636516

Report Number: 214-TRC-03-003

Safety Compliance Testing For FMVSS 214

Side Impact Protection

Indicant

Nissan Motor Co., LTD

2003 Nissan 350Z 2-door Coupe

NHTSA Number: C35201

Transportation Research Center Inc.

10820 State Route 347

P. O. Box B-67

East Liberty, OH 43319

March 6, 2003

Final Report

U. S. Department Of Transportation

National Highway Traffic Safety Administration

Enforcement

Office of Vehicle Safety Compliance

400 Seventh Street, S. W.

Room No. 6111 (NVS-220)

Washington, DC 20590

Test Performed By: Jason D. Jenkins, Test Engineer

Report Approved By: _____

Jeffery W. Sankey, Manager Project Operations

Transportation Research Center Inc.

Approval Date: 3/6/03

FINAL REPORT ACCEPTANCE BY OVSC:

Accepted By: _____

Acceptance Date: 5-21-03

Technical Report Documentation Page

1. Report No. 214-TRC-03-003	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle Final Report of FMVSS 214 Indicant Compliance Side Impact Testing of a 2003 Nissan 350Z 2-door coupe NHTSA No.: C35201		5. Report Date March 6, 2003 6. Performing Organization Code TRC Inc.
7. Author(s) Jeffery W. Sankey, Manager Project Operations Transportation Research Center Inc.		8. Performing Organization Report No. 030225
9. Performing Organization Name and Address Transportation Research Center Inc. 10820 State Route 347 East Liberty, OH 43319		10. Work Unit No. (TRAIS) 11. Contract or Grant No. DTNH22-02-D-11114
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Vehicle Safety Compliance (NVS-220) 400 Seventh Street, S.W., Room 6111 Washington, DC 20590		13. Type of Report and Period Covered Final Report February - March 2003 14. Sponsoring Agency Code NVS-220
15. Supplemental Notes		

16. Abstract

This 55/28 km/h 90° Impact (Moving Deformable Barrier) Compliance Test was conducted on the subject vehicle, a 2003 Nissan 350Z 2-door coupe in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-214D-06 (except the test was conducted 8 km/h (5 mph) faster than the standard specifies) to determine FMVSS 214 Side Impact Protection compliance. This test was conducted by Transportation Research Center Inc. in East Liberty, Ohio, on February 25, 2003.

The impact velocity of the Moving Deformable Barrier (MDB) was 62.2 km/h, and the ambient temperature at the struck (driver's side) side of the target vehicle at the time of impact was 21° C. The target vehicle's post-test maximum crush was 216 mm at Level 2.

The test or target vehicle's performance is given below:

	Front SID		Rear SID	
Left Upper Rib Acceleration:	49.4	g's	-	g's
Left Lower Rib Acceleration:	52.5	g's	-	g's
Lower Spine Acceleration:	48.5	g's	-	g's
Thoracic Trauma Index, (TTI):	50.5	g's	-	g's
Pelvis Acceleration (PEV):	63.2	g's	-	g's

The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during side impact event.

17. Key Words Compliance Testing Side Impact Protection FMVSS 214 Side Impact Dummy (SID HIII)	18. Distribution Statement Copies of this report are available from: NHTSA Technical Information Services (TIS) Room 5108 (NPO-230), 400 Seventh Street, S.W. Washington, DC 20590 Telephone No. (202) 366-4946 Attn: Robert Horniele

19. Security Classification (of this report)	20. Security Classification (of this page)	21. Number of Pages	22. Price
Unclassified	Unclassified	308	

Form DOT F 1700.7 (8-72) Reproduction of completed page authorized

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Section 1

Purpose and Test Procedure

This side impact test is part of the FMVSS 214 Side Impact Protection Compliance Test Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-02-D-11114. The purpose of this test was to evaluate side impact protection in a 2003 Nissan 350Z 2-door. The test was conducted in accordance with the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-06, dated July 2001), with the exception of the test speed, which was at the NCAP High-Speed Lateral Impact level (61.2 km/h).

Section 2

Summary of Side Impact Test

A 2003 Nissan 350Z 2-door coupe was impacted on the driver's side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the monorail at a velocity of 62.2 km/h (38.6 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by Transportation Research Center Inc. in East Liberty, Ohio on February 25, 2003. Pre-test and post-test photographs of the test vehicle, the moving deformable barrier (MDB), and the side impact dummies (SIDs) are included in Appendix A.

One restrained Side Impact Dummy (SID) was placed in the driver (Pos. #1) designated seating position according to the instructions specified in the OVSC Side Impact Laboratory Test Procedure (TP-214D-06, dated July 2001). The SID was certified prior to this test. The side impact test was documented by one real-time camera and 8 high-speed cameras. Camera locations and other pertinent camera information are included in this report.

The SID was instrumented with the following instrumentation:

1. Head (HED) triaxial and redundant accelerometers (X, Y, and Z-directions)
2. Neck (NEK) triaxial force and moment load cells (X, Y, and Z-directions)
3. Left Upper Rib (LUR) uniaxial and redundant accelerometer (Y-direction)
4. Left Lower Rib (LLR) uniaxial and redundant accelerometer (Y-direction)
5. Lower Thoracic Spine (T_{12}) uniaxial and redundant accelerometer (Y-direction)
6. Pelvic (PEV) section uniaxial and redundant accelerometer (Y-direction)

A summary of the side impact dummy (SID) configuration and verification test data can be found in Appendix C. A total of 52 channels of data were recorded. Appendix B contains the vehicle, MDB, and dummy response data traces.

The following tables summarize the results of the test:

Injury Criteria	Front SID	Rear SID
TTI (g)	50.5	---
PEV (g)	63.2	----

Head Injury Criteria (HIC)

Injury Criteria	Front SID	Rear SID
HIC	511	----
t_1 (ms)	47.2	
t_2 (ms)	77.8	
Average Acceleration $t_1 - t_2$ (g)	48.8	---

HIC is as defined in FMVSS 208. The maximum time interval t_1 to t_2 is 36 ms.

Neck Injury Criteria

Maximum Values	Front SID	Rear SID
Neck X-axis Force (N)	-628	----
Neck Y-axis Force (N)	711	----
Neck Z-axis Force (N)	1924	----
Moment About X-axis (Nm)[1]	68.0	----
Moment About Y-axis (Nm)	-29.4	----
Moment About Z-axis (Nm)	-21.0	----

[1] Calculated about the occipital condyle with the following formula: $M_{occ} = M_x + 0.01778F_y$.

Data Acquisition Explanations

The driver's lower spine Y-axis acceleration data channel, T12YG1, recorded questionable data between approximately 85 and 90 milliseconds. This affected the lower spine Y-axis velocity calculation and the peak acceleration, thus affecting the driver's Thoracic Trauma Index (TTI) calculation. The redundant lower spine Y-axis acceleration data channel was used to calculate the TTI data presented in this report.

The left side sill at front Y-axis acceleration data channel, LFSYG1, recorded questionable data after 24 milliseconds and did not return to zero after the impact event. This affected the left side sill at front velocity and displacement calculations.

The left side sill at rear Y-axis acceleration data channel, LRSYG1, lost data after 16 milliseconds. This affected the left side sill at rear velocity and displacement calculations.

The mid-rear of left front door Y-axis acceleration data channel, LFMYG1, lost data between 41 and 63 milliseconds. This affected the mid-rear of left front door velocity and displacement calculations.

The left lower A-post Y-axis acceleration data channel, LLAYG1, recorded questionable data after 5 milliseconds. This affected the left lower A-post velocity calculation.

The left middle A-post Y-axis acceleration data channel, LMAYG1, lost data after 15 milliseconds. This affected the left middle A-post velocity calculation.

Section 3

Summary of Test Results

Data Sheet 1

General Test Vehicle Parameter Data

Test Vehicle Information:

Vehicle Year/Make/Model: 2003/Nissan/350Z

Vehicle Body Style/Color: 2-door coupe/Black VIN: JN1AZ34D63T107987

Vehicle NHTSA No.: C35201 Build Date: 11/02

Engine Data: 6 Cylinders; ___ CID; 3.5 Liters; ___ cc

Placement: - Longitudinal; or - Lateral; or - Horizontal

Transmission: 6 Speed; X Manual; - Automatic; - Overdrive

Final Drive: X RWD; - FWD; - Four-Wheel Drive

Odometer Reading: 236 km

Options: X A/C; X Power steering; X Power. brakes; X Power windows

Data From Vehicle's Tire Placard:

Tire Pressure (at capacity)* 240 kPa Front; 240 kPa Rear

Recommended Tire Size: 225/50R17

Tires on Test Vehicle: 235/50R17 Manufacturer: Bridgestone, Potenza

Vehicle Capacity Data:

Number of Occupants: 2 Front; ___ Rear; ___ 3rd seat; 2 Total

Type of Front Seats: X Bucket; - Bench; - Split bench

Type of Front Seat Back: - Fixed; X Adjustable with X Lever or - Knob

Vehicle Max. Capacity Loading = 204 kg (A)

No. of Occupants x 68.04 kg. = 136 kg (B)

Vehicle Cargo Capacity (A-B) = 68 kg

Test Vehicle Delivered Weight With Maximum Fluids:

Left Front	=	407.5 kg	Left Rear	=	327.0 kg
Right Front	=	386.0 kg	Right Rear	=	354.5 kg
Total Front	=	793.5 kg	Total Rear	=	681.5 kg
Front % of Total Weight	=	53.8 %	Rear % of Total Weight	=	46.2 %
Total Weight	=	1475.0 kg			

* Tire pressure used in test.

Data Sheet 1 (continued)

General Test Vehicle Parameter Data

Calculation Of Vehicle's Target Test Weight:

Total Test Vehicle Delivered Weight With Max. Fluids = 1475 kg (A)

Maximum Cargo Carrying Capacity of Test Vehicle = 68 kg (B)

Weight of Instrumented Side Impact Dummy (1 X 83 kg) = 83 kg (C)

Test Vehicle Target Weight: = 1626 kg (A+B+C)

Fully Loaded Test Vehicle (UDW + 1 SID + Cargo):

Left Front	=	436.5 kg	Left Rear	=	400.0 kg
Right Front	=	390.5 kg	Right Rear	=	409.0 kg
Total Front	=	827.0 kg	Total Rear	=	809.0 kg
Front % of Total Weight	=	50.6 %	Rear % of Total Weight	=	49.4 %
Total Weight	=	1636.0 kg			

As Tested Weight of Test Vehicle (1 SID + Cargo + Equipment & Instrumentation):

Left Front	=	445.4 kg	Left Rear	=	371.5 kg
Right Front	=	433.0 kg	Right Rear	=	370.6 kg
Total Front	=	878.4 kg	Total Rear	=	742.1 kg
Front % of Total Weight	=	54.2 %	Rear % of Total Weight	=	45.8 %
Total Weight	=	1620.5 kg			

Test Vehicle Attitude (all dimensions in millimeters):

As Delivered		Fully Loaded		Ready For Test	
Right Front	680	Right Front	678	Right Front	680
Left Front	690	Left Front	682	Left Front	682
Right Rear	702	Right Rear	685	Right Rear	692
Left Rear	708	Left Rear	685	Left Rear	690

Test Vehicle Wheelbase: 2655 mm

C.G. = 1216 mm rearward of front wheel centerline

Total Vehicle Length:

Right Side = 4145 mm

Left Side = 4150 mm

Centerline = 4286 mm

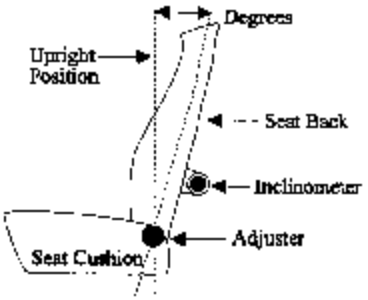
Data Sheet 1 (continued)

General Test Vehicle Parameter Data

Vehicle: 2003 Nissan 350Z 2-door coupe

NHTSA No.: C35201

Nominal Design Riding Position for adjustable driver and passenger seat backs. Please describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent, if applicable.



Front Seat Assembly
Left Side View

Front Seat Cushion Placement: Mid. the tenth notch rearward of the front "zero" position.

Total Length of Fore/Aft Adjustment Travel: 230 mm

Total Number of Adjustment Positions or Detents: 20

Front Seat Back Adjustment Position: The back was adjusted to the 6th notch from full up.

Seat Back Torso Angle: 21.5 degrees

Second Position Seat Placement: Not applicable

Total Length Of Fore/Aft Adjustment Travel: - mm

Seat Back Adjustment Position: -

Adjustable Steering Column Position: Mid between the highest and lowest angles.

Window Positions:

Right Front: Open Right Rear: Closed

Left Front: Closed Left Rear: Closed

Note: Windows will be in closed position on struck side of test vehicle and in open position on opposite side.

Amount of Stoddard Solvent in Fuel Tank:

75.7 liters (fuel tank usable capacity)

70.4 liters used in test (92% - 94% of fuel tank usable capacity)

Location of Impact Point On Test Vehicle Side To Be Impacted:

Wheelbase = 2655 millimeters

Intended impact point is 387.5 millimeters rearward of front axle centerline

(which is 940 millimeters forward of the wheelbase midpoint)

Actual Impact Point is 398 millimeters rearward of front axle centerline

Data Sheet 2

Test Vehicle Summary of Results

Vehicle Year/Make/Model: 2003/Nissan/350Z

Body Style: 2-door coupe VIN: JN1AZ34D63T107987

NHTSA No.: C35201 Build Date: 11/02

Test Date: 02/25/03

Vehicle Overall Length = 4286 mm Overall Width = 1790 mm

Vehicle Test Weight (Pre-Test):

Left Front	=	445.4	kg	Left Rear	=	371.5	kg
Right Front	=	433.0	kg	Right Rear	=	370.6	kg
Total Front	=	878.4	kg	Total Rear	=	742.1	kg
Total Weight	=	1620.5	kg				
Wheelbase	=	2655	mm				

Longitudinal C.G. From Center Of Front Axle = 1216 mm

Impact Angle With Respect To Impactor = 90 degrees

Impact Point:

Actual Impact Point is 11 mm right of nominal impact ref. line (Lateral)

Actual Impact Point is 13 mm up from nominal impact point (Vertical)

Maximum Exterior Static Crush:

1. Level 1 (181 mm above ground) = 51 mm
2. Level 2 (442 mm above ground) = 216 mm
3. Level 3 (584 mm above ground) = 174 mm
4. Level 4 (874 mm above ground) = 128 mm
5. Level 5 (1229 mm above ground) = 33 mm

Maximum Post-Test Intrusion = 216 mm

Occupants:	Front Passenger	Rear Passenger
Dummy Identification	028	-
Restraints Used	Seat belt	-

Instrumentation:

Number of Vehicle Data Channels: = 18

Number of Cameras: Onboard = 2 Offboard = 7 Total = 9

Data Sheet 3

Moving Deformable Barrier(MDB) Summary

MDB Face Manufacturer And Serial Number:

Plascore, 050A0602-3-035A0602

Position Of Impactor (MDB) On Monorail:

Crabbed 27°

MDB Specifications:

Overall Width of Framework Carriage	=	1251	mm
Overall Length of MDB (Incl. honeycomb impact face)	=	4014	mm
Wheelbase of Framework Carriage	=	2591	mm
Track of Framework Carriage (Front & Rear)	=	1881	mm
C.G. Location Rearward of Front Axle	=	1114	mm

MDB Weight:

Left Front	=	376.8	kg	Left Rear	=	304.2	kg
Right Front	=	399.2	kg	Right Rear	=	280.8	kg
Total Front	=	776.0	kg	Total Rear	=	585.0	kg
Total MDB Weight	=	1361.0	kg				

Impact Angle (MDB C/L to Target Vehicle C/L) = 90 degrees

Impact Speed = 62.2 km/h

Maximum Static Crush of Honeycomb Impact Face:

1. Row A at Center of Bumper Level	=	233	millimeters
2. Row B at Top of Bumper Level	=	180	millimeters
3. Row C at Mid Level	=	176	millimeters
4. Row D at Top of Stack Level	=	153	millimeters

Instrumentation:

Number of MDB Data Channels = 5

Data Sheet 4

Post-Test Observations

Vehicle: 2003 Nissan 350Z 2-door coupe NHTSA No.: C35201

Visible Dummy Contact Points:

	Left Front SID	Left Rear SID
Head:	Door panel, head restraint	-
Upper Torso:	Door panel	-
Lower Torso:	None	-
Left Knee:	Door panel	-
Right Knee:	None	-

Door Opening:

	Left Side	Right Side
Front:	Latched, jammed shut	Remained closed & operational
Rear:	-	-

MDB Distance From Target Impact Point:

Vertical: 13 mm up from target

Horizontal: 11 mm right from target

Arm Rest Locations:

Front: 311 mm below the bottom of the window

Rear: mm below the bottom of the window

Seat Movement:

Front: No

Rear: -

Glazing Damage:

Windshield: Entire windshield shattered

Window: Shattered

Pillar Separation: No

Sill Separation: No

Other Notable Impact Effects:

-

Section 4

Occupant and Vehicle Information

Data Sheet 5

SID Instrumentation Data

Vehicle: 2003 Nissan 350Z 2-door coupe NHTSA No.: C35201

TEST NUMBER: 030225 DRIVER DUMMY SERIAL NUMBER: 028

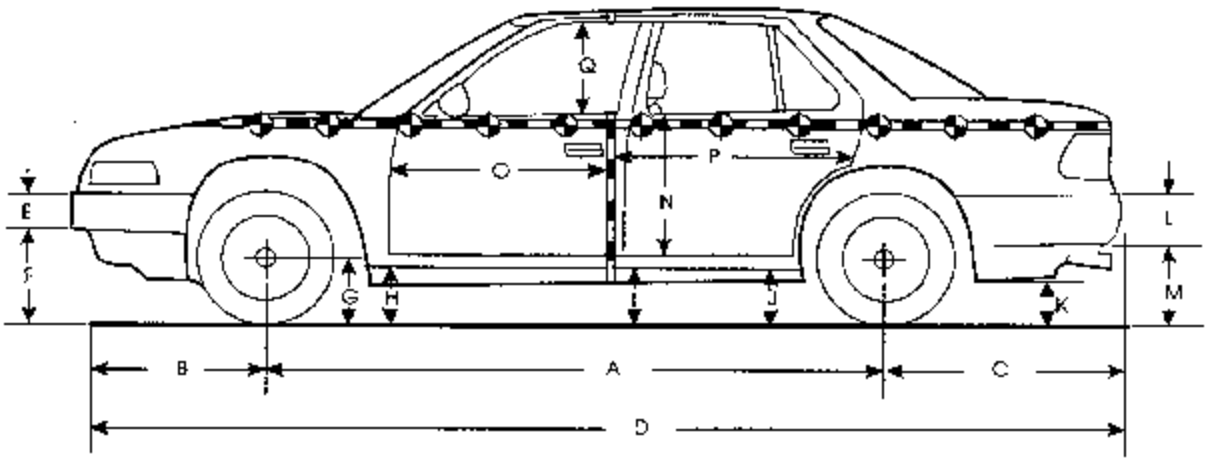
	POSITIVE DIRECTION		NEGATIVE DIRECTION	
HEAD ACCELERATION				
LONGITUDINAL	5.0 g	@ 220.7 ms	50.5 g	@ 72.2 ms
LATERAL	90.7 g	@ 72.0 ms	8.5 g	@ 221.0 ms
VERTICAL	47.0 g	@ 54.5 ms	7.2 g	@ 72.1 ms
RESULTANT	103.6 g	@ 72.4 ms		
HIC	511 from 47.2 to 77.8 ms			
LEFT UPPER RIB ACCELERATION				
LATERAL (P)	49.4 g	@ 38.1 ms	17.0 g	@ 74.4 ms
LATERAL (R)	49.4 g	@ 38.1 ms	17.4 g	@ 74.4 ms
LEFT LOWER RIB ACCELERATION				
LATERAL (P)	52.5 g	@ 36.3 ms	11.7 g	@ 74.4 ms
LATERAL (R)	53.3 g	@ 36.3 ms	12.0 g	@ 74.4 ms
TTI d (P) [1]	50.5			
TTI d (R)	50.9			
LOWER SPINE ACCELERATION				
LATERAL (P) [1]	66.8 g	@ 87.5 ms	16.8 g	@ 67.5 ms
LATERAL (R)	48.5 g	@ 32.5 ms	16.7 g	@ 67.5 ms
PELVIS ACCELERATION				
LATERAL (P)	63.2 g	@ 26.3 ms	4.9 g	@ 109.4 ms
LATERAL (R)	63.3 g	@ 26.3 ms	4.9 g	@ 109.4 ms

[1] See Data Acquisition Explanations on Page 2-3.

Data Sheet 6

Vehicle Pre-Test And Post-Test Measurements

Vehicle: 2003 Nissan 350Z 2-door coupe NHTSA No.: C35201



Left Side View

Note: All dimensions are in millimeters with tolerance of ±3 mm

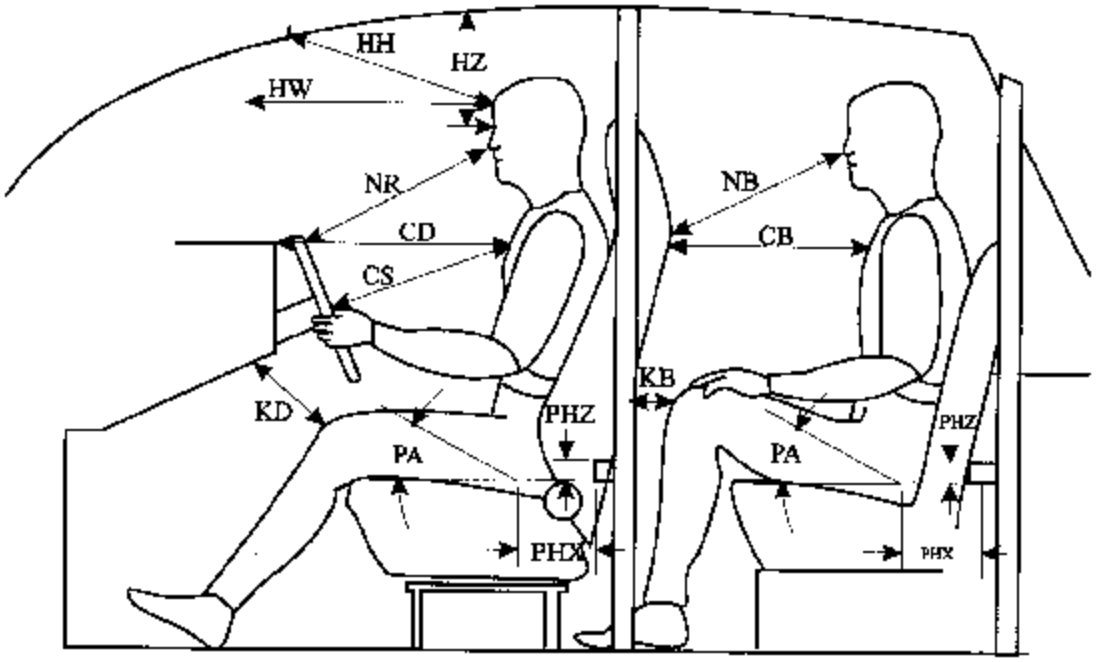
	Pre-Test (as delivered)	Pre-Test (as tested)	Post-Test (as tested)	Change
A	2655	2655	2655	0
B	792	792	791	1
C	845	845	845	0
D	4286	4286	4286	0
E	380	380	380	0
F	185	171	202	-31
G	320	315	317	-2
H	134	122	176	-54
I	185	159	201	-42
J1	165	146	135	11
J2	177	140	189	-49
K	210	210	189	21
L	490	490	490	0
M	365	356	334	22
N	-	-	-	-
O	535	535	535	0
P	-	-	-	-
Q	335	335	365	-30
R	4145	4145	4145	0
S	4150	4150	4150	0
T	1307	1307	1265	42

D = Length at centerline E&L = Bumper Thickness R = Right Side Length S = Left Side Length
T = Width at B-pillar J1 = To Pinch Weld J2 = To Sill

Data Sheet 7

SID Longitudinal Clearance Dimensions

Vehicle: 2003 Nissan 350Z 2-door coupe NHTSA No.: C35201



Left Side View

Note: All measurements are in millimeters with tolerance of ±3 mm

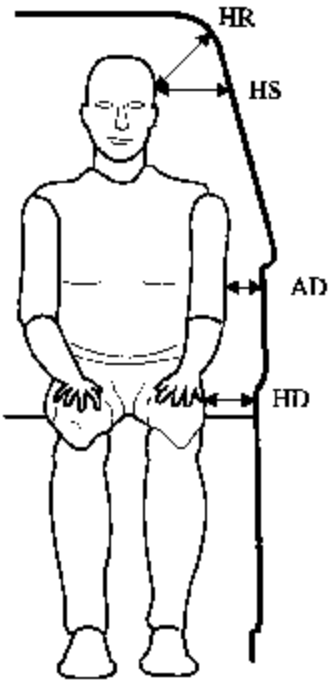
Measurement	Driver SID # 028	Left Rear Pass. SID # -
HH	355	-
HW	510	-
HZ	140	-
NR/NB	399	-
CD/CB	495	-
CS	275	-
KDL(KDA°)/KBL(KBA°)	102/(33°)	-
KDR(KDA°)/KBR(KBA°)	103/(41°)	-
PA°	24.9°	-
PHX	441	-
PHZ	215	-

Note: 2-door vehicle shown. Rear dummy PHX and PHZ measurements for 4-door vehicle would use the C-post striker as a reference point.

Data Sheet 8

SID Lateral Clearance Dimensions

Vehicle: 2003 Nissan 350Z 2-door coupe NHTSA No.: C35201



Note: All measurements are in millimeters with tolerance of ±3 mm

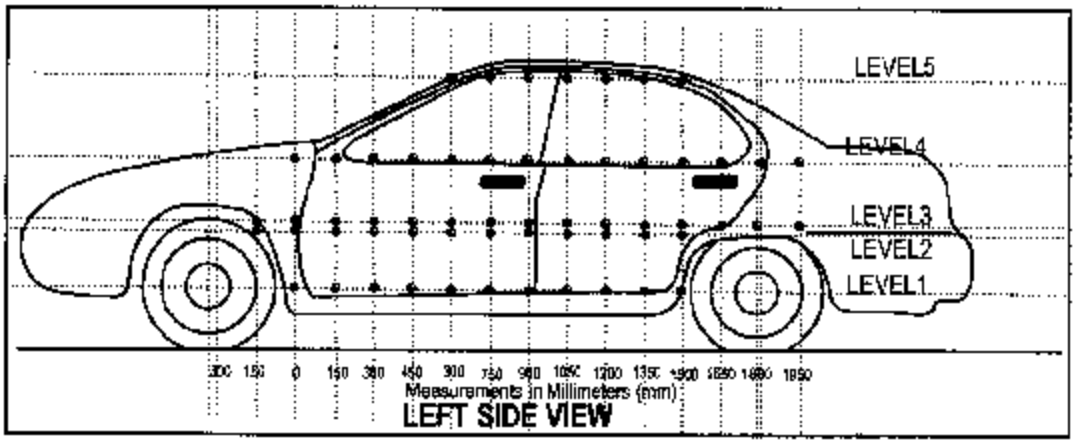
Measurement	Driver SID # 028	Left Rear Pass. SID # -
HR	185	-
HS	285	-
AD*	Lower: 74 Upper: 62	Lower: - Upper: -
HD	139	-

* Lower measurement is taken laterally at center of the lower rib accelerometer height from the SID arm segment to the closest part of the vehicle side.
Upper measurement is taken laterally at center of the upper rib accelerometer height from the SID arm segment to the closest part of the vehicle side.

Data Sheet 9

Vehicle Side Measurements

Vehicle: 2003 Nissan 350Z 2-door coupe NHTSA No.: C35201



Level 5 - Window Top
Level 4 - Window Sill
Level 3 - Mid-Door
Level 2 - Occupant H-Point
Level 1 - Axle Centerline Height or Sill Top Height

Measurements Are Taken When The Vehicle Is In The "As Tested" Configuration.

Measurements along the vertical 750 mm line shown above:

Level 5 @ Window Top	=	1229	mm
Level 4 @ Window Sill	=	874	mm
Level 3 @ Mid Door	=	584	mm
Level 2 @ Occupant H-Point	=	442	mm
Level 1 @ Axle Centerline Height (or Sill Top Height)	=	181	mm

Data Sheet 10

Vehicle Exterior Crush Profiles - All Levels

Vehicle: 2003 Nissan 350Z 2-door coupe

NHTSA No.: C35201

Location	Height		(mm) From Impact Point													
			-1200	-1050	-900	-750	-600	-450	-300	-150	0	150	300	450	600	750
Level 1 Side Sill	181	Pre	---	---	---	---	---	---	---	---	---	649	649	634	642	643
		Post	---	---	---	---	---	---	---	---	---	673	684	685	683	680
		Crush	---	---	---	---	---	---	---	---	---	24	35	51	41	37
Level 2 H-Point	442	Pre	---	---	---	628	---	---	---	---	602	622	615	605	602	599
		Post	---	---	---	617	---	---	---	---	680	791	811	756	786	800
		Crush	---	---	---	-11	---	---	---	---	78	169	196	151	184	201
Level 3 Mid-Door	584	Pre	---	---	---	655	---	---	---	---	616	627	617	607	601	597
		Post	---	---	---	654	---	---	---	---	714	755	719	753	758	760
		Crush	---	---	---	-1	---	---	---	---	98	128	120	146	157	163
Level 4 Window Sill	874	Pre	---	---	---	---	---	795	777	754	740	625	714	703	696	694
		Post	---	---	---	---	---	801	792	783	770	753	755	745	773	790
		Crush	---	---	---	---	---	6	15	29	30	128	41	42	77	96
Level 5 Window Top	1229	Pre	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Post	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Crush	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Data Sheet 10 (Continued)

Vehicle Exterior Crush Profiles - All Levels

Vehicle: 2003 Nissan 350Z 2-door coupe

NHTSA No.: C35201

Location	Height		(mm) From Impact Point												
			900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700
Level 1 Side Sill	181	Pre	641	643	640	647	648	650	645	---	---	---	---	---	628
		Post	683	685	687	685	683	681	665	---	---	---	---	---	639
		Crush	42	42	47	38	35	31	20	---	---	---	---	---	11
Level 2 H-Point	442	Pre	597	597	598	601	605	613	610	---	---	---	---	---	631
		Post	810	813	808	809	802	795	743	---	---	---	---	---	643
		Crush	213	216	210	208	197	182	133	---	---	---	---	---	12
Level 3 Mid-Door	584	Pre	595	595	596	6900	605	614	616	593	---	---	---	608	662
		Post	766	769	770	770	765	762	738	667	---	---	---	625	679
		Crush	171	174	174	170	160	148	122	74	---	---	---	17	17
Level 4 Window Sill	874	Pre	689	687	689	691	695	692	706	712	720	730	750	770	786
		Post	809	805	796	796	807	763	769	738	746	753	771	788	804
		Crush	120	118	107	105	112	71	63	26	26	23	21	18	18
Level 5 Window Top	1229	Pre	882	872	873	878	890	911	943	---	---	---	---	---	---
		Post	909	900	901	909	923	939	966	---	---	---	---	---	---
		Crush	27	28	28	31	33	28	23	---	---	---	---	---	---

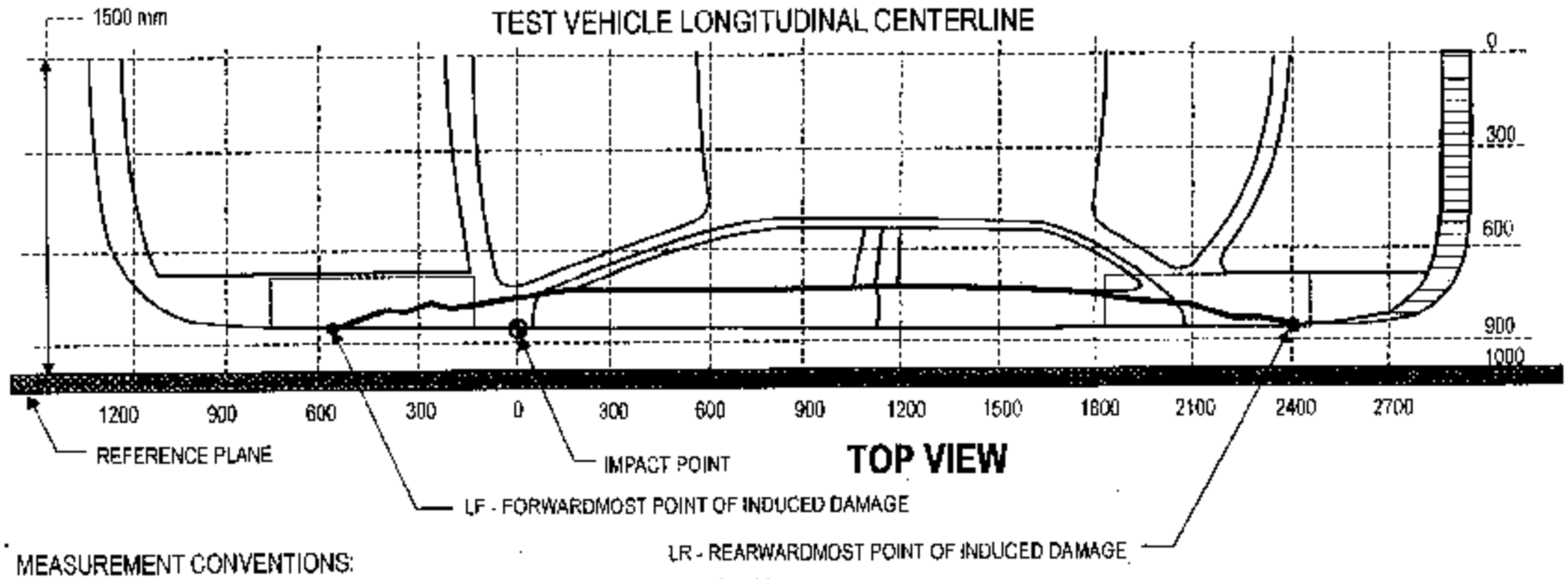
Data Sheet 11

Vehicle Damage Profile Distances

Vehicle: 2003 Nissan 350Z 2-door coupe

NHTSA No.: C35201

NOTE: All measurements are in millimeters (mm) and should be accurate to plus or minus 3mm.



MEASUREMENT CONVENTIONS:
Forward of the impact point (towards front of vehicle) is considered negative (-)
Rearward of the impact point (towards rear end of vehicle) is considered positive (+)

DPD Measurements	Post-Test (mm)	Pre-Test (mm)	Static Crush (mm)[1]
6: LF = -150 mm (Level 4)	783	754	29
5: 300 mm (Level 2)	811	615	196
4: 750 mm (Level 2)	80	599	201
3: 1200 mm (Level 2)	808	598	210
2: 1650 mm (Level 2)	795	613	182
1: LR = 1950 mm (Level 3)	667	593	74

[1] Full length of induced damage was -150 to 1950 mm.

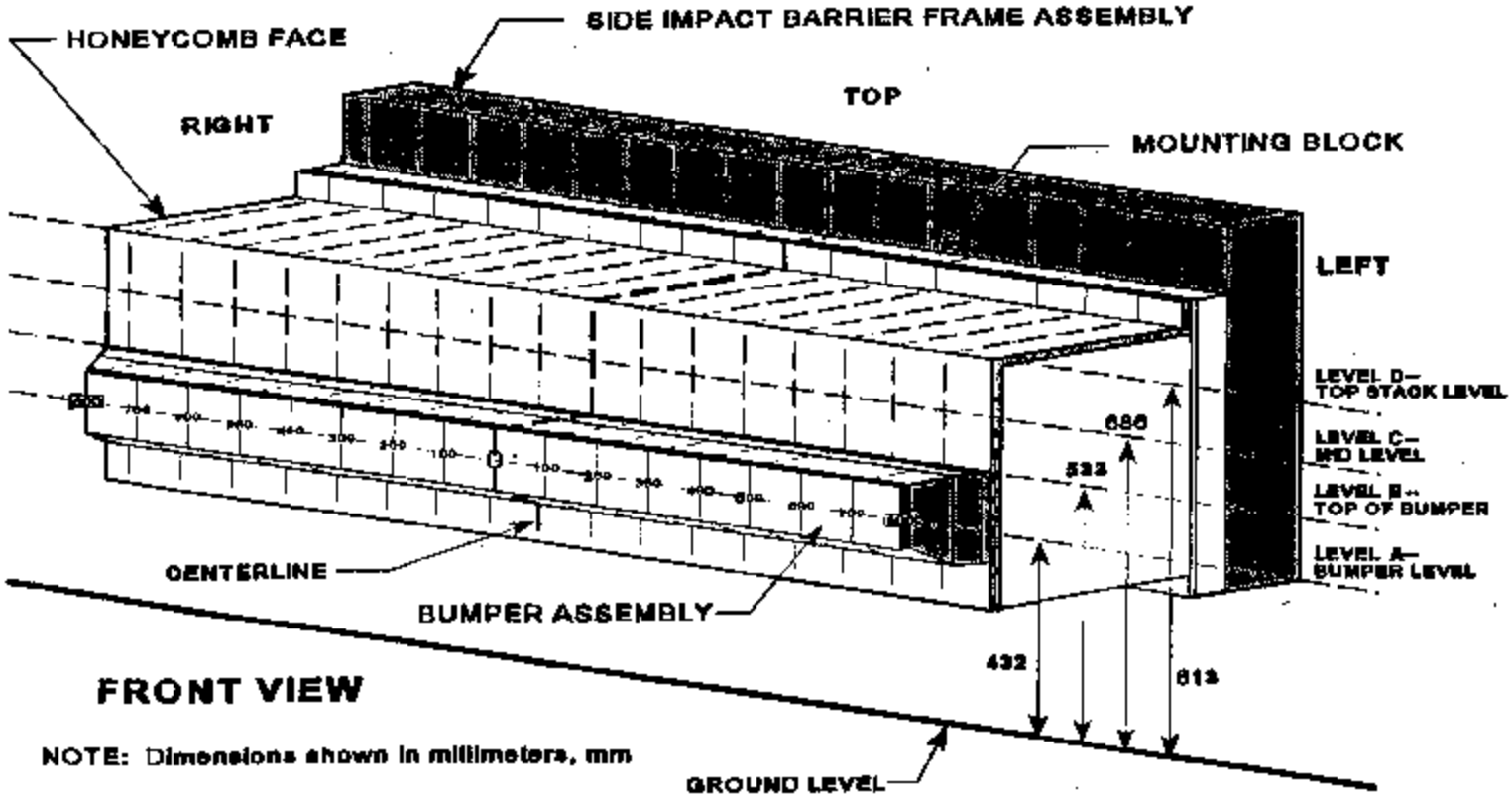
Data Sheet 12

Exterior Static Crush For Impactor Face

(Grid as looking at MDB from front)

Vehicle: 2003 Nissan 350Z 2-door coupe

NHTSA No.: C35201



Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Nissan 350Z 2-door coupe

NHTSA No.: C35201

		Distance Right of Center (mm)									Distance Left of Center (mm)							
Location	Height At CL	800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800
Top Stack Level - Level D	811	153	136	105	55	49	40	33	35	40	46	52	63	78	104	124	124	129
Mid Level Level C	688	176	159	132	76	51	39	30	26	29	28	33	42	57	87	134	121	119
Top Bumper Level - Level B	559	180	153	142	130	113	96	85	78	76	77	77	77	81	92	102	116	139
Mid Bumper Level - Level A	432	233	212	195	184	169	151	134	124	121	121	121	124	134	158	174	171	169

All measurements are in millimeters and have a tolerance of + 3mm.

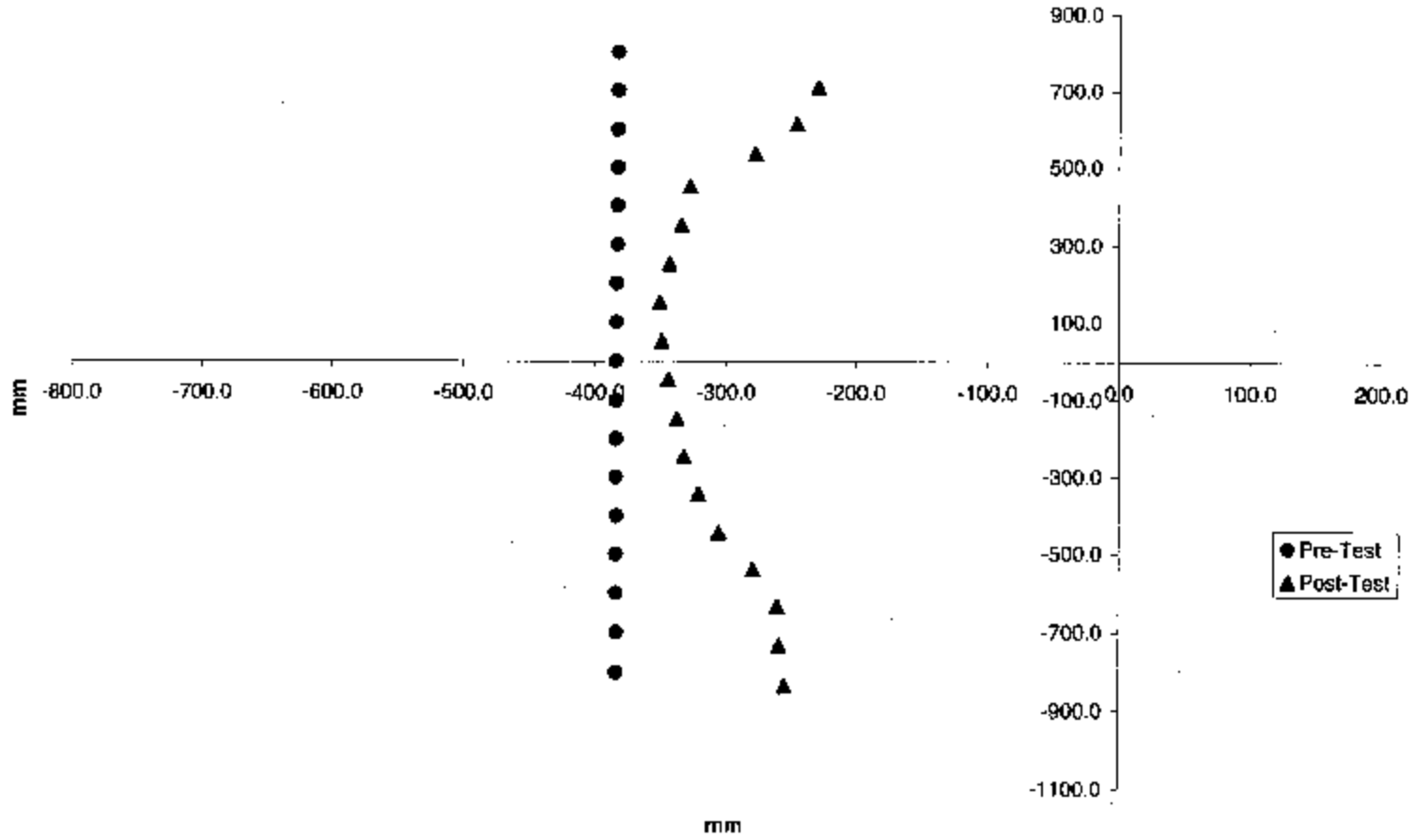
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Nissan 350Z 2-door coupe

NHTSA No.: C35201

Level D - Deformable Barrier Face Profile 1-17



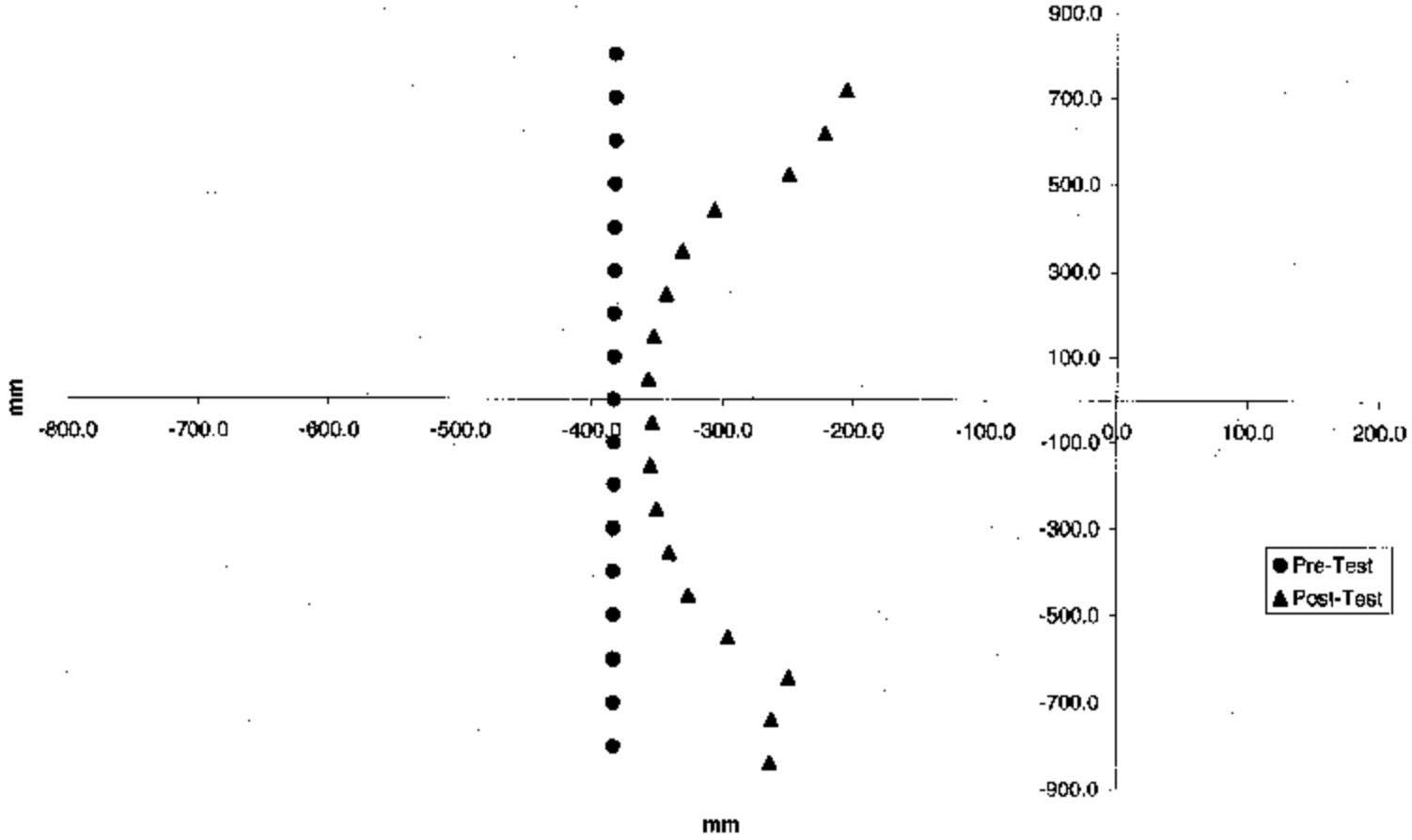
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Nissan 350Z 2-door coupe

NHTSA No.: C35201

Level C - Deformable Barrier Face Profile 18-34



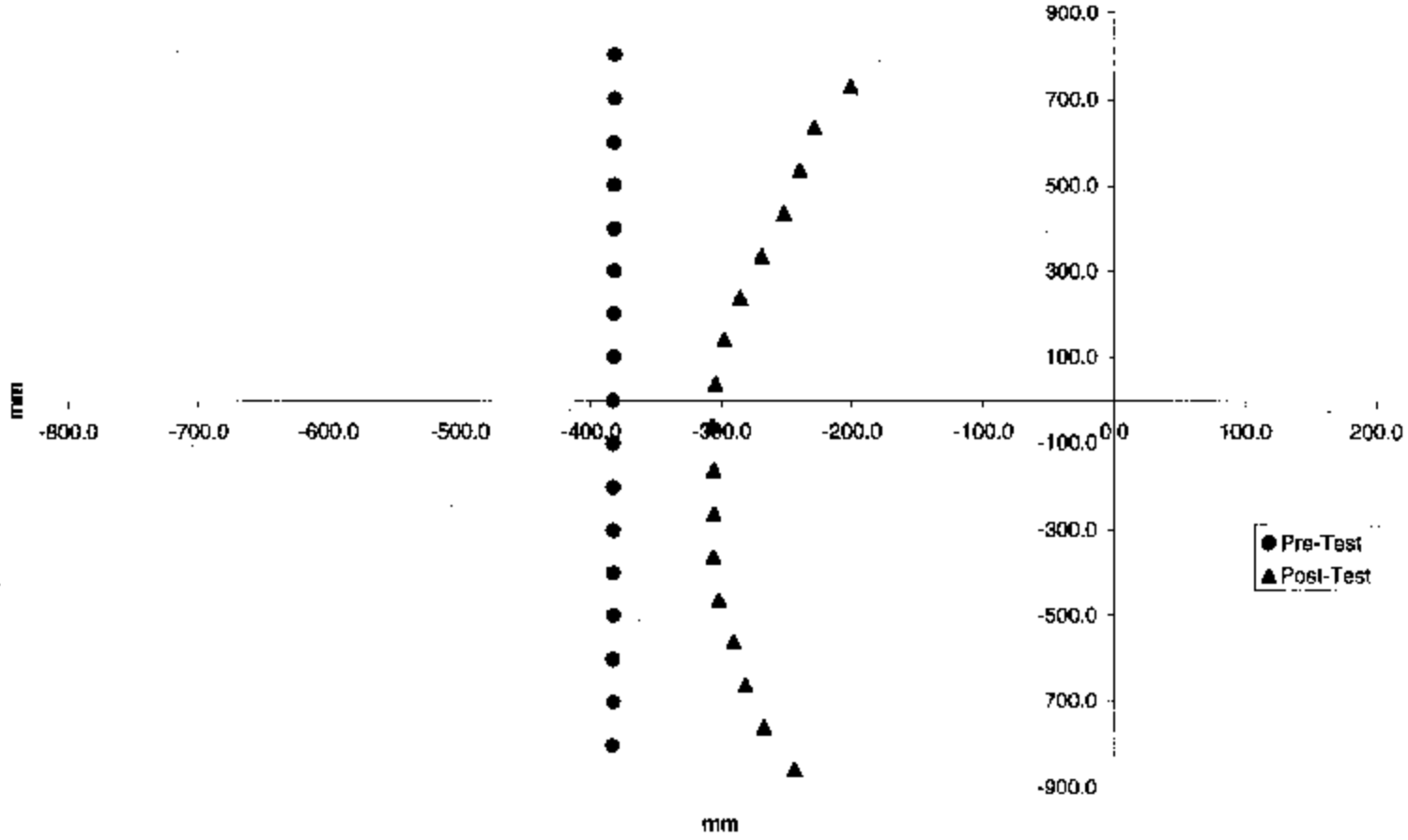
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Nissan 350Z 2-door coupe

NHTSA No.: C35201

Level B - Deformable Barrier Face Profile 35-51



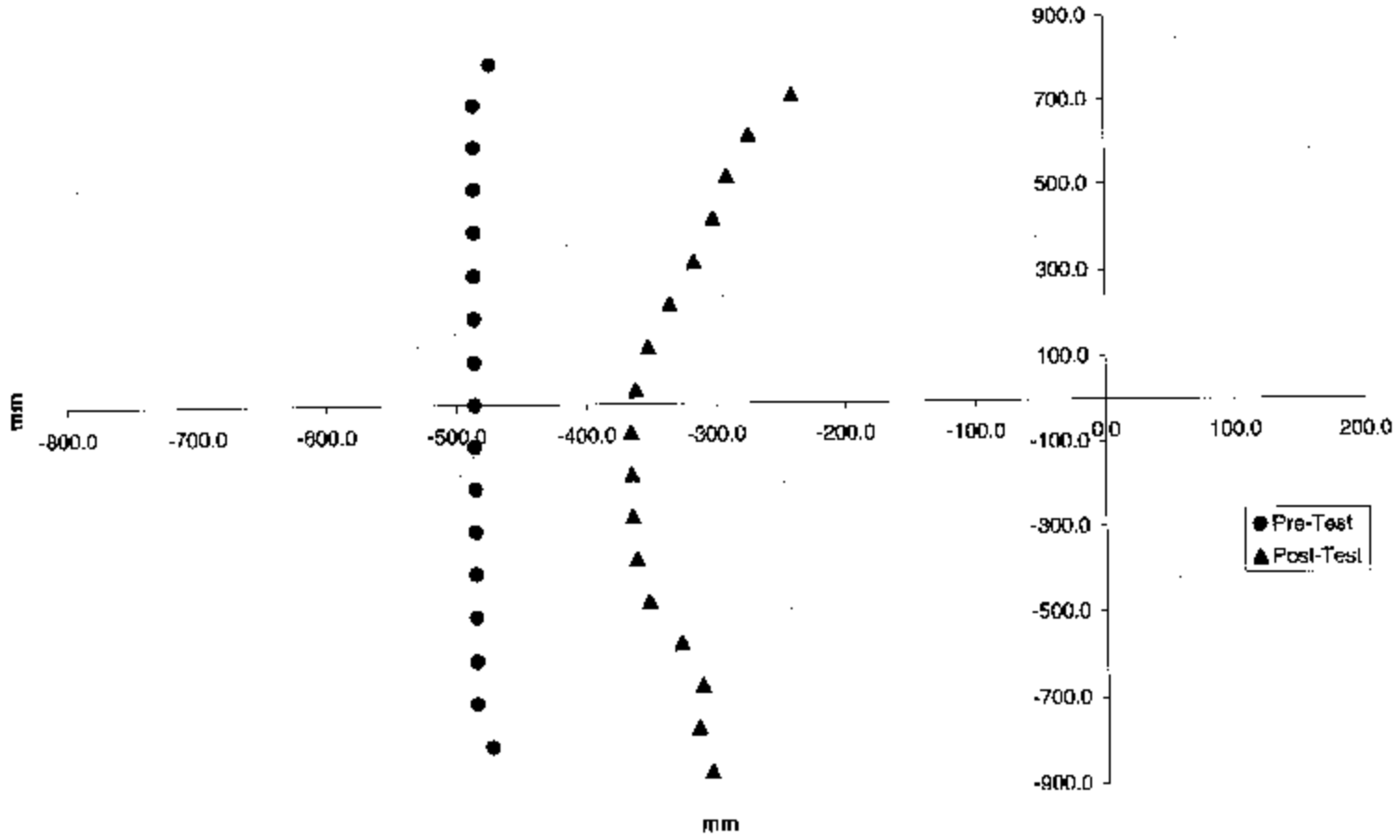
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Nissan 350Z 2-door coupe

NHTSA No.: C35201

Level A - Deformable Barrier Face Profile 52-68



Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Nissan 350Z 2-door coupe

NHTSA No.: C35201

Deformable Barrier Face Profile

Level D - Top Stack

Pre-Test

Index	Xmm	Ymm	Zmm
1	-382	800	-43
2	-382	699	-44
3	-382	599	-45
4	-382	499	-45
5	-382	399	-45
6	-383	300	-46
7	-383	199	-46
8	-383	99	-46
9	-383	-1	-46
10	-383	-103	-46
11	-383	-203	-47
12	-384	-302	-47
13	-383	-403	-47
14	-383	-503	-47
15	-383	-603	-47
16	-383	-703	-47
17	-384	-805	-48

Post-Test

Index	Xmm	Ymm	Zmm
1	-229	709	-49
2	-245	615	-60
3	-277	533	-69
4	-327	448	-75
5	-334	349	-74
6	-343	250	-72
7	-350	150	-70
8	-348	51	-64
9	-343	-49	-62
10	-337	-150	-59
11	-331	-249	-60
12	-321	-346	-45
13	-305	-446	-38
14	-279	-542	-33
15	-260	-637	-27
16	-259	-737	-23
17	-255	-838	-20

Difference

Index	Xmm	Ymm	Zmm
1	-153	91	5
2	-136	85	16
3	-105	66	24
4	-55	51	29
5	-49	50	28
6	-40	50	26
7	-33	49	24
8	-35	48	18
9	-40	48	16
10	-46	47	13
11	-52	47	13
12	-63	44	-1
13	-78	42	-9
14	-104	38	-14
15	-124	34	-19
16	-124	34	-25
17	-129	33	-28

Data Sheet 12 (Continued)

Exterior Static Crush for Impactor Face

Vehicle: 2003 Nissan 350Z 2-door coupe

NHTSA No.: C35201

Deformable Barrier Face Profile Cont'd.

Level C - Mid Level

Pre-Test

Index	Xmm	Ymm	Zmm
18	-382	800	-162
19	-382	699	-164
20	-382	599	-165
21	-382	499	-165
22	-382	398	-167
23	-382	299	-166
24	-382	199	-168
25	-382	98	-170
26	-383	-1	-169
27	-383	-102	-171
28	-383	-202	-172
29	-383	-302	-172
30	-383	-402	-173
31	-383	-503	-174
32	-383	-603	-175
33	-383	-703	-175
34	-383	-803	-176

Post-Test

Index	Xmm	Ymm	Zmm
18	-206	716	-165
19	-223	618	-177
20	-250	522	-185
21	-306	439	-192
22	-331	344	-194
23	-343	245	-191
24	-352	146	-190
25	-356	44	-187
26	-354	-56	-181
27	-355	-157	-178
28	-350	-257	-174
29	-341	-358	-167
30	-326	-457	-162
31	-296	-553	-158
32	-249	-644	-154
33	-262	-742	-150
34	-264	-841	-147

Difference

Index	Xmm	Ymm	Zmm
18	-176	84	4
19	-159	81	13
20	-132	77	21
21	-76	60	27
22	-51	54	27
23	-39	54	24
24	-30	54	21
25	-26	54	17
26	-29	55	12
27	-28	55	7
28	-33	55	1
29	-42	55	-5
30	-57	55	-11
31	-87	50	-16
32	-134	41	-21
33	-121	40	-25
34	-119	38	-29

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Nissan 350Z 2-door coupe

NHTSA No.: C35201

Deformable Barrier Face Profile Cont'd.

Level B - Top of Bumper

Pre-Test

Index	Xmm	Ymm	Zmm
35	-382	801	-297
36	-382	701	-298
37	-382	600	-299
38	-382	500	-298
39	-382	399	-299
40	-382	299	-298
41	-382	200	-299
42	-382	99	-299
43	-383	-1	-298
44	-383	-103	-300
45	-383	-203	-300
46	-383	-302	-300
47	-383	-402	-300
48	-383	-502	-300
49	-383	-603	-301
50	-383	-703	-301
51	-383	-803	-300

Post-Test

Index	Xmm	Ymm	Zmm
35	-201	730	-300
36	-229	634	-306
37	-240	534	-308
38	-252	435	-303
39	-269	335	-304
40	-286	237	-304
41	-298	138	-304
42	-304	37	-302
43	-307	-63	-298
44	-306	-164	-294
45	-306	-264	-290
46	-306	-363	-286
47	-302	-463	-281
48	-290	-562	-273
49	-281	-663	-270
50	-267	-761	-262
51	-244	-857	-252

Difference

Index	Xmm	Ymm	Zmm
35	-180	72	2
36	-153	67	8
37	-142	66	8
38	-130	65	4
39	-113	64	5
40	-96	62	6
41	-85	62	5
42	-78	62	2
43	-76	62	-1
44	-77	62	-6
45	-77	61	-11
46	-77	61	-14
47	-81	61	-19
48	-92	61	-27
49	-102	59	-30
50	-116	58	-39
51	-139	54	-48

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Nissan 350Z 2-door coupe

NHTSA No.: C35201

Deformable Barrier Face Profile Cont'd.

Level A - Mid Bumper

Pre-Test

Index	Xmm	Ymm	Zmm
52	-472	799	-424
53	-485	699	-424
54	-485	599	-424
55	-485	500	-424
56	-485	400	-424
57	-485	300	-424
58	-486	200	-424
59	-486	99	-424
60	-486	-1	-425
61	-486	-100	-425
62	-486	-200	-425
63	-486	-300	-425
64	-486	-400	-425
65	-486	-501	-425
66	-486	-601	-425
67	-486	-700	-426
68	-474	-802	-426

Post-Test

Index	Xmm	Ymm	Zmm
52	-239	720	-442
53	-273	625	-447
54	-290	526	-447
55	-301	427	-445
56	-316	329	-445
57	-335	230	-446
58	-352	131	-445
59	-362	31	-444
60	-365	-69	-442
61	-365	-167	-438
62	-365	-268	-434
63	-362	-368	-429
64	-352	-467	-423
65	-328	-564	-413
66	-312	-662	-408
67	-315	-761	-410
68	-305	-863	-407

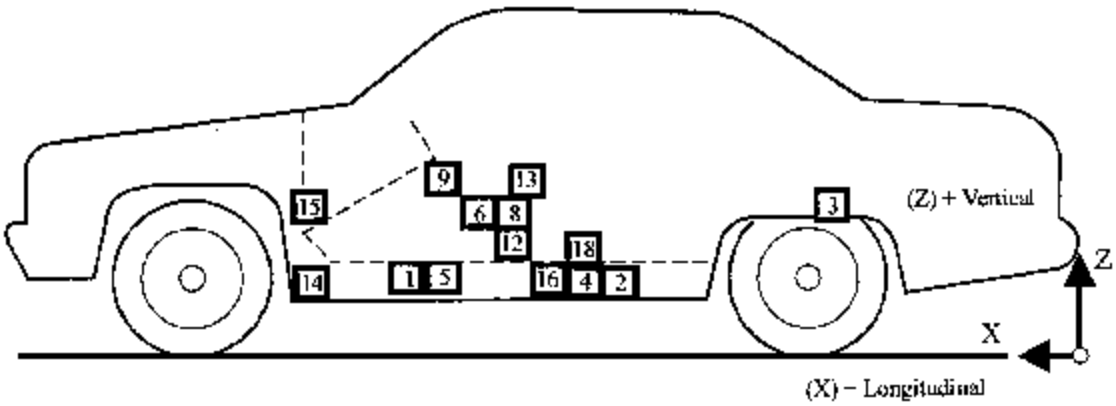
Difference

Index	Xmm	Ymm	Zmm
52	-233	79	19
53	-212	75	23
54	-195	73	23
55	-184	73	21
56	-169	71	21
57	-151	70	21
58	-134	68	21
59	-124	68	20
60	-121	68	17
61	-121	68	13
62	-121	67	9
63	-124	67	4
64	-134	67	-2
65	-158	63	-12
66	-174	61	-18
67	-171	60	-15
68	-169	61	-18

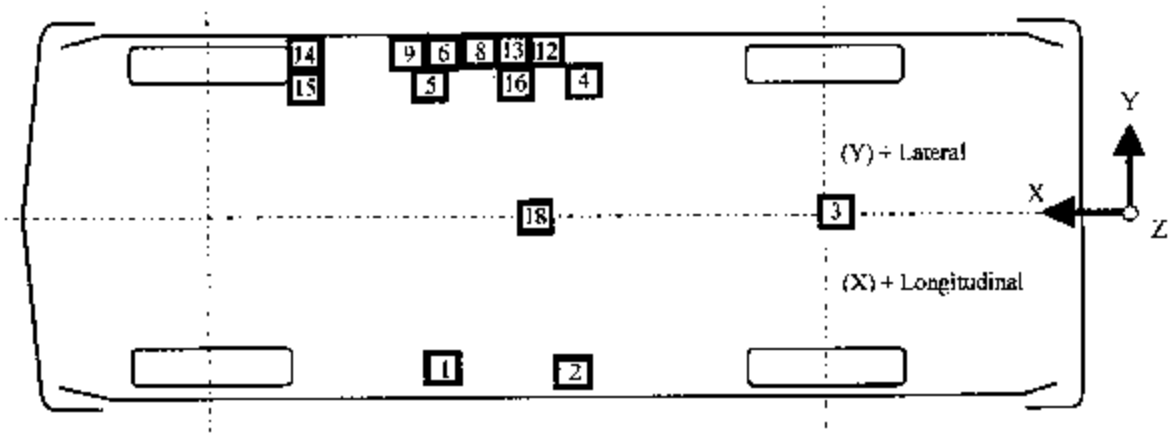
Data Sheet 13

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2003 Nissan 350Z 2-door coupe NHTSA No.: C35201



Side View



Bottom View

1-Right Front Side Sill
2-Right Side Sill at Rear
3-Rear Floorpan Above Axle
4-Left Side Sill at Rear
5-Left Front Side Sill
6-Left Front Door on Centerline
7-Right Rear Occupant Compartment (omitted)
8-Left Front Door Mid Rear
9-Left Front Door Upper Centerline
10-Left Rear Door Mid Rear (omitted)
11-Left Rear Door Upper Centerline (omitted)
12-Left Side Lower B-pillar
13-Left Side Middle B-pillar
14-Left Side Lower A-pillar
15-Left Side Middle A-pillar
16-Left Side Front Seat Track at H-point
17-Left Rear Seat Track at H-point (omitted)
18-Vehicle Center of Gravity

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2003 Nissan 350Z 2-door coupe

NHTSA No.: C35201

TEST NUMBER: 030225

No.	LOCATION	X	Y	Z	POSITIVE DIRECTION		NEGATIVE DIRECTION	
1	RIGHT SIDE SILL AT FRONT	2575 mm	692 mm	-291 mm				
	LONGITUDINAL				5.1 g	@ 52.9 ms	6.9 g	@ 19.7 ms
	LATERAL				27.3 g	@ 28.4 ms	3.5 g	@ 54.8 ms
	VERTICAL				6.9 g	@ 20.9 ms	5.0 g	@ 63.7 ms
	RESULTANT				27.9 g	@ 28.4 ms		
2	RIGHT SIDE SILL AT REAR	1885 mm	692 mm	-330 mm				
	LONGITUDINAL				6.9 g	@ 30.6 ms	7.4 g	@ 20.1 ms
	LATERAL				23.0 g	@ 7.8 ms	2.0 g	@ 168.9 ms
	VERTICAL				10.4 g	@ 33.5 ms	5.8 g	@ 59.8 ms
	RESULTANT				23.2 g	@ 7.9 ms		
3	REAR FLOORPAN ABOVE AXLE	1010 mm	0 mm	-646 mm				
	LONGITUDINAL				3.3 g	@ 51.5 ms	7.9 g	@ 20.2 ms
	LATERAL				27.7 g	@ 33.6 ms	1.9 g	@ 164.9 ms
	VERTICAL				8.5 g	@ 11.9 ms	7.2 g	@ 8.4 ms
	RESULTANT				27.8 g	@ 33.8 ms		
4	LEFT SIDE SILL AT REAR	2553 mm	-692 mm	-300 mm				
	LATERAL [1]				---- g	@ ---- ms	---- g	@ ---- ms
5	LEFT SIDE SILL AT FRONT	1840 mm	-692 mm	-323 mm				
	LATERAL [1]				---- g	@ ---- ms	---- g	@ ---- ms

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2003 Nissan 350Z 2-door coupe

NHTSA No.: C35201

TEST NUMBER: 030225

No.	LOCATION	X	Y	Z	POSITIVE DIRECTION		NEGATIVE DIRECTION	
6	LEFT FRONT DOOR ON CENTERLINE LATERAL	2160 mm	-745 mm	-642 mm	92.0 g	@ 11.7 ms	118.9 g	@ 22.2 ms
8	LEFT FRONT DOOR MIDREAR LATERAL [1]	1730 mm	-754 mm	-602 mm	---- g	@ ---- ms	---- g	@ ---- ms
9	LEFT FRONT DOOR UPPER CENTERLINE LATERAL	2150 mm	-745 mm	-823 mm	327.6 g	@ 16.4 ms	128.8 g	@ 25.1 ms
12	LEFT LOWER B-POST LATERAL	1725 mm	-730 mm	-458 mm	80.7 g	@ 5.3 ms	47.2 g	@ 19.4 ms
13	LEFT MIDDLE B-POST LATERAL	1585 mm	-730 mm	-843 mm	38.4 g	@ 13.0 ms	13.8 g	@ 48.9 ms
14	LEFT LOWER A-POST LATERAL [1]	2745 mm	-805 mm	-325 mm	---- g	@ ---- ms	---- g	@ ---- ms
15	LEFT MIDDLE A-POST LATERAL [1]	2745 mm	-805 mm	-759 mm	---- g	@ ---- ms	---- g	@ ---- ms

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2003 Nissan 350Z 2-door coupe

NHTSA No.: C35201

TEST NUMBER: 030225

No.	LOCATION	X	Y	Z	POSITIVE DIRECTION		NEGATIVE DIRECTION	
16	LEFT FRONT SEAT TRACK	2070 mm	685 mm	-320 mm				
	LATERAL				94.7 g	@ 9.0 ms	40.8 g	@ 17.9 ms
18	VEHICLE CENTER OF GRAVITY	2416 mm	0 mm	-495 mm				
	LONGITUDINAL				2.5 g	@ 51.4 ms	12.6 g	@ 11.0 ms
	LATERAL				20.9 g	@ 18.7 ms	1.9 g	@ 72.4 ms
	VERTICAL				14.3 g	@ 15.8 ms	5.5 g	@ 60.3 ms
	RESULTANT				23.0 g	@ 10.6 ms		

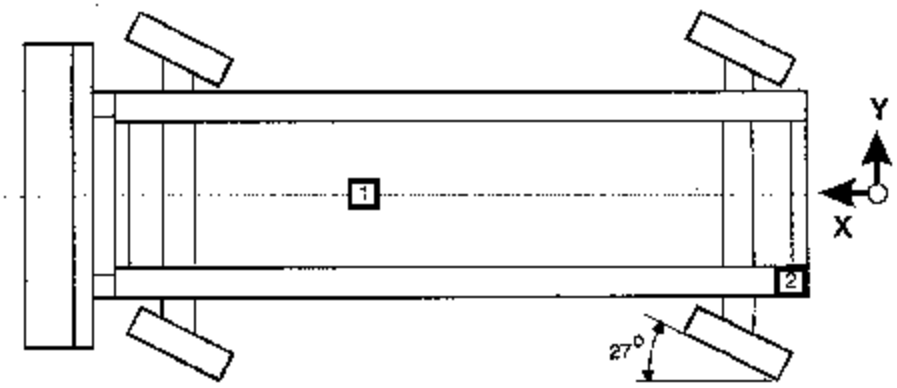
REFERENCE: X: + FORWARD FROM REAR BUMPER
Y: + RIGHTWARD FROM VEHICLE CENTERLINE
Z: + DOWNWARD FROM GROUND LEVEL

For acceleration data sign convention, see Report Sign Convention in Appendix D.
[1] See Data Acquisition Explanations on page 2-3.

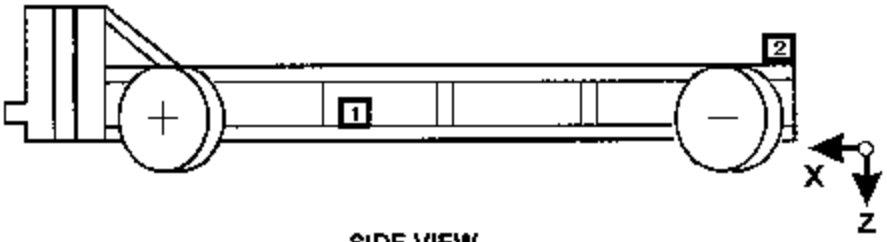
Data Sheet 14

MDB Accelerometer Locations and Data Summary

Vehicle: 2003 Nissan 350Z 2-door coupe NHTSA No.: C35201



TOP VIEW



SIDE VIEW

Accel. No.	Location		Coordinates (millimeters) X*	Y*	Z*	Positive Direction Max. (g)	Time (ms)	Negative Direction Max. (g)	Time (ms)
1	MDB Center of Gravity		1853	0	-519				
	Longitudinal	X				7.8	261.8	25.4	39.7
	Lateral	Y				4.7	61.5	6.8	19.0
	Vertical	Z				5.0	29.8	4.5	53.6
	Resultant	R				26.0	39.5	-	-
2	Rear Frame Member		411	-738	-628				
	Longitudinal	X				3.2	120.1	26.3	41.4
	Lateral	Y				2.1	18.2	3.2	94.2

*Reference: X = Rear Bumper (+ Forward)

Y = Vehicle Centerline (+ To Right)

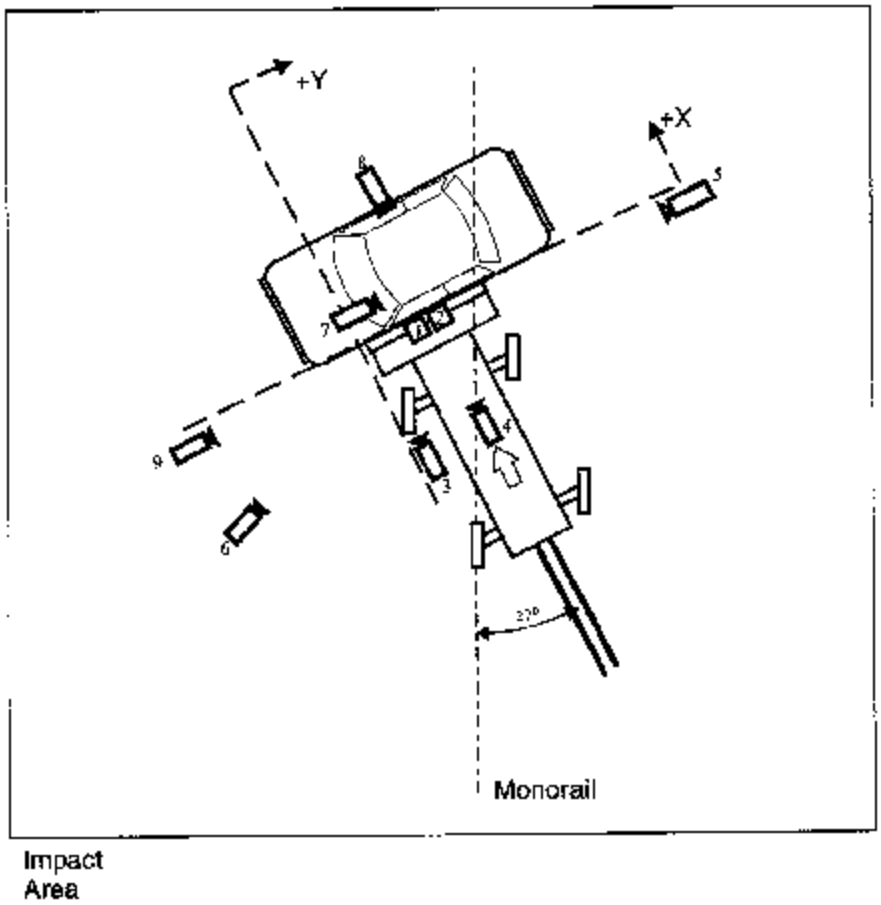
Z = Ground Level (+ Up)

All measurements accurate to within ±3 mm.

Data Sheet 15

High-Speed Camera Locations and Data Summary

Vehicle: 2003 Nissan 350Z 2-door coupe NHTSA No.: C35201



Camera Number	Location	Location, mm X	Y	Z	Angle (deg)	Lens (mm)	Speed (fps)
1	Overhead wide	250	2150	-5750	-80.1	8.5	N/A[1]
2	Overhead tight	370	1800	-5750	-88.3	17	1020
3	Onboard MDB left side	-1750	-40	-720	-0.3	13	1954
4	Onboard MDB center	-2480	830	-1353	-4.6	25	1025
5	Right side of MDB	-1250	10380	-901	-0.9	13	1025
6	Left side of MDB	-3400	-5250	-1100	-4.0	13	225
7	Onboard vehicle front	550	-170	-1200	-8.2	8	280
8	Onboard side front door	1750	-1010	-1000	-4.6	8	N/A[2]
9	Real-time panning-Video	----	----	-1009	-2.7	Zoom	24

+X: Forward (referenced to MDB) from impact point
+Y: Rightward (referenced to MDB) from impact point
+Z: Downward from ground level
[1] LED's too faint to read
[2] Too slow to time

Section 5

Vehicle Fuel System Integrity

Data Sheet 16

FMVSS 301 Fuel System Integrity Data

NHTSA No.: C35201

Test Date:

Vehicle Year/Make/Model/Body Style: 2003 Nissan 350Z 2-door coupe

****

Test Vehicle Impact Type :

_____ Frontal (48.28 km/h)
_____ Oblique (48.28 km/h) with ____° barrier face first contacting the (driver/passenger) side
_____ Rear Moving Barrier (48.28 km/h)
_____ Lateral Moving Barrier (32.19 km/h)
__X__ Side Impact Moving Deformable Barrier (62.2 km/h) contacting the driver's side side

Fuel Spillage Measurement:

	Actual	Maximum Allowed
1. From impact until vehicle motion ceases	0 g	28 g
2. For five-minute period after vehicle motion ceases	0 g	142 g
3. For next 25 minutes.	0 g	28 g/1 minute

Solvent Spillage Details :

None

Data Sheet 17

FMVSS 301 Rollover Data

Vehicle: 2003 Nissan 350Z 2-door coupe NHTSA No.: C35201

0 - 90 Degrees

1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time	1	minutes	30	seconds
(Spec. Range = 1 to 3 minutes)				
FMVSS 301 Position Hold Time +	5	minutes	0	seconds
Total	6	minutes	30	seconds
Next whole minute interval	7	minutes		

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2003 Nissan 350Z 2-door coupe NHTSA No.: C35201

90 - 180 Degrees

1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time	1	minutes	30	seconds
(Spec. Range = 1 to 3 minutes)				
FMVSS 301 Position Hold Time +	5	minutes	0	seconds
Total	6	minutes	30	seconds
Next whole minute interval	7	minutes		

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A

Note: Record spillage for whole minute intervals only as determined above.

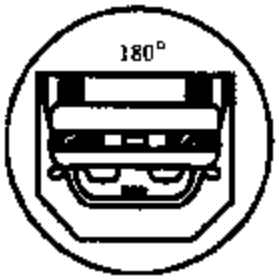
4. Solvent Spillage Location(s):

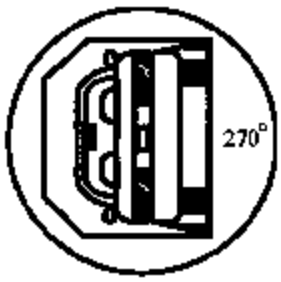
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2003 Nissan 350Z 2-door coupe NHTSA No.: C35201

180 - 270 Degrees





1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time	1	minutes	30	seconds
(Spec. Range = 1 to 3 minutes)				
FMVSS 301 Position Hold Time +	5	minutes	0	seconds
Total	6	minutes	30	seconds
Next whole minute interval	7	minutes		

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A

Note: Record spillage for whole minute intervals only as determined above.

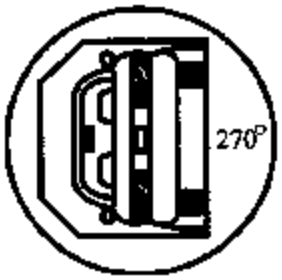
4. Solvent Spillage Location(s):

Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2003 Nissan 350Z 2-door coupe NHTSA No.: C35201

270 - 360 Degrees



1. Determination Of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time	1	minutes	30	seconds
(Spec. Range = 1 to 3 minutes)				
FMVSS 301 Position Hold Time +	5	minutes	0	seconds
Total	6	minutes	30	seconds
Next whole minute interval	7	minutes		

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

Appendix A

Photographs

List of Photographs

List of Photographs, Cont'd.

