

Report Number: 214-TRC-03-011

Safety Compliance Testing For FMVSS 214

Side Impact Protection

Indicant

Mitsubishi Motors North America Inc.

2004 Mitsubishi Endeavor SUV

NHTSA Number: C45600

Transportation Research Center Inc.

10820 State Route 347

P. O. Box B-67

East Liberty, OH 43319



Test Date: September 16, 2003

Final Report: September 29, 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

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16. Abstract <p>This 56/28 km/h 90° Impact (Moving Deformable Barrier) Compliance Test was conducted on the subject vehicle, a 2004 Mitsubishi Endeavor SUV in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-214D-06 (except the test was conducted 8 km/h (5 mph) faster than the standard specifies) to determine FMVSS 214 Side Impact Protection compliance. This test was conducted by Transportation Research Center Inc. in East Liberty, Ohio, on September 16, 2003.</p> <p>The impact velocity of the Moving Deformable Barrier (MDB) was 62.2 km/h, and the ambient temperature at the struck (Driver side) side of the target vehicle at the time of impact was 21° C. The target vehicle's post-test maximum crush was 325 mm at Level 3.</p> <p>The test or target vehicle's performance is given below (with FIR filter):</p> <table border="0" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>Front SID HIII</u></th> <th></th> <th style="text-align: center;"><u>Rear SID HIII</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib Acceleration:</td> <td style="text-align: center;"><u>31.8</u></td> <td>g's</td> <td style="text-align: center;"><u>35.7</u></td> <td>g's</td> </tr> <tr> <td>Left Lower Rib Acceleration:</td> <td style="text-align: center;"><u>41.6</u></td> <td>g's</td> <td style="text-align: center;"><u>37.5</u></td> <td>g's</td> </tr> <tr> <td>Lower Spine Acceleration:</td> <td style="text-align: center;"><u>49.0</u></td> <td>g's</td> <td style="text-align: center;"><u>45.7</u></td> <td>g's</td> </tr> <tr> <td>Thoracic Trauma Index, (TTI):</td> <td style="text-align: center;"><u>45.3</u></td> <td>g's</td> <td style="text-align: center;"><u>41.6</u></td> <td>g's</td> </tr> <tr> <td>Pelvis Acceleration (PEV):</td> <td style="text-align: center;"><u>55.3</u></td> <td>g's</td> <td style="text-align: center;"><u>53.7</u></td> <td>g's</td> </tr> </tbody> </table> <p>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.</p>					<u>Front SID HIII</u>		<u>Rear SID HIII</u>		Left Upper Rib Acceleration:	<u>31.8</u>	g's	<u>35.7</u>	g's	Left Lower Rib Acceleration:	<u>41.6</u>	g's	<u>37.5</u>	g's	Lower Spine Acceleration:	<u>49.0</u>	g's	<u>45.7</u>	g's	Thoracic Trauma Index, (TTI):	<u>45.3</u>	g's	<u>41.6</u>	g's	Pelvis Acceleration (PEV):	<u>55.3</u>	g's	<u>53.7</u>	g's
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Section 1

Purpose and Test Procedure

This side impact test is part of the FMVSS 214 Side Impact Protection Compliance Test Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-02-D-11114. The purpose of this test was to evaluate side impact protection in a 2004 Mitsubishi Endeavor SUV. The test was conducted in accordance with the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-06, dated July 2001) (except the test was conducted 8 km/h (5 mph) faster than the standard specifies).

Section 2

Summary of Side Impact Test

A 2004 Mitsubishi Endeavor SUV was impacted on the driver side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the monorail at a velocity of 62.2 km/h (38.6 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by Transportation Research Center Inc. in East Liberty, Ohio on September 16, 2003. Pre-test and post-test photographs of the test vehicle, the moving deformable barrier (MDB), and the side impact dummies (SID HIIIs) are included in Appendix A.

Two restrained Side Impact Dummies (SID HIIIs) 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 SID HIII dummies 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 HIIIs 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 dummy (SID HIII) configuration and verification test data can be found in Appendix C. A total of 68 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 HIII	Rear SID HIII
TTI (g)	45.3	41.6
PEV (g)	55.3	53.7

Head Injury Criteria (HIC)

Injury Criteria	Front SID HIII	Rear SID HIII
HIC	98	514
t ₁ (ms)	55.44	69.04
t ₂ (ms)	91.44	75.68
Average Acceleration t ₁ - t ₂ (g)	23.67	89.80

HIC is as defined in FMVSS 208. The maximum time interval t₁ to t₂ is 36 ms.

Neck Injury Criteria

Maximum Values	Front SID HIII	Rear SID HIII
Neck X-axis Force (N)	-508	-354
Neck Y-axis Force (N)	556	-497
Neck Z-axis Force (N)	1291	-1728
Moment About X-axis (Nm) ¹	53.4	-96.0
Moment About Y-axis (Nm)	30.3	-43.0
Moment About Z-axis (Nm)	15.5	38.3

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

Data Acquisition Explanations

The vehicle's left rear seat track Y-axis acceleration channel, LRTYG1, recorded questionable data throughout the test. The calculated left rear seat track velocity was also affected.

The vehicle's center of gravity X- and Y-axis acceleration channels, VCGXG1 and VCGYG1, did not return to zero post-test. The vehicle center of gravity resultant and calculated X- and Y-axis velocities were also affected.

Section 3

Summary of Test Results

Data Sheet 1

General Test Vehicle Parameter Data

Test Vehicle Information:

Vehicle Year/Make/Model: 2004 Mitsubishi Endeavor
Vehicle Body Style/Color: SUV/Titanium Pearl VIN: 4A4MN21S64E003369
Vehicle NHTSA No.: C45600 Build Date: 03/03
Engine Data: 6 Cylinders; CID; 3.8 Liters; cc
Placement: - Longitudinal; or X Lateral; or - Horizontal
Transmission: 4 Speed; - Manual; X Automatic; - Overdrive
Final Drive: - RWD; - FWD; X Four-Wheel Drive
Odometer Reading: 153 mi (246 km)
Options: X A/C; X Power steering; X Pwr. brakes; X Power windows

Data From Vehicle's Tire Placard:

Tire Pressure (at capacity)* 220 kPa Front; 220 kPa Rear
Recommended Tire Size: P235/65R17
Tires on Test Vehicle: P235/65R17 Manufacturer: Bridgestone, Turanza

Vehicle Capacity Data:

Number of Occupants: 2 Front; 3 Rear; N/A 3rd seat; 5 Total
Type of Front Seats: X Bucket; - Bench; - Split bench
Type of Front Seat Back: - Fixed; X Adjustable with X Lever or - Knob
Vehicle Max. Capacity Loading = 440 kg (A)
No. of Occupants x 68.04 kg. = 340 kg (B)
Vehicle Cargo Capacity (A-B) = 100 kg

Test Vehicle Delivered Weight With Maximum Fluids:

Left Front	=	<u>543.5</u> kg	Left Rear	=	<u>393.0</u> kg
Right Front	=	<u>502.5</u> kg	Right Rear	=	<u>412.5</u> kg
Total Front	=	<u>1046.0</u> kg	Total Rear	=	<u>805.5</u> kg
Front % of Total Weight	=	<u>56.5</u> %	Rear % of Total Weight	=	<u>43.5</u> %
Total Weight	=	<u>1851.5</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 = 1851.5 kg (A)
Maximum Cargo Carrying Capacity of Test Vehicle = 100 kg (B)
Weight of Instrumented Side Impact Dummies (2 X 83.5 kg) = 167 kg (C)
Test Vehicle Target Weight: = 2118.5 kg (A+B+C)

Fully Loaded Test Vehicle (UDW + 2 SID HIII s + Cargo):

Left Front	=	<u>595.0</u> kg	Left Rear	=	<u>514.5</u> kg
Right Front	=	<u>500.5</u> kg	Right Rear	=	<u>498.5</u> kg
Total Front	=	<u>1095.5</u> kg	Total Rear	=	<u>1013.0</u> kg
Front % of Total Weight	=	<u>52.0</u> %	Rear % of Total Weight	=	<u>48.0</u> %
Total Weight	=	<u>2108.5</u> kg			

As Tested Weight of Test Vehicle (2 SID HIII s + Cargo + Equipment & Instrumentation):

Left Front	=	<u>579.4</u> kg	Left Rear	=	<u>509.0</u> kg
Right Front	=	<u>541.0</u> kg	Right Rear	=	<u>481.4</u> kg
Total Front	=	<u>1120.4</u> kg	Total Rear	=	<u>990.4</u> kg
Front % of Total Weight	=	<u>53.1</u> %	Rear % of Total Weight	=	<u>46.9</u> %
Total Weight	=	<u>2110.8</u> kg			

Test Vehicle Attitude (all dimensions in millimeters):

As Delivered	Fully Loaded	As Tested
Right Front <u>876</u>	Right Front <u>855</u>	Right Front <u>852</u>
Left Front <u>874</u>	Left Front <u>845</u>	Left Front <u>840</u>
Right Rear <u>876</u>	Right Rear <u>830</u>	Right Rear <u>838</u>
Left Rear <u>876</u>	Left Rear <u>825</u>	Left Rear <u>822</u>

Test Vehicle Wheelbase: 2755 mm

C.G. = 1293 mm rearward of front wheel centerline

Total Vehicle Length:

Right Side = 4418 mm
Left Side = 4427 mm
Centerline = 4832 mm

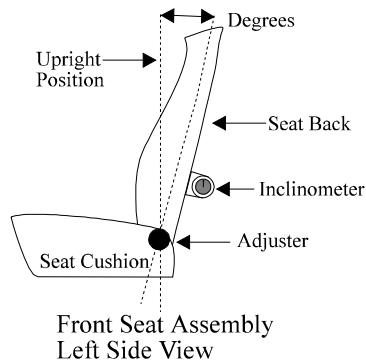
Data Sheet 1 (continued)

General Test Vehicle Parameter Data

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600

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: 12th of 23 notches (forward-most notch is Notch #1)

Total Length of Fore/Aft Adjustment Travel: 220 mm

Total Number of Adjustment Positions or Detents: 23

Front Seat Back Adjustment Position: The seat back was adjusted to the 6th step, counting the first most upright locking position as Step 0.

Seat Back Torso Angle: 23 degrees

Second Position Seat Placement: Fixed

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

Seat Back Adjustment Position: N/A

Adjustable Steering Column Position: 3rd locking position, counting the lowest position as #1

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.

Amount of Stoddard Solvent In Fuel Tank:

81.0 liters (fuel tank usable capacity)

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

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

Wheelbase = 2755 millimeters

Intended impact point is 438 millimeters rearward of front axle centerline
(which is 940 millimeters forward of the wheelbase midpoint)

Actual Impact Point is 437 millimeters rearward of front axle centerline

Data Sheet 2

Test Vehicle Summary of Results

Vehicle Year/Make/Model: 2004/Mitsubishi/Endeavor

Body Style: SUV

VIN: 4A4MN21S64E003369

NHTSA No.: C45600

Build Date: 03/2003

Test Date: 09/16/03

Vehicle Overall Length = 4832 mm

Overall Width = 1865 mm

Vehicle Test Weight (Pre-Test):

Left Front = 579.4 kg Left Rear = 509.0 kg

Right Front = 541.0 kg Right Rear = 481.4 kg

Total Front = 1120.4 kg Total Rear = 990.4 kg

Total Weight = 2110.8 kg

Wheelbase = 2755 mm

Longitudinal C.G. From Center Of Front Axle = 1293 mm

Impact Angle With Respect To Impactor = 90 degrees

Impact Point:

Actual Impact Point is 1 mm left of nominal impact ref. line (Lateral)

Actual Impact Point is 1 mm up from nominal impact point (Vertical)

Maximum Exterior Static Crush:

1. Level 1 (380 mm above ground) = 159 mm

2. Level 2 (737 mm above ground) = 322 mm

3. Level 3 (755 mm above ground) = 325 mm

4. Level 4 (1080 mm above ground) = 194 mm

5. Level 5 (1620 mm above ground) = 43 mm

Maximum Post-Test Intrusion = 325 mm

Occupants:

Front Passenger

Rear Passenger

Dummy Identification 055 059

Restraints Used 3-point seat belt 3-point seat belt

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:

Cellbond, DF726

Position Of Impactor (MDB) On Monorail:

Crabbed 27° to the left

MDB Specifications:

Overall Width of Framework Carriage	=	<u>1251</u>	mm
Overall Length of MDB (Incl. honeycomb impact face)	=	<u>4014</u>	mm
Wheelbase of Framework Carriage	=	<u>2591</u>	mm
Track of Framework Carriage (Front & Rear)	=	<u>1881</u>	mm
C.G. Location Rearward of Front Axle	=	<u>1117</u>	mm

MDB Weight:

Left Front	=	<u>419.8</u>	kg	Left Rear	=	<u>261.0</u>	kg
Right Front	=	<u>354.2</u>	kg	Right Rear	=	<u>325.6</u>	kg
Total Front	=	<u>774.0</u>	kg	Total Rear	=	<u>586.6</u>	kg
Total MDB Weight	=	<u>1360.6</u>	kg				
Impact Angle (MDB C/L to Target Vehicle C/L)	=	<u>90</u>	degrees				
Impact Speed	=	<u>62.2</u>	km/h				

Maximum Static Crush of Honeycomb Impact Face:

1. Row A at Center of Bumper Level	=	<u>232</u>	millimeters
2. Row B at Top of Bumper Level	=	<u>145</u>	millimeters
3. Row C at Mid Level ¹	=	<u>128</u>	millimeters
4. Row D at Top of Stack Level	=	<u>150</u>	millimeters

Instrumentation:

Number of MDB Data Channels = 5

¹ Row C at Mid Level pre-test measurements were not collected prior to impact. Pre-test measurements from a second barrier face were used to determine difference.

Data Sheet 4

Post-Test Observations

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600

Visible Dummy Contact Points:

	<u>Left Front SID HIII</u>	<u>Left Rear SID HIII</u>
Head:	<u>B-pillar, headrest</u>	<u>C-pillar</u>
Upper Torso:	<u>Door panel</u>	<u>Door panel</u>
Lower Torso:	<u>None</u>	<u>None</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</u>	<u>Easy</u>
Rear:	<u>Latched and jammed</u>	<u>Easy</u>

MDB Distance From Target Impact Point:

Vertical: 1 mm up from target
Horizontal: 1 mm left from target

Arm Rest Locations:

Front: 190 mm below the bottom of the window
Rear: 230 mm below the bottom of the window

Seat Movement:

Front: None
Rear: N/A

Glazing Damage:

Windshield: None
Window: None

Pillar Separation: No

Sill Separation: No

Other Notable Impact Effects:

None

Section 4

Occupant and Vehicle Information

Data Sheet 5

SID HIII Instrumentation Data

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600

TEST NUMBER: 030916

DRIVER DUMMY SERIAL NUMBER: 055

POSITIVE
DIRECTION

NEGATIVE
DIRECTION

HEAD ACCELERATION

LONGITUDINAL	12.2 g	@ 133.5 ms	11.5 g	@ 89.0 ms
LATERAL	16.2 g	@ 85.4 ms	4.1 g	@ 36.4 ms
VERTICAL	29.7 g	@ 63.4 ms	0.2 g	@ 18.5 ms
RESULTANT	32.8 g	@ 63.4 ms		
HIC	98 from 55.4 to 91.4 ms			

HEAD REDUNDANT ACCELERATION

LONGITUDINAL	12.3 g	@ 133.9 ms	11.2 g	@ 84.8 ms
LATERAL	16.5 g	@ 85.4 ms	4.2 g	@ 36.8 ms
VERTICAL	30.9 g	@ 62.9 ms	0.1 g	@ 8.6 ms
RESULTANT	34.3 g	@ 63.0 ms		
HIC	106 from 55.2 to 91.2 ms			

NECK FORCE

X-AXIS SHEAR	37.0 N	@ 275.1 ms	507.5 N	@ 84.4 ms
Y-AXIS SHEAR	556.2 N	@ 87.0 ms	206.5 N	@ 37.4 ms
Z-AXIS AXIAL	1290.9 N	@ 62.7 ms	74.7 N	@ 1.1 ms

NECK MOMENT

ABOUT X-AXIS	44.0 N-m	@ 81.9 ms	39.6 N-m	@ 45.6 ms
ABOUT Y-AXIS	30.3 N-m	@ 95.2 ms	21.1 N-m	@ 59.5 ms
ABOUT Z-AXIS	15.5 N-m	@ 80.2 ms	9.0 N-m	@ 39.4 ms
OCCIPITAL COND	53.4 N-m	@ 82.0 ms	38.7 N-m	@ 45.4 ms

LEFT UPPER RIB ACCELERATION

LATERAL (P)	31.8 g	@ 34.4 ms	5.1 g	@ 90.0 ms
LATERAL (R)	31.3 g	@ 34.4 ms	5.3 g	@ 90.0 ms

LEFT LOWER RIB ACCELERATION

LATERAL (P)	41.6 g	@ 41.2 ms	7.4 g	@ 36.3 ms
LATERAL (R)	42.6 g	@ 41.2 ms	10.3 g	@ 36.3 ms
TTI d (P)	45.3			
TTI d (R)	45.5			

LOWER SPINE ACCELERATION

LATERAL (P)	49.0 g	@ 35.0 ms	3.5 g	@ 86.3 ms
LATERAL (R)	48.4 g	@ 35.0 ms	3.7 g	@ 86.3 ms

PELVIS ACCELERATION

LATERAL (P)	55.3 g	@ 35.0 ms	8.5 g	@ 64.4 ms
LATERAL (R)	55.3 g	@ 35.0 ms	8.4 g	@ 64.4 ms

POSITIVE DIRECTION

LONGITUDINAL: FORWARD
LATERAL: RIGHTWARD
VERTICAL: DOWNWARD

NEGATIVE DIRECTION

LONGITUDINAL: REARWARD
LATERAL: LEFTWARD
VERTICAL: UPWARD

Data Sheet 5 (Continued)

SID HIII Instrumentation Data

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600

TEST NUMBER: 030916

PASSENGER DUMMY SERIAL NUMBER: 059

POSITIVE
DIRECTION

NEGATIVE
DIRECTION

HEAD ACCELERATION

LONGITUDINAL	22.7 g	@ 74.5 ms	8.7 g	@ 133.3 ms
LATERAL	102.5 g	@ 71.6 ms	8.8 g	@ 54.0 ms
VERTICAL	22.0 g	@ 101.5 ms	18.7 g	@ 77.0 ms
RESULTANT	103.7 g	@ 72.7 ms		
HIC	514 from 69.0 to 75.7 ms			

HEAD REDUNDANT ACCELERATION

LONGITUDINAL	24.2 g	@ 74.3 ms	8.3 g	@ 131.3 ms
LATERAL	103.2 g	@ 71.5 ms	8.6 g	@ 54.8 ms
VERTICAL	22.9 g	@ 101.5 ms	18.2 g	@ 77.0 ms
RESULTANT	105.2 g	@ 72.8 ms		
HIC	532 from 69.0 to 75.8 ms			

NECK FORCE

X-AXIS SHEAR	269.5 N	@ 77.0 ms	353.8 N	@ 124.6 ms
Y-AXIS SHEAR	113.0 N	@ 155.9 ms	496.7 N	@ 76.7 ms
Z-AXIS AXIAL	960.7 N	@ 101.8 ms	1728.2 N	@ 76.2 ms

NECK MOMENT

ABOUT X-AXIS	9.9 N-m	@ 159.6 ms	92.4 N-m	@ 73.6 ms
ABOUT Y-AXIS	30.6 N-m	@ 112.6 ms	43.0 N-m	@ 87.2 ms
ABOUT Z-AXIS	38.3 N-m	@ 98.0 ms	10.7 N-m	@ 64.7 ms
OCCIPITAL COND	11.9 N-m	@ 159.4 ms	96.0 N-m	@ 74.0 ms

LEFT UPPER RIB ACCELERATION

LATERAL (P)	35.7 g	@ 59.4 ms	6.6 g	@ 42.5 ms
LATERAL (R)	34.4 g	@ 59.4 ms	7.4 g	@ 42.5 ms

LEFT LOWER RIB ACCELERATION

LATERAL (P)	37.5 g	@ 46.3 ms	6.4 g	@ 108.8 ms
LATERAL (R)	40.0 g	@ 46.3 ms	6.6 g	@ 108.8 ms
TTI d (P)	41.6			
TTI d (R)	42.4			

LOWER SPINE ACCELERATION

LATERAL (P)	45.7 g	@ 51.3 ms	8.1 g	@ 80.6 ms
LATERAL (R)	44.8 g	@ 51.3 ms	8.3 g	@ 80.6 ms

PELVIS ACCELERATION

LATERAL (P)	53.7 g	@ 41.2 ms	10.1 g	@ 88.8 ms
LATERAL (R)	53.7 g	@ 41.2 ms	10.2 g	@ 88.8 ms

POSITIVE DIRECTION

LONGITUDINAL: FORWARD
LATERAL: RIGHTWARD
VERTICAL: DOWNWARD

NEGATIVE DIRECTION

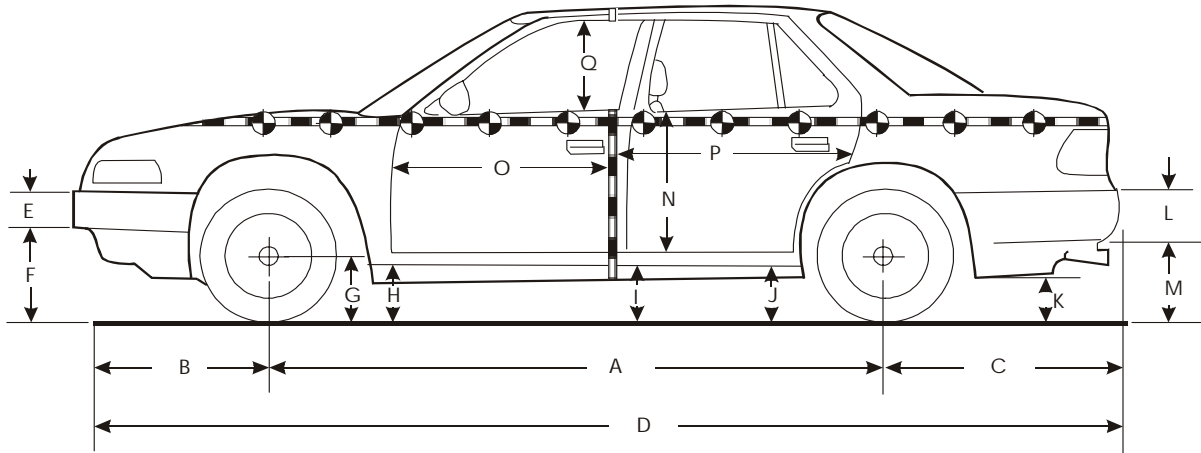
LONGITUDINAL: REARWARD
LATERAL: LEFTWARD
VERTICAL: UPWARD

Data Sheet 6

Vehicle Pre-Test And Post-Test Measurements

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600



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	2755	2755	2750	5
B	925	925	936	-11
C	1152	1152	1024	128
D	4832	4832	4764	68
E	170	170	170	0
F	544	550	562	-12
G	340	340	340	0
H	361	360	325	35
I	363	358	390	-32
J1	320	300	305	-5
J2	365	340	350	-10
K	438	405	413	-8
L	165	165	165	0
M	540	505	350	155
N	805	805	722	83
O	780	780	705	75
P	1250	1250	1203	47
Q	470	470	467	3
R	4418	4418	4417	1
S	4427	4427	4410	17
T	1465	1465	1310	155

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

E&L = Bumper Thickness
J1 = To Pinch Weld

R = Right Side Length
J2 = To Sill

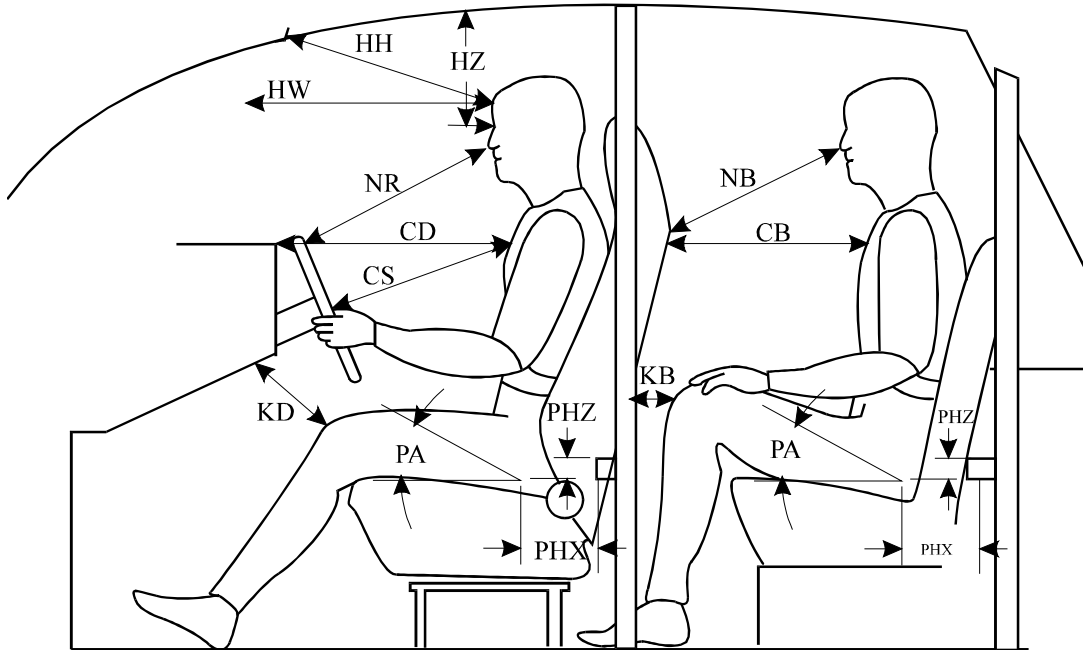
S = Left Side Length

Data Sheet 7

SID HIII Longitudinal Clearance Dimensions

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600



Left Side View

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

Measurement	Driver SID HIII # 055	Left Rear Pass. SID HIII # 059
HH	523	N/A
HW	764	N/A
HZ	191	213
NR/NB	470	556
CD/CB	604	461
CS	352	N/A
KDL(KDA°)/KBL(KBA°)	53/(16.3°)	158/(19.6°)
KDR(KDA°)/KBR(KBA°)	104/(14.5°)	162/(21.0°)
PA°	23.2°	23.3°
PHX	208	194
PHZ	172	232

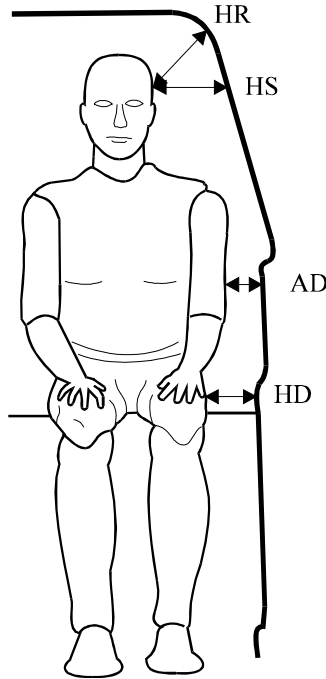
Note: 2-door vehicle shown. Rear dummy PHX and PHZ measurements for 4-door vehicle would use the C-post striker as a reference point.

Data Sheet 8

SID HIII Lateral Clearance Dimensions

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600



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

Measurement	Driver SID HIII # 055	Left Rear Pass. SID HIII # 059
HR	268	290
HS	357	380
AD*	Lower: 47 Upper: 108	Lower: 165 Upper: 126
HD	164	162

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

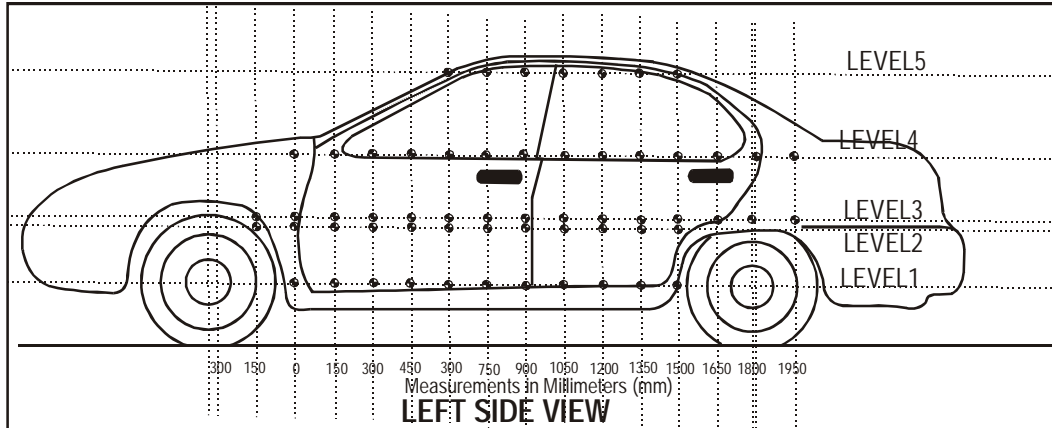
Upper measurement is taken laterally at center of the upper rib accelerometer height from the SID HIII arm segment to the closest part of the vehicle side.

Data Sheet 9

Vehicle Side Measurements

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600



Level 5 - Window Top

Level 4 - Window Sill

Level 3 - Mid-Door

Level 2 - Occupant H-Point

Level 1 - Axle Centerline Height or Sill Top Height

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

Measurements along the vertical 750 mm line shown above:

Level 5 @ Window Top	=	<u>1620</u>	mm
Level 4 @ Window Sill	=	<u>1080</u>	mm
Level 3 @ Mid Door	=	<u>755</u>	mm
Level 2 @ Occupant H-Point	=	<u>737</u>	mm
Level 1 @ Axle Centerline Height (or Sill Top Height)	=	<u>380</u>	mm

Data Sheet 10

Vehicle Exterior Crush Profiles - All Levels

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600

Location	Height		(mm) From Impact Point													
			-1200	-1050	-900	-750	-600	-450	-300	-150	0	150	300	450	600	750
Level 1 Side Sill	380	Pre	---	---	645	---	---	---	---	---	---	651	672	669	669	666
		Post	---	---	633	---	---	---	---	---	---	719	735	751	766	780
		Crush	---	---	-12	---	---	---	---	---	---	68	63	82	97	114
Level 2 H-Point	737	Pre	---	---	592	---	---	---	---	---	581	584	582	577	574	569
		Post	---	---	587	---	---	---	---	---	593	709	792	811	820	833
		Crush	---	---	-5	---	---	---	---	---	12	125	210	234	246	264
Level 3 Mid-Door	755	Pre	---	---	591	---	---	---	---	---	577	584	581	578	574	570
		Post	---	---	589	---	---	---	---	---	592	705	795	819	827	832
		Crush	---	---	-2	---	---	---	---	---	15	121	214	241	253	262
Level 4 Window Sill	1080	Pre	---	---	716	696	680	665	650	640	638	644	636	624	622	614
		Post	---	---	717	700	686	673	663	656	665	633	675	682	698	716
		Crush	---	---	1	---	---	---	13	16	27	-11	39	58	76	102
Level 5 Window Top	1620	Pre	---	---	---	---	---	---	---	---	---	---	---	---	830	823
		Post	---	---	---	---	---	---	---	---	---	---	---	---	850	850
		Crush	---	---	---	---	---	---	---	---	---	---	---	---	20	27

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Data Sheet 10 (Continued)

Vehicle Exterior Crush Profiles - All Levels

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600

Location	Height		(mm) From Impact Point												
			900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700
Level 1 Side Sill	380	Pre	665	664	665	661	662	665	636	---	---	---	---	---	---
		Post	799	809	811	814	805	792	795	---	---	---	---	---	---
		Crush	134	145	146	153	143	127	159	---	---	---	---	---	---
Level 2 H-Point	737	Pre	568	568	568	566	569	570	573	578	---	---	---	---	670
		Post	860	865	870	888	867	837	808	708	---	---	---	---	603
		Crush	292	297	302	322	298	267	235	130	---	---	---	---	-67
Level 3 Mid-Door	755	Pre	567	567	567	567	568	570	570	576	---	---	---	---	593
		Post	856	870	864	892	875	837	808	710	---	---	---	---	602
		Crush	289	303	297	325	307	267	238	134	---	---	---	---	9
Level 4 Window Sill	1080	Pre	611	606	604	604	600	602	604	606	593	590	590	595	622
		Post	734	753	798	767	738	713	686	667	660	643	629	623	628
		Crush	123	147	194	163	138	111	82	61	67	53	39	28	6
Level 5 Window Top	1620	Pre	824	820	822	822	829	828	832	840	848	850	860	866	880
		Post	852	857	860	865	851	853	855	856	865	869	874	882	893
		Crush	28	37	38	43	22	25	23	16	17	19	14	16	13

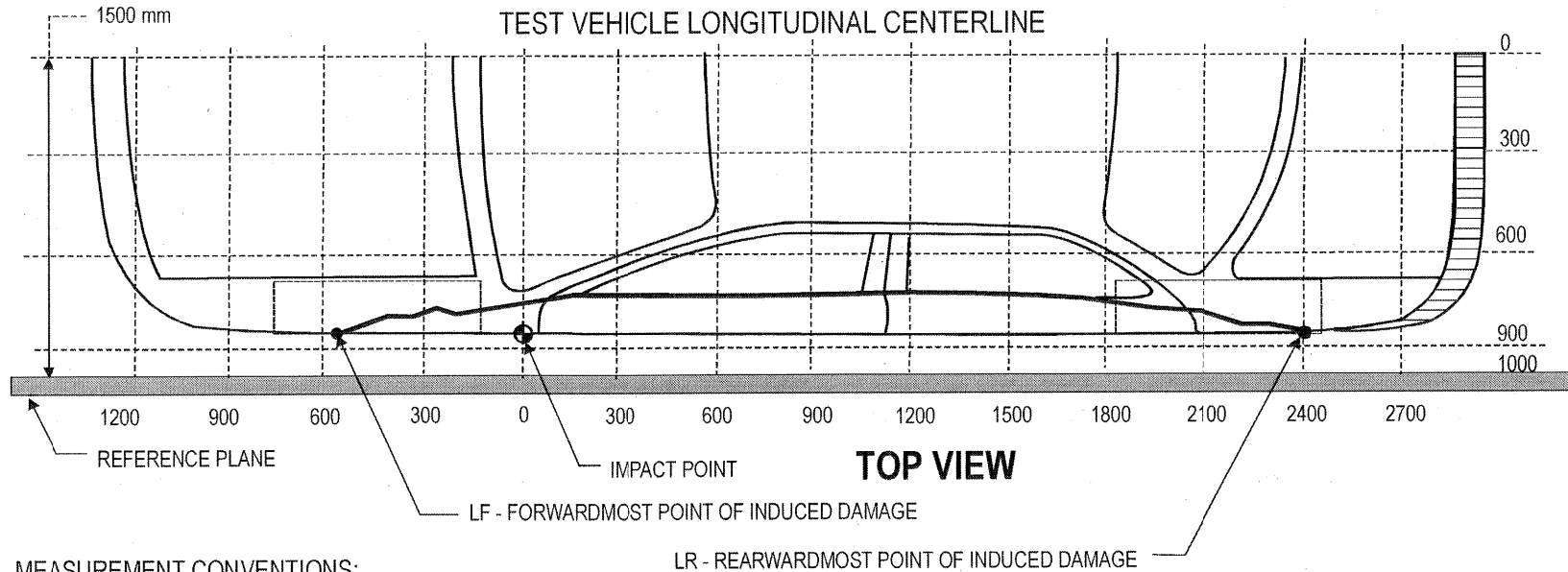
Data Sheet 11

Vehicle Damage Profile Distances

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600

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 = 0 mm (Level 4)	665	638	27
5: 450 mm (Level 3)	819	578	241
4: 1050 mm (Level 3)	870	567	303
3: 1350 mm (Level 3)	892	567	325
2: 1650 mm (Level 2,3)	808/808	570/570	238/238
1: LR = 2400 mm (Level 4)	629	590	39

Full length of induced damage was 0 to 2400 mm.

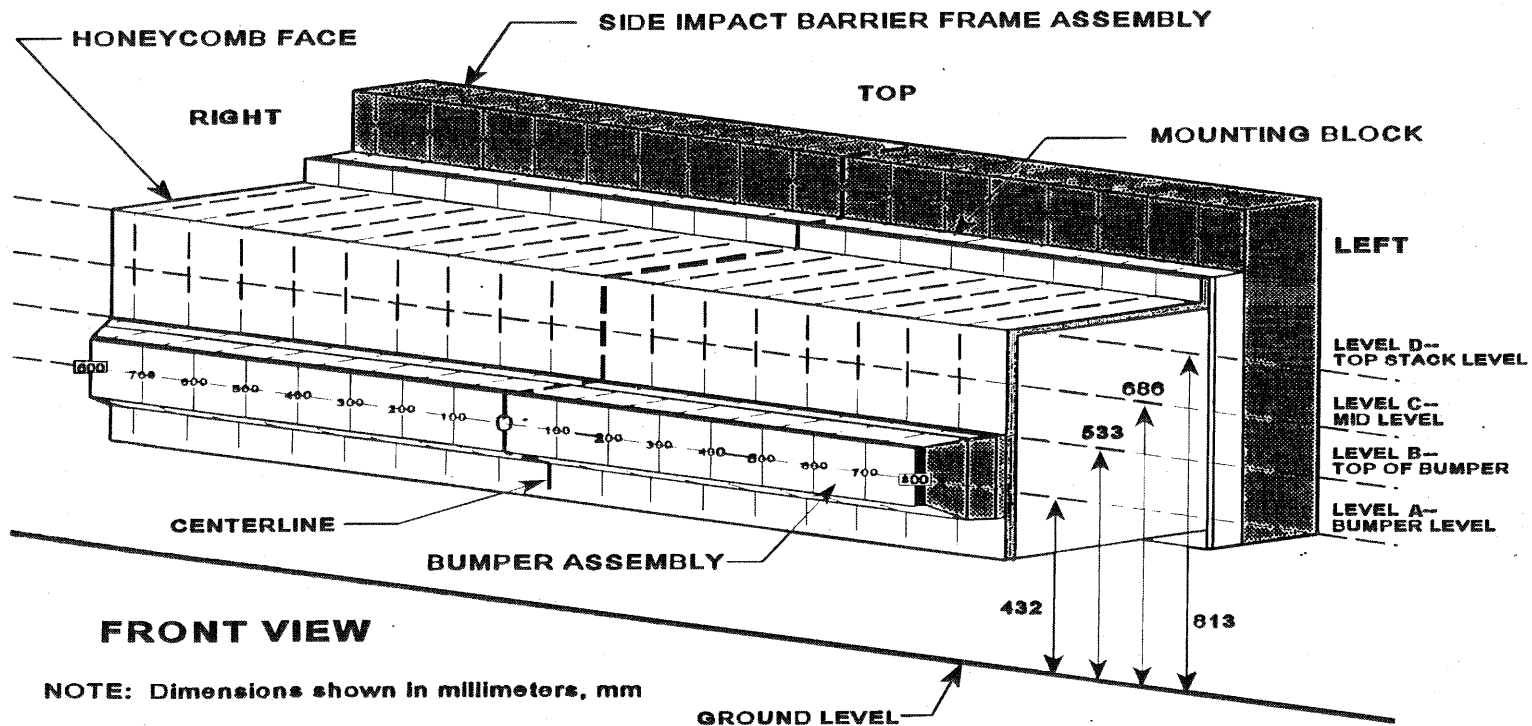
Data Sheet 12

Exterior Static Crush For Impactor Face

(Grid as looking at MDB from front)

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600



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Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600

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	-108	-73	-50	-36	-21	-31	-65	-51	-47	-48	-39	-50	-59	-68	-85	-107	-150
Mid Level - Level C	N/A ¹	-91	-60	-51	-40	-30	-30	-41	-61	-38	-28	-28	-36	-52	-62	-73	-87	-128
Top Bumper Level - Level B	557	-113	-108	-88	-77	-70	-69	-73	-76	-77	-80	-84	-88	-93	-97	-104	-114	-145
Mid Bumper Level - Level A	432	-207	-202	-192	-182	-173	-172	-174	-177	-182	-186	-189	-193	-197	-203	-212	-222	-232

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

¹ Pre-test measurement height not recorded.

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600

Deformable Barrier Face Profile

Level D - Top Stack

Pre-Test

Index	Xmm	Ymm	Zmm
1	-379	801	-36
2	-380	702	-37
3	-380	602	-37
4	-380	502	-37
5	-380	402	-37
6	-381	302	-38
7	-381	202	-38
8	-381	102	-38
9	-382	2	-38
10	-382	-99	-39
11	-382	-199	-40
12	-382	-298	-40
13	-382	-398	-41
14	-382	-498	-40
15	-382	-598	-41
16	-383	-698	-41
17	-383	-798	-42

Post-Test

Index	Xmm	Ymm	Zmm
1	-271	735	-88
2	-307	642	-89
3	-330	545	-91
4	-344	447	-96
5	-360	350	-103
6	-349	254	-94
7	-316	160	-95
8	-331	61	-91
9	-335	-38	-89
10	-334	-135	-89
11	-343	-232	-86
12	-333	-331	-79
13	-323	-430	-70
14	-315	-529	-59
15	-297	-625	-54
16	-275	-720	-43
17	-233	-804	-37

Difference

Index	Xmm	Ymm	Zmm
1	-108	67	53
2	-73	60	52
3	-50	57	55
4	-36	55	59
5	-21	52	66
6	-31	48	57
7	-65	43	57
8	-51	41	53
9	-47	40	51
10	-48	36	50
11	-39	34	47
12	-50	33	39
13	-59	32	29
14	-68	30	19
15	-85	27	13
16	-107	22	2
17	-150	6	-5

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600

Deformable Barrier Face Profile Cont'd.

Level C - Mid Level

Pre-Test¹

Index	Xmm	Ymm	Zmm
18	-380	802	-291
19	-380	702	-292
20	-381	602	-292
21	-381	502	-292
22	-381	402	-292
23	-382	302	-293
24	-382	202	-293
25	-383	101	-293
26	-383	2	-294
27	-383	-99	-294
28	-383	-198	-295
29	-383	-298	-296
30	-384	-398	-297
31	-384	-498	-297
32	-384	-598	-297
33	-384	-698	-297
34	-384	-798	-296

Post-Test

Index	Xmm	Ymm	Zmm
18	-289	733	-211
19	-321	648	-213
20	-330	547	-213
21	-341	449	-215
22	-351	349	-224
23	-351	250	-220
24	-341	153	-218
25	-322	52	-215
26	-345	-46	-213
27	-355	-145	-213
28	-355	-244	-209
29	-347	-343	-203
30	-332	-441	-192
31	-321	-541	-186
32	-311	-640	-176
33	-297	-738	-165
34	-256	-826	-158

Difference

Index	Xmm	Ymm	Zmm
18	-91	69	-80
19	-60	54	-79
20	-51	55	-79
21	-40	53	-78
22	-30	52	-68
23	-30	52	-73
24	-41	49	-76
25	-61	50	-78
26	-38	48	-81
27	-28	46	-81
28	-28	46	-86
29	-36	45	-93
30	-52	44	-105
31	-62	43	-111
32	-73	41	-121
33	-87	40	-131
34	-128	29	-138

¹ Row C at Mid Level pre-test measurements were not collected prior to impact. Pre-test measurements from a second barrier face were used to determine difference.

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600

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	401	-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	-266	745	-306
36	-272	647	-291
37	-292	552	-316
38	-303	452	-327
39	-309	351	-335
40	-310	250	-336
41	-307	150	-336
42	-304	49	-335
43	-304	-50	-324
44	-301	-150	-316
45	-297	-249	-308
46	-292	-349	-302
47	-288	-449	-297
48	-283	-549	-293
49	-277	-649	-288
50	-267	-749	-281
51	-237	-842	-274

Difference

Index	Xmm	Ymm	Zmm
35	-113	56	16
36	-108	54	-1
37	-88	49	24
38	-77	49	34
39	-70	49	41
40	-69	50	42
41	-73	50	41
42	-76	51	40
43	-77	50	29
44	-80	50	20
45	-84	49	11
46	-88	49	4
47	-93	49	-2
48	-97	49	-6
49	-104	48	-11
50	-114	48	-19
51	-145	42	-27

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600

Deformable Barrier Face Profile Cont'd.

