

Report Number: 214-TRC-03-010

Safety Compliance Testing For FMVSS 214

Side Impact Protection

Indicant

DaimlerChrysler

2003 Mercedes-Benz C240 4-door Sedan

NHTSA Number: C30513

Transportation Research Center Inc.

10820 State Route 347

P. O. Box B-67

East Liberty, OH 43319



Test Date: May 5, 2003

Final Report: May 16, 2003

**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

This Final Test Report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, under Contract No. DTNH22-02-D-11114. This publication is distributed by the U. S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings, and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Test Performed By: Michael S. Postle, Engineering Technician

Report Approved By: _____

Virginia L. Watters, Project Manager
Transportation Research Center Inc.

Approval Date: _____

FINAL REPORT ACCEPTANCE BY OVSC:

Accepted By: _____

Acceptance Date: _____

1. Report No. 214-TRC-03-010	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 Mercedes-Benz C240 4-door sedan, NHTSA No.: C30513	5. Report Date May 16, 2003	6. Performing Organization Code TRC Inc.																														
	8. Performing Organization Report No. 030505-1																															
7. Author(s) Virginia L. Watters, Project Manager Transportation Research Center Inc.	10. Work Unit No. (TRAIS)																															
9. Performing Organization Name and Address Transportation Research Center Inc. 10820 State Route 347 East Liberty, OH 43319	11. Contract or Grant No. DTNH22-02-D-11114																															
	13. Type of Report and Period Covered Final Report May 2003																															
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	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 Mercedes-Benz C240 4-door sedan 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 specified) to determine FMVSS 214 Side Impact Protection compliance. This test was conducted by Transportation Research Center Inc. in East Liberty, Ohio, on May 5, 2003. The impact velocity of the Moving Deformable Barrier (MDB) was 62.1 km/h, and the ambient temperature at the struck (driver's side) side of the target vehicle at the time of impact was 21.1° C. The target vehicle's post-test maximum crush was 260 mm at Level 3. The test or target vehicle's performance is given below: <table border="0"> <thead> <tr> <th></th> <th><u>Front SID-H3</u></th> <th></th> <th><u>Rear SID-H3</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib Acceleration:</td> <td><u>40.9</u></td> <td>g's</td> <td><u>55.3</u></td> <td>g's</td> </tr> <tr> <td>Left Lower Rib Acceleration:</td> <td><u>34.2</u></td> <td>g's</td> <td><u>61.2</u></td> <td>g's</td> </tr> <tr> <td>Lower Spine Acceleration:</td> <td><u>60.5</u></td> <td>g's</td> <td><u>46.3</u></td> <td>g's</td> </tr> <tr> <td>Thoracic Trauma Index, (TTI):</td> <td><u>50.7</u></td> <td>g's</td> <td><u>53.8</u></td> <td>g's</td> </tr> <tr> <td>Pelvis Acceleration (PEV):</td> <td><u>57.9</u></td> <td>g's</td> <td><u>39.0</u></td> <td>g's</td> </tr> </tbody> </table> 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.				<u>Front SID-H3</u>		<u>Rear SID-H3</u>		Left Upper Rib Acceleration:	<u>40.9</u>	g's	<u>55.3</u>	g's	Left Lower Rib Acceleration:	<u>34.2</u>	g's	<u>61.2</u>	g's	Lower Spine Acceleration:	<u>60.5</u>	g's	<u>46.3</u>	g's	Thoracic Trauma Index, (TTI):	<u>50.7</u>	g's	<u>53.8</u>	g's	Pelvis Acceleration (PEV):	<u>57.9</u>	g's	<u>39.0</u>	g's
	<u>Front SID-H3</u>		<u>Rear SID-H3</u>																													
Left Upper Rib Acceleration:	<u>40.9</u>	g's	<u>55.3</u>	g's																												
Left Lower Rib Acceleration:	<u>34.2</u>	g's	<u>61.2</u>	g's																												
Lower Spine Acceleration:	<u>60.5</u>	g's	<u>46.3</u>	g's																												
Thoracic Trauma Index, (TTI):	<u>50.7</u>	g's	<u>53.8</u>	g's																												
Pelvis Acceleration (PEV):	<u>57.9</u>	g's	<u>39.0</u>	g's																												
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 Hornicle																															
19. Security Classification (of this report) Unclassified	20. Security Classification (of this page) Unclassified	21. Number of Pages 424																														
		22. Price																														

Table of Contents

<u>Section</u>	<u>Description</u>	<u>Page No.</u>
1	Purpose and Test Procedure	1-1
2	Summary of Side Impact Test	2-1
3	Summary of Test Results	3-1
	Data Sheet 1 - General Vehicle Test Parameter Data	3-2
	Data Sheet 2 - Test Vehicle Summary of Results	3-6
	Data Sheet 3 - Moving Deformable Barrier (MDB) Summary	3-7
	Data Sheet 4 - Post-Test Observations	3-8
4	Occupant and Vehicle Information	4-1
	Data Sheet 5 - SID Instrumentation Data	4-2
	Data Sheet 6 - Vehicle Pre-Test And Post-Test Measurements	4-4
	Data Sheet 7 - SID Longitudinal Clearance Dimensions	4-5
	Data Sheet 8 - SID Lateral Clearance Dimensions	4-6
	Data Sheet 9 - Vehicle Side Measurements	4-7
	Data Sheet 10 - Vehicle Exterior Crush Profiles - All Levels	4-8
	Data Sheet 11 - Vehicle Damage Profile Distances	4-10
	Data Sheet 12 - Exterior Static Crush For Impactor Face	4-11
	Data Sheet 13 - Test Vehicle Accelerometer Locations and Data Summary	4-21
	Data Sheet 14 - MDB Accelerometer Locations and Data Summary	4-24
	Data Sheet 15 - High-Speed Camera Locations and Data	4-25
5	Vehicle Fuel System Integrity	5-1
	Data Sheet 16 - FMVSS 301 Fuel System Integrity Data	5-2
	Data Sheet 17 - FMVSS 301 Rollover Data	5-3
Appendix A	Photographs	A-1
Appendix B	Data Plots	B-1
Appendix C	Sid Configuration and Performance Verification Data	C-1
Appendix D	Test Equipment List and Calibration Information	D-1

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 Mercedes-Benz C240 4-door sedan. 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 test speed, which was at the NCAP High Speed Lateral Impact level (62.1 km/h).

Section 2

Summary of Side Impact Test

A 2003 Mercedes-Benz C240 4-door Sedan 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 62.1 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 May 5, 2003. Pre-test and post-test photographs of the test vehicle, the moving deformable barrier (MDB), and the side impact Hybrid III dummies (SID-H3s) are included in Appendix A.

Two restrained Side Impact Hybrid III Dummies (SID-H3s) were placed in the driver (Pos. #1) and left rear (Pos. #4) designated seating positions according to the instructions specified in the OVSC Side Impact Laboratory Test Procedure (TP-214D-06, dated July 2001). Both SIDs were certified prior to this test. The side impact test was documented by one real-time camera and 9 high-speed cameras. Camera locations and other pertinent camera information are included in this report.

The SID-H3s were instrumented with the following accelerometers:

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 (T₁₂) uniaxial and redundant accelerometer (Y-direction)
6. Pelvic (PEV) section uniaxial and redundant accelerometer (Y-direction)

A summary of the side impact Hybrid III dummy (SID-H3) configuration and verification test data can be found in Appendix C. A total of 72 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-H3	Rear SID-H3
TTI (g)	50.7	53.8
PEV (g)	58.0	41.3

Head Injury Criteria (HIC)

Injury Criteria	Front SID-H3	Rear SID-H3
HIC	123	145
t_1 (ms)	31.3	34.4
t_2 (ms)	67.3	67.6
Average Acceleration $t_1 - t_2$ (g)	25.9	39.0

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-H3	Rear SID-H3
Neck X-axis Force (N)	-482	480
Neck Y-axis Force (N)	-270	-1017
Neck Z-axis Force (N)	-504	-1177
Moment About X-axis (Nm) ¹	-41.7	-37.6
Moment About Y-axis (Nm)	-48.6	28.2
Moment About Z-axis (Nm)	32.7	-15.7

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

Data Acquisition Explanations

The driver's redundant pelvis Y-axis acceleration channel, PEVYR1, recorded questionable data throughout the test. The driver's calculated redundant pelvis Y-axis velocity was also effected.

The vehicle's left middle A-pillar Y-axis acceleration channel, LMAYG1, exceeded full scale at approximately 46 ms and recorded no useful data after that. The vehicle's calculated left middle A-pillar Y-axis velocity and was also affected.

Section 3

Summary of Test Results

Data Sheet 1

General Test Vehicle Parameter Data

Test Vehicle Information:

Vehicle Year/Make/Model: 2003 Mercedes-Benz C240 Sedan
Vehicle Body Style/Color: 4-door/Black VIN: WDBRF61J93A491553
Vehicle NHTSA No.: C30513 Build Date: 01/03
Engine Data: 6 Cylinders; CID; 2.6 Liters; cc
Placement: X Longitudinal; or - Lateral; or - Horizontal
Transmission: 6 Speed; X Manual; - Automatic; - Overdrive
Final Drive: - RWD; X FWD; - Four-Wheel Drive
Odometer Reading: 52 mi
Options: X A/C; X Power steering; X Pwr. brakes; X Power windows

Data From Vehicle's Tire Placard:

Tire Pressure (at capacity)* 350 kPa Front; 350 kPa Rear

Recommended Tire Size: 205/55R16

Tires on Test Vehicle: 20555R16 Manufacturer: Pirella, P6

Vehicle Capacity Data:

Number of Occupants: 2 Front; 3 Rear; 3rd seat; 5 Total
Type of Front Seats: X Bucket; - Bench; - Split bench
Type of Front Seat Back: - Fixed; X Adjustable with - Lever or X Knob
Vehicle Max. Capacity Loading = 392 kg (A)
No. of Occupants x 68.04 kg. = 340.2 kg (B)
Vehicle Cargo Capacity (A-B) = 51.8 kg

Test Vehicle Delivered Weight With Maximum Fluids:

Left Front	=	<u>405.0</u> kg	Left Rear	=	<u>351.5</u> kg
Right Front	=	<u>392.5</u> kg	Right Rear	=	<u>356.5</u> kg
Total Front	=	<u>797.5</u> kg	Total Rear	=	<u>708</u> kg
Front % of Total Weight	=	<u>53.0</u> %	Rear % of Total Weight	=	<u>47.0</u> %
Total Weight	=	<u>1505.5</u> 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 = 1505.5 kg (A)

Maximum Cargo Carrying Capacity of Test Vehicle = 51.8 kg (B)

Weight of Instrumented Side Impact Dummies (2 X 84.0 kg) = 168.0 kg (C)

Test Vehicle Target Weight: = 1725.3 kg (A+B+C)

Fully Loaded Test Vehicle (UDW + 2 SIDs + Cargo):

Left Front = 456.5 kg Left Rear = 462.5 kg

Right Front = 385.0 kg Right Rear = 437.0 kg

Total Front = 841.5 kg Total Rear = 899.5 kg

Front % of Total Weight = 48.3 % Rear % of Total Weight = 51.7 %

Total Weight = 1741.0 kg

As Tested Weight of Test Vehicle (2 SIDs + Cargo + Equipment & Instrumentation):

Left Front = 440.8 kg Left Rear = 432.2 kg

Right Front = 418.6 kg Right Rear = 423.4 kg

Total Front = 859.4 kg Total Rear = 855.6 kg

Front % of Total Weight = 50.1 % Rear % of Total Weight = 49.9 %

Total Weight = 1715.0 kg

Test Vehicle Attitude (all dimensions in millimeters):

As Delivered	Fully Loaded	Ready For Test
Right Front <u>709</u>	Right Front <u>690</u>	Right Front <u>693</u>
Left Front <u>709</u>	Left Front <u>678</u>	Left Front <u>693</u>
Right Rear <u>670</u>	Right Rear <u>623</u>	Right Rear <u>647</u>
Left Rear <u>674</u>	Left Rear <u>613</u>	Left Rear <u>639</u>

Test Vehicle Wheelbase: 2712 mm

C.G. = 1353 mm rearward of front wheel centerline

Total Vehicle Length:

Right Side = 4355 mm

Left Side = 4355 mm

Centerline = 4525 mm

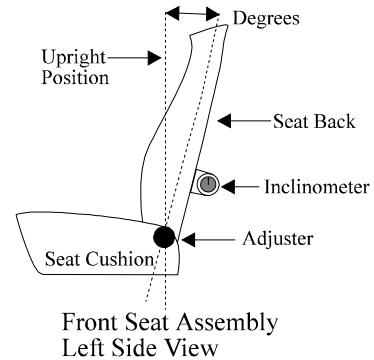
Data Sheet 1 (continued)

General Test Vehicle Parameter Data

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

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 Cushion Placement: 3 notches forward of center notch when seat was in full down. This position is the mid position for the full seat travel available through all the adjustment heights. (The position was verified as 144 mm measured from the back edge of the outboard seat U-rail to the back edge of the sliding post.)

Total Length of Fore/Aft Adjustment Travel: 215 mm

Total Number of Adjustment Positions or Detents: 27

Front Seat Back Adjustment Position: The back was adjusted to the 23.5 measured at the seat back

Seat Back Torso Angle: 23.5 degrees

Second Position Seat Placement: Fixed

Total Length Of Fore/Aft Adjustment Travel: N/A mm

Seat Back Adjustment Position: N/A, not adjustable

Adjustable Steering Column Position: 20.25° Middle of the geometric range of steering column adjustment (17.5° to 23.0°)

Telescoping Steering Column Position: 28 mm rearward of full in; center of 56 mm range of travel

Window Positions:

Right Front: Open

Right Rear: Open

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.

Data Sheet 1 (continued)

General Test Vehicle Parameter Data

Amount of Stoddard Solvent In Fuel Tank:

62.0 liters (fuel tank usable capacity)

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

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

Wheelbase = 2712 millimeters

Intended impact point is 416 millimeters rearward of front axle centerline
(which is 940 millimeters forward of the wheelbase midpoint)

Actual Impact Point is 426 millimeters rearward of front axle centerline

Data Sheet 2

Test Vehicle Summary of Results

Vehicle Year/Make/Model: 2003/Mercedes-Benz/C240

Body Style: 4-door sedan

VIN: WDBRF61J93A491553

NHTSA No.: C30513

Build Date: 01/03

Test Date: 05/05/03

Vehicle Overall Length = 4525 mm

Overall Width = 1722 mm

Vehicle Test Weight (Pre-Test):

Left Front = 440.8 kg Left Rear = 432.2 kg

Right Front = 418.6 kg Right Rear = 423.4 kg

Total Front = 859.4 kg Total Rear = 855.6 kg

Total Weight = 1715.0 kg

Wheelbase = 2712 mm

Longitudinal C.G. From Center Of Front Axle = 1353 mm

Impact Angle With Respect To Impactor = 90 degrees

Impact Point:

Actual Impact Point is 10 mm Right of nominal impact ref. line (Lateral)

Actual Impact Point is 15 mm Up from nominal impact point (Vertical)

Maximum Exterior Static Crush:

1. Level 1 (270 mm above ground) = 104 mm

2. Level 2 (485 mm above ground) = 225 mm

3. Level 3 (623 mm above ground) = 260 mm

4. Level 4 (860 mm above ground) = 252 mm

5. Level 5 (1375 mm above ground) = 70 mm

Maximum Post-Test Intrusion = 260 mm

Occupants:

Front Passenger

Rear Passenger

Dummy Identification 066

028

Restraints Used Side curtain airbag, torso
airbag, seatbelt

Side curtain airbag, torso
airbag, seatbelt

Instrumentation:

Number of Vehicle Data Channels: = 21

Number of Cameras: Onboard = 3 Offboard = 8 Total = 11

Data Sheet 3

Moving Deformable Barrier(MDB) Summary

MDB Face Manufacturer And Serial Number:

Plascore, 015A0303-4/ 013C0203

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 = 388.2 kg Left Rear = 293.8 kg

Right Front = 387.8 kg Right Rear = 291.4 kg

Total Front = 776.0 kg Total Rear = 585.2 kg

Total MDB Weight = 1361.2 kg

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

Impact Speed = 62.1 km/h

Maximum Static Crush of Honeycomb Impact Face:

1. Row A at Center of Bumper Level = 223 millimeters

2. Row B at Top of Bumper Level = 136 millimeters

3. Row C at Mid Level = 155 millimeters

4. Row D at Top of Stack Level = 160 millimeters

Instrumentation:

Number of MDB Data Channels = 5

Data Sheet 4

Post-Test Observations

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

Visible Dummy Contact Points:

	<u>Left Front SID-H3</u>	<u>Left Rear SID-H3</u>
Head:	<u>Side air curtain, head restraint</u>	<u>Side air curtain, side header, head restraint</u>
Upper Torso:	<u>Torso airbag, B-pillar, door panel</u>	<u>Torso airbag, door panel</u>
Lower Torso:	<u>Torso airbag</u>	<u>Torso airbag</u>
Left Knee:	<u>Door panel</u>	<u>Door panel</u>
Right Knee:	<u>None</u>	<u>None</u>

Door Opening:

	<u>Left Side</u>	<u>Right Side</u>
Front:	<u>Latched and jammed shut</u>	<u>Easy</u>
Rear:	<u>Latched and jammed shut</u>	<u>Easy</u>

MDB Distance From Target Impact Point:

Vertical: 15 mm up from target

Horizontal: 10 mm right from target

Arm Rest Locations:

Front: 233 mm below the bottom of the window

Rear: 260 mm below the bottom of the window

Seat Movement:

Front: None

Rear: None

Glazing Damage:

Windshield: None

Window: Driver and passenger side windows shattered

Pillar Separation: No

Sill Separation: No

Other Notable Impact Effects: None

Section 4

Occupant and Vehicle Information

Data Sheet 5

SID-H3 Instrumentation Data

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

TEST NUMBER: 030505-1

DRIVER DUMMY SERIAL NUMBER: 028

POSITIVE
DIRECTION

NEGATIVE
DIRECTION

HEAD ACCELERATION

LONGITUDINAL	5.7 g	@ 20.1 ms	22.8 g	@ 58.5 ms
LATERAL	24.6 g	@ 55.8 ms	4.9 g	@ 181.4 ms
VERTICAL	15.2 g	@ 54.8 ms	10.1 g	@ 60.6 ms
RESULTANT	35.8 g	@ 55.0 ms		
HIC	123	from 31.3 to 67.3 ms		

HEAD REDUNDANT ACCELERATION

LONGITUDINAL	5.4 g	@ 286.2 ms	22.3 g	@ 62.6 ms
LATERAL	25.8 g	@ 52.2 ms	4.8 g	@ 181.0 ms
VERTICAL	14.7 g	@ 54.9 ms	9.9 g	@ 60.6 ms
RESULTANT	35.6 g	@ 55.0 ms		
HIC	122	from 31.3 to 67.3 ms		

NECK FORCE

X-AXIS SHEAR	174.3 N	@ 291.4 ms	482.3 N	@ 55.0 ms
Y-AXIS SHEAR	55.1 N	@ 104.3 ms	269.8 N	@ 26.9 ms
Z-AXIS AXIAL	410.7 N	@ 55.0 ms	504.4 N	@ 53.3 ms

NECK MOMENT

ABOUT X-AXIS	9.6 N-m	@ 113.8 ms	40.7 N-m	@ 37.5 ms
ABOUT Y-AXIS	12.7 N-m	@ 84.2 ms	48.6 N-m	@ 49.4 ms
ABOUT Z-AXIS	32.7 N-m	@ 62.2 ms	8.0 N-m	@ 165.4 ms
OCCIPITAL COND	10.3 N-m	@ 112.7 ms	41.6 N-m	@ 37.3 ms

LEFT UPPER RIB ACCELERATION

LATERAL (P)	40.9 g	@ 16.9 ms	10.0 g	@ 66.3 ms
LATERAL (R)	41.8 g	@ 16.9 ms	10.6 g	@ 66.9 ms

LEFT LOWER RIB ACCELERATION

LATERAL (P)	34.2 g	@ 26.9 ms	7.5 g	@ 67.5 ms
LATERAL (R)	35.9 g	@ 26.9 ms	8.6 g	@ 67.5 ms
TTI d (P)	50.7			
TTI d (R)	50.5			

LOWER SPINE ACCELERATION

LATERAL (P)	60.5 g	@ 30.0 ms	12.9 g	@ 73.1 ms
LATERAL (R)	59.2 g	@ 30.6 ms	12.9 g	@ 73.1 ms

PELVIS ACCELERATION

LATERAL (P)	57.9 g	@ 29.4 ms	9.9 g	@ 78.1 ms
LATERAL (R) ¹	---	---	---	---

POSITIVE DIRECTION

LONGITUDINAL: FORWARD
LATERAL: RIGHTWARD
VERTICAL: DOWNWARD

NEGATIVE DIRECTION

LONGITUDINAL: REARWARD
LATERAL: LEFTWARD
VERTICAL: UPWARD

¹ See DATA ACQUISITION EXPLANATION

Data Sheet 5 (Continued)

SID-H3 Instrumentation Data

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

TEST NUMBER: 030505-1

PASSENGER DUMMY SERIAL NUMBER: 066

POSITIVE
DIRECTION

NEGATIVE
DIRECTION

HEAD ACCELERATION

LONGITUDINAL	9.1 g	@ 140.3 ms	10.0 g	@ 41.8 ms
LATERAL	39.9 g	@ 40.9 ms	4.8 g	@ 141.0 ms
VERTICAL	18.0 g	@ 94.6 ms	27.6 g	@ 60.7 ms
RESULTANT	40.9 g	@ 40.9 ms		
HIC	145 from 34.4 to 67.6 ms			

HEAD REDUNDANT ACCELERATION

LONGITUDINAL	9.2 g	@ 140.3 ms	10.0 g	@ 41.9 ms
LATERAL	40.2 g	@ 40.9 ms	4.8 g	@ 142.5 ms
VERTICAL	18.1 g	@ 94.6 ms	27.5 g	@ 60.4 ms
RESULTANT	41.3 g	@ 40.9 ms		
HIC	146 from 34.6 to 67.5 ms			

NECK FORCE

X-AXIS SHEAR	479.9 N	@ 62.1 ms	85.6 N	@ 271.3 ms
Y-AXIS SHEAR	171.8 N	@ 138.0 ms	1017.2 N	@ 60.2 ms
Z-AXIS AXIAL	653.0 N	@ 94.8 ms	1177.1 N	@ 61.3 ms

NECK MOMENT

ABOUT X-AXIS	22.3 N-m	@ 97.0 ms	32.1 N-m	@ 44.1 ms
ABOUT Y-AXIS	28.2 N-m	@ 54.5 ms	7.2 N-m	@ 201.2 ms
ABOUT Z-AXIS	3.3 N-m	@ 246.3 ms	15.7 N-m	@ 163.7 ms
OCCIPITAL COND	17.5 N-m	@ 96.9 ms	37.6 N-m	@ 45.0 ms

LEFT UPPER RIB ACCELERATION

LATERAL (P)	55.3 g	@ 45.6 ms	21.2 g	@ 97.5 ms
LATERAL (R)	54.3 g	@ 45.6 ms	21.9 g	@ 98.1 ms

LEFT LOWER RIB ACCELERATION

LATERAL (P)	61.2 g	@ 45.6 ms	23.9 g	@ 97.5 ms
LATERAL (R)	61.1 g	@ 45.6 ms	26.0 g	@ 97.5 ms
TTI d (P)	53.8			
TTI d (R)	53.8			

LOWER SPINE ACCELERATION

LATERAL (P)	46.3 g	@ 50.6 ms	7.7 g	@ 101.9 ms
LATERAL (R)	46.5 g	@ 50.6 ms	7.6 g	@ 101.9 ms

PELVIS ACCELERATION

LATERAL (P)	39.0 g	@ 44.4 ms	3.6 g	@ 96.9 ms
LATERAL (R)	39.1 g	@ 44.4 ms	3.6 g	@ 96.9 ms

POSITIVE DIRECTION

LONGITUDINAL: FORWARD
LATERAL: RIGHTWARD
VERTICAL: DOWNWARD

NEGATIVE DIRECTION

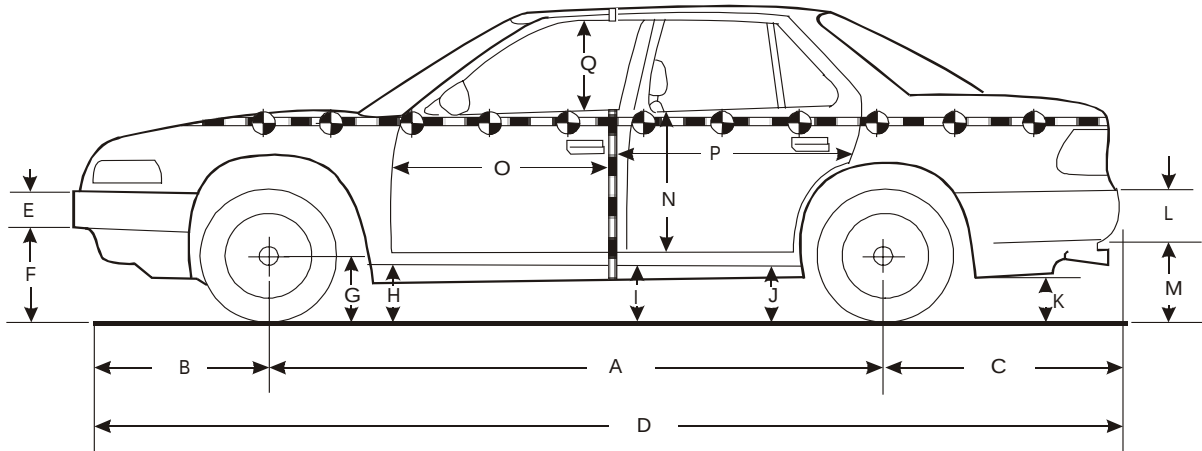
LONGITUDINAL: REARWARD
LATERAL: LEFTWARD
VERTICAL: UPWARD

Data Sheet 6

Vehicle Pre-Test And Post-Test Measurements

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513



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	2712	2712	2701	11
B	760	760	750	10
C	1055	1055	1055	0
D	4525	4525	4525	0
E	305	305	305	0
F	212	197	203	-6
G	295	294	296	-2
H	242	222	227	-5
I	260	238	280	-42
J1	201	175	175	0
J2	274	250	245	5
K	264	234	215	19
L	129	129	129	0
M	443	400	382	18
N	636	636	620	16
O	639	639	455	184
P	1454	1454	1330	124
Q	410	410	433	-23
R	4355	4355	4343	12
S	4355	4355	4331	24
T	1293	1293	1170	123

D = Length at centerline
T = Width at B-pillar

E&L = Bumper Thickness
J1 = To Pinch Weld

R = Right Side Length
J2 = To Sill

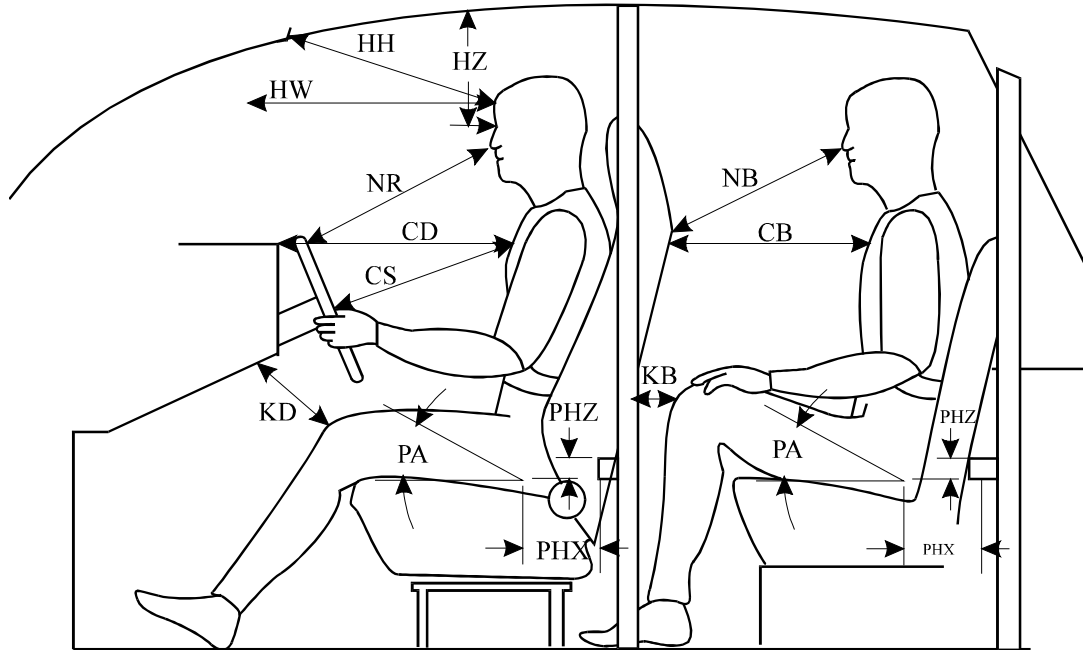
S = Left Side Length

Data Sheet 7

SID-H3 Longitudinal Clearance Dimensions

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513



Left Side View

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

Measurement	Driver SID-H3 # 066	Left Rear Pass. SID-H3 # 028
HH	366	N/A
HW	585	N/A
HZ	143	146
NR/NB	427	680
CD/CB	496	557
CS	346	N/A
KDL(KDA°)/KBL(KBA°)	107/(64.9°)	109/(73.0°)
KDR(KDA°)/KBR(KBA°)	75.0/(73.0°)	138/(71.8°)
PA°	23.8°	24.7°
PHX	176	223
PHZ	286	338

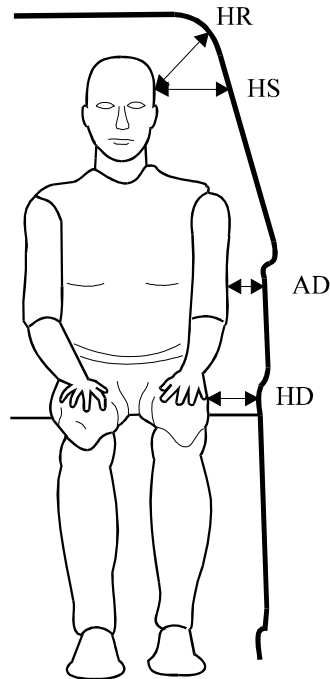
Note: 2-door vehicle shown. Rear dummy PHX and PHZ measurements for 4-door vehicle would use the C-post striker as a reference point.

Data Sheet 8

SID-H3 Lateral Clearance Dimensions

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513



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

Measurement	Driver SID-H3 # 066	Left Rear Pass. SID-H3 # 028
HR	190	172
HS	320	320
AD*	Lower: 102 Upper: 76	Lower: 116 Upper: 108
HD	128	185

* 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.

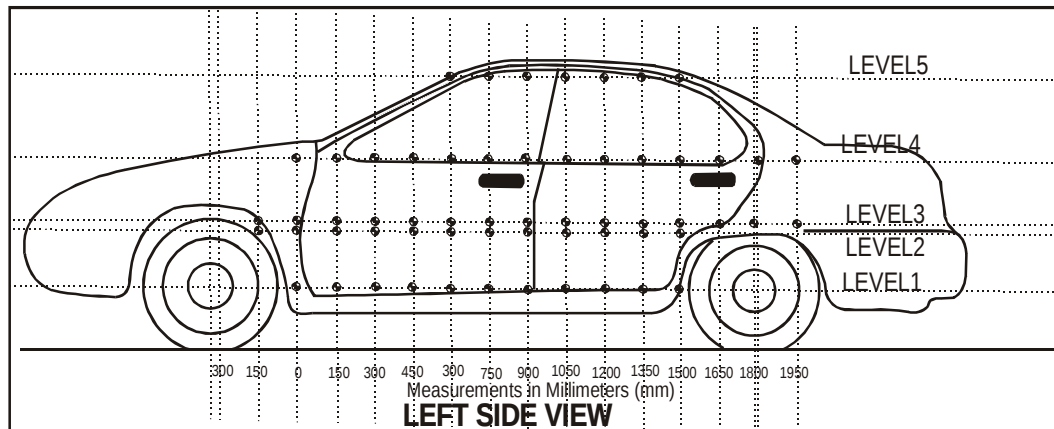
Upper measurement is taken laterally at center of the upper rib accelerometer height from the SID arm segment to the closest part of the vehicle side.

Data Sheet 9

Vehicle Side Measurements

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513



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 1050 mm line shown above:

Level 5 @ Window Top	=	<u>1375</u>	mm
Level 4 @ Window Sill	=	<u>860</u>	mm
Level 3 @ Mid Door	=	<u>623</u>	mm
Level 2 @ Occupant H-Point	=	<u>485</u>	mm
Level 1 @ Axle Centerline Height (or Sill Top Height)	=	<u>270</u>	mm

Data Sheet 10

Vehicle Exterior Crush Profiles - All Levels

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

Location	Height		(mm) From Impact Point													
			-1200	-1050	-900	-750	-600	-450	-300	-150	0	150	300	450	600	750
Level 1 Side Sill	270	Pre	---	---	---	---	---	---	---	---	680	690	690	695	694	696
		Post	---	---	---	---	---	---	---	---	741	760	771	783	788	795
		Crush	---	---	---	---	---	---	---	---	61	70	81	88	94	99
Level 2 H-Point	485	Pre	---	---	---	655	---	---	---	---	650	652	656	656	660	657
		Post	---	---	---	710	---	---	---	---	738	810	833	850	863	870
		Crush	---	---	---	55	---	---	---	---	88	158	177	194	203	213
Level 3 Mid-Door	623	Pre	---	---	---	670	---	---	---	638	650	653	654	653	654	654
		Post	---	---	---	725	---	---	---	705	740	775	823	850	880	895
		Crush	---	---	---	55	---	---	---	67	90	122	169	197	226	241
Level 4 Window Sill	860	Pre	---	---	---	---	760	737	721	710	700	698	694	684	680	675
		Post	---	---	---	---	807	794	774	760	767	793	800	831	852	872
		Crush	---	---	---	---	47	57	53	50	67	95	106	147	172	197
Level 5 Window Top	1375	Pre	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Post	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Crush	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Data Sheet 10 (Continued)

Vehicle Exterior Crush Profiles - All Levels

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

Location	Height		(mm) From Impact Point												
			900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700
Level 1 Side Sill	270	Pre	700	696	700	698	696	696	694	---	---	---	---	---	---
		Post	800	800	802	774	747	722	---	---	---	---	---	---	---
		Crush	100	104	102	76	51	26	---	---	---	---	---	---	---
Level 2 H-Point	485	Pre	657	658	660	660	661	665	667	659	---	---	---	---	691
		Post	874	875	875	885	863	837	810	694	---	---	---	---	700
		Crush	217	217	215	225	202	172	143	35	---	---	---	---	9
Level 3 Mid-Door	623	Pre	655	658	658	657	658	665	667	667	649	---	---	667	696
		Post	915	892	877	890	903	912	878	764	682	---	---	677	700
		Crush	260	234	219	233	245	247	211	97	33	---	---	10	4
Level 4 Window Sill	860	Pre	673	670	679	668	667	670	672	688	686	695	702	718	728
		Post	873	860	860	875	900	922	896	807	725	721	720	730	739
		Crush	200	190	181	207	233	252	224	119	39	26	18	12	11
Level 5 Window Top	1375	Pre	930	928	930	925	926	931	936	952	972	---	---	---	---
		Post	980	983	989	995	990	988	978	980	1000	---	---	---	---
		Crush	50	55	59	70	64	57	42	28	28	---	---	---	---

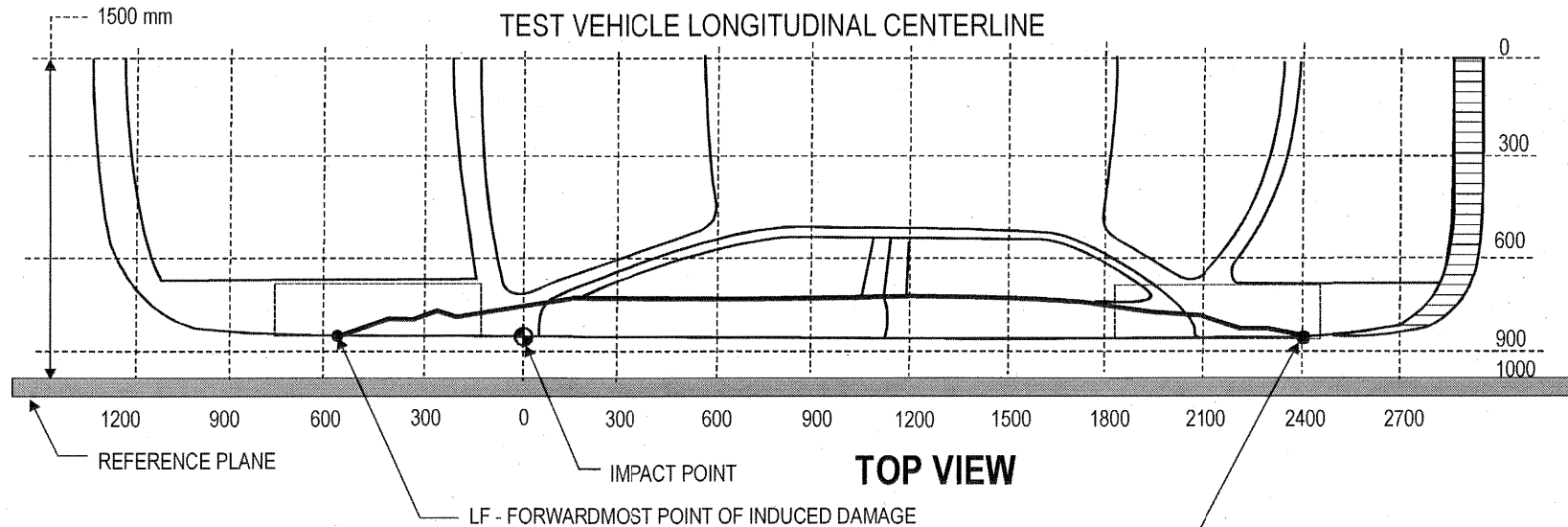
Data Sheet 11

Vehicle Damage Profile Distances

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

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)
6: LF = -150 mm (Level 3)	705	638	67
5: 300 mm (Level 2)	833	656	177
4: 750 mm (Level 3)	895	654	241
3: 1200 mm (Level 3)	877	658	219
2: 1650 mm (Level 4)	922	670	252
1: LR = 2100 mm (Level 4)	725	686	39

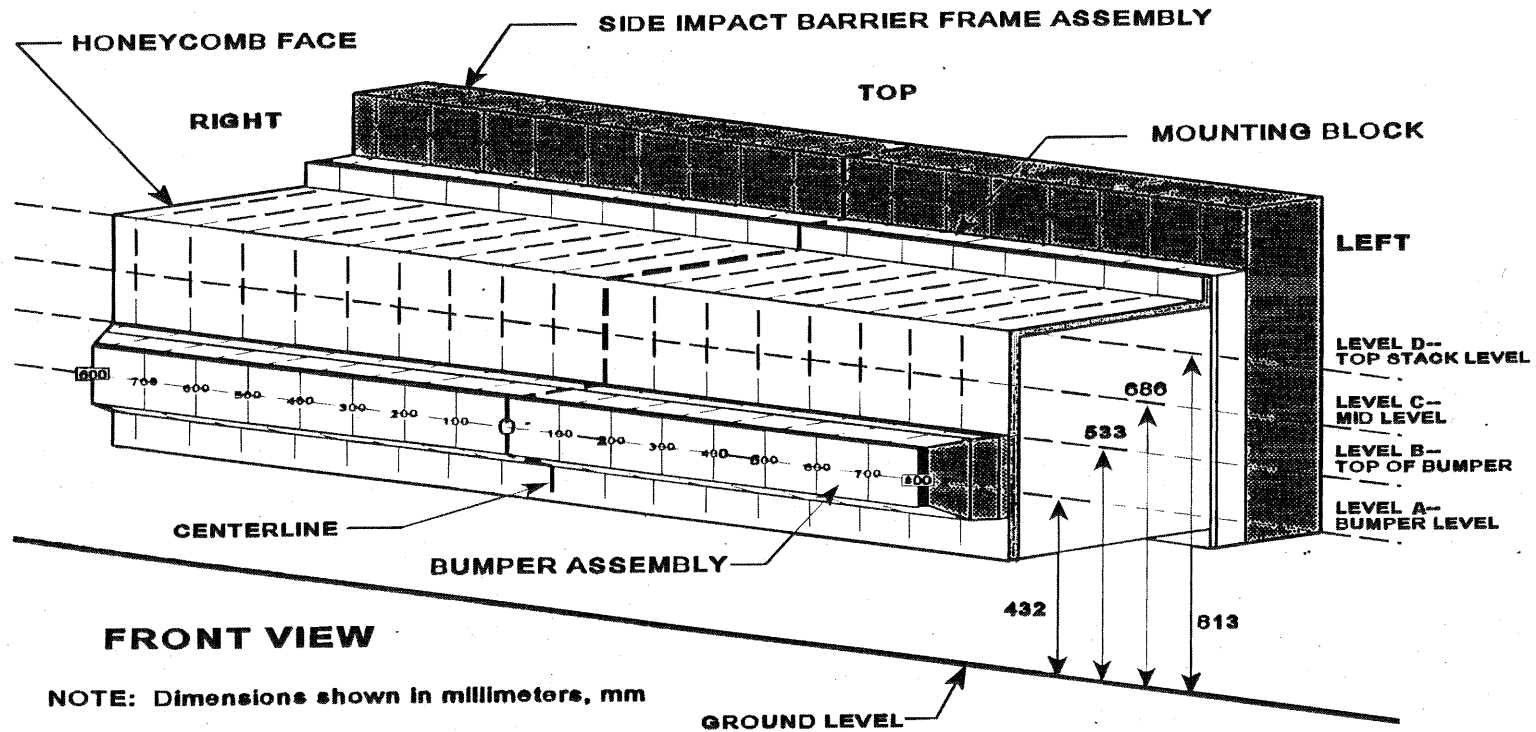
Data Sheet 12

Exterior Static Crush For Impactor Face

(Grid as looking at MDB from front)

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513



Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

Location	Height At CL	Distance Right of Center (mm)									Distance Left of Center (mm)							
		800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800
Top Stack Level - Level D	814	-39	-19	-28	-38	-64	-97	-92	-77	-46	-50	-52	-62	-76	-92	-123	-150	-160
Mid Level Level C	685	-47	-29	-31	-32	-53	-69	-60	-36	-29	-21	-24	-31	-45	-64	-106	-155	-150
Top Bumper Level - Level B	560	-112	-108	-100	-96	-96	-89	-90	-91	-93	-93	-94	-91	-94	-100	-111	-126	-136
Mid Bumper Level - Level A	432	-223	-208	-188	-174	-171	-165	-160	-155	-152	-151	-153	-154	-157	-165	-181	-197	-193

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

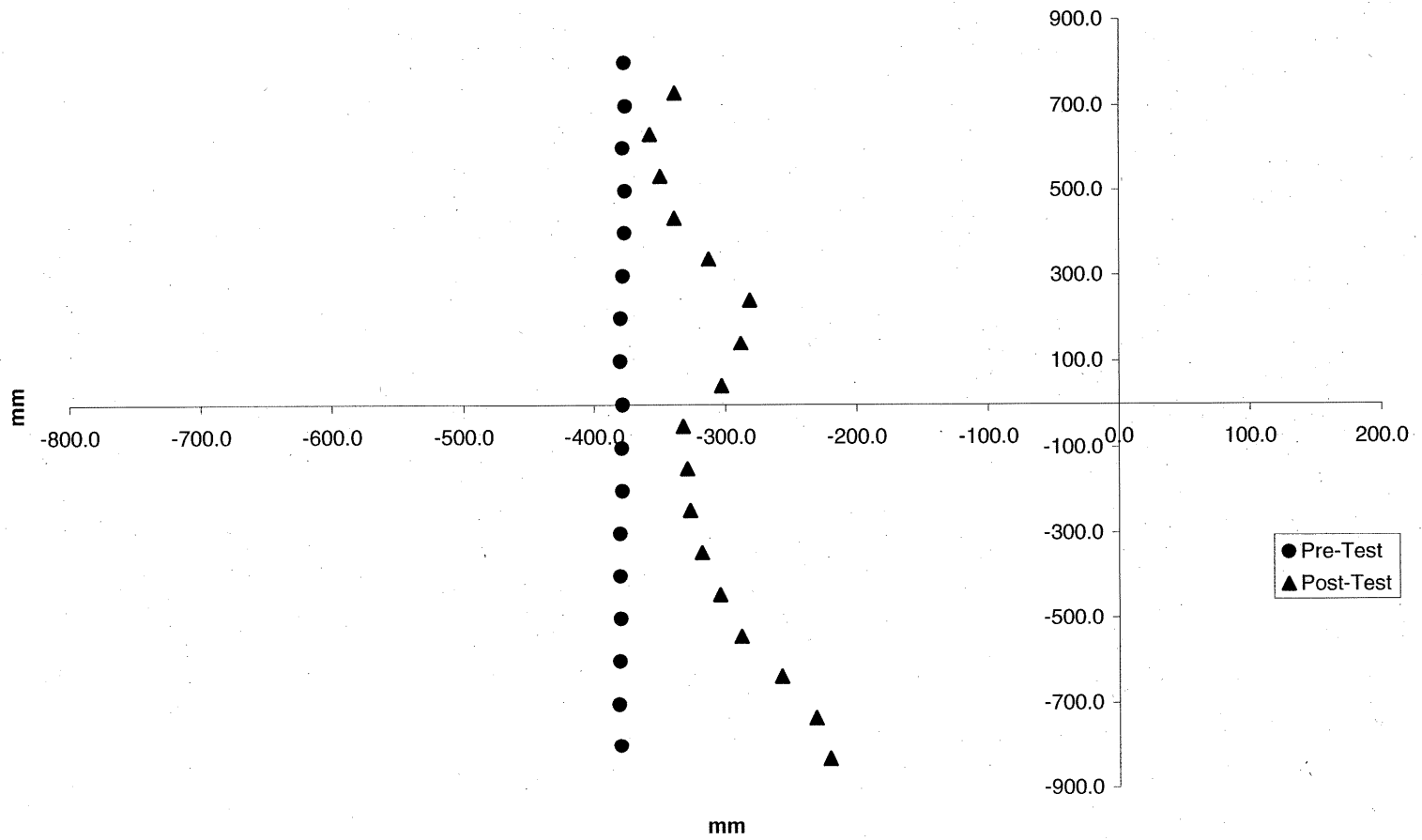
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

Level D - Deformable Barrier Face Profile 1-17



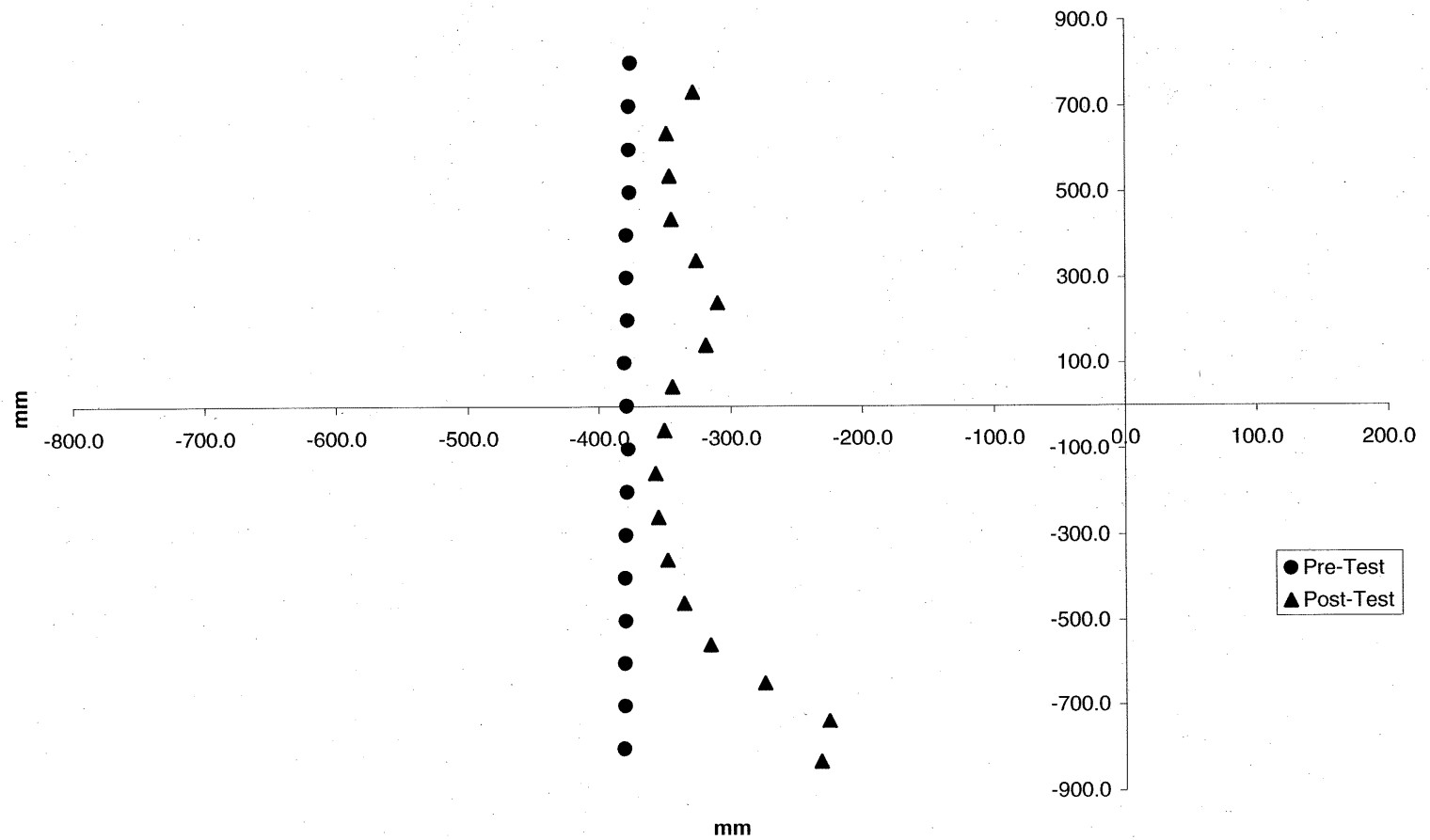
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

Level C - Deformable Barrier Face Profile 18-34



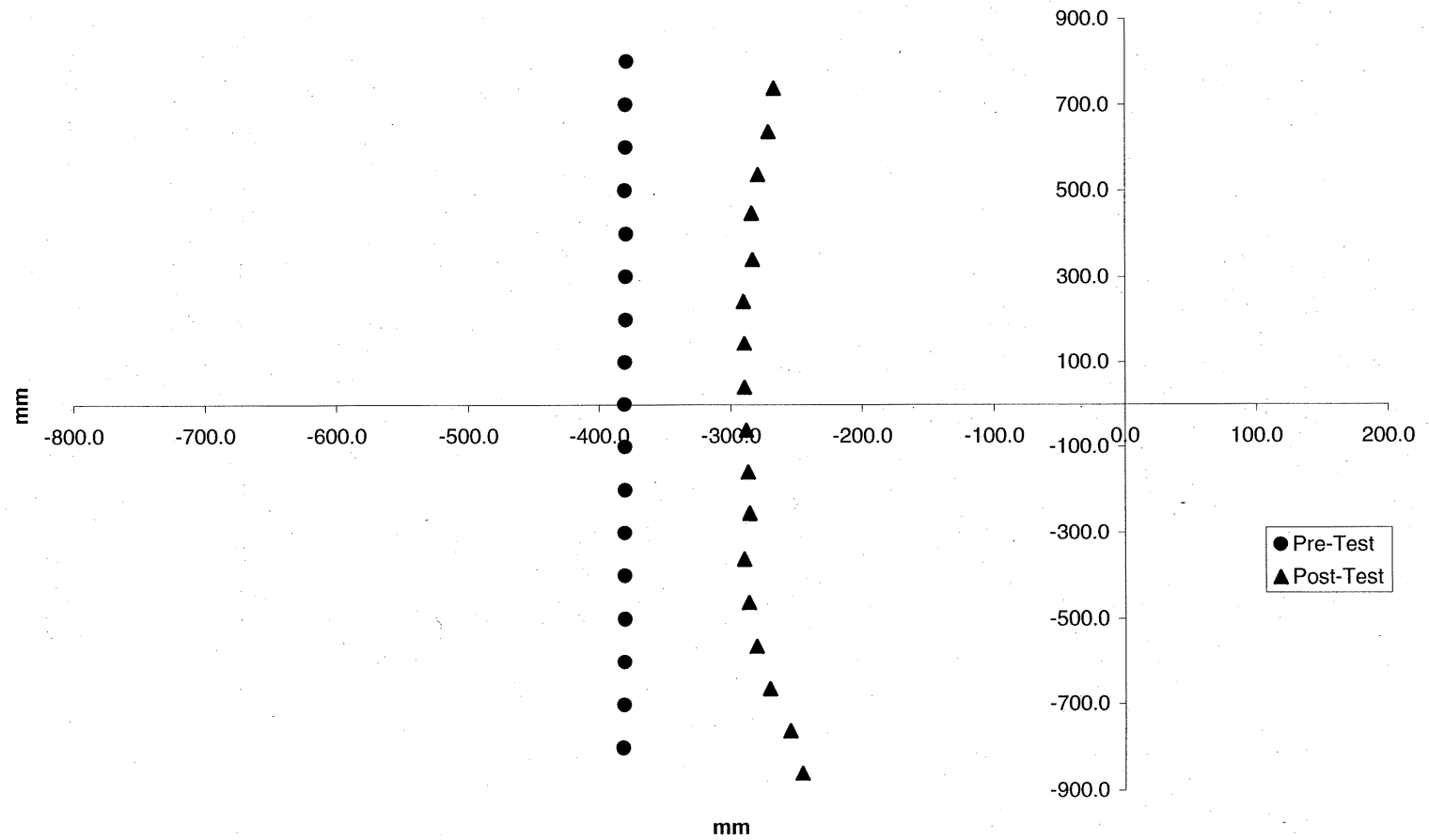
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

Level B - Deformable Barrier Face Profile 35-51



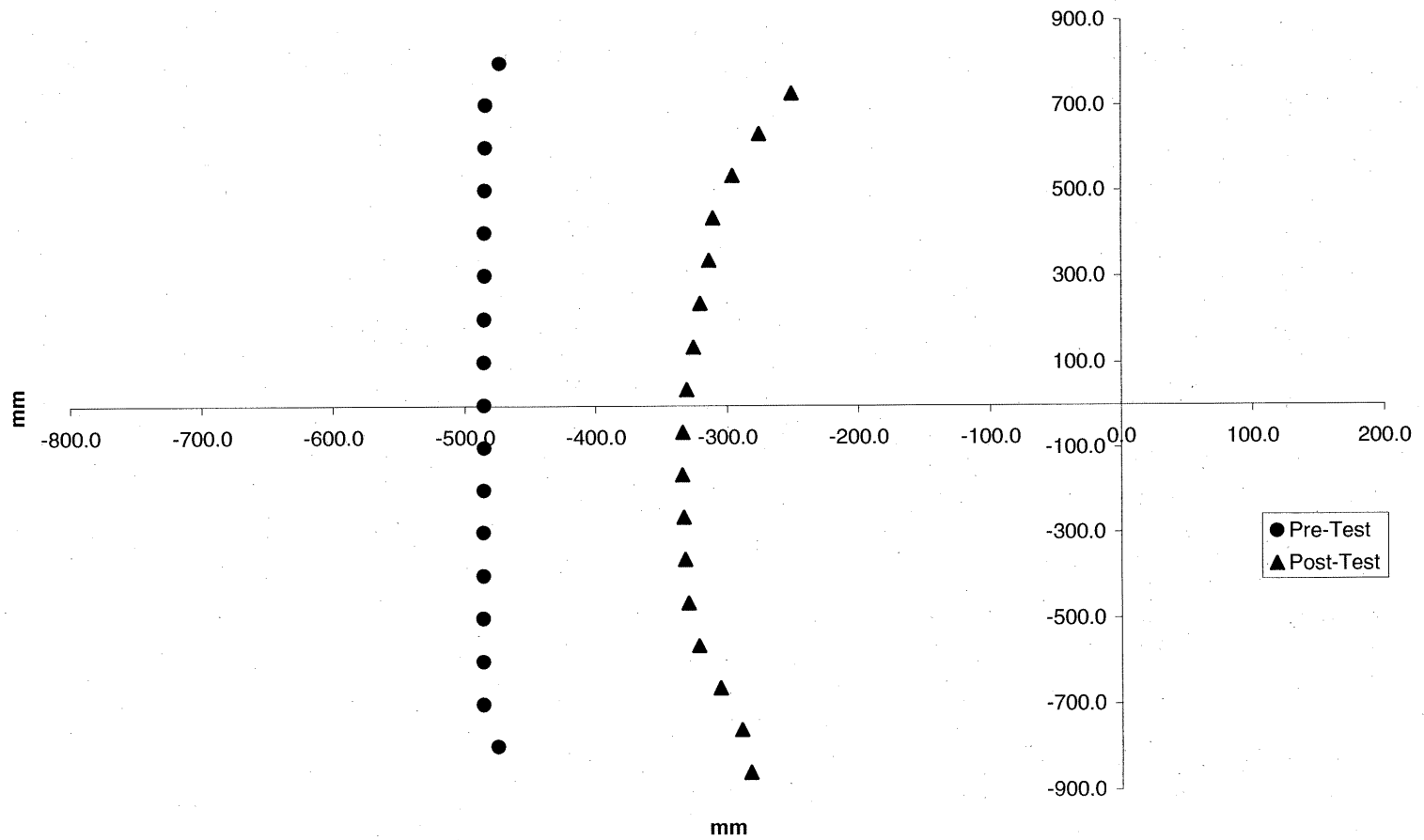
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

Level A - Deformable Barrier Face Profile 52-68



Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

Deformable Barrier Face Profile

Level D - Top Stack

Pre-Test

Index	Xmm	Ymm	Zmm
1	-377	801	-36
2	-376	700	-36
3	-378	600	-37
4	-376	500	-38
5	-377	400	-39
6	-378	299	-39
7	-380	201	-40
8	-380	100	-40
9	-378	0	-41
10	-379	-100	-41
11	-378	-201	-42
12	-380	-300	-43
13	-380	-400	-43
14	-380	-500	-43
15	-381	-600	-44
16	-381	-700	-45
17	-380	-800	-46

Post-Test

Index	Xmm	Ymm	Zmm
1	-338	730	-90
2	-357	633	-95
3	-349	534	-99
4	-339	435	-102
5	-313	339	-105
6	-281	243	-110
7	-288	143	-113
8	-303	43	-110
9	-332	-51	-102
10	-329	-150	-113
11	-327	-247	-101
12	-318	-346	-89
13	-304	-444	-81
14	-288	-542	-72
15	-258	-636	-66
16	-231	-733	-63
17	-221	-832	-62

Difference

Index	Xmm	Ymm	Zmm
1	-39	71	54
2	-19	66	59
3	-28	66	62
4	-38	65	64
5	-64	61	67
6	-97	56	71
7	-92	58	74
8	-77	57	70
9	-46	50	61
10	-50	49	72
11	-52	46	60
12	-62	45	47
13	-76	44	38
14	-92	42	29
15	-123	36	22
16	-150	32	18
17	-160	32	17

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

Deformable Barrier Face Profile Cont'd.

Level C - Mid Level

Pre-Test

Index	Xmm	Ymm	Zmm
18	-375	801	-165
19	-377	701	-165
20	-377	601	-166
21	-377	501	-167
22	-379	401	-167
23	-379	301	-168
24	-378	201	-168
25	-381	101	-169
26	-379	0	-170
27	-378	-100	-170
28	-379	-200	-171
29	-380	-299	-171
30	-381	-399	-172
31	-380	-499	-173
32	-381	-599	-174
33	-381	-700	-175
34	-382	-800	-176

Post-Test

Index	Xmm	Ymm	Zmm
18	-328	733	-219
19	-348	638	-223
20	-346	538	-226
21	-345	438	-230
22	-326	341	-234
23	-310	242	-235
24	-319	142	-233
25	-344	45	-227
26	-350	-56	-224
27	-357	-156	-219
28	-355	-258	-215
29	-348	-357	-208
30	-336	-458	-202
31	-316	-556	-197
32	-275	-647	-194
33	-226	-737	-193
34	-232	-831	-181

Difference

Index	Xmm	Ymm	Zmm
18	-47	68	54
19	-29	63	58
20	-31	63	60
21	-32	62	63
22	-53	60	67
23	-69	59	67
24	-60	59	64
25	-36	56	59
26	-29	56	54
27	-21	56	49
28	-24	58	44
29	-31	58	37
30	-45	59	30
31	-64	57	24
32	-106	48	21
33	-155	37	18
34	-150	31	5

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

Deformable Barrier Face Profile Cont'd.

Level B - Top of Bumper

Pre-Test

Index	Xmm	Ymm	Zmm
35	-379	800	-290
36	-380	701	-291
37	-380	601	-292
38	-380	501	-293
39	-379	400	-294
40	-380	301	-295
41	-380	200	-295
42	-380	100	-295
43	-381	1	-295
44	-380	-100	-297
45	-380	-201	-297
46	-381	-300	-298
47	-381	-400	-299
48	-381	-500	-299
49	-381	-601	-299
50	-381	-701	-300
51	-382	-800	-301

Post-Test

Index	Xmm	Ymm	Zmm
35	-267	738	-299
36	-271	637	-301
37	-279	537	-308
38	-284	448	-314
39	-283	341	-320
40	-290	243	-323
41	-289	145	-325
42	-289	41	-327
43	-288	-61	-322
44	-287	-159	-316
45	-286	-255	-312
46	-290	-362	-307
47	-287	-462	-305
48	-281	-563	-303
49	-270	-664	-298
50	-255	-762	-295
51	-246	-859	-294

Difference

Index	Xmm	Ymm	Zmm
35	-112	62	9
36	-108	63	10
37	-100	63	16
38	-96	53	21
39	-96	60	27
40	-89	57	28
41	-90	56	30
42	-91	59	32
43	-93	62	27
44	-93	59	19
45	-94	54	15
46	-91	62	9
47	-94	62	6
48	-100	63	4
49	-111	63	-1
50	-126	61	-5
51	-136	59	-6

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

Deformable Barrier Face Profile Cont'd.

Level A - Mid Bumper

Pre-Test

Index	Xmm	Ymm	Zmm
52	-473	800	-417
53	-484	702	-417
54	-484	602	-417
55	-484	501	-418
56	-485	402	-419
57	-485	302	-420
58	-485	201	-420
59	-486	102	-421
60	-486	2	-423
61	-486	-99	-424
62	-486	-199	-424
63	-486	-298	-424
64	-486	-399	-425
65	-487	-498	-426
66	-487	-599	-426
67	-487	-698	-428
68	-476	-797	-428

Post-Test

Index	Xmm	Ymm	Zmm
52	-251	728	-417
53	-276	633	-427
54	-296	535	-435
55	-311	436	-441
56	-314	337	-442
57	-320	237	-444
58	-326	137	-446
59	-331	37	-448
60	-334	-62	-450
61	-334	-163	-451
62	-333	-263	-450
63	-332	-363	-449
64	-330	-463	-448
65	-322	-562	-445
66	-306	-662	-439
67	-289	-759	-434
68	-283	-858	-431

Difference

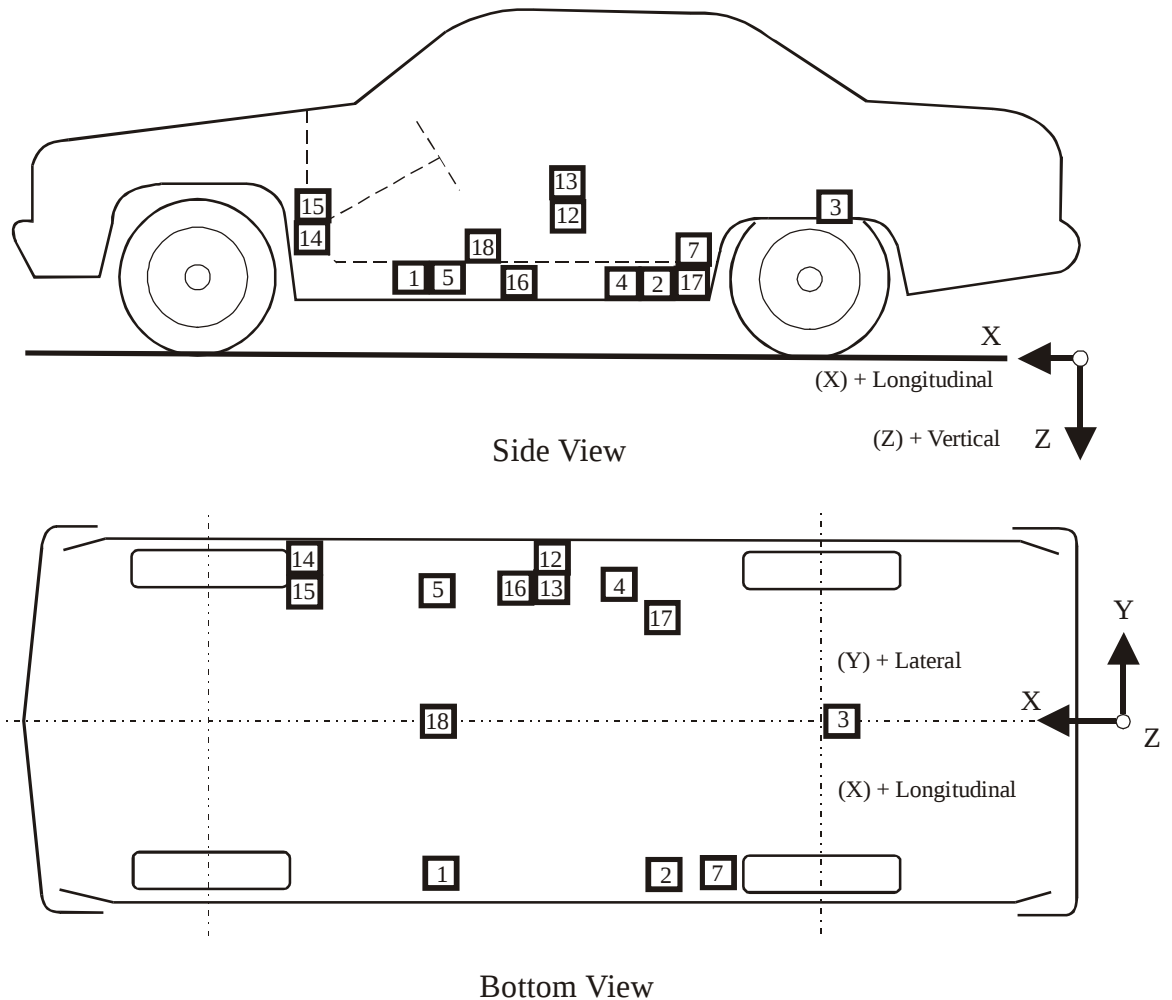
Index	Xmm	Ymm	Zmm
52	-223	71	0
53	-208	69	10
54	-188	66	18
55	-174	65	23
56	-171	65	23
57	-165	65	25
58	-160	65	26
59	-155	65	27
60	-152	64	27
61	-151	64	27
62	-153	64	26
63	-154	64	25
64	-157	64	23
65	-165	64	19
66	-181	62	13
67	-197	60	6
68	-193	61	3

Data Sheet 13

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513



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

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data SummaryVehicle: 2003 Mercedes-Benz C240 4-door SedanNHTSA No.: C30513

TEST NUMBER: 030505-1

No. LOCATION	X	Y	Z	POSITIVE DIRECTION		NEGATIVE DIRECTION	
1 RIGHT SIDE SILL AT FRONT SEAT	2917 mm	675 mm	-285 mm				
LONGITUDINAL				2.1 g	@ 57.1 ms	6.5 g	@ 11.7 ms
LATERAL				24.5 g	@ 7.8 ms	1.7 g	@ 175.4 ms
VERTICAL				6.0 g	@ 9.9 ms	4.1 g	@ 116.2 ms
RESULTANT				25.1 g	@ 7.9 ms		
2 RIGHT SIDE SILL AT REAR SEAT	1957 mm	675 mm	-275 mm				
LONGITUDINAL				2.3 g	@ 57.0 ms	5.8 g	@ 11.7 ms
LATERAL				29.7 g	@ 7.2 ms	2.2 g	@ 88.5 ms
VERTICAL				2.7 g	@ 85.4 ms	6.5 g	@ 15.7 ms
RESULTANT				29.9 g	@ 7.2 ms		
3 REAR FLOORPAN ABOVE AXLE	1139 mm	-15 mm	-448 mm				
LONGITUDINAL				4.6 g	@ 8.2 ms	9.6 g	@ 14.2 ms
LATERAL				29.3 g	@ 6.8 ms	1.4 g	@ 92.6 ms
VERTICAL				11.2 g	@ 13.5 ms	9.5 g	@ 21.4 ms
RESULTANT				29.9 g	@ 7.0 ms		
4 LEFT SIDE SILL AT REAR SEAT	1897 mm	-675 mm	-275 mm				
LATERAL				65.4 g	@ 6.7 ms	14.8 g	@ 14.6 ms
5 LEFT SIDE SILL AT FRONT SEAT	2932 mm	-675 mm	-299 mm				
LATERAL				128.2 g	@ 4.2 ms	37.3 g	@ 9.3 ms
7 RIGHT REAR OCCUPANT COMPARTMENT	1792 mm	0 mm	-261 mm				
LATERAL				28.0 g	@ 6.6 ms	1.5 g	@ 173.3 ms

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

TEST NUMBER: 030505-1
No. LOCATION

X

Y

Z

POSITIVE
DIRECTION

NEGATIVE
DIRECTION

12 LEFT LOWER B-POST LATERAL	2102 mm	-678 mm	-635 mm	178.8 g	@	4.2 ms	31.2 g	@	12.8 ms
13 LEFT MIDDLE B-POST LATERAL	2051 mm	-678 mm	-877 mm	122.8 g	@	5.0 ms	27.3 g	@	23.9 ms
14 LEFT LOWER A-POST LATERAL	3054 mm	-754 mm	-389 mm	91.8 g	@	3.2 ms	18.4 g	@	18.1 ms
15 LEFT MIDDLE A-POST LATERAL ¹	3077 mm	-754 mm	-710 mm	---	---	---	---	---	---
16 LEFT FRONT SEAT TRACK LATERAL	2319 mm	-560 mm	-275 mm	60.6 g	@	9.0 ms	7.0 g	@	49.7 ms
17 LEFT REAR SEAT TRACK LATERAL	1487 mm	-724 mm	-500 mm	102.2 g	@	4.5 ms	41.6 g	@	8.4 ms
18 VEHICLE CENTER OF GRAVITY	2599 mm	0 mm	-465 mm						
LONGITUDINAL				6.8 g	@	16.8 ms	8.4 g	@	28.8 ms
LATERAL				35.0 g	@	8.2 ms	7.4 g	@	53.4 ms
VERTICAL				12.6 g	@	20.0 ms	23.2 g	@	9.0 ms
RESULTANT				41.3 g	@	8.5 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.

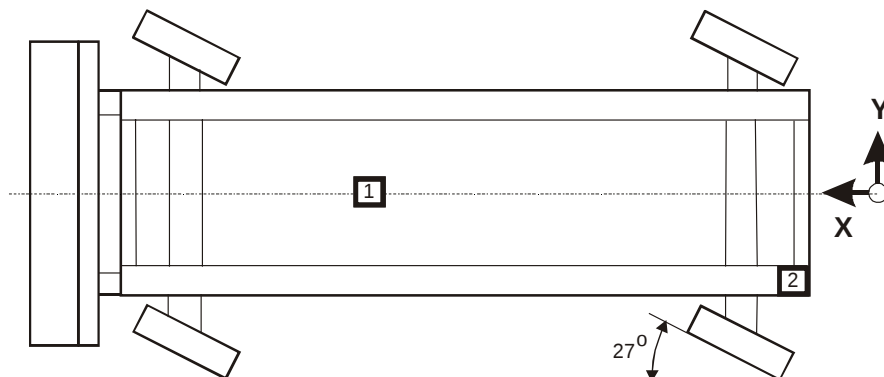
¹ See DATA ACQUISITION EXPLANATIONS on page 2-3

Data Sheet 14

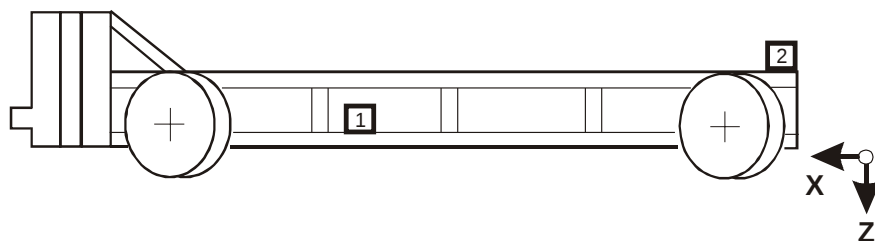
MDB Accelerometer Locations and Data Summary

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513



TOP VIEW



SIDE VIEW

Accel. No.	Location	Coordinates (millimeters)			Positive Direction		Negative Direction	
		X*	Y*	Z*	Max. (g)	Time (ms)	Max. (g)	Time (ms)
1	MDB Center of Gravity	1855	0	-520				
	Longitudinal X				2.3	186.2	-23.6	34.5
	Lateral Y				4.9	19.2	-12.5	22.6
	Vertical Z				8.3	15.1	-6.6	25.0
	Resultant R				25.2	22.7		
2	Rear Frame Member	412	-677	-625				
	Longitudinal X				2.7	116.2	-25.4	33.8
	Lateral Y				3.4	28.6	-3.5	141.6

*Reference: X = Rear Bumper (+ Forward)

Y = Vehicle Centerline (+ To Right)

Z = Ground Level (+ Down)

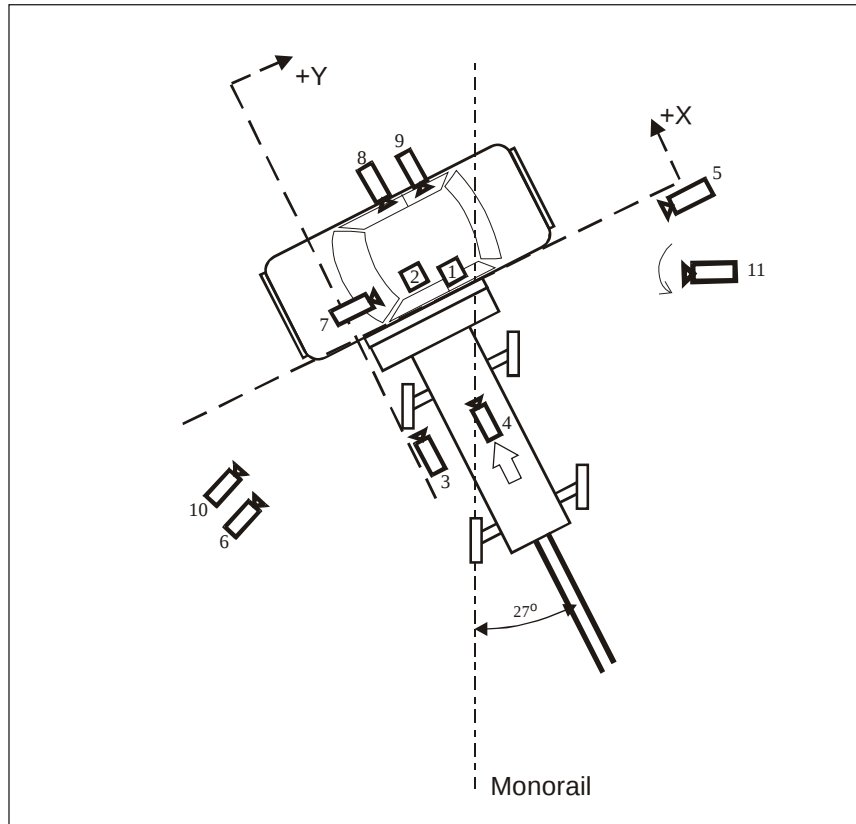
All measurements accurate to within ± 3 mm.

Data Sheet 15

High-Speed Camera Locations and Data Summary

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513



Impact
Area

Camera Number	Location	Location, mm			Lens		Speed (fps)
		X	Y	Z	(mm)	(deg)	
1	Overhead wide	250	2150	-5750	8.5	-77.5	N/A ¹
2	Overhead tight	370	1800	-5750	17	-85.5	1012
3	Onboard MDB left side	-1750	-40	-720	13	-0.5	1022
4	Onboard MDB center	-2480	830	-1353	25	-5.2	1010
5	Right side of MDB	50	11650	-1180	13	-1	1012
6	Left side of MDB	-2300	-5740	-1100	13	-2.9	1022
7	Onboard vehicle front	505	-180	-1180	8	-8.4	325
8	Onboard side front door	1670	910	-1020	8	-6	N/A ²
9	Onboard side rear door	1600	1700	-1500	8	-0.8	N/A ¹
10	Digital overall event	-2350	-5730	-1210	13	-4.3	1000
11	Real-time Panning-Video	N/A	N/A	N/A	Zoom	N/A	24

+X: Forward (referenced to MDB) from impact point

+Y: Rightward (referenced to MDB) from impact point

+Z: Downward from ground level

¹ No LEDs

² Camera did not run.

Section 5

Vehicle Fuel System Integrity

Data Sheet 16

FMVSS 301 Fuel System Integrity Data

NHTSA No.: C30513

Test Date: 05/19/03

Vehicle Year/Make/Model/Body Style: 2003 Mercedes-Benz C240 4-door Sedan

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
 (62.0 km/h) contacting the driver's side

Fuel Spillage Measurement:

1. From impact until vehicle motion ceases
2. For five-minute period after vehicle motion ceases
3. For next 25 minutes.

Actual	Maximum Allowed
0 g	28 g
0 g	142 g
0 g	28 g/1 minute

Solvent Spillage Details :

N/A

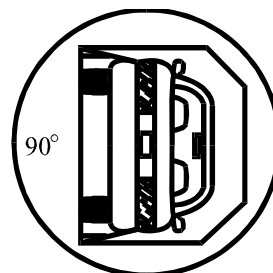
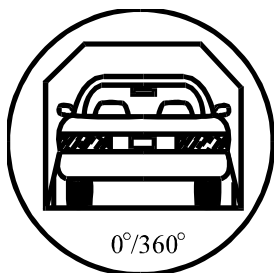
Data Sheet 17

FMVSS 301 Rollover Data

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

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

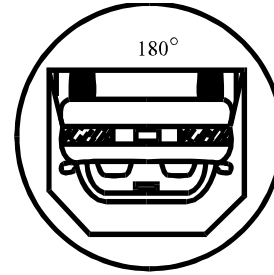
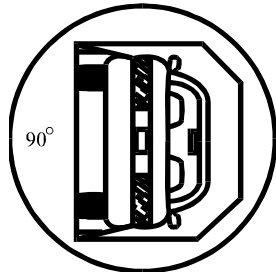
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

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):

None

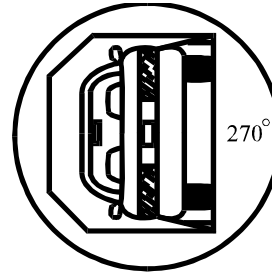
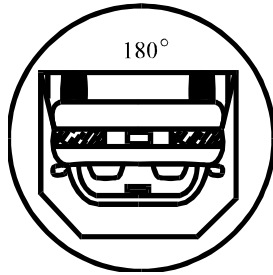
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

180 - 270 Degrees



1. Determination of Solvent Collection Time Period:

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

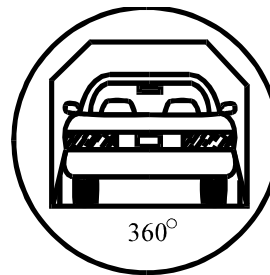
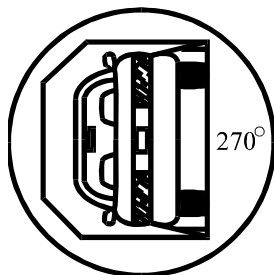
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

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):

None

Appendix A

Photographs

List of Photographs

<u>Figure</u>	<u>Description</u>	<u>Page</u>
Figure A-1	Pre-Test Front View of Test Vehicle	A-4
Figure A-2	Post-Test Front View of Test Vehicle	A-5
Figure A-3	Pre-Test Impacted Side View of Test Vehicle	A-6
Figure A-4	Post-Test Impacted Side View of Test Vehicle	A-7
Figure A-5	Pre-Test Rear View of Test Vehicle	A-8
Figure A-6	Post-Test Rear View of Test Vehicle	A-9
Figure A-7	Pre-Test Frontal View of Impactor Face	A-10
Figure A-8	Post-Test Frontal View of Impactor Face	A-11
Figure A-9	Pre-Test Left Side View of Impactor Face	A-12
Figure A-10	Post-Test Left Side View of Impactor Face	A-13
Figure A-11	Pre-Test Right Side View of Impactor Face	A-14
Figure A-12	Post-Test Right Side View of Impactor Face	A-15
Figure A-13	Pre-Test Top View of Impactor Face	A-16
Figure A-14	Post-Test Top View of Impactor Face	A-17
Figure A-15	Pre-Test View of MDB Showing Contact Switches in Place	A-18
Figure A-16	Post-Test Overhead View of MDB and Vehicle	A-19
Figure A-17	Pre-Test Right Occupant Compartment View of Front SID	A-20
Figure A-18	Post-Test Right Occupant Compartment View of Front SID	A-21
Figure A-19	Pre-Test Right Occupant Compartment View of Rear SID	A-22
Figure A-20	Post-Test Right Occupant Compartment View of Rear SID	A-23
Figure A-21	Pre-Test Left View of Front SID	A-24
Figure A-22	Post-Test Left View of Front SID	A-25
Figure A-23	Pre-Test Left View of Front SID and Belt Position	A-26
Figure A-24	Pre-Test View of Front SID and Door Clearance	A-27
Figure A-25	Post-Test View of Front SID and Door Clearance	A-28
Figure A-26	Pre-Test Left View of Rear SID	A-29
Figure A-27	Post-Test Left View of Rear SID	A-30
Figure A-28	Pre-Test Left View of Rear SID and Belt Position	A-31

List of Photographs, Cont'd.

<u>Figure</u>	<u>Description</u>	<u>Page</u>
Figure A-29	Pre-Test View of Rear SID and Door Clearance	A-32
Figure A-30	Post-Test View of Rear SID and Door Clearance	A-33
Figure A-31	Pre-Test Interior of Front Door	A-34
Figure A-32	Post-Test Interior of Front Door Showing SID Impact Locations	A-35
Figure A-33	Post-Test Front SID Contact - View 1	A-36
Figure A-34	Post-Test Front SID Contact - View 2	A-37
Figure A-35	Post-Test Front SID Contact - View 3	A-38
Figure A-36	Post-Test Front SID Contact - View 4	A-39
Figure A-37	Pre-Test Interior of Rear Panel	A-40
Figure A-38	Post-Test Interior of Rear Panel Showing SID Impact Locations	A-41
Figure A-39	Post-Test Rear SID Contact - View 1	A-42
Figure A-40	Post-Test Rear SID Contact - View 2	A-43
Figure A-41	Post-Test Rear SID Contact - View 3	A-44
Figure A-42	Post-Test Rear SID Contact - View 4	A-45
Figure A-43	Pre-Test Left Side View of MDB With Impactor Face in Position	A-46
Figure A-44	Pre-Test Primary Impact Point View	A-47
Figure A-45	Post-Test Primary Impact Point View	A-48
Figure A-46	Pre-Test Right Side View of MDB With Impactor Face in Position	A-49
Figure A-47	Pre-Test Secondary Impact Point View	A-50
Figure A-48	Post-Test Secondary Impact Point View	A-51
Figure A-49	Pre-Test Vehicle Certification Label View	A-52
Figure A-50	Pre-Test Vehicle Recommended Tire Pressure Label View	A-53
Figure A-51	Impact Event	A-54
Figure A-52	Pre-Test Fuel Cap	A-55
Figure A-53	Post-Test Fuel Cap	A-56
Figure A-54	FMVSS 301 Rollover View at 90°	A-57
Figure A-55	FMVSS 301 Rollover View at 180°	A-58
Figure A-56	FMVSS 301 Rollover View at 270°	A-59
Figure A-57	FMVSS 301 Rollover View at 360°	A-60



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

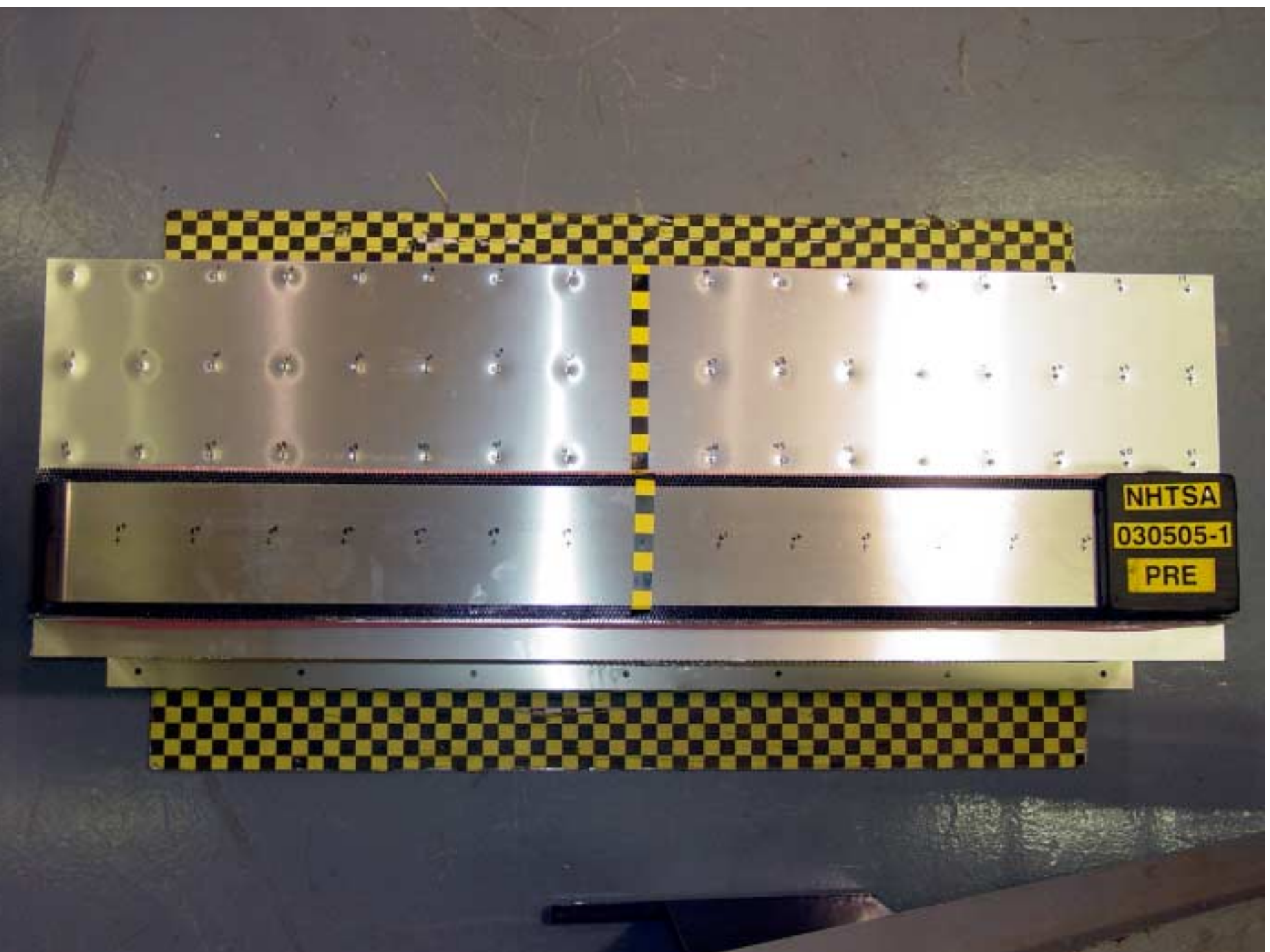


Figure A-7 Pre-Test Frontal View of Impactor Face



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

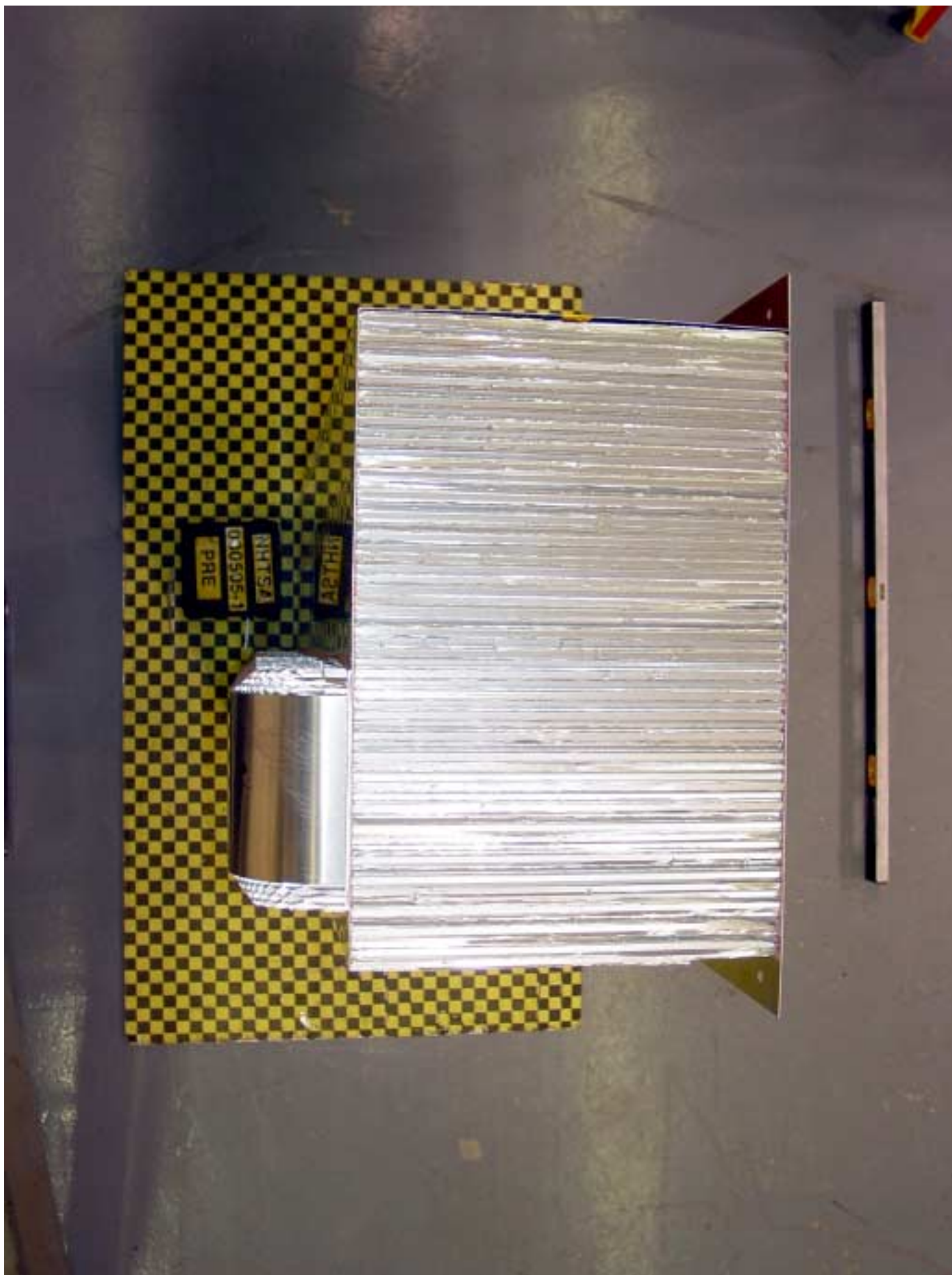


Figure A-9 Pre-Test Left Side View of Impactor Face

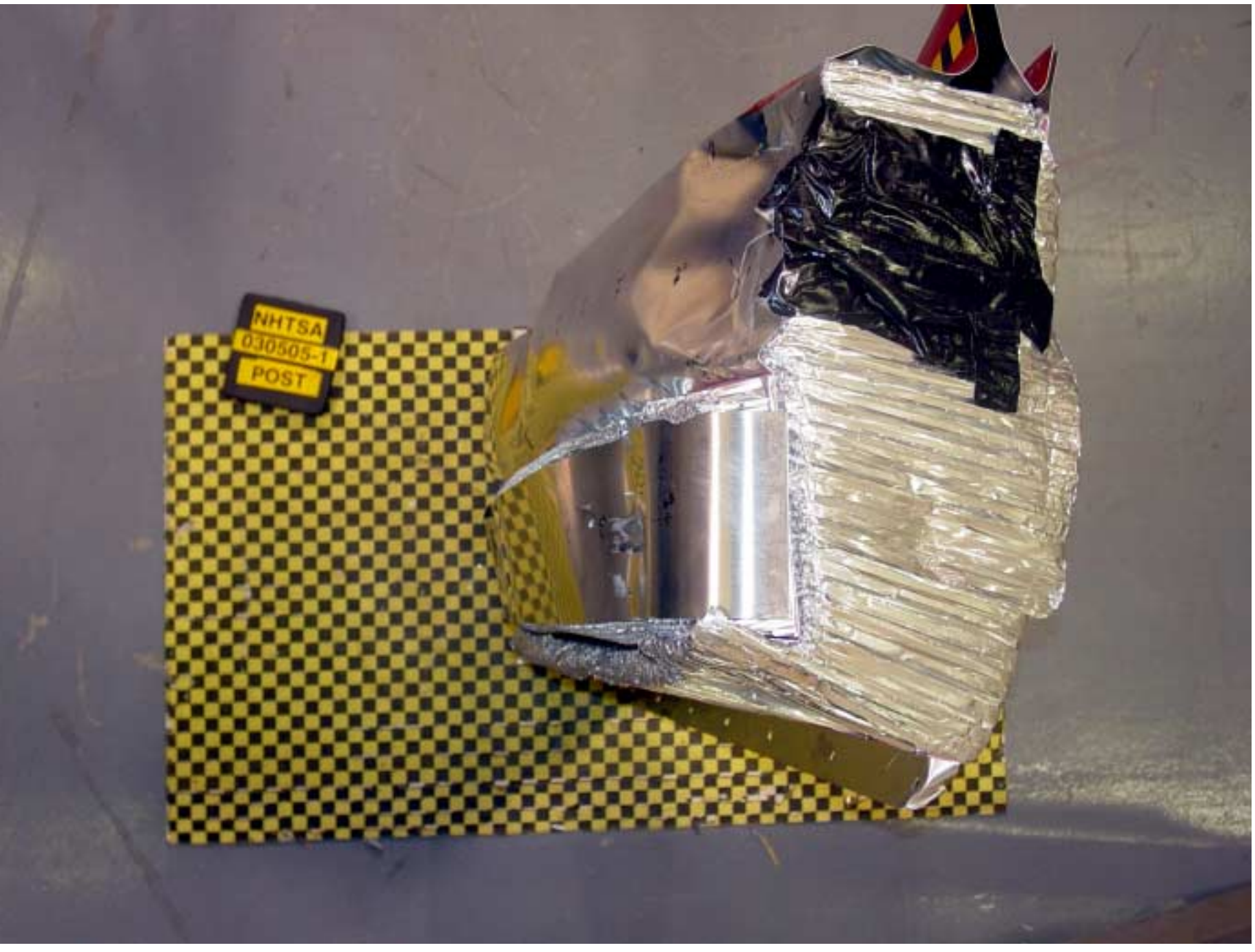


Figure A-10 Post-Test Left Side View of Impactor Face



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

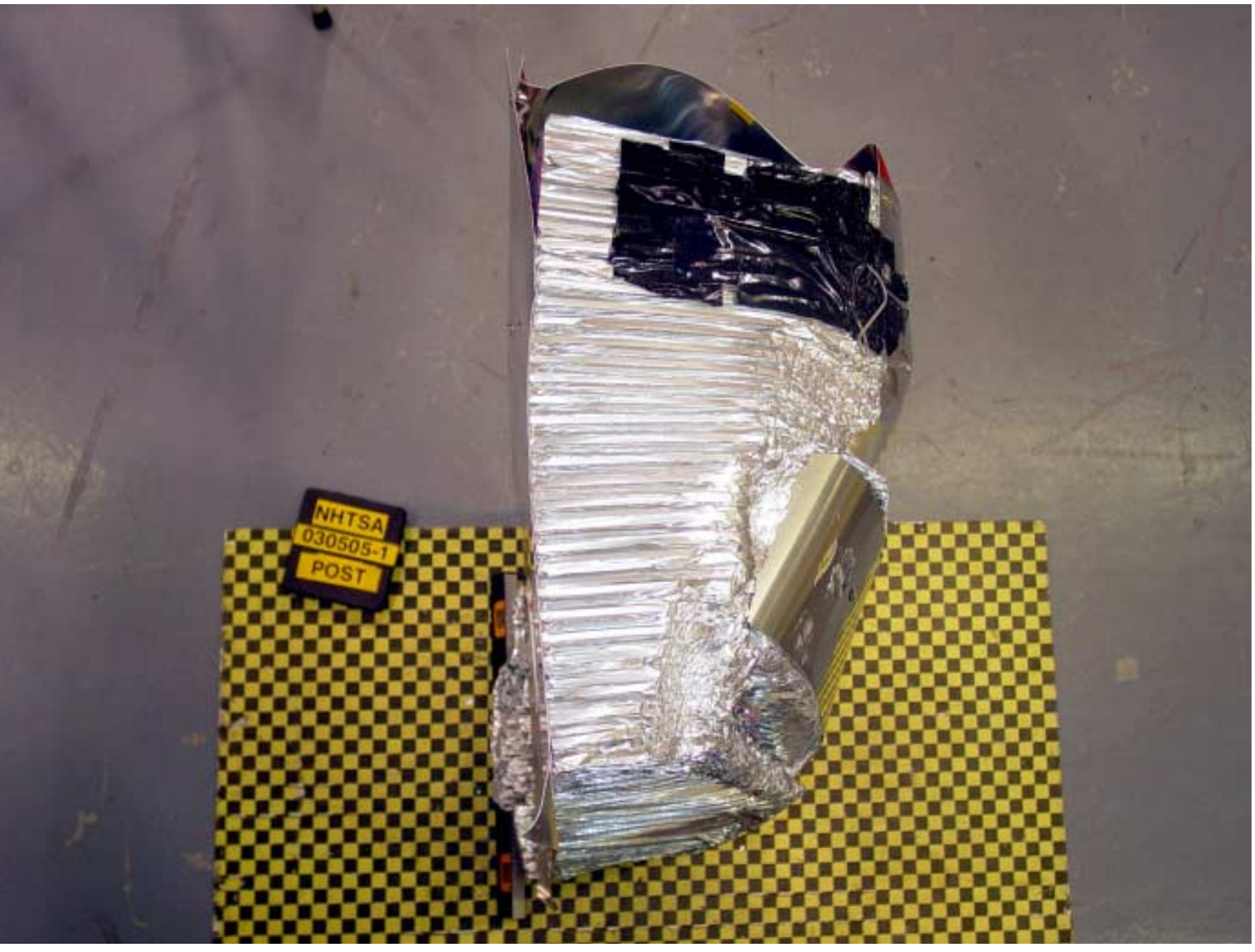


Figure A-12 Post-Test Right Side View of Impactor Face

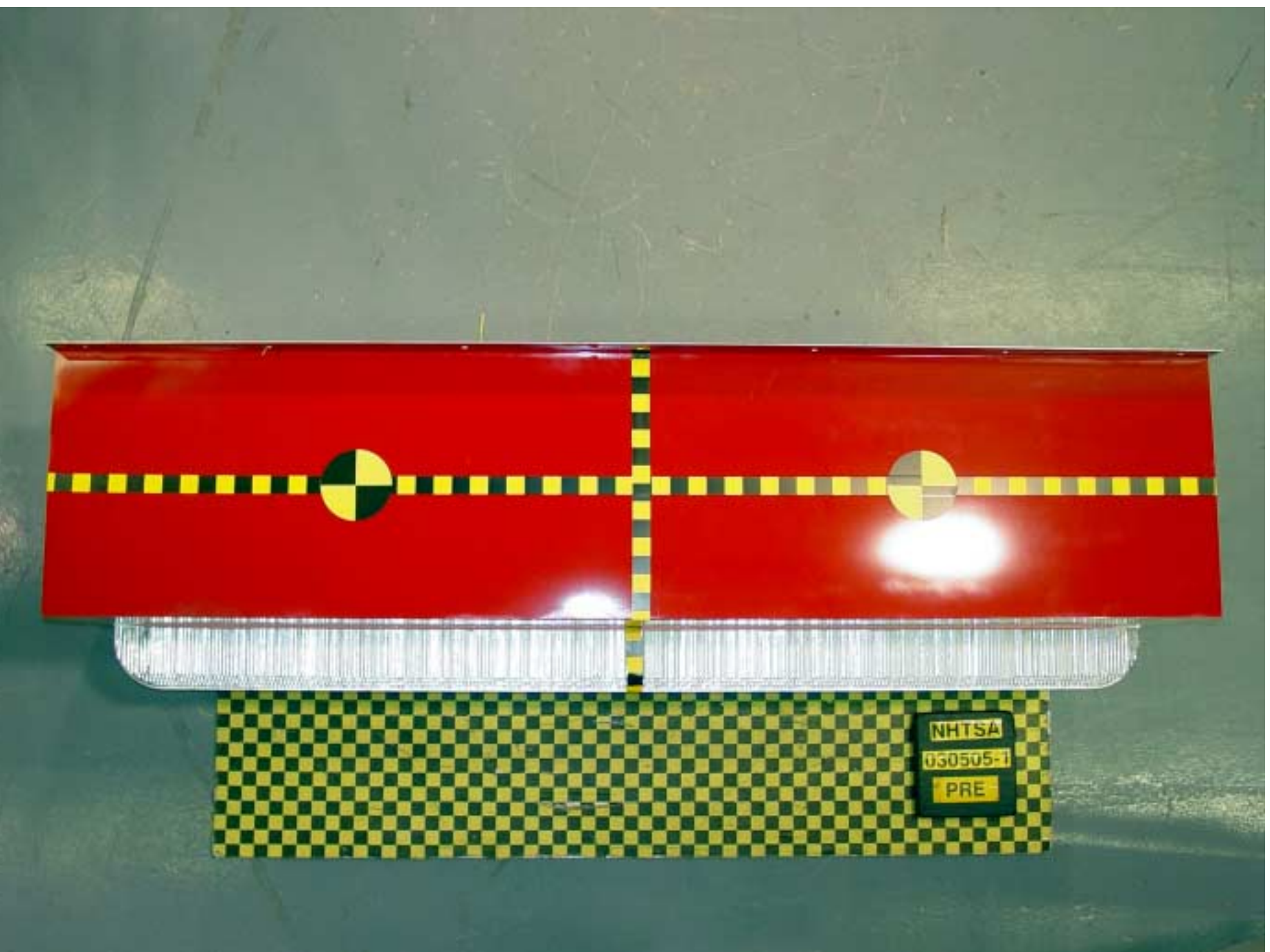


Figure A-13 Pre-Test Top View of Impactor Face

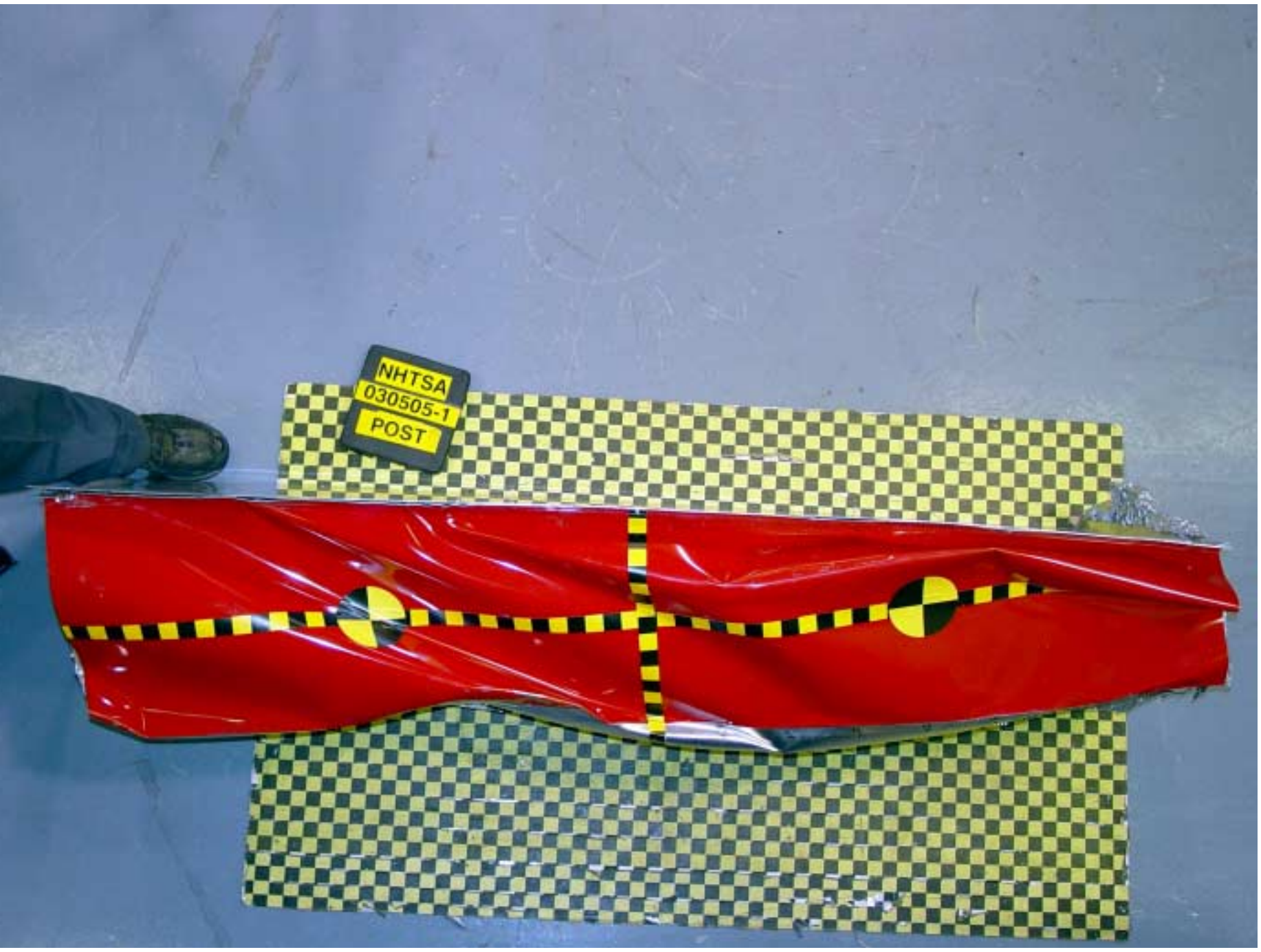


Figure A-14 Post-Test Top View of Impactor Face

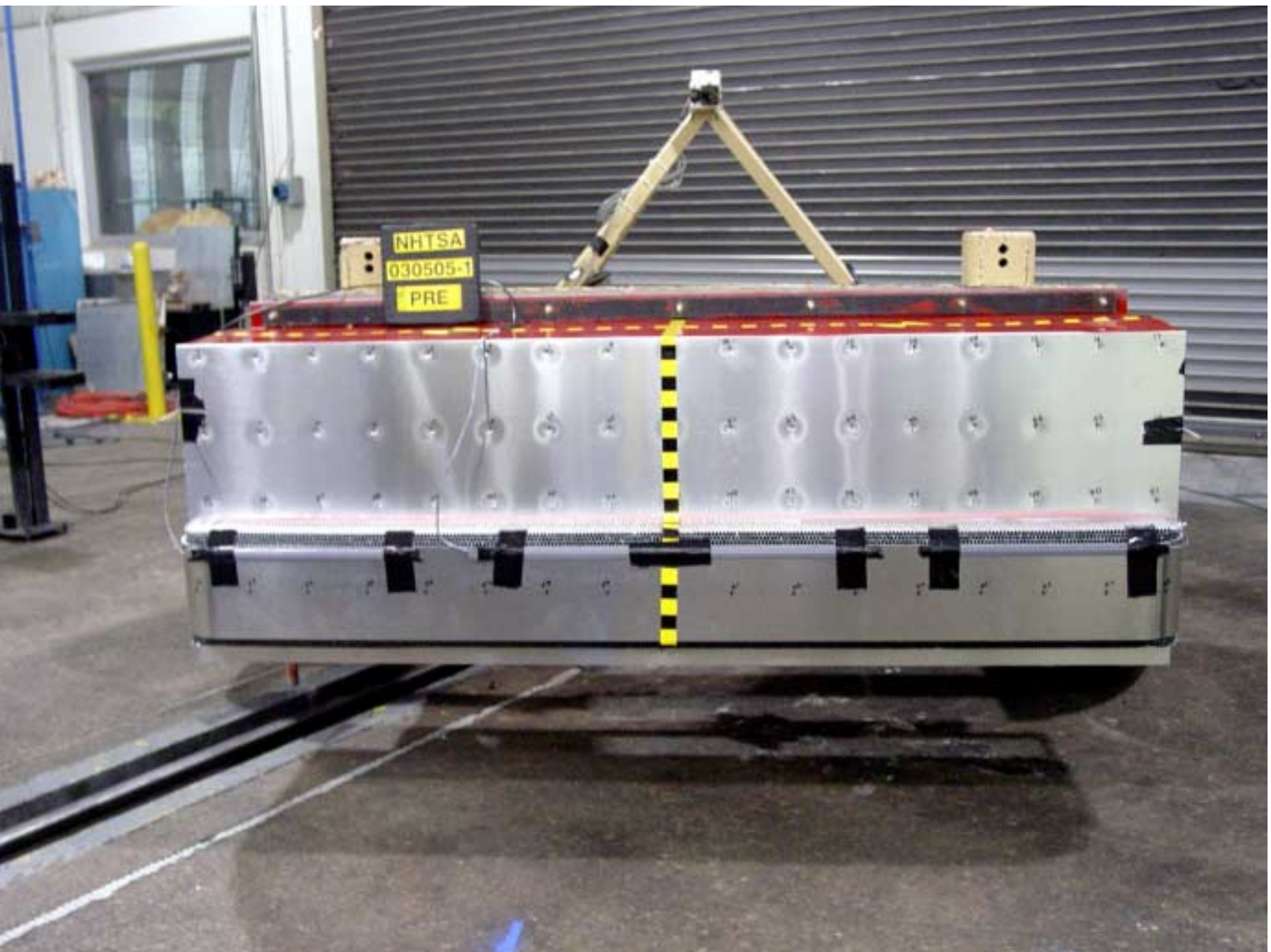


Figure A-15 Pre-Test View of MDB Showing Contact Switches in Place

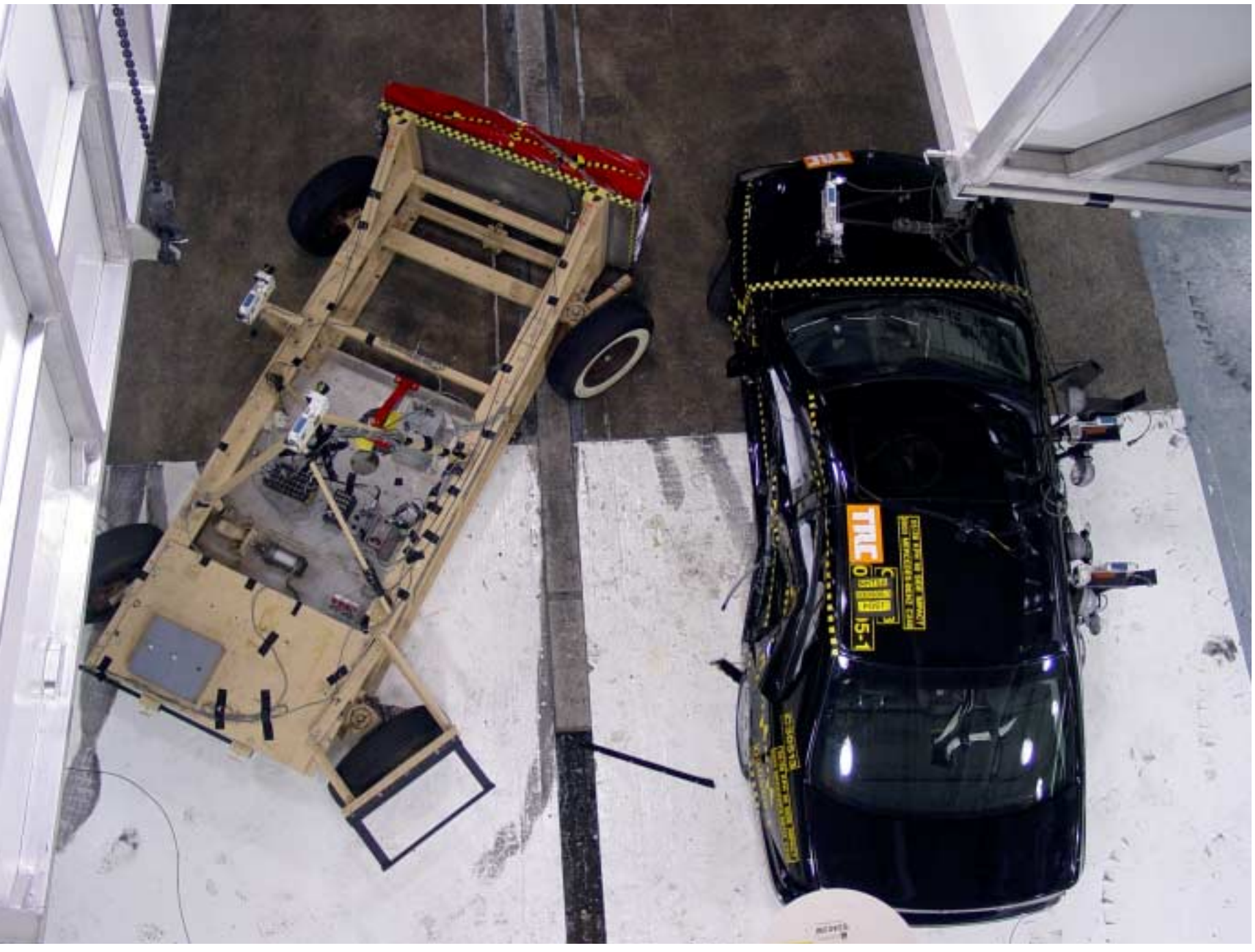


Figure A-16 Post-Test Overhead View of MDB and Vehicle



Figure A-17 Pre-Test Right Occupant Compartment View of Front SID



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



Figure A-19 Pre-Test Right Occupant Compartment View of Rear SID



Figure A-20 Post-Test Right Occupant Compartment View of Rear SID



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



Figure A-22 Post-Test Left View of Front SID



Figure A-23 Pre-Test Left View of Front SID and Belt Position



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



Figure A-25 Post-Test View of Front SID and Door Clearance



Figure A-26 Pre-Test Left View of Rear SID



Figure A-27 Post-Test Left View of Rear SID



Figure A-28 Pre-Test Left View of Rear SID and Belt Position



Figure A-29 Pre-Test View of Rear SID and Door Clearance

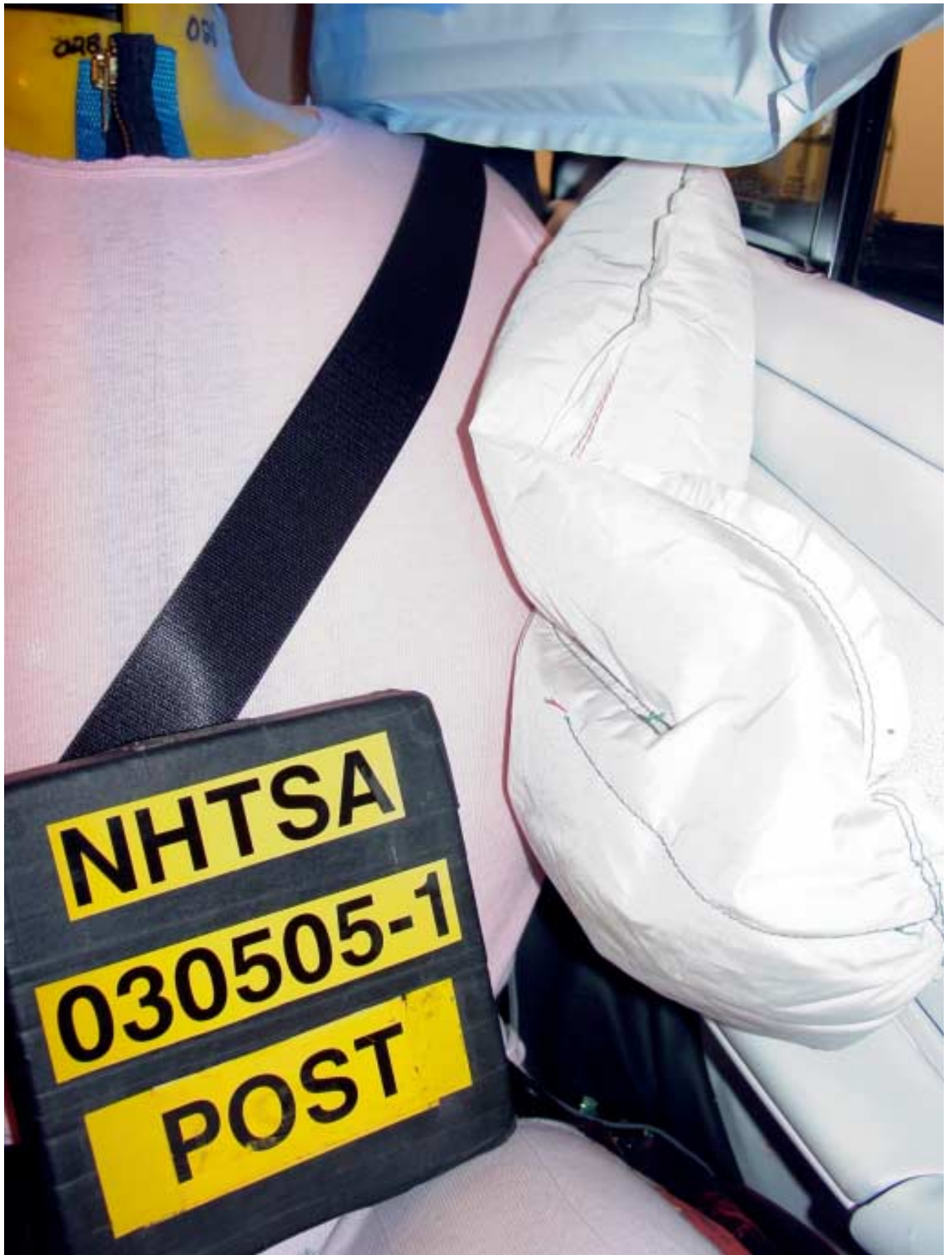


Figure A-30 Post-Test View of Rear SID and Door Clearance



Figure A-31 Pre-Test Interior of Front Door



Figure A-32 Post-Test Interior of Front Door Showing SID Impact Location



Figure A-33 Post-Test Front SID Contact – View 1



Figure A-34 Post-Test Front SID Contact – View 2



Figure A-35 Post-Test Front SID Contact – View 3



Figure A-36 Post-Test Front SID Contact – View 4



Figure A-37 Pre-Test Interior of Rear Panel



Figure A-38 Post-Test Interior of Rear Panel Showing SID Impact Locations



Figure A-39 Post-Test Rear SID Contact - View 1



Figure A-40 Post-Test Rear SID Contact - View 2



Figure A-41 Post-Test Rear SID Contact - View 3



Figure A-42 Post-Test Rear SID Contact - View 4



Figure A-43 Pre-Test Left Side View of MDB With Impactor Face in Position



Figure A-44 Pre-Test Primary Impact Point View



Figure A-45 Post-Test Primary Impact Point View



Figure A-46 Pre-Test Right Side View of MDB With Impactor Face in Position



Figure A-47 Pre-Test Secondary Impact Point View



Figure A-48 Post-Test Secondary Impact Point View

MFD BY DAIMLERCHRYSLER AG STUTTGART

	KG	LBS
GVWR	1950	4300
GAWR FRONT	945	2085
GAWR REAR	1005	2215

PASSENGER CAR MADE IN GERMANY 01/03
THIS VEHICLE CONFORMS TO ALL APPLICABLE
U.S. FEDERAL MOTOR VEHICLE SAFETY BUMPER
AND THEFT PREVENTION STANDARDS IN EFFECT
ON THE DATE OF MANUFACTURE SHOWN ABOVE

WDBRF61J93A491553 040



Figure A-49 Pre-Test Vehicle Certification Label View

VEHICLE TIRE INFORMATION

VEHICLE CAPACITY WEIGHT	392 KG (865 LBS)	
SEATING CAPACITY	5	
COLD TIRE PRESSURE	FRONT 2	REAR 3
RECOMMENDED TIRE SIZE	FRONT 28 PSI	REAR 32 PSI
SUMMER TIRE	205/55 R16 91H	
	225/50 R16 92V	
	225/45 R17 91W	
	225/45 R17 91Y	
	205/55 R16 91H M&S	
WINTER TIRE		
FOR ADDITIONAL INFORMATION SEE INSIDE FILLER PIPE COVER AND OWNER'S MANUAL.		
A 203 584 29 79		5880466

Figure A-50 Pre-Test Vehicle Recommended Tire Pressure Label View



Figure A-51 Impact Event



Figure A-52 Pre-Test Fuel Cap



Figure A-53 Post-Test Fuel Cap



Figure A-54 FMVSS 301 Rollover View at 90°



Figure A-55 FMVSS 301 Rollover View at 180°



Figure A-56 FMVSS 301 Rollover View at 270°



Figure A-57 FMVSS 301 Rollover View at 360°

Appendix B

Data Plots

Table of Data Plots

Driver and Passenger 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

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
1	Driver Head X-Axis Acceleration	B-10
2	Driver Head X-Axis Velocity	B-11
3	Driver Head Y-Axis Acceleration	B-12
4	Driver Head Y-Axis Velocity	B-13
5	Driver Head Z-Axis Acceleration	B-14
6	Driver Head Z-Axis Velocity	B-15
7	Driver Head Resultant Acceleration	B-16
8	Driver Neck X-Axis Shear Force	B-17
9	Driver Neck Y-Axis Shear Force	B-18
10	Driver Neck Z-Axis Axial Force	B-19
11	Driver Neck Moment about X Axis	B-20
12	Driver Neck Moment about Y Axis	B-21
13	Driver Neck Moment about Z Axis	B-22
14	Driver Neck Occipital Condyle Moment about X Axis	B-23
15	Driver Upper Rib Y-Axis Acceleration	B-24
16	Driver Upper Rib Y-Axis Velocity	B-25
17	Driver Lower Rib Y-Axis Acceleration	B-26
18	Driver Lower Rib Y-Axis Velocity	B-27
19	Driver Lower Spine Y-Axis Acceleration	B-28
20	Driver Lower Spine Y-Axis Velocity	B-29
21	Driver Pelvis Y-Axis Acceleration	B-30
22	Driver Pelvis Y-Axis Velocity	B-31
23	Driver Shoulder Contact Switch	B-32
24	Driver Pelvis Contact Switch	B-33

Table of Data Plots (Continued)

Driver and Passenger Dummy Instrumentation Plots (Continued)

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

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
25	Left Rear Passenger Head X-Axis Acceleration	B-34
26	Left Rear Passenger Head X-Axis Velocity	B-35
27	Left Rear Passenger Head Y-Axis Acceleration	B-36
28	Left Rear Passenger Head Y-Axis Velocity	B-37
29	Left Rear Passenger Head Z-Axis Acceleration	B-38
30	Left Rear Passenger Head Z-Axis Velocity	B-39
31	Left Rear Passenger Head Resultant Acceleration	B-40
32	Left Rear Passenger Neck X-Axis Shear Force	B-41
33	Left Rear Passenger Neck Y-Axis Shear Force	B-42
34	Left Rear Passenger Neck Z-Axis Axial Force	B-43
35	Left Rear Passenger Neck Moment about X Axis	B-44
36	Left Rear Passenger Neck Moment about Y Axis	B-45
37	Left Rear Passenger Neck Moment about Z Axis	B-46
38	Left Rear Passenger Neck Occipital Condyle Moment about X Axis	B-47
39	Left Rear Passenger Upper Rib Y-Axis Acceleration	B-48
40	Left Rear Passenger Upper Rib Y-Axis Velocity	B-49
41	Left Rear Passenger Lower Rib Y-Axis Acceleration	B-50
42	Left Rear Passenger Lower Rib Y-Axis Velocity	B-51
43	Left Rear Passenger Lower Spine Y-Axis Acceleration	B-52
44	Left Rear Passenger Lower Spine Y-Axis Velocity	B-53
45	Left Rear Passenger Pelvis Y-Axis Acceleration	B-54
46	Left Rear Passenger Pelvis Y-Axis Velocity	B-55
47	Left Rear Passenger Shoulder Contact Switch	B-56
48	Left Rear Passenger Pelvis Contact Switch	B-57

Table of Data Plots (Continued)

Driver and Passenger Dummy Instrumentation Plots

Acceleration Data - Filter Class 1000 - Redundant

Integration Data - Filter Class 180 - Redundant

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
49	Driver Head X-Axis Redundant Acceleration	B-59
50	Driver Head X-Axis Redundant Velocity	B-60
51	Driver Head Y-Axis Redundant Acceleration	B-61
52	Driver Head Y-Axis Redundant Velocity	B-62
53	Driver Head Z-Axis Redundant Acceleration	B-63
54	Driver Head Z-Axis Redundant Velocity	B-64
55	Driver Head Resultant Redundant Acceleration	B-65
56	Driver Upper Rib Y-Axis Redundant Acceleration	B-66
57	Driver Upper Rib Y-Axis Redundant Velocity	B-67
58	Driver Lower Rib Y-Axis Redundant Acceleration	B-68
59	Driver Lower Rib Y-Axis Redundant Velocity	B-69
60	Driver Lower Spine Y-Axis Redundant Acceleration	B-70
61	Driver Lower Spine Y-Axis Redundant Velocity	B-71
62	Driver Pelvis Y-Axis Redundant Acceleration	B-72
63	Driver Pelvis Y-Axis Redundant Velocity	B-73
64	Left Rear Passenger Head X-Axis Redundant Acceleration	B-74
65	Left Rear Passenger Head X-Axis Redundant Velocity	B-75
66	Left Rear Passenger Head Y-Axis Redundant Acceleration	B-76
67	Left Rear Passenger Head Y-Axis Redundant Velocity	B-77
68	Left Rear Passenger Head Z-Axis Redundant Acceleration	B-78
69	Left Rear Passenger Head Z-Axis Redundant Velocity	B-79
70	Left Rear Passenger Head Resultant Redundant Acceleration	B-80
71	Left Rear Passenger Upper Rib Y-Axis Redundant Acceleration	B-81
72	Left Rear Passenger Upper Rib Y-Axis Redundant Velocity	B-82
73	Left Rear Passenger Lower Rib Y-Axis Redundant Acceleration	B-83
74	Left Rear Passenger Lower Rib Y-Axis Redundant Velocity	B-84
75	Left Rear Passenger Lower Spine Y-Axis Redundant Acceleration	B-85
76	Left Rear Passenger Lower Spine Y-Axis Redundant Velocity	B-86
77	Left Rear Passenger Pelvis Y-Axis Redundant Acceleration	B-87
78	Left Rear Passenger Pelvis Y-Axis Redundant Velocity	B-88

Table of Data Plots (Continued)
Test Vehicle Instrumentation Plots
Acceleration Data - Filter Class 60
Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
79	Right Side Sill at Front Seat X-Axis Acceleration	B-90
80	Right Side Sill at Front Seat X-Axis Velocity	B-91
81	Right Side Sill at Front Seat Y-Axis Acceleration	B-92
82	Right Side Sill at Front Seat Y-Axis Velocity	B-93
83	Right Side Sill at Front Seat Z-Axis Acceleration	B-94
84	Right Side Sill at Front Seat Z-Axis Velocity	B-95
85	Right Side Sill at Front Seat Resultant Acceleration	B-96
86	Right Side Sill at Rear Seat X-Axis Acceleration	B-97
87	Right Side Sill at Rear Seat X-Axis Velocity	B-98
88	Right Side Sill at Rear Seat Y-Axis Acceleration	B-99
89	Right Side Sill at Rear Seat Y-Axis Velocity	B-100
90	Right Side Sill at Rear Seat Z-Axis Acceleration	B-101
91	Right Side Sill at Rear Seat Z-Axis Velocity	B-102
92	Right Side Sill at Rear Seat Resultant Acceleration	B-103
93	Rear Floorpan Above Axle X-Axis Acceleration	B-104
94	Rear Floorpan Above Axle X-Axis Velocity	B-105
95	Rear Floorpan Above Axle Y-Axis Acceleration	B-106
96	Rear Floorpan Above Axle Y-Axis Velocity	B-107
97	Rear Floorpan Above Axle Z-Axis Acceleration	B-108
98	Rear Floorpan Above Axle Z-Axis Velocity	B-109
99	Rear Floorpan Above Axle Resultant Acceleration	B-110
100	Left Side Sill at Front Seat Y-Axis Acceleration	B-111
101	Left Side Sill at Front Seat Y-Axis Velocity	B-112
102	Left Side Sill at Front Seat Y-Axis Displacement	B-113
103	Left Side Sill at Rear Seat Y-Axis Acceleration	B-114
104	Left Side Sill at Rear Seat Y-Axis Velocity	B-115
105	Left Side Sill at Rear Seat Y-Axis Displacement	B-116
106	Right Rear Occupant Compartment Y-Axis Acceleration	B-117

Table of Data Plots (Continued)
Test Vehicle Instrumentation Plots (Continued)
Acceleration Data - Filter Class 60
Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
107	Right Rear Occupant Compartment Y-Axis Velocity	B-118
108	Right Rear Occupant Compartment Y-Axis Displacement	B-119
109	Left Lower A-Post Y-Axis Acceleration	B-120
110	Left Lower A-Post Y-Axis Velocity	B-121
111	Left Middle A-Post Y-Axis Acceleration	B-122
112	Left Middle A-Post Y-Axis Velocity	B-123
113	Left Lower B-Post Y-Axis Acceleration	B-124
114	Left Lower B-Post Y-Axis Velocity	B-125
115	Left Middle B-Post Y-Axis Acceleration	B-126
116	Left Middle B-Post Y-Axis Velocity	B-127
117	Left Front Seat Track Y-Axis Acceleration	B-128
118	Left Front Seat Track Y-Axis Velocity	B-129
119	Left Rear Seat Track Y-Axis Acceleration	B-130
120	Left Rear Seat Track Y-Axis Velocity	B-131
121	Vehicle Center of Gravity X-Axis Acceleration	B-132
122	Vehicle Center of Gravity X-Axis Velocity	B-133
123	Vehicle Center of Gravity Y-Axis Acceleration	B-134
124	Vehicle Center of Gravity Y-Axis Velocity	B-135
125	Vehicle Center of Gravity Z-Axis Acceleration	B-136
126	Vehicle Center of Gravity Z-Axis Velocity	B-137
127	Vehicle Center of Gravity Resultant Acceleration	B-138

Table of Data Plots (Continued)
 MDB Instrumentation Plots
 Acceleration Data - Filter Class 60
 Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
128	MDB Center of Gravity X-Axis Acceleration	B-140
129	MDB Center of Gravity X-Axis Velocity	B-141
130	MDB Center of Gravity Y-Axis Acceleration	B-142
131	MDB Center of Gravity Y-Axis Velocity	B-143
132	MDB Center of Gravity Z-Axis Acceleration	B-144
133	MDB Center of Gravity Z-Axis Velocity	B-145
134	MDB Center of Gravity Resultant Acceleration	B-146
135	MDB Left Rear X-Axis Acceleration	B-147
136	MDB Left Rear X-Axis Velocity	B-148
137	MDB Left Rear Y-Axis Acceleration	B-149
138	MDB Left Rear Y-Axis Velocity	B-150
139	MDB Right Side Contact Switch	B-151
140	MDB Left Side Contact Switch	B-152

Driver and Passenger Dummy Instrumentation Plots
 Acceleration Data - FIR Filtered

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
141	Driver Upper Rib Y-Axis Acceleration	B-154
142	Driver Lower Rib Y-Axis Acceleration	B-155
143	Driver Lower Spine Y-Axis Acceleration	B-156
144	Driver Pelvis Y-Axis Acceleration	B-157
145	Left Rear Passenger Upper Rib Y-Axis Acceleration	B-158
146	Left Rear Passenger Lower Rib Y-Axis Acceleration	B-159
147	Left Rear Passenger Lower Spine Y-Axis Acceleration	B-160
148	Left Rear Passenger Pelvis Y-Axis Acceleration	B-161

Table of Data Plots (Continued)
Driver and Passenger Dummy Instrumentation Plots
Acceleration Data - FIR Filtered - Redundant

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
149	Driver Upper Rib Y-Axis Redundant Acceleration	B-163
150	Driver Lower Rib Y-Axis Redundant Acceleration	B-164
151	Driver Lower Spine Y-Axis Redundant Acceleration	B-165
152	Driver Pelvis Y-Axis Redundant Acceleration	B-166
153	Left Rear Passenger Upper Rib Y-Axis Redundant Acceleration	B-167
154	Left Rear Passenger Lower Rib Y-Axis Redundant Acceleration	B-168
155	Left Rear Passenger Lower Spine Y-Axis Redundant Acceleration	B-169
156	Left Rear Passenger Pelvis Y-Axis Redundant Acceleration	B-170

Driver and Passenger Dummy Instrumentation Plots

Acceleration Data - Filter Class 1000

Integration Data - Filter Class 180

Force Data - Filter Class 1000

Moment Data - Filter Class 600

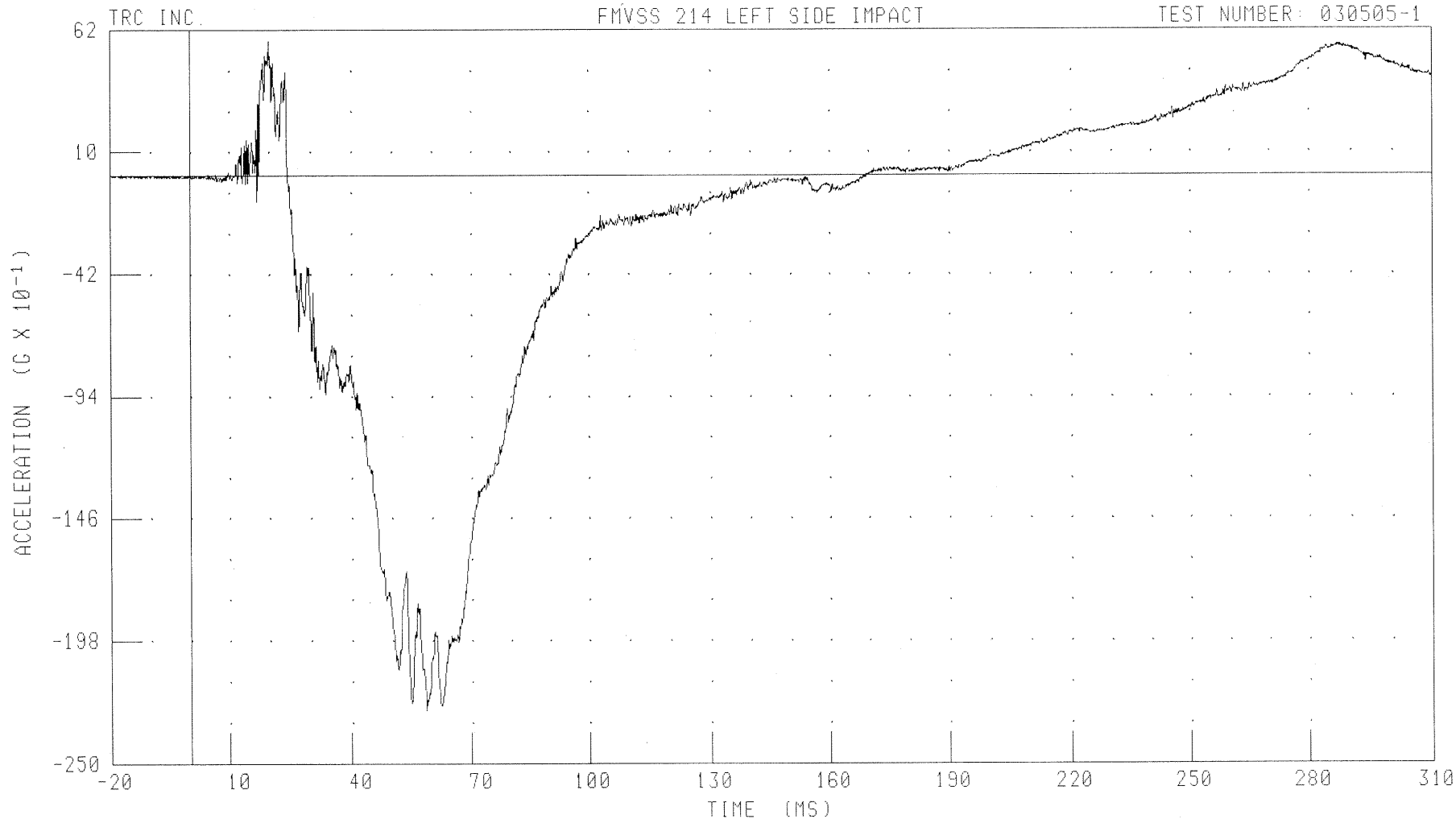
Contact Data - Filter Class 1000

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER HEAD X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDXG1 FILTER: CH. CLASS 1000

PEAK DATA: 5.72 G @ 20.08 MS, -22.77 G @ 58.48 MS

B-10

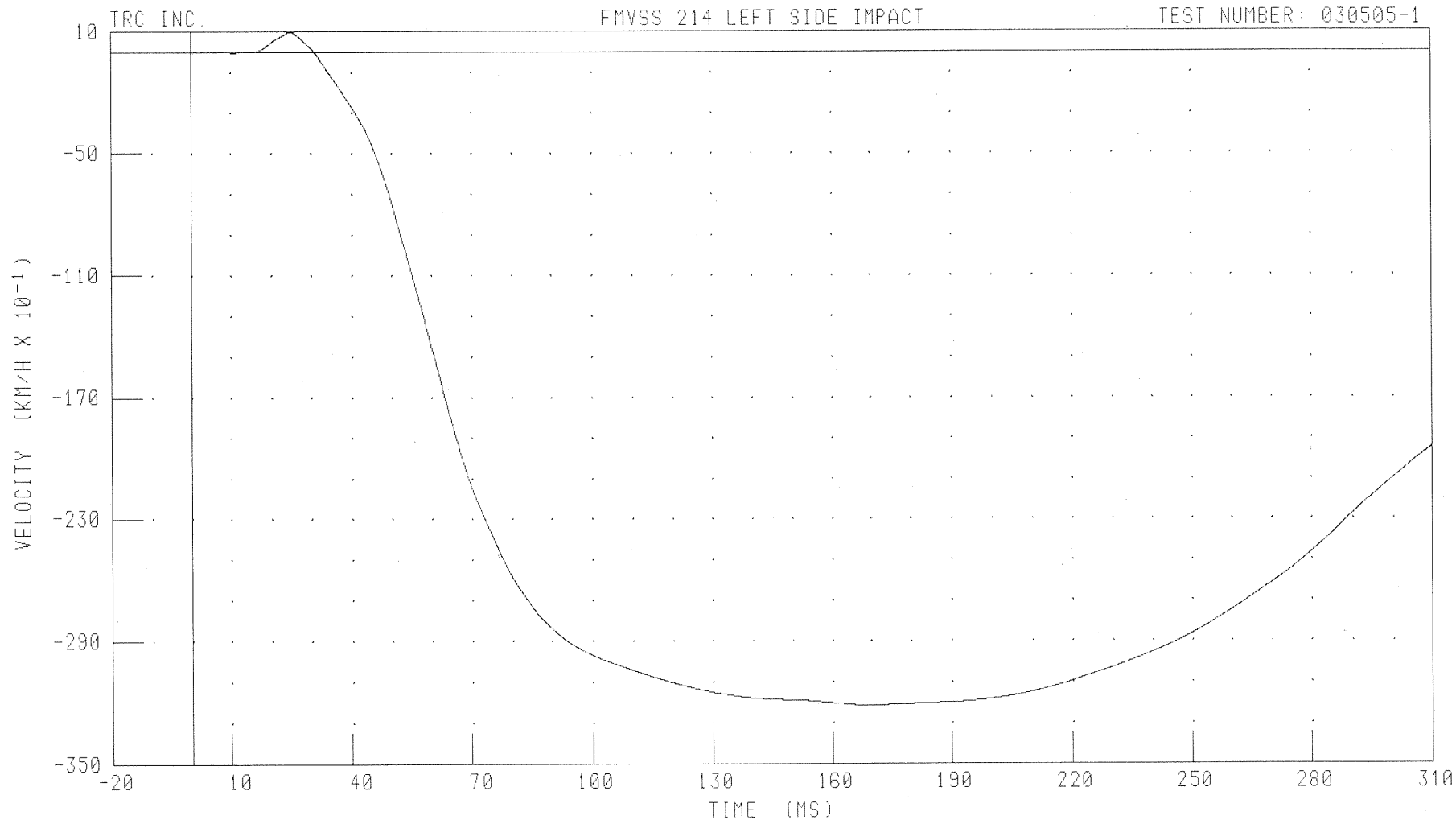
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER HEAD X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDXV1 FILTER: CH. CLASS 180

PEAK DATA: 0.97 KM/H @ 24.96 MS; -32.16 KM/H @ 169.60 MS

B-11

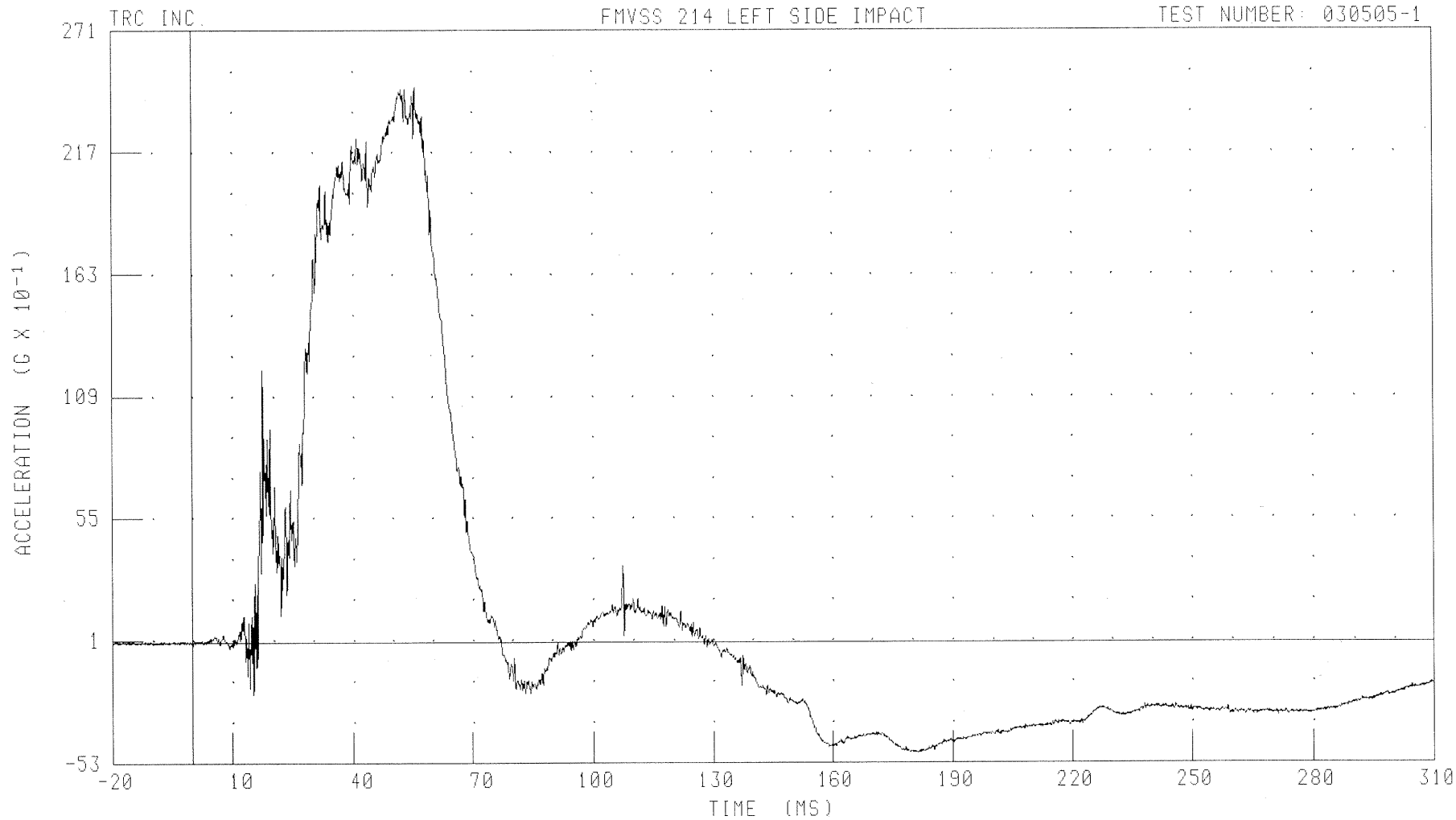
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER HEAD Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDYG1 FILTER: CH CLASS 1000

PEAK DATA: 24.59 G @ 55.84 MS; -4.89 G @ 181.44 MS

B-12

030505-1

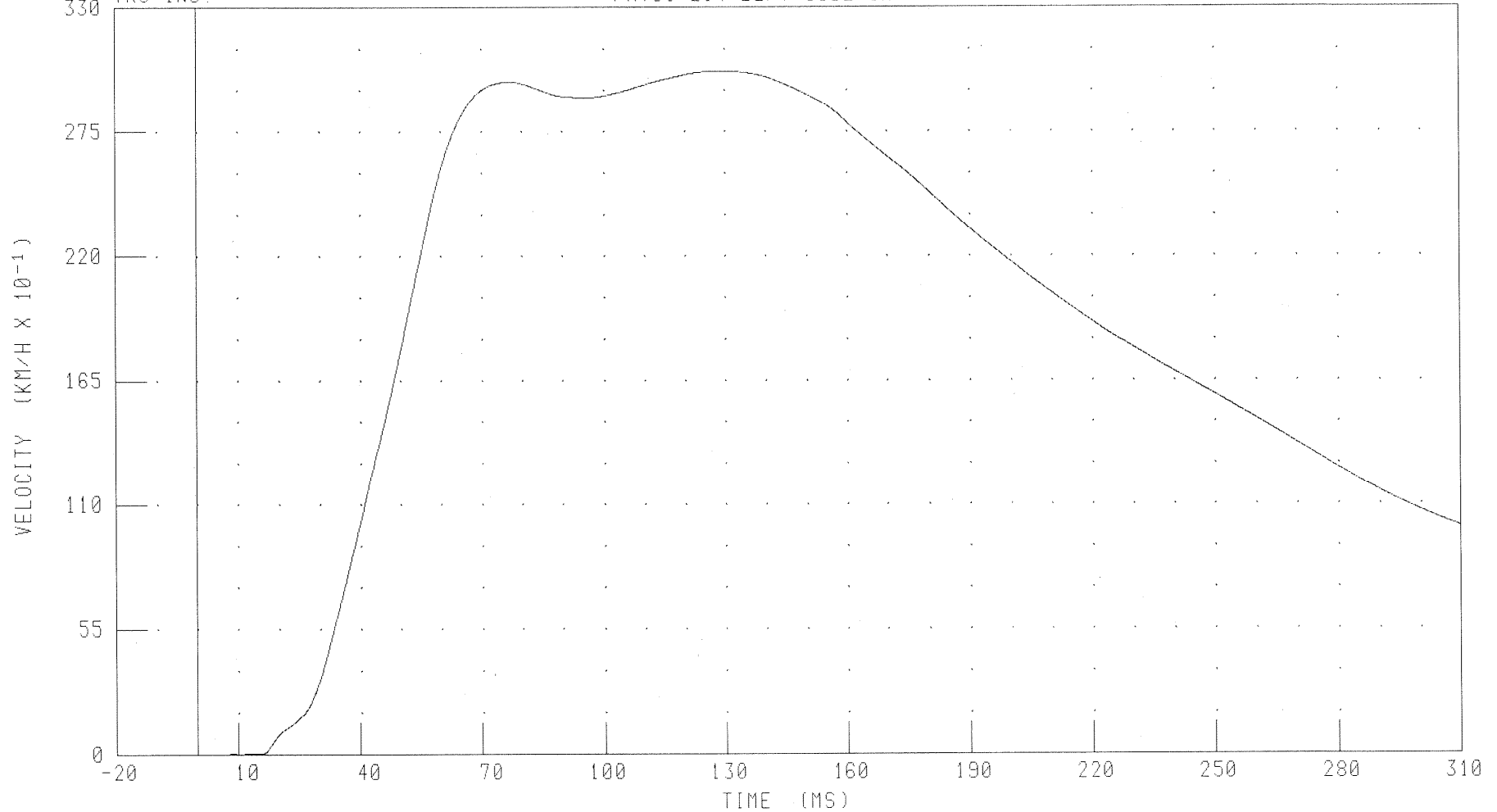
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER HEAD Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1

TRC INC.



