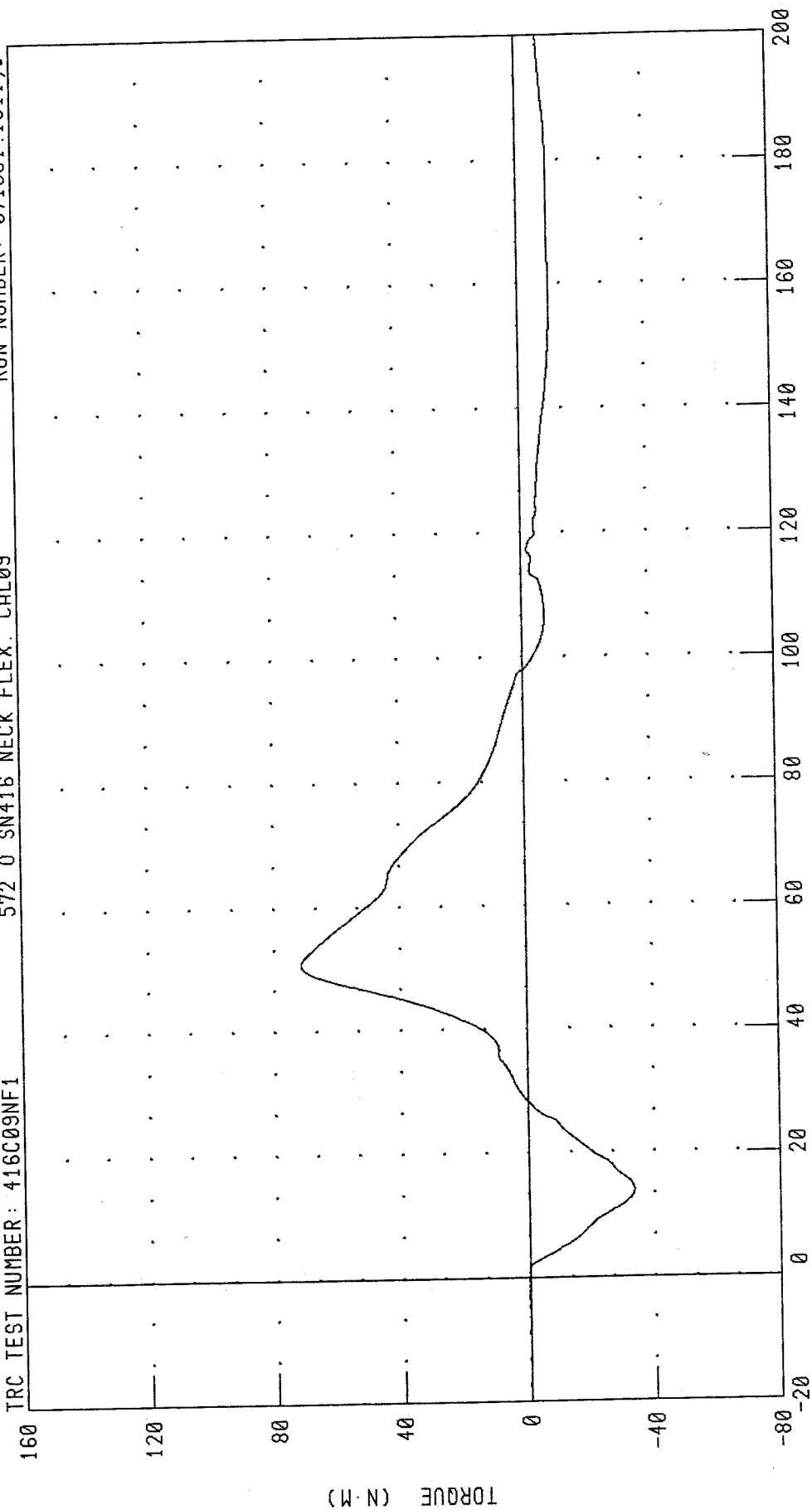
PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

NECK MOMENT Y AXIS

RUN NUMBER: 071901.1011,1

TRC TEST NUMBER: 416C09NF1

572 0 SN416 NECK FLEX. CAL09



TIME (MS)

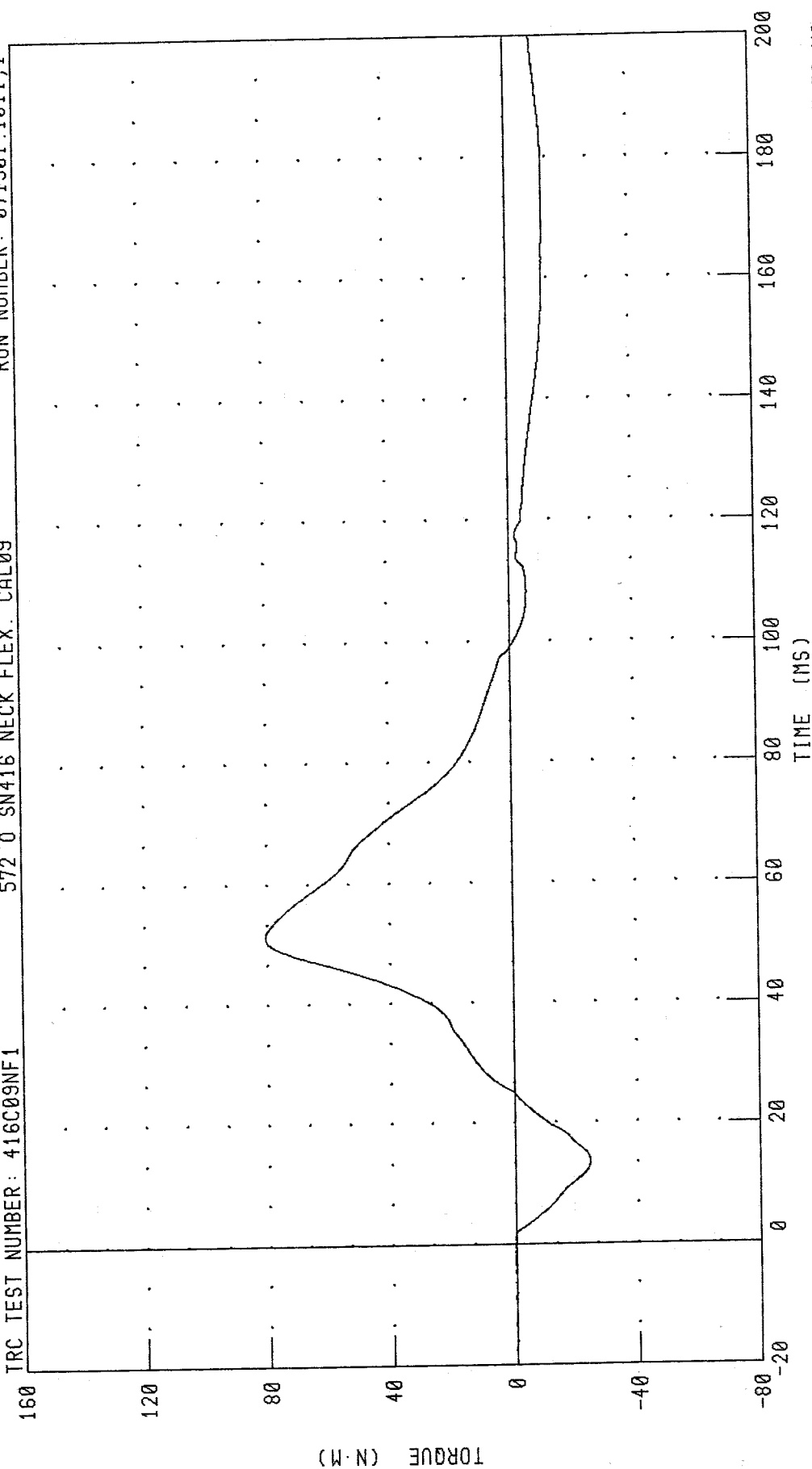
PEAK DATA: 71.35 N·M @ 50.88 MS; -33.55 N·M @ 13.92 MS

CHANNEL: NEKYM FILTER: CH: CLASS 600

PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: 416C09NF1 572 0 SN416 NECK FLEX. CAL09 RUN NUMBER: 071901.1011;1



CHANNEL: NEKOM FILTER: CH. CLASS 600

PEAK DATA: 80.57 N·M @ 51.20 MS, -24.47 N·M @ 13.36 MS

TRANSPORTATION RESEARCH CENTER INC.

HYBRID III SMALL FEMALE

19-JUL-01

NECK EXTENSION TEST - 6 CHANNEL TRANSDUCER

TRC INC. TEST NO: 416C09NE1 572 0 SN416 NECK EXT. CAL 09

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	6.14 M/S
INTEGRATED PENDULUM VELOCITY	10 MS	1.5 - 1.9 M/S	1.65 M/S
	20 MS	3.1 - 3.9 M/S	3.34 M/S
	30 MS	4.6 - 5.6 M/S	4.94 M/S
PEAK D-PLANE ROTATION		99 - 114 DEG.	108.54 DEG.
PEAK MOMENT DURING ROTATION INTERVAL		53 - 65 NM	-56.13 NM
NEGATIVE MOMENT DECAY TIME TO 10 NM		94 - 114 MS	104.32 MS
TIME OF PEAK ROTATION AFTER PEAK MOMENT		0 - 10 MS	5.28 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 071901.1040;1

		TOTALN		(deg		)		Min, Max values =		75.896 @		50.0000		108.542 @		76.9600	
msec																	
1175	50.0000	-->	75.896	76.069	76.243	76.416	76.589	76.763	76.936	77.108	77.281	77.454					
1185	50.8000	-->	77.626	77.798	77.970	78.142	78.314	78.486	78.657	78.828	78.999	79.169					
1195	51.6000	-->	79.340	79.510	79.679	79.849	80.018	80.187	80.355	80.524	80.691	80.859					
1205	52.4000	-->	81.026	81.193	81.359	81.525	81.691	81.856	82.021	82.185	82.349	82.513					
1215	53.2000	-->	82.676	82.839	83.002	83.164	83.326	83.487	83.649	83.810	83.970	84.131					
1225	54.0000	-->	84.291	84.451	84.610	84.770	84.929	85.088	85.246	85.405	85.563	85.721					
1235	54.8000	-->	85.879	86.036	86.193	86.350	86.506	86.662	86.817	86.973	87.127	87.282					
1245	55.6000	-->	87.436	87.589	87.742	87.895	88.047	88.198	88.349	88.499	88.649	88.799					
1255	56.4000	-->	88.948	89.096	89.243	89.391	89.537	89.683	89.828	89.973	90.118	90.261					
1265	57.2000	-->	90.405	90.547	90.690	90.831	90.973	91.113	91.254	91.393	91.533	91.671					
1275	58.0000	-->	91.810	91.947	92.084	92.221	92.357	92.493	92.628	92.763	92.897	93.031					
1285	58.8000	-->	93.164	93.297	93.429	93.561	93.692	93.822	93.953	94.082	94.211	94.340					
1295	59.6000	-->	94.468	94.595	94.722	94.848	94.974	95.099	95.223	95.347	95.471	95.593					
1305	60.4000	-->	95.715	95.837	95.958	96.078	96.198	96.317	96.435	96.553	96.670	96.787					
1315	61.2000	-->	96.303	96.419	96.533	96.646	96.757	96.867	96.976	97.084	97.192	97.300					
1325	62.0000	-->	98.032	98.142	98.251	98.360	98.468	98.575	98.682	98.788	98.893	98.998					
1335	62.8000	-->	99.102	99.206	99.309	99.411	99.512	99.613	99.713	99.812	99.911	100.009					
1345	63.6000	-->	100.106	100.202	100.298	100.393	100.487	100.580	100.673	100.765	100.856	100.947					
1355	64.4000	-->	101.037	101.126	101.215	101.303	101.390	101.477	101.564	101.649	101.734	101.819					
1365	65.2000	-->	101.903	101.987	102.070	102.153	102.235	102.317	102.398	102.479	102.560	102.641					
1375	66.0000	-->	102.721	102.800	102.880	102.959	103.038	103.116	103.195	103.273	103.351	103.428					
1385	66.8000	-->	103.505	103.582	103.659	103.736	103.812	103.888	103.964	104.039	104.114	104.189					
1395	67.6000	-->	104.263	104.337	104.410	104.483	104.556	104.628	104.699	104.770	104.841	104.911					
1405	68.4000	-->	104.980	105.049	105.118	105.185	105.253	105.319	105.385	105.450	105.515	105.579					
1415	69.2000	-->	105.642	105.704	105.766	105.826	105.887	105.946	106.004	106.062	106.119	106.175					
1425	70.0000	-->	106.230	106.284	106.337	106.390	106.442	106.493	106.543	106.593	106.641	106.689					
1435	70.8000	-->	106.736	106.783	106.828	106.873	106.917	106.961	107.003	107.045	107.086	107.126					
1445	71.6000	-->	107.166	107.205	107.243	107.281	107.317	107.354	107.392	107.424	107.458	107.492					
1455	72.4000	-->	107.525	107.558	107.590	107.621	107.652	107.682	107.712	107.741	107.770	107.798					
1465	73.2000	-->	107.826	107.854	107.881	107.907	107.933	107.959	107.984	108.008	108.033	108.057					
1475	74.0000	-->	108.080	108.103	108.125	108.147	108.169	108.190	108.211	108.231	108.250	108.269					
1485	74.8000	-->	108.288	108.306	108.323	108.340	108.356	108.372	108.387	108.401	108.415	108.428					
1495	75.6000	-->	108.441	108.452	108.463	108.474	108.483	108.492	108.500	108.508	108.515	108.521					
1505	76.4000	-->	108.526	108.530	108.534	108.537	108.539	108.541	108.542	108.542	108.542	108.541					
1515	77.2000	-->	108.539	108.537	108.534	108.530	108.526	108.521	108.516	108.510	108.504	108.497					
1525	78.0000	-->	108.490	108.482	108.473	108.465	108.455	108.446	108.436	108.425	108.414	108.403					
1535	78.8000	-->	108.392	108.380	108.368	108.355	108.342	108.329	108.316	108.302	108.288	108.273					
1545	79.6000	-->	108.259	108.243	108.228	108.212	108.196	108.180	108.163	108.146	108.128	108.111					
1555	80.4000	-->	108.092	108.074	108.054	108.035	108.015	107.995	107.974	107.953	107.931	107.909					
1565	81.2000	-->	107.886	107.863	107.840	107.816	107.791	107.766	107.741	107.716	107.689	107.663					
1575	82.0000	-->	107.636	107.608	107.580	107.552	107.523	107.494	107.465	107.435	107.405	107.374					
1585	82.8000	-->	107.343	107.311	107.280	107.247	107.215	107.182	107.148	107.115	107.080	107.046					
1595	83.6000	-->	107.011	106.975	106.940	106.903	106.867	106.830	106.792	106.755	106.716	106.678					
1605	84.4000	-->	106.639	106.599	106.560	106.520	106.479	106.438	106.397	106.356	106.314	106.273					
1615	85.2000	-->	106.230	106.188	106.145	106.102	106.059	106.016	105.973	105.929	105.885	105.841					
1625	86.0000	-->	105.797	105.753	105.708	105.663	105.619	105.574	105.528	105.483	105.437	105.391					
1635	86.8000	-->	105.345	105.299	105.252	105.205	105.157	105.110	105.061	105.013	104.964	104.914					
1645	87.6000	-->	104.864	104.814	104.763	104.712	104.661	104.608	104.556	104.503	104.449	104.395					
1655	88.4000	-->	104.341	104.286	104.231	104.175	104.119	104.062	104.005	103.947	103.889	103.831					
1665	89.2000	-->	103.772	103.713	103.653	103.593	103.532	103.472	103.410	103.348	103.286	103.224					

19-JUL-01 10:45

[DUMMY.416C09]416C09NE1D.RAD;1

TRC INC. 416C09NE1 01200

TOTAL Deltax = 0.080000 msec

572 O SN416 NECK EXT. CAL 09

Npts = 8000; IP0 = 550; Filter = BLPP

6.1 m/sec

100/ 250/ -16

msec	TOTAL	(deg	)	Min, Max values =	75.896 @	50.0000	108.542 @	76.9600
1675	103.161	103.098	103.034	102.970	102.906	102.841	102.711	102.646
1685	102.513	102.447	102.380	102.313	102.246	102.178	102.041	101.973
1695	101.834	101.765	101.695	101.625	101.554	101.483	101.341	101.269
1705	101.124	101.052	100.979	100.905	100.832	100.757	100.608	100.533
1715	100.382	100.306	100.230	100.153	100.076	99.999	99.843	99.764
1725	99.606	99.527	99.447	99.367	99.287	99.207	99.045	98.964
1735	98.800	98.718	98.636	98.553	98.470	98.387	98.219	98.135
1745	97.966	97.882	97.796	97.711	97.625	97.539	97.367	97.280
1755	97.106	97.018	96.930	96.842	96.754	96.666	96.488	96.399
1765	96.221	96.131	96.042	95.952	95.862	95.772	95.591	95.501
1775	95.320	95.229	95.138	95.046	94.955	94.863	94.679	94.587
1785	94.402	94.309	94.216	94.123	94.029	93.935	93.747	93.653
1795	93.463	93.368	93.273	93.178	93.082	92.987		

msec	NEKOM	(N-m	)	Min, Max values =	-56.126 @	71.6800	-17.009 @	94.6400
1335	62.8000 -->	-45.661	-45.755	-45.849	-45.943	-46.038	-46.134	-46.234
1345	63.6000 -->	-46.664	-46.769	-46.869	-46.965	-47.059	-47.155	-47.258
1355	64.4000 -->	-47.728	-47.843	-47.958	-48.073	-48.192	-48.314	-48.438
1365	65.2000 -->	-48.931	-49.056	-49.182	-49.308	-49.436	-49.565	-49.691
1375	66.0000 -->	-50.183	-50.312	-50.445	-50.576	-50.704	-50.827	-50.946
1385	66.8000 -->	-51.403	-51.523	-51.649	-51.781	-51.912	-52.039	-52.160
1395	67.6000 -->	-52.603	-52.708	-52.812	-52.919	-53.031	-53.144	-53.254
1405	68.4000 -->	-53.656	-53.763	-53.869	-53.968	-54.059	-54.144	-54.226
1415	69.2000 -->	-54.551	-54.624	-54.695	-54.765	-54.836	-54.911	-54.991
1425	70.0000 -->	-55.307	-55.365	-55.416	-55.464	-55.516	-55.571	-55.625
1435	70.8000 -->	-55.793	-55.827	-55.862	-55.900	-55.942	-55.986	-56.029
1445	71.6000 -->	-56.123	-56.126	-56.126	-56.125	-56.124	-56.123	-56.119
1455	72.4000 -->	-56.069	-56.042	-56.017	-55.996	-55.976	-55.950	-55.915
1465	73.2000 -->	-55.731	-55.693	-55.656	-55.616	-55.570	-55.513	-55.444
1475	74.0000 -->	-55.082	-54.996	-54.920	-54.854	-54.795	-54.736	-54.670
1485	74.8000 -->	-54.348	-54.264	-54.177	-54.088	-53.996	-53.902	-53.802
1495	75.6000 -->	-53.319	-53.181	-53.044	-52.912	-52.785	-52.660	-52.532
1505	76.4000 -->	-51.949	-51.797	-51.645	-51.491	-51.333	-51.171	-51.001
1515	77.2000 -->	-50.232	-50.038	-49.846	-49.652	-49.452	-49.246	-49.034
1525	78.0000 -->	-48.177	-47.975	-47.779	-47.588	-47.398	-47.210	-47.021
1535	78.8000 -->	-46.274	-46.079	-45.877	-45.668	-45.454	-45.236	-45.015
1545	79.6000 -->	-44.141	-43.919	-43.690	-43.458	-43.226	-42.996	-42.768
1555	80.4000 -->	-41.903	-41.708	-41.516	-41.321	-41.120	-40.917	-40.717
1565	81.2000 -->	-39.972	-39.783	-39.588	-39.388	-39.188	-38.995	-38.806
1575	82.0000 -->	-38.029	-37.838	-37.662	-37.499	-37.344	-37.189	-37.027
1585	82.8000 -->	-36.345	-36.159	-35.965	-35.765	-35.562	-35.361	-35.167
1595	83.6000 -->	-34.400	-34.212	-34.035	-33.867	-33.700	-33.528	-33.347
1605	84.4000 -->	-32.572	-32.395	-32.227	-32.069	-31.919	-31.772	-31.620
1615	85.2000 -->	-30.938	-30.770	-30.608	-30.454	-30.308	-30.167	-30.023
1625	86.0000 -->	-29.327	-29.148	-28.976	-28.813	-28.653	-28.492	-28.329
1635	86.8000 -->	-27.645	-27.478	-27.313	-27.149	-26.984	-26.821	-26.659
1645	87.6000 -->	-26.097	-25.975	-25.848	-25.709	-25.557	-25.395	-25.228
1655	88.4000 -->	-24.633	-24.505	-24.378	-24.248	-24.115	-23.980	-23.846
1665	89.2000 -->	-23.308	-23.180	-23.056	-22.935	-22.816	-22.702	-22.589
1675	90.0000 -->	-22.098	-21.977	-21.861	-21.750	-21.640	-21.529	-21.418
1685	90.8000 -->	-20.962	-20.845	-20.735	-20.636	-20.546	-20.463	-20.379
1695	91.6000 -->	-19.981	-19.881	-19.789	-19.704	-19.622	-19.538	-19.451
1705	92.4000 -->	-19.130	-19.057	-18.978	-18.893	-18.804	-18.719	-18.640
1715	93.2000 -->	-18.358	-18.287	-18.209	-18.124	-18.034	-17.946	-17.863
1725	94.0000 -->	-17.590	-17.529	-17.464	-17.390	-17.311	-17.232	-17.156
1635	86.8000 -->	-27.645	-27.478	-27.313	-27.149	-26.984	-26.821	-26.659
1645	87.6000 -->	-26.097	-25.975	-25.848	-25.709	-25.557	-25.395	-25.228
1655	88.4000 -->	-24.633	-24.505	-24.378	-24.248	-24.115	-23.980	-23.846
1665	89.2000 -->	-23.308	-23.180	-23.056	-22.935	-22.816	-22.702	-22.589
1675	90.0000 -->	-22.098	-21.977	-21.861	-21.750	-21.640	-21.529	-21.418
1685	90.8000 -->	-20.962	-20.845	-20.735	-20.636	-20.546	-20.463	-20.379
1695	91.6000 -->	-19.981	-19.881	-19.789	-19.704	-19.622	-19.538	-19.451
1705	92.4000 -->	-19.130	-19.057	-18.978	-18.893	-18.804	-18.719	-18.640
1715	93.2000 -->	-18.358	-18.287	-18.209	-18.124	-18.034	-17.946	-17.863
1725	94.0000 -->	-17.590	-17.529	-17.464	-17.390	-17.311	-17.232	-17.156
1635	86.8000 -->	-27.645	-27.478	-27.313	-27.149	-26.984	-26.821	-26.659
1645	87.6000 -->	-26.097	-25.975	-25.848	-25.709	-25.557	-25.395	-25.228
1655	88.4000 -->	-24.633	-24.505	-24.378	-24.248	-24.115	-23.980	-23.846
1665	89.2000 -->	-23.308	-23.180	-23.056	-22.935	-22.816	-22.702	-22.589
1675	90.0000 -->	-22.098	-21.977	-21.861	-21.750	-21.640	-21.529	-21.418
1685	90.8000 -->	-20.962	-20.845	-20.735	-20.636	-20.546	-20.463	-20.379
1695	91.6000 -->	-19.981	-19.881	-19.789	-19.704	-19.622	-19.538	-19.451
1705	92.4000 -->	-19.130	-19.057	-18.978	-18.893	-18.804	-18.719	-18.640
1715	93.2000 -->	-18.358	-18.287	-18.209	-18.124	-18.034	-17.946	-17.863
1725	94.0000 -->	-17.590	-17.529	-17.464	-17.390	-17.311	-17.232	-17.156
1635	86.8000 -->	-27.645	-27.478	-27.313	-27.149	-26.984	-26.821	-26.659
1645	87.6000 -->	-26.097	-25.975	-25.848	-25.709	-25.557	-25.395	-25.228
1655	88.4000 -->	-24.633	-24.505	-24.378	-24.248	-24.115	-23.980	-23.846
1665	89.2000 -->	-23.308	-23.180	-23.056	-22.935	-22.816	-22.702	-22.589
1675	90.0000 -->	-22.098	-21.977	-21.861	-21.750	-21.640	-21.529	-21.418
1685	90.8000 -->	-20.962	-20.845	-20.735	-20.636	-20.546	-20.463	-20.379
1695	91.6000 -->	-19.981	-19.881	-19.789	-19.704	-19.622	-19.538	-19.451
1705	92.4000 -->	-19.130	-19.057	-18.978	-18.893	-18.804	-18.719	-18.640
1715	93.2000 -->	-18.358	-18.287	-18.209	-18.124	-18.034	-17.946	-17.863
1725	94.0000 -->	-17.590	-17.529	-17.464	-17.390	-17.311	-17.232	-17.156
1635	86.8000 -->	-27.645	-27.478	-27.313	-27.149	-26.984	-26.821	-26.659
1645	87.6000 -->	-26.097	-25.975	-25.848	-25.709	-25.557	-25.395	-25.228
1655	88.4000 -->	-24.633	-24.505	-24.378	-24.248	-24.115	-23.980	-23.846
1665	89.2000 -->	-23.308	-23.180	-23.056	-22.935	-22.816	-22.702	-22.589
1675	90.0000 -->	-22.098	-21.977	-21.861	-21.750	-21.640	-21.529	-21.418
1685	90.8000 -->	-20.962	-20.845	-20.735	-20.636	-20.546	-20.463	-20.379
1695	91.6000 -->	-19.981	-19.881	-19.789	-19.704	-19.622	-19.538	-19.451
1705	92.4000 -->	-19.130	-19.057	-18.978	-18.893	-18.804	-18.719	-18.640
1715	93.2000 -->	-18.358	-18.287	-18.209	-18.124	-18.034	-17.946	-17.863
1725	94.0000 -->	-17.590	-17.529	-17.464	-17.390	-17.311	-17.232	-17.156
1635	86.8000 -->	-27.645	-27.478	-27.313	-27.149	-26.984	-26.821	-26.659
1645	87.6000 -->	-26.097	-25.975	-25.848	-25.709	-25.557	-25.395	-25.228
1655	88.4000 -->	-24.633	-24.505	-24.378	-24.248	-24.115	-23.980	-23.846
1665	89.2000 -->	-23.308	-23.180	-23.056	-22.935	-22.816	-22.702	-22.589
1675	90.0000 -->	-22.098	-21.977	-21.861	-21.750	-21.640	-21.529	-21.418
1685	90.8000 -->	-20.962	-20.845	-20.735	-20.636	-20.546	-20.463	-20.379
1695	91.6000 -->	-19.981	-19.881	-19.789	-19.704	-19.622	-19.538	-19.451
1705	92.4000 -->	-19.130	-19.057	-18.978	-18.893	-18.804	-18.719	-18.640
1715	93.2000 -->	-18.358	-18.287	-18.209	-18.124	-18.034	-17.946	-17.863
1725	94.0000 -->	-17.590	-17.529	-17.464	-17.390	-17.311	-17.232	-17.156
1635	86.8000 -->	-27.645	-27.478	-27.313	-27.149	-26.984	-26.821	-26.659
1645	87.6000 -->	-26.097	-25.975	-25.848	-25.709	-25.557	-25.395	-25.228
1655	88.4000 -->	-24.633	-24.505	-24.378	-24.248	-24.115	-23.980	-23.846
1665	89.2000 -->	-23.308	-23.180	-23.056	-22.935	-22.816	-22.702	-22.589
1675	90.0000 -->	-22.098	-21.977	-21.861	-21.750	-21.640	-21.529	-21.418
1685	90.8000 -->	-20.962	-20.845	-20.735	-20.636	-20.546	-20.463	-20.379
1695	91.6000 -->	-19.981	-19.881	-19.789	-19.704	-19.622	-19.538	-19.451
1705	92.4000 -->	-19.130	-19.057	-18.978	-18.893	-18.804	-18.719	-18.640
1715	93.2000 -->	-18.358	-18.287	-18.209	-18.124	-18.034	-17.946	-17.863
1725	94.0000 -->	-17.590	-17.529	-17.464	-17.390	-17.311	-17.232	-17.156
1635	86.8000 -->	-27.645	-27.478	-27.313	-27.149	-26.984	-26.821	-26.659
1645	87.6000 -->	-26.097	-25.975	-25.848	-25.709	-25.557	-25.395	-25.228
1655	88.4000 -->	-24.633	-24.505	-24.378	-24.248	-24.115	-23.980	-23.846
1665	89.2000 -->	-23.308	-23.180	-23.056	-22.935	-22.816	-22.702	-22.589
1675	90.0000 -->	-22.098	-21.977	-21.861	-21.750	-21.640	-21.529	-21.418
1685	90.8000 -->	-20.962	-20.845	-20.735	-20.636	-20.546	-20.463	-20.379
1695	91.6000 -->	-19.981	-19.881	-19.789	-19.704	-19.622	-19.538	-19.451
1705	92.4000 -->	-19.130	-19.057	-18.978	-18.893	-18.804	-18.719	-18.640
1715	93.2000 -->	-18.358	-18.287	-18.209	-18.124	-18.034	-17.946	-17.863
1725	94.0000 -->	-17.590	-17.529	-17.464	-17.390	-17.311	-17.232	-17.156
1635	86.8000 -->	-27.645	-27.478	-27.313	-27.149	-26.984	-26.821	-26.659
1645	87.6000 -->	-26.097	-25.975	-25.848	-25.709	-25.557	-25.395	-25.228
1655	88.4000 -->	-24.633	-24.505	-24.378	-24.248	-24.115	-23.980	-23.84

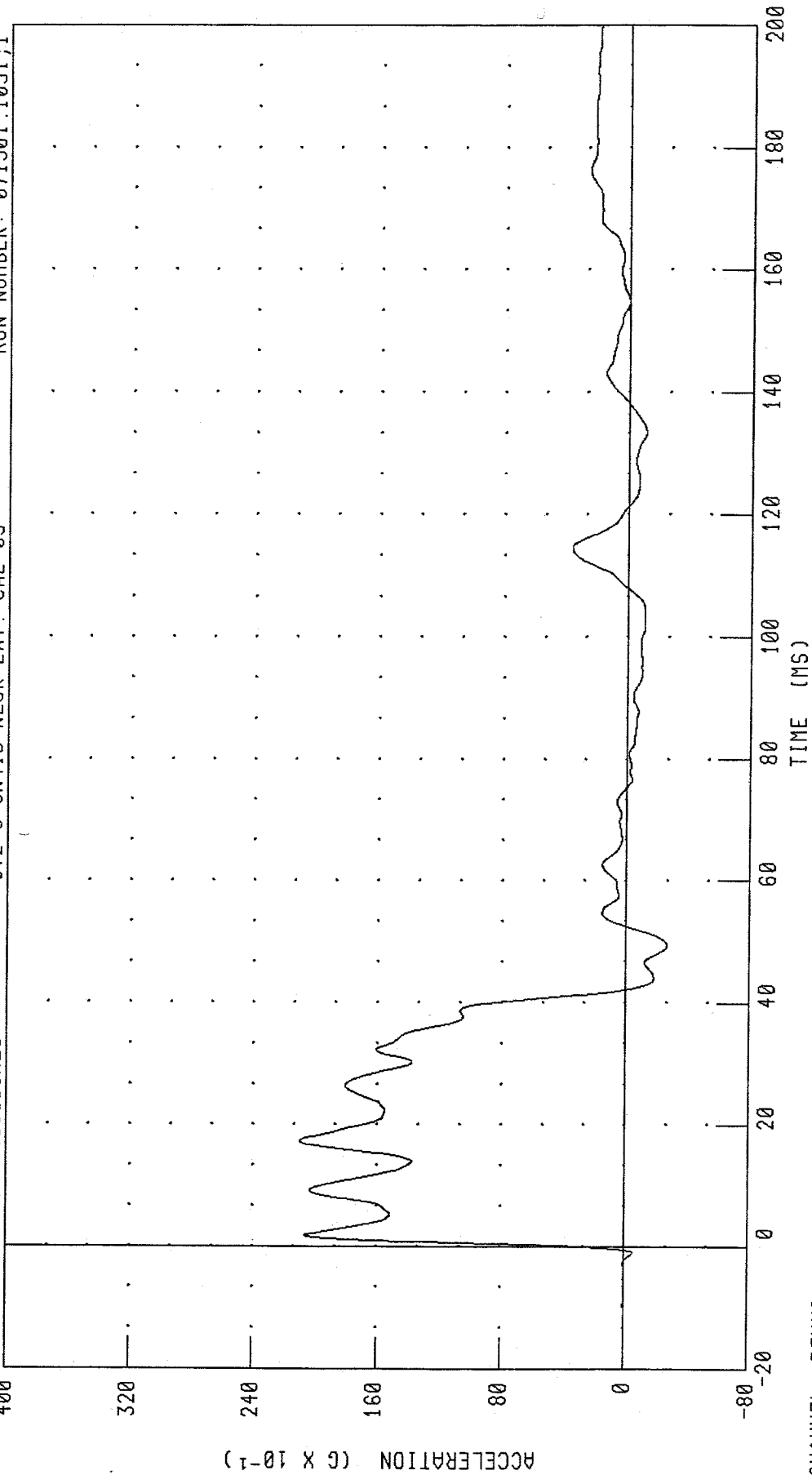
572 O SN416 NECK EXT. CAL 09 6.1 m/sec
Npts = 8000; IP0 = 550; Filter = BLPP 1000/ 2500/ -16

[DUMMY.416C09J416C09NE1D.RAD;1
TRC INC. 416C09NE1 01200
NEKOM Deltax = 0.080000 msec

	msec	NEKOM	(N-m	)	Min, Max values =	-22.098 @	90.0000	-3.925 @	120.0000
1675	90.0000 -->	-22.098	-21.977	-21.861	-21.750	-21.640	-21.529	-21.418	-21.307
1685	90.8000 -->	-20.962	-20.845	-20.735	-20.636	-20.546	-20.463	-20.379	-20.289
1695	91.6000 -->	-19.981	-19.881	-19.789	-19.704	-19.622	-19.538	-19.451	-19.365
1705	92.4000 -->	-19.130	-19.057	-18.978	-18.893	-18.804	-18.719	-18.640	-18.565
1715	93.2000 -->	-18.358	-18.287	-18.209	-18.124	-18.034	-17.946	-17.863	-17.786
1725	94.0000 -->	-17.590	-17.529	-17.464	-17.390	-17.311	-17.232	-17.156	-17.082
1735	94.8000 -->	-16.869	-16.802	-16.736	-16.668	-16.597	-16.524	-16.451	-16.378
1745	95.6000 -->	-16.184	-16.129	-16.074	-16.012	-15.940	-15.861	-15.778	-15.696
1755	96.4000 -->	-15.486	-15.425	-15.363	-15.294	-15.218	-15.138	-15.061	-14.990
1765	97.2000 -->	-14.805	-14.746	-14.685	-14.622	-14.558	-14.495	-14.430	-14.362
1775	98.0000 -->	-14.149	-14.092	-14.041	-13.992	-13.939	-13.879	-13.811	-13.740
1785	98.8000 -->	-13.546	-13.487	-13.427	-13.366	-13.306	-13.247	-13.187	-13.125
1795	99.6000 -->	-12.940	-12.888	-12.841	-12.795	-12.750	-12.703	-12.654	-12.602
1805	100.4000 -->	-12.432	-12.374	-12.317	-12.264	-12.212	-12.160	-12.106	-12.055
1815	101.2000 -->	-11.895	-11.833	-11.765	-11.697	-11.638	-11.592	-11.557	-11.525
1825	102.0000 -->	-11.374	-11.304	-11.231	-11.161	-11.095	-11.036	-10.988	-10.949
1835	102.8000 -->	-10.845	-10.797	-10.745	-10.692	-10.641	-10.594	-10.547	-10.497
1845	103.6000 -->	-10.327	-10.281	-10.244	-10.217	-10.192	-10.164	-10.132	-10.094
1855	104.4000 -->	-9.940	-9.882	-9.826	-9.773	-9.725	-9.681	-9.639	-9.599
1865	105.2000 -->	-9.467	-9.414	-9.360	-9.306	-9.257	-9.217	-9.189	-9.169
1875	106.0000 -->	-9.107	-9.069	-9.026	-8.983	-8.946	-8.915	-8.889	-8.865
1885	106.8000 -->	-8.786	-8.756	-8.722	-8.684	-8.644	-8.603	-8.563	-8.526
1895	107.6000 -->	-8.412	-8.375	-8.343	-8.316	-8.290	-8.258	-8.214	-8.162
1905	108.4000 -->	-8.026	-8.001	-7.979	-7.955	-7.929	-7.903	-7.882	-7.866
1915	109.2000 -->	-7.823	-7.809	-7.794	-7.774	-7.745	-7.704	-7.659	-7.617
1925	110.0000 -->	-7.539	-7.521	-7.505	-7.491	-7.475	-7.458	-7.437	-7.414
1935	110.8000 -->	-7.331	-7.295	-7.259	-7.232	-7.215	-7.205	-7.195	-7.182
1945	111.6000 -->	-7.092	-7.058	-7.028	-6.999	-6.967	-6.936	-6.908	-6.883
1955	112.4000 -->	-6.838	-6.828	-6.817	-6.801	-6.781	-6.758	-6.735	-6.713
1965	113.2000 -->	-6.666	-6.649	-6.627	-6.603	-6.575	-6.546	-6.520	-6.499
1975	114.0000 -->	-6.453	-6.437	-6.419	-6.400	-6.381	-6.362	-6.342	-6.322
1985	114.8000 -->	-6.264	-6.244	-6.224	-6.206	-6.188	-6.172	-6.157	-6.144
1995	115.6000 -->	-6.078	-6.040	-5.998	-5.958	-5.925	-5.898	-5.876	-5.856
2005	116.4000 -->	-5.778	-5.742	-5.707	-5.676	-5.651	-5.628	-5.605	-5.578
2015	117.2000 -->	-5.478	-5.440	-5.399	-5.356	-5.313	-5.272	-5.235	-5.198
2025	118.0000 -->	-5.078	-5.036	-4.995	-4.958	-4.924	-4.890	-4.854	-4.818
2035	118.8000 -->	-4.689	-4.634	-4.576	-4.521	-4.473	-4.430	-4.389	-4.346
2045	119.6000 -->	-4.187	-4.131	-4.078	-4.026	-3.975	-3.925	-3.879	-3.833

PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION
PENDULUM DECELERATION

TRC TEST NUMBER: 416C09NE1 572 0 SN416 NECK EXT. CAL 09 RUN NUMBER: 071901.1051;1



CHANNEL: PENXC FILTER: CH. CLASS 180 PEAK DATA: 20.96 G @ 17.36 MS; -2.66 G @ 49.36 MS

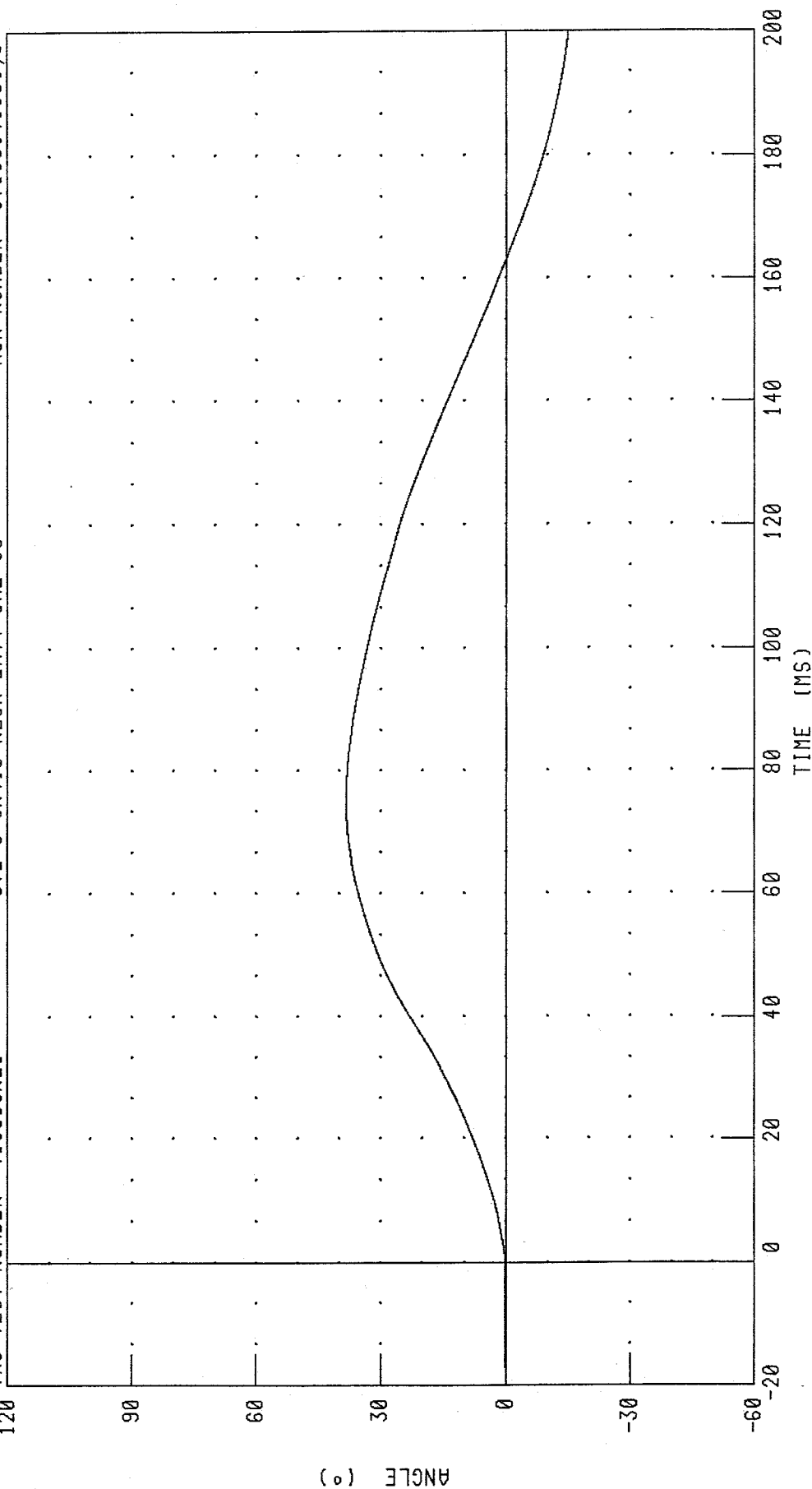
PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER: 416C09NE1

572 0 SN416 NECK EXT. CAL 09

RUN NUMBER: 071901.1051;1



CHANNEL: BETA

FILTER: CH. CLASS 60

PEAK DATA: 38.30 ° @ 75.68 MS; -15.21 ° @ 200.00 MS

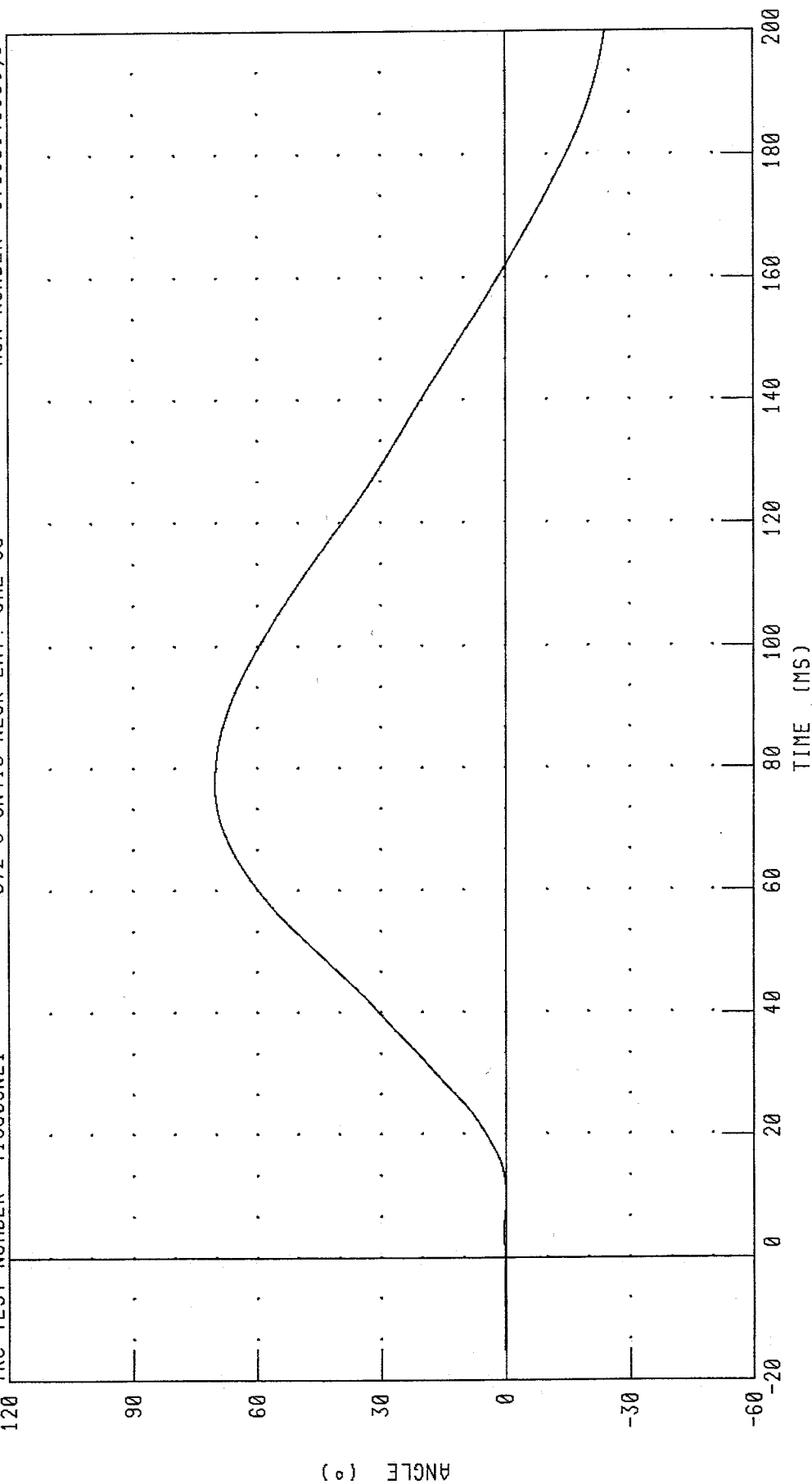
PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: 416C09NE1

572 0 SN416 NECK EXT. CAL 09

RUN NUMBER: 071901.1051,1



CHANNEL: THETA FILTER: CH. CLASS 60

PEAK DATA: 70.27 ° @ 77.36 MS; -24.17 ° @ 200.00 MS

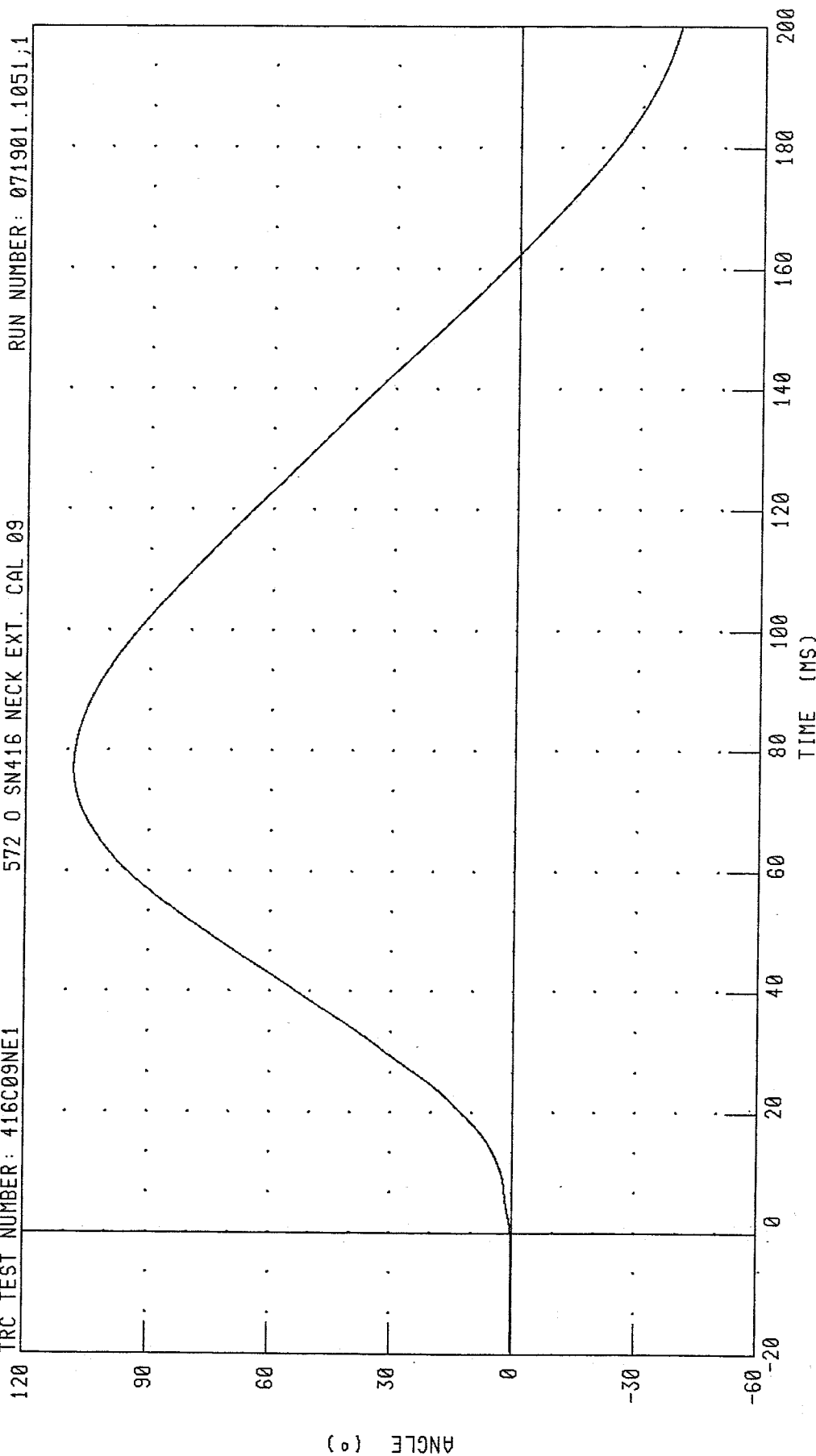
PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

TOTAL ROTATION

TRC TEST NUMBER: 416C09NE1

572 0 SN416 NECK EXT. CAL 09

RUN NUMBER: 071901.1051.1



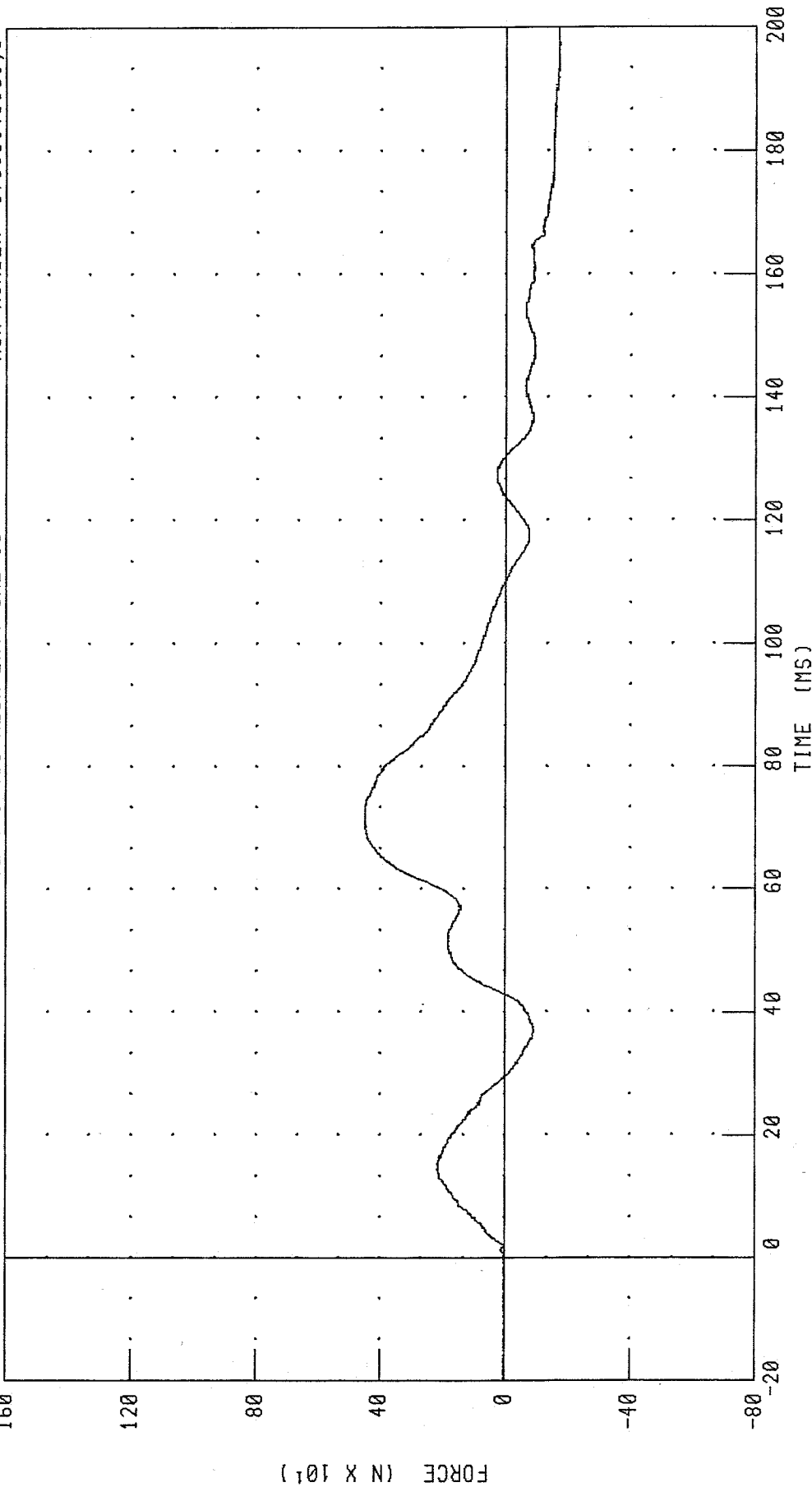
CHANNEL: TOTAN FILTER: CH. CLASS 60

PEAK DATA: 108.54 ° @ 76.96 MS; -39.38 ° @ 200.00 MS

PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

NECK FORCE X AXIS

TRC TEST NUMBER: 416C09NE1 572 0 SN416 NECK EXT. CAL 09 RUN NUMBER: 071901.1051;1



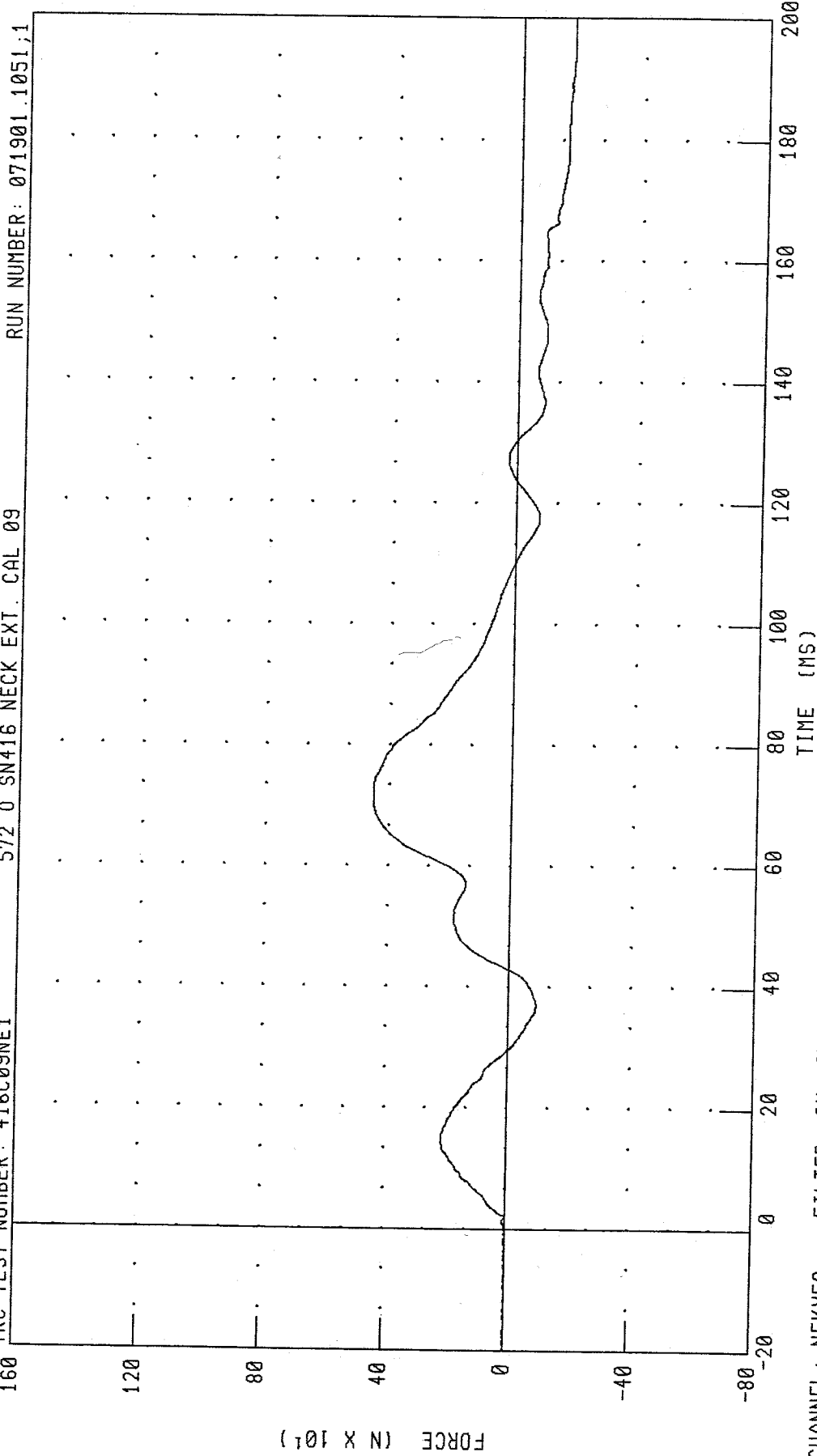
CHANNEL: NEKXF FILTER: CH. CLASS 1000 PEAK DATA: 450.76 N @ 69.84 MS; -174.93 N @ 197.04 MS

PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION
NECK FORCE X AXIS FILTERED FOR USE IN OCCIPITAL MOMENT CALCULATION

TRC TEST NUMBER: 416C09NE1

572 0 SN416 NECK EXT. CAL 09

RUN NUMBER: 071901.1051;1



CHANNEL: NEKXFC FILTER: CH. CLASS 600

PEAK DATA: 450.92 N @ 73.36 MS; -171.54 N @ 197.12 MS

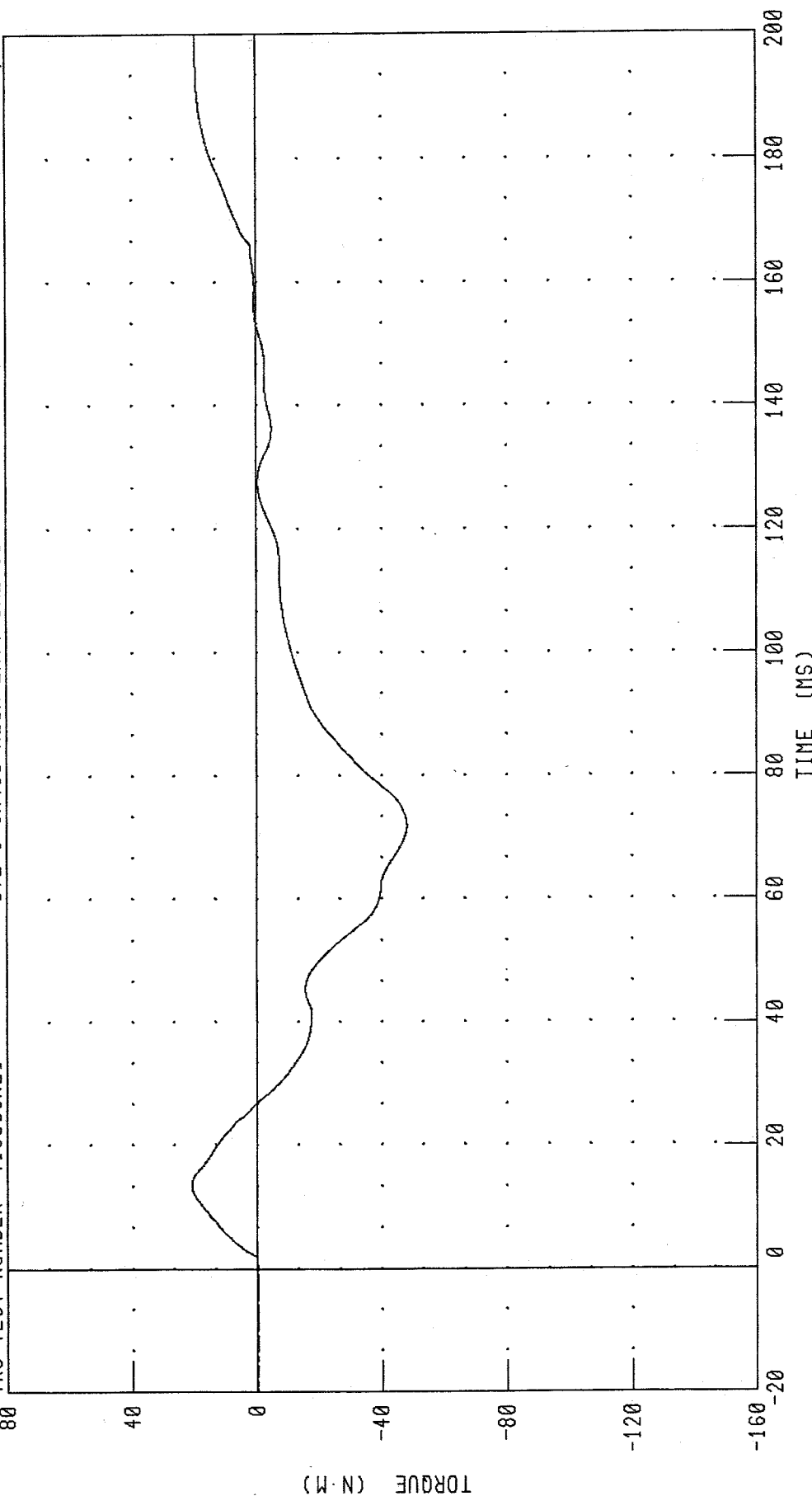
PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

NECK MOMENT Y AXIS

TRC TEST NUMBER: 416C09NE1

572 0 SN416 NECK EXT. CAL 09

RUN NUMBER: 071901.1051;1



CHANNEL: NEKYM

FILTER: CH. CLASS 600

PEAK DATA: 20.93 N·M @ 13.28 MS; -48.11 N·M @ 71.68 MS

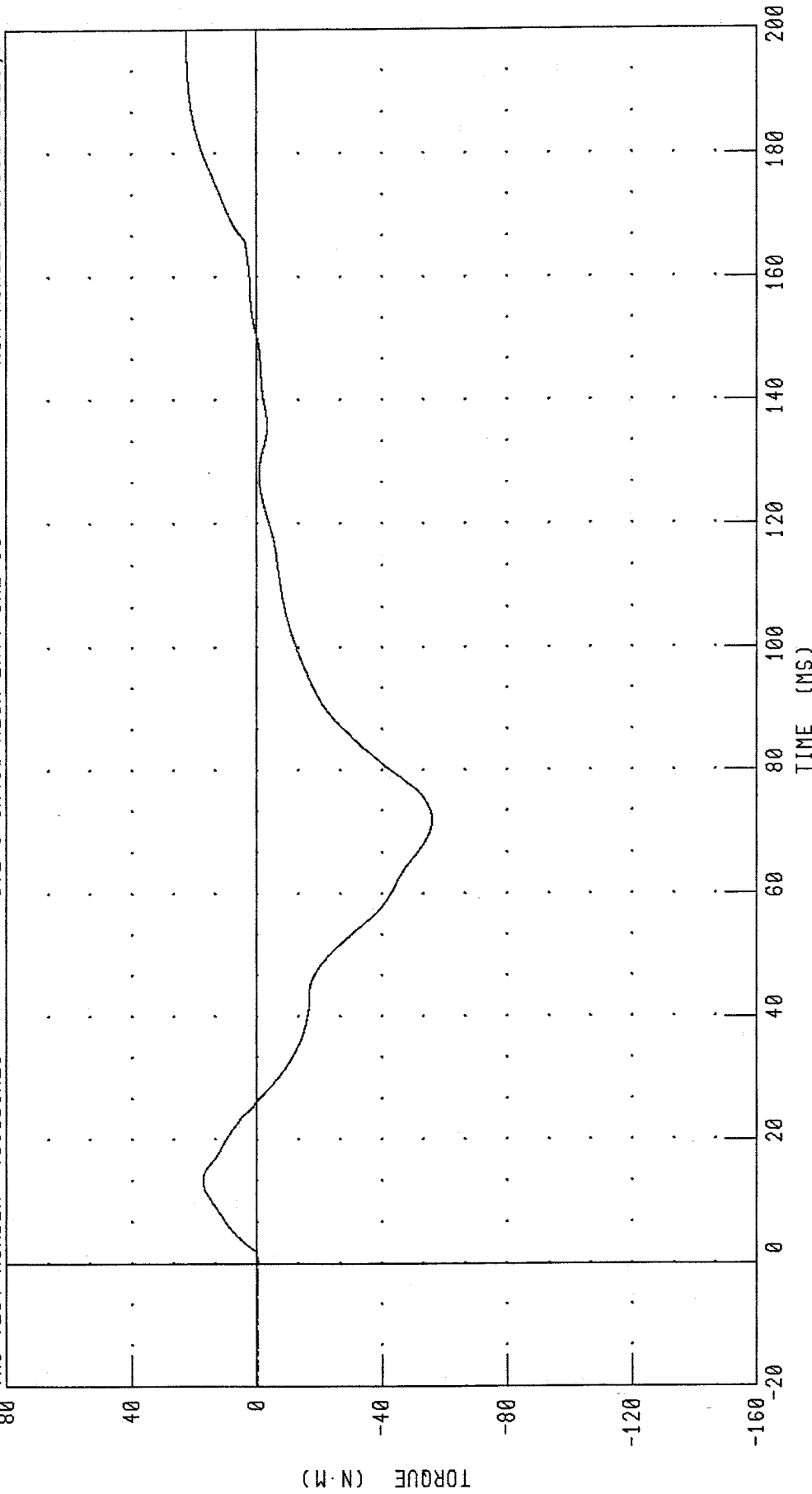
PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: 416C09NE1

572 0 SN416 NECK EXT. CAL 09

RUN NUMBER: 071901.1051,1



CHANNEL: NEKOM

FILTER: CH. CLASS 600

TIME (MS)

PEAK DATA: 22.58 N·M @ 200.00 MS; -56.13 N·M @ 71.68 MS

TRANSPORTATION RESEARCH CENTER INC.

THORAX IMPACT TEST

HYBRID III SMALL FEMALE

31-JUL-01

TRC INC.

TEST NO: 416C09TH1

572 0 SN416 THORAX CAL9

TEST PARAMETER	HIGH SPEED TEST	TEST RESULTS
	SPECIFICATION	
TEMPERATURE	20.6-22.2 DEG. C	22.2 DEG. C
RELATIVE HUMIDITY	10 - 70 %	63.0 %
PENDULUM VELOCITY	6.59 - 6.83 M/S	6.62 M/S
MAXIMUM DEFLECTION	50 - 58 MM	55.8 MM
PEAK RESISTIVE FORCE DURING DEFLECTION INTERVAL	3900 - 4400 N	4265. N
PEAK FORCE DURING 18 TO 50MN DEFLECTION	<= 105%	94.1%
INTERNAL HYSTERESIS	69% - 85%	74.0%

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 073101.0940;1

[DUMMY.416C09]416C09TH1D.RAD;1
TRC INC. 416C09TH1 01212
PENXF Deltax = 0.080000 msec

572 O SN416 THORAX CAL9
Npts = 8000; IP0 = 320; Filter = BLPP 300/ 750/ -16 6.6 m/sec

Page 1
31-JUL-01 10:16

	msec	PENXF	(N	)	Min, Max values =	2518.8 @ 26.7200	4265.1 @ 16.9600
499	14.3200 -->	4022.6	4029.4	4036.0	4048.7	4061.6	4075.7
509	15.1200 -->	4091.5	4100.1	4109.1	4127.9	4147.3	4167.0
519	15.9200 -->	4186.4	4195.8	4205.1	4222.8	4238.6	4251.4
529	16.7200 -->	4260.2	4263.0	4264.6	4264.6	4260.9	4254.4
539	17.5200 -->	4245.9	4241.0	4235.9	4224.8	4212.2	4197.9
549	18.3200 -->	4181.8	4173.1	4163.9	4144.2	4122.7	4111.2
559	19.1200 -->	4074.1	4060.8	4047.2	4019.3	3991.1	3963.4
569	19.9200 -->	3937.2	3924.7	3912.7	3890.0	3868.7	3848.3
579	20.7200 -->	3828.3	3818.3	3808.2	3787.6	3766.2	3743.6
589	21.5200 -->	3719.8	3707.1	3694.0	3666.0	3635.8	3603.8
599	22.3200 -->	3570.7	3553.9	3537.0	3503.1	3469.3	3435.5
609	23.1200 -->	3401.4	3384.1	3366.6	3330.6	3293.2	3254.1
619	23.9200 -->	3213.1	3191.9	3170.2	3148.2	3080.3	3034.0
629	24.7200 -->	2987.7	2964.7	2942.0	2897.8	2855.5	2815.1
639	25.5200 -->	2776.7	2758.2	2740.3	2706.1	2673.4	2641.5
649	26.3200 -->	2609.2	2592.5	2575.2	2538.4	2518.8	2518.8

[DUMY.416C09]416C09THID.RAD;1		572 O SN416 THORAX CAL9		6.6 m/sec		31-JUL-01 10:16		Page 1	
TRC INC. 416C09TH1 01212		Npts = 8000; IP0 =		Filter = BLPP		1000/ 2500/ -16			
CSTXD Deltax = 0.080000 msec									
msec		CSTXD (mm)		Min, Max values =		0.000 @		55.899 @ 20.3200	
320	0.0000 -->	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
330	0.8000 -->	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.000
340	1.6000 -->	0.000	0.005	0.011	0.019	0.038	0.047	0.058	0.076
350	2.4000 -->	0.102	0.139	0.249	0.325	0.415	0.522	0.643	0.930
360	3.2000 -->	1.094	1.272	1.461	1.662	1.873	2.318	2.555	3.070
370	4.0000 -->	3.359	3.670	4.344	4.701	5.073	5.466	6.334	6.804
380	4.8000 -->	7.290	7.784	8.284	9.303	9.824	10.351	11.414	11.948
390	5.6000 -->	12.484	13.020	13.554	14.618	15.153	15.698	16.260	17.450
400	6.4000 -->	18.069	18.690	19.304	20.496	21.076	21.648	22.214	23.332
410	7.2000 -->	23.883	24.427	24.961	25.479	26.458	26.921	27.368	28.219
420	8.0000 -->	28.621	29.005	29.372	29.726	30.074	30.784	31.147	31.883
430	8.8000 -->	32.253	32.626	33.006	33.398	33.801	34.211	35.019	35.756
440	9.6000 -->	36.083	36.382	36.655	36.912	37.159	37.406	37.907	38.417
450	10.4000 -->	38.674	38.933	39.198	39.472	39.757	40.050	40.645	41.227
460	11.2000 -->	41.509	41.785	42.055	42.320	42.579	42.835	43.343	43.844
470	12.0000 -->	44.086	44.321	44.547	44.766	44.978	45.185	45.608	46.069
480	12.8000 -->	46.314	46.568	46.830	47.097	47.367	47.888	48.350	48.555
490	13.6000 -->	48.747	48.929	49.105	49.277	49.447	49.616	49.958	50.320
500	14.4000 -->	50.511	50.704	50.899	51.089	51.271	51.436	51.702	51.889
510	15.2000 -->	51.969	52.053	52.144	52.243	52.352	52.469	52.723	52.995
520	16.0000 -->	53.134	53.271	53.404	53.531	53.650	53.760	53.952	54.106
530	16.8000 -->	54.171	54.229	54.283	54.334	54.384	54.434	54.535	54.643
540	17.6000 -->	54.704	54.770	54.842	54.918	54.996	55.071	55.202	55.305
550	18.4000 -->	55.350	55.393	55.435	55.474	55.508	55.538	55.585	55.625
560	19.2000 -->	55.645	55.665	55.685	55.706	55.729	55.753	55.824	55.845
570	20.0000 -->	55.863	55.878	55.889	55.896	55.899	55.899	55.889	55.863
580	20.8000 -->	55.845	55.826	55.804	55.779	55.754	55.727	55.667	55.601
590	21.6000 -->	55.567	55.531	55.495	55.457	55.417	55.375	55.292	55.209
600	22.4000 -->	55.163	55.115	55.062	55.007	54.948	54.886	54.760	54.635
610	23.2000 -->	54.571	54.504	54.436	54.368	54.298	54.227	54.081	53.929
620	24.0000 -->	53.852	53.774	53.695	53.614	53.528	53.438	53.241	53.028
630	24.8000 -->	52.915	52.799	52.679	52.557				

[DUMMY.416C09]416C09TH1D.RAD;1						572 O SN416 THORAX CAL9						6.6 m/sec						31-JUL-01 10:16						Page 1																										
TRC INC.						416C09TH1 01212																																												
PENXF Deltax = 0.080000 msec						Npts = 8000; IF0 =						320; Filter = BLPP						300/ 750/ -16																																
msec						PENXF (N)						Min, Max values =						2744.2 @ 7.8400						4015.5 @ 14.2400																										
400						3271.6				3223.1					3175.9					3130.0					3085.4					3042.4					3001.2					2962.1					2925.4					2891.6
410						7.2000	-->			2860.9					2809.9					2789.8					2773.5					2760.8					2751.8					2746.3					2744.2					2745.3
420						8.0000	-->			2749.4					2766.5					2779.2					2794.8					2813.1					2834.1					2857.8					2883.8					2912.0
430						9.0000	-->			2942.1					3006.7					3040.5					3074.8					3109.5					3144.4					3179.3					3214.1					3248.9
440						9.6000	-->			3283.7					3353.2					3388.0					3422.8					3457.6					3492.1					3526.2					3559.6					3592.2
450						10.4000	-->			3623.6					3653.7					3709.5					3735.1					3759.0					3781.5					3802.3					3821.7					3839.6
460						11.2000	-->			3856.0					3884.1					3895.7					3905.6					3913.8					3920.1					3924.7					3929.0					3939.0
470						12.0000	-->			3929.2					3928.3					3924.9					3922.8					3920.9					3919.4					3918.3					3917.9					3918.0
480						12.8000	-->			3918.7					3921.8					3924.1					3927.0					3920.0					3934.1					3938.6					3943.5					3949.1
490						13.6000	-->			3955.3					3962.0					3969.2					3984.6					3992.5					4000.4					4008.0					4015.5					

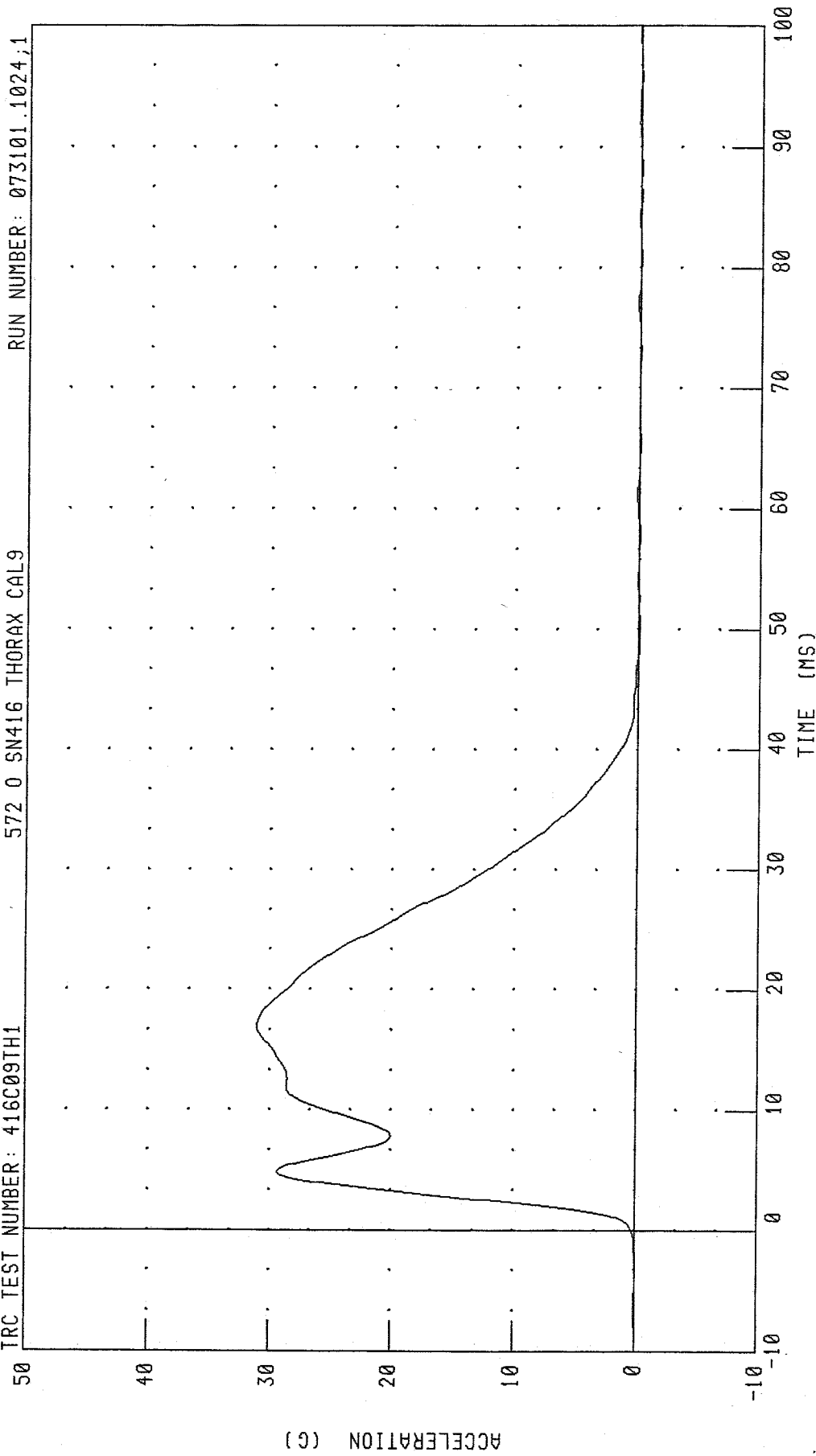
PART 572-0 HYBRID III SMALL FEMALE - THORAX CALIBRATION

PENDULUM DECELERATION

TRC TEST NUMBER: 416C09TH1

572 0 SN416 THORAX CAL9

RUN NUMBER: 073101.1024;1



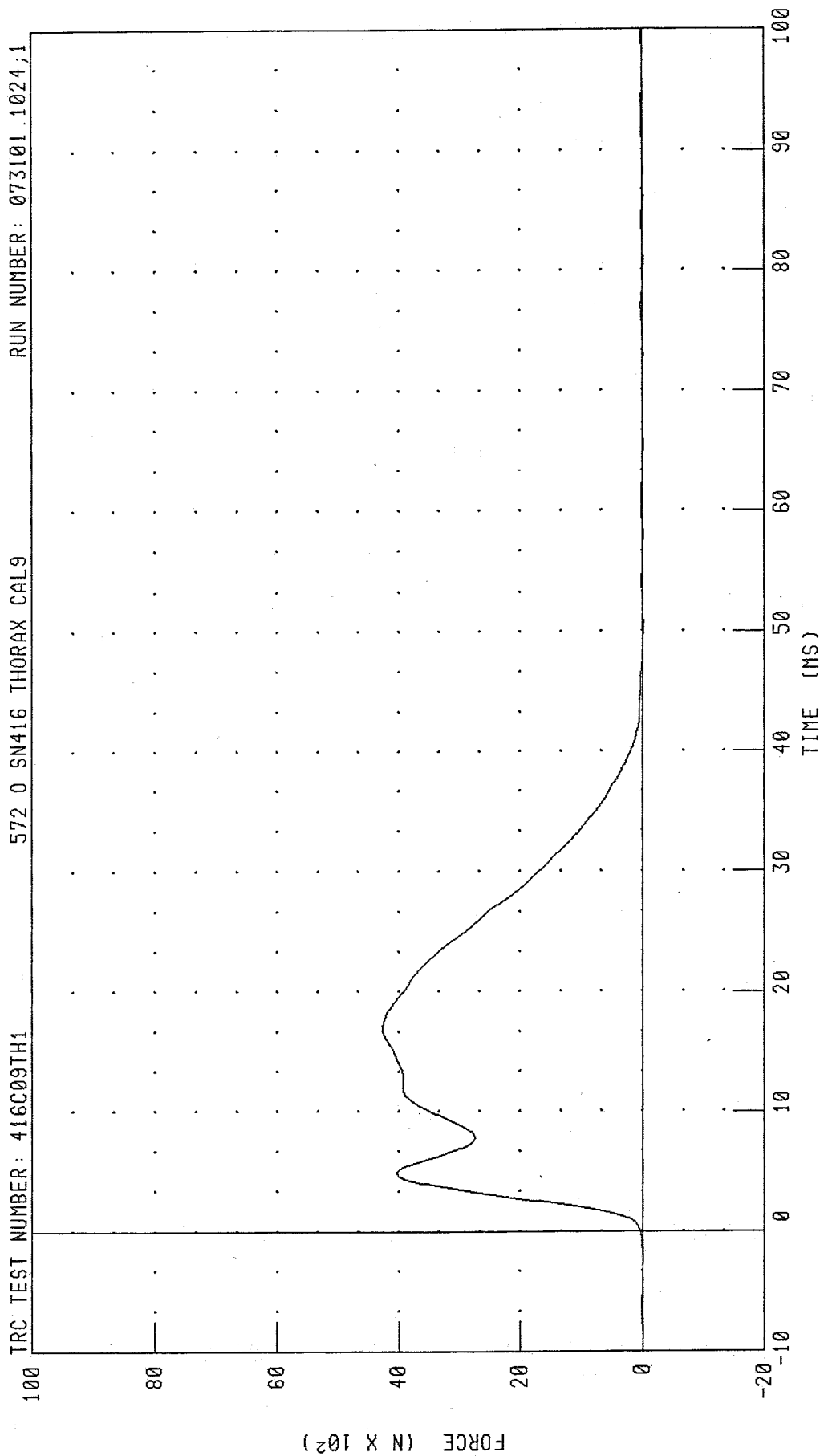
CHANNEL: PENXG

FILTER: CH. CLASS 180

PEAK DATA: 31.08 G @ 16.96 MS; -0.12 G @ 50.40 MS

PART 572-0 HYBRID III SMALL FEMALE - THORAX CALIBRATION

PENDULUM FORCE



CHANNEL: PENXF FILTER: CH. CLASS 180

PEAK DATA: 4265.11 N @ 16.96 MS; -16.98 N @ 50.40 MS

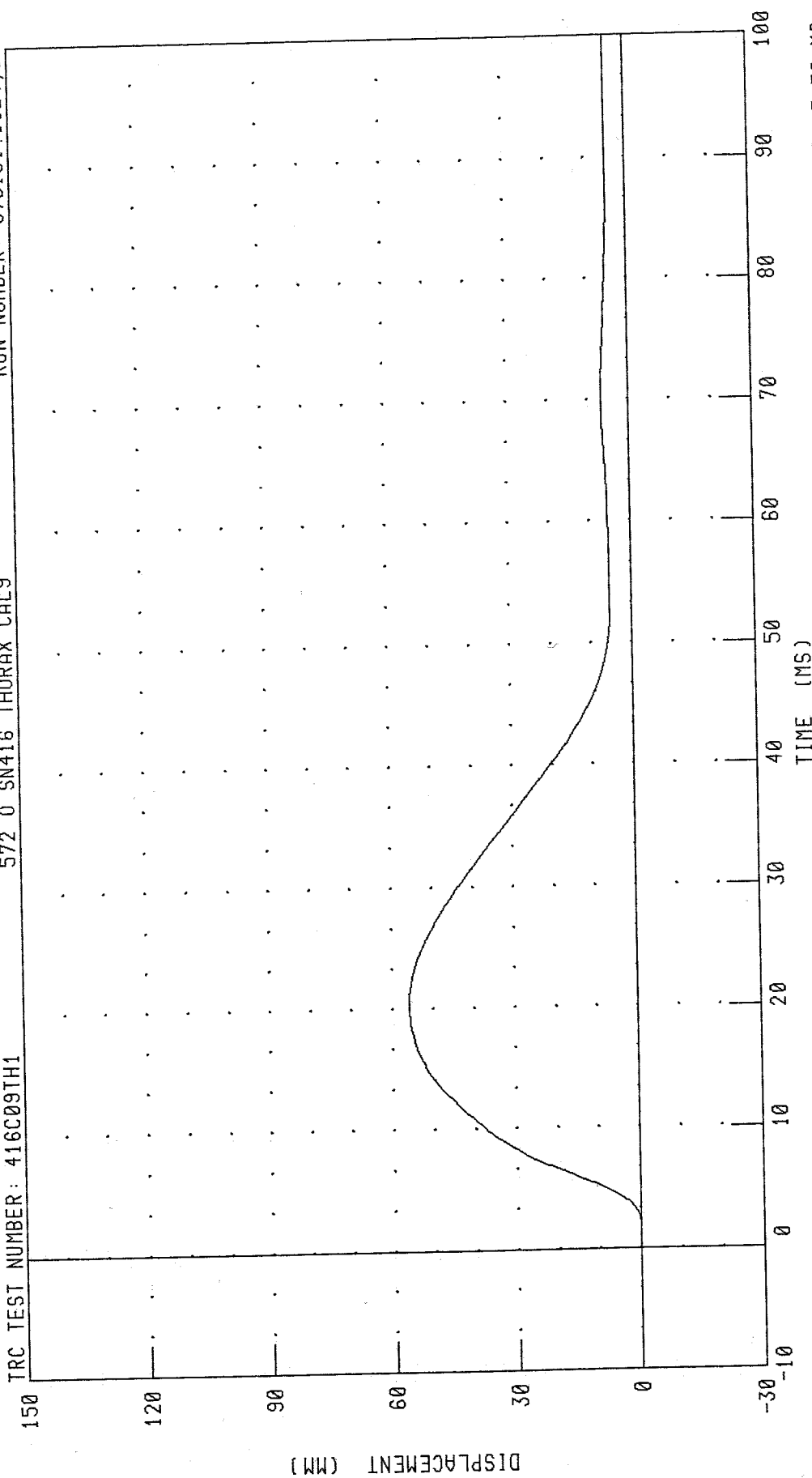
PART 572-0 HYBRID III SMALL FEMALE - THORAX CALIBRATION

STERNUM DISPLACEMENT

RUN NUMBER: 073101.1024;1

TRC TEST NUMBER: 416C09TH1

572 0 SN416 THORAX CAL9

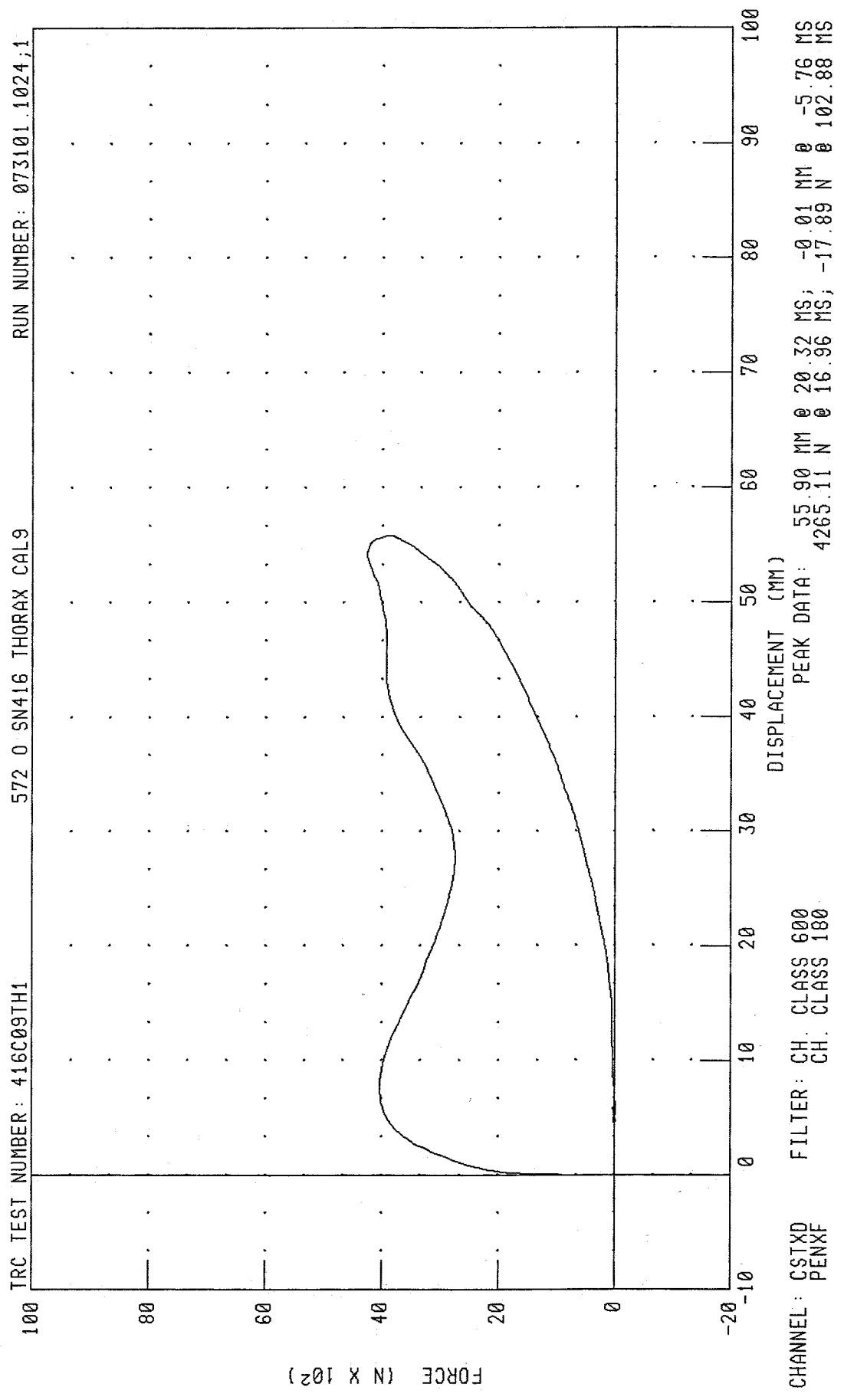


PEAK DATA: 55.90 MM @ 20.32 MS, -0.01 MM @ -5.76 MS

CHANNEL: CSTXD FILTER: CH. CLASS 600

PART 572-0 HYBRID III SMALL FEMALE - THORAX CALIBRATION

CHEST DISPLACEMENT VS PENDULUM FORCE



TRANSPORTATION RESEARCH CENTER INC.

TORSO FLEXION TEST

HYBRID III SMALL FEMALE

CAL DATE: 29-Jun-01

TRC, INC. TEST NO: 416C9TF1 572 O SN 416 TORSO FLEX CAL 09

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	56 %
INITIAL ANGLE OF UNSUPPORTTED DUMMY	<= 20 DEG. REFERENCED TO VERTICAL	3 DEG.
MAXIMUM FORCE AT 45 DEG. DURING 10 SECOND PERIOD	320 -390 N	347 N
RETURN ANGLE @ 3MINUTES	+/- 8 DEG OF INTIAL ANGLE	5 DEG.

TEST MEETS SPECIFICATIONS

TECHNICIAN



TRANSPORTATION RESEARCH CENTER INC.

LEFT KNEE IMPACT TEST

HYBRID III SMALL FEMALE

20-JUL-01

TRC INC.

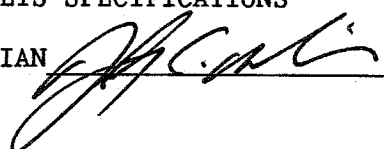
TEST NO: 416C09LK2

572 0 SN416 LEFT KNEE CAL9

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	60.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.13 M/S
PEAK KNEE IMPACT FORCE 3.0 KG PENDULUM	3400 - 4200 N	3817.5 N

TEST MEETS SPECIFICATIONS

TECHNICIAN

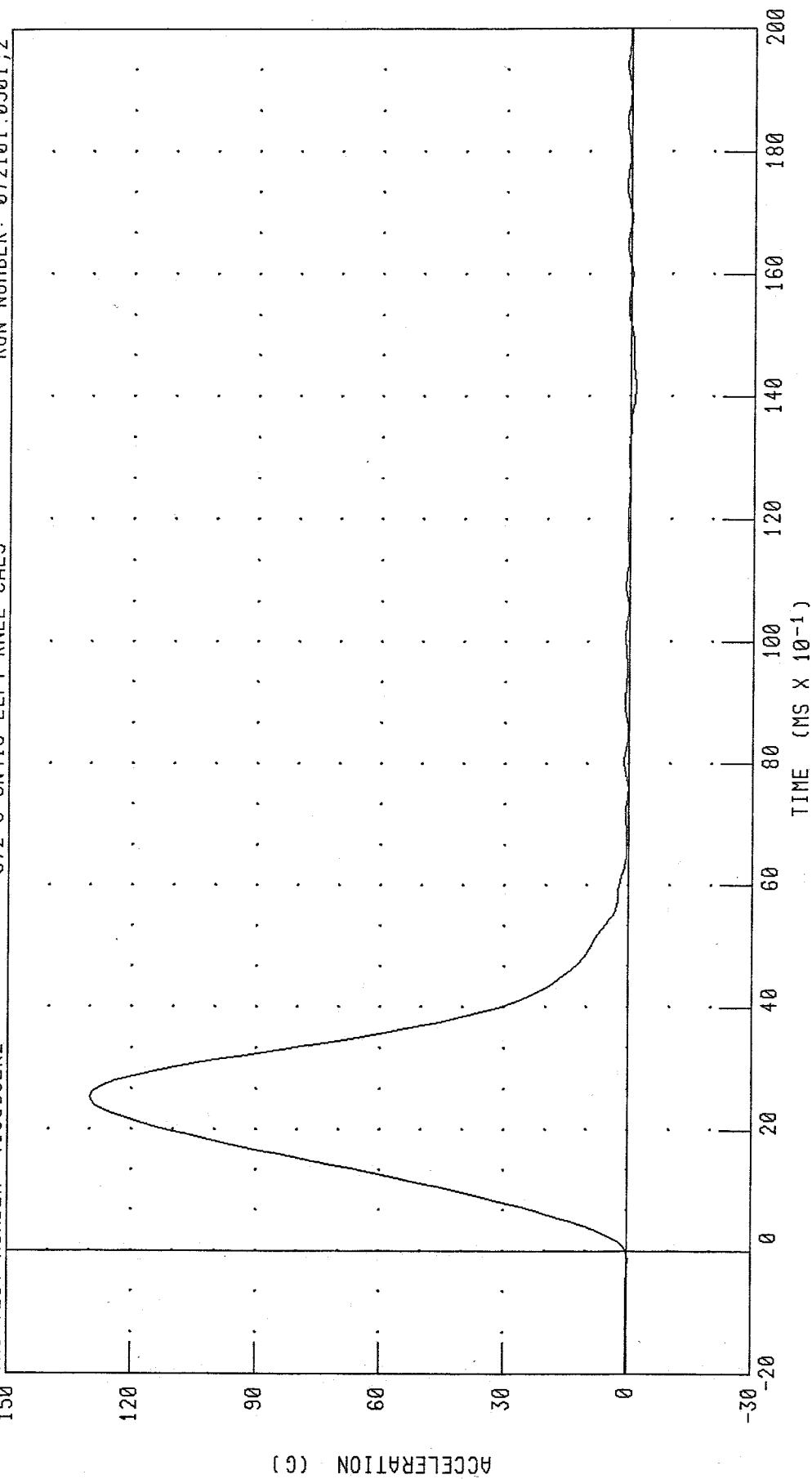


RUN NUMBER: 072101.0857;2

PART 572-0 HYBRID III SMALL FEMALE - LEFT KNEE CALIBRATION

PENDULUM DECELERATION (5 KG PEND.)

TRC TEST NUMBER: 416C09LK2 572 0 SN416 LEFT KNEE CAL9 RUN NUMBER: 072101.0901;2



CHANNEL: PENXG

FILTER: CH: CLASS 600

TIME (MS X 10⁻¹)

PEAK DATA: 130.04 G @ 2.56 MS; -1.34 G @ 14.16 MS

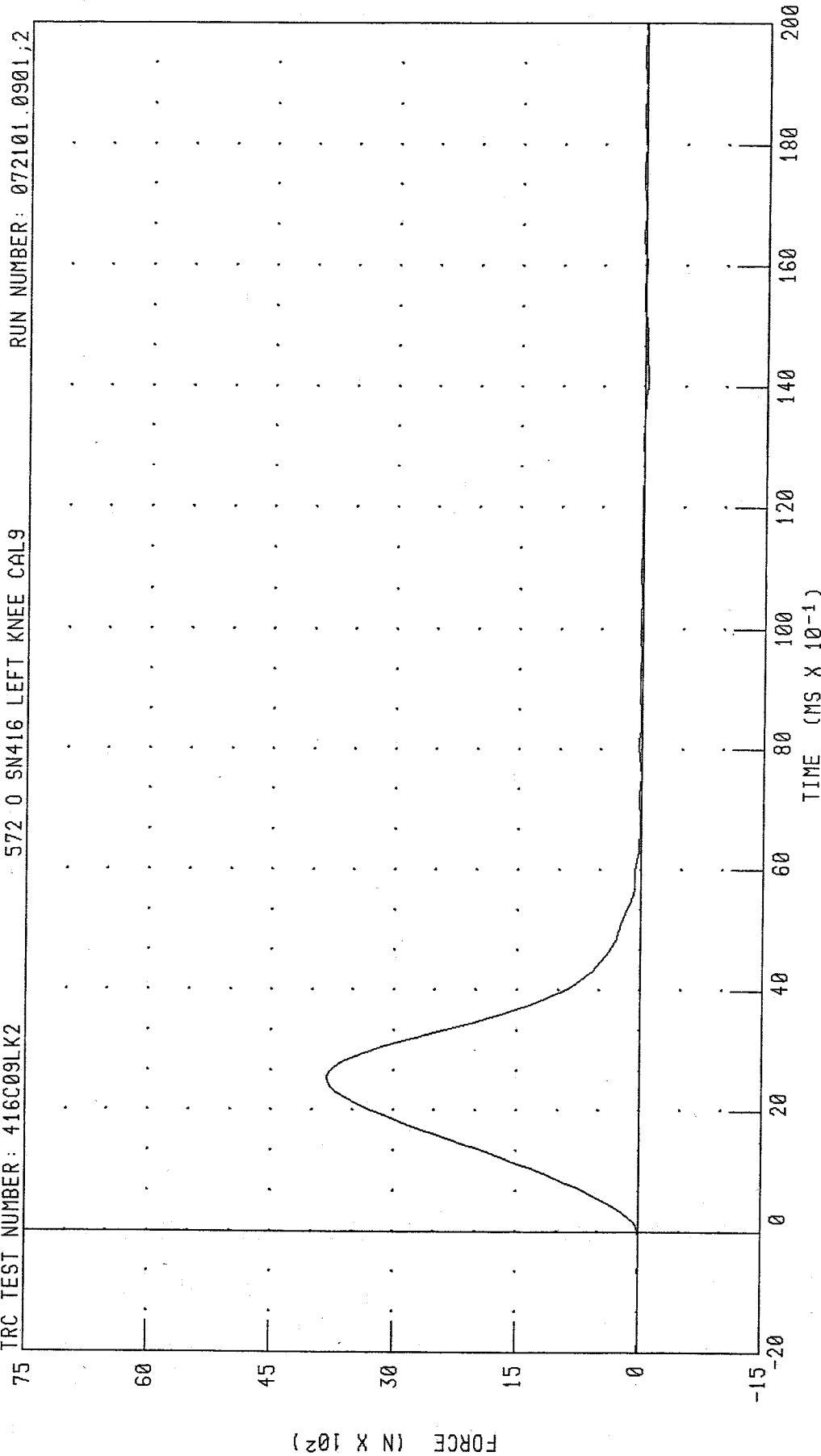
PART 572-0 HYBRID III SMALL FEMALE - LEFT KNEE CALIBRATION

PENDULUM FORCE (5 KG PEND.)

TRC TEST NUMBER: 416C09LK2

572 0 SN416 LEFT KNEE CAL9

RUN NUMBER: 072101.0901;2



CHANNEL: PENXF

FILTER: CH. CLASS 600

PEAK DATA: 3817.52 N @ 2.56 MS;

-39.46 N @ 14.16 MS

TRANSPORTATION RESEARCH CENTER INC.

KNEE SLIDER TEST

HYBRID III SMALL FEMALE

19-JUL-01

LEFT KNEE
TRC INC.

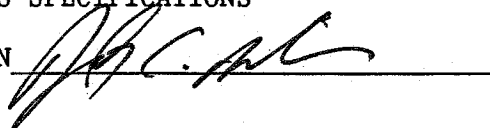
TEST NO: 416C09LS1

572 0 SN416 LEFT SLIDER CAL09

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	55.0 %
PENDULUM VELOCITY	2.70-2.80 M/S	2.70 M/S
PEAK DISPLACEMENT	12.7 - 15.5 MM	13.7 MM

TEST MEETS SPECIFICATIONS

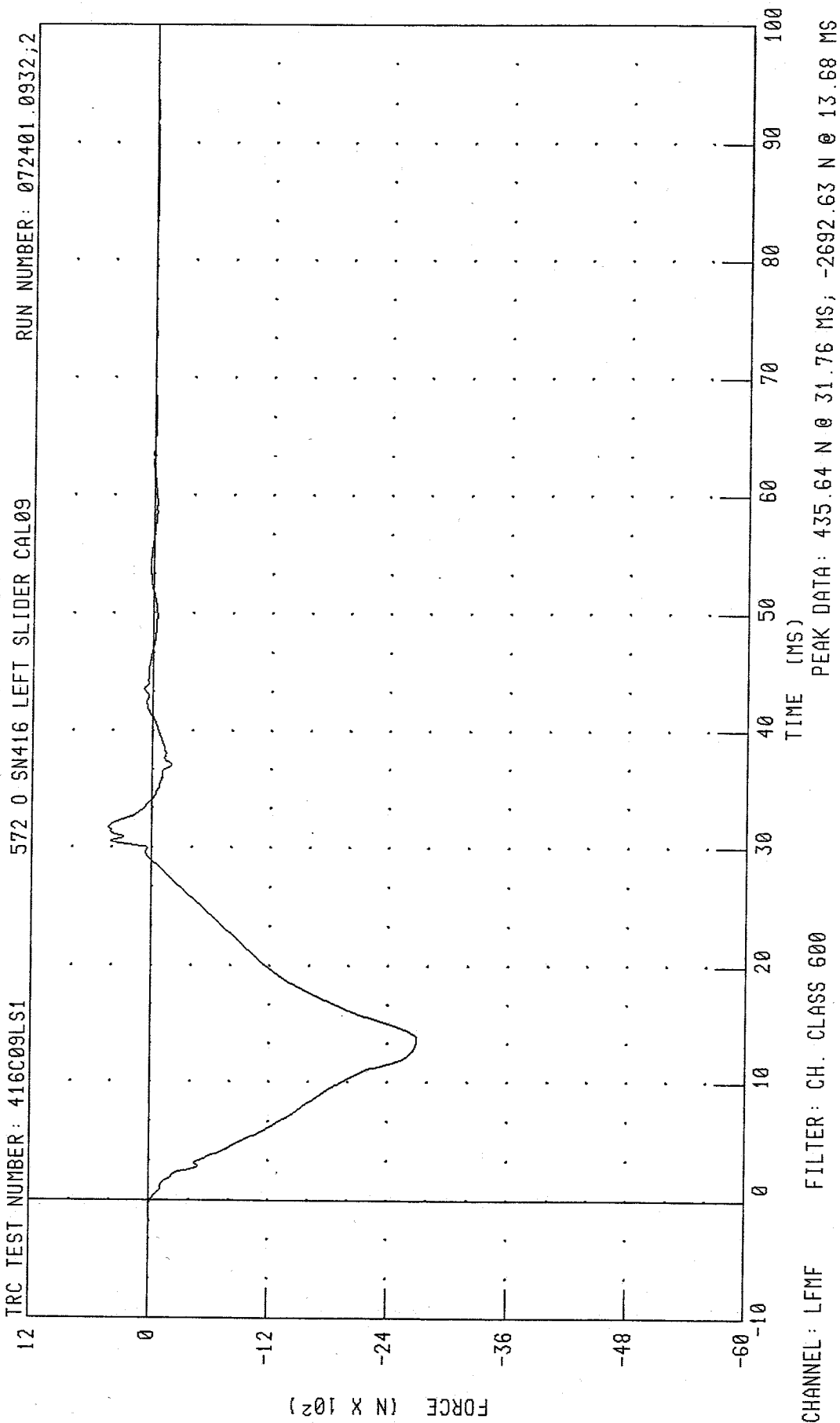
TECHNICIAN



RUN NUMBER: 072401.1050;3

PART 572-0 HYBRID III SMALL FEMALE - LEFT KNEE SLIDER CALIBRATION

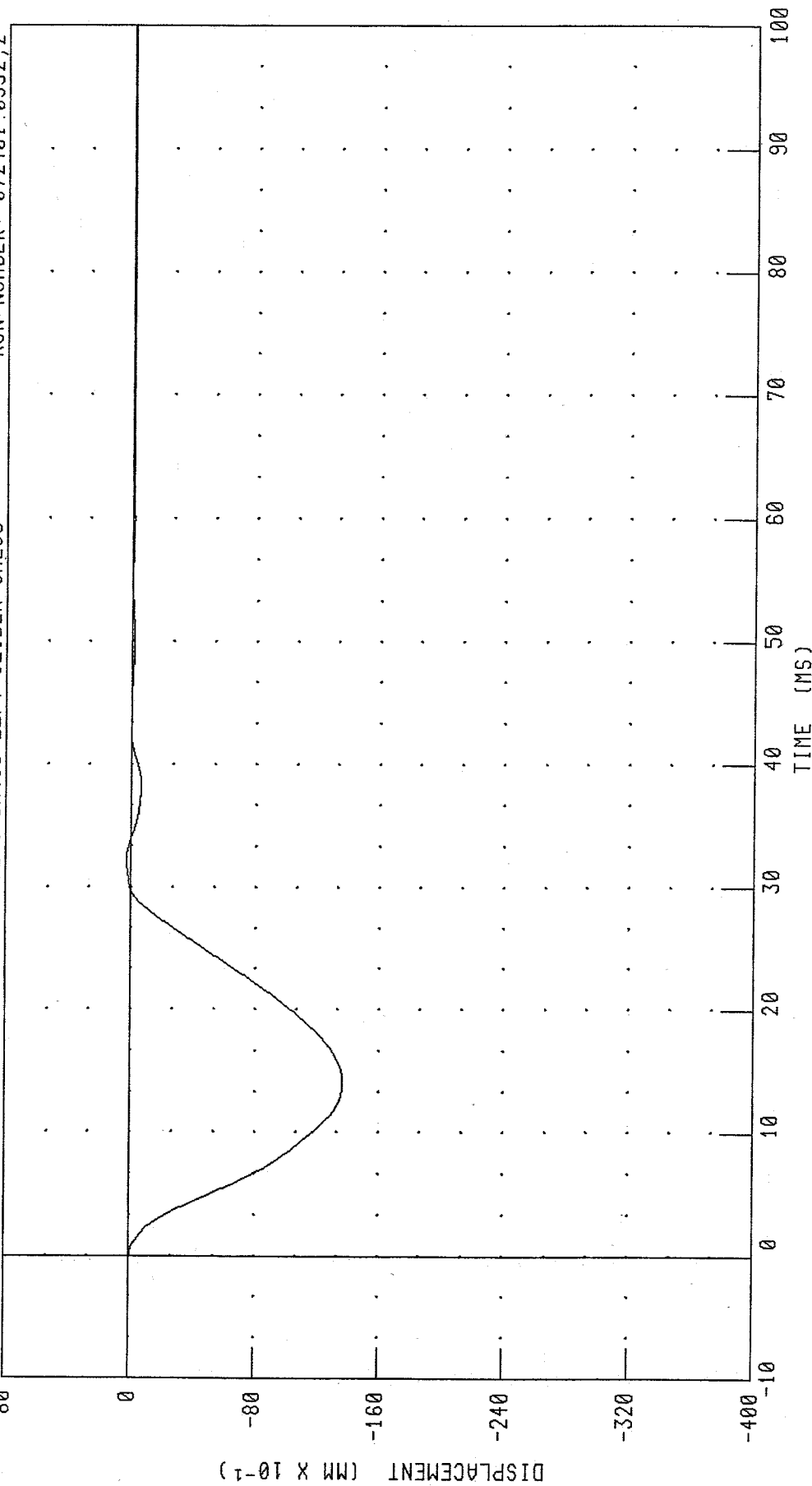
LEFT FEMUR FORCE



PART 572-0 HYBRID III SMALL FEMALE - LEFT KNEE SLIDER CALIBRATION

LEFT KNEE DISPLACEMENT

TRC TEST NUMBER: 416C09LS1 572 0 SN416 LEFT SLIDER CAL09 RUN NUMBER: 072401.0932.2



CHANNEL: KNLXD FILTER: CH. CLASS 180 PEAK DATA: 0.31 MM @ 32.24 MS, -13.69 MM @ 14.16 MS

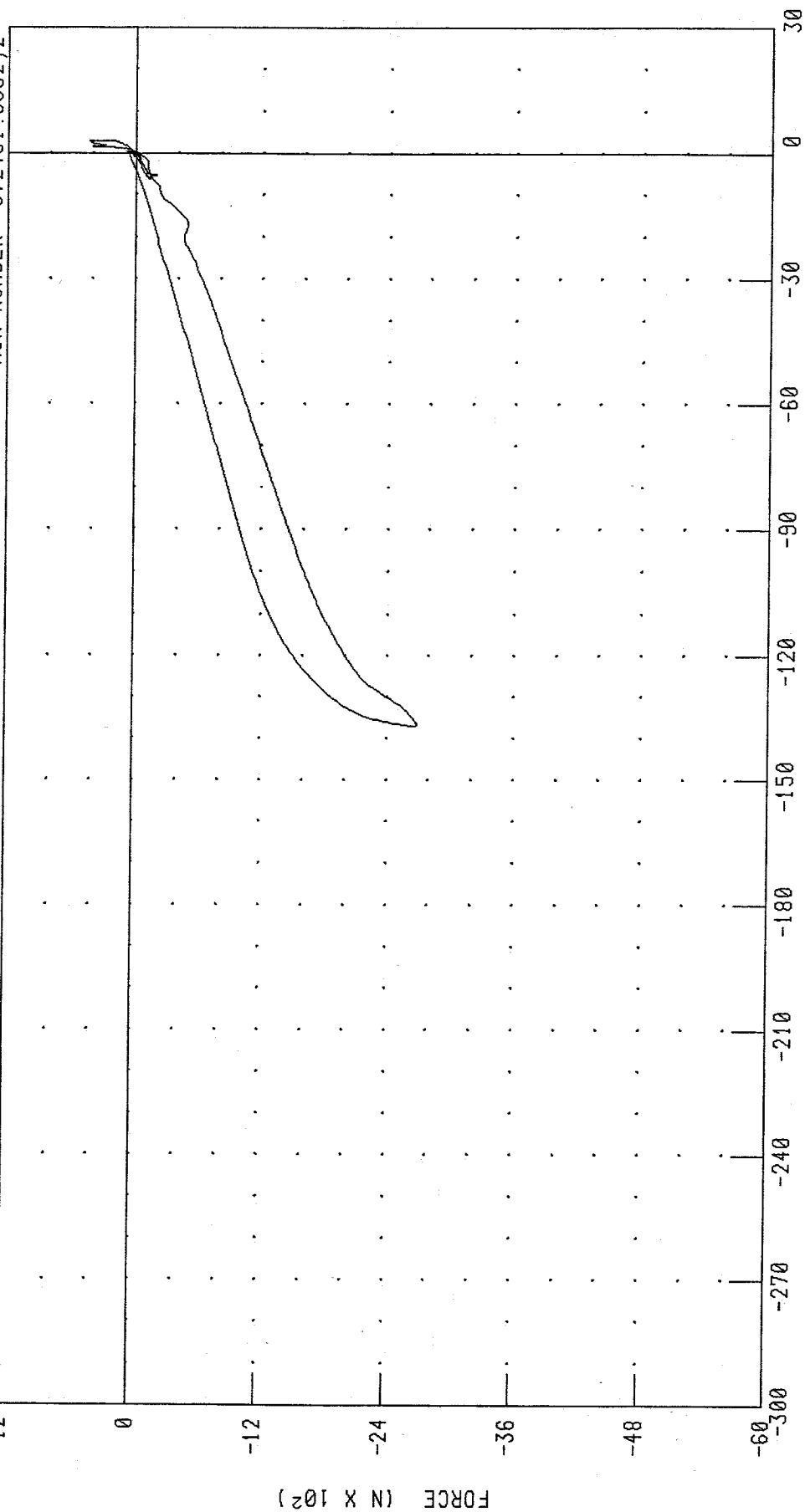
PART 572-0 HYBRID III SMALL FEMALE - LEFT KNEE SLIDER CALIBRATION

LEFT KNEE DISPLACEMENT VS FEMUR FORCE

TRC TEST NUMBER: 416C09LS1

572 0 SN416 LEFT SLIDER CAL09

RUN NUMBER: 072401.0932;2



CHANNEL: KNLXD
LFHF

DISPLACEMENT ($MM \times 10^{-1}$)

PEAK DATA: 0.31 MM @ 32.24 MS;

435.64 N @ 31.76 MS;

-13.69 MM @ 14.16 MS

-2692.63 N @ 13.68 MS

TRANSPORTATION RESEARCH CENTER INC.