Level A - Mid Bumper

Pre-Test

Index	Xmm	Ymm	Zmm
52	-468	806	-415
53	-485	710	-416
54	-485	609	-416
55	-485	510	-417
56	-485	410	-417
57	-486	310	-417
58	-486	210	-418
59	-486	110	-418
60	-486	10	-420
61	-487	-90	-420
62	-487	-190	-420
63	-487	-290	-420
64	-487	-390	-420
65	-488	-491	-421
66	-488	-590	-421
67	-488	-691	-422
68	-480	-789	-422

Post-Test

Index	Xmm	Ymm	Zmm
52	-261	744	-427
53	-283	650	-440
54	-293	551	-449
55	-303	452	-457
56	-312	353	-464
57	-314	253	-465
58	-312	153	-463
59	-309	53	-461
60	-305	-47	-459
61	-301	-147	-456
62	-298	-247	-453
63	-294	-347	-450
64	-290	-446	-448
65	-285	-547	-444
66	-275	-646	-439
67	-266	-746	-432
68	-248	-842	-424

Difference

Index	Xmm	Ymm	Zmm
52	-207	62	12
53	-202	60	25
54	-192	59	33
55	-182	58	40
56	-173	57	46
57	-172	57	47
58	-174	57	45
59	-177	57	43
60	-182	57	39
61	-186	57	36
62	-189	57	33
63	-193	56	30
64	-197	56	27
65	-203	56	23
66	-212	56	17
67	-222	55	11
68	-232	54	2

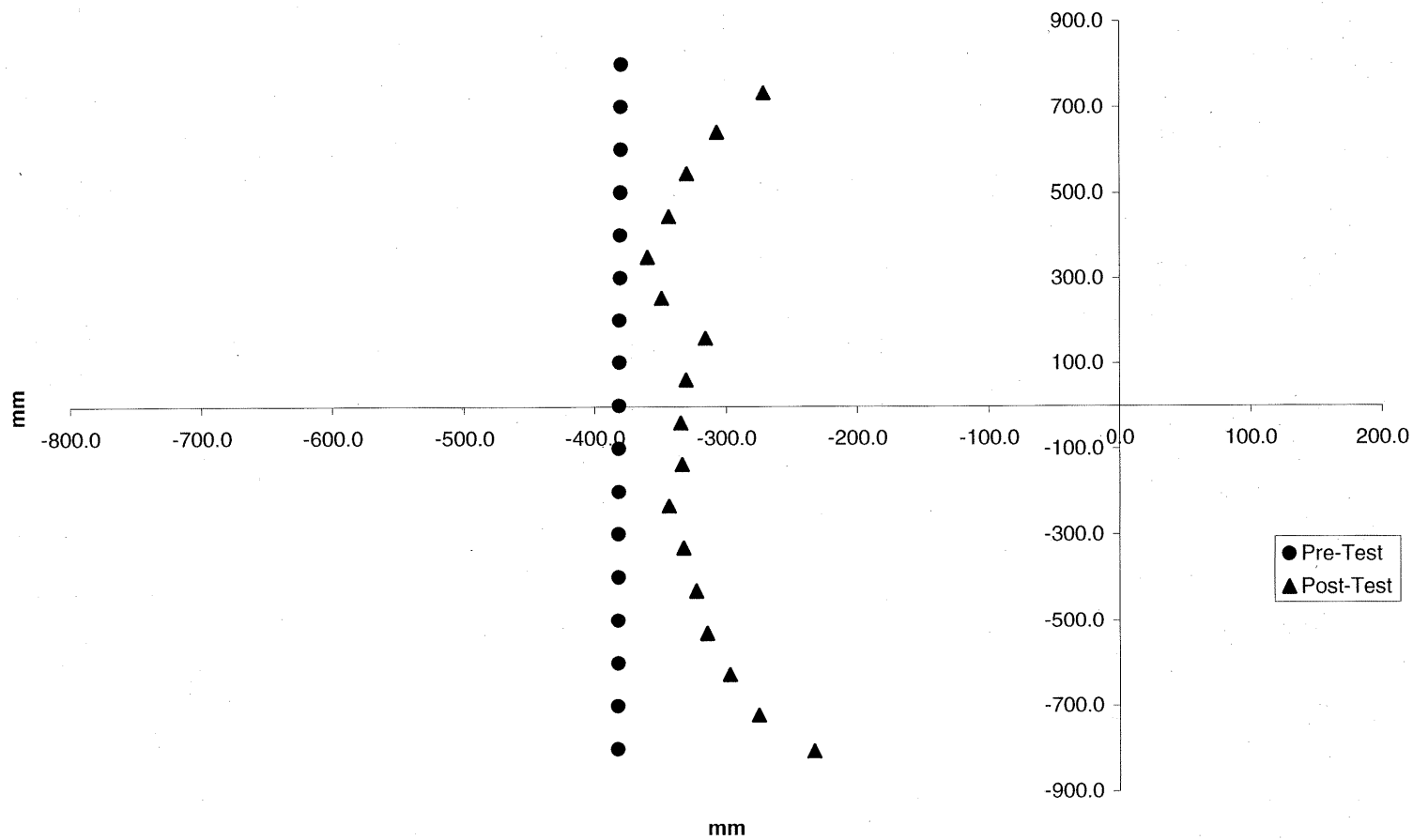
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600

Level D - Deformable Barrier Face Profile 1-17



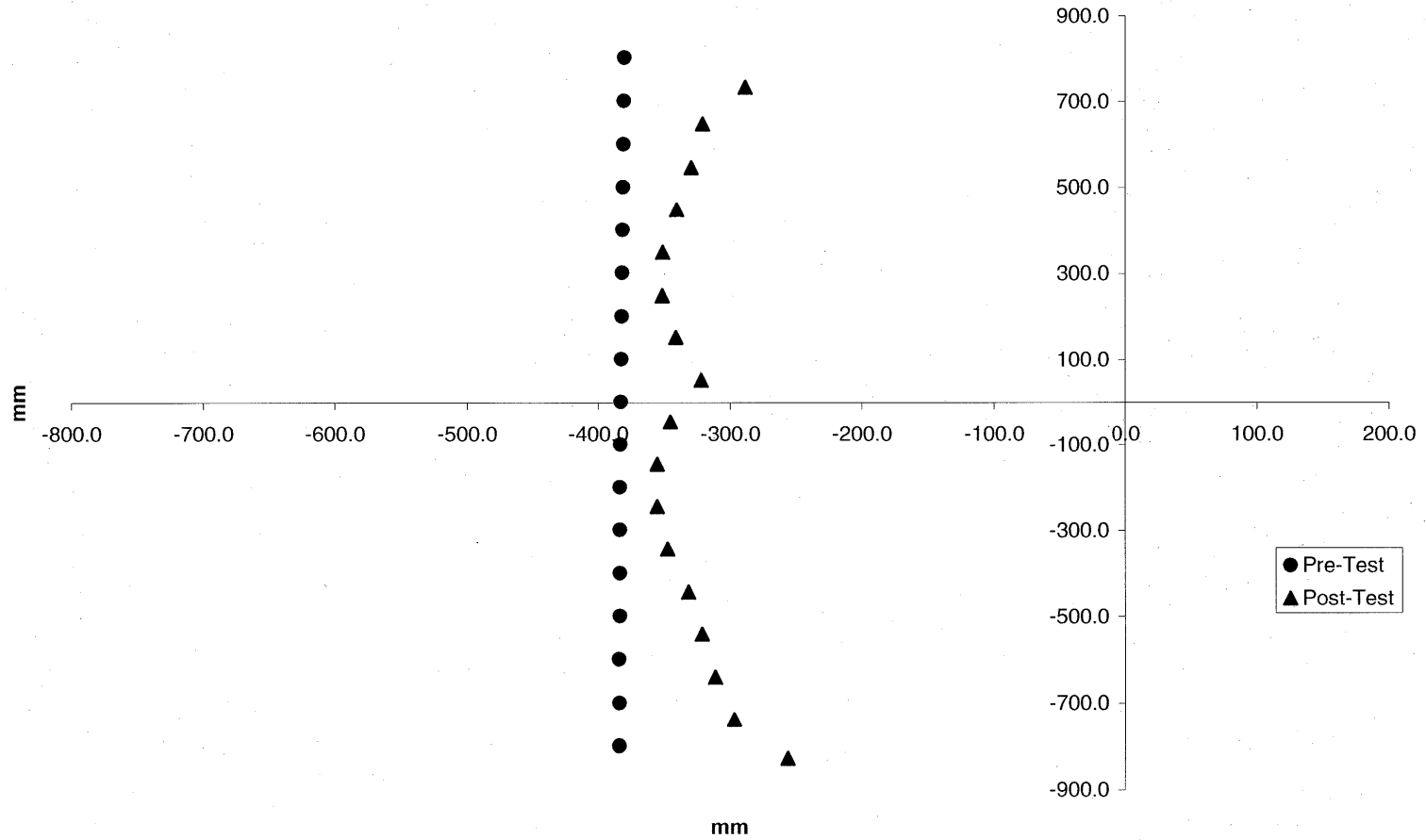
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600

Level C - Deformable Barrier Face Profile 18-34



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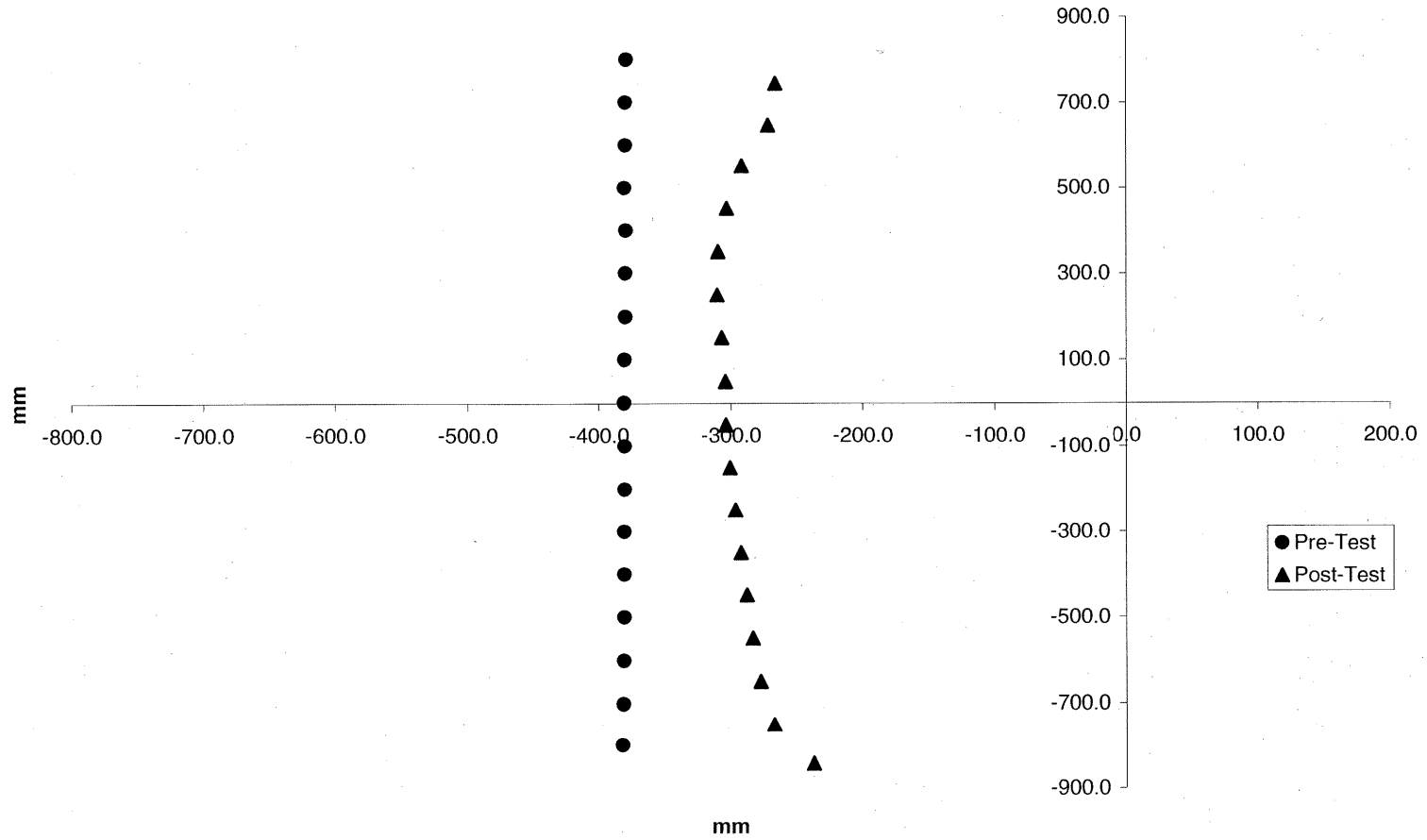
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600

Level B - Deformable Barrier Face Profile 35-51



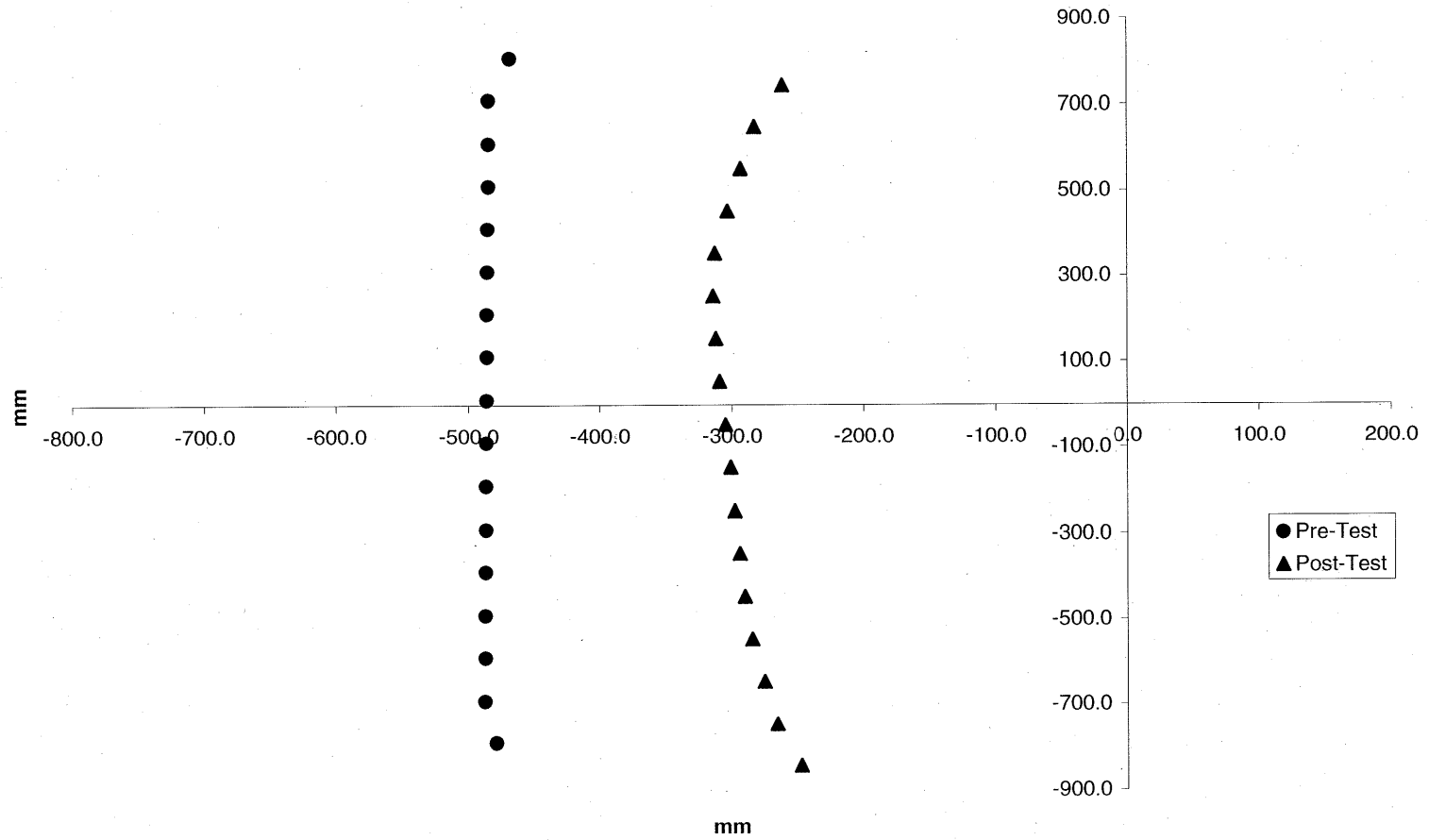
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600

Level A - Deformable Barrier Face Profile 52-68



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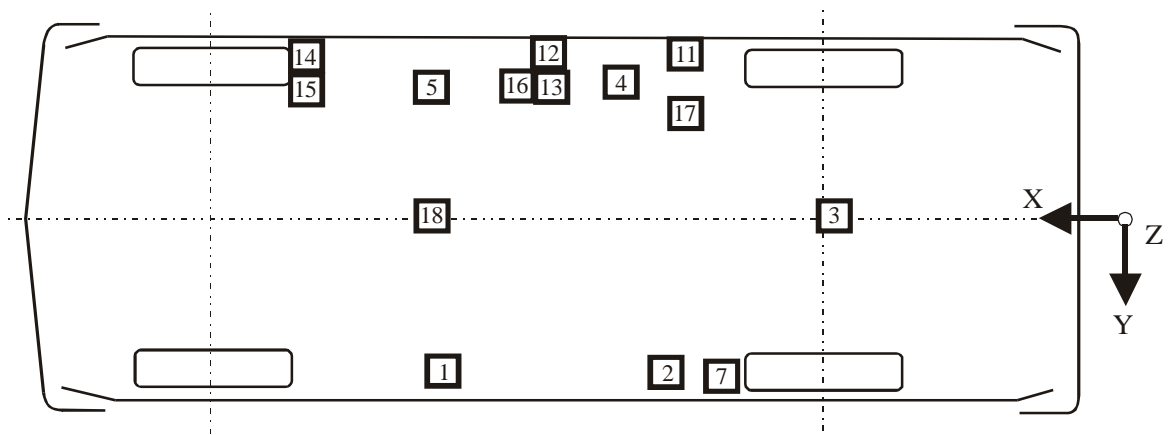
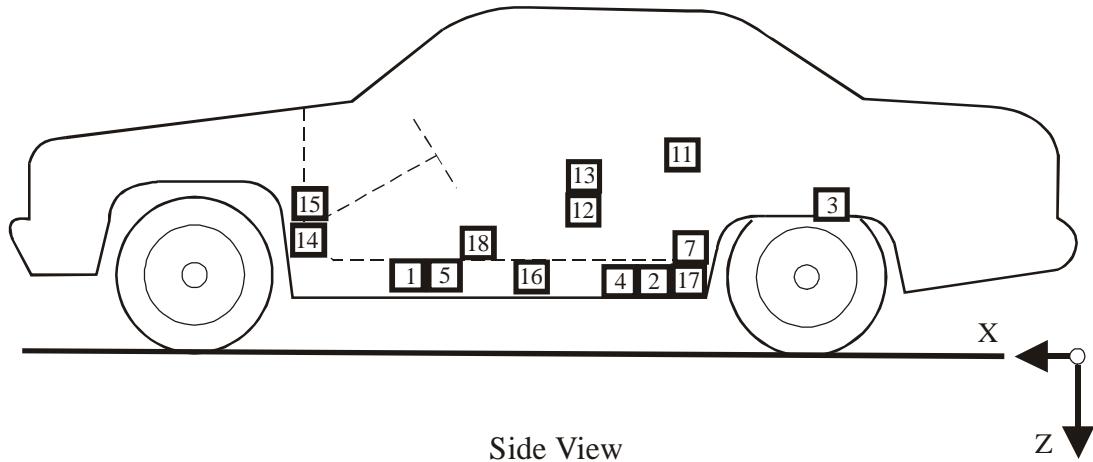
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Data Sheet 13

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600



- | | |
|------------------------------------|--|
| 1-Right Front Side Sill | 10-Left Rear Door Mid Rear |
| 2-Right Side Sill at Rear Seat | 11-Left Rear Door Upper Centerline |
| 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 | 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 | 17-Left Rear Seat Track at H-point |
| 9-Left Front Door Upper Centerline | 18-Vehicle Center of Gravity |

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600

TEST NUMBER: 030916 No. LOCATION	X	Y	Z	POSITIVE DIRECTION		NEGATIVE DIRECTION	
1 RIGHT SIDE SILL AT FRONT SEAT	3300 mm	700 mm	-435 mm				
LONGITUDINAL				2.7 g	@ 68.7 ms	6.1 g	@ 16.6 ms
LATERAL				21.3 g	@ 8.9 ms	2.6 g	@ 93.6 ms
VERTICAL				4.5 g	@ 91.4 ms	9.4 g	@ 8.5 ms
RESULTANT				23.4 g	@ 8.8 ms		
2 RIGHT SIDE SILL AT REAR SEAT	2340 mm	700 mm	-425 mm				
LONGITUDINAL				2.8 g	@ 68.6 ms	6.5 g	@ 17.4 ms
LATERAL				24.9 g	@ 8.3 ms	2.5 g	@ 175.0 ms
VERTICAL				4.4 g	@ 179.3 ms	10.7 g	@ 9.5 ms
RESULTANT				27.0 g	@ 8.5 ms		
3 REAR FLOORPAN ABOVE AXLE	1505 mm	0 mm	-735 mm				
LONGITUDINAL				3.3 g	@ 65.0 ms	6.5 g	@ 21.1 ms
LATERAL				23.1 g	@ 8.6 ms	3.2 g	@ 174.6 ms
VERTICAL				5.4 g	@ 23.6 ms	5.1 g	@ 18.0 ms
RESULTANT				23.5 g	@ 8.6 ms		
4 LEFT SIDE SILL AT REAR SEAT	2353 mm	-700 mm	-410 mm				
LATERAL				47.3 g	@ 18.9 ms	22.2 g	@ 28.6 ms

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Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600

TEST NUMBER: 030916

No. LOCATION	X	Y	Z	POSITIVE DIRECTION		NEGATIVE DIRECTION	
5 LEFT SIDE SILL AT FRONT SEAT LATERAL	3288 mm	-700 mm	-395 mm	26.1 g	@ 5.4 ms	2.5 g	@ 177.7 ms
7 RIGHT REAR OCCUPANT COMPARTMENT LATERAL	2515 mm	685 mm	-455 mm	25.1 g	@ 8.3 ms	2.5 g	@ 94.4 ms
12 LEFT LOWER B-POST LATERAL	2635 mm	-730 mm	-665 mm	125.3 g	@ 8.2 ms	48.8 g	@ 34.4 ms
13 LEFT MIDDLE B-POST LATERAL	2660 mm	-750 mm	-1016 mm	151.8 g	@ 9.9 ms	39.8 g	@ 33.1 ms
14 LEFT LOWER A-POST LATERAL	3740 mm	-820 mm	-611 mm	80.5 g	@ 19.4 ms	18.4 g	@ 16.0 ms
15 LEFT MIDDLE A-POST LATERAL	3715 mm	-780 mm	-925 mm	23.1 g	@ 8.4 ms	1.5 g	@ 300.6 ms
16 LEFT FRONT SEAT TRACK LATERAL	2914 mm	-700 mm	-400 mm	21.0 g	@ 3.5 ms	29.0 g	@ 16.2 ms
17 LEFT REAR SEAT TRACK LATERAL ¹	2163 mm	-600 mm	-450 mm	65.3 g	@ 35.5 ms	29.2 g	@ 41.4 ms

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030916

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600

TEST NUMBER: 030916 No. LOCATION	X	Y	Z	POSITIVE DIRECTION	NEGATIVE DIRECTION
18 VEHICLE CENTER OF GRAVITY	3350 mm	-75 mm	-500 mm		
LONGITUDINAL ¹				1.0 g @ 2.0 ms	20.3 g @ 12.6 ms
LATERAL ¹				54.5 g @ 31.8 ms	-1.0 g @ 0.0 ms
VERTICAL				12.2 g @ 18.2 ms	6.6 g @ 41.8 ms
RESULTANT ¹				57.1 g @ 31.8 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

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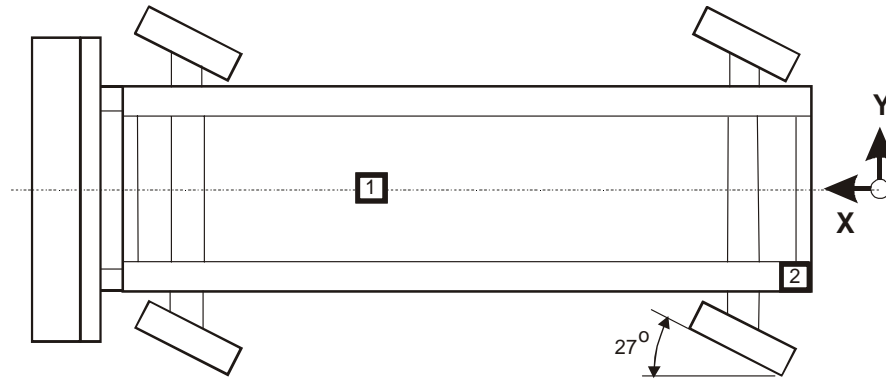
030916

Data Sheet 14

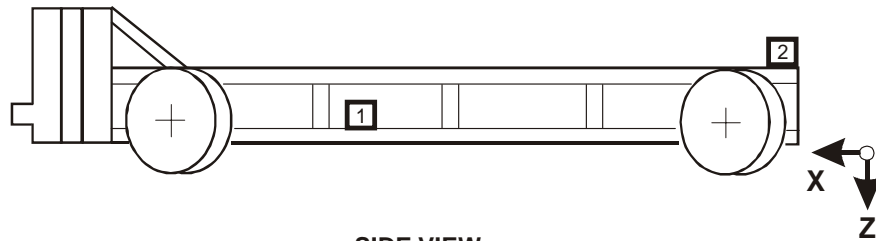
MDB Accelerometer Locations and Data Summary

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600



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				5.2	91.6	-22.6	14.6
	Lateral Y				2.1	74.4	-7.0	101.7
	Vertical Z				8.5	12.0	-35.4	92.9
	Resultant R				35.7	92.8		
2	Rear Frame Member	412	-677	-625				
	Longitudinal X				2.0	64.6	-2.0	54.6
	Lateral Y				27.8	38.6	-2.9	91.0

*Reference: X = Rear Bumper (+ Forward)

Y = Vehicle Centerline (+ To Right)

Z = Ground Level (+ Down)

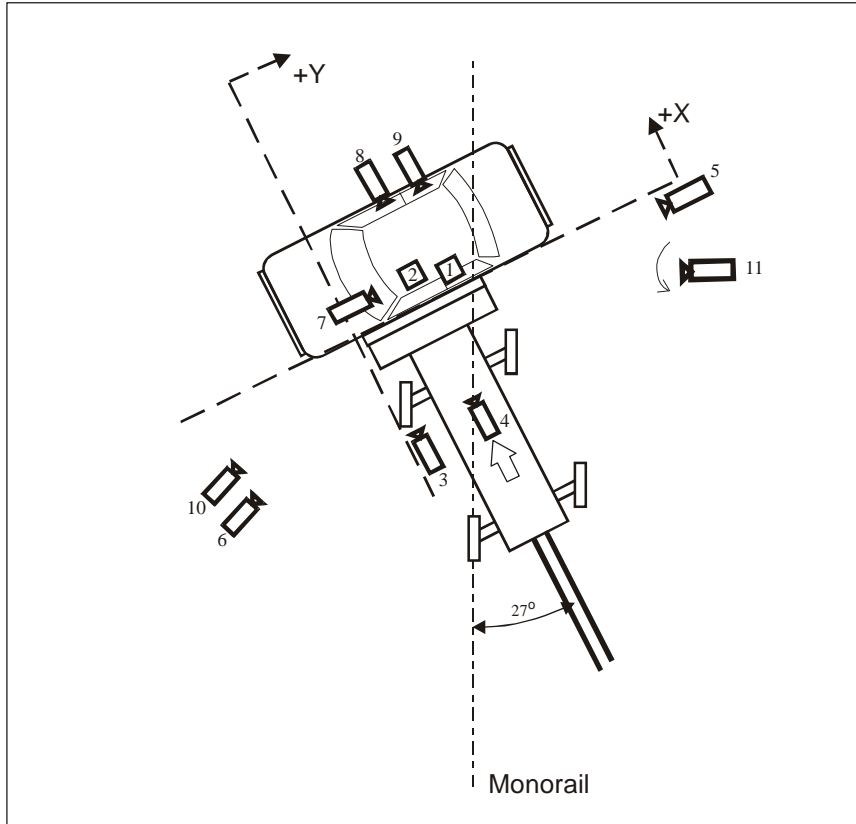
All measurements accurate to within ± 3 mm.

Data Sheet 15

High-Speed Camera Locations and Data Summary

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600



Impact Area

Camera Number	Location	Location, mm			Angle (deg.)	Lens (mm)	Speed (fps)
		X	Y	Z			
1	Overhead wide	250	2150	-5750	-77.5	8.5	1000
2	Overhead tight	370	1800	-5750	-85.5	17	1000
3	Onboard MDB left side	-1750	-40	-720	-0.5	25	1000
4	Onboard MDB center	-2480	830	-1353	-5.2	13	1000
5	Right side of MDB	500	12830	-870	1.6	13	1000
6	Left side of MDB	-3100	-4100	-870	0.9	13	1000
7	Onboard vehicle front	570	-600	-1460	0.1	8	1000
8	Onboard side front door	1750	700	-1230	0.9	8	1000
9	Onboard side rear door	1750	1500	-1300	-4.1	8	1000
10	Digital overall event	-2200	-4950	-980	-2.0	13	1000
11	Real-time Panning-Video	N/A	N/A	N/A	N/A	Zoom	30

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

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

+Z: Downward from ground level

Section 5

Vehicle Fuel System Integrity

Data Sheet 16

FMVSS 301 Fuel System Integrity Data

NHTSA No.: C45600

Test Date: 09/16/03

Vehicle Year/Make/Model/Body Style: 2004 Mitsubishi Endeavor SUV

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)
- Side Impact Moving Deformable Barrier (38.5 MPH) contacting the Driver 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

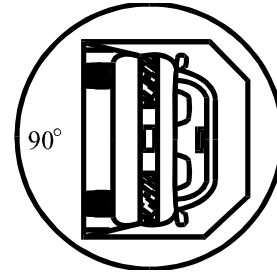
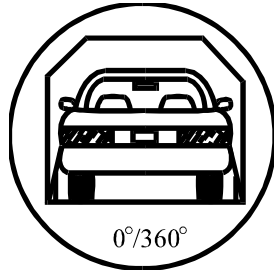
Data Sheet 17

FMVSS 301 Rollover Data

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600

0 - 90 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

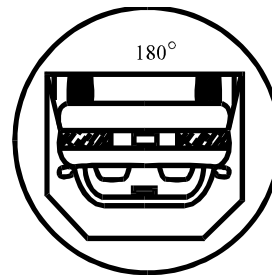
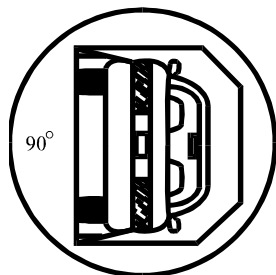
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600

90 - 180 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

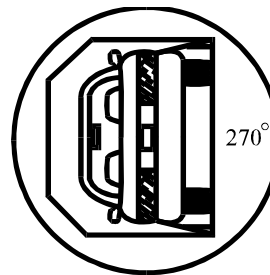
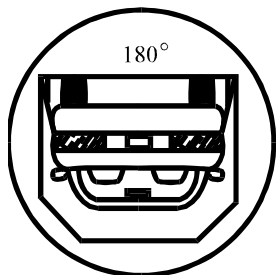
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600

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

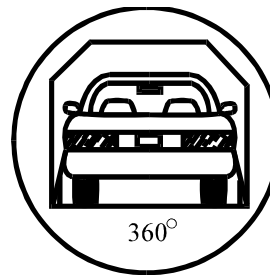
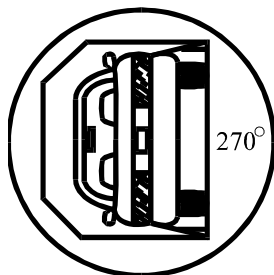
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2004 Mitsubishi Endeavor SUV

NHTSA No.: C45600

270 - 360 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

Appendix A

Photographs

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

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



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

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

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

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

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Figure A-7 Pre-Test Non Impacted Angled Side View of Test Vehicle

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Figure A-8 Post-Test Non Impacted Angled Side View of Test Vehicle

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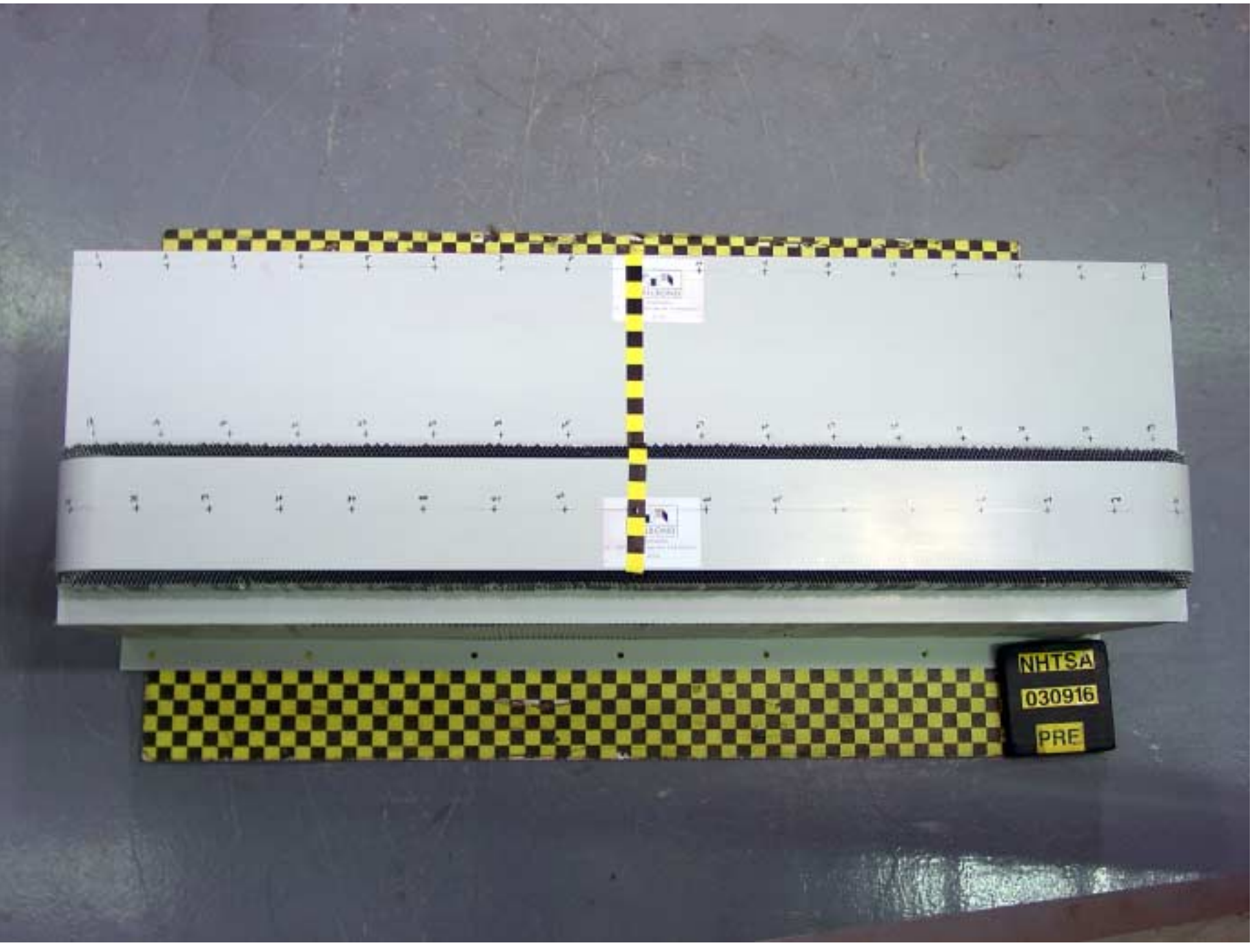


Figure A-9 Pre-Test Frontal View of Impactor Face

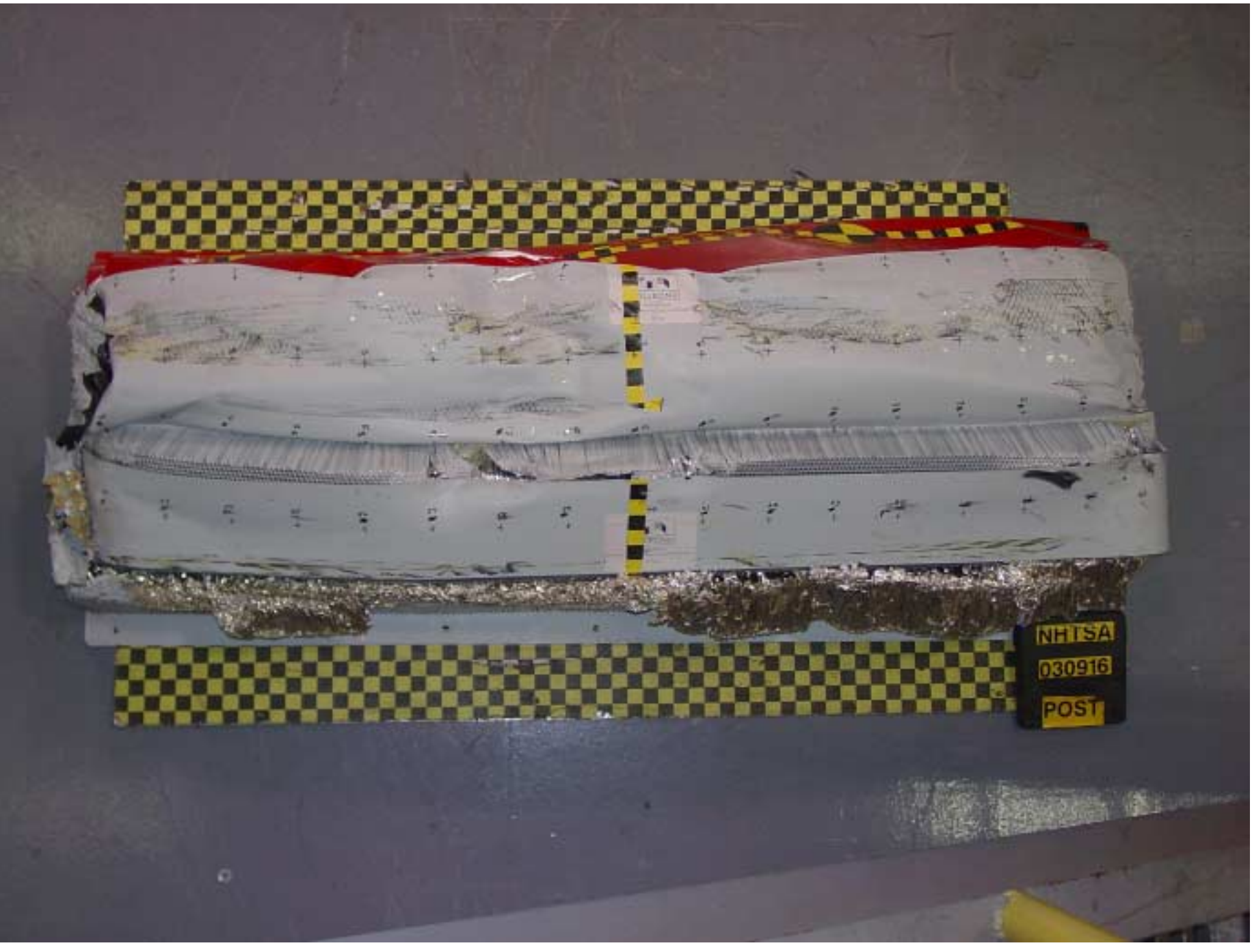


Figure A-10 Post-Test Frontal View of Impactor Face

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



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



Figure A-13 Pre-Test Right Side View of Impactor Face



Figure A-14 Post-Test Right Side View of Impactor Face

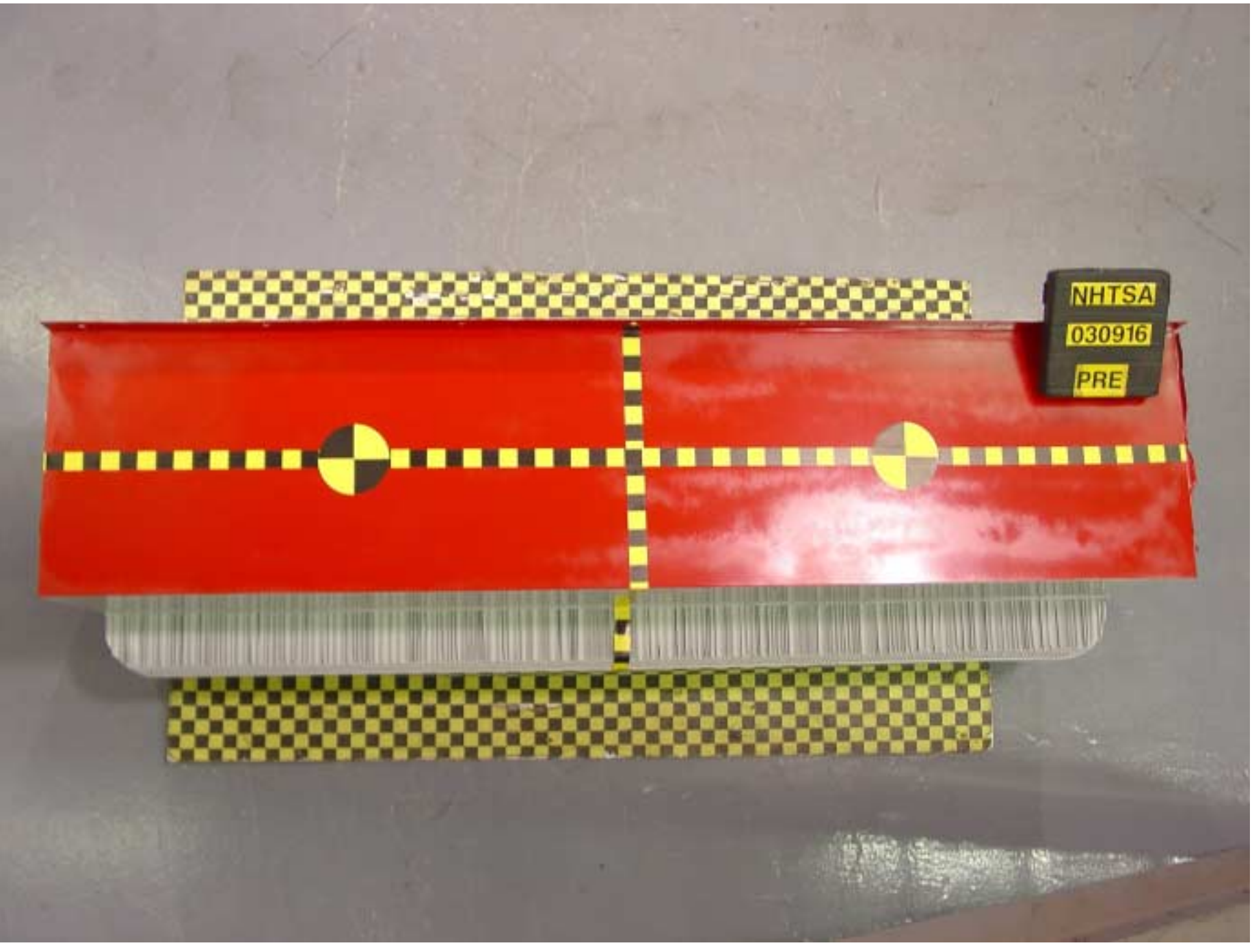


Figure A-15 Pre-Test Top View of Impactor Face

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Figure A-16 Post-Test Top View of Impactor Face

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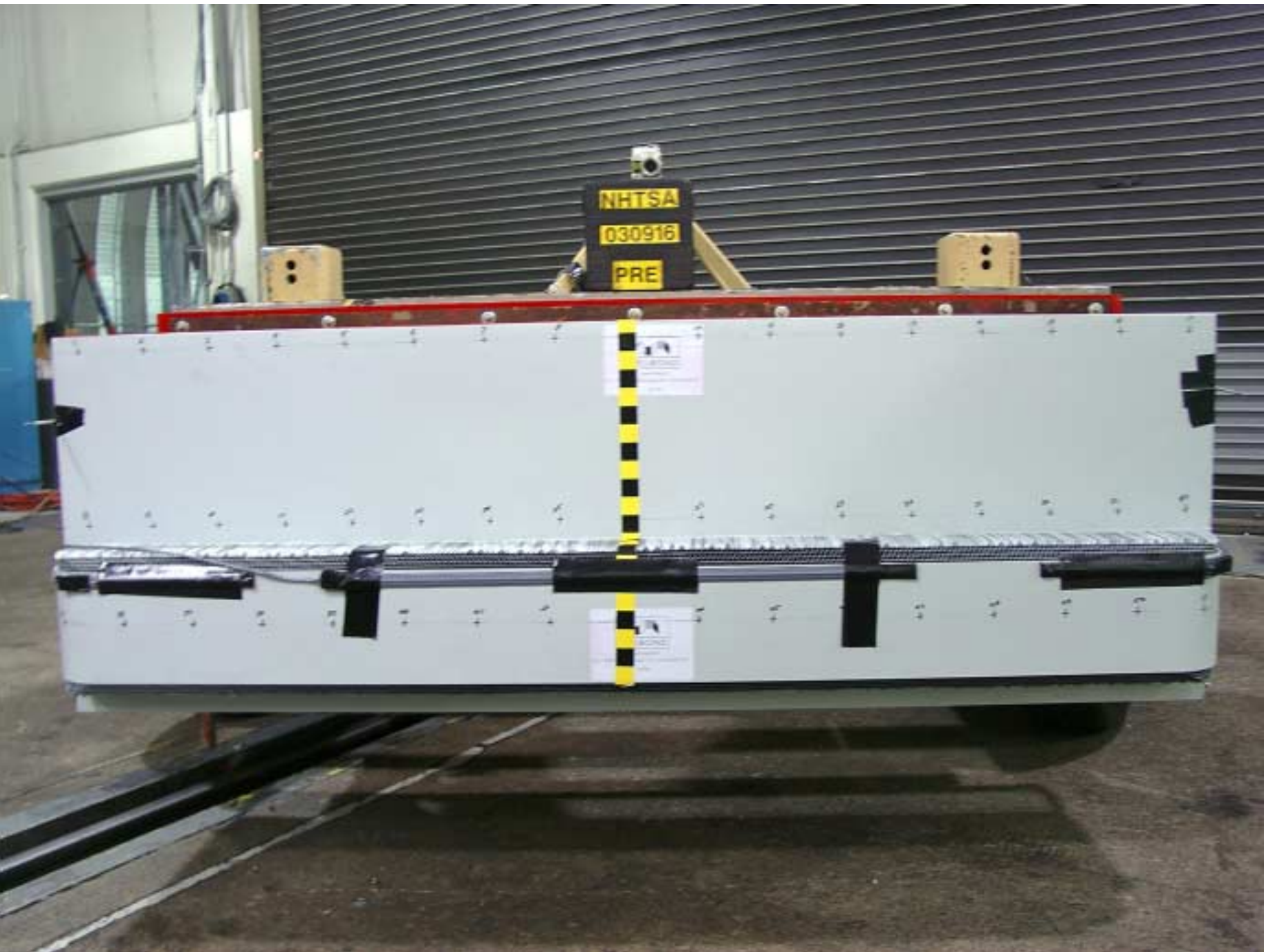


Figure A-17 Pre-Test View of MDB Showing Contact Switches in Place

A-20

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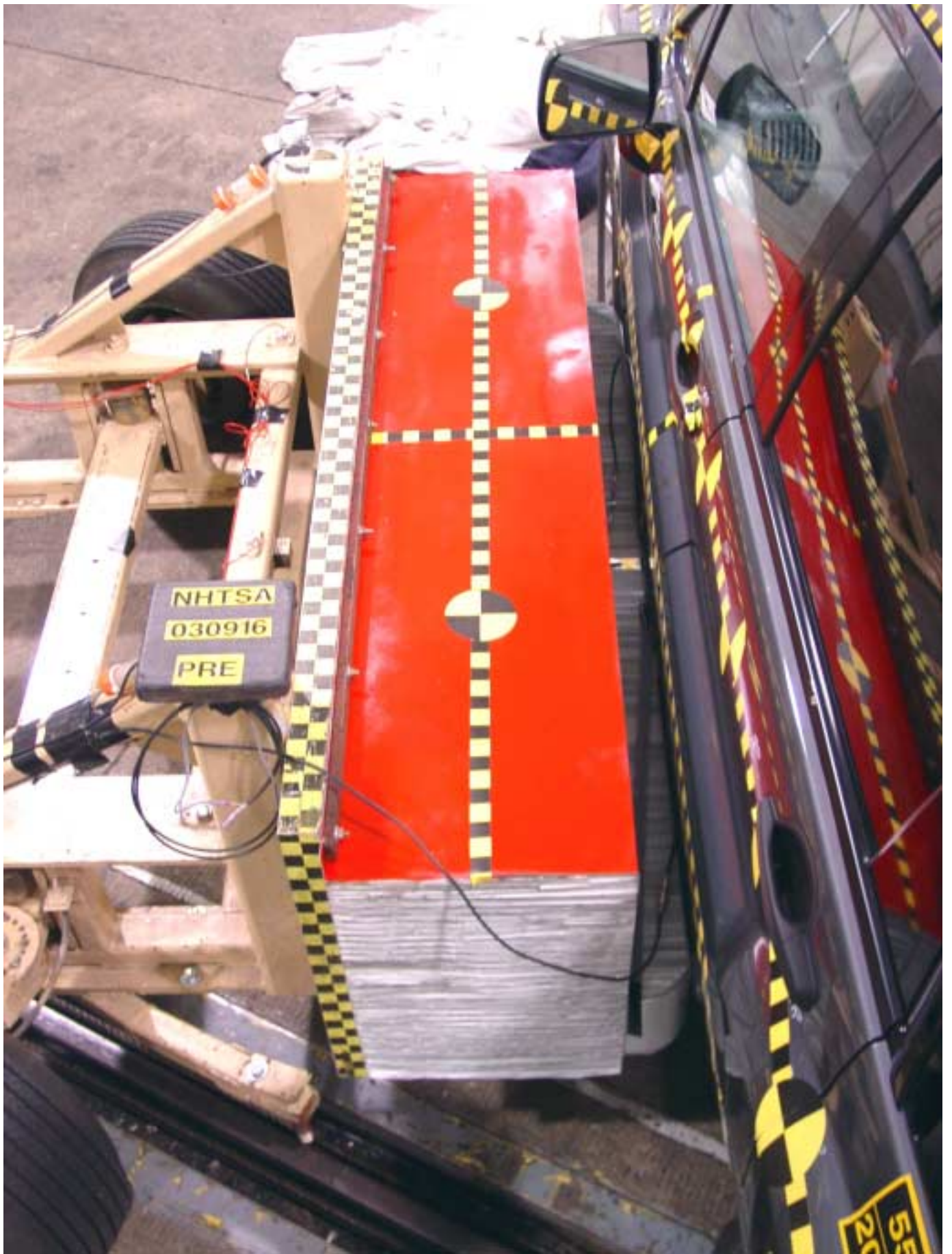


Figure A-18 Pre-Test Overhead View of MDB Aligned with Vehicle



Figure A-19 Post-Test Overhead View of Vehicle



Figure A-20 Pre-Test Right Occupant Compartment View of Front SID HIII

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Figure A-21 Post-Test Right Occupant Compartment View of Front SID HIII

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Figure A-22 Pre-Test Right Occupant Compartment View of Rear SID HIII

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Figure A-23 Post-Test Right Occupant Compartment View of Rear SID HIII



Figure A-24 Pre-Test Left View of Front SID HMI

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Figure A-25 Post-Test Left View of Front SID HMI



Figure A-26 Pre-Test Left View of Front SID HMI

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Figure A-27 Pre-Test Left View of Front SID III and Door Clearance



Figure A-28 Post-Test Left View of Front SID HIII and Door Clearance



Figure A-29 Pre-Test Left View of Rear SID HMI



Figure A-30 Post-Test Left View of Rear SID HMI

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Figure A-31 Pre-Test Left of Rear SID HMI

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Figure A-32 Pre-Test Left View of Rear SID HIII and Door Clearance



Figure A-33 Post-Test Left View of Rear SID HIII and Door Clearance



Figure A-34 Pre-Test Interior of Front Door

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Figure A-35 Post-Test Interior of Front Door Showing SID HIII Impact Locations

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Figure A-36 Post-Test Front SID HIII Contact - View 1

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Figure A-37 Post-Test Front SID HIII Contact - View 2

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Figure A-38 Pre-Test Interior of Rear Door

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Figure A-39 Post-Test Interior of Rear Panel Showing SID HMMI Impact Locations

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Figure A-40 Post-Test Rear SID HMI Contact View
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Figure A-41 Pre-Test Left Side View of MDB With Impactor Face in Position

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Figure A-42 Pre-Test Primary Impact Point View
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Figure A-43 Post-Test Primary Impact Point View
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Figure A-44 Pre-Test Right Side View of MDB With Impactor Face in Position

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Figure A-45 Pre-Test Secondary Impact Point View

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Figure A-46 Post-Test Secondary Impact Point View
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MADE IN U.S.A. DATE MAR. 2003
 MFD BY MITSUBISHI MOTORS NORTH AMERICA, INC.
 GVWR 5250 LBS/2380 KG
 GAWR 2750 LBS/1245 KG WITH P235/65R17 103S,T TIRES.
 FR. 17X7 TUBES AT 220 kPa/32 psi COLD.
 GAWR 2800 LBS/1270 KG WITH P235/65R17 103S,T TIRES.
 RR. 17X7 TUBES AT 220 kPa/32 psi COLD.
 THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR
 VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF
 MANUFACTURE SHOWN ABOVE.
 4 A 4 M N 2 1 S 6 4 E 0 3 3 6 9

 MDH 030713 VEHICLE TYPE:MPV MU900277

Figure A-47 Vehicle Certification Label View
A-50



TIRE INFORMATION

VEHICLE CAPACITY WEIGHT

440 kg (970 lbs)

DESIGNATED SEATING CAPACITY

OCCUPANTS 1ST SEAT : 2
2ND SEAT : 3
TOTAL : 5

INFLATION PRESSURE
UP TO VEHICLE CAPACITY WEIGHT

TIRE SIZE	FRONT	REAR
P235/65R17 103S	220 kPa	220 kPa
P235/65R17 103T	(32 psi)	(32 psi)

TEMPORARY SPARE TIRE
FOR TEMPORARY USE ONLY

T155/90R16 | 420 kPa (60 psi)

SEE OWNER'S MANUAL FOR
ADDITIONAL INFORMATION

PART NO. MR961843

Figure A-48 Vehicle Recommended Tire Pressure Label View



Figure A-49 Impact Event

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Figure A-50 Pre-Test Fuel Cap

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Figure A-51 Post-Test Fuel Cap
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Figure A-52 FMVSS 301 Rollover View at 90°

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Figure A-53 FMVSS 301 Rollover View at 180°

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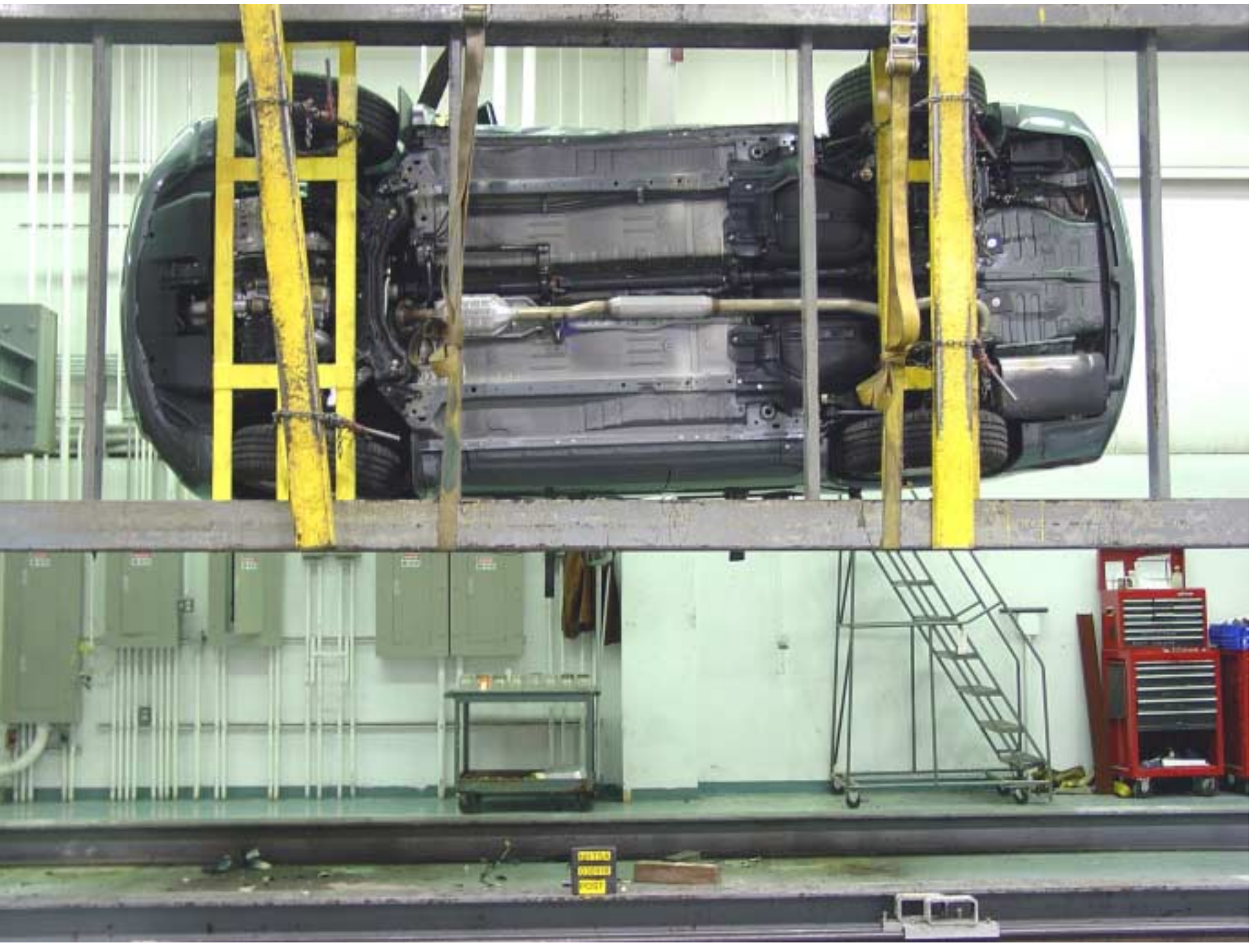