CHANNEL: HEDYV1

FILTER: CH. CLASS 180

PEAK DATA: 30.19 KM/H @ 128.48 MS; 0.00 KM/H @ 0.80 MS

B-13

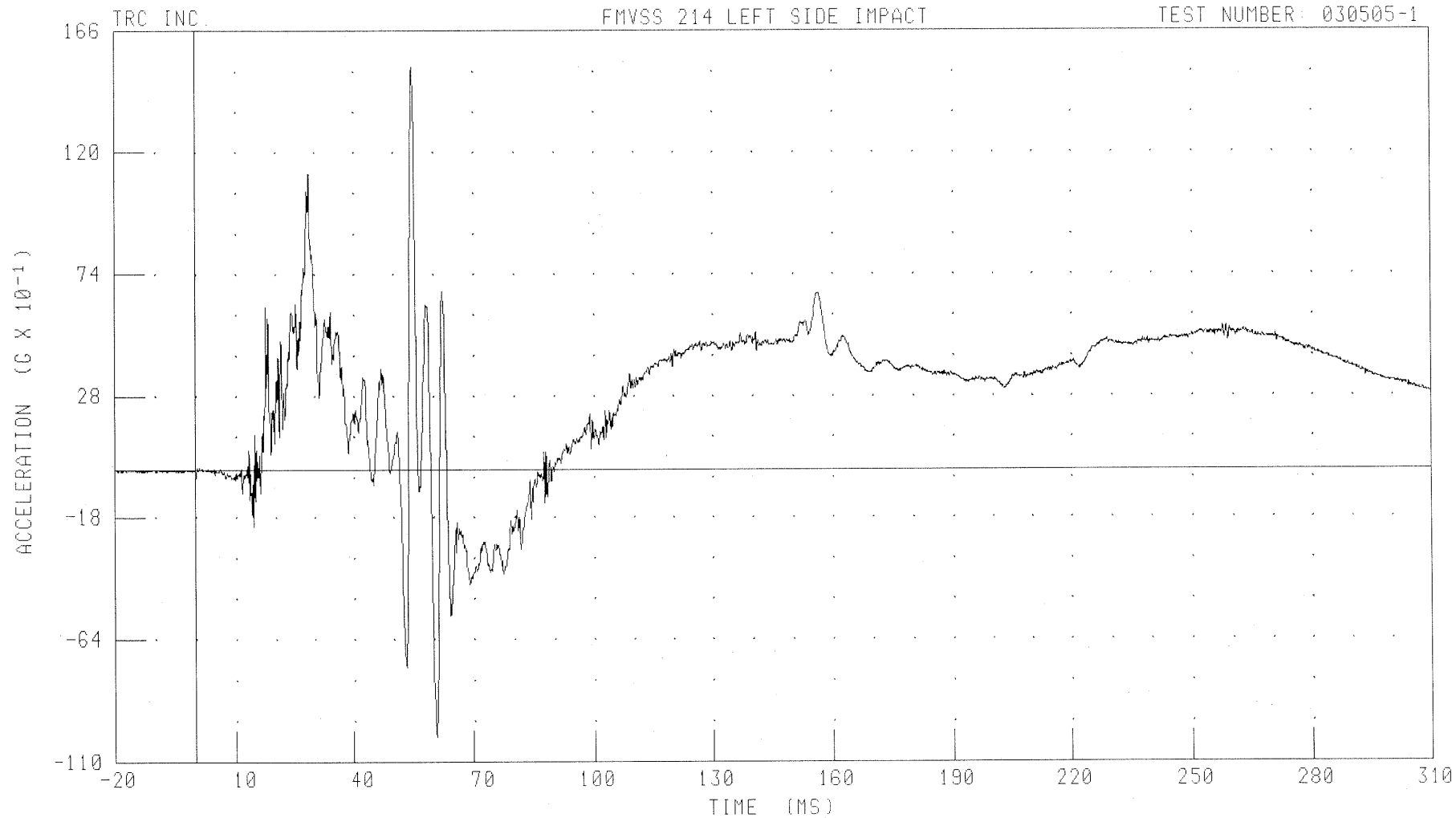
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER HEAD Z-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDZG1 FILTER: CH. CLASS 1000

B-14

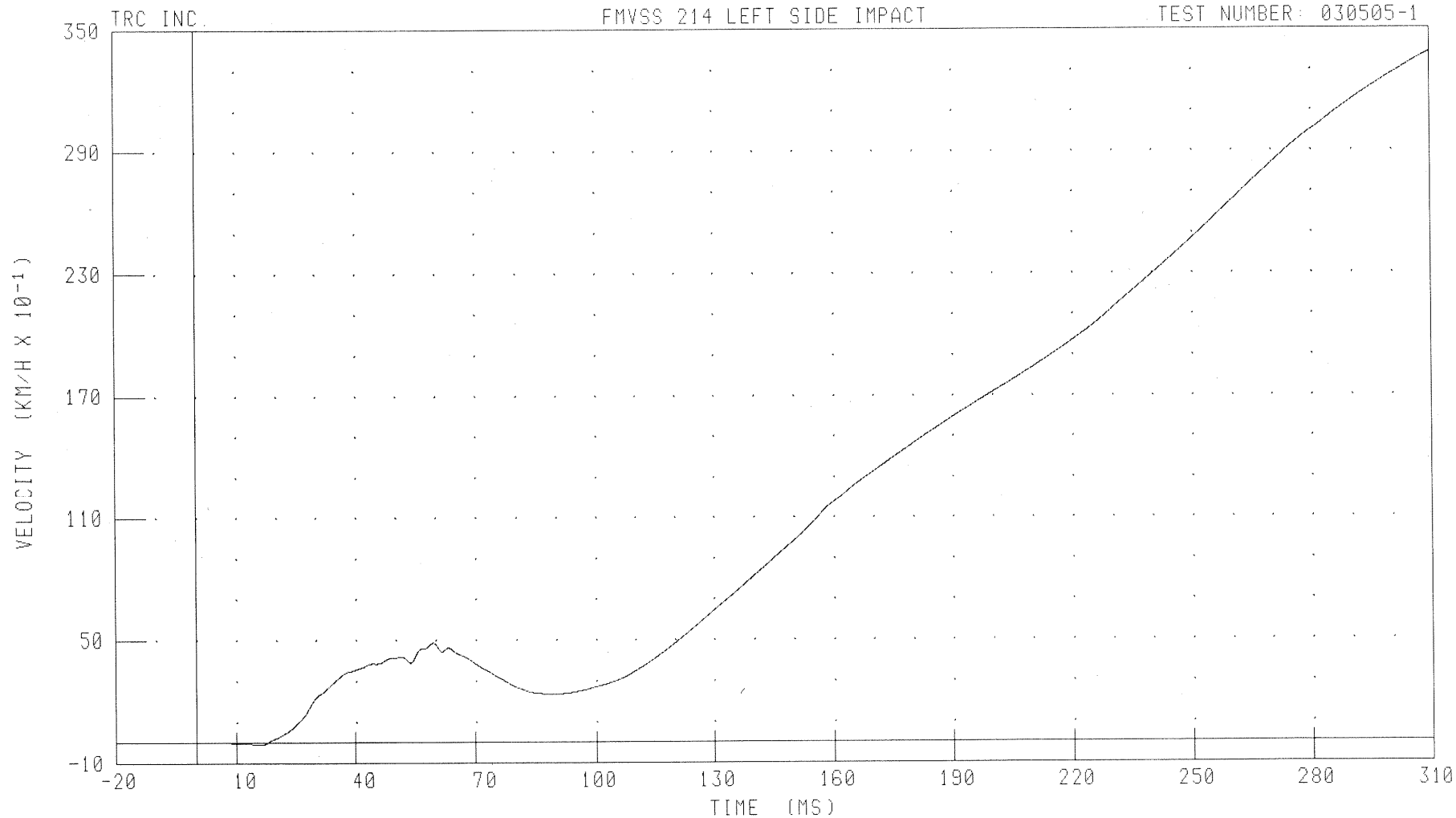
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER HEAD Z-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDZV1 FILTER: CH. CLASS 180

PEAK DATA: 33.86 KM/H @ 310.00 MS; -0.09 KM/H @ 15.92 MS

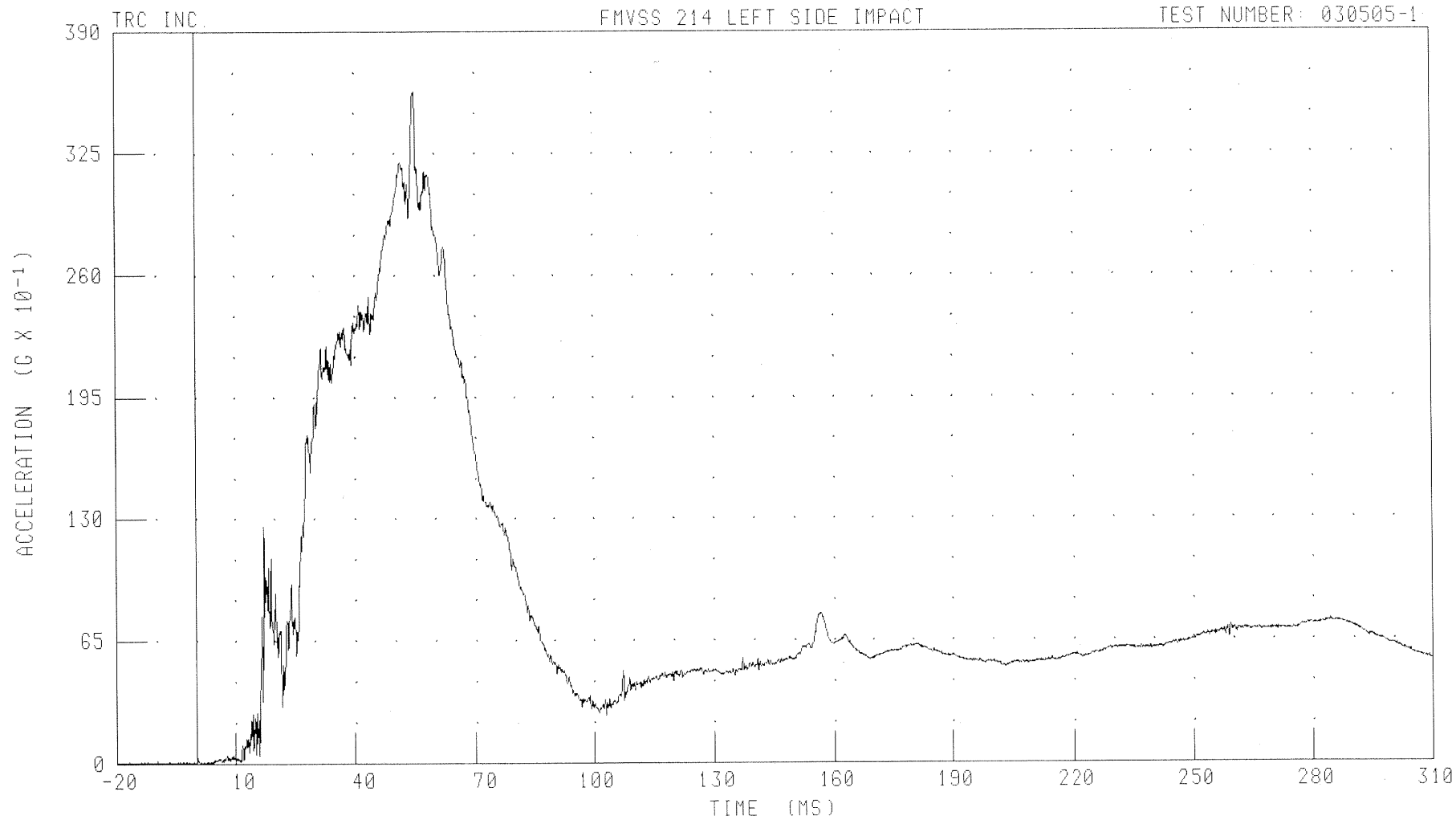
B-15

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
DRIVER HEAD RESULTANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDRG1 FILTER: CH. CLASS 1000

PEAK DATA: 35.84 G @ 55.04 MS; 0.01 G @ -16.96 MS

B-16

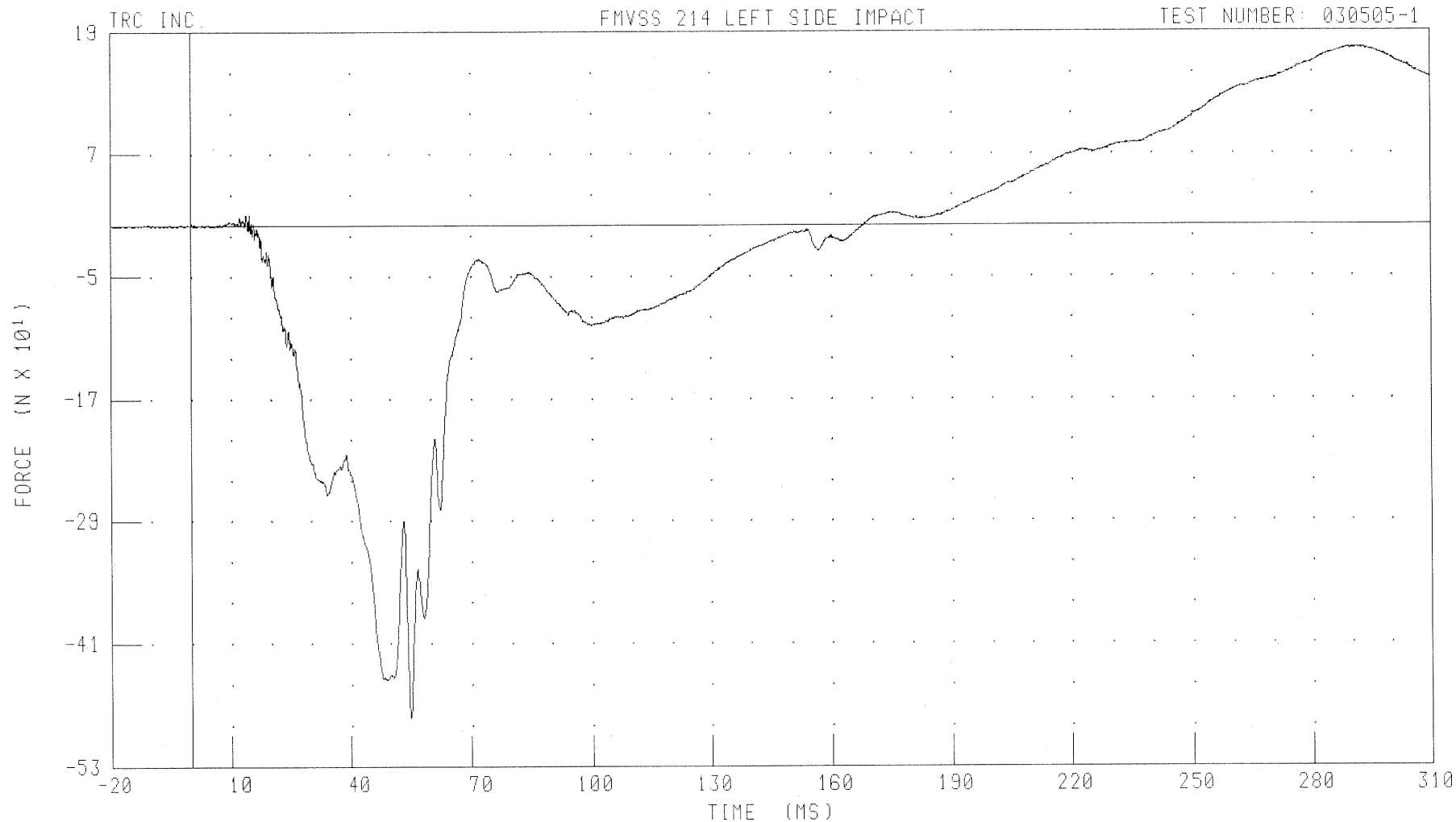
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER NECK X-AXIS SHEAR FORCE

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: NEKXF1 FILTER: CH. CLASS 1000

B-17

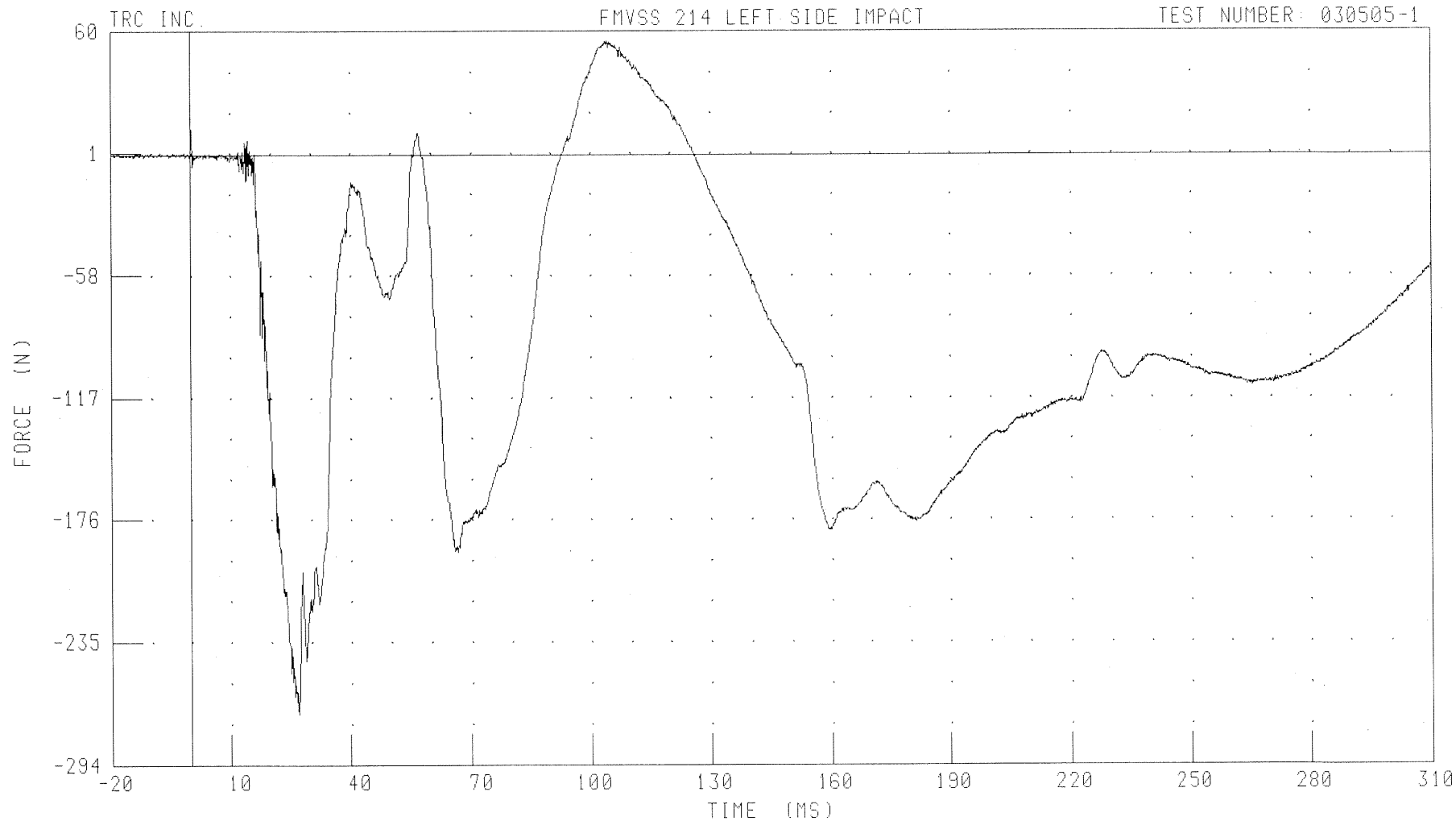
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER NECK Y-AXIS SHEAR FORCE

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: NEKYF1 FILTER: CH. CLASS 1000

PEAK DATA: 55.14 N @ 104.32 MS; -269.76 N @ 26.88 MS

B-18

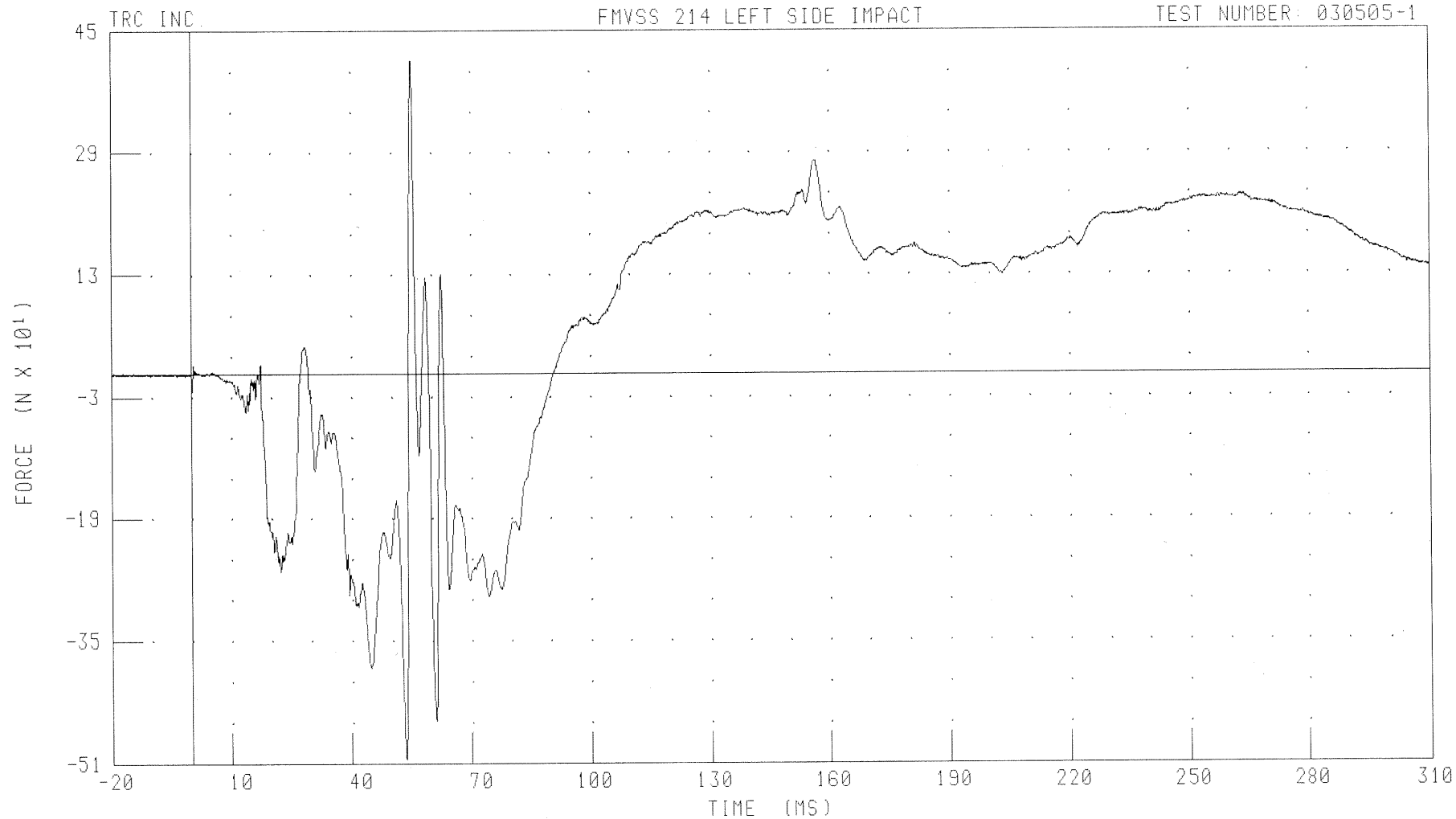
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER NECK Z-AXIS AXIAL FORCE

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: NEKZF1 FILTER: CH. CLASS 1000

PEAK DATA: 410.69 N @ 54.96 MS; -504.36 N @ 53.28 MS

B-19

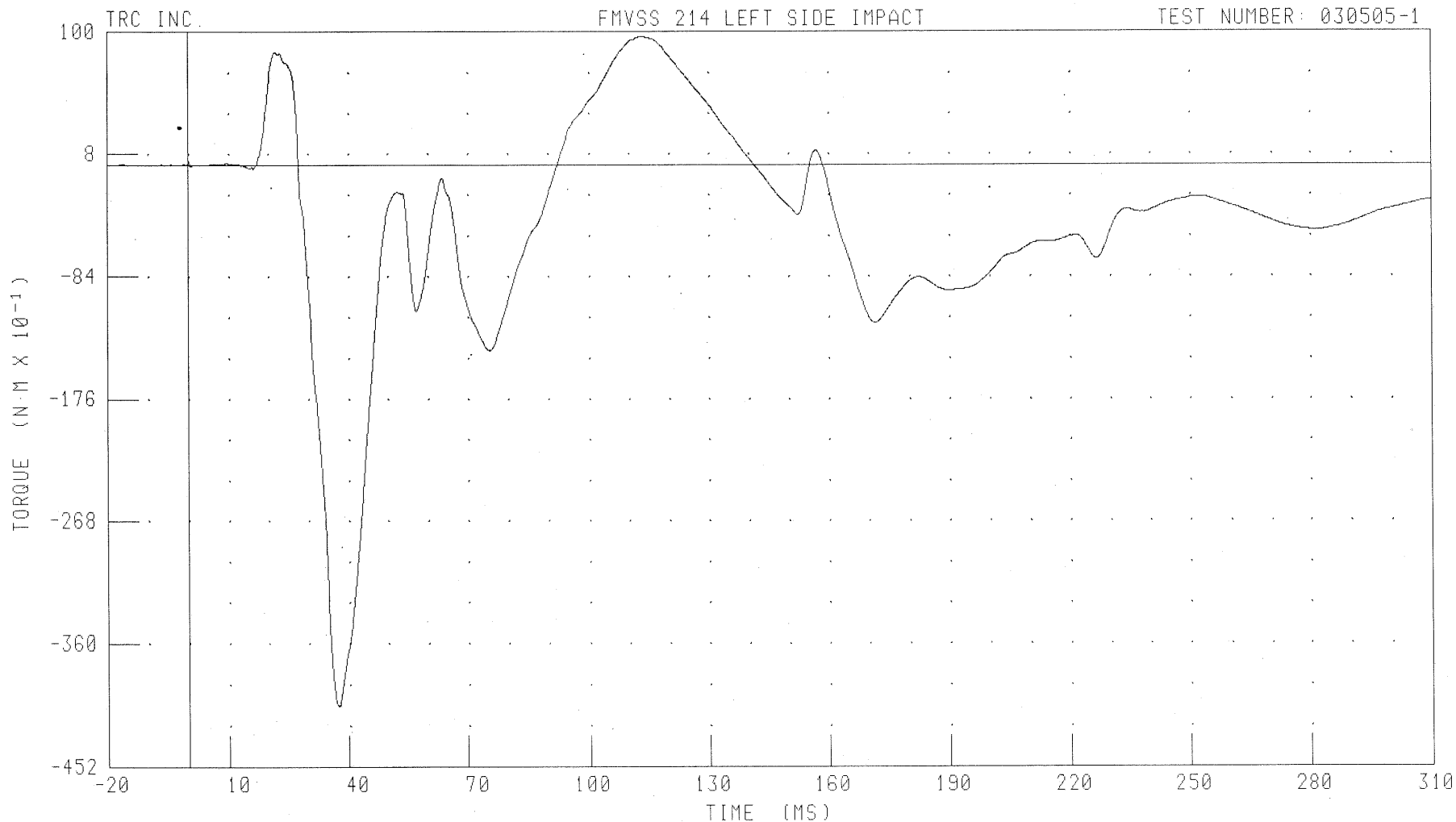
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER NECK MOMENT ABOUT X AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: NEKXM1 FILTER: CH. CLASS 600

PEAK DATA: 9.63 N·M @ 113.84 MS, -40.68 N·M @ 37.52 MS

B-20

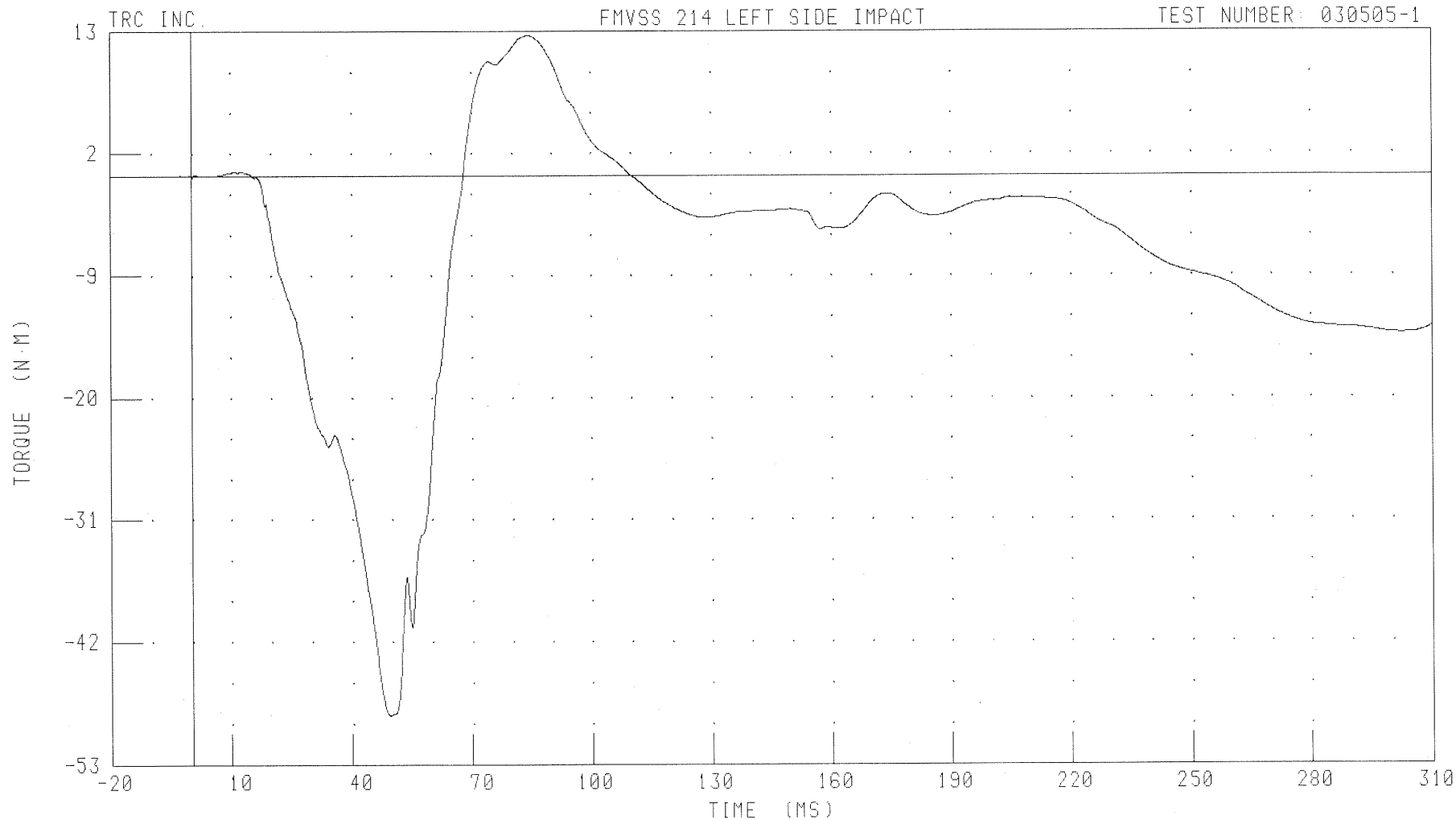
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER NECK MOMENT ABOUT Y AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: NEKYM1 FILTER: CH. CLASS 600

PEAK DATA: 12.66 N·M @ 84.16 MS; -48.59 N·M @ 49.44 MS

B-21

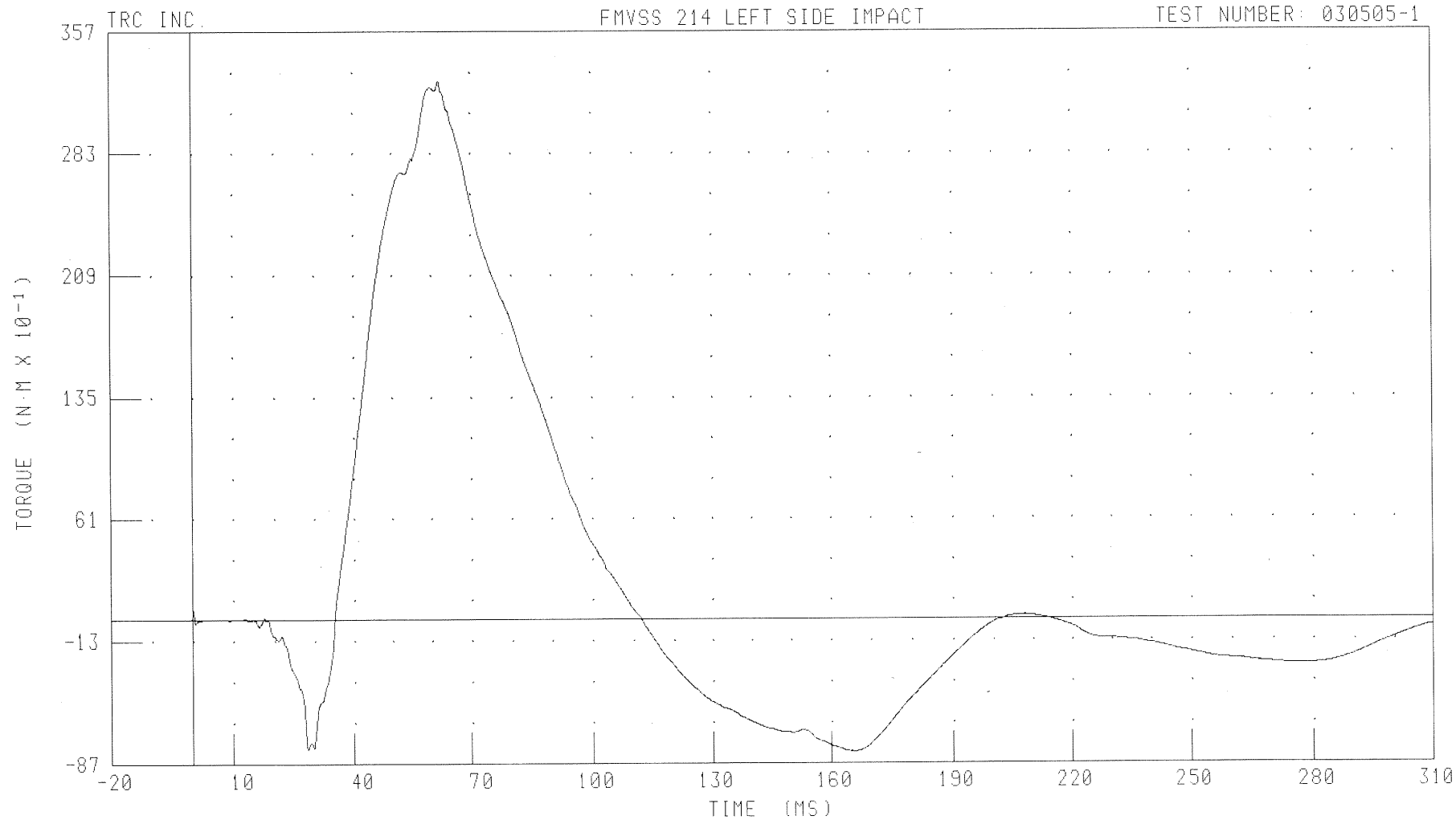
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER NECK MOMENT ABOUT Z AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: NEKZM1 FILTER: CH. CLASS 600

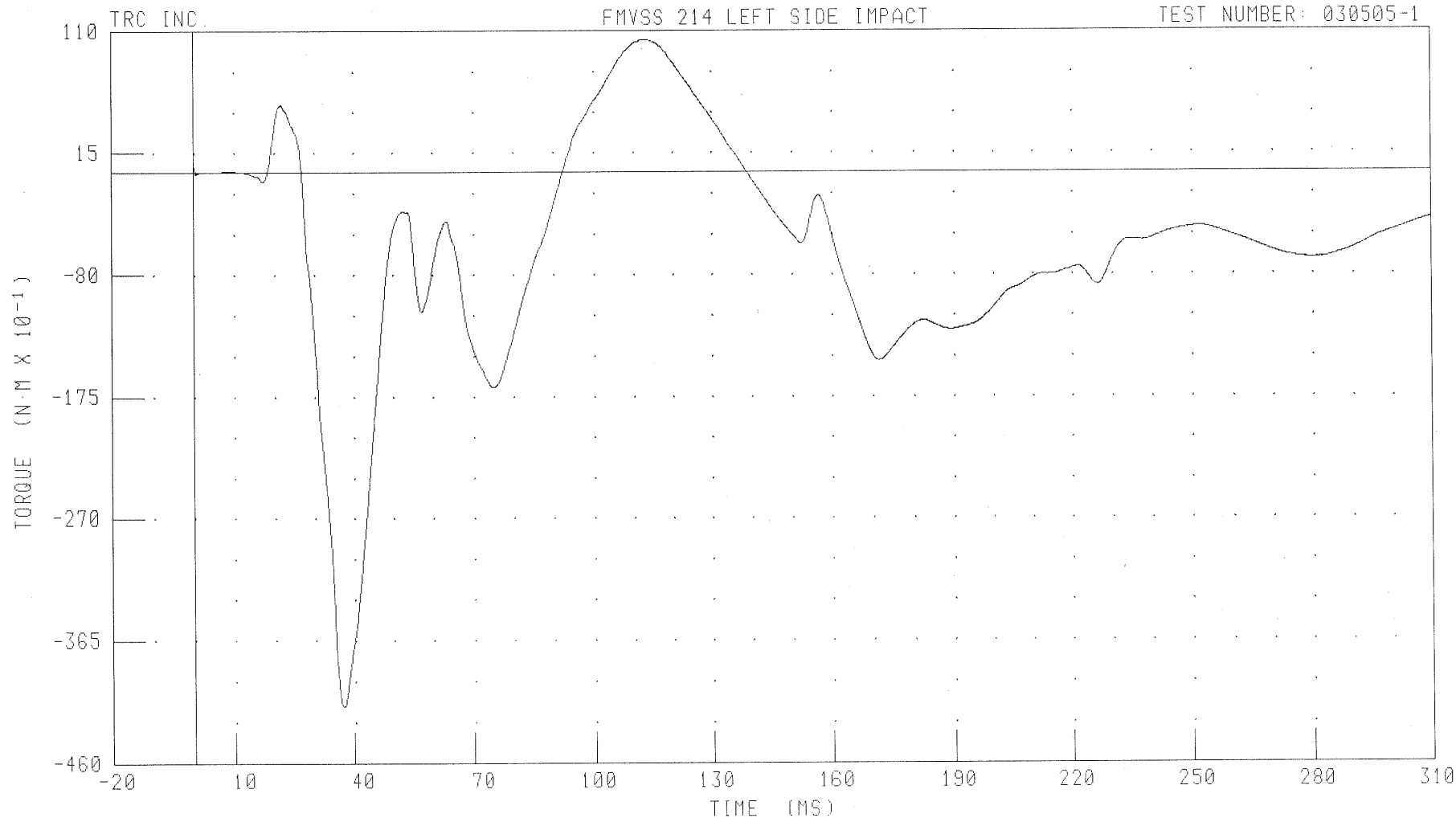
B-22

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
DRIVER NECK OCCIPITAL CONDYLE MOMENT ABOUT X AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: NK0XM1

FILTER: CH. CLASS 600

PEAK DATA: 10.31 N·m @ 112.72 MS; -41.60 N·m @ 37.28 MS

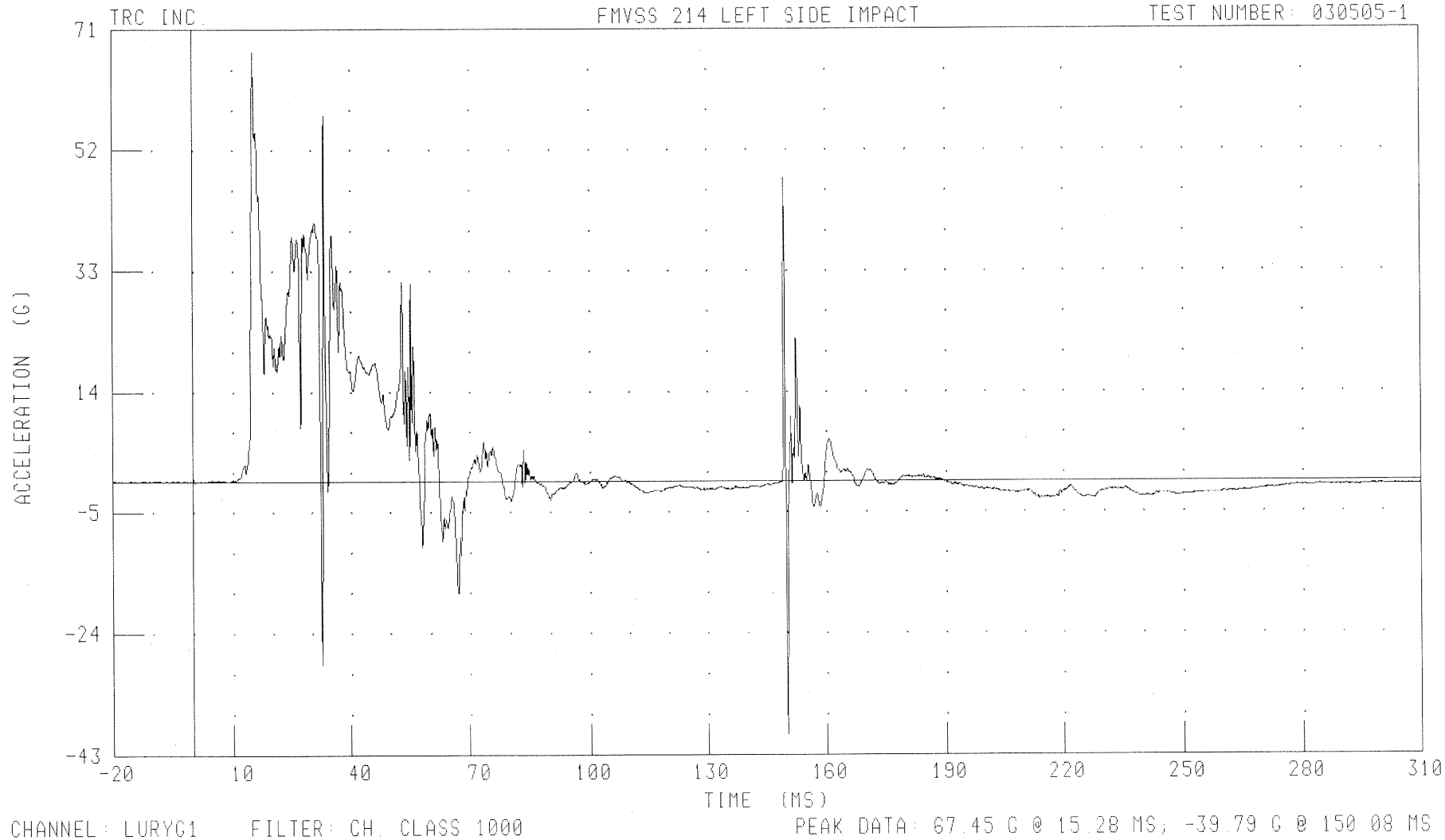
B-23

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
DRIVER UPPER RIB Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



B-24

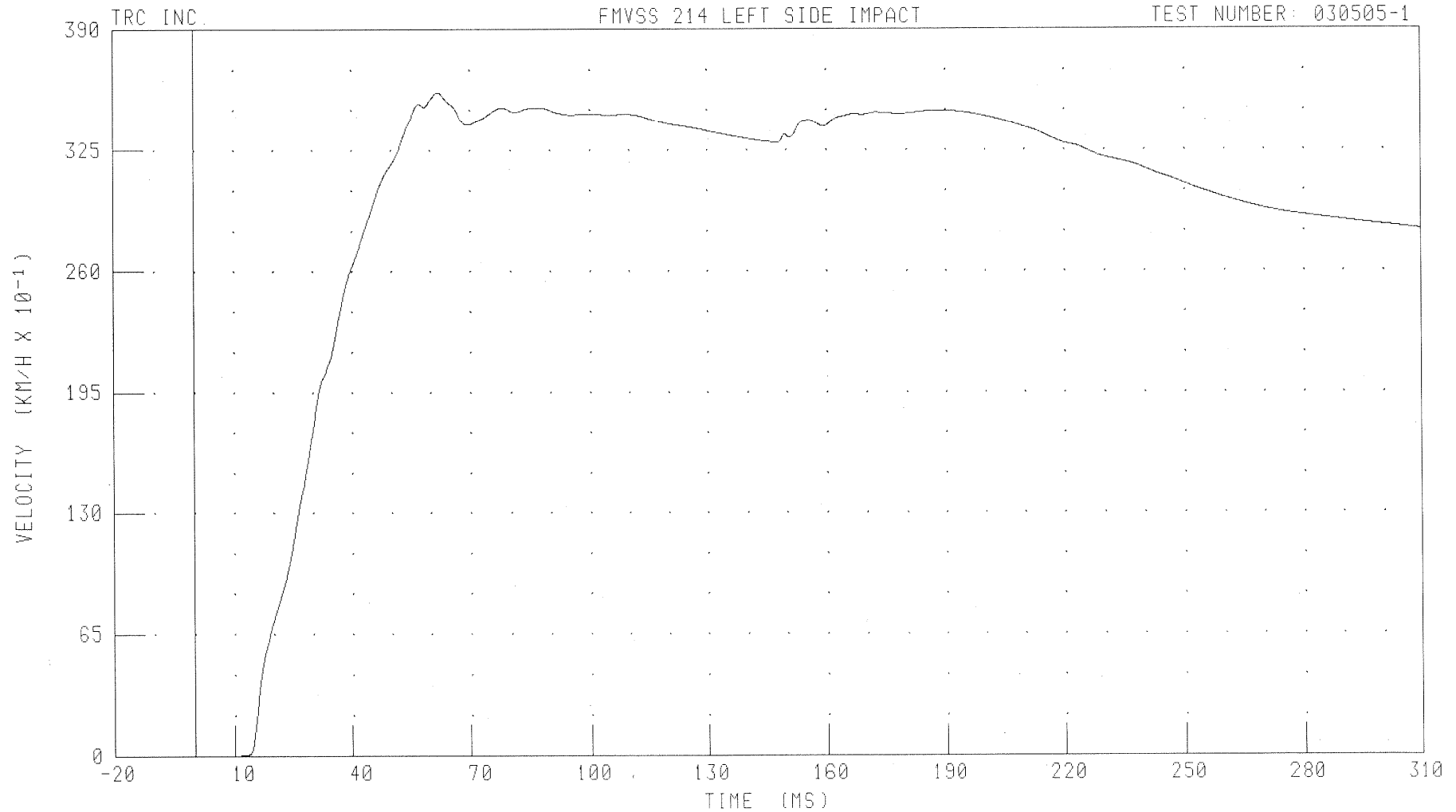
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER UPPER RIB Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LURYV1 FILTER: CH. CLASS 180

PEAK DATA: 35.62 KM/H @ 62.16 MS; 0.00 KM/H @ 3.44 MS

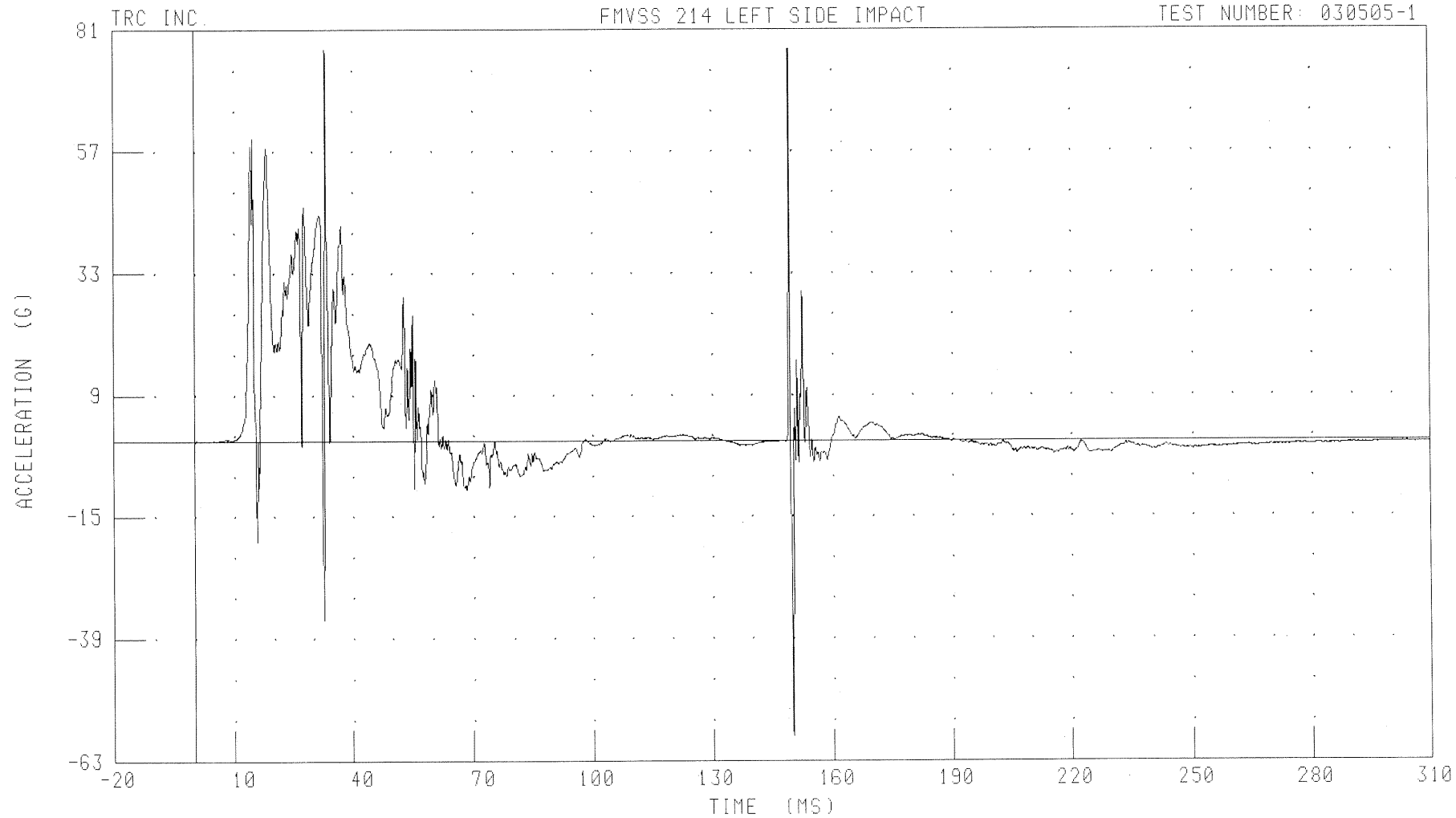
B-25

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
DRIVER LOWER RIB Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LLRYG1 FILTER: CH. CLASS 1000

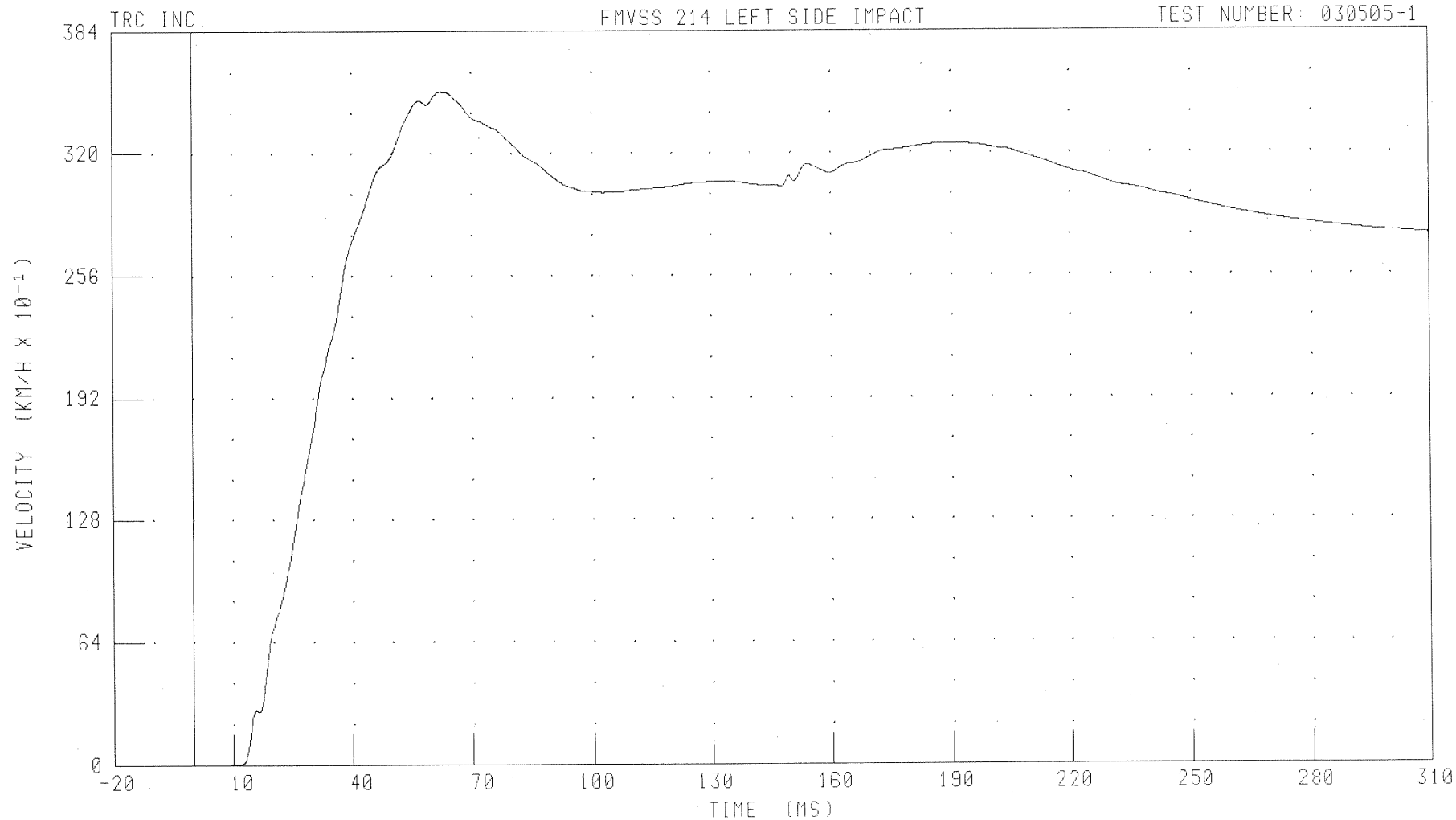
PEAK DATA 77.26 G @ 149.44 MS; -58.10 G @ 150.08 MS

55/28 KPH 90-DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER LOWER RIB Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LLRYV1 FILTER: CH. CLASS 180

PEAK DATA: 35.25 KM/H @ 62.24 MS; 0.00 KM/H @ 0.64 MS

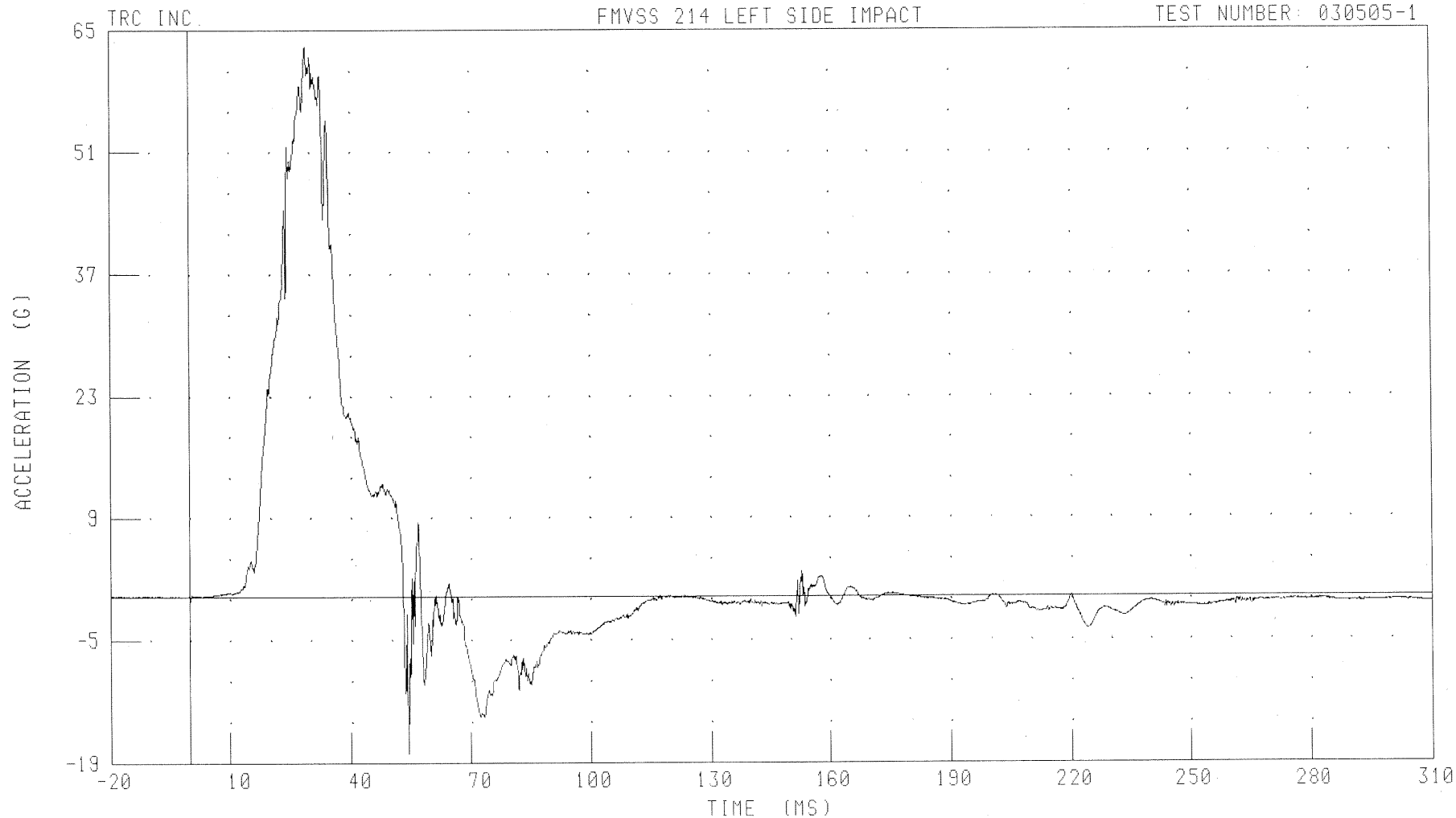
B-27

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
DRIVER LOWER SPINE Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: T12YG1 FILTER: CH. CLASS 1000

PEAK DATA: 63.14 G @ 29.12 MS; -17.93 G @ 54.16 MS

B-28

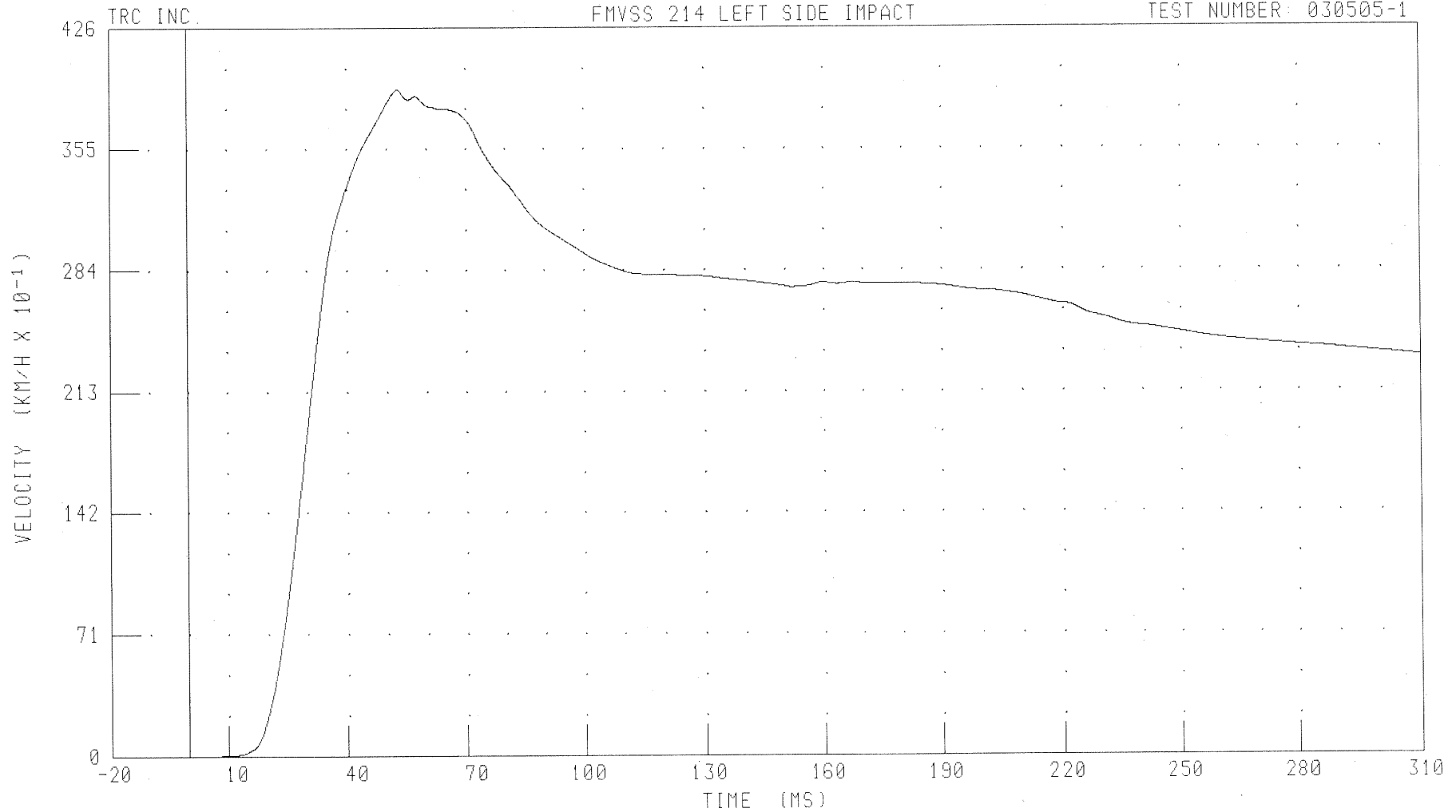
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER LOWER SPINE Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: T12YV1 FILTER: CH. CLASS 180

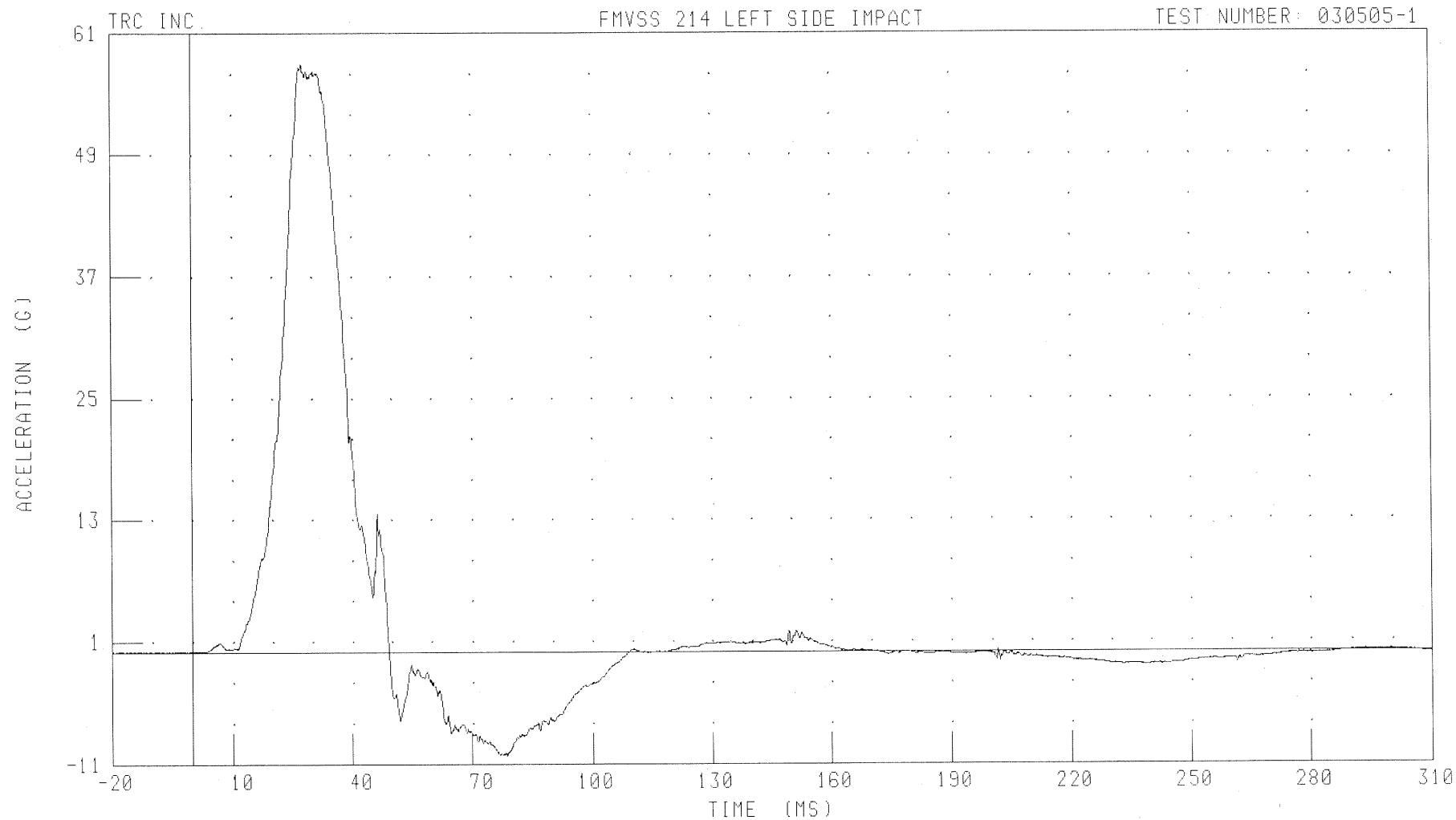
PEAK DATA: 39 00 KM/H @ 52.88 MS; 0.00 KM/H @ 0.72 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER PELVIS Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: PEVYG1 FILTER: CH. CLASS 1000

PEAK DATA: 57.95 G @ 27.76 MS, -10.19 G @ 78.56 MS

B-30

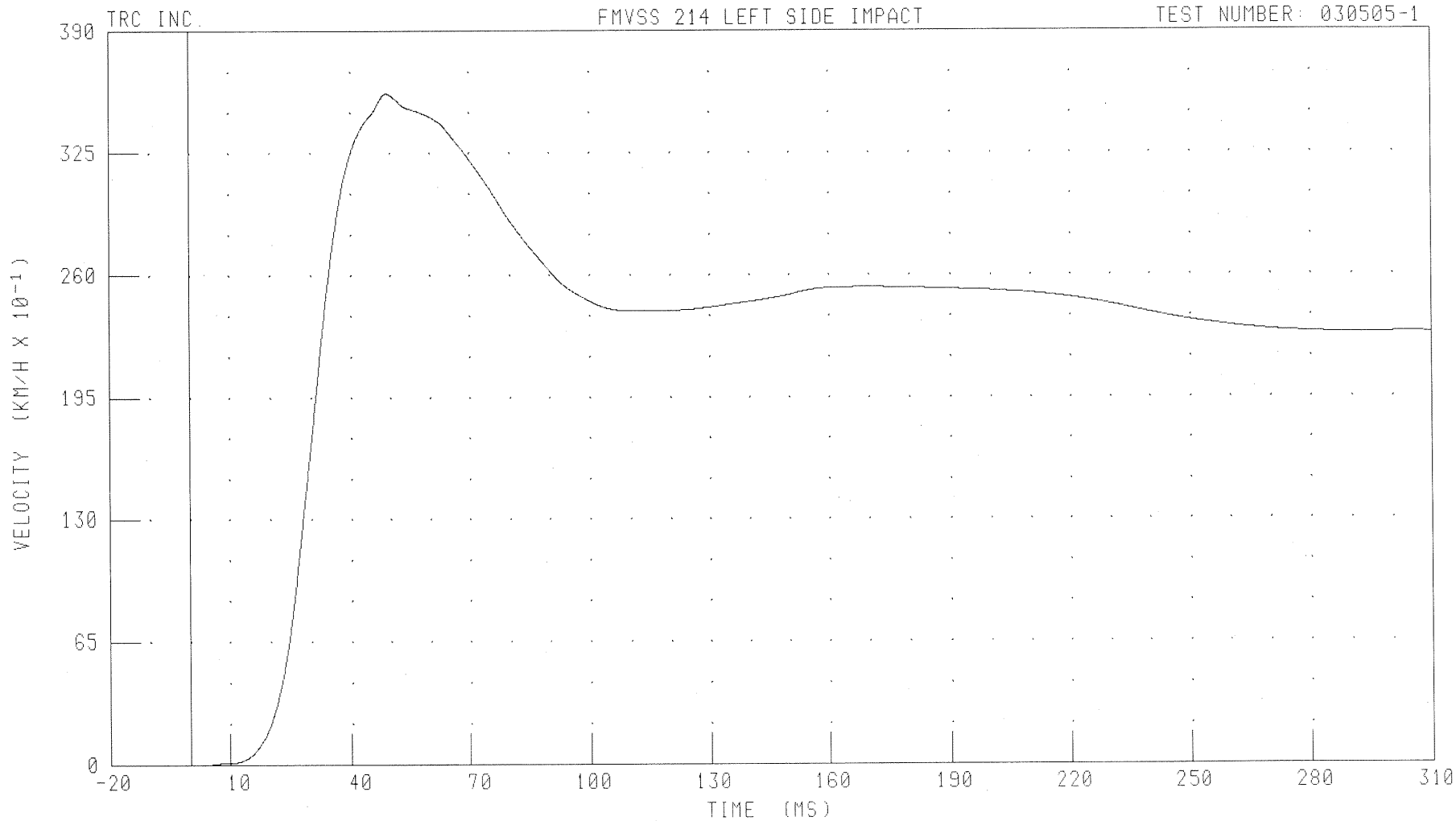
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER PELVIS Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: PEVYV1 FILTER: CH. CLASS 180

PEAK DATA: 35.69 KM/H @ 49.36 MS; 0.00 KM/H @ 0.00 MS

B-31

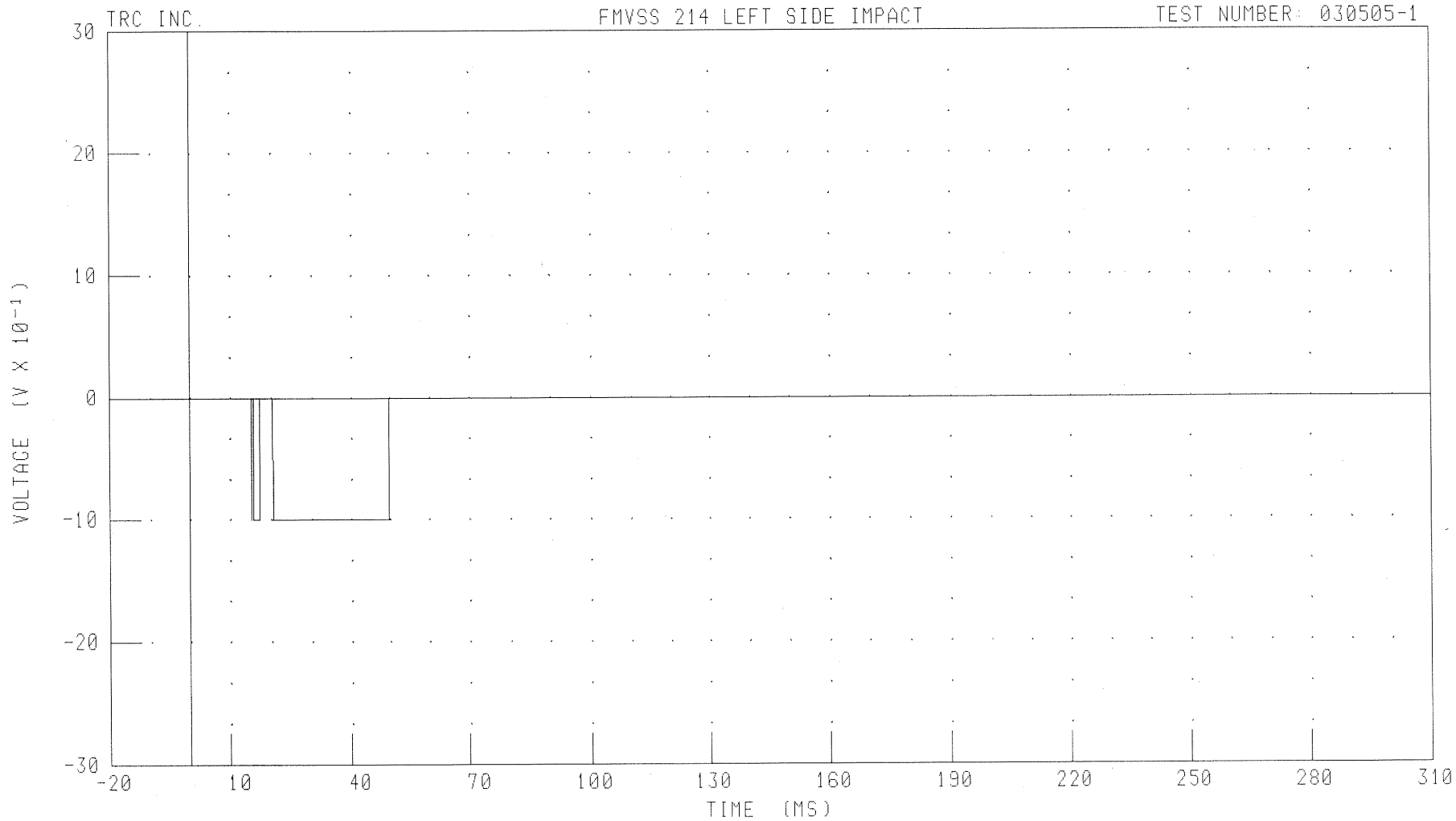
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER SHOULDER CONTACT SWITCH

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: SHLET1 FILTER: CH. CLASS 1000

PEAK DATA: 0.00 V @ 310.00 MS; -1.00 V @ 15.28 MS

B-32

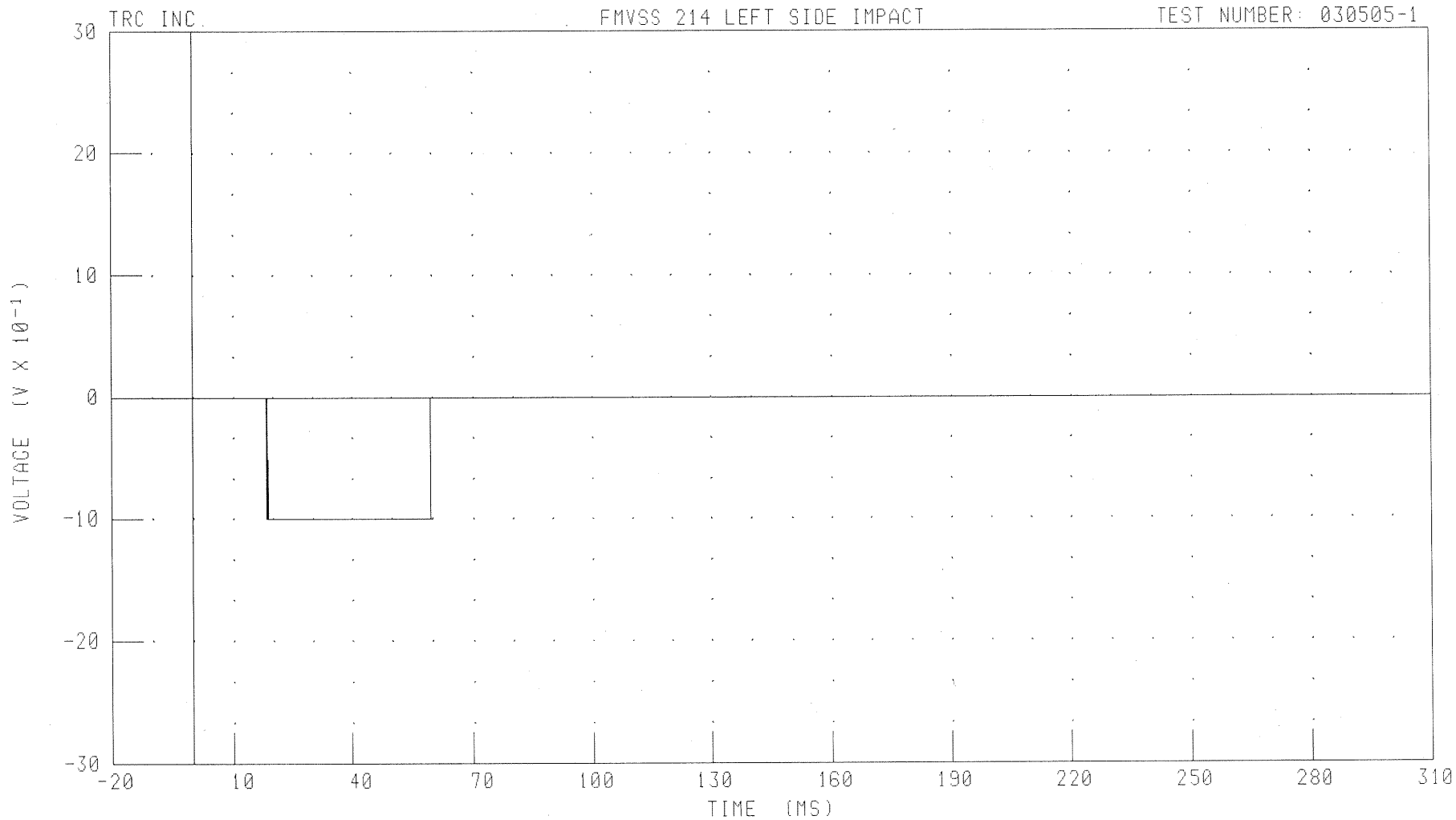
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER PELVIS CONTACT SWITCH

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: PEVET1 FILTER: CH. CLASS 1000

PEAK DATA: 0.00 V @ 310.00 MS; -1.00 V @ 18.40 MS

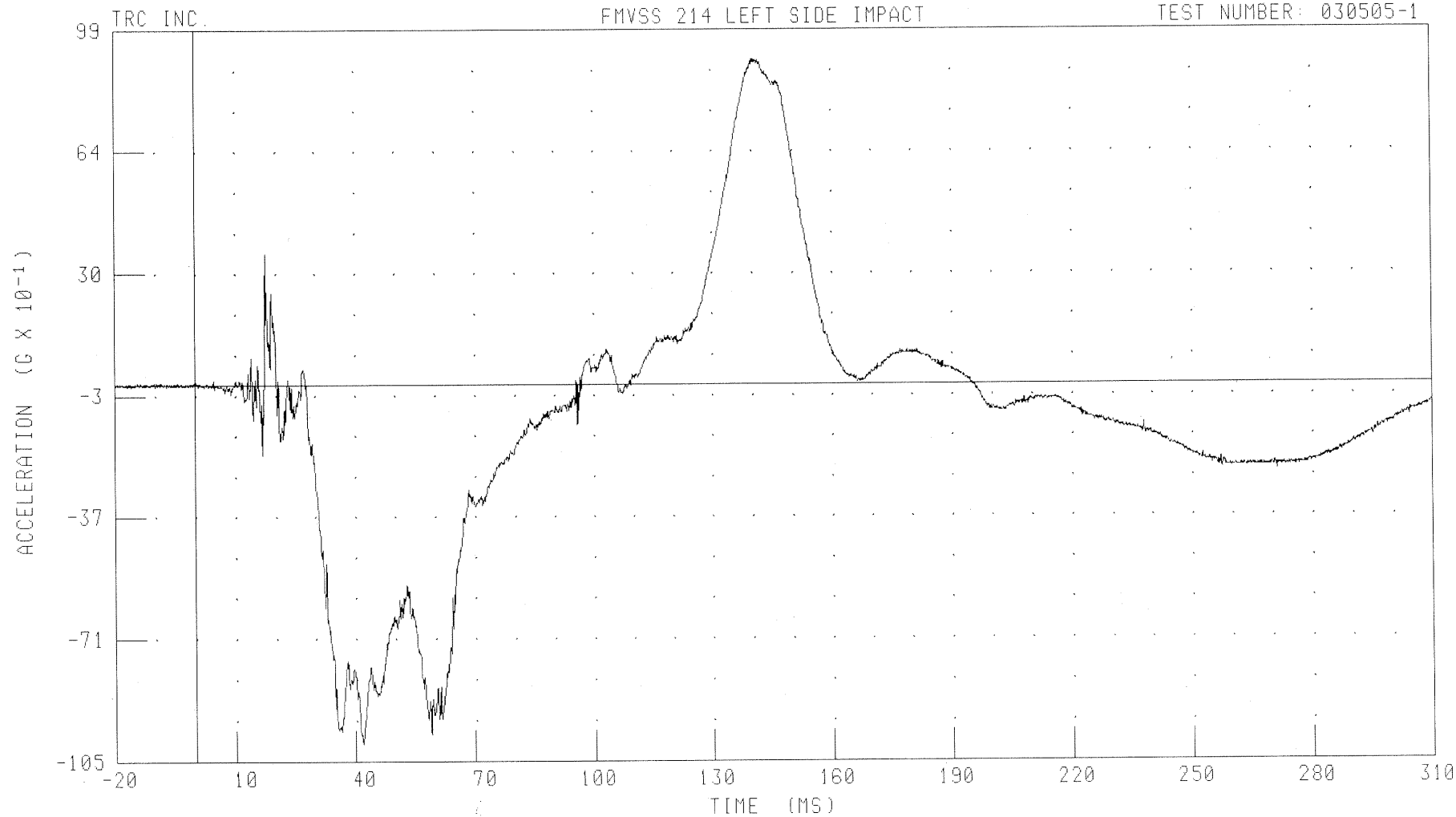
B-33

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER HEAD X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



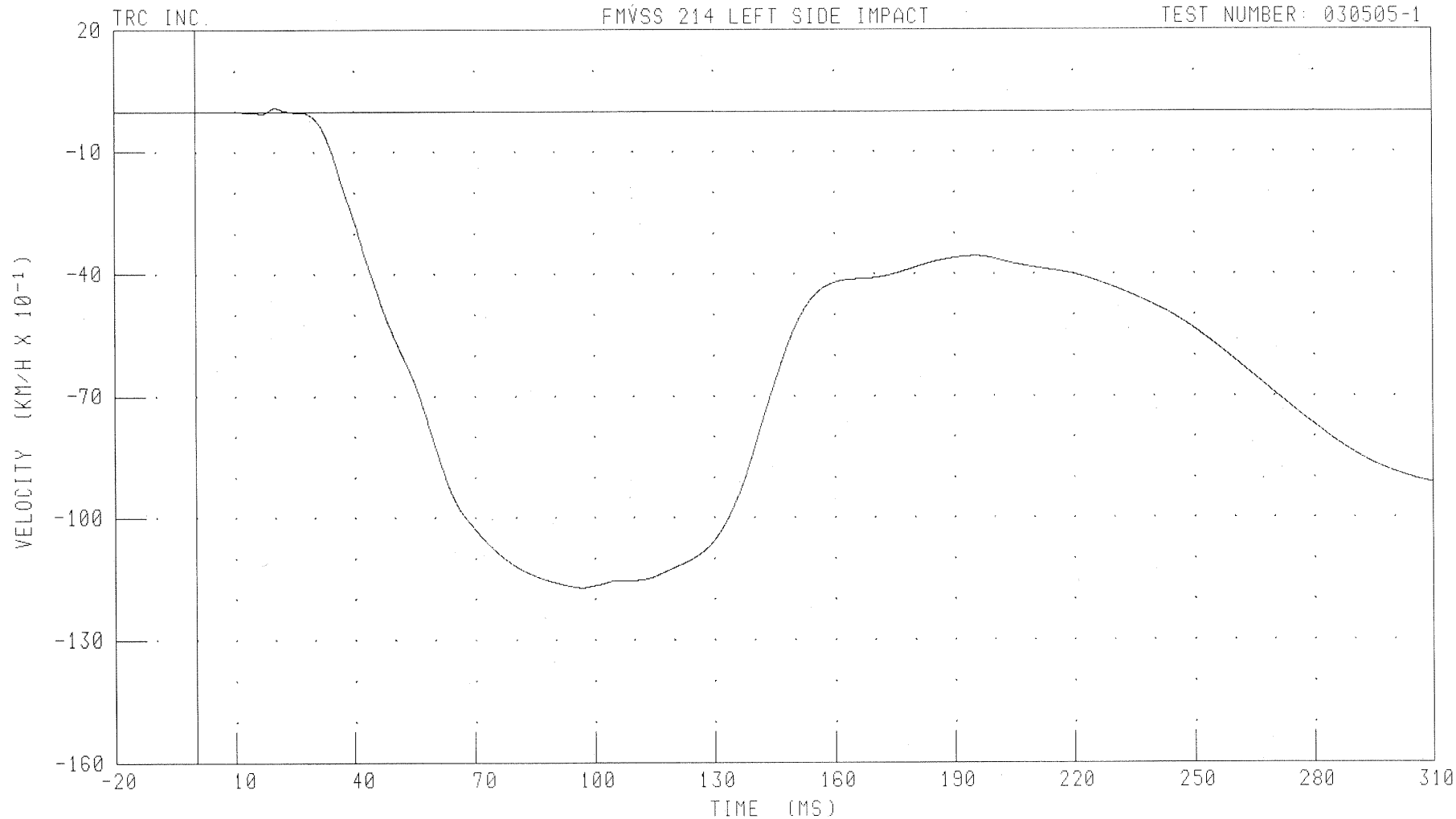
B-34

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER HEAD X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDXV4 FILTER: CH. CLASS 180

PEAK DATA: 0.10 KM/H @ 20.40 MS; -11.73 KM/H @ 96.80 MS

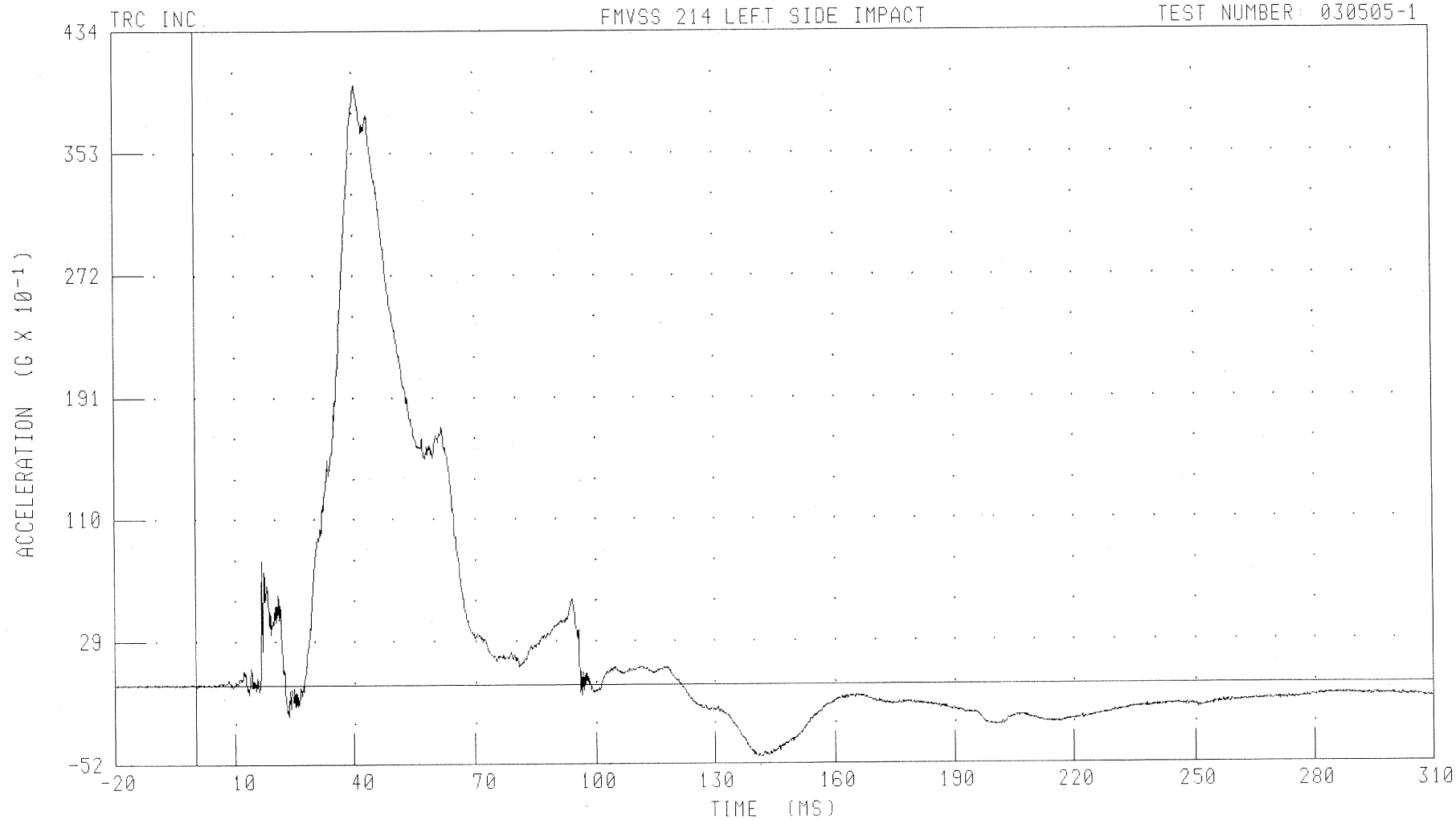
B-35

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER HEAD Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDYG4 FILTER: CH CLASS 1000

PEAK DATA: 39.85 G @ 40.88 MS; -4.75 G @ 140.96 MS

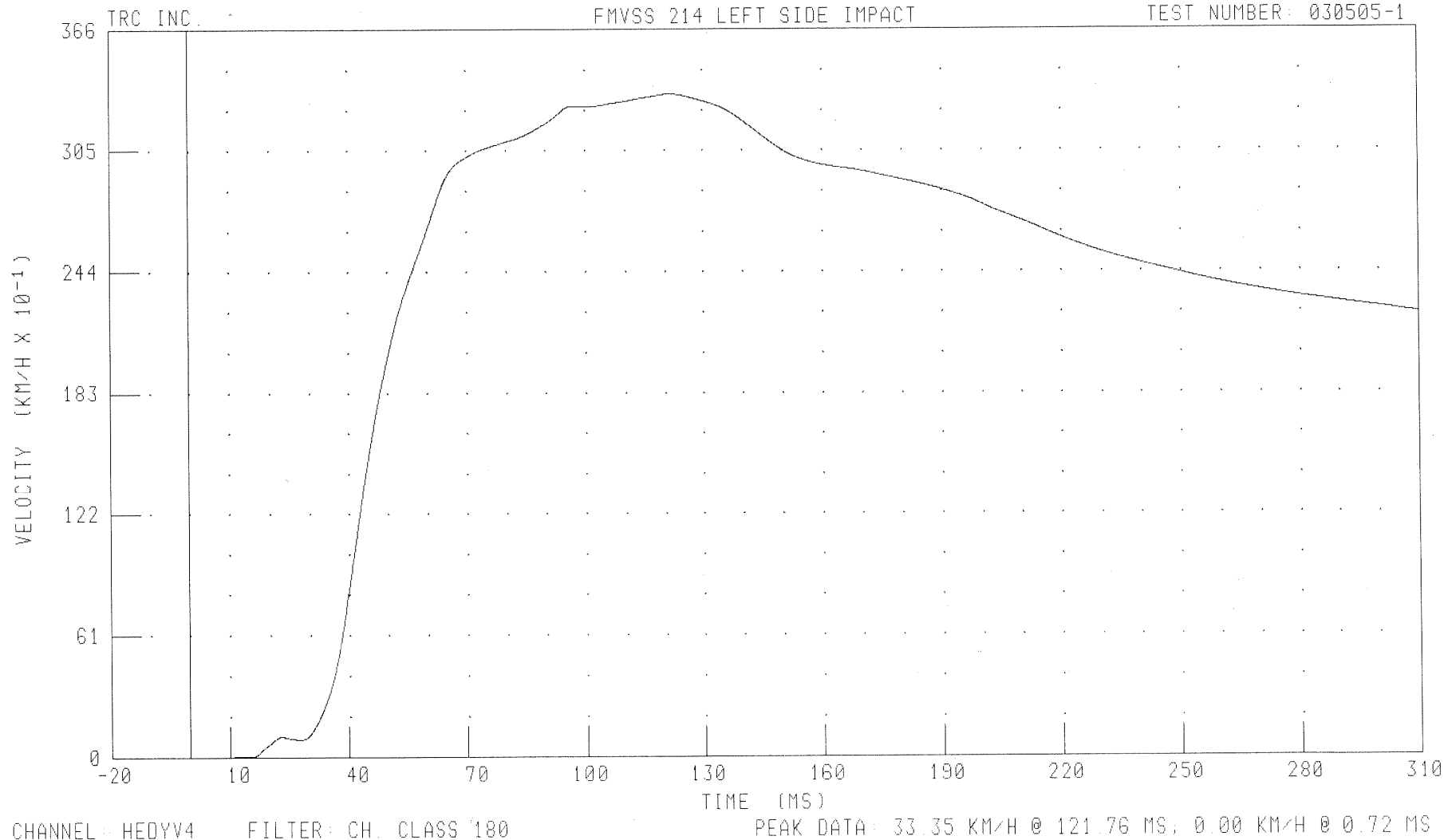
B-36

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER HEAD Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



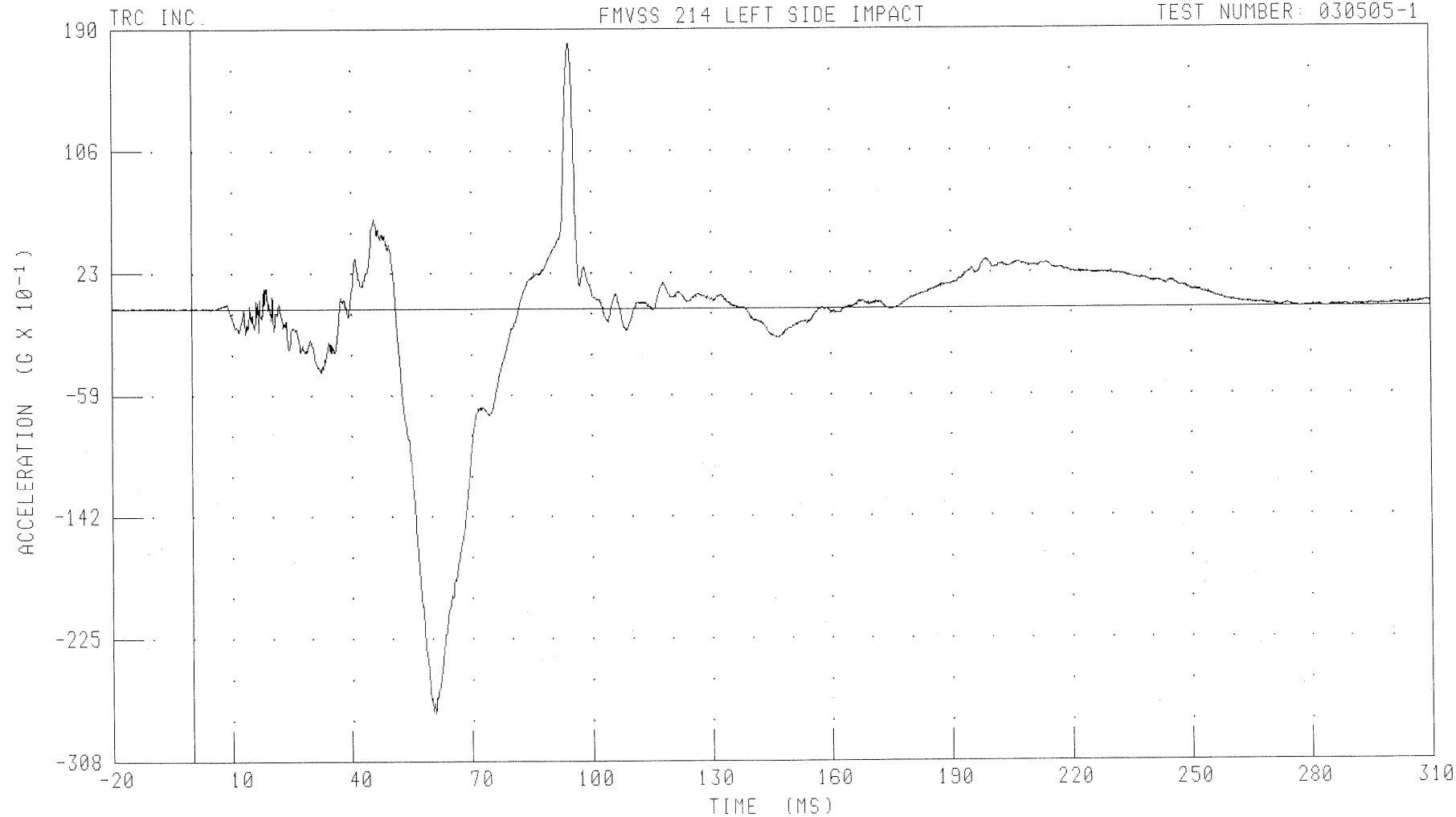
B-37

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER HEAD Z-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDZG4 FILTER: CH. CLASS 1000

PEAK DATA: 18.01 G @ 94.56 MS, -27.59 G @ 60.72 MS

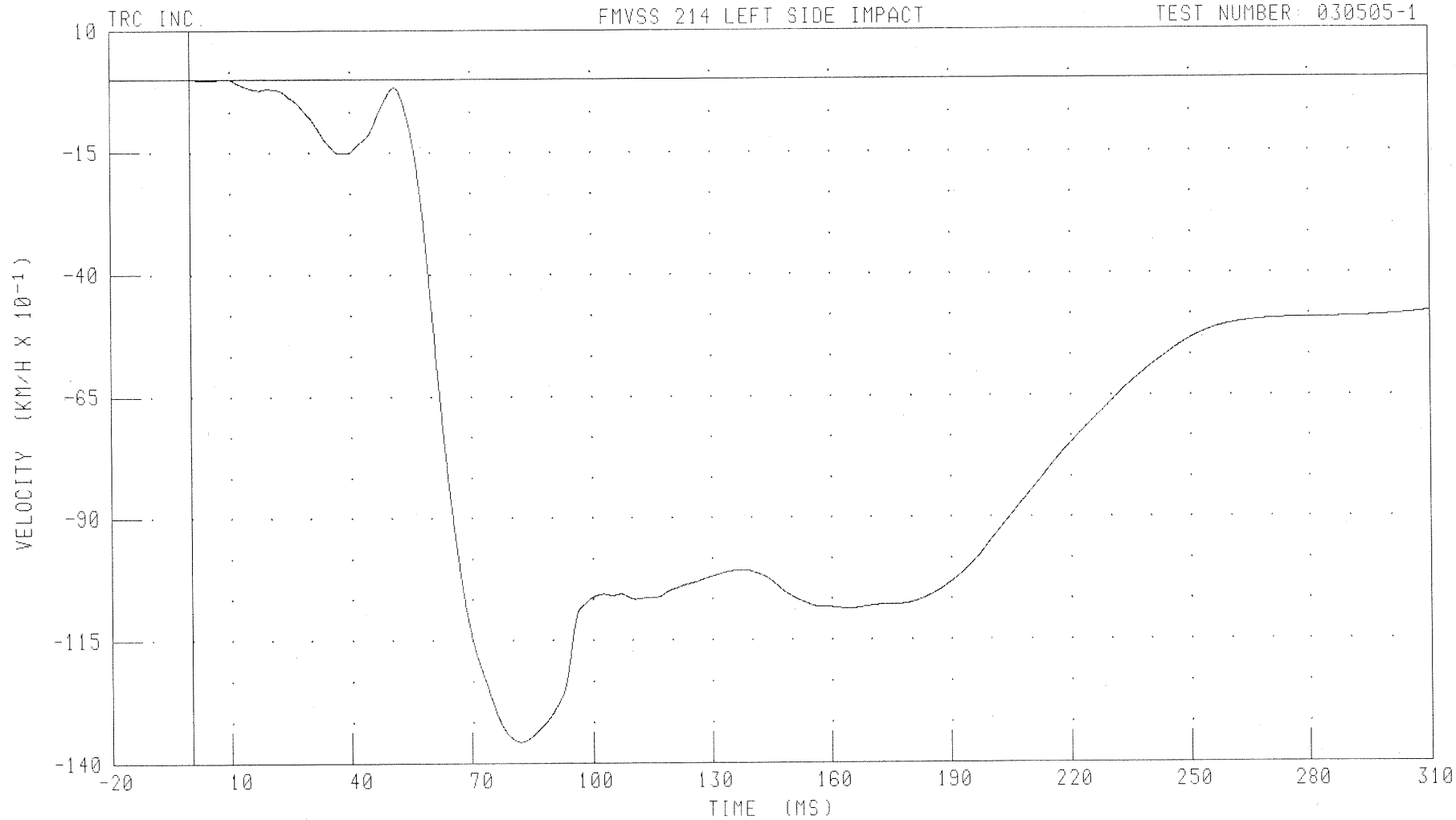
B-38

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER HEAD Z-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDZV4 FILTER: CH. CLASS 180

PEAK DATA: 0.01 KM/H @ 9.20 MS, -13.57 KM/H @ 82.08 MS

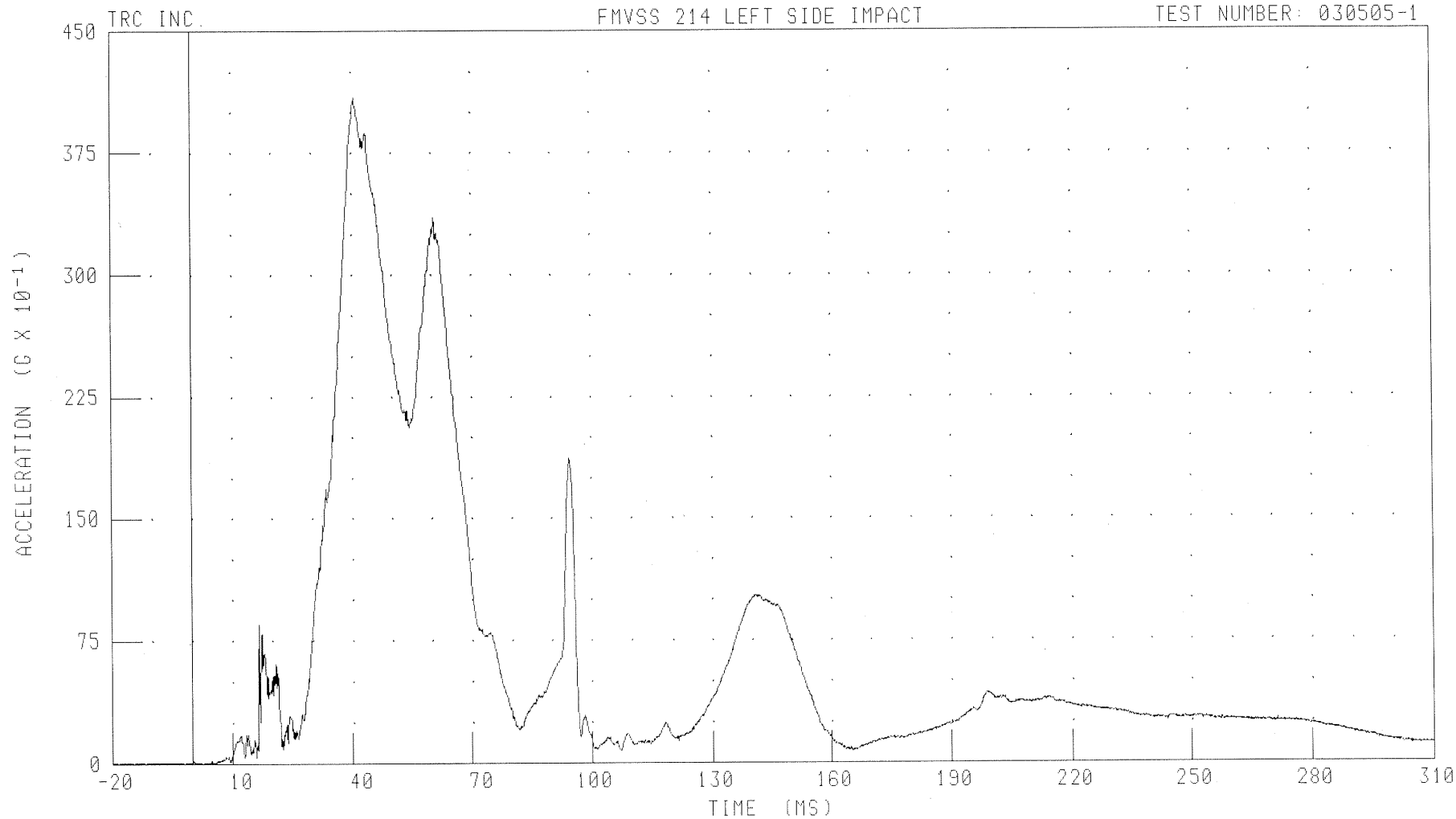
B-39

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER HEAD RESULTANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDRC4 FILTER: CH. CLASS 1000

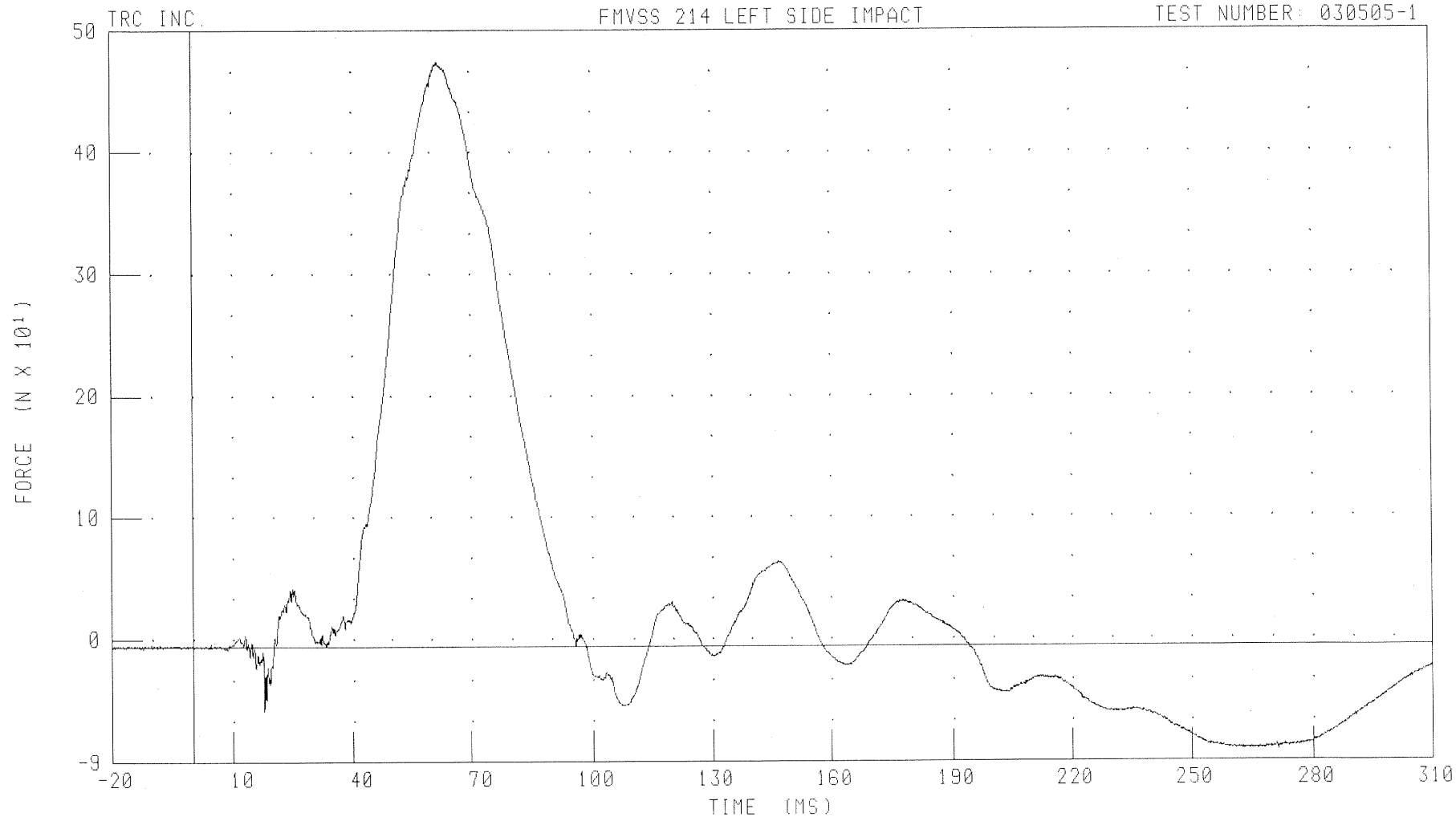
B-40

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER NECK X-AXIS SHEAR FORCE

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: NEKXF4 FILTER: CH. CLASS 1000

PEAK DATA: 479.95 N @ 62.08 MS, -85.56 N @ 271.28 MS

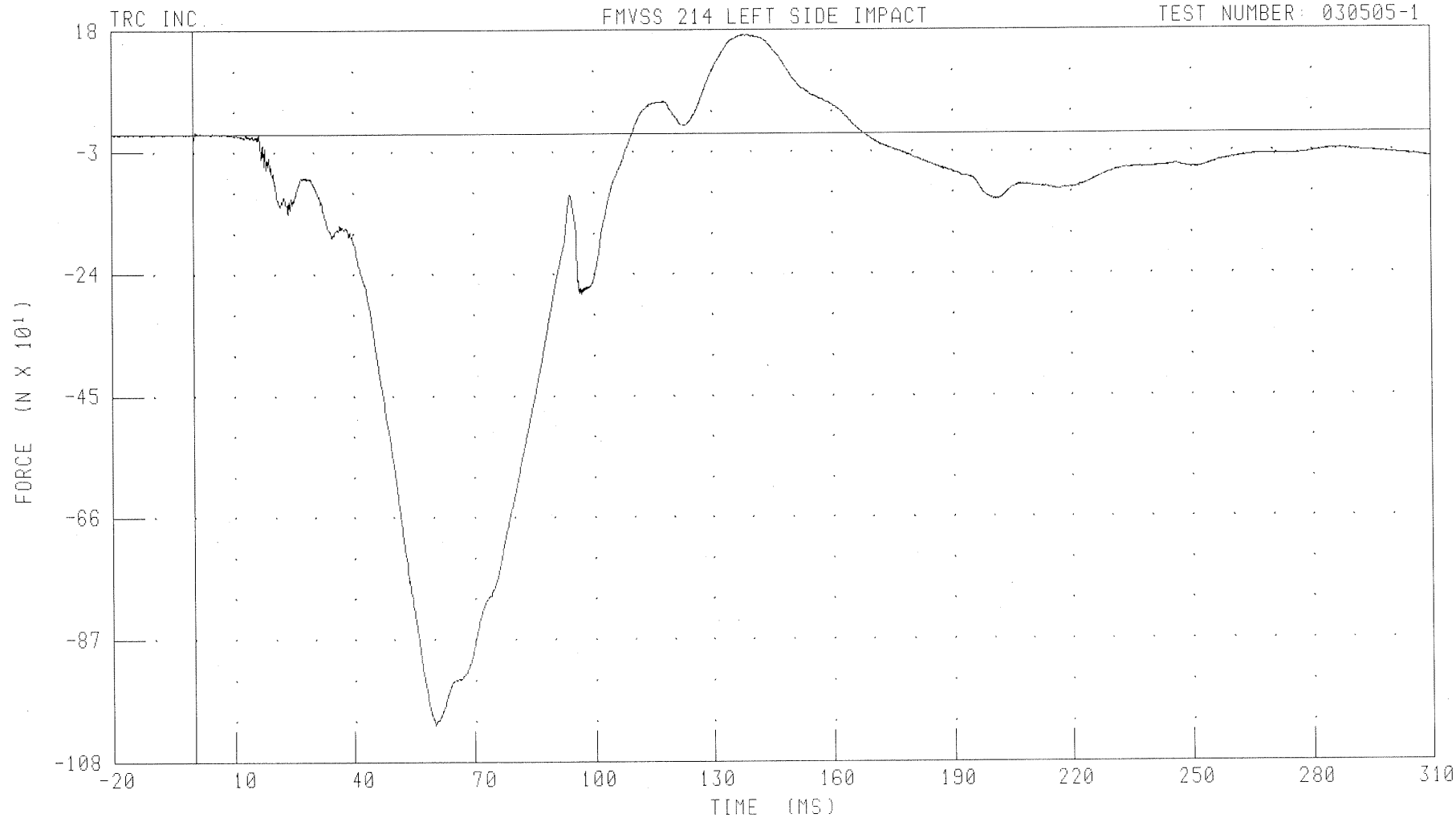
B-41

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER NECK Y-AXIS SHEAR FORCE

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: NEKYF4 FILTER: CH. CLASS 1000

PEAK DATA: 171.76 N @ 138.00 MS; -107.24 N @ 60.24 MS

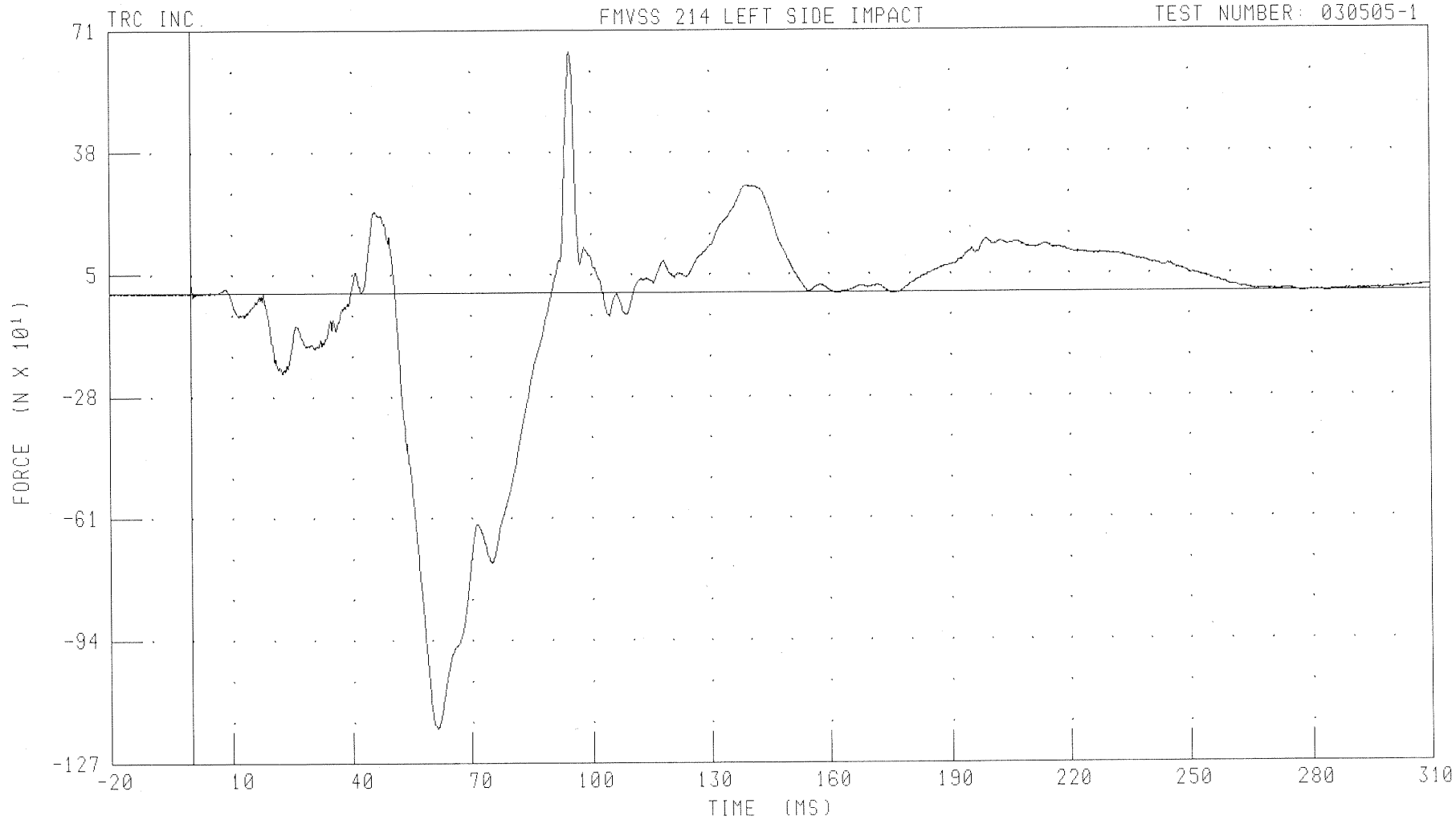
B-42

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER NECK Z-AXIS AXIAL FORCE

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: NEKZF4 FILTER: CH. CLASS 1000

PEAK DATA: 653.01 N @ 94.80 MS; -1177.06 N @ 61.28 MS

B-43

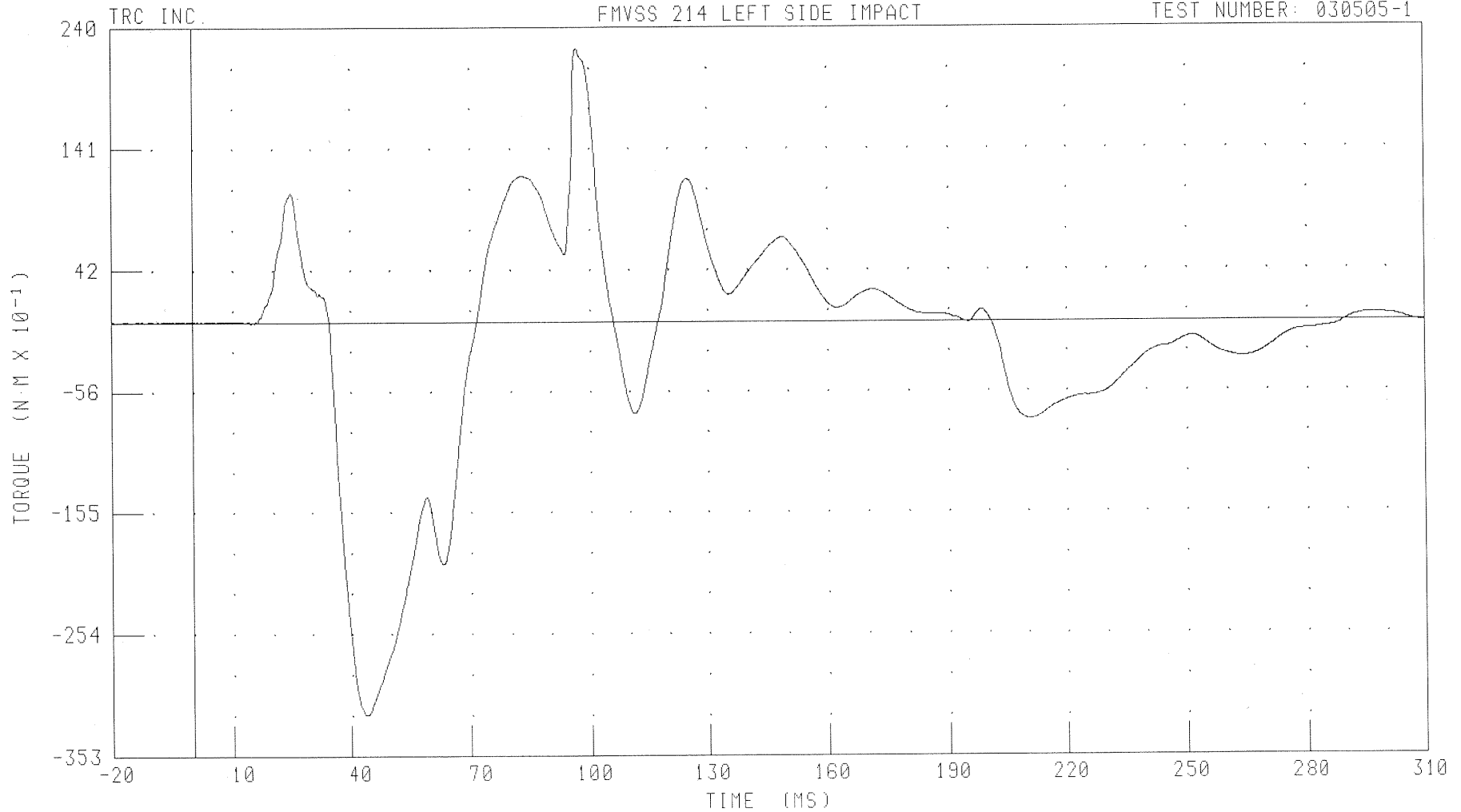
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

LEFT REAR PASSENGER NECK MOMENT ABOUT X AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: NEKXM4 FILTER: CH. CLASS 600

PEAK DATA: 22.29 N·M @ 96.96 MS, -32.09 N·M @ 44.08 MS

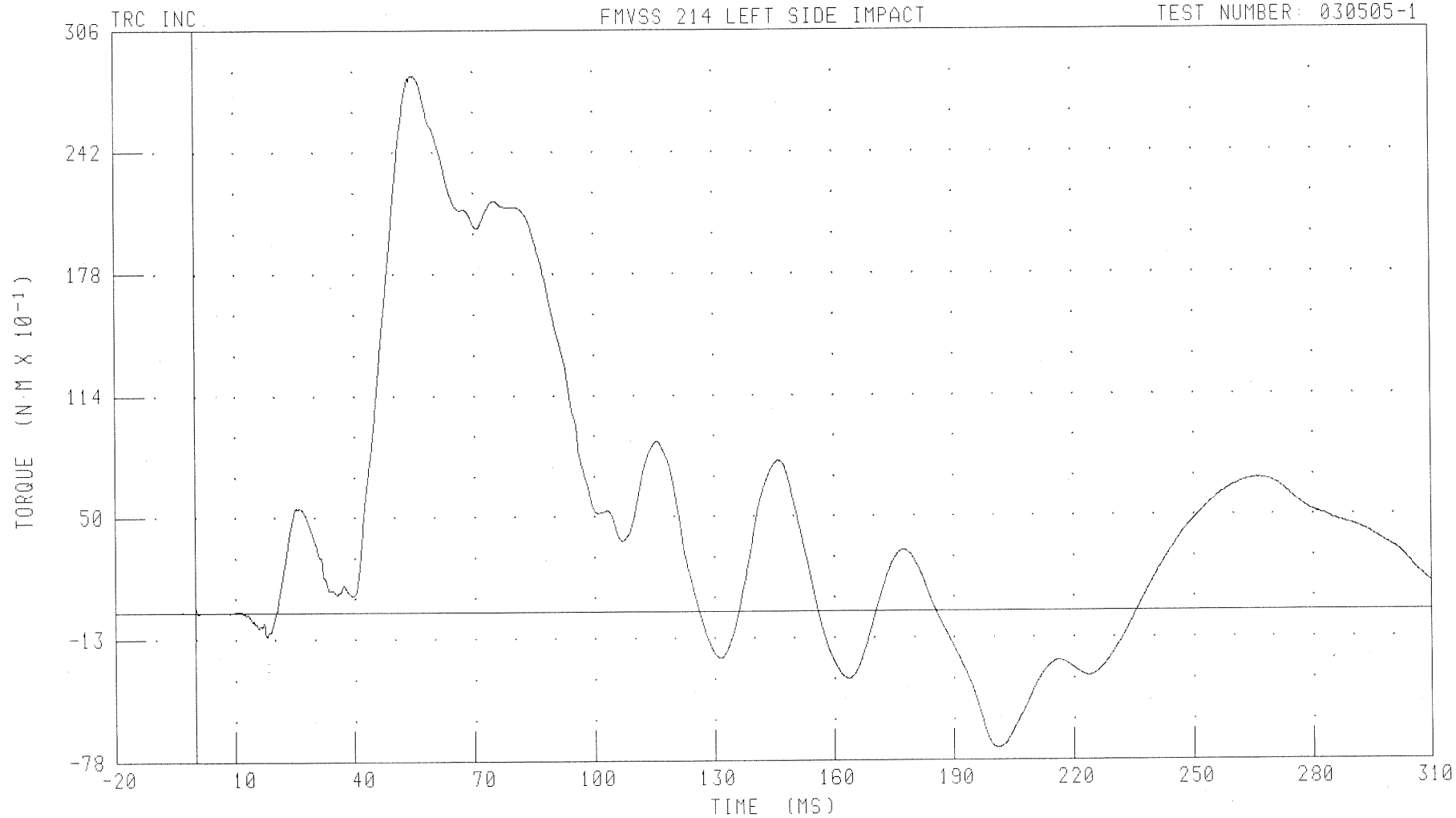
B-44

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER NECK MOMENT ABOUT Y AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: NEKYM4 FILTER: CH. CLASS 600

PEAK DATA: 28.24 N-M @ 54.48 MS; -7.15 N-M @ 201.20 MS

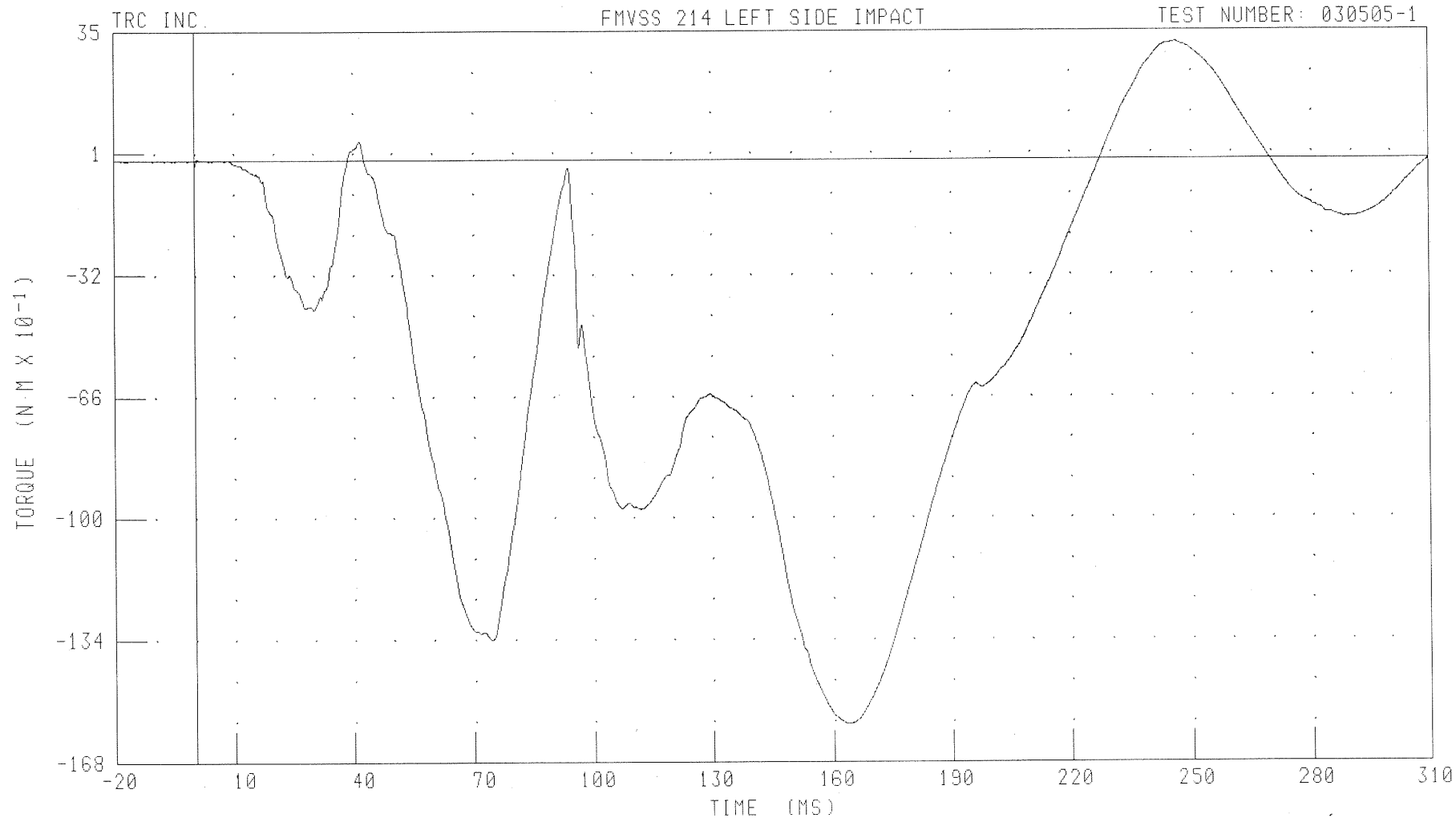
B-45

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER NECK MOMENT ABOUT Z AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: NEKZM4 FILTER: CH. CLASS 600

PEAK DATA 3.29 N-M @ 246.32 MS, -15.75 N-M @ 163.68 MS

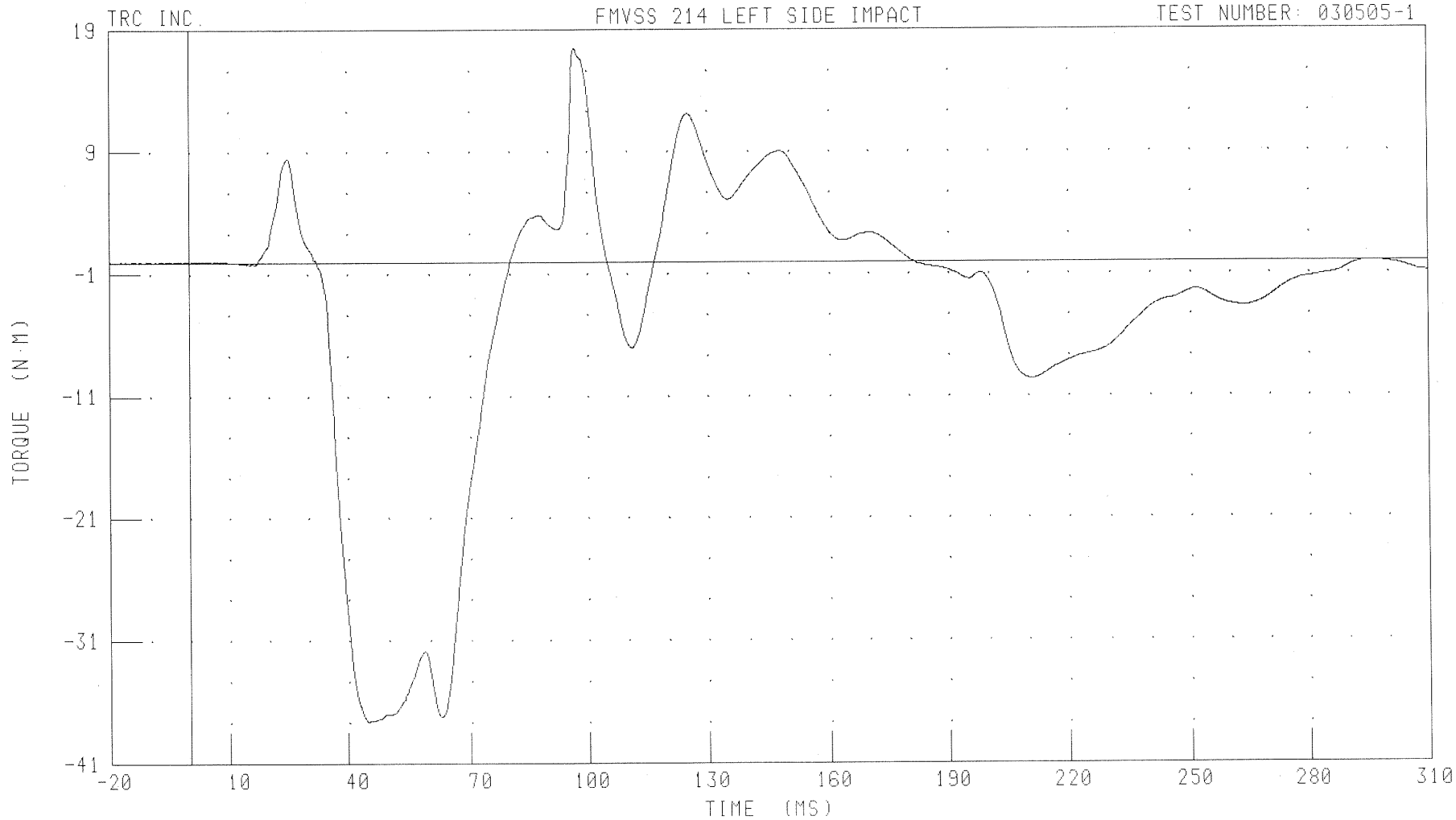
B-46

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER NECK OCCIPITAL CONDYLE MOMENT ABOUT X AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: NK0XM4 FILTER: CH. CLASS 600

PEAK DATA: 17.49 N·m @ 96.88 ms; -37.63 N·m @ 44.96 ms

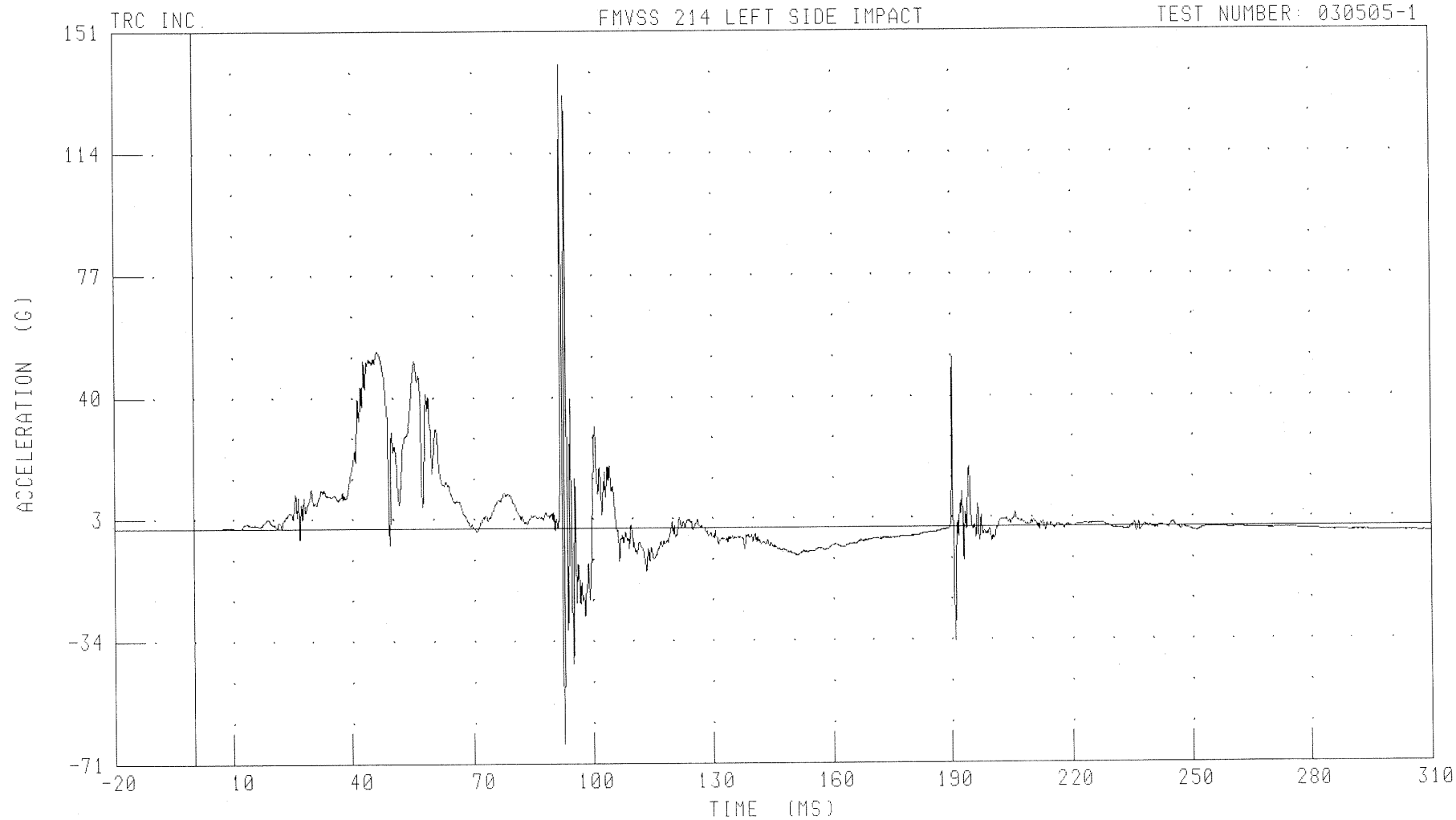
B-47

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER UPPER RIB Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LURYG4 FILTER: CH. CLASS 1000

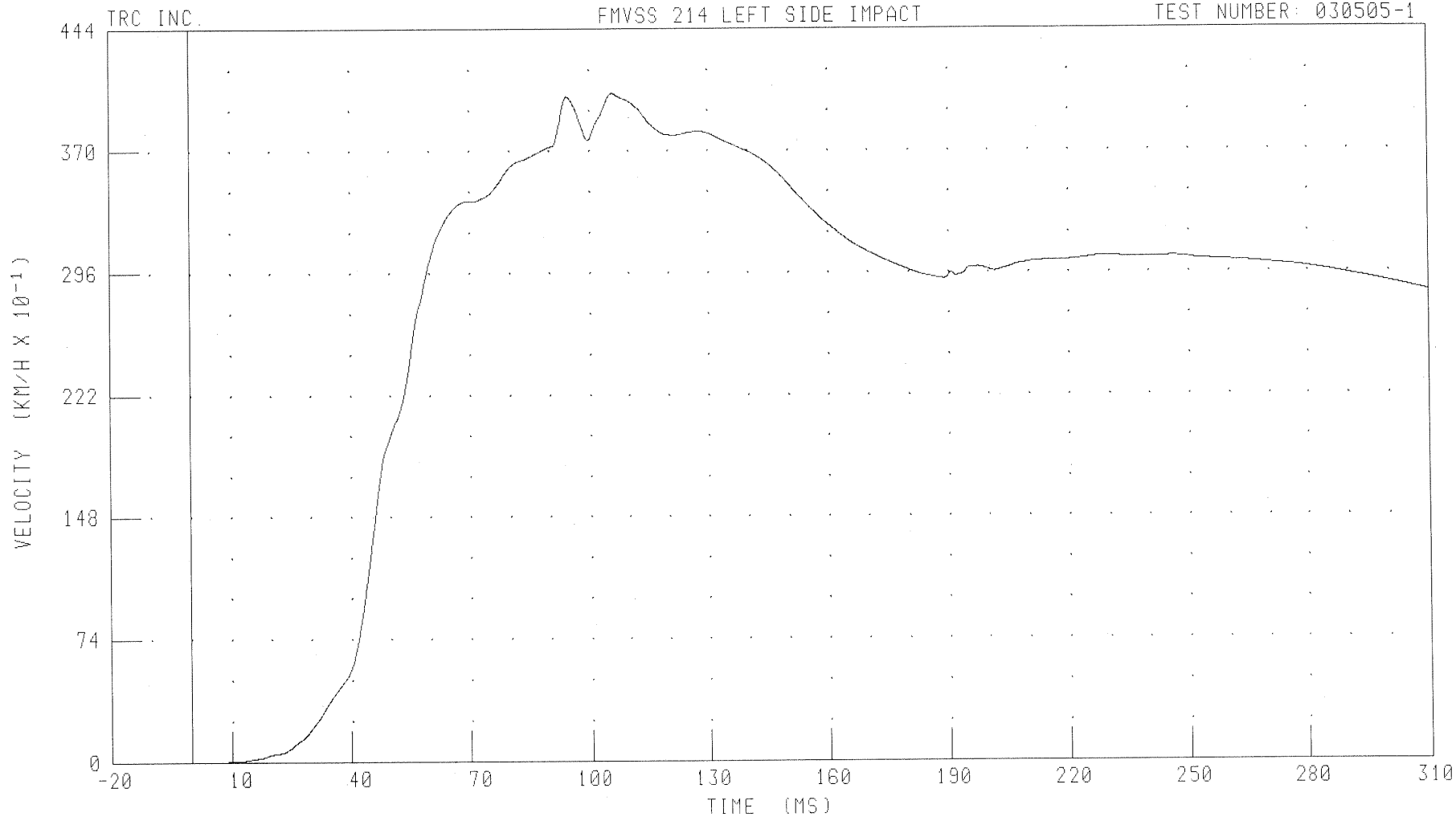
B-48

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER UPPER RIB Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LURYV4