RIGHT KNEE IMPACT TEST

HYBRID III SMALL FEMALE

21-JUL-01

TRC INC.

TEST NO: 416C09RK1

572 0 SN416 R.KNEE CAL09

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	60.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.13 M/S
PEAK KNEE IMPACT FORCE 3.0 KG PENDULUM	3450 - 4060 N	3567.8 N

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 072101.0913;1

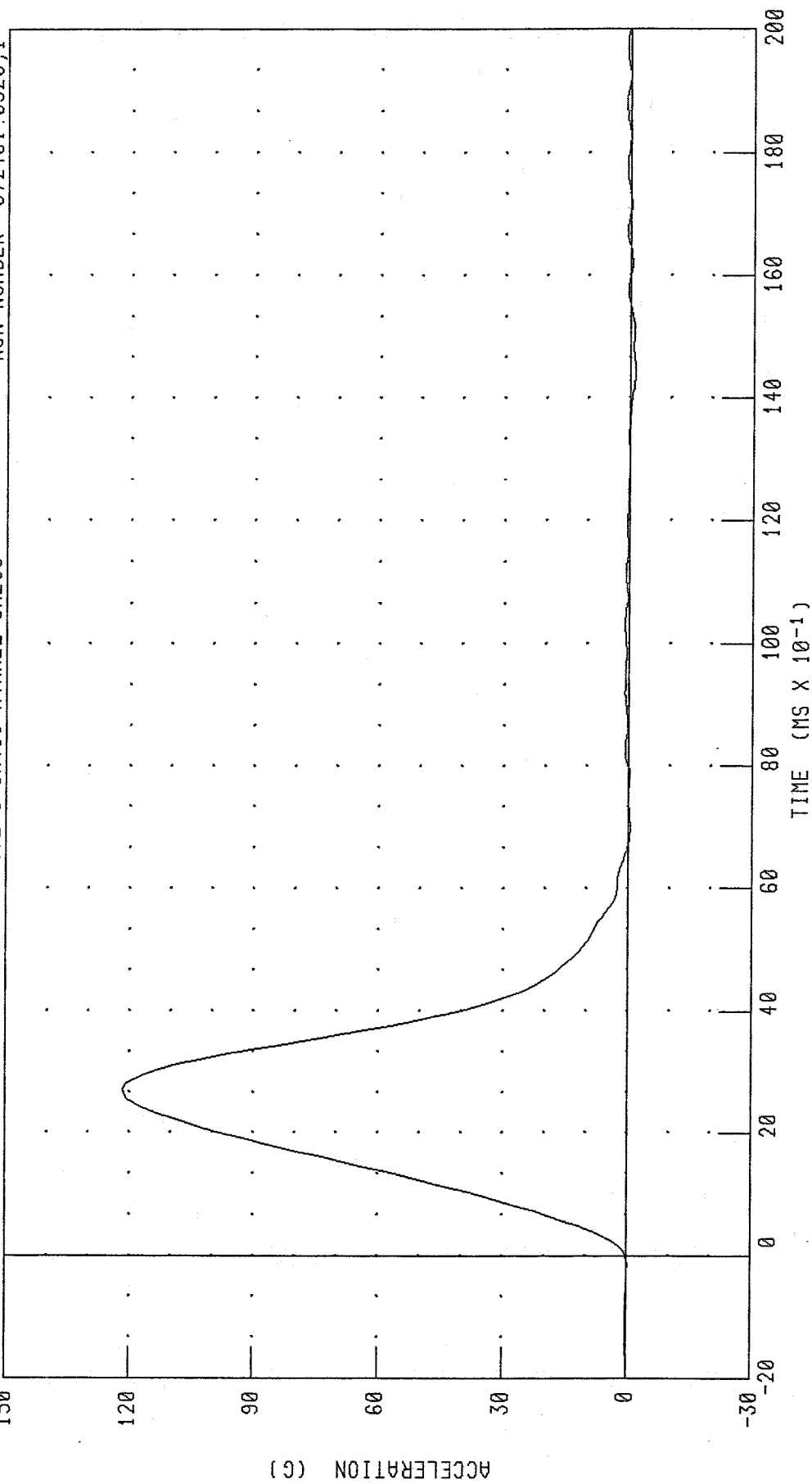
PART 572-0 HYBRID III SMALL FEMALE - RIGHT KNEE CALIBRATION

PENDULUM DECELERATION (5 KG PEND.)

TRC TEST NUMBER: 416C09RK1

572 0 SN416 R.KNEE CAL09

RUN NUMBER: 072401.0920;1



CHANNEL: PENXG

FILTER: CH. CLASS 600

TIME (MS X 10⁻¹)

PEAK DATA: 121.53 G @ 2.72 MS; -1.42 G @ 14.40 MS

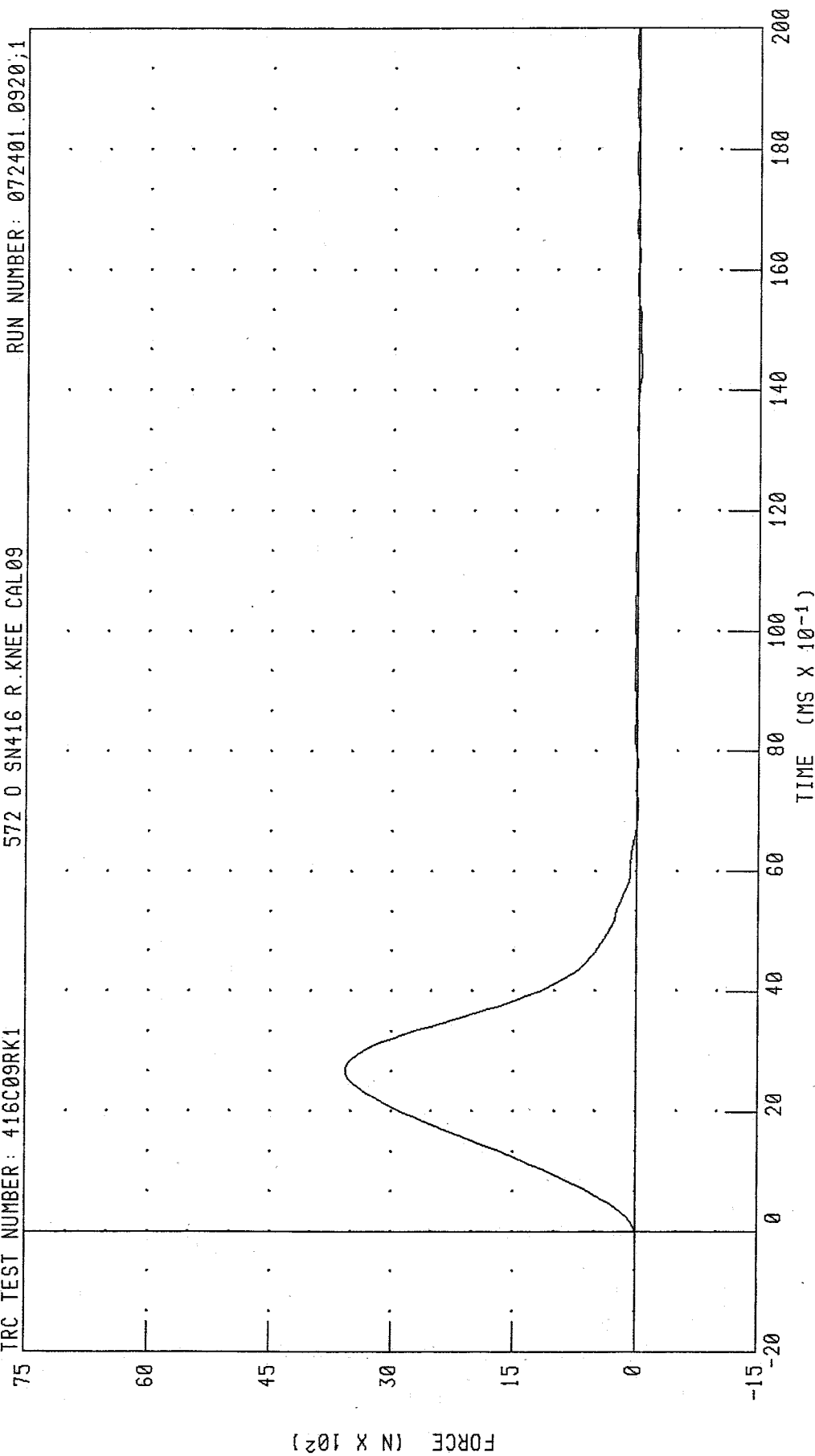
PART 572-0 HYBRID III SMALL FEMALE - RIGHT KNEE CALIBRATION

PENDULUM FORCE (5 KG PEND.)

TRC TEST NUMBER: 416C09RK1

572 0 SN416 R.KNEE CAL09

RUN NUMBER: 072401.0920;1



CHANNEL: PENXF

FILTER: CH. CLASS 600

TIME (MS X 10⁻¹)

PEAK DATA: 3567.86 N @ 2.72 MS, -41.59 N @ 14.40 MS

TRANSPORTATION RESEARCH CENTER INC.

KNEE SLIDER TEST

HYBRID III SMALL FEMALE

20-JUL-01

RIGHT KNEE

TRC INC.

TEST NO: 416C09RS1

572 0 SN416 RIGHT SLIDER CAL09

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	55.0 %
PENDULUM VELOCITY	2.70-2.80 M/S	2.70 M/S
PEAK DISPLACEMENT	12.7 - 15.5 MM	13.9 MM

TEST MEETS SPECIFICATIONS

TECHNICIAN

JPC

RUN NUMBER: 082801.1532;1

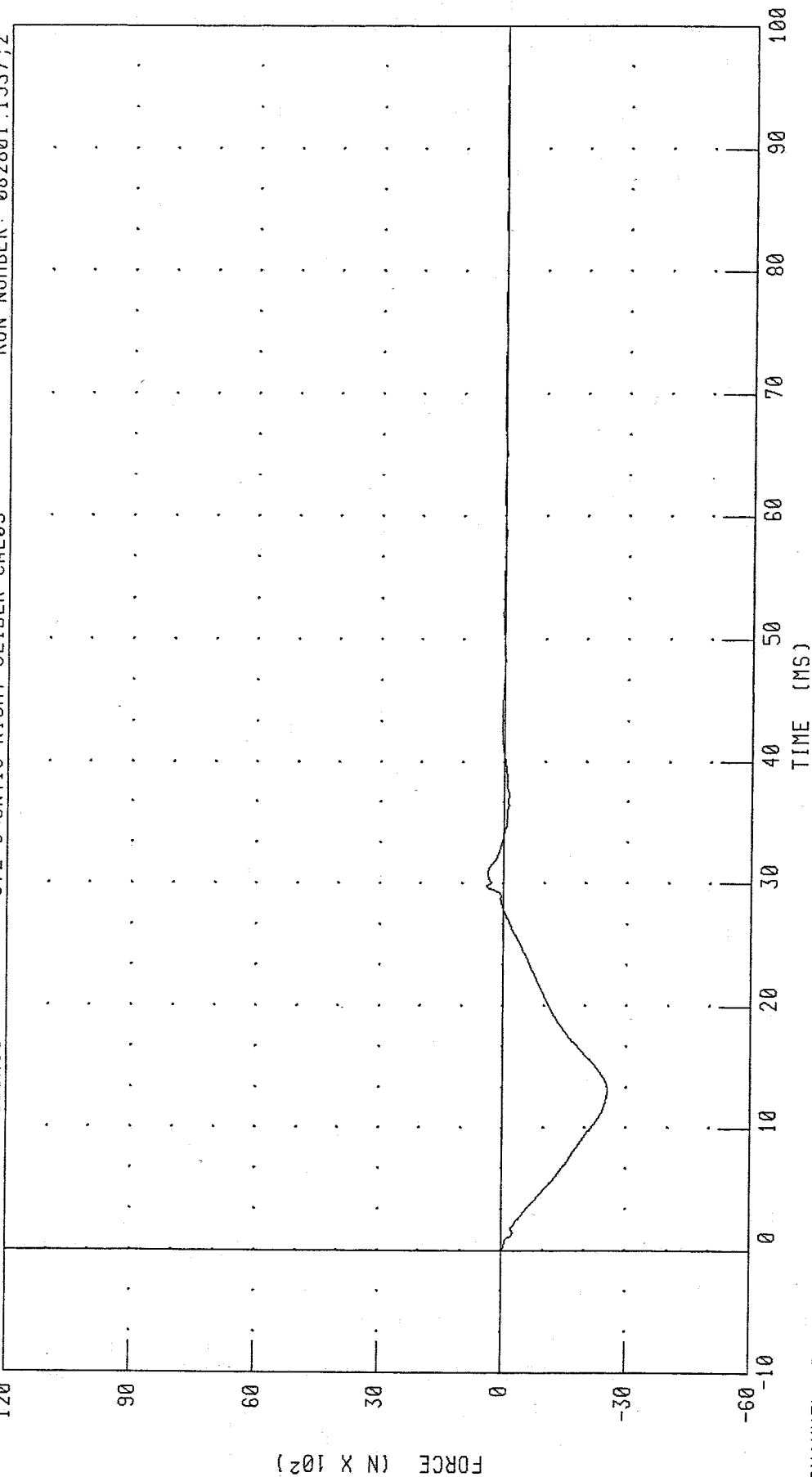
PART 572-0 HYBRID III SMALL FEMALE - RIGHT KNEE SLIDER CALIBRATION

RIGHT FEMUR FORCE

TRC TEST NUMBER: 416C09RS1

572 0 SN416 RIGHT SLIDER CAL09

RUN NUMBER: 082801.1537,2



CHANNEL: RFMF

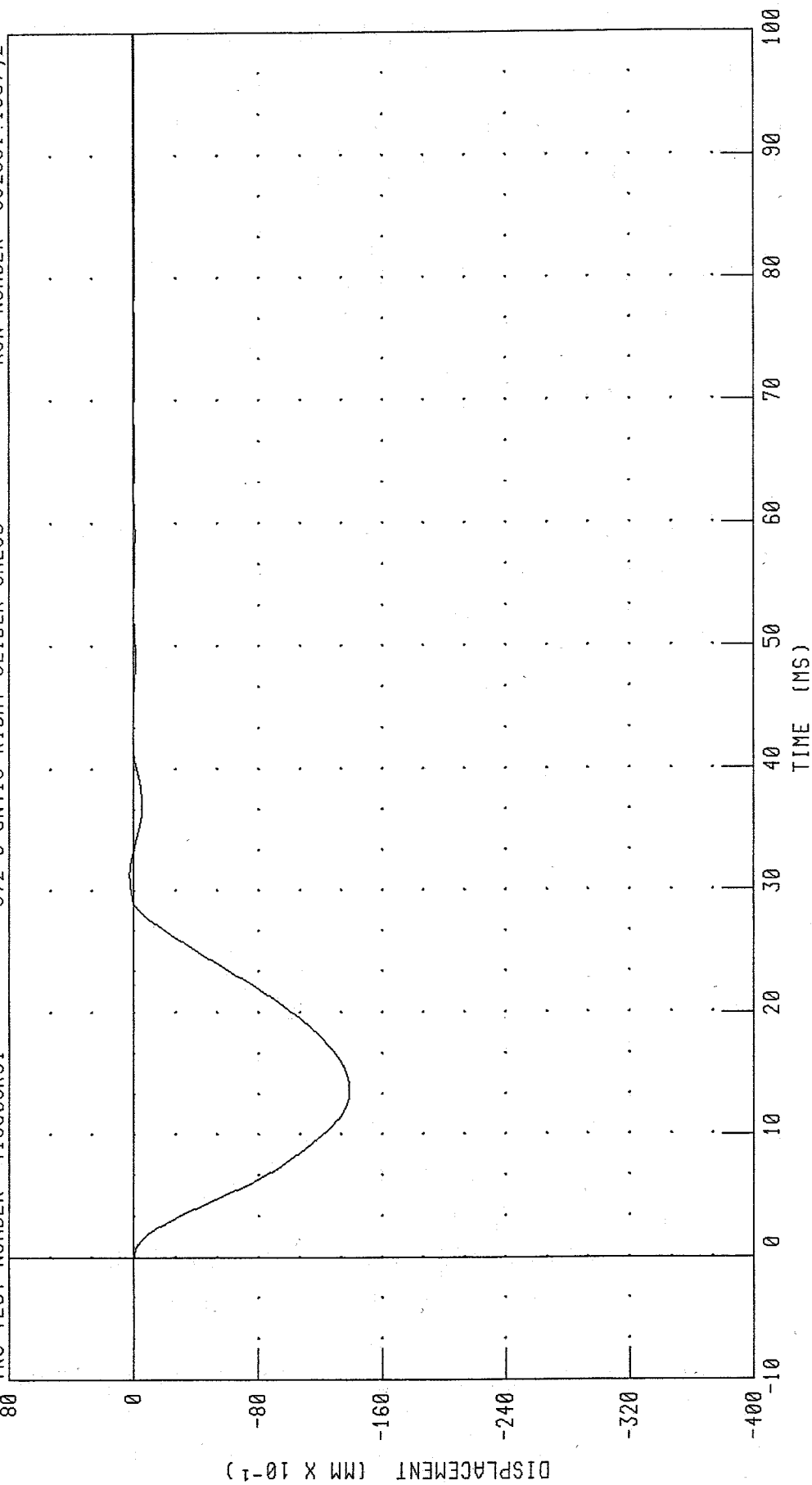
FILTER: CH. CLASS 600

TIME (MS)

PEAK DATA: 408.08 N @ 29.76 MS; -2543.15 N @ 13.12 MS

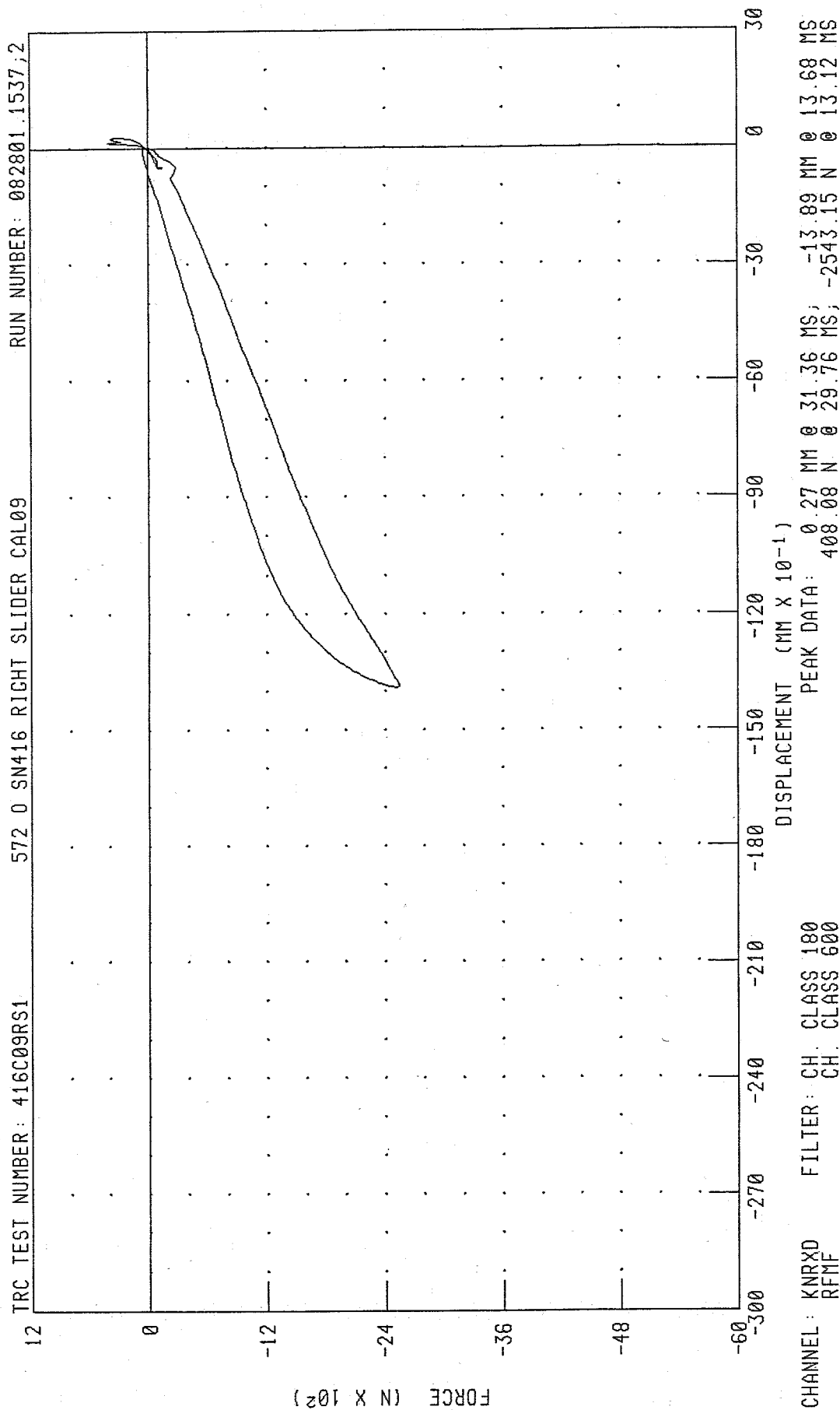
PART 572-0 HYBRID III SMALL FEMALE - RIGHT KNEE SLIDER CALIBRATION
RIGHT KNEE DISPLACEMENT

TRC TEST NUMBER: 416C09RS1 572 0 SN416 RIGHT SLIDER CAL09 RUN NUMBER: 082801.1537;2



CHANNEL: KNRXD FILTER: CH. CLASS 180 PEAK DATA: 0.27 MM @ 31.36 MS; -13.89 MM @ 13.68 MS

PART 572-0 HYBRID III SMALL FEMALE - RIGHT KNEE SLIDER CALIBRATION
 RIGHT KNEE DISPLACEMENT VS FEMUR FORCE



Pre-Test Dummy Configuration and Performance Verification Data

Right Front Passenger Dummy S/N: 421

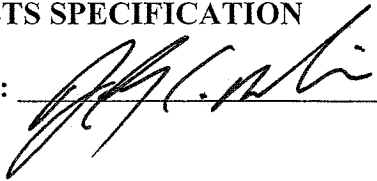
TRANSPORTATION RESEARCH CENTER INC.
HYBRID III SMALL FEMALE EXTERNAL DIMENSIONS
SN: 421 MFG:FTSS

DATE: 31-Jul-01

TRC INC. TEST NO: 421C02ED1 5720 SN421EXT. DIMENSION CAL02

TEST PARAMETER	DIMEN.	SPECIFICATION	TEST RESULTS
Total Sitting Height	A	774.7 - 800.1 MM	784.86 MM
Shoulder Pivot Height	B	431.8 - 457.2 MM	439.42 MM
Hip Pivot Height	C	81.3 - 86.3 MM	86.36 MM
Hip Pivot from Backline	D	144.8 - 149.8 MM	144.78 MM
Shoulder Pivot from Backline	E	68.6 - 83.8 MM	73.66 MM
Thigh Clearance	F	119.4 - 134.6 MM	127 MM
Back of Elbow to Wrist Pivot	G	243.9 - 259.1 MM	248.92 MM
Head Back from Backline	H	40.7 - 45.7 MM	45.72 MM
Shoulder to Elbow Length	I	276.8 - 297.2 MM	294.64 MM
Elbow Rest Height	J	182.8 - 203.2 MM	190.5 MM
Buttock to Knee Length	K	520.7 - 546.1 MM	535.94 MM
Popliteal Height	L	355.6 - 376 MM	370.84 MM
Knee to Floor Height	M	393.7 - 419.1 MM	403.86 MM
Buttock Popliteal Length	N	414 - 439.4 MM	431.8 MM
Chest Depth	O	175.3 - 190.5 MM	180.34 MM
Foot Length	P	218.5 - 233.7 MM	228.6 MM
Buttock to Knee Pivot Length	R	457.2 - 482.6 MM	464.82 MM
Head Breadth	S	137.1 - 147.3 MM	139.7 MM
Head Depth	T	177.8 - 188 MM	185.42 MM
Hip Breadth	U	299.7 - 314.9 MM	302.26 MM
Shoulder Breadth	V	350.5 - 365.7 MM	358.14 MM
Foot Breadth	W	78.8 - 94 MM	88.9 MM
Head Circumference	X	528.3 - 548.7 MM	541.02 MM
Chest Circumference with Jacket	Y	850.9 - 881.3 MM	868.68 MM
Waist Circumference	Z	759.5 - 789.9 MM	769.62 MM
Ref Location for Chest Circumference	AA	299.7 - 309.9 MM	304.8 MM
Ref Location for Waist Circumference	BB	160 - 170.2 MM	165.1 MM

DUMMY MEETS SPECIFICATION

TECHNICIAN: 

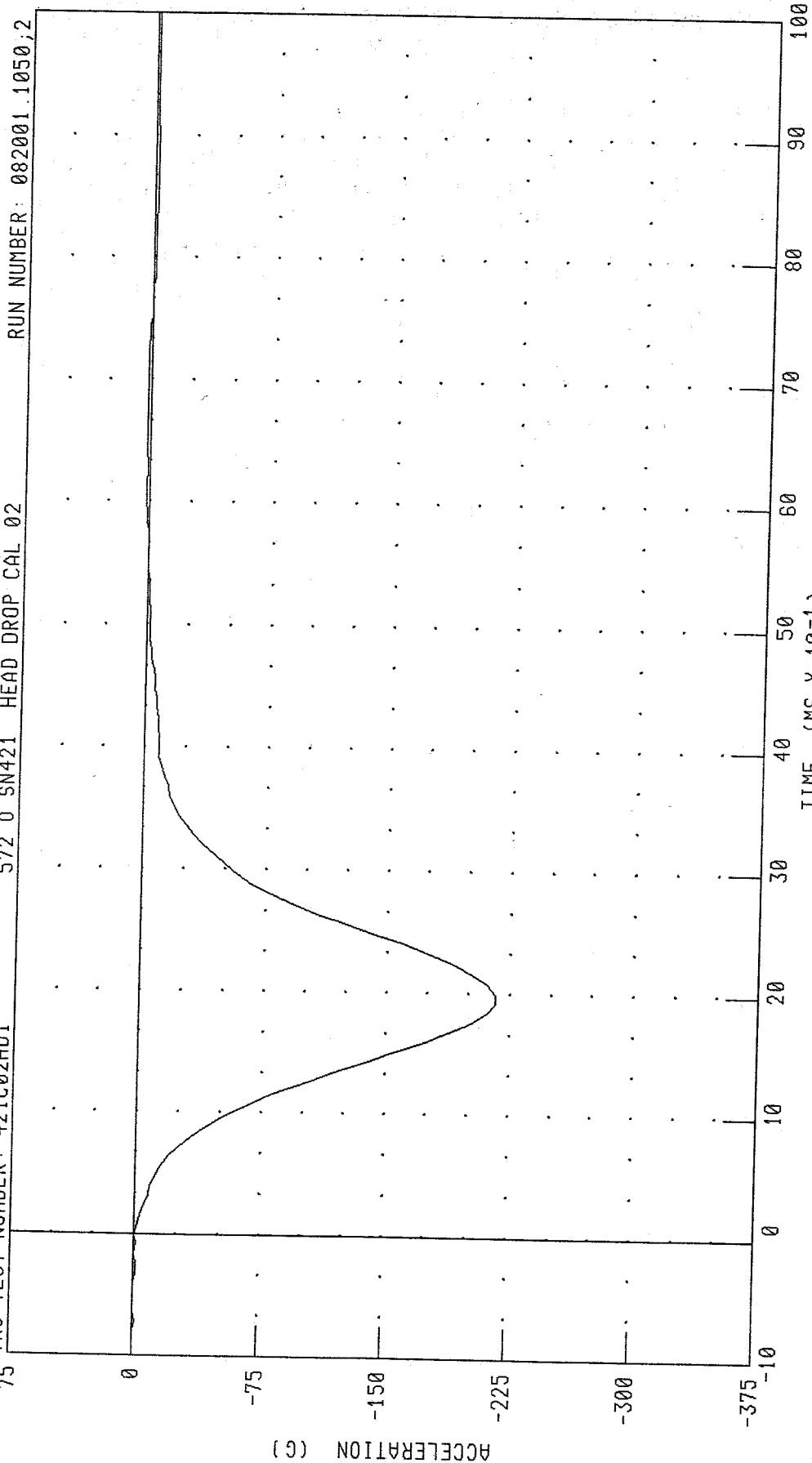
PART 572-0 HYBRID III SMALL FEMALE - HEAD CALIBRATION

HEAD ACCELERATION X AXIS

TRC TEST NUMBER: 421C02HD1

572 0 SN421 HEAD DROP CAL 02

RUN NUMBER: 082001.1050;2



CHANNEL: HEDXC

FILTER: CH. CLASS 1000

TIME (MS X 10⁻¹)

PEAK DATA: 2.19 G @ 6.00 MS; -216.49 G @ 1.92 MS

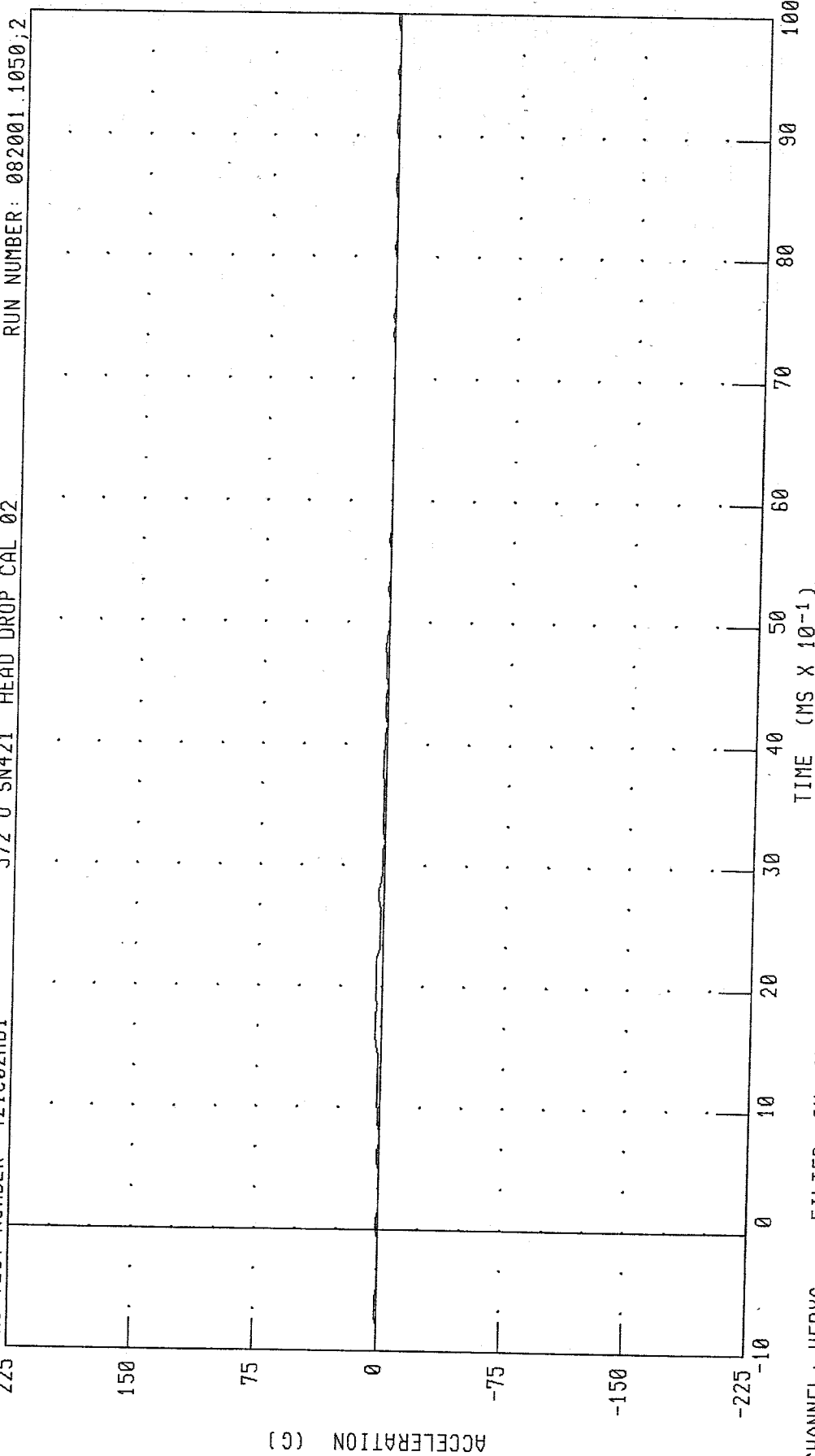
PART 572-0 HYBRID III SMALL FEMALE - HEAD CALIBRATION

HEAD ACCELERATION Y AXIS

TRC TEST NUMBER: 421C02HD1

572 0 SN421 HEAD DROP CAL 02

RUN NUMBER: 082001.1050;2



CHANNEL: HEDYC FILTER: CH. CLASS 1000

PEAK DATA: 3.63 G @ 1.60 MS; -0.21 G @ -0.96 MS

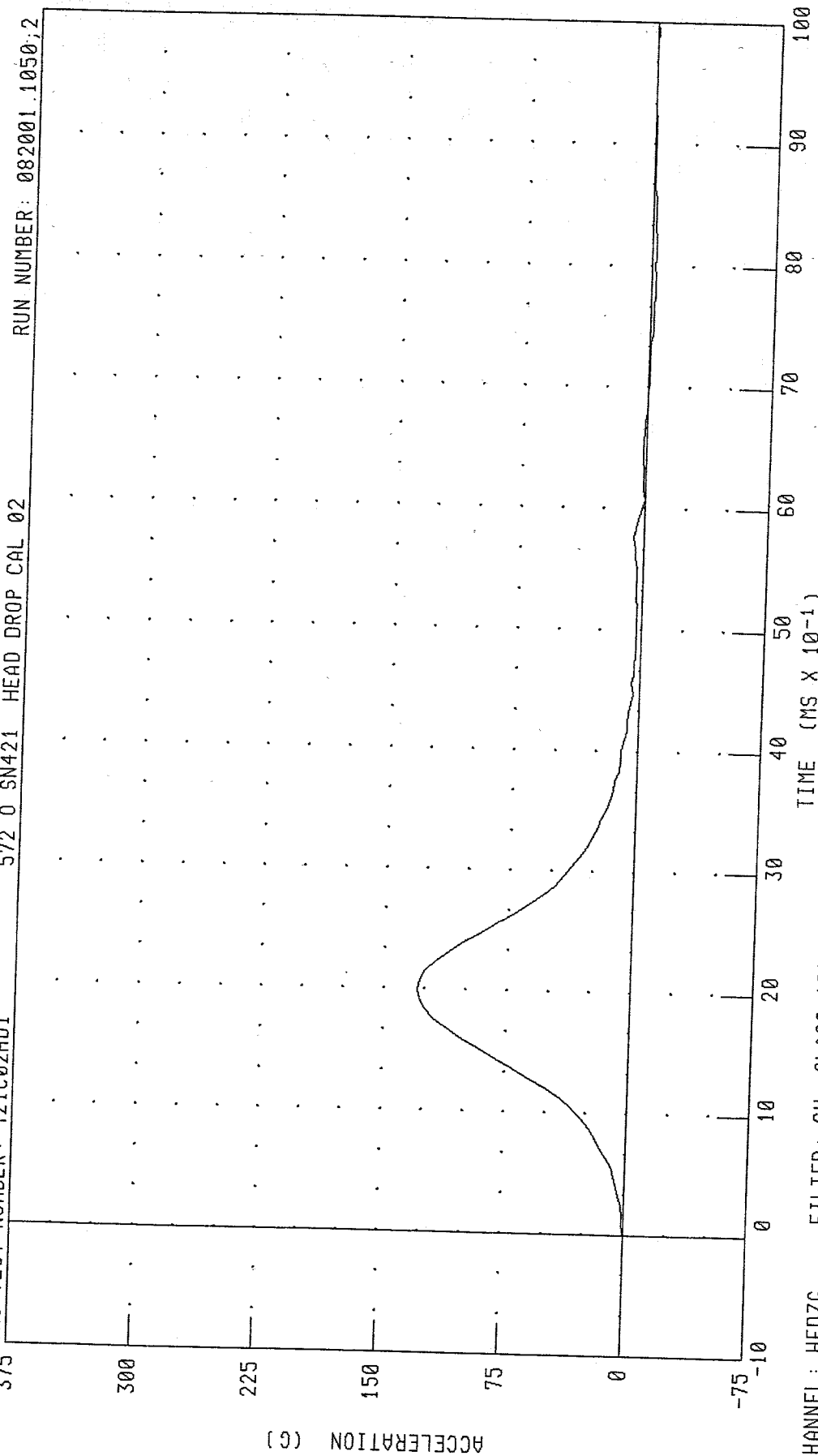
PART 572-0 HYBRID III SMALL FEMALE - HEAD CALIBRATION

HEAD ACCELERATION Z AXIS

TRC TEST NUMBER: 421C02HD1

572 0 SN421 HEAD DROP CAL 02

RUN NUMBER: 082001.1050;2



CHANNEL: HEDZC

FILTER: CH. CLASS 1000

TIME (MS X 10⁻¹)

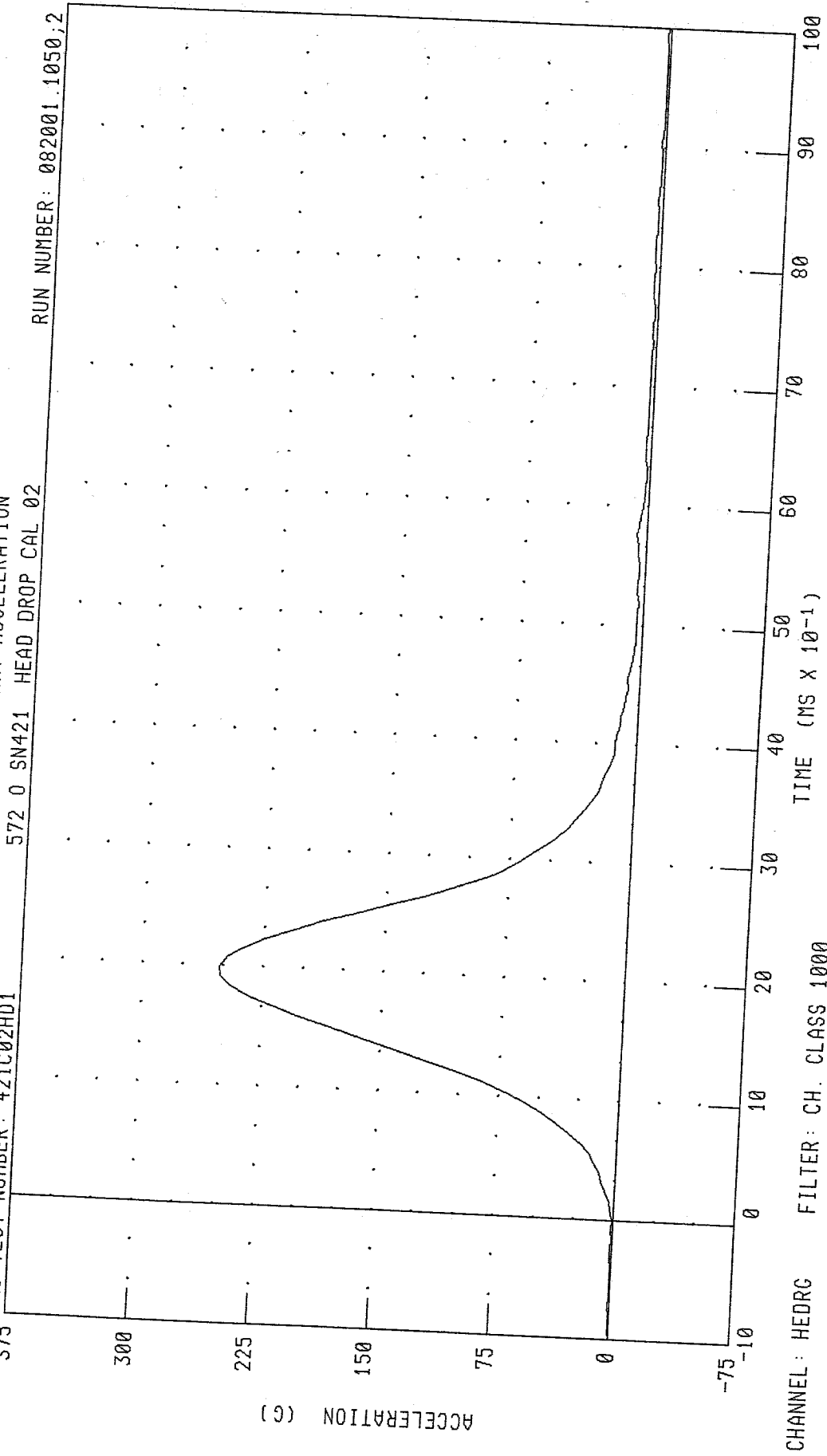
PEAK DATA: 129.17 G @ 2.00 MS; -2.97 G @ 7.76 MS

PART 572-0 HYBRID III SMALL FEMALE -- HEAD CALIBRATION
HEAD RESULTANT ACCELERATION

TRC TEST NUMBER: 421C02HD1

572 0 SN421 HEAD DROP CAL 02

RUN NUMBER: 082001.1050;2



CHANNEL: HEDRG

FILTER: CH. CLASS 1000

TIME (MS X 10^{-1})

PEAK DATA: 252.13 G @ 2.00 MS; 0.30 G @ -0.96 MS

TRANSPORTATION RESEARCH CENTER INC.

HYBRID III SMALL FEMALE

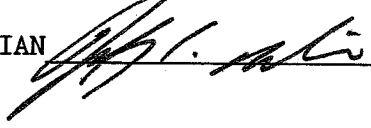
30-JUL-01

NECK FLEXION TEST - 6 CHANNEL TRANSDUCER

TRC INC. TEST NO: 421C02NF14 572 0 SN421 NECK FLEX. CAL2

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	7.12 M/S
INTEGRATED PENDULUM VELOCITY	10 MS	2.0 - 2.5 M/S	2.32 M/S
	20 MS	4.0 - 5.0 M/S	4.71 M/S
	30 MS	5.8 - 7.0 M/S	6.88 M/S
PEAK D-PLANE ROTATION		77 - 91 DEG.	78.27 DEG.
PEAK MOMENT DURING ROTATION INTERVAL		69 - 83 NM	72.42 NM
POSITIVE MOMENT DECAY TIME TO 10 NM		80 - 100 MS	86.08 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 073001.1419;1

	msec	TOTAL	(deg	)	Min, Max values =	25.812 @ 100.0000	78.272 @ 58.1600
838	50.0000 -->	74.995	75.057	75.119	75.180	75.240	75.471
848	50.8000 -->	75.582	75.637	75.691	75.744	75.796	75.951
858	51.6000 -->	76.101	76.150	76.199	76.247	76.295	76.390
868	52.4000 -->	76.575	76.620	76.665	76.709	76.753	76.840
878	53.2000 -->	77.009	77.050	77.091	77.131	77.171	77.210
888	54.0000 -->	77.397	77.432	77.467	77.501	77.535	77.568
898	54.8000 -->	77.721	77.750	77.777	77.804	77.830	77.856
908	55.6000 -->	77.970	77.991	78.010	78.029	78.047	78.065
918	56.4000 -->	78.140	78.152	78.164	78.176	78.186	78.196
928	57.2000 -->	78.236	78.242	78.248	78.253	78.257	78.261
938	58.0000 -->	78.271	78.272	78.272	78.272	78.271	78.263
948	58.8000 -->	78.257	78.253	78.249	78.244	78.239	78.228
958	59.6000 -->	78.202	78.194	78.186	78.178	78.170	78.151
968	60.4000 -->	78.110	78.098	78.087	78.074	78.062	78.048
978	61.2000 -->	77.974	77.958	77.941	77.923	77.905	78.005
988	62.0000 -->	77.782	77.760	77.736	77.712	77.687	77.867
998	62.8000 -->	77.521	77.491	77.460	77.428	77.395	77.608
1008	63.6000 -->	77.180	77.141	77.102	77.061	77.020	77.255
1018	64.4000 -->	76.756	76.709	76.661	76.613	76.563	76.847
1028	65.2000 -->	76.253	76.199	76.144	76.088	76.032	76.359
1038	66.0000 -->	75.682	75.622	75.561	75.500	75.438	75.801
1048	66.8000 -->	75.056	74.991	74.925	74.859	74.792	75.185
1058	67.6000 -->	74.384	74.315	74.245	74.175	74.105	74.522
1068	68.4000 -->	73.674	73.601	73.527	73.453	73.379	73.819
1078	69.2000 -->	72.925	72.848	72.771	72.693	72.615	73.078
1088	70.0000 -->	72.135	72.054	71.972	71.889	71.806	72.297
1098	70.8000 -->	71.298	71.211	71.124	71.037	70.949	71.469
1108	71.6000 -->	70.409	70.317	70.225	70.132	70.039	70.591
1118	72.4000 -->	69.470	69.374	69.277	69.180	69.083	69.661
1128	73.2000 -->	68.491	68.392	68.292	68.192	68.092	68.690
1138	74.0000 -->	67.485	67.384	67.282	67.180	67.078	67.688
1148	74.8000 -->	66.463	66.360	66.257	66.154	66.051	66.668
1158	75.6000 -->	65.429	65.325	65.221	65.117	65.013	65.637
1168	76.4000 -->	64.384	64.278	64.173	64.067	63.961	64.594
1178	77.2000 -->	63.319	63.210	63.102	62.993	62.884	63.534
1188	78.0000 -->	62.220	62.108	61.995	61.882	61.769	62.443
1198	78.8000 -->	61.078	60.961	60.843	60.725	60.607	61.310
1208	79.6000 -->	59.887	59.766	59.643	59.521	59.398	60.129
1218	80.4000 -->	58.653	58.527	58.401	58.275	58.148	58.903
1228	81.2000 -->	57.383	57.254	57.125	56.996	56.867	57.639
1238	82.0000 -->	56.087	55.957	55.826	55.696	55.565	56.348
1248	82.8000 -->	54.779	54.648	54.517	54.386	54.255	55.041
1258	83.6000 -->	53.470	53.339	53.208	53.077	52.947	53.731
1268	84.4000 -->	52.163	52.033	51.902	51.771	51.641	52.424
1278	85.2000 -->	50.856	50.725	50.593	50.462	50.331	51.118
1288	86.0000 -->	49.539	49.407	49.274	49.142	49.009	49.804
1298	86.8000 -->	48.207	48.072	47.938	47.803	47.668	48.475
1308	87.6000 -->	46.854	46.717	46.581	46.444	46.307	47.126
1318	88.4000 -->	45.484	45.346	45.208	45.071	44.933	45.759
1328	89.2000 -->	44.104	43.966	43.827	43.689	43.551	44.380
							42.998
							42.859

[DUMMY.421C02]421C02NF14D.RAD;1
TRC INC. 421C02NF14 01211
TOTAL Deltax = 0.080000 msec

572 O SN421 NECK FLEX. CAL2										7.1 m/sec		30-JUL-01 14:25		Page 2	
Npts = 8000; IP0 = 213; Filter = BLPP										100/ 250/ -16					
										Min, Max values =					
(deg)															
TOTAL															
msec															
1338	90.0000	-->	42.721	42.583	42.445	42.307	42.169	42.031	41.893	41.755	78.272	@	58.1600		
1348	90.8000	-->	41.342	41.205	41.068	40.931	40.794	40.657	40.520	40.383	41.618			41.480	
1358	91.6000	-->	39.973	39.837	39.701	39.564	39.428	39.292	39.156	39.020	40.246			40.110	
1368	92.4000	-->	38.613	38.477	38.341	38.205	38.070	37.934	37.798	37.662	38.884			38.748	
1378	93.2000	-->	37.255	37.119	36.983	36.848	36.712	36.576	36.440	36.304	37.527			37.391	
1388	94.0000	-->	35.896	35.759	35.623	35.487	35.351	35.214	35.078	34.941	36.168			36.032	
1398	94.8000	-->	34.531	34.394	34.258	34.121	33.984	33.847	33.710	33.573	34.805			34.668	
1408	95.6000	-->	33.162	33.025	32.888	32.750	32.613	32.476	32.340	32.203	33.436			33.299	
1418	96.4000	-->	31.792	31.656	31.519	31.383	31.247	31.111	30.975	30.839	32.066			31.929	
1428	97.2000	-->	30.433	30.297	30.162	30.027	29.893	29.758	29.623	29.489	30.703			30.568	
1438	98.0000	-->	29.087	28.953	28.820	28.687	28.554	28.421	28.288	28.156	29.355			29.221	
1448	98.8000	-->	27.759	27.628	27.497	27.365	27.235	27.104	26.974	26.844	28.023			27.891	
1458	99.6000	-->	26.455	26.326	26.197	26.069	25.940	25.812			26.714			26.584	

[DUMNY.421C02]421C02NF14D.RAD;1
TRC INC. 421C02NF14 01211
NEKOM Deltax = 0.080000 msec

572 O SN421 NECK FLEX. CAL2 7.1 m/sec
Npts = 8000; IPO = 213; Filter = BLPP 1000/ 2500/ -16

	msec	NEKOM	(N-m	)	Min, Max values =	56.744 @	64.0000	72.417 @	53.2000
878	53.2000 -->	72.417	72.273	72.133	71.836	71.675	71.512	71.205	71.069
888	54.0000 -->	70.939	70.809	70.673	70.405	70.280	70.158	69.918	69.792
898	54.8000 -->	69.664	69.536	69.411	69.172	69.055	68.937	68.694	68.569
908	55.6000 -->	68.445	68.323	68.202	67.964	67.852	67.747	67.544	67.443
918	56.4000 -->	67.344	67.252	67.167	66.996	66.906	66.820	66.683	66.631
928	57.2000 -->	66.587	66.549	66.518	66.470	66.444	66.415	66.362	66.349
938	58.0000 -->	66.344	66.344	66.345	66.341	66.335	66.326	66.293	66.265
948	58.8000 -->	66.227	66.179	66.124	66.018	65.973	65.929	65.842	65.797
958	59.6000 -->	65.745	65.681	65.609	65.450	65.366	65.281	65.116	65.035
968	60.4000 -->	64.949	64.855	64.753	64.537	64.426	64.314	64.091	63.973
978	61.2000 -->	63.845	63.709	63.565	63.267	63.118	62.972	62.689	62.546
988	62.0000 -->	62.400	62.249	62.090	61.744	61.559	61.368	60.974	60.771
998	62.8000 -->	60.562	60.349	60.131	59.676	59.435	59.187	58.677	58.414
1008	63.6000 -->	58.142	57.863	57.583	57.027	56.744			

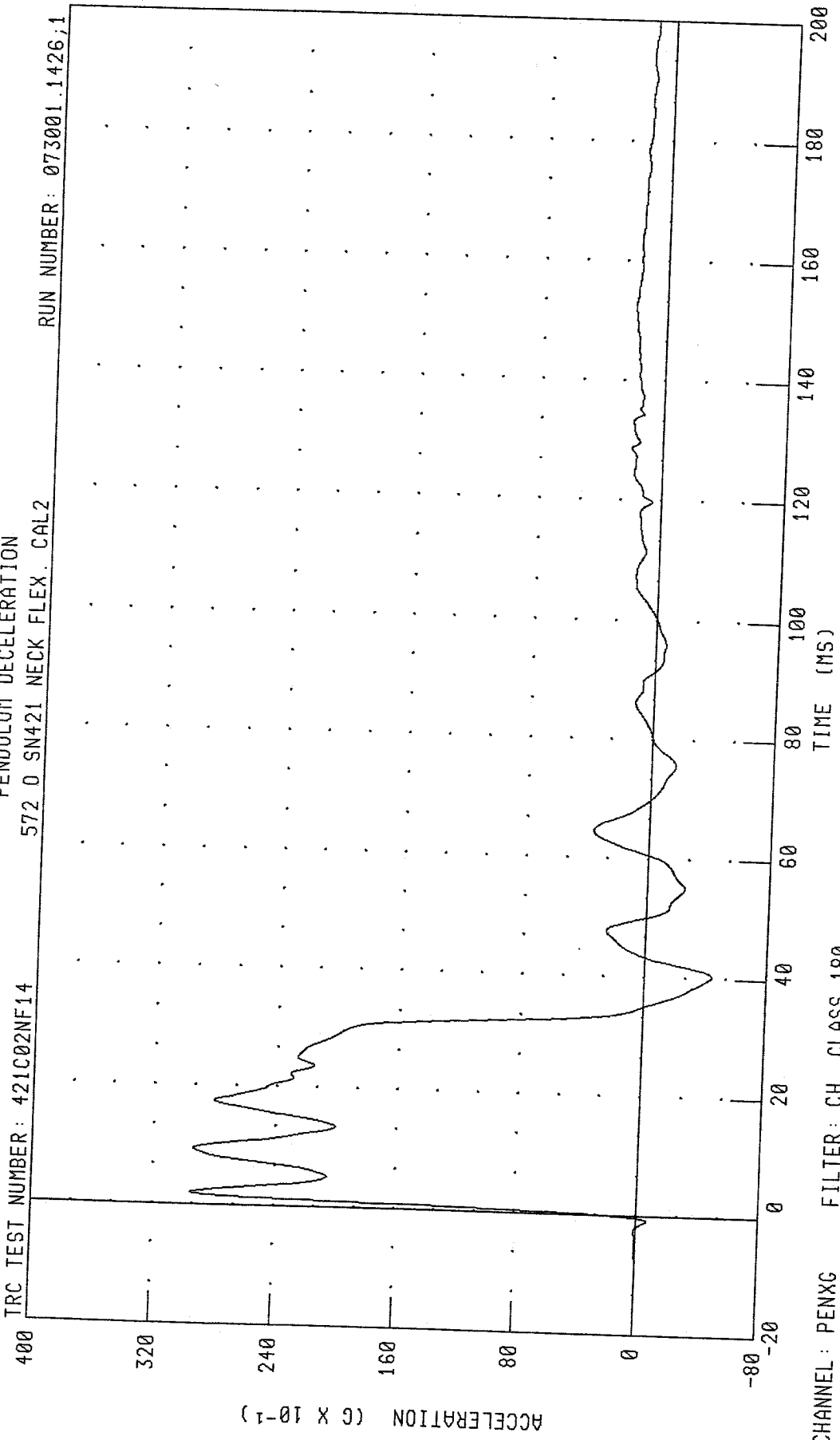
PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

PENDULUM DECELERATION

TRC TEST NUMBER: 421C02NF14

572 0 SN421 NECK FLEX. CAL2

RUN NUMBER: 073001.1426;1



CHANNEL: PENXC FILTER: CH. CLASS 180

PEAK DATA: 29.50 G @ 2.00 MS; -4.41 G @ 40.32 MS

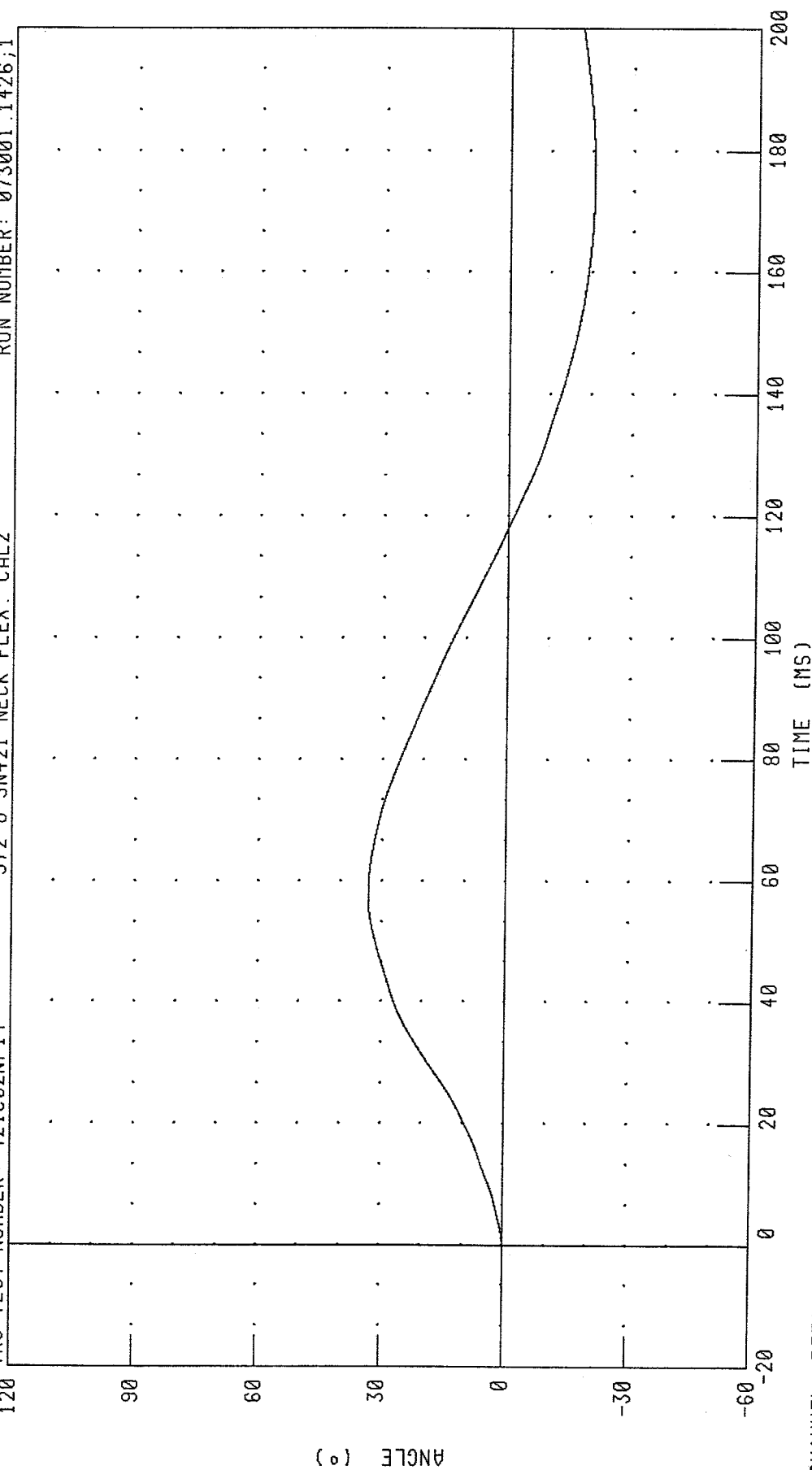
PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER: 421C02NF14

572 0 SN421 NECK FLEX. CAL2

RUN NUMBER: 073001.1426;1



CHANNEL: BETA

FILTER: CH. CLASS 60

PEAK DATA: 33.32 ° @ 57.84 MS; -20.43 ° @ 176.00 MS

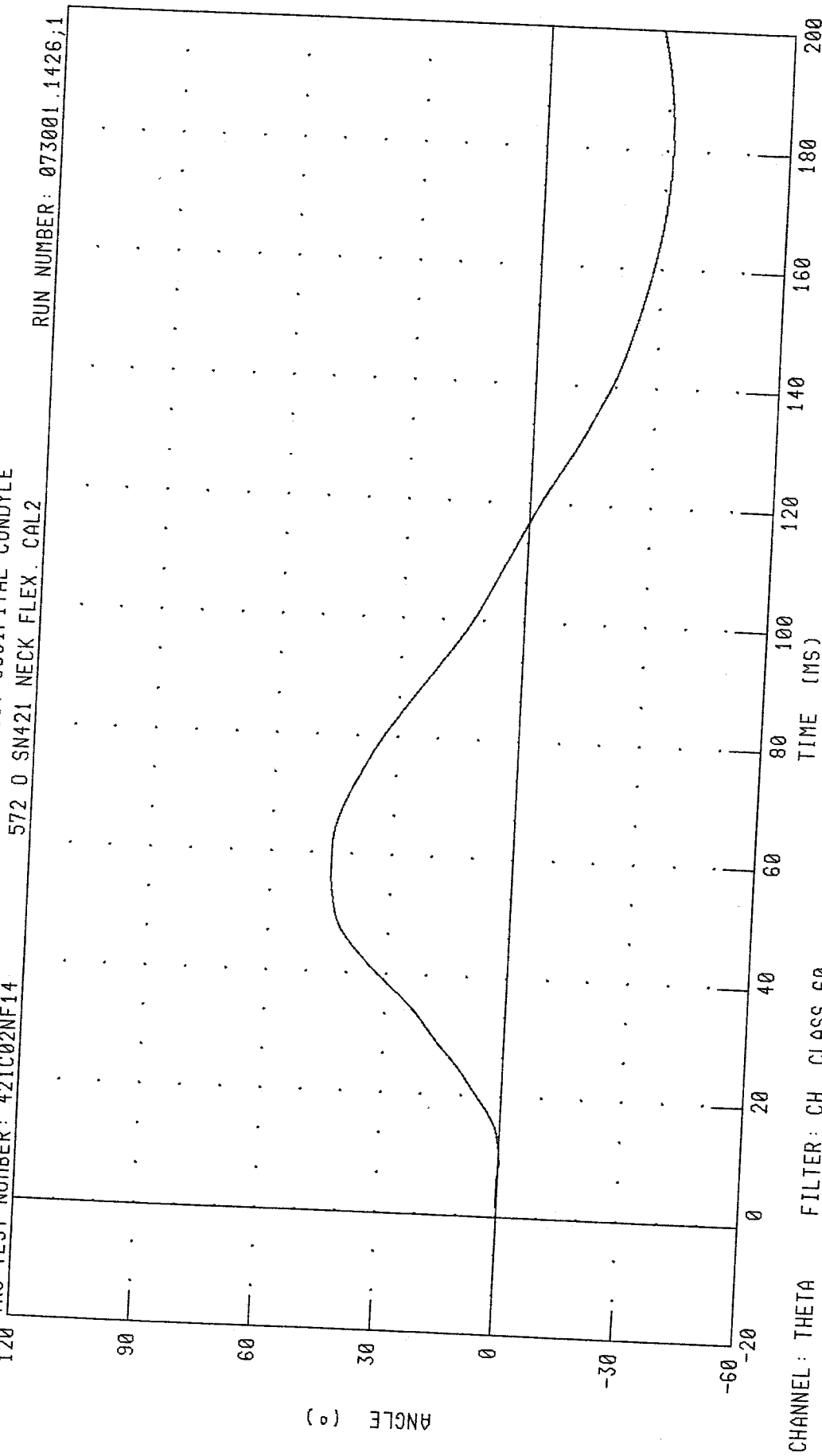
PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

TRC TEST NUMBER: 421C02NF14

ROTATION ABOUT OCCIPITAL CONDYLE

572 0 SN421 NECK FLEX. CAL2

RUN NUMBER: 073001.1426,1



CHANNEL: THETA

FILTER: CH. CLASS 60

PEAK DATA: 44.96 ° @ 58.88 MS, -31.46 ° @ 180.72 MS

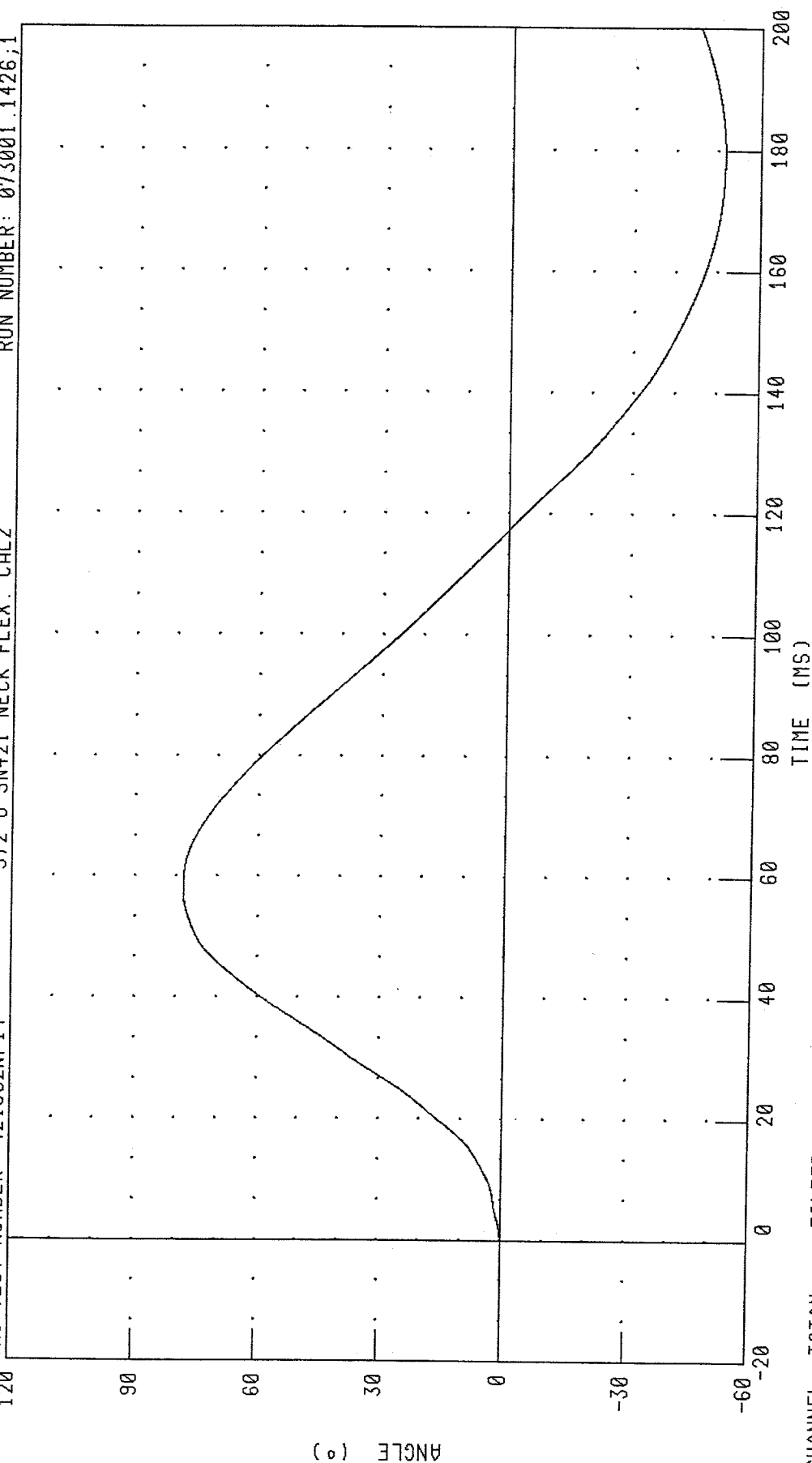
PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

TOTAL ROTATION

TRC TEST NUMBER: 421C02NF14

572 0 SN421 NECK FLEX. CAL2

RUN NUMBER: 073001.1426;1



CHANNEL: TOTAL FILTER: CH. CLASS 60

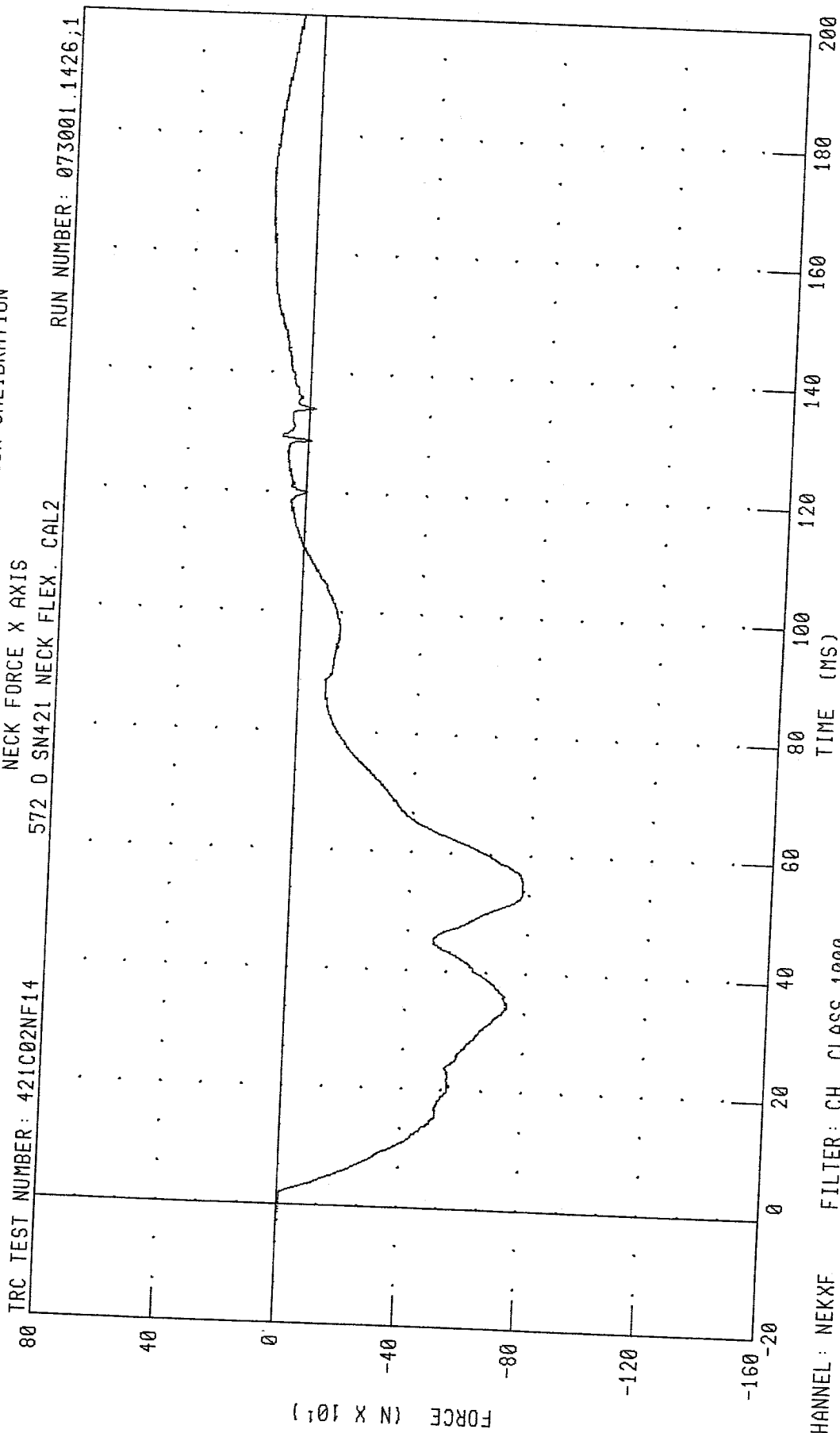
PEAK DATA: 78.27 ° @ 58.16 MS; -51.84 ° @ 179.20 MS

PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

TRC TEST NUMBER: 421C02NF14

572 0 SN421 NECK FLEX. CAL2

RUN NUMBER: 073001.1426;1



CHANNEL: NEKXF FILTER: CH. CLASS 1000

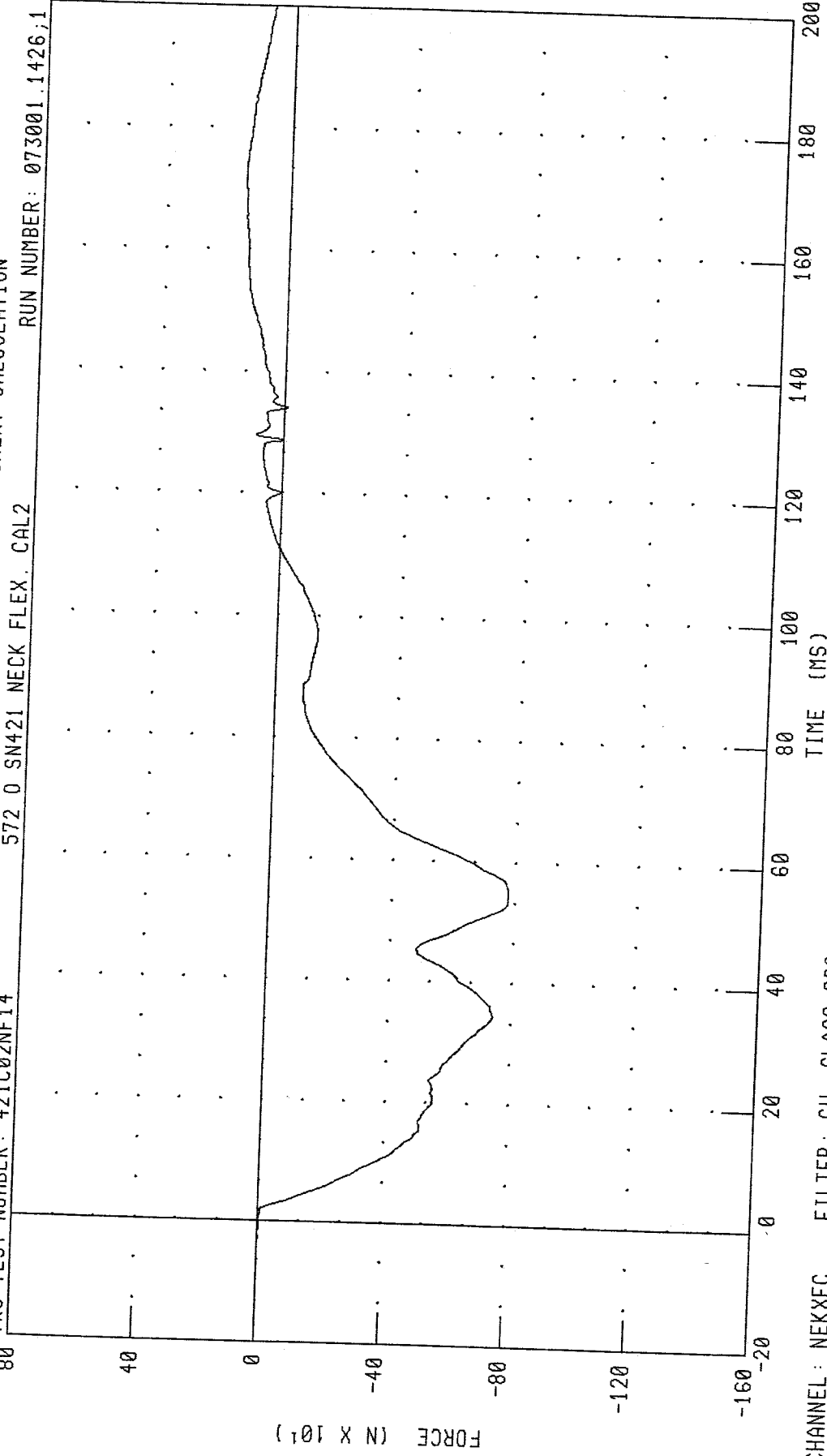
PEAK DATA: 147.90 N @ 169.60 MS; -782.47 N @ 54.08 MS

PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION
NECK FORCE X AXIS FILTERED FOR USE IN OCCIPITAL MOMENT CALCULATION

TRC TEST NUMBER: 421C02NF14

572 0 SN421 NECK FLEX. CAL2

RUN NUMBER: 073001.1426;1



CHANNEL: NEKXFC FILTER: CH. CLASS 600

PEAK DATA: 147.99 N @ 171.84 MS; -779.05 N @ 54.08 MS

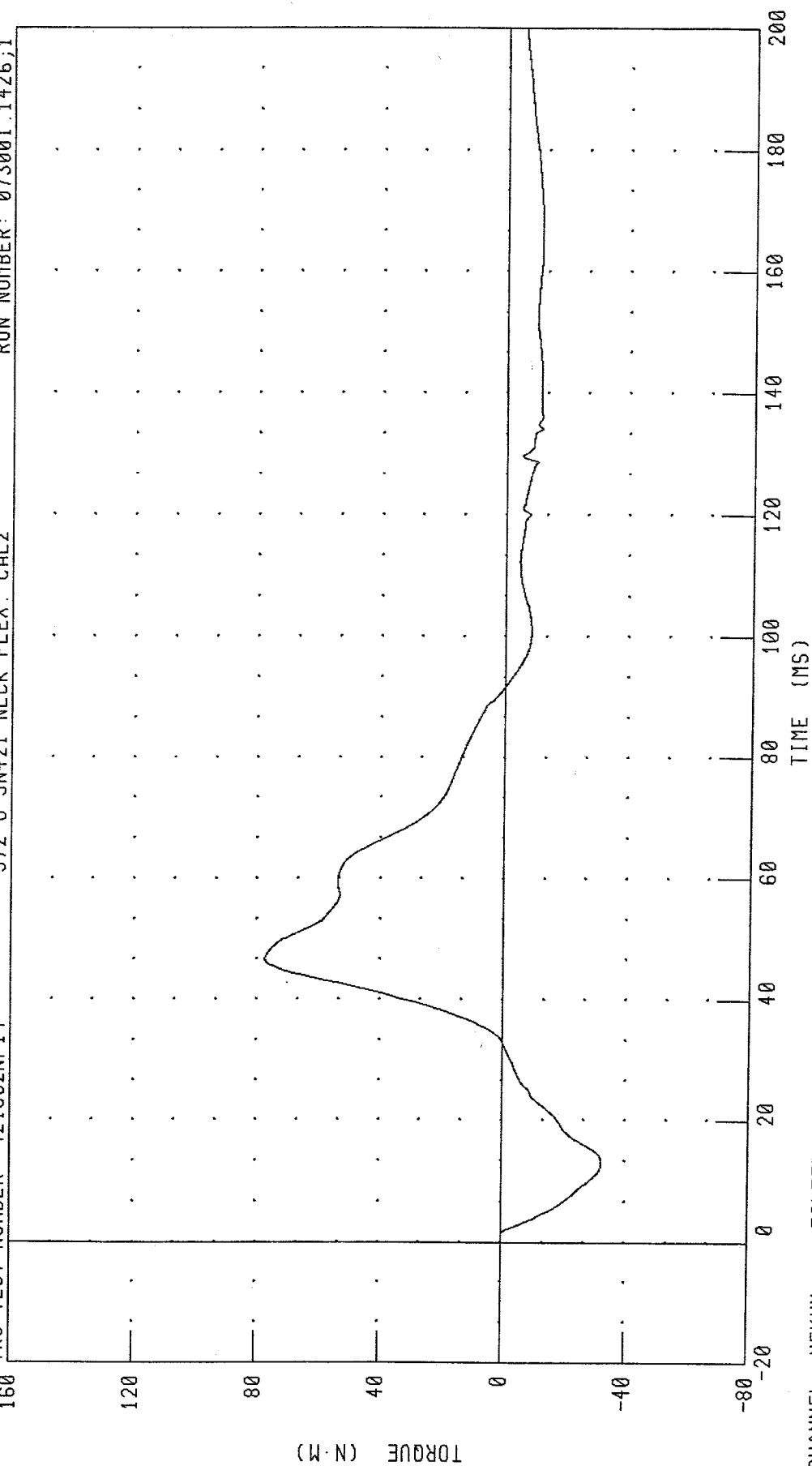
PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

NECK MOMENT Y AXIS

TRC TEST NUMBER: 421C02NF14

572 0 SN421 NECK FLEX. CAL2

RUN NUMBER: 073001.1426;1



CHANNEL: NEKYM

FILTER: CH. CLASS 600

PEAK DATA: 77.33 N·M @ 46.72 MS; -32.40 N·M @ 13.04 MS

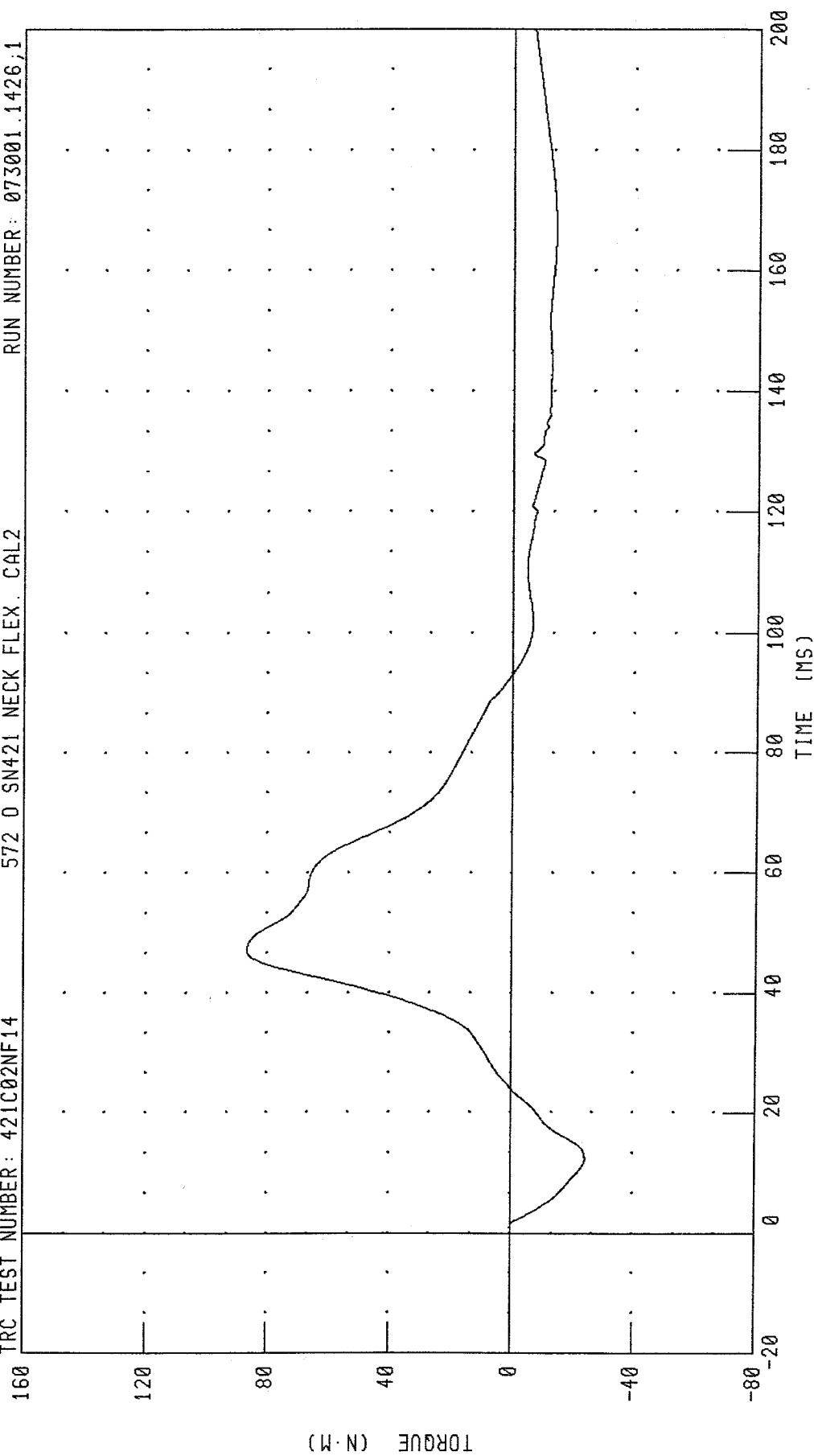
PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: 421C02NF14

572 0 SN421 NECK FLEX. CAL2

RUN NUMBER: 073001.1426,1



CHANNEL: NEKOM

FILTER: CH. CLASS 600

TIME (MS)

PEAK DATA: 86.76 N·M @ 47.20 MS; -24.39 N·M @ 12.40 MS

TRANSPORTATION RESEARCH CENTER INC.

HYBRID III SMALL FEMALE

30-JUL-01

NECK EXTENSION TEST - 6 CHANNEL TRANSDUCER

TRC INC.

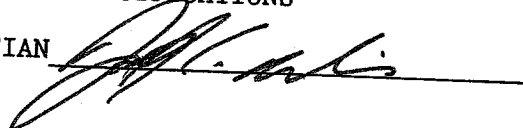
TEST NO: 421C02NE2

572 0 SN421 NECK EXT. CAL 2

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	6.14 M/S
INTEGRATED PENDULUM VELOCITY	10 MS 1.5 - 1.9 M/S	1.67 M/S
	20 MS 3.1 - 3.9 M/S	3.45 M/S
	30 MS 4.6 - 5.6 M/S	5.10 M/S
PEAK D-PLANE ROTATION	99 - 114 DEG.	101.82 DEG.
PEAK MOMENT DURING ROTATION INTERVAL	-53 / - 65 NM	-60.48 NM
NEGATIVE MOMENT DECAY TIME TO 10 NM LEVEL	94 - 114 MS	101.20 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 073001.1606;1

msec	TOTAL (deg)	Min, Max values =	100/ 250/ -16	101.826 @ 73.8400
871 50.0000 -->	75.048 75.203	75.513 75.668	75.979 76.135	76.291 76.447
881 50.8000 -->	76.604 76.340	77.075 77.232	77.548 77.706	77.864 78.023
891 51.6000 -->	78.181 78.340	78.657 78.816	79.134 79.293	79.452 79.610
901 52.4000 -->	79.769 79.928	80.086 80.244	80.716 80.873	81.029 81.184
911 53.2000 -->	81.339 81.494	81.647 81.801	82.255 82.406	82.555 82.703
921 54.0000 -->	82.851 82.998	83.144 83.289	83.719 83.860	84.001 84.141
931 54.8000 -->	84.280 84.418	84.556 84.692	85.096 85.229	85.362 85.493
941 55.6000 -->	85.624 85.754	86.012 86.140	86.394 86.519	86.645 86.770
951 56.4000 -->	86.894 87.018	87.264 87.386	87.629 87.750	87.871 87.992
961 57.2000 -->	88.112 88.231	88.470 88.589	88.826 88.944	89.062 89.180
971 58.0000 -->	89.297 89.414	89.647 89.763	89.995 90.110	90.224 90.339
981 58.8000 -->	90.453 90.566	90.792 90.904	91.126 91.237	91.347 91.456
991 59.6000 -->	91.564 91.672	91.886 91.991	92.200 92.304	92.406 92.508
1001 60.4000 -->	92.609 92.709	92.906 93.004	93.197 93.292	93.386 93.480
1011 61.2000 -->	93.573 93.665	93.757 93.847	94.027 94.116	94.291 94.378
1021 62.0000 -->	94.465 94.551	94.721 94.805	94.972 95.055	95.137 95.219
1031 62.8000 -->	95.381 95.300	95.462 95.543	95.781 95.860	95.939 96.017
1041 63.6000 -->	96.096 96.173	96.251 96.328	96.482 96.558	96.634 96.710
1051 64.4000 -->	96.861 96.935	97.010 97.084	97.231 97.304	97.377 97.449
1061 65.2000 -->	97.592 97.662	97.732 97.801	97.938 98.006	98.072 98.138
1071 66.0000 -->	98.268 98.332	98.457 98.518	98.579 98.639	98.756 98.813
1081 66.8000 -->	98.870 98.925	99.035 99.088	99.141 99.194	99.245 99.296
1091 67.6000 -->	99.396 99.445	99.541 99.588	99.635 99.682	99.773 99.818
1101 68.4000 -->	99.863 99.908	99.952 99.996	100.039 100.082	100.168 100.211
1111 69.2000 -->	100.295 100.337	100.379 100.421	100.462 100.503	100.544 100.585
1121 70.0000 -->	100.706 100.746	100.786 100.825	100.864 100.902	100.941 100.978
1131 70.8000 -->	101.089 101.125	101.160 101.195	101.229 101.262	101.294 101.326
1141 71.6000 -->	101.417 101.445	101.473 101.499	101.525 101.550	101.573 101.596
1151 72.4000 -->	101.657 101.676	101.693 101.709	101.724 101.738	101.751 101.774
1161 73.2000 -->	101.792 101.800	101.807 101.812	101.817 101.821	101.826 101.825
1171 74.0000 -->	101.824 101.822	101.819 101.816	101.811 101.806	101.799 101.792
1181 74.8000 -->	101.767 101.757	101.746 101.735	101.723 101.710	101.697 101.683
1191 75.6000 -->	101.637 101.621	101.605 101.587	101.570 101.552	101.533 101.514
1201 76.4000 -->	101.455 101.434	101.413 101.392	101.371 101.349	101.327 101.304
1211 77.2000 -->	101.236 101.212	101.189 101.165	101.141 101.117	101.093 101.068
1221 78.0000 -->	100.994 100.968	100.943 100.918	100.892 100.866	100.840 100.813
1231 78.8000 -->	100.733 100.706	100.678 100.650	100.622 100.594	100.565 100.536
1241 79.6000 -->	100.446 100.415	100.384 100.353	100.321 100.288	100.255 100.222
1251 80.4000 -->	100.119 100.083	100.047 100.011	99.974 99.936	99.859 99.820
1261 81.2000 -->	99.740 99.699	99.658 99.616	99.574 99.531	99.487 99.443
1271 82.0000 -->	99.308 99.262	99.216 99.169	99.073 99.025	98.976 98.926
1281 82.8000 -->	98.826 98.775	98.724 98.672	98.567 98.514	98.407 98.353
1291 83.6000 -->	98.298 98.244	98.188 98.133	98.021 97.965	97.851 97.794
1301 84.4000 -->	97.736 97.679	97.621 97.562	97.445 97.386	97.267 97.207
1311 85.2000 -->	97.147 97.087	97.026 96.966	96.843 96.782	96.658 96.596
1321 86.0000 -->	96.533 96.470	96.407 96.344	96.216 96.152	96.022 95.957
1331 86.8000 -->	95.891 95.825	95.759 95.692	95.558 95.490	95.422 95.354
1341 87.6000 -->	95.215 95.146	95.076 94.935	94.864 94.792	94.721 94.649
1351 88.4000 -->	94.504 94.431	94.357 94.284	94.136 94.062	93.987 93.912
1361 89.2000 -->	93.762 93.687	93.611 93.535	93.382 93.305	93.151 93.073

[DUMMY.421C02J421C02NE2D.RAD;1
TRC INC. 421C02NE2 01211
TOTAN Deltax = 0.080000 msec

572 O SN421 NECK EXT. CAL 2
Npts = 8000; IPO = 246; Filter = BLPP

100/ 250/ -16

30-JUL-01 16:07

Page 2

	msec	TOTAN	(deg	)	Min, Max values =	75.048 @	50.0000	101.826 @	73.8400
1371	90.0000 -->	92.995	92.917	92.839	92.760	92.681	92.602	92.523	92.443
1381	90.8000 -->	92.204	92.124	92.043	91.963	91.882	91.801	91.720	91.639
1391	91.6000 -->	91.394	91.313	91.231	91.148	91.066	90.983	90.900	90.817
1401	92.4000 -->	90.566	90.482	90.397	90.312	90.227	90.142	90.056	89.970
1411	93.2000 -->	89.709	89.622	89.534	89.446	89.358	89.269	89.180	89.091
1421	94.0000 -->	88.821	88.730	88.639	88.548	88.457	88.365	88.273	88.180
1431	94.8000 -->	87.902	87.809	87.715	87.622	87.528	87.433	87.339	87.244
1441	95.6000 -->	86.959	86.864	86.768	86.672	86.576	86.479	86.382	86.285
1451	96.4000 -->	85.992	85.894	85.795	85.696	85.597	85.498	85.398	85.299
1461	97.2000 -->	84.998	84.898	84.797	84.696	84.595	84.494	84.393	84.292
1471	98.0000 -->	83.988	83.887	83.785	83.684	83.583	83.482	83.380	83.279
1481	98.8000 -->	82.975	82.874	82.773	82.672	82.570	82.469	82.367	82.265
1491	99.6000 -->	81.960	81.857	81.755	81.653	81.550	81.447		

[DUMMY.421C02]421C02NE2D.RAD;1
TRC INC. 421C02NE2 01211
NEKOM Deltax = 0.080000 msec

572 O SN421 NECK EXT. CAL 2 6.1 m/sec 30-JUL-01 16:07 Page 1
Npts = 8000; IPO = 246; Filter = BLPP 1000/ 2500/ -16 -31.381 @ 82.5600

	msec	NEKOM	(N-M)		Min, Max values =	1000/ 2500/ -16	-31.381 @ 82.5600
1085	67.1200 -->	-58.683	-58.796	-58.899	-59.084	-59.263	-59.445
1095	67.9200 -->	-59.630	-59.721	-59.890	-59.964	-60.094	-60.197
1105	68.7200 -->	-60.278	-60.310	-60.351	-60.366	-60.396	-60.424
1115	69.5200 -->	-60.451	-60.466	-60.478	-60.466	-60.443	-60.437
1125	70.3200 -->	-60.366	-60.356	-60.342	-60.298	-60.418	-60.373
1135	71.1200 -->	-59.964	-59.890	-59.816	-60.266	-60.226	-60.381
1145	71.9200 -->	-59.012	-58.888	-58.764	-59.656	-60.173	-60.109
1155	72.7200 -->	-57.890	-57.767	-58.644	-58.527	-59.460	-59.247
1165	73.5200 -->	-56.433	-56.258	-57.635	-57.351	-58.306	-58.105
1175	74.3200 -->	-54.292	-54.077	-55.856	-55.633	-57.051	-56.749
				-53.652	-53.440	-55.175	-54.727
				-51.521	-51.307	-53.229	-52.580
1185	75.1200 -->	-52.152	-51.942	-51.732	-51.307	-50.854	-50.612
1195	75.9200 -->	-49.849	-49.586	-49.321	-48.798	-48.289	-48.039
1205	76.7200 -->	-47.288	-47.042	-46.799	-46.312	-45.836	-45.385
1215	77.5200 -->	-44.942	-44.720	-44.494	-44.018	-43.507	-43.243
1225	78.3200 -->	-42.459	-42.201	-41.944	-41.438	-40.951	-40.717
1235	79.1200 -->	-40.017	-39.784	-39.558	-39.340	-38.700	-38.476
1245	79.9200 -->	-37.773	-37.552	-37.342	-36.932	-36.520	-36.314
1255	80.7200 -->	-35.704	-35.502	-35.300	-34.898	-34.505	-34.316
1265	81.5200 -->	-33.774	-33.592	-33.408	-33.031	-32.647	-32.461
1275	82.3200 -->	-31.928	-31.744	-31.560	-31.381		

[DUMMY.421C02]421C02NE2D.RAD;1
TRC INC. 421C02NE2 01211
NEKOM Deltax = 0.080000 msec

572 O SN421 NECK EXT. CAL 2 6.1 m/sec
Npts = 8000; IP0 = 246; Filter = BLPP 1000/ 2500/ -16

Page 1
30-JUL-01 16:07

	msec	NEKOM	(N-m	)	Min, Max values =	1000/ 2500/ -16	-4.239 @ 114.0000
1421	94.0000 -->	-15.014	-14.944	-14.878	-14.752	-14.620	-14.469
1431	94.8000 -->	-14.318	-14.246	-14.176	-14.042	-13.905	-13.761
1441	95.6000 -->	-13.623	-13.558	-13.497	-13.371	-13.233	-13.110
1451	96.4000 -->	-13.007	-12.957	-12.905	-12.846	-12.783	-12.718
1461	97.2000 -->	-12.428	-12.373	-12.316	-12.259	-12.206	-12.158
1471	98.0000 -->	-11.918	-11.875	-11.830	-11.780	-11.727	-11.674
1481	98.8000 -->	-11.438	-11.391	-11.342	-11.290	-11.238	-11.187
1491	99.6000 -->	-10.980	-10.933	-10.883	-10.831	-10.779	-10.727
1501	100.4000 -->	-10.472	-10.409	-10.349	-10.300	-10.261	-10.227
1511	101.2000 -->	-10.020	-9.989	-9.970	-9.956	-9.940	-9.917
1521	102.0000 -->	-9.713	-9.682	-9.653	-9.620	-9.580	-9.537
1531	102.8000 -->	-9.395	-9.365	-9.328	-9.286	-9.239	-9.190
1541	103.6000 -->	-9.005	-8.977	-8.941	-8.897	-8.850	-8.807
1551	104.4000 -->	-8.710	-8.688	-8.657	-8.619	-8.580	-8.543
1561	105.2000 -->	-8.359	-8.324	-8.293	-8.263	-8.232	-8.199
1571	106.0000 -->	-8.028	-7.995	-7.963	-7.934	-7.906	-7.876
1581	106.8000 -->	-7.684	-7.655	-7.625	-7.588	-7.541	-7.488
1591	107.6000 -->	-7.286	-7.254	-7.222	-7.193	-7.166	-7.139
1601	108.4000 -->	-6.946	-6.907	-6.867	-6.824	-6.775	-6.724
1611	109.2000 -->	-6.516	-6.475	-6.434	-6.394	-6.355	-6.316
1621	110.0000 -->	-6.070	-6.034	-6.007	-5.986	-5.966	-5.939
1631	110.8000 -->	-5.717	-5.677	-5.643	-5.612	-5.582	-5.549
1641	111.6000 -->	-5.299	-5.241	-5.187	-5.137	-5.091	-5.048
1651	112.4000 -->	-4.923	-4.904	-4.878	-4.843	-4.798	-4.747
1661	113.2000 -->	-4.523	-4.495	-4.471	-4.445	-4.413	-4.376
1671	114.0000 -->	-4.239					

PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

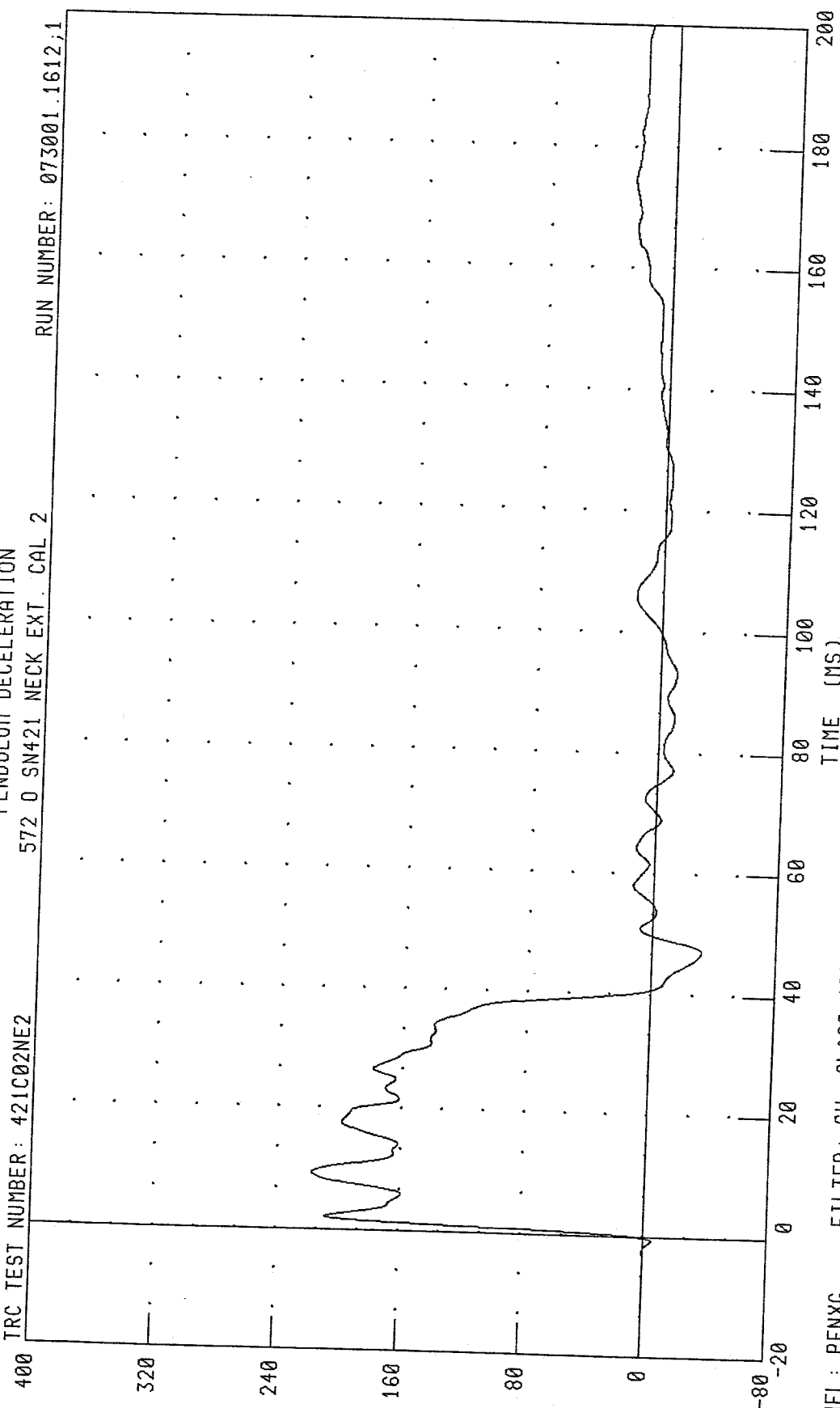
PENDULUM DECELERATION

TRC TEST NUMBER: 421C02NE2

572 0 SN421 NECK EXT. CAL 2

RUN NUMBER: 073001.1612;1

ACCELERATION (G X 10⁻¹)



CHANNEL: PENXC FILTER: CH. CLASS 180

PEAK DATA: 21.73 G @ 9.28 MS; -3.22 G @ 47.20 MS

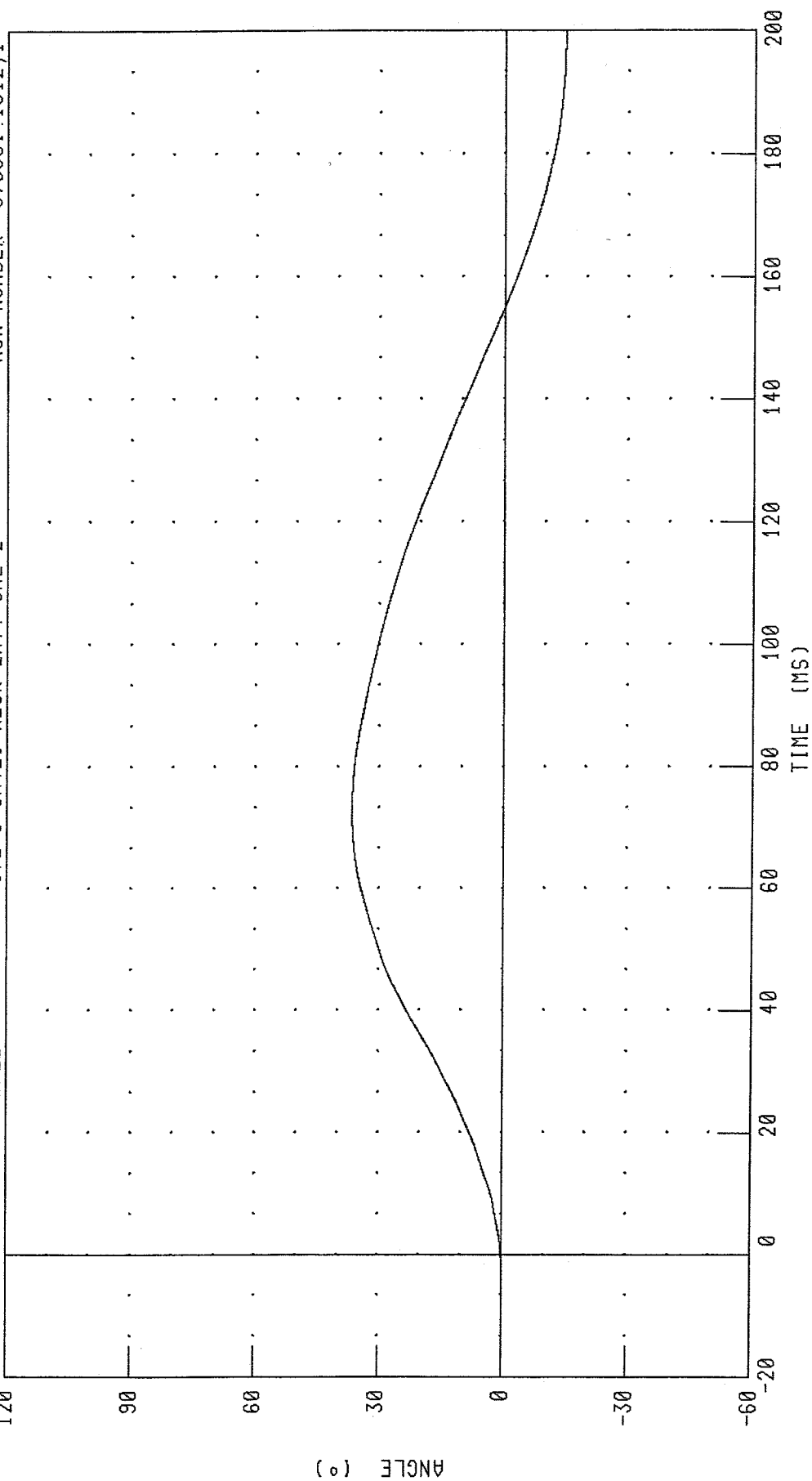
PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER: 421C02NE2

572 0 SN421 NECK EXT. CAL 2

RUN NUMBER: 073001.1612;1



CHANNEL: BETA FILTER: CH. CLASS 60

PEAK DATA: 36.52 ° @ 73.12 MS; -14.73 ° @ 199.36 MS

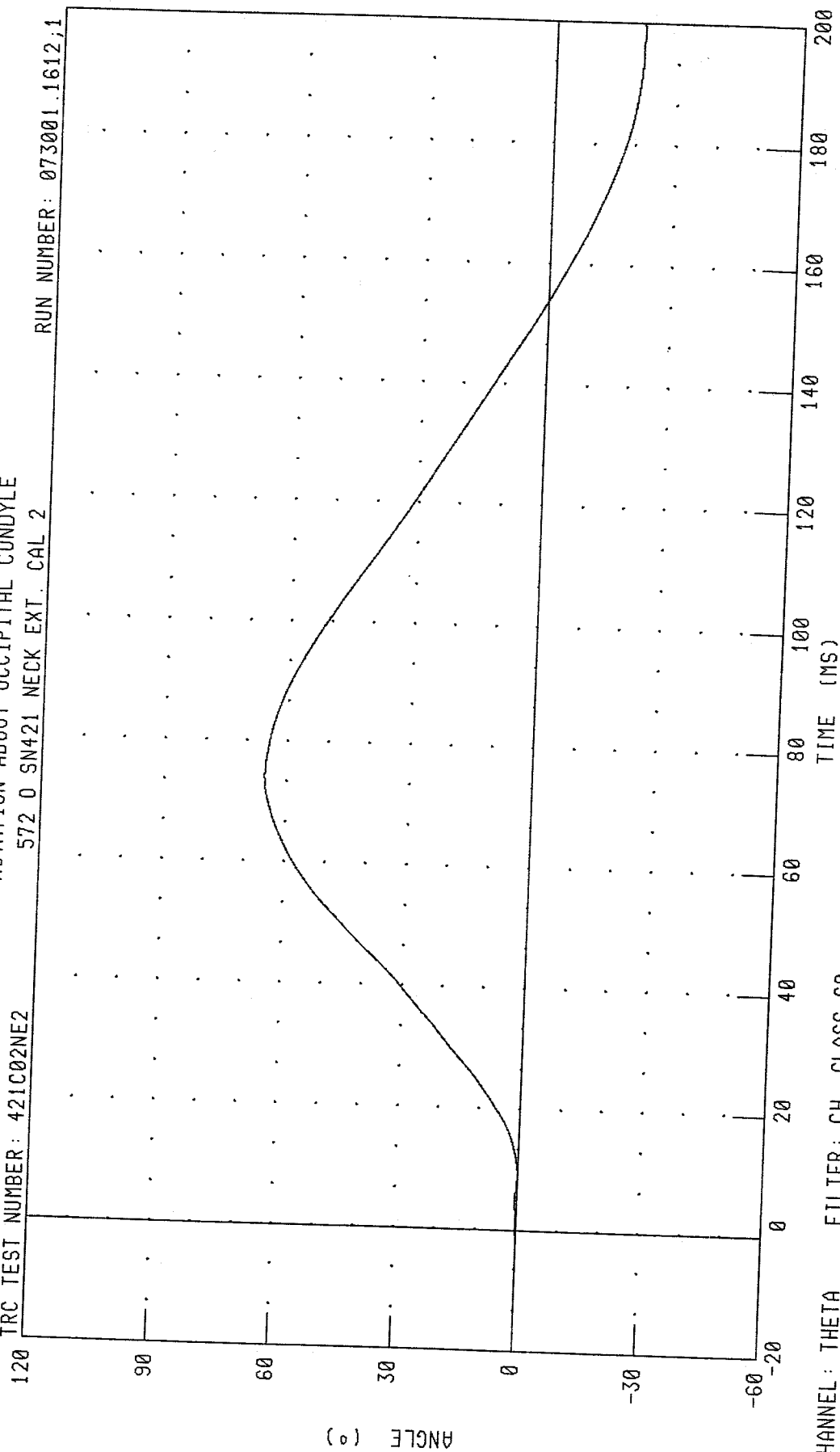
PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: 421C02NE2

572 0 SN421 NECK EXT. CAL 2

RUN NUMBER: 073001.1612;1



CHANNEL: THETA FILTER: CH. CLASS 60

PEAK DATA: 65.32 ° @ 74.24 MS; -21.56 ° @ 198.32 MS

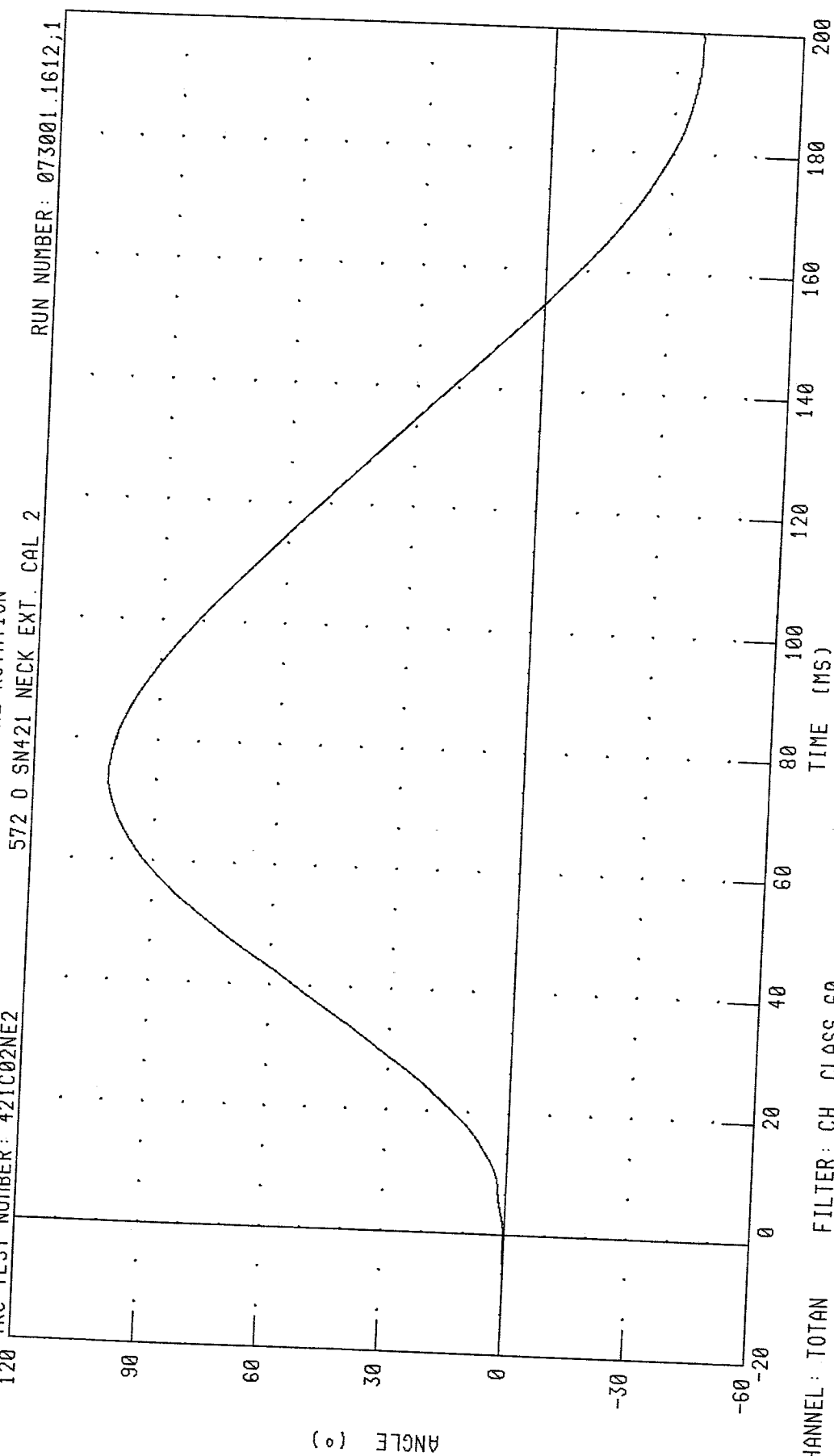
PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

TRC TEST NUMBER: 421C02NE2

TOTAL ROTATION

572 0 SN421 NECK EXT. CAL 2

RUN NUMBER: 073001.1612;1



CHANNEL: TOTAN

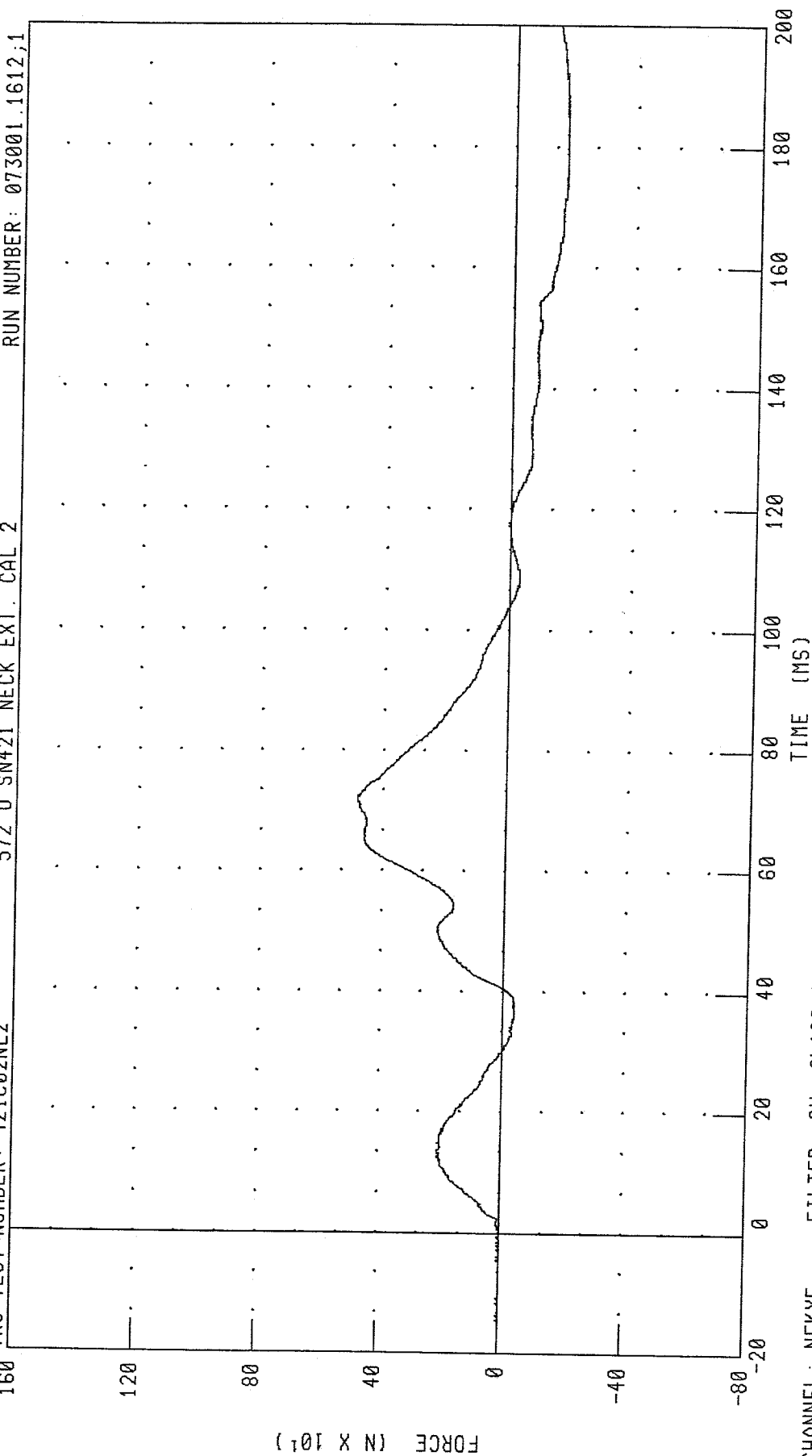
FILTER: CH. CLASS 60

PEAK DATA: 101.83 ° @ 73.84 MS; -36.28 ° @ 198.88 MS

PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

NECK FORCE X AXIS

TRC TEST NUMBER: 421C02NE2 572 0 SN421 NECK EXT. CAL 2 RUN NUMBER: 073001.1612,1



CHANNEL: NEKXF FILTER: CH. CLASS 1000

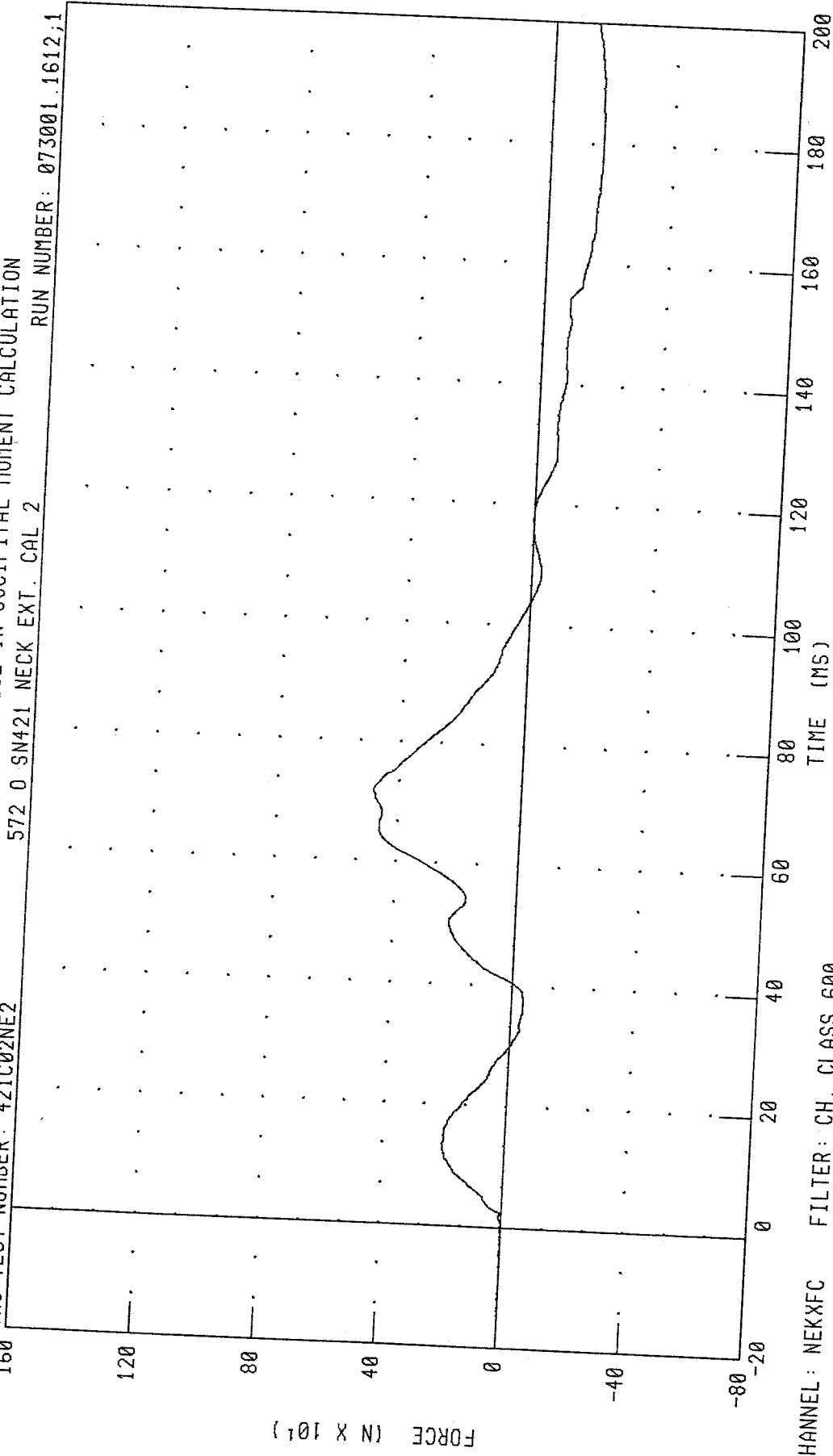
PEAK DATA: 482.36 N @ 71.44 MS; -169.77 N @ 173.20 MS

PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION
NECK FORCE X AXIS FILTERED FOR USE IN OCCIPITAL MOMENT CALCULATION

TRC TEST NUMBER: 421C02NE2

572 0 SN421 NECK EXT. CAL 2

RUN NUMBER: 073001.1612;1

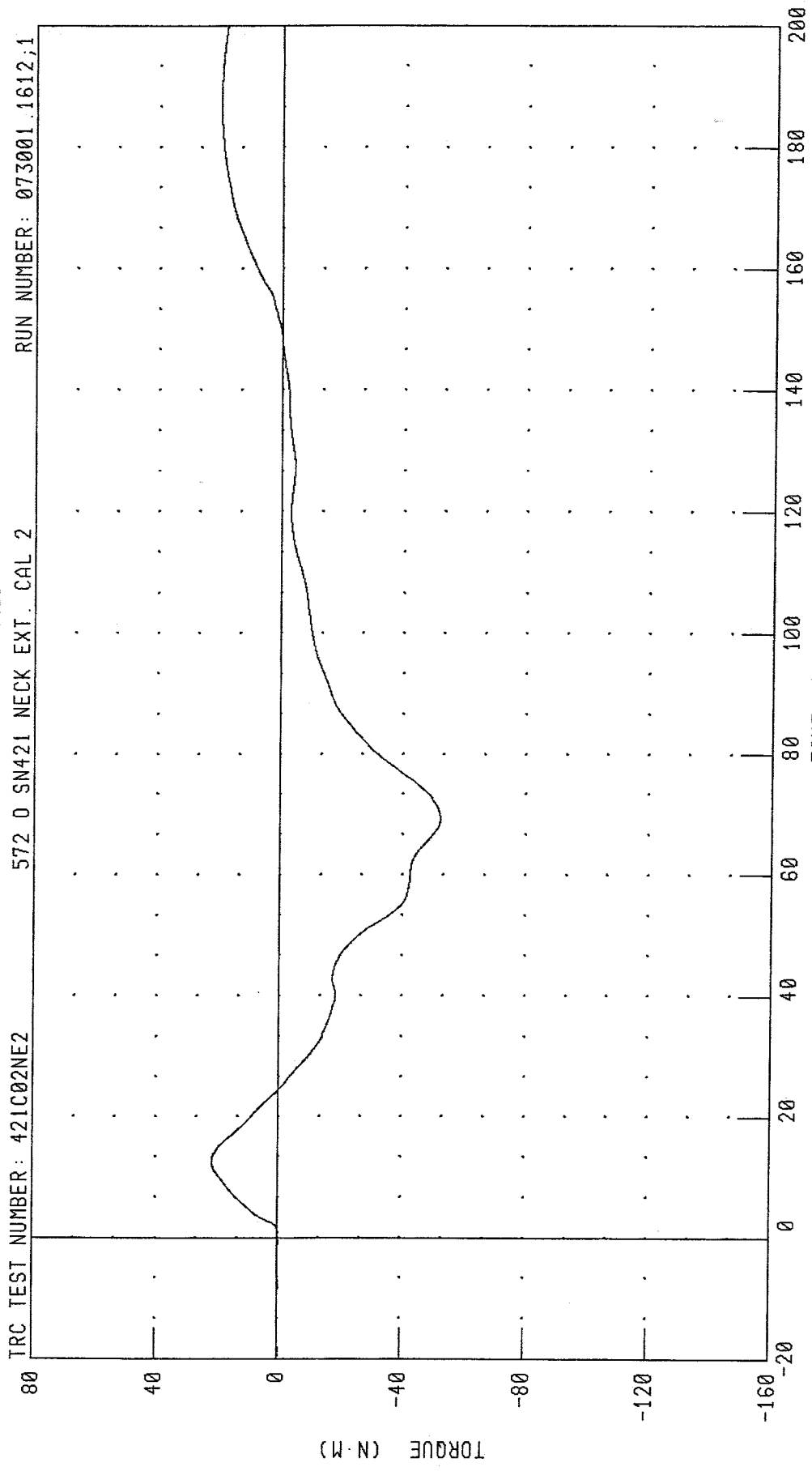


CHANNEL: NEKXFC FILTER: CH. CLASS 600

PEAK DATA: 482.65 N @ 71.84 MS; -169.89 N @ 175.52 MS

PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

NECK MOMENT Y AXIS



TRC TEST NUMBER: 421C02NE2 572 0 SN421 NECK EXT. CAL 2 RUN NUMBER: 073001.1612,1

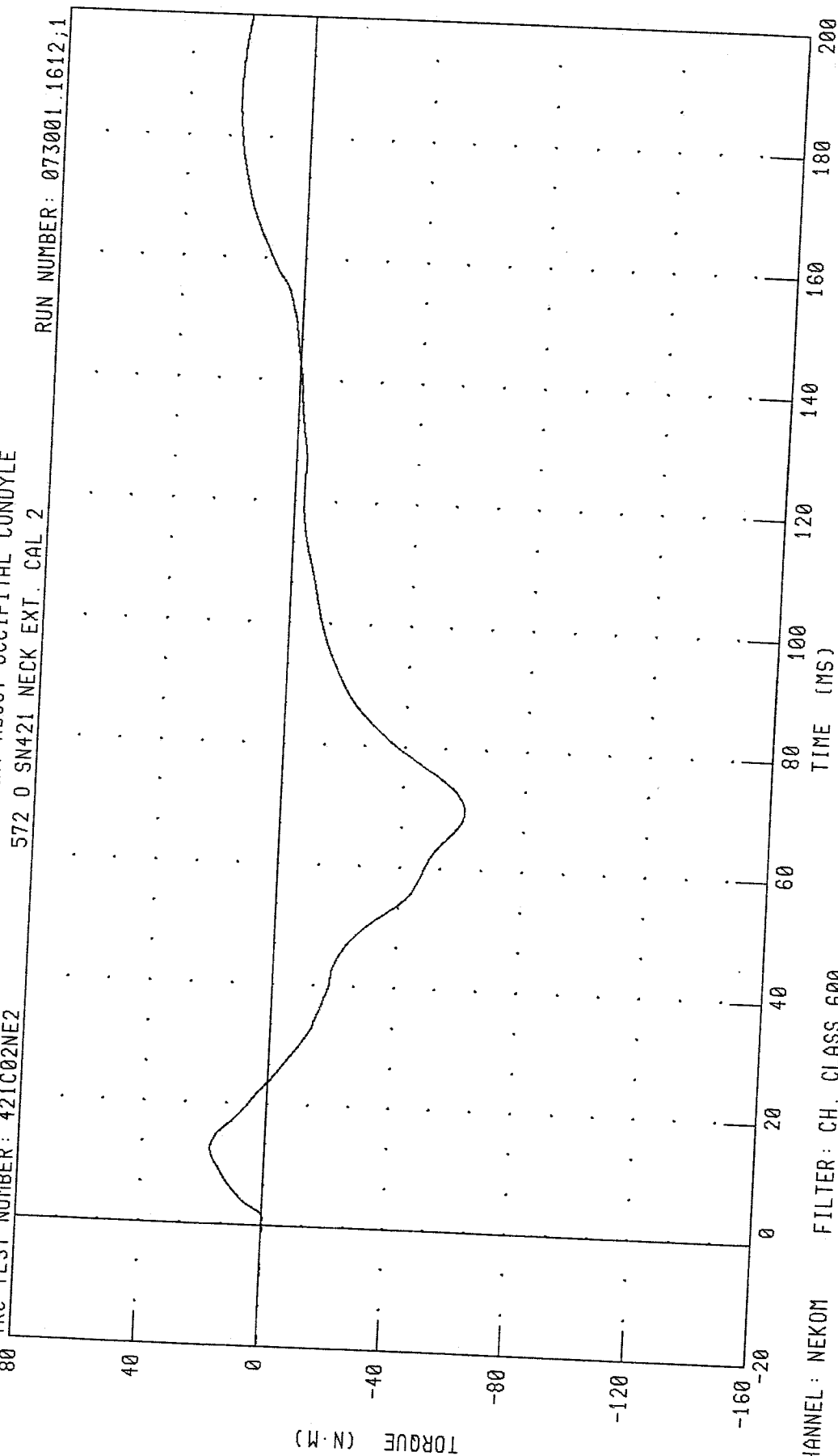
CHANNEL: NEKYM FILTER: CH. CLASS 600

PEAK DATA: 21.62 N·M @ 12.64 MS; -52.24 N·M @ 69.44 MS

PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION
TOTAL MOMENT ABOUT OCCIPITAL CONDYLE
572 0 SN421 NECK EXT. CAL 2

TRC TEST NUMBER: 421C02NE2

RUN NUMBER: 073001.1612;1



CHANNEL: NEKOM FILTER: CH. CLASS 600

PEAK DATA: 23.16 N-M @ 184.80 MS, -60.48 N-M @ 69.76 MS

TRANSPORTATION RESEARCH CENTER INC.