Figure A-54 FMVSS 301 Rollover View at 270°

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030916



Figure A-55 FMVSS 301 Rollover View at 360°

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030916

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

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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 Head Resultant Redundant Acceleration	B-17
9	Driver Neck X-Axis Shear Force	B-18
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11	Driver Neck Z-Axis Axial Force	B-20
12	Driver Neck Moment about X Axis	B-21
13	Driver Neck Moment about Y Axis	B-22
14	Driver Neck Moment about Z Axis	B-23
15	Driver Neck Occipital Condyle Moment about X Axis	B-24
16	Driver Upper Rib Y-Axis Acceleration	B-25
17	Driver Upper Rib Y-Axis Velocity	B-26
18	Driver Lower Rib Y-Axis Acceleration	B-27
19	Driver Lower Rib Y-Axis Velocity	B-28
20	Driver Lower Spine Y-Axis Acceleration	B-29
21	Driver Lower Spine Y-Axis Velocity	B-30
22	Driver Pelvis Y-Axis Acceleration	B-31
23	Driver Pelvis Y-Axis Velocity	B-32
24	Left Rear Passenger Head X-Axis Acceleration	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

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25	Left Rear Passenger Head X-Axis Velocity	B-34
26	Left Rear Passenger Head Y-Axis Acceleration	B-35
27	Left Rear Passenger Head Y-Axis Velocity	B-36
28	Left Rear Passenger Head Z-Axis Acceleration	B-37
29	Left Rear Passenger Head Z-Axis Velocity	B-38
30	Left Rear Passenger Head Resultant Acceleration	B-39
31	Left Rear Passenger Head Resultant Redundant 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
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Table of Data Plots (Continued)

Driver and Passenger Dummy Instrumentation Plots
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Integration Data - Filter Class 180 - Redundant

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

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>
75	Right Side Sill at Front Seat X-Axis Acceleration	B-86
76	Right Side Sill at Front Seat X-Axis Velocity	B-87
77	Right Side Sill at Front Seat Y-Axis Acceleration	B-88
78	Right Side Sill at Front Seat Y-Axis Velocity	B-89
79	Right Side Sill at Front Seat Z-Axis Acceleration	B-90
80	Right Side Sill at Front Seat Z-Axis Velocity	B-91
81	Right Side Sill at Front Seat Resultant Acceleration	B-92
82	Right Side Sill at Rear Seat X-Axis Acceleration	B-93
83	Right Side Sill at Rear Seat X-Axis Velocity	B-94
84	Right Side Sill at Rear Seat Y-Axis Acceleration	B-95
85	Right Side Sill at Rear Seat Y-Axis Velocity	B-96
86	Right Side Sill at Rear Seat Z-Axis Acceleration	B-97
87	Right Side Sill at Rear Seat Z-Axis Velocity	B-98
88	Right Side Sill at Rear Seat Resultant Acceleration	B-99
89	Rear Floorpan Above Axle X-Axis Acceleration	B-100
90	Rear Floorpan Above Axle X-Axis Velocity	B-101
91	Rear Floorpan Above Axle Y-Axis Acceleration	B-102
92	Rear Floorpan Above Axle Y-Axis Velocity	B-103
93	Rear Floorpan Above Axle Z-Axis Acceleration	B-104
94	Rear Floorpan Above Axle Z-Axis Velocity	B-105
95	Rear Floorpan Above Axle Resultant Acceleration	B-106
96	Left Side Sill at Front Seat Y-Axis Acceleration	B-107
97	Left Side Sill at Front Seat Y-Axis Velocity	B-108
98	Left Side Sill at Front Seat Y-Axis Displacement	B-109

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>
99	Left Side Sill at Rear Seat Y-Axis Acceleration	B-110
100	Left Side Sill at Rear Seat Y-Axis Velocity	B-111
101	Left Side Sill at Rear Seat Y-Axis Displacement	B-112
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103	Right Rear Occupant Compartment Y-Axis Velocity	B-114
104	Right Rear Occupant Compartment Y-Axis Displacement	B-115
105	Left Lower A-Post Y-Axis Acceleration	B-116
106	Left Lower A-Post Y-Axis Velocity	B-117
107	Left Middle A-Post Y-Axis Acceleration	B-118
108	Left Middle A-Post Y-Axis Velocity	B-119
109	Left Lower B-Post Y-Axis Acceleration	B-120
110	Left Lower B-Post Y-Axis Velocity	B-121
111	Left Middle B-Post Y-Axis Acceleration	B-122
112	Left Middle B-Post Y-Axis Velocity	B-123
113	Left Front Seat Track Y-Axis Acceleration	B-124
114	Left Front Seat Track Y-Axis Velocity	B-125
115	Left Rear Seat Track Y-Axis Acceleration	B-126
116	Left Rear Seat Track Y-Axis Velocity	B-127
117	Vehicle Center of Gravity X-Axis Acceleration	B-128
118	Vehicle Center of Gravity X-Axis Velocity	B-129
119	Vehicle Center of Gravity Y-Axis Acceleration	B-130
120	Vehicle Center of Gravity Y-Axis Velocity	B-131
121	Vehicle Center of Gravity Z-Axis Acceleration	B-132
122	Vehicle Center of Gravity Z-Axis Velocity	B-133
123	Vehicle Center of Gravity Resultant Acceleration	B-134

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>
124	MDB Center of Gravity X-Axis Acceleration	B-136
125	MDB Center of Gravity X-Axis Velocity	B-137
126	MDB Center of Gravity Y-Axis Acceleration	B-138
127	MDB Center of Gravity Y-Axis Velocity	B-139
128	MDB Center of Gravity Z-Axis Acceleration	B-140
129	MDB Center of Gravity Z-Axis Velocity	B-141
130	MDB Center of Gravity Resultant Acceleration	B-142
131	MDB Left Rear X-Axis Acceleration	B-143
132	MDB Left Rear X-Axis Velocity	B-144
133	MDB Left Rear Y-Axis Acceleration	B-145
134	MDB Left Rear Y-Axis Velocity	B-146
135	MDB Right Side Contact Switch	B-147
136	MDB Left Side Contact Switch	B-148

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

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
137	Driver Upper Rib Y-Axis Acceleration	B-150
138	Driver Lower Rib Y-Axis Acceleration	B-151
139	Driver Lower Spine Y-Axis Acceleration	B-152
140	Driver Pelvis Y-Axis Acceleration	B-153
141	Left Rear Passenger Upper Rib Y-Axis Acceleration	B-154
142	Left Rear Passenger Lower Rib Y-Axis Acceleration	B-155
143	Left Rear Passenger Lower Spine Y-Axis Acceleration	B-156
144	Left Rear Passenger Pelvis Y-Axis Acceleration	B-157
145	Driver Upper Rib Y-Axis Redundant Acceleration	B-158
146	Driver Lower Rib Y-Axis Redundant Acceleration	B-159
147	Driver Lower Spine Y-Axis Redundant Acceleration	B-160
148	Driver Pelvis Y-Axis Redundant Acceleration	B-161
149	Left Rear Passenger Upper Rib Y-Axis Redundant Acceleration	B-162
150	Left Rear Passenger Lower Rib Y-Axis Redundant Acceleration	B-163
151	Left Rear Passenger Lower Spine Y-Axis Redundant Acceleration	B-164
152	Left Rear Passenger Pelvis Y-Axis Redundant Acceleration	B-165

Driver and Passenger Dummy Instrumentation Plots

Acceleration Data - Filter Class 1000

Integration Data - Filter Class 180

Force Data - Filter Class 1000

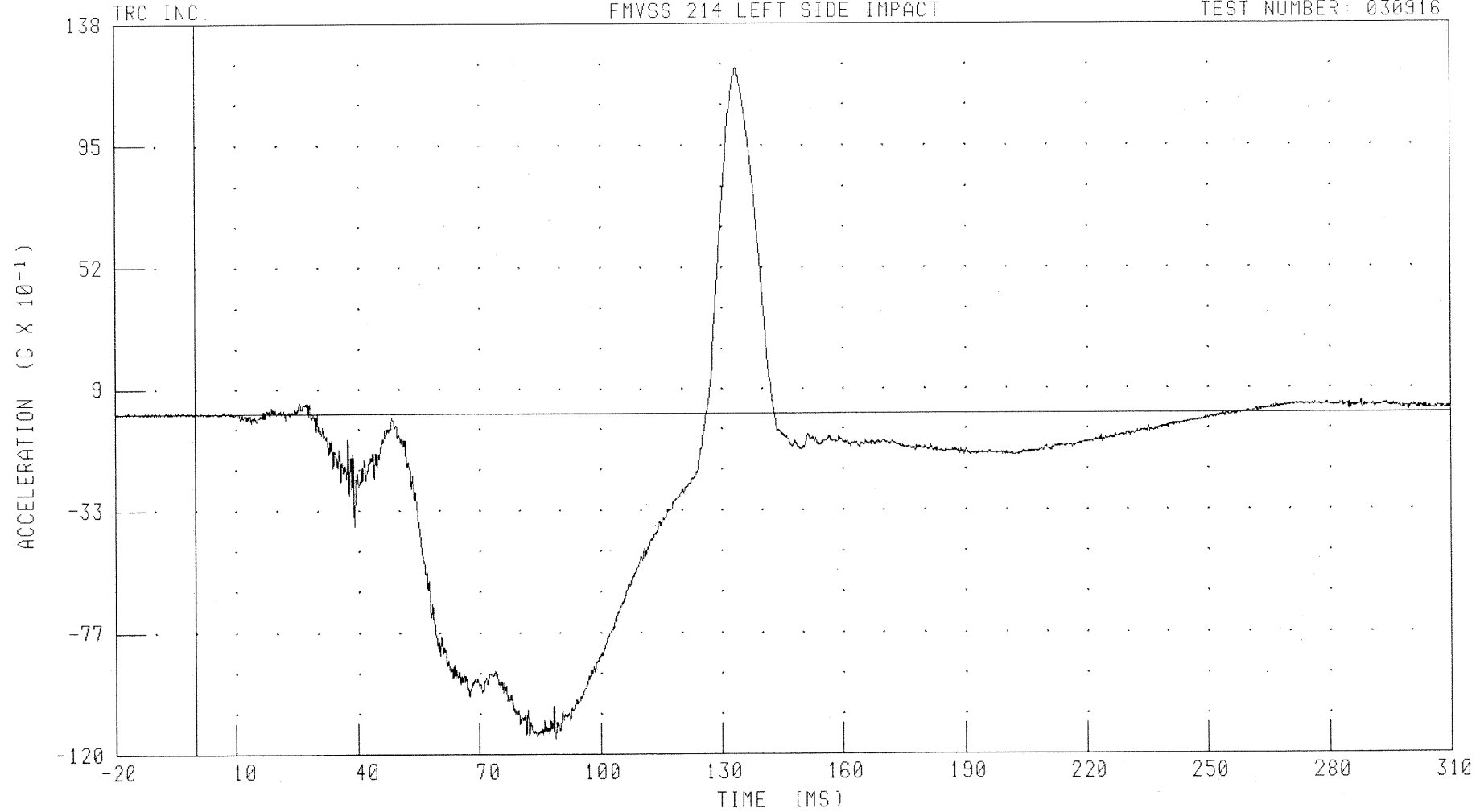
Moment Data - Filter Class 600

Contact Data - Filter Class 1000

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER HEAD X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



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030916

CHANNEL: HEDXC1

FILTER: CH. CLASS 1000

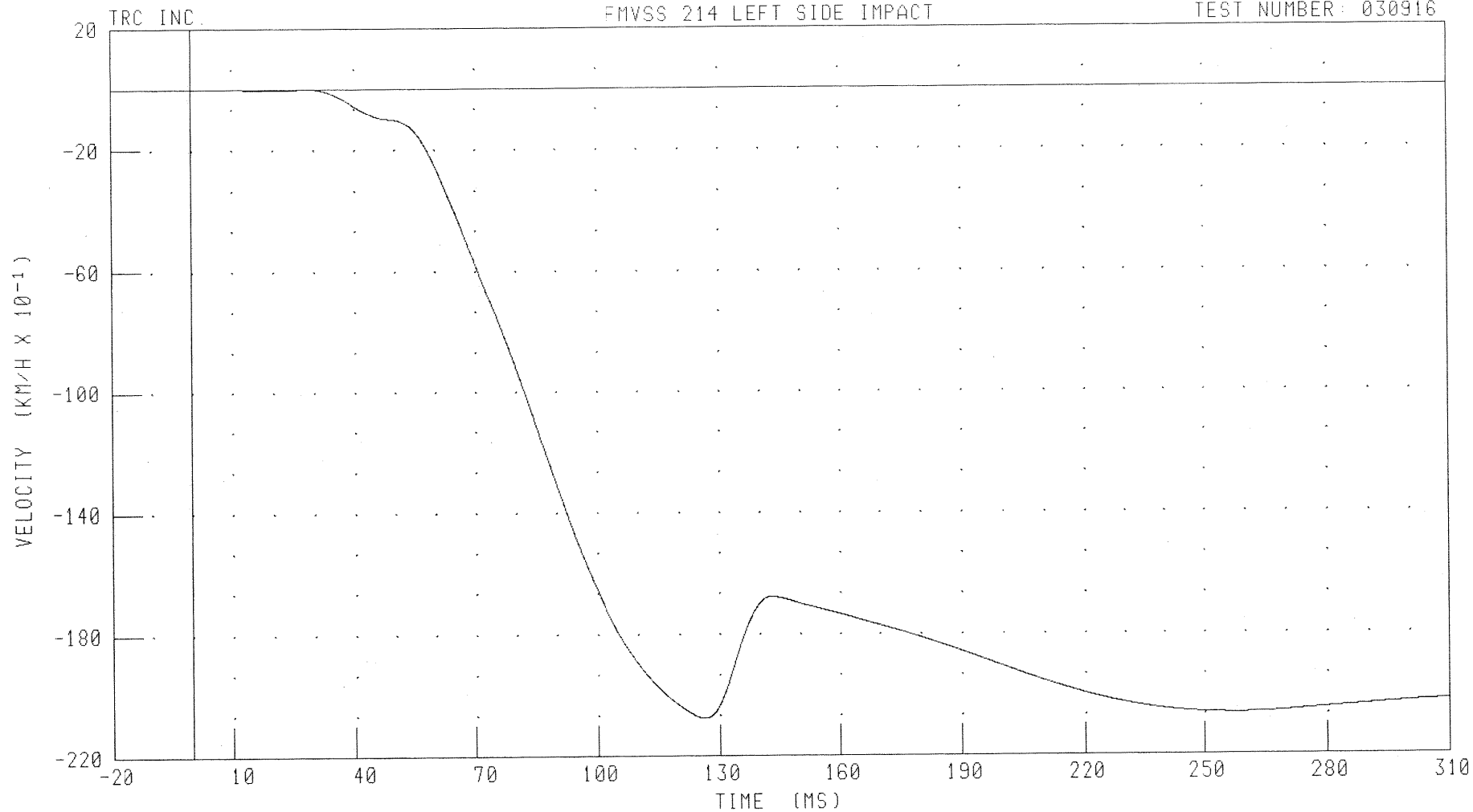
PEAK DATA: 12.25 G @ 133.52 MS; -11.45 G @ 88.96 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR

DRIVER HEAD X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: HEDXV1 FILTER: CH. CLASS 100

PEAK DATA: 0.01 KM/H @ 28.64 MS; -20.76 KM/H @ 126.32 MS

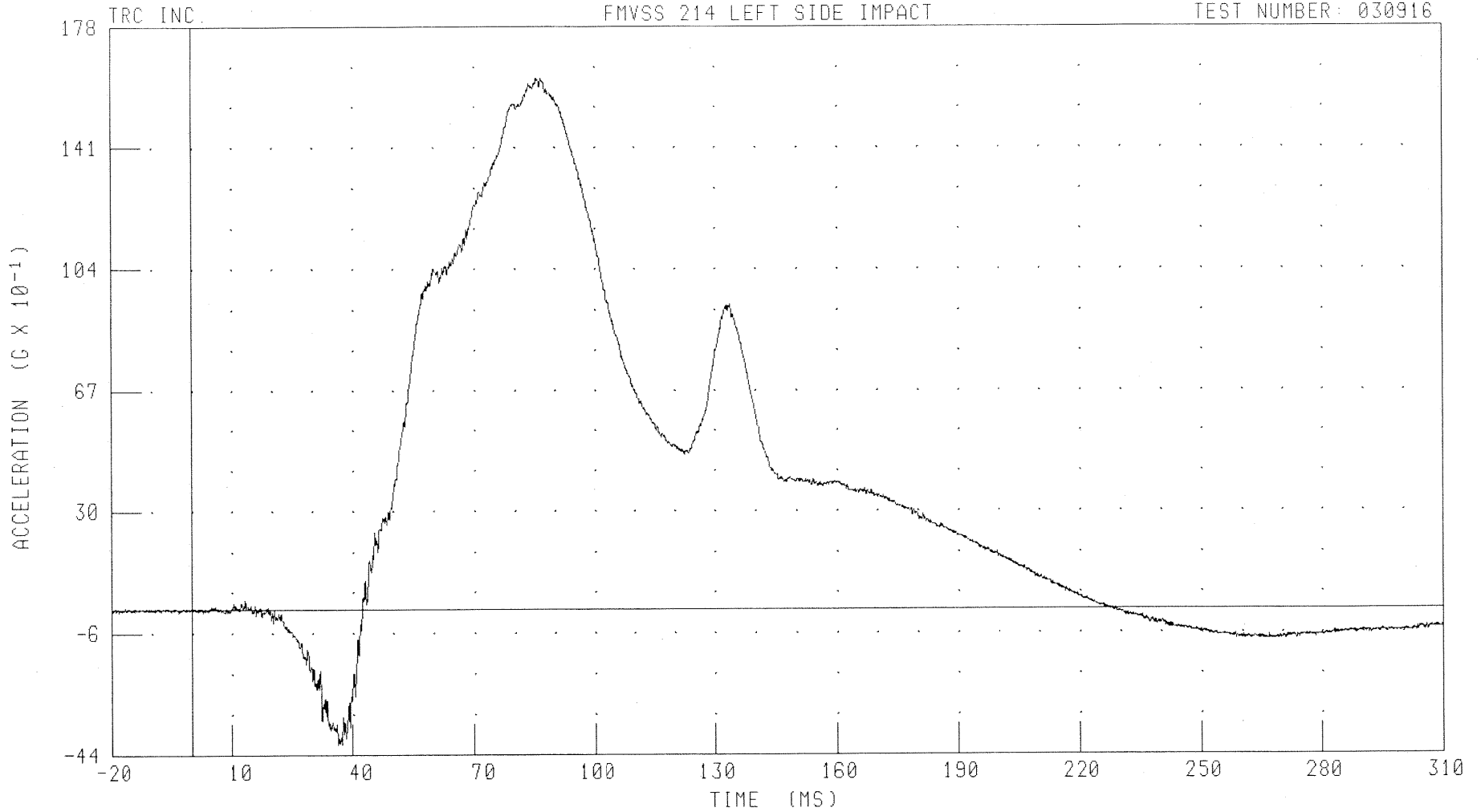
B-11

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER HEAD Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: HEDYG1 FILTER: CH. CLASS 1000

PEAK DATA: 16.20 G @ 85.36 MS; -4.09 G @ 36.40 MS

B-12

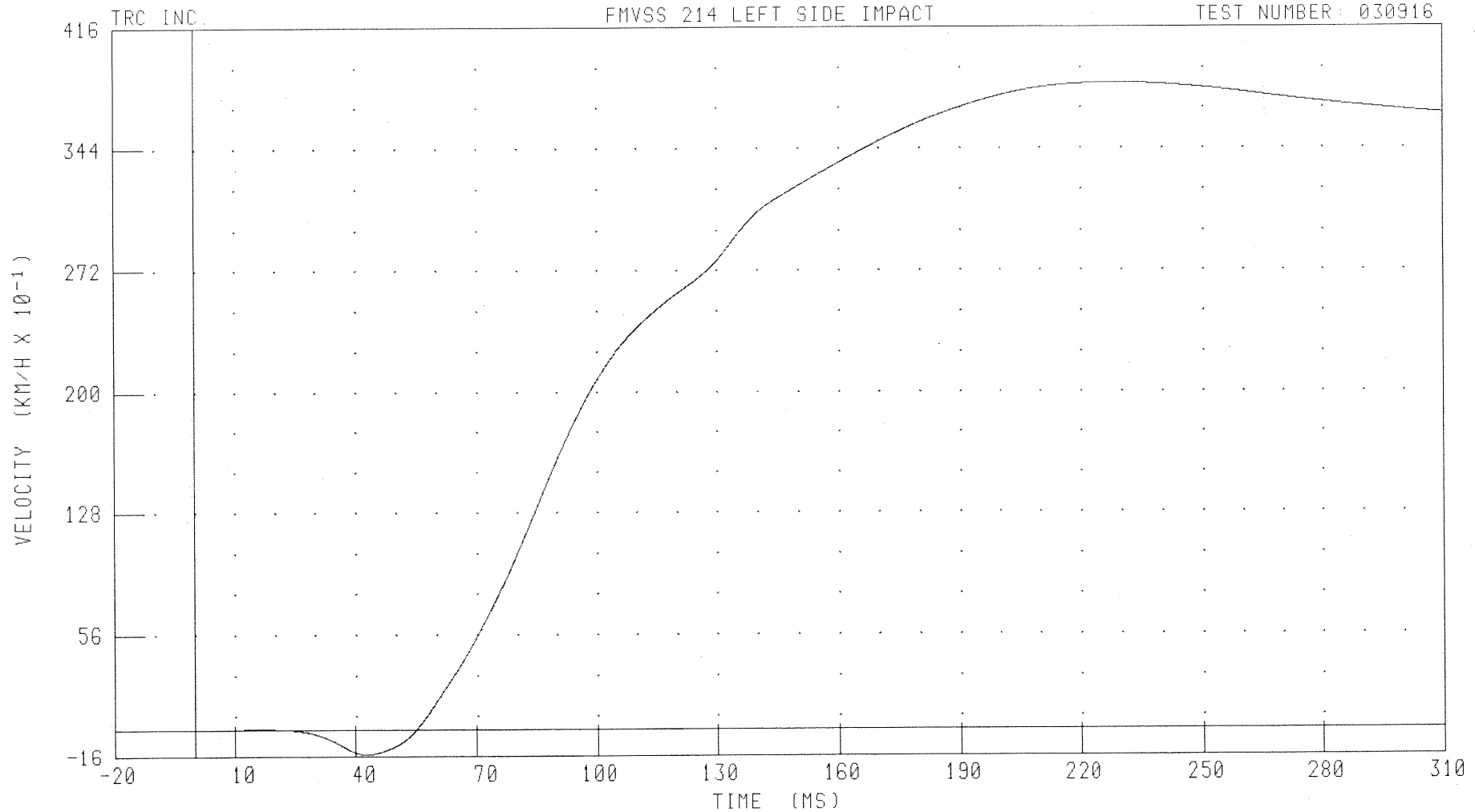
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR

DRIVER HEAD Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: HEDYV1 FILTER: CH. CLASS 180

PEAK DATA: 38.28 KM/H @ 228.08 MS; -1.49 KM/H @ 42.48 MS

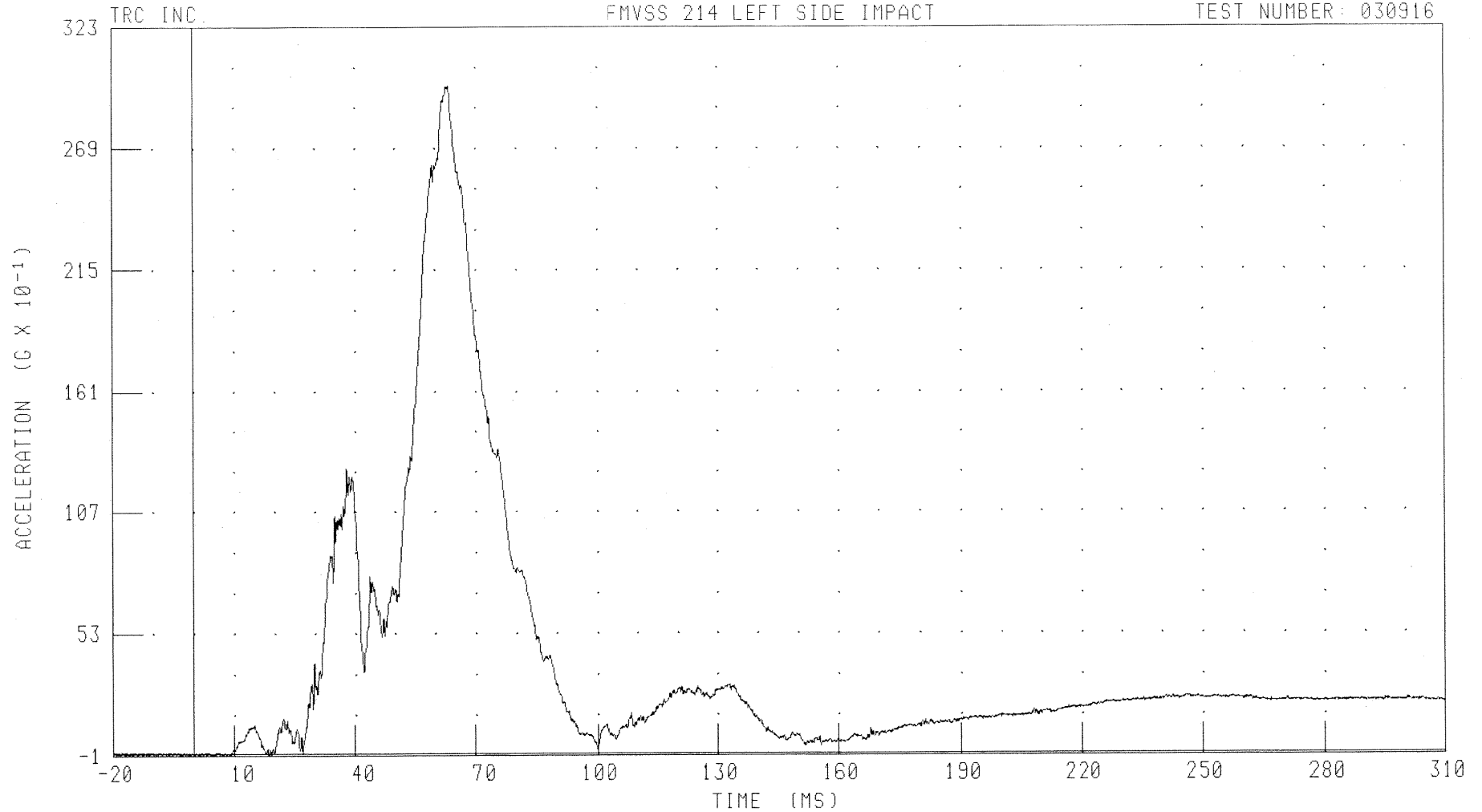
B-13

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER HEAD Z-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: HEDZG1 FILTER: CH. CLASS 1000

PEAK DATA: 29.69 G @ 63.44 MS; -0.16 G @ 18.48 MS

B-14

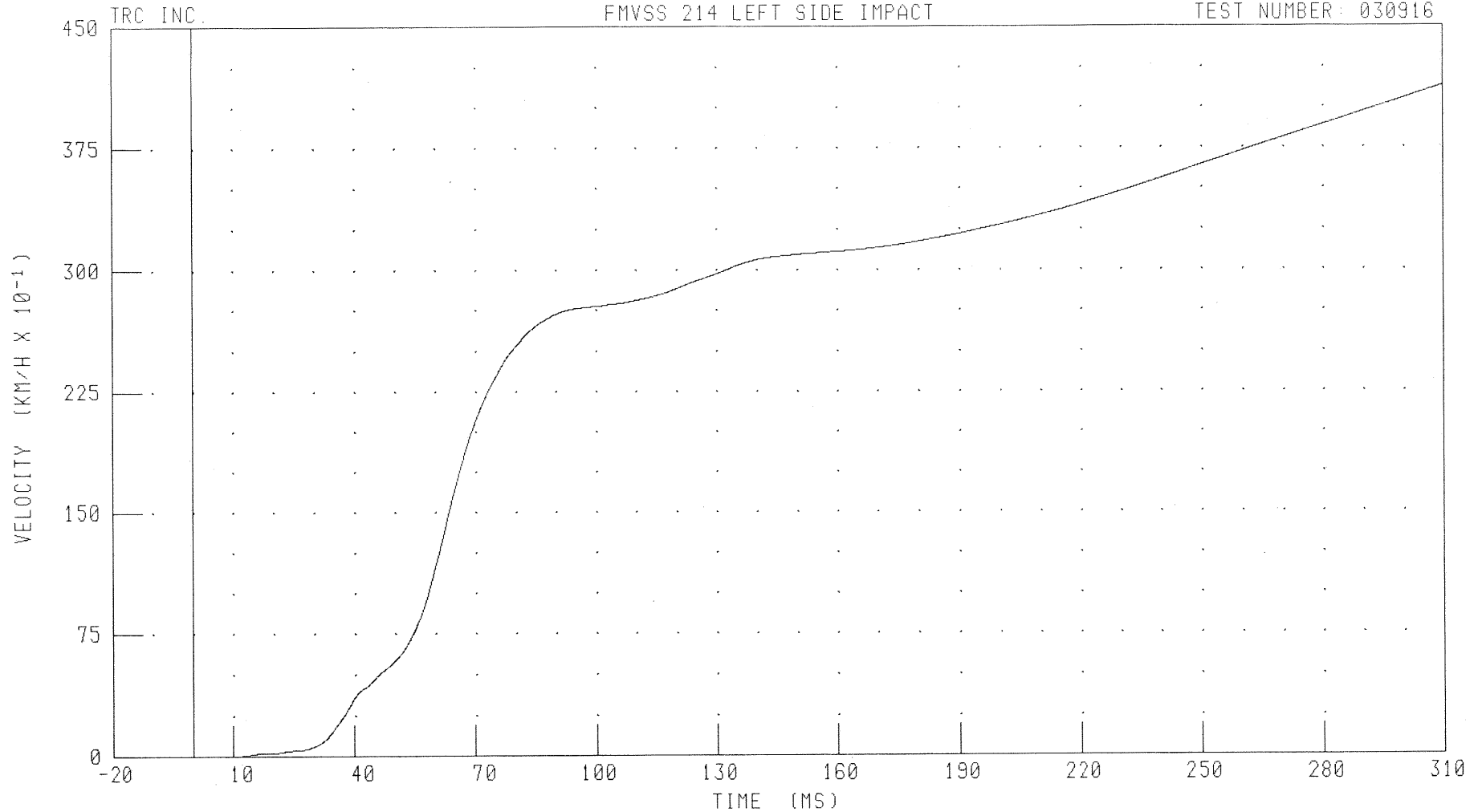
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR

DRIVER HEAD Z-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: HEDZV1 FILTER: CH. CLASS 180

PEAK DATA: 41.33 KM/H @ 310.00 MS; -0.01 KM/H @ 9.12 MS

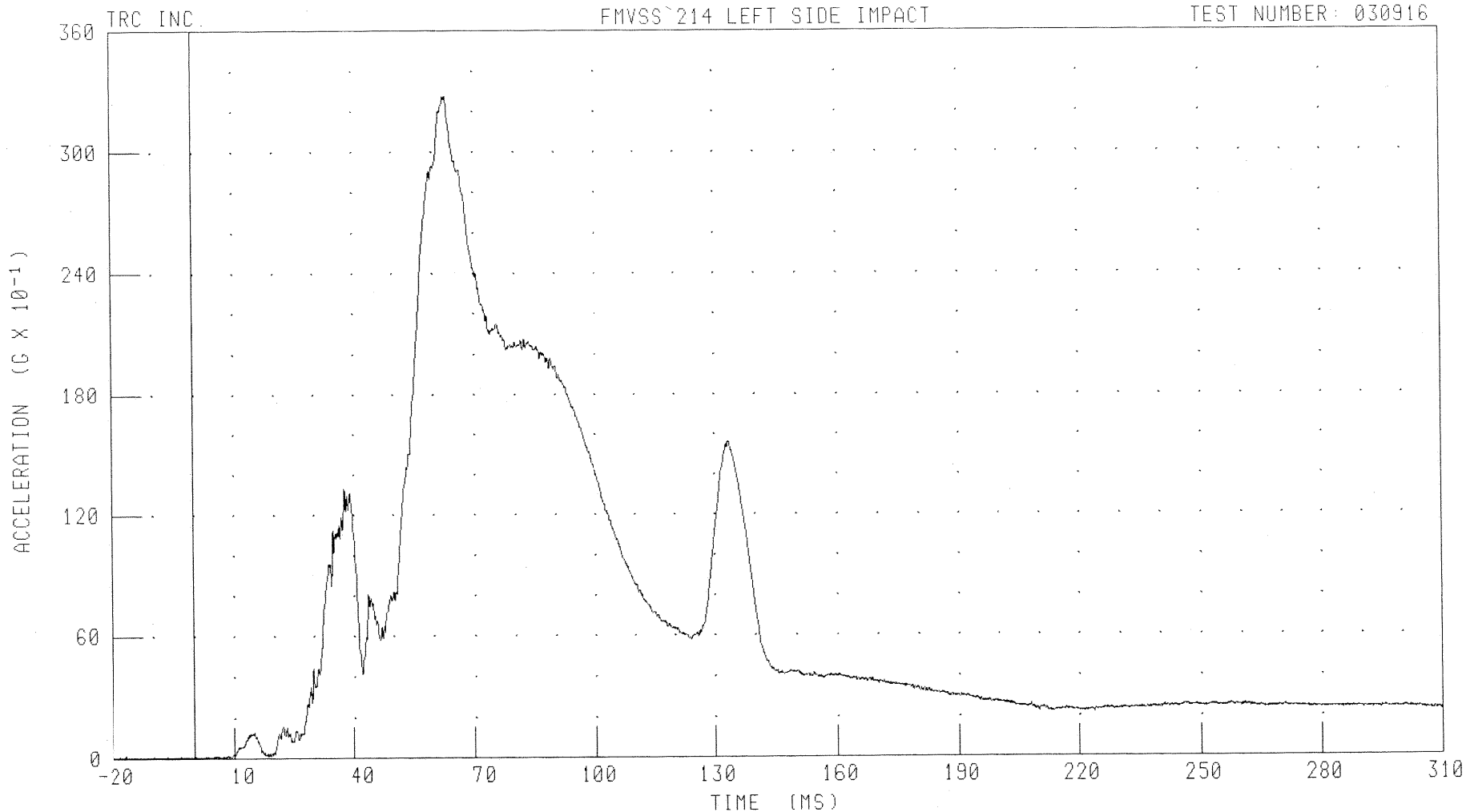
B-15

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER HEAD RESULTANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: HEDRG1 FILTER: CH. CLASS 1000

PEAK DATA: 32.76 G @ 63.44 MS; 0.01 G @ -18.08 MS

B-16

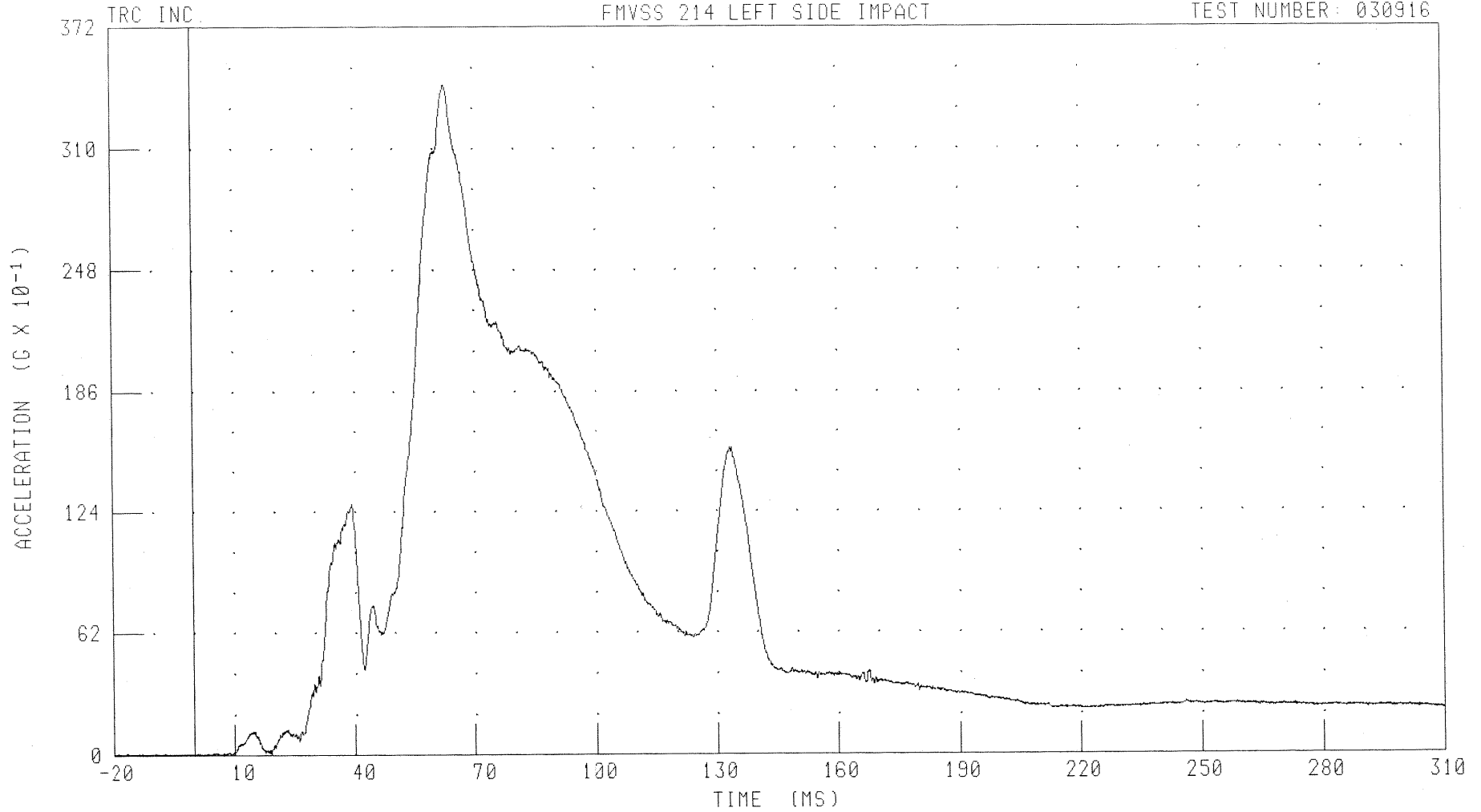
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR

DRIVER HEAD RESULTANT REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: HEDRR1 FILTER: CH. CLASS 1000

PEAK DATA: 34.27 G @ 63.04 MS; 0.00 G @ -18.00 MS

B-17

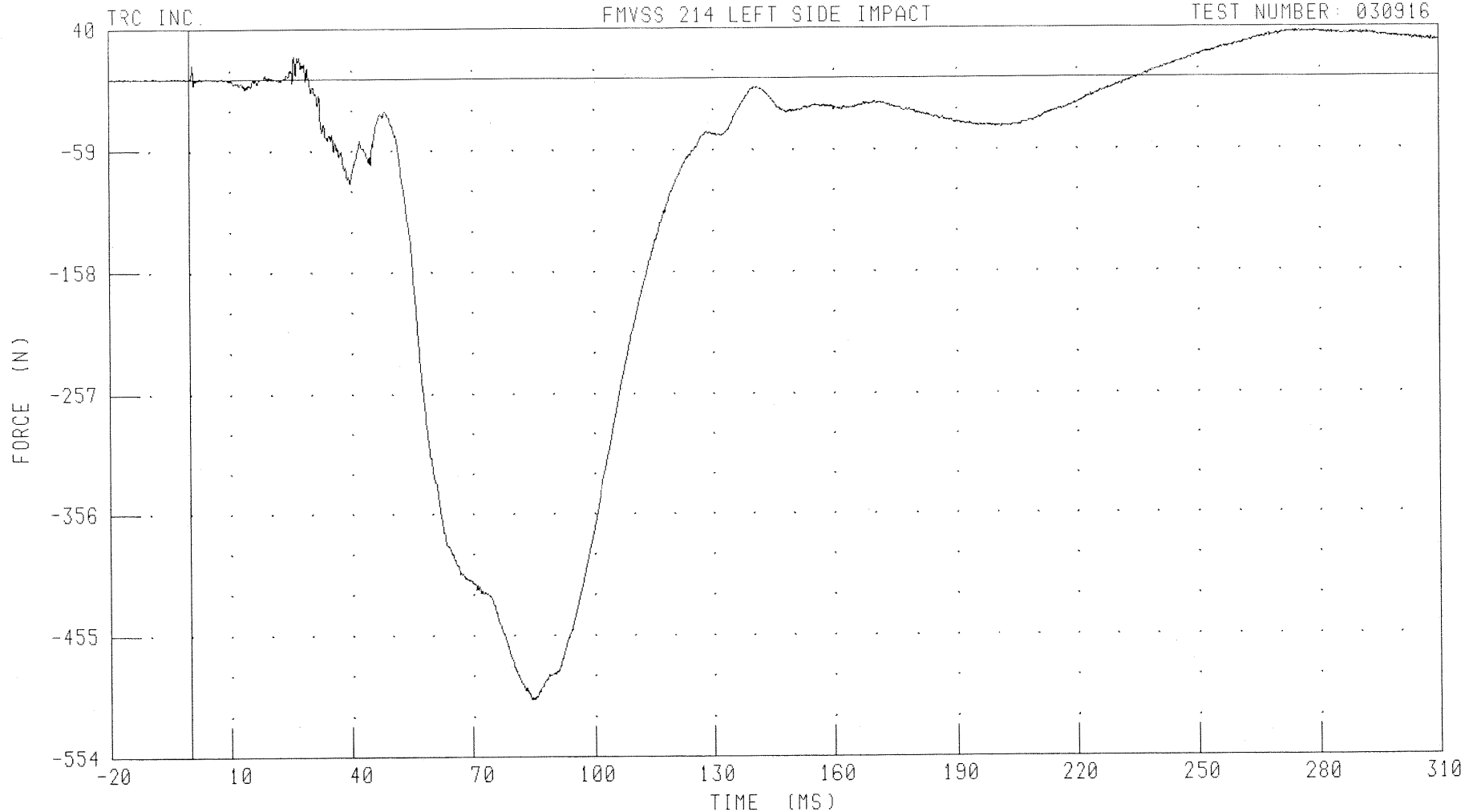
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR

DRIVER NECK X-AXIS SHEAR FORCE

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: NEKXF1

FILTER: CH. CLASS 1000

PEAK DATA: 37.01 N @ 275.12 MS; -507.54 N @ 84.40 MS

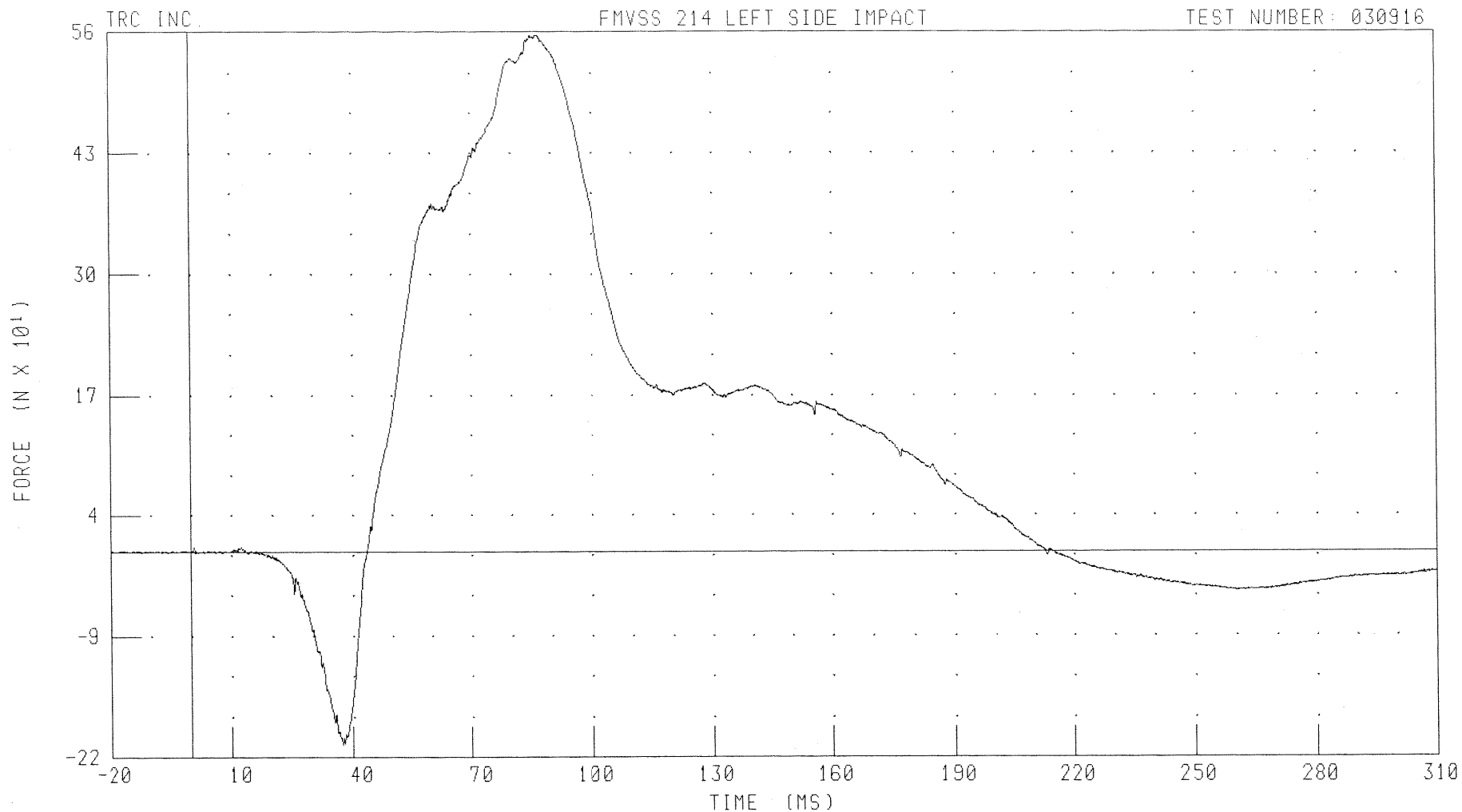
B-18

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER NECK Y-AXIS SHEAR FORCE

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: NEKYF1 FILTER: CH. CLASS 1000

PEAK DATA: 556.21 N @ 86.96 MS; -206.54 N @ 37.36 MS

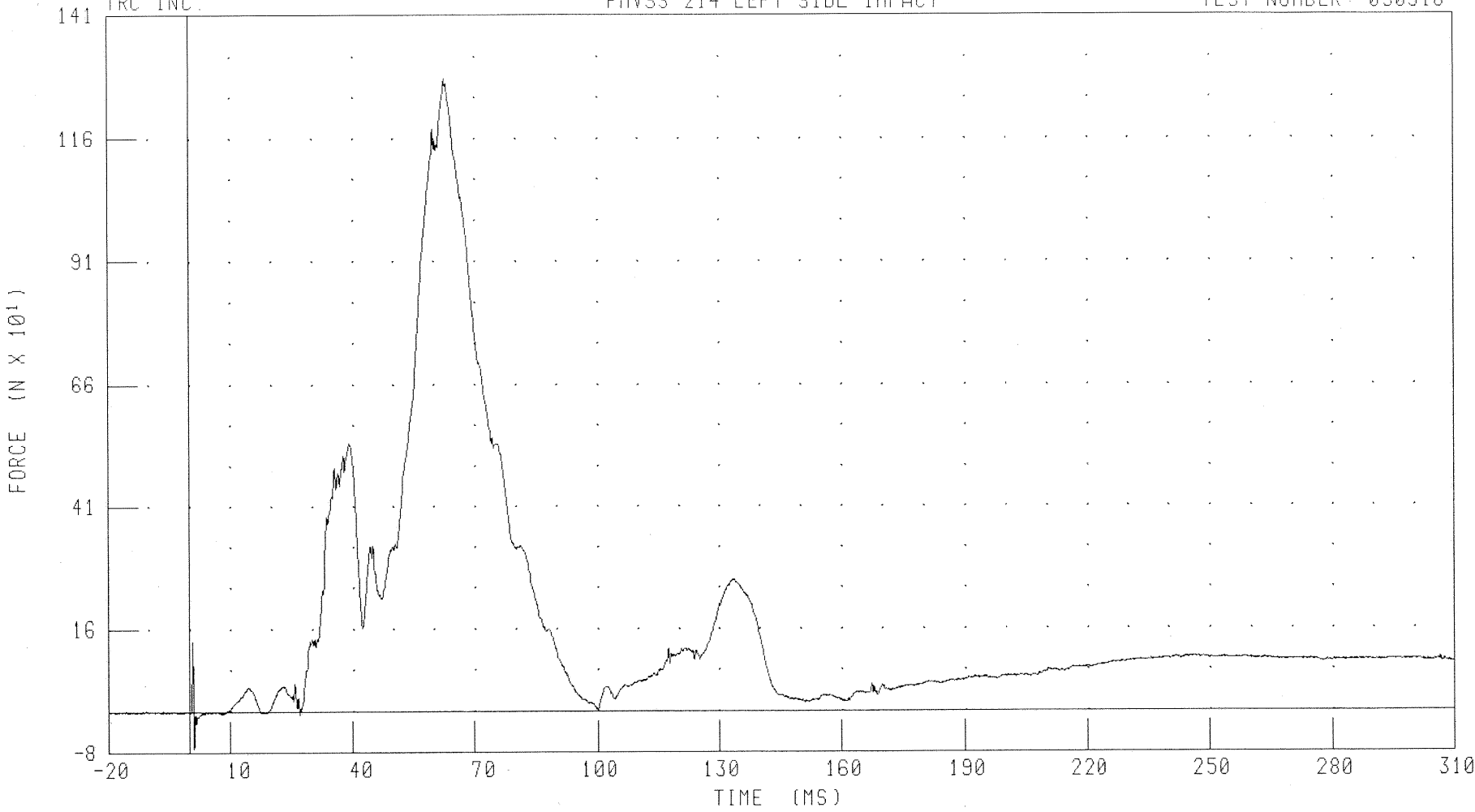
B-19

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER NECK Z-AXIS AXIAL FORCE

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: NEKZF1 FILTER: CH. CLASS 1000