FILTER: CH. CLASS 180

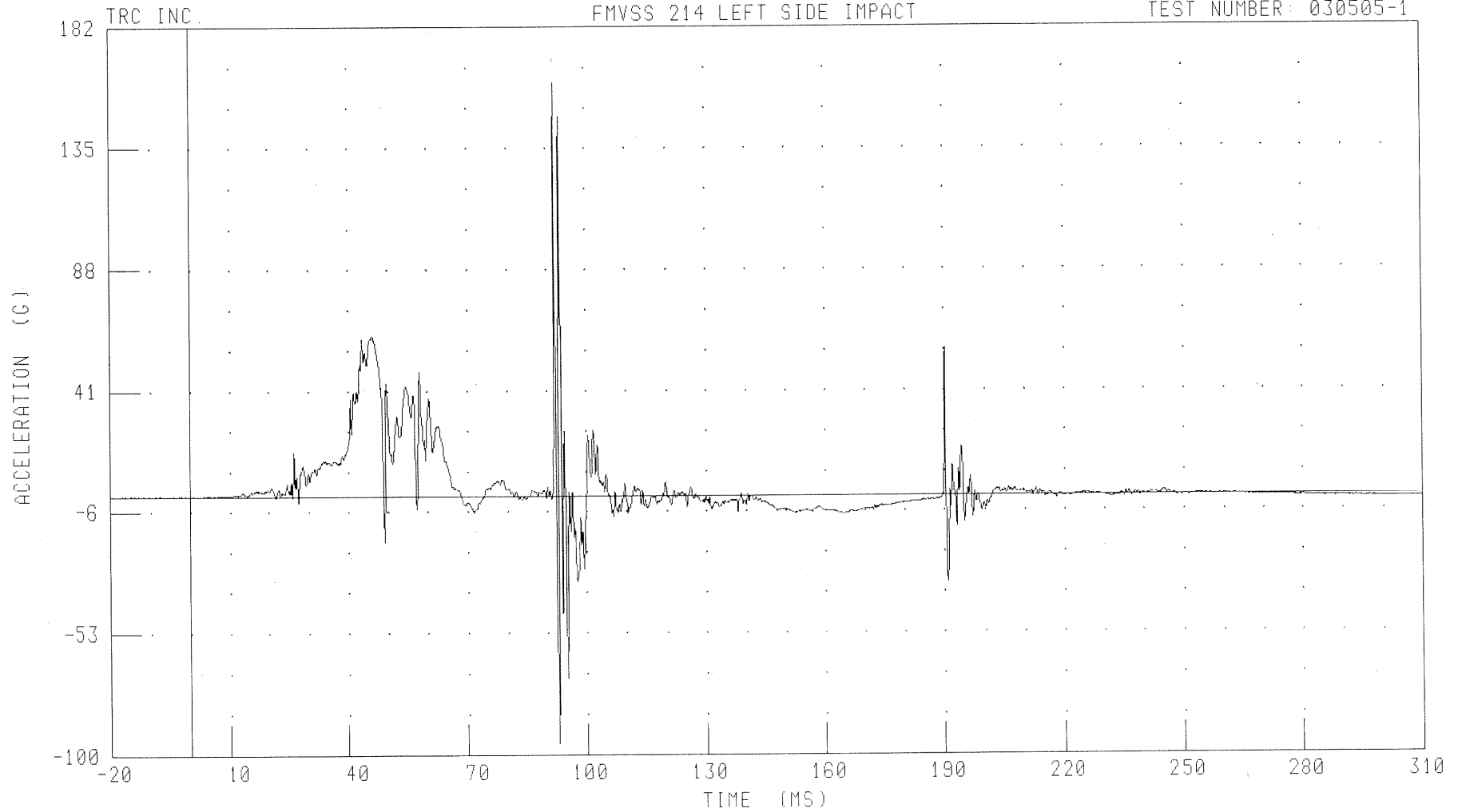
PEAK DATA: 40.51 KM/H @ 106.16 MS; 0.00 KM/H @ 0.00 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

LEFT REAR PASSENGER LOWER RIB Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



B-50

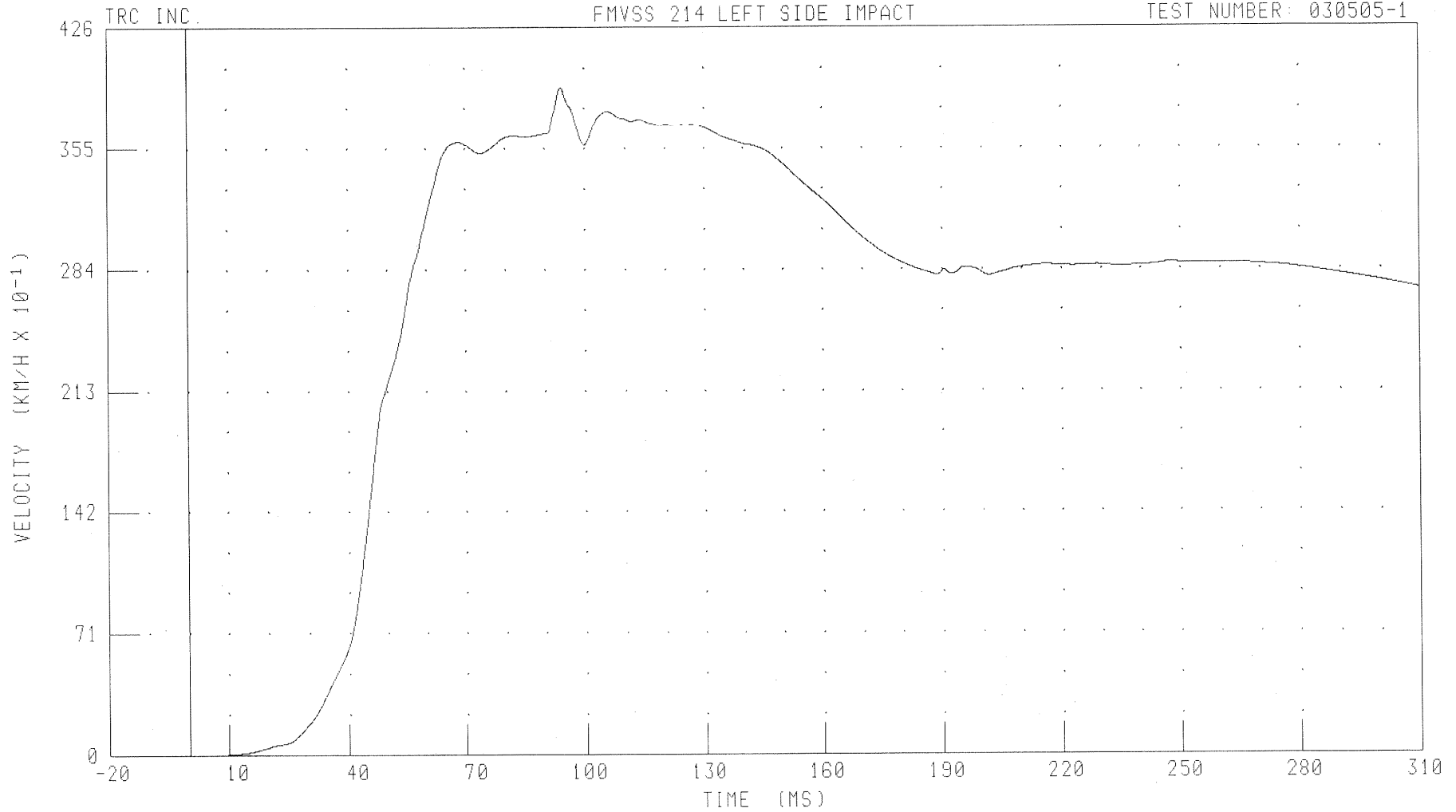
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

LEFT REAR PASSENGER LOWER RIB Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LLRYV4 FILTER: CH. CLASS 180

PEAK DATA: 39 09 KM/H @ 94.40 MS; 0.00 KM/H @ 0.00 MS

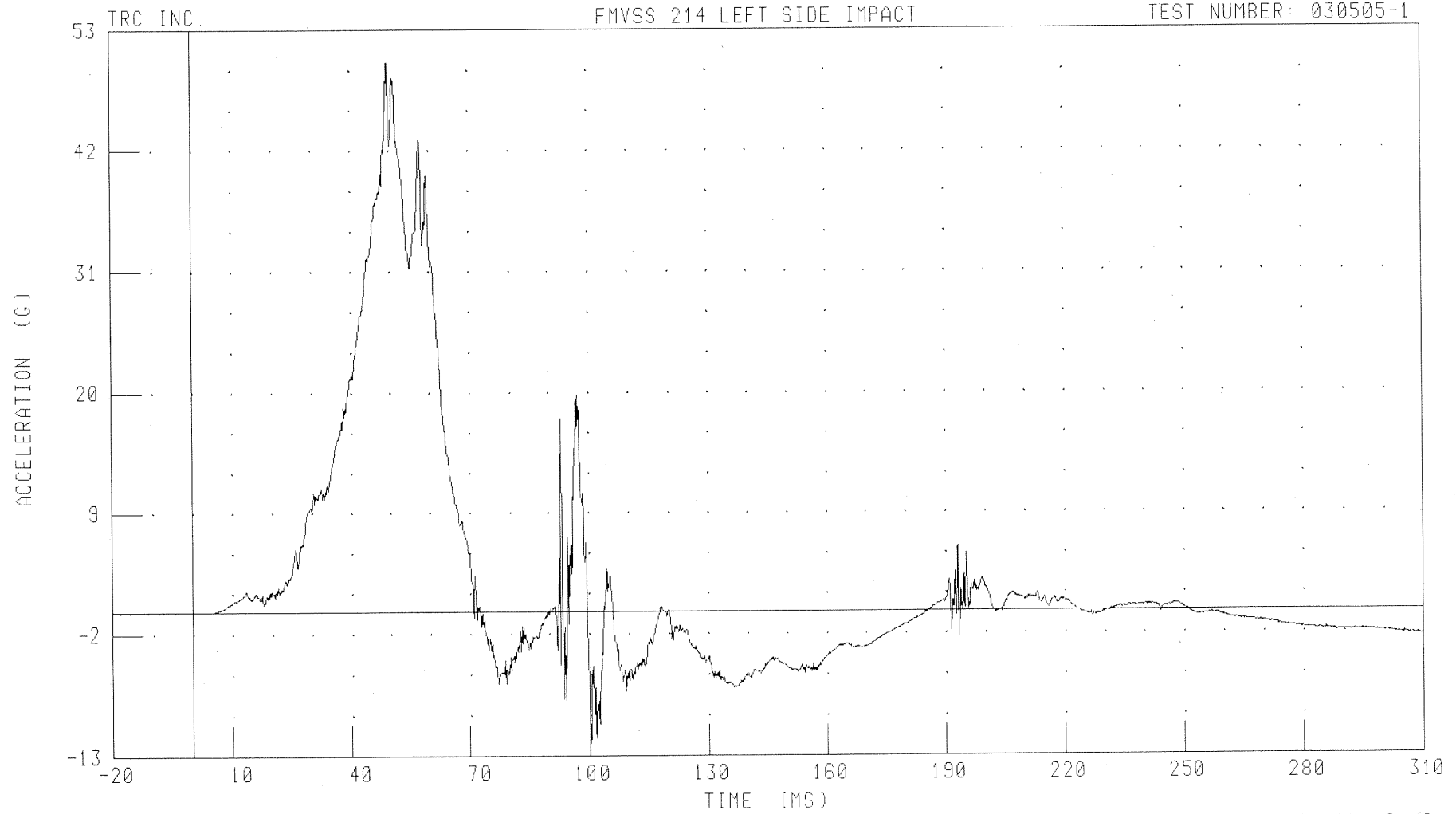
B-51

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER LOWER SPINE Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: T12YG4 FILTER: CH. CLASS 1000

PEAK DATA: 50.04 G @ 49.68 MS, -11.94 G @ 100.48 MS

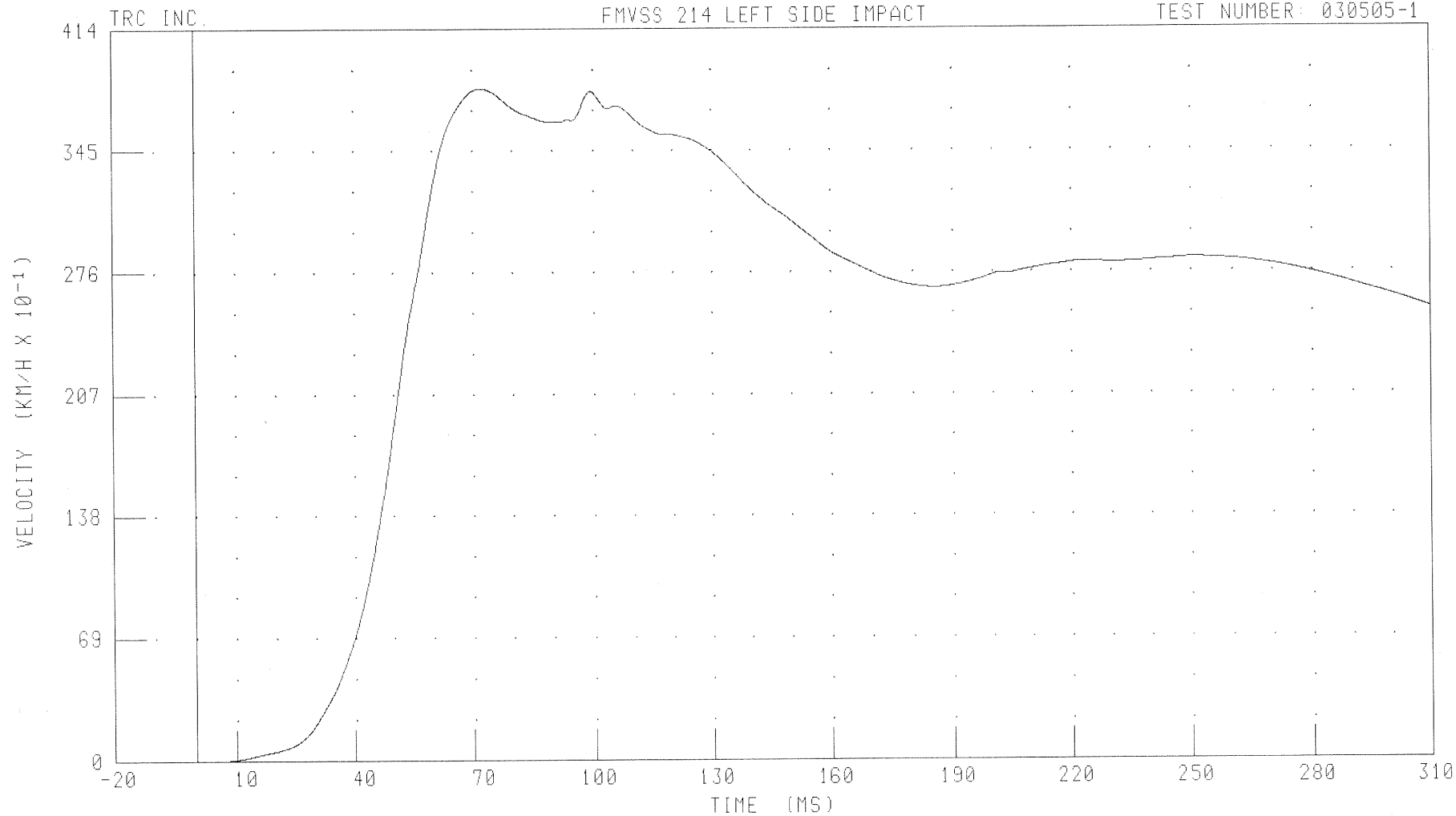
B-52

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER LOWER SPINE Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: T12YV4

FILTER: CH. CLASS 180

PEAK DATA: 38 03 KM/H @ 72.24 MS; 0 00 KM/H @ 0 00 MS

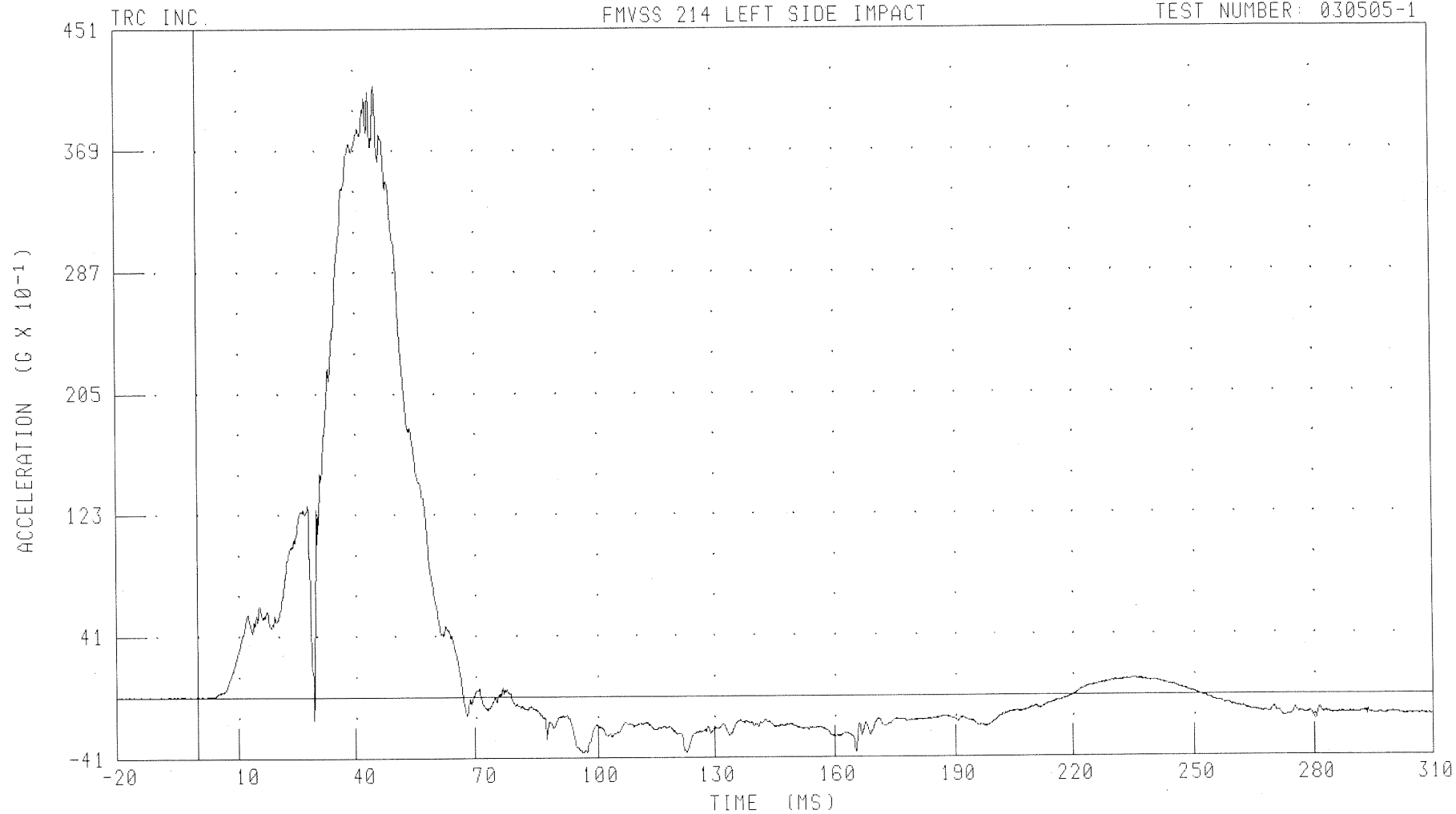
B-53

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER PELVIS Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: PEVYG4 FILTER: CH. CLASS 1000

PEAK DATA: 41.29 G @ 45.44 MS; -3.78 G @ 165.28 MS

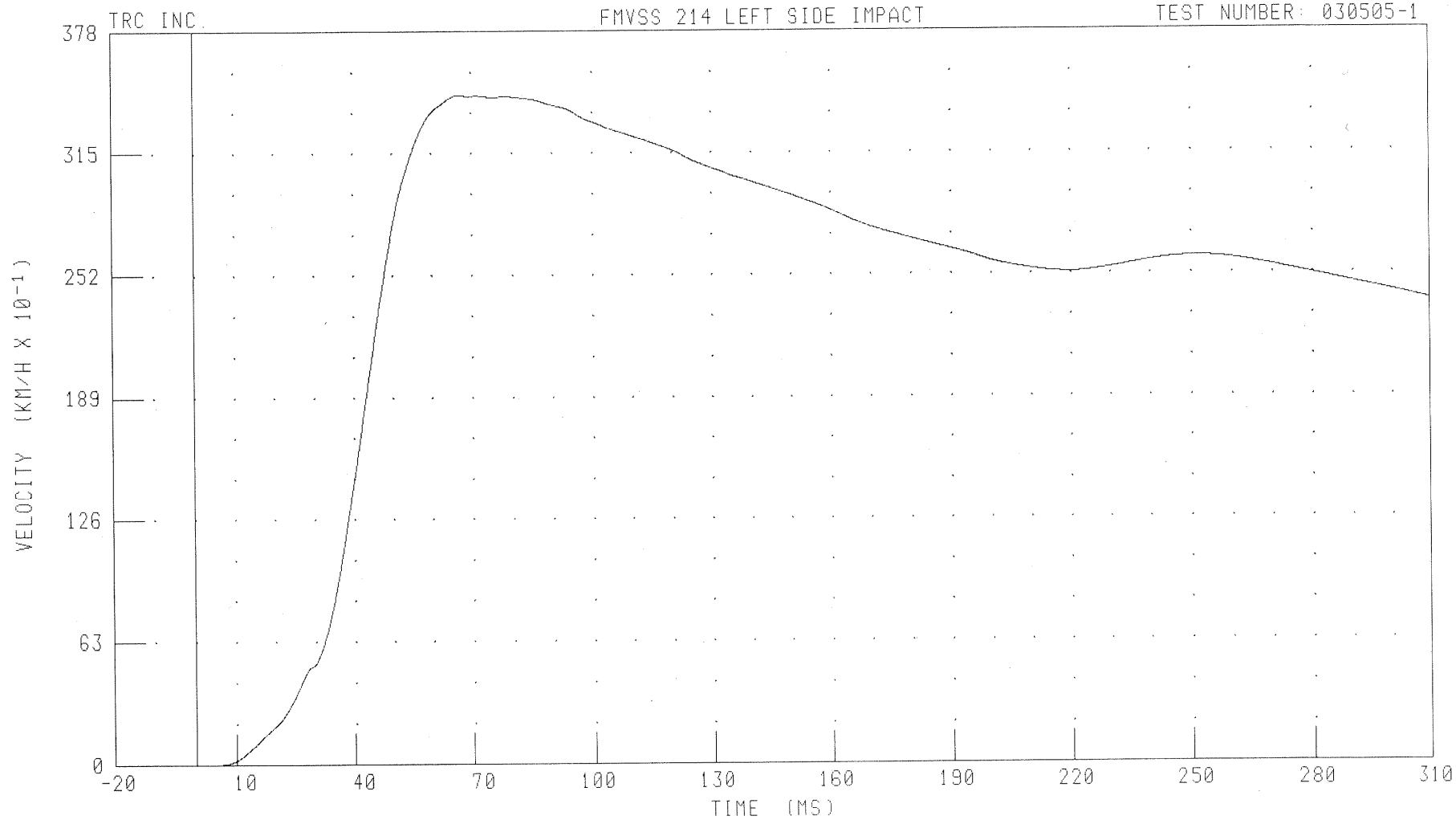
B-54

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER PELVIS Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: PEVYV4 FILTER: CH. CLASS 180

PEAK DATA: 34.52 KM/H @ 67.04 MS; 0.00 KM/H @ 0.00 MS

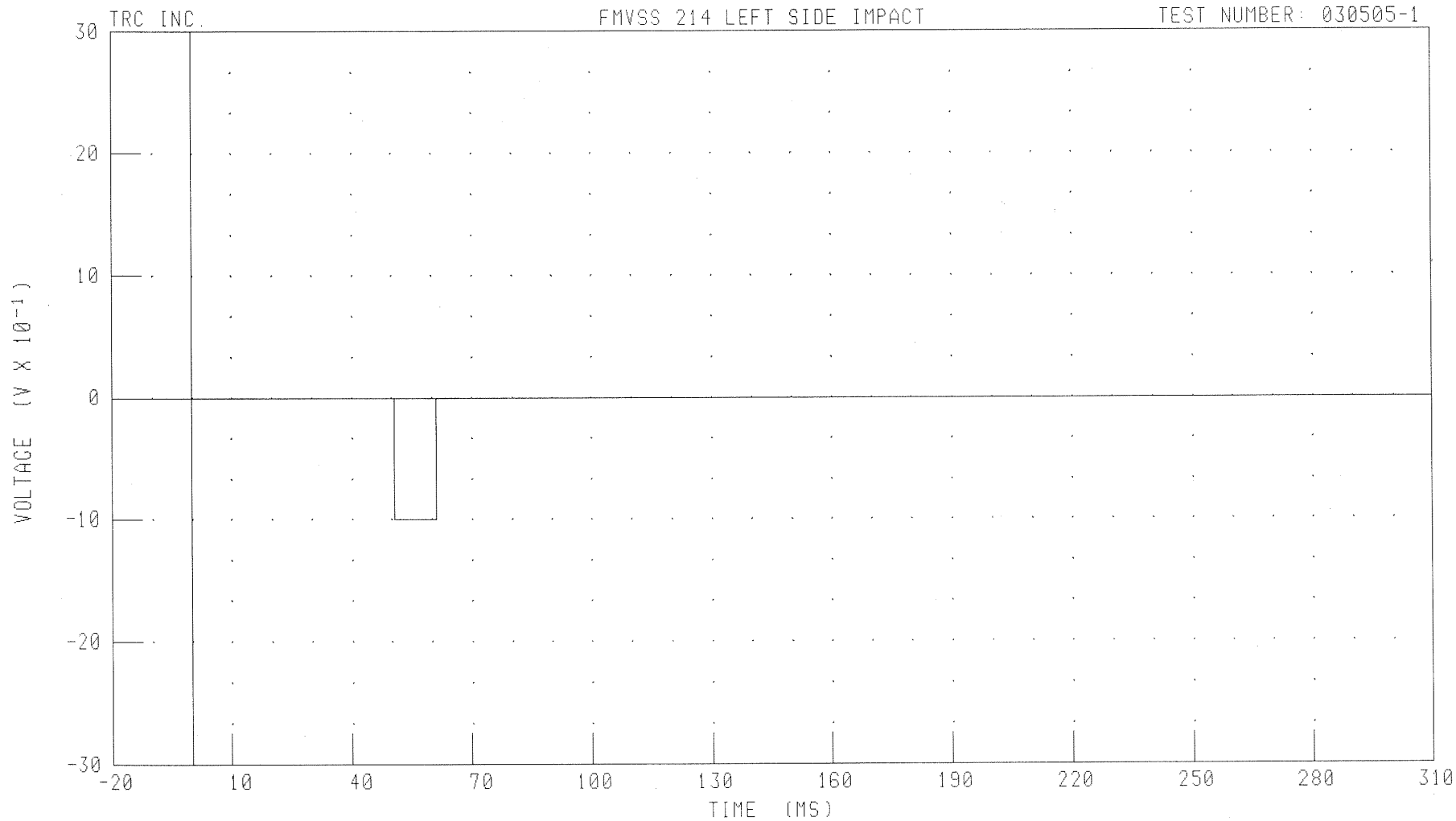
B-55

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER SHOULDER CONTACT SWITCH

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: SHLET4 FILTER: CH. CLASS 1000

PEAK DATA: 0.00 V @ 310.00 MS; -1.00 V @ 50.80 MS

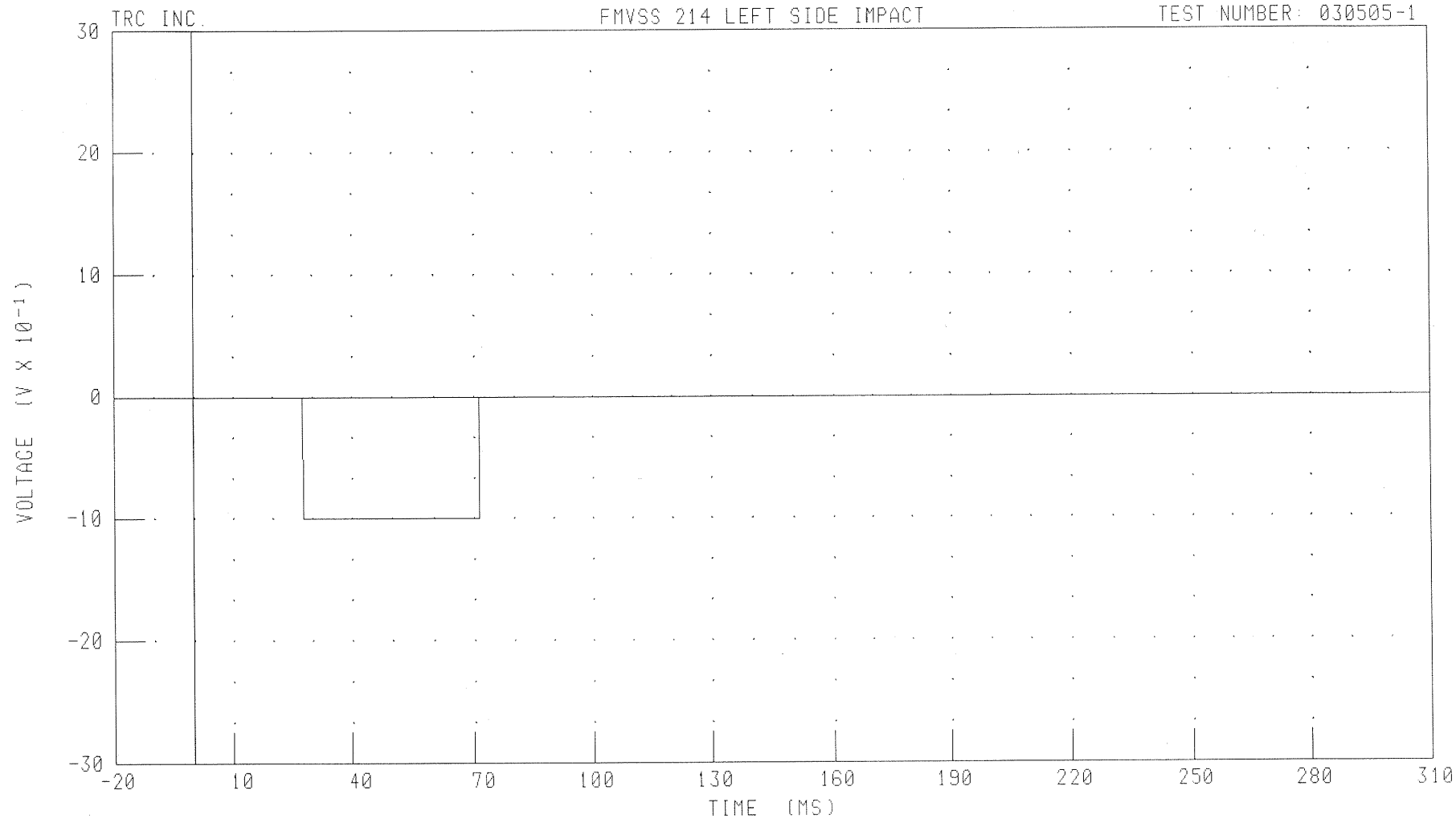
B-56

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER PELVIS CONTACT SWITCH

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: PEVET4 FILTER: CH. CLASS 1000

B-57

030505-1

Driver and Passenger Dummy Instrumentation Plots

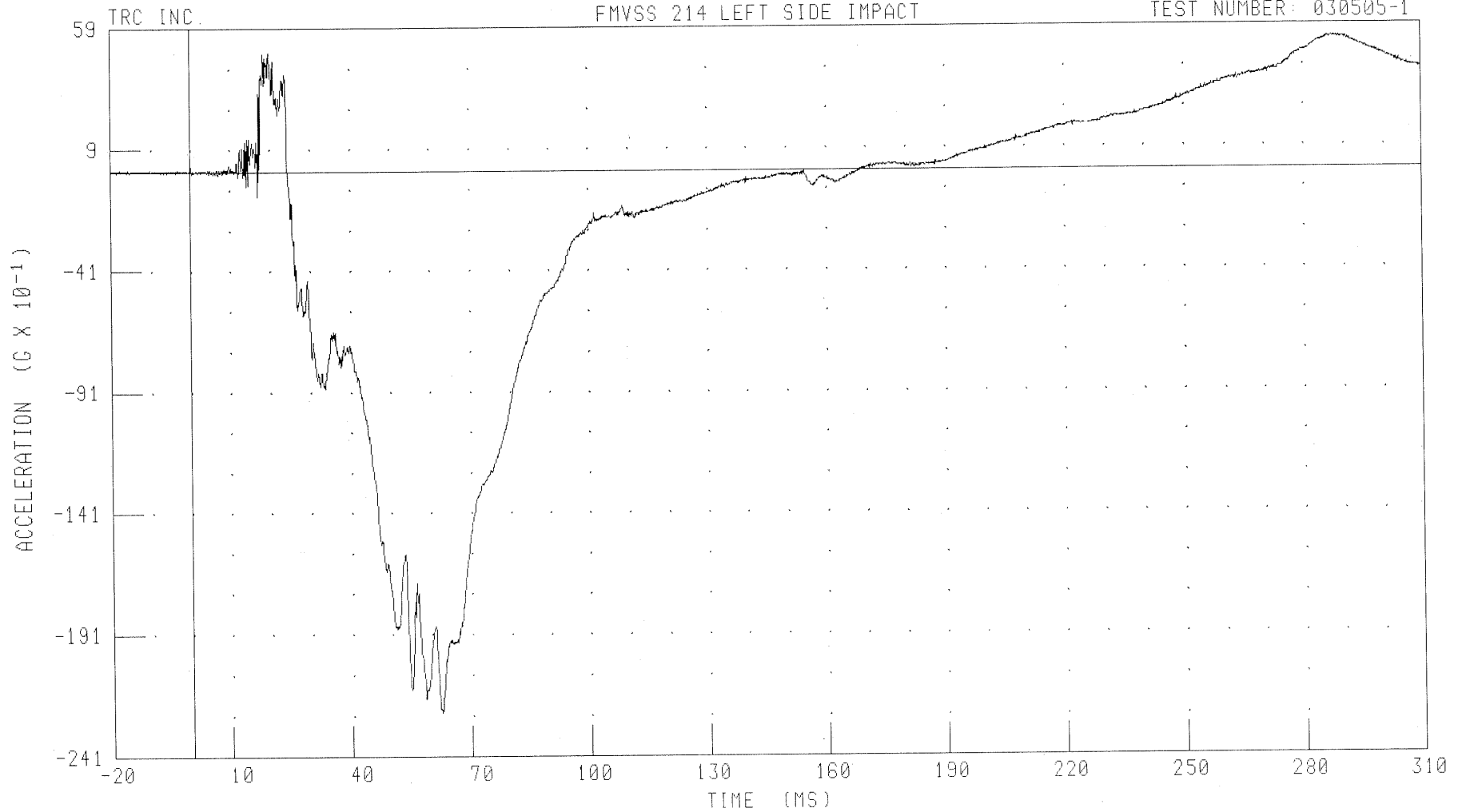
Acceleration Data - Filter Class 1000 - Redundant

Integration Data - Filter Class 180 - Redundant

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
DRIVER HEAD X-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDXR1

FILTER: CH. CLASS 1000

PEAK DATA: 5.40 G @ 286.24 MS; -22.33 G @ 62.56 MS

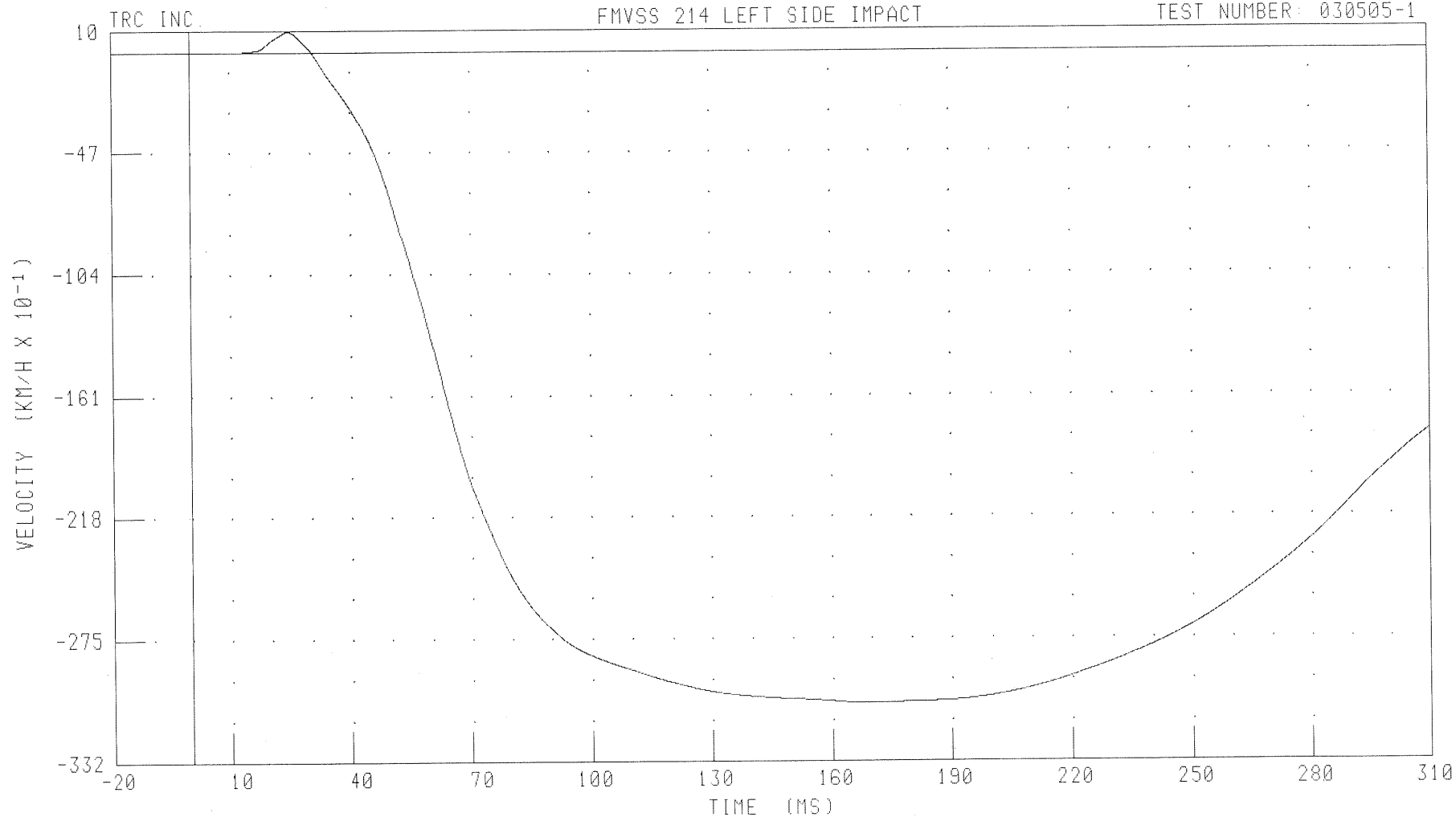
B-59

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
DRIVER HEAD X-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDXVI

FILTER: CH. CLASS 180

PEAK DATA: 0.96 KM/H @ 24.80 MS; -30.53 KM/H @ 169.04 MS

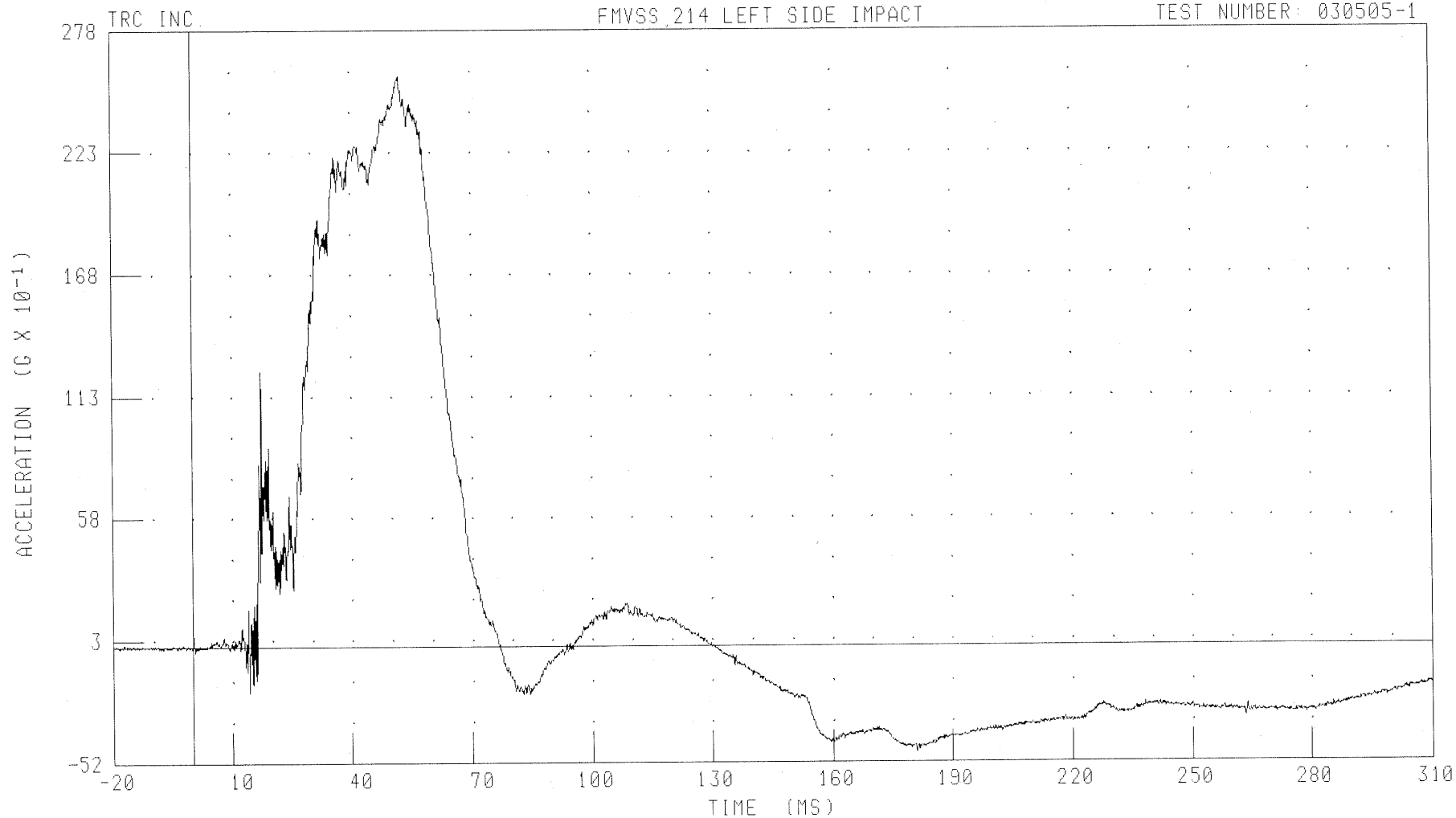
B-60

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
DRIVER HEAD Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDYR1 FILTER: CH. CLASS 1000

PEAK DATA: 25.76 G @ 52.24 MS; -4.77 G @ 181.04 MS

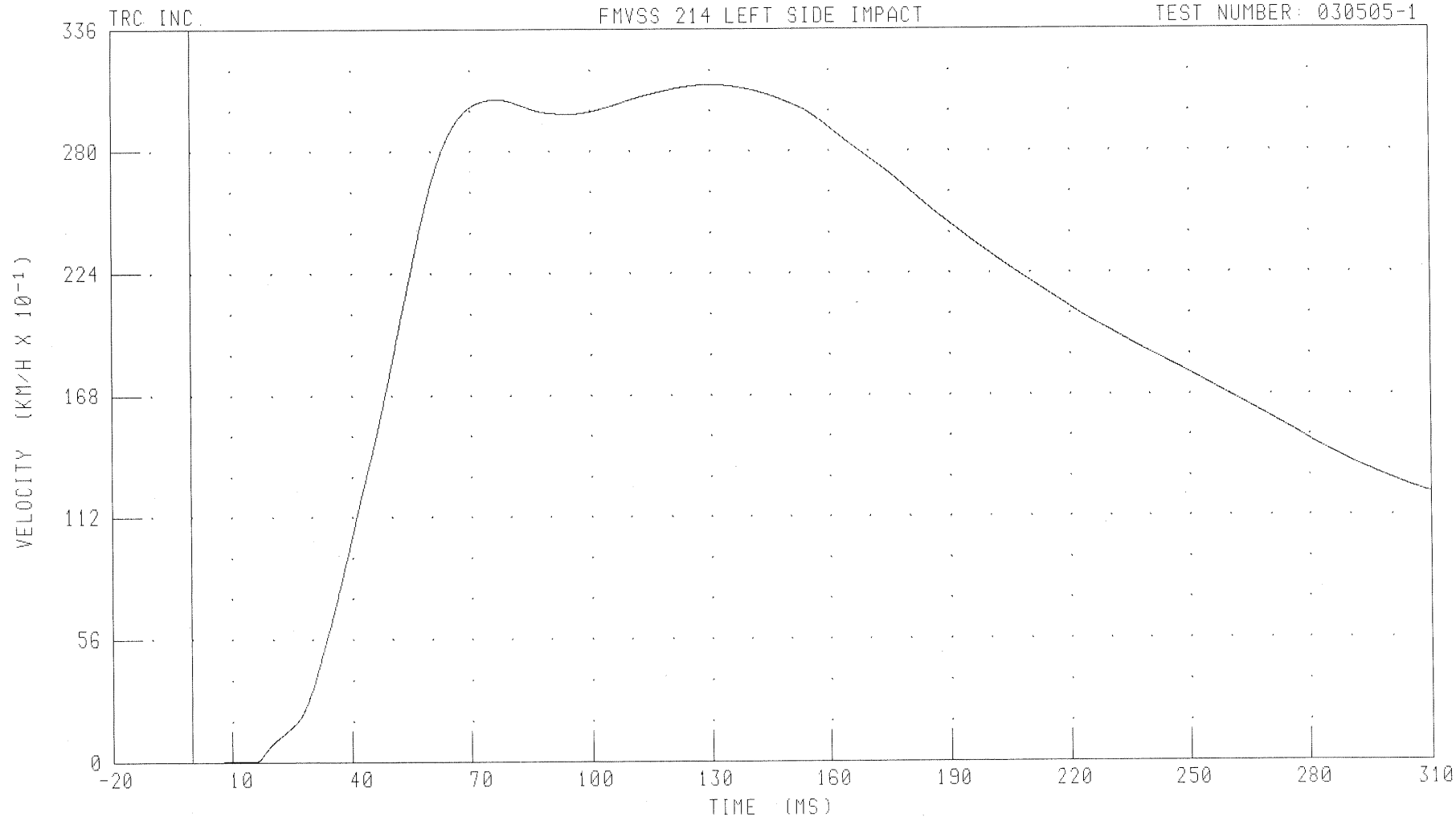
B-61

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
DRIVER HEAD Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



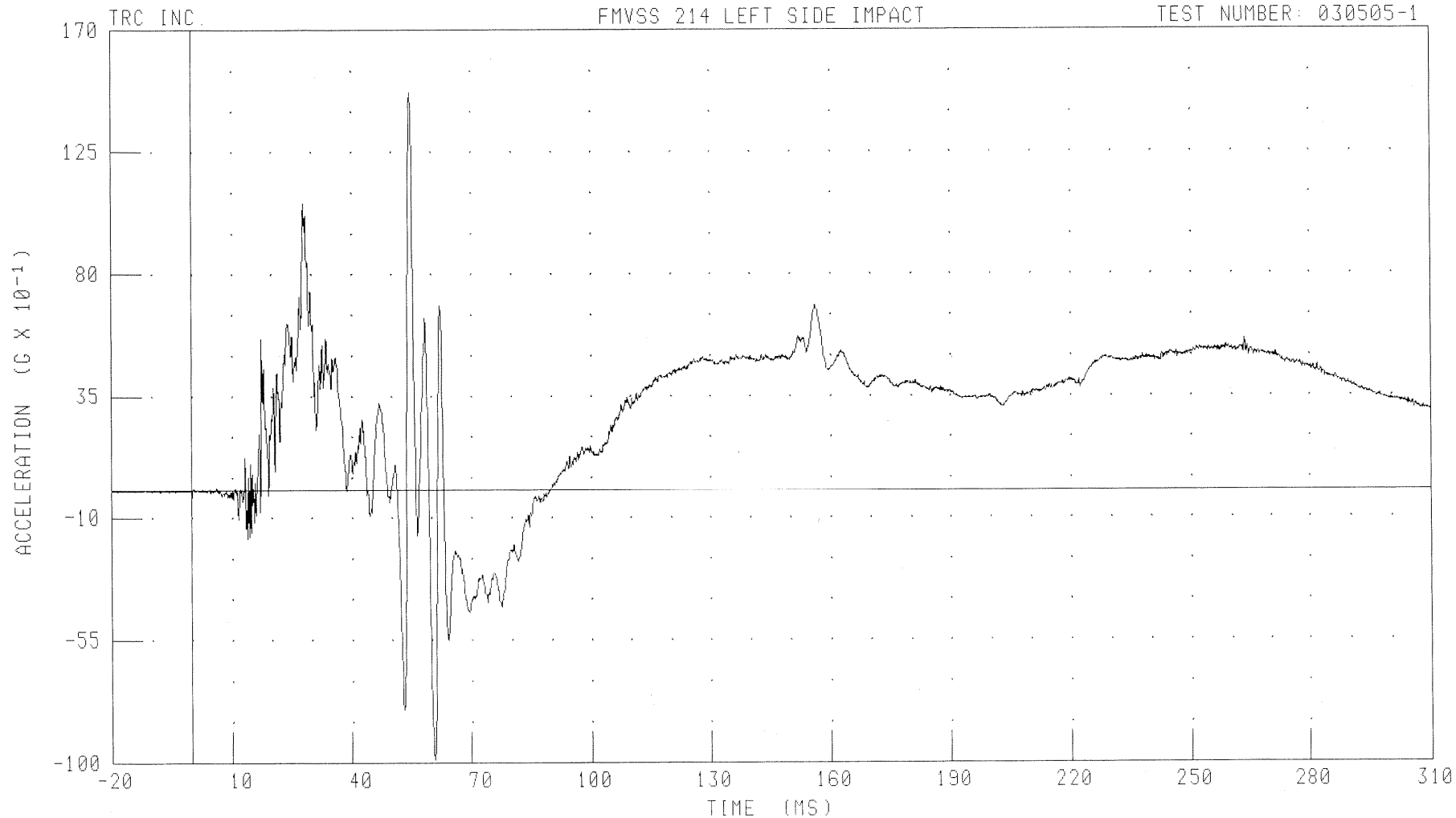
CHANNEL: HEDYVI FILTER: CH. CLASS 180

PEAK DATA: 31.05 KM/H @ 130.40 MS; 0.00 KM/H @ 3.52 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
DRIVER HEAD Z-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDZR1 FILTER: CH. CLASS 1000

PEAK DATA: 14.74 G @ 54.88 MS; -9.88 G @ 60.64 MS

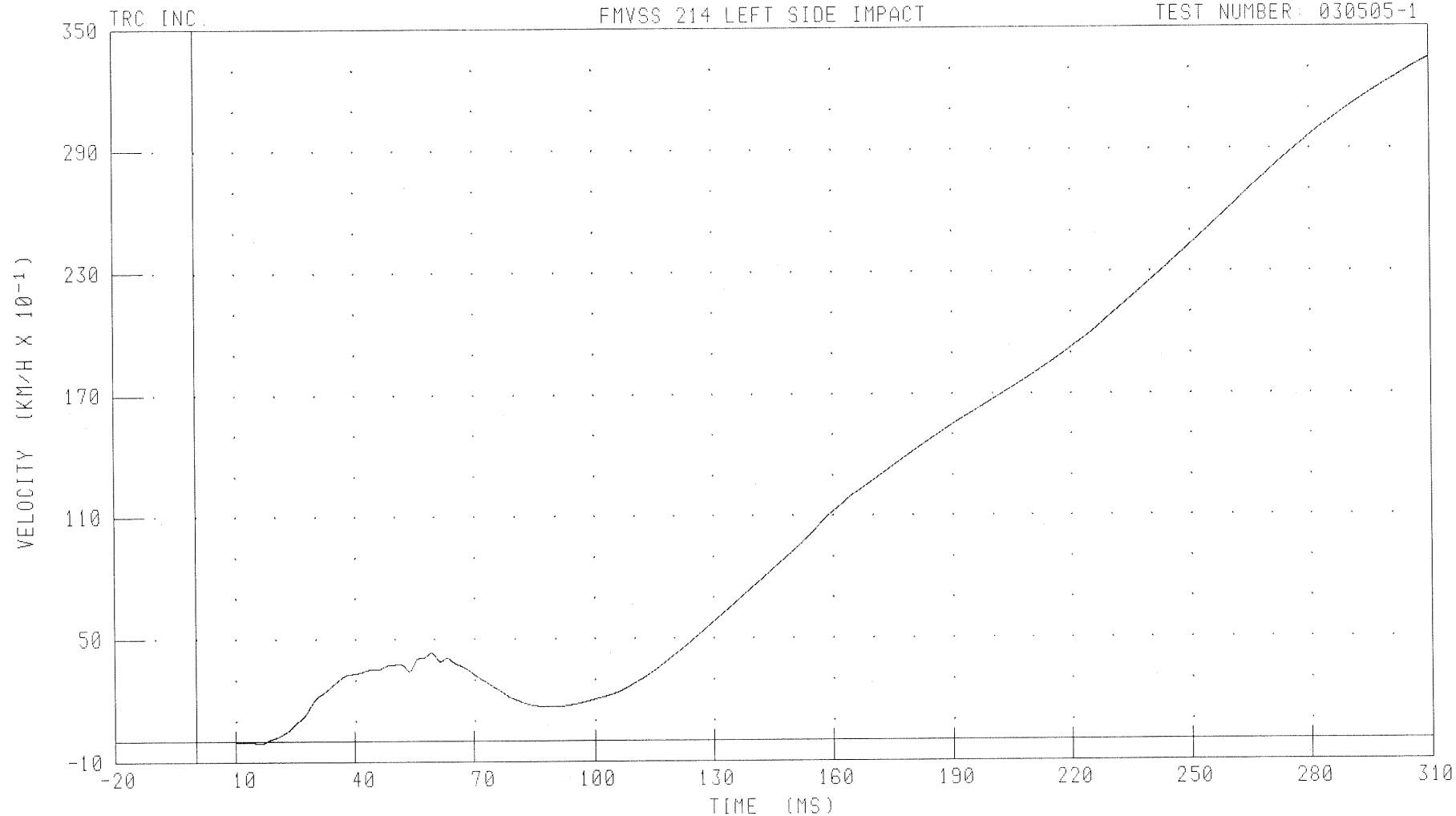
B-63

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
DRIVER HEAD Z-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDZVI FILTER: CH. CLASS 180

PEAK DATA: 33.48 KM/H @ 310.00 MS; -0.08 KM/H @ 16.32 MS

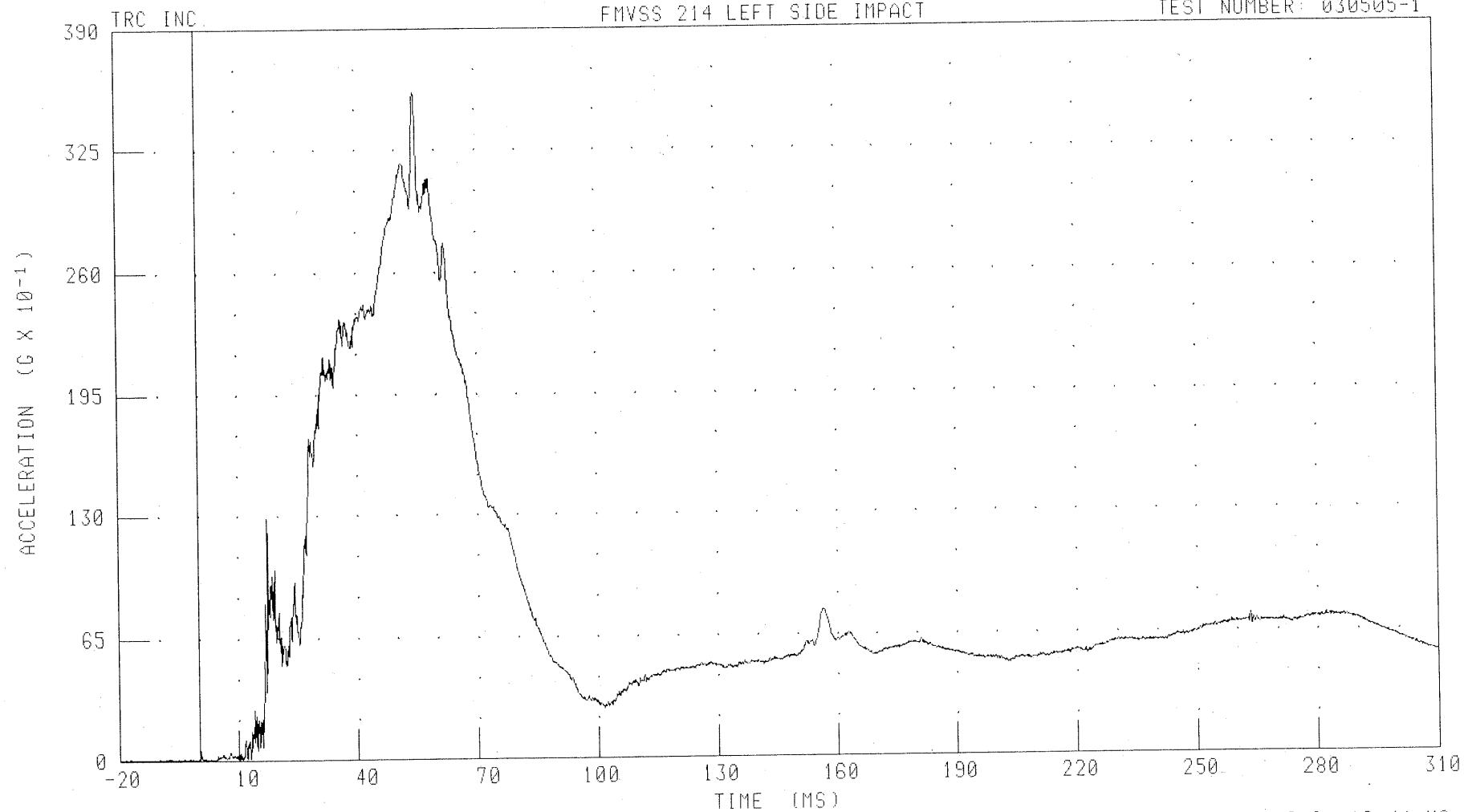
B-64

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
DRIVER HEAD RESULTANT REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDRR1 FILTER: CH. CLASS 1000

PEAK DATA: 35.59 G @ 54.96 MS, 0.01 G @ -19.44 MS

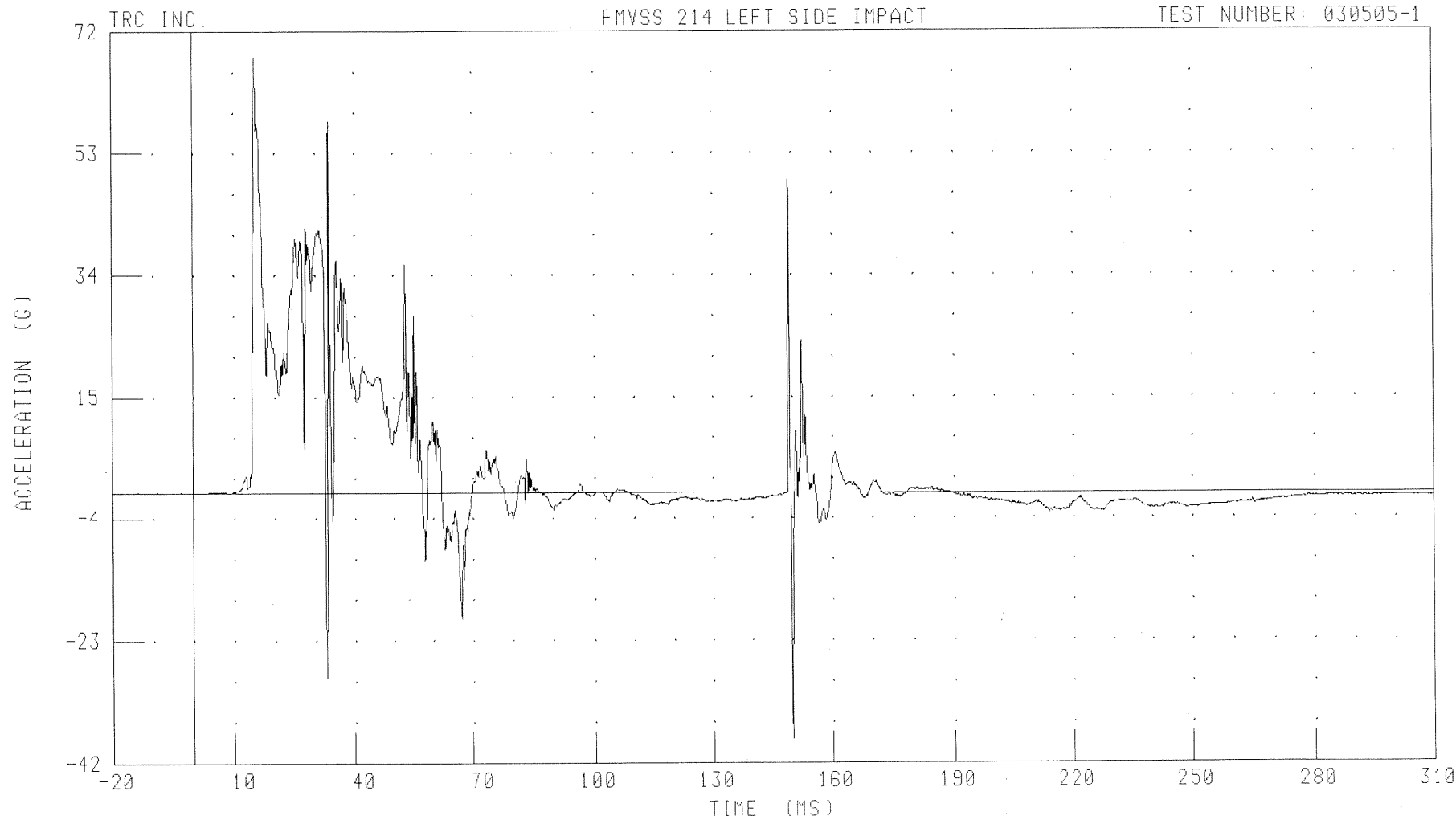
B-65

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
DRIVER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LURYR1 FILTER: CH. CLASS 1000

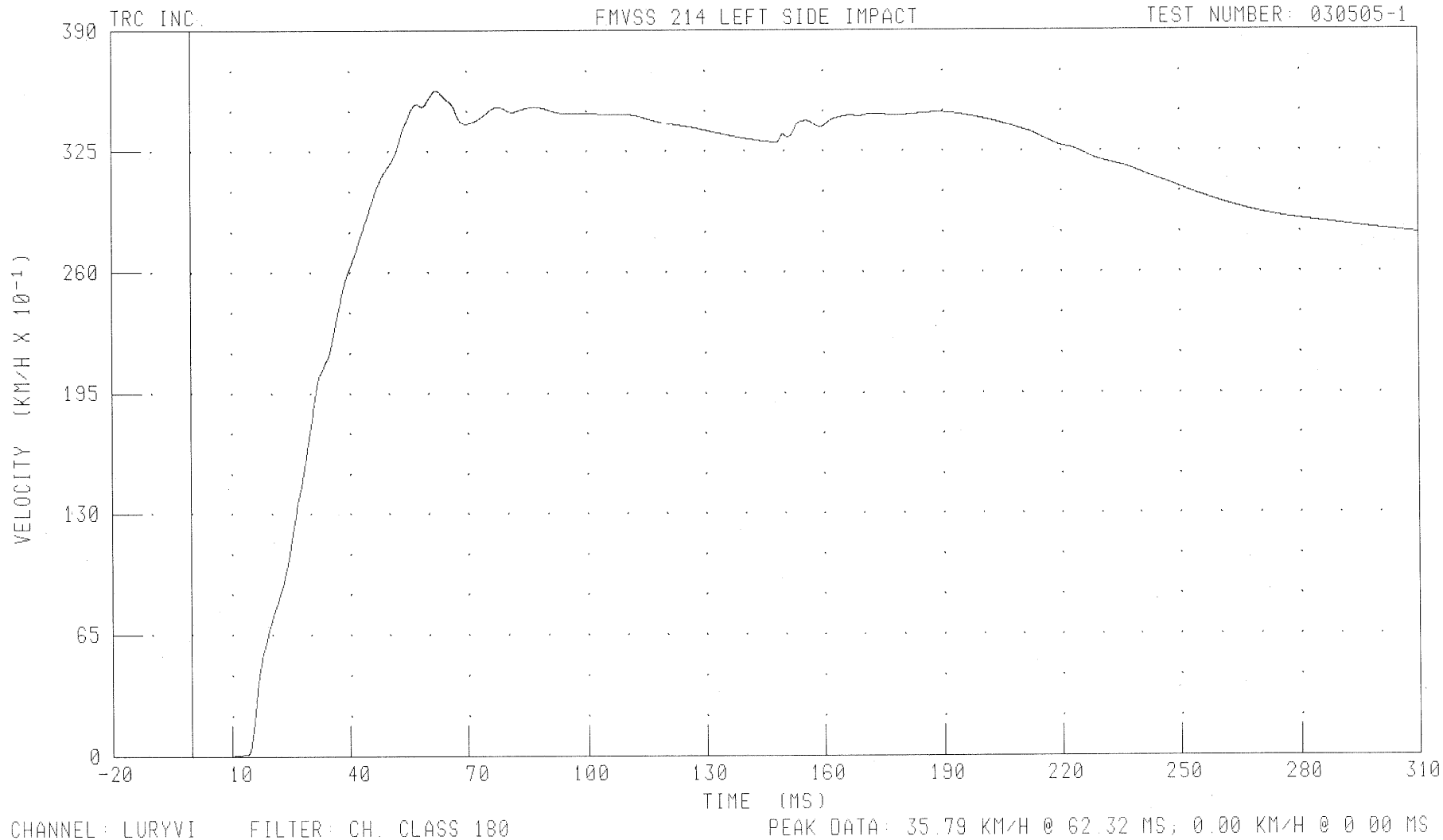
B-66

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
DRIVER UPPER RIB Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



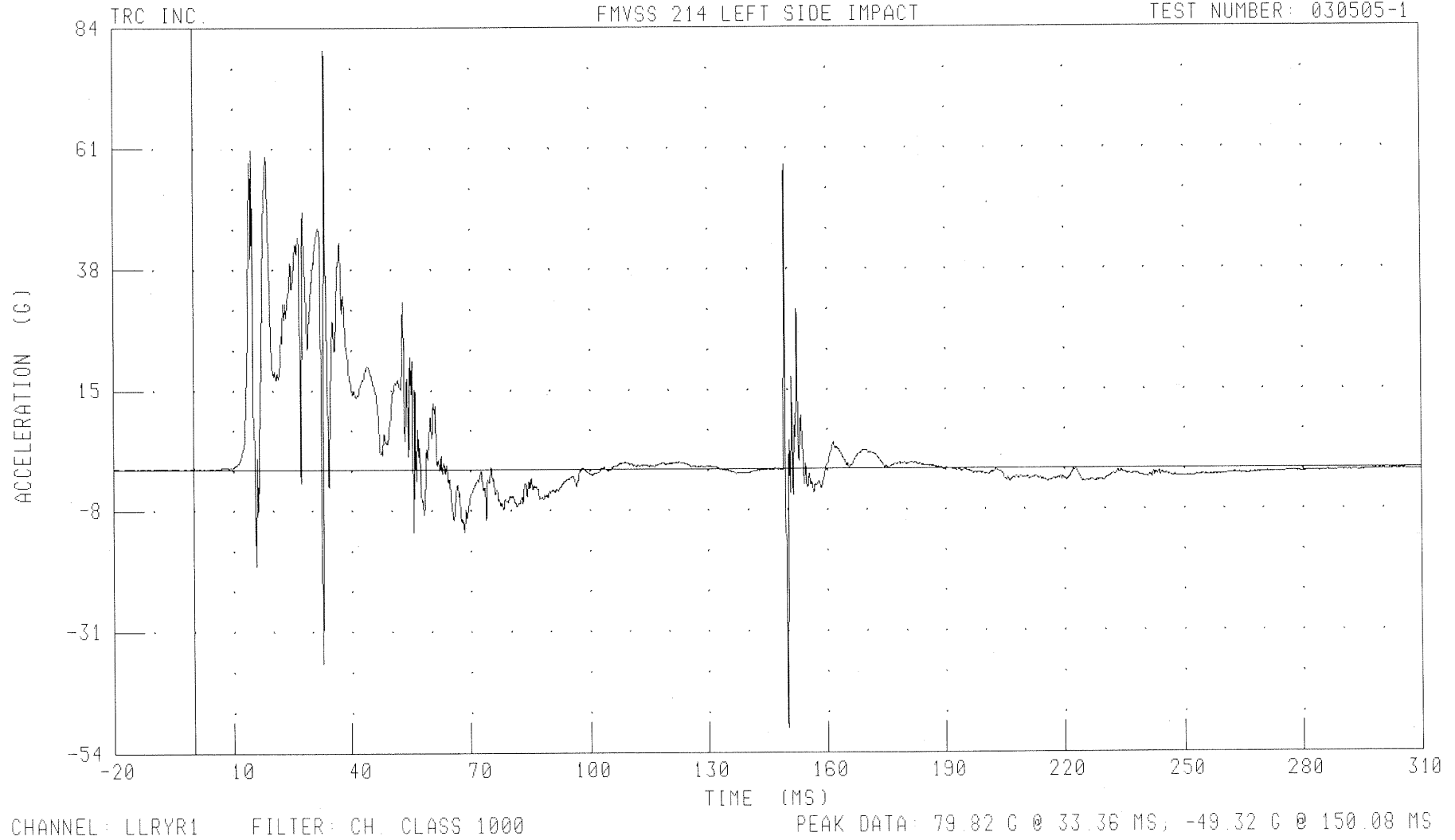
B-67

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
DRIVER LOWER RIB Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



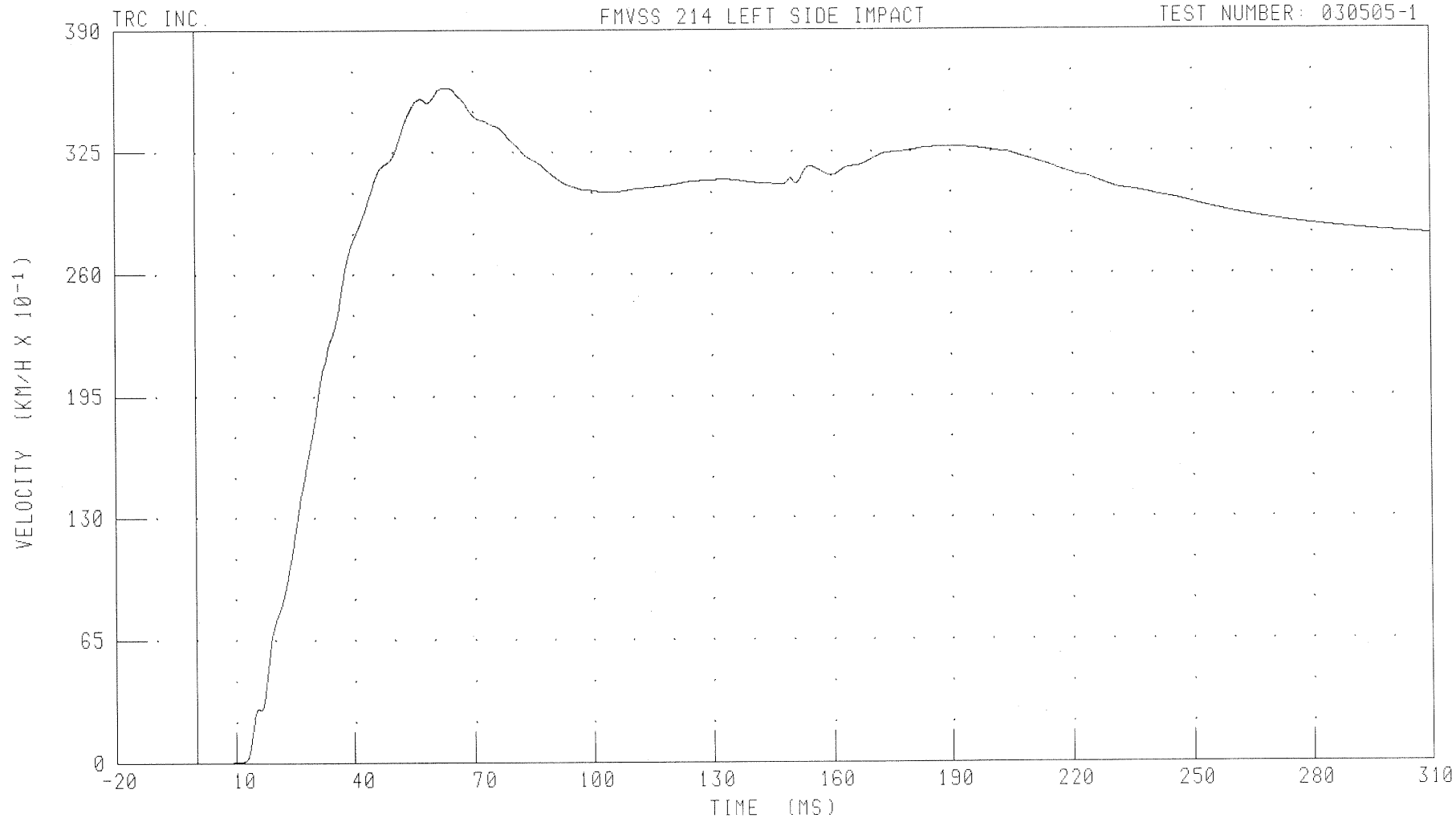
B-68

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
DRIVER LOWER RIB Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LLRYVI

FILTER: CH. CLASS 180

PEAK DATA: 35.94 KM/H @ 63.60 MS; 0.00 KM/H @ 4.96 MS

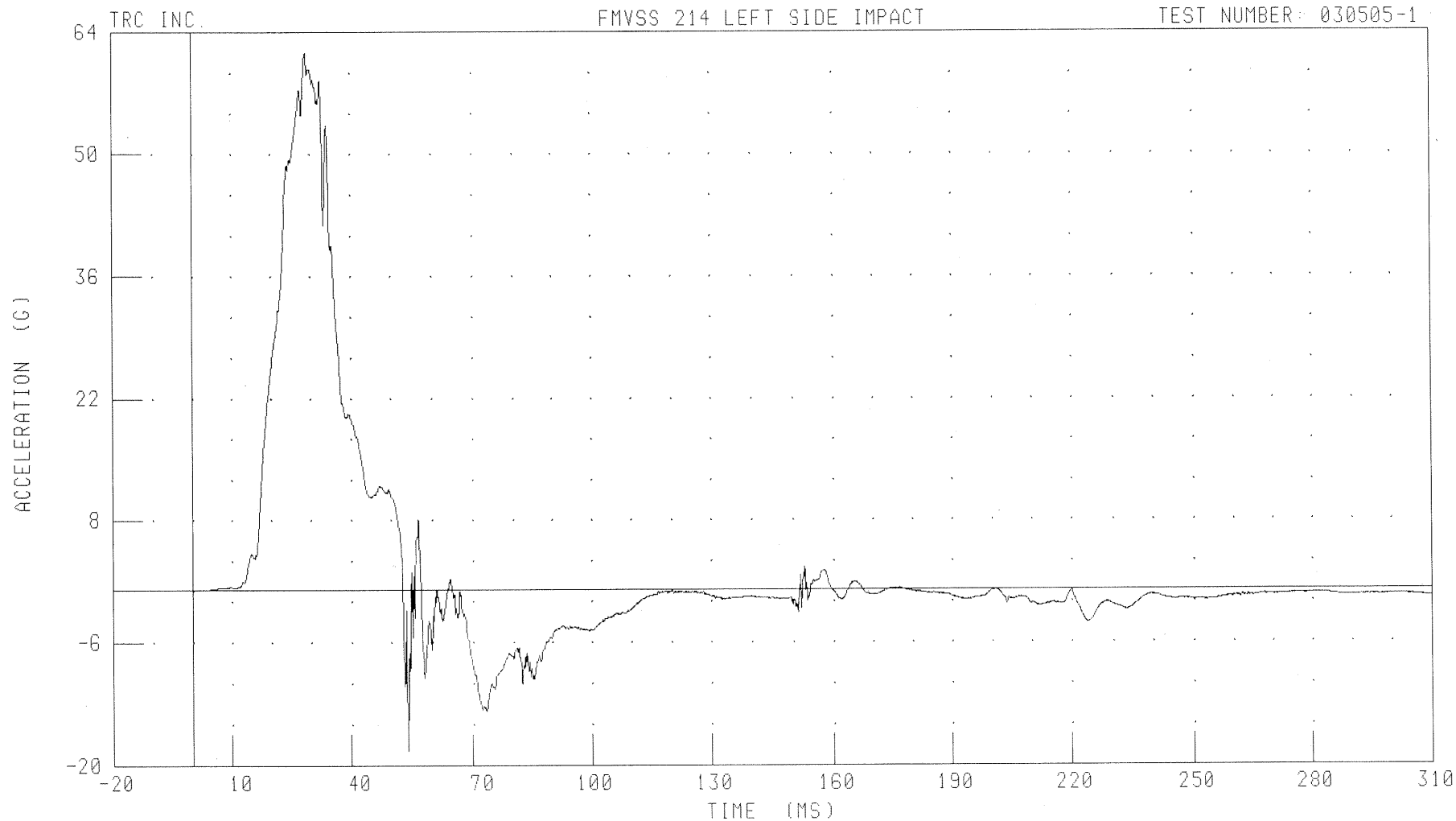
B-69

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
DRIVER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: T12YR1 FILTER: CH. CLASS 1000

B-70

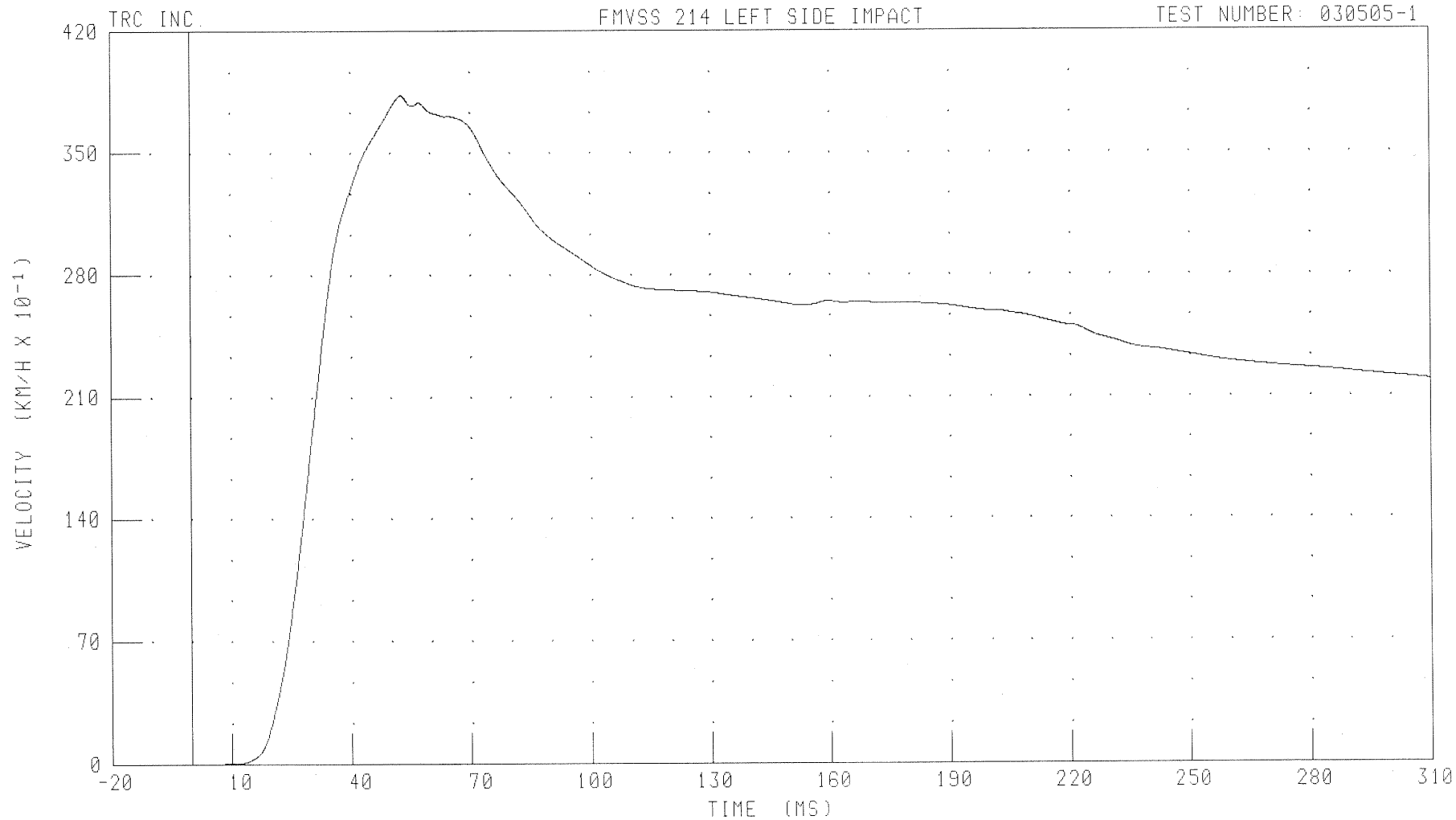
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER LOWER SPINE Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: T12YVI FILTER: CH. CLASS 180

PEAK DATA: 383.2 KM/H @ 52.80 MS; 0.00 KM/H @ 0.48 MS

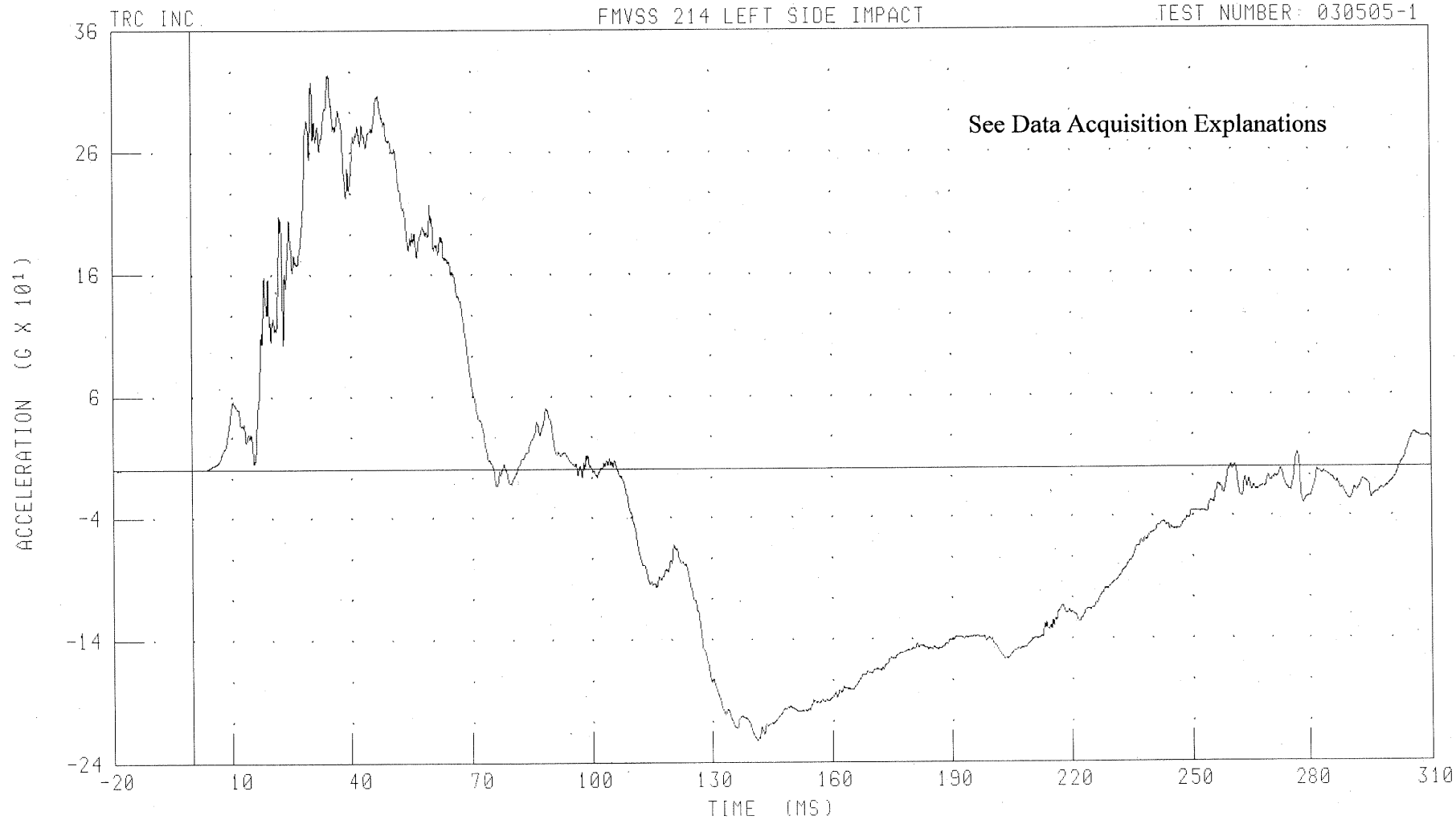
B-71

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
DRIVER PELVIS Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



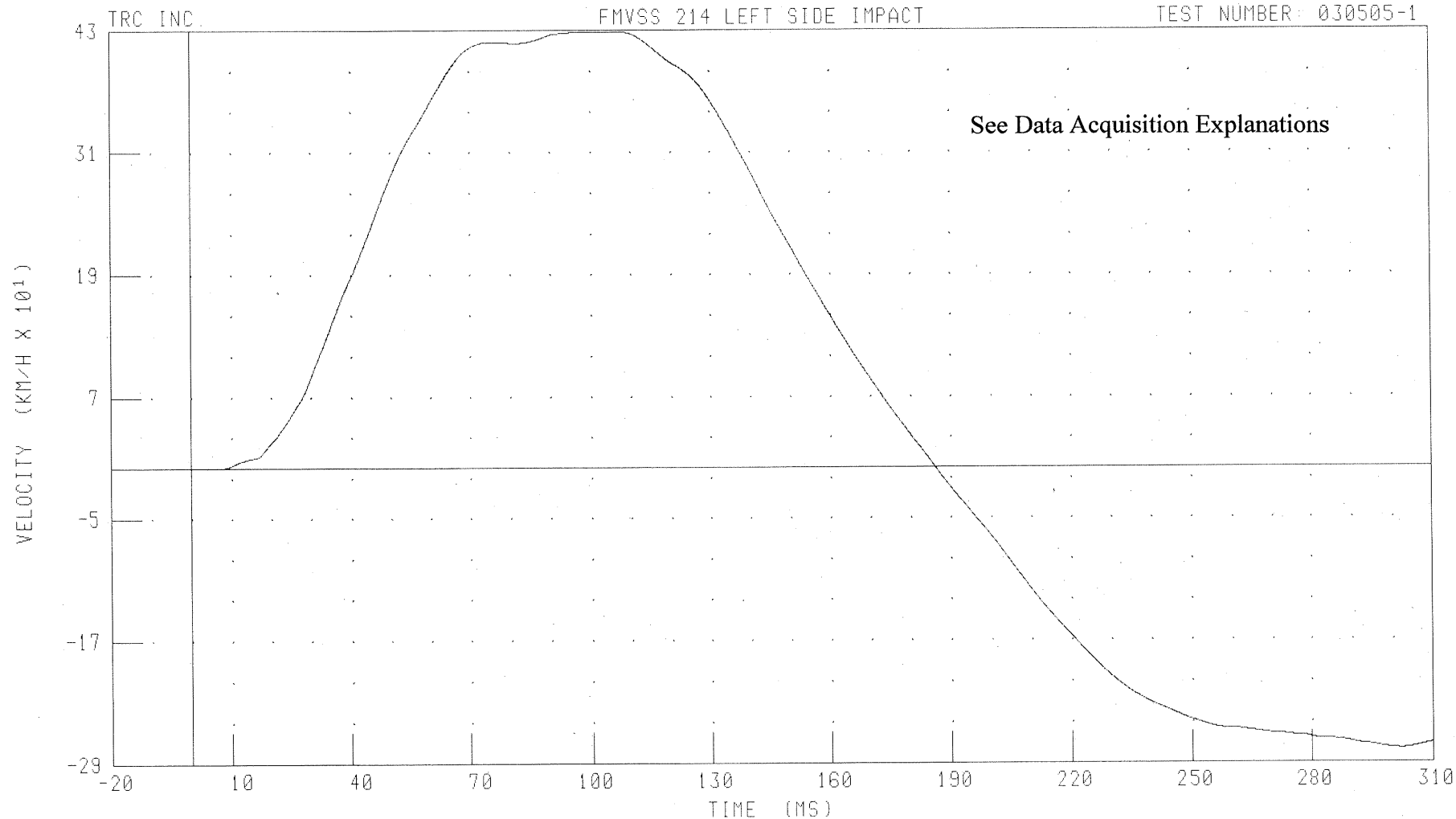
CHANNEL: PEVYR1 FILTER: CH. CLASS 1000

PEAK DATA: 323.54 G @ 34.72 MS; -222.67 G @ 141.44 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
DRIVER PELVIS Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



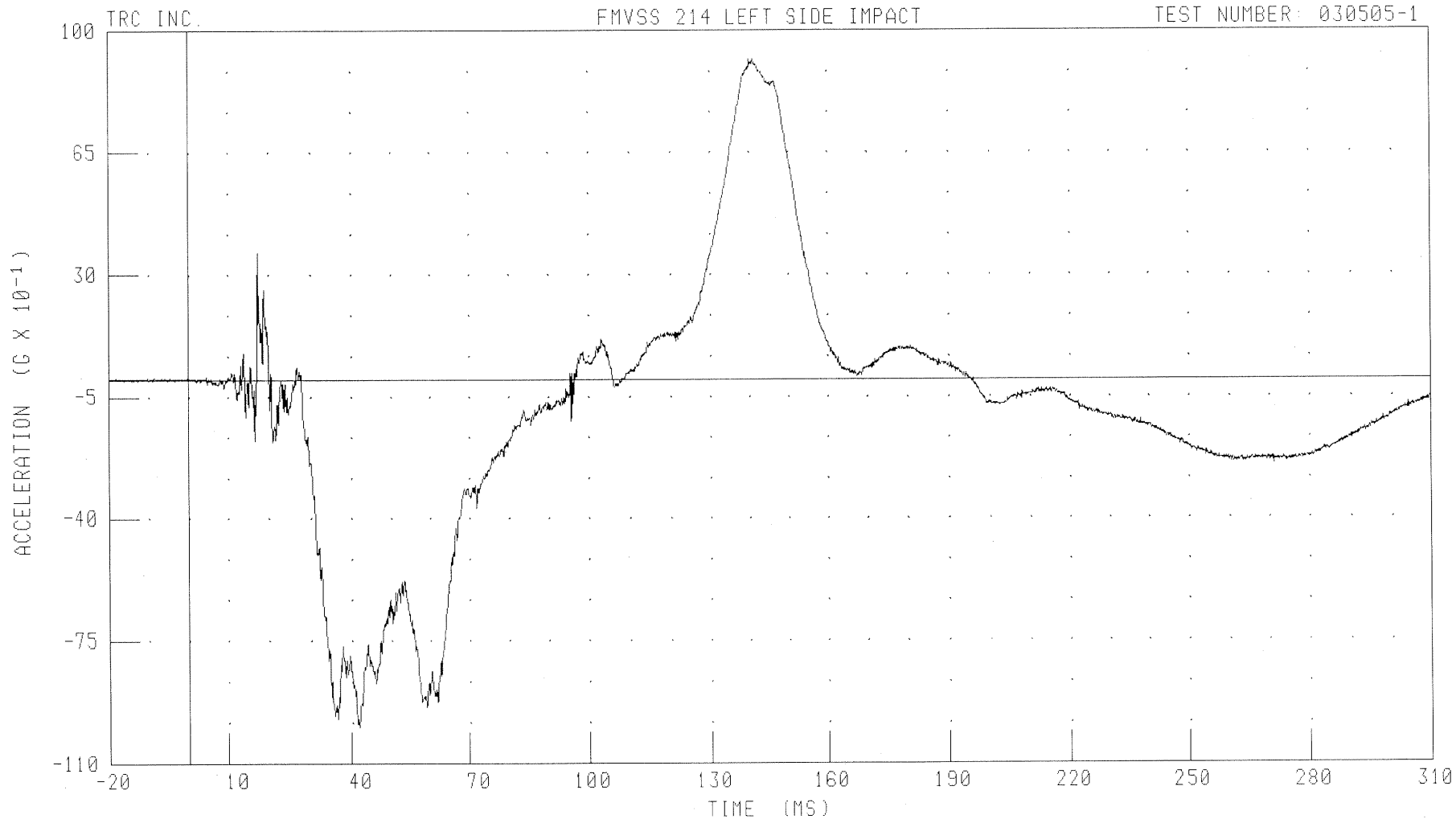
CHANNEL: PEVYVI FILTER: CH. CLASS 180

PEAK DATA: 428.65 KM/H @ 106.72 MS; -276.47 KM/H @ 302.00 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER HEAD X-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDXR4 FILTER: CH. CLASS 1000

PEAK DATA: 9.16 G @ 140.32 MS; -9.96 G @ 41.92 MS

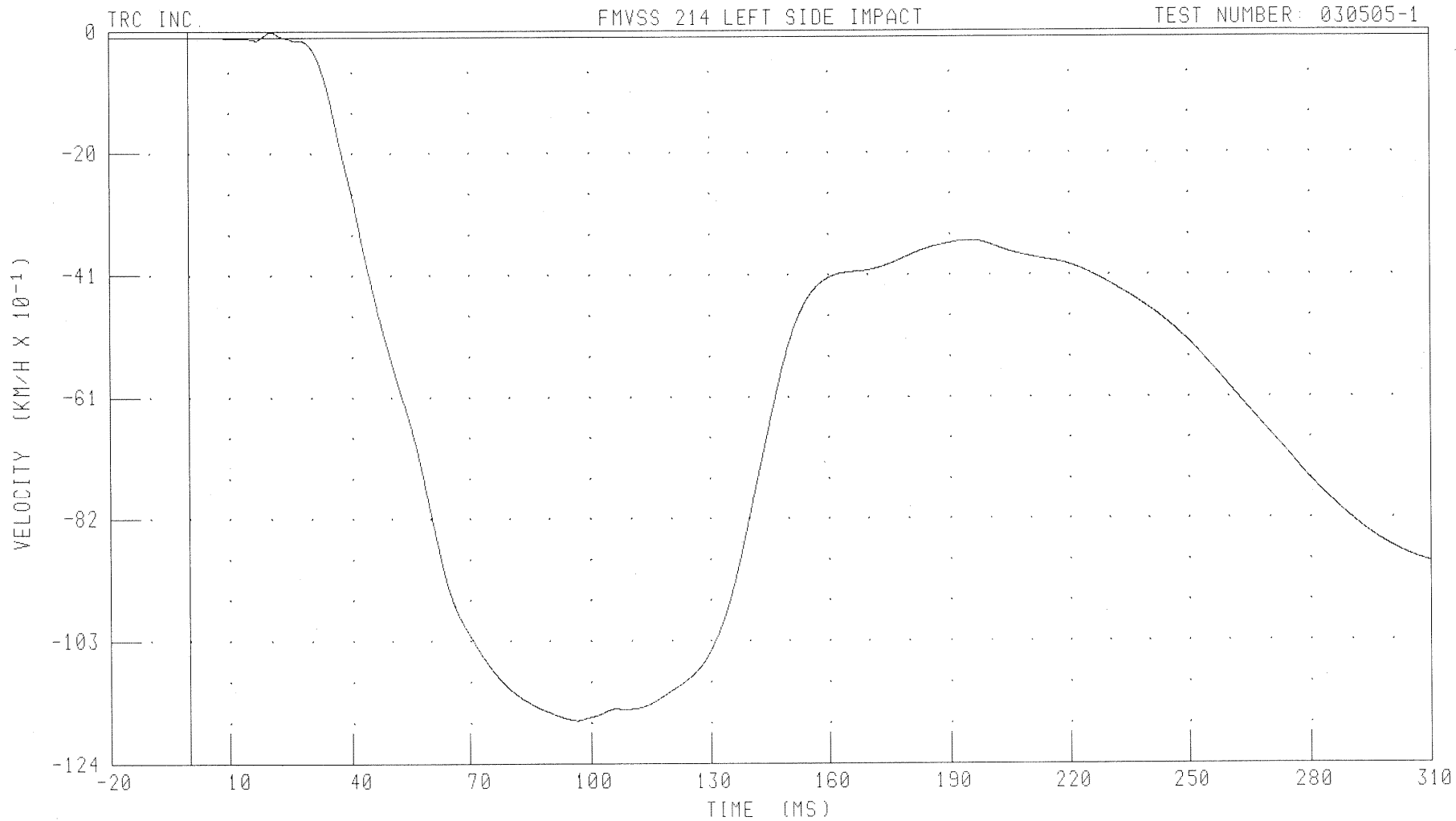
B-74

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER HEAD X-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDXVJ FILTER: CH. CLASS 180

PEAK DATA: 0.10 KM/H @ 20.32 MS; -11.76 KM/H @ 96.80 MS

B-75

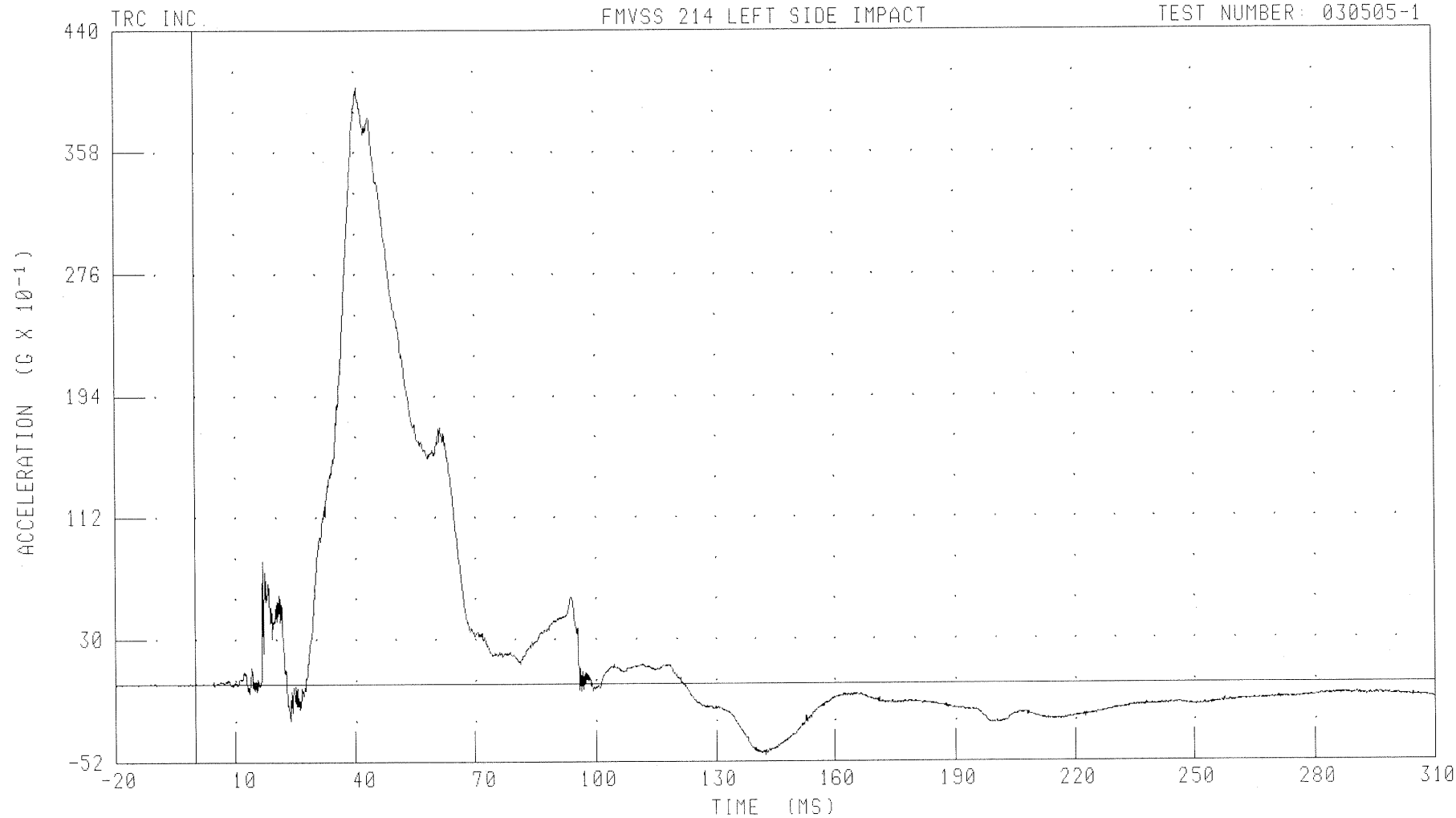
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

LEFT REAR PASSENGER HEAD Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDYR4 FILTER: CH. CLASS 1000

PEAK DATA: 40.19 G @ 40.88 MS; -4.77 G @ 142.48 MS

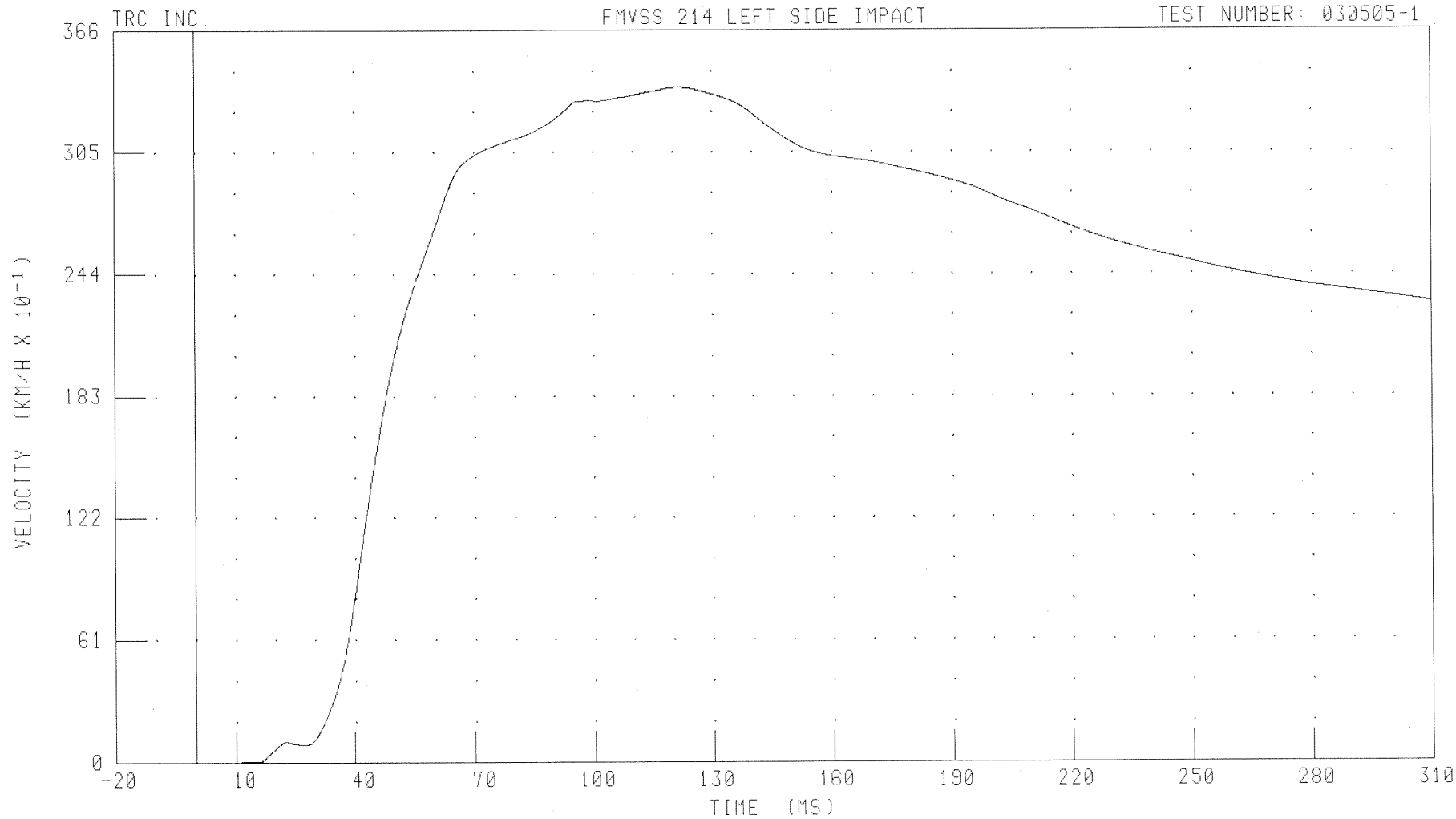
B-76

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER HEAD Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDYVJ FILTER: CH. CLASS 180

PEAK DATA: 33.76 KM/H @ 121.84 MS; 0.00 KM/H @ 0.00 MS

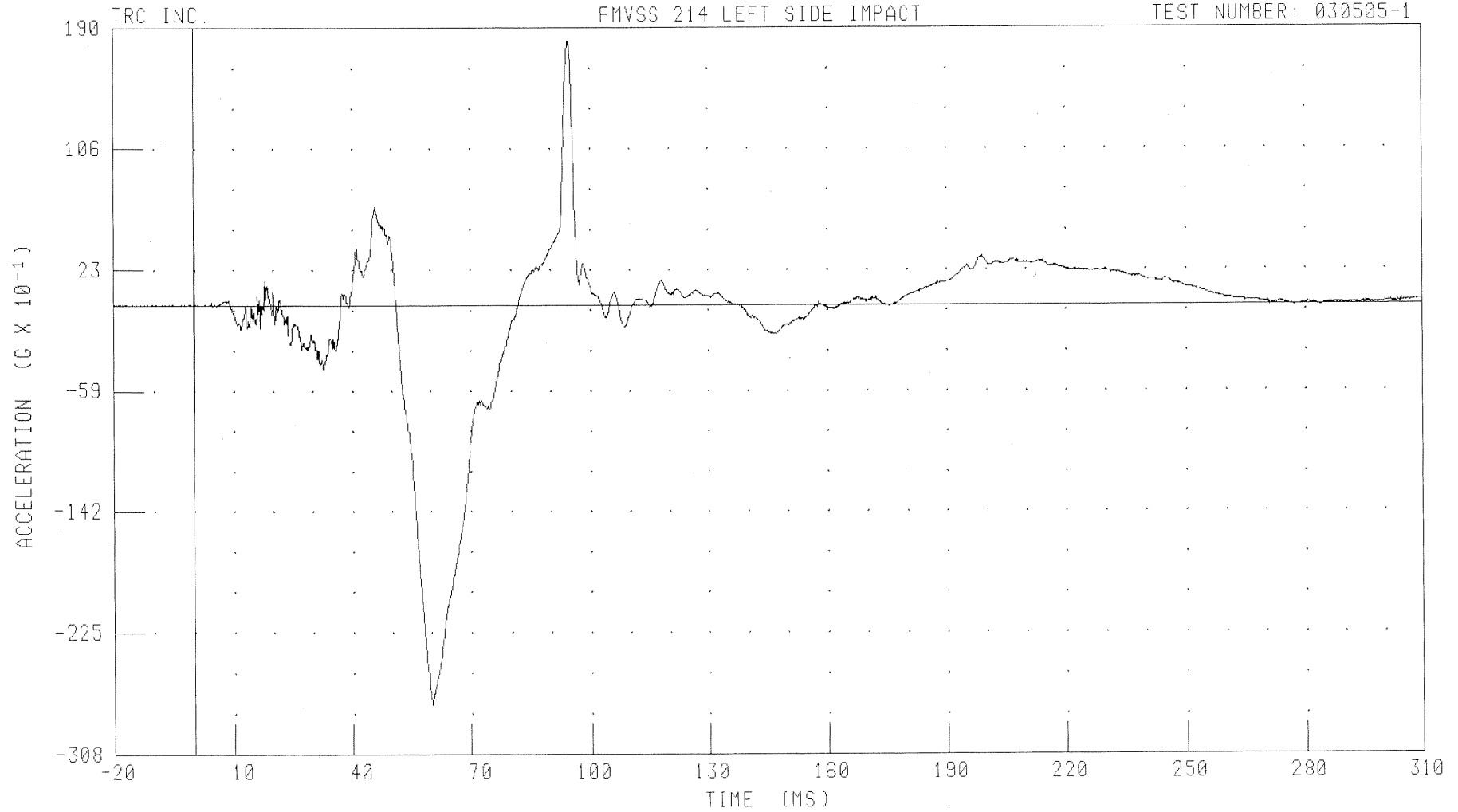
B-77

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER HEAD Z-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDZR4 FILTER: CH. CLASS 1000

PEAK DATA: 18.10 G @ 94.64 MS, -27.47 G @ 60.40 MS

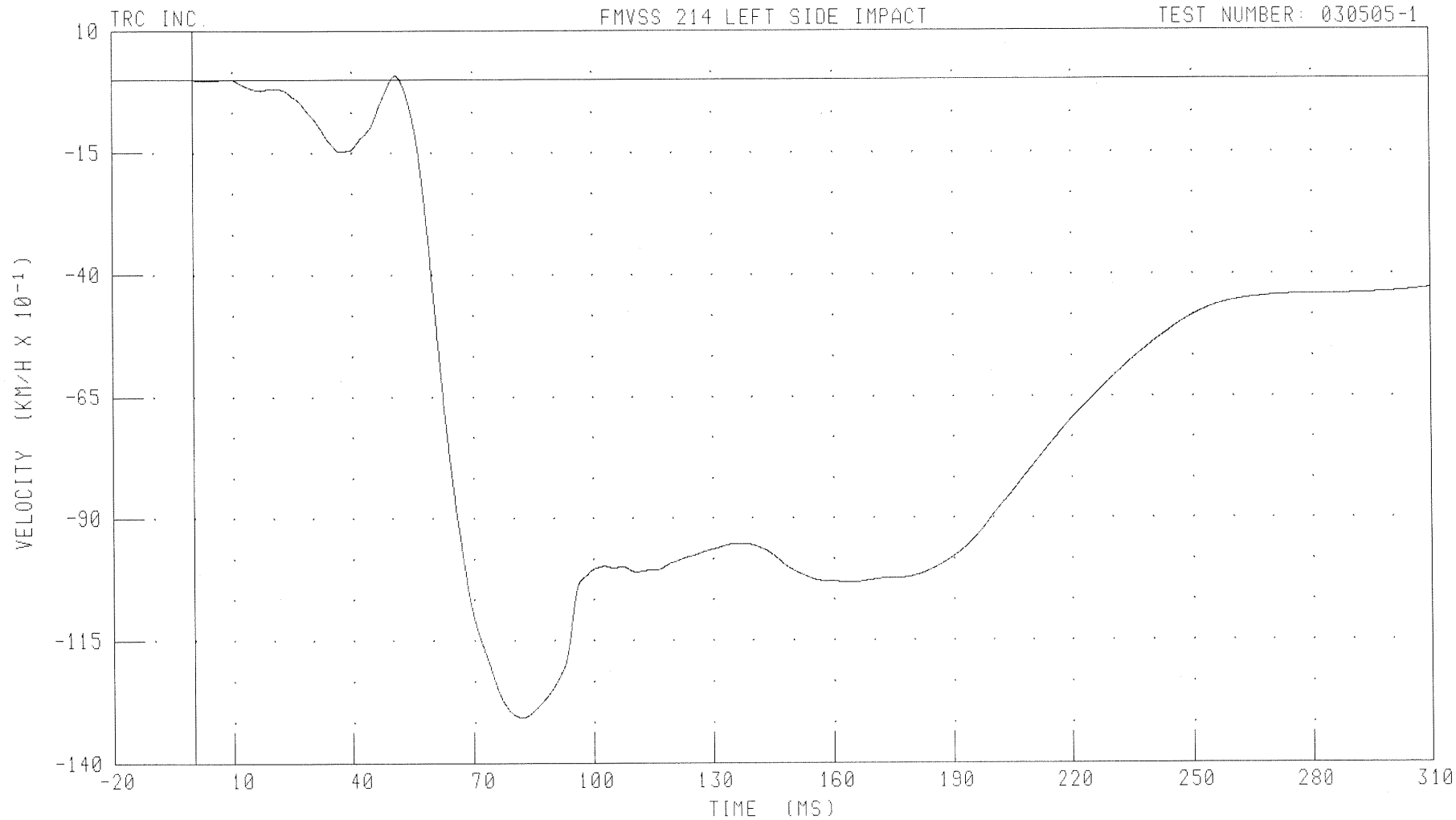
B-78

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER HEAD Z-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDZVJ FILTER: CH. CLASS 180

PEAK DATA: 0.09 KM/H @ 51.28 MS; -13.07 KM/H @ 81.92 MS

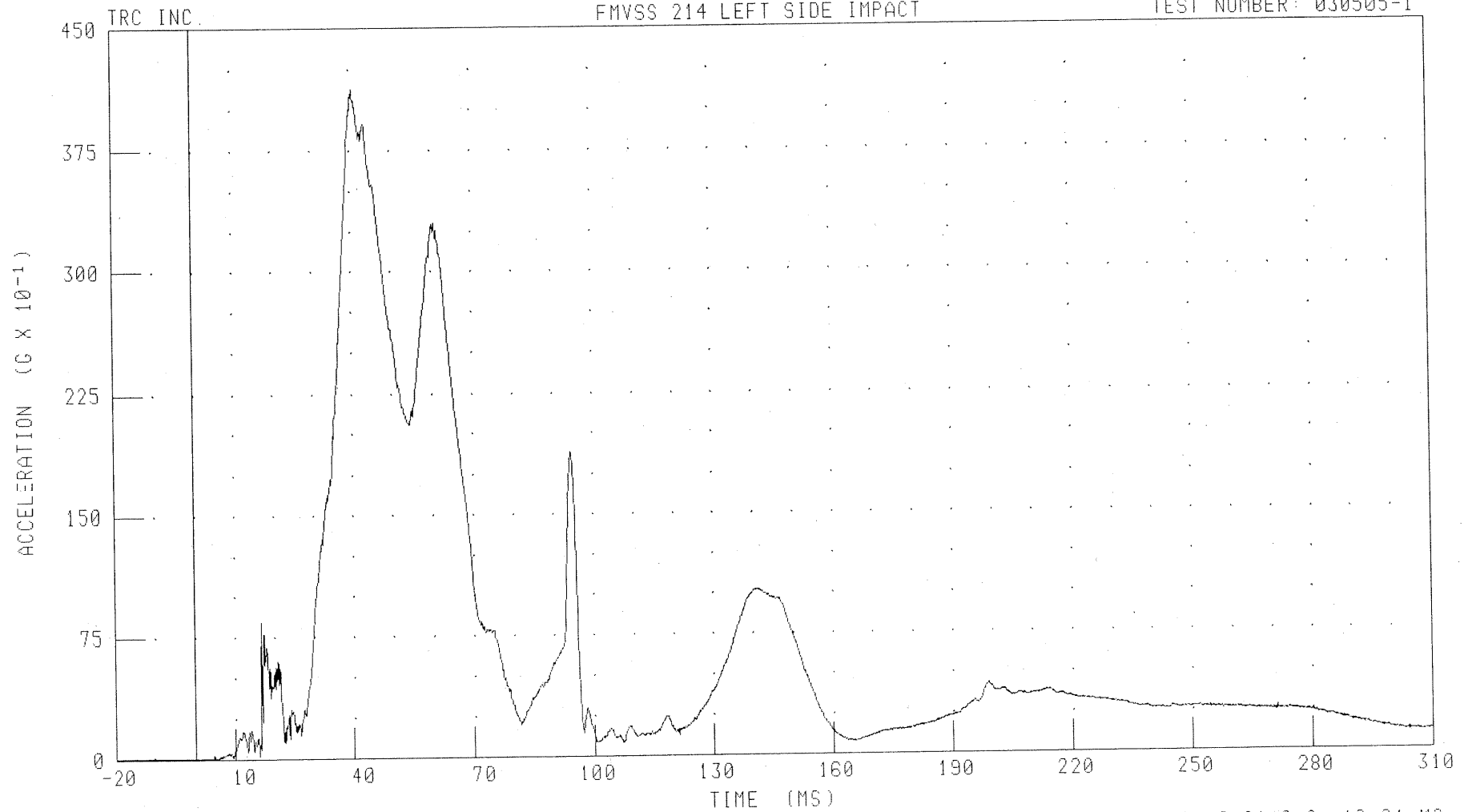
B-79

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER HEAD RESULTANT REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEDRR4 FILTER: CH. CLASS 1000

PEAK DATA: 41.30 G @ 40.88 MS; 0.01 G @ -19.84 MS

B-80

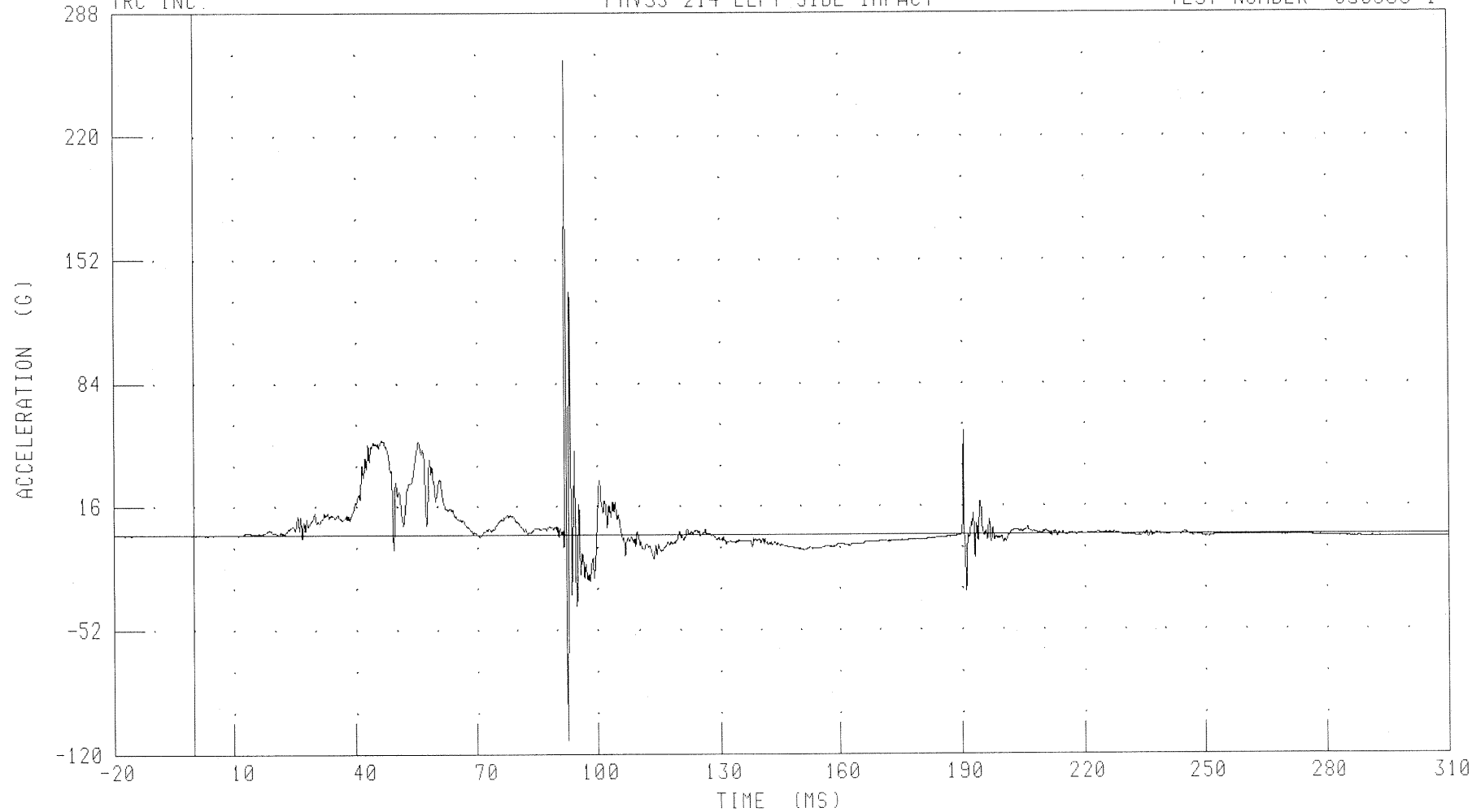
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LURYR4 FILTER: CH. CLASS 1000

PEAK DATA: 262.36 G @ 92.24 MS; -112.57 G @ 92.64 MS

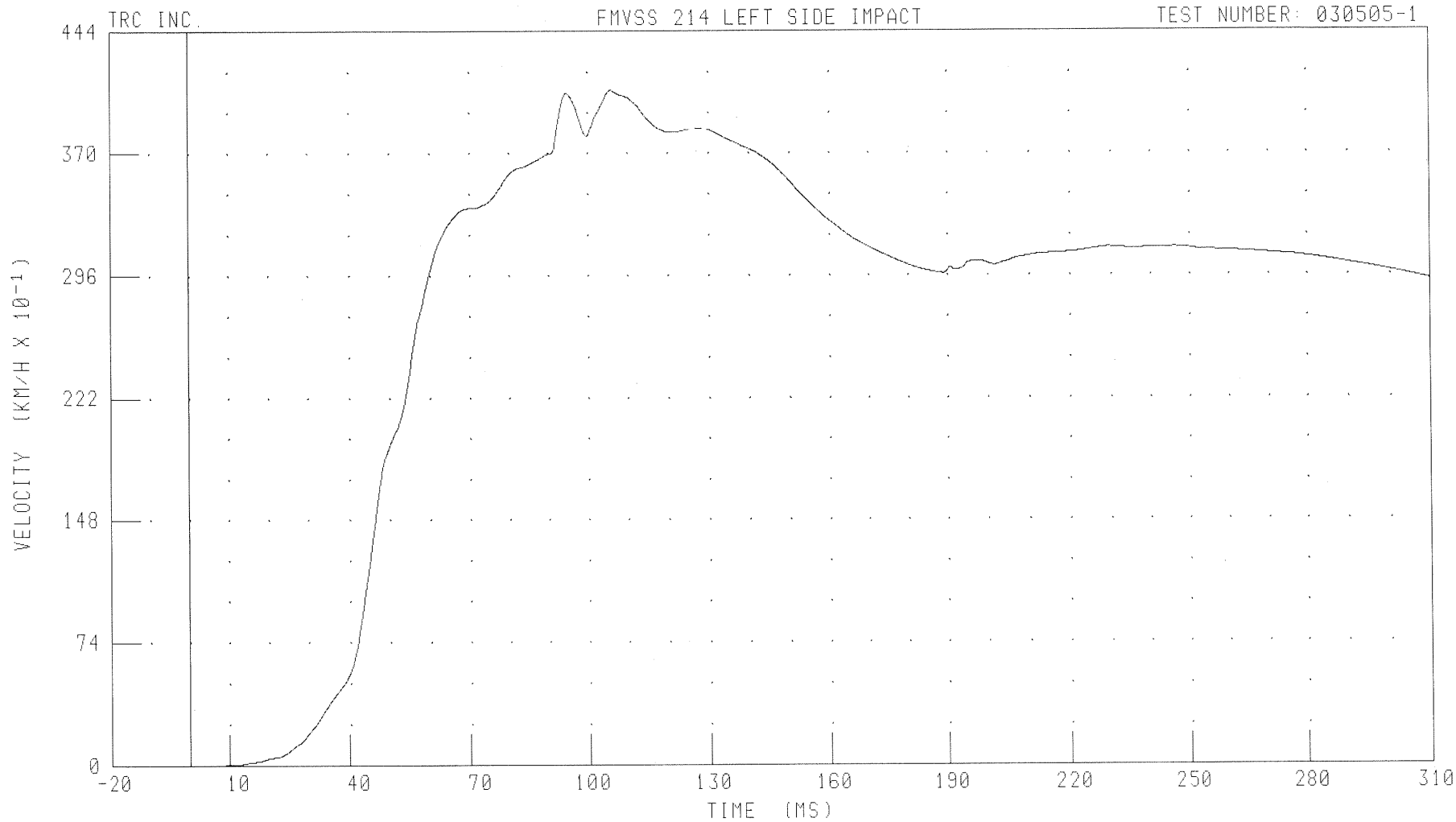
B-81

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER UPPER RIB Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LURYVJ FILTER: CH. CLASS 180

PEAK DATA: 40.83 KM/H @ 106.00 MS, 0.00 KM/H @ 0.00 MS

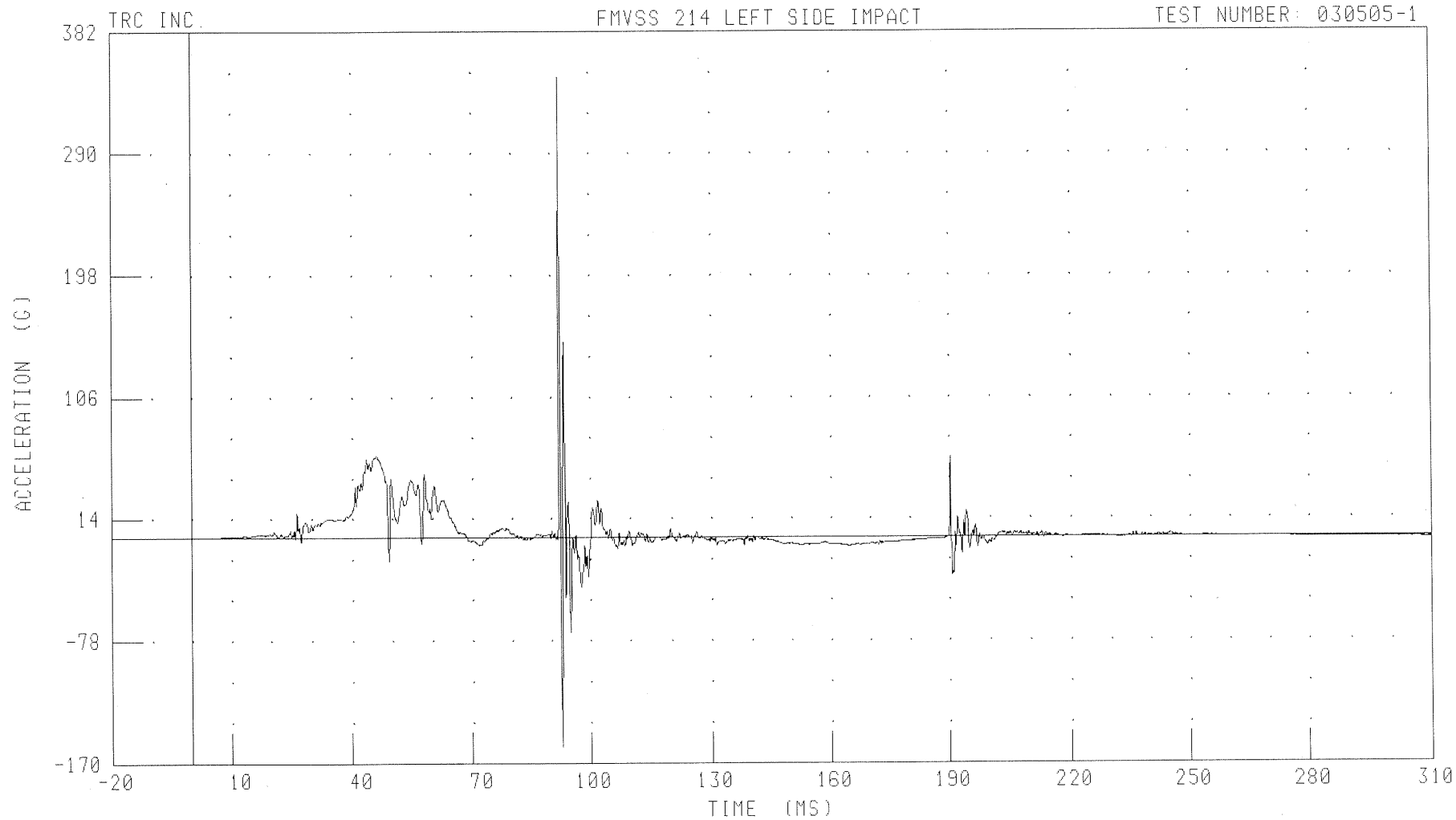
B-82

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER LOWER RIB Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LLRYR4 FILTER: CH. CLASS 1000

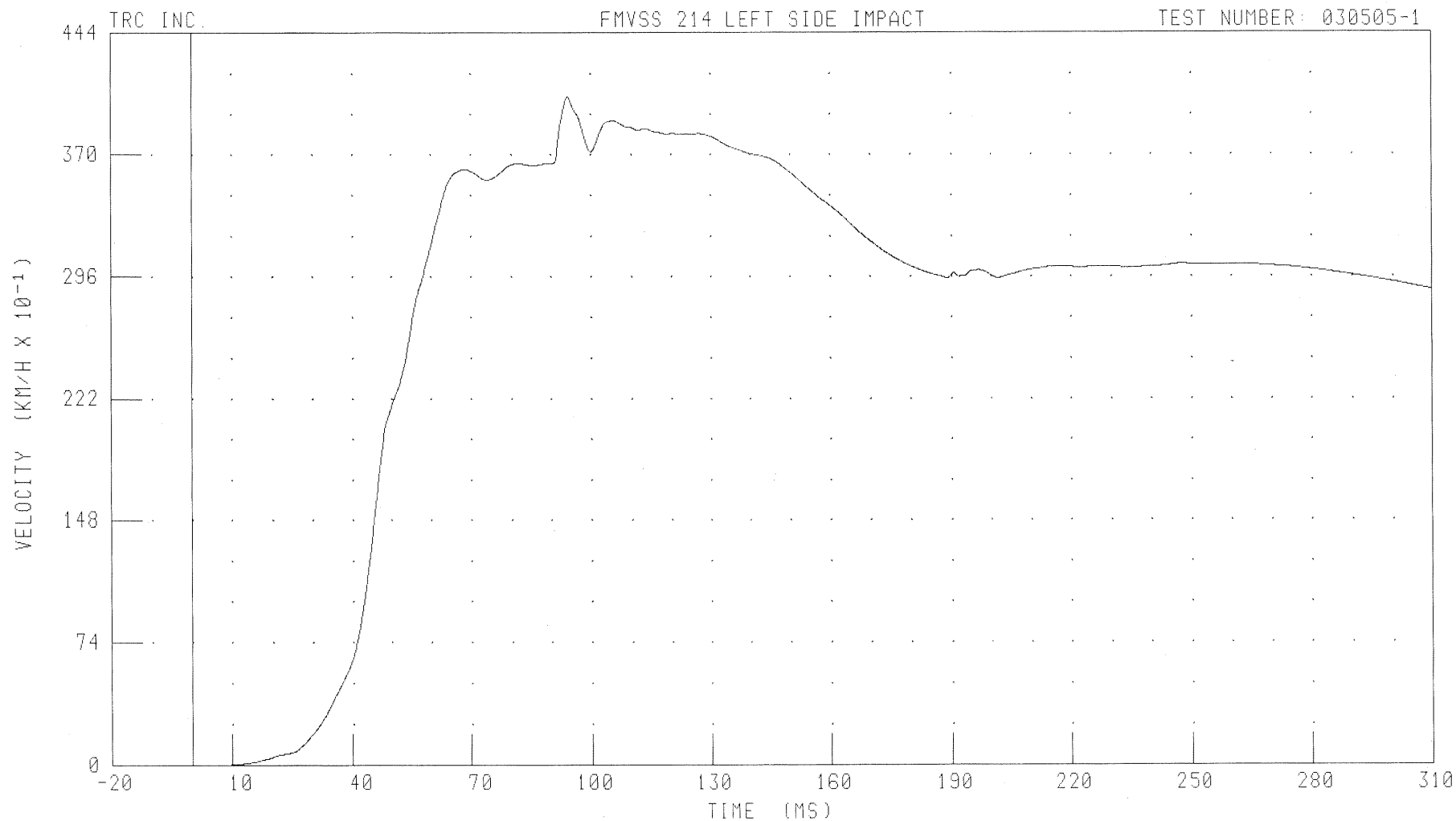
B-83

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER LOWER RIB Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LLRYVJ FILTER: CH. CLASS 180

PEAK DATA: 40.53 KM/H @ 94.48 MS; 0.00 KM/H @ 0.00 MS

B-84

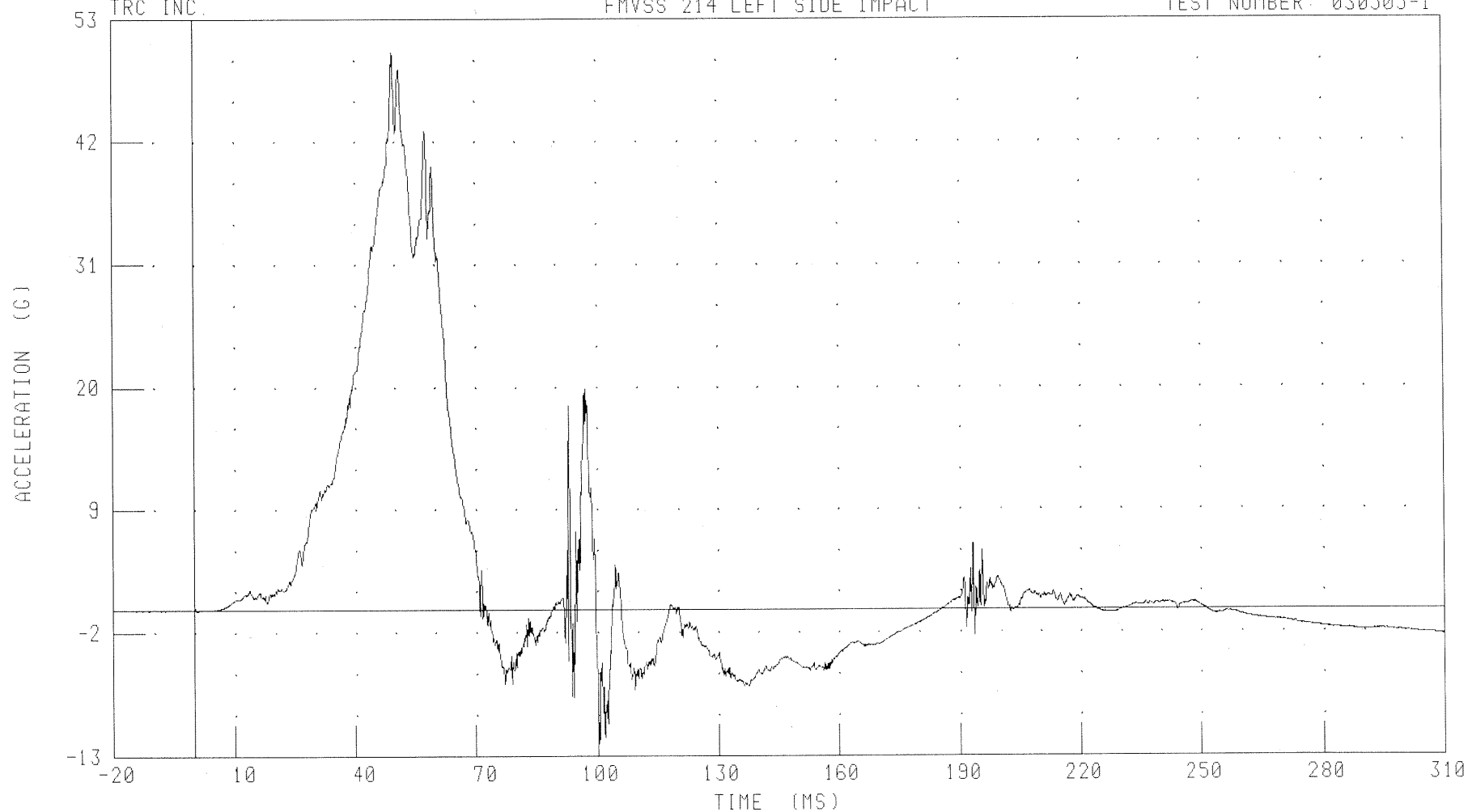
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: T12YR4 FILTER: CH. CLASS 1000

PEAK DATA: 50.04 G @ 49.68 MS, -11.87 G @ 100.48 MS

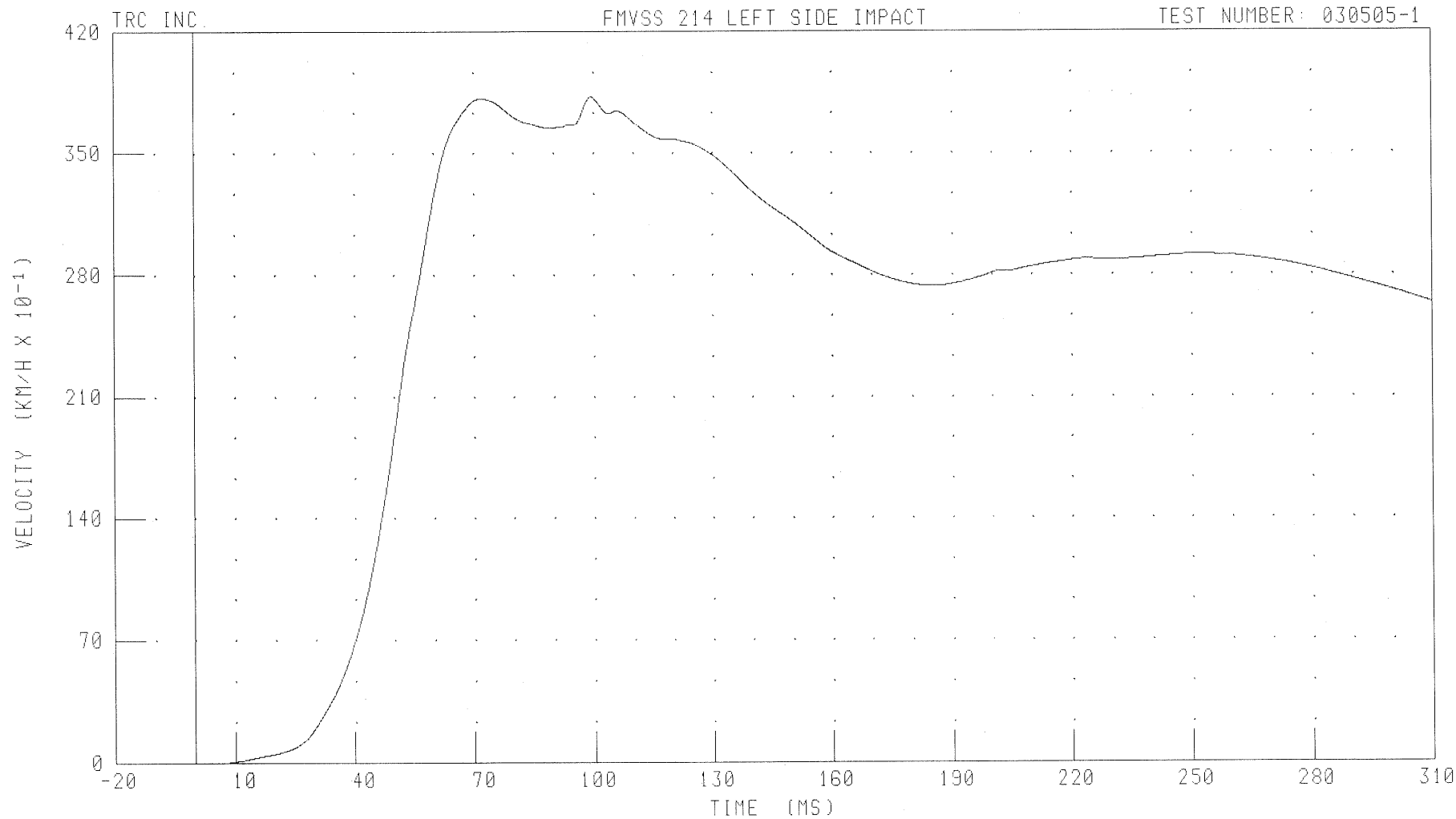
B-85

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: T12YVJ

FILTER: CH. CLASS 180

PEAK DATA: 38.27 KM/H @ 99.52 MS; 0.00 KM/H @ 0.00 MS

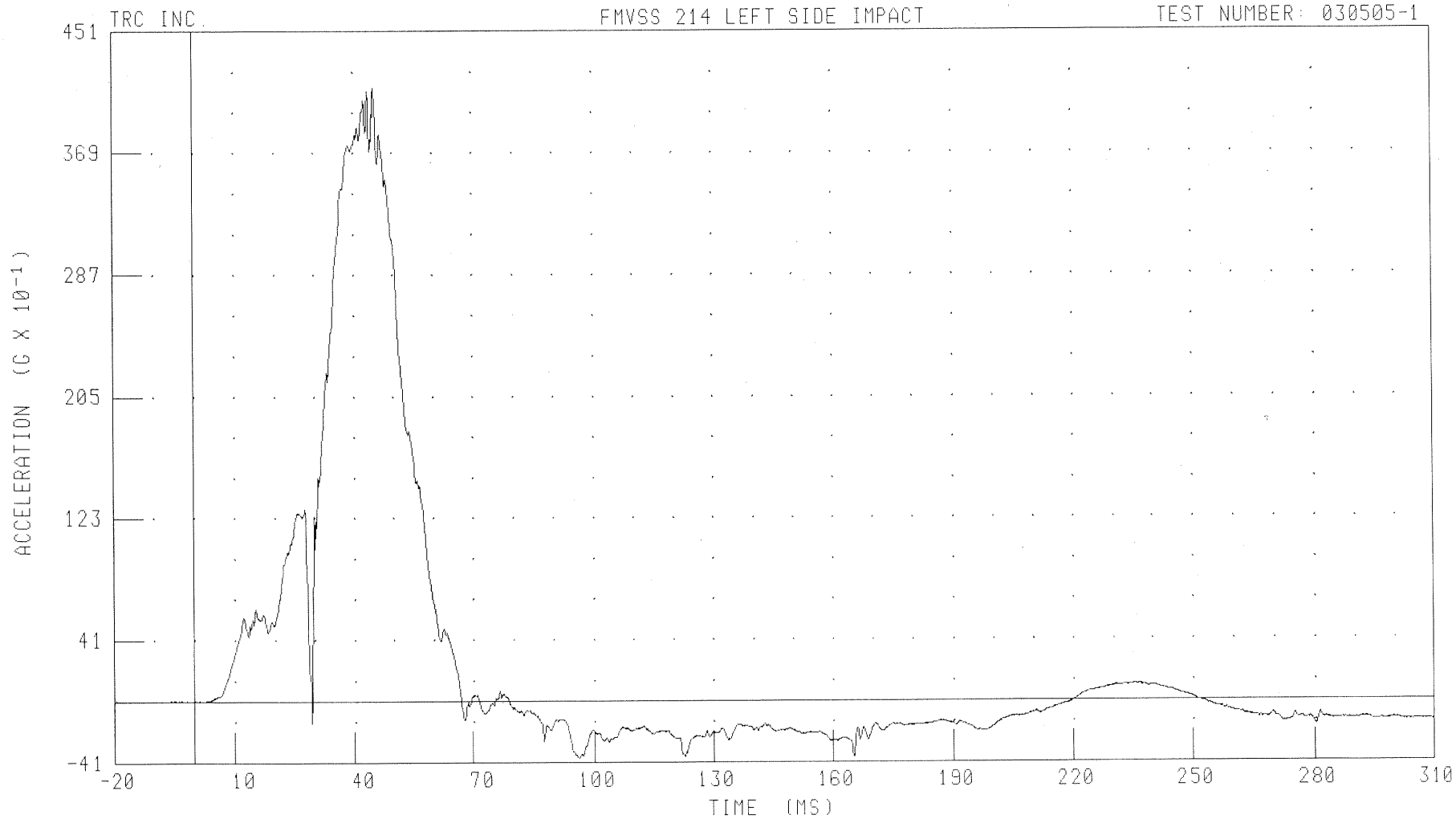
B-86

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER PELVIS Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: PEVYR4 FILTER: CH. CLASS 1000

PEAK DATA: 41.31 G @ 45.44 MS; -3.81 G @ 96.40 MS

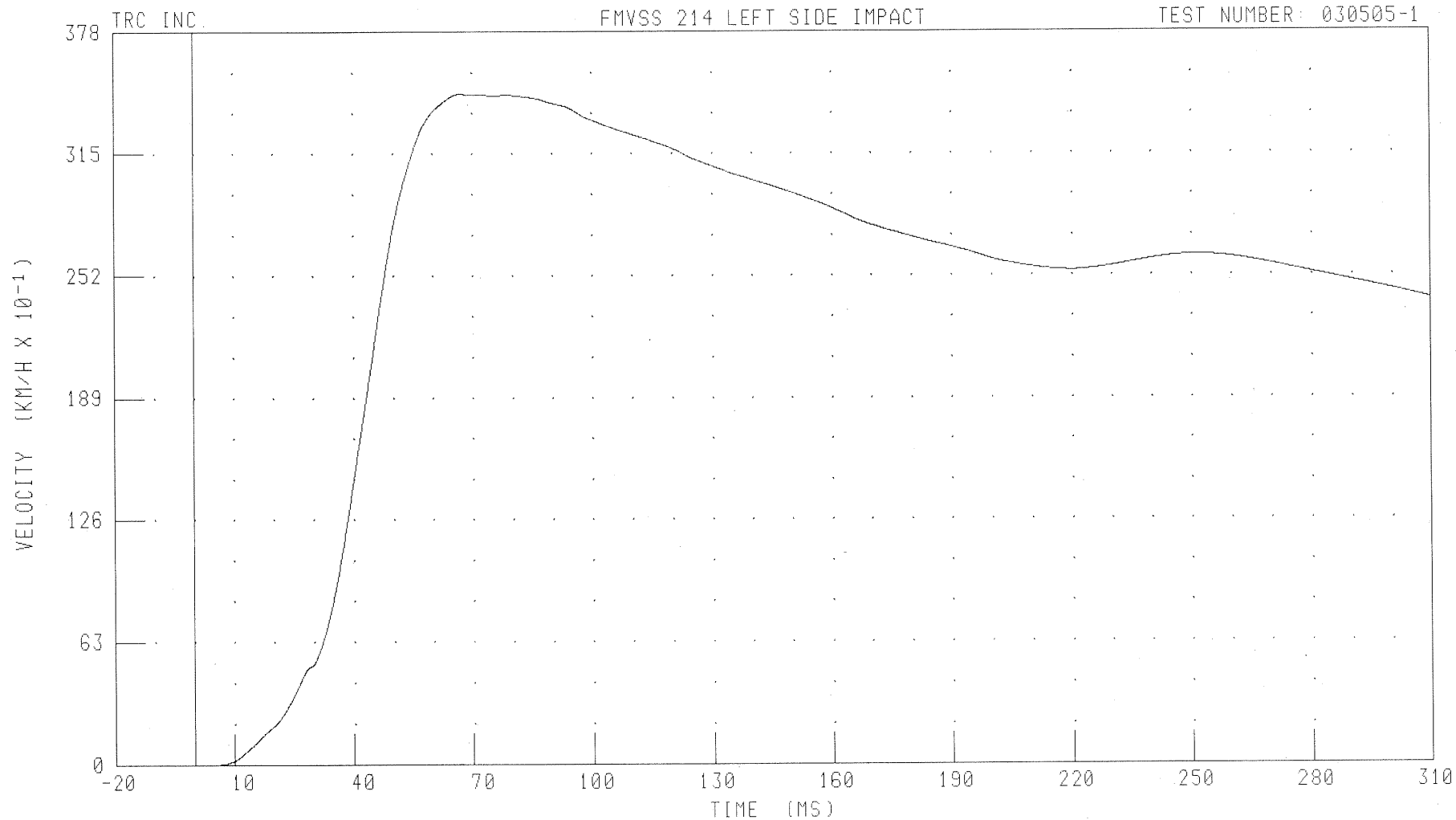
B-87

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER PELVIS Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: PEVYVJ FILTER: CH. CLASS 180