THORAX IMPACT TEST

HYBRID III SMALL FEMALE

31-JUL-01

TRC INC.

TEST NO: 421C02TH3

572 0 SN421 THORAX CAL2

TEST PARAMETER	HIGH SPEED TEST	TEST RESULTS
	SPECIFICATION	
TEMPERATURE	20.6-22.2 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	60.0 %
PENDULUM VELOCITY	6.59 - 6.83 M/S	6.83 M/S
MAXIMUM DEFLECTION	50 - 58 MM	50.8 MM
PEAK RESISTIVE FORCE DURING DEFLECTION INTERVAL	3900 - 4400 N	4369. N
PEAK FORCE DURING 18 TO 50 MM DEFLECTION	$\leq 105\%$	103%
INTERNAL HYSTERESIS	69% - 85%	73.1%

TEST MEETS SPECIFICATIONS

TECHNICIAN

[Signature]

RUN NUMBER: 073101.1643;1

[DUMMY.421C02J421C02TH3D.RAD;1
TRC INC. 421C02TH3 01212
CSTXD Deltax = 0.080000 msec

572 O SN421 THORAX CAL2

Npts = 8000; IP0 = 1045; Filter = BLPP

1000/ 2500/ -16

6.8 m/sec
31-JUL-01 16:43

Page 1

msec	CSTXD (mm)	Min, Max values =	35.509 @	10.0000	50.888 @	20.0800
1170	35.724	35.952	36.195	36.711	37.233	37.486
1180	38.201	38.428	38.650	39.087	39.527	39.731
1190	40.464	40.712	40.961	41.210	41.930	39.983
1200	42.755	42.942	43.128	43.320	43.736	42.153
1210	44.681	45.126	45.319	45.487	45.958	44.441
1220	46.132	46.313	46.411	46.515	46.742	46.046
1230	47.272	47.413	47.553	47.690	48.071	46.997
1240	48.476	48.558	48.634	48.703	48.823	47.133
1250	49.184	49.262	49.342	49.420	48.899	48.288
1260	49.884	49.938	50.039	50.088	49.637	49.036
1270	50.438	50.548	50.595	50.635	50.255	49.766
1280	50.752	50.777	50.791	50.803	50.714	50.316
1290	50.860	50.867	50.878	50.883	50.832	50.728
1300	50.867	50.856	50.824	50.802	50.887	50.842
1310	50.578	50.494	50.451	50.774	50.883	50.851
1320	50.134	50.037	49.983	50.407	50.704	50.876
1330	49.514	49.364	49.288	49.823	50.271	50.620
1340	48.740	48.565	48.476	49.135	49.723	50.180
1350	47.834	47.728	47.505	48.387	48.903	49.586
1360	46.747	46.638	46.408	47.391	48.125	48.823
1370	45.598	45.486	45.252	46.289	47.062	47.936
1380	44.326	44.187	43.909	45.128	46.169	46.853
1390	42.981	42.848	42.567	44.869	45.933	45.708
1400	41.521	41.370	41.062	45.000	44.736	44.601
1410	39.953	39.801	39.496	43.633	43.367	44.464
1420	38.366			42.271	43.238	43.110
				40.903	41.971	41.671
				39.341	40.420	40.106
				39.185	38.868	38.536
				39.027	38.704	

msec	CSTXD (mm)	Min, Max values =	-0.006 @	0.0800	50.888 @	20.0800
1045	0.0000 -->	-0.006	-0.006	-0.001	0.002	0.002
1055	0.8000 -->	0.004	0.004	0.009	0.013	0.028
1065	1.6000 -->	0.035	0.035	0.087	0.180	0.435
1075	2.4000 -->	0.695	0.846	1.171	1.340	2.061
1085	3.2000 -->	2.479	2.715	2.976	3.586	4.719
1095	4.0000 -->	6.430	6.855	7.277	8.115	8.956
1105	4.8000 -->	10.272	11.216	12.216	13.272	14.359
1115	5.6000 -->	15.437	16.486	17.515	18.540	19.566
1125	6.4000 -->	20.586	21.569	22.494	23.388	24.292
1135	7.2000 -->	25.202	26.077	26.874	27.566	28.162
1145	8.0000 -->	28.695	29.201	29.733	30.349	31.056
1155	8.8000 -->	31.801	32.515	33.149	33.687	34.145
1165	9.6000 -->	34.550	34.926	35.113	35.509	35.952
1175	10.4000 -->	36.711	36.974	37.486	37.969	38.428
1185	11.2000 -->	39.087	39.306	39.752	39.983	40.464
1195	12.0000 -->	41.456	41.697	42.153	42.220	42.712
1205	12.8000 -->	43.522	43.736	44.364	44.565	44.912
1215	13.6000 -->	45.631	45.755	46.441	46.681	46.912
1225	14.4000 -->	46.625	46.742	47.133	47.272	47.413
1235	15.2000 -->	47.951	48.071	48.385	48.476	48.558
1245	16.0000 -->	48.834	48.899	49.108	49.184	49.262
1255	16.8000 -->	49.568	49.637	49.766	49.826	49.938
1265	17.6000 -->	50.140	50.196	50.255	50.316	50.399
1275	18.4000 -->	50.668	50.694	50.714	50.740	50.764
1285	19.2000 -->	50.814	50.823	50.832	50.851	50.867
1295	20.0000 -->	50.887	50.888	50.887	50.876	50.867
1305	20.8000 -->	50.774	50.741	50.704	50.663	50.620
1315	21.6000 -->	50.362	50.316	50.271	50.226	50.180
1325	22.4000 -->	49.858	49.791	49.723	49.655	49.586
1335	23.2000 -->	49.135	49.058	48.981	48.903	48.823
1345	24.0000 -->	48.300	48.213	48.125	48.033	47.936
1355	24.8000 -->	47.279	47.169	47.062	46.958	46.834

msec	PENXF (N)	Min, Max values =	300/	750/	-16	4369.0 @	17.5200
1264	17.5200 -->	4358.0	4346.6	4322.4	4309.7	4269.3	4255.3
1274	18.3200 -->	4227.1	4213.1	4185.8	4172.7	4135.8	4124.5
1284	19.1200 -->	4103.7	4093.5	4084.0	4065.8	4039.4	4030.5
1294	19.9200 -->	4012.2	4002.7	3992.7	3982.3	3947.5	3921.2
1304	20.7200 -->	3892.5	3877.4	3861.8	3829.5	3779.2	3762.1
1314	21.5200 -->	3727.9	3710.8	3676.3	3658.9	3606.1	3588.2

[DUMMY.421C02]421C02TH3D.RAD;1
TRC INC. 421C02TH3 01212
PENXF Deltax = 0.080000 msec

572 O SN421 THORAX CAL2

Npts = 8000; IPO = 1045; Filter = BLPP

31-JUL-01 16:43

6.8 m/sec

Page 1

msec		PENXF (N		Min, Max values =		300/ 750/ -16		4479.0 @ 16.0800	
1120	6.0000 -->	3187.4	3135.6	3087.1	3042.2	2930.8	2901.8	2876.9	2855.8
1130	6.8000 -->	2838.5	2824.9	2814.8	2808.2	2805.3	2815.3	2824.7	2836.8
1140	7.6000 -->	2851.4	2868.2	2887.2	2908.2	2955.9	3010.7	3040.4	3071.6
1150	8.4000 -->	3104.3	3138.4	3174.0	3210.9	3288.7	3370.3	3411.9	3453.8
1160	9.2000 -->	3495.7	3537.4	3578.7	3619.5	3659.5	3736.3	3807.1	3839.9
1170	10.0000 -->	3870.7	3899.5	3926.1	3950.5	3972.5	4024.0	4036.4	4046.7
1180	10.8000 -->	4055.1	4061.8	4067.0	4071.0	4092.1	4078.1	4078.5	4082.8
1190	11.6000 -->	4078.6	4078.6	4078.5	4078.6	4079.1	4080.4	4081.4	4082.8
1200	12.4000 -->	4084.6	4086.7	4089.1	4091.7	4097.5	4100.7	4107.6	4111.4
1210	13.2000 -->	4115.6	4120.2	4125.3	4131.0	4144.6	4152.7	4171.6	4182.5
1220	14.0000 -->	4194.4	4207.1	4220.7	4235.0	4249.8	4280.6	4312.3	4328.2
1230	14.8000 -->	4343.8	4359.1	4373.9	4388.0	4401.4	4425.6	4445.6	4454.0
1240	15.6000 -->	4461.1	4467.1	4471.8	4475.3	4477.6	4479.0	4476.6	4474.2
1250	16.4000 -->	4471.1	4467.3	4462.9	4457.9	4452.3	4439.6	4424.9	4416.8
1260	17.2000 -->	4408.2	4399.2	4389.6	4379.5	4369.0	4346.6	4322.4	4309.7
1270	18.0000 -->	4296.5	4283.0	4269.3	4255.3	4241.2	4227.1	4185.8	4172.7
1280	18.8000 -->	4159.9	4147.6	4135.8	4124.5	4113.7	4093.5	4074.8	4065.8
1290	19.6000 -->	4056.9	4048.2	4039.4	4030.5	4021.5	4012.2	3982.3	3971.3
1300	20.4000 -->	3959.7	3947.5	3934.6	3921.2	3907.1	3877.4	3845.8	3829.5
1310	21.2000 -->	3812.9	3796.1	3779.2	3762.1	3745.1	3710.8	3676.3	3658.9
1320	22.0000 -->	3641.4	3623.8	3606.1					

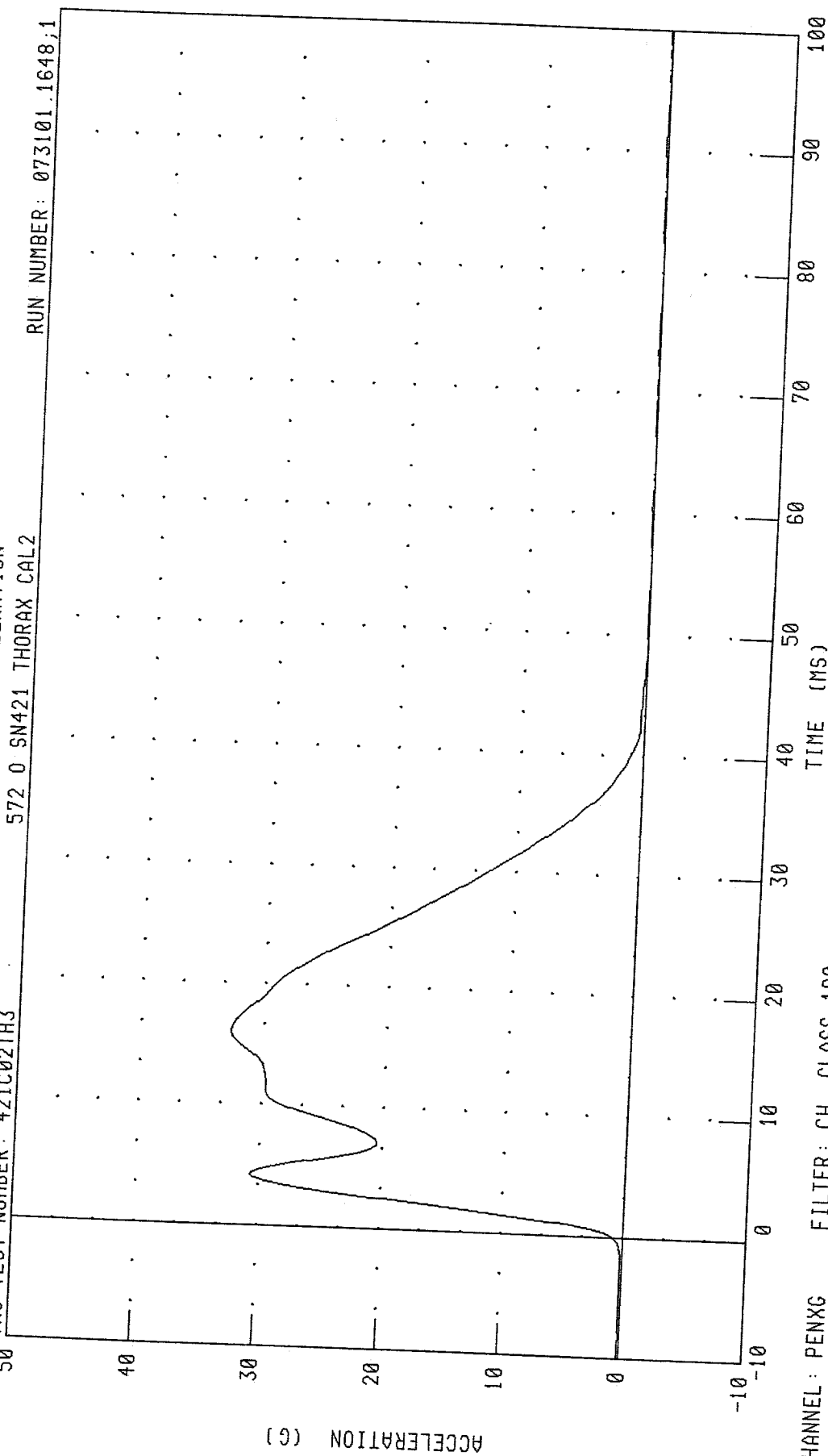
PART 572-0 HYBRID III SMALL FEMALE - THORAX CALIBRATION

TRC TEST NUMBER: 421C02TH3

PENDULUM DECELERATION

572 0 5N421 THORAX CAL2

RUN NUMBER: 073101.1648;1



CHANNEL: PENXG

FILTER: CH. CLASS 180

TIME (MS)

PEAK DATA: 32.64 G @ 16.08 MS; -0.06 G @ 64.80 MS

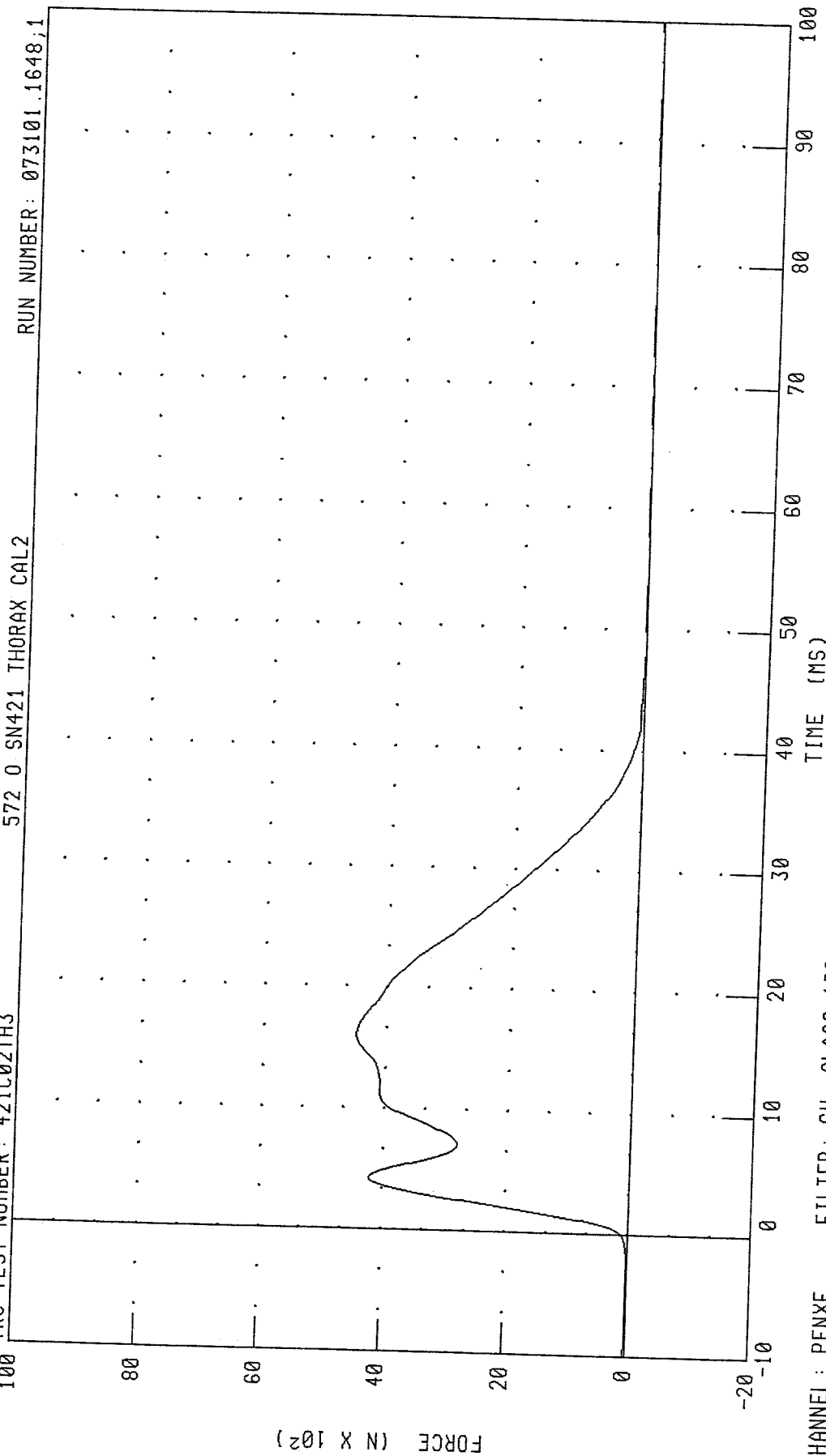
PART 572-0 HYBRID III SMALL FEMALE - THORAX CALIBRATION

PENDULUM FORCE

TRC TEST NUMBER: 421C02TH3

572 0 SN421 THORAX CAL2

RUN NUMBER: 073101.1648;1



CHANNEL: PENXF FILTER: CH. CLASS 180

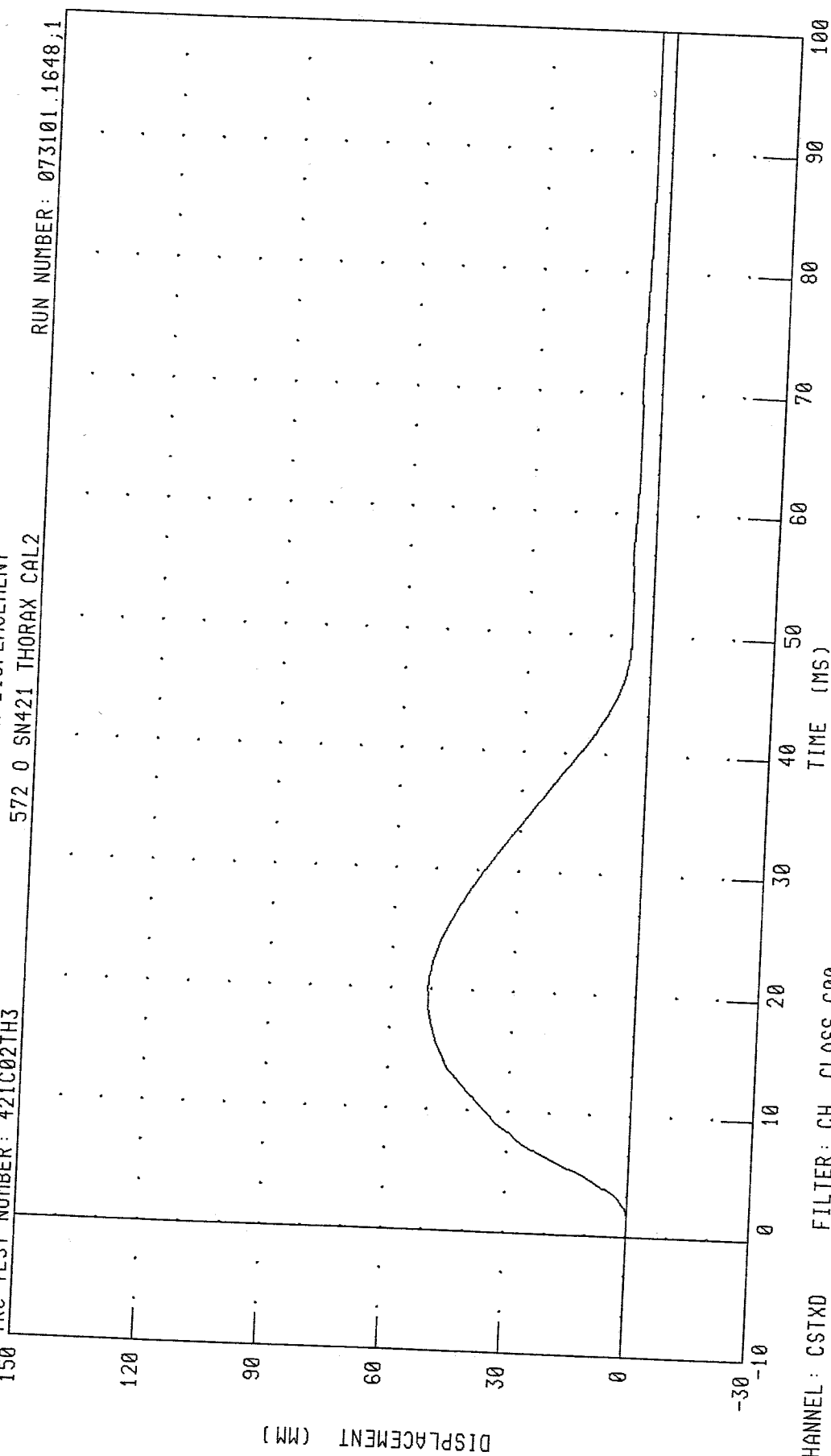
PEAK DATA: 4479.00 N @ 16.08 MS; -8.47 N @ 64.80 MS

PART 572-0 HYBRID III SMALL FEMALE - THORAX CALIBRATION

TRC TEST NUMBER: 421C02TH3

STERNUM DISPLACEMENT
572 0 SN421 THORAX CAL2

RUN NUMBER: 073101.1648;1



CHANNEL: CSTXD FILTER: CH. CLASS 600

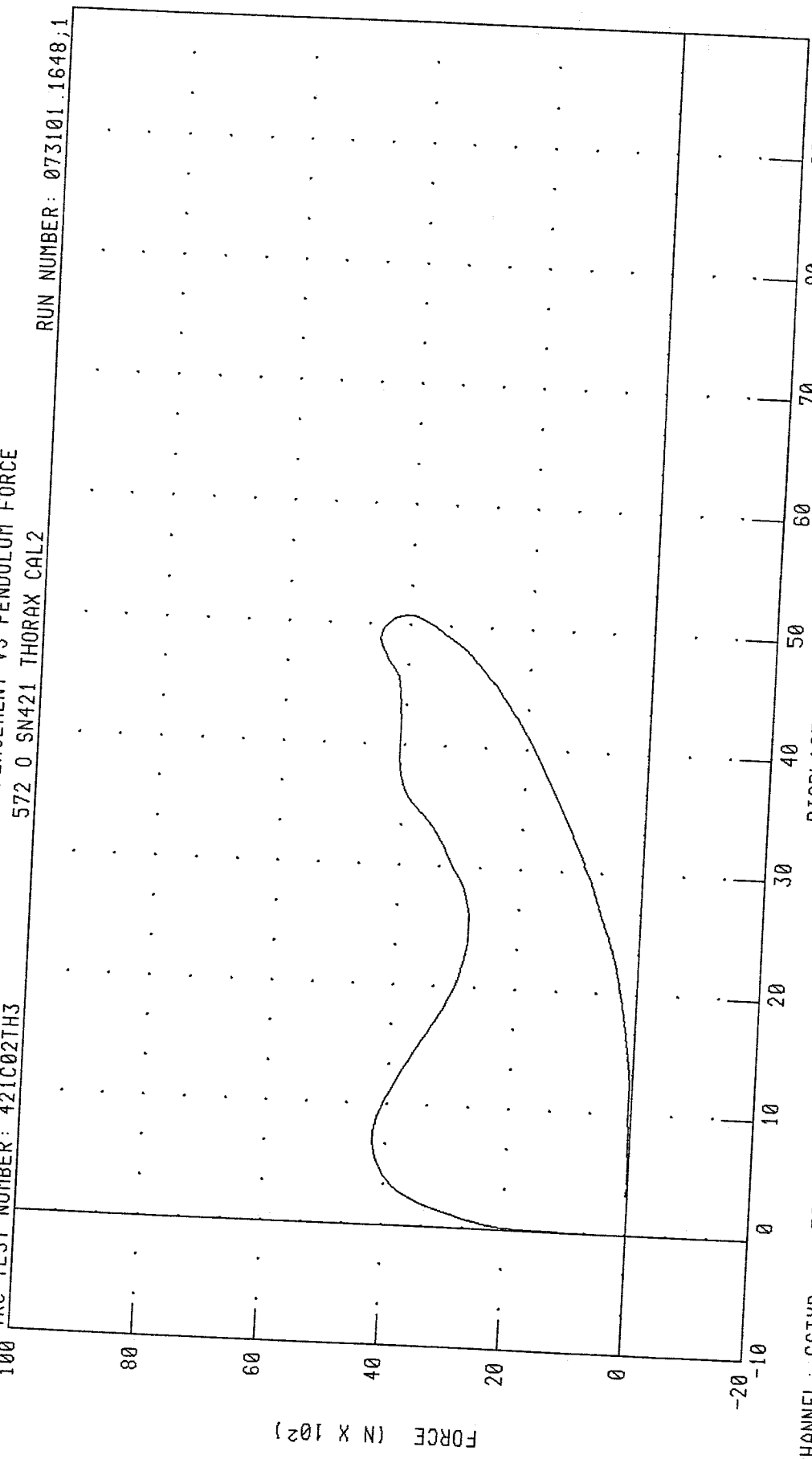
PEAK DATA: 50.89 MM @ 20.08 MS; -0.01 MM @ -3.36 MS

PART 572-0 HYBRID III SMALL FEMALE - THORAX CALIBRATION
CHEST DISPLACEMENT VS PENDULUM FORCE

TRC TEST NUMBER: 421C02TH3

572 0 SN421 THORAX CAL2

RUN NUMBER: 073101.1648;1



CHANNEL: CSTXD
PENXF

FILTER: CH. CLASS 600
CH. CLASS 180

PEAK DATA:

50.89 MM @ 20.08 MS; -0.01 MM @ -3.36 MS
4479.00 N @ 16.08 MS; -8.47 N @ 64.80 MS

TRANSPORTATION RESEARCH CENTER INC.

TORSO FLEXION TEST

HYBRID III SMALL FEMALE

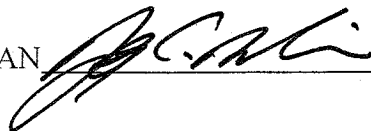
CAL DATE: 27-Jul-01

TRC, INC. TEST NO: 421C02TF1 572 O SN 421 TORSO FLEX CAL 02

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 – 70 %	60 %
INITIAL ANGLE OF UNSUPPORTRED DUMMY	<= 20 DEG. REFERENCED TO VERTICAL	6 DEG.
MAXIMUM FORCE AT 45 DEG. DURING 10 SECOND PERIOD	320 -390 N	334 N
RETURN ANGLE @ 3MINUTES	+/- 8 DEG OF INITIAL ANGLE	10 DEG.

TEST MEETS SPECIFICATIONS

TECHNICIAN



TRANSPORTATION RESEARCH CENTER INC.

LEFT KNEE IMPACT TEST

HYBRID III SMALL FEMALE

21-JUL-01

TRC INC.

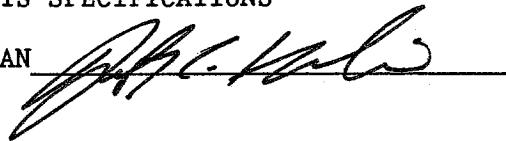
TEST NO: 421C02LK1

572 0 SN421 LEFT KNEE CAL9

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	60.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.13 M/S
PEAK KNEE IMPACT FORCE 3.0 KG PENDULUM	3400 - 4200 N	3801.8 N

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 072101.1201;2

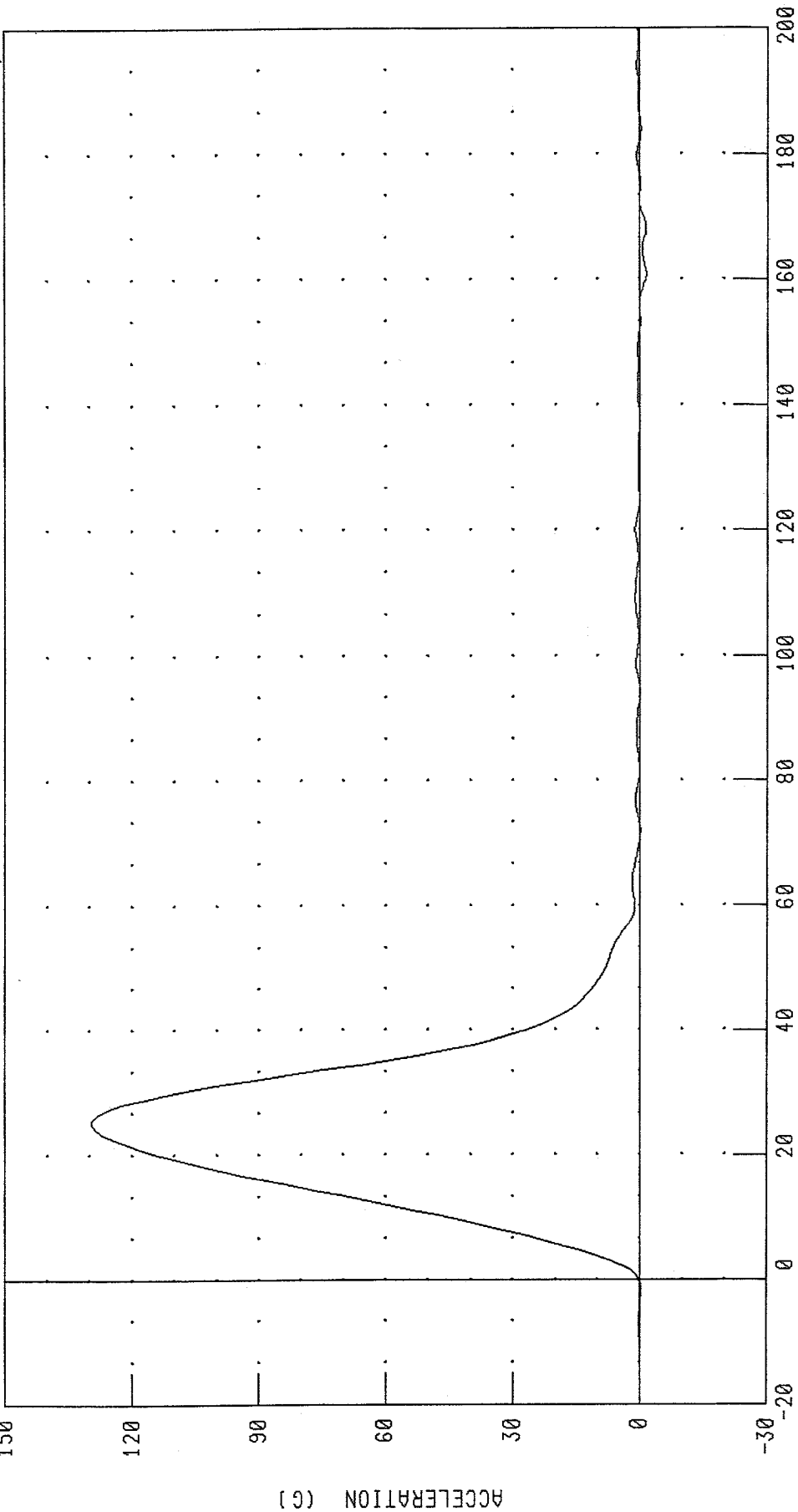
PART 572-0 HYBRID III SMALL FEMALE - LEFT KNEE CALIBRATION

PENDULUM DECELERATION (5 KG PEND.)

TRC TEST NUMBER: 421C02LK1

572 0 SN421 LEFT KNEE CAL9

RUN NUMBER: 072101.1205;2



TIME (MS X 10⁻¹)

CHANNEL: PENXG FILTER: CH. CLASS 600

PEAK DATA: 129.51 G @ 2.48 MS, -1.75 G @ 16.08 MS

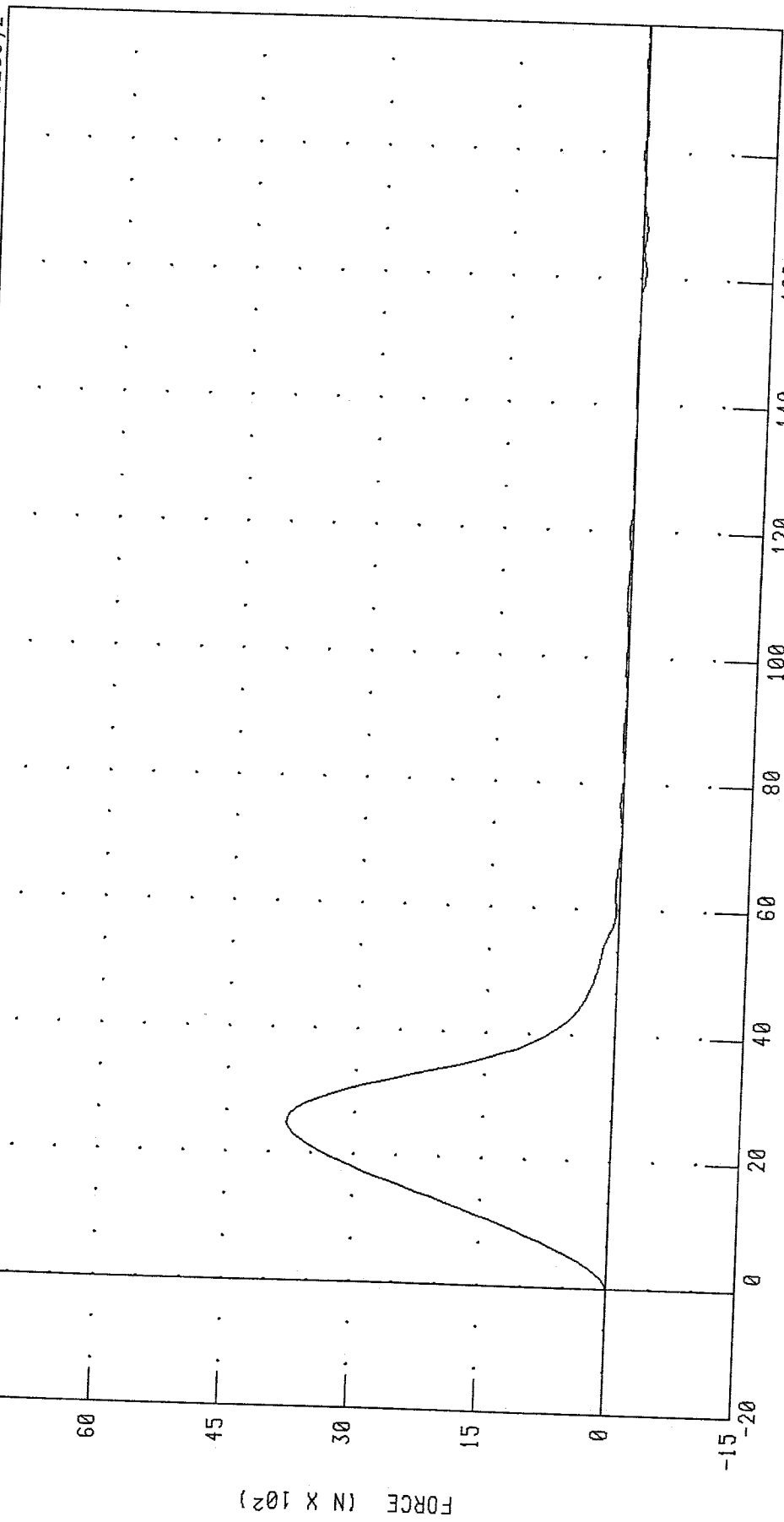
PART 572-0 HYBRID III SMALL FEMALE - LEFT KNEE CALIBRATION

PENDULUM FORCE (5 KG PEND.)

75 TRC TEST NUMBER: 421C02LK1

572 0 SN421 LEFT KNEE CAL9

RUN NUMBER: 072101.1205;2



CHANNEL: PENXF FILTER: CH. CLASS 600

TIME (MS X 10⁻¹)

PEAK DATA: 3801.87 N @ 2.48 MS; -51.46 N @ 16.08 MS

TRANSPORTATION RESEARCH CENTER INC.

KNEE SLIDER TEST

HYBRID III SMALL FEMALE

20-JUL-01

LEFT KNEE

TRC INC.

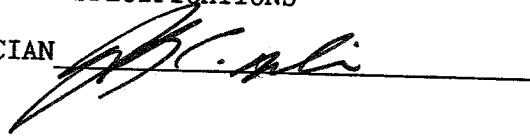
TEST NO: 421C02LS1

572 0 SN421 LEFT SLIDER CAL2

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	55.0 %
PENDULUM VELOCITY	2.70-2.80 M/S	2.73 M/S
PEAK DISPLACEMENT	12.7 - 15.5 MM	13.8 MM

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 072401.1003;4

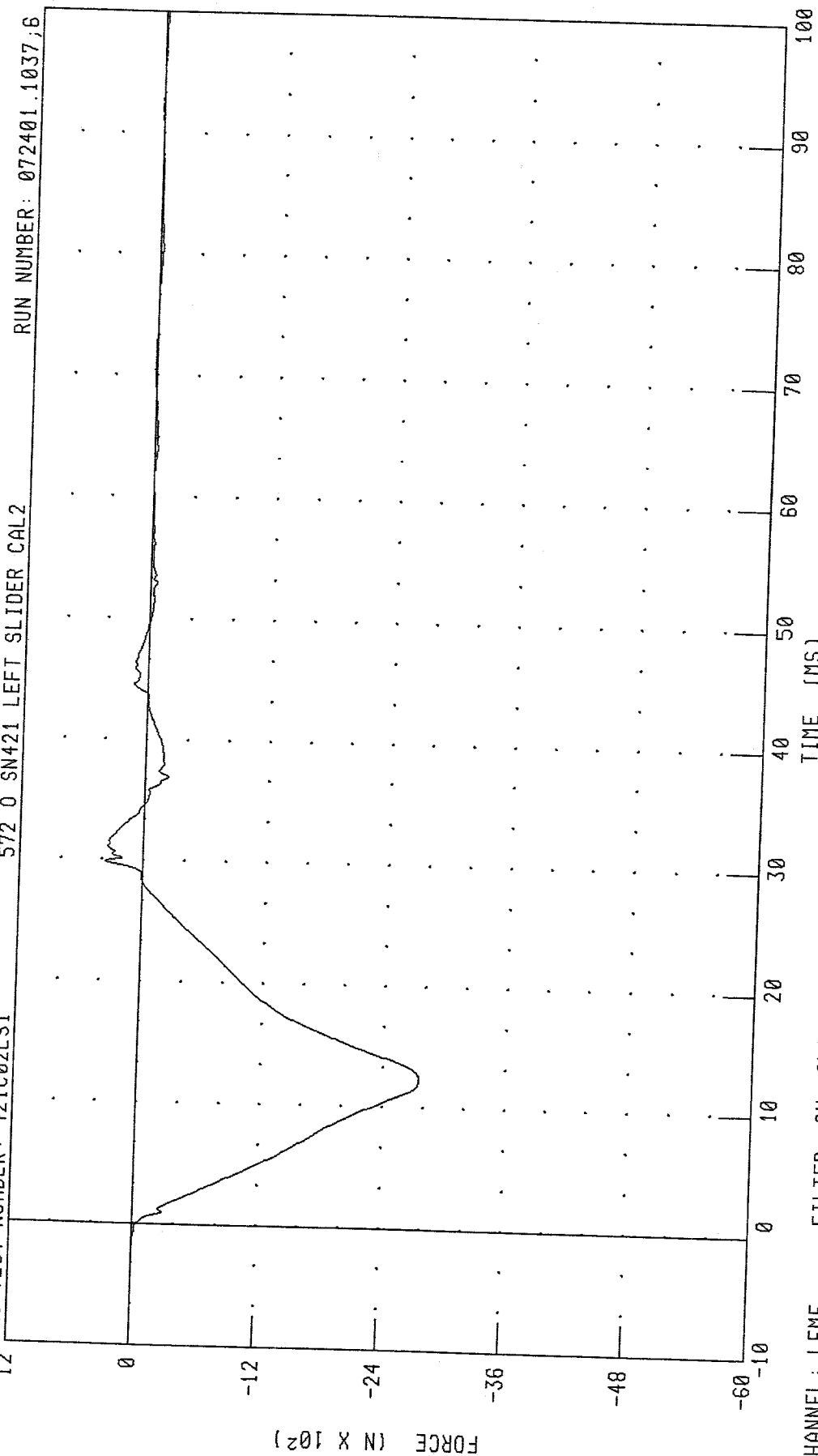
PART 572-0 HYBRID III SMALL FEMALE - LEFT KNEE SLIDER CALIBRATION

TRC TEST NUMBER: 421C02LS1

LEFT FEMUR FORCE

572 0 SN421 LEFT SLIDER CAL2

RUN NUMBER: 072401.1037,6



CHANNEL: LFMF

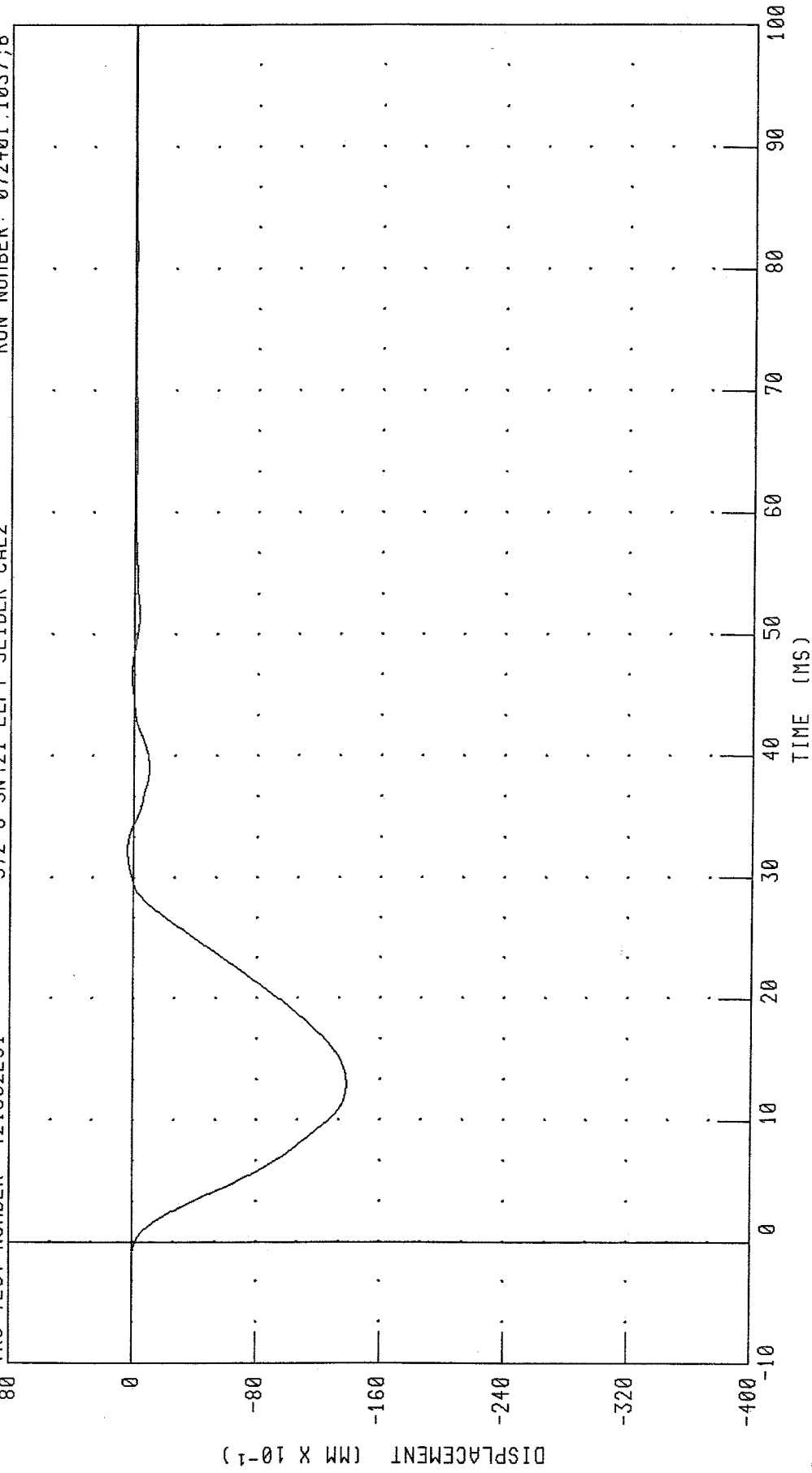
FILTER: CH. CLASS 600

PEAK DATA: 366.66 N @ 29.84 MS, -2750.08 N @ 12.32 MS

PART 572-0 HYBRID III SMALL FEMALE - LEFT KNEE SLIDER CALIBRATION

LEFT KNEE DISPLACEMENT

TRC TEST NUMBER: 421C02LS1 572 0 SN421 LEFT SLIDER CAL2 RUN NUMBER: 072401.1037,6

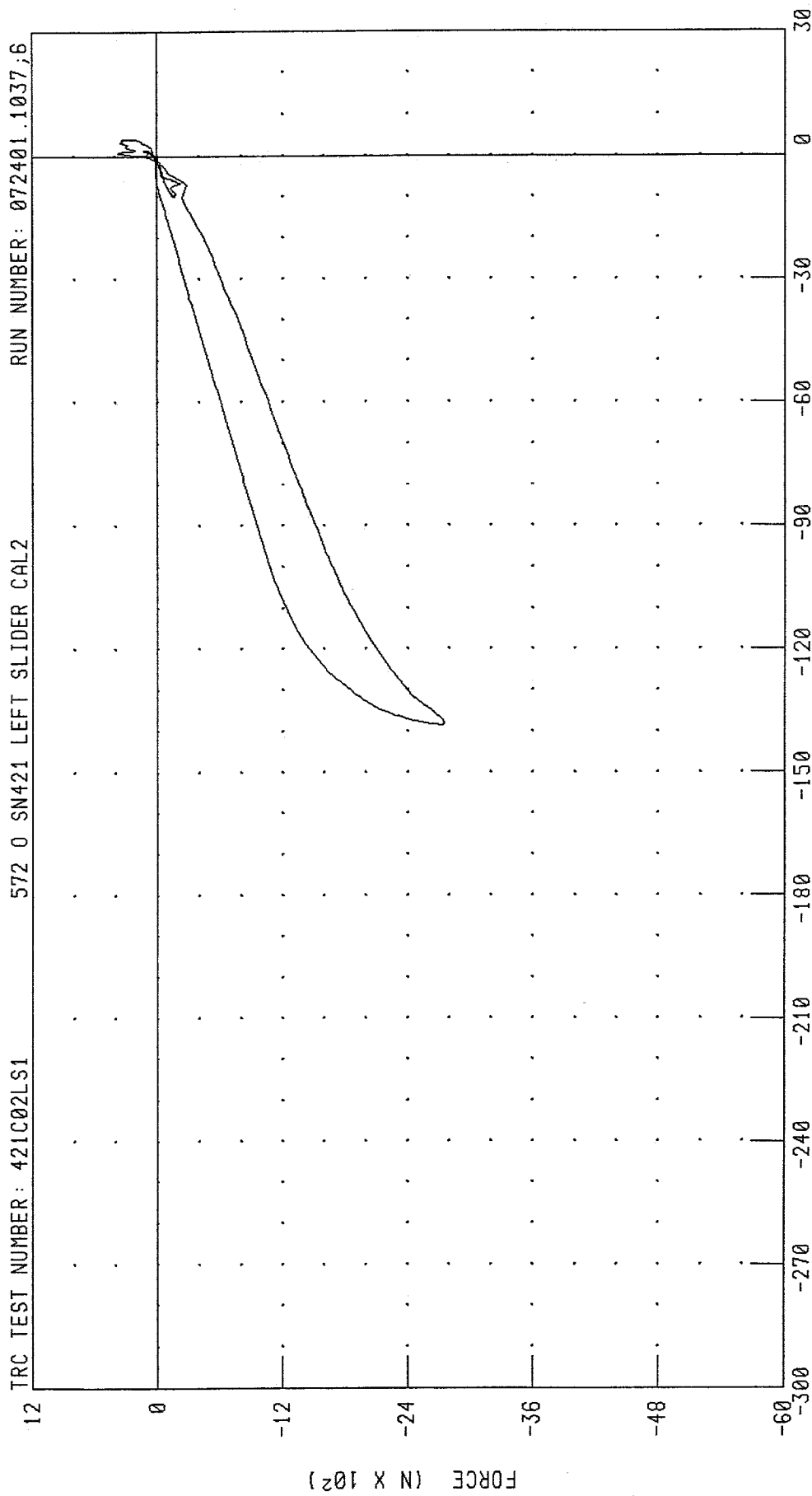


CHANNEL: KNLXD FILTER: CH. CLASS 180

PEAK DATA: 0.41 MM @ 32.32 MS; -13.84 MM @ 12.96 MS

PART 572-0 HYBRID III SMALL FEMALE - LEFT KNEE SLIDER CALIBRATION
LEFT KNEE DISPLACEMENT VS FEMUR FORCE

TRC TEST NUMBER: 421C02LS1 572 0 SN421 LEFT SLIDER CAL2 RUN NUMBER: 072401.1037;6



DISPLACEMENT ($mm \times 10^{-1}$)

CHANNEL: KNLXD
LFMF

FILTER: CH: CLASS 180
CH: CLASS 600

PEAK DATA: 0.41 MM @ 32.32 MS;
366.66 N @ 29.84 MS; -13.84 MM @ 12.96 MS;
-2750.08 N @ 12.32 MS

TRANSPORTATION RESEARCH CENTER INC.

RIGHT KNEE IMPACT TEST

HYBRID III SMALL FEMALE

20-JUL-01

TRC INC.

TEST NO: 421C02RK1

572 0 SN421 R.KNEE CAL2

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	60.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.13 M/S
PEAK KNEE IMPACT FORCE 3.0 KG PENDULUM	3400 - 4200 N	3717.8 N

TEST MEETS SPECIFICATIONS

TECHNICIAN



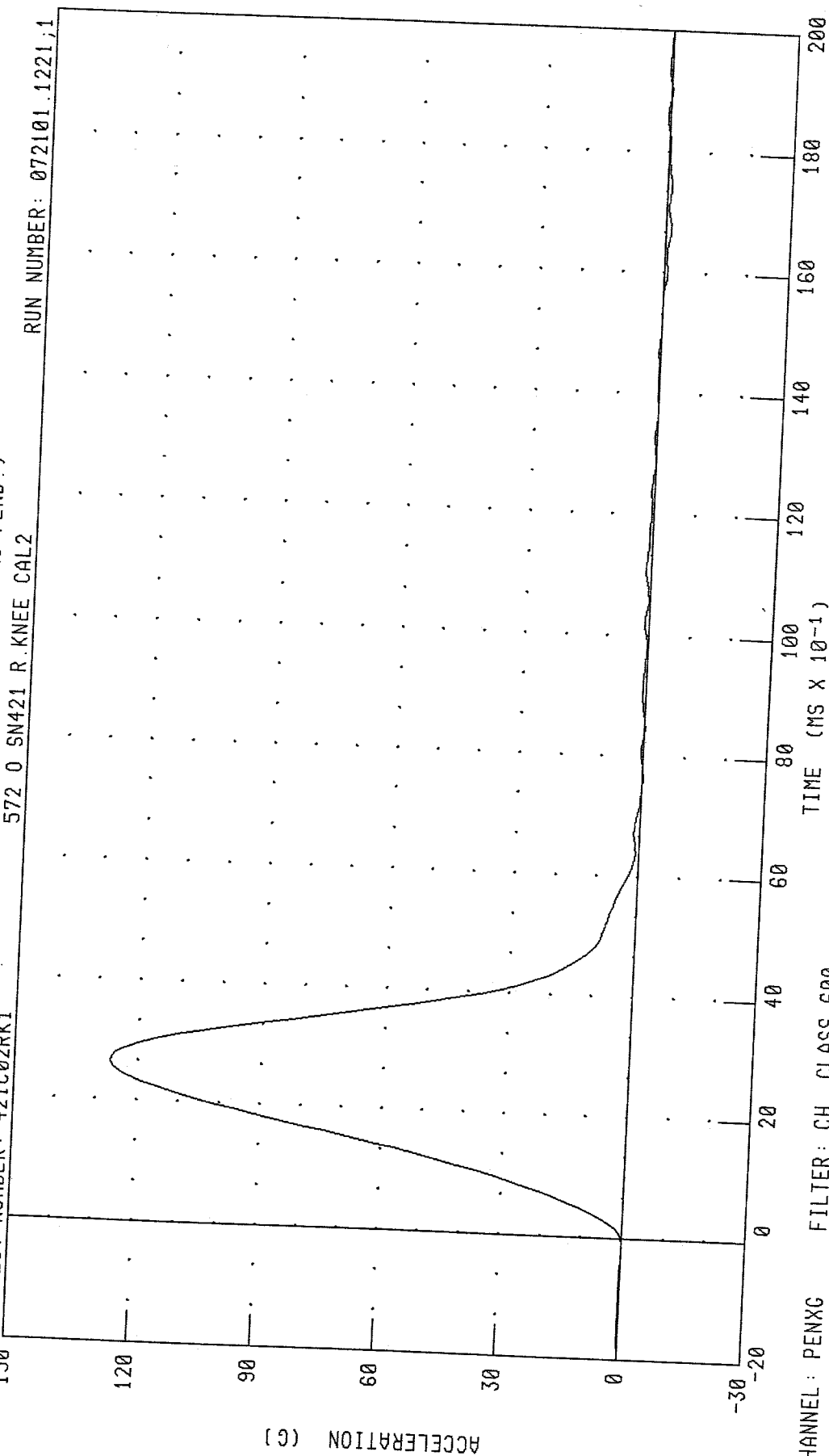
RUN NUMBER: 072101.1220;1

PART 572-0 HYBRID III SMALL FEMALE - RIGHT KNEE CALIBRATION
PENDULUM DECELERATION (5 KG PEND.)

TRC TEST NUMBER: 421C02RK1

572 0 SN421 R.KNEE CAL2

RUN NUMBER: 072101.1221.1



CHANNEL: PENXC

FILTER: CH. CLASS 600

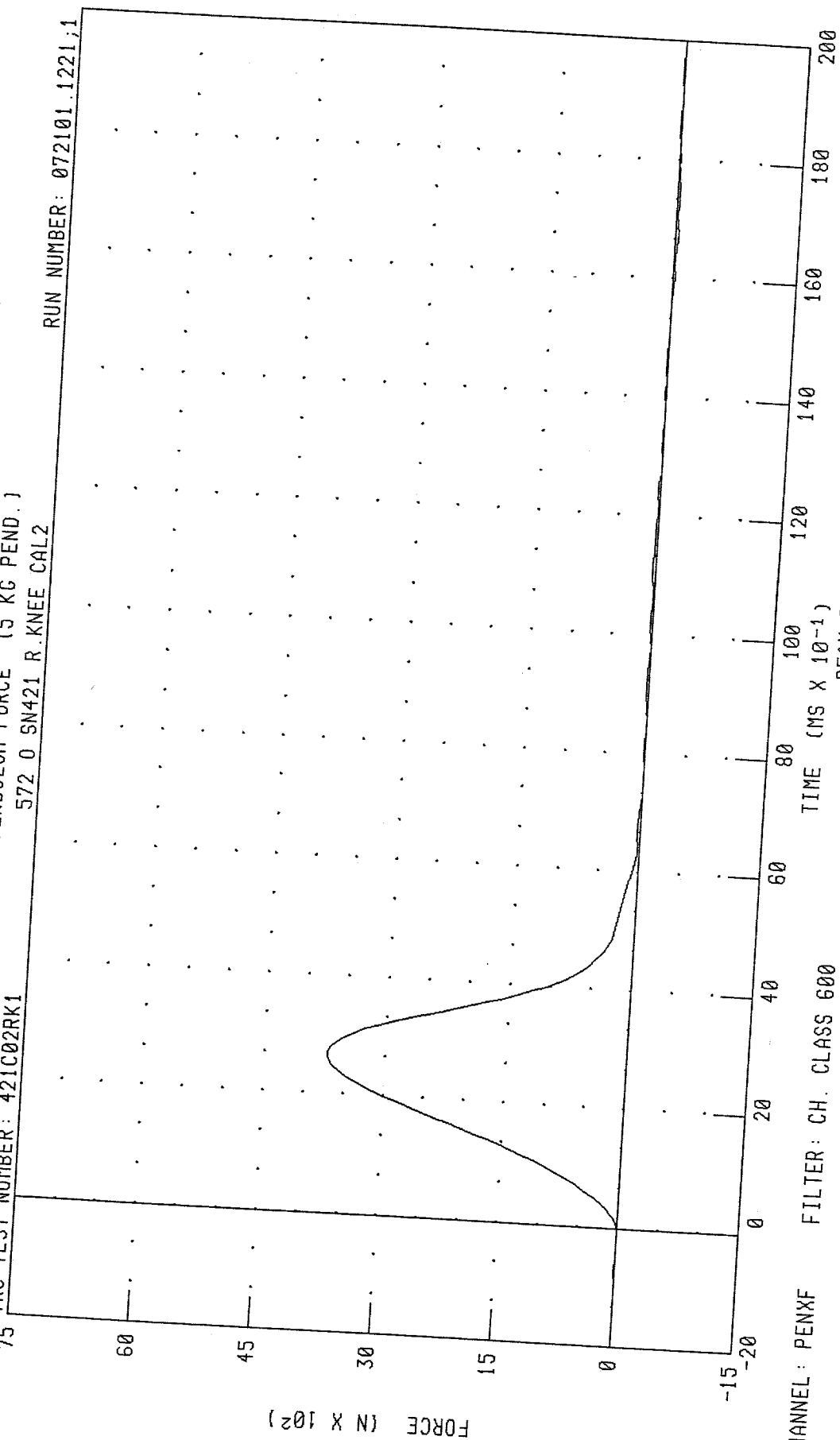
TIME (MS X 10⁻¹)

PEAK DATA: 126.64 G @ 2.64 MS; -1.34 G @ 16.72 MS

PART 572-0 HYBRID III SMALL FEMALE - RIGHT KNEE CALIBRATION
PENDULUM FORCE (5 KG PEND.)
572 0 SN421 R.KNEE CAL2

TRC TEST NUMBER: 421C02RK1

RUN NUMBER: 072101.1221;1



CHANNEL: PENXF FILTER: CH. CLASS 600

PEAK DATA: 3717.83 N @ 2.64 MS; -39.47 N @ 16.72 MS

TRANSPORTATION RESEARCH CENTER INC.

KNEE SLIDER TEST

HYBRID III SMALL FEMALE

20-JUL-01

RIGHT KNEE
TRC INC.

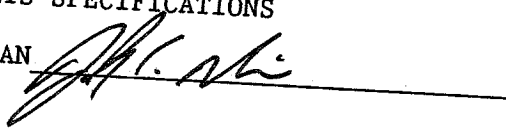
TEST NO: 421C02RS1

572 0 SN421 RIGHT SLIDER CAL02

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	55.0 %
PENDULUM VELOCITY	2.70-2.80 M/S	2.73 M/S
PEAK DISPLACEMENT	12.7 - 15.5 MM	14.9 MM

TEST MEETS SPECIFICATIONS

TECHNICIAN



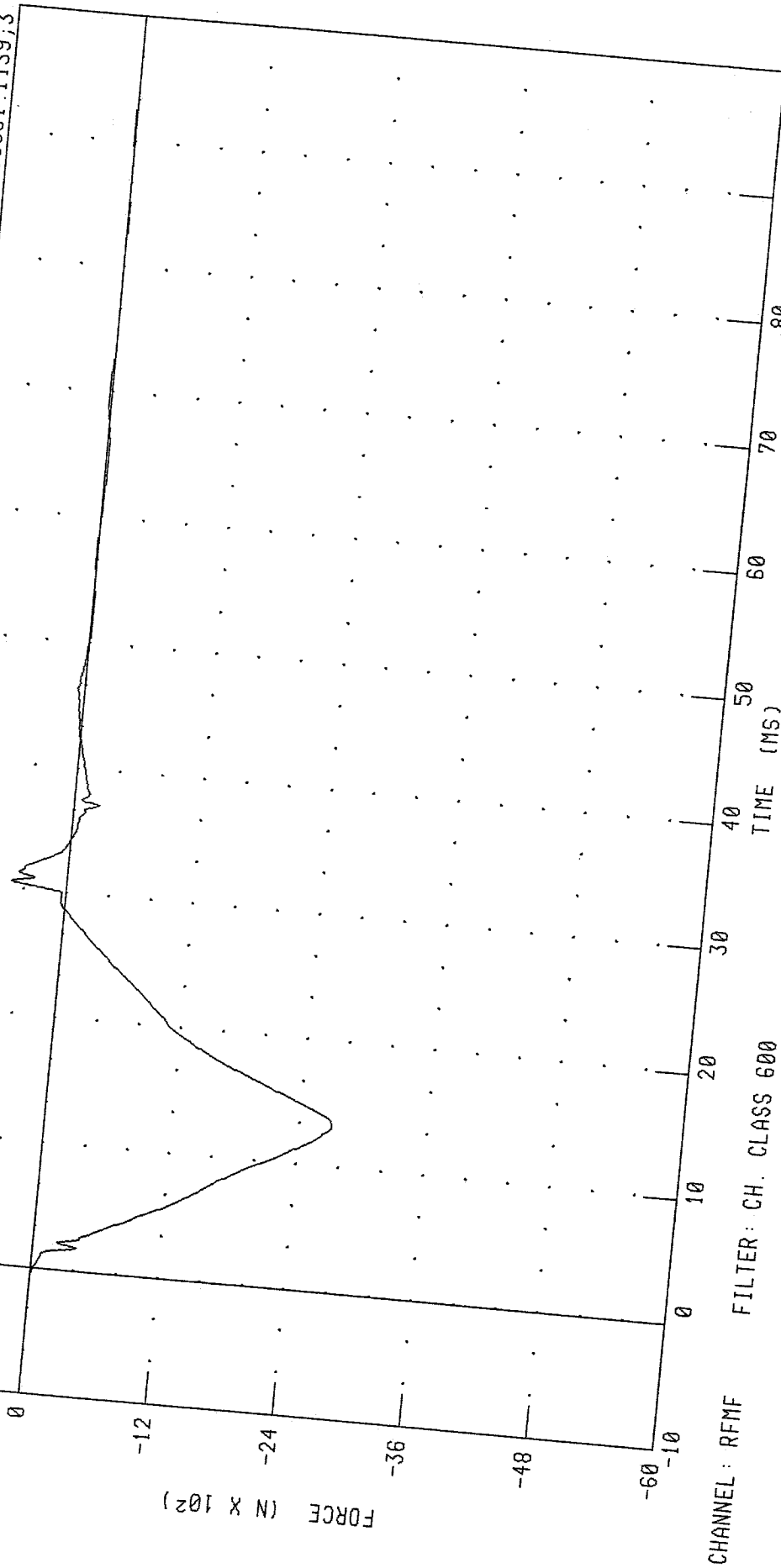
RUN NUMBER: 080601.1045;1

PART 572-0 HYBRID III SMALL FEMALE - RIGHT KNEE SLIDER CALIBRATION
RIGHT FEMUR FORCE

12 IRC TEST NUMBER: 421C02RS1

572 0 SN421 RIGHT SLIDER CAL02

RUN NUMBER: 080601.1139;3



PEAK DATA: 518.92 N @ 30.64 MS; -2701.97 N @ 13.28 MS

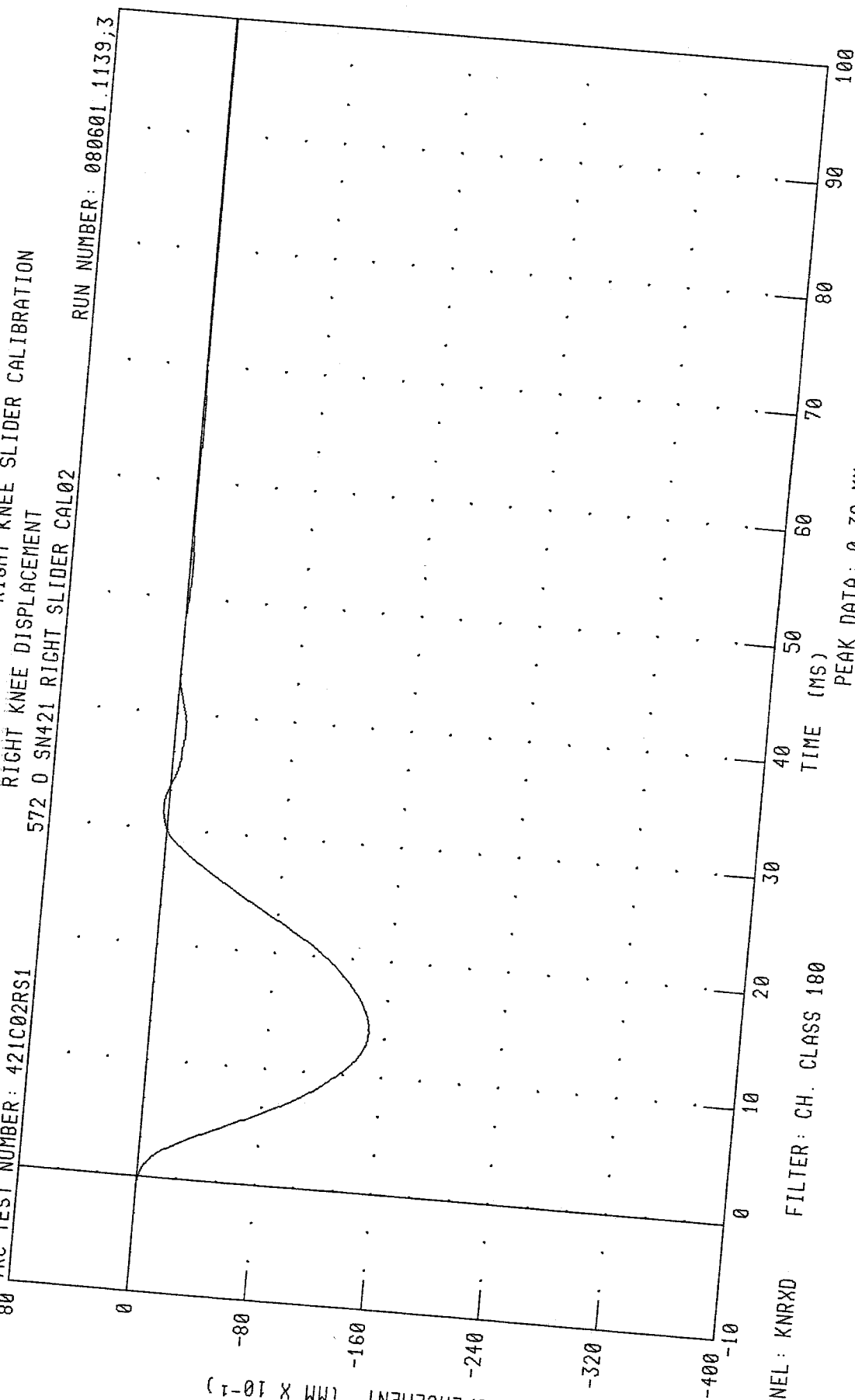
PART 572-0 HYBRID III SMALL FEMALE - RIGHT KNEE SLIDER CALIBRATION
RIGHT KNEE DISPLACEMENT

80 IRC TEST NUMBER: 421C02RS1

572 0 SN421 RIGHT SLIDER CAL02

RUN NUMBER: 080601.1139,3

DISPLACEMENT (MM X 10⁻¹)



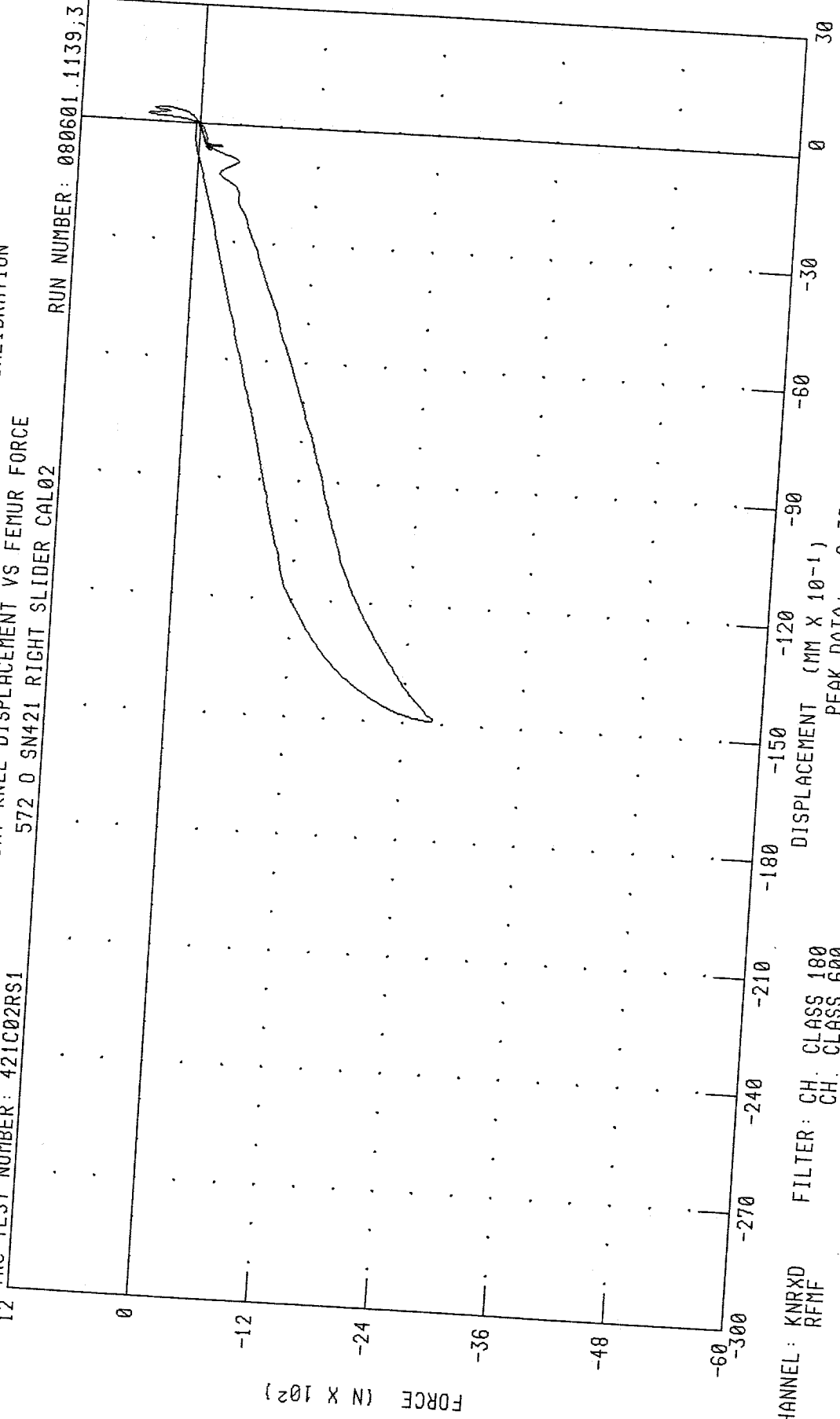
CHANNEL: KNRXD FILTER: CH. CLASS 180

PEAK DATA: 0.38 MM @ 31.92 MS, -14.91 MM @ 13.84 MS

PART 572-0 HYBRID III SMALL FEMALE - RIGHT KNEE SLIDER CALIBRATION
RIGHT KNEE DISPLACEMENT VS FEMUR FORCE
572 0 SN421 RIGHT SLIDER CAL02

TRC TEST NUMBER: 421C02RS1

RUN NUMBER: 080601.1139,3



CHANNEL: KNRXD
REF: FEMF
FILTER: CH. CLASS 180
CH. CLASS 600

PEAK DATA: 0.38 MM @ 31.92 MS;
518.92 N @ 30.64 MS;
-14.91 MM @ 13.84 MS;
-2701.97 N @ 13.28 MS

Pre-Test Dummy Configuration and Performance Verification Data

Right Rear Passenger Dummy S/N: 088

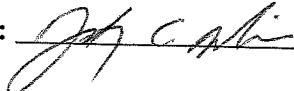
TRANSPORTATION RESEARCH CENTER INC.
HYBRID III SIX-YEAR-OLD EXTERNAL DIMENSIONS
SN: 088 MFG: FTSS

DATE: 13-Aug-01

TRC INC. TEST NO: 088C06ED1 572N SN 088 EXT. DIMENSION CAL 06

TEST PARAMETER	DIMEN.	SPECIFICATION	TEST RESULTS
Total Sitting Height	A	622.3 - 647.7 MM	637.54 MM
Shoulder Pivot Height	B	348.0 - 363.2 MM	353.06 MM
Hip Pivot Height	C	63.5 - 73.7 MM	71.12 MM
Hip Pivot from Backline	D	88.9 - 99.1 MM	91.44 MM
Shoulder Pivot from Backline	E	53.3 - 63.5 MM	63.5 MM
Thigh Clearance	F	88.9 - 104.1 MM	91.44 MM
Back of Elbow to Wrist Pivot	G	182.9 - 198.1 MM	193.04 MM
Head Back from Backline	H	17.8 - 22.8 MM	20.32 MM
Shoulder to Elbow Length	I	215.9 - 231.1 MM	223.52 MM
Elbow Rest Height	J	157.4 - 177.8 MM	167.64 MM
Buttock to Knee Length	K	370.8 - 391.2 MM	383.54 MM
Popliteal Height	L	269.2 - 289.6 MM	279.4 MM
Knee to Floor Height	M	307.4 - 322.6 MM	320.04 MM
Buttock Popliteal Length	N	320.0 - 340.4 MM	327.66 MM
Chest Depth	O	129.6 - 144.8 MM	134.62 MM
Foot Length	P	170.2 - 185.4 MM	177.8 MM
Buttock to Knee Pivot Length	R	342.9 - 363.3 MM	358.14 MM
Head Breadth	S	137.1 - 147.3 MM	139.7 MM
Head Depth	T	167.6 - 177.8 MM	175.26 MM
Hip Breadth	U	208.3 - 223.5 MM	220.98 MM
Shoulder Breadth	V	259.1 - 274.3 MM	269.24 MM
Foot Breadth	W	62.3 - 77.5 MM	76.2 MM
Head Circumference	X	510.5 - 530.9 MM	520.7 MM
Chest Circumference with Jacket	Y	596.9 - 622.3 MM	612.14 MM
Waist Circumference	Z	558.8 - 584.2 MM	574.04 MM
Reference Location for Chest Circumference	AA	325.1 - 335.3 MM	330.2 MM
Reference Location for Waist Circumference	BB	153.7 - 163.9 MM	160.02 MM

DUMMY MEETS SPECIFICATION

TECHNICIAN: 

TRANSPORTATION RESEARCH CENTER INC.

HEAD DROP TEST

HYBRID III SIX YEAR OLD

07-AUG-01

TRC INC.

TEST NO: 088C6HD2

572 N SN088 HEAD DROP CAL6

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	245 - 300 G	263.15 G
PEAK LATERAL ACCELERATION	15 G MAX	4.42 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN John C. Miller

RUN NUMBER: 080701.1038;1

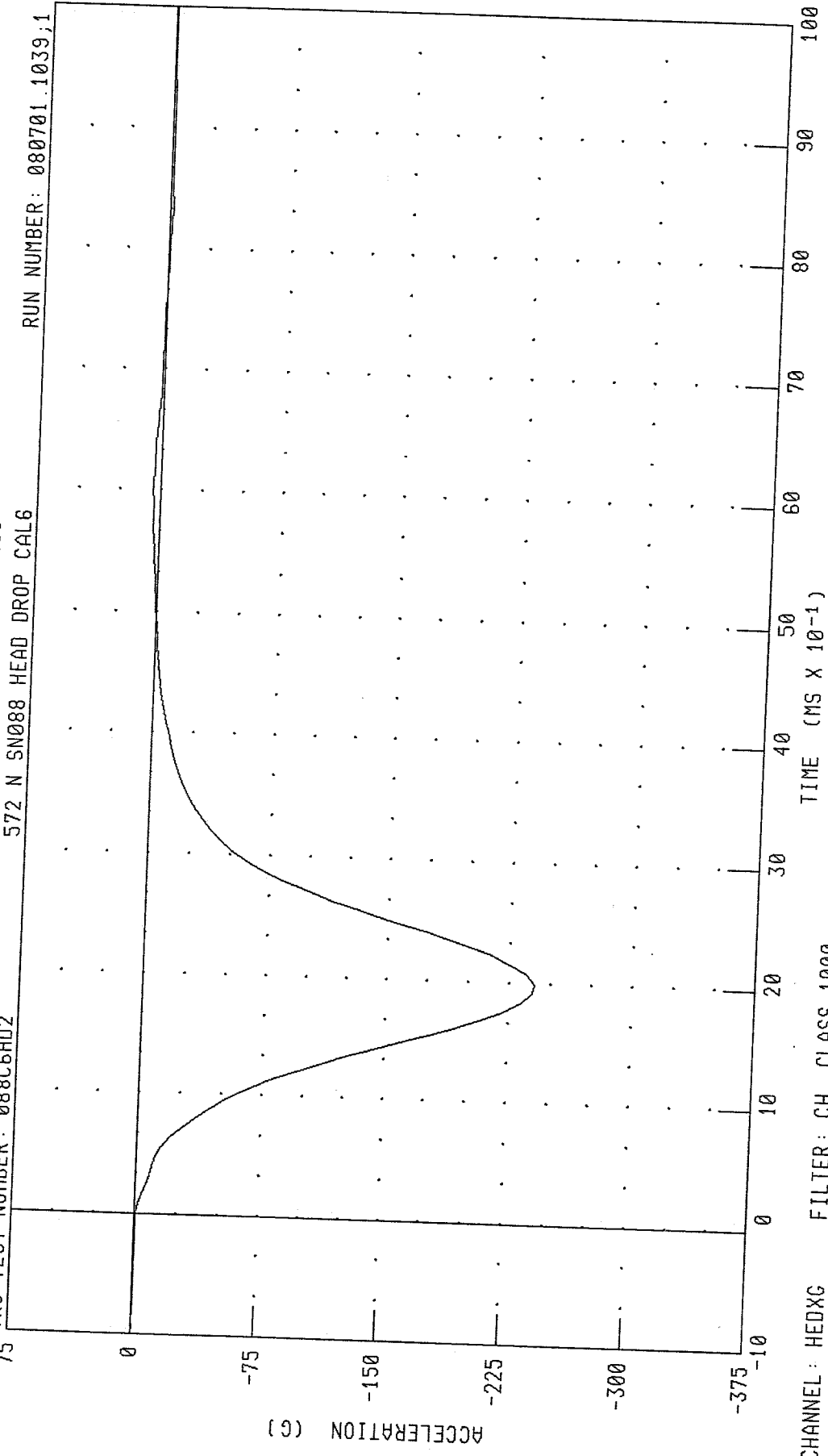
PART 572-N HYBRID III SIX-YEAR-OLD CHILD - HEAD CALIBRATION

75 IRC TEST NUMBER: 088C6HD2

HEAD ACCELERATION X AXIS

572 N SN088 HEAD DROP CAL6

RUN NUMBER: 080701.1039;1



CHANNEL: HEDXC FILTER: CH. CLASS 1000

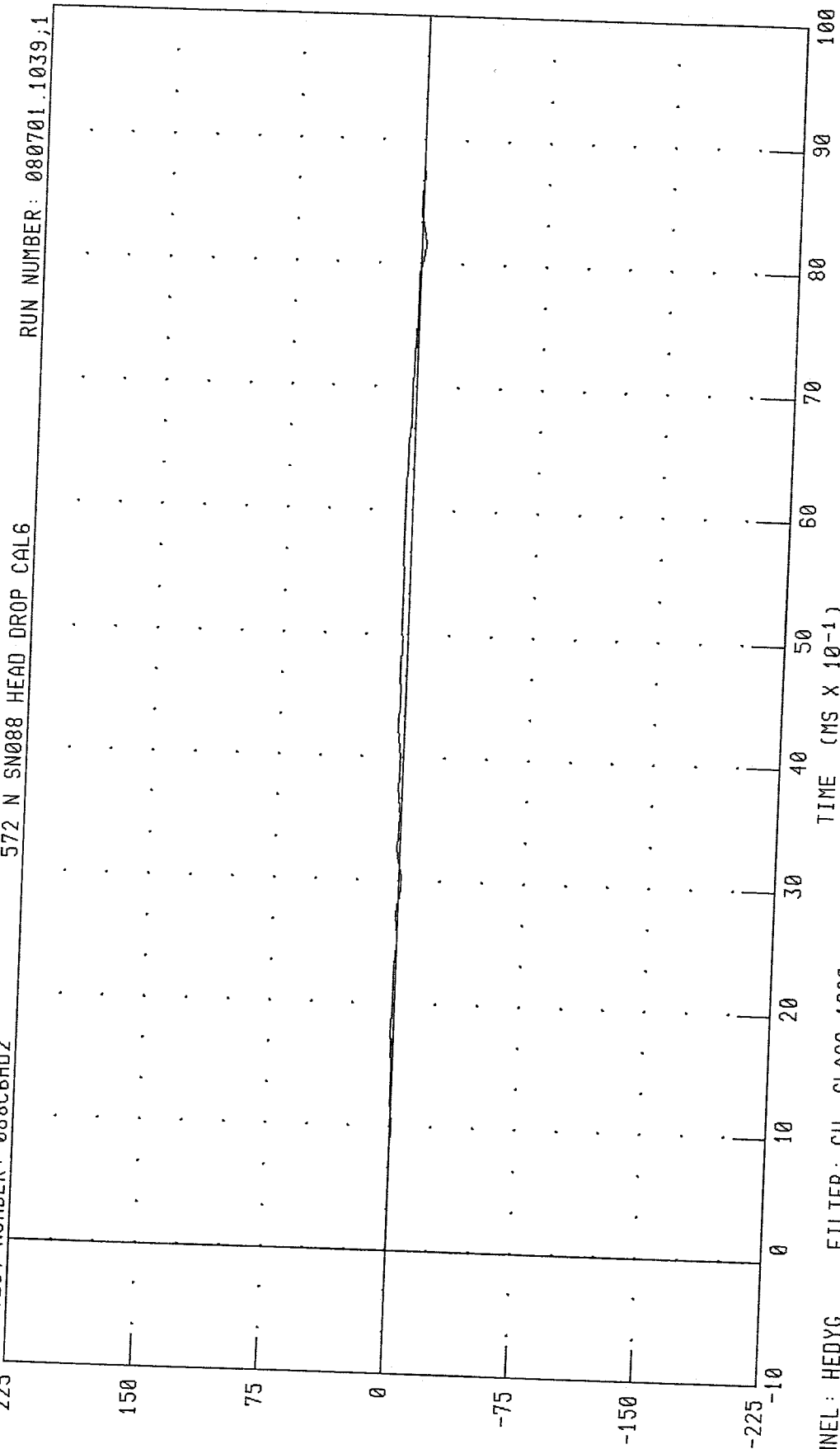
PEAK DATA: 4.52 G @ 6.00 MS; -240.34 G @ 2.00 MS

PART 572-N HYBRID III SIX-YEAR-OLD CHILD - HEAD CALIBRATION

TRC TEST NUMBER: 088C6HD2
HEAD ACCELERATION Y AXIS
572 N SN088 HEAD DROP CAL6

RUN NUMBER: 080701.1039,1

ACCELERATION (G)



CHANNEL: HEDYC

FILTER: CH. CLASS 1000

TIME (MS X 10⁻¹)

PEAK DATA: 4.42 G @ 6.00 MS; -2.80 G @ 8.16 MS

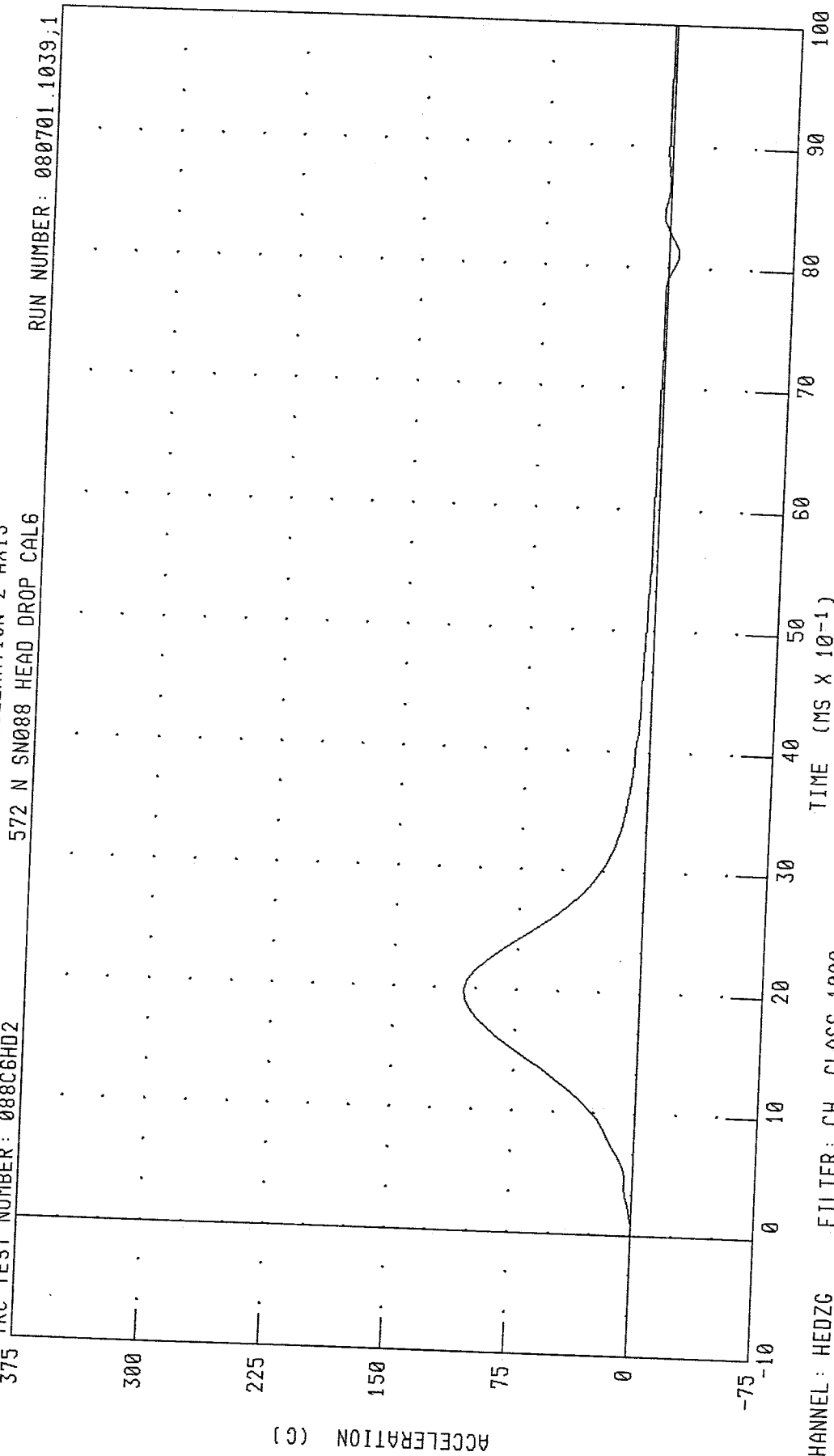
PART 572-N HYBRID III SIX-YEAR-OLD CHILD - HEAD CALIBRATION

HEAD ACCELERATION Z AXIS

TRC TEST NUMBER: 088C6HD2

572 N SN088 HEAD DROP CAL6

RUN NUMBER: 080701.1039;1



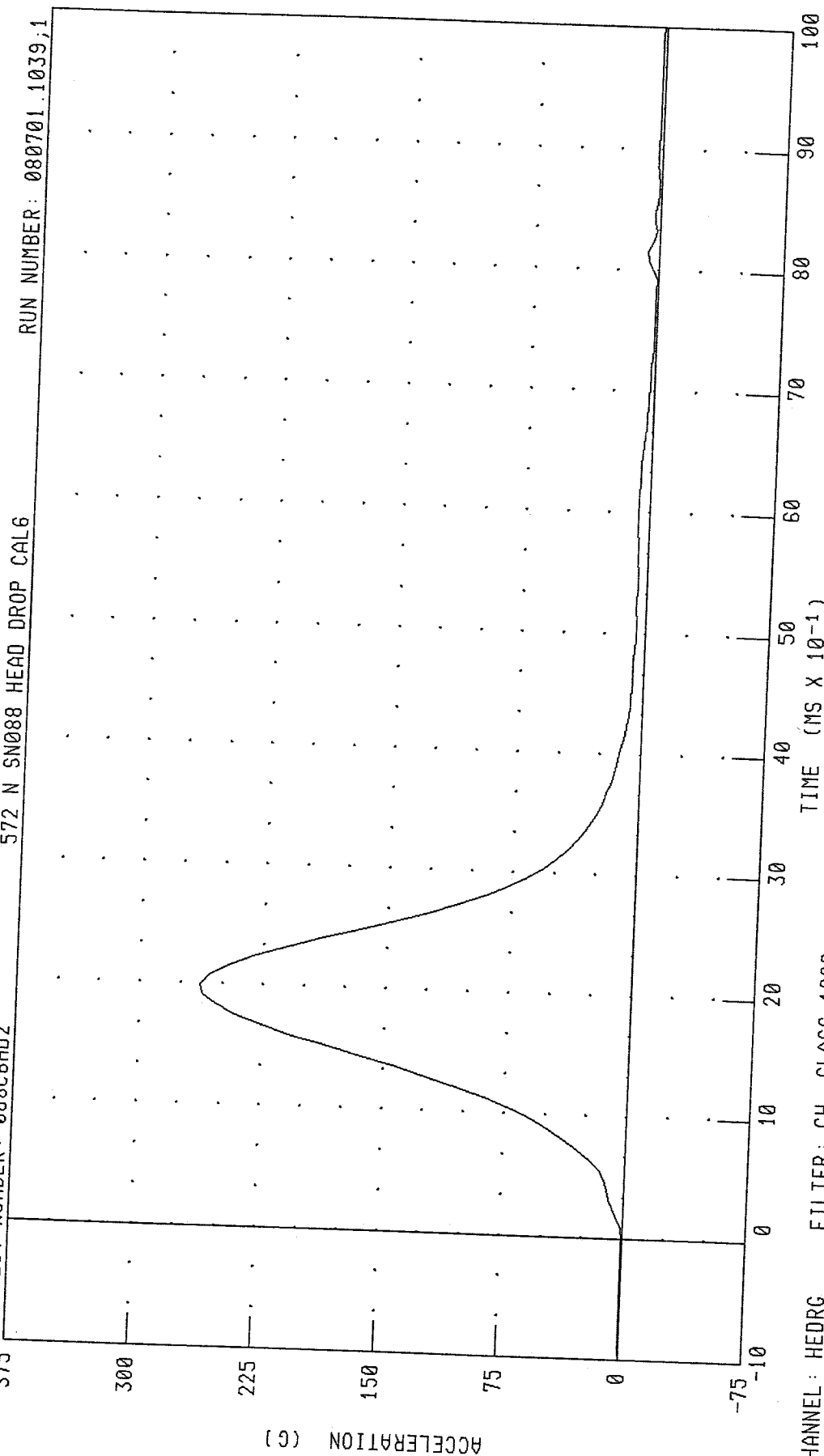
CHANNEL: HEDZG FILTER: CH. CLASS 1000

PEAK DATA: 107.17 G @ 2.00 MS; -6.02 G @ 8.16 MS

PART 572-N HYBRID III SIX-YEAR-OLD CHILD - HEAD CALIBRATION

TRC TEST NUMBER: 088C6HD2
HEAD RESULTANT ACCELERATION
572 N SN088 HEAD DROP CAL6

RUN NUMBER: 080701.1039,1



CHANNEL: HEDRG

FILTER: CH. CLASS 1000

PEAK DATA: 263.16 G @ 2.00 MS; 0.22 G @ -0.88 MS

TRANSPORTATION RESEARCH CENTER INC.

HYBRID III SIX YEAR OLD

13-AUG-01

NECK FLEXION TEST

TRC INC.