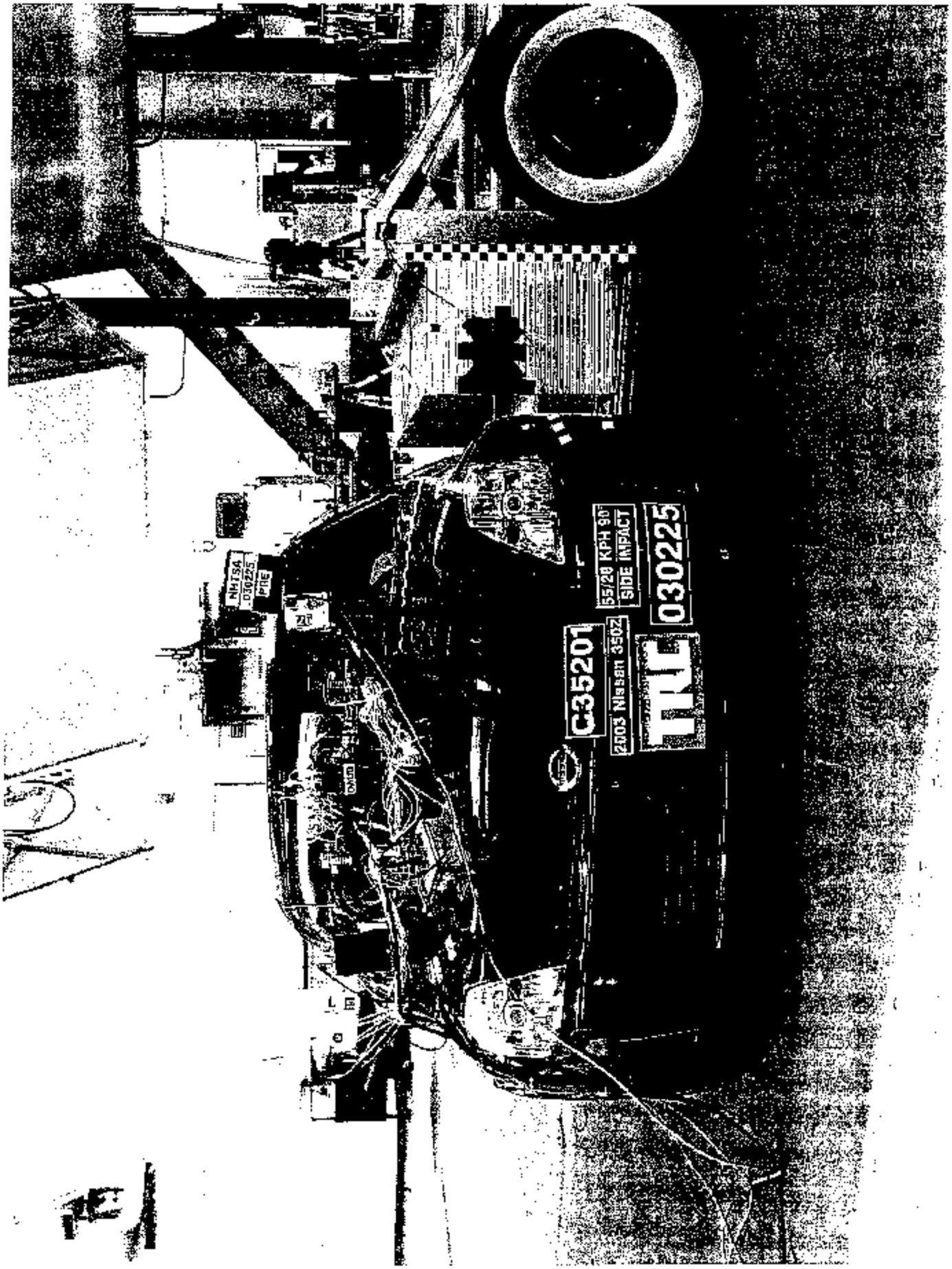


Figure A-1 Pre-Test Front View of Test Vehicle

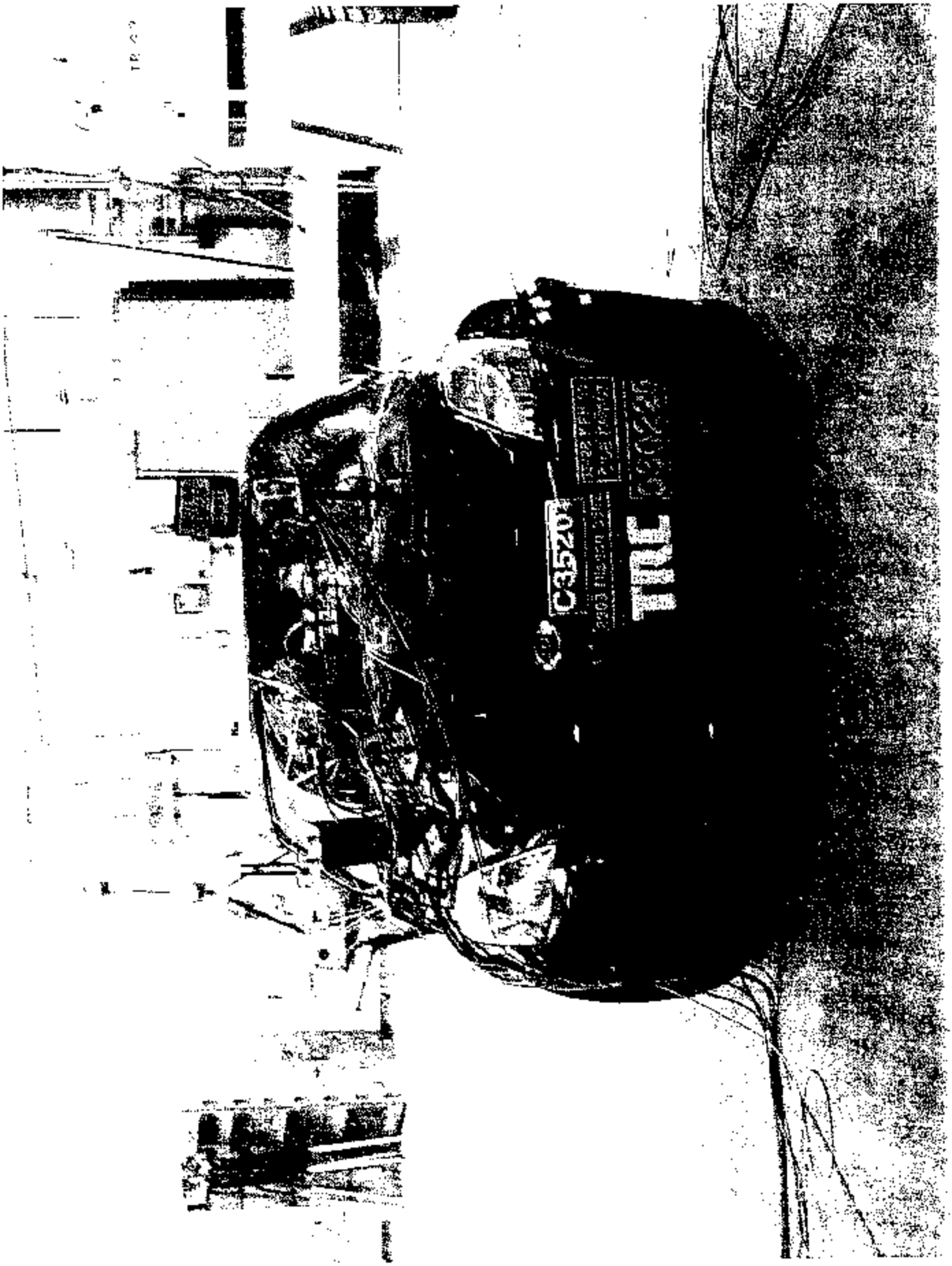


Figure A-2 Post-Test Front View of Test Vehicle

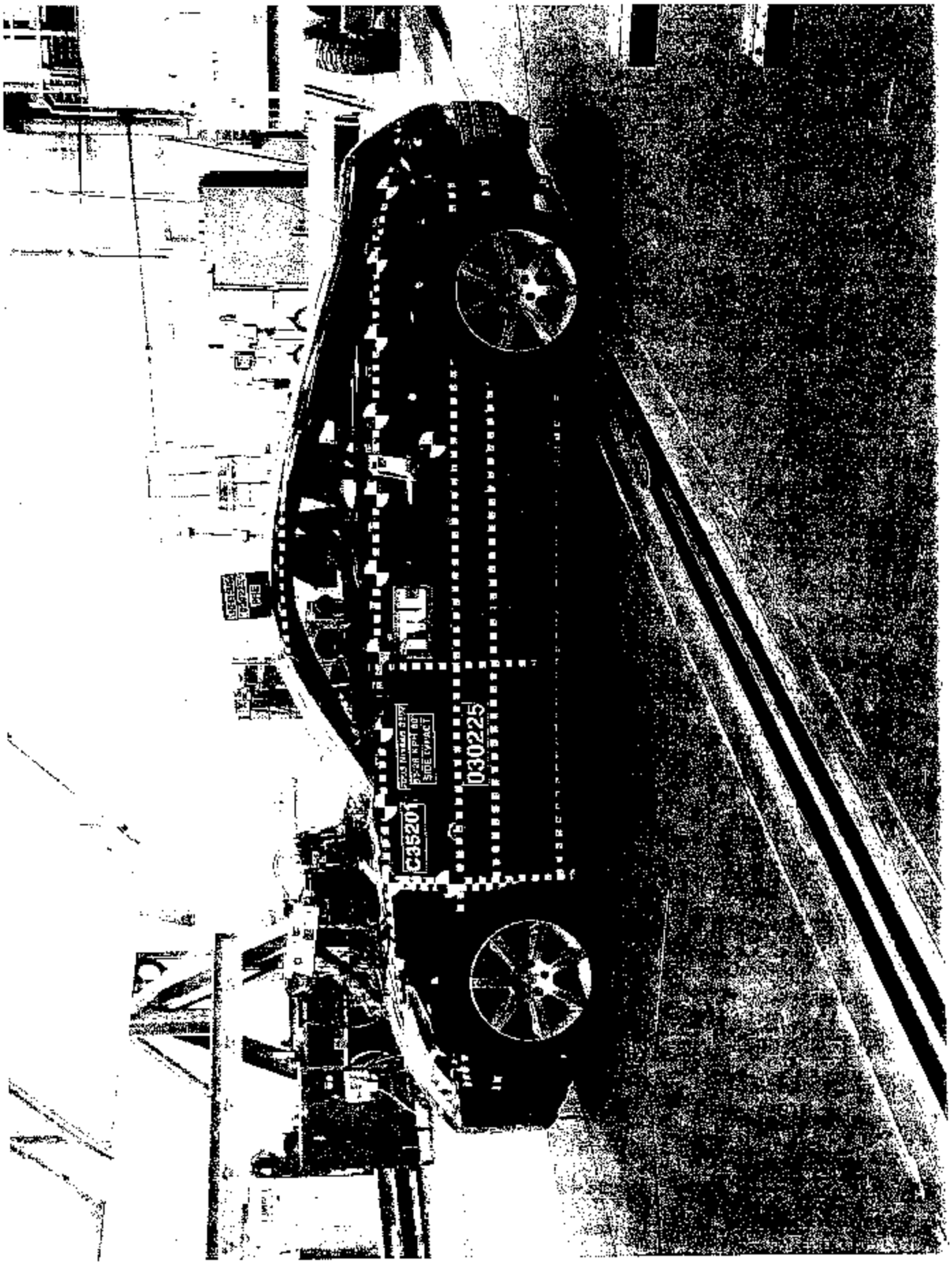


Figure A-3 Pre-Test Impacted Side View of Test Vehicle

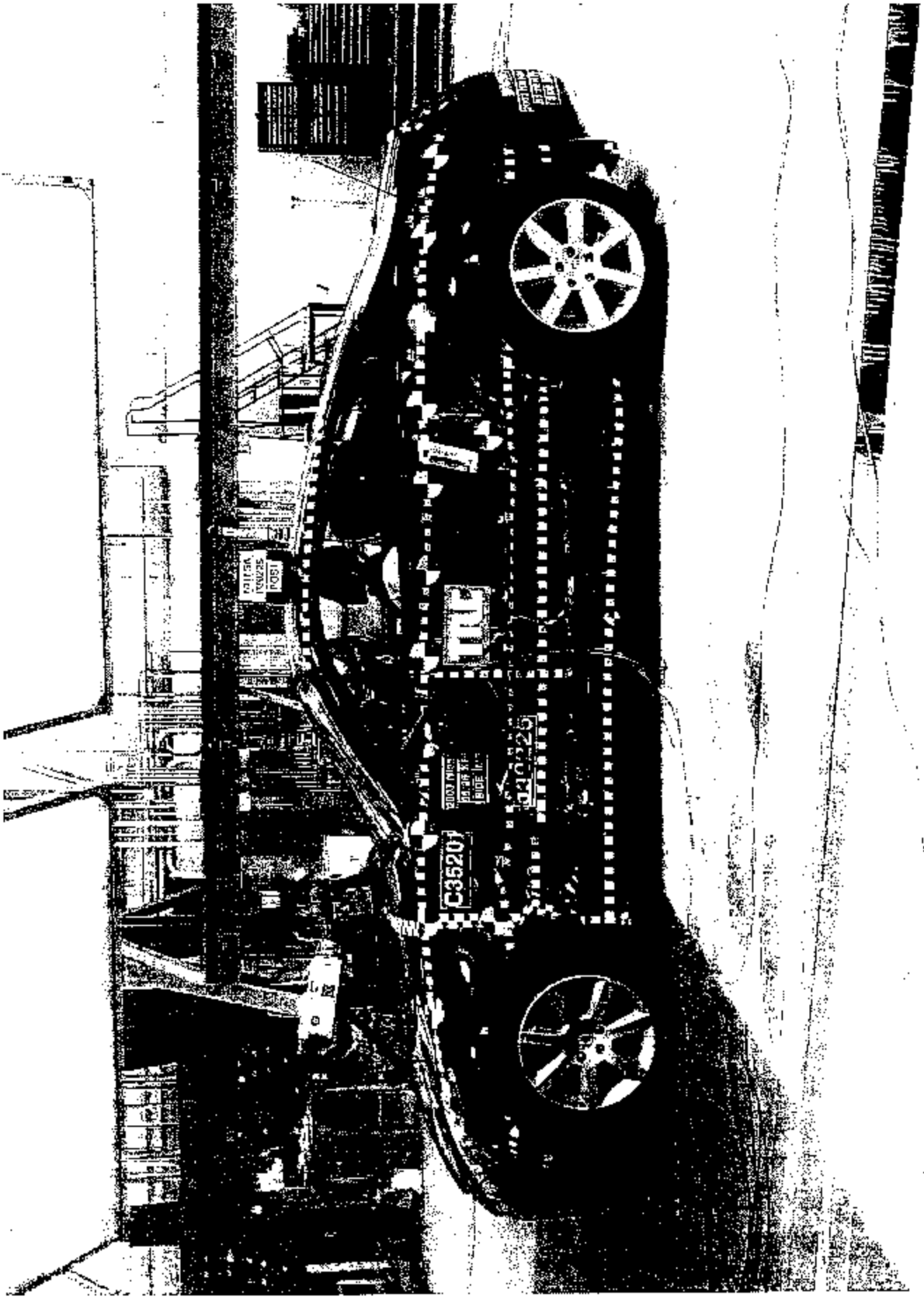


Figure A-4 Post-Test Impacted Side View of Test Vehicle

Figure A-5 Pre-Test Rear View of Test Vehicle

Figure A-6 Post-Test Rear View of Test Vehicle

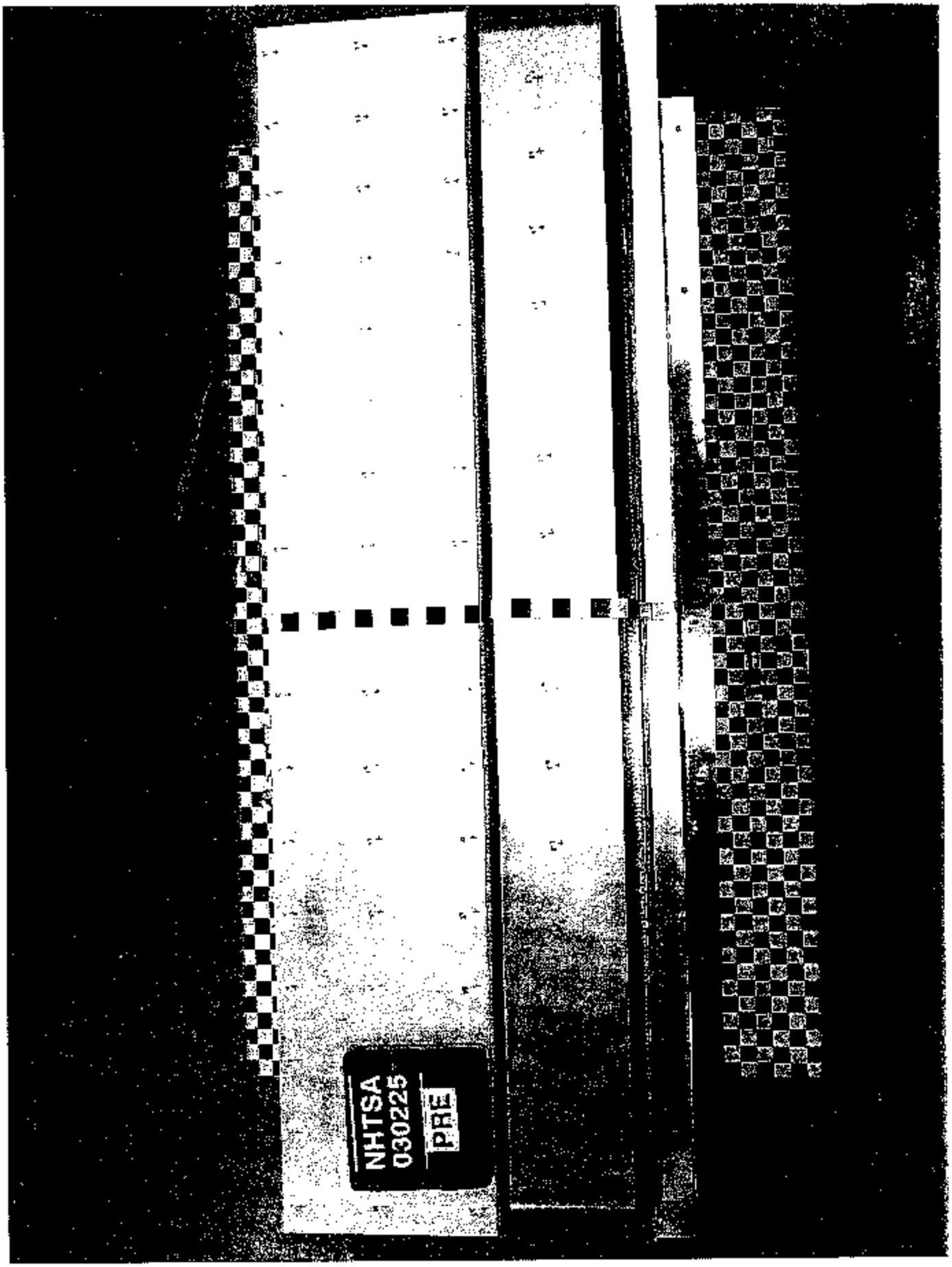


Figure A-7 Pre-Test Frontal View of Impactor Face

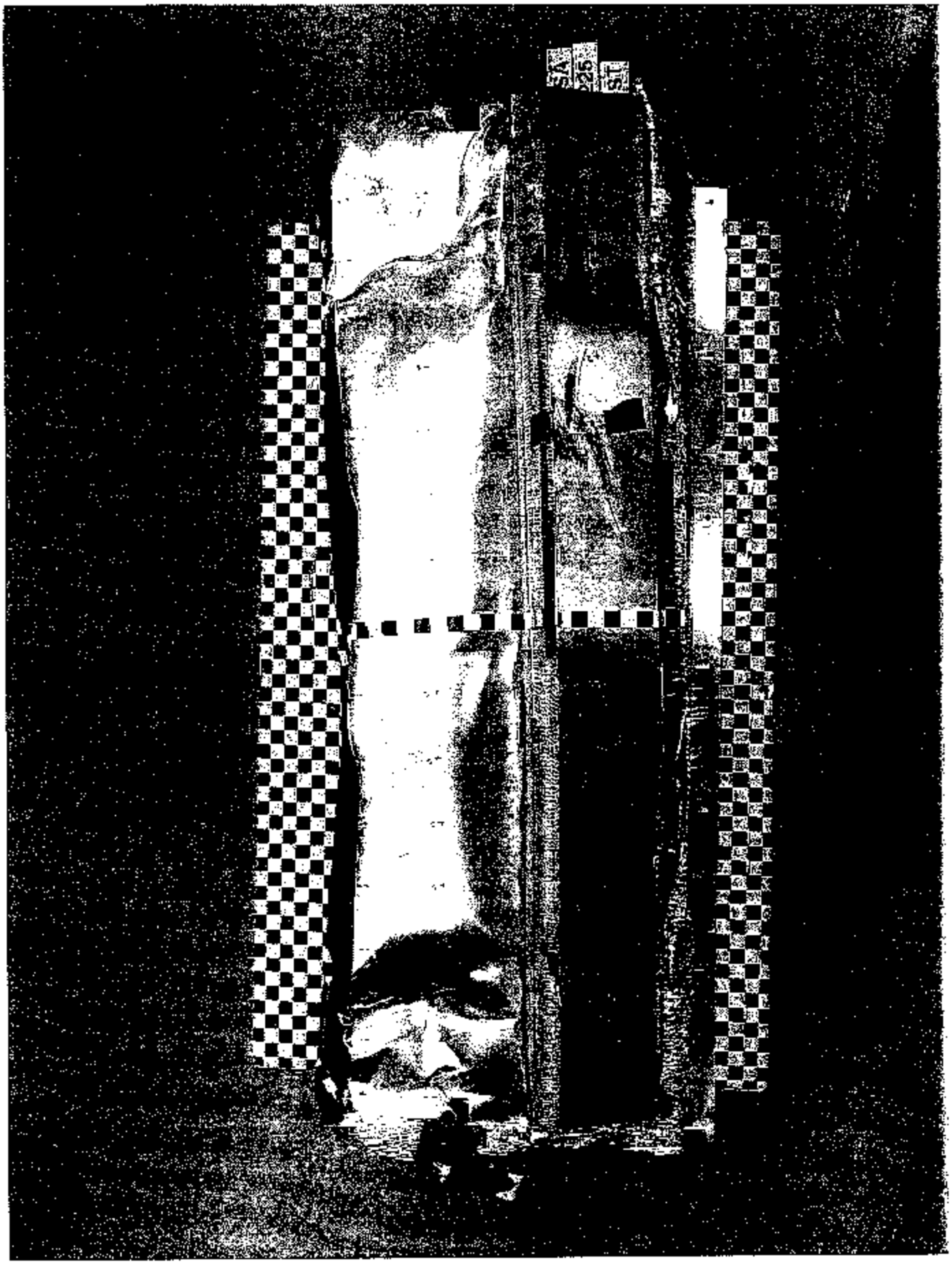


Figure A-8 Post-Test Frontal View of Impactor Face

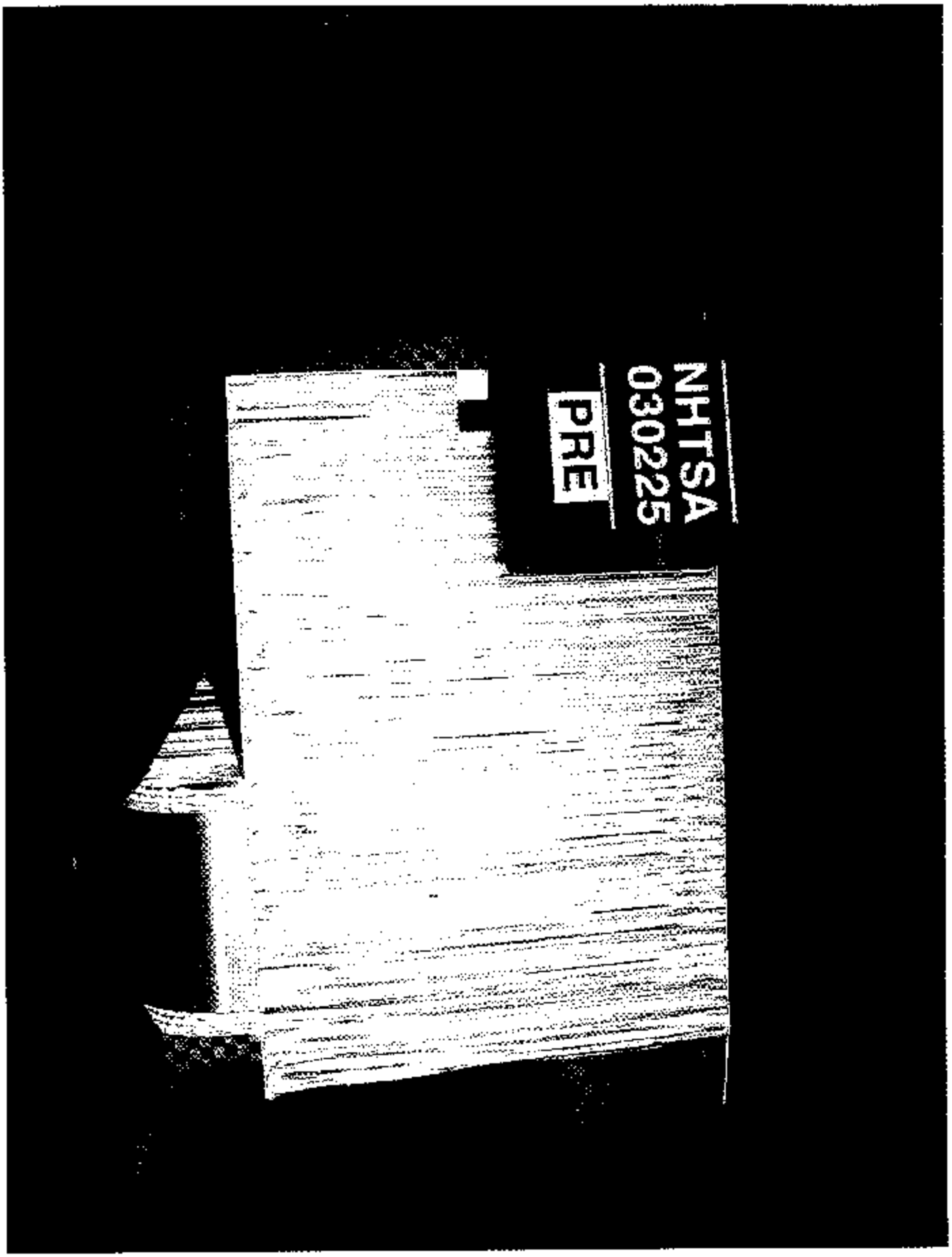


Figure A-9 Pre-Test Left Side View of Impactor Face

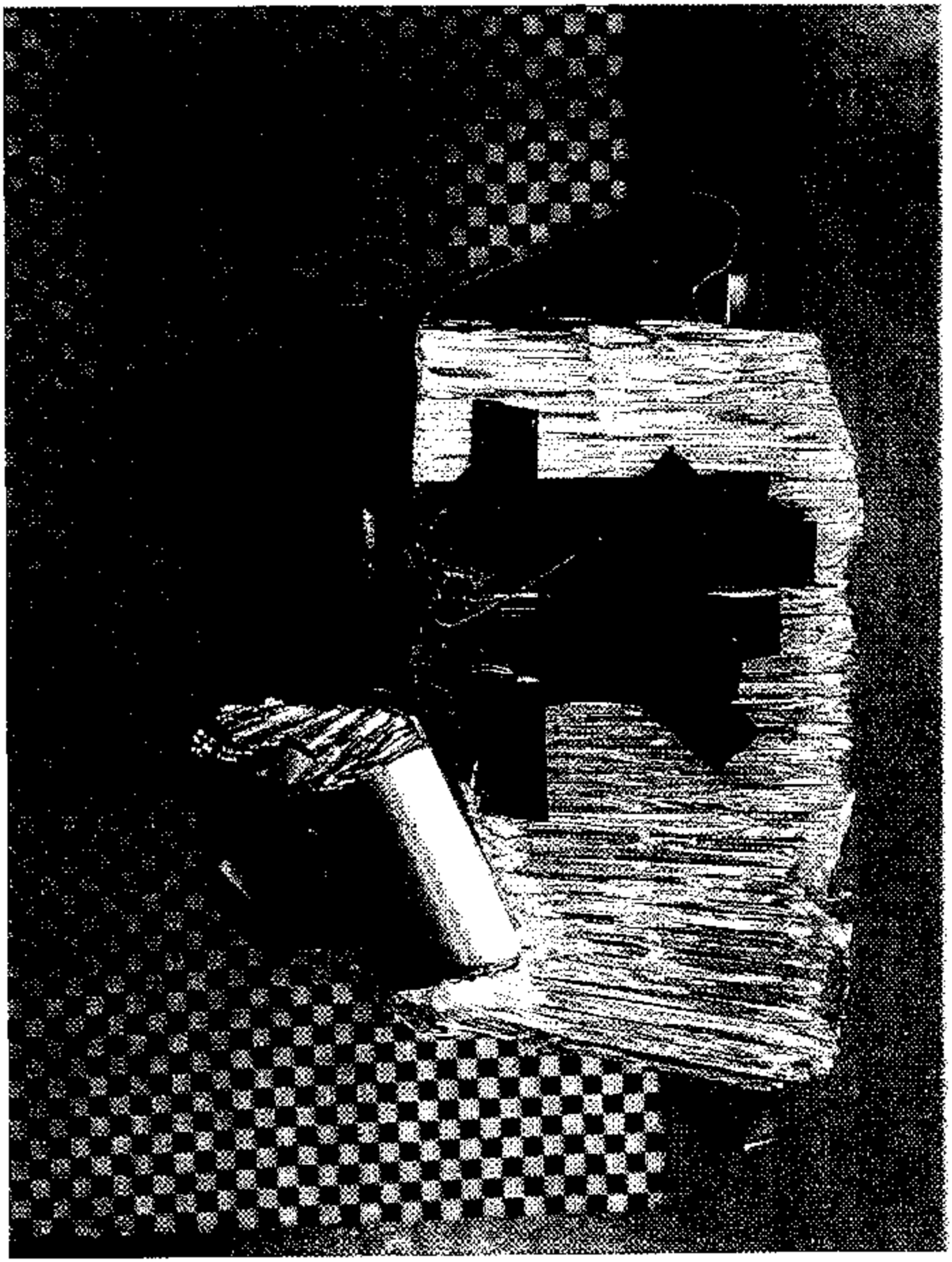


Figure A-10 Post-Test Left Side View of Impactor Face

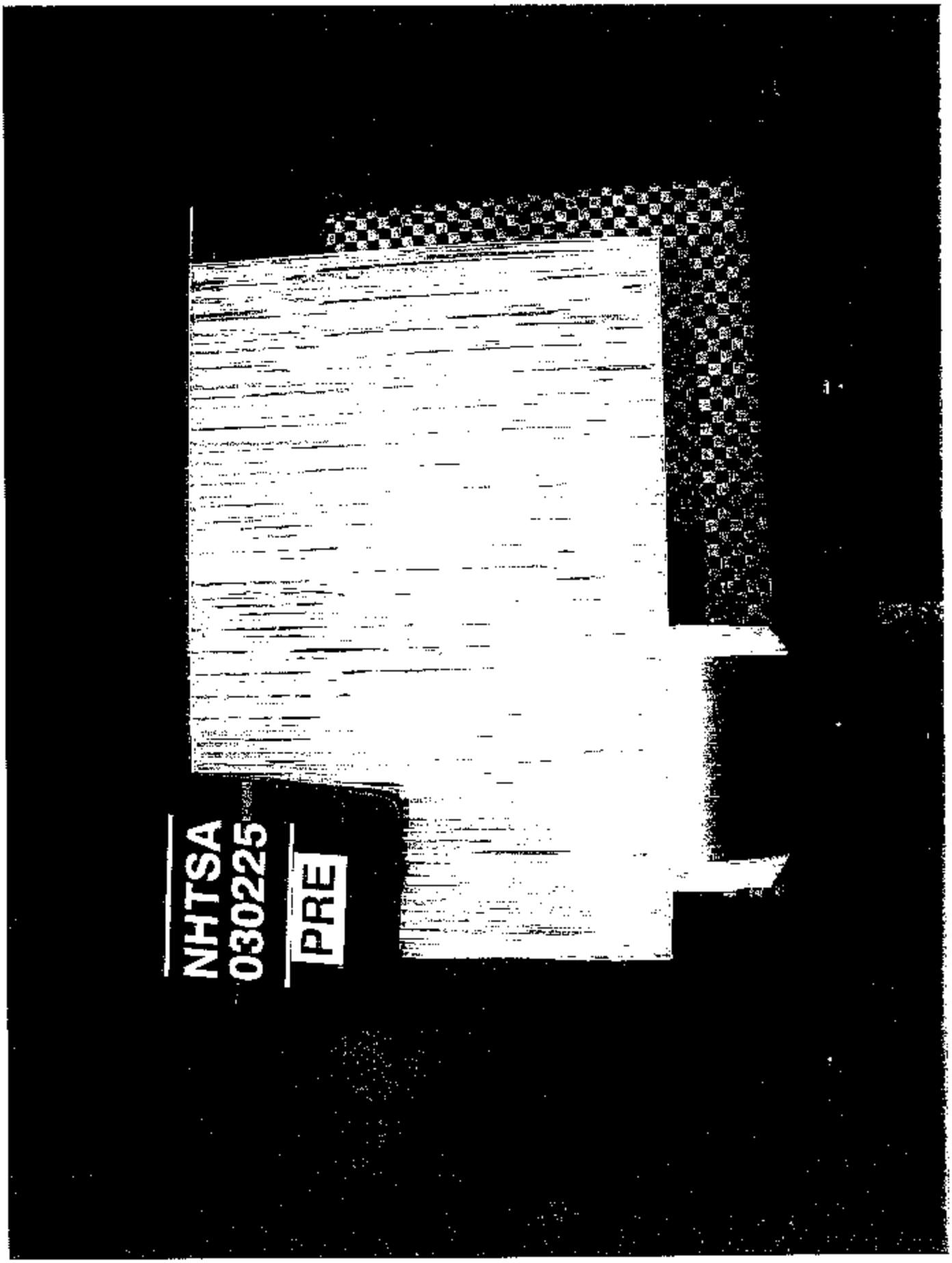


Figure A-11 Pre-Test Right Side View of Impactor Face

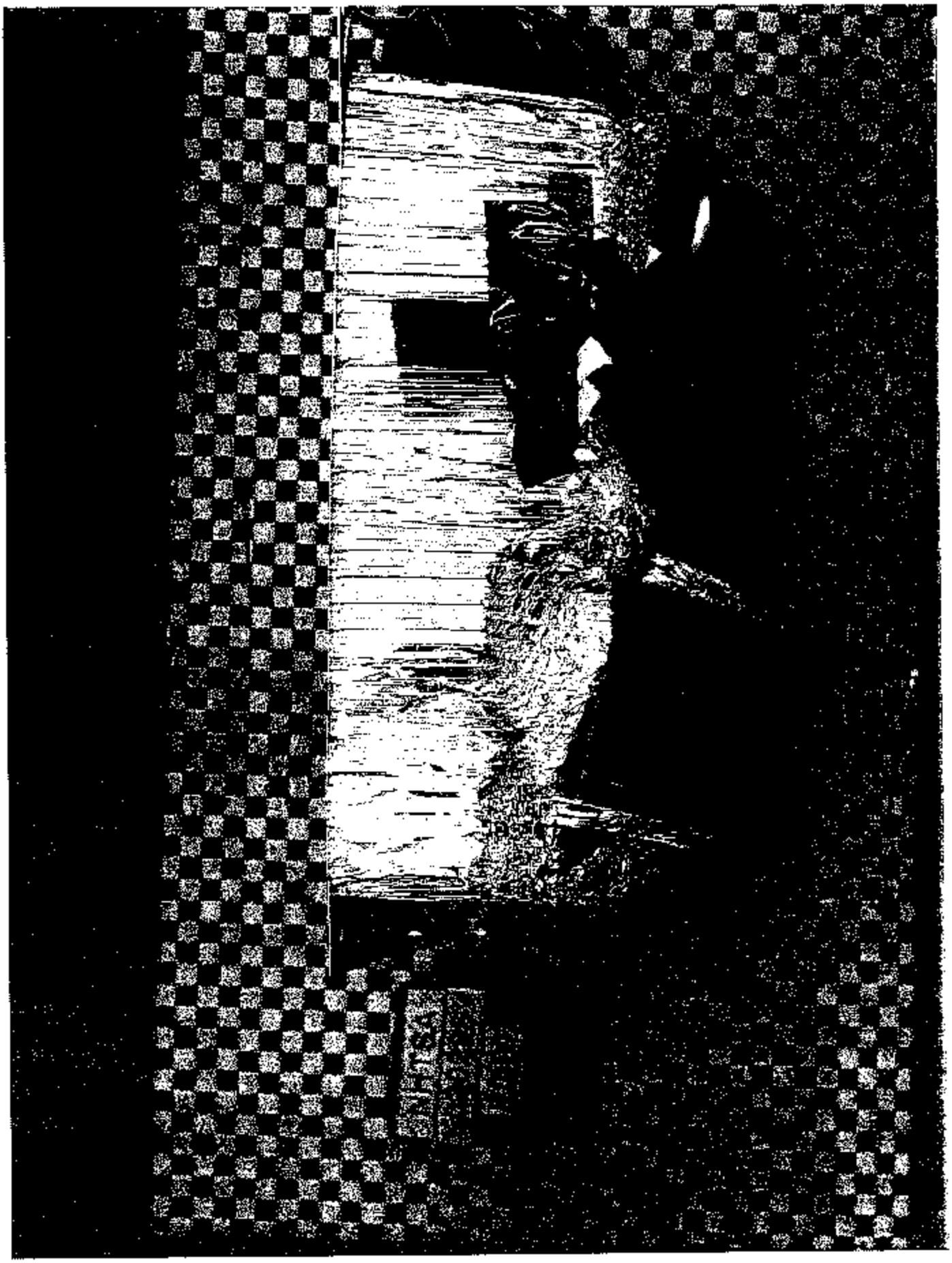


Figure A-12 Post-Test Right Side View of Impactor Face

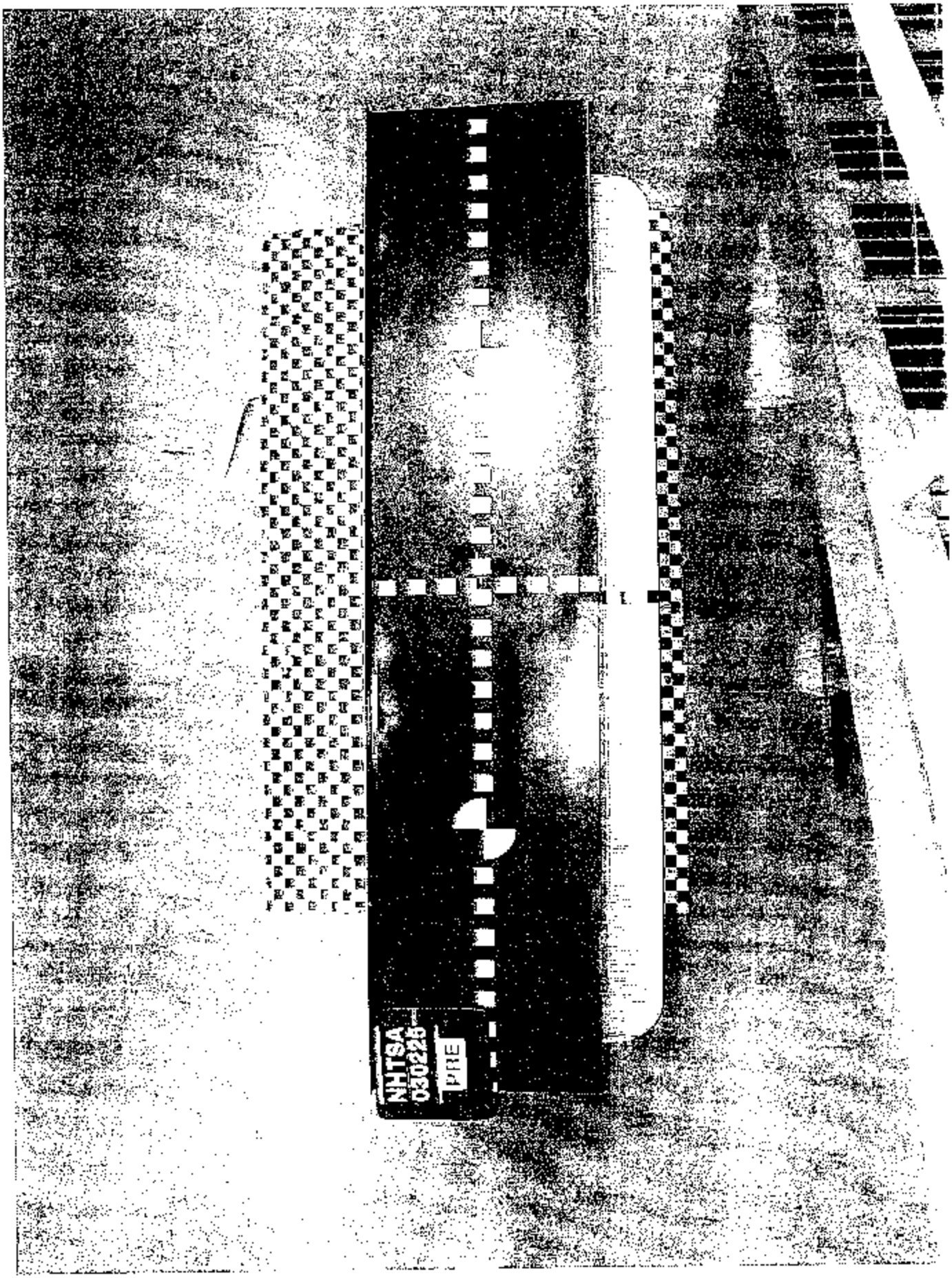


Figure A-13 Pre-Test Top View of Impactor Face

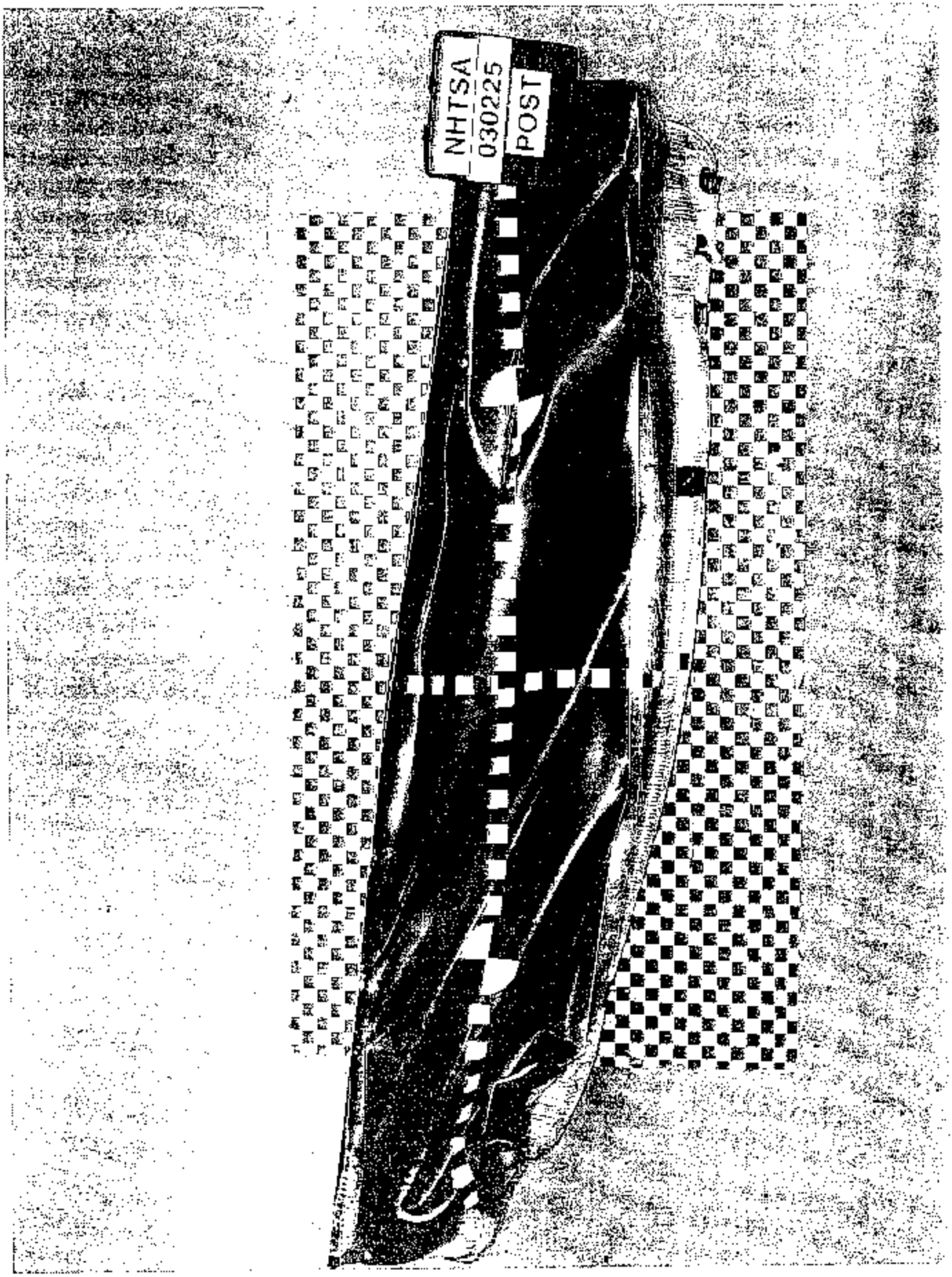


Figure A-14 Post-Test Top View of Impactor Face

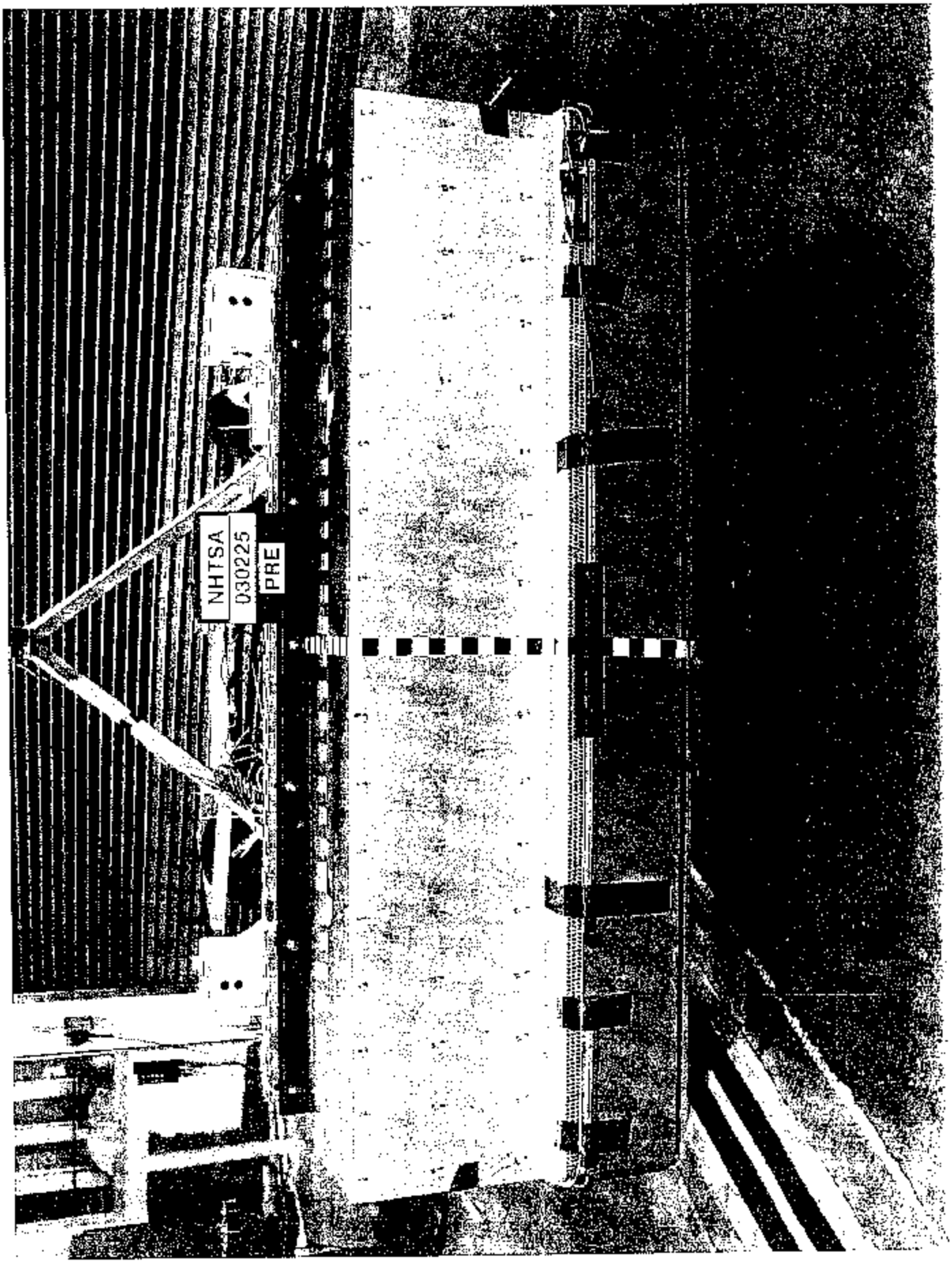


Figure A-15 Pre-Test View of MDB Showing Contact Switches in Place

Figure A-16 Pre-Test Overhead View of MDB Aligned with Vehicle

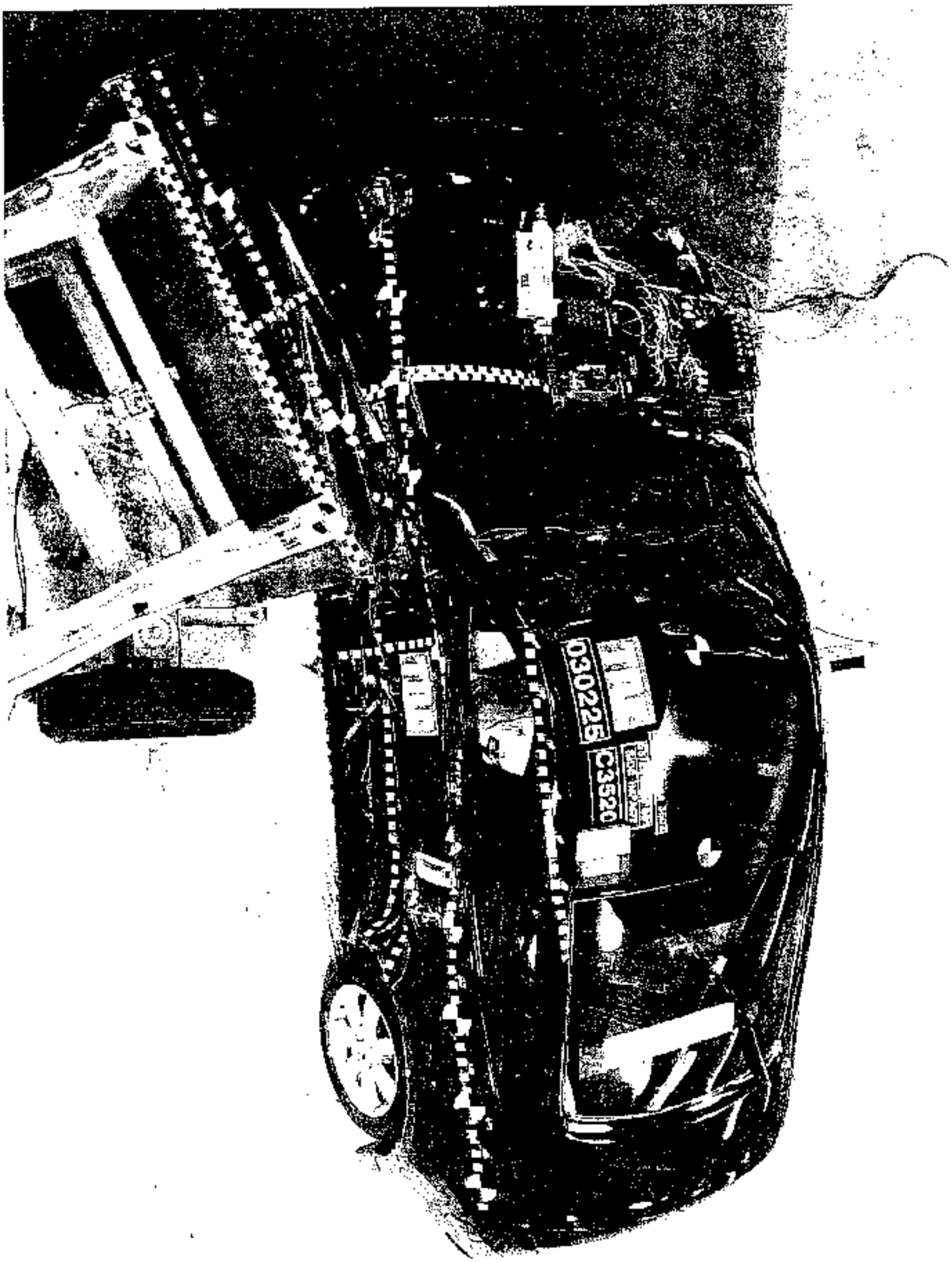


Figure A-17 Post-Test Overhead View of MDB and Vehicle

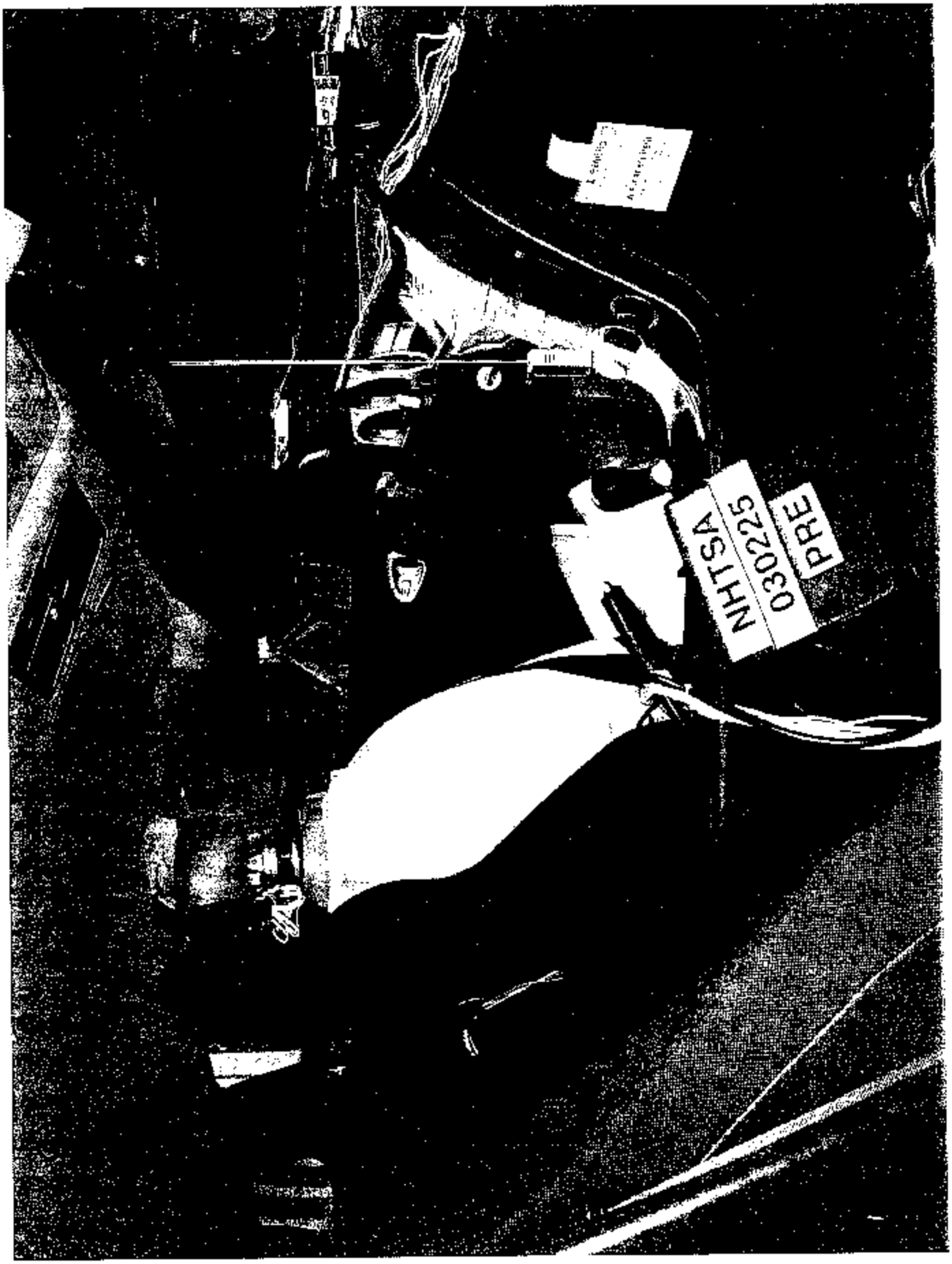


Figure A-18 Pre-Test Right Occupant Compartment View of Front SID

Figure A-19 Post-Test Right Occupant Compartment View of Front SID

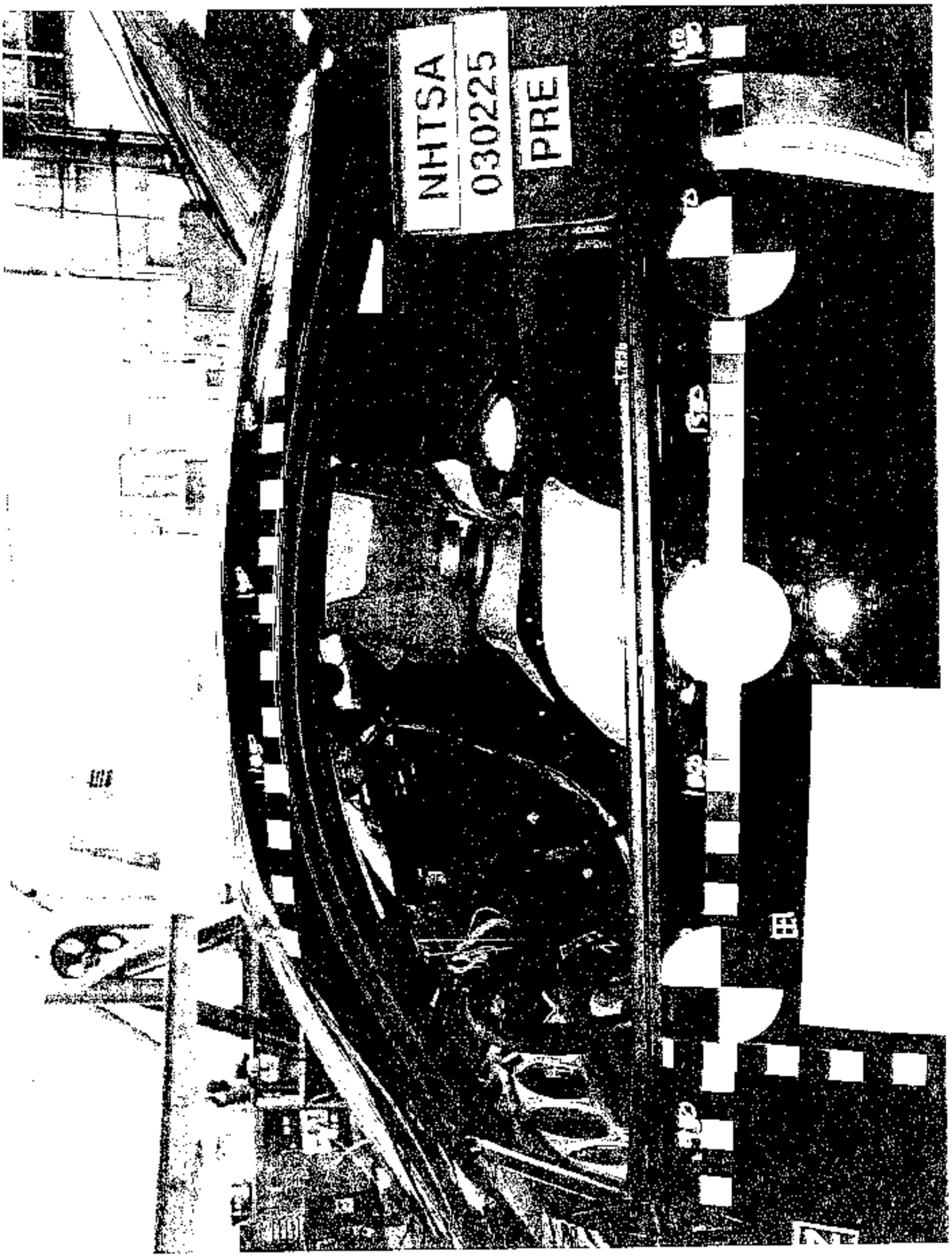


Figure A-20 Pre-Test Left View of Front SID

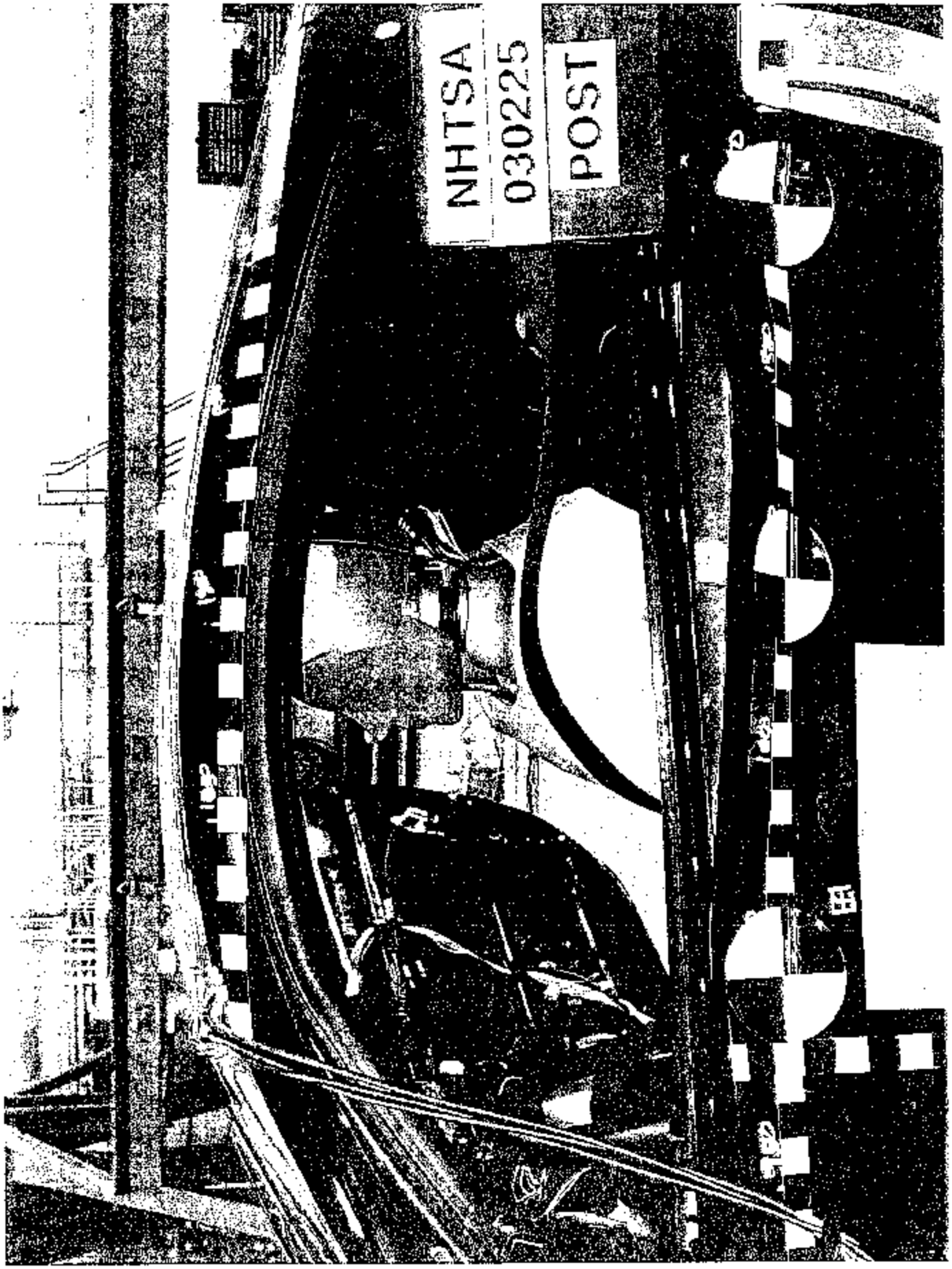


Figure A-21 Post-Test Left View of Front SID

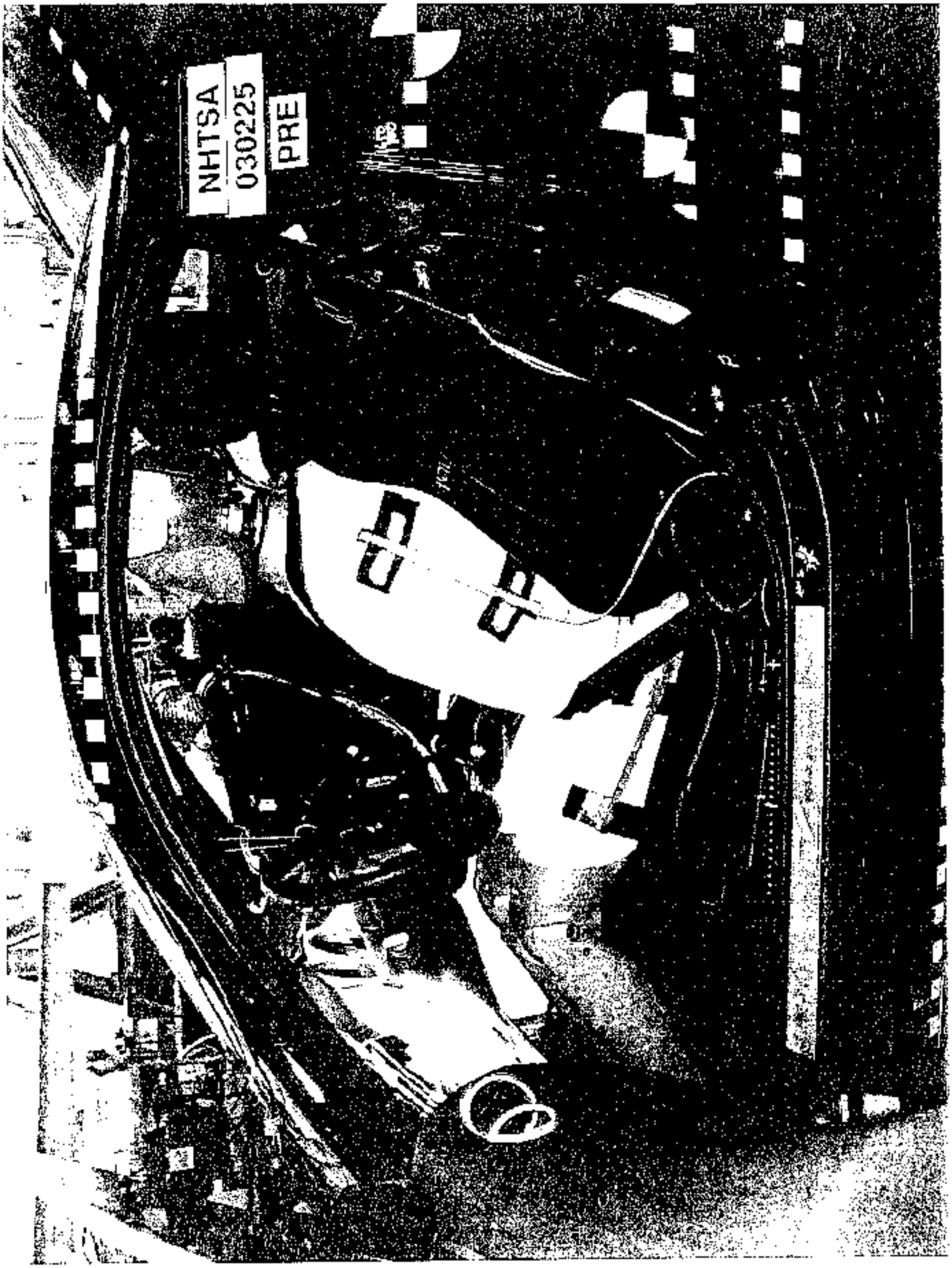


Figure A-22 Pre-Test Left View of Front SID and Belt Position

Figure A-23 Pre-Test Left View of Front SID and Door Clearance

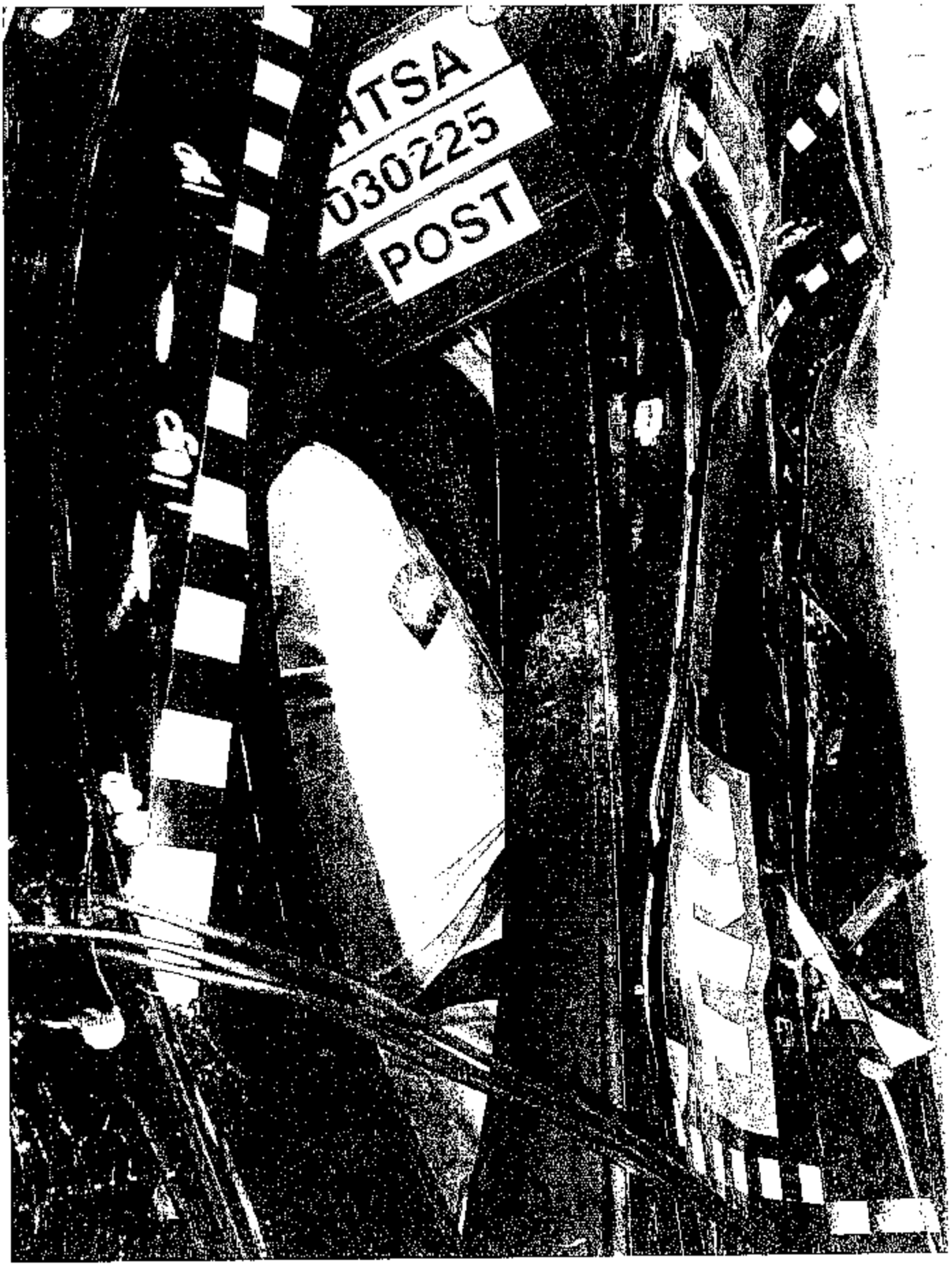


Figure A-24 Post-Test Left View of Front SID and Door Clearance

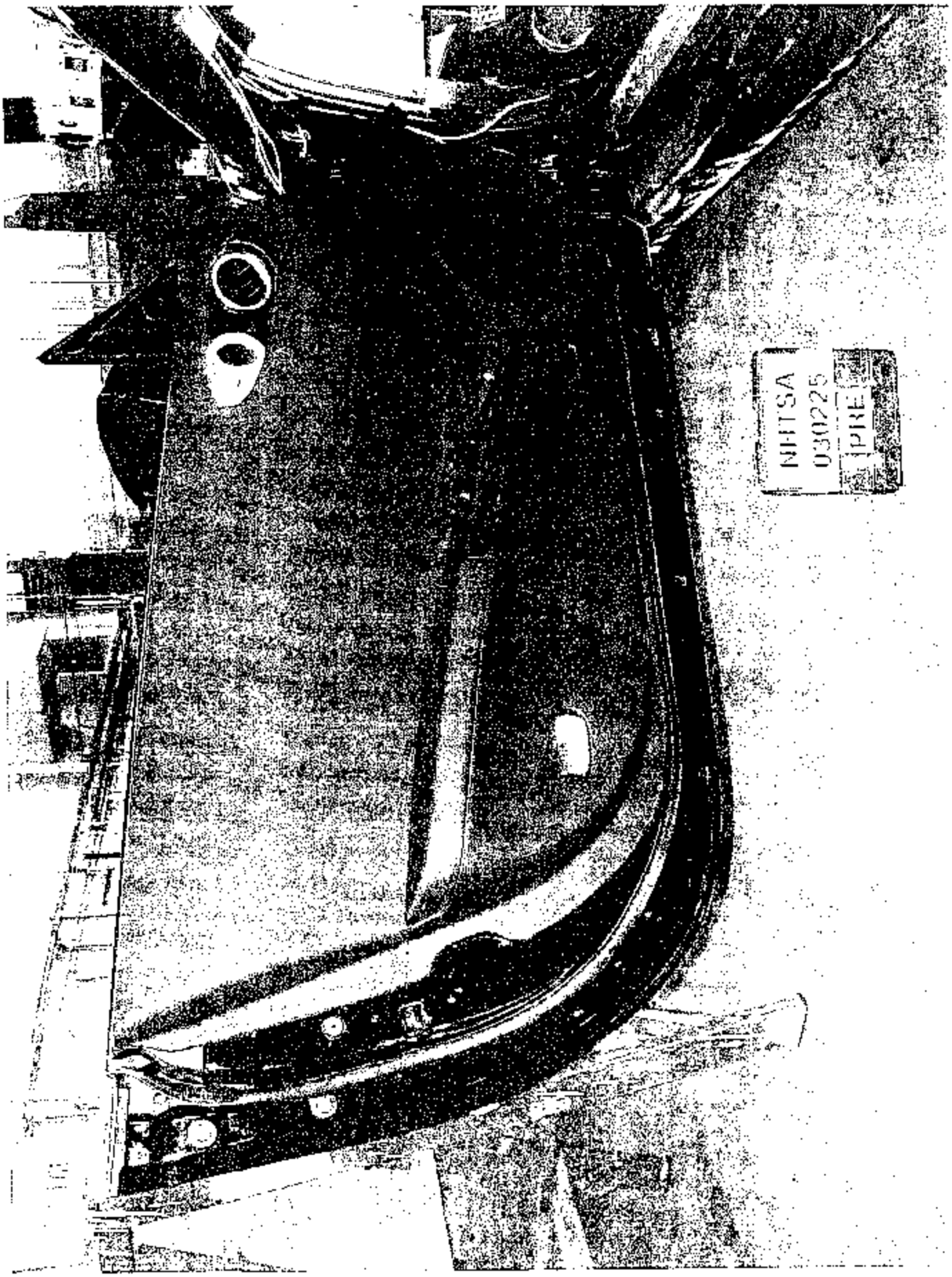


Figure A-25 Pre-Test Interior of Front Door

Figure A-25 Post-Test Interior of Front Door Showing SID Impact Locations

Figure A-27 Post-Test Front SID Contact - View 1

Figure A-28 Post-Test Frame SID Contact - View 2

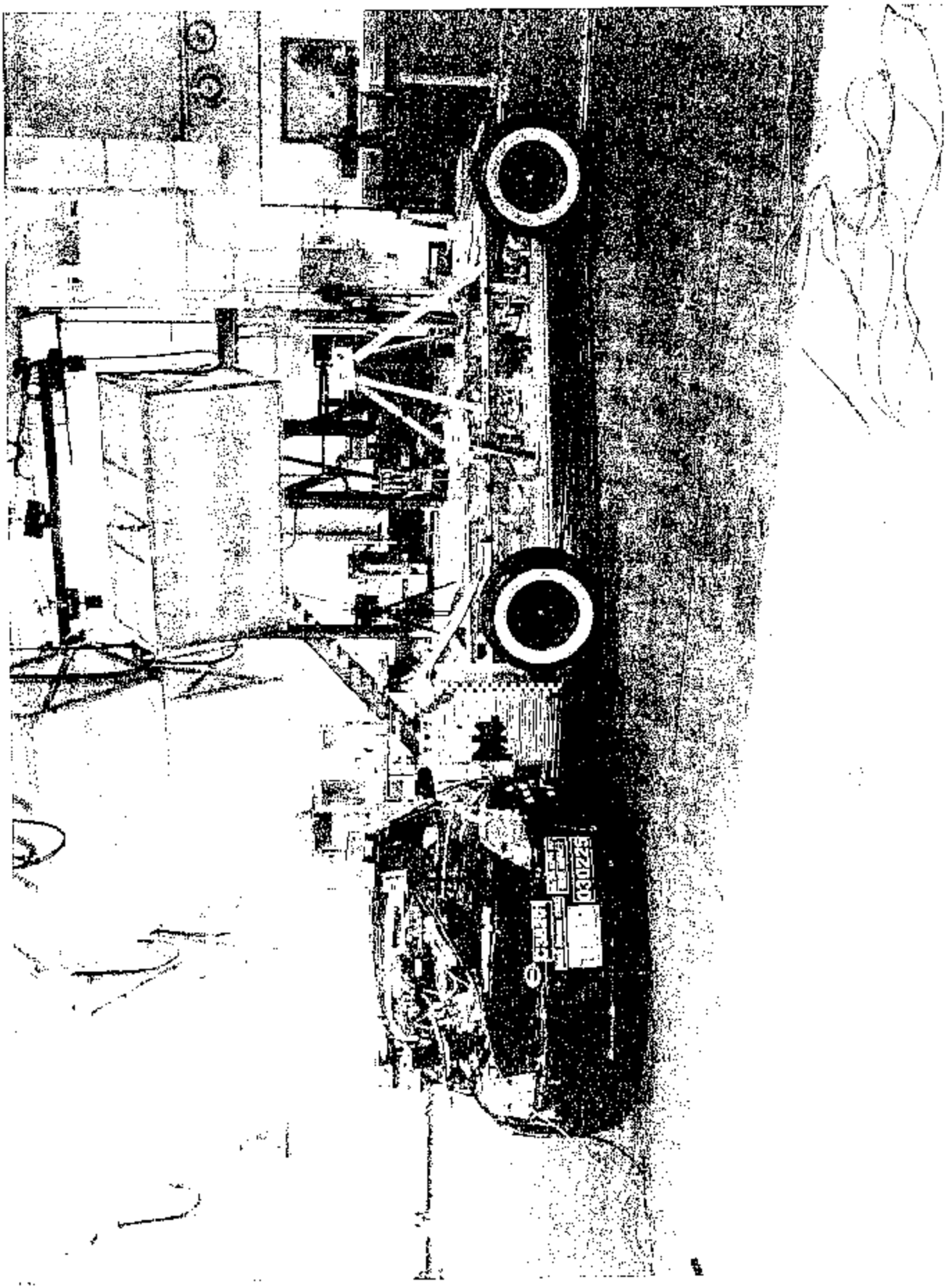


Figure A-29 Pre-Test Left Side View of MDB With Impactor Face in Position

Figure A-30 Pre-Test Primary Impact Point View

Figure A-31 Post-Test Primary Impact Point View

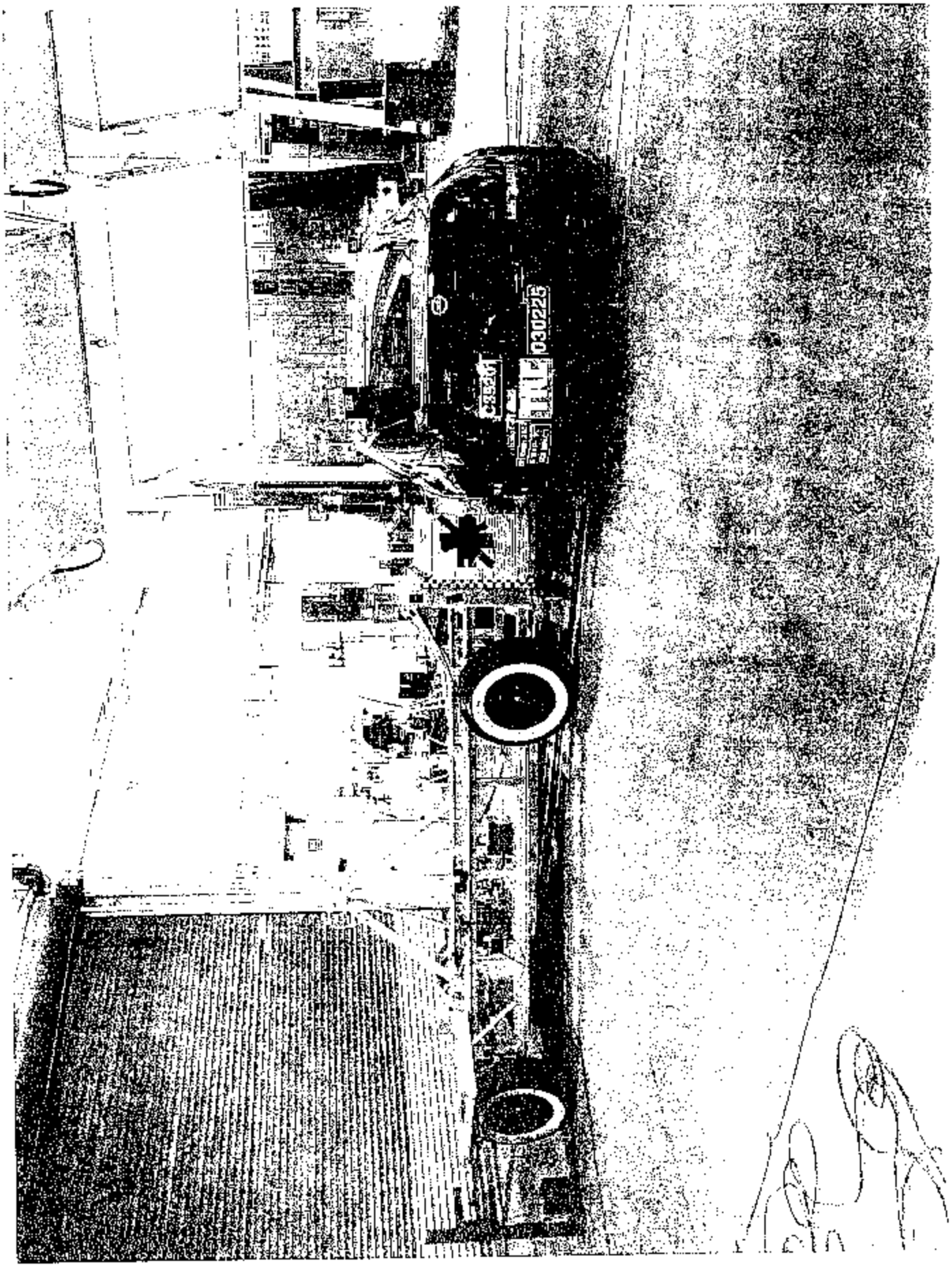


Figure A-32 Pre-Test Right Side View of MDB With Impactor Place in Position

Figure A-33 Pre-Test Secondary Impact Point View

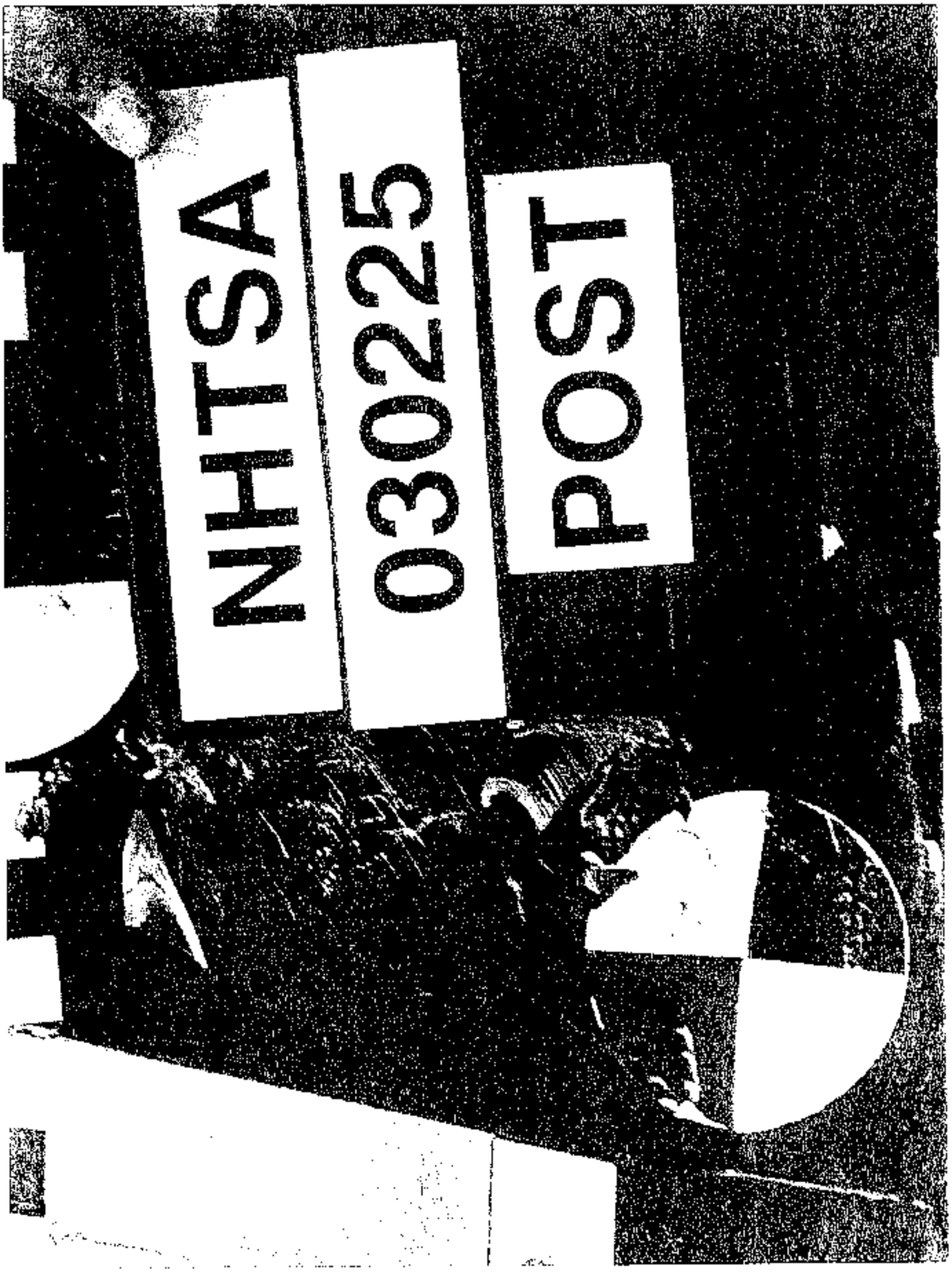


Figure A-34 Post-Test Secondary Impact Point View

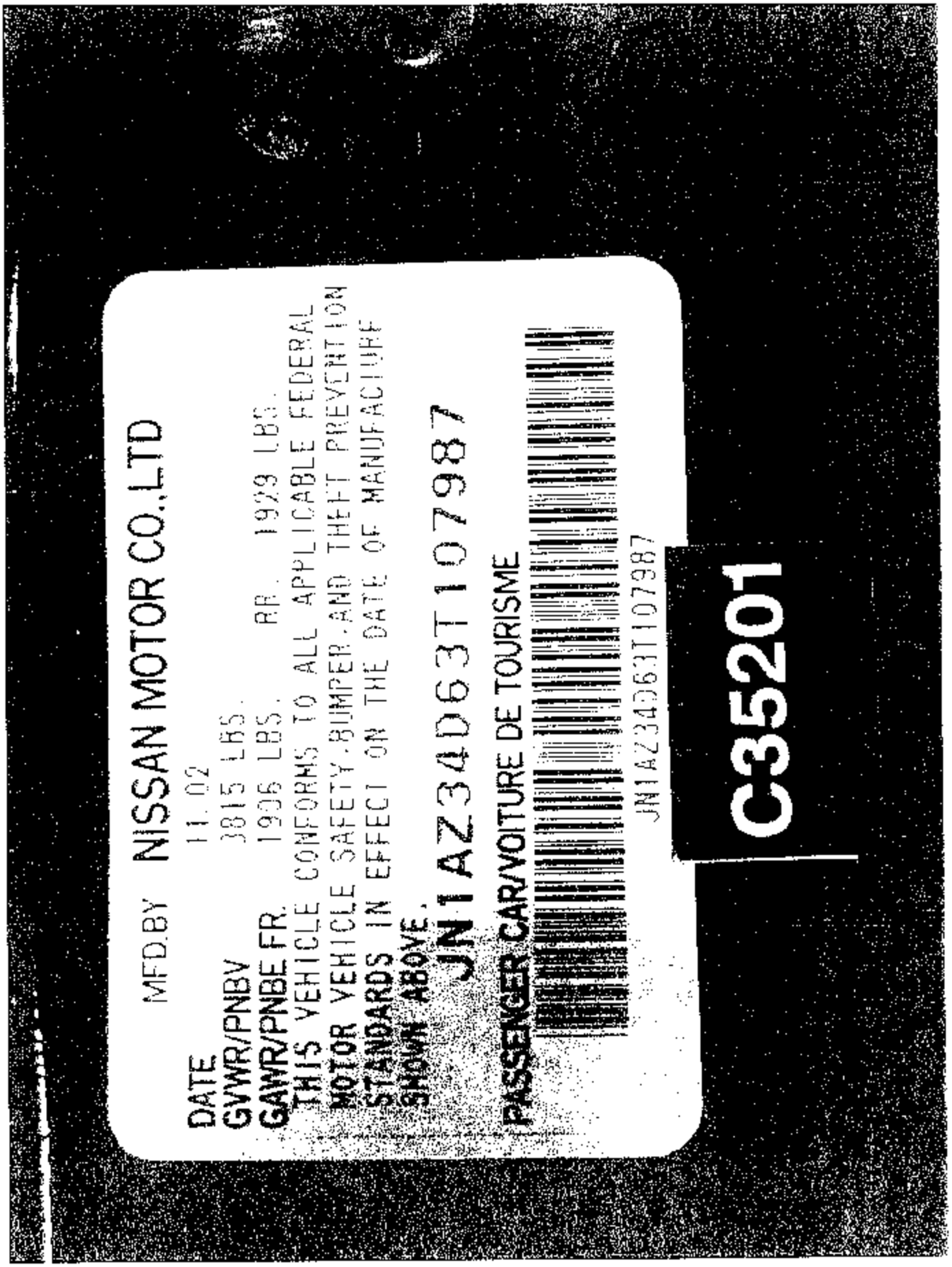


Figure A-35 Pre-Test Vehicle Certification Label View

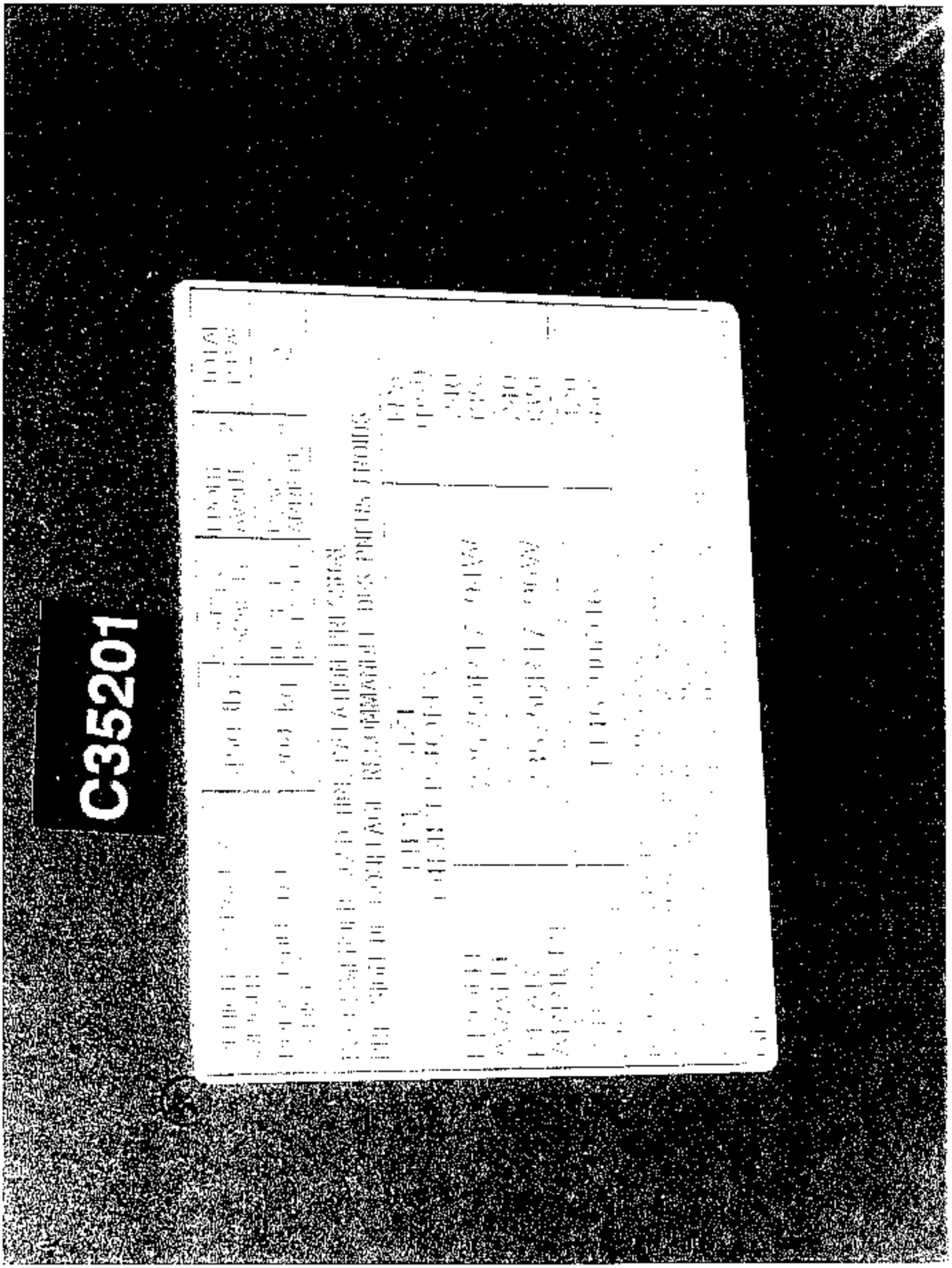


Figure A-36 Pre-Test Vehicle Recommended Tire Pressure Label View

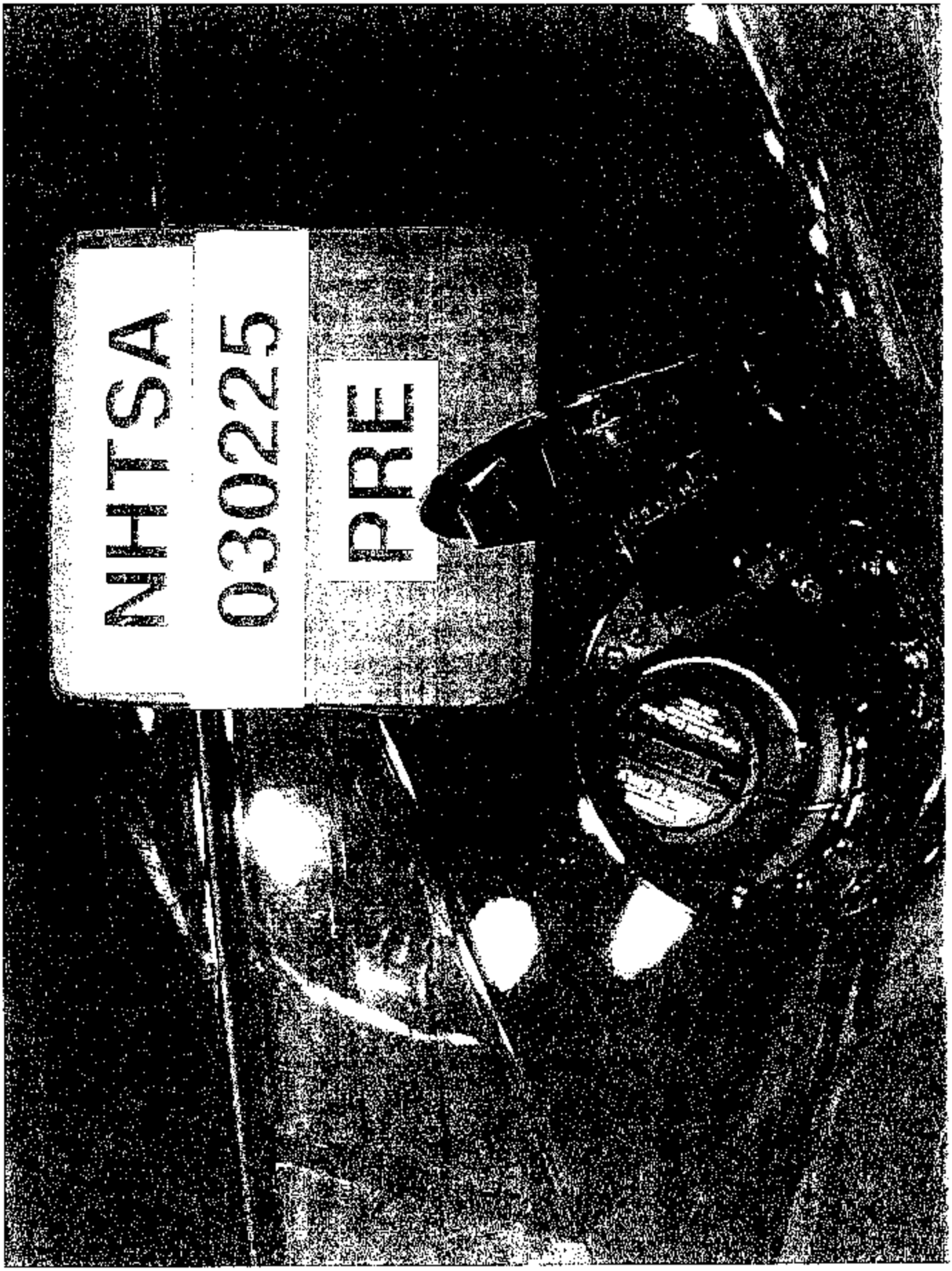


Figure A-37 Pre-Test Fuel Cap

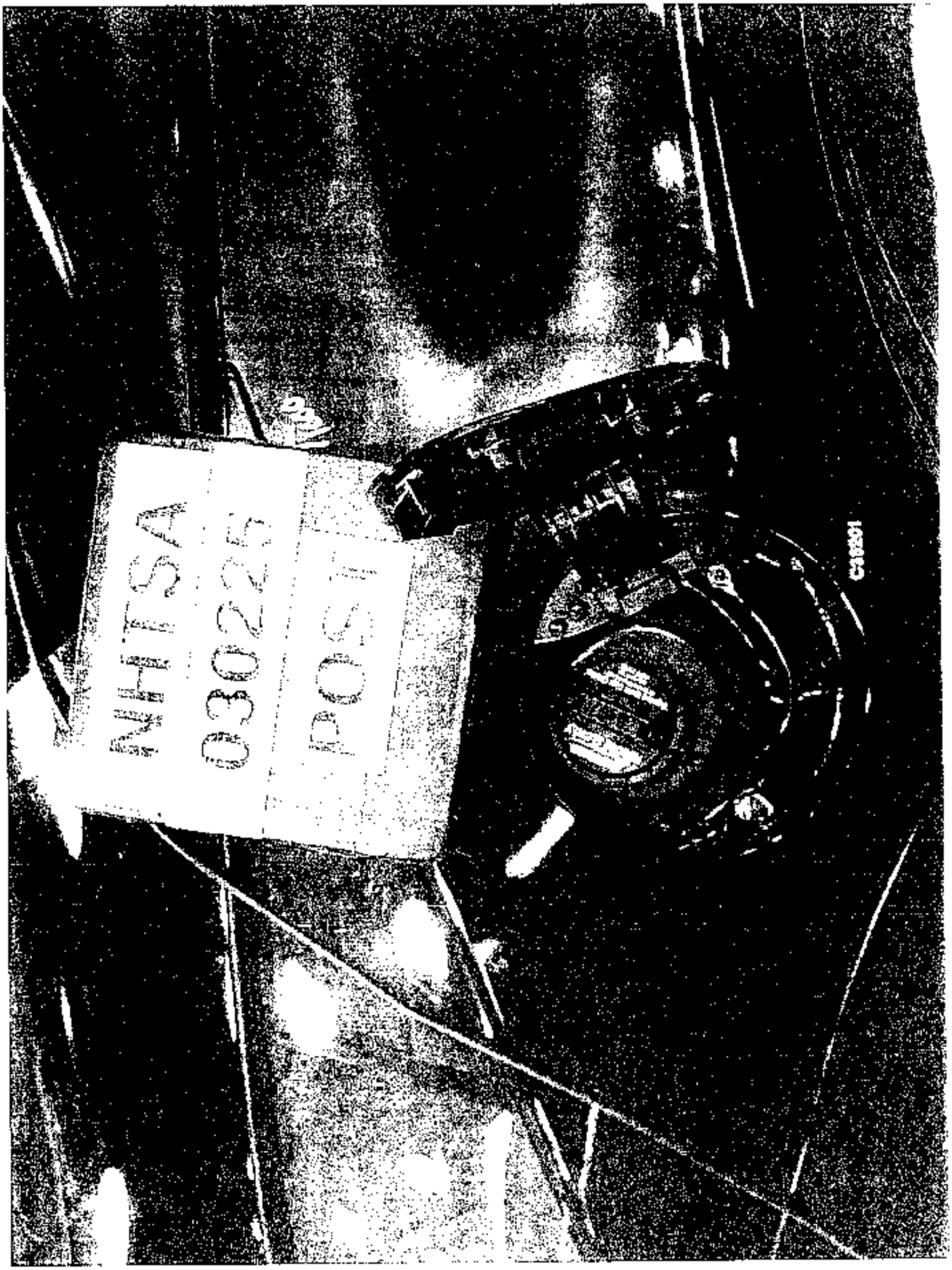


Figure A-38 Post-Test Fuel Cap

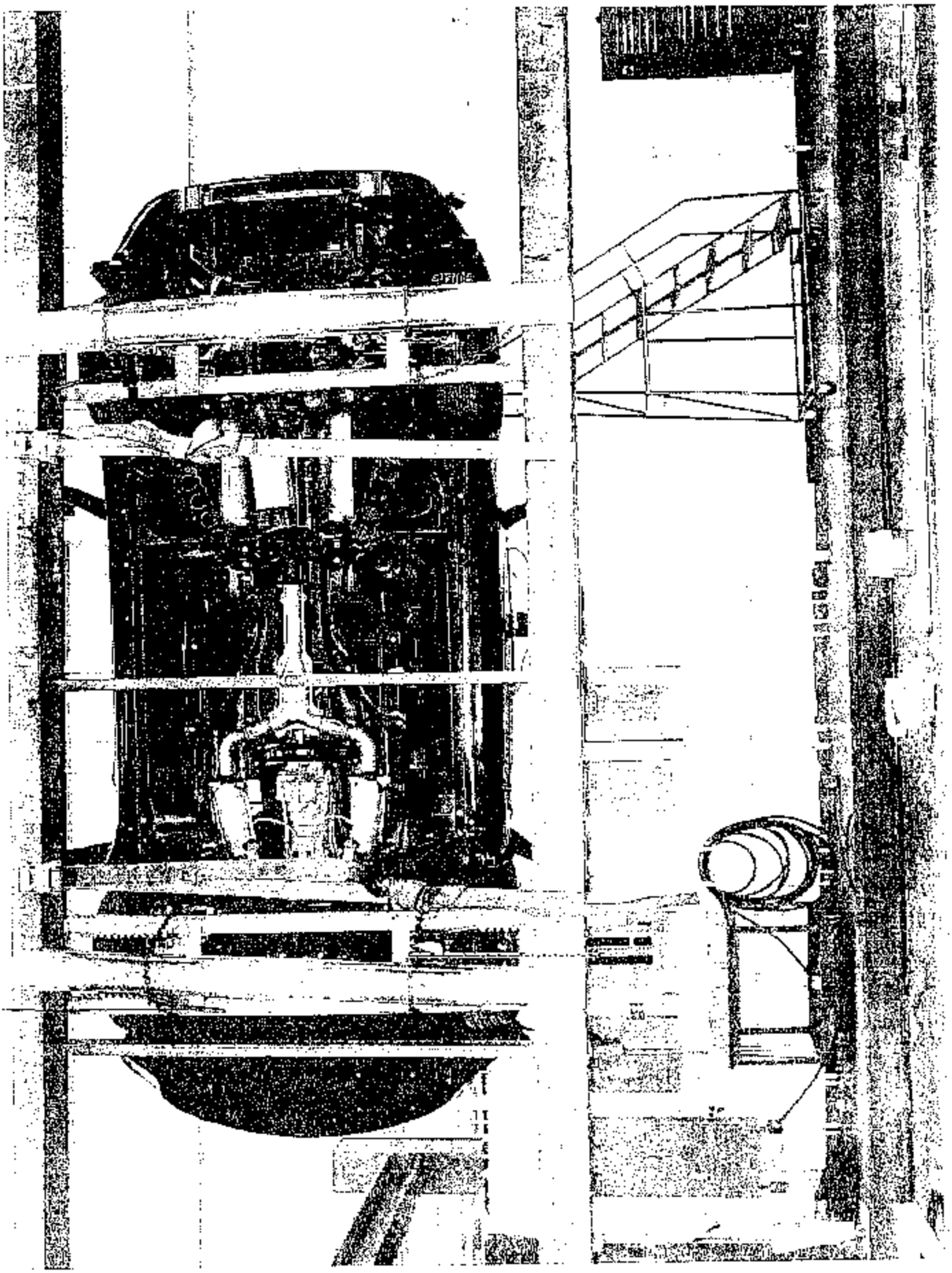


Figure A-39 FMVSS 301 Rollover View at 90°

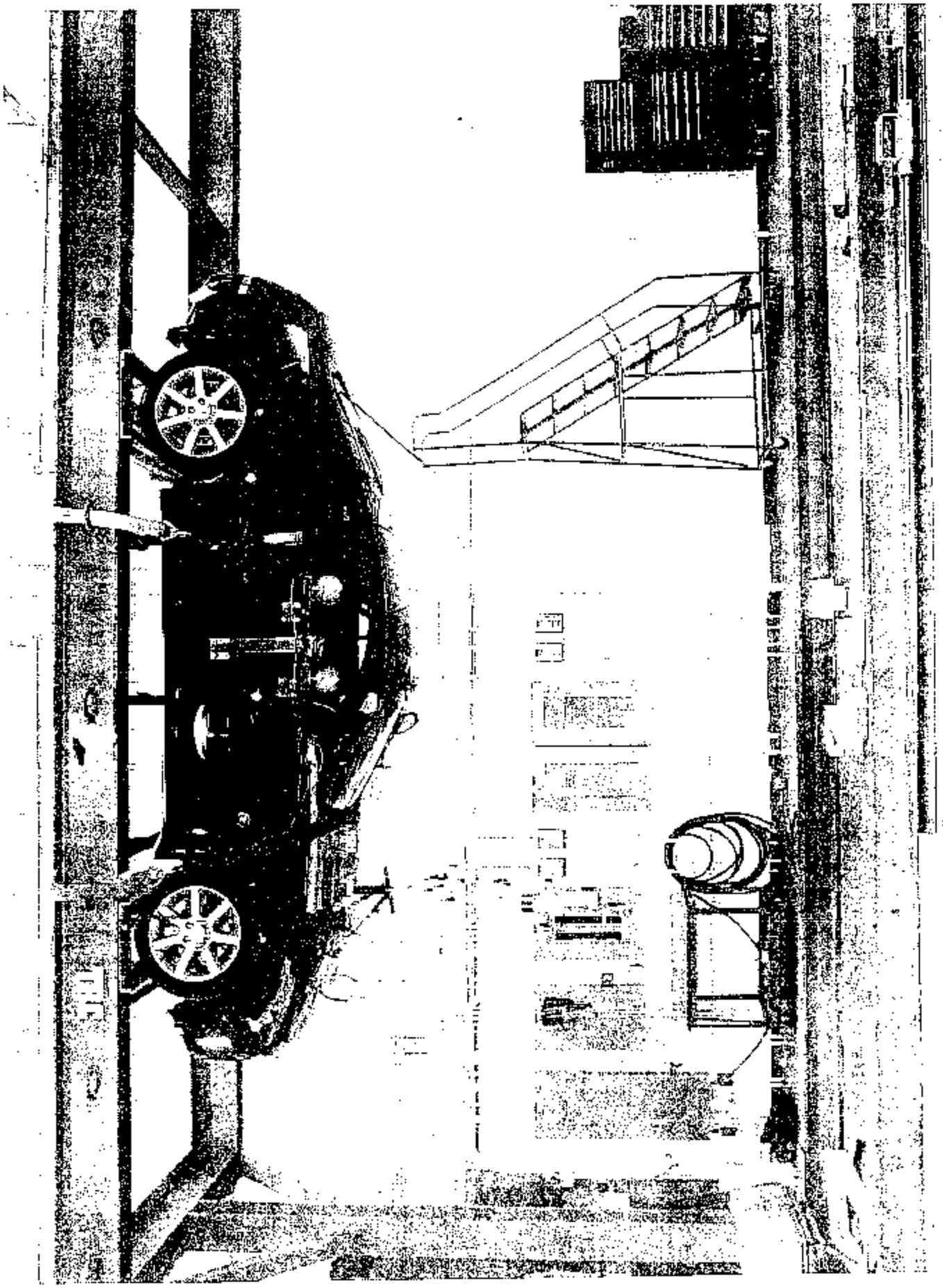


Figure A-40 FMVSS 301 Rollover View at 180°

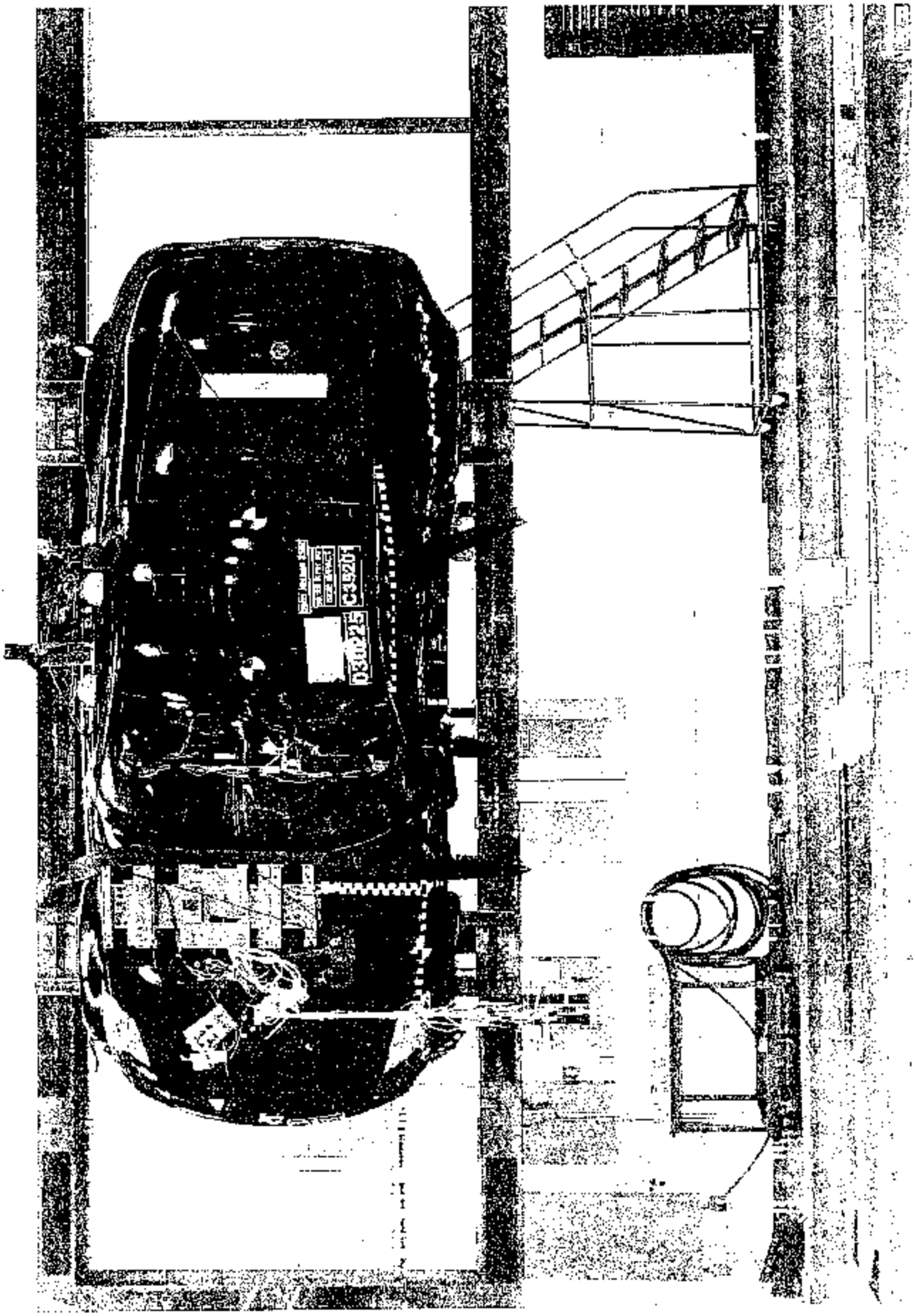


Figure A-41 FMVSS 301 Rollover View at 270°

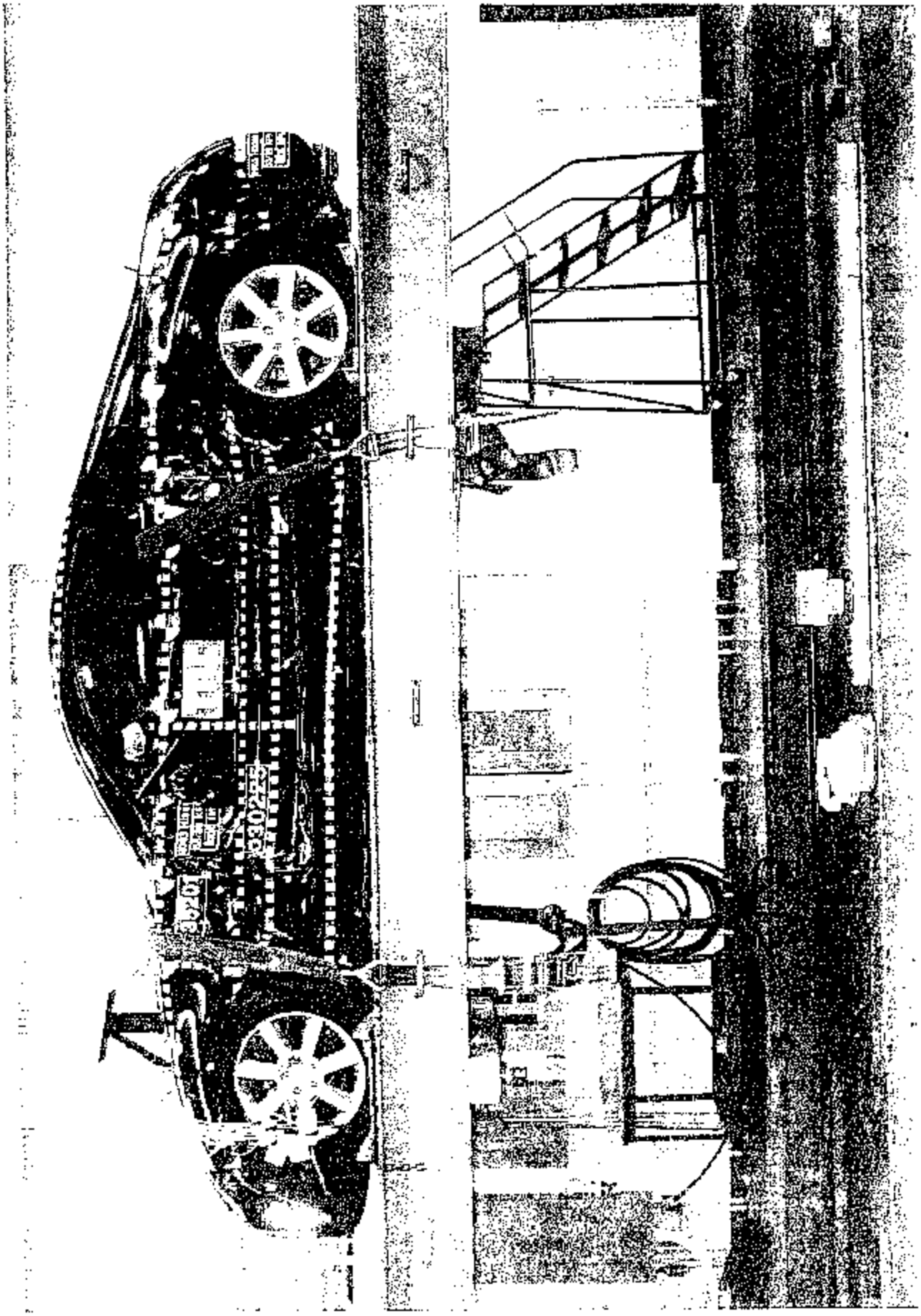


Figure A-42. FMVSS 301 Rollover View at 360°

Appendix B

Data Plots

Table of Data Plots

Driver Dummy Instrumentation Plots

Acceleration Data - Filter Class 1000

Integration Data - Filter Class 180

Force Data - Filter Class 1000

Moment Data - Filter Class 600

Contact Data - Filter Class 1000

Driver Dummy Instrumentation Plots
Acceleration Data - Filter Class 1000 - Redundant
Integration Data - Filter Class 180 - Redundant

Test Vehicle Instrumentation Plots
Acceleration Data - Filter Class 60
Integration Data - Filter Class 180

Table of Data Plots (Continued)

Test Vehicle Instrumentation Plots (Continued)

Acceleration Data - Filter Class 60

Integration Data - Filter Class 180

Table of Data Plots (Continued)

Test Vehicle Instrumentation Plots (Continued)

Acceleration Data - Filter Class 60

Integration Data - Filter Class 180

MDB Instrumentation Plots

Acceleration Data - Filter Class 60

Integration Data - Filter Class 180

Table of Data Plots (Continued)

MDB Instrumentation Plots (Continued)

Acceleration Data - Filter Class 60

Integration Data - Filter Class 180

Driver Dummy Instrumentation Plots

Acceleration Data - FIR Filtered

Driver Dummy Instrumentation Plots

Acceleration Data - FIR Filtered - Redundant

Driver Dummy Instrumentation Plots

Acceleration Data - Filter Class 1000

Integration Data - Filter Class 180

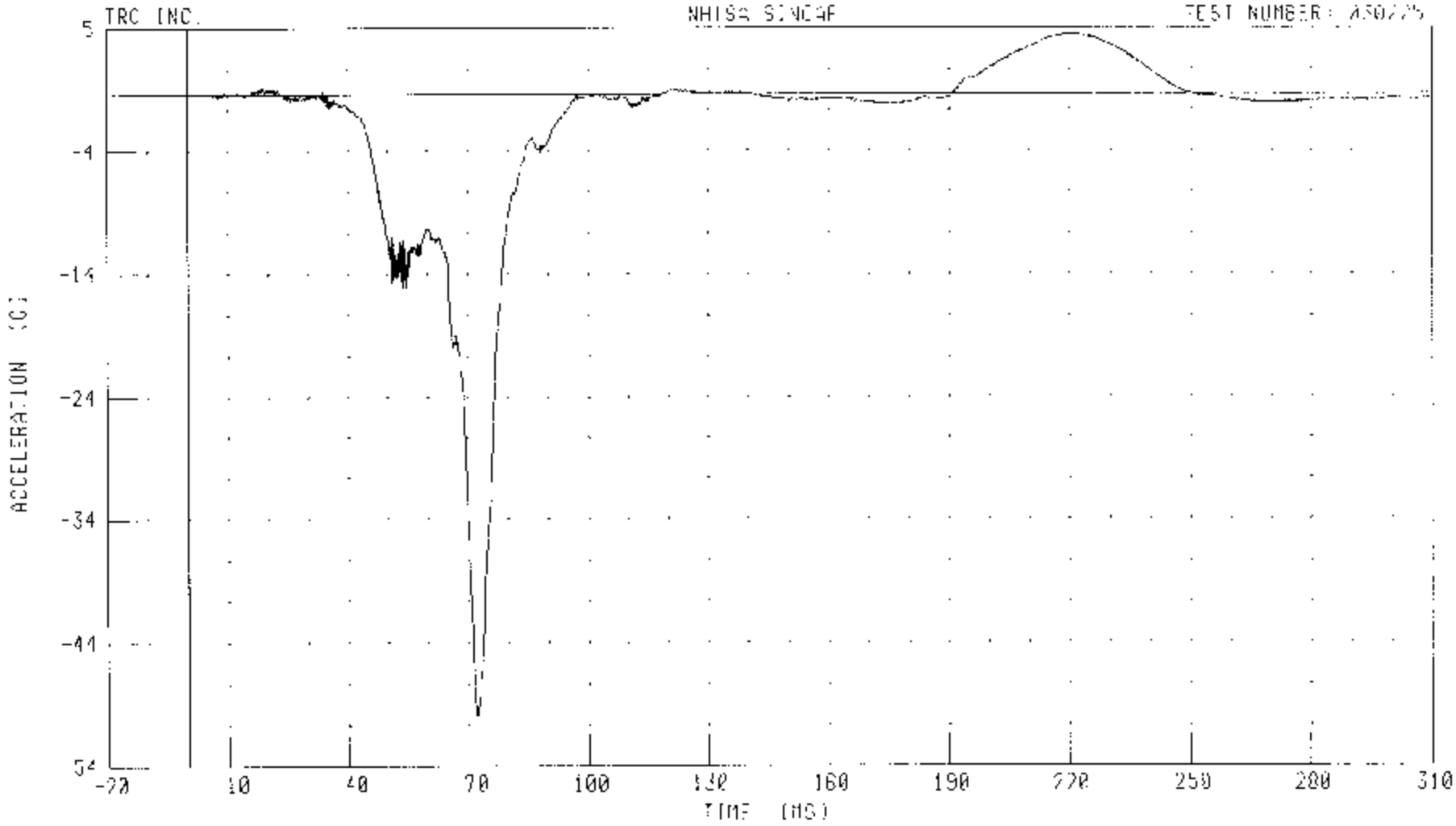
Force Data - Filter Class 1000

Moment Data - Filter Class 600

Contact Data - Filter Class 1000

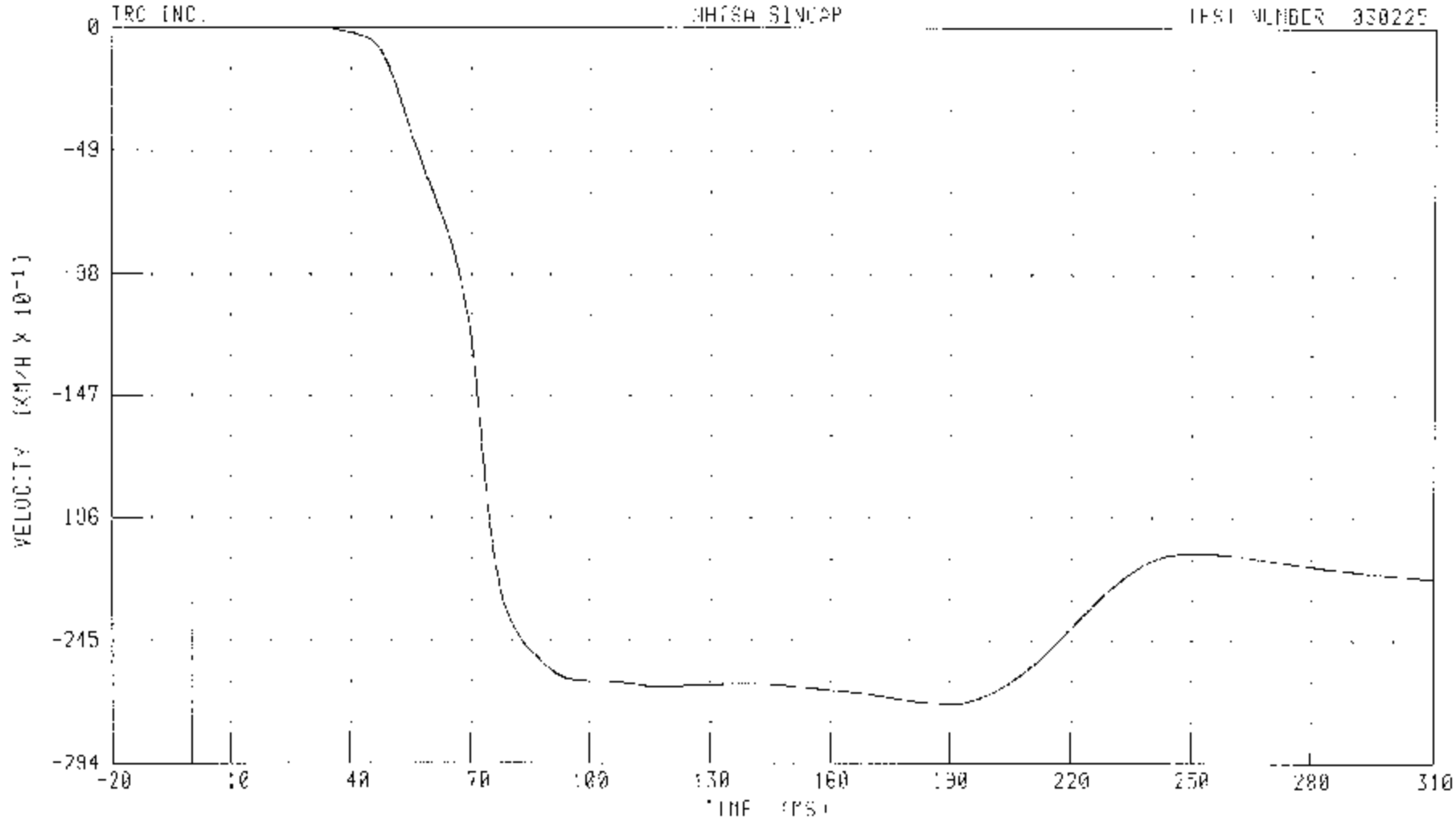
55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 NISSAN 350Z

DRIVER HEAD X-AXIS ACCELERATION



CHANNEL: HEDXC1 FILTER: CFC CLASS 1000 PEAK DATA: 4.85 G @ 220.72 MS, -50.53 G @ 72.24 MS

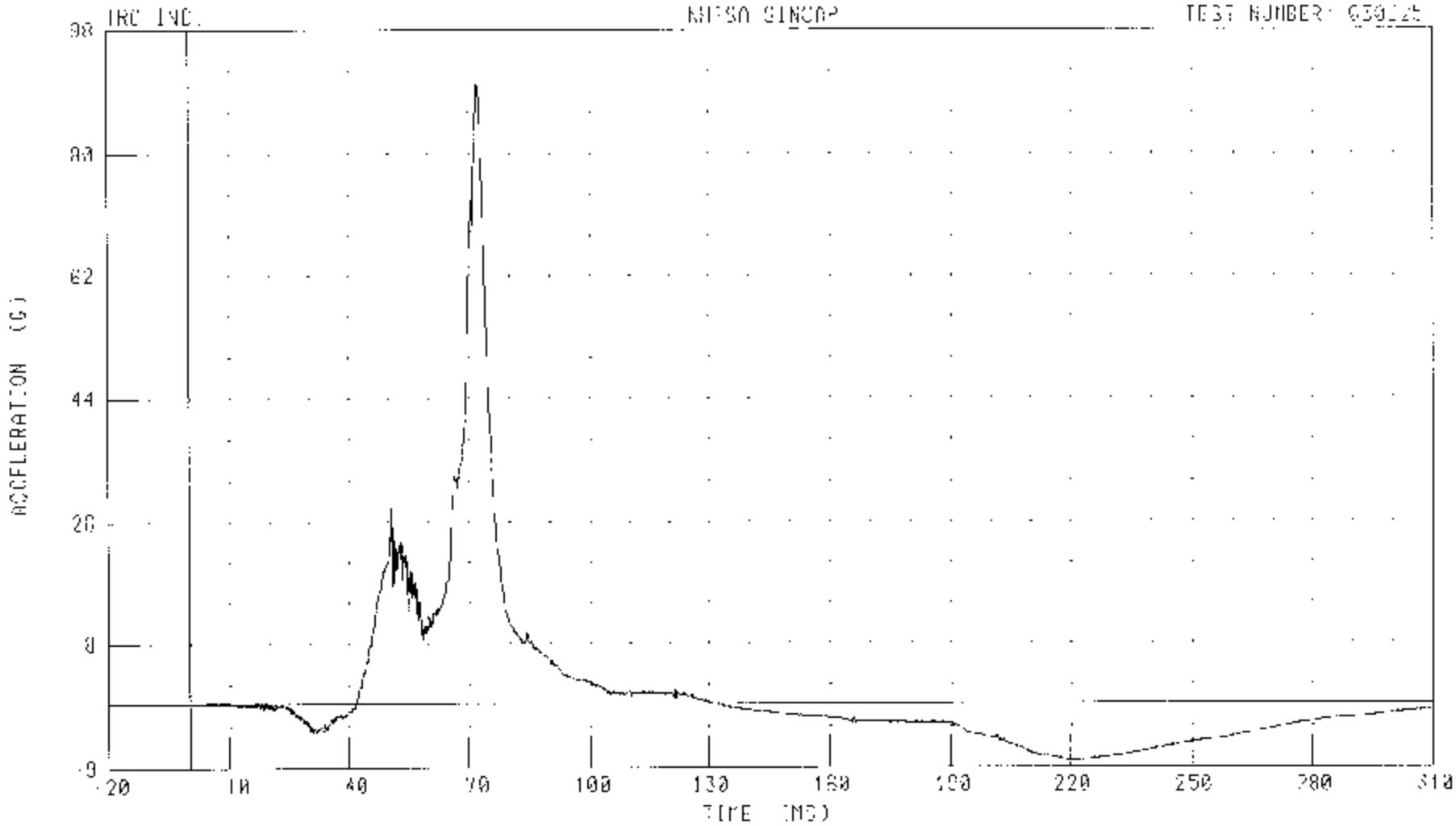
55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOV.NO DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
DRIVER HEAD X AXIS VELOCITY



CHANNEL HEDXV1 FILTER CF. CLASS 180 PEAK DATA 0.07 KM/H @ 23.52 MS, -27.05 KM/H @ 190.00 MS

55/20 KPH 90 DEGREE NEAR SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z

DRIVER HEAD Y-AXIS ACCELERATION

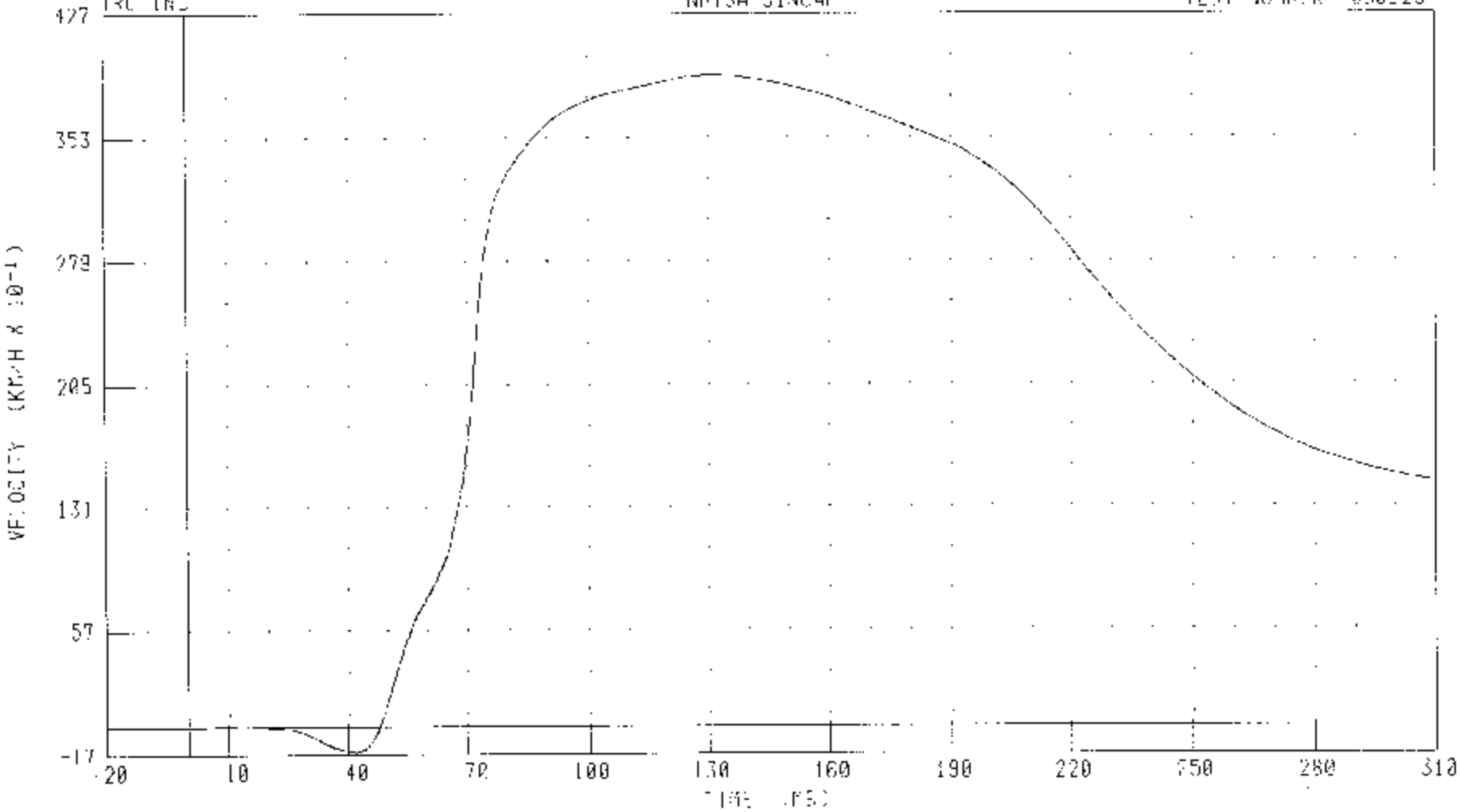


CHANNEL HEADY01 FILTER: CH CLASS 1000 PEAK DATA 80.69 G @ 72.00 MS, 8.47 G @ 220.00 MS

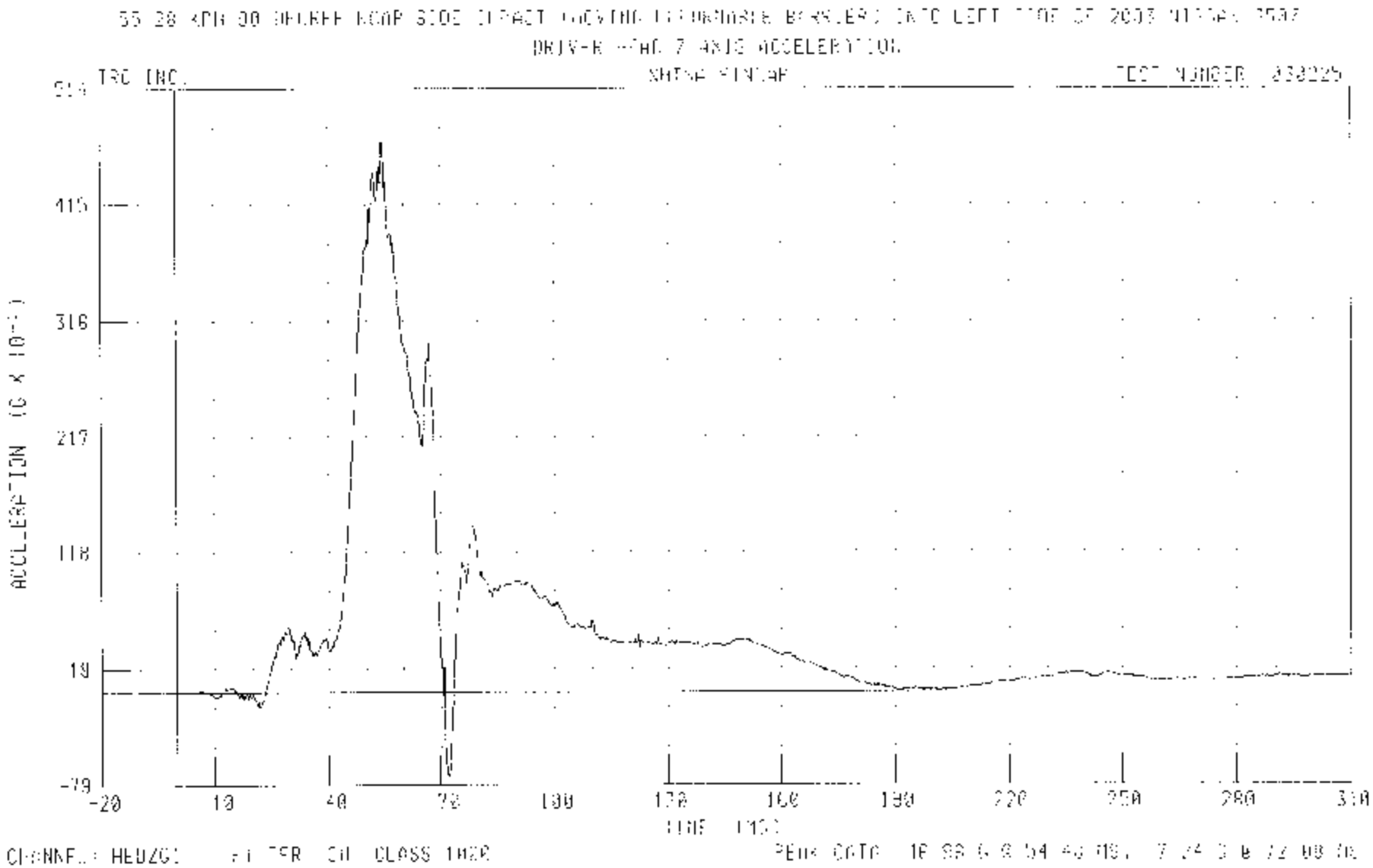
55.18 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z