PEAK DATA: 1290.93 N @ 62.72 MS; -74.67 N @ 1.12 MS

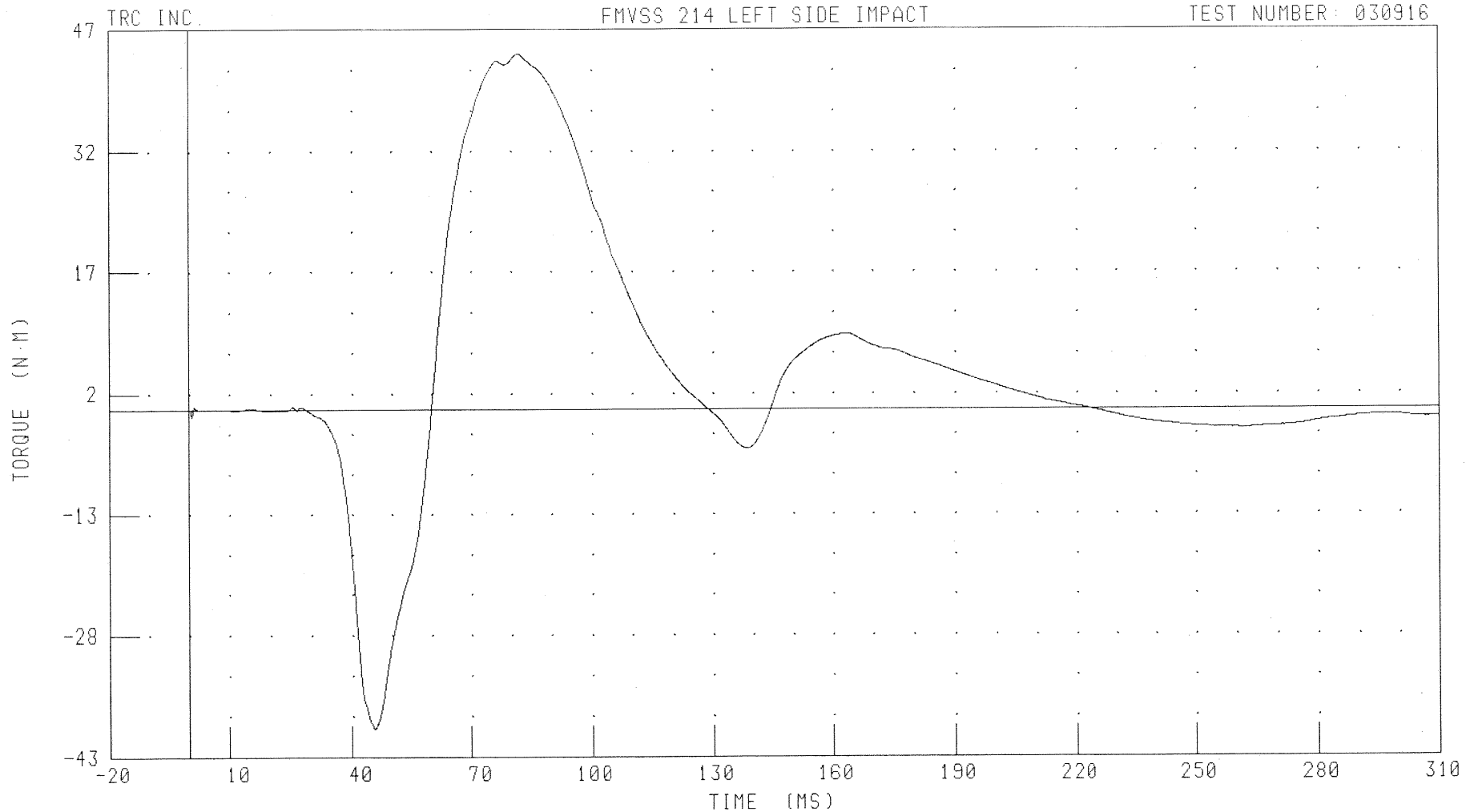
B-20

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER NECK MOMENT ABOUT X AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: NEKX1 FILTER: CH. CLASS 600

PEAK DATA: 44.02 N·M @ 81.92 MS; -39.58 N·M @ 45.60 MS

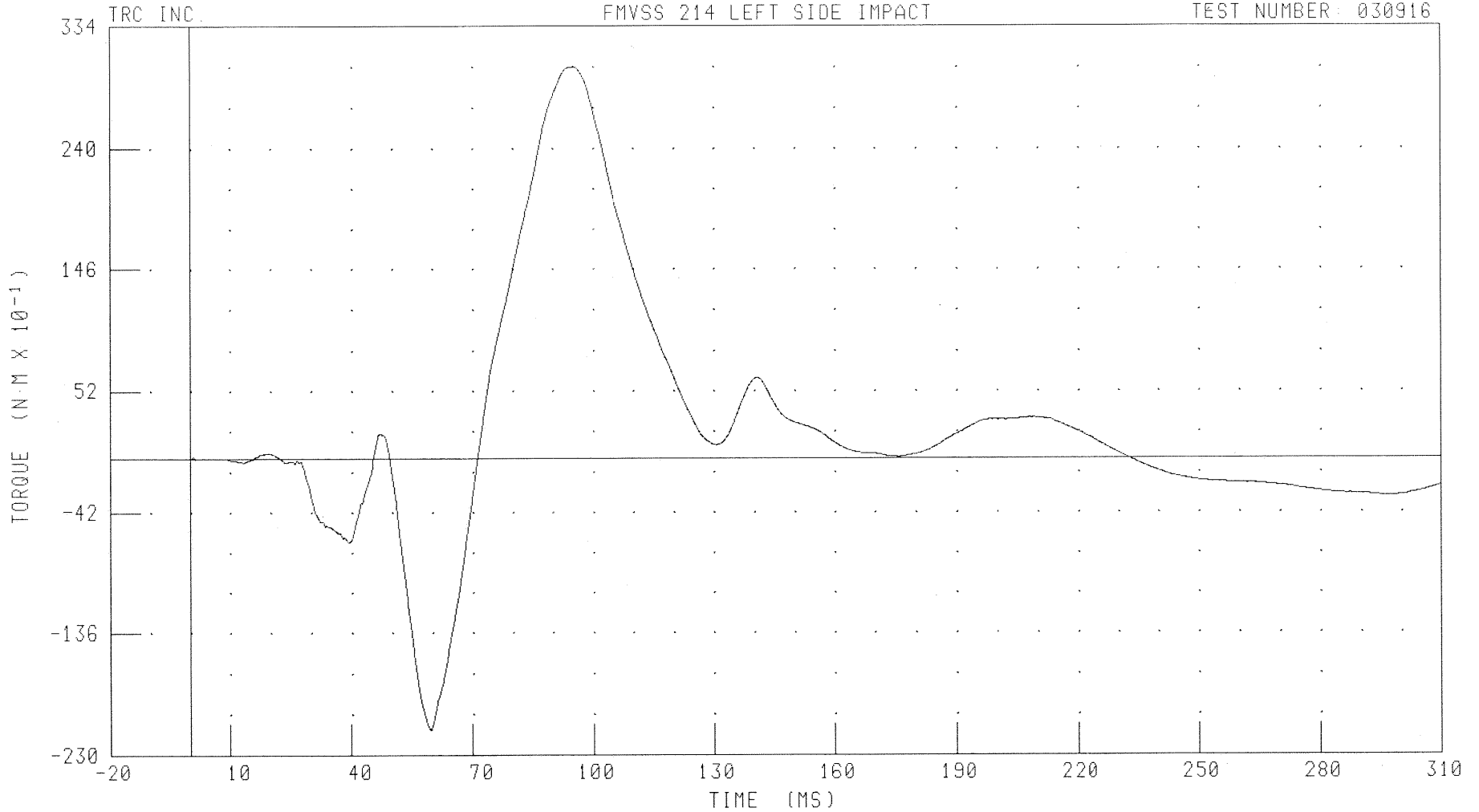
B-21

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER NECK MOMENT ABOUT Y AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: NEKYM1

FILTER: CH. CLASS 600

PEAK DATA: 30.28 N·M @ 95.20 MS; -21.07 N·M @ 59.52 MS

B-22

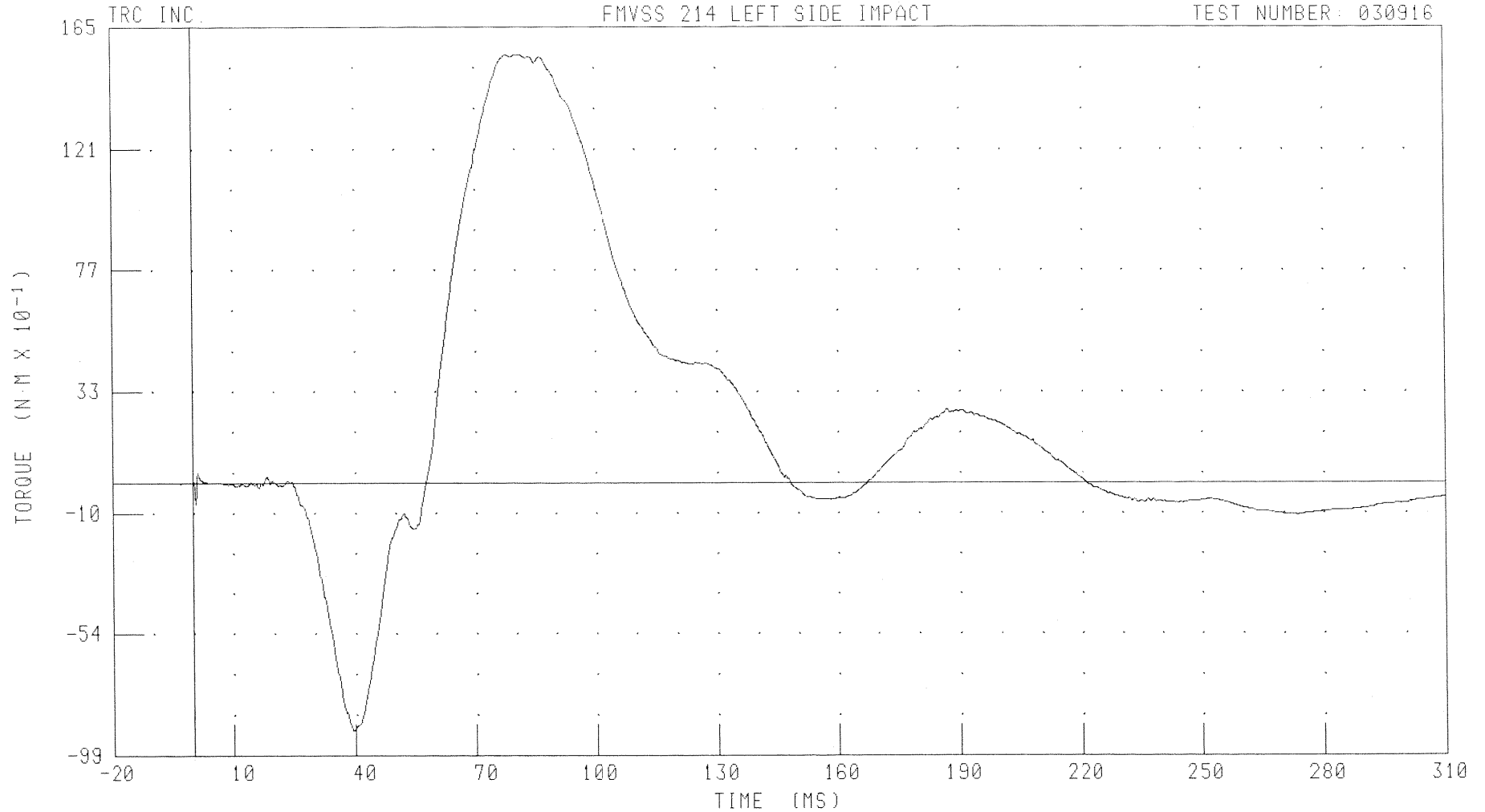
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR

DRIVER NECK MOMENT ABOUT Z AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



B-23

030916

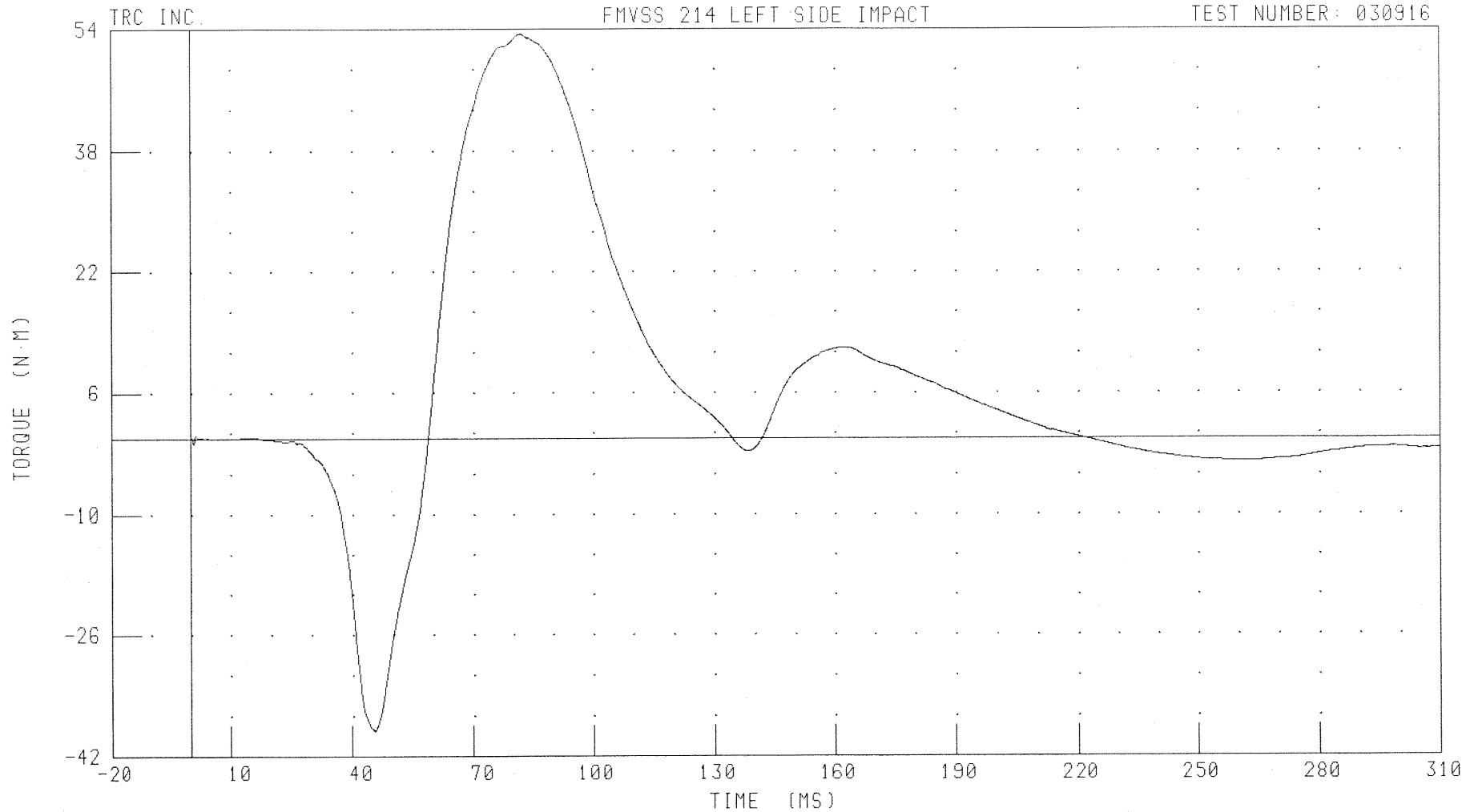
CHANNEL: NEKZM1 FILTER: CH. CLASS 600

PEAK DATA: 15.50 N.M @ 80.16 MS, -9.02 N.M @ 39.36 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER NECK OCCIPITAL CONDYLE MOMENT ABOUT X AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: NK0XM1 FILTER: CH. CLASS 600

PEAK DATA: 53.42 N.M @ 82.00 MS; -38.70 N.M @ 45.44 MS

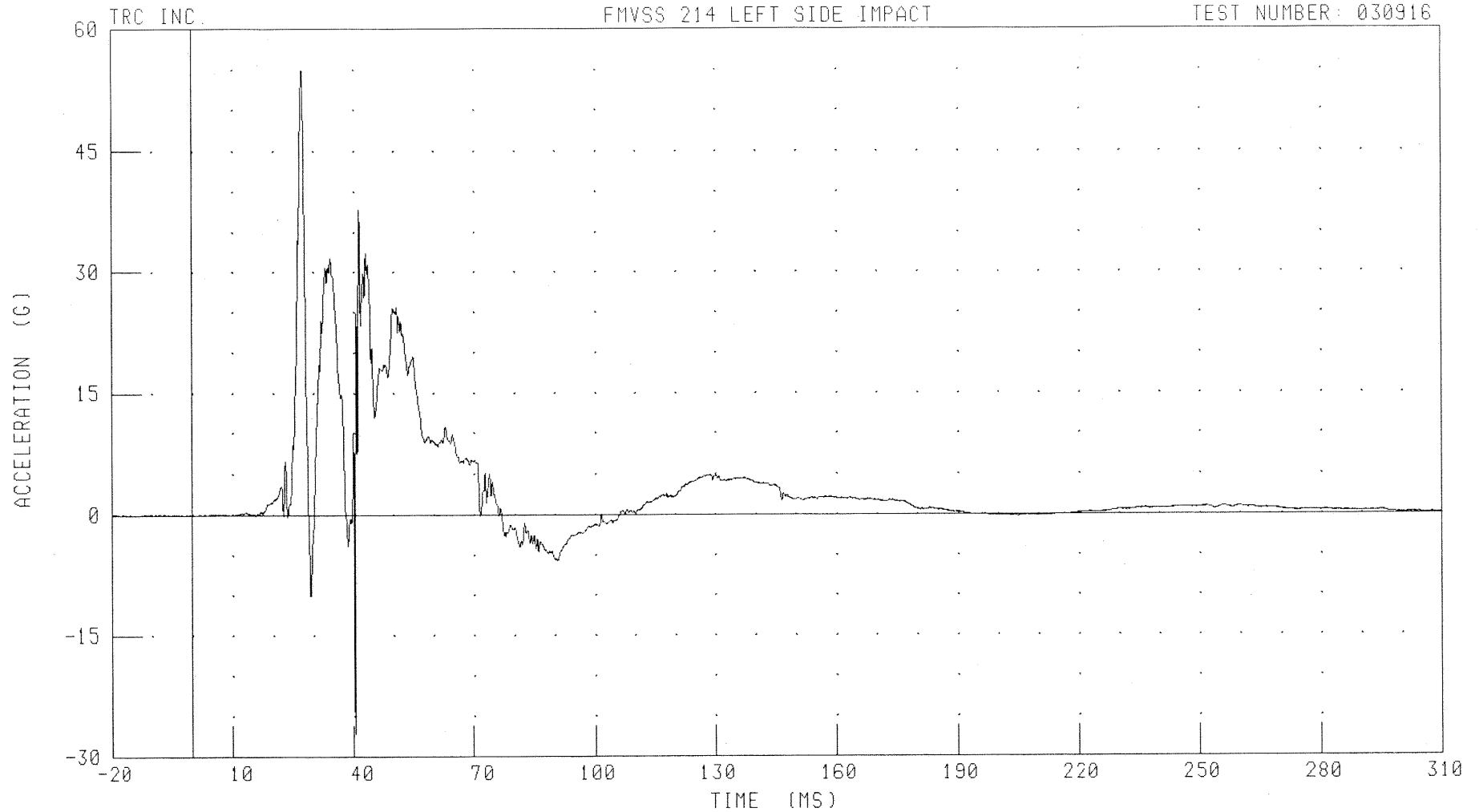
B-24

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER UPPER RIB Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LURYG1 FILTER: CH. CLASS 1000

PEAK DATA: 54.97 G @ 27.28 MS; -27.28 G @ 40.32 MS

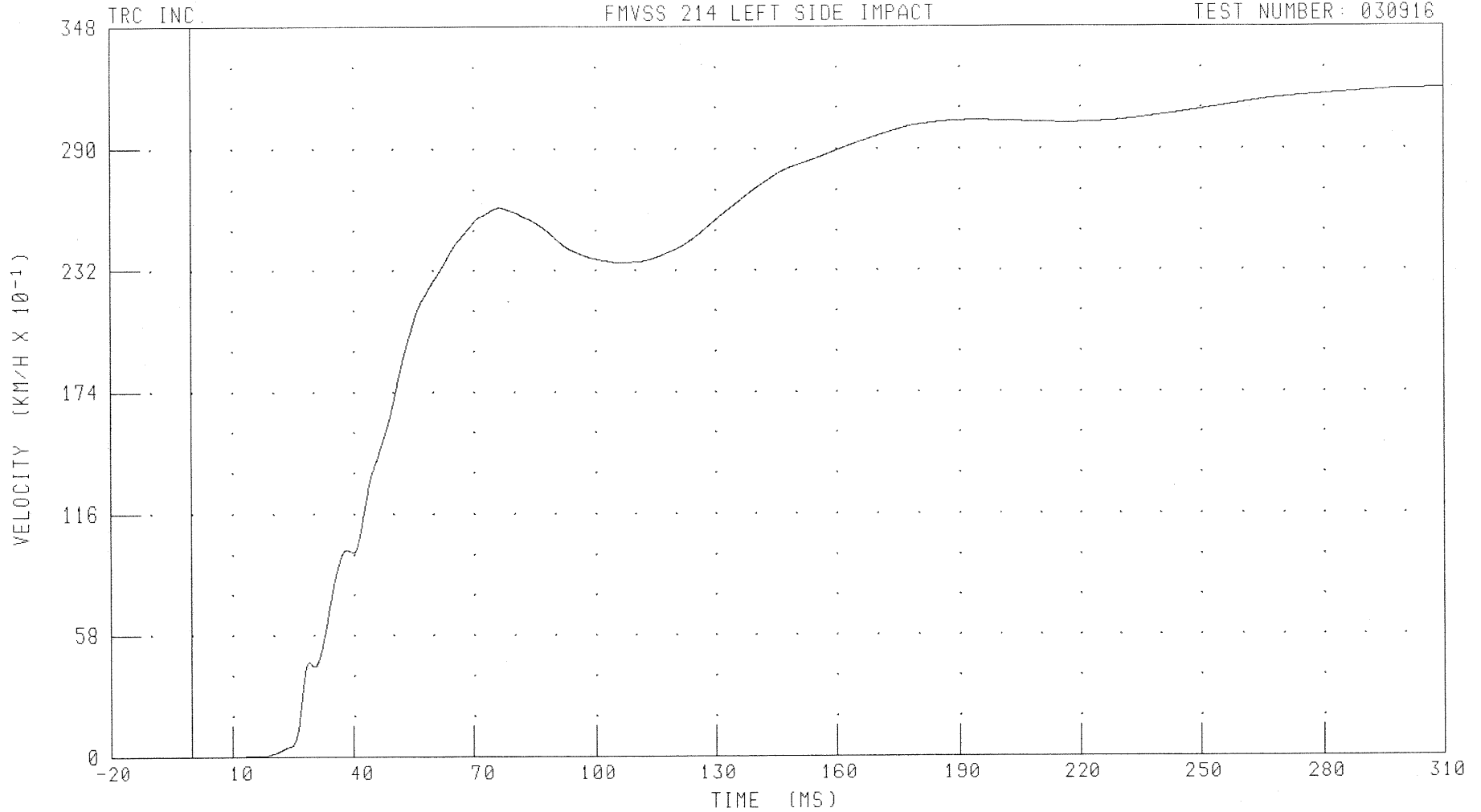
B-25

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER UPPER RIB Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LURYV1 FILTER: CH. CLASS 180

PEAK DATA: 31.86 KM/H @ 310.00 MS; 0.00 KM/H @ 0.96 MS

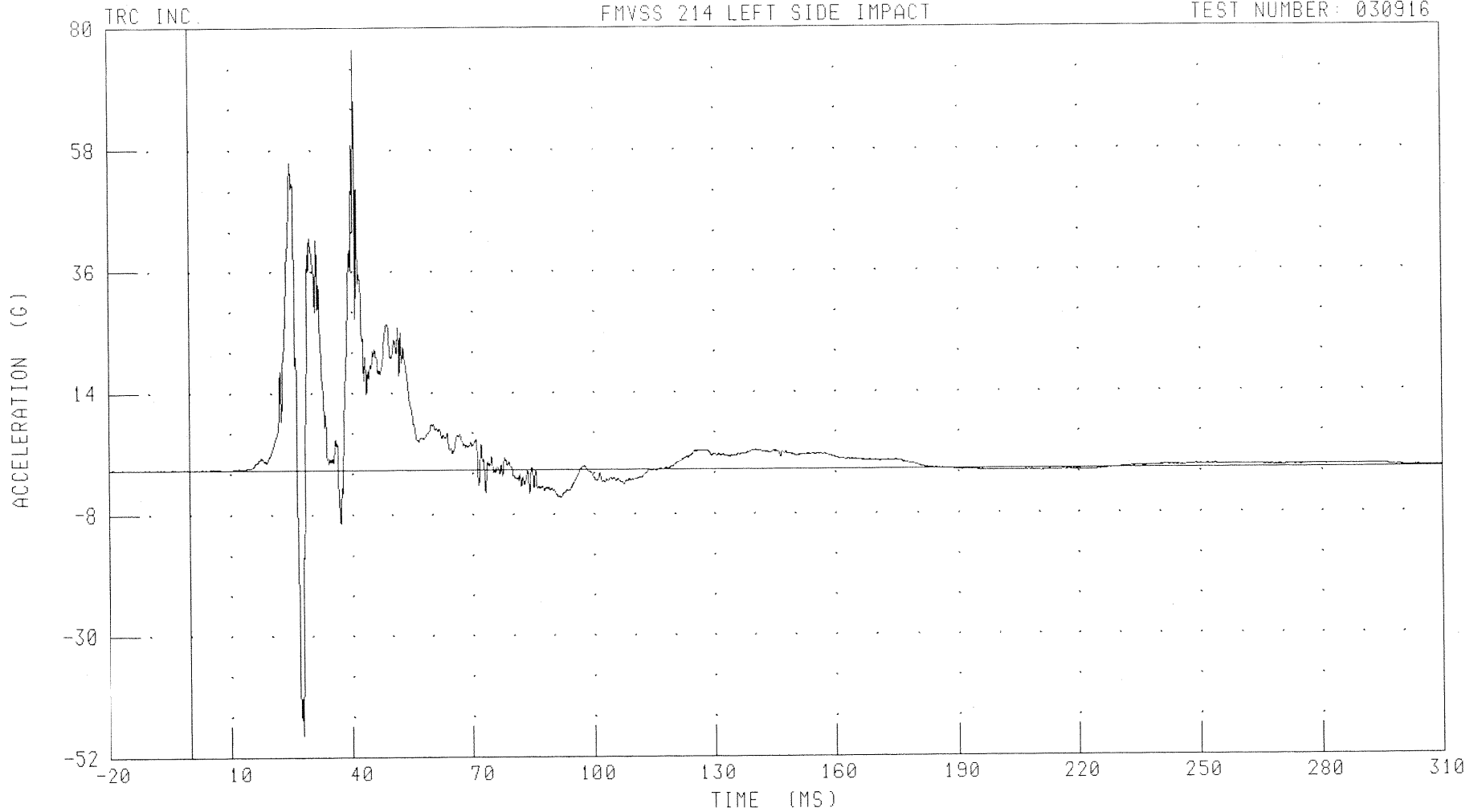
B-26

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER LOWER RIB Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LLRYG1 FILTER: CH. CLASS 1000

PEAK DATA: 76.06 G @ 40.64 MS; -48.07 G @ 27.68 MS

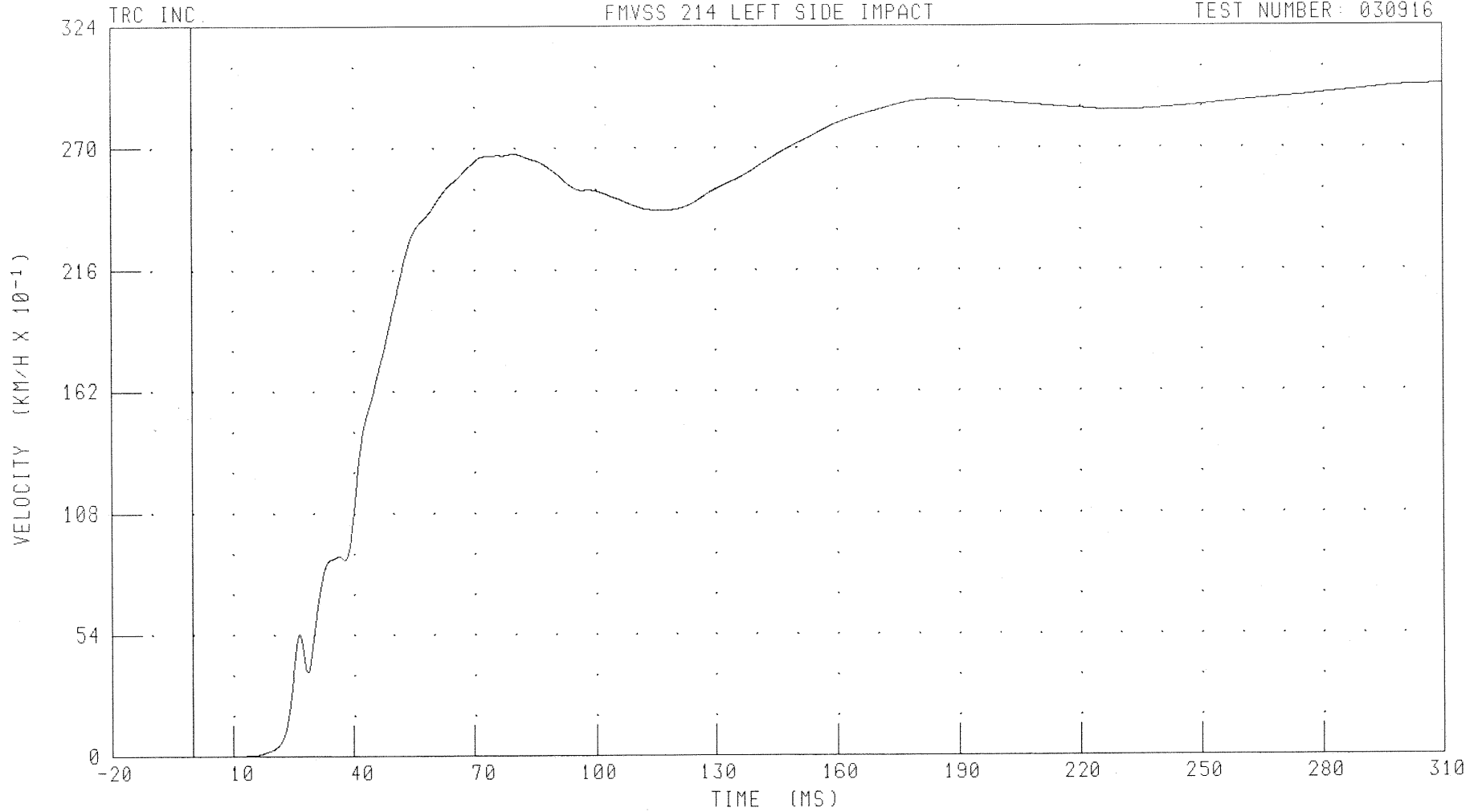
B-27

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER LOWER RIB Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LLRYV1

FILTER: CH. CLASS 180

PEAK DATA: 29.80 KM/H @ 310.00 MS; 0.00 KM/H @ 0.00 MS

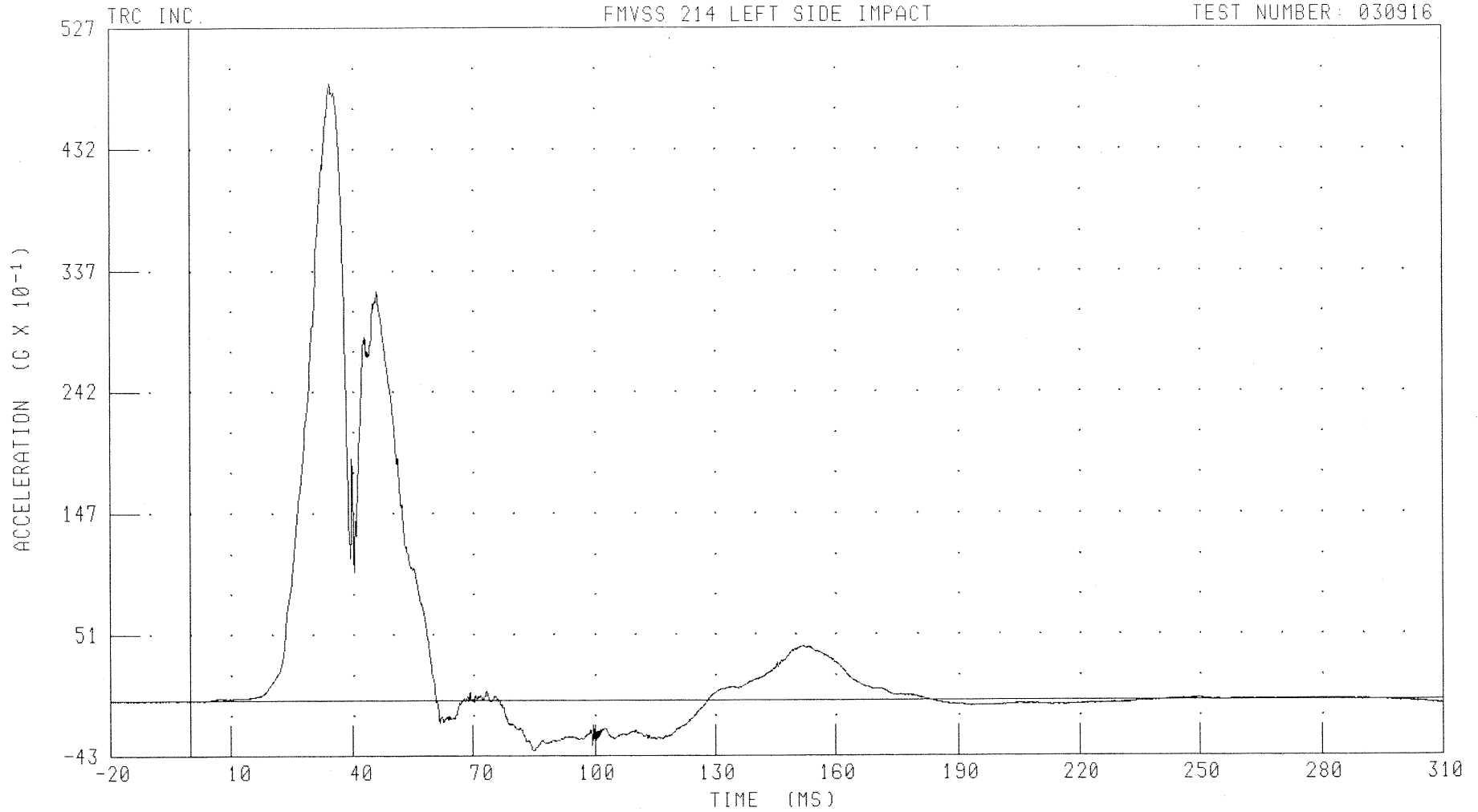
B-28

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER LOWER SPINE Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: T12YC1

FILTER: CH. CLASS 1000

PEAK DATA: 48.37 G @ 34.32 MS; -3.95 G @ 84.88 MS

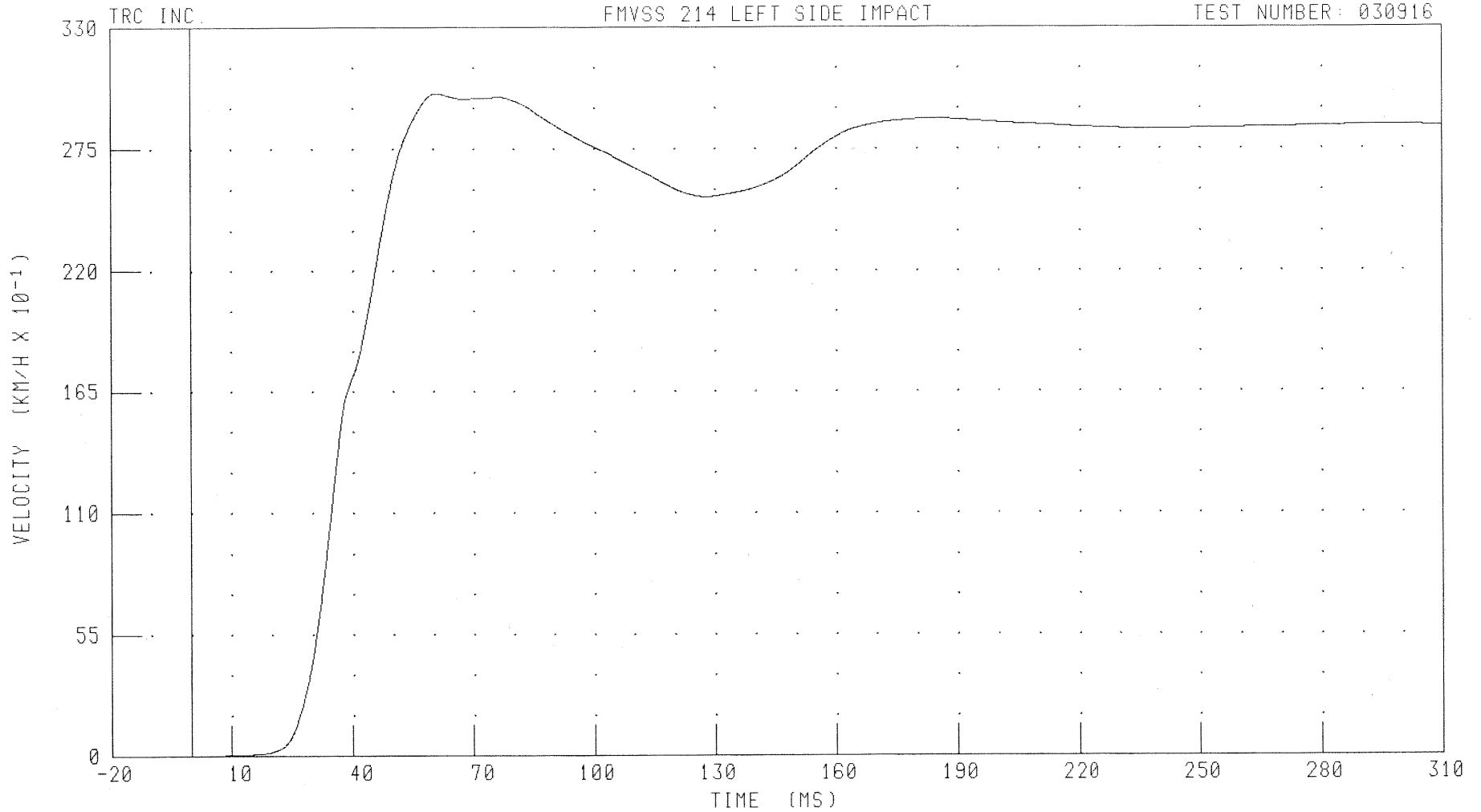
B-29

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER LOWER SPINE Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: T12YV1

FILTER: CH. CLASS 180

PEAK DATA: 30.01 KM/H @ 60.88 MS; 0.00 KM/H @ 0.00 MS

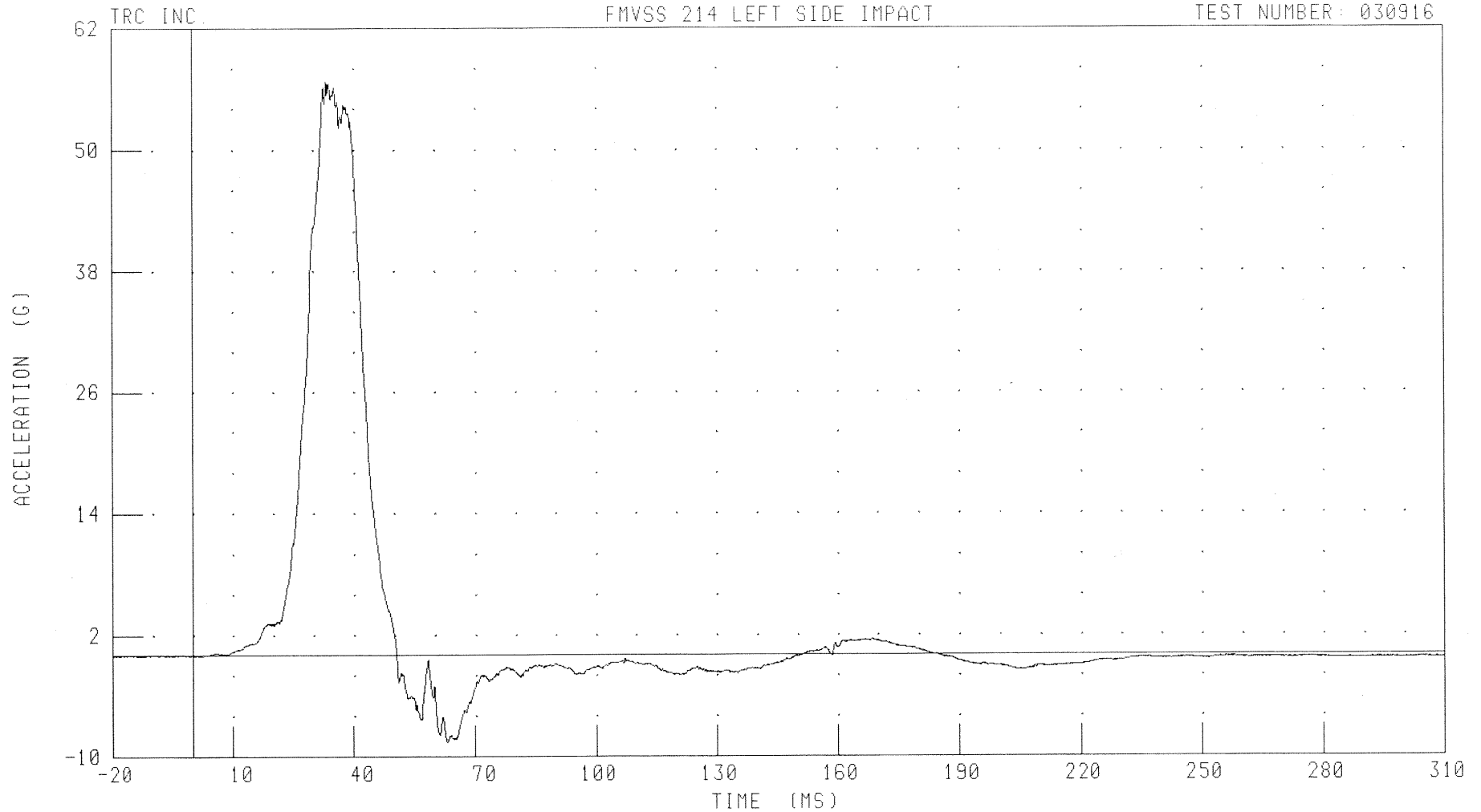
B-30

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER PELVIS Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: PEVYG1 FILTER: CH. CLASS 1000

PEAK DATA: 56.76 G @ 33.36 MS; -8.58 G @ 63.12 MS

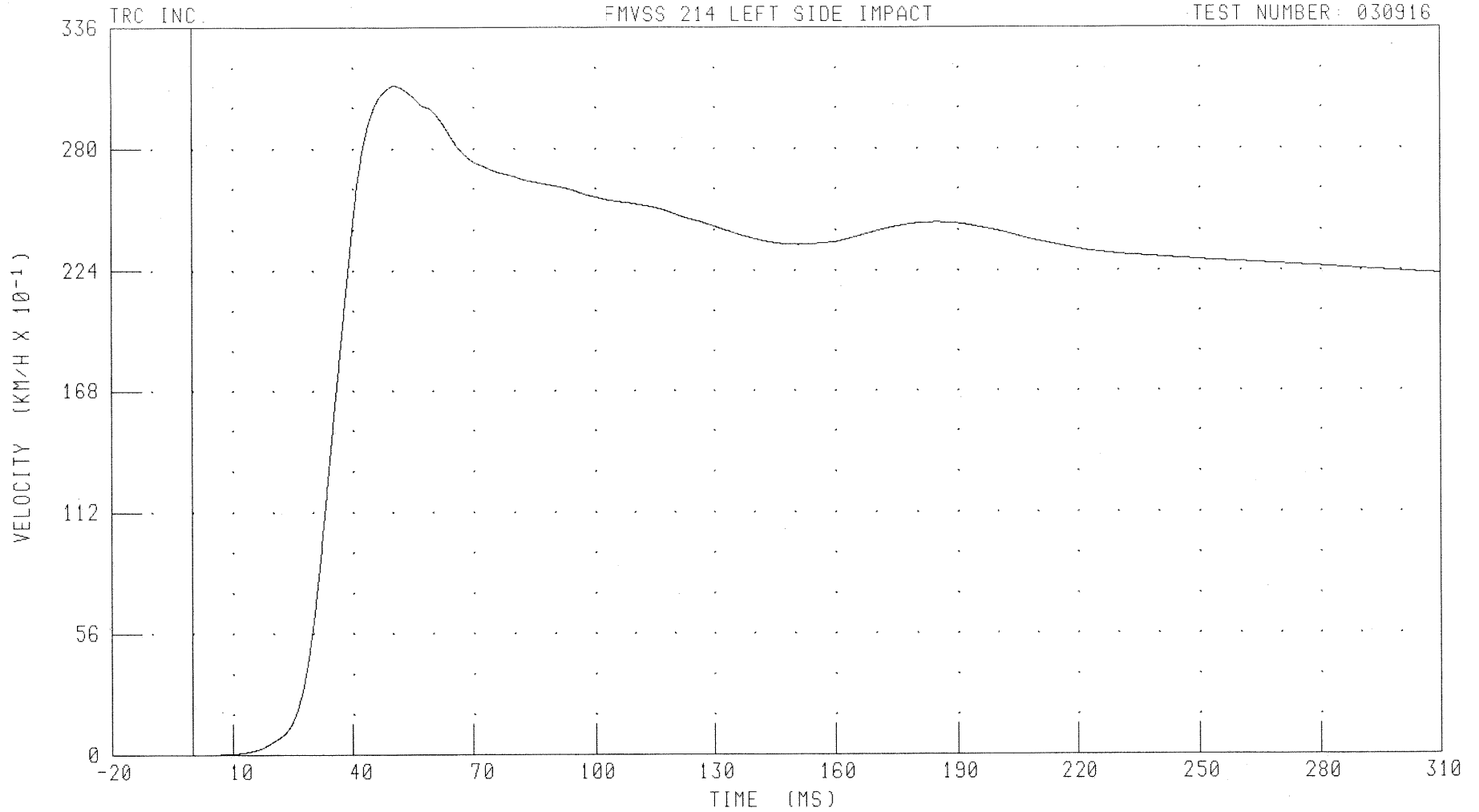
B-31

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER PELVIS Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: PEVYV1

FILTER: CH. CLASS 180

PEAK DATA: 308.89 KM/H @ 50.56 MS; 0.00 KM/H @ 2.48 MS

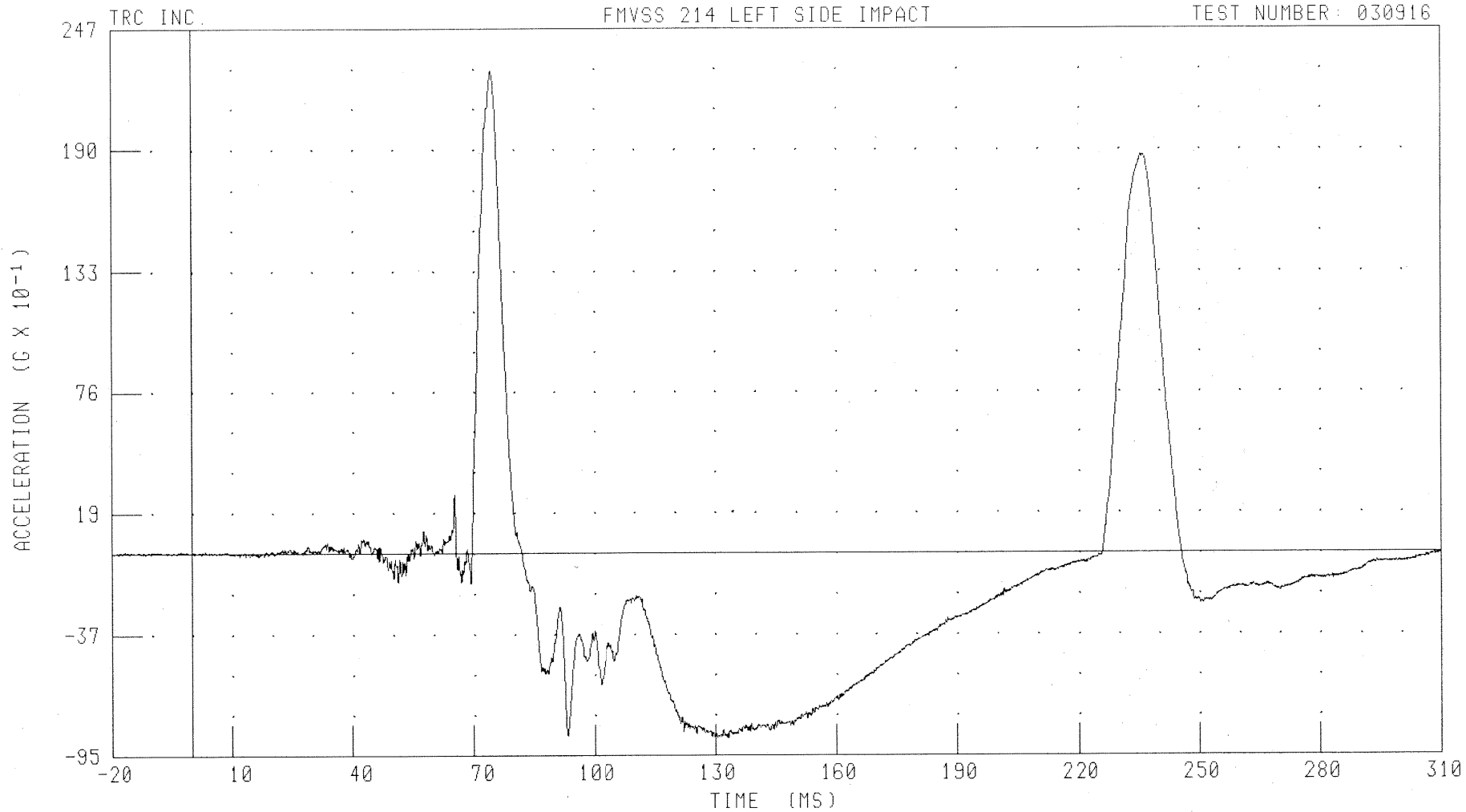
B-32

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER HEAD X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: HEDXG4 FILTER: CH. CLASS 1000