TEST NO: 088C6NF7

572 N SN088 NECK FLEX.CAL6

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6-22.2 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	60.0 %
IMPACT VELOCITY	4.83 - 5.07 M/S	5.07 M/S
INTEGRATED PENDULUM VELOCITY	10 MS 1.2 - 1.6 M/S	1.54 M/S
	20 MS 2.4 - 3.4 M/S	3.10 M/S
	30 MS 3.8 - 5.0 M/S	4.50 M/S
PEAK D-PLANE ROTATION	74 - 92 DEG.	74.98 DEG.
PEAK MOMENT DURING ROTATION INTERVAL	27 -33 NM	31.89 NM
POSITIVE MOMENT DECAY TIME TO 5 NM LEVEL	103 - 123 MS	104.80 MS
TIME OF PEAK ROTATION AFTER PEAK MOMENT	10 - 22 MS	19.76 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 081301.1935;4

msec	TOTAL (deg)	Min, Max values =	100/ 250/ -16	74.984 @ 70.7200
1294	50.0000 -->	63.446 63.531 63.617 63.702 63.786 63.871	56.447 @ 100.0000	64.124 64.207
1304	50.8000 -->	64.291 64.374 64.458 64.541 64.624 64.706	63.955 64.040	64.953 65.035
1314	51.6000 -->	65.117 65.199 65.280 65.361 65.442 65.522	64.789 65.602	65.762 65.841
1324	52.4000 -->	65.920 65.998 66.077 66.154 66.232 66.309	66.385 66.462	66.537 66.613
1334	53.2000 -->	66.687 66.762 66.836 66.909 66.982 67.055	67.127 67.198	67.269 67.340
1344	54.0000 -->	67.410 67.479 67.548 67.616 67.684 67.752	67.818 67.885	67.951 68.016
1354	54.8000 -->	68.081 68.145 68.209 68.273 68.336 68.398	68.460 68.522	68.583 68.644
1364	55.6000 -->	68.704 68.764 68.824 68.883 68.941 69.000	69.058 69.116	69.173 69.230
1374	56.4000 -->	69.287 69.343 69.399 69.455 69.511 69.566	69.621 69.676	69.731 69.785
1384	57.2000 -->	69.839 69.894 70.002 70.055 70.109 70.163	70.216 70.270	70.323 70.377
1394	58.0000 -->	70.377 70.430 70.483 70.537 70.590 70.643	70.696 70.750	70.803 70.856
1404	58.8000 -->	70.909 70.962 71.016 71.069 71.122 71.175	71.228 71.281	71.334 71.387
1414	59.6000 -->	71.440 71.493 71.545 71.598 71.650 71.703	71.755 71.807	71.859 71.911
1424	60.4000 -->	71.963 72.015 72.066 72.117 72.168 72.219	72.269 72.319	72.369 72.418
1434	61.2000 -->	72.467 72.516 72.564 72.612 72.659 72.706	72.752 72.798	72.844 72.888
1444	62.0000 -->	72.933 72.976 73.019 73.062 73.104 73.146	73.186 73.227	73.266 73.306
1454	62.8000 -->	73.344 73.382 73.420 73.457 73.493 73.529	73.564 73.598	73.632 73.666
1464	63.6000 -->	73.699 73.731 73.763 73.794 73.824 73.854	73.884 73.913	73.941 73.969
1474	64.4000 -->	73.996 74.023 74.049 74.075 74.100 74.125	74.149 74.173	74.196 74.219
1484	65.2000 -->	74.241 74.263 74.284 74.305 74.326 74.345	74.365 74.384	74.403 74.421
1494	66.0000 -->	74.439 74.457 74.474 74.491 74.507 74.524	74.539 74.555	74.570 74.585
1504	66.8000 -->	74.600 74.614 74.628 74.642 74.656 74.669	74.682 74.695	74.708 74.720
1514	67.6000 -->	74.733 74.744 74.756 74.768 74.779 74.790	74.801 74.811	74.821 74.831
1524	68.4000 -->	74.841 74.851 74.860 74.869 74.877 74.886	74.894 74.901	74.909 74.916
1534	69.2000 -->	74.922 74.929 74.935 74.941 74.946 74.951	74.956 74.960	74.964 74.968
1544	70.0000 -->	74.971 74.974 74.978 74.981 74.980 74.982	74.983 74.983	74.984 74.984
1554	70.8000 -->	74.984 74.983 74.982 74.981 74.979 74.975	74.973 74.973	74.970 74.967
1564	71.6000 -->	74.964 74.960 74.956 74.952 74.948 74.943	74.938 74.932	74.927 74.921
1574	72.4000 -->	74.914 74.908 74.901 74.894 74.886 74.878	74.870 74.862	74.853 74.844
1584	73.2000 -->	74.835 74.826 74.816 74.806 74.796 74.785	74.774 74.763	74.752 74.740
1594	74.0000 -->	74.729 74.717 74.705 74.692 74.680 74.667	74.654 74.641	74.627 74.614
1604	74.8000 -->	74.600 74.587 74.573 74.558 74.544 74.530	74.515 74.501	74.486 74.471
1614	75.6000 -->	74.456 74.441 74.425 74.410 74.394 74.378	74.363 74.346	74.330 74.314
1624	76.4000 -->	74.297 74.281 74.264 74.247 74.230 74.212	74.195 74.177	74.159 74.141
1634	77.2000 -->	74.122 74.104 74.085 74.066 74.047 74.028	73.989 73.969	73.949 73.929
1644	78.0000 -->	73.929 73.908 73.888 73.867 73.846 73.825	73.804 73.782	73.761 73.739
1654	78.8000 -->	73.717 73.695 73.673 73.651 73.628 73.606	73.583 73.560	73.537 73.513
1664	79.6000 -->	73.490 73.466 73.442 73.418 73.394 73.370	73.345 73.320	73.295 73.270
1674	80.4000 -->	73.245 73.219 73.193 73.167 73.141 73.115	73.088 73.061	73.033 73.005
1684	81.2000 -->	72.977 72.949 72.920 72.891 72.861 72.832	72.801 72.770	72.739 72.707
1694	82.0000 -->	72.675 72.643 72.610 72.576 72.542 72.507	72.472 72.436	72.400 72.363
1704	82.8000 -->	72.325 72.287 72.248 72.209 72.169 72.128	72.087 72.045	72.002 71.959
1714	83.6000 -->	71.915 71.871 71.826 71.780 71.734 71.687	71.639 71.591	71.542 71.492
1724	84.4000 -->	71.442 71.392 71.340 71.288 71.236 71.183	71.129 71.075	71.020 70.965
1734	85.2000 -->	70.908 70.852 70.795 70.737 70.679 70.620	70.560 70.500	70.440 70.379
1744	86.0000 -->	70.317 70.255 70.192 70.129 70.065 70.001	69.937 69.871	69.806 69.739
1754	86.8000 -->	69.673 69.605 69.538 69.470 69.401 69.332	69.262 69.192	69.122 69.051
1764	87.6000 -->	68.980 68.908 68.836 68.764 68.691 68.618	68.545 68.471	68.397 68.322
1774	88.4000 -->	68.248 68.173 68.097 68.022 67.946 67.870	67.794 67.718	67.641 67.565
1784	89.2000 -->	67.488 67.411 67.333 67.256 67.178 67.100	67.022 66.944	66.866 66.788

[DUMMY.088C6]088C6NF7D.RAD;4
TRC INC. 088C6NF7 01225
TOTAN Deltax = 0.080000 msec

572 N SN088 NECK FLEX.CAL6

Npts = 6250; IPO = 669; Filter = BLPP

5.1 m/sec

13-AUG-01 19:35

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13-AUG-01 19:33											
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	msec	NEKOM	(N-m	)	Min, Max values =	25.116 @	77.7600	31.886 @	65.6800
1476	64.5600 -->	31.801	31.818	31.833	31.841	31.834	31.822	31.804	31.806
1486	65.3600 -->	31.816	31.835	31.858	31.876	31.885	31.879	31.863	31.853
1496	66.1600 -->	31.842	31.826	31.804	31.777	31.723	31.706	31.694	31.693
1506	66.9600 -->	31.689	31.679	31.661	31.638	31.594	31.577	31.538	31.518
1516	67.7600 -->	31.501	31.486	31.473	31.461	31.444	31.442	31.438	31.432
1526	68.5600 -->	31.425	31.416	31.407	31.398	31.372	31.357	31.330	31.320
1536	69.3600 -->	31.308	31.294	31.279	31.265	31.243	31.232	31.202	31.186
1546	70.1600 -->	31.172	31.157	31.142	31.125	31.109	31.075	31.022	30.984
1556	70.9600 -->	30.942	30.900	30.861	30.826	30.790	30.710	30.618	30.569
1566	71.7600 -->	30.517	30.463	30.406	30.344	30.278	30.140	30.015	29.962
1576	72.5600 -->	29.912	29.860	29.802	29.736	29.661	29.505	29.361	29.296
1586	73.3600 -->	29.227	29.153	29.074	28.993	28.910	28.740	28.567	28.477
1596	74.1600 -->	28.387	28.299	28.214	28.129	27.967	27.890	27.732	27.649
1606	74.9600 -->	27.562	27.471	27.379	27.289	27.206	27.052	26.911	26.843
1616	75.7600 -->	26.773	26.699	26.621	26.541	26.461	26.307	26.143	26.063
1626	76.5600 -->	25.988	25.922	25.864	25.813	25.766	25.662	25.534	25.465
1636	77.3600 -->	25.397	25.332	25.273	25.220	25.167	25.116		

msec		NEKOM (N-m		Min, Max values =		0.0530 @ 123.0400		5.5866 @ 103.0400	
			)						
1957	103.0400 -->	5.5866	5.5566	5.5229	5.4835	5.4409	5.4003	5.3650	5.3354
1967	103.8400 -->	5.2790	5.2680	5.2564	5.2421	5.2255	5.2066	5.1842	5.1563
1977	104.6400 -->	5.0454	5.0138	4.9894	4.9695	4.9515	4.9349	4.9199	4.9063
1987	105.4400 -->	4.8519	4.8261	4.8028	4.7842	4.7682	4.7510	4.7306	4.7081
1997	106.2400 -->	4.6335	4.6053	4.5822	4.5674	4.5606	4.5596	4.5619	4.5653
2007	107.0400 -->	4.4528	4.5296	4.4936	4.4492	4.4051	4.3687	4.3420	4.3234
2017	107.8400 -->	4.2920	4.2862	4.2828	4.2778	4.2684	4.2575	4.2510	4.2514
2027	108.6400 -->	4.2412	4.2169	4.1826	4.1439	4.1073	4.0780	4.0583	4.0468
2037	109.4400 -->	4.0379	4.0390	4.0374	4.0287	4.0104	3.9820	3.9454	3.9071
2047	110.2400 -->	3.8380	3.8266	3.8130	3.7948	3.7733	3.7540	3.7427	3.7407
2057	111.0400 -->	3.7305	3.7085	3.6794	3.6491	3.6216	3.5978	3.5779	3.5620
2067	111.8400 -->	3.5151	3.4904	3.4634	3.4404	3.4248	3.4159	3.4092	3.3991
2077	112.6400 -->	3.3080	3.2658	3.2311	3.2083	3.1953	3.1869	3.1772	3.1615
2087	113.4400 -->	3.0896	3.0728	3.0608	3.0490	3.0315	3.0045	2.9684	2.9286
2097	114.2400 -->	2.8490	2.8377	2.8260	2.8088	2.7838	2.7537	2.7242	2.6995
2107	115.0400 -->	2.6480	2.6249	2.5946	2.5612	2.5305	2.5033	2.4754	2.4432
2117	115.8400 -->	2.3604	2.3491	2.3436	2.3405	2.3378	2.3339	2.3263	2.3108
2127	116.6400 -->	2.2139	2.1807	2.1498	2.1182	2.0840	2.0478	2.0118	1.9771
2137	117.4400 -->	1.8878	1.8708	1.8583	1.8452	1.8264	1.8001	1.7692	1.7402
2147	118.2400 -->	1.6827	1.6587	1.6281	1.5944	1.5604	1.5254	1.4866	1.4440
2157	119.0400 -->	1.3220	1.2930	1.2749	1.2665	1.2611	1.2517	1.2351	1.2116
2167	119.8400 -->	1.1248	1.1031	1.0842	1.0637	1.0386	1.0104	0.9825	0.9565
2177	120.6400 -->	0.8726	0.8445	0.8186	0.7919	0.7615	0.7279	0.6938	0.6615
2187	121.4400 -->	0.5858	0.5663	0.5444	0.5174	0.4842	0.4473	0.4116	0.3815
2197	122.2400 -->	0.3006	0.2654	0.2328	0.2083	0.1909	0.1761	0.1582	0.1347
2207	123.0400 -->	0.0530							

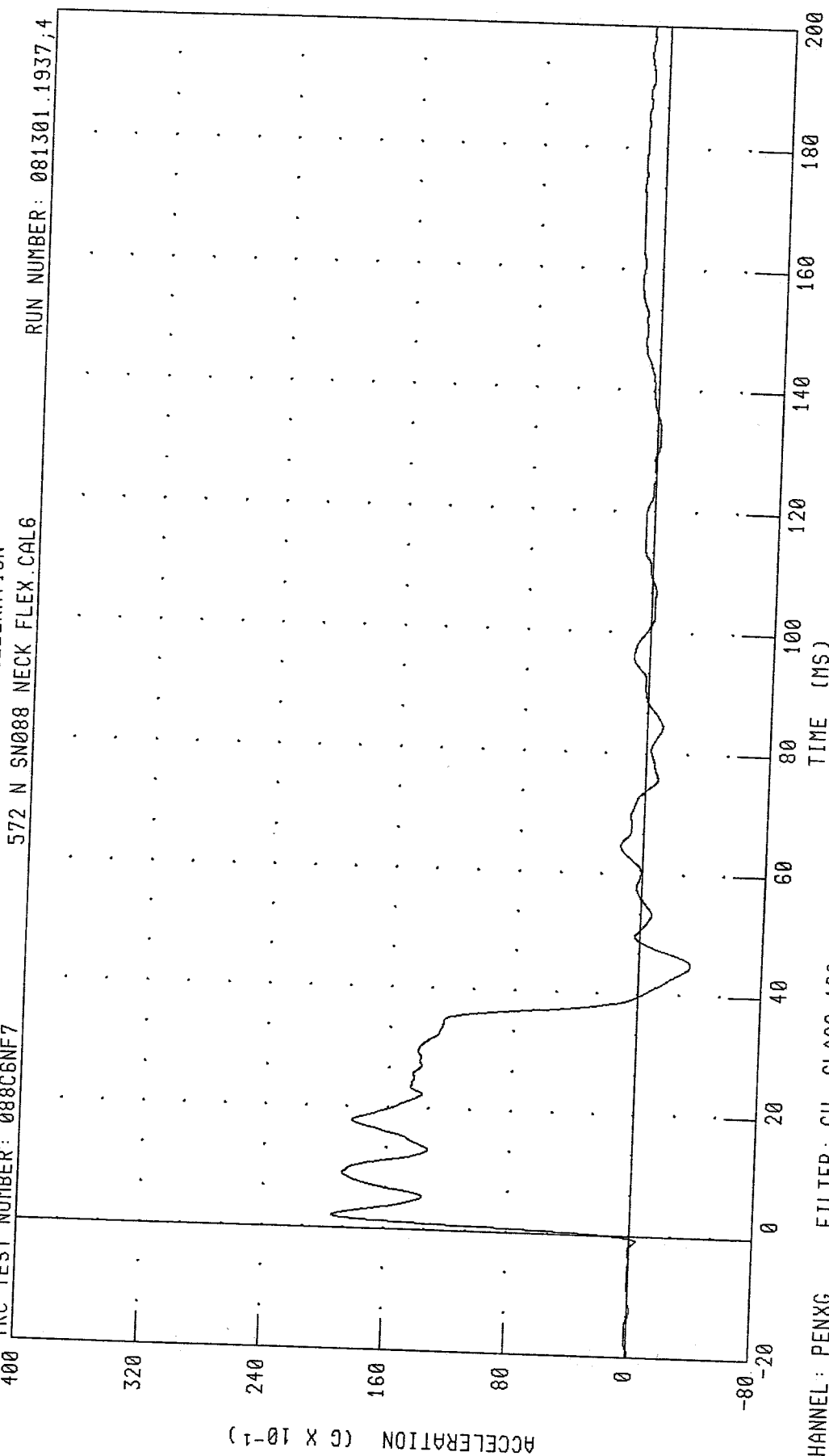
PART 572 N HYBRID III SIX-YEAR-OLD CHILD - NECK FLEXION CALIBRATION

PENDULUM DECELERATION

572 N SN088 NECK FLEX.CAL6

TRC TEST NUMBER: 088C6NF7

RUN NUMBER: 081301.1937,4



CHANNEL: PENXG FILTER: CH. CLASS 180

PEAK DATA: 19.45 G @ 2.08 MS; -3.36 G @ 44.96 MS

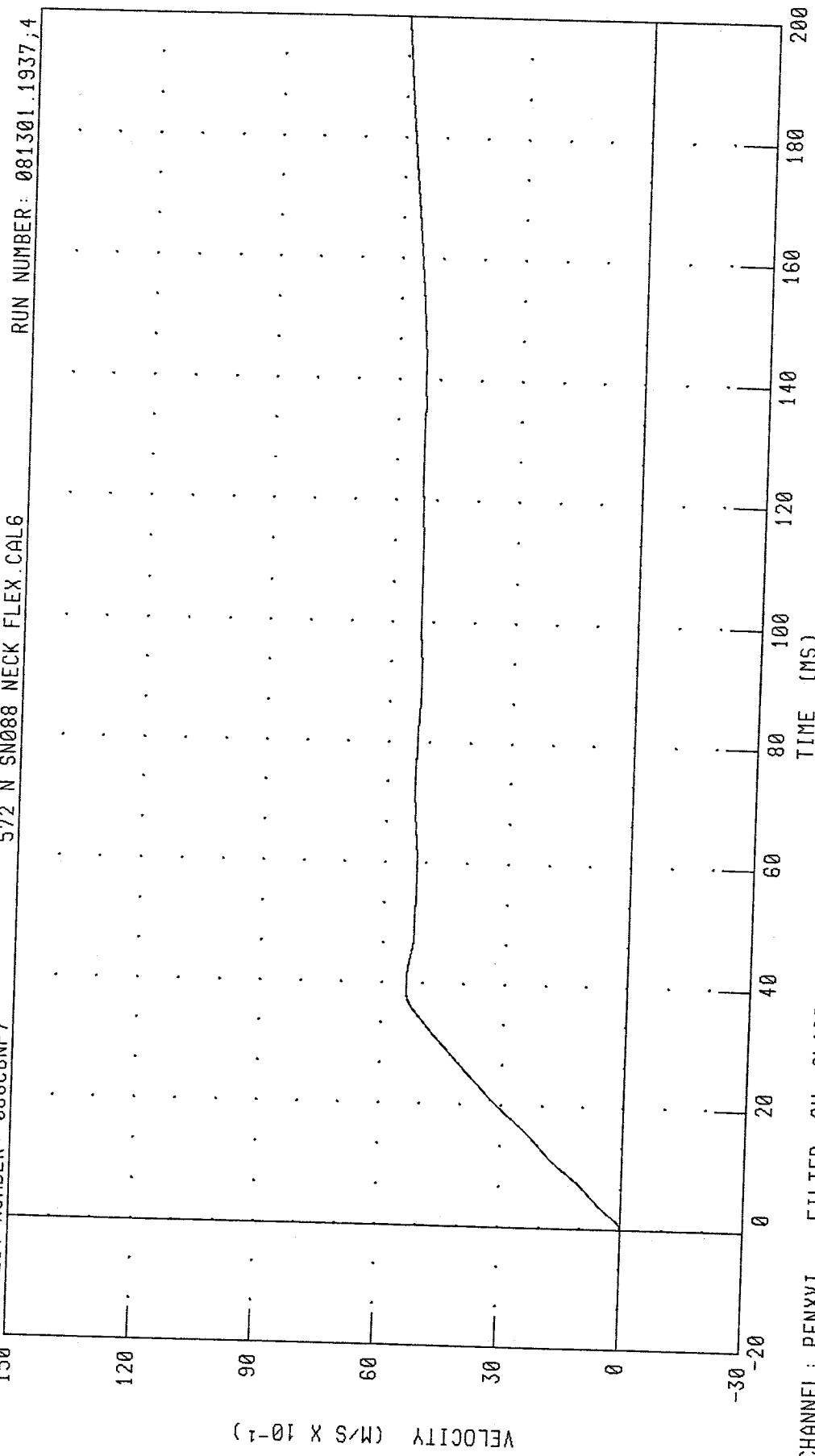
PART 572 N HYBRID III SIX-YEAR-OLD CHILD - NECK FLEXION CALIBRATION

TRC TEST NUMBER: 088C6NF7

INTEGRATED PENDULUM VELOCITY

572 N SN088 NECK FLEX.CAL6

RUN NUMBER: 081301.1937,4



CHANNEL: PENXVI FILTER: CH. CLASS 180

PEAK DATA: 5.97 M/S @ 200.00 MS; -0.01 M/S @ -18.64 MS

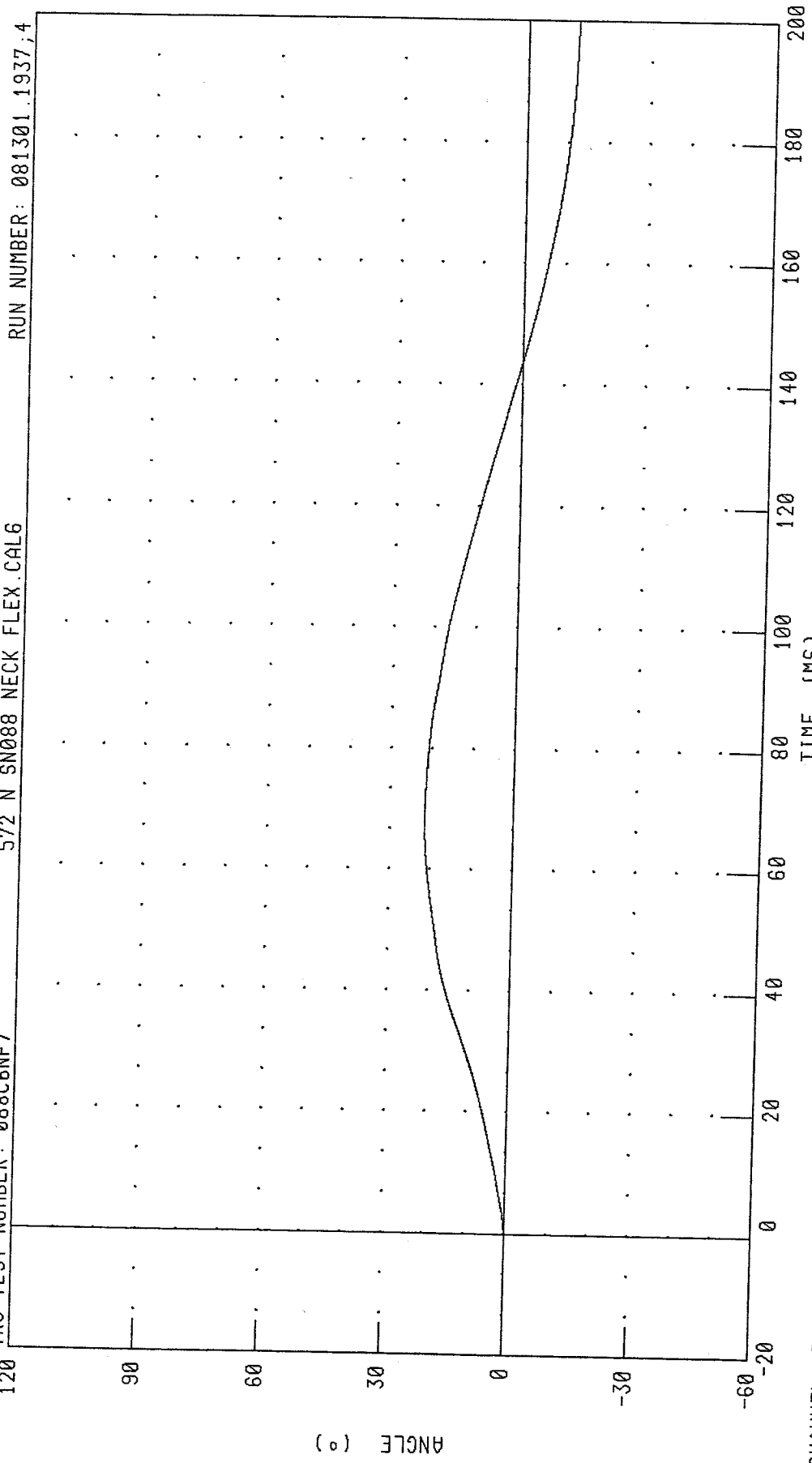
PART 572 N HYBRID III SIX-YEAR-OLD CHILD - NECK FLEXION CALIBRATION

ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER: 088C6NF7

572 N SN088 NECK FLEX.CAL6

RUN NUMBER: 081301.1937,4



CHANNEL: BETA

FILTER: CH. CLASS 60

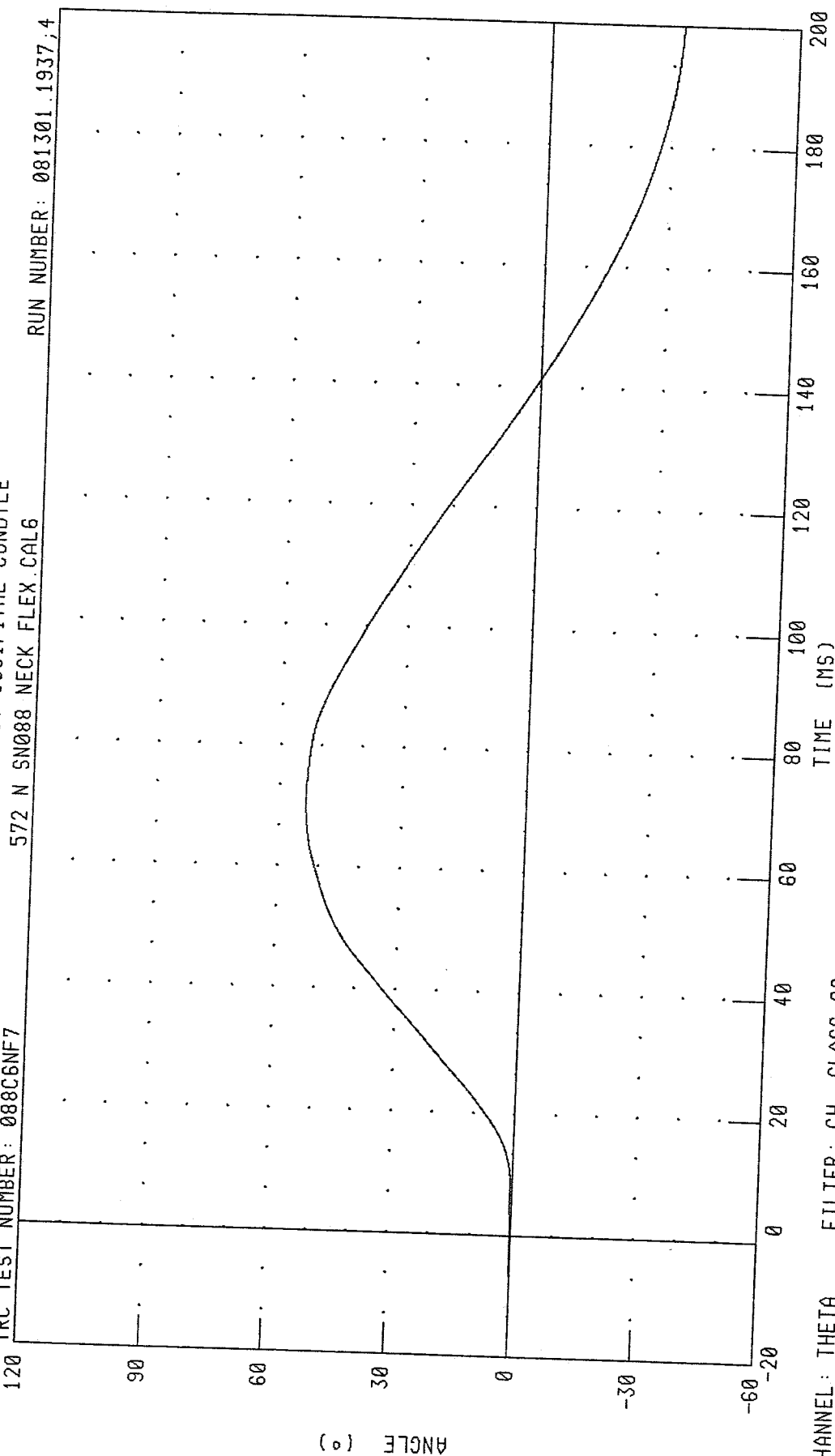
PEAK DATA: 21.51 ° @ 69.04 MS; -12.25 ° @ 200.00 MS

PART 572 N HYBRID III SIX-YEAR-OLD CHILD - NECK FLEXION CALIBRATION
ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: 088C6NF7

572 N SN088 NECK FLEX.CAL6

RUN NUMBER: 081301.1937,4



CHANNEL: THETA FILTER: CH. CLASS 60

PEAK DATA: 53.51 ° @ 71.36 MS; -32.33 ° @ 200.00 MS

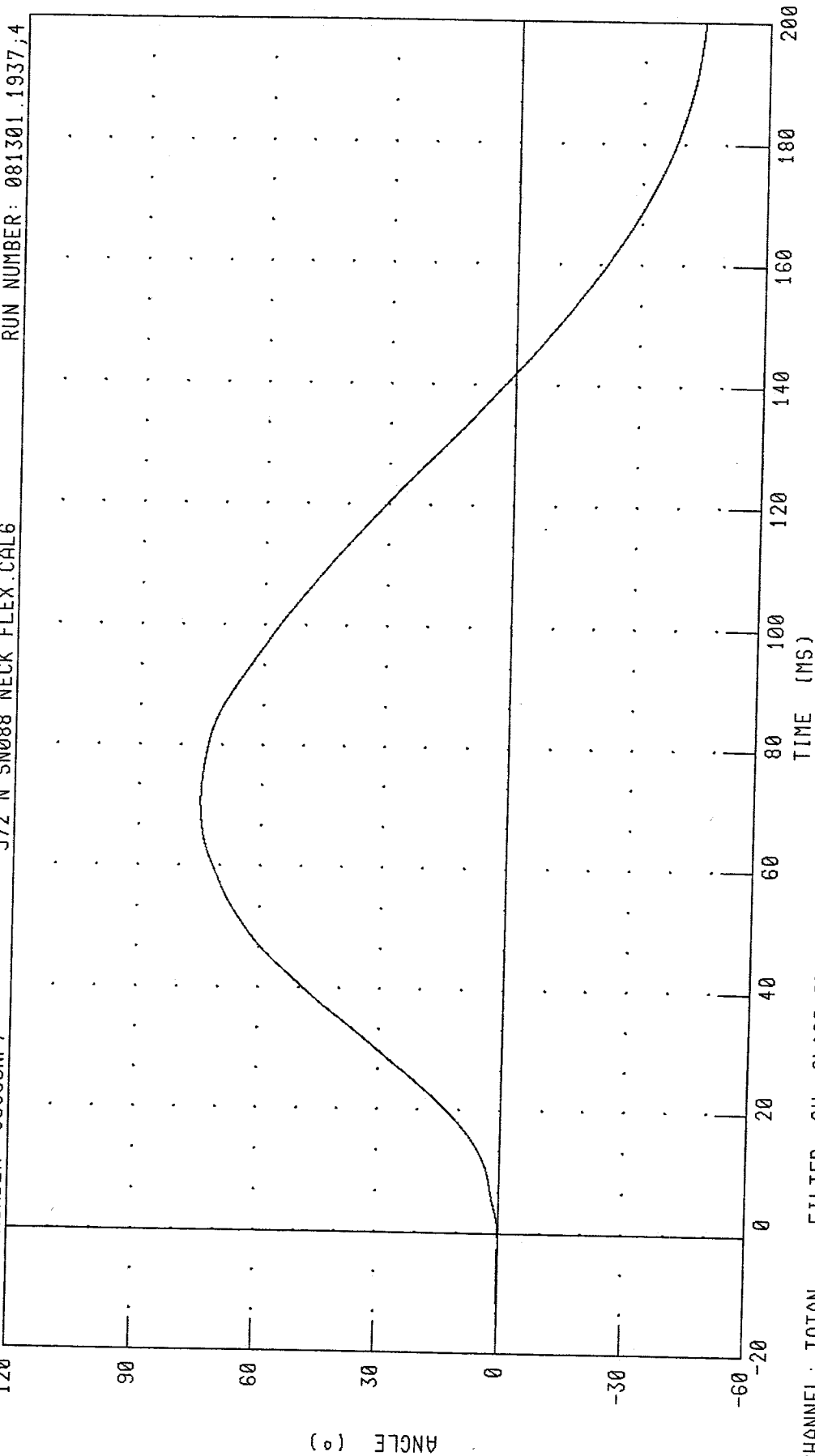
PART 572 N HYBRID III SIX-YEAR-OLD CHILD - NECK FLEXION CALIBRATION

TOTAL ROTATION

TRC TEST NUMBER: 088C6NF7

572 N 5N088 NECK FLEX.CAL6

RUN NUMBER: 081301.1937;4



CHANNEL: TOTAN

FILTER: CH. CLASS 60

TIME (MS)

PEAK DATA: 74.98 ° @ 70.72 MS, -44.57 ° @ 200.00 MS

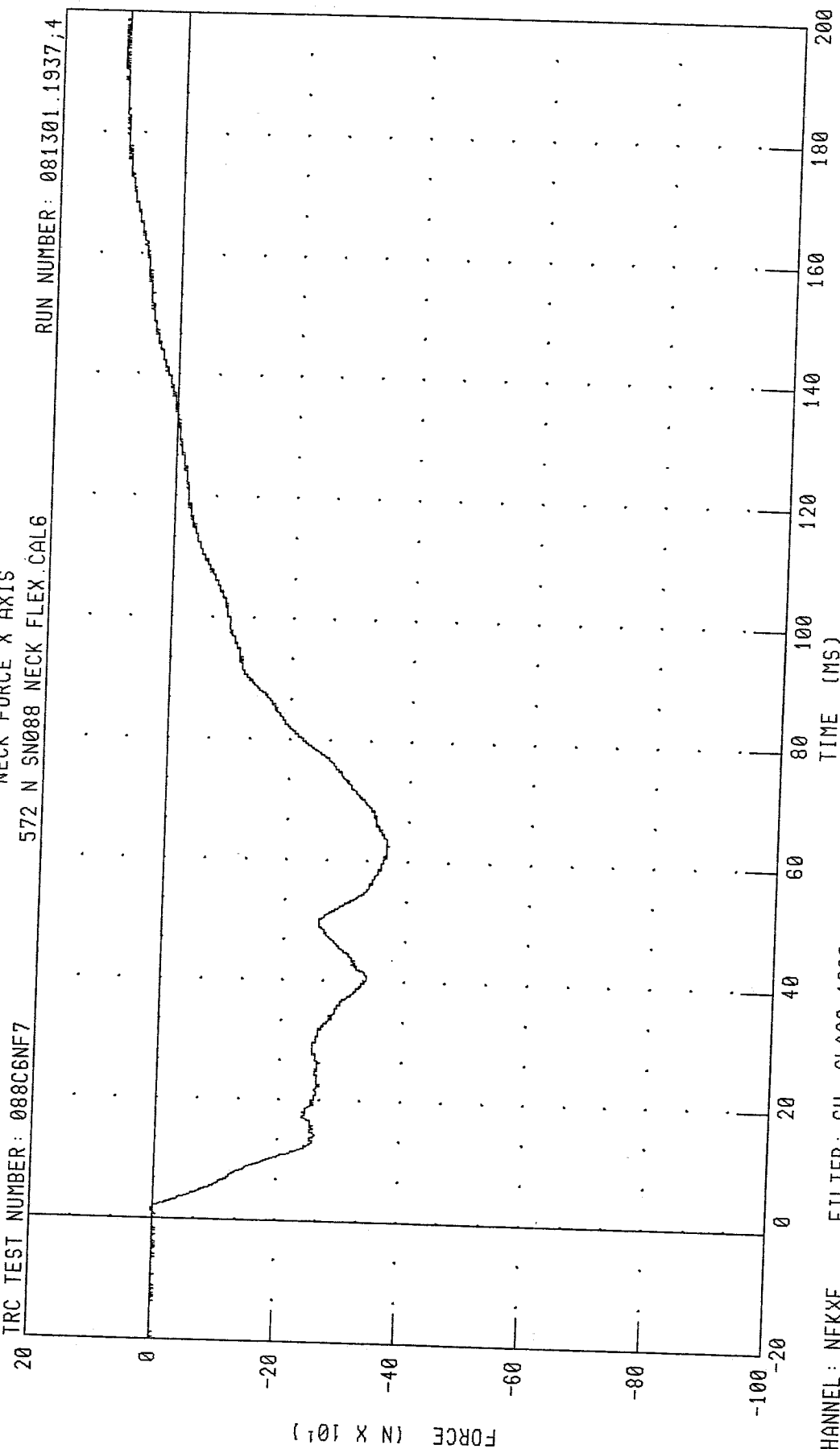
PART 572 N HYBRID III SIX-YEAR-OLD CHILD - NECK FLEXION CALIBRATION

NECK FORCE X AXIS

TRC TEST NUMBER: 088C6NF7

572 N SN088 NECK FLEX.CAL6

RUN NUMBER: 081301.1937;4



CHANNEL: NEKXF FILTER: CH. CLASS 1000

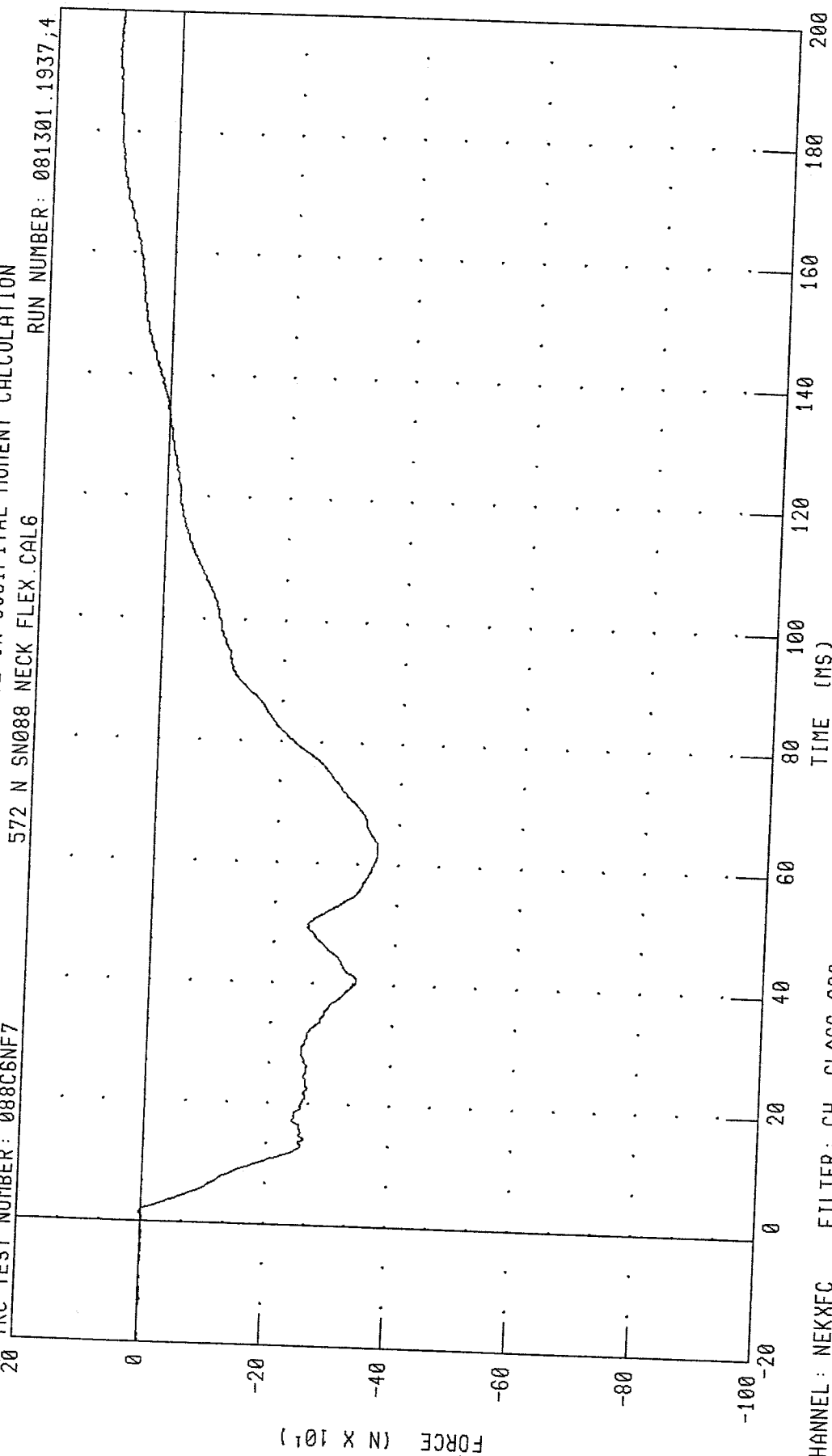
PEAK DATA: 100.03 N @ 188.72 MS; -369.03 N @ 62.64 MS

PART 572 N HYBRID III SIX-YEAR-OLD CHILD - NECK FLEXION CALIBRATION
NECK FORCE X AXIS FILTERED FOR USE IN OCCIPITAL MOMENT CALCULATION

TRC TEST NUMBER: 088C6NF7

572 N SN088 NECK FLEX.CAL6

RUN NUMBER: 081301.1937,4

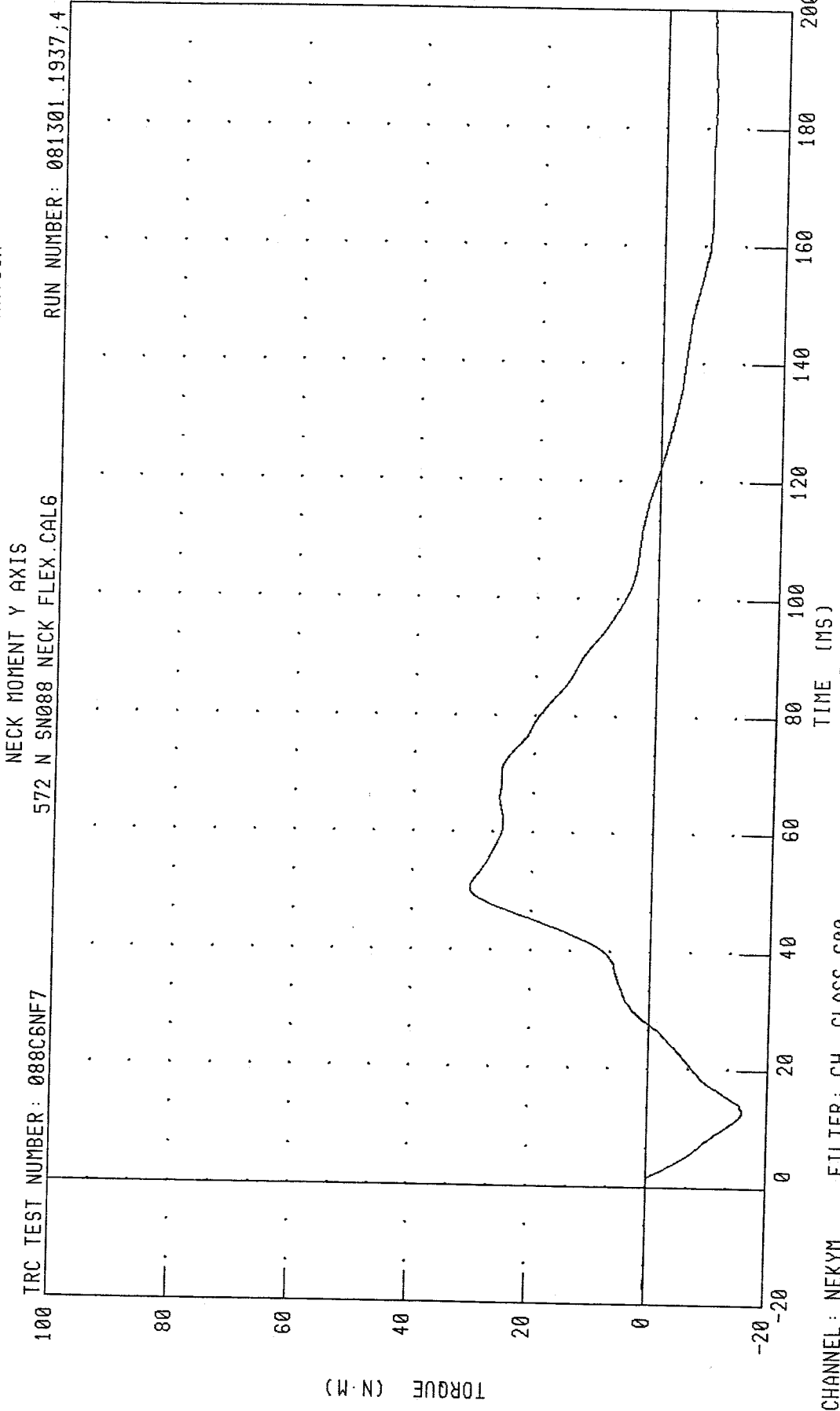


CHANNEL: NEKXFC FILTER: CH. CLASS 600

PEAK DATA: 100.06 N @ 193.52 MS, -365.61 N @ 62.64 MS

PART 572 N HYBRID III SIX-YEAR-OLD CHILD - NECK FLEXION CALIBRATION

TRC TEST NUMBER: 088C8NF7 572 N SN088 NECK FLEX.CAL6 RUN NUMBER: 081301.1937,4



CHANNEL: NEKYM FILTER: CH. CLASS 600

PEAK DATA: 30.35 N·M @ 50.64 MS; -15.84 N·M @ 12.96 MS

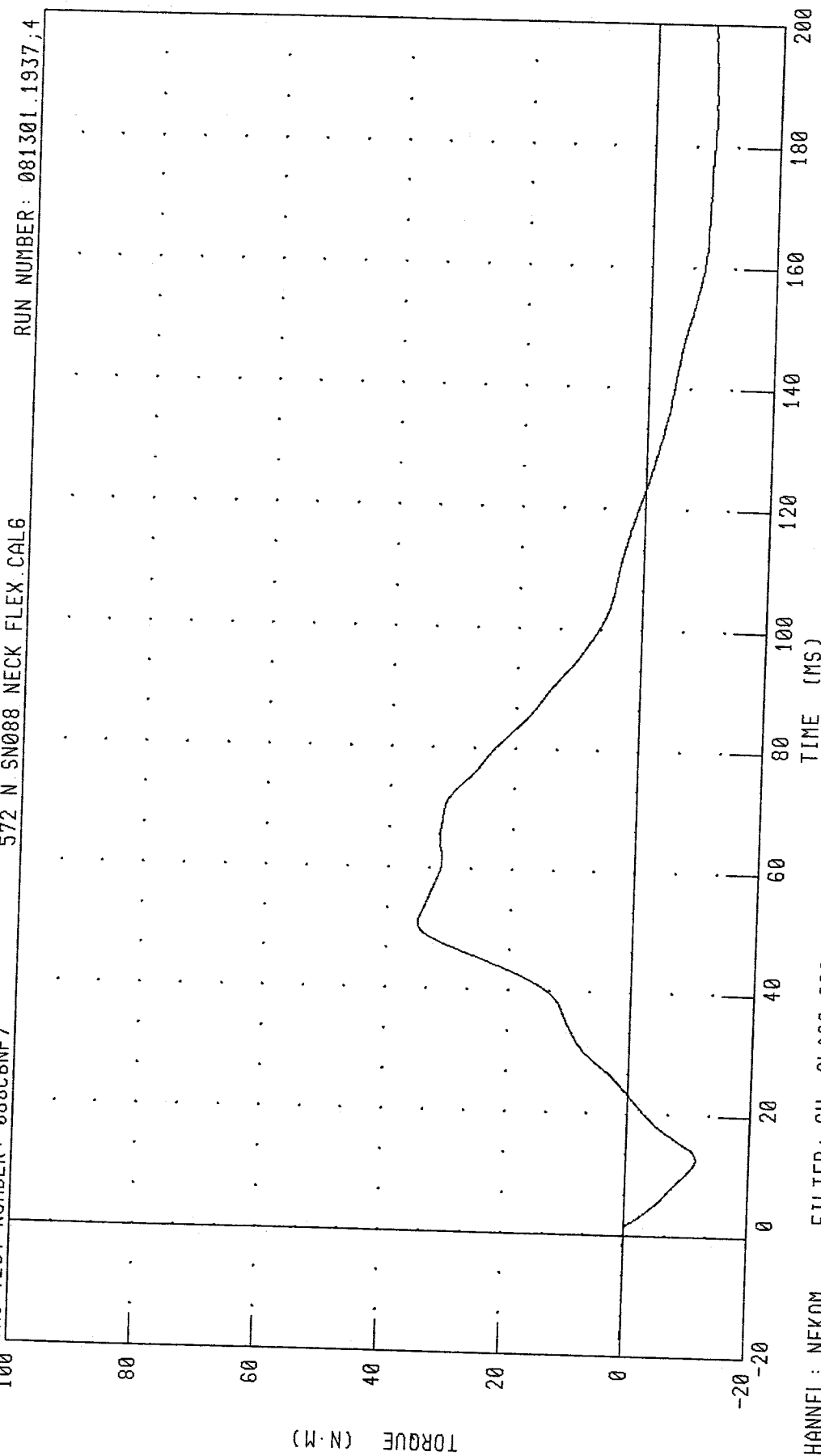
PART 572 N HYBRID III SIX-YEAR-OLD CHILD - NECK FLEXION CALIBRATION

TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: 088C6NF7

572 N SN088 NECK FLEX.CAL6

RUN NUMBER: 081301.1937;4



CHANNEL: NEKOM FILTER: CH. CLASS 600

PEAK DATA: 35.07 N·M @ 50.96 MS; -11.32 N·M @ 12.80 MS

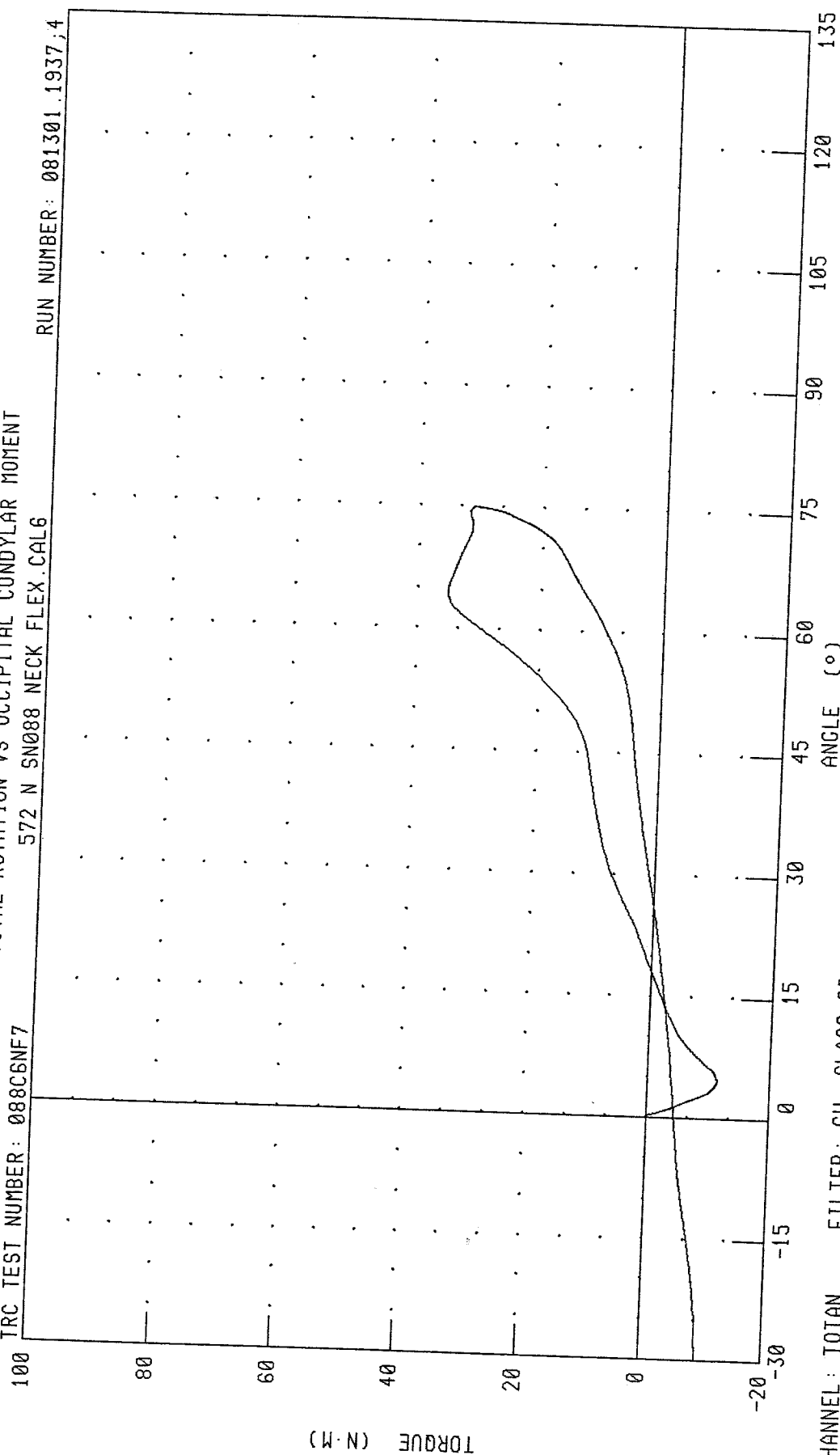
PART 572 N HYBRID III SIX-YEAR-OLD CHILD - NECK FLEXION CALIBRATION

TOTAL ROTATION VS OCCIPITAL CONDYLAR MOMENT

TRC TEST NUMBER: 088C6NF7

572 N SN088 NECK FLEX.CAL6

RUN NUMBER: 081301.1937,4



CHANNEL: TOTAN
NEKOM

FILTER: CH. CLASS 600
CH. CLASS 600

PEAK DATA: 74.98 ° @ 70.72 MS; -44.57 ° @ 200.00 MS
35.07 N·M @ 50.96 MS; -11.32 N·M @ 12.80 MS

TRANSPORTATION RESEARCH CENTER INC.

HYBRID III SIX YEAR OLD

13-AUG-01

NECK EXTENSION TEST

TRC INC.

TEST NO: 088C6NE4

572 N SN088 NECK EXT.CAL6

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6 - 22.2 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	60.0 %
IMPACT VELOCITY	4.18 - 4.42 M/S	4.38 M/S
INTEGRATED PENDULUM VELOCITY	10 MS 1.0 - 1.4 M/S	1.22 M/S
	20 MS 2.2 - 3.0 M/S	2.55 M/S
	30 MS 3.2 - 4.2 M/S	3.79 M/S
PEAK D-PLANE ROTATION	85 - 103 DEG.	85.53 DEG.
PEAK MOMENT IN ROTATION INTERVAL	-19 / -24 NM	-24.22 NM *
NEGATIVE MOMENT DECAY TIME FROM PEAK TO 5 NM	123 - 147 MS	127.04 MS

* TEST DOES NOT MEET SPECIFICATIONS

TECHNICIAN

RUN NUMBER: 081301.1856;1

msec		TOTAL (deg)		Min, Max values =		100/ 250/ -16		85.532 @ 86.0800	
msec		TOTAL (deg)		Min, Max values =		100/ 250/ -16		85.532 @ 86.0800	
1274	40.0000 -->	41.992	42.115	42.237	42.360	42.482	42.605	42.728	42.851
1284	40.8000 -->	43.223	43.347	43.472	43.597	43.723	43.849	43.975	44.102
1294	41.6000 -->	44.486	44.615	44.744	44.874	45.005	45.136	45.267	45.400
1304	42.4000 -->	45.799	45.934	46.069	46.204	46.341	46.477	46.614	46.752
1314	43.2000 -->	47.168	47.308	47.448	47.589	47.730	47.872	48.014	48.156
1324	44.0000 -->	48.585	48.729	48.873	49.018	49.162	49.307	49.452	49.598
1334	44.8000 -->	50.035	50.180	50.326	50.472	50.618	50.764	50.910	51.056
1344	45.6000 -->	51.493	51.639	51.784	51.929	52.074	52.219	52.363	52.508
1354	46.4000 -->	52.939	53.082	53.225	53.368	53.510	53.652	53.793	53.934
1364	47.2000 -->	54.355	54.495	54.634	54.772	54.910	55.048	55.185	55.322
1374	48.0000 -->	55.729	55.864	55.998	56.132	56.265	56.398	56.530	56.662
1384	48.8000 -->	57.054	57.184	57.314	57.442	57.571	57.698	57.826	57.953
1394	49.6000 -->	58.330	58.456	58.580	58.704	58.828	58.952	59.075	59.197
1404	50.4000 -->	59.563	59.684	59.805	59.925	60.046	60.165	60.285	60.404
1414	51.2000 -->	60.760	60.879	60.996	61.114	61.231	61.348	61.465	61.582
1424	52.0000 -->	61.930	62.045	62.161	62.276	62.391	62.506	62.620	62.735
1434	52.8000 -->	63.076	63.190	63.303	63.417	63.530	63.642	63.755	63.867
1444	53.6000 -->	64.203	64.315	64.426	64.537	64.648	64.759	64.869	64.979
1454	54.4000 -->	65.307	65.416	65.524	65.632	65.740	65.847	65.954	66.061
1464	55.2000 -->	66.378	66.483	66.588	66.692	66.796	66.899	67.002	67.105
1474	56.0000 -->	67.411	67.512	67.613	67.713	67.813	67.912	68.012	68.111
1484	56.8000 -->	68.405	68.502	68.599	68.696	68.792	68.888	68.984	69.079
1494	57.6000 -->	69.363	69.457	69.551	69.644	69.737	69.830	69.923	70.015
1504	58.4000 -->	70.290	70.381	70.471	70.562	70.652	70.742	70.832	70.921
1514	59.2000 -->	71.188	71.277	71.365	71.453	71.541	71.629	71.716	71.803
1524	60.0000 -->	72.064	72.150	72.237	72.323	72.408	72.494	72.579	72.665
1534	60.8000 -->	72.919	73.003	73.087	73.171	73.255	73.338	73.421	73.504
1544	61.6000 -->	73.751	73.833	73.915	73.996	74.077	74.158	74.239	74.319
1554	62.4000 -->	74.559	74.638	74.717	74.796	74.874	74.952	75.030	75.107
1564	63.2000 -->	75.338	75.414	75.490	75.565	75.640	75.715	75.789	75.863
1574	64.0000 -->	76.083	76.156	76.228	76.300	76.372	76.443	76.513	76.584
1584	64.8000 -->	76.793	76.862	76.930	76.999	77.067	77.134	77.201	77.268
1594	65.6000 -->	77.468	77.533	77.599	77.664	77.729	77.793	77.858	77.922
1604	66.4000 -->	78.112	78.175	78.237	78.299	78.361	78.423	78.484	78.545
1614	67.2000 -->	78.725	78.784	78.844	78.902	78.961	79.019	79.077	79.134
1624	68.0000 -->	79.304	79.360	79.416	79.471	79.526	79.581	79.635	79.689
1634	68.8000 -->	79.850	79.903	79.955	80.008	80.059	80.111	80.163	80.214
1644	69.6000 -->	80.365	80.415	80.465	80.514	80.564	80.613	80.662	80.710
1654	70.4000 -->	80.855	80.903	80.950	80.998	81.045	81.093	81.140	81.187
1664	71.2000 -->	81.327	81.374	81.420	81.467	81.513	81.559	81.605	81.651
1674	72.0000 -->	81.788	81.833	81.879	81.924	81.969	82.014	82.059	82.104
1684	72.8000 -->	82.237	82.281	82.325	82.369	82.413	82.456	82.500	82.543
1694	73.6000 -->	82.672	82.714	82.757	82.799	82.840	82.882	82.923	82.964
1704	74.4000 -->	83.085	83.124	83.163	83.202	83.240	83.278	83.316	83.353
1714	75.2000 -->	83.462	83.498	83.533	83.567	83.602	83.636	83.669	83.702
1724	76.0000 -->	83.800	83.832	83.863	83.894	83.925	83.956	83.986	84.016
1734	76.8000 -->	84.104	84.133	84.161	84.190	84.218	84.245	84.273	84.300
1744	77.6000 -->	84.380	84.406	84.432	84.457	84.482	84.507	84.531	84.556
1754	78.4000 -->	84.626	84.649	84.672	84.694	84.716	84.738	84.760	84.781
1764	79.2000 -->	84.842	84.862	84.881	84.900	84.918	84.937	84.955	84.972

[DUMNY.088C61088C6NE4D.RAD;1
TRC INC. 088C6NE4 01225
TOTAN Deltax = 0.080000 msec

572 N SN088 NECK EXT.CAL6
Npts = 6250; IPO = 774; Filter = BLPP

4.4 m/sec

100/ 250/ -16

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	msec	TOTAN (deg)	Min, Max values =	41.992 @	40.0000	85.532 @	86.0800
1774	80.0000 -->	85.022	85.054	85.084	85.113	85.127	85.141
1784	80.8000 -->	85.167	85.192	85.204	85.227	85.249	85.260
1794	81.6000 -->	85.280	85.300	85.309	85.327	85.344	85.352
1804	82.4000 -->	85.368	85.376	85.390	85.397	85.417	85.423
1814	83.2000 -->	85.435	85.441	85.447	85.452	85.467	85.475
1824	84.0000 -->	85.484	85.487	85.491	85.494	85.501	85.507
1834	84.8000 -->	85.514	85.516	85.518	85.522	85.524	85.527
1844	85.6000 -->	85.529	85.530	85.531	85.532	85.532	85.532
1854	86.4000 -->	85.531	85.530	85.528	85.527	85.524	85.523
1864	87.2000 -->	85.519	85.516	85.511	85.508	85.506	85.500
1874	88.0000 -->	85.493	85.485	85.481	85.477	85.463	85.458
1884	88.8000 -->	85.447	85.442	85.436	85.423	85.410	85.403
1894	89.6000 -->	85.380	85.372	85.363	85.346	85.327	85.317
1904	90.4000 -->	85.285	85.274	85.262	85.237	85.212	85.198
1914	91.2000 -->	85.155	85.140	85.124	85.092	85.058	85.040
1924	92.0000 -->	84.984	84.965	84.944	84.903	84.859	84.813
1934	92.8000 -->	84.766	84.741	84.716	84.664	84.611	84.556
1944	93.6000 -->	84.499	84.470	84.440	84.380	84.318	84.256
1954	94.4000 -->	84.191	84.159	84.126	84.059	83.992	83.923
1964	95.2000 -->	83.854	83.819	83.784	83.713	83.604	83.567
1974	96.0000 -->	83.493	83.455	83.417	83.379	83.263	83.184
1984	96.8000 -->	83.105	83.064	83.024	82.983	82.859	82.776
1994	97.6000 -->	82.692	82.649	82.607	82.564	82.435	82.349
2004	98.4000 -->	82.262	82.218	82.174	82.130	81.998	81.909
2014	99.2000 -->	81.820	81.775	81.730	81.685	81.548	81.456
2024	100.0000 -->	81.363	81.316	81.269	81.222	81.078	81.030
2034	100.8000 -->	80.884	80.835	80.785	80.735	80.585	80.483
2044	101.6000 -->	80.380	80.328	80.276	80.224	80.065	80.012
2054	102.4000 -->	79.850	79.796	79.741	79.686	79.521	79.409
2064	103.2000 -->	79.297	79.241	79.184	79.128	78.957	78.843
2074	104.0000 -->	78.728	78.671	78.613	78.556	78.382	78.267
2084	104.8000 -->	78.151	78.092	78.034	77.976	77.801	77.684
2094	105.6000 -->	77.567	77.508	77.448	77.389	77.210	77.090
2104	106.4000 -->	76.968	76.907	76.846	76.784	76.598	76.471
2114	107.2000 -->	76.344	76.280	76.215	76.150	75.887	75.754
2124	108.0000 -->	75.687	75.619	75.551	75.483	75.277	75.139
2134	108.8000 -->	74.999	74.929	74.859	74.788	74.576	74.434
2144	109.6000 -->	74.291	74.220	74.148	74.077	73.862	73.718
2154	110.4000 -->	73.574	73.502	73.430	73.357	73.140	72.995
2164	111.2000 -->	72.850	72.778	72.705	72.632	72.413	72.267
2174	112.0000 -->	72.121	72.048	71.974	71.901	71.680	71.533
2184	112.8000 -->	71.385	71.311	71.237	71.162	70.938	70.788
2194	113.6000 -->	70.638	70.562	70.486	70.410	70.181	70.028
2204	114.4000 -->	69.874	69.797	69.719	69.641	69.407	69.251
2214	115.2000 -->	69.093	69.014	68.935	68.855	68.616	68.456
2224	116.0000 -->	68.295	68.214	68.134	68.053	67.809	67.646
2234	116.8000 -->	67.483	67.401	67.319	67.237	66.990	66.825
2244	117.6000 -->	66.660	66.577	66.494	66.411	66.162	65.995
2254	118.4000 -->	65.827	65.744	65.660	65.576	65.323	65.155
2264	119.2000 -->	64.985	64.901	64.816	64.731	64.476	64.305

[DUMMY.088C6]088C6NE4D.RAD;1
TRC INC. 088C6NE4 01225
TOTAL Deltax = 0.080000 msec

572 N SN088 NECK EXT.CAL6

Npts = 6250; IPO = 774; Filter = BLPP

4.4 m/sec

100/ 250/ -16

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	msec	TOTAL	(deg	)	Min, Max values =	41.992 @	40.0000	85.532 @	86.0800
2274	120.0000 -->	64.134	64.049	63.963	63.792	63.621	63.535	63.449	63.363
2284	120.8000 -->	63.277	63.191	63.105	63.019	62.933	62.847	62.760	62.674
2294	121.6000 -->	62.414	62.328	62.241	62.154	62.067	61.980	61.893	61.806
2304	122.4000 -->	61.544	61.456	61.368	61.281	61.193	61.105	61.016	60.928
2314	123.2000 -->	60.663	60.574	60.485	60.396	60.307	60.217	60.128	60.038
2324	124.0000 -->	59.769	59.678	59.588	59.498	59.407	59.317	59.226	59.135
2334	124.8000 -->	58.862	58.771	58.679	58.588			59.044	58.953

msec		NEKOM (N-m)		Min, Max values =		1000/ 2500/ -16		-1.351 @ 150.0000	
1774	80.0000 -->	-24.189	-24.169	-24.153	-24.144	-24.127	-24.103	-24.078	-24.055
1784	80.8000 -->	-24.035	-24.019	-23.960	-23.930	-23.900	-23.871	-23.840	-23.807
1794	81.6000 -->	-23.774	-23.745	-23.662	-23.627	-23.591	-23.556	-23.522	-23.484
1804	82.4000 -->	-23.445	-23.406	-23.335	-23.299	-23.226	-23.183	-23.135	-23.084
1814	83.2000 -->	-23.036	-22.993	-22.912	-22.867	-22.764	-22.712	-22.666	-22.624
1824	84.0000 -->	-22.582	-22.540	-22.455	-22.410	-22.322	-22.281	-22.242	-22.206
1834	84.8000 -->	-22.167	-22.122	-22.019	-21.963	-21.905	-21.848	-21.747	-21.706
1844	85.6000 -->	-21.669	-21.635	-21.558	-21.512	-21.462	-21.354	-21.304	-21.261
1854	86.4000 -->	-21.224	-21.189	-21.104	-21.059	-20.974	-20.929	-20.882	-20.832
1864	87.2000 -->	-20.779	-20.725	-20.630	-20.585	-20.482	-20.423	-20.367	-20.317
1874	88.0000 -->	-20.274	-20.238	-20.170	-20.137	-20.063	-20.019	-19.976	-19.938
1884	88.8000 -->	-19.906	-19.875	-19.804	-19.765	-19.729	-19.664	-19.630	-19.591
1894	89.6000 -->	-19.551	-19.474	-19.436	-19.394	-19.297	-19.249	-19.205	-19.164
1904	90.4000 -->	-19.124	-19.087	-19.017	-18.990	-18.946	-18.920	-18.887	-18.850
1914	91.2000 -->	-18.807	-18.758	-18.644	-18.587	-18.492	-18.452	-18.416	-18.381
1924	92.0000 -->	-18.341	-18.294	-18.184	-18.125	-18.015	-17.968	-17.928	-17.890
1934	92.8000 -->	-17.849	-17.802	-17.701	-17.654	-17.573	-17.537	-17.498	-17.454
1944	93.6000 -->	-17.410	-17.368	-17.289	-17.247	-17.200	-17.091	-17.030	-16.968
1954	94.4000 -->	-16.906	-16.848	-16.754	-16.720	-16.655	-16.617	-16.573	-16.525
1964	95.2000 -->	-16.475	-16.424	-16.326	-16.277	-16.179	-16.131	-16.084	-16.038
1974	96.0000 -->	-15.991	-15.944	-15.844	-15.793	-15.694	-15.651	-15.612	-15.577
1984	96.8000 -->	-15.542	-15.502	-15.405	-15.346	-15.221	-15.166	-15.118	-15.074
1994	97.6000 -->	-15.030	-14.986	-14.904	-14.868	-14.788	-14.741	-14.691	-14.641
2004	98.4000 -->	-14.592	-14.544	-14.444	-14.395	-14.295	-14.240	-14.182	-14.125
2014	99.2000 -->	-14.075	-14.032	-13.961	-13.930	-13.859	-13.808	-13.746	-13.683
2024	100.0000 -->	-13.628	-13.585	-13.522	-13.488	-13.400	-13.351	-13.302	-13.259
2034	100.8000 -->	-13.222	-13.193	-13.138	-13.104	-13.009	-12.954	-12.901	-12.850
2044	101.6000 -->	-12.801	-12.755	-12.673	-12.634	-12.547	-12.500	-12.454	-12.414
2054	102.4000 -->	-12.385	-12.367	-12.346	-12.331	-12.307	-12.234	-12.185	-12.129
2064	103.2000 -->	-12.068	-12.010	-11.926	-11.897	-11.845	-11.813	-11.776	-11.738
2074	104.0000 -->	-11.700	-11.663	-11.587	-11.553	-11.498	-11.468	-11.430	-11.389
2084	104.8000 -->	-11.349	-11.313	-11.251	-11.222	-11.160	-11.122	-11.077	-11.031
2094	105.6000 -->	-10.991	-10.960	-10.910	-10.879	-10.806	-10.773	-10.744	-10.714
2104	106.4000 -->	-10.681	-10.650	-10.594	-10.567	-10.505	-10.474	-10.445	-10.418
2114	107.2000 -->	-10.392	-10.366	-10.312	-10.289	-10.248	-10.223	-10.195	-10.169
2124	108.0000 -->	-10.148	-10.130	-10.101	-10.088	-10.061	-10.049	-10.041	-10.037
2134	108.8000 -->	-10.035	-10.033	-10.005	-9.977	-9.906	-9.869	-9.834	-9.802
2144	109.6000 -->	-9.775	-9.754	-9.737	-9.696	-9.672	-9.630	-9.610	-9.588
2154	110.4000 -->	-9.563	-9.537	-9.479	-9.449	-9.426	-9.401	-9.392	-9.377
2164	111.2000 -->	-9.351	-9.313	-9.267	-9.184	-9.124	-9.101	-9.087	-9.079
2174	112.0000 -->	-9.074	-9.063	-9.045	-8.989	-8.917	-8.881	-8.852	-8.829
2184	112.8000 -->	-8.813	-8.799	-8.774	-8.755	-8.726	-8.649	-8.609	-8.572
2194	113.6000 -->	-8.541	-8.514	-8.482	-8.477	-8.471	-8.462	-8.445	-8.419
2204	114.4000 -->	-8.388	-8.360	-8.340	-8.319	-8.308	-8.249	-8.204	-8.160
2214	115.2000 -->	-8.124	-8.097	-8.078	-8.048	-8.006	-7.983	-7.957	-7.927
2224	116.0000 -->	-7.894	-7.859	-7.828	-7.782	-7.763	-7.709	-7.670	-7.627
2234	116.8000 -->	-7.585	-7.549	-7.524	-7.508	-7.488	-7.467	-7.439	-7.406
2244	117.6000 -->	-7.370	-7.336	-7.312	-7.285	-7.245	-7.195	-7.173	-7.156
2254	118.4000 -->	-7.142	-7.126	-7.102	-7.068	-6.992	-6.948	-6.934	-6.917
2264	119.2000 -->	-6.893	-6.864	-6.835	-6.784	-6.760	-6.704	-6.675	-6.649

msec		NEKOM (N-m		Min, Max values =		-24.189 @ 80.0000		-1.351 @ 150.0000	
2274	120.0000 -->	-6.623	-6.595	-6.513	-6.489	-6.463	-6.435	-6.407	-6.378
2284	120.8000 -->	-6.346	-6.307	-6.171	-6.127	-6.088	-6.059	-6.043	-6.036
2294	121.6000 -->	-6.036	-6.039	-6.041	-6.041	-5.968	-5.924	-5.882	-5.850
2304	122.4000 -->	-5.831	-5.823	-5.816	-5.816	-5.767	-5.738	-5.713	-5.696
2314	123.2000 -->	-5.688	-5.686	-5.688	-5.687	-5.668	-5.640	-5.554	-5.514
2324	124.0000 -->	-5.486	-5.471	-5.465	-5.465	-5.451	-5.435	-5.414	-5.391
2334	124.8000 -->	-5.367	-5.344	-5.324	-5.324	-5.275	-5.269	-5.265	-5.261
2344	125.6000 -->	-5.258	-5.252	-5.242	-5.242	-5.204	-5.155	-5.148	-5.140
2354	126.4000 -->	-5.129	-5.115	-5.100	-5.100	-5.064	-5.003	-4.989	-4.976
2364	127.2000 -->	-4.962	-4.950	-4.938	-4.938	-4.910	-4.888	-4.882	-4.869
2374	128.0000 -->	-4.844	-4.812	-4.776	-4.744	-4.717	-4.684	-4.684	-4.687
2384	128.8000 -->	-4.690	-4.691	-4.687	-4.677	-4.658	-4.567	-4.545	-4.535
2394	129.6000 -->	-4.535	-4.541	-4.546	-4.544	-4.532	-4.467	-4.437	-4.435
2404	130.4000 -->	-4.348	-4.337	-4.322	-4.302	-4.278	-4.242	-4.387	-4.363
2414	131.2000 -->	-4.193	-4.187	-4.175	-4.158	-4.137	-4.216	-4.204	-4.198
2424	132.0000 -->	-4.057	-4.057	-4.056	-4.051	-4.094	-4.077	-4.065	-4.059
2434	132.8000 -->	-3.979	-3.980	-3.984	-3.984	-4.027	-3.996	-3.986	-3.981
2444	133.6000 -->	-3.872	-3.882	-3.881	-3.881	-3.985	-3.971	-3.927	-3.898
2454	134.4000 -->	-3.790	-3.853	-3.841	-3.835	-3.831	-3.826	-3.818	-3.806
2464	135.2000 -->	-3.746	-3.771	-3.754	-3.741	-3.736	-3.750	-3.763	-3.759
2474	136.0000 -->	-3.631	-3.725	-3.697	-3.668	-3.643	-3.619	-3.596	-3.579
2484	136.8000 -->	-3.564	-3.554	-3.549	-3.548	-3.548	-3.550	-3.549	-3.547
2494	137.6000 -->	-3.544	-3.539	-3.536	-3.533	-3.527	-3.501	-3.464	-3.446
2504	138.4000 -->	-3.430	-3.416	-3.402	-3.388	-3.379	-3.380	-3.377	-3.367
2514	139.2000 -->	-3.348	-3.323	-3.297	-3.277	-3.263	-3.254	-3.256	-3.258
2524	140.0000 -->	-3.259	-3.261	-3.262	-3.261	-3.257	-3.236	-3.196	-3.169
2534	140.8000 -->	-3.138	-3.108	-3.082	-3.063	-3.050	-3.042	-3.045	-3.046
2544	141.6000 -->	-3.045	-3.040	-3.027	-3.006	-2.978	-2.885	-2.868	-2.863
2554	142.4000 -->	-2.866	-2.868	-2.864	-2.855	-2.845	-2.837	-2.833	-2.833
2564	143.2000 -->	-2.829	-2.817	-2.794	-2.760	-2.720	-2.659	-2.639	-2.635
2574	144.0000 -->	-2.631	-2.626	-2.621	-2.615	-2.603	-2.558	-2.503	-2.485
2584	144.8000 -->	-2.474	-2.471	-2.471	-2.473	-2.476	-2.481	-2.478	-2.467
2594	145.6000 -->	-2.447	-2.416	-2.379	-2.344	-2.316	-2.290	-2.264	-2.241
2604	146.4000 -->	-2.213	-2.186	-2.165	-2.151	-2.143	-2.130	-2.095	-2.070
2614	147.2000 -->	-2.045	-2.022	-2.004	-1.991	-1.983	-1.967	-1.944	-1.930
2624	148.0000 -->	-1.912	-1.891	-1.872	-1.858	-1.851	-1.849	-1.836	-1.819
2634	148.8000 -->	-1.793	-1.763	-1.736	-1.715	-1.701	-1.693	-1.684	-1.604
2644	149.6000 -->	-1.564	-1.529	-1.507	-1.496	-1.492	-1.489	-1.465	-1.440
		-1.412	-1.387	-1.370	-1.361	-1.356	-1.351		

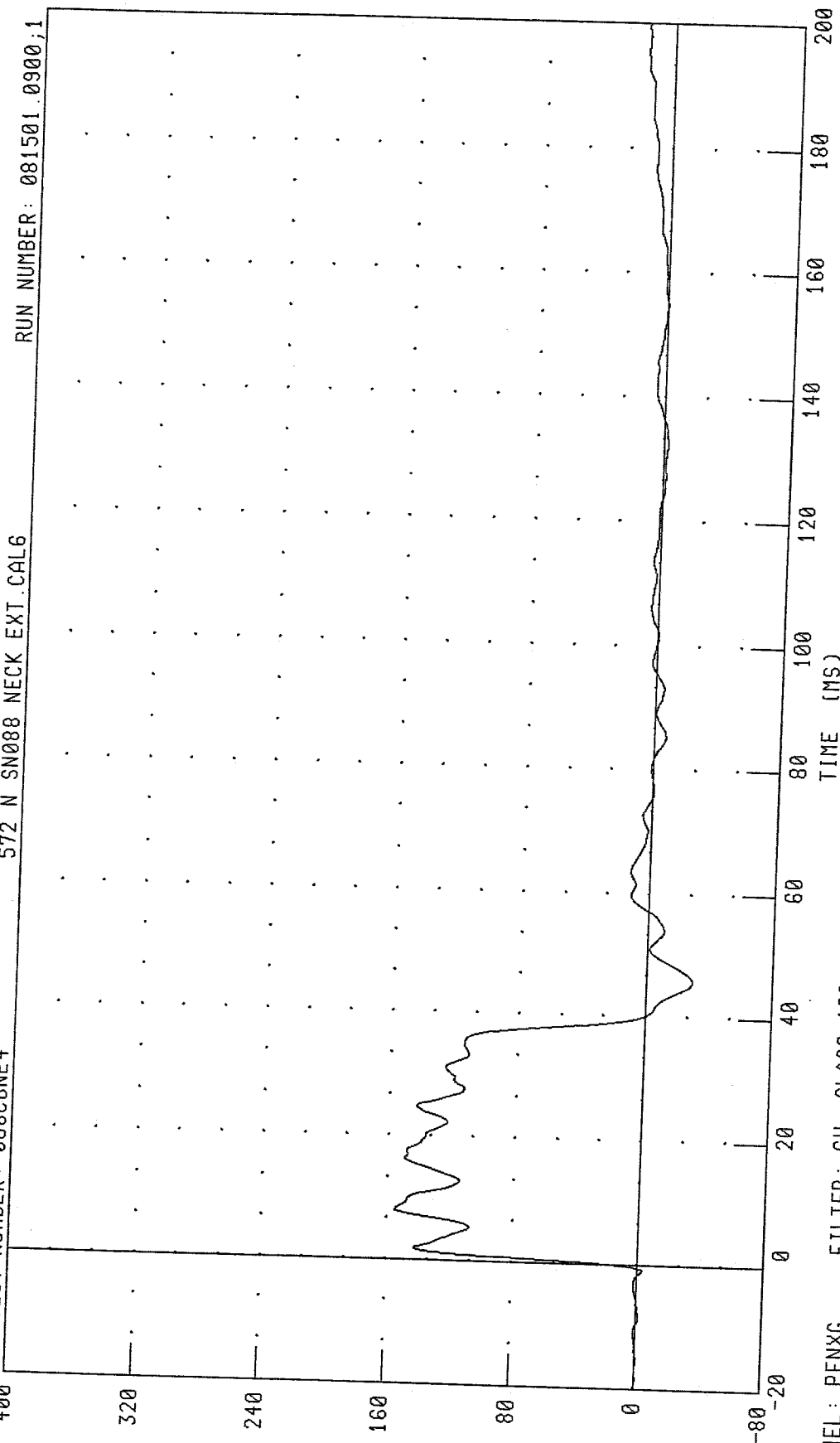
PART 572-N HYBRID III SIX-YEAR-OLD CHILD - NECK EXTENSION CALIBRATION
PENDULUM DECELERATION

TRC TEST NUMBER: 088C6NE4

572 N SN088 NECK EXT.CAL6

RUN NUMBER: 081501.0900;1

ACCELERATION (G X 10⁻¹)



CHANNEL: PENXC

FILTER: CH. CLASS 180

PEAK DATA: 15.48 G @ 8.08 MS, -2.94 G @ 45.76 MS

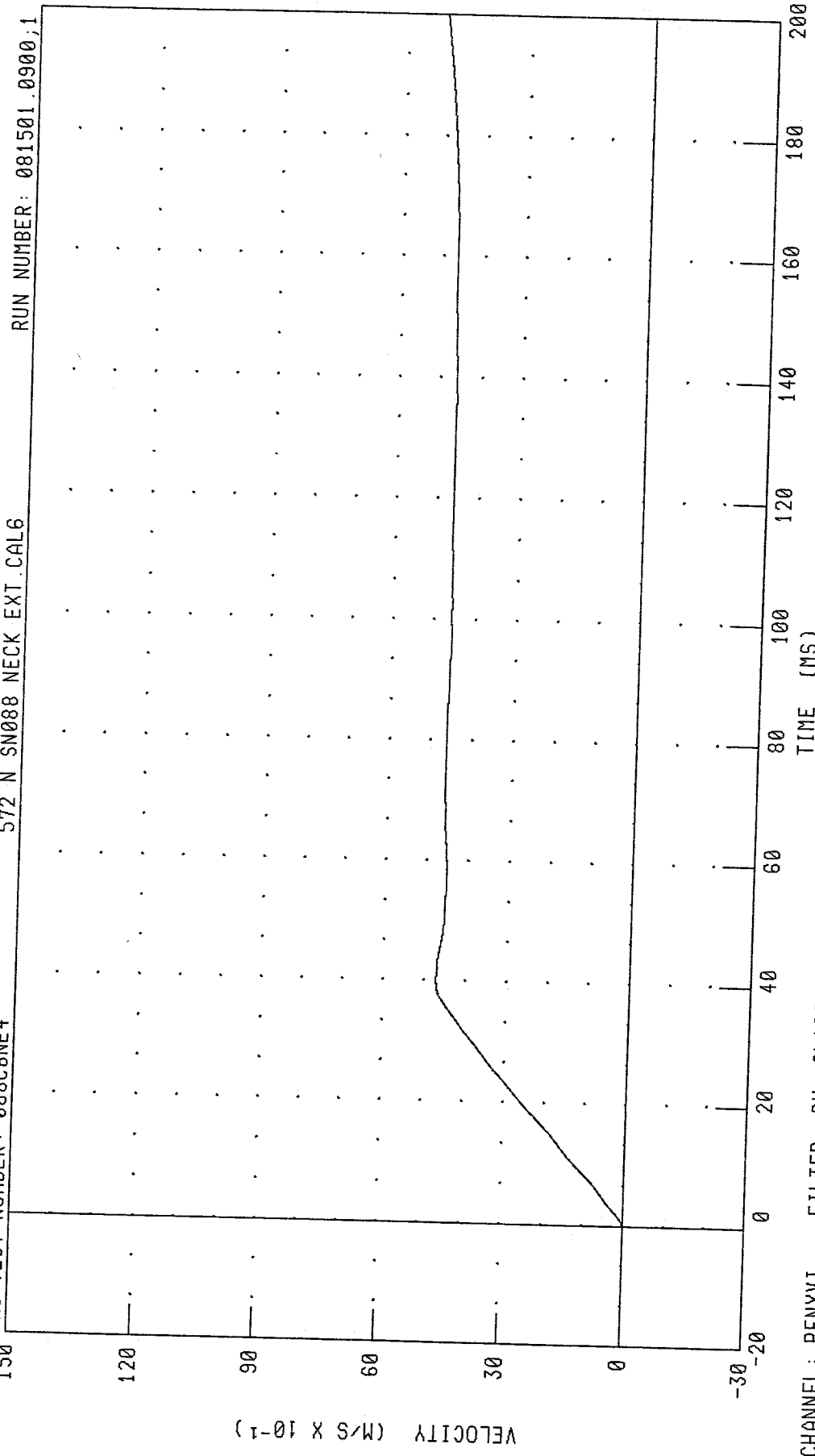
PART 572-N HYBRID III SIX-YEAR-OLD CHILD - NECK EXTENSION CALIBRATION

TRC TEST NUMBER: 088C6NE4

INTEGRATED PENDULUM VELOCITY

572 N SN088 NECK EXT.CAL6

RUN NUMBER: 081501.0900;1



CHANNEL: PENXVI FILTER: CH. CLASS 180

PEAK DATA: 5.04 M/S @ 200.00 MS; -0.01 M/S @ -5.92 MS

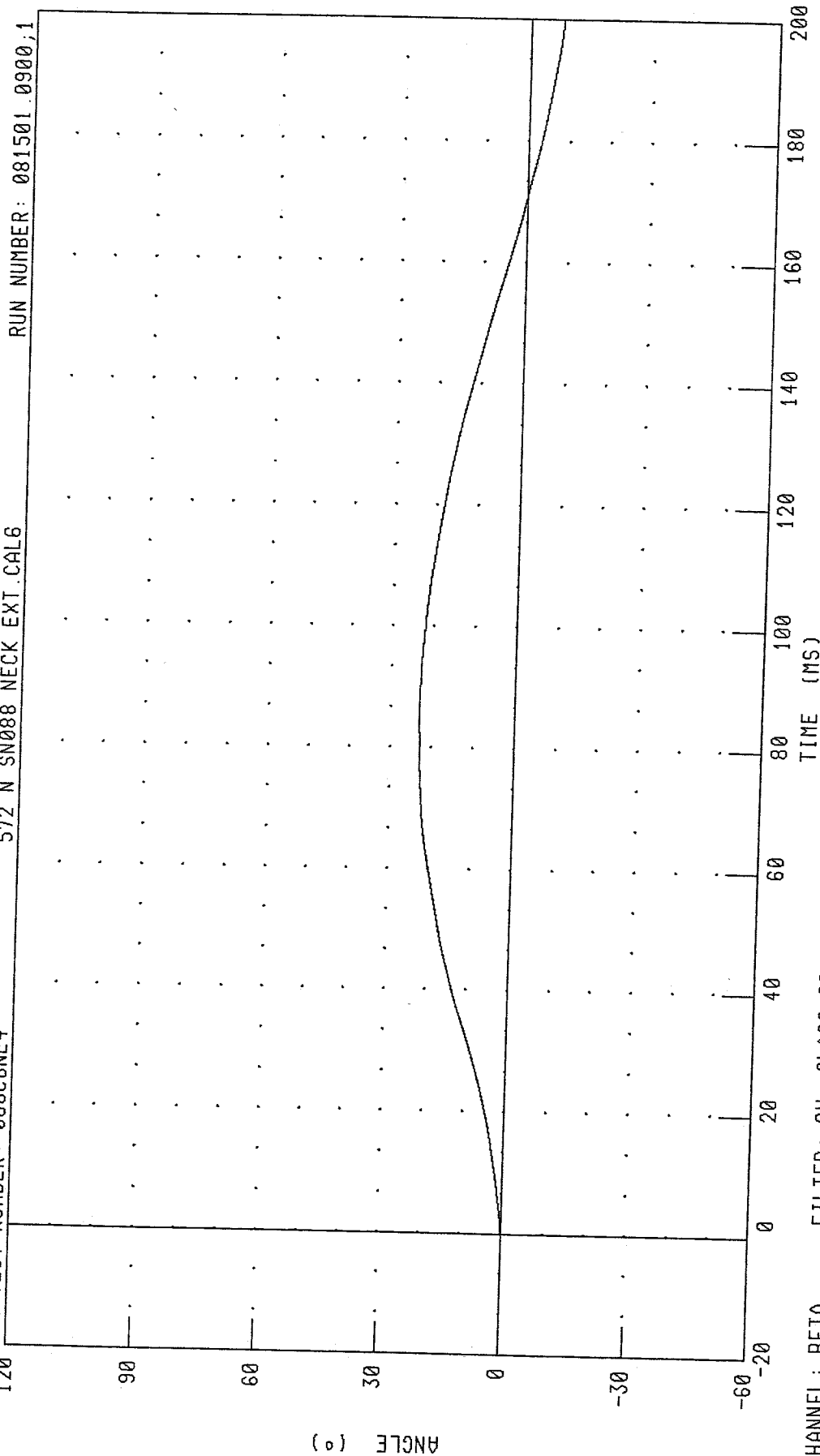
PART 572-N HYBRID III SIX-YEAR-OLD CHILD - NECK EXTENSION CALIBRATION

ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER: 088C6NE4

572 N SN088 NECK EXT CAL6

RUN NUMBER: 081501 0900;1



CHANNEL: BETA

FILTER: CH. CLASS 60

TIME (MS)

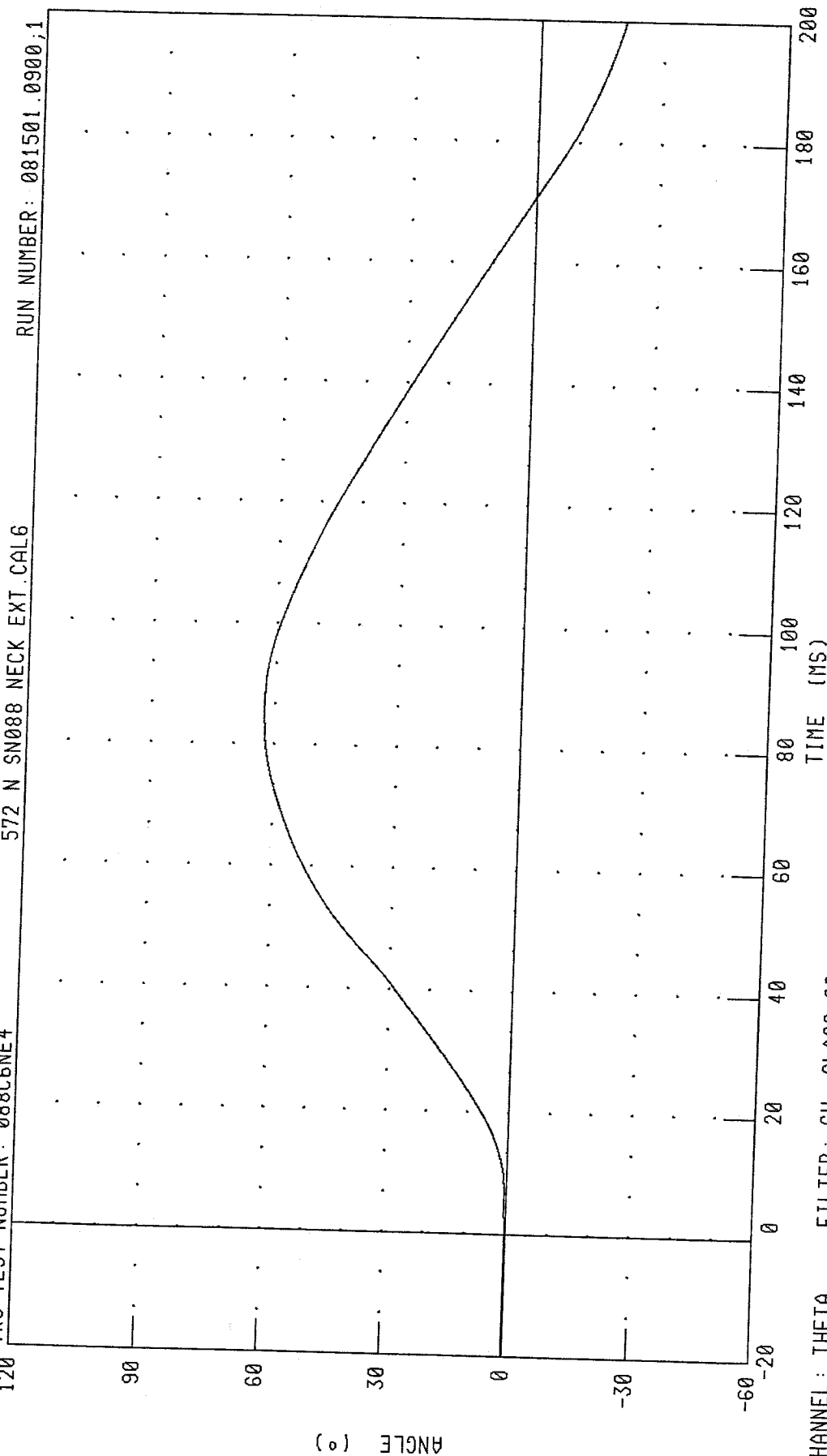
PEAK DATA: 22.94 ° @ 86.16 MS; -8.11 ° @ 200.00 MS

PART 572-N HYBRID III SIX-YEAR-OLD CHILD - NECK EXTENSION CALIBRATION
ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: 088C6NE4

572 N SN088 NECK EXT.CAL6

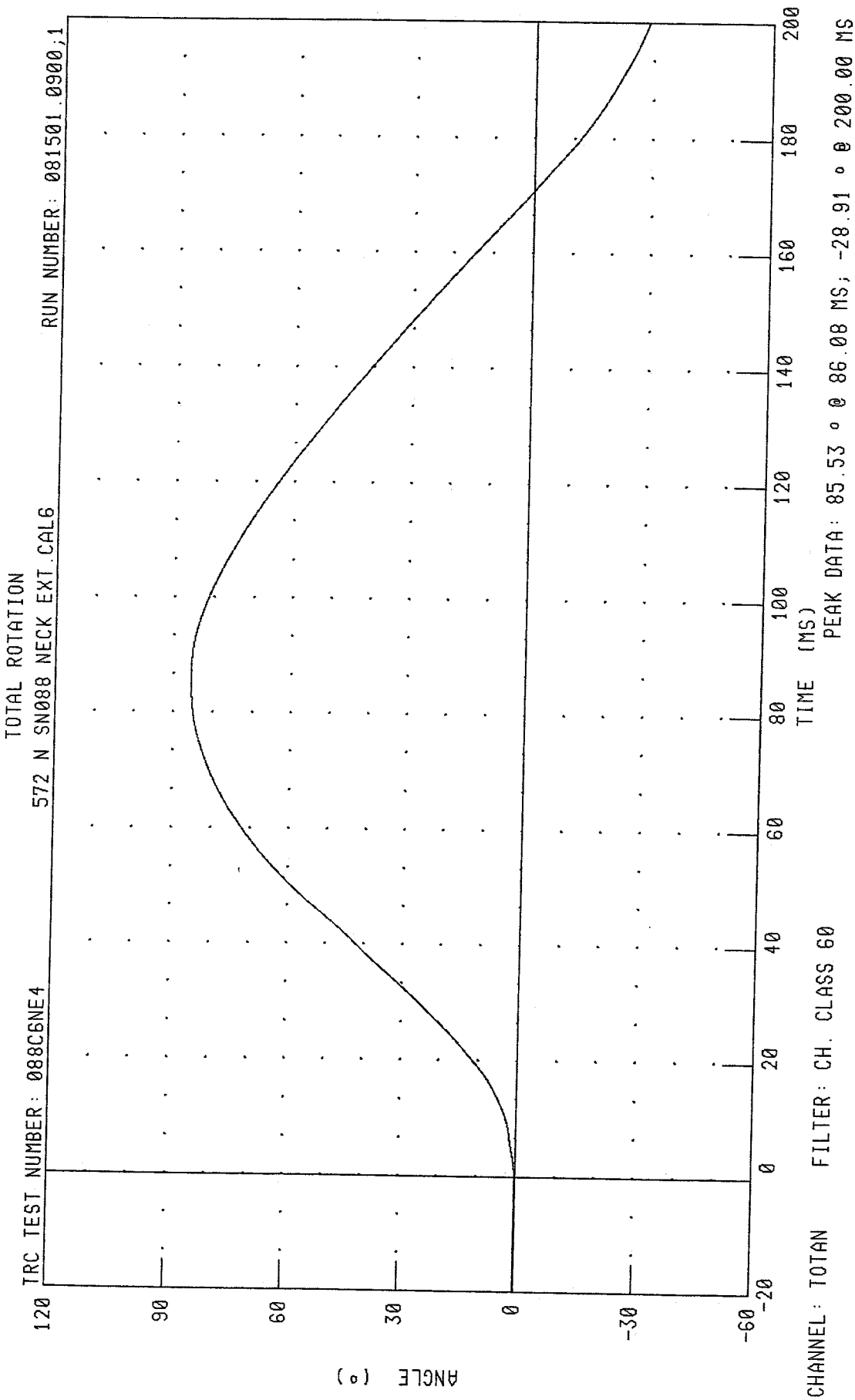
RUN NUMBER: 081501.0900;1



CHANNEL: THETA FILTER: CH. CLASS 60

PEAK DATA: 62.60 ° @ 86.08 MS; -20.80 ° @ 200.00 MS

PART 572-N HYBRID III SIX-YEAR-OLD CHILD - NECK EXTENSION CALIBRATION



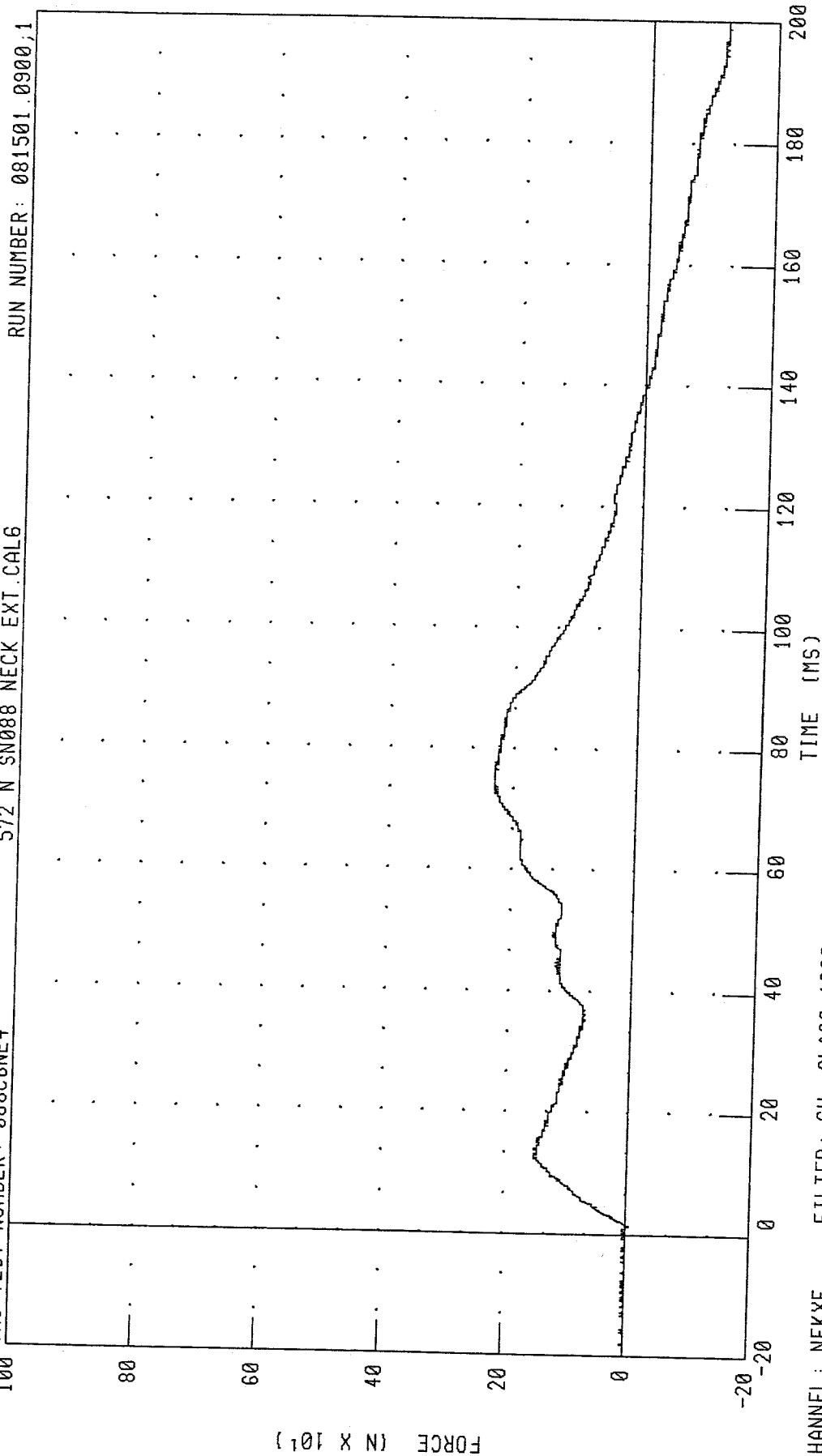
PART 572-N HYBRID III SIX-YEAR-OLD CHILD - NECK EXTENSION CALIBRATION

NECK FORCE X AXIS

TRC TEST NUMBER: 088C6NE4

572 N SN088 NECK EXT CAL6

RUN NUMBER: 081501 0900;1



CHANNEL: NEKXF FILTER: CH. CLASS 1000

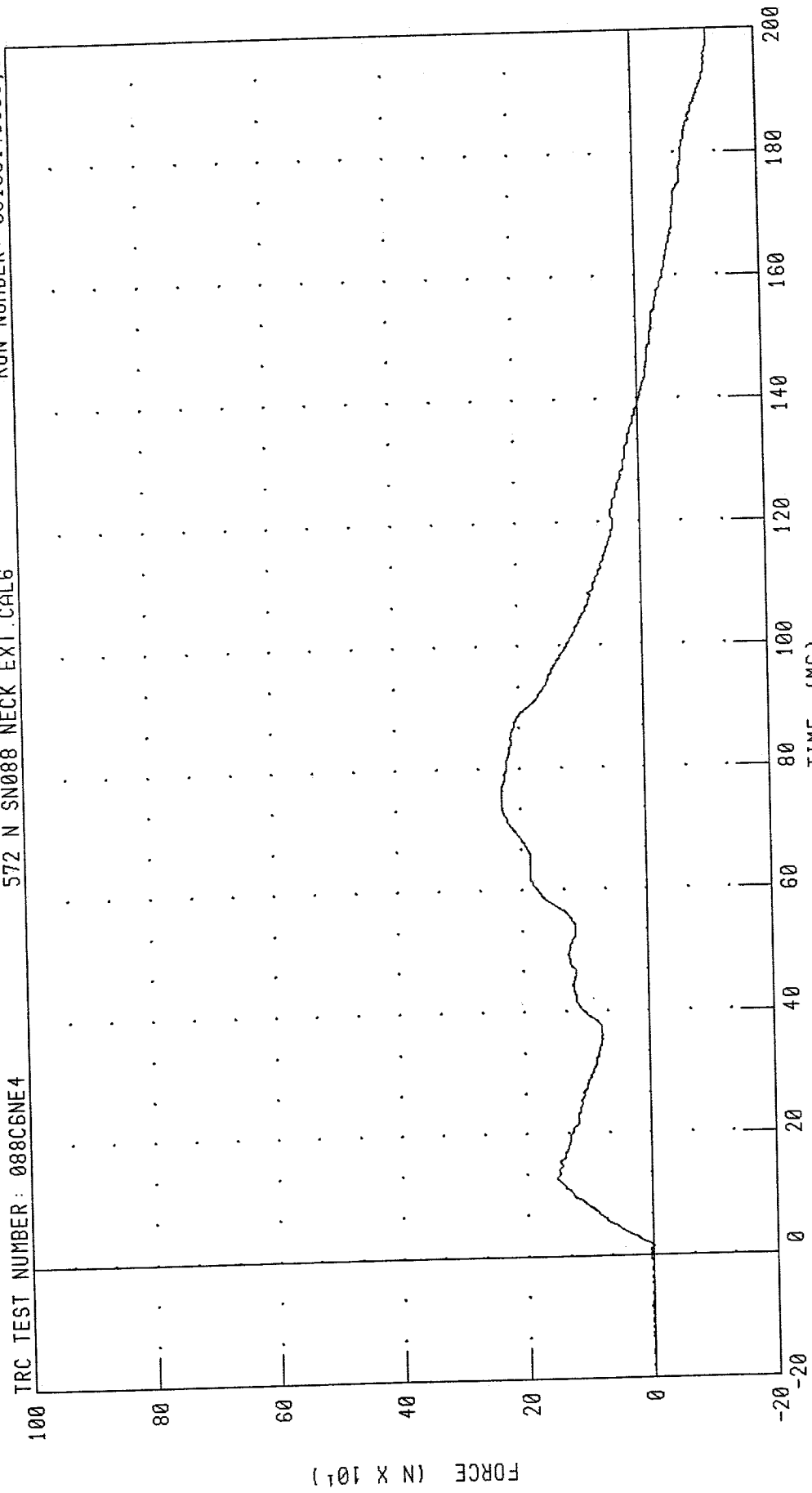
PEAK DATA: 229.94 N @ 72.64 MS, -126.20 N @ 198.80 MS

PART 572-N HYBRID III SIX-YEAR-OLD CHILD - NECK EXTENSION CALIBRATION
NECK FORCE X AXIS FILTERED FOR USE IN OCCIPITAL MOMENT CALCULATION

RUN NUMBER: 081501.0900,1

572 N SN088 NECK EXT.CAL6

TRC TEST NUMBER: 088C6NE4



TIME (MS)

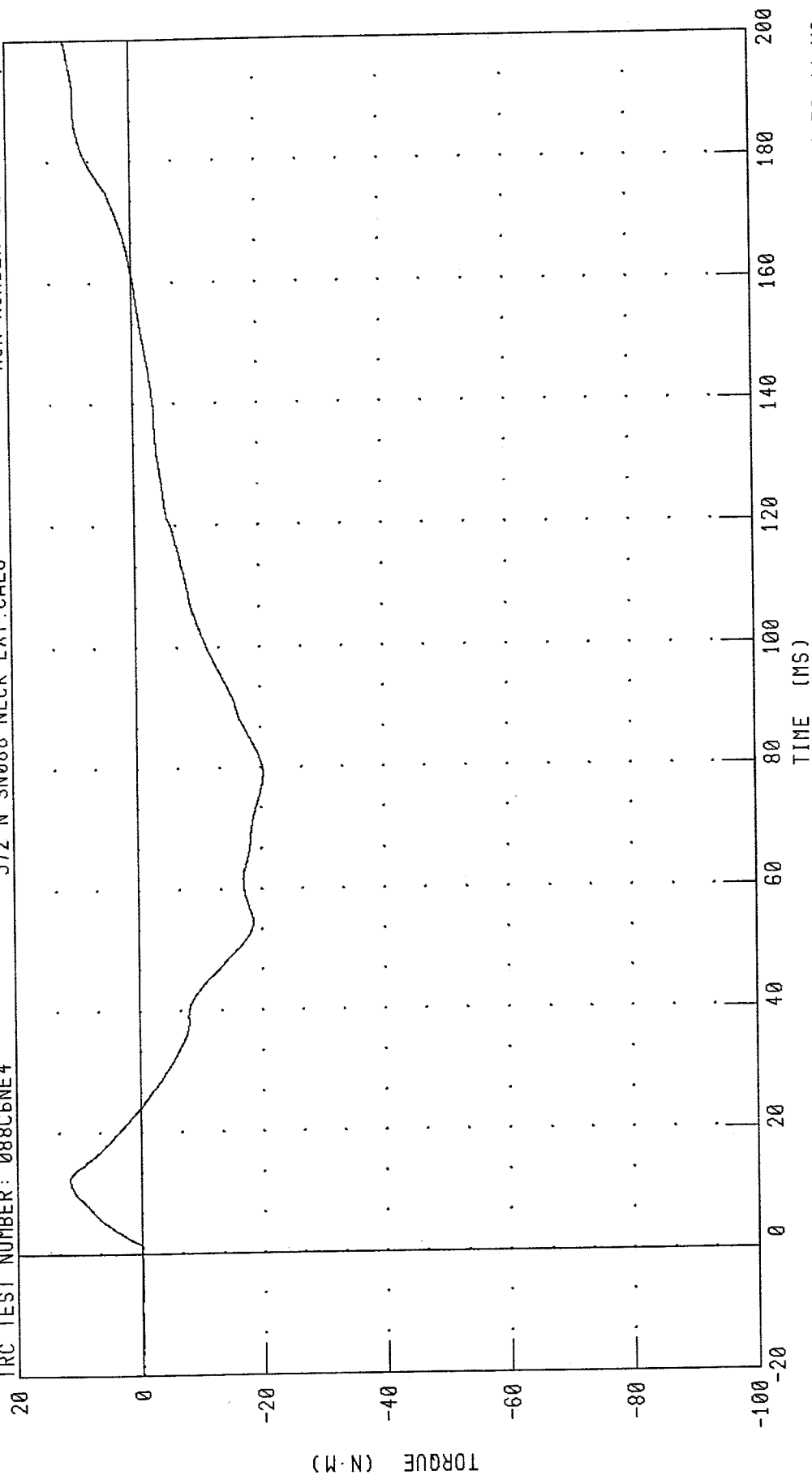
PEAK DATA: 229.98 N @ 76.00 MS, -122.78 N @ 198.80 MS

CHANNEL: NEKXFC FILTER: CH. CLASS 600

PART 572-N HYBRID III SIX-YEAR-OLD CHILD - NECK EXTENSION CALIBRATION

NECK MOMENT Y AXIS

TRC TEST NUMBER: 088C6NE4 572 N SN088 NECK EXT.CAL6 RUN NUMBER: 081501.0900;1



PEAK DATA: 11.63 N·M @ 12.32 MS; -20.36 N·M @ 79.44 MS

CHANNEL: NEKYM FILTER: CH. CLASS 600

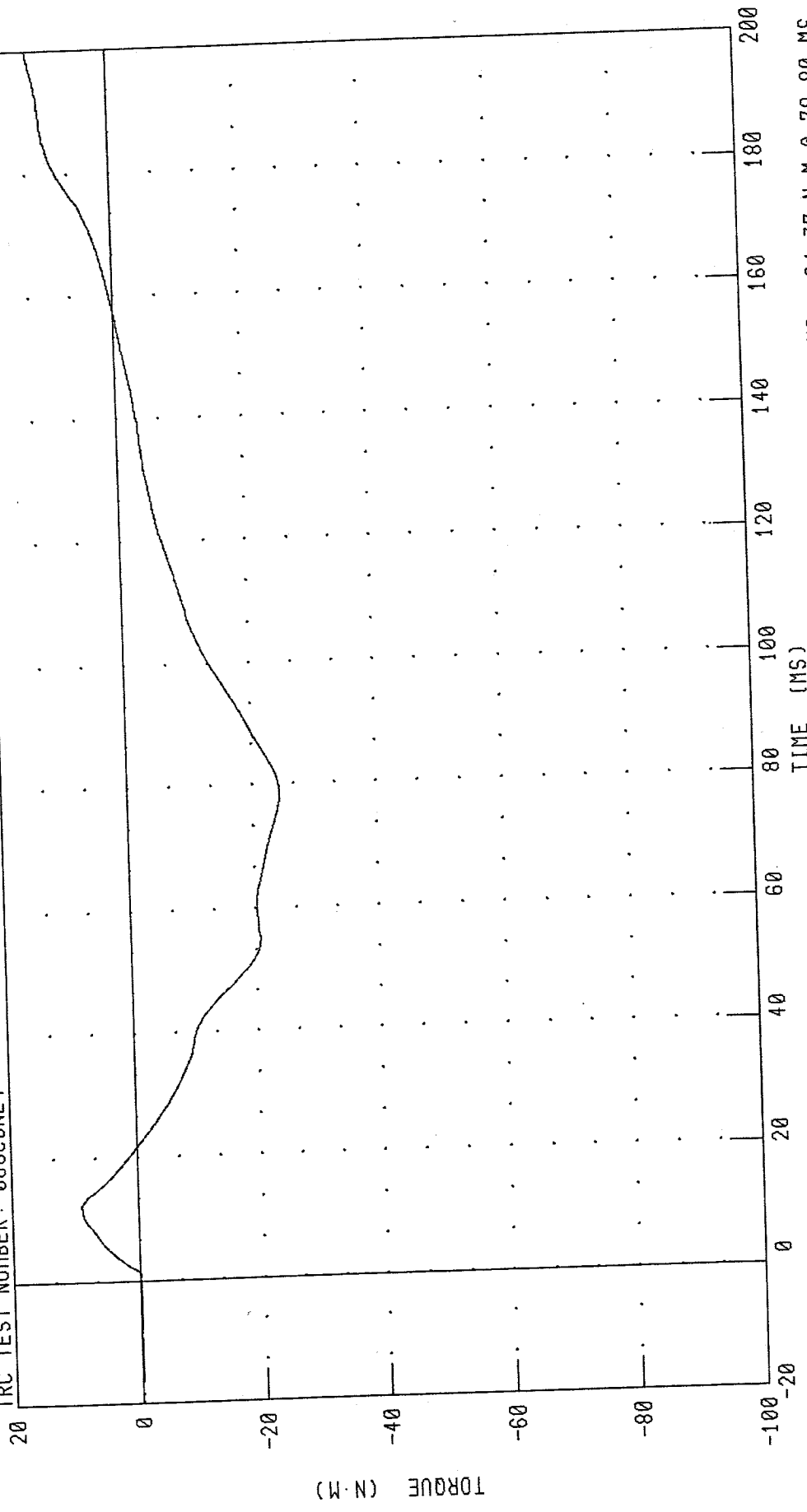
PART 572-N HYBRID III SIX-YEAR-OLD CHILD - NECK EXTENSION CALIBRATION

TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

RUN NUMBER: 081501.0900,1

572 N SN088 NECK EXT.CAL6

TRC TEST NUMBER: 08806NE4



TIME (MS)

PEAK DATA: 12.93 N·M @ 200.00 MS; -24.37 N·M @ 78.80 MS

FILTER: CH. CLASS 600

CHANNEL: NEKOM

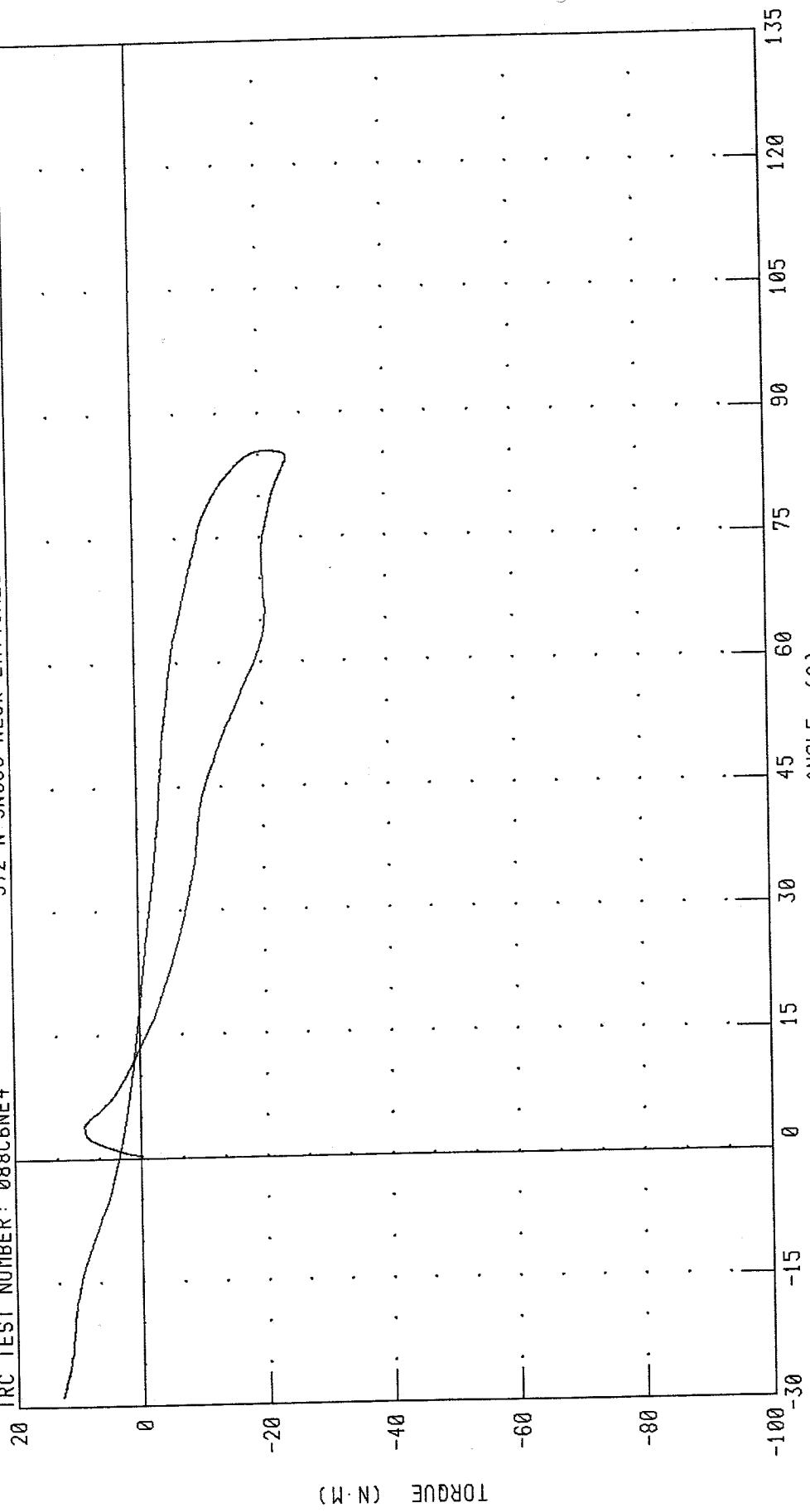
PART 572-N HYBRID III SIX-YEAR-OLD CHILD - NECK EXTENSION CALIBRATION

TOTAL ROTATION VS OCCIPITAL CONDYLAR MOMENT

RUN NUMBER: 081501.0900;1

572 N SN088 NECK EXT.CAL6

TRC TEST NUMBER: 088C6NE4



ANGLE (°)

PEAK DATA: 85.53 ° @ 86.08 MS; -28.91 ° @ 200.00 MS
12.93 N·M @ 200.00 MS; -24.37 N·M @ 78.80 MS

FILTER: CH. CLASS 60
CH. CLASS 600

CHANNEL: TOTAN
NEKOM

TORQUE (N·M)

TRANSPORTATION RESEARCH CENTER INC.

THORAX IMPACT TEST

HYBRID III SIX YEAR OLD

13-AUG-01

TRC INC.