PEAK DATA: 34.61 KM/H @ 67.04 MS; 0.00 KM/H @ 0.00 MS

B-88

030505-1

Test Vehicle Instrumentation Plots

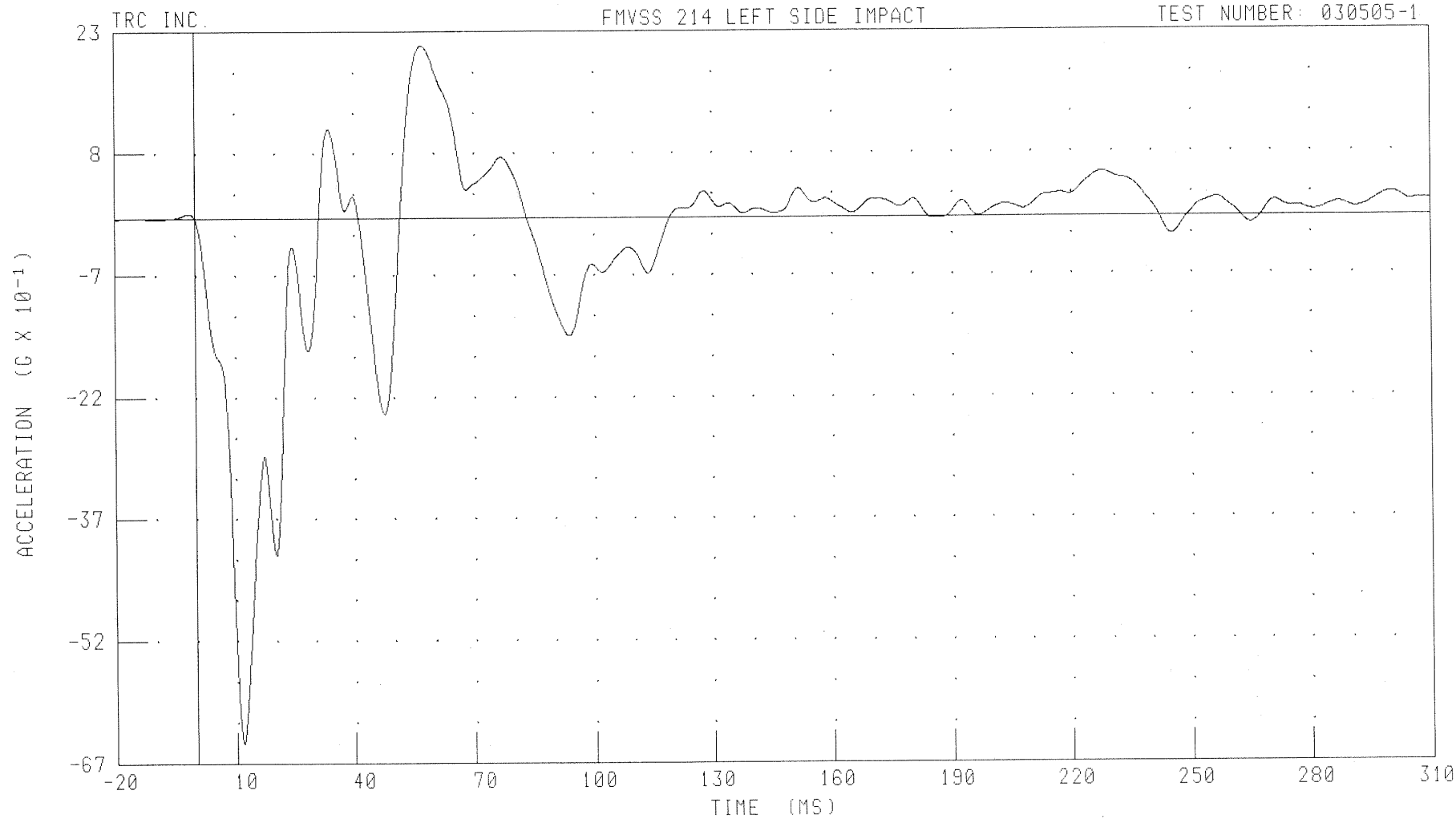
Acceleration Data - Filter Class 60

Integration Data - Filter Class 180

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
RIGHT SIDE SILL AT FRONT SEAT X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: RFSXG1 FILTER: CH. CLASS 60

PEAK DATA: 2.13 G @ 57.12 MS, -6.46 G @ 11.68 MS

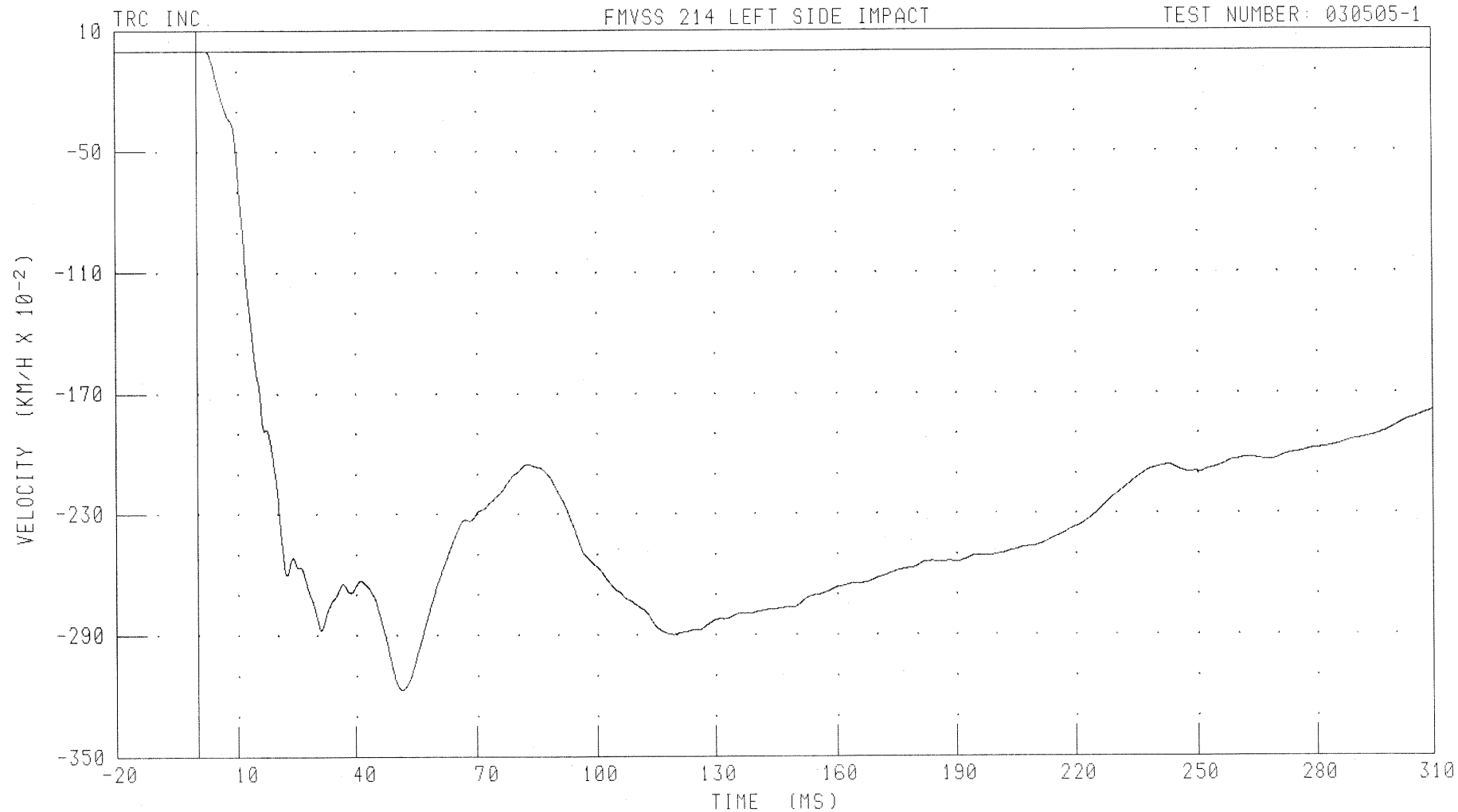
B-90

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
RIGHT SIDE SILL AT FRONT SEAT X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: RFSXV1

FILTER: CH. CLASS 180

PEAK DATA: 0.00 KM/H @ 1.84 MS, -3.17 KM/H @ 51.52 MS

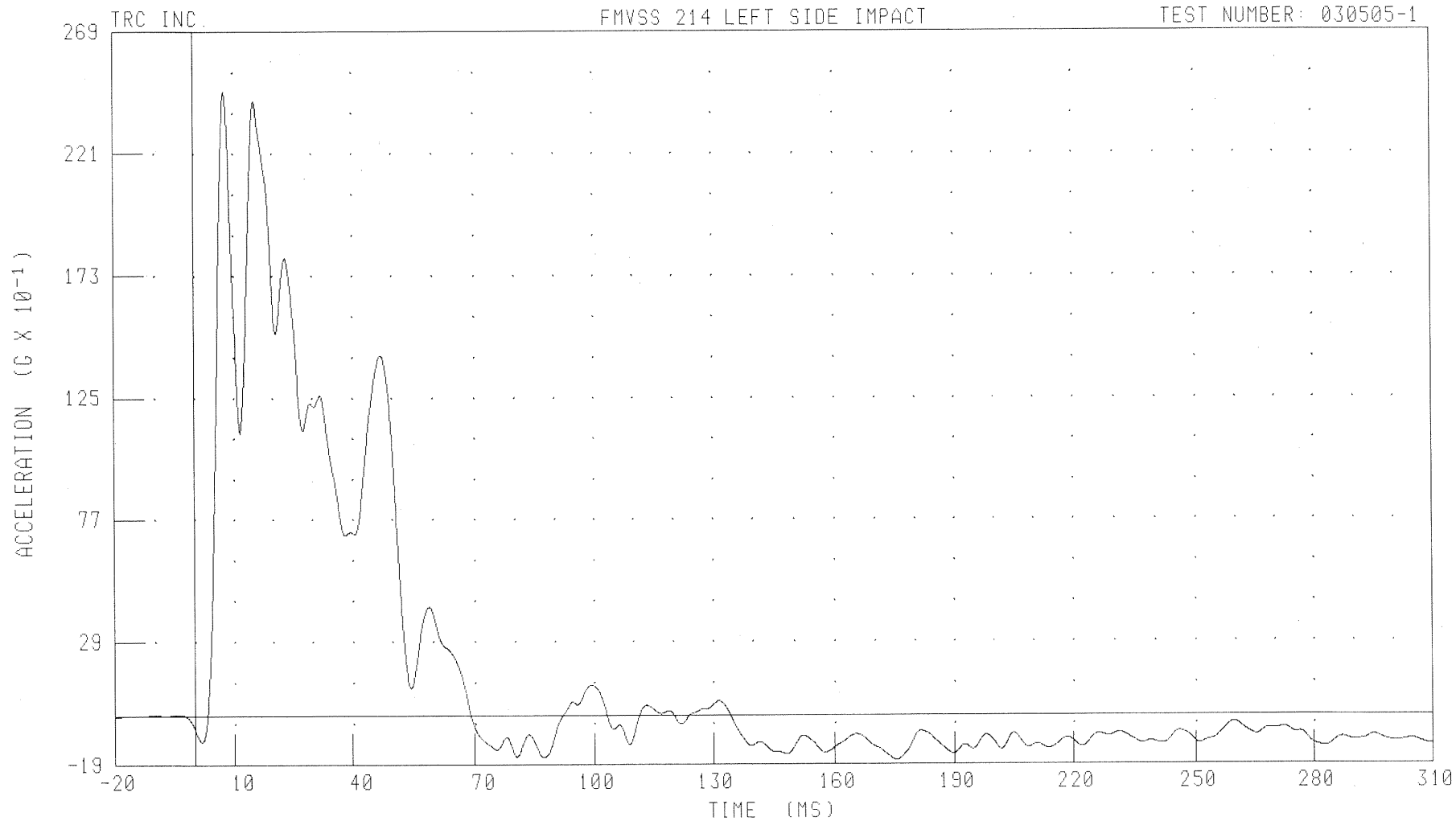
B-91

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
RIGHT SIDE SILL AT FRONT SEAT Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: RFSYG1 FILTER: CH. CLASS 60

PEAK DATA: 24.53 G @ 7.84 MS; -1.75 G @ 175.44 MS

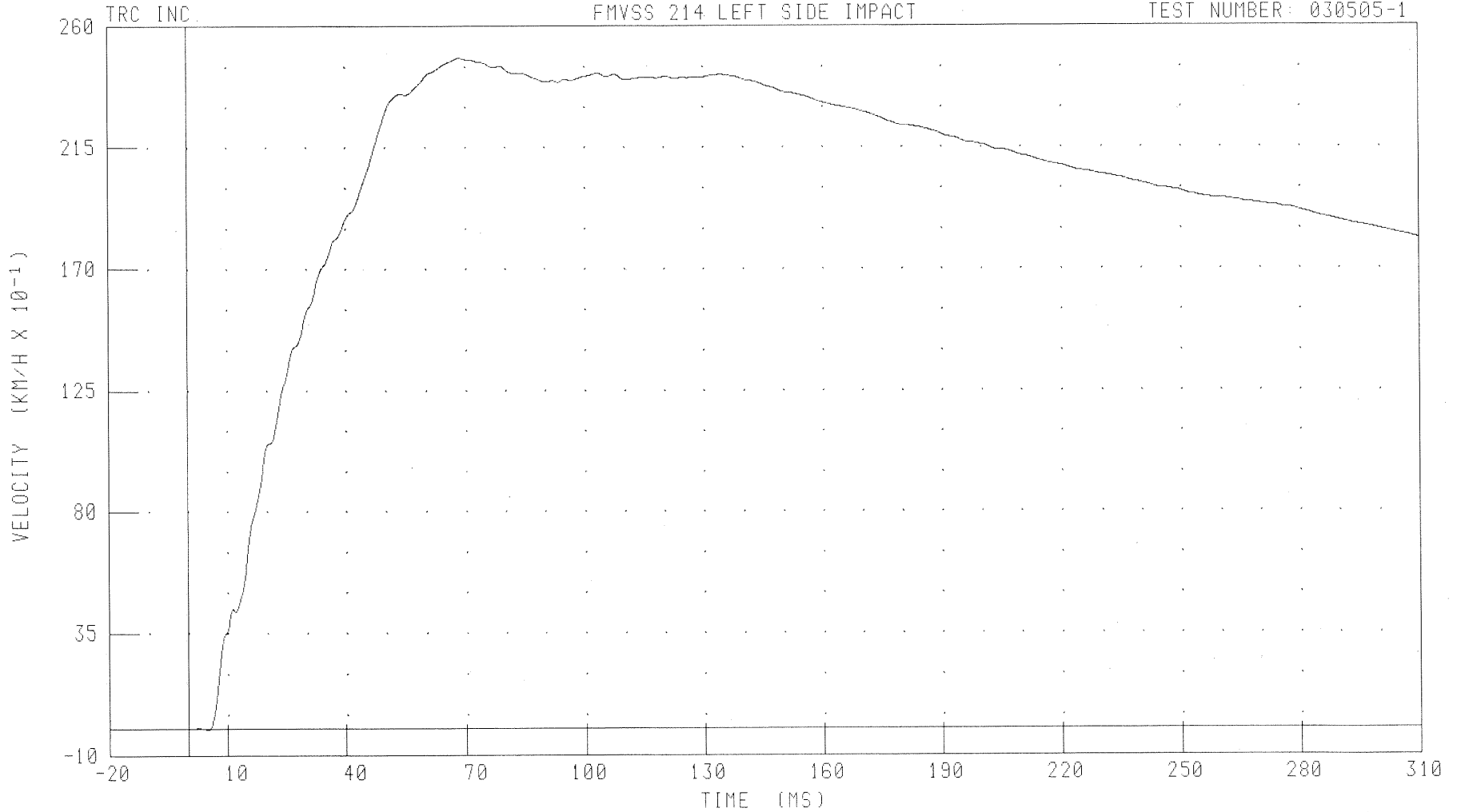
B-92

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
RIGHT SIDE SILL AT FRONT SEAT Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: RFSYV1 FILTER: CH. CLASS 180

PEAK DATA: 248.3 KM/H @ 68.64 MS; -0.06 KM/H @ 4.96 MS

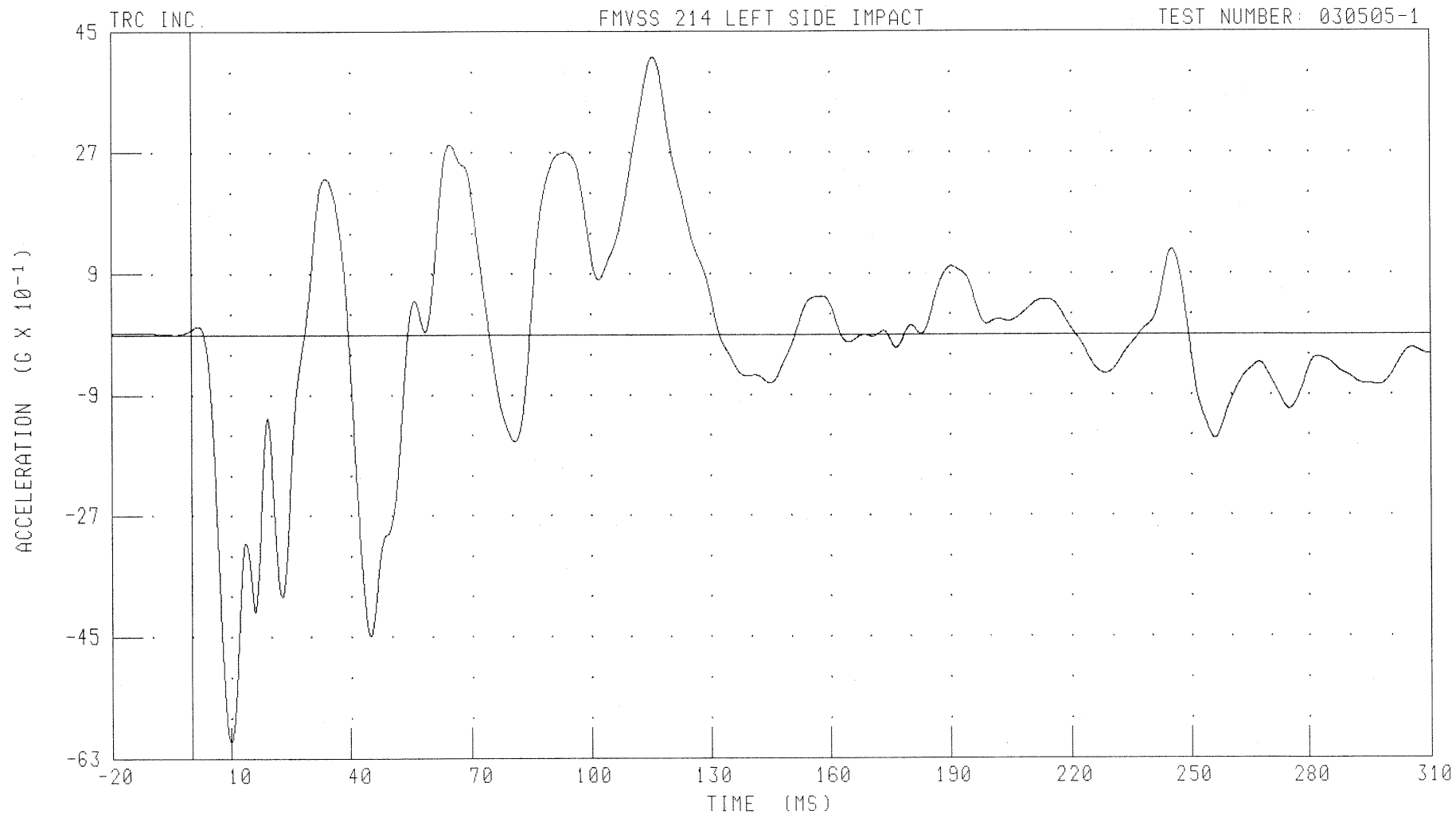
B-93

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
RIGHT SIDE SILL AT FRONT SEAT Z-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



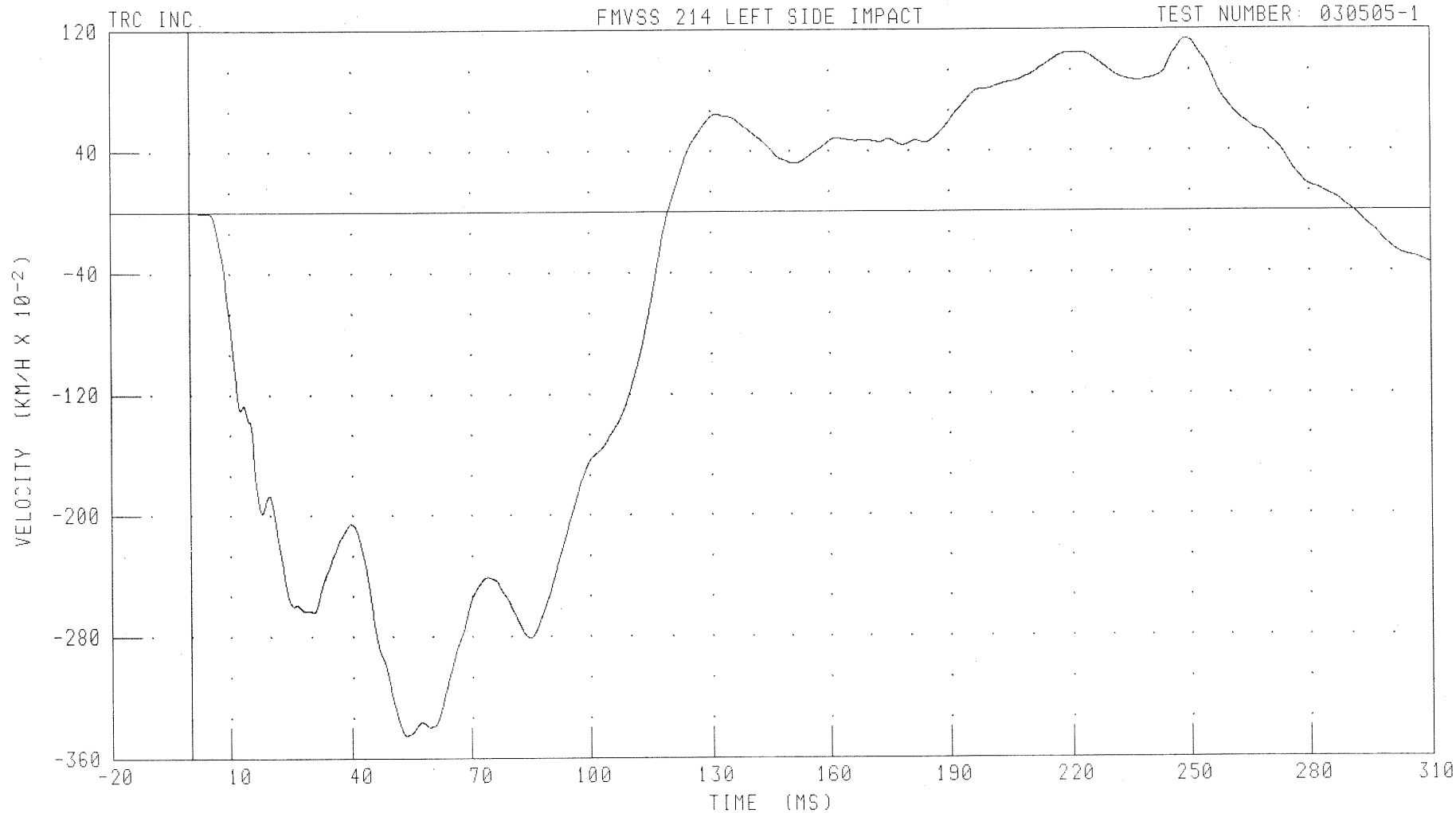
B-94

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
RIGHT SIDE SILL AT FRONT SEAT Z-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: RFSZV1 FILTER: CH. CLASS 180

PEAK DATA: 1.13 KM/H @ 249.04 MS; -3.45 KM/H @ 53.52 MS

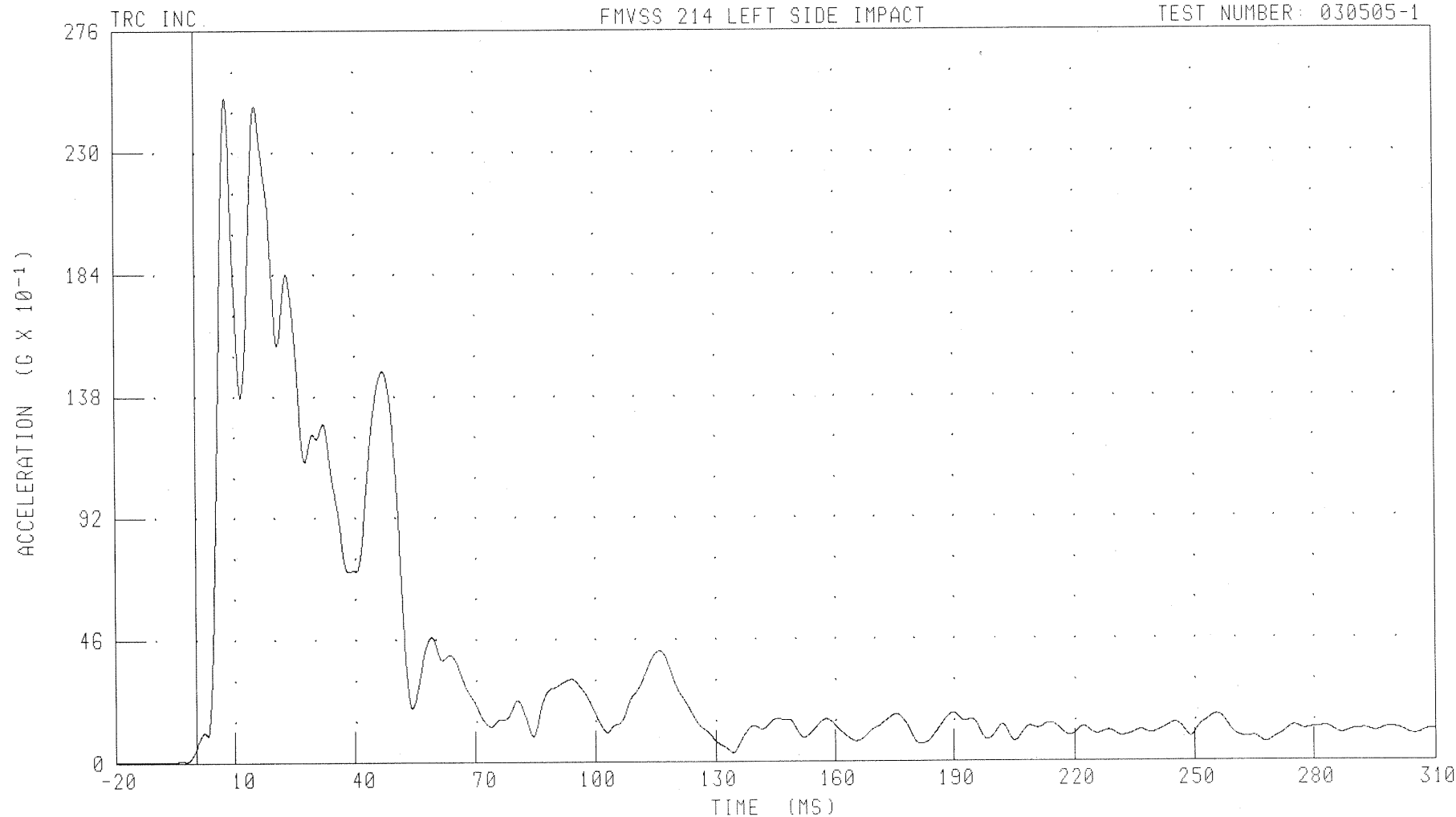
B-95

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: RFSRG1 FILTER: CH. CLASS 60

PEAK DATA: 25.10 G @ 7.92 MS; 0.02 G @ -14.24 MS

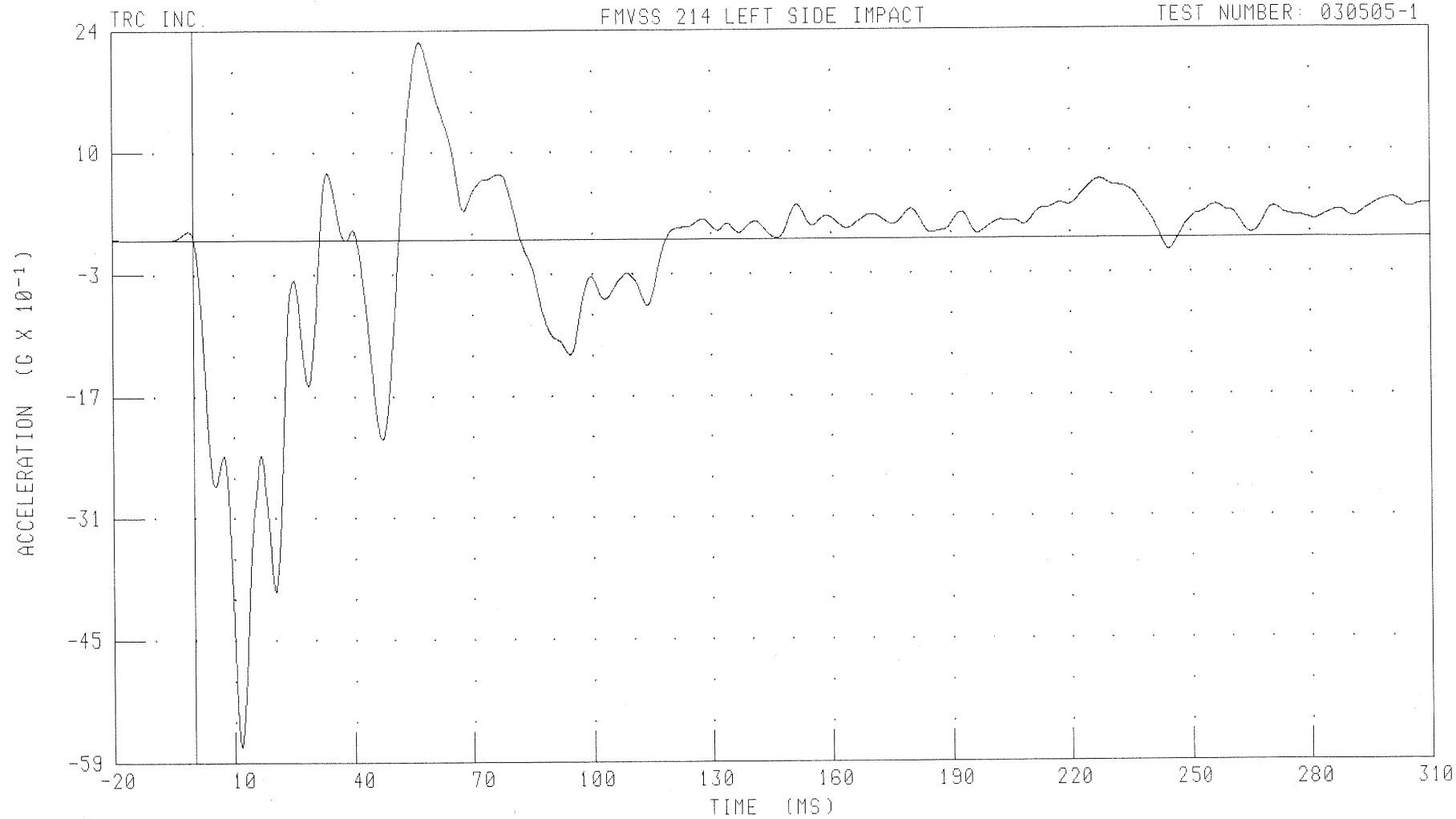
B-96

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
RIGHT SIDE SILL AT REAR SEAT X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: RRSXG1 FILTER: CH. CLASS 60

PEAK DATA: 2.27 G @ 57.04 MS; -5.82 G @ 11.68 MS

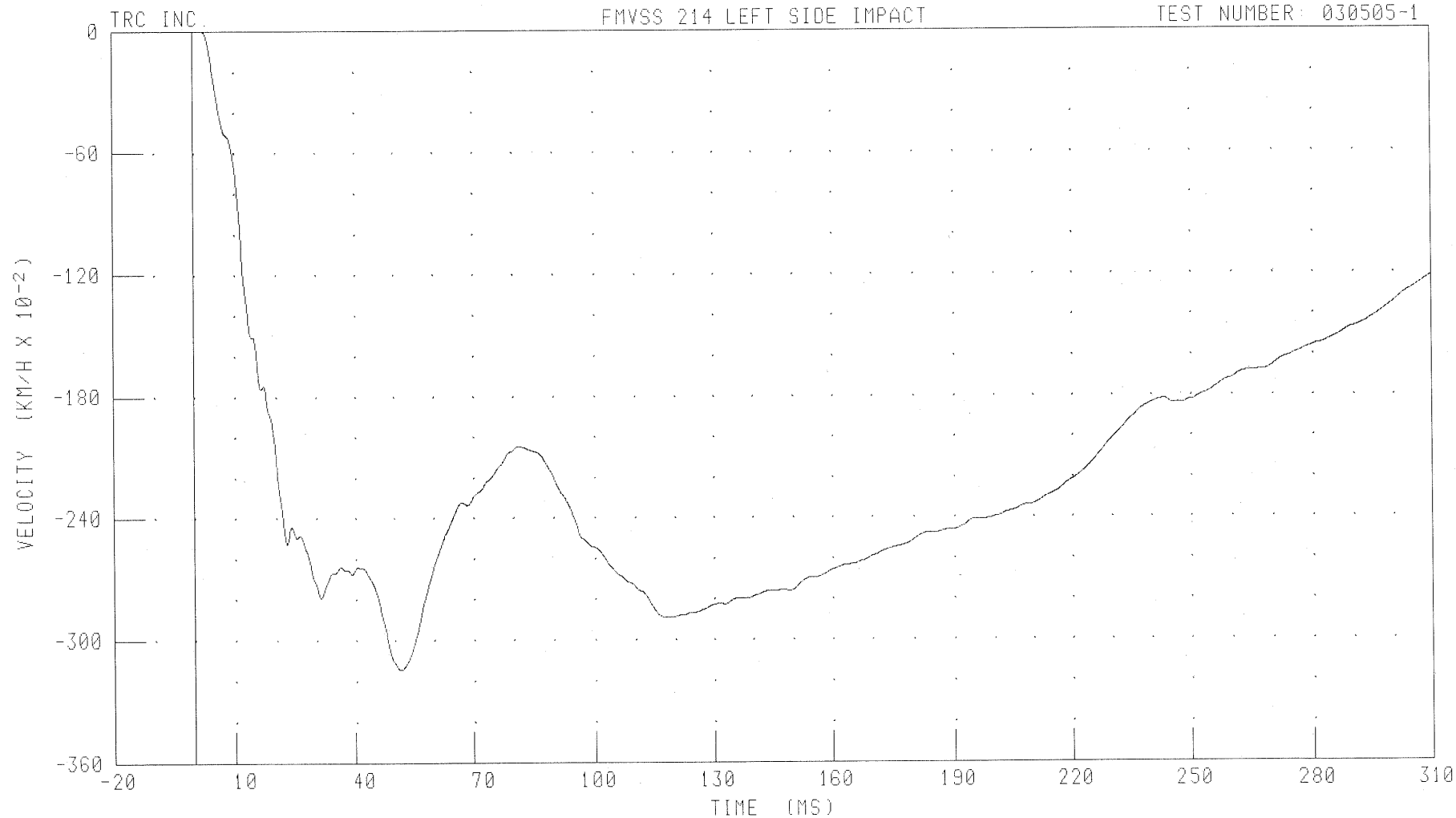
B-97

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
RIGHT SIDE SILL AT REAR SEAT X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: RRSXV1

FILTER: CH. CLASS 180

PEAK DATA: 0.00 KM/H @ 1.92 MS; -3.15 KM/H @ 51.68 MS

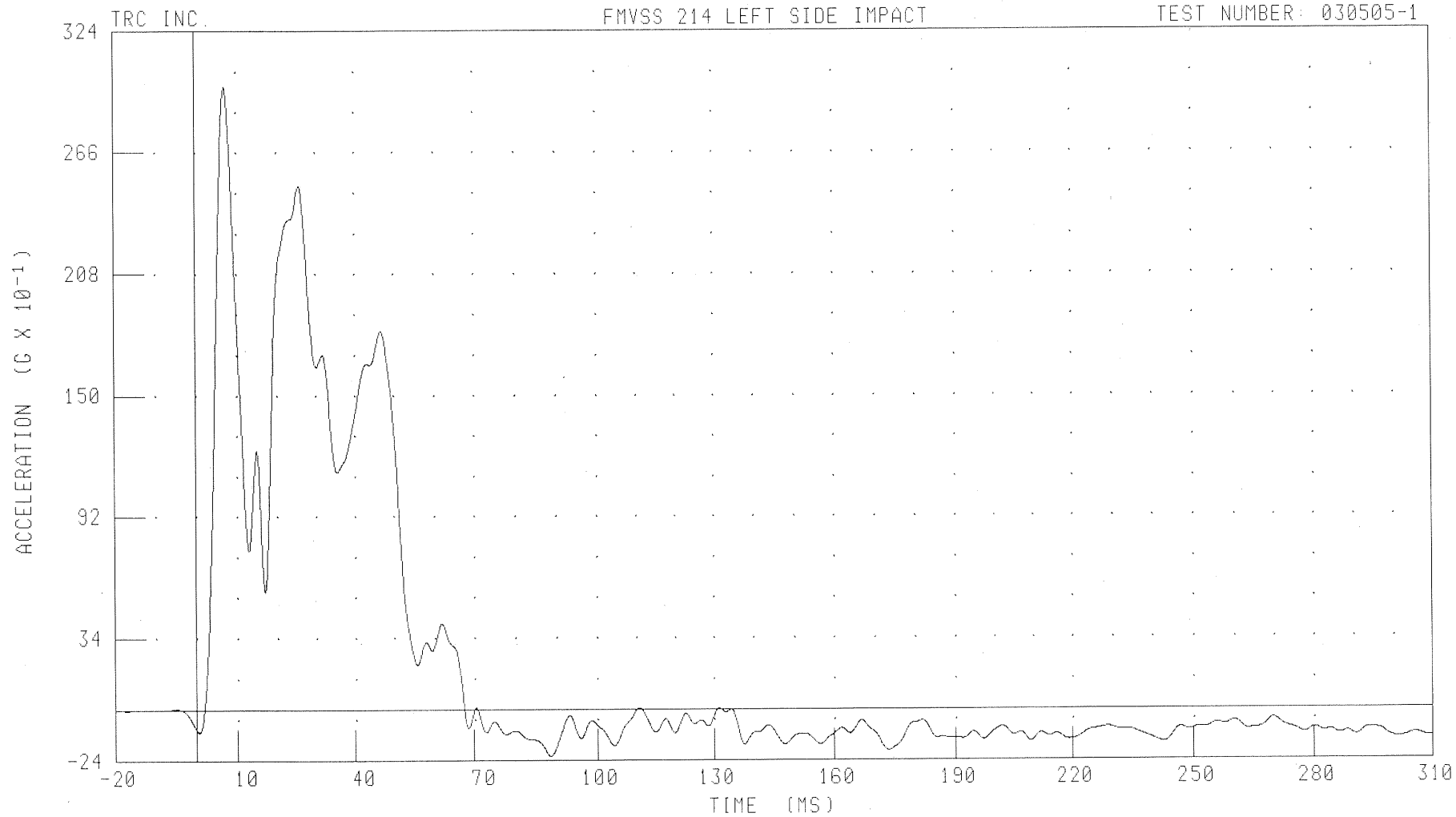
B-98

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
RIGHT SIDE SILL AT REAR SEAT Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: RRSYG1 FILTER: CH. CLASS 60

PEAK DATA: 29.74 G @ 7.20 MS; -2.21 G @ 88.48 MS

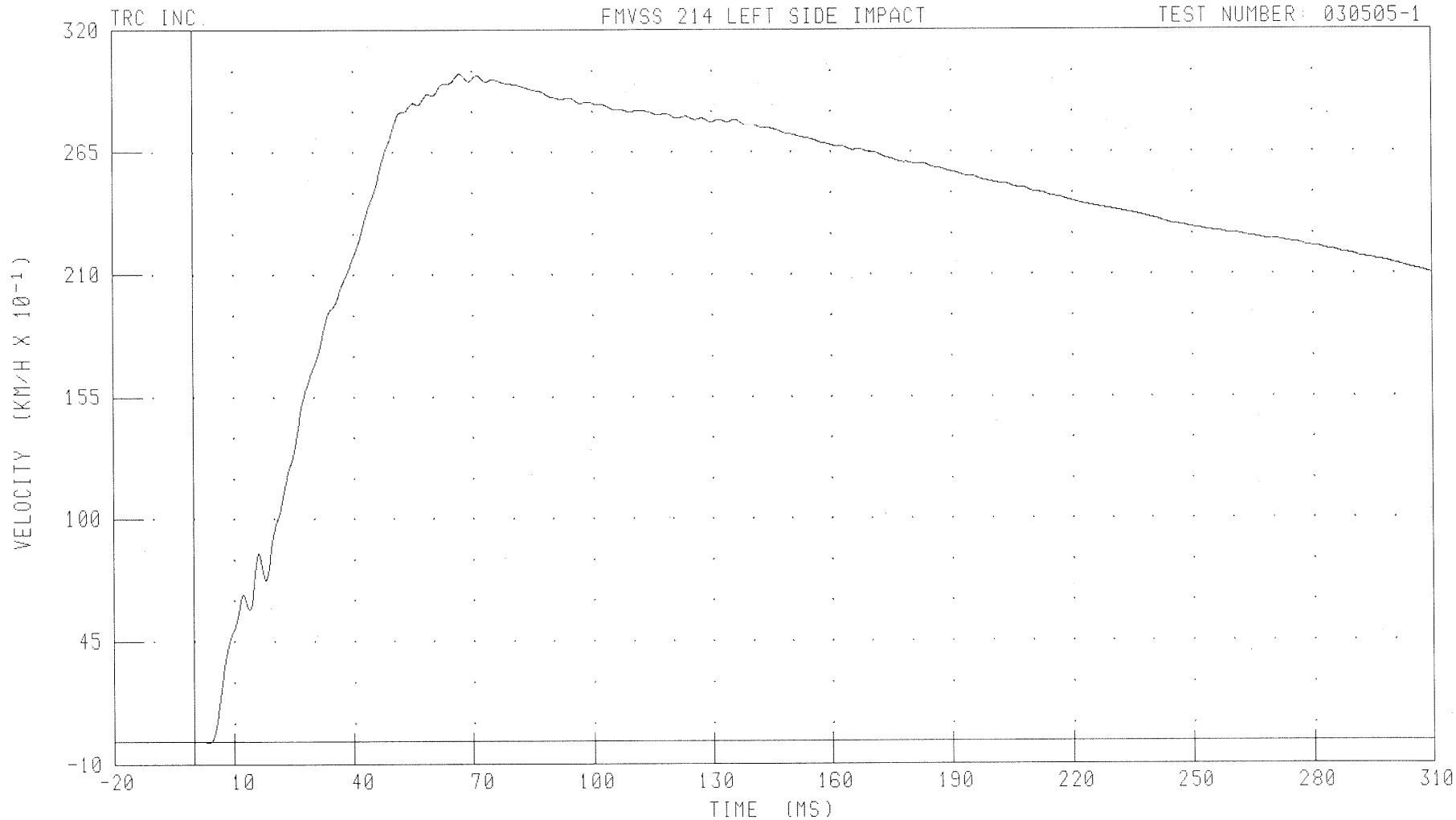
B-99

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
RIGHT SIDE SILL AT REAR SEAT Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: RRSYV1 FILTER: CH. CLASS 180

PEAK DATA: 30.04 KM/H @ 67.12 MS; -0.02 KM/H @ 3.76 MS

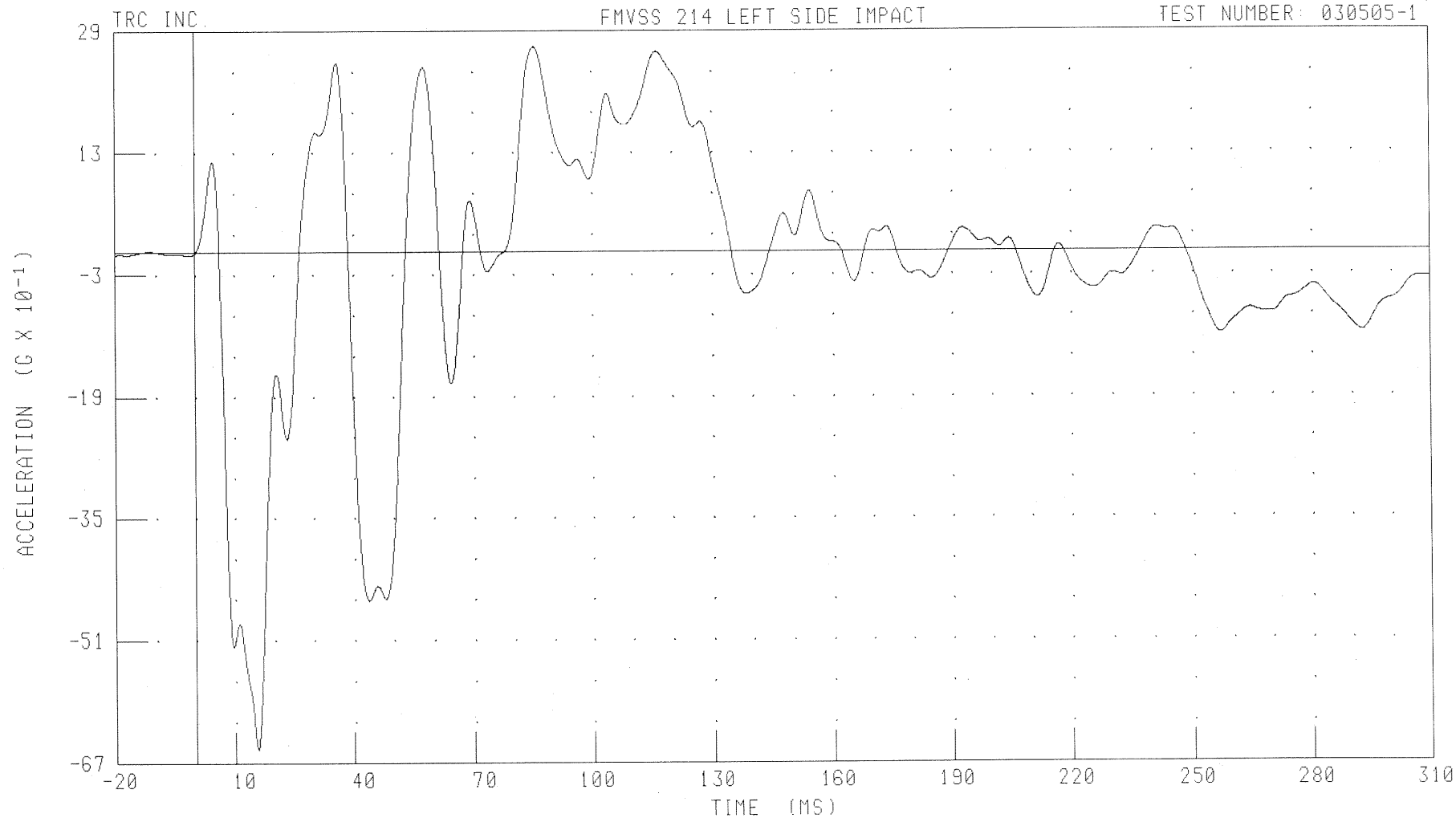
B-100

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
RIGHT SIDE SILL AT REAR SEAT Z-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: RRSZG1 FILTER: CH. CLASS 60

PEAK DATA: 2.69 G @ 85.44 MS, -6.52 G @ 15.68 MS

B-101

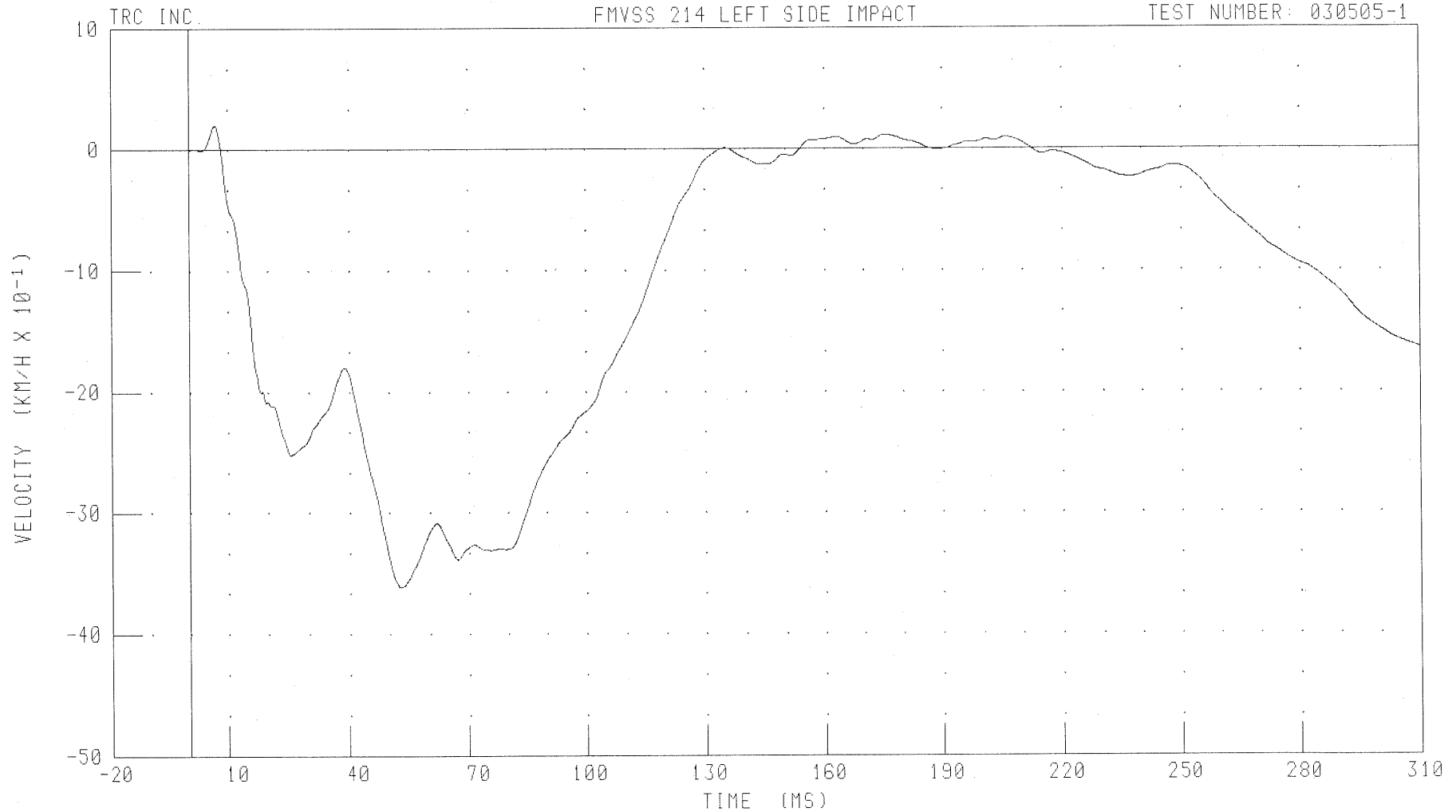
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

RIGHT SIDE SILL AT REAR SEAT Z-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: RRSZV1 FILTER: CH. CLASS 180

PEAK DATA: 0.20 KM/H @ 6.88 MS; -3.62 KM/H @ 52.96 MS

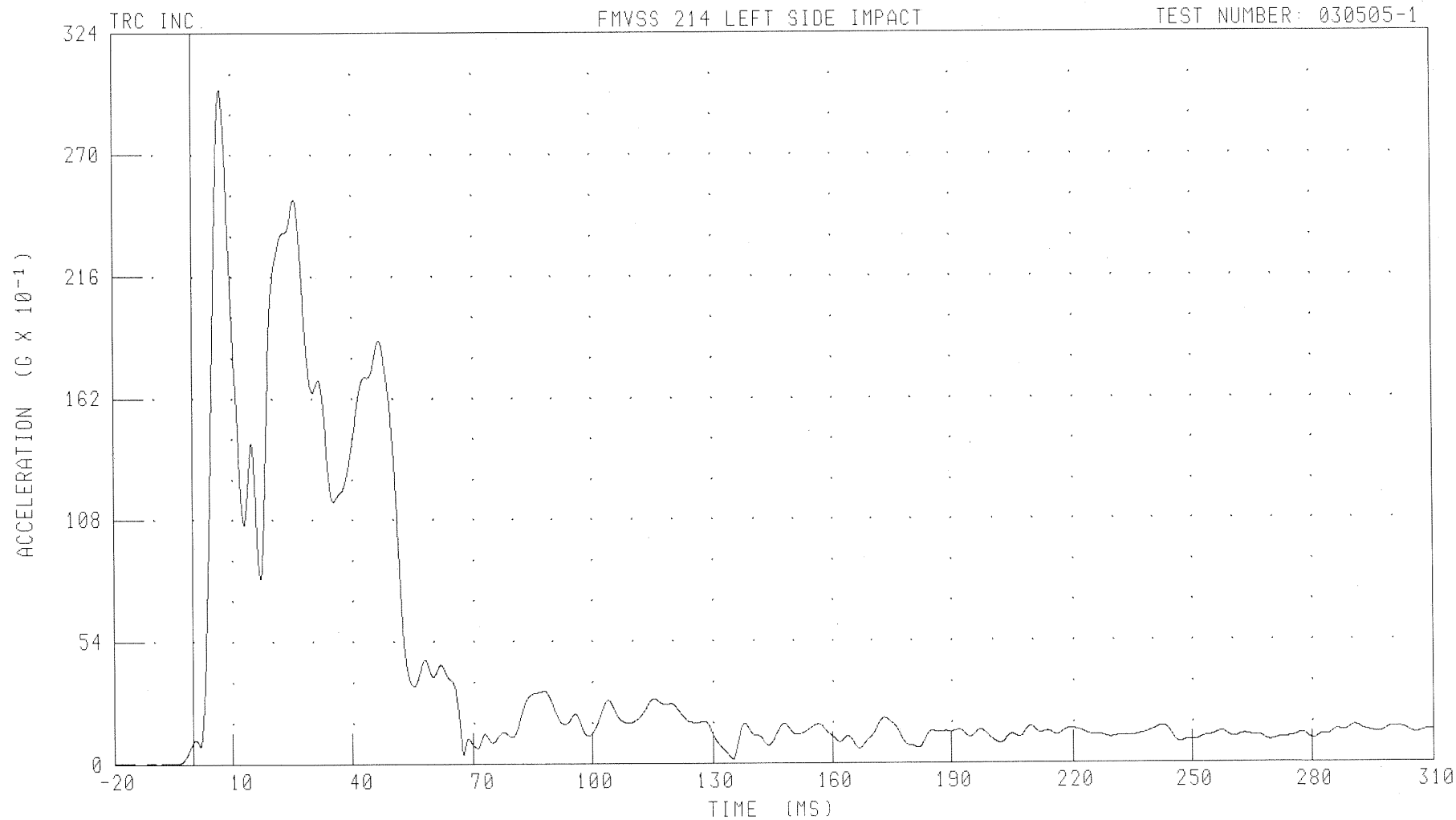
B-102

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: RRSRG1 FILTER: CH. CLASS 60

PEAK DATA: 29.91 G @ 7.20 MS; 0.00 G @ -13.60 MS

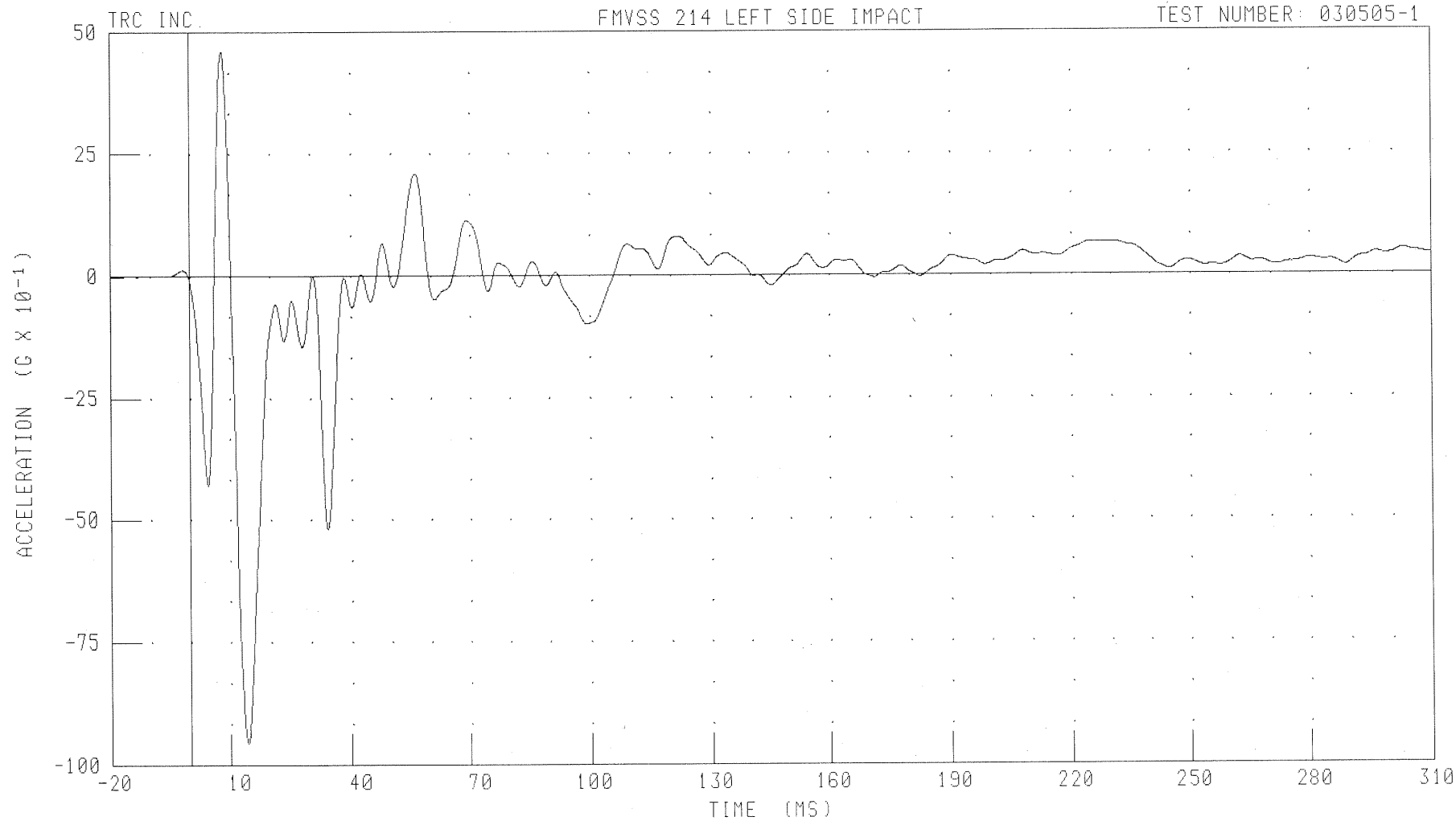
B-103

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
REAR FLOORPAN ABOVE AXLE X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: RDKXG1 FILTER: CH. CLASS 60

PEAK DATA: 4.61 G @ 8.24 MS; -9.56 G @ 14.24 MS

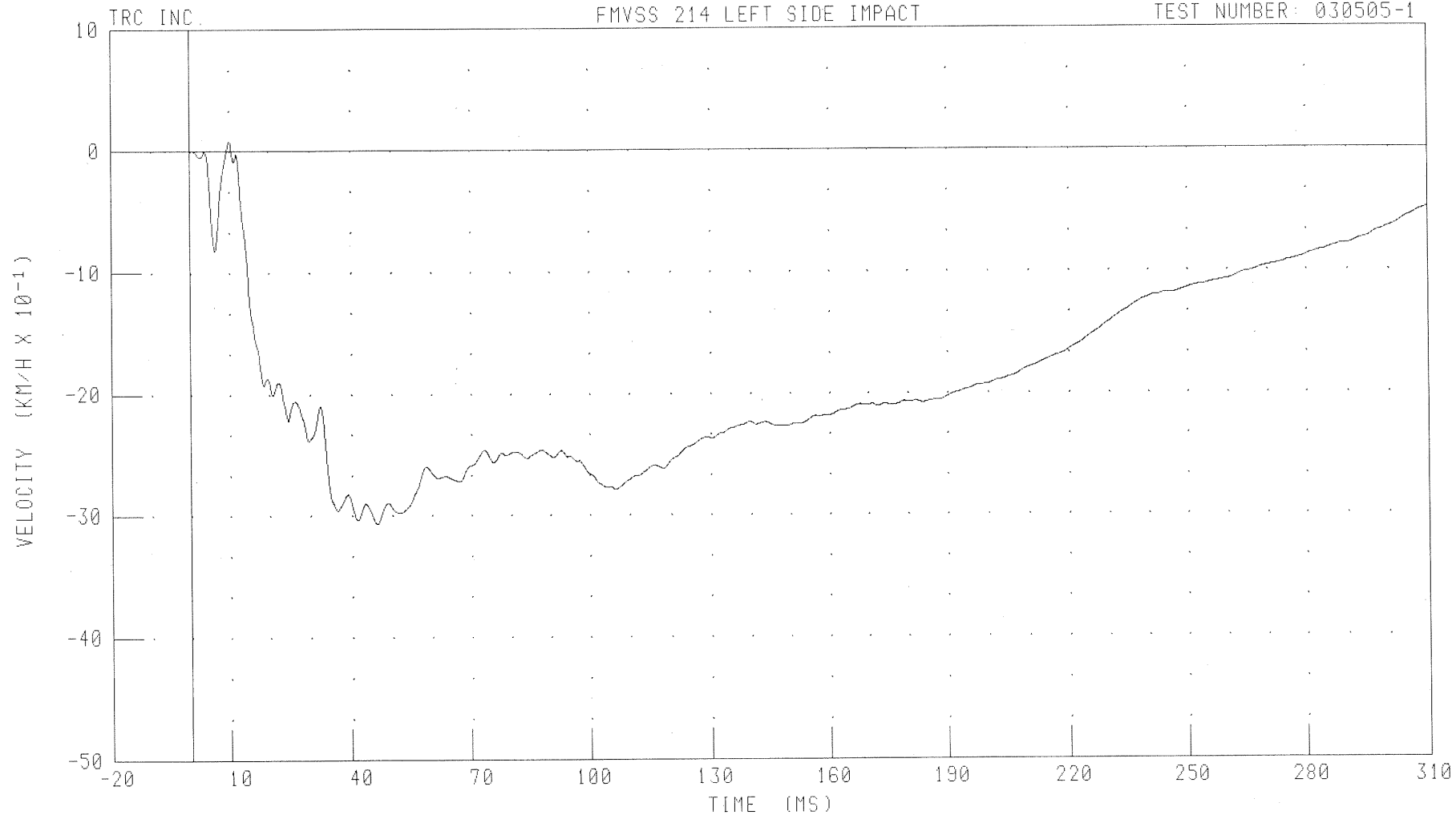
B-104

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
REAR FLOORPAN ABOVE AXLE X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: RDKXV1

FILTER: CH. CLASS 180

PEAK DATA: 0.08 KM/H @ 10.08 MS; -3.07 KM/H @ 46.48 MS

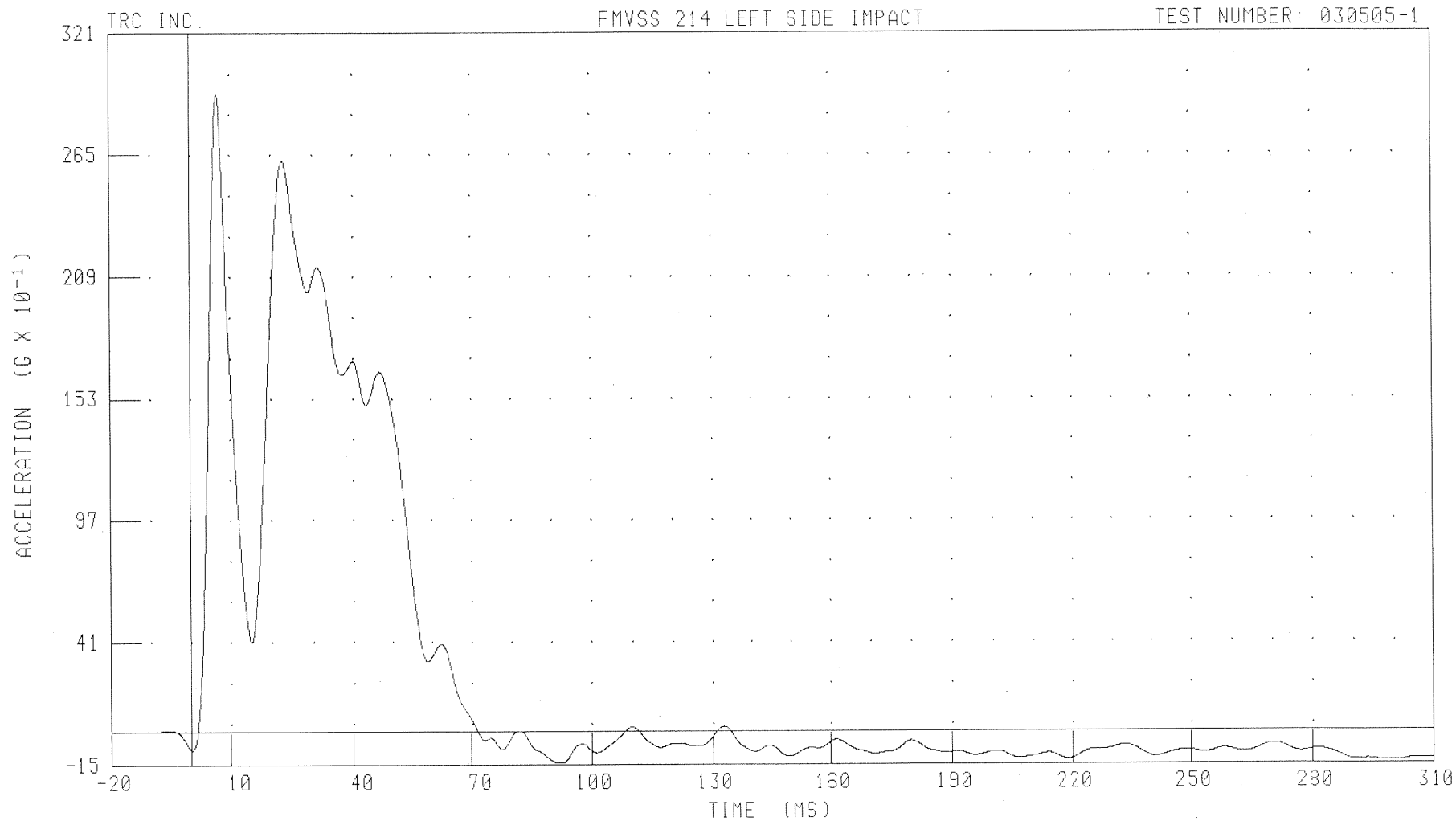
B-105

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
REAR FLOORPAN ABOVE AXLE Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: RDKYG1 FILTER: CH. CLASS 60

PEAK DATA: 29.31 G @ 6.80 MS; -1.43 G @ 92.56 MS

B-106

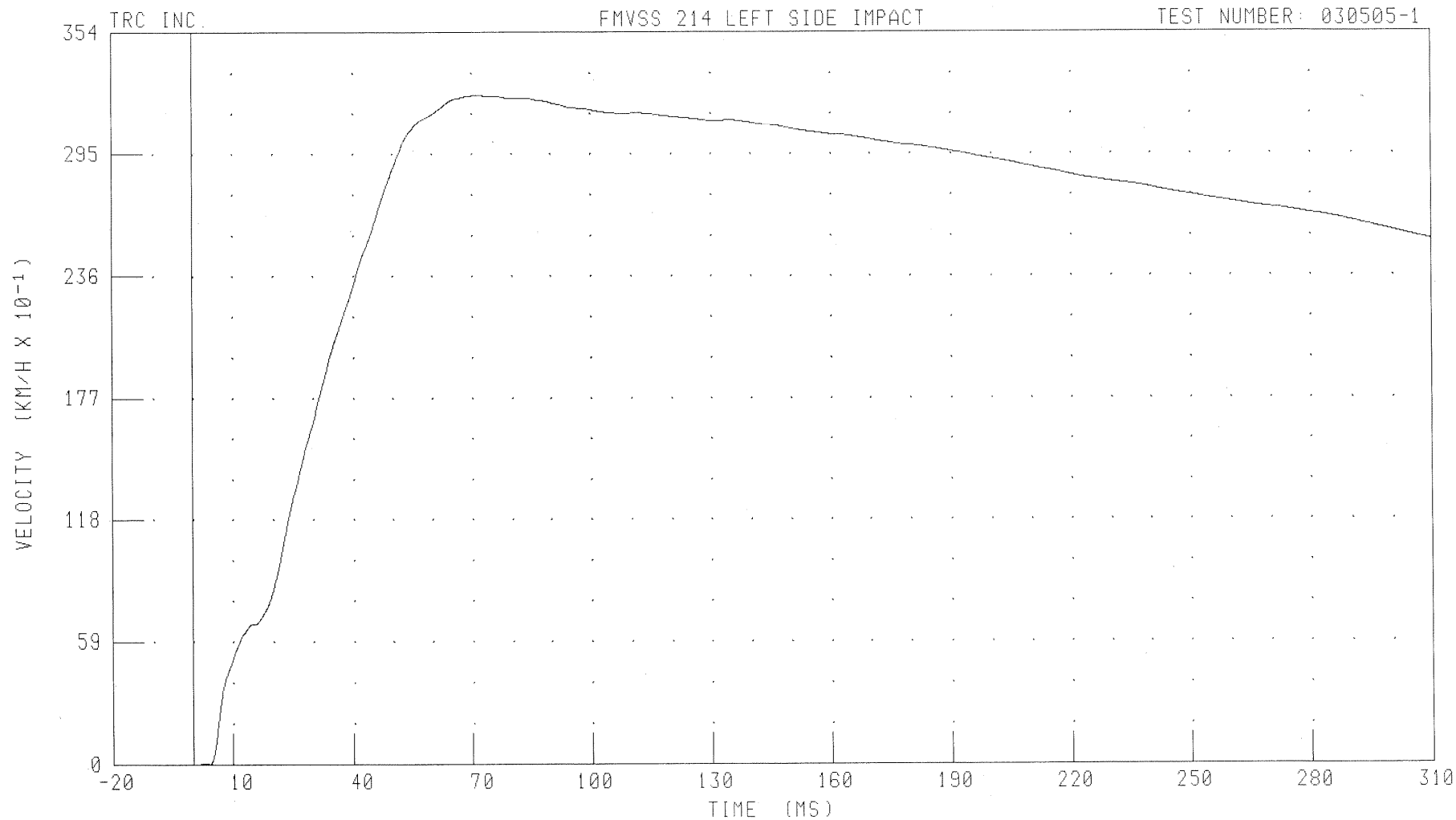
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

REAR FLOORPAN ABOVE AXLE Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: RDKYV1 FILTER: CH. CLASS 180

PEAK DATA: 32.38 KM/H @ 71.76 MS; 0.00 KM/H @ 0.40 MS

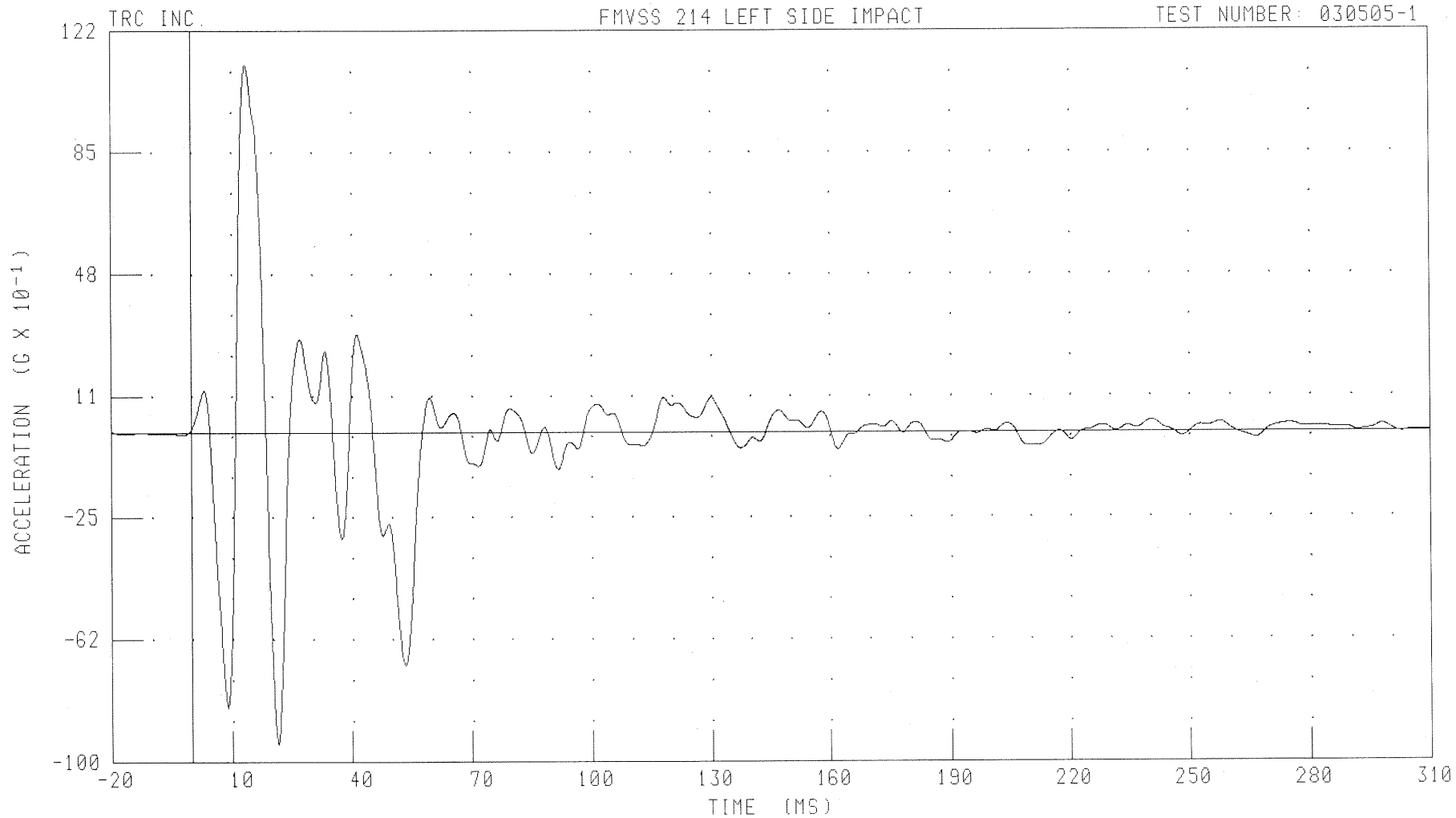
B-107

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
REAR FLOORPAN ABOVE AXLE Z-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: RDKZG1 FILTER: CH. CLASS 60

PEAK DATA: 11.18 G @ 13.52 MS; -9.46 G @ 21.36 MS

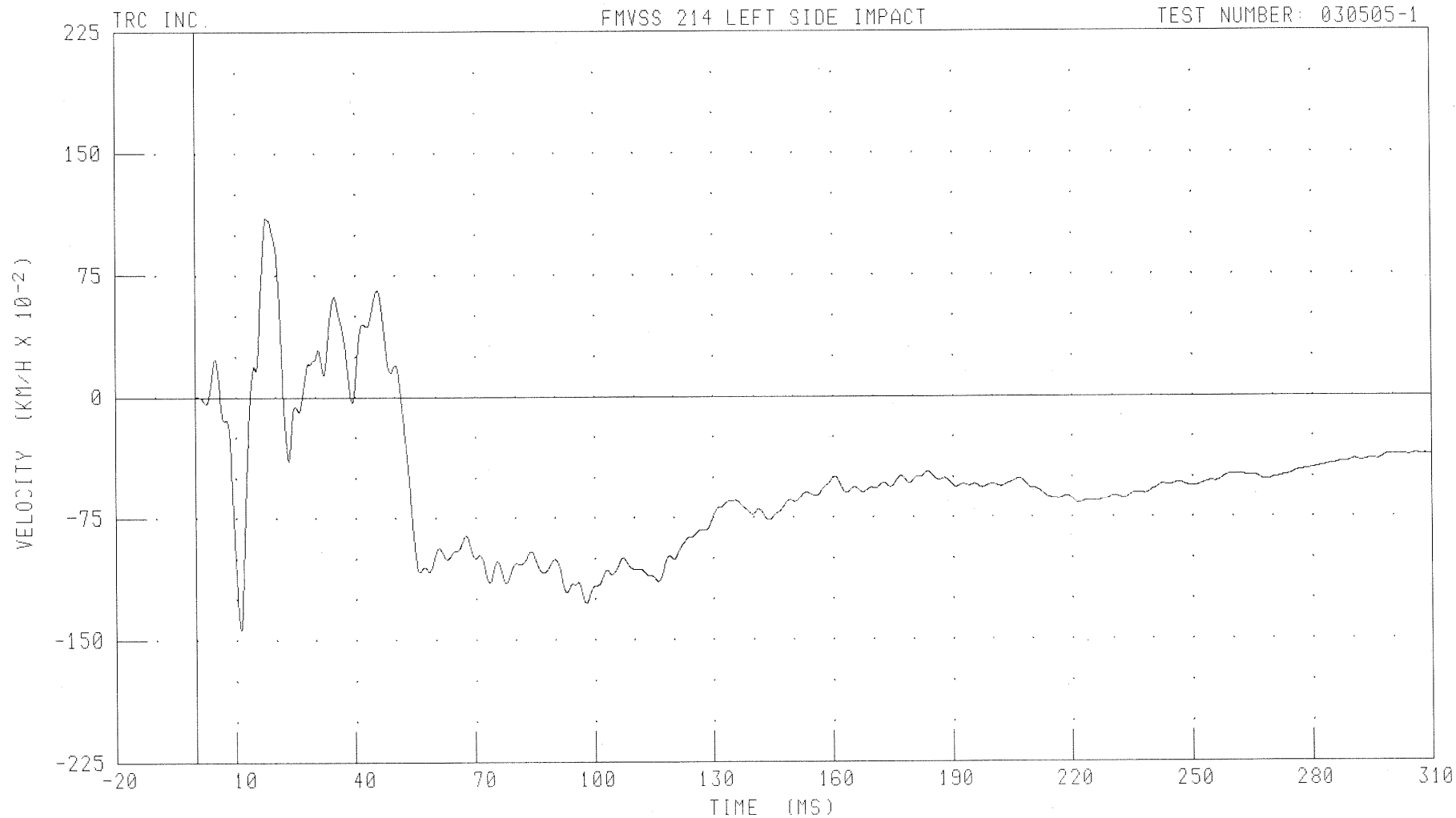
B-108

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
REAR FLOORPAN ABOVE AXLE Z-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: RDKZV1 FILTER: CH. CLASS 180

PEAK DATA: 1.10 KM/H @ 17.76 MS; -1.44 KM/H @ 11.20 MS

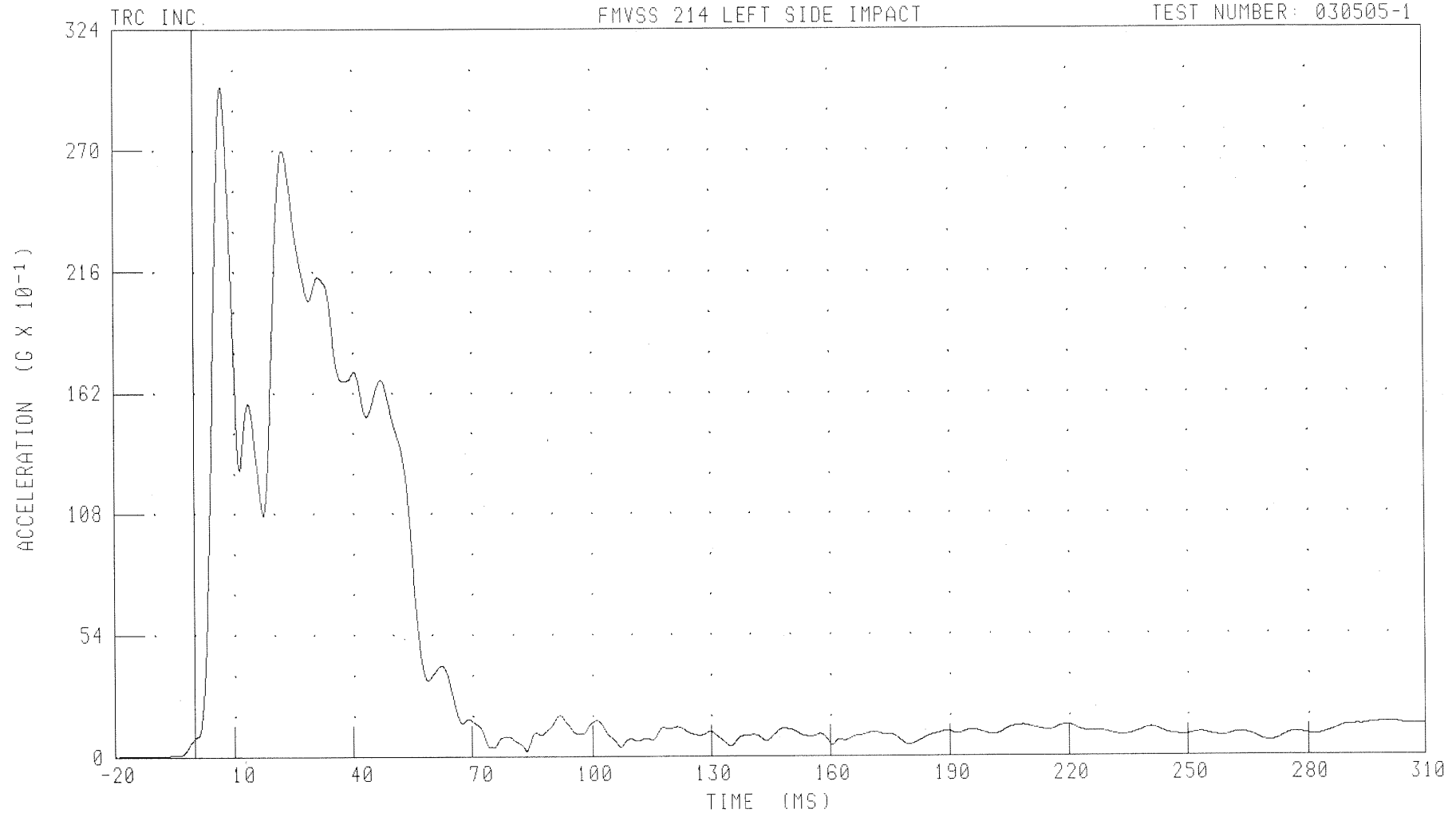
B-109

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: RDKRG1 FILTER: CH. CLASS 60

PEAK DATA: 29.86 G @ 6.96 MS, 0.01 G @ -19.44 MS

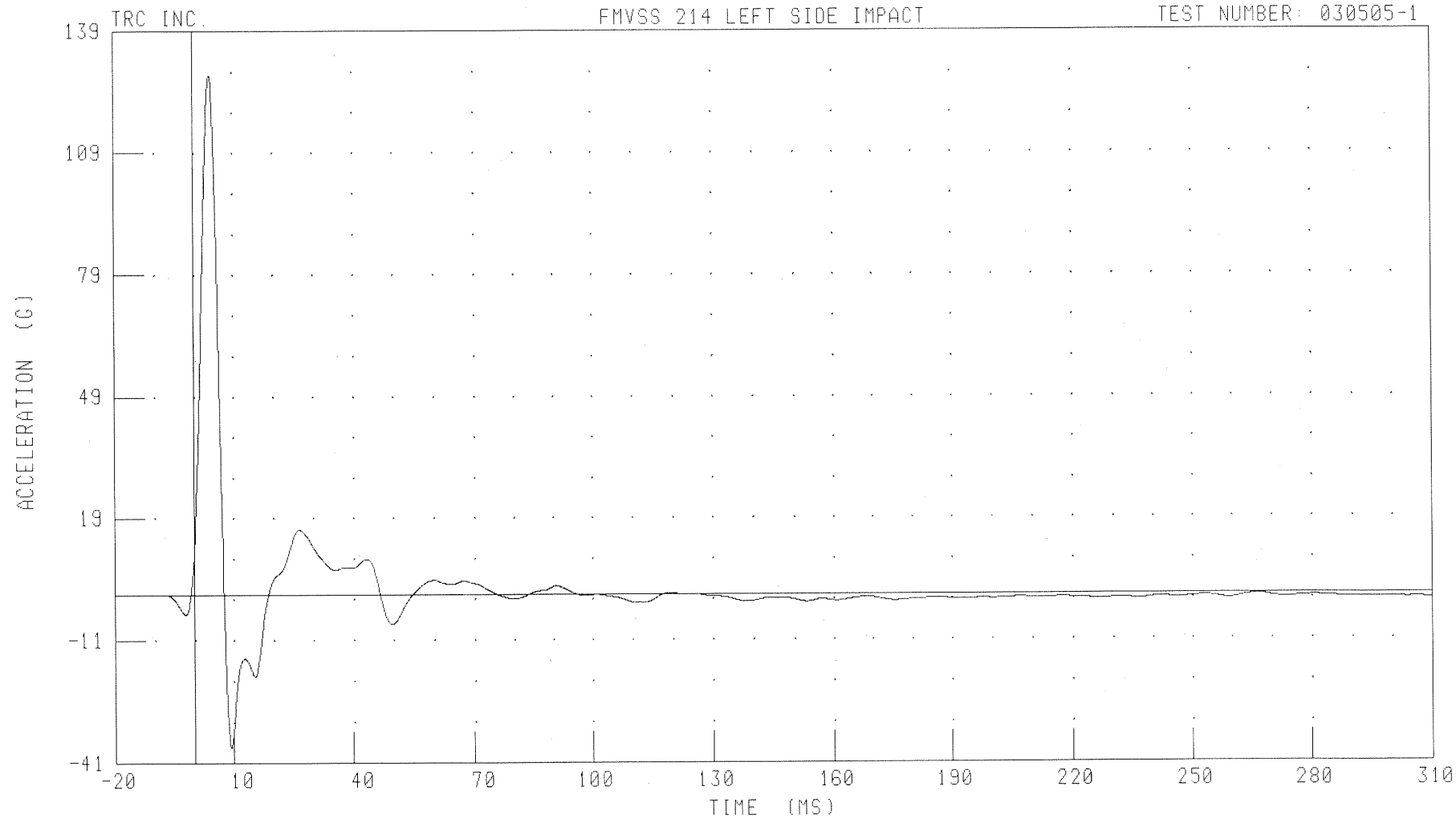
B-110

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT SIDE SILL AT FRONT SEAT Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LFSYG1 FILTER: CH. CLASS 60

PEAK DATA: 128.23 G @ 4.16 MS; -37.32 G @ 9.28 MS

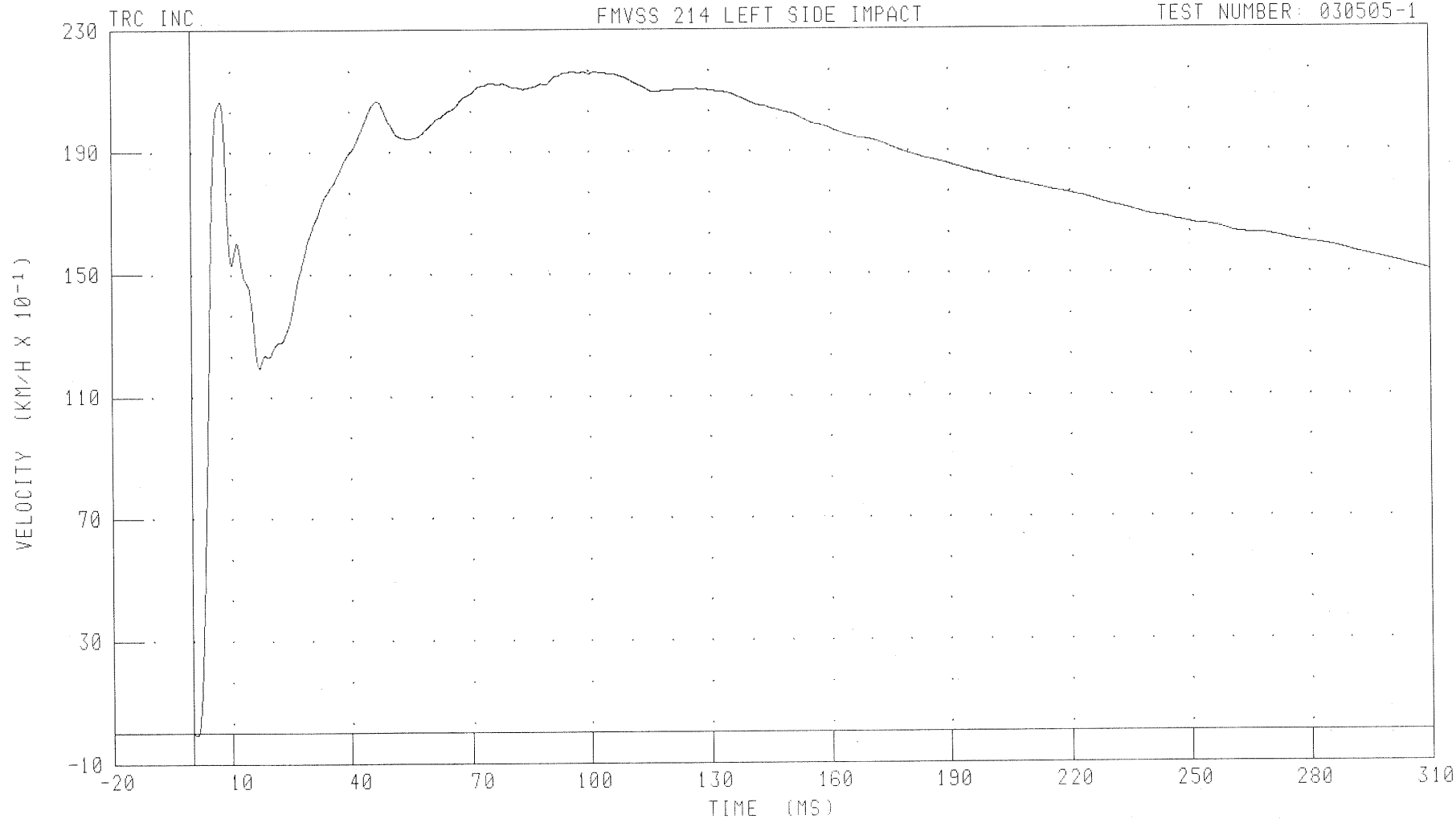
B-111

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT SIDE SILL AT FRONT SEAT Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LFSYV1 FILTER: CH. CLASS 180

PEAK DATA: 21.63 KM/H @ 96.32 MS; -0.07 KM/H @ 0.96 MS

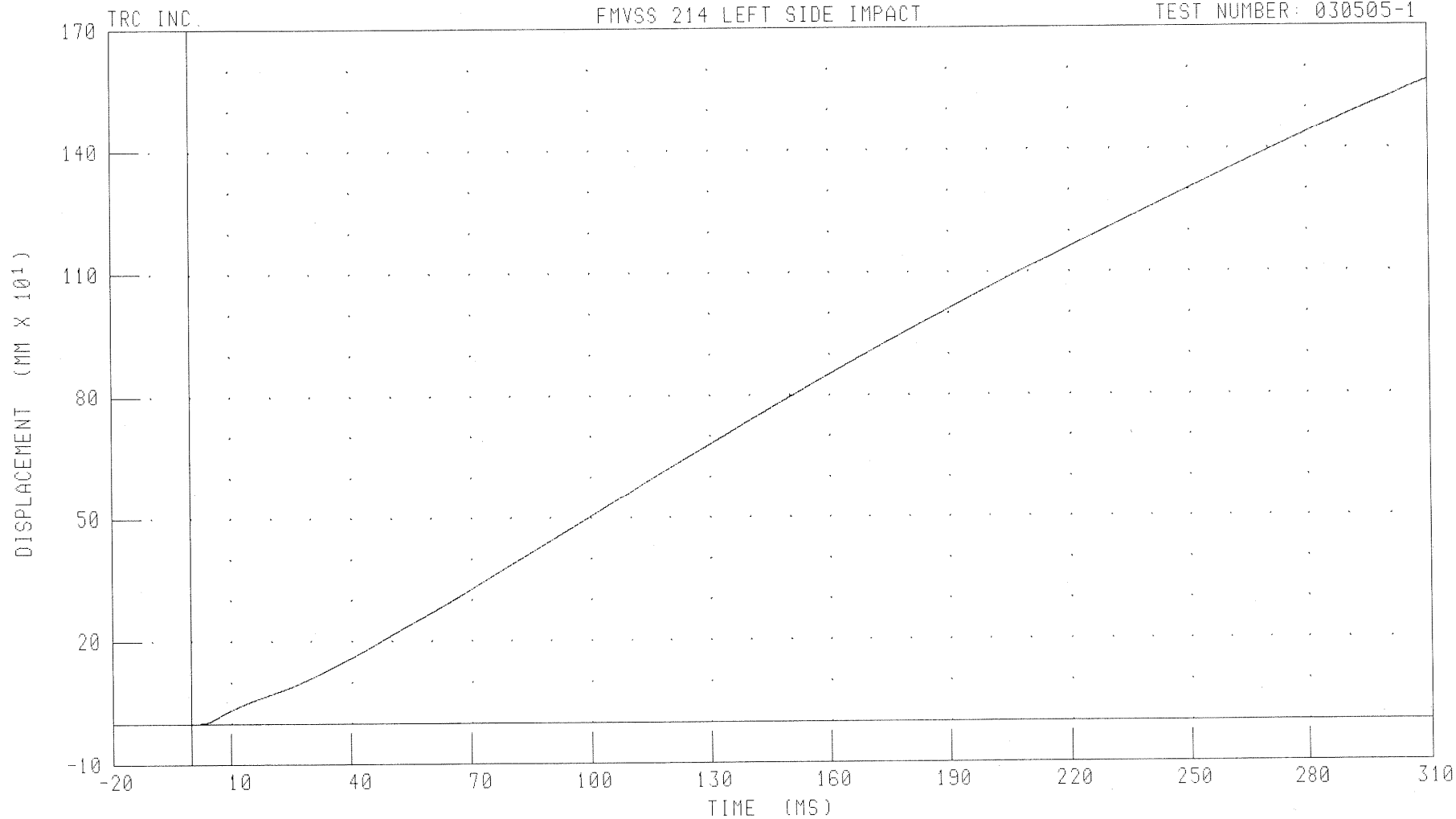
B-112

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT SIDE SILL AT FRONT SEAT Y-AXIS DISPLACEMENT

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LFSYD1 FILTER: CH. CLASS 180

PEAK DATA: 1567.49 MM @ 310.00 MS, -0.02 MM @ 1.36 MS

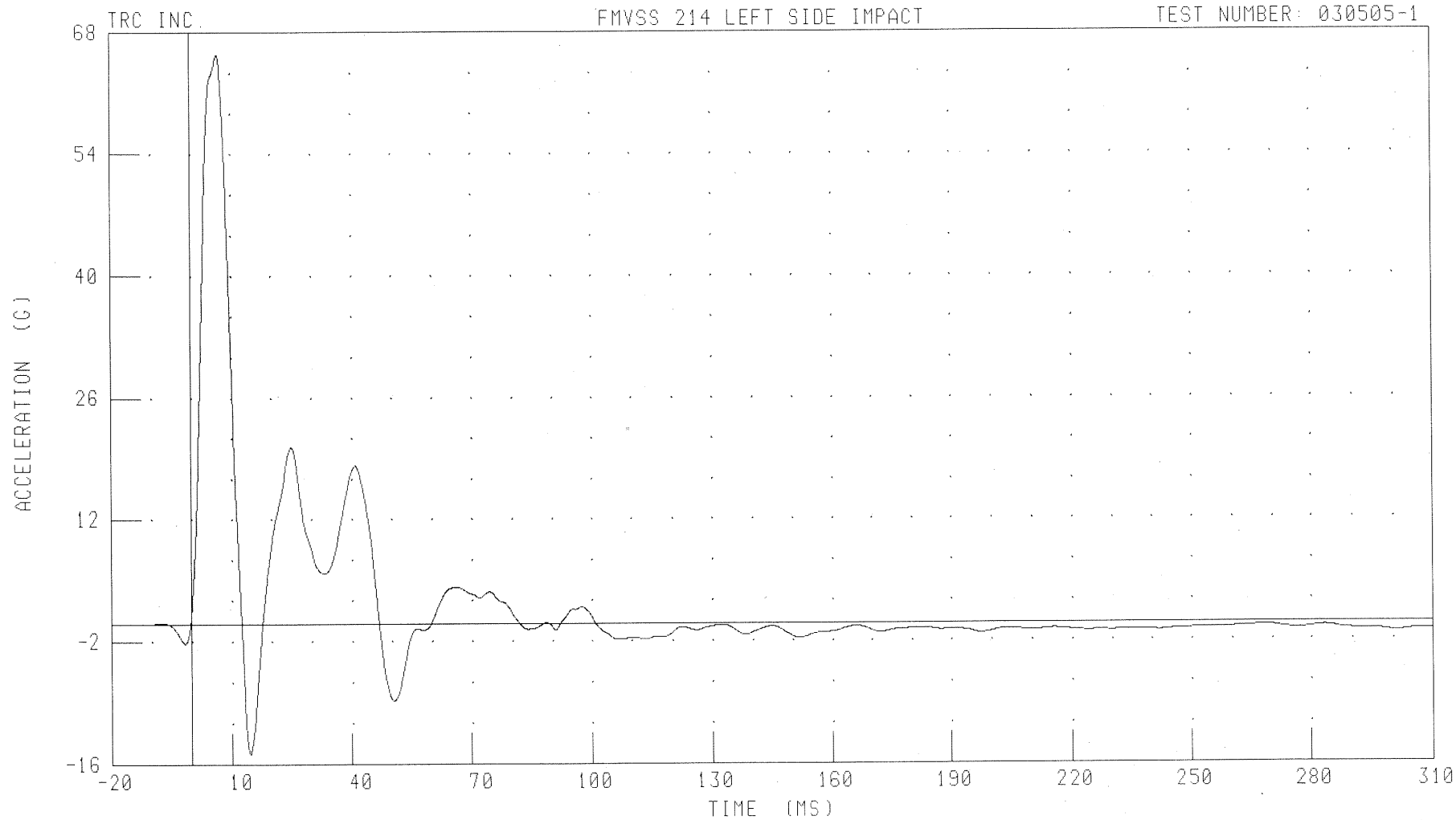
B-113

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT SIDE SILL AT REAR SEAT Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LRSYG1 FILTER: CH. CLASS 60

PEAK DATA: 65.40 G @ 6.72 MS; -14.81 G @ 14.56 MS

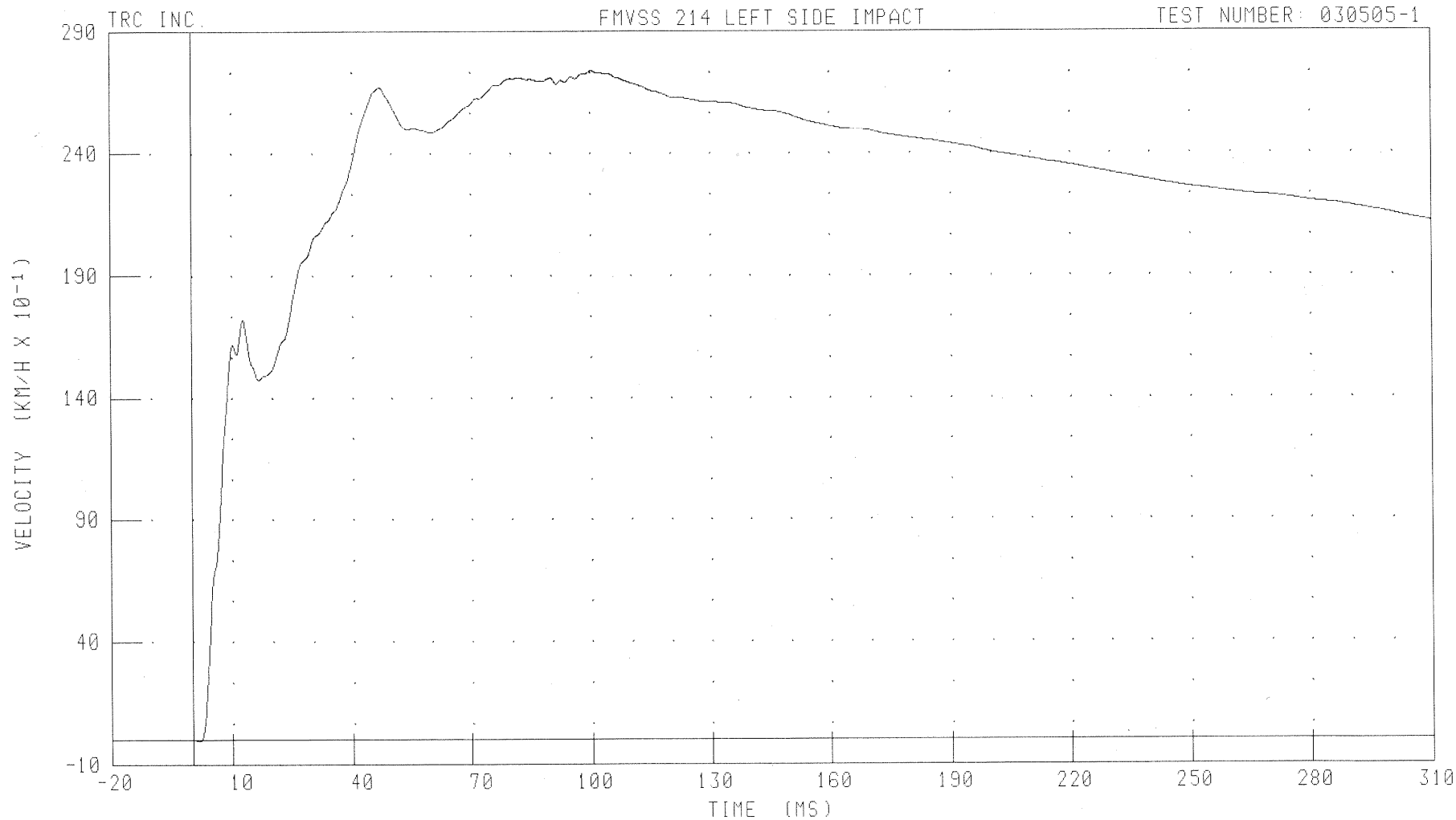
B-114

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT SIDE SILL AT REAR SEAT Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LRSYV1 FILTER: CH. CLASS 180

PEAK DATA: 27.40 KM/H @ 100.48 MS; -0.05 KM/H @ 1.60 MS

B-115

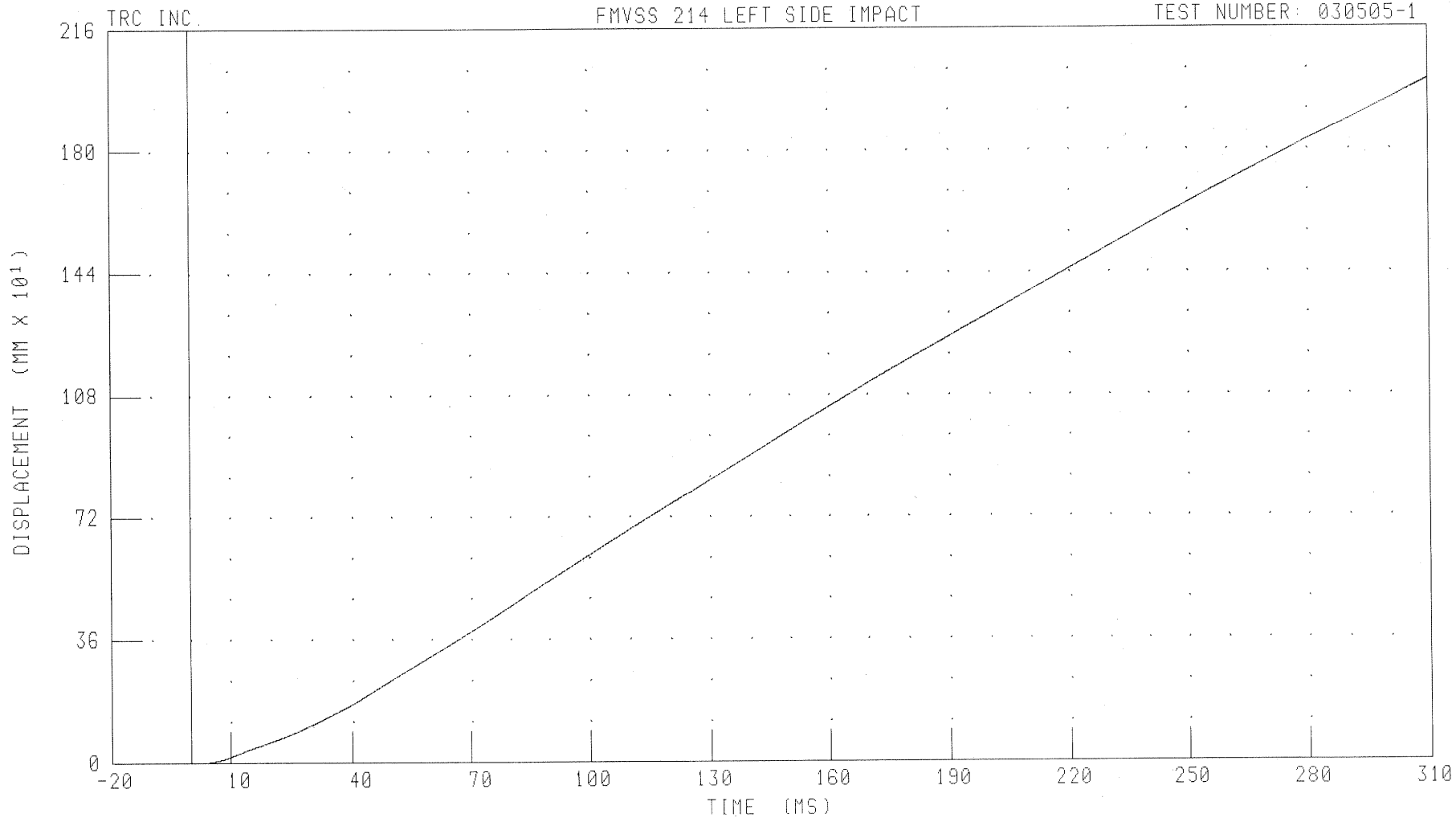
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

LEFT SIDE SILL AT REAR SEAT Y-AXIS DISPLACEMENT

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LRSYD1

FILTER: CH. CLASS 180

PEAK DATA: 2007.38 MM @ 310.00 MS; -0.01 MM @ 2.08 MS

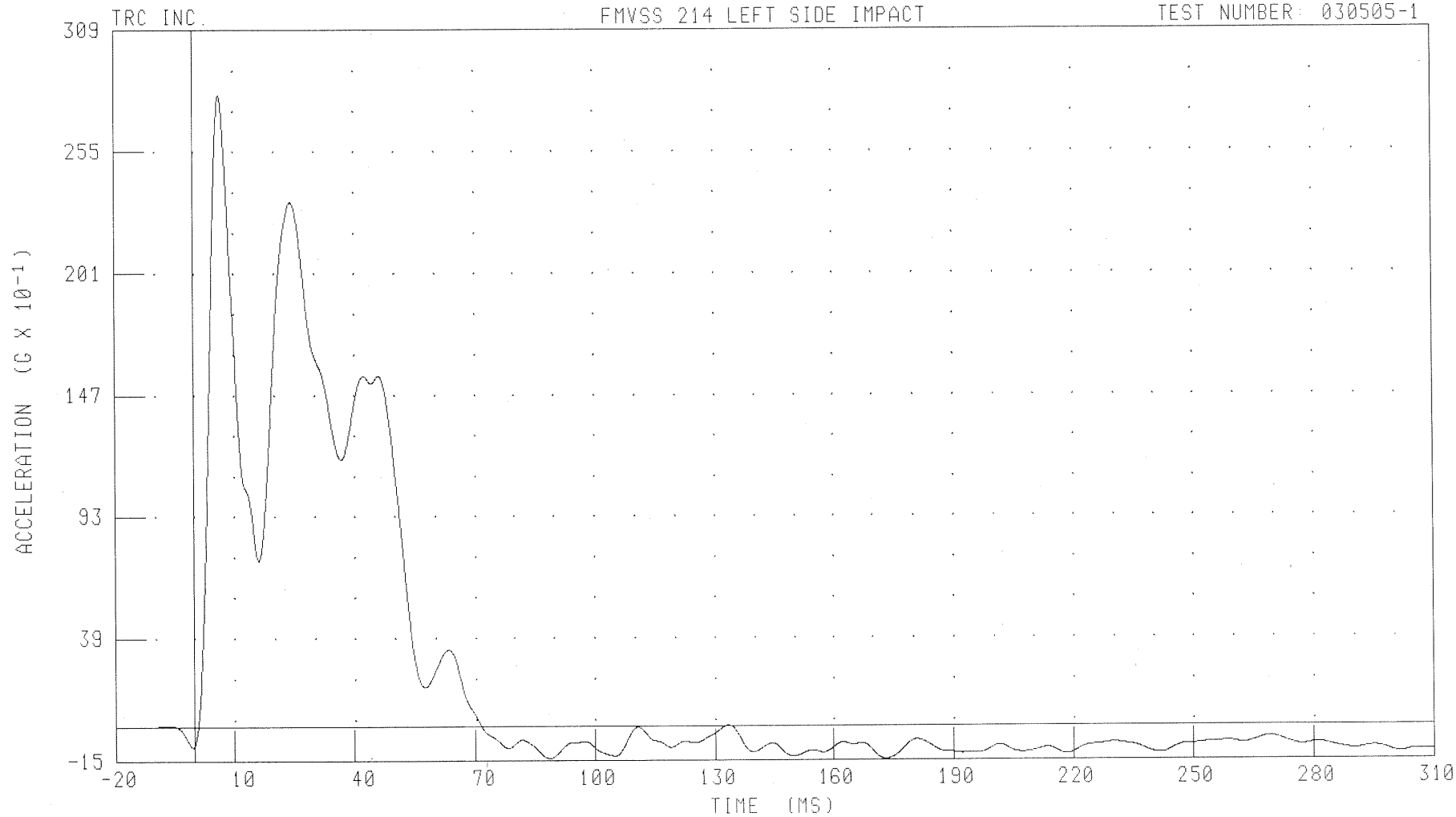
B-116

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: RRTYG1

FILTER: CH. CLASS 60

PEAK DATA: 28.02 G @ 6.64 MS; -1.45 G @ 173.28 MS

B-117

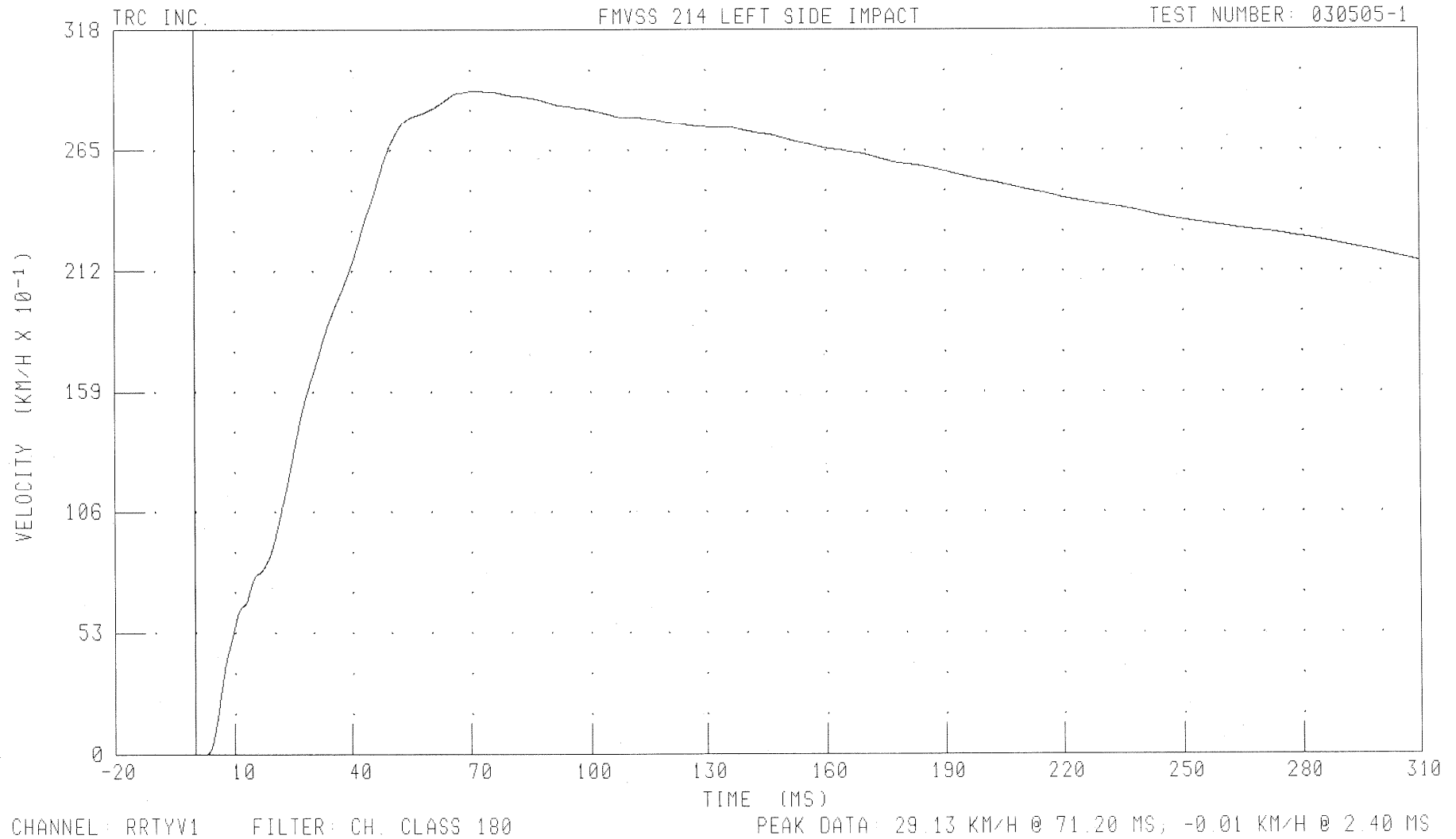
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



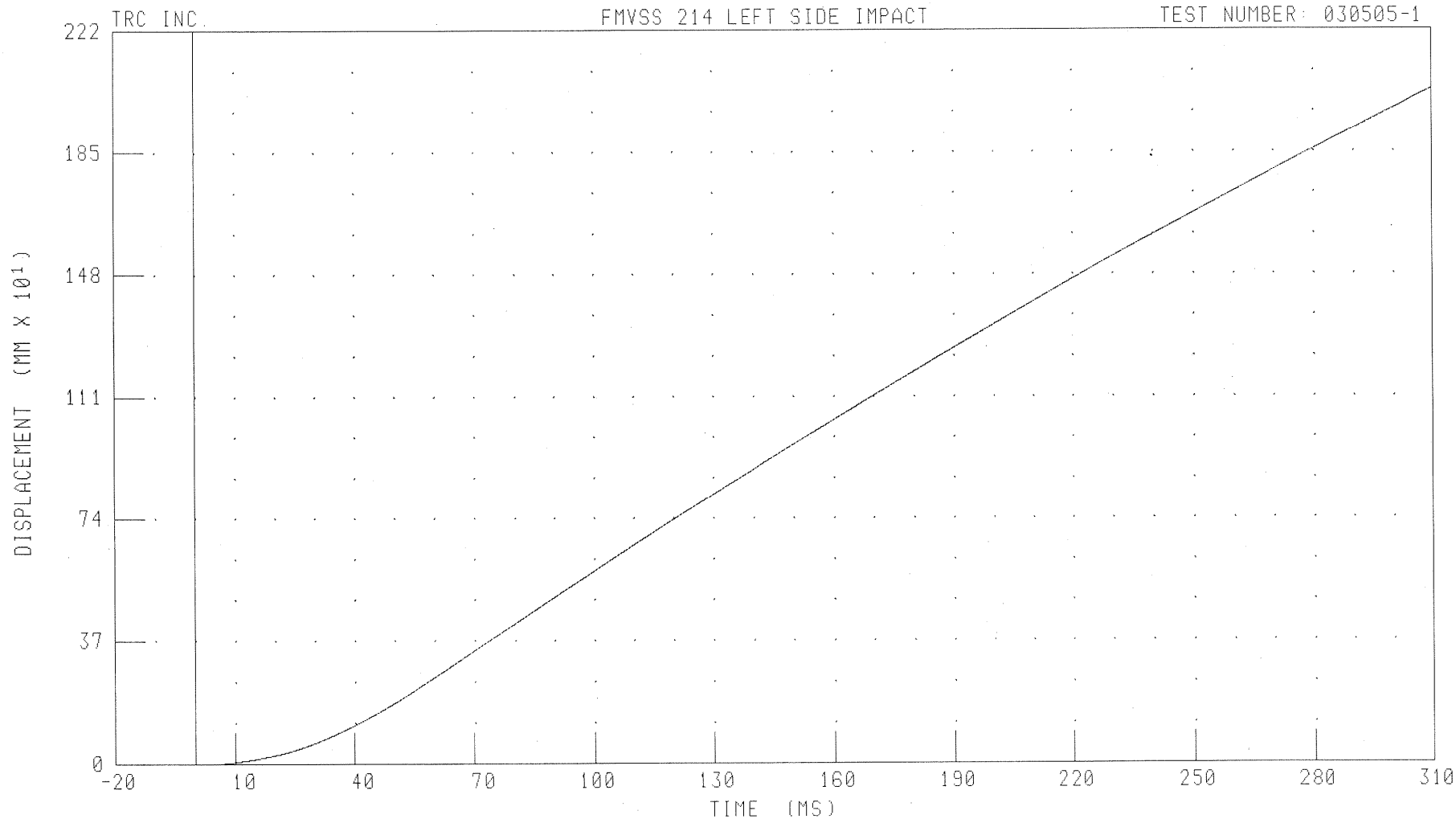
B-118

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS DISPLACEMENT

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: RRTYD1 FILTER: CH. CLASS 180

PEAK DATA: 2040.55 MM @ 310.00 MS; 0.00 MM @ 2.88 MS

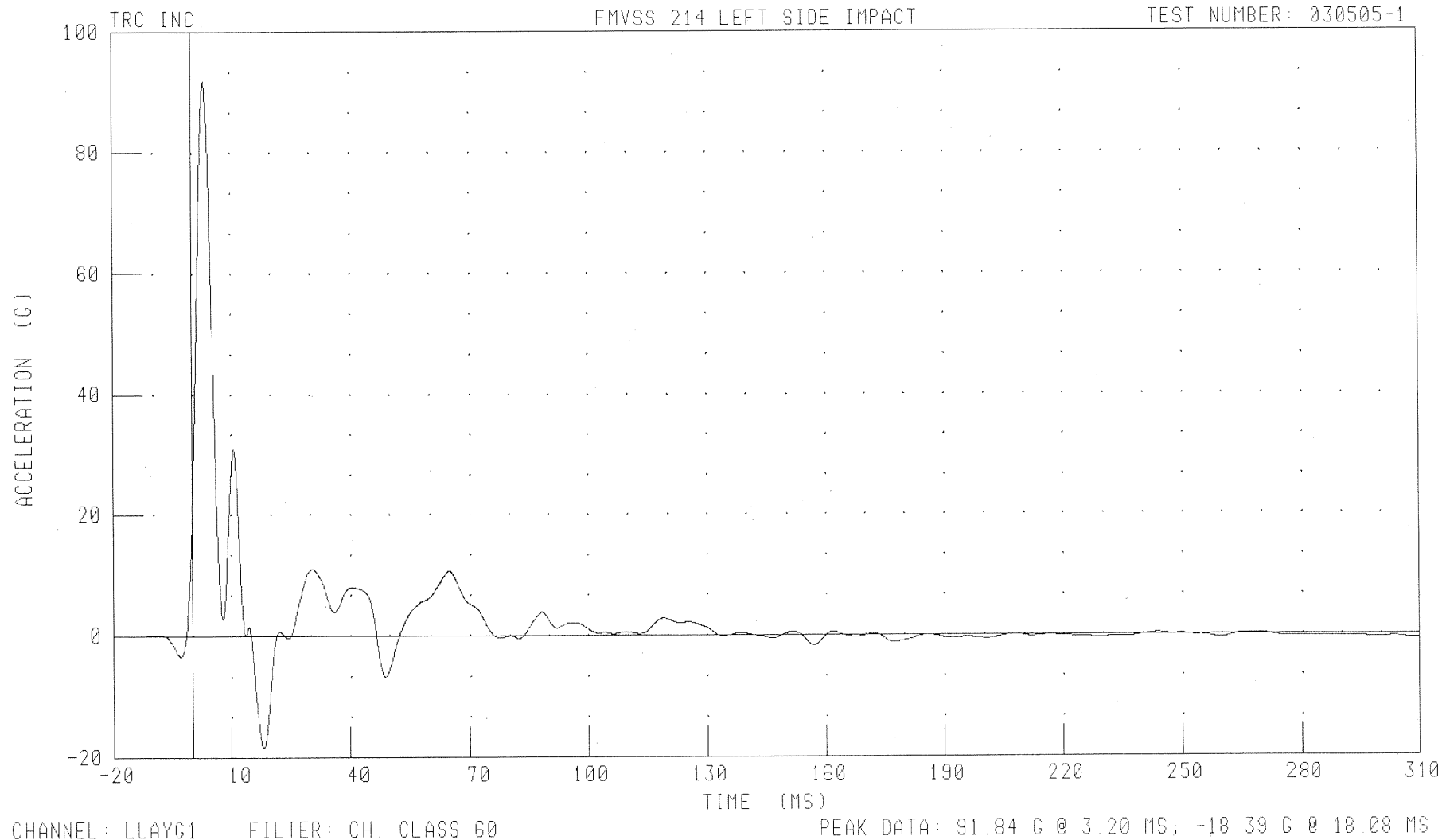
B-119

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT LOWER A-POST Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



B-120

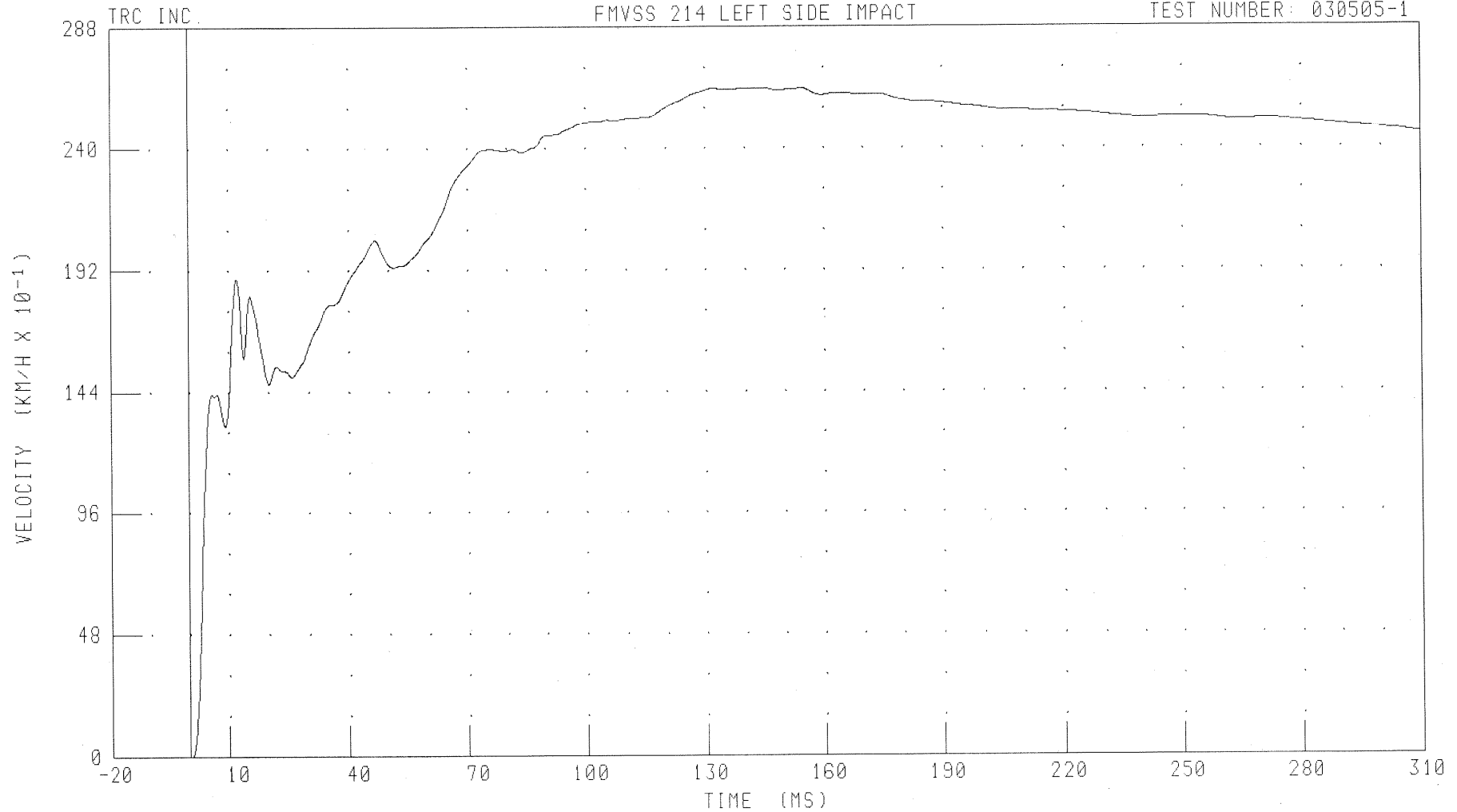
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

LEFT LOWER A-POST Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LLAYV1 FILTER: CH. CLASS 180

PEAK DATA: 26.39 KM/H @ 154.64 MS, -0.01 KM/H @ 0.32 MS

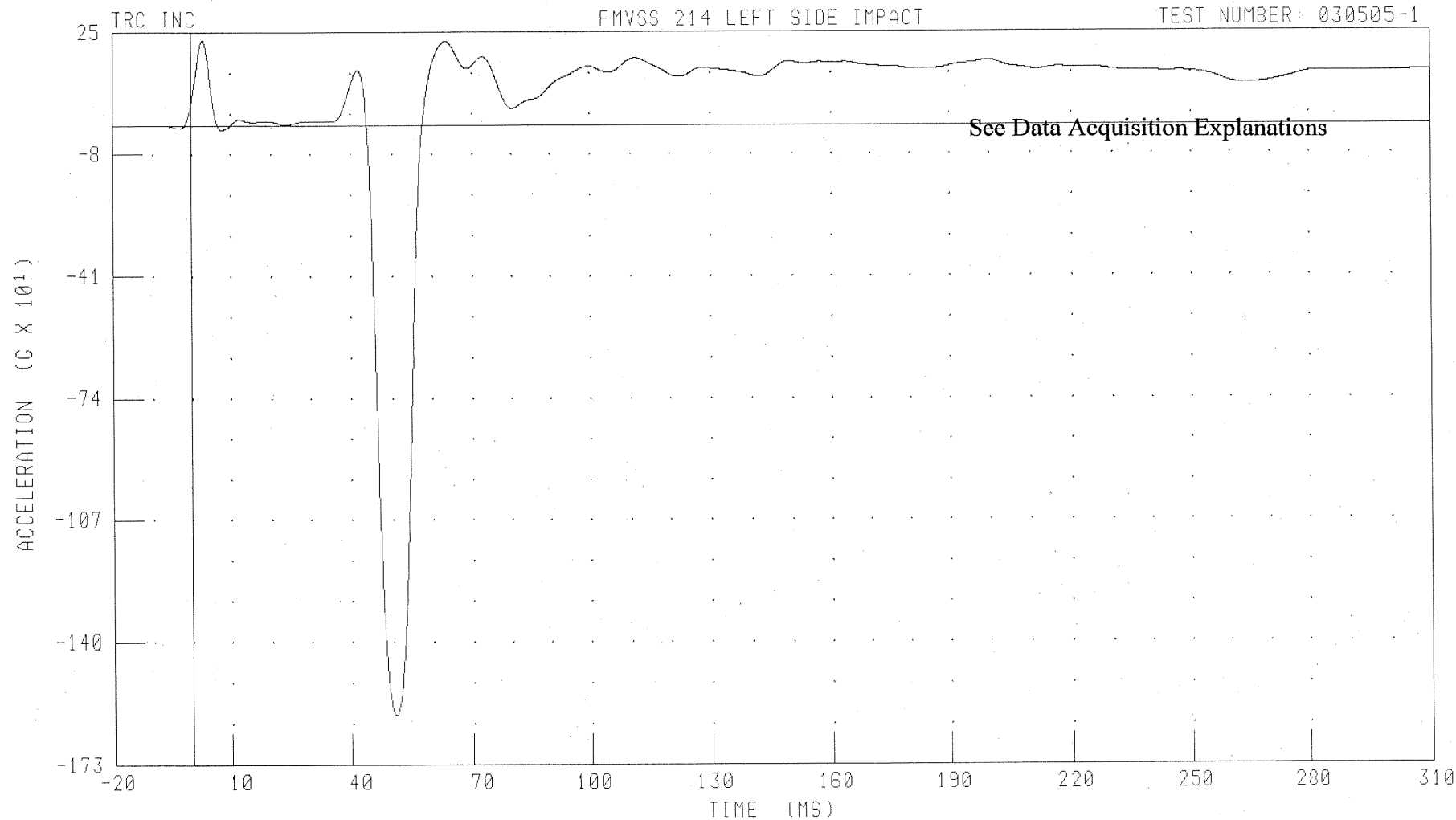
B-121

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT MIDDLE A-POST Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LMAYG1 FILTER: CH. CLASS 60

PEAK DATA: 229.87 G @ 3.04 MS; -1597.36 G @ 50.64 MS

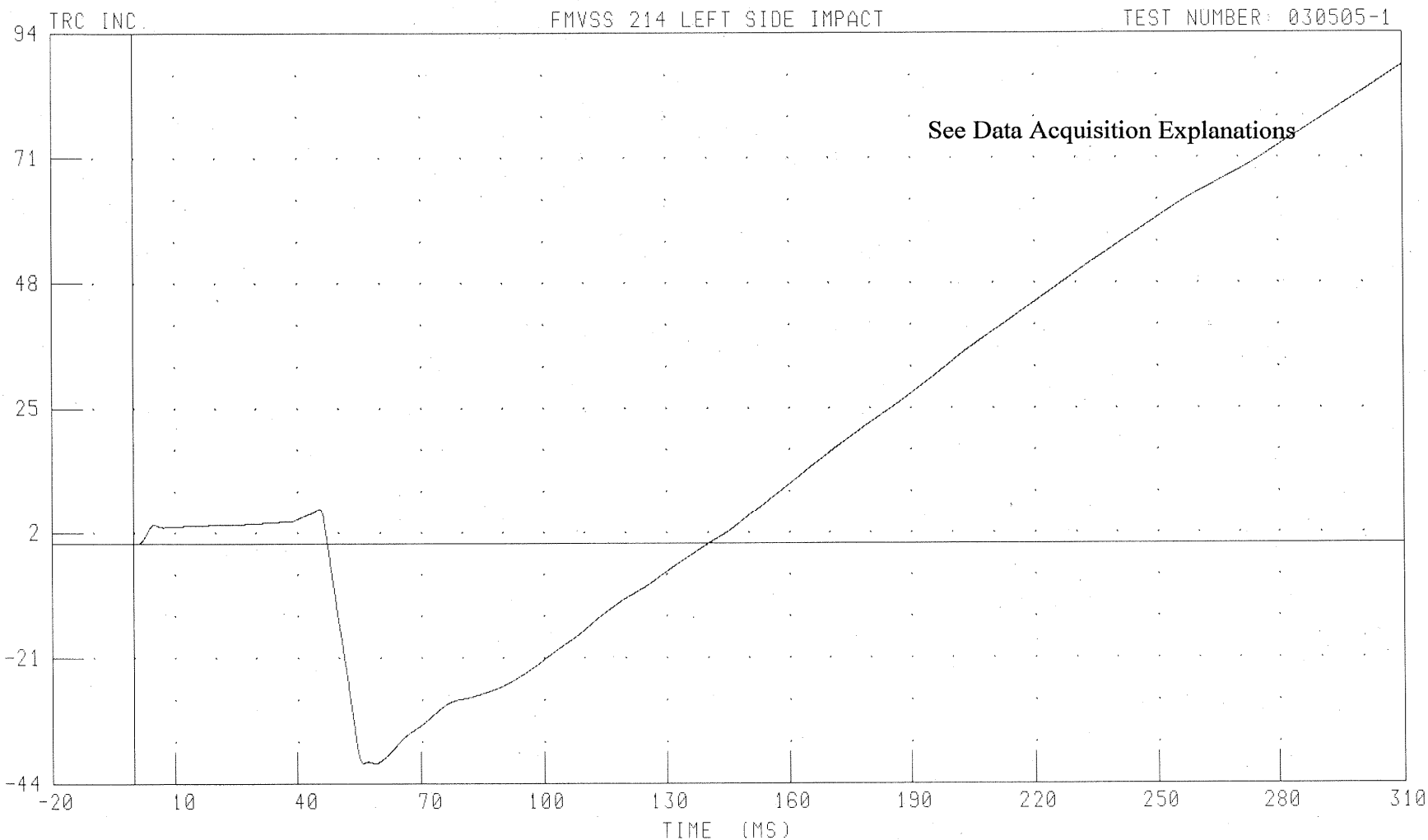
B-122

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT MIDDLE A-POST Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LMAYV1 FILTER: CH. CLASS 180

PEAK DATA: 88.94 KM/H @ 310.00 MS; -40.33 KM/H @ 58.88 MS

B-123

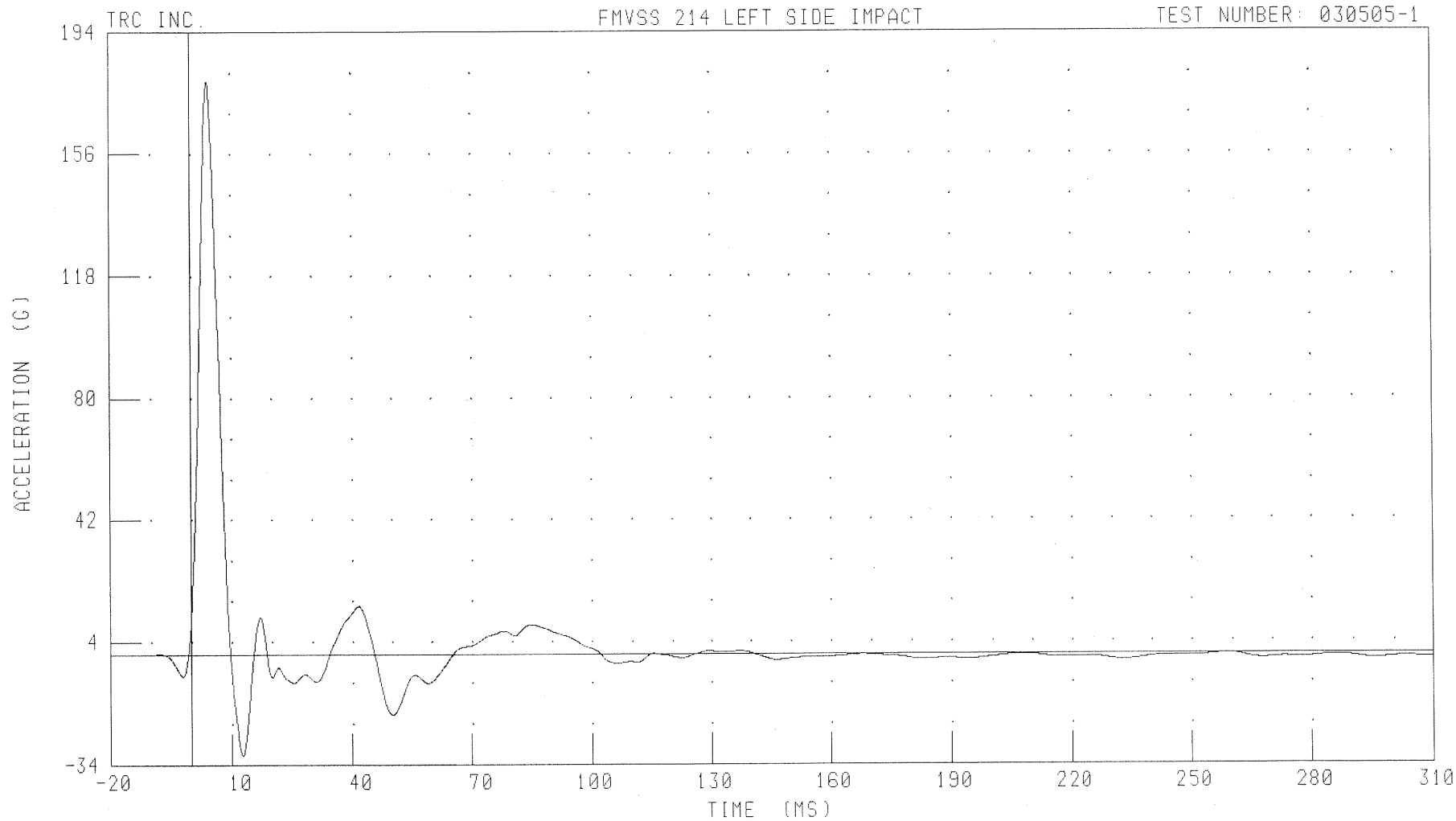
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

LEFT LOWER B-POST Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LLBYG1 FILTER: CH. CLASS 60

PEAK DATA: 178.80 G @ 4.24 MS, -31.21 G @ 12.80 MS

B-124

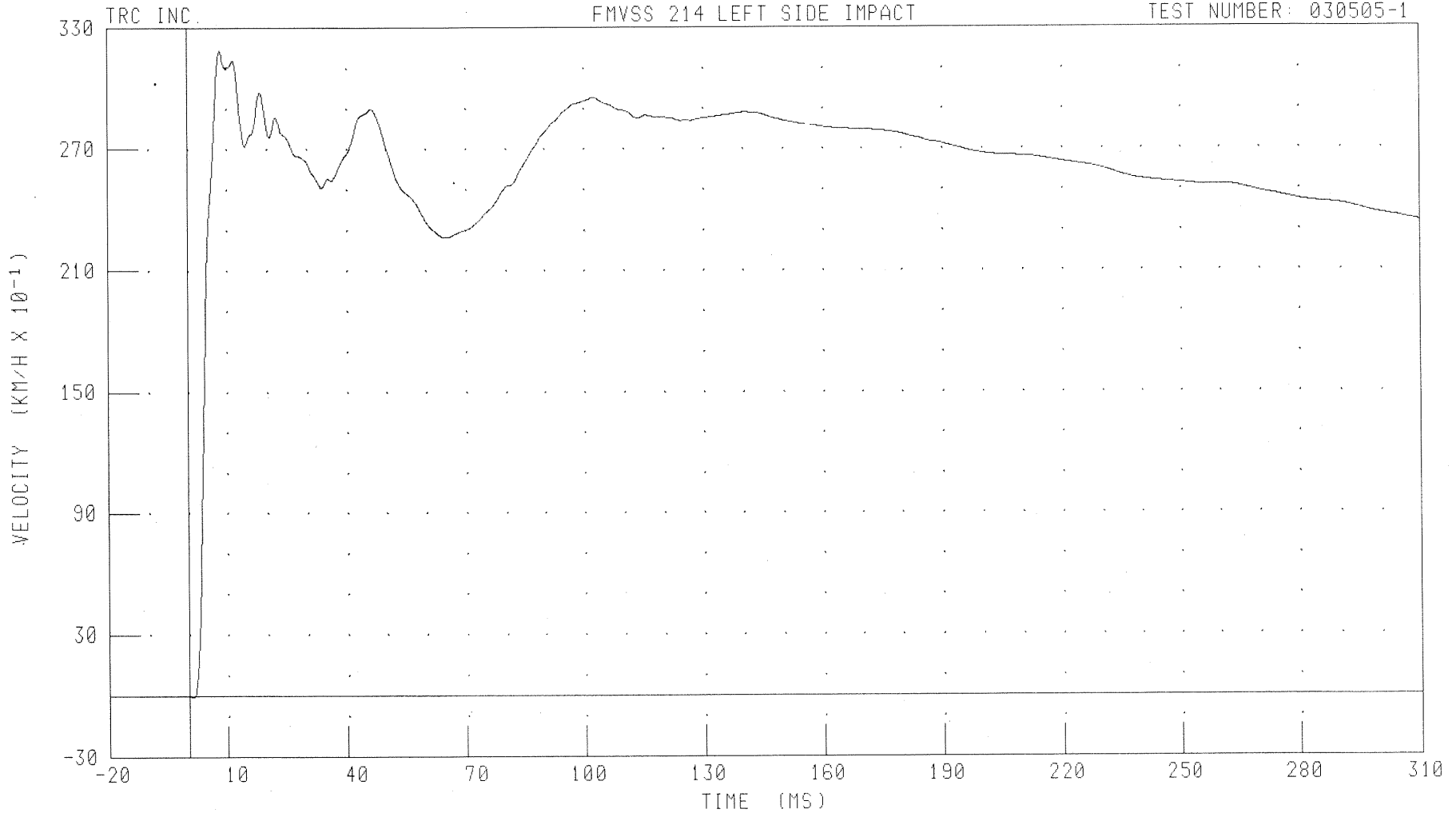
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

LEFT LOWER B-POST Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LLBYV1 FILTER: CH. CLASS 180

PEAK DATA: 31.87 KM/H @ 8.40 MS; -0.07 KM/H @ 1.04 MS

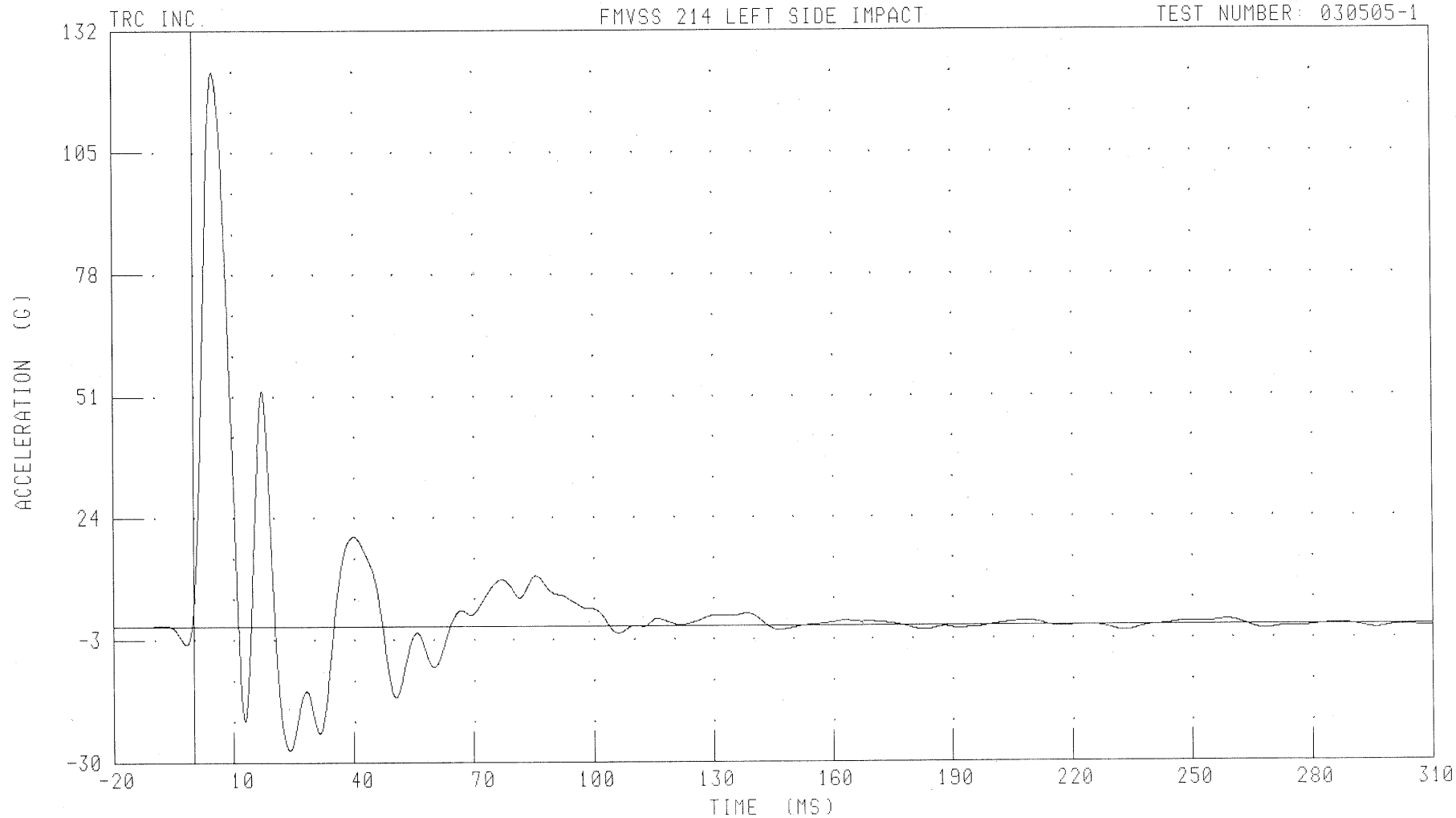
B-125

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT MIDDLE B-POST Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LMBYG1 FILTER: CH. CLASS 60