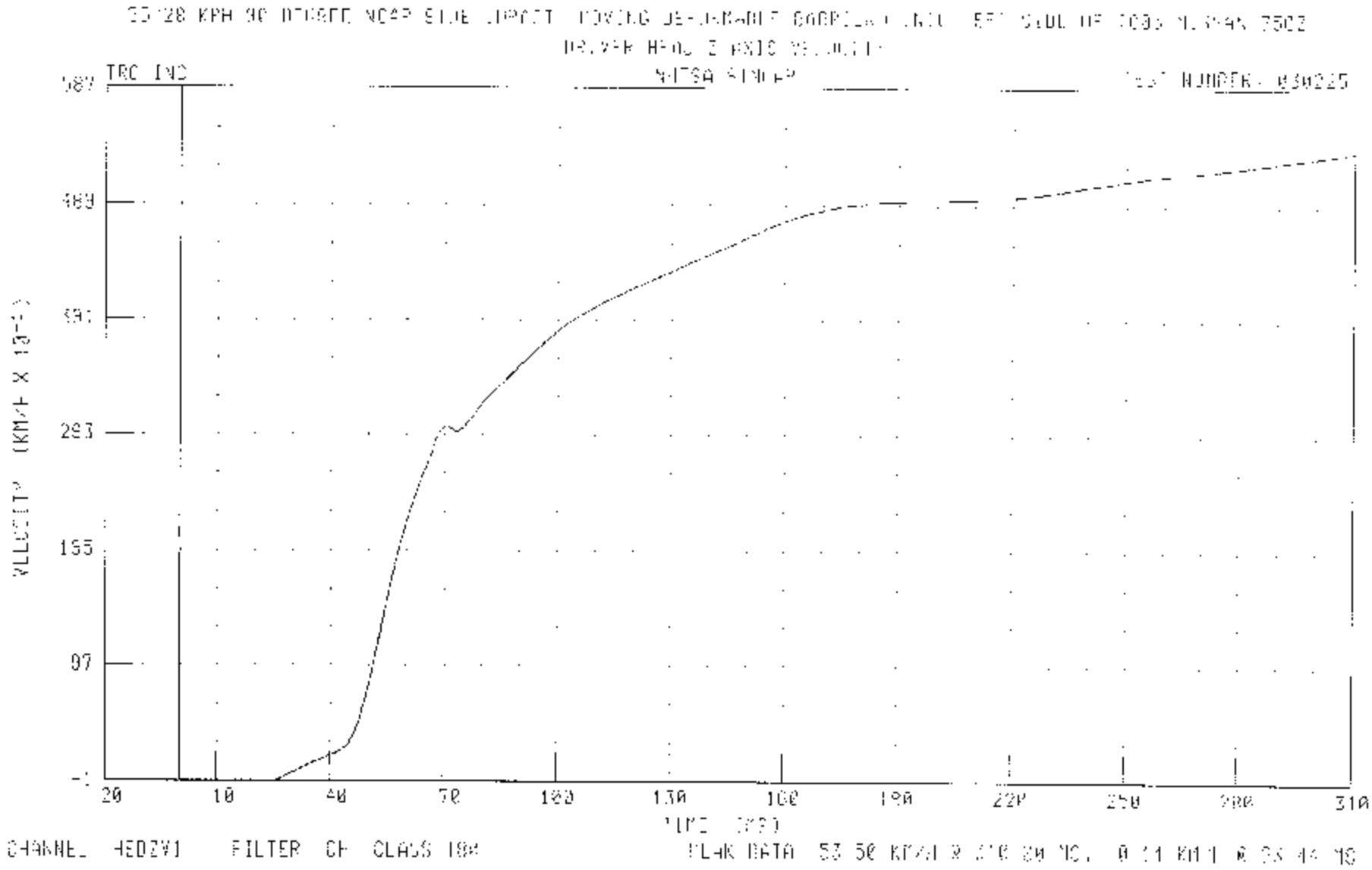
DRIVER HEAD Y AXIS VELOCITY

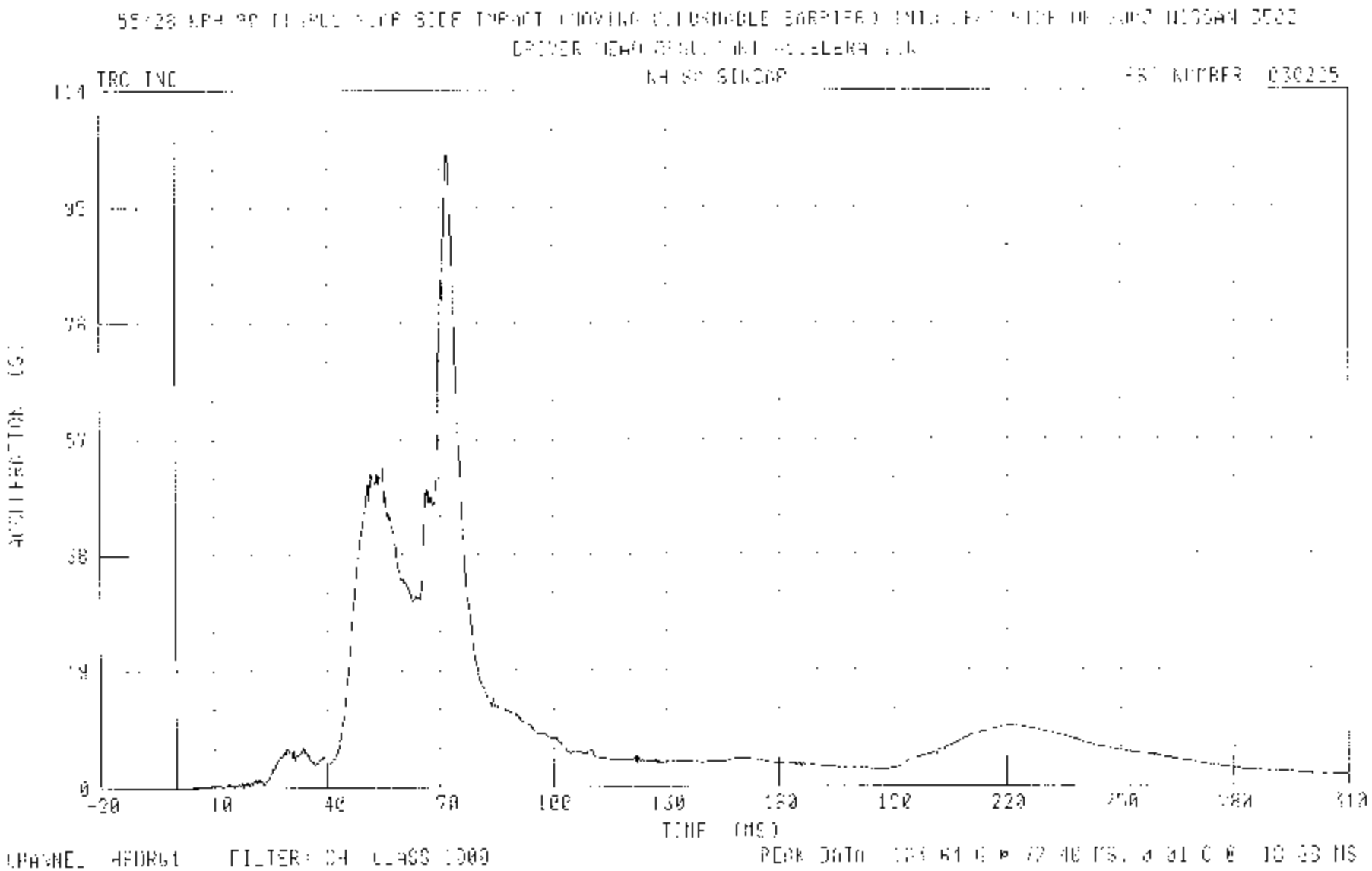
IRC INC NHTSA SINCAP TEST NUMBER 030225

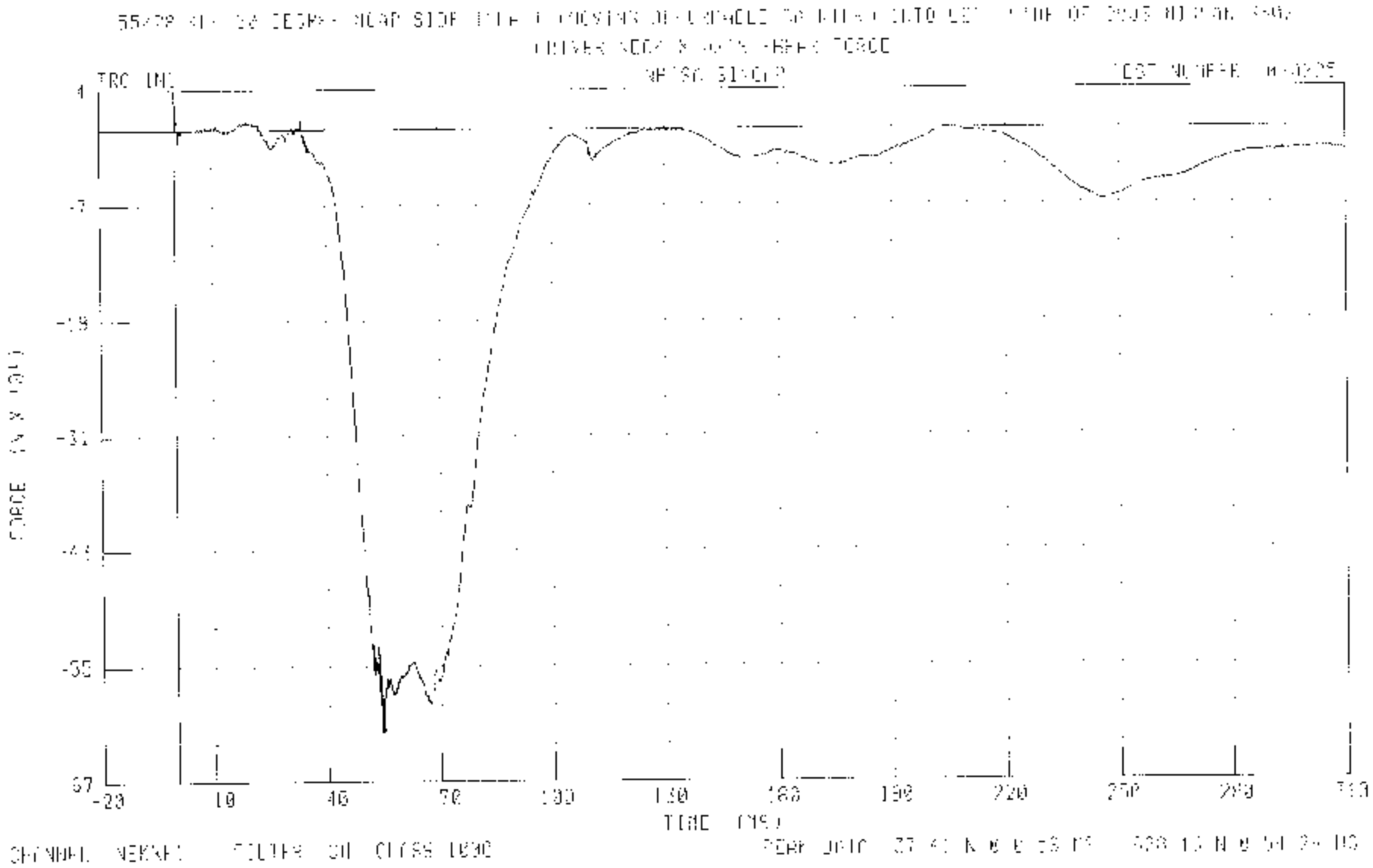


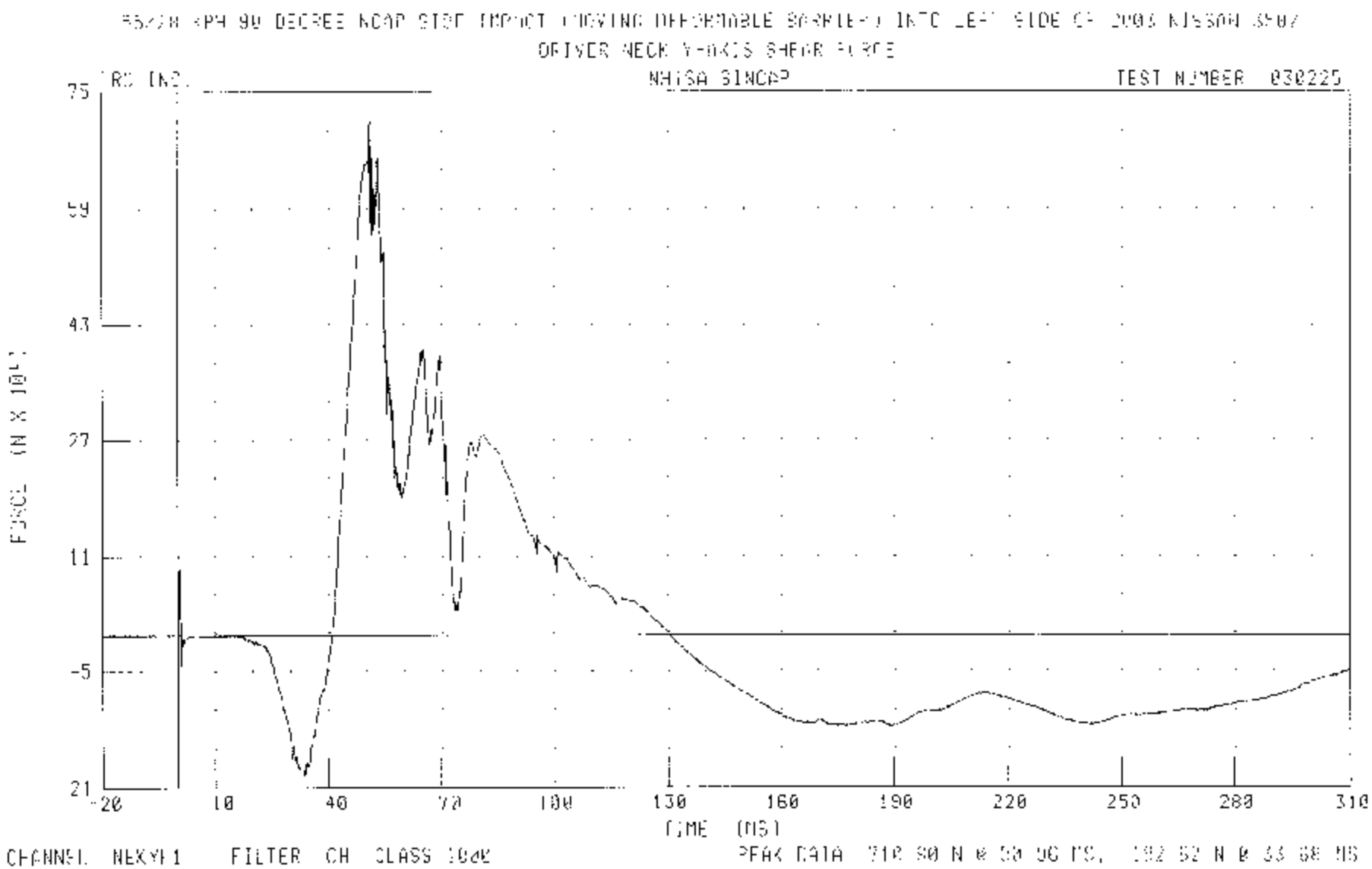
CHANNEL HEDYV1 FILTER CH. CLASS 180 PEAK DATA 39.00 KM/H @ 131.12 MS, 1.55 KM/H @ 41.84 MS

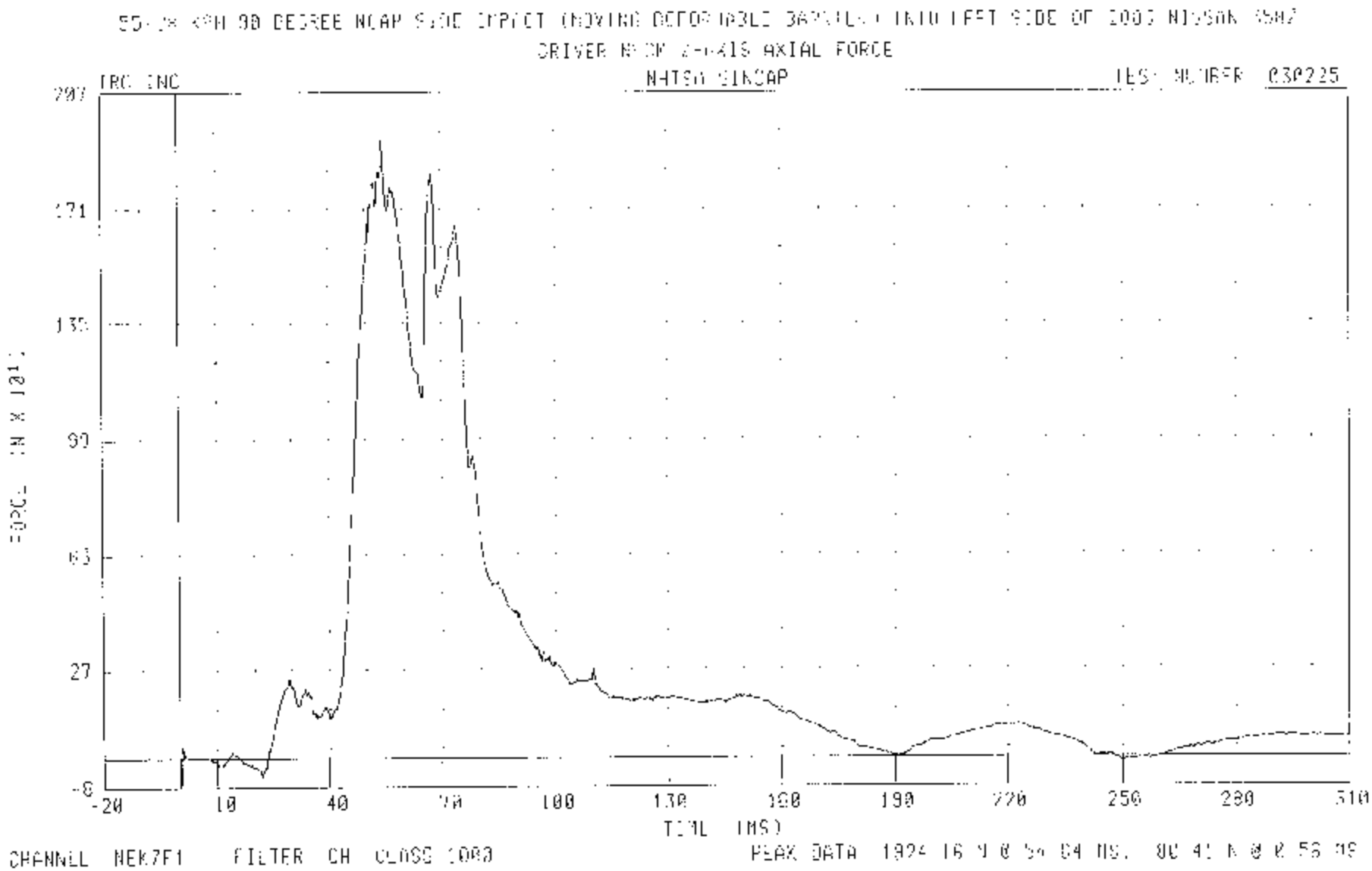

DRIVER ~FAC Z AXIS ACCELERATION
TEST NUMBER
ACCELERATION (G X 10^-1)
514
415
316
217
118
19
-79
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)


TRC INC
NHTSA SINGER
TEST NUMBER: 030225
VELOCITY (KM/H X 10-1)
489
391
293
195
97
-1
20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL HEDZV1 FILTER CF CLASS 180
PEAK DATA 53.50 KM/H @ 210.00 MS, 0.11 KM/H @ 35.44 MS


TRC INC
FST NUMBER 030225
TIME (MS)
PEAK DATA


TRC INC
4
-7
-19
-31
-43
-55
-67
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)


55/50 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
DRIVER NECK Y-AXIS SHEAR FORCE
NHTSA SINCAP
TEST NUMBER 030225
RC (N2)
75
59
43
27
11
-5
21
FORCE (N X 10E1)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL NEXY1 FILTER CH CLASS 1000
PEAK DATA 710.80 N @ 50.06 MS, 192.52 N @ 33.68 MS

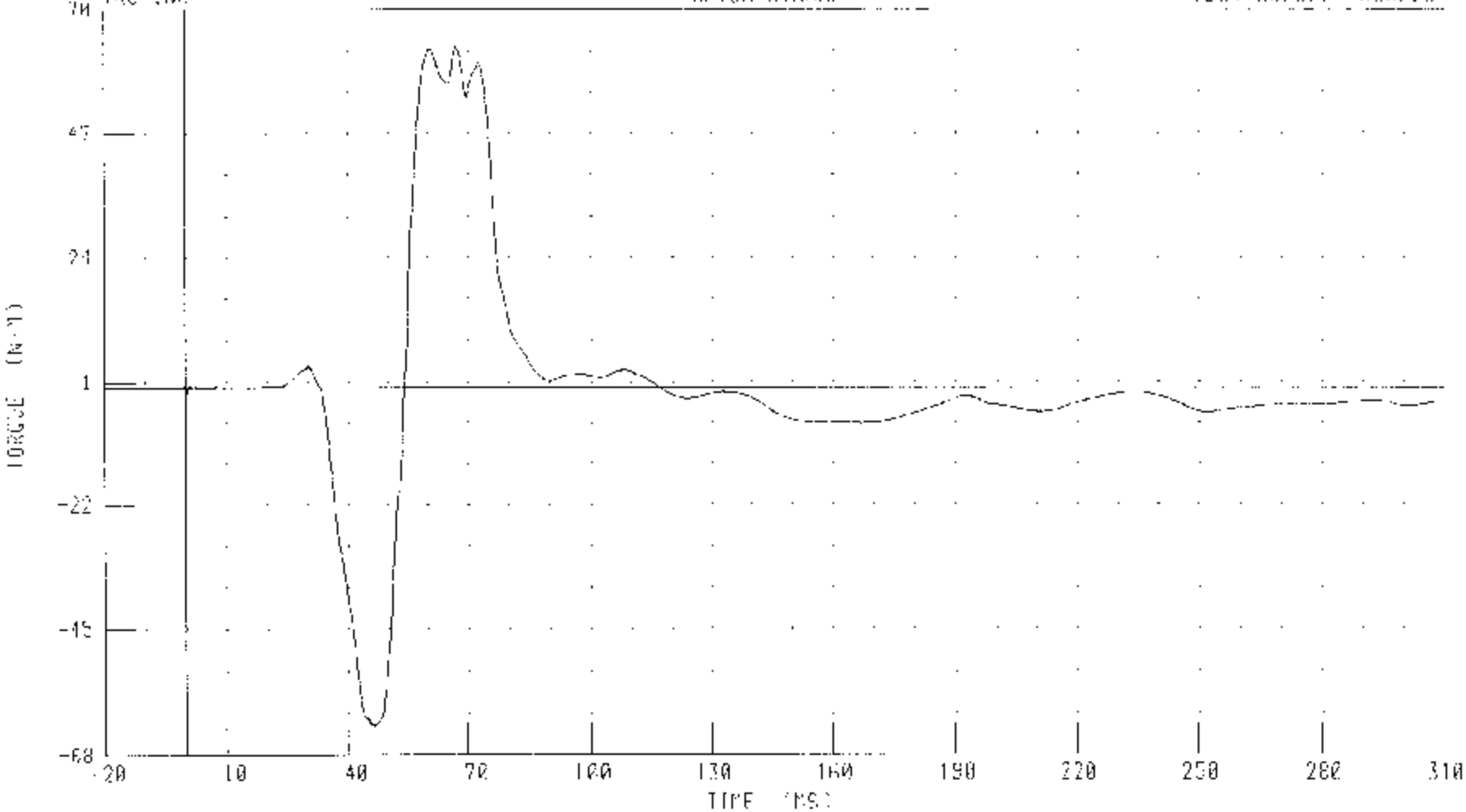

DRIVER
AXIAL FORCE
NHTSA SINCAP
TEST NUMBER
030225
FORCE (N X 10E1)
207
171
135
99
63
27
-8
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL NEK7F1
FILTER CH CLASS 1000
PEAK DATA

55.28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
DRIVER HELP MOMENT ABOUT X AXIS

TRC INC

NHTSA SINCAP

TEST NUMBER 030225



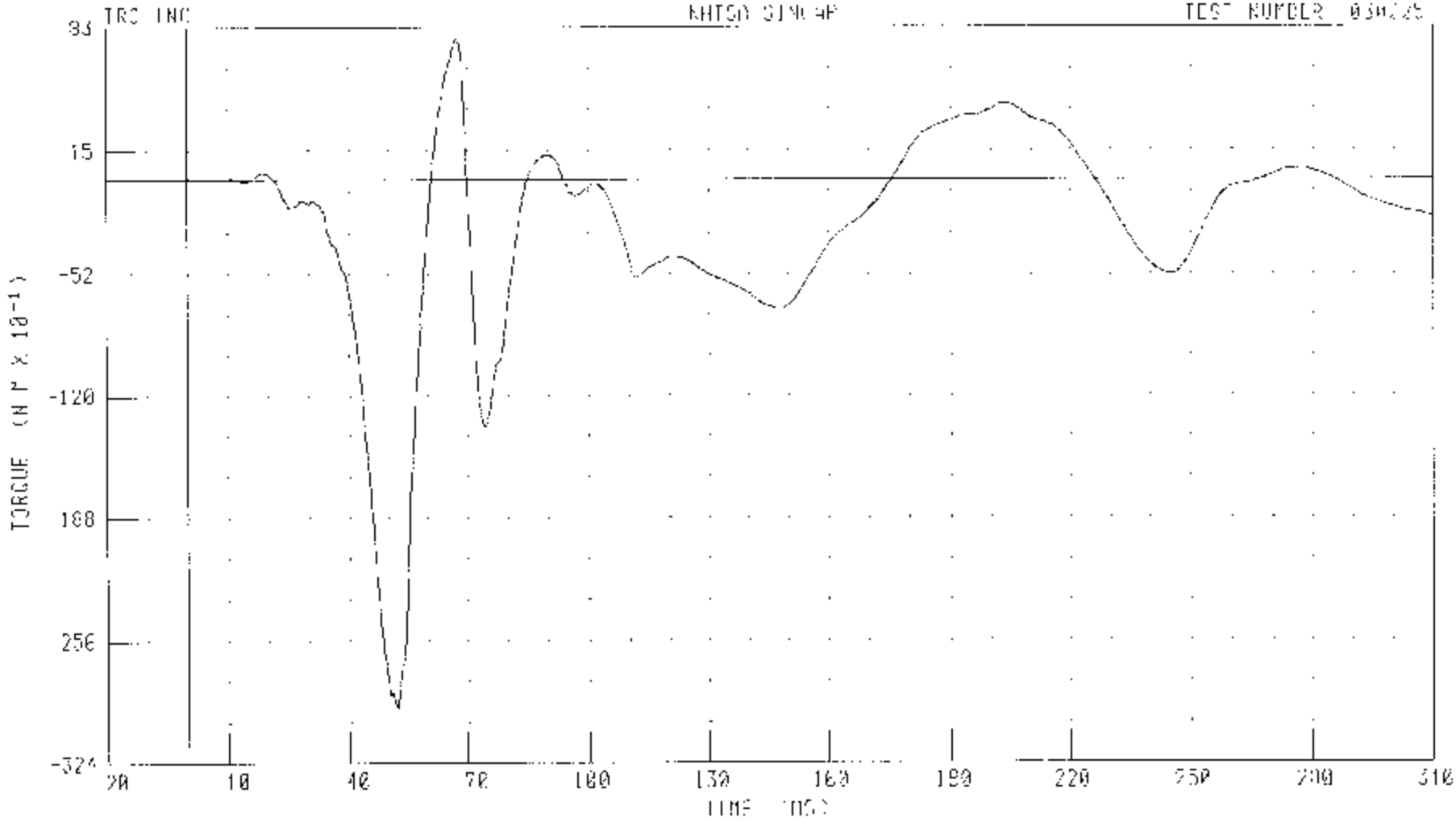
CHANNEL : MEKXM1 FILTER CH CLASS 600

PEAK DATA 33.19 N-M @ 67.20 MS; -62.54 N-M @ 46.40 MS

55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
DRIVER NECK MOMENT ABOUT Y AXIS

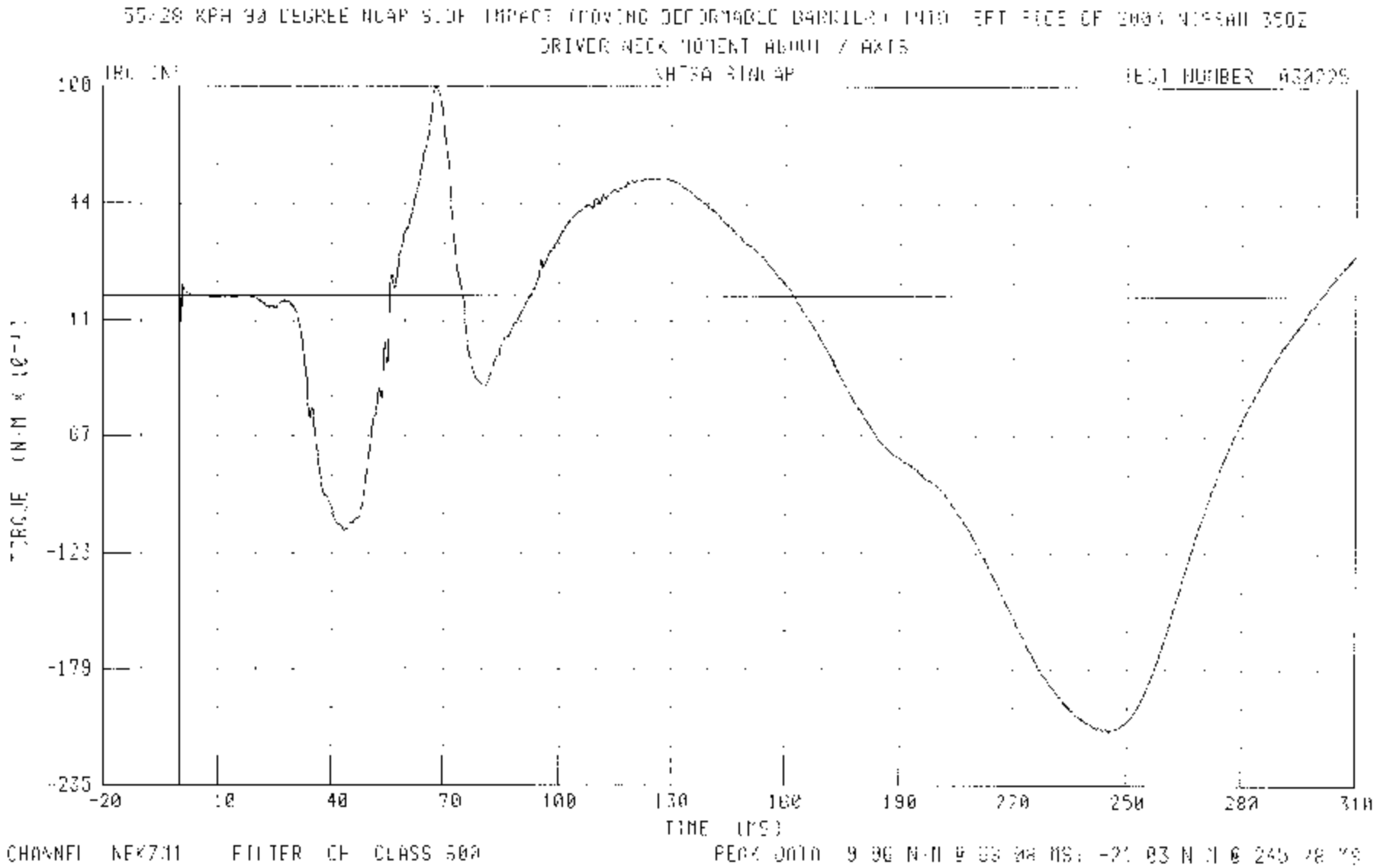
NHTSA SINGAP

TEST NUMBER 030225

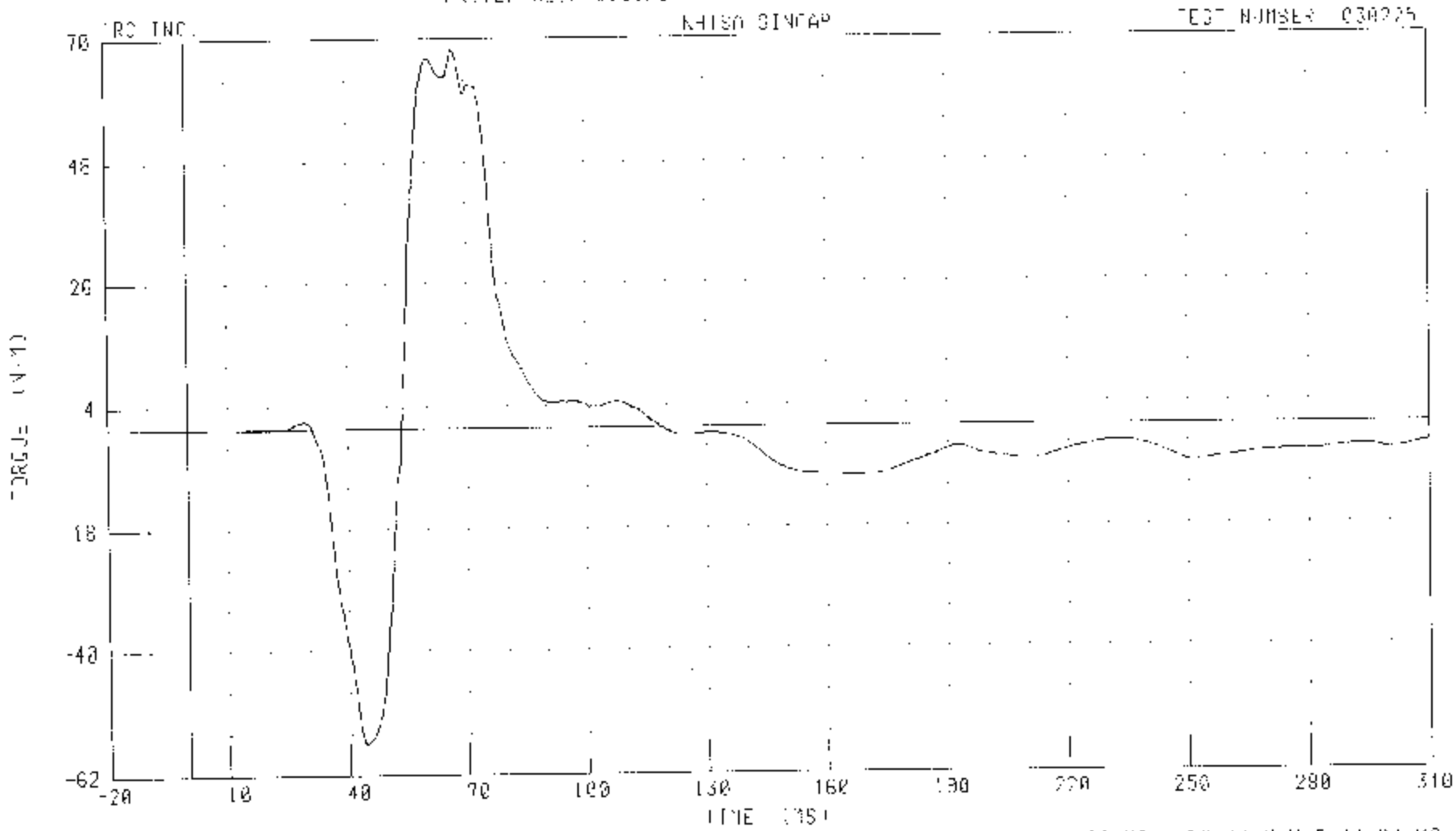


CHANNEL NEKYM1 FILTER CH CLASS 600

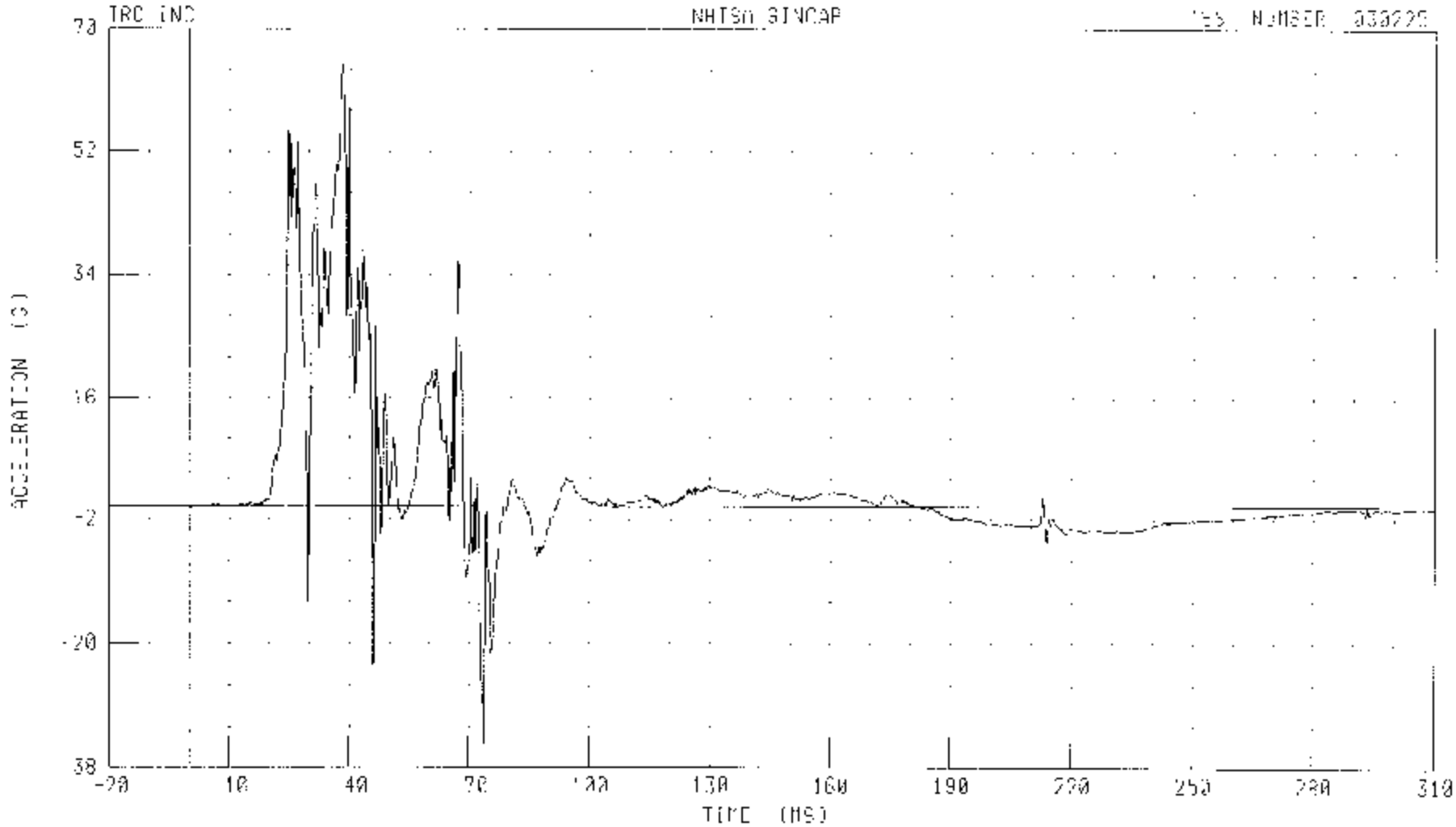
PEAK RATIO 7.7 N M @ 87.63 MS, 20.42 N M @ 52.16 MS


55.28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2001 NISSAN 350Z
DRIVER NECK MOMENT ABOUT Y AXIS
TEST NUMBER A30225
100
44
11
-67
-123
-179
-235
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL NEK711 FILTER CF CLASS 600
PEAK DATA 9.00 N-M @ 03.00 MS; -21.03 N-M @ 245.78 MS

55/26 KPH 90 D-LYNE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN ACCE
DRIVER HEAD OCCIPITAL CONDYLE MOMENT ABOUT X AXIS

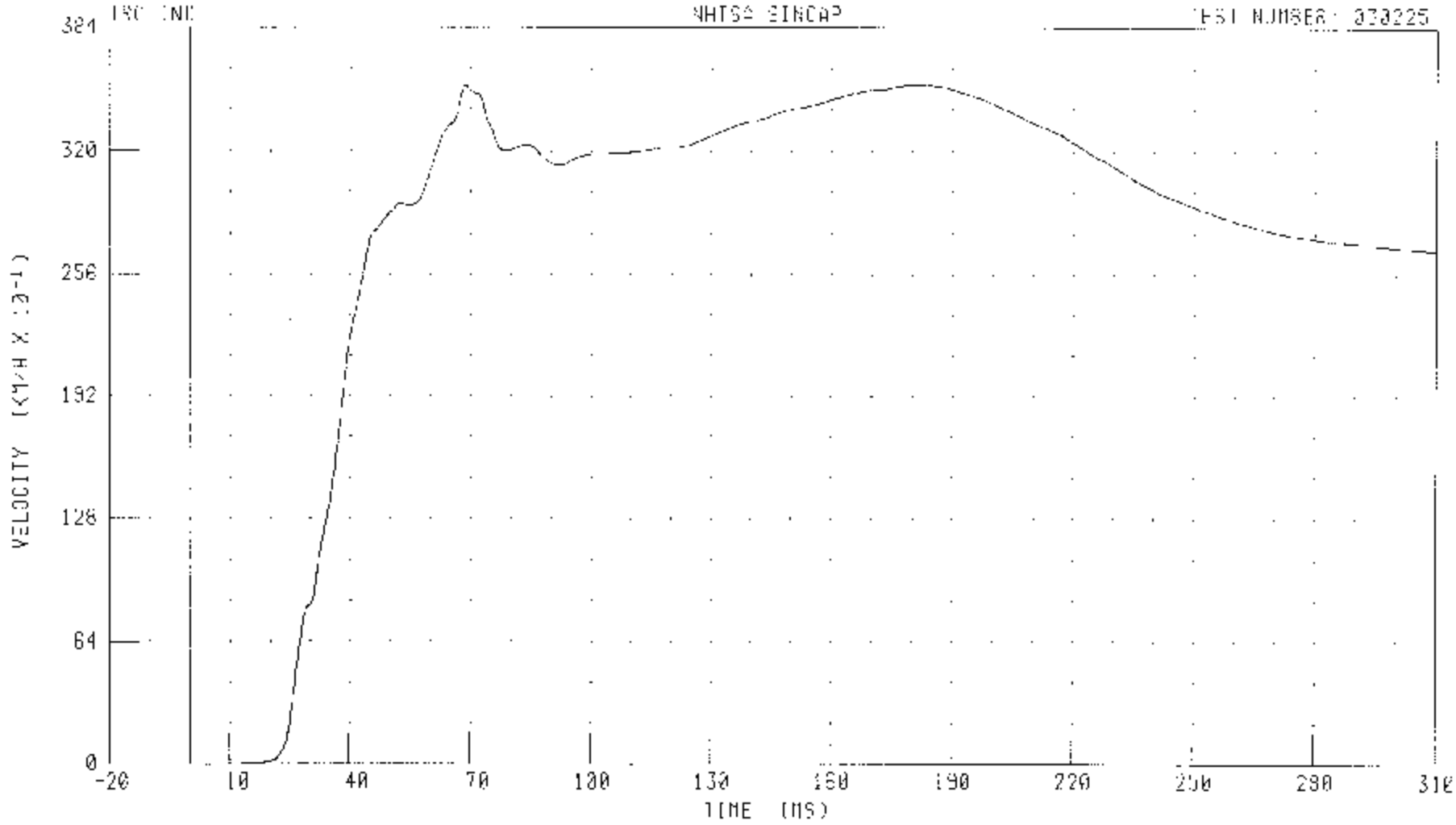


55/23 KMH 30 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN ALTIMA
DRIVER UPPER RIB Y-AXIS PCDF.EAT GN



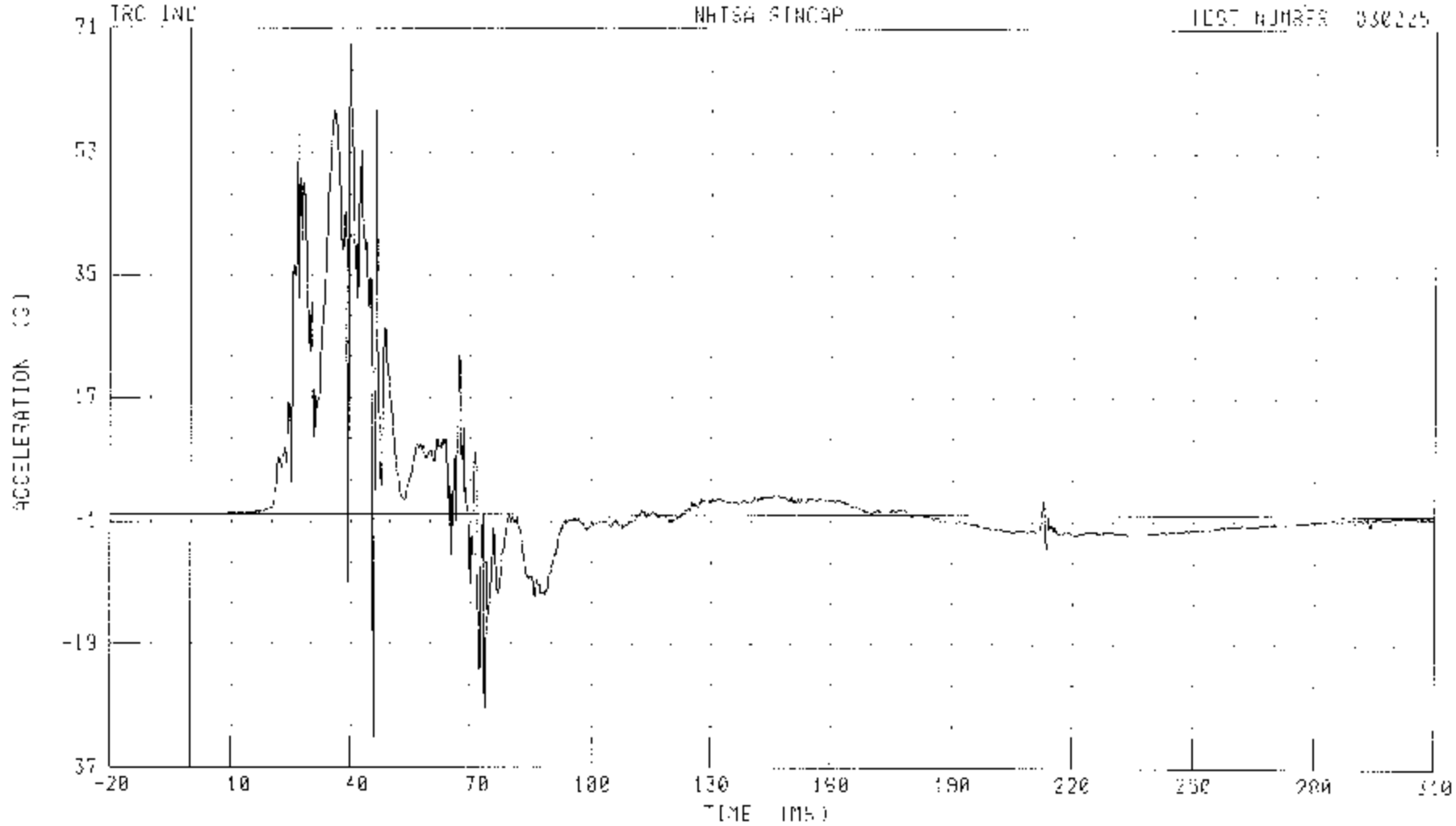
CHANNEL LURPG1 FILTER CH. CLASS 1000 PEAK DATA 64.91 G @ 38.40 MS, 35.14 G @ 73.76 MS

55/25 KPH 90 DEGREE NCAP SLED IMPACT (MOVING DEFORMABLE BARRIER) TEST LEFT SIDE OF 2003 NISSAN 350Z
DRIVER UPPER RIB Y AXIS VELOCITY



CHANNEL LURYYI FILTER CH. CLASS 180 PEAK DATA 35.41 KM/H @ 78.12 MS, 0.00 KM/H @ 0.00 MS

55/30 KPH 30 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
DRIVER LOWER RIB Y AXIS ACCELERATION

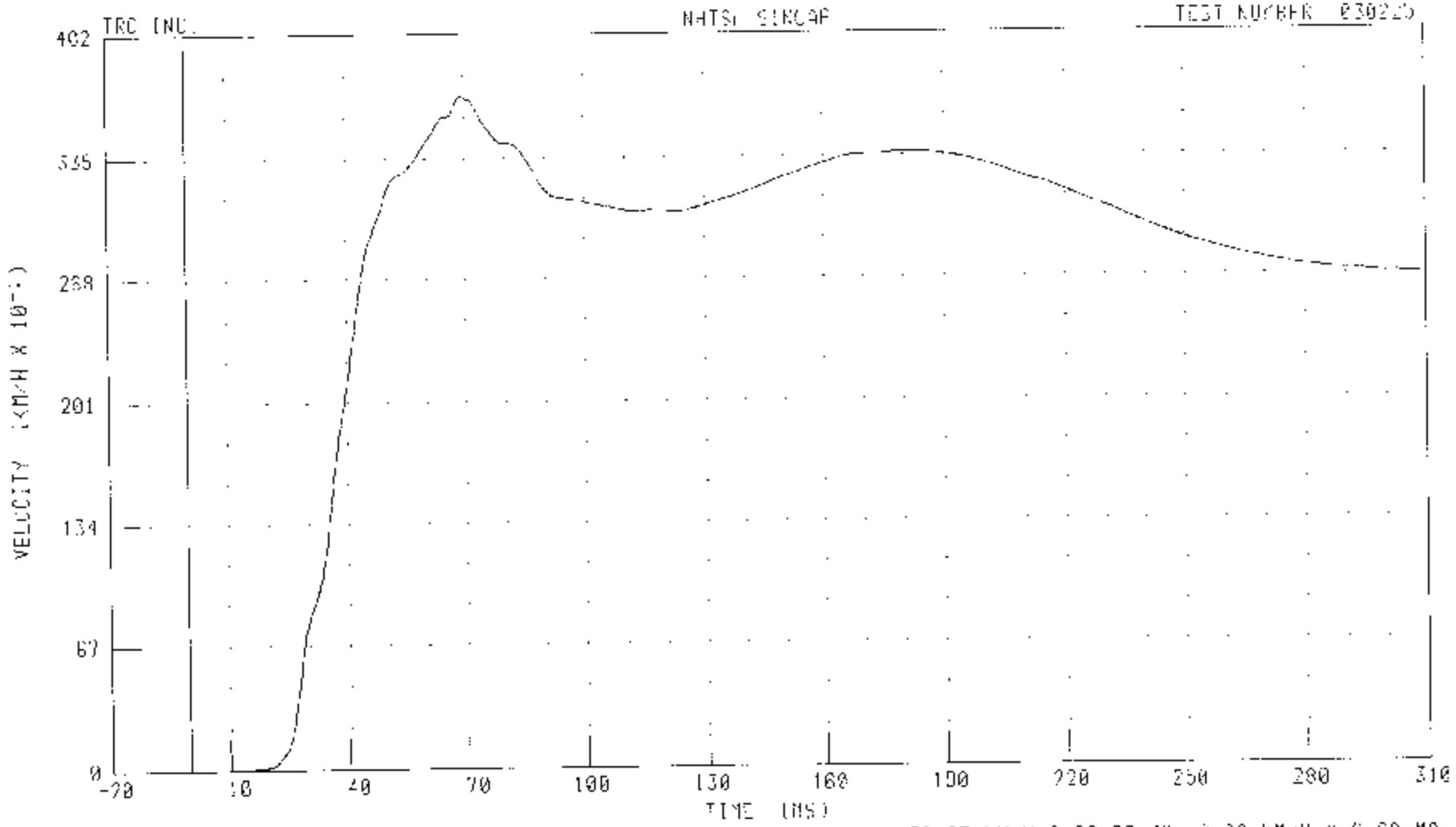


CHANNEL L1RYG1 FILTER CH. CLASS 1000 PEAK VALUE: 68.77 G @ 30.97 MS, -44.32 G @ 46.08 MS

55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2002 NISSAN 350Z

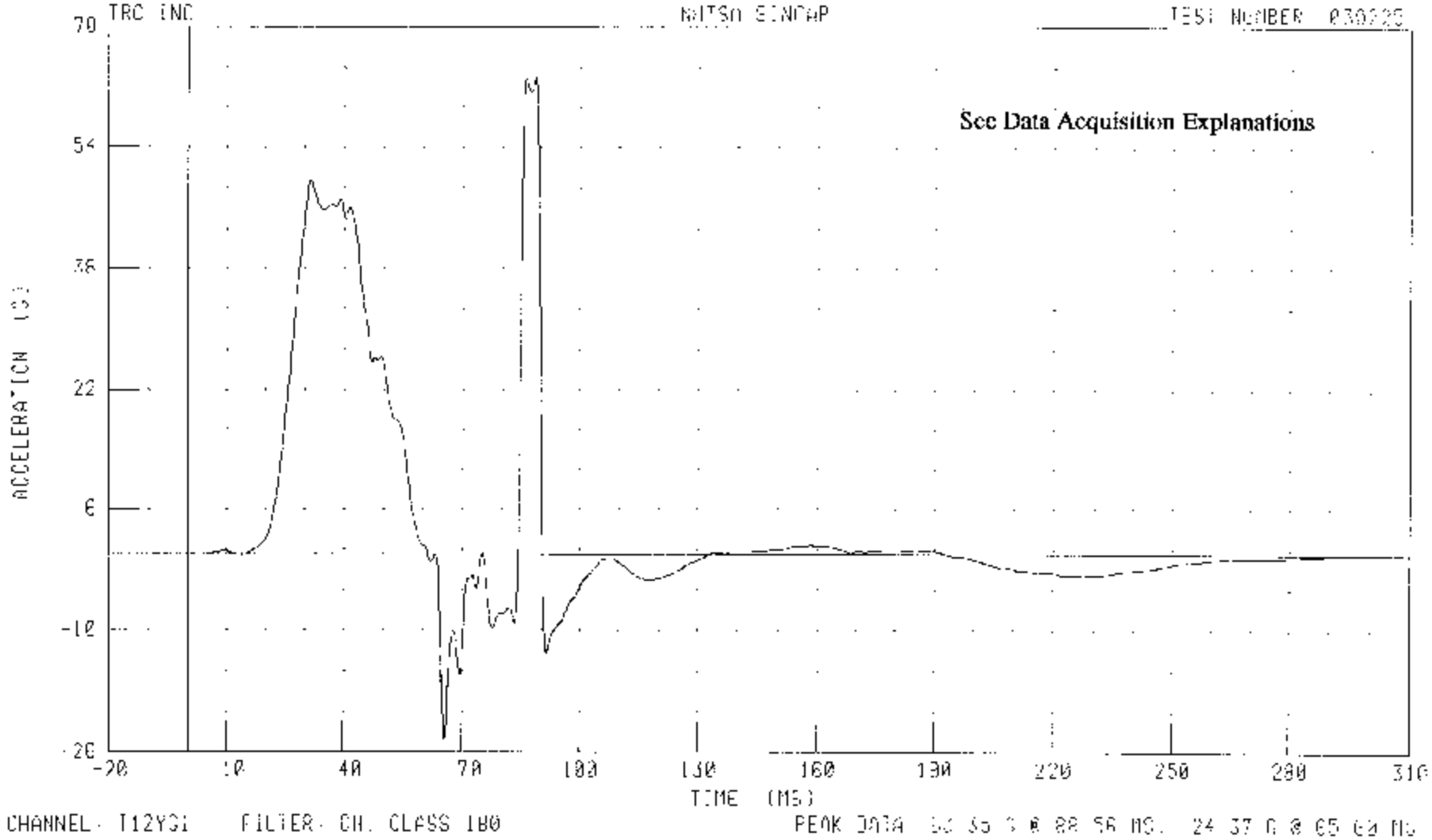
DRIVER LOWER RIB Y-AXIS VELOCITY

TRC INC. NHTSA SINCAP TEST NUMBER 030225



CHANNEL TIRYV1 FILTER CFC CLASS 180 PEAK DATA 36.87 KM/H @ 69.36 MS; 0.00 KM/H @ 0.00 MS

55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE - BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
DRIVER LOWER SPINE Y AXIS ACCELERATION

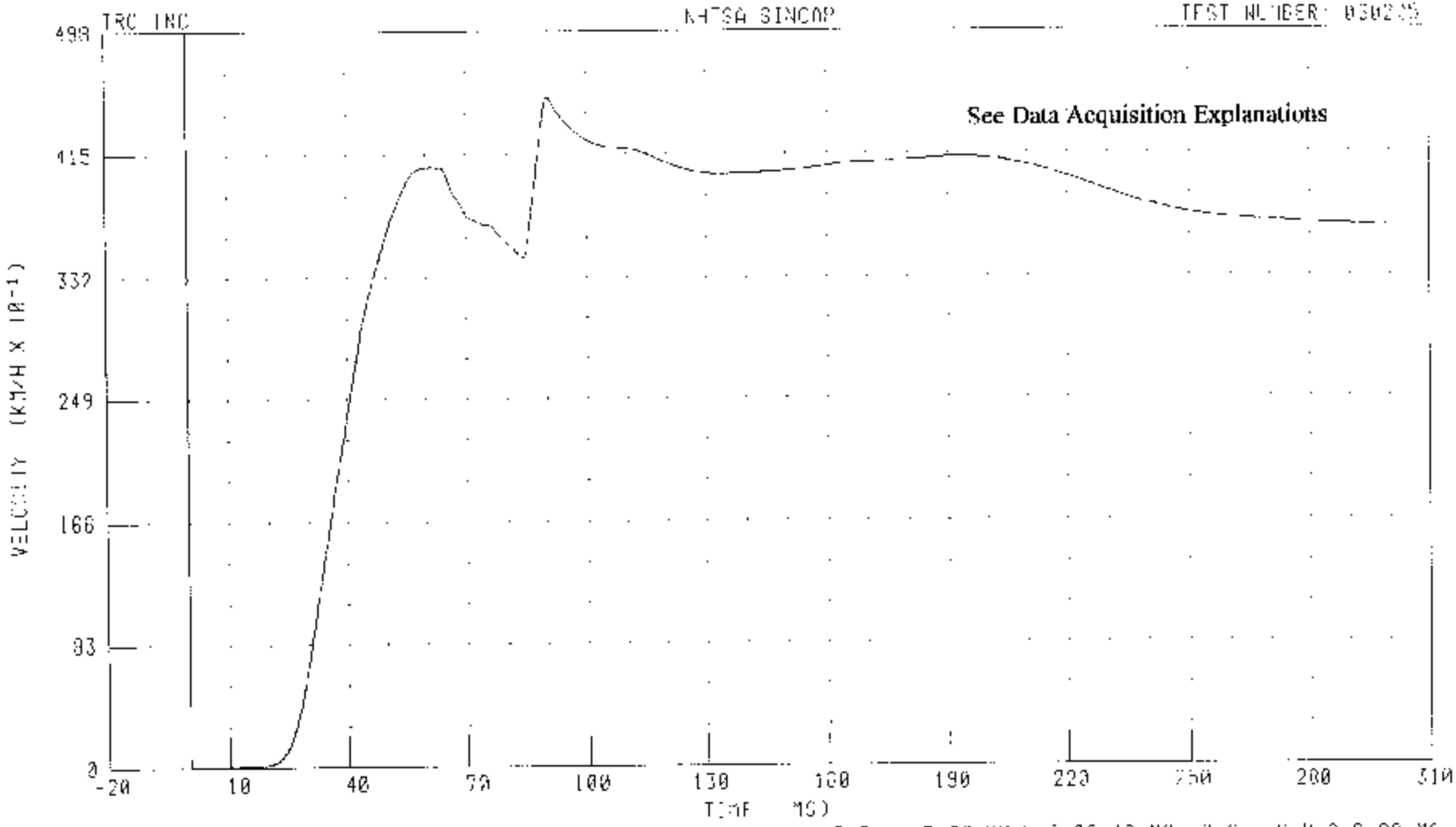


55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z

DRIVER FLOOR PINE X-AXIS VELOCITY

NHTSA SINCAP

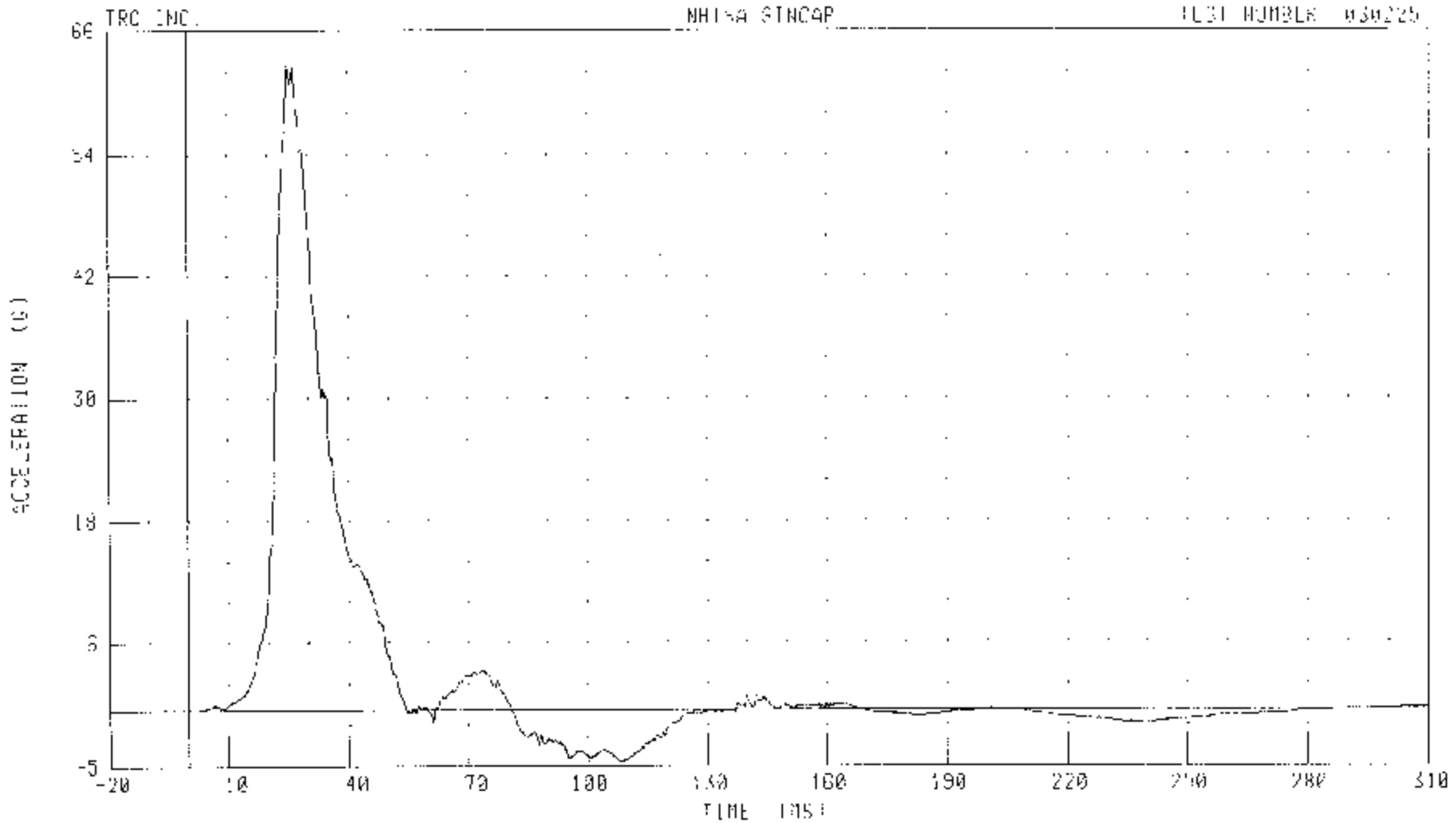
TEST NUMBER: 030225



CHANNEL: 12YV1 FILTER CH CLASS 180

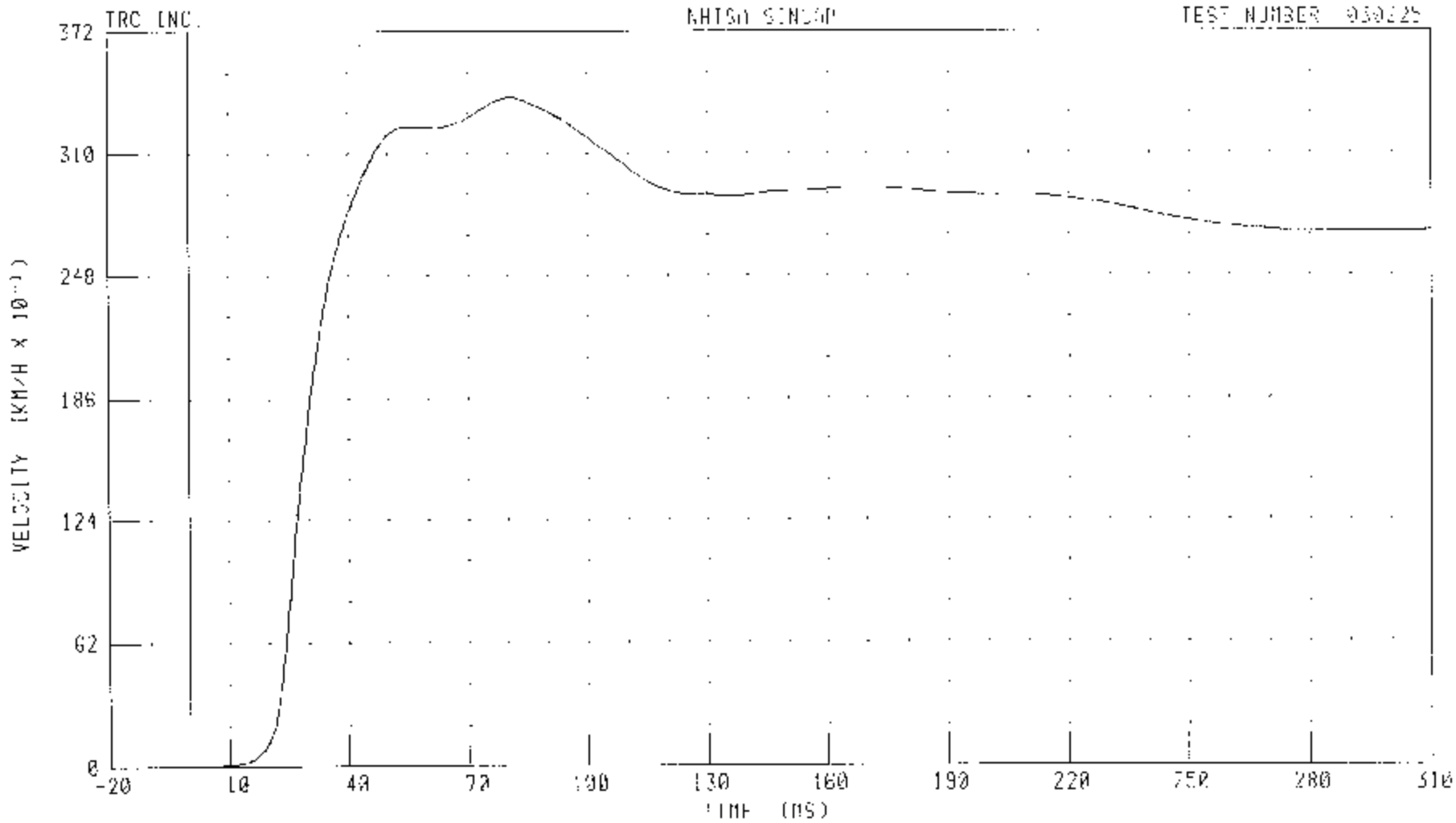
PEAK DATA: 47.33 KM/H @ 90.40 MS. 0.00 G/F @ 0.80 MS

55/28 KPH 30 DEGREES VEAR SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2002 NISSAN 350Z
DRIVER PELVIS Y-AXIS ACCELERATION



55/73 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z

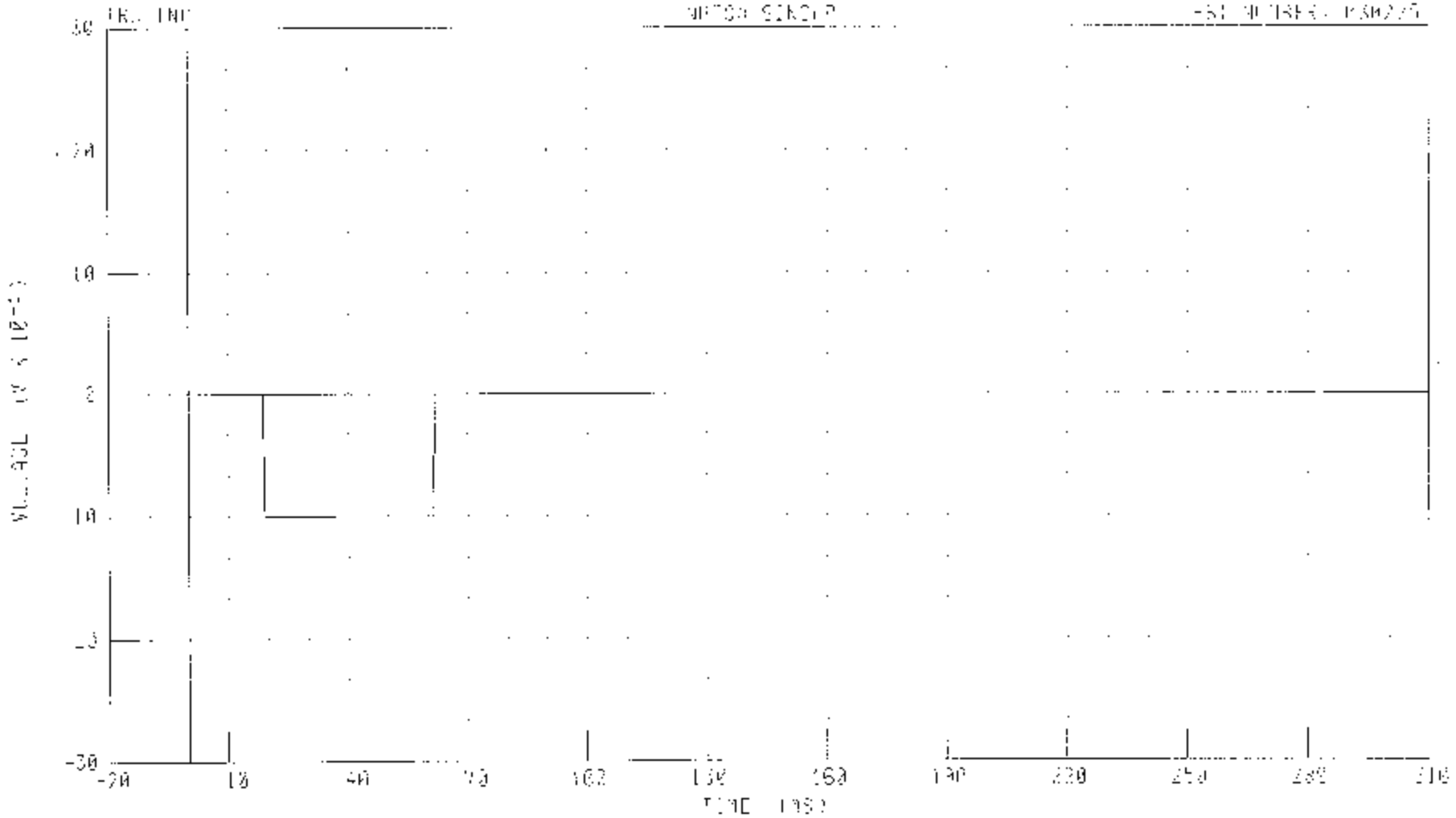
DRIVER R-.VIS Y-AXIS VELOCITY



CHANNEL PEVYV1 FILTER CH CLASS 100

PEAK DATA 33.85 KM/H @ 81.04 MS, 0.00 KM/H @ 0.00 MS

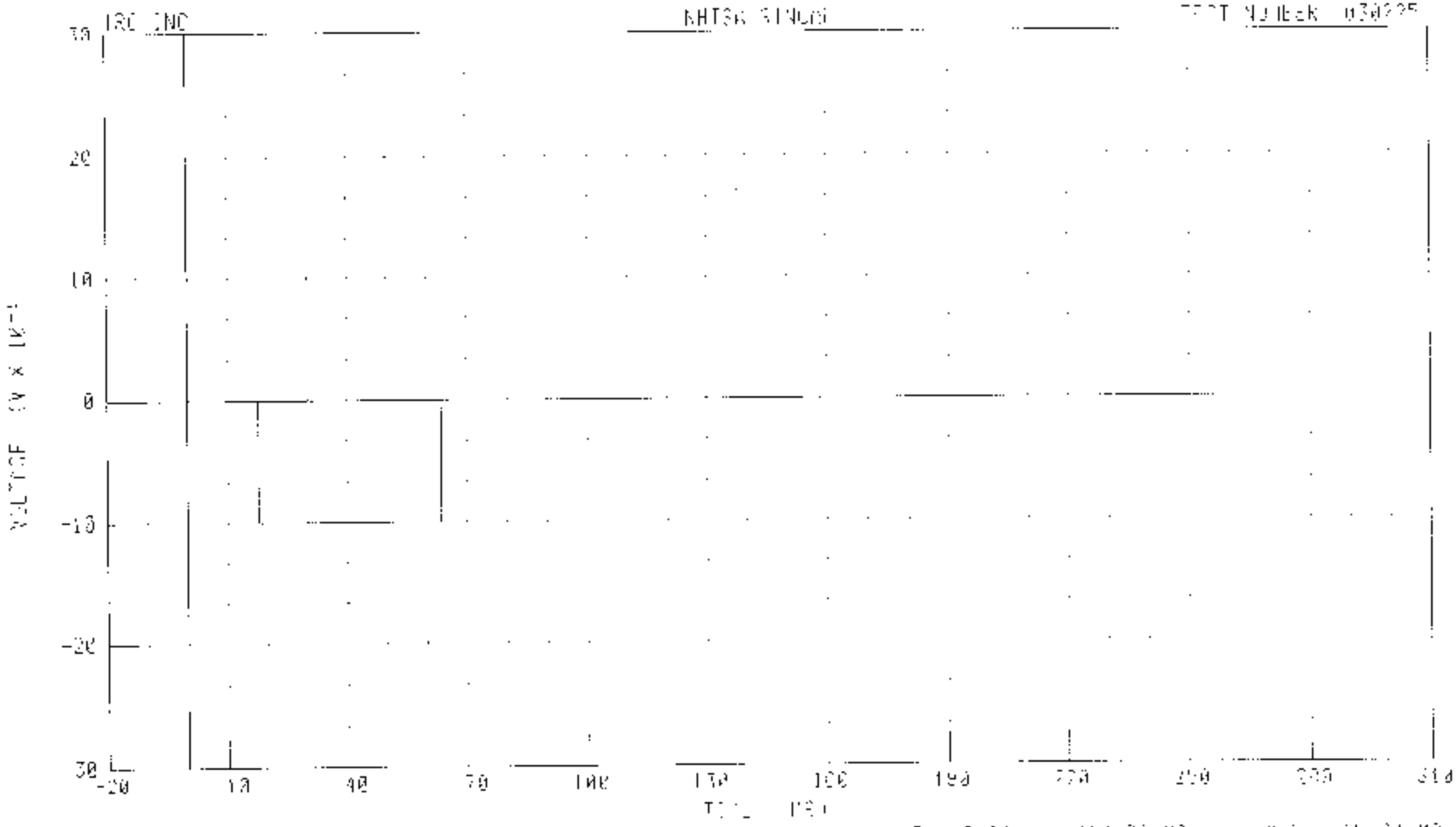
55/13 KMH 90 DEGREE NEAR SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
DRIVER SHOULDER CONTACT SWITCH



CHANNEL CH - 1 FILTER CH 1655 1000

55/20 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
DRIVER PER VTS CONTACT SWITCH

IRC INC — MHTSR SINGAPORE — TEST NUMBER 030225

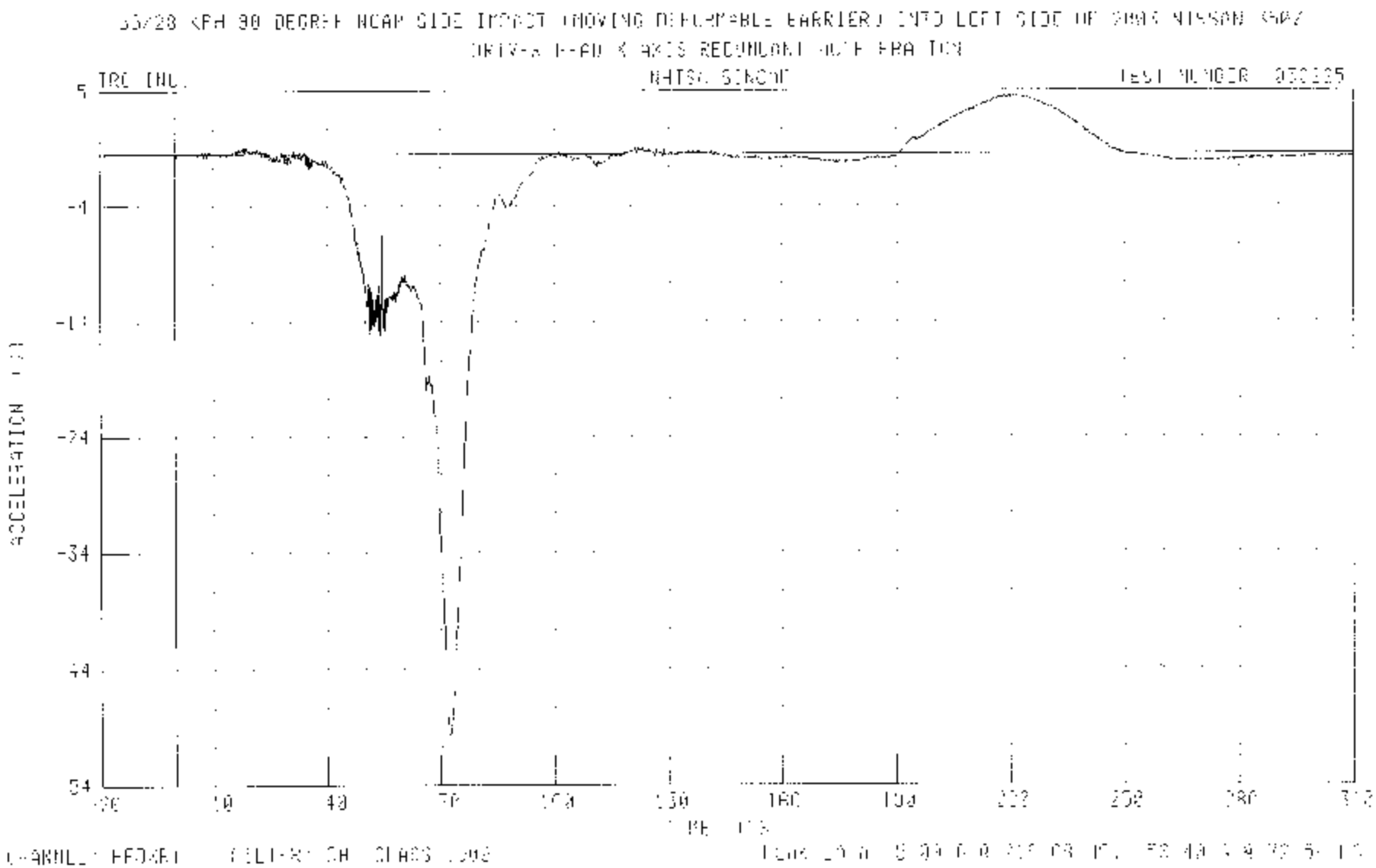


CHANNEL POWER FILTER: CFC CLASS 1000 PERF DATA: 0.00 M 313.30 MS, 00 7 0 15 54 MS

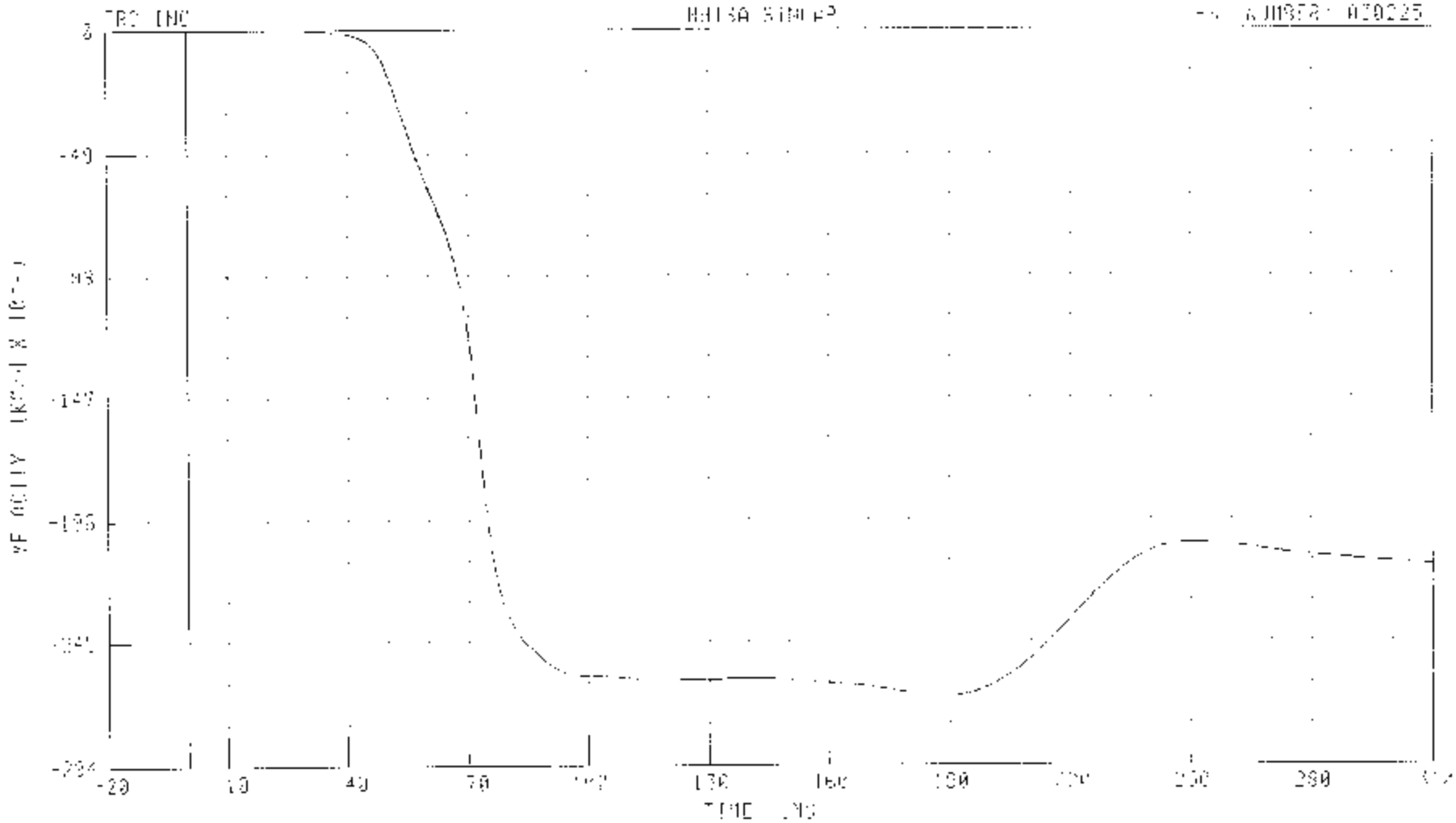
Driver Dummy Instrumentation Plots

Acceleration Data - Filter Class 1000 - Redundant

Integration Data - Filter Class 180 - Redundant

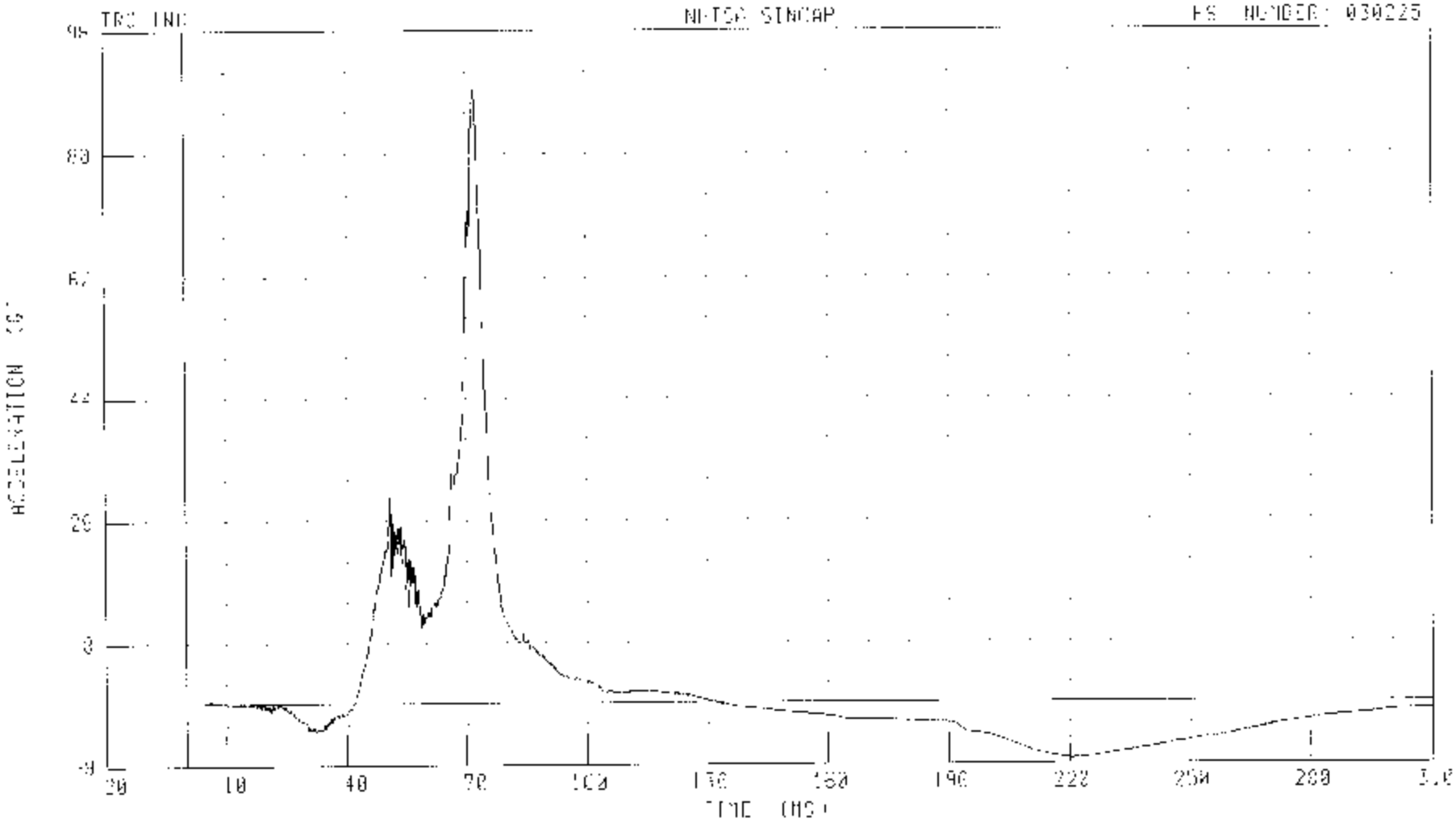

55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2001 NISSAN 5DR
UNIVERSAL HEAD X AXIS REDUNDANT DATA FRAME
TRC INC.
NHTSA SINGLE
TEST NUMBER 030225
ACCELERATION (G)
5
-4
-14
-24
-34
-44
-54
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)

55/20 KP - 30 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2WD FIESTA 3502
DRIVER H-P3 - AXIS REDUNDANT VELOCITY

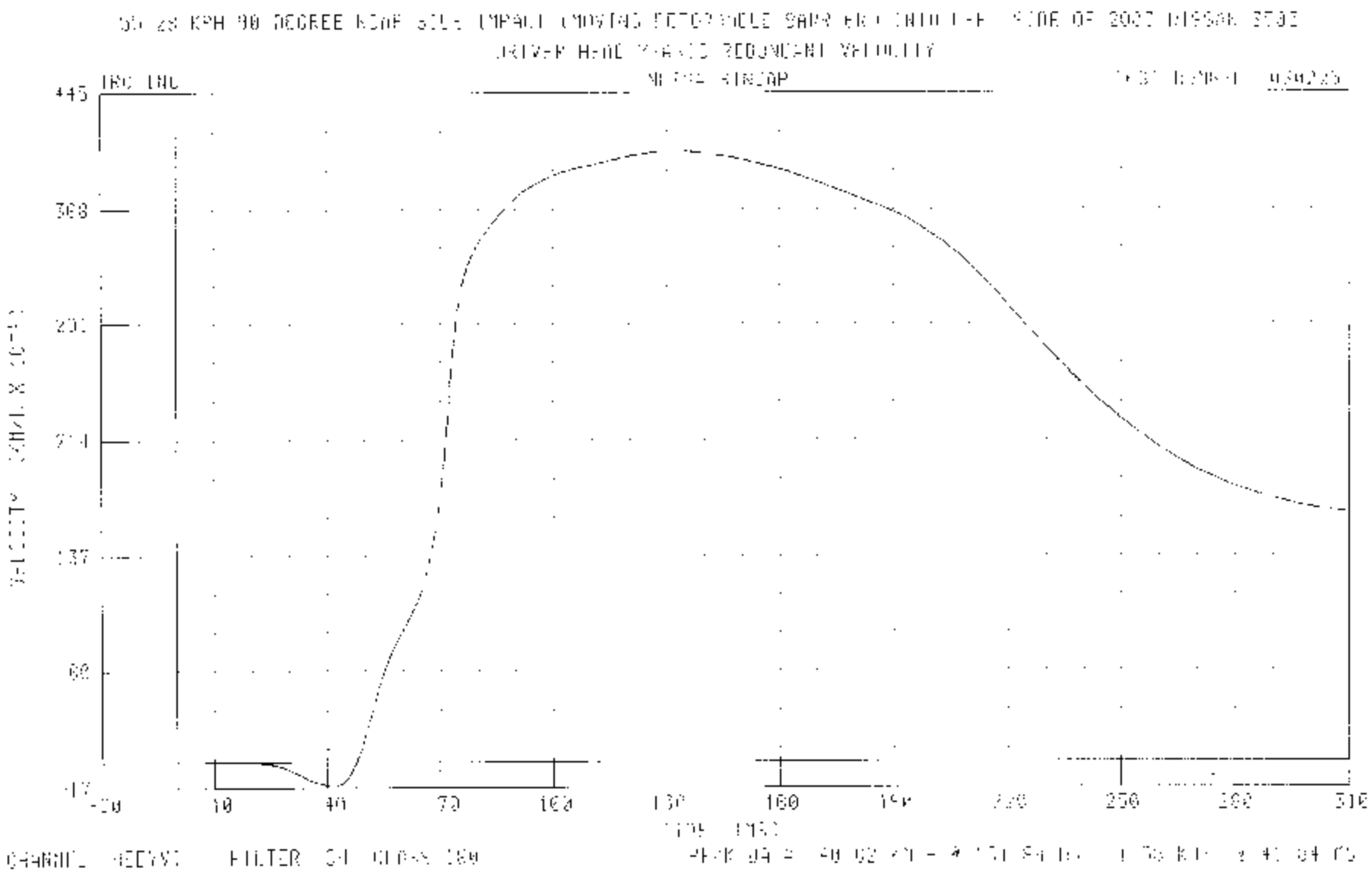


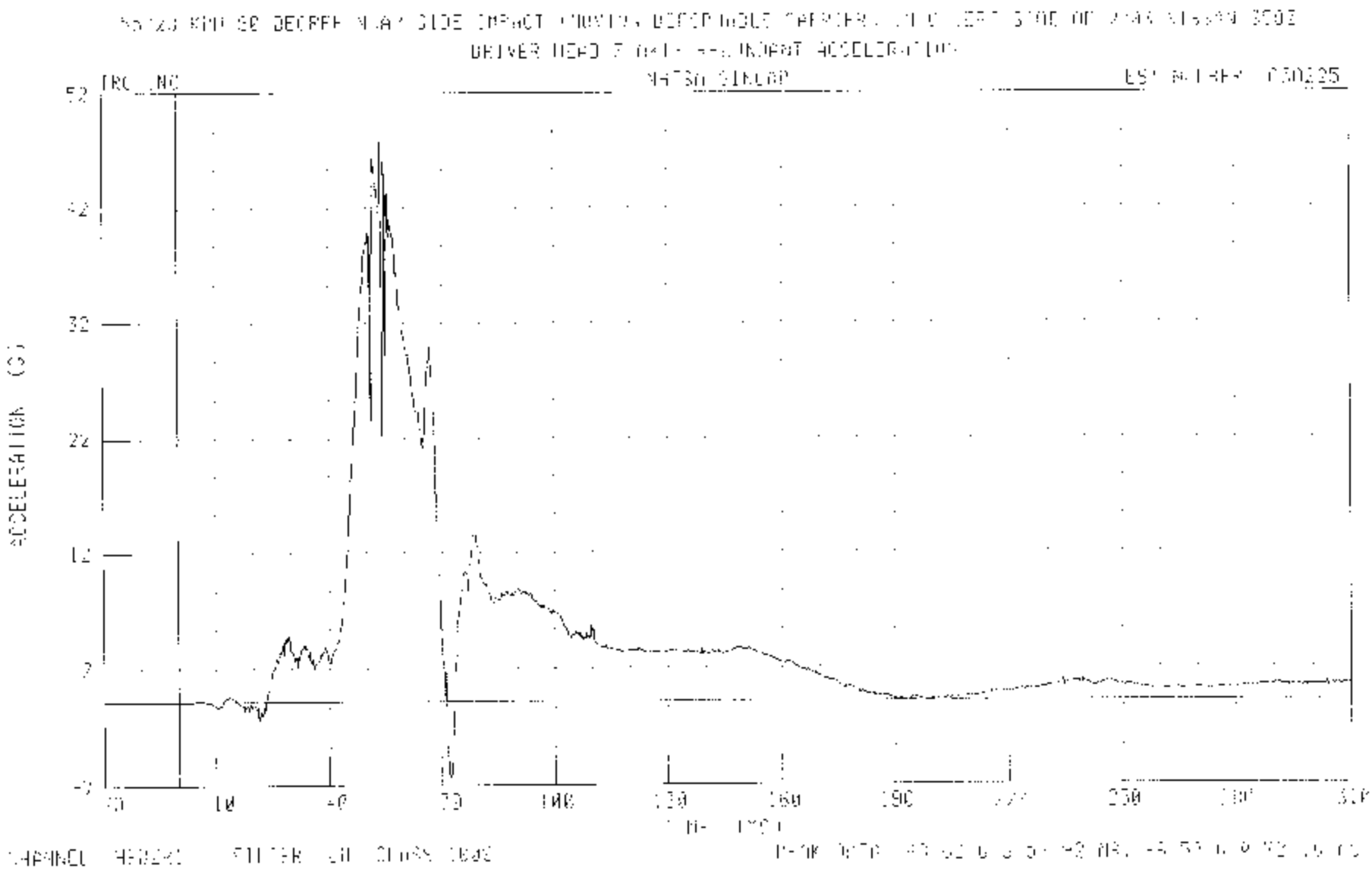
CHANNEL NUMBER FILTER CLASS 180 PLOT DATE: 0 DAY 0 HR 0 MIN 0 SEC

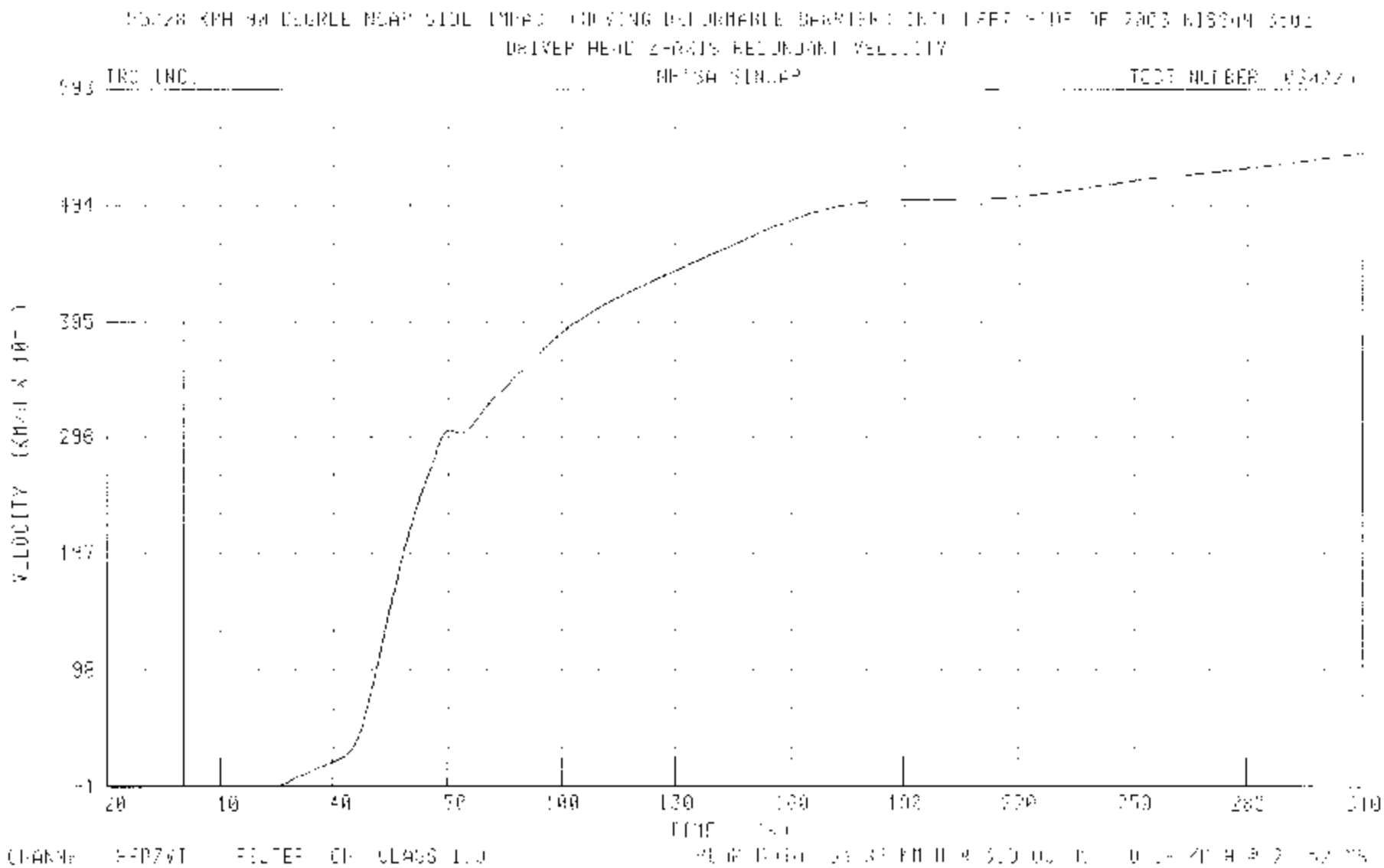
55/28 KPH 30 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2000 NISSAN 350Z
DRIVER HEAD Y-AXIS REDUNDANT ACCELERATION

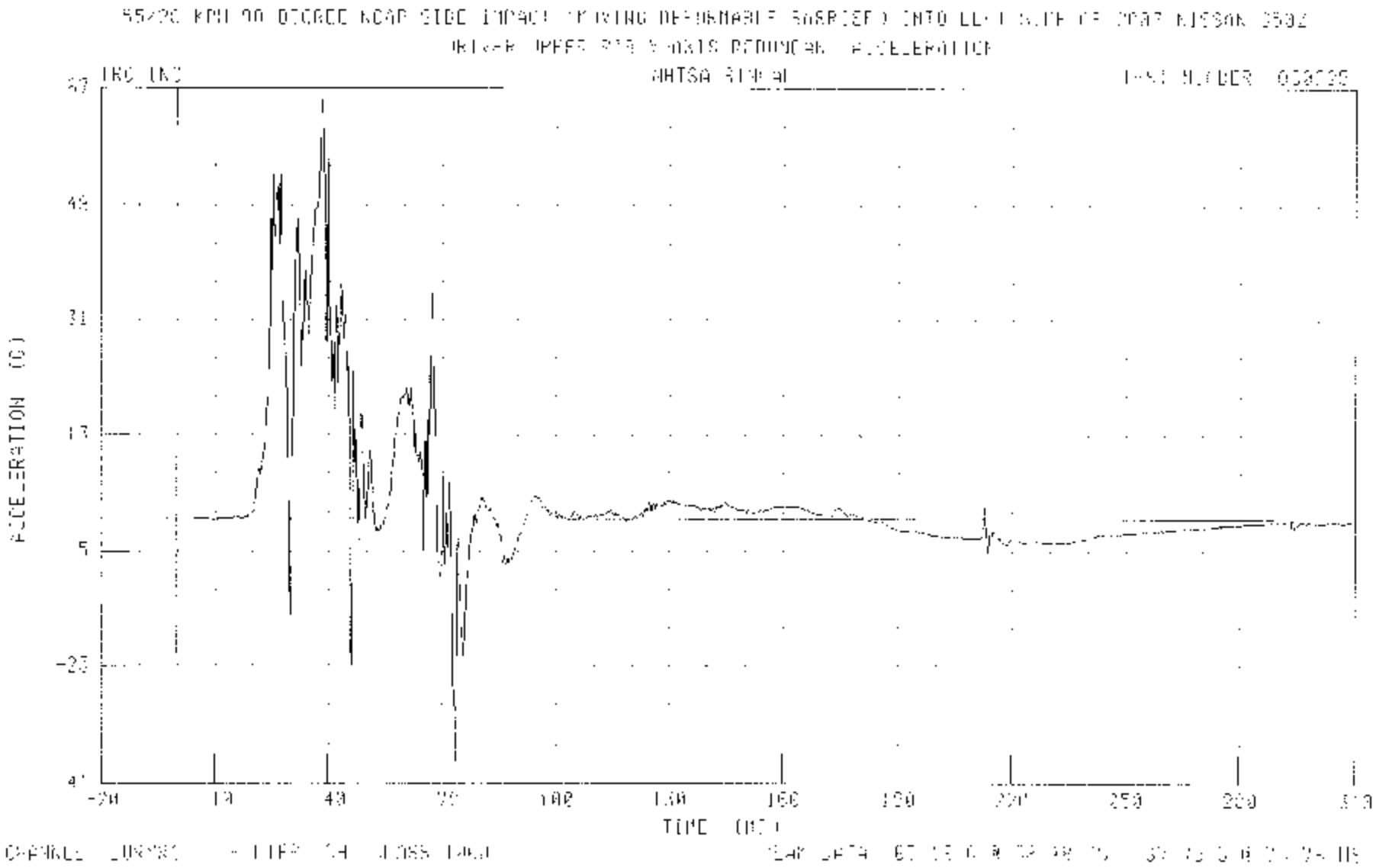


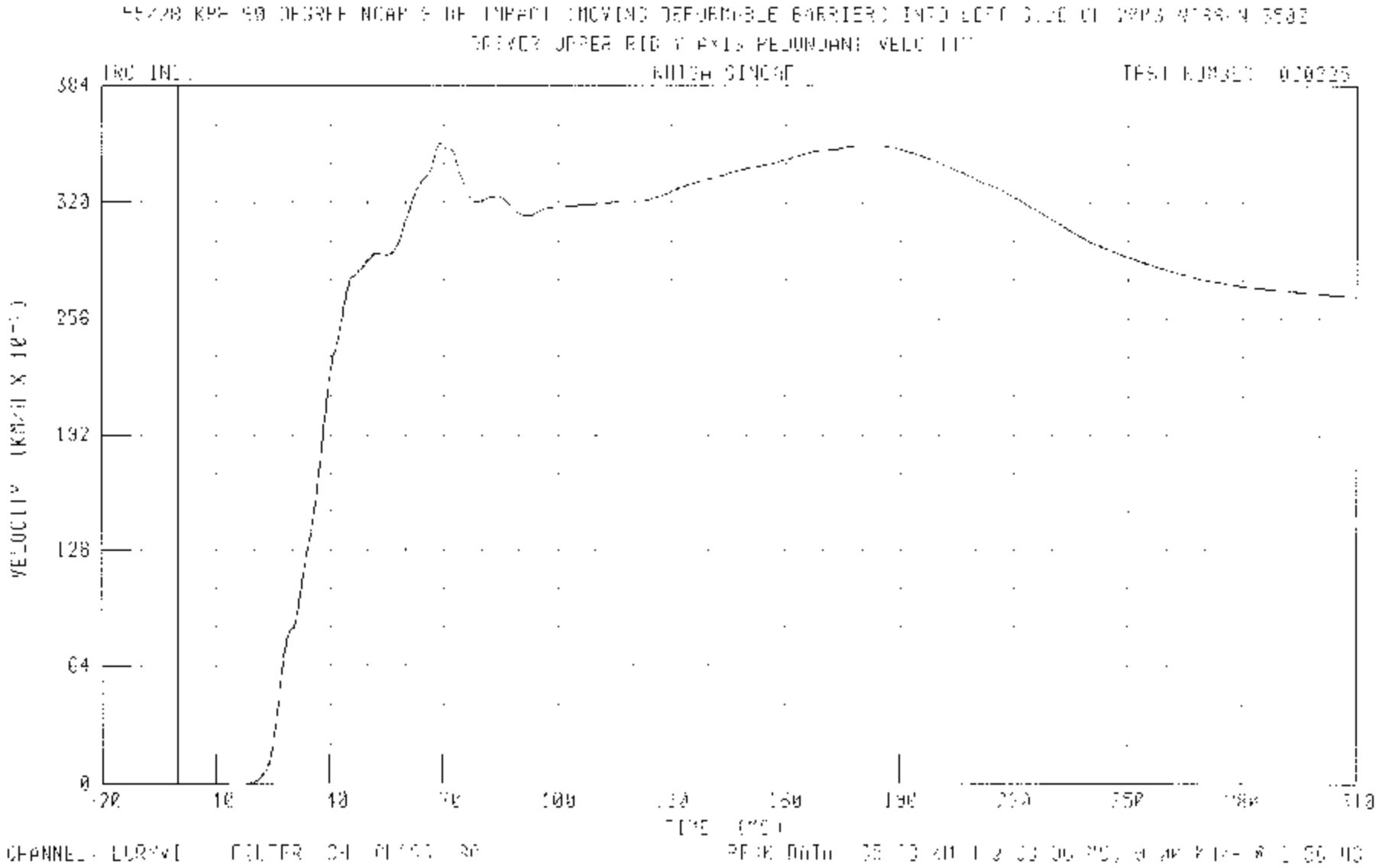
CHANNEL HEDMNT FILTER LB CLASS 1000 PEAK DATA

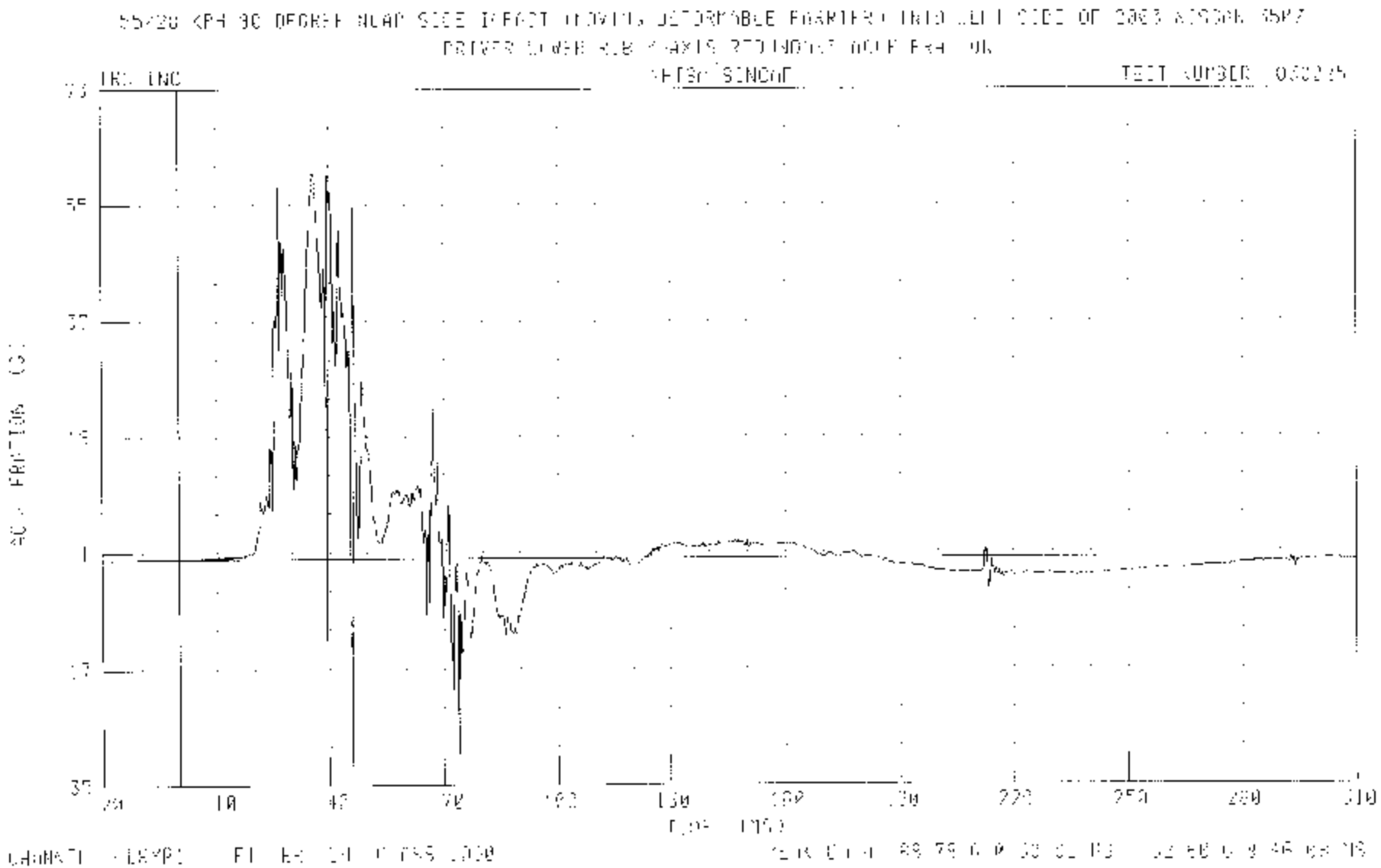

445
368
291
214
137
60
-17
-20
10
40
70
100
130
160
190
220
250
280
310

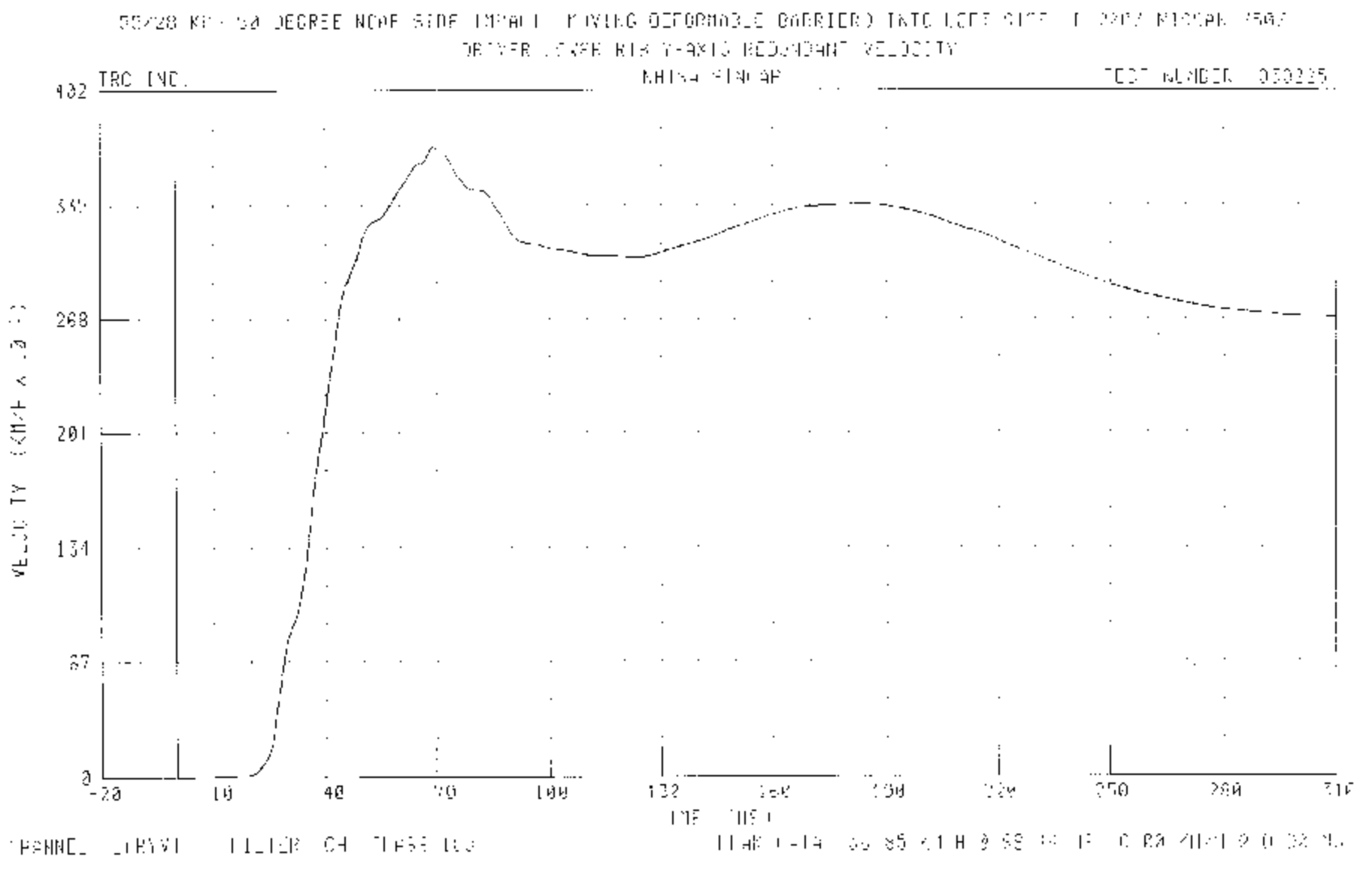

DRIVER HEAD
ACCELERATION (G)
52
42
32
22
12
2
-8
10
40
70
100
130
160
190
230
310

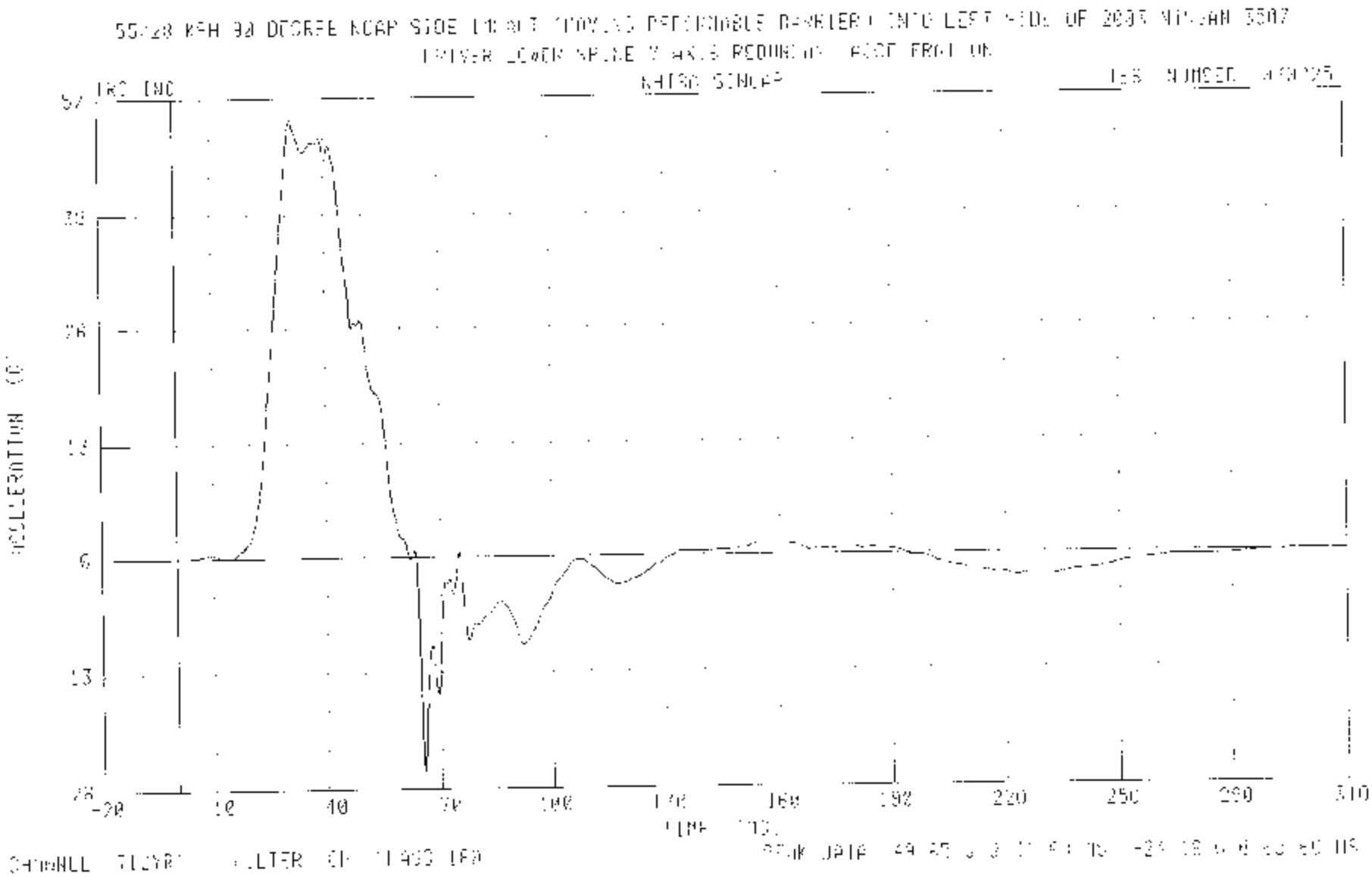

DRIVER HEAD Z-AXIS RELUNANT VELOCITY
TRC INC.
TEST NUMBER
VELOCITY (KM/H X 10^-1)
593
494
395
296
197
98
-1
20
10
40
50
100
130
200
250
280
310
TIME