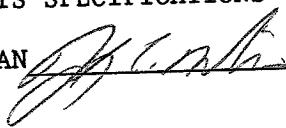
TEST NO: 088C6TH1

572N SN088 H.S.THORAX CAL6

TEST PARAMETER	HIGH SPEED TEST	TEST RESULTS
	SPECIFICATION	
TEMPERATURE	20.6-22.2 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	56.0 %
PENDULUM VELOCITY	6.59 - 6.83 M/S	6.59 M/S
MAXIMUM DEFLECTION	38.1 - 45.7 MM	41.0 MM
MAXIMUM FORCE IN DEFLECTION INTERVAL	1150 - 1380 N	1290. N
INTERNAL HYSTERESIS	76% - 92%	78.7%
MAXIMUM FORCE % BETWEEN 12.5 & 38 MM DEFLECTION	<= 105 %	102 %

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 081601.1037;1

[DUMMY.088C6]088C6TH1D.RAD;1									
TRC INC. 088C6TH1 01225									
CSTXD Deltax = 0.080000 msec									
572N SN088 H.S.THORAX CAL6									
Npts = 5000; IP0 = 457; Filter = BLPP 1000/ 2500/ -16									
0.0 m/sec									
Min, Max values =									
16.318 @ 30.0000									
41.004 @ 15.2800									
msec	CSTXD	(mm	)	Min	Max	values =	1000/ 2500/ -16	41.004 @ 15.2800	38.285
582	10.0000 -->	36.841	37.060	37.269	37.467	37.809	37.950	38.074	38.184
592	10.8000 -->	38.381	38.474	38.568	38.663	38.753	38.903	38.960	39.007
602	11.6000 -->	39.091	39.133	39.177	39.226	39.281	39.408	39.479	39.554
612	12.4000 -->	39.707	39.783	39.855	39.924	39.992	40.121	40.178	40.256
622	13.2000 -->	40.280	40.299	40.320	40.345	40.374	40.448	40.489	40.529
632	14.0000 -->	40.605	40.645	40.689	40.736	40.784	40.871	40.907	40.954
642	14.8000 -->	40.966	40.974	40.980	40.987	40.995	41.004	41.000	40.988
652	15.6000 -->	40.933	40.888	40.833	40.774	40.716	40.608	40.552	40.492
662	16.4000 -->	40.363	40.297	40.230	40.163	40.097	39.959	39.887	39.814
672	17.2000 -->	39.658	39.577	39.495	39.416	39.339	39.177	39.089	38.996
682	18.0000 -->	38.799	38.697	38.597	38.499	38.407	38.236	38.154	38.071
692	18.8000 -->	37.903	37.813	37.716	37.606	37.482	37.190	37.026	36.854
702	19.6000 -->	36.513	36.351	36.199	36.058	35.926	35.686	35.576	35.471
712	20.4000 -->	35.268	35.164	35.053	34.933	34.803	34.512	34.355	34.193
722	21.2000 -->	33.872	33.718	33.573	33.440	33.319	33.114	33.024	32.934
732	22.0000 -->	32.738	32.628	32.509	32.381	32.244	31.950	31.801	31.654
742	22.8000 -->	31.373	31.240	31.108	30.974	30.834	30.536	30.377	30.215
752	23.6000 -->	29.884	29.718	29.553	29.389	29.227	28.902	28.735	28.566
762	24.4000 -->	28.220	28.045	27.871	27.697	27.523	27.175	27.000	26.825
772	25.2000 -->	26.475	26.300	26.128	25.959	25.798	25.498	25.356	25.212
782	26.0000 -->	24.907	24.743	24.573	24.398	24.219	23.850	23.662	23.476
792	26.8000 -->	23.117	22.944	22.775	22.610	22.447	22.112	21.933	21.746
802	27.6000 -->	21.362	21.171	20.986	20.808	20.637	20.311	20.149	19.982
812	28.4000 -->	19.640	19.468	19.299	19.136	18.980	18.680	18.529	18.375
822	29.2000 -->	18.060	17.898	17.734	17.567	17.396	17.041	16.857	16.673
832	30.0000 -->	16.318							

[DUMMY.088C6]088C6TH1D.RAD;1
TRC INC. 088C6TH1 01225
CSTXD Deltax = 0.080000 msec

572N SN088 H.S.THORAX CAL6
Npts = 5000; IP0 = 457; Filter = BLPP

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0.0 m/sec
1000/ 2500/ -16

msec		CSTXD (mm)		Min, Max values =		0.004 @		0.0000		41.004 @	
457	0.0000 -->	0.004	0.010	0.016	0.021	0.023	0.024	0.028	0.042	0.075	0.134
467	0.8000 -->	0.228	0.360	0.529	0.728	0.948	1.176	1.398	1.606	1.800	1.989
477	1.6000 -->	2.189	2.415	2.677	2.975	3.303	3.651	4.007	4.365	4.722	5.081
487	2.4000 -->	5.447	5.829	6.234	6.666	7.125	7.605	8.095	8.585	9.063	9.525
497	3.2000 -->	9.973	10.412	10.847	11.280	11.711	12.139	12.566	12.997	13.436	13.886
507	4.0000 -->	14.349	14.822	15.300	15.774	16.236	16.680	17.100	17.495	17.863	18.205
517	4.8000 -->	18.527	18.840	19.159	19.496	19.860	20.253	20.671	21.108	21.554	21.999
527	5.6000 -->	22.434	22.855	23.260	23.653	24.035	24.405	24.757	25.085	25.388	25.672
537	6.4000 -->	25.950	26.235	26.534	26.844	27.159	27.468	27.762	28.035	28.286	28.516
547	7.2000 -->	28.728	28.929	29.125	29.322	29.527	29.745	29.977	30.222	30.473	30.719
557	8.0000 -->	30.953	31.172	31.376	31.572	31.770	31.977	32.199	32.437	32.684	32.933
567	8.8000 -->	33.180	33.423	33.663	33.902	34.146	34.395	34.648	34.903	35.155	35.403
577	9.6000 -->	35.650	35.895	36.140	36.380	36.614	36.841	37.060	37.269	37.467	37.648
587	10.4000 -->	37.809	37.950	38.074	38.184	38.285	38.381	38.474	38.568	38.663	38.753
597	11.2000 -->	38.835	38.903	38.960	39.007	39.050	39.091	39.133	39.177	39.226	39.281
607	12.0000 -->	39.342	39.408	39.479	39.554	39.631	39.707	39.783	39.855	39.924	39.992
617	12.8000 -->	40.058	40.121	40.178	40.223	40.256	40.280	40.320	40.345	40.374	40.374
627	13.6000 -->	40.409	40.448	40.489	40.529	40.567	40.605	40.645	40.689	40.736	40.784
637	14.4000 -->	40.829	40.871	40.907	40.935	40.954	40.966	40.974	40.980	40.987	40.995
647	15.2000 -->	41.001	41.004	41.000	40.988	40.966	40.933	40.888	40.833	40.774	40.716
657	16.0000 -->	40.662	40.608	40.552	40.492	40.429	40.363	40.297	40.230	40.163	40.097
667	16.8000 -->	40.029	39.959	39.887	39.814	39.737	39.658	39.577	39.495	39.416	39.339
677	17.6000 -->	39.260	39.177	39.089	38.996	38.899	38.799	38.697	38.597	38.499	38.407
687	18.4000 -->	38.320	38.236	38.154	38.071	37.987	37.903	37.813	37.716	37.606	37.482
697	19.2000 -->	37.344	37.190	37.026	36.854	36.682	36.513	36.351	36.199	36.058	35.926
707	20.0000 -->	35.803	35.686	35.576	35.471	35.369	35.268	35.164	35.053	34.933	34.803
717	20.8000 -->	34.663	34.512	34.355	34.193	34.031	33.872	33.718	33.573	33.440	33.319
727	21.6000 -->	33.211	33.114	33.024	32.934	32.840	32.738	32.628	32.509	32.381	32.244
737	22.4000 -->	32.099	31.950	31.801	31.654	31.511	31.373	31.240	31.108	30.974	30.834
747	23.2000 -->	30.688	30.536	30.377	30.215	30.050	29.884	29.718	29.553	29.389	29.227
757	24.0000 -->	29.065	28.902	28.735	28.566	28.393	28.220	28.045	27.871	27.697	27.523
767	24.8000 -->	27.349	27.175	27.000	26.825						

[DUMMY.088C6]088C6TH1D.RAD;1
TRC INC. 088C6TH1 01225
PENXF Deltax = 0.080000 msec

572N SN088 H.S.THORAX CAL6
Npts = 5000; IP0 = 457; Filter = BLPP

0.0 m/sec

300/ 750/ -16

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16-AUG-01 10:44

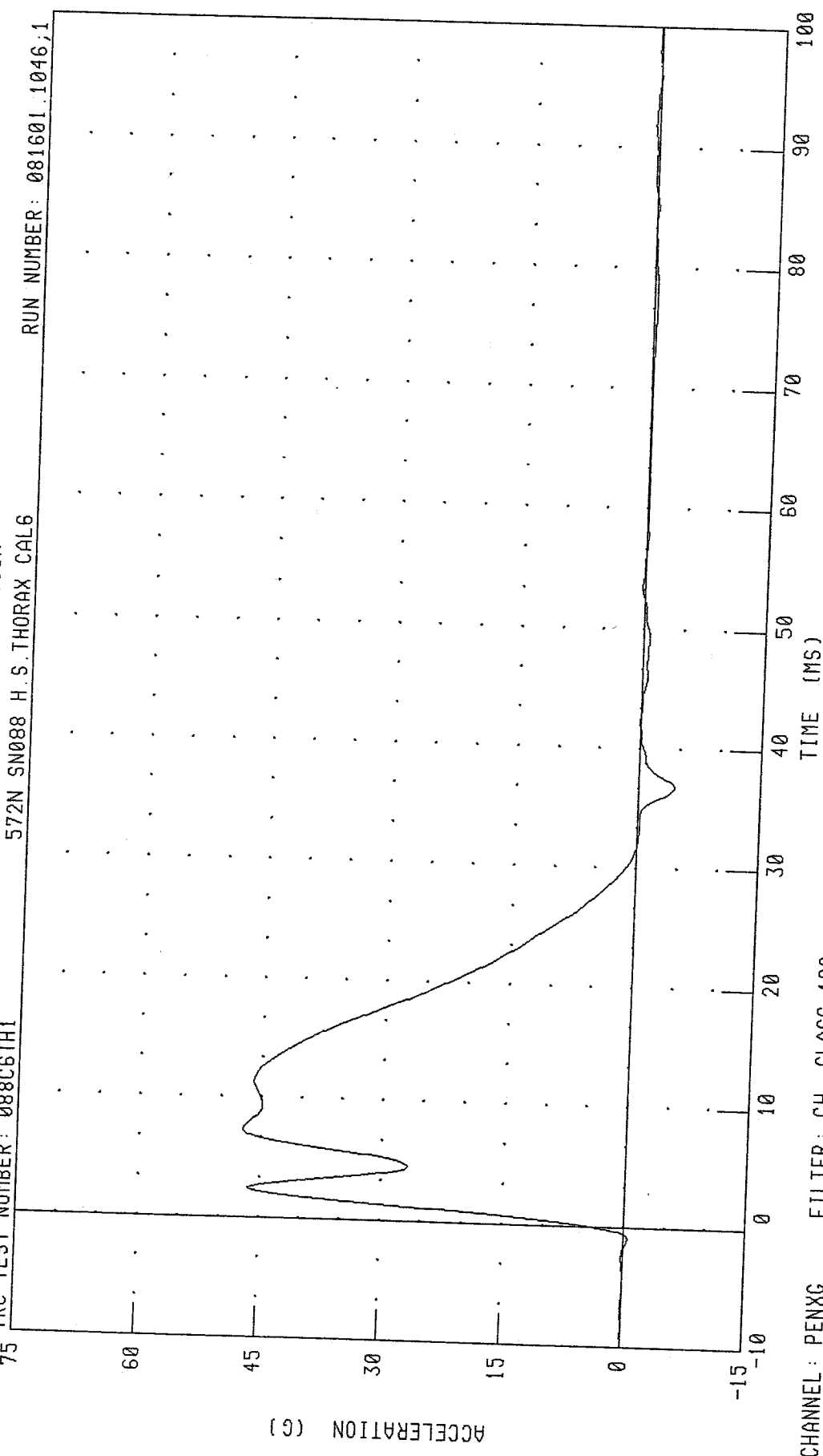
msec		PENXF (N)		Min, Max values =		750.3 @		4.5600		1322.5 @	
504	3.7600 -->	897.7	871.5	847.4	825.8	806.6	790.1	776.5	765.7	757.8	752.7
514	4.5600 -->	750.3	750.7	753.7	759.3	767.3	777.7	790.4	805.2	822.1	841.0
524	5.3600 -->	861.8	884.2	908.2	933.6	960.1	987.6	1015.6	1044.0	1072.4	1100.4
534	6.1600 -->	1127.7	1153.9	1178.8	1202.1	1223.6	1242.9	1260.0	1274.9	1287.5	1298.0
544	6.9600 -->	1306.3	1312.7	1317.3	1320.3	1322.0	1322.5	1321.9	1320.6	1318.6	1316.2
554	7.7600 -->	1313.3	1310.1	1306.6	1302.9	1299.0	1294.9	1290.8	1286.7	1282.6	1278.7
564	8.5600 -->	1275.0	1271.5	1268.3	1265.6	1263.2	1261.3	1259.8	1258.7	1258.0	1257.7
574	9.3600 -->	1257.7	1258.0	1258.4	1259.0	1259.8	1260.7	1261.7	1262.8	1264.0	1265.3
584	10.1600 -->	1266.7	1268.3	1270.0	1271.8	1273.8	1275.9	1278.0			

PART 572 N HYBRID III SIX-YEAR-OLD CHILD - THORAX CALIBRATION
PENDULUM DECELERATION

TRC TEST NUMBER: 088C6TH1

572N SN088 H.S.THORAX CAL6

RUN NUMBER: 081601.1046;1



CHANNEL: PENXC FILTER: CH. CLASS 180

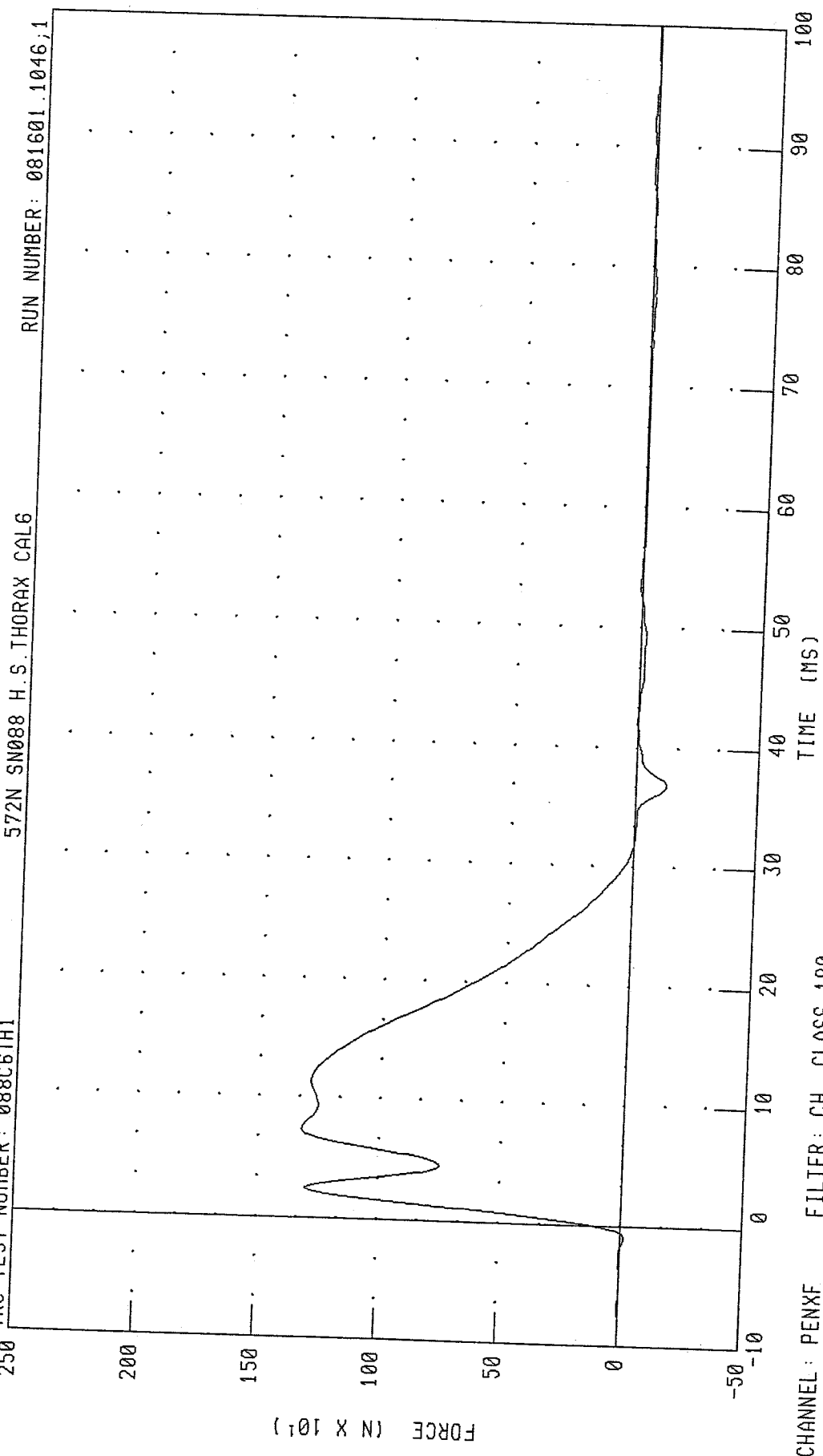
PEAK DATA: 47.19 G @ 7.36 MS; -4.44 G @ 36.80 MS

PART 572 N HYBRID III SIX-YEAR-OLD CHILD - THORAX CALIBRATION
PENDULUM FORCE

TRC TEST NUMBER: 088C6TH1

572N SN088 H.S. THORAX CAL6

RUN NUMBER: 081601.1046,1



CHANNEL: PENXF FILTER: CH. CLASS 180

PEAK DATA: 1322.45 N @ 7.36 MS; -124.55 N @ 36.80 MS

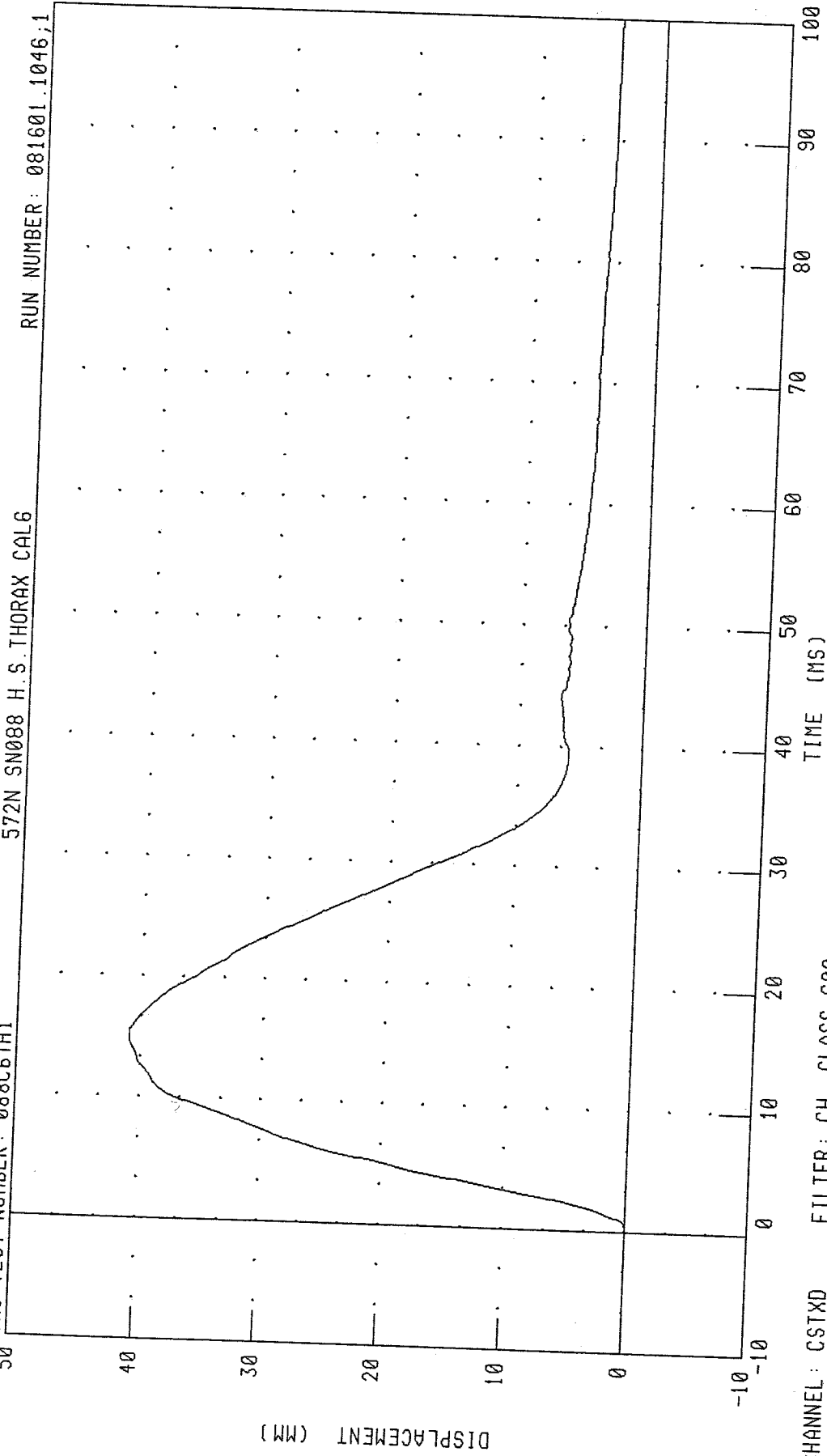
PART 572 N HYBRID III SIX-YEAR-OLD CHILD - THORAX CALIBRATION

TRC TEST NUMBER: 088C6TH1

STERNUM DISPLACEMENT

572N SN088 H.S. THORAX CAL6

RUN NUMBER: 081601.1046,1



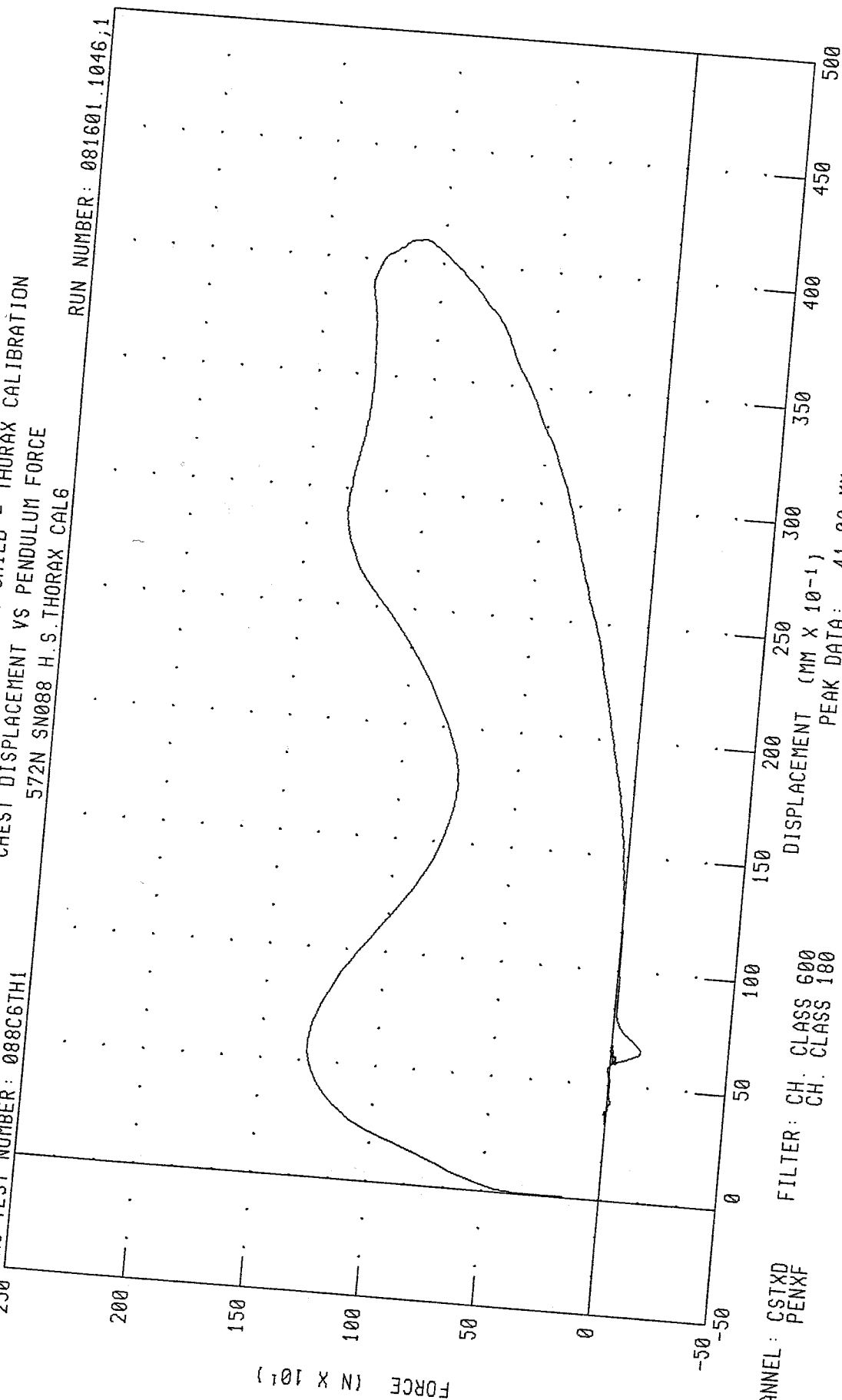
CHANNEL: CSTXD FILTER: CH. CLASS 600

PEAK DATA: 41.00 MM @ 15.28 MS; 0.00 MM @ -0.32 MS

PART 572 N HYBRID III SIX-YEAR-OLD CHILD - THORAX CALIBRATION
 CHEST DISPLACEMENT VS PENDULUM FORCE
 572N SN088 H.S. THORAX CAL6

TRC TEST NUMBER: 088C6TH1

RUN NUMBER: 081601.1046;1



CHANNEL: CSTXD
 FILTER: CH. CLASS 600
 CH. CLASS 180

PEAK DATA: 41.00 MM @ 15.28 MS;
 1322.45 N @ 7.36 MS; -124.55 N @ 36.80 MS

TRANSPORTATION RESEARCH CENTER INC.

TORSO FLEXION TEST

HYBRID III SIX-YEAR-OLD

CAL DATE: 07-Aug-01

TRC, INC.

TEST NO: 088C06TF1

572 N SN088 TORSO FLEX CAL 06

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6 – 22.2 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 – 70 %	56 %
INITIAL ANGLE OF UNSUPPORTTED DUMMY	<= 22 DEG. REFERENCED TO VERTICAL	6 DEG.
MAXIMUM FORCE AT 45 DEG. DURING 10 SECOND PERIOD	147 – 200 N	191.3 N
RETURN ANGLE	+/- 8 DEG OF INTIAL ANGLE	9 DEG.

TEST MEETS SPECIFICATIONS

TECHNICIAN



Post-Test Dummy Configuration and Performance Verification Data

Driver Dummy S/N: 416

TRANSPORTATION RESEARCH CENTER INC.
HYBRID III SMALL FEMALE EXTERNAL DIMENSIONS
SN: 416 MFG:FTSS

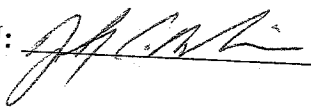
DATE: 21-Aug-01

TRC INC. TEST NO: 416C10ED1

5720 SN416EXT. DIMENSION CAL10

TEST PARAMETER	DIMEN.	SPECIFICATION	TEST RESULTS
Total Sitting Height	A	774.7 - 800.1 MM	784.86 MM
Shoulder Pivot Height	B	431.8 - 457.2 MM	444.5 MM
Hip Pivot Height	C	81.3 - 86.3 MM	86.36 MM
Hip Pivot from Backline	D	144.8 - 149.8 MM	147.32 MM
Shoulder Pivot from Backline	E	68.6 - 83.8 MM	78.74 MM
Thigh Clearance	F	119.4 - 134.6 MM	124.46 MM
Back of Elbow to Wrist Pivot	G	243.9 - 259.1 MM	254 MM
Head Back from Backline	H	40.7 - 45.7 MM	45.72 MM
Shoulder to Elbow Length	I	276.8 - 297.2 MM	284.48 MM
Elbow Rest Height	J	182.8 - 203.2 MM	187.96 MM
Buttock to Knee Length	K	520.7 - 546.1 MM	541.02 MM
Popliteal Height	L	355.6 - 376 MM	370.84 MM
Knee to Floor Height	M	393.7 - 419.1 MM	408.94 MM
Buttock Popliteal Length	N	414 - 439.4 MM	431.8 MM
Chest Depth	O	175.3 - 190.5 MM	180.34 MM
Foot Length	P	218.5 - 233.7 MM	228.6 MM
Buttock to Knee Pivot Length	R	457.2 - 482.6 MM	472.44 MM
Head Breadth	S	137.1 - 147.3 MM	142.24 MM
Head Depth	T	177.8 - 188 MM	185.42 MM
Hip Breadth	U	299.7 - 314.9 MM	307.34 MM
Shoulder Breadth	V	350.5 - 365.7 MM	353.06 MM
Foot Breadth	W	78.8 - 94 MM	88.9 MM
Head Circumference	X	528.3 - 548.7 MM	541.02 MM
Chest Circumference with Jacket	Y	850.9 - 881.3 MM	876.3 MM
Waist Circumference	Z	759.5 - 789.9 MM	777.24 MM
Ref Location for Chest Circumference	AA	299.7 - 309.9 MM	304.8 MM
Ref Location for Waist Circumference	BB	160 - 170.2 MM	165.1 MM

DUMMY MEETS SPECIFICATION

TECHNICIAN: 

TRANSPORTATION RESEARCH CENTER INC.

HEAD DROP TEST

HYBRID III SMALL FEMALE

16-AUG-01

TRC INC.

TEST NO: 416C10HD1

572 0 SN416 HEAD DROP CAL 10

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	250 - 300 G	244.06 G *
PEAK LATERAL ACCELERATION	15 G MAX	13.59 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

* TEST DOES NOT MEET SPECIFICATIONS

TECHNICIAN *J.C. Miller*

RUN NUMBER: 082201.1354;1

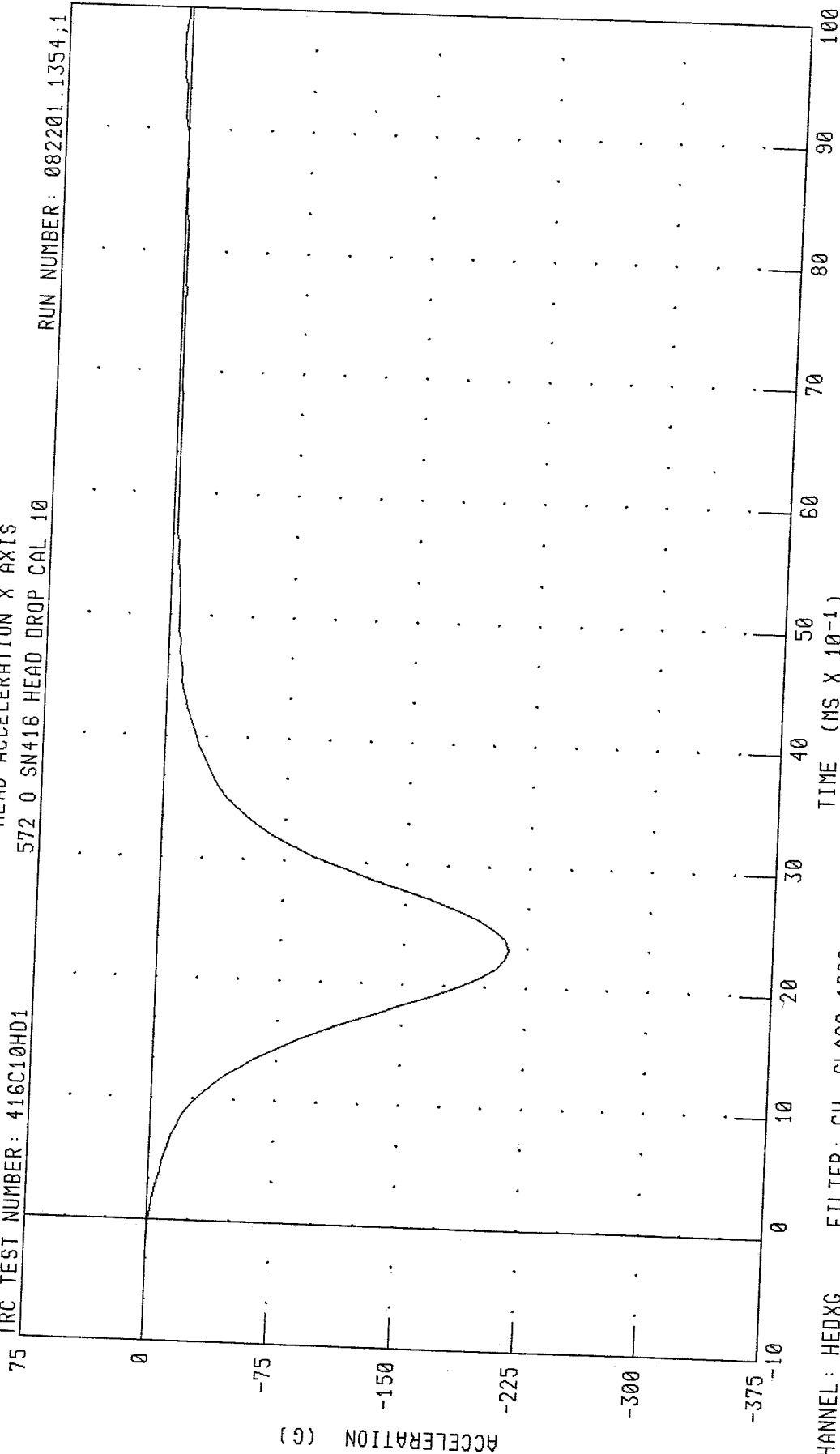
PART 572-0 HYBRID III SMALL FEMALE - HEAD CALIBRATION

HEAD ACCELERATION X AXIS

572 0 SN416 HEAD DROP CAL 10

RUN NUMBER: 082201.1354;1

TRC TEST NUMBER: 416C10HD1



CHANNEL: HEDXC FILTER: CH. CLASS 1000

PEAK DATA: 4.17 G @ 9.60 MS; -213.85 G @ 2.32 MS

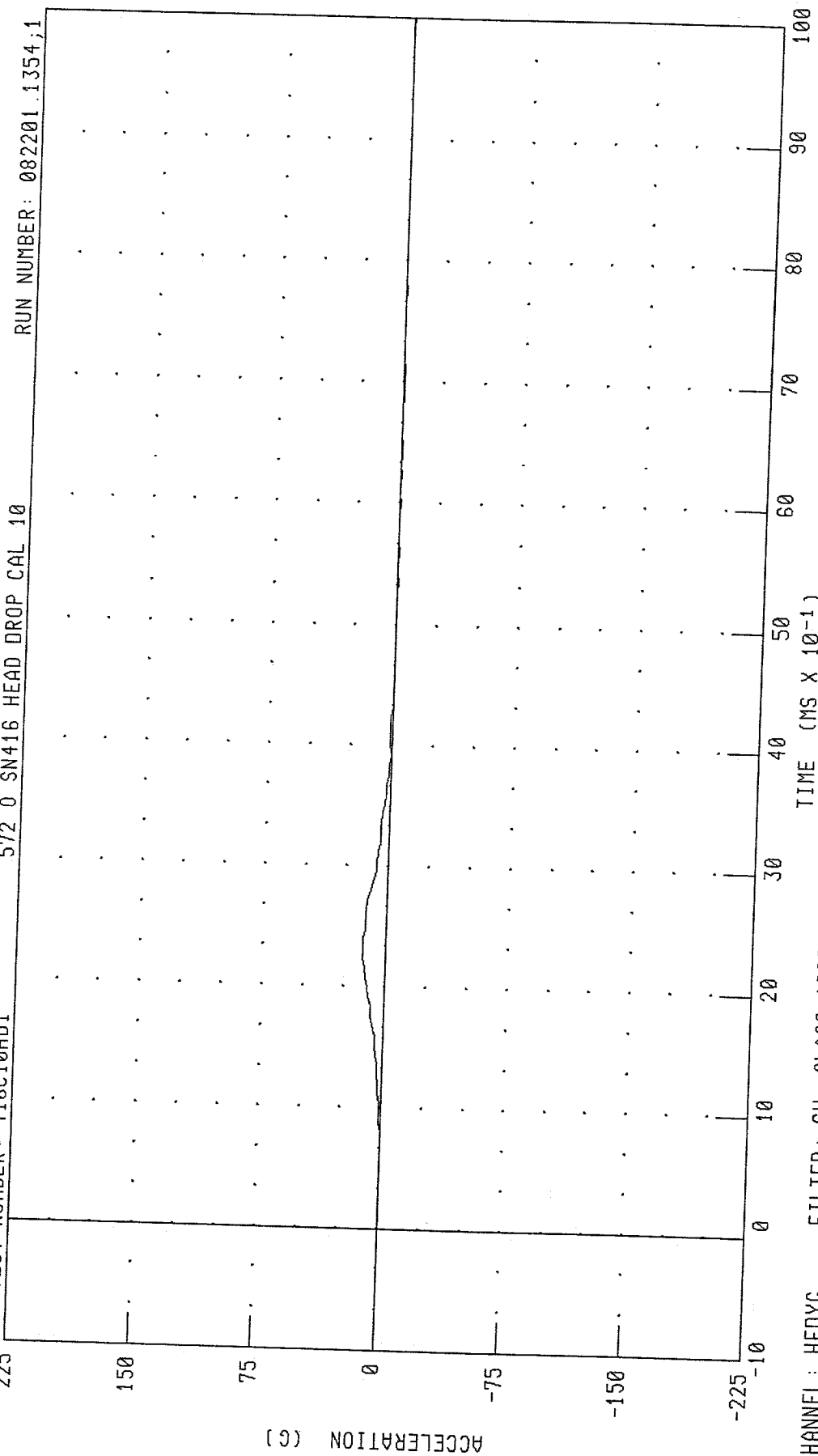
PART 572-0 HYBRID III SMALL FEMALE - HEAD CALIBRATION

HEAD ACCELERATION Y AXIS

TRC TEST NUMBER: 416C10HD1

572 0 SN416 HEAD DROP CAL 10

RUN NUMBER: 082201.1354;1



CHANNEL: HEDYC

FILTER: CH. CLASS 1000

TIME (MS X 10⁻¹)

PEAK DATA: 13.60 G @ 2.24 MS; -0.95 G @ 5.36 MS

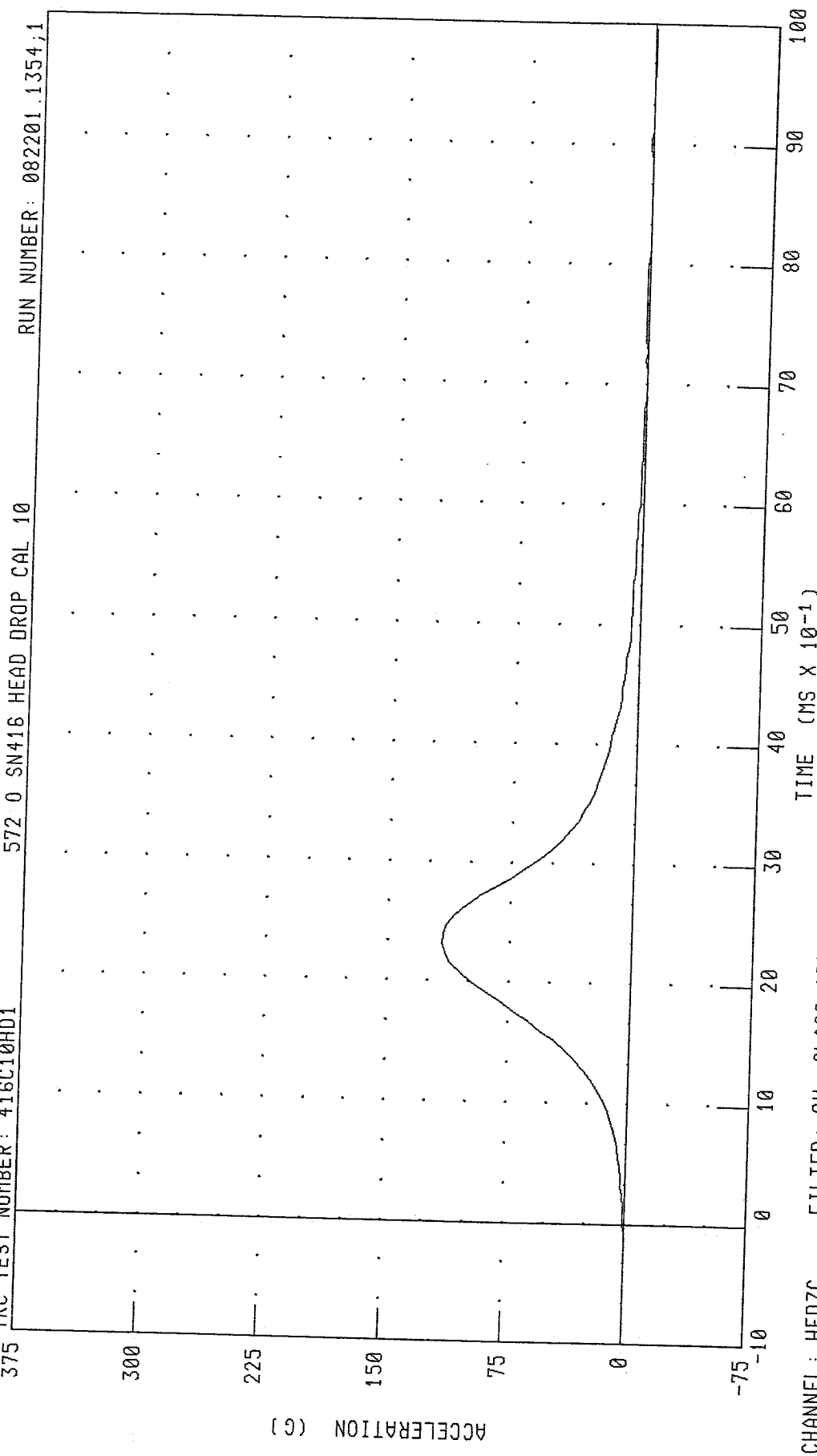
PART 572-0 HYBRID III SMALL FEMALE - HEAD CALIBRATION

HEAD ACCELERATION Z AXIS

TRC TEST NUMBER: 416C10HD1

572 0 SN416 HEAD DROP CAL 10

RUN NUMBER: 082201.1354;1



CHANNEL: HEDZG FILTER: CH. CLASS 1000

PEAK DATA: 116.85 G @ 2.32 MS; -0.98 G @ 9.60 MS

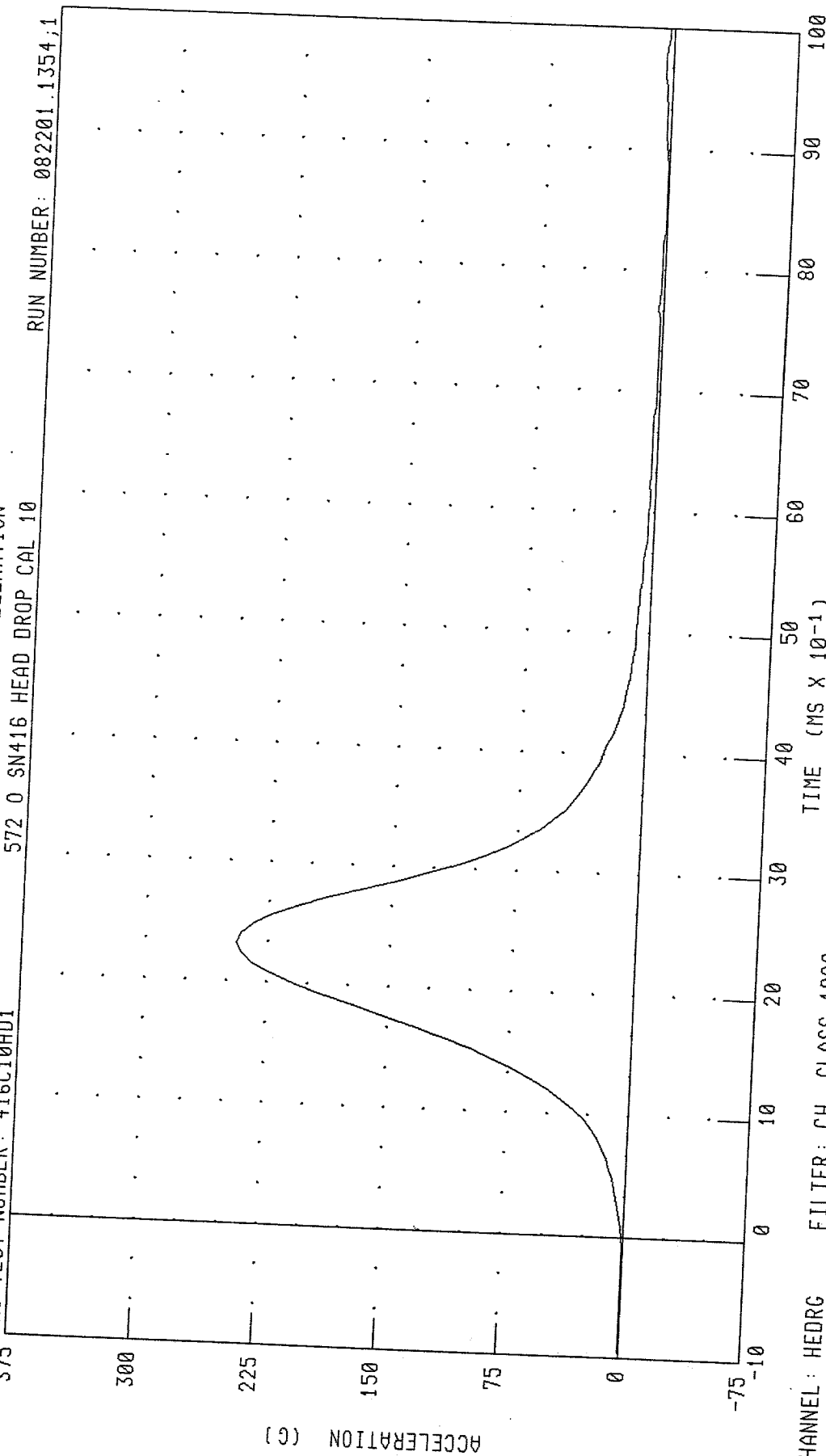
PART 572-0 HYBRID III SMALL FEMALE - HEAD CALIBRATION

TRC TEST NUMBER: 416C10HD1

HEAD RESULTANT ACCELERATION

572 0 SN416 HEAD DROP CAL 10

RUN NUMBER: 082201.1354;1



CHANNEL: HEDRG

FILTER: CH. CLASS 1000

TIME (MS X 10⁻¹)

PEAK DATA: 244.07 G @ 2.32 MS; 0.30 G @ -0.96 MS

TRANSPORTATION RESEARCH CENTER INC.

HYBRID III SMALL FEMALE

20-AUG-01

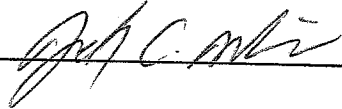
NECK FLEXION TEST - 6 CHANNEL TRANSDUCER

TRC INC. TEST NO: 416C10NF1 572 0 SN416 NECK FLEX. CAL10

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6-22.2 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	65.0 %
IMPACT VELOCITY	6.89 - 7.13 M/S	7.06 M/S
INTEGRATED PENDULUM VELOCITY	10 MS 2.0 - 2.5 M/S	2.37 M/S
	20 MS 4.0 - 5.0 M/S	4.66 M/S
	30 MS 5.8 - 7.0 M/S	6.74 M/S
PEAK D-PLANE ROTATION	77 - 91 DEG.	83.51 DEG.
PEAK MOMENT DURING ROTATION INTERVAL	69 - 83 NM	79.09 NM
POSITIVE MOMENT DECAY TIME TO 10 NM	80 - 100 MS	88.32 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 082001.1334;1

20-AUG-01 13:34

[DUMMY.416C10J416C10NF1D.RAD;1

TRC INC. 416C10NF1 01232

TOTAN Deltax = 0.080000 msec

572 O SN416 NECK FLEX. CAL10 7.1 m/sec
Npts = 8000; IP0 = 477; Filter = BLPP

100/ 250/ -16

83.516 @ 61.2000

60.259 @ 40.0000

Min, Max values =

)

TOTAN (deg

msec

1477 80.0000 --> 67.066

[DUMMY.416C10]416C10NF1D.RAD;1
TRC INC. 416C10NF1 01232
NEKOM Deltax = 0.080000 msec

572 O SN416 NECK FLEX. CAL10 7.1 m/sec
Npts = 8000; IP0 = 477; Filter = BLPP 1000/ 2500/ -16

	msec	NEKOM	(N-m	)	Min, Max values =	33.763 @	72.3200	79.089 @	50.4000
1097	49.6000 -->	78.548	78.639	78.720	78.792	78.859	78.923	79.066	79.083
1107	50.4000 -->	79.089	79.086	79.075	79.055	79.029	79.000	78.905	78.872
1117	51.2000 -->	78.841	78.810	78.775	78.731	78.674	78.602	78.279	78.144
1127	52.0000 -->	77.999	77.849	77.697	77.547	77.405	77.270	76.893	76.770
1137	52.8000 -->	76.645	76.519	76.392	76.261	76.129	75.998	75.649	75.545
1147	53.6000 -->	75.439	75.324	75.195	75.054	74.911	74.775	74.413	74.299
1157	54.4000 -->	74.183	74.064	73.943	73.818	73.691	73.563	73.211	73.099
1167	55.2000 -->	72.987	72.878	72.770	72.661	72.551	72.441	72.113	72.001
1177	56.0000 -->	71.884	71.759	71.621	71.472	71.318	71.165	70.732	70.586
1187	56.8000 -->	70.428	70.254	70.062	69.855	69.639	69.418	68.765	68.555
1197	57.6000 -->	68.349	68.143	67.937	67.730	67.521	67.309	66.671	66.469
1207	58.4000 -->	66.272	66.076	65.876	65.665	65.440	65.208	64.537	64.331
1217	59.2000 -->	64.133	63.944	63.762	63.585	63.409	63.230	62.689	62.506
1227	60.0000 -->	62.323	62.143	61.962	61.777	61.590	61.410	60.945	60.794
1237	60.8000 -->	60.635	60.472	60.307	60.143	59.975	59.798	59.237	59.056
1247	61.6000 -->	58.877	58.701	58.528	58.356	58.179	57.997	57.425	57.242
1257	62.4000 -->	57.069	56.903	56.742	56.587	56.438	56.294	55.871	55.728
1267	63.2000 -->	55.586	55.447	55.315	55.194	55.081	54.971	54.627	54.500
1277	64.0000 -->	54.364	54.218	54.067	53.916	53.770	53.631	53.222	53.077
1287	64.8000 -->	52.929	52.781	52.635	52.487	52.337	52.187	51.714	51.547
1297	65.6000 -->	51.379	51.214	51.051	50.885	50.712	50.532	49.961	49.765
1307	66.4000 -->	49.568	49.371	49.176	48.981	48.787	48.595	48.028	47.829
1317	67.2000 -->	47.622	47.407	47.189	46.970	46.752	46.535	45.933	45.749
1327	68.0000 -->	45.565	45.375	45.178	44.971	44.755	44.531	43.828	43.592
1337	68.8000 -->	43.361	43.135	42.915	42.702	42.497	42.297	41.673	41.448
1347	69.6000 -->	41.221	40.995	40.773	40.551	40.329	40.108	39.447	39.227
1357	70.4000 -->	39.010	38.798	38.591	38.388	38.183	37.971	37.295	37.062
1367	71.2000 -->	36.832	36.606	36.383	36.161	35.940	35.720	35.074	34.864
1377	72.0000 -->	34.655	34.444	34.227	33.999	33.763	33.503		

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[DUMMY.416C10]416C10NF1D.RAD:1 572 O SN416 NECK FLEX. CAL10 7.1 m/sec 1000/ 2500/ -16

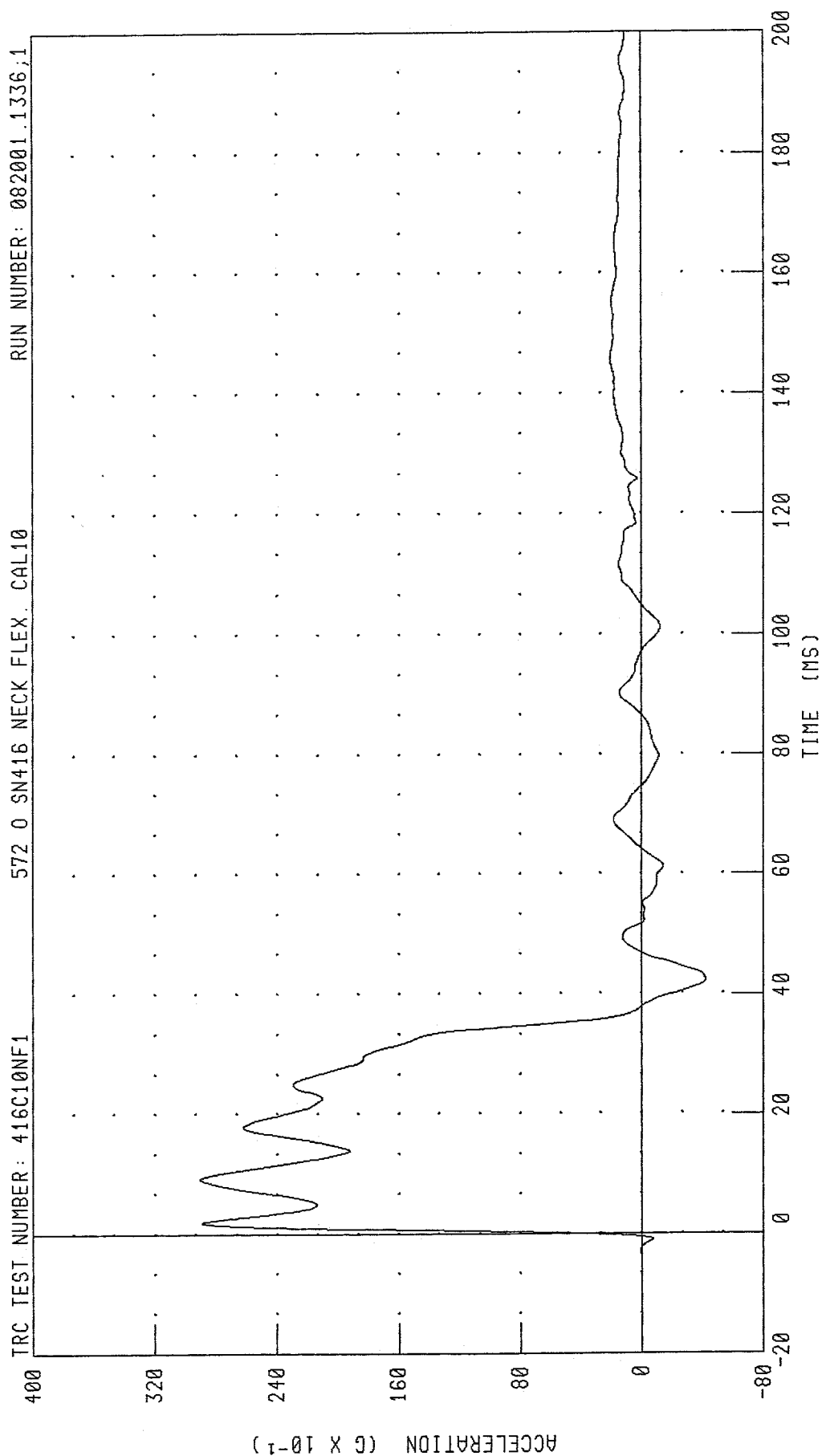
TRC INC. 416C10NF1 01232 Npts = 8000; IP0 = 477; Filter = BLPP

NEKOM Deltax = 0.080000 msec

	msec	NEKOM	(N-m	)	Min, Max values =	-2.547 @ 100.0000	18.138 @ 80.0000
1477	80.0000 -->	18.138	18.029	17.921	17.706	17.502	17.324
1487	80.8000 -->	17.149	17.055	16.957	16.860	16.670	16.385
1497	81.6000 -->	16.213	16.134	16.056	15.974	15.791	15.500
1507	82.4000 -->	15.319	15.227	15.140	15.061	14.926	14.728
1517	83.2000 -->	14.569	14.483	14.397	14.313	14.143	13.889
1527	84.0000 -->	13.717	13.628	13.540	13.456	13.252	13.120
1537	84.8000 -->	12.979	12.910	12.843	12.774	12.539	12.369
1547	85.6000 -->	12.224	12.165	12.110	12.054	11.932	11.727
1557	86.4000 -->	11.579	11.506	11.436	11.369	11.244	11.062
1567	87.2000 -->	10.914	10.837	10.764	10.697	10.576	10.390
1577	88.0000 -->	10.265	10.201	10.133	10.065	9.924	9.734
1587	88.8000 -->	9.619	9.560	9.498	9.431	9.280	9.084
1597	89.6000 -->	8.967	8.910	8.850	8.786	8.642	8.407
1607	90.4000 -->	8.256	8.183	8.108	8.031	7.893	7.720
1617	91.2000 -->	7.594	7.530	7.465	7.396	7.251	7.018
1627	92.0000 -->	6.871	6.799	6.722	6.641	6.472	6.209
1637	92.8000 -->	6.027	5.934	5.840	5.745	5.555	5.301
1647	93.6000 -->	5.133	5.041	4.948	4.857	4.675	4.375
1657	94.4000 -->	4.166	4.074	3.990	3.909	3.743	3.456
1667	95.2000 -->	3.235	3.122	3.015	2.916	2.738	2.487
1677	96.0000 -->	2.320	2.242	2.168	2.092	1.914	1.610
1687	96.8000 -->	1.409	1.313	1.218	1.121	0.918	0.629
1697	97.6000 -->	0.449	0.360	0.270	0.177	-0.023	-0.384
1707	98.4000 -->	-0.605	-0.701	-0.795	-0.892	-1.096	-1.408
1717	99.2000 -->	-1.619	-1.726	-1.832	-1.934	-2.116	-2.368
1727	100.0000 -->	-2.547				-2.283	-2.456

PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

PENDULUM DECELERATION



CHANNEL: PENXG FILTER: CH. CLASS 180

PEAK DATA: 29.02 G @ 9.20 MS; -4.22 G @ 42.24 MS

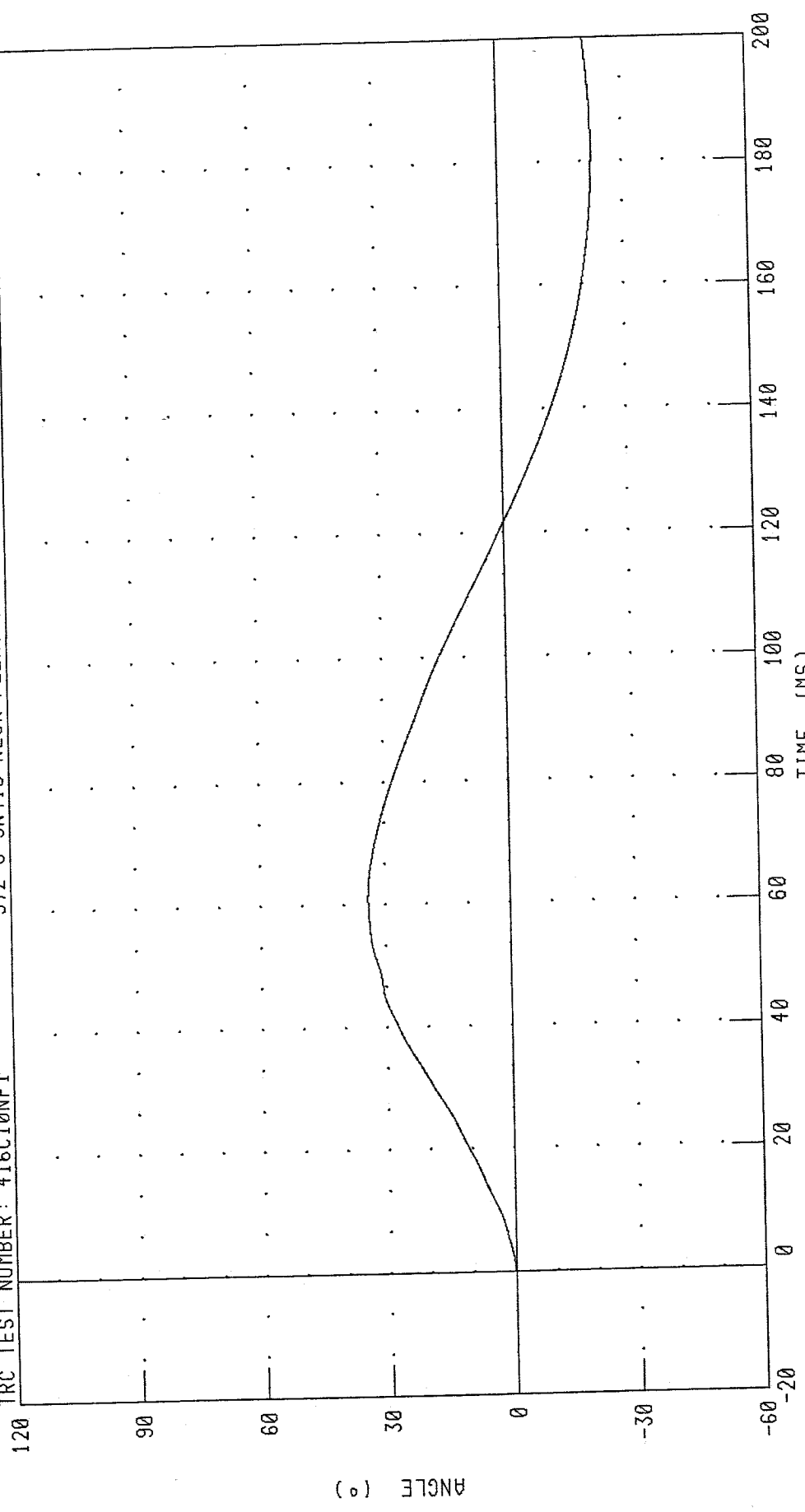
PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER: 416C10NF1

572 0 SN416 NECK FLEX. CAL10

RUN NUMBER: 082001.1336;1



PEAK DATA: 34.09 ° @ 61.12 MS; -22.59 ° @ 182.64 MS

FILTER: CH. CLASS 60

CHANNEL: BETA

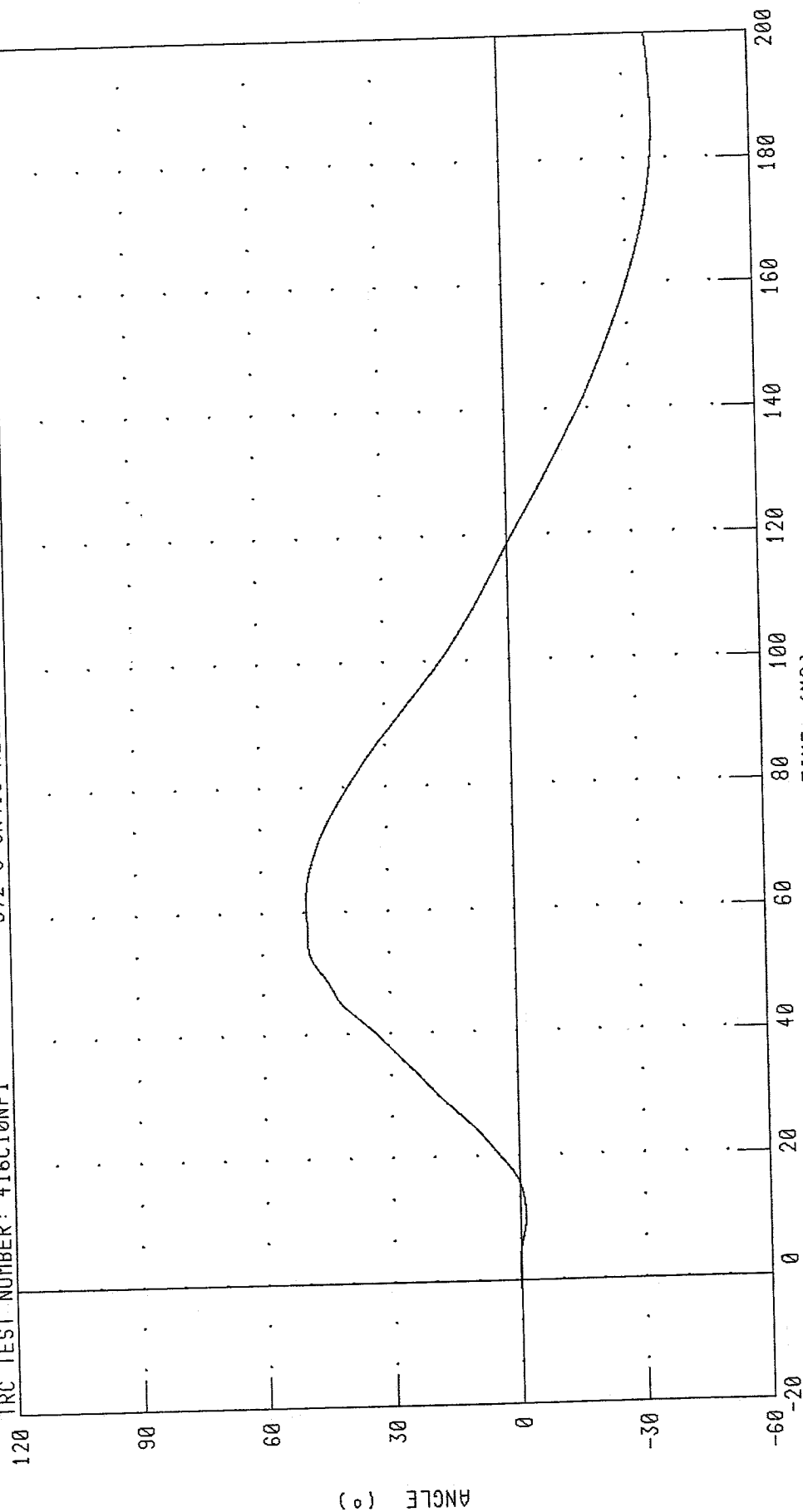
PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

ROTATION ABOUT OCCIPITAL CONDYLE

RUN NUMBER: 082001.1336;1

TRC TEST NUMBER: 416C10NF1

572 0 SN416 NECK FLEX. CAL10



TIME (MS)

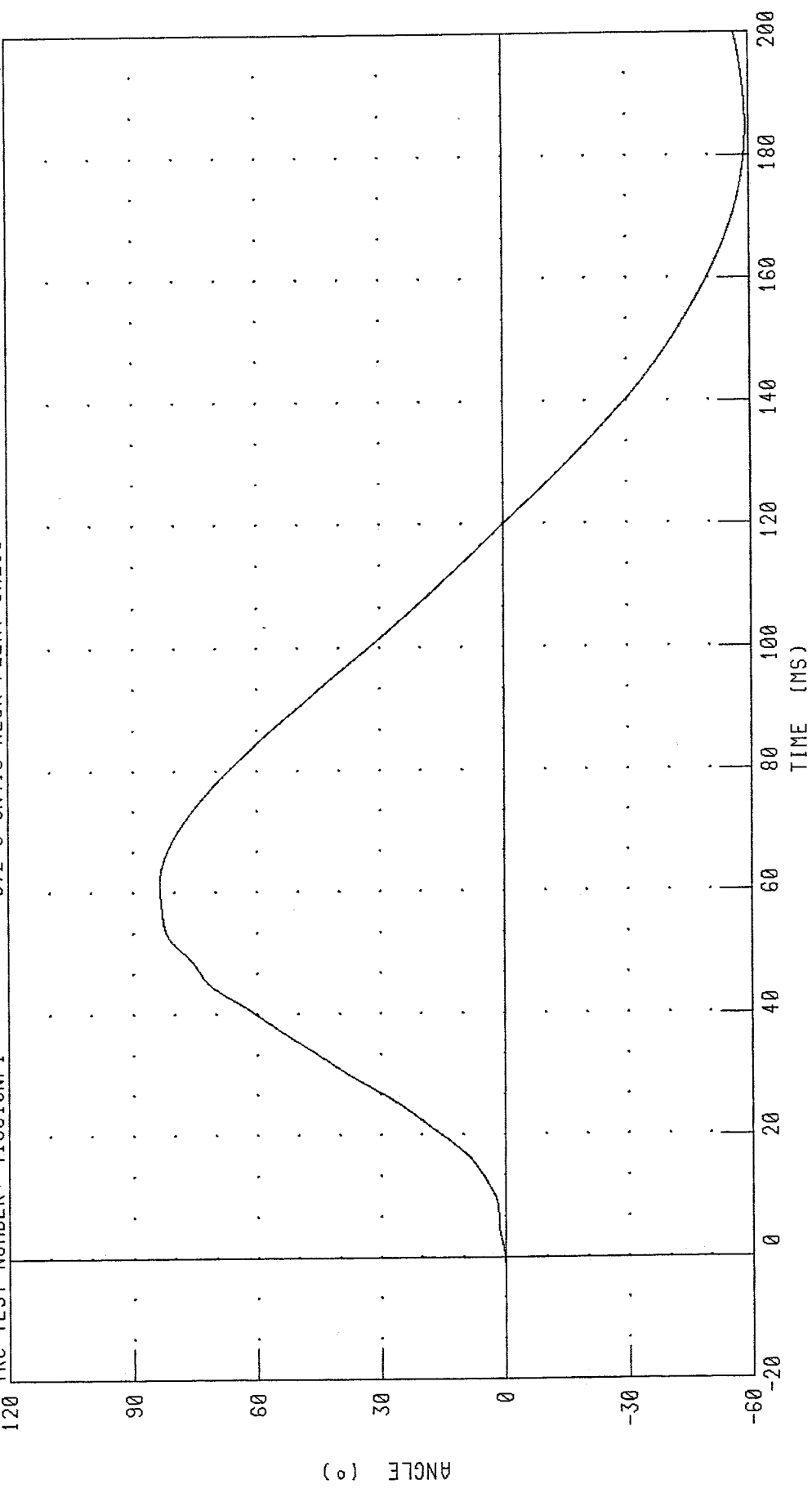
PEAK DATA: 49.42 ° @ 61.36 MS; -36.62 ° @ 185.92 MS

CHANNEL: THETA FILTER: CH. CLASS 60

PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

TOTAL ROTATION

TRC TEST NUMBER: 416C10NF1 572 0 SN416 NECK FLEX. CAL10 RUN NUMBER: 082001.1336;1



CHANNEL: TOTAL FILTER: CH. CLASS 60 PEAK DATA: 83.52 ° @ 61.20 MS; -59.17 ° @ 184.80 MS

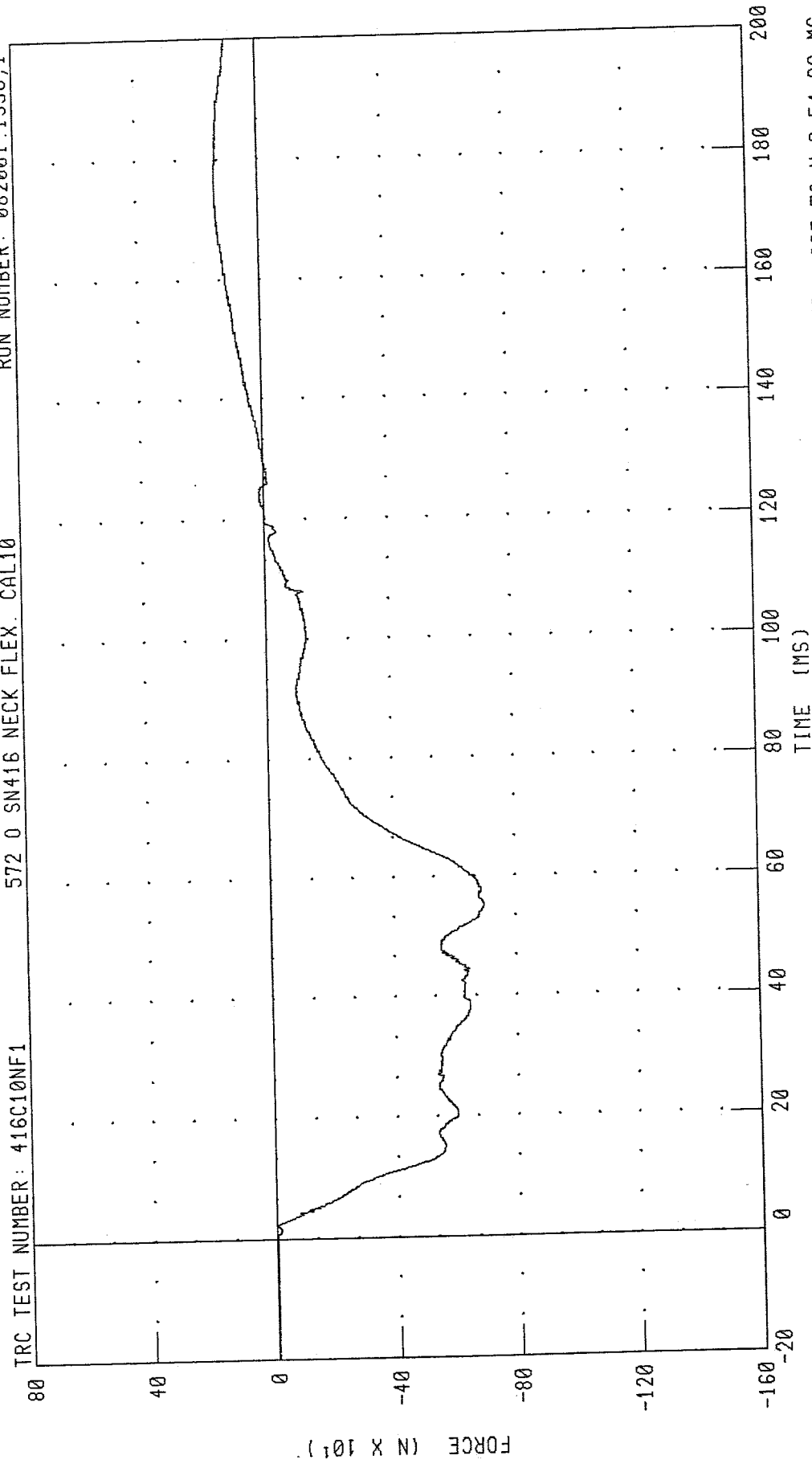
PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

NECK FORCE X AXIS

TRC TEST NUMBER: 416C10NF1

572 0 SN416 NECK FLEX. CAL10

RUN NUMBER: 082001.1336;1

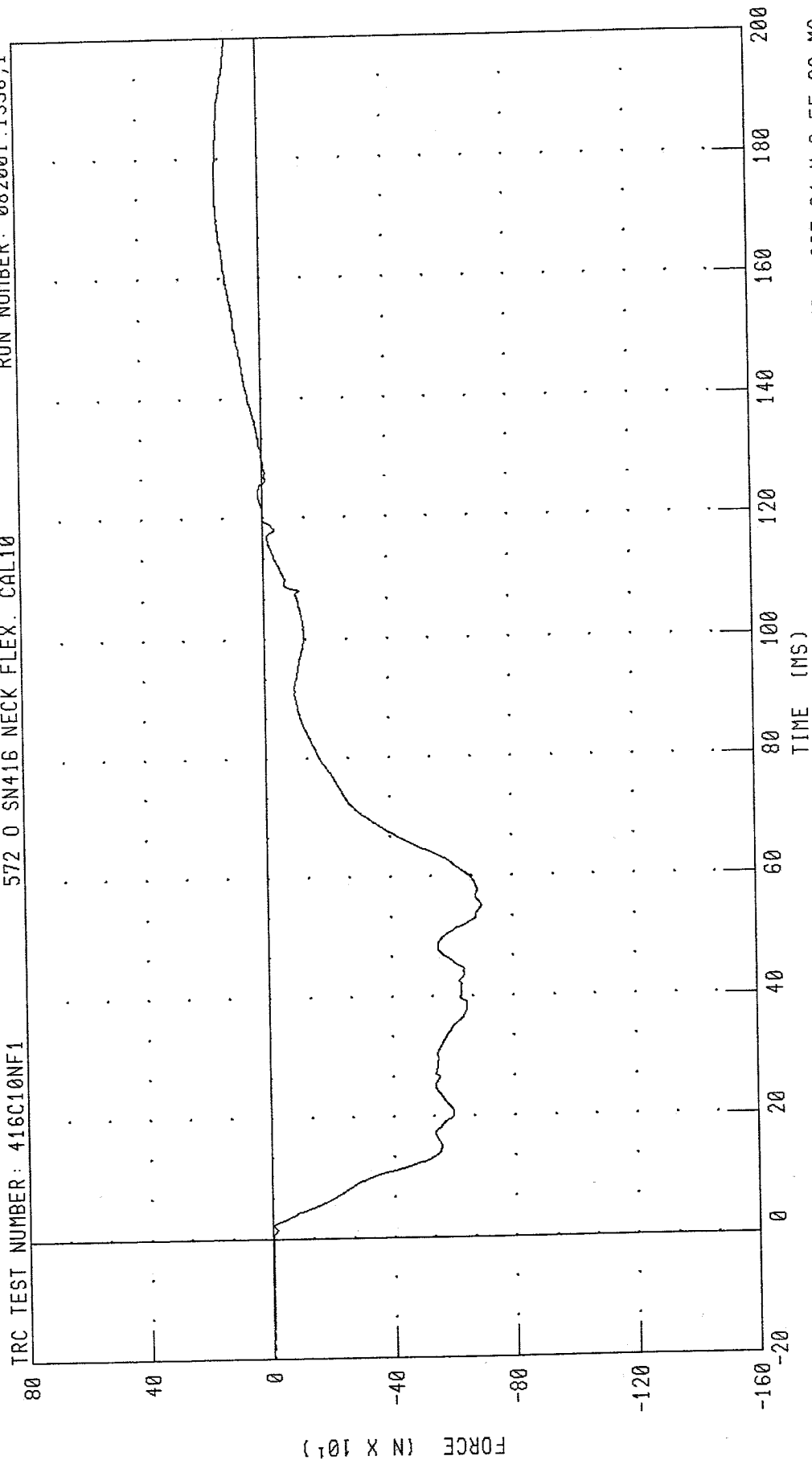


PEAK DATA: 145.16 N @ 172.16 MS, -697.79 N @ 54.96 MS

CHANNEL: NEKXF FILTER: CH. CLASS 1000

PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION
NECK FORCE X AXIS FILTERED FOR USE IN OCCIPITAL MOMENT CALCULATION

TRC TEST NUMBER: 416C10NF1 572 0 SN416 NECK FLEX. CAL10 RUN NUMBER: 082001.1336,1

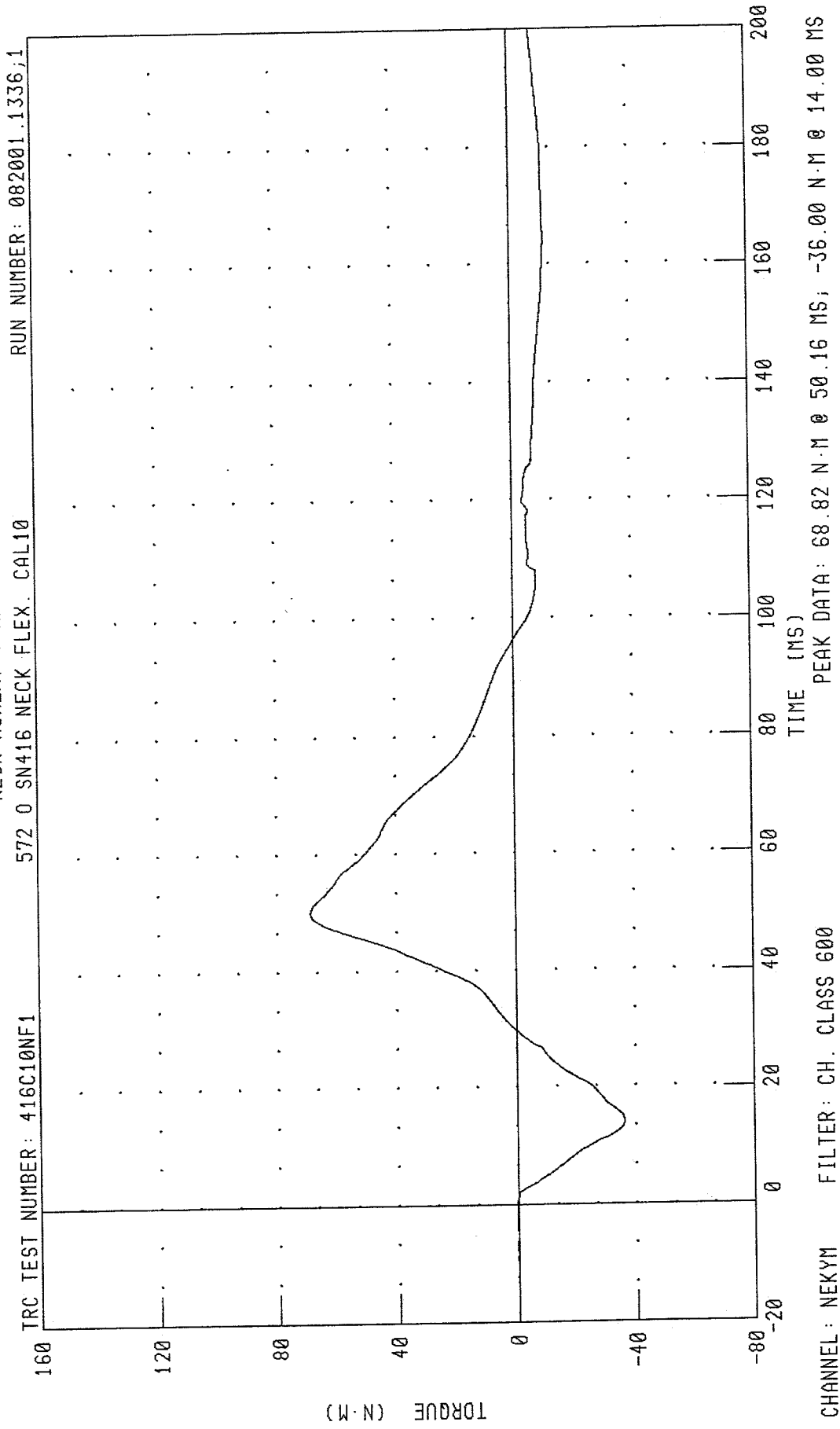


CHANNEL: NEKXFC FILTER: CH. CLASS 600

PEAK DATA: 145.26 N @ 172.96 MS; -697.94 N @ 55.20 MS

PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

NECK MOMENT Y AXIS



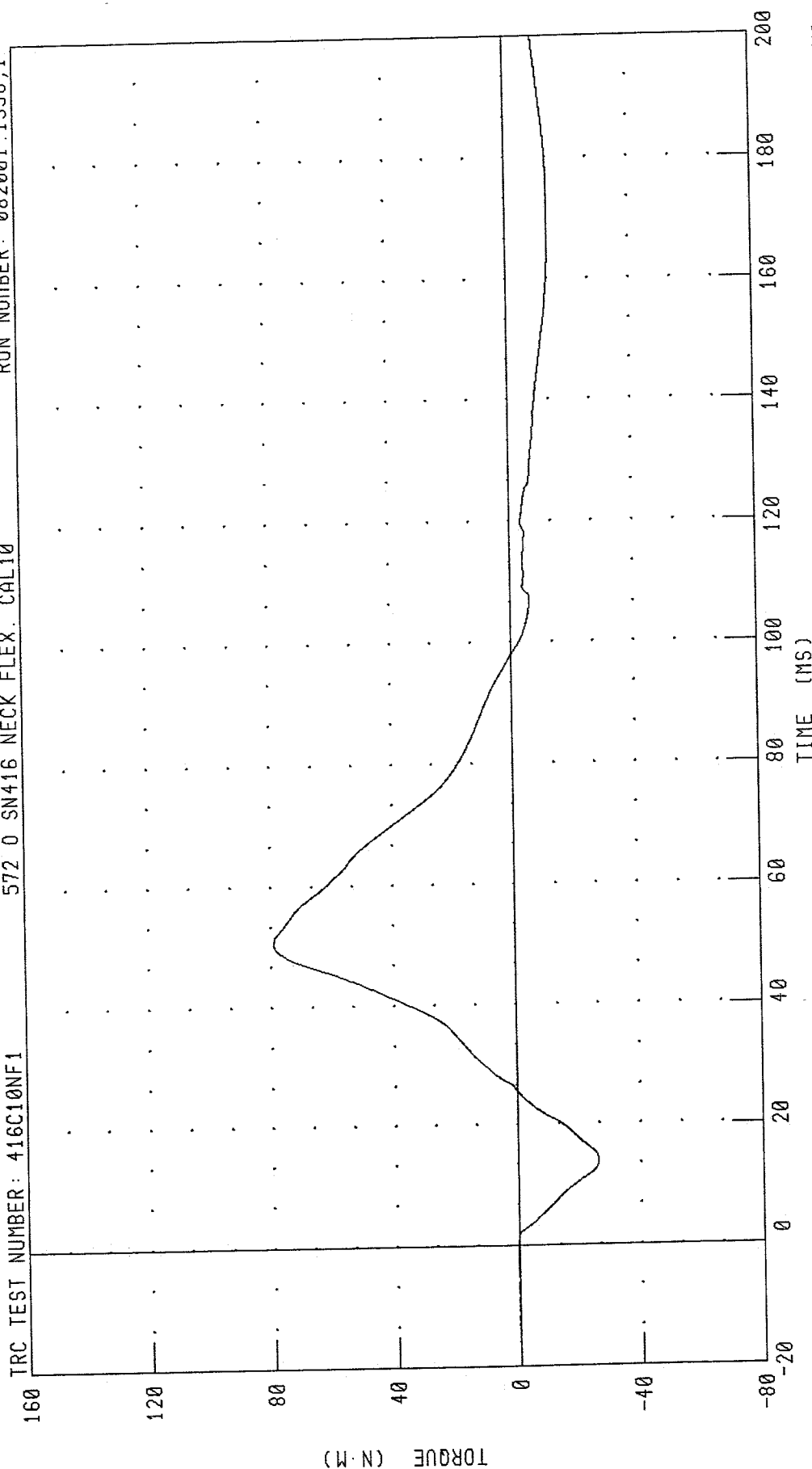
PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: 416C10NF1

572 0 SN416 NECK FLEX. CAL10

RUN NUMBER: 082001.1336;1



CHANNEL: NEKOM FILTER: CH. CLASS 600

PEAK DATA: 79.09 N·M @ 50.40 MS; -26.27 N·M @ 13.76 MS

TRANSPORTATION RESEARCH CENTER INC.

HYBRID III SMALL FEMALE

20-AUG-01

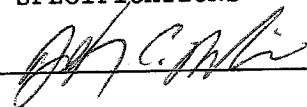
NECK EXTENSION TEST - 6 CHANNEL TRANSDUCER

TRC INC. TEST NO: 416C10NE1 572 0 SN416 NECK EXT. CAL 10

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6 - 22.2 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY		10 - 70 %	65.0 %
IMPACT VELOCITY		5.95 - 6.19 M/S	6.19 M/S
INTEGRATED PENDULUM VELOCITY	10 MS	1.5 - 1.9 M/S	1.70 M/S
	20 MS	3.1 - 3.9 M/S	3.46 M/S
	30 MS	4.6 - 5.6 M/S	5.13 M/S
PEAK D-PLANE ROTATION		99 - 114 DEG.	106.29 DEG.
PEAK MOMENT DURING ROTATION INTERVAL		-53/-65 NM	-60.95 NM
NEGATIVE MOMENT DECAY TIME TO -10 NM LEVEL		94 -114 MS	101.76 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 082001.1402;1

20-AUG-01 14:02

6.2 m/sec
Filter = BLPP

100/ 250/ -16

572 O SN416 NECK EXT. CAL 10
Npts = 8000; IP0 = 550;572 O SN416 NECK EXT. CAL 10
Npts = 8000; IP0 = 550;572 O SN416 NECK EXT. CAL 10
Npts = 8000; IP0 = 550;572 O SN416 NECK EXT. CAL 10
Npts = 8000; IP0 = 550;572 O SN416 NECK EXT. CAL 10
Npts = 8000; IP0 = 550;572 O SN416 NECK EXT. CAL 10
Npts = 8000; IP0 = 550;572 O SN416 NECK EXT. CAL 10
Npts = 8000; IP0 = 550;

msec		TOTAL (deg)		Min, Max values =		75.808 @ 50.0000		106.297 @ 74.8000	
1175	50.0000 -->	75.808	75.976	76.144	76.312	76.480	76.649	76.817	76.985
1185	50.8000 -->	77.491	77.659	77.828	77.997	78.167	78.336	78.505	78.675
1195	51.6000 -->	79.185	79.355	79.526	79.697	79.868	80.039	80.210	80.381
1205	52.4000 -->	80.895	81.066	81.238	81.409	81.580	81.751	81.921	82.091
1215	53.2000 -->	82.600	82.769	82.937	83.105	83.272	83.439	83.604	83.770
1225	54.0000 -->	84.261	84.424	84.585	84.746	84.906	85.065	85.223	85.381
1235	54.8000 -->	85.847	86.000	86.153	86.304	86.455	86.604	86.753	86.900
1245	55.6000 -->	87.337	87.480	87.623	87.765	87.905	88.045	88.184	88.322
1255	56.4000 -->	88.731	88.866	89.000	89.133	89.266	89.398	89.529	89.660
1265	57.2000 -->	90.050	90.179	90.307	90.436	90.563	90.691	90.818	90.945
1275	58.0000 -->	91.324	91.450	91.576	91.701	91.827	91.952	92.077	92.202
1285	58.8000 -->	92.575	92.700	92.824	92.948	93.072	93.195	93.318	93.442
1295	59.6000 -->	93.810	93.932	94.053	94.175	94.296	94.417	94.537	94.657
1305	60.4000 -->	95.015	95.134	95.252	95.369	95.486	95.603	95.719	95.834
1315	61.2000 -->	96.177	96.291	96.403	96.515	96.626	96.737	96.847	96.956
1325	62.0000 -->	97.280	97.386	97.491	97.596	97.700	97.803	97.906	98.007
1335	62.8000 -->	98.308	98.406	98.504	98.601	98.697	98.793	98.887	98.981
1345	63.6000 -->	99.259	99.350	99.441	99.531	99.620	99.709	99.797	99.884
1355	64.4000 -->	100.143	100.228	100.312	100.396	100.479	100.562	100.644	100.725
1365	65.2000 -->	100.967	101.047	101.125	101.204	101.282	101.359	101.436	101.513
1375	66.0000 -->	101.739	101.814	101.888	101.961	102.035	102.107	102.180	102.251
1385	66.8000 -->	102.465	102.535	102.605	102.674	102.743	102.812	102.880	102.948
1395	67.6000 -->	103.150	103.216	103.282	103.347	103.412	103.476	103.540	103.604
1405	68.4000 -->	103.791	103.852	103.912	103.973	104.032	104.091	104.149	104.207
1415	69.2000 -->	104.376	104.431	104.488	104.539	104.591	104.644	104.695	104.746
1425	70.0000 -->	104.893	104.941	104.988	105.034	105.079	105.124	105.168	105.211
1435	70.8000 -->	105.334	105.374	105.412	105.450	105.487	105.523	105.558	105.593
1445	71.6000 -->	105.690	105.721	105.751	105.781	105.809	105.836	105.863	105.889
1455	72.4000 -->	105.961	105.983	106.005	106.026	106.046	106.065	106.083	106.101
1465	73.2000 -->	106.149	106.163	106.177	106.190	106.202	106.213	106.224	106.234
1475	74.0000 -->	106.259	106.266	106.272	106.278	106.283	106.287	106.290	106.293
1485	74.8000 -->	106.297	106.296	106.296	106.294	106.292	106.289	106.285	106.281
1495	75.6000 -->	106.265	106.258	106.250	106.242	106.233	106.224	106.214	106.203
1505	76.4000 -->	106.168	106.155	106.141	106.127	106.112	106.097	106.081	106.065
1515	77.2000 -->	106.012	105.994	105.975	105.955	105.935	105.915	105.894	105.872
1525	78.0000 -->	105.805	105.781	105.757	105.733	105.708	105.682	105.656	105.629
1535	78.8000 -->	105.546	105.517	105.488	105.457	105.427	105.396	105.364	105.331
1545	79.6000 -->	105.230	105.196	105.160	105.124	105.087	105.050	105.012	104.974
1555	80.4000 -->	104.855	104.815	104.774	104.732	104.690	104.647	104.604	104.560
1565	81.2000 -->	104.426	104.380	104.334	104.287	104.239	104.192	104.143	104.095
1575	82.0000 -->	103.945	103.895	103.844	103.792	103.740	103.688	103.635	103.582
1585	82.8000 -->	103.419	103.364	103.309	103.254	103.198	103.141	103.084	103.027
1595	83.6000 -->	102.854	102.795	102.737	102.677	102.618	102.558	102.498	102.437
1605	84.4000 -->	102.253	102.191	102.128	102.066	102.002	101.939	101.875	101.811
1615	85.2000 -->	101.615	101.549	101.483	101.416	101.349	101.281	101.214	101.145
1625	86.0000 -->	100.938	100.869	100.799	100.728	100.658	100.586	100.515	100.443
1635	86.8000 -->	100.227	100.154	100.081	100.008	99.934	99.860	99.786	99.712
1645	87.6000 -->	99.488	99.413	99.338	99.262	99.187	99.111	99.035	98.959
1655	88.4000 -->	98.730	98.653	98.576	98.498	98.421	98.343	98.265	98.187
1665	89.2000 -->	97.952	97.873	97.793	97.714	97.634	97.554	97.474	97.393

20-AUG-01 14:02

[DUMMY.416C10]416C10NE1D.RAD;1
TRC INC. 416C10NE1 01232
TOTAL Deltax = 0.080000 msec

572 O SN416 NECK EXT. CAL 10 6.2 m/sec
Npts = 8000; IP0 = 550; Filter = BLPP 100/ 250/ -16

	msec	TOTAN	(deg	)	Min, Max values =	100/ 250/ -16	106.297 @ 74.8000
1675	90.0000 -->	97.151	97.069	96.988	96.906	96.658	96.491
1685	90.8000 -->	96.323	96.238	96.153	96.067	95.807	95.632
1695	91.6000 -->	95.456	95.367	95.277	95.188	94.916	94.734
1705	92.4000 -->	94.550	94.458	94.365	94.272	93.992	93.804
1715	93.2000 -->	93.615	93.520	93.426	93.331	93.045	92.855
1725	94.0000 -->	92.663	92.567	92.471	92.375	92.085	91.891
1735	94.8000 -->	91.696	91.598	91.500	91.402	91.107	90.910
1745	95.6000 -->	90.712	90.613	90.514	90.415	90.118	89.919
1755	96.4000 -->	89.720	89.621	89.521	89.422	89.123	88.923
1765	97.2000 -->	88.722	88.622	88.521	88.420	88.115	87.911
1775	98.0000 -->	87.705	87.601	87.498	87.393	87.079	86.868
1785	98.8000 -->	86.656	86.549	86.442	86.335	86.011	85.794
1795	99.6000 -->	85.576	85.466	85.357	85.247	85.026	84.808

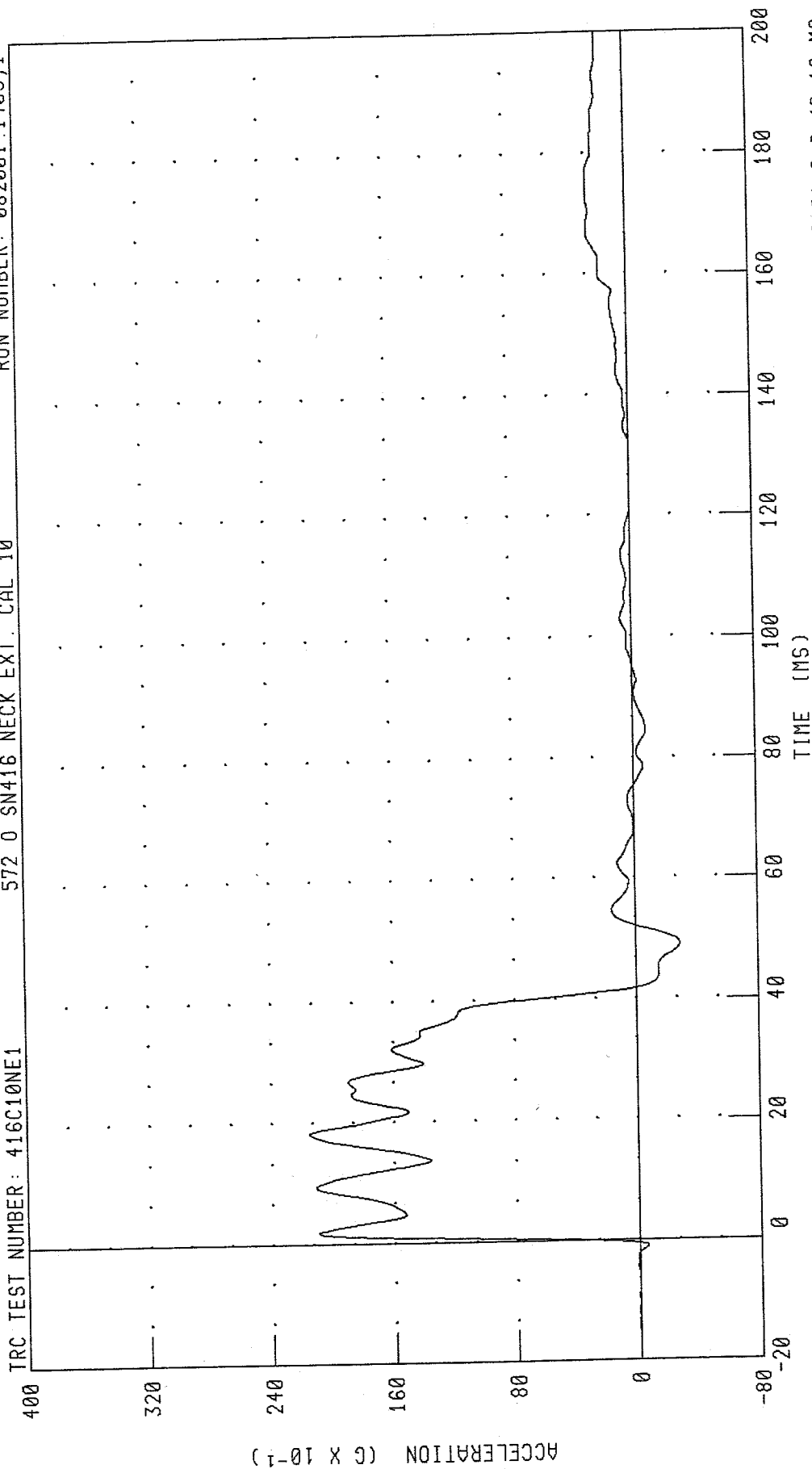
PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

PENDULUM DECELERATION

TRC TEST NUMBER: 416C10NE1

572 0 SN416 NECK EXT. CAL 10

RUN NUMBER: 082001.1405;1



PEAK DATA: 21.55 G @ 18.24 MS; -2.91 G @ 49.12 MS

CHANNEL: PENXC FILTER: CH. CLASS 180

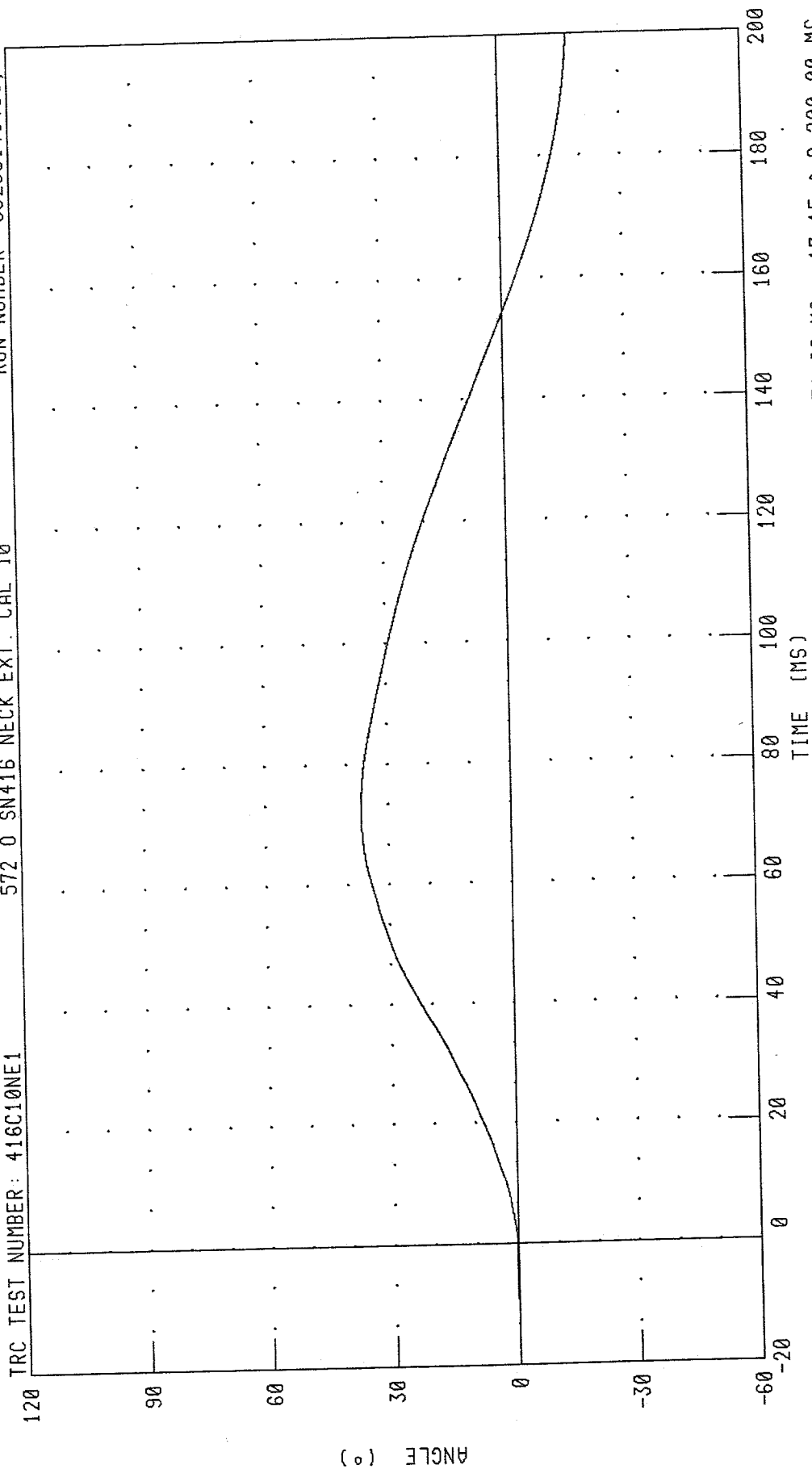
PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

ROTATION ABOUT BASE OF NECK

RUN NUMBER: 082001.1405;1

TRC TEST NUMBER: 416C10NE1

572 0 SN416 NECK EXT. CAL 10



PEAK DATA: 36.51 ° @ 71.92 MS; -17.15 ° @ 200.00 MS

FILTER: CH. CLASS 60

CHANNEL: BETA

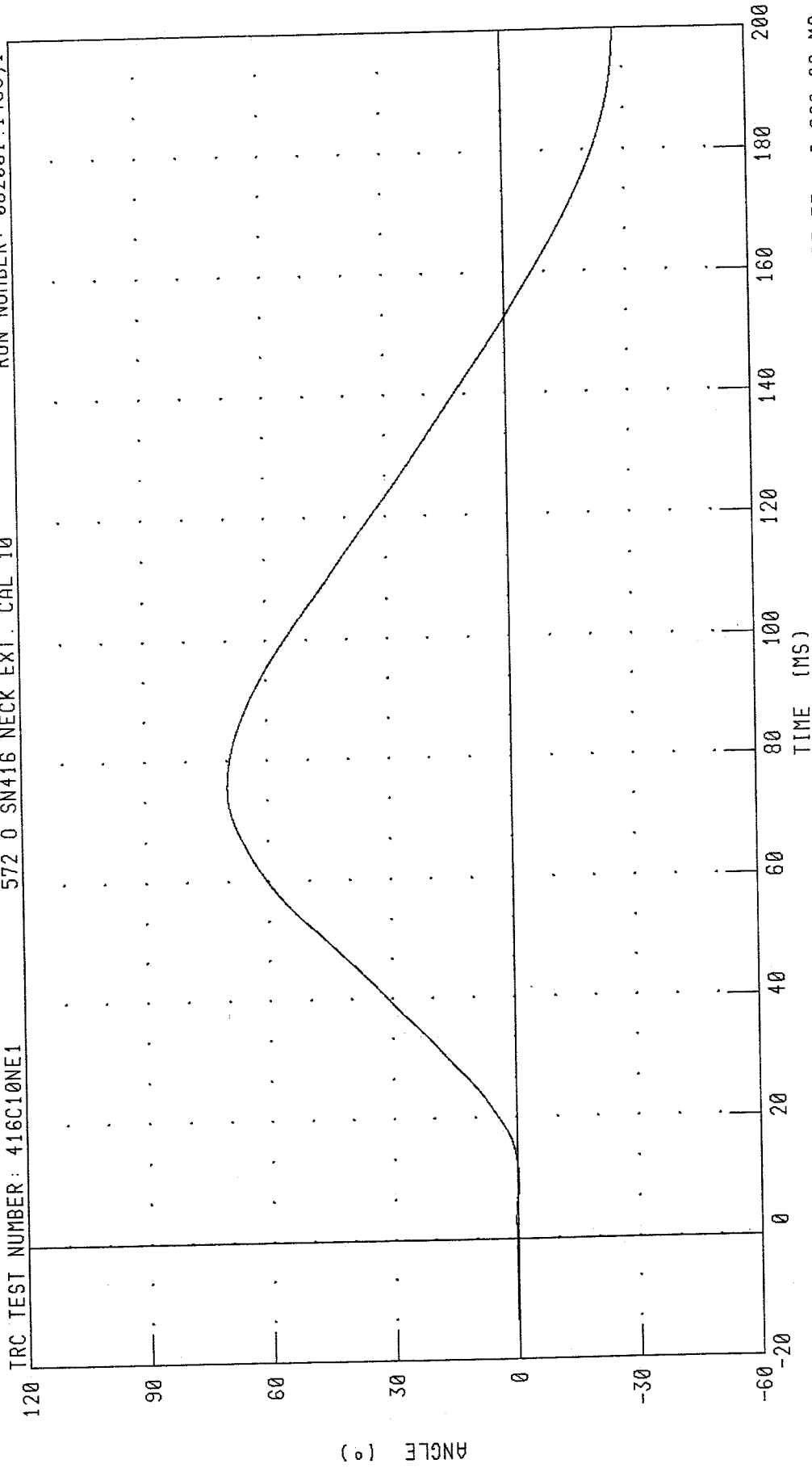
PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

ROTATION ABOUT OCCIPITAL CONDYLE

RUN NUMBER: 082001.1405;1

TRC TEST NUMBER: 416C10NE1

572 0 SN416 NECK EXT. CAL 10



PEAK DATA: 69.90 ° @ 75.60 MS; -27.73 ° @ 200.00 MS

CHANNEL: THETA FILTER: CH. CLASS 60

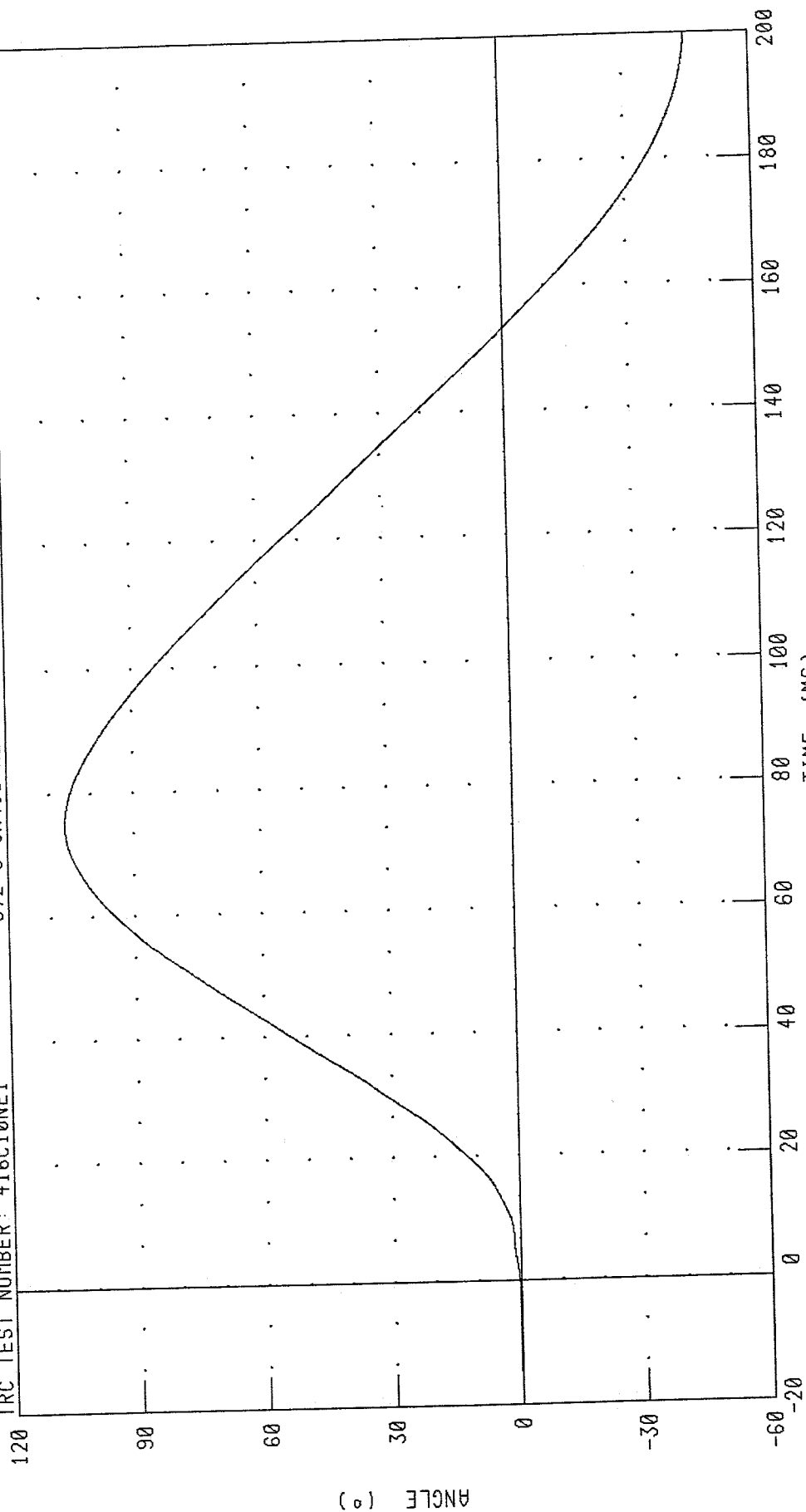
PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

TOTAL ROTATION

RUN NUMBER: 082001.1405;1

572 0 SN416 NECK EXT. CAL 10

TRC TEST NUMBER: 416C10NE1



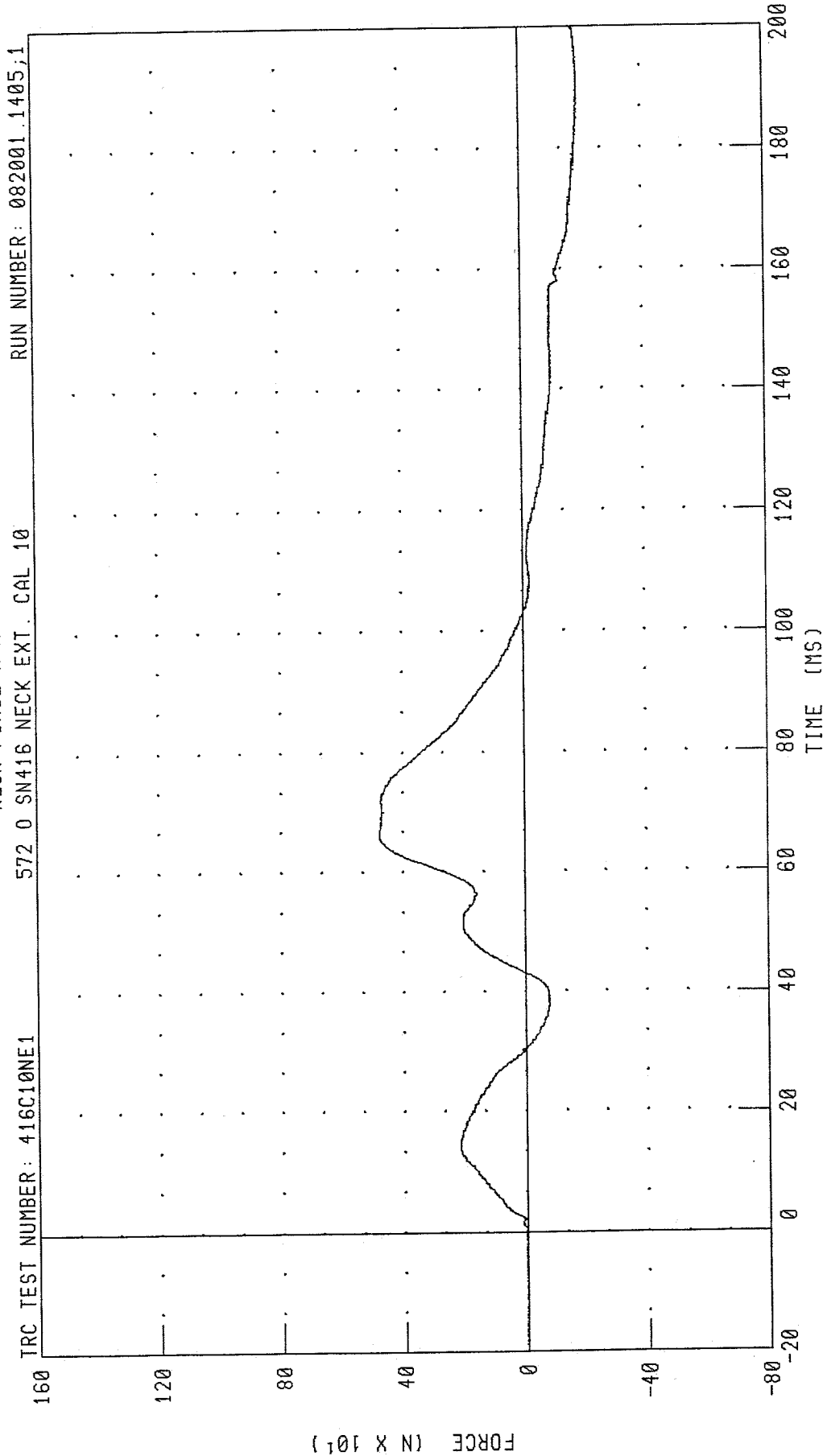
TIME (MS)

PEAK DATA: 106.30 ° @ 74.80 MS; -44.87 ° @ 200.00 MS

CHANNEL: TOTAN FILTER: CH. CLASS 60

PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

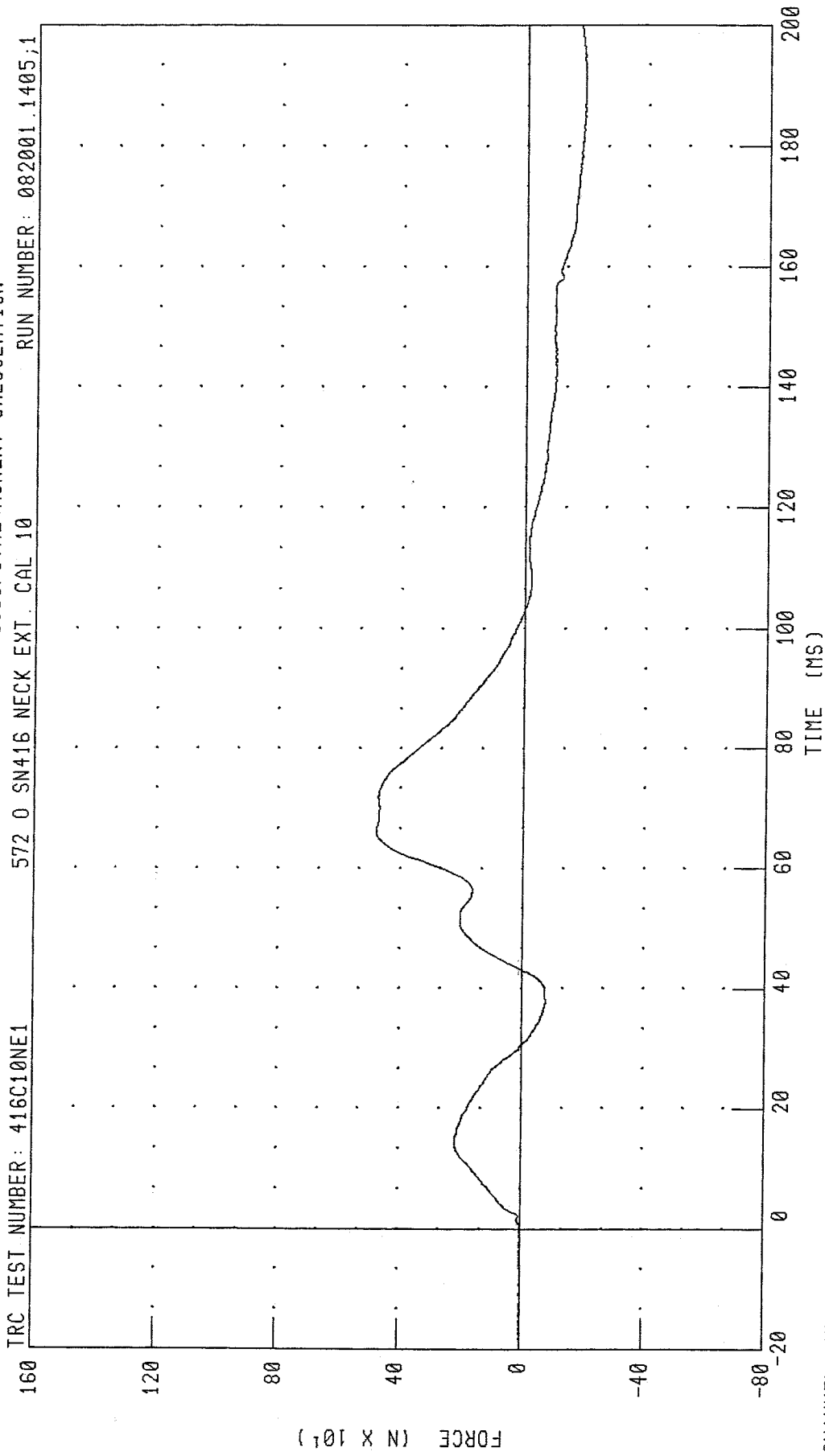
NECK FORCE X AXIS



CHANNEL: NEKXF FILTER: CH. CLASS 1000

PEAK DATA: 476.97 N @ 65.52 MS; -192.18 N @ 184.88 MS

PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION
NECK FORCE X AXIS FILTERED FOR USE IN OCCIPITAL MOMENT CALCULATION



CHANNEL: NEKXFC FILTER: CH. CLASS 600

PEAK DATA: 477.13 N @ 65.84 MS, -192.27 N @ 188.88 MS

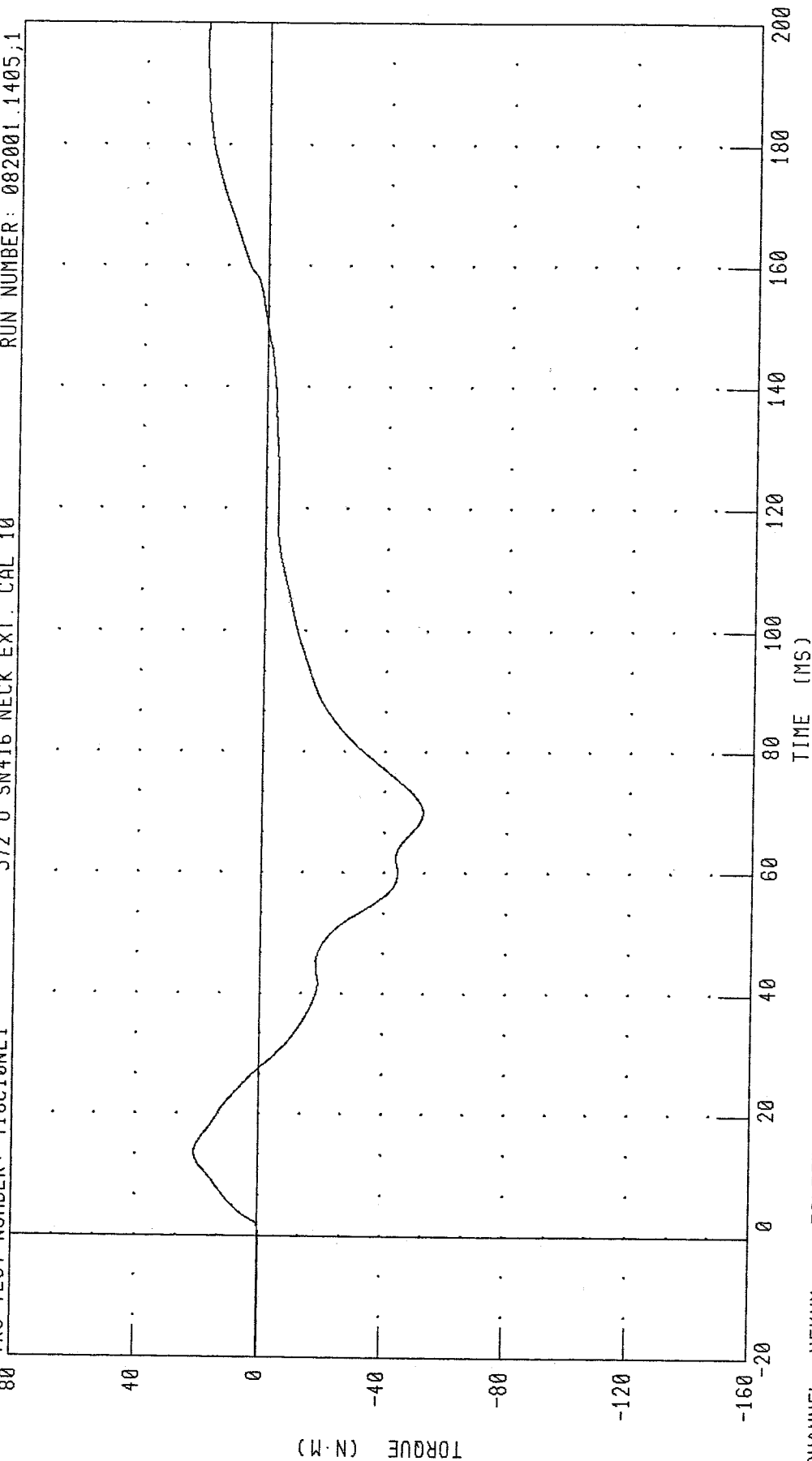
PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

NECK MOMENT Y AXIS

TRC TEST NUMBER: 416C10NE1

572 0 SN416 NECK EXT. CAL 10

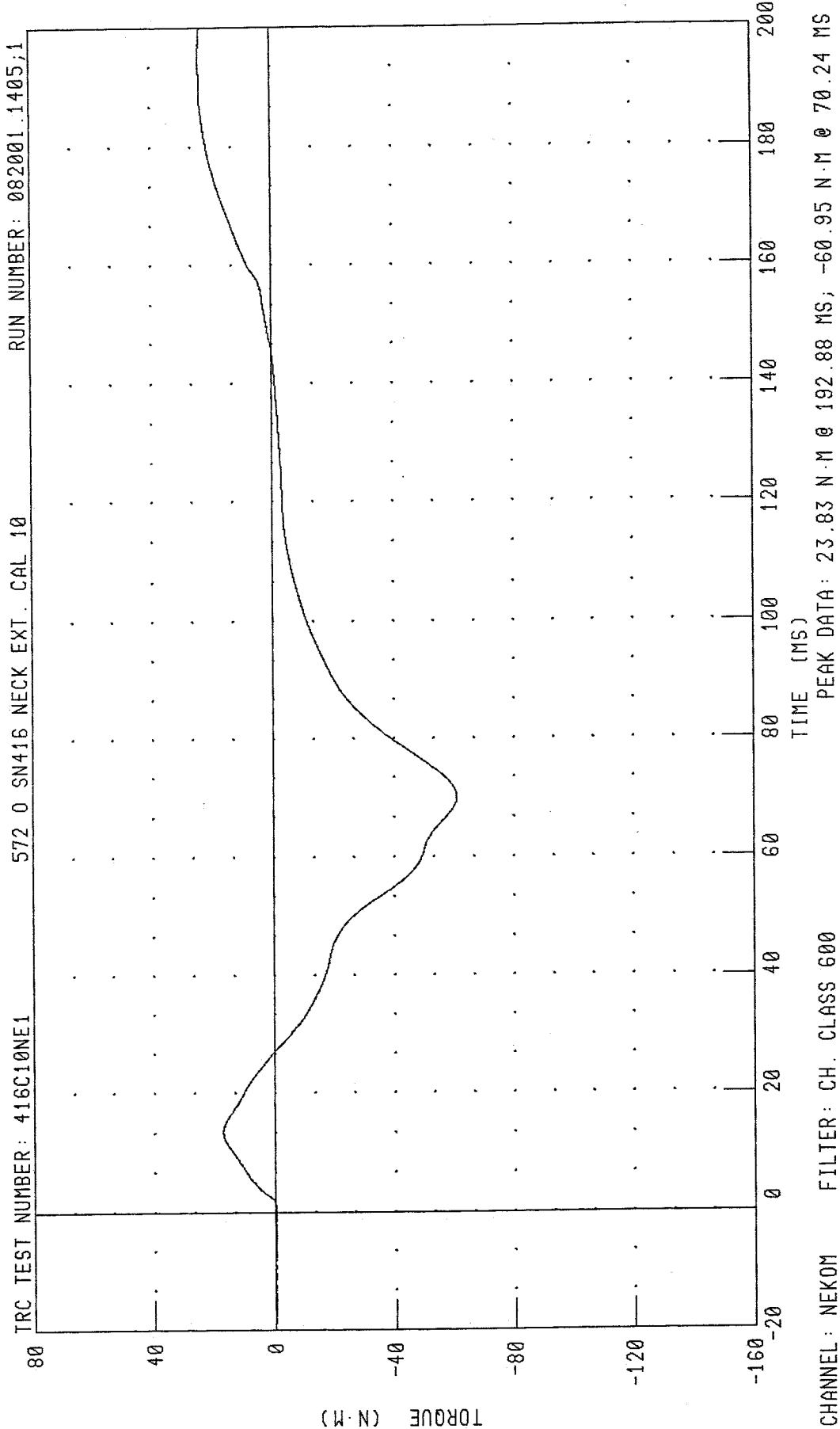
RUN NUMBER: 082001.1405,1



CHANNEL: NEKYM FILTER: CH. CLASS 600

PEAK DATA: 21.11 N·M @ 13.76 MS; -52.64 N·M @ 70.16 MS

PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION
TOTAL MOMENT ABOUT OCCIPITAL CONDYLE



TRANSPORTATION RESEARCH CENTER INC.