PEAK DATA: 122.80 G @ 5.04 MS; -27.32 G @ 23.92 MS

B-126

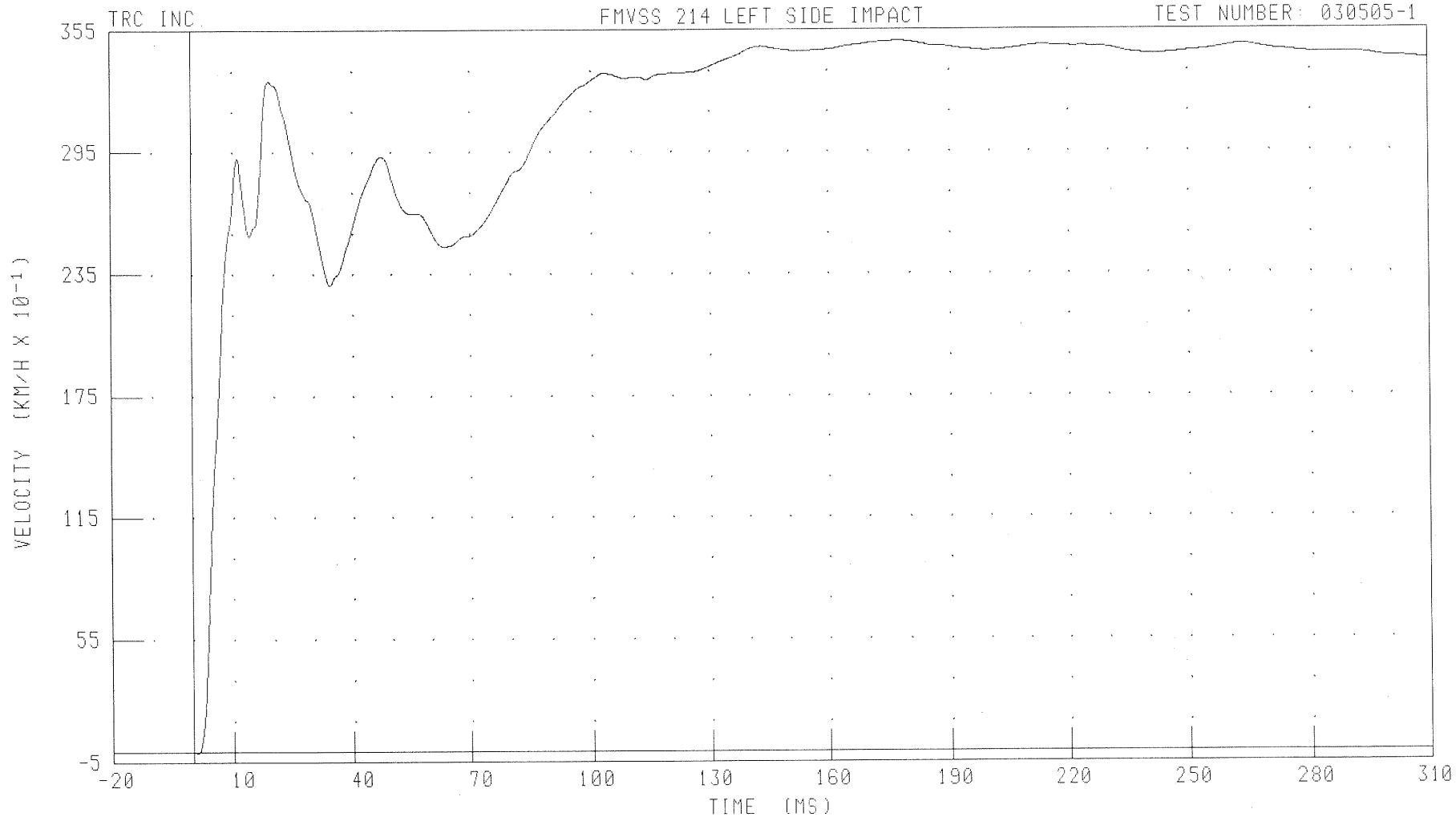
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

LEFT MIDDLE B-POST Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LMBYV1

FILTER: CH. CLASS 180

PEAK DATA: 34.94 KM/H @ 177.12 MS; -0.03 KM/H @ 1.04 MS

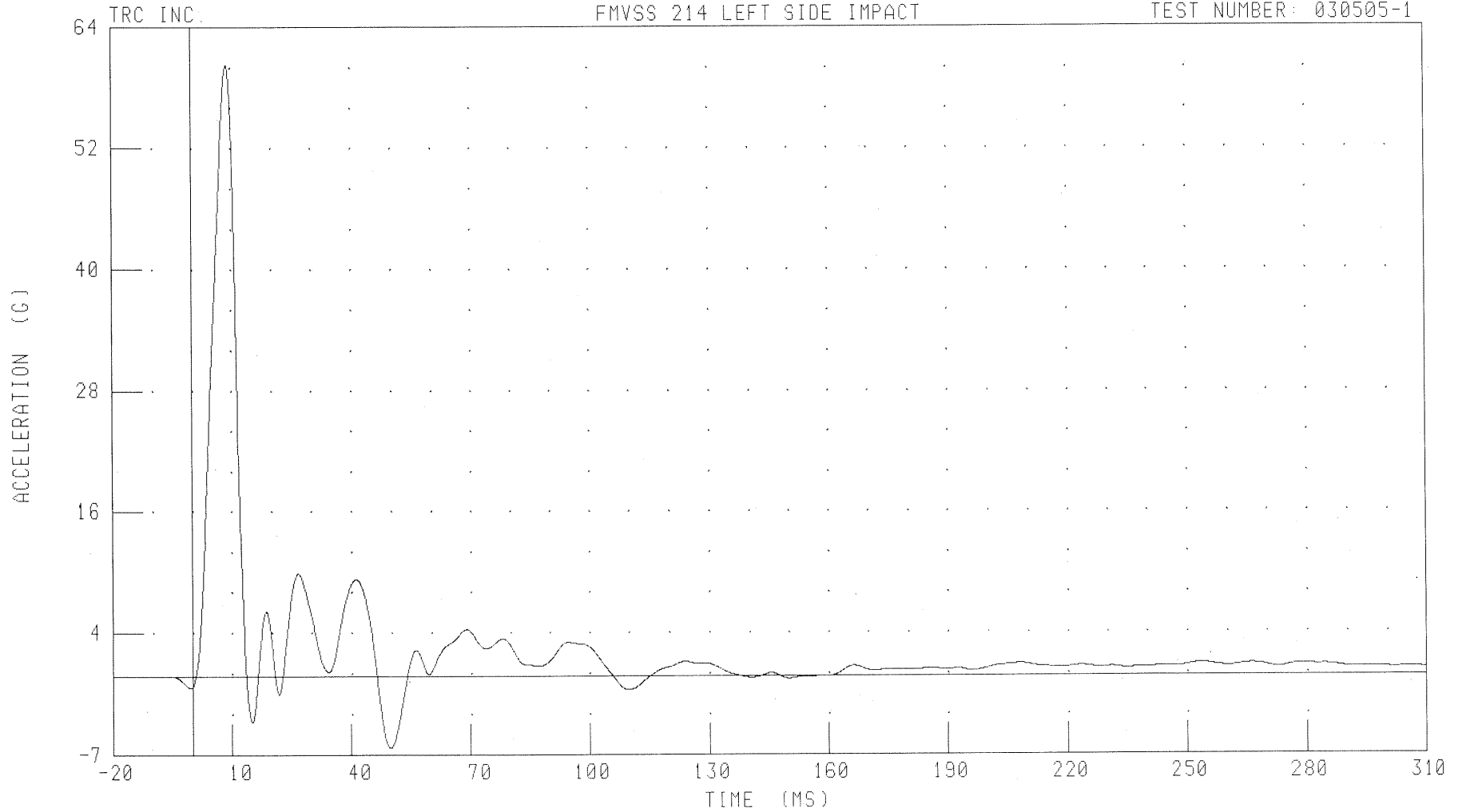
B-127

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT FRONT SEAT TRACK Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LFTYG1 FILTER: CH. CLASS 60

PEAK DATA: 60.59 G @ 9.04 MS; -7.03 G @ 49.68 MS

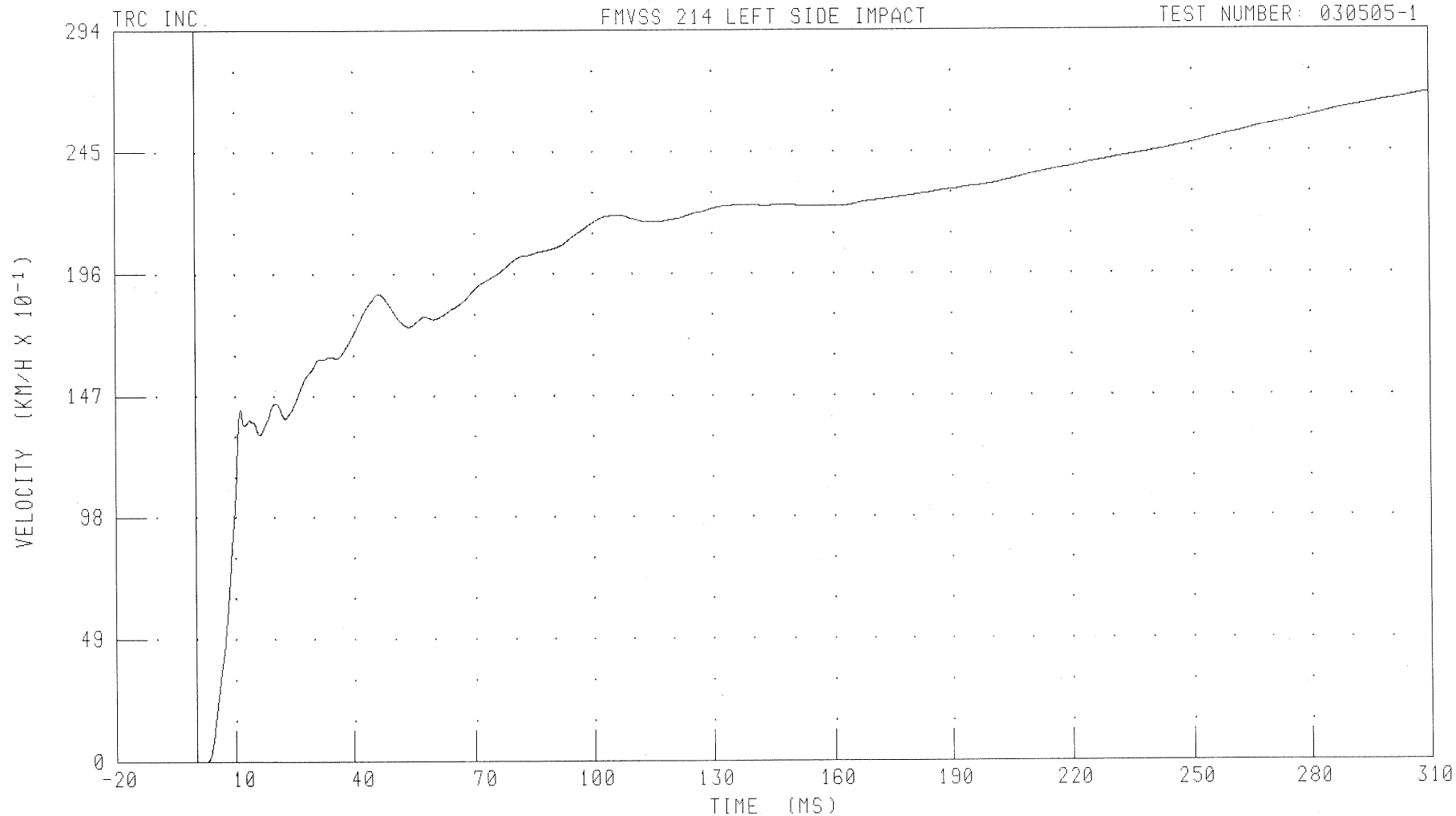
B-128

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT FRONT SEAT TRACK Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LFTYV1 FILTER: CH. CLASS 180

PEAK DATA: 26.85 KM/H @ 310.00 MS; -0.01 KM/H @ 2.32 MS

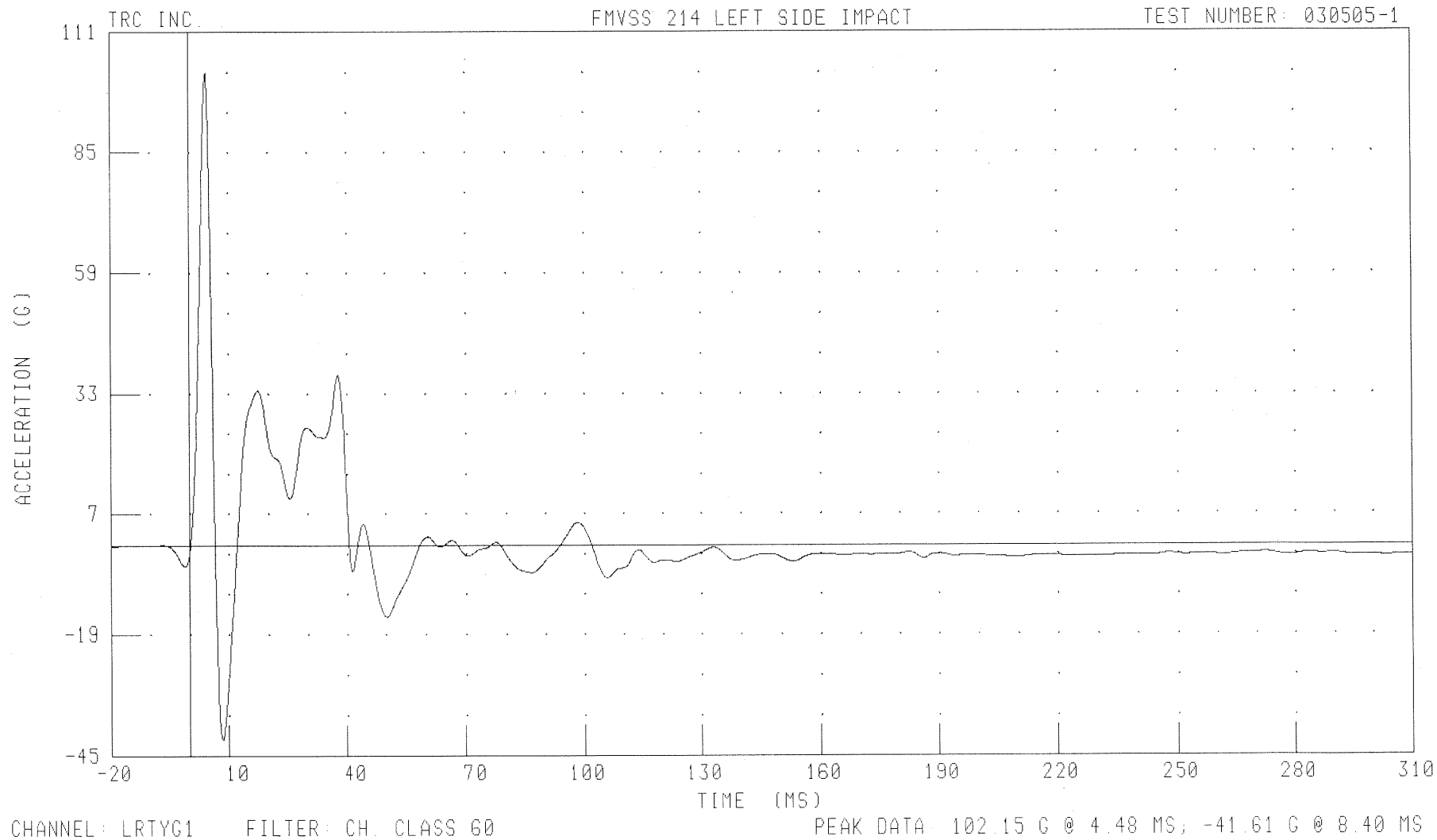
B-129

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR SEAT TRACK Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



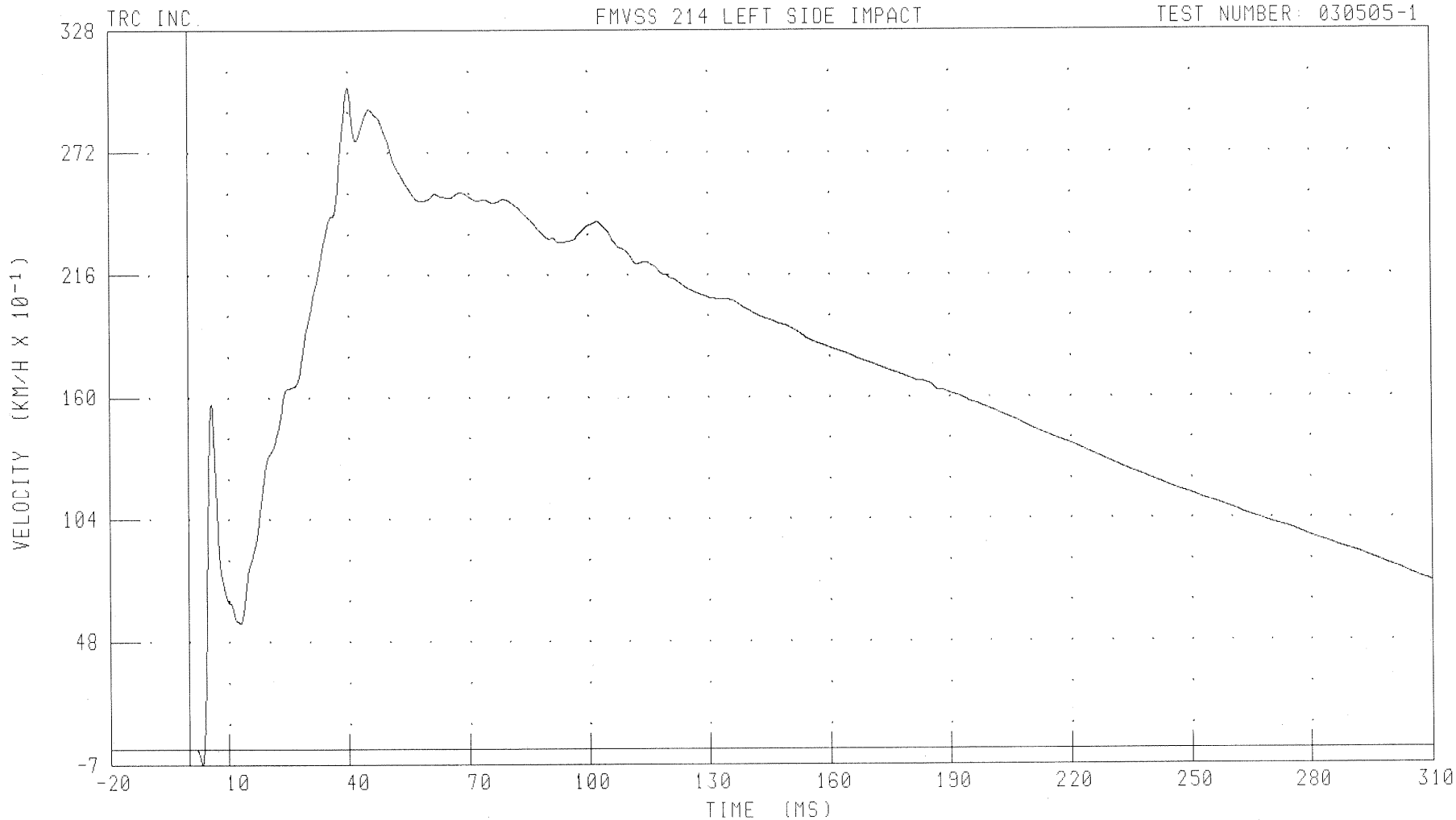
B-130

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR SEAT TRACK Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LRTYV1 FILTER: CH. CLASS 180

PEAK DATA: 30.29 KM/H @ 40.16 MS, -0.70 KM/H @ 3.28 MS

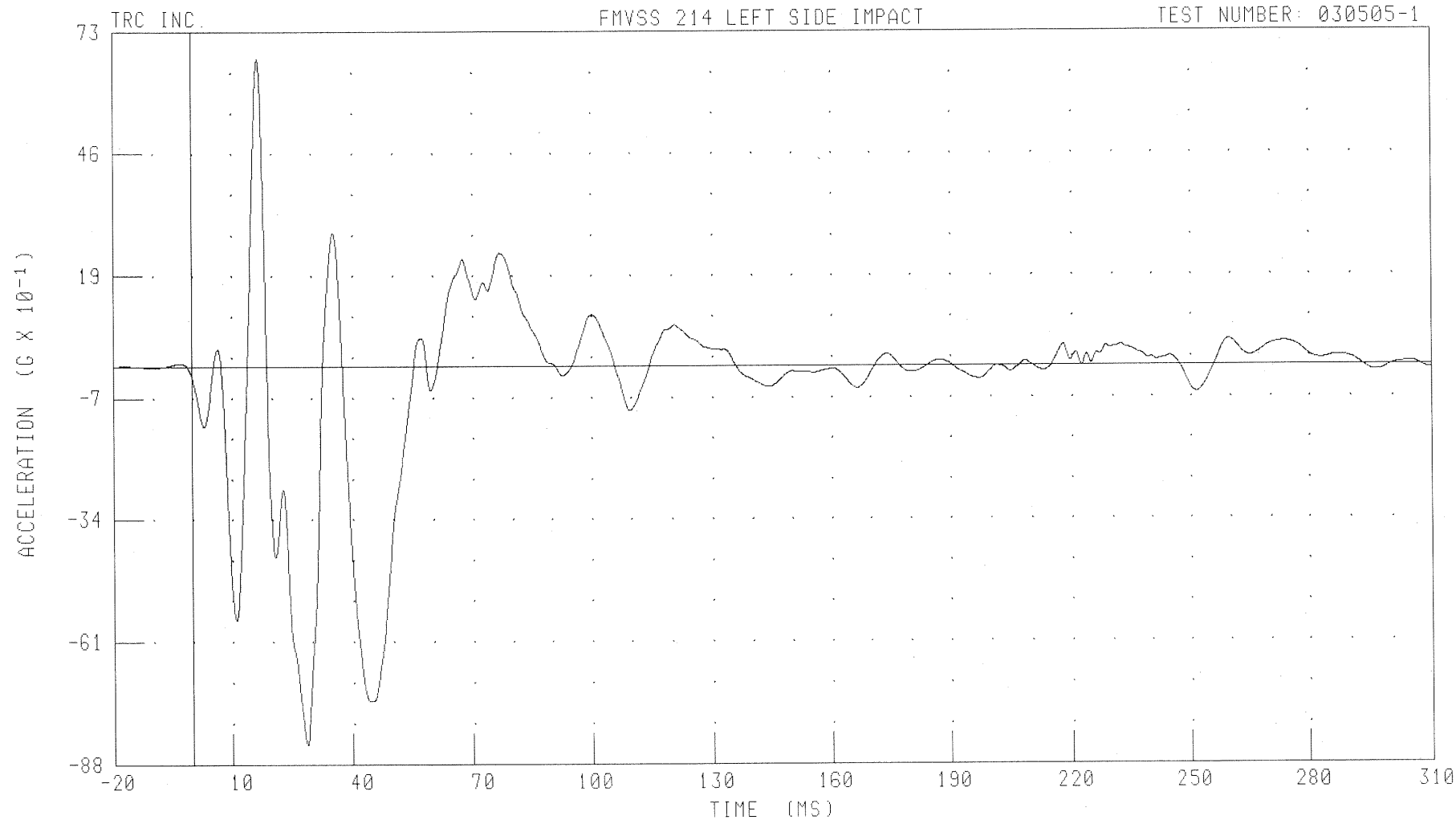
B-131

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
VEHICLE CENTER OF GRAVITY X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: VCGXG1 FILTER: CH. CLASS 60

PEAK DATA: 6.81 G @ 16.80 MS; -8.37 G @ 28.80 MS

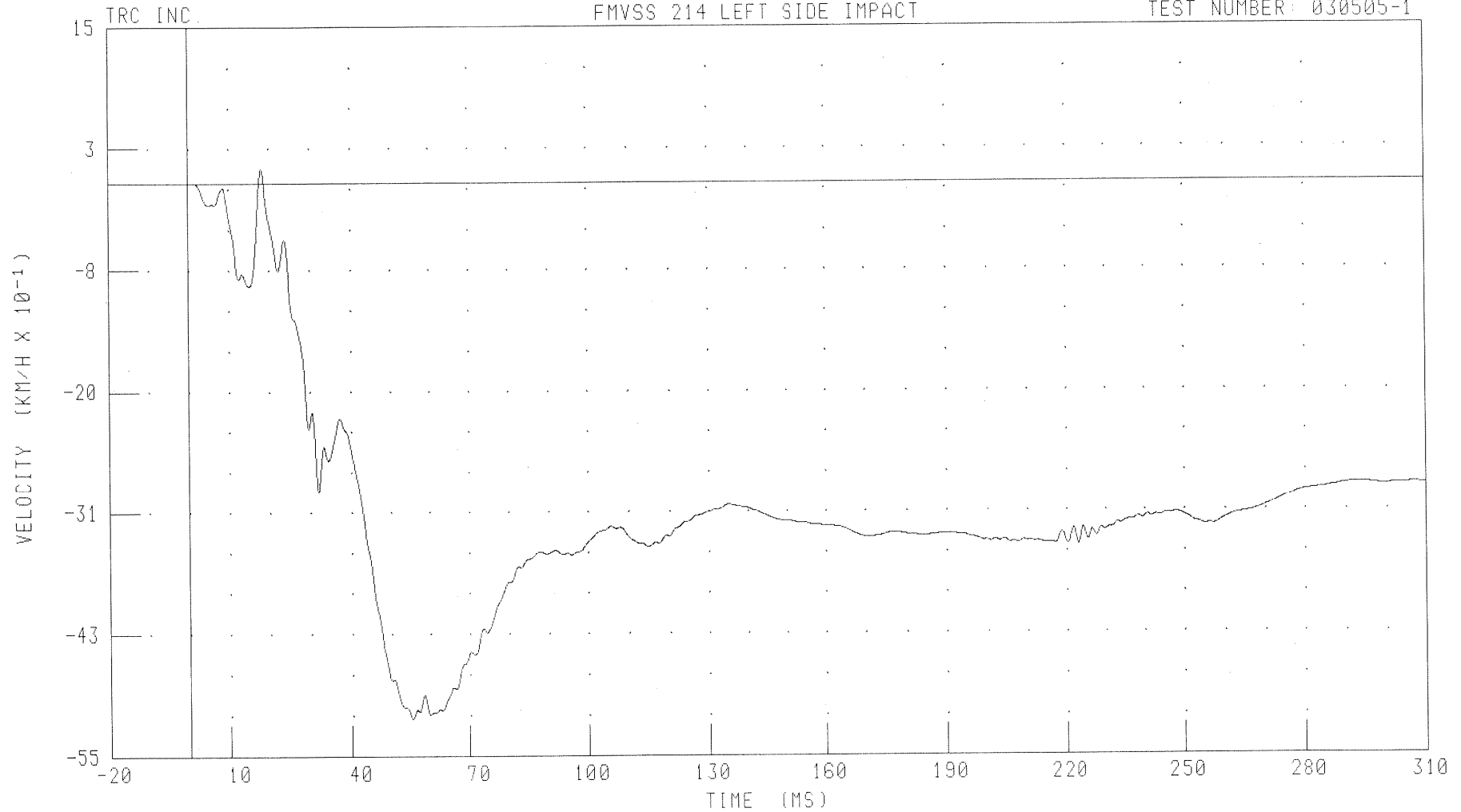
B-132

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
VEHICLE CENTER OF GRAVITY X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: VCGXV1 FILTER: CH. CLASS 180

PEAK DATA: 0.14 KM/H @ 18.32 MS; -5.15 KM/H @ 55.36 MS

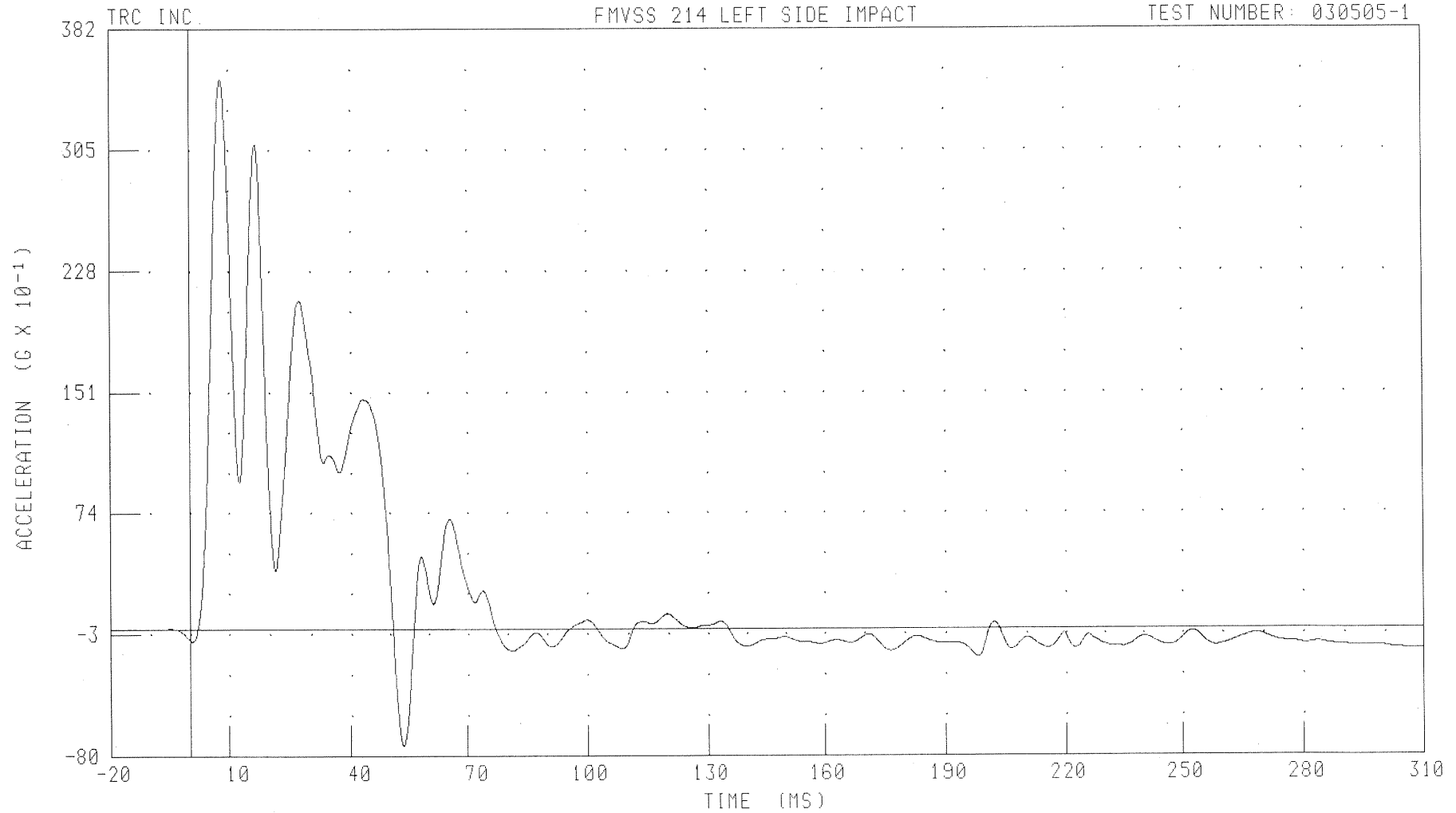
B-133

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
VEHICLE CENTER OF GRAVITY Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: VCCYG1 FILTER: CH. CLASS 60

PEAK DATA: 35.02 G @ 8.16 MS, -7.36 G @ 53.44 MS

B-134

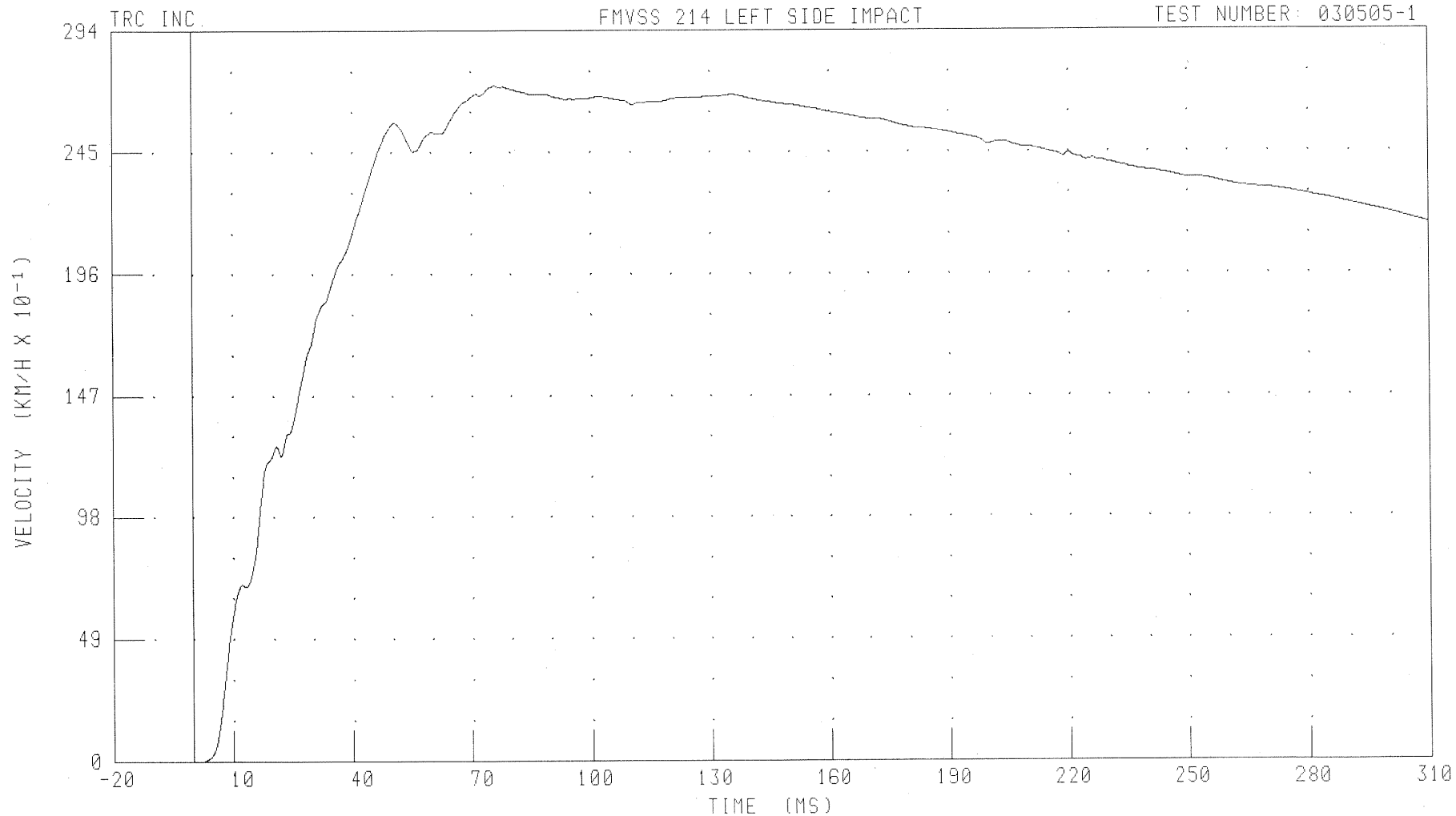
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

VEHICLE CENTER OF GRAVITY Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: VCCYV1

FILTER: CH. CLASS 180

PEAK DATA: 27.20 KM/H @ 76.16 MS, 0.00 KM/H @ 0.00 MS

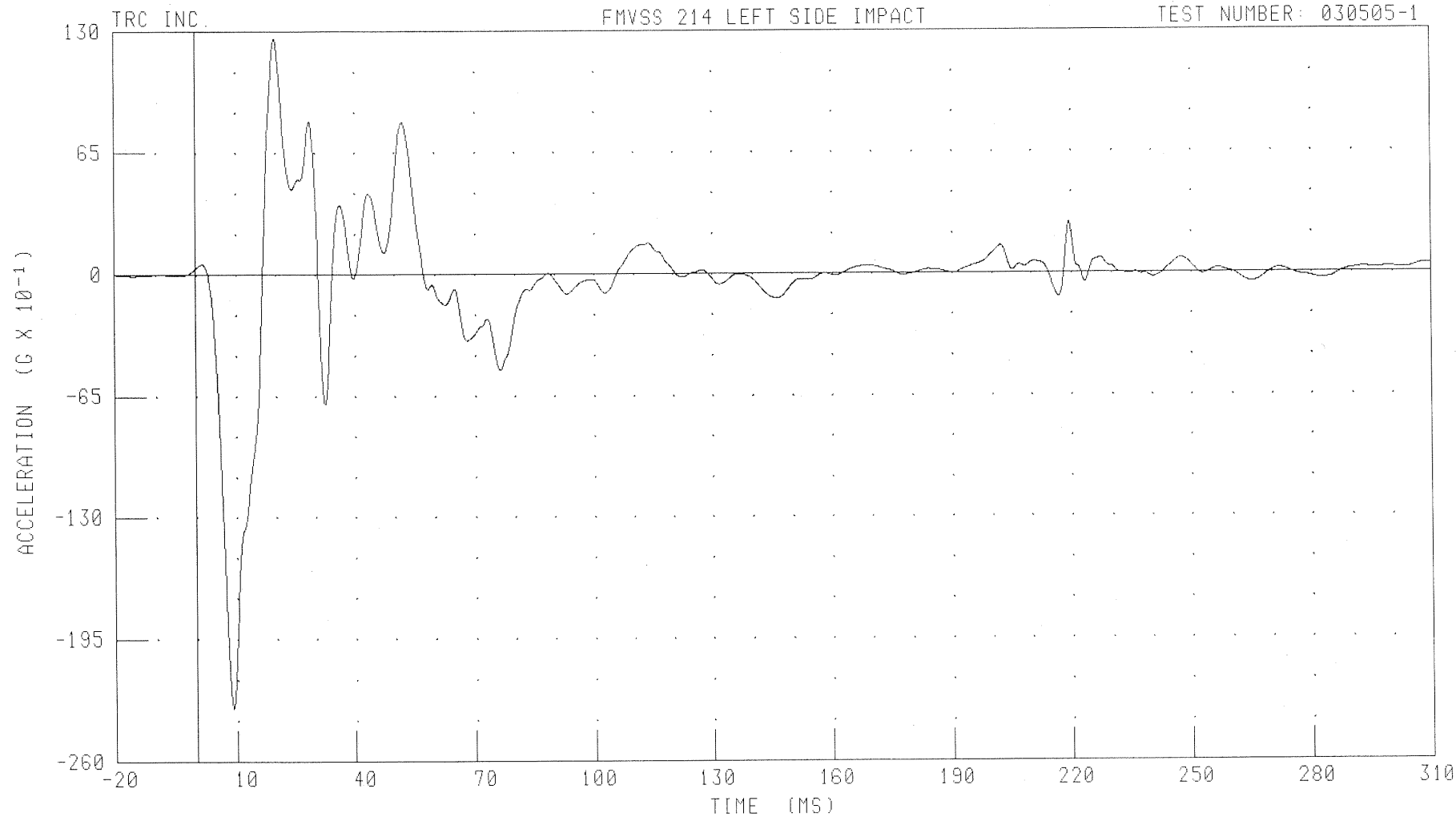
B-135

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
VEHICLE CENTER OF GRAVITY Z-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: VCCZG1 FILTER: CH. CLASS 60

PEAK DATA: 12.64 G @ 20.00 MS; -23.20 G @ 9.04 MS

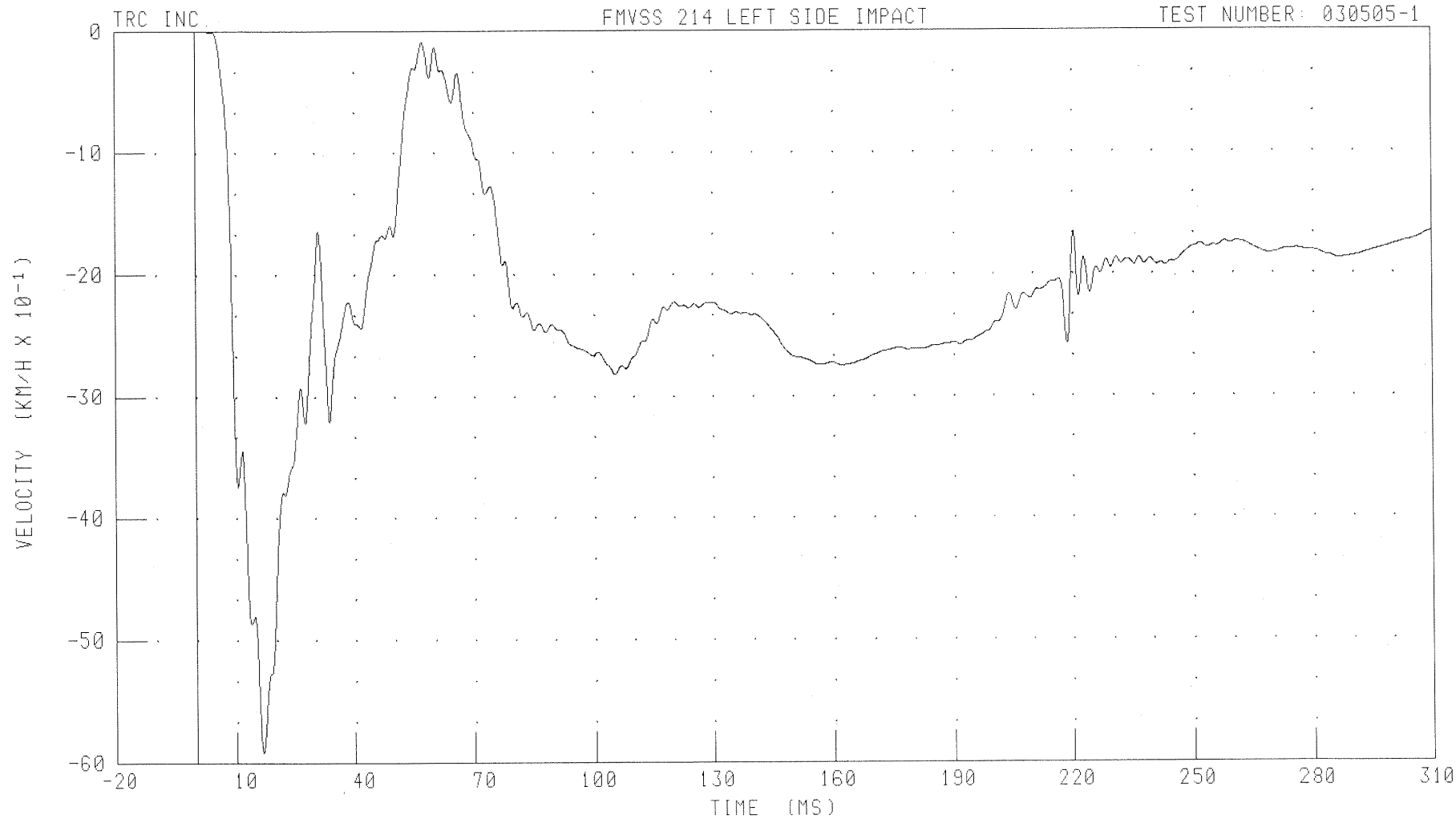
B-136

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
VEHICLE CENTER OF GRAVITY Z-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: VCGZV1 FILTER: CH. CLASS 180

PEAK DATA: 0.00 KM/H @ 2.16 MS; -5.92 KM/H @ 16.64 MS

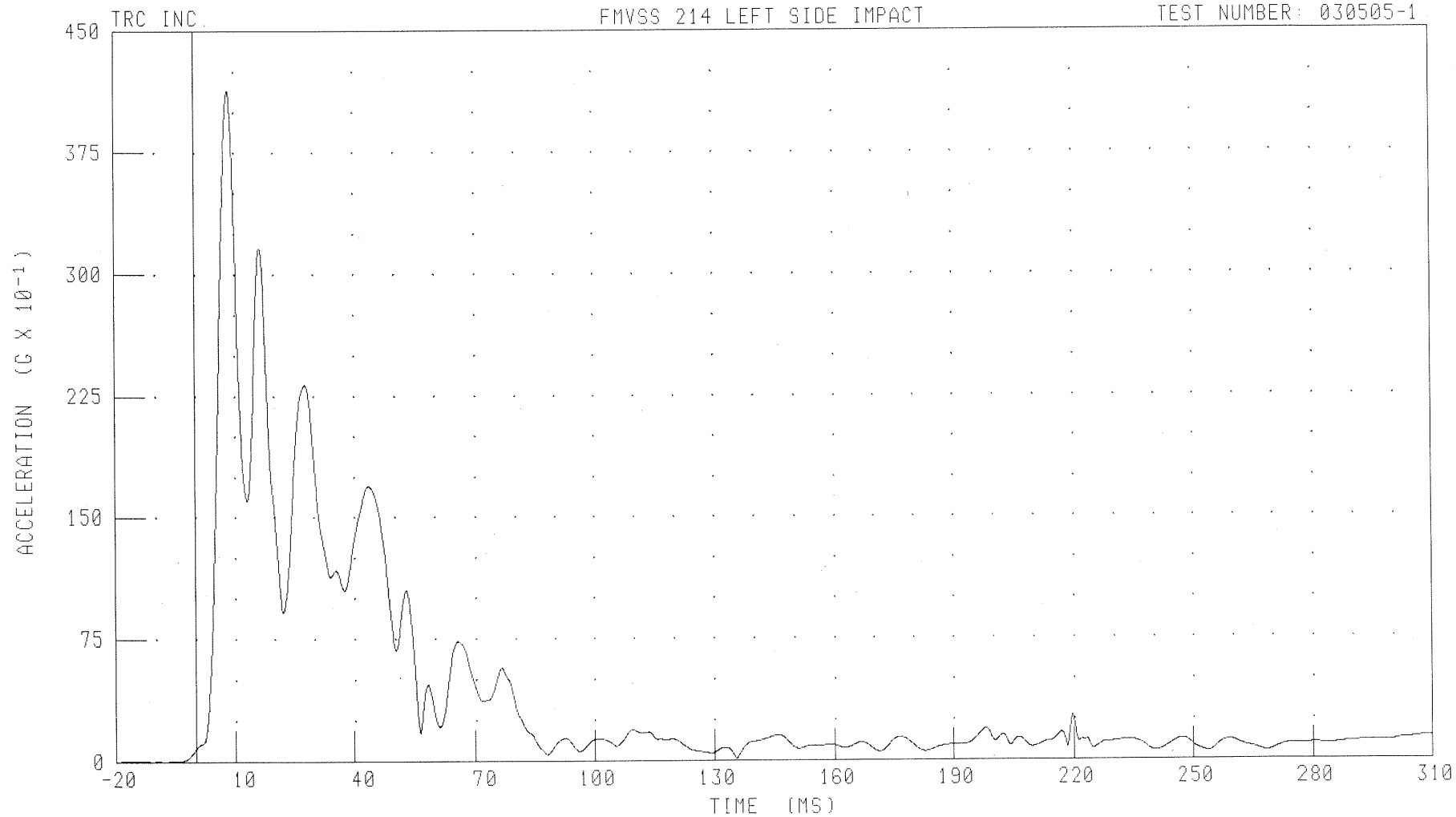
B-137

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
VEHICLE CENTER OF GRAVITY RESULTANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: VCGRG1

FILTER: CH. CLASS 60

PEAK DATA: 41.32 G @ 8.48 MS; 0.01 G @ -19.60 MS

B-138

030505-1

MDB Instrumentation Plots

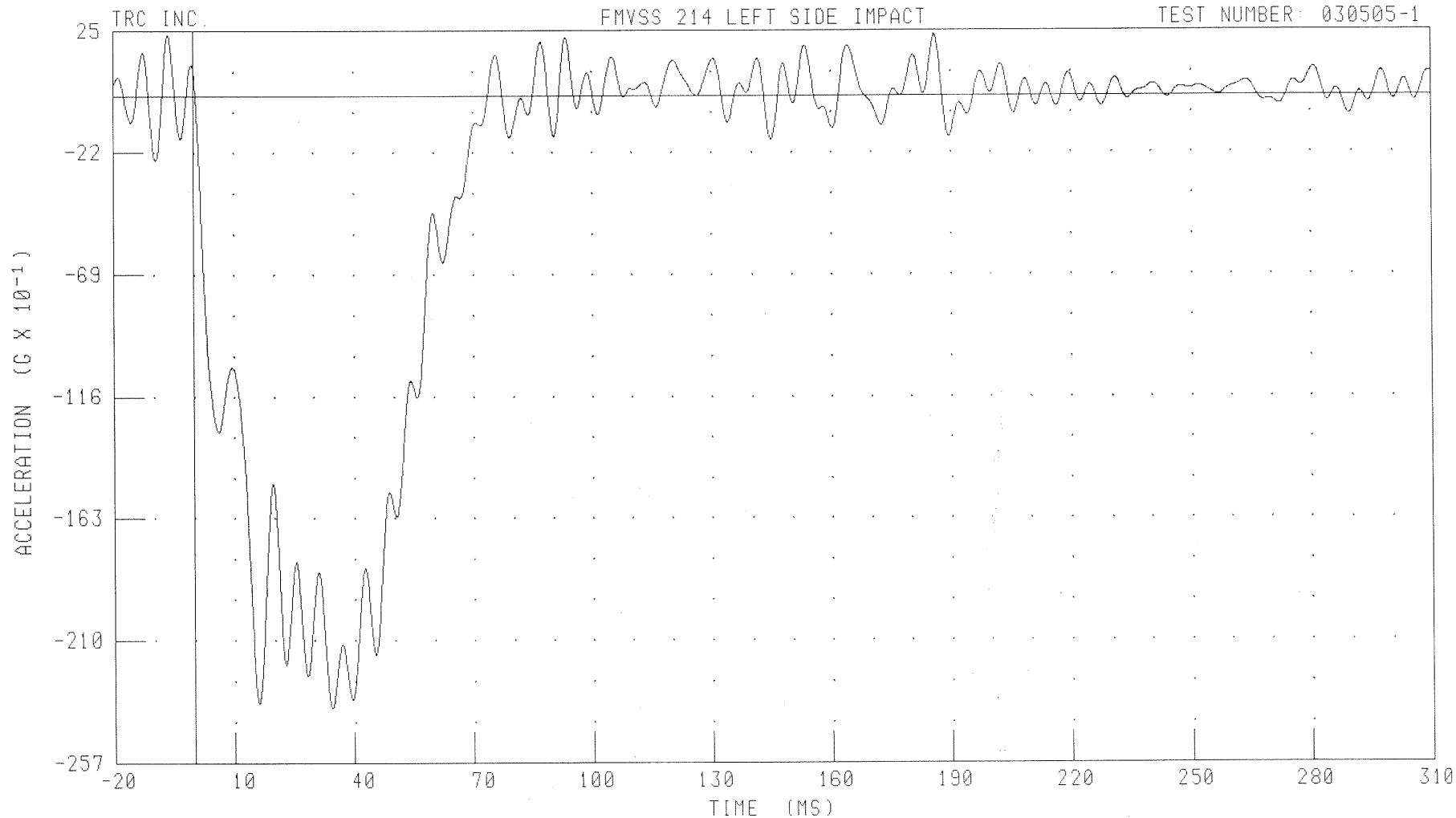
Acceleration Data - Filter Class 60

Integration Data - Filter Class 180

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
MDB CENTER OF GRAVITY X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: BCGXG1

FILTER: CH. CLASS 60

PEAK DATA: 2.34 G @ 186.16 MS; -23.61 G @ 34.48 MS

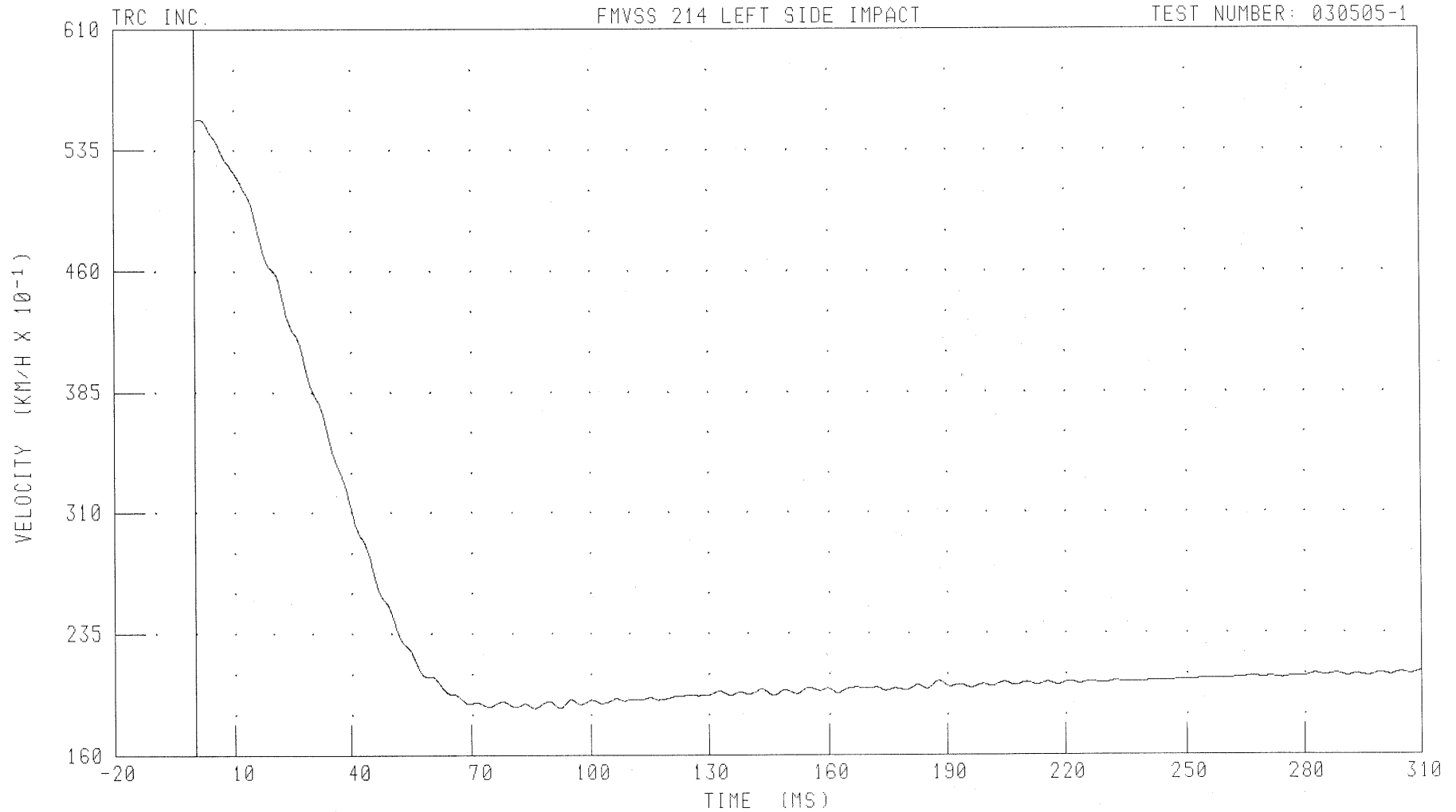
B-140

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
MDB CENTER OF GRAVITY X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: BCGXV1 FILTER: CH. CLASS 180

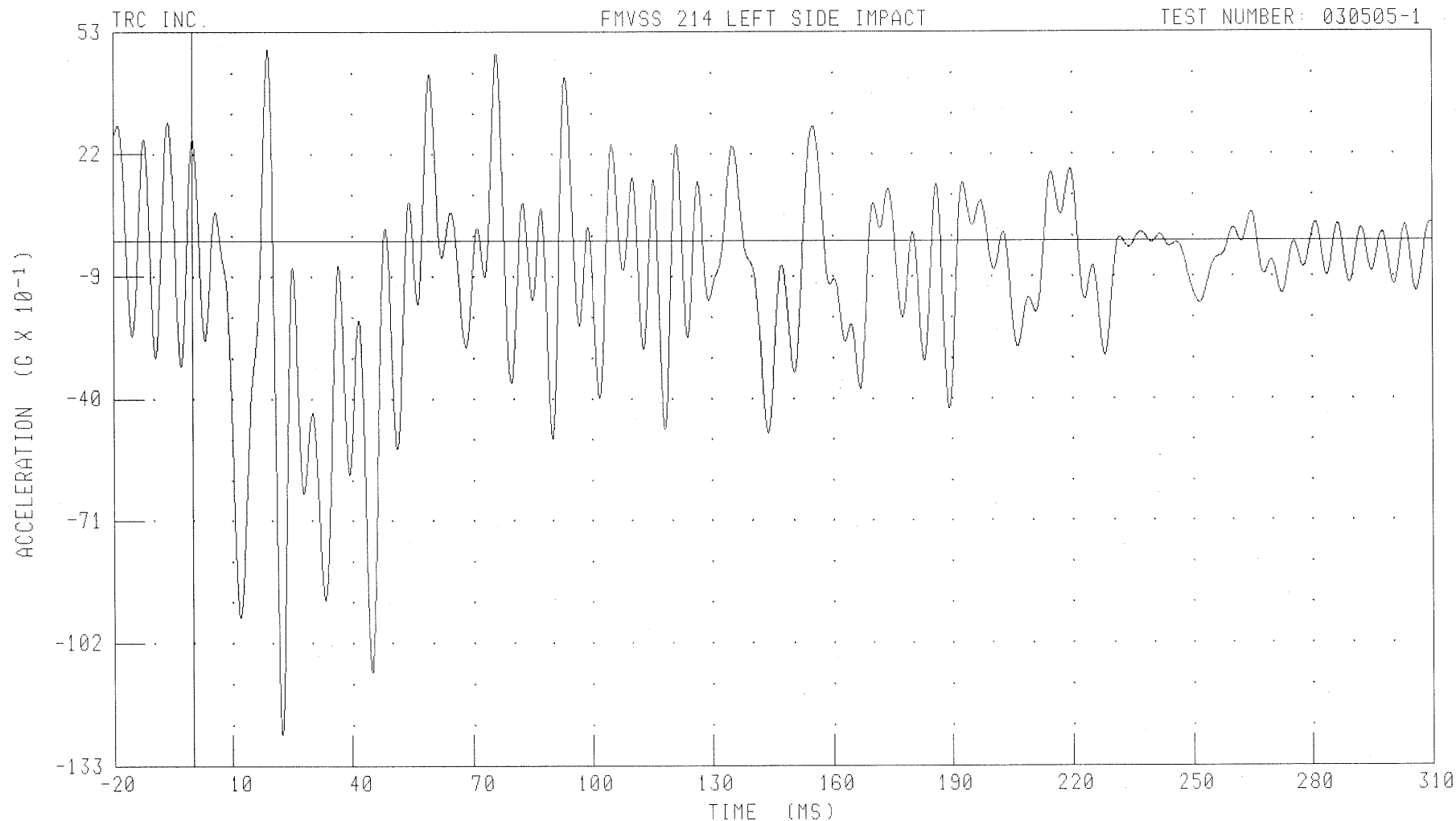
B-141

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
MDB CENTER OF GRAVITY Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: BCGYG1 FILTER: CH. CLASS 60

PEAK DATA: 4.87 G @ 19.20 MS; -12.51 G @ 22.64 MS

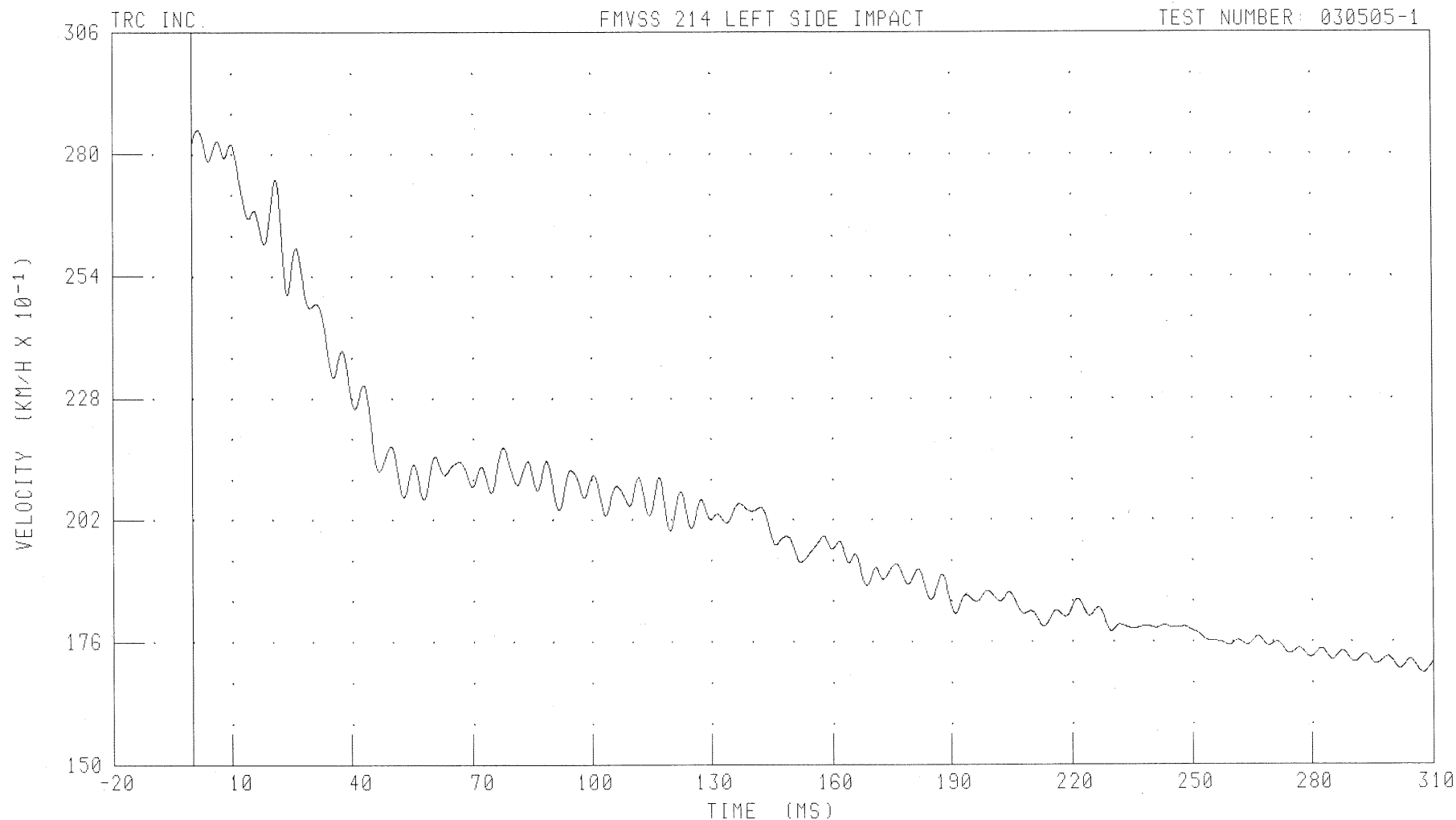
B-142

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
MDB CENTER OF GRAVITY Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: BCGYV1 FILTER: CH. CLASS 180

PEAK DATA: 28.51 KM/H @ 1.52 MS; 16.94 KM/H @ 307.52 MS

B-143

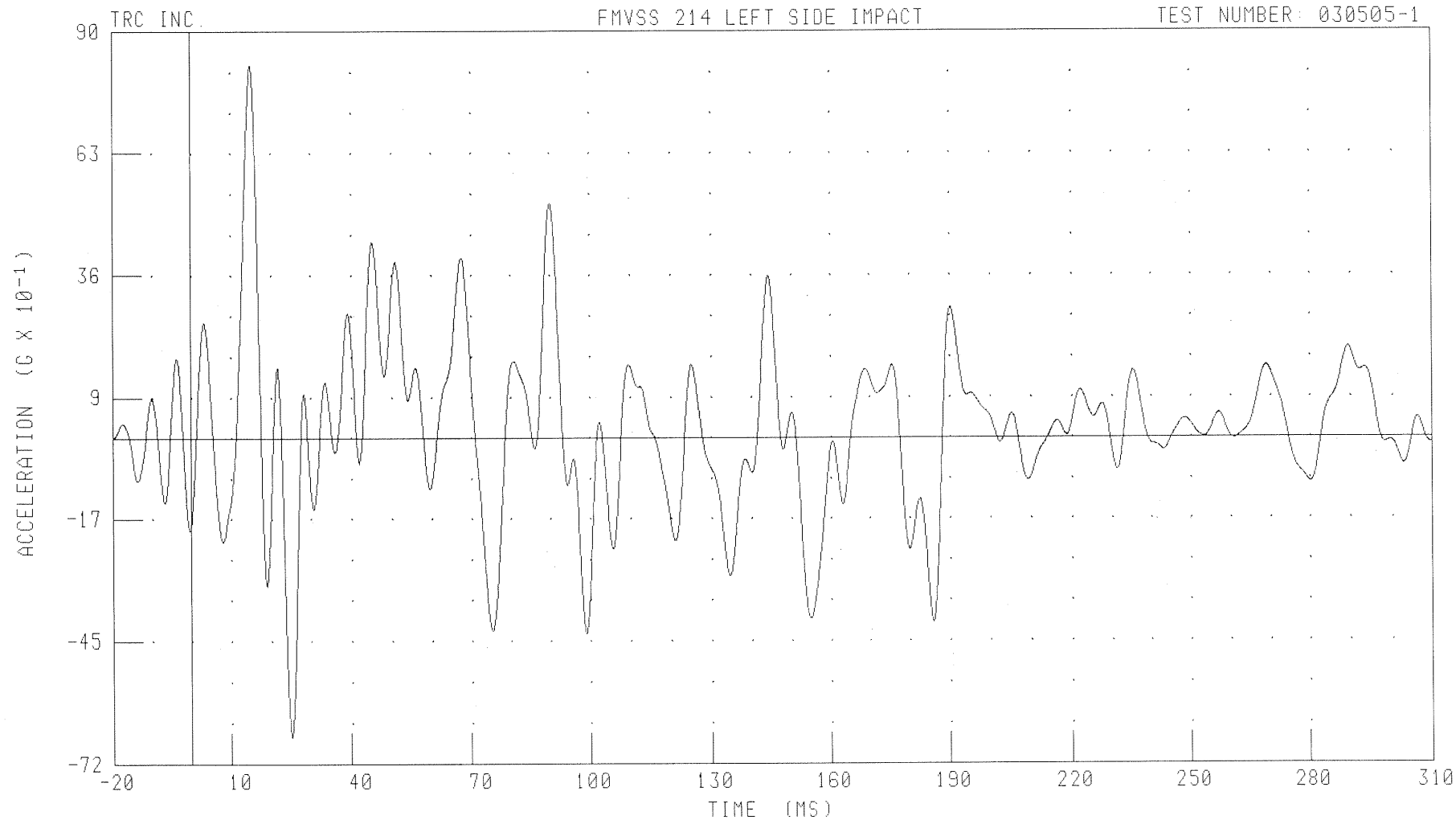
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

MDB CENTER OF GRAVITY Z-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: BCGZG1

FILTER: CH. CLASS 60

PEAK DATA: 8.26 G @ 15.12 MS; -6.61 G @ 25.04 MS

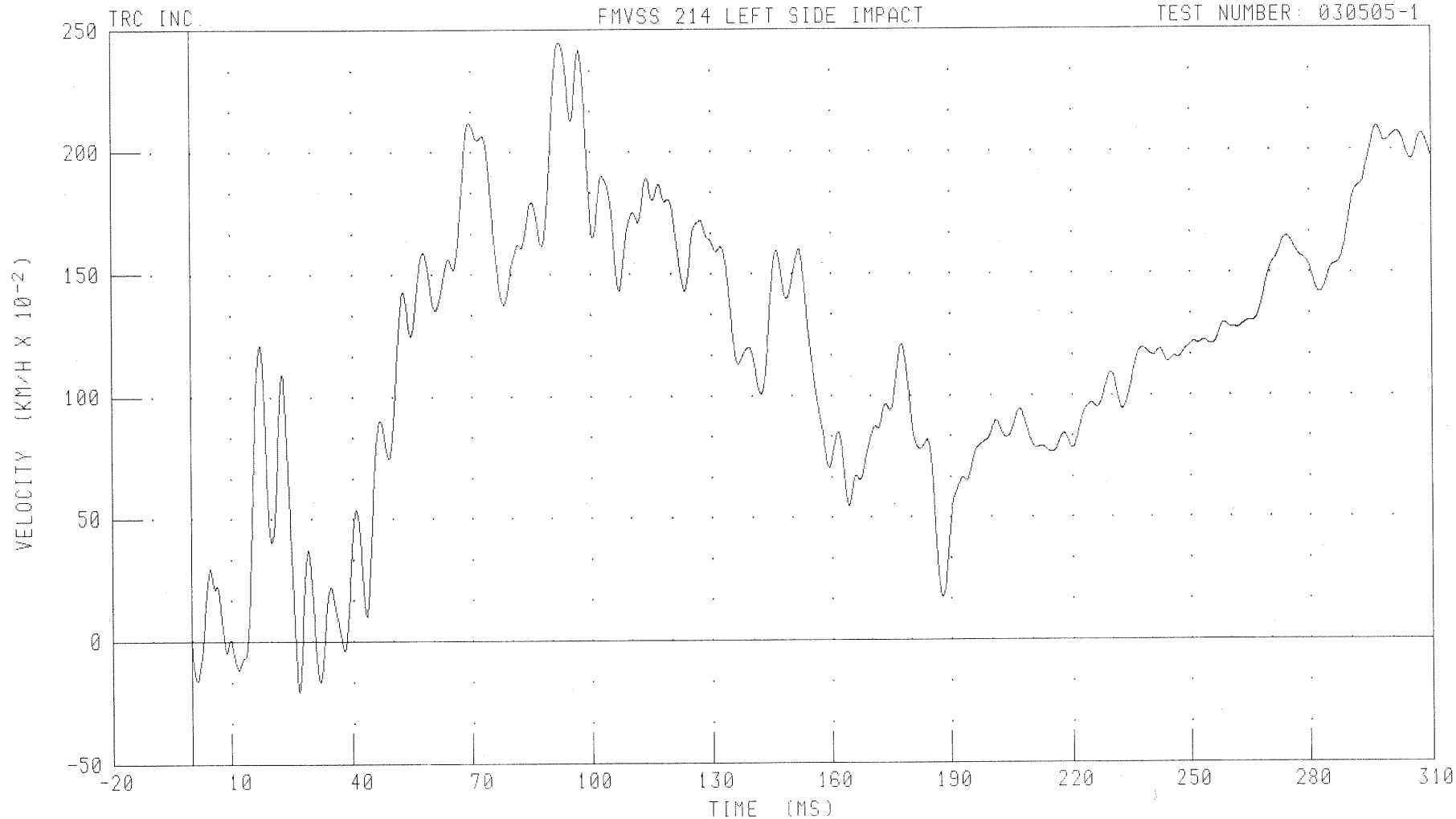
B-144

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
MDB CENTER OF GRAVITY Z-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: BCGZV1 FILTER: CH. CLASS 180

PEAK DATA: 2.45 KM/H @ 92.48 MS; -0.21 KM/H @ 26.96 MS

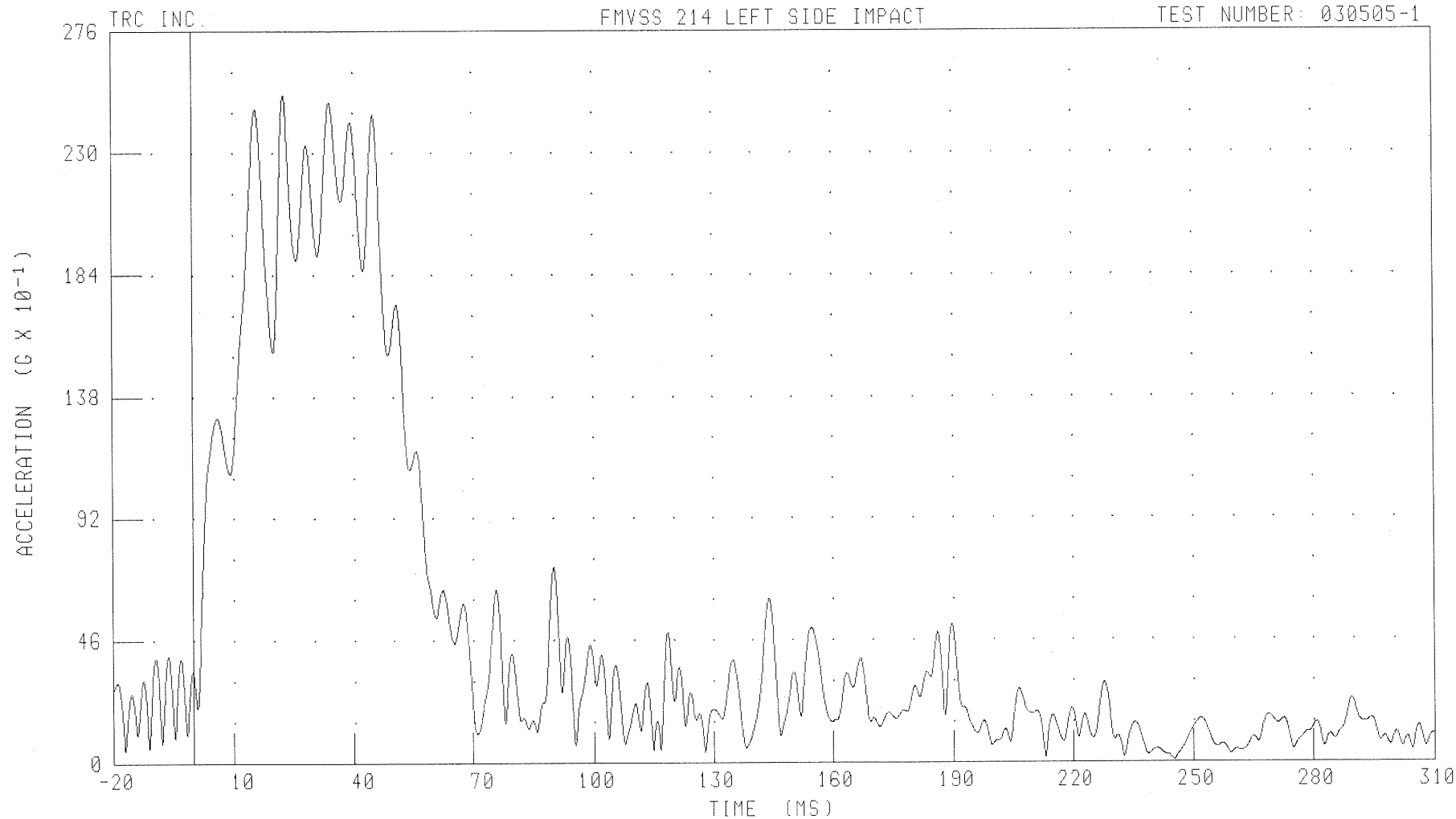
B-145

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
MDB CENTER OF GRAVITY RESULTANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: BCGRG1 FILTER: CH. CLASS 60

PEAK DATA: 25.20 G @ 22.72 MS; 0.08 G @ 245.20 MS

B-146

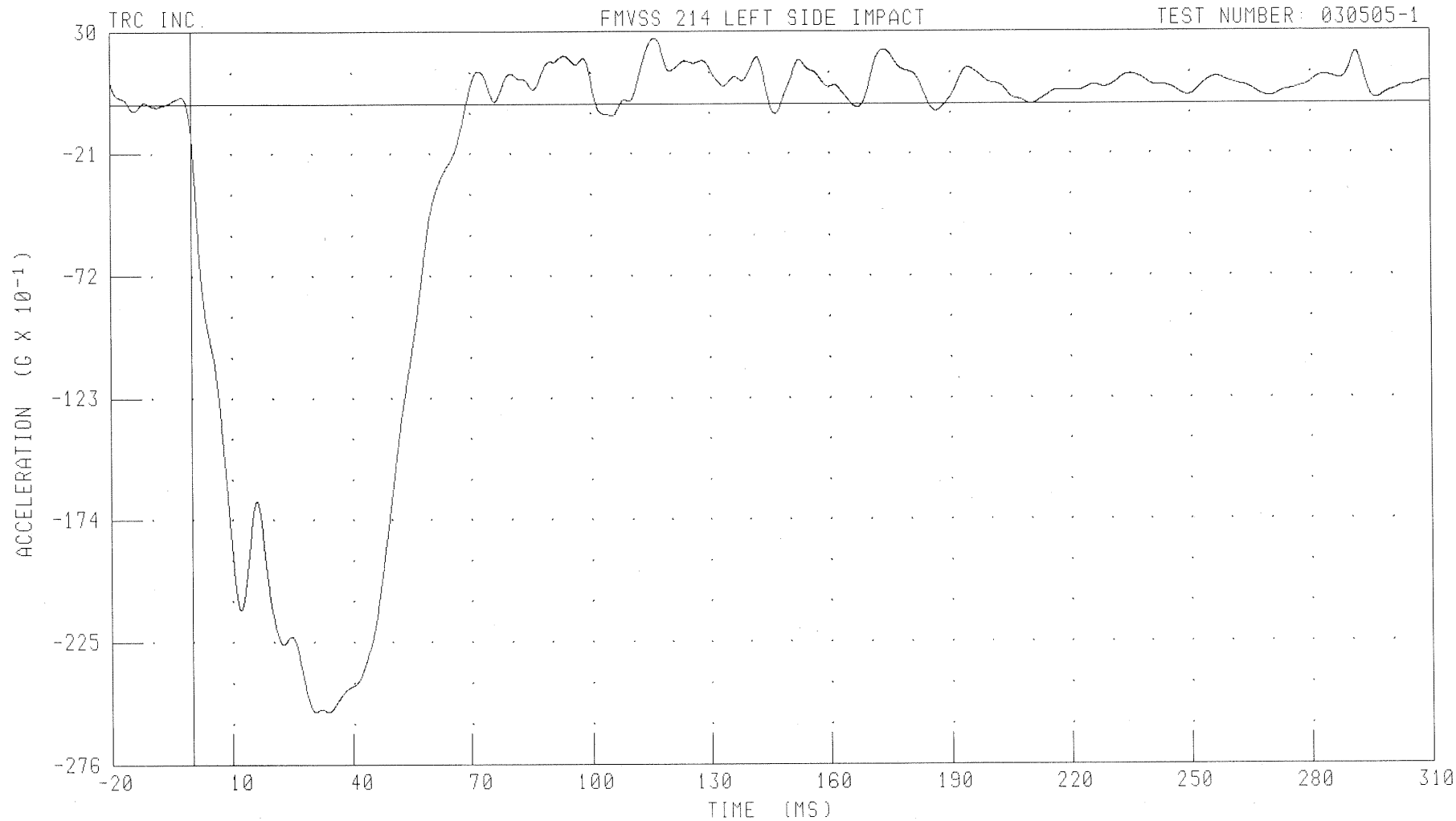
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

MOB LEFT REAR X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LRRXG1 FILTER: CH. CLASS 60

PEAK DATA: 2.73 G @ 116.24 MS; -25.42 G @ 33.76 MS

B-147

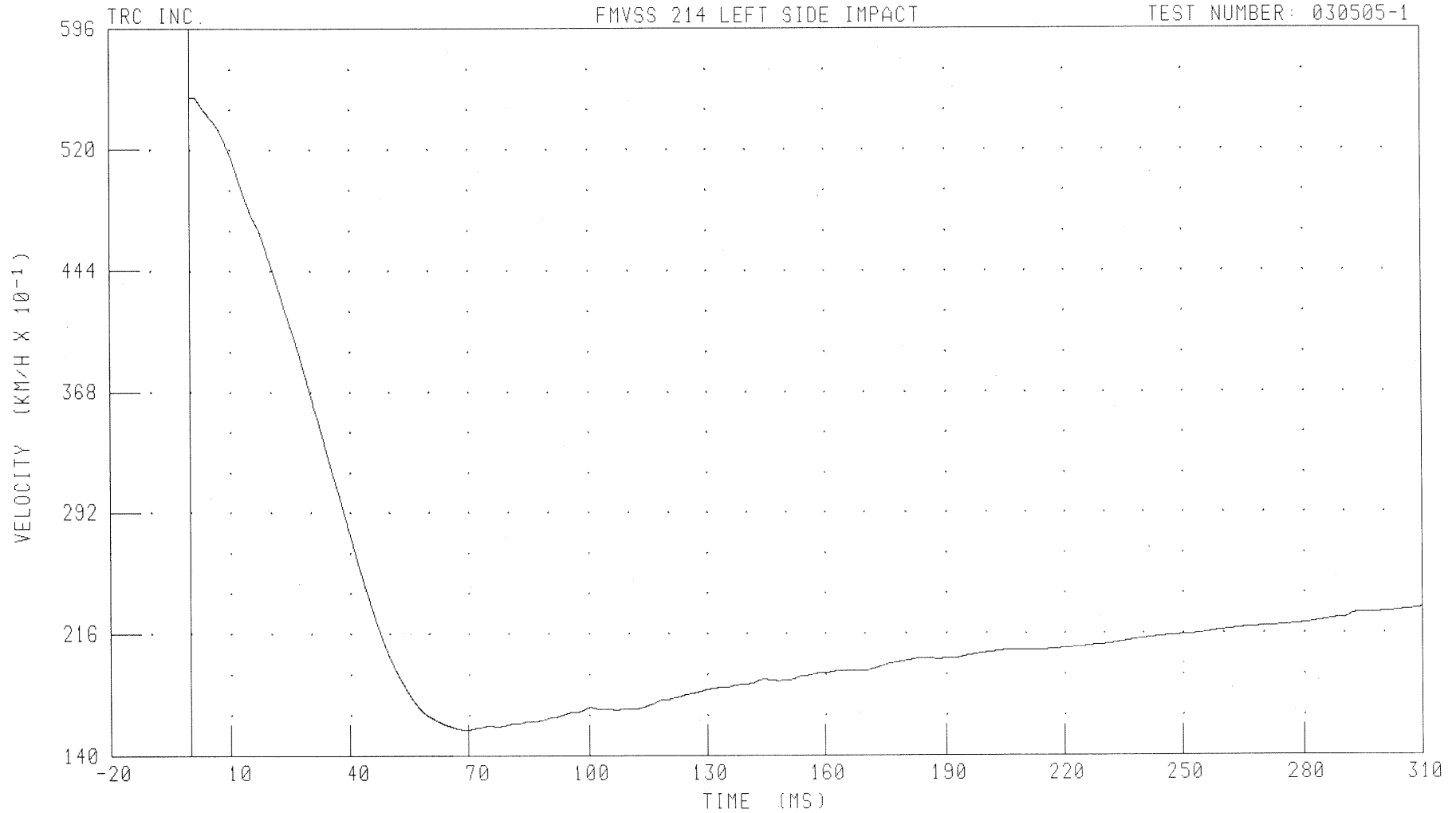
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

MDB LEFT REAR X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LRRXV1 FILTER: CH. CLASS 100

PEAK DATA: 55.31 KM/H @ 0.64 MS, 15.61 KM/H @ 69.68 MS

B-148

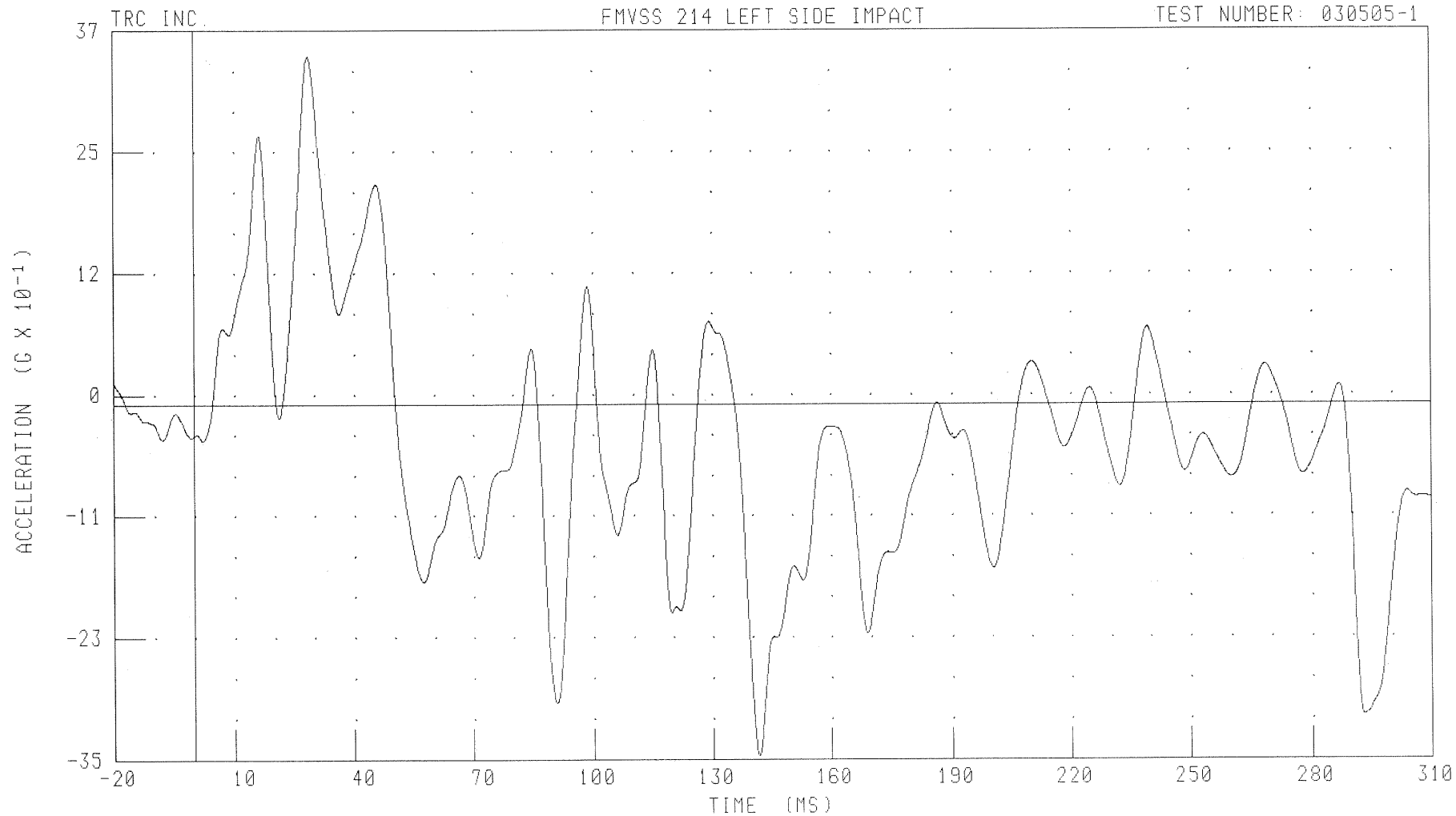
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

MDB LEFT REAR Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LRRYG1

FILTER: CH. CLASS 60

PEAK DATA: 3.44 G @ 28.64 MS; -3.46 G @ 141.60 MS

B-149

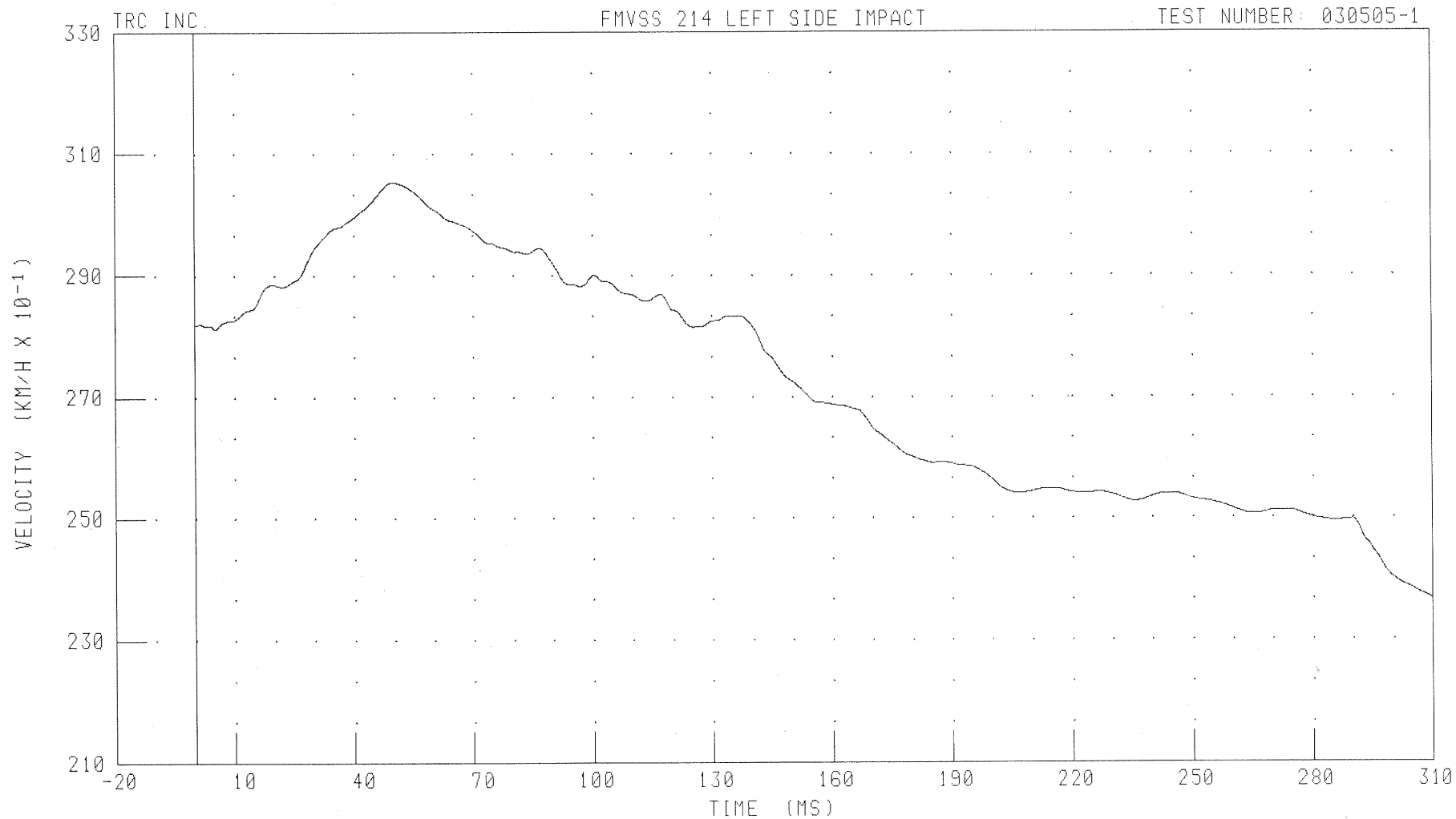
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

MDB LEFT REAR Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LRRYV1 FILTER: CH. CLASS 180

PEAK DATA: 30.54 KM/H @ 49.84 MS; 23.66 KM/H @ 310.00 MS

B-150

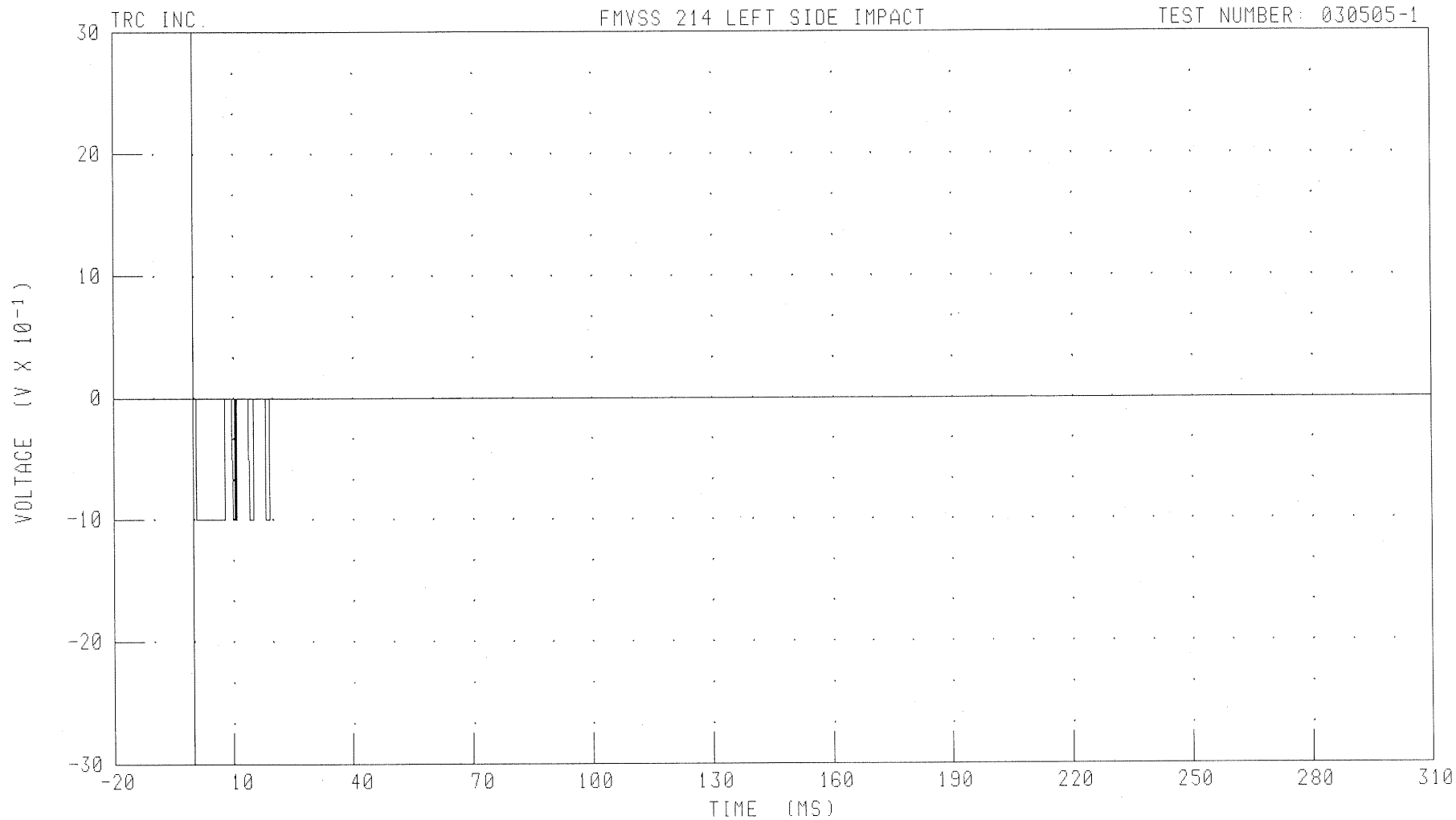
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

MDB RIGHT SIDE CONTACT SWITCH

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: MDBR1

FILTER: CH. CLASS 1000

B-151

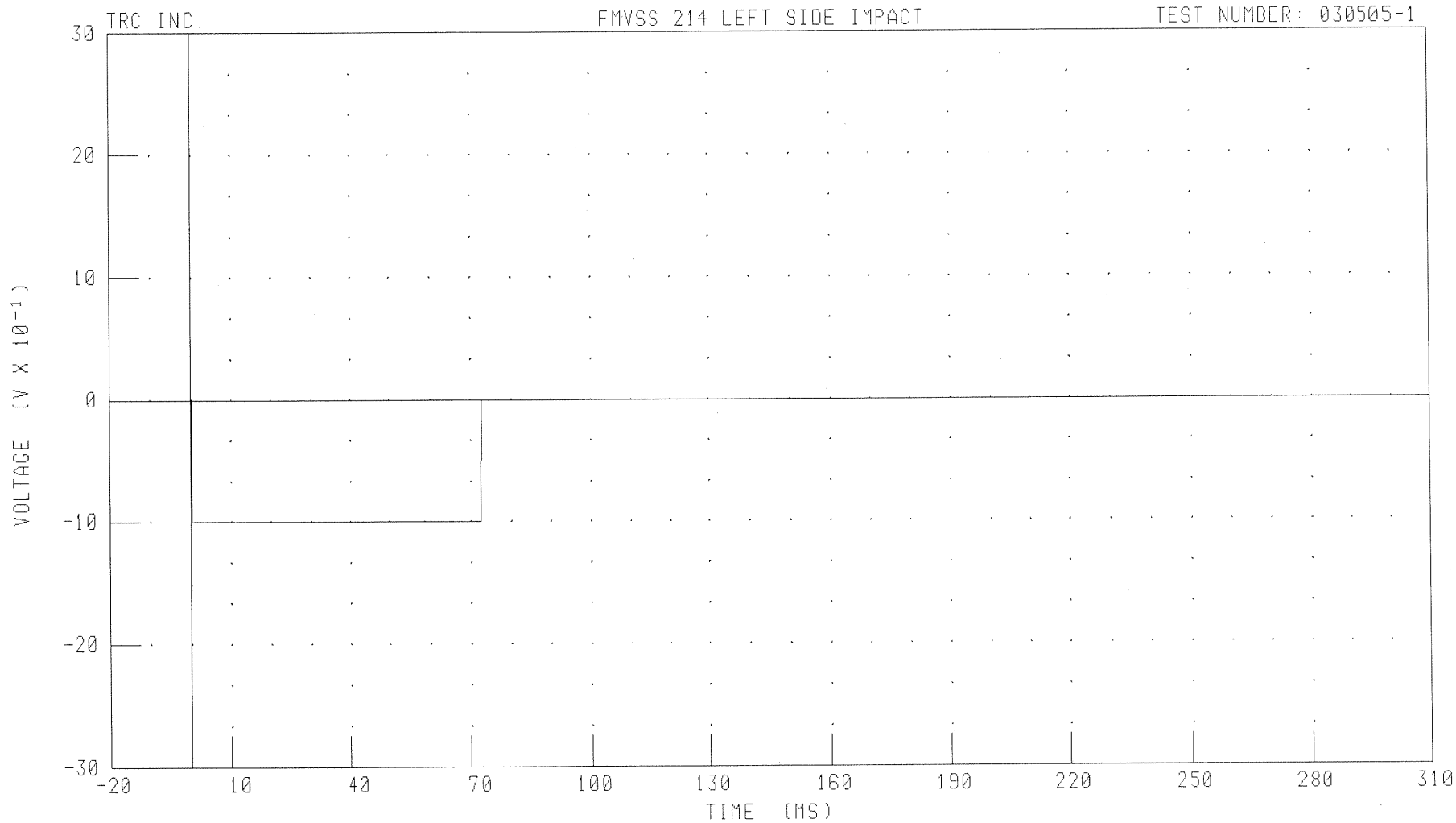
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

MOB LEFT SIDE CONTACT SWITCH

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: MOBL1

FILTER: CH. CLASS 1000

PEAK DATA: 0.00 V @ 310.00 MS; -1.00 V @ 0.40 MS

B-152

030505-1

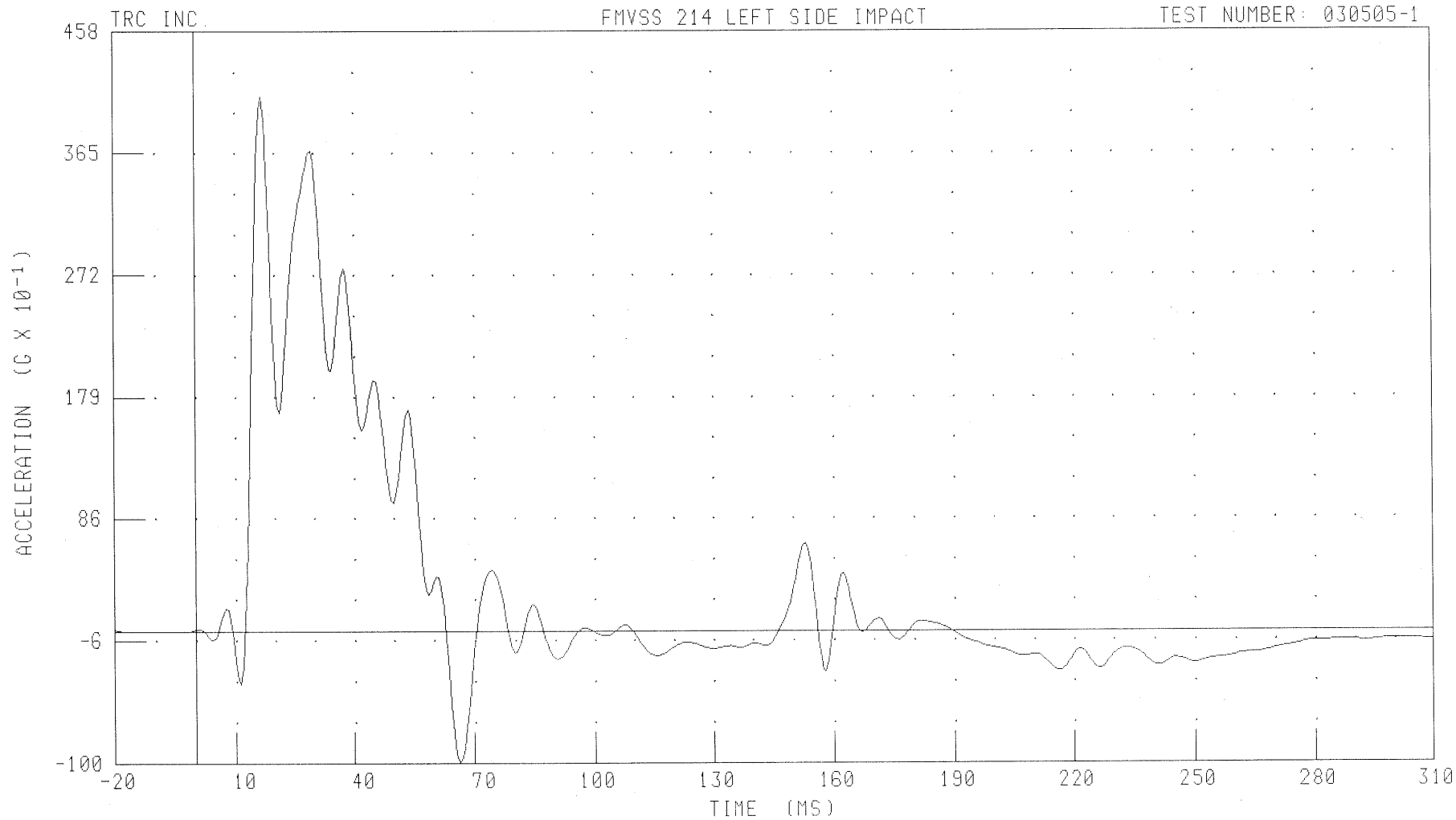
Driver and Passenger Dummy Instrumentation Plots
Acceleration Data - FIR Filtered

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER UPPER RIB Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LURYG1 FILTER: FIR 100

PEAK DATA: 40.87 G @ 16.87 MS; -9.96 G @ 66.25 MS

B-154

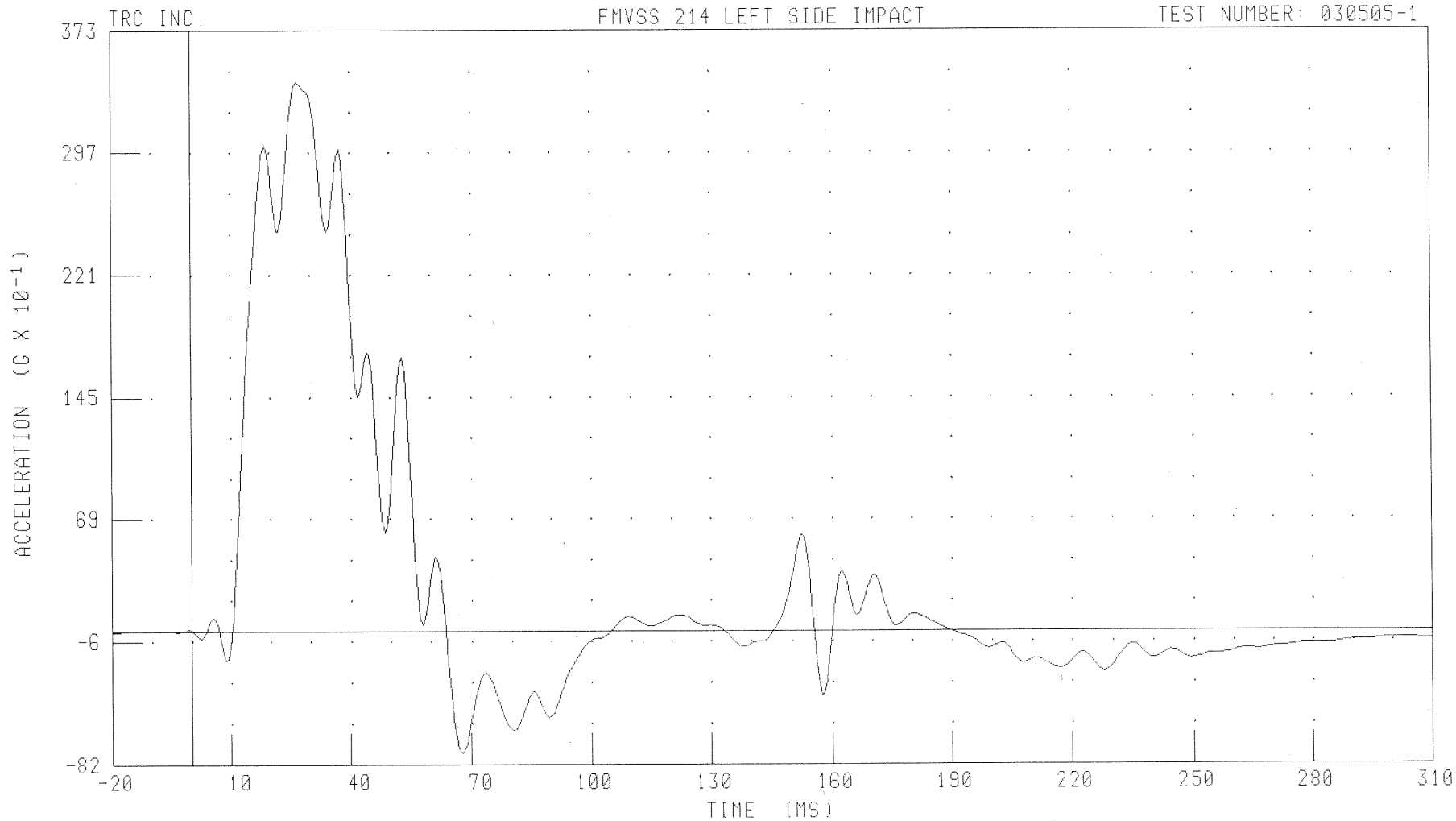
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER LOWER RIB Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LLRYG1 FILTER: FIR 100

PEAK DATA: 34.21 G @ 26.87 MS; -7.49 G @ 67.50 MS

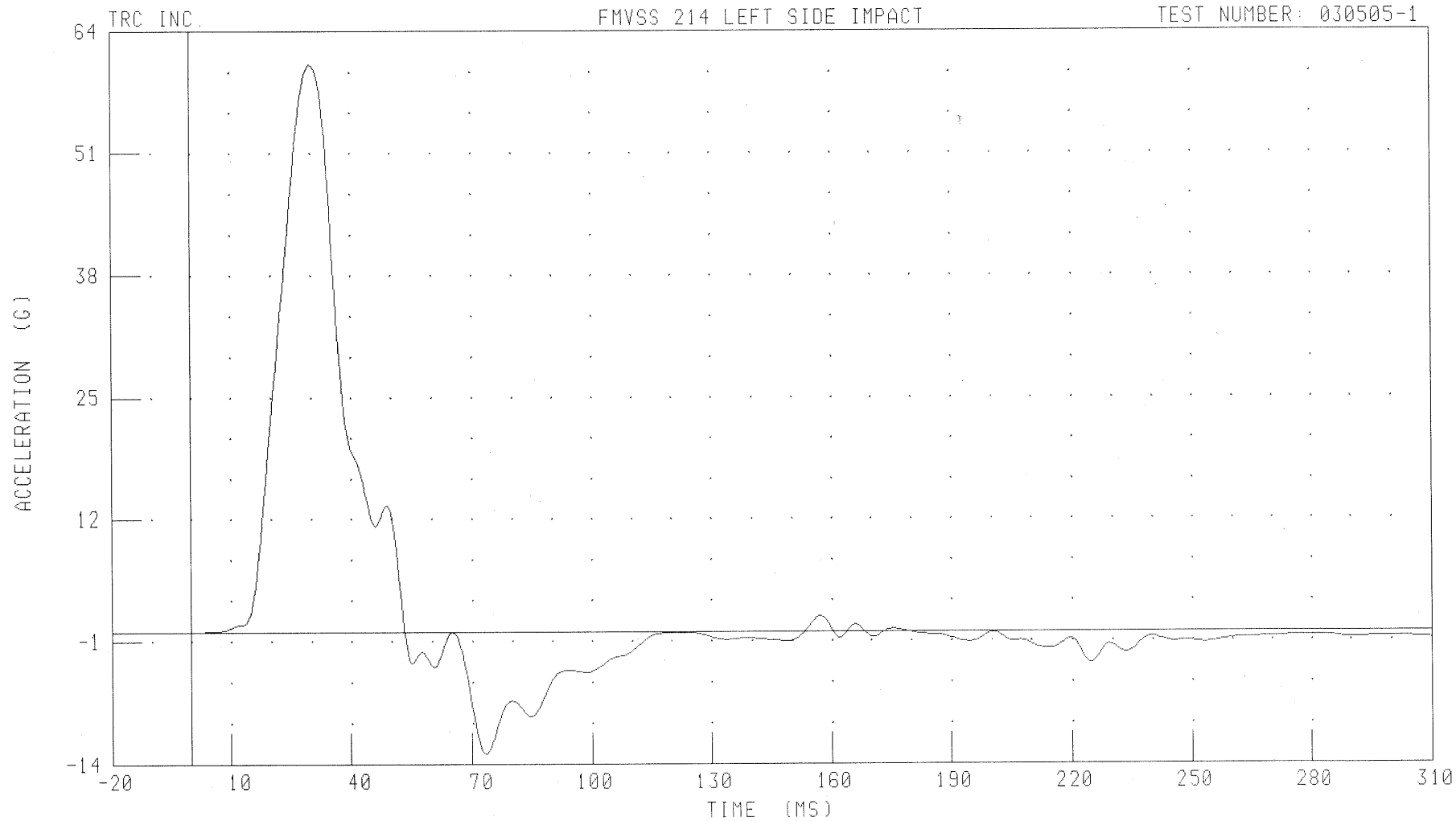
B-155

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
DRIVER LOWER SPINE Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



B-156

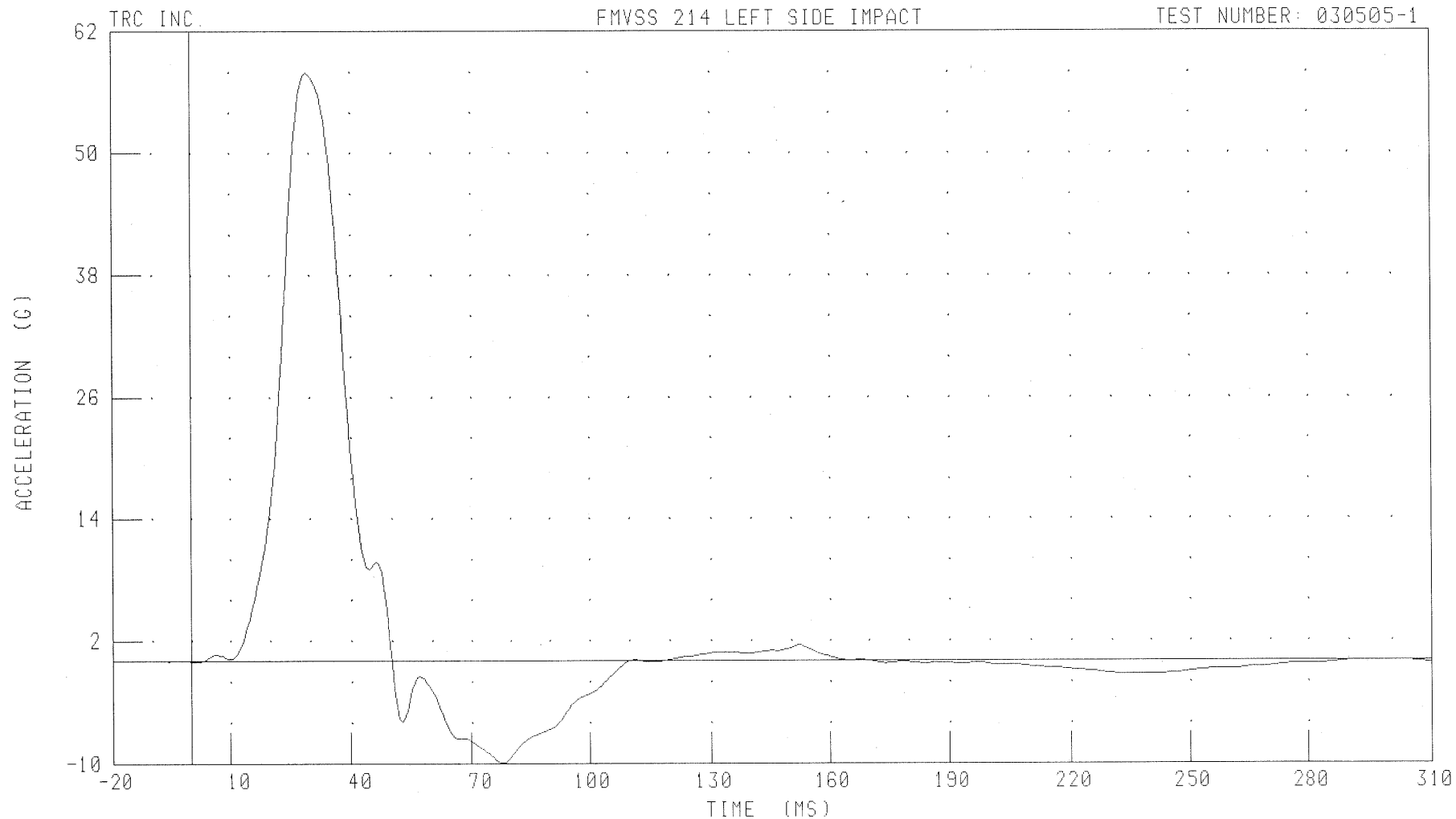
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER PELVIS Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: PEVYG1 FILTER: FIR 100

PEAK DATA: 57.91 G @ 29.38 MS; -9.95 G @ 78.13 MS

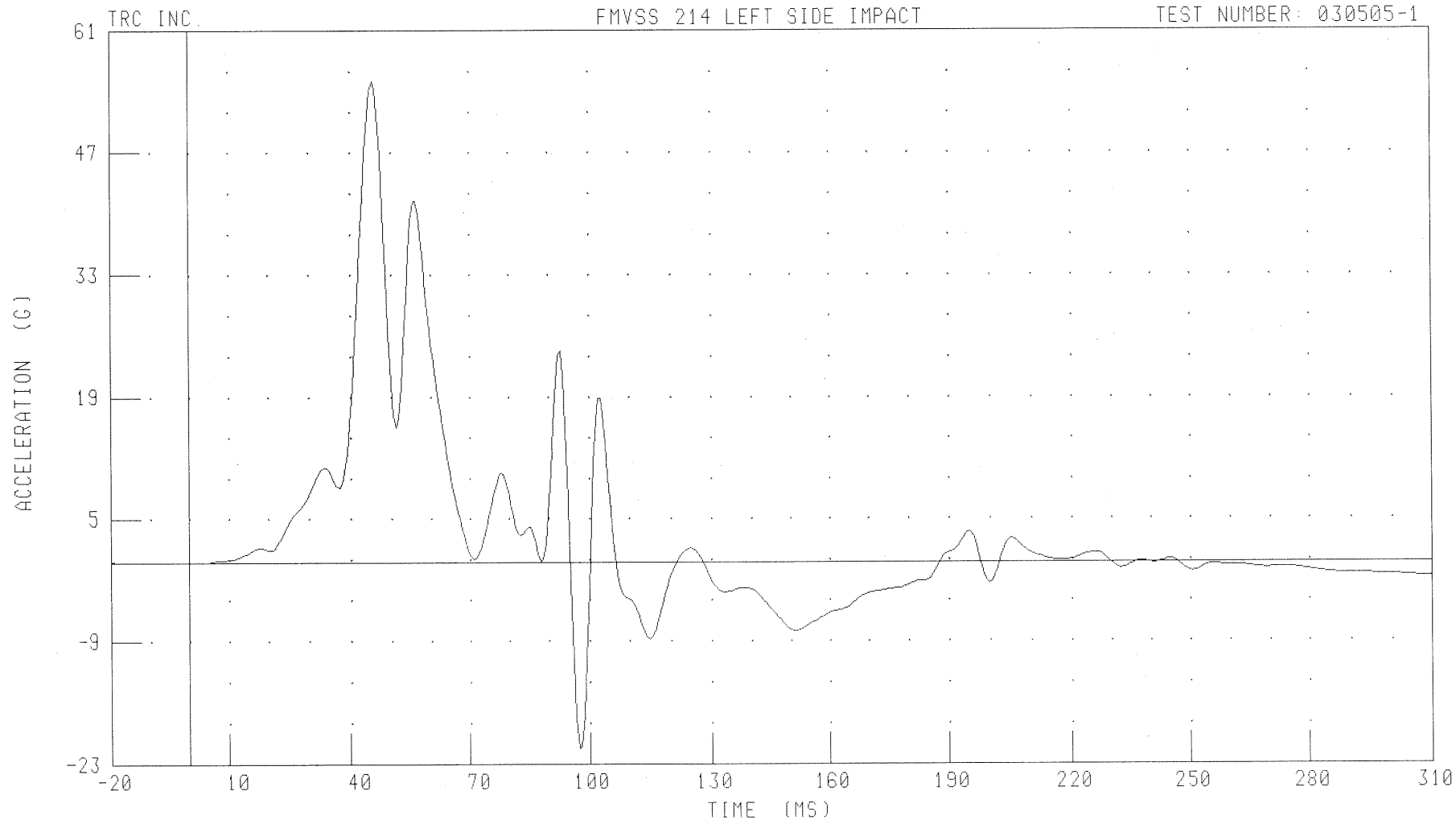
B-157

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER UPPER RIB Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LURYG4 FILTER: FIR 100

PEAK DATA: 55.26 G @ 45.62 MS; -21.23 G @ 97.50 MS

B-158

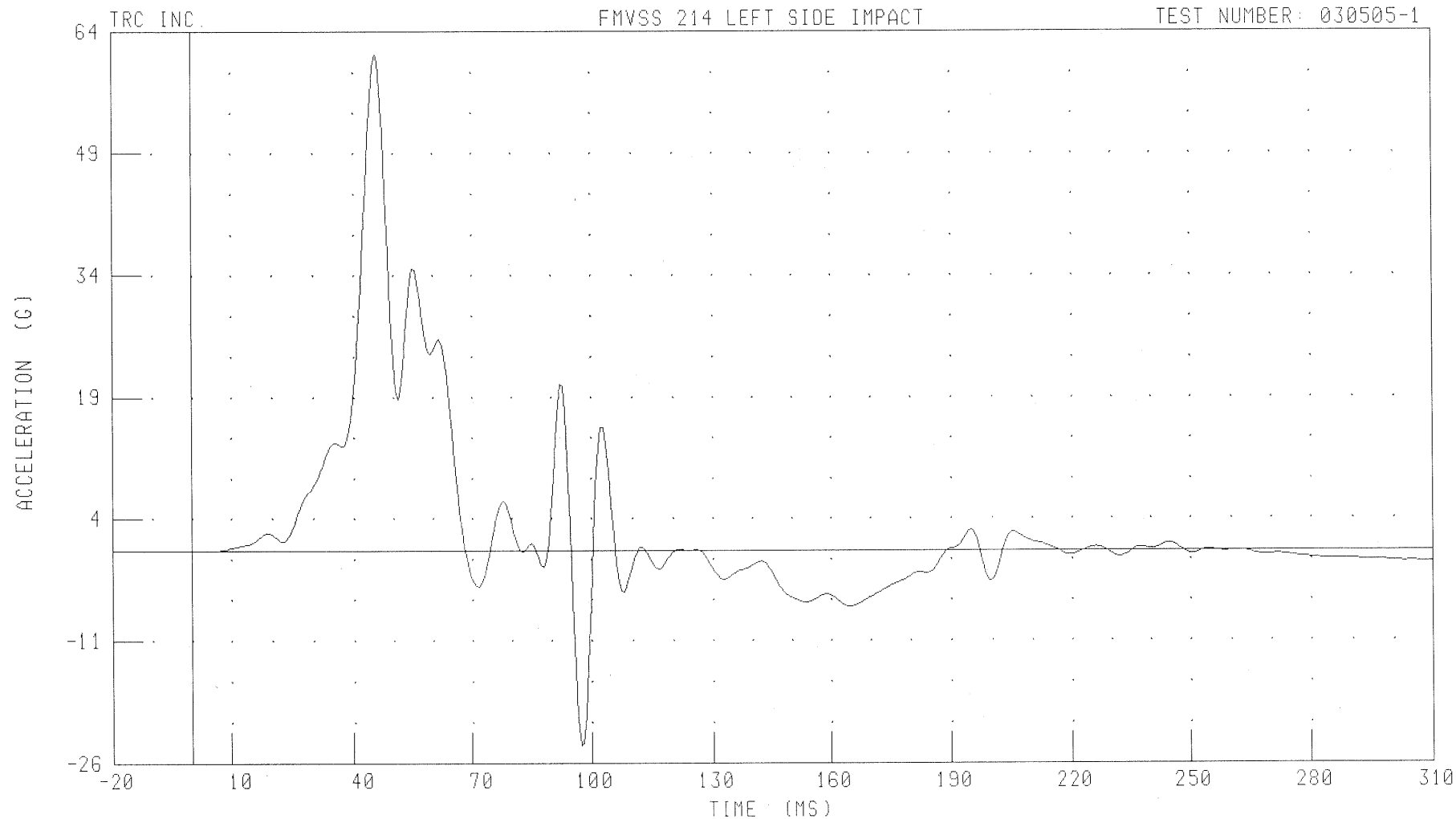
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

LEFT REAR PASSENGER LOWER RIB Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LLRYG4 FILTER: FIR 100

PEAK DATA: 61.23 G @ 45.62 MS, -23.86 G @ 97.50 MS

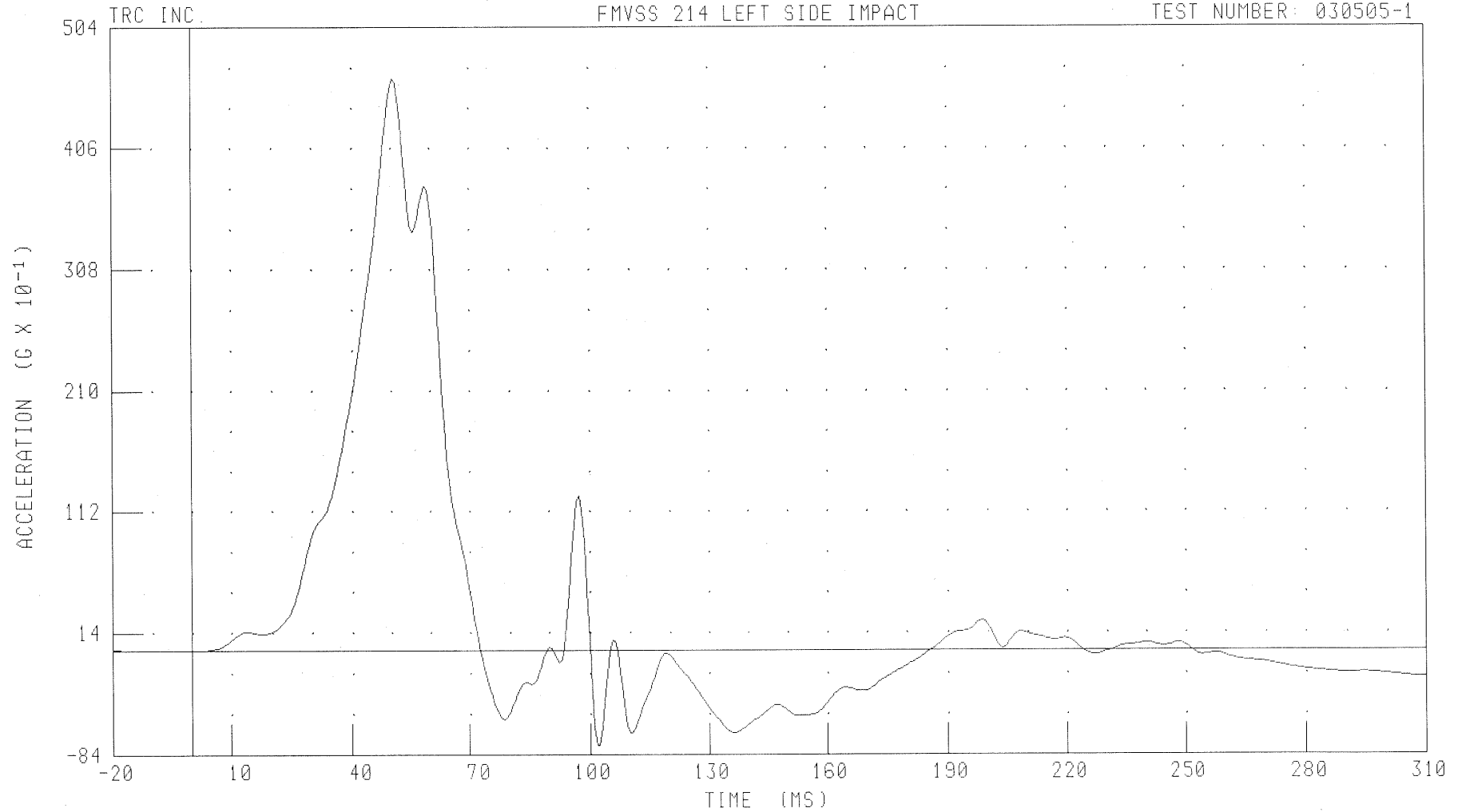
B-159

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER LOWER SPINE Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: T12YC4 FILTER: FIR 100

PEAK DATA: 46.28 G @ 50.63 MS; -7.67 G @ 101.88 MS

B-160

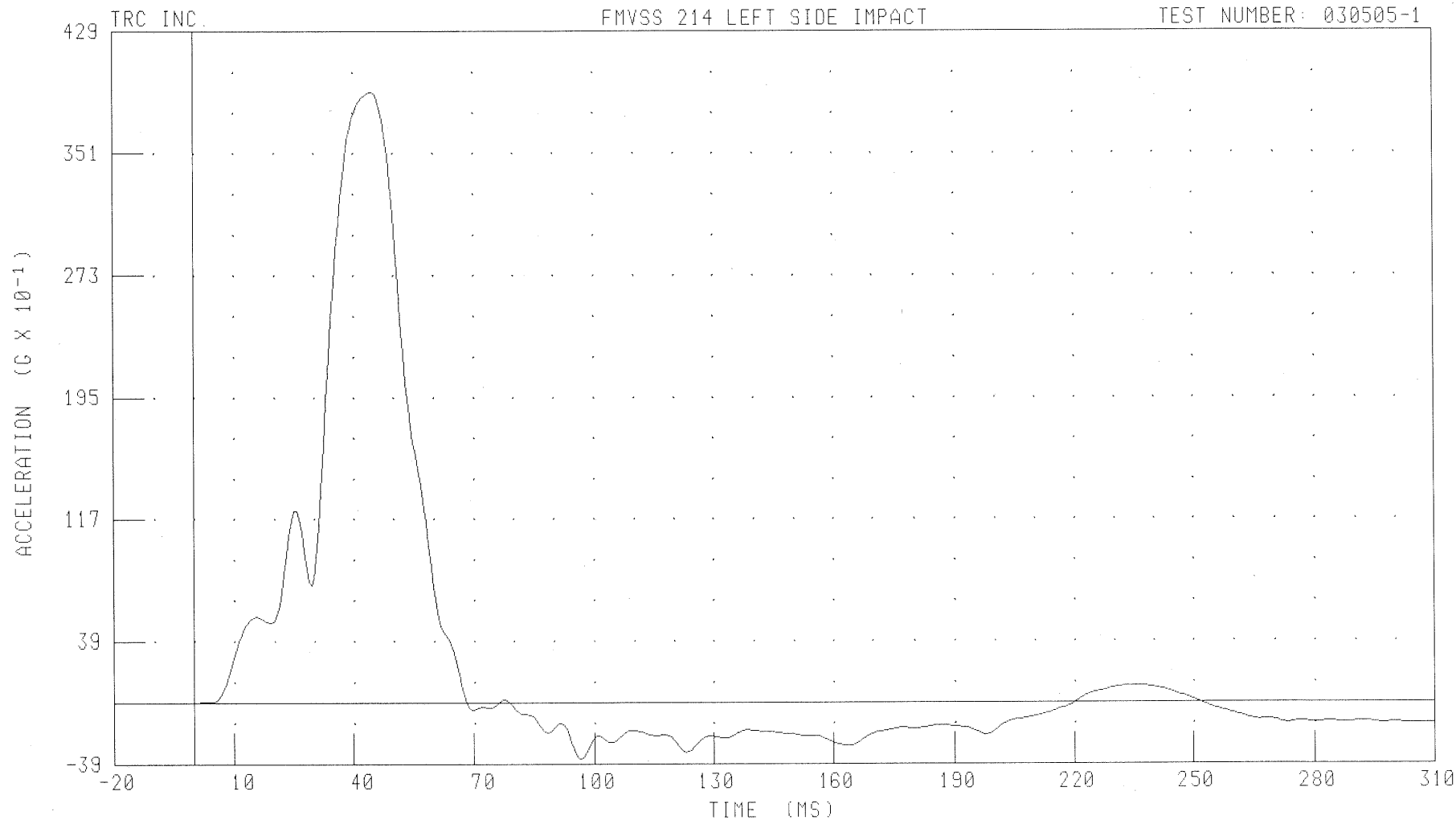
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

LEFT REAR PASSENGER PELVIS Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: PEVYG4 FILTER: FIR 100

PEAK DATA: 39.02 G @ 44.38 MS; -3.58 G @ 96.88 MS

B-161

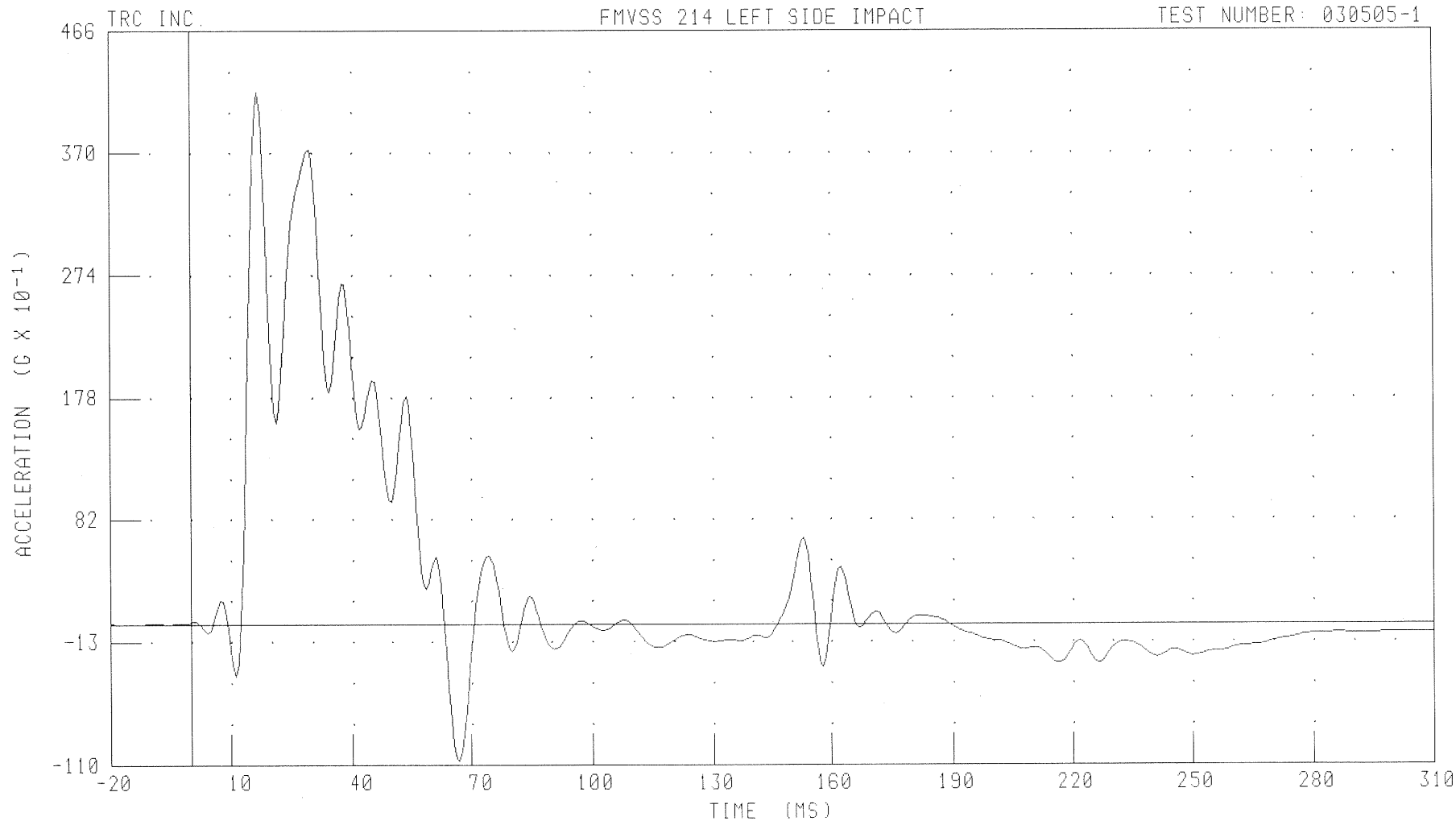
030505-1

Driver and Passenger Dummy Instrumentation Plots
Acceleration Data - FIR Filtered - Redundant

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
DRIVER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LURYR1 FILTER: FIR 100

PEAK DATA: 41.84 G @ 16.87 MS; -10.65 G @ 66.87 MS

B-163

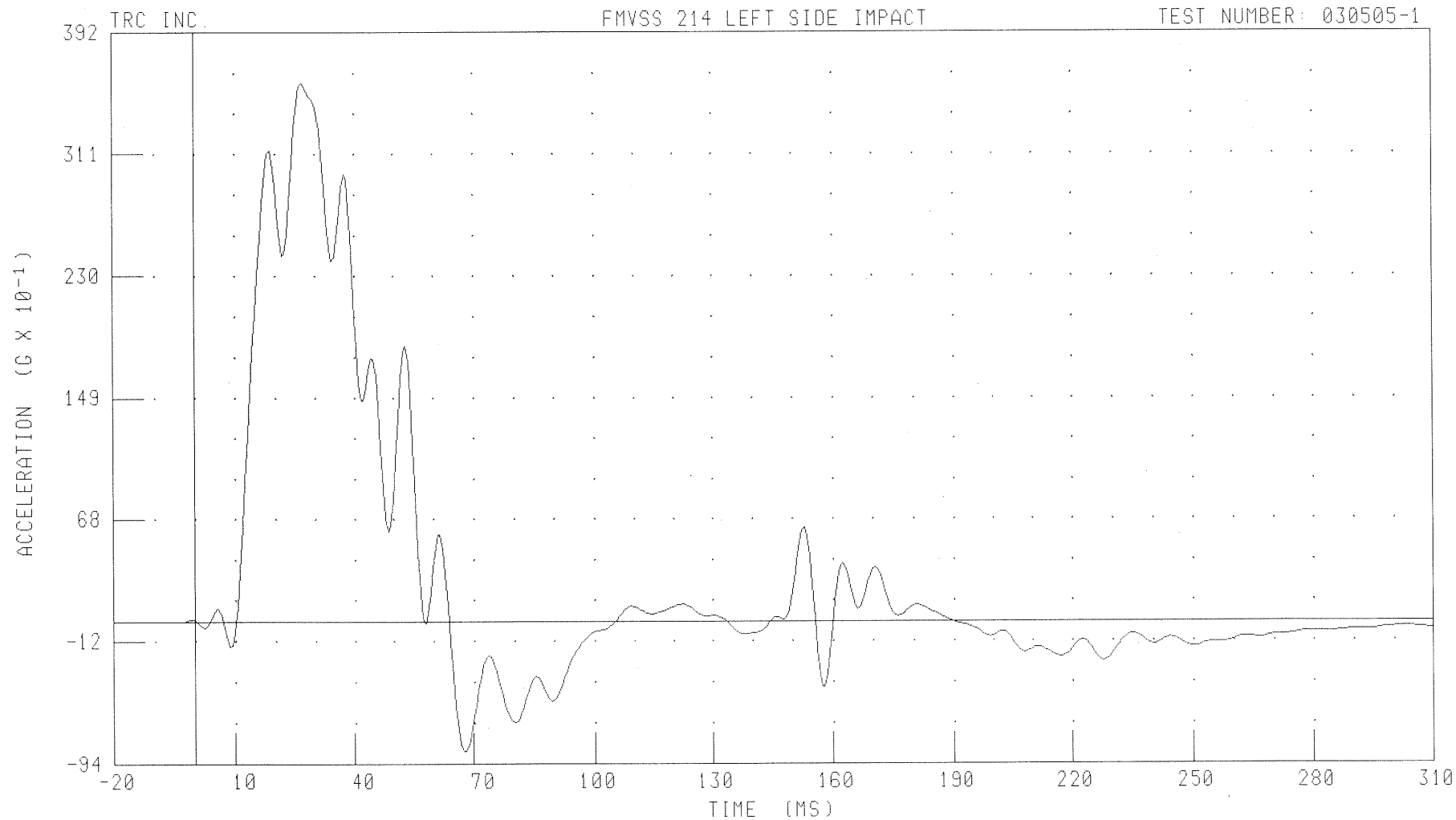
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER LOWER RIB Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LLRYR1

FILTER: FIR 100

PEAK DATA: 35.88 G @ 26.87 MS; -8.56 G @ 67.50 MS

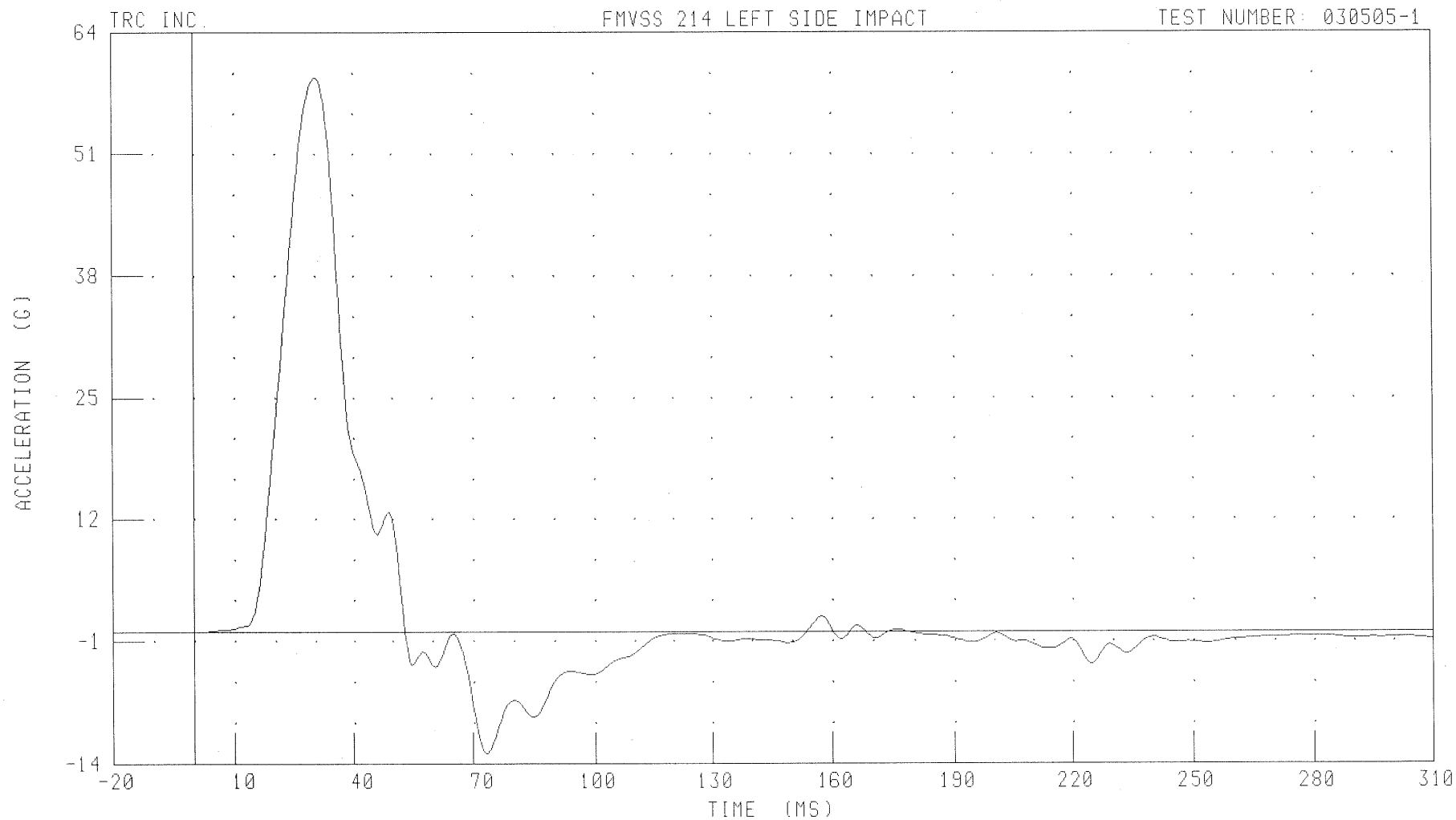
B-164

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
DRIVER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: T12YR1 FILTER: FIR 100

PEAK DATA: 59.22 G @ 30.62 MS, -12.93 G @ 73.13 MS

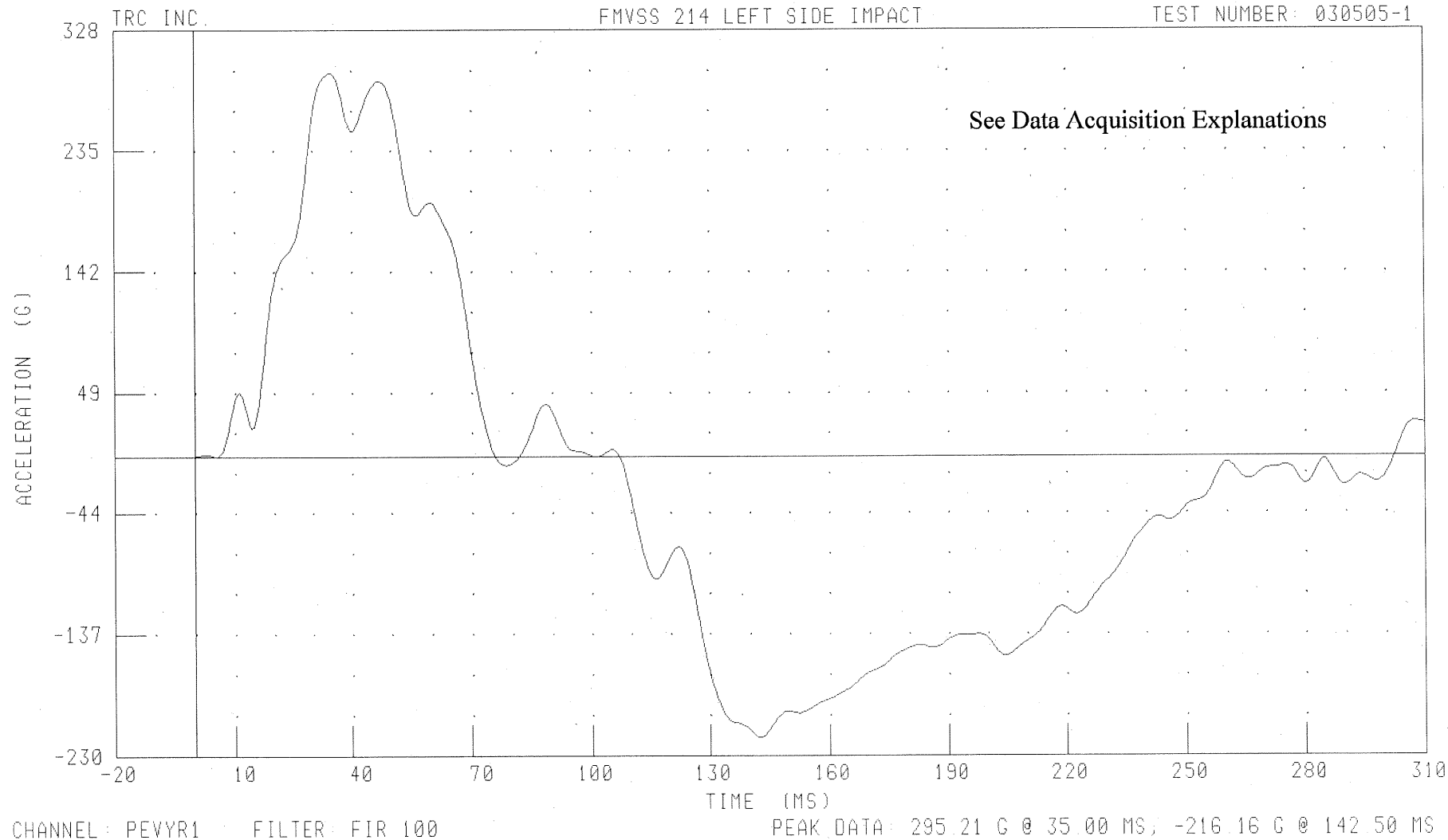
B-165

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
DRIVER PELVIS Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



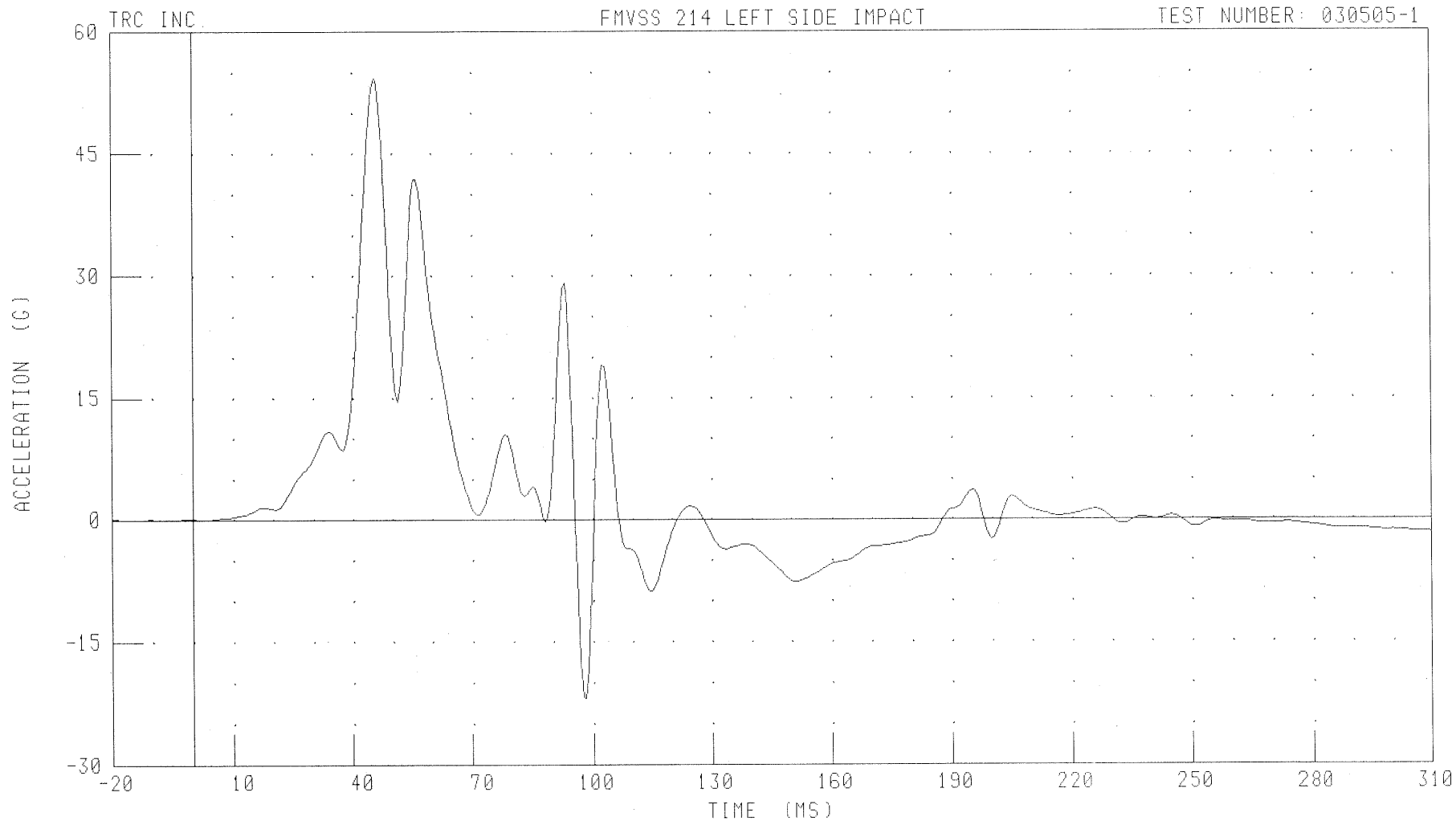
B-166

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LURYR4 FILTER: FIR 100

PEAK DATA: 54.35 G @ 45.62 MS; -21.91 G @ 98.12 MS

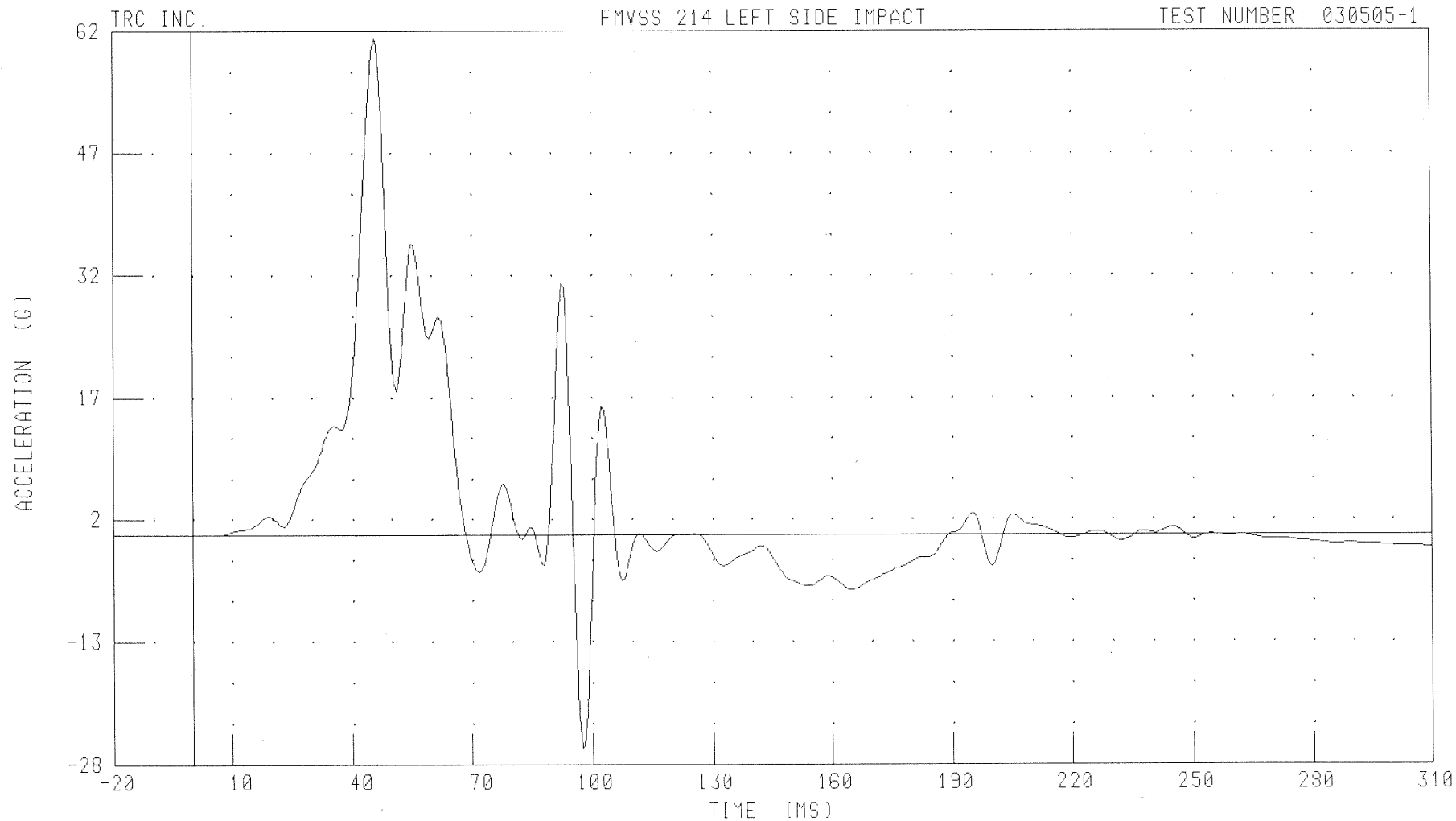
B-167

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER LOWER RIB Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: LLRYR4 FILTER: FIR 100

PEAK DATA: 61.10 G @ 45.62 MS; -25.97 G @ 97.50 MS

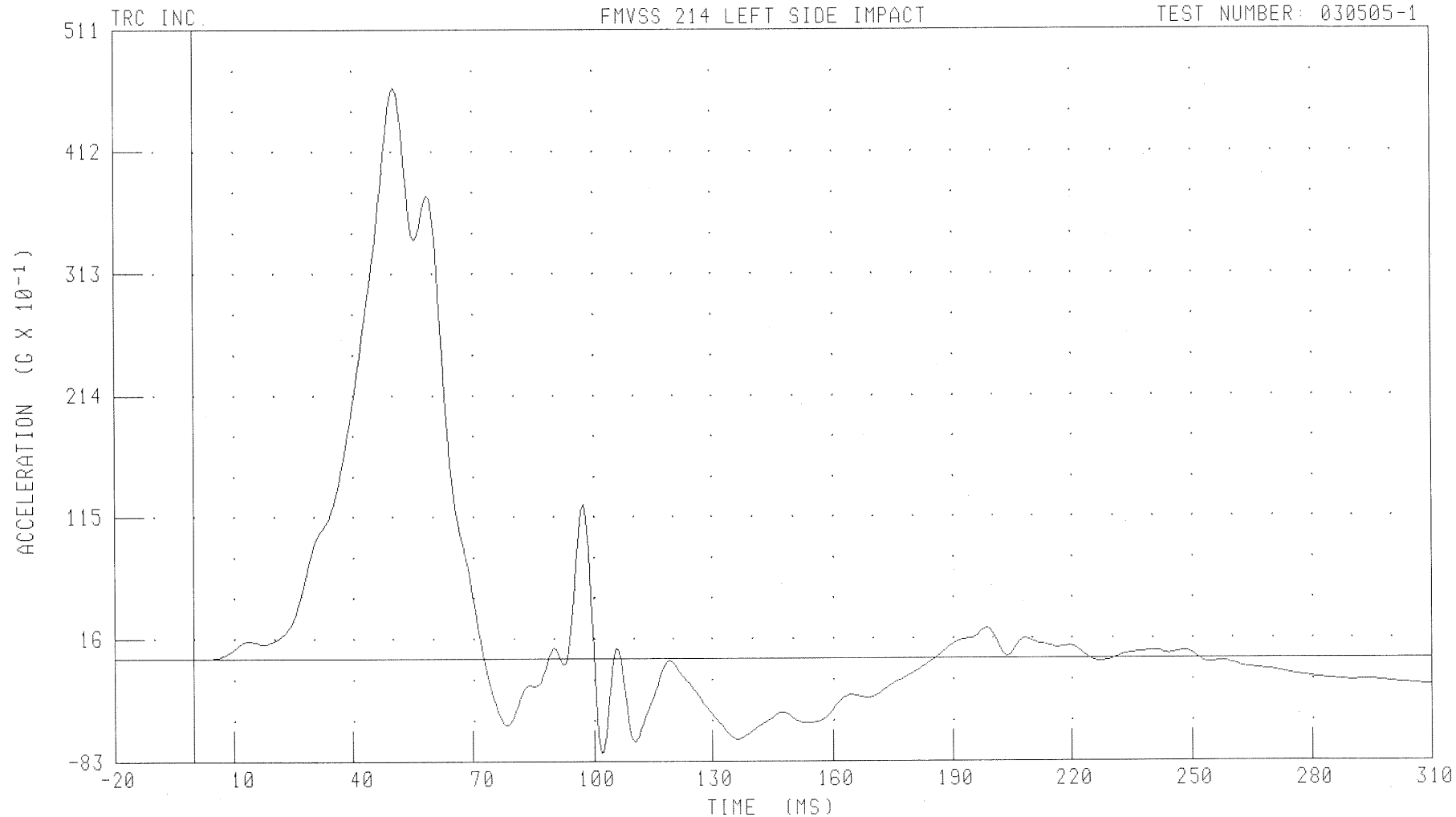
B-168

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: T12YR4 FILTER: FIR 100

PEAK DATA: 46.45 G @ 50.63 MS, -7.60 G @ 101.88 MS

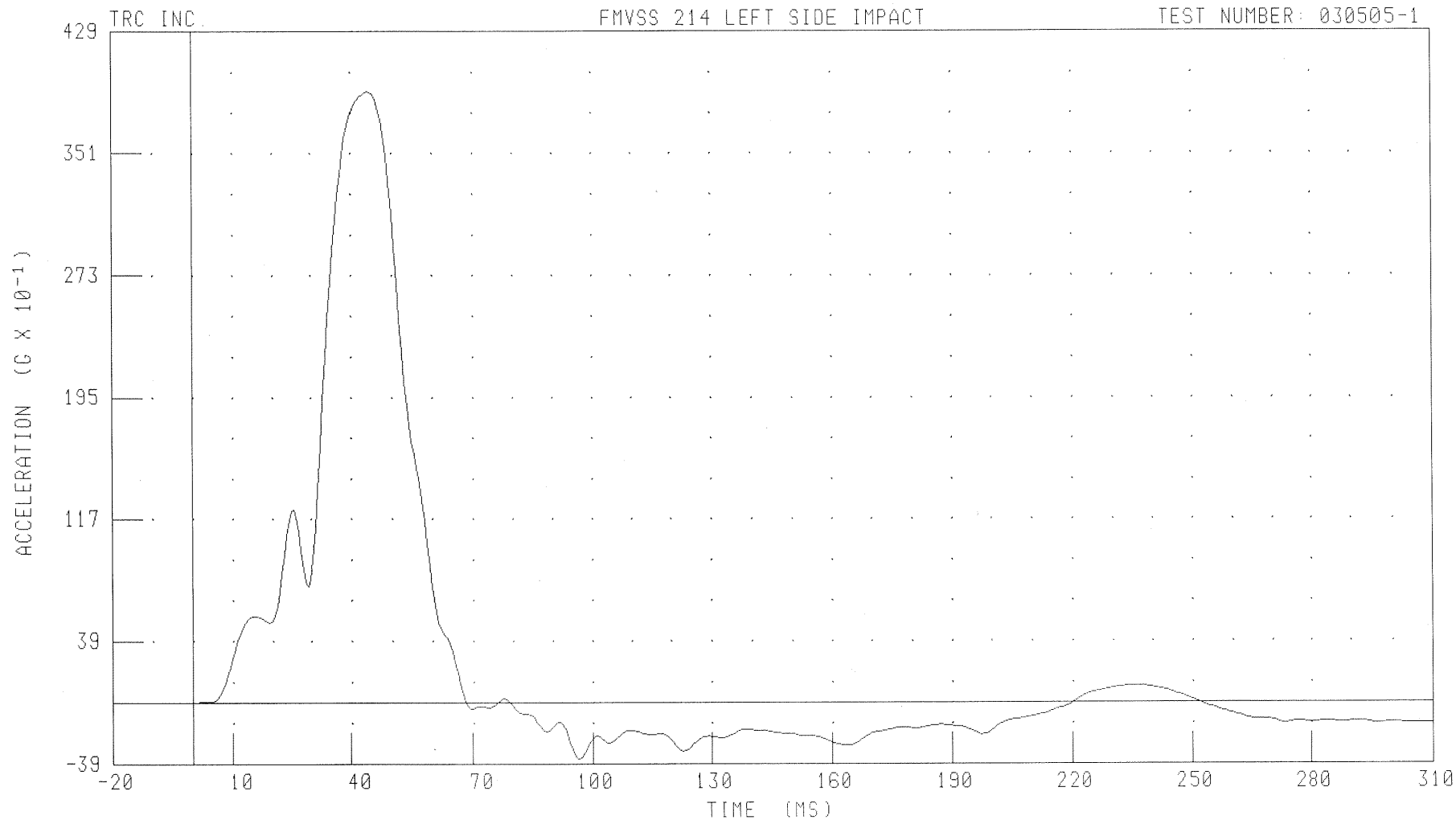
B-169

030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
LEFT REAR PASSENGER PELVIS Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: PEVYR4

FILTER: FIR 100

PEAK DATA: 39.06 G @ 44.38 MS; -3.58 G @ 96.88 MS

B-170

030505-1

Appendix C

SID Configuration and Performance Verification Data

Summary
SID Pre-Test and Post-Test Calibration
Configured For Left Side Impact

Date: April 28 - May 5, 2003 TRC Inc. Test Number: 066C08/09 & 028C06/07
Laboratory Technician: Jack Willeke and Chris Roberts

Test Parameter	Specification	SID 066		SID 028	
		Pre-Test	Post-Test	Pre-Test	Post-Test
SH - Seated Height (mm)	889-909	902	901	895	896
RH - Rib Height (mm)	502-520	507	505	504	506
HP - Hip Pivot Height (mm)	99 ref	99.1	99.1	99.1	99.1
RD - Rib from Back Line (mm)	229-241	238	239	230	231
KH - Knee Pivot from Back Line (mm)	511-526	521	520	512	511
KV - Knee Pivot to Floor (mm)	490-505	497	498	498	499
HW - Hip Width (mm)	356-391	387	388	372	373
Thorax Impacts					
Temperature (°C)	18.9-25.5	21.7	21.1	21.7	21.7
Relative Humidity (%)	10-70	26	29	43	47
Probe Speed (m/s)	4.27-4.33	4.23	4.29	4.29	4.31
Upper Rib (g's)	37-46	41.0	42.4	40.0	40.4
Lower Rib (g's)	37-46	40.2	44.7	42.6	39.4
Lower Spine (g's)	15-22	19.2	21.2	17.5	16.4
Pelvis Impacts					
Temperature (°C)	18.9-25.5	21.7	21.1	21.7	21.7
Relative Humidity (%)	10-70	26	26	43	47
Probe Speed (m/s)	4.27-4.33	4.28	4.28	4.29	4.28
Pelvis (g's)	40-60	53.7	50.0	47.6	43.8

Calibration Test Results

Pre-Test

SID: 066

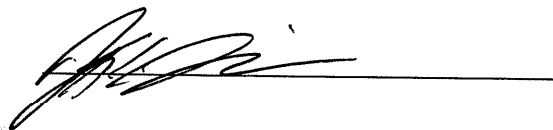
Configured for Left Side Impact

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

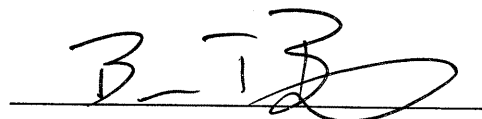
Transportation Research Center Inc.
572F SID Dummy
External Dimensions
Serial No. 066 Calibration No. 08

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	902 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	507 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Rib From Backline	RD	228.6 - 241.3 mm	238 mm	Yes
Knee Pivot From Backline	KH	510.5 - 525.8 mm	521 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	497 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	387 mm	Yes
Top Rib Width From C/L	RW-1	165.1 - 180.3 mm	170 mm	Yes
Bottom Rib Width From C/L	RW-2	165.1 - 180.3 mm	169 mm	Yes
Difference Between Top & Bottom Rib Width from C/L		<= 2.5 mm	1.0 mm	Yes

Technician



Approved




TRANSPORTATION RESEARCH CENTER INC.