PEAK DATA: 22.73 G @ 74.48 MS; -8.71 G @ 133.28 MS

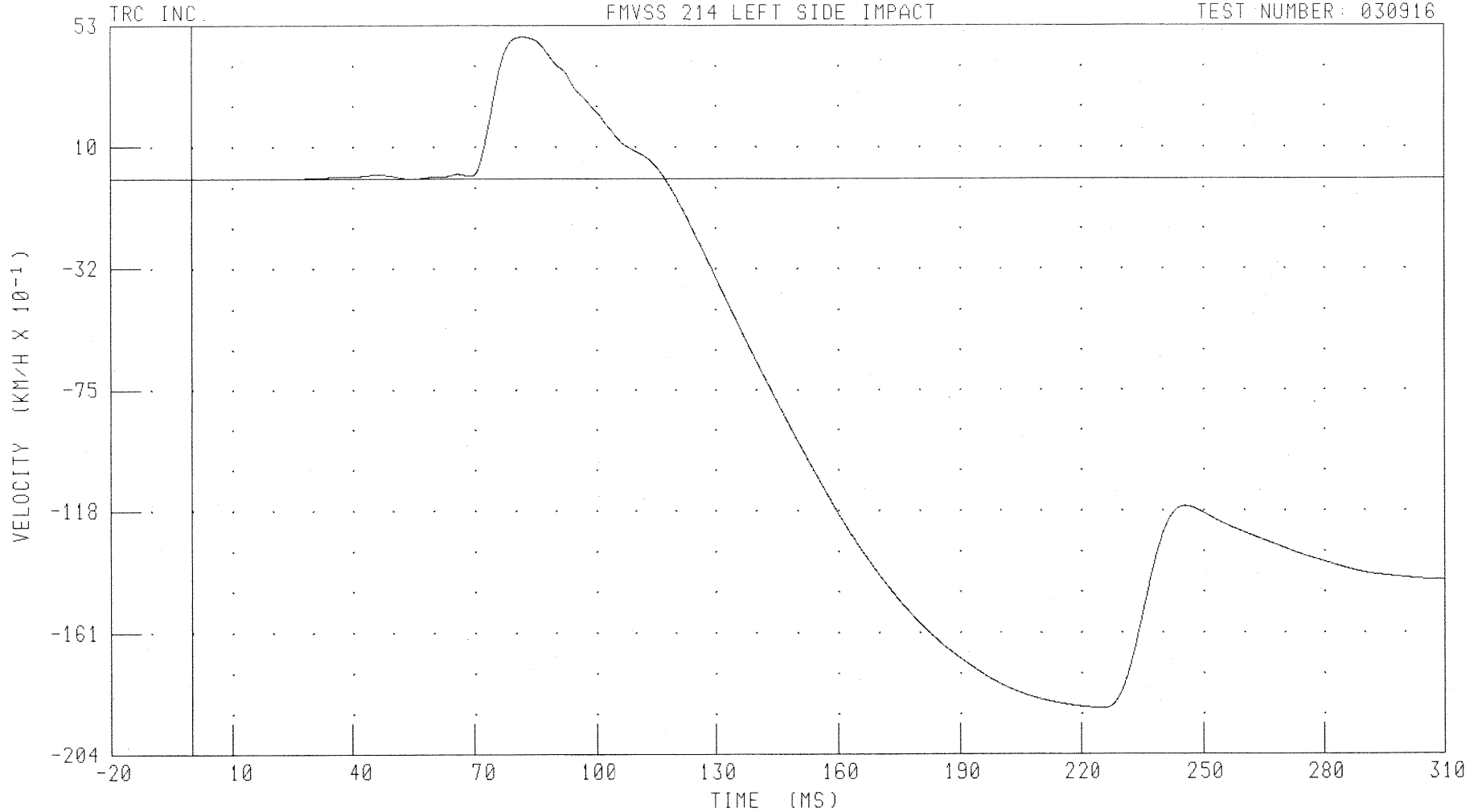
B-33

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER HEAD X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: HEDXV4

FILTER: CH. CLASS 180

PEAK DATA: 5.00 KM/H @ 81.84 MS; -18.78 KM/H @ 225.76 MS

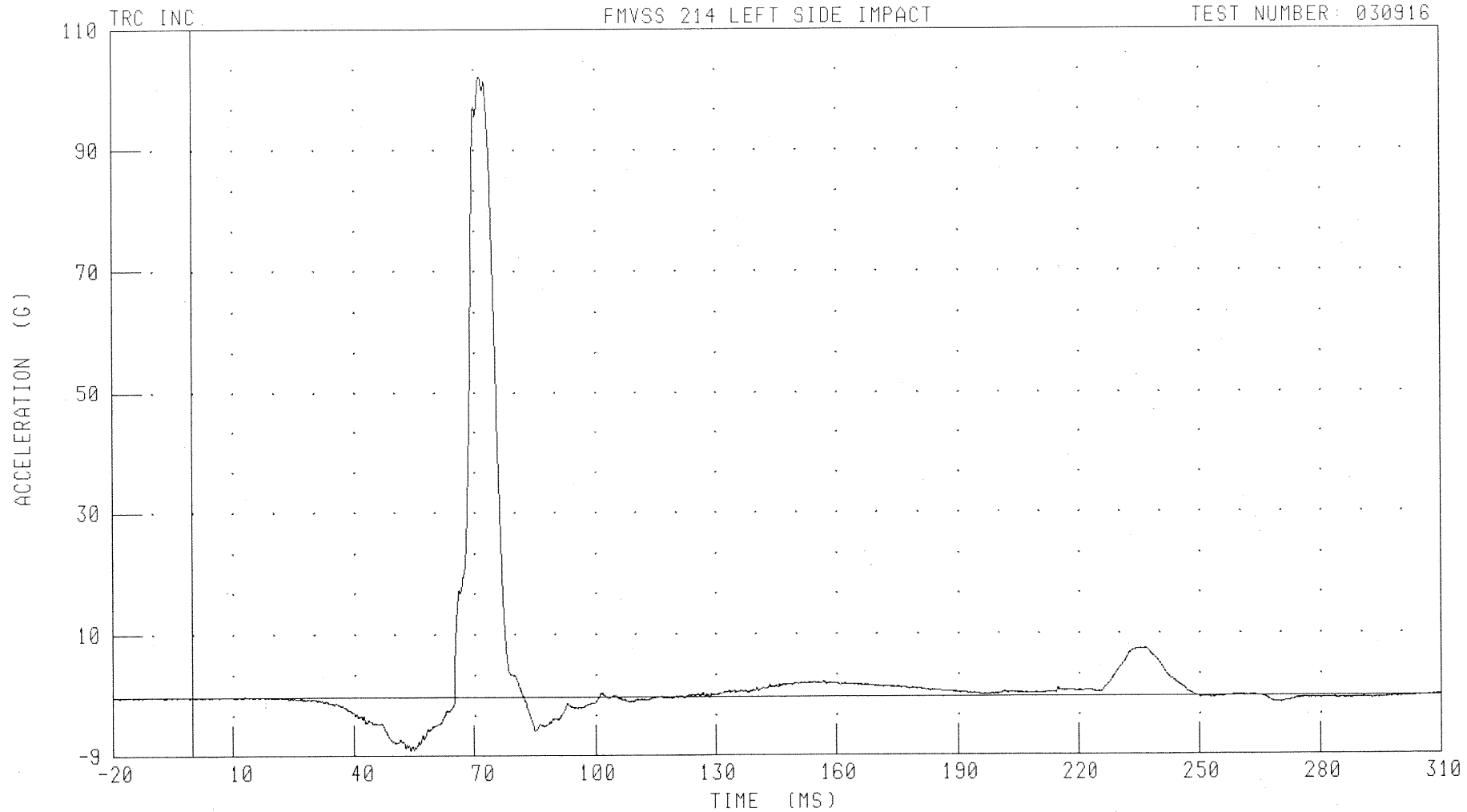
B-34

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER HEAD Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: HEDYG4 FILTER: CH. CLASS 1000

PEAK DATA: 102.53 G @ 71.60 MS; -8.76 G @ 54.00 MS

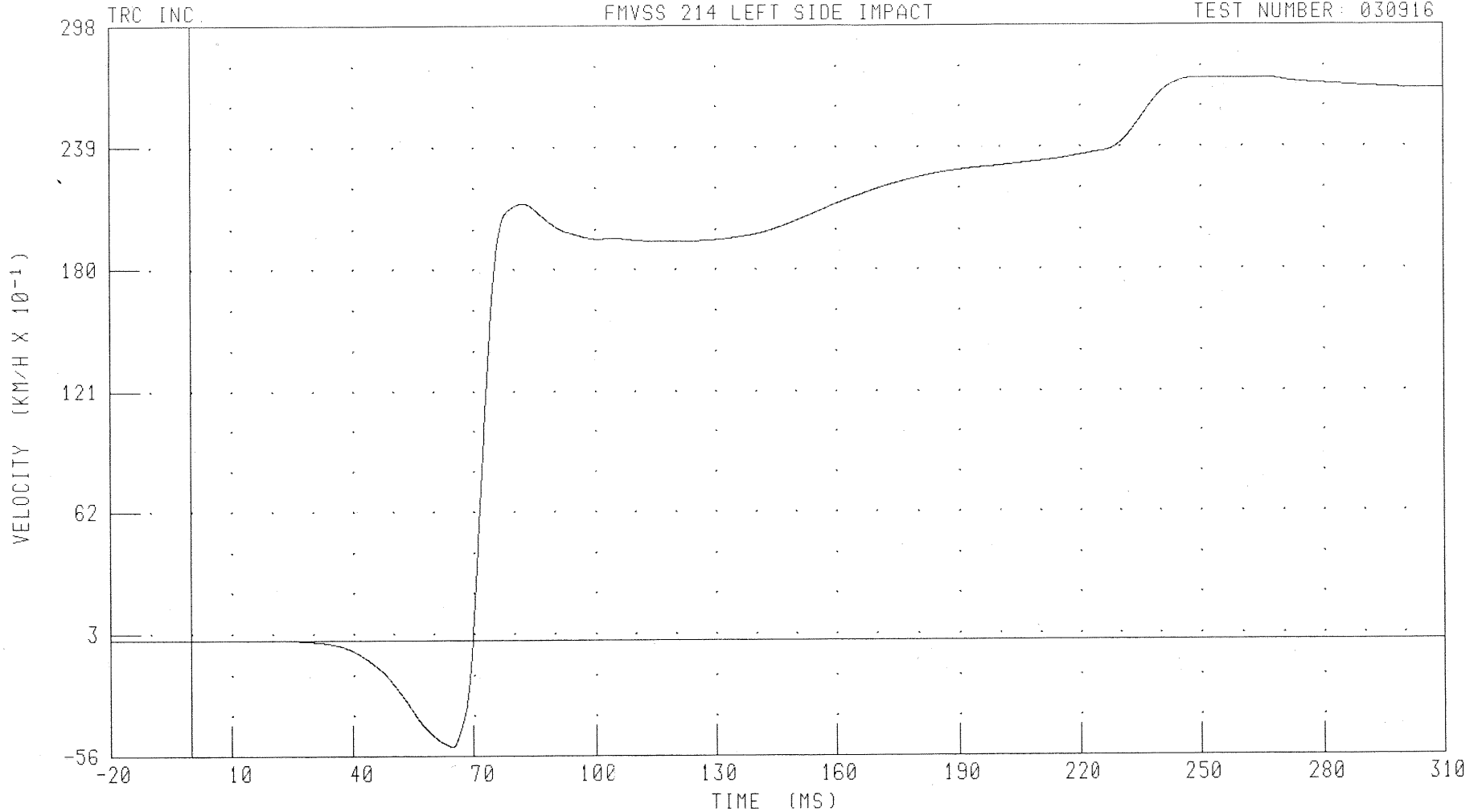
B-35

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER HEAD Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: HEDYV4 FILTER: CH. CLASS 180

PEAK DATA: 27.23 KM/H @ 265.44 MS; -5.16 KM/H @ 64.64 MS

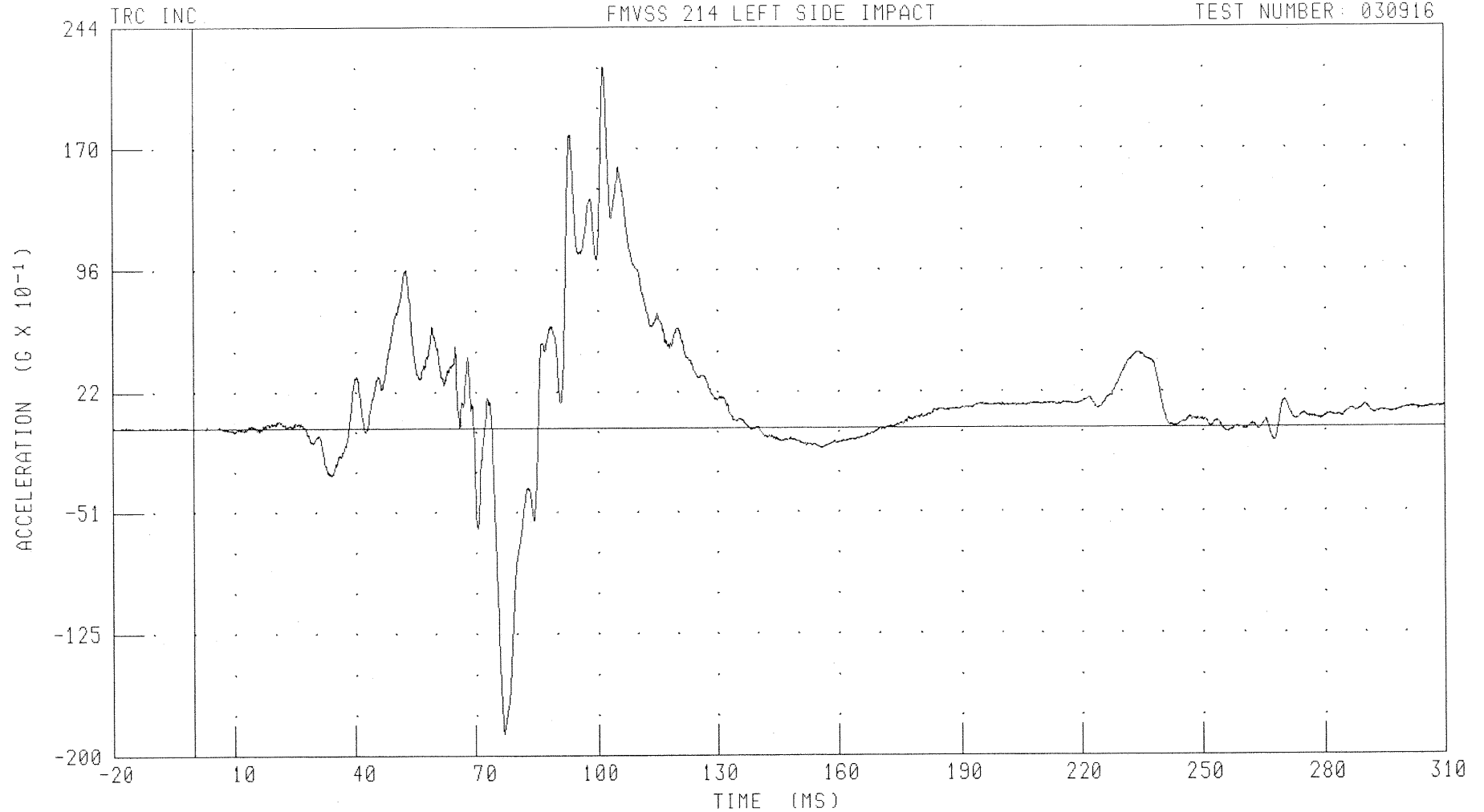
B-36

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER HEAD Z-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: HEDZG4 FILTER: CH. CLASS 1000

PEAK DATA: 21.97 G @ 101.52 MS; -18.67 G @ 76.96 MS

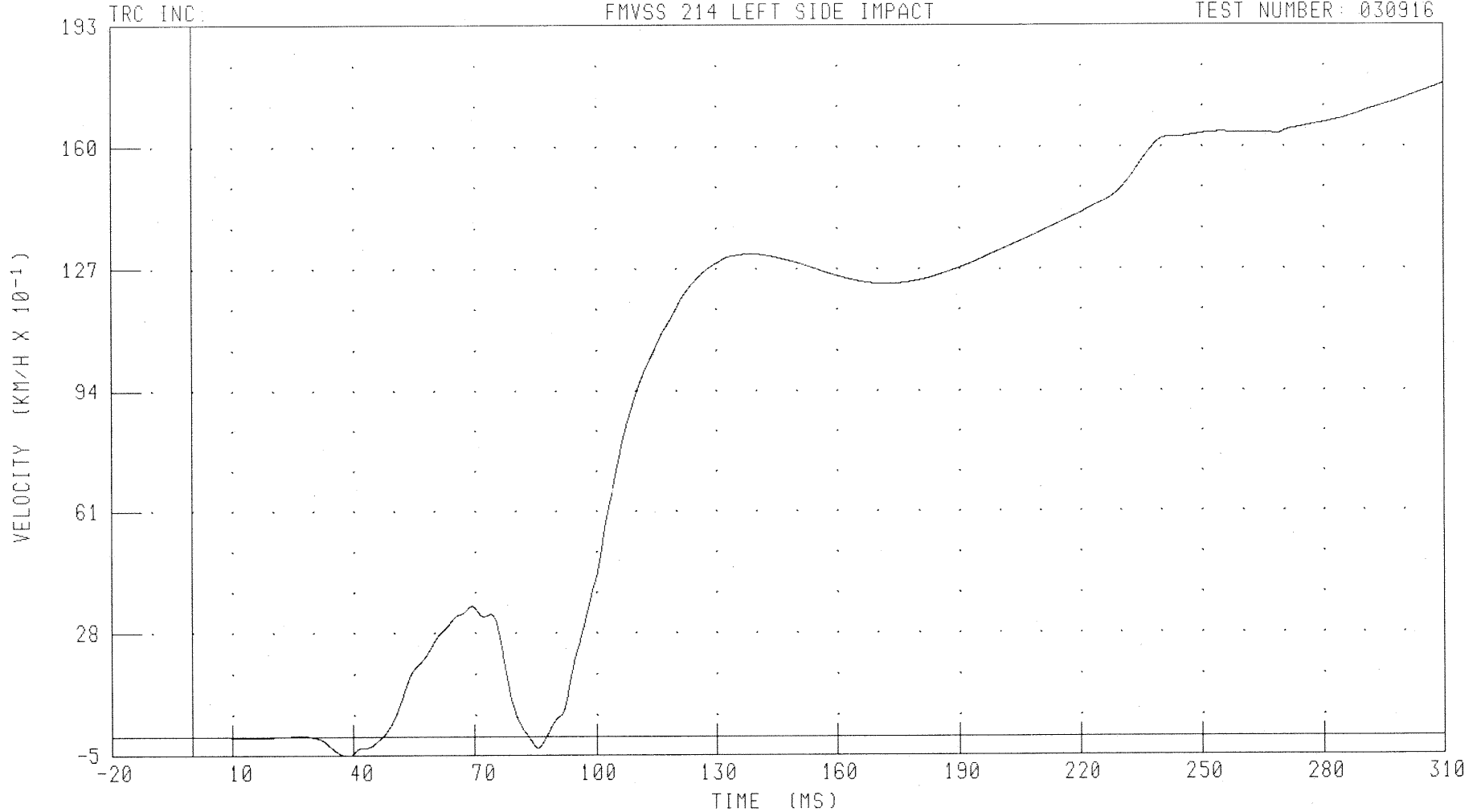
B-37

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER HEAD Z-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: FEDZV4

FILTER: CH. CLASS 180

PEAK DATA: 17.71 KM/H @ 310.00 MS; -0.53 KM/H @ 38.48 MS

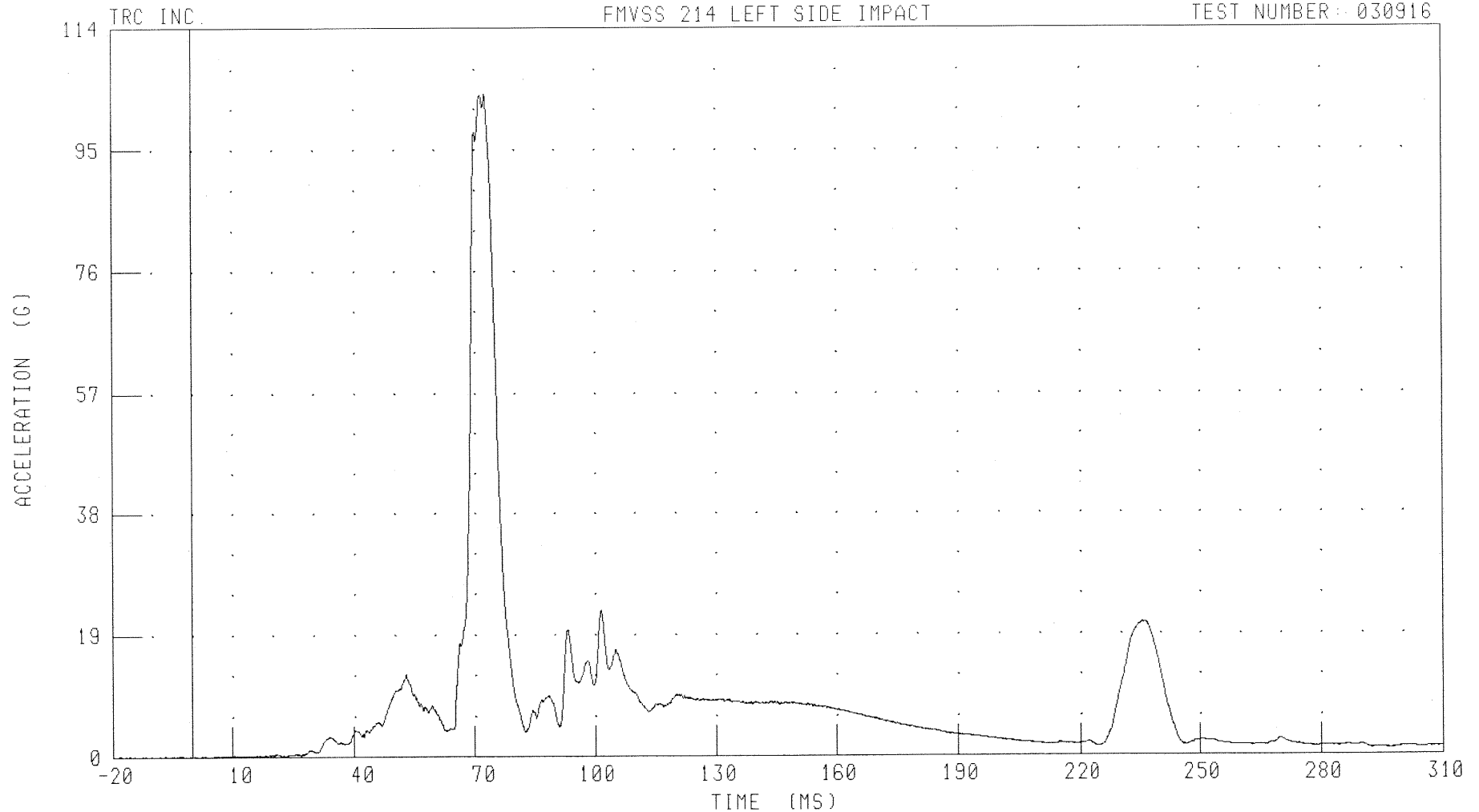
B-38

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER HEAD RESULTANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: HEDRG4

FILTER: CH. CLASS 1000

PEAK DATA: 103.74 G @ 72.72 MS; 0.01 G @ -16.48 MS

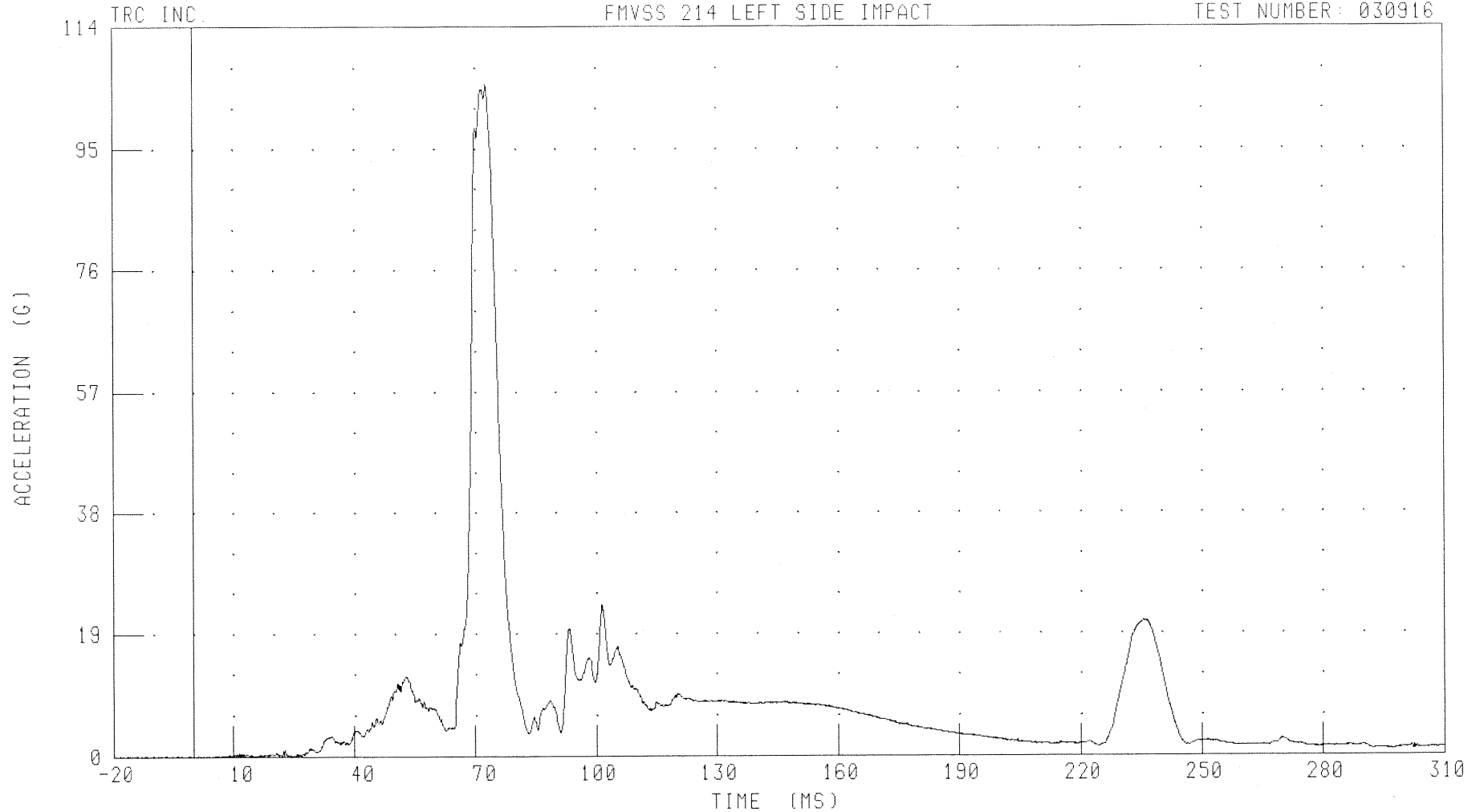
B-39

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER HEAD RESULTANT REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: HEDRR4 FILTER: CH. CLASS 1000

PEAK DATA: 105.24 G @ 72.80 MS; 19.12 G @ 230.12 MS

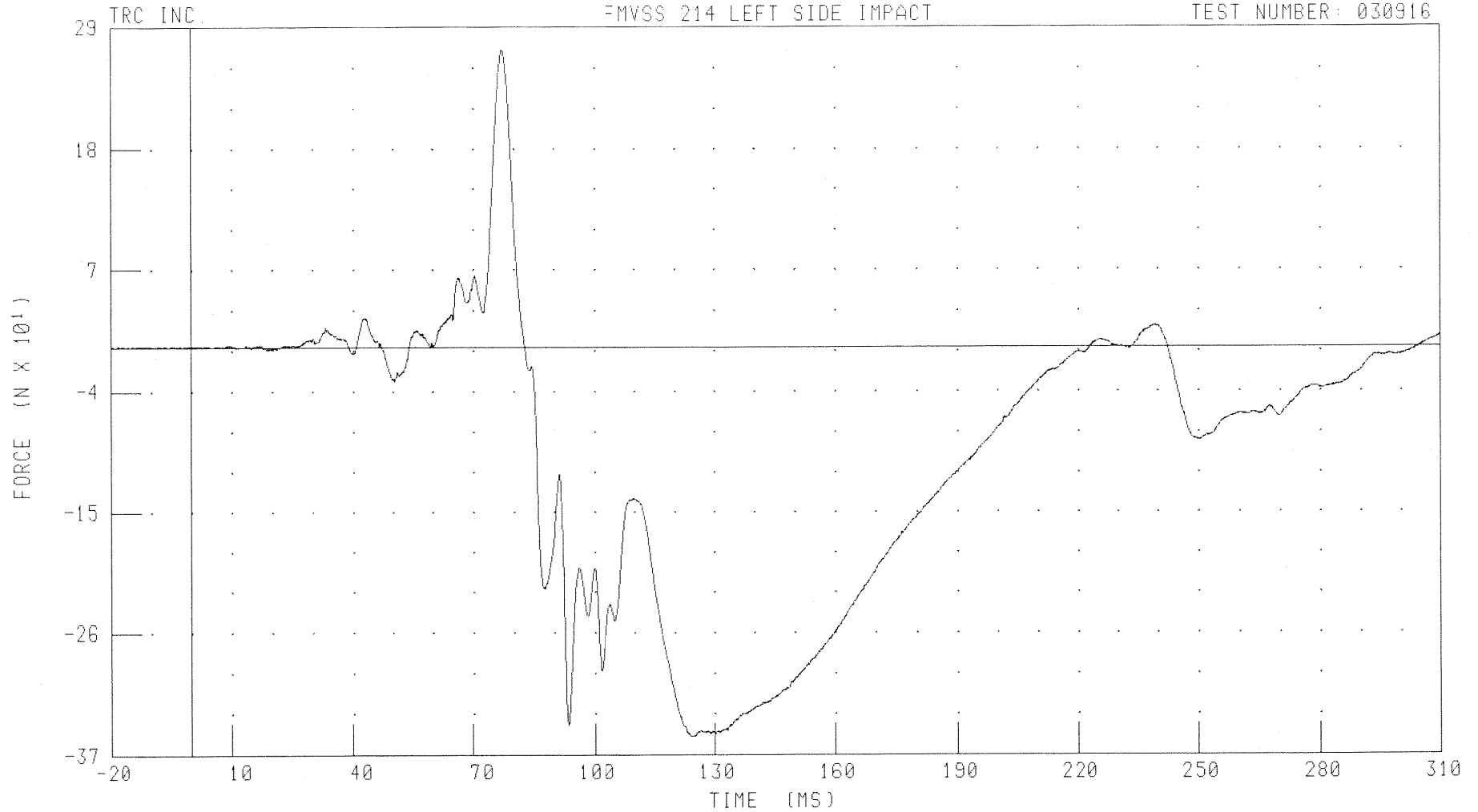
B-40

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER NECK X-AXIS SHEAR FORCE

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: NEKXF4 FILTER: CH. CLASS 1000

PEAK DATA: 269.46 N @ 77.04 MS; -353.79 N @ 124.56 MS

B-41

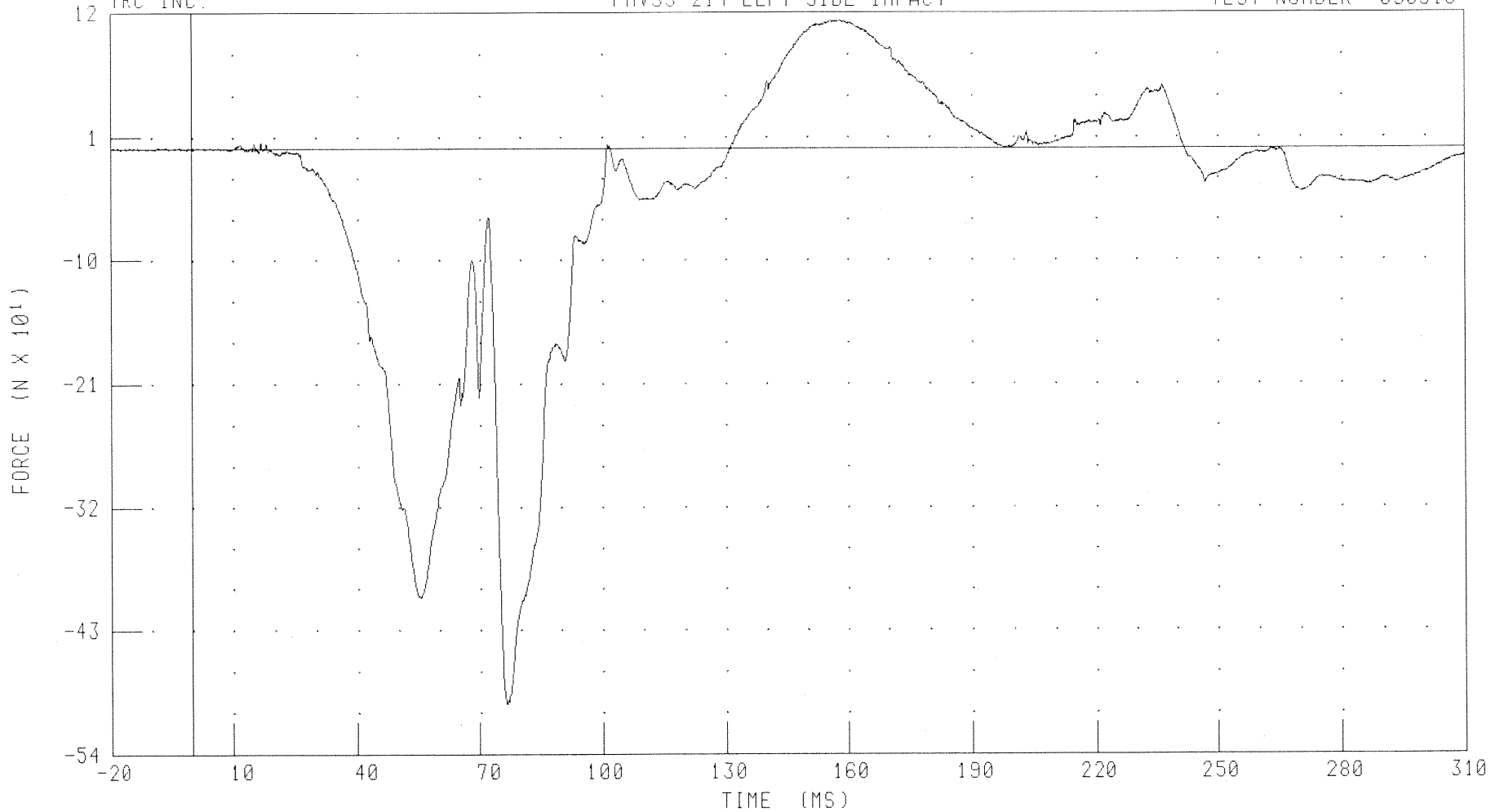
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER NECK Y-AXIS SHEAR FORCE

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: NEKYF4

FILTER: CH. CLASS 1000

PEAK DATA: 112.98 N @ 155.92 MS; -496.75 N @ 76.72 MS

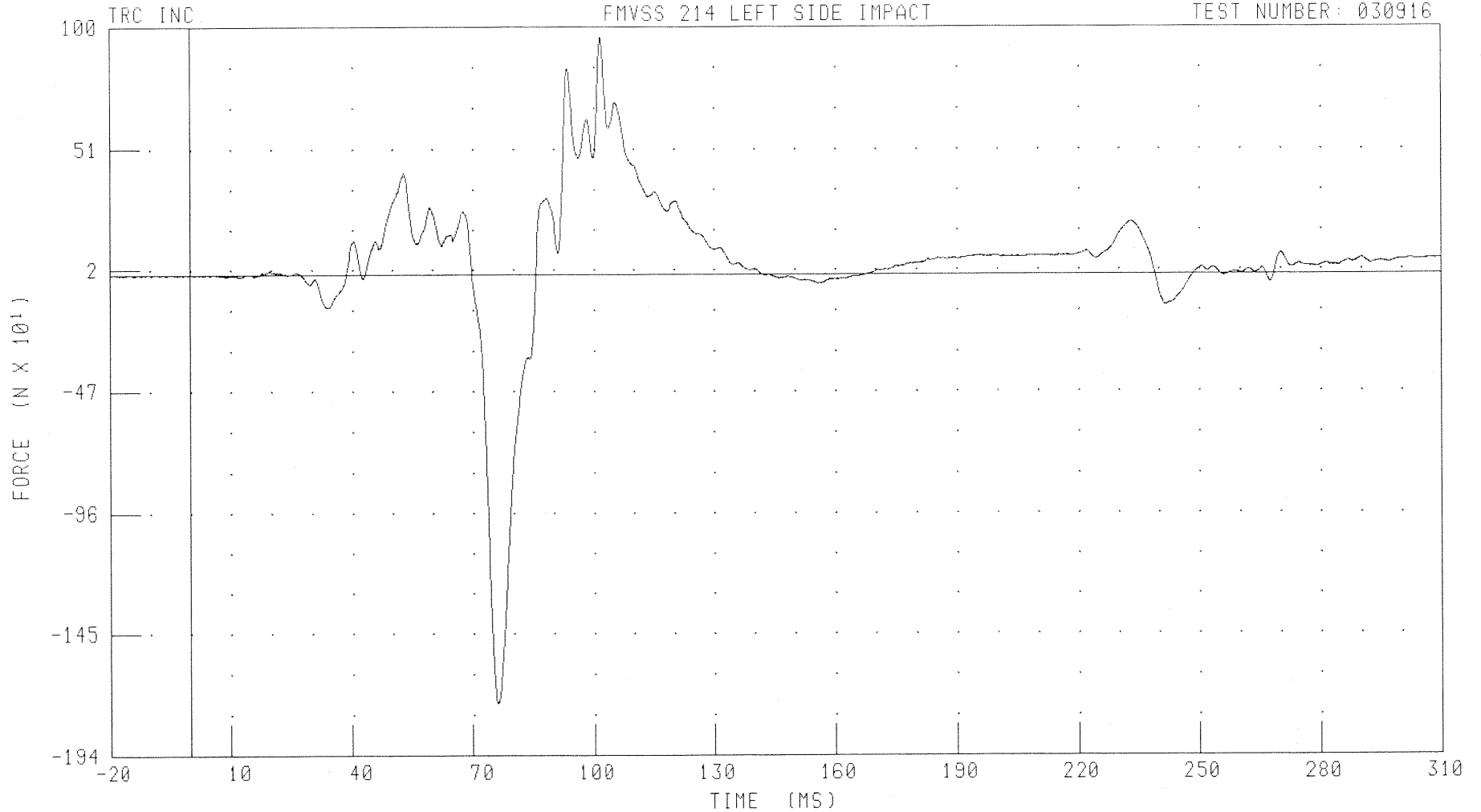
B-42

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER NECK Z-AXIS AXIAL FORCE

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



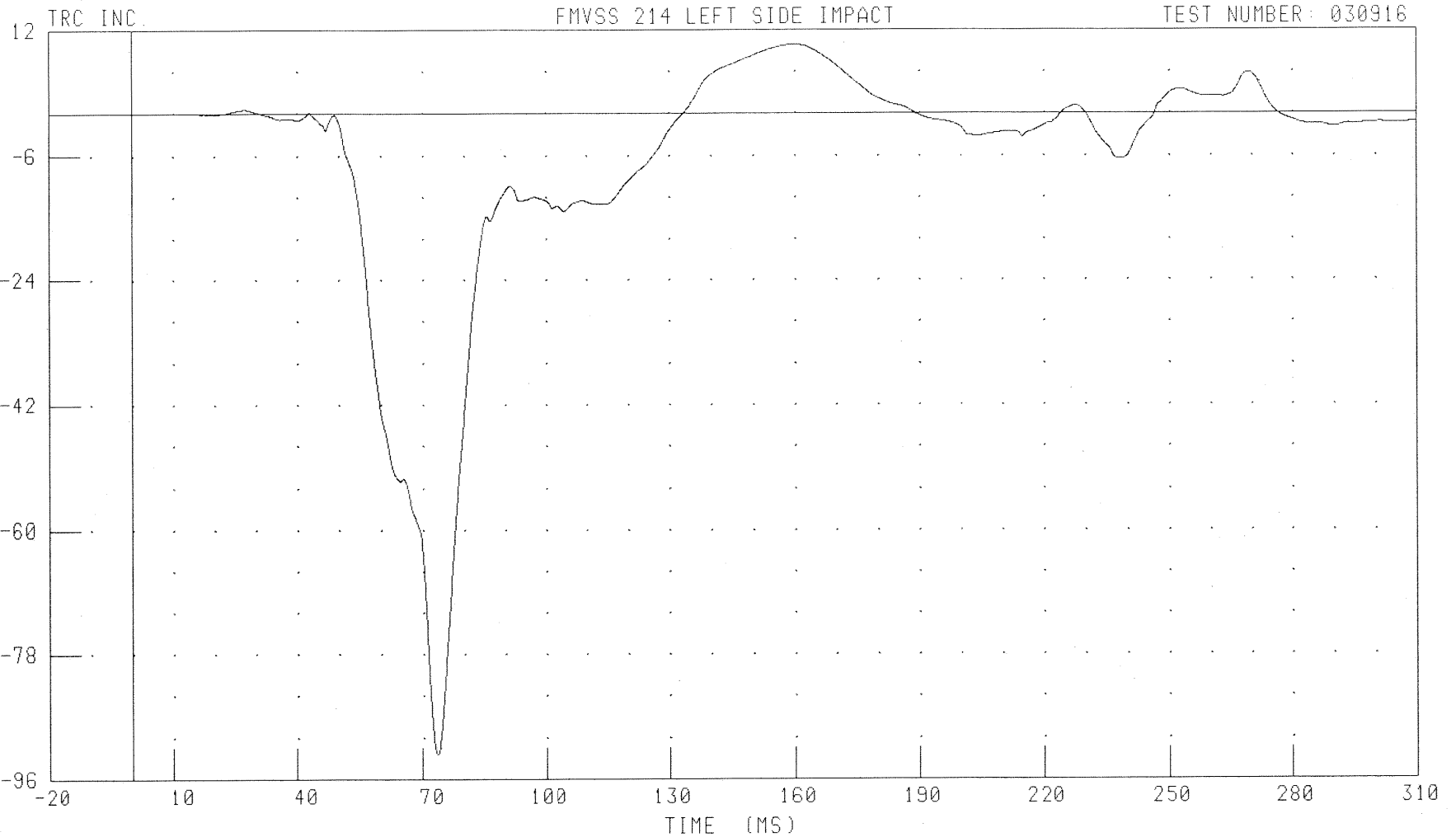
CHANNEL: NEKZF4 FILTER: CH. CLASS 1000

PEAK DATA: 960.68 N @ 101.76 MS; -1728.18 N @ 76.16 MS

B-43

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER NECK MOMENT ABOUT X AXIS



CHANNEL: NEKXM4 FILTER: CH. CLASS 600

PEAK DATA: 9.91 N.M @ 159.60 MS; -92.42 N.M @ 73.60 MS

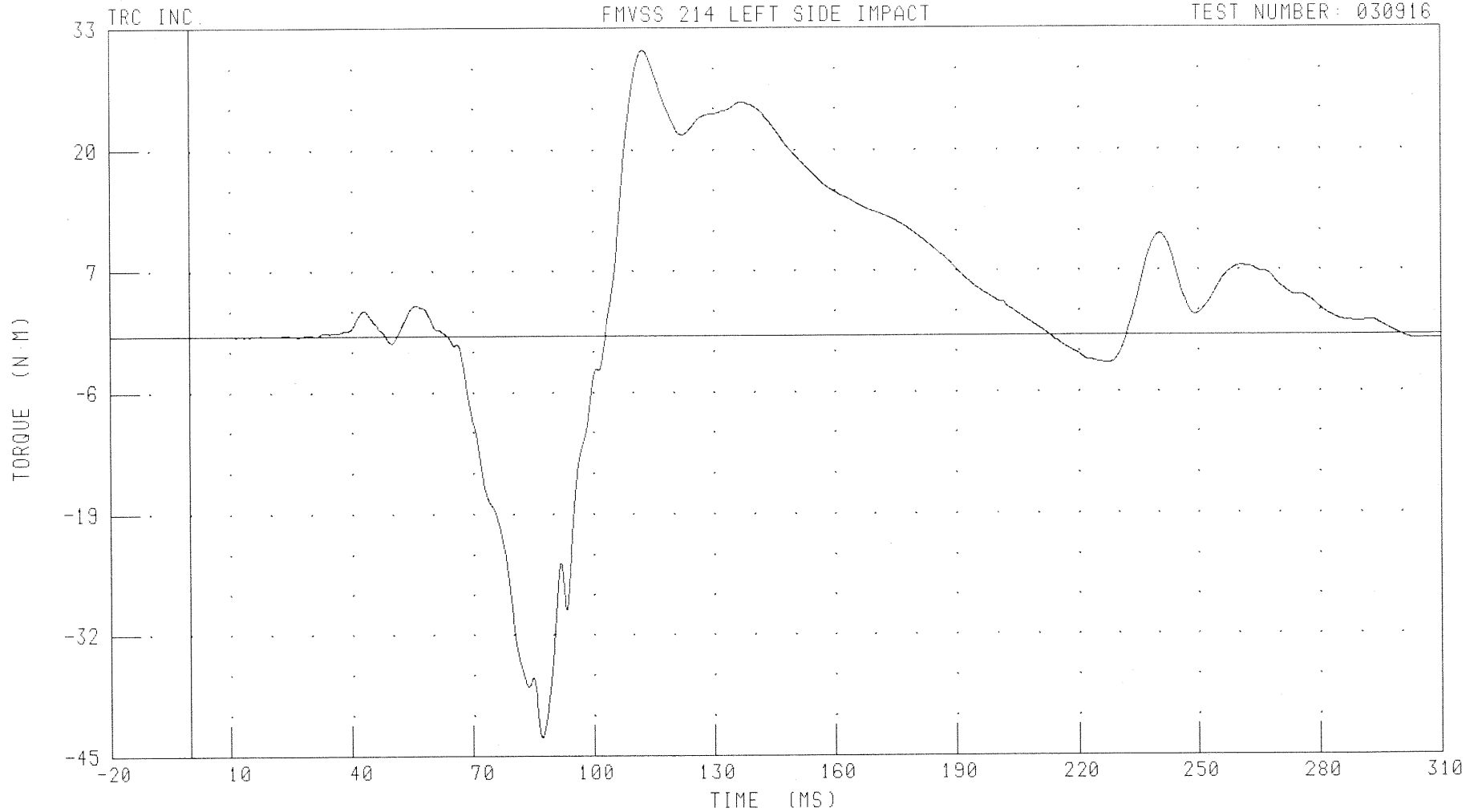
B-44

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER NECK MOMENT ABOUT Y AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: NEKYM4 FILTER: CH. CLASS 600

PEAK DATA: 30.62 N·M @ 112.56 MS; -43.03 N·M @ 87.20 MS

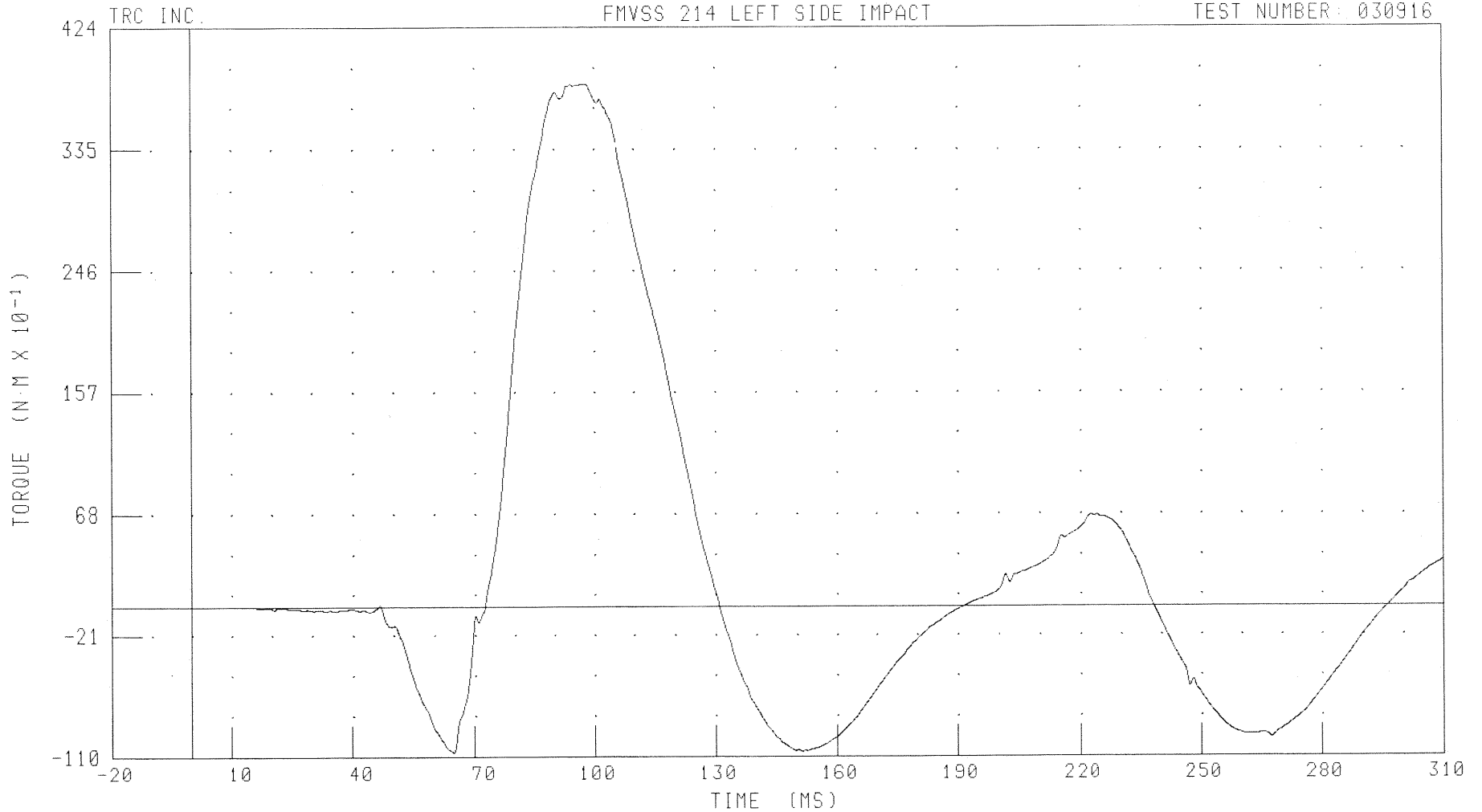
B-45

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER NECK MOMENT ABOUT Z AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: NEKZM4