THORAX IMPACT TEST

HYBRID III SMALL FEMALE

21-AUG-01

TRC INC.

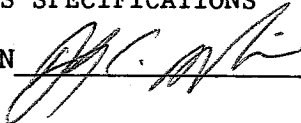
TEST NO: 416C10TH1

572 O SN416 THORAX CAL10

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	6.62 M/S
MAXIMUM DEFLECTION	50 - 58 MM	55.0 MM
PEAK RESISTIVE FORCE DURING DEFLECTION INTERVAL	3900 - 4400 N	4214. N
INTERNAL HYSTERESIS	69% - 85%	73.0%
PEAK FORCE % DURING 18 MM & 50 MM DEFLECTION	<= 105%	94.5 %

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 082101.1514;1

	msec	CSTXD (mm)	Min, Max values =			37.062 @ 10.0000	55.033 @ 20.0800
1216	10.0000 -->	37.062	37.498	37.715	37.933	38.375	38.821
1226	10.8000 -->	39.278	39.752	39.992	40.231	40.707	41.188
1236	11.6000 -->	41.678	42.162	42.398	42.629	43.087	43.563
1246	12.4000 -->	44.090	44.689	45.012	45.342	45.980	46.522
1256	13.2000 -->	46.936	47.250	47.383	47.510	47.776	48.107
1266	14.0000 -->	48.535	49.050	49.328	49.611	50.165	50.658
1276	14.8000 -->	51.046	51.306	51.391	51.454	51.537	51.585
1286	15.6000 -->	51.632	51.718	51.785	51.869	52.077	52.311
1296	16.4000 -->	52.531	52.714	52.787	52.848	52.942	53.009
1306	17.2000 -->	53.070	53.150	53.202	53.264	53.425	53.622
1316	18.0000 -->	53.822	53.993	54.065	54.129	54.232	54.311
1326	18.8000 -->	54.385	54.465	54.511	54.562	54.678	54.806
1336	19.6000 -->	54.916	54.987	55.009	55.024	55.033	55.004
1346	20.4000 -->	54.939	54.867	54.833	54.800	54.743	54.702
1356	21.2000 -->	54.674	54.646	54.628	54.605	54.542	54.457
1366	22.0000 -->	54.361	54.273	54.233	54.191	54.094	53.970
1376	22.8000 -->	53.815	53.642	53.555	53.470	53.313	53.174
1386	23.6000 -->	53.043	52.905	52.831	52.754	52.595	52.428
1396	24.4000 -->	52.250	52.059	51.958	51.855	51.648	51.434
1406	25.2000 -->	51.204	50.952	50.822	50.692	50.440	50.205
1416	26.0000 -->	49.979	49.748	49.626	49.498	49.224	48.938
1426	26.8000 -->	48.650	48.356	48.209	48.064	47.782	47.515
1436	27.6000 -->	47.263	47.016	46.889	46.758	46.478	46.163
1446	28.4000 -->	45.812	45.443	45.261	45.086	44.759	44.443
1456	29.2000 -->	44.121	43.789	43.625	43.466	43.164	42.863
1466	30.0000 -->	42.541					42.705

	msec	PENXF (N	)	Min, Max values =	2382.9 @ 26.9600	4214.9 @ 16.5600
1272	14.4800 -->	3983.6	3998.9	4044.6	4059.8	4104.5
1282	15.2800 -->	4131.4	4143.3	4170.7	4177.5	4188.4
1292	16.0800 -->	4201.6	4205.3	4213.1	4214.4	4193.2
1302	16.8800 -->	4206.9	4202.4	4185.3	4179.3	4213.0
1312	17.6800 -->	4148.7	4141.7	4117.5	4108.4	4161.3
1322	18.4800 -->	4061.1	4052.1	4027.5	4019.8	4155.2
1332	19.2800 -->	3976.7	3966.3	3932.9	3921.7	4079.9
1342	20.0800 -->	3867.1	3856.1	3821.5	3809.1	3995.7
1352	20.8800 -->	3743.1	3730.0	3693.2	3681.6	3888.8
1362	21.6800 -->	3620.4	3606.7	3562.4	3547.0	3770.0
1372	22.4800 -->	3468.0	3452.1	3403.2	3385.9	3646.2
1382	23.2800 -->	3292.5	3273.3	3217.4	3199.3	3499.7
1392	24.0800 -->	3109.1	3090.4	3032.0	3011.8	3330.9
1402	24.8800 -->	2910.9	2891.2	2832.0	2811.7	3145.5
1412	25.6800 -->	2705.0	2683.2	2619.2	2598.5	2971.1
1422	26.4800 -->	2500.8	2481.6	2442.8	2403.0	2748.5
						2539.1
						2558.5
						2578.3
						2791.0
						2991.5
						3181.3
						3368.1
						3349.7
						3163.5
						3145.5
						3127.4
						2930.8
						2726.8
						2519.9
						2382.9

	msec	PENXF	(N	)	Min, Max values =	2707.7 @	7.7600	3983.6 @	14.4800
1171	6.4000 -->	3190.3	3139.3	3090.4	2999.7	2919.2	2883.1	2849.8	2819.7
1181	7.2000 -->	2792.8	2769.4	2749.8	2722.2	2709.3	2707.7	2708.8	2712.4
1191	8.0000 -->	2718.3	2726.5	2737.3	2766.9	2808.2	2833.3	2861.2	2891.8
1201	8.8000 -->	2924.8	2960.0	2997.0	3075.3	3156.0	3196.5	3236.6	3276.5
1211	9.6000 -->	3316.2	3355.7	3395.0	3472.9	3511.0	3583.4	3617.1	3648.6
1221	10.4000 -->	3677.9	3704.8	3729.4	3771.4	3804.8	3818.7	3831.1	3842.2
1231	11.2000 -->	3852.1	3860.9	3868.5	3879.5	3883.5	3882.8	3880.5	3876.8
1241	12.0000 -->	3872.2	3866.9	3861.3	3850.0	3839.6	3835.1	3831.0	3827.4
1251	12.8000 -->	3824.4	3821.8	3819.7	3816.8	3816.9	3818.6	3822.0	3827.2
1261	13.6000 -->	3834.2	3843.2	3853.9	3879.1	3907.6	3922.5	3937.7	3952.9
1271	14.4000 -->	3968.3	3983.6						

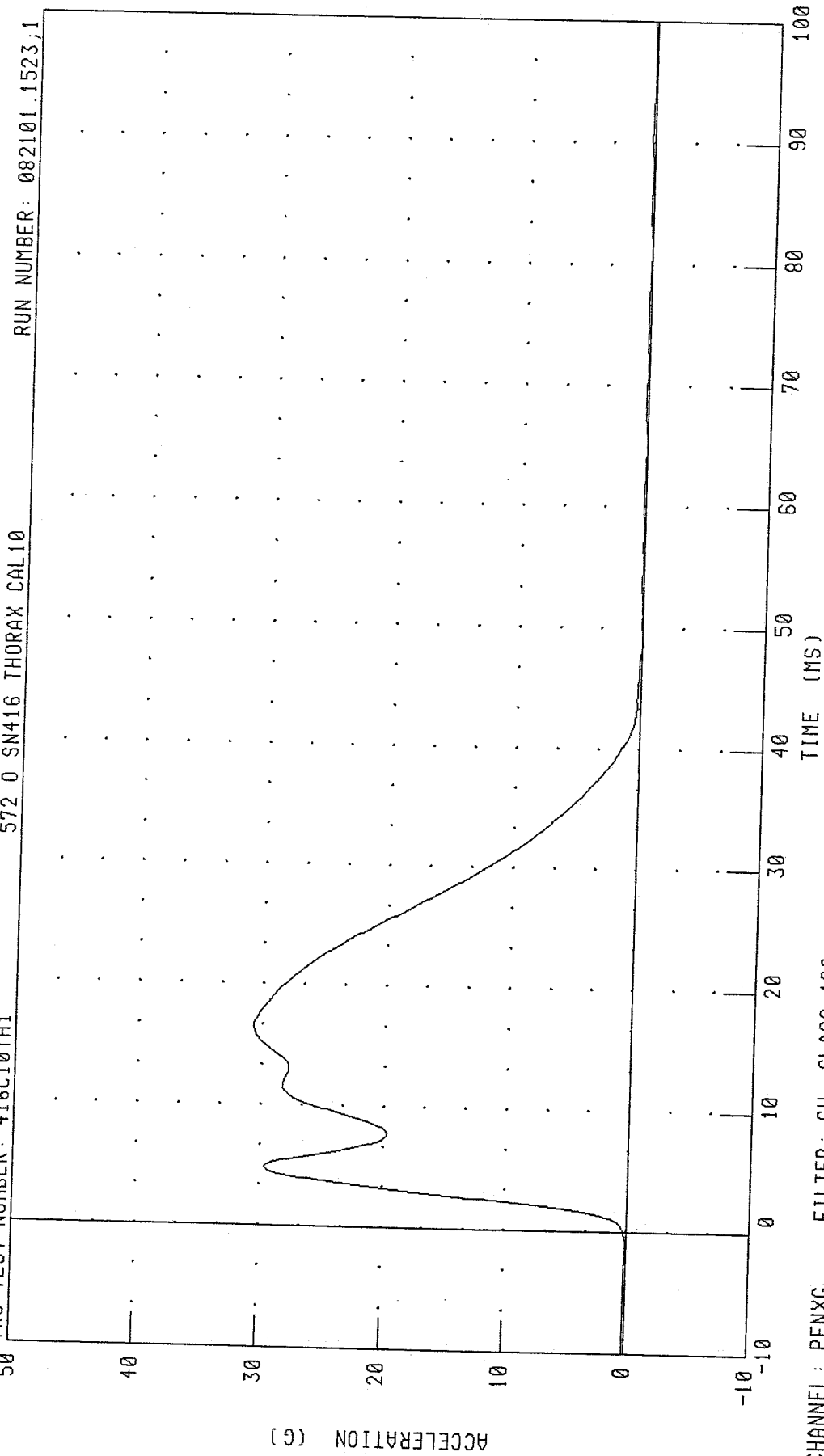
PART 572-0 HYBRID III SMALL FEMALE - THORAX CALIBRATION

PENDULUM DECELERATION

TRC TEST NUMBER: 416C10TH1

572 0 SN416 THORAX CAL10

RUN NUMBER: 082101.1523,1



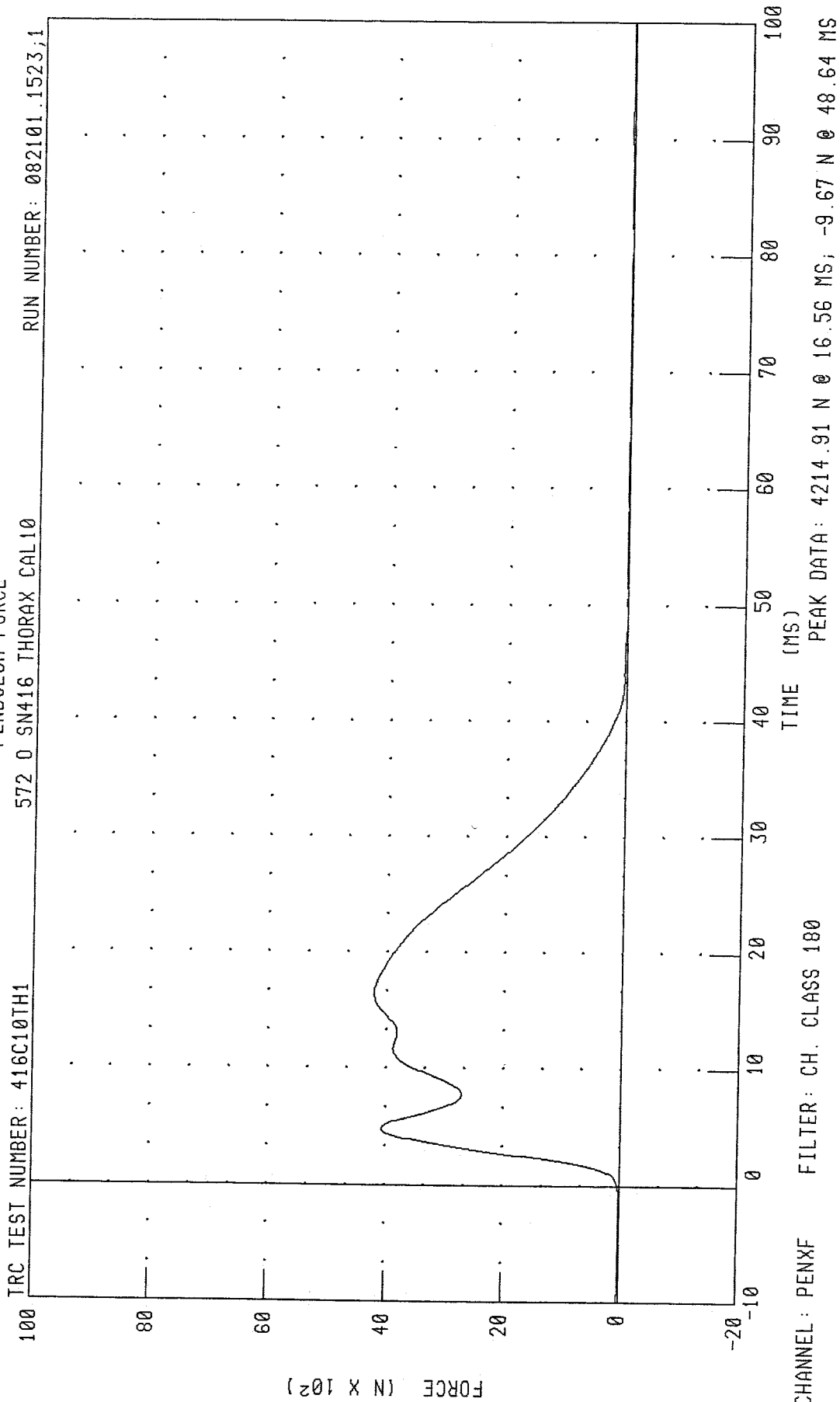
CHANNEL: PENXG

FILTER: CH. CLASS 180

PEAK DATA: 30.71 G @ 16.56 MS; -0.07 G @ 48.64 MS

PART 572-0 HYBRID III SMALL FEMALE - THORAX CALIBRATION

PENDULUM FORCE



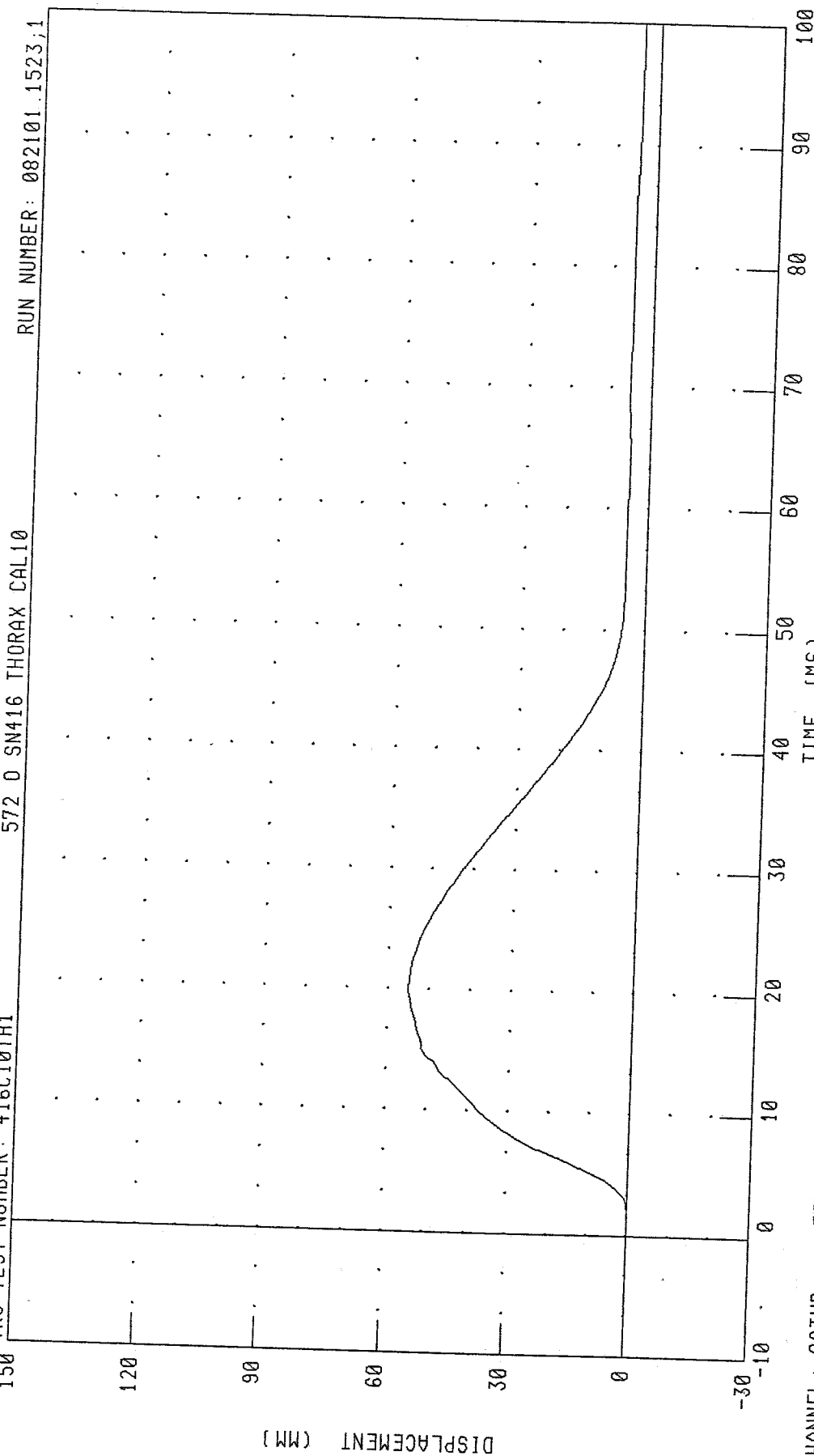
PART 572-0 HYBRID III SMALL FEMALE - THORAX CALIBRATION

STERNUM DISPLACEMENT

TRC TEST NUMBER: 416C10TH1

572 0 SN416 THORAX CAL10

RUN NUMBER: 082101.1523;1



CHANNEL: CSTXD FILTER: CH. CLASS 600

PEAK DATA: 55.03 MM @ 20.08 MS; -0.02 MM @ -1.28 MS

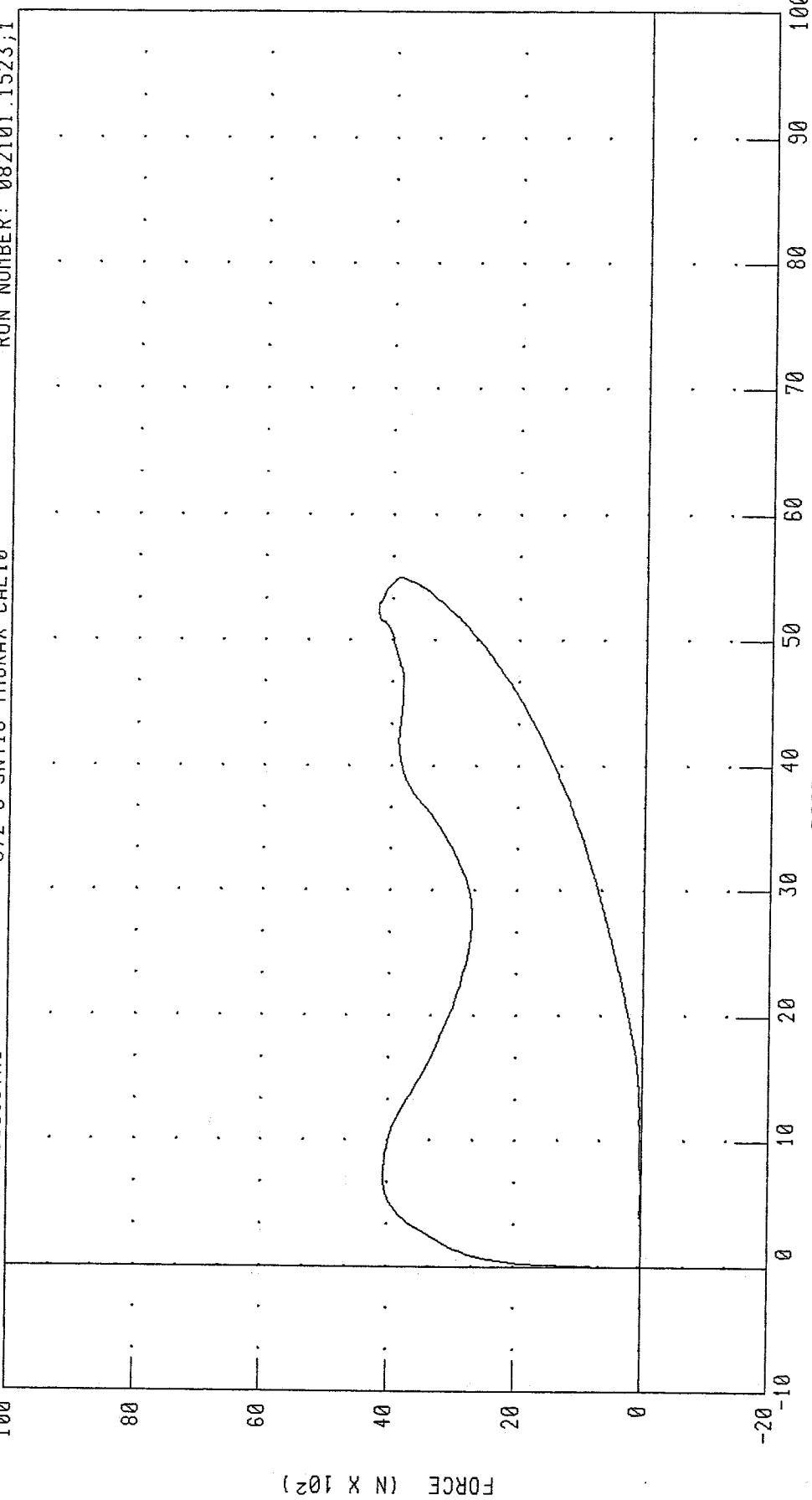
PART 572-0 HYBRID III SMALL FEMALE - THORAX CALIBRATION

CHEST DISPLACEMENT VS PENDULUM FORCE

TRC TEST NUMBER: 416C10TH1

572 0 SN416 THORAX CAL10

RUN NUMBER: 082101.1523;1



CHANNEL: CSTXD
PENXF

FILTER: CH. CLASS 600
CH. CLASS 180

PEAK DATA:

55.03 MM @ 20.08 MS;
4214.91 N @ 16.56 MS;

-0.02 MM @ -1.28 MS
-9.67 N @ 48.64 MS

TRANSPORTATION RESEARCH CENTER INC.

TORSO FLEXION TEST

HYBRID III SMALL FEMALE

CAL DATE: 20-Aug-01

TRC, INC. TEST NO: 416C10TF1 572 O SN 416 TORSO FLEX CAL 10

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	65 %
INITIAL ANGLE OF UNSUPPORTRED DUMMY	<= 20 DEG. REFERENCED TO VERTICAL	9 DEG.
MAXIMUM FORCE AT 45 DEG. DURING 10 SECOND PERIOD	320 -390 N	335 N
RETURN ANGLE @ 3MINUTES	+/- 8 DEG OF INTIAL ANGLE	12 DEG.

TEST MEETS SPECIFICATIONS

TECHNICIAN



TRANSPORTATION RESEARCH CENTER INC.

LEFT KNEE IMPACT TEST

HYBRID III SMALL FEMALE

15-AUG-01

TRC INC.

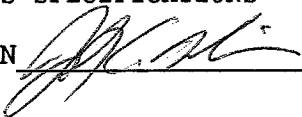
TEST NO: 416C10LK1

572 O SN416 LEFT KNEE CAL10

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	54.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.09 M/S
PEAK KNEE IMPACT FORCE 3.0 KG PENDULUM	3400 - 4200 N	3749.8 N

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 081501.1105;1

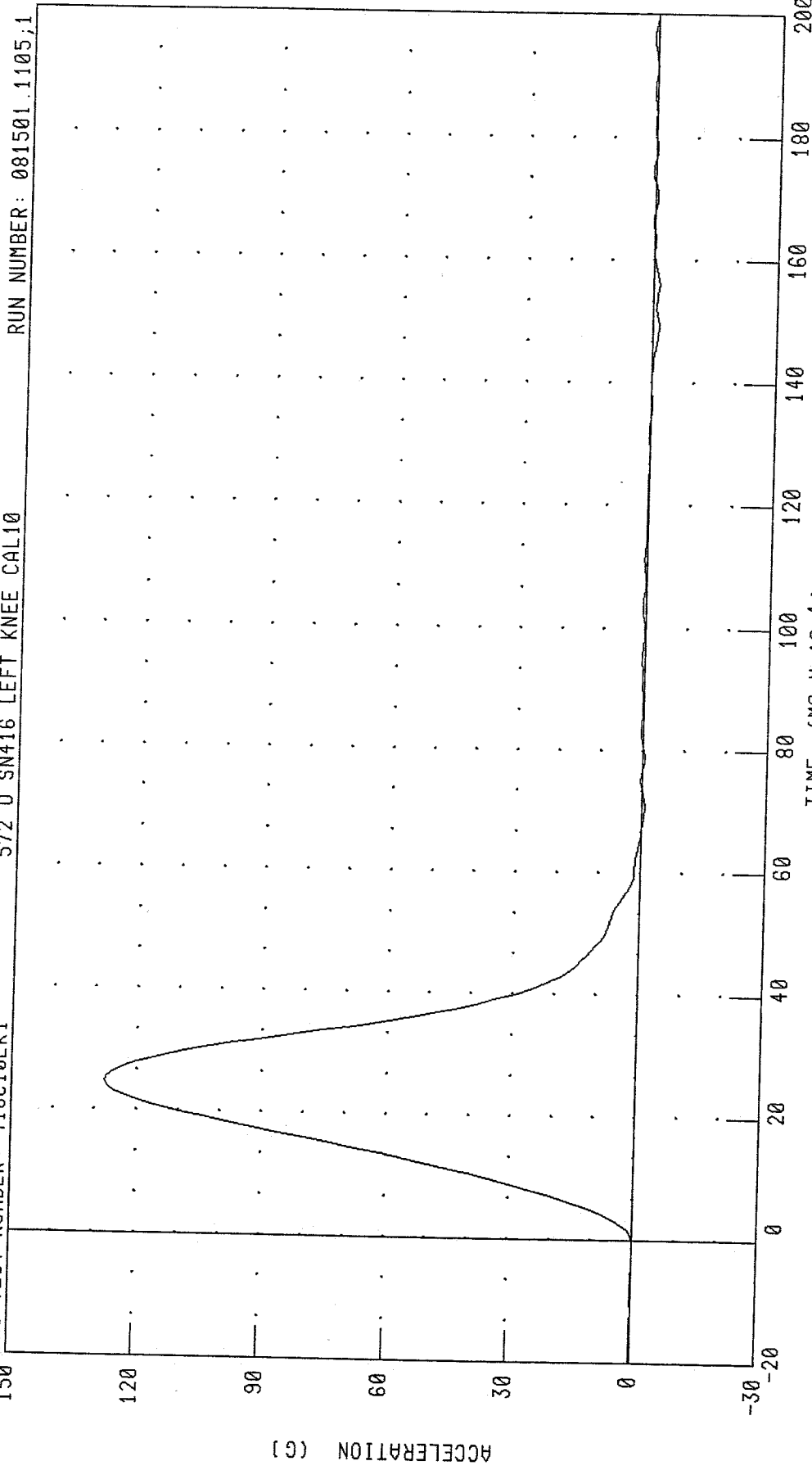
PART 572-0 HYBRID III SMALL FEMALE - LEFT KNEE CALIBRATION

PENDULUM DECELERATION (5 KG PEND.)

IRC TEST NUMBER: 416C10LK1

572 0 SN416 LEFT KNEE CAL10

RUN NUMBER: 081501.1105;1



CHANNEL: PENXC

FILTER: CH. CLASS 600

TIME (MS X 10⁻¹)

PEAK DATA: 127.73 G @ 2.48 MS; -1.51 G @ 14.88 MS

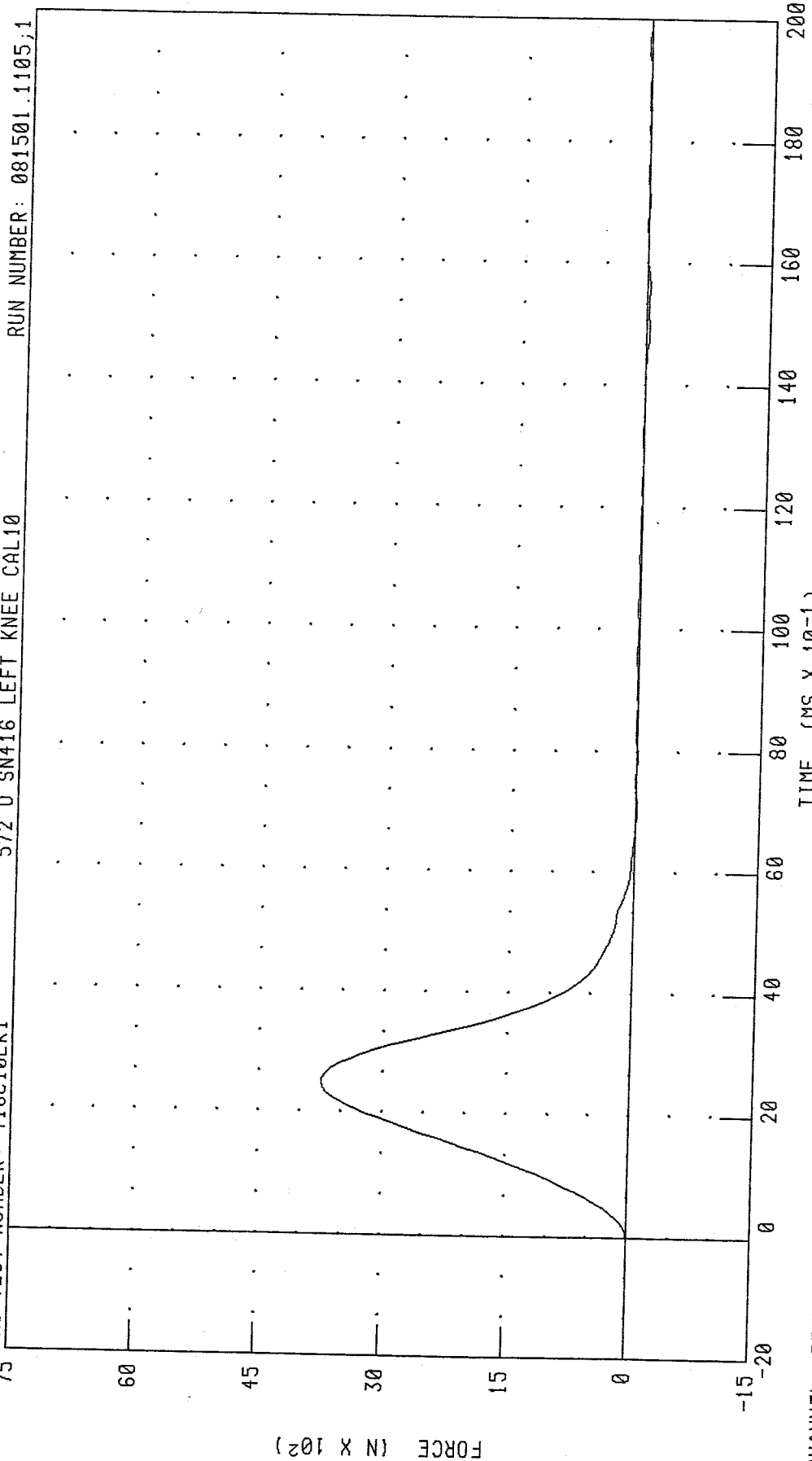
PART 572-0 HYBRID III SMALL FEMALE - LEFT KNEE CALIBRATION

PENDULUM FORCE (5 KG PEND.)

TRC TEST NUMBER: 416C10LK1

572 0 SN416 LEFT KNEE CAL10

RUN NUMBER: 081501.1105;1



CHANNEL: PENXF FILTER: CH. CLASS 600

PEAK DATA: 3749.81 N @ 2.48 MS; -44.42 N @ 14.88 MS

TRANSPORTATION RESEARCH CENTER INC.

RIGHT KNEE IMPACT TEST

HYBRID III SMALL FEMALE

15-AUG-01

TRC INC.

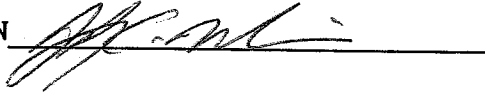
TEST NO: 416C10RK1

572 0 SN416 R.KNEE CAL10

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	54.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.09 M/S
PEAK KNEE IMPACT FORCE 3.0 KG PENDULUM	3400 - 4200 N	3796.3 N

TEST MEETS SPECIFICATIONS

TECHNICIAN



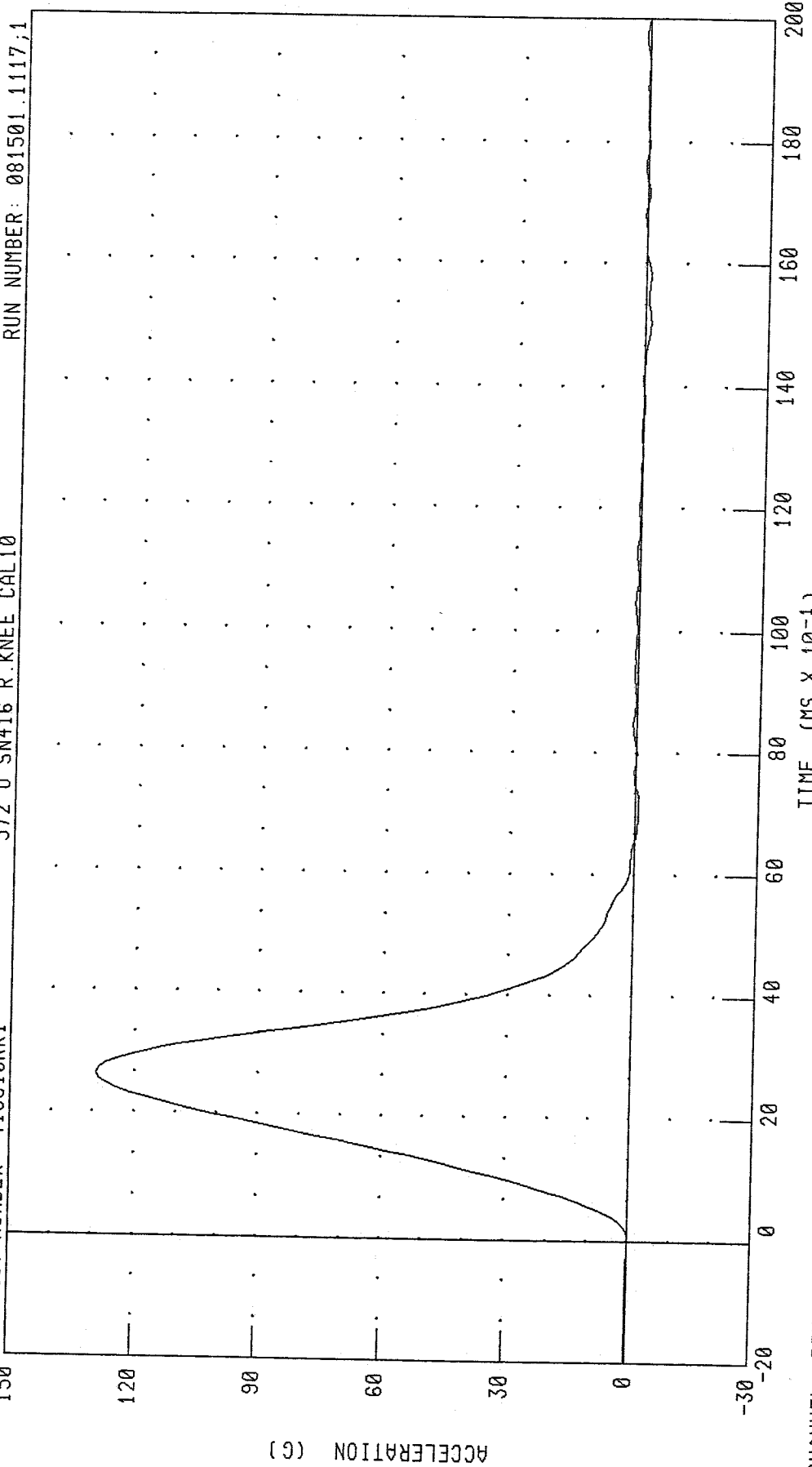
RUN NUMBER: 081501.1116;1

PART 572-0 HYBRID III SMALL FEMALE - RIGHT KNEE CALIBRATION
PENDULUM DECELERATION (5 KG PEND.)

TRC TEST NUMBER: 416C10RK1

572 0 SN416 R.KNEE CAL10

RUN NUMBER: 081501.1117,1



CHANNEL: PENXC FILTER: CH. CLASS 600

PEAK DATA: 129.32 G @ 2.64 MS; -1.46 G @ 15.04 MS

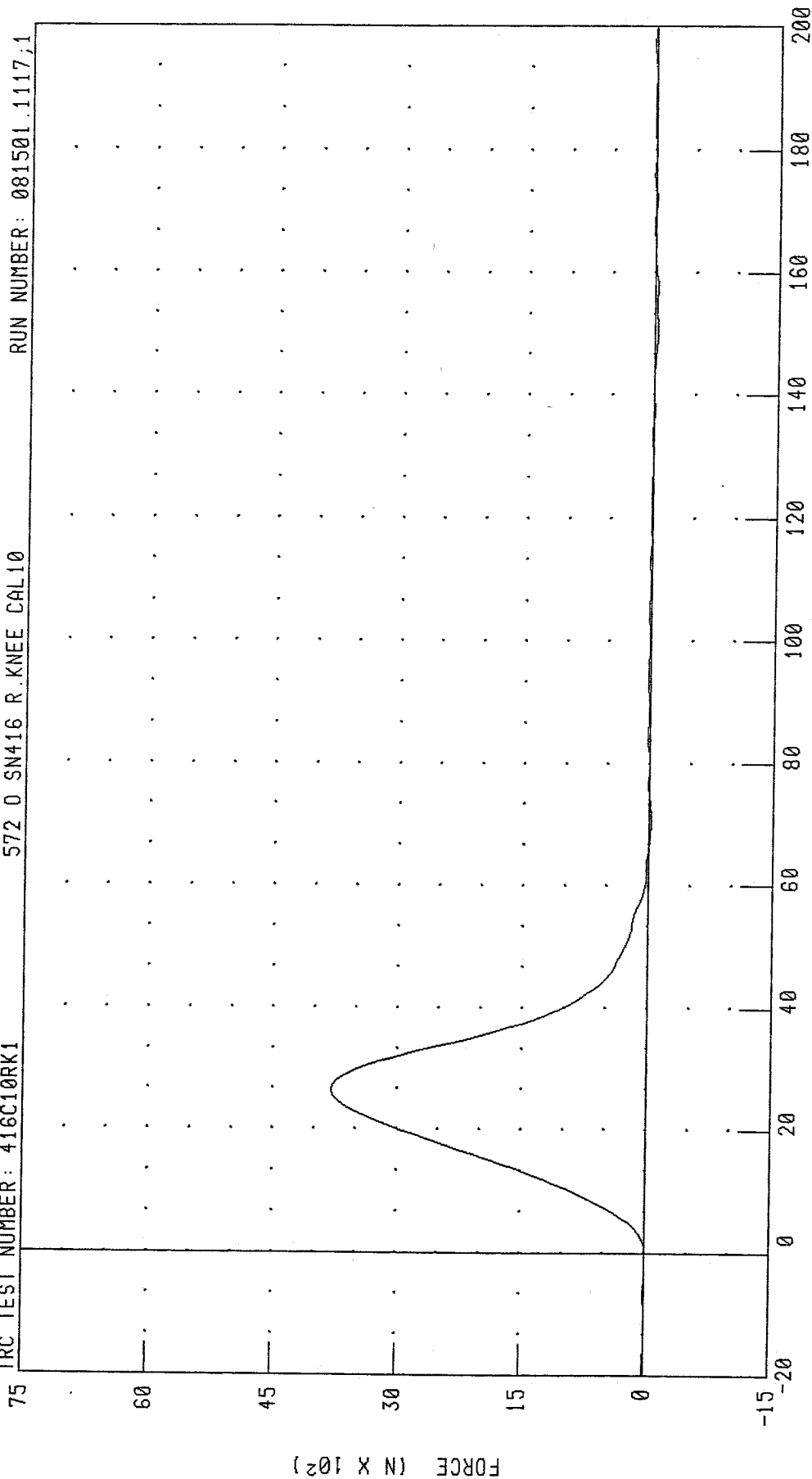
PART 572-0 HYBRID III SMALL FEMALE - RIGHT KNEE CALIBRATION

PENDULUM FORCE (5 KG PEND.)

TRC TEST NUMBER: 416C10RK1

572 0 SN416 R.KNEE CAL10

RUN NUMBER: 081501.1117,1



CHANNEL: PENXF FILTER: CH. CLASS 600

TIME ($ms \times 10^{-1}$)

PEAK DATA: 3796.39 N @ 2.64 MS, -42.82 N @ 15.04 MS

TRANSPORTATION RESEARCH CENTER INC.

KNEE SLIDER TEST

HYBRID III SMALL FEMALE

16-AUG-01

LEFT KNEE

TRC INC.

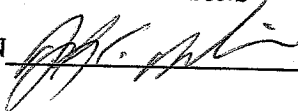
TEST NO: 416C10LS1

572 0 SN416 LEFT SLIDER CAL10

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	22.2 DEG. C
RELATIVE HUMIDITY	10 - 70 %	62.0 %
PENDULUM VELOCITY	2.70-2.80 M/S	2.78 M/S
PEAK DISPLACEMENT	12.7 - 15.5 MM	14.3 MM

TEST MEETS SPECIFICATIONS

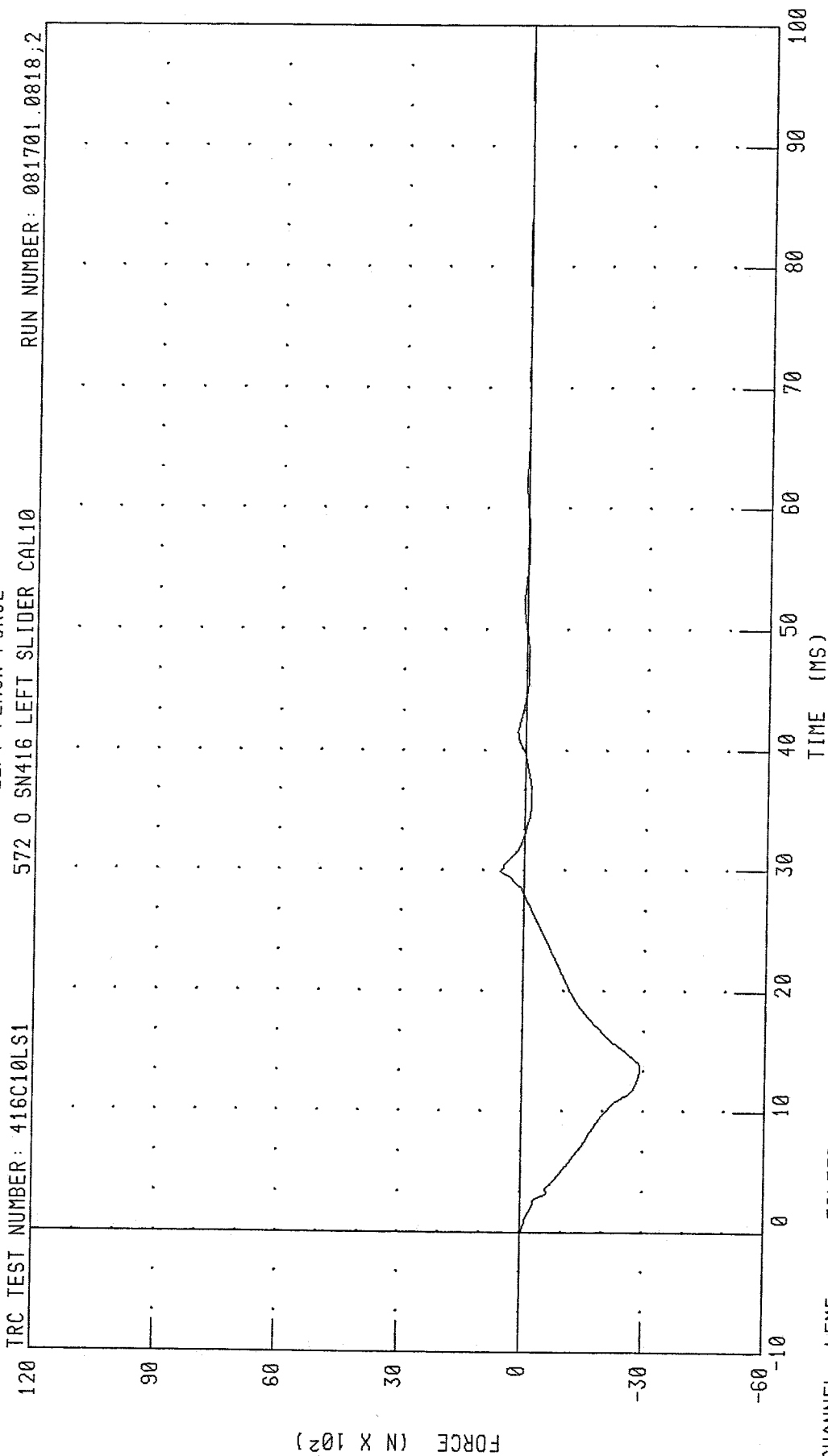
TECHNICIAN



RUN NUMBER: 081601.1306;1

PART 572-0 HYBRID III SMALL FEMALE - LEFT KNEE SLIDER CALIBRATION

LEFT FEMUR FORCE



CHANNEL: LFMF

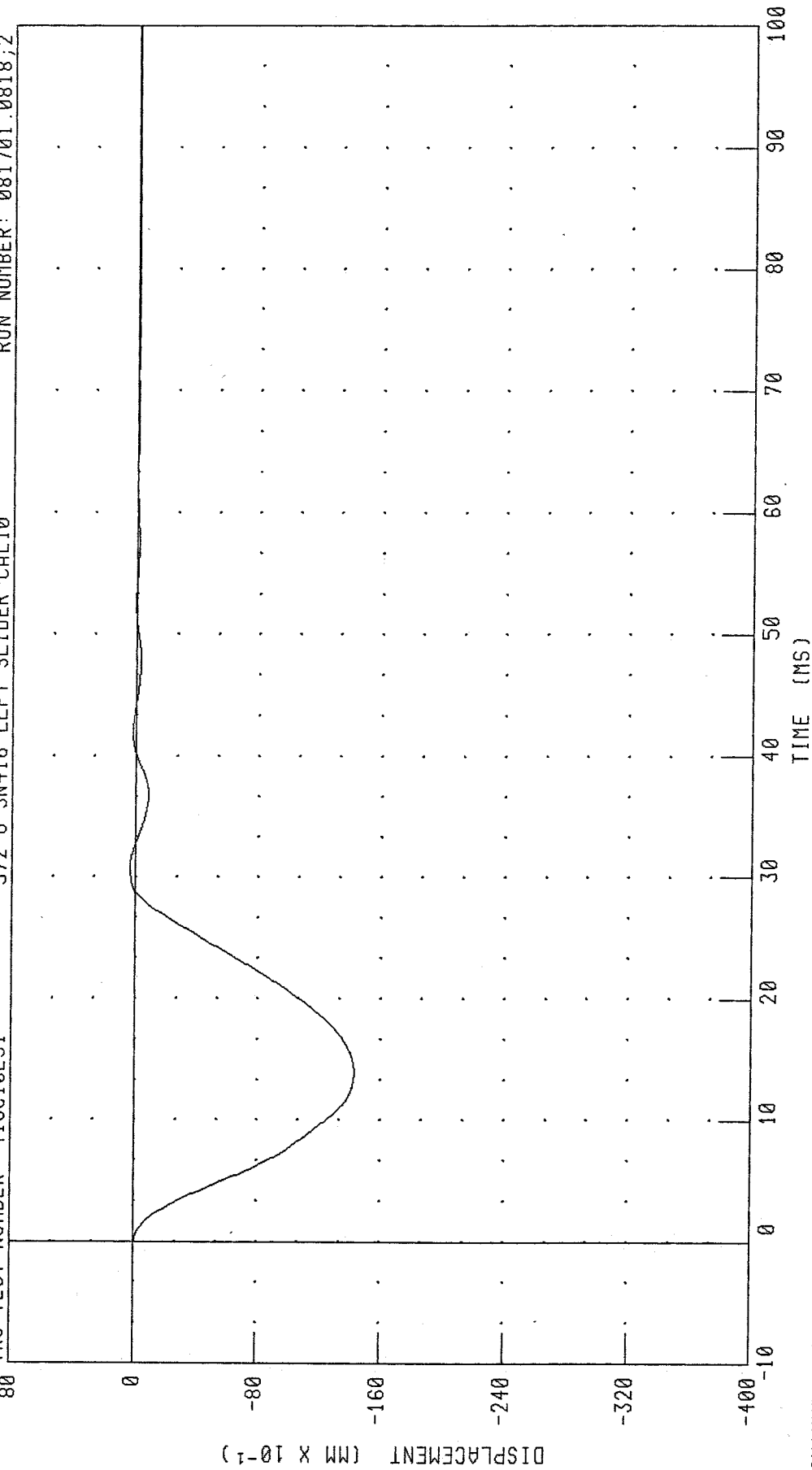
FILTER: CH. CLASS 600

PEAK DATA: 564.08 N @ 29.92 MS; -2915.02 N @ 13.60 MS

PART 572-0 HYBRID III SMALL FEMALE - LEFT KNEE SLIDER CALIBRATION

LEFT KNEE DISPLACEMENT

TRC TEST NUMBER: 416C10LS1 572 0 SN416 LEFT SLIDER CAL10 RUN NUMBER: 081701.0818;2

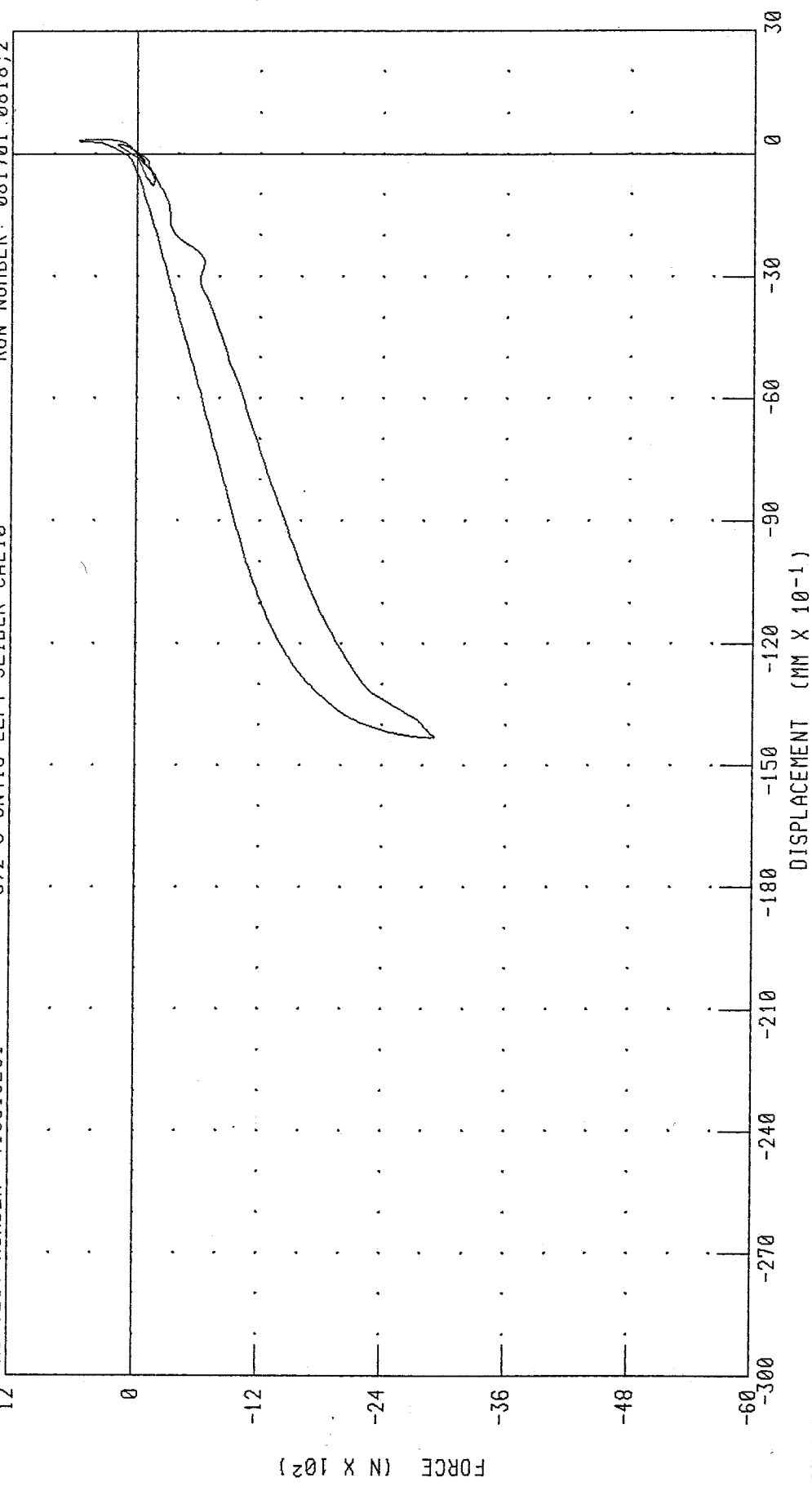


CHANNEL: KNLXD FILTER: CH. CLASS 180

PEAK DATA: 0.36 MM @ 30.80 MS; -14.32 MM @ 14.00 MS

PART 572-0 HYBRID III SMALL FEMALE - LEFT KNEE SLIDER CALIBRATION
 LEFT KNEE DISPLACEMENT VS FEMUR FORCE

12 IRC TEST NUMBER: 416C10LS1 572 0 SN416 LEFT SLIDER CAL10 RUN NUMBER: 081701.0818;2



CHANNEL: KNLXD FILTER: CH. CLASS 180
 LFMF CH. CLASS 600
 DISPLACEMENT (MM X 10⁻¹)
 PEAK DATA: 0.36 MM @ 30.80 MS; -14.32 MM @ 14.00 MS
 564.08 N @ 29.92 MS; -2915.02 N @ 13.60 MS

TRANSPORTATION RESEARCH CENTER INC.

KNEE SLIDER TEST

HYBRID III SMALL FEMALE

16-AUG-01

RIGHT KNEE
TRC INC.

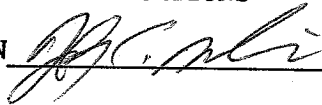
TEST NO: 416C10RS1

572 O SN416 RIGHT SLIDER 10

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	64.0 %
PENDULUM VELOCITY	2.70-2.80 M/S	2.77 M/S
PEAK DISPLACEMENT	12.7 - 15.5 MM	14.8 MM

TEST MEETS SPECIFICATIONS

TECHNICIAN

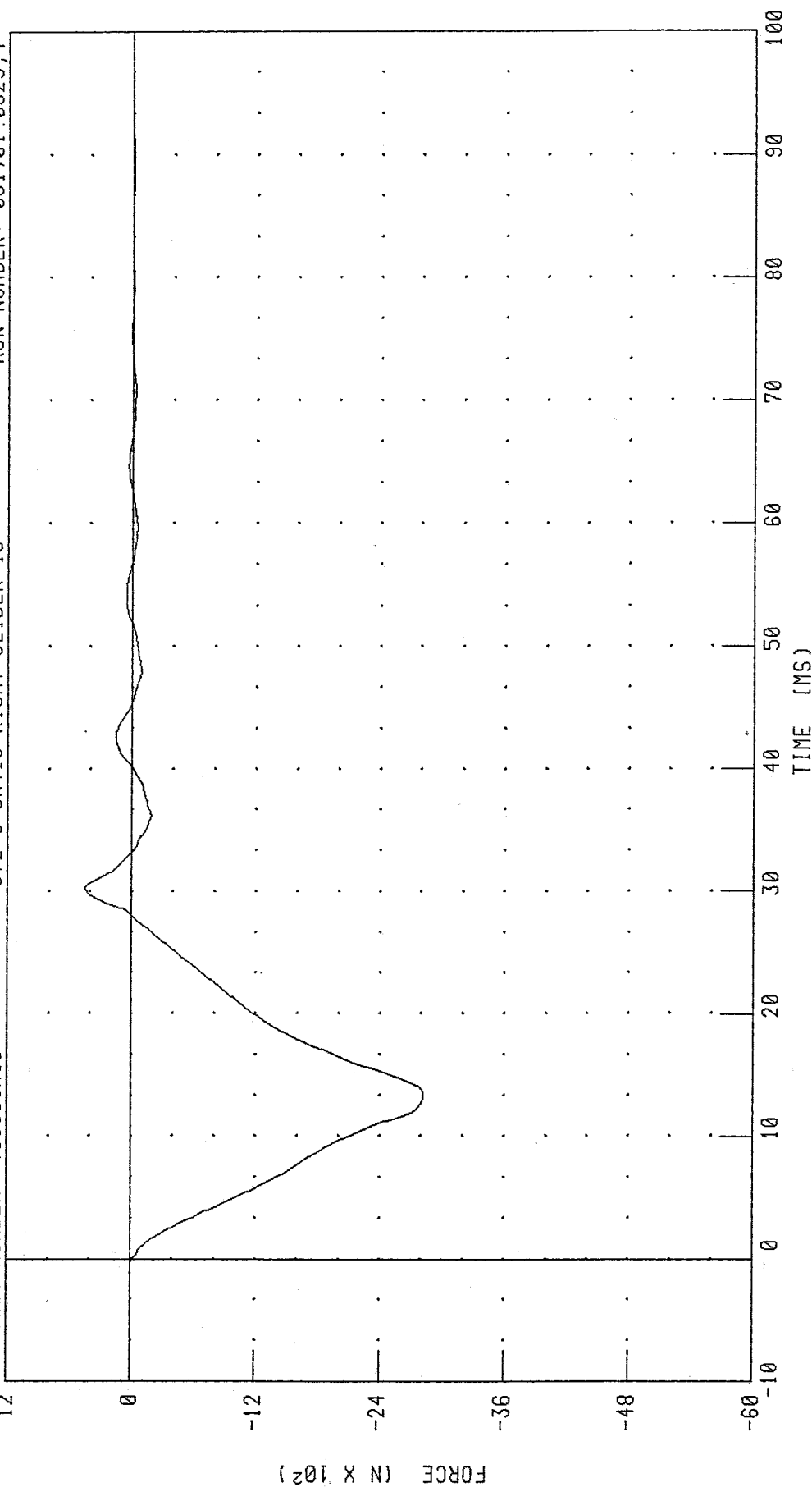


RUN NUMBER: 081601.1120;3

PART 572-0 HYBRID III SMALL FEMALE - RIGHT KNEE SLIDER CALIBRATION

RIGHT FEMUR FORCE

TRC TEST NUMBER: 416C10RS1 572 0 SN416 RIGHT SLIDER 10 RUN NUMBER: 081701.0829;4

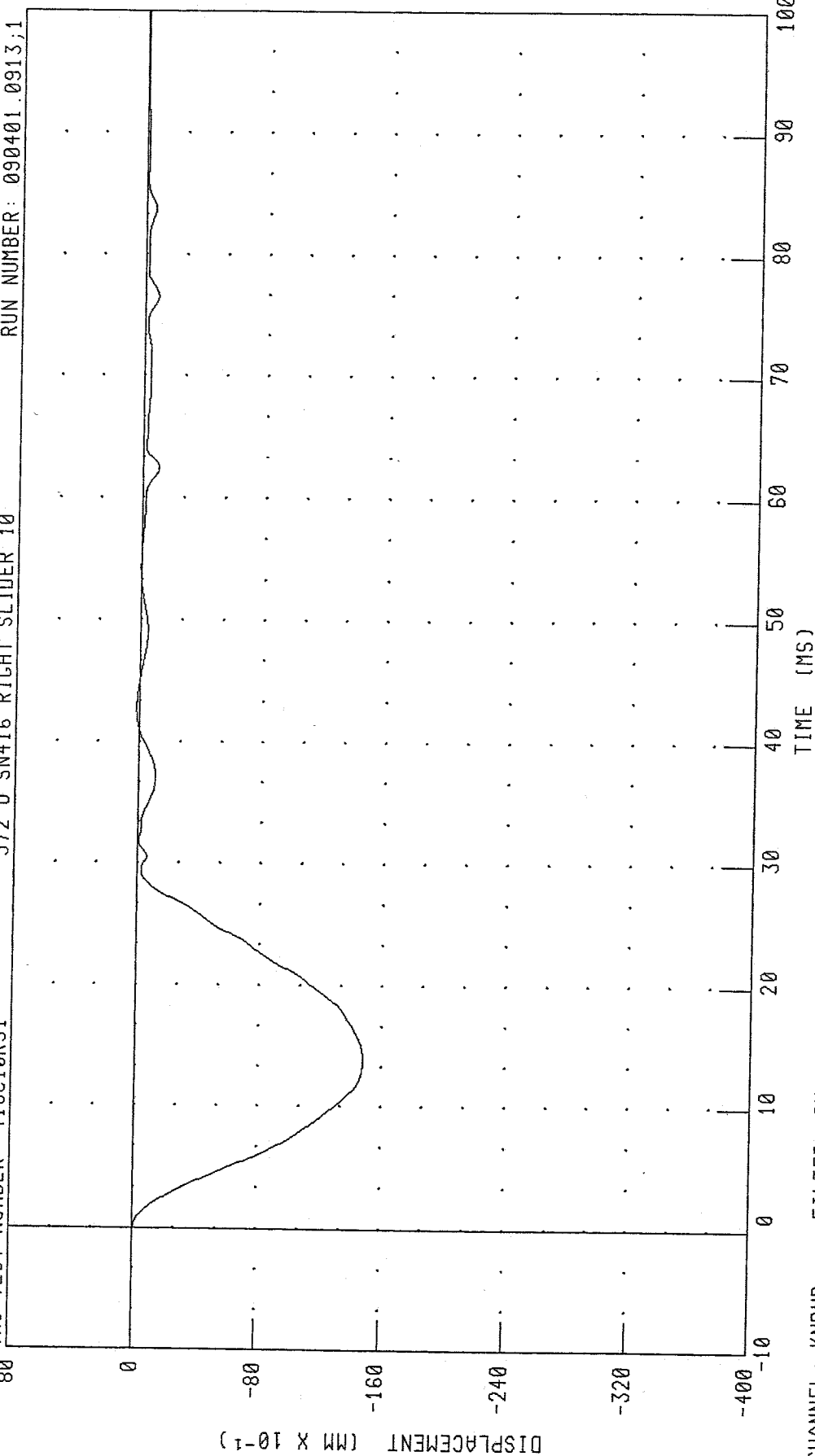


CHANNEL: RFMF FILTER: CH. CLASS 600

PEAK DATA: 449.81 N @ 30.32 MS, -2821.33 N @ 13.36 MS

PART 572-0 HYBRID III SMALL FEMALE - RIGHT KNEE SLIDER CALIBRATION
RIGHT KNEE DISPLACEMENT

TRC TEST NUMBER: 416C10RS1 572 0 SN416 RIGHT SLIDER 10 RUN NUMBER: 090401.0913.1

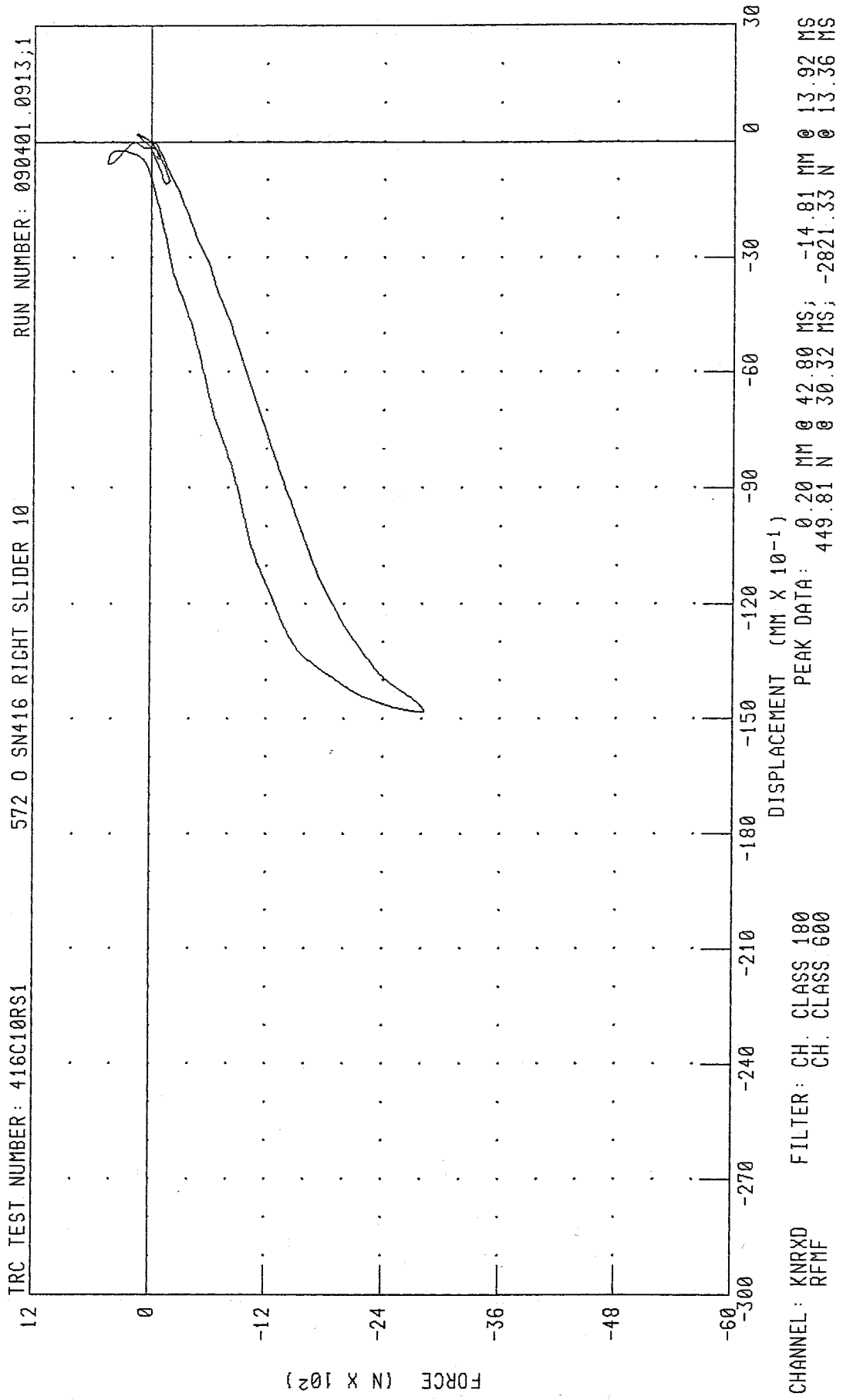


CHANNEL: KNRXD FILTER: CH. CLASS 180

PEAK DATA: 0.20 MM @ 42.80 MS, -14.81 MM @ 13.92 MS

PART 572-0 HYBRID III SMALL FEMALE - RIGHT KNEE SLIDER CALIBRATION

RIGHT KNEE DISPLACEMENT VS FEMUR FORCE



Post-Test Dummy Configuration and Performance Verification Data

Right Front Passenger Dummy S/N: 421

TRANSPORTATION RESEARCH CENTER INC.
HYBRID III SMALL FEMALE EXTERNAL DIMENSIONS
SN: 421 MFG:03

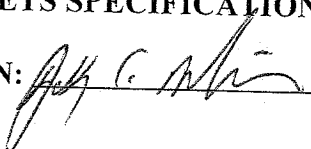
DATE: 21-Aug-01

TRC INC. TEST NO: 421C03ED1

5720 SN421EXT. DIMENSION CAL03

TEST PARAMETER	DIMEN.	SPECIFICATION	TEST RESULTS
Total Sitting Height	A	774.7 - 800.1 MM	795.02 MM
Shoulder Pivot Height	B	431.8 - 457.2 MM	447.04 MM
Hip Pivot Height	C	81.3 - 86.3 MM	81.28 MM
Hip Pivot from Backline	D	144.8 - 149.8 MM	147.32 MM
Shoulder Pivot from Backline	E	68.6 - 83.8 MM	78.74 MM
Thigh Clearance	F	119.4 - 134.6 MM	127 MM
Back of Elbow to Wrist Pivot	G	243.9 - 259.1 MM	256.54 MM
Head Back from Backline	H	40.7 - 45.7 MM	45.72 MM
Shoulder to Elbow Length	I	276.8 - 297.2 MM	284.48 MM
Elbow Rest Height	J	182.8 - 203.2 MM	187.96 MM
Buttock to Knee Length	K	520.7 - 546.1 MM	530.86 MM
Popliteal Height	L	355.6 - 376 MM	373.38 MM
Knee to Floor Height	M	393.7 - 419.1 MM	408.94 MM
Buttock Popliteal Length	N	414 - 439.4 MM	431.8 MM
Chest Depth	O	175.3 - 190.5 MM	185.42 MM
Foot Length	P	218.5 - 233.7 MM	228.6 MM
Buttock to Knee Pivot Length	R	457.2 - 482.6 MM	469.9 MM
Head Breadth	S	137.1 - 147.3 MM	144.78 MM
Head Depth	T	177.8 - 188 MM	185.42 MM
Hip Breadth	U	299.7 - 314.9 MM	307.34 MM
Shoulder Breadth	V	350.5 - 365.7 MM	358.14 MM
Foot Breadth	W	78.8 - 94 MM	88.9 MM
Head Circumference	X	528.3 - 548.7 MM	541.02 MM
Chest Circumference with Jacket	Y	850.9 - 881.3 MM	869.442 MM
Waist Circumference	Z	759.5 - 789.9 MM	782.32 MM
Ref Location for Chest Circumference	AA	299.7 - 309.9 MM	304.8 MM
Ref Location for Waist Circumference	BB	160 - 170.2 MM	165.1 MM

DUMMY MEETS SPECIFICATION

TECHNICIAN: 

TRANSPORTATION RESEARCH CENTER INC.

HEAD DROP TEST

HYBRID III SMALL FEMALE

16-AUG-01

TRC INC.

TEST NO: 421C03HD4

572 0 SN421 HEAD DROP CAL 3

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	22.2 DEG. C
RELATIVE HUMIDITY	10 - 70 %	64.0 %
PEAK RESULTANT ACCELERATION	250 - 300 G	251.91 G
PEAK LATERAL ACCELERATION	15 G MAX	6.74 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN *J. C. Smith*

RUN NUMBER: 082201.0932;1

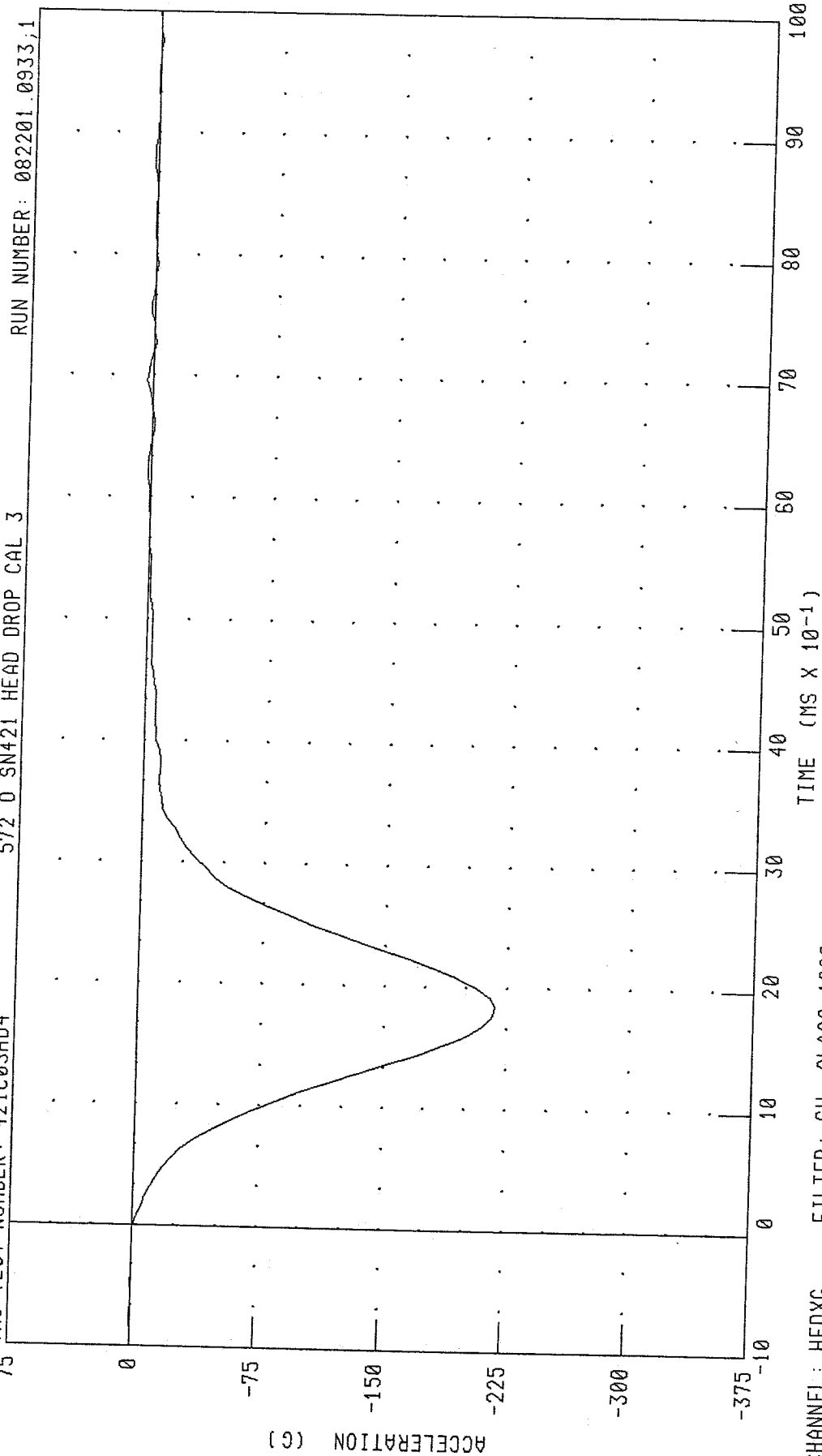
PART 572-0 HYBRID III SMALL FEMALE - HEAD CALIBRATION

HEAD ACCELERATION X AXIS

TRC TEST NUMBER: 421C03HD4

572 0 SN421 HEAD DROP CAL 3

RUN NUMBER: 082201.0933,1



CHANNEL: HEDXC FILTER: CH. CLASS 1000

PEAK DATA: 3.86 G @ 6.96 MS; -217.80 G @ 1.84 MS

PART 572-0 HYBRID III SMALL FEMALE - HEAD CALIBRATION

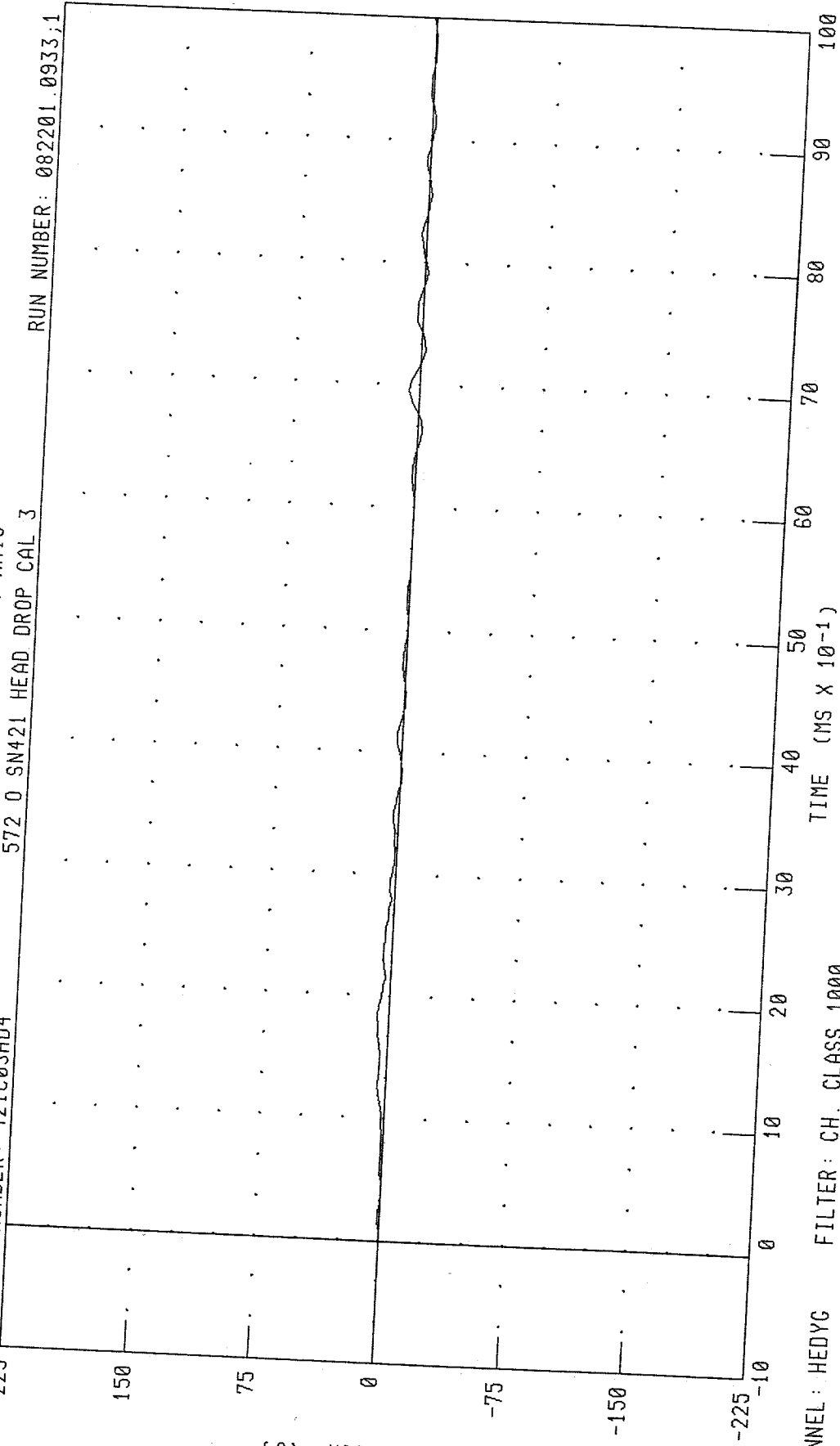
TRC TEST NUMBER: 421C03HD4

HEAD ACCELERATION Y AXIS

572 0 SN421 HEAD DROP CAL 3

RUN NUMBER: 082201.0933;1

ACCELERATION (G)



CHANNEL: HEDYC

FILTER: CH. CLASS 1000

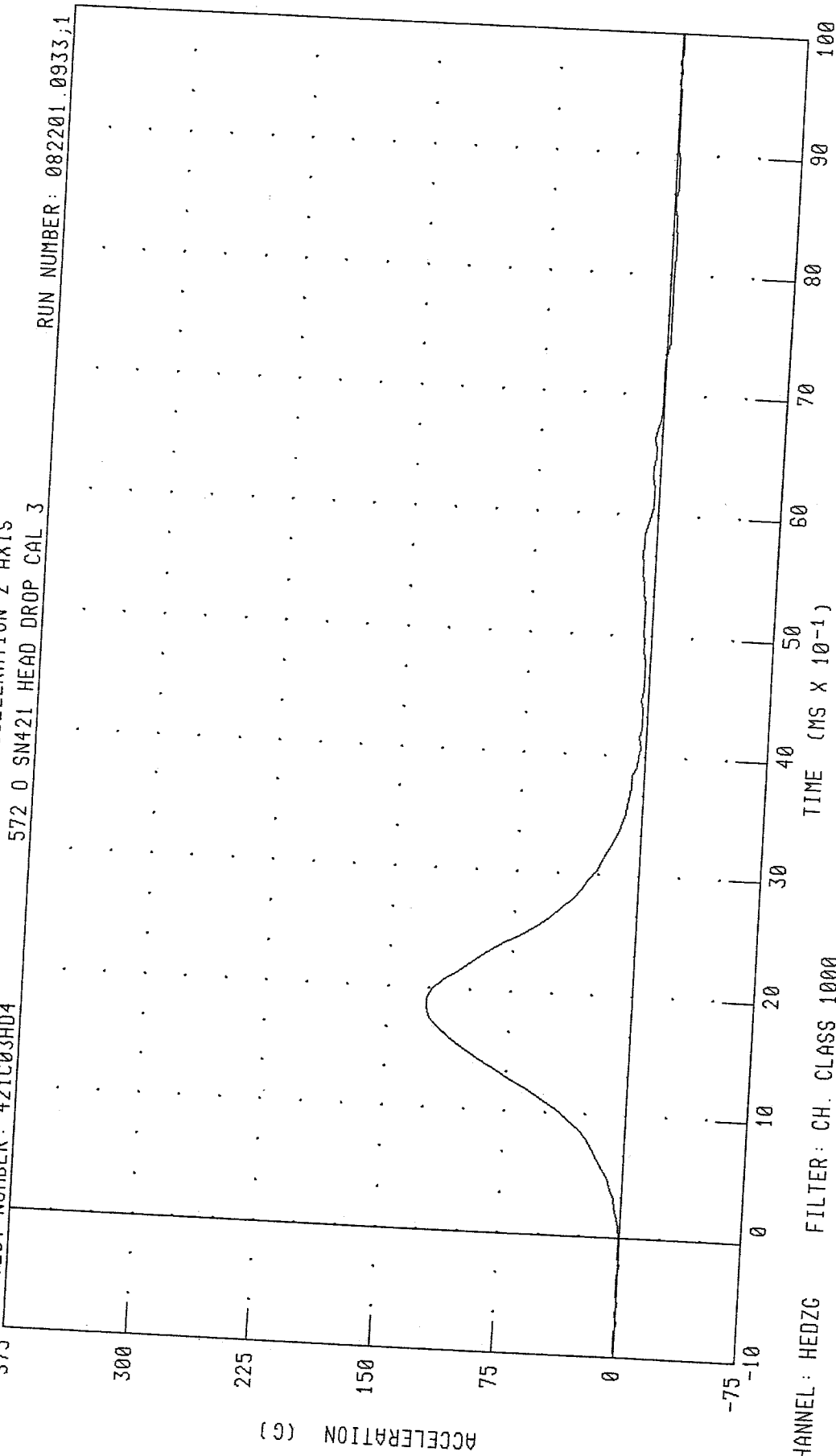
PEAK DATA: 6.74 G @ 1.84 MS; -2.87 G @ 6.64 MS

PART 572-0 HYBRID III SMALL FEMALE - HEAD CALIBRATION
HEAD ACCELERATION Z AXIS

IRC TEST NUMBER: 421C03HD4

572 0 SN421 HEAD DROP CAL 3

RUN NUMBER: 082201.0933,1



CHANNEL: HEDZG FILTER: CH. CLASS 1000

PEAK DATA: 126.41 G @ 1.84 MS; -2.75 G @ 8.16 MS

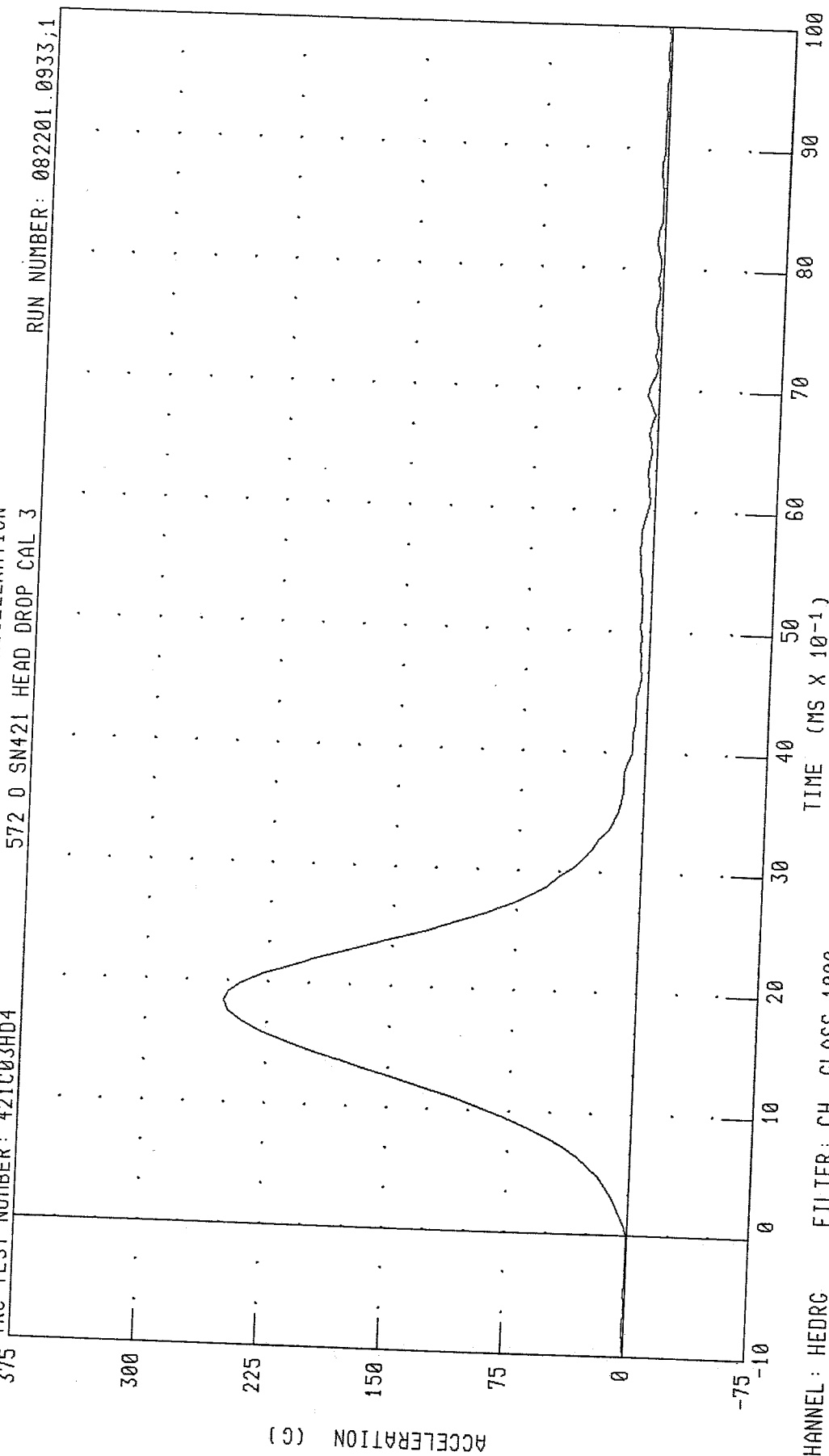
PART 572-0 HYBRID III SMALL FEMALE - HEAD CALIBRATION

TRC TEST NUMBER: 421C03HD4

HEAD RESULTANT ACCELERATION

572 0 SN421 HEAD DROP CAL 3

RUN NUMBER: 082201.0933,1



CHANNEL: HEDRC

FILTER: CH. CLASS 1000

TIME (MS X 10⁻¹)

PEAK DATA: 251.92 G @ 1.84 MS; 0.26 G @ -0.96 MS

TRANSPORTATION RESEARCH CENTER INC.

HYBRID III SMALL FEMALE

16-AUG-01

NECK FLEXION TEST - 6 CHANNEL TRANSDUCER

TRC INC.