55/20 KMH 90 DEGREE ROAD SIDE IMPACT TOWING DEFORMABLE BARRIER INTO LEFT SIDE OF 2007 NISSAN 350Z
DRIVER UPPER RIB X-AXIS RESULTANT ACCELERATION
IRC_INC
NHTSA SIMAL
TEST NUMBER 030225
ACCELERATION (G)
TIME (MS)

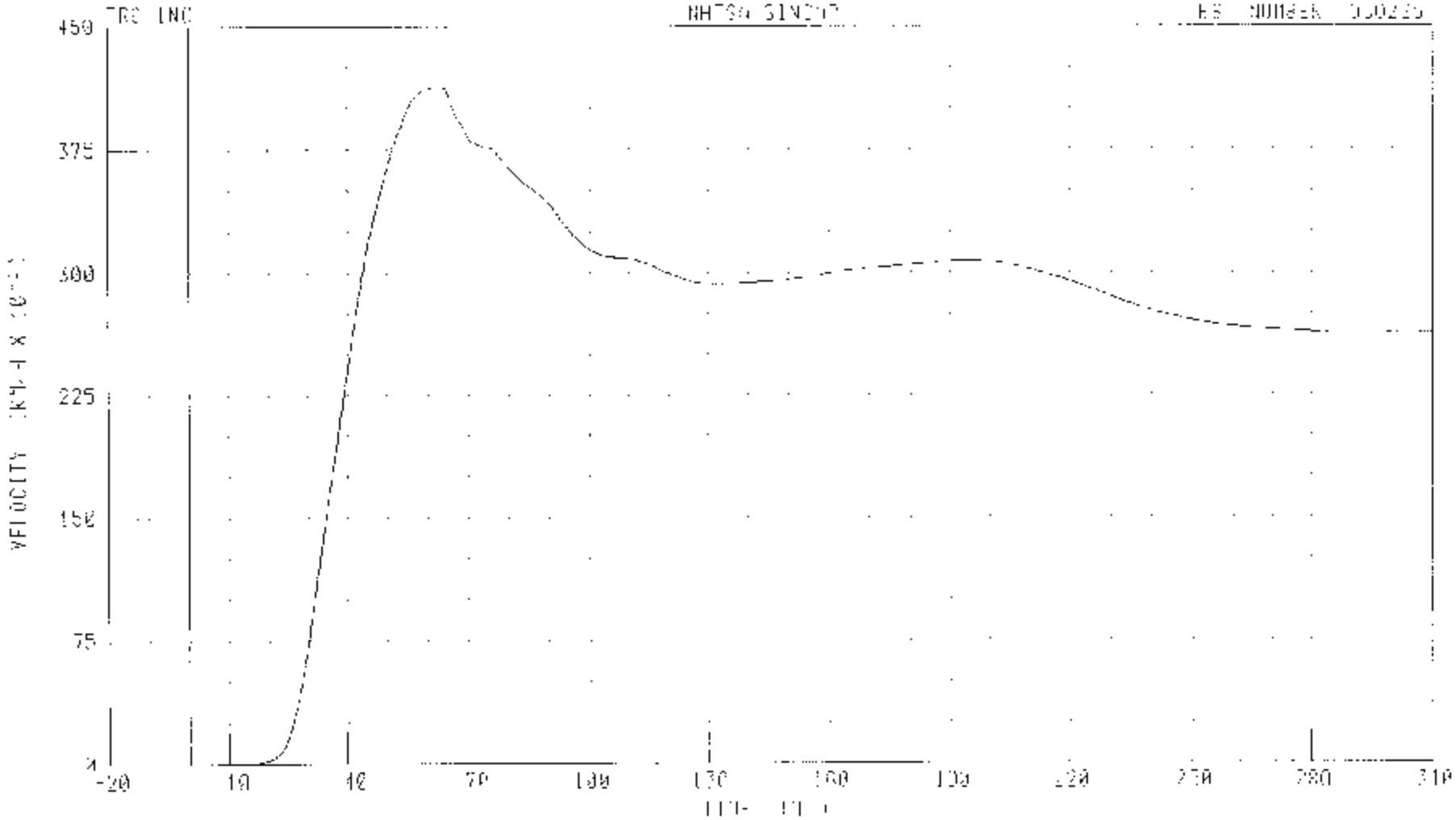

384
320
256
192
128
64
0
VELOCITY (KM/H X 10^-1)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
TEST NUMBER 020225

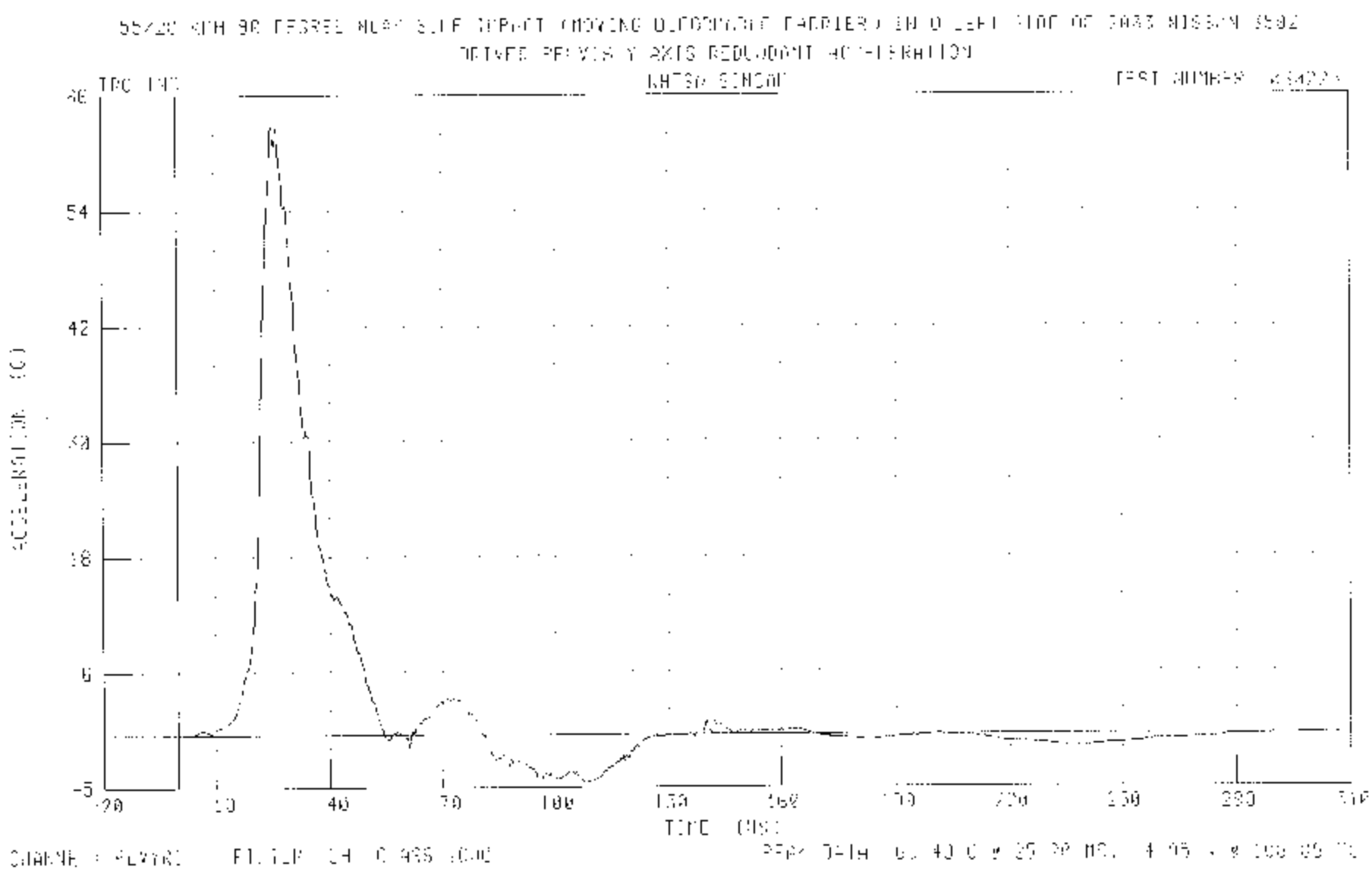

TEST NUMBER
TIME (MS)

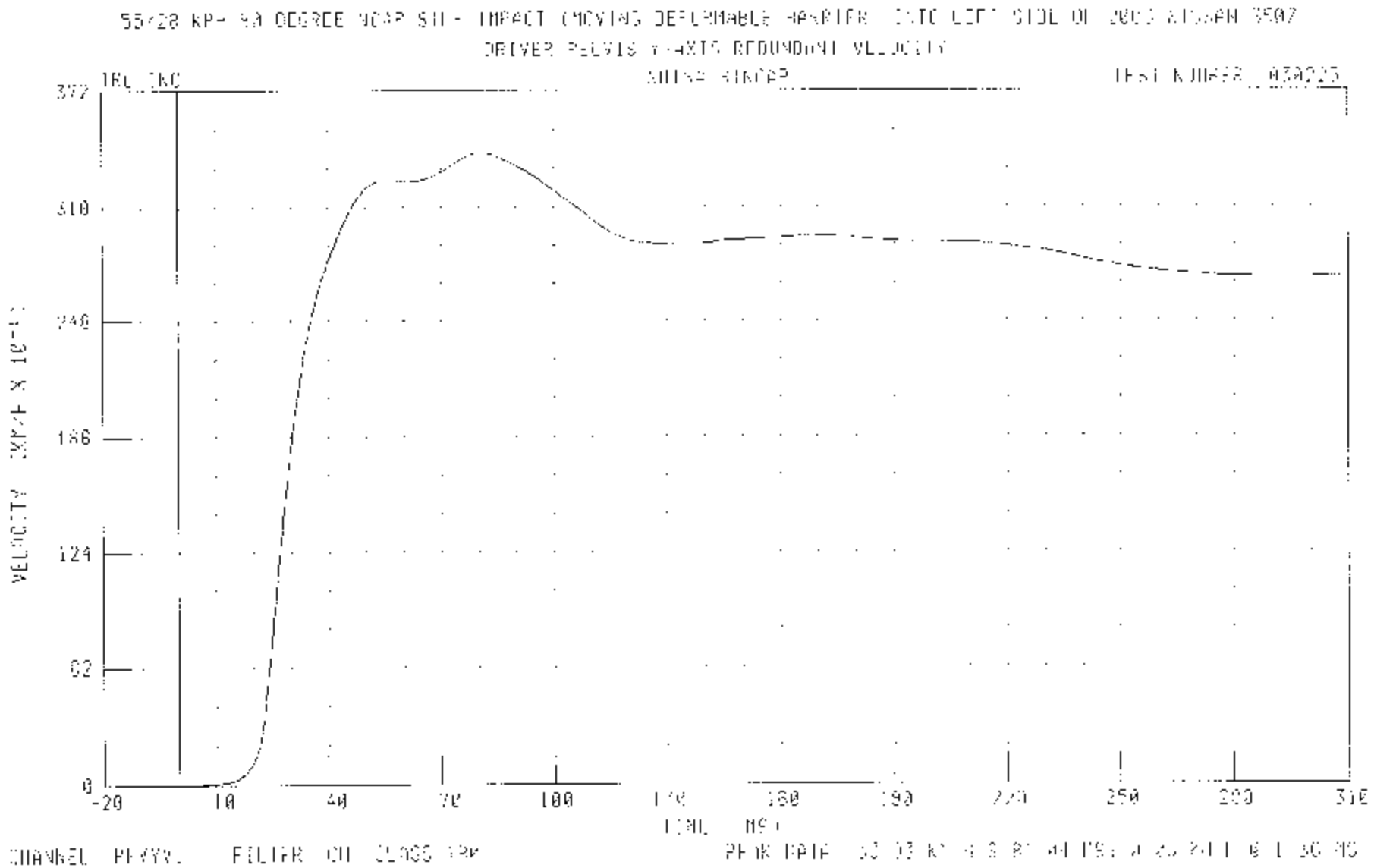

TRC INC.
TEST NUMBER 030225
402
335
268
201
134
67
0
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)


55.28 KPH 90 DEGREE NCAP SIDE IMPACT (100% DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
DRIVER LOWER SPINE Y AXIS REDUCING FOOT FROM ON
NHTSA SINGLE
TEST NUMBER
ACCELERATION (G)
TIME (MS)
CHANNEL TITLE
FILTER CF
PEAK DATE

55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING COLLAPSIBLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
DRIVER (LOWER SPINE Y AXIS) RELEVANT VEHICLE




55/20 KPH 90 DEGREE NCAP SLED IMPACT (MOVING DEFORMABLE BARRIER) IN D LEFT SIDE OF 2003 NISSAN 350Z
DRIVER PRIMARY AXIS REDUNDANT ACCELERATION
WHISK SENSOR
TEST NUMBER
TPC INC
56
54
42
30
18
6
-5
ACCELERATION (G)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL = PLYRI
FILTER CH C 4KS (CFC
REF DATA

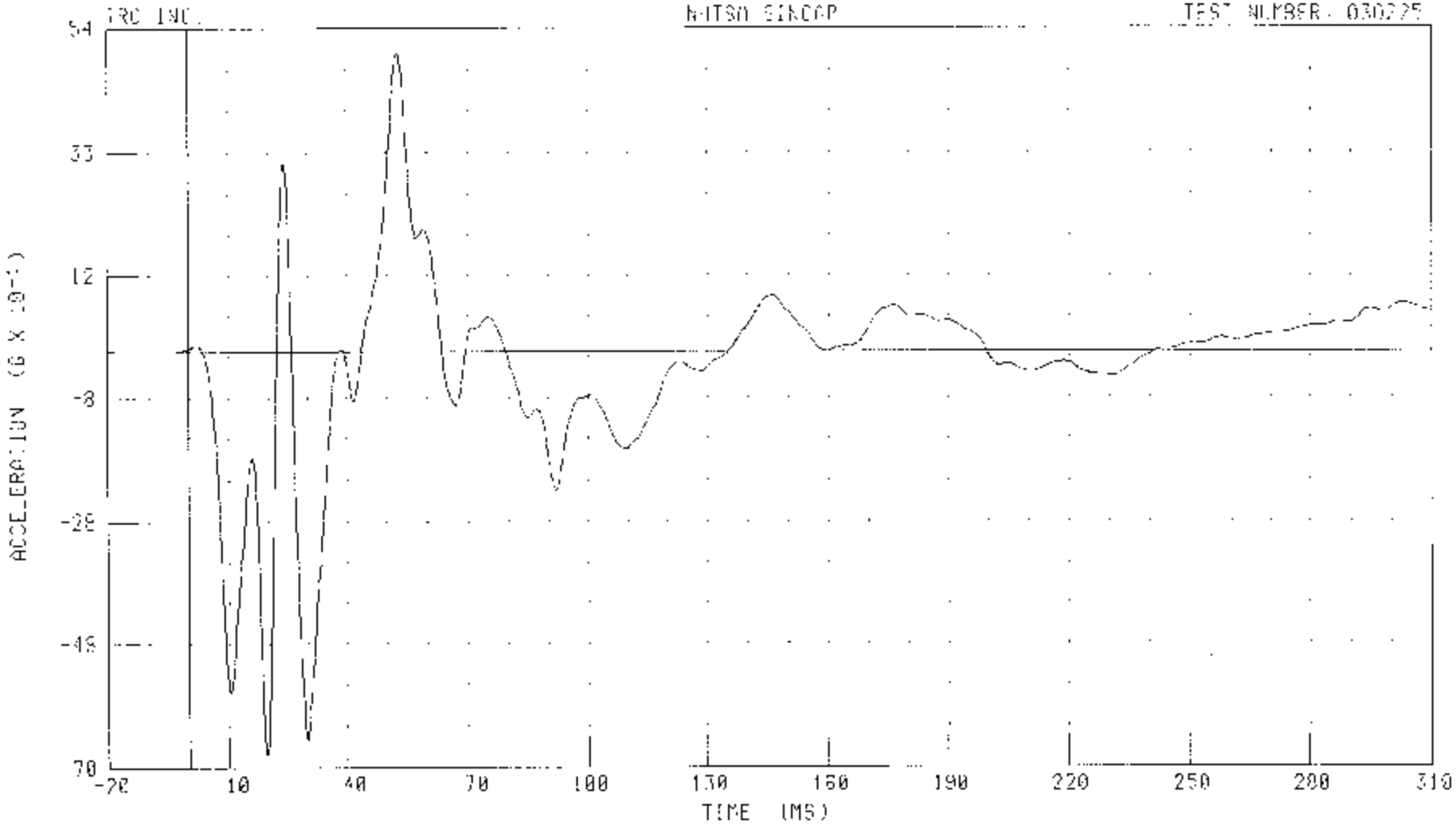

55/20 KPH 90 DEGREE BOAR SIL - IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 3507
DRIVER PELVIS X-AXIS RESULTANT VELOCITY
SUBJ: SINGER
TEST NUMBER 030225
IRL IKC
372
310
248
186
124
62
0
VELOCITY (MAX X 10-1)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL PRVVV. FILTER CH CLASS 180
PEAK DATE

Test Vehicle Instrumentation Plots

Acceleration Data - Filter Class 60

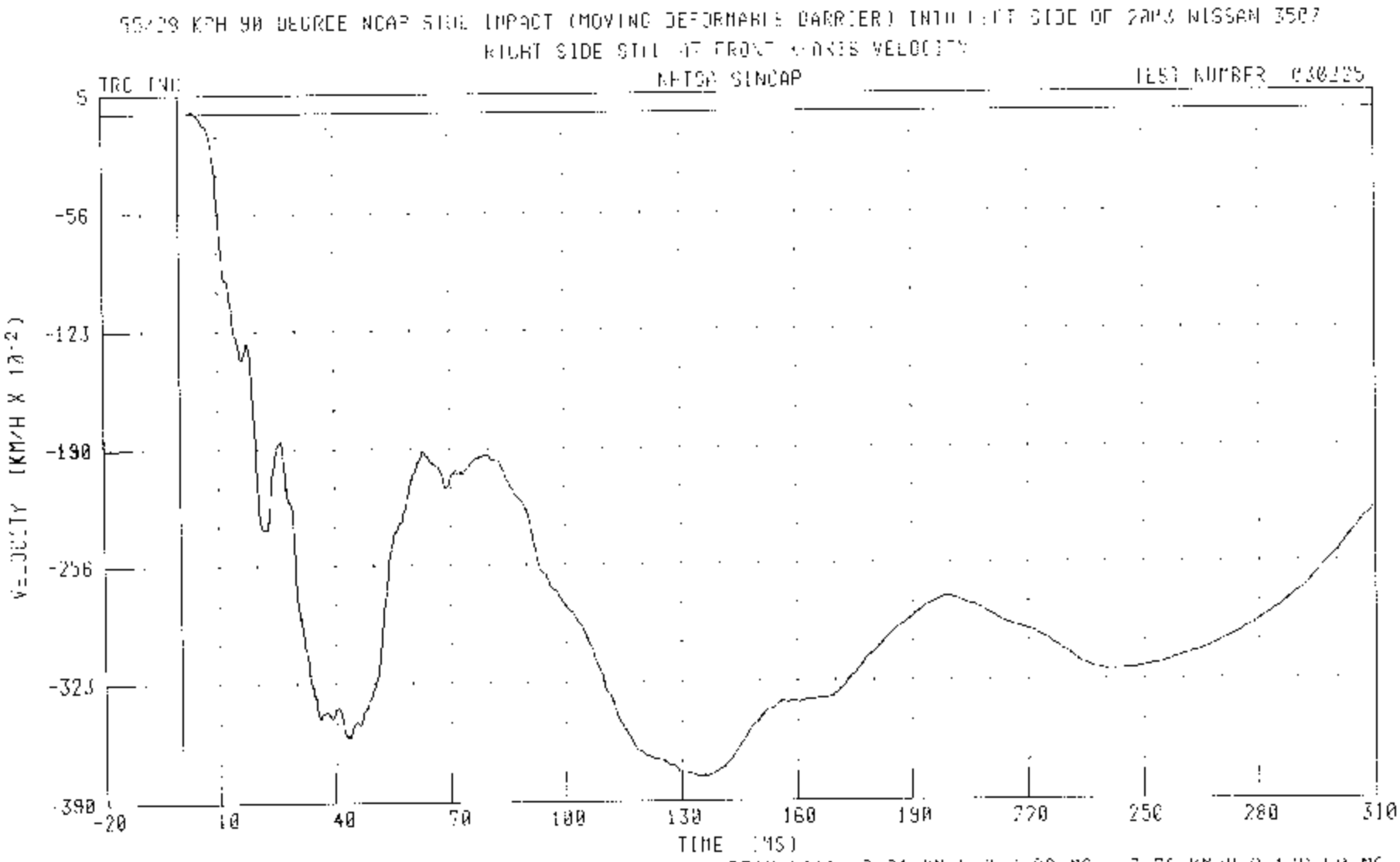
Integration Data - Filter Class 180

55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2447 NISSAN 3507
RIGHT SIDE SIL. AT FRONT Y-AXIS ACCELERATION

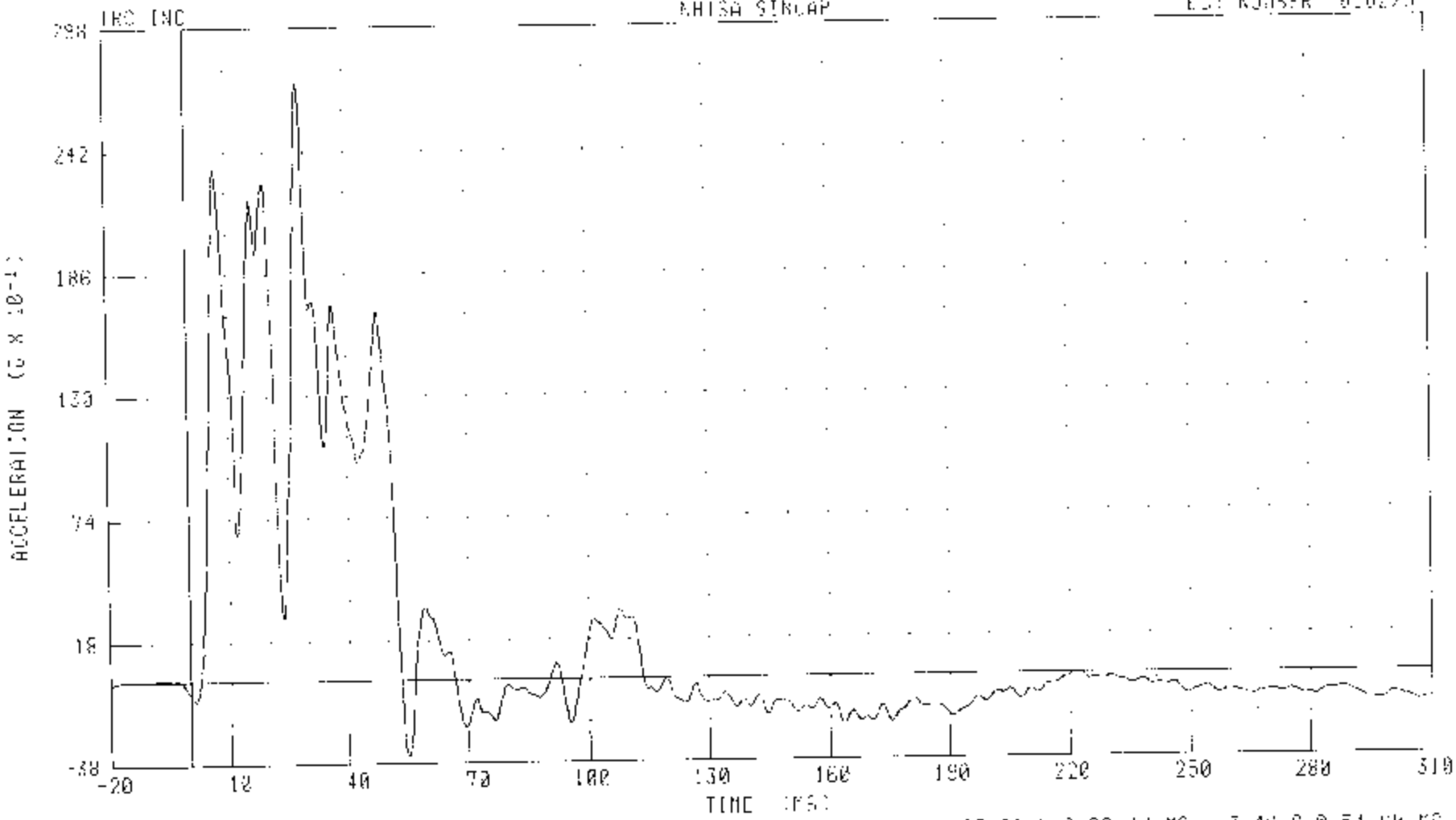


CHANNEL RFSXG1 -IL ER CH CLASS 60

PEAK DATA: 5.00 G @ 52.38 MS, -6.88 G @ 19.68 MS


55/29 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
RIGHT SIDE STILL AT FRONT AXLE VELOCITY
TRC INC
NHTSA SINCAP
TEST NUMBER 030225
VELOCITY (KM/H X 10^-2)
5
-56
-123
-190
-256
-323
-390
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL RFSXV1 FILTER CH. CLASS 180
PEAK DATA 0.01 KM/H @ 3.60 MS -3.76 KM/H @ 136.80 MS

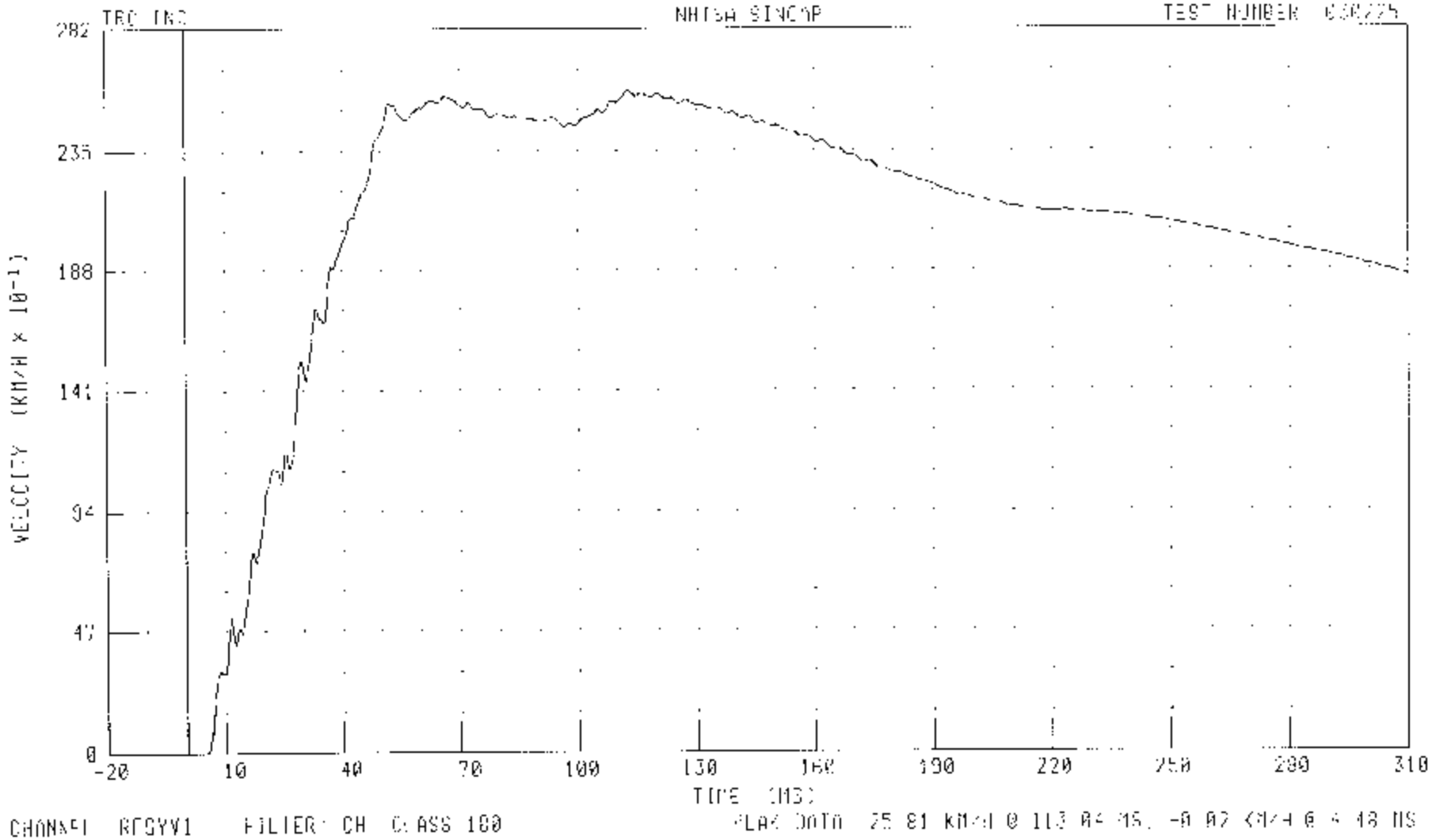
55/28 KPH 90 DEGREE NEAR SIDE IMPACT IMPING DEFORMABLE BARRIER INTO LEFT SIDE OF 2003 NISSAN 350Z
RIGHT SIDE SILL AT FRONT X-AXIS ACCELERATION



CHANNEL : RFSYG1 FILTER CH CLASS 60

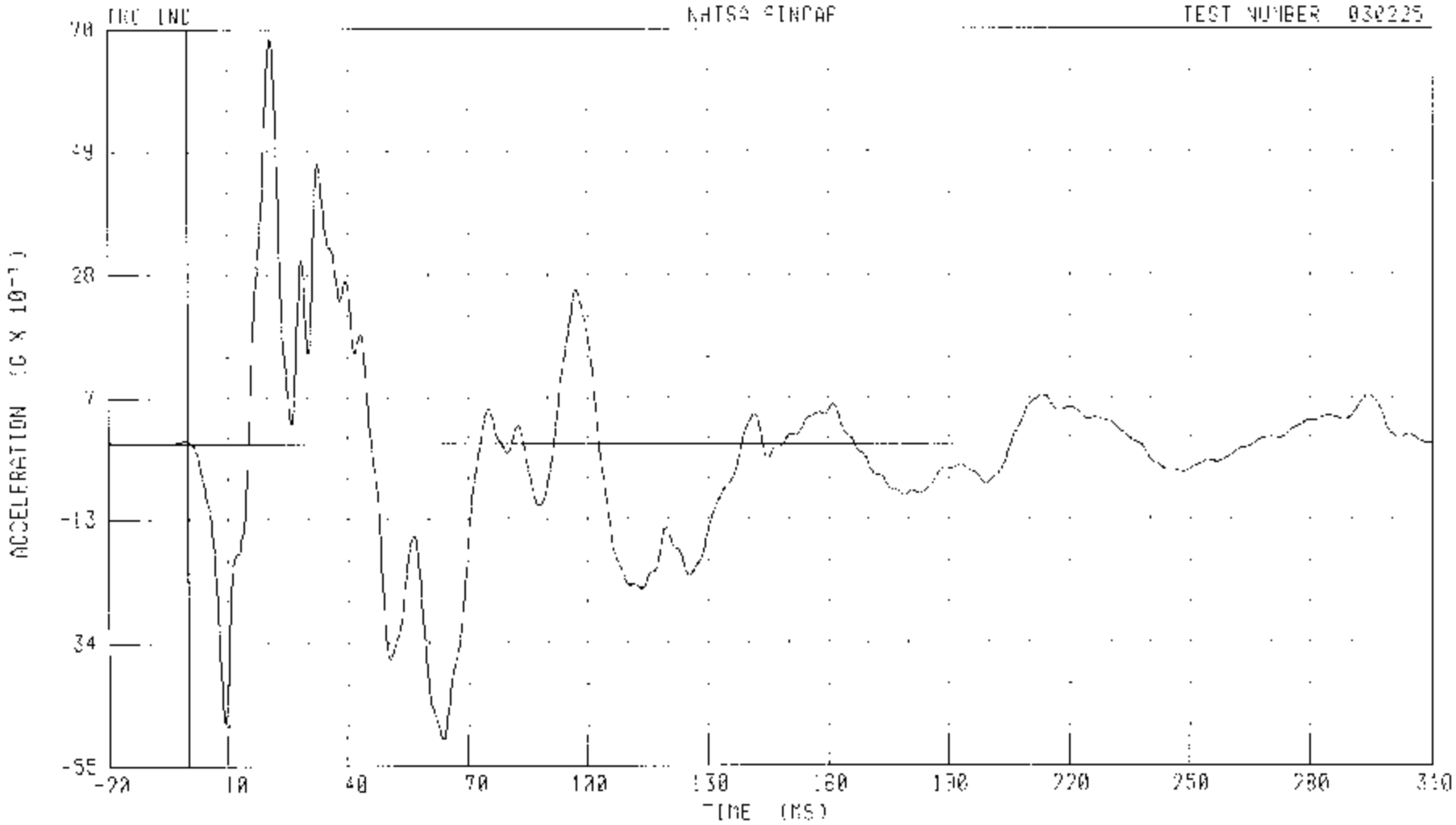
PEAK DATA 27.28 G @ 28.40 MS; -3.40 G @ 54.80 MS

55/20 KP- 30 DEGREE NCAP SIDE IMPACT IMPACTING DEFORMABLE BARRIER INTO LEFT SIDE OF 2003 NISSAN 350Z
RIGHT SIDE SILL AT FRONT Y-AXIS VELOCITY

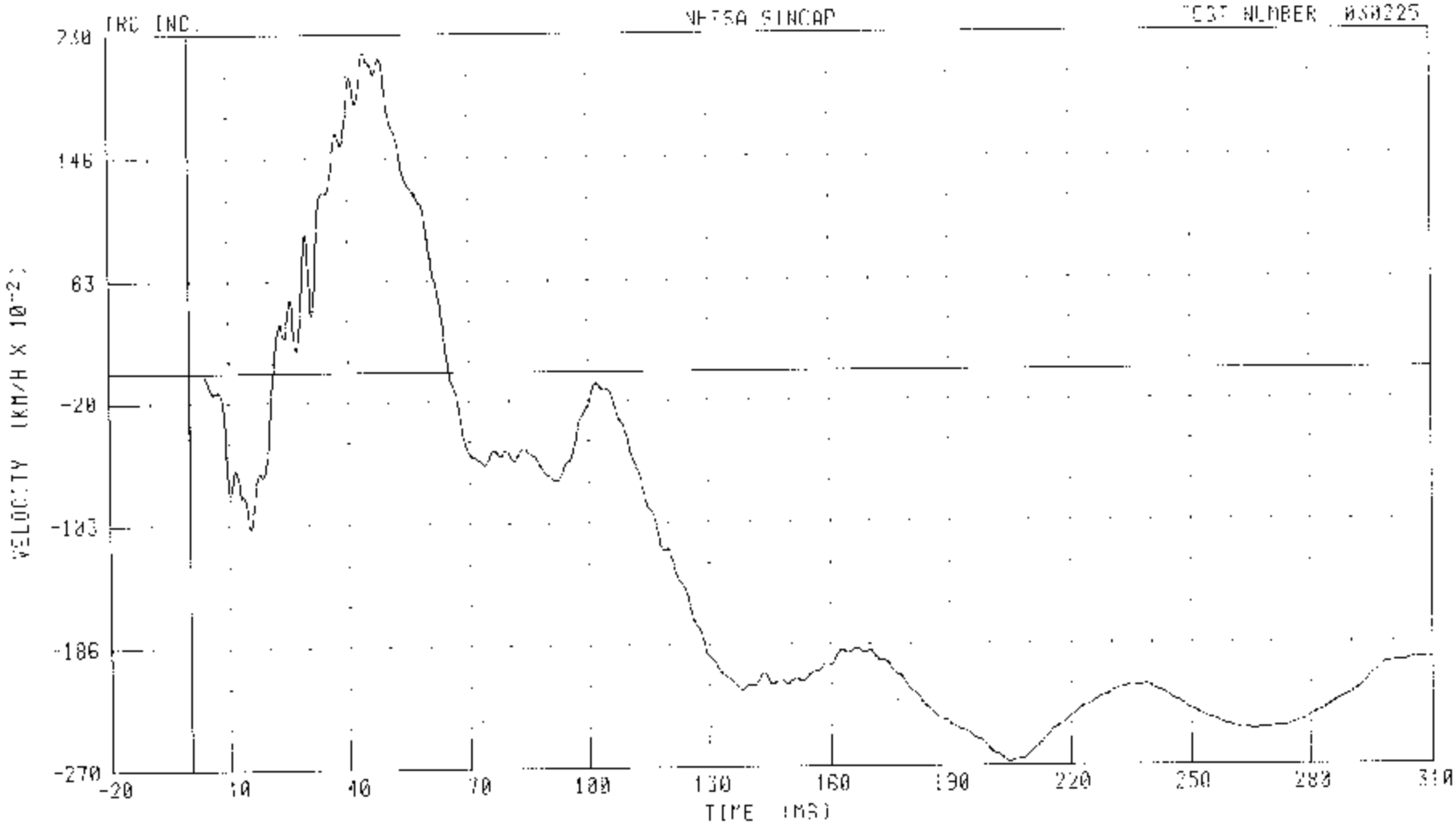


CHANNEL RCSYV1 FILTER: CH CLASS 180 PEAK DATA 25.81 KM/H @ 113.84 MS, -0.07 KM/H @ 4.48 MS

55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
RIGHT SIDE SILL AT FRONT Z-AXIS ACCELERATION



55.28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
RIGHT SIDE SILL AT FRONT Z AXIS VELOCITY

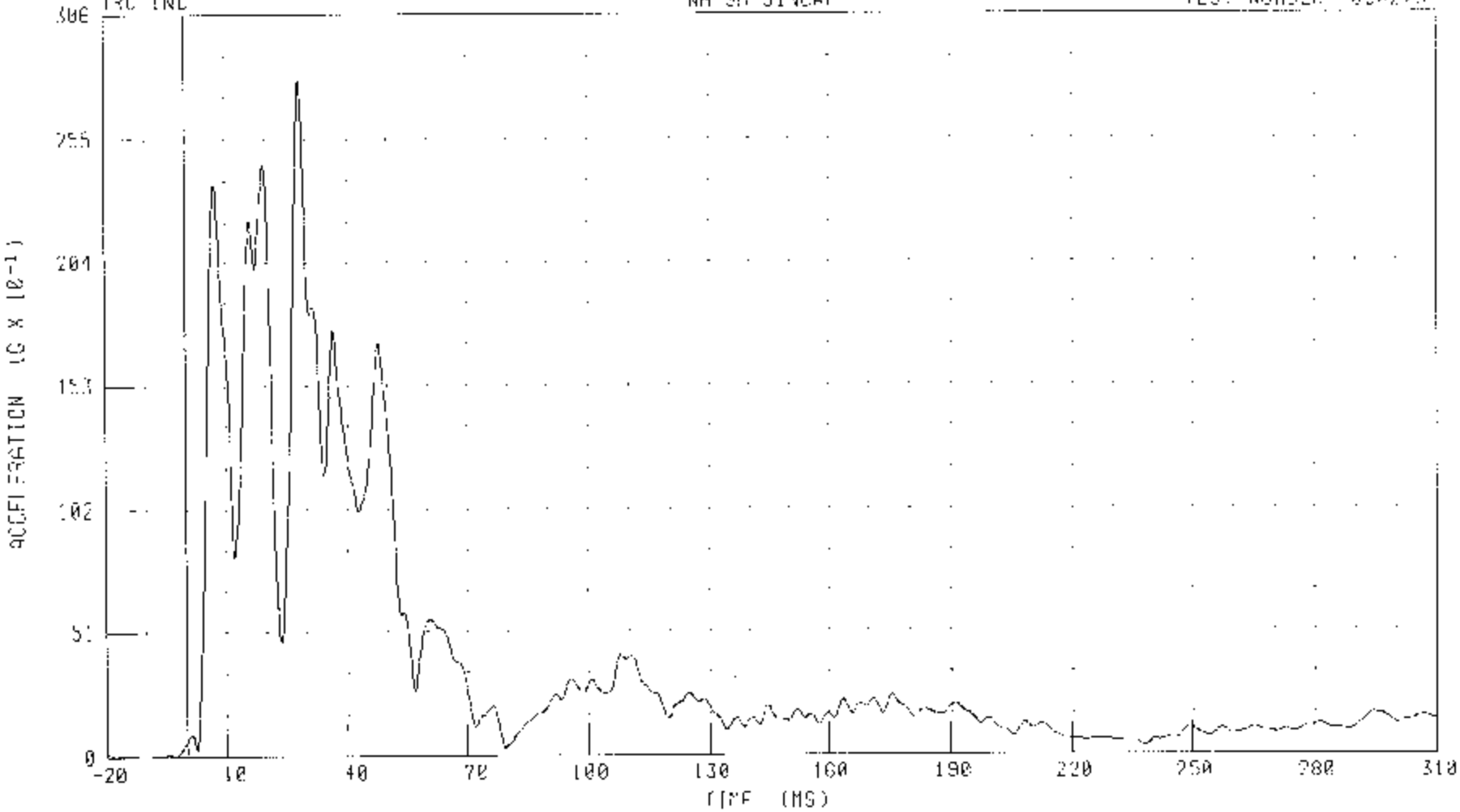


CHANNEL RFSZV1 FILTER: CH CLASS 180

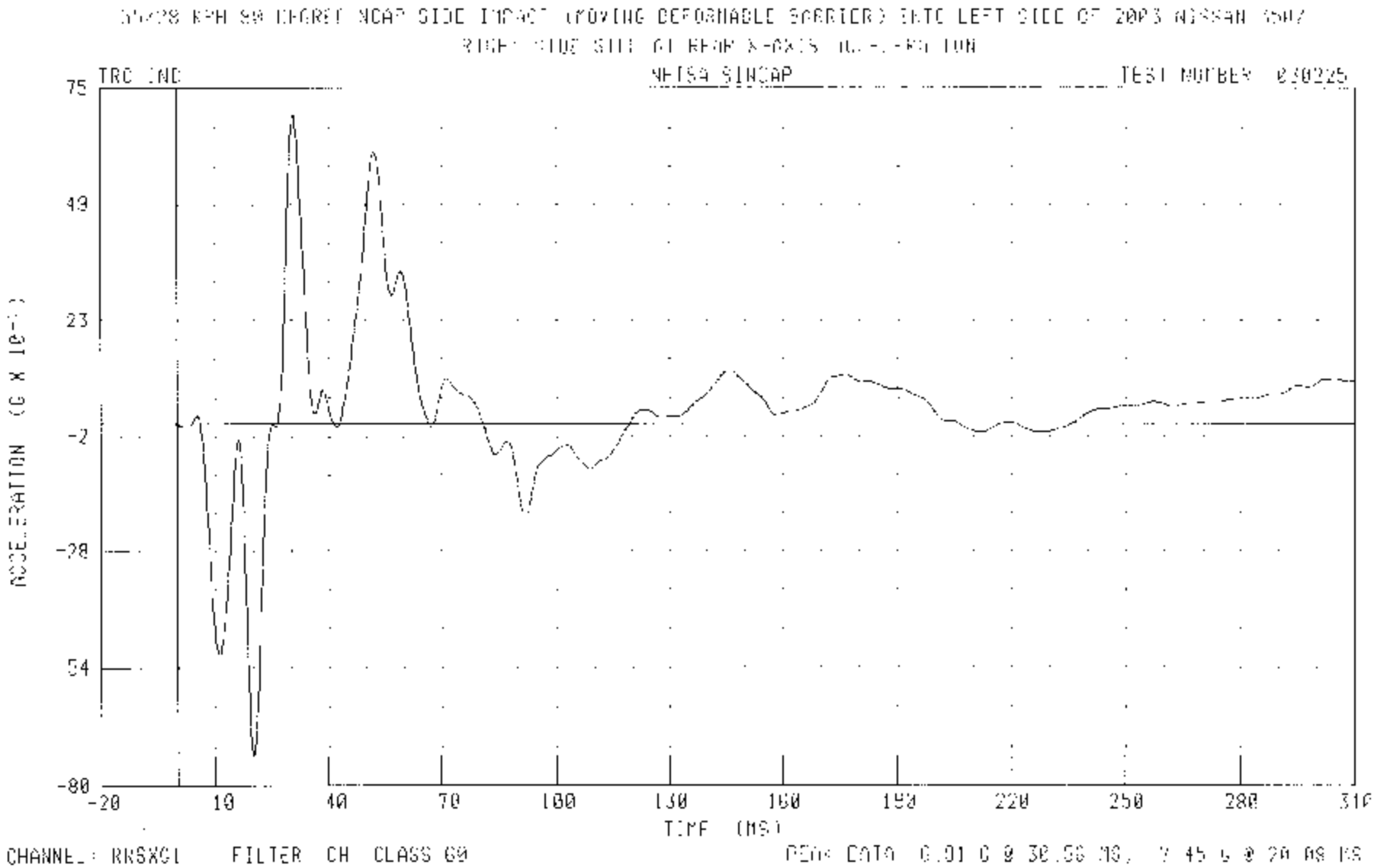
PEAK DATA: 2.13 KM/H @ 47.56 MS, 3.68 KM/H @ 204.96 MS

55/28 KPH 90 DEGREE NCAP SIDE IMPACT INCLUDING DEFORMABLE BARRIER INTO LEFT SIDE OF 2003 NISSAN 350Z
RIGHT SIDE SILL AT FRONT RESULTANT ACCELERATION

TRC IND — NHTSA SINCAP — TEST NUMBER 030225

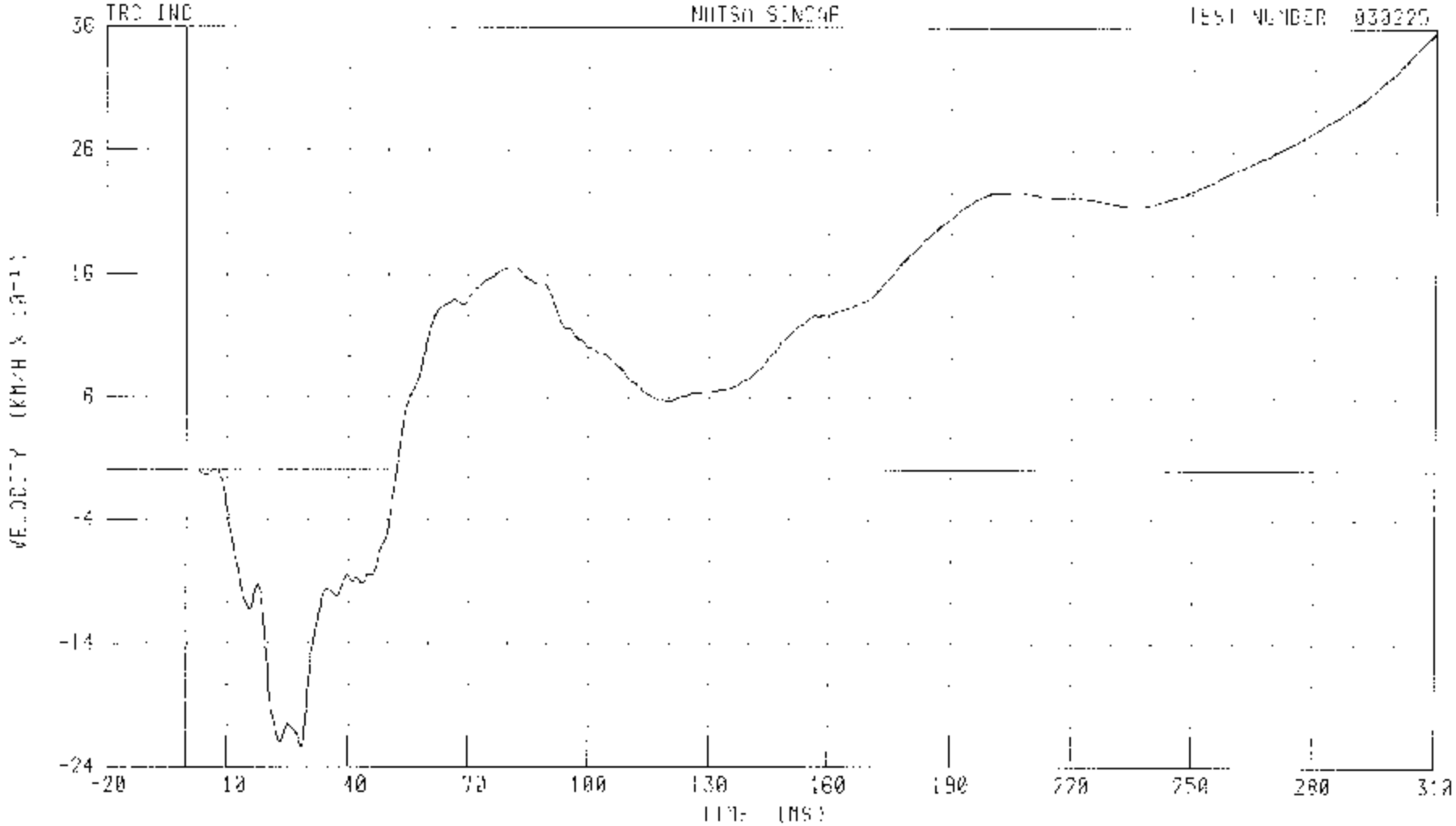


CHANNEL RFSRG1 FILTER CH. CLASS 60 PEAK DATA 27.90 G @ 28.40 MS. 0.00 G @ -10.48 MS


TRC IND
NHTSA SINCAP
TEST NUMBER 030225
75
49
23
-2
-28
54
-80
ACCELERATION (G X 10-1)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: RRSXCI
FILTER CH CLASS 60
PEAK DATA 0.01 G @ 30.56 MS, 7.45 G @ 20.09 MS

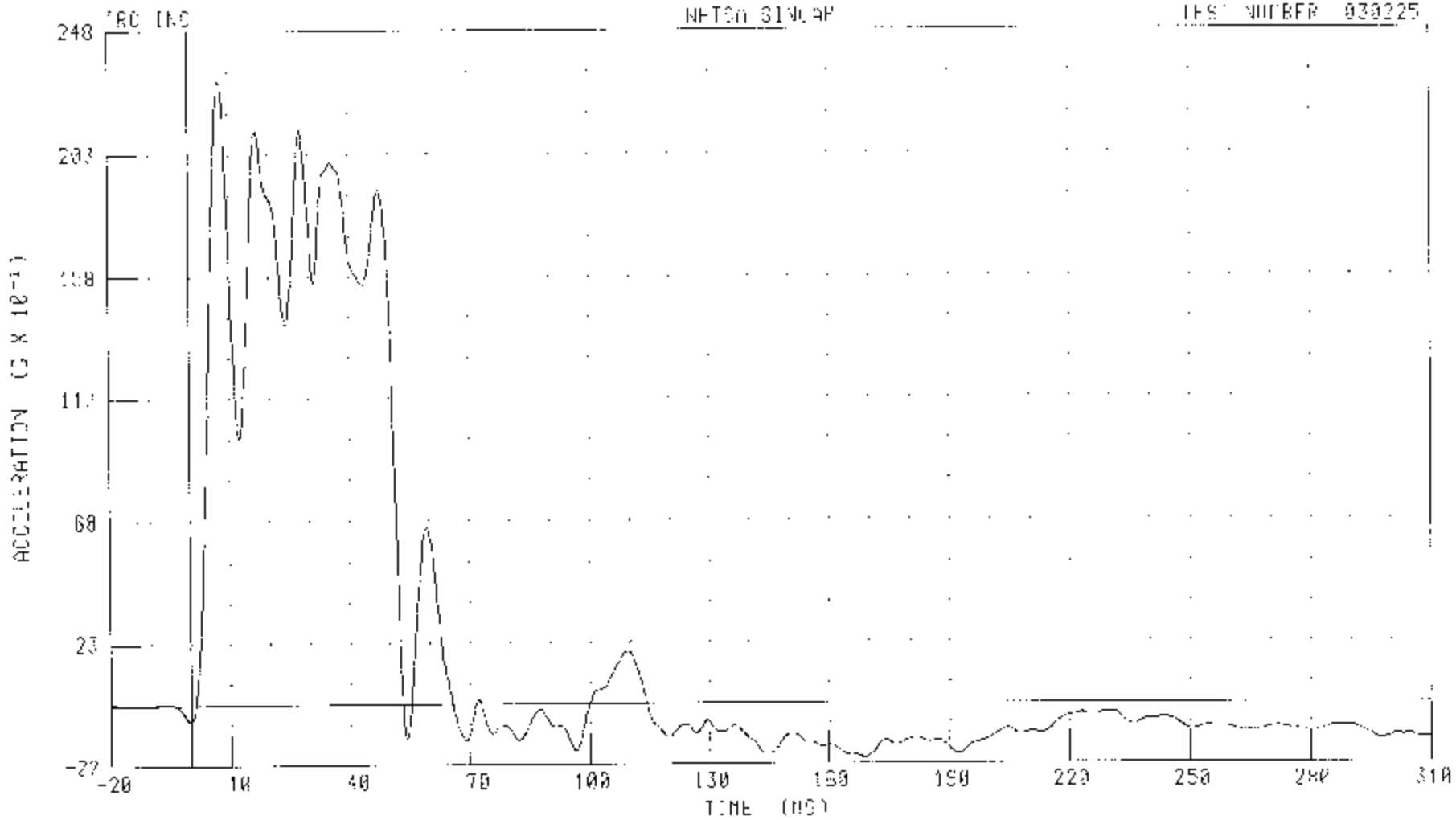
55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z

SIGN: SIDE SILL AT REAR X-AXIS VELOCITY



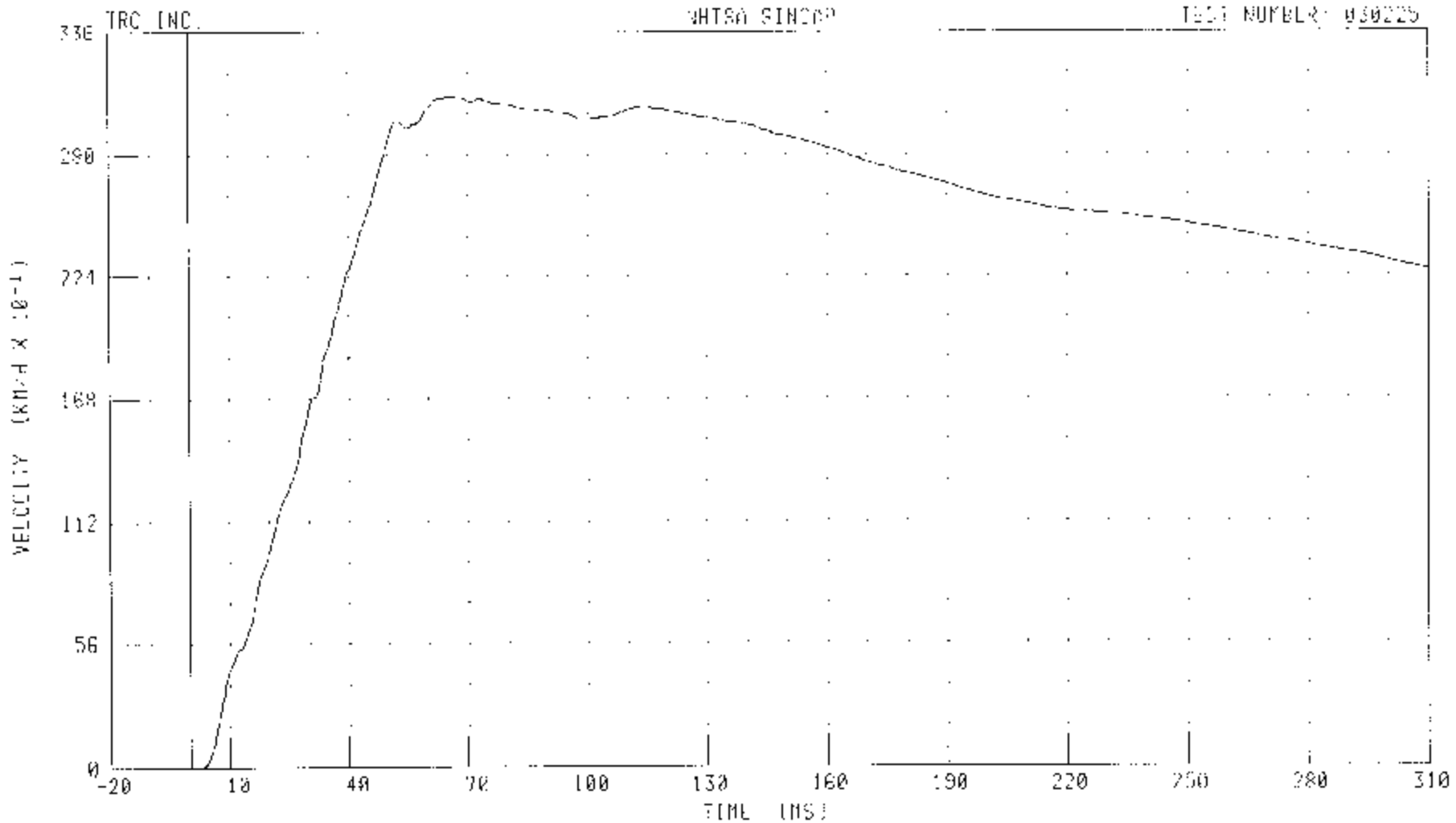
CHANNEL RRSXV1 FILTER CF CLASS 180 PEAK DATA 3.58 KM/H @ 310.00 MS, -2.24 KM/H @ 28.06 MS

55/38 MPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2005 NISSAN 350Z
RIGHT SIDE SILL AT REAR Y-AXIS ACCELERATION



CHANNEL RRSYG1 FILTER CH CLASS CD PEAK DA A 22.97 G @ 7.04 MS. -2.03 G @ 168.88 MS

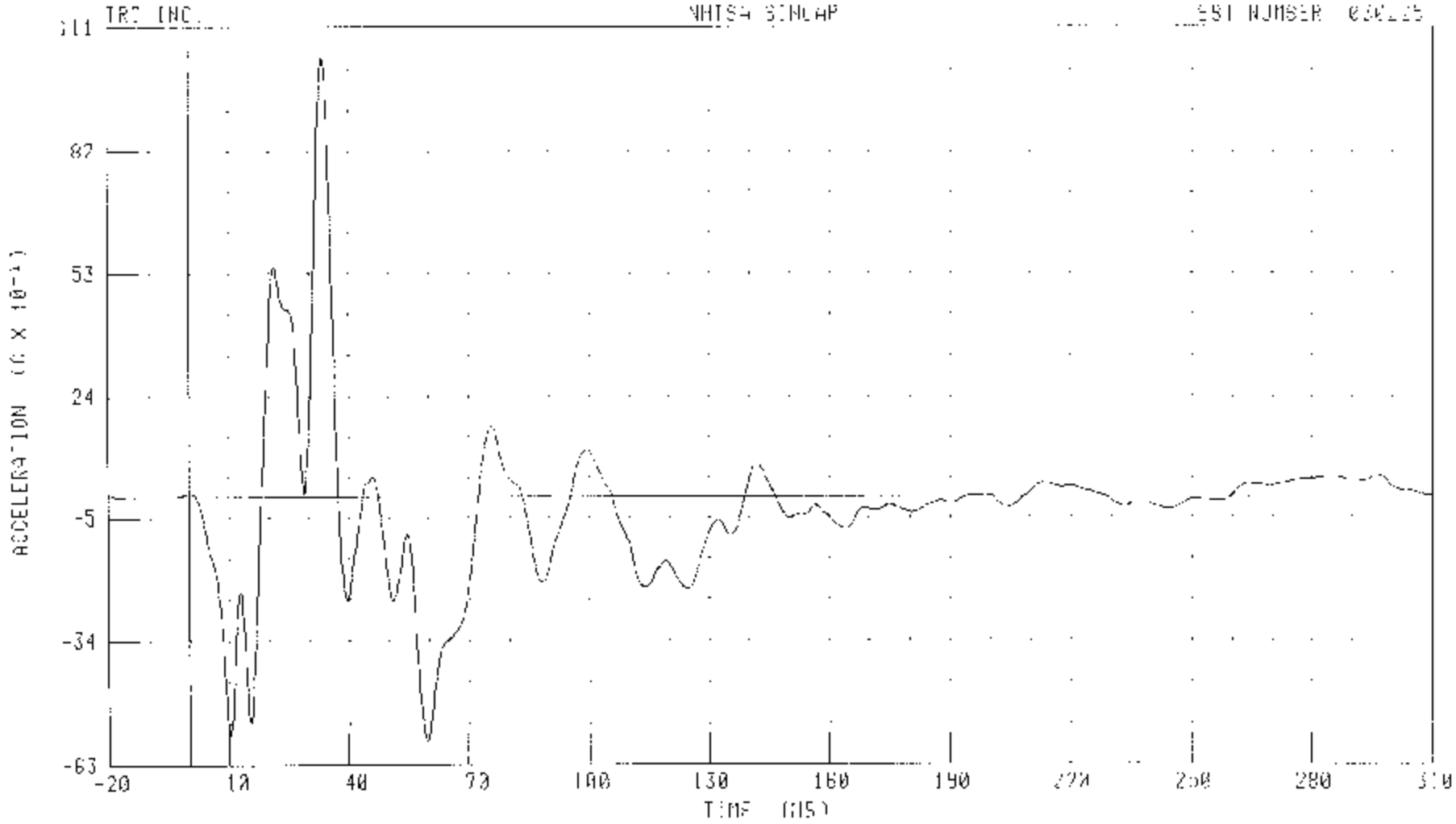
55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2002 NISSAN 350Z
RIGHT SIDE SILL @ REAR Y-AXIS VELOCITY



CHANNEL RRSYV1 FILTER CH CLASS 180

PEAK DATA: 30.64 KM/H @ 65.76 MS, 0.00 KM/H @ 2.40 MS

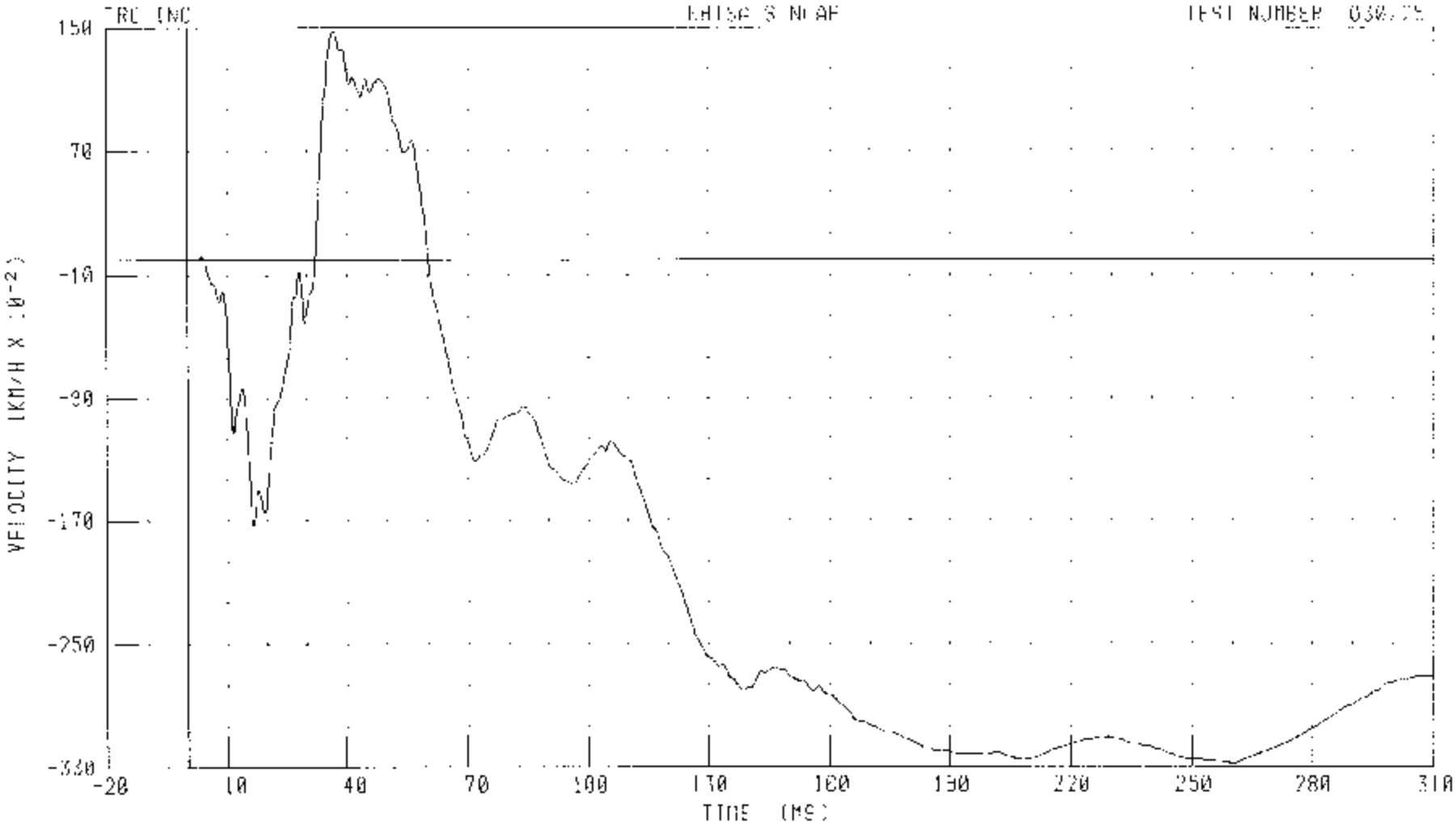
55.8 KPH 90 DEGREE NEAR SIDE IMPACT MOVING DEFORMABLE BARRIER: INTO LEFT SIDE OF 2003 NISSAN SUV
RIGHT SIDE SILL AT REAR Z AXIS ACCELERATION



CHANNEL RRSZC1 FILTER: CFC CLASS 60

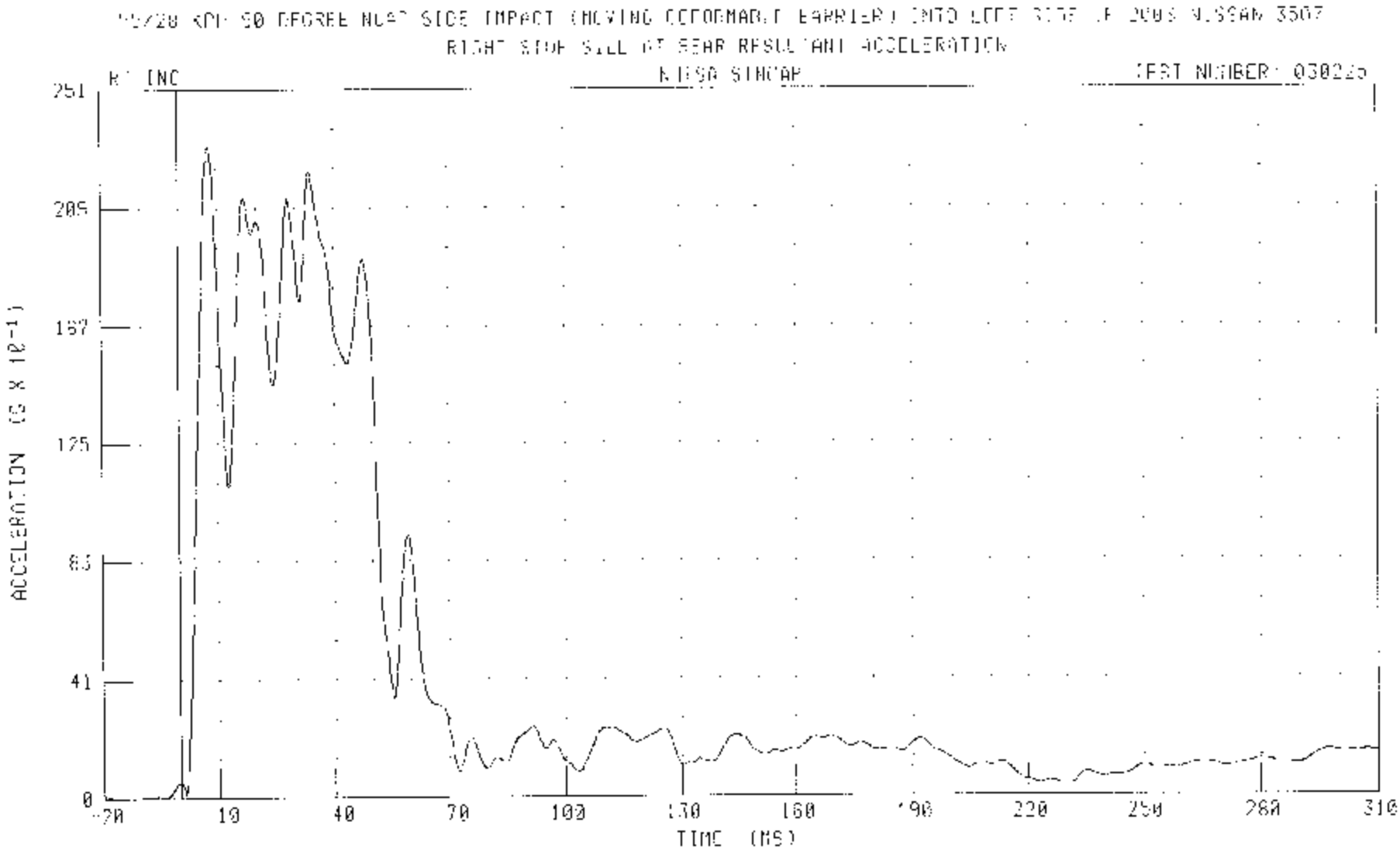
PEAK DATA 10 42 3 @ 33 52 MS; -5.78 G @ 59 70 MS

55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN ALTIMA
RIGHT SIDE STILL AT REAR Z-AXIS VELOCITY

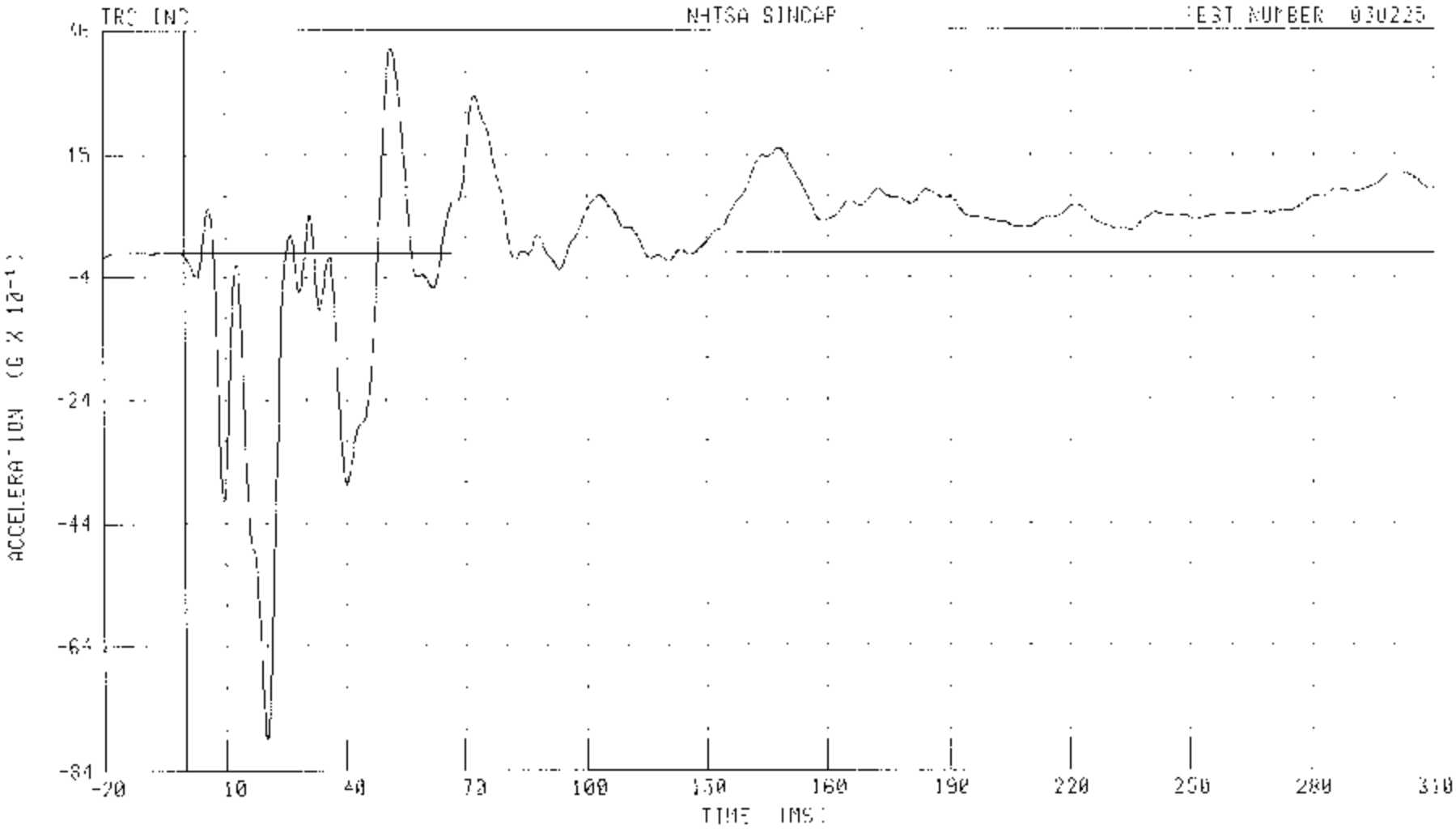


CHANNEL RRSZV1 FILTER: CF CLASS 180

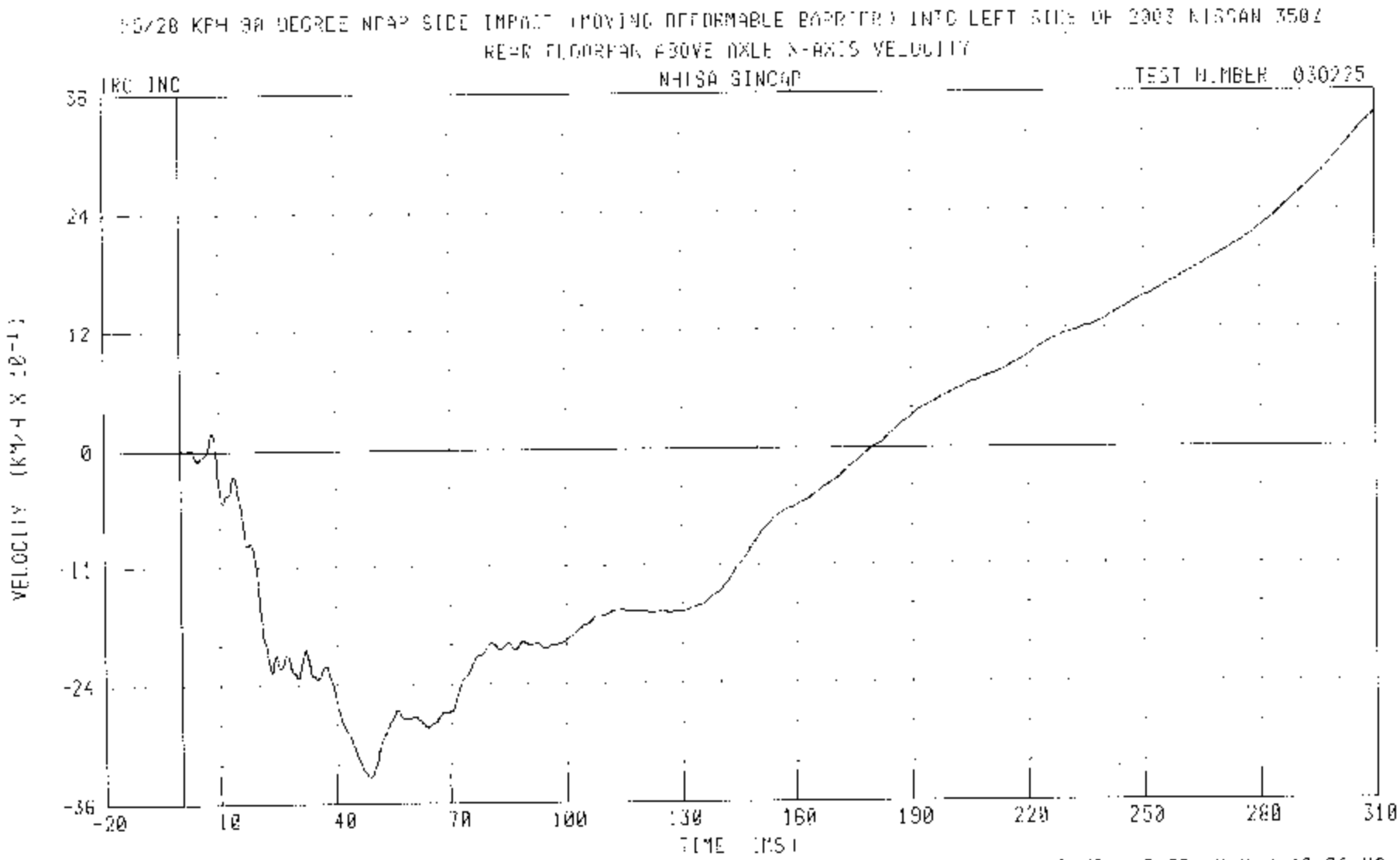
PEAK DATA : 47 KM/H @ 38.88 MS; -3.78 KM/H @ 260.40 MS


RIGHT SIDE SILL AT REAR RESULTANT ACCELERATION
NISSAN SINGAP
TEST NUMBER: 030225
251
209
167
125
83
41
0
ACCELERATION (G X 10-1)
-70
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL RRSRG1 FILTER CFC CLASS 60
PEAK DATA: 23 10 3 0 7 92 MS; 0 00 3 0 -16 00 MS

55/28 KPH 90 DEGREE NCAP SIDE IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2003 NISSAN 350Z
REAR FLOORPAN ABOVE AXLE X-AXIS ACCELERATION



CHANNEL RDRXG1 FILTER CFC CLASS 60 PEAK DATA: 3.30 G @ 51.52 MS, -7.87 G @ 20.16 MS

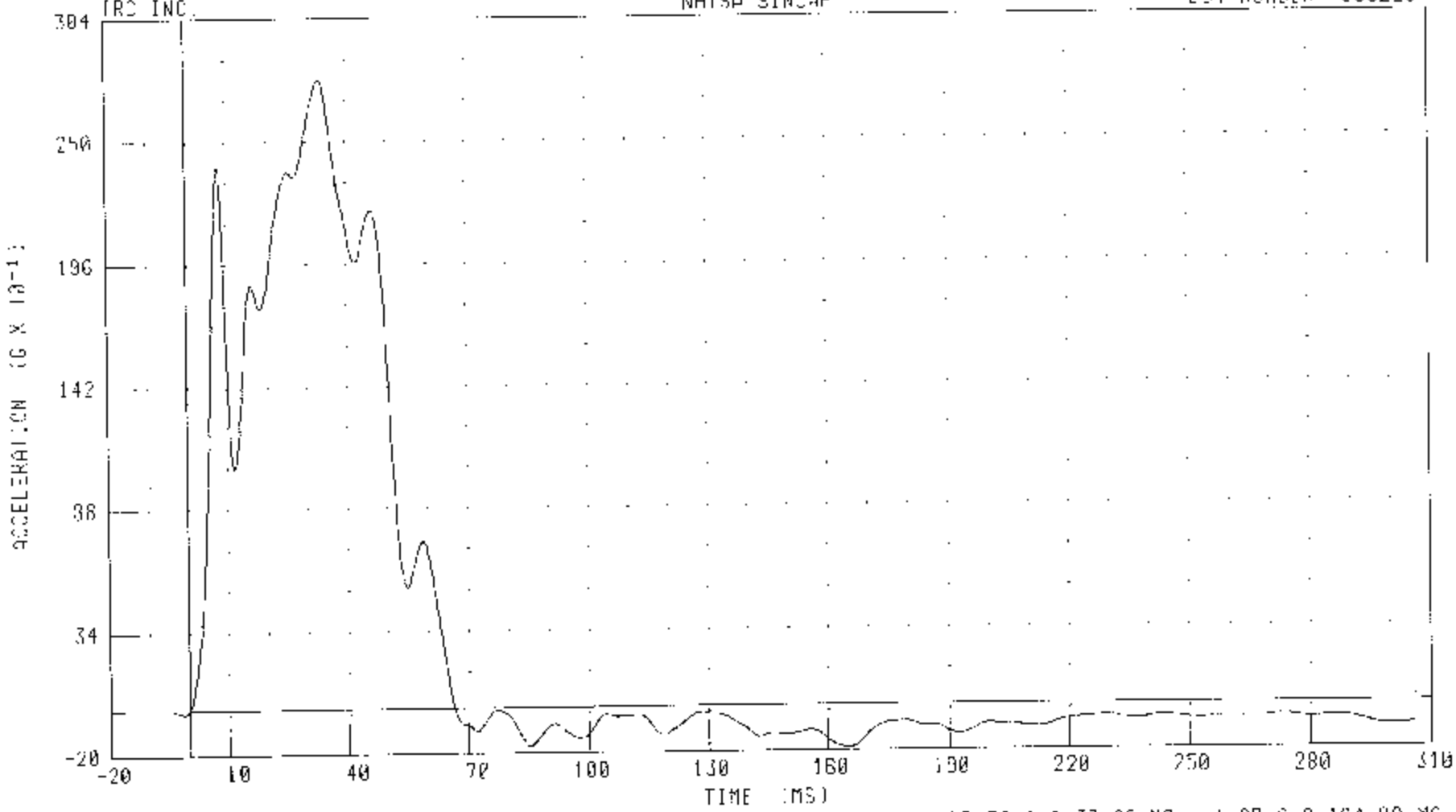

55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
REAR FLOORPAN ABOVE AXLE X-AXIS VELOCITY
NHTSA SINCAP
TEST NUMBER 030225
IRC INC
VELOCITY (KM/H X 10-1)
TIME (MS)
CHANNEL RDRXV1
FILTER: CH. CLASS 180
PEAK DATA

55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z

REAR FLOORPAN ABOVE AXLE Y-AXIS ACCELERATION

NHTSA SINCAP

TEST NUMBER 030225

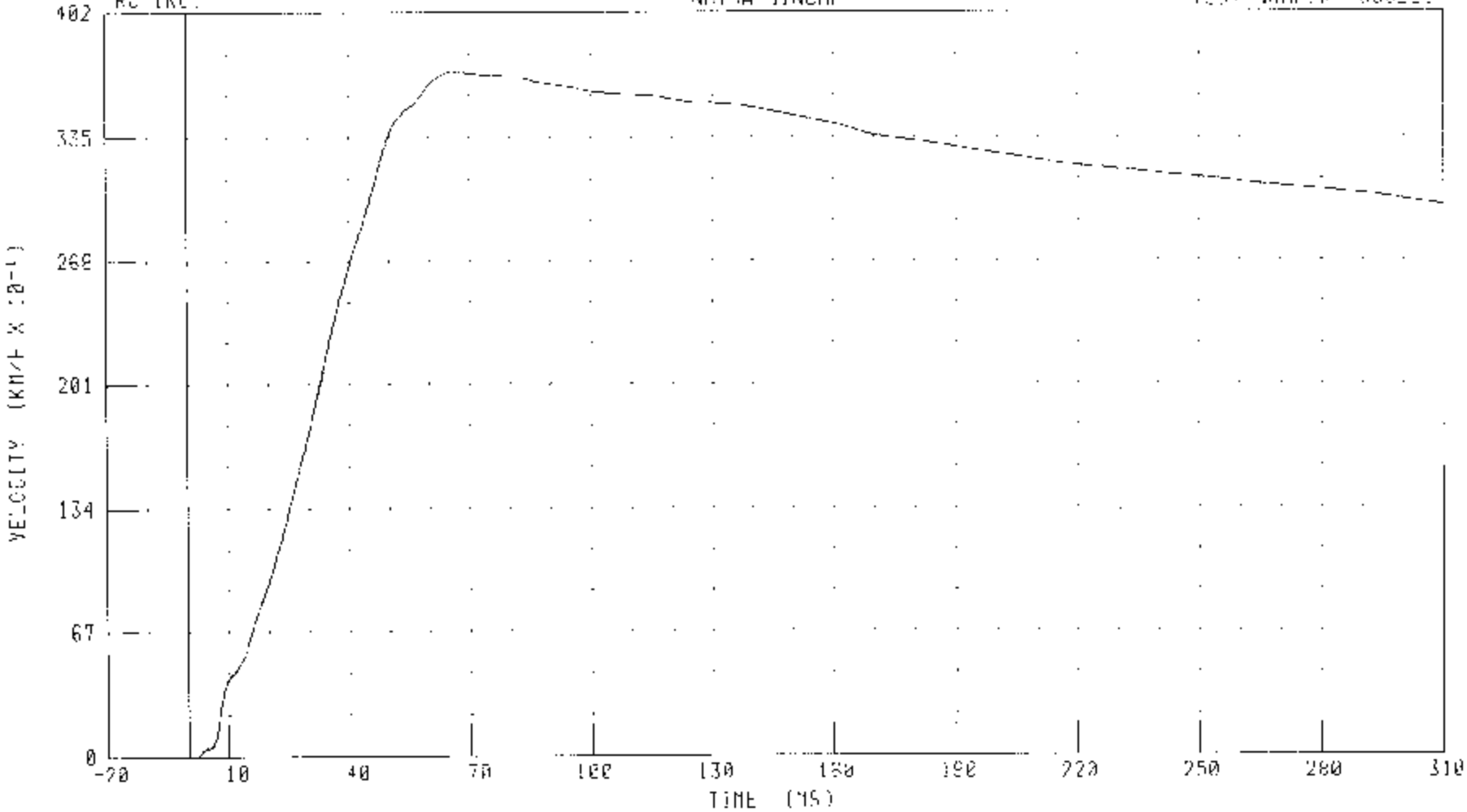


CHANNEL RDKYG1 FILTER CH CLASS 60

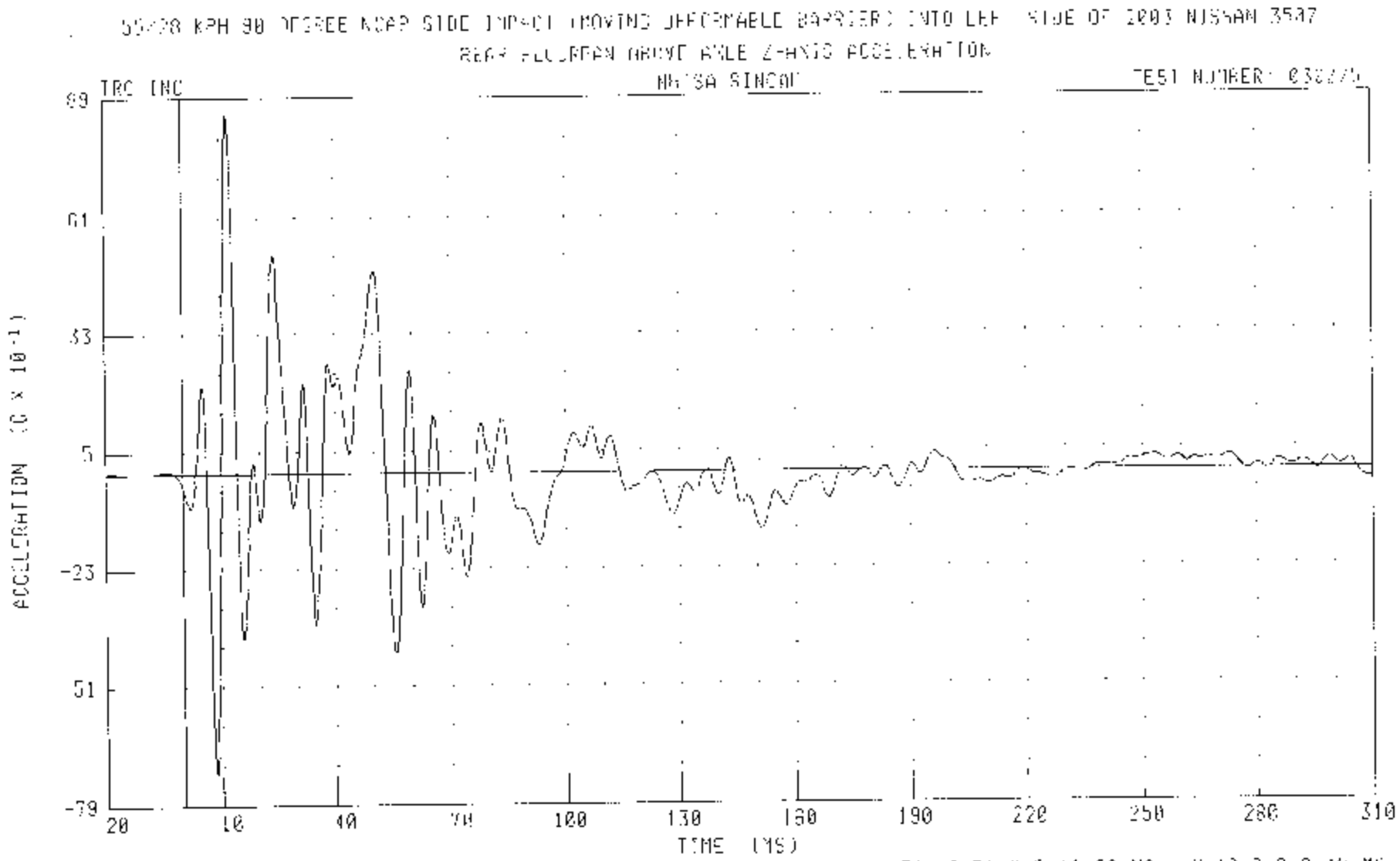
PEAK DATA: 27.70 G @ 33.60 MS, -1.87 G @ 164.08 MS

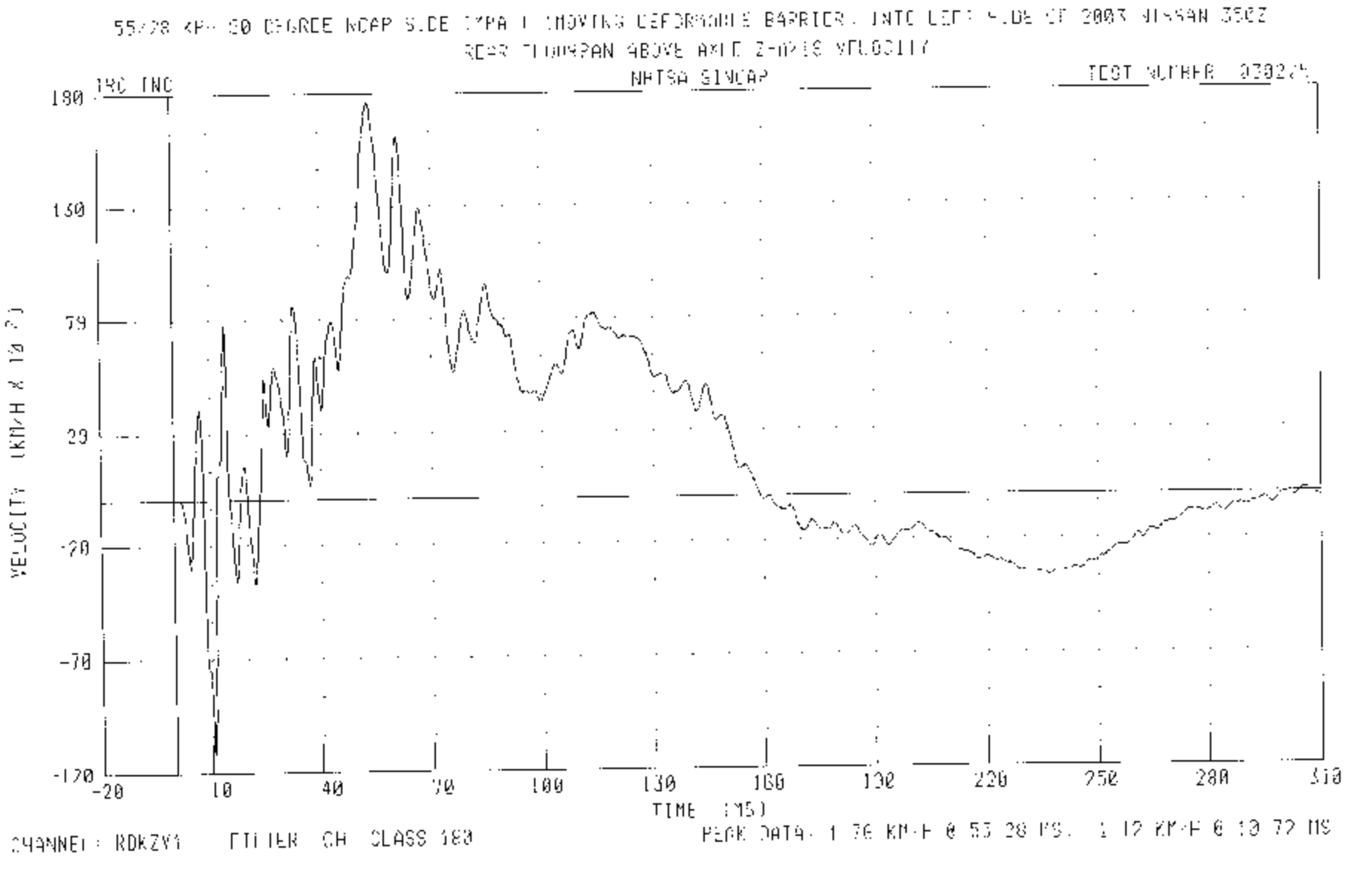
55.28 KPH 92 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2002 NISSAN 4D2
REAR FLOORPAN ABOVE AXLE X-AXIS VELOCITY

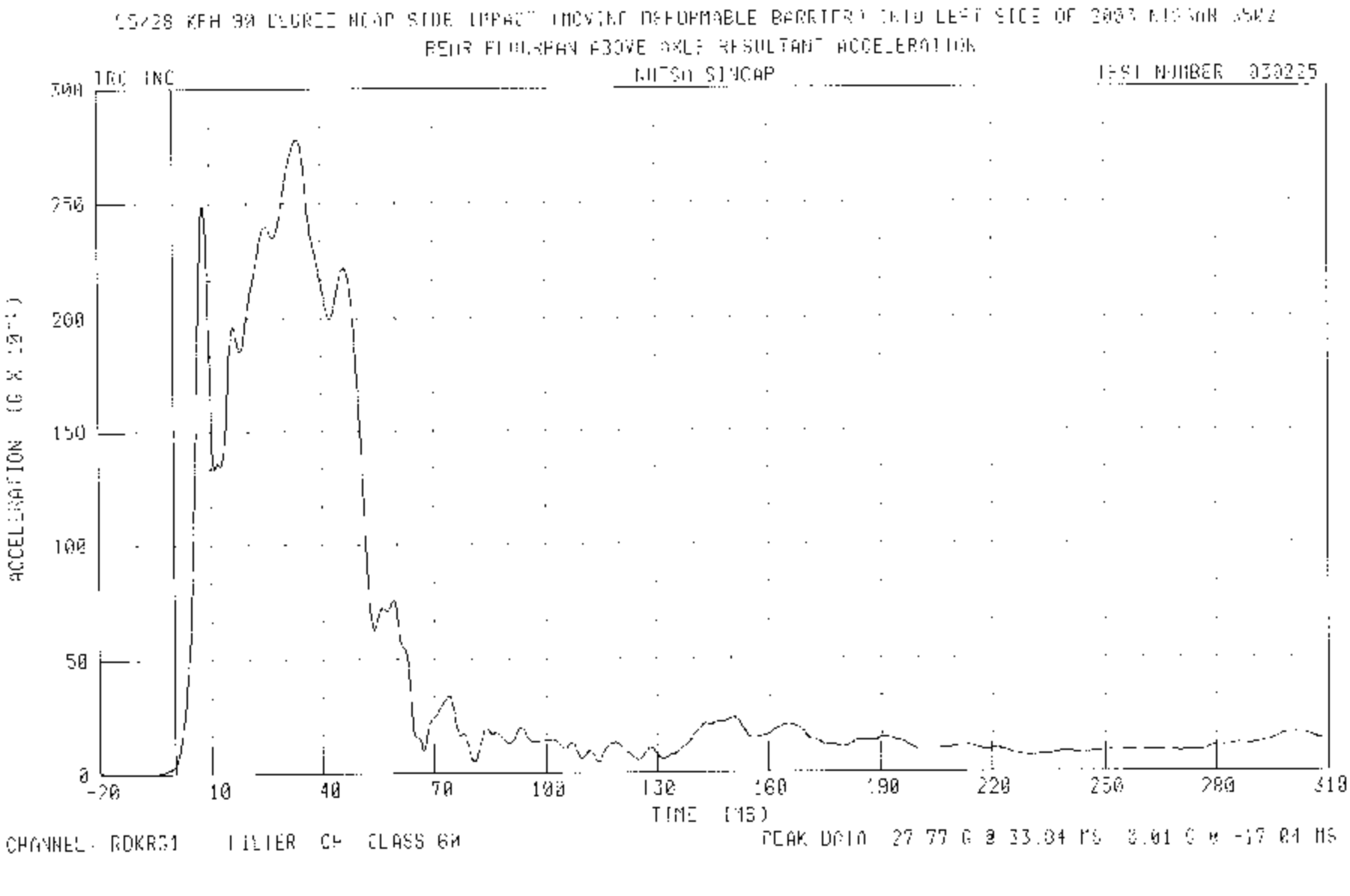
TRC INC. WHISA SINCAP TEST NUMBER 030225



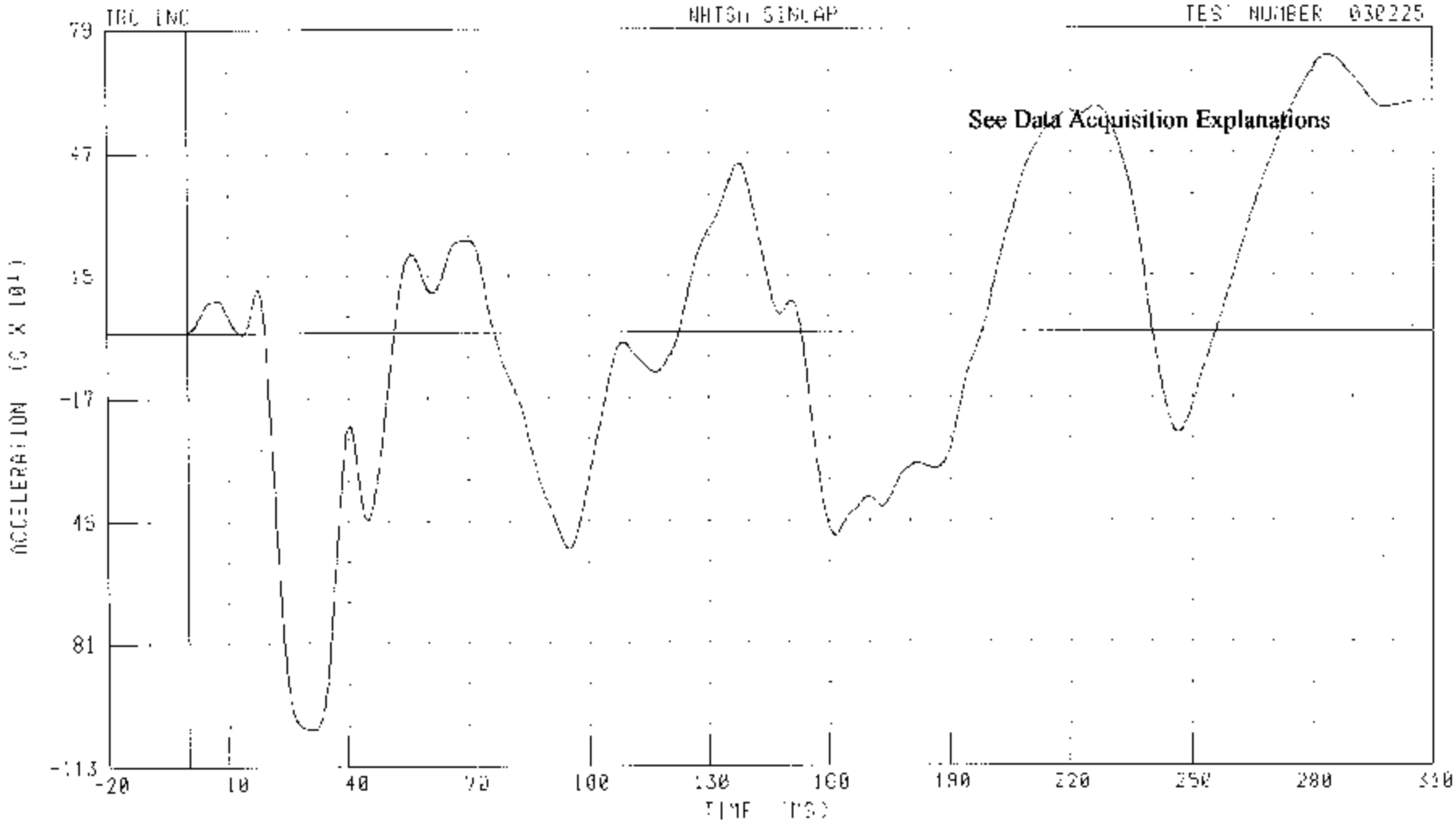
CHANNEL: RDKYV1 FILTER CH CLASS 180 PEAK DATA 37.03 KM/H @ 65.68 MS; -0.01 KM/H @ 1.33 MS


55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEF SIDE OF 2003 NISSAN 3587
REAR FLOOREAN ABOVE AXLE Z-AXIS ACCELERATION
NHTSA SINCAP
TEST NUMBER: 030225
TRC INC
ACCELERATION (G x 10-1)
TIME (MS)
CHANNEL RDKZG1 FILTER: CH CLASS 60
PEAK DATA: 8 51 3 8 11 92 MS. 7 19 3 8 8 40 MS


55.28 KPH 30 DEGREE NCAP SIDE IMPACT MOVING DEFORMABLE BARRIER, INTO LEFT SIDE OF 2003 NISSAN 350Z
REAR TIMKEN ABOVE AXLE Z-AXIS VELOCITY
NHTSA SINCAP
TEST NUMBER 030225
180 INC INC
150
79
29
-20
-70
-120
VELOCITY (KM/H X 10 ?)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: RDKZV1 FILTER CH CLASS 180
PEAK DATA: 1.76 KM/H @ 53.28 MS. 1.12 KM/H @ 10.72 MS

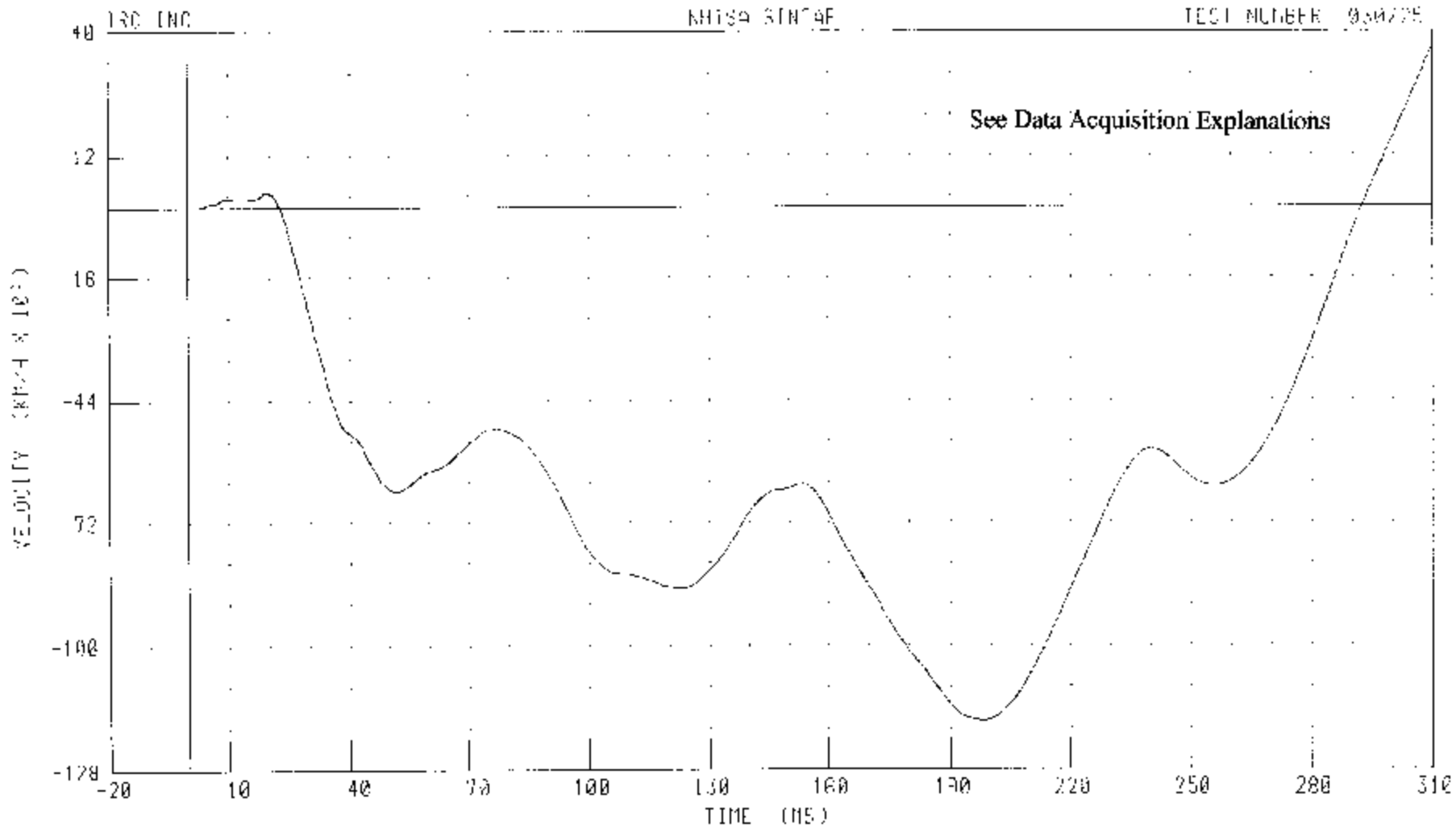

55/28 KPH 90 DEGREE ROAD SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION
NHTSA SINCAP
TEST NUMBER 030225
TRC INC
ACCELERATION (G X 10^-1)
300
250
200
150
100
50
0
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: RDKR31 FILTER CF CLASS 60
PEAK DATA 27.77 G @ 33.04 MS 0.01 G @ -17.04 MS

55/28 MPH 90 DEGREE NCAP SIDE IMPACT GOLVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2000 NISSAN ASPIRE
LEFT SIDE SILL AT FRONT Y-AXIS ACCELERATION