FILTER: CH. CLASS 600

PEAK DATA: 38.28 N·M @ 98.00 MS; -10.69 N·M @ 64.72 MS

B-46

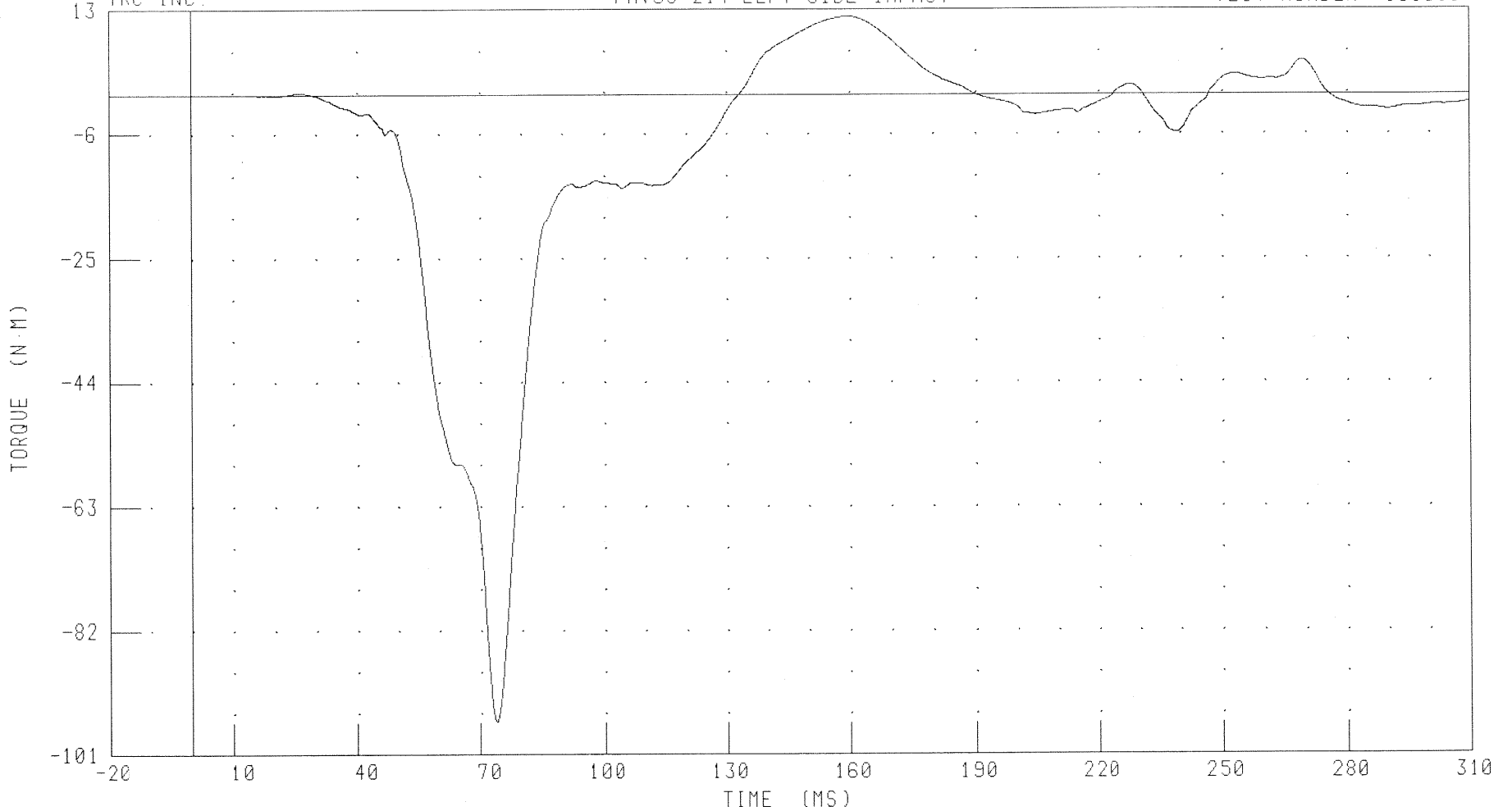
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER NECK OCCIPITAL CONDYLE MOMENT ABOUT X AXIS

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: NK0XM4

FILTER: CH. CLASS 600

PEAK DATA: 11.89 N·M @ 159.44 MS; -96.05 N·M @ 74.00 MS

B-47

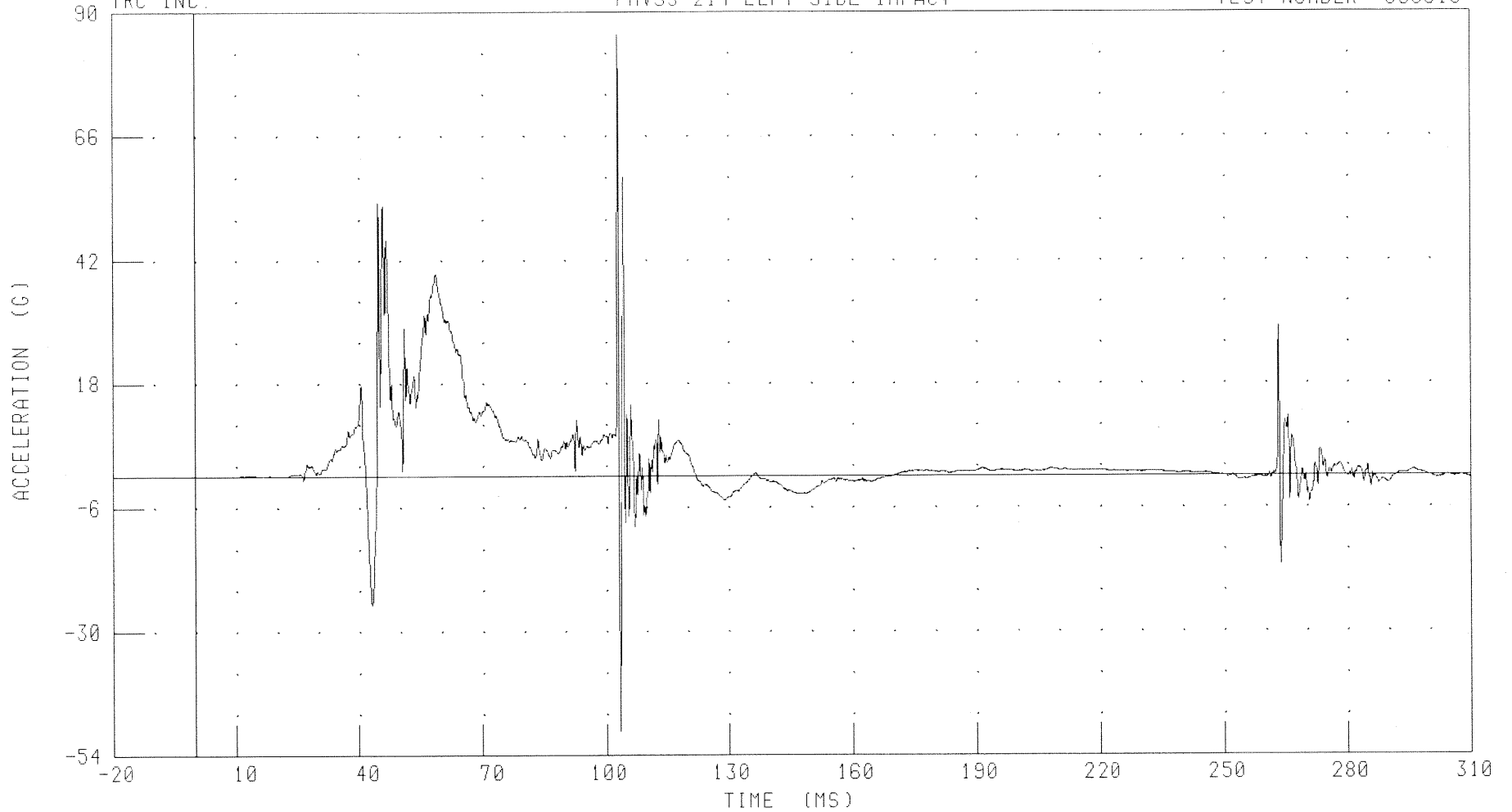
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER UPPER RIB Y-AXIS ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LURYG4

FILTER: CH. CLASS 1000

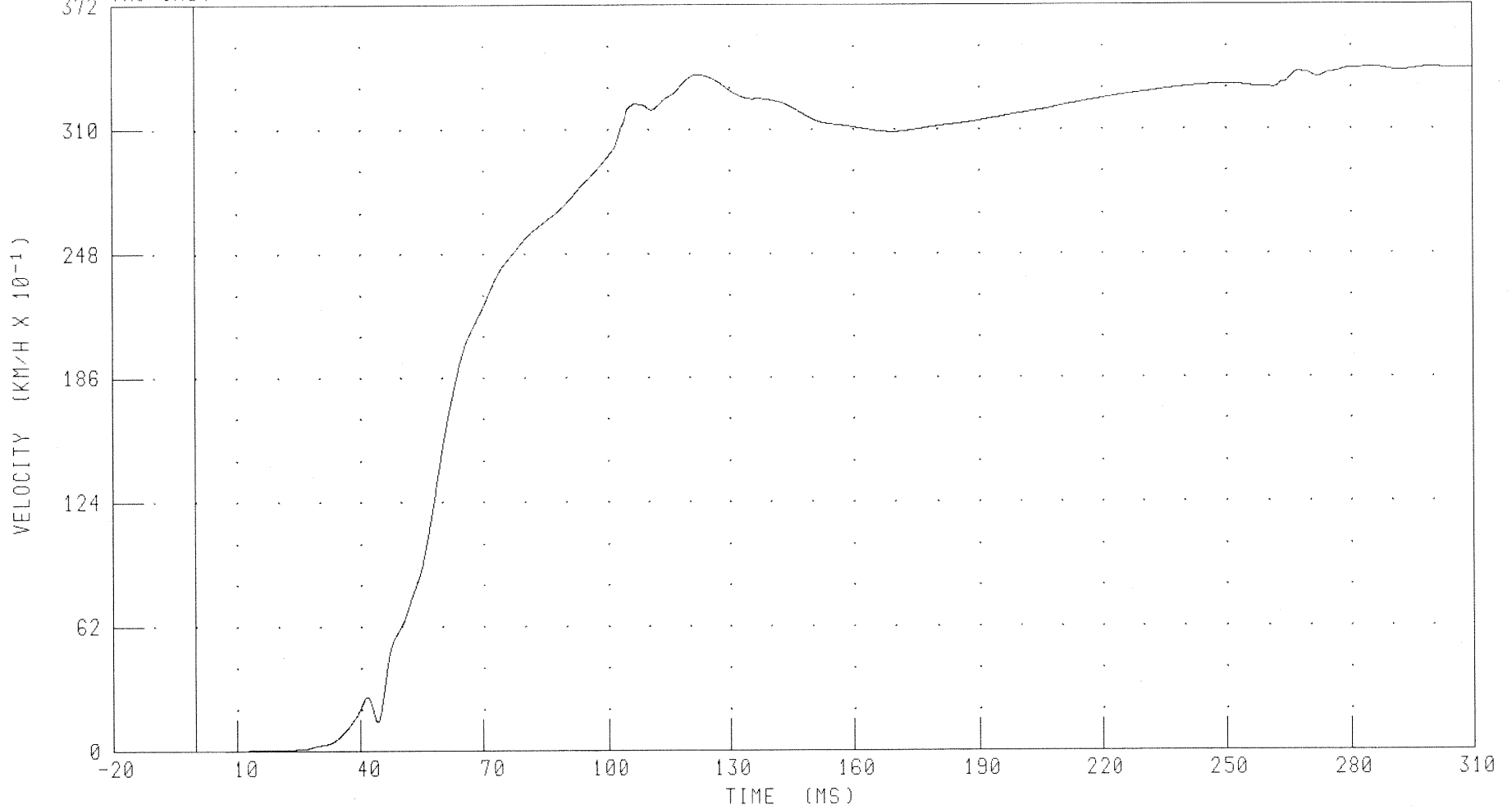
PEAK DATA: 85.49 G @ 102.96 MS, -49.28 G @ 103.44 MS

B-48

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER UPPER RIB Y-AXIS VELOCITY

TRC INC. FMVSS 214 LEFT SIDE IMPACT TEST NUMBER: 030916



CHANNEL: LURYV4

FILTER: CH. CLASS 180

PEAK DATA: 34.08 KM/H @ 285.20 MS; 0.00 KM/H @ 0.00 MS

B-49

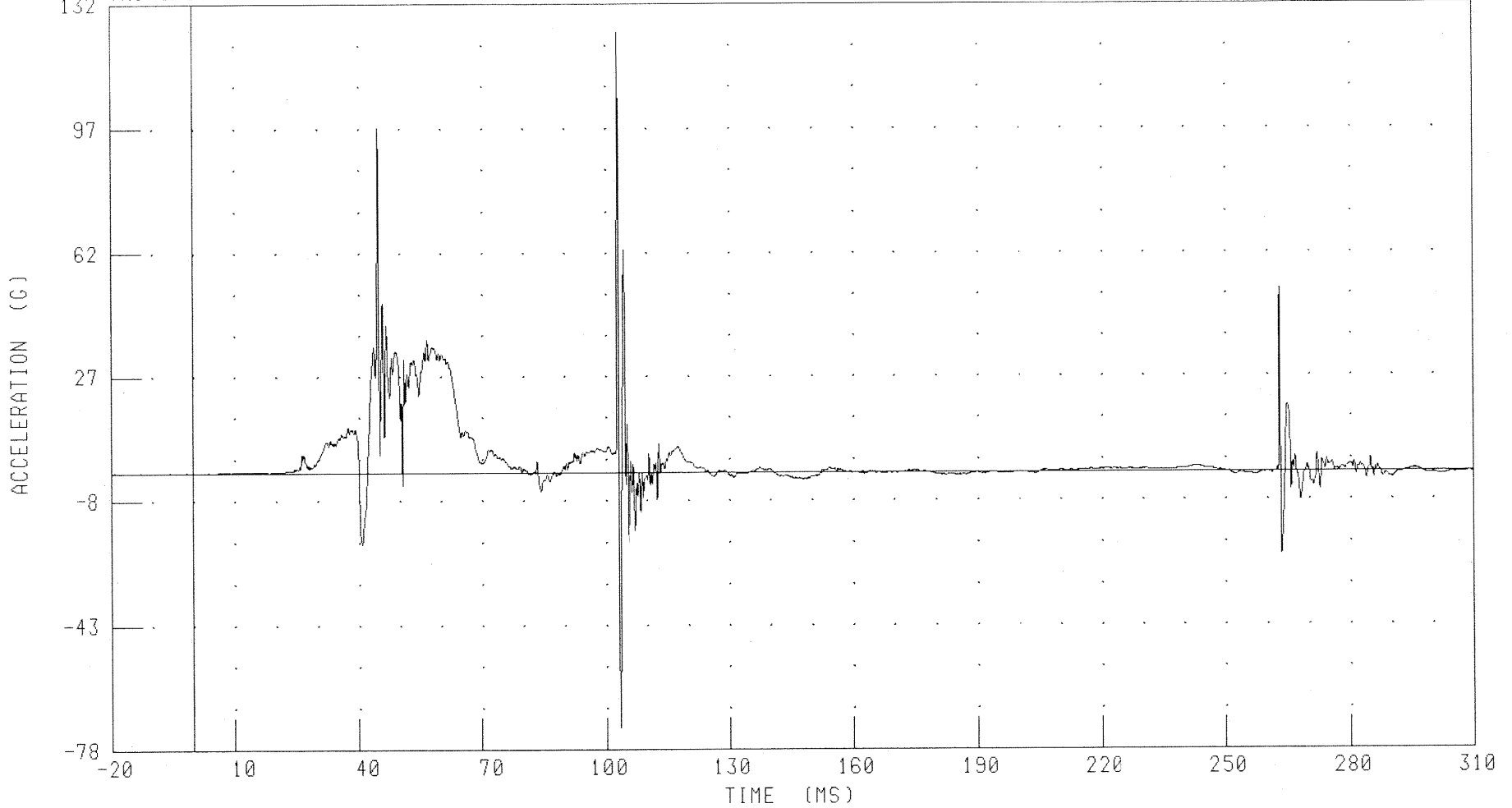
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER LOWER RIB Y-AXIS ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LLRYG4

FILTER: CH. CLASS 1000

PEAK DATA: 124.08 G @ 102.88 MS; -71.77 G @ 103.44 MS

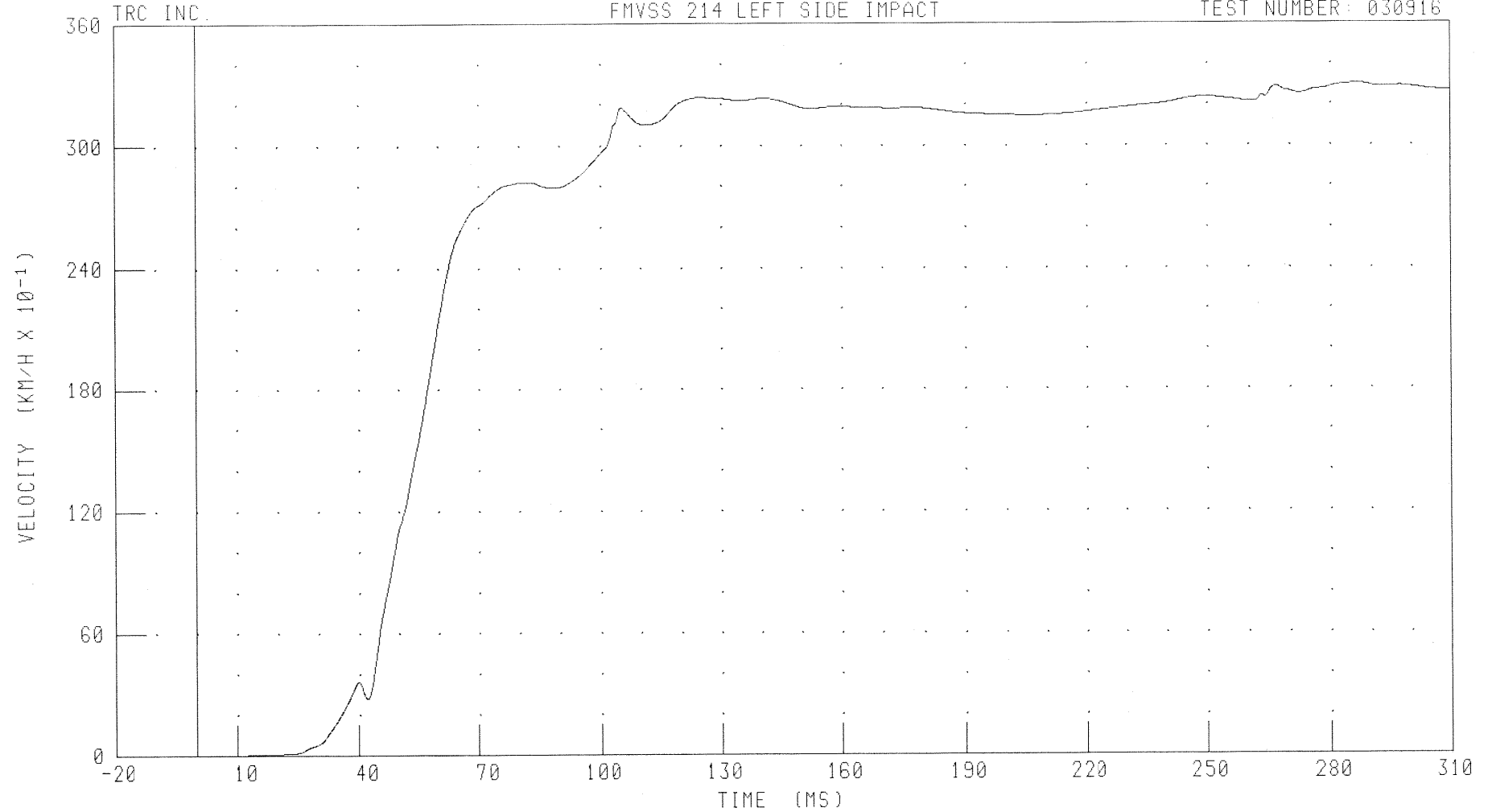
B-50

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER LOWER RIB Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LLRYV4

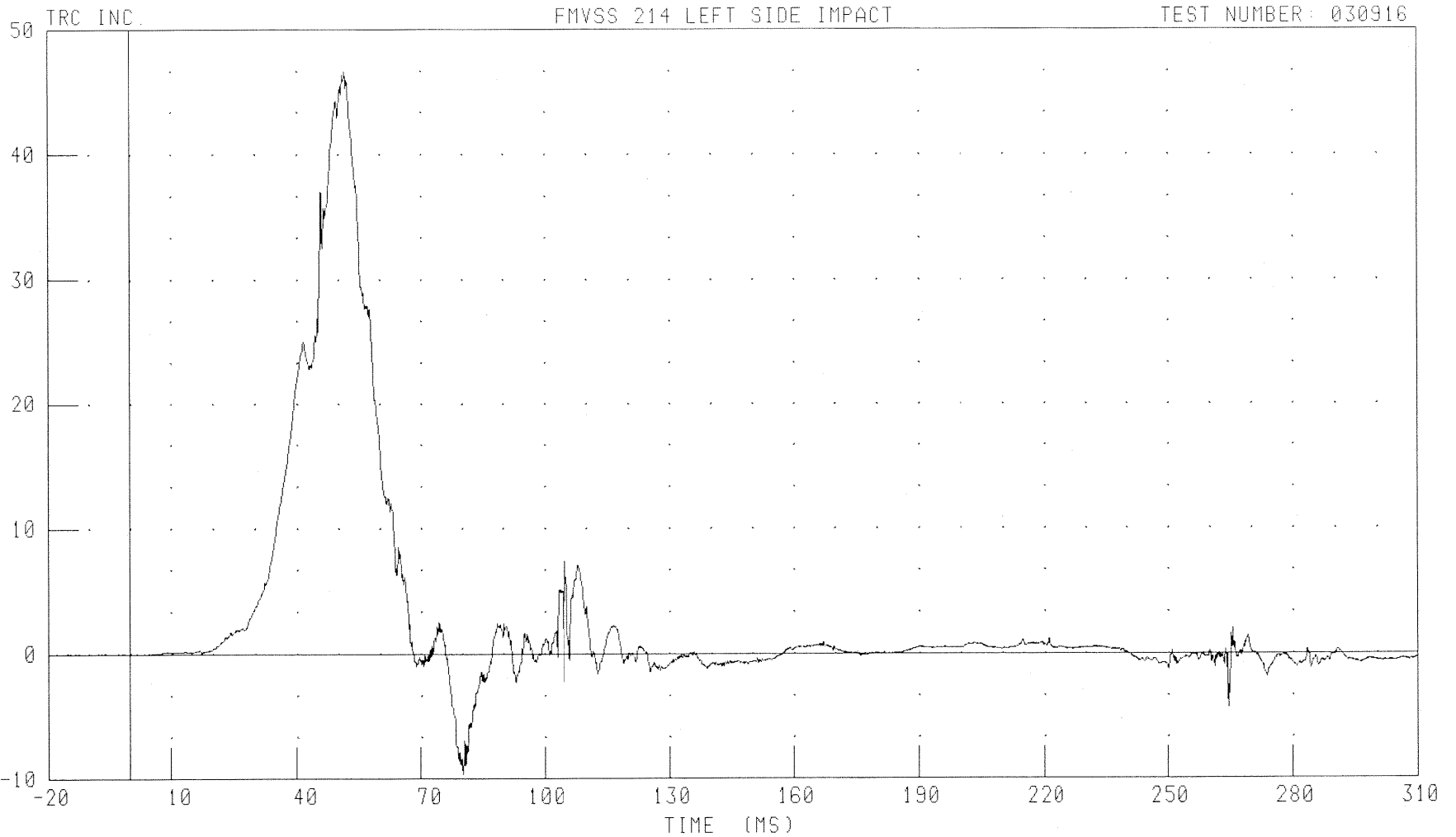
FILTER: CH. CLASS 180

PEAK DATA: 33.02 KM/H @ 287.12 MS; 0.00 KM/H @ 0.48 MS

B-51

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER LOWER SPINE Y-AXIS ACCELERATION



CHANNEL: T12YC4 FILTER: CH. CLASS 1000

PEAK DATA: 46.64 G @ 51.68 MS; -9.67 G @ 80.32 MS

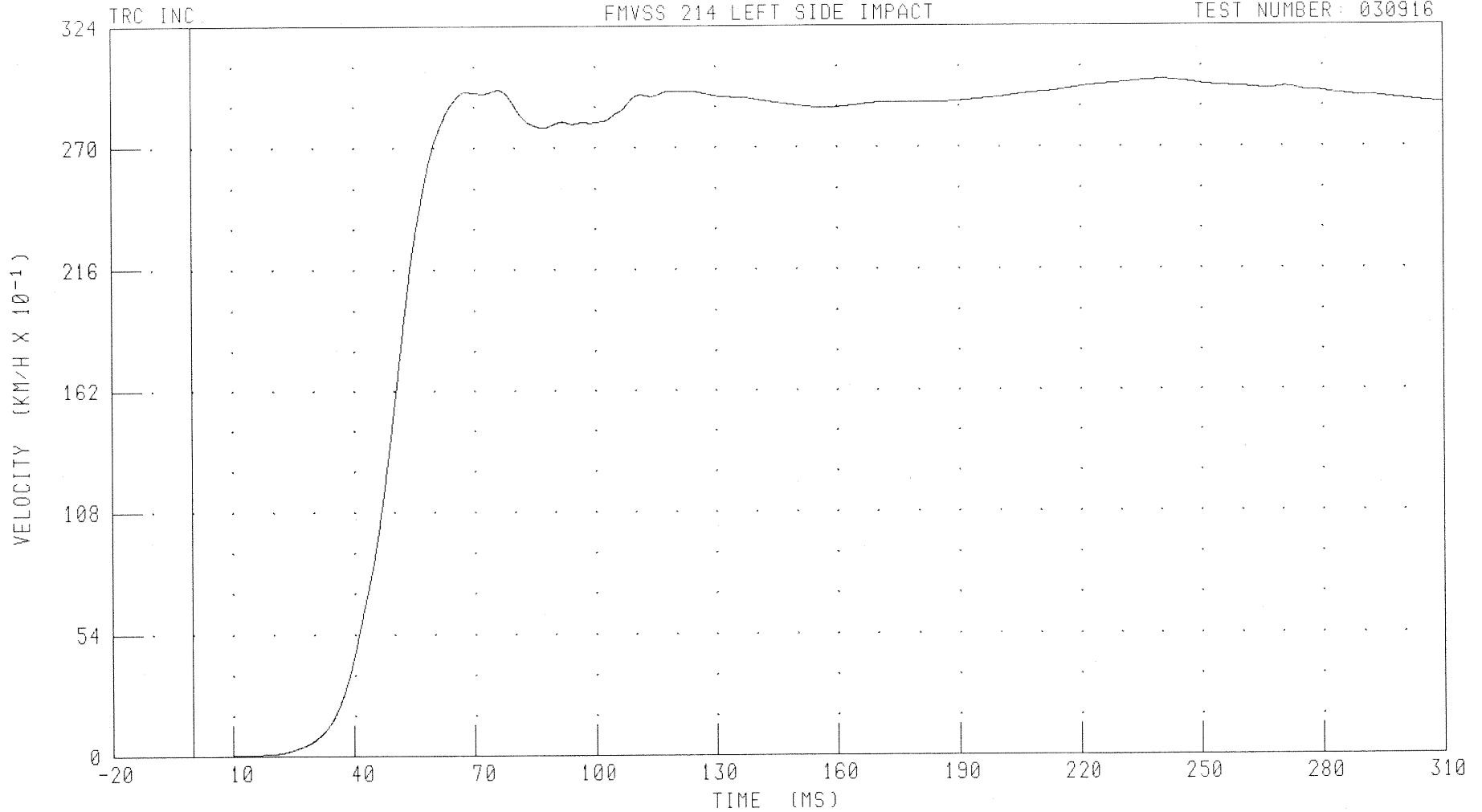
B-52

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER LOWER SPINE Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: T12YV4 FILTER: CH. CLASS 180

PEAK DATA: 29.97 KM/H @ 240.48 MS; 0.00 KM/H @ 0.00 MS

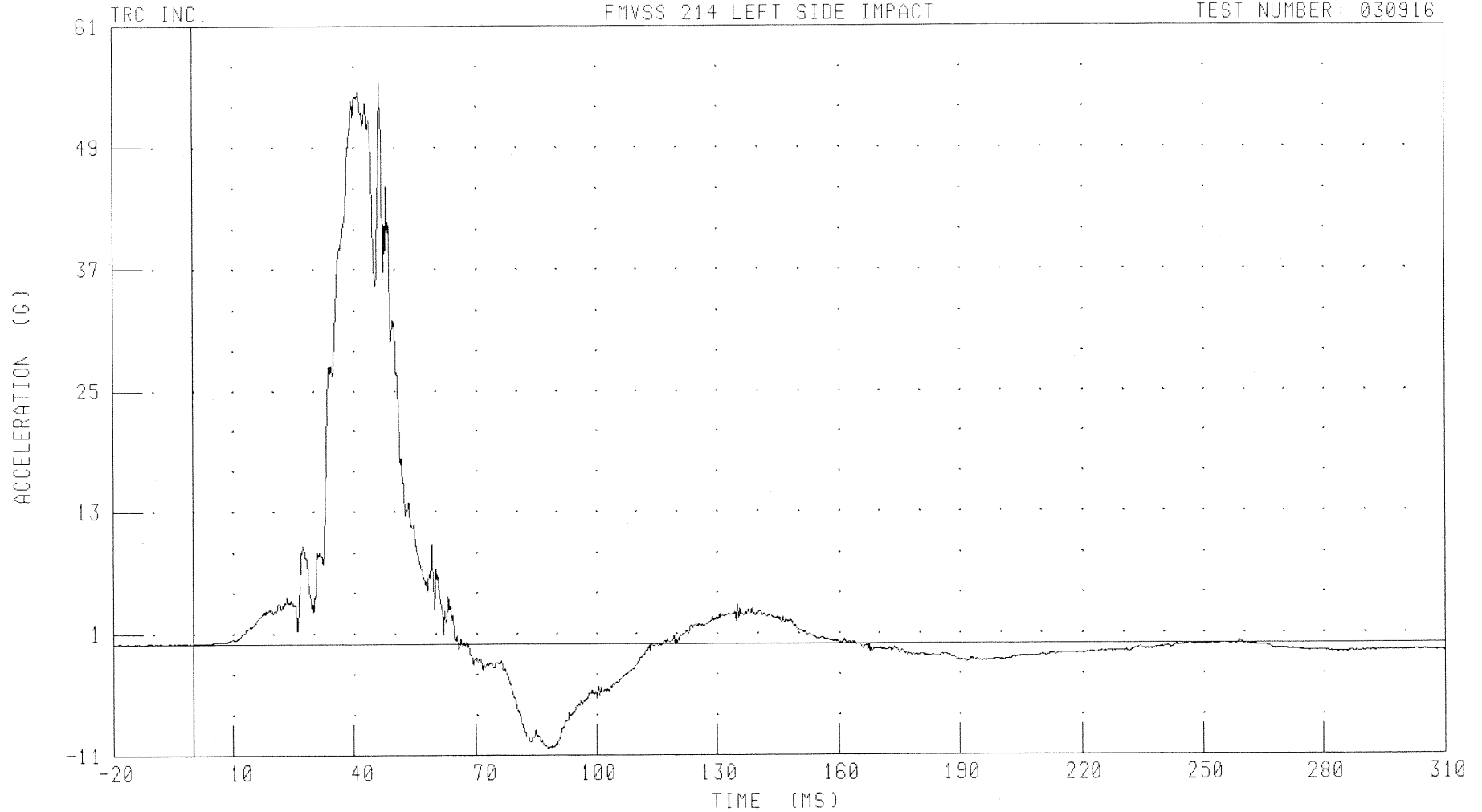
B-53

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER PELVIS Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: PEVYG4

FILTER: CH. CLASS 1000

PEAK DATA: 55.46 G @ 46.48 MS; -10.39 G @ 87.84 MS

B-54

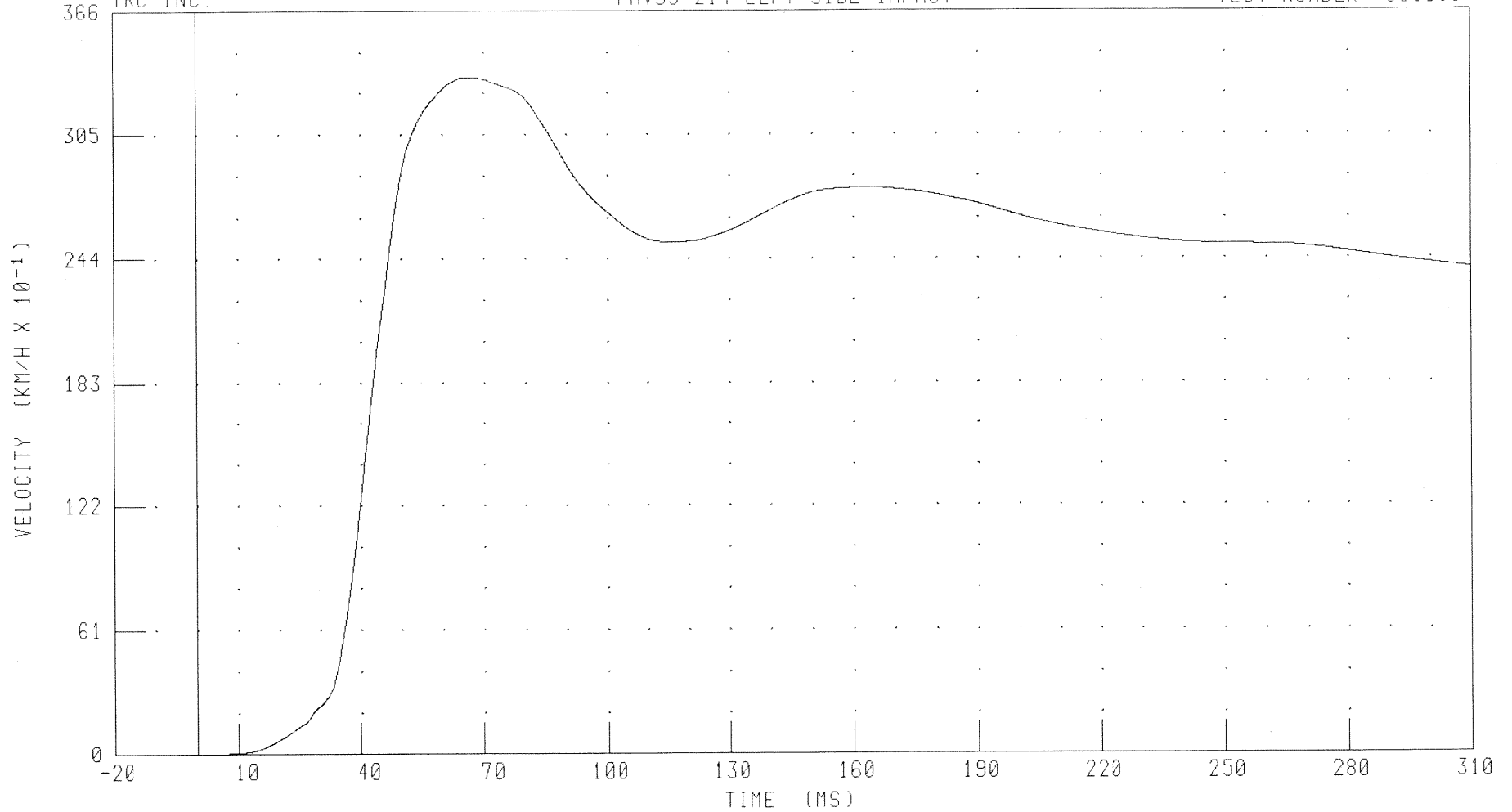
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER PELVIS Y-AXIS VELOCITY

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: PEVYV4

FILTER: CH. CLASS 180

PEAK DATA: 33.31 KM/H @ 65.60 MS; 0.00 KM/H @ 0.00 MS

B-55

030916

Driver and Passenger Dummy Instrumentation Plots

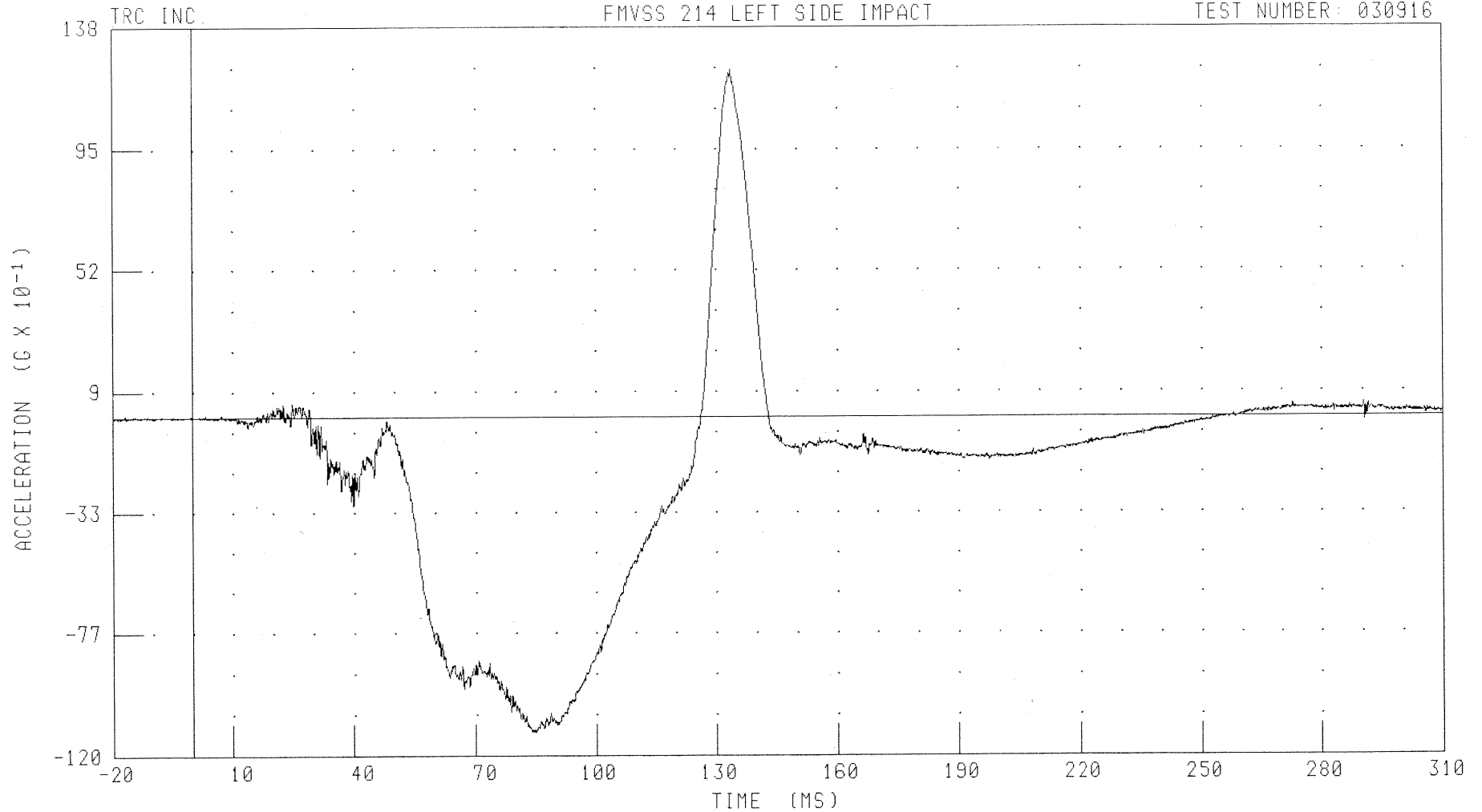
Acceleration Data - Filter Class 1000 - Redundant

Integration Data - Filter Class 180 - Redundant

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER HEAD X-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: HEDXR1

FILTER: CH. CLASS 1000

PEAK DATA: 12.33 G @ 133.92 MS; -11.21 G @ 84.80 MS

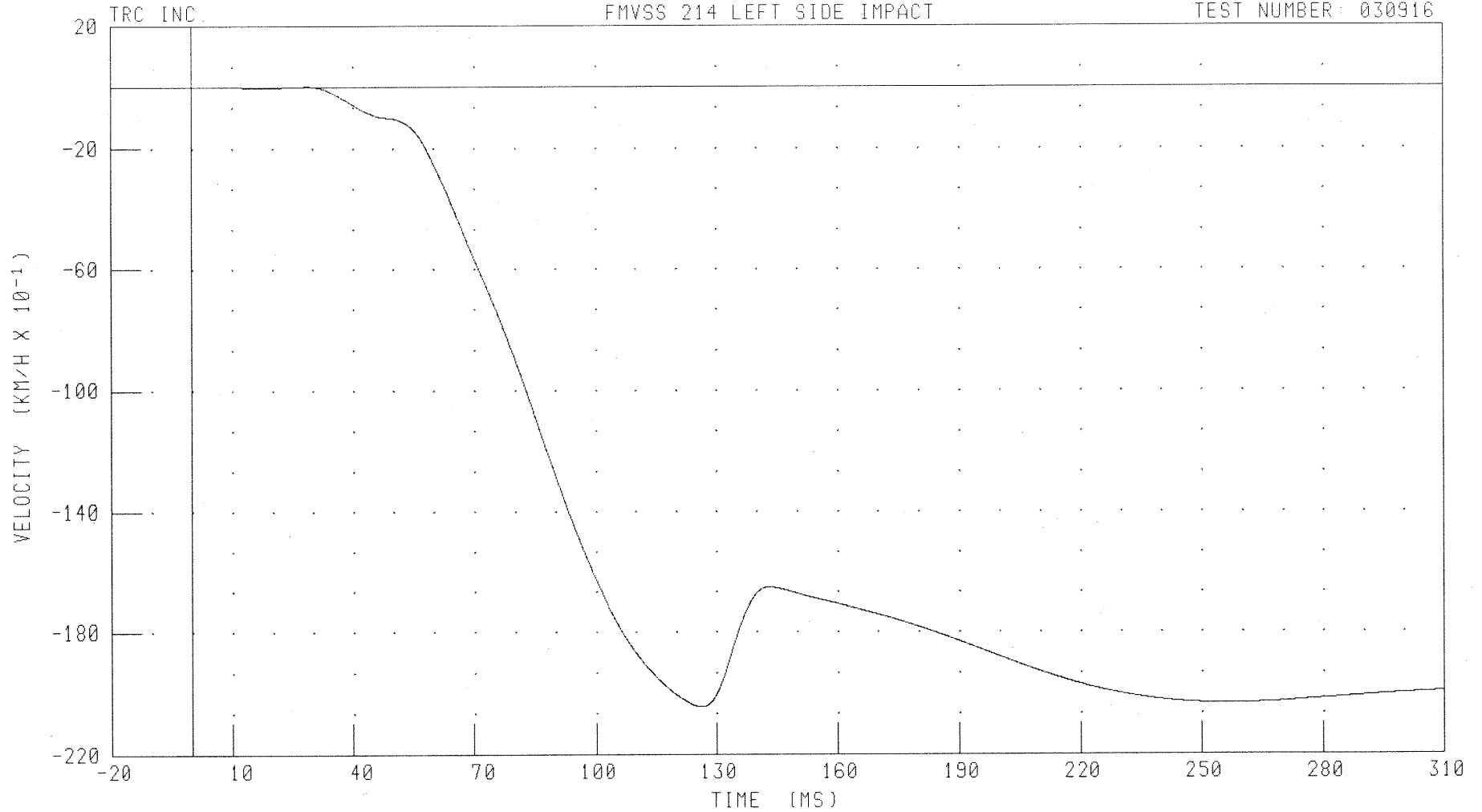
B-57

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER HEAD X-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: HEDXVI FILTER: CH. CLASS 180

PEAK DATA: 0.03 KM/H @ 28.80 MS; -20.46 KM/H @ 126.32 MS

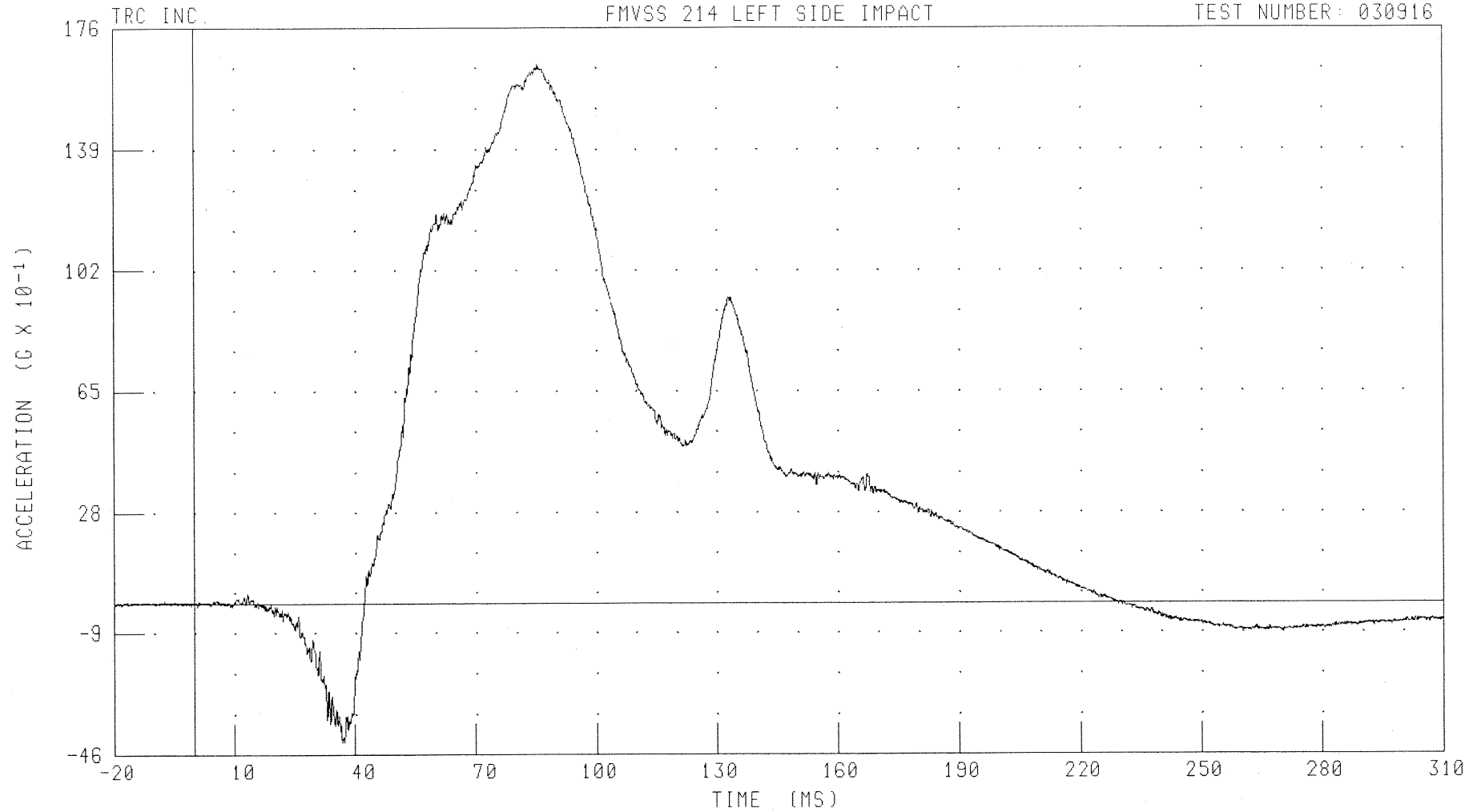
B-58

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER HEAD Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: HEDYR1 FILTER: CH. CLASS 1000