TEST NO: 421C03NF2

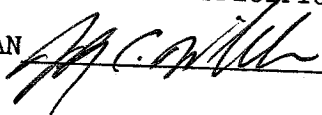
572 0 SN421 NECK FLEX. CAL3

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6-22.2 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	64.0 %
IMPACT VELOCITY	6.89 - 7.13 M/S	7.12 M/S
INTEGRATED PENDULUM VELOCITY	10 MS 2.1 - 2.5 M/S	2.20 M/S
	20 MS 4.0 - 5.0 M/S	4.49 M/S
	30 MS 5.8 - 7.0 M/S	6.58 M/S
PEAK D-PLANE ROTATION	77 - 91 DEG.	72.39 DEG. *
PEAK MOMENT DURING ROTATION INTERVAL	69 - 83 NM	N/A NM
POSITIVE MOMENT DECAY TIME TO 10 NM LEVEL	80 - 100 MS	89.52 MS

DID NOT REACH 77 DEGREES OF ROTATION

* TEST DOES NOT MEET SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 082201.0842;2

PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

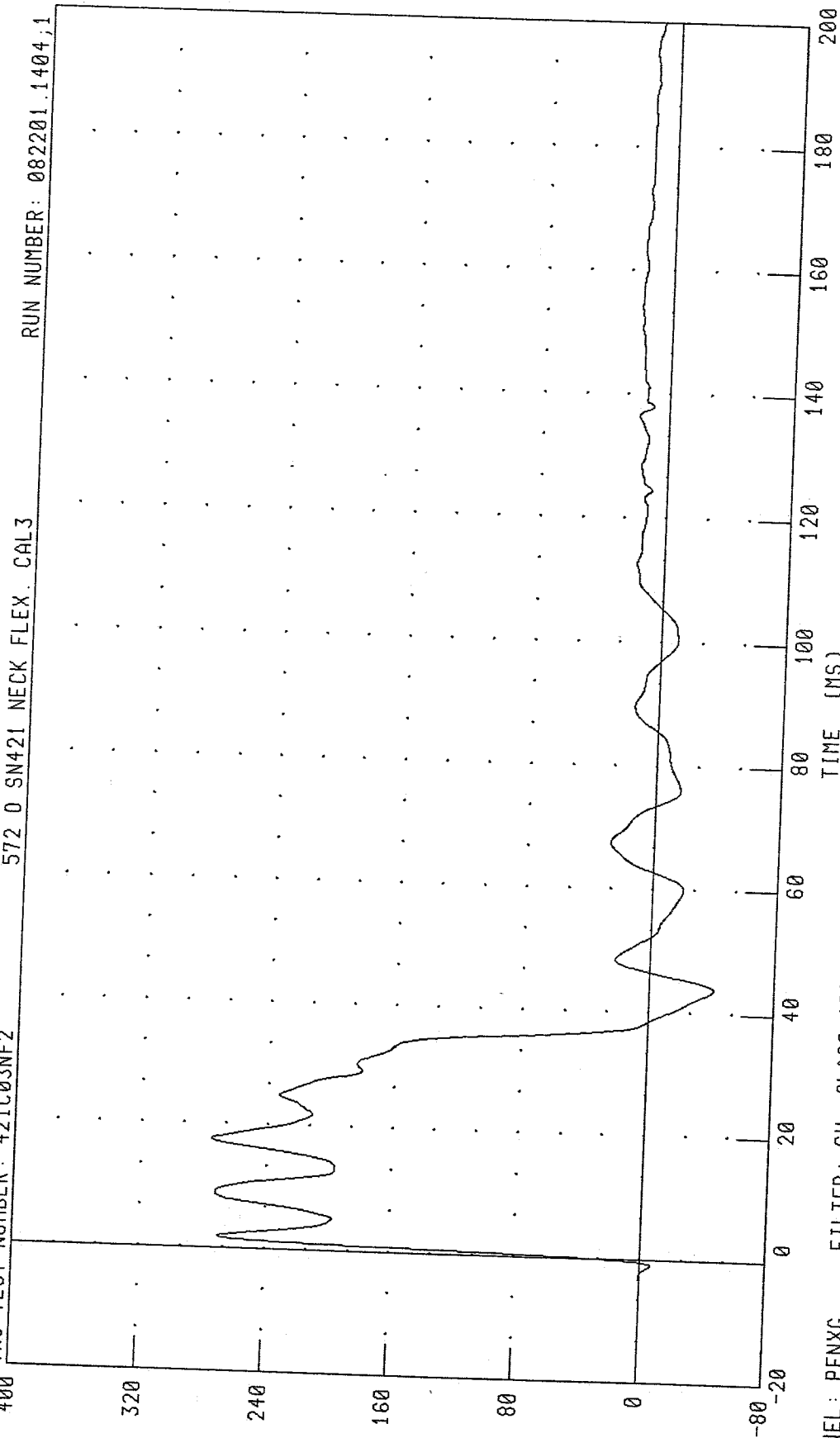
PENDULUM DECELERATION

TRC TEST NUMBER: 421C03NF2

572 0 SN421 NECK FLEX. CAL3

RUN NUMBER: 082201.1404,1

ACCELERATION (G X 10⁻¹)



CHANNEL: PENXC FILTER: CH. CLASS 180

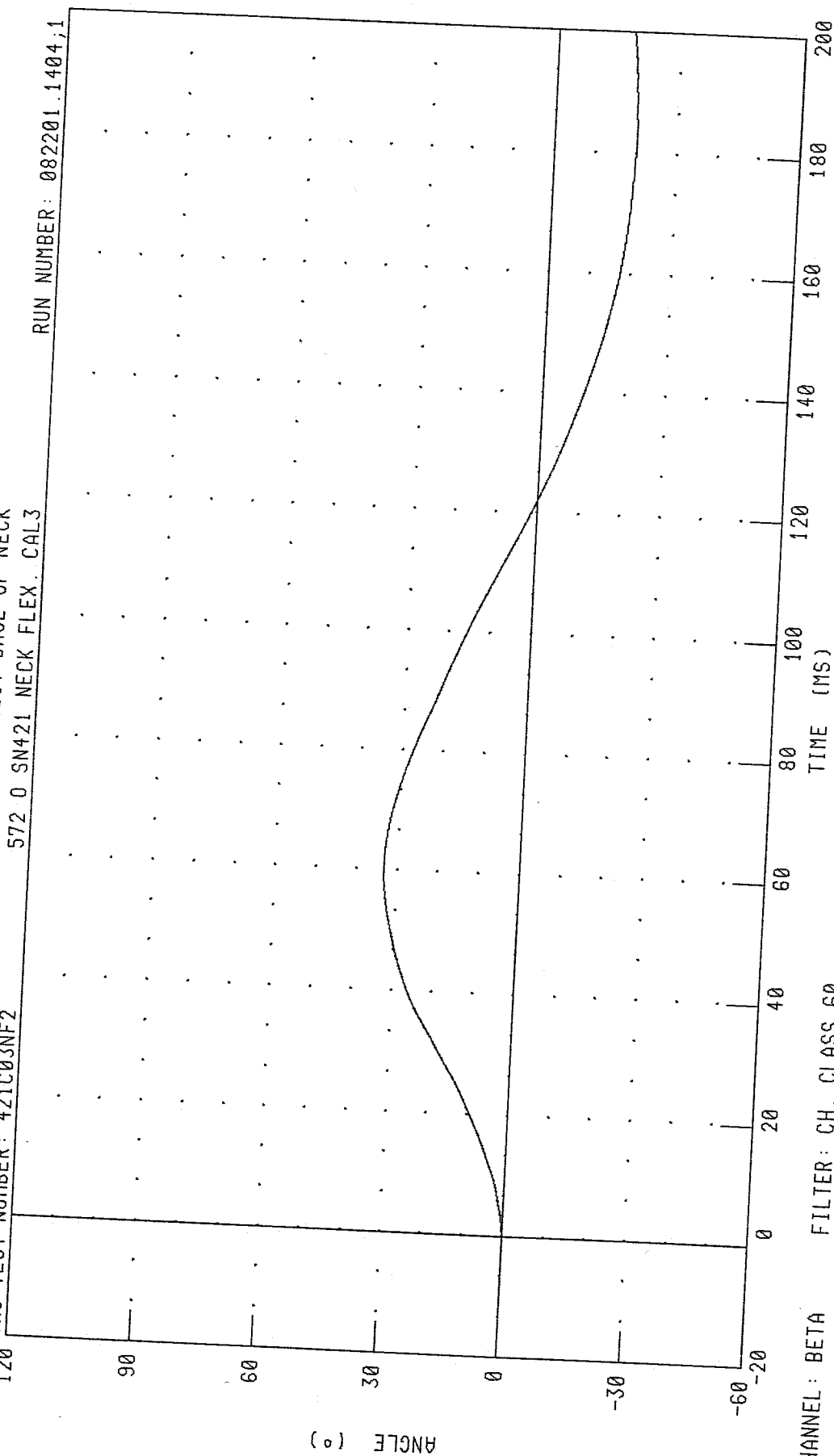
PEAK DATA: 27.55 G @ 17.68 MS; -4.13 G @ 43.84 MS

PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION
ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER: 421C03NF2

572 0 SN421 NECK FLEX. CAL3

RUN NUMBER: 082201.1404,1



PEAK DATA: 33.27 ° @ 60.80 MS; -20.06 ° @ 182.16 MS

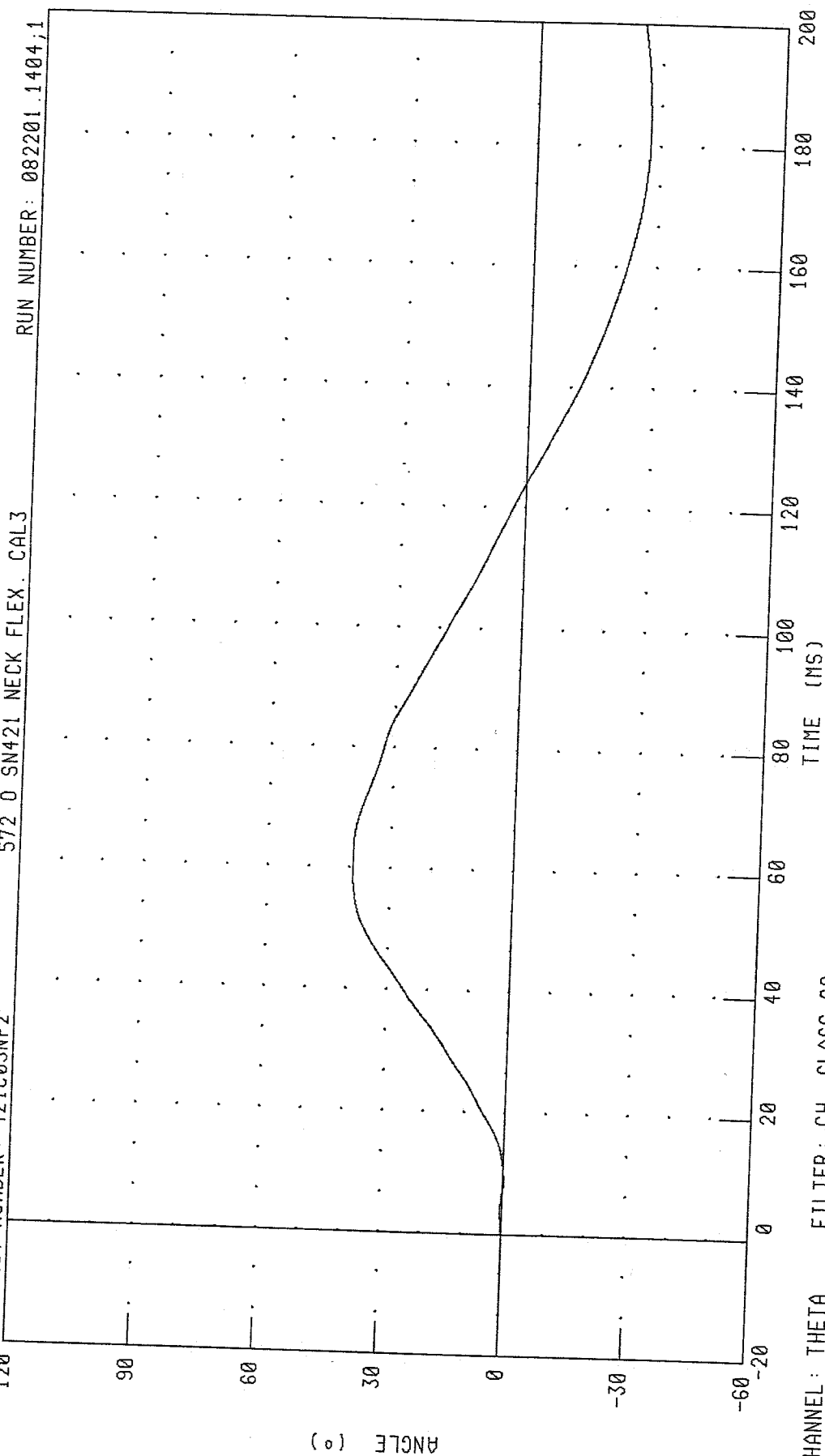
PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: 421C03NF2

572 0 SN421 NECK FLEX. CAL3

RUN NUMBER: 082201.1404,1



CHANNEL: THETA FILTER: CH. CLASS 60

PEAK DATA: 39.14 ° @ 61.28 MS, -27.61 ° @ 181.92 MS

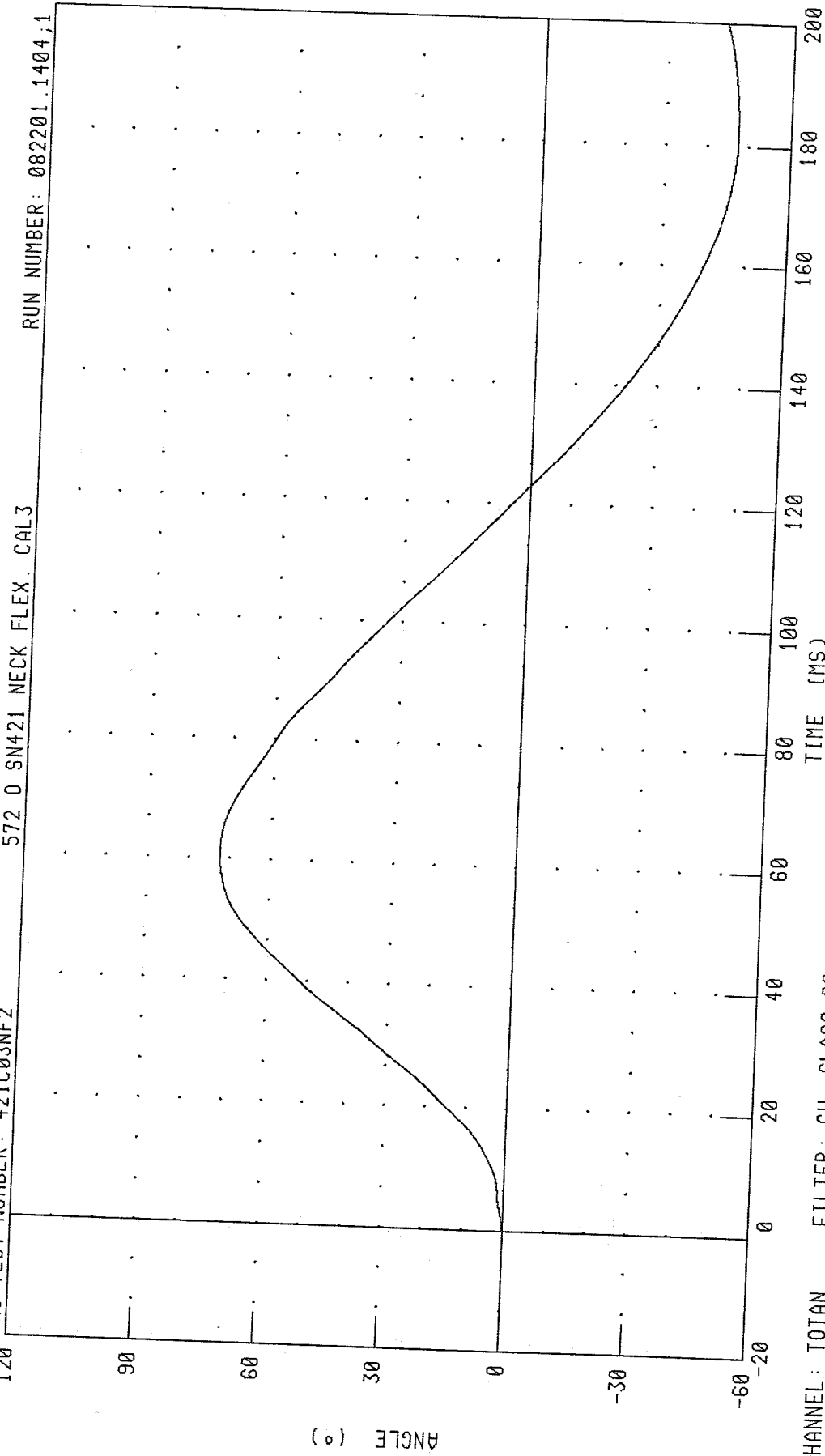
PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

TRC TEST NUMBER: 421C03NF2

TOTAL ROTATION

572 0 SN421 NECK FLEX. CAL3

RUN NUMBER: 082201.1404,1



CHANNEL: TOTAL FILTER: CH. CLASS 60

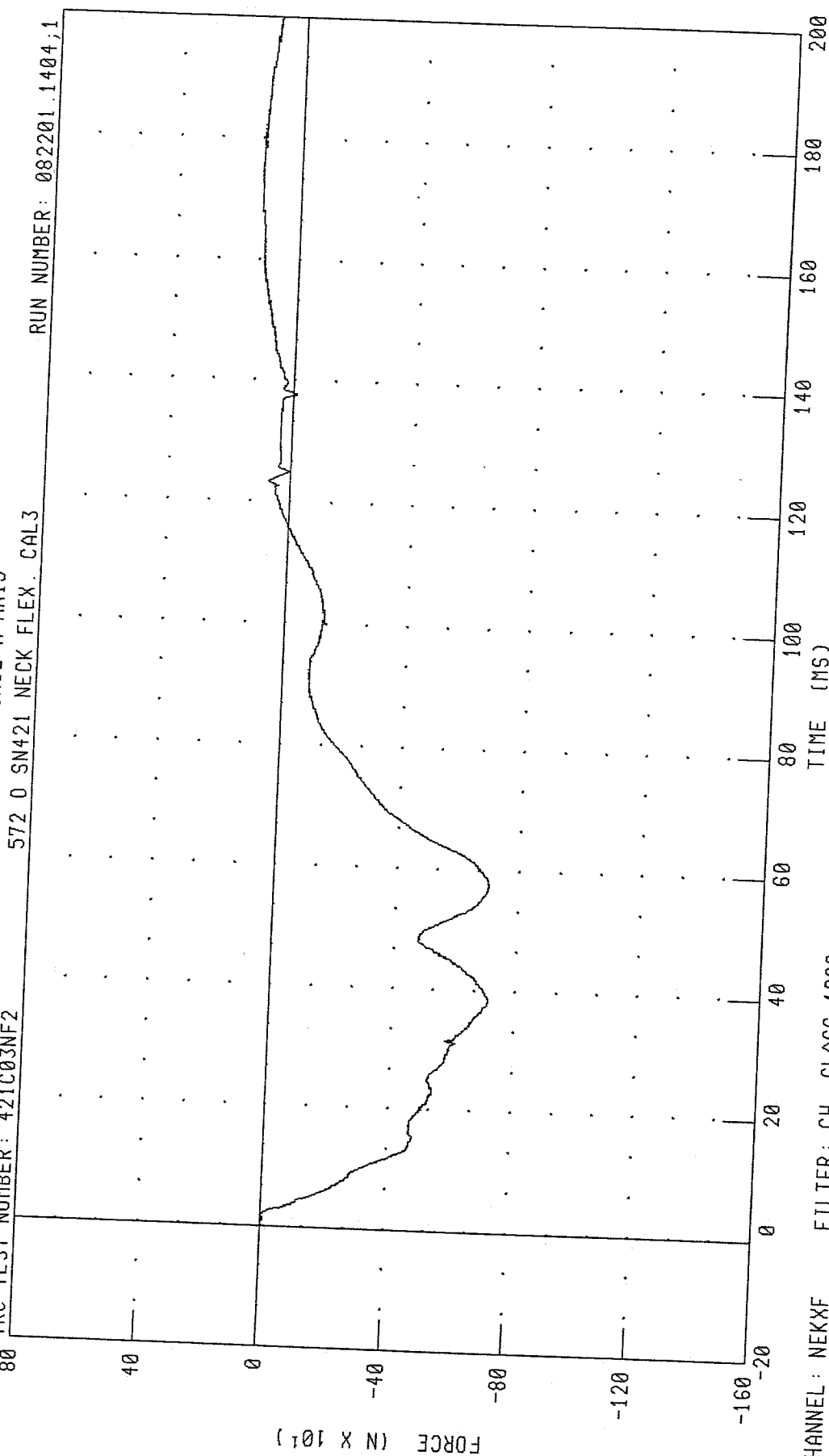
PEAK DATA: 72.40 ° @ 60.96 MS; -47.67 ° @ 181.92 MS

PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

TRC TEST NUMBER: 421C03NF2

572 0 SN421 NECK FLEX. CAL3

RUN NUMBER: 082201.1404,1



CHANNEL: NEKXF FILTER: CH. CLASS 1000

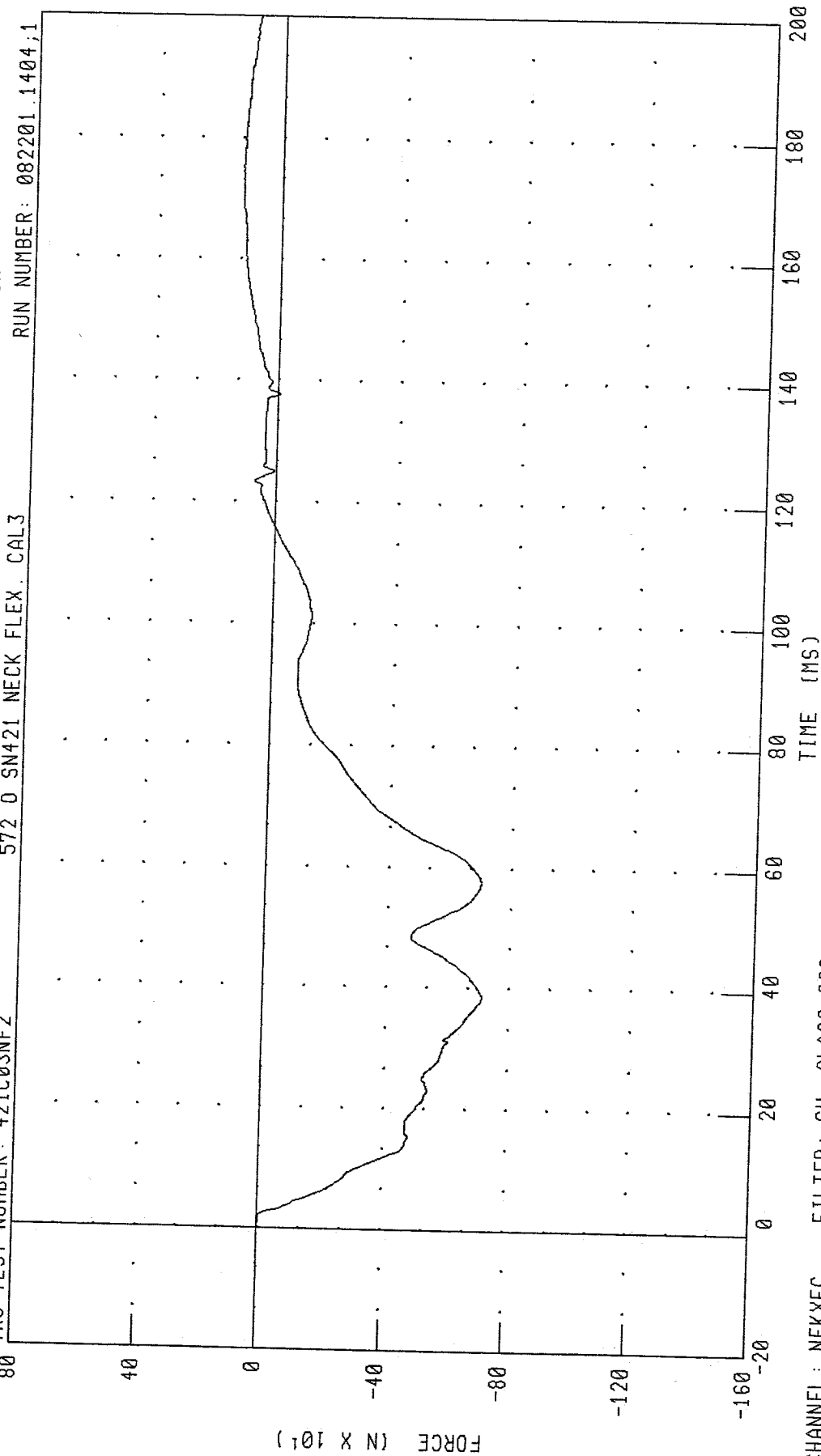
PEAK DATA: 130.33 N @ 172.64 MS; -712.94 N @ 38.16 MS

PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION
NECK FORCE X AXIS FILTERED FOR USE IN OCCIPITAL MOMENT CALCULATION

TRC TEST NUMBER: 421C03NF2

572 0 SN421 NECK FLEX. CAL3

RUN NUMBER: 082201.1404;1



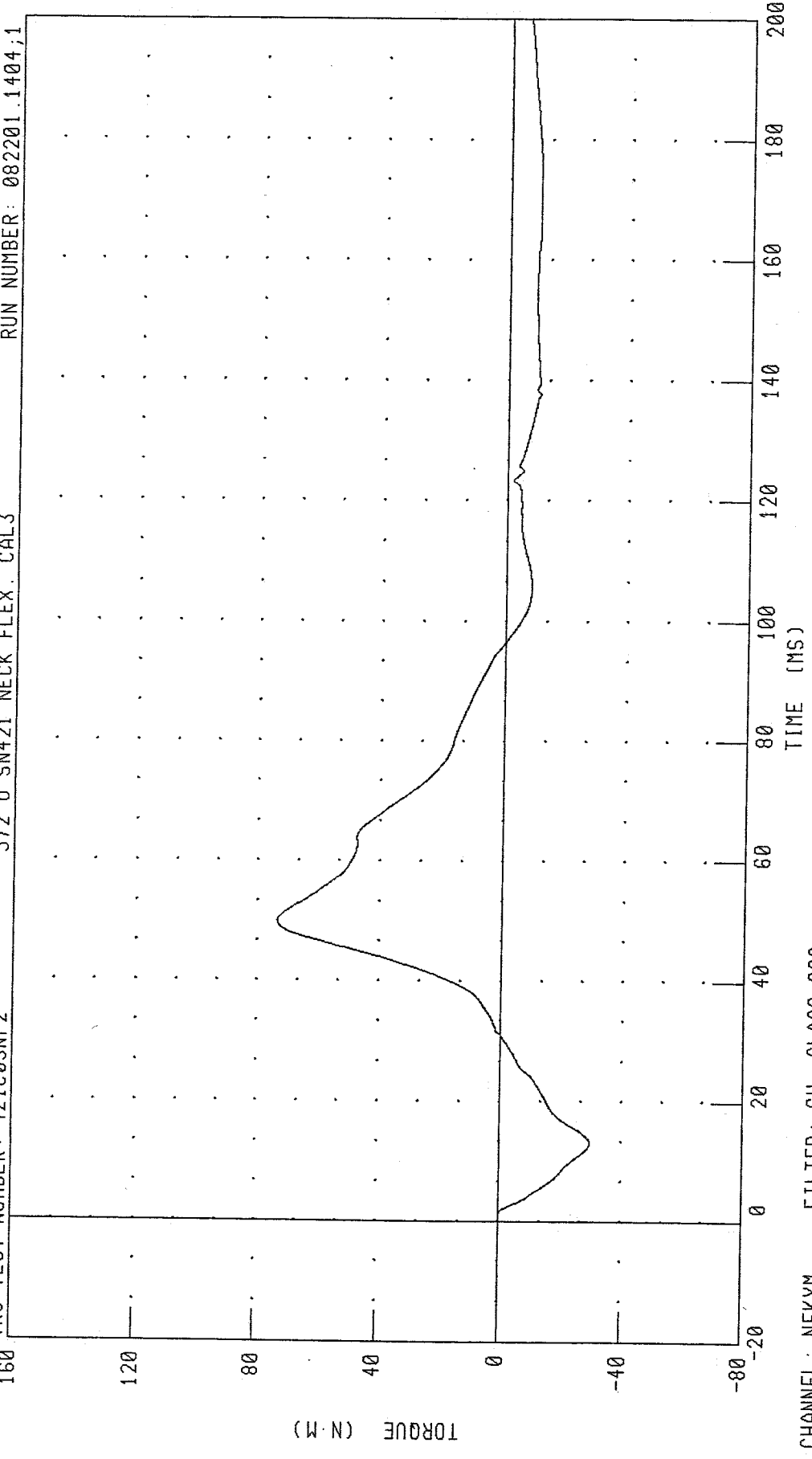
CHANNEL: NEKXFC FILTER: CH. CLASS 600

PEAK DATA: 130.06 N @ 175.20 MS, -713.10 N @ 38.56 MS

PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

NECK MOMENT Y AXIS

TRC TEST NUMBER: 421C03NF2 572 0 SN421 NECK FLEX. CAL3 RUN NUMBER: 082201.1404;1



CHANNEL: NEKYM FILTER: CH. CLASS 600 PEAK DATA: 73.56 N-M @ 50.00 MS; -29.64 N-M @ 13.12 MS

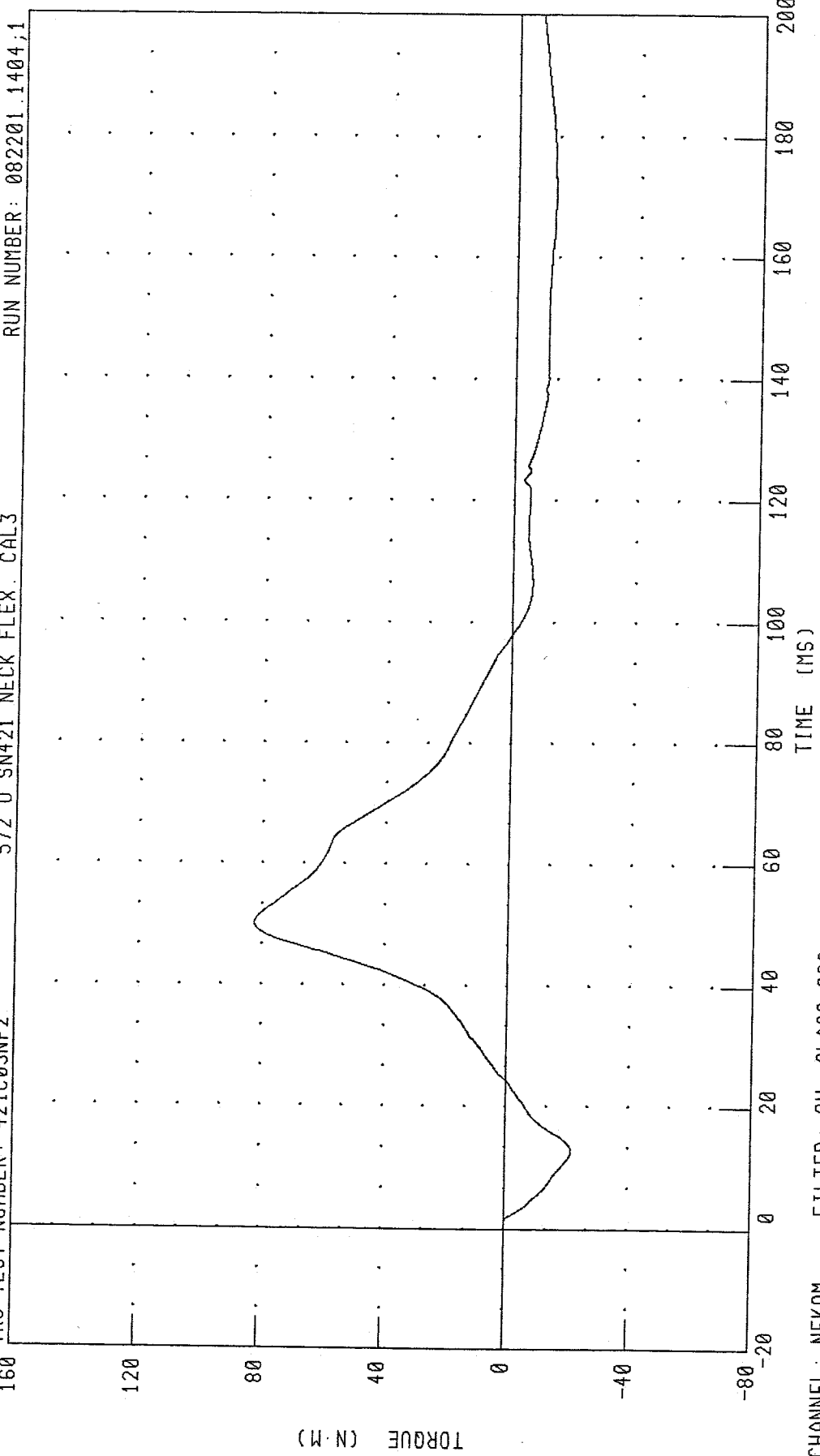
PART 572-0 HYBRID III SMALL FEMALE - NECK FLEXION CALIBRATION

TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: 421C03NF2

572 0 SN421 NECK FLEX. CAL3

RUN NUMBER: 082201.1404;1



CHANNEL: NEKOM FILTER: CH. CLASS 600

PEAK DATA: 82.54 N·M @ 50.24 MS; -21.59 N·M @ 12.80 MS

TRANSPORTATION RESEARCH CENTER INC.

HYBRID III SMALL FEMALE

20-AUG-01

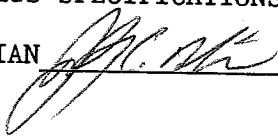
NECK EXTENSION TEST - 6 CHANNEL TRANSDUCER

TRC INC. TEST NO: 421C03NE1 572 0 SN421 NECK EXT. CAL 3

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6 - 22.2 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	67.0 %
IMPACT VELOCITY	5.95 - 6.19 M/S	6.14 M/S
INTEGRATED PENDULUM VELOCITY	10 MS 1.5 - 1.9 M/S	1.78 M/S
	20 MS 3.1 - 3.9 M/S	3.70 M/S
	30 MS 4.6 - 5.6 M/S	5.47 M/S
PEAK D-PLANE ROTATION	99 - 114 DEG.	106.13 DEG.
PEAK MOMENT DURING ROTATION INTERVAL	-53 / -65 NM	-57.22 NM
NEGATIVE MOMENT DECAY TIME TO -10 NM LEVEL	94 - 114 MS	101.12 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 082001.0852;1

msec	TOTAL (deg)	Min, Max values =	100/ .250/ -16	106.139 @ 80.4800
1176	50.0000 -->	77.484 77.653 77.821 77.989 78.157 78.325 78.492 78.660	77.484 @ 50.0000	106.139 @ 80.4800
1186	50.8000 -->	79.159 79.324 79.490 79.654 79.819 79.982 80.146 80.308	78.492 78.660	78.826 78.993
1196	51.6000 -->	80.793 80.953 81.113 81.273 81.432 81.590 81.748 81.905	80.146 80.308	80.470 80.632
1206	52.4000 -->	82.375 82.530 82.685 82.840 82.994 83.148 83.301 83.454	81.748 81.905	82.062 82.219
1216	53.2000 -->	84.064 84.216 84.367 84.518 84.669 84.820 84.970 85.121	83.301 83.454	83.607 83.760
1226	54.0000 -->	85.421 85.571 85.720 85.870 86.019 86.168 86.317 86.466	84.820 84.970	85.121 85.271
1236	54.8000 -->	86.911 87.060 87.208 87.356 87.504 87.652 87.799 87.947	86.317 86.466	86.614 86.763
1246	55.6000 -->	88.389 88.535 88.682 88.828 88.975 89.120 89.266 89.411	87.799 87.947	88.094 88.241
1256	56.4000 -->	89.845 89.989 90.133 90.276 90.418 90.561 90.702 90.844	89.266 89.411	89.556 89.701
1266	57.2000 -->	91.264 91.403 91.541 91.679 91.816 91.952 92.087 92.222	90.702 90.844	90.984 91.125
1276	58.0000 -->	92.751 92.882 93.011 93.139 93.266 93.392 93.518 93.642	91.816 91.952	92.356 92.488
1286	58.8000 -->	93.887 94.008 94.128 94.247 94.365 94.482 94.598 94.713	93.392 93.518	93.642 93.765
1296	59.6000 -->	95.050 95.161 95.270 95.379 95.486 95.593 95.699 95.803	94.598 94.713	94.826 94.939
1306	60.4000 -->	96.113 96.215 96.316 96.416 96.516 96.615 96.713 96.812	95.699 95.803	95.907 96.011
1316	61.2000 -->	97.104 97.200 97.297 97.393 97.489 97.585 97.681 97.776	96.713 96.812	96.909 97.007
1326	62.0000 -->	98.063 98.159 98.254 98.350 98.445 98.541 98.637 98.732	97.585 97.681	97.872 97.967
1336	62.8000 -->	99.019 99.114 99.210 99.305 99.400 99.495 99.590 99.684	98.445 98.541	98.828 98.923
1346	63.6000 -->	99.966 100.059 100.152 100.244 100.336 100.427 100.518 100.608	99.684 99.779	99.873 99.967
1356	64.4000 -->	100.873 100.960 101.046 101.130 101.214 101.297 101.378 101.458	100.608 100.697	100.786 100.873
1366	65.2000 -->	101.691 101.766 101.840 101.912 101.983 102.052 102.120 102.186	101.378 101.458	101.537 101.615
1376	66.0000 -->	102.376 102.437 102.496 102.553 102.609 102.663 102.716 102.768	102.120 102.186	102.251 102.314
1386	66.8000 -->	102.915 102.961 103.007 103.051 103.094 103.135 103.176 103.216	102.768 102.818	102.867 102.918
1396	67.6000 -->	103.330 103.367 103.402 103.438 103.472 103.506 103.540 103.573	103.216 103.255	103.293 103.338
1406	68.4000 -->	103.670 103.702 103.734 103.765 103.796 103.827 103.858 103.889	103.573 103.606	103.638 103.673
1416	69.2000 -->	103.982 104.012 104.043 104.073 104.104 104.134 104.165 104.195	103.889 103.920	103.951 104.000
1426	70.0000 -->	104.285 104.315 104.345 104.375 104.404 104.433 104.462 104.491	104.165 104.195	104.225 104.255
1436	70.8000 -->	104.576 104.603 104.631 104.658 104.685 104.711 104.737 104.762	104.491 104.520	104.548 104.581
1446	71.6000 -->	104.836 104.860 104.884 104.907 104.929 104.952 104.973 104.995	104.737 104.762	104.812 104.842
1456	72.4000 -->	105.056 105.076 105.095 105.114 105.132 105.150 105.168 105.185	104.995 105.016	105.036 105.066
1466	73.2000 -->	105.235 105.251 105.266 105.282 105.297 105.312 105.326 105.340	105.168 105.185	105.202 105.219
1476	74.0000 -->	105.382 105.395 105.408 105.421 105.434 105.447 105.459 105.471	105.326 105.354	105.368 105.398
1486	74.8000 -->	105.507 105.519 105.531 105.542 105.554 105.565 105.576 105.588	105.471 105.484	105.496 105.526
1496	75.6000 -->	105.621 105.632 105.644 105.655 105.666 105.677 105.688 105.699	105.588 105.599	105.610 105.640
1506	76.4000 -->	105.733 105.745 105.756 105.767 105.779 105.790 105.802 105.813	105.699 105.711	105.722 105.752
1516	77.2000 -->	105.847 105.858 105.869 105.880 105.891 105.902 105.913 105.924	105.813 105.824	105.836 105.866
1526	78.0000 -->	105.955 105.965 105.974 105.984 105.993 106.003 106.012 106.020	105.924 105.934	105.945 105.975
1536	78.8000 -->	106.045 106.053 106.061 106.068 106.075 106.081 106.088 106.094	106.020 106.029	106.037 106.067
1546	79.6000 -->	106.110 106.115 106.119 106.123 106.126 106.130 106.132 106.135	106.094 106.100	106.105 106.135
1556	80.4000 -->	106.139 106.139 106.139 106.139 106.139 106.139 106.139 106.139	106.135 106.137	106.138 106.168
1566	81.2000 -->	106.119 106.114 106.108 106.102 106.094 106.086 106.078 106.068	106.137 106.138	106.124 106.154
1576	82.0000 -->	106.035 106.023 106.010 105.996 105.981 105.965 105.949 105.932	106.068 106.058	105.914 105.944
1586	82.8000 -->	105.875 105.855 105.834 105.812 105.790 105.766 105.742 105.718	105.932 105.914	105.692 105.722
1596	83.6000 -->	105.639 105.612 105.584 105.555 105.526 105.497 105.466 105.436	105.718 105.692	105.666 105.696
1606	84.4000 -->	105.341 105.309 105.276 105.243 105.209 105.175 105.141 105.107	105.436 105.405	105.373 105.403
1616	85.2000 -->	105.001 104.966 104.930 104.893 104.856 104.819 104.782 104.744	105.107 105.072	105.037 105.067
1626	86.0000 -->	104.627 104.587 104.547 104.507 104.465 104.424 104.382 104.339	104.744 104.705	104.666 104.696
1636	86.8000 -->	104.207 104.162 104.116 104.070 104.023 103.976 103.927 103.878	104.339 104.296	104.252 104.282
1646	87.6000 -->	103.728 103.676 103.624 103.572 103.519 103.465 103.410 103.356	103.878 103.829	103.779 103.809
1656	88.4000 -->	103.188 103.131 103.074 103.017 102.959 102.900 102.841 102.782	103.410 103.356	103.244 103.274
1666	89.2000 -->	102.603 102.543 102.482 102.421 102.359 102.298 102.236 102.174	102.782 102.723	102.663 102.693

msec	TOTAL (deg)	Min, Max values =	77.484 @	50.0000	106.139 @	80.4800
1676	101.986	101.795	101.667	101.537	101.472	101.407
90.0000 -->	101.922	101.731	101.602	101.537	101.472	101.407
1686	101.341	101.143	101.010	100.875	100.808	100.740
90.8000 -->	101.275	101.076	100.943	100.875	100.808	100.740
1696	100.672	100.466	100.327	100.257	100.187	100.117
91.6000 -->	100.604	100.397	100.257	100.187	100.117	100.046
1706	99.975	99.759	99.614	99.467	99.393	99.319
92.4000 -->	99.903	99.687	99.541	99.467	99.393	99.319
1716	99.245	99.019	98.867	98.714	98.638	98.560
93.2000 -->	99.170	98.943	98.791	98.714	98.638	98.560
1726	98.483	98.249	98.092	97.934	97.775	97.705
94.0000 -->	98.405	98.170	98.013	97.934	97.775	97.705
1736	97.695	97.454	97.292	97.139	96.966	96.896
94.8000 -->	97.615	97.373	97.211	97.139	96.966	96.896
1746	96.883	96.635	96.468	96.301	96.217	96.132
95.6000 -->	97.601	96.552	96.385	96.301	96.217	96.132
1756	96.048	95.792	95.620	95.448	95.361	95.274
96.4000 -->	95.963	95.706	95.534	95.448	95.361	95.274
1766	95.187	94.923	94.746	94.568	94.478	94.388
97.2000 -->	95.099	94.835	94.657	94.568	94.478	94.388
1776	94.297	94.024	93.840	93.654	93.561	93.467
98.0000 -->	94.207	93.932	93.747	93.654	93.561	93.467
1786	93.372	93.087	92.895	92.702	92.605	92.507
98.8000 -->	93.278	92.992	92.799	92.702	92.605	92.507
1796	92.409	92.114	91.916			
99.6000 -->	92.311	92.015				

421C03NE1 01232
Deltax = 0.080000 msec

572 O SN421 NECK EXT. CAL 3

Npts = 8000; IP0 = 551; Filter = BLPP

1000/ 2500/ -16

6.1 m/sec
20-AUG-01 08:52

Page 1

20-AUG-01 08:55									
JCI, Filter = BLPP 1000/ 2500/ -16									
Min, Max values =									
msec	NEKOM (N-m)								
1336	62.8000 -->	-44.503	-44.659	-44.820	-44.986	-45.161	-45.342	-45.531	-45.724
1346	63.6000 -->	-46.312	-46.512	-46.715	-46.917	-47.119	-47.324	-47.536	-47.750
1356	64.4000 -->	-48.351	-48.523	-48.683	-48.836	-48.988	-49.143	-49.300	-49.461
1366	65.2000 -->	-49.975	-50.155	-50.336	-50.515	-50.692	-50.868	-51.049	-51.236
1376	66.0000 -->	-51.806	-51.989	-52.166	-52.341	-52.517	-52.693	-52.866	-53.031
1386	66.8000 -->	-53.479	-53.609	-53.726	-53.832	-53.935	-54.039	-54.143	-54.248
1396	67.6000 -->	-54.711	-54.827	-54.934	-55.034	-55.135	-55.244	-55.362	-55.470
1406	68.4000 -->	-55.732	-55.854	-55.971	-56.079	-56.172	-56.252	-56.324	-56.400
1416	69.2000 -->	-56.623	-56.696	-56.764	-56.828	-56.887	-56.940	-56.989	-57.037
1426	70.0000 -->	-57.163	-57.192	-57.210	-57.218	-57.219	-57.214	-57.204	-57.189
1436	70.8000 -->	-57.113	-57.082	-57.055	-57.030	-57.001	-56.962	-56.912	-56.854
1446	71.6000 -->	-56.679	-56.626	-56.576	-56.526	-56.477	-56.428	-56.378	-56.325
1456	72.4000 -->	-56.124	-56.037	-55.940	-55.832	-55.717	-55.598	-55.474	-55.342
1466	73.2000 -->	-54.891	-54.730	-54.566	-54.402	-54.240	-54.081	-53.927	-53.778
1476	74.0000 -->	-53.366	-53.234	-53.094	-52.935	-52.755	-52.556	-52.341	-52.115
1486	74.8000 -->	-51.424	-51.189	-50.951	-50.712	-50.472	-50.233	-49.993	-49.753
1496	75.6000 -->	-49.065	-48.848	-48.632	-48.412	-48.186	-47.954	-47.718	-47.476
1506	76.4000 -->	-46.707	-46.443	-46.184	-45.930	-45.677	-45.424	-45.175	-44.934
1516	77.2000 -->	-44.292	-44.102	-43.920	-43.742	-43.564	-43.381	-43.192	-42.901
1526	78.0000 -->	-42.460	-42.290	-42.118	-41.941	-41.757	-41.566	-41.369	-41.170
1536	78.8000 -->	-40.576	-40.389	-40.202	-40.013	-39.823	-39.638	-39.461	-39.292
1546	79.6000 -->	-38.796	-38.634	-38.475	-38.317	-38.154	-37.986	-37.815	-37.642
1556	80.4000 -->	-37.132	-36.963	-36.794	-36.628	-36.463	-36.300	-36.135	-35.967
1566	81.2000 -->	-35.407	-35.212	-35.021	-34.837	-34.656	-34.479	-34.305	-34.133
1576	82.0000 -->	-33.603	-33.417	-33.231	-33.046	-32.862	-32.674	-32.485	-32.297
1586	82.8000 -->	-31.754	-31.571	-31.386	-31.205	-31.031	-30.864	-30.701	-30.536
1596	83.6000 -->	-30.026	-29.856	-29.692	-29.532	-29.372	-29.211	-29.049	-28.886
1606	84.4000 -->	-28.404	-28.245	-28.087	-27.929	-27.771	-27.614	-27.460	-27.312
1616	85.2000 -->	-26.902	-26.768	-26.631	-26.494	-26.359	-26.224	-26.084	-25.936
1626	86.0000 -->	-25.484	-25.342	-25.207	-25.077	-24.953	-24.831	-24.706	-24.576
1636	86.8000 -->	-24.184	-24.054	-23.923	-23.792	-23.665	-23.541	-23.417	-23.289
1646	87.6000 -->	-22.896	-22.761	-22.626	-22.493	-22.366	-22.243	-22.123	-22.005
1656	88.4000 -->	-21.652	-21.534	-21.416	-21.299	-21.185	-21.075	-20.972	-20.873
1666	89.2000 -->	-20.572	-20.470	-20.369	-20.271	-20.176	-20.084	-19.991	-19.897
1676	90.0000 -->	-19.618	-19.530	-19.444	-19.361	-19.285	-19.217	-19.157	-19.099
1686	90.8000 -->	-18.897	-18.825	-18.757	-18.695	-18.636	-18.578	-18.516	-18.452
1696	91.6000 -->	-18.279	-18.228	-18.175	-18.115	-18.048	-17.975	-17.902	-17.833
1706	92.4000 -->	-17.663	-17.607	-17.545	-17.482	-17.418	-17.357	-17.297	-17.239
1716	93.2000 -->	-17.055	-16.983	-16.904	-16.818	-16.727	-16.631	-16.531	-16.434
1726	94.0000 -->	-16.444	-16.361	-16.274	-16.181	-16.083	-15.980	-15.873	-15.762
1736	94.8000 -->	-15.815	-15.724	-15.628	-15.527	-15.422	-15.313	-15.200	-15.083
1746	95.6000 -->	-15.188	-15.088	-14.983	-14.874	-14.761	-14.644	-14.518	-14.388
1756	96.4000 -->	-14.565	-14.452	-14.335	-14.214	-14.089	-13.960	-13.827	-13.690
1766	97.2000 -->	-13.935	-13.808	-13.677	-13.542	-13.404	-13.262	-13.116	-12.966
1776	98.0000 -->	-13.288	-13.152	-13.012	-12.869	-12.722	-12.571	-12.416	-12.258
1786	98.8000 -->	-12.642	-12.497	-12.348	-12.195	-12.038	-11.878	-11.714	-11.546
1796	99.6000 -->	-12.001	-11.848	-11.691	-11.530	-11.365	-11.196	-11.023	-10.846
1806	100.4000 -->	-11.356	-11.194	-11.028	-10.858	-10.684	-10.506	-10.324	-10.138
1816	101.2000 -->	-10.707	-10.536	-10.361	-10.182	-10.000	-9.814	-9.625	-9.432
1826	102.0000 -->	-10.054	-9.875	-9.691	-9.503	-9.311	-9.116	-8.918	-8.716
1836	102.8000 -->	-9.406	-9.219	-9.027	-8.831	-8.632	-8.429	-8.223	-8.014
1846	103.6000 -->	-8.753	-8.558	-8.358	-8.154	-7.946	-7.735	-7.521	-7.304
1856	104.4000 -->	-8.104	-7.901	-7.693	-7.481	-7.265	-7.046	-6.824	-6.599
1866	105.2000 -->	-7.459	-7.248	-7.033	-6.814	-6.591	-6.365	-6.136	-5.904
1876	106.0000 -->	-6.818	-6.600	-6.377	-6.150	-5.919	-5.685	-5.448	-5.208
1886	106.8000 -->	-6.181	-5.956	-5.727	-5.494	-5.257	-5.017	-4.774	-4.528
1896	107.6000 -->	-5.548	-5.316	-5.080	-4.841	-4.598	-4.352	-4.104	-3.853
1906	108.4000 -->	-4.919	-4.680	-4.437	-4.191	-3.942	-3.690	-3.436	-3.179
1916	109.2000 -->	-4.294	-4.048	-3.798	-3.544	-3.287	-3.028	-2.767	-2.504
1926	110.0000 -->	-3.673	-3.420	-3.163	-2.902	-2.638	-2.371	-2.103	-1.833
1936	110.8000 -->	-3.056	-2.796	-2.532	-2.265	-1.995	-1.723	-1.449	-1.173
1946	111.6000 -->	-2.443	-2.177	-1.908	-1.636	-1.362	-1.087	-0.811	-0.533
1956	112.4000 -->	-1.834	-1.561	-1.286	-1.012	-0.737	-0.461	-0.184	0.094
1966	113.2000 -->	-1.229	-0.950	-0.668	-0.384	-0.098	0.190	0.472	0.748
1976	114.0000 -->	-0.628	-0.343	-0.057	0.231	0.514	0.791	1.062	1.327
1986	114.8000 -->	0.000	0.280	0.554	0.822	1.085	1.342	1.594	1.841
1996	115.6000 -->	0.628	0.907	1.176	1.435	1.684	1.923	2.152	2.371
2006	116.4000 -->	1.256	1.529	1.796	2.057	2.312	2.561	2.805	3.044
2016	117.2000 -->	1.884	2.151	2.412	2.667	2.916	3.160	3.400	3.635
2026	118.0000 -->	2.512	2.773	3.028	3.277	3.520	3.758	3.991	4.219
2036	118.8000 -->	3.140	3.395	3.644	3.887	4.124	4.355	4.581	4.802
2046	119.6000 -->	3.768	4.017	4.260	4.497	4.728	4.953	5.173	5.388
2056	120.4000 -->	4.396	4.639	4.876	5.107	5.332	5.551	5.768	5.981
2066	121.2000 -->	5.024	5.261	5.492	5.717	5.936	6.149	6.357	6.560
2076	122.0000 -->	5.652	5.883	6.108	6.327	6.540	6.747	6.950	7.148
2086	122.8000 -->	6.280	6.505	6.724	6.937	7.144	7.346	7.543	7.735
2096	123.6000 -->	6.908	7.127	7.340	7.547	7.748	7.944	8.136	8.323
2106	124.4000 -->	7.536	7.750	7.958	8.161	8.358	8.550	8.737	8.920
2116	125.2000 -->	8.164	8.373	8.576	8.773	8.965	9.152	9.335	9.513
2126	126.0000 -->	8.792	8.995	9.192	9.384	9.571	9.753	9.926	10.094
2136	126.8000 -->	9.420	9.617	9.808	9.994	10.175	10.351	10.523	10.690
2146	127.6000 -->	10.048	10.239	10.424	10.604	10.779	10.949	11.115	11.277
2156	128.4000 -->	10.676	10.861	11.040	11.214	11.383	11.547	11.707	11.862
2166	129.2000 -->	11.304	11.483	11.657	11.826	11.990	12.149	12.304	12.455
2176	130.0000 -->	11.932	12.106	12.275	12.439	12.598	12.752	12.902	13.048
2186	130.8000 -->	12.560	12.729	12.893	13.052	13.206	13.356	13.502	13.644
2196	131.6000 -->	13.188	13.352	13.511	13.666	13.816	13.962	14.105	14.244
2206	132.4000 -->	13.816	13.975	14.129	14.278	14.423	14.564	14.702	14.836
2216	133.2000 -->	14.444	14.598	14.747	14.892	15.033	15.170	15.303	15.432
2226	134.0000 -->	15.072	15.221	15.365	15.505	15.641	15.773	15.902	16.028
2236	134.8000 -->	15.700	15.843	15.981	16.116	16.247			

	msec	NEKOM (N-m)		Min, Max values =			
1726	94.0000 -->	-16.230	-16.138	-15.874	-15.795	-15.718	-4.509 @ 114.0000
1736	94.8000 -->	-15.404	-15.333	-15.111	-15.033	-14.955	-15.560
1746	95.6000 -->	-14.620	-14.536	-14.299	-14.226	-14.152	-14.792
1756	96.4000 -->	-13.826	-13.754	-13.687	-13.620	-13.551	-13.989
1766	97.2000 -->	-13.154	-13.099	-13.037	-12.967	-12.889	-13.267
1776	98.0000 -->	-12.439	-12.369	-12.303	-12.242	-12.188	-12.584
1786	98.8000 -->	-11.790	-11.725	-11.665	-11.607	-11.550	-12.511
1796	99.6000 -->	-11.183	-11.120	-11.061	-11.006	-10.952	-11.938
1806	100.4000 -->	-10.549	-10.481	-10.417	-10.354	-10.287	-11.316
1816	101.2000 -->	-9.925	-9.883	-9.841	-9.799	-9.755	-10.692
1826	102.0000 -->	-9.509	-9.468	-9.431	-9.398	-9.363	-10.019
1836	102.8000 -->	-9.039	-9.004	-8.979	-8.961	-8.942	-9.591
1846	103.6000 -->	-8.744	-8.721	-8.695	-8.664	-8.631	-9.143
1856	104.4000 -->	-8.441	-8.401	-8.359	-8.319	-8.284	-8.797
1866	105.2000 -->	-8.068	-8.036	-8.013	-7.994	-7.977	-8.509
1876	106.0000 -->	-7.808	-7.778	-7.755	-7.737	-7.721	-8.152
1886	106.8000 -->	-7.501	-7.465	-7.437	-7.412	-7.384	-7.913
1896	107.6000 -->	-7.181	-7.144	-7.106	-7.068	-7.032	-7.673
1906	108.4000 -->	-6.853	-6.821	-6.793	-6.764	-6.730	-7.323
1916	109.2000 -->	-6.565	-6.541	-6.507	-6.466	-6.427	-7.257
1926	110.0000 -->	-6.273	-6.232	-6.188	-6.141	-6.097	-6.921
1936	110.8000 -->	-5.958	-5.926	-5.890	-5.849	-5.803	-6.624
1946	111.6000 -->	-5.551	-5.516	-5.477	-5.434	-5.391	-6.356
1956	112.4000 -->	-5.195	-5.161	-5.126	-5.091	-5.052	-6.015
1966	113.2000 -->	-4.802	-4.772	-4.745	-4.718	-4.692	-5.755
1976	114.0000 -->	-4.509					-5.351
							-5.285
							-5.011
							-4.966
							-4.638
							-4.611
							-4.581
							-4.546
							-4.511
							-4.477
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							-4.407
							-4.372
							-4.337
							-4.302
							-4.267
							-4.232
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							-3.812
							-3.777
							-3.742
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[DUMMY.421C03]421C03NE1D.RAD;1
TRC INC. 421C03NE1 01232
NEKOM Deltax = 0.080000 msec

572 O SN421 NECK EXT. CAL 3 6.1 m/sec
Npts = 8000; IP0 = 551; Filter = BLPP 1000/ 2500/ -16

	msec	NEKOM (N-m	)	Min, Max values =	-16.230 @ 94.0000	-15.718	-15.639	-4.509 @ 114.0000
1726	94.0000 -->	-16.230	-16.138	-15.957	-15.874	-15.795	-15.560	-15.480
1736	94.8000 -->	-15.404	-15.333	-15.188	-15.111	-15.033	-14.792	-14.706
1746	95.6000 -->	-14.620	-14.536	-14.375	-14.299	-14.226	-13.989	-13.905
1756	96.4000 -->	-13.826	-13.754	-13.687	-13.551	-13.478	-13.267	-13.209
1766	97.2000 -->	-13.154	-13.099	-12.967	-12.889	-12.731	-12.584	-12.511
1776	98.0000 -->	-12.439	-12.369	-12.242	-12.188	-12.079	-11.938	-11.861
1786	98.8000 -->	-11.790	-11.725	-11.607	-11.550	-11.439	-11.316	-11.249
1796	99.6000 -->	-11.183	-11.120	-11.006	-10.952	-10.830	-10.692	-10.620
1806	100.4000 -->	-10.549	-10.481	-10.354	-10.287	-10.216	-10.078	-9.969
1816	101.2000 -->	-9.925	-9.883	-9.799	-9.755	-9.711	-9.591	-9.552
1826	102.0000 -->	-9.509	-9.468	-9.398	-9.363	-9.320	-9.205	-9.087
1836	102.8000 -->	-9.039	-8.979	-8.981	-8.942	-8.915	-8.835	-8.767
1846	103.6000 -->	-8.744	-8.721	-8.664	-8.631	-8.599	-8.509	-8.477
1856	104.4000 -->	-8.441	-8.401	-8.319	-8.284	-8.255	-8.152	-8.108
1866	105.2000 -->	-8.068	-8.036	-7.994	-7.977	-7.959	-7.880	-7.843
1876	106.0000 -->	-7.808	-7.778	-7.755	-7.737	-7.700	-7.637	-7.593
1886	106.8000 -->	-7.501	-7.465	-7.412	-7.384	-7.354	-7.257	-7.219
1896	107.6000 -->	-7.181	-7.144	-7.068	-7.032	-7.000	-6.921	-6.887
1906	108.4000 -->	-6.853	-6.821	-6.764	-6.730	-6.692	-6.601	-6.583
1916	109.2000 -->	-6.565	-6.541	-6.466	-6.427	-6.395	-6.335	-6.308
1926	110.0000 -->	-6.273	-6.232	-6.141	-6.097	-6.060	-6.000	-5.983
1936	110.8000 -->	-5.958	-5.926	-5.849	-5.803	-5.755	-5.664	-5.585
1946	111.6000 -->	-5.551	-5.516	-5.434	-5.391	-5.351	-5.257	-5.227
1956	112.4000 -->	-5.195	-5.161	-5.091	-5.052	-5.011	-4.877	-4.837
1966	113.2000 -->	-4.802	-4.772	-4.718	-4.692	-4.665	-4.581	-4.546
1976	114.0000 -->	-4.509						

	msec	NEKOM	(N-m	)	Min, Max values =	-16.230 @	94.0000	-4.509 @	114.0000
1726	94.0000 -->	-16.230	-16.138	-16.046	-15.957	-15.795	-15.639	-15.560	-15.480
1736	94.8000 -->	-15.404	-15.333	-15.262	-15.188	-15.033	-14.875	-14.792	-14.706
1746	95.6000 -->	-14.620	-14.536	-14.455	-14.375	-14.226	-14.073	-13.989	-13.905
1756	96.4000 -->	-13.826	-13.754	-13.687	-13.620	-13.478	-13.332	-13.267	-13.209
1766	97.2000 -->	-13.154	-13.099	-13.037	-12.967	-12.809	-12.657	-12.584	-12.511
1776	98.0000 -->	-12.439	-12.369	-12.303	-12.242	-12.135	-12.013	-11.938	-11.861
1786	98.8000 -->	-11.790	-11.725	-11.665	-11.607	-11.495	-11.380	-11.316	-11.249
1796	99.6000 -->	-11.183	-11.120	-11.061	-11.006	-10.894	-10.763	-10.692	-10.620
1806	100.4000 -->	-10.549	-10.481	-10.417	-10.354	-10.216	-10.078	-10.019	-9.969
1816	101.2000 -->	-9.925	-9.883	-9.841	-9.799	-9.711	-9.629	-9.591	-9.552
1826	102.0000 -->	-9.509	-9.468	-9.431	-9.398	-9.320	-9.205	-9.143	-9.087
1836	102.8000 -->	-9.039	-9.004	-8.979	-8.961	-8.915	-8.835	-8.797	-8.767
1846	103.6000 -->	-8.744	-8.721	-8.695	-8.664	-8.599	-8.539	-8.509	-8.477
1856	104.4000 -->	-8.441	-8.401	-8.359	-8.319	-8.255	-8.193	-8.152	-8.108
1866	105.2000 -->	-8.068	-8.036	-8.013	-7.994	-7.959	-7.913	-7.880	-7.843
1876	106.0000 -->	-7.808	-7.778	-7.755	-7.737	-7.700	-7.637	-7.593	-7.546
1886	106.8000 -->	-7.501	-7.465	-7.437	-7.412	-7.354	-7.291	-7.257	-7.219
1896	107.6000 -->	-7.181	-7.144	-7.106	-7.068	-7.000	-6.948	-6.921	-6.887
1906	108.4000 -->	-6.853	-6.821	-6.793	-6.764	-6.692	-6.624	-6.601	-6.583
1916	109.2000 -->	-6.565	-6.541	-6.507	-6.466	-6.395	-6.356	-6.335	-6.308
1926	110.0000 -->	-6.273	-6.232	-6.188	-6.141	-6.060	-6.015	-6.000	-5.983
1936	110.8000 -->	-5.958	-5.926	-5.890	-5.849	-5.755	-5.664	-5.623	-5.585
1946	111.6000 -->	-5.551	-5.516	-5.477	-5.434	-5.351	-5.285	-5.257	-5.227
1956	112.4000 -->	-5.195	-5.161	-5.126	-5.091	-5.011	-4.921	-4.877	-4.837
1966	113.2000 -->	-4.802	-4.772	-4.745	-4.718	-4.665	-4.611	-4.581	-4.546
1976	114.0000 -->	-4.509							

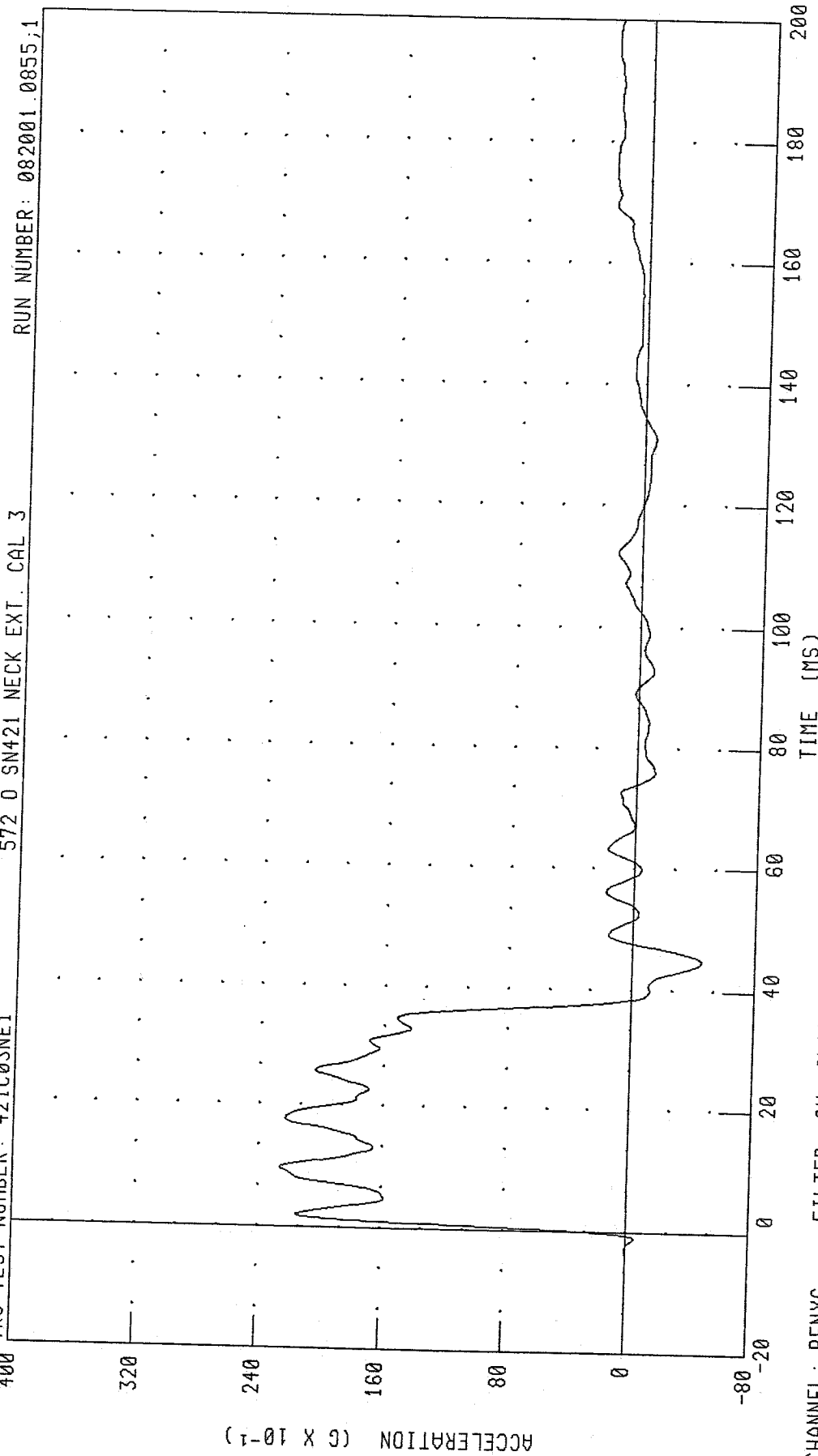
PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

PENDULUM DECELERATION

TRC TEST NUMBER: 421C03NE1

572 0 SN421 NECK EXT. CAL 3

RUN NUMBER: 082001.0855;1



CHANNEL: PENXG FILTER: CH. CLASS 180

PEAK DATA: 22.61 G @ 9.76 MS; -4.54 G @ 44.80 MS

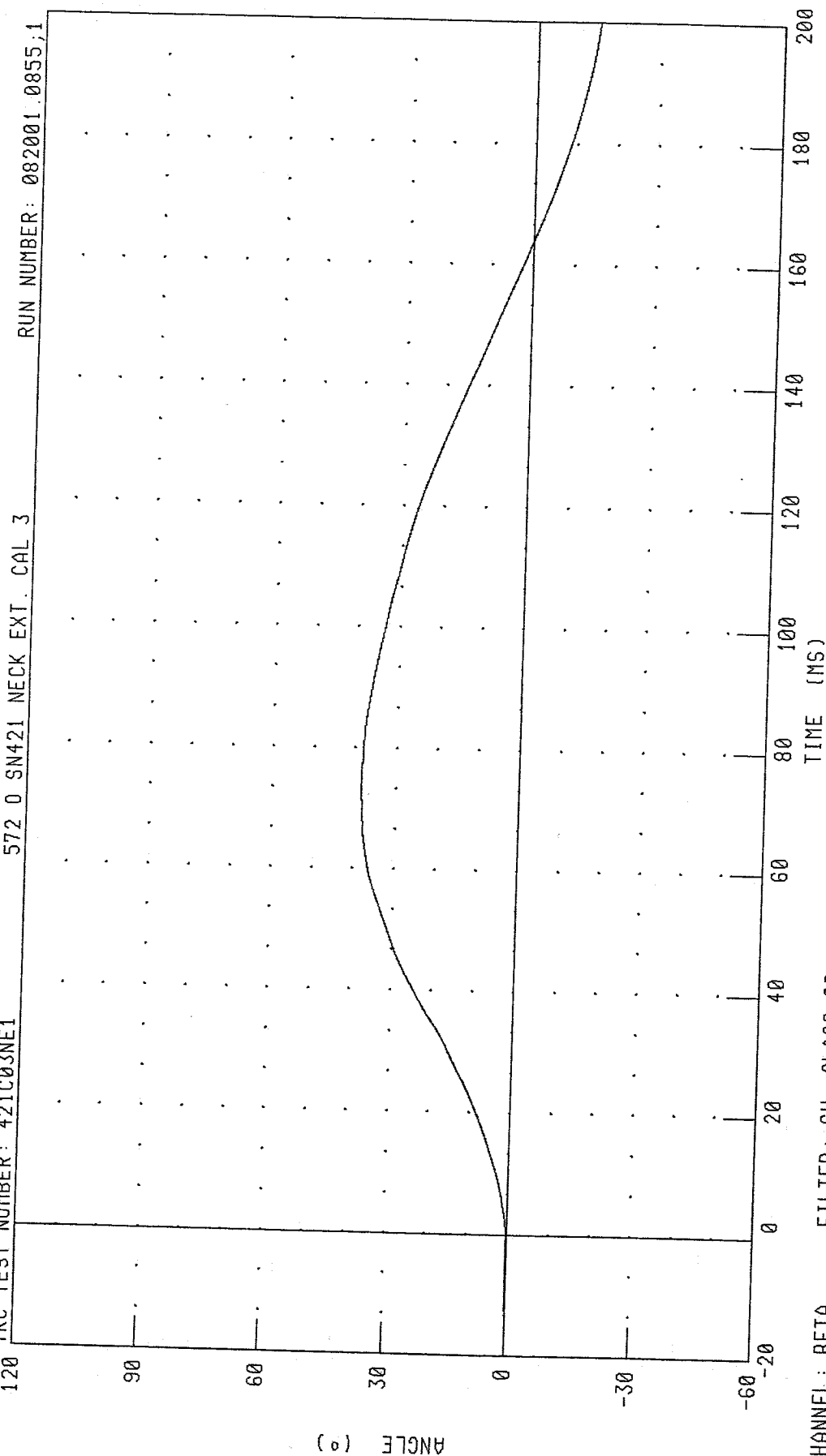
PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER: 421C03NE1

572 0 SN421 NECK EXT. CAL 3

RUN NUMBER: 082001.0855;1



CHANNEL: BETA

FILTER: CH. CLASS 60

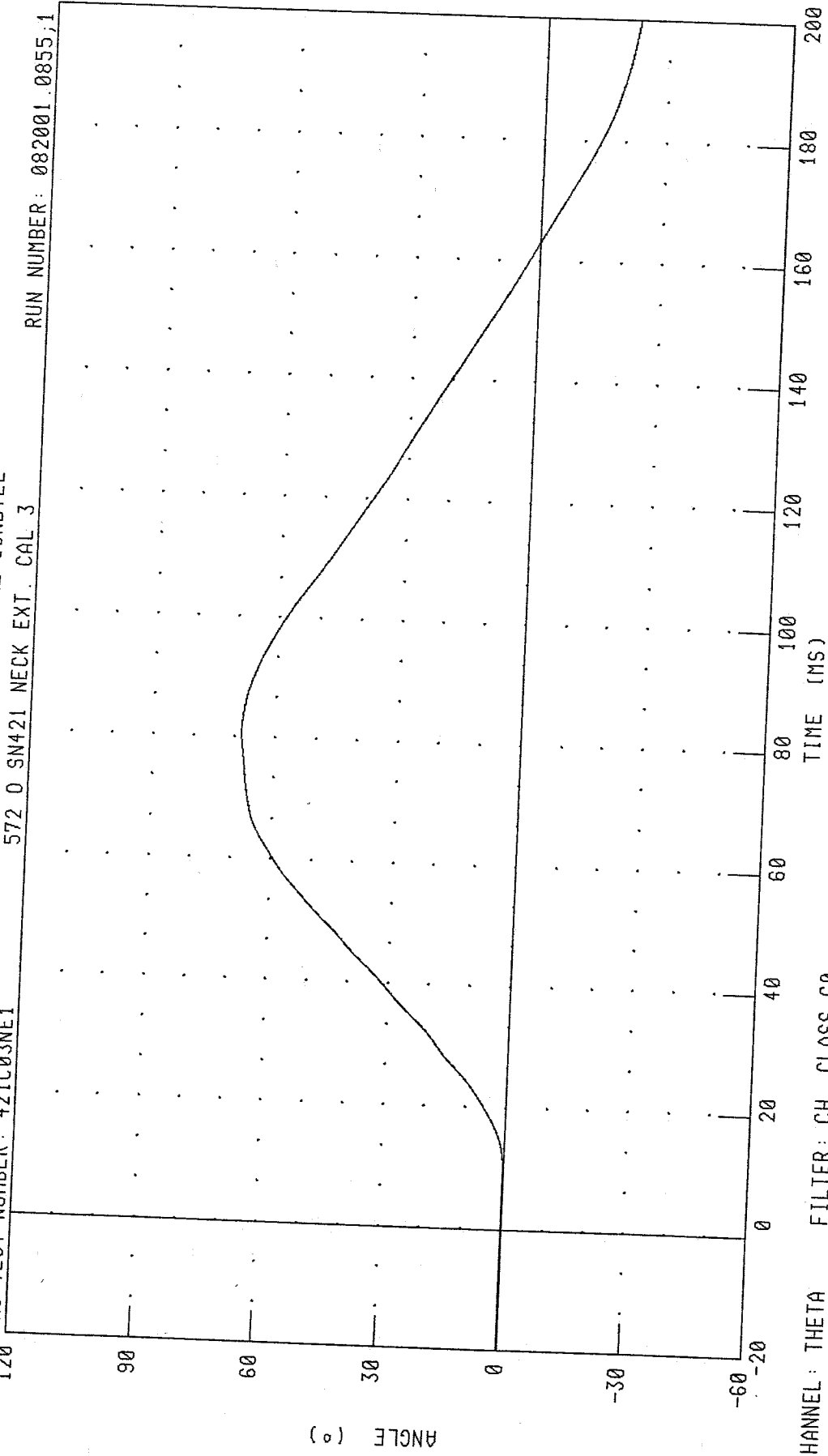
PEAK DATA: 38.25 ° @ 74.40 MS; -15.08 ° @ 200.00 MS

PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION
ROTATION ABOUT OCCIPITAL CONDYLE

IRC TEST NUMBER: 421C03NE1

572 0 SN421 NECK EXT. CAL 3

RUN NUMBER: 082001.0855;1



CHANNEL: THETA FILTER: CH. CLASS 60

PEAK DATA: 68.22 ° @ 81.28 MS; -22.81 ° @ 200.00 MS

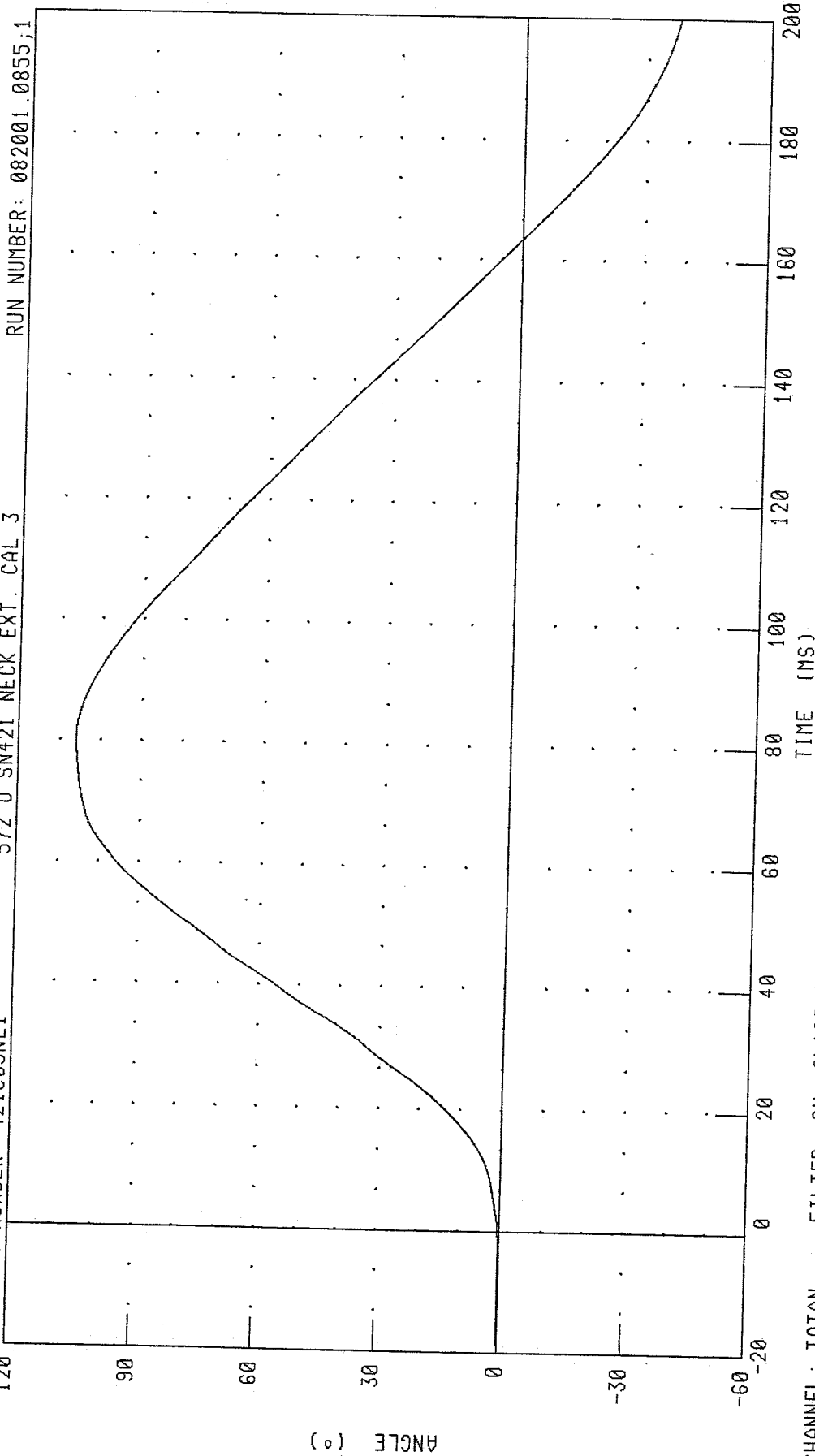
PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

TOTAL ROTATION

TRC TEST NUMBER: 421C03NE1

572 0 SN421 NECK EXT. CAL 3

RUN NUMBER: 082001.0855,1



CHANNEL: TOTAL FILTER: CH. CLASS 60

PEAK DATA: 106.14 ° @ 80.48 MS; -37.89 ° @ 200.00 MS

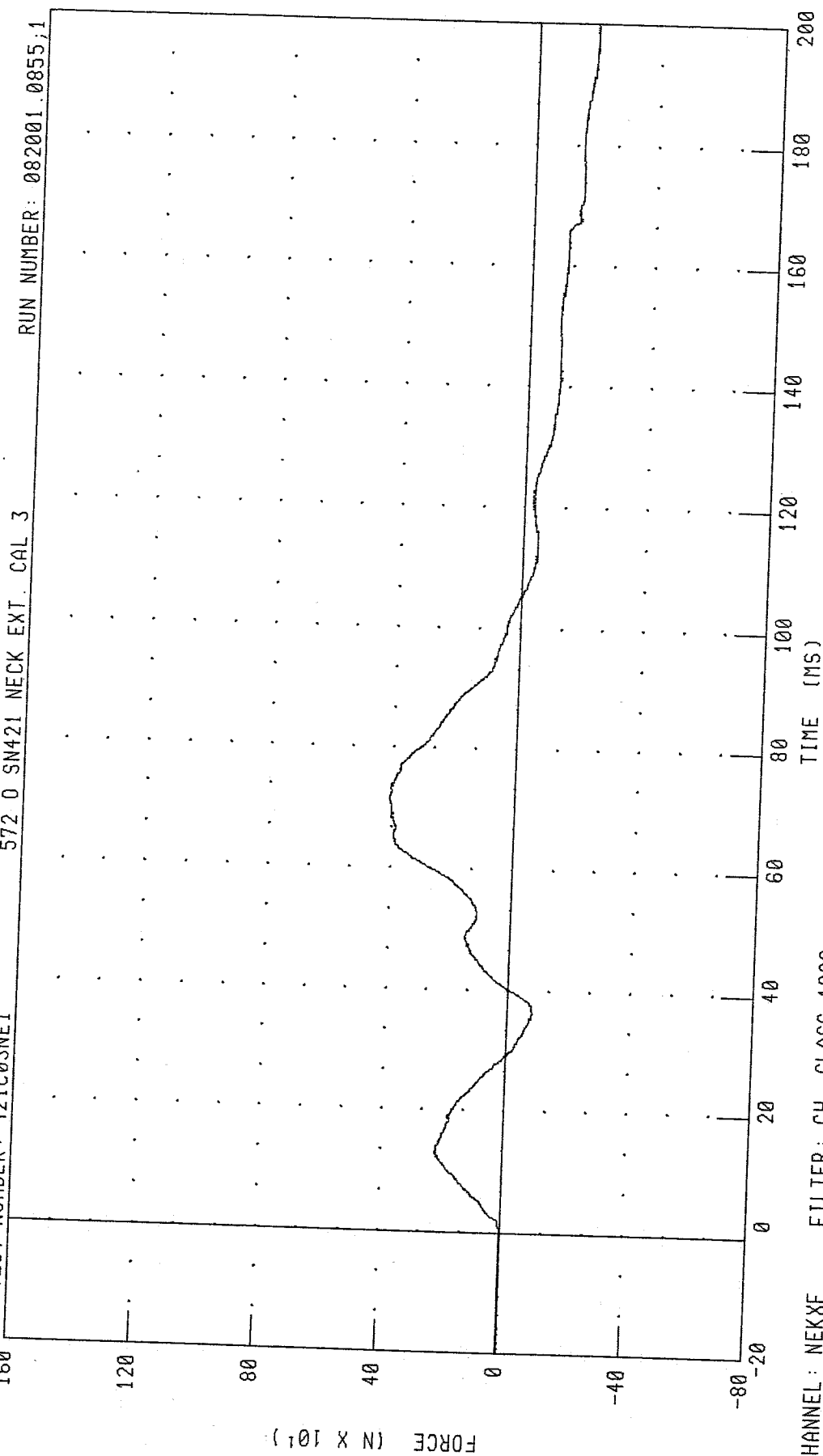
PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

TRC TEST NUMBER: 421C03NE1

NECK FORCE X AXIS

572 0 SN421 NECK EXT. CAL 3

RUN NUMBER: 082001.0855;1



CHANNEL: NEKXF FILTER: CH. CLASS 1000

PEAK DATA: 409.48 N @ 71.12 MS; -194.72 N @ 195.12 MS

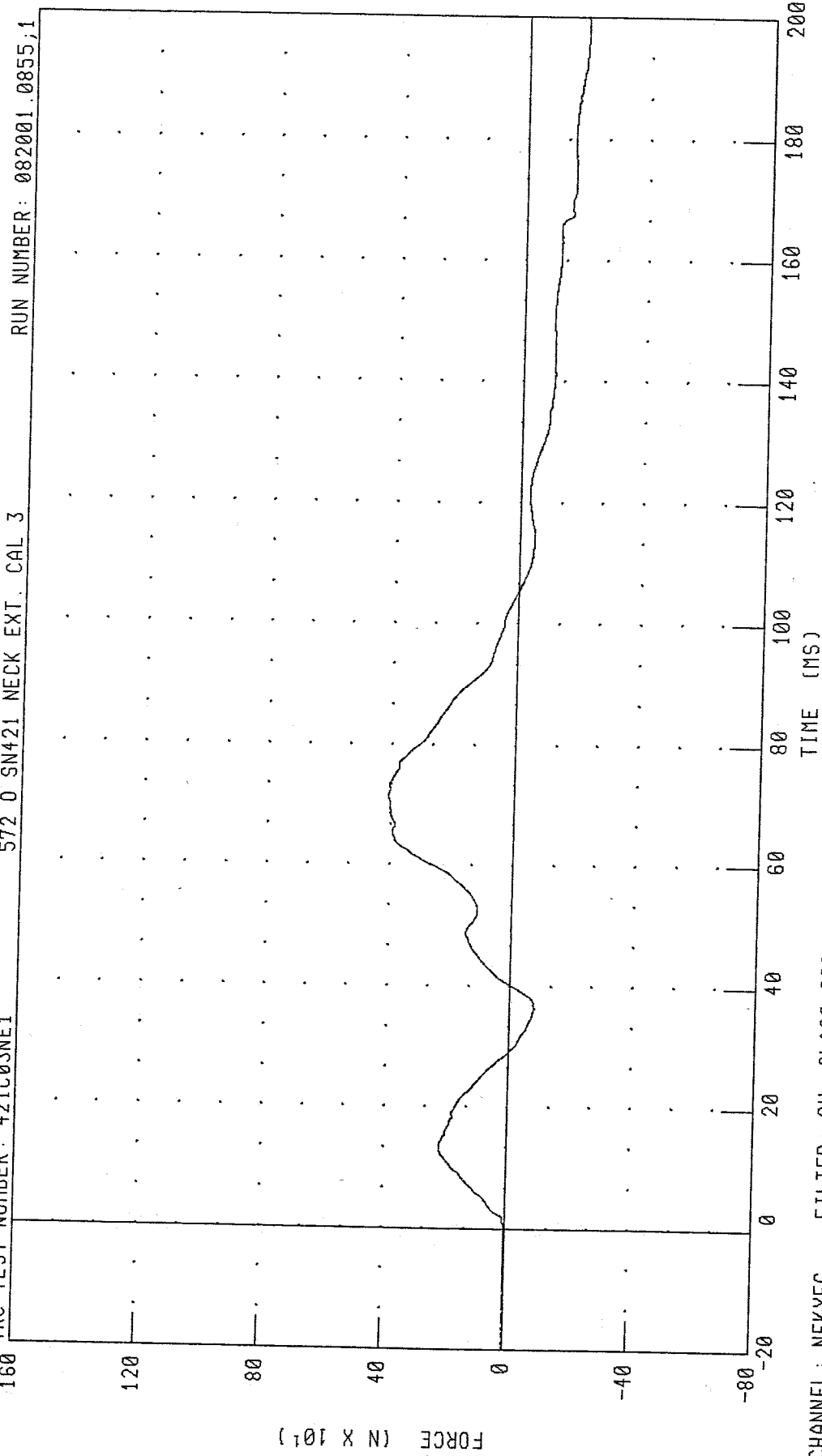
PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

NECK FORCE X AXIS FILTERED FOR USE IN OCCIPITAL MOMENT CALCULATION

TRC TEST NUMBER: 421C03NE1

572 0 SN421 NECK EXT. CAL 3

RUN NUMBER: 082001.0855;1



CHANNEL: NEKXFC FILTER: CH. CLASS 600

PEAK DATA: 409.78 N @ 71.44 MS; -194.78 N @ 197.92 MS

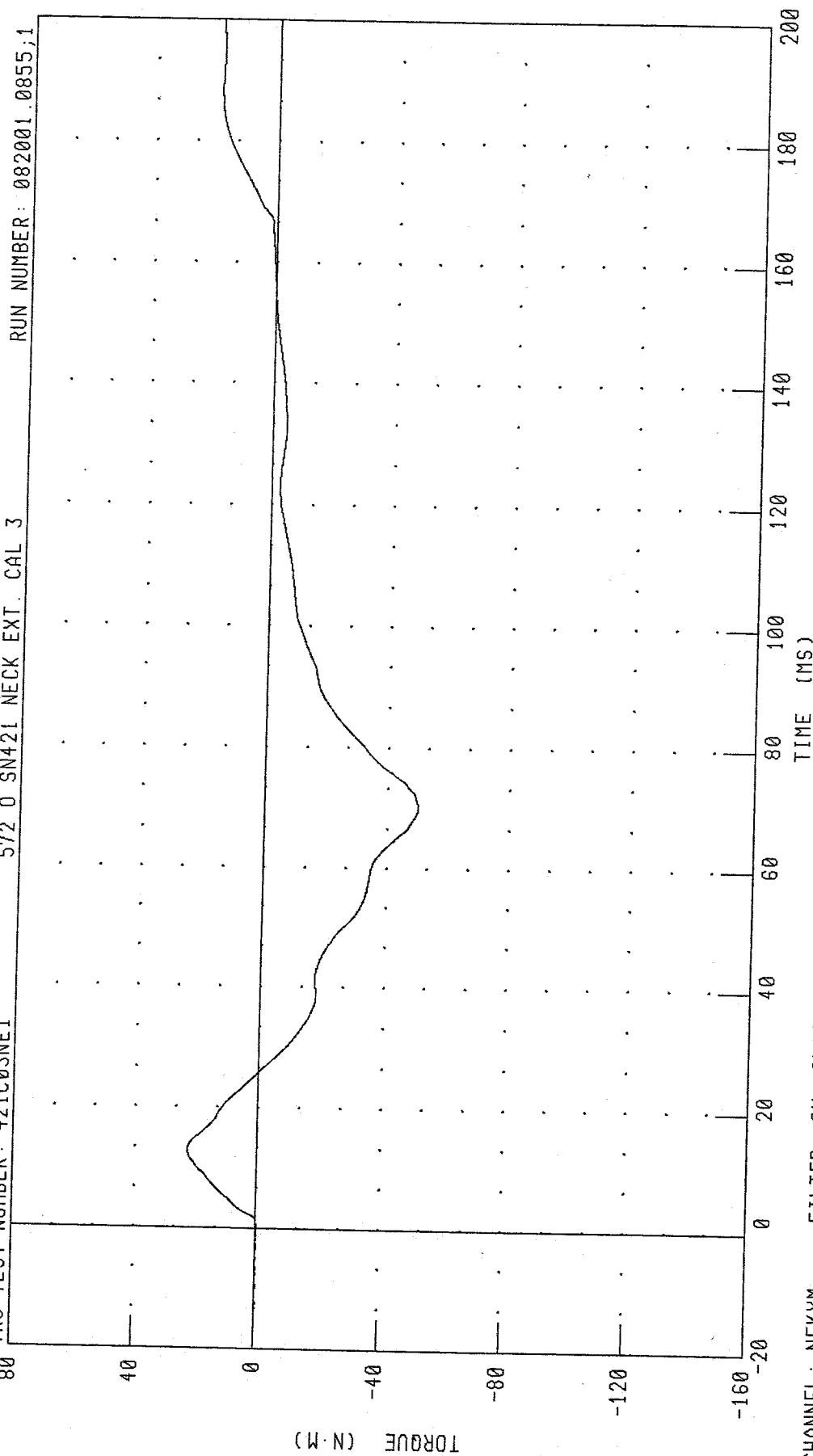
PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

NECK MOMENT Y AXIS

TRC TEST NUMBER: 421C03NE1

572 0 SN421 NECK EXT. CAL 3

RUN NUMBER: 082001.0855;1



CHANNEL: NEKYM

FILTER: CH. CLASS 600

TIME (MS)

PEAK DATA: 22.90 N·M @ 12.96 MS; -50.09 N·M @ 70.24 MS

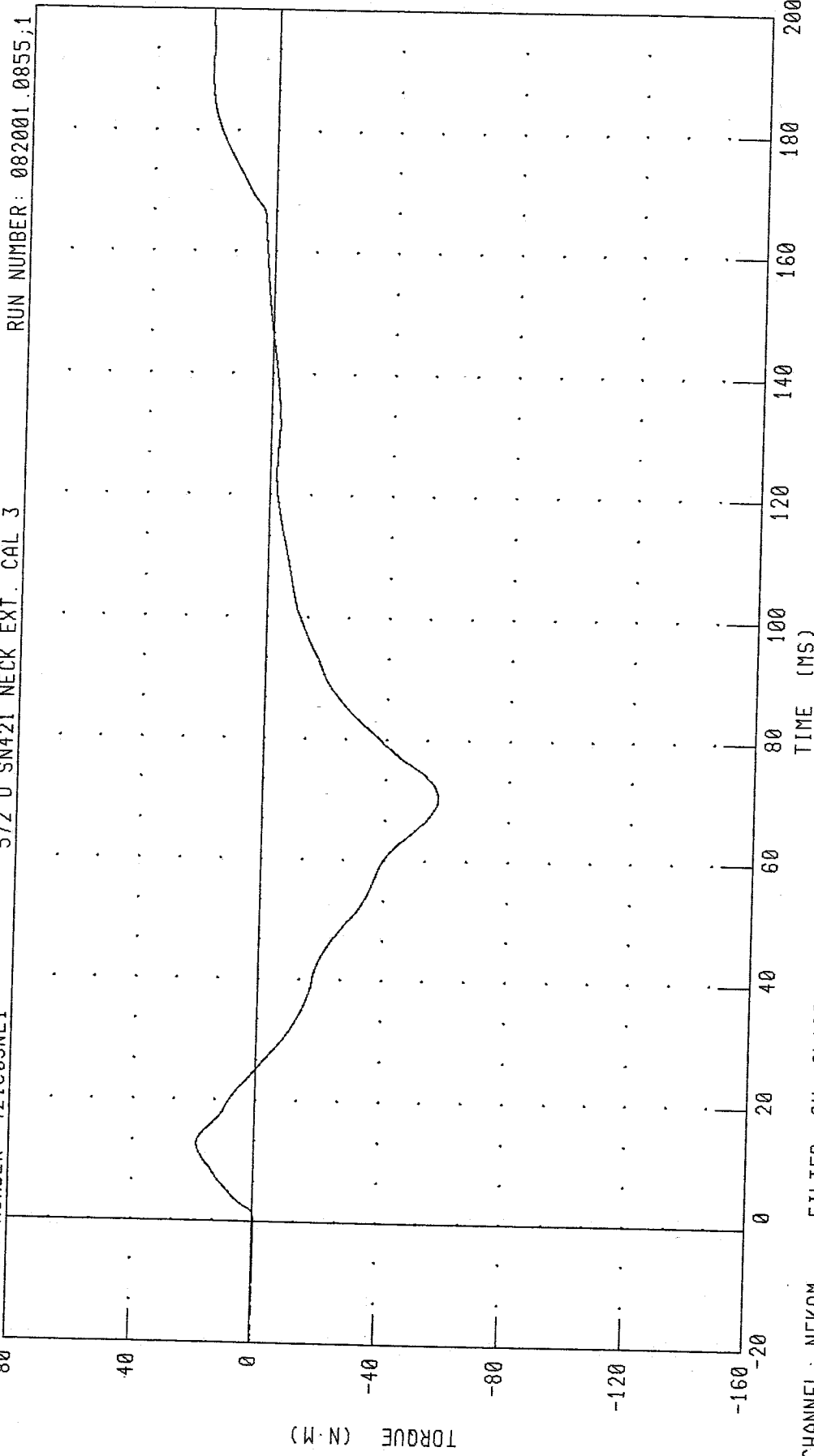
PART 572-0 HYBRID III SMALL FEMALE - NECK EXTENSION CALIBRATION

TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

IRC TEST NUMBER: 421C03NE1

572 0 SN421 NECK EXT. CAL 3

RUN NUMBER: 082001.0855,1



CHANNEL: NEKOM

FILTER: CH. CLASS 600

TIME (MS)

PEAK DATA: 21.91 N-M @ 199.52 MS, -57.22 N-M @ 70.32 MS

TRANSPORTATION RESEARCH CENTER INC.

THORAX IMPACT TEST

HYBRID III SMALL FEMALE

21-AUG-01

TRC INC.

TEST NO: 421C03TH1

572 0 SN421 THORAX CAL3

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	6.71 M/S
MAXIMUM DEFLECTION	50 - 58 MM	50.8 MM
PEAK RESISTIVE FORCE DURING DEFLECTION INTERVAL	3900 - 4400 N	4188. N
INTERNAL HYSTERESIS	69% - 85%	73.3%
PEAK FORCE DURING 18 TO 50 MM DEFLECTION	<= 105%	102%

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 082101.1353;1

3395.3	@	22
4038.0		40
3925.6		39
3825.1		38
3727.3		37
3626.4		36
3493.7		34

	msec	CSTXD (mm)	Min, Max values =	-0.007 @	0.0800	50.836 @	20.0000
1079	0.0000 -->	-0.005	-0.003	-0.005	0.000	0.002	0.001
1089	0.8000 -->	0.000	0.018	0.007	0.035	0.058	0.000
1099	1.6000 -->	0.290	0.545	0.450	0.365	0.775	0.170
1109	2.4000 -->	1.627	2.267	2.047	2.495	0.775	0.125
1119	3.2000 -->	4.183	4.938	4.546	5.351	2.267	1.072
1129	4.0000 -->	8.478	9.399	8.938	5.781	6.220	1.244
1139	4.8000 -->	13.263	14.297	13.778	10.329	6.664	3.541
1149	5.6000 -->	18.514	19.571	18.543	15.339	10.800	7.565
1159	6.4000 -->	23.403	24.269	23.835	20.611	15.862	12.254
1169	7.2000 -->	27.602	28.242	27.934	25.147	21.115	12.755
						22.071	17.450
						25.588	17.983
						26.450	22.525
						29.065	22.968
						29.592	27.243
							26.858
							29.869
							30.165
1179	8.0000 -->	30.482	31.180	30.822	31.920	32.281	33.263
1189	8.8000 -->	33.813	34.281	34.056	34.692	34.884	33.263
1199	9.6000 -->	35.845	36.295	36.063	36.791	35.256	35.444
1209	10.4000 -->	38.252	38.685	38.471	38.892	37.047	35.639
1219	11.2000 -->	40.280	40.715	40.493	39.094	37.302	37.792
1229	12.0000 -->	42.534	42.928	42.733	41.181	39.486	39.876
1239	12.8000 -->	44.501	44.909	44.705	43.313	41.657	42.113
1249	13.6000 -->	46.365	46.648	46.511	45.314	43.698	42.328
1259	14.4000 -->	47.339	47.477	47.406	46.886	45.509	44.297
1269	15.2000 -->	48.300	48.514	48.409	47.556	46.984	46.210
						47.740	47.209
						48.789	47.274
						48.946	48.073
							49.102
1279	16.0000 -->	49.182	49.343	49.263	49.496	49.627	49.732
1289	16.8000 -->	49.819	49.894	49.858	49.929	49.682	49.777
1299	17.6000 -->	50.208	50.312	50.259	50.365	50.077	50.160
1309	18.4000 -->	50.649	50.670	50.689	50.708	50.513	50.624
1319	19.2000 -->	50.787	50.791	50.797	50.805	50.756	50.783
1329	20.0000 -->	50.836	50.835	50.832	50.826	50.829	50.835
1339	20.8000 -->	50.688	50.659	50.628	50.593	50.804	50.835
1349	21.6000 -->	50.320	50.274	50.268	50.555	50.786	50.715
1359	22.4000 -->	49.814	49.762	49.724	50.124	50.476	50.401
1369	23.2000 -->	49.143	49.065	49.065	49.646	50.019	50.362
						49.443	49.915
						48.742	49.220
						48.659	49.296
						48.572	48.392
							48.483
1379	24.0000 -->	48.300	48.208	48.022	47.927	47.729	47.522
1389	24.8000 -->	47.313	47.206	46.990			47.418

	msec	PENXF	(N	)	Min, Max values =	2746.7 @	6.6400	4188.6 @	15.6800
1149	5.6000 -->	3009.9	2971.0	2934.7	2870.5	2819.2	2798.9	2782.2	2769.1
1159	6.4000 -->	2759.3	2752.6	2748.5	2747.1	2753.9	2760.5	2769.5	2781.0
1169	7.2000 -->	2795.2	2812.1	2831.8	2879.5	2937.4	2969.5	3003.4	3038.6
1179	8.0000 -->	3074.7	3111.4	3148.5	3185.9	3300.9	3340.6	3381.0	3421.9
1189	8.8000 -->	3463.2	3504.6	3545.6	3625.6	3701.2	3737.0	3771.4	3804.2
1199	9.6000 -->	3835.6	3865.6	3894.3	3921.8	3973.9	4021.5	4043.0	4062.8
1209	10.4000 -->	4080.4	4095.7	4108.7	4128.3	4140.9	4145.1	4148.2	4150.4
1219	11.2000 -->	4151.7	4152.1	4151.8	4148.7	4142.2	4137.5	4131.8	4125.2
1229	12.0000 -->	4118.0	4110.5	4103.2	4090.1	4080.7	4077.3	4074.7	4072.7
1239	12.8000 -->	4071.1	4069.9	4068.8	4067.2	4066.6	4066.3	4066.8	4067.8
1249	13.6000 -->	4069.7	4072.3	4075.9	4085.3	4090.8	4101.8	4107.0	4111.7
1259	14.4000 -->	4116.2	4120.4	4124.7	4133.9	4139.0	4150.3	4156.3	4162.3
1269	15.2000 -->	4168.1	4173.5	4178.4	4185.5	4187.6	4188.6	4187.7	4186.2
1279	16.0000 -->	4184.2	4181.9	4179.3	4173.3	4169.6	4165.3	4154.2	4147.4
1289	16.8000 -->	4139.8	4131.5	4122.6	4113.3	4094.0			

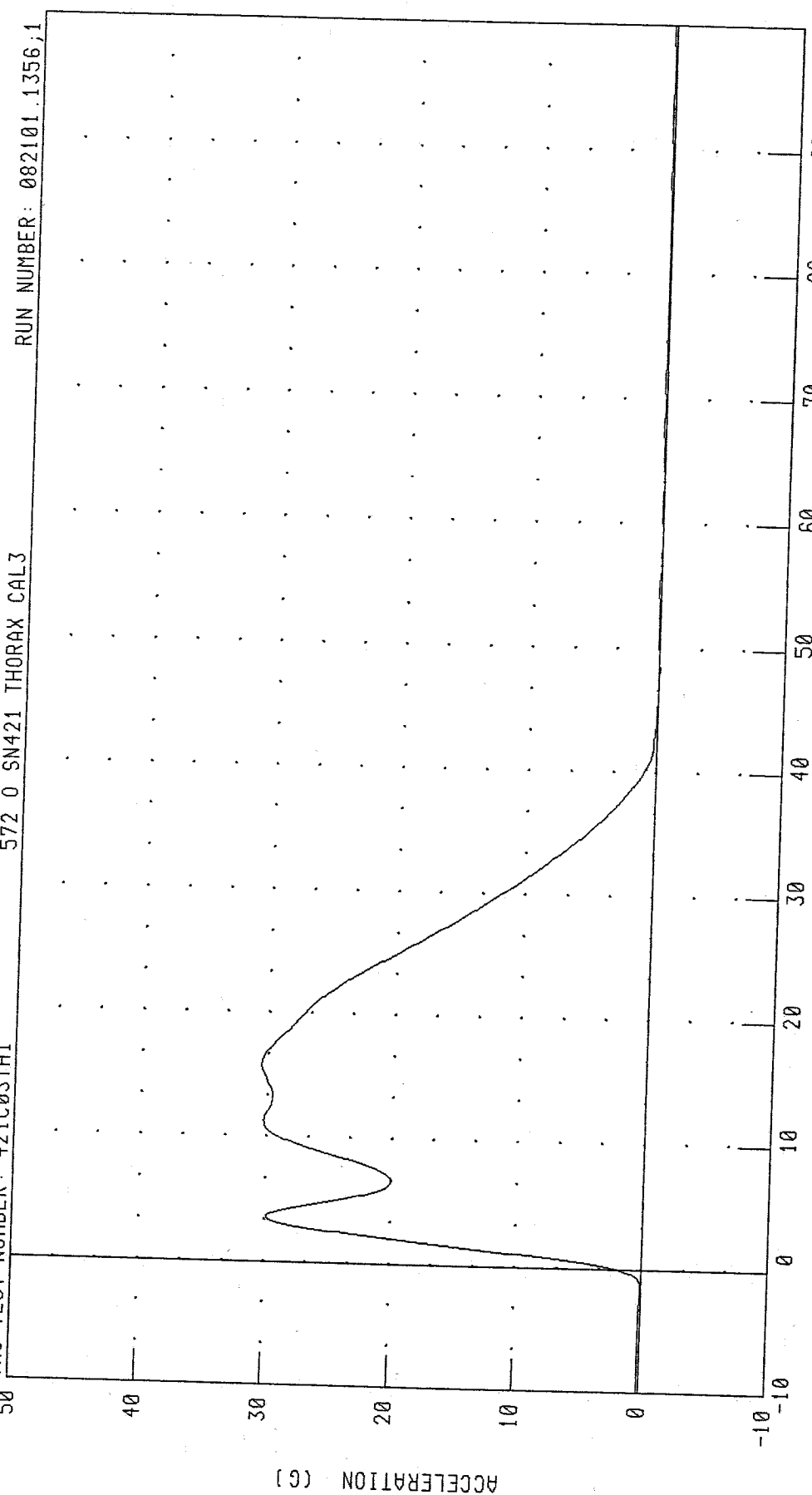
PART 572-0 HYBRID III SMALL FEMALE - THORAX CALIBRATION

PENDULUM DECELERATION

572 0 SN421 THORAX CAL3

RUN NUMBER: 082101.1356;1

50 IRC TEST NUMBER: 421003TH1



CHANNEL: PENXG

FILTER: CH. CLASS 180

TIME (MS)

PEAK DATA: 30.52 G @ 15.68 MS, -0.07 G @ 48.40 MS

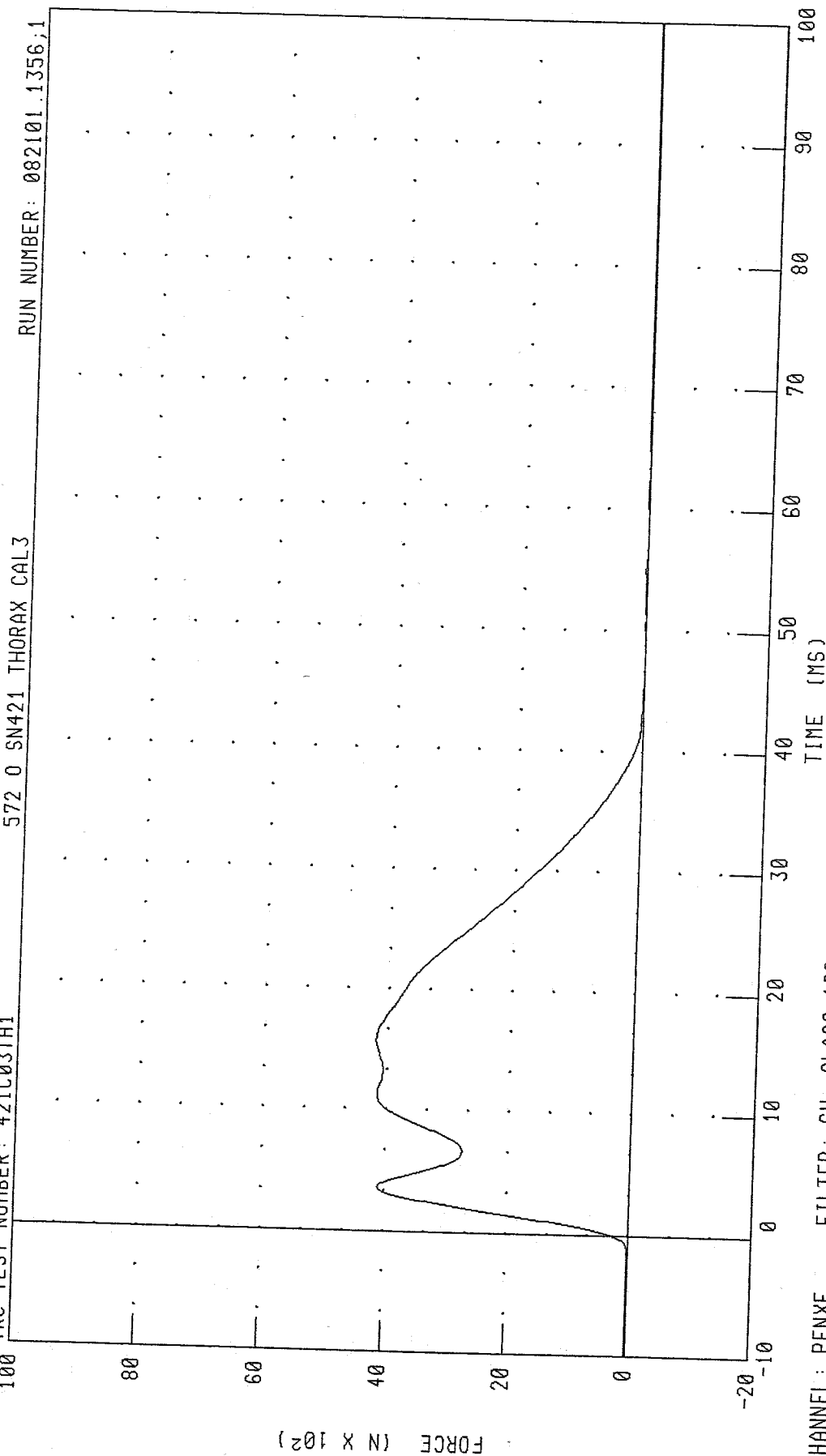
PART 572-0 HYBRID III SMALL FEMALE - THORAX CALIBRATION

PENDULUM FORCE

TRC TEST NUMBER: 421C03TH1

572 0 SN421 THORAX CAL3

RUN NUMBER: 082101.1356,1



CHANNEL: PENXF FILTER: CH. CLASS 180

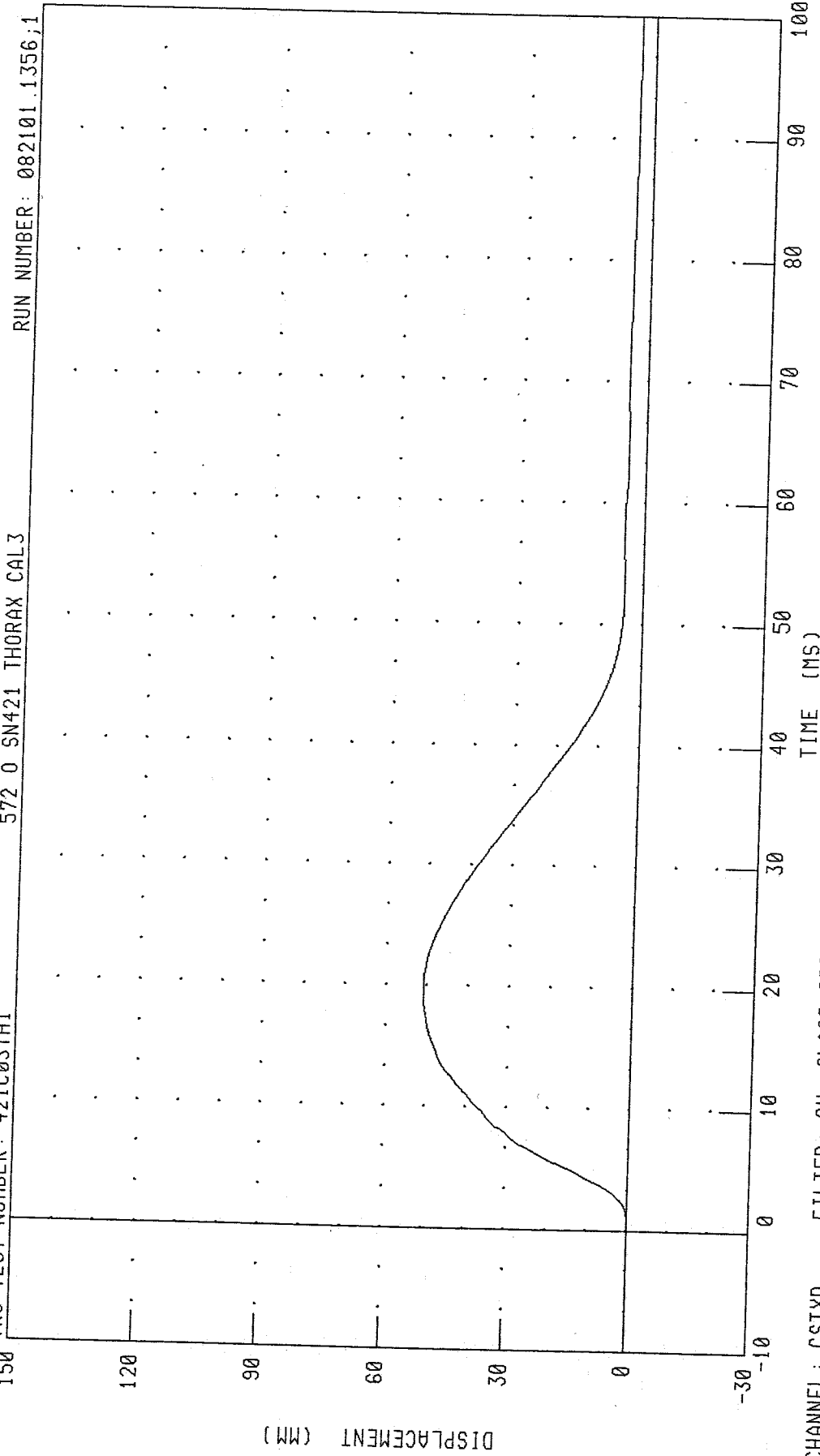
PEAK DATA: 4188.58 N @ 15.68 MS; -9.93 N @ 48.40 MS

PART 572-0 HYBRID III SMALL FEMALE - THORAX CALIBRATION

TRC TEST NUMBER: 421C03TH1

572 0 SN421 THORAX CAL3

RUN NUMBER: 082101.1356;1



CHANNEL: CSTXD FILTER: CH. CLASS 600

PEAK DATA: 50.84 MM @ 20.00 MS; -0.01 MM @ -5.28 MS

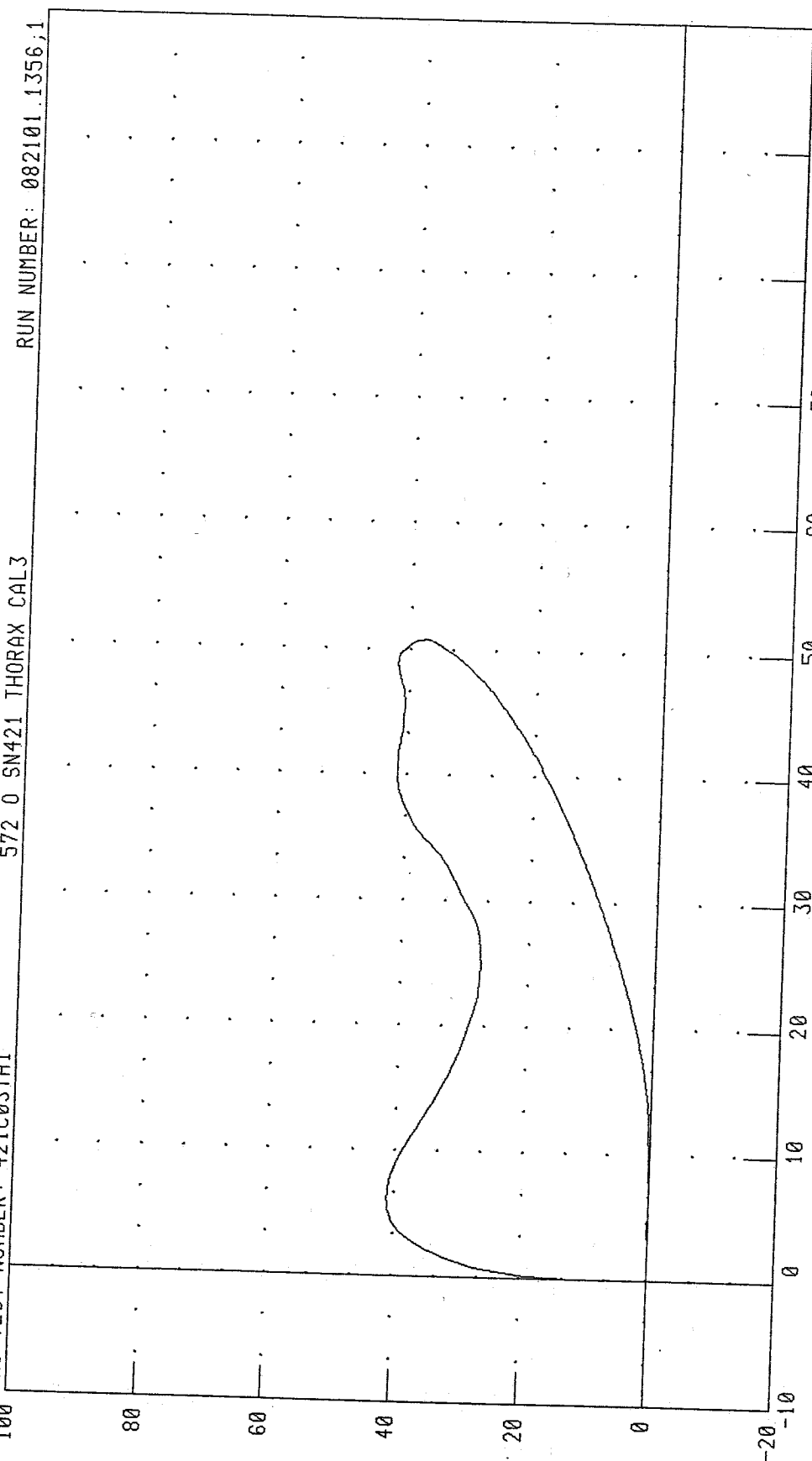
PART 572-0 HYBRID III SMALL FEMALE - THORAX CALIBRATION
CHEST DISPLACEMENT VS PENDULUM FORCE

TRC TEST NUMBER: 421C03TH1

572 0 SN421 THORAX CAL3

RUN NUMBER: 082101.1356;1

FORCE (N X 10²)



CHANNEL: CSTXD
PENXF

FILTER: CH: CLASS 600
CH: CLASS 180

DISPLACEMENT (MM)

PEAK DATA: 50.84 MM @ 20.00 MS; -0.01 MM @ -5.28 MS
4188.58 N @ 15.68 MS; -9.93 N @ 48.40 MS

TRANSPORTATION RESEARCH CENTER INC.

TORSO FLEXION TEST

HYBRID III SMALL FEMALE

CAL DATE: 20-Aug-01

TRC, INC.

TEST NO: 421C03TF1

572 O SN 421 TORSO FLEX CAL 03

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	65 %
INITIAL ANGLE OF UNSUPPORTRED DUMMY	<= 20 DEG. REFERENCED TO VERTICAL	4 DEG.
MAXIMUM FORCE AT 45 DEG. DURING 10 SECOND PERIOD	320 -390 N	342 N
RETURN ANGLE @ 3MINUTES	+/- 8 DEG OF INITIAL ANGLE	2 DEG.

TEST MEETS SPECIFICATIONS

TECHNICIAN



TRANSPORTATION RESEARCH CENTER INC.

LEFT KNEE IMPACT TEST

HYBRID III SMALL FEMALE

15-AUG-01

TRC INC.

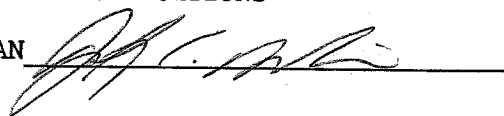
TEST NO: 421C03LK1

572 O SN421 LEFT KNEE CAL3

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	56.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.09 M/S
PEAK KNEE IMPACT FORCE 3.0 KG PENDULUM	3400 - 4200 N	3819.0 N

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 081501.1012;1

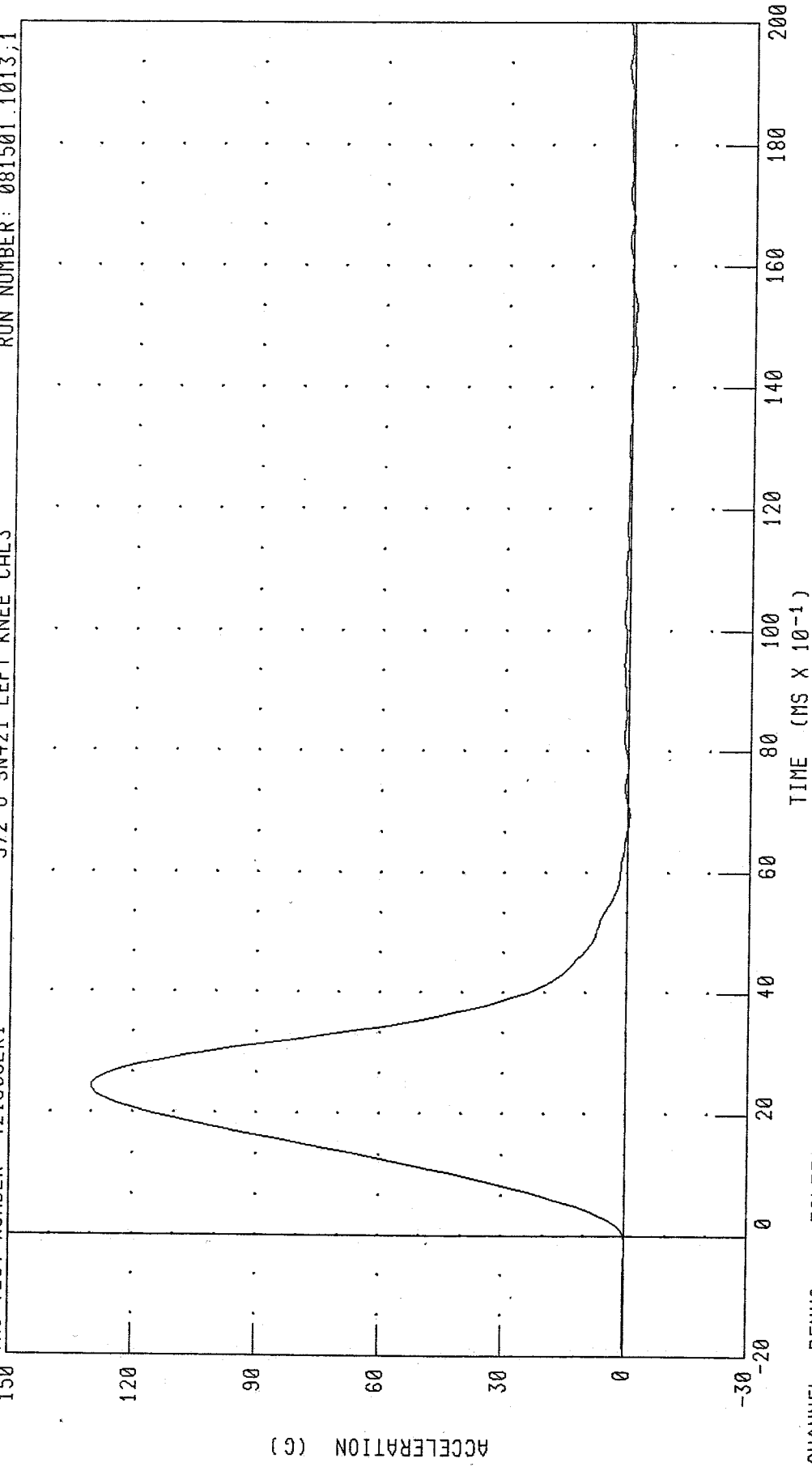
PART 572-0 HYBRID III SMALL FEMALE - LEFT KNEE CALIBRATION

PENDULUM DECELERATION (5 KG PEND.)

TRC TEST NUMBER: 421C03LK1

572 0 SN421 LEFT KNEE CAL3

RUN NUMBER: 081501.1013,1



CHANNEL: PENXC

FILTER: CH. CLASS 600

PEAK DATA: 130.09 G @ 2.40 MS, -1.04 G @ 15.28 MS

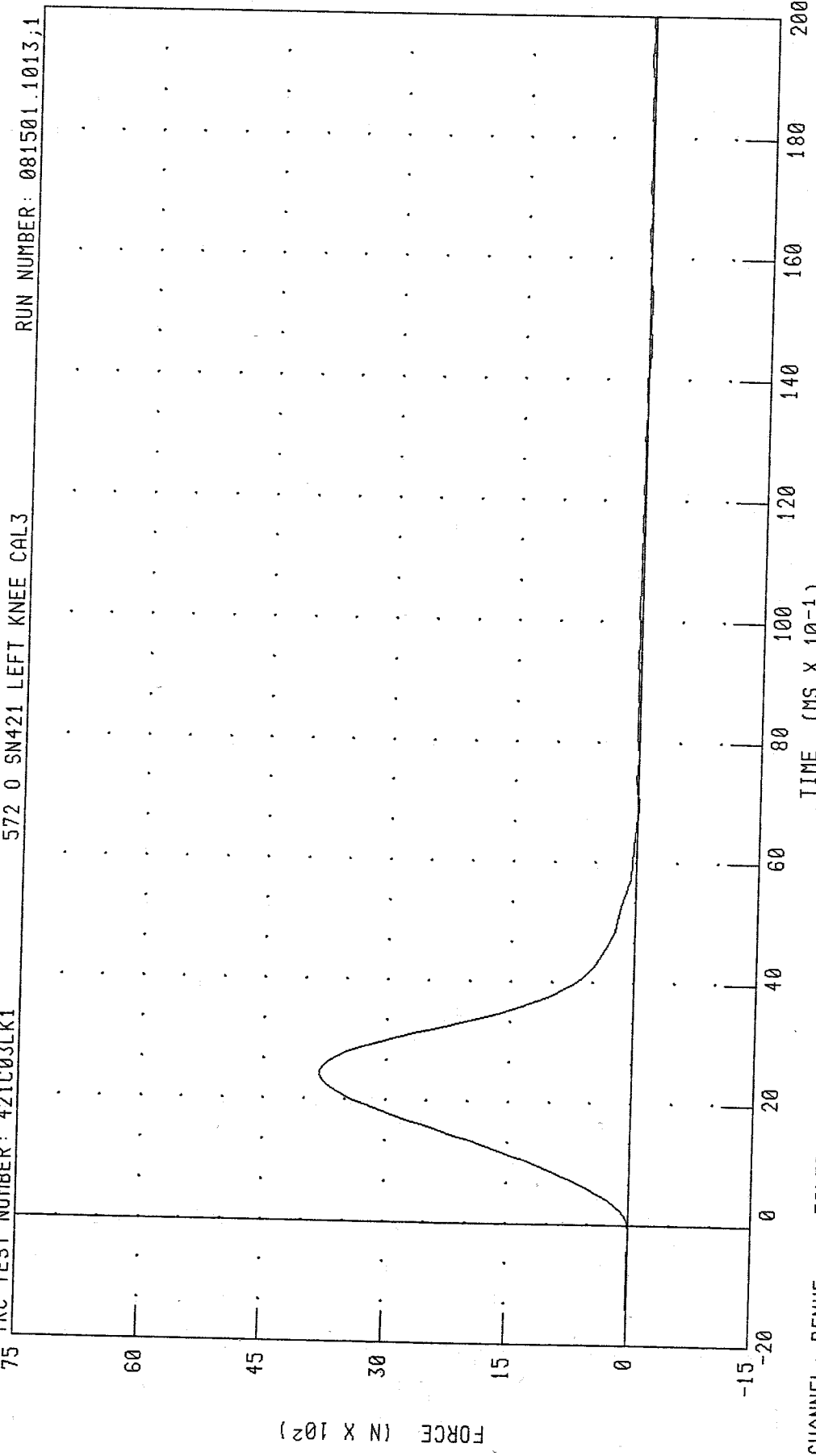
PART 572-0 HYBRID III SMALL FEMALE - LEFT KNEE CALIBRATION

PENDULUM FORCE (5 KG PEND.)

TRC TEST NUMBER: 421C03LK1

572 0 SN421 LEFT KNEE CAL3

RUN NUMBER: 081501.1013,1



CHANNEL: PENXF FILTER: CH. CLASS 600

TIME (MS X 10⁻¹)

PEAK DATA: 3819.04 N @ 2.40 MS, -30.45 N @ 15.28 MS

TRANSPORTATION RESEARCH CENTER INC.