CHANNEL LFSYG1 FILTER CH CLASS 60 PEAK DATA 720.70 G @ 283.76 MS; -1034.21 G @ 31.04 MS

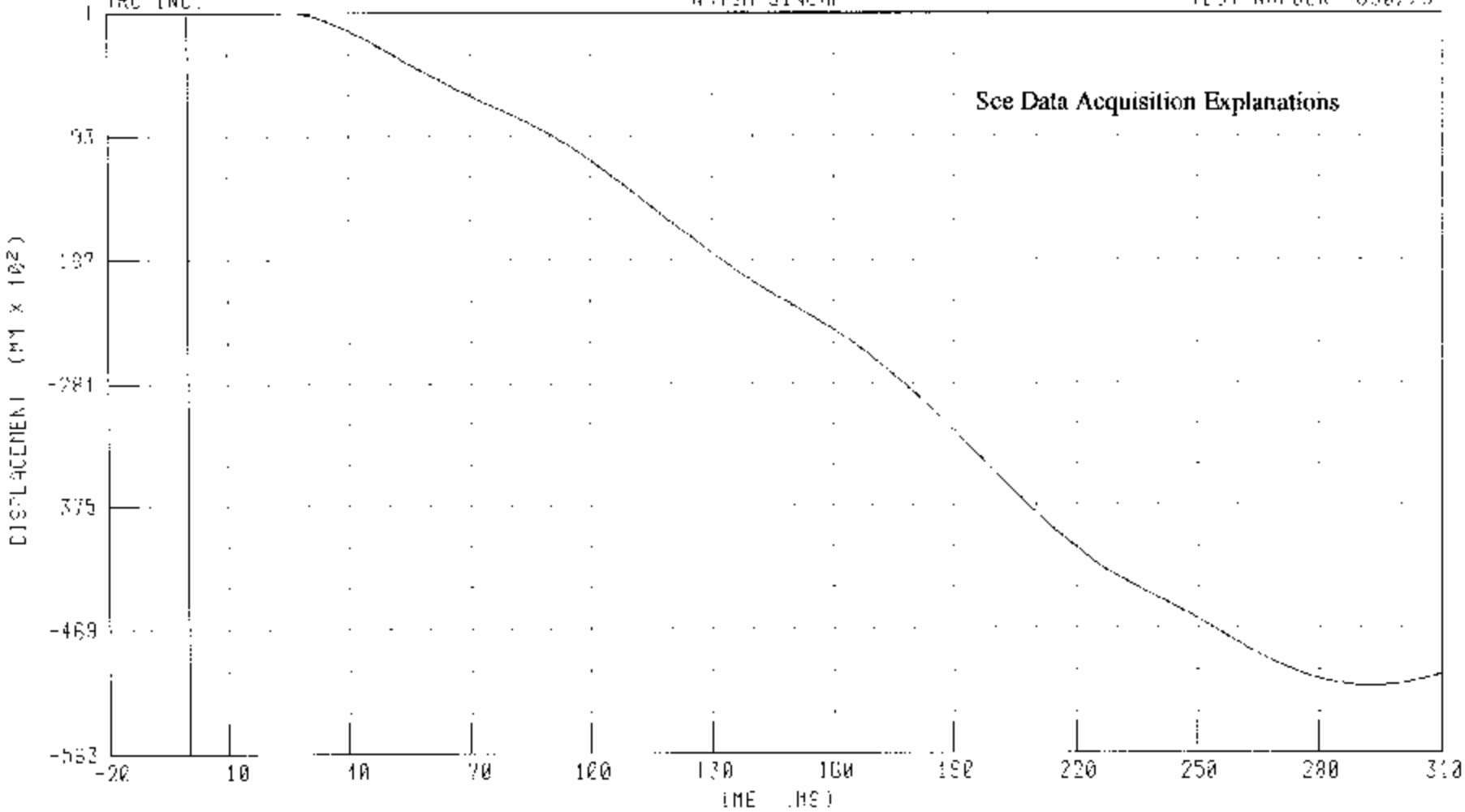
55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
LEFT SIDE SILL AT FRONT TRAILING VEHICLE



CHANNEL LFSYV1 FILTER: CFC CLASS 180 PEAK DATA 368.42 KM/H @ 310.00 MS, -1170.69 KM/H @ 198.08 MS

53/28 KPH 90 DEGREE NCAP SIDE IMPACT MOVING DEFORMABLE BARRIER INTO TEST SIDE OF 2003 NISSAN 350Z
LEFT SIDE SILL @ FRONT Y-AXIS DISPLACEMENT

IRC INC. NHTSA SINCAP TEST NUMBER 030225

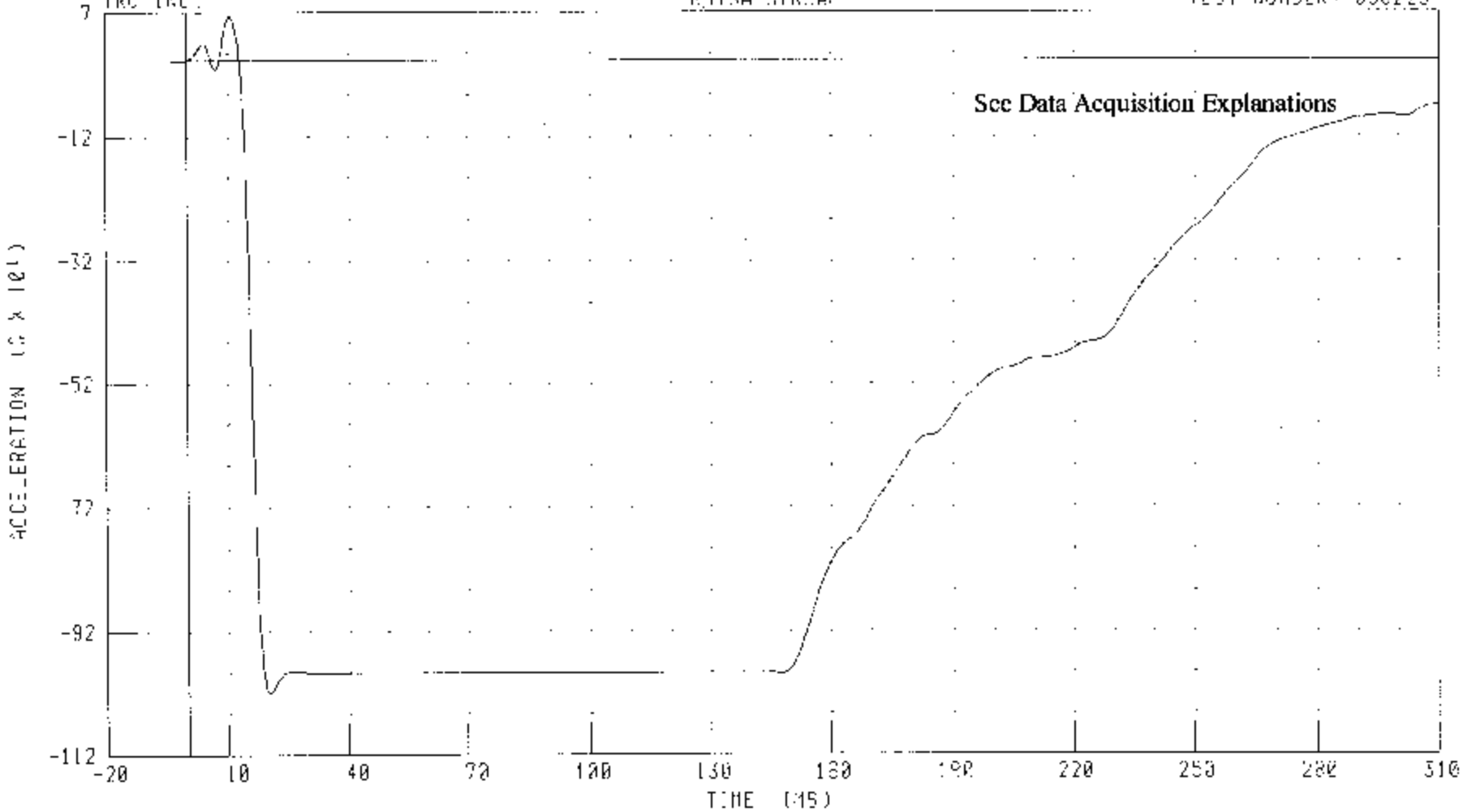


CHANNEL LFSYD1 FILTER: CFC CLASS 180 PEAK DATA 99.45 MM @ 22.00 MS, 51224.60 MM @ 292.50 MS

55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN S502

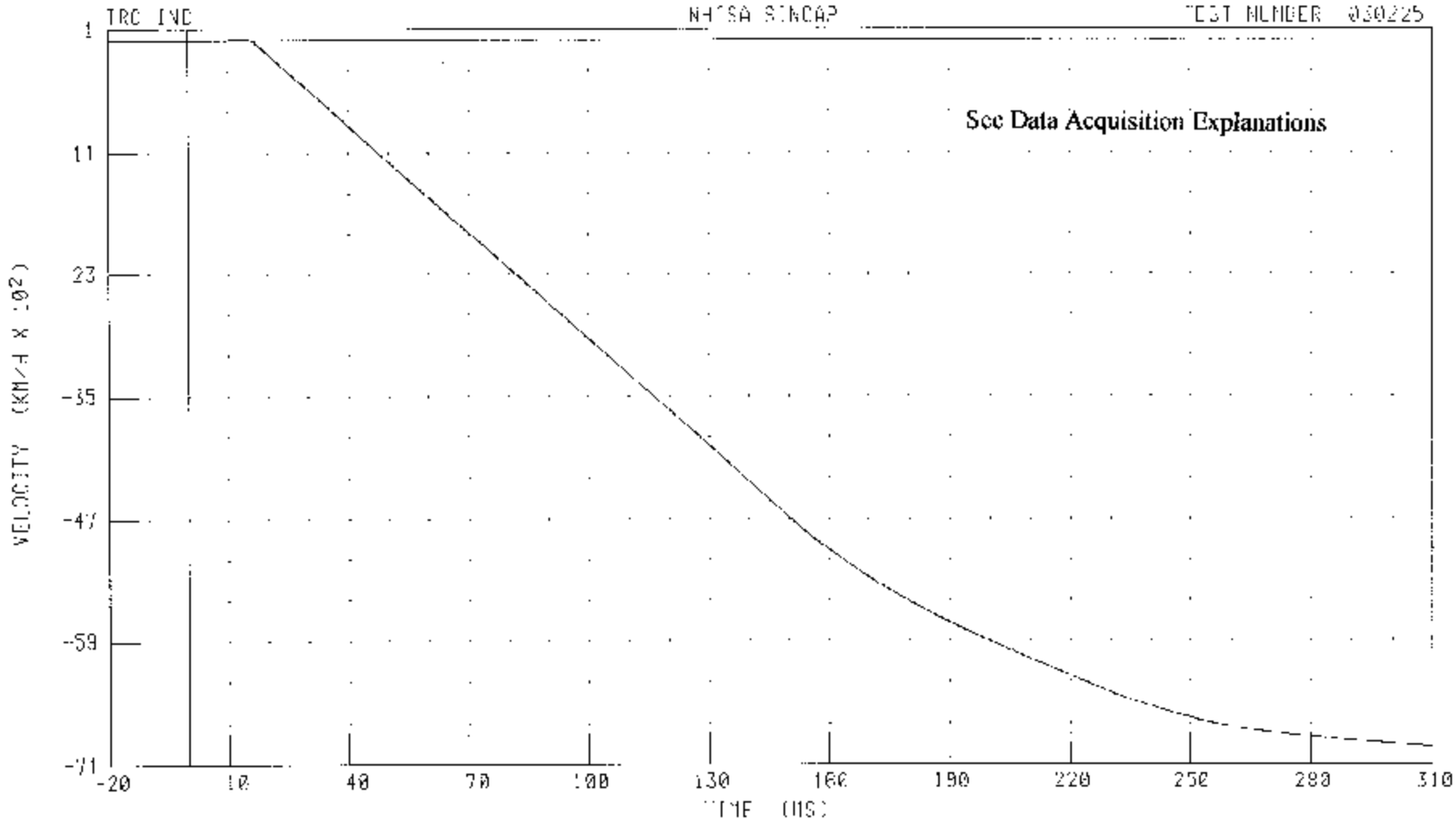
LEFT SIDE SILL AT REAR Y AXIS ACCELERATION

TRC INC. NHTSA SINCAP TEST NUMBER: 030225

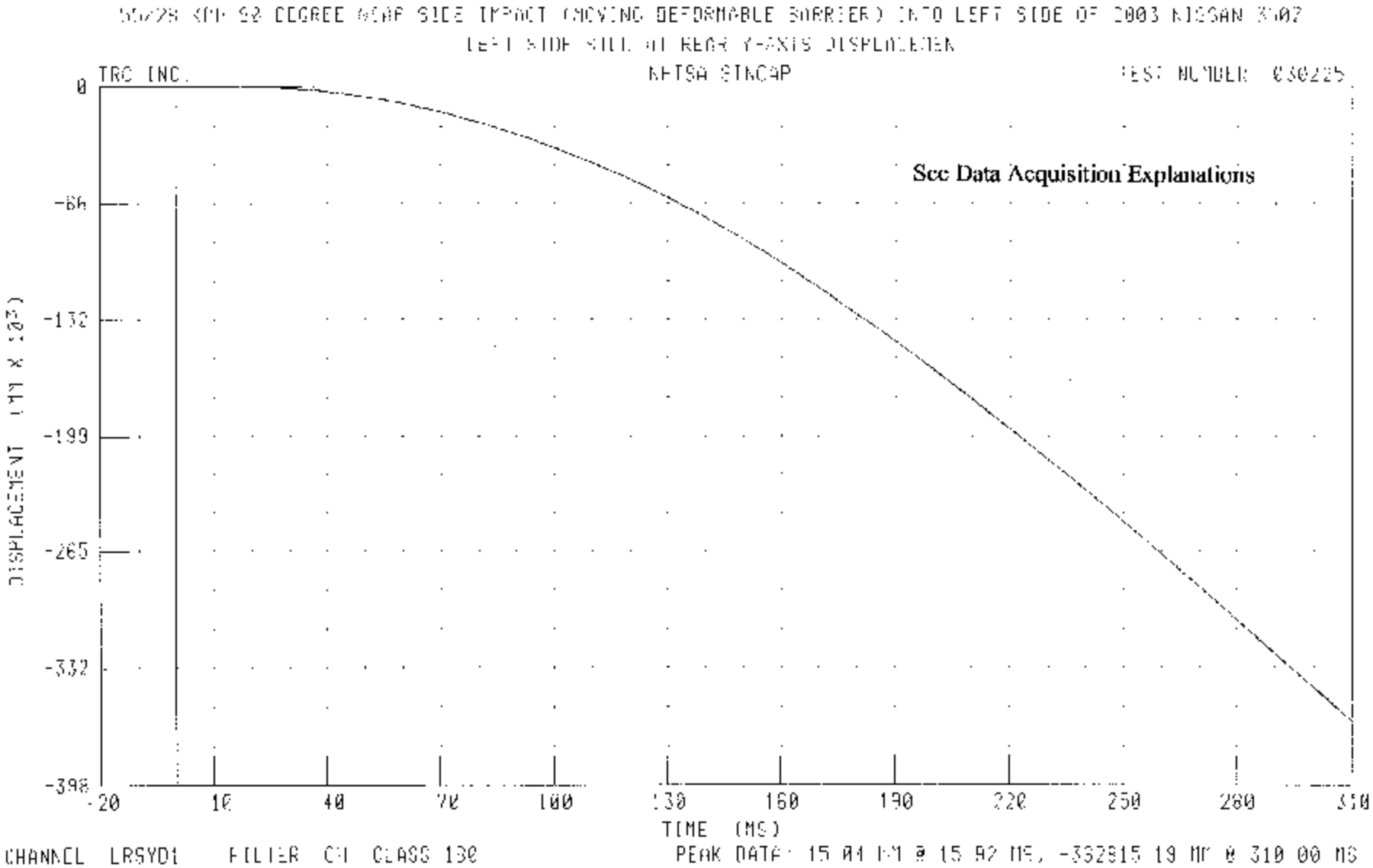


CHANNEL LRSYG1 FILTER CH CLASS 60 PEAK DATA 71.31 G @ 10.56 MS; -1021.91 G @ 20.16 MS

55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
LEFT SIDE SILL AT REAR Y-AXIS VELOCITY

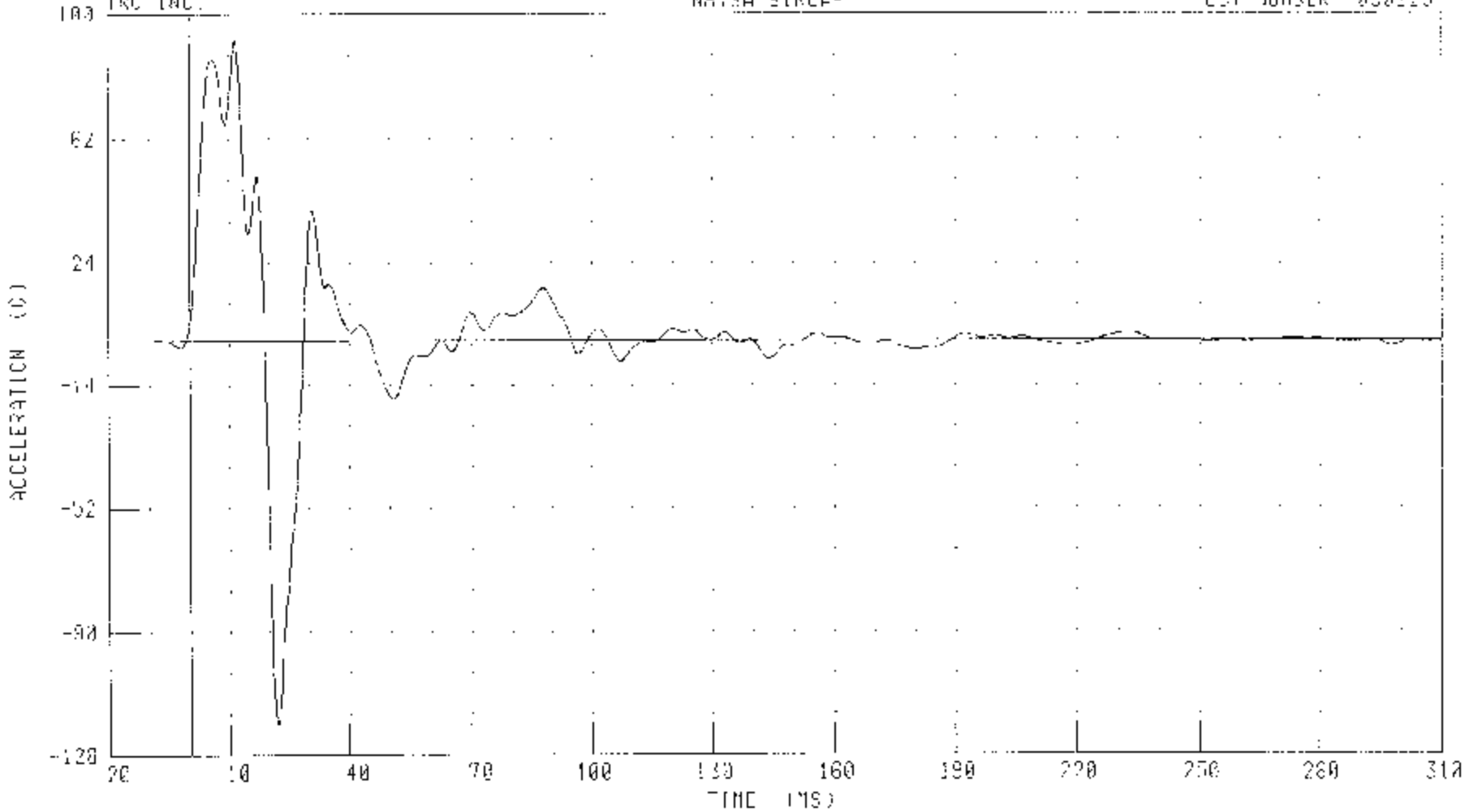


CHANNEL LRSYY FILTER CF CLASS 180 PEAK DATA @ 39 KM/H @ 11.28 MS, -6929.91 KM/H @ 310.00 MS


030225 30 MPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
LEFT SIDE SILL AT REAR Y-AXIS DISPLACEMENT
TRC INC.
NHTSA SINCAP
TEST NUMBER: 030225
See Data Acquisition Explanations
DISPLACEMENT (MM X 10E3)
0
-66
-132
-199
-265
-332
-398
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL LRSYD1 FILTER CH CLASS 180
PEAK DATA: 15.04 MM @ 15.92 MS, -332.815 19 MM @ 310.00 MS

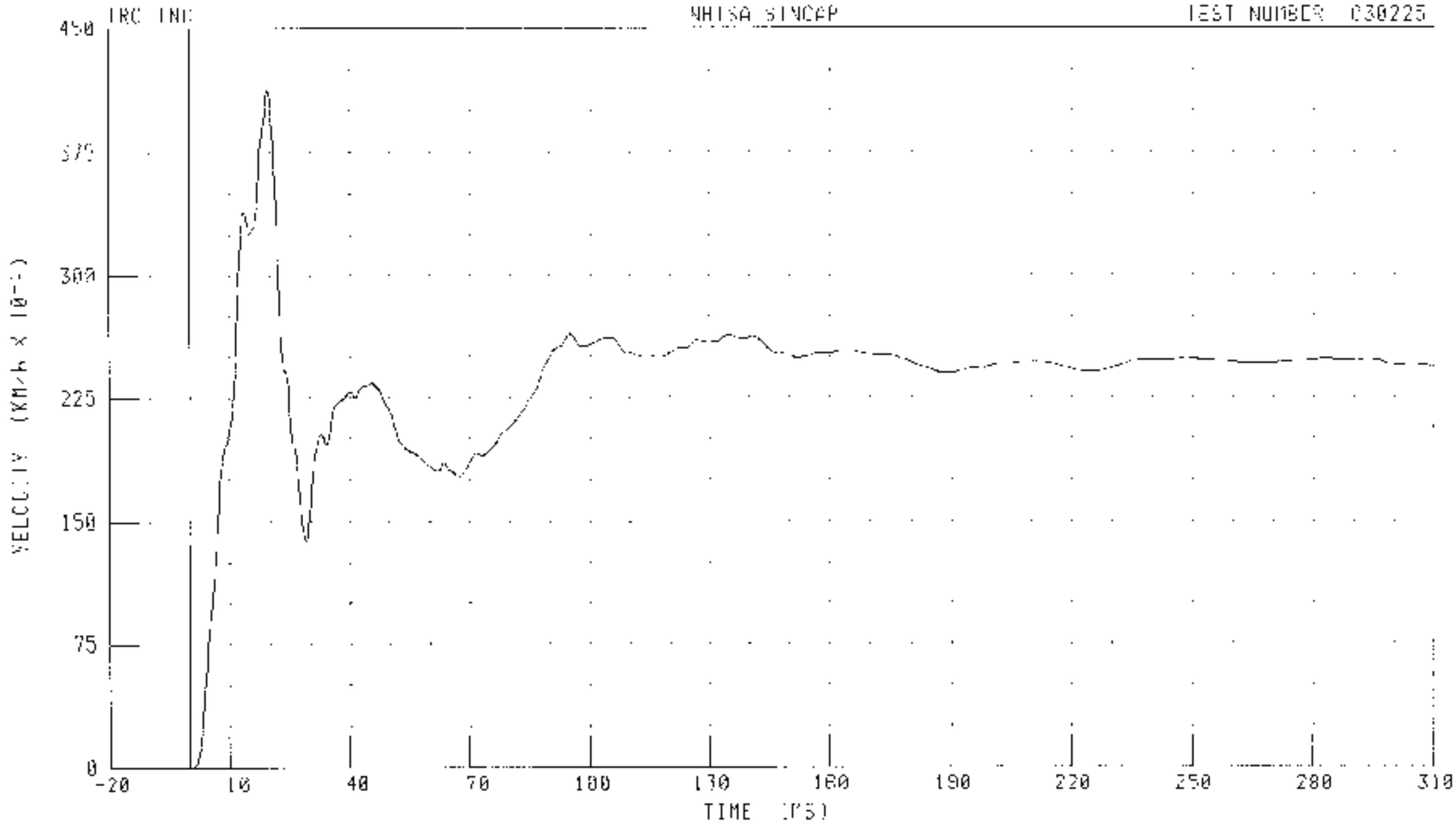
55/29 KMH 30 DEGREE NCAP SITE IMPACT (MOVING DEFORMABLE BARRIER) INTO THE SIDE OF 2001 NISSAN 350Z
LEFT FRONT DOOR @ CENTERLINE X AXIS ACCELERATION

TRC INC. NHTSA SINCAP TEST NUMBER 030225



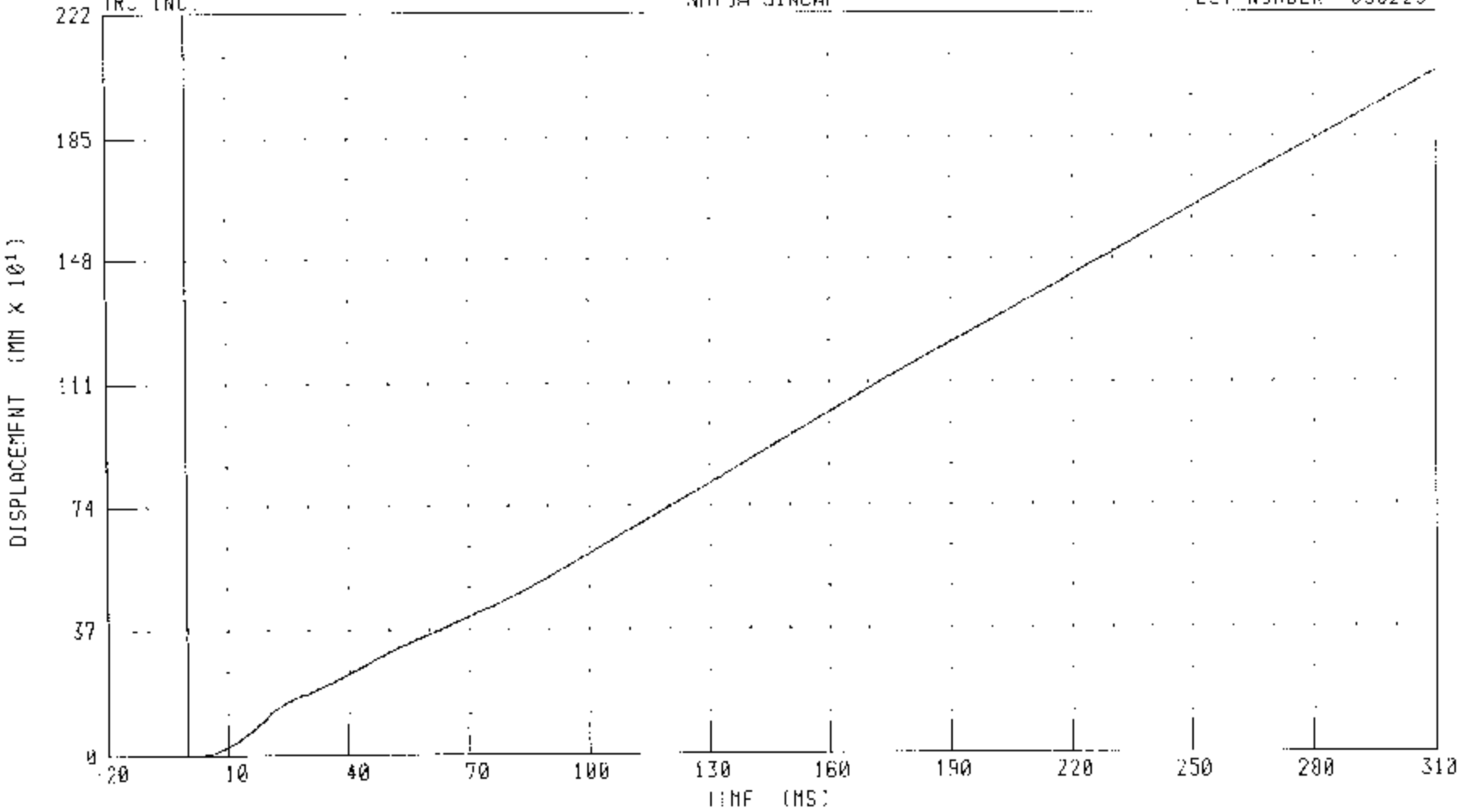
CHANNEL LFCYG1 FILTER CH 0 ASS 60 PEAK DATA 81 97 G @ 11 68 MS, 110 00 G @ 22 10 MS

55 20 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2WD NISSAN 3502
LEFT FRONT DOOR ON CENTERLINE X AXIS VELOCITY



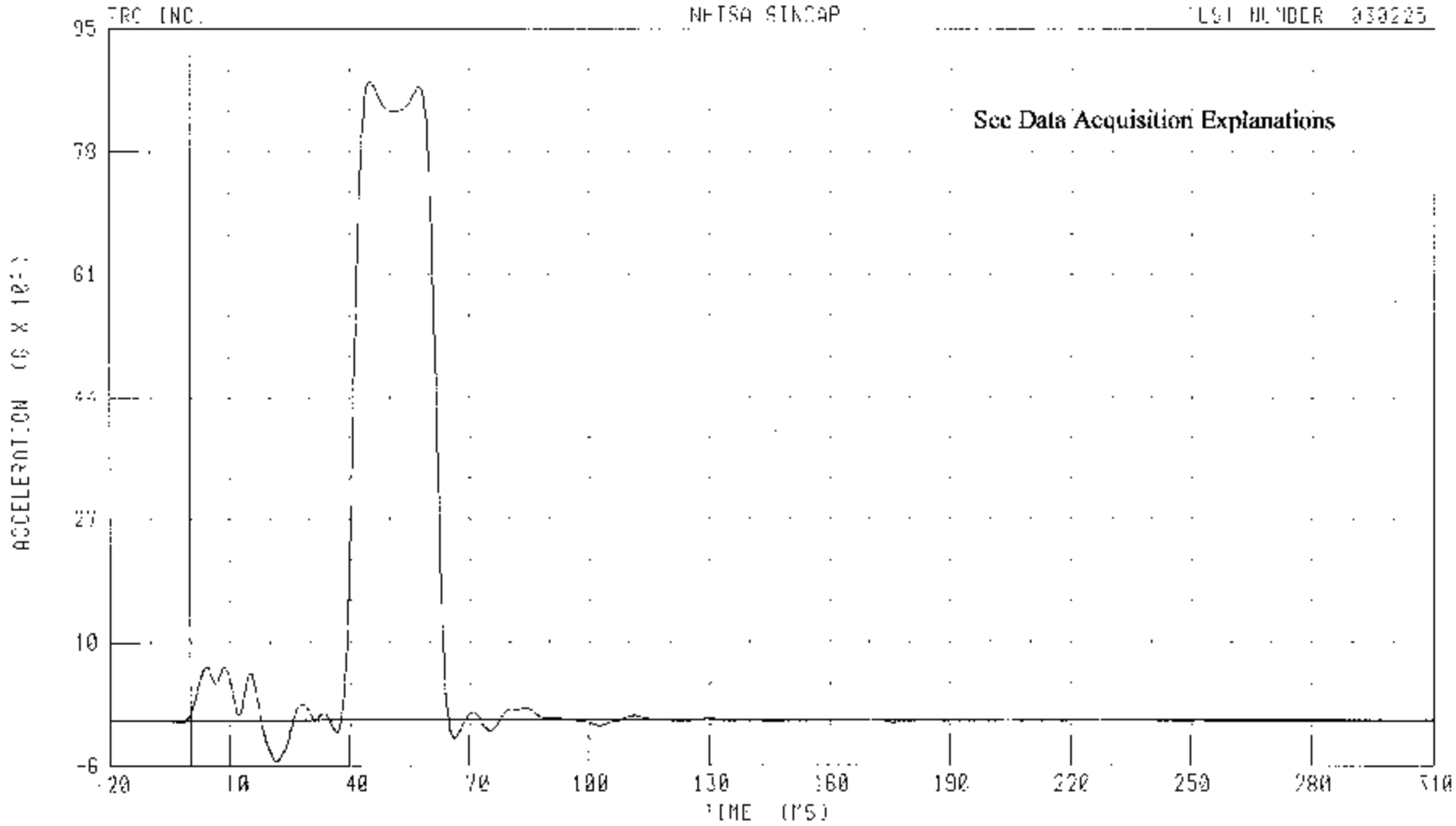
55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
LEFT FRONT DOOR ON CENTERLINE Y-AXIS DISPLACEMENT

TRC INC. NHTSA SINCAP TEST NUMBER 030225



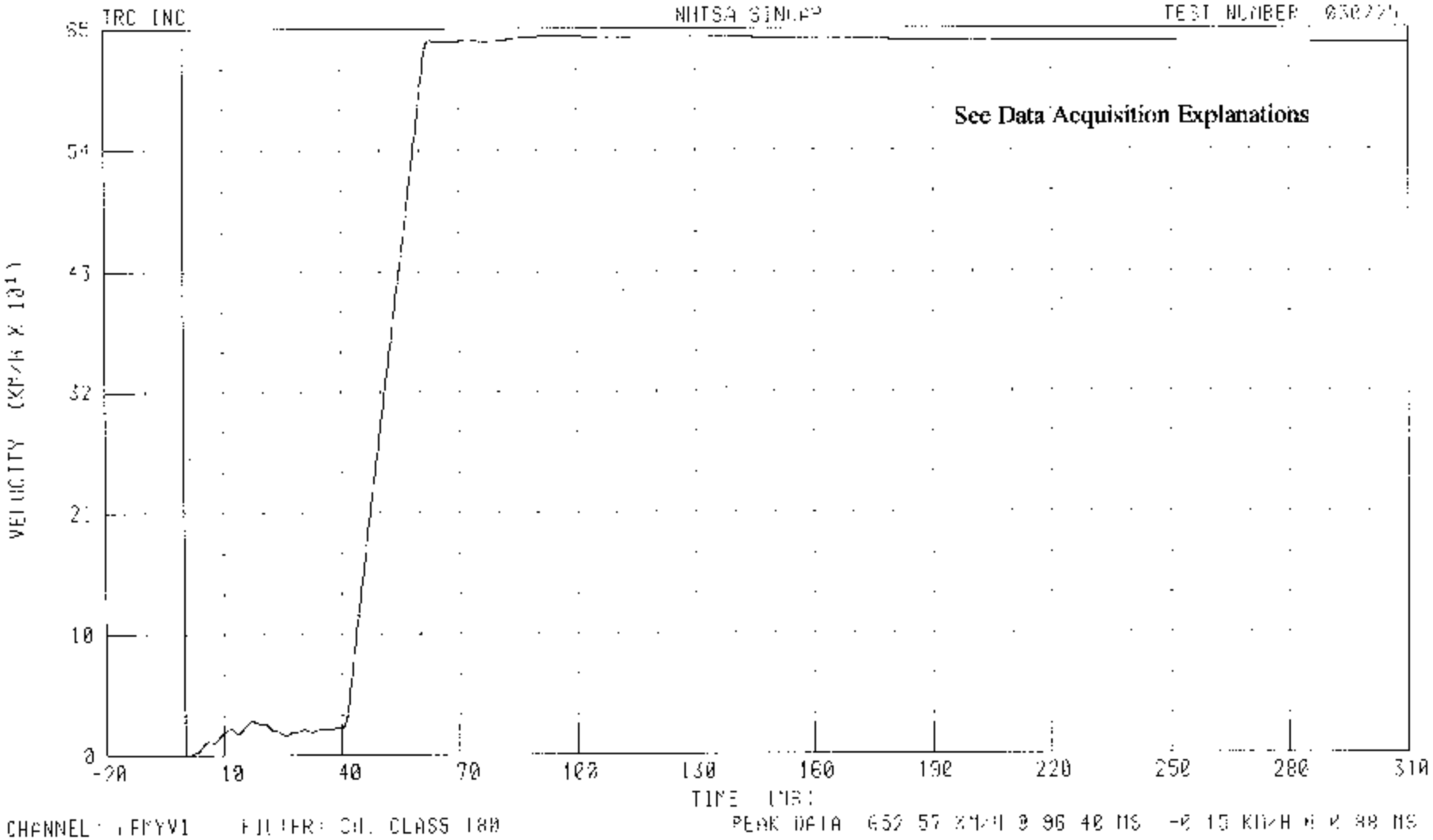
CHANNEL LFCYD1 FILTER: CH. CLASS 180 PEAK DATA 2045.02 MM @ 310.00 MS; A 30 MM @ 0.00 MS

-5/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2002 NISSAN 350Z
LEFT FRONT DOOR MID-REAR Y-AXIS ACCELERATION

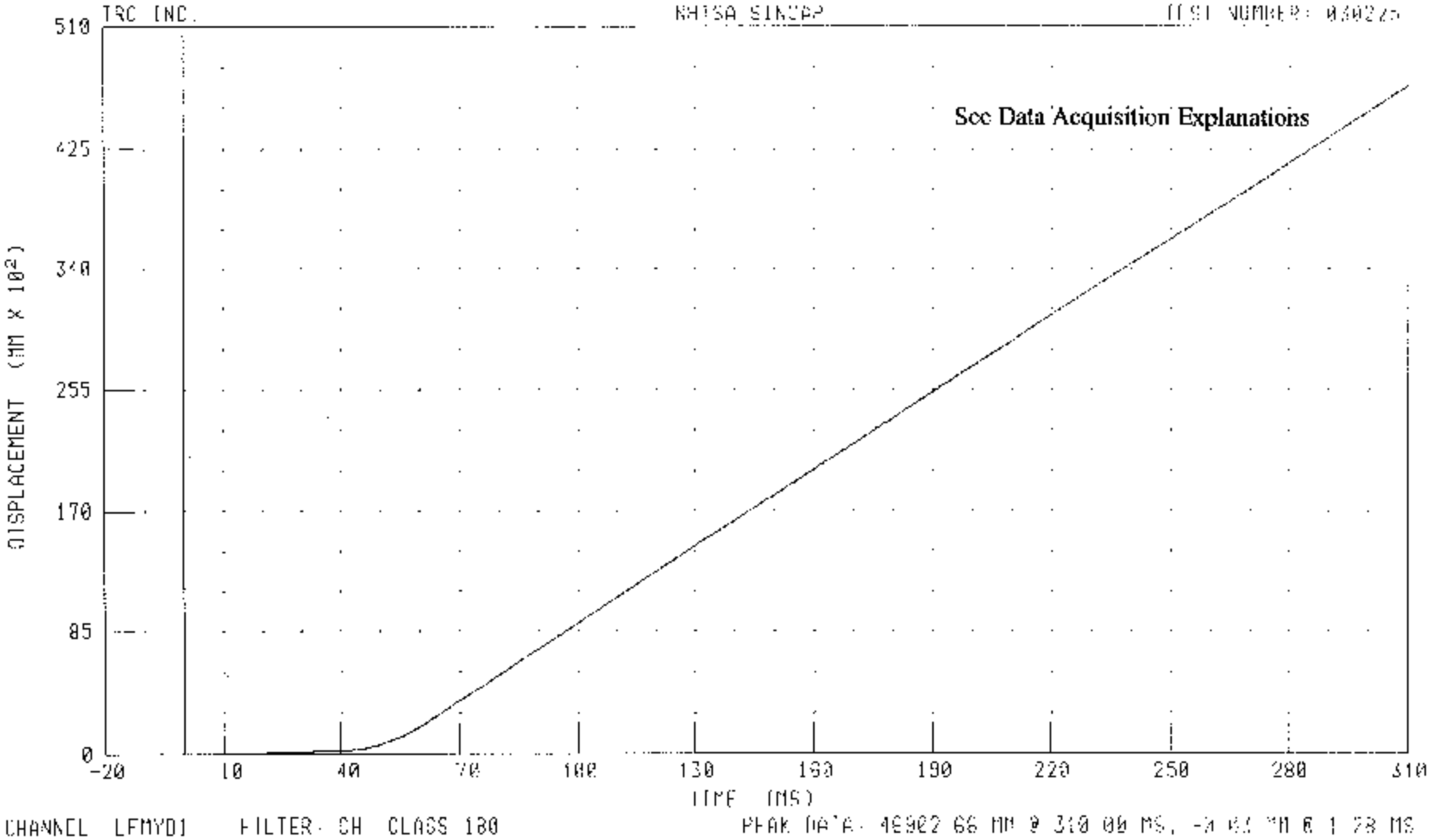


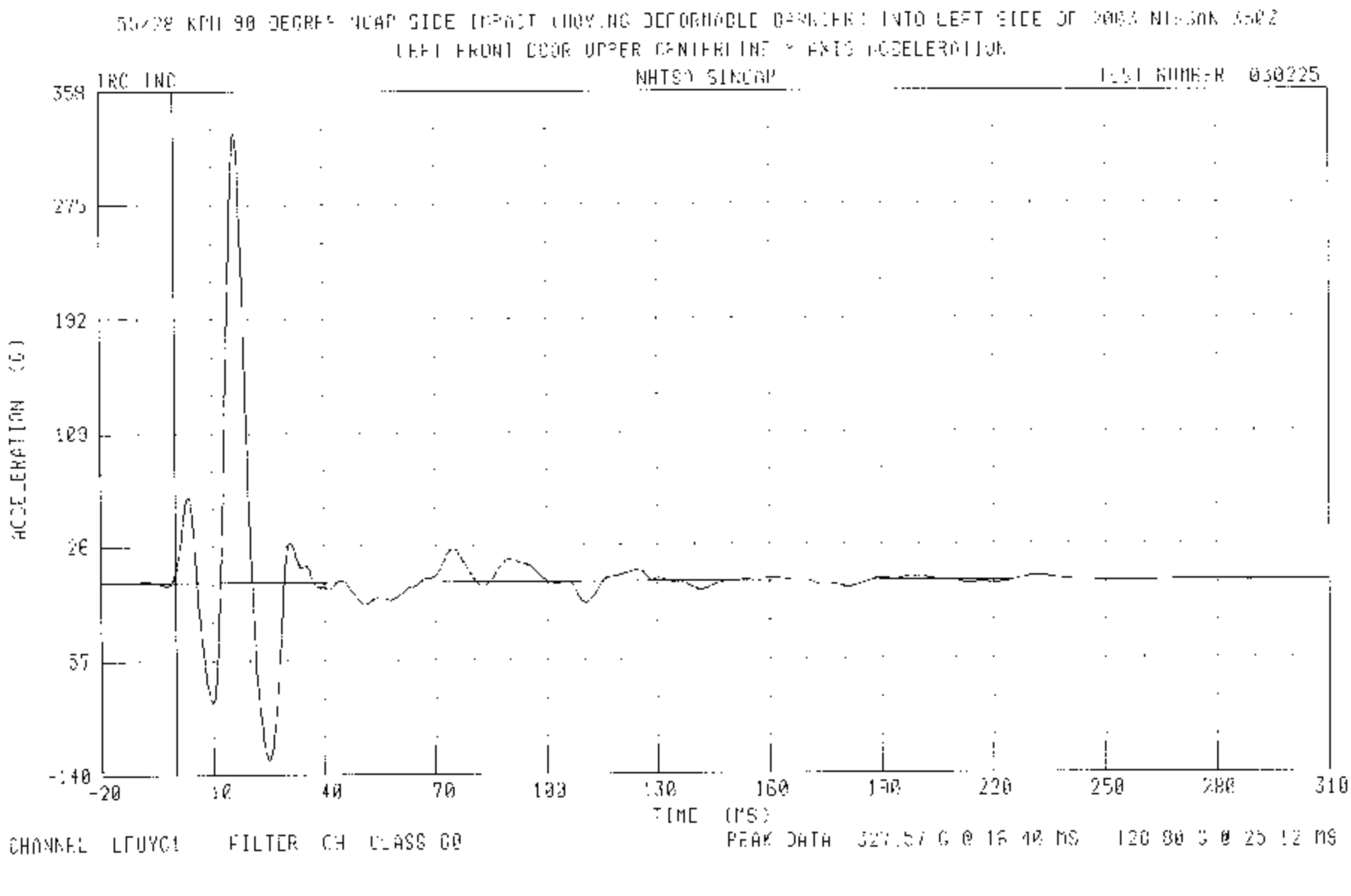
CHANNEL: LFMY03 FILTER CH CLASS 60 PEAK DATA 883.01 G @ 45.78 MS; -57.33 G @ 21.50 MS

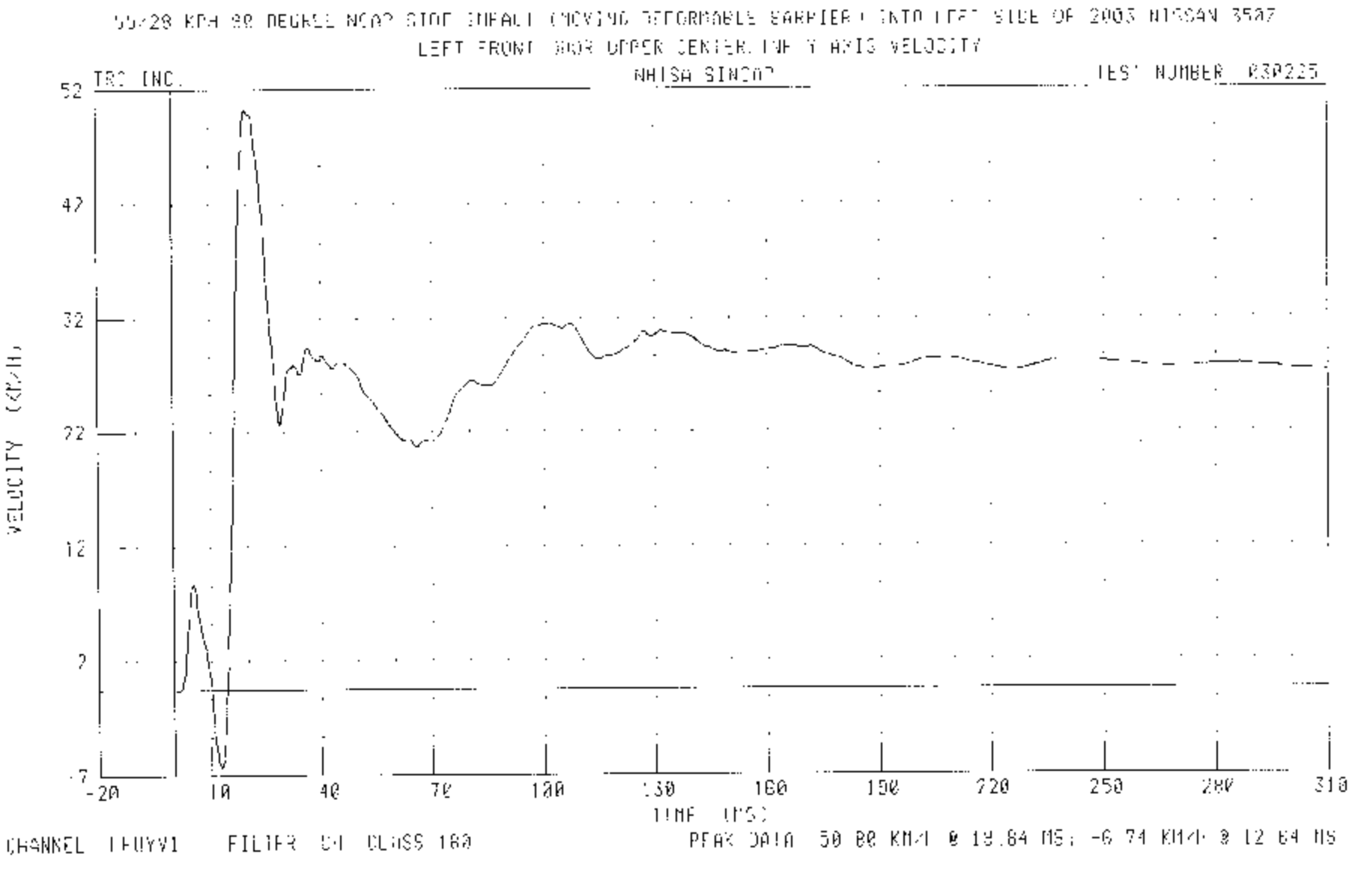
55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2001 NISSAN 350Z
LEFT FRONT DOOR MID-REAR Y-AXIS VELOCITY



55/23 KPH 30 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2002 NISSAN 350Z
LEFT FRONT DOOR MID-REAR Y-AXIS DISPLACEMENT



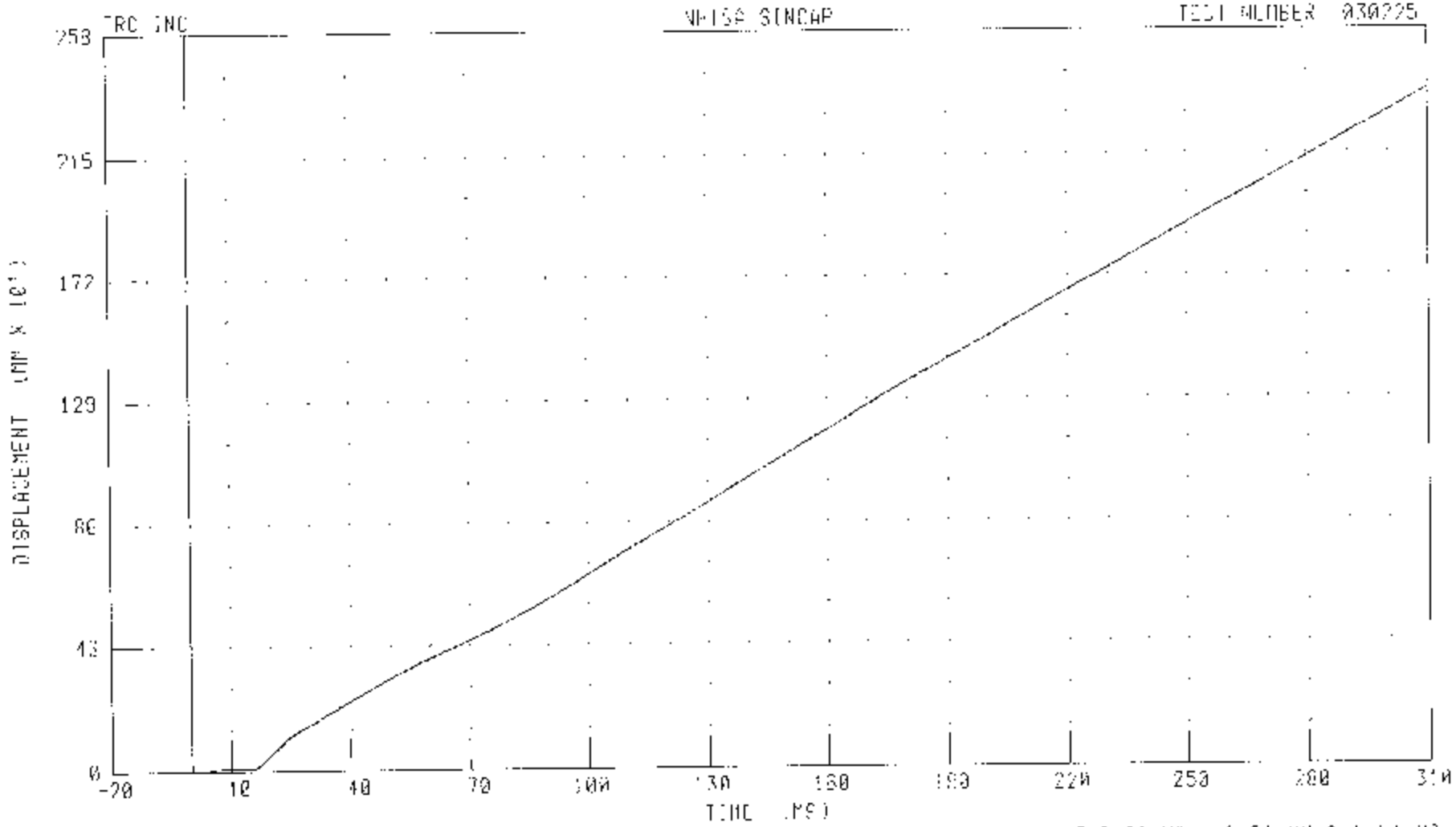

55/28 KMH 90 DEGREE NCAP SIDE IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2003 NISSAN 350Z
LEFT FRONT DOOR UPPER CENTERLINE Y AXIS ACCELERATION
IRC INC
NHTSA SINCAP
TEST NUMBER 030225
ACCELERATION (G)
358
275
192
109
26
57
-140
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL LFDYC1 FILTER CH CLASS 60
PEAK DATA 327.57 G @ 16.40 MS 120.80 G @ 25.12 MS


56.28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
LEFT FRONT DOOR UPPER CENTER, INF Y AXIS VELOCITY
TRC INC.
WHISA SINCAP
TEST NUMBER R3P225
VELOCITY (KM/H)
52
42
32
22
12
2
-7
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL TFDYV1
FILTER CFC CLASS 180
PEAK DATA 50.80 KM/H @ 19.84 MS; -6.74 KM/H @ 12.64 MS

55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN ASUZ

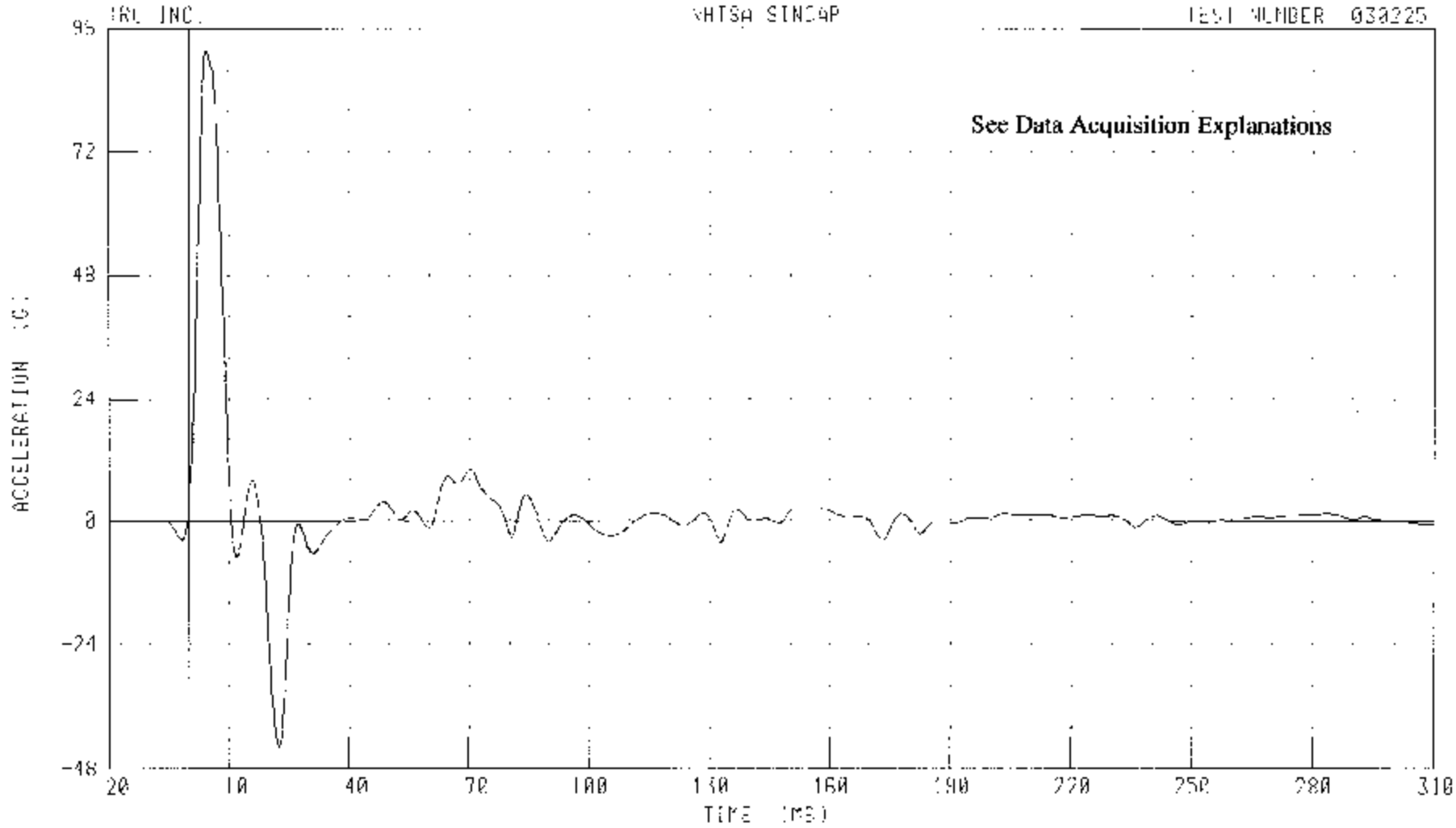
LEFT FRONT DOOR UPPER CENTERLINE Y-AXIS DISPLACEMENT

TRC INC WHISS SINCAP TEST NUMBER 030225



CHANNEL: FUYD1 FILTER CH CLASS 180 PEAK DATA 2470 96 IN @ 510 00 MS -0 01 M1 @ 1 34 MS

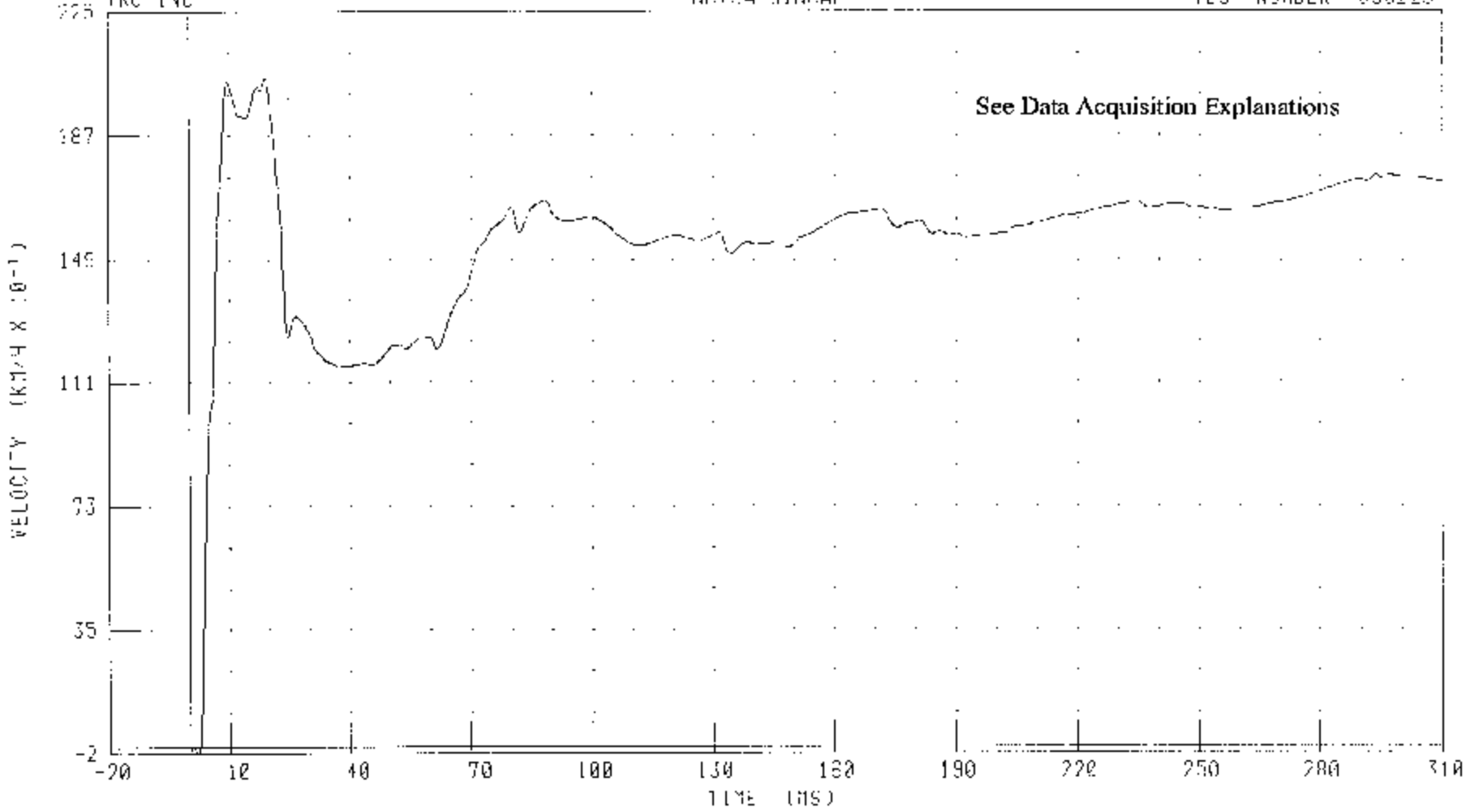
55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2006 NISSAN 350Z
LEFT LOWER A-POST Y-AXIS ACCELERATION



CHANNEL: 11AYG1 FILTER: CFC CLASS 60 PEAK DATA 31.79 G @ 4.50 MS, 43.74 G @ 22.72 MS

55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
LEFT LOWER B POST Y AXIS VELOCITY

TRC INC — NHTSA SINCAP — TEST NUMBER 030225

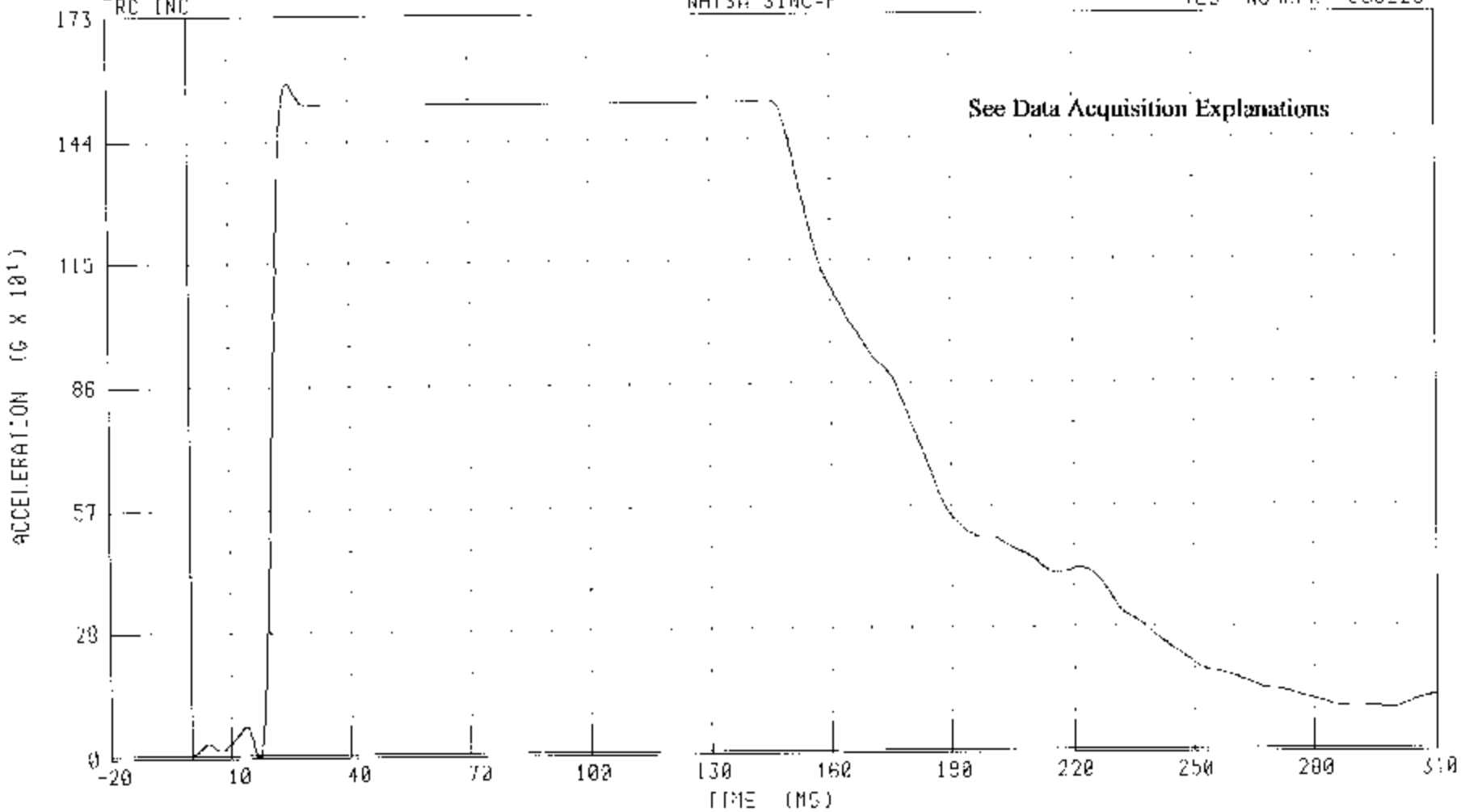


CHANNEL LLAYV1 FILTER CH CLASS 180 PEAK DATA 20.55 KM/H @ 13.20 MS, -0.25 KM/H @ 2.00 MS

55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z

LEFT MIDDLE B-POST Y-AXIS ACCELERATION

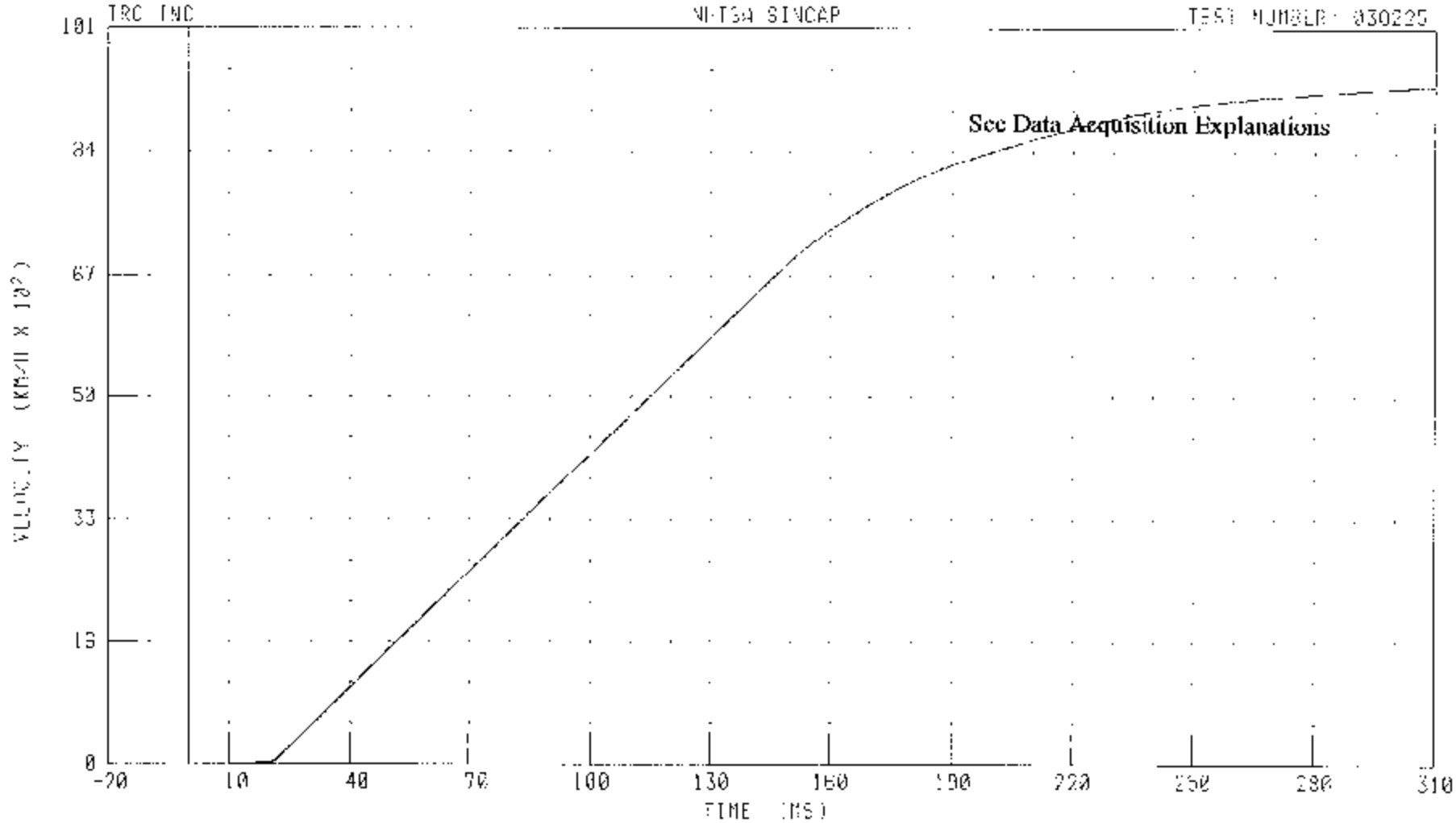
TRC INC NHTSA SINCAP TEST NUMBER: 030225



CHANNEL: MAYG1 FILTER CH CLASS 60

PEAK DATA 1579.25 G @ 20.04 MS; -6.72 G @ 17.04 MS

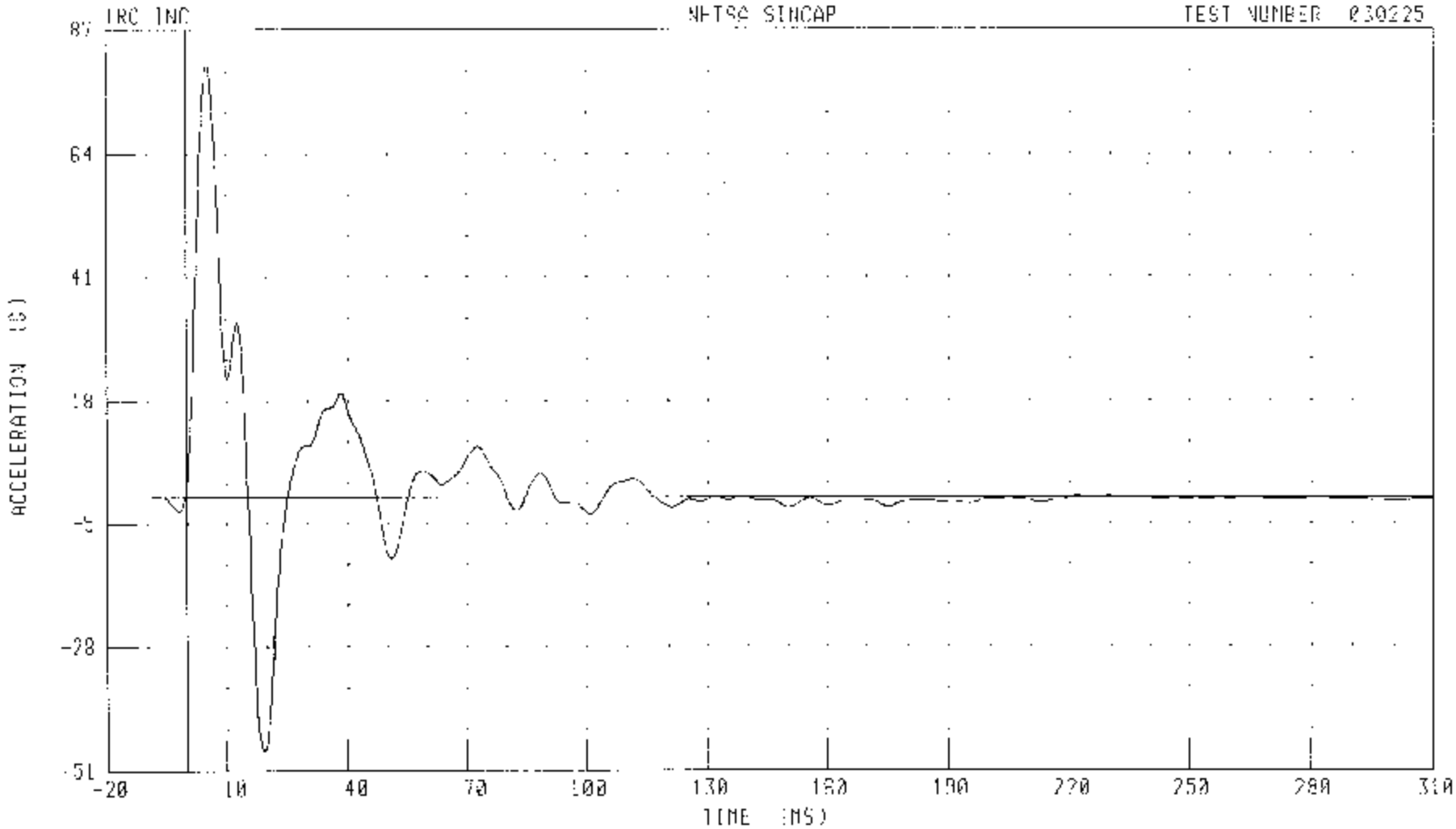
55.29 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2002 NISSAN 3507
LEFT MIDDLE A-POST Y-AXIS VELOCITY



CHANNEL LMAYV1 FILTER: CH. CLASS 180 PEAK DATA 9417.74 KM/H @ 310.00 MS; -8.19 KM/H @ 2.40 MS

55/20 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z

LEFT LOWER B-POST Y-AXIS ACCELERATION

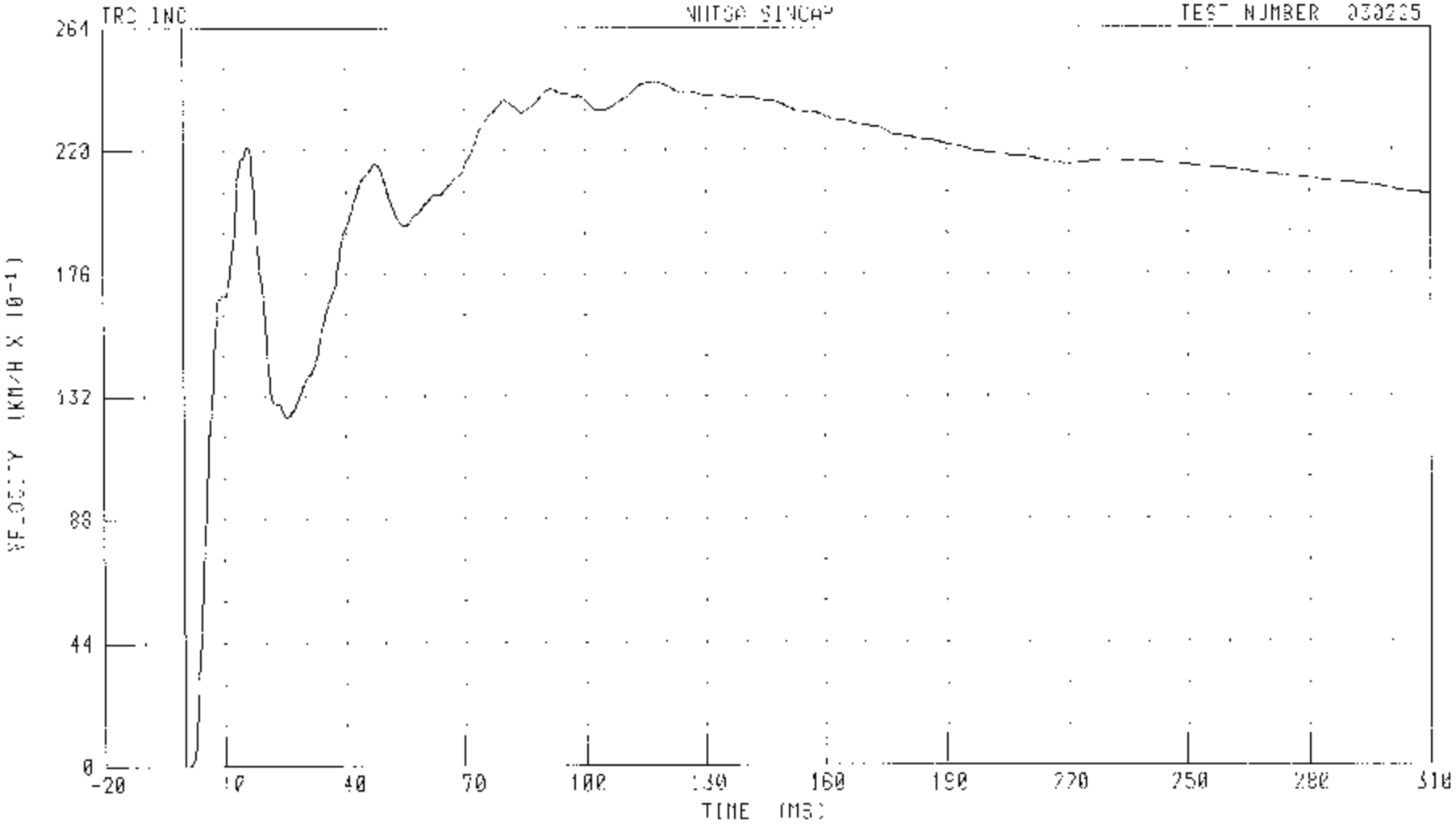


CHANNEL LLBYC1 FILTER: CH. CLASS 60

PEAK DATA: 80.69 G @ 9.28 MS, -47.25 G @ 19.36 MS

55/28 KPH 30 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z

LEFT LOWER B-POST Y-AXIS VELOCITY



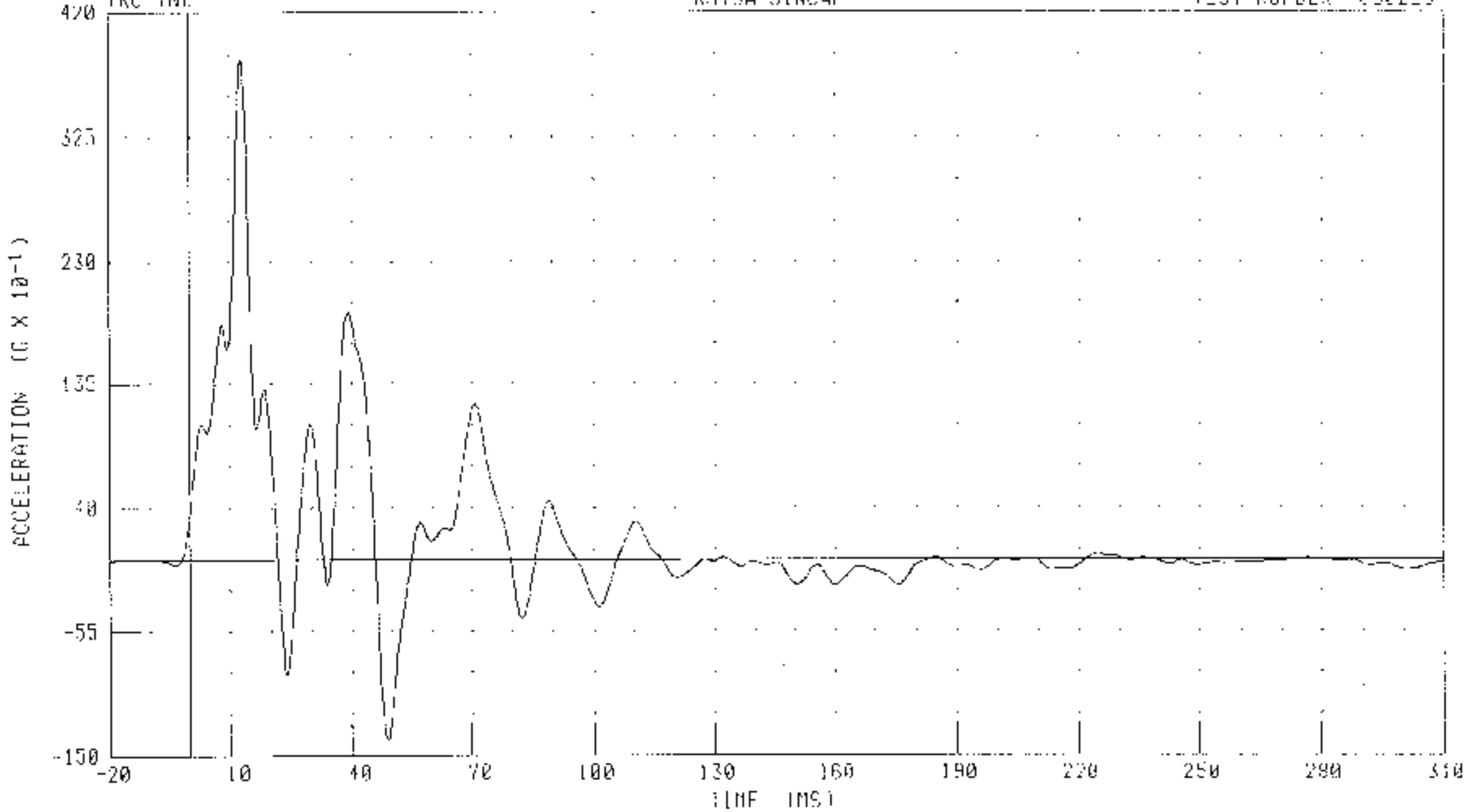
CHANNEL LLBYV1 FILTER CH CLASS 180

PEAK DATA 24.43 KM/H @ 117.68 MS; 0.00 KM/H @ 2.24 MS

55/20 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z

LEFT MIDDLE B POST Y-AXIS ACCELERATION

TRC INC — NHTSA SINCAP — TEST NUMBER 030225

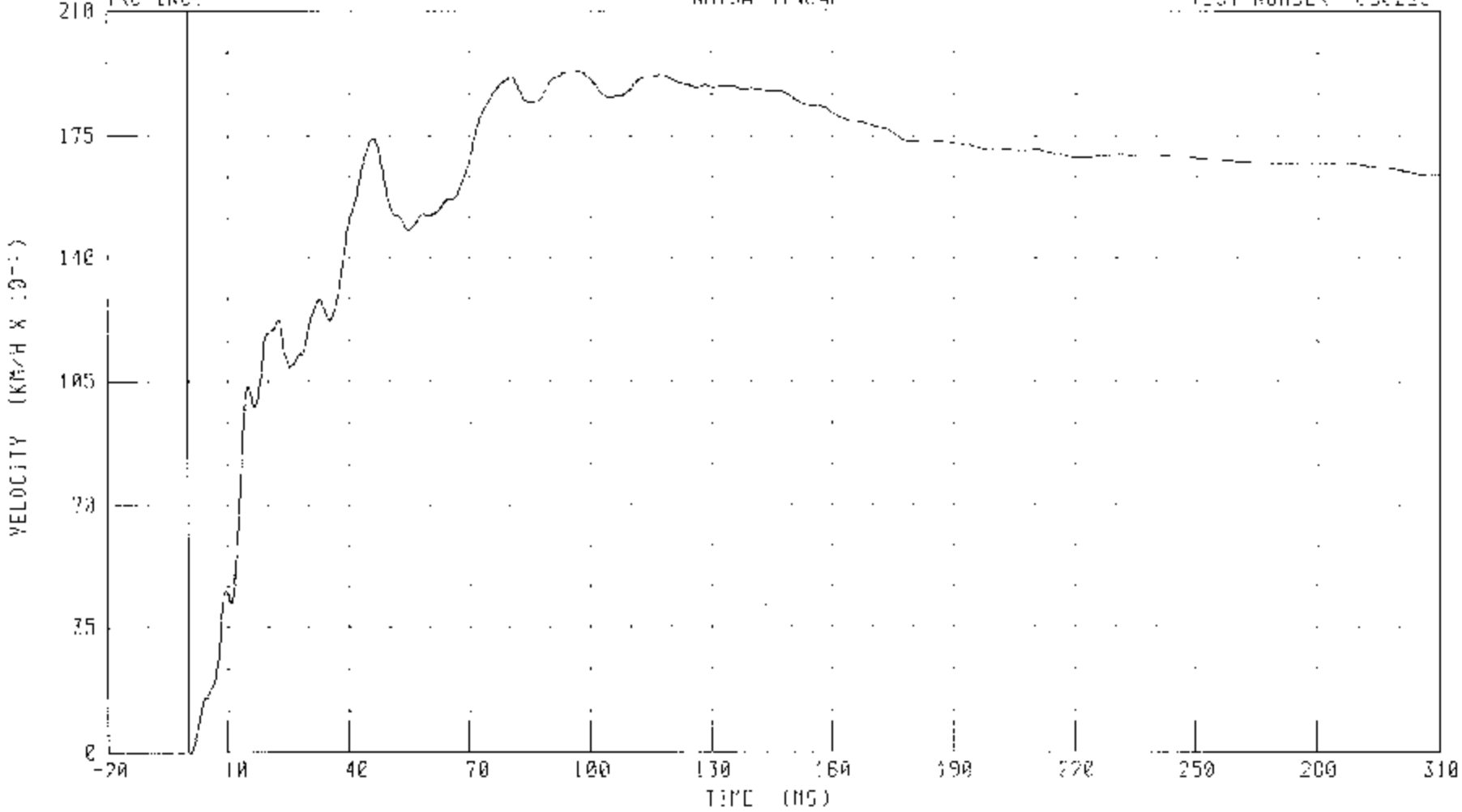


CHANNEL: LMBYG1 FILTER CH CLASS 60 PEAK DATA 38.38 G @ 13.04 MS, -13.84 G @ 40.00 MS

55/20 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z

FFT TIME B-POST Y-AX S VELOC IT

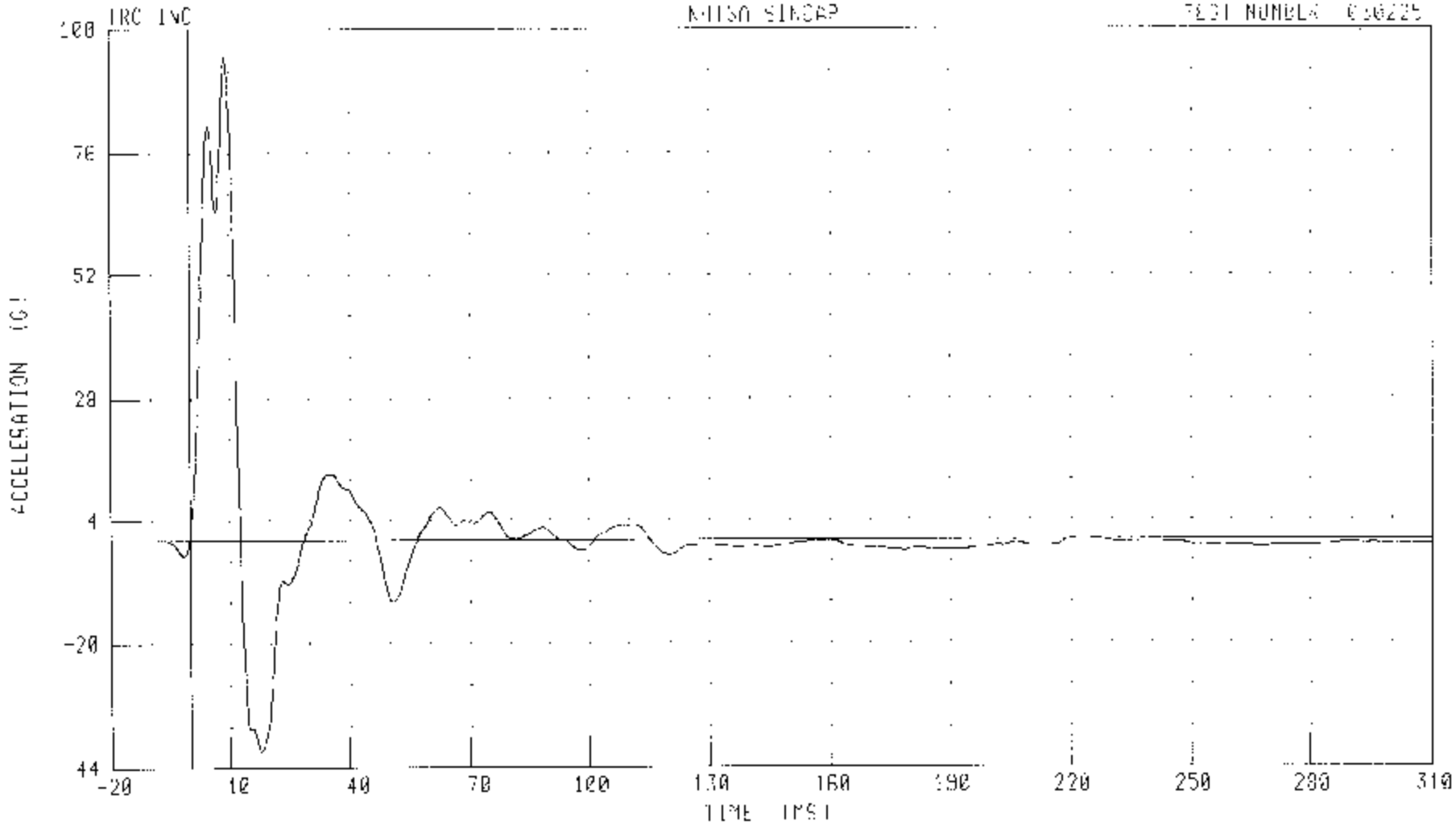
TRC INC. NHTSA SINCAP TEST NUMBER 030225



CHANNEL LM37V1 FILTER C4 CLASS 180 PEAK DATA 19.31 KM/H @ 97.30 MS, 0.00 KM/H @ 0.24 MS

55/28 KPH 90 DEGREE ROAD SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2000 NISSAN 3500

LEFT FRONT SEAT TRACK Y-AXIS ACCELERATION

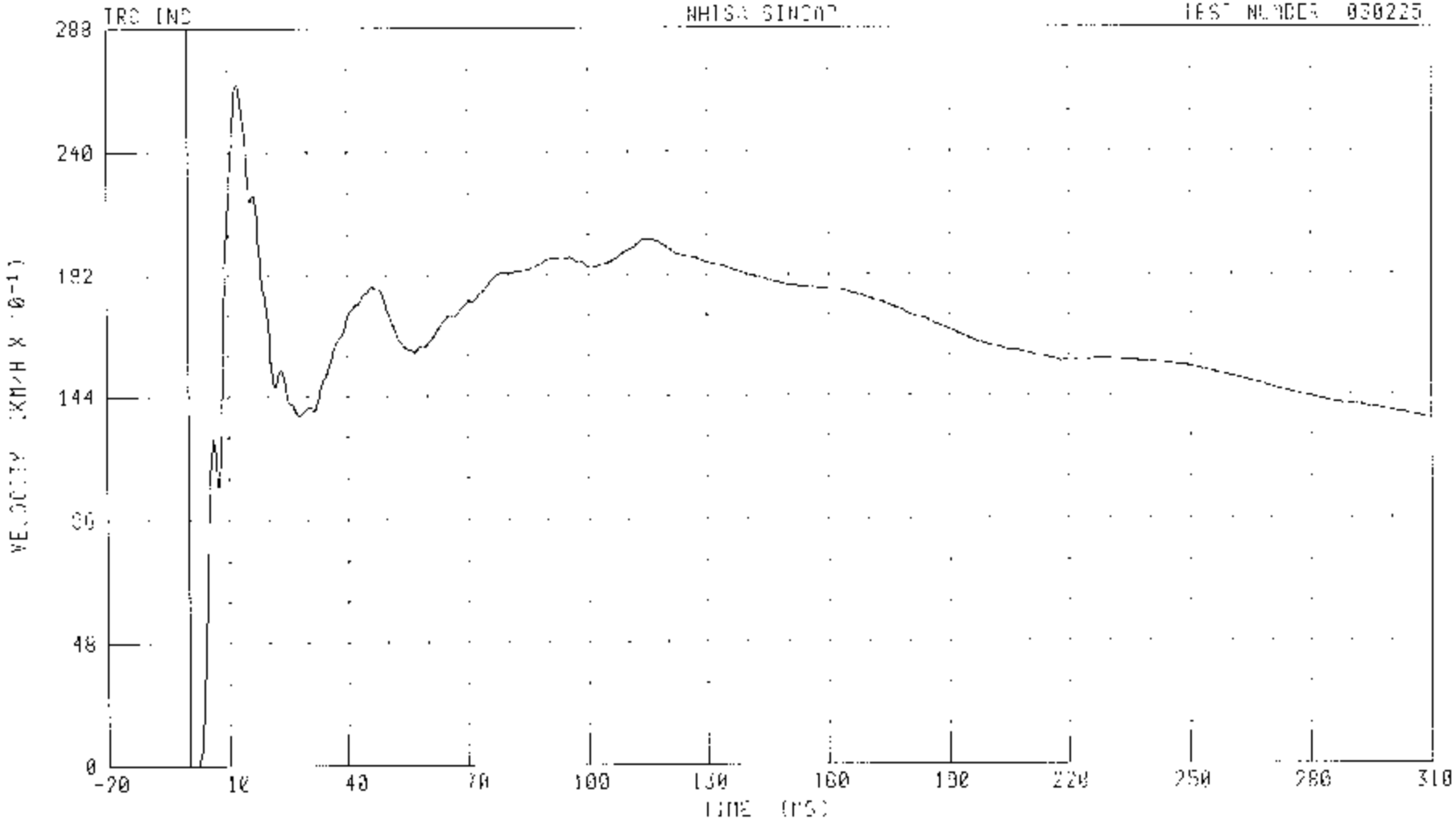


CHANNEL LFTYG1 FILTER CH CLASS 60

PEAK DATA 54.73 G @ 9.04 MS; -40.90 G @ 17.02 MS

55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z

LEFT FRONT SEAT TRACK Y-AXIS VELOCITY



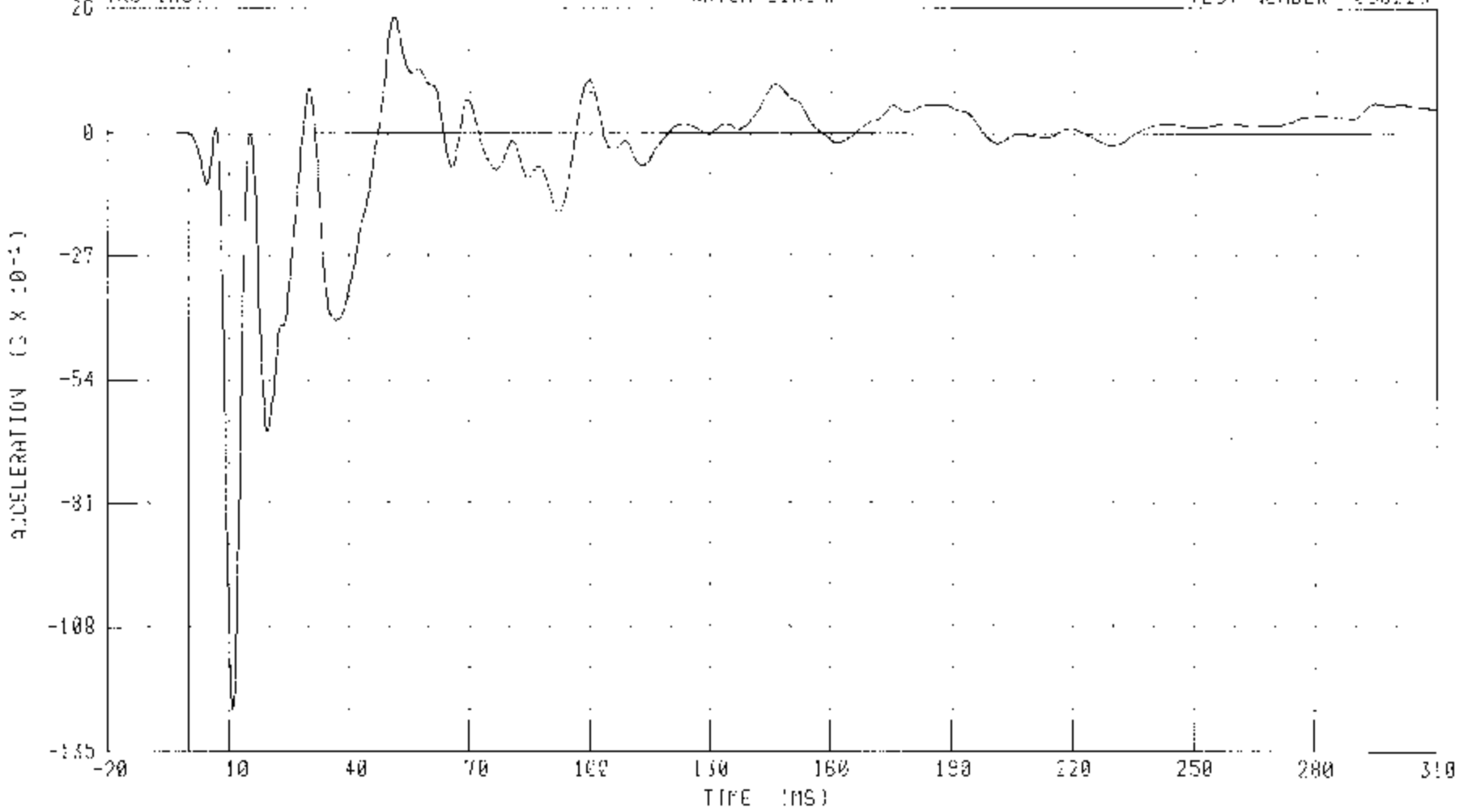
CHANNEL LFTYV1 FILTER: CH CLASS 180

PEAK DATA: 95.07 KM/H @ 12.32 MS, -2.01 KM/H @ 1.12 MS

55.28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z

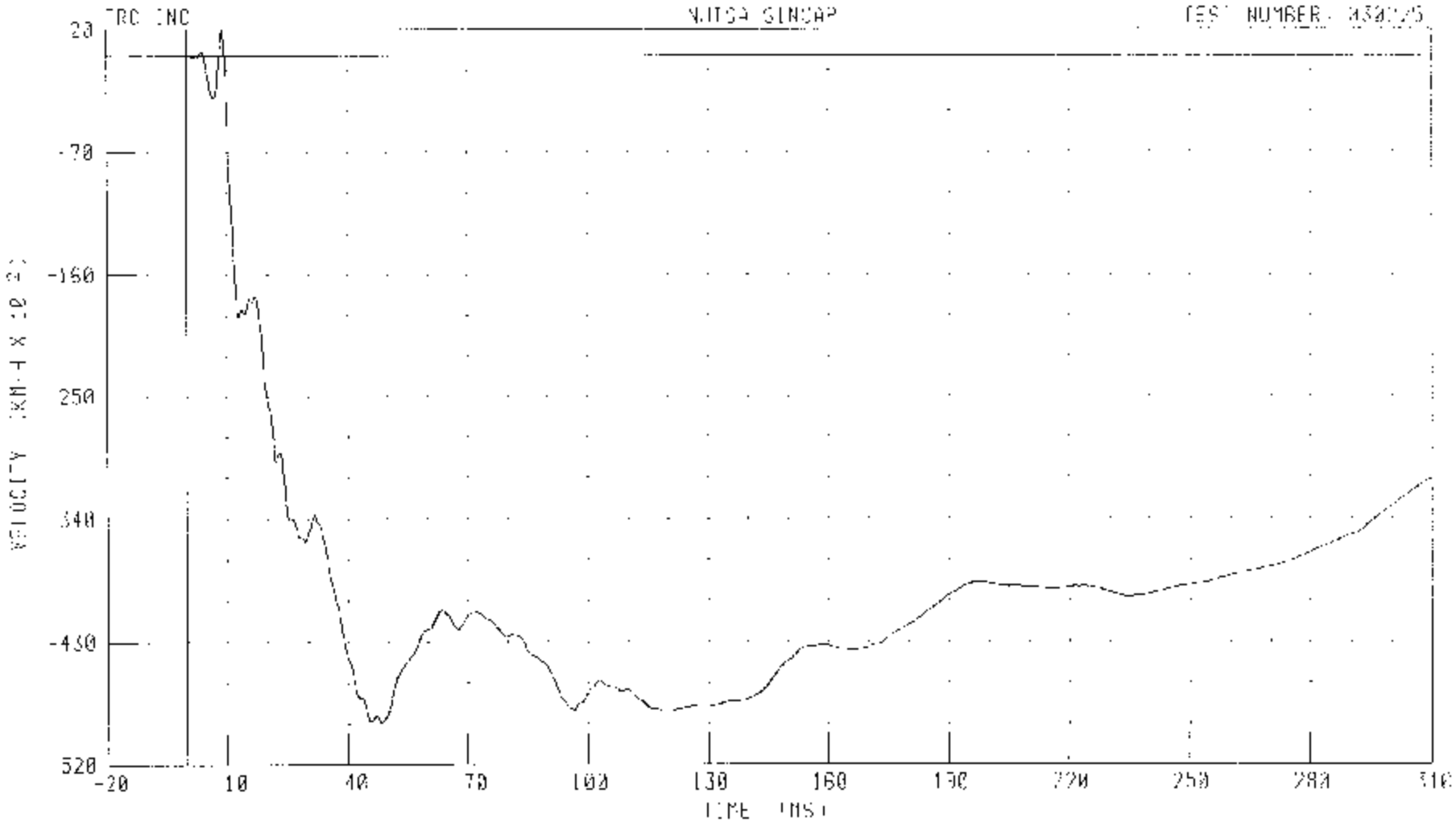
VEHICLE CENTER OF GRAVITY X-AXIS ACCELERATION

TRC INC. NHTSA SINCAP TEST NUMBER 030225



CHANNEL VCCXG1 FILTER CFC CLASS 60 PEAK DATA 2.50 G @ 51.44 MS, -12.61 G @ 10.06 MS

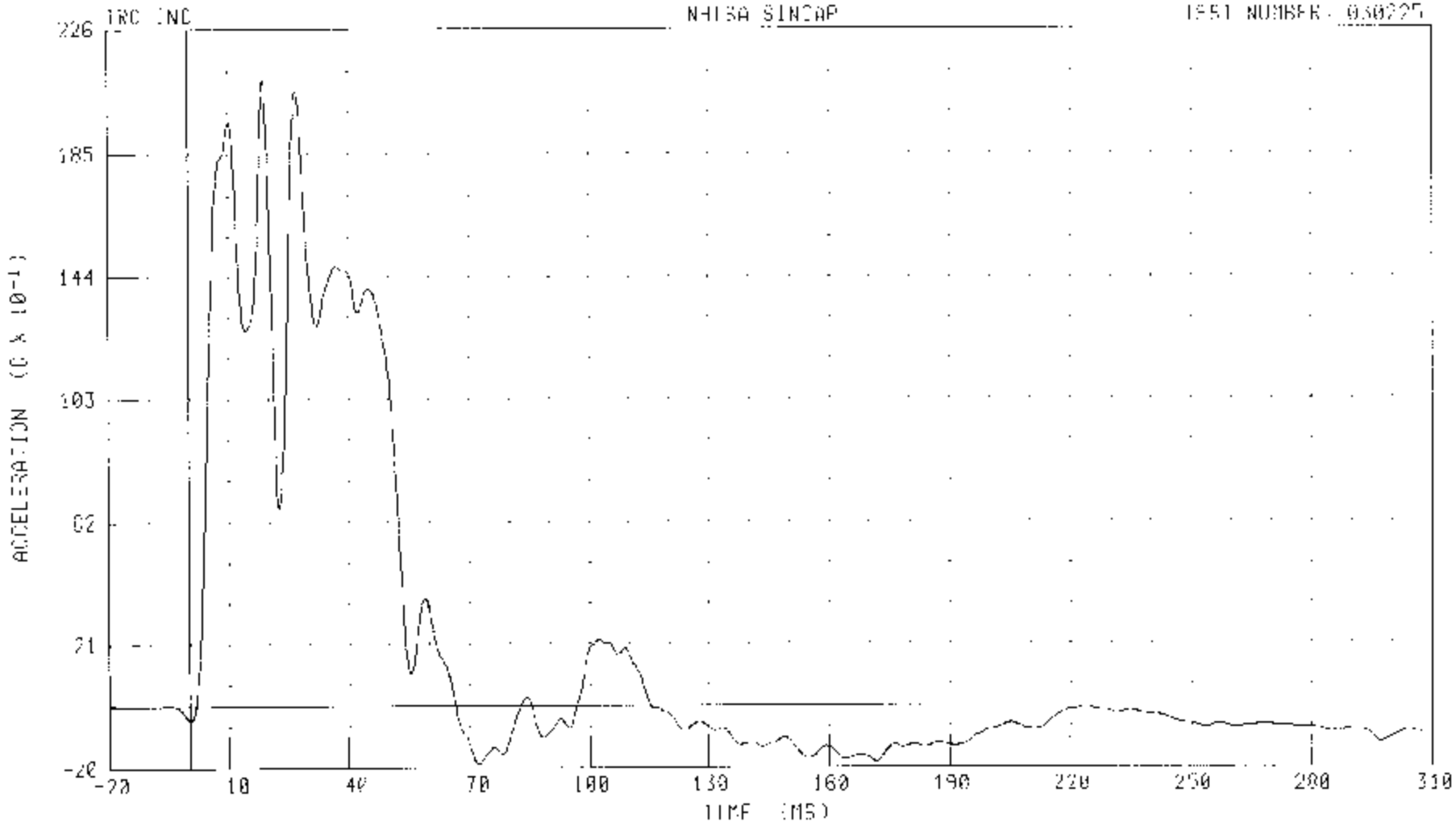
55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2043 NISSAN 5247
VEHICLE CENTER OF GRAVITY X AXIS VELOCITY



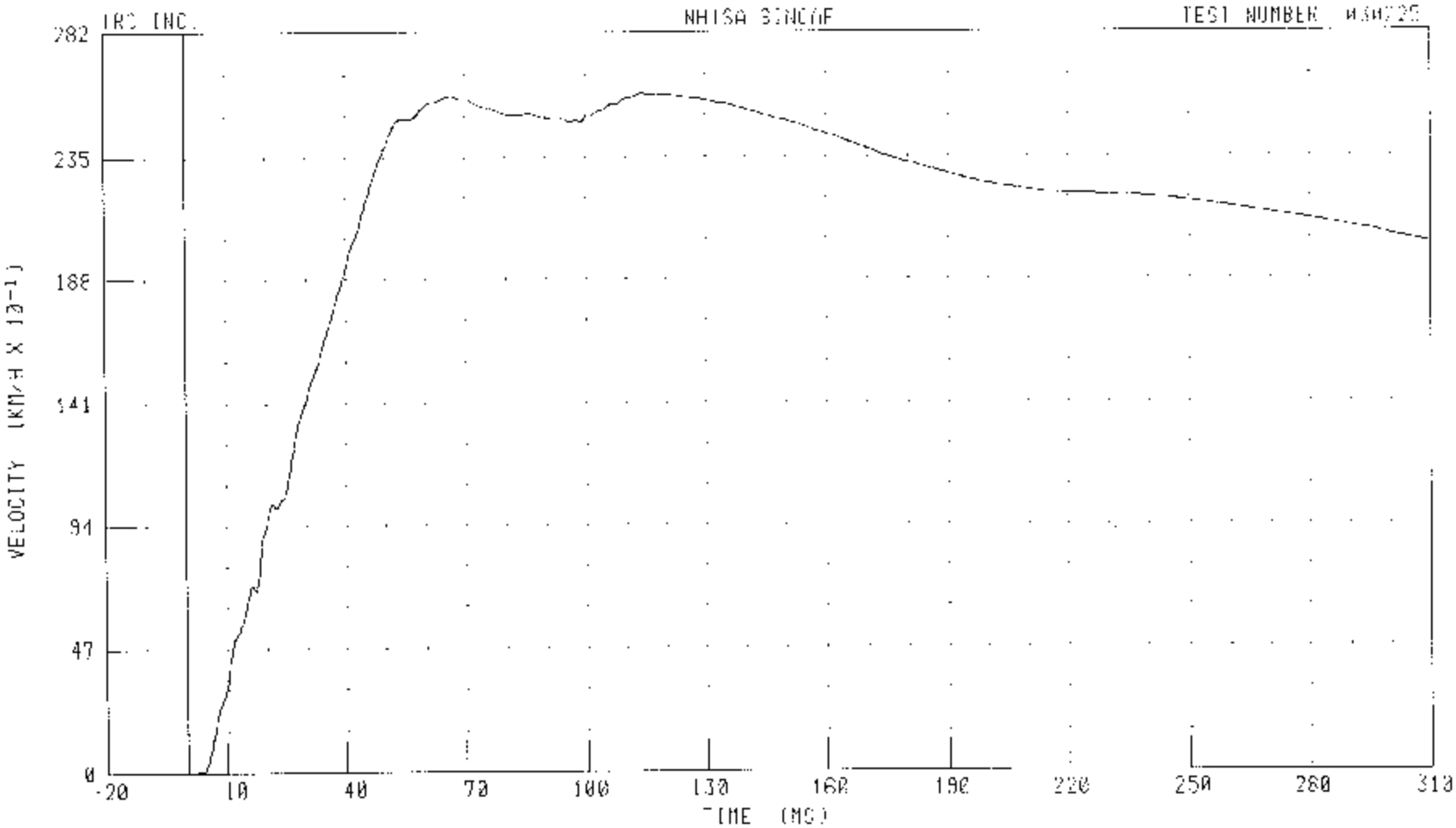
CHANNEL: VCGXV1 FILTER: CH CLASS 180 PEAK DATA: 4.19 KM/H @ 0.06 MS. 4.83 KM/H @ 40.40 MS

55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z

VEHICLE CENTER OF GRAVITY Y-AXIS ACCELERATION



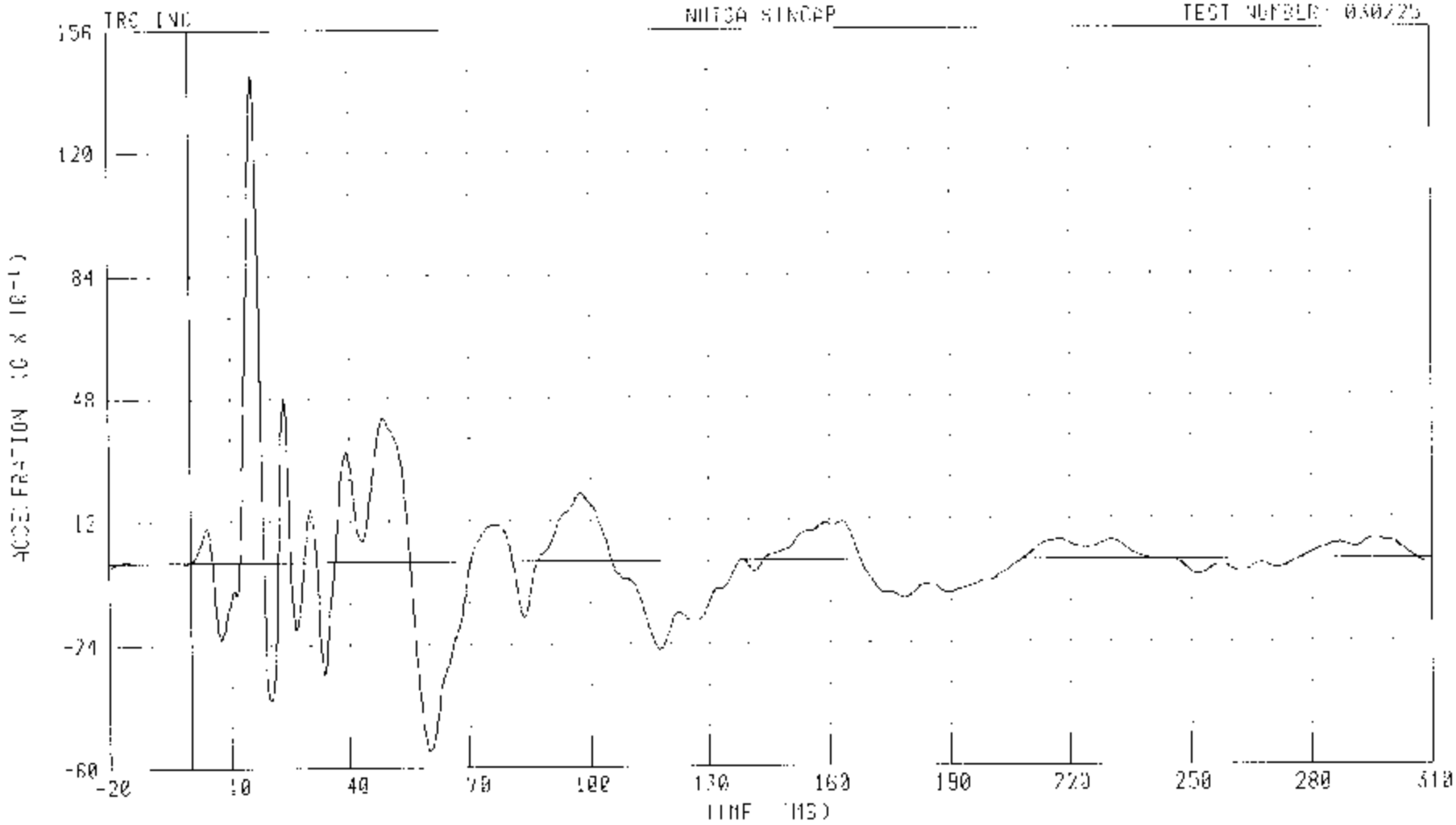
55/23 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
VEHICLE CENTER OF GRAVITY Y-AXIS VELOCITY