LATERAL HEAD DROP TEST

SID/HIII DUMMY

28-APR-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO. HDL06608

572M SID/HIII SN066 HEAD CAL08

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6 deg. C	21.67 deg. C
RELATIVE HUMIDITY	10 - 70 %	34.00 %
PEAK RESULTANT ACCELERATION	120 - 150 G	128.48 G
PEAK LONGITUDINAL ACCELERATION	15 G MAX	-5.71 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 042803.1349;1

572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION X AXIS

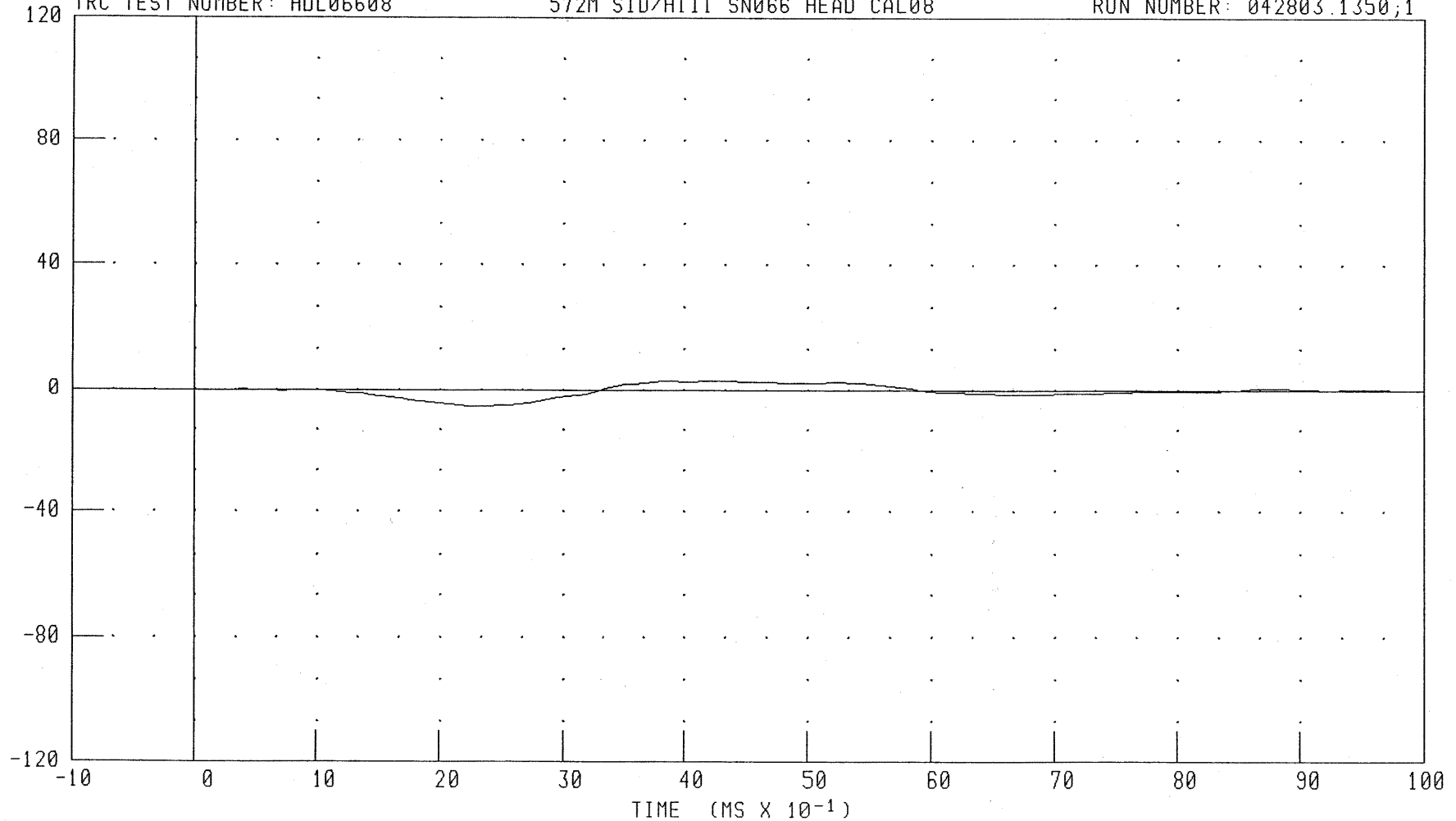
TRC TEST NUMBER: HDL06608

572M SID/HIII SN066 HEAD CAL08

RUN NUMBER: 042803.1350;1

C-6

ACCELERATION (G)



CHANNEL: HEDXG

FILTER: CH. CLASS 1000

PEAK DATA: 2.92 G @ 4.24 MS; -5.71 G @ 2.32 MS

030505-1

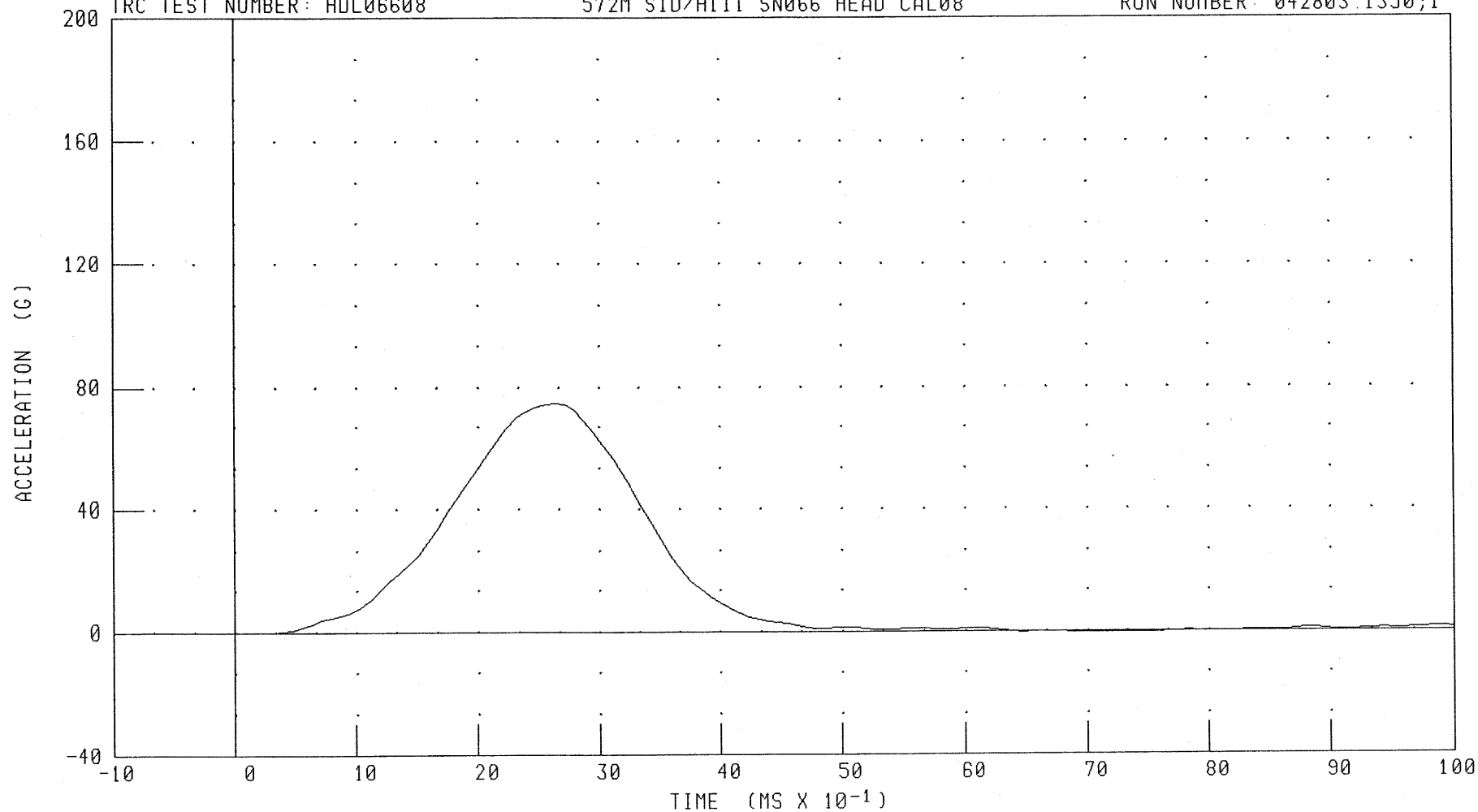
572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Y AXIS

TRC TEST NUMBER: HDL06608

572M SID/HIII SN066 HEAD CAL08

RUN NUMBER: 042803.1350,1



CHANNEL: HEDYG

FILTER: CH. CLASS 1000

PEAK DATA: 74.53 G @ 2.64 MS; -0.55 G @ 7.44 MS

030505-1

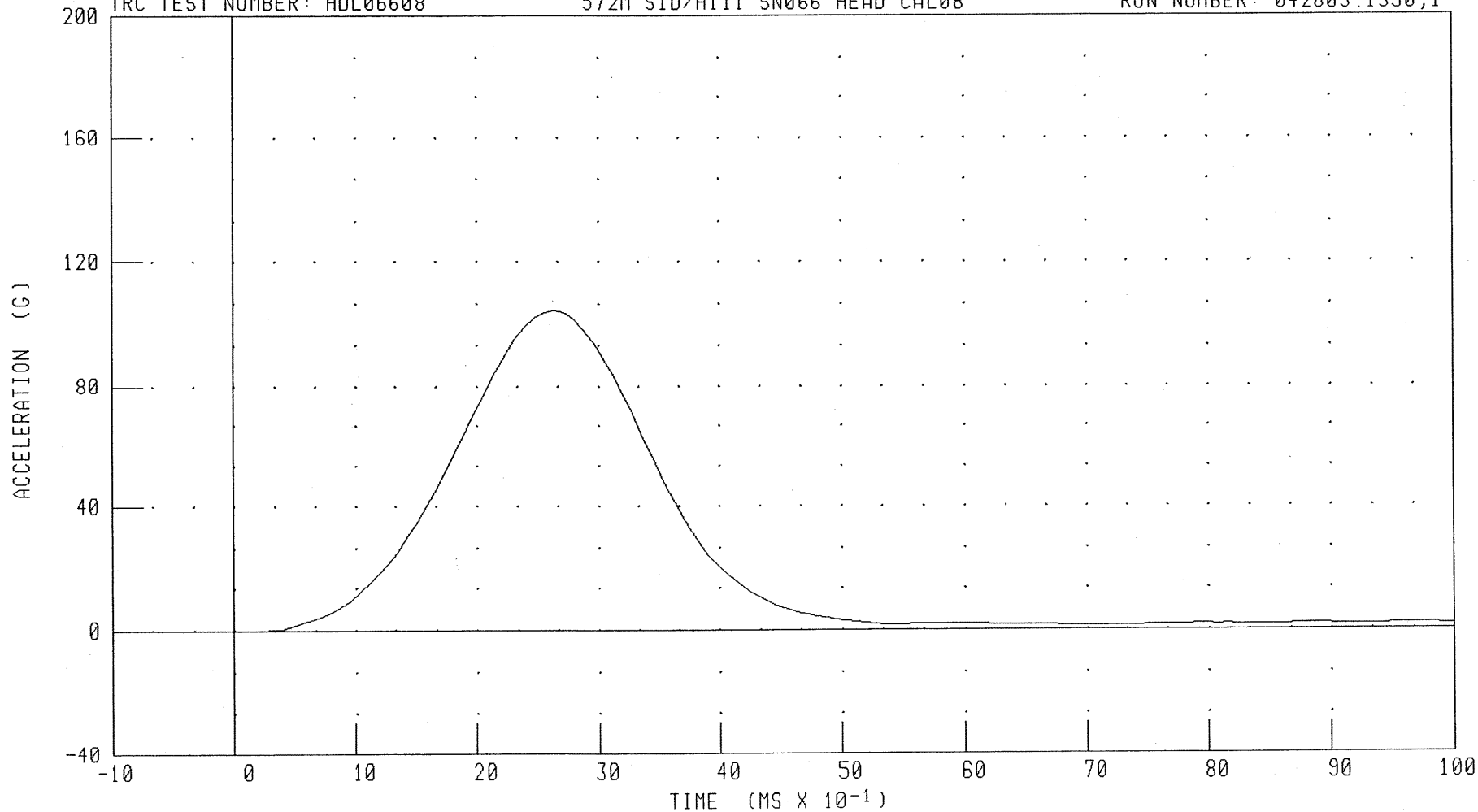
572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Z AXIS

TRC TEST NUMBER: HDL06608

572M SID/HIII SN066 HEAD CAL08

RUN NUMBER: 042803.1350;1



CHANNEL: HEDZG

FILTER: CH. CLASS 1000

PEAK DATA: 104.54 G @ 2.64 MS; -0.07 G @ -0.80 MS

030505-1

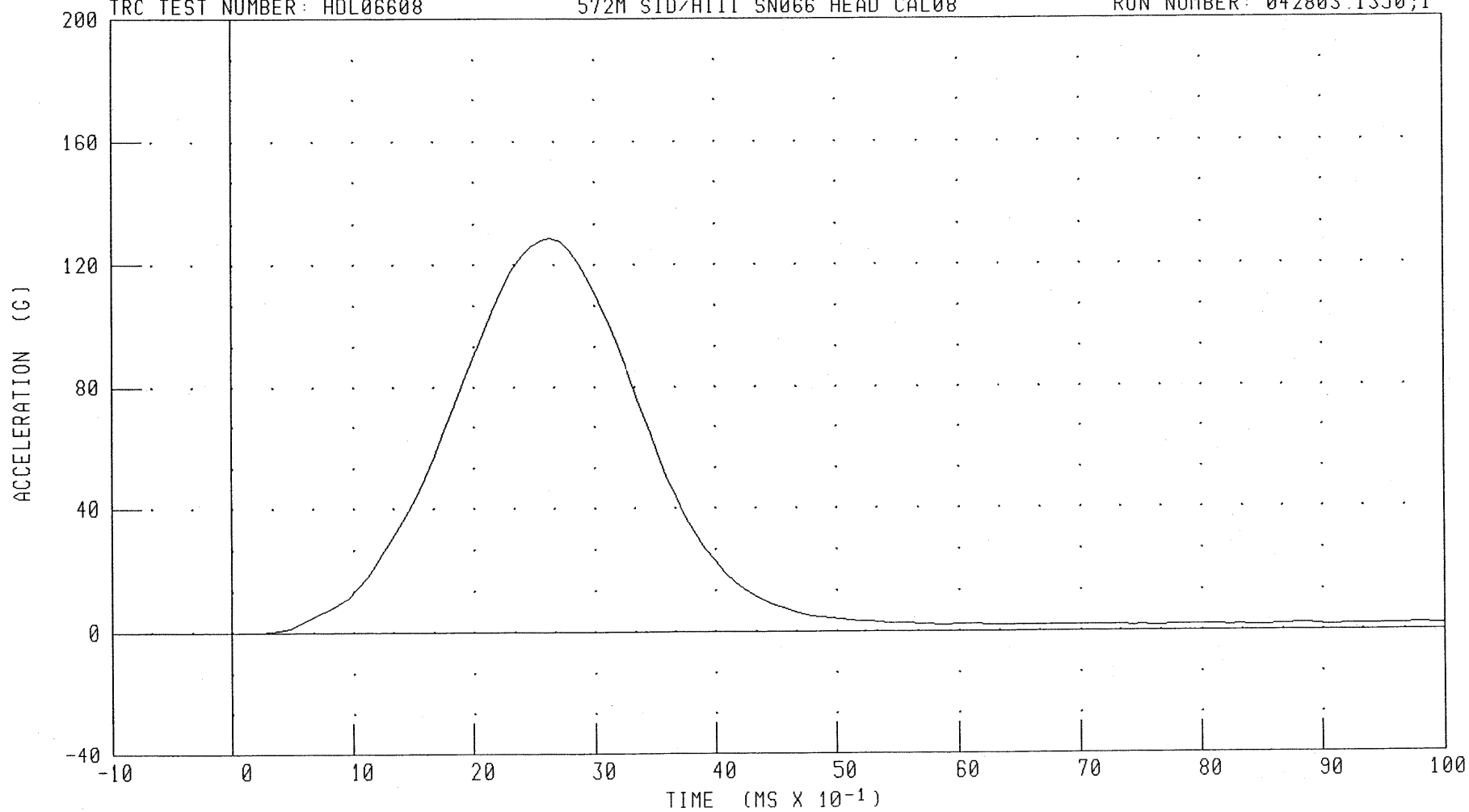
572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD RESULTANT ACCELERATION

TRC TEST NUMBER: HDL06608

572M SID/HIII SN066 HEAD CAL08

RUN NUMBER: 042803.1350;1



CHANNEL: HEDRG

FILTER: CH. CLASS 1000

PEAK DATA: 128.48 G @ 2.64 MS; 0.02 G @ -0.32 MS

C-9

030505-1

TRANSPORTATION RESEARCH CENTER INC.

LATERAL NECK TEST

SID/HIII DUMMY

29-APR-03

LEFT SIDE CONFIGURATION

TRC INC.

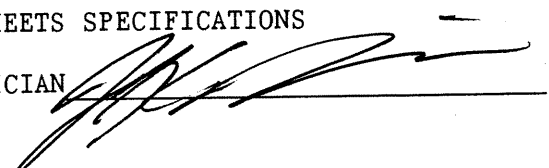
TEST NO. NFL06608

572M H3/SID SN066 NECK CAL08

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6 - 22.2 deg. C	21.67 deg. C
RELATIVE HUMIDITY		10 - 70 %	34.00 %
IMPACT VELOCITY		6.89 - 7.13 M/S	7.06 M/S
INTEGRATED VELOCITY	10 MS	1.96 - 2.55 M/S	2.45 M/S
	20 MS	4.12 - 5.10 M/S	4.87 M/S
	30 MS	5.73 - 7.01 M/S	6.80 M/S
	40 - 70 MS	6.27 - 7.64 M/S	7.04- 7.13 M/S
MAXIMUM MIDSAGGITAL PLANE ROTATION		66- 82 deg.	71.78 deg.
ROTATION ANGLE DECAY TIME FROM PEAK TO ZERO		58 - 67 MS	61.52 MS
MAXIMUM MOMENT ABOUT OCCIPITAL CONDYLE		73 - 88 NM	78.43 NM
POSITIVE MOMENT DECAY TIME FROM PEAK TO ZERO		49 - 64 MS	57.52 MS
TIME OF MAXIMUM ROTATION AFTER MAXIMUM MOMENT		2 - 16 MS	9.20 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 042903.1118;1

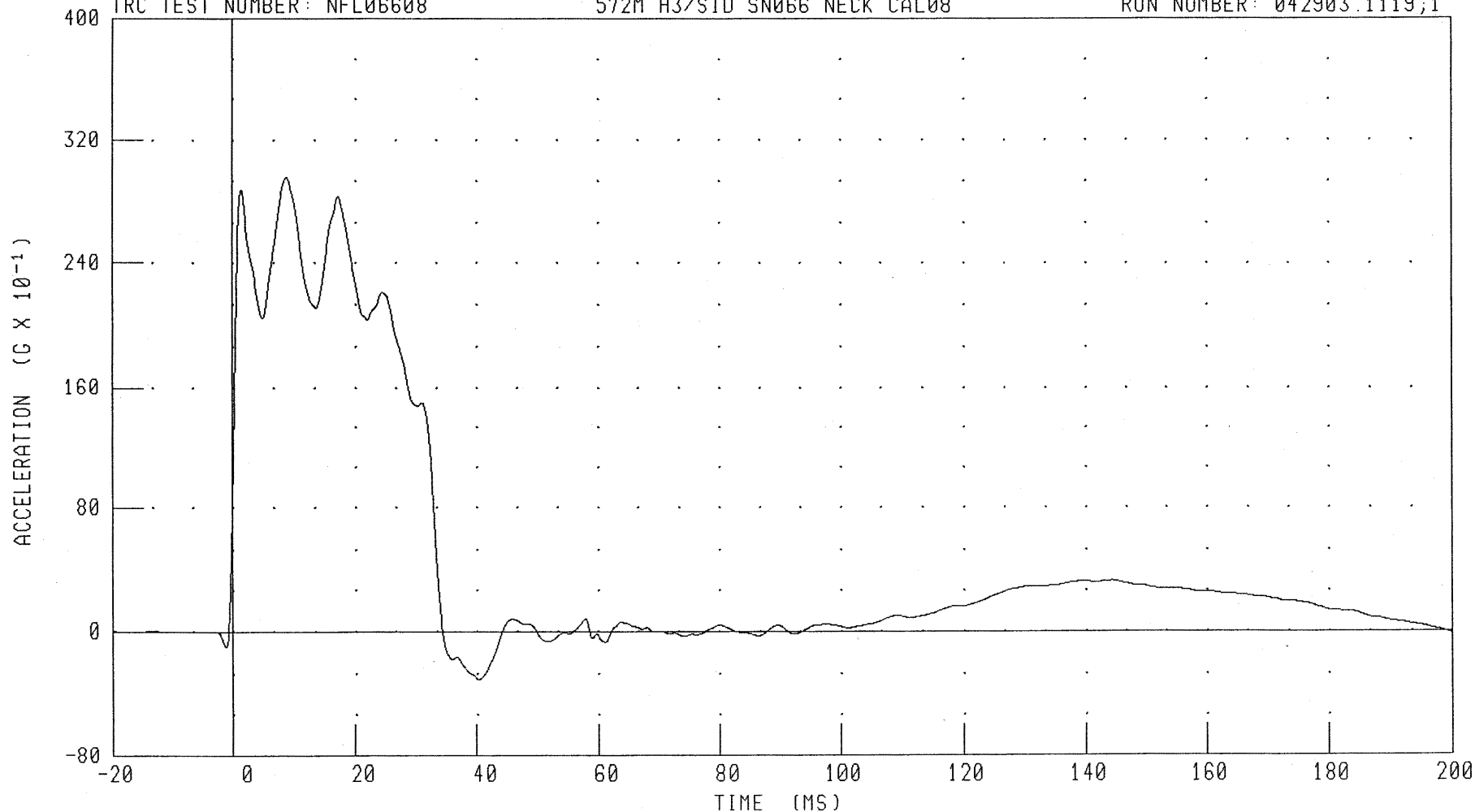
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

PENDULUM DECELERATION

TRC TEST NUMBER: NFL06608

572M H3/SID SN066 NECK CAL08

RUN NUMBER: 042903.1119;1



CHANNEL: PENXC

FILTER: CH. CLASS 180

PEAK DATA: 29.60 G @ 8.80 MS; -3.08 G @ 40.40 MS

030505-1

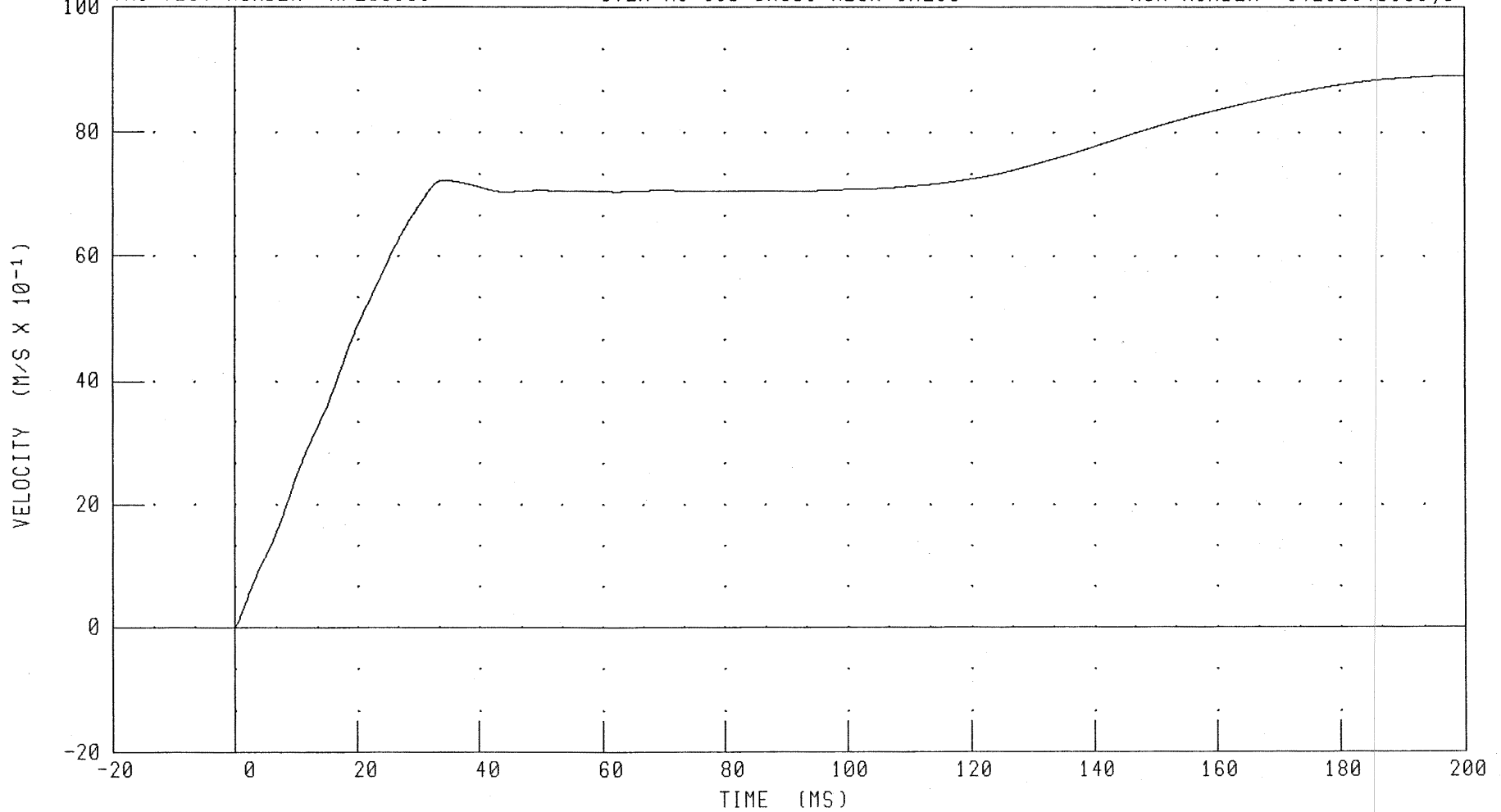
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

INTEGRATED PENDULUM VELOCITY

TRC TEST NUMBER: NFL06608

572M H3/SID SN066 NECK CAL08

RUN NUMBER: 042903.1119;1



CHANNEL: PENXVI FILTER: CH. CLASS 180

PEAK DATA: 8.90 M/S @ 198.72 MS; -0.01 M/S @ -0.72 MS

030505-1

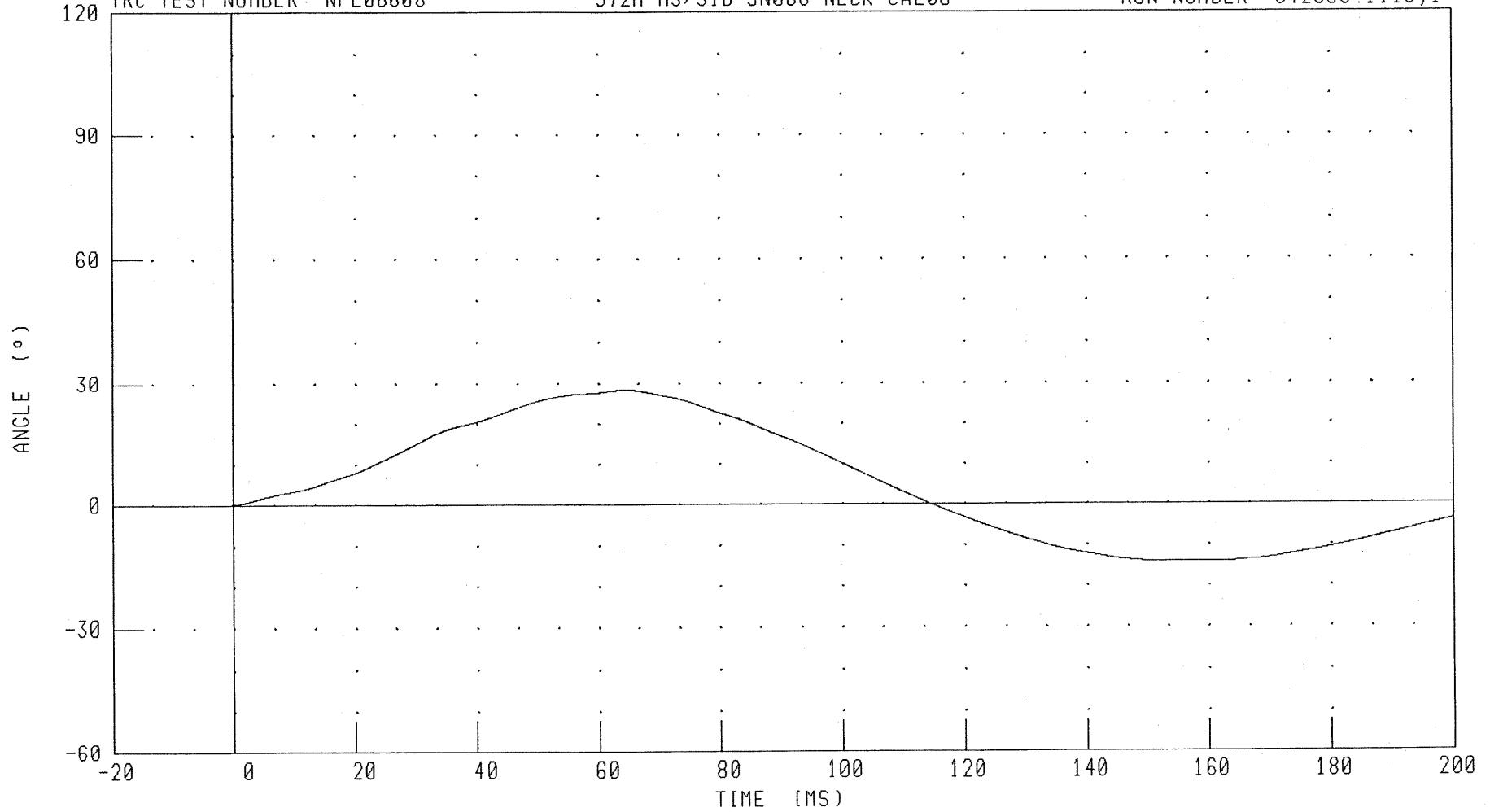
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER: NFL06608

572M H3/SID SN066 NECK CAL08

RUN NUMBER: 042903.1119;1



CHANNEL: BETA

FILTER: CH. CLASS 60

PEAK DATA: 28.38 ° @ 64.64 MS; -14.15 ° @ 155.92 MS

030505-1

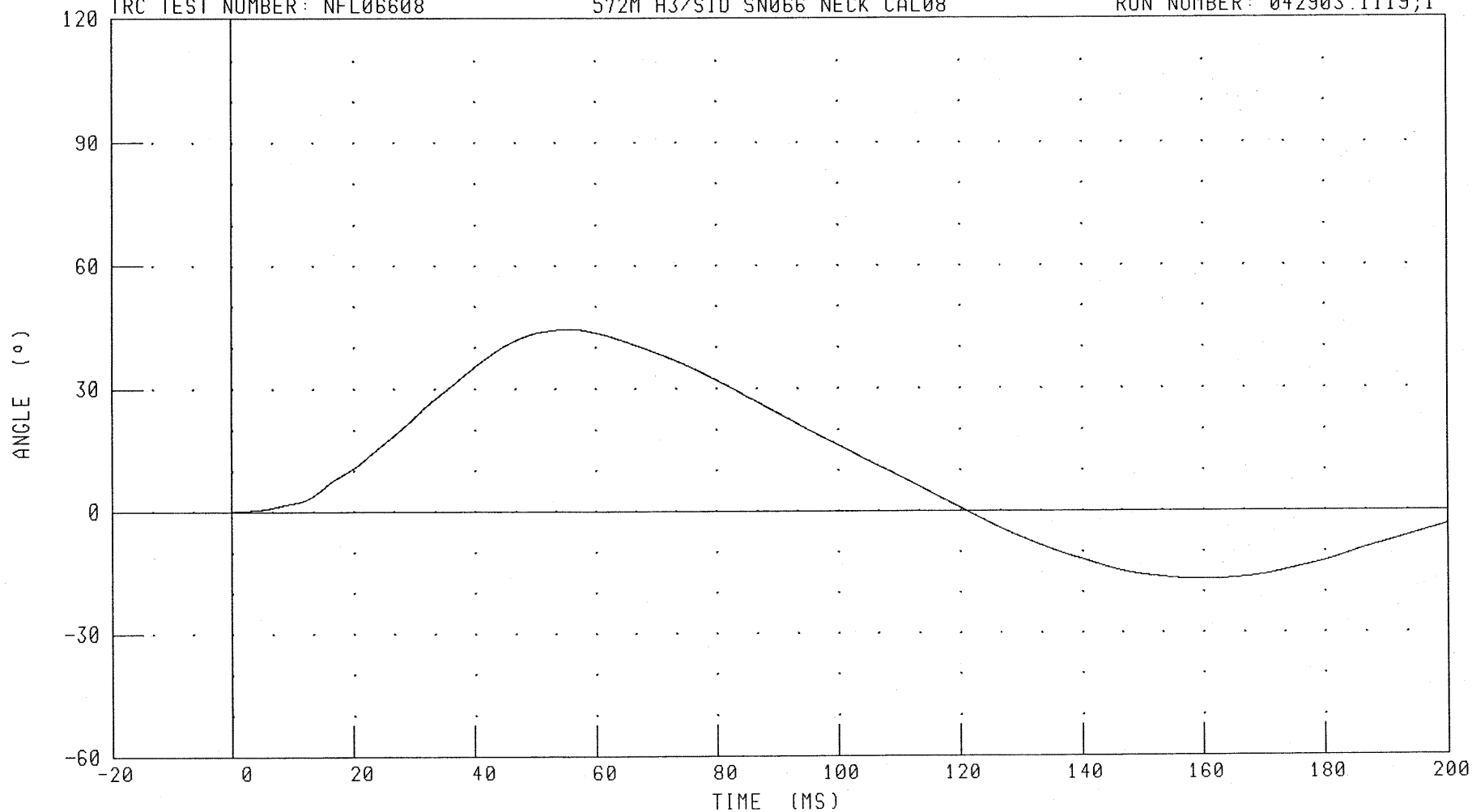
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: NFL06608

572M H3/SID SN066 NECK CAL08

RUN NUMBER: 042903.1119;1



CHANNEL: THETA

FILTER: CH. CLASS 60

PEAK DATA: 44.47 ° @ 55.84 MS; -16.93 ° @ 159.92 MS

030505-1

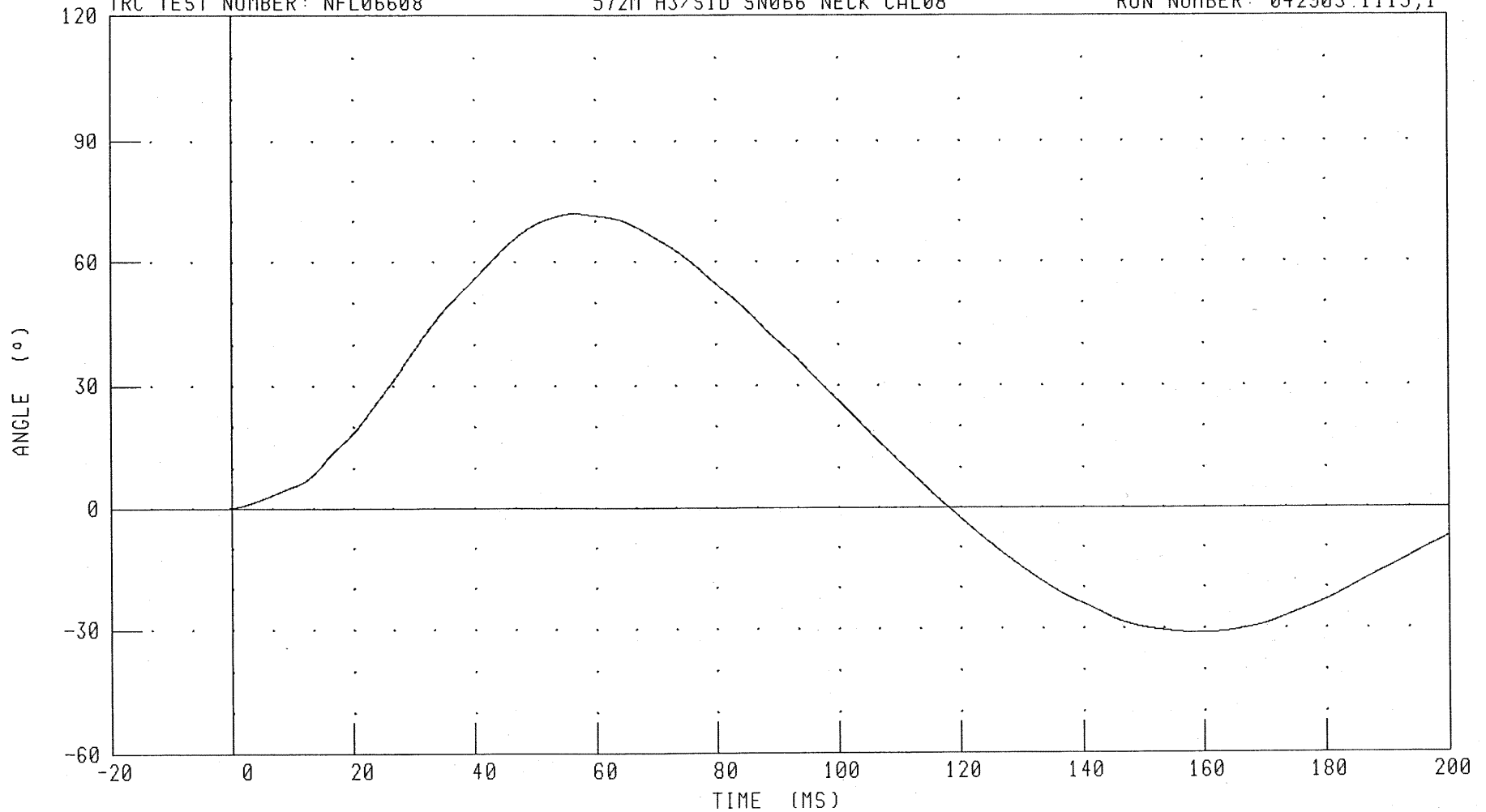
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

TOTAL ROTATION

TRC TEST NUMBER: NFL06608

572M H3/SID SN066 NECK CAL08

RUN NUMBER: 042903.1119;1



CHANNEL: TOTAN

FILTER: CH. CLASS 60

PEAK DATA: 71.78 ° @ 56.64 MS; -31.07 ° @ 159.68 MS

030505-1

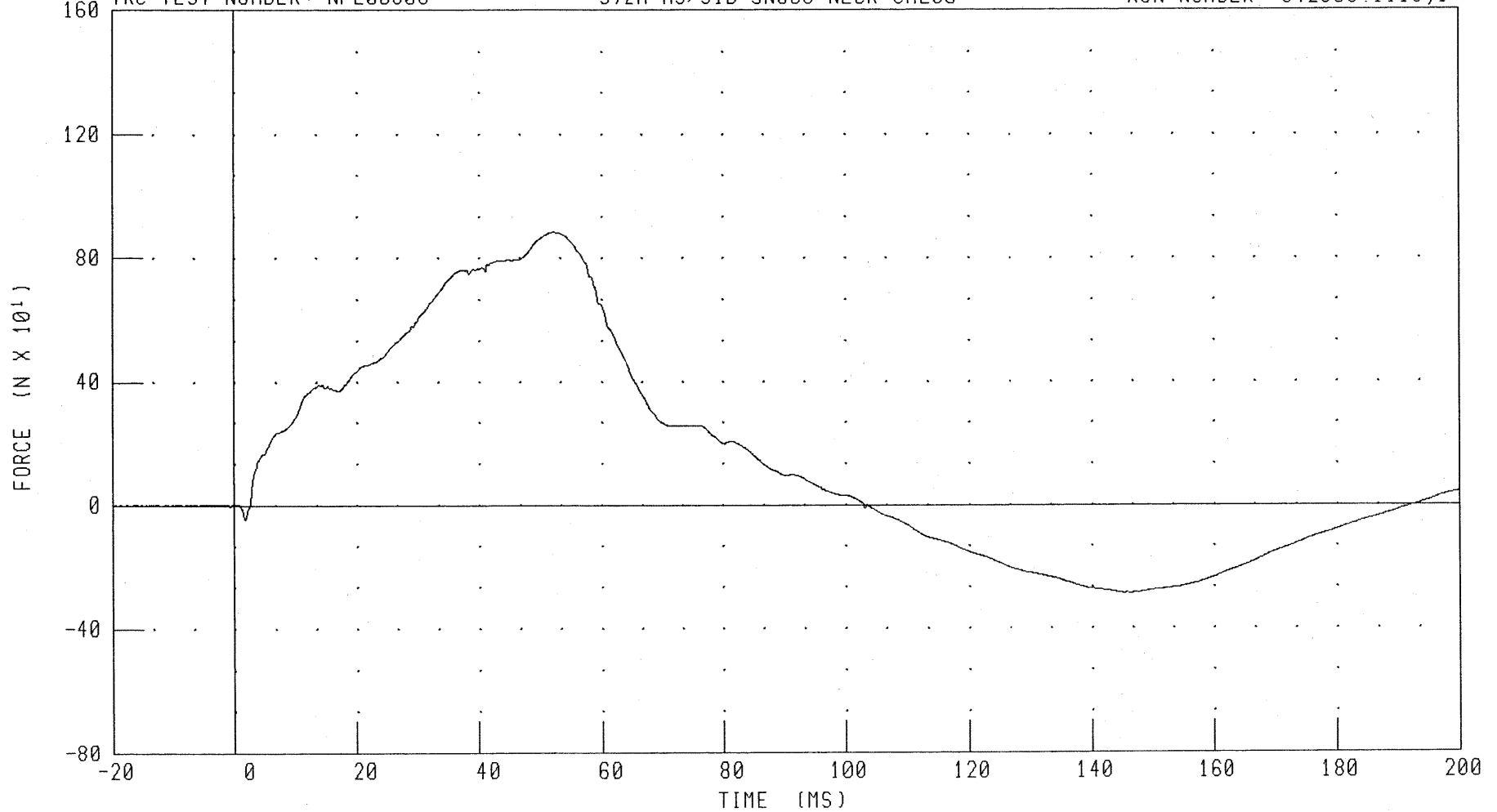
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

NECK FORCE Y AXIS

TRC TEST NUMBER: NFL06608

572M H3/SID SN066 NECK CAL08

RUN NUMBER: 042903.1119;1



CHANNEL: NEKYF

FILTER: CH. CLASS 1000

PEAK DATA: 882.36 N @ 52.24 MS; -288.64 N @ 146.16 MS

030505-1

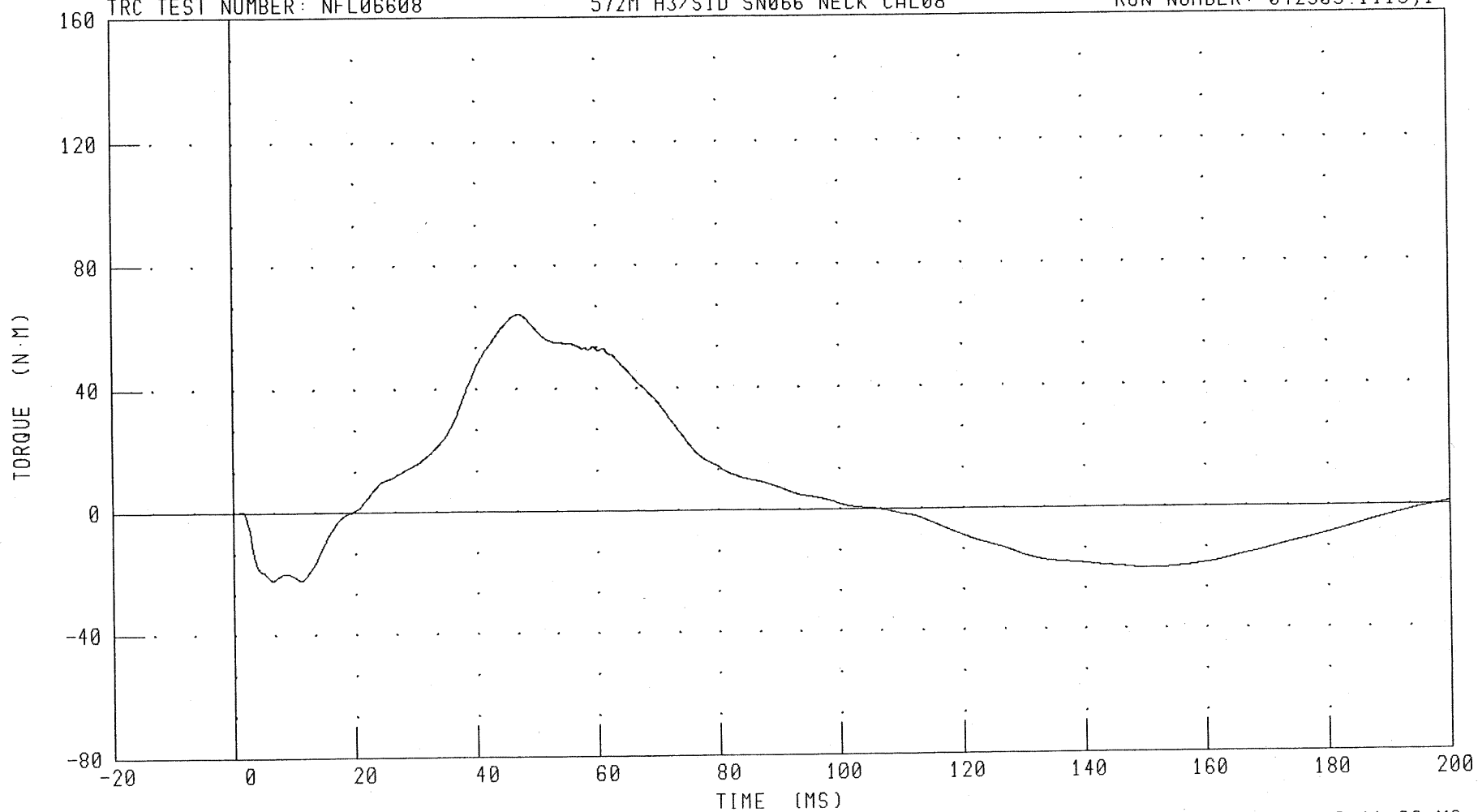
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

NECK MOMENT X AXIS

TRC TEST NUMBER: NFL06608

572M H3/SID SN066 NECK CAL08

RUN NUMBER: 042903.1119;1



CHANNEL: NEKXM

FILTER: CH. CLASS 600

PEAK DATA: 64.15 N·M @ 47.28 MS; -22.17 N·M @ 11.20 MS

030505-1

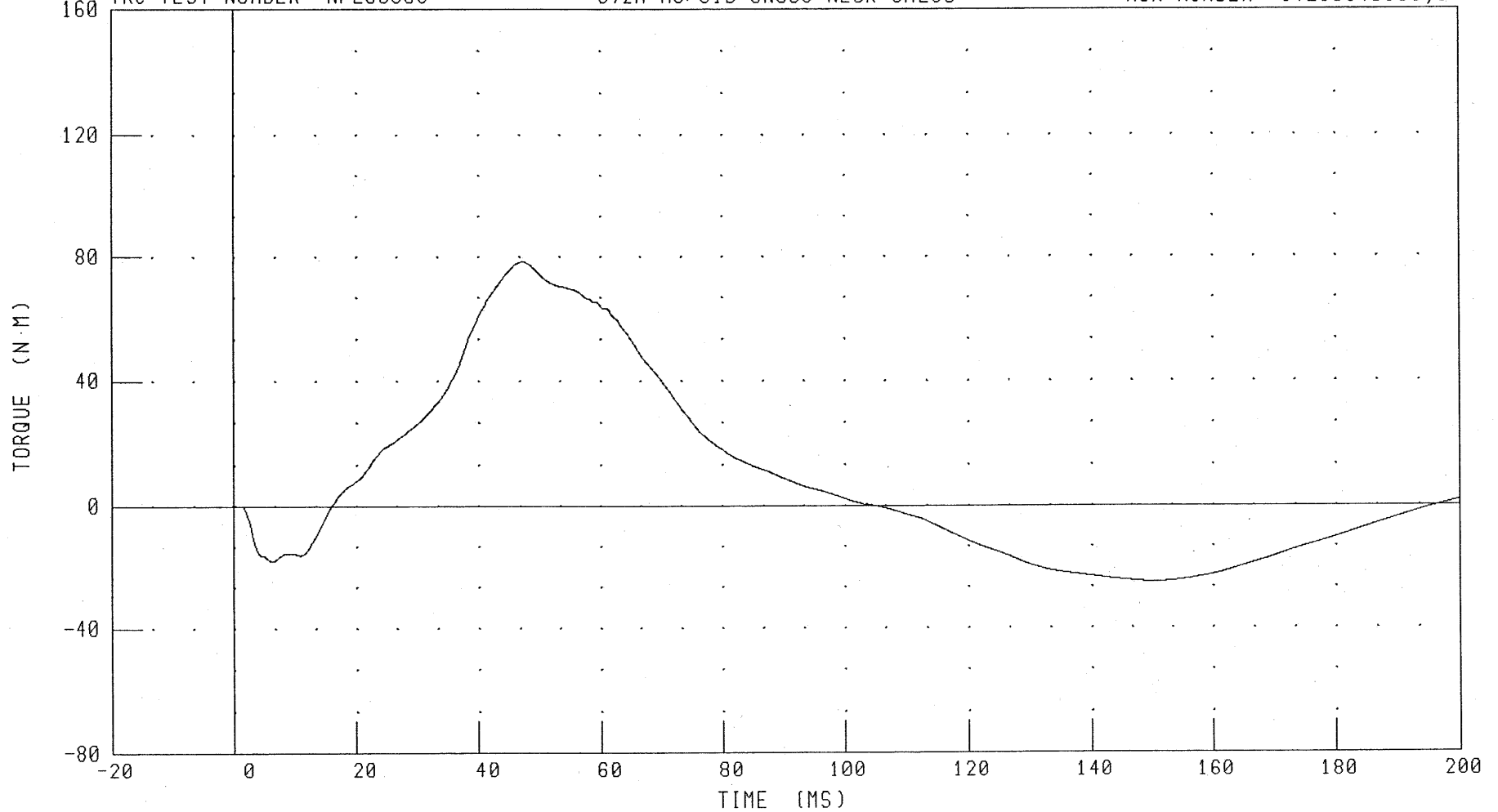
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: NFL06608

572M H3/SID SN066 NECK CAL08

RUN NUMBER: 042903.1119;1



CHANNEL: NEKOM

FILTER: CH. CLASS 600

PEAK DATA: 78.43 N·M @ 47.44 MS; -25.11 N·M @ 150.00 MS

030505-1

TRANSPORTATION RESEARCH CENTER INC.

LATERAL THORAX IMPACT TEST

SIDE IMPACT DUMMY

28-APR-03

LEFT SIDE CONFIGURATION

TRC INC.

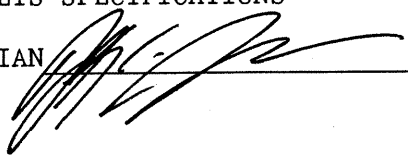
TEST NO: STL06608A

572F SID SN066 L.THORAX CAL08

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	26.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.23 M/S
PEAK ACCELERATION: UPPER RIB BAR	37 - 46 G	41.0 G
PEAK ACCELERATION: LOWER RIB BAR	37 - 46 G	40.2 G
PEAK ACCELERATION: LOWER THORACIC SPINE	15 - 22 G	19.2 G

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 042803.0921;1

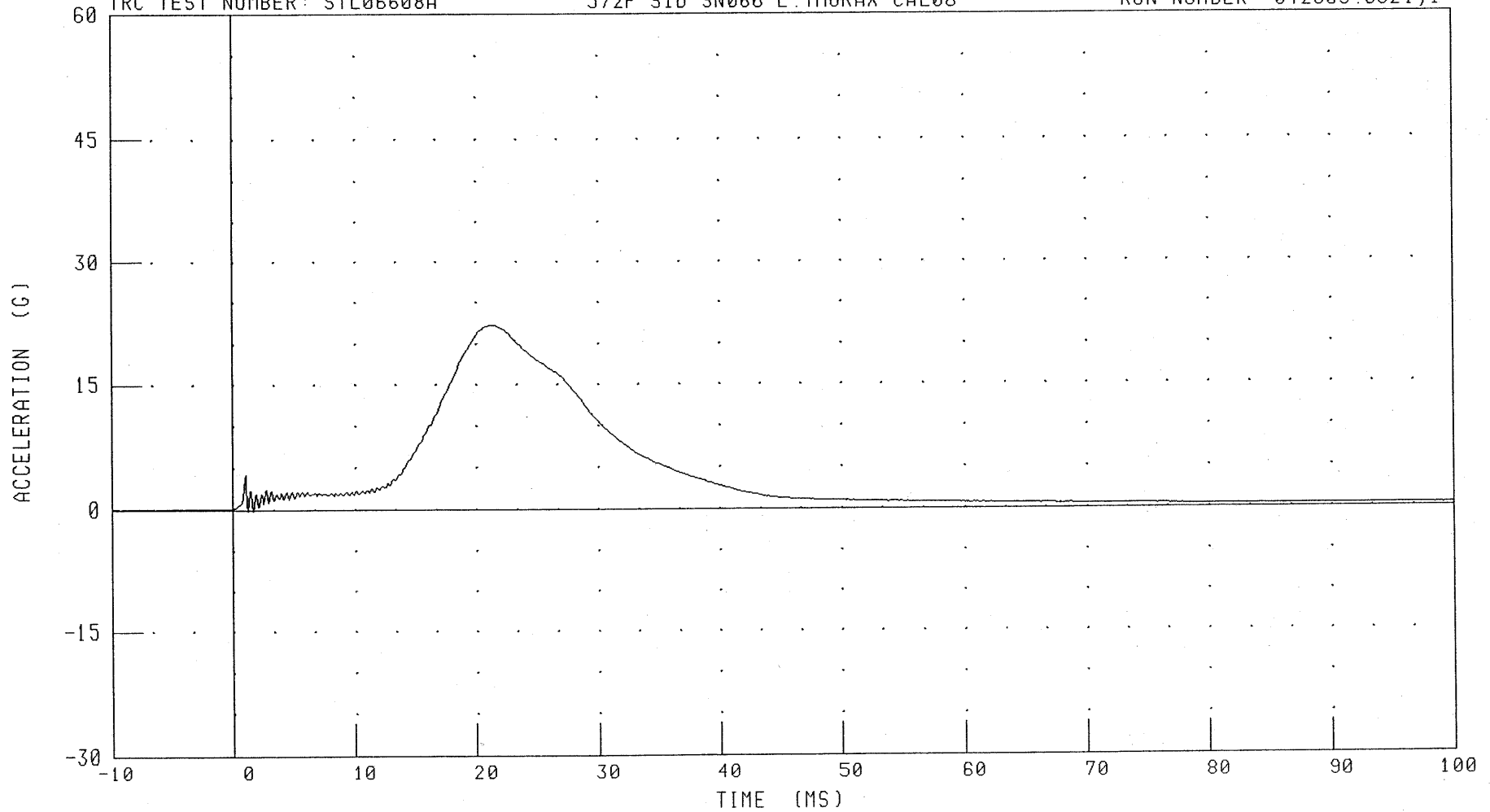
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

PENDULUM DECELERATION

TRC TEST NUMBER: STL06608A

572F SID SN066 L THORAX CAL08

RUN NUMBER: 042803.0921;1



CHANNEL: PENXG

FILTER: CH. CLASS 1000

PEAK DATA: 22.22 G @ 21.20 MS; -0.22 G @ 1.68 MS

030505-1

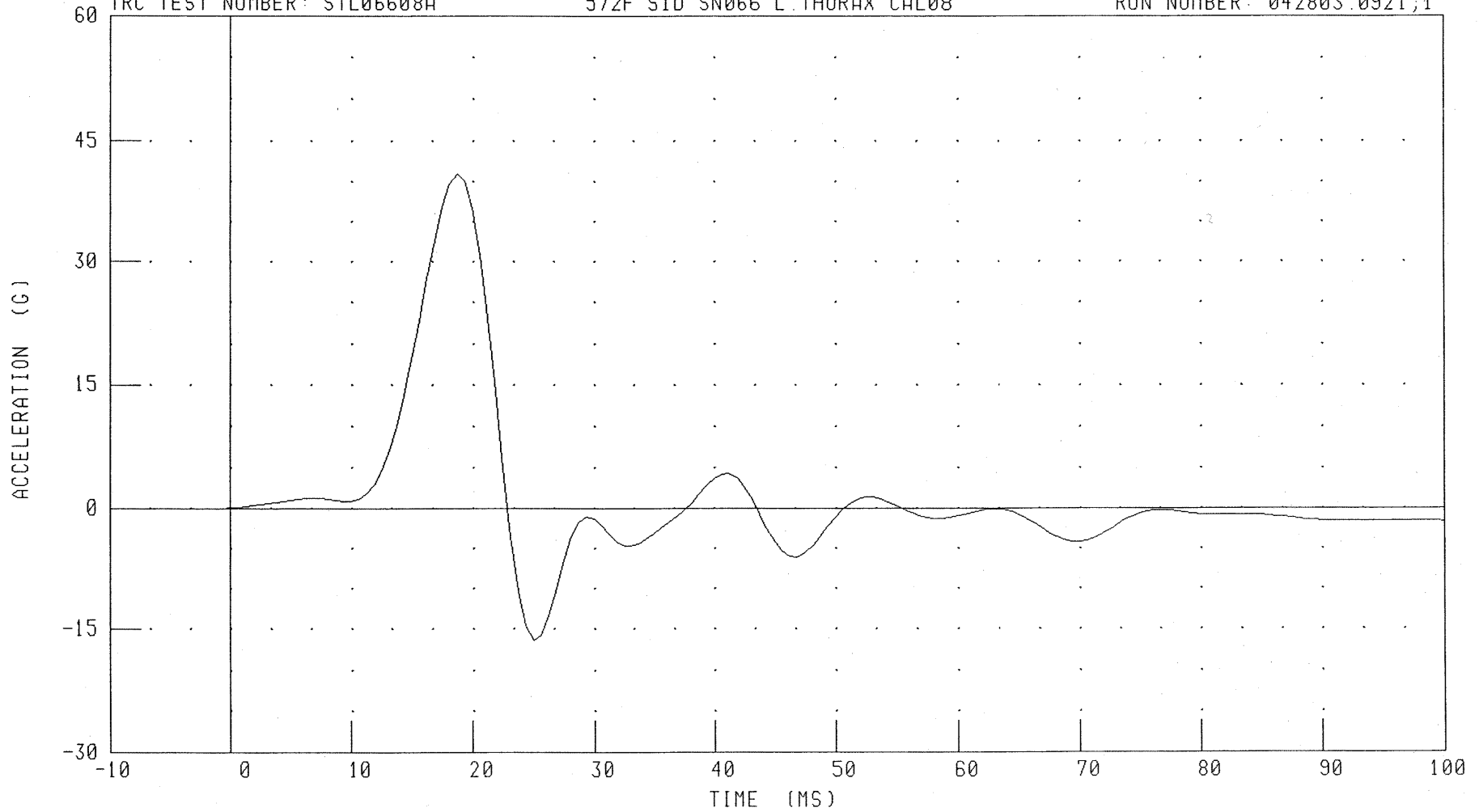
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LEFT UPPER RIB ACCELERATION Y AXIS

TRC TEST NUMBER: STL06608A

572F SID SN066 L THORAX CAL08

RUN NUMBER: 042803.0921;1



CHANNEL: LURYG

FILTER: FIR 100

PEAK DATA: 40.99 G @ 18.75 MS; -16.42 G @ 25.00 MS

030505-1

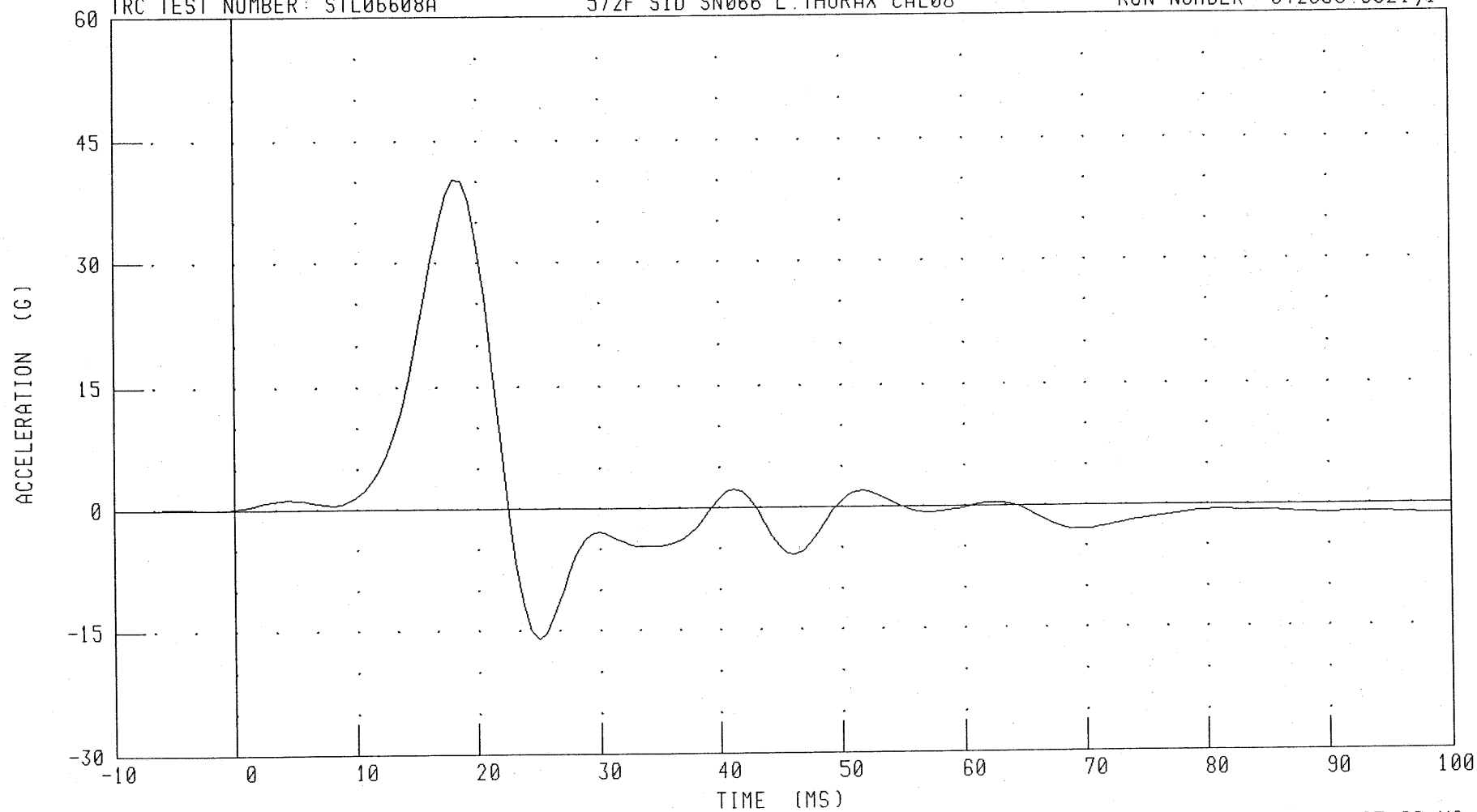
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LEFT LOWER RIB ACCELERATION Y AXIS

TRC TEST NUMBER: STL06608A

572F SID SN066 L THORAX CAL08

RUN NUMBER: 042803.0921;1



CHANNEL: LLRYG

FILTER: FIR 100

PEAK DATA: 40.25 G @ 18.13 MS; -16.05 G @ 25.00 MS

030505-1

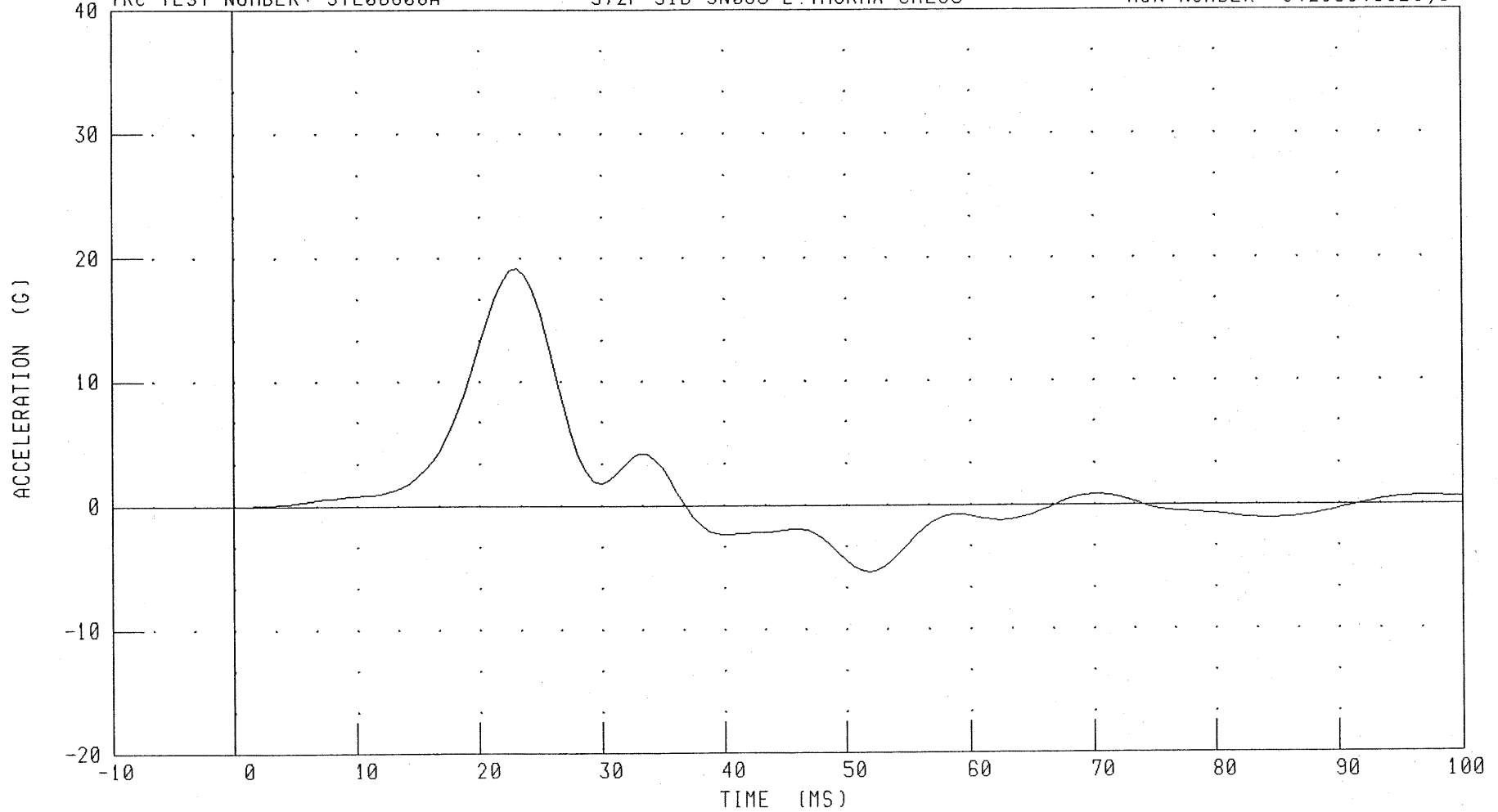
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LOWER SPINE ACCELERATION Y AXIS

TRC TEST NUMBER: STL06608A

572F SID SN066 L THORAX CAL08

RUN NUMBER: 042803.0921;1



CHANNEL: T12YC

FILTER: FIR 100

PEAK DATA: 19.18 G @ 23.13 MS; -5.45 G @ 51.88 MS

030505-1

TRANSPORTATION RESEARCH CENTER INC.

THORACIC SHOCK ABSORBER TESTS

SIDE IMPACT DUMMY

29-APR-03

TRC INC.

572F SN066 DAMPER TEST CAL08

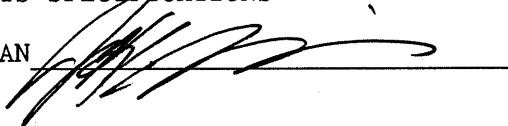
TEST NUMBERS: DP06608A,DP06608B,DP06608C

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		18.9 - 25.5 C	21.7 DEG. C
RELATIVE HUMIDITY		10 - 70 %	34.0 %
VELOCITY	FORCE	683 - 944 N	847 N
2.76 M/S	DISPLACEMENT	29.8 - 34.6 MM	30.4 MM
VELOCITY	FORCE	1733 - 2100 N	1989 N
4.26 M/S	DISPLACEMENT	31.6 - 37.2 MM	34.1 MM
VELOCITY	FORCE	3743 - 4448 N	4118 N
6.10 M/S	DISPLACEMENT	33.3 - 39.5 MM	39.0 MM

DAMPER SETTING = 5.0

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 042903.1056;1

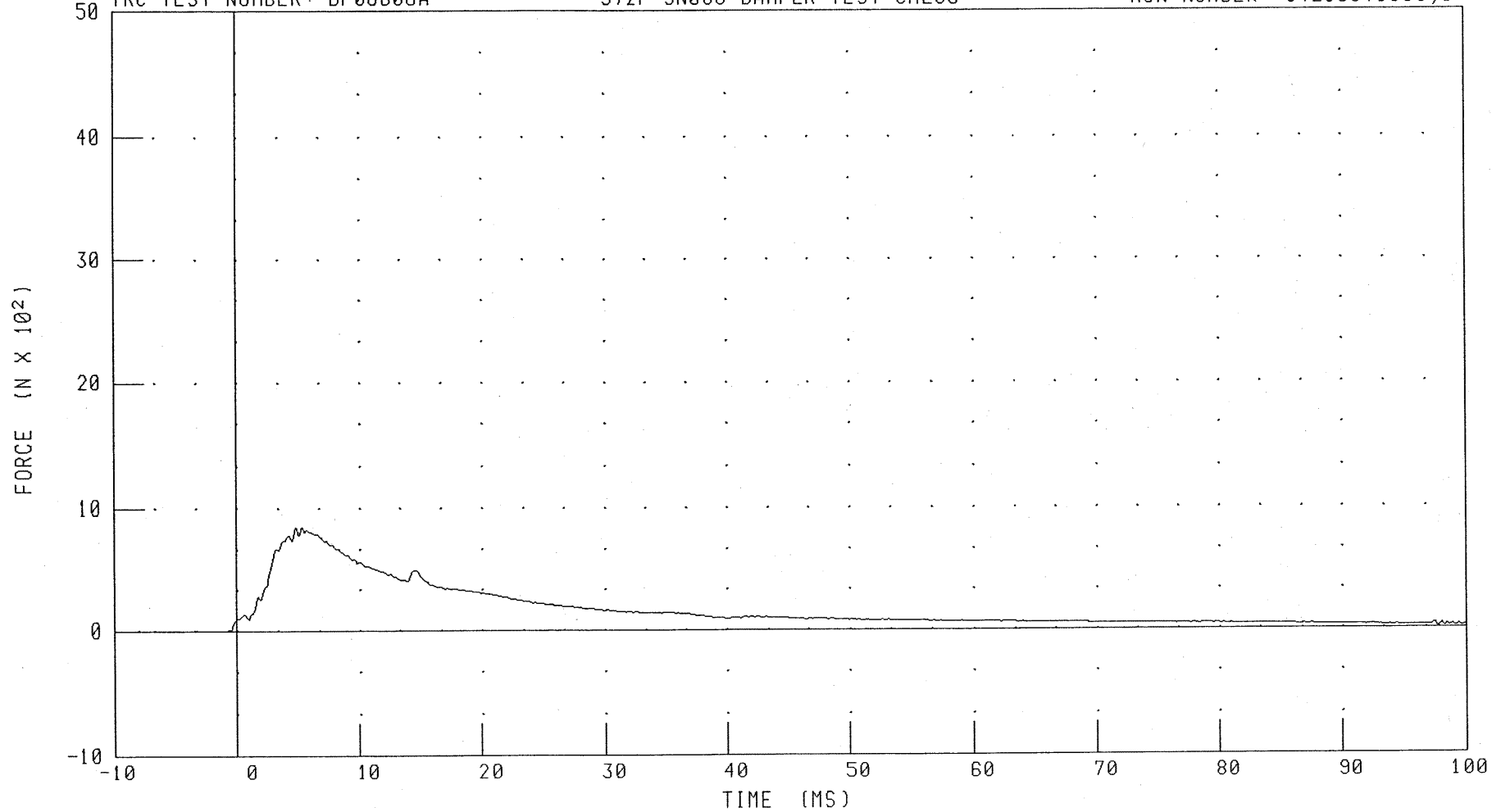
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (3.0 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

TRC TEST NUMBER: DP06608A

572F SN066 DAMPER TEST CAL08

RUN NUMBER: 042903.1056;1



CHANNEL: DAMPF

FILTER: CH. CLASS 1000

PEAK DATA: 847.34 N @ 4.80 MS; -2.01 N @ -3.76 MS

030505-1

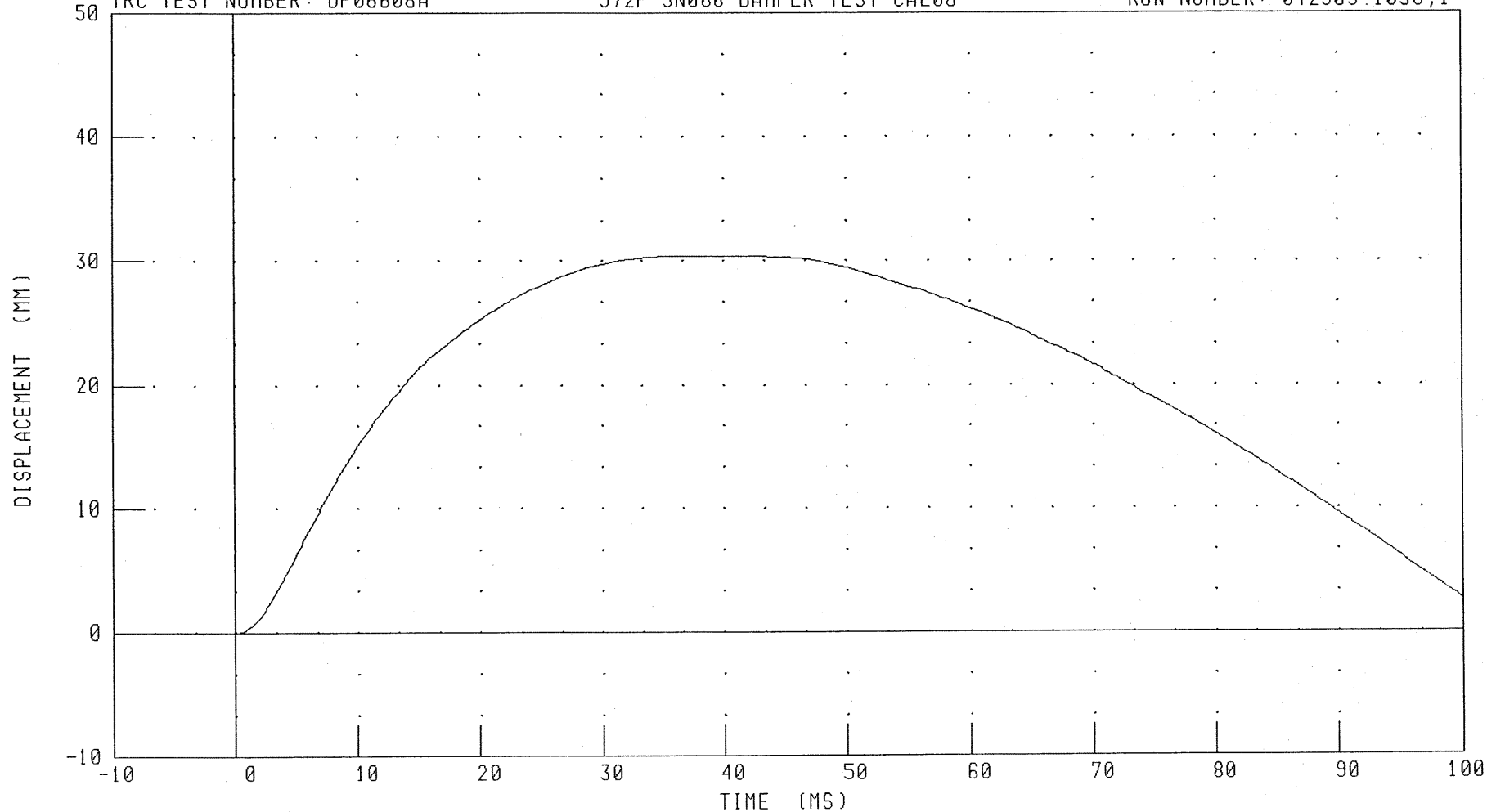
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (3.0 M/SEC)

SHOCK ABSORBER DISPLACEMENT

TRC TEST NUMBER: DP06608A

572F SN066 DAMPER TEST CAL08

RUN NUMBER: 042903.1056;1



CHANNEL: CSTYD

FILTER: CH. CLASS 1000

PEAK DATA: 30.39 MM @ 36.72 MS; 0.00 MM @ -9.68 MS

030505-1

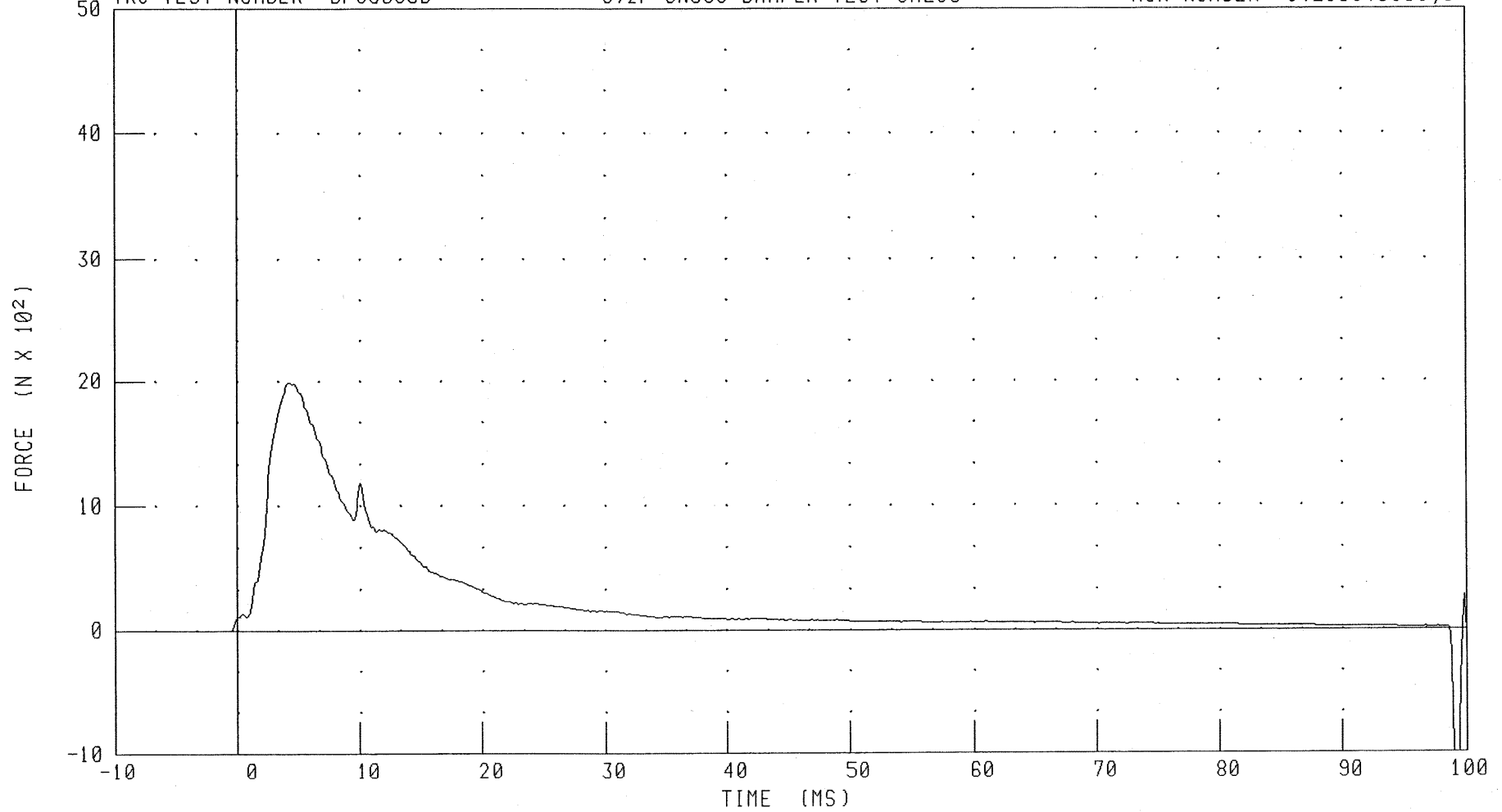
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (4.3 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

TRC TEST NUMBER: DP06608B

572F SN066 DAMPER TEST CAL08

RUN NUMBER: 042903.1056;1



CHANNEL: DAMPF

FILTER: CH. CLASS 1000

PEAK DATA: 1988.96 N @ 4.32 MS; -2160.34 N @ 99.12 MS

030505-1

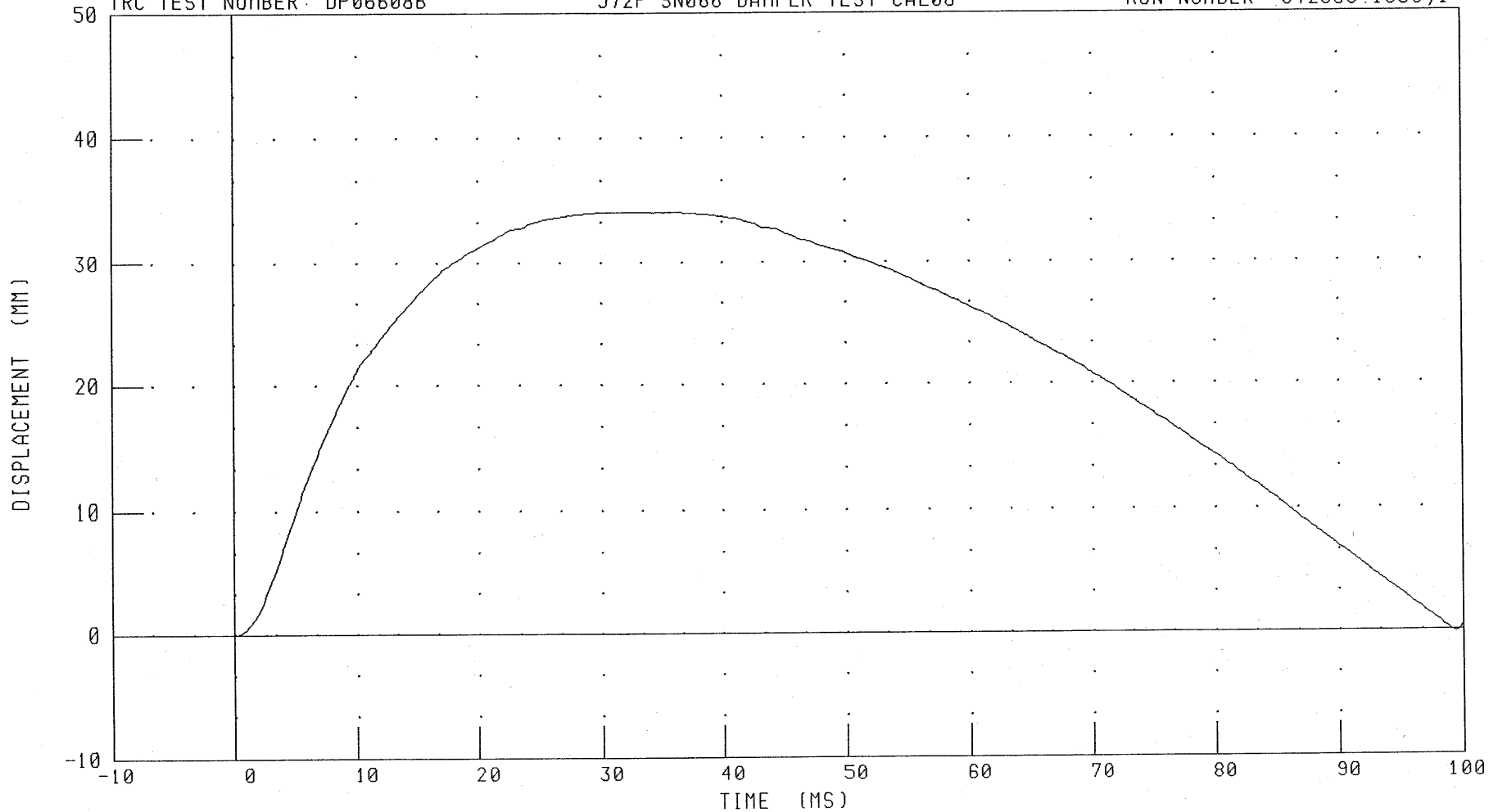
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (4.3 M/SEC)

SHOCK ABSORBER DISPLACEMENT

572F SN066 DAMPER TEST CAL08

RUN NUMBER: 042903.1056;1

TRC TEST NUMBER: DP06608B



CHANNEL: CSTYD

FILTER: CH. CLASS 1000

PEAK DATA: 34.09 MM @ 30.08 MS; -0.15 MM @ 99.36 MS

C-28

030505-1

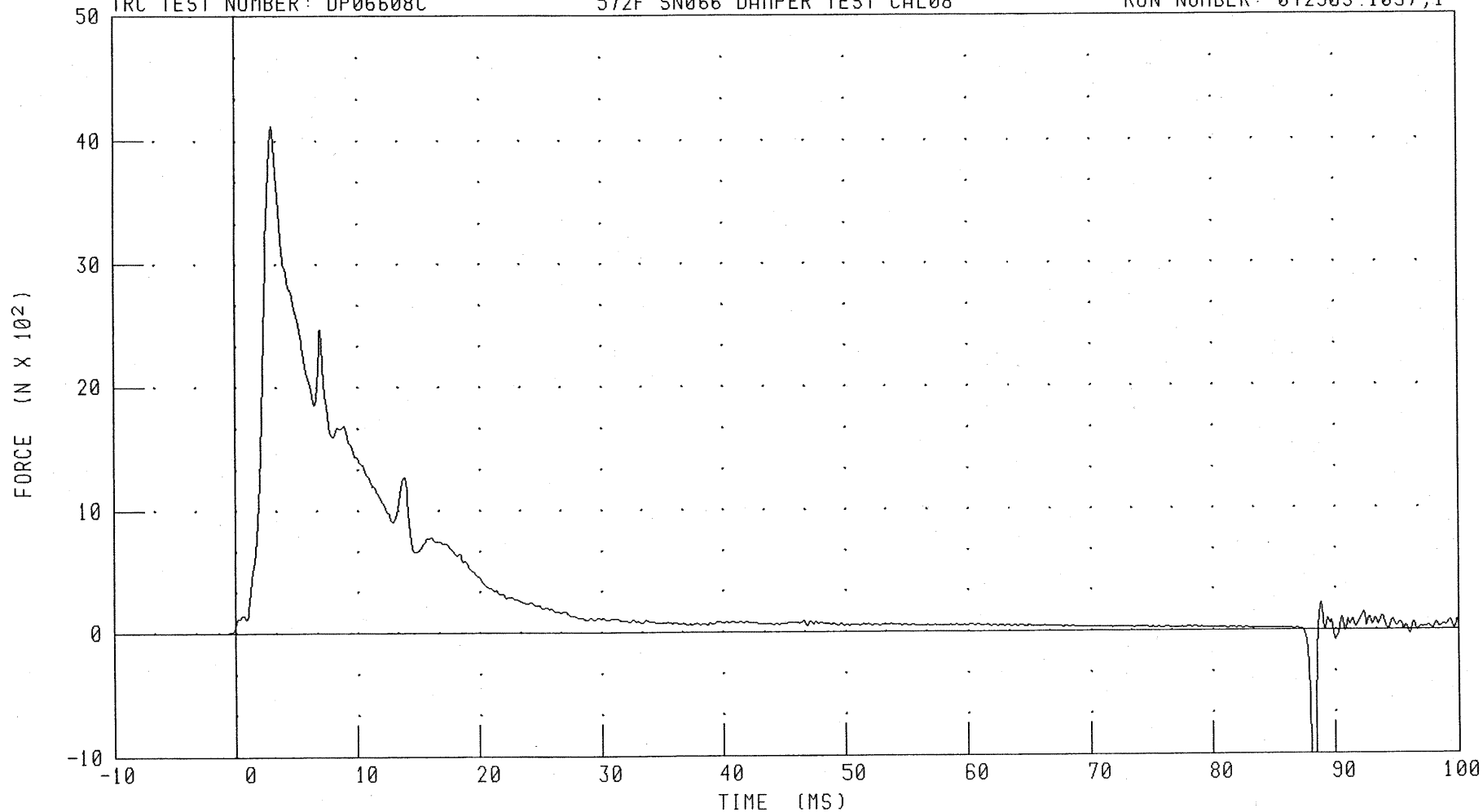
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (6.1 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

TRC TEST NUMBER: DP06608C

572F SN066 DAMPER TEST CAL08

RUN NUMBER: 042903.1057;1



CHANNEL: DAMPF

FILTER: CH. CLASS 1000

PEAK DATA: 4117.77 N @ 3.04 MS; -2267.79 N @ 88.24 MS

030505-1

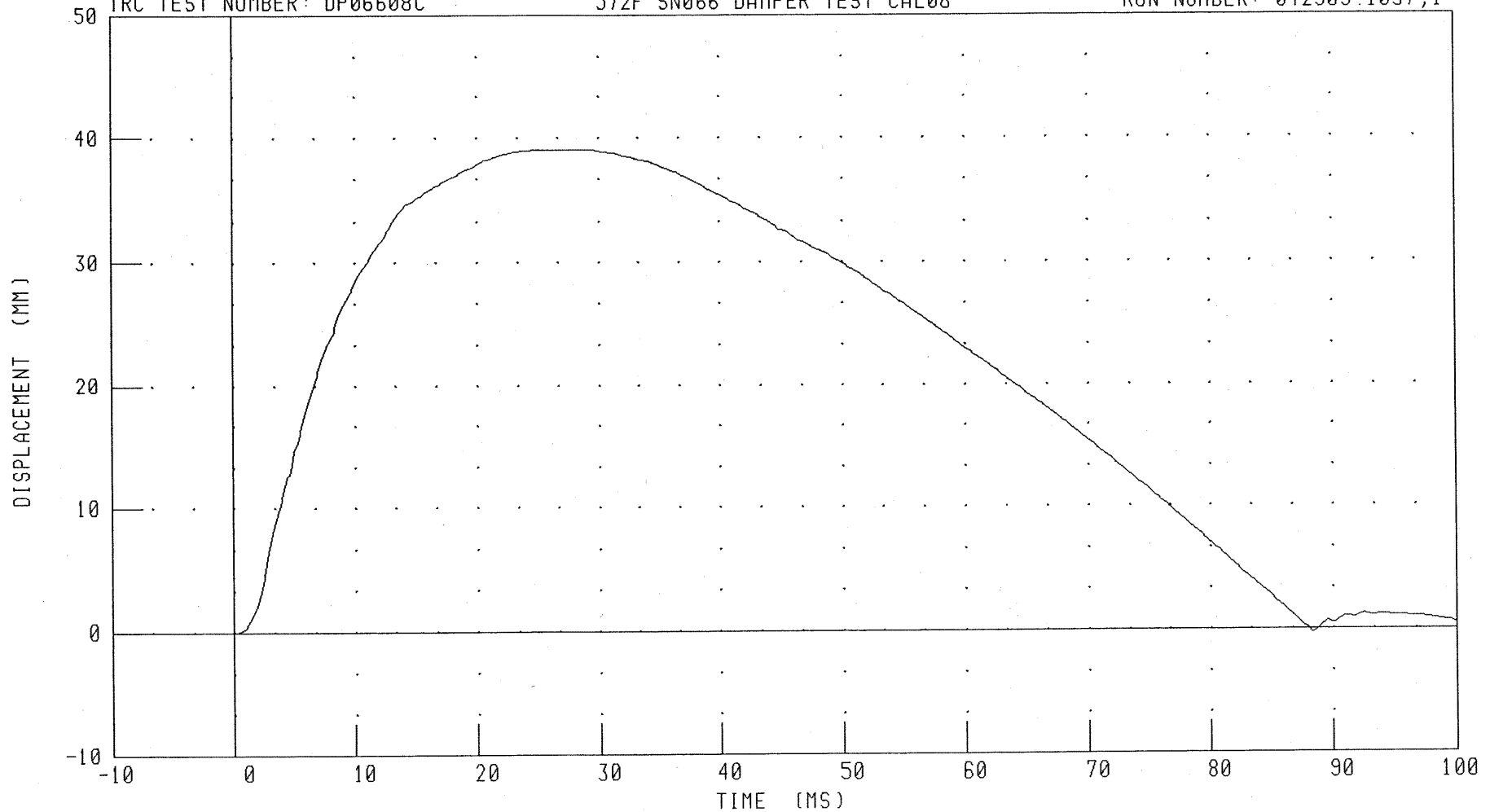
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (6.1 M/SEC)

SHOCK ABSORBER DISPLACEMENT

TRC TEST NUMBER: DP06608C

572F SN066 DAMPER TEST CAL08

RUN NUMBER: 042903.1057;1



CHANNEL: CSTYD

FILTER: CH. CLASS 1000

PEAK DATA: 39.02 MM @ 28.32 MS; -0.27 MM @ 88.40 MS

030505-1

Transportation Research Center Inc.

572B Abdomen Compression Test

HIII SID Serial No. 066 Calibration No. 08 - 1

Test Date 04/29/2003

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Displacement Rate	6.35 - 8.89 mm/s	7.2 - 8.0 mm/s	Yes
Data Within Required Corridor	Yes	Yes	Yes

Comments:

Technician



Approved



04.29.2003 11:27:03 2

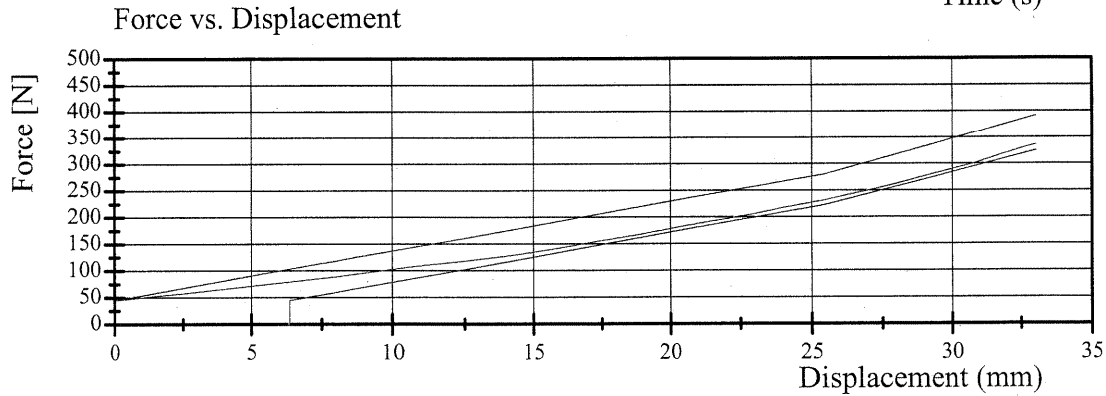
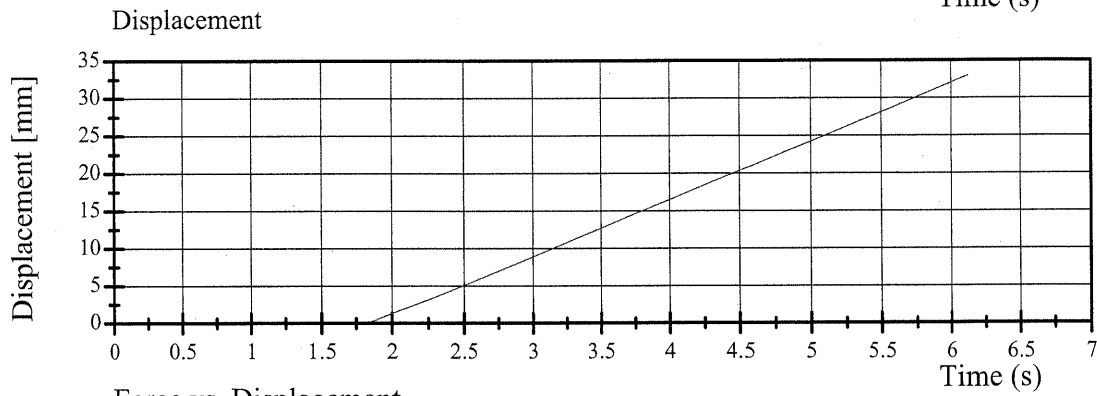
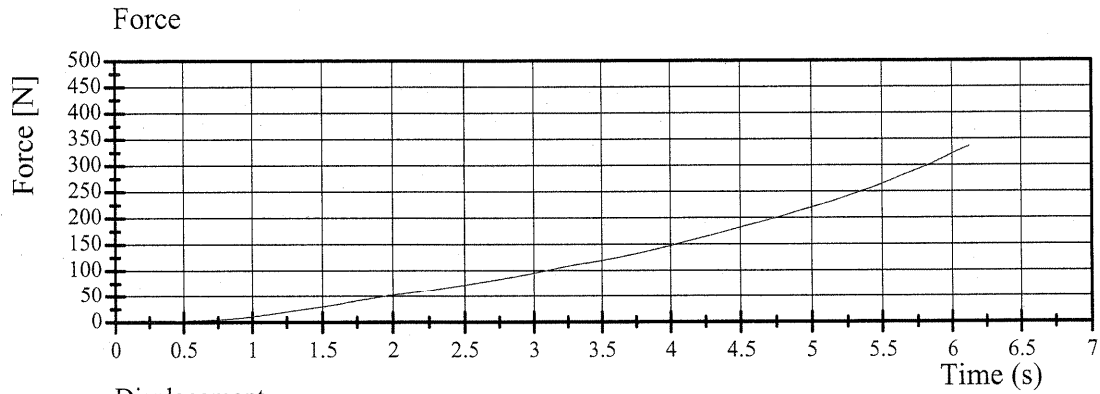


Transportation Research Center Inc.

572B Abdomen Compression Test

HIII SID Serial No. 066 Calibration No. 08 - 1

Test Date 04/29/2003



04.29.2003 11:27:03 2



TRANSPORTATION RESEARCH CENTER INC.

LUMBAR FLEXION TEST

SID PART 572B

CAL DATE: 29-Apr-03

TRC, INC.

TEST NO: 066C08TF1

572B SN 066 TORSO FLEX CAL 08

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6° C	21.7 °C
RELATIVE HUMIDITY	10 – 70 %	37 %
FORCE AT 0 DEG. FLEXION	-27 – 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 – 151 N	106.8 N
FORCE AT 30 DEG OF FLEXION	151 – 205 N	160.1 N
FORCE AT 40 DEG OF FLEXION	205 – 258 N	222.4 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-APR-03

LEFT SIDE CONFIGURATION

TRC INC.

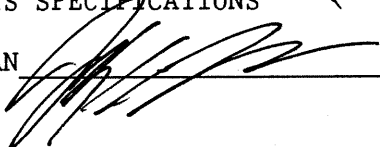
TEST NO: SPL06608

572F SN066 LEFT PELVIS CAL08

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	26.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.28 M/S
PEAK PELVIC ACCELERATION	40 - 60 G	53.7 G
TIME ABOVE 20 G LEVEL	3 - 7 MS	6.0 MS
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 042803.0927;1

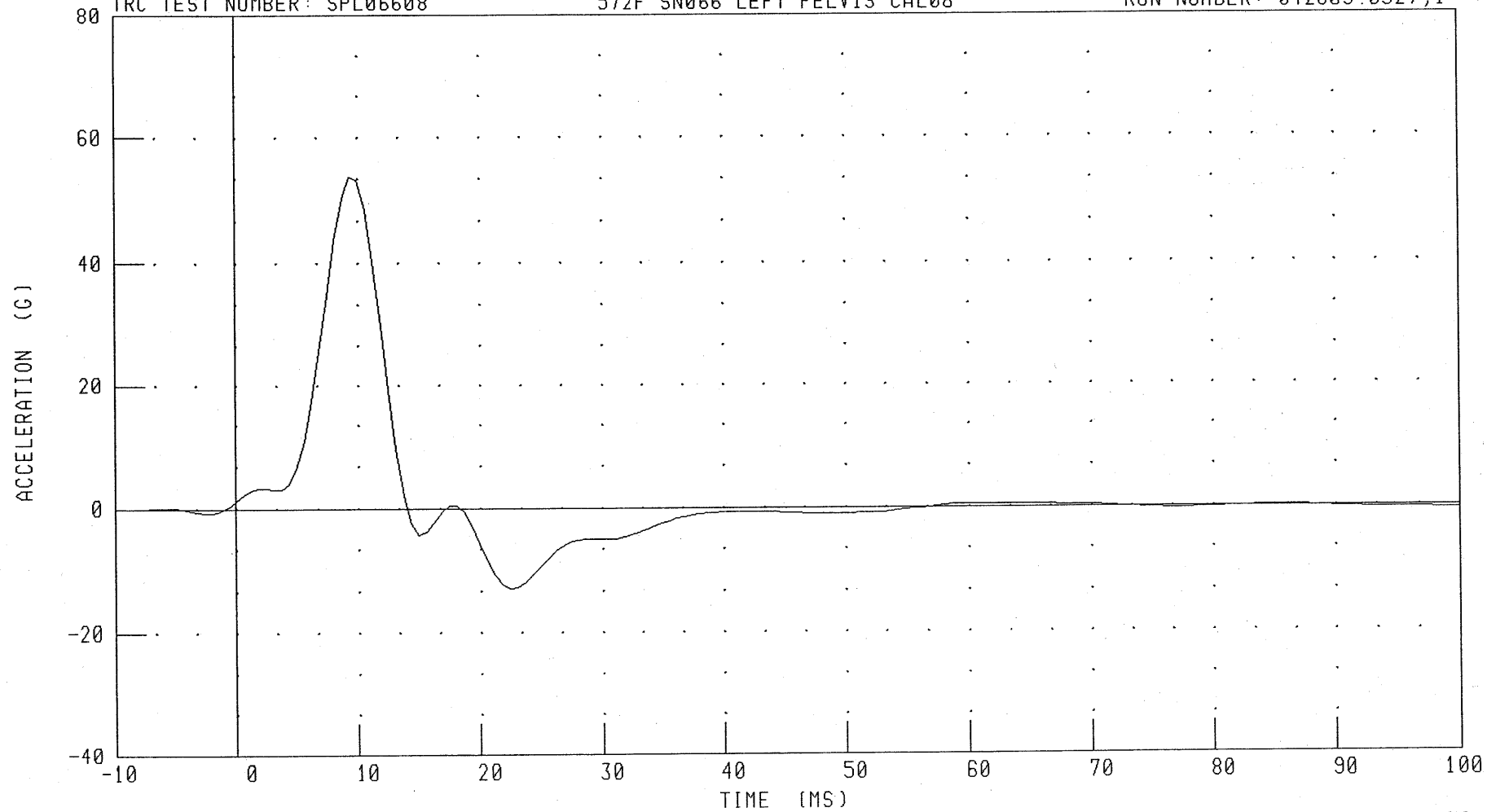
PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PELVIS ACCELERATION Y AXIS

TRC TEST NUMBER: SPL06608

572F SN066 LEFT PELVIS CAL08

RUN NUMBER: 042803.0927;1



CHANNEL: PEVYG

FILTER: FIR 100

PEAK DATA: 53.67 G @ 9.37 MS, -12.99 G @ 22.50 MS

C-35

030505-1

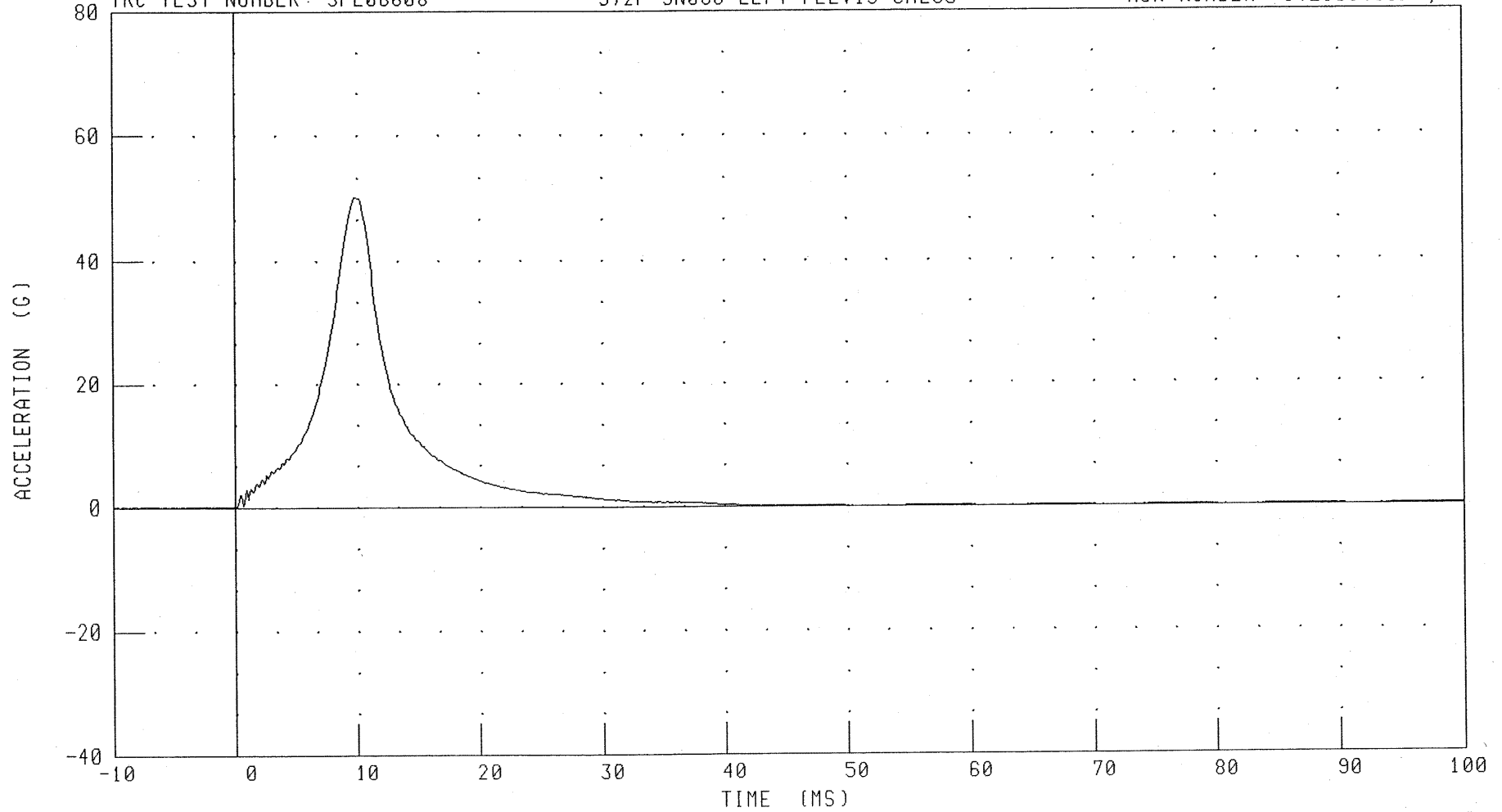
PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PENDULUM DECELERATION

TRC TEST NUMBER: SPL06608

572F SN066 LEFT PELVIS CAL08

RUN NUMBER: 042803.0927;1



CHANNEL: PENXC

FILTER: CH. CLASS 1000

PEAK DATA: 50.28 G @ 9.92 MS; -0.12 G @ 52.56 MS

C-36

030505-1

Calibration Test Results

Pre-Test

SID: 028

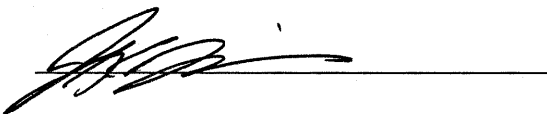
Configured for Left Side Impact

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

Transportation Research Center Inc.
572F SID Dummy
External Dimensions
Serial No. 028 Calibration No. 06

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	895 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	230 mm	Yes
Knee Pivot From Backline	KH	510.5 - 525.8 mm	512 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	498 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	372 mm	Yes
Top Rib Width From C/L	RW-1	165.1 - 180.3 mm	169 mm	Yes
Bottom Rib Width From C/L	RW-2	165.1 - 180.3 mm	168 mm	Yes
Difference Between Top & Bottom Rib Width from C/L		<= 2.5 mm	1.0 mm	Yes

Technician



Approved




TRANSPORTATION RESEARCH CENTER INC.

LATERAL HEAD DROP TEST

HYBRIDI III SID DUMMY

01-MAY-03

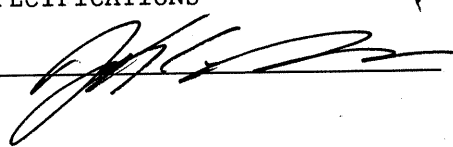
LEFT SIDE CONFIGURATION

TRC INC. TEST NO. HDL02806 572M SID/HIII SN028 HEAD CAL06

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6 deg. C	21.67 deg. C
RELATIVE HUMIDITY	10 - 70 %	43.00 %
PEAK RESULTANT ACCELERATION	120 - 150 G	135.13 G
PEAK LONGITUDINAL ACCELERATION	15 G MAX	-6.54 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 050903.1449;1

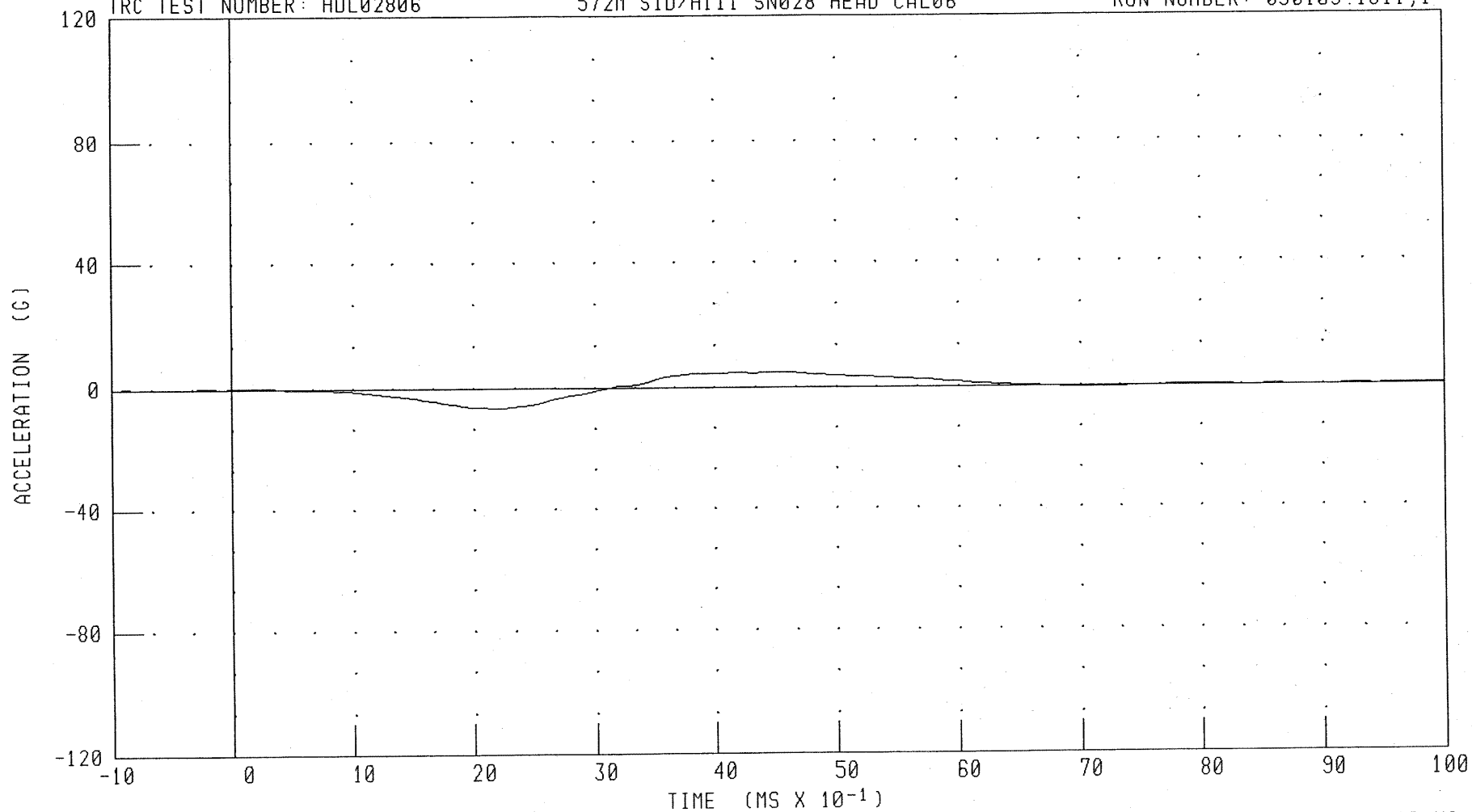
572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION X AXIS

TRC TEST NUMBER: HDL02806

572M SID/HIII SN028 HEAD CAL06

RUN NUMBER: 050103.1611,1



CHANNEL: HEDXG

FILTER: CH. CLASS 1000

PEAK DATA: 4.61 G @ 4.56 MS; -6.54 G @ 2.16 MS

030505-1

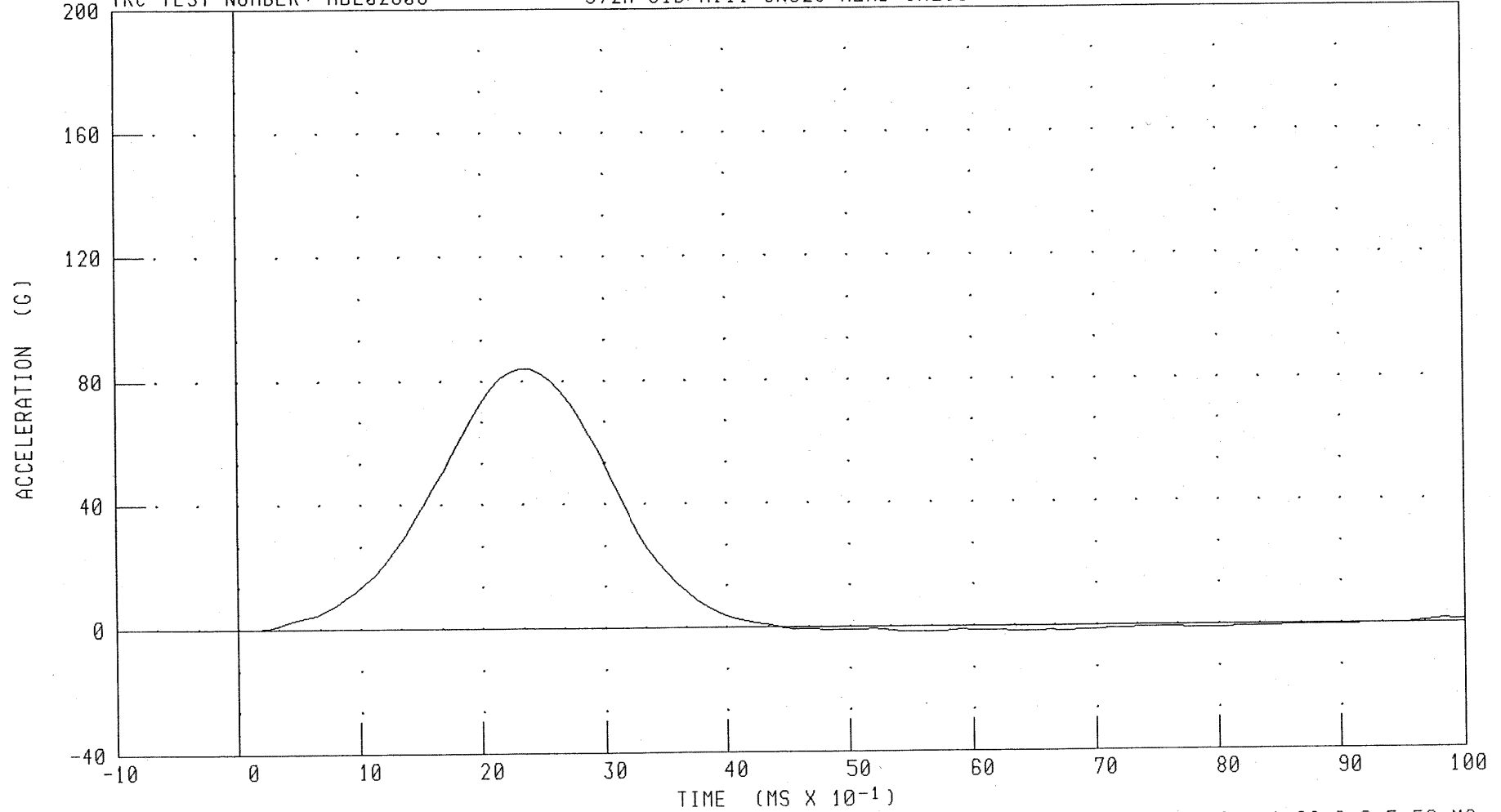
572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Y AXIS

TRC TEST NUMBER: HDL02806

572M SID/HIII SN028 HEAD CAL06

RUN NUMBER: 050103.1611;1



CHANNEL: HEDYG

FILTER: CH. CLASS 1000

PEAK DATA: 84.00 G @ 2.32 MS; -1.80 G @ 5.52 MS

030505-1

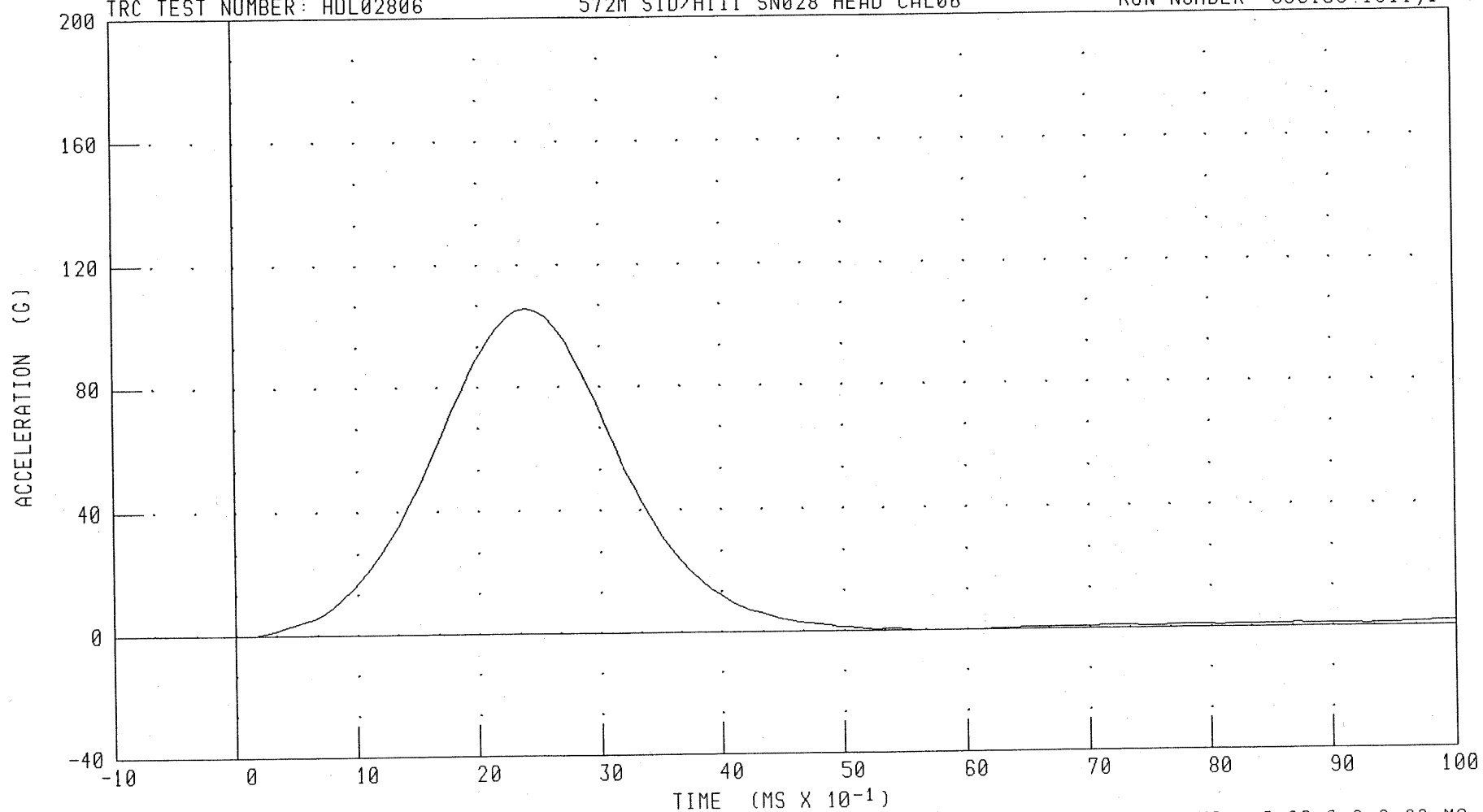
572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Z AXIS

TRC TEST NUMBER: HDL02806

572M SID/HIII SN028 HEAD CAL06

RUN NUMBER: 050103.1611;1



CHANNEL: HEDZG

FILTER: CH. CLASS 1000

PEAK DATA: 105.74 G @ 2.40 MS; -0.09 G @ 0.00 MS

C-42

030505-1

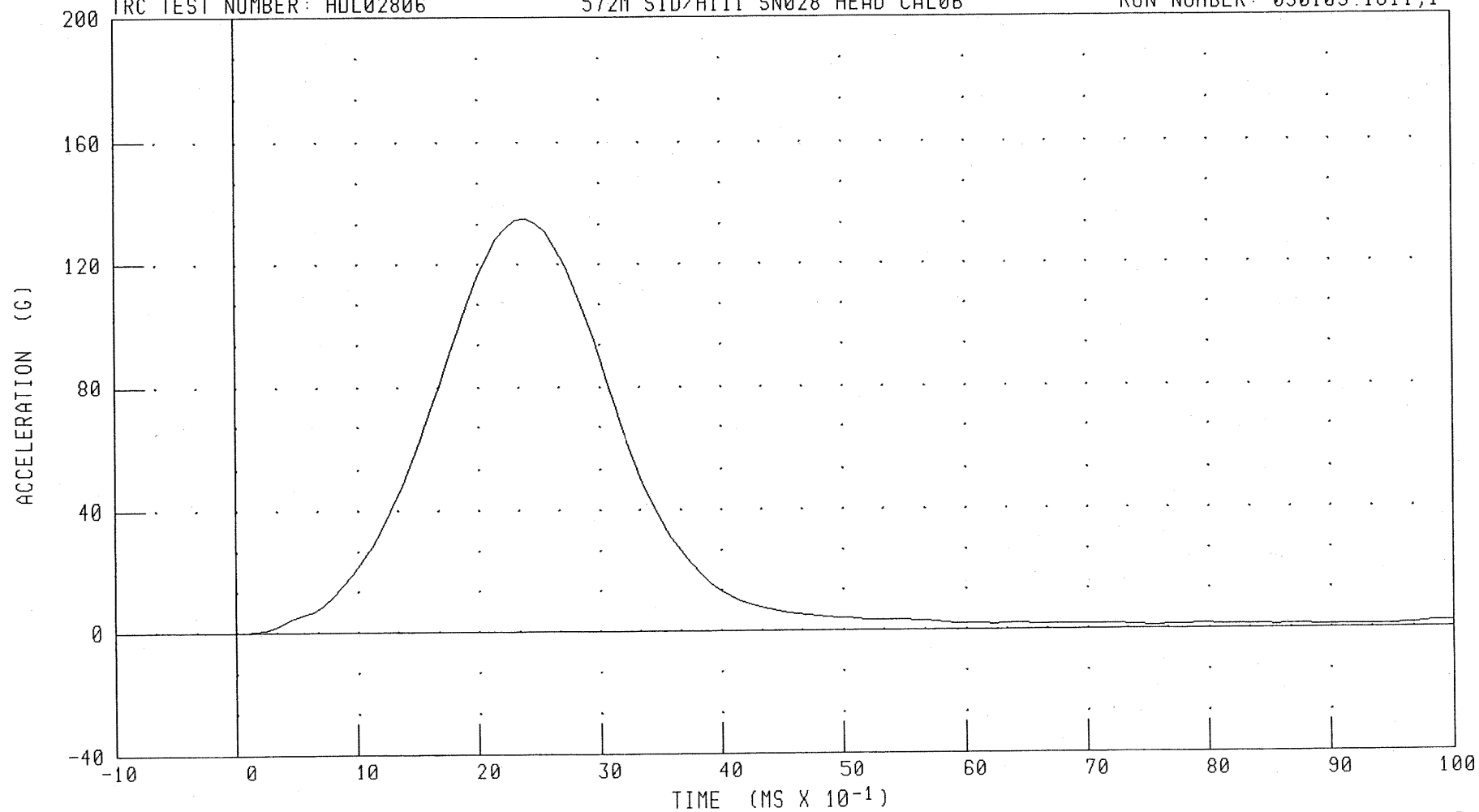
572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD RESULTANT ACCELERATION

TRC TEST NUMBER: HDL02806

572M SID/HIII SN028 HEAD CAL06

RUN NUMBER: 050103.1611;1



CHANNEL: HEDRG

FILTER: CH. CLASS 1000

PEAK DATA: 135.13 G @ 2.40 MS; 0.03 G @ -0.56 MS

030505-1

TRANSPORTATION RESEARCH CENTER INC.

LATERAL NECK TEST

HYBRIDIII SID DUMMY

01-MAY-03

LEFT SIDE CONFIGURATION

TRC INC.