RIGHT KNEE IMPACT TEST

HYBRID III SMALL FEMALE

15-AUG-01

TRC INC.

TEST NO: 421C03RK1

572 0 SN421 R.KNEE CAL3

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	56.0 %
PROBE VELOCITY	2.07 - 2.13 M/S	2.09 M/S
PEAK KNEE IMPACT FORCE 3.0 KG PENDULUM	3400 - 4200 N	3925.7 N

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 081501.1030;1

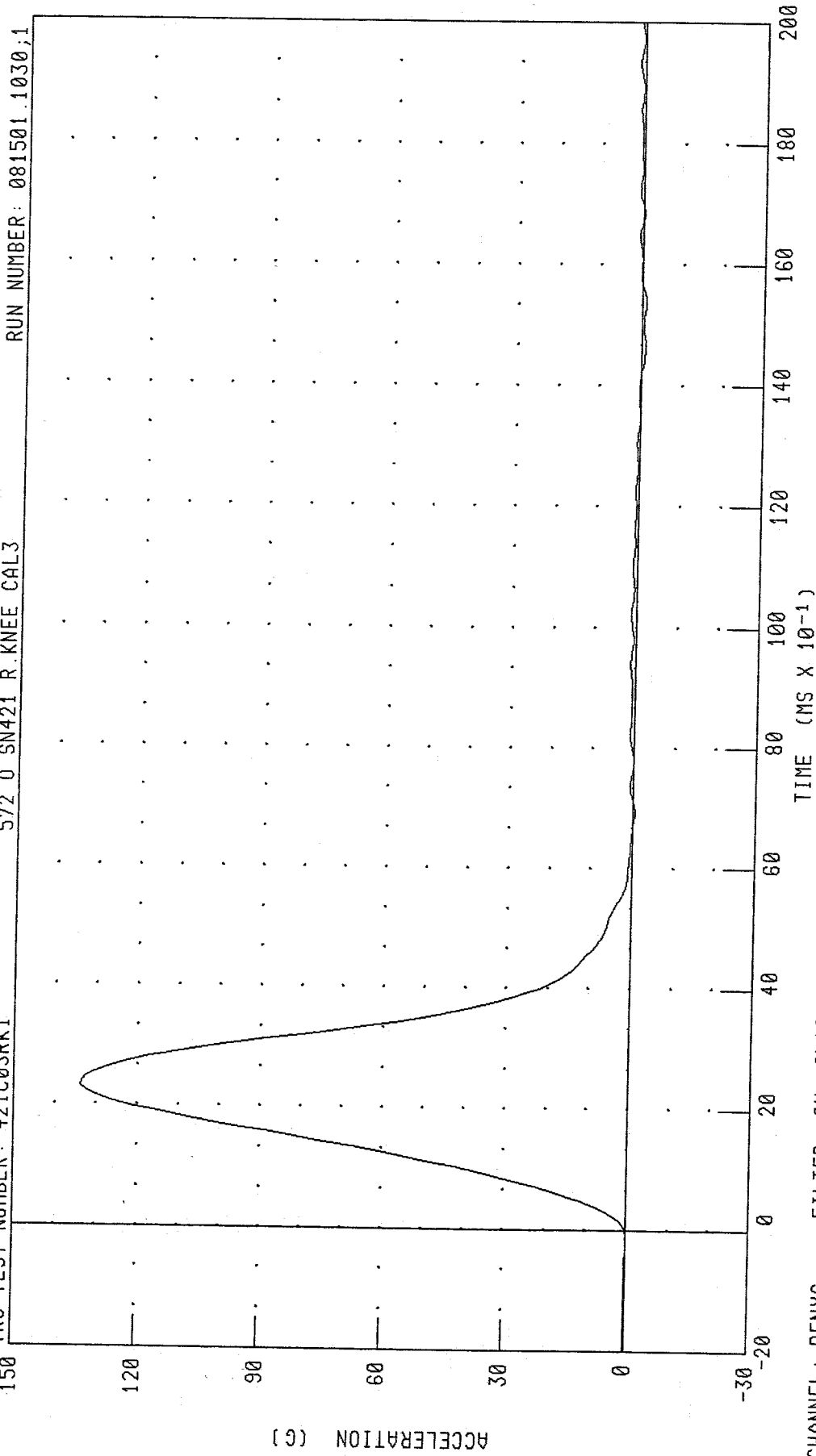
PART 572-0 HYBRID III SMALL FEMALE - RIGHT KNEE CALIBRATION

PENDULUM DECELERATION (5 KG PEND.)

TRC TEST NUMBER: 421C03RK1

572 0 SN421 R.KNEE CAL3

RUN NUMBER: 081501.1030;1



CHANNEL: PENXC FILTER: CH. CLASS 600

PEAK DATA: 133.73 G @ 2.32 MS; -1.14 G @ 15.36 MS

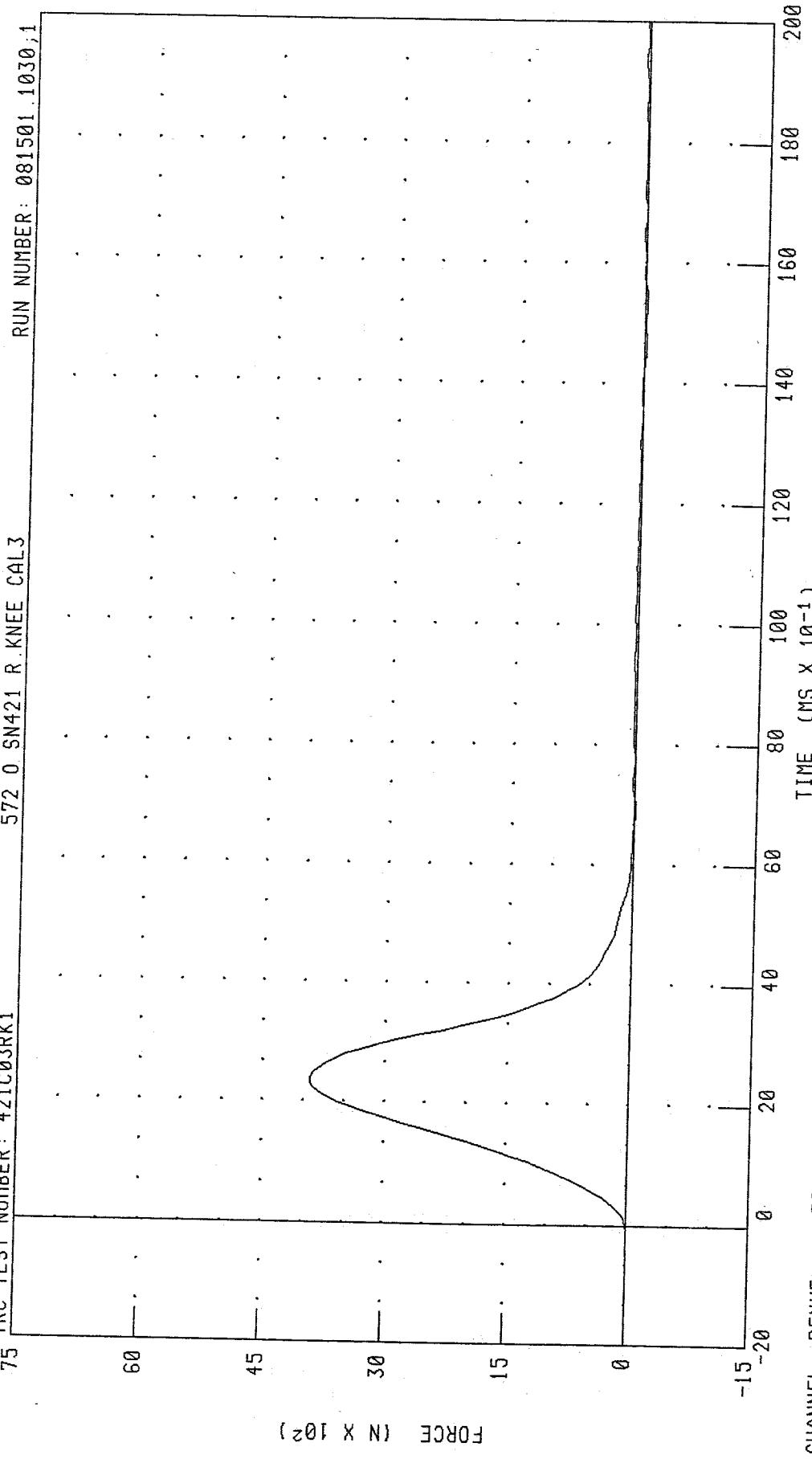
PART 572-0 HYBRID III SMALL FEMALE - RIGHT KNEE CALIBRATION

PENDULUM FORCE (5 KG PEND.)

TRC TEST NUMBER: 421C03RK1

572 0 SN421 R KNEE CAL3

RUN NUMBER: 081501.1030,1



CHANNEL: PENXF FILTER: CH. CLASS 600

PEAK DATA: 3925.76 N @ 2.32 MS; -33.57 N @ 15.36 MS

TRANSPORTATION RESEARCH CENTER INC.

KNEE SLIDER TEST

HYBRID III SMALL FEMALE

16-AUG-01

LEFT KNEE

TRC INC.

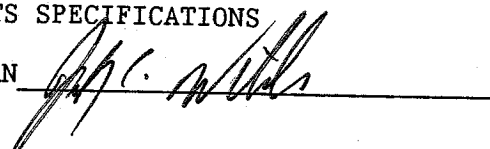
TEST NO: 421C03LS1

572 0 SN421 LEFT SLIDER CAL3

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9-25.6 DEG. C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	65.0 %
PENDULUM VELOCITY	2.70-2.80 M/S	2.79 M/S
PEAK DISPLACEMENT	12.7 - 15.5 MM	14.5 MM

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 090401.0859;2

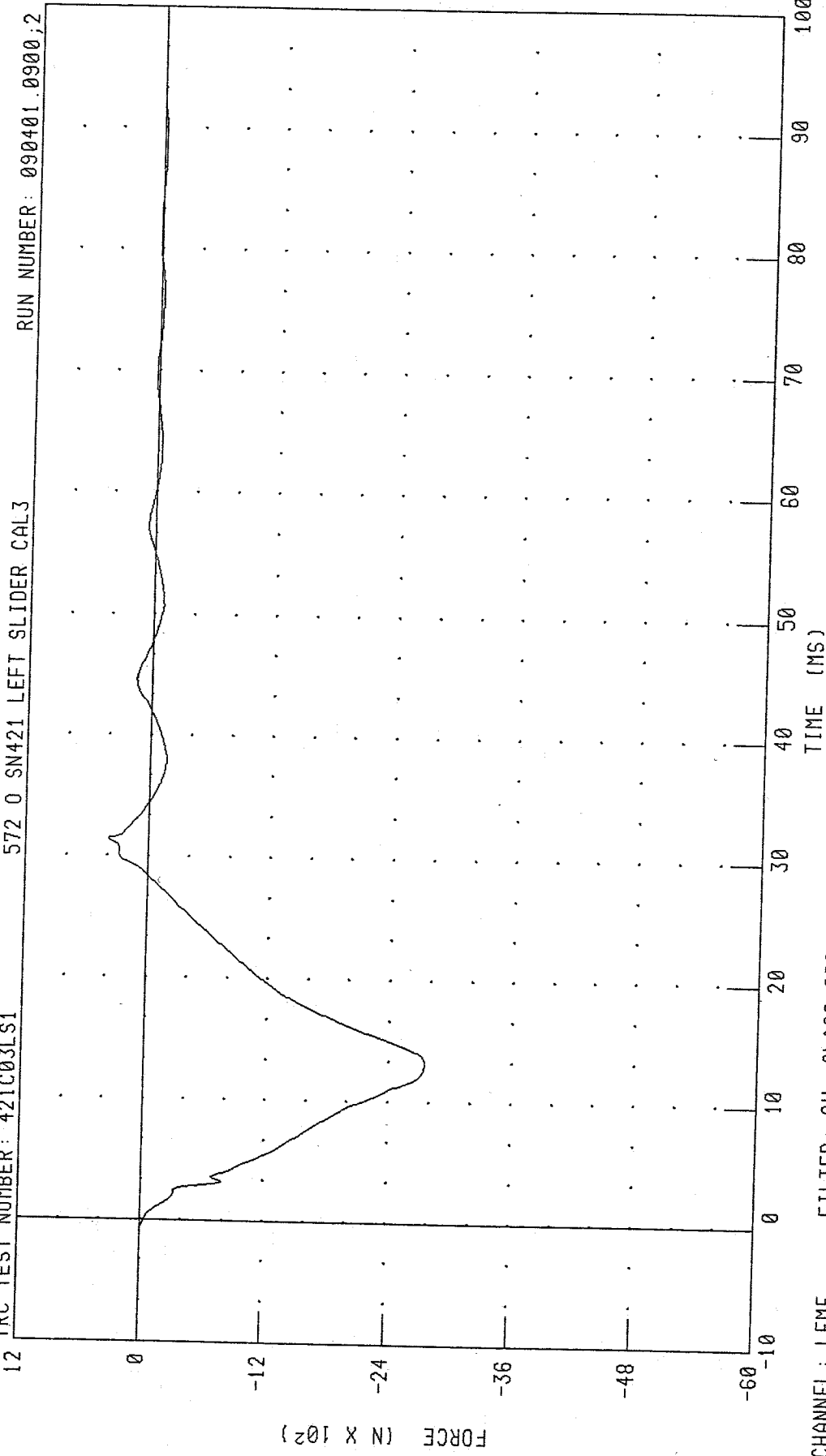
PART 572-0 HYBRID III SMALL FEMALE - LEFT KNEE SLIDER CALIBRATION

LEFT FEMUR FORCE

TRC TEST NUMBER: 421C03LS1

572 0 SN421 LEFT SLIDER CAL3

RUN NUMBER: 090401.0900;2



CHANNEL: LFMF FILTER: CH. CLASS 600

PEAK DATA: 392.13 N @ 31.44 MS; -2748.71 N @ 13.20 MS

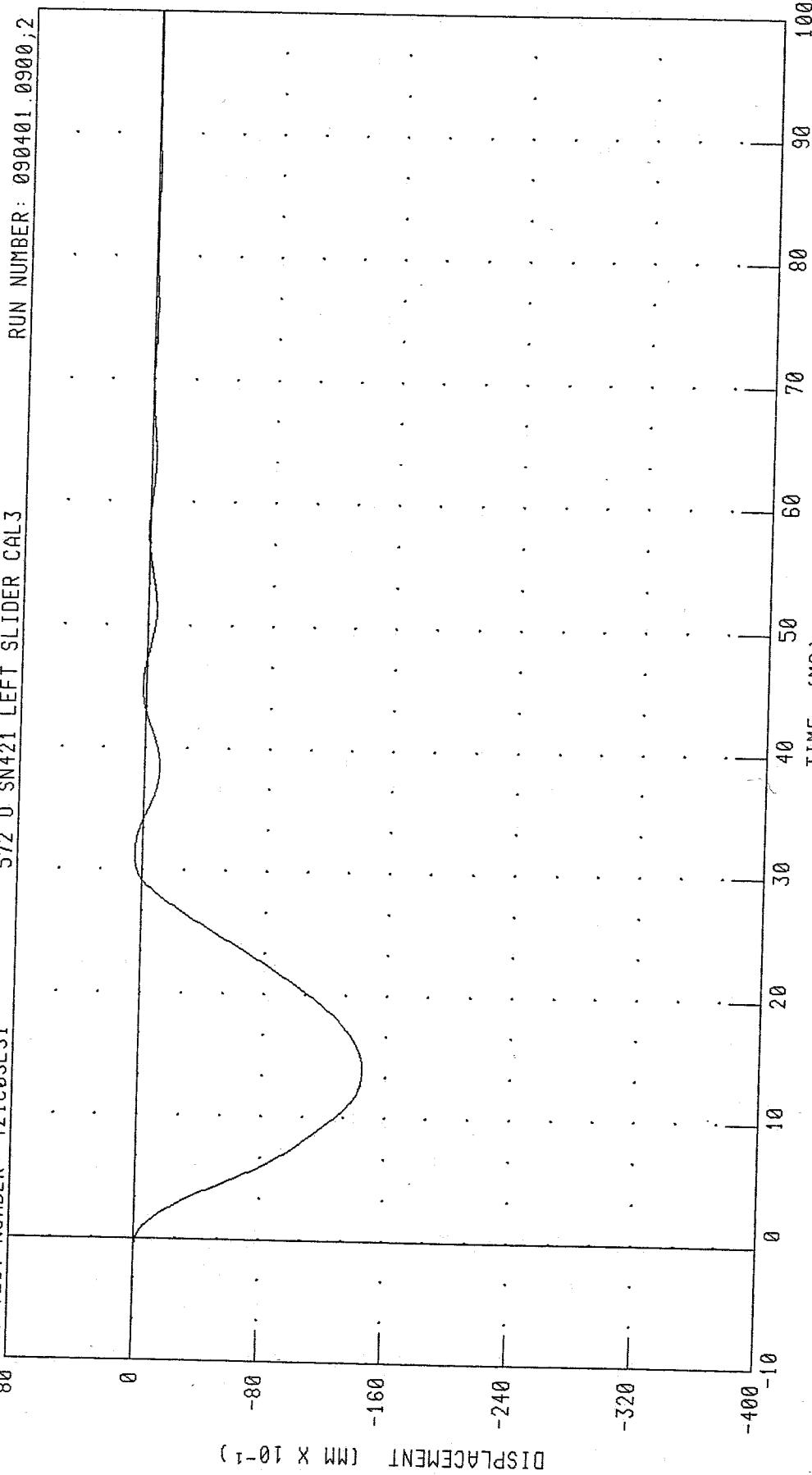
PART 572-0 HYBRID III SMALL FEMALE - LEFT KNEE SLIDER CALIBRATION

LEFT KNEE DISPLACEMENT

TRC TEST NUMBER: 421C03LS1

572 0 SN421 LEFT SLIDER CAL3

RUN NUMBER: 090401.0900;2



CHANNEL: KNLXD FILTER: CH. CLASS 180

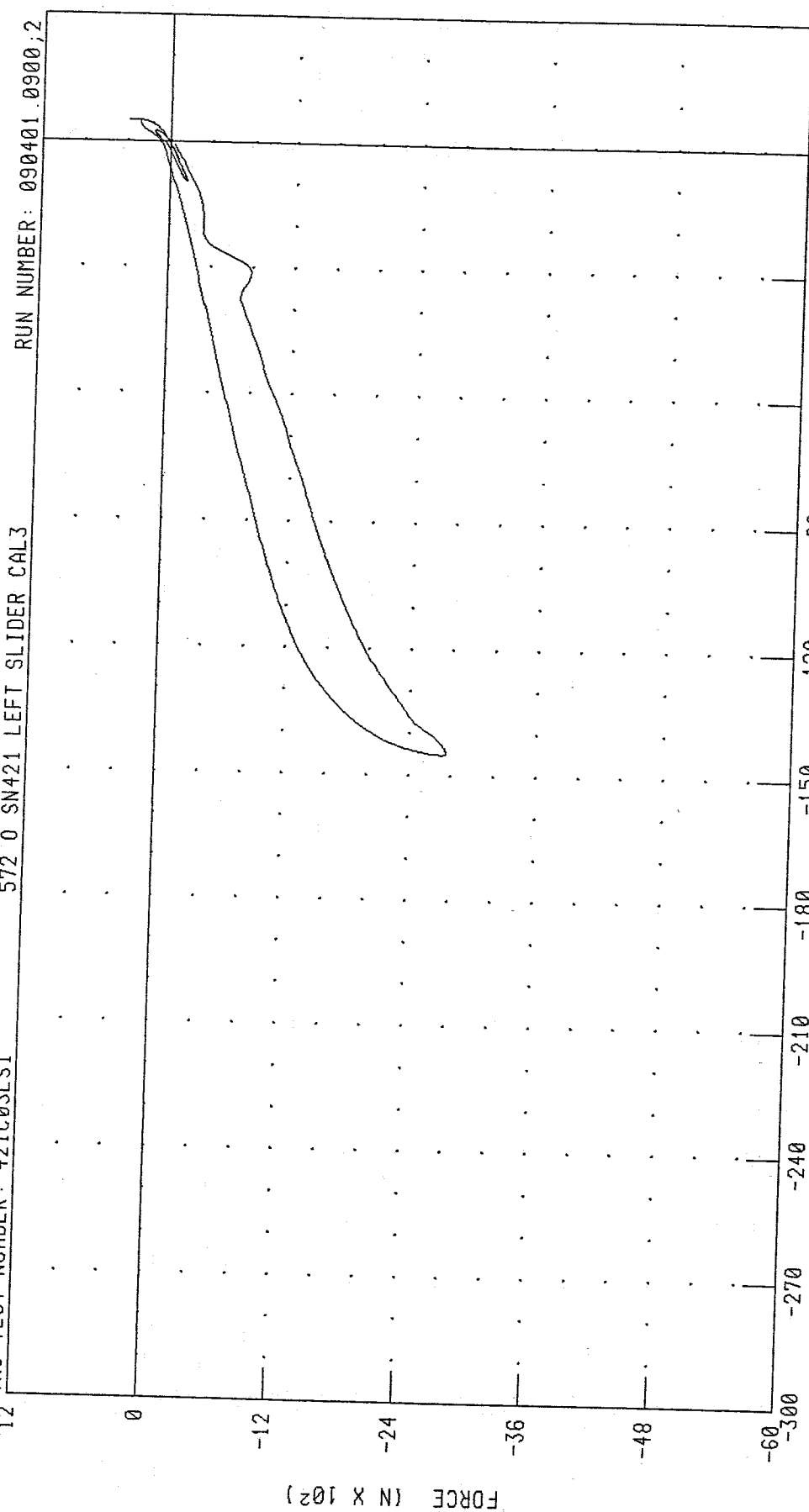
PEAK DATA: 0.50 MM @ 31.28 MS; -14.50 MM @ 13.92 MS

PART 572-0 HYBRID III SMALL FEMALE - LEFT KNEE SLIDER CALIBRATION
LEFT KNEE DISPLACEMENT VS FEMUR FORCE

TRC TEST NUMBER: 421C03LS1

572 0 SN421 LEFT SLIDER CAL3

RUN NUMBER: 090401.0900;2



CHANNEL: KNLXD
LFHF
FILTER: CH. CLASS 180
CH. CLASS 600

DISPLACEMENT (MM X 10⁻¹)

PEAK DATA: 0.50 MM @ 31.28 MS; -14.50 MM @ 13.92 MS
392.13 N @ 31.44 MS; -2748.71 N @ 13.20 MS

TRANSPORTATION RESEARCH CENTER INC.

KNEE SLIDER TEST

HYBRID III SMALL FEMALE

16-AUG-01

RIGHT KNEE

TRC INC.

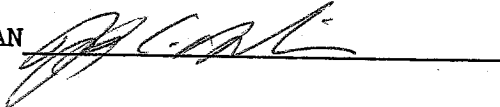
TEST NO: 421C03RS1

572 0 SN421 RIGHT SLIDER CAL3

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	2.75 M/S
PEAK DISPLACEMENT	12.7 - 15.5 MM	14.9 MM

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 081601.1557;1

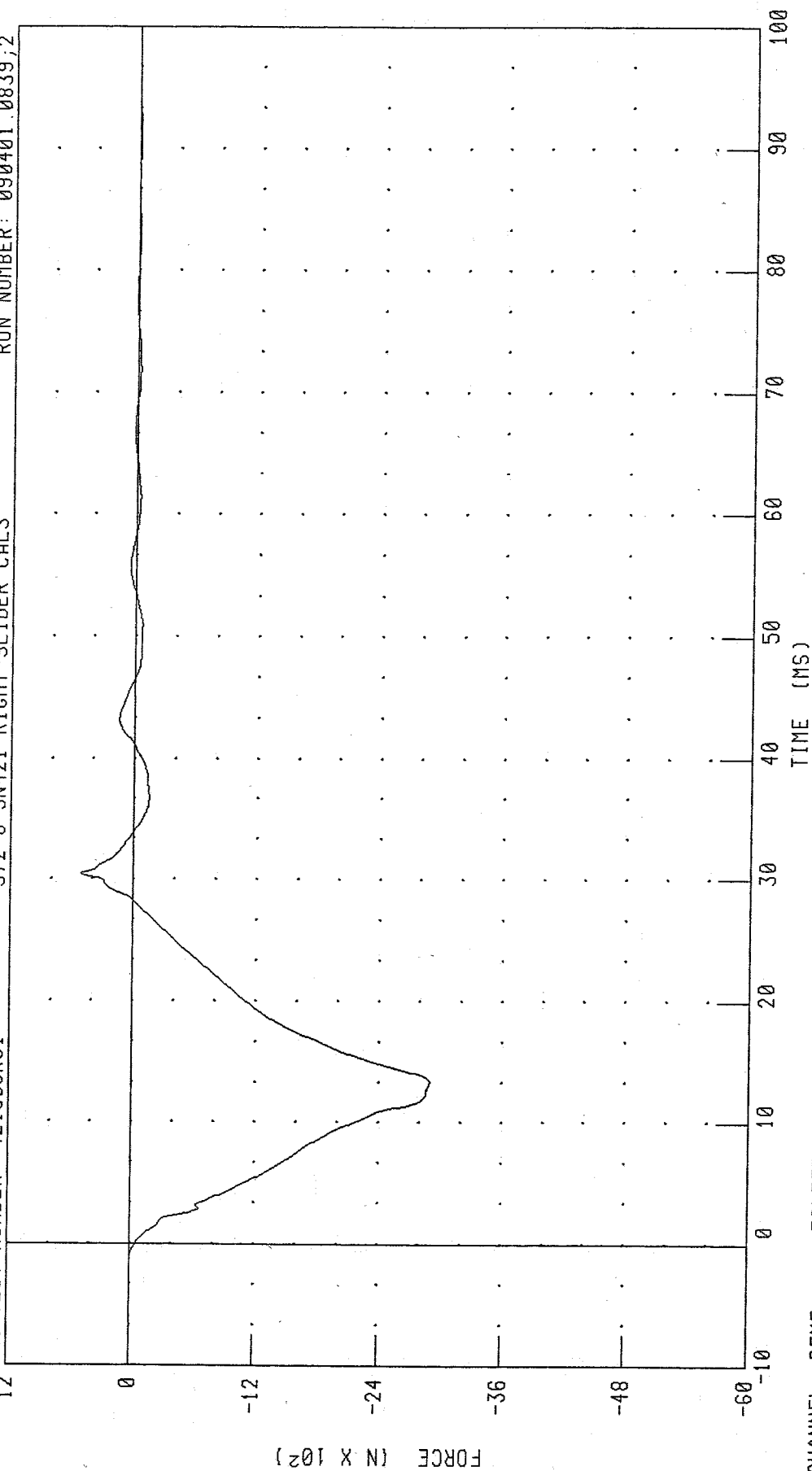
PART 572-0 HYBRID III SMALL FEMALE - RIGHT KNEE SLIDER CALIBRATION

RIGHT FEMUR FORCE

TRC TEST NUMBER: 421C03RS1

572 0 SN421 RIGHT SLIDER CAL3

RUN NUMBER: 090401.0839,2



CHANNEL: RFMF FILTER: CH. CLASS 600

PEAK DATA: 512.55 N @ 30.48 MS; -2898.24 N @ 13.36 MS

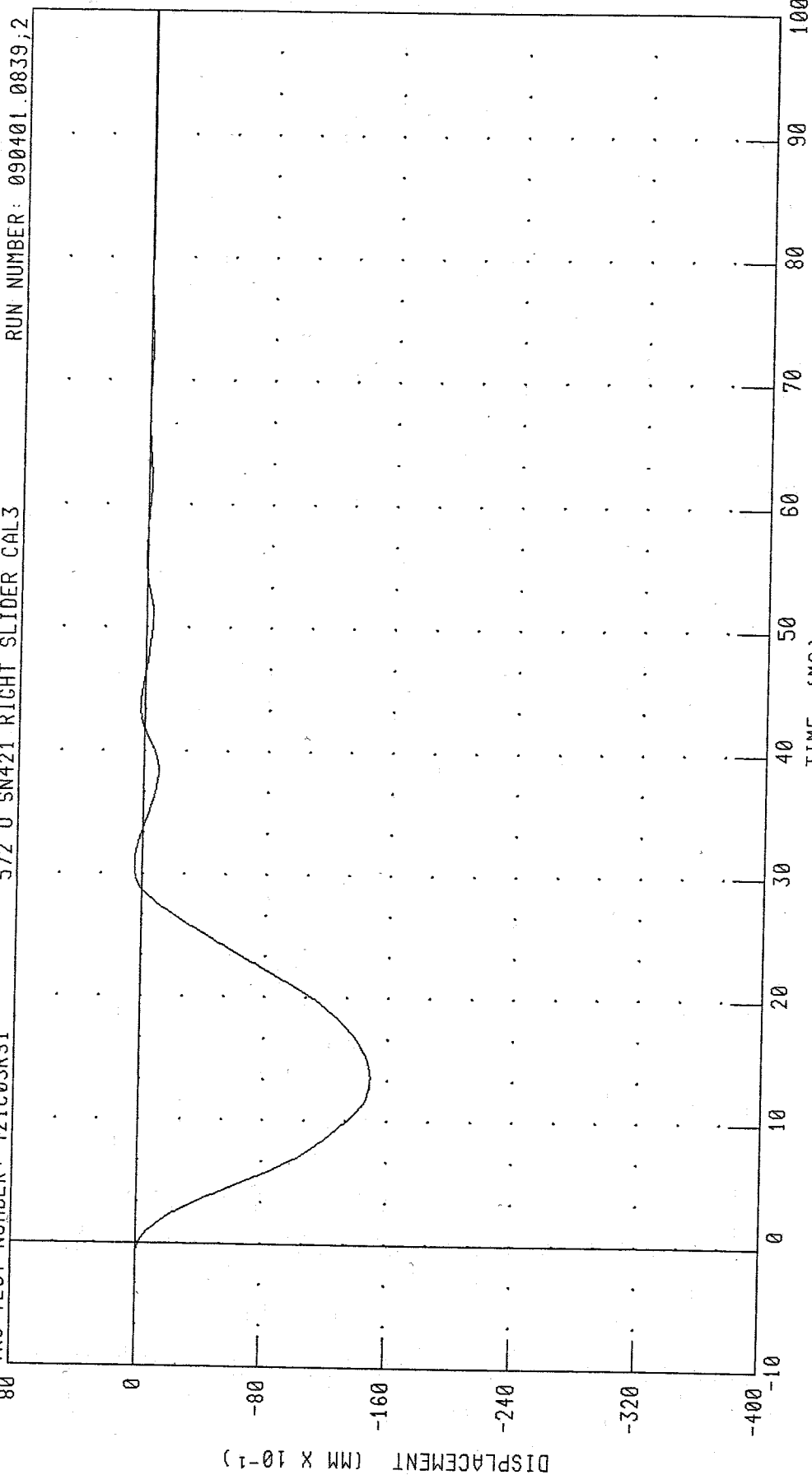
PART 572-0 HYBRID III SMALL FEMALE - RIGHT KNEE SLIDER CALIBRATION

RIGHT KNEE DISPLACEMENT

TRC TEST NUMBER: 421C03RS1

572 0 SN421 RIGHT SLIDER CAL3

RUN NUMBER: 090401.0839;2



CHANNEL: KNRXD FILTER: CH. CLASS 180

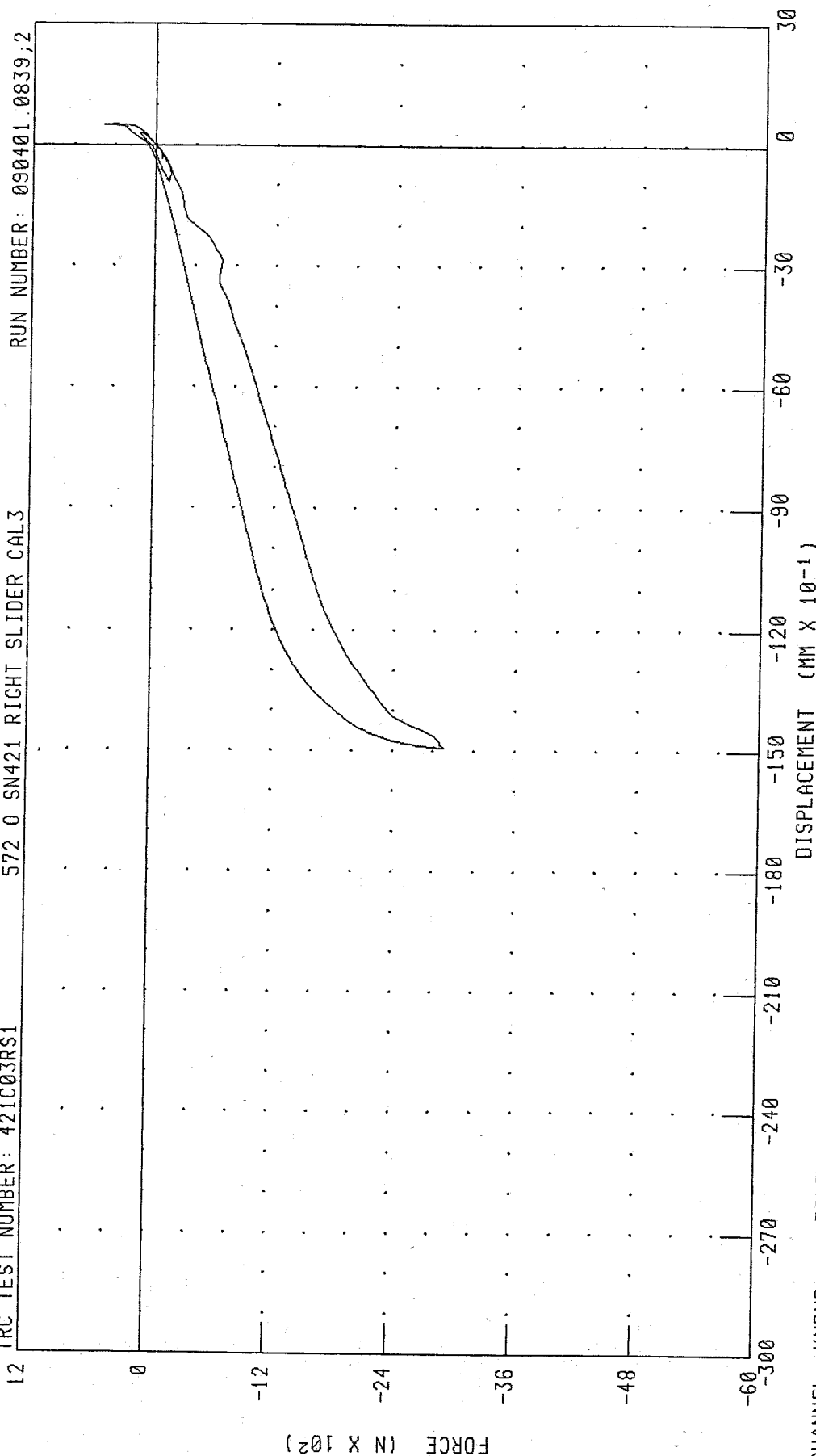
PEAK DATA: 0.51 MM @ 30.80 MS; -14.91 MM @ 13.60 MS

PART 572-0 HYBRID III SMALL FEMALE - RIGHT KNEE SLIDER CALIBRATION
 RIGHT KNEE DISPLACEMENT VS FEMUR FORCE

TRC TEST NUMBER: 421C03RS1

572 0 SN421 RIGHT SLIDER CAL3

RUN NUMBER: 090401.0839;2



DISPLACEMENT (MM X 10⁻¹)

CHANNEL: KNRXD FILTER: CH. CLASS 180
 RFMF CH. CLASS 600

PEAK DATA: 0.51 MM @ 30.80 MS; -14.91 MM @ 13.60 MS
 512.55 N @ 30.48 MS; -2898.24 N @ 13.36 MS

Appendix D

Test Equipment and Instrumentation Calibration Information

Sign Convention
SAE J211 MAR95

Accelerometers:

- +X: Forward
- +Y: Rightward
- +Z: Downward

Potentiometers:

- +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)

Rotation potentiometers:

- +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

Load cells:

- +Femur force: Tension
- +Seat belt force: Tension
- +Barrier force: Tension

Neck load cells:

- +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

Tibia load cells:

- +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

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.

Channel Report

08/14/2001 2:51:42 PM

Name of Test 010814

System K3600

Name of DAU DAU1

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol.	Cal. Date/Status	Group	Mfg.	Model
1000	EVENT	EVENT	EVENT		10.24	+	11/20/2000	OK	TRC	Event
1001	98H13-F01	HEDXG1	Head Accel X	Fwd	804.5254556G	+	05/24/2001	OK	Entran	EGE-73BQ-2000BF
1002	98H10-F12	HEDYG1	Head Accel Y	Lft	806.9345941G	+	05/24/2001	OK	Entran	EGE-73BQ-2000BF
1003	99H12-F30	HEDZG1	Head Accel Z	Up	798.4529973G	+	05/23/2001	OK	Entran	EGE-73BQ-2000BF
1004	99H12-F06	HEDXR1	Head Accel Red X	Rwd	800.4627675G	+	05/23/2001	OK	Entran	EGE-73BQ-2000BF
1005	98H13-F04	HEDYR1	Head Accel Red Y	Lft	796.6825640G	+	05/24/2001	OK	Entran	EGE-73BQ-2000BF
1006	DJ64J	HEDZR1	Head Accel Red Z	Up	794.6855404G	+	05/22/2001	OK	Endevco	EGE-73BQ-2000BF
1007	98H10-F10	HD1XG1	Head (LT) Accel X	Fwd	795.8961604G	+	05/24/2001	OK	Entran	7264-2KM5T
1008	99H12-F07	HD1ZG1	Head (LT) Accel Z	Up	801.2644955G	+	05/23/2001	OK	Entran	EGE-73BQ-2000BF
1009	98H14-K20	HD2YG1	Head (FT) Accel Y	Lft	800.4252259G	+	05/24/2001	OK	Entran	EGE-73BQ-2000BF
1010	98H13-F05	HD2ZG1	Head (FT) Accel Z	Up	798.6460453G	+	05/24/2001	OK	Entran	EGE-73BQ-2000BF
1011	98H10-F19	HD3XG1	Head (TP) Accel X	Fwd	798.6522742G	+	05/24/2001	OK	Entran	EGE-73BQ-2000BF
1012	98H13-F07	HD3YG1	Head (TP) Accel Y	Lft	805.2466854G	+	05/24/2001	OK	Entran	EGE-73BQ-2000BF
1013	1716A-1039-FX	NEKXF1	Neck Force X	Hd	8898.786084N	+	05/24/2001	OK	Denton	1716A
1014	1716A-1039-FY	NEKYF1	Neck Force Y	Hd	8903.210537N	+	05/24/2001	OK	Denton	1716A
1015	1716A-1039-FZ	NEKZF1	Neck Force Z	Hd	13347.38023N	+	05/24/2001	OK	Denton	1716A
1016	1716A-1039-MX	NEKXM1	Neck Moment X	Rt Ear	282.5376572NM	+	05/24/2001	OK	Denton	1716A
1017	1716A-1039-MY	NEKYM1	Neck Moment Y	Chin	282.7337019NM	+	05/24/2001	OK	Denton	1716A
1018	1716A-1039-MZ	NEKZM1	Neck Moment Z	Chn	282.4757407NM	+	05/24/2001	OK	Denton	1716A
1019	IF-228-101-FX	NKLYF1	Neck Lower Force X	Hd	13338.04610N	+	01/26/2001	OK	FTSS	IF-228
1020	IF-228-101-FY	NKLYF1	Neck Lower Force Y	Hd	13340.78332N	+	01/26/2001	OK	FTSS	IF-228
1021	IF-228-101-FZ	NKLYF1	Neck Lower Force Z	Hd	13338.95983N	+	01/26/2001	OK	FTSS	IF-228
1022	IF-228-101-MX	NKLYM1	Neck Lower Moment X	Lt Ear	338.9009409NM	+	01/26/2001	OK	FTSS	IF-228
1023	IF-228-101-MY	NKLYM1	Neck Lower Moment Y	Chn	339.1778584NM	+	01/26/2001	OK	FTSS	IF-228
1024	IF-228-101-MZ	NKLYM1	Neck Lower Moment Z	Chn	180.6958966NM	+	01/26/2001	OK	FTSS	IF-228
1025	99H12-F15	CSTXG1	Chest Accel X	Fwd	399.2514036G	+	05/23/2001	OK	Entran	EGE-73BQ-2000BF
1026	AAMD5	CSTYG1	Chest Accel Y	Lft	398.7538940G	+	05/24/2001	OK	Endevco	7264-2000LC
1027	99H12-F08	CSTZG1	Chest Accel Z	Up	400.7184757G	+	05/23/2001	OK	Entran	EGE-73BQ-2000BF
1028	AJ7R1	STUXG1	Sternum Upper Accel X	Fwd	805.9628658G	+	05/22/2001	OK	Endevco	7264-2KM5T
1029	J19868	STMXG1	Sternum Mid Accel X	Fwd	798.7083388G	+	05/21/2001	OK	Endevco	7264-2000T

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1030	DC33J	STLXG1	Sternum Lower Accel X	Fwd	807.0109072 G	+	05/21/2001	OK	416v	Endevco	7264-2000T
1031	14CB1-2897-416	CSTXD1	Chest Deflection X D109	Strmm	106.7801205 MM	+	06/18/2001	OK	416v	Servo	14CB1-2897
1032	2152A-086-FX	LMBXF1	Lumbar Force X	Cst	13347.71340 N	+	06/02/2001	OK	416v	Denton	2152A
1033	2152A-086-FY	LMBYF1	Lumbar Force Y	Cst	13345.65164 N	+	06/02/2001	OK	416v	Denton	2152A
1034	2152A-086-FZ	LMBZF1	Lumbar Force Z	Cst	17801.84735 N	+	06/02/2001	OK	416v	Denton	2152A
1035	2152A-086-MX	LMBXM1	Lumbar Moment X	Rt	677.6250688 NM	+	06/02/2001	OK	416v	Denton	2152A
1036	2152A-086-MY	LMBYM1	Lumbar Moment Y	Strmm	677.7404344 NM	+	06/02/2001	OK	416v	Denton	2152A
1037	J18037	PEVXG1	Pelvis Accel X S37	Rwd	401.7829116 G	+	05/21/2001	OK	416v	Endevco	7264-2000T
1038	J19547	PEVYG1	Pelvis Accel Y	Lft	400.6338152 G	+	05/21/2001	OK	416v	Endevco	7264-2000T
1039	J19639	PEVZG1	Pelvis Accel Z	Up	400.7357257 G	+	05/21/2001	OK	416v	Endevco	7264-2000T
1040	2430-717	LFMZFI	Left Femur Force Z 516	Knee	13339.17234 N	+	05/23/2001	OK	416v	GSE	2430
1041	2430-729	RFMZFI	Right Femur Force Z 507	Knee	13347.00184 N	+	05/23/2001	OK	416v	GSE	2430
1042	150-0121VR-15021KNLXD1	TBLXFI	Left Knee Displacement	Tib	43.68973461 MM	+	04/04/2001	OK	416v	SpaceAge	150-0121VR
1043	150-0121VL-14949KNRXD1	TBLZFI	Right Knee Displacement	Tib	44.97145366 MM	+	04/04/2001	OK	416v	SpaceAge	150-0121VL
1044	4825-75-FX	TBLXF1	Left Upper Tibia Force X LC8	Tib	8893.793445 N	+	11/08/2000	OK	416v	Denton	4825
1045	4825-75-FZ	TBLZF1	Left Upper Tibia Force Z LC15	Tib	8894.284291 N	+	11/08/2000	OK	416v	Denton	4825
1046	4825-75-MX	TBLXM1	Left Upper Tibia Moment X	Ank	282.6386997 NM	+	11/08/2000	OK	416v	Denton	4825
1047	4825-75-MY	TBLYM1	Left Upper Tibia Moment Y	Ank	282.7149889 NM	+	11/08/2000	OK	416v	Denton	4825
1048	99H12-F14	TBLXG1	Left Tibia Accel X	Fwd	1212.422595 G	+	07/12/2001	OK	416v	Entran	EGE-73BQE0-2000BF
1049	99I08-F27	TBLYG1	Left Tibia Accel Y	Rt	1205.911794 G	+	07/12/2001	OK	416v	Entran	EGE-73BQE0-2000BF
1050	4826-79-FX	ANLXF1	Left Lower Tibia Force X LC23	Ank	8890.932568 N	+	11/15/2000	OK	416v	Denton	4826
1051	4826-79-FY	ANLYF1	Left Lower Tibia Force Y LC16	Ank	8890.815695 N	+	11/15/2000	OK	416v	Denton	4826
1052	4826-79-FZ	ANLZF1	Left Lower Tibia Force Z LC19	Ank	8898.136771 N	+	11/15/2000	OK	416v	Denton	4826
1053	4826-79-MX	ANLXM1	Left Lower Tibia Moment X	Ank	282.0877633 NM	+	11/15/2000	OK	416v	Denton	4826
1054	4826-79-MY	ANLYM1	Left Lower Tibia Moment Y	Ank	282.0985705 NM	+	11/15/2000	OK	416v	Denton	4826
1055	PD210-4B-AK-044FTLXD1	FTLXD1	Left Foot Disp. X POT4	Invers	322.0125786 DEG	+	07/31/2001	OK	416v	CONTELEC	PD210-4B
1056	PD210-4B-AK-043FTLYD1	FTLYD1	Left Foot Disp. Y POT5	Dorsif	324.1532130 DEG	+	07/31/2001	OK	416v	CONTELEC	PD210-4B
1057	PD210-4B-AK-048FTLZD1	FTLZD1	Left Foot Disp. Z POT6	Extern	323.0283911 DEG	+	07/31/2001	OK	416v	CONTELEC	PD210-4B
1058	00L20-A08	FTLXG1	Left Foot Accel X	Fwd	1223.738617 G	+	07/11/2001	OK	416v	Entran	EGE-73B6Q-2000IF
1059	00L13-F72	FTLYG1	Left Foot Accel Y	Rt	1201.328030 G	+	07/11/2001	OK	416v	Entran	EGE-73B6Q-2000IF
1060	98H10-F18	FTLZG1	Left Foot Accel Z	Dn	1203.643843 G	+	07/12/2001	OK	416v	Entran	EGE-73B6Q-2000IF
1061	4825-77-FX	TBRXF1	Right Upper Tibia Force X LC10	Tib	8889.143139 N	+	11/08/2000	OK	416v	Denton	4825
1062	4825-77-FZ	TBRZF1	Right Upper Tibia Force Z LC14	Tib	8905.408421 N	+	11/08/2000	OK	416v	Denton	4825
1063	4825-77-MX	TBRXM1	Right Upper Tibia Moment X	Ank	282.5802203 NM	+	11/08/2000	OK	416v	Denton	4825
1064	4825-77-MY	TBRYM1	Right Upper Tibia Moment Y	Ank	282.4299002 NM	+	11/08/2000	OK	416v	Denton	4825

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1065	99H12-F18	TBRXG1	Right Tibia Accel X	Fwd	1208.387911G	+	07/12/2001	OK	416v	Entran	EGE-73BQE0-2000BF
1066	99H12-F23	TBRYG1	Right Tibia Accel Y	Rt	1200.468933G	+	07/12/2001	OK	416v	Entran	EGE-73BQE0-2000BF
1067	4826-75-FX	ANRXF1	Right Lower Tibia Force X	LC28	8891.834540N	+	11/08/2000	OK	416v	Denton	4826
1068	4826-75-FY	ANRYF1	Right Lower Tibia Force Y	LC20	8897.147944N	+	11/08/2000	OK	416v	Denton	4826
1069	4826-75-FZ	ANRZF1	Right Lower Tibia Force Z	LC9	8902.963453N	+	11/08/2000	OK	416v	Denton	4826
1070	4826-75-MX	ANRXM1	Right Lower Tibia Moment X	Ank	282.7964823NM	+	11/08/2000	OK	416v	Denton	4826
1071	4826-75-MY	ANRYM1	Right Lower Tibia Moment Y	Ank	282.0975293NM	+	11/08/2000	OK	416v	Denton	4826
1072	PD210-4B-AK-029	FTRXD1	Right Foot Disp. X	POT1	320.8020050DEG	+	07/31/2001	OK	416v	CONTELEC	PD210-4B
1073	PD210-4B-AK-030	FTRYD1	Right Foot Disp. Y	POT2	321.6080402DEG	+	07/31/2001	OK	416v	CONTELEC	PD210-4B
1074	PD210-4B-AK-031	FTRZD1	Right Foot Disp. Z	POT3	318.7052598DEG	+	07/31/2001	OK	416v	CONTELEC	PD210-4B
1075	99H12-F29	FTRXG1	Right Foot Accel X	Fwd	1202.640171G	+	07/12/2001	OK	416v	Entran	EGE-73BQE0-2000BF
1076	99102-F13	FTRYG1	Right Foot Accel Y	Rt	1206.992067G	+	07/12/2001	OK	416v	Entran	EGE-73BQE0-2000BF
1077	99102-F08	FTRZG1	Right Foot Accel Z	Dn	1229.114653G	+	07/12/2001	OK	416v	Entran	EGE-73BQE0-2000BF
1078	98G18-F18	HEDXG2	Head Accel X	FWD	796.5957976G	+	07/12/2001	OK	416v	Entran	EGE-73BQE0-2000BF
1079	99H30-Z05	HEDYG2	Head Accel Y	LT	805.1453822G	+	04/12/2001	OK	421v	Entran	EGE-73BQE0-2000BF
1080	99102-F09	HEDZG2	Head Accel Z	UP	794.8335817G	+	04/12/2001	OK	421v	Entran	EGE-73BQE0-2000BF
1081	00L13-F03	HEDXR2	Head Accel Red X	RR	801.2143404G	+	04/12/2001	OK	421v	Entran	EGE-73BQE0-2000BF
1082	99H30-Z08	HEDYR2	Head Accel Red Y	LT	794.6608722G	+	04/12/2001	OK	421v	Entran	EGE-73BQE0-2000BF
1083	99H30-Z04	HEDZR2	Head Accel Red Z	UP	798.6522742G	+	04/12/2001	OK	421v	Entran	EGE-73BQE0-2000BF
1084	99102-F12	HD1XG2	Head (LT) Accel X	FWD	802.6273504G	+	04/12/2001	OK	421v	Entran	EGE-73BQE0-2000BF
1085	99102-F06	HD1ZG2	Head (LT) Accel Z	UP	804.8542773G	+	04/12/2001	OK	421v	Entran	EGE-73BQE0-2000BF
1086	99102-F15	HD2YG2	Head (FT) Accel Y	LT	803.9948494G	+	04/12/2001	OK	421v	Entran	EGE-73BQE0-2000BF
1087	99108-F29	HD2ZG2	Head (FT) Accel Z	UP	800.8008008G	+	04/11/2001	OK	421v	Entran	EGE-73BQE0-2000BF
1088	99H30-Z03	HD3XG2	Head (TP) Accel X	FWD	794.8459209G	+	04/11/2001	OK	421v	Entran	EGE-73BQE0-2000BF
1089	99108-F28	HD3YG2	Head (TP) Accel Y	LT	801.6471343G	+	04/12/2001	OK	421v	Entran	EGE-73BQE0-2000BF
1090	1716A-852-FX	NEKXF2	Neck Force X		8902.128022N	+	09/01/2000	OK	421v	Denton	1716A
1091	1716A-852-FY	NEKYF2	Neck Force Y		8897.647510N	+	09/01/2000	OK	421v	Denton	1716A
1092	1716A-852-FZ	NEKZF2	Neck Force Z		13352.45759N	+	09/01/2000	OK	421v	Denton	1716A
1093	1716A-852-MX	NEKXM2	Neck Moment X		282.3044648NM	+	09/01/2000	OK	421v	Denton	1716A
1094	1716A-852-MY	NEKYM2	Neck Moment Y		282.5310335NM	+	09/01/2000	OK	421v	Denton	1716A
1095	1716A-852-MZ	NEKZM2	Neck Moment Z		282.6996773NM	+	09/01/2000	OK	421v	Denton	1716A
1096	2150-86-FX	NKLYF2	Neck Lower Force X		13351.83675N	+	06/18/2001	OK	421v	Denton	2150
1097	2150-86-FY	NKLYF2	Neck Lower Force Y		13334.62859N	+	06/18/2001	OK	421v	Denton	2150
1098	2150-86-FZ	NKLYF2	Neck Lower Force Z		13348.67179N	+	06/18/2001	OK	421v	Denton	2150
1099	2150-86-MX	NKLYM2	Neck Lower Moment X		340.1328740NM	+	06/18/2001	OK	421v	Denton	2150

[illegible]

Channel Report

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Name of Test 010814 System MINIDAU Name of DAU DAU6

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol.	Cal. Date/Status	Group	Mfg.	Model
6001	BF99J	STMXG2	Sternum Mid Accel X	FWD	812.4533870G	+	05/21/2001	OK	Endevco	7264-2KM5T
6002	J20294	STLXG2	Sternum Lower Accel X	FWD	787.7165451G	+	05/21/2001	OK	Endevco	7264-2000T
6003	14CB1-2897-1355	CSTXD2	Chest Deflection X VRTC1		101.1174425MM	+	08/14/2000	---	Servo	14CB1-2897
6004	2152-076-FX	LMBXF2	Lumbar Force X		13333.04722N	+	06/01/2001	OK	Denton	2152
6005	2152-076-FY	LMBYF2	Lumbar Force Y		13319.73991N	+	06/01/2001	OK	Denton	2152
6006	2152-076-FZ	LMBZF2	Lumbar Force Z		17809.29280N	+	06/01/2001	OK	Denton	2152
6007	2152-076-MX	LMBXM2	Lumbar Moment X		678.1373655NM	+	06/01/2001	OK	Denton	2152
6008	2152-076-MY	LMBYM2	Lumbar Moment Y		676.9367473NM	+	06/01/2001	OK	Denton	2152
6009	99108-F26	PEVXG2	Pelvis Accel X	RR	400.4004004G	+	04/12/2001	OK	Entran	EGE-73BQE0-2000BF
6010	99H30-Z02	PEVYG2	Pelvis Accel Y	LT	400.0937719G	+	04/12/2001	OK	Entran	EGE-73BQE0-2000BF
6011	99108-F30	PEVZG2	Pelvis Accel Z	UP	400.0625097G	+	04/12/2001	OK	Entran	EGE-73BQE0-2000BF
6012	1914A-383-FZ	LFMZ2	Left Femur Force Z		13351.17871N	+	05/24/2001	OK	Denton	1914A
6013	1914A-376-FZ	RFMZ2	Right Femur Force Z		13352.41894N	+	05/24/2001	OK	Denton	1914A
6014	150-0121VR-13742KNLXD2	RFXD2	Right Knee Displacement		22.06325950MM	+	04/25/2001	OK	SpaceAge	150-0121VR
6015	150-0121VL-18123KNRDXD2	TBLXF2	Left Upper Tibia Force X LC12		21.63989856MM	+	04/26/2001	OK	SpaceAge	150-0121VL
6016	4825-79-FX	TBLZF2	Left Upper Tibia Force Z LC7		8891.957540N	+	11/29/2000	OK	Denton	4825
6017	4825-79-FZ	TBLXM2	Left Upper Tibia Moment X LC3		8896.997513N	+	11/29/2000	OK	Denton	4825
6018	4825-79-MX	TBLYM2	Left Upper Tibia Moment Y LC4		282.7871824NM	+	11/29/2000	OK	Denton	4825
6019	4825-79-MY	TBLXG2	Left Tibia Accel X	FWD	282.4054287NM	+	11/29/2000	OK	Denton	4825
6020	00L13-F16	TBLYG2	Left Tibia Accel Y	RT	1207.718073G	+	07/11/2001	OK	Entran	EGE-73B6Q-2000JF
6021	98H10-F01	ANLXF2	Left Lower Tibia Force X LC21		1200.243799G	+	07/11/2001	OK	Entran	EGE-73BQ-2000BF
6022	4826-77-FX	ANLYF2	Left Lower Tibia Force Y LC06		8902.019367N	+	11/08/2000	OK	Denton	4826
6023	4826-77-FY	ANLZF2	Left Lower Tibia Force Z LC24		8901.333138N	+	11/08/2000	OK	Denton	4826
6024	4826-77-FZ	ANLXM2	Left Lower Tibia Moment X		8903.693753N	+	11/08/2000	OK	Denton	4826
6025	4826-77-MX	ANLYM2	Left Lower Tibia Moment Y LC05		281.6848070NM	+	11/08/2000	OK	Denton	4826
6026	4826-77-MY	ANLXD2	Left Foot Disp. X POT7		281.9388383NM	+	11/08/2000	OK	Denton	4826
6027	PD210-4B-AK-047FTLXD2	FTLYD2	Left Foot Disp. Y POT8		160	+	07/31/2001	OK	CONTELEC	PD210-4B
6028	PD210-4B-AK-049FTLYD2	FTLZD2	Left Foot Disp. Z POT9		160.4010025DEG	+	07/31/2001	OK	CONTELEC	PD210-4B
6029	PD210-4B-AK-087FTLZD2	FTLXG2	Left Foot Accel X	FWD	162.7980922DEG	+	07/31/2001	OK	CONTELEC	PD210-4B
6030	99108-F25	FTLXG2	Left Foot Accel Y		1223.709369G	+	07/12/2001	OK	Entran	EGE-73BQE0-2000BF

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6031	00L20-A14	FTLYG2	Left Foot Accel Y	RT	1209.601209G	+	07/11/2001	OK	421v	Entran	08/14/2001 2:51:53 PM
6032	00L13-F13	FTLZG2	Left Foot Accel Z	DWN	1180.811808G	+	07/11/2001	OK	421v	Entran	EGE-73B6Q-2000JF
											EGE-73B6Q-2000JF

Channel Report

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Name of Test		010814		System		MINIDAU		Name of DAU		DAU7	
Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol.	Cal. Date/Status	Group	Mfg.	Model	
7001	4825-76-FX	TBRXF2	Right Upper Tibia Force X		8895.424245N	+	11/08/2000	421v	Denton	4825	
7002	4825-76-FZ	TBRZF2	Right Upper Tibia Force Z		8902.963453N	+	11/08/2000	421v	Denton	4825	
7003	4825-76-MX	TBRXM2	Right Upper Tibia Moment X		283.0011229NM	+	11/08/2000	421v	Denton	4825	
7004	4825-76-MY	TBRYM2	Right Upper Tibia Moment Y		282.2980537NM	+	11/08/2000	421v	Denton	4825	
7005	00L20-A15	TBRXG2	Right Tibia Accel X	FWD	1218.467396G	+	07/11/2001	421v	Entran	EGE-73B6Q-2000JF	
7006	98H13-F15	TBRYG2	Right Tibia Accel Y	RT	1191.695372G	+	07/11/2001	421v	Entran	EGE-73BQ-2000BF	
7007	4826-78-FX	ANRXF2	Right Lower Tibia Force X		8900.651656N	+	11/08/2000	421v	Denton	4826	
7008	4826-78-FY	ANRYF2	Right Lower Tibia Force Y	LC25	8902.229869N	+	11/08/2000	421v	Denton	4826	
7009	4826-78-FZ	ANRZF2	Right Lower Tibia Force Z		8903.737726N	+	11/08/2000	421v	Denton	4826	
7010	4826-78-MX	ANRXM2	Right Lower Tibia Moment X		282.8074218NM	+	11/08/2000	421v	Denton	4826	
7011	4826-78-MY	ANRYM2	Right Lower Tibia Moment Y		282.1842924NM	+	11/08/2000	421v	Denton	4826	
7012	PD210-4B-AK-084	FTRXD2	Right Foot Disp. X	ROT X	162.2820919DEG	+	07/31/2001	421v	CONTELEC	PD210-4B	
7013	PD210-4B-AK-085	FTRYD2	Right Foot Disp. Y	ROTY	161.8204804DEG	+	07/31/2001	421v	CONTELEC	PD210-4B	
7014	PD210-4B-AK-086	FTRZD2	Right Foot Disp. Z	ROTZ	161.4632608DEG	+	07/31/2001	421v	CONTELEC	PD210-4B	
7015	99D15-N08	FTRXG2	Right Foot Accel X	FWD	1200.863120G	+	07/12/2001	421v	Entran	EGE-73BQE0-2000BF	
7016	99I02-F10	FTRYG2	Right Foot Accel Y	RT	1191.695372G	+	07/12/2001	421v	Entran	EGE-73BQE0-2000BF	
7017	J23803	HEDXG3	Head Accel X	Fwd	792.5696594G	+	06/26/2001	421v	Endevco	7264-2000T	
7018	J23947	HEDYG3	Head Accel Y	Rgt	800.1750382G	+	06/26/2001	421v	Endevco	7264-2000T	
7019	J23998	HEDZG3	Head Accel Z	Up	802.7594857G	+	06/27/2001	421v	Endevco	7264-2000T	
7020	1716A-798-FX	NEKXF3	Neck Force X	Hd	8894.679695N	+	06/26/2001	421v	Denton	1716A	
7021	1716A-798-FY	NEKYF3	Neck Force Y	Hd	8885.626660N	+	06/26/2001	421v	Denton	1716A	
7022	1716A-798-FZ	NEKZF3	Neck Force Z	Hd	13330.48880N	+	06/26/2001	421v	Denton	1716A	
7023	1716A-798-MX	NEKXM3	Neck Moment X	Rt Ear	282.6340508NM	+	06/26/2001	421v	Denton	1716A	
7024	1716A-798-MY	NEKYM3	Neck Moment Y	Chn	282.2800418NM	+	06/26/2001	421v	Denton	1716A	
7025	1716A-798-MZ	NEKZM3	Neck Moment Z	Chn	282.4885511NM	+	06/26/2001	421v	Denton	1716A	
7026	ACC65	CSTXG3	Chest Accel X	S33	403.2512129G	+	06/26/2001	421v	Endevco	7264-2000T	
7027	DW83J	CSTYG3	Chest Accel Y	Fwd	396.9823141G	+	06/26/2001	421v	Endevco	7264-2000T	
7028	AJ4L3	CSTZG3	Chest Accel Z	Lft	396.8623073G	+	06/26/2001	421v	Endevco	7264-2000T	
7029	08C1-3179-088	CSTXD3	Chest Deflection X	Dwn	99.53227606MM	+	07/03/2001	421v	Servo	08C1-3179	
7030	J39615	VCGYG	VEHICAL C.G. Y-AXIS	Strmm	984.2368319G	+	04/20/2001	421v	Endevco	7264-2000TZ	

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7031	J39618	VEHICAL C.G. Z-AXIS	UP	1007.477371 G	+ 04/20/2001	OK	-1	Endevco	08/14/2001 2:51:56 PM
7032	J38644	REAR DECK X-AXIS	RR	978.3688756 G	+ 03/28/2001	OK	-1	Endevco	7264-2000TZ
									7264-2000TZ

Channel Report

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Name of Test 010814

System MINIDAU

Name of DAU DAU8

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol.	Cal. Date/Status	Group	Mfg.	Model
8001	J38419	RDKYG	REAR DECK Y-AXIS	RT	1021.140805 G	+	03/28/2001	-1	Endevco	7264-2000TZ
8002	J38570	RDKZG	REAR DECK Z-AXIS	UP	997.1759665 G	+	03/22/2001	-1	Endevco	7264-2000TZ
8003	IP1	DABET1	DRIVER AIRBAG EVENT	6	1.003921568 V	+	06/15/2000	-1	FLUKE	Y8101A
8004	IP2	DABET2	DRIVER AIRBAG EVENT	5	1.003921568 V	+	06/15/2000	-1	FLUKE	Y8101A
8005	IP3	PABET1	PASSENGER AIRBAG EVENT	8	1.003921568 V	+	06/15/2000	-1	FLUKE	Y8101A
8006	IP4	PABET2	PASSENGER AIRBAG EVENT	4	1.003921568 V	+	06/15/2000	-1	FLUKE	Y8101A
8007	AL40	STUXG2	Sternum Upper Accel X 4		798.5028072 G	+	05/21/2001	421v	Endevco	7264-2KM5T
8008	00L20-A12	FTRZG2	Right Foot Accel Z	DWN	1174.204201 G	+	07/11/2001	-1	Entran	EGE-73B6Q-2000JF

Dummy	416v	Type	HYBRID III 5th	Description	VRTC - 416v HYBRID III 5th Female CAL'd 5-24-01 (DKS 7-31-01)				
Chsnam	Location		Model	Name	Manufacturer	Sens./mV/V/U	Fullscale	Caldate	TRC Dir
HEDXG	Head Accel X		EGE-73B6Q-20	01G19-F01	Entran	0.02003 G	2000	08/10/2001	Fwd
HEDYG	Head Accel Y		EGE-73BQ-200	98H10-F12	Entran	0.0235 G	2000	05/24/2001	Lft
HEDZG	Head Accel Z		EGE-73BQE0-2	99H12-F30	Entran	0.01886 G	2000	05/23/2001	Up
HEDXR	Head Accel Red X		EGE-73BQE0-2	99H12-F06	Entran	0.01854 G	2000	05/23/2001	Rwd
HEDYR	Head Accel Red Y		EGE-73BQ-200	98H13-F04	Entran	0.01627 G	2000	05/24/2001	Lft
HEDZR	Head Accel Red Z		7264-2KM5T	DJ64J	Endevco	0.03304 G	2000	05/22/2001	Up
HD1XG	Head (LT) Accel X		EGE-73BQ-200	98H10-F10	Entran	0.01838 G	2000	05/24/2001	Fwd
HD1ZG	Head (LT) Accel Z		EGE-73BQE0-2	99H12-F07	Entran	0.01727 G	2000	05/23/2001	Up
HD2YG	Head (FT) Accel Y		EGE-73BQ-200	98H14-K20	Entran	0.03046 G	2000	05/24/2001	Lft
HD2ZG	Head (FT) Accel Z		EGE-73BQ-200	98H13-F05	Entran	0.01623 G	2000	05/24/2001	Up
HD3XG	Head (TP) Accel X		EGE-73BQ-200	98H10-F19	Entran	0.02068 G	2000	05/24/2001	Fwd
HD3YG	Head (TP) Accel Y		EGE-73BQ-200	98H13-F07	Entran	0.01742 G	2000	05/24/2001	Lft
NEKXF	Neck Force X		1716A	1716A-1039-FX	Denton	0.000200125 N	8896.4	05/24/2001	Hd Fd,Cst Rr
NEKYF	Neck Force Y		1716A	1716A-1039-FY	Denton	0.000193302 N	8896.4	05/24/2001	Hd Lt,Cst Rt
NEKZF	Neck Force Z		1716A	1716A-1039-FZ	Denton	0.000100025 N	13344.6	05/24/2001	Hd Up,Cst Dn
NEKXM	Neck Moment X		1716A	1716A-1039-MX	Denton	0.006030442 NM	282.5	05/24/2001	Rt Ear to Rt Shld
NEKYM	Neck Moment Y		1716A	1716A-1039-MY	Denton	0.006117876 NM	282.5	05/24/2001	Chin to Strmm
NEKZM	Neck Moment Z		1716A	1716A-1039-MZ	Denton	0.008430442 NM	282.5	05/24/2001	Chn to Lt Shld
NKLXF	Neck Lower Force X		IF-228	IF-228-101-FX	FTSS	0.000149947 N	13344.7	01/26/2001	Hd Rr,Cst Fd
NKLYF	Neck Lower Force Y		IF-228	IF-228-101-FY	FTSS	0.000149624 N	13344.7	01/26/2001	Hd Lt,Cst Rt
NKLZF	Neck Lower Force Z		IF-228	IF-228-101-FZ	FTSS	0.000093505 N	13344.7	01/26/2001	Hd Up,Cst Dn
NKLXM	Neck Lower Moment X		IF-228	IF-228-101-MX	FTSS	0.006805252 NM	338.95	01/26/2001	Lt Ear to Lt Shld
NKLYM	Neck Lower Moment Y		IF-228	IF-228-101-MY	FTSS	0.006924461 NM	338.95	01/26/2001	Chn to Strmm
NKLZM	Neck Lower Moment Z		IF-228	IF-228-101-MZ	FTSS	0.013821902 NM	180.78	01/26/2001	Chn to Lt Shld
CSTXG	Chest Accel X		EGE-73BQE0-2	99H12-F15	Entran	0.01832 G	2000	05/23/2001	Fwd
CSTYG	Chest Accel Y		7264-2000LC	AAMD5	Endevco	0.02675 G	2000	05/24/2001	Lft

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Chsnam	Location	Model	Name	Manufacturer	Sens./m V/V/U	Fullscale	Caldate	TRC Dir
CSTZG	Chest Accel Z	EGE-73BQE0-2	99H12-F08	Entran	0.01787 G	2000	05/23/2001	Up
STUXG	Sternum Upper Accel X	7264-2KM5T	AJ7R1	Endevco	0.02229 G	2000	05/22/2001	Fwd
STMXG	Sternum Mid Accel X	7264-2000T	J19868	Endevco	0.02419 G	2000	05/21/2001	Fwd
STLXG	Sternum Lower Accel X	7264-2000T	DC33J	Endevco	0.02488 G	2000	05/21/2001	Fwd
CSTXD	Chest Deflection X	14CB1-2897	14CB1-2897-416	Servo	1.5983 MM	100	06/18/2001	Strmm Away Frn Spn
LMBXF	Lumbar Force X	2152A	2152A-086-FX	Denton	0.000139995 N	13344.6	06/02/2001	Cst Fd, Pel Rr
LMBYF	Lumbar Force Y	2152A	2152A-086-FY	Denton	0.000138002 N	13344.6	06/02/2001	Cst Lt, Pel Rt
LMBZF	Lumbar Force Z	2152A	2152A-086-FZ	Denton	0.000050458 N	17793	06/02/2001	Cst Up, Pel Dn
LMBXM	Lumbar Moment X	2152A	2152A-086-MX	Denton	0.002293111 NM	677.9	06/02/2001	Rt Shld to Rt Hip
LMBYM	Lumbar Moment Y	2152A	2152A-086-MY	Denton	0.002268623 NM	677.9	06/02/2001	Strmm to Frt of Legs
PEVXG	Pelvis Accel X	7264-2000T	J18037	Endevco	0.03748 G	2000	05/21/2001	Rwd
PEVYG	Pelvis Accel Y	7264-2000T	J19547	Endevco	0.02635 G	2000	05/21/2001	Lft
PEVZG	Pelvis Accel Z	7264-2000T	J19639	Endevco	0.02323 G	2000	05/21/2001	Up
LFMZG	Left Femur Force Z 516	2430	2430-717	GSE	0.000067221 N	13344	05/23/2001	Knee Fd, Pel Rr
RFMZG	Right Femur Force Z 507	2430	2430-729	GSE	0.000067895 N	13344	05/23/2001	Knee Fd, Pel Rr
KNLXD	Left Knee Displacement	150-0121VR	150-0121VR-15021	SpaceAge	23.438 MM	40	04/04/2001	Tib Rr, Hld Fem
TBLXF	Left Upper Tibia Force X LC8	4825	4825-75-FX	Denton	0.000257576 N	8896	11/08/2000	Tib Fd, Knee Rr
TBLZF	Left Upper Tibia Force Z LC15	4825	4825-75-FZ	Denton	0.000106013 N	8896	11/08/2000	Tib Dn, Knee Up
TBLXM	Left Upper Tibia Moment X LC17	4825	4825-75-MX	Denton	0.010263456 NM	282.4	11/08/2000	Ank Lt, Hld Knee
TBLYM	Left Upper Tibia Moment Y LC01	4825	4825-75-MY	Denton	0.01017422 NM	282.4	11/08/2000	Ank Fd, Hld Knee
TBLXG	Left Tibia Accel X	EGE-73BQE0-2	99H12-F14	Entran	0.01797 G	2000	07/12/2001	Fwd
TBLYG	Left Tibia Accel Y	EGE-73BQE0-2	99108-F27	Entran	0.02295 G	2000	07/12/2001	Rt
ANLXF	Left Lower Tibia Force X LC23	4826	4826-79-FX	Denton	0.000261758 N	8896	11/15/2000	Ank Fd, Knee Rr
ANLYF	Left Lower Tibia Force Y LC16	4826	4826-79-FY	Denton	0.000260577 N	8896	11/15/2000	Ank Rt, Knee Lft
ANLZF	Left Lower Tibia Force Z LC19	4826	4826-79-FZ	Denton	0.000107351 N	8896	11/15/2000	Ank Dn, Knee Up
ANLXM	Left Lower Tibia Moment X LC26	4826	4826-79-MX	Denton	0.010225566 NM	282.4	11/15/2000	Ank Lt, Hld Knee
ANLYM	Left Lower Tibia Moment Y LC18	4826	4826-79-MY	Denton	0.010491147 NM	282.4	11/15/2000	Ank Fd, Hld Knee
FTLXD	Left Foot Disp. X POT4	PD210-4B	PD210-4B-AK-044	CONTELEC	3.18 DE	318	07/31/2001	Inversion

Chsnam	Location	Model	Name	Manufacturer	Sens./m V/V/U	Fullscale	Caldate	TRC Dir
FTLYD	Left Foot Disp. Y POT5	PD210-4B	PD210-4B-AK-043	CONTELEC	3.159 DE	318	07/31/2001	Dorsiflexion
FTLZD	Left Foot Disp. Z POT6	PD210-4B	PD210-4B-AK-048	CONTELEC	3.17 DE	318	07/31/2001	External Rotation
FTLXG	Left Foot Accel X	EGE-73B6Q-20	00L20-A08	Entran	0.01946 G	2000	07/11/2001	Fwd
FTLYG	Left Foot Accel Y	EGE-73B6Q-20	00L13-F72	Entran	0.02079 G	2000	07/11/2001	Rt
FTLZG	Left Foot Accel Z	EGE-73B6Q-20	98H10-F18	Entran	0.02075 G	2000	07/12/2001	Dn
KNRXD	Right Knee Displacement	150-0121VL	150-0121VL-14949	SpaceAge	22.77 MM	40	04/04/2001	Tib Rr,Hld Fem
TBRXF	Right Upper Tibia Force X LC10	4825	4825-77-FX	Denton	0.000258869 N	8896	11/08/2000	Tib Fd,Knee Rr
TBRZF	Right Upper Tibia Force Z LC14	4825	4825-77-FZ	Denton	0.000106272 N	8896	11/08/2000	Tib Dn,Knee Up
TBRXM	Right Upper Tibia Moment X LC13	4825	4825-77-MX	Denton	0.01026558 NM	282.4	11/08/2000	Ank Lt,Hld Knee
TBRYM	Right Upper Tibia Moment Y LC22	4825	4825-77-MY	Denton	0.01018449 NM	282.4	11/08/2000	Ank Fd,Hld Knee
TBRXG	Right Tibia Accel X	EGE-73BQE0-2	99H12-F18	Entran	0.01803 G	2000	07/12/2001	Fwd
TBRYG	Right Tibia Accel Y	EGE-73BQE0-2	99H12-F23	Entran	0.01706 G	2000	07/12/2001	Rt
ANRXF	Right Lower Tibia Force X LC28	4826	4826-75-FX	Denton	0.000259959 N	8896	11/08/2000	Ank Fd,Knee Rr
ANRYF	Right Lower Tibia Force Y LC20	4826	4826-75-FY	Denton	0.000260982 N	8896	11/08/2000	Ank Rt,Knee Lft
ANRZF	Right Lower Tibia Force Z LC9	4826	4826-75-FZ	Denton	0.000107093 N	8896	11/08/2000	Ank Dn,Knee Up
ANRXM	Right Lower Tibia Moment X LC11	4826	4826-75-MX	Denton	0.010228753 NM	282.4	11/08/2000	Ank Lt,Hld Knee
ANRYM	Right Lower Tibia Moment Y LC02	4826	4826-75-MY	Denton	0.010225212 NM	282.4	11/08/2000	Ank Fd,Hld Knee
FTRXD	Right Foot Disp. X POT1	PD210-4B	PD210-4B-AK-029	CONTELEC	3.192 DE	318	07/31/2001	Eversion
FTRYD	Right Foot Disp. Y POT2	PD210-4B	PD210-4B-AK-030	CONTELEC	3.184 DE	318	07/31/2001	Dorsiflexion
FTRZD	Right Foot Disp. Z POT3	PD210-4B	PD210-4B-AK-031	CONTELEC	3.213 DE	318	07/31/2001	Internal Rotation
FTRXG	Right Foot Accel X	EGE-73BQE0-2	99H12-F29	Entran	0.01851 G	2000	07/12/2001	Fwd
FTRYG	Right Foot Accel Y	EGE-73BQE0-2	99102-F13	Entran	0.01973 G	2000	07/12/2001	Rt
FTRZG	Right Foot Accel Z	EGE-73BQE0-2	99102-F08	Entran	0.02032 G	2000	07/12/2001	Dn

Dummy	421v	Type	HYBRID III 5th	Description	VRTC - 421v HYBRID III 5th Female CAL'd 5-24-01 (DKS 7-31-01)				
Chsnam	Location		Model	Name	Manufacturer	Sens./mV/V/U	Fullscale	Caldate	TRC Dir
HEDXG	Head Accel X 514		EGE-73BQ-200	98G18-F18	Entran	0.01863 G	2000	04/12/2001	Fwd
HEDYG	Head Accel Y		EGE-73BQE0-2	99H30-Z05	Entran	0.01927 G	2000	04/12/2001	Lft
HEDZG	Head Accel Z		EGE-73BQE0-2	99102-F09	Entran	0.02013 G	2000	04/12/2001	Up
HEDXR	Head Accel Red X		EGE-73B6Q-20	00L13-F03	Entran	0.02506 G	2000	04/12/2001	Rwd
HEDYR	Head Accel Red Y		EGE-73BQE0-2	99H30-Z08	Entran	0.01895 G	2000	04/12/2001	Lft
HEDZR	Head Accel Red Z		EGE-73BQE0-2	99H30-Z04	Entran	0.02068 G	2000	04/12/2001	Up
HD1XG	Head (LT) Accel X		EGE-73BQE0-2	99102-F12	Entran	0.01849 G	2000	04/12/2001	Fwd
HD1ZG	Head (LT) Accel Z		EGE-73BQE0-2	99102-F06	Entran	0.01871 G	2000	04/12/2001	Up
HD2YG	Head (FT) Accel Y		EGE-73BQE0-2	99102-F15	Entran	0.01873 G	2000	04/12/2001	Lft
HD2ZG	Head (FT) Accel Z		EGE-73BQE0-2	99108-F29	Entran	0.01998 G	2000	04/11/2001	Up
HD3XG	Head (TP) Accel X		EGE-73BQE0-2	99H30-Z03	Entran	0.01982 G	2000	04/11/2001	Fwd
HD3YG	Head (TP) Accel Y		EGE-73BQE0-2	99108-F28	Entran	0.02241 G	2000	04/12/2001	Lft
NEKXF	Neck Force X		1716A	1716A-852-FX	Denton	0.000195627 N	8896.4	09/01/2000	Hd Fd,Cst Rr
NEKYF	Neck Force Y		1716A	1716A-852-FY	Denton	0.00018805 N	8896.4	09/01/2000	Hd Lt,Cst Rt
NEKZF	Neck Force Z		1716A	1716A-852-FZ	Denton	0.000097446 N	13344.6	09/01/2000	Hd Up,Cst Dn
NEKXM	Neck Moment X		1716A	1716A-852-MX	Denton	0.006055575 NM	282.5	09/01/2000	Lt Ear to Lt Shld
NEKYM	Neck Moment Y		1716A	1716A-852-MY	Denton	0.005970973 NM	282.5	09/01/2000	Chin to Strmm
NEKZM	Neck Moment Z		1716A	1716A-852-MZ	Denton	0.008707256 NM	282.5	09/01/2000	Chn to Lt Shld
NKLXF	Neck Lower Force X		2150	2150-86-FX	Denton	0.000171191 N	13344.2	06/18/2001	Hd Fd,Cst Rr
NKLYF	Neck Lower Force Y		2150	2150-86-FY	Denton	0.000169895 N	13344.2	06/18/2001	Hd Lt,Cst Rt
NKLZF	Neck Lower Force Z		2150	2150-86-FZ	Denton	0.000081957 N	13344.2	06/18/2001	Hd Up,Cst Dn
NKLXM	Neck Lower Moment X		2150	2150-86-MX	Denton	0.004240265 NM	451.9	06/18/2001	Lt Ear to Lt Shld
NKLYM	Neck Lower Moment Y		2150	2150-86-MY	Denton	0.004374336 NM	451.9	06/18/2001	Chn to Strmm
CSTXG	Chest Accel X		EGE-73BQ-200	98H14-K02	Entran	0.01948 G	2000	04/12/2001	Fwd
CSTYG	Chest Accel Y		7264C-2KLC-2- P15321		Endevco	0.01428 G	2000	04/11/2001	Lft
CSTZG	Chest Accel Z		7264C-2KLC-2- P17743		Endevco	0.01467 G	2000	04/11/2001	Up

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Chsnam	Location	Model	Name	Manufacturer	Sens./mV/V/U	Fullscale	Caldate	TRC Dir
CSTXR	Chest Accel Red X	EGE-73BQE0-2	99H30-Z07	Entran	0.01974 G	2000	04/12/2001	Fwd
CSTYR	Chest Accel Red Y	7264C-2KLC-2-	P15334	Endevco	0.01336 G	2000	04/11/2001	Lft
CSTZR	Chest Accel Red Z	EGE-73BQE0-2	99G29-Q13	Entran	0.02286 G	2000	04/12/2001	Up
STUXG	Sternum Upper Accel X 4	7264-2KM5T	AL40	Endevco	0.03206 G	2000	05/21/2001	Fwd
STMXG	Sternum Mid Accel X	7264-2KM5T	BF99J	Endevco	0.03707 G	2000	05/21/2001	Fwd
STLXG	Sternum Lower Accel X	7264-2000T	J20294	Endevco	0.02826 G	2000	05/21/2001	Fwd
CSTXD	Chest Deflection X	14CB1-2897	14CB1-2897-1355	Servo	1.808364 MM	100	08/14/2001	Strmm Away Frm Spn
LMBXF	Lumbar Force X	2152	2152-076-FX	Denton	0.000144364 N	13344.6	06/01/2001	Cst Fd,Pel Rr
LMBYF	Lumbar Force Y	2152	2152-076-FY	Denton	0.000143967 N	13344.6	06/01/2001	Cst Lt,Pel Rt
LMBZF	Lumbar Force Z	2152	2152-076-FZ	Denton	0.000058433 N	17793	06/01/2001	Cst Up,Pel Dn
LMBXM	Lumbar Moment X	2152	2152-076-MX	Denton	0.002374243 NM	677.9	06/01/2001	Rt Shld to Rt Hip
LMBYM	Lumbar Moment Y	2152	2152-076-MY	Denton	0.002370998 NM	677.9	06/01/2001	Strmm to Frt of Legs
PEVXG	Pelvis Accel X	EGE-73BQE0-2	99108-F26	Entran	0.02368 G	2000	04/12/2001	Rwd
PEVYG	Pelvis Accel Y	EGE-73BQE0-2	99H30-Z02	Entran	0.0191 G	2000	04/12/2001	Lft
PEVZG	Pelvis Accel Z	EGE-73BQE0-2	99108-F30	Entran	0.0237 G	2000	04/12/2001	Up
LFMXF	Left Femur Force X	1914A	1914A-383-FX	Denton	0.000147751 N	13344	05/24/2001	Knee Dn,Fem Up
LFMYF	Left Femur Force Y	1914A	1914A-383-FY	Denton	0.000148246 N	13344	05/24/2001	Knee Rt,Fem Lt
LFMZG	Left Femur Force Z	1914A	1914A-383-FZ	Denton	0.000060202 N	22240	05/24/2001	Knee Fd,Pel Rr
LFMXM	Left Femur Moment X	1914A	1914A-383-MX	Denton	0.004511209 NM	339	05/24/2001	Knee Rt,Hld Fem
LFMYM	Left Femur Moment Y	1914A	1914A-383-MY	Denton	0.004614159 NM	339	05/24/2001	Knee Up,Hld Fem
LFMZM	Left Femur Moment Z	1914A	1914A-383-MZ	Denton	0.008078761 NM	339	05/24/2001	Tib Lt,Hld Pel
RFMXF	Right Femur Force X	1914A	1914A-376-FX	Denton	0.000146934 N	13344	05/24/2001	Knee Dn,Fem Up
RFMYF	Right Femur Force Y	1914A	1914A-376-FY	Denton	0.000146882 N	13344	05/24/2001	Knee Rt,Fem Lt
RFMZG	Right Femur Force Z	1914A	1914A-376-FZ	Denton	0.000060008 N	22240	05/24/2001	Knee Fd,Pel Rr
RFMXM	Right Femur Moment X	1914A	1914A-376-MX	Denton	0.004509439 NM	339	05/24/2001	Knee Rt,Hld Fem
RFMYM	Right Femur Moment Y	1914A	1914A-376-MY	Denton	0.004633038 NM	339	05/24/2001	Knee Up,Hld Fem
RFMZM	Right Femur Moment Z	1914A	1914A-376-MZ	Denton	0.008148082 NM	339	05/24/2001	Tib Lt,Hld Pel
KNLXD	Left Knee Displacement	150-0121VR	150-0121VR-13742	SpaceAge	23.206 MM	40	04/25/2001	Tib Rr,Hld Fem

Chsnam	Location	Model	Name	Manufacturer	Sens./m V/V/U	Fullscale	Caldate	TRC Dir
TBLXF	Left Upper Tibia Force X LC12	4825	4825-79-FX	Denton	0.000264129 N	8896	11/29/2000	Tib Fd,Knee Rr
TBLZF	Left Upper Tibia Force Z LC7	4825	4825-79-FZ	Denton	0.000108172 N	8896	11/29/2000	Tib Dn,Knee Up
TBLXM	Left Upper Tibia Moment X LC3	4825	4825-79-MX	Denton	0.010405453 NM	282.4	11/29/2000	Ank Lt,Hld Knee
TBLYM	Left Upper Tibia Moment Y LC4	4825	4825-79-MY	Denton	0.010242917 NM	282.4	11/29/2000	Ank Fd,Hld Knee
TBLXG	Left Tibia Accel X	EGE-73B6Q-20	00L13-F16	Entran	0.01927 G	2000	07/11/2001	Fwd
TBLYG	Left Tibia Accel Y	EGE-73BQ-200	98H10-F01	Entran	0.01939 G	2000	07/11/2001	Rt
ANLXF	Left Lower Tibia Force X LC21	4826	4826-77-FX	Denton	0.000261432 N	8896	11/08/2000	Ank Fd,Knee Rr
ANLYF	Left Lower Tibia Force Y LC06	4826	4826-77-FY	Denton	0.000262646 N	8896	11/08/2000	Ank Rt,Knee Lft
ANLZF	Left Lower Tibia Force Z LC24	4826	4826-77-FZ	Denton	0.000107284 N	8896	11/08/2000	Ank Dn,Knee Up
ANLXM	Left Lower Tibia Moment X LC30	4826	4826-77-MX	Denton	0.010269121 NM	282.4	11/08/2000	Ank Lt,Hld Knee
ANLYM	Left Lower Tibia Moment Y LC05	4826	4826-77-MY	Denton	0.010377124 NM	282.4	11/08/2000	Ank Fd,Hld Knee
FTLXD	Left Foot Disp. X POT7	PD210-4B	PD210-4B-AK-047	CONTELEC	3.2 DE	318	07/31/2001	Inversion
FTLYD	Left Foot Disp. Y POT8	PD210-4B	PD210-4B-AK-049	CONTELEC	3.192 DE	318	07/31/2001	Dorsiflexion
FTLZD	Left Foot Disp. Z POT9	PD210-4B	PD210-4B-AK-087	CONTELEC	3.145 DE	318	07/31/2001	External Rotation
FTLXG	Left Foot Accel X	EGE-73BQE0-2	99108-F25	Entran	0.02092 G	2000	07/12/2001	Fwd
FTLYG	Left Foot Accel Y	EGE-73B6Q-20	00L20-A14	Entran	0.01924 G	2000	07/11/2001	Rt
FTLZG	Left Foot Accel Z	EGE-73B6Q-20	00L13-F13	Entran	0.0271 G	2000	07/11/2001	Dn
KNRXd	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 UTRFX	4825	4825-76-FX	Denton	0.000260442 N	8896	11/08/2000	Tib Fd,Knee Rr
TBRZF	Right Upper Tibia Force Z UTRFY	4825	4825-76-FZ	Denton	0.000107093 N	8896	11/08/2000	Tib Dn,Knee Up
TBRXM	Right Upper Tibia Moment X UTRMX	4825	4825-76-MX	Denton	0.010338172 NM	282.4	11/08/2000	Ank Lt,Hld Knee
TBRYM	Right Upper Tibia Moment Y UTRMY	4825	4825-76-MY	Denton	0.010246813 NM	282.4	11/08/2000	Ank Fd,Hld Knee
TBRXG	Right Tibia Accel X	EGE-73B6Q-20	00L20-A15	Entran	0.0191 G	2000	07/11/2001	Fwd
TBRYG	Right Tibia Accel Y	EGE-73BQ-200	98H13-F15	Entran	0.01868 G	2000	07/11/2001	Rt
ANRXF	Right Lower Tibia Force X LTRFX	4826	4826-78-FX	Denton	0.000263871 N	8896	11/08/2000	Ank Fd,Knee Rr
ANRYF	Right Lower Tibia Force Y LC25	4826	4826-78-FY	Denton	0.00026504 N	8896	11/08/2000	Ank Rt,Knee Lft
ANRZF	Right Lower Tibia Force Z LTRFZ	4826	4826-78-FZ	Denton	0.000108498 N	8896	11/08/2000	Ank Dn,Knee Up
ANRXM	Right Lower Tibia Moment X LC27	4826	4826-78-MX	Denton	0.010286473 NM	282.4	11/08/2000	Ank Lt,Hld Knee

Chsnam	Location	Model	Name	Manufacturer	Sens./mV/V/U	Fullscale	Caldate	TRC Dir
ANRYM	Right Lower Tibia Moment Y	LTRM 4826	4826-78-MY	Denton	0.01048796 NM	282.4	11/08/2000	Ank Fd,Hld Knee
FTRXD	Right Foot Disp. X	ROT X	PD210-4B-AK-084	CONTELEC	3.155 DE	318	07/31/2001	Eversion
FTRYD	Right Foot Disp. Y	ROTY	PD210-4B-AK-085	CONTELEC	3.164 DE	318	07/31/2001	Dorsiflexion
FTRZD	Right Foot Disp. Z	ROTZ	PD210-4B-AK-086	CONTELEC	3.171 DE	318	07/31/2001	Internal Rotation
FTRXG	Right Foot Accel X		EGE-73BQE0-2 99D15-N08	Entran	0.02244 G	2000	07/12/2001	Fwd
FTRYG	Right Foot Accel Y		EGE-73BQE0-2 99102-F10	Entran	0.01868 G	2000	07/12/2001	Rt
FTRZG	Right Foot Accel Z		EGE-73B6Q-20 00L20-A12	Entran	0.01982 G	2000	07/11/2001	Dn

Dummy	088v	Type	HIIL-6 Y.O.	Description	VRTC - 088v HIIL 6 YR OLD CAL'd 9-7-00 (DKS 8-8-01)			
Chsnam	Location	Model	Name	Manufacturer	Sens./mV/V/U	Fullscale	Caldate	TRC Dir
HEDXG	Head Accel X	7264-2000T	J23803	Endevco	0.02584 G	2000	06/26/2001	Fwd
HEDYG	Head Accel Y	7264-2000T	J23947	Endevco	0.02461 G	2000	06/26/2001	Rgt
HEDZG	Head Accel Z	7264-2000T	J23998	Endevco	0.02126 G	2000	06/27/2001	Up
NEKXF	Neck Force X	1716A	1716A-798-FX	Denton	0.000191875 N	8896.4	06/26/2001	Hd Fd,Cst Rr
NEKYF	Neck Force Y	1716A	1716A-798-FY	Denton	0.000185277 N	8896.4	06/26/2001	Hd Lt,Cst Rt
NEKZF	Neck Force Z	1716A	1716A-798-FZ	Denton	0.000096503 N	13344.6	06/26/2001	Hd Up,Cst Dn
NEKXM	Neck Moment X	1716A	1716A-798-MX	Denton	0.005769203 NM	282.5	06/26/2001	Rt Ear to Rt Shld
NEKYM	Neck Moment Y	1716A	1716A-798-MY	Denton	0.005850973 NM	282.5	06/26/2001	Chn to Strnum
NEKZM	Neck Moment Z	1716A	1716A-798-MZ	Denton	0.008164247 NM	282.5	06/26/2001	Chn to Lt Shld
CSTXG	Chest Accel X S33	7264-2000T	ACC65	Endevco	0.02152 G	2000	06/26/2001	Fwd
CSTYG	Chest Accel Y	7264-2000T	DW83J	Endevco	0.03307 G	2000	06/26/2001	Lft
CSTZG	Chest Accel Z	7264-2000T	AJ4L3	Endevco	0.02481 G	2000	06/26/2001	Dwn
CSTXD	Chest Deflection X	08C1-3179	08C1-3179-088	Servo	2.154617037 MM	100	08/16/2001	Strmm Away Frm Spn
LMBXF	Lumbar Force X	2431	2431-128-FX	Denton	0.000472054 N	4448.2	07/02/2001	Cst Fwd, Pel Rwd
LMBYF	Lumbar Force Y	2431	2431-128-FY	Denton	0.000470683 N	4448.2	07/02/2001	Cst Lft, Pel Rgt
LMBZF	Lumbar Force Z	2431	2431-128-FZ	Denton	0.000138906 N	7117.16	07/02/2001	Cst Up, Pel Dwn
LMBXM	Lumbar Moment X	2431	2431-128-MX	Denton	0.006257079 NM	225.969	07/02/2001	Rgt Shld twd Rgt Hip
LMBYM	Lumbar Moment Y	2431	2431-128-MY	Denton	0.00609115 NM	225.969	07/02/2001	Strn twd Frt of Leg
LMBZM	Lumbar Moment Z	2431	2431-128-MZ	Denton	0.015342776 NM	141.23	07/02/2001	Rt Shld Fwd Lt Shld RR
PEVXG	Pelvis Accel X	7264-2000LC	AALW8	Endevco	0.02281 G	2000	06/26/2001	Fwd
PEVYG	Pelvis Accel Y	EGE-73BQE0-2 99H12-F25		Entran	0.01696 G	2000	06/26/2001	Lft
PEVZG	Pelvis Accel Z	7264-2000T	AJ4J6	Endevco	0.02719 G	2000	06/26/2001	Up
LFMZP	Left Femur Force Z	2090	2090-126	Denton	0.000213084 N	6672	07/11/2001	Knee Fd,Pel Rr
RFMZP	Right Femur Force Z	2090	2090-125	Denton	0.000210836 N	6672	07/11/2001	Knee Fd,Pel Rr

S16. Test procedures for rigid barrier test requirements using 5th percentile adult female dummies.

S16.1 General provisions. Crash testing to determine compliance with the requirements of S15 of this standard is conducted as specified in the following paragraphs (a) and (b).

(a) Belted test. Place a 49 CFR Part 572 Subpart O 5th percentile adult female test dummy at each front outboard seating position of a vehicle, in accordance with the procedures specified in S16.3 of this standard. Impact the vehicle traveling longitudinally forward at any speed, up to and including 48 km/h (30 mph), into a fixed rigid barrier that is perpendicular within a tolerance of ± 5 degrees to the line of travel of the vehicle under the applicable conditions of S16.2 if this standard.

(b) Unbelted test. Place a 49 CFR Part 572 Subpart O 5th percentile adult female test dummy at each front outboard seating position of a vehicle, in accordance with the procedures specified in S16.3 of this standard, except S16.3.5. Impact the vehicle traveling longitudinally forward at any speed, from 32 km/h (20 mph) to 40 km/h (25 mph), inclusive, into a fixed rigid barrier that is perpendicular within a tolerance of ± 5 degrees to the line of travel of the vehicle under the applicable conditions of S16.3 of this standard.

S16.2 Test conditions.

S16.2.1 The vehicle, including test devices and instrumentation, is loaded as in S8.1.1.

S16.2.2 Movable vehicle windows and vents are placed in the fully closed position, unless the vehicle manufacturer chooses to specify a different adjustment position prior to the time the vehicle is certified.

S16.2.3 Convertibles and open-body type vehicles have the top, if any, in place in the closed passenger compartment configuration.

S16.2.4 Doors are fully closed and latched but not locked.

S16.2.5 The dummy is clothed in form fitting cotton stretch garments with short sleeves and above the knee length pants. A size 7½W shoe which meets the configuration and size specifications of MIL-S-21711E (see S4.7) or its equivalent is placed on each foot of the test dummy.

S16.2.6 Limb joints are set at one g, barely restraining the weight of the limb when extended horizontally. Leg joints are adjusted with the torso in the supine position.

S16.2.7 Instrumentation shall not affect the motion of dummies during impact.

S16.2.8 The stabilized temperature of the dummy is at any level between 20.6° C and 22.2° C (69° F to 72° F).

S16.2.9 Steering wheel adjustment.

S16.2.9.1 Adjust a tiltable steering wheel, if possible, so that the steering wheel hub is at the geometric center of its full range of driving positions.

S16.2.9.2 If there is no setting detent at the mid-position, lower the steering wheel to the detent just below the mid-position.

S16.2.9.3 If the steering column is telescoping, place the steering column in the mid-position. If there is no mid-position, move the steering wheel rearward one position from the mid-position.

S16.2.10 Driver and passenger seat set-up.

S16.2.10.1 Lumbar support adjustment. Position adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position.

S16.2.10.2 Other seat adjustments. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position.

S16.2.10.3 Seat position adjustment. If the passenger seat does not adjust independently of the driver seat, the driver seat position shall control the final position of the passenger seat.

S16.2.10.3.1 If the seat is adjustable in the fore and aft and/or vertical directions, move the seat to the rearmost position at the full down height adjustment. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. If the seat cushion contains a height adjustment, independent of the seat back, set this adjustment to the full down position. Record a seat cushion reference angle.

S16.2.10.3.2 Using only controls which move the seat fore and aft, move the seat to the full forward position. If seat adjustments other than fore-aft are present and the seat cushion reference angle changes from that measured in S16.2.10.3.1, use those adjustments to maintain as closely as possible the angle recorded in S16.2.10.3.1.

S16.2.10.3.3 If the seat height is adjustable, determine the maximum and minimum heights at this position, while maintaining, as closely as possible, the angle recorded in S16.2.10.3.1. Set the seat at the midpoint height with the seat cushion reference angle set as closely as possible to the angle recorded in S16.2.10.3.1. Mark the location of the seat for future reference.

S16.3 Dummy seating positioning procedures. The 49 CFR Part 572 Subpart O 5th percentile adult female test dummy is positioned as follows:

S16.3.1 General provisions and definitions.

S16.3.1.1 All angles are measured with respect to the horizontal plane unless otherwise stated.

S16.3.1.2 The dummy's neck bracket is adjusted to align the zero degree index marks.

S16.3.1.3 The term "midsagittal plane" refers to the vertical plane that separates the dummy into equal left and right halves.

S16.3.1.4 The term "vertical longitudinal plane" refers to a vertical plane parallel to the vehicle's longitudinal centerline.

S16.3.1.5 The term "vertical plane" refers to a vertical plane, not necessarily parallel to the vehicle's longitudinal centerline.

S16.3.1.6 The term "transverse instrumentation platform" refers to the transverse instrumentation surface inside the dummy's skull casting to which the neck load cell mounts. This surface is perpendicular to the skull cap's machined inferior-superior mounting surface.

S16.3.1.7 The term "thigh" refers to the femur between, but not including the knee and the pelvis.

S16.3.1.8 The term "leg" refers to the lower part of the entire leg including the knee.

S16.3.1.9 The term "foot" refers to the foot including the ankle.

S16.3.1.10 The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.

S16.3.1.11 For leg and thigh angles use the following references:

S16.3.1.11.1 Thigh - a straight line on the thigh skin between the center of the ½ - 13 UNC-2B tapped hole in the upper leg femur clamp (see drawings 880105-504 (left thigh) and 880105-505 (right thigh), upper leg femur clamp) and the knee pivot shoulder bolt (part 880105-527 in drawing 880105-528R & 528L, sliding knee assy. w/o pot).

S16.3.1.11.2 Leg - a straight line on the leg skin between the center of the ankle shell (parts 880105-609 & 633 in drawing 880105-660, ankle assembly) and the knee pivot shoulder bolt (part 880105-27 in drawing 880105-528R & 528L, sliding knee assy. w/o pot).

S16.3.2 Driver dummy positioning.

S16.3.2.1 Driver torso/head/seat back angle positioning.

S16.3.2.1.1 With the seat in the position determined in S16.2.10, use only the controls which mover the seat fore and aft to place the seat in the rearmost position, without adjusting independent height controls. If the seat cushion reference angle automatically changes as the seat is moved from the full forward position, maintain as closely as possible the seat cushion reference angle in S16.2.10.3.1, for the final forward position when measuring the pelvic angle as specified in S16.3.2.1.11.

S16.3.2.1.2 Fully recline the seat back, if adjustable. Install the dummy into the driver's seat, such that when the legs are positioned 120 degrees to the thighs, the calves of the legs are not touching the seat cushion.

S16.3.2.1.3 Bucket seats. Center the dummy on the seat cushion so that its midsagittal plane is vertical and coincides with the vertical longitudinal plane through the center of the seat cushion.

S16.3.2.1.4 Bench seats. Position the midsagittal plane of the dummy vertical and parallel to the vehicle's longitudinal centerline and aligned with the center of the steering wheel rim.

S16.3.2.1.5 Hold the dummy's thighs down and push rearward on the upper torso to maximize the dummy's pelvic angle.

S16.3.2.1.6 Place the legs at 120 degrees to the thighs. Set the initial transverse distance between the longitudinal centerlines at the front of the dummy's knees at 160 to 170 mm (6.3 to 6.7 in.), with the thighs and legs of the dummy in vertical planes. Push rearward on the dummy's knees to force the pelvis into the seat so there is no gap between the pelvis and the seat back or until contact occurs between the back of the dummy's calves and the front of the seat cushion.

S16.3.2.1.7 Gently rock the upper torso relative to the lower torso laterally in a side to side motion three times through a ± 5 degree arc (approximately 51 mm (2 in) side to side) to reduce friction between the dummy and the seat.

S16.3.2.1.8 Extend the legs slightly so that the feet are not in contact with the floor pan. Let the thighs rest on the seat cushion to the extent permitted by the foot movement. Keeping the leg and the thigh in a vertical plane, place the foot in the vertical longitudinal plane that passes through the centerline of the accelerator pedal. Rotate the left thigh outboard about the hip until the center of the knee is the same distance from the midsagittal plane of the dummy as the right knee ± 5 mm (± 0.2 in). Using only controls which move the seat fore and aft, attempt to return the seat to the full forward position. If either of the dummy's legs first contacts the steering wheel, then adjust the steering wheel, if adjustable, upward until contact with the steering wheel is avoided. If the steering wheel is not adjustable, separate the knees enough to avoid steering wheel contact. Proceed with moving the seat forward until either the leg contacts the vehicle interior or the seat reaches the full forward position. (The right foot may contact and depress the accelerator and/or change the angle of the foot with respect to the leg during seat movement.) If necessary to avoid contact with the vehicles brake or clutch pedal, rotate the test dummy's left foot about the leg. If there is still interference, rotate the left thigh outboard about the hip the minimum distance necessary to avoid pedal interference. If a dummy leg contacts the vehicle interior before the

full forward position is attained, position the seat at the next detent where there is no contact. If the seat is a power seat, position the seat to avoid contact while assuring that there is a maximum of 5 mm (0.2 in.) distance between the vehicle interior and the point on the dummy that would first contact the vehicle interior. If the steering wheel was moved, return it to the position described in S16.2.9. If the steering wheel contacts the dummy's leg(s) prior to attaining this position, adjust it to the next higher detent or if infinitely adjustable, until there is 5 mm (0.2 in.) clearance between the wheel and the dummy's leg(s).

S16.3.2.1.9 For vehicles without adjustable seat backs, adjust the lower neck bracket to level the head as much as possible. For vehicles with adjustable seat backs, while holding the thighs in place, rotate the seat back forward until the transverse instrumentation platform of the head is level to within ± 5 degrees, making sure that the pelvis does not interfere with the seat bight. Inspect the abdomen to ensure that it is properly installed. If the torso contacts the steering wheel, adjust the steering wheel in the following order until there is no contact: telescoping adjustment, lowering adjustment, raising adjustment. If the vehicle has no adjustments or contact with the steering wheel cannot be eliminated by adjustment, position the seat at the next detent where there is no contact with the steering wheel as adjusted in S16.2.9. If the seat is a power seat, position the seat to avoid contact while assuring that there is a maximum of 5 mm (0.2 in.) distance between the steering wheel as adjusted in S16.2.9 and the point of contact on the dummy.

S16.3.2.1.10 If it is not possible to achieve the head level within ± 5 degrees, minimize the angle.

S16.3.2.1.11 Measure and set the dummy's pelvic angle using the pelvic angle gage (drawing TE-2504, incorporated by reference in 49 CFR Part 572, Subpart O, of the chapter). The angle shall be set to 20.0 degrees ± 2.5 degrees. If this is not possible, adjust the pelvic angle as close to 20.0 degrees as possible while keeping the transverse instrumentation platform of the head as level as possible by adjustments specified in S16.3.2.1.9 and S16.3.2.1.10.

S16.3.2.1.12 If the dummy is contacting the vehicle interior after these adjustments, move the seat rearward until there is a maximum of 5 mm (0.2 in.) between the contact points of the dummy and the interior of the vehicle or if it has a manual seat adjustment, to the next rearward detent position. If after these adjustments, the dummy contact point is more than 5 mm (0.2 in.) from the vehicle interior and the seat is still not in its forward most position, move the seat forward until the contact point is 5 mm (0.2 in.) or less from the vehicle interior, or if it has a manual seat adjustment, move the seat to the closest detent position without making contact, or until the seat reaches its forward most position, whichever occurs first.

S16.3.2.2 Driver foot positioning.

S16.3.2.2.1 If the vehicle has an adjustable accelerator pedal, adjust it to the full forward position. Rest the right foot of the test dummy on the undepressed accelerator pedal with the rearmost point of the heel on the floor pan in the plane of the pedal. If the foot cannot be placed on the accelerator pedal, set it initially perpendicular to the leg and then place it as far forward as possible in the direction of the pedal centerline with the rearmost point of the heel resting on the floor pan. If the vehicle has an adjustable accelerator pedal and the right foot is not touching the accelerator pedal when positioned as above, move the pedal rearward until it touches the right foot. If the accelerator pedal in the full rearward position still does not touch the foot, leave the pedal in that position.

S16.3.2.2.2 If the ball of the foot does not contact the pedal, change the angle of the foot relative to the leg such that the toe of the foot contacts the undepressed accelerator pedal.

S16.3.2.2.3 Place the left foot on the toe board with the rearmost point of the heel resting on the floor pan as close as possible to the point of intersection of the planes described by the toe board and floor pan, and not on the wheel-well projection or foot rest.

S16.3.2.2.4 If the left foot cannot be positioned on the toe board, place the foot perpendicular to the lower leg centerline as far forward as possible with the heel resting on the floor pan.

S16.3.2.2.5 If necessary to avoid contact with the vehicle's brake or clutch pedal, rotate the test dummy's left foot about the lower leg. If there is still pedal interference, rotate the left leg outboard about the hip the minimum distance necessary to avoid the pedal interference. If the left foot does not contact the floor pan, place the foot parallel to the floor and place the leg as perpendicular to the thigh as possible.

S16.3.2.3 Driver arm/hand positioning.

S16.3.2.3.1 Place the dummy's upper arms adjacent to the torso with the arm centerlines as close to a vertical longitudinal plane as possible.

S16.3.2.3.2 Place the palms of the dummy in contact with the outer part of the steering wheel rim at its horizontal centerline with the thumbs inside the steering wheel rim.

S16.3.2.3.3 If it is not possible to position the thumbs inside the steering wheel rim at its horizontal centerline, then position them above and as close to the horizontal centerline of the steering wheel rim as possible.

S16.3.2.3.4 Lightly tape the hands to the steering wheel rim so that if the hand of the test dummy is pushed upward by a force of not less than 9 N (2 lb.) and not more than 22 N (5 lb.), the tape releases the hand from the steering wheel rim.

S16.3.3 Passenger dummy positioning.

S16.3.3.1 Passenger torso/head/seat back angle positioning.

S16.3.3.1.1 With the seat in the position determined in S16.2.10, use only the controls which move the seat fore and aft to place the seat in the rearmost position, without adjusting independent height controls. If the seat cushion reference angle automatically changes as the seat is moved from the full forward position, maintain as closely as possible the seat cushion reference angle recorded in S16.2.10.3.1, for the final forward position when measuring the pelvic angle as specified in S16.3.3.1.11.

S16.3.3.1.2 Fully recline the seat back, if adjustable. Install the dummy into the passenger's seat, such that when the legs are 120 degrees to the thighs, the calves of the legs are not touching the seat cushion.

S16.3.3.1.3 Bucket seats. Center the dummy on the seat cushion so that its midsagittal plane is vertical and coincides with the vertical longitudinal plane through the center of the seat cushion.

S16.3.3.1.4 Bench seats. Position the midsagittal plane of the dummy vertical and parallel to the vehicle's longitudinal centerline and the same distance from the vehicle's longitudinal centerline as the midsagittal plane of the driver dummy.

S16.3.3.1.5 Hold the dummy's thighs down and push rearward on the upper torso to maximize the dummy's pelvic angle.

S16.3.3.1.6 Place the legs at 120 degrees to the thighs. Set the initial transverse distance between the longitudinal centerlines at the front of the dummy's knees at 160 to 170 mm (6.3 to 6.7 in.), with the thighs and legs of the dummy in vertical planes. Push rearward on the dummy's knees to force the pelvis into the seat so there is no gap between the pelvis and

the seat back or until contact occurs between the back of the dummy's calves and the front of the seat cushion.

S16.3.3.1.7 Gently rock the upper torso relative to the lower torso laterally side to side three times through at ± 5 degree arc (approximately 51 mm (2 in.) side to side).

S16.3.3.1.8 Extend the legs slightly so that the feet are not in contact with the floor pan. Let the thighs rest on the seat cushion to the extent permitted by the foot movement. With the feet perpendicular to the legs, place the heels on the floor pan. If a heel will not contact the floor pan, place it as close to the floor pan as possible. Using only controls which move the seat fore and aft, attempt to return the seat to the full forward position. If a dummy leg contacts the vehicle interior before the full forward position is attained, position the seat at the next detent where there is no contact. If the seats are power seats, position the seat to avoid contact while assuring that there is a maximum of 5 mm (0.2 in.) distance between the vehicle interior and the point on the dummy that would first contact the vehicle interior.

S16.3.3.1.9 For vehicles without adjustable seat backs, adjust the lower neck bracket to level the head as much as possible. For vehicles with adjustable seat backs, while holding the thighs in place, rotate the seat back forward until the transverse instrumentation platform of the head is level to within ± 5 degrees, making sure that the pelvis does not interfere with the seat bight. Inspect the abdomen to insure that it is properly installed.

S16.3.3.1.10 If it is not possible to orient the head level within ± 5 degrees, minimize the angle.

S16.3.3.1.11 Measure and set the dummy's pelvic angle using the pelvic angle gage (drawing TE-2504, incorporated by reference in 49 CFR Part 572, Subpart O, of this chapter). The angle shall be set to 20.0 degrees ± 2.5 degrees. If this is not possible, adjust the pelvic angle as close to 20.0 degrees as possible while keeping the transverse instrumentation platform of the head as level as possible as specified in S16.3.3.1.9 and S16.3.3.1.10.

S16.3.3.1.12 If the dummy is contacting the vehicle interior after these adjustments, move the seat rearward until there is a maximum of 5 mm (0.2 in.) between the contact point of the dummy and the interior of the vehicle or if it has a manual seat adjustment, to the next rearward detent position. If after these adjustments the dummy contact point is more than 5 mm (0.2 in.) from the vehicle interior and the seat is still not in its forward most position, move the seat forward until the contact point is 5 mm (0.2 in.) or less from the vehicle interior, or if it has a manual seat adjustment, move the seat to the closest detent position without making contact, or until the seat reaches its forward most position, whichever occurs first.

S16.3.3.2 Passenger foot positioning.

S16.3.3.2.1 Place the passenger's feet flat on the toe board.

S16.3.3.2.2 If the feet cannot be placed flat on the toe board, set them perpendicular to the leg centerlines and place them as far forward as possible with the heels resting on the floor pan.

S16.3.3.3 Passenger arm/hand positioning.

S16.3.3.3.1 Place the dummy's upper arms in contact with the seat back and the torso.

S16.3.3.3.2 Place the palms of the dummy in contact with the outside of the thighs.

S16.3.3.3.3 Place the little fingers in contact with the seat cushion.

S16.3.4 Driver and passenger adjustable head restraints.

S16.3.4.1 If the head restraint has an automatic adjustment, leave it where the system positions the restraint after the dummy is placed in the seat.

S16.3.4.2 Adjust each head restraint to its lowest and most forward position.

S16.3.4.3 Measure the vertical distance from the top most point of the head restraint to the bottom most point. Locate a horizontal plane through the midpoint of this distance. Adjust each head restraint vertically so that this horizontal plane is aligned with the center of gravity (CG) of the dummy head.

S16.3.4.3 If the above position is not attainable, move the vertical center of the head restraint to the closest detent below the center of the head CG.

S16.3.4.4 If the head restraint has a fore and aft adjustment, place the restraint in the forward most position or until contact with the head is made, whichever occurs first.

S16.3.5 Driver and passenger manual belt adjustment (for tests conducted with a belted dummy).

S16.3.5.1 If an adjustable seat belt D-ring anchorage exists, place it in the manufacturer's design position for a 5th percentile adult female with the seat in the position specified in S16.2.10.3.

S16.3.5.2 Place the Type 2 manual belt around the test dummy and fasten the latch.

S16.3.5.3 Ensure that the dummy's head remains as level as possible, as specified in S16.3.2.1.9 and S16.3.2.1.10, and S16.3.3.1.9 and S16.3.3.1.10.

S16.3.5.4 Remove all slack from the lap belt. Pull the upper torso webbing out of the retractor and allow it to retract; repeat this operation four times. Apply a 9 N (2 lbf) to 18 N (4 lbf) tension load to the lap belt. If the belt system is equipped with a tension-relieving device, introduce the maximum amount of slack into the upper torso belt that is recommended by the manufacturer. If the belt system is not equipped with a tension-relieving device, allow the excess webbing in the shoulder belt to be retracted by the retractive force of the retractor.