CHANNEL: VCGYV1 FILTER CR. CLASS 180 PEAK DATA 25.60 KM/H @ 114.48 MS. 0.00 KM/H @ 0.00 MS

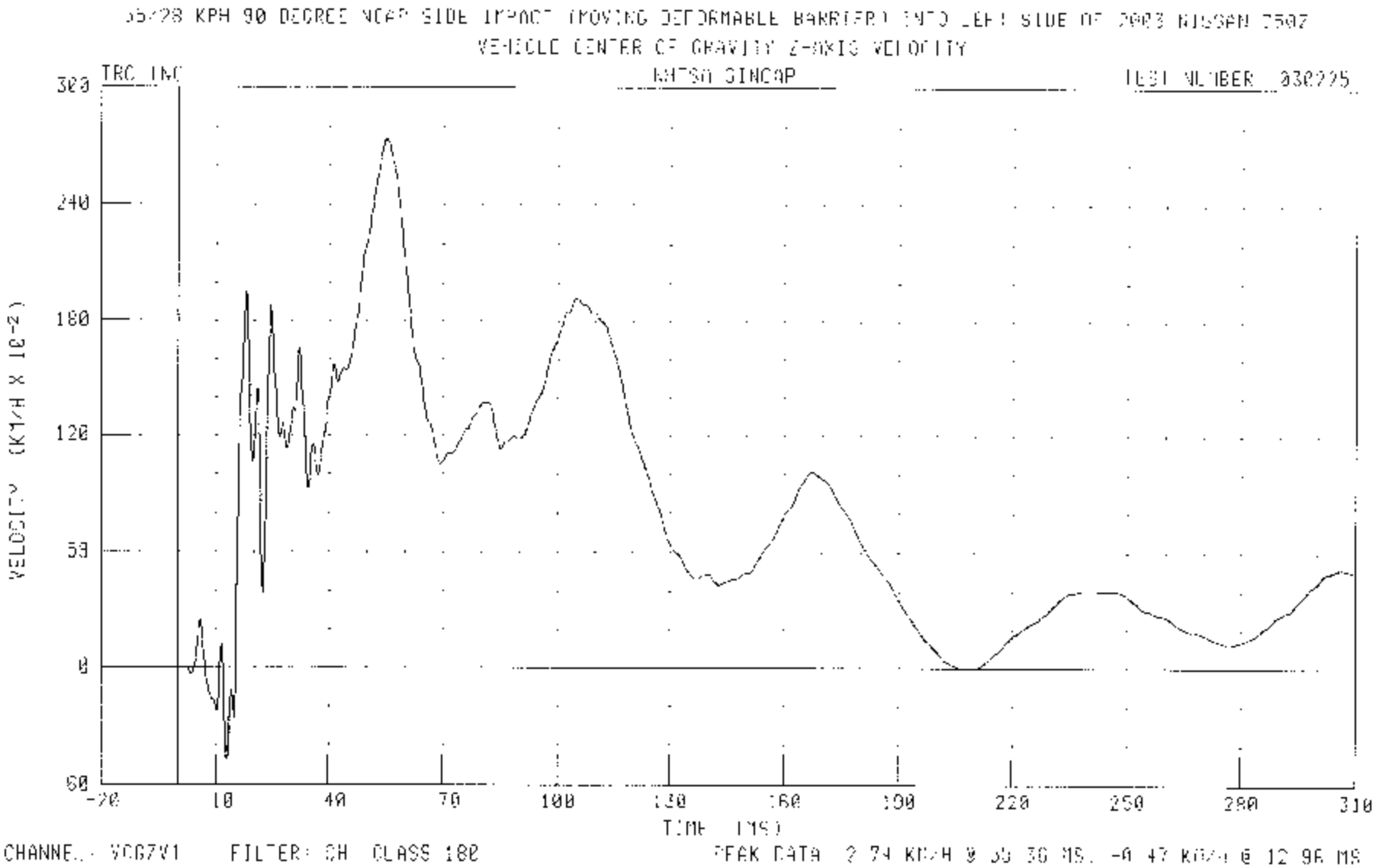
55.28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z

VEHICLE CENTER OF GRAVITY Z-AXIS ACCELERATION

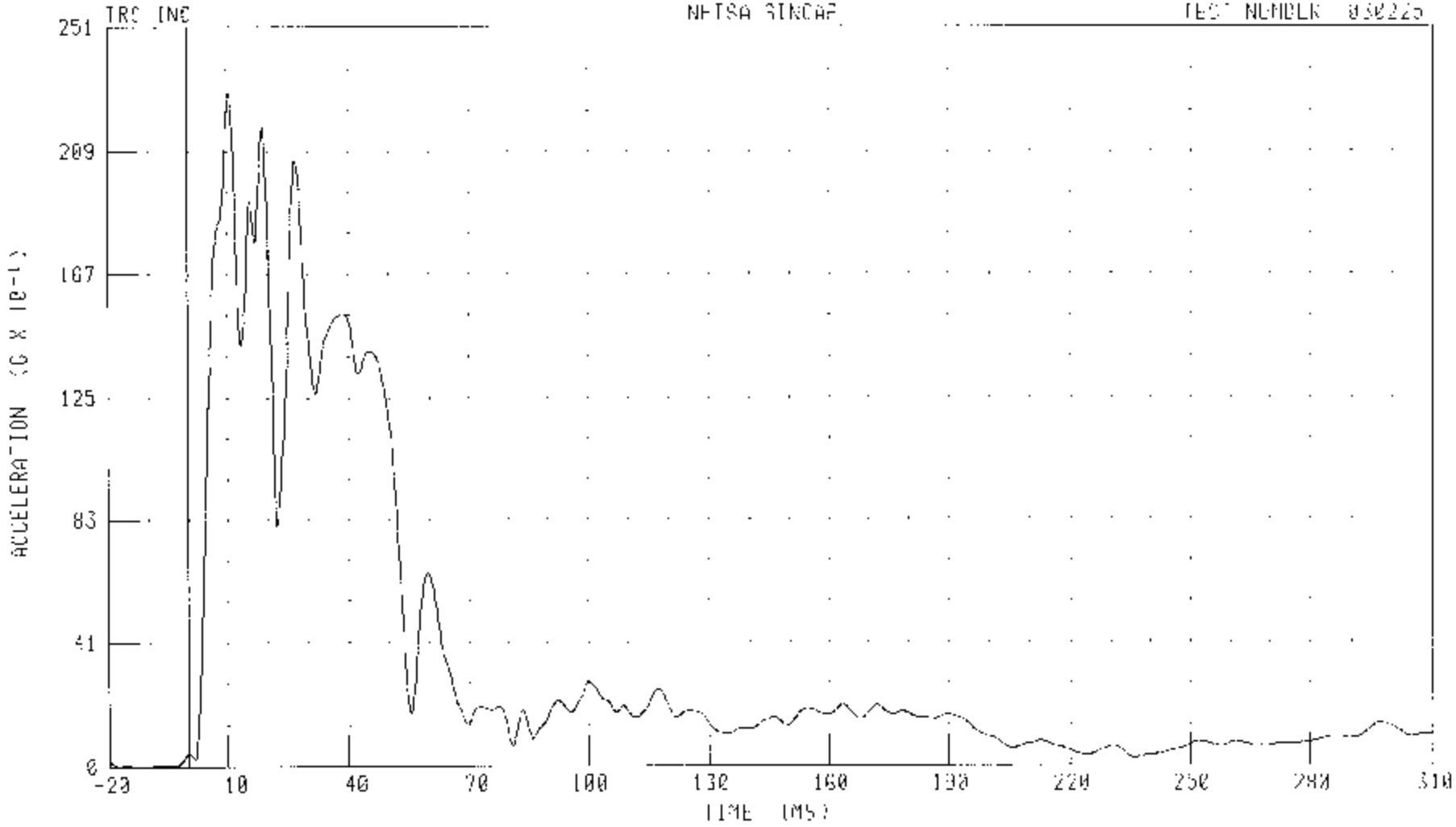


CHANNEL VCG2G1 FILTER CFC CLASS 60

PEAK DATA: 14.30 G @ 15.76 MS; -5.50 G @ 60.32 MS


56.28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
VEHICLE CENTER OF GRAVITY Z-AXIS VELOCITY
TRC INC
NHTSA SINCAP
TEST NUMBER 030225
VELOCITY (KM/H X 10-2)
300
240
180
120
60
0
-60
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: VCGZV1
FILTER: CH CLASS 180
PEAK DATA 2.74 KM/H @ 55.36 MS, -0.47 KM/H @ 12.96 MS

55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
VEHICLE CENTER OF GRAVITY RESULTANT ACCELERATION
NHTSA SINCAP



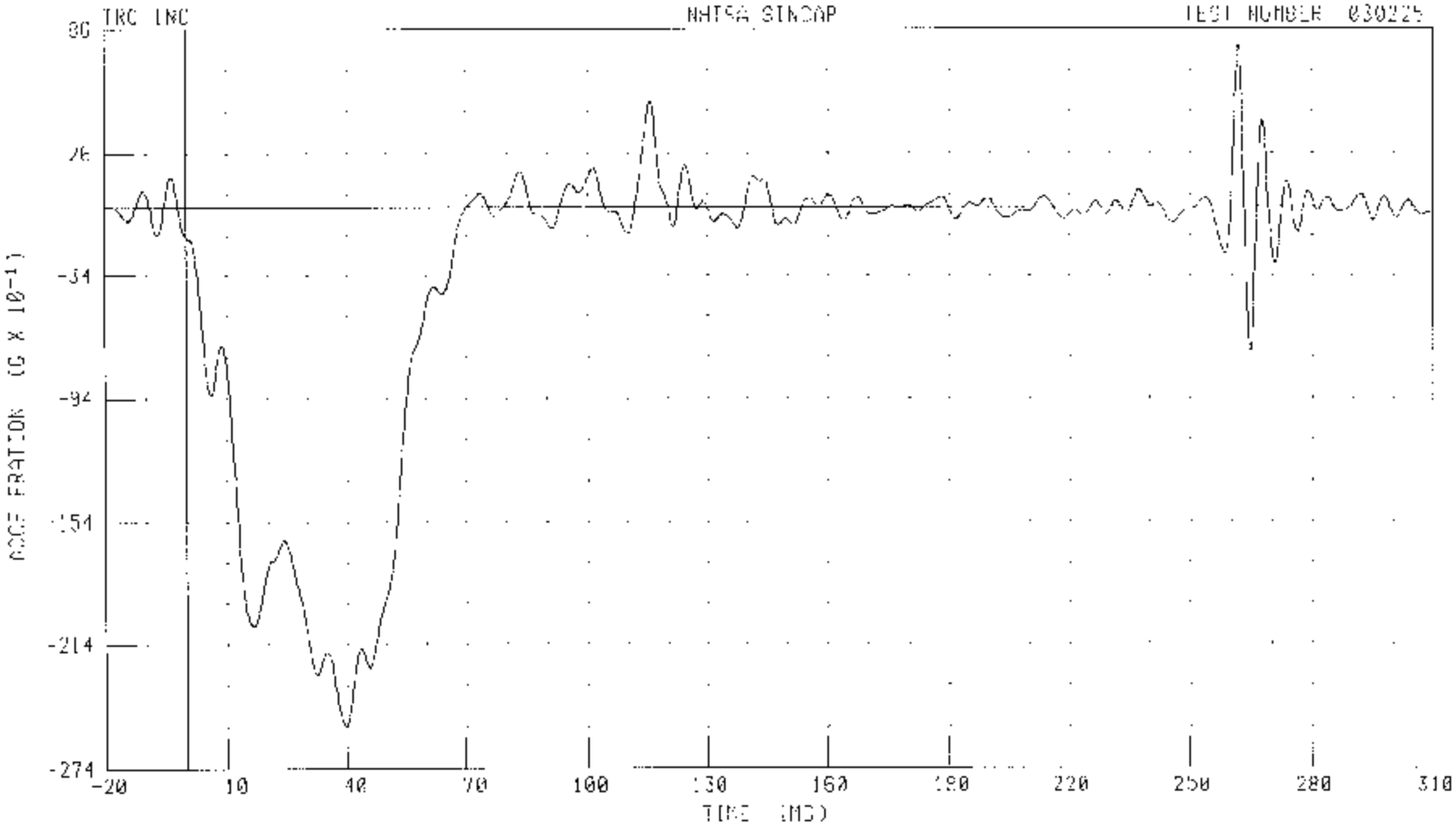
CHANNEL VCGRG1 FILTER CH CLASS 60 PEAK DATA 23.02 G @ 10.34 MS, 0.01 G @ 12.00 MS

MDB Instrumentation Plots

Acceleration Data - Filter Class 60

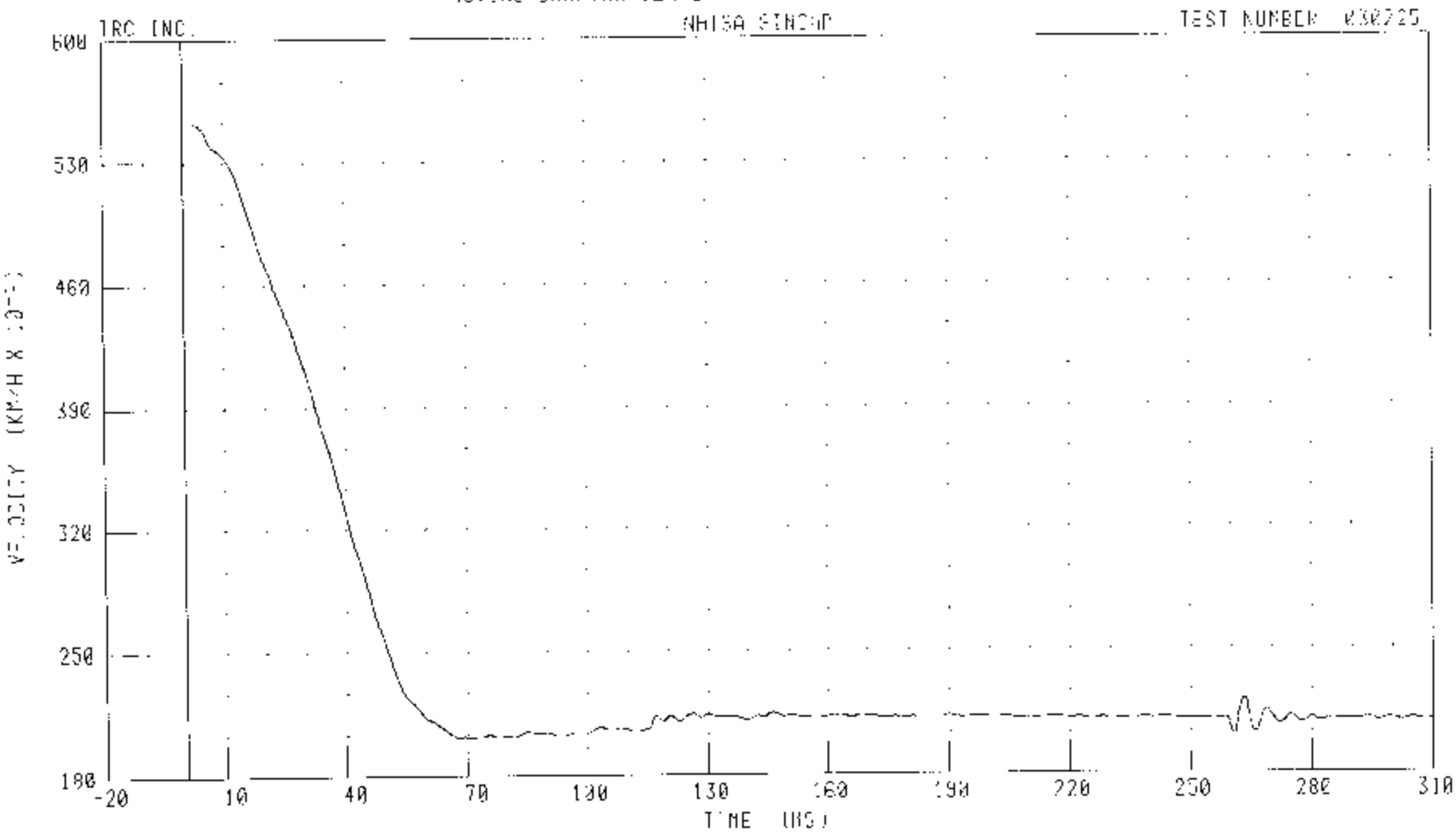
Integration Data - Filter Class 180

55.28 KPH 90 DEGREE NEAR SIDE IMPACT (HAVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2007 NISSAN 350Z
MOVING BARRIER CENTER OF GRAVITY X-AXIS ACCELERATION



CHANNEL BCGXC1 FILTER: CH CLASS 60 PEAK DATA 7.02 G @ 261.76 MS -25.39 G @ 39.63 MS

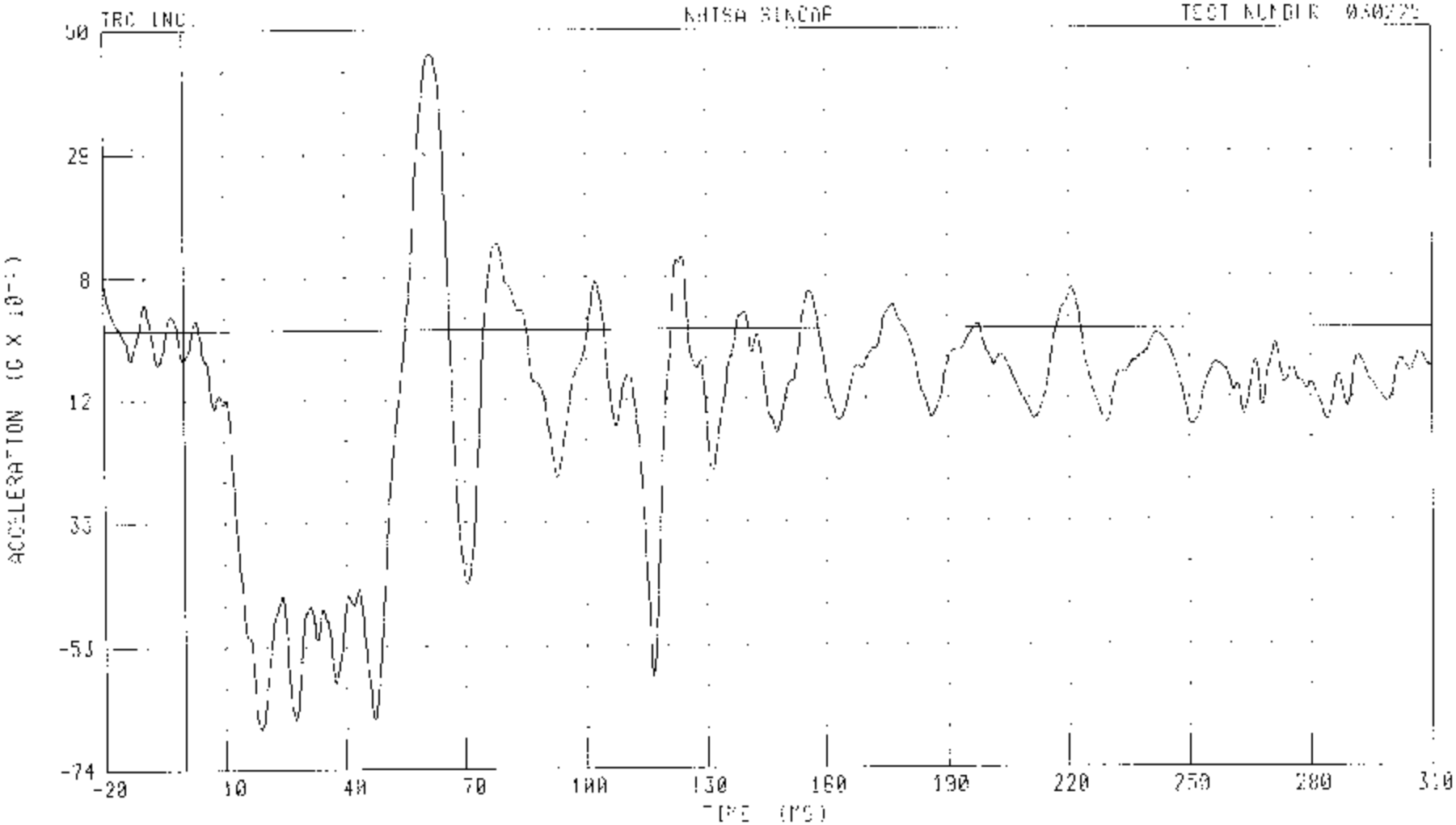
55/28 KPH 90 DEGREE NEAR SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN ALTA
MOVING BARRIER CENTER OF GRAVITY X AXIS VELOCITY



CHANNEL : BCGXV1 FILTER CH CLASS 180

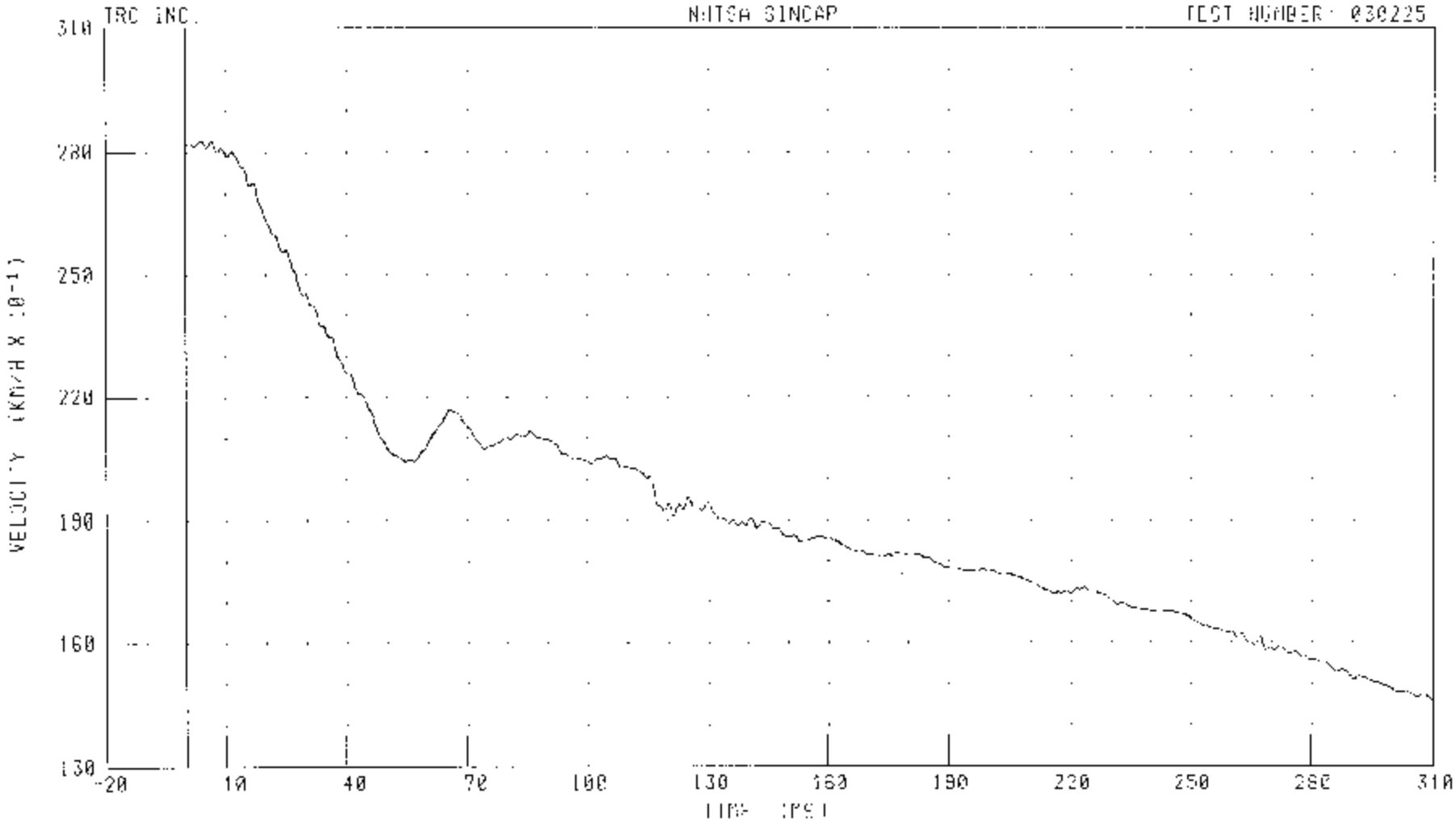
PEAK DA = 35.40 KM/H @ 0.00 MS; 20.15 KM/H @ 260.72 MS

55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN SUV
MOVING BARRIER CENTER OF GRAVITY Y AXIS ACCELERATION



CHANNEL: BCGY01 FILTER CF CLASS 60 PEAK DATA 4.68 G @ 51.52 MS. -8.30 G @ 19.96 MS

55/28 KPH 30 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) IN 2 LEFT SIDE OF 2001 NISSAN SUVZ
MOVING BARRIER CENTER OF GRAVITY Y-AXIS VELOCITY

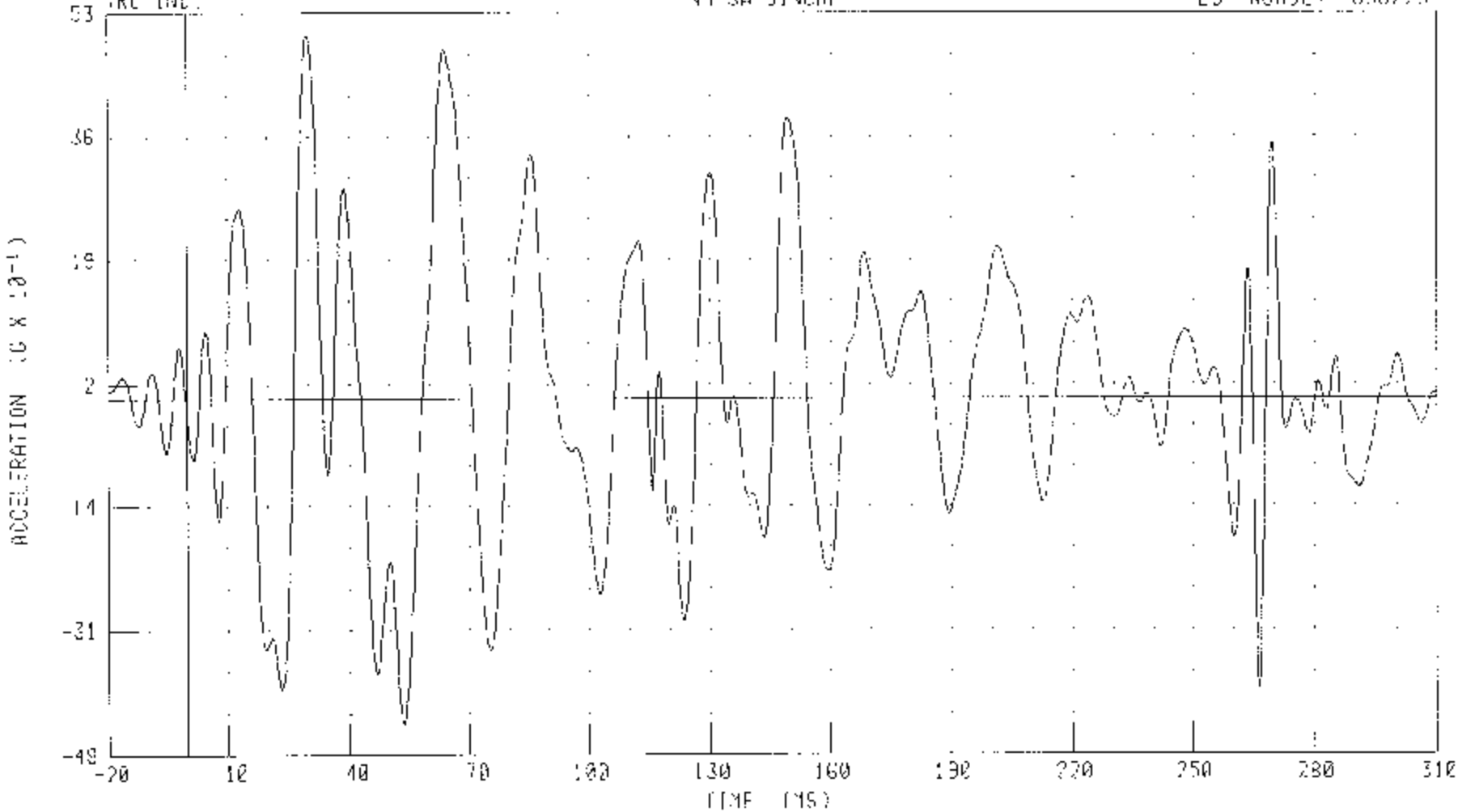


CHANNEL: 3CGYV1 FILTER: CH CLASS 180 PEAK DATA 28.27 KM/H @ 6.26 MS; 14.57 KM/H @ 310.00 MS

55/28 KPH 30 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO REAR SIDE OF 2003 NISSAN 350Z

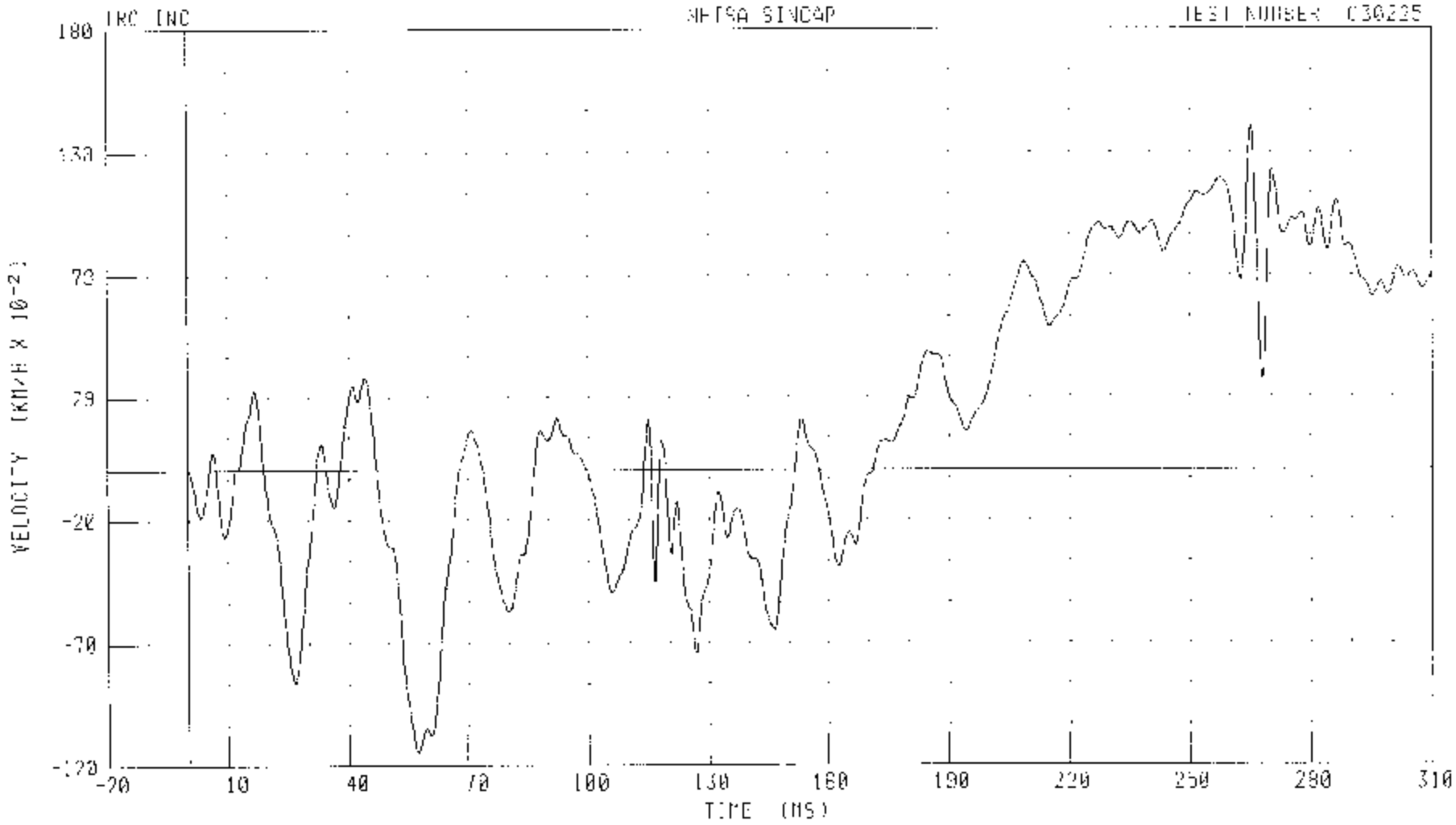
MOVING BARRIER CENTER OF GRAVITY Z AXIS ACCELERATION

TRC INC. NHTSA SINCAP TEST NUMBER 030225



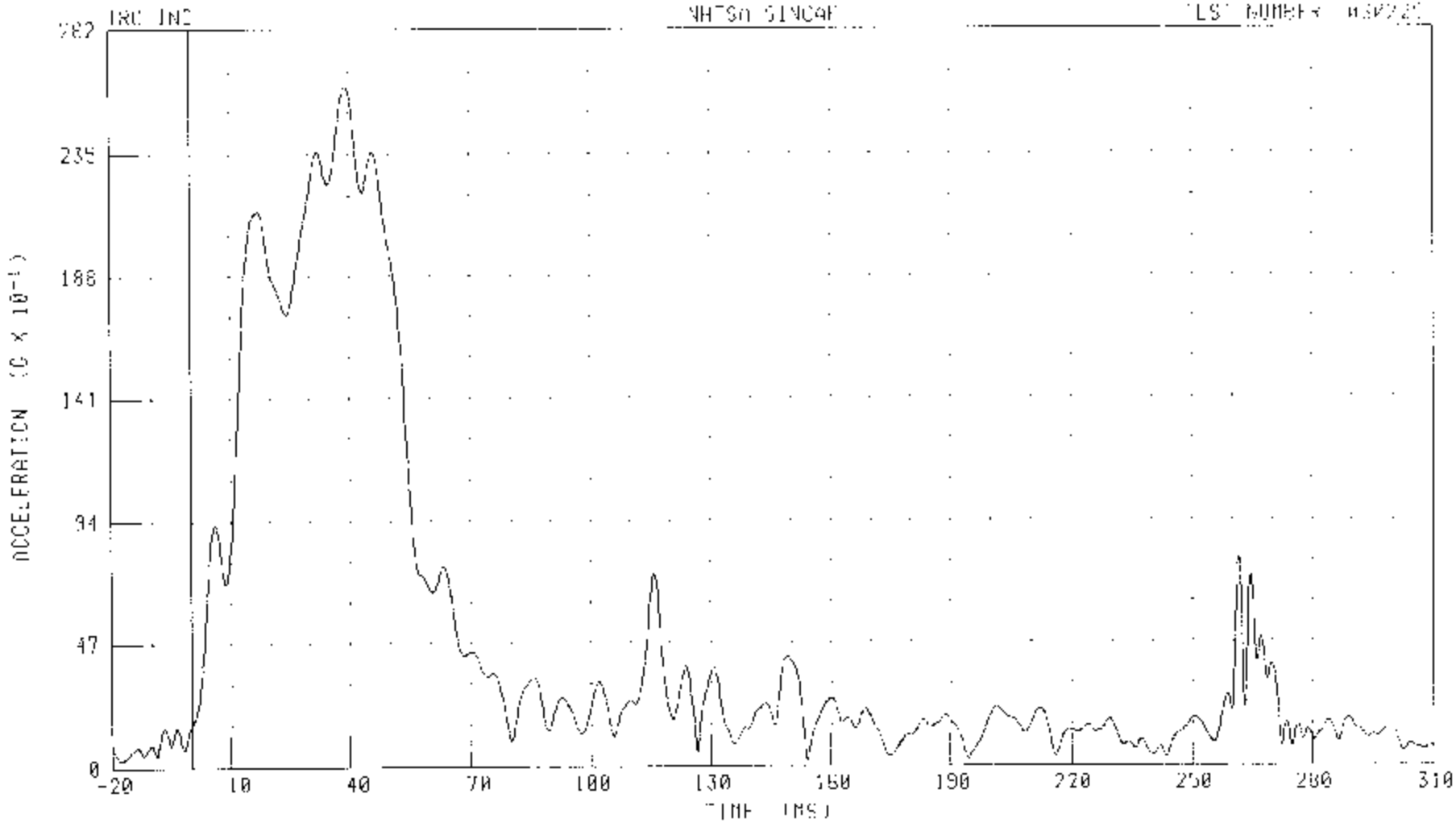
CHANNEL R0GZG1 FILTER CH CLASS 60 PEAK DATA 4.89 G @ 29.31 MS, -4.49 G @ 53.60 MS

55/29 KPH 30 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO IFT SIDE OF 2003 NISSAN ALTA
MOVING BARRIER CENTER OF GRAVITY Z AXIS VELOCITY



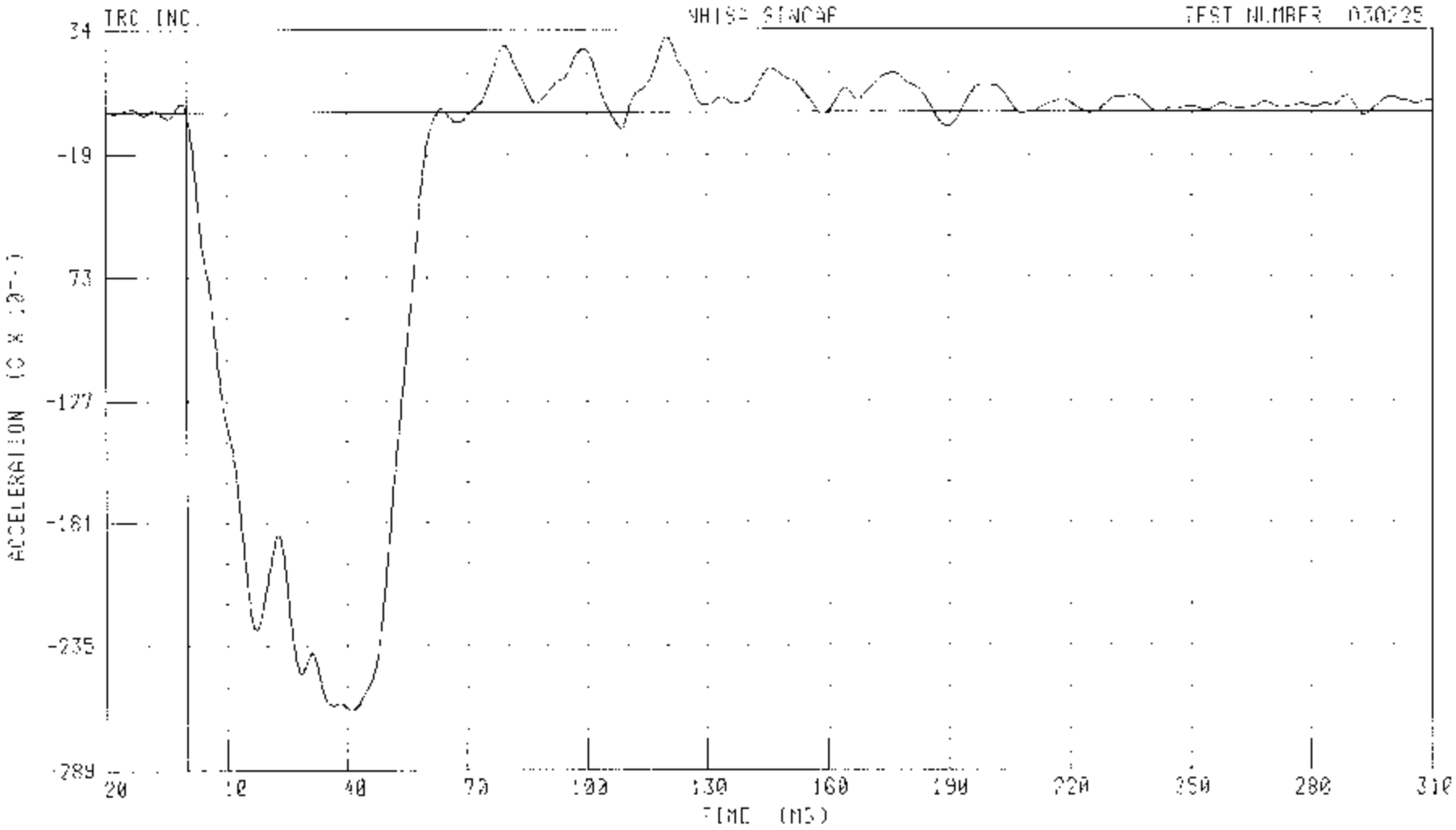
CHANNEL: BCR7V: FILTER: CH CLASS 180 PEAK DATA 1 40 KM/H @ 265 28 MS; -1 14 KM/H @ 37 32 MS

50728 XP4 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
MOVING BARRIER CENTER OF GRAVITY RESULTANT ACCELERATION



CHANNEL ECGRG1 FILTER: CH CLASS 60 PEAK DATA 26 04 0 6 39 52 MS, 0 22 3 9 154 24 MS

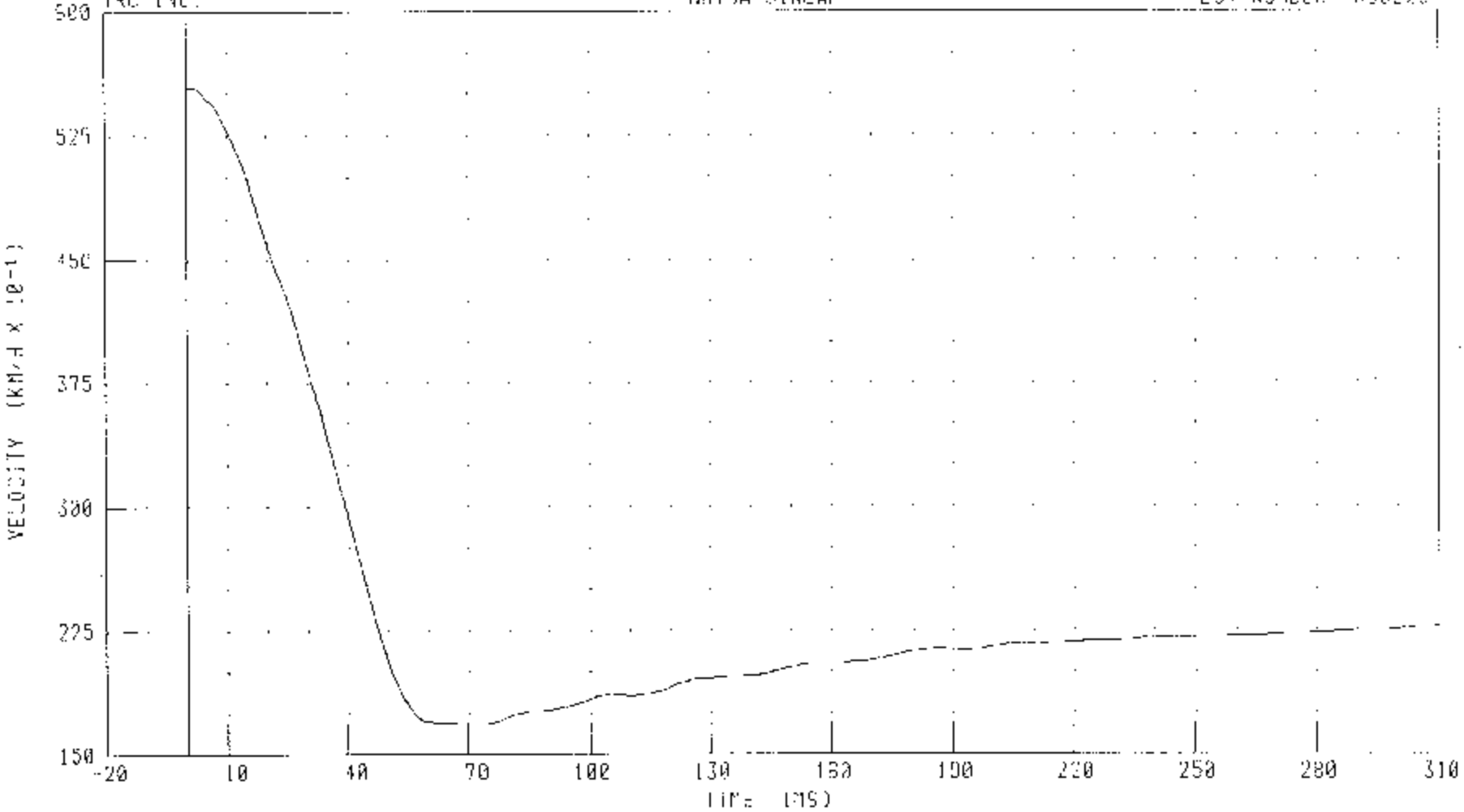
55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
MOVING BARRIER LEFT REAR X-AXIS ACCELERATION



CHANNEL: IRRXGL FILTER CF CLASS 60 PEAK DATA 3.19 G @ 120.08 MS, -26.30 G @ 41.38 MS

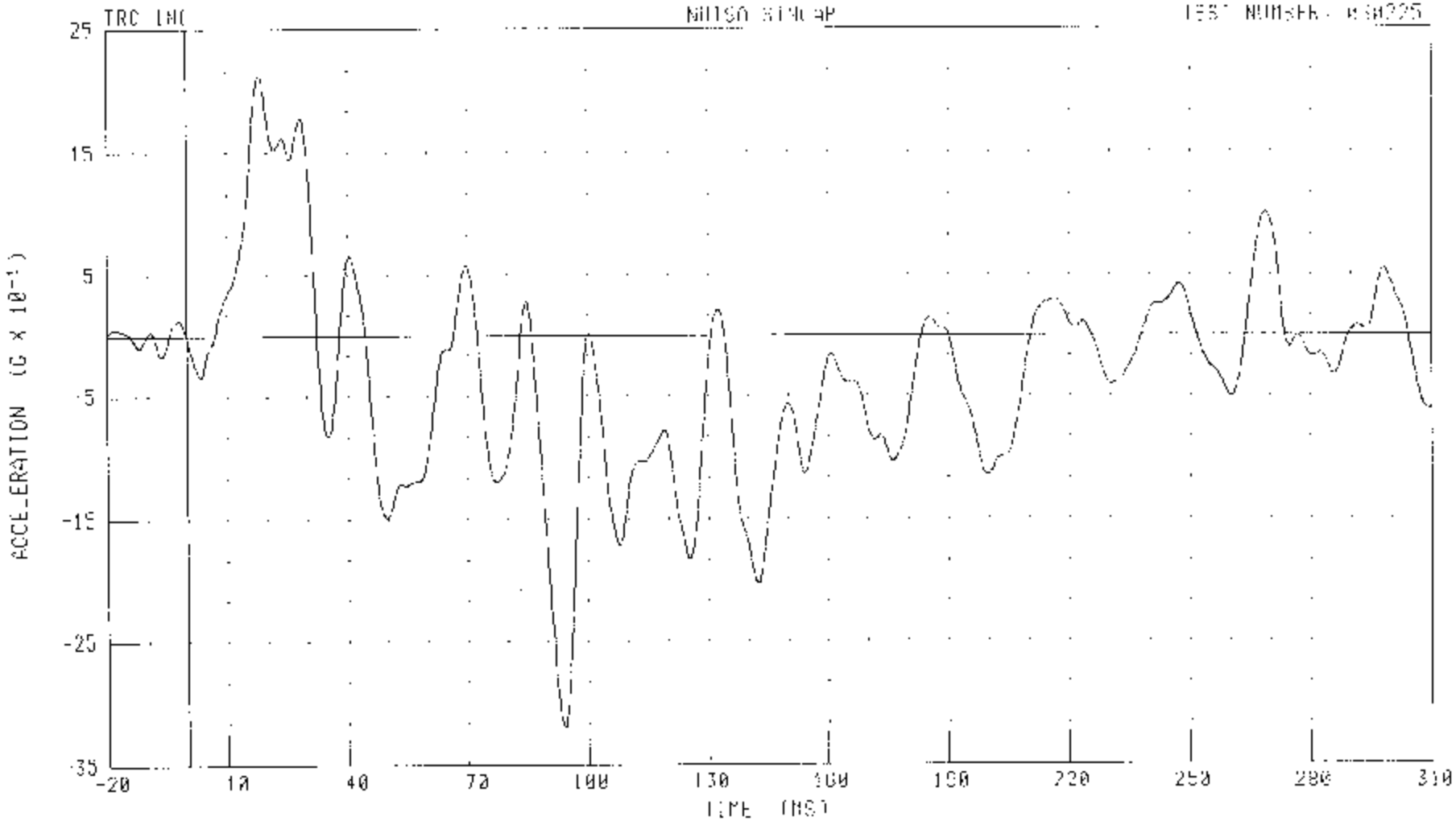
55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOV.IG DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MINIVAN 3502
"MOVING BARRIER LEFT REAR X AXIS VELOCITY"

TRC INC. NHTSA SINCAP TEST NUMBER M60325



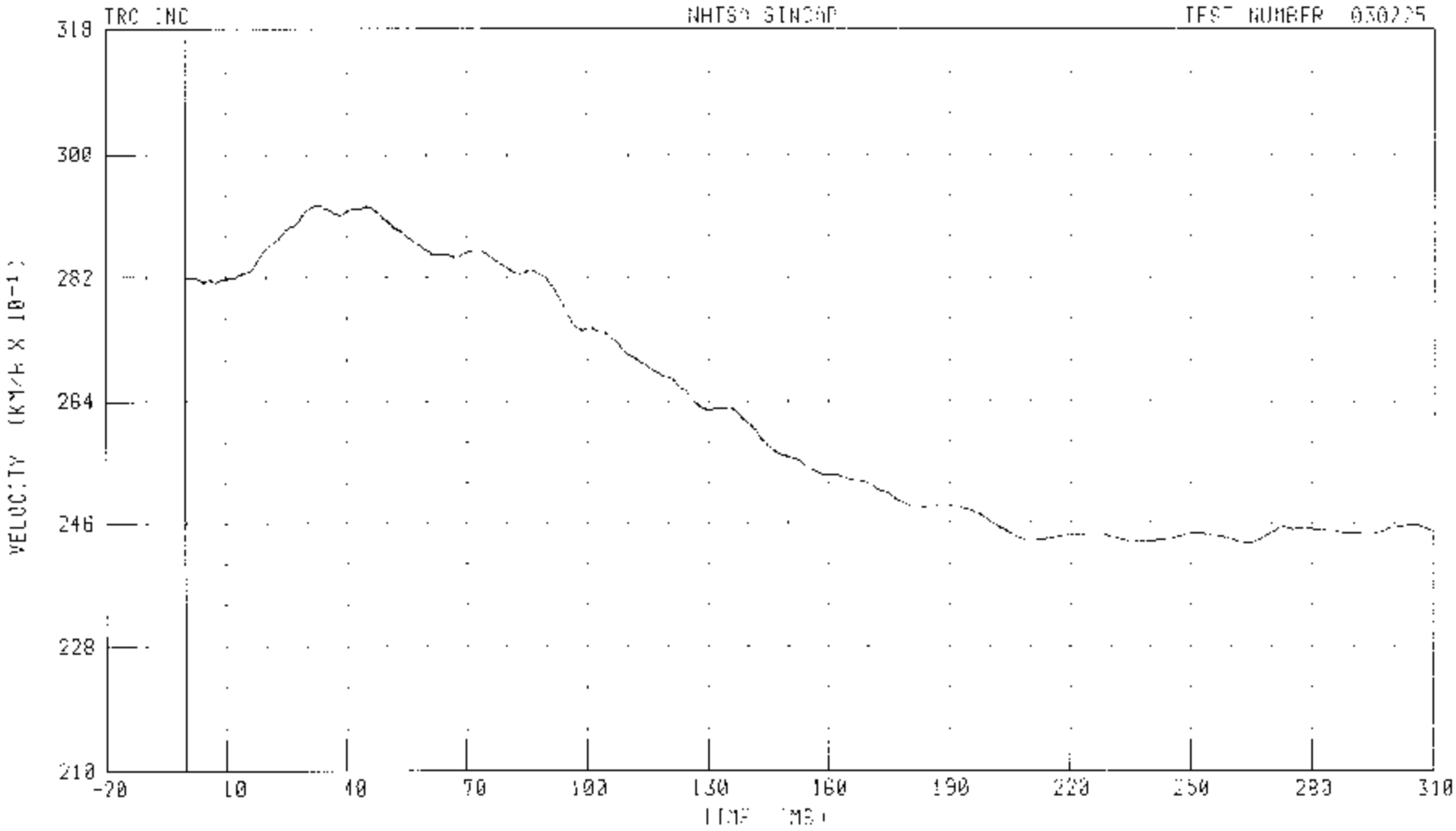
CHANNEL LRRXV1 FILTER: CH. CLASS 180 PEAK DATA: 55.40 KM/H @ 0.00 MS; 16.82 KM/H @ 70.00 MS

55/26 MPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
MOVING BARRIER LEFT REAR Y AXIS ACCELERATION



CHANNEL: LRRYG1 FILTER: CH CLASS 60 PEAK DATA: 2.13 G @ 18.24 MS, 3.21 G @ 94.24 MS

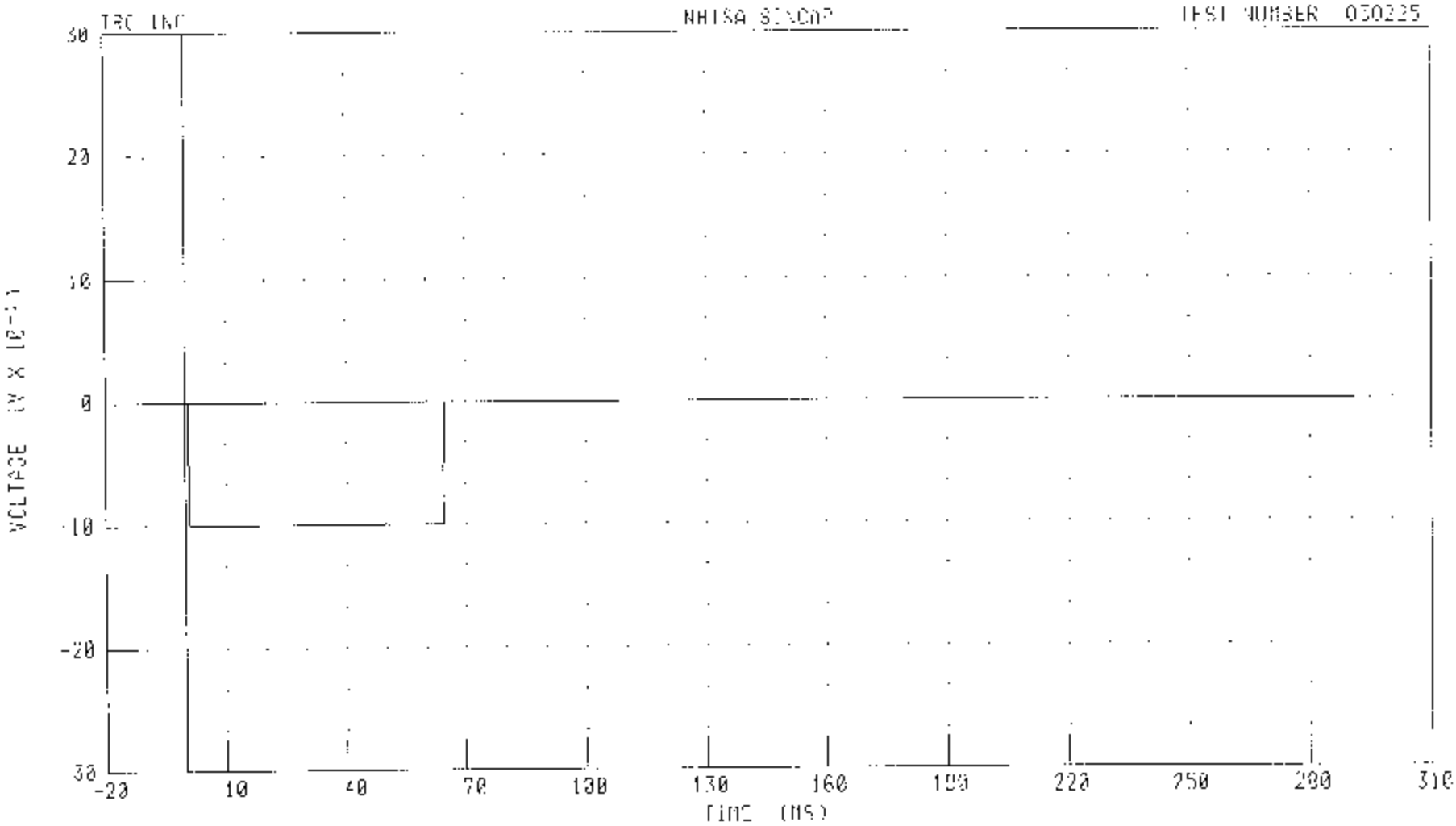
55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2001 NISSAN 350Z
MOVING BARRIER LEFT REAR Y-AXIS VELOCITY



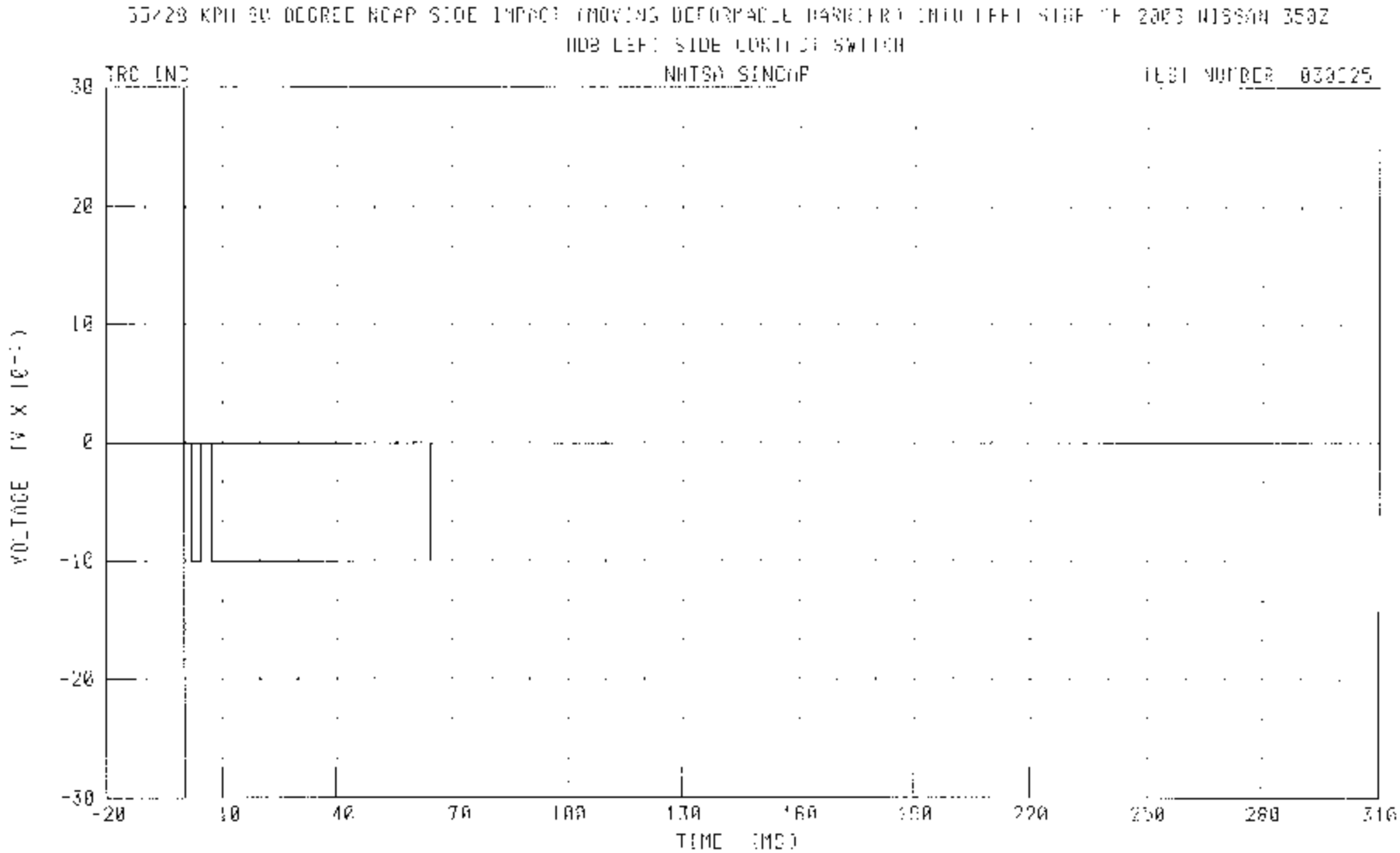
CHANNEL: LRRYV1 FILTER CH. CLASS 180 PEAK DATA 29.27 KM/H @ 32.88 MS, 24.31 KM/H @ 264.40 MS

55/28 KPH 90 DEGREE NEAR SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN ALTIMA
NOB HIGH: SIDE CONTACT SWITCH

TEST NUMBER 030225



CHANNEL MDAR1 FILTER CFC CLASS 1000 PEAK DATA 0.00 V @ 310.00 MS, -1.00 V @ 0.00 MS

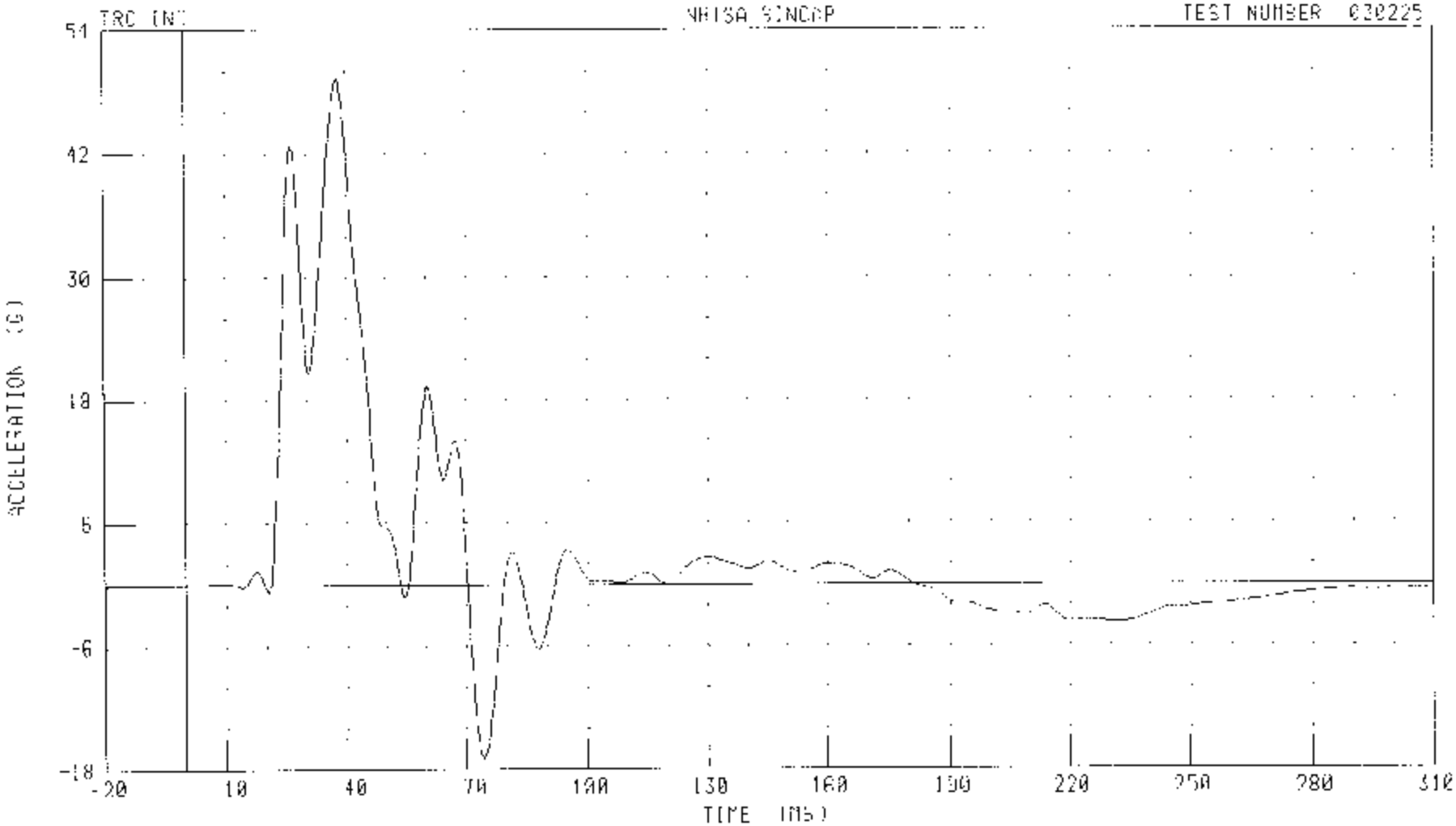

35/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
MDB LEFT SIDE CONTACT SWITCH
TRC INC
NHTSA SINCAP
TEST NUMBER 030225
30
20
10
0
-10
-20
-30
VOLTAGE (V X 10-1)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL MDBL1
FILTER CH CLASS 1000
PEAK DATA 0.80 V @ 310.00 MS; -1.00 V @ 1.92 MS

Driver Dummy Instrumentation Plots

Acceleration Data - FIR Filtered

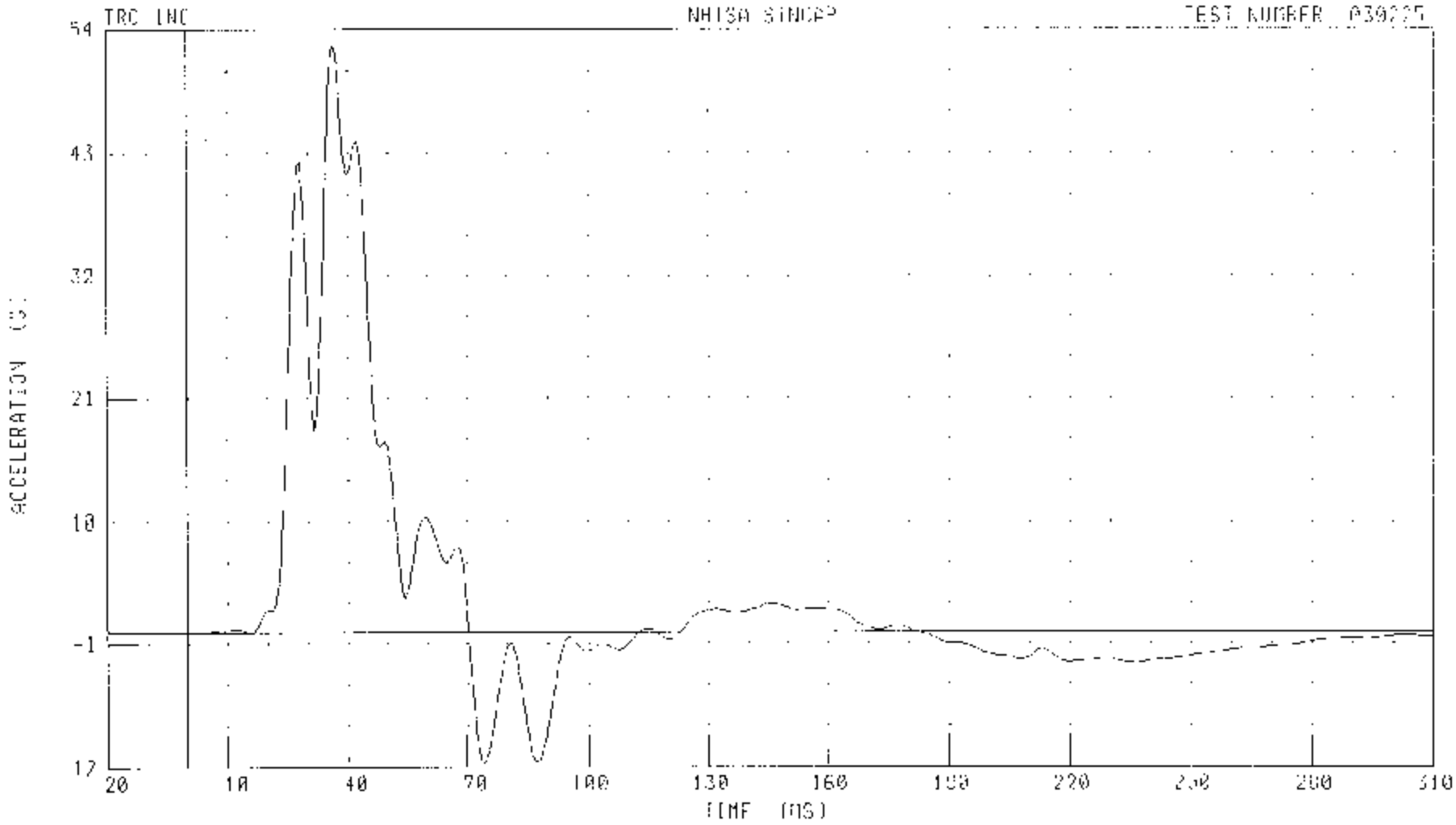
55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z

DRIVER UPPER RIB Y AXIS ACCELERATION



CHANNEL : LURYG1 FILTER FIR 180 PEAK DATA 49.38 G @ 38.13 MS, 15.85 G @ 74.37 MS

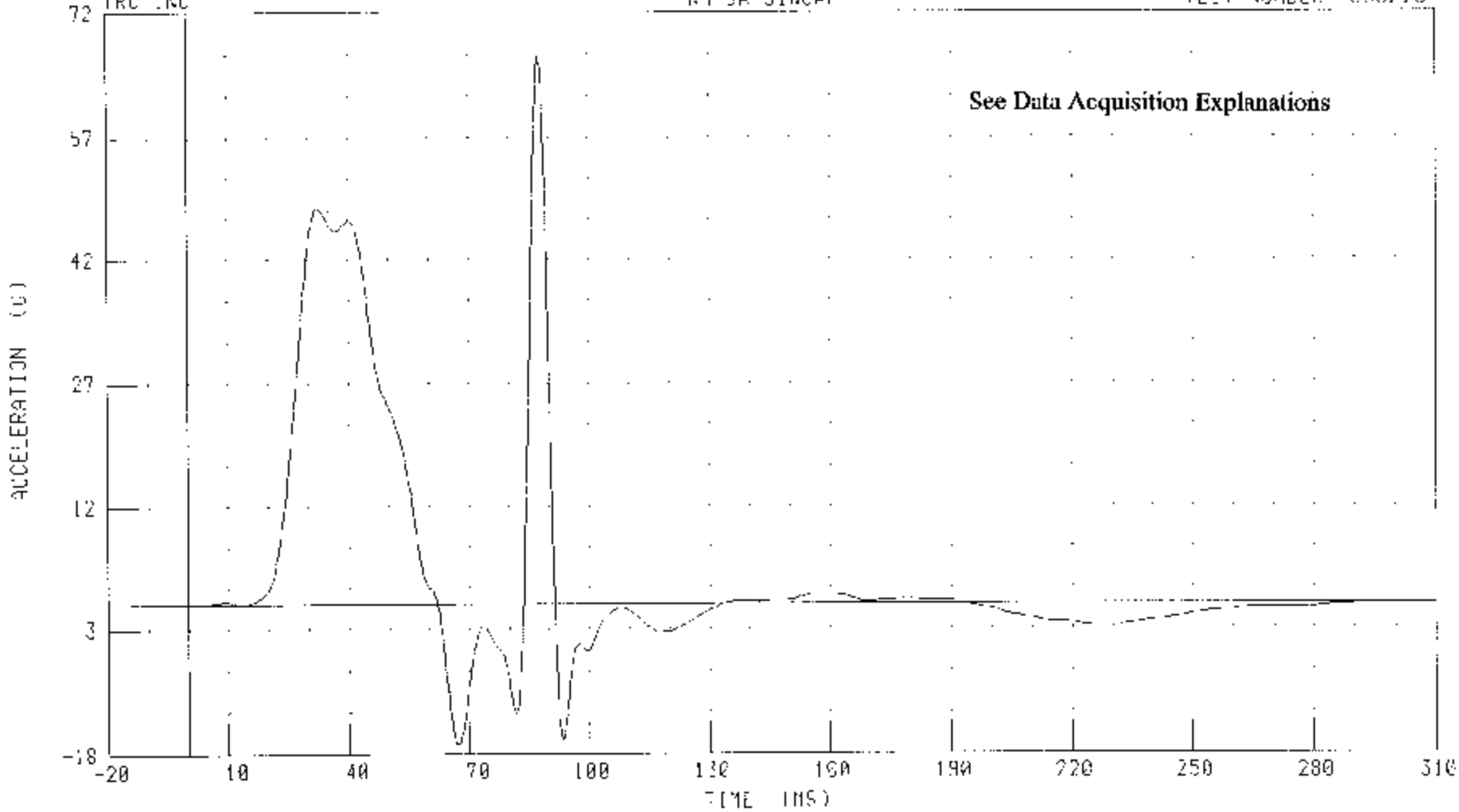
55/28 KPH 30 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
DRIVER LOWER RIB Y-AXIS ACCELERATION



55/28 KPH 90 DEGREE NCAP SIDE IMPACT .MOVING DEFORMABLE BARRIER: INTO LEFT SIDE OF 2003 NISSAN 350Z

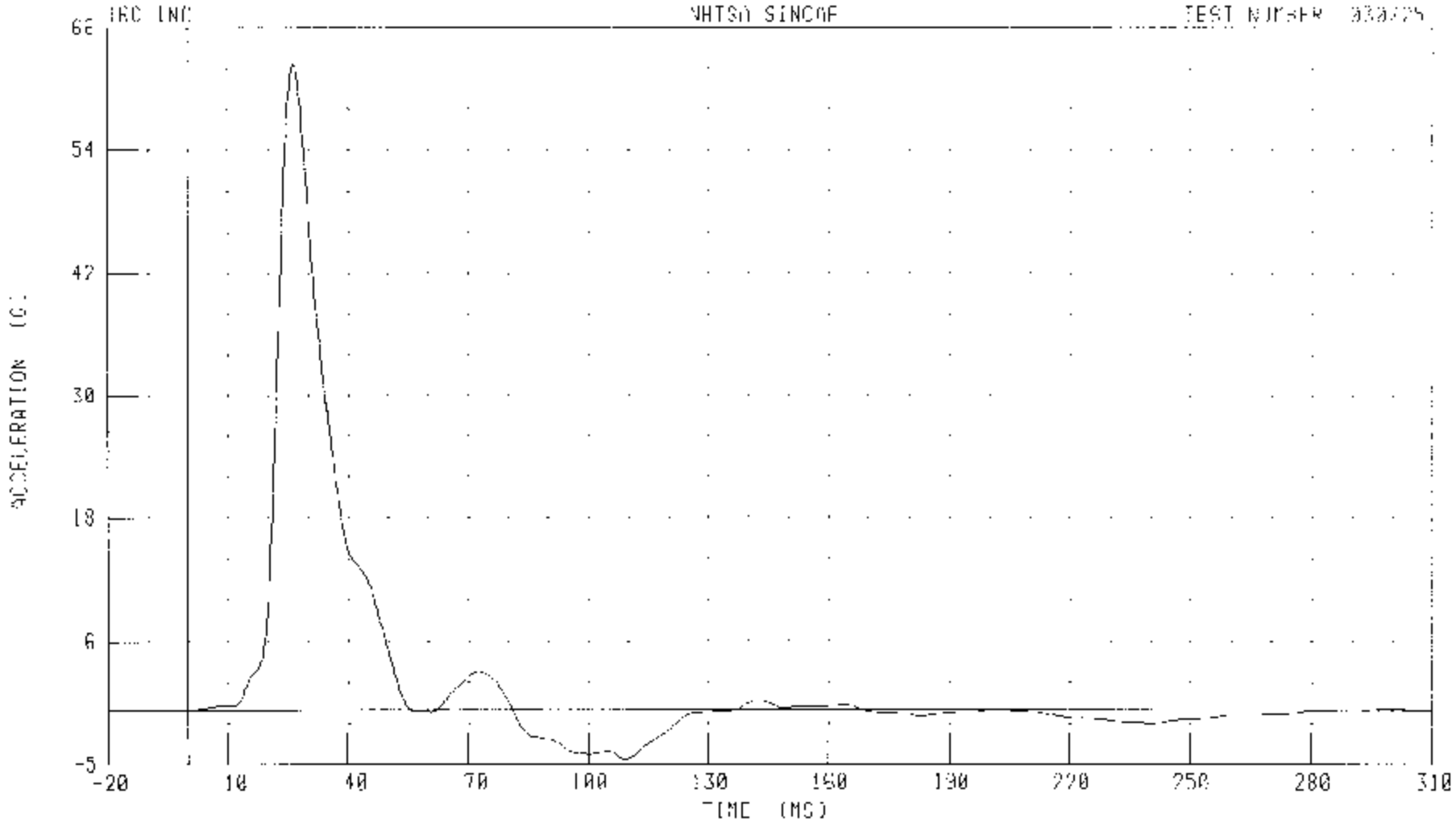
DRIVER LOWER SPINE Y-AXIS ACCELERATION

TRC INC — NHTSA SINCAP — TEST NUMBER 030225



CHANNEL: 112YG1 FILTER: FIR 100 PEAK DATA: 66.85 G @ 67.50 MS, -16.85 G @ 67.50 MS

55/28 KP- 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
DRIVER PELVIS Y-AXIS ACCELERATION

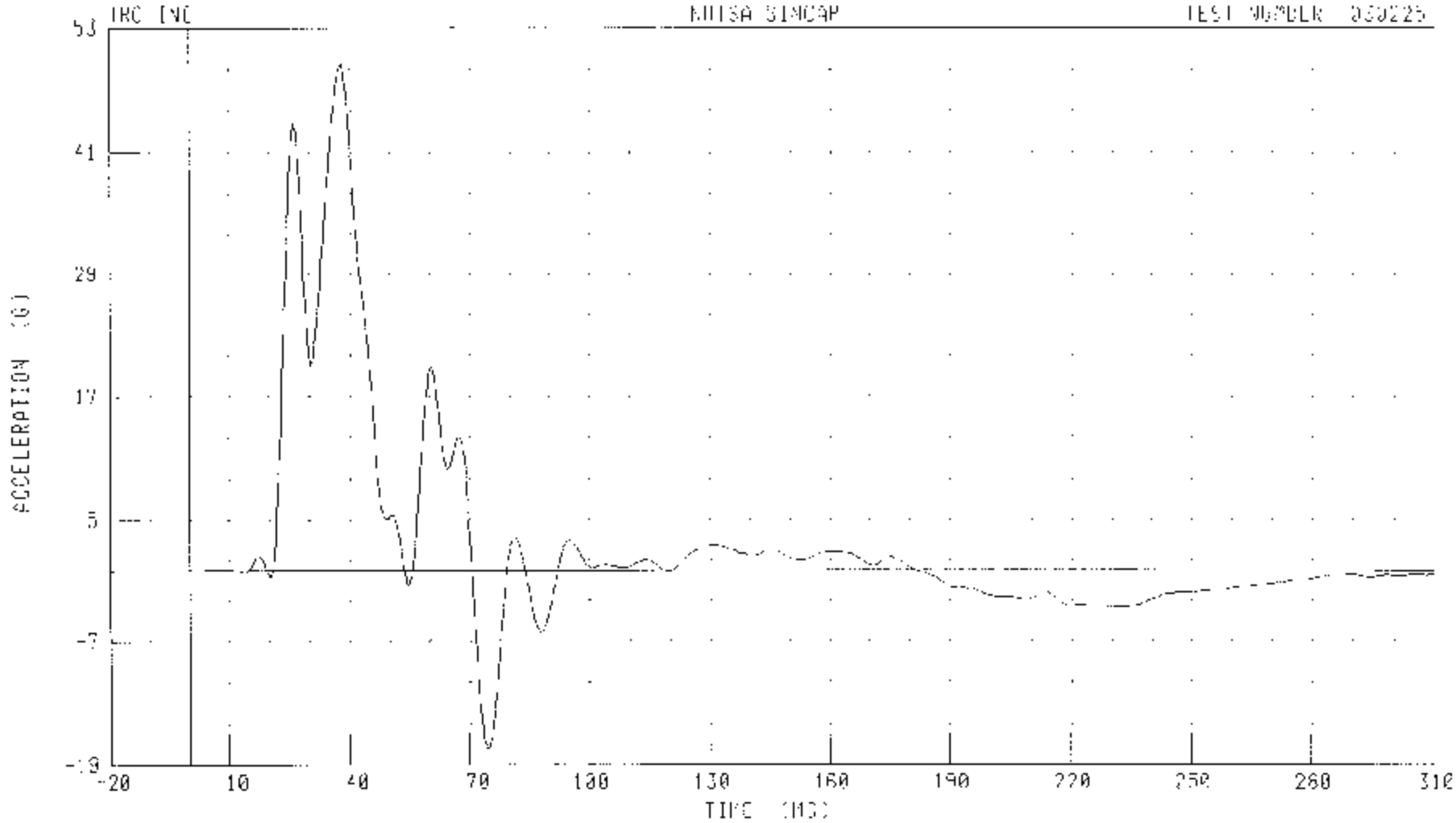


CHANNEL: FEVYG1 FILTER FIR 100 PEAK DATA: 63.19 G @ 26.25 MS; -4.88 G @ 100.38 MS

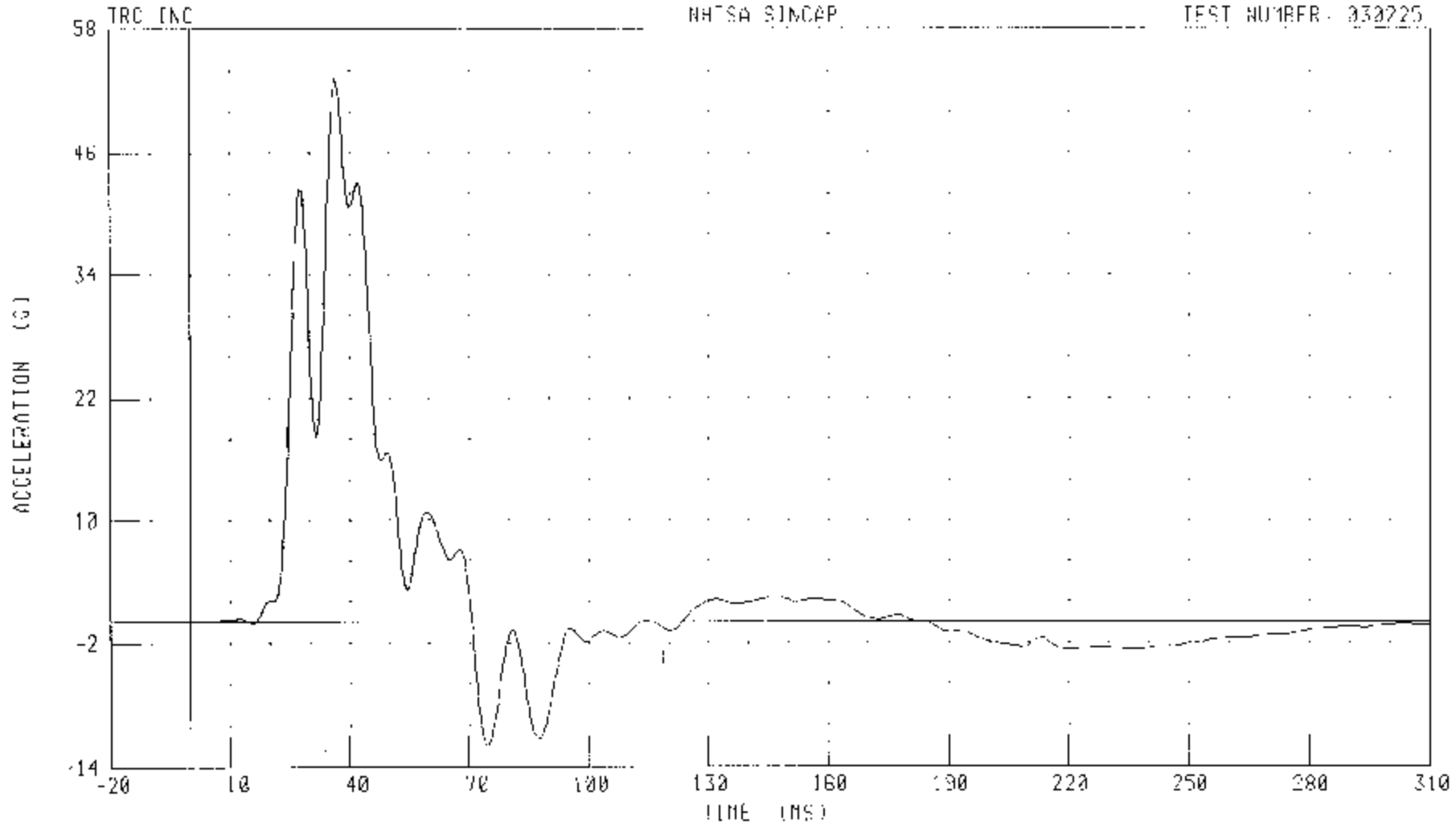
Driver Dummy Instrumentation Plots

Acceleration Data - FIR Filtered - Redundant

55/20 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO 1994 FORD TAURUS
DRIVER UPPER RIB Y AXIS REDUNDANT ACCELERATION

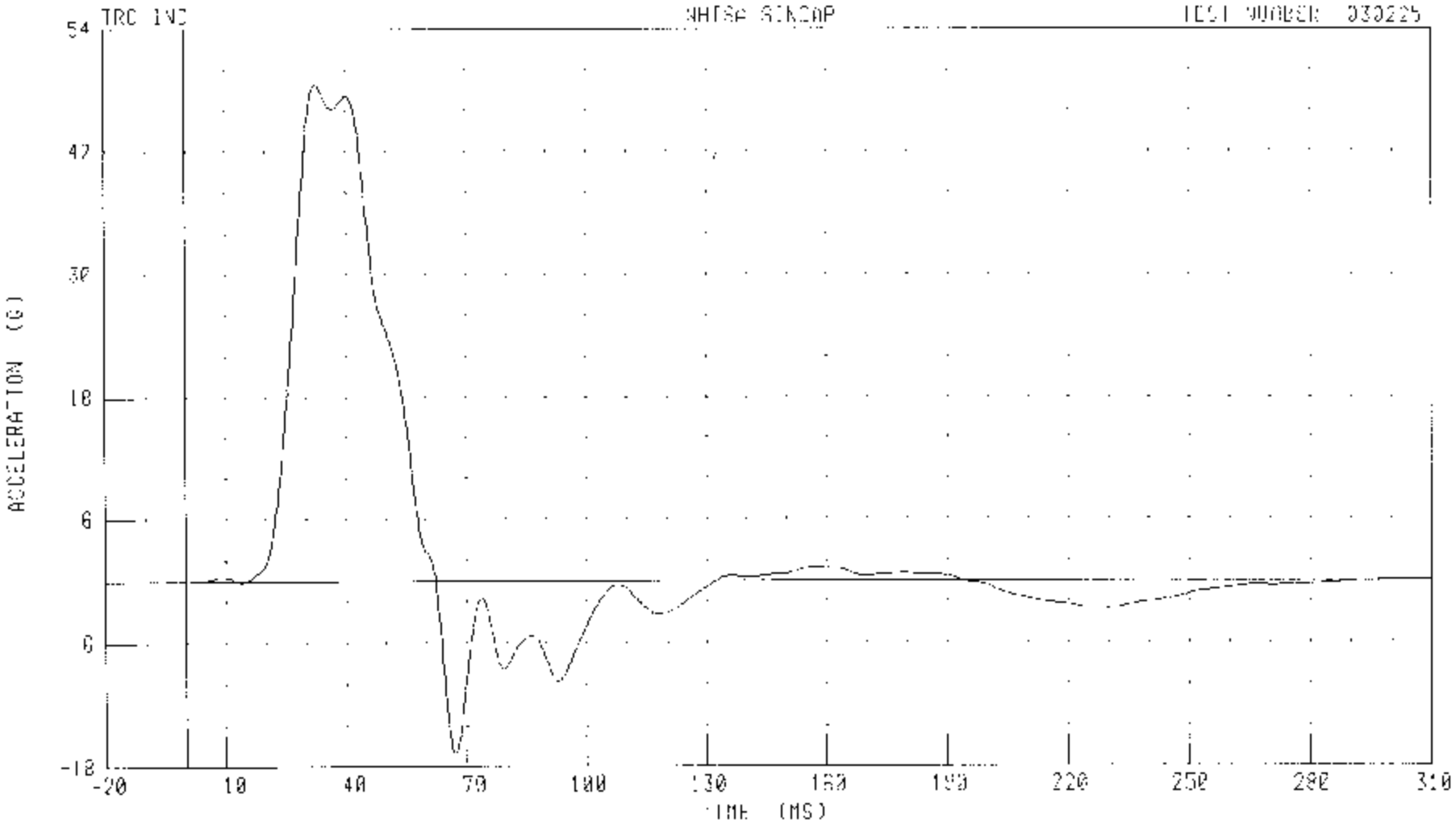


55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
DRIVER LOWER RIB Y-AXIS REDUNDANT ACCELERATION



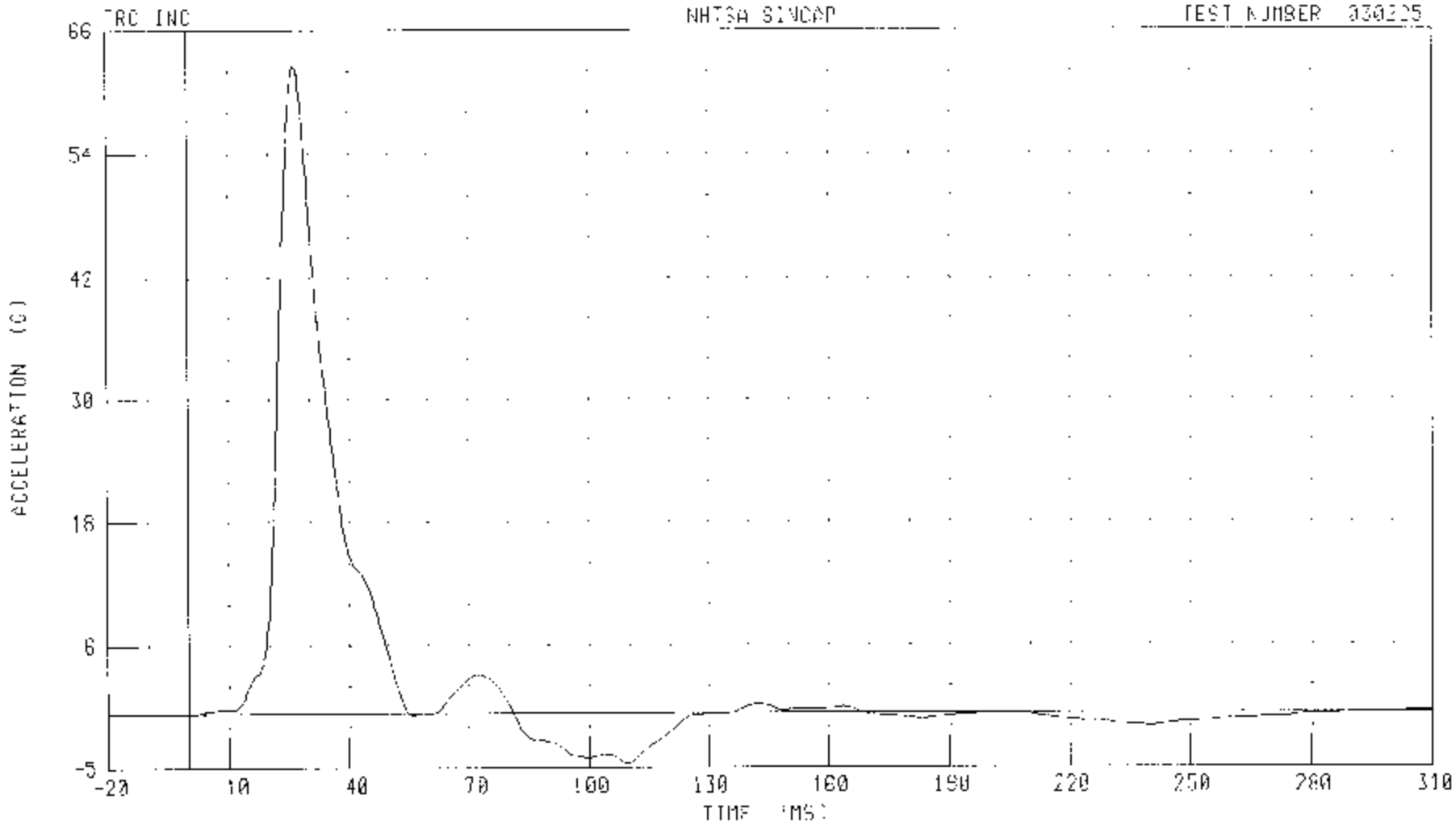
CHANNEL: LLRYR1 FILTER CIR 100 PEAK DATA: 53.26 G @ 36.25 MS; -11.95 G @ 74.37 MS

55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
DRIVER LOWER SPINE Y-AXIS REDUNDANT FILE FORMATION



CHANNEL : 112YR1 FILTER FIR 100 PEAK DATA: 48.53 G @ 32.50 MS, -18.69 G @ 67.50 MS

55/28 KPH 90 DEGREE NCAP SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 NISSAN 350Z
DRIVER PELVIS Y-AXIS REDUNDANT ACCELERATION



CHANNEL PEVYR1 FILTER F.R 100 PEAK DATA 63.32 G @ 26.25 MS, -4.91 G @ 109.38 MS

Appendix C

SID Configuration and Performance Verification Data

Summary

SID Pre-Test and Post-Test Calibration

Configured For Left Side Impact

Date: Jan. 24 - March 5, 2003

TRC Inc. Test Number: 028C01 & C02

Laboratory Technician: Jack Willeke

Test Parameter	Specification	SID 028		SID	
		Pre-Test	Post-Test	Pre-Test	Post-Test
SH - seated height (mm)	889-909	901	900	-	-
RH - Rib Height (mm)	502-520	503	504	-	-
HP - Hip Pivot Height (mm)	99 ref	---	99	-	-
RD - Rib from Back Line (mm)	229-241	236	236	-	-
KH - Knee Pivot from Back Line (mm)	511-526	515	514	-	-
KV - Knee Pivot to Floor (mm)	490-505	496	497	-	-
HW - Hip Width (mm)	356-391	375	375	-	-
Thorax Impacts					
Temperature (°C)	18.9-25.5	21.7	21.7	-	-
Relative Humidity (%)	10-70	32	29	-	-
Probe Speed (m/s)	4.27-4.33	4.29	4.28	-	-
Upper Rib (g's)	37-46	42.9	39.1	-	-
Lower Rib (g's)	37-46	40.8	37.3	-	-
Lower Spine (g's)	15-22	16.4	16.5	-	-
Pelvis Impacts					
Temperature (°C)	18.9-25.5	21.7	21.7	-	-
Relative Humidity (%)	10-70	32	29	-	-
Probe Speed (m/s)	4.27-4.33	4.28	4.28	-	-
Pelvis (g's)	40-60	48.4	48.4	-	-

Calibration Test Results

Pre-Test

SID: 028

Configured for Left Side Impact

External Dimensions:	The dummy passed all external dimension requirements.
Lateral Head Drop Test:	The head passed all drop test requirements.
Lateral Neck Test:	The neck passed all impact test requirements.
Lateral Thorax Impact Test:	The lateral thorax passed all impact test requirements.
Thoracic Shock Absorber Test:	The thoracic shock absorber passed all test requirements.
Pelvis Impact Test:	The lateral pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen met the compression test requirements.
Lumbar Flexion Test:	The dummy met the lumbar flexion test requirements.

Transportation Research Center Inc.
572F SID Dummy
External Dimensions
Serial No. 028 Calibration No. 01

Test Parameter	Dimension	Specification				Results	Pass
Seated Height	SH	889.0	-	909.3	mm	901 mm	Yes
Knee Pivot From Backline	KH	510.5	-	525.8	mm	515 mm	Yes
Knee Pivot From Floor	KV	490.2	-	505.5	mm	496 mm	Yes
Hip Width	HW	355.6	-	391.2	mm	375 mm	Yes
Rib Height	RH	501.7	-	520.7	mm	503 mm	Yes
Rib From Backline	RD	228.6	-	24[illegible].3	mm	236 mm	Yes
Top Rib Width From C\L	RW-1	165.1	-	180.3	mm	173 mm	Yes
Bottom Rib Width From C\L	RW-2	165.1	-	180.3	mm	172 mm	Yes
Difference Between Top & Bottom Rib Width from C\L			<=	2.5	mm	1.0 mm	Yes

Technician

Approved

TRC

TRANSPORTATION RESEARCH CENTER INC.

LATERAL HEAD DROP TEST

HYBRIDIII SID DUMMY 24-FEB-03

LEFT SIDE CONFIGURATION

TRC INC. TEST NO. HDL02801 H3/SID SN028 HEAD DROP CAL01

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6 deg. C	21.67 deg. C
RELATIVE HUMIDITY	10 - 70 %	31.00 %
PEAK RESULTANT ACCELERATION	120 - 150 G	137.53 G
PEAK LONGITUDINAL ACCELERATION	15 G MAX	-7.07 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

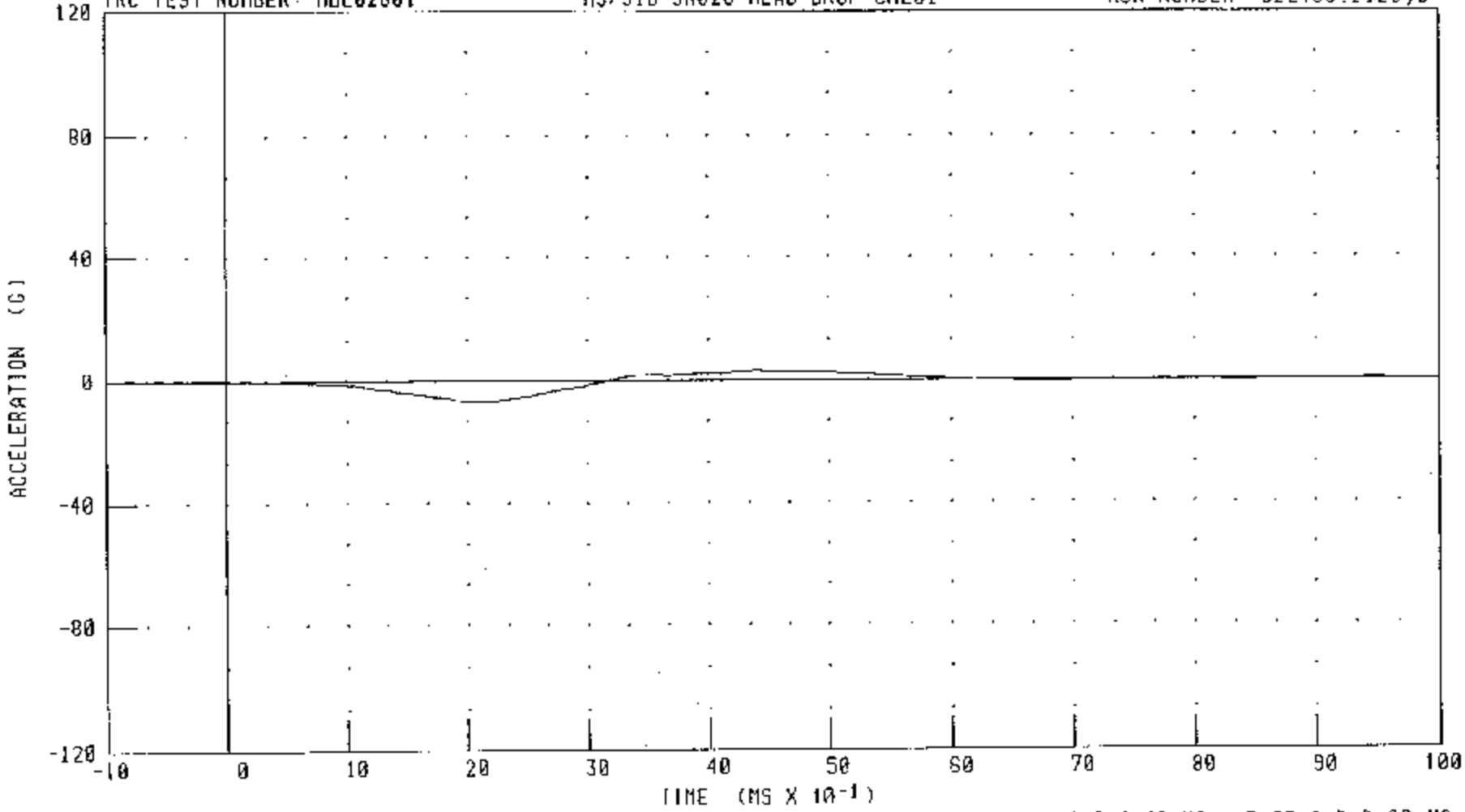
TEST MEETS SPECIFICATIONS

TECHNICIAN _____ RUN NUMBER: 022403.0931;1

SID DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION X AXIS

TRC TEST NUMBER: HDL02801 H3/SID SN028 HEAD DROP CAL01 RUN NUMBER: 022403.1129;3

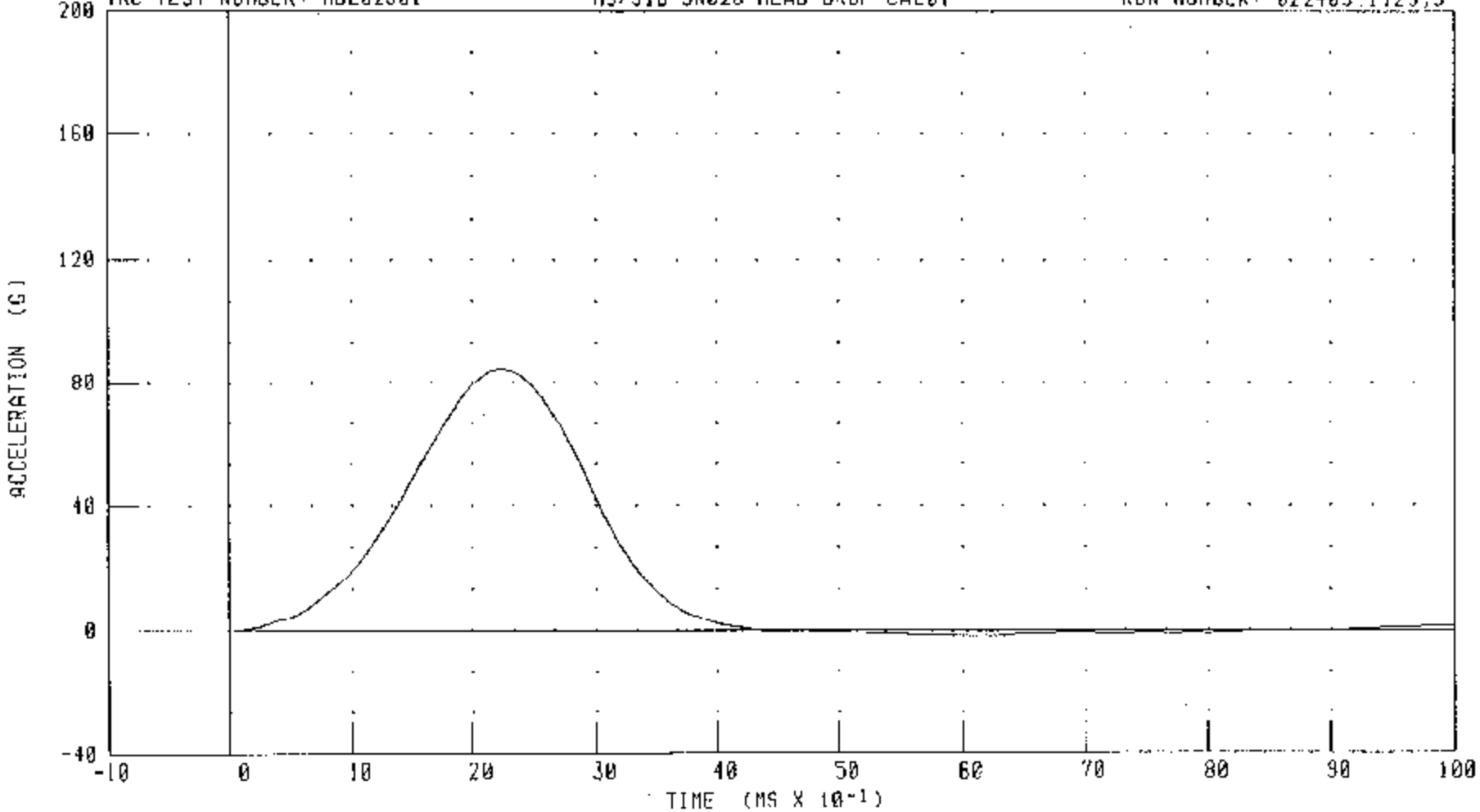


CHANNEL: HEDXC FILTER: CH CLASS 1000 PEAK DATA: 3.12 G @ 1.40 MS; -7.07 G @ 2.08 MS

SID DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Y AXIS

TRC TEST NUMBER: HDL02801 H3/SID SN028 HEAD DROP CAL01 RUN NUMBER: 022403.1129;3

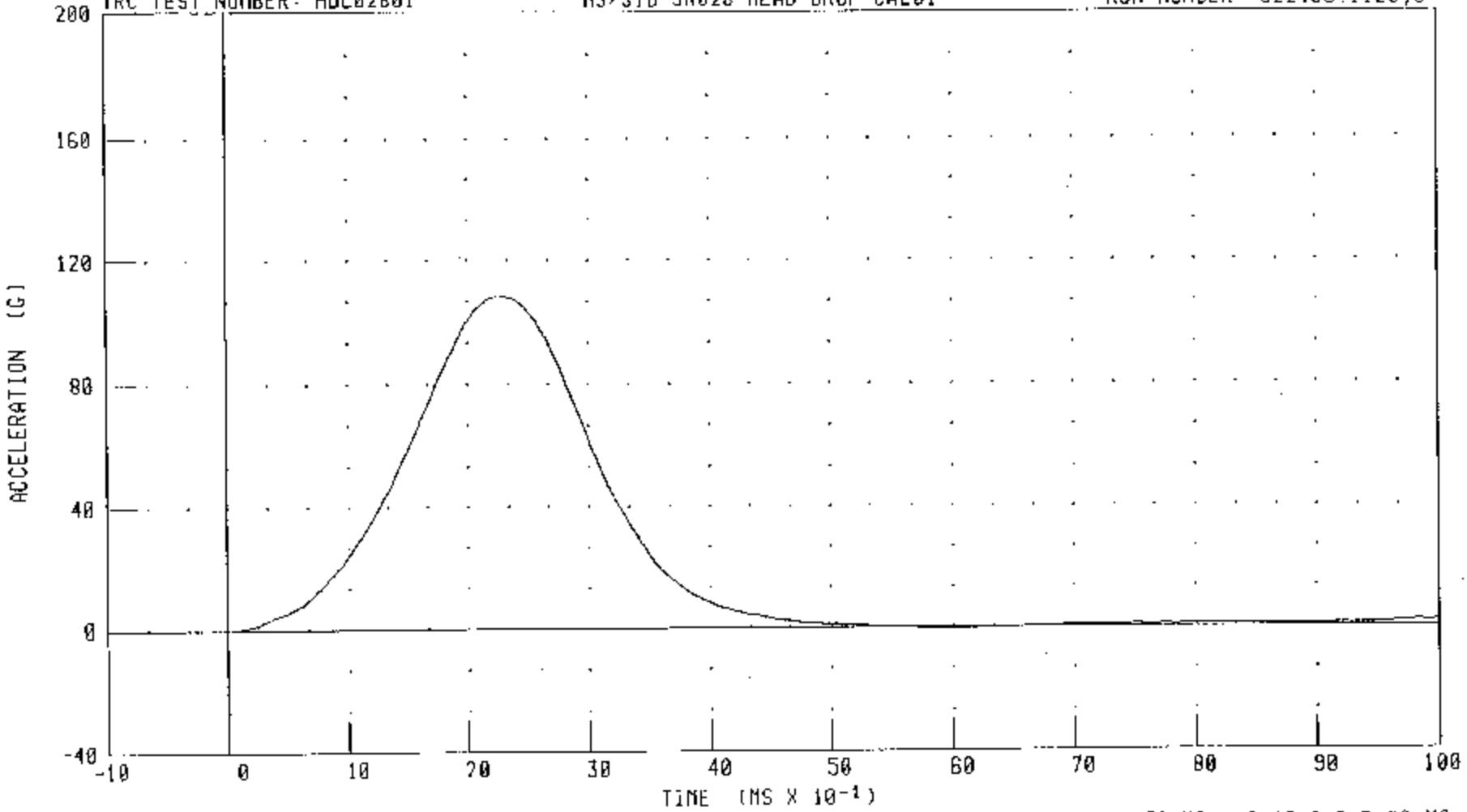


CHANNEL: HEDYC FILTER: CFC CLASS 1000 PEAK DATA 84.41 G @ 2.24 MS; -1.80 G @ 6.00 MS

SID DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Z AXIS

TRC TEST NUMBER: HDL02B01 H3/SID SN028 HEAD DROP CAL01 RUN NUMBER: 022403.1129;3

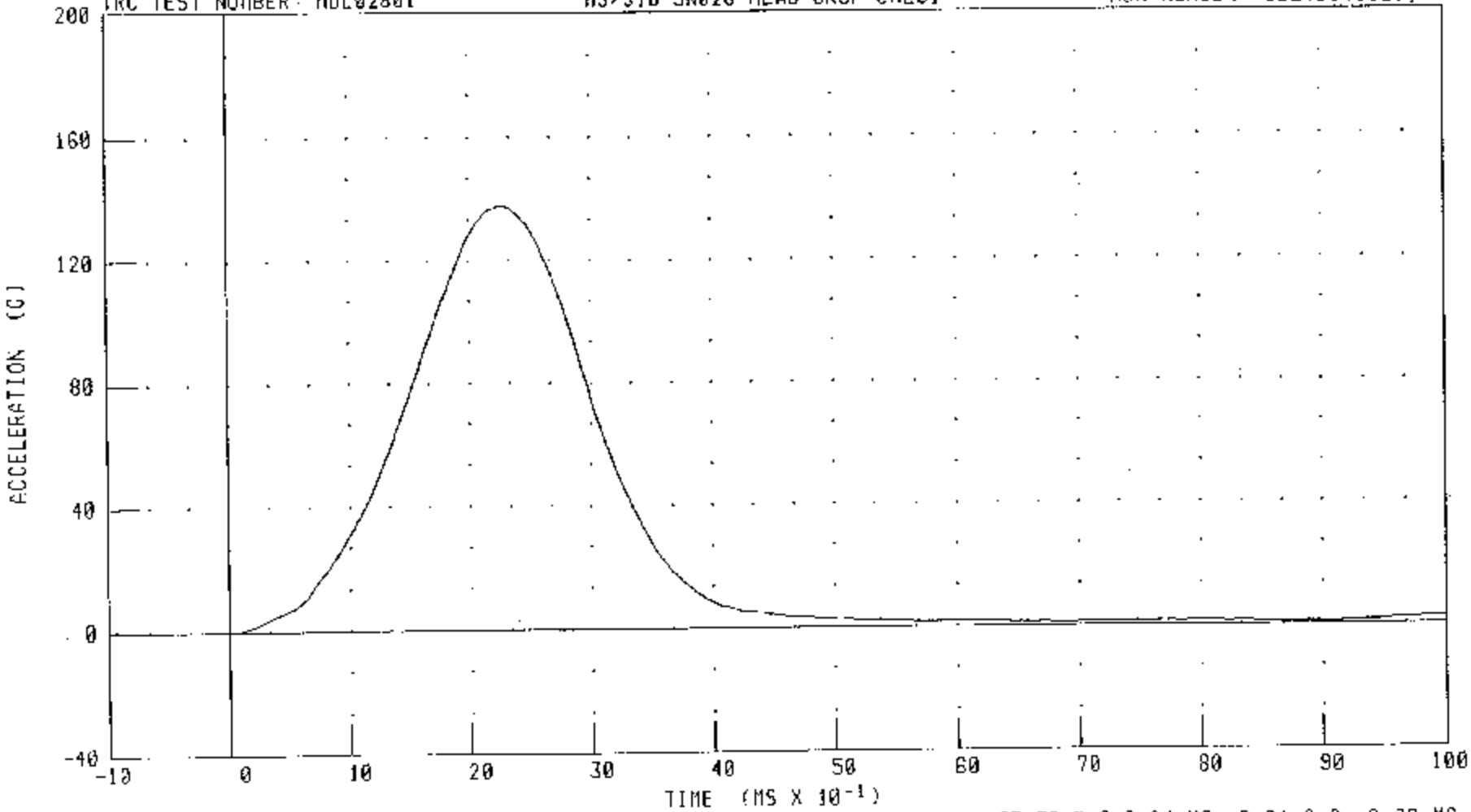


CHANNEL: HFDZG FILTER CH. CLASS 1000 PEAK DATA: 108.42 G @ 2.32 MS; -0.40 G @ 5.92 MS

SID DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD RESULTANT ACCELERATION

TRC TEST NUMBER: HDL02801 H3/SID SN028 HEAD DROP CAL01 RUN NUMBER: 022403.1129;3



CHANNEL: HEDRG FILTER: CH CLASS 1000

PEAK DATA: 137 53 G @ 2 21 MS; 0 04 G @ -0.00 MS

TRANSPORTATION RESEARCH CENTER INC.