PEAK DATA: 16.48 G @ 85.44 MS; -4.22 G @ 36.80 MS

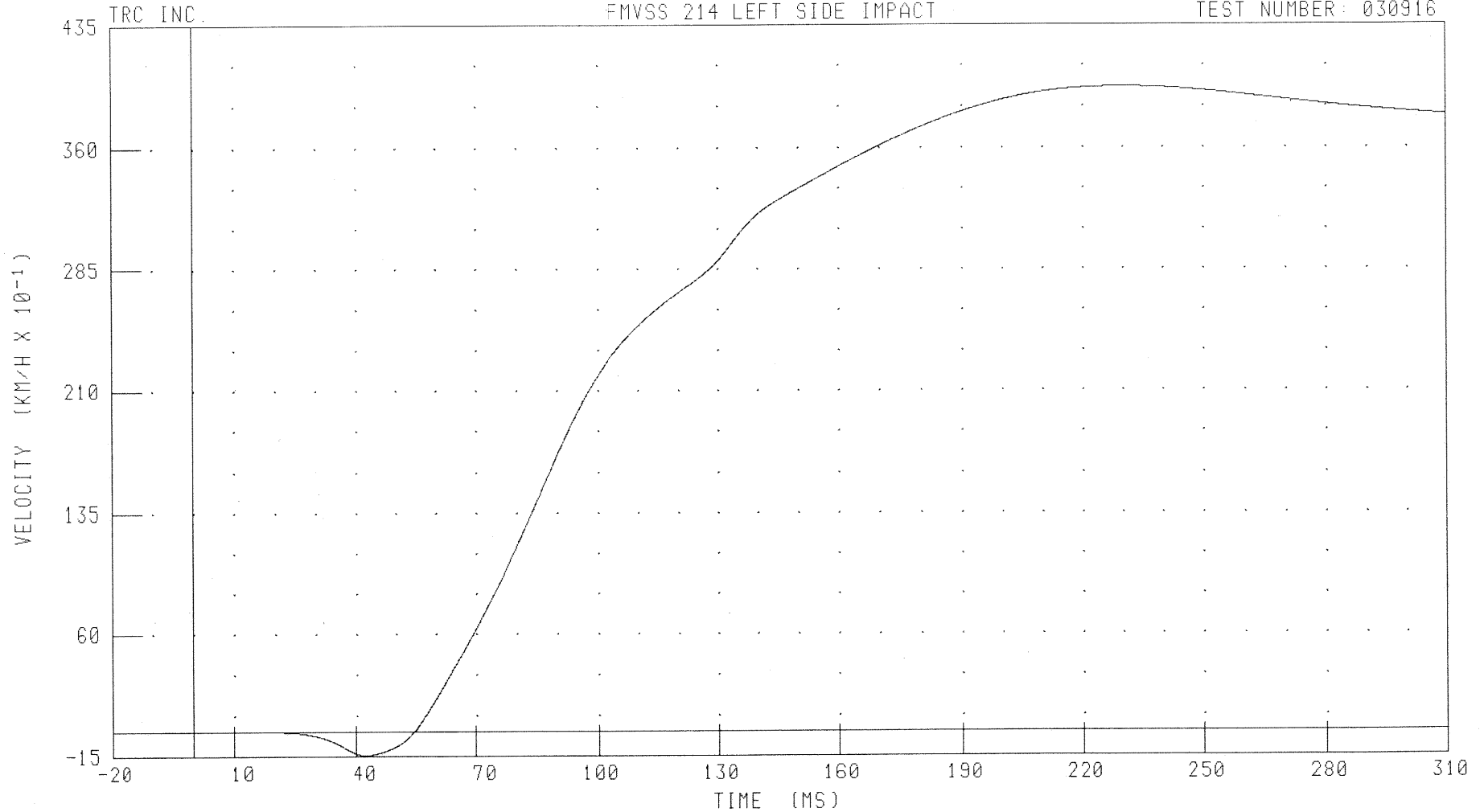
B-59

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER HEAD Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: HEDYVI FILTER: CH. CLASS 180

PEAK DATA: 39.69 KM/H @ 229.84 MS; -1.45 KM/H @ 42.32 MS

B-60

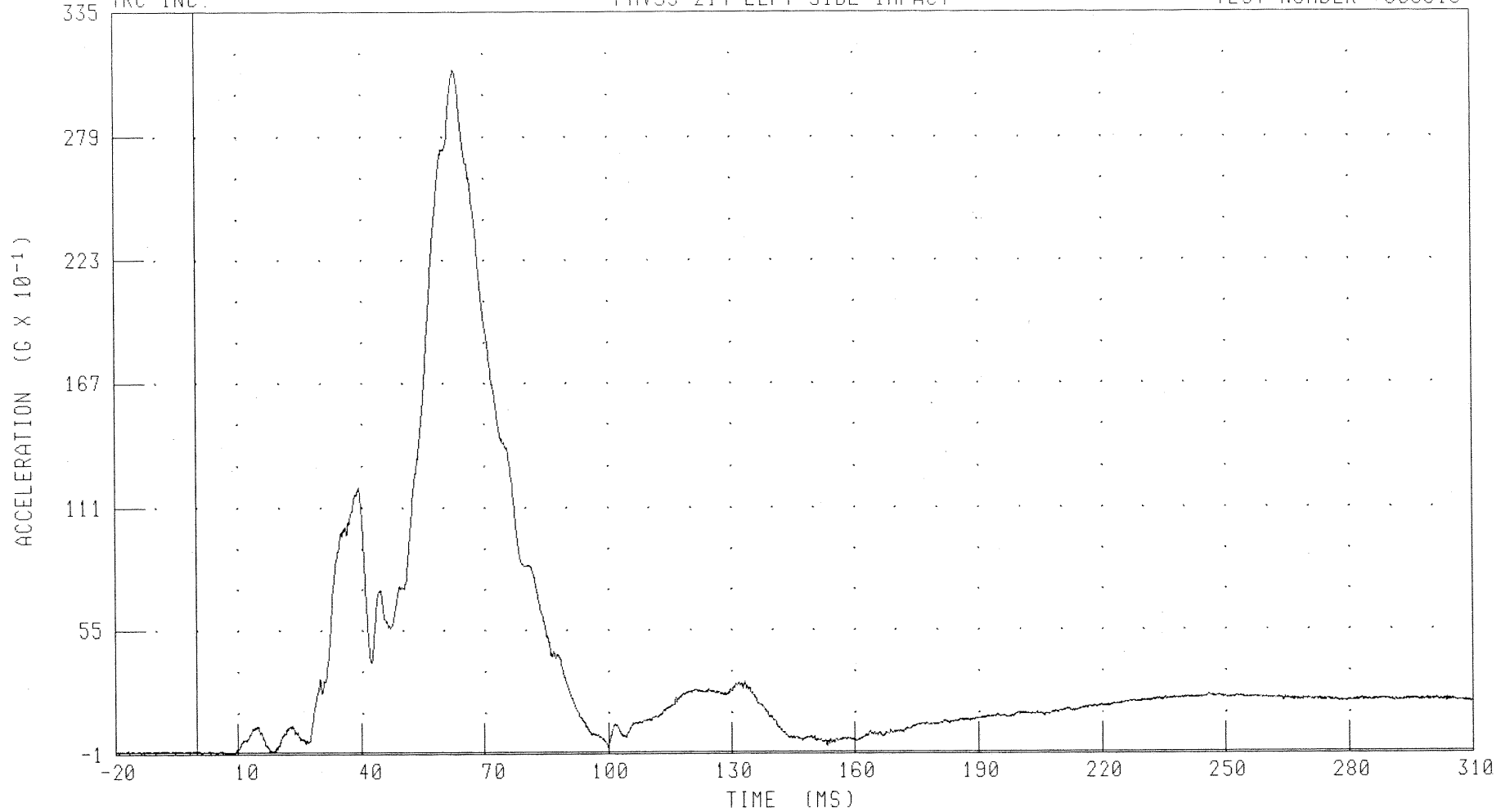
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER HEAD Z-AXIS REDUNDANT ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



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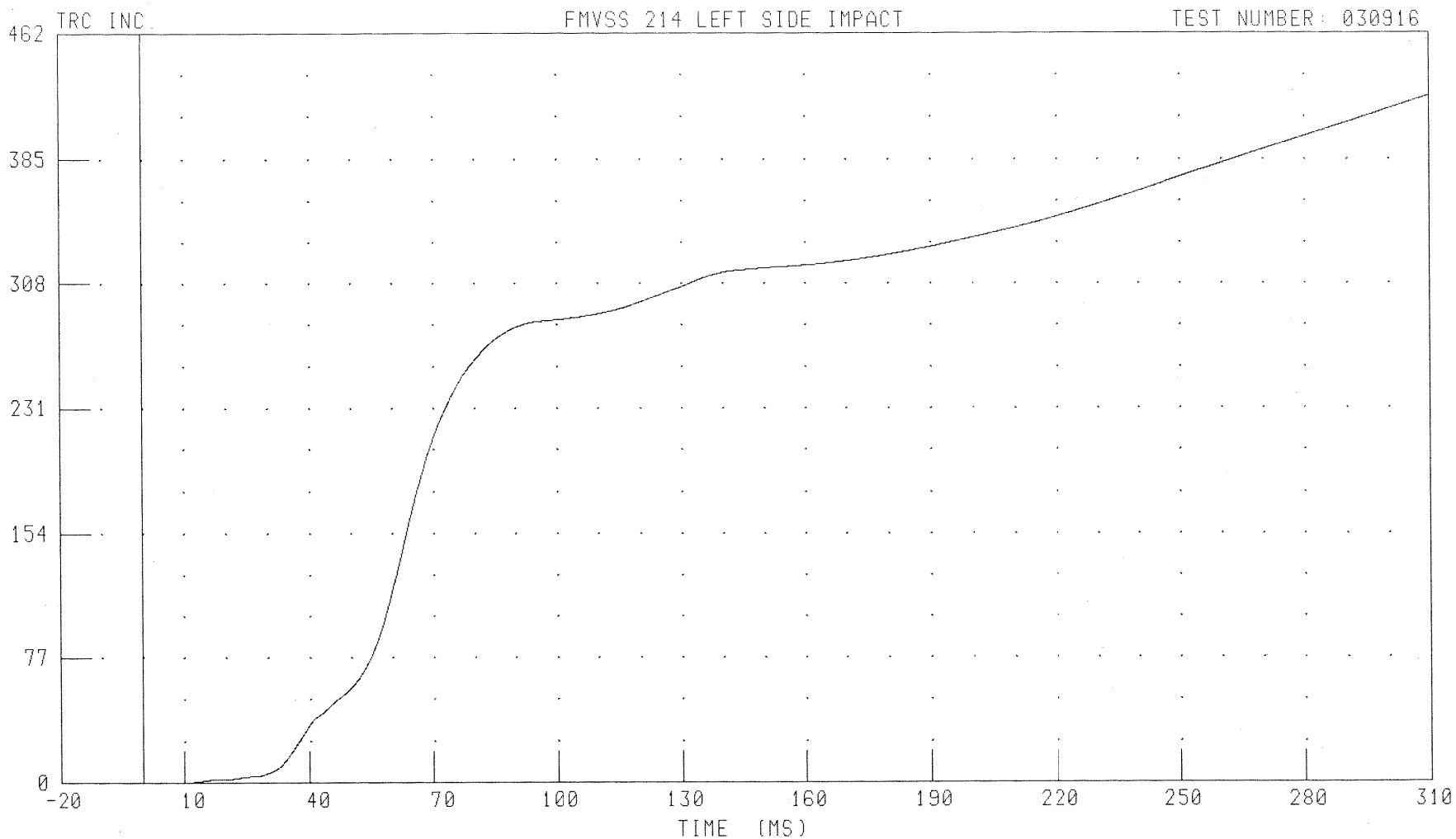
030916

CHANNEL: HEDZR1

FILTER: CH. CLASS 1000

PEAK DATA: 30.89 G @ 62.88 MS, -0.12 G @ 8.56 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER HEAD Z-AXIS REDUNDANT VELOCITY



CHANNEL: HEDZVI

FILTER: CH. CLASS 180

PEAK DATA: 42.33 KM/H @ 310.00 MS; -0.01 KM/H @ 9.28 MS

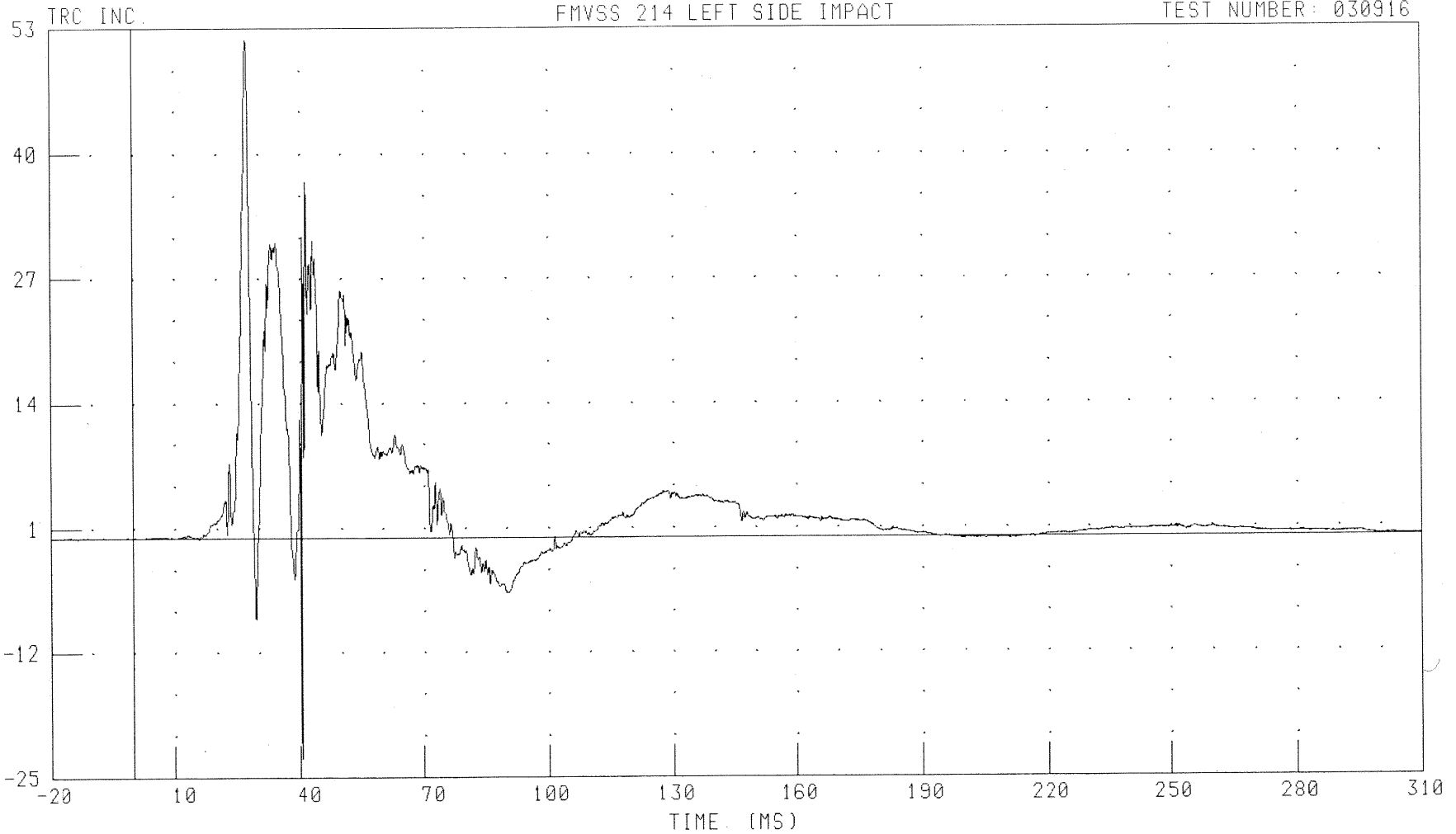
B-62

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LURYR1 FILTER: CH. CLASS 1000

PEAK DATA: 51.77 G @ 27.28 MS; -23.00 G @ 40.32 MS

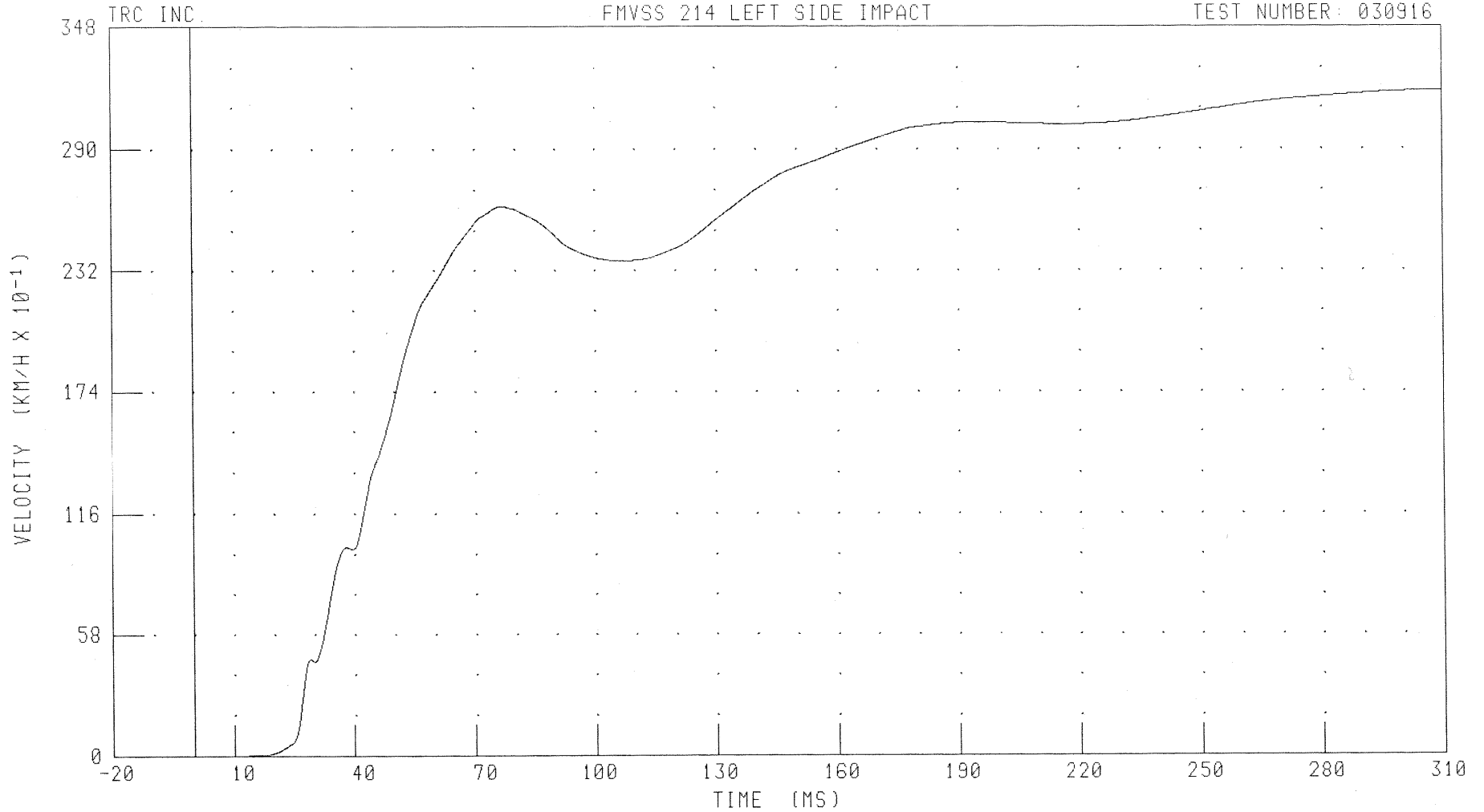
B-63

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER UPPER RIB Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



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030916

CHANNEL: LURYVI

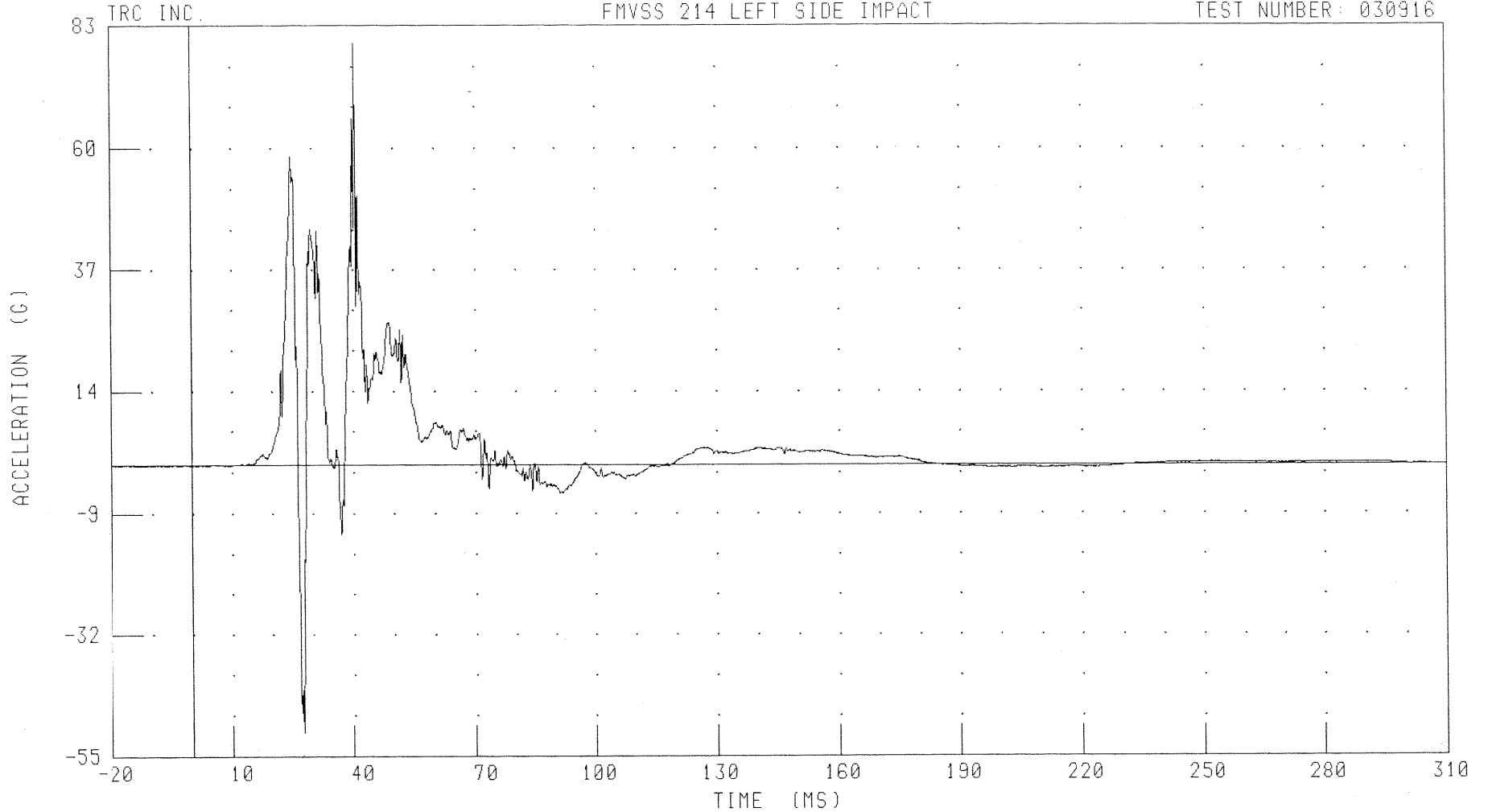
FILTER: CH. CLASS 180

PEAK DATA: 31.72 KM/H @ 310.00 MS; 0.00 KM/H @ 1.68 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER LOWER RIB Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LLRYR1 FILTER: CH. CLASS 1000

PEAK DATA: 79.67 G @ 40.64 MS; -50.57 G @ 27.68 MS

B-65

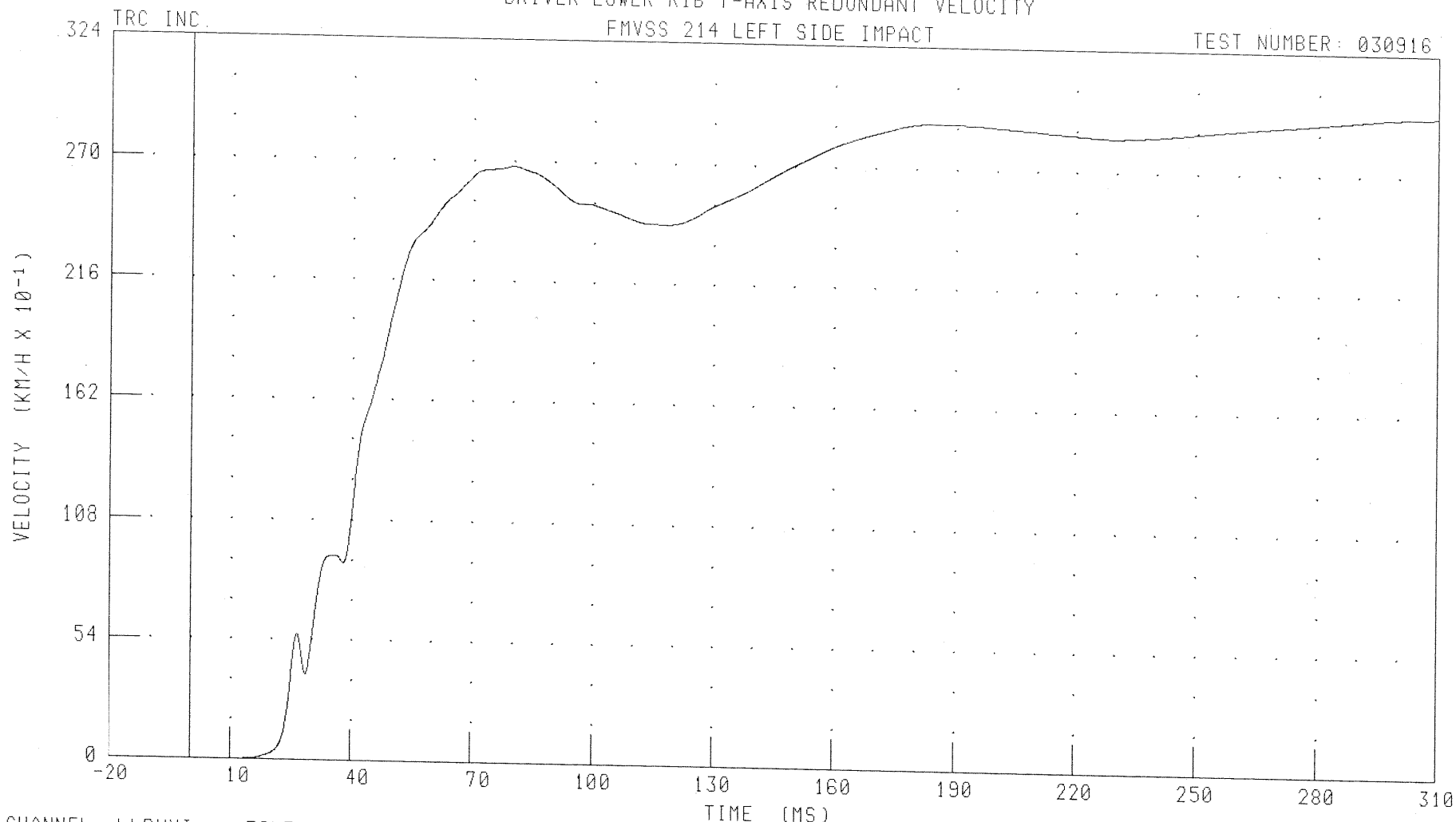
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR

DRIVER LOWER RIB Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LLRYVI FILTER: CH. CLASS 180

PEAK DATA: 29.60 KM/H @ 310.00 MS; 0.00 KM/H @ 1.44 MS

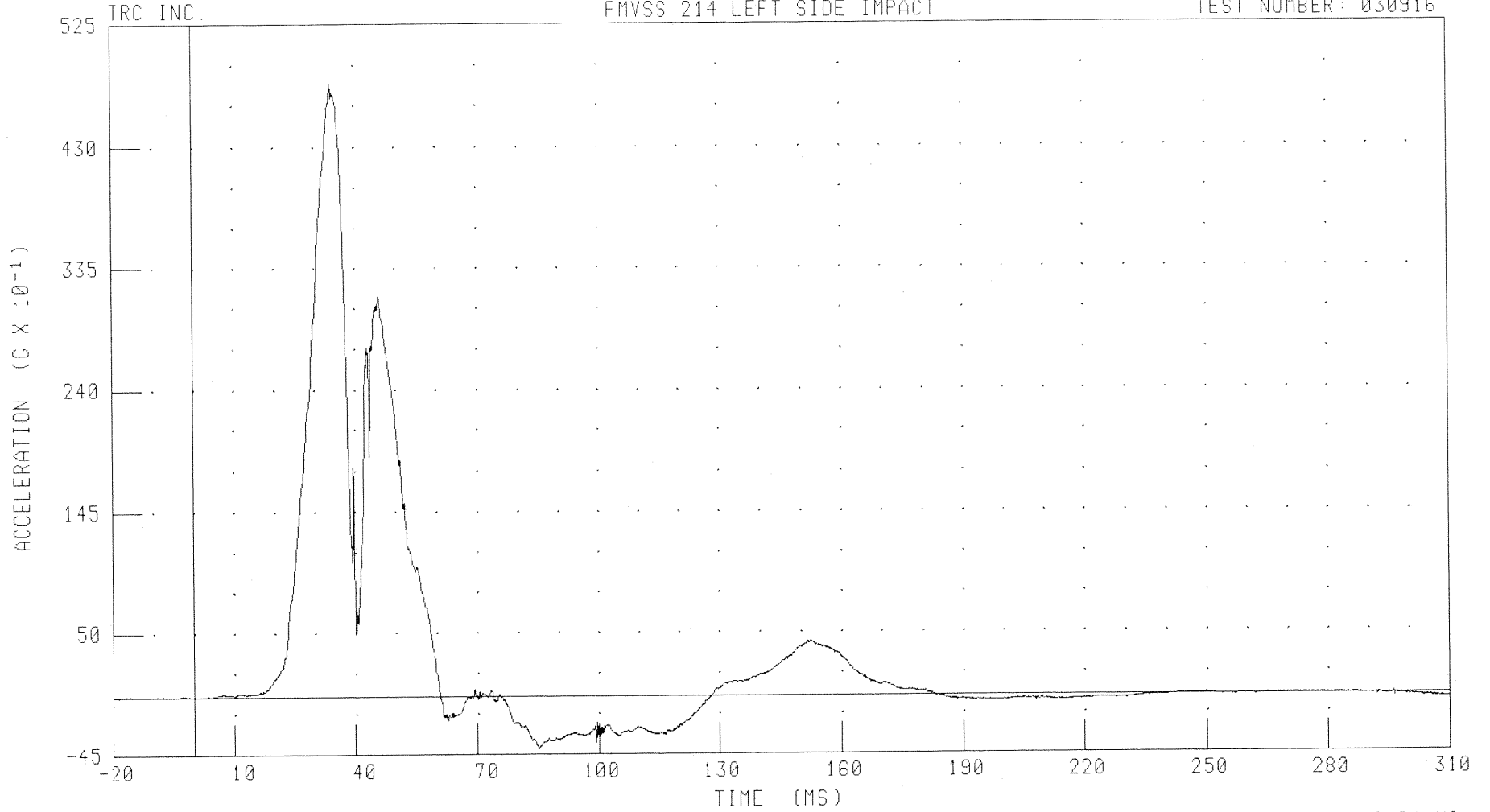
B-66

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: T12YR1 FILTER: CH. CLASS 1000

PEAK DATA: 47.86 G @ 34.32 MS; -4.12 G @ 85.04 MS

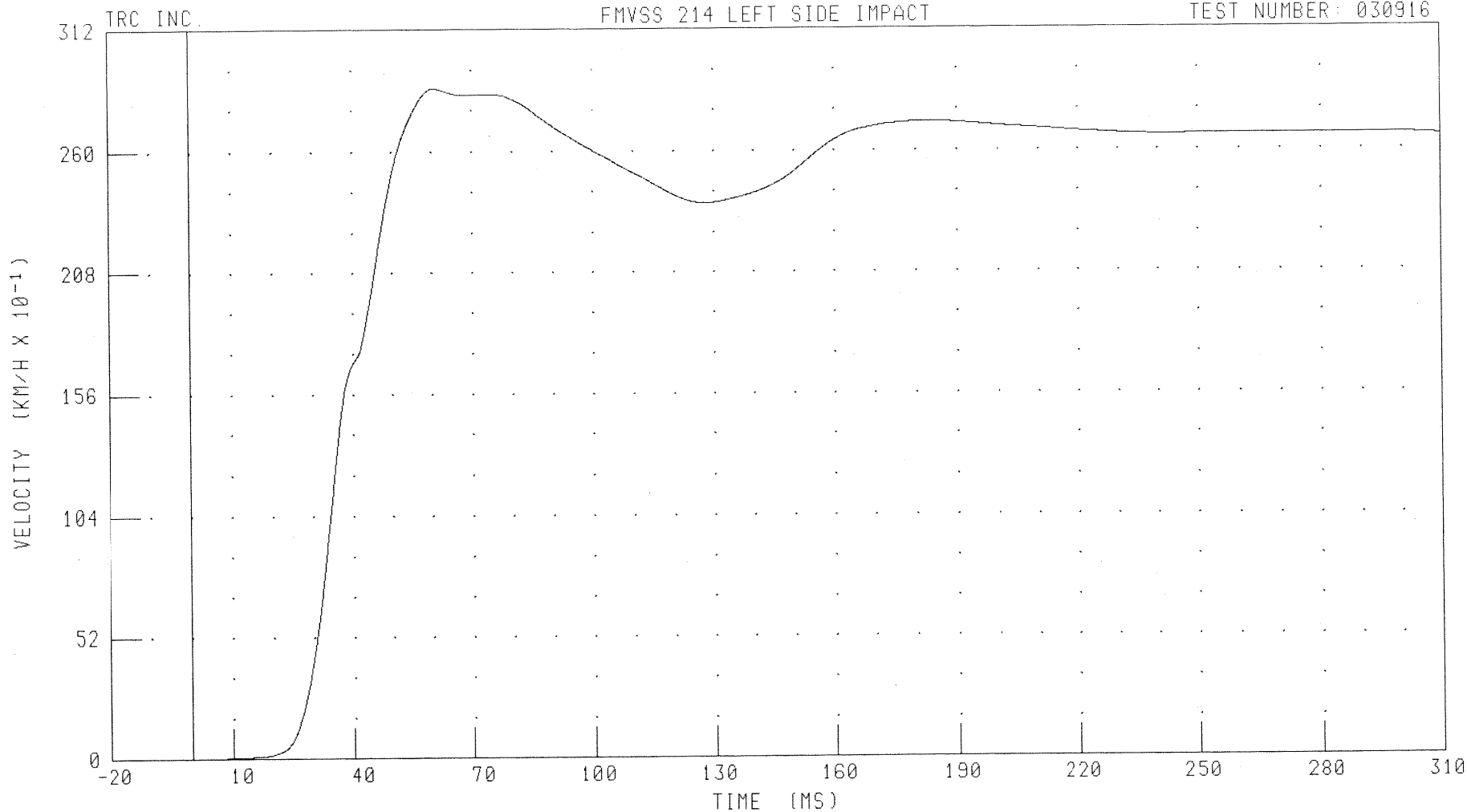
B-67

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER LOWER SPINE Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: T12YVI FILTER: CH. CLASS 180

PEAK DATA: 28.66 KM/H @ 60.88 MS; 0.00 KM/H @ 2.48 MS

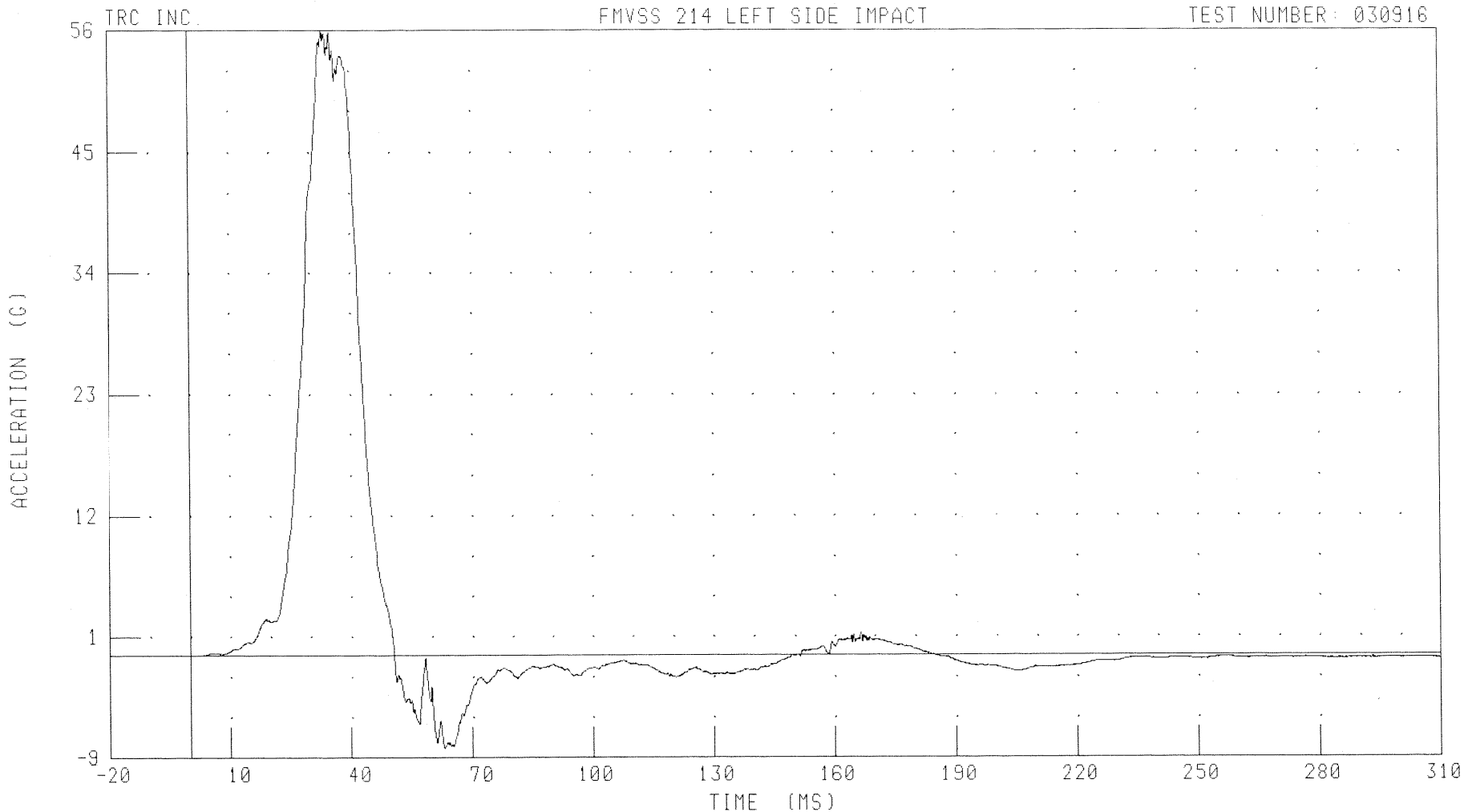
B-68

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER PELVIS Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: PEVYR1 FILTER: CH. CLASS 1000

PEAK DATA: 56.76 G @ 33.36 MS; -8.47 G @ 63.04 MS

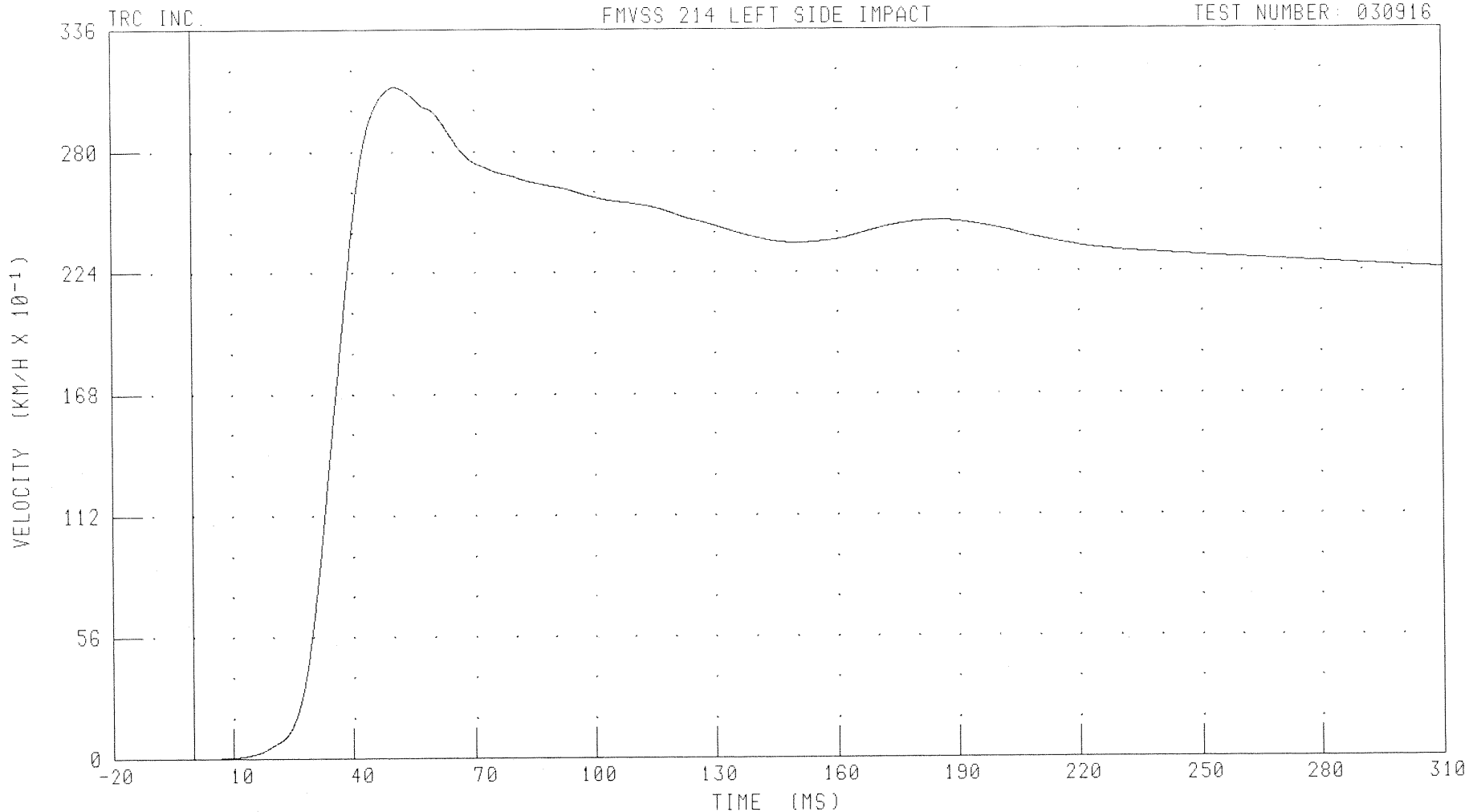
B-69

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER PELVIS Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: PEVYVI FILTER: CH. CLASS 180

PEAK DATA: 309.5 KM/H @ 50.64 MS; 0.00 KM/H @ 2.16 MS

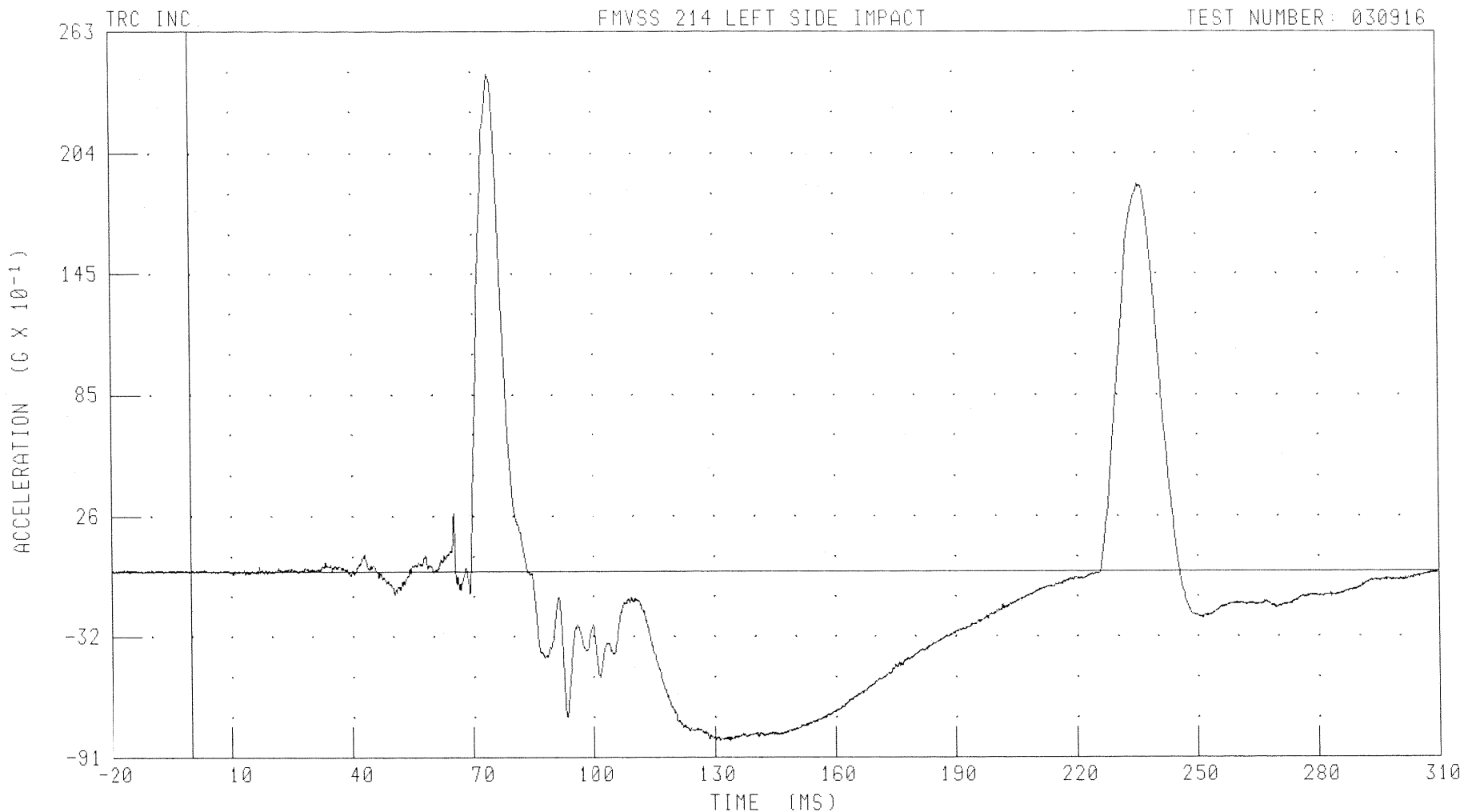
B-70

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER HEAD X-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: HEDXR4 FILTER: CH. CLASS 1000

PEAK DATA: 24.20 G @ 74.32 MS; -8.31 G @ 131.28 MS

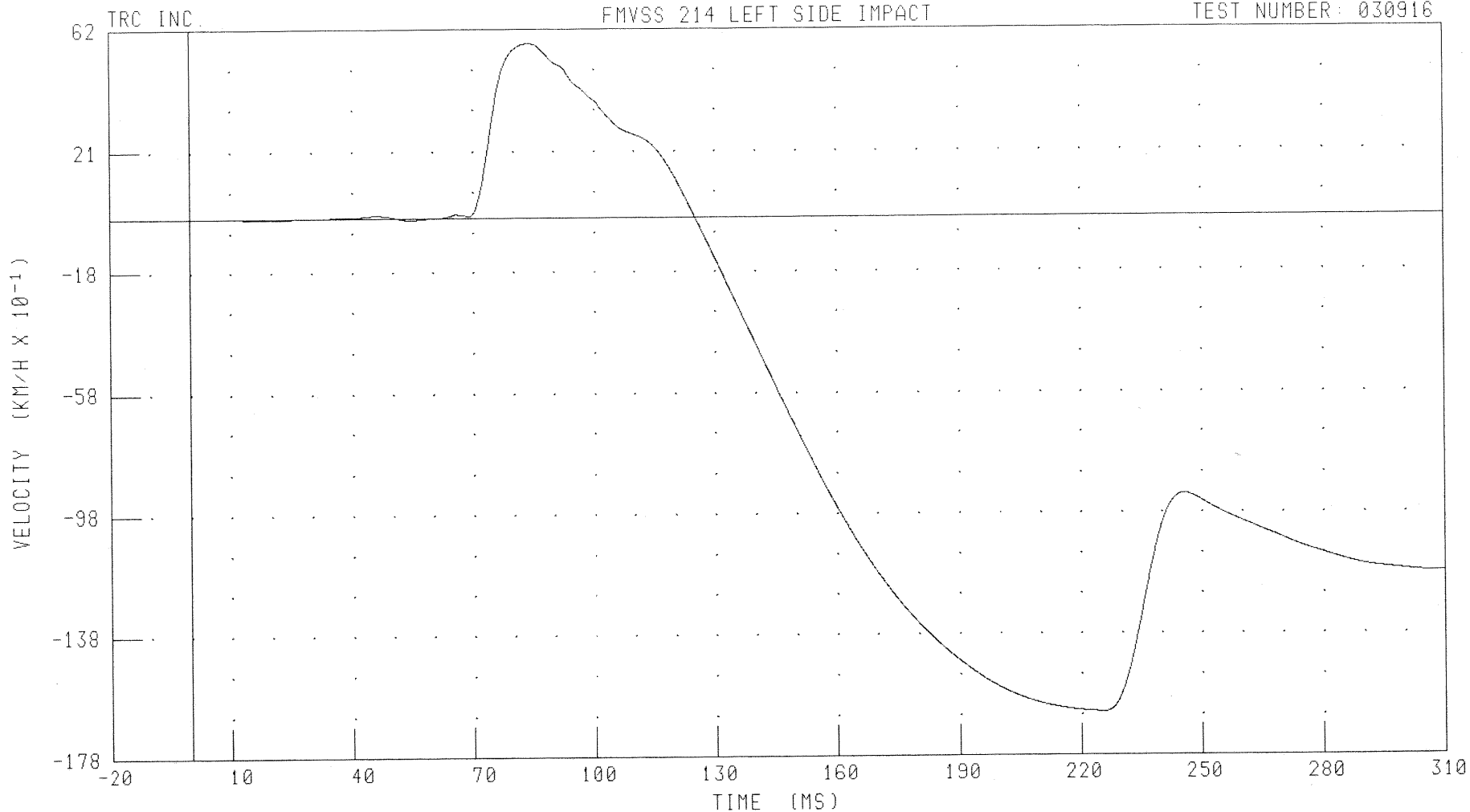
B-71

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER HEAD X-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: HEDXVJ FILTER: CH. CLASS 180