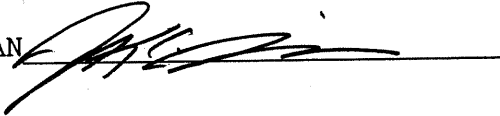
TEST NO. NFL02806

572M H3/SID SN028 NECK CAL06

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6 - 22.2 deg. C	21.67 deg. C
RELATIVE HUMIDITY		10 - 70 %	43.00 %
IMPACT VELOCITY		6.89 - 7.13 M/S	7.06 M/S
INTEGRATED VELOCITY	10 MS	1.96 - 2.55 M/S	2.35 M/S
	20 MS	4.12 - 5.10 M/S	4.80 M/S
	30 MS	5.73 - 7.01 M/S	6.85 M/S
	40 - 70 MS	6.27 - 7.64 M/S	7.11- 7.19 M/S
MAXIMUM MIDSAGGITAL PLANE ROTATION		66 - 82 deg.	71.81 deg.
ROTATION ANGLE DECAY TIME FROM PEAK TO ZERO		58 - 67 MS	58.88 MS
MAXIMUM MOMENT ABOUT OCCIPITAL CONDYLE		73 - 88 NM	79.19 NM
POSITIVE MOMENT DECAY TIME FROM PEAK TO ZERO		49 - 64 MS	56.32 MS
TIME OF MAXIMUM ROTATION AFTER MAXIMUM MOMENT		2 - 16 MS	8.88 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN



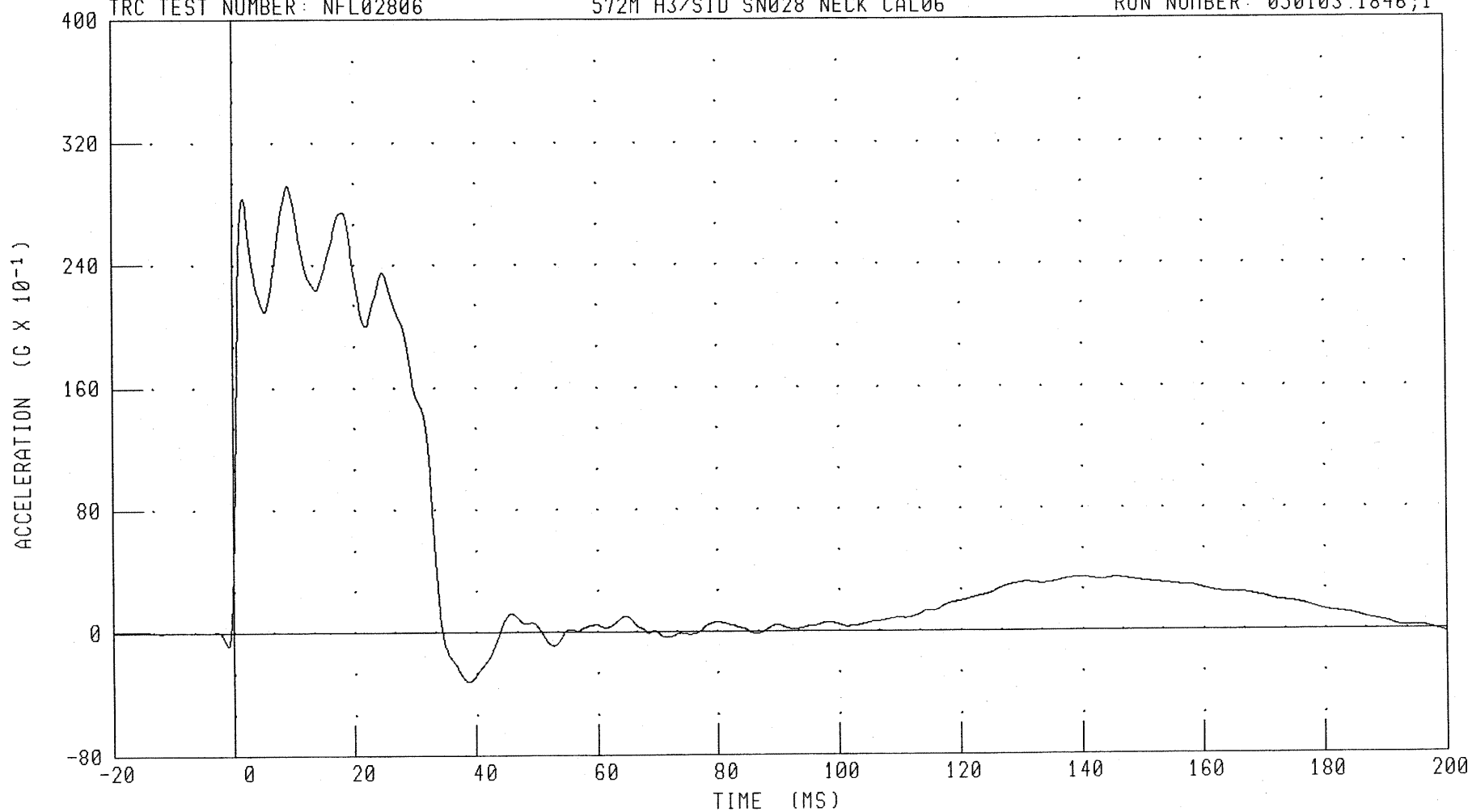
RUN NUMBER: 050903.1452;1

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST
PENDULUM DECELERATION

TRC TEST NUMBER: NFL02806

572M H3/SID SN028 NECK CAL06

RUN NUMBER: 050103.1846;1



CHANNEL: PENXC

FILTER: CH. CLASS 180

PEAK DATA: 29.16 G @ 9.20 MS; -3.22 G @ 38.88 MS

030505-1

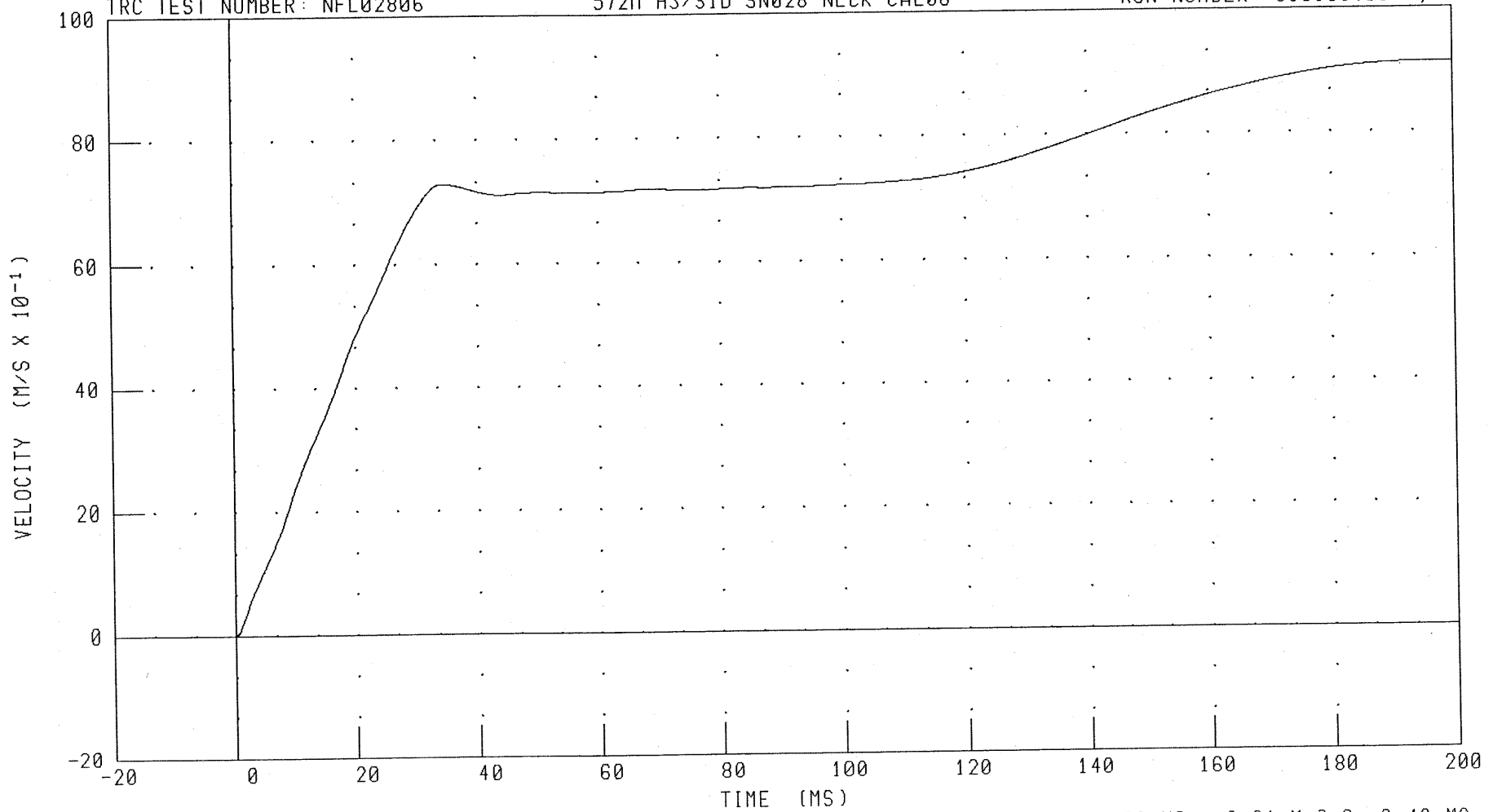
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

INTEGRATED PENDULUM VELOCITY

TRC TEST NUMBER: NFL02806

572M H3/SID SN028 NECK CAL06

RUN NUMBER: 050103.1846;1



CHANNEL: PENXVI

FILTER: CH. CLASS 180

PEAK DATA: 9.13 M/S @ 197.92 MS; -0.01 M/S @ -0.48 MS

C-46

030505-1

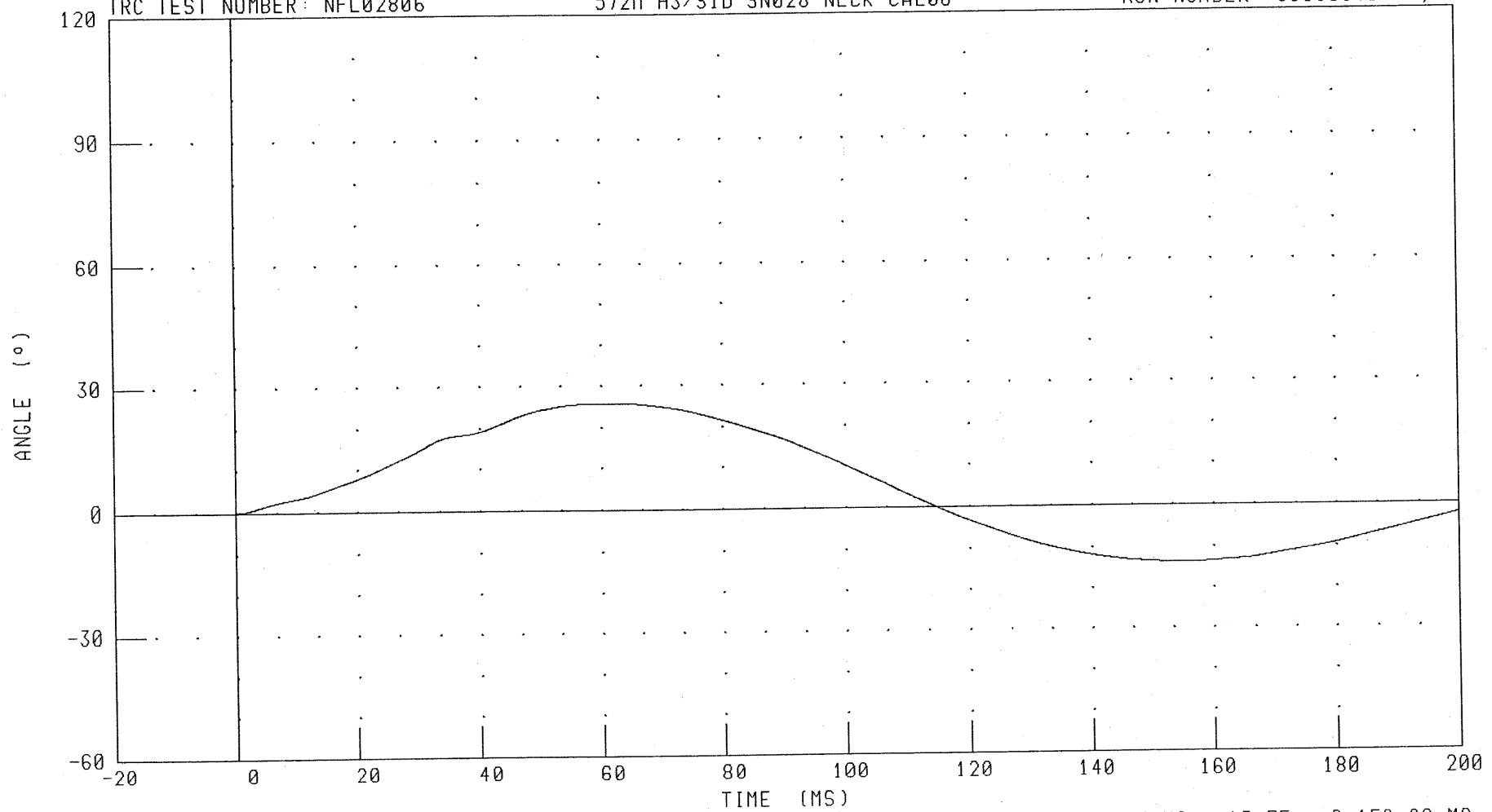
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER: NFL02806

572M H3/SID SN028 NECK CAL06

RUN NUMBER: 050103.1846;1



CHANNEL: BETA

FILTER: CH. CLASS 60

PEAK DATA: 25.57 ° @ 63.44 MS; -13.75 ° @ 156.08 MS

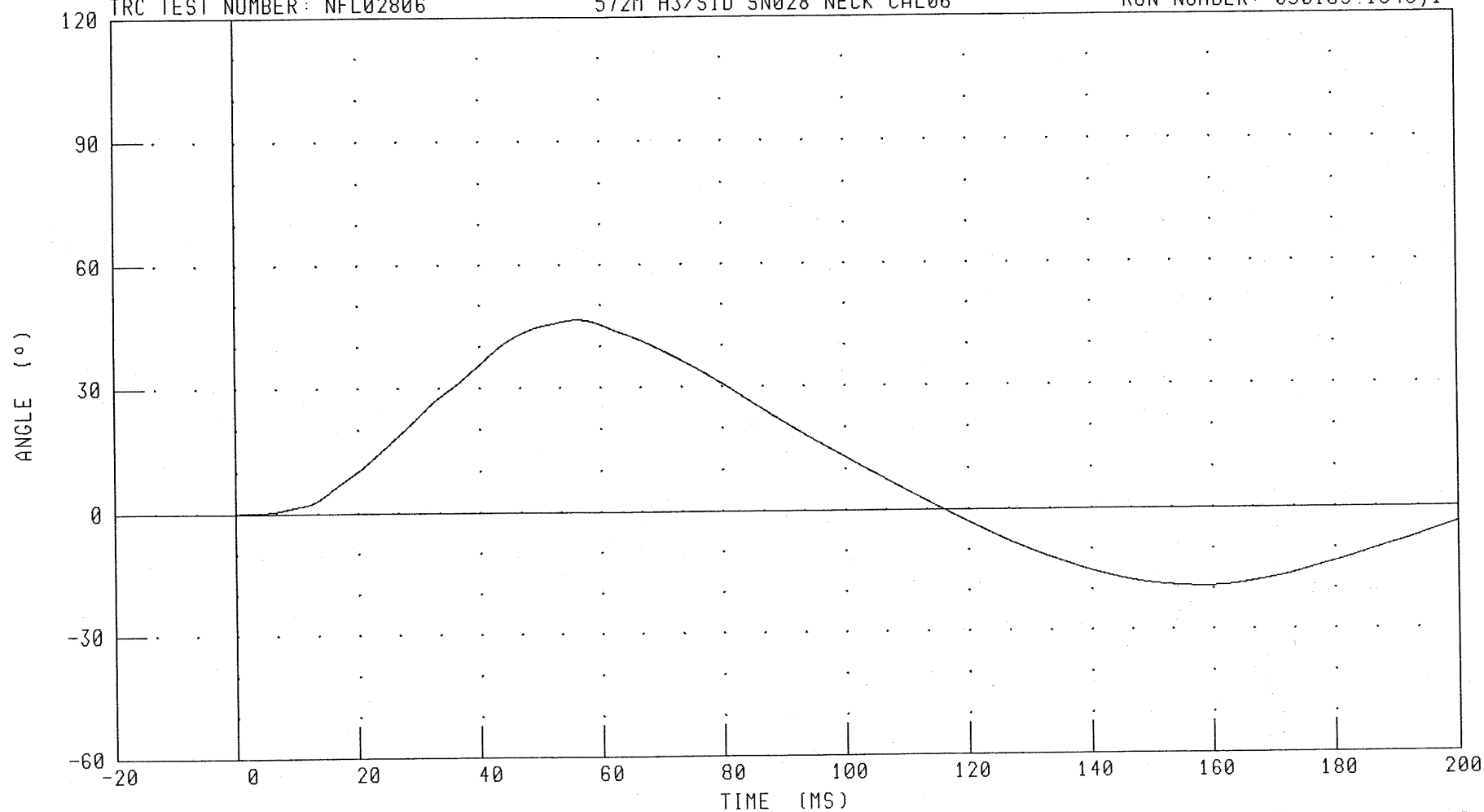
030505-1

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST
ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: NFL02806

572M H3/SID SN028 NECK CAL06

RUN NUMBER: 050103.1846;1



CHANNEL: THETA

FILTER: CH. CLASS 60

PEAK DATA: 46.34 ° @ 56.32 MS; -19.31 ° @ 158.64 MS

030505-1

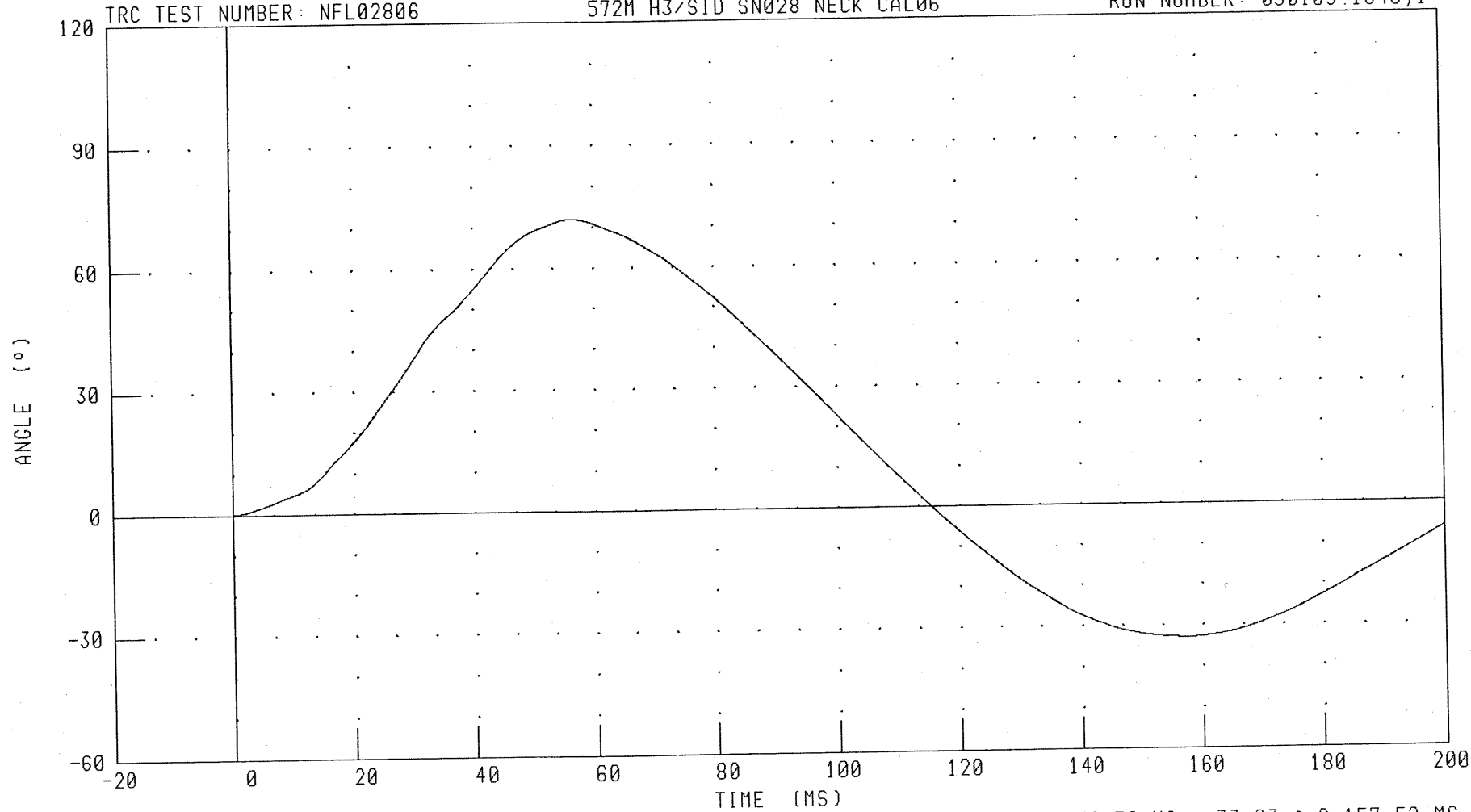
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

TOTAL ROTATION

TRC TEST NUMBER: NFL02806

572M H3/SID SN028 NECK CAL06

RUN NUMBER: 050103.1846;1



CHANNEL: TOTAN

FILTER: CH. CLASS 60

PEAK DATA: 71.81 ° @ 56.56 MS; -33.03 ° @ 157.52 MS

C-49

030505-1

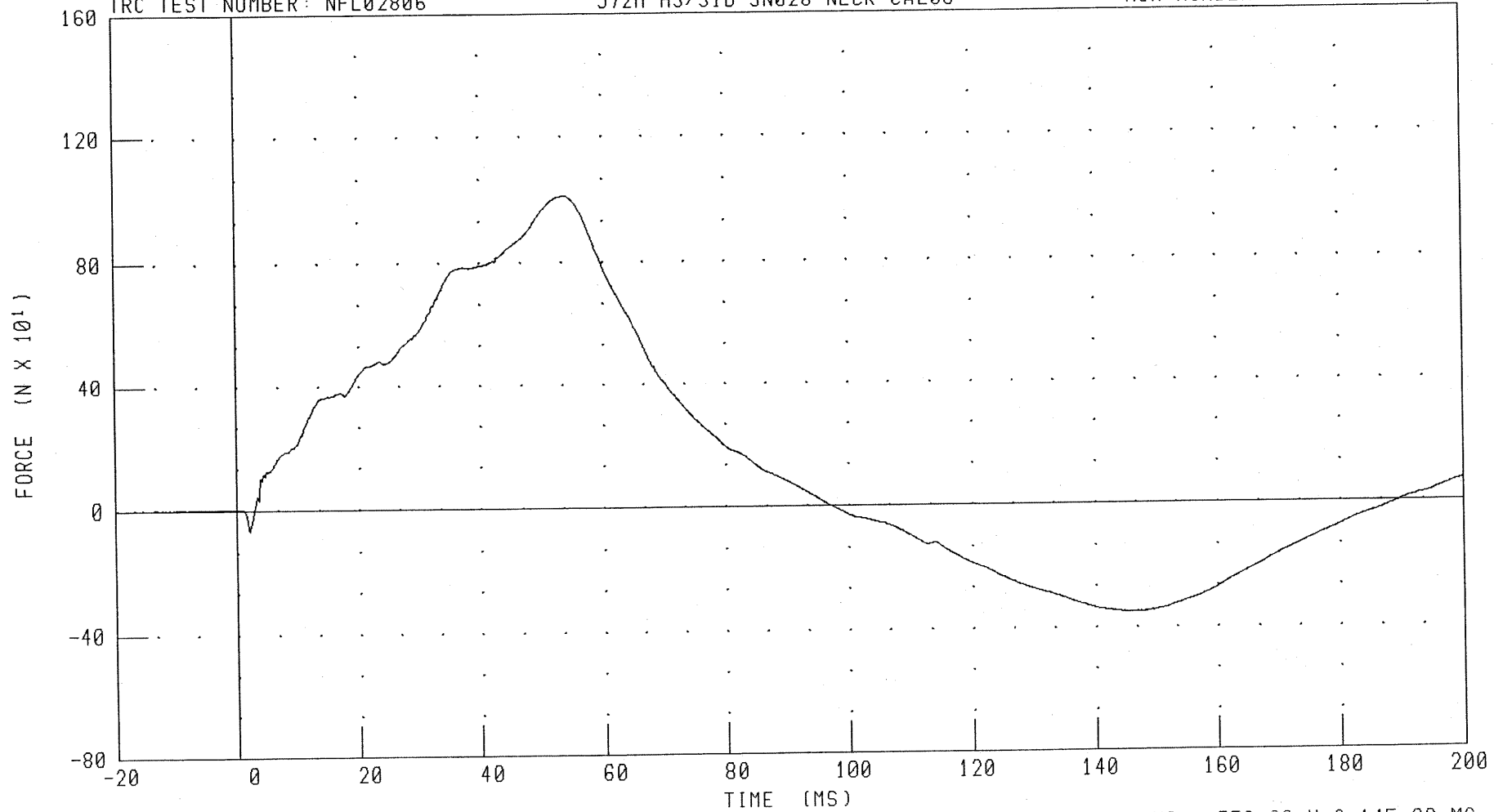
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

NECK FORCE Y AXIS

TRC TEST NUMBER: NFL02806

572M H3/SID SN028 NECK CAL06

RUN NUMBER: 050103.1846;1



CHANNEL: NEKYF

FILTER: CH. CLASS 1000

PEAK DATA: 1015.53 N @ 53.52 MS; -350.28 N @ 145.28 MS

030505-1

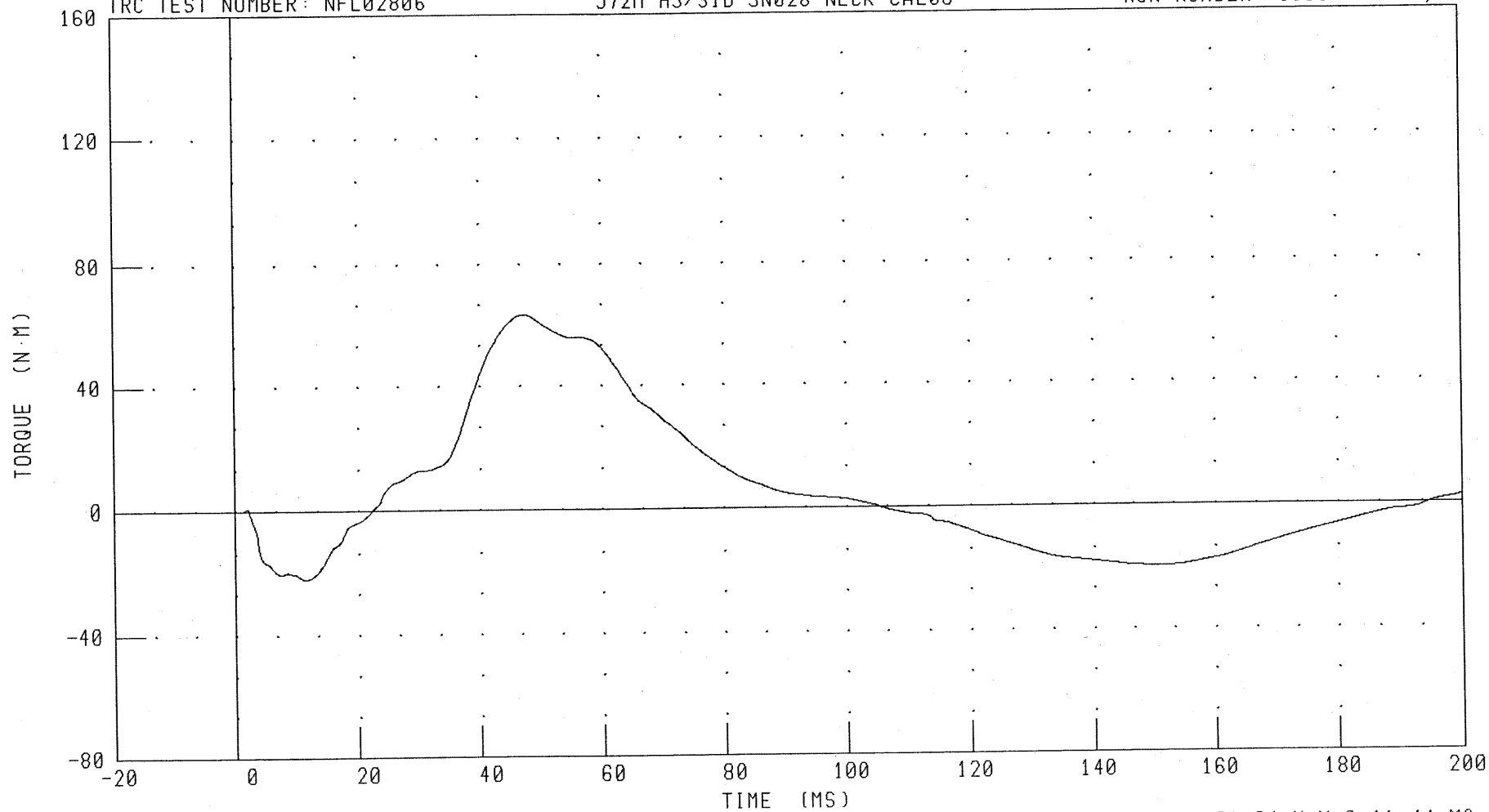
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

NECK MOMENT X AXIS

TRC TEST NUMBER: NFL02806

572M H3/SID SN028 NECK CAL06

RUN NUMBER: 050103.1846;1



CHANNEL: NEKXM

FILTER: CH. CLASS 600

PEAK DATA: 63.35 N·M @ 47.36 MS; -21.84 N·M @ 11.44 MS

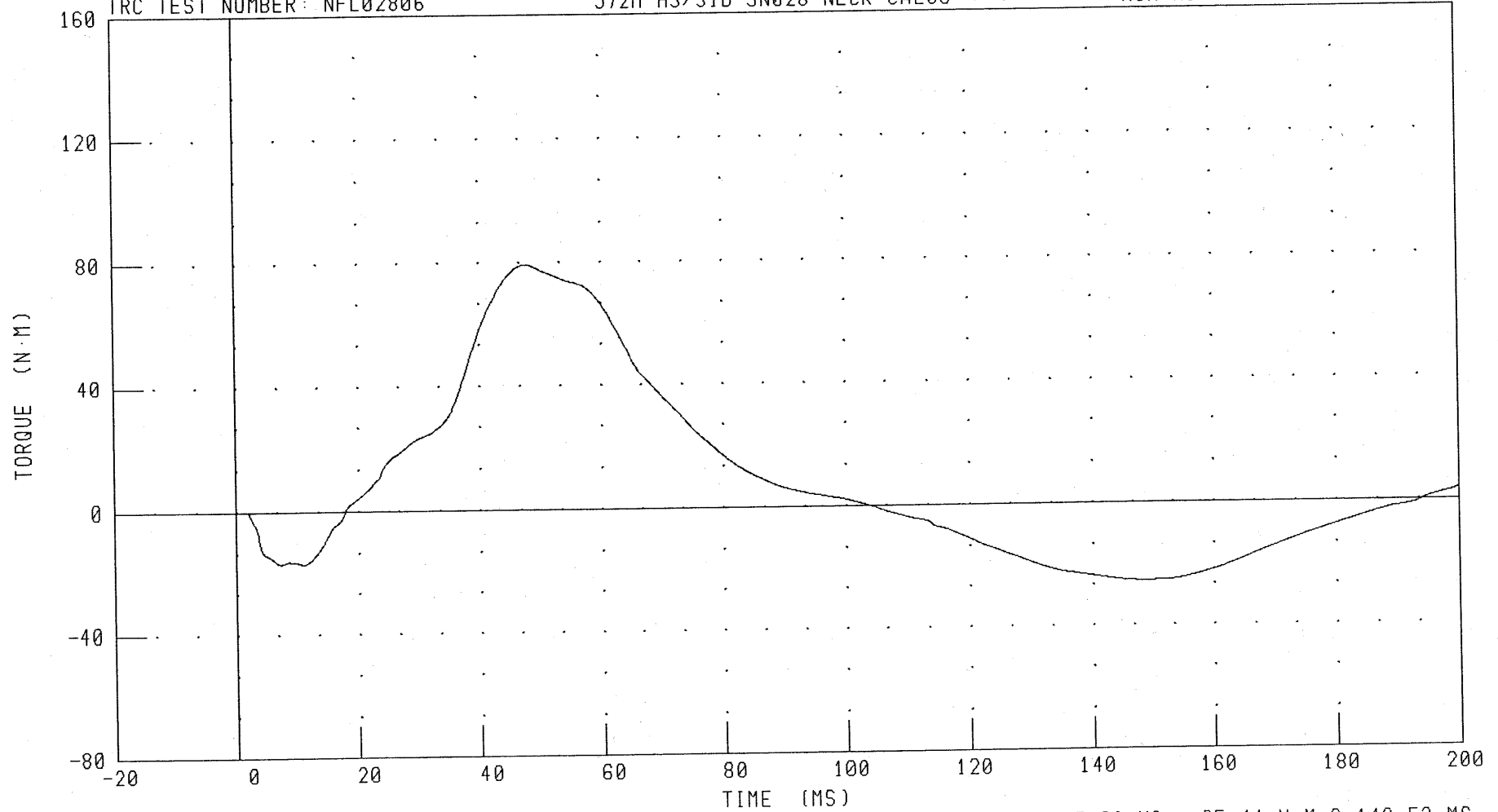
030505-1

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST
TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: NFL02806

572M H3/SID SN028 NECK CAL06

RUN NUMBER: 050103.1846;1



CHANNEL: NEKOM

FILTER: CH. CLASS 600

PEAK DATA: 79.19 N·M @ 47.68 MS; -25.44 N·M @ 149.52 MS

C-52

030505-1

TRANSPORTATION RESEARCH CENTER INC.

LATERAL THORAX IMPACT TEST

SIDE IMPACT DUMMY

01-MAY-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO: STL02806

572F SID SN028 L.THORAX CAL06

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	43.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.29 M/S
PEAK ACCELERATION: UPPER RIB BAR	37 - 46 G	40.0 G
PEAK ACCELERATION: LOWER RIB BAR	37 - 46 G	42.6 G
PEAK ACCELERATION: LOWER THORACIC SPINE	15 - 22 G	17.5 G

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 050903.1441;1

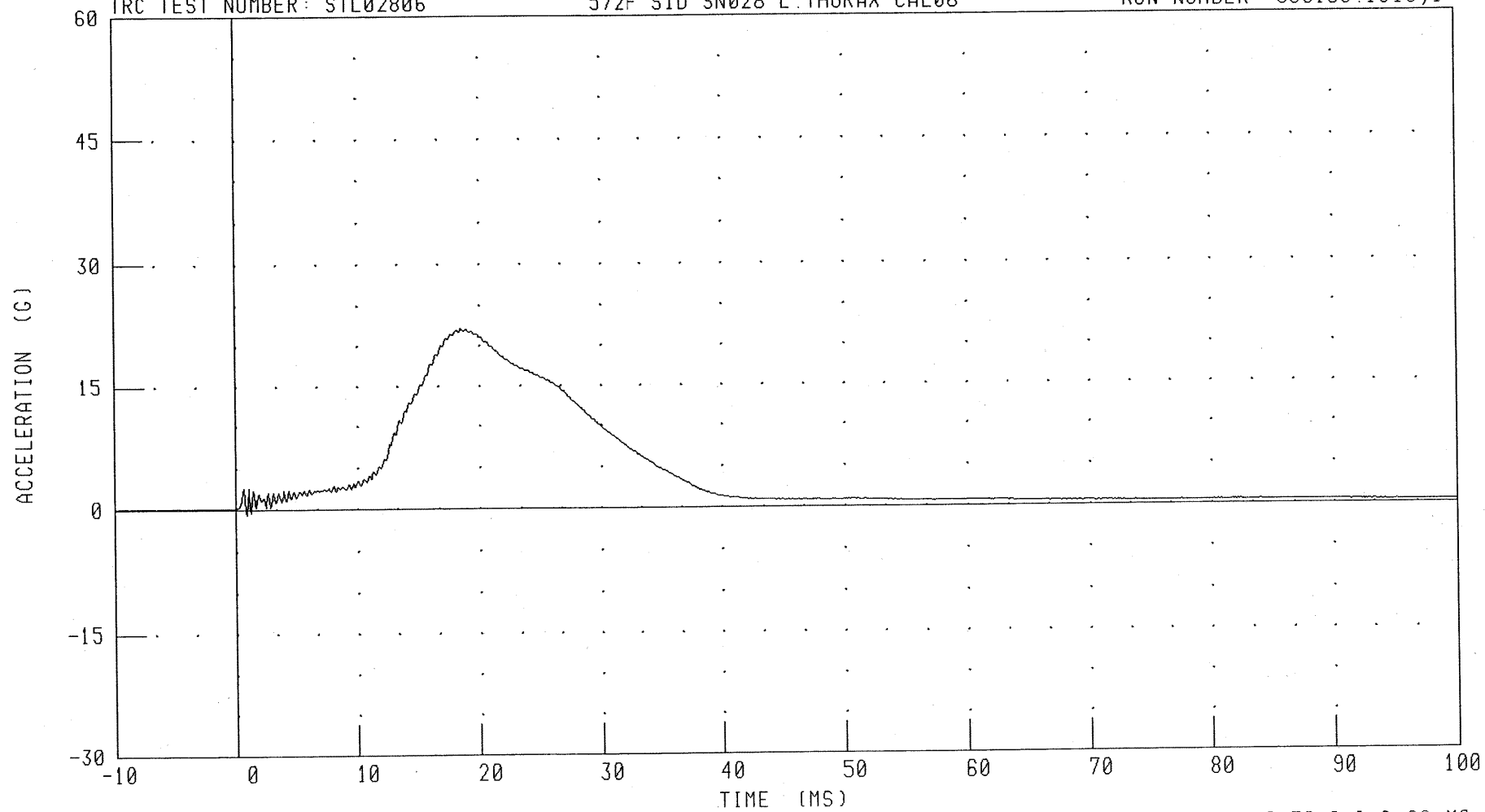
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

PENDULUM DECELERATION

TRC TEST NUMBER: STL02806

572F SID SN028 L THORAX CAL06

RUN NUMBER: 050103.1316;1



CHANNEL: PENXC

FILTER: CH. CLASS 1000

PEAK DATA: 22.15 G @ 18.56 MS; -0.70 G @ 0.88 MS

030505-1

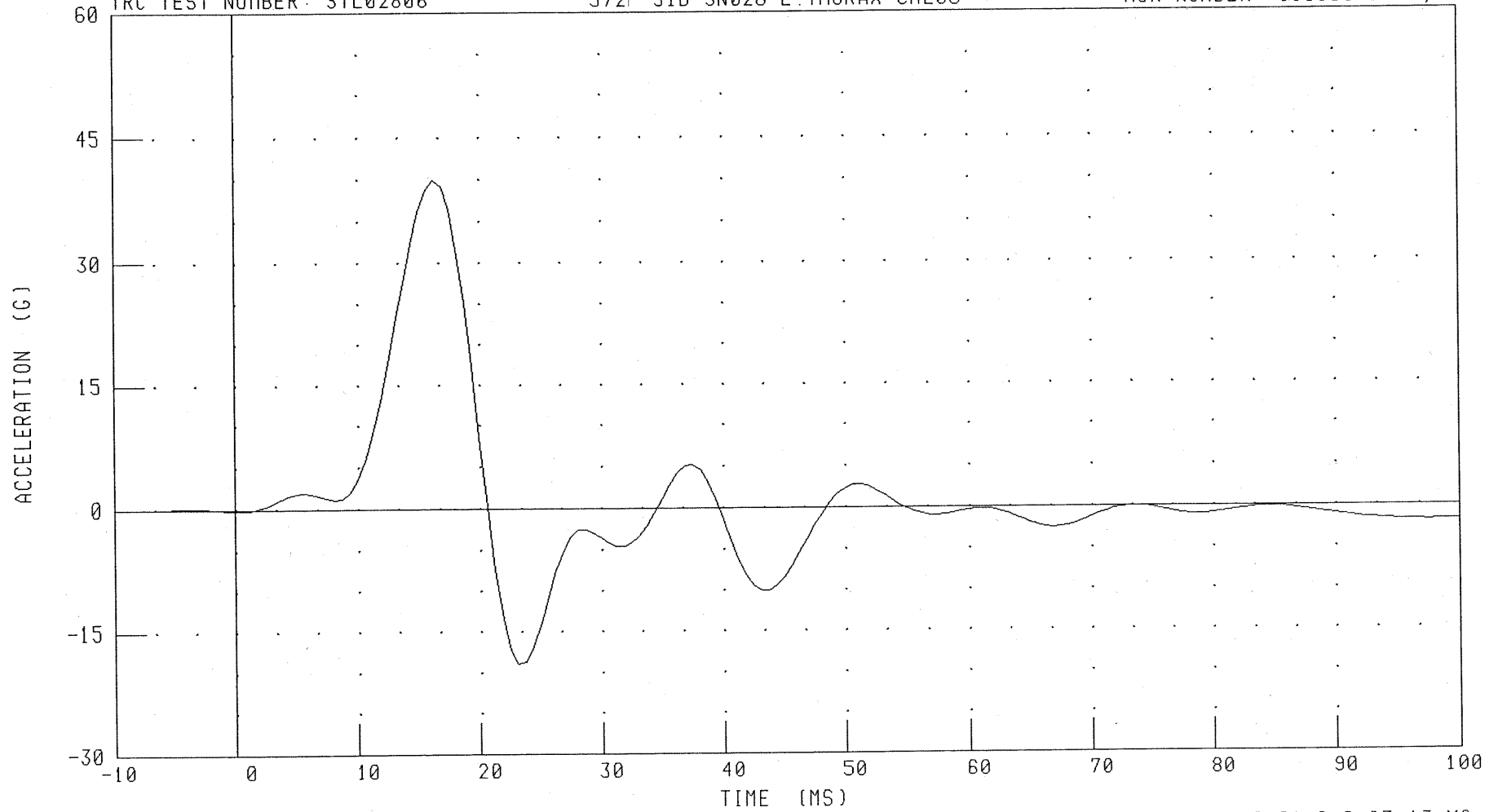
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LEFT UPPER RIB ACCELERATION Y AXIS

TRC TEST NUMBER: STL02806

572F SID SN028 L THORAX CAL06

RUN NUMBER: 050103.1316;1



CHANNEL: LURYG

FILTER: FIR 100

PEAK DATA: 39.99 G @ 16.25 MS; -19.01 G @ 23.13 MS

030505-1

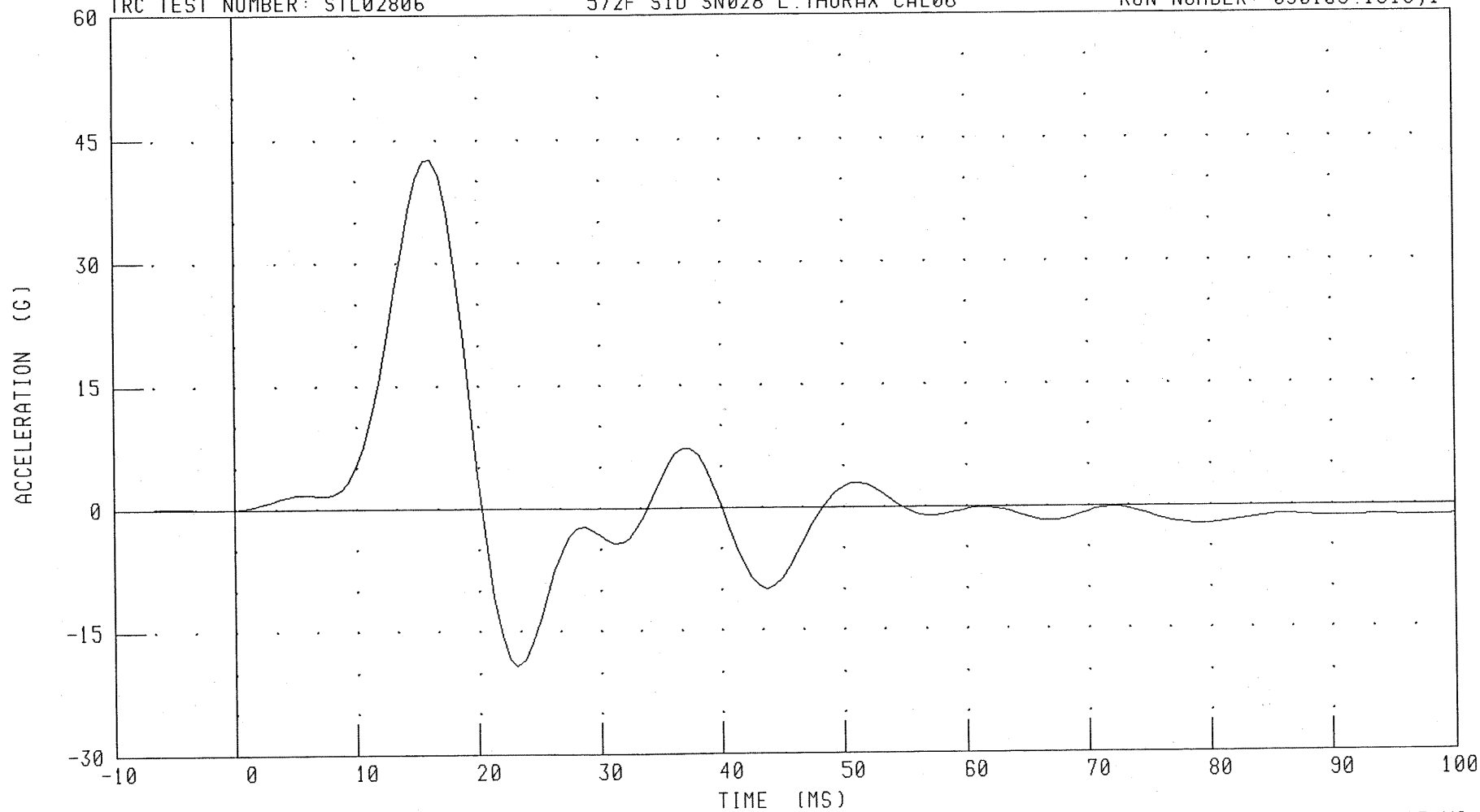
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LEFT LOWER RIB ACCELERATION Y AXIS

TRC TEST NUMBER: STL02806

572F SID SN028 L THORAX CAL06

RUN NUMBER: 050103.1316;1



CHANNEL: LLRYG

FILTER: FIR 100

PEAK DATA: 42.64 G @ 16.25 MS; -19.26 G @ 23.13 MS

030505-1

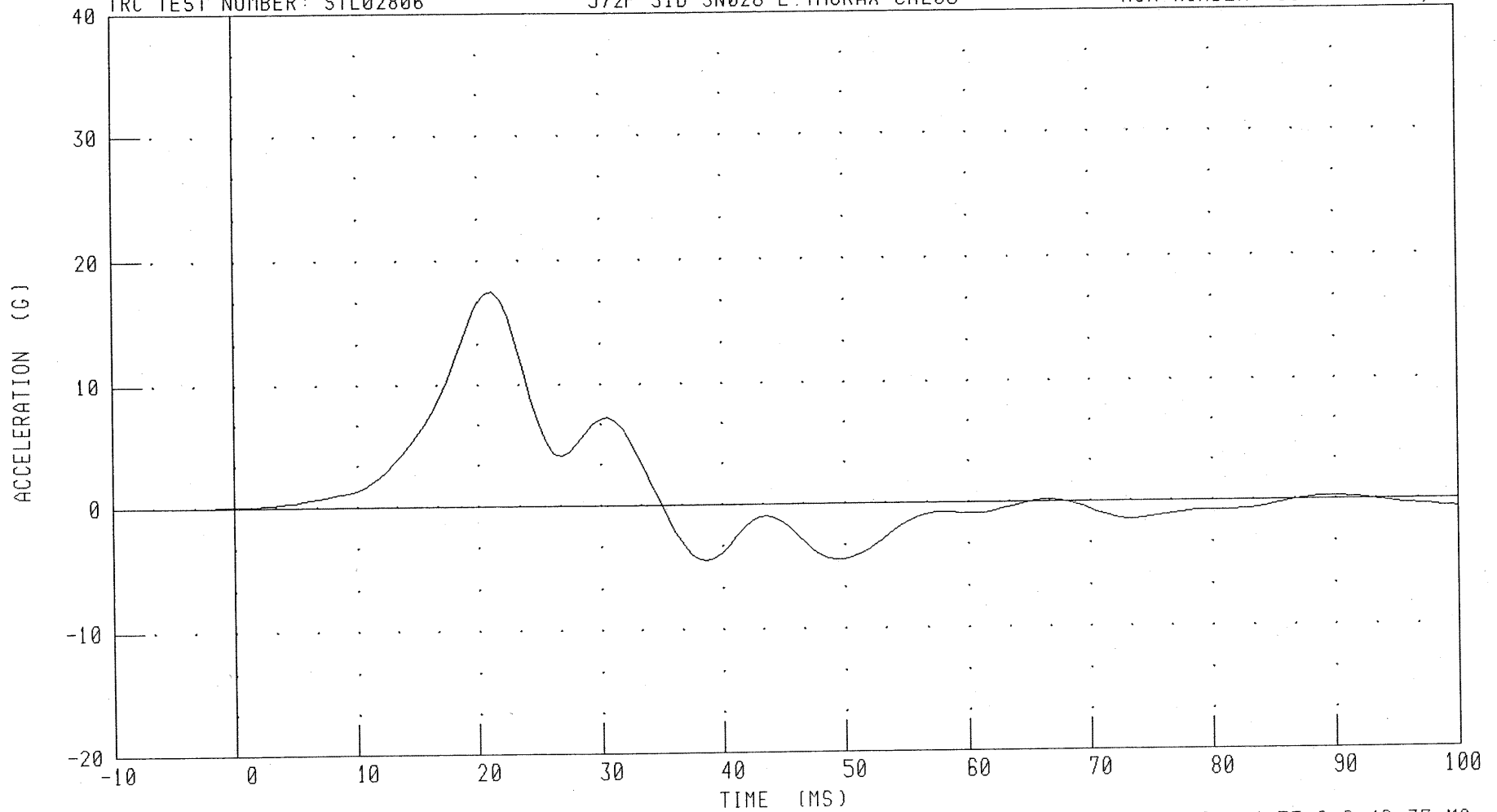
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LOWER SPINE ACCELERATION Y AXIS

TRC TEST NUMBER: STL02806

572F SID SN028 L THORAX CAL06

RUN NUMBER: 050103.1316;1



CHANNEL: T12YG FILTER: FIR 100

PEAK DATA: 17.49 G @ 21.25 MS; -4.55 G @ 49.37 MS

030505-1

TRANSPORTATION RESEARCH CENTER INC.

THORACIC SHOCK ABSORBER TESTS

SIDE IMPACT DUMMY

01-MAY-03

TRC INC.

572F SN028 DAMPER TEST CAL06

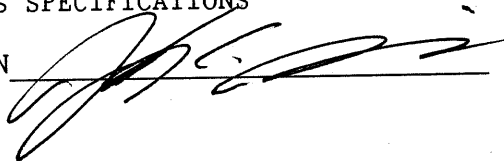
TEST NUMBERS: DP02806A, DP02806B, DP02806C

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		18.9 - 25.5 C	21.7 DEG. C
RELATIVE HUMIDITY		10 - 70 %	43.0 %
VELOCITY	FORCE	667 - 925 N	821 N
2.71 M/S	DISPLACEMENT	29.7 - 34.5 MM	30.9 MM
VELOCITY	FORCE	1733 - 2100 N	1844 N
4.26 M/S	DISPLACEMENT	31.6 - 37.2 MM	34.4 MM
VELOCITY	FORCE	3703 - 4402 N	3778 N
6.07 M/S	DISPLACEMENT	33.3 - 39.5 MM	36.6 MM

DAMPER SETTING = 5.5

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 050903.1436;1

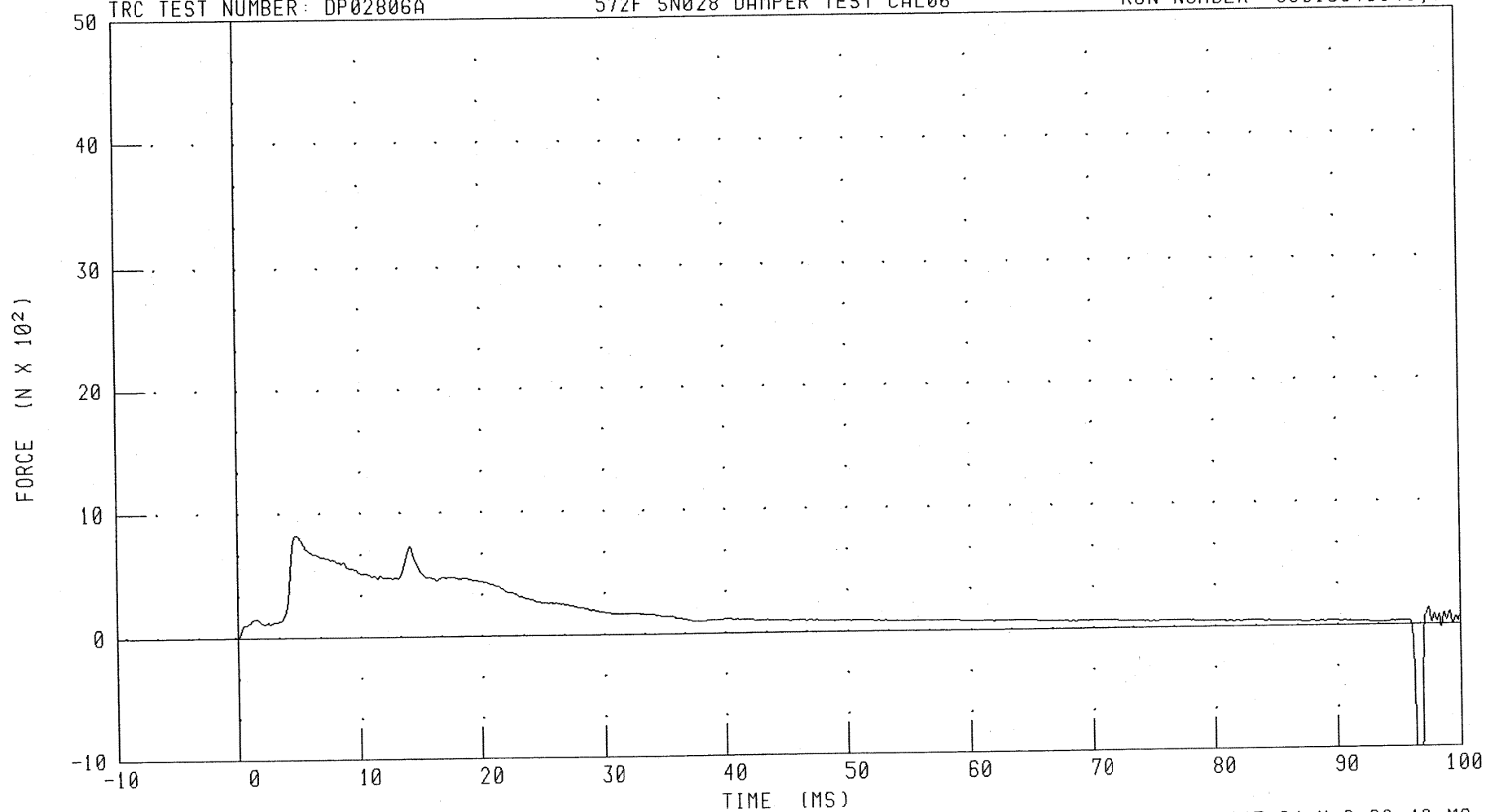
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (3.0 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

RUN NUMBER: 050103.1840;1

TRC TEST NUMBER: DP02806A

572F SN028 DAMPER TEST CAL06



CHANNEL: DAMPF

FILTER: CH. CLASS 1000

PEAK DATA: 821.38 N @ 4.80 MS; -1445.84 N @ 96.48 MS

030505-1

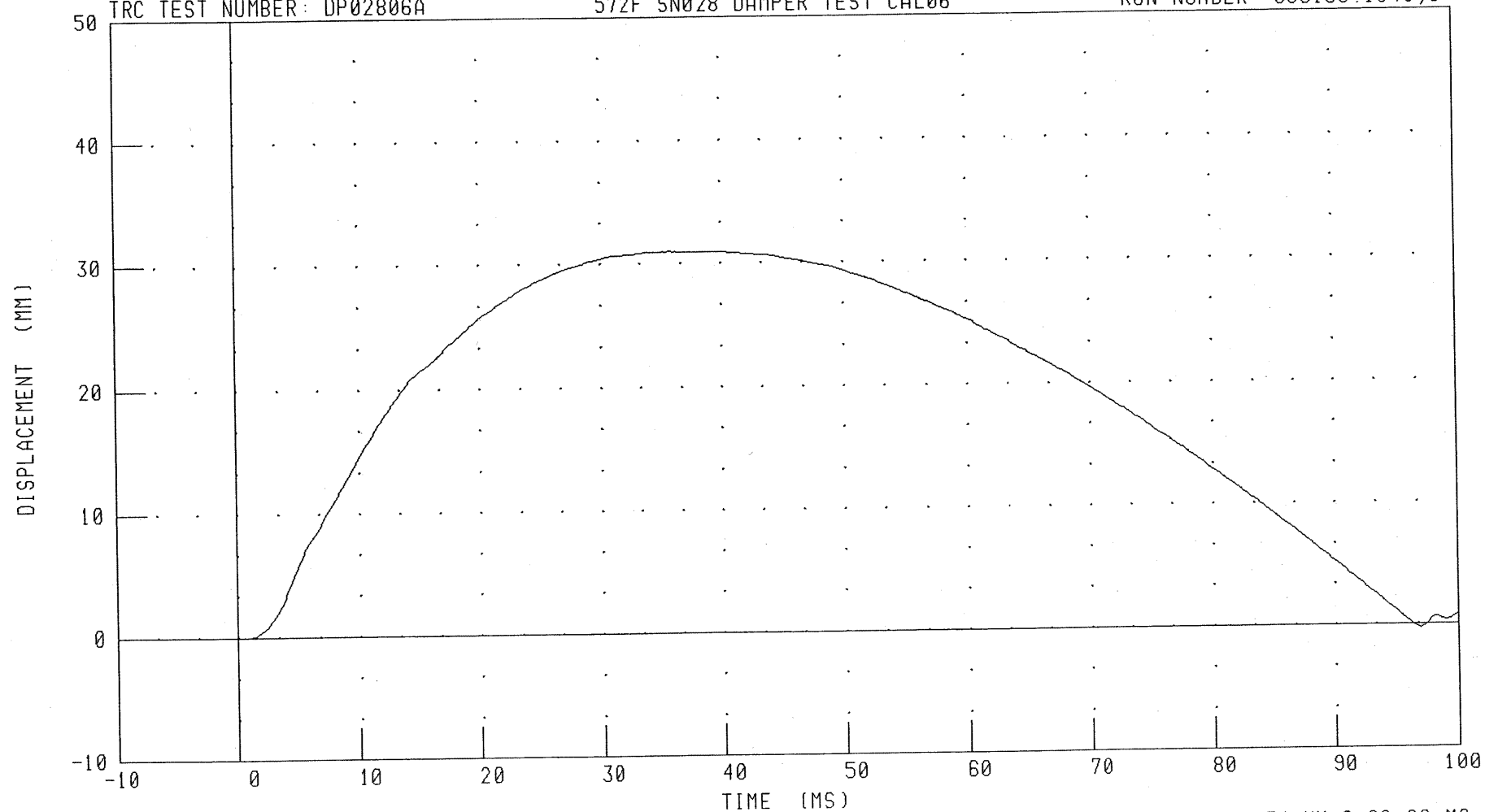
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (3.0 M/SEC)

SHOCK ABSORBER DISPLACEMENT

572F SN028 DAMPER TEST CAL06

RUN NUMBER: 050103.1840;1

TRC TEST NUMBER: DP02806A



CHANNEL: CSTYD

FILTER: CH. CLASS 1000

PEAK DATA: 30.93 MM @ 35.84 MS; -0.34 MM @ 96.88 MS

C-60

030505-1

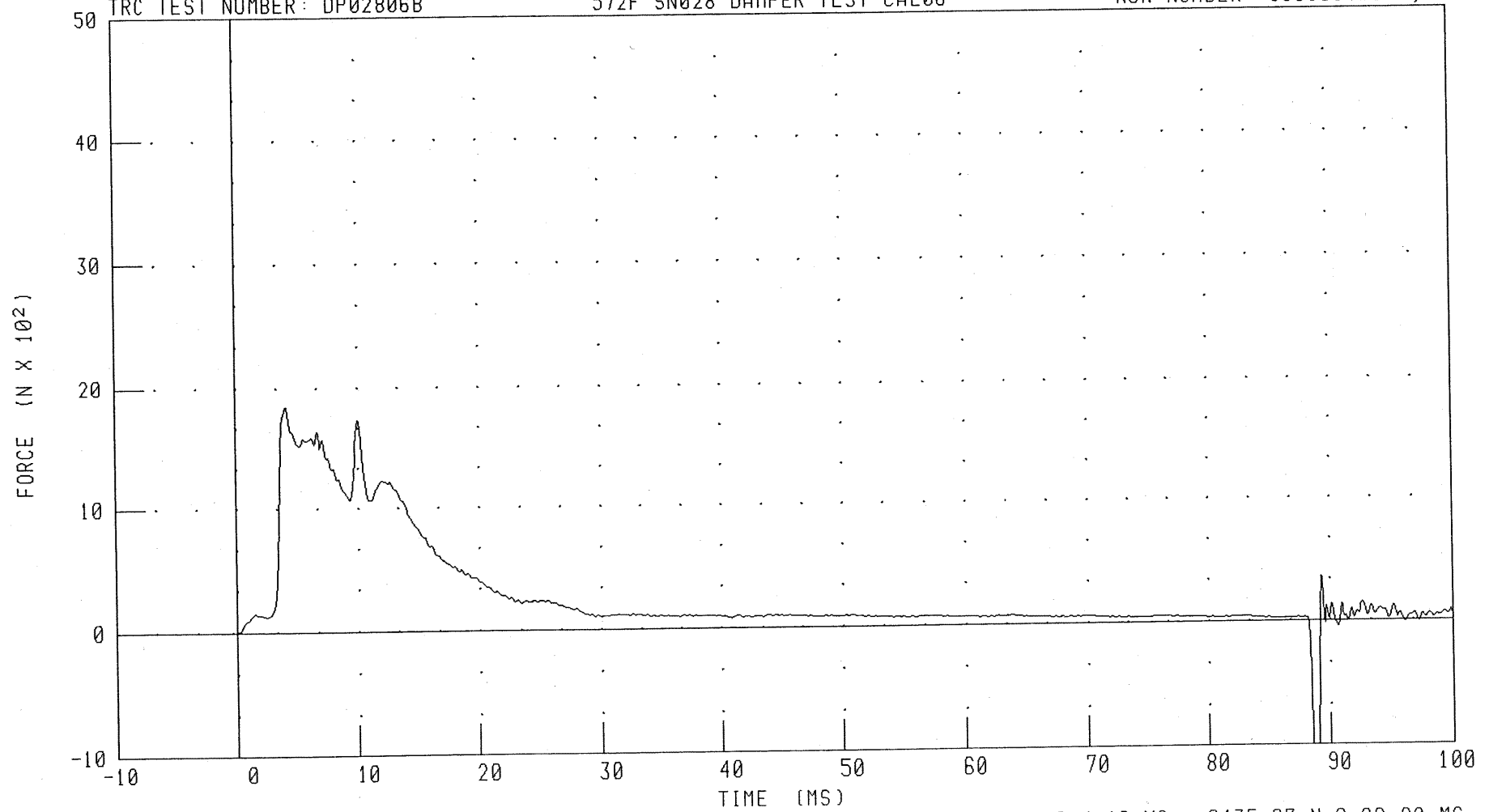
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (4.3 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

TRC TEST NUMBER: DP02806B

572F SN028 DAMPER TEST CAL06

RUN NUMBER: 050103.1841;1



CHANNEL: DAMPF FILTER: CH. CLASS 1000

030505-1

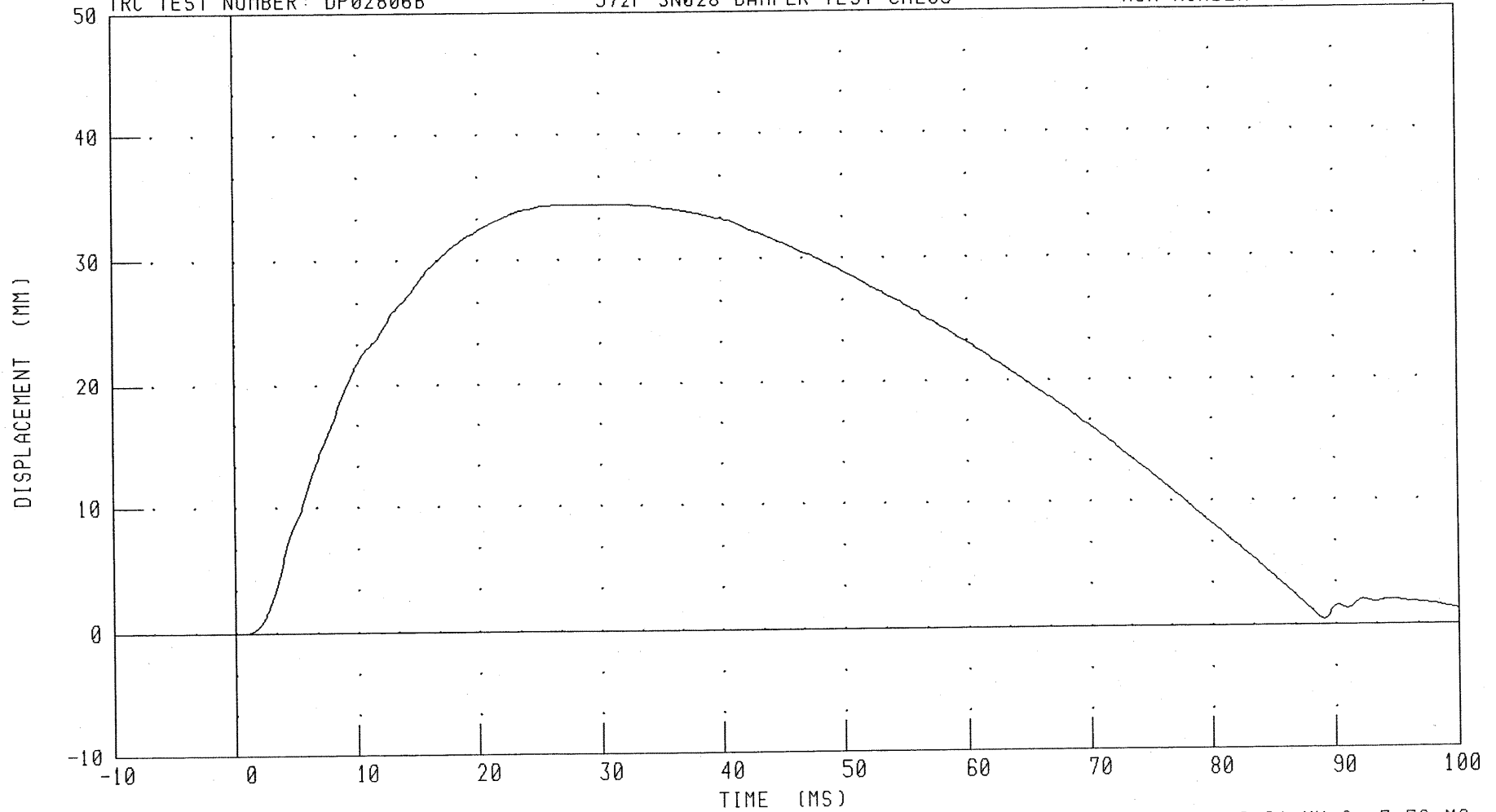
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (4.3 M/SEC)

SHOCK ABSORBER DISPLACEMENT

TRC TEST NUMBER: DP02806B

572F SN028 DAMPER TEST CAL06

RUN NUMBER: 050103.1841;1



CHANNEL: CSTYD

FILTER: CH. CLASS 1000

PEAK DATA: 34.38 MM @ 27.52 MS; -0.01 MM @ -7.76 MS

C-62

030505-1

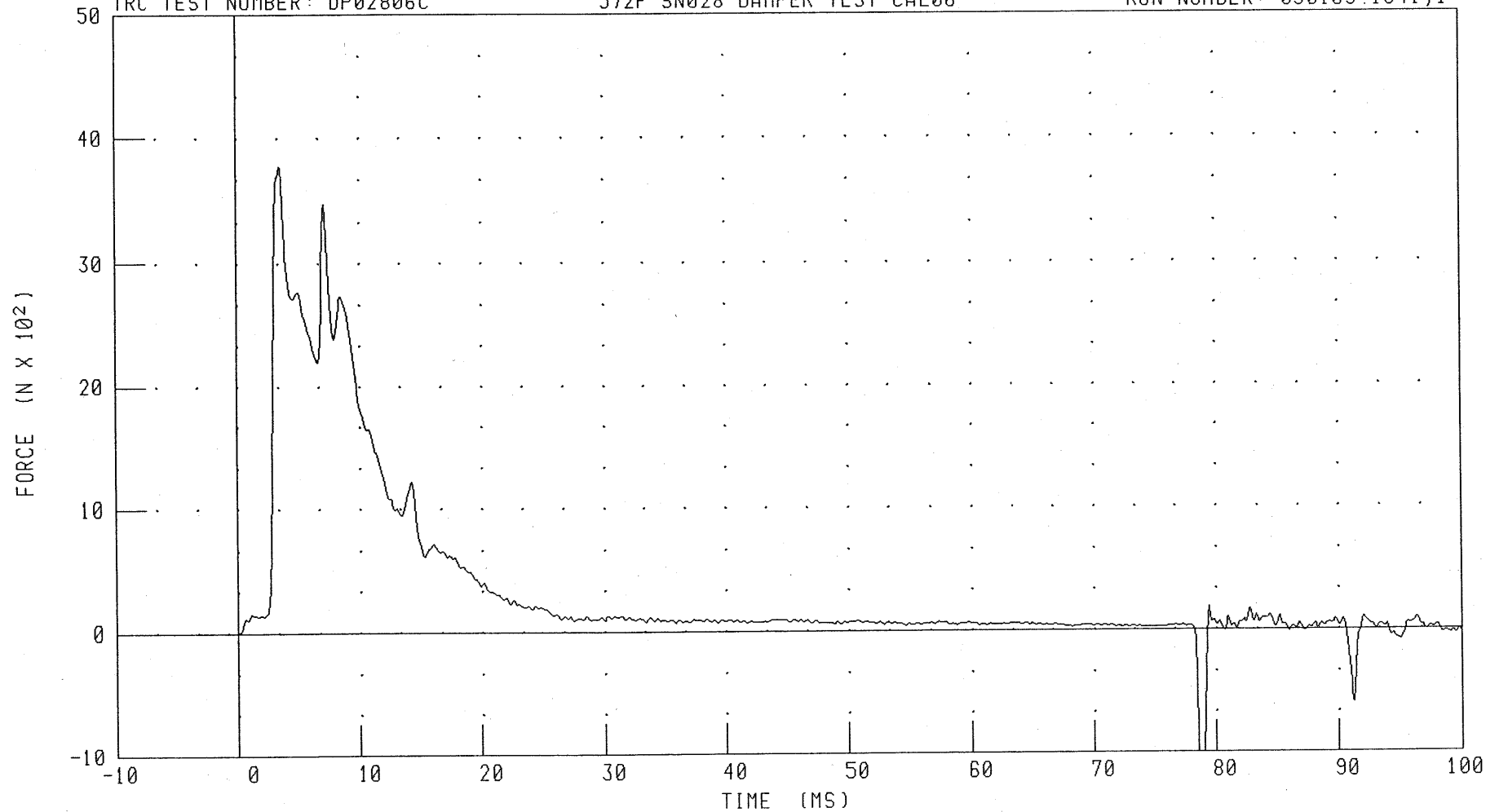
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (6.1 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

TRC TEST NUMBER: DP02806C

572F SN028 DAMPER TEST CAL06

RUN NUMBER: 050103.1841;1



CHANNEL: DAMPF

FILTER: CH. CLASS 1000

PEAK DATA: 3777.88 N @ 3.52 MS; -2281.23 N @ 78.80 MS

030505-1

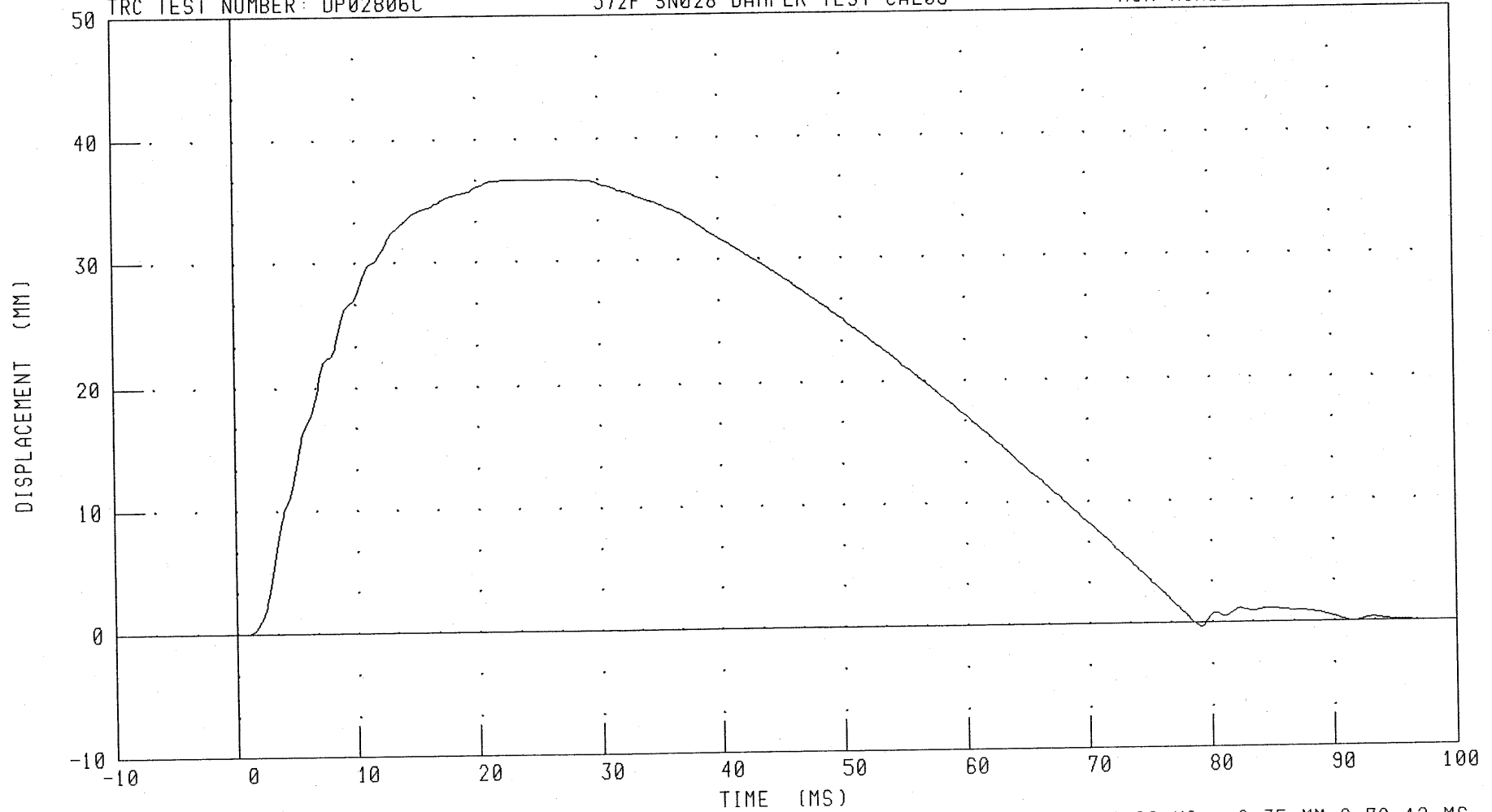
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (6.1 M/SEC)

SHOCK ABSORBER DISPLACEMENT

TRC TEST NUMBER: DP02806C

572F SN028 DAMPER TEST CAL06

RUN NUMBER: 050103.1841;1



CHANNEL: CSTYD

FILTER: CH. CLASS 1000

PEAK DATA: 36.64 MM @ 24.08 MS; -0.35 MM @ 79.12 MS

030505-1

TRANSPORTATION RESEARCH CENTER INC.

LUMBAR FLEXION TEST

SID PART 572B

CAL DATE: 01-May-03

TRC, INC.

TEST NO: 028C06LF1

572B SN 028 TORSO FLEX CAL 06

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6° C	21.7 °C
RELATIVE HUMIDITY	10 – 70 %	43 %
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	191.3 N
FORCE AT 40 DEG OF FLEXION	205 – 258 N	218.0 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	8 °

TEST MEETS SPECIFICATIONS

TECHNICIAN



Transportation Research Center Inc.

572B Abdomen Compression Test

HIII SID Serial No. 028 Calibration No. 06 - 1

Test Date 05/01/2003

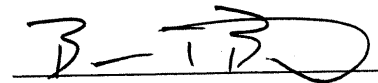
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	43 %	Yes
Displacement Rate	6.35 - 8.89 mm/s	7.3 - 8.1 mm/s	Yes
Data Within Required Corridor	Yes	Yes	Yes

Comments:

Technician



Approved



05.02.2003 11:02:52 5

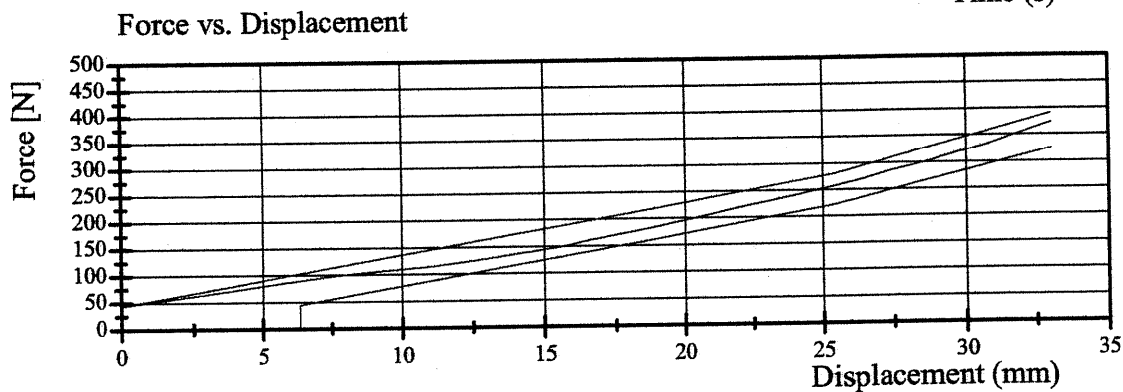
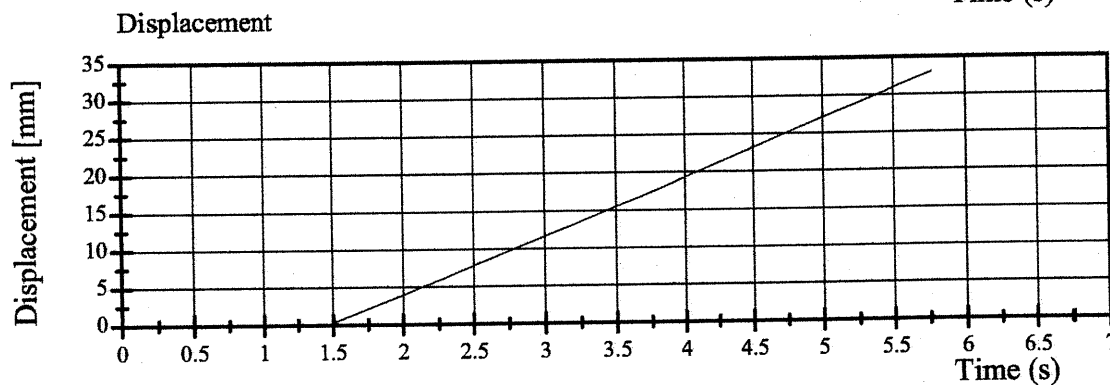
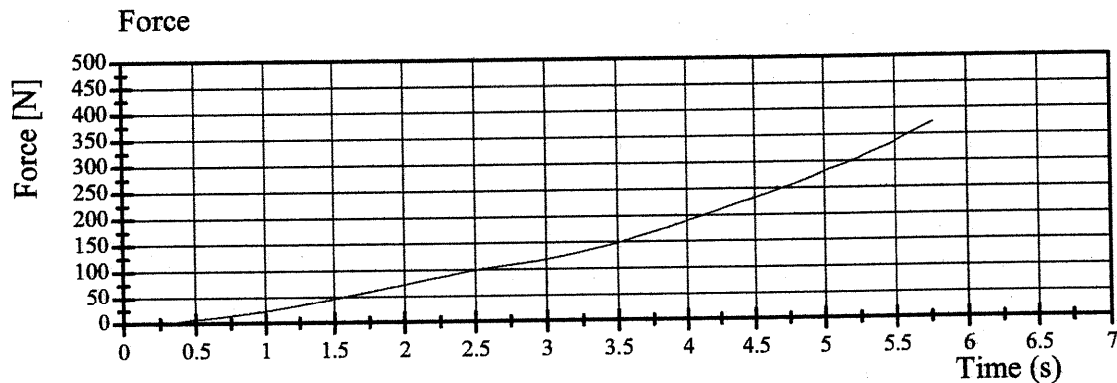


Transportation Research Center Inc.

572B Abdomen Compression Test

HIH SID Serial No. 028 Calibration No. 06 - 1

Test Date 05/01/2003



05.02.2003 11:02:38 5



TRANSPORTATION RESEARCH CENTER INC.

LATERAL PELVIS IMPACT TEST

SIDE IMPACT DUMMY

01-MAY-03

LEFT SIDE CONFIGURATION

TRC INC.

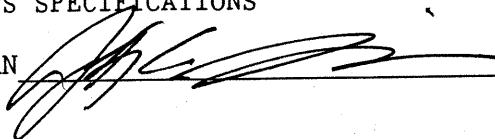
TEST NO: SPL02806

572F SN028 LEFT PELVIS CAL06

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	43.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.29 M/S
PEAK PELVIC ACCELERATION	40 - 60 G	47.6 G
TIME ABOVE 20 G LEVEL	3 - 7 MS	6.3 MS
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 050903.1439;1

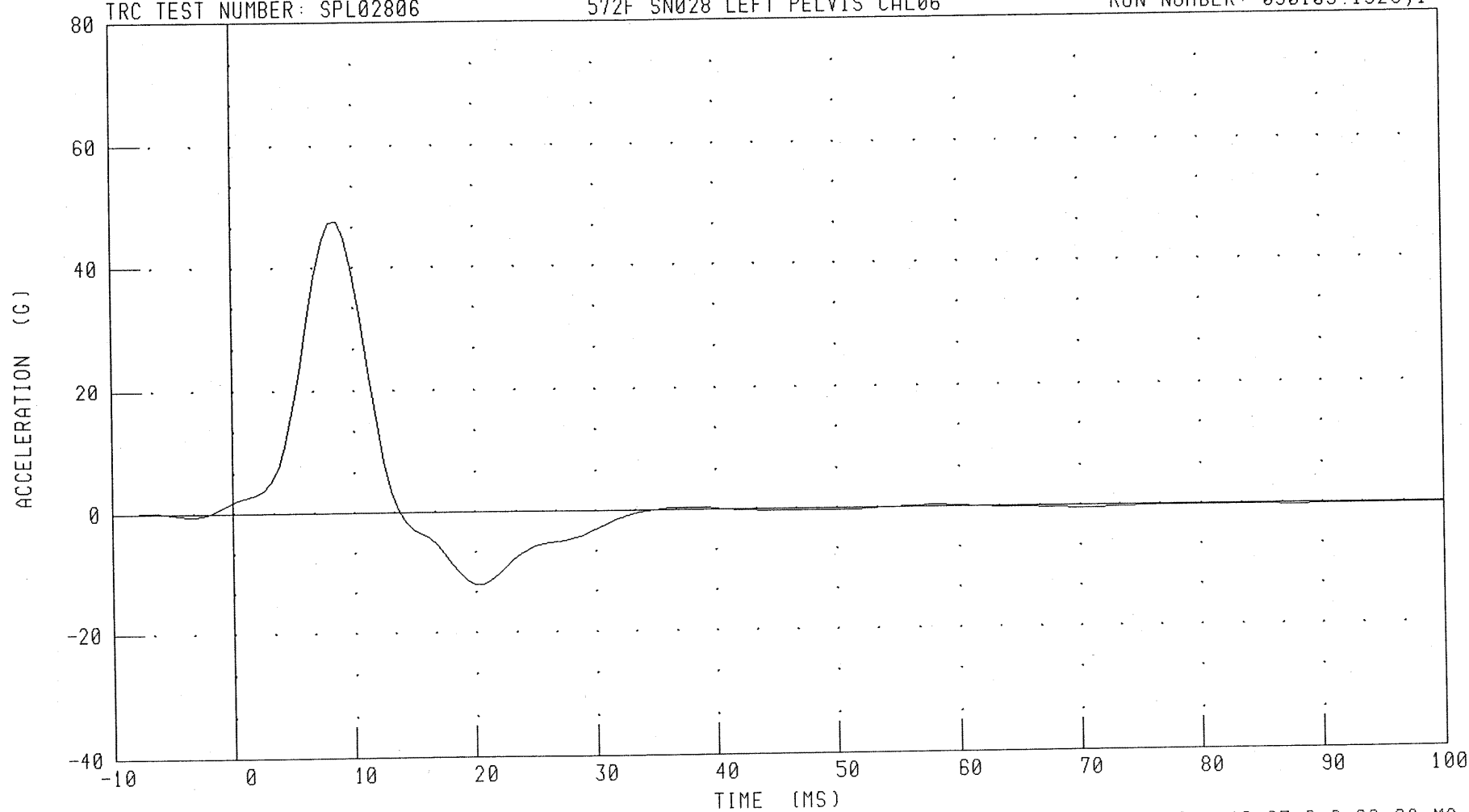
PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PELVIS ACCELERATION Y AXIS

RUN NUMBER: 050103.1320;1

TRC TEST NUMBER: SPL02806

572F SN028 LEFT PELVIS CAL06



PEAK DATA: 47.56 G @ 8.75 MS; -12.07 G @ 20.00 MS

CHANNEL: PEVYG FILTER: FIR 100

C-69

030505-1

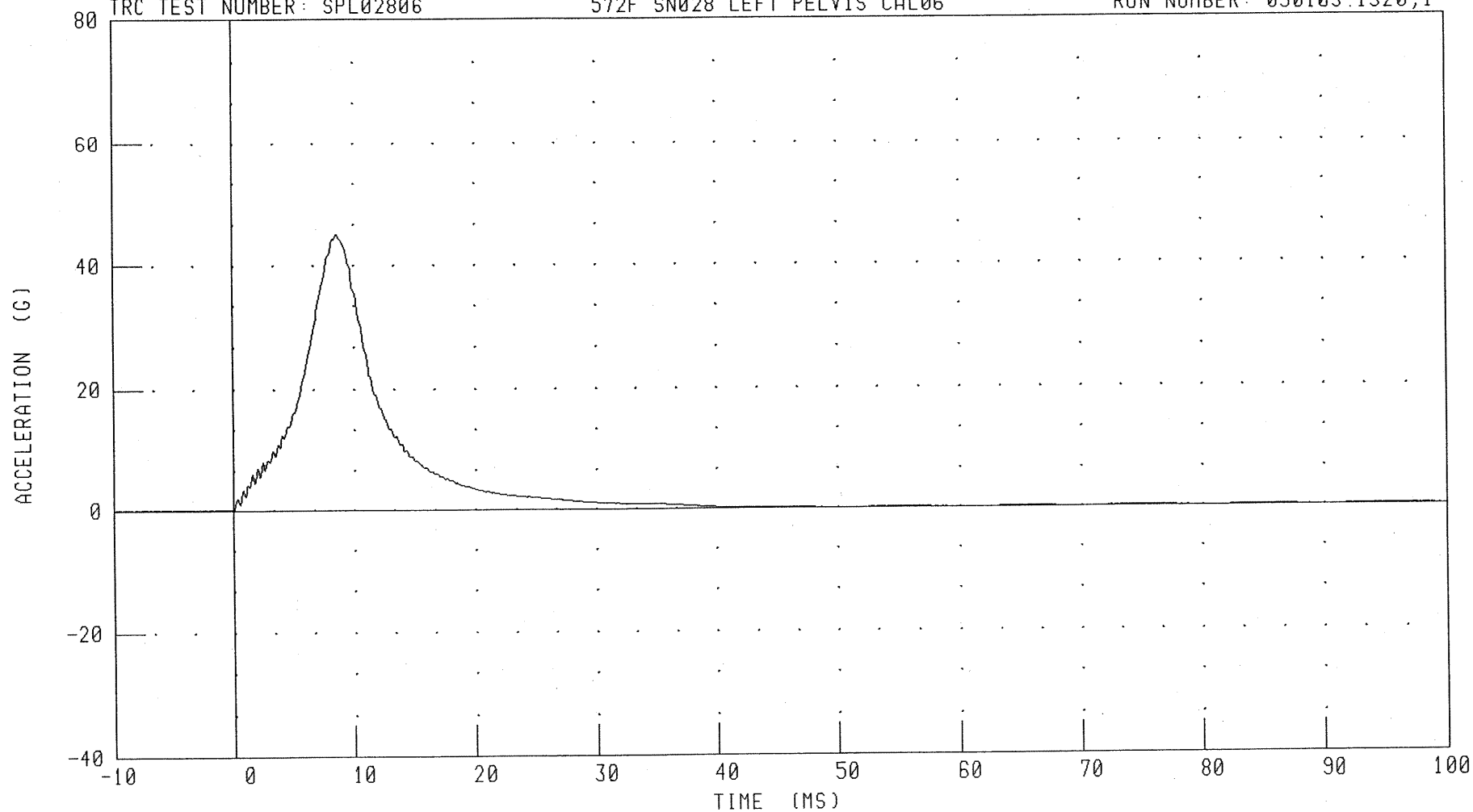
PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PENDULUM DECELERATION

TRC TEST NUMBER: SPL02806

572F SN028 LEFT PELVIS CAL06

RUN NUMBER: 050103.1320;1



CHANNEL: PENXC

FILTER: CH. CLASS 1000

PEAK DATA: 44.95 G @ 8.72 MS; -0.12 G @ 49.12 MS

030505-1

Calibration Test Results

Post-Test

SID: 066

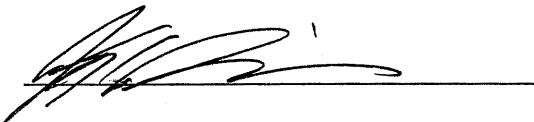
Configured for Left Side Impact

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

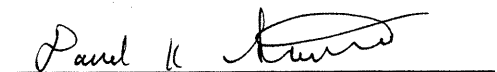
Transportation Research Center Inc.
572F SID Dummy
External Dimensions
Serial No. 066 Calibration No. 09

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	901 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	505 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Rib From Backline	RD	228.6 - 241.3 mm	239 mm	Yes
Knee Pivot From Backline	KH	510.5 - 525.8 mm	520 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	498 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	388 mm	Yes
Top Rib Width From C/L	RW-1	165.1 - 180.3 mm	169 mm	Yes
Bottom Rib Width From C/L	RW-2	165.1 - 180.3 mm	170 mm	Yes
Difference Between Top & Bottom Rib Width from C/L		<= 2.5 mm	1.0 mm	Yes

Technician



Approved




TRANSPORTATION RESEARCH CENTER INC.

LATERAL HEAD DROP TEST

SID/HIII DUMMY

15-MAY-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO. HDL06609

572M SID/HIII SN066 HEAD CAL09

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6 deg. C	21.67 deg. C
RELATIVE HUMIDITY	10 - 70 %	48.00 %
PEAK RESULTANT ACCELERATION	120 - 150 G	131.58 G
PEAK LONGITUDINAL ACCELERATION	15 G MAX	-11.81 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 051603.1003;1

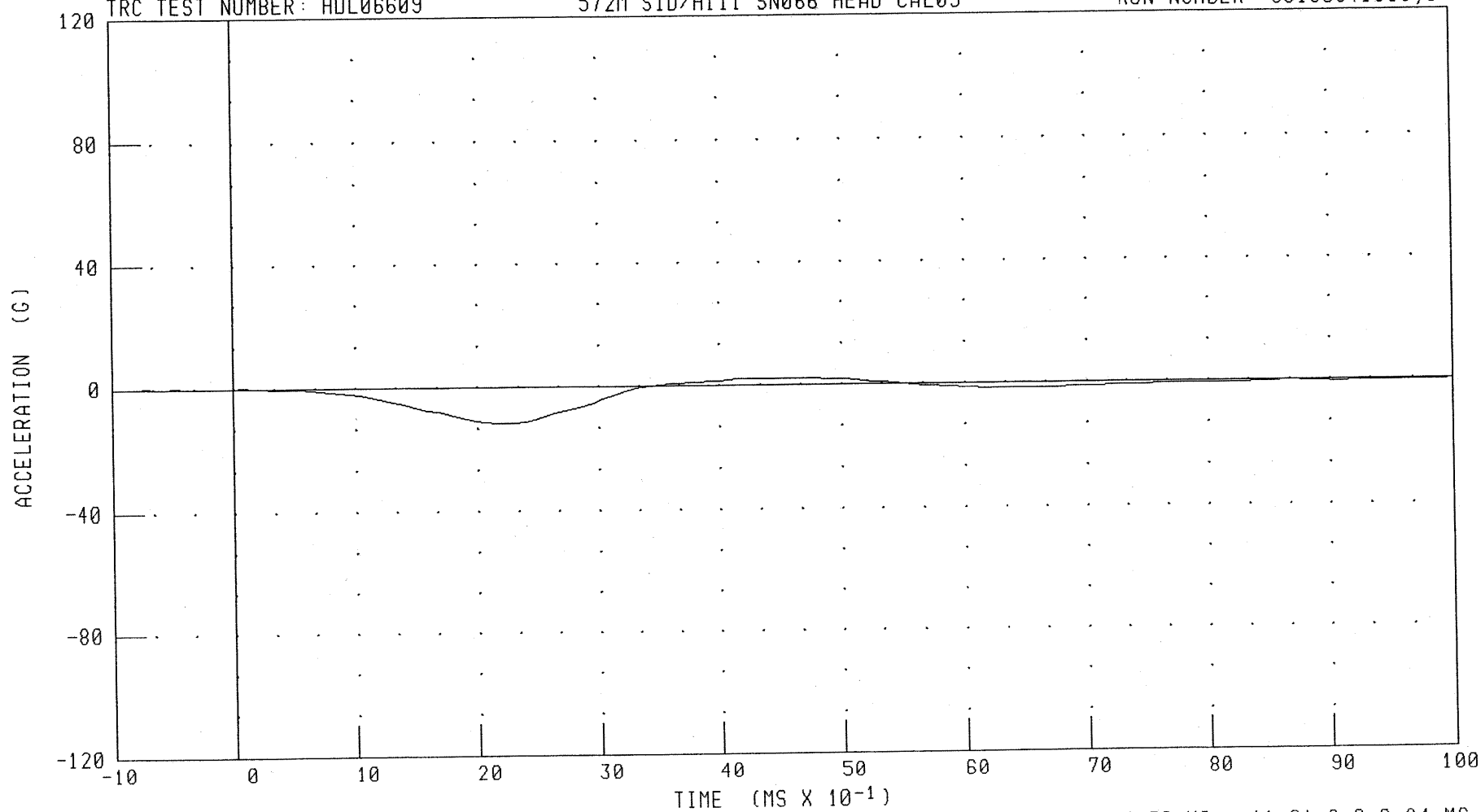
572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION X AXIS

TRC TEST NUMBER: HDL06609

572M SID/HIII SN066 HEAD CAL09

RUN NUMBER: 051603.1006;1



CHANNEL: HEDXC

FILTER: CH: CLASS 1000

PEAK DATA: 2.02 G @ 4.32 MS; -11.81 G @ 2.24 MS

030505-1

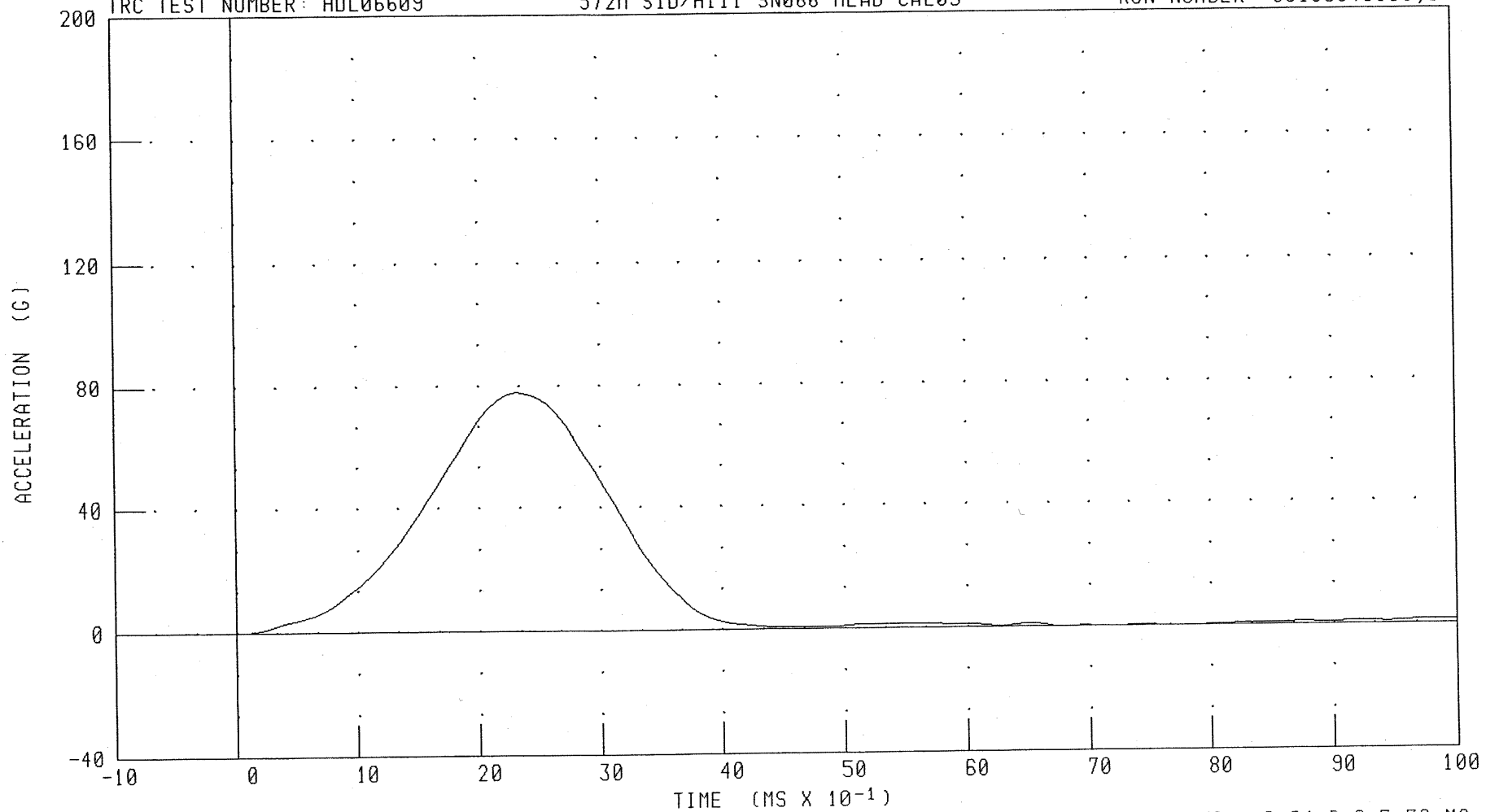
572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Y AXIS

TRC TEST NUMBER: HDL06609

572M SID/HIII SN066 HEAD CAL09

RUN NUMBER: 051603.1006;1



CHANNEL: HEDYG

FILTER: CH. CLASS 1000

PEAK DATA: 77.70 G @ 2.32 MS; -0.24 G @ 7.76 MS

030505-1

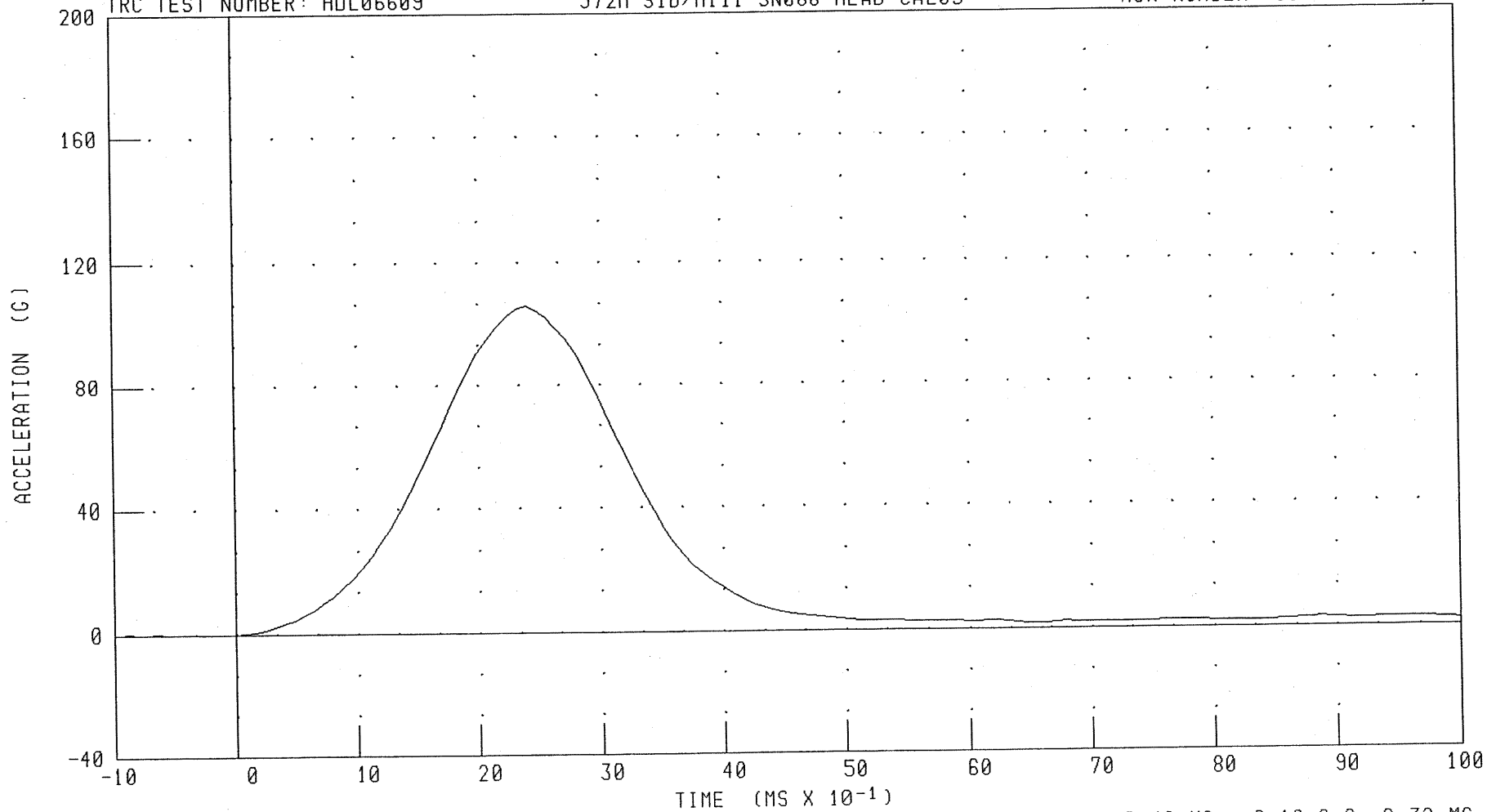
572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Z AXIS

TRC TEST NUMBER: HDL06609

572M SID/HIII SN066 HEAD CAL09

RUN NUMBER: 051603.1006;1



CHANNEL: HEDZG

FILTER: CH. CLASS 1000

PEAK DATA: 105.86 G @ 2.40 MS; -0.10 G @ -0.32 MS

030505-1

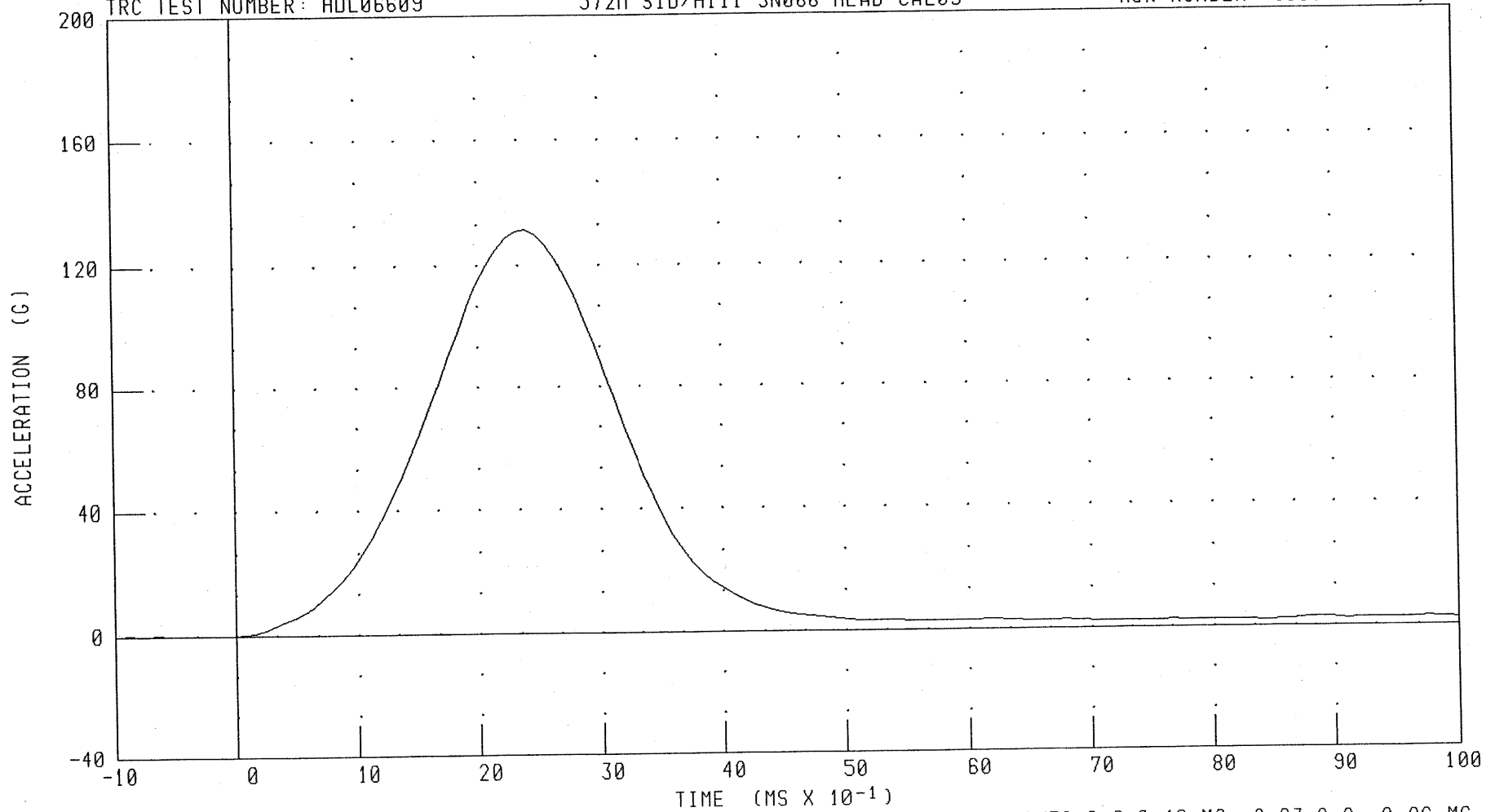
572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD RESULTANT ACCELERATION

TRC TEST NUMBER: HDL06609

572M SID/HIII SN066 HEAD CAL09

RUN NUMBER: 051603.1006;1



CHANNEL: HEDRG

FILTER: CH. CLASS 1000

PEAK DATA: 131.58 G @ 2.40 MS; 0.03 G @ -0.96 MS

030505-1

TRANSPORTATION RESEARCH CENTER INC.

LATERAL NECK TEST

SID/HIII DUMMY

15-MAY-03

LEFT SIDE CONFIGURATION

TRC INC.

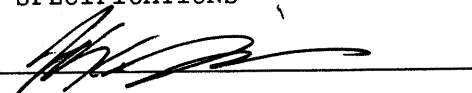
TEST NO. NFL06609

572M SID/HIII SN066 NECK CAL09

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6 - 22.2 deg. C	21.67 deg. C
RELATIVE HUMIDITY		10 - 70 %	47.00 %
IMPACT VELOCITY		6.89 - 7.13 M/S	6.99 M/S
INTEGRATED VELOCITY	10 MS	1.96 - 2.55 M/S	2.32 M/S
	20 MS	4.12 - 5.10 M/S	4.69 M/S
	30 MS	5.73 - 7.01 M/S	6.72 M/S
	40 - 70 MS	6.27 - 7.64 M/S	7.10- 7.21 M/S
MAXIMUM MIDSAGGITAL PLANE ROTATION		66 - 82 deg.	70.26 deg.
ROTATION ANGLE DECAY TIME FROM PEAK TO ZERO		58 - 67 MS	59.20 MS
MAXIMUM MOMENT ABOUT OCCIPITAL CONDYLE		73 - 88 NM	83.58 NM
POSITIVE MOMENT DECAY TIME FROM PEAK TO ZERO		49 - 64 MS	53.76 MS
TIME OF MAXIMUM ROTATION AFTER MAXIMUM MOMENT		2 - 16 MS	7.68 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN



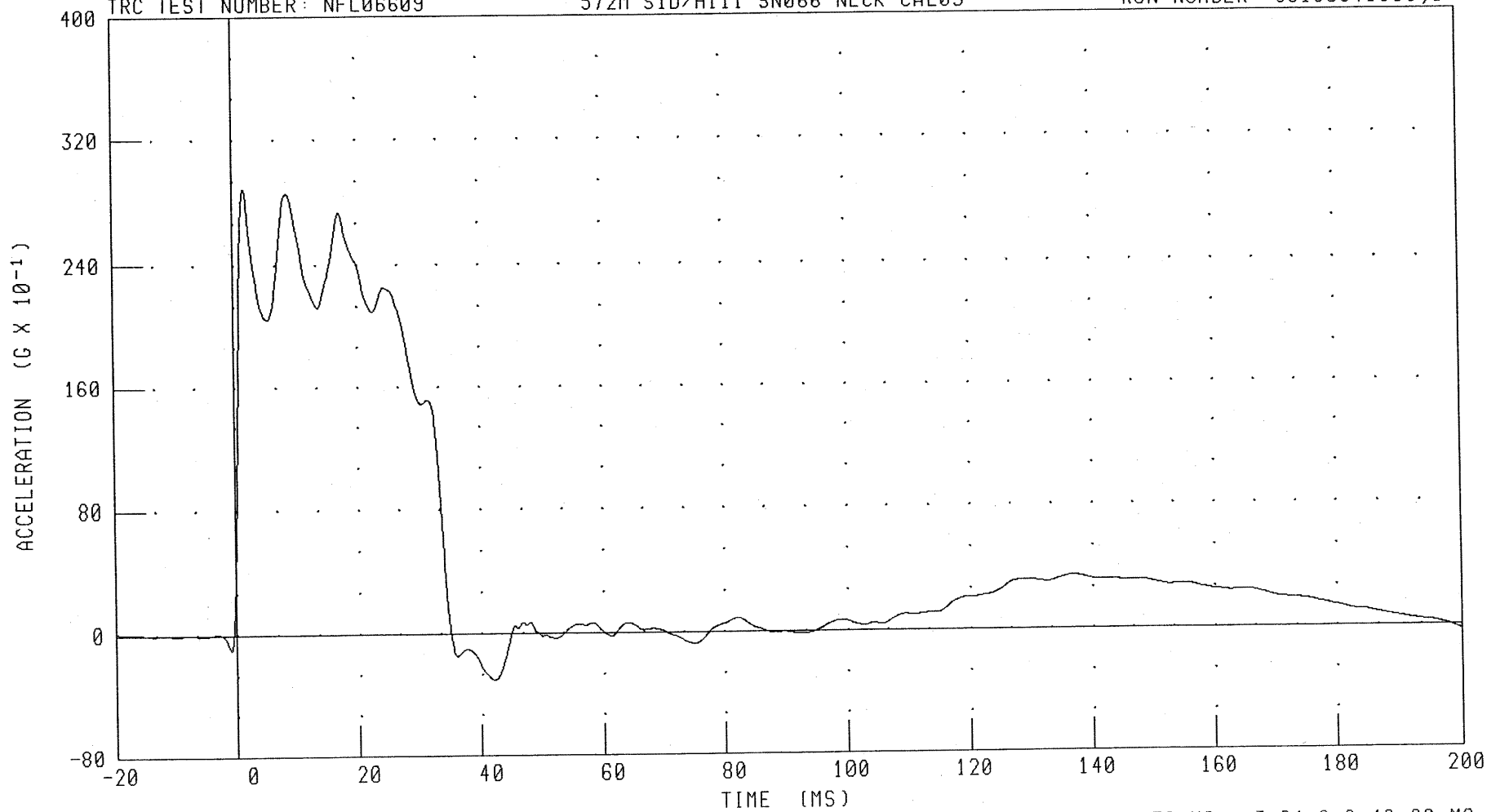
RUN NUMBER: 051603.1004;1

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST
PENDULUM DECELERATION

TRC TEST NUMBER: NFL06609

572M SID/HIII SN066 NECK CAL09

RUN NUMBER: 051603.1005;1



CHANNEL: PENXG

FILTER: CH. CLASS 180

PEAK DATA: 28.83 G @ 1.76 MS; -3.04 G @ 42.08 MS

030505-1

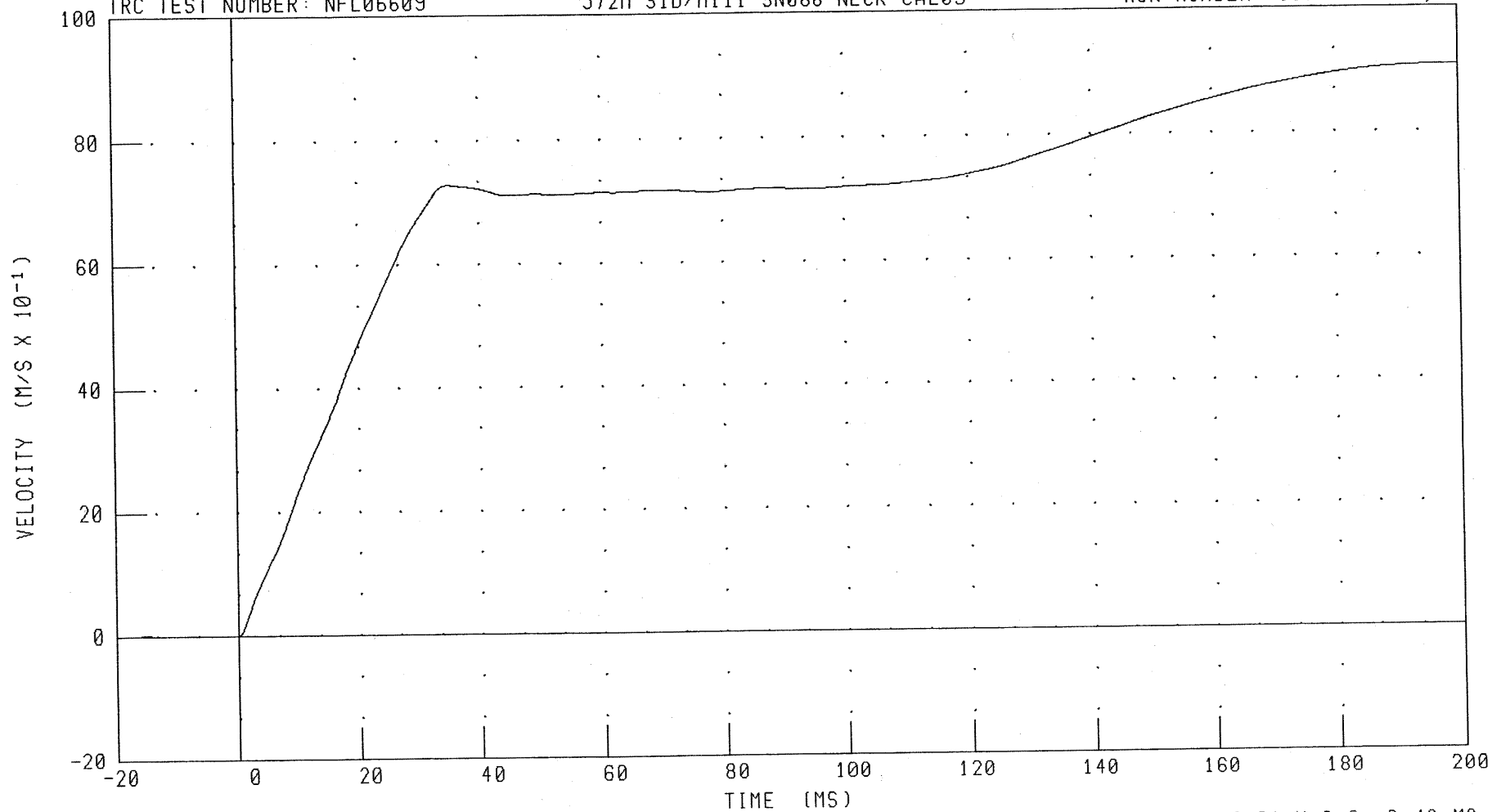
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

INTEGRATED PENDULUM VELOCITY

TRC TEST NUMBER: NFL06609

572M SID/HIII SN066 NECK CAL09

RUN NUMBER: 051603.1005;1



CHANNEL: PENXVI

FILTER: CH. CLASS 180

PEAK DATA: 9.06 M/S @ 198.08 MS; -0.01 M/S @ -0.40 MS

030505-1

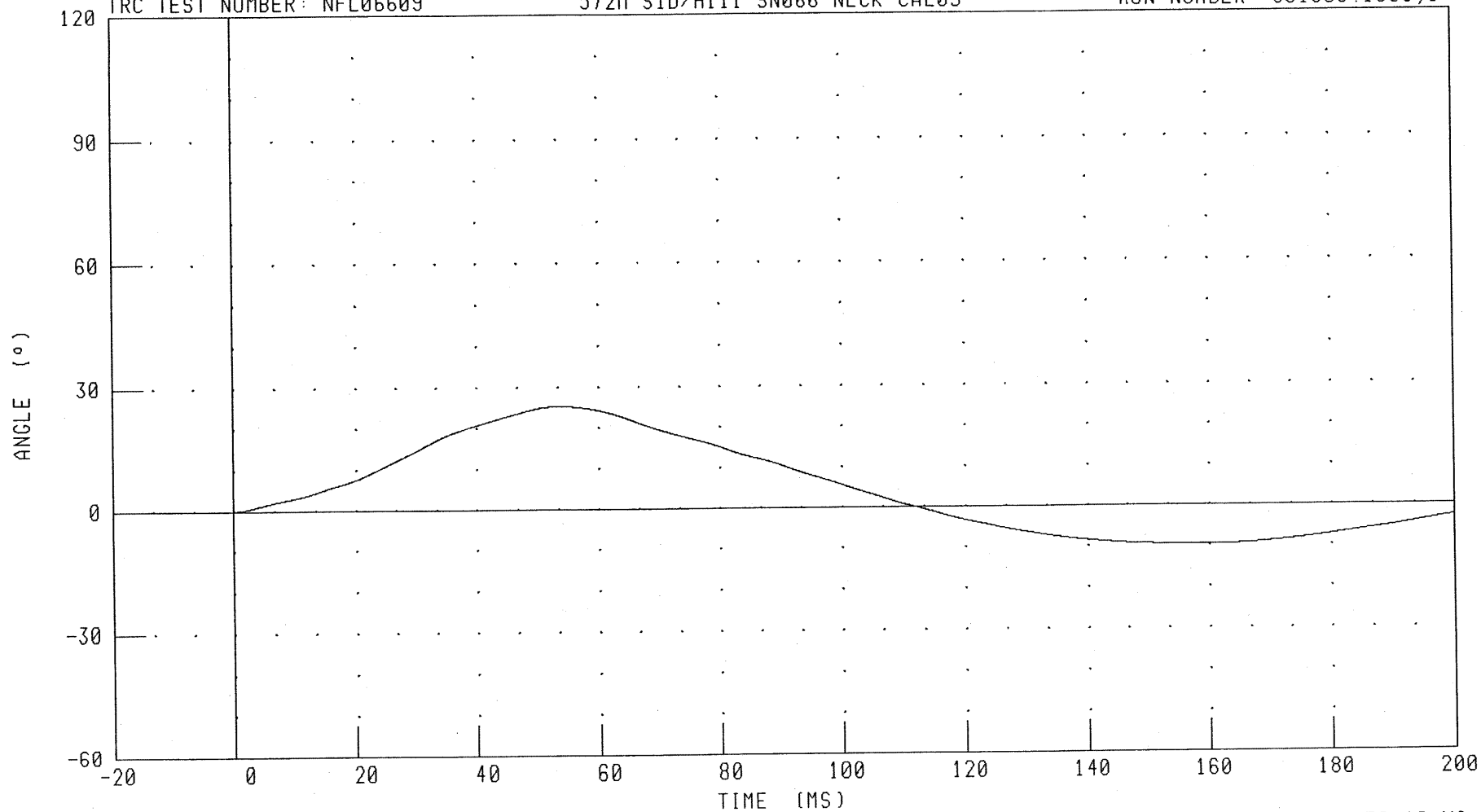
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER: NFL06609

572M SID/HIII SN066 NECK CAL09

RUN NUMBER: 051603.1005;1



CHANNEL: BETA

FILTER: CH. CLASS 60

PEAK DATA: 25.35 ° @ 53.84 MS; -9.74 ° @ 159.12 MS

030505-1

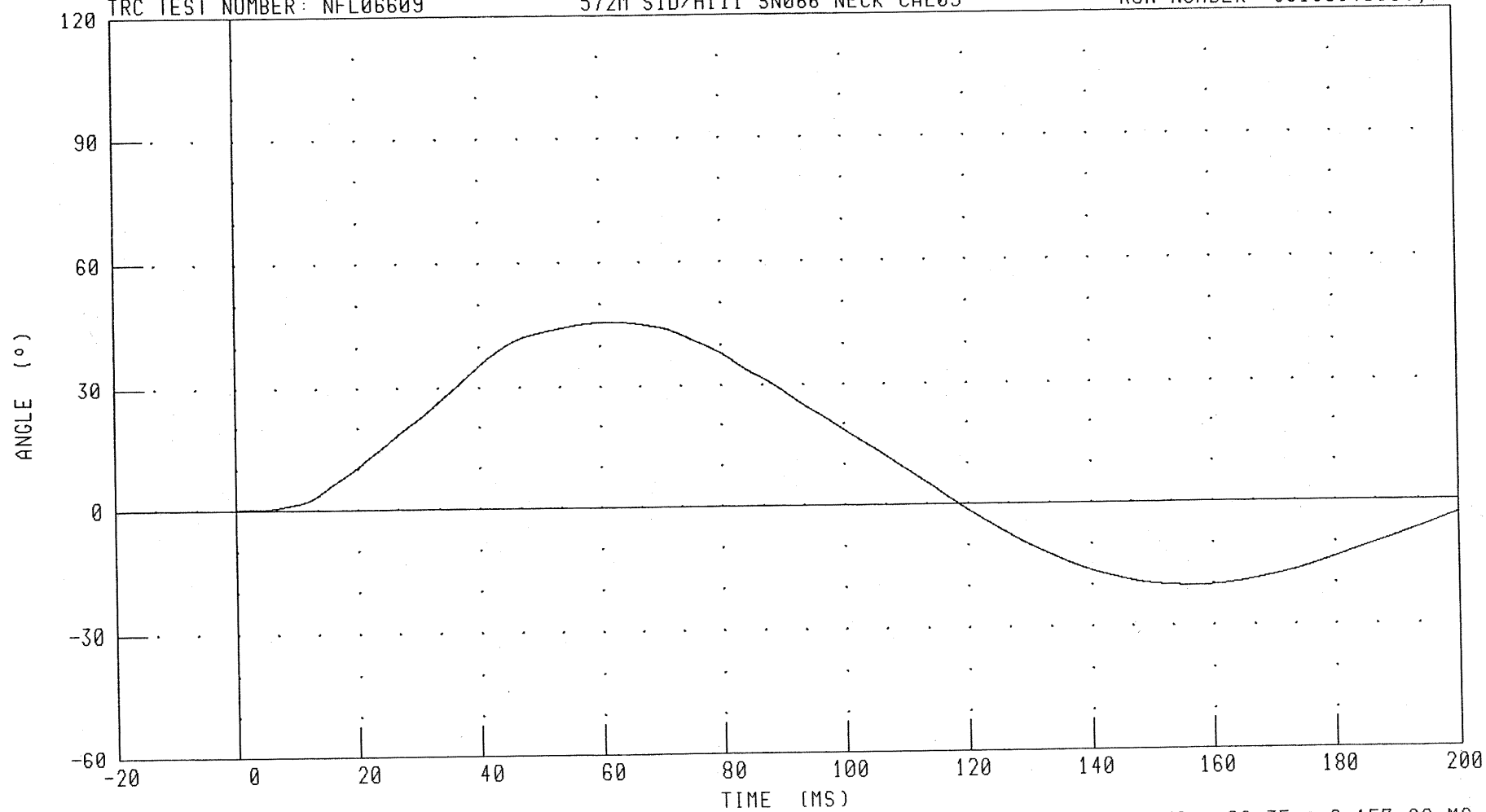
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: NFL06609

572M SID/HIII SN066 NECK CAL09

RUN NUMBER: 051603.1005;1



CHANNEL: THETA

FILTER: CH. CLASS 60

PEAK DATA: 45.68 ° @ 61.52 MS; -20.35 ° @ 157.28 MS

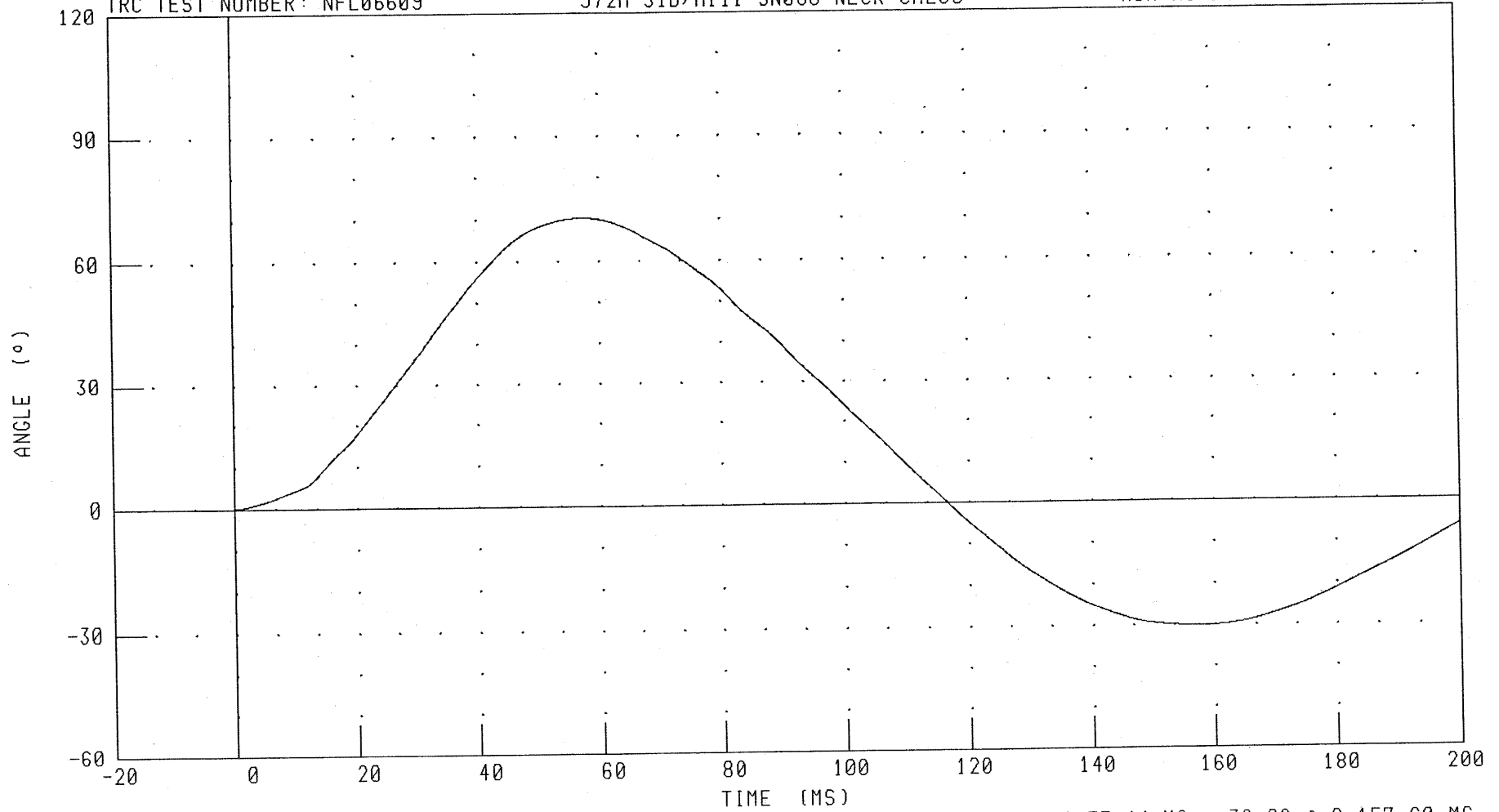
030505-1

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST
TOTAL ROTATION

TRC TEST NUMBER: NFL06609

572M SID/HIII SN066 NECK CAL09

RUN NUMBER: 051603.1005;1



CHANNEL: TOTAN

FILTER: CH. CLASS 60

PEAK DATA: 70.26 ° @ 57.44 MS; -30.08 ° @ 157.60 MS

030505-1

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

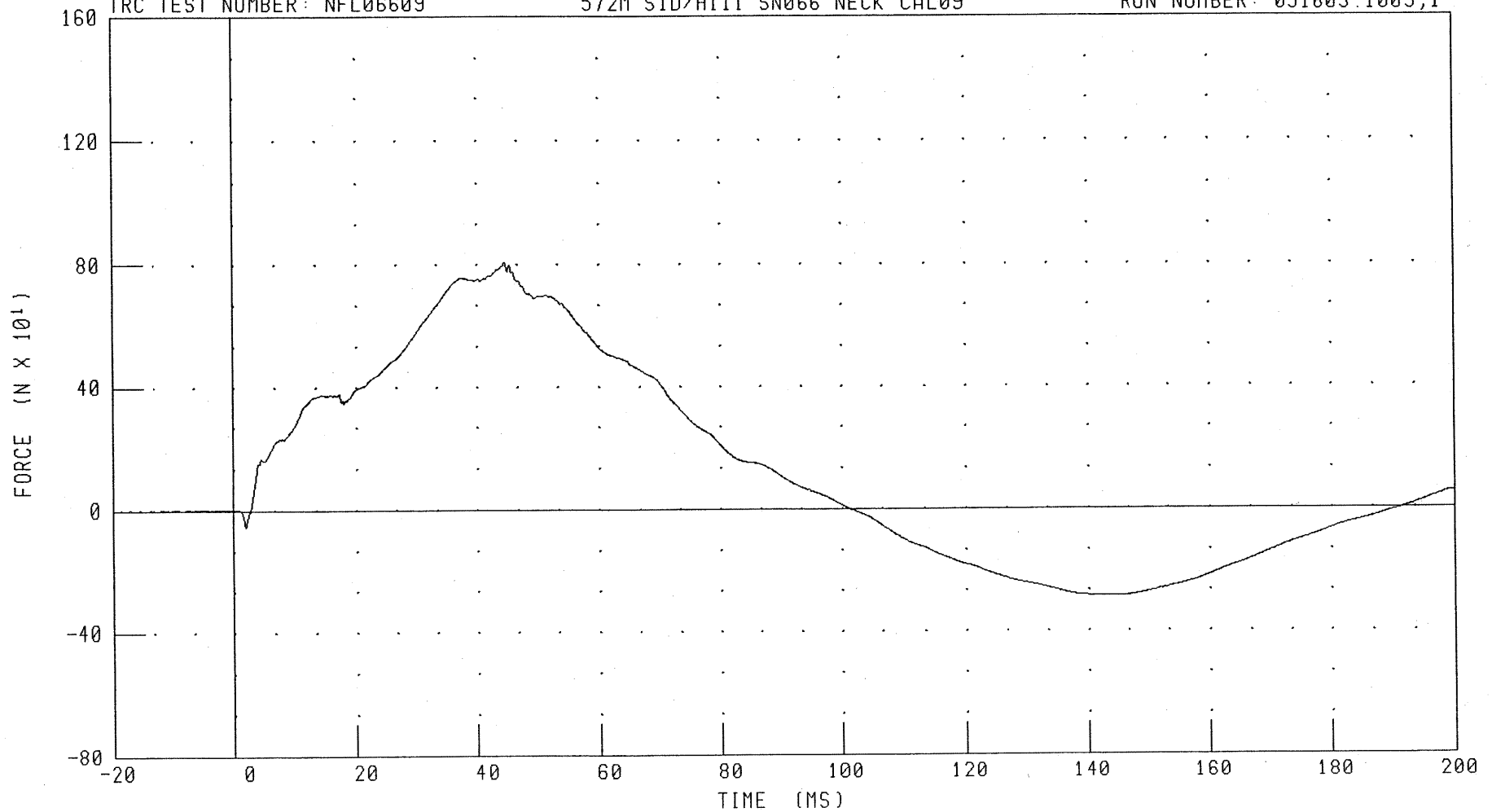
NECK FORCE Y AXIS

TRC TEST NUMBER: NFL06609

572M SID/HIII SN066 NECK CAL09

RUN NUMBER: 051603.1005;1

C-84



CHANNEL: NEKYF

FILTER: CH. CLASS 1000

PEAK DATA: 808.83 N @ 44.72 MS; -286.33 N @ 142.80 MS

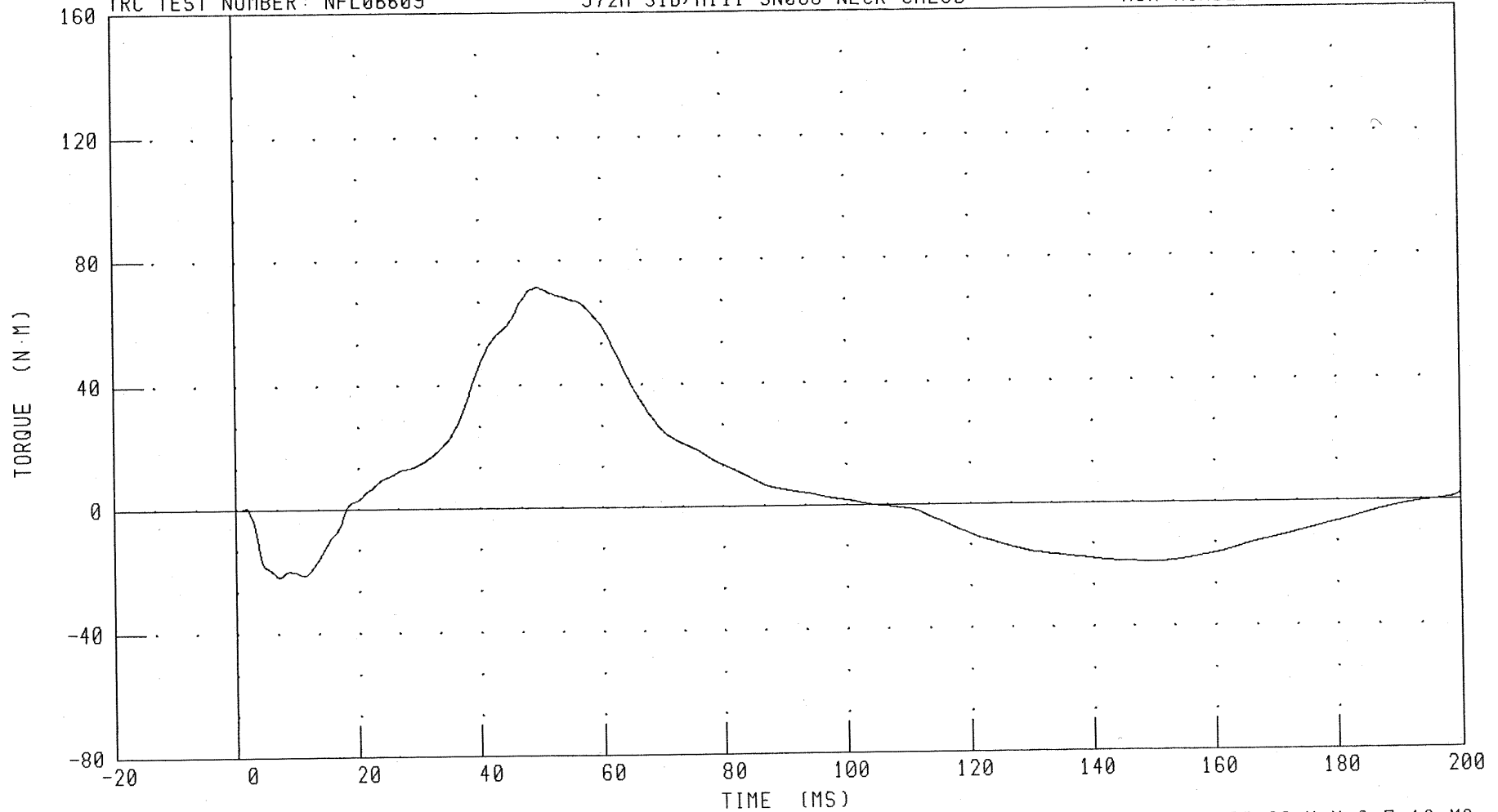
030505-1

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST
NECK MOMENT X AXIS

TRC TEST NUMBER: NFL06609

572M SID/HIII SN066 NECK CAL09

RUN NUMBER: 051603.1005;1



CHANNEL: NEKXM

FILTER: CH. CLASS 600

PEAK DATA: 71.31 N·m @ 49.68 MS; -22.00 N·m @ 7.12 MS

030505-1

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

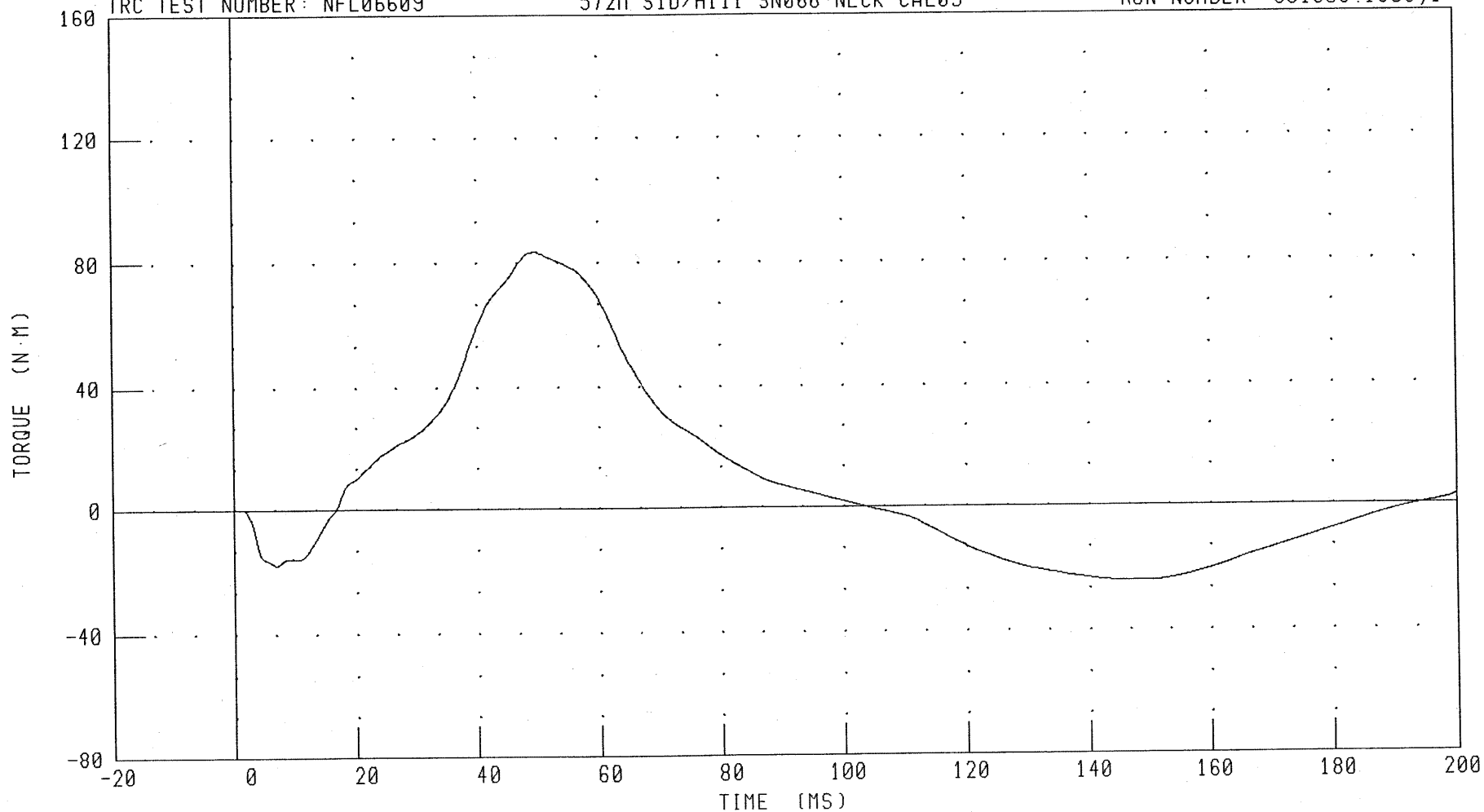
TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: NFL06609

572M SID/HIII SN066 NECK CAL09

RUN NUMBER: 051603.1005,1

C-86



CHANNEL: NEKOM

FILTER: CH. CLASS 600

PEAK DATA: 83.58 N·M @ 49.76 MS, -24.30 N·M @ 149.20 MS

030505-1

TRANSPORTATION RESEARCH CENTER INC.

LATERAL THORAX IMPACT TEST

SIDE IMPACT DUMMY

14-MAY-03

LEFT SIDE CONFIGURATION

TRC INC.