LATERAL NECK TEST

HYBRIDIII SID DUMMY 24-FEB-03

LEFT SIDE CONFIGURATION

TRC INC. TEST NO. NFL02801 H3/SID SN028 NECK LEFT CAL01

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6 - 22.2 deg. C	21.67 deg. C
RELATIVE HUMIDITY		10 - 70 %	31.00 %
IMPACT VELOCITY		6.89 - 7.13 M/S	6.99 M/S
INTEGRATED VELOCITY	10 MS	1.96 - 2.55 M/S	2.27 M/S
	20 MS	4.12 - 5.10 M/S	4.50 M/S
	30 MS	5.73 - 7.01 M/S	6.37 M/S
	40 - 70 MS	6.27 - 7.64 M/S	7.10- 7.24 M/S
MAXIMUM MIDSAGGITAL PLANE ROTATION		66 - 82 deg.	67.74 deg.
ROTATION ANGLE DECAY TIME FROM PEAK TO ZERO		58 - 67 MS	60.64 MS
MAXIMUM MOMENT ABOUT OCCIPITAL CONDYLE		73 - 88 NM	78.26 NM
POSITIVE MOMENT DECAY TIME FROM PEAK TO ZERO		49 - 64 MS	54.96 MS
TIME OF MAXIMUM ROTATION AFTER MAXIMUM MOMENT		2 - 16 MS	8.08 MS

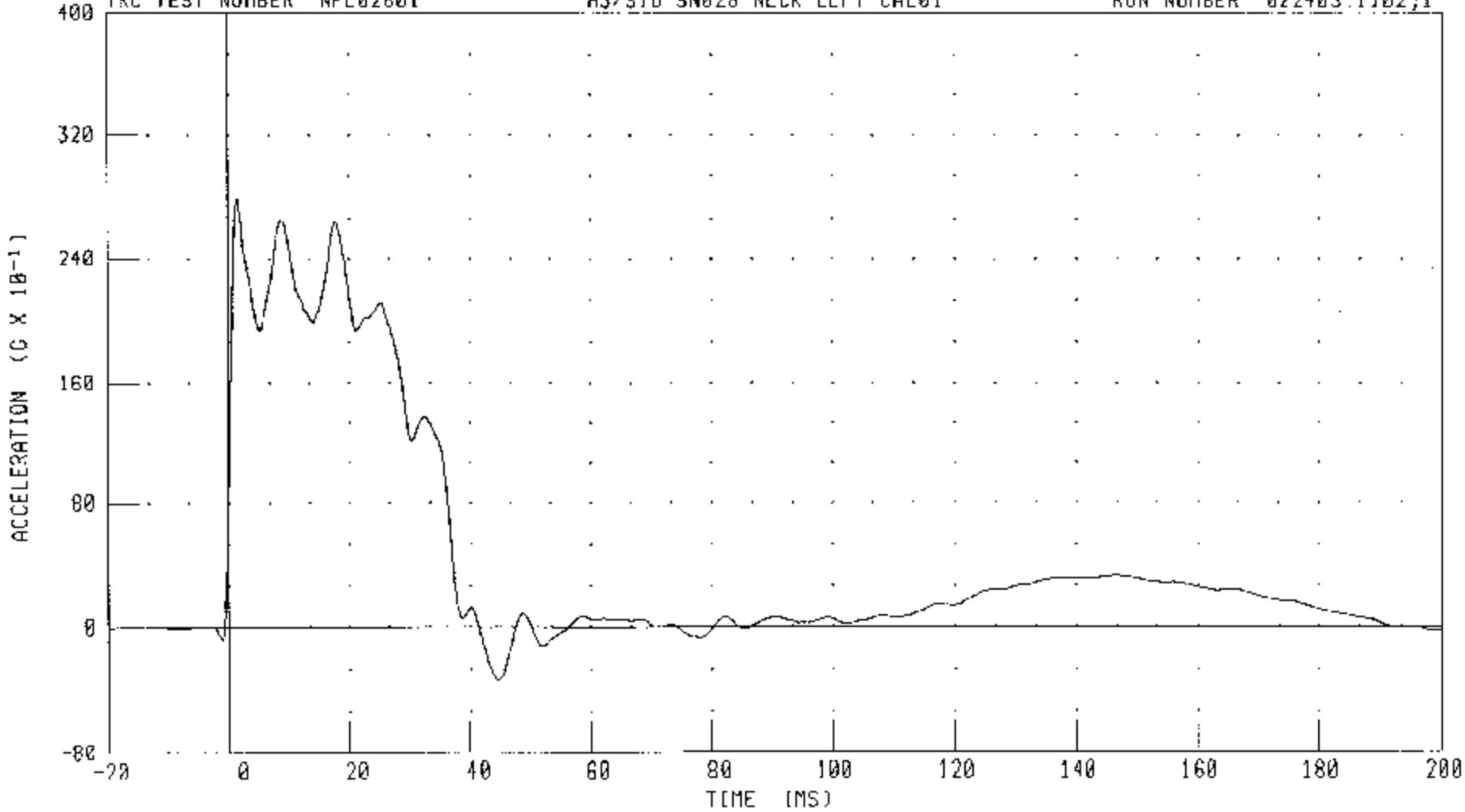
TEST MEETS SPECIFICATIONS

TECHNICIAN _____ RUN NUMBER: 022403.1055;1

H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

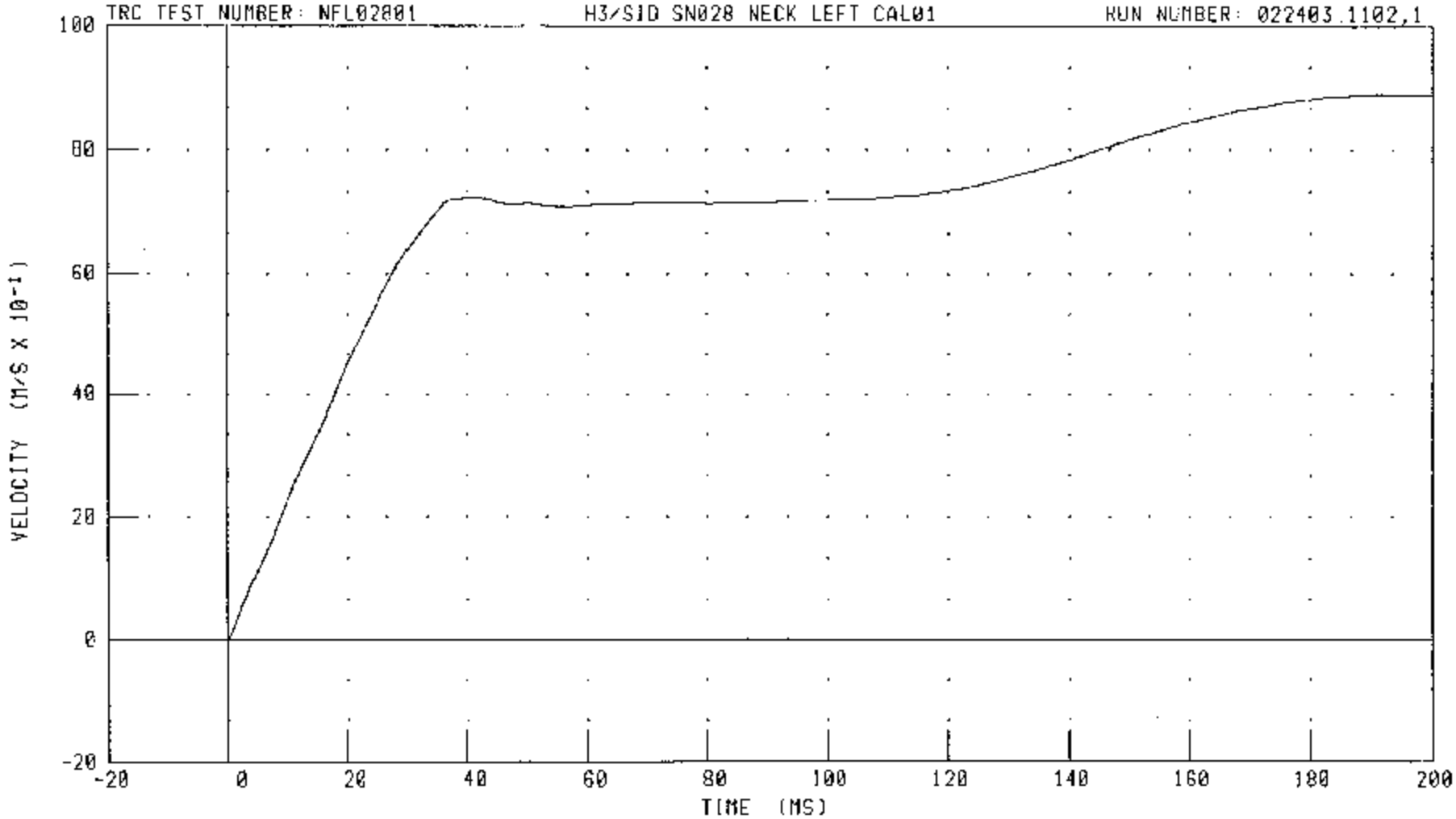
PENDULUM DECELERATION

TRC TEST NUMBER NFL02801 H3/SID SN028 NECK LEFT CAL01 RUN NUMBER: 022403.1102;1



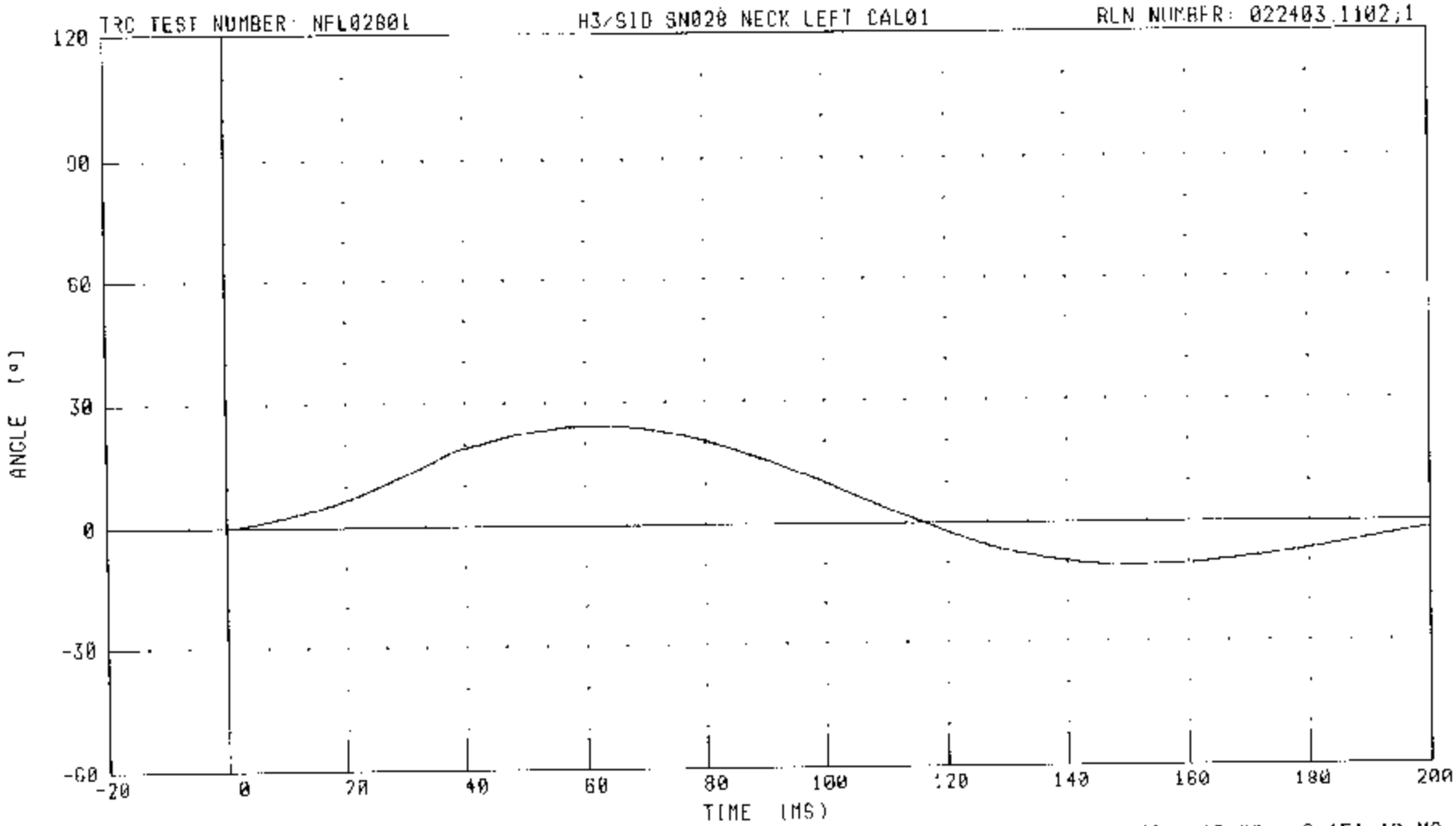
CHANNEL PENXG FILTER: CH. CLASS 180 PEAK DATA: 27.88 G @ 1.52 MS; -3.36 G @ 44.56 MS

H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST
INTEGRATED PENDULUM VELOCITY



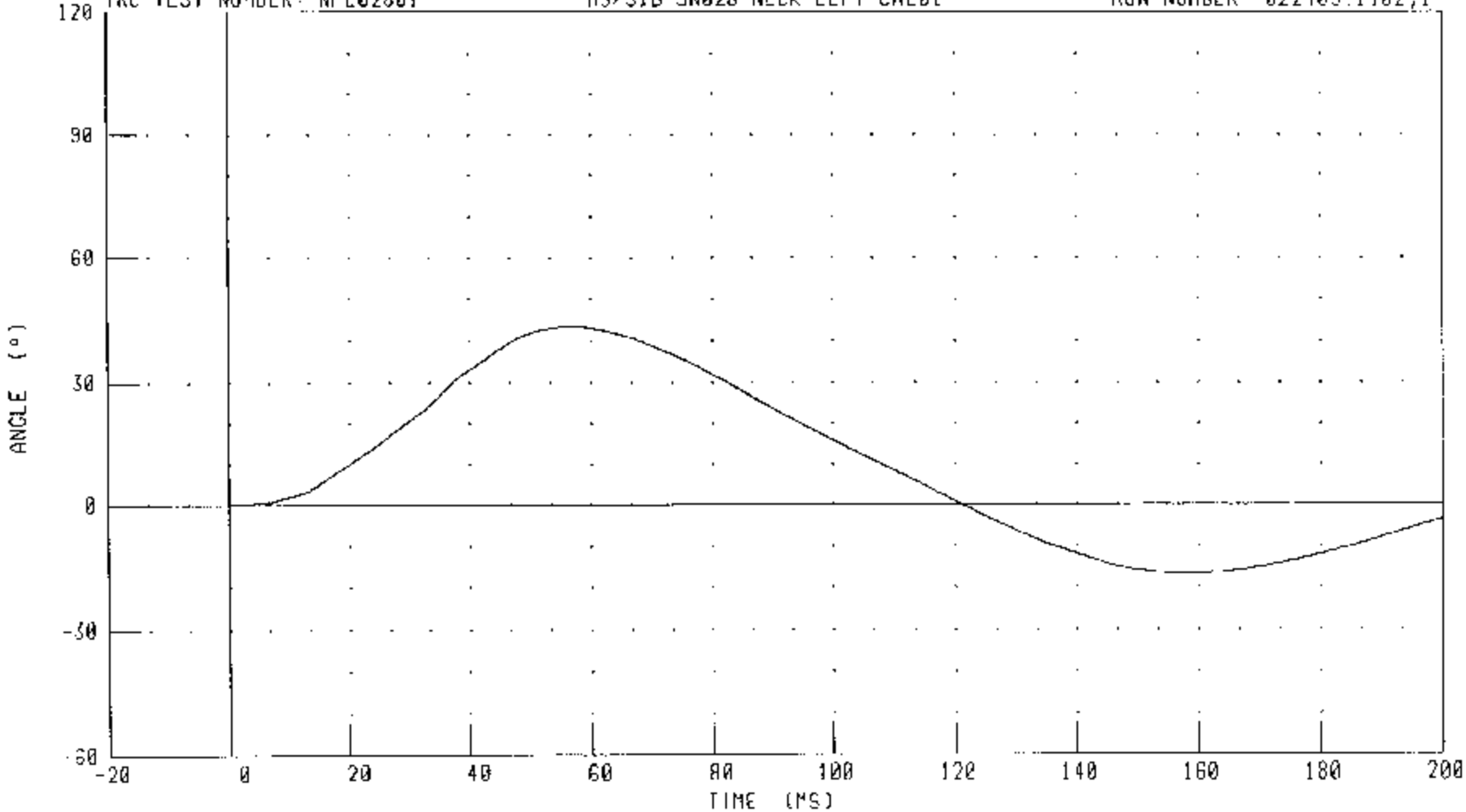
CHANNEL: PENXVI FILTER: CH. CLASS 180 PEAK DATA 8.90 M/S @ 191.52 MS; -0.01 M/S @ -0.72 MS

H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST
ROTATION ABOUT BASE OF NECK



H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST
ROTATION ABOUT OCCIPITAL CONDYLE

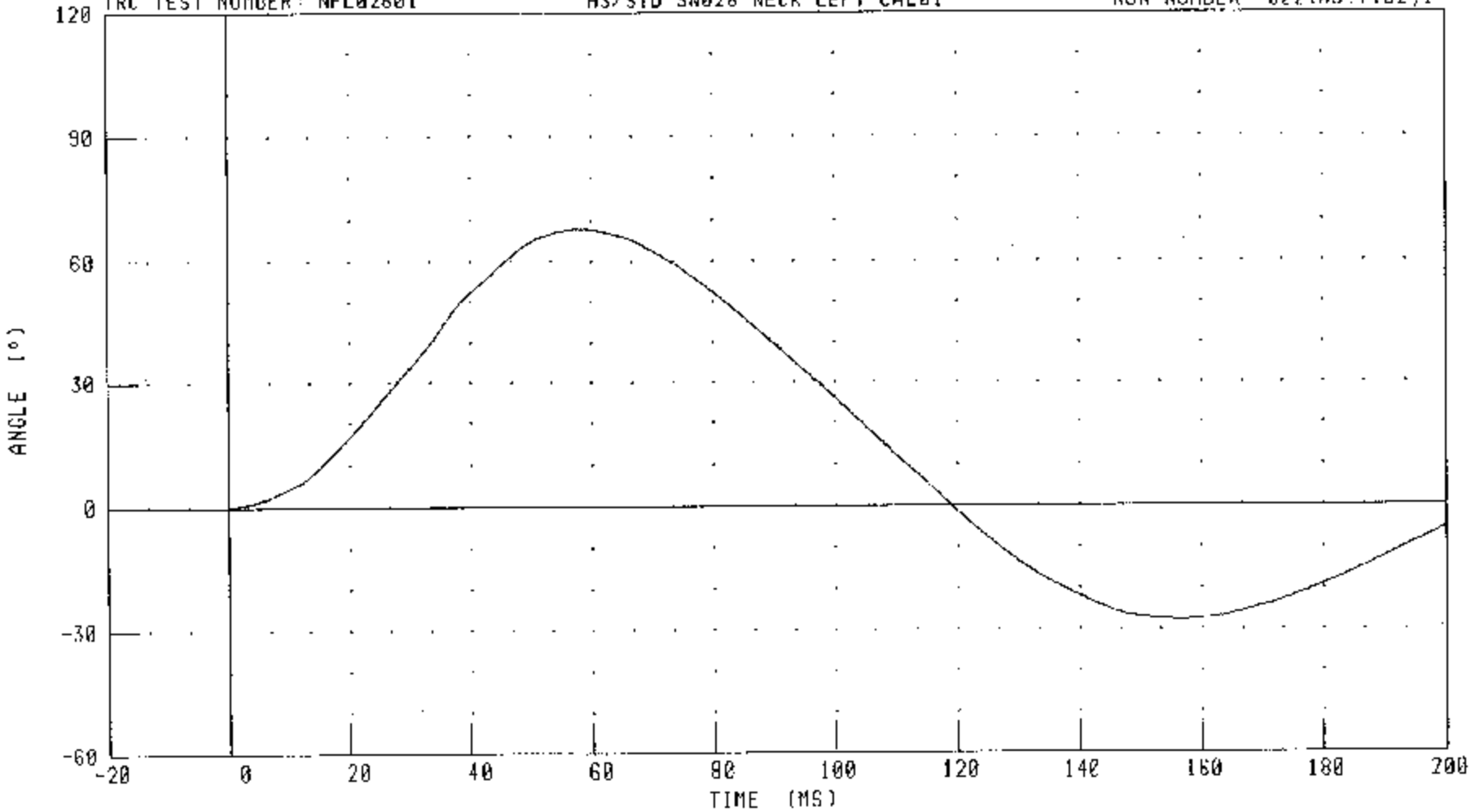
TRC TEST NUMBER: NFL02801 H3/SID SN028 NECK LEFT CAL01 RUN NUMBER: 022403.1102;1



CHANNEL THETA FILTER: CH. CLASS 60 PEAK DATA: 43.43 ° @ 56.88 MS; -16.94 ° @ 158.00 MS

H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST
TOTAL ROTATION

TRC TEST NUMBER: NFL02801 H3/SID SN028 NECK LEFT CAL01 RUN NUMBER: 022403.1102;1

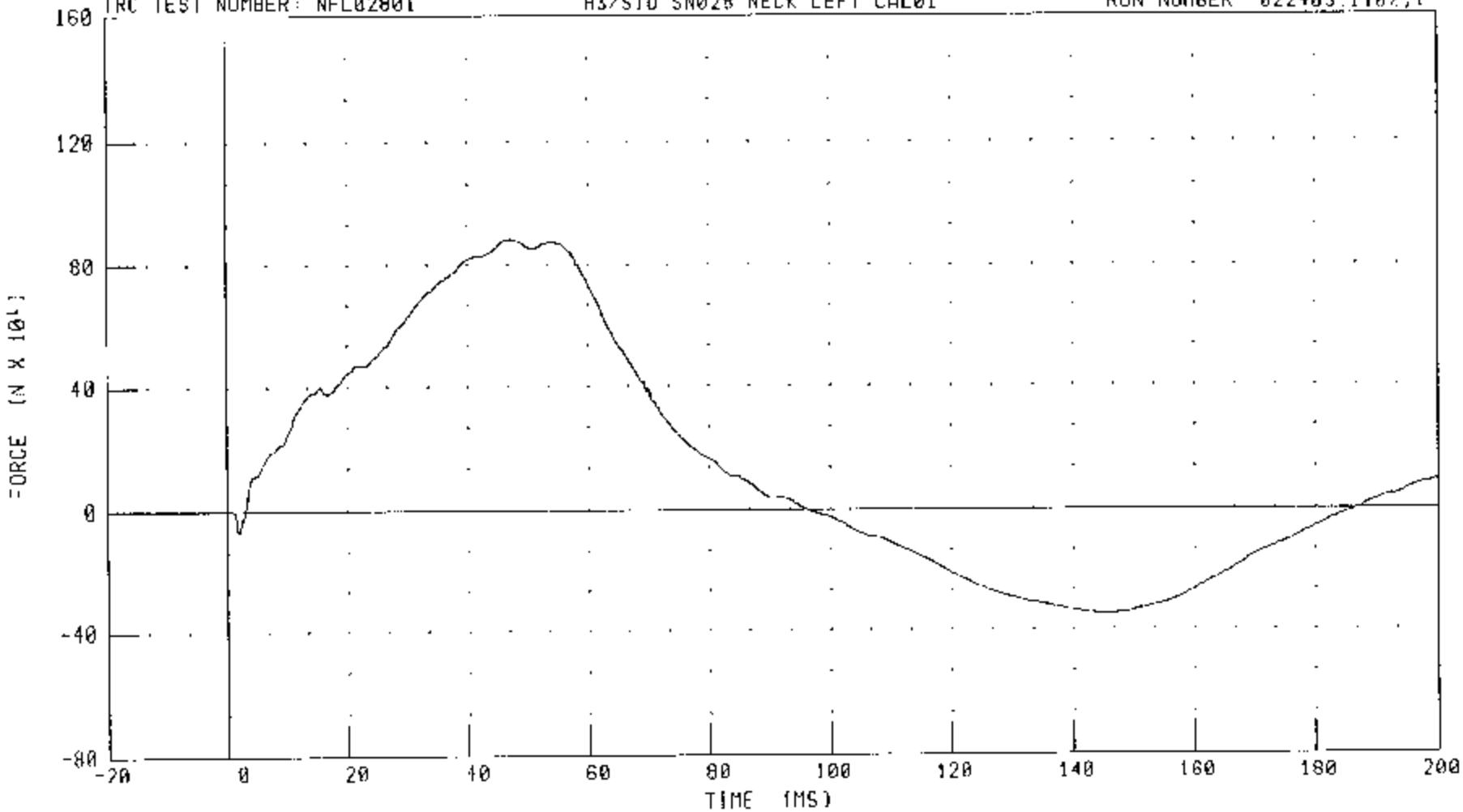


CHANNEL: TOTAN FILTER CH. CLASS 60 PEAK DATA 67.74 ° @ 50.40 MS; -27.70 ° @ 156.56 MS

H3/SID DUMMY CALIBRATION LEFT LATERAL NECK TEST

NECK FORCE Y AXIS

TRC TEST NUMBER: NFL02001 H3/SID SN028 NECK LEFT CAL01 RUN NUMBER: 022403.1102;1

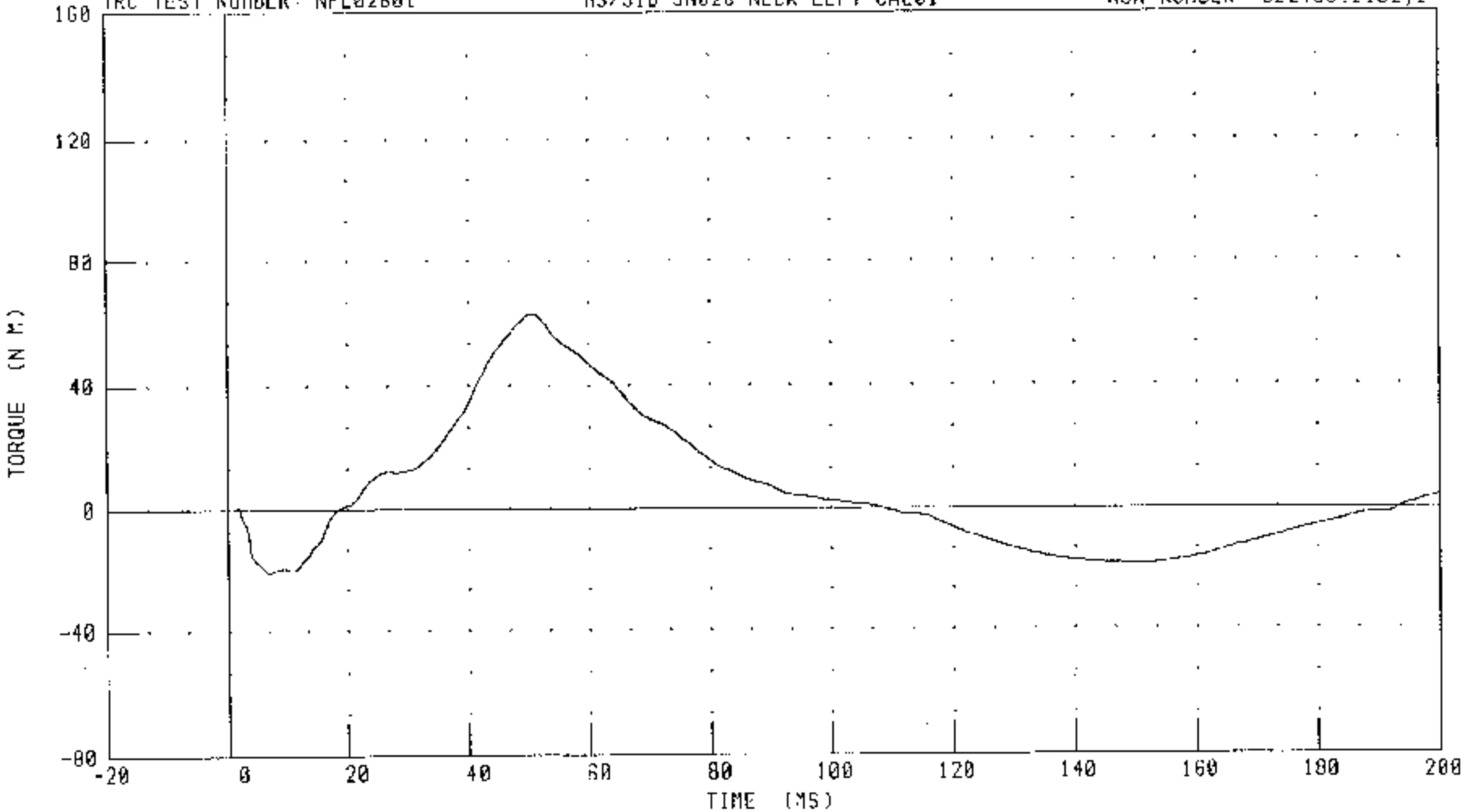


CHANNEL NEKYF FILTER: CH CLASS 1000 PEAK DATA: 884.95 N @ 47.12 MS; -346.94 N @ 145.12 MS

H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

NECK MOMENT X AXIS

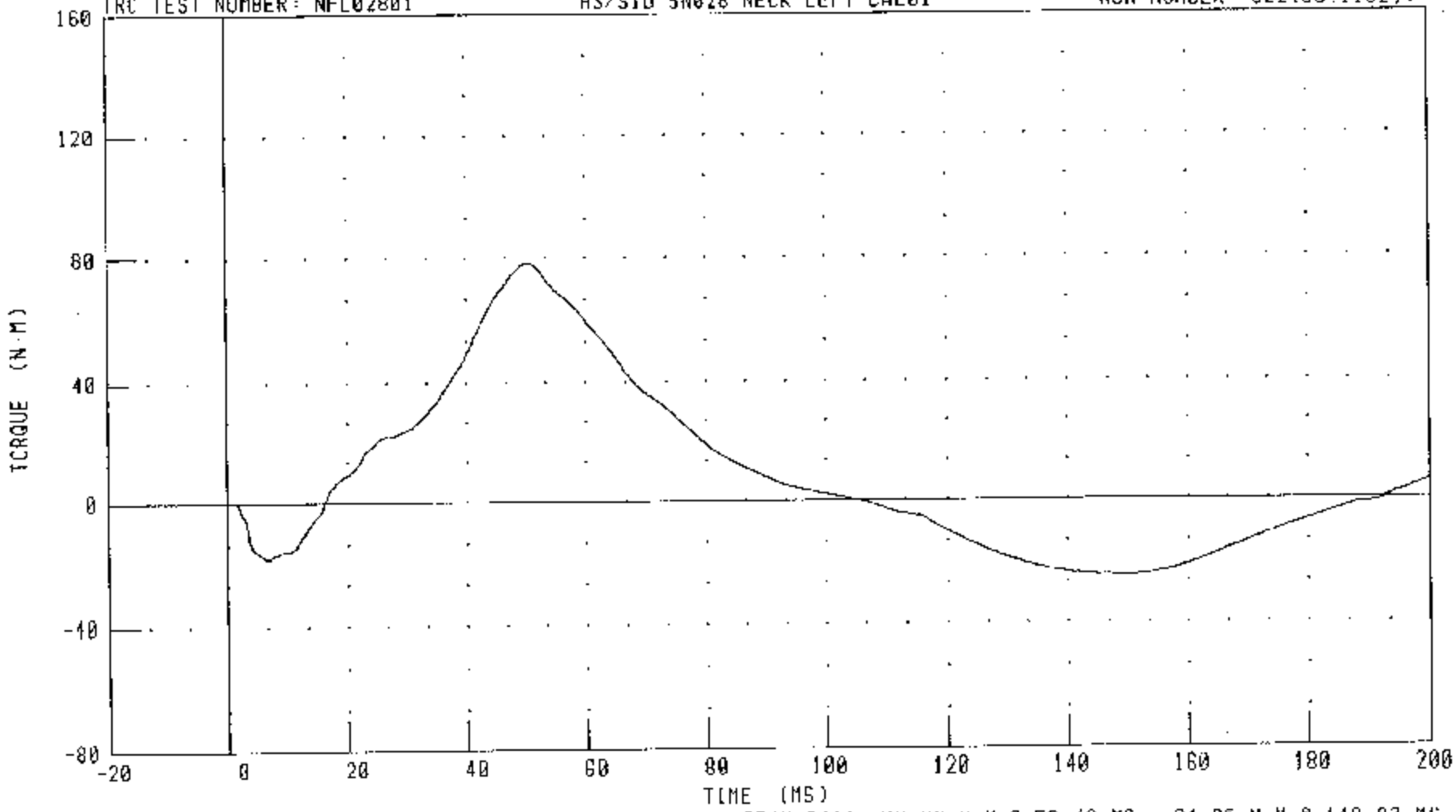
TRC TEST NUMBER: NFL02B0L H3/SID SN028 NECK LEFT CAL01 RUN NUMBER: 022403.1102;1



CHANNEL: NEKXM FILTER: CH. CLASS 600 PEAK DATA: 63.02 N·M @ 50.40 MS; -71.07 N·M @ 6.96 MS

H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST
TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: NFL02801 H3/SID SN028 NECK LEFT CAL01 RUN NUMBER: 022403.1102;1



CHANNEL: NEKOM FILTER: CH CLASS 600 PEAK DATA: 70.26 N M @ 50.32 MS, -24.85 N M @ 149.92 MS

TRANSPORTATION RESEARCH CENTER INC.

LATERAL THORAX IMPACT TEST

SIDE IMPACT DUMMY 06-FEB-03

LEFT SIDE CONFIGURATION

TRC INC. TEST NO: STL02801A 572F SID SN028 L.THORAX CAL01

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	32.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.29 M/S
PEAK ACCELERATION: UPPER RIB BAR	37 - 46 G	42.9 G
PEAK ACCELERATION: LOWER RIB BAR	37 - 46 G	40.8 G
PEAK ACCELERATION: LOWER THORACIC SPINE	15 - 22 G	16.4 G

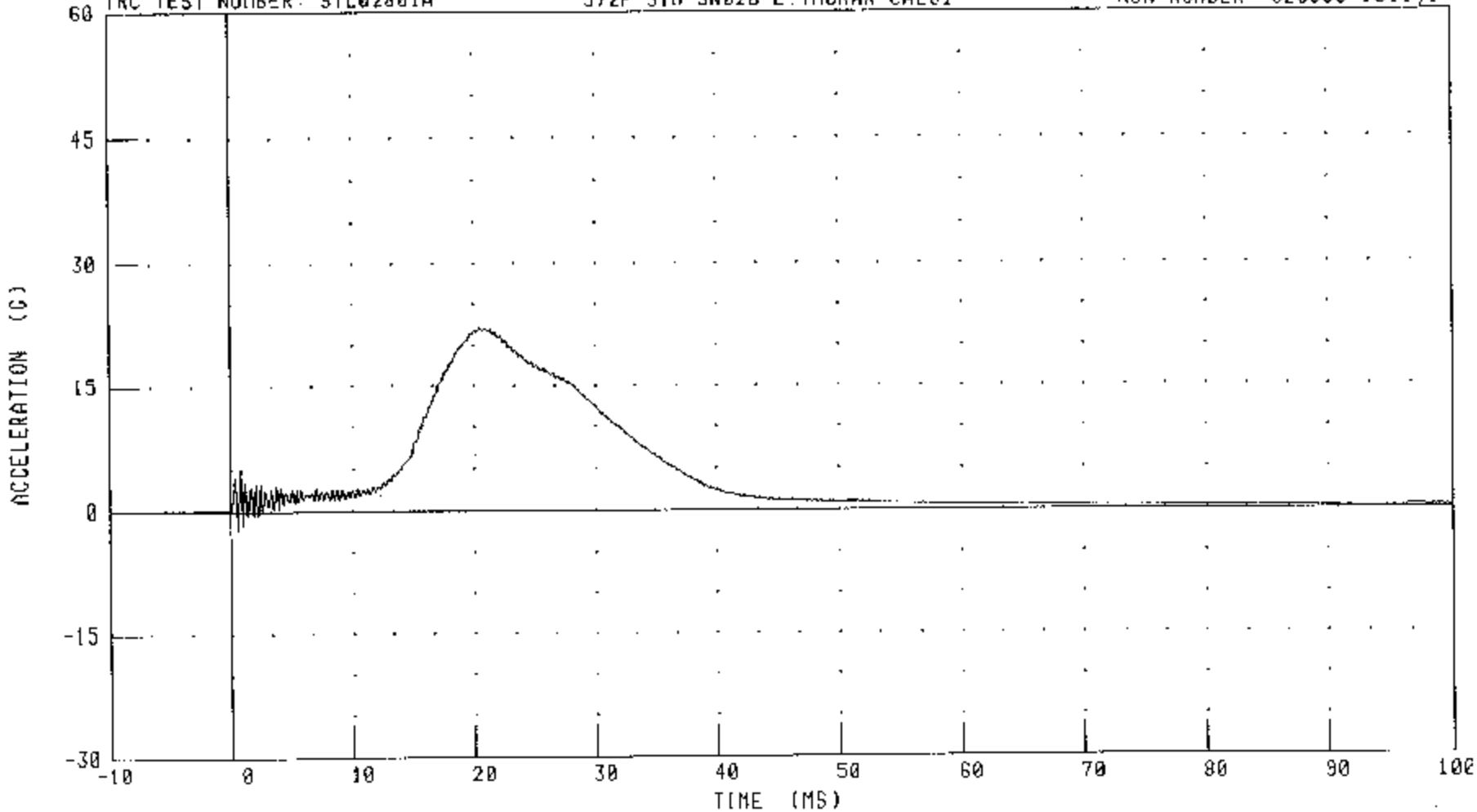
TEST MEETS SPECIFICATIONS

TECHNICIAN _____ RUN NUMBER: 020603.1511;1

PART 572-F S.I.D THORAX CALIBRATION - (LEFT SIDE IMPACT)

PENDULUM DECELERATION

TRC TEST NUMBER: STL02801A 572F SID SN028 L.THORAX CAL01 RUN NUMBER: 020603 1511;1

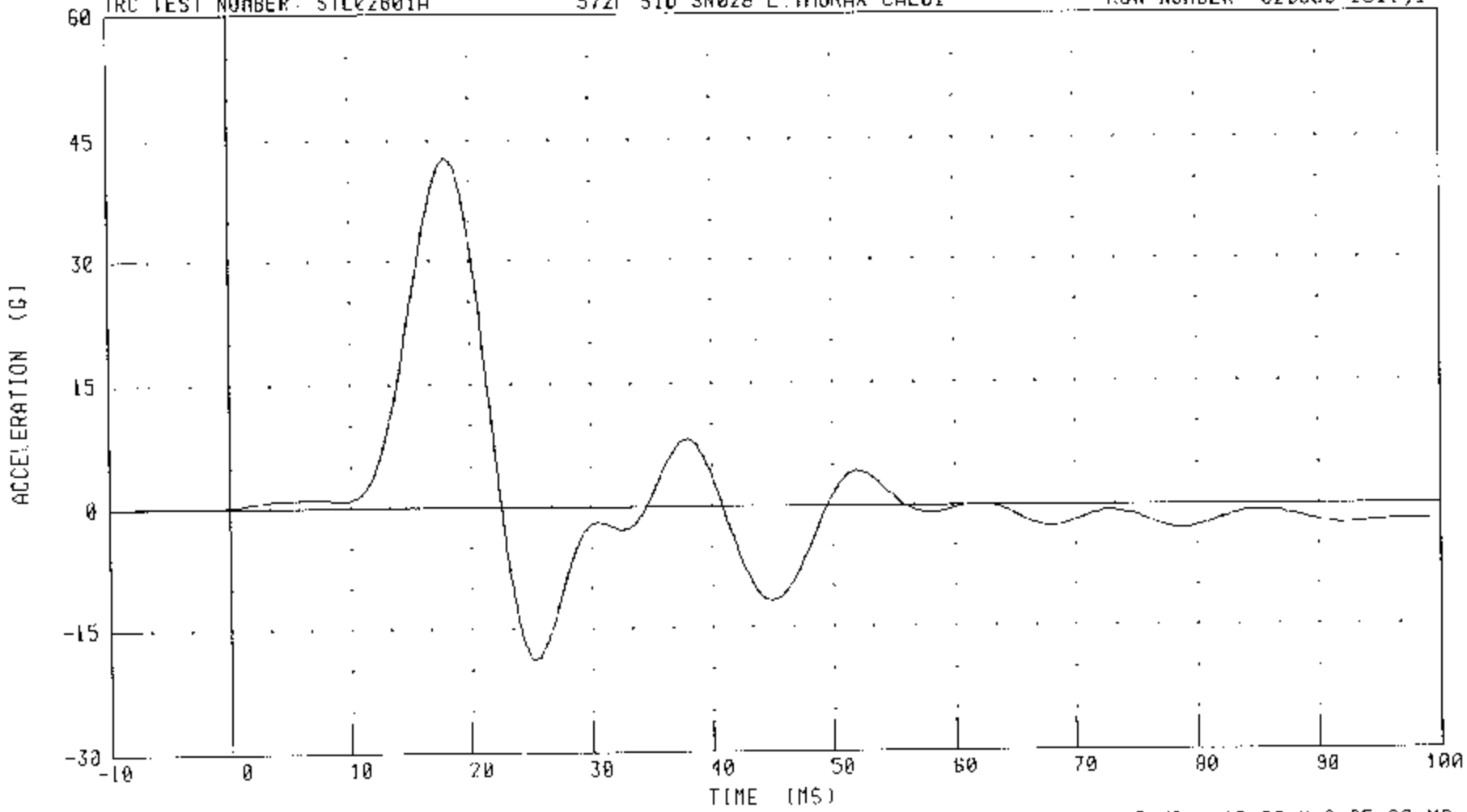


CHANNEL: PFNXG FILTER CP. CLASS 1000 PEAK DATA: 22.16 G @ 20.56 MS; -2.21 G @ 0.56 MS

PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LEFT UPPER RIB ACCELERATION Y AXIS

TRC TEST NUMBER: STL02B01A 572F SID SN028 L.THORAX CAL01 RUN NUMBER: 020603 1511;1

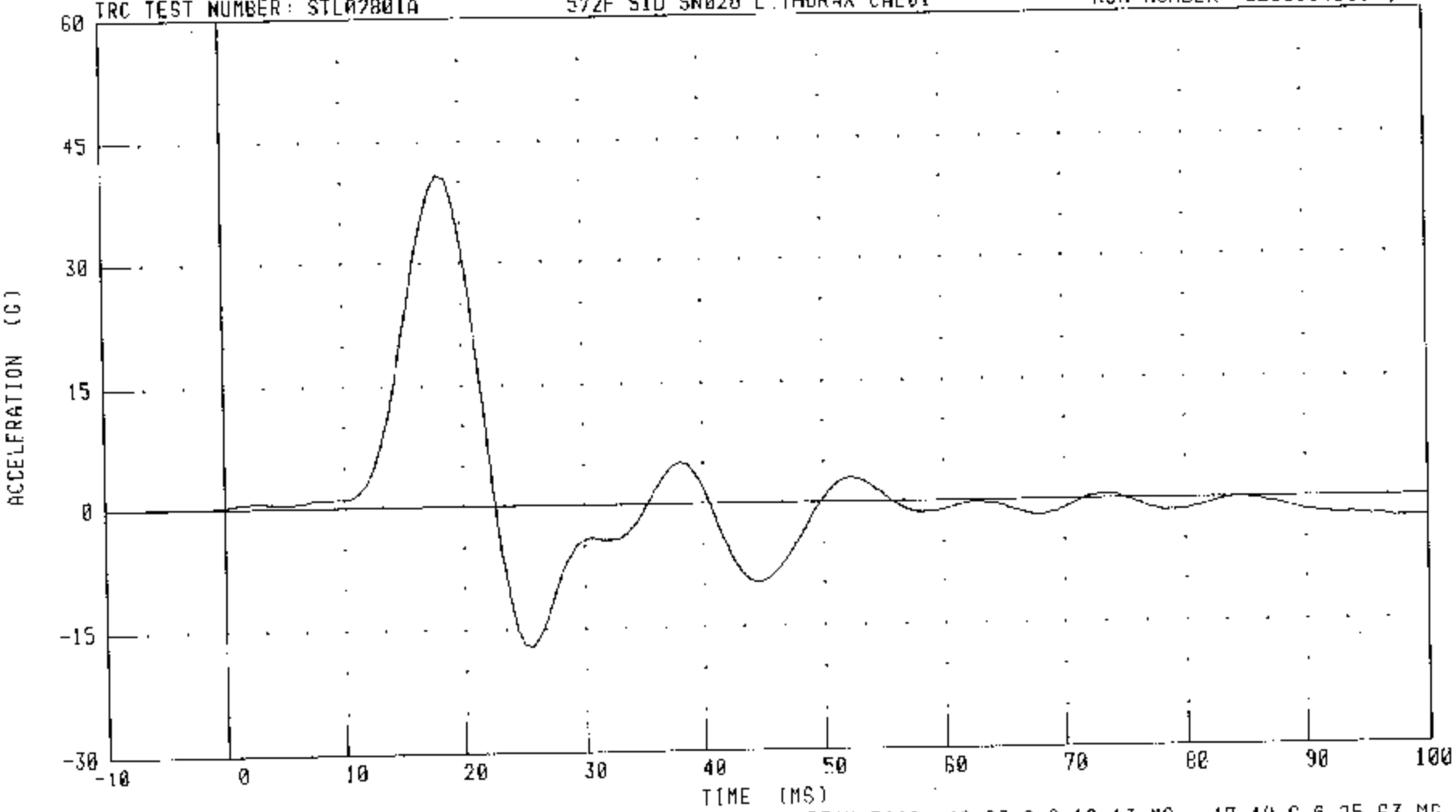


CHANNEL: LURYG FILTER: FIR 100 PEAK DATA: 42.97 G @ 18.13 MS; -18.66 G @ 25.00 MS

PART 572-F S I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LEFT LOWER RIB ACCELERATION Y AXIS

TRC TEST NUMBER: STL02801A 572F SID SN020 L.THORAX CAL01 RUN NUMBER: 020603.1511;1



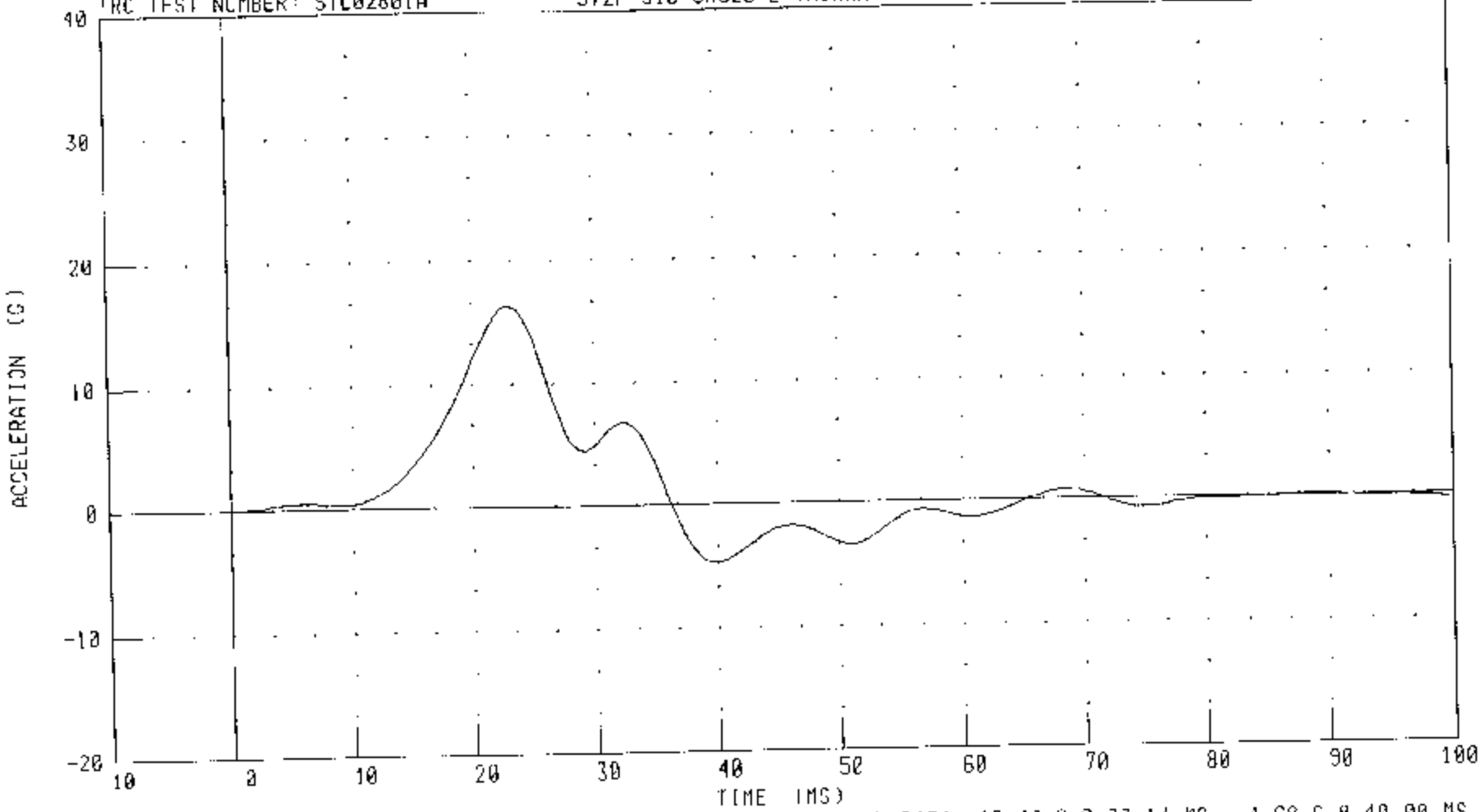
CHANNEL: LLRYG FILTER: FIR 100

PEAK DATA: 40.83 G @ 18.13 MS. -17.18 G @ 25.63 MS

PART 572-F S I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)
LOWER SPINE ACCELERATION Y AXIS
572F SID SN028 L THORAX CAL01

TRC TEST NUMBER: SIL0280IA

RUN NUMBER: 020603.1511;1



CHANNEL: T12YG FILTER: FIR 100

PEAK DATA: 16.43 G @ 23.13 MS, -4.68 G @ 40.00 MS

TRANSPORTATION RESEARCH CENTER INC.

THORACIC SHOCK ABSORBER TESTS

SIDE IMPACT DUMMY 03-FEB-03

TRC INC. 572F SN028 DAMPER TEST CAL01

TEST NUMBERS: DP02801A,DP02801B,DP02801C

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		18.9 - 25.5 C	21.7 DEG. C
RELATIVE HUMIDITY		10 - 70 %	46.0 %
VELOCITY	FORCE	667 - 925 N	750 N
2.69 M/S	DISPLACEMENT	29.7 - 34.5 MM	29.9 MM
VELOCITY	FORCE	1733 - 2100 N	1791 N
4.26 M/S	DISPLACEMENT	31.6 - 37.2 MM	34.9 MM
VELOCITY	FORCE	3784 - 4495 N	4259 N
6.12 M/S	DISPLACEMENT	33.3 - 39.6 MM	37.8 MM

DAMPER SETTING = 5.6

TEST MEETS SPECIFICATIONS

TECHNICIAN _____ RUN NUMBER: 020303.1116;2

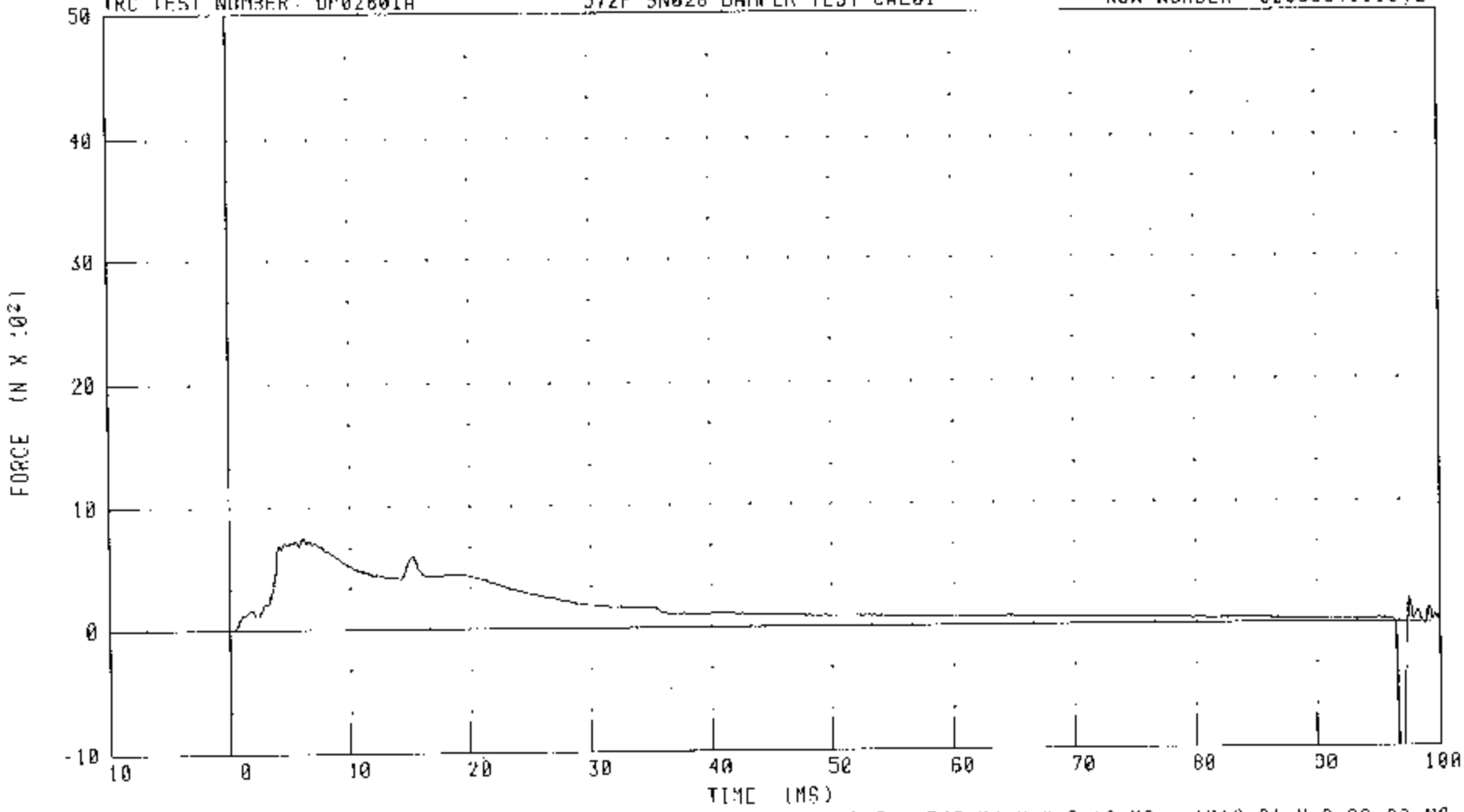
PART 572-F S I D THORACIC SHOCK ABSORBER CALIBRATION (3.0 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

TRC TEST NUMBER: DP02B01A

572F SN028 DAMPER TEST CAL01

RUN NUMBER: 020303.1116;2



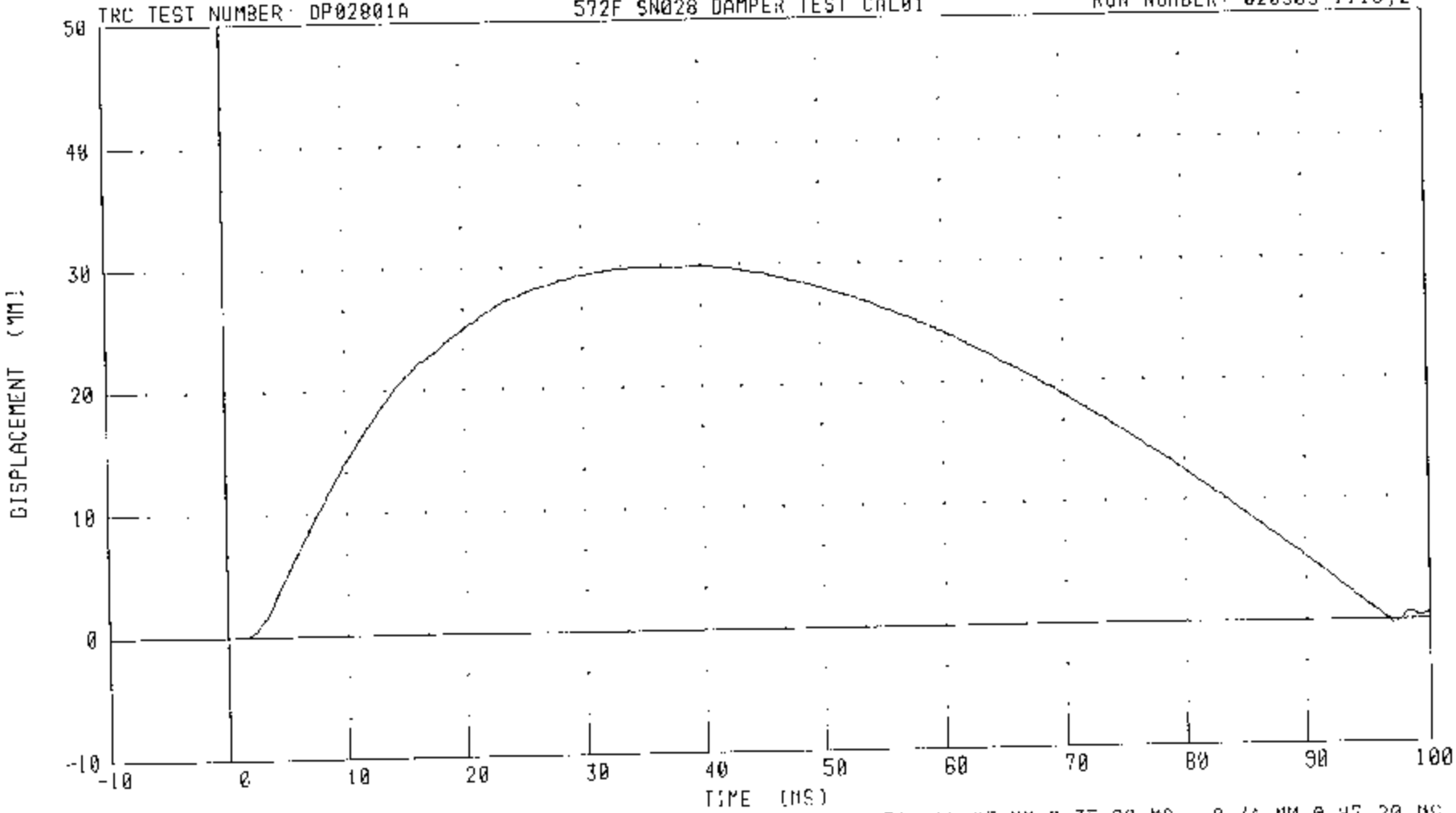
CHANNEL: DAMPF FILTER: CF. CLASS 1000

PEAK DATA: 749.74 N @ 6.16 MS; 1712.91 N @ 96.80 MS

PART 572-F 5.1.U. THORACIC SHOCK ABSORBER CALIBRATION (3.0 M/SEC)

SHOCK ABSORBER DISPLACEMENT

TRC TEST NUMBER: DP02801A 572F SN028 DAMPER TEST CAL01 RUN NUMBER: 020303 1116;2



CHANNEL: CSTYD FILTER CH. CLASS 1000

PEAK DATA 29.87 MM @ 35.20 MS; 0.31 MM @ 97.20 MS

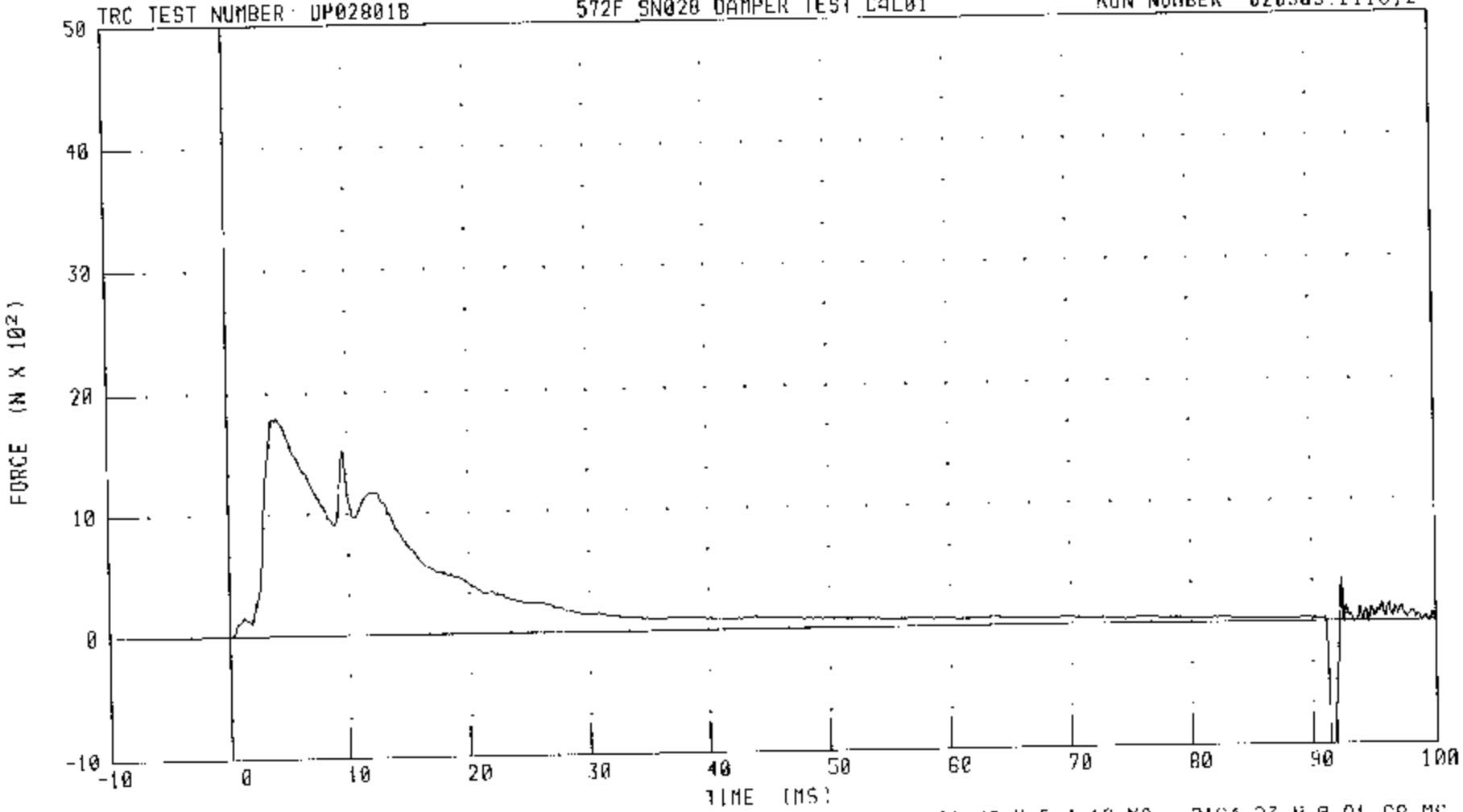
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (4.3 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

572F SN028 DAMPER TEST CAL01

TRC TEST NUMBER: UP02801B

RUN NUMBER: 020303.1116;2



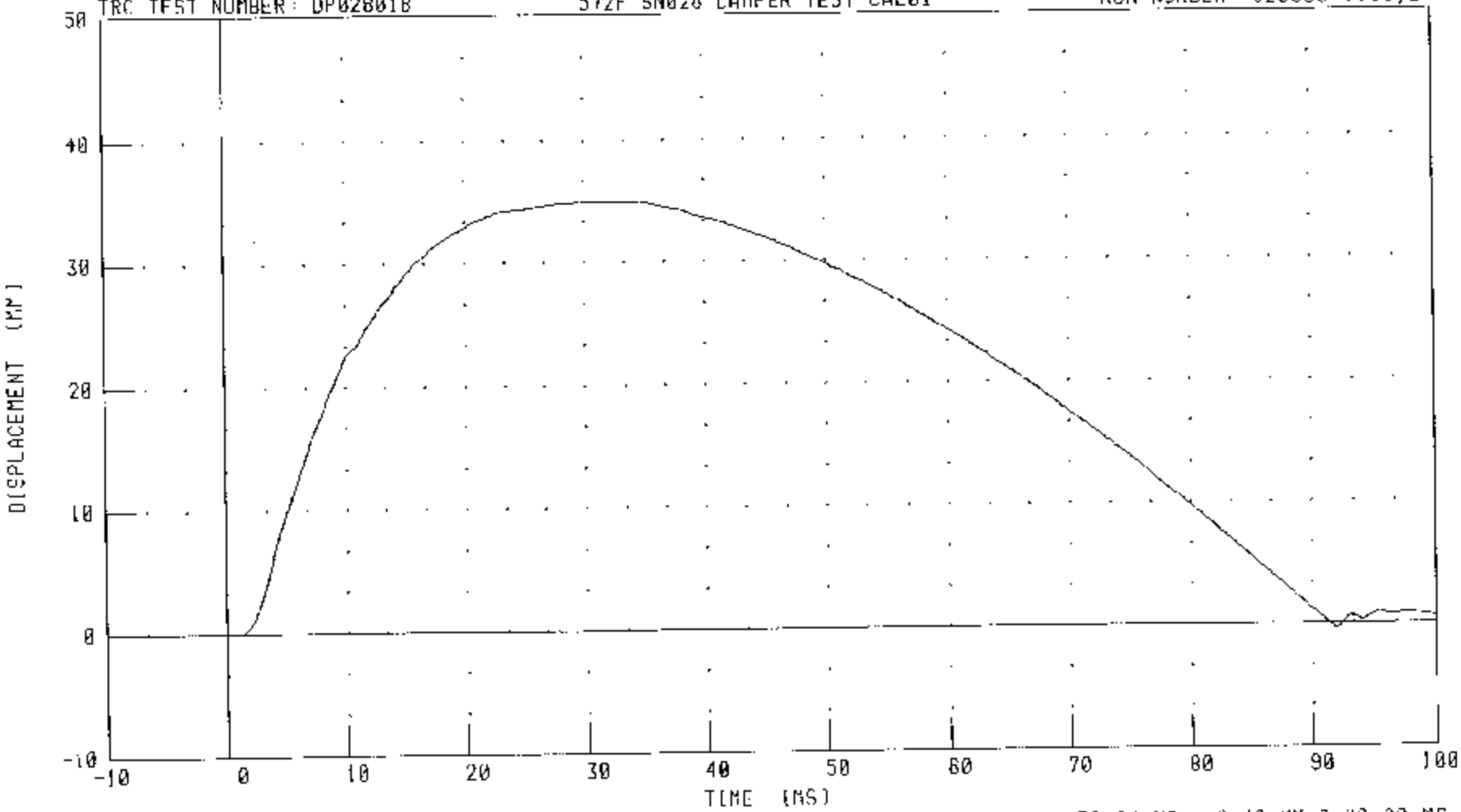
CHANNEL: DAMPF FILTER: CH CLASS 1000

PEAK DATA: 1791.40 N @ 4.16 MS; -2164.23 N @ 91.68 MS

PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (4.3 M/SEC)

SHOCK ABSORBER DISPLACEMENT

TRC TEST NUMBER: DP02801B 572F SN020 DAMPER TEST CAL01 RUN NUMBER: 020303 1116;2



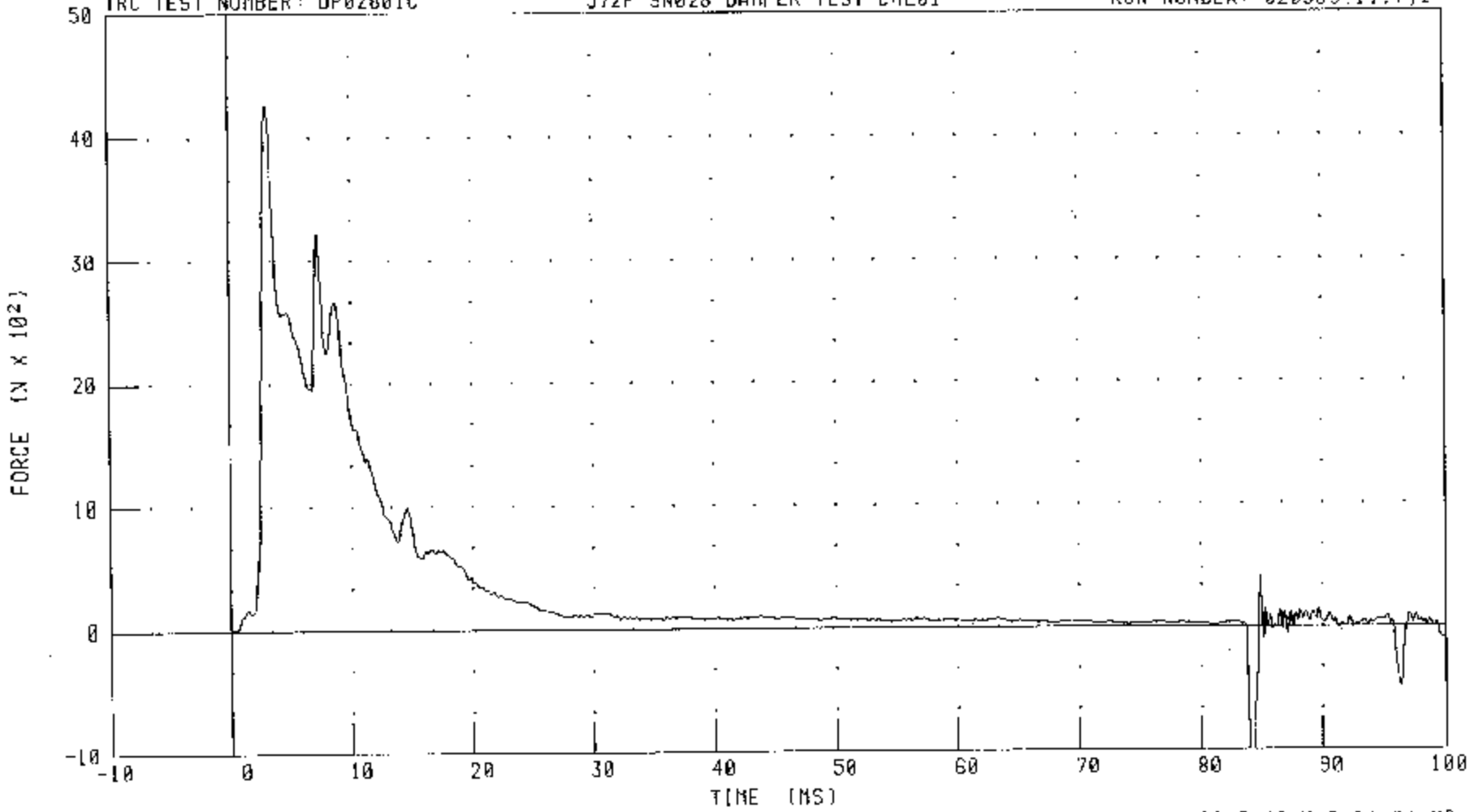
CHANNEL: CSTYD FILTER CH CLASS 1000

PEAK DATA 34.90 MM @ 30.64 MS, -0.40 MM @ 92.00 MS

PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (6.1 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

TRC TEST NUMBER: DP02801C 572F SN028 DAMPER TEST CAL01 RUN NUMBER: 020303.1117;1

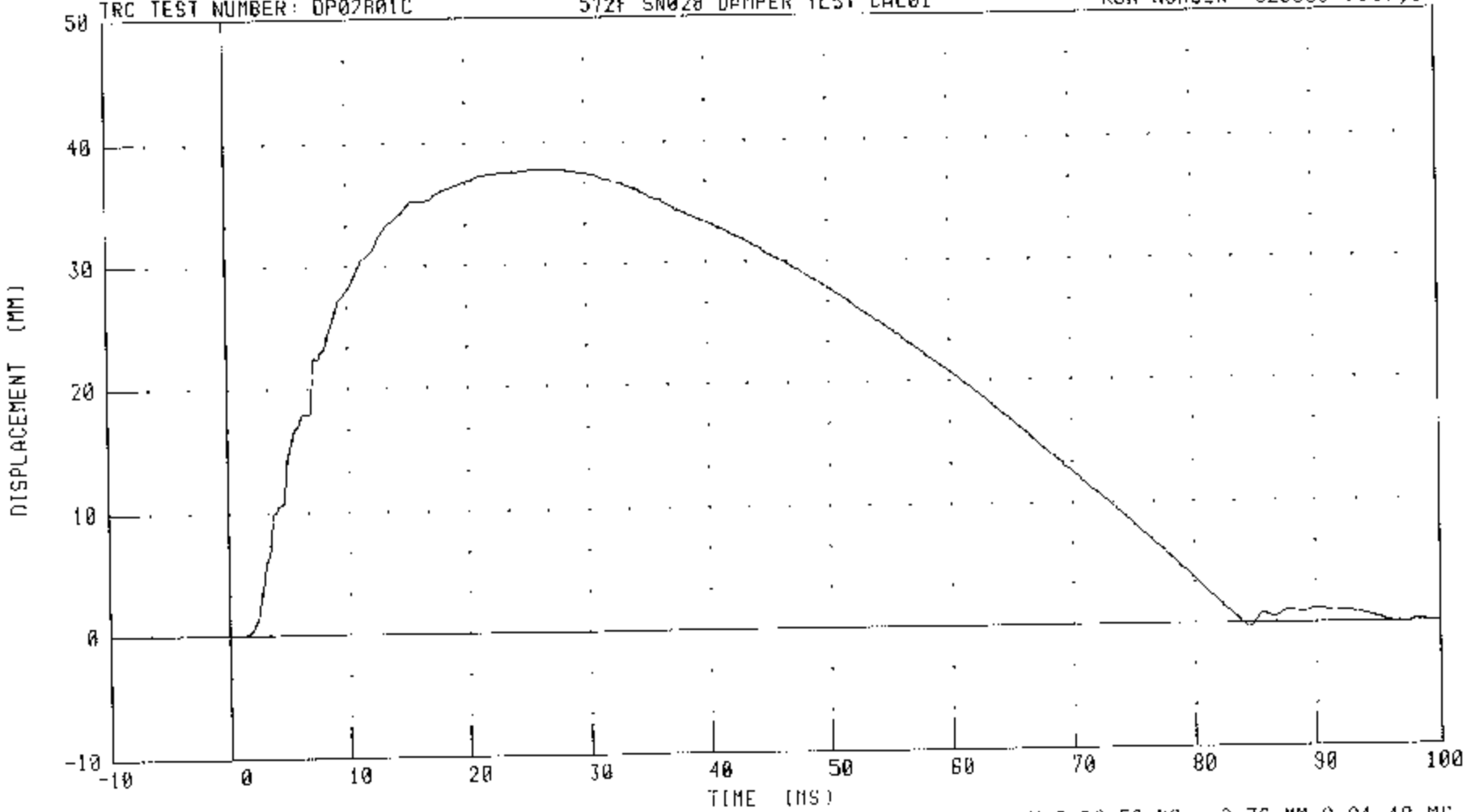


CHANNEL: DAMPF FILTER: CH. CLASS 1000 PEAK DATA: 4259.31 N @ 3.12 MS, -2213.42 N @ 04.24 MS

PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (6.1 M/SEC)

SHOCK ABSORBER DISPLACEMENT

TRC TEST NUMBER: DP02R01C 572F SN020 DAMPER TEST CAL01 RUN NUMBER: 020303 1117;1



CHANNEL: CSTYD FILTER CH. CLASS 1000

PEAK DATA: 37.75 MM @ 26.56 MS; -0.36 MM @ 84.48 MS

C-30

030225

TRANSPORTATION RESEARCH CENTER INC.

LATERAL PELVIS IMPACT TEST

SIDE IMPACT DUMMY 06-FEB-03

LEFT SIDE CONFIGURATION

TRC INC. TEST NO: SPL02801 572F SN028 LEFT PELVIS CAL01

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	32.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.28 M/S
PEAK PELVIC ACCELERATION	40 - 60 G	48.4 G
TIME ABOVE 20 G LEVEL	3 - 7 MS	6.3 MS
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

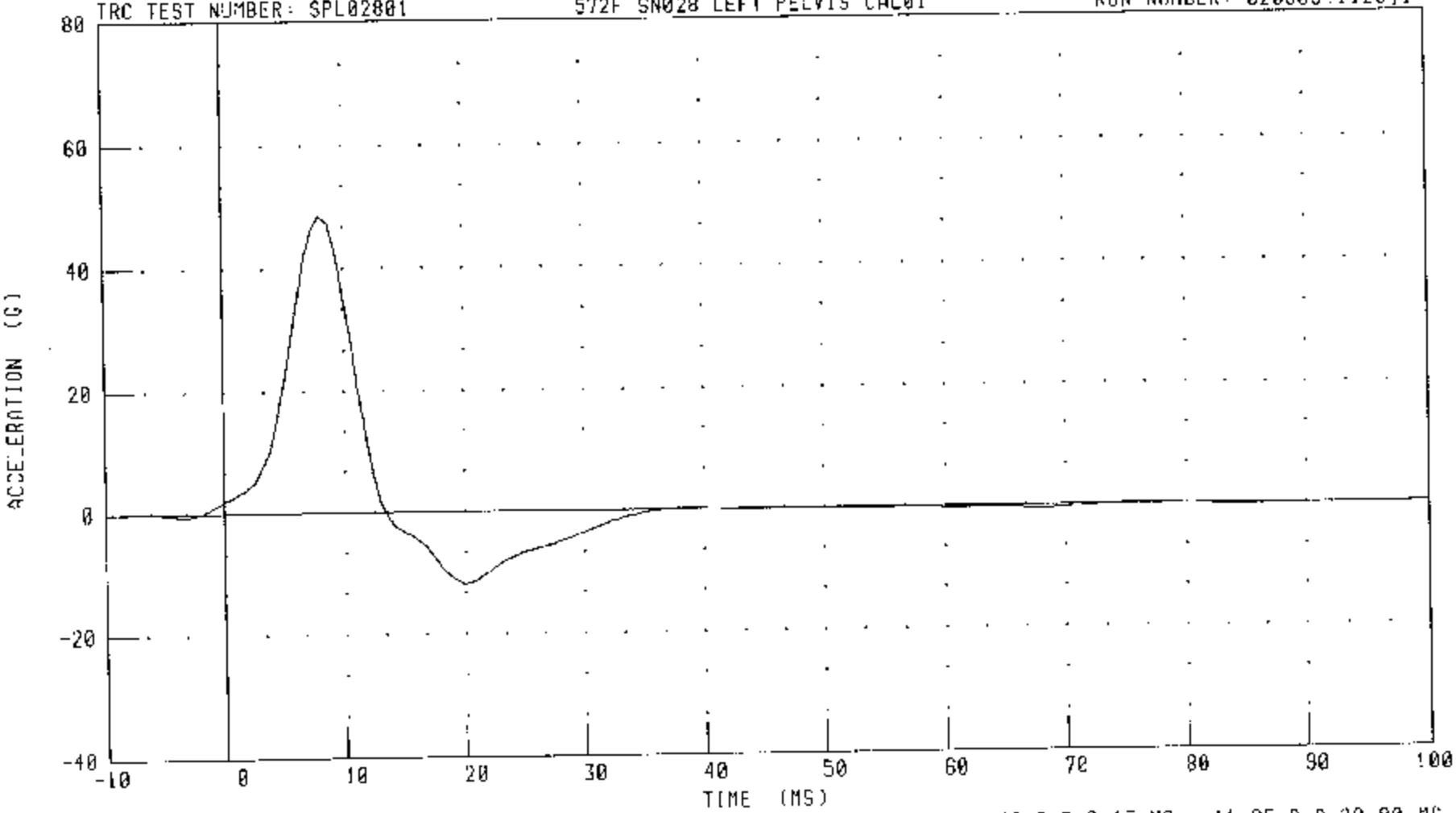
TECHNICIAN

RUN NUMBER: 020603.1123;1

PART 572-F S.I.D. PELVIS CALIBRATION (LEFT SIDE IMPACT)

PELVIS ACCELERATION Y AXIS

TRC TEST NUMBER: SPL02801 572F SN028 LEFT PELVIS CAL01 RUN NUMBER: 020603.1128;1

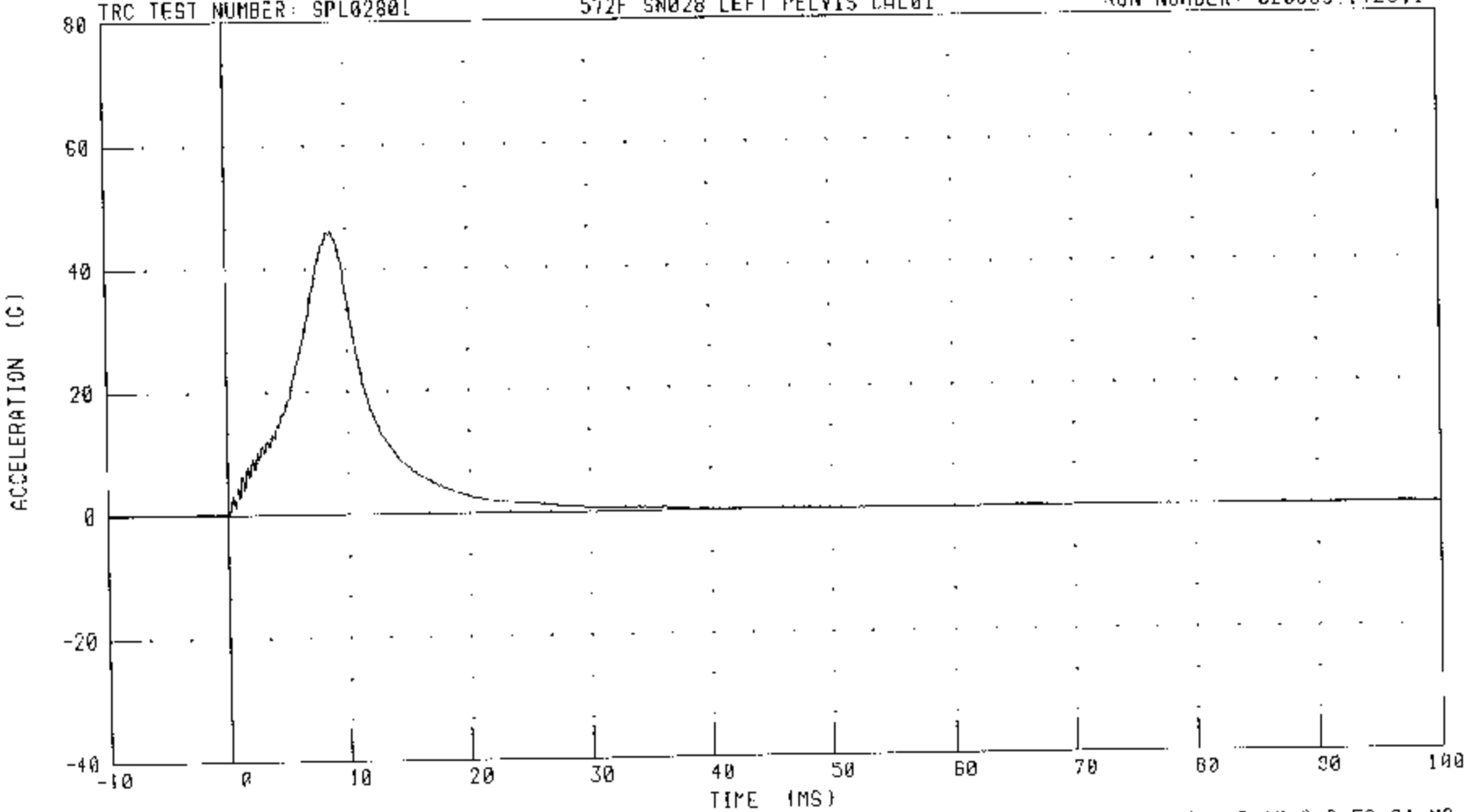


CHANNEL: PEVYC FILTER: FIR 100

PEAK DATA: 48.42 G @ 8.13 MS, -11.85 G @ 20.00 MS

PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)
PENDULUM DECELERATION

TRC TEST NUMBER: SPL0280L 572F SN028 LEFT PELVIS CAL01 RUN NUMBER: 020603.1128.1



CHANNEL: PENXC FILTER: CH CLASS 1000 PEAK DATA 46.11 G @ 8.80 MS; -0.17 G @ 50.64 MS

Transportation Research Center Inc.

572B Abdomen Compression Test

SID Serial No. 028 Calibration No. 01 - 1

Test Date 01/24/2003

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	34 %	Yes
Displacement Rate	6.35 - 8.89 mm/s	7.4 - 7.9 mm/s	Yes
Data Within Required Corridor	Yes	Yes	Yes

Comments:

Technician

Approved

01.24.2003 13:13:46 23

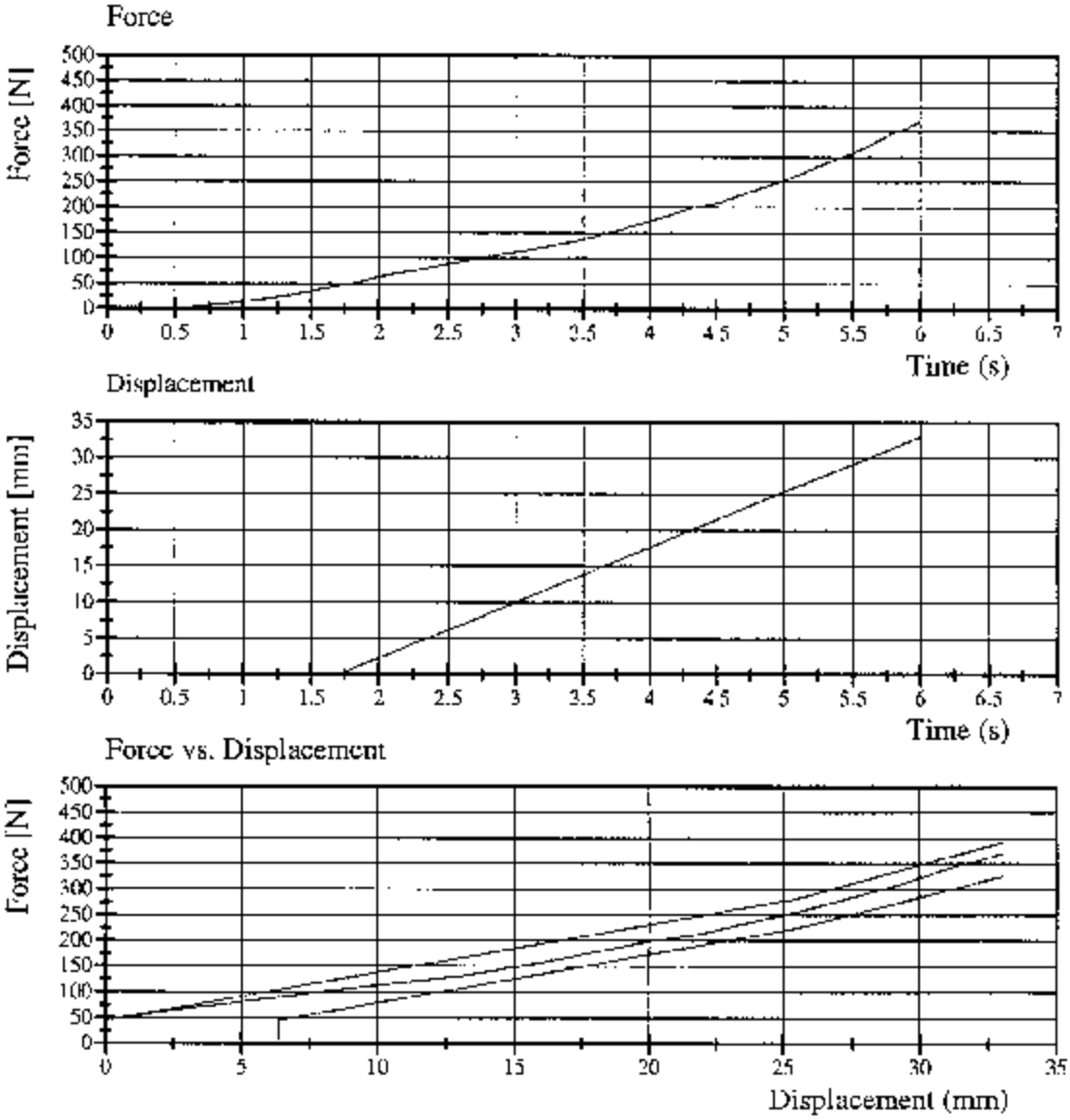
TRC

Transportation Research Center Inc.

572B Abdomen Compression Test

SID Serial No. 028 Calibration No. 01 - 1

Test Date 01/24/2003



01.24.2003 13:13:46 23

TRANSPORTATION RESEARCH CENTER INC.

LUMBAR FLEXION TEST

SID PART 572B

CAL DATE: 24-Jan-03

TRC, INC. **TEST NO: LF02801** **572B SN 028 TORSO FLEX CAL 01**

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 – 70 %	31 %
FORCE AT 0 DEG. FLEXION	-27 – 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 – 151 N	125 N
FORCE AT 30 DEG OF FLEXION	151 – 205 N	175 N
FORCE AT 40 DEG OF FLEXION	205 – 258 N	241 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 DEG.	7 Deg

TEST MEETS SPECIFICATIONS

TECHNICIAN

Calibration Test Results

Post-Test

SID: 028

Configured for Left Side Impact

External Dimensions:	The dummy passed all external dimension requirements.
Lateral Head Drop Test:	The head passed all drop test requirements.
Lateral Neck Test:	The neck passed all impact test requirements.
Lateral Thorax Impact Test:	The lateral thorax passed all impact test requirements.
Thoracic Shock Absorber Test:	The thoracic shock absorber was not tested at this time.
Pelvis Impact Test:	The lateral pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen met the compression test requirements.
Lumbar Flexion Test:	The dummy met the lumbar flexion test requirements.

Transportation Research Center Inc.
572F SID Dummy
External Dimensions
Serial No. 028 Calibration No. 02

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	900 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	504 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Rib From Backline	RD	228.6 - 241.3 mm	236 mm	Yes
Knee Pivot From Backline	KH	510.5 - 525.8 mm	514 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	497 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	375 mm	Yes
Top Rib Width From C\L	RW-1	165.1 - 180.3 mm	172 mm	Yes
Bottom Rib Width From C\L	RW-2	165.1 - 180.3 mm	172 mm	Yes
Difference Between Top & Bottom Rib Width from C\L		<= 2.5 mm	0.0 mm	Yes

Technician

Approved

TRC

TRANSPORTATION RESEARCH CENTER INC.

LATERAL HEAD DROP TEST

HYBRIDIII SID DUMMY 05-MAR-03

LEFT SIDE CONFIGURATION

TRC INC. TEST NO. HDL02802 H3/SID SN028 HEAD DROP CAL02

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6 deg. C	21.67 deg. C
RELATIVE HUMIDITY	10 - 70 %	33.00 %
PEAK RESULTANT ACCELERATION	120 - 150 G	145.12 G
PEAK LONGITUDINAL ACCELERATION	15 G MAX	-11.14 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

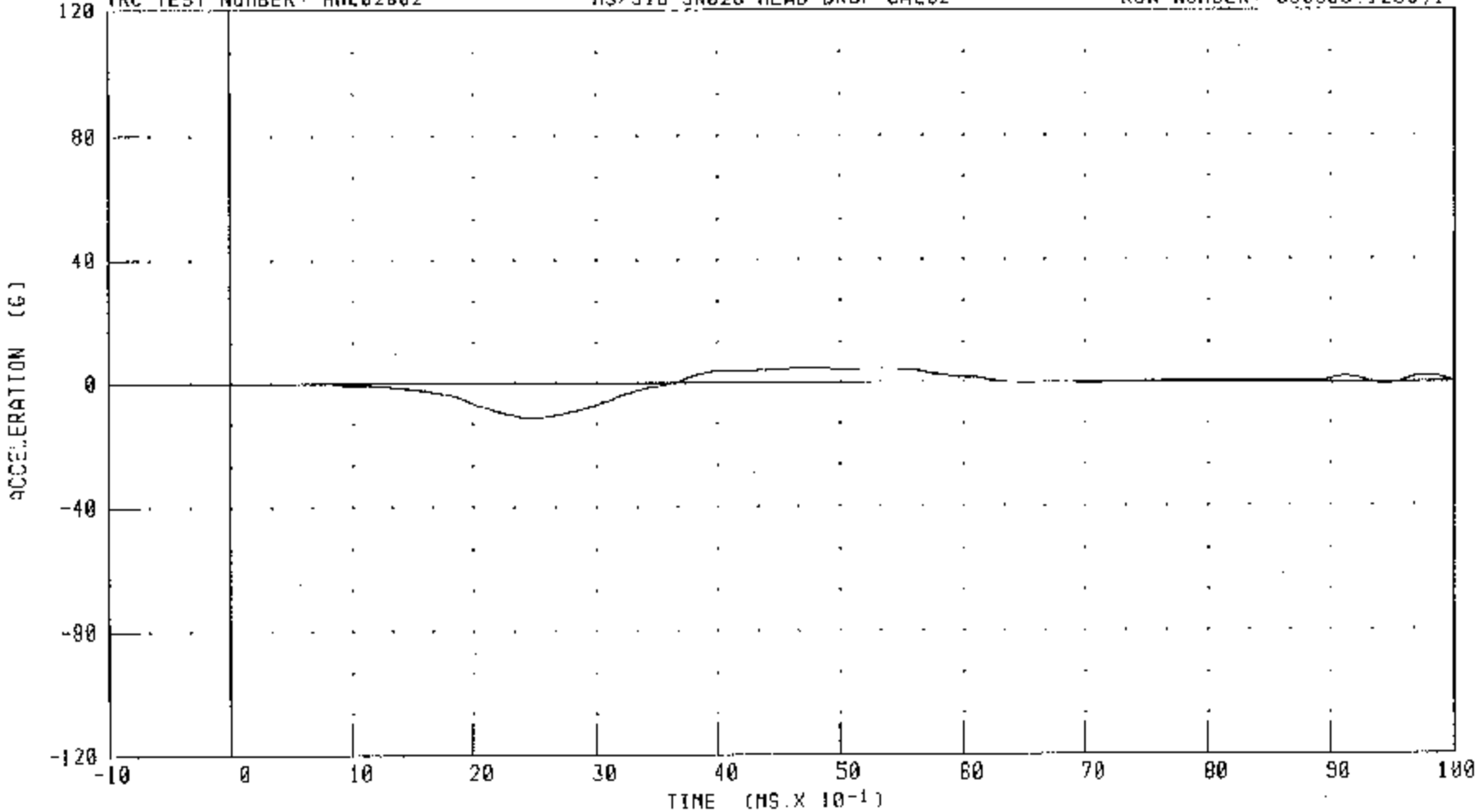
TEST MEETS SPECIFICATIONS

TECHNICIAN _____ RUN NUMBER: 030503.1259;1

SID DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION X AXIS

TRC TEST NUMBER: HDL02802 H3/SID SN028 HEAD DROP CAL02 RUN NUMBER: 030503.1259;1

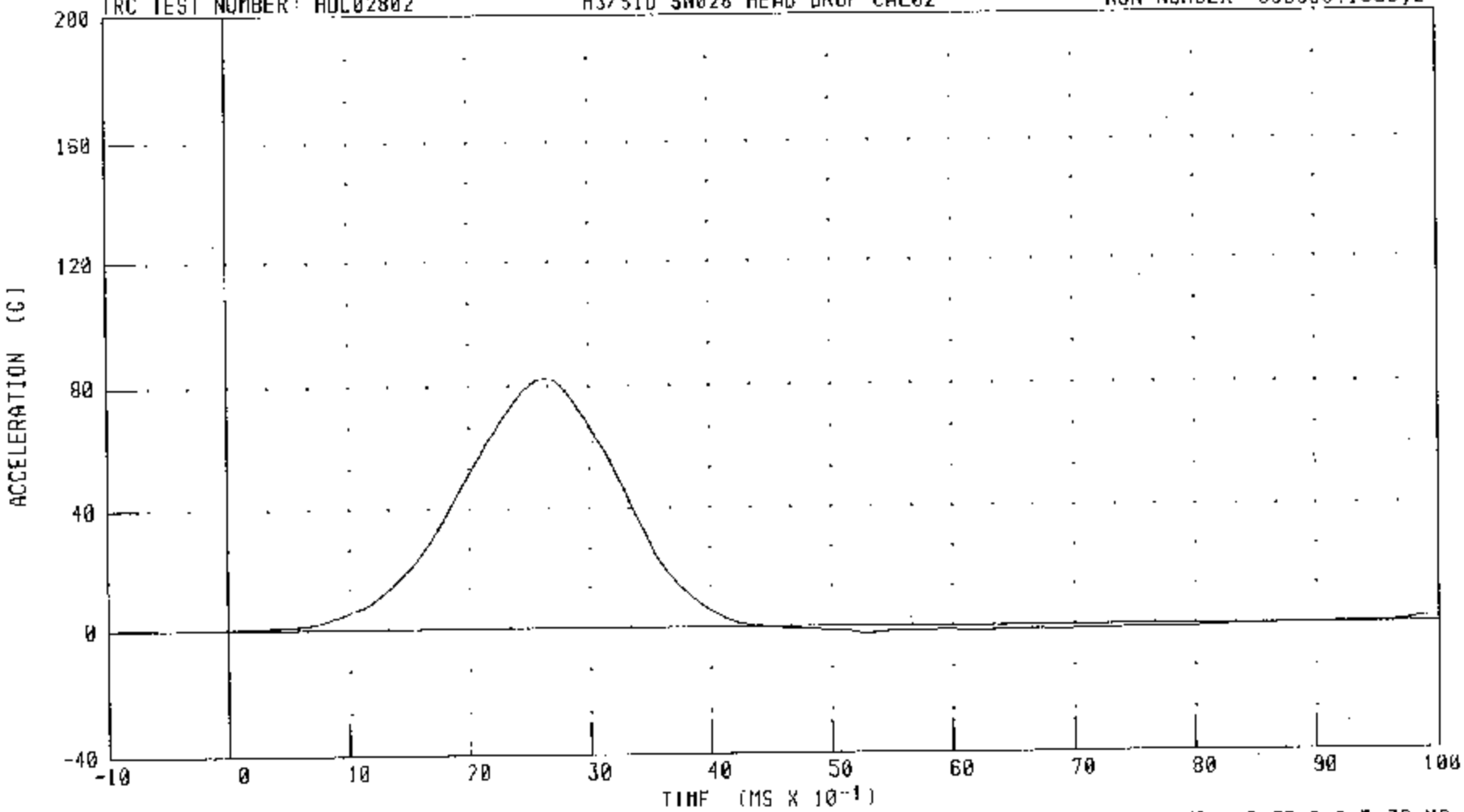


CHANNEL - HEDXG FILTER: CH. CLASS 1000 PEAK DATA: 1 77 G @ 4.72 MS; -11.14 G @ 2 48 MS

SID DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Y AXIS

TRC TEST NUMBER: HDL02802 H3/SID SN028 HEAD DROP CAL02 RUN NUMBER: 030503.1306;2

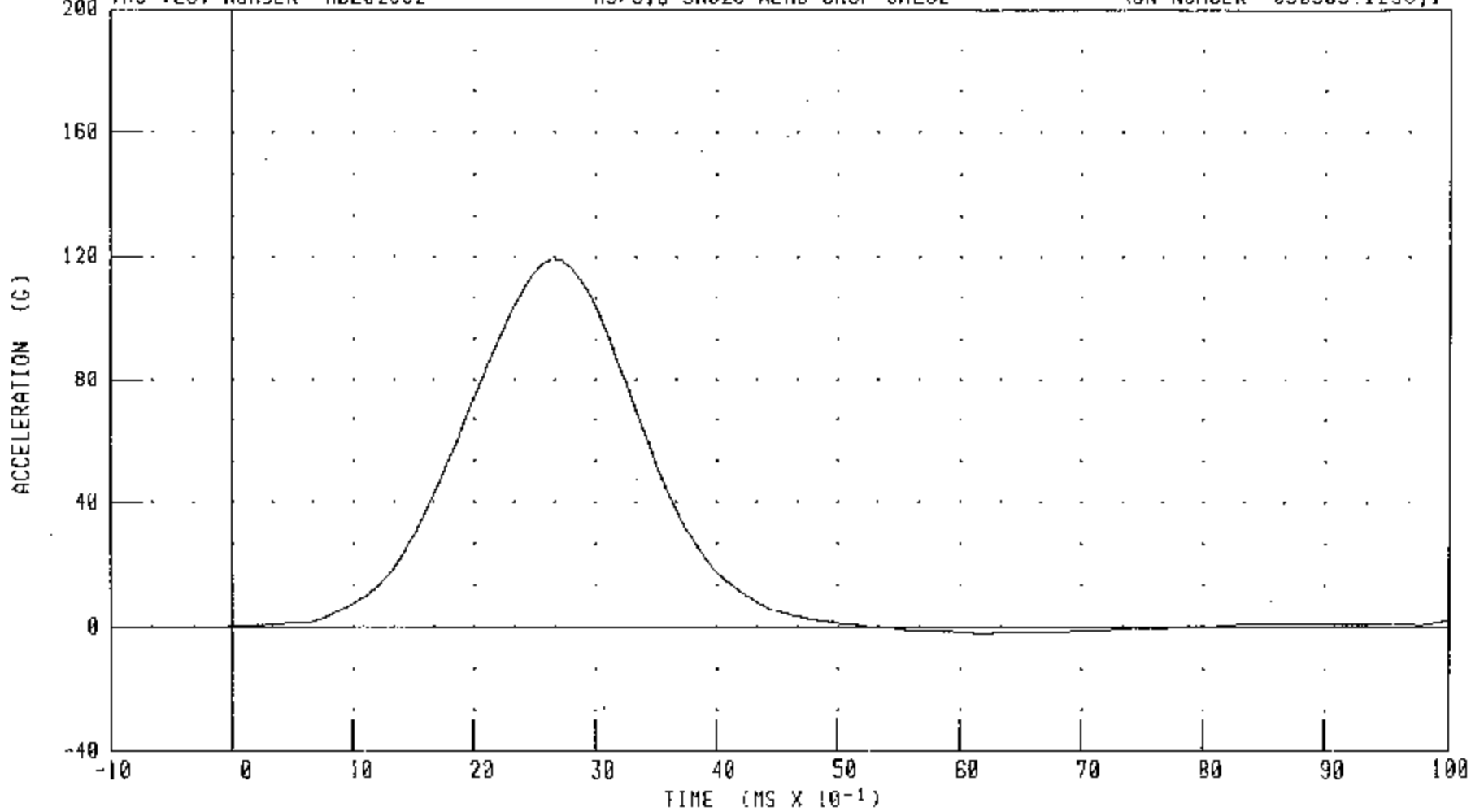


CHANNEL: HEDYG FILTER: CH CLASS 1000 PEAK DATA: 82.35 G @ 2.64 MS; -2.35 G @ 5.30 MS

SID DUMMY CALIBRATION 35 DEGREE LEFT LATERAL HEAD DROP

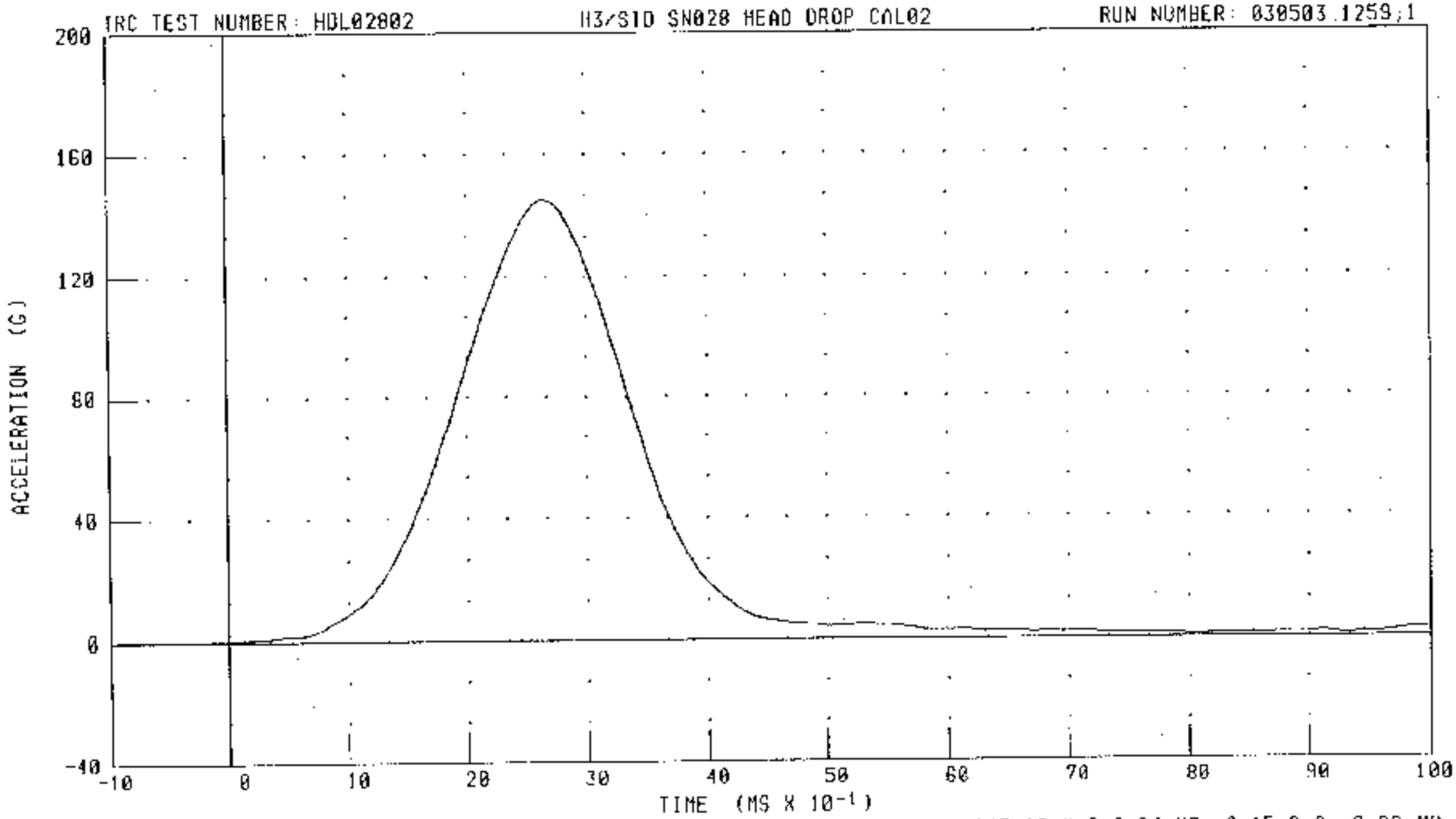
HEAD ACCELERATION Z AXIS

TRC TEST NUMBER: HDL02802 H3/SID SN028 HEAD DROP CAL02 RUN NUMBER: 030503.1259;1



CHANNEL: HEDZC FILTER: CH. CLASS 1000 PEAK DATA: 119.01 G @ 2.64 MS; -1.96 G @ 6.16 MS

SID DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP
HEAD RESULTANT ACCELERATION



CHANNEL: HEDRG FILTER: CH CLASS 1000

PEAK DATA: 145.12 G @ 2.64 MS; 0.15 G @ -0.96 MS

TRANSPORTATION RESEARCH CENTER INC.

LATERAL NECK TEST

HYBRIDIII SID DUMMY 05-MAR-03

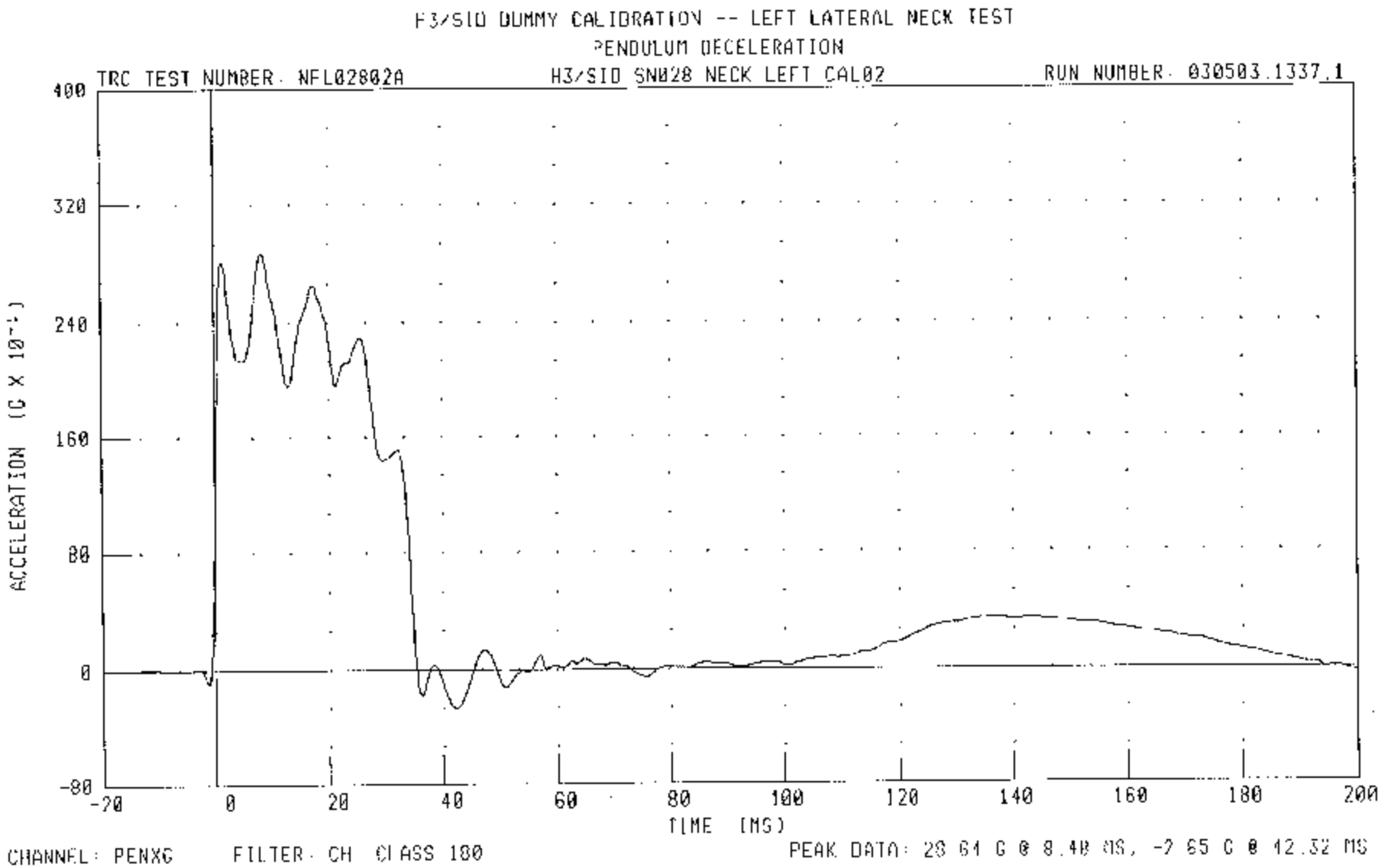
LEFT SIDE CONFIGURATION

TRC INC. TEST NO. NFL02802A H3/SID SN028 NECK LEFT CAL02

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6 - 22.2 deg. C	21.67 deg. C
RELATIVE HUMIDITY		10 - 70 %	30.00 %
IMPACT VELOCITY		6.89 - 7.13 M/S	7.06 M/S
INTEGRATED VELOCITY	10 MS	1.96 - 2.55 M/S	2.42 M/S
	20 MS	4.12 - 5.10 M/S	4.73 M/S
	30 MS	5.73 - 7.01 M/S	6.69 M/S
	40 - 70 MS	6.27 - 7.64 M/S	7.18- 7.28 M/S
MAXIMUM MIDSAGGITAL PLANE ROTATION		66 - 82 deg.	70.80 deg.
ROTATION ANGLE DECAY TIME FROM PEAK TO ZERO		58 - 67 MS	58.40 MS
MAXIMUM MOMENT ABOUT OCCIPITAL CONDYLE		73 - 88 NM	83.25 NM
POSITIVE MOMENT DECAY TIME FROM PEAK TO ZERO		49 - 64 MS	51.52 MS
TIME OF MAXIMUM ROTATION AFTER MAXIMUM MOMENT		2 - 16 MS	8.32 MS

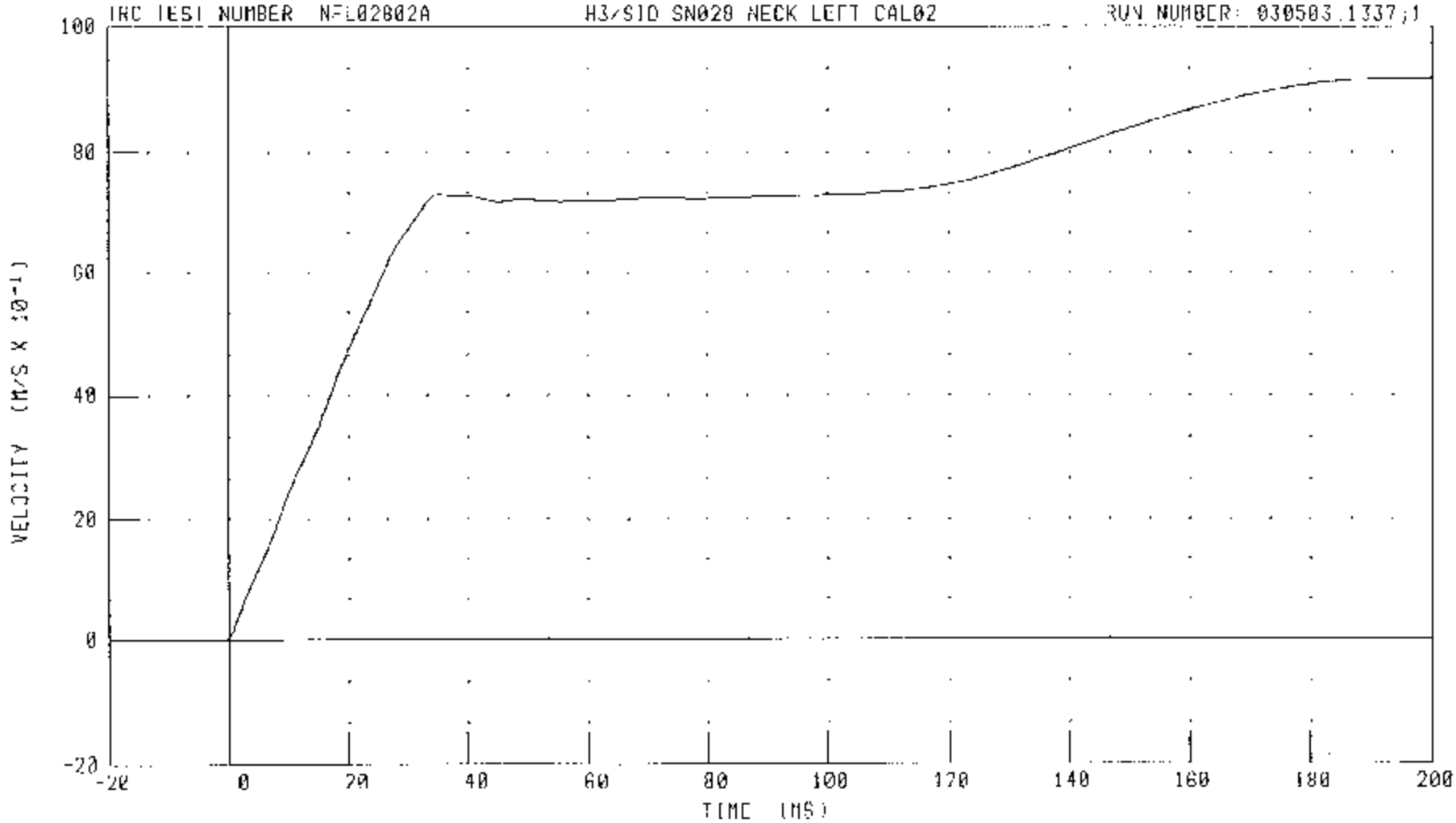
TEST MEETS SPECIFICATIONS

TECHNICIAN _____ RUN NUMBER: 030503.1337;1


F3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST
PENDULUM DECELERATION
TRC TEST NUMBER: NFL02802A
H3/SID SN028 NECK LEFT CAL02
RUN NUMBER: 030503.1337.1
ACCELERATION (G X 10⁻¹)
400
320
240
160
80
0
-80
-20
0
20
40
60
80
100
120
140
160
180
200
TIME (MS)
CHANNEL: PENXG
FILTER: CH CLASS 180
PEAK DATA: 28.61 G @ 8.48 MS, -2.65 G @ 12.32 MS

H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

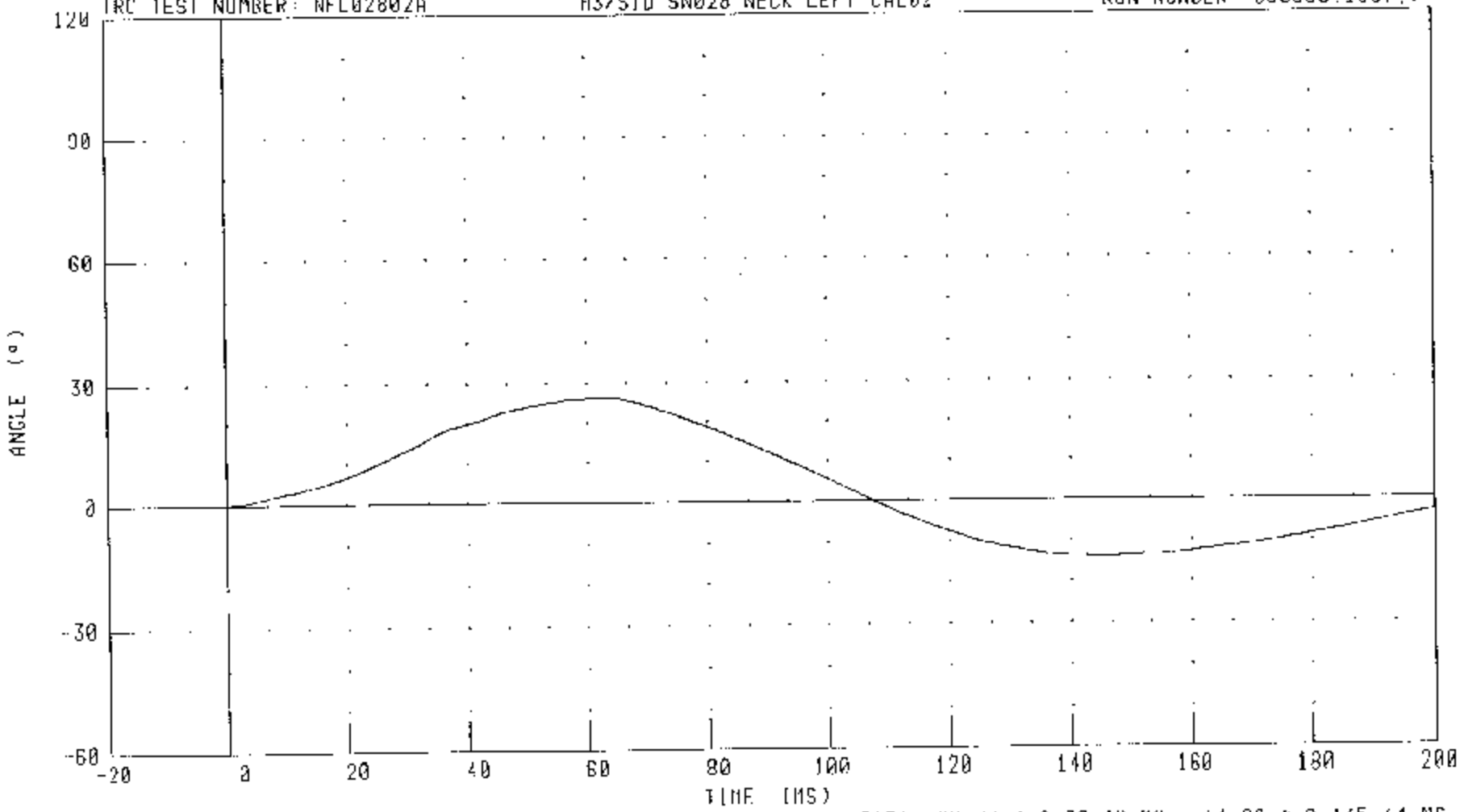
INTEGRATED PENDULUM VELOCITY



CHANNEL PENXVI FILTER: CH CLASS 180 PEAK DATA 0.18 M/S @ 197.20 MS; -0.01 M/S @ -0.80 MS

H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST
ROTATION ABOUT BASE OF NECK

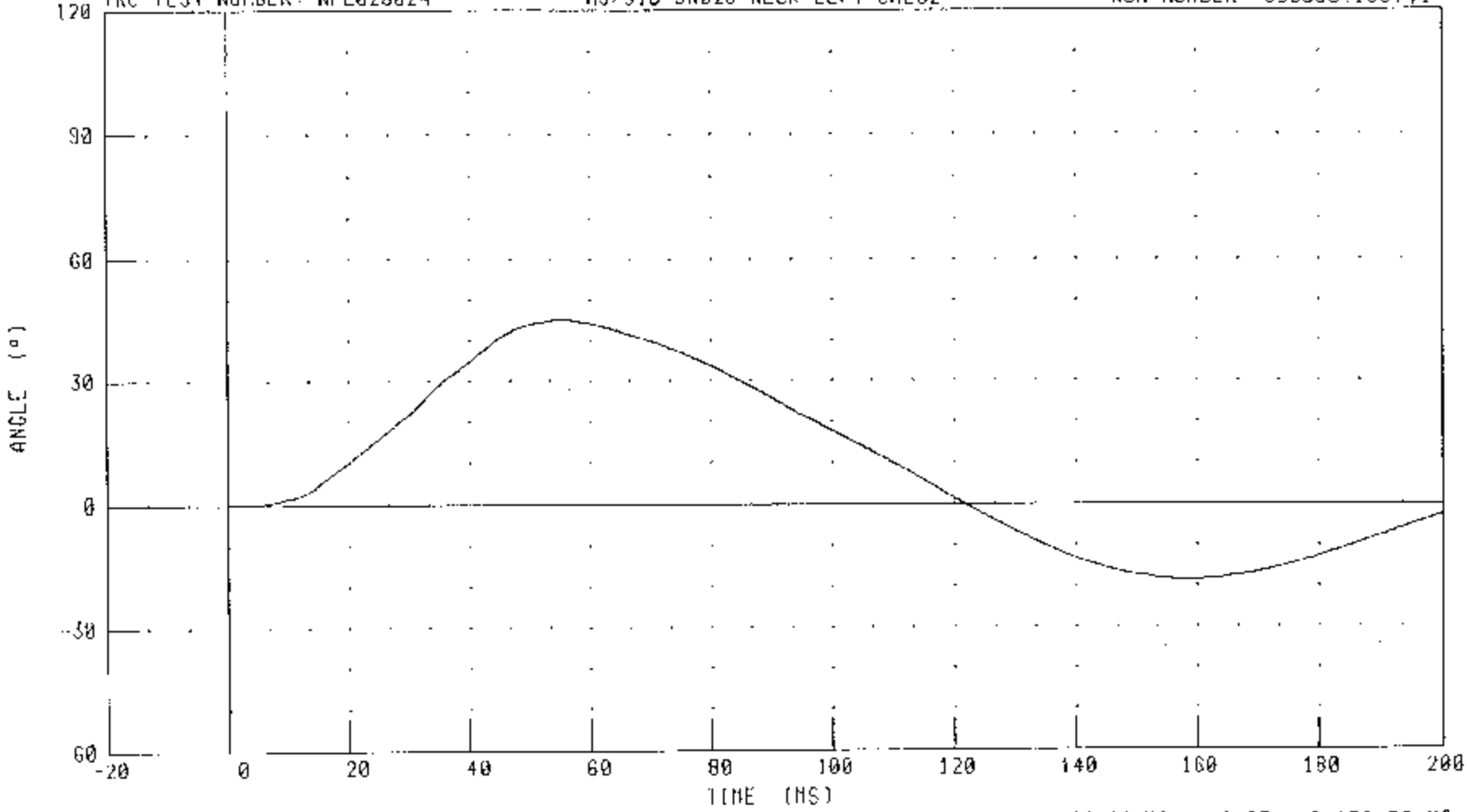
IRC TEST NUMBER: NFL02802A H3/SID SN028 NECK LEFT CAL02 RUN NUMBER: 030503.1337.1



CHANNEL DFTA FILTER CF. CLASS 60 PEAK DATA 26.34 ° @ 62.48 MS; -14.06 ° @ 145.44 MS

H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST
ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: NFL028024 H3/SID SN028 NECK LEFT CAL02 RUN NUMBER 030503.1337.1

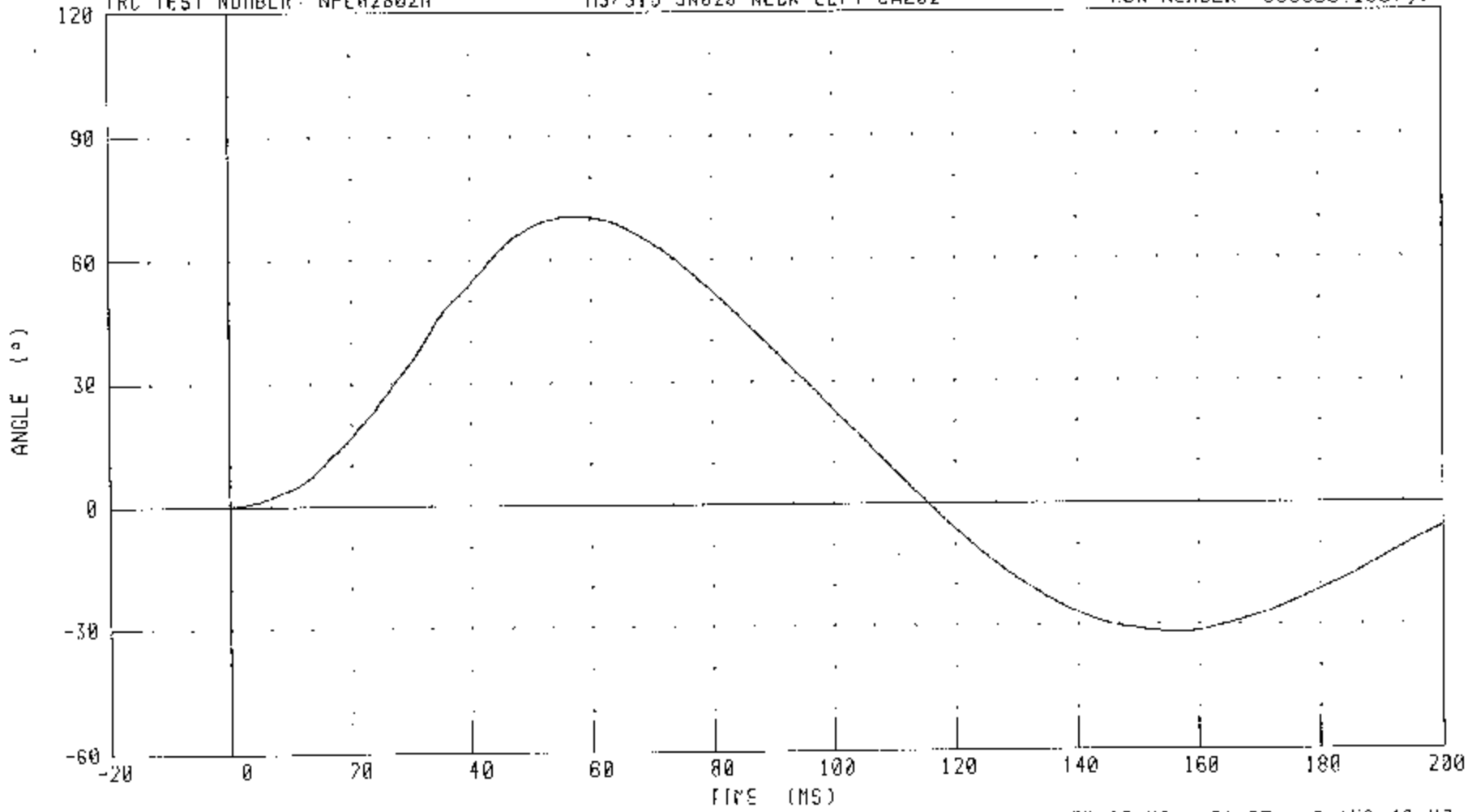


CHANNEL: THETA FILTER: CH. CLASS 60 PEAK DATA 45.13 ° @ 55.44 MS; -18.67 ° @ 158.56 MS

H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

TOTAL ROTATION

TRC TEST NUMBER: NFL02802A H3/SID SN028 NECK LEFT CAL02 RUN NUMBER: 030503.1337.1



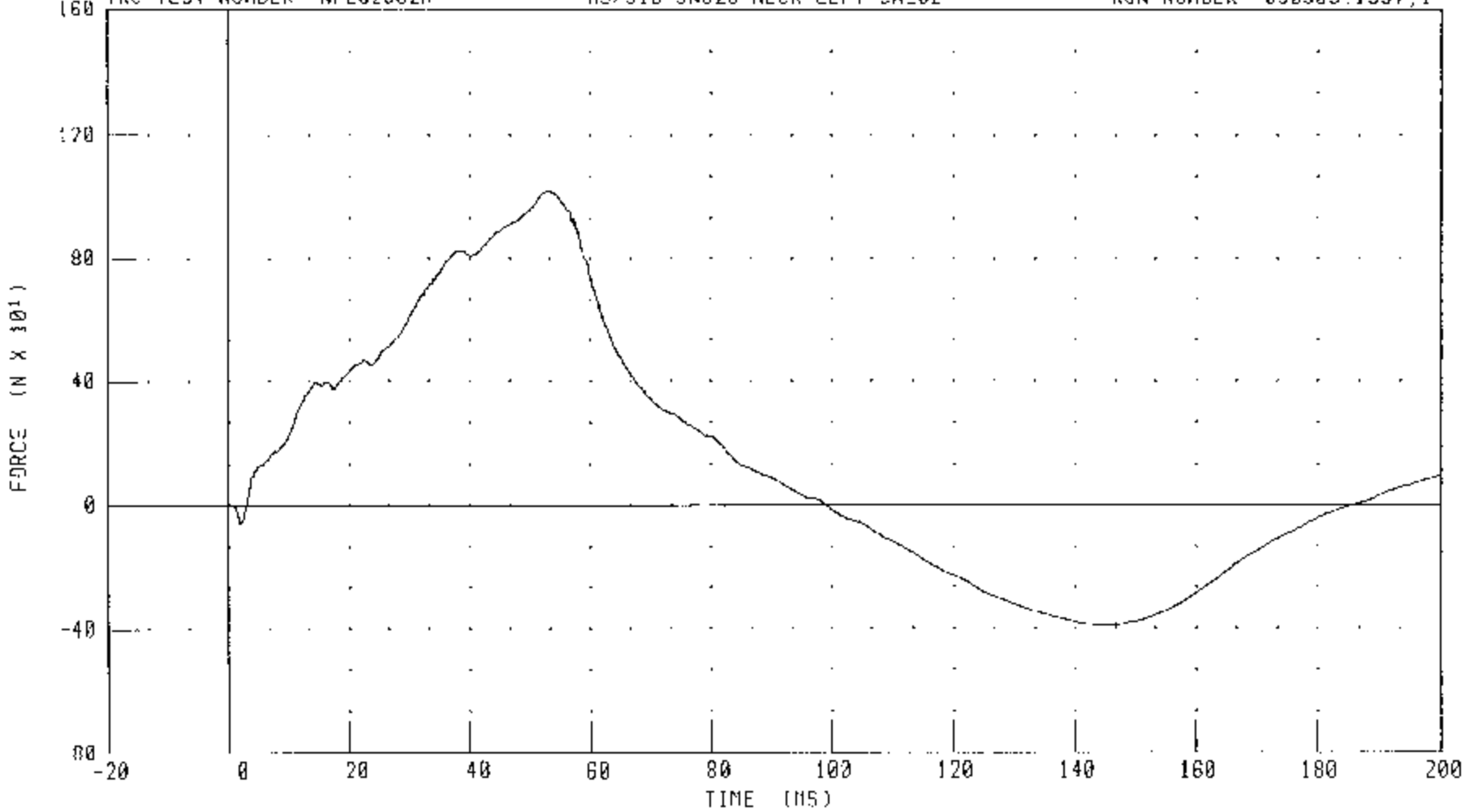
CHANNEL: TOTAN FILTER CH. CLASS 60

PEAK DATA 70.60 ° @ 97.20 MS; -31.95 ° @ 158.40 MS

H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

NECK FORCE Y AXIS

IRC TEST NUMBER: NFL02802A H3/SID SN028 NECK LEFT CA_02 RUN NUMBER 030503.1337.1

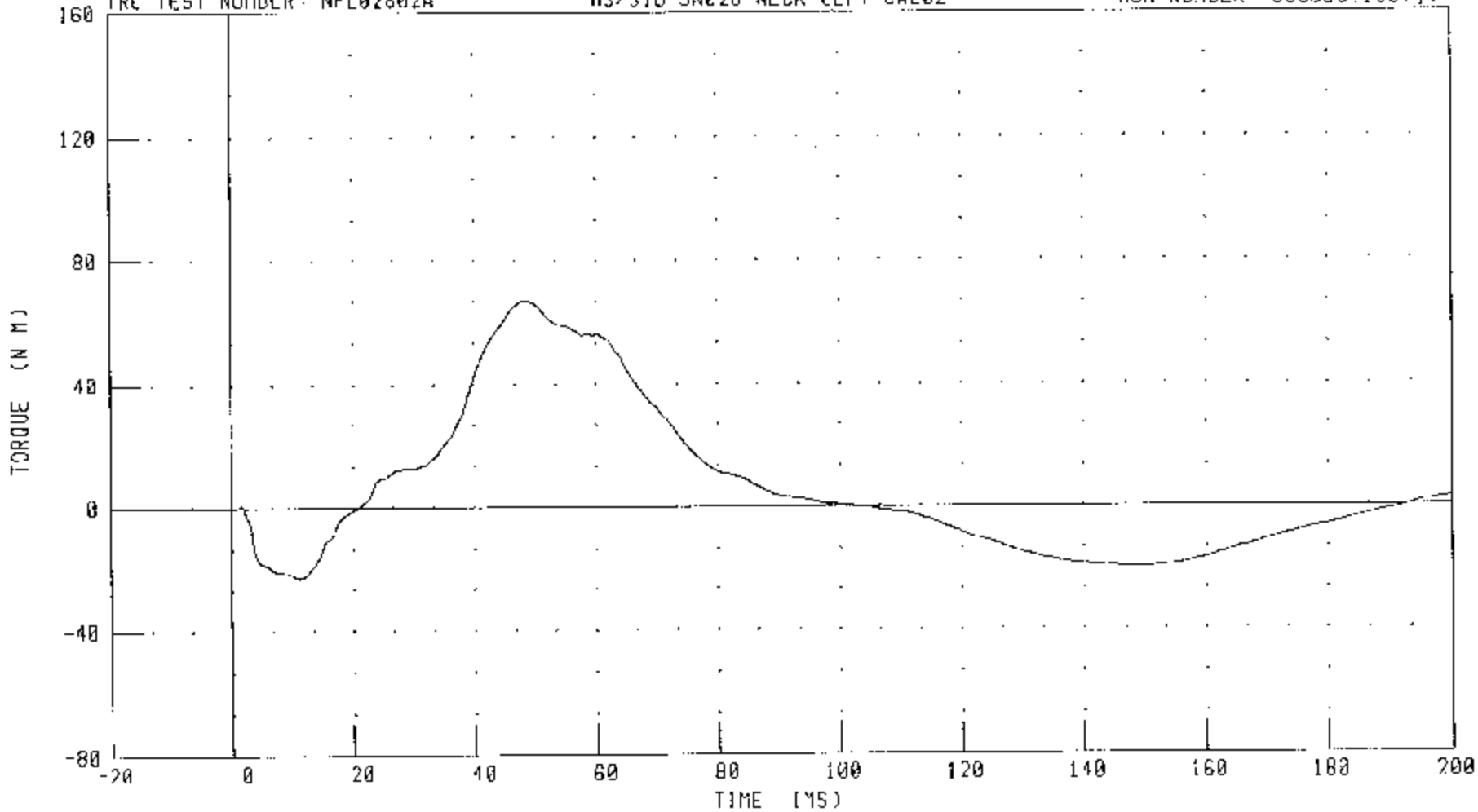


CHANNEL: NECKYF FILTER: CH. CLASS 1000 PEAK DATA: 1018.93 N @ 53.28 MS; -391.31 N @ 144.64 MS

H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

NECK MOMENT X AXIS

TRC TEST NUMBER: NFL02802A H3/SID SN028 NECK LEFT CAL02 RUN NUMBER: 030503.1337.1

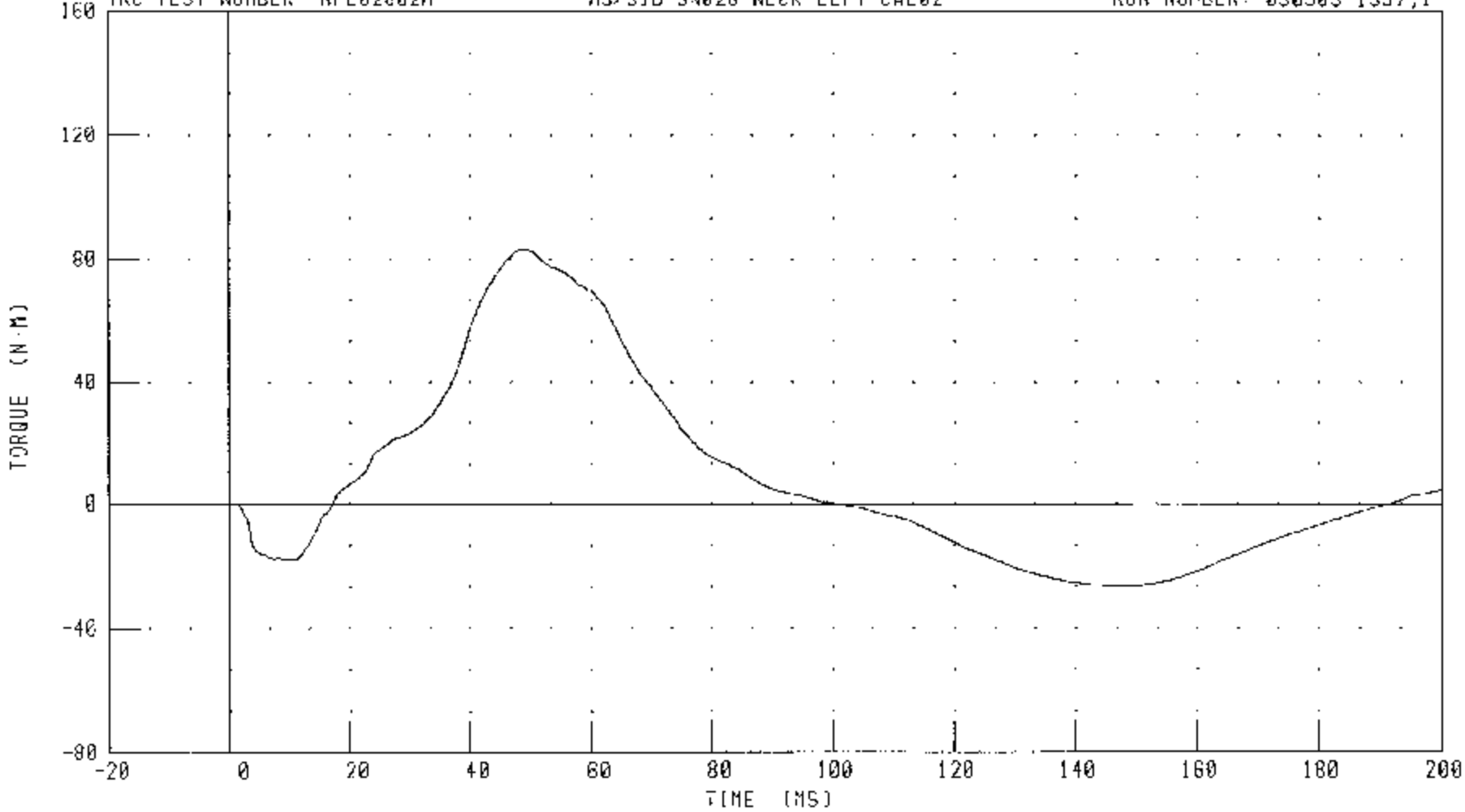


CHANNEL: NECKXM FILTER: CH. CLASS 600

PEAK DATA: 66.64 N-M @ 18.32 MS; -22.97 N-M @ 11.20 MS

H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST
TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER NFL02802A H3/SID SN028 NECK LEFT CAL02 RUN NUMBER: 030503 1337;1



CHANNEL: NECKM FILTER: CH CLASS 600 PEAK DATA: 83.25 N·M @ 43.88 MS, 26.70 N·M @ 148.46 MS

TRANSPORTATION RESEARCH CENTER INC.

LATERAL THORAX IMPACT TEST

SIDE IMPACT DUMMY 28-FEB-03

LEFT SIDE CONFIGURATION

TRC INC. TEST NO: STL02802 572F SID SN028 L.THORAX CAL02

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	29.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.28 M/S
PEAK ACCELERATION: UPPER RIB BAR	37 - 46 G	39.1 G
PEAK ACCELERATION: LOWER RIB BAR	37 - 46 G	37.3 G
PEAK ACCELERATION: LOWER THORACIC SPINE	15 - 22 G	16.5 G

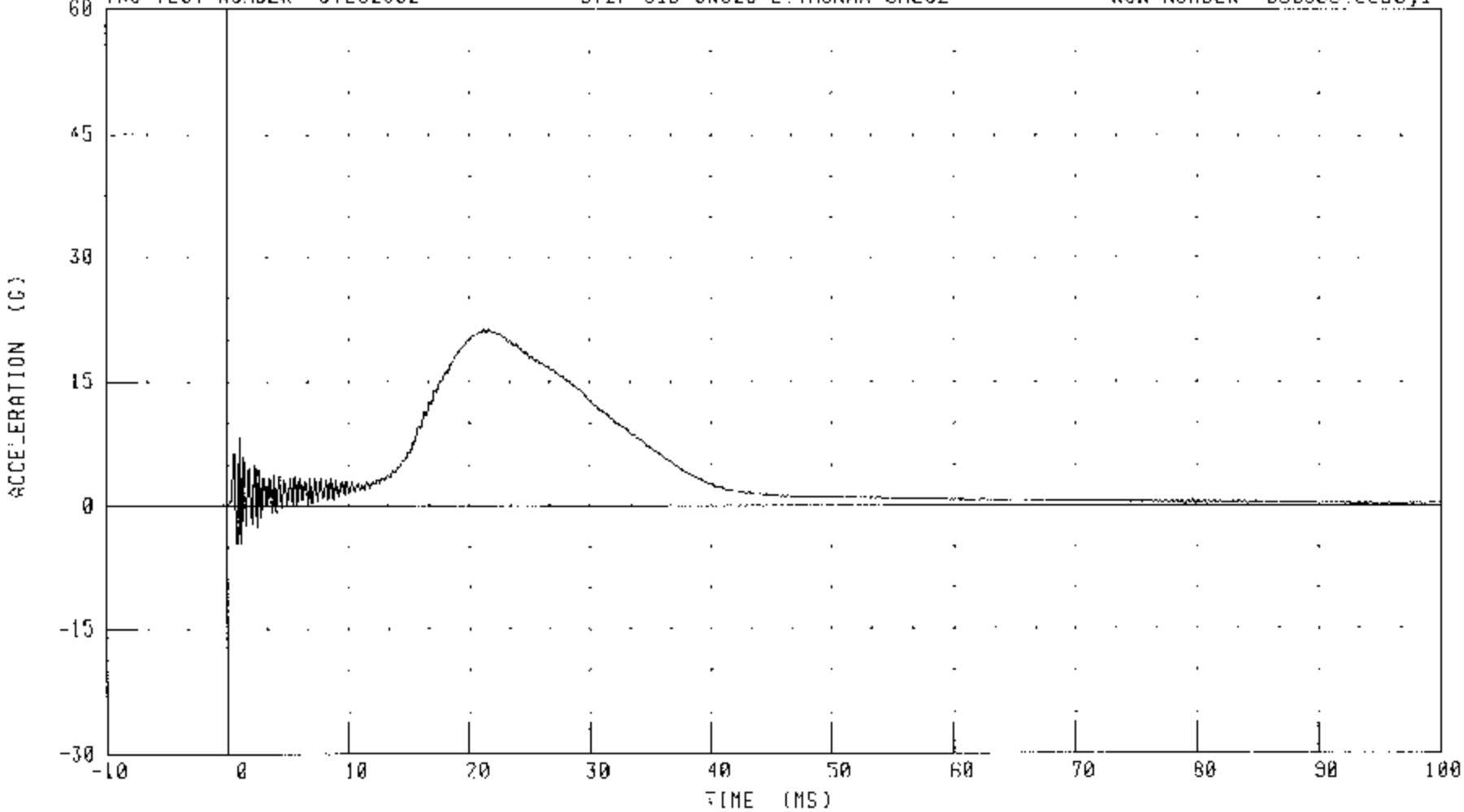
TEST MEETS SPECIFICATIONS

TECHNICIAN _____ RUN NUMBER: 022803.1318;1

PART 572 F S.I D THORAX CALIBRATION - (LEFT SIDE IMPACT)

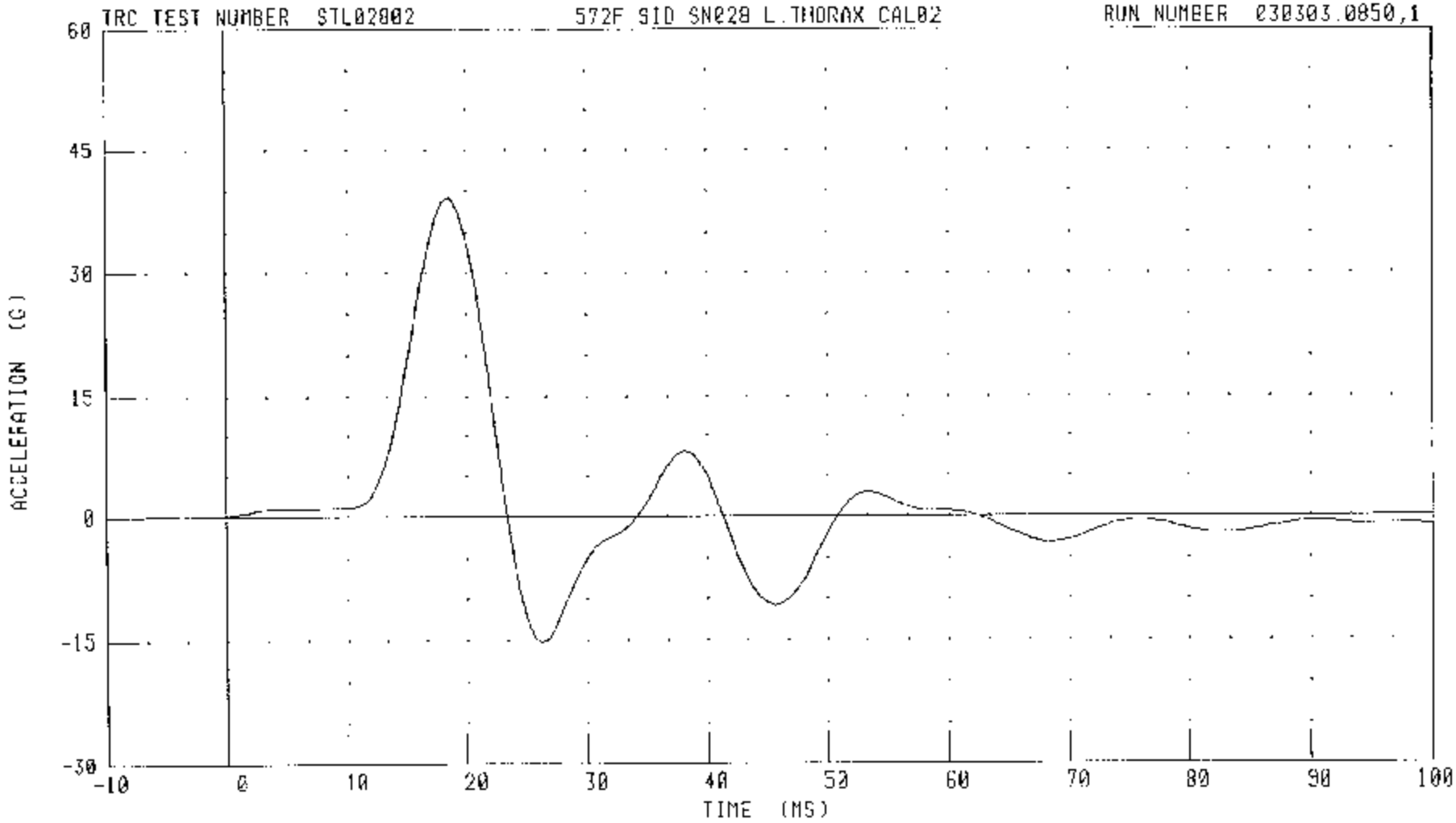
PENDULUM DECELERATION

TRC TEST NUMBER: STL02802 572F SID SN028 L.THORAX CAL02 RUN NUMBER 030303.0850,1



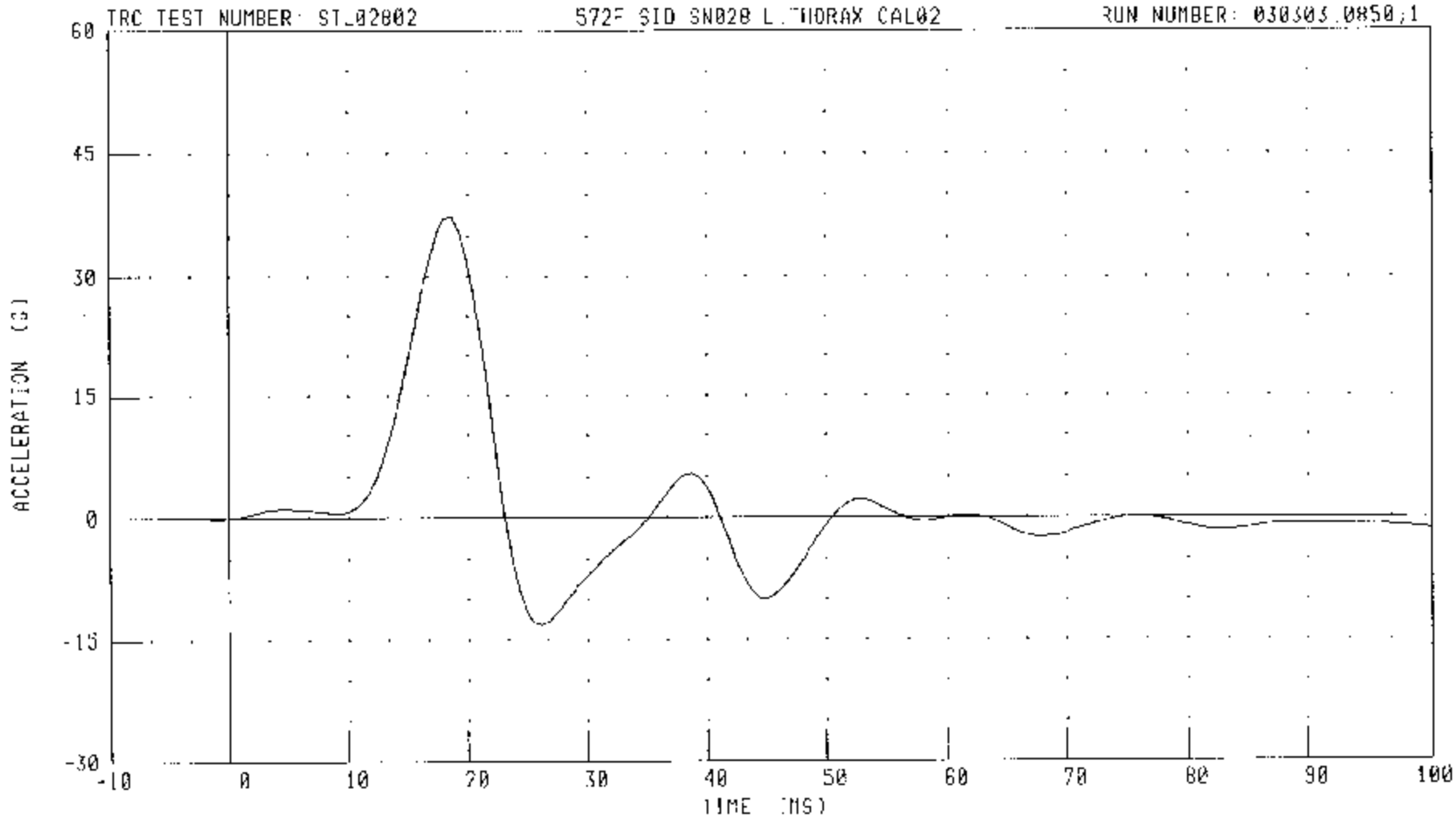
CHANNEL: PENXC FILTER: CH CLASS 1000 PEAK DATA: 21.18 G @ 21.68 MS; -4.80 G @ 0 80 MS

PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)
LEFT UPPER RIB ACCELERATION Y AXIS



CHANNEL: LURYG FILTER: FIR 100 PEAK DATA: 39.11 G @ 18.75 MS, -15.24 G @ 26.25 MS

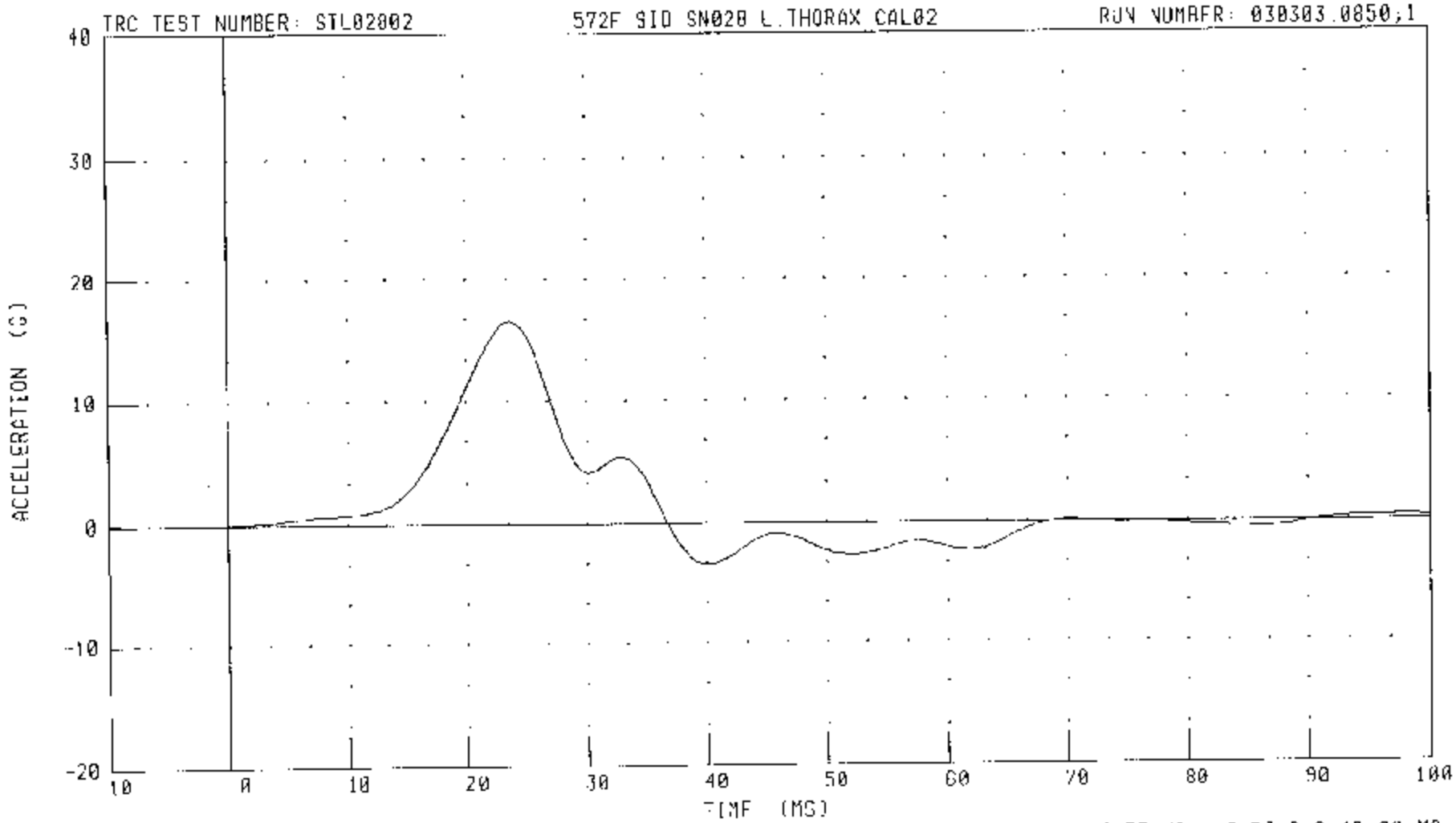
PART 572-F S.I.D THORAX CALIBRATION - (LEFT SIDE IMPACT)
LEFT LOWER RIB ACCELERATION Y AXIS



CHANNEL: LLRYG FILTER: FIR 100

PEAK DATA: 37.29 G @ 18.75 MS, -13.11 G @ 26.25 MS

PART 572-F S I D. THORAX CALIBRATION - (LEFT SIDE IMPACT)
LOWER SPINE ACCELERATION Y AXIS



CHANNEL: 1:2YG FILTER: FIR 100

PEAK DATA: 16.46 G @ 23.75 MS; -3.53 G @ 40.00 MS

Transportation Research Center Inc.

572B Abdomen Compression Test

HIII SID Serial No. 028 Calibration No. 02 - 1

Test Date 03/05/2003

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	33 %	Yes
Displacement Rate	6.35 - 8.89 mm/s	6.4 - 8.1 mm/s	Yes
Data Within Required Corridor	Yes	Yes	Yes

Comments:

Technician

Approved

03.06.2003 07:03:27 3

TRC

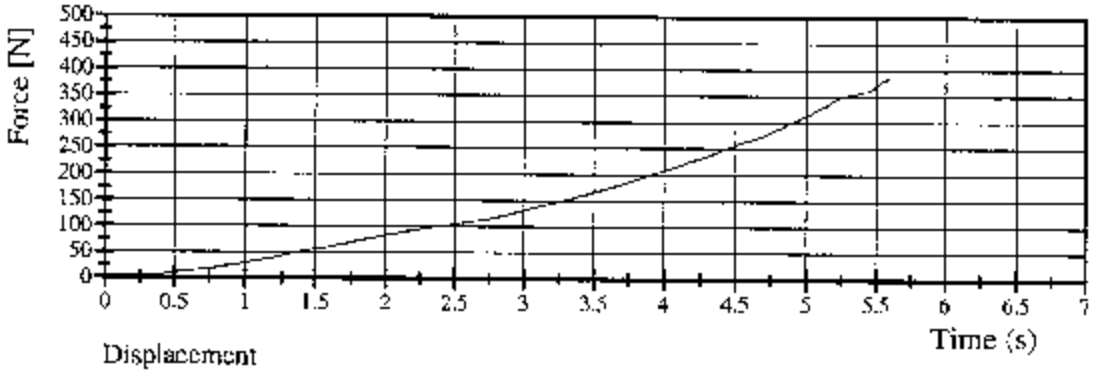
Transportation Research Center Inc.

572B Abdomen Compression Test

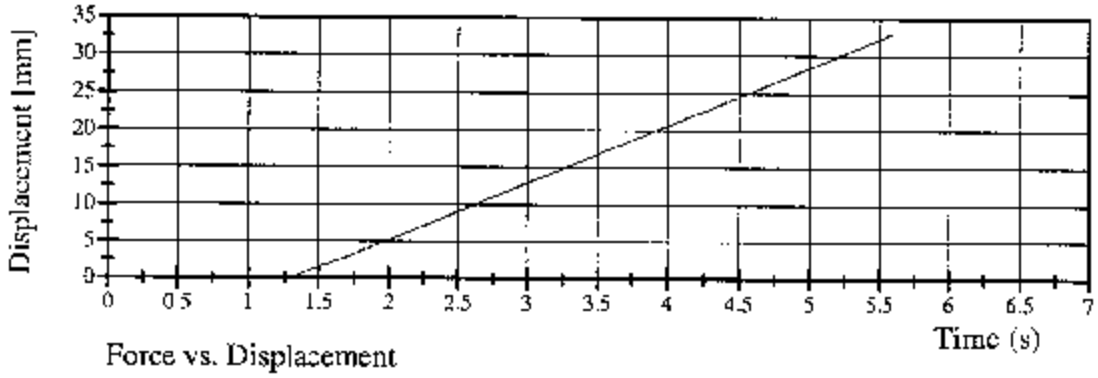
HIII SID Serial No. 028 Calibration No. 02 - 1

Test Date 03/05/2003

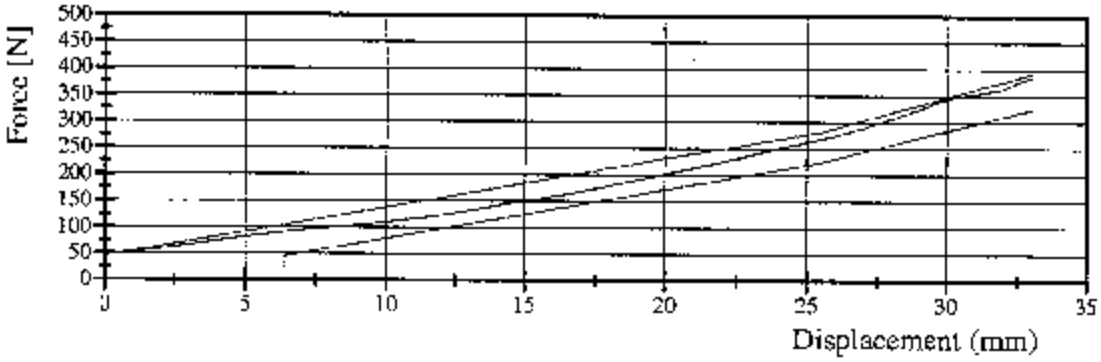
Force



Displacement



Force vs. Displacement



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TRANSPORTATION RESEARCH CENTER INC.

LUMBAR FLEXION TEST

SID PART 572B

CAL DATE: 05-Mar-03

TRC, INC. **TEST NO: 028C02LF1** **572B SN 028 TORSO FLEX CAL 02**

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6° C	21.7 °C
RELATIVE HUMIDITY	10 – 70 %	32 %
FORCE AT 0 DEG. FLEXION	-27 – 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 – 151 N	129.0 N
FORCE AT 30 DEG OF FLEXION	151 – 205 N	169.0 N
FORCE AT 40 DEG OF FLEXION	205 – 258 N	226.9 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	5 °

TEST MEETS SPECIFICATIONS

TECHNICIAN

TRANSPORTATION RESEARCH CENTER INC.

LATERAL PELVIS IMPACT TEST

SIDE IMPACT DUMMY 28-FEB-03

LEFT SIDE CONFIGURATION

TRC INC. TEST NO: SPL02802 572F SN028 LEFT PELVIS CAL02

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	29.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.28 M/S
PEAK PELVIC ACCELERATION	40 - 60 G	48.4 G
TIME ABOVE 20 G LEVEL	3 - 7 MS	6.2 MS
IS ACCELERATION CURVE UNIMODAL?	YES	YES

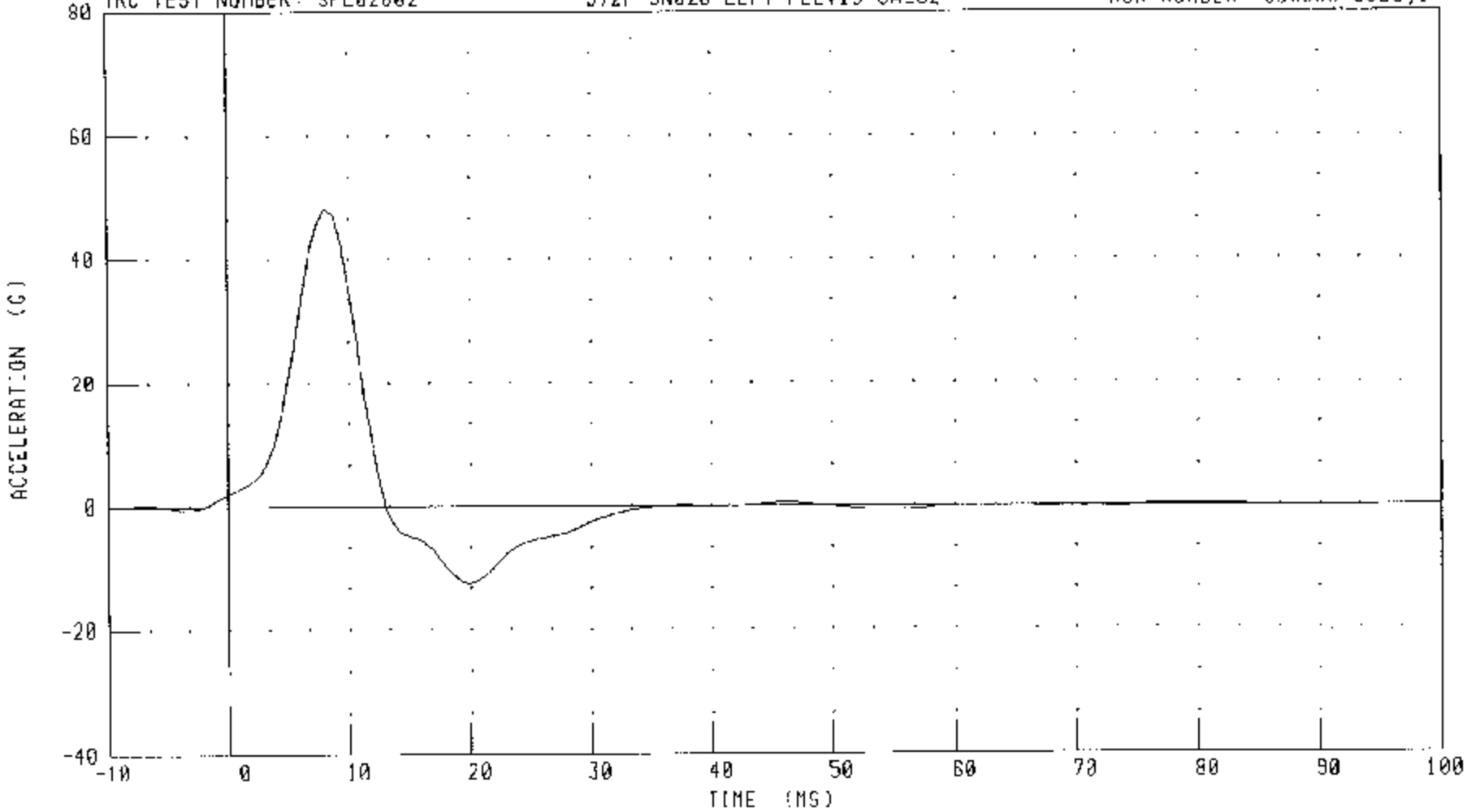
TEST MEETS SPECIFICATIONS

TECHNICIAN _____ RUN NUMBER: 022803.1327;1

PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PELVIS ACCELERATION Y AXIS

TRC TEST NUMBER: SPL02802 572F SN028 LEFT PELVIS CAL02 RUN NUMBER: 030303 0850;1

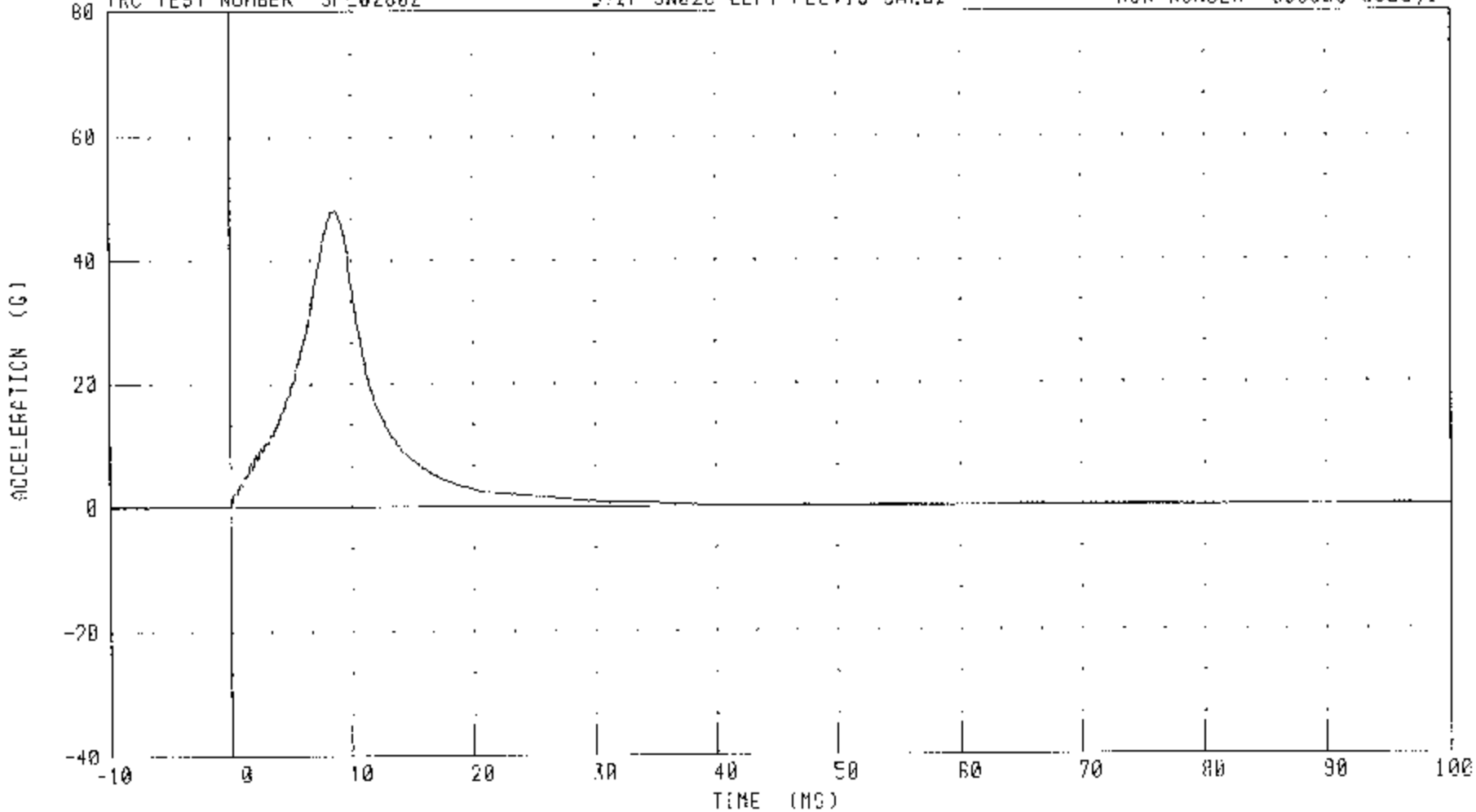


CHANNEL: PEVYG FILTER: FIR 100 PEAK DATA: 48.36 G @ 8.13 MS, 12.62 G @ 20.00 MS

PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PENDULUM DECELERATION

TRC TEST NUMBER: SPL02802 572F SN020 LEFT PELVIS CAL02 RUN NUMBER: 030303 0850;1



CHANNEL: PENXC FILTER: CH CLASS 1000 PEAK DATA: 48.15 G @ 8.00 MS; -0.18 G @ 97.84 MS

Transportation Research Center Inc. SID Pre-Use Inspection

Type: HIII SID S/N: 028 Mfr: Vector Test Date: 02/25/03

Proj./Seg. No.: 20020455/1200 Test Eng.: Virginia Watters

ITEM	PRE-USE	
HEAD:		
Head Ballast Condition	X	
Accel. Mount Bolts and Cables	X	
Skull Cap Bolts	X	
Head Skin Condition	X	
Accel. Cable Exit (left or right)	(Left) X	(Right)
NECK:		
Rubber Condition and Separation From End Caps	X	
THORAX:		
Stacked Shoulder Foams and Bolts	X	
* Rib Cage Spring and Support Assembly	X	
* Rib Cage Bolts	X	
* Damper Rear Attachment Ring, Pivot Pins, and Bracket	X	
* Location and Adjustment of Chest Pot Bracket and Collars	X	
* Chest Pot Rod End Nuts and Eyebolt	X	
Arm Foam Orientation	X	
Thorax/Lumbar Spine Bolts	X	
PELVIS:		
Tightness and Alignment of H-Point Tool Insert	X	
* Hips Range of Motion and 1-2g Adjustment (before calibration only)	X	
Upper Femur Bolt Adjustment and Position	X	
Check Spine Kits (Yellow tape = Kits/No tape = No kits)	(With) X	(Without)
LEGS AND FEET:		
Femur Load Cell Bolts (40 ft/lbs)	X	
Breakaway Femur Bolts (5-6 ft/lbs)	X	
Knee Joint Function and Range of Motion	X	
Leg Skin Condition and Position	X	
Ankle Range of Motion	X	
Foot Condition	X	
OTHER:		
Cleanliness	X	
Target Position	X	
Clothes	X	
Shoes	X	
Knee & Ankle One G Joint Adjustments	X	

Inspection Completed By: Jack Willeke Date: 02/24/03

TRANSPORTATION RESEARCH CENTER INC. SID Post-Use Inspection

S/N: 028/HII SID Mfg: Vector Test Date: 2/25/03

Proj./Seg. No.: 20020455/1200 Test Eng.: Virginia Watters

ITEM	POST-USE
HEAD: Driver	
Head Skin Condition	X
Head Ballast Condition	X
NECK:	
Rubber Condition and Separation From End Caps	X
THORAX:	
Jacket Condition	X
Arm Foam Condition	X
Damper and Chest Pot Movement and Condition	X
Rib Cage Spring and Support Assembly Condition	X
Rib Wrap Condition	X
Abdomen condition	X
Thorax/Lumbar Spine Bolts	X
Lumbar Spine Condition and Separation From End Caps	X
PELVIS:	
Iliac Crest bone	X
Flesh Condition	X
Hip Range of Motion	X
LEGS AND FEET:	
Knee Skins and Castings Condition	X
Leg Skin Condition	X
Foot Condition	X
Knee Joint Range of Motion	X
Ankle Range of Motion	X

NOTES: Jacket zipper is starting to come off the dummy on the back left bottom area.

Inspection Completed By: Jack Willeke Date: 2/28/03

Appendix D

Test Equipment List and Calibration Information

Sign Convention
SAE J211 MAR95

Accelerometers:	+X: Forward	
	−Y: Rightward	
	+Z: Downward	
Potentiometers:	+Chest longitudinal deflection:	Outward
	+Chest lateral deflection:	Rightward
	+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

Sign Convention, Cont'd.
SAE J211 MAR95

Lumbar load cells:	+X force:	Chest rearward, pelvis forward
	+Y force:	Chest leftward, pelvis rightward
	+Z force:	Chest upward, pelvis downward
	+X moment:	Left shoulder toward left hip
	+Y moment:	Sternum toward front of legs
	+Z moment:	Right shoulder forward, left shoulder rearward

Frequency Response Classes
SAE J211 MAR95

Typical Test Measurements	Channel Class
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	600
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. The polarity column indicates whether a polarity change occurred during data acquisition to conform to J211 MAR95. See Report Sign Convention sheet for description of data output as presented in the report: occasionally channels have been adjusted in post-acquisition processing to conform to J211 MAR95.

Channel Report

2/25/2003 8:30:44 AM

Name of Test 030225 **System** MINIDAU **Name of DAU** DAU8

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range		Pol.	Cal.		Group	Mfg.	Model
0001	EVENT	SYNCB	SYNCB		5.12	V	+	10/15/2002	OK	-1	TRC	Event
0002	J37150	BCGXG1	MDB CG X-AXIS	FWD	601.10829	g	+	7/11/2002	---	-1	Endevco	7264-2000TZ
0003	J38043	BCGYG1	MDB CG Y-AXIS	RT	591.76384	g	+	7/11/2002	---	-1	Endevco	7264-2000TZ
0004	J27288	BCGZG1	MDB CG Z-AXIS	UP	598.64136	g	-	7/11/2002	---	-1	Endevco	7264-2000TZ
0005	P25324	LRRXG1	MDB LT RR X-AXIS	LT	598.41047	g	-	1/22/2003	OK	-1	Endevco	7264C-2K-2-180
0006	P24531	LRRYG1	MDB LT RR Y-AXIS	LT	593.27238	g	-	11/21/2002	OK	-1	Endevco	7264C-2K-2-180

Channel Report

2/25/2003 8:30:44 AM

Name of Test 030225 **System** MINIDAU **Name of DAU** DAUC

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range		Pol.	Cal.		Group	Mfg.	Model
0001	P25307	HEDXG1	Head Accel X	Rwd	809.10240	g	-	1/22/2003	OK	028nlr	Endevco	7264C-2K-2-180
0002	P25326	HEDYG1	Head Accel Y	Lft	808.84676	g	-	1/22/2003	OK	028nlr	Endevco	7264C-2K-2-180
0003	P25298	HEDZG1	Head Accel Z	Up	807.64741	g	-	1/22/2003	OK	028nlr	Endevco	7264C-2K-2-180
0004	P25318	HEDXR1	Head Accel X Red	Rwd	810.61397	g	-	1/22/2003	OK	028nlr	Endevco	7264C-2K-2-180
0005	P25301	HEDYR1	Head Accel Y Red	Lt	802.80983	g	-	1/22/2003	OK	028nlr	Endevco	7264C-2K-2-180
0006	P25305	HEDZR1	Head Accel Z Red	Up	807.23993	g	-	1/21/2003	OK	028nlr	Endevco	7264C-2K-2-180
0007	1716A-1532-FX	NEKXF1	Neck Force X	Hd	8897.6474	N	-	8/29/2002	OK	028nlr	Denton	1716A
0008	1716A-1532-FY	NEKYF1	Neck Force Y	Hd	8895.2129	N	+	8/29/2002	OK	028nlr	Denton	1716A
0009	1716A-1532-FZ	NEKZF1	Neck Force Z	Hd	13348.030	N	+	8/29/2002	OK	028nlr	Denton	1716A
0010	1716A-1532-MX	NEKXM1	Neck Moment X	Rt Ear	282.53421	N·m	-	8/29/2002	OK	028nlr	Denton	1716A
0011	1716A-1532-MY	NEKYM1	Neck Moment Y	Chn	282.61056	N·m	+	8/29/2002	OK	028nlr	Denton	1716A
0012	1716A-1532-MZ	NEKZM1	Neck Moment Z	Chn	281.87299	N·m	+	8/29/2002	OK	028nlr	Denton	1716A
0013	P25231	LURYG1	Left Upper Rib Y	Rgt	806.24842	g	+	12/13/2002	OK	028nlr	Endevco	7264C-2K-2-180
0014	P25371	LURYR1	Left Upper Rib Red Y	Rgt	791.95668	g	+	12/19/2002	OK	028nlr	Endevco	7264C-2K-2-180
0015	P25075	LLRYG1	Left Lower Rib Y	Rgt	801.25195	g	+	12/19/2002	OK	028nlr	Endevco	7264C-2K-2-180
0016	P25076	LLRYR1	Left Lower Rib Red Y	Rgt	797.43326	g	+	12/19/2002	OK	028nlr	Endevco	7264C-2K-2-180
0017	P25261	T12YG1	Lower Spine Y	Lft	401.56862	g	-	11/21/2002	OK	028nlr	Endevco	7264C-2K-2-180
0018	P25374	T12YR1	Lower Spine Red Y	Lft	396.97923	g	-	12/19/2002	OK	028nlr	Endevco	7264C-2K-2-180
0019	P25063	PEVYG1	Pelvis Accel Y	Lft	400.40353	g	-	12/19/2002	OK	028nlr	Endevco	7264C-2K-2-180
0020	P25074	PEVYR1	Pelvis Accel Red Y	Lft	397.60196	g	-	12/19/2002	OK	028nlr	Endevco	7264C-2K-2-180
0021	P25258	RFSXG1	RGT SIDE SILL FRNT ST X	FWD	401.96586	g	+	11/21/2002	OK	-1	Endevco	7264C-2K-2-180
0022	P24493	RFSYG1	RGT SIDE SILL FRNT ST Y	LT	984.61538	g	-	11/22/2002	OK	-1	Endevco	7264C-2K-2-180
0023	P25320	RFSZG1	RGT SIDE SILL FRNT ST Z	UP	400.51315	g	-	1/22/2003	OK	-1	Endevco	7264C-2K-2-180
0024	P25317	RRSXG1	RGT SIDE SILL RR ST X	FWD	401.11560	g	+	1/22/2003	OK	-1	Endevco	7264C-2K-2-180
0025	P24506	RRSYG1	RGT SIDE SILL RR ST Y	LT	993.78881	g	-	11/21/2002	OK	-1	Endevco	7264C-2K-2-180
0026	P22031	RRSZG1	RGT SIDE SILL RR ST Z	UP	397.59270	g	-	9/9/2002	OK	-1	Endevco	7264C-2K-2-180
0027	P25295	RDKXG1	RR FLRPAN ABV AXLE X	FWD	1016.3569	g	+	1/22/2003	OK	-1	Endevco	7264C-2K-2-180
0028	P25265	RDKYG1	RR FLRPAN ABV AXLE Y	LT	988.95155	g	-	11/21/2002	OK	-1	Endevco	7264C-2K-2-180
0029	P24566	RDKZG1	RR FLRPAN ABV AXLE Z	UP	1003.3313	g	-	11/21/2002	OK	-1	Endevco	7264C-2K-2-180
0030	P23837	LRSYG1	LFT SIDE SILL RR ST Y	RT	990.23305	g	+	2/7/2003	OK	-1	Endevco	7264C-2K-2-180
0031	J35574	LFSYG1	LFT SIDE SILL FRNT ST Y	RT	1020.5505	g	+	9/10/2002	OK	-1	Endevco	7264-2000TZ
0032	J36698	LFCYG1	LFT FRNT DOOR CTRLN Y	RT	1559.5491	g	-	7/11/2002	---	-1	Endevco	7264-2000TZ

Channel Report

2/25/2003 8:30:44 AM

Name of Test 030225 **System** MINIDAU **Name of DAU** DAUD

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range		Pol.	Cal.		Group	Mfg.	Model
0001	J35900	LFMYG1	LFT FRNT DOOR MIDRR Y	RT	1483.5419	g	+	7/11/2002	- -	-1	Endevco	7264-2000TZ
0002	J35750	LFUYG1	LFT FRNT DOOR UPPER C/L	RT	1499.7070	g	+	7/11/2002	---	-1	Endevco	7264-2000TZ
0003	P25316	LLBYG1	LFT LOWER B-POST Y	LT	1508.1445	g	-	1/22/2003	OK	-1	Endevco	7264C-2K-2-180
0004	P25319	LUBYG1	LFT MID B-POST Y	LT	1464.6984	g	-	1/22/2003	OK	-1	Endevco	7264C-2K-2-180
0005	J40759	LLAYG1	LFT LOWER A-POST Y	LT	1536.6146	g	-	12/3/2002	OK	-1	Endevco	7264-2000TZ
0006	P25310	LUAYG1	LFT MID A-POST Y	LT	1529.5910	g	-	1/22/2003	OK	-1	Endevco	7264C-2K-2-180
0007	J35808	LFTYG1	LFT FRNT ST TRK Y	RT	1466.3764	g	+	7/11/2002	---	-1	Endevco	7264-2000TZ
0008	P24561	VCGXG1	VEH C/G X	FWD	1000.9775	g	+	11/22/2002	OK	-1	Endevco	7264C-2K-2-180
0009	P24596	VCGYG1	VEH C/G Y	LT	987.65432	g	-	11/20/2002	OK	-1	Endevco	7264C-2K-2-180
0010	P23805	VCGZG1	VEH C/G Z	UP	999.37539	g	-	2/19/2003	OK	-1	Endevco	7264C-2K-2-180

Digital and System Channel Report

2003-02-25 08:30:25

Name of Test 030225 **System** MINIDAU **Name of DAU** DAUB **descriptio**

enable	Channel	Short Name	Type	Data File	Module Type
Yes	0501	DIGB	dig0	DATB0501	KM3710 Controller

bit position	bit	short	long	descriptio
MSB = bit 15	1	MDBR1	MDB RT SIDE SWITCH	
bit 14	1	MDBL1	MDB LT SIDE SWITCH	
bit 13	0			
bit 12	0			
bit 11	0			
bit 10	0			
bit 09	0			
bit 08	0			
bit 07	0			
bit 06	0			
bit 05	0			
bit 04	0			
bit 03	0			
bit 02	0			
bit 01	0			
LSB = bit 00	0			

Digital and System Channel Report

2003-02-25 08:30:23

Name of Test 030225 System MINIDAU Name of DAU DAUC descriptio

enable	Channel	Short Name	Type	Data File	Module Type
Yes	0501	DIGC	dig0	DATC0501	KM3710 Controller

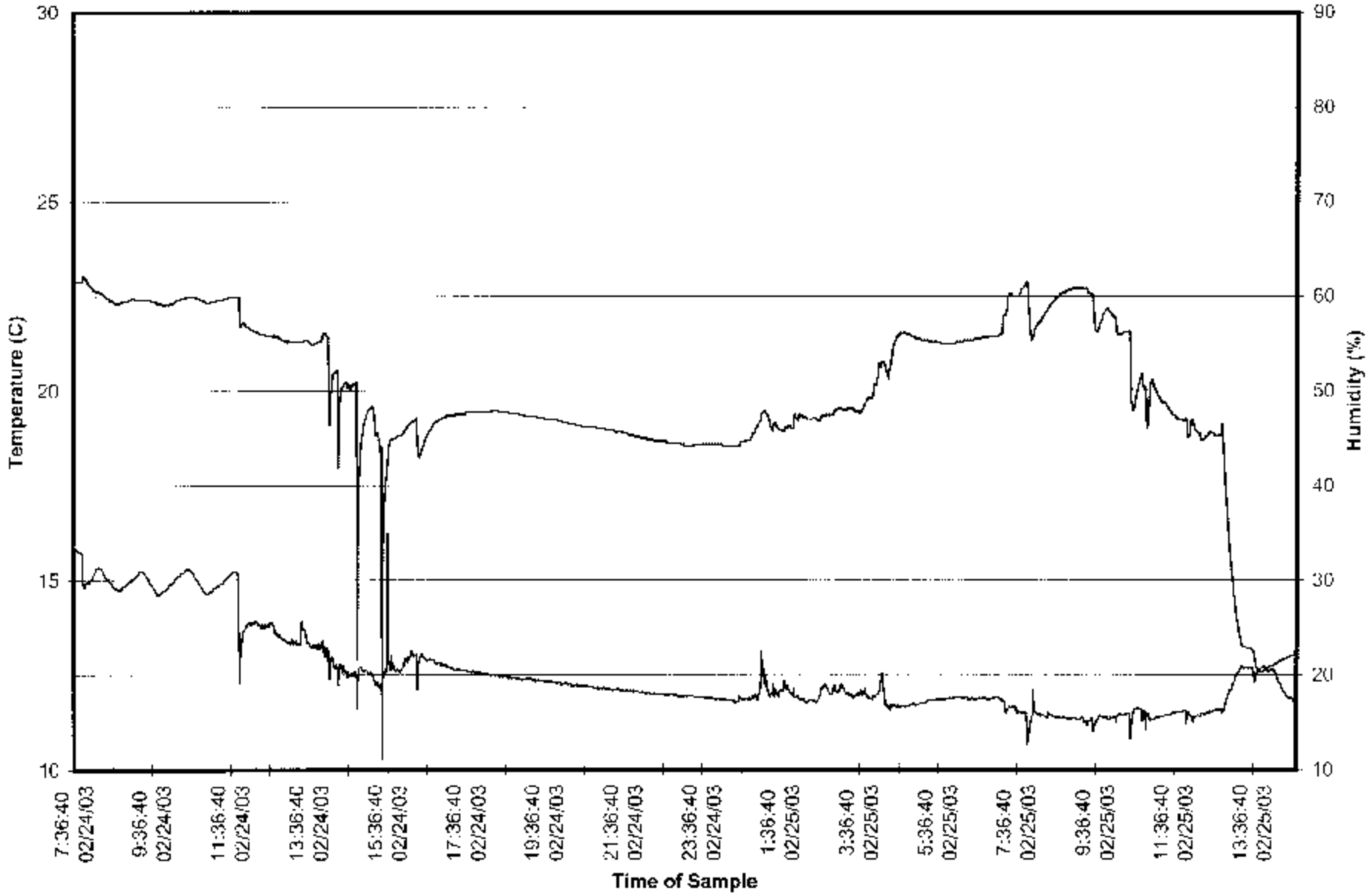
bit position	bit	short	long	descriptio
MSB = bit 15	1	SHLET1	DRIV. SHOULDER CONTACT	
bit 14	1	PEVET1	DRIV. PELVIS CONTACT	
bit 13	0			
bit 12	0			
bit 11	0			
bit 10	0			
bit 09	0			
bit 08	0			
bit 07	0			
bit 06	0			
bit 05	0			
bit 04	0			
bit 03	0			
bit 02	0			
bit 01	0			
LSB = bit 00	0			

Dummy 028nlr **Type** SID/H3 **Description** NHTSA - 028n SID-LEFT IMP. CONFIG. w/RED ACCELS CAL DUE 6-19-03(DKS 2-21-03)J21

Chsname	Location	Model	Name	Manufacturer	Sens./mV/V/U		Fullscale	Caldate	Pos Output	Flip
HEDXG	Head Accel X	7264C-2K-2-18	P25307	Endevco	0.01808	g	2000	1/22/03	Rwd	1
HEDYG	Head Accel Y	7264C-2K-2-18	P25326	Endevco	0.0211	g	2000	1/22/03	Lft	1
HEDZG	Head Accel Z	7264C-2K-2-18	P25298	Endevco	0.02186	g	2000	1/22/03	Up	1
HEDXR	Head Accel X Red	7264C-2K-2-18	P25318	Endevco	0.01914	g	2000	1/22/03	Rwd	1
HEDYR	Head Accel Y Red	7264C-2K-2-18	P25301	Endevco	0.01993	g	2000	1/22/03	Lt	1
HEDZR	Head Accel Z Red	7264C-2K-2-18	P25305	Endevco	0.02046	g	2000	1/21/03	Up	1
NEKXF	Neck Force X	1716A	1716A-1532-FX	Denton	0.000197066	N	8896.4	8/29/02	Hd Fd,Cst Rr	1
NEKYF	Neck Force Y	1716A	1716A-1532-FY	Denton	0.000187489	N	8896.4	8/29/02	Hd Lt,Cst Rt	0
NEKZF	Neck Force Z	1716A	1716A-1532-FZ	Denton	9.73546E-05	N	13344.6	8/29/02	Hd Up,Cst Dn	0
NEKXM	Neck Moment X	1716A	1716A-1532-MX	Denton	0.005922124	N·m	282.5	8/29/02	Rt Ear to Rt Shld	1
NEKYM	Neck Moment Y	1716A	1716A-1532-MY	Denton	0.005901239	N·m	282.5	8/29/02	Chn to Strnm	0
NEKZM	Neck Moment Z	1716A	1716A-1532-MZ	Denton	0.008294159	N·m	282.5	8/29/02	Chn to Lt Shld	0
LURYG	Left Upper Rib Y	7264C-2K-2-18	P25231	Endevco	0.01764	g	2000	12/13/02	Rgt	0
LURYR	Left Upper Rib Red Y	7264C-2K-2-18	P25371	Endevco	0.02155	g	2000	12/19/02	Rgt	0
LLRYG	Left Lower Rib Y	7264C-2K-2-18	P25075	Endevco	0.01775	g	2000	12/19/02	Rgt	0
LLRYR	Left Lower Rib Red Y	7264C-2K-2-18	P25076	Endevco	0.01566	g	2000	12/19/02	Rgt	0
T12YG	Lower Spine Y	7264C-2K-2-18	P25261	Endevco	0.017	g	2000	11/21/02	Lft	1
T12YR	Lower Spine Red Y	7264C-2K-2-18	P25374	Endevco	0.02186	g	2000	12/19/02	Lft	1
PEVYG	Pelvis Accel Y	7264C-2K-2-18	P25063	Endevco	0.01801	g	2000	12/19/02	Lft	1
PEVYR	Pelvis Accel Red Y	7264C-2K-2-18	P25074	Endevco	0.01764	g	2000	12/19/02	Lft	1

030225

55/28 KPH 90 DEGREE NCAP SIDE IMPACT 030225



PLASCORE

SIDE IMPACTOR BARRIER CERTIFICATION

Date: July 11, 2002

To: Transportation Research
Ship & Rec Bldg 50
10820 St. Route 347
East Liberty, OH 43319-0367

PURCHASE ORDER INFORMATION

Customer P.O. Number: 018767
Work Order Number: 13552
Quantity: 05 pieces

CORE INFORMATION

Core Type: PAMG-3/8-1.6-001-P-5052-T
Measured Cell Size: 0.375 inches
Measured Density: 1.6 pcf

Unit Numbers:
050C0602 - 01 pc.
050A0602 - 01 pc.
049A0602 - 01 pc.
048C0602 - 01 pc.
035C0602 - 01 pc.

This is to certify that the aluminum honeycomb core supplied, under the unit numbers provided, meets the crush requirements of 45 psi +/- 2.5 psi as per DWG# DSL-1285.

QA Plascore Accept 001

Quality Control Representative
Karl D. Zwaanstra

PLASCORE, INC. • 615 N. FAIRVIEW ST. • ZEELAND, MI 49464-0170 • PHONE: (616) 772-1220 • FAX: (616) 772-4289
WEBSITE: www.plascore.com • EMAIL: info@plascore.com

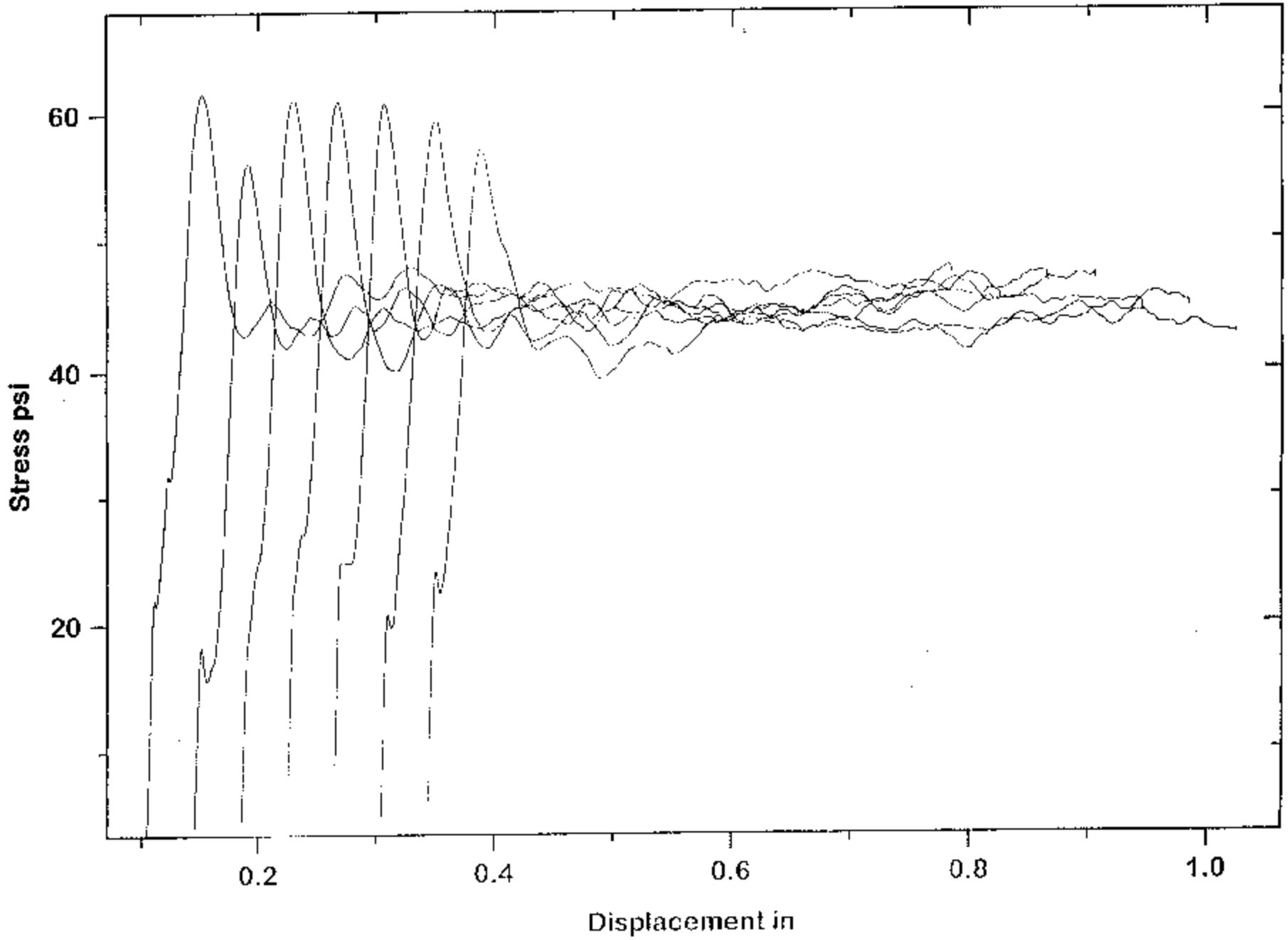
PLASCORE

Crush Data
45 psi +/- 2.5 psi per DWG # DSL-1285

Block Number: **049A0602**

Specimen Number	Zone 1	Zone 2	Zone 3
1	46.16	46.20	46.90
2	45.19	44.51	45.39
3	45.18	44.59	45.82
4	44.12	45.03	46.00
5	44.61	44.57	45.10
6	43.71	42.95	43.74
7	43.36	43.10	44.13

BLOCK # 049A0602 Sample ID: IN224645



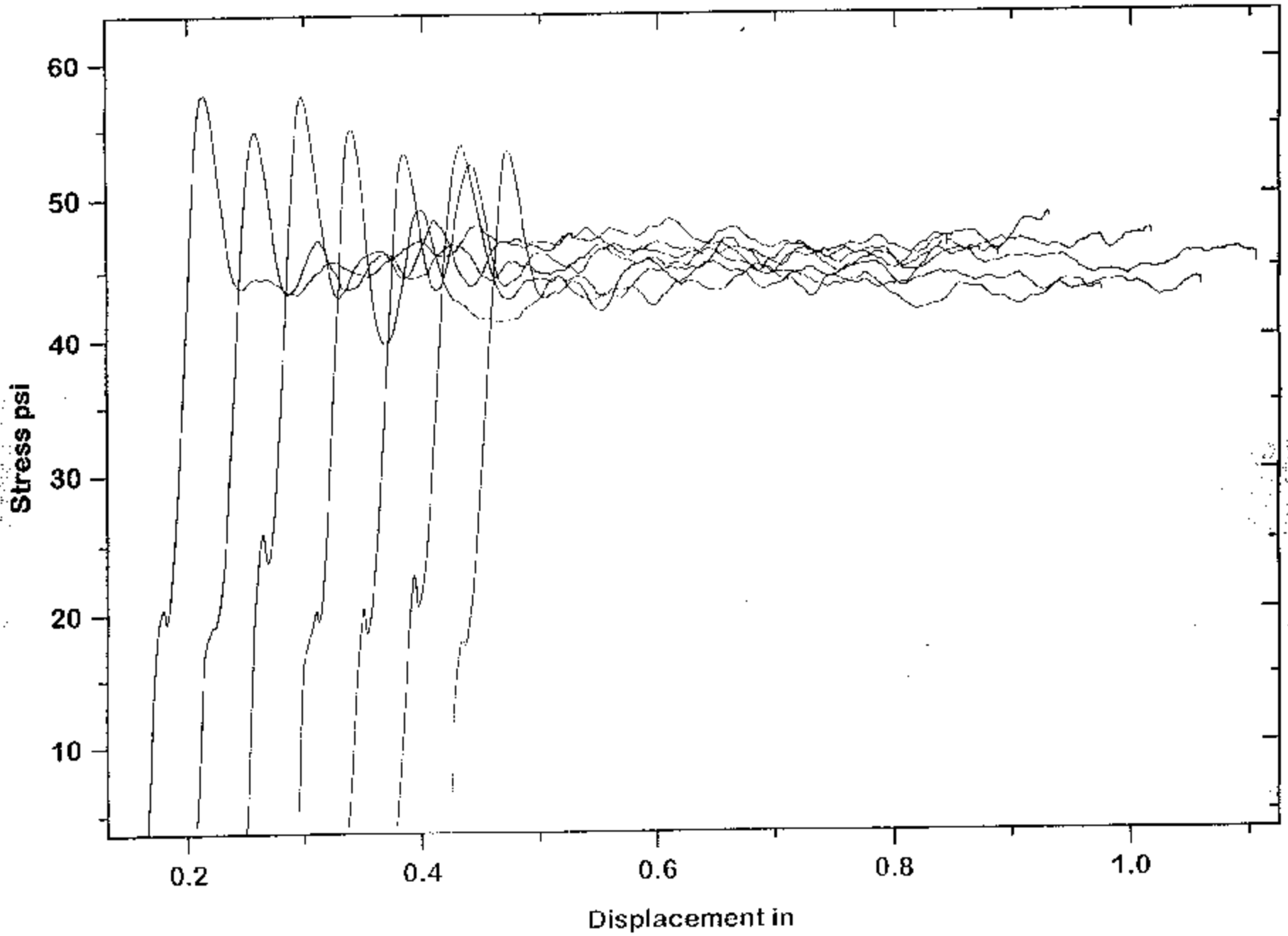
PLASCORE

Crush Data
45 psi +/- 2.5 psi per DWG # DSL-1285

Block Number: **048C0602**

Specimen Number	Zone 1	Zone 2	Zone 3
1	47.11	47.40	46.45
2	45.53	45.74	45.30
3	46.53	46.08	46.11
4	43.56	44.04	42.94
5	45.83	45.92	46.60
6	45.02	44.18	43.70
7	44.58	45.48	44.82

BLOCK # 048C0602 Sample ID: IN224702



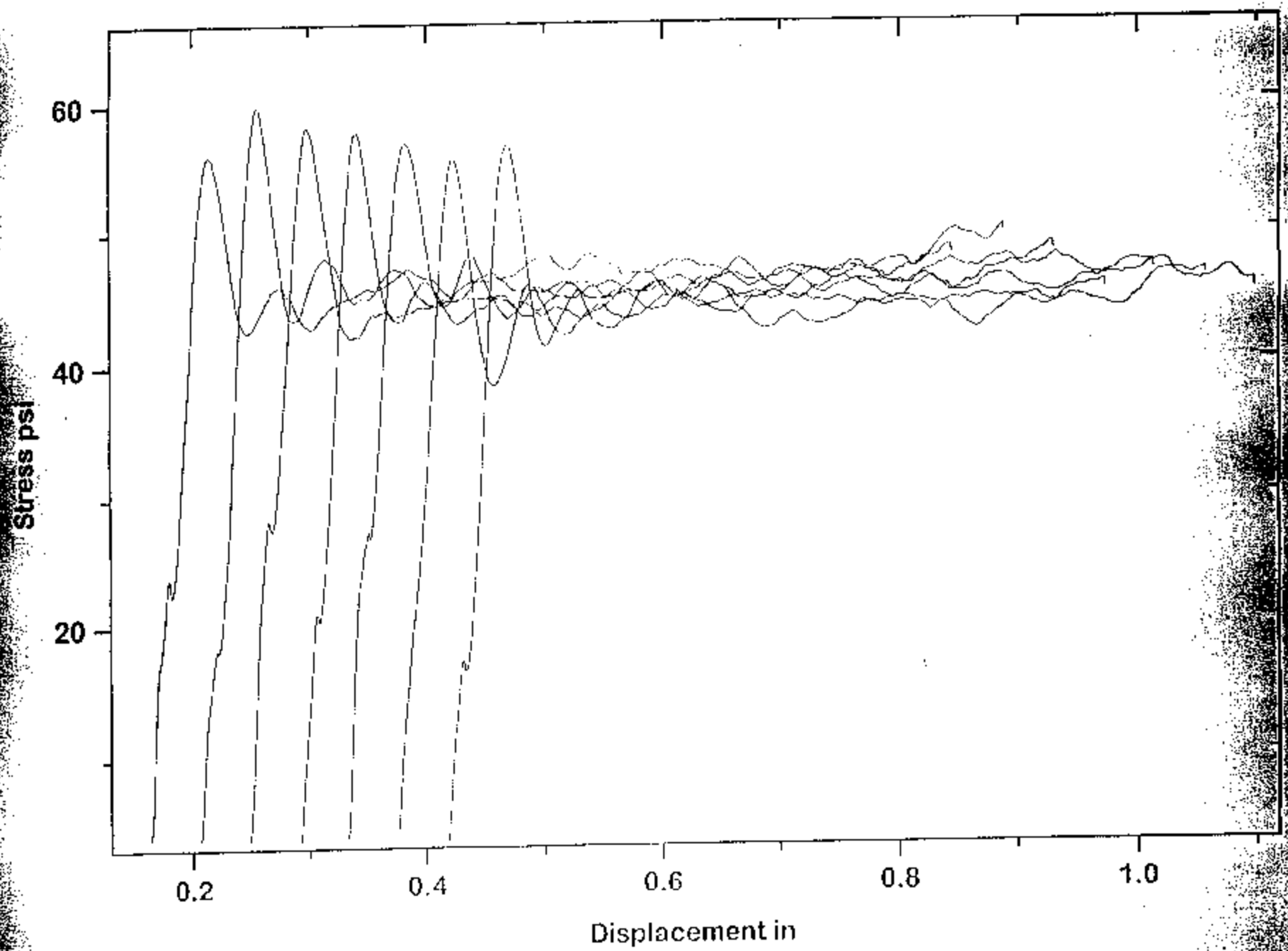
PLASCORE

Crush Data
45 psi +/- 2.5 psi per DWG # DSL-1285

Block Number: **050C0602**

Specimen Number	Zone 1	Zone 2	Zone 3
1	45.68	45.06	46.48
2	47.32	46.96	47.22
3	45.64	46.03	45.94
4	44.46	44.58	44.57
5	46.31	46.61	47.40
6	43.73	44.01	44.57
7	45.34	45.64	46.59

BLOCK # 050C0602 Sample ID: IN224700



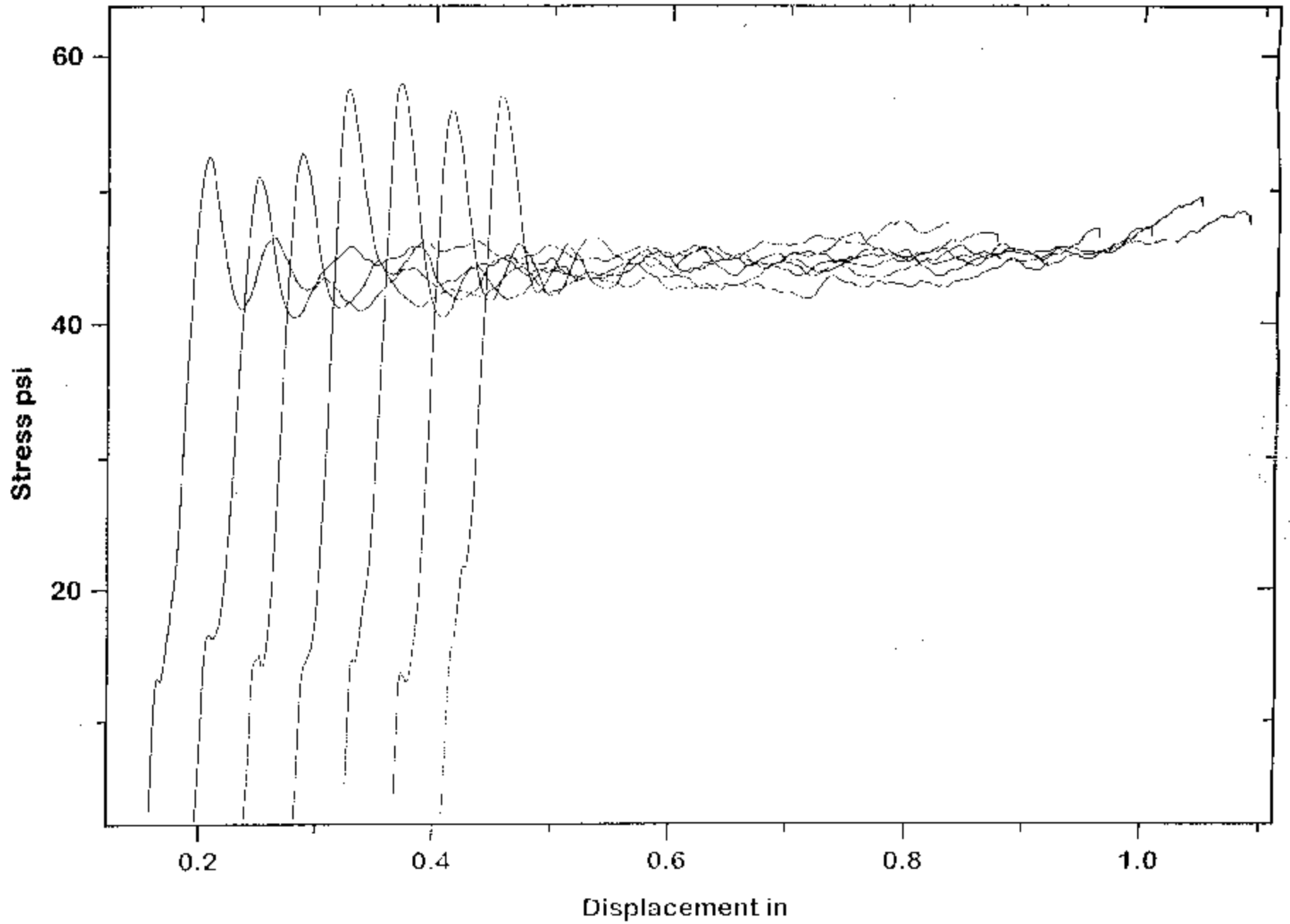
PLASCORE

Crush Data
45 psi +/- 2.5 psi per DWG # DSL-1285

Block Number: **050A0602**

Specimen Number	Zone 1	Zone 2	Zone 3
1	45.45	45.57	46.30
2	43.96	44.38	44.78
3	43.82	42.82	43.14
4	44.82	45.12	45.41
5	43.48	44.31	45.21
6	44.66	45.38	45.21
7	45.66	45.02	45.87

BLOCK # 050A0602 Sample ID: IN224649



PLASCORE

SIDE IMPACTOR BARRIER CERTIFICATION

Date: July 11, 2002

To: Transportation Research
Ship & Rec Bldg 50
10820 St. Route 347
East Liberty, OH 43319-0367

PURCHASE ORDER INFORMATION

Customer P.O. Number: 018767
Work Order Number: 13552
Quantity: 05 pieces

CORE INFORMATION

Core Type: PCGA-1/4-5.2-P-3003-T
Measured Cell Size: 0.250 inches
Measured Density: 5.2 pcf

Unit Numbers: 035A0602 - 03 pcs.
058B0502 - 02 pcs.

This is to certify that the aluminum honeycomb core supplied, under the unit numbers provided, meets the crush requirements of 232 – 250 psi as per DWG# DSL-1285.

QA Plascore Accept 001

Quality Control Representative
Karl D. Zwaanstra

PLASCORE

Crush Data
232 - 250 psi per DWG # DSL-1285

Block Number: **058B0502**

Specimen Number	Zone 1	Zone 2	Zone 3
1	234.88	233.03	238.26
2	245.89	246.74	234.83
3	244.45	242.80	244.84
4	233.66	232.58	232.66
5	241.14	241.30	238.97
6	241.47	241.27	241.95
7	241.53	238.17	235.74

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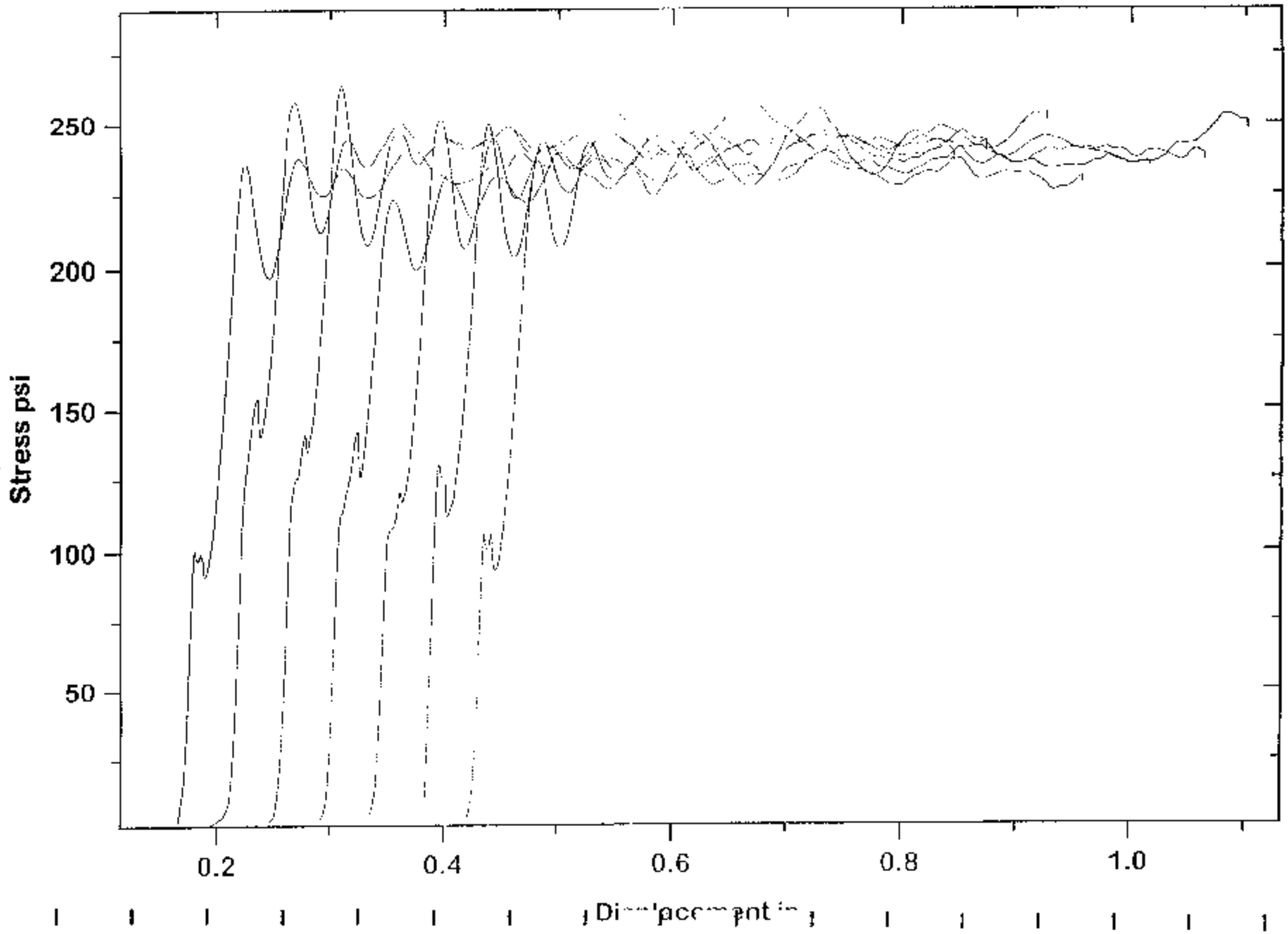
WEBSITE: www.plascore.com • EMAIL: info@plascore.com

BLOCK # 058B0502 Sample ID: IN224430



PLASCORE

Crush Data
232 - 250 psi per DWG # DSL-1285

Block Number: **035A0602**

Specimen Number	Zone 1	Zone 2	Zone 3
1	244.40	243.67	243.31
2	233.87	235.01	232.86
3	236.81	234.93	233.33
4	239.66	238.82	236.92
5	244.52	242.91	243.54
6	246.13	246.27	243.76
7	244.63	245.45	243.59

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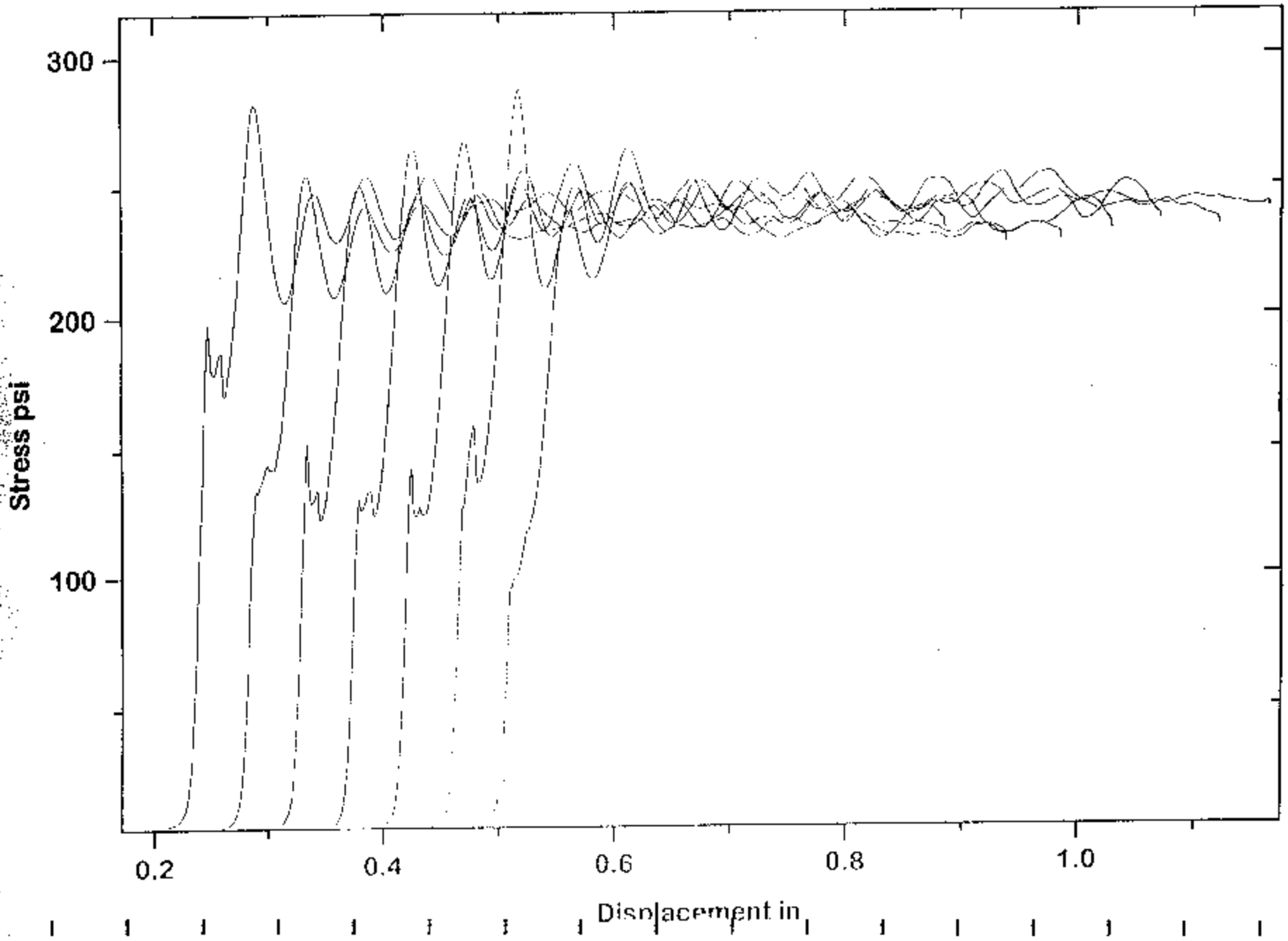
WEBSITE: www.plascore.com • EMAIL: info@plascore.com

BLOCK # 035A0602 Samples: IN224610



PLASCORE

Crush Data
45 psi +/- 2.5 psi per DWG # DSL-1285

Block Number: **035C0602**

Specimen Number	Zone 1	Zone 2	Zone 3
1	46.57	46.17	46.74
2	45.67	45.64	47.19
3	45.73	45.27	45.40
4	44.47	44.96	45.89
5	46.95	47.06	46.69
6	45.56	47.05	47.20
7	45.38	45.66	45.78

PLASCORE, INC. • 615 N. FAIRVIEW ST. • ZEELAND, MI 49464-0170 • PHONE: (616) 772-1220 • FAX: (616) 772-1289
WEBSITE: www.plascore.com • EMAIL: info@plascore.com

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