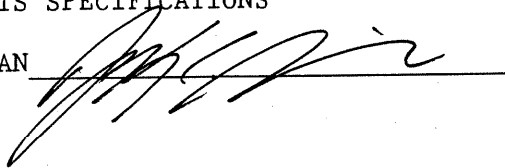
TEST NO: STL06609

572F SID SN066 L.THORAX CAL09

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	29.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.29 M/S
PEAK ACCELERATION: UPPER RIB BAR	37 - 46 G	42.4 G
PEAK ACCELERATION: LOWER RIB BAR	37 - 46 G	44.7 G
PEAK ACCELERATION: LOWER THORACIC SPINE	15 - 22 G	21.6 G

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 051403.1226;1

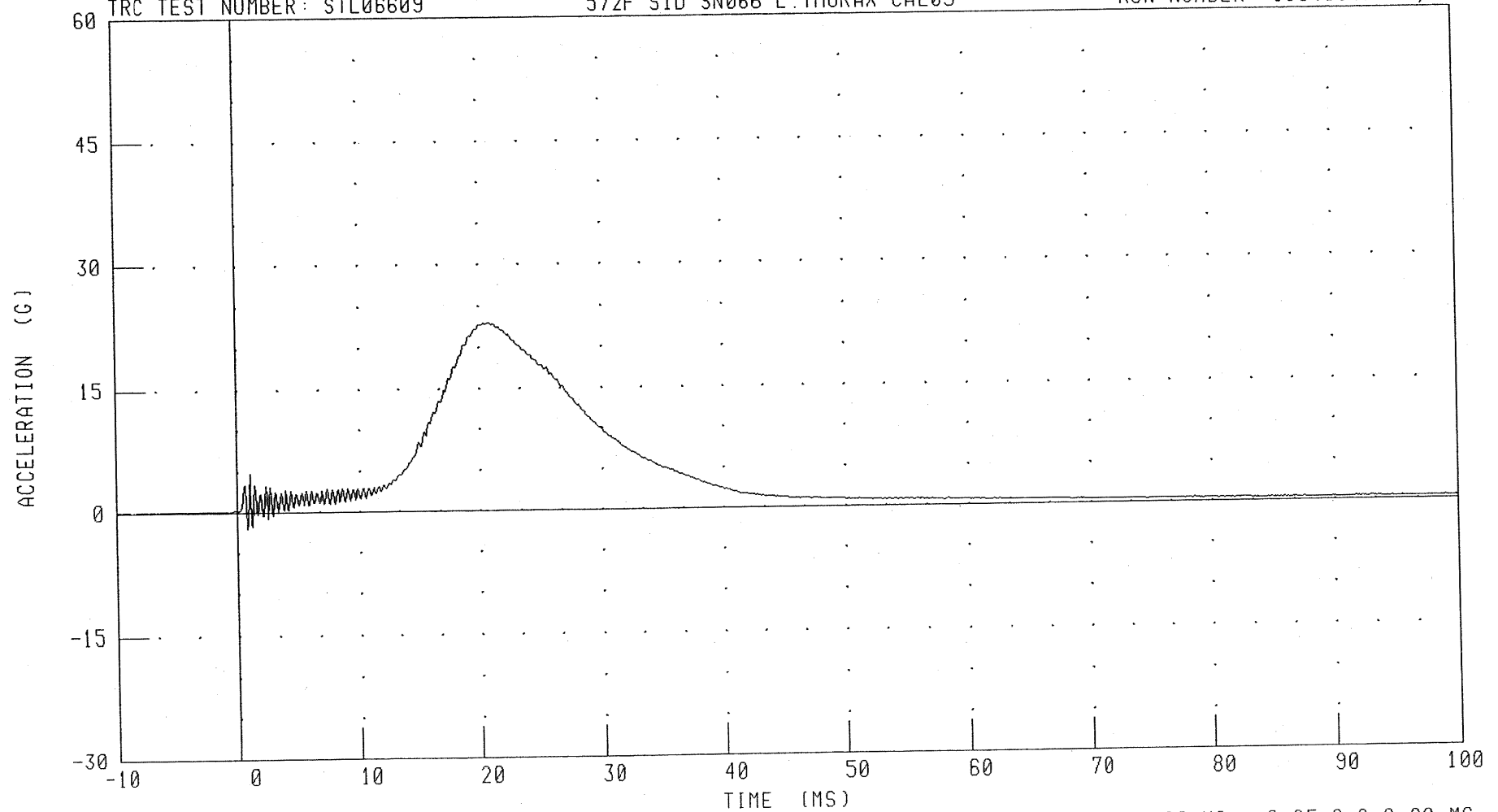
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

PENDULUM DECELERATION

TRC TEST NUMBER: STL06609

572F SID SN066 L THORAX CAL09

RUN NUMBER: 051403.1226;1



CHANNEL: PENXC

FILTER: CH. CLASS 1000

PEAK DATA: 23.00 G @ 20.88 MS; -2.05 G @ 0.80 MS

030505-1

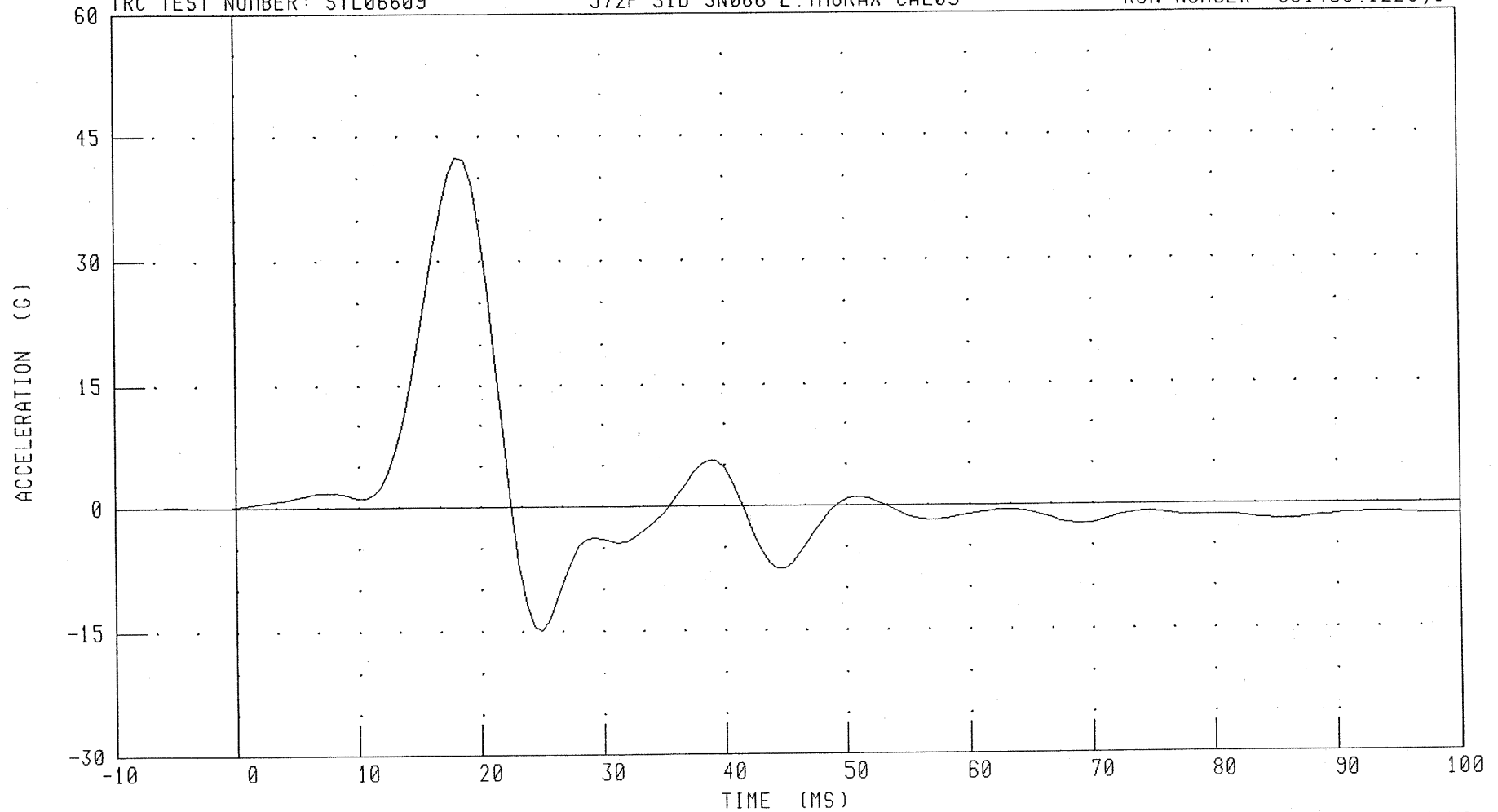
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LEFT UPPER RIB ACCELERATION Y AXIS

TRC TEST NUMBER: STL06609

572F SID SN066 L THORAX CAL09

RUN NUMBER: 051403.1226;1



CHANNEL: LURYG

FILTER: FIR 100

PEAK DATA: 42.37 G @ 18.13 MS; -14.85 G @ 25.00 MS

030505-1

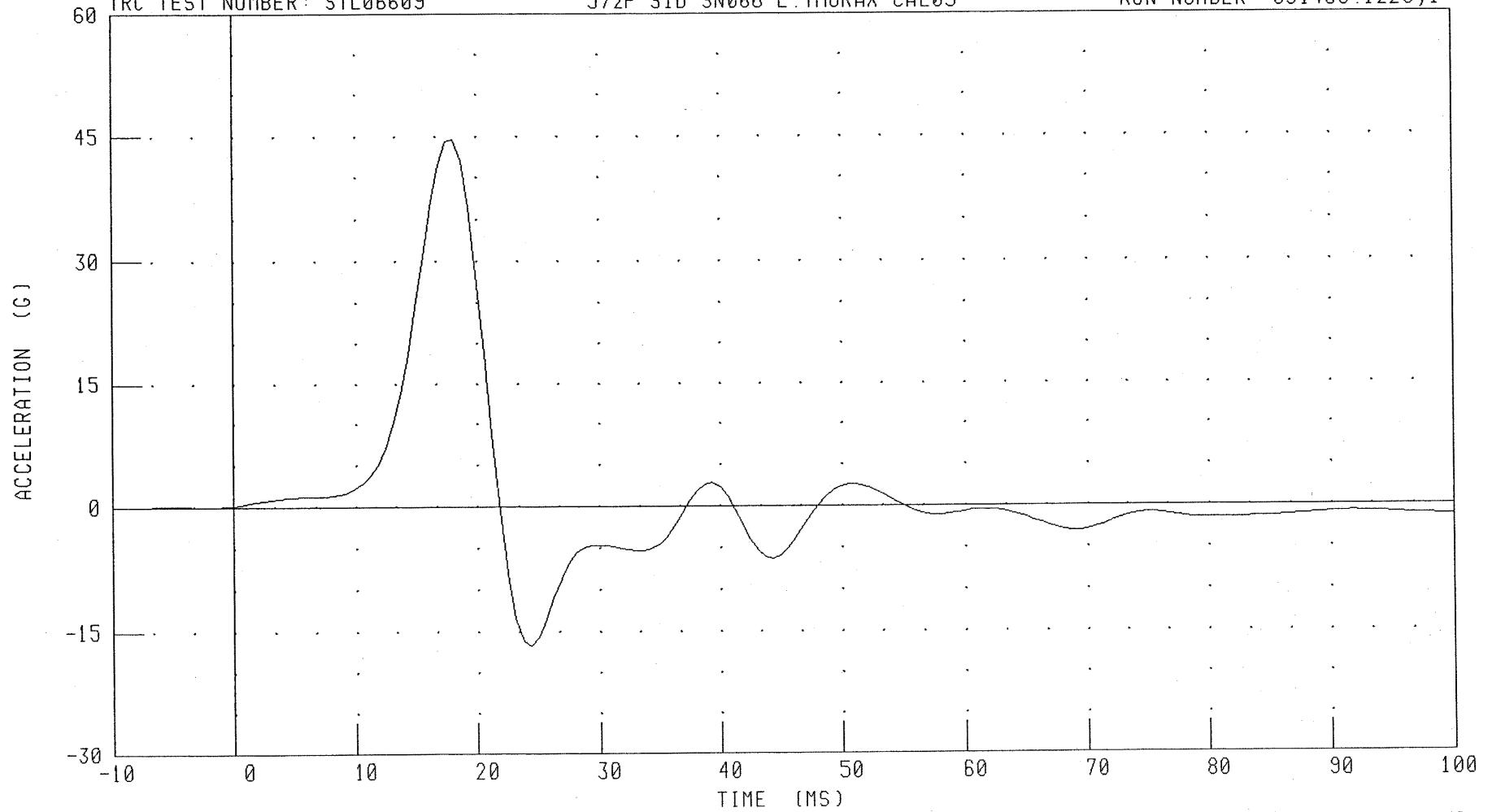
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LEFT LOWER RIB ACCELERATION Y AXIS

TRC TEST NUMBER: STL06609

572F SID SN066 L.THORAX CAL09

RUN NUMBER: 051403.1226;1



030505-1

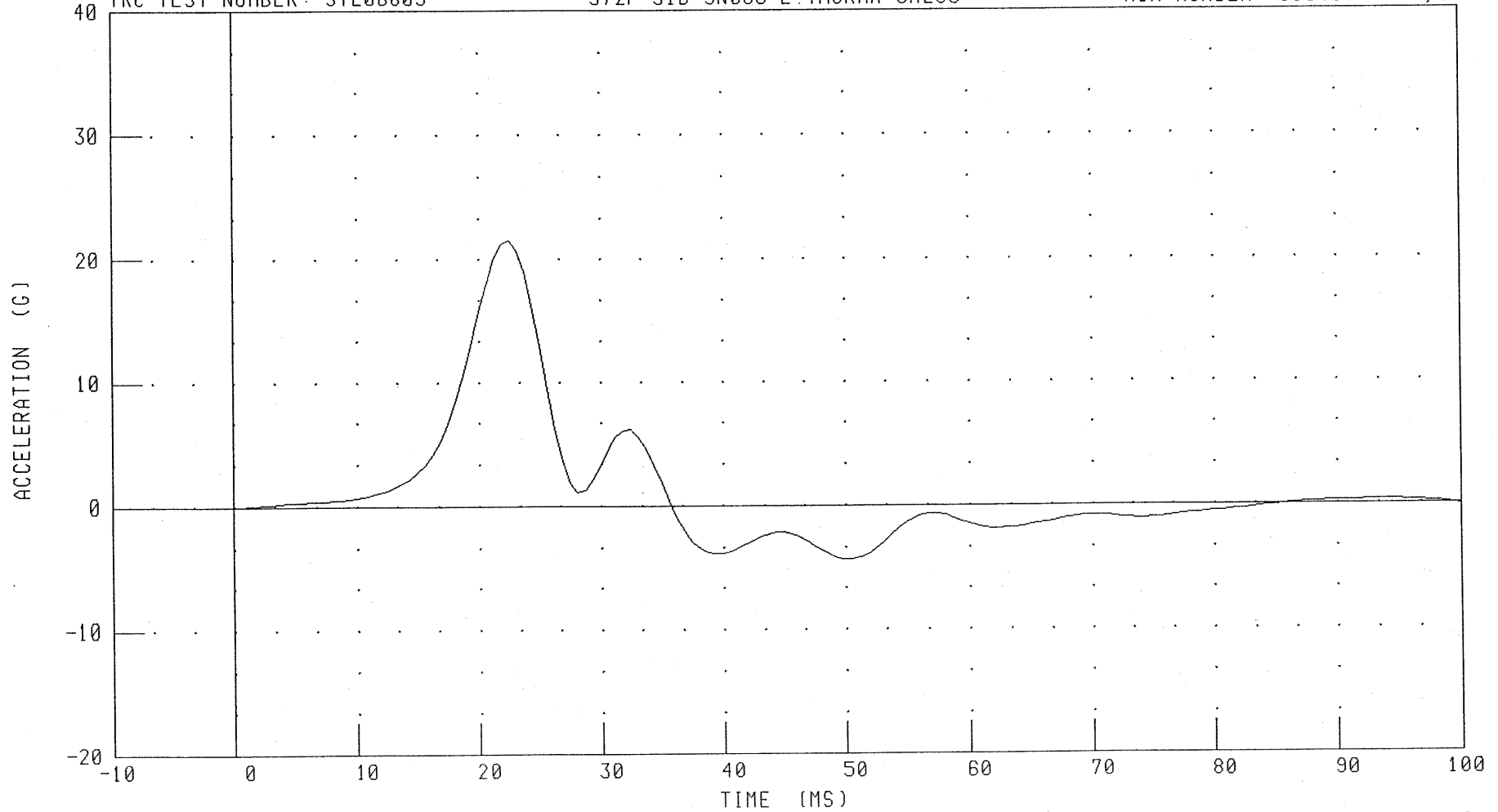
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LOWER SPINE ACCELERATION Y AXIS

TRC TEST NUMBER: STL06609

572F SID SN066 L THORAX CAL09

RUN NUMBER: 051403.1226;1



CHANNEL: T12YG

FILTER: FIR 100

PEAK DATA: 21.56 G @ 22.50 MS; -4.37 G @ 50.00 MS

030505-1

TRANSPORTATION RESEARCH CENTER INC.

LUMBAR FLEXION TEST

SID PART 572B

CAL DATE: 15-May-03

TRC, INC.

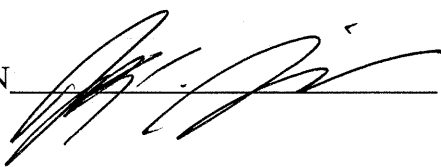
TEST NO: 066C09TF1

572B SN 066 TORSO FLEX CAL 09

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6° C	21.7 °C
RELATIVE HUMIDITY	10 – 70 %	26 %
FORCE AT 0 DEG. FLEXION	-27 – 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 – 151 N	115.7 N
FORCE AT 30 DEG OF FLEXION	151 – 205 N	164.6 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.

572B Abdomen Compression Test

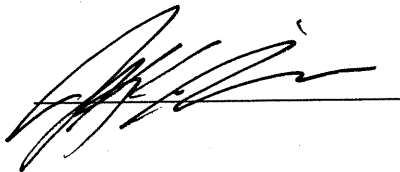
HIII SID Serial No. 066 Calibration No. 09 - 1

Test Date 05/14/2003

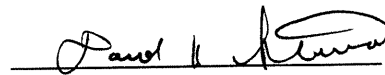
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	27 %	Yes
Displacement Rate	6.35 - 8.89 mm/s	7.3 - 8.0 mm/s	Yes
Data Within Required Corridor	Yes	Yes	Yes

Comments:

Technician



Approved



05.14.2003 15:10:24 13

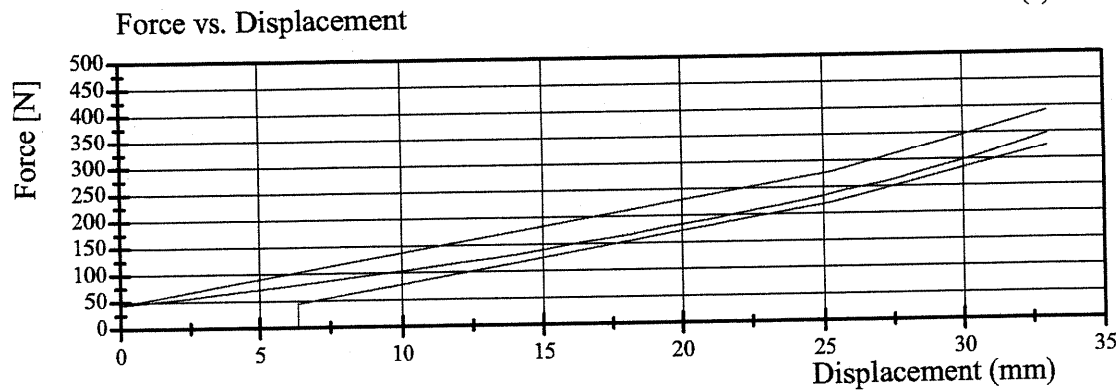
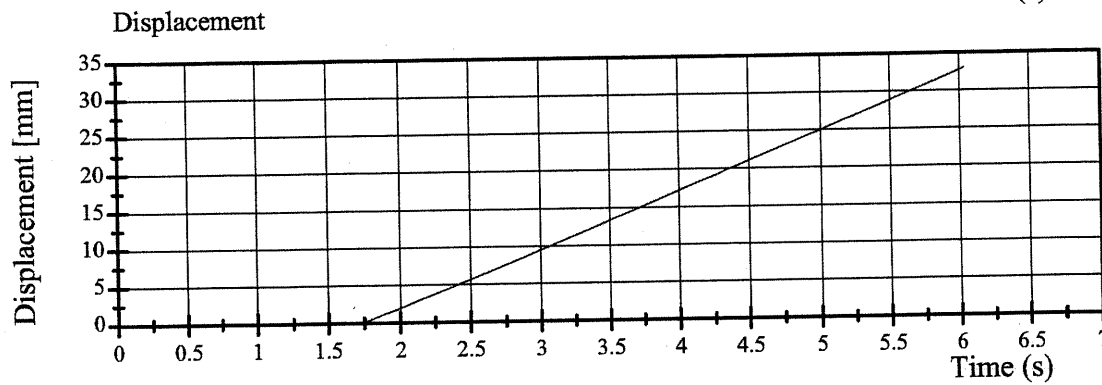
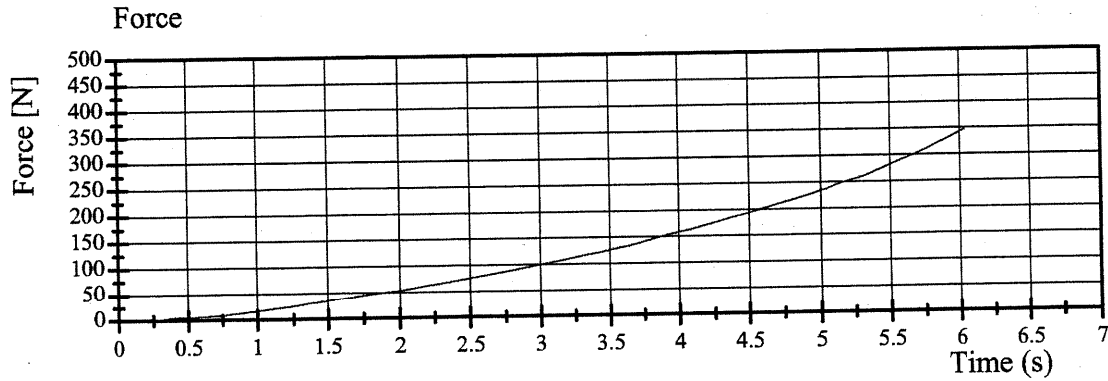


Transportation Research Center Inc.

572B Abdomen Compression Test

HIH SID Serial No. 066 Calibration No. 09 - 1

Test Date 05/14/2003



05.14.2003 15:10:16 13



TRANSPORTATION RESEARCH CENTER INC.

LATERAL PELVIS IMPACT TEST

SIDE IMPACT DUMMY

14-MAY-03

LEFT SIDE CONFIGURATION

TRC INC.

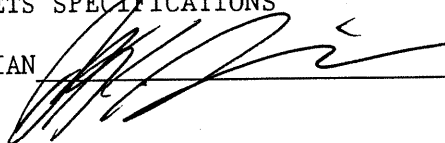
TEST NO: SPL06609

572F SN066 LEFT PELVIS CAL09

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	26.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.28 M/S
PEAK PELVIC ACCELERATION	40 - 60 G	50.0 G
TIME ABOVE 20 G LEVEL	3 - 7 MS	6.2 MS
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 051403.1234;1

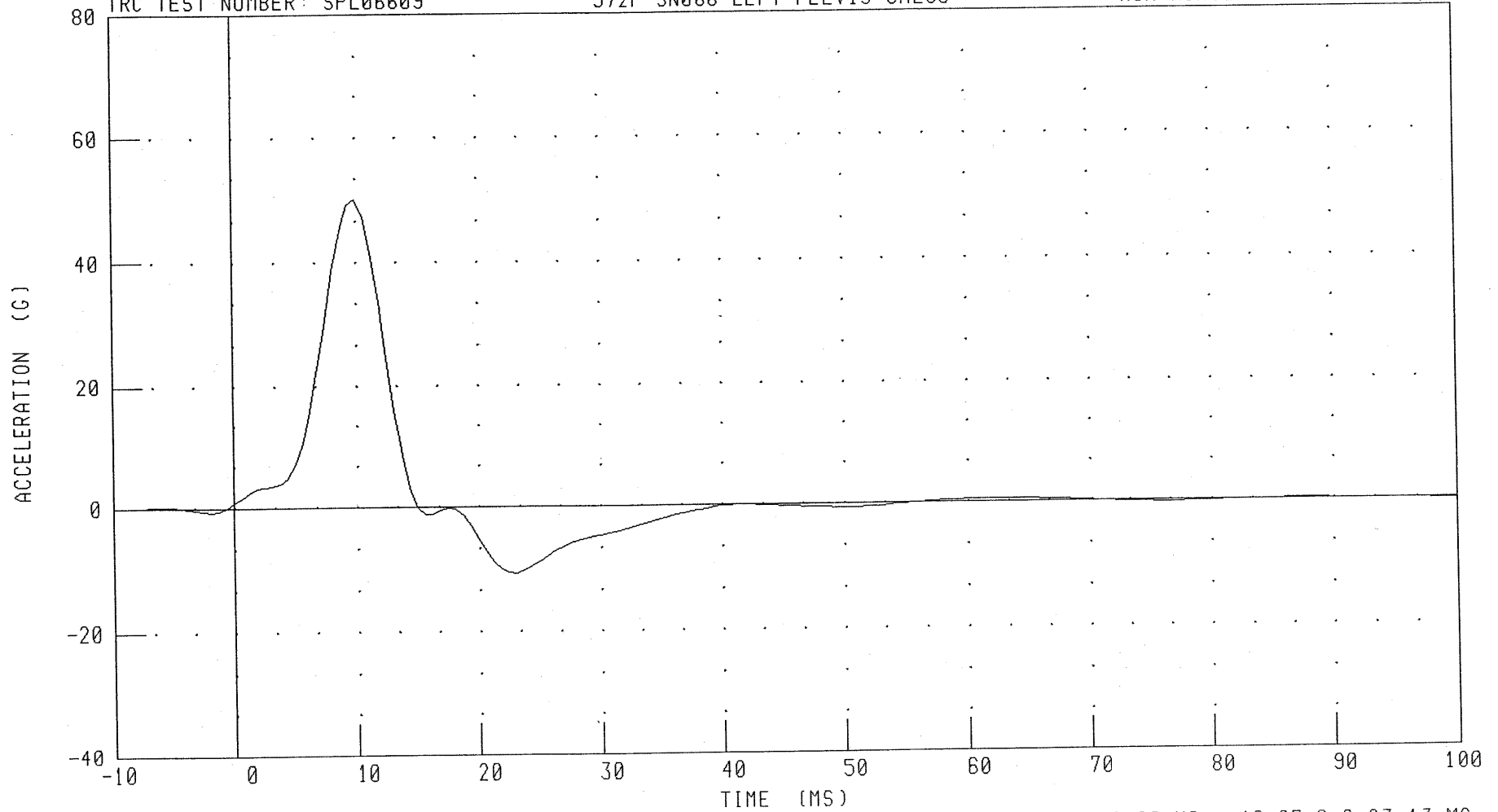
PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PELVIS ACCELERATION Y AXIS

RUN NUMBER: 051403.1234;1

TRC TEST NUMBER: SPL06609

572F SN066 LEFT PELVIS CAL09



CHANNEL: PEVYG

FILTER: FIR 100

PEAK DATA: 50.04 G @ 10.00 MS; -10.67 G @ 23.13 MS

C-96

030505-1

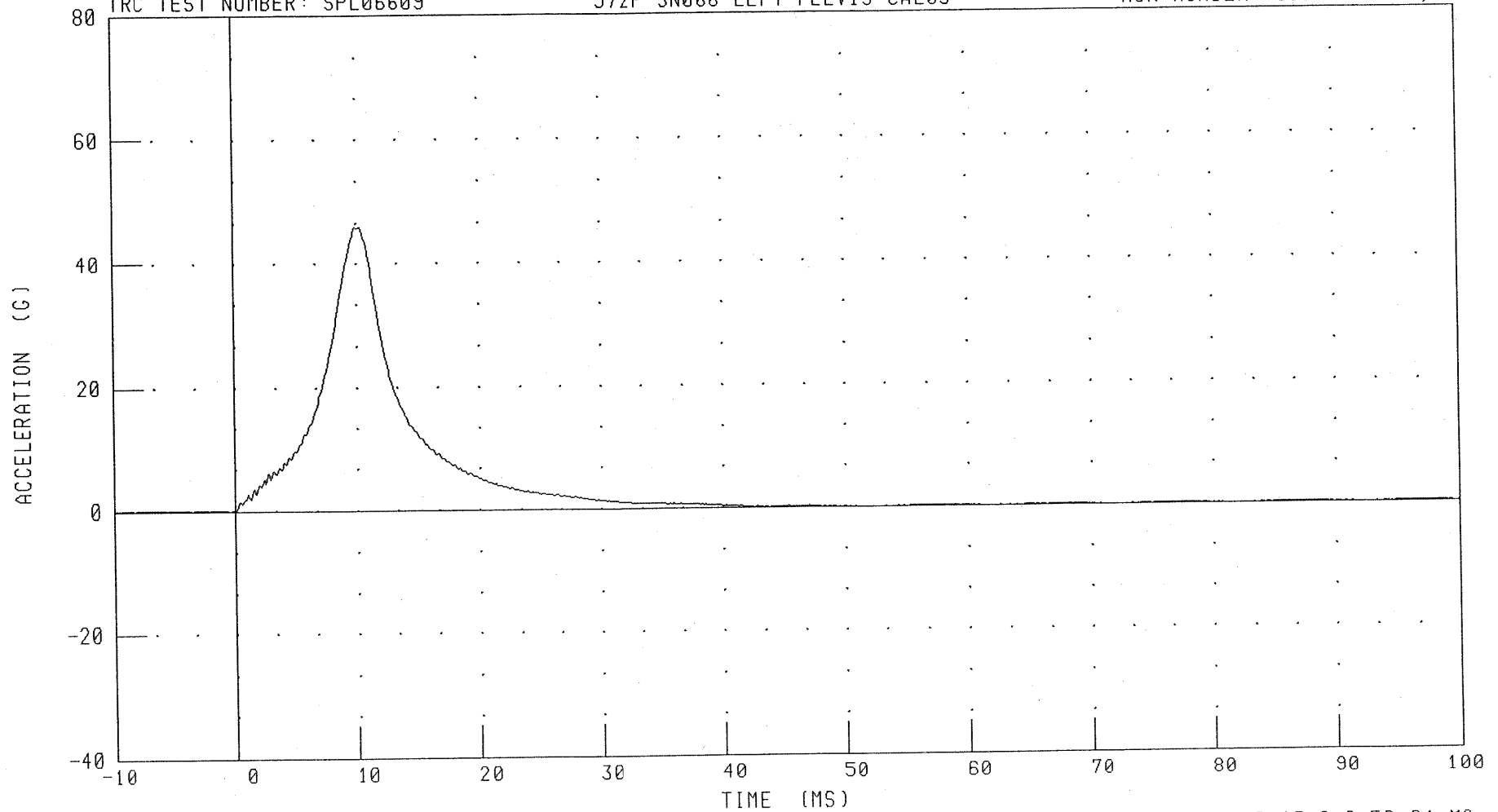
PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PENDULUM DECELERATION

TRC TEST NUMBER: SPL06609

572F SN066 LEFT PELVIS CAL09

RUN NUMBER: 051403.1234;1



CHANNEL: PENXG

FILTER: CH. CLASS 1000

PEAK DATA: 46.01 G @ 10.40 MS; -0.13 G @ 50.64 MS

030505-1

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

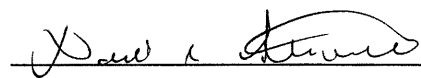
Transportation Research Center Inc.
572F SID Dummy
External Dimensions
Serial No. 028 Calibration No. 07

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	896 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	506 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Rib From Backline	RD	228.6 - 241.3 mm	231 mm	Yes
Knee Pivot From Backline	KH	510.5 - 525.8 mm	511 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	499 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	373 mm	Yes
Top Rib Width From C/L	RW-1	165.1 - 180.3 mm	170 mm	Yes
Bottom Rib Width From C/L	RW-2	165.1 - 180.3 mm	170 mm	Yes
Difference Between Top & Bottom Rib Width from C/L		<= 2.5 mm	0.0 mm	Yes

Technician



Approved




TRANSPORTATION RESEARCH CENTER INC.

LATERAL HEAD DROP TEST

SID/HIII DUMMY

13-JAN-03

LEFT SIDE CONFIGURATION

TRC INC.

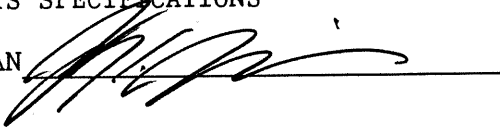
TEST NO. HDL02807

572M SID/HIII SN028 HEAD CAL07

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6 deg. C	21.67 deg. C
RELATIVE HUMIDITY	10 - 70 %	48.00 %
PEAK RESULTANT ACCELERATION	120 - 150 G	138.29 G
PEAK LONGITUDINAL ACCELERATION	15 G MAX	-9.95 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 051603.0958;1

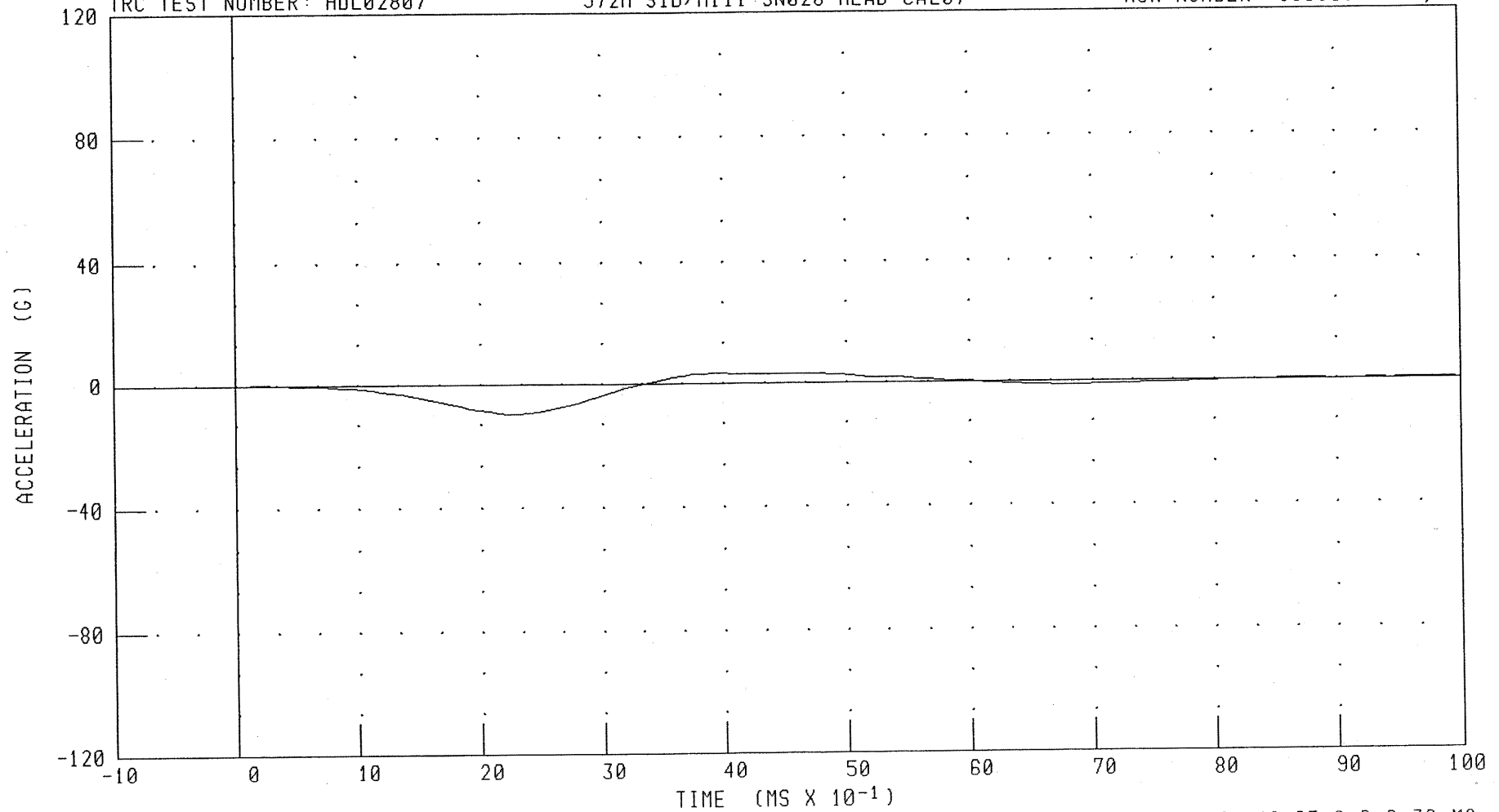
572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION X AXIS

TRC TEST NUMBER: HDL02807

572M SID/HIII SN028 HEAD CAL07

RUN NUMBER: 051603.0959;1



CHANNEL: HEDXC

FILTER: CH. CLASS 1000

PEAK DATA: 3.16 G @ 3.92 MS; -9.95 G @ 2.32 MS

030505-1

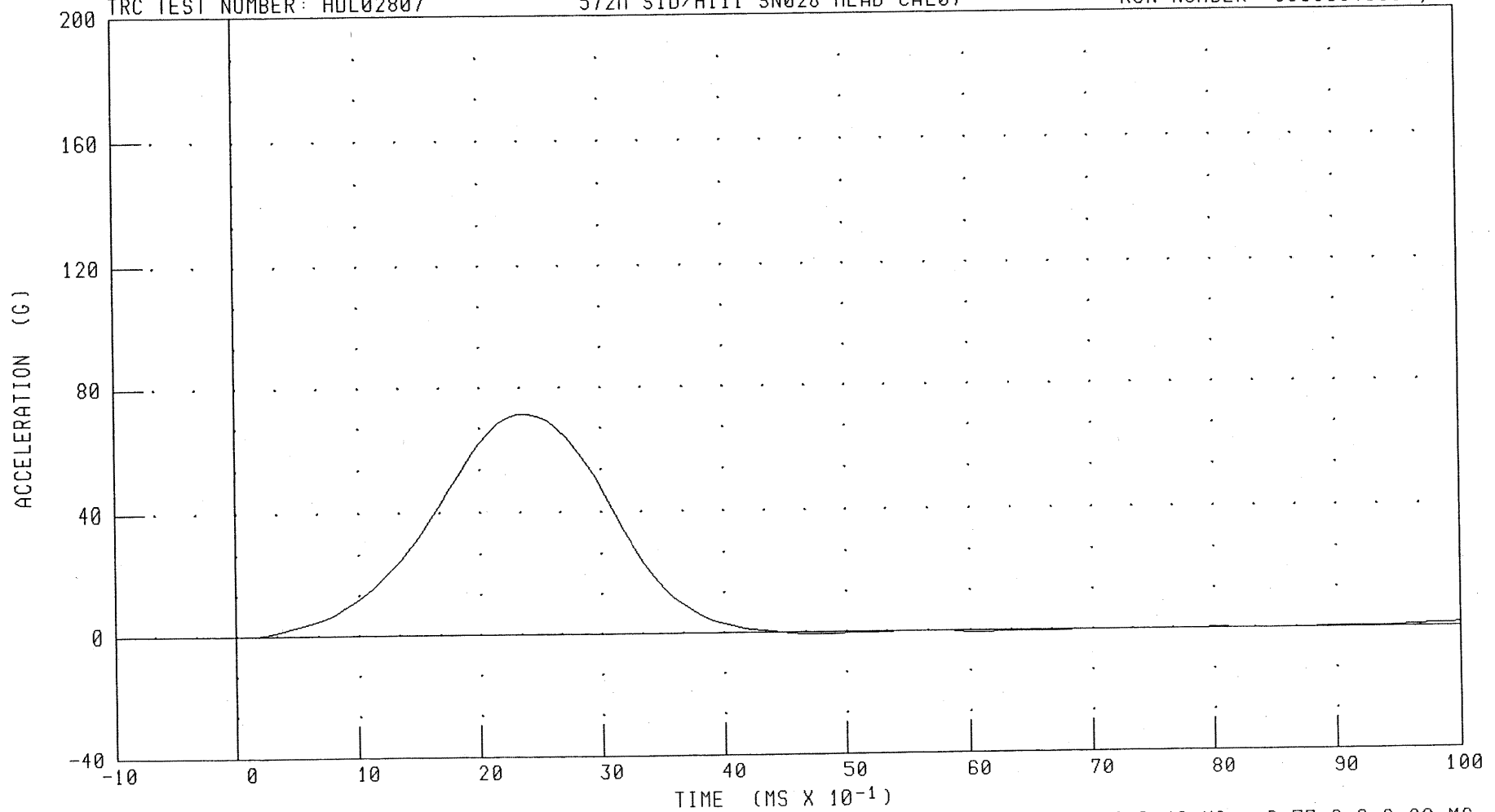
572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Y AXIS

TRC TEST NUMBER: HDL02807

572M SID/HIII SN028 HEAD CAL07

RUN NUMBER: 051603.0959;1



CHANNEL: HEDYG

FILTER: CH. CLASS 1000

PEAK DATA: 71.40 G @ 2.40 MS; -0.77 G @ 6.08 MS

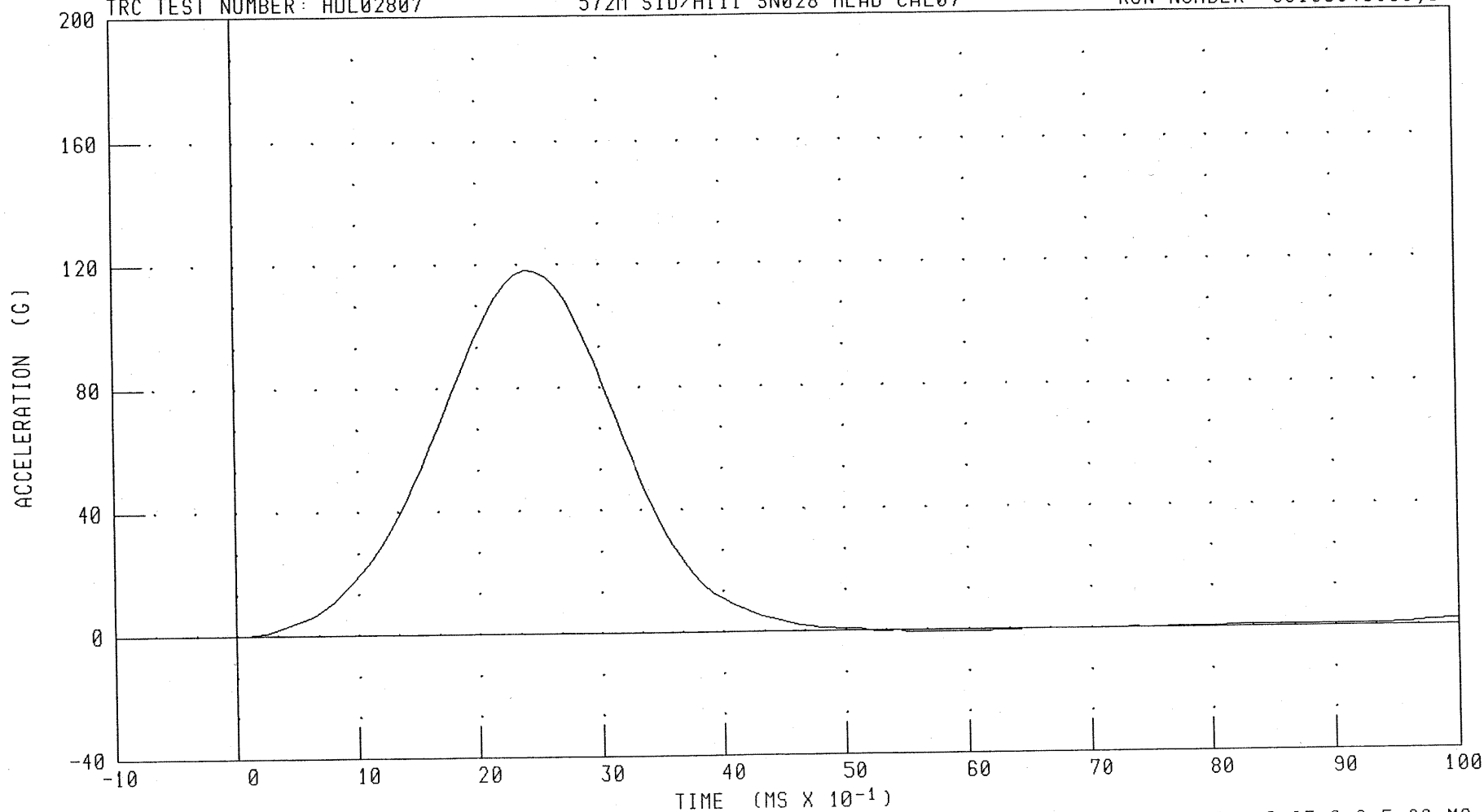
030505-1

572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP
HEAD ACCELERATION Z AXIS

TRC TEST NUMBER: HDL02807

572M SID/HIII SN028 HEAD CAL07

RUN NUMBER: 051603.0959;1



CHANNEL: HEDZG

FILTER: CH. CLASS 1000

PEAK DATA: 118.03 G @ 2.40 MS; -0.85 G @ 5.92 MS

030505-1

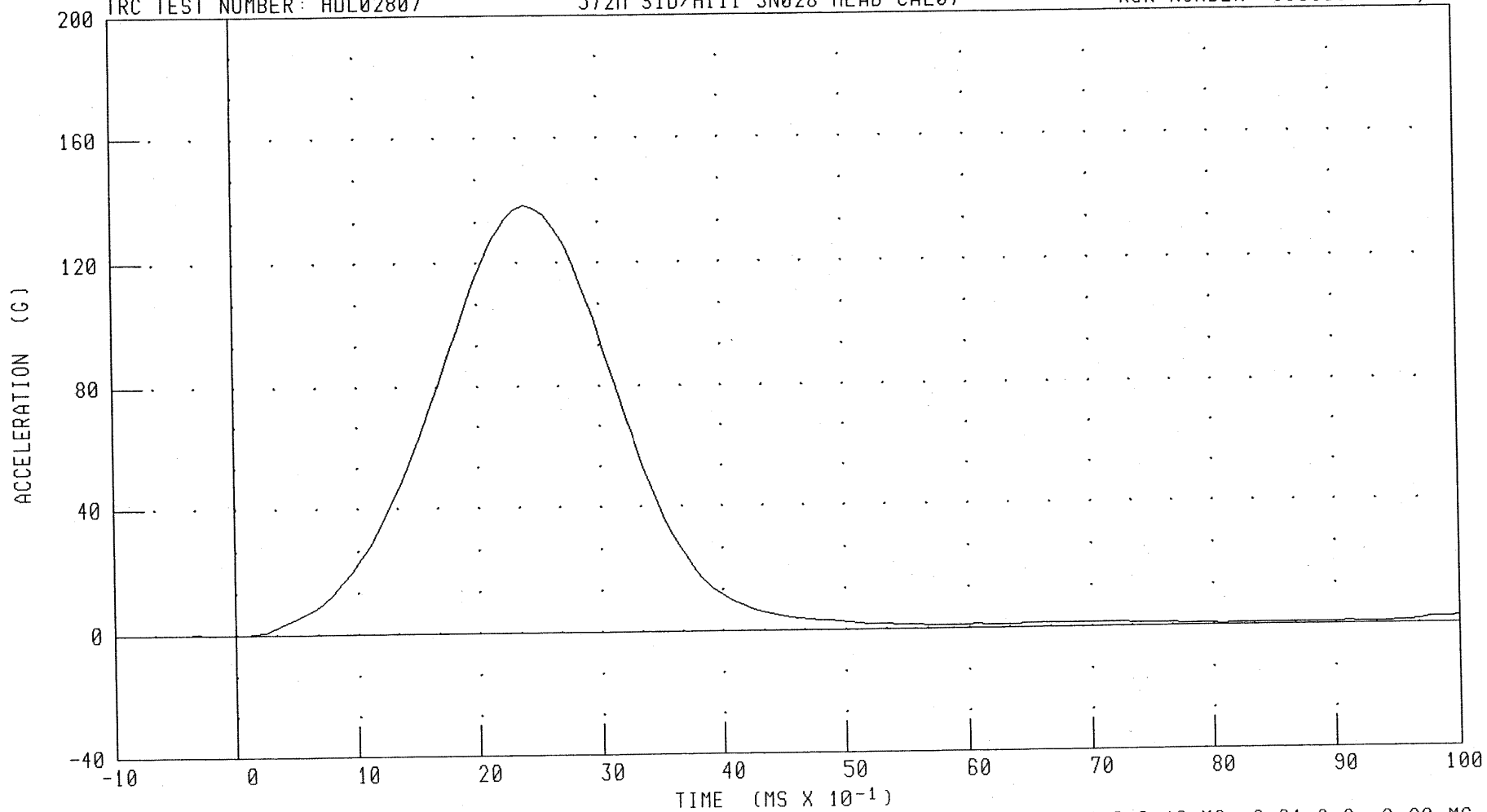
572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD RESULTANT ACCELERATION

TRC TEST NUMBER: HDL02807

572M SID/HIII SN028 HEAD CAL07

RUN NUMBER: 051603.0959;1



CHANNEL: HEDRG

FILTER: CH. CLASS 1000

PEAK DATA: 138.29 G @ 2.40 MS; 0.01 G @ -0.80 MS

030505-1

TRANSPORTATION RESEARCH CENTER INC.

LATERAL NECK TEST

SID/HIII DUMMY

15-MAY-03

LEFT SIDE CONFIGURATION

TRC INC.

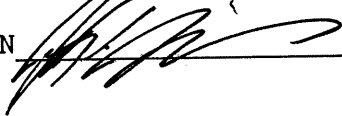
TEST NO. NFL02807

572M SID/HIII SN028 NECK CAL07

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		20.6 - 22.2 deg. C	21.67 deg. C
RELATIVE HUMIDITY		10 - 70 %	48.00 %
IMPACT VELOCITY		6.89 - 7.13 M/S	7.06 M/S
INTEGRATED VELOCITY	10 MS	1.96 - 2.55 M/S	2.28 M/S
	20 MS	4.12 - 5.10 M/S	4.61 M/S
	30 MS	5.73 - 7.01 M/S	6.58 M/S
	40 - 70 MS	6.27 - 7.64 M/S	7.13- 7.24 M/S
MAXIMUM MIDSAGGITAL PLANE ROTATION		66 - 82 deg.	73.90 deg.
ROTATION ANGLE DECAY TIME FROM PEAK TO ZERO		58 - 67 MS	60.24 MS
MAXIMUM MOMENT ABOUT OCCIPITAL CONDYLE		73 - 88 NM	80.52 NM
POSITIVE MOMENT DECAY TIME FROM PEAK TO ZERO		49 - 64 MS	53.60 MS
TIME OF MAXIMUM ROTATION AFTER MAXIMUM MOMENT		2 - 16 MS	8.16 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 051603.0958;1

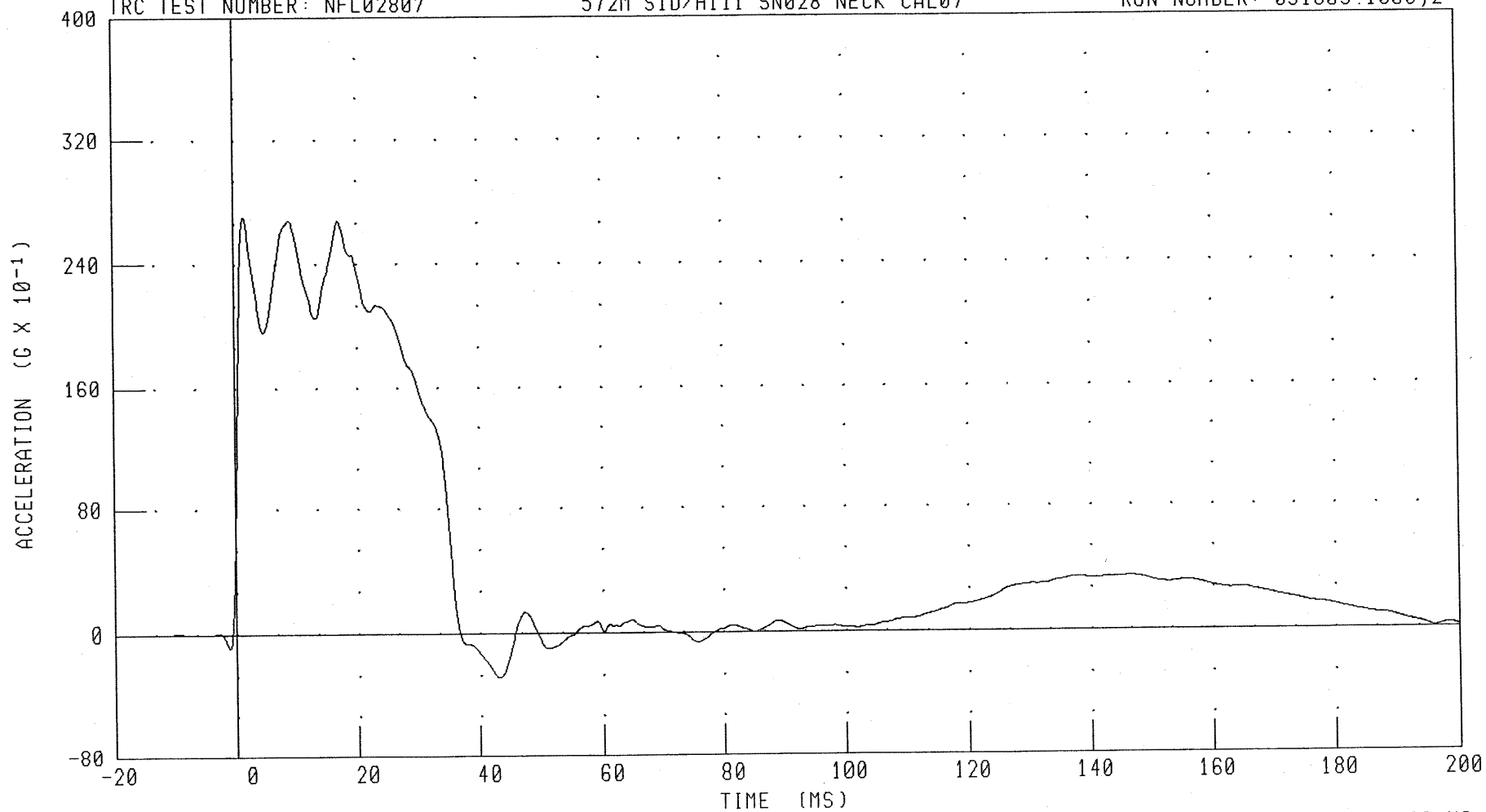
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

PENDULUM DECELERATION

TRC TEST NUMBER: NFL02807

572M SID/HIII SN028 NECK CAL07

RUN NUMBER: 051603.1000;2



CHANNEL: PENXC

FILTER: CH. CLASS 180

PEAK DATA: 27.03 G @ 1.60 MS; -2.82 G @ 43.20 MS

C-106

030505-1

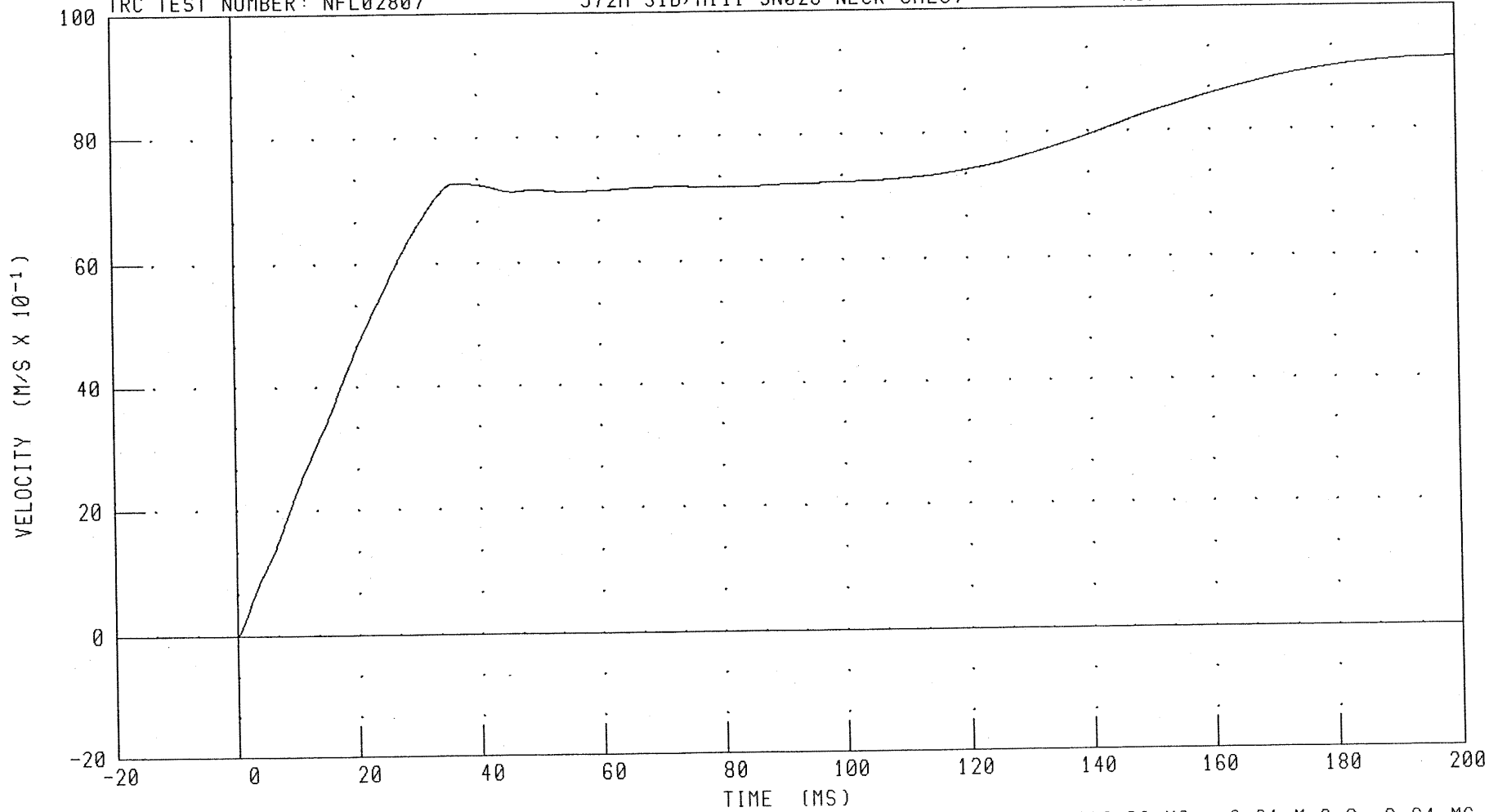
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

INTEGRATED PENDULUM VELOCITY

572M SID/HIII SN028 NECK CAL07

RUN NUMBER: 051603.1000;2

TRC TEST NUMBER: NFL02807



CHANNEL: PENXVI

FILTER: CH. CLASS 180

PEAK DATA: 9.13 M/S @ 200.00 MS; -0.01 M/S @ -0.64 MS

C-107

030505-1

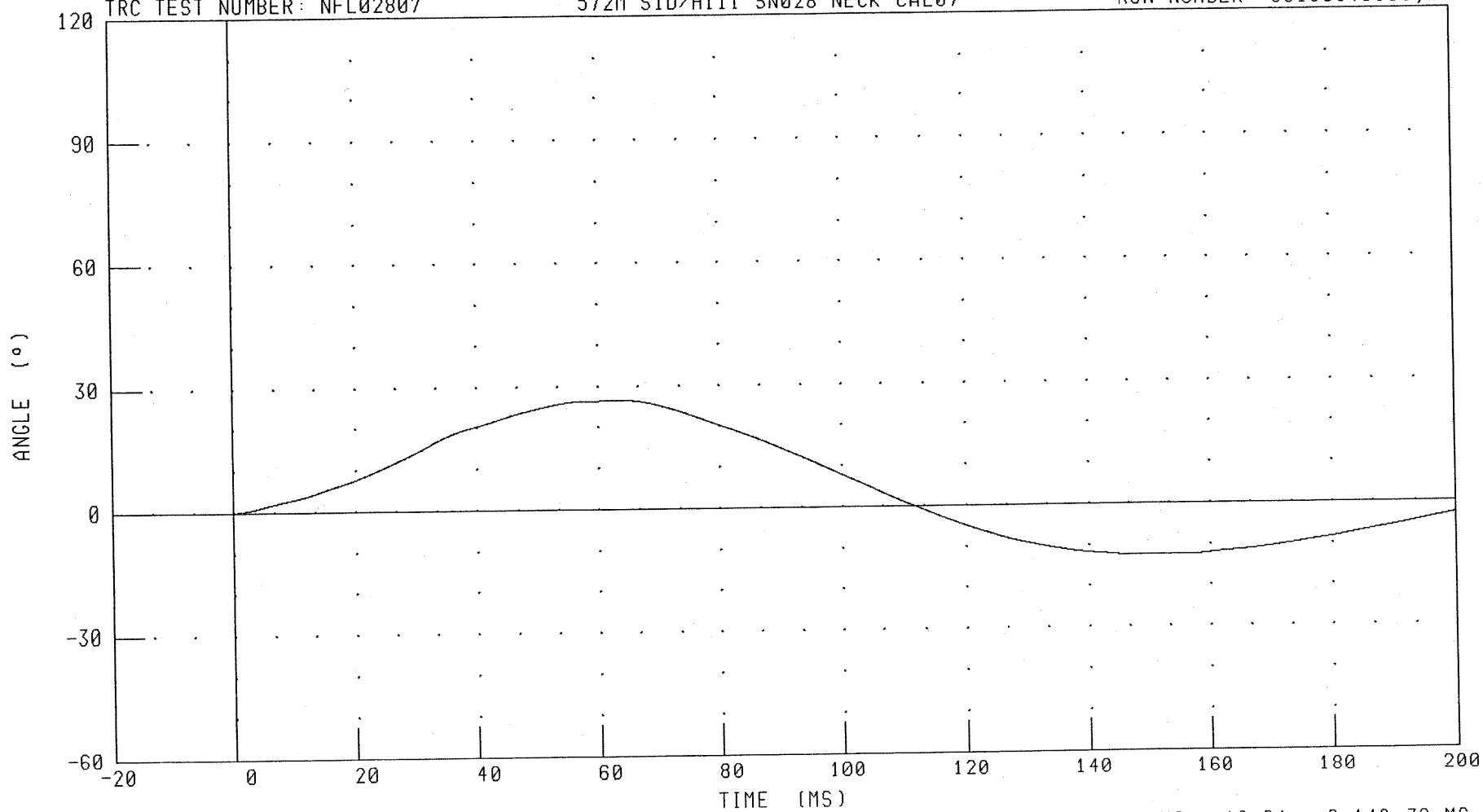
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

ROTATION ABOUT BASE OF NECK

572M SID/HIII SN028 NECK CAL07

RUN NUMBER: 051603.1000;2

TRC TEST NUMBER: NFL02807



CHANNEL: BETA

FILTER: CH. CLASS 60

PEAK DATA: 26.60 ° @ 63.92 MS; -12.64 ° @ 149.36 MS

C-108

030505-1

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

ROTATION ABOUT OCCIPITAL CONDYLE

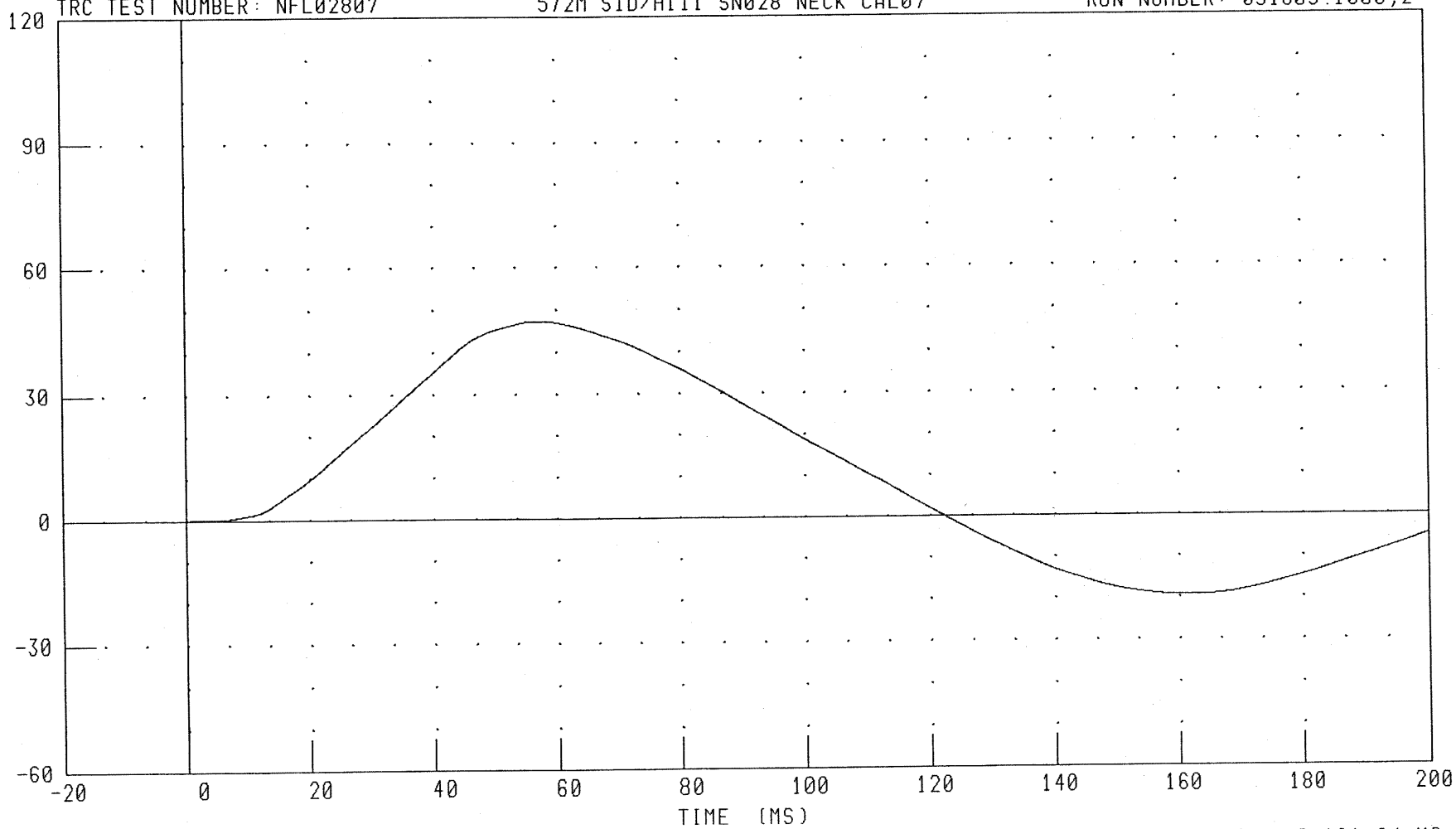
TRC TEST NUMBER: NFL02807

572M SID/HIII SN028 NECK CAL07

RUN NUMBER: 051603.1000;2

C-109

ANGLE (°)



CHANNEL: THETA

FILTER: CH. CLASS 60

PEAK DATA: 47.53 ° @ 57.04 MS; -19.50 ° @ 161.04 MS

030505-1

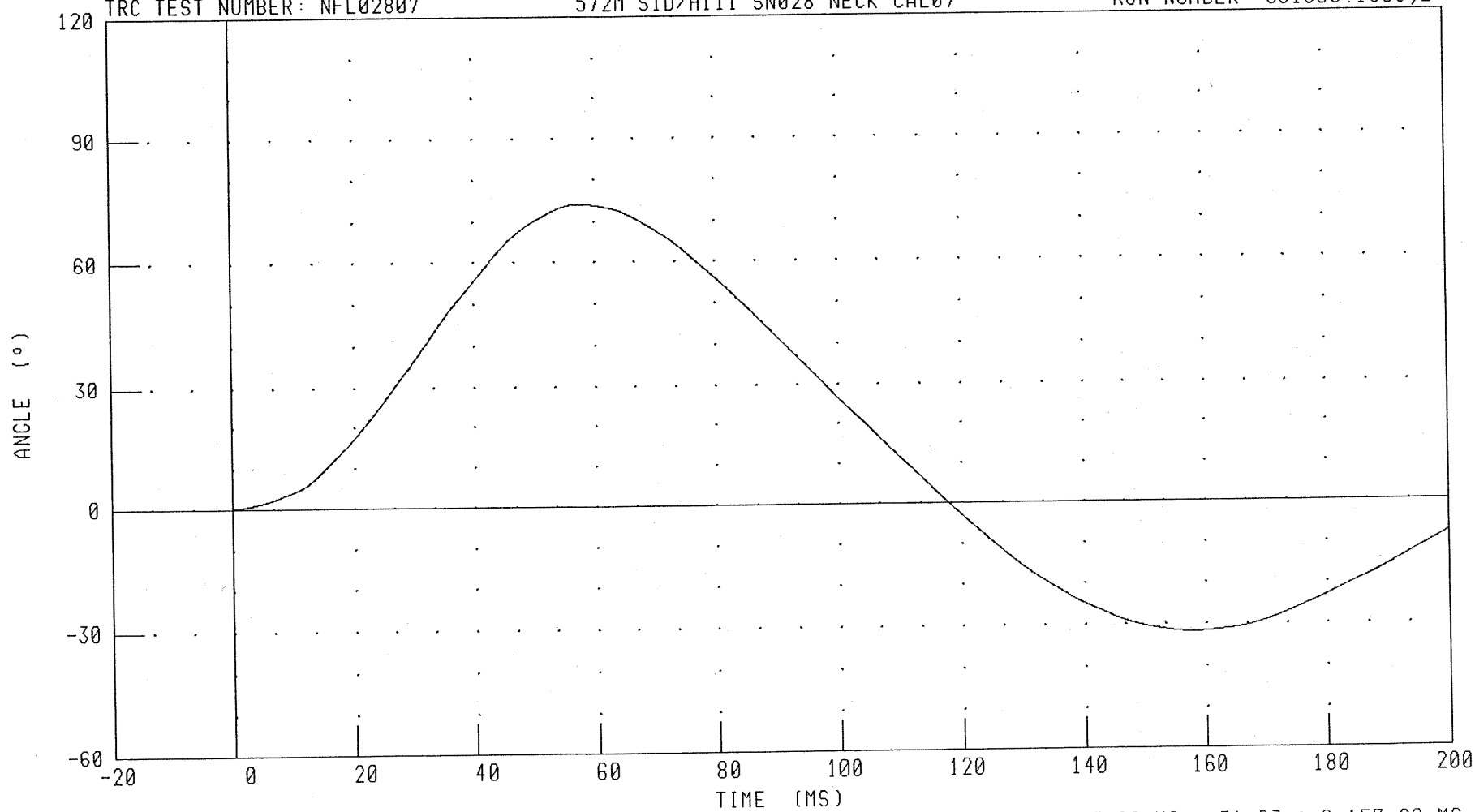
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

TOTAL ROTATION

TRC TEST NUMBER: NFL02807

572M SID/HIII SN028 NECK CAL07

RUN NUMBER: 051603.1000;2



CHANNEL: TOTAN

FILTER: CH. CLASS 60

PEAK DATA: 73.90 ° @ 57.68 MS; -31.83 ° @ 157.92 MS

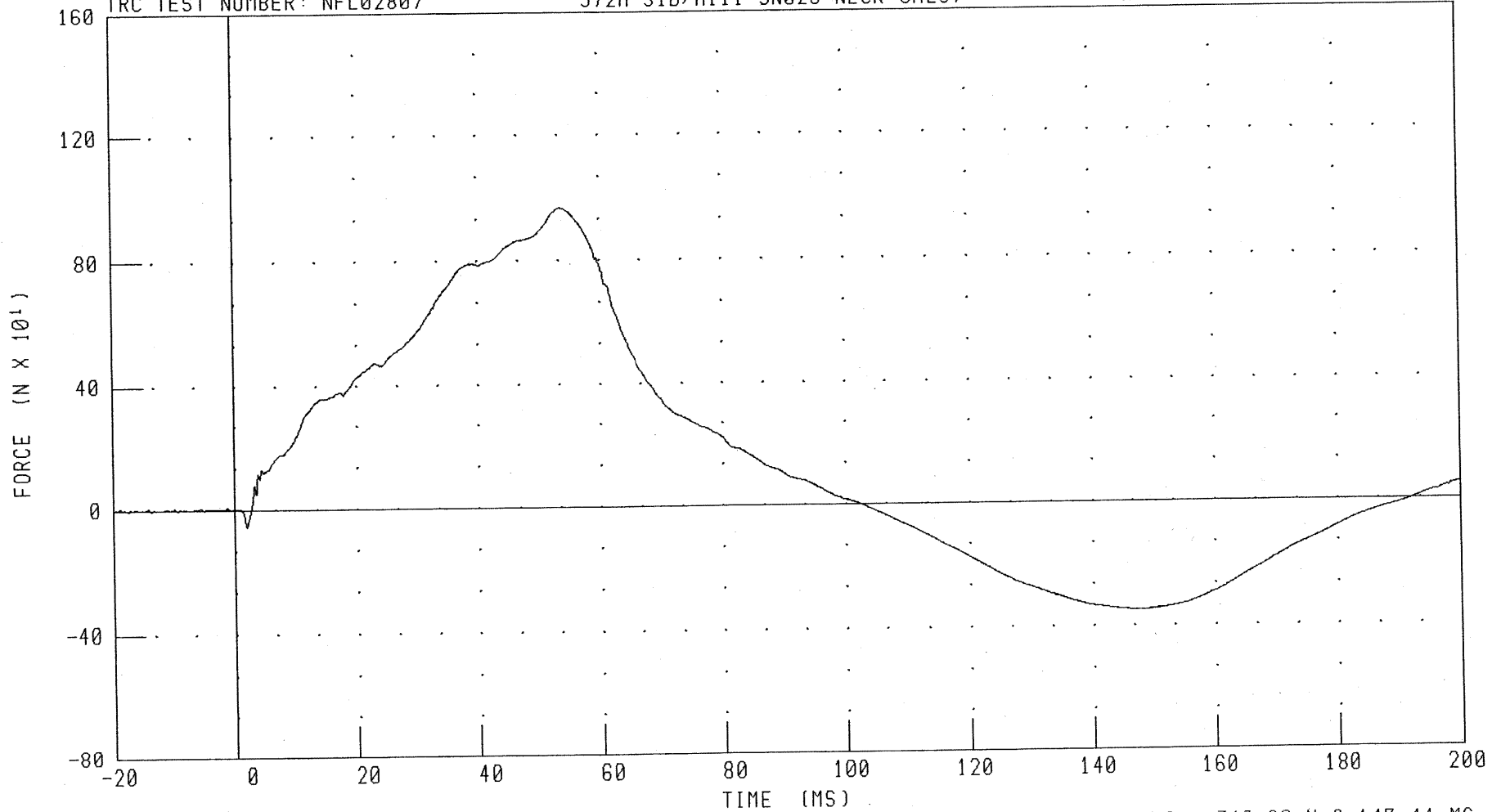
030505-1

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST
NECK FORCE Y AXIS

TRC TEST NUMBER: NFL02807

572M SID/HIII SN028 NECK CAL07

RUN NUMBER: 051603.1000;2



CHANNEL: NEKYF

FILTER: CH. CLASS 1000

PEAK DATA: 966.60 N @ 53.68 MS; -349.90 N @ 147.44 MS

C-111

030505-1

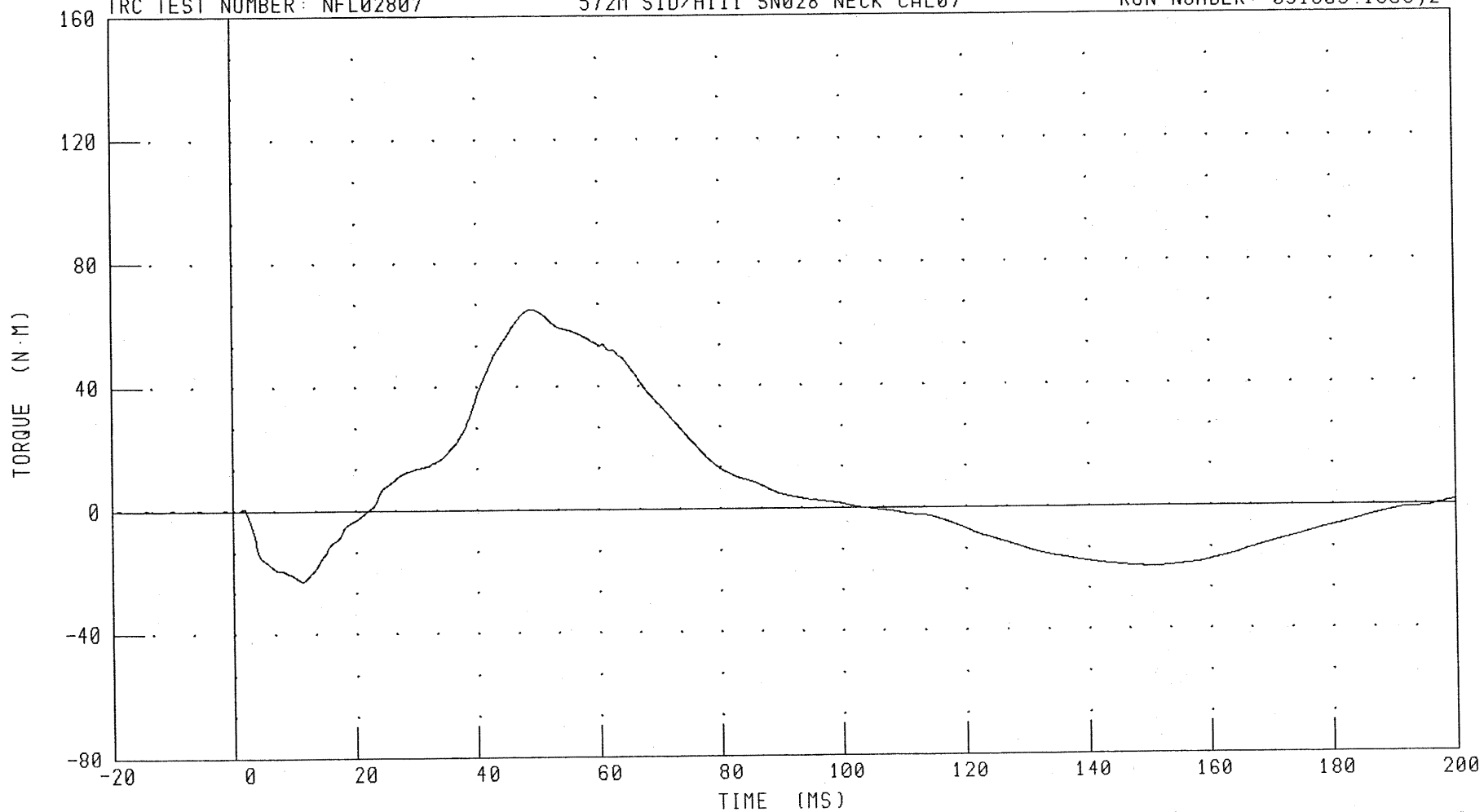
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

NECK MOMENT X AXIS

TRC TEST NUMBER: NFL02807

572M SID/HIII SN028 NECK CAL07

RUN NUMBER: 051603.1000;2



CHANNEL: NEKXM

FILTER: CH. CLASS 600

PEAK DATA: 64.91 N·M @ 49.36 MS; -22.72 N·M @ 11.36 MS

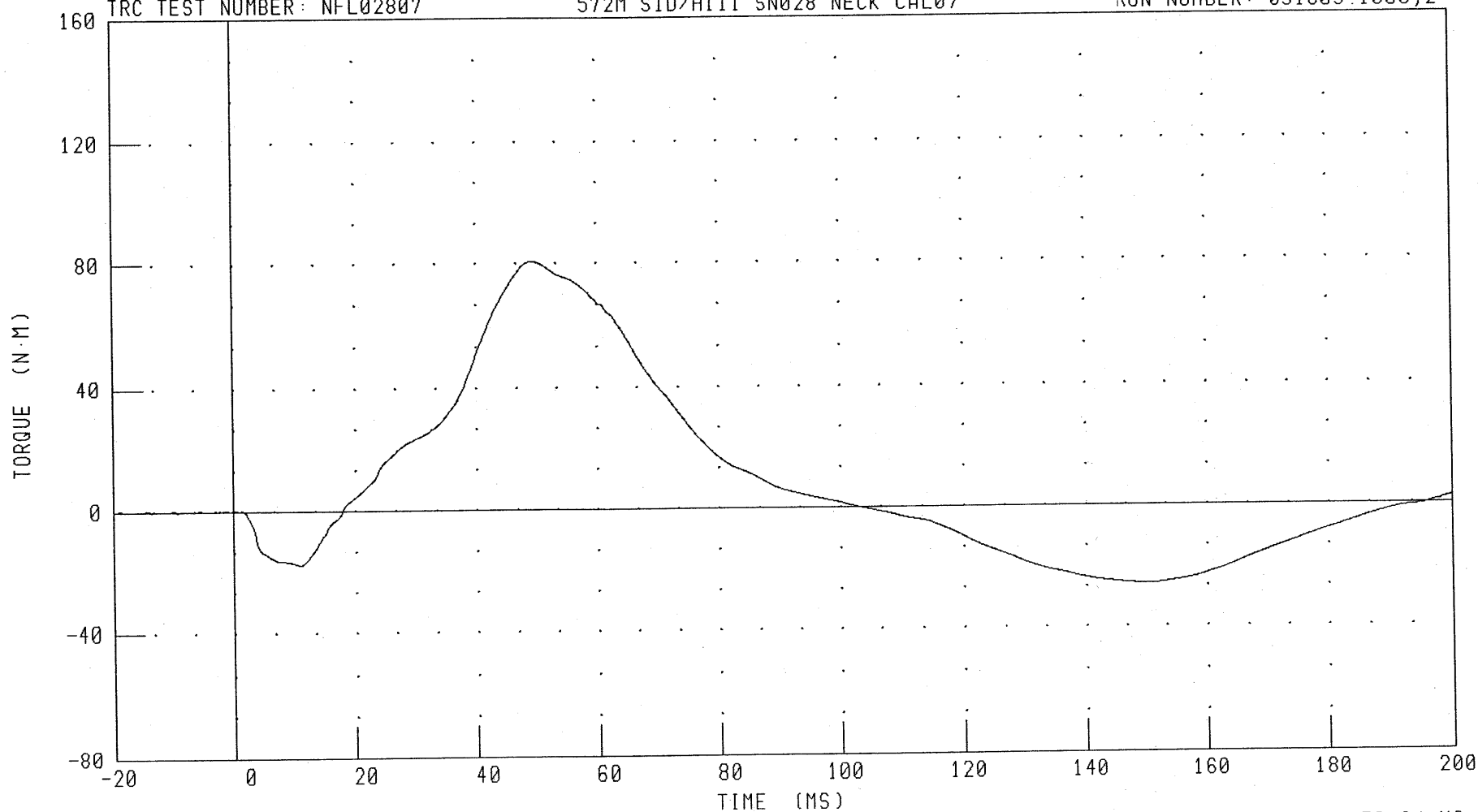
030505-1

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST
TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: NFL02807

572M SID/HIII SN028 NECK CAL07

RUN NUMBER: 051603.1000;2



CHANNEL: NEKOM

FILTER: CH. CLASS 600

PEAK DATA: 80.52 N·M @ 49.52 MS; -25.85 N·M @ 150.64 MS

030505-1

TRANSPORTATION RESEARCH CENTER INC.

LATERAL THORAX IMPACT TEST

SIDE IMPACT DUMMY

15-MAY-03

LEFT SIDE CONFIGURATION

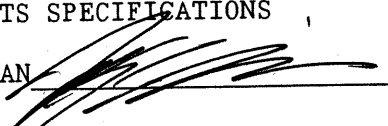
TRC INC.

TEST NO: STL02807A

572F SID SN028 L.THORAX CAL07

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	47.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.31 M/S
PEAK ACCELERATION: UPPER RIB BAR	37 - 46 G	40.4 G
PEAK ACCELERATION: LOWER RIB BAR	37 - 46 G	39.4 G
PEAK ACCELERATION: LOWER THORACIC SPINE	15 - 22 G	16.4 G

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 051503.0916;1

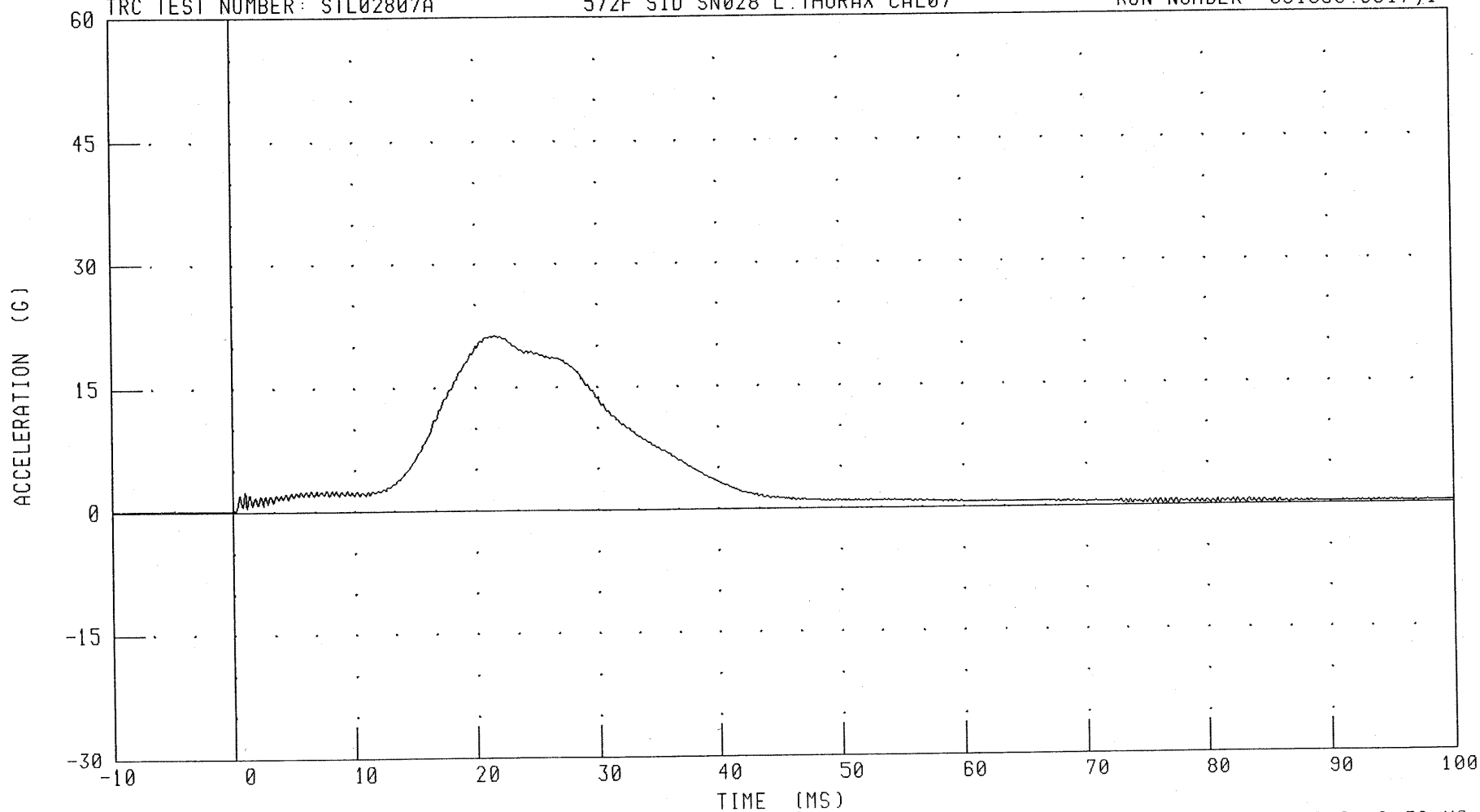
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)
PENDULUM DECELERATION

TRC TEST NUMBER: STL02807A

572F SID SN028 L THORAX CAL07

RUN NUMBER: 051503.0917;1

C-115



CHANNEL: PENXC

FILTER: CH. CLASS 1000

PEAK DATA: 21.34 G @ 21.68 MS; 0.00 G @ -9.36 MS

030505-1

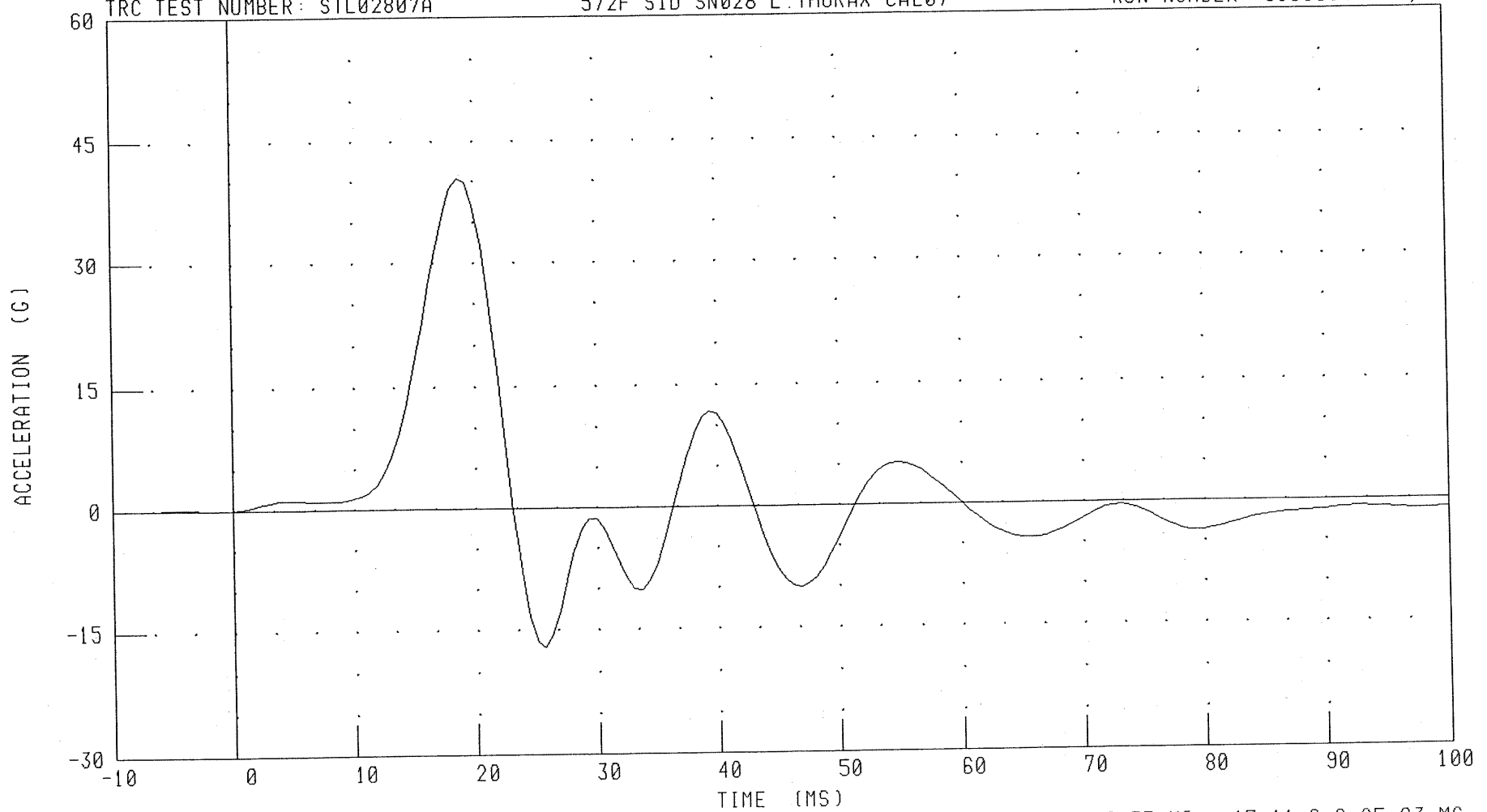
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LEFT UPPER RIB ACCELERATION Y AXIS

TRC TEST NUMBER: STL02807A

572F SID SN028 L THORAX CAL07

RUN NUMBER: 051503.0917;1



CHANNEL: LURYG

FILTER: FIR 100

PEAK DATA: 40.40 G @ 18.75 MS; -17.11 G @ 25.63 MS

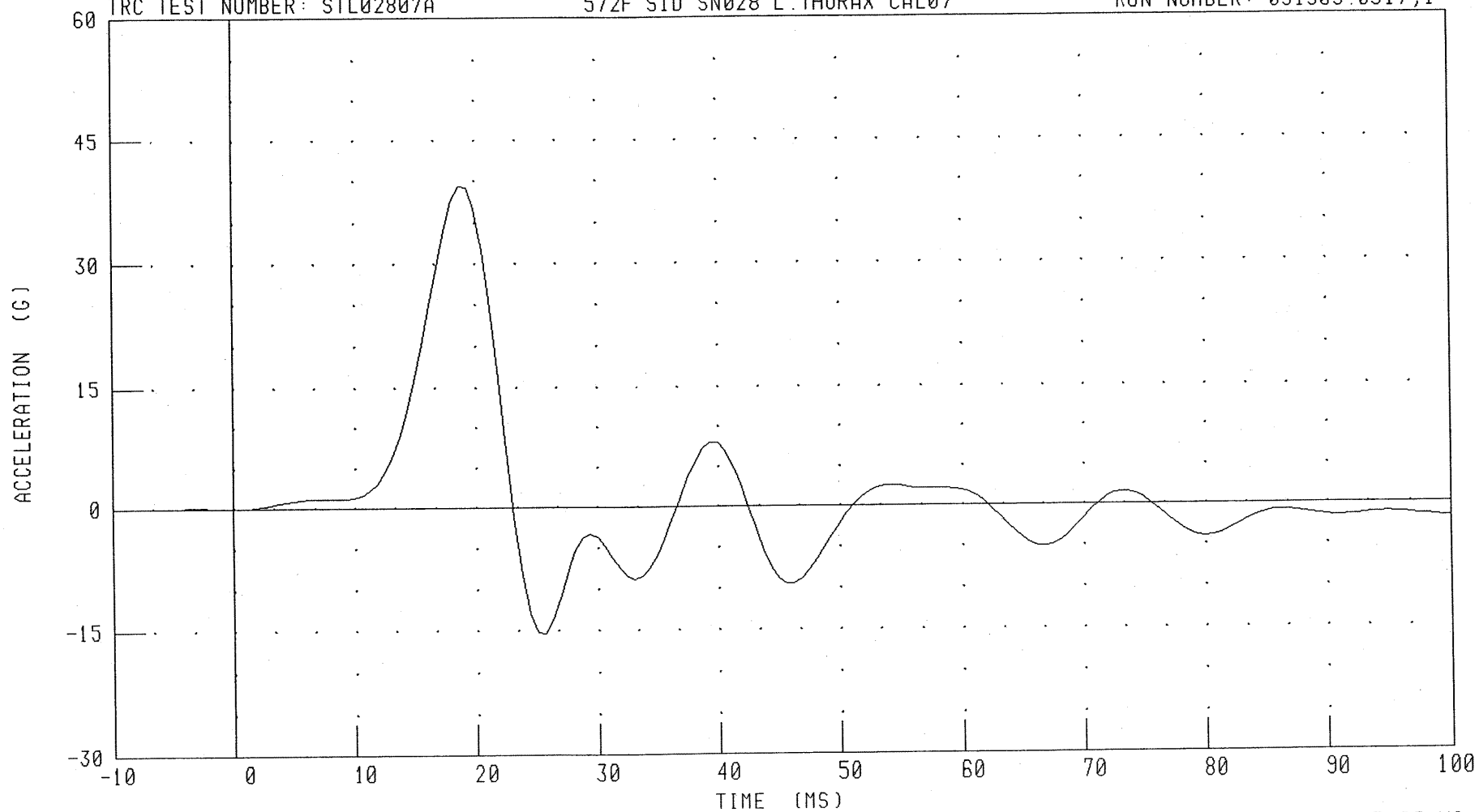
030505-1

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

TRC TEST NUMBER: STL02807A

572F SID SN028 L.THORAX CAL07

RUN NUMBER: 051503.0917;1



CHANNEL: LLRYG

FILTER: FIR 100

PEAK DATA: 39.38 G @ 18.75 MS; -15.42 G @ 25.63 MS

030505-1

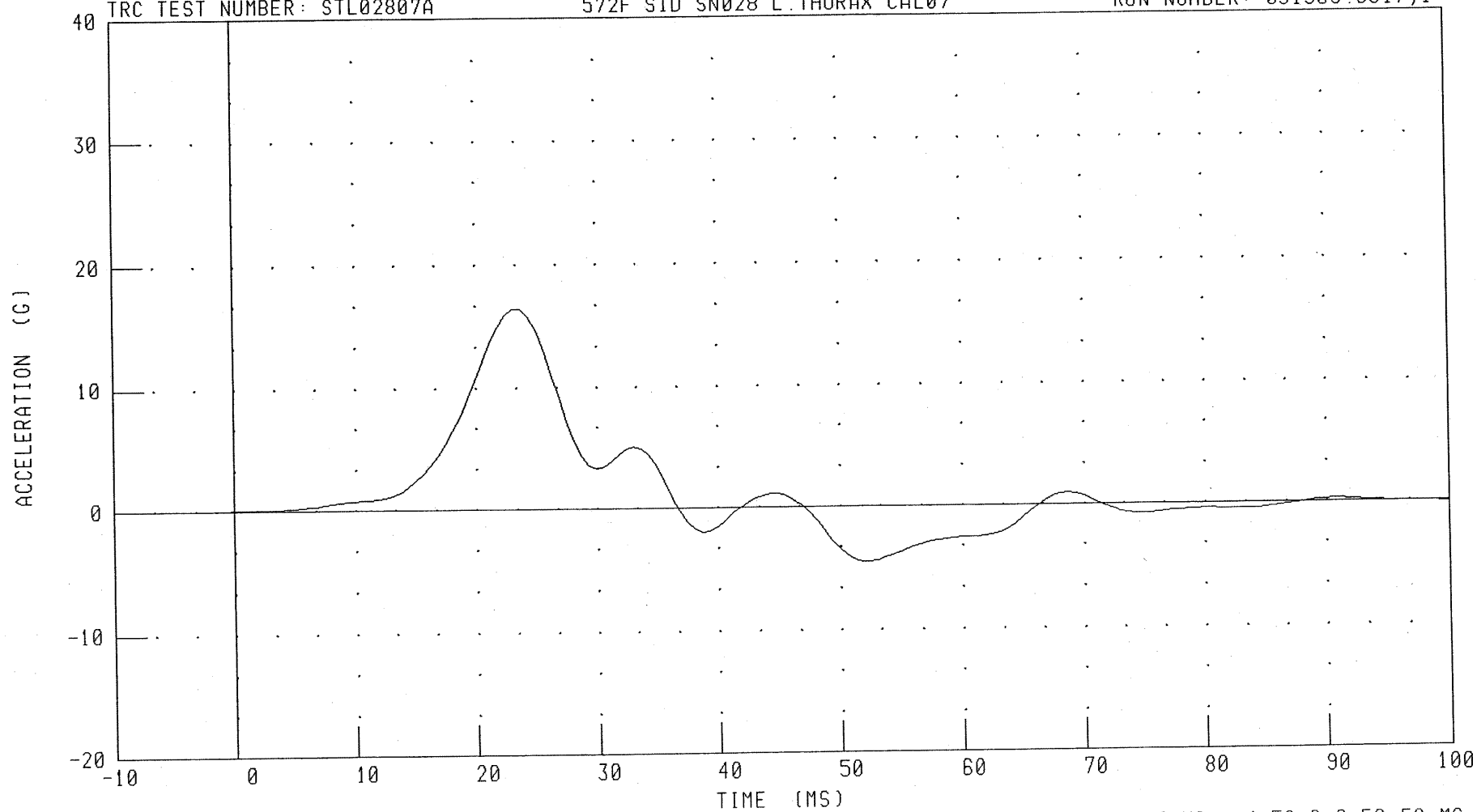
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LOWER SPINE ACCELERATION Y AXIS

TRC TEST NUMBER: STL02807A

572F SID SN028 L THORAX CAL07

RUN NUMBER: 051503.0917;1



CHANNEL: T12YC

FILTER: FIR 100

PEAK DATA: 16.44 G @ 23.13 MS; -4.59 G @ 52.50 MS

030505-1

TRANSPORTATION RESEARCH CENTER INC.

LUMBAR FLEXION TEST

SID PART 572B

CAL DATE: 15-May-03

TRC, INC.

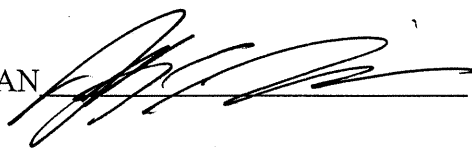
TEST NO: 028C07LF1

572B SN 028 TORSO FLEX CAL 07

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6° C	21.7 °C
RELATIVE HUMIDITY	10 – 70 %	46 %
FORCE AT 0 DEG. FLEXION	-27 – 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 – 151 N	137.9 N
FORCE AT 30 DEG OF FLEXION	151 – 205 N	186.8 N
FORCE AT 40 DEG OF FLEXION	205 – 258 N	222.4 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	6 °

TEST MEETS SPECIFICATIONS

TECHNICIAN



Transportation Research Center Inc.

572B Abdomen Compression Test

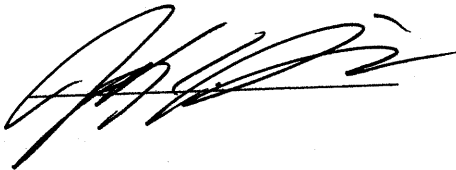
HIII SID Serial No. 028 Calibration No. 07 - 1

Test Date 05/15/2003

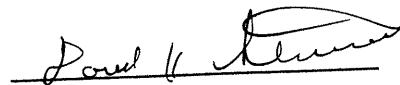
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	48 %	Yes
Displacement Rate	6.35 - 8.89 mm/s	7.4 - 8.0 mm/s	Yes
Data Within Required Corridor	Yes	Yes	Yes

Comments:

Technician



Approved



05.15.2003 15:20:01 60

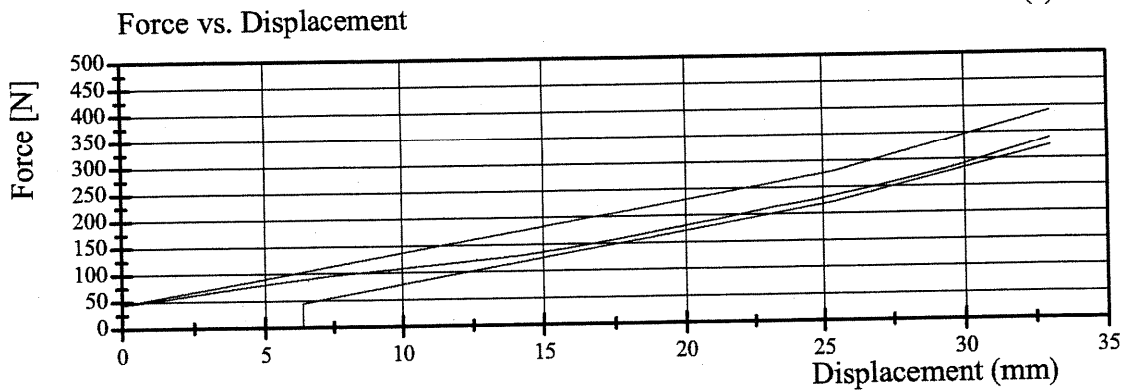
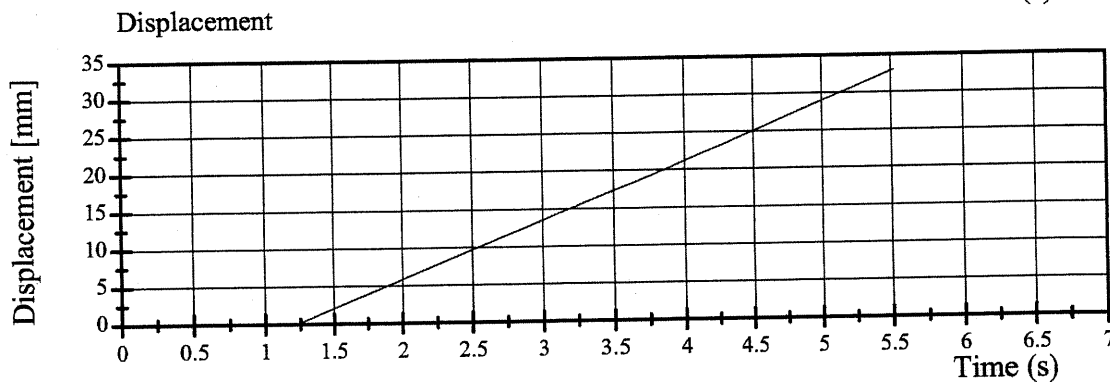
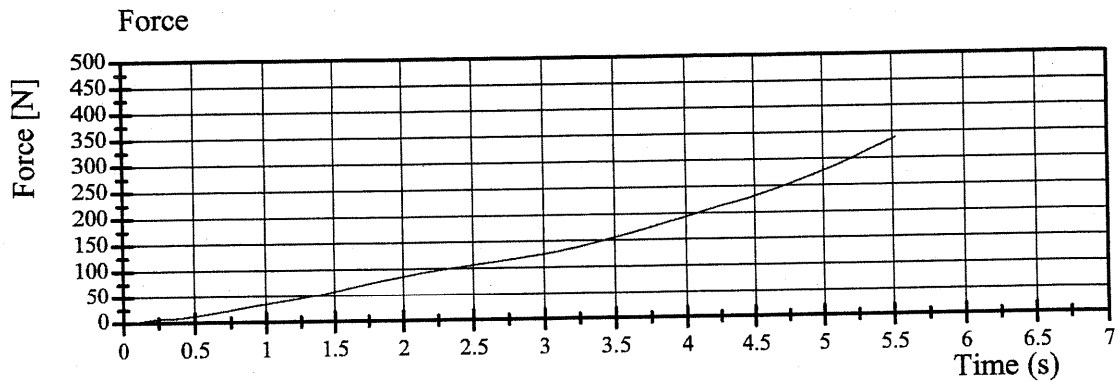


Transportation Research Center Inc.

572B Abdomen Compression Test

HIII SID Serial No. 028 Calibration No. 07 - 1

Test Date 05/15/2003



05.15.2003 15:19:56 60



TRANSPORTATION RESEARCH CENTER INC.

LATERAL PELVIS IMPACT TEST

SIDE IMPACT DUMMY

15-MAY-03

LEFT SIDE CONFIGURATION

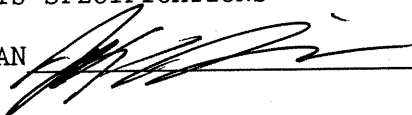
TRC INC.

TEST NO: SPL02807

572F SN028 LEFT PELVIS CAL07

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.7 DEG. C
RELATIVE HUMIDITY	10 - 70 %	47.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.28 M/S
PEAK PELVIC ACCELERATION	40 - 60 G	43.8 G
TIME ABOVE 20 G LEVEL	3 - 7 MS	6.3 MS
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 051503.0822;1

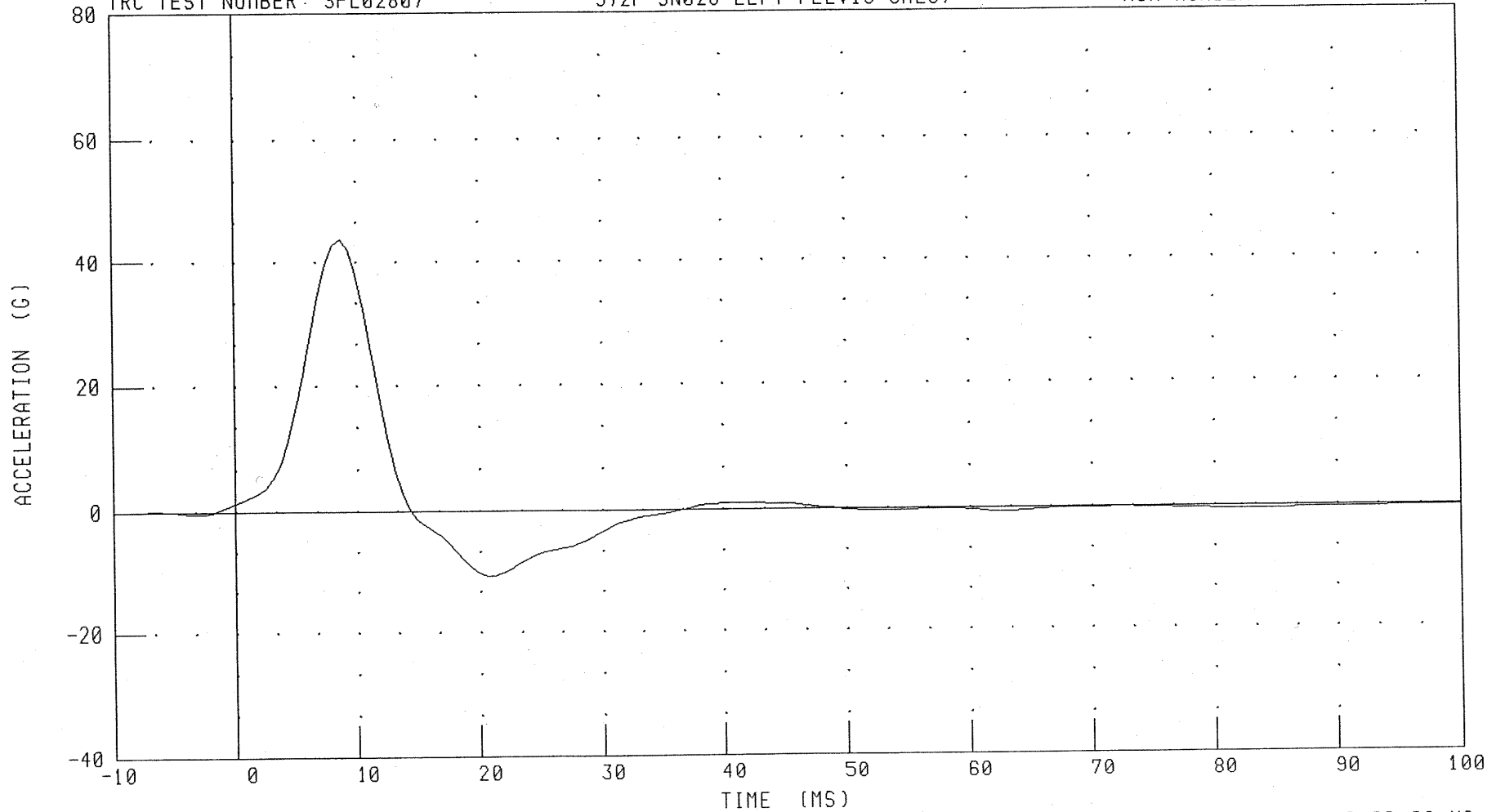
PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PELVIS ACCELERATION Y AXIS

TRC TEST NUMBER: SPL02807

572F SN028 LEFT PELVIS CAL07

RUN NUMBER: 051503.0822;1



CHANNEL: PEVYG

FILTER: FIR 100

PEAK DATA: 43.78 G @ 8.75 MS; -10.71 G @ 20.62 MS

030505-1

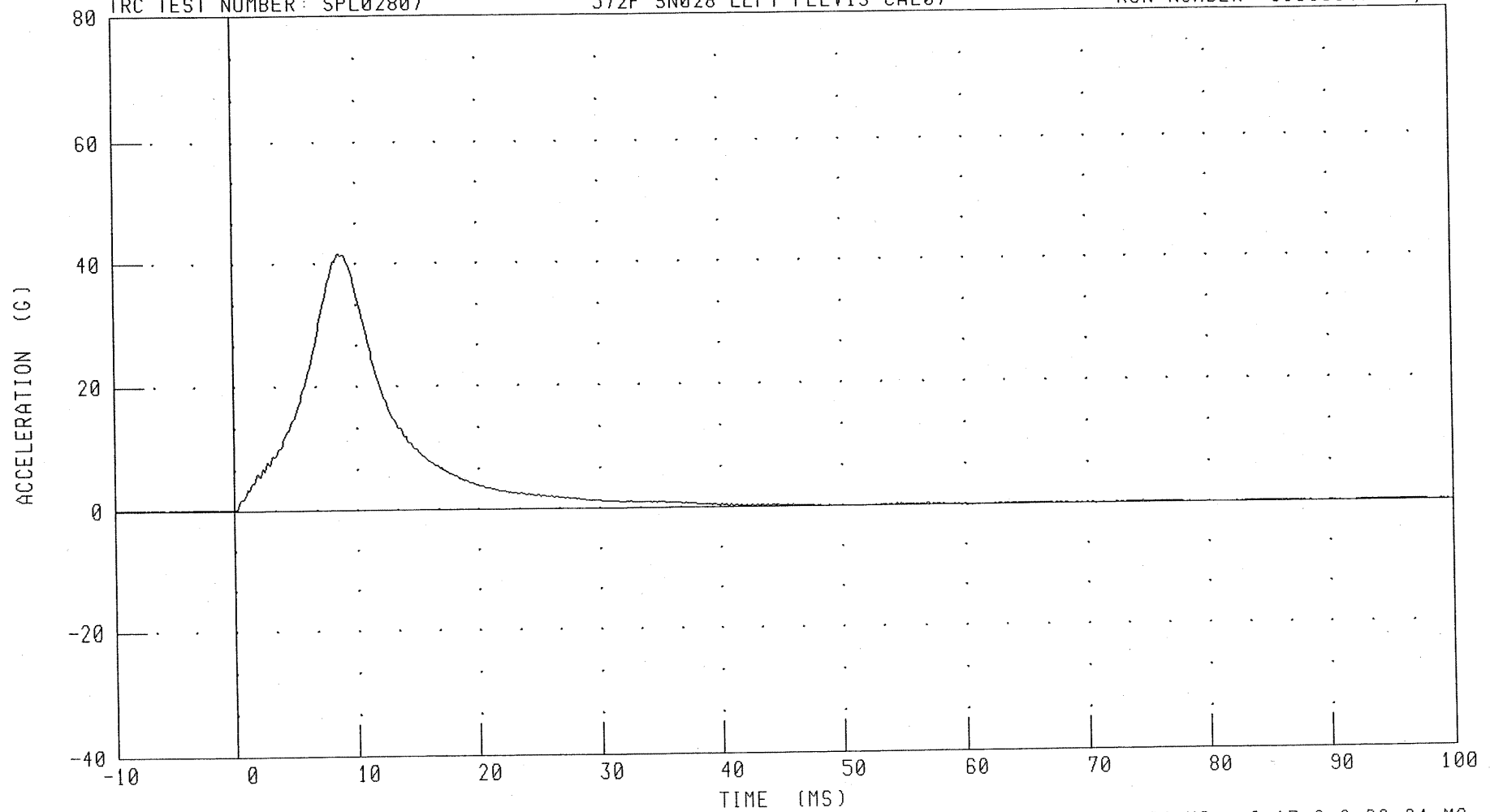
PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PENDULUM DECELERATION

TRC TEST NUMBER: SPL02807

572F SN028 LEFT PELVIS CAL07

RUN NUMBER: 051503.0822;1



CHANNEL: PENXC

FILTER: CH. CLASS 1000

PEAK DATA: 41.66 G @ 8.64 MS; -0.17 G @ 60.24 MS

C-124

030505-1

Transportation Research Center Inc.

SID Pre-Use Inspection

Type: HIH SID S/N: 066 Mfr: Denton Test Date: 05/05/03

Proj./Seg. No.: 20020455-1160 Test Eng.: G. 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) N/A	(Right) N/A
NECK:		
Rubber Condition and Separation From End Caps	X	
THORAX: Left Side Configuration		
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: J. Clarridge Date: 05/02/03

Transportation Research Center Inc.

SID Pre-Use Inspection

Type: HIH SID S/N: 028 Mfr: Vector Test Date: 05/05/03

Proj./Seg. No.: 20020455-1160 Test Eng.: G. 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) N/A	(Right) N/A
NECK:		
Rubber Condition and Separation From End Caps	X	
THORAX: Left Side Configuration		
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: J. Clarridge Date: 05/02/03

Transportation Research Center Inc.

SID Post-Use Inspection

Type: HIH SID S/N: 066 Mfr: Denton Test Date: 05/05/03

Proj./Seg. No.: 20020455-1160 Test Eng.: G. Watters

ITEM	POST-USE
HEAD:	
Head Skin Condition	X
Head Ballast Condition	X
NECK:	
Rubber Condition and Separation From End Caps	X
THORAX: Left Side Configuration	
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:	
Illioc 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: No damage to report.

Inspection Completed By: J. Clarridge

Date: 05/12/03

Transportation Research Center Inc.

SID Post-Use Inspection

Type: HIII SID S/N: 028 Mfr: Vector Test Date: 05/05/03

Proj./Seg. No.: 20020455-1160 Test Eng.: G. Watters

ITEM	POST-USE
HEAD:	
Head Skin Condition	X
Head Ballast Condition	X
NECK:	
Rubber Condition and Separation From End Caps	X
THORAX: Left Side Configuration	
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: No damage to report.

Inspection Completed By: J. Clarridge

Date: 05/12/03

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

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

5/16/2003 1:10:37 PM

Name of Test 030505-1

System MINIDAU

Name of DAU DAUA

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol.	Cal.	Group	Mfg.	Model
0001	J26980	HEDXG1	Head Accel X	Rwd	790.56265 g	-	3/11/2003	OK 066nlr	Endevco	7264-2000TZ
0002	J27048	HEDYG1	Head Accel Y	Lft	800.20005 g	-	3/11/2003	OK 066nlr	Endevco	7264-2000TZ
0003	J26896	HEDZG1	Head Accel Z	Up	788.48078 g	-	3/11/2003	OK 066nlr	Endevco	7264-2000TZ
0004	P22890	HEDXR1	Head Accel X Red	Rwd	796.35419 g	-	3/11/2003	OK 066nlr	Endevco	7264C-2K-2-180
0005	P16213	HEDYR1	Head Accel Y Red	Lt	805.41135 g	-	3/11/2003	OK 066nlr	Endevco	7264C-2K-2-180
0006	P18941	HEDZR1	Head Accel Z Red	Up	808.42530 g	-	3/11/2003	OK 066nlr	Endevco	7264C-2K-2-180
0007	1716A-1220-FX	NEKXF1	Neck Force X	Hd	8898.1070 N	-	3/10/2003	OK 066nlr	Denton	1716A
0008	1716A-1220-FY	NEKYF1	Neck Force Y	Hd	8909.1398 N	+	3/10/2003	OK 066nlr	Denton	1716A
0009	1716A-1220-FZ	NEKZF1	Neck Force Z	Hd	13367.953 N	+	3/10/2003	OK 066nlr	Denton	1716A
0010	1716A-1220-MX	NEKXM1	Neck Moment X	Rt Ear	283.36569 N·m	-	3/10/2003	OK 066nlr	Denton	1716A
0011	1716A-1220-MY	NEKYM1	Neck Moment Y	Chn	283.17739 N·m	+	3/10/2003	OK 066nlr	Denton	1716A
0012	1716A-1220-MZ	NEKZM1	Neck Moment Z	Chn	282.90480 N·m	+	3/10/2003	OK 066nlr	Denton	1716A
0013	P24511	LURYG1	Left Upper Rib Y	Rgt	799.87501 g	+	11/21/2002	OK 066nlr	Endevco	7264C-2K-2-180
0014	P21652	LURYR1	Left Upper Rib Red Y	Rgt	803.23805 g	+	11/21/2002	OK 066nlr	Endevco	7264C-2K-2-180
0015	P25829	LLRYG1	Left Lower Rib Y	Rgt	798.32849 g	+	3/20/2003	OK 066nlr	Endevco	7264C-2K-2-180
0016	P24627	LLRYR1	Left Lower Rib Red Y	Rgt	801.56555 g	+	11/21/2002	OK 066nlr	Endevco	7264C-2K-2-180
0017	P21635	T12YG1	Lower Spine Y	Lft	401.99742 g	-	11/21/2002	OK 066nlr	Endevco	7264C-2K-2-180
0018	P24564	T12YR1	Lower Spine Red Y	Lft	401.56862 g	-	11/21/2002	OK 066nlr	Endevco	7264C-2K-2-180
0019	P24393	PEVYG1	Pelvis Accel Y	Lft	401.26964 g	-	11/21/2002	OK 066nlr	Endevco	7264C-2K-2-180
0020	P25824	PEVYR1	Pelvis Accel Red Y	Lft	397.34277 g	-	3/20/2003	OK 066nlr	Endevco	7264C-2K-2-180
0021	P25307	HEDXG4	Head Accel X	Rwd	809.10240 g	-	1/22/2003	OK 028nlr	Endevco	7264C-2K-2-180
0022	P25326	HEDYG4	Head Accel Y	Lft	808.84676 g	-	1/22/2003	OK 028nlr	Endevco	7264C-2K-2-180
0023	P25298	HEDZG4	Head Accel Z	Up	807.64741 g	-	1/22/2003	OK 028nlr	Endevco	7264C-2K-2-180
0024	P25318	HEDXR4	Head Accel X Red	Rwd	810.61397 g	-	1/22/2003	OK 028nlr	Endevco	7264C-2K-2-180
0025	P25301	HEDYR4	Head Accel Y Red	Lt	802.80983 g	-	1/22/2003	OK 028nlr	Endevco	7264C-2K-2-180
0026	P25305	HEDZR4	Head Accel Z Red	Up	807.23993 g	-	1/21/2003	OK 028nlr	Endevco	7264C-2K-2-180
0027	1716A-1535-FX	NEKXF4	Neck Force X	Hd	8891.7626 N	-	3/21/2003	OK 028nlr	Denton	1716A
0028	1716A-1535-FY	NEKYF4	Neck Force Y	Hd	8889.1703 N	+	3/21/2003	OK 028nlr	Denton	1716A
0029	1716A-1535-FZ	NEKZF4	Neck Force Z	Hd	13358.833 N	+	3/21/2003	OK 028nlr	Denton	1716A
0030	1716A-1535-MX	NEKXM4	Neck Moment X	Rt Ear	282.62505 N·m	-	3/21/2003	OK 028nlr	Denton	1716A
0031	1716A-1535-MY	NEKYM4	Neck Moment Y	Chn	283.29670 N·m	+	3/21/2003	OK 028nlr	Denton	1716A
0032	1716A-1535-MZ	NEKZM4	Neck Moment Z	Chn	282.83189 N·m	+	3/21/2003	OK 028nlr	Denton	1716A

D-6

030505-1

Channel Report

5/16/2003 1:10:37 PM

Name of Test 030505-1

System MINIDAU

Name of DAU DAUB

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol.	Cal.	Group	Mfg.	Model
0001	P25231	LURYG4	Left Upper Rib Y	Rgt	806.24842	g	+ 12/13/2002	OK 028nlr	Endevco	7264C-2K-2-180
0002	J27507	LURYR4	Left Upper Rib Red Y	Rgt	808.38701	g	+ 3/18/2003	OK 028nlr	Endevco	7264-2KM5T
0003	P25075	LLRYG4	Left Lower Rib Y	Rgt	801.25195	g	+ 12/19/2002	OK 028nlr	Endevco	7264C-2K-2-180
0004	P25076	LLRYR4	Left Lower Rib Red Y	Rgt	797.43326	g	+ 12/19/2002	OK 028nlr	Endevco	7264C-2K-2-180
0005	P25261	T12YG4	Lower Spine Y	Lft	401.56862	g	- 11/21/2002	OK 028nlr	Endevco	7264C-2K-2-180
0006	P25374	T12YR4	Lower Spine Red Y	Lft	396.97923	g	- 12/19/2002	OK 028nlr	Endevco	7264C-2K-2-180
0007	P25063	PEVYG4	Pelvis Accel Y	Lft	400.40353	g	- 12/19/2002	OK 028nlr	Endevco	7264C-2K-2-180
0008	P25074	PEVYR4	Pelvis Accel Red Y	Lft	397.60196	g	- 12/19/2002	OK 028nlr	Endevco	7264C-2K-2-180
0009	03C03C14-F02	RFSZG1	RGT SIDE SILL FRNT ST Z	UP	402.83241	g	+ 3/31/2003	OK -1	Entran	EGE-73B6Q-200
0010	03C03C14-F18	RFSYG1	RGT SIDE SILL FRNT ST Y	LT	1007.2791	g	- 3/27/2003	OK -1	Entran	EGE-73B6Q-200
0011	03C03C14-F20	RFSXG1	RGT SIDE SILL FRNT ST X	FWD	397.79348	g	- 3/27/2003	OK -1	Entran	EGE-73B6Q-200
0012	03D03C27-N14	RRSXG1	RGT SIDE SILL RR ST X	FWD	401.60012	g	+ 4/3/2003	--- -1	Entran	EGE-73B6Q-200
0013	03D03C27-N11	RRSYG1	RGT SIDE SILL RR ST Y	LT	989.37198	g	- 4/3/2003	OK -1	Entran	EGE-73B6Q-200
0014	03D03C27-N10	RRSZG1	RGT SIDE SILL RR ST Z	UP	400.87691	g	- 4/3/2003	OK -1	Entran	EGE-73B6Q-200
0015	03C03C14-N20	RDKXG1	RR FLRPAN ABV AXLE X	FWD	1011.0584	g	+ 3/28/2003	OK -1	Entran	EGE-73B6Q-200
0016	03D03C27-N05	RDKYG1	RR FLRPAN ABV AXLE Y	LT	989.37198	g	- 4/3/2003	OK -1	Entran	EGE-73B6Q-200
0017	03C03C14-N13	RDKZG1	RR FLRPAN ABV AXLE Z	UP	979.15471	g	- 3/24/2003	OK -1	Entran	EGE-73B6Q-200
0018	03D03C28-N13	LRSYG1	LFT SIDE SILL RR ST Y	RT	1006.2893	g	+ 4/3/2003	OK -1	Entran	EGE-73B6Q-200
0020	03D03C27-N09	LFSYG1	LFT SIDE SILL FRNT ST Y	RT	1013.8613	g	+ 5/15/2003	OK -1	Entran	EGE-73B6Q-200
0021	03D03C28-N25	RRTYG1	RGT RR OCP COMP Y	LT	1458.6894	g	- 5/16/2003	OK -1	Entran	EGE-73B6Q-200
0022	03C03C14-N02	LLBYG1	LFT LOWER B-POST Y	RT	1544.4947	g	+ 5/12/2003	OK -1	Entran	EGE-73B6Q-200
0023	03C03C14-N18	LUBYG1	LFT MID B-POST Y	RT	1538.4615	g	+ 3/21/2003	OK -1	Entran	EGE-73B6Q-200
0024	03D03C27-N28	LLAYG1	LFT LOWER A-POST Y	LT	1513.4496	g	- 5/15/2003	OK -1	Entran	EGE-73B6Q-200
0025	03D03C28-N08	LUAYG1	LFT MID A-POST Y	LT	1495.3271	g	- 5/9/2003	OK -1	Entran	EGE-73B6Q-200
0026	03D03C27-N17	LFTYG1	LFT FRNT ST TRK Y	RT	1545.8937	g	+ 4/3/2003	OK -1	Entran	EGE-73B6Q-200
0027	03D03C27-N01	LRTYG1	LFT RR ST TR Y	LT	1458.6894	g	- 5/15/2003	OK -1	Entran	EGE-73B6Q-200
0028	03D03C28-N05	VCGXG1	VEH C/G X	FWD	994.56099	g	+ 5/15/2003	OK -1	Entran	EGE-73B6Q-200
0029	03D03C28-N11	VCGYG1	VEH C/G Y	RT	996.88473	g	+ 4/4/2003	OK -1	Entran	EGE-73B6Q-200
0030	03D03C28-N04	VCGZG1	VEH C/G Z	UP	984.61538	g	- 4/4/2003	OK -1	Entran	EGE-73B6Q-200

D-7

030505-1

Channel Report

5/16/2003 1:10:37 PM

Name of Test 030505-1

System MINIDAU

Name of DAU DAUC

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol.	Cal.	Group	Mfg.	Model
0001	03C03C14-F23	BCGXG1	MDB CG X	FWD	604.27239	g	+ 3/27/2003	OK -1	Entran	EGE-73B6Q-200
0002	03C03C14-N27	BCGYG1	MDB CG Y	RT	600.37523	g	+ 3/24/2003	OK -1	Entran	EGE-73B6Q-200
0003	P23459	BCGZG1	MDB CG Z	UP	596.45852	g	- 3/3/2003	OK -1	Endevco	7264C-2K-2-180
0004	P23362	LRRXG1	MDB L RR X	RR	606.49135	g	- 3/3/2003	OK -1	Endevco	7264C-2K-2-180
0005	P23460	LRRYG1	MDB L RR Y	RT	605.37268	g	+ 3/3/2003	OK -1	Endevco	7264C-2K-2-180
0006	EVENT	EVENT	EVENT		5.12	V	+ 10/15/2002	OK -1	TRC	Event

Digital and System Channel Report

2003-05-05 07:47:09

Name of Test 030505-1

System MINIDAU

Name of DAU DAUA descriptio

enable Channel Short Name
Yes 0501 DIGA

Type
dig0

Data File Module Type
DATA0501 KM3710 Controller

bit position	bit	short	long	descriptio
MSB = bit 15	1	SHLET1	D SHOULER CONTACT SWT	A
bit 14	1	PEVET1	D PELVIS CONTACT SWT	B
bit 13	1	SHLET4	P SHOULDER CONTACT SWT	C
bit 12	1	PEVET4	P PELVIS CONTACT SWT	D
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			

D-9

030505-1

Digital and System Channel Report

2003-05-05 07:47:10

Name of Test 030505-1

System MINIDAU

Name of DAU DAUC descriptio

enable Channel Short Name
Yes 0501 DIGC

Type
dig0

Data File Module Type
DATC0501 KM3710 Controller

bit position	bit	short	long	descriptio
MSB = bit 15	1	MDBR1	MDB R CONTACT SWT	1
bit 14	1	MDBL1	MDB L CONTACT SWT	2
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			

D-10

030505-1

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

Chsnam	Location	Model	Name	Manufacturer	Sens./mV/V/	Fullscal	Caldat	Pos Output	Flip
HEDXG	Head Accel X	7264C-2K-2-18	P25307	Endevco	0.01808 g	2000	1/22/2003	Rwd	1
HEDYG	Head Accel Y	7264C-2K-2-18	P25326	Endevco	0.0211 g	2000	1/22/2003	Lft	1
HEDZG	Head Accel Z	7264C-2K-2-18	P25298	Endevco	0.02186 g	2000	1/22/2003	Up	1
HEDXR	Head Accel X Red	7264C-2K-2-18	P25318	Endevco	0.01914 g	2000	1/22/2003	Rwd	1
HEDYR	Head Accel Y Red	7264C-2K-2-18	P25301	Endevco	0.01993 g	2000	1/22/2003	Lt	1
HEDZR	Head Accel Z Red	7264C-2K-2-18	P25305	Endevco	0.02046 g	2000	1/21/2003	Up	1
NEKXF	Neck Force X	1716A	1716A-1535-FX	Denton	0.000185746 N	8896.4	3/21/2003	Hd Fd,Cst Rr	1
NEKYF	Neck Force Y	1716A	1716A-1535-FY	Denton	0.000181126 N	8896.4	3/21/2003	Hd Lt,Cst Rt	0
NEKZF	Neck Force Z	1716A	1716A-1535-FZ	Denton	0.000093708 N	13344.6	3/21/2003	Hd Up,Cst Dn	0
NEKXM	Neck Moment X	1716A	1716A-1535-MX	Denton	0.00580637 N	282.5	3/21/2003	Rt Ear to Rt Shld	1
NEKYM	Neck Moment Y	1716A	1716A-1535-MY	Denton	0.005701238 N	282.5	3/21/2003	Chn to Strnm	0
NEKZM	Neck Moment Z	1716A	1716A-1535-MZ	Denton	0.008154336 N	282.5	3/21/2003	Chn to Lt Shld	0
LURYG	Left Upper Rib Y	7264C-2K-2-18	P25231	Endevco	0.01764 g	2000	12/13/2002	Rgt	0
LURYR	Left Upper Rib Red Y	7264-2KM5T	J27507	Endevco	0.02639 g	2000	3/18/2003	Rgt	0
LLRYG	Left Lower Rib Y	7264C-2K-2-18	P25075	Endevco	0.01775 g	2000	12/19/2002	Rgt	0
LLRYR	Left Lower Rib Red Y	7264C-2K-2-18	P25076	Endevco	0.01566 g	2000	12/19/2002	Rgt	0
T12YG	Lower Spine Y	7264C-2K-2-18	P25261	Endevco	0.017 g	2000	11/21/2002	Lft	1
T12YR	Lower Spine Red Y	7264C-2K-2-18	P25374	Endevco	0.02186 g	2000	12/19/2002	Lft	1
PEVYG	Pelvis Accel Y	7264C-2K-2-18	P25063	Endevco	0.01801 g	2000	12/19/2002	Lft	1
PEVYR	Pelvis Accel Red Y	7264C-2K-2-18	P25074	Endevco	0.01764 g	2000	12/19/2002	Lft	1

D-11

030505-1

Monday, May 05, 2003 028nlr

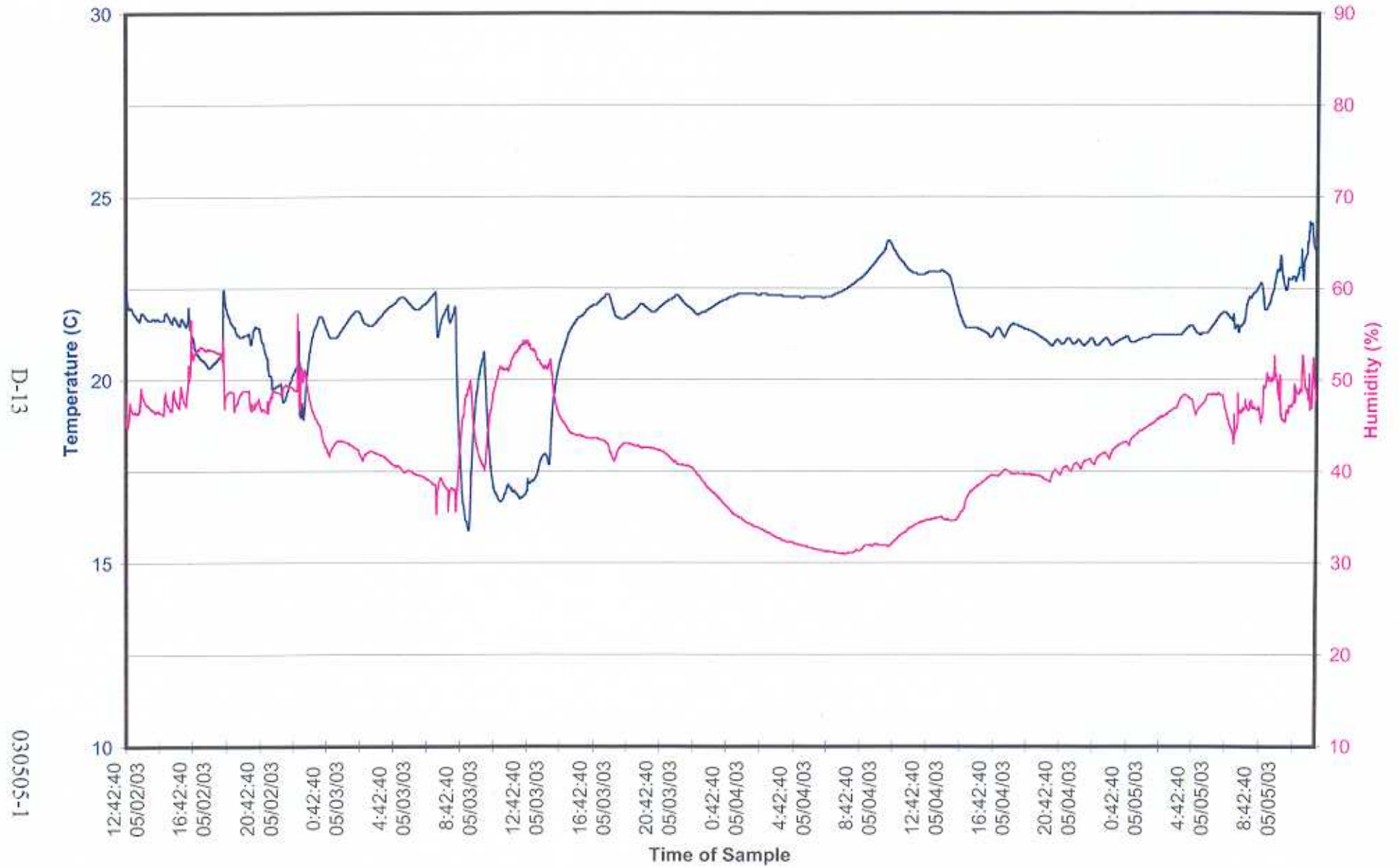
Page 1 of 1

D-12

030505-1

Dummy	066nlr	Type	SID	Description	NHTSA - 066n SID-LEFT IMP.W/ RED ACCELS CAL DUE 5-21-03(DKS 4-25-03)J211						
Chsnam	Location	Model	Name	Manufacturer	Sens./mV/V/		Fullscal	Caldat	Pos Output	Flip	
HEDXG	Head Accel X	7264-2000TZ	J26980	Endevco	0.03084	g	2000	3/11/2003	Rwd	1	
HEDYG	Head Accel Y	7264-2000TZ	J27048	Endevco	0.02666	g	2000	3/11/2003	Lft	1	
HEDZG	Head Accel Z	7264-2000TZ	J26896	Endevco	0.02405	g	2000	3/11/2003	Up	1	
HEDXR	Head Accel X Red	7264C-2K-2-18	P22890	Endevco	0.02217	g	2000	3/11/2003	Rwd	1	
HEDYR	Head Accel Y Red	7264C-2K-2-18	P16213	Endevco	0.0163	g	2000	3/11/2003	Lt	1	
HEDZR	Head Accel Z Red	7264C-2K-2-18	P18941	Endevco	0.02043	g	2000	3/11/2003	Up	1	
NEKXF	Neck Force X	1716A	1716A-I220-FX	Denton	0.000194393	N	8896.4	3/10/2003	Hd Fd,Cst Rr	1	
NEKYF	Neck Force Y	1716A	1716A-I220-FY	Denton	0.000189043	N	8896.4	3/10/2003	Hd Lt,Cst Rt	0	
NEKZF	Neck Force Z	1716A	1716A-I220-FZ	Denton	0.000098459	N	13344.6	3/10/2003	Hd Up,Cst Dn	0	
NEKXM	Neck Moment X	1716A	1716A-I220-MX	Denton	0.006002832	N	282.5	3/10/2003	Rt Ear to Rt Shld	1	
NEKYM	Neck Moment Y	1716A	1716A-I220-MY	Denton	0.005908673	N	282.5	3/10/2003	Chn to Strnm	0	
NEKZM	Neck Moment Z	1716A	1716A-I220-MZ	Denton	0.008456991	N	282.5	3/10/2003	Chn to Lt Shld	0	
LURYG	Left Upper Rib Y	7264C-2K-2-18	P24511	Endevco	0.0173	g	2000	11/21/2002	Rgt	0	
LURYR	Left Upper Rib Red Y	7264C-2K-2-18	P21652	Endevco	0.02198	g	2000	11/21/2002	Rgt	0	
LLRYG	Left Lower Rib Y	7264C-2K-2-18	P25829	Endevco	0.03054	g	2000	3/20/2003	Rgt	0	
LLRYR	Left Lower Rib Red Y	7264C-2K-2-18	P24627	Endevco	0.01825	g	2000	11/21/2002	Rgt	0	
T12YG	Lower Spine Y	7264C-2K-2-18	P21635	Endevco	0.01873	g	2000	11/21/2002	Lft	1	
T12YR	Lower Spine Red Y	7264C-2K-2-18	P24564	Endevco	0.01875	g	2000	11/21/2002	Lft	1	
PEVYG	Pelvis Accel Y	7264C-2K-2-18	P24393	Endevco	0.01963	g	2000	11/21/2002	Lft	1	
PEVYR	Pelvis Accel Red Y	7264C-2K-2-18	P25824	Endevco	0.03068	g	2000	3/20/2003	Lft	1	

Side Impact Protection Compliance Test/030505-1



SIDE IMPACTOR BARRIER CERTIFICATION

Date: April 1, 2003
To: Transportation Research
Ship & Rec Bldg 50
10820 St. Route 347
East Liberty, OH 43319-0367

PURCHASE ORDER INFORMATION

Customer P.O. Number: 22964
Work Order Number: 16444
Quantity: 01 piece

CORE INFORMATION

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

Unit Number: 013C0203

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


Quality Control Representative
Karl D. Zwaanstra

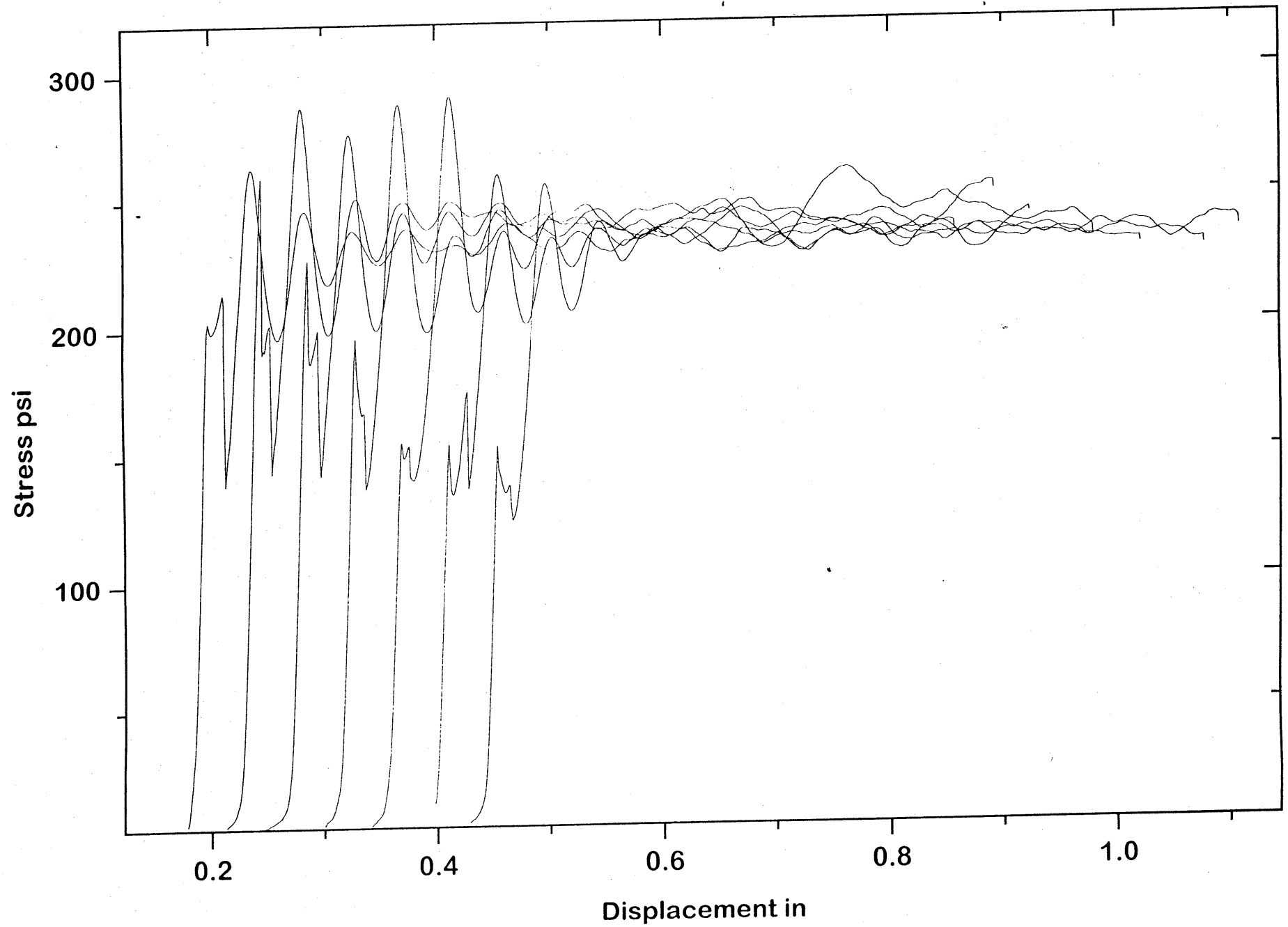


Crush Data
232 - 250 psi per DWG # DSL-1285

Block Number: 013C0203

<u>Specimen Number</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>
1	233.48	233.35	237.86
2	242.12	244.14	240.86
3	240.11	239.69	235.51
4	239.95	247.24	244.81
5	236.72	235.46	235.51
6	233.23	233.94	234.72
7	235.06	233.80	236.57

BLOCK # 013C0203 Sample ID: IN226629



D-16

030505-1

SIDE IMPACTOR BARRIER CERTIFICATION

Date: April 1, 2003
To: Transportation Research
Ship & Rec Bldg 50
10820 St. Route 347
East Liberty, OH 43319-0367

PURCHASE ORDER INFORMATION

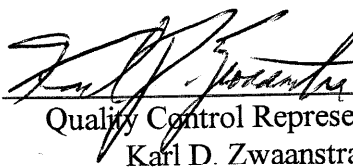
Customer P.O. Number: 22964
Work Order Number: 16444
Quantity: 01 piece

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 Number: 015A0303

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


Quality Control Representative
Karl D. Zwaanstra

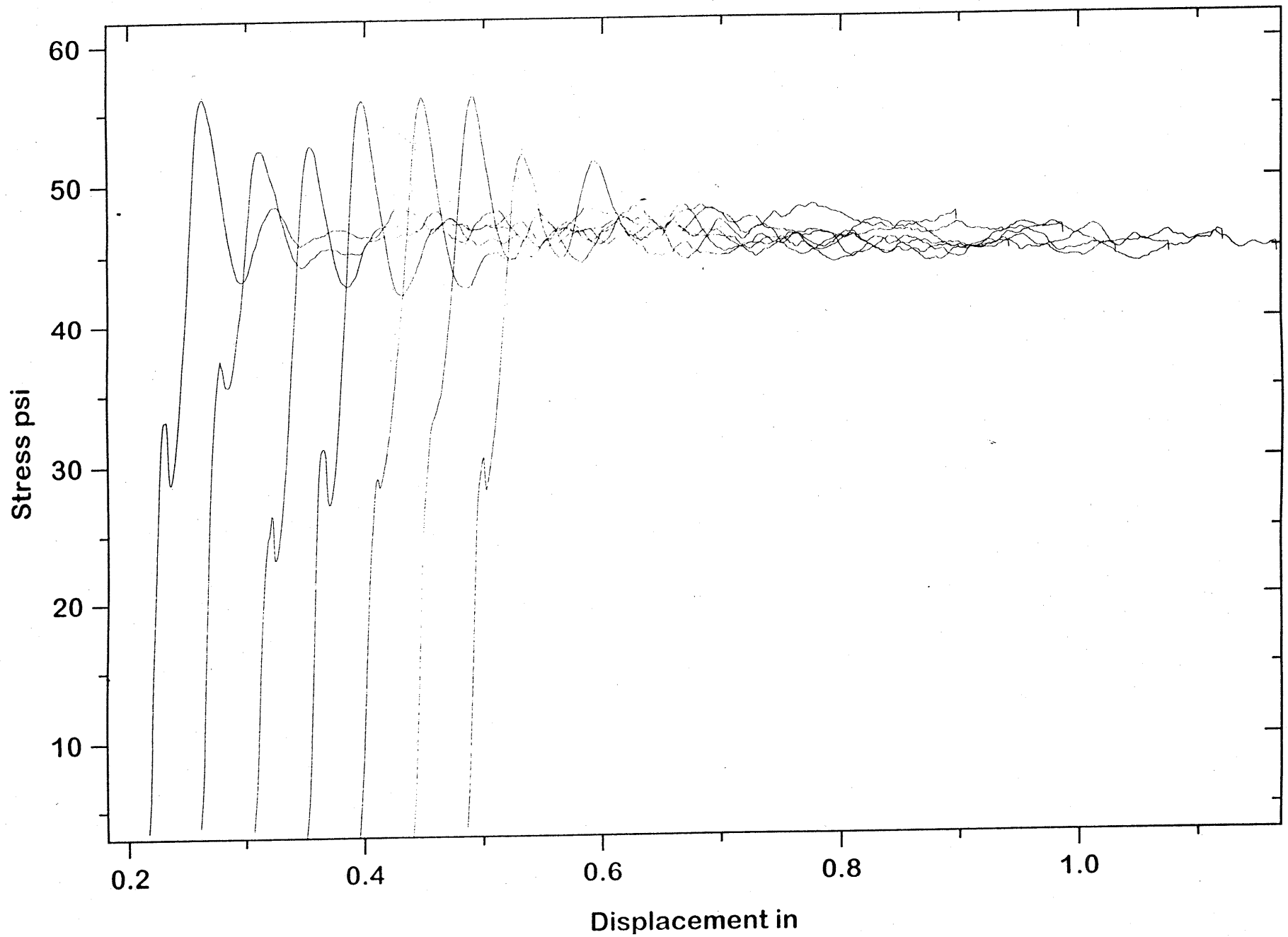


Crush Data
45 psi +/- 2.5 psi per DWG # DSL-1285

Block Number: 015A0303

<u>Specimen Number</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>
1	46.99	46.55	46.05
2	47.24	46.50	46.21
3	46.66	46.47	45.26
4	46.48	47.18	46.39
5	45.34	45.13	45.25
6	46.00	45.52	45.07
7	45.42	45.16	45.49

BLOCK # 015A0303 Sample ID: IN226928



D-19

030505-1