PEAK DATA: 5.72 KM/H @ 84.00 MS; -16.37 KM/H @ 225.68 MS

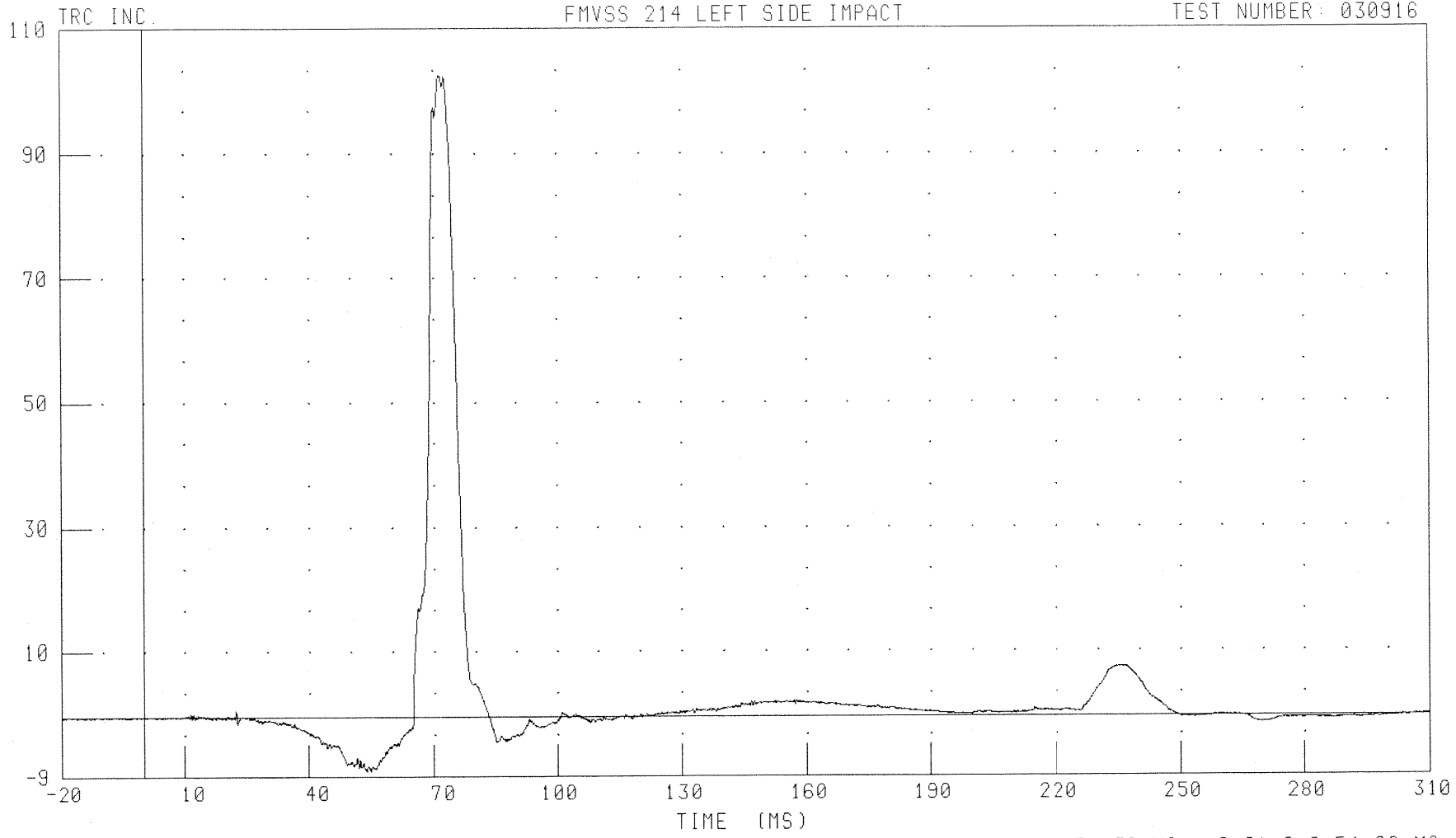
B-72

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER HEAD Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



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030916

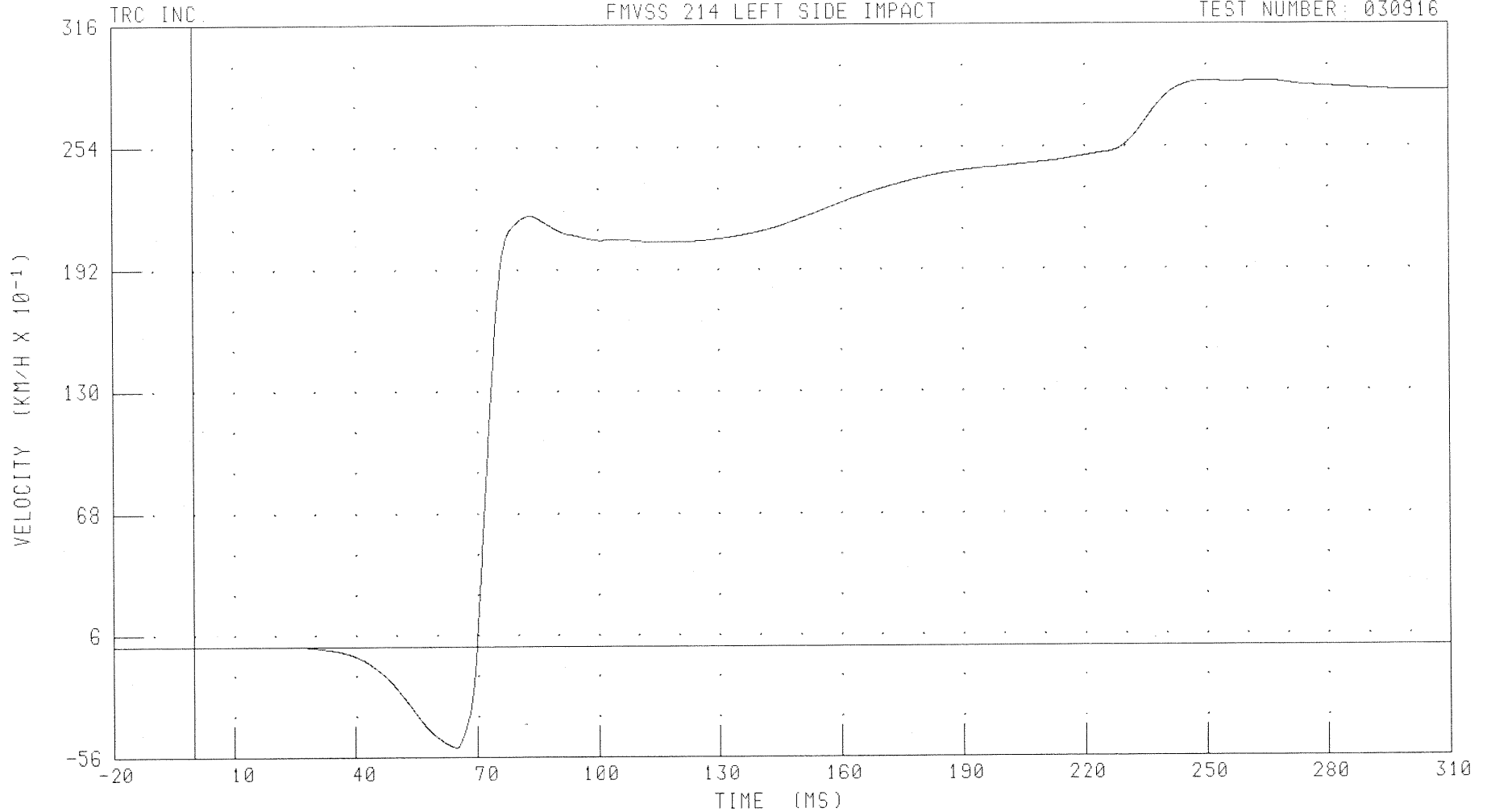
CHANNEL: HEDYR4 FILTER: CH. CLASS 1000

PEAK DATA: 103.23 G @ 71.52 MS; -8.61 G @ 54.80 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER HEAD Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: HEDYVJ FILTER: CH. CLASS 180

PEAK DATA: 28.73 KM/H @ 265.84 MS; -5.12 KM/H @ 64.64 MS

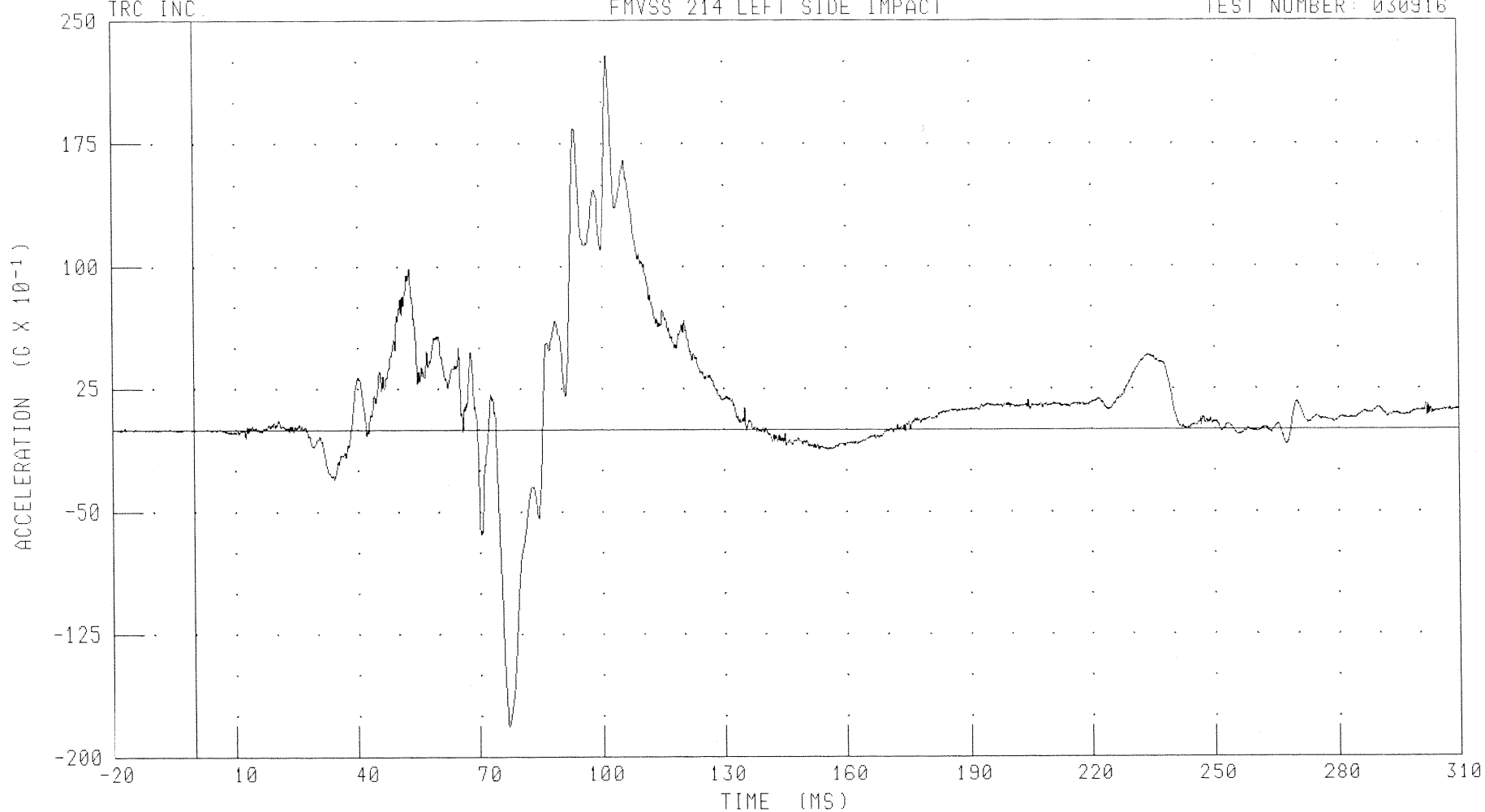
B-74

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER HEAD Z-AXIS REDUNDANT ACCELERATION

TRC INC. FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: HEDZR4 FILTER: CH. CLASS 1000

PEAK DATA: 22.88 G @ 101.52 MS; -18.18 G @ 77.04 MS

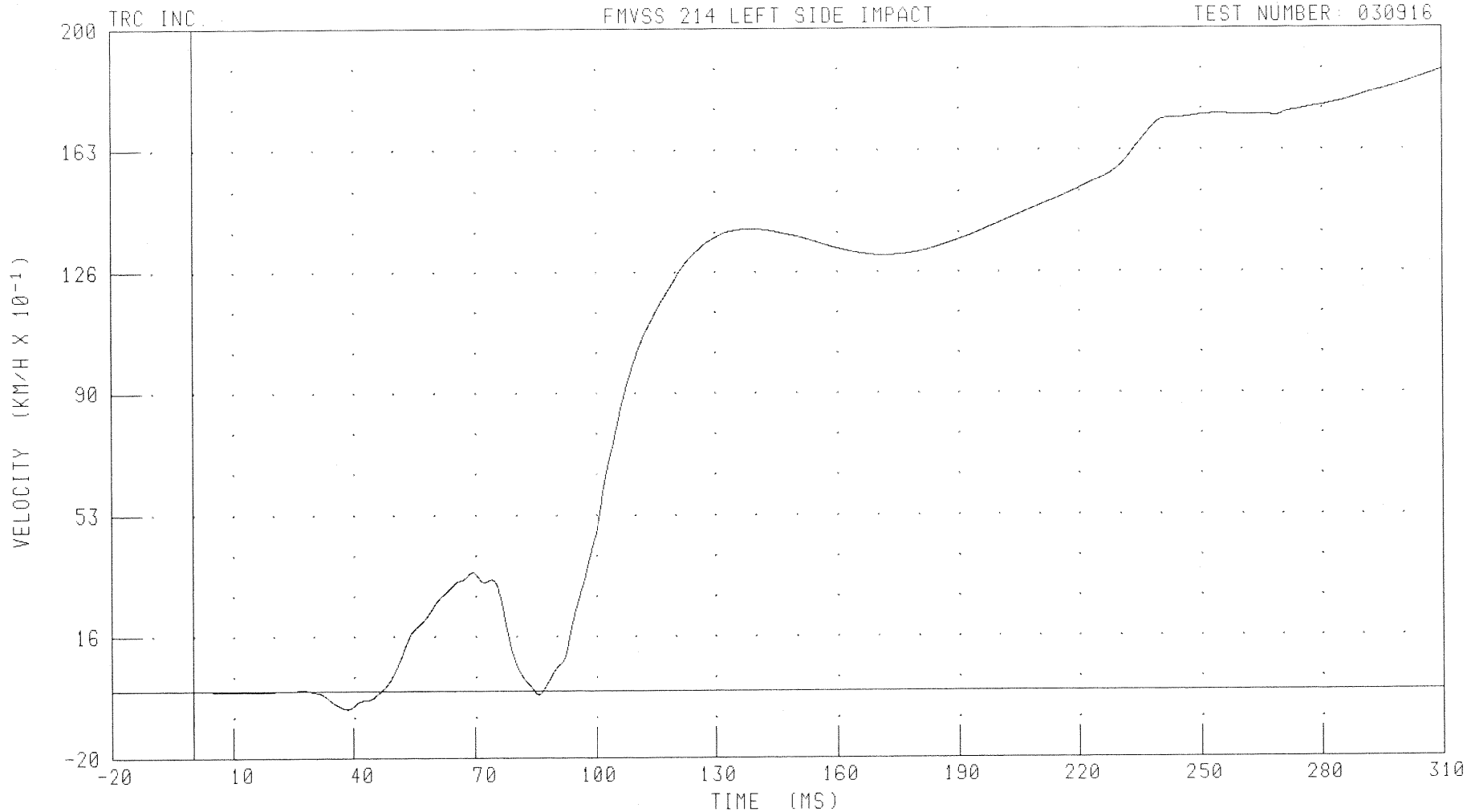
B-75

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER HEAD Z-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: HEDZVJ FILTER: CH CLASS 180

PEAK DATA: 18.72 KM/H @ 310.00 MS; -0.53 KM/H @ 38.48 MS

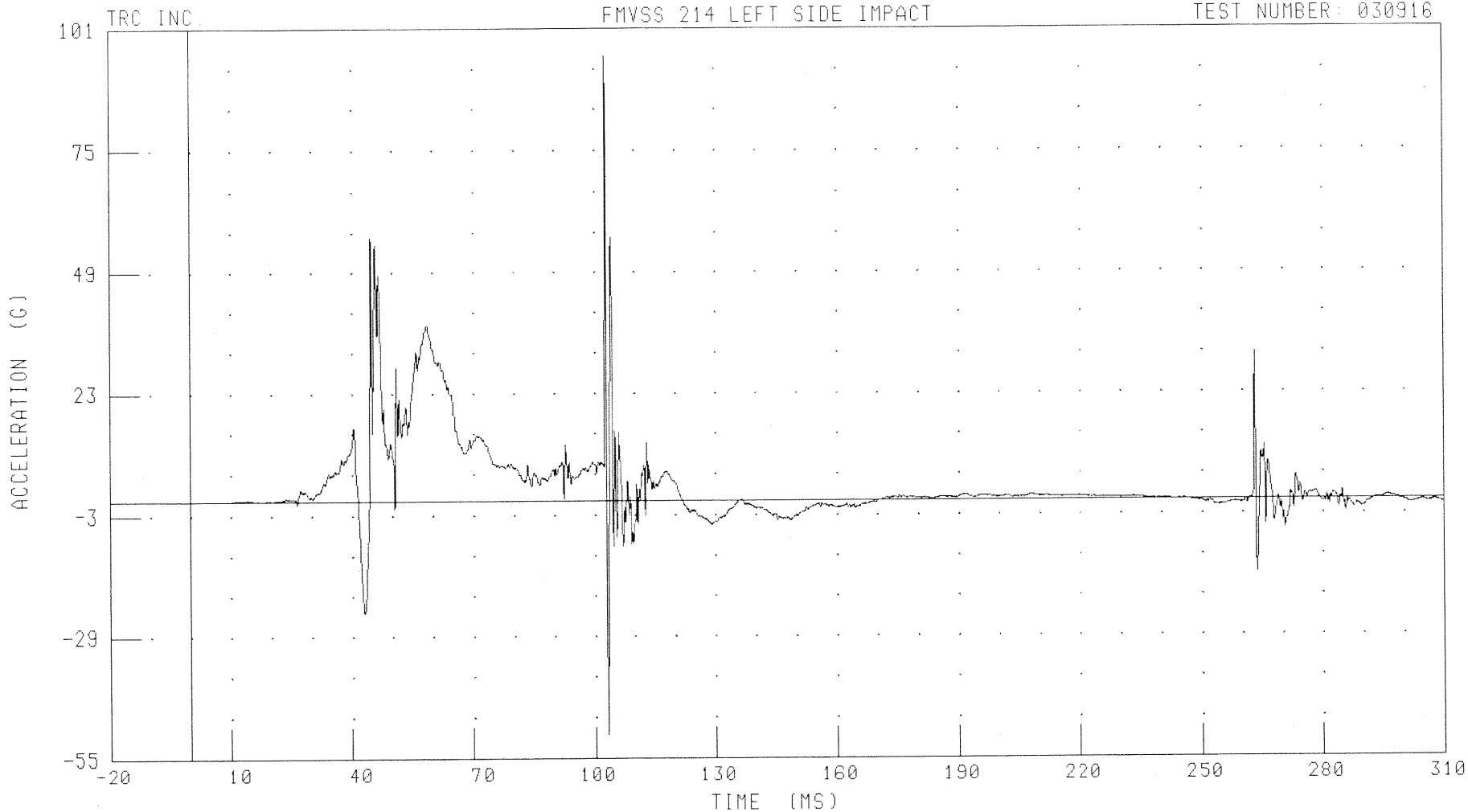
B-76

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LURYR4

FILTER: CH. CLASS 1000

PEAK DATA: 95.11 G @ 102.96 MS; -50.04 G @ 103.44 MS

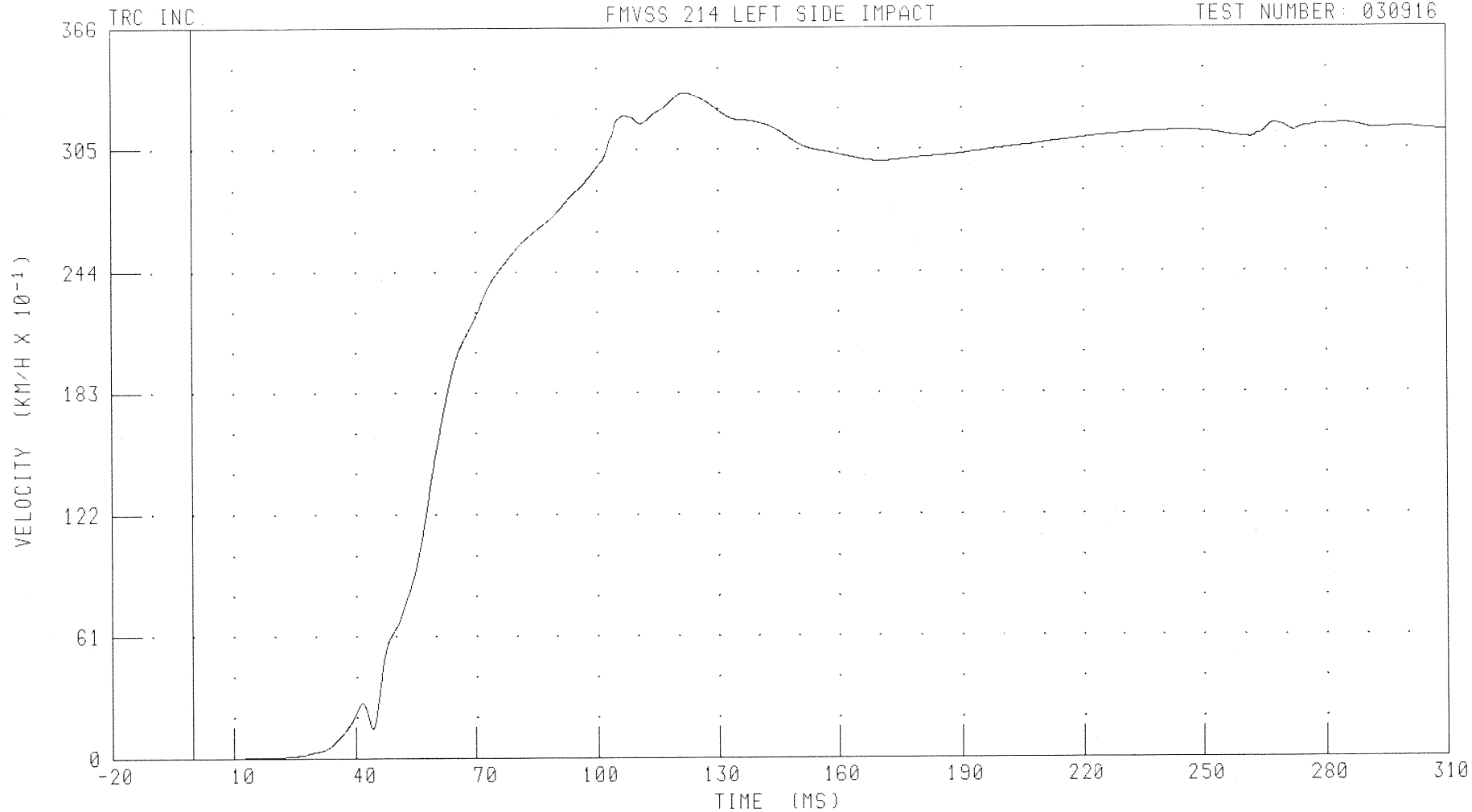
B-77

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER UPPER RIB Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LURYVJ

FILTER: CH. CLASS 180

PEAK DATA: 33.33 KM/H @ 121.84 MS; 0.00 KM/H @ 1.28 MS

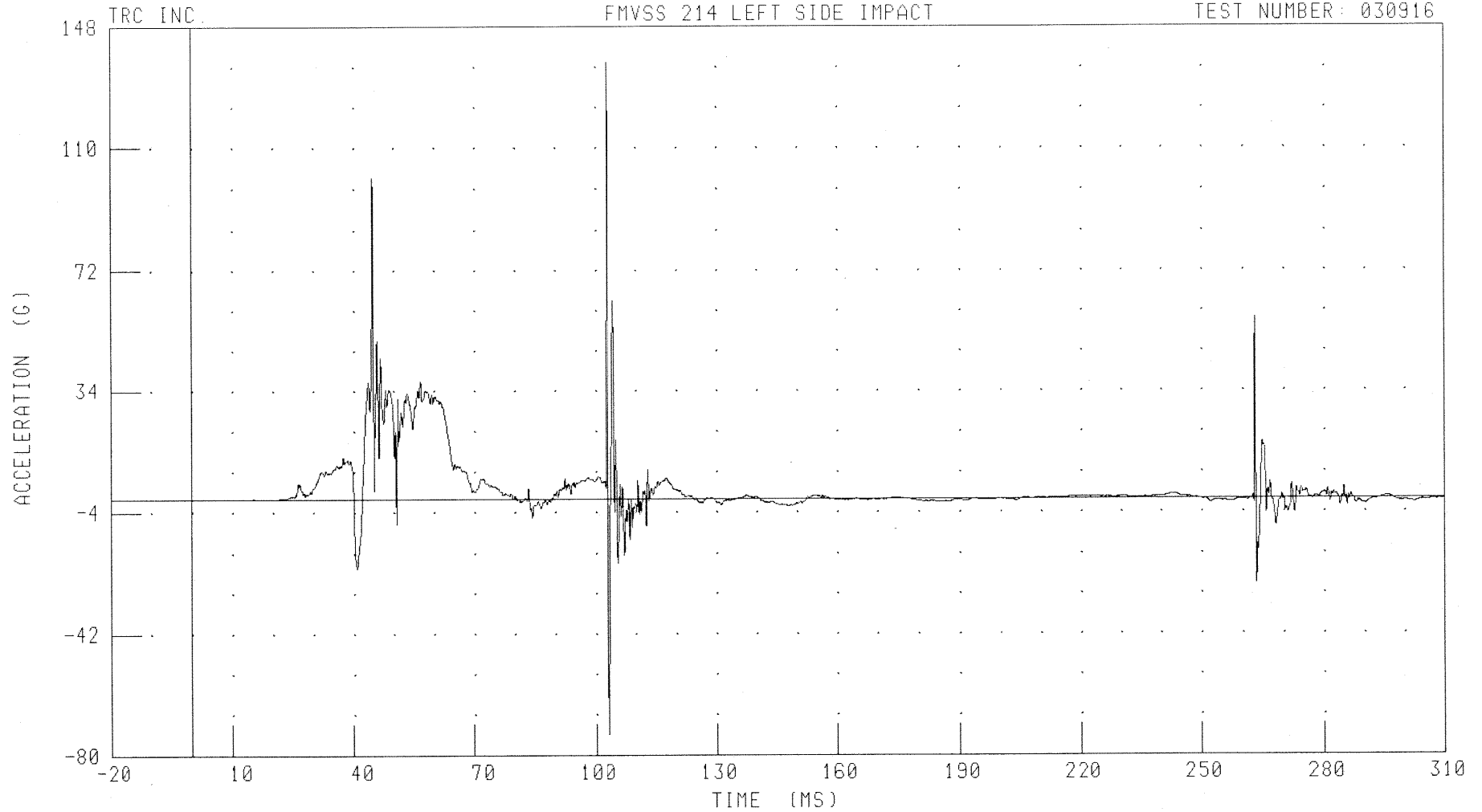
B-78

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER LOWER RIB Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LLRYR4 FILTER: CH. CLASS 1000

PEAK DATA: 136.74 G @ 102.96 MS; -73.63 G @ 103.44 MS

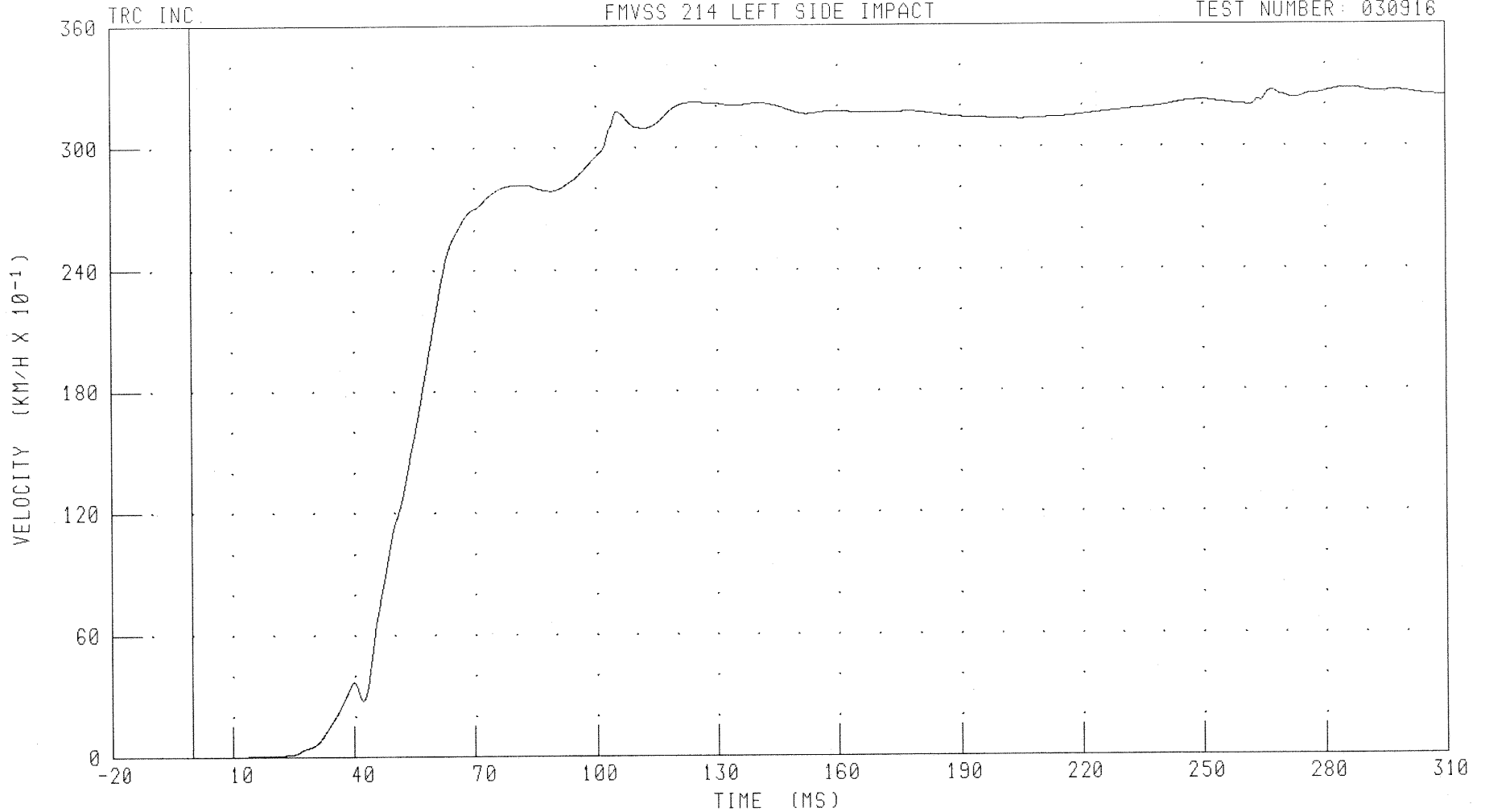
B-79

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER LOWER RIB Y-AXIS REDUNDANT VELOCITY.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LLRYVJ FILTER: CH. CLASS 180

PEAK DATA: 32.83 KM/H @ 287.20 MS; 0.00 KM/H @ 0.00 MS

B-80

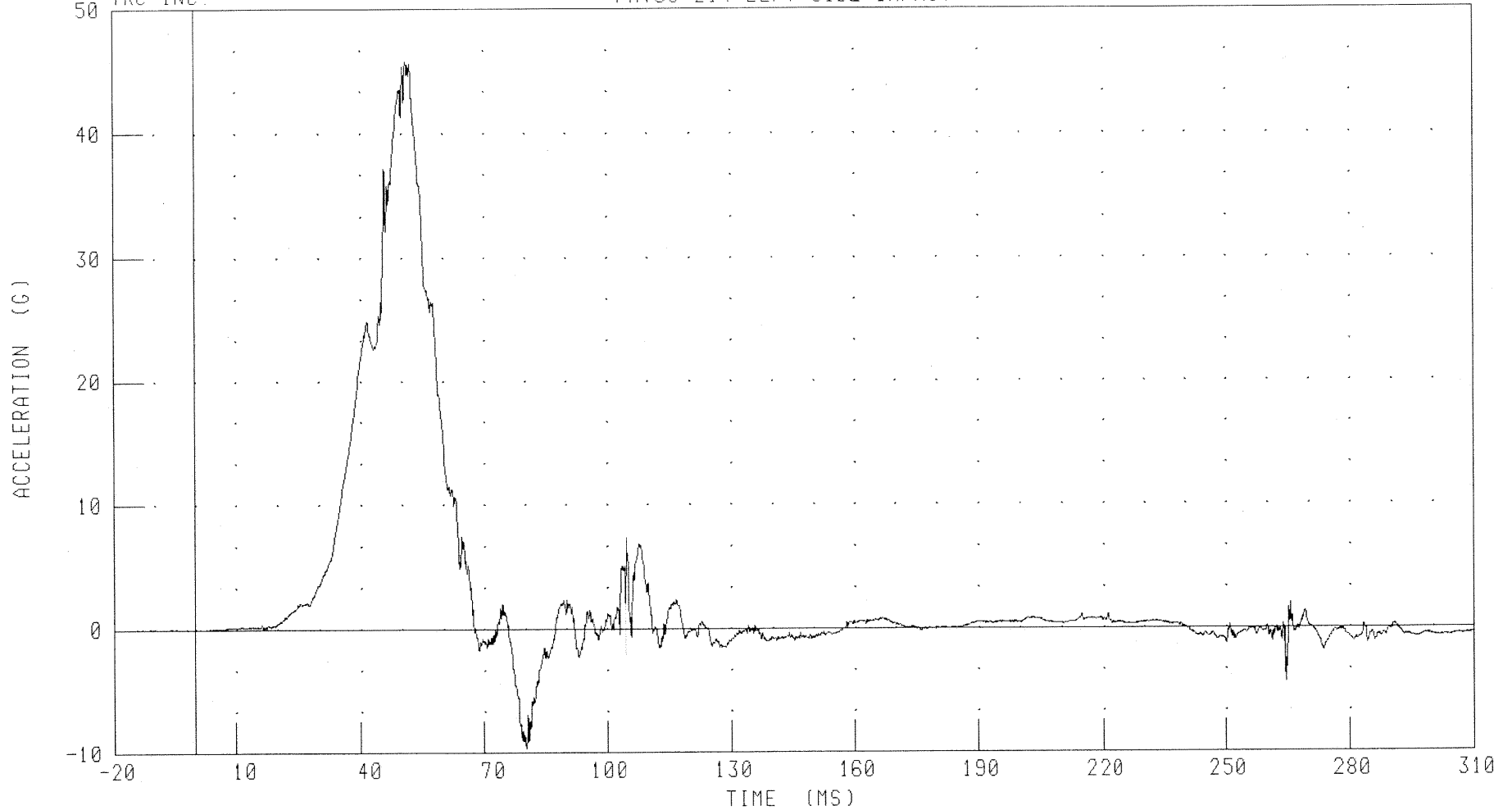
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: T12YR4

FILTER: CH. CLASS 1000

PEAK DATA: 45.80 G @ 51.04 MS; -9.69 G @ 80.32 MS

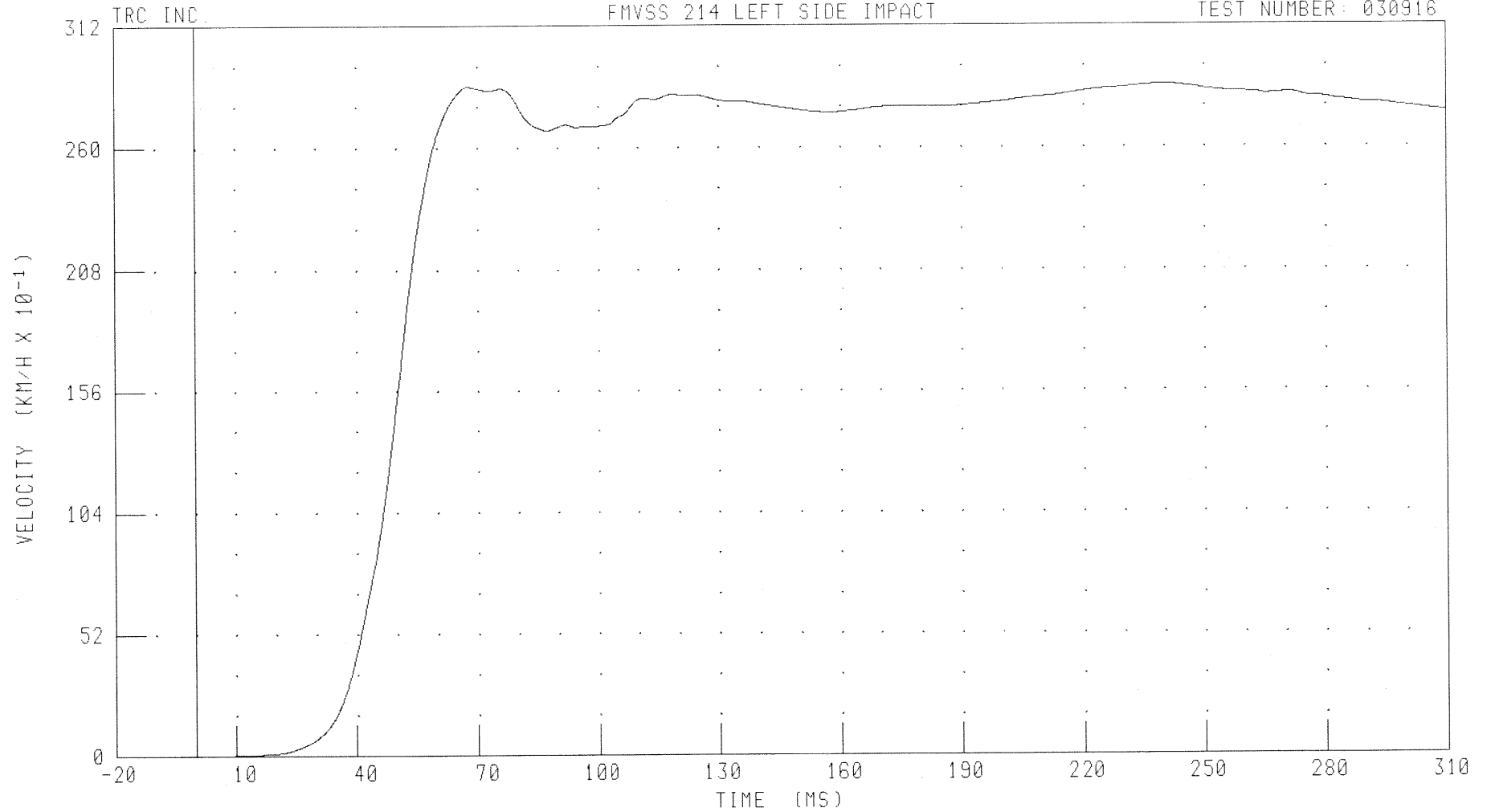
B-81

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: T12YVJ FILTER: CH. CLASS 180

PEAK DATA: 286.66 KM/H @ 240.32 MS; 0.00 KM/H @ 0.00 MS

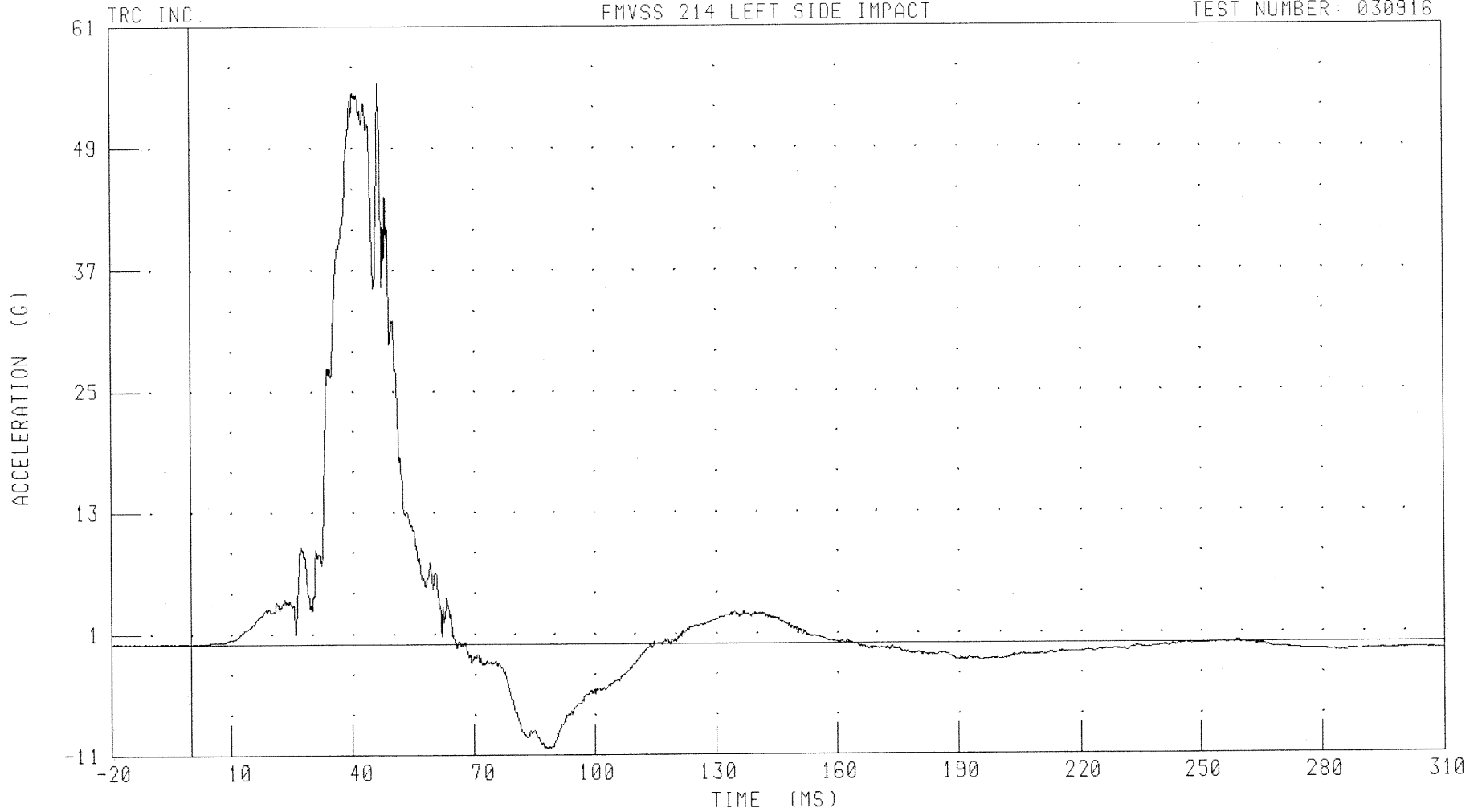
B-82

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER PELVIS Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: PEVYR4

FILTER: CH. CLASS 1000

PEAK DATA: 55.44 G @ 46.48 MS; -10.41 G @ 88.24 MS

B-83

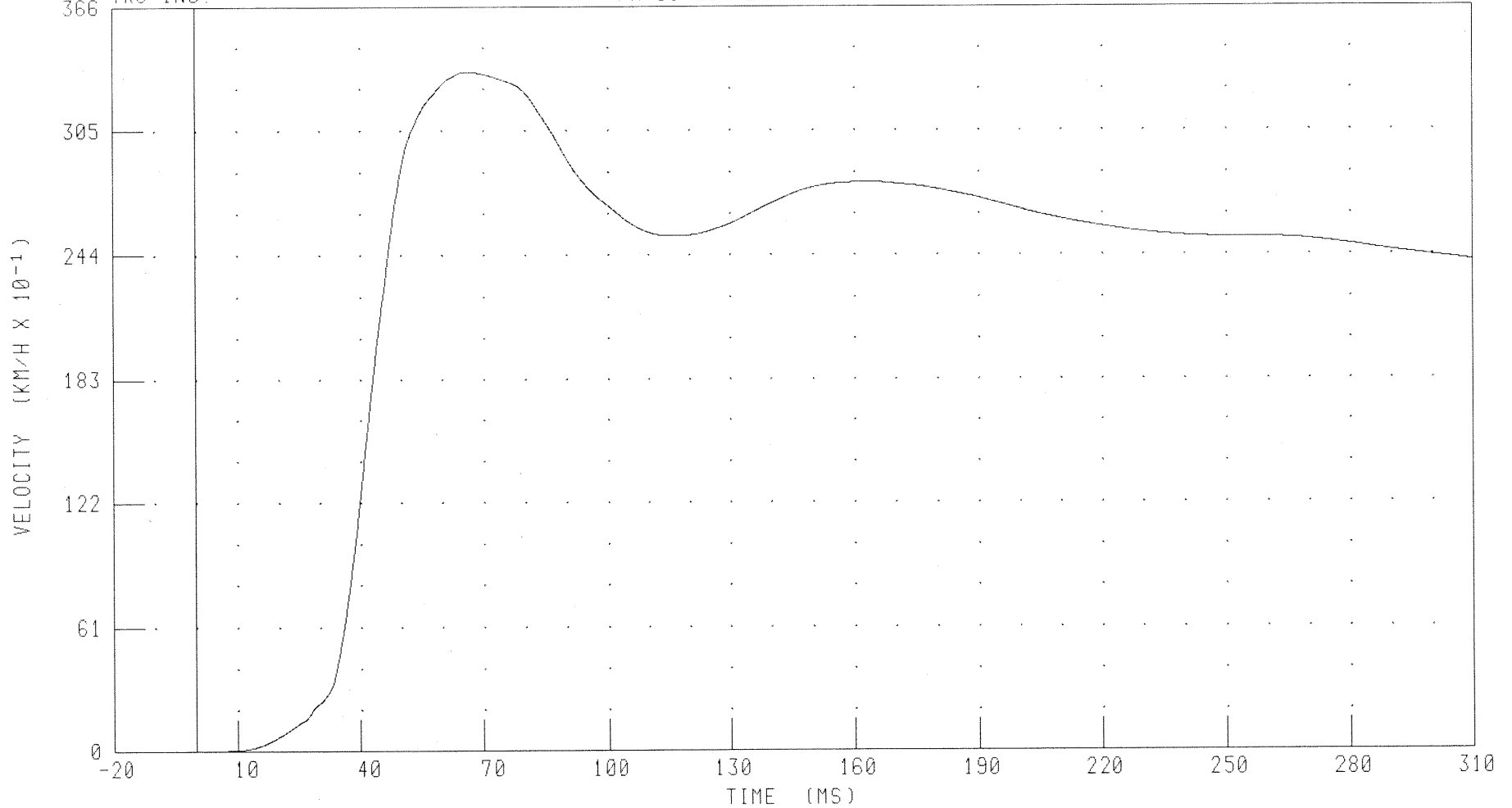
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER PELVIS Y-AXIS REDUNDANT VELOCITY

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: PEVYVJ

FILTER: CH. CLASS 180

PEAK DATA: 33.36 KM/H @ 65.68 MS; 0.00 KM/H @ 0.00 MS

B-84

030916

Test Vehicle Instrumentation Plots

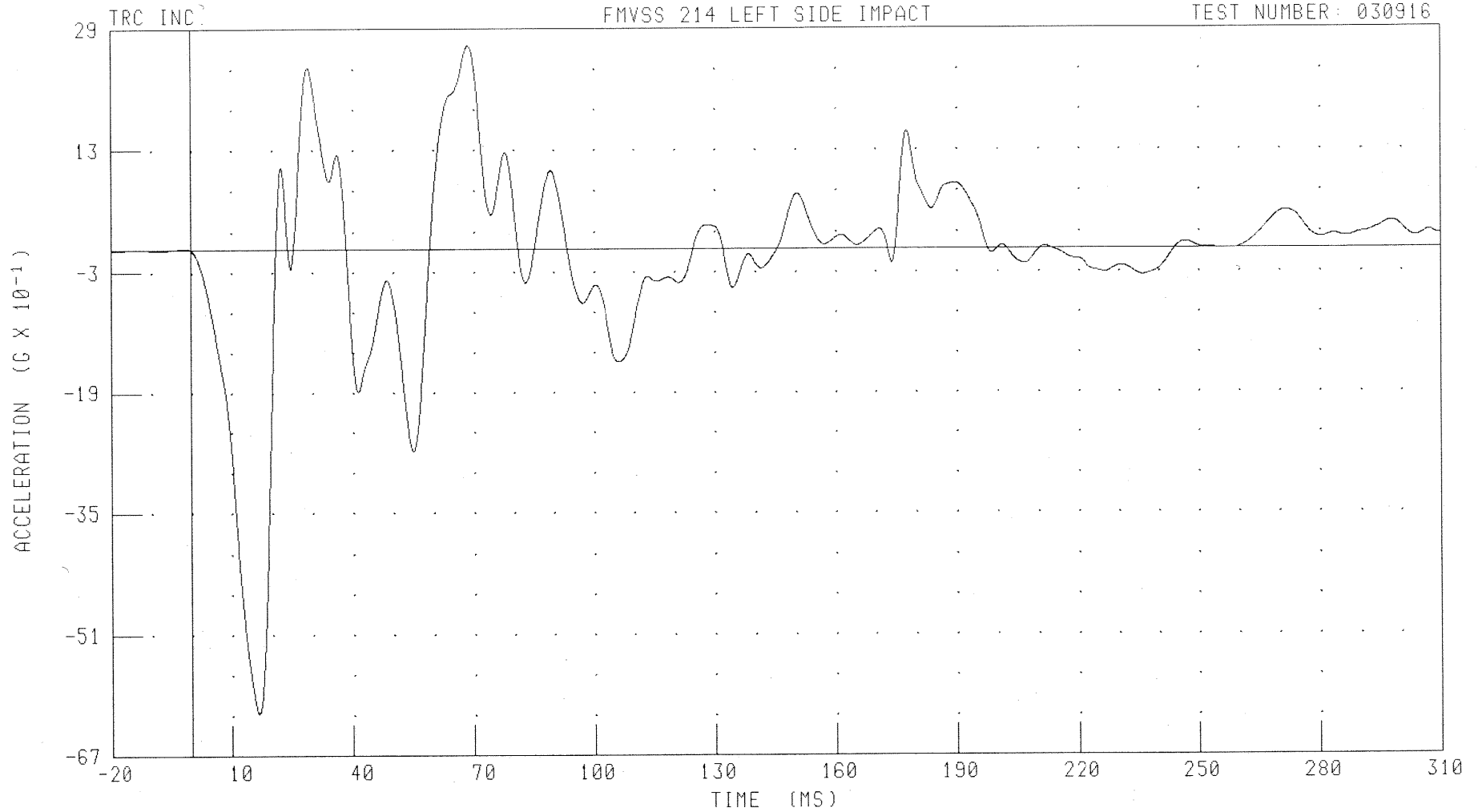
Acceleration Data - Filter Class 60

Integration Data - Filter Class 180

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
RIGHT SIDE SILL AT FRONT SEAT X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: RFSXG1 FILTER: CH. CLASS 60

PEAK DATA: 2.68 G @ 68.72 MS; -6.14 G @ 16.64 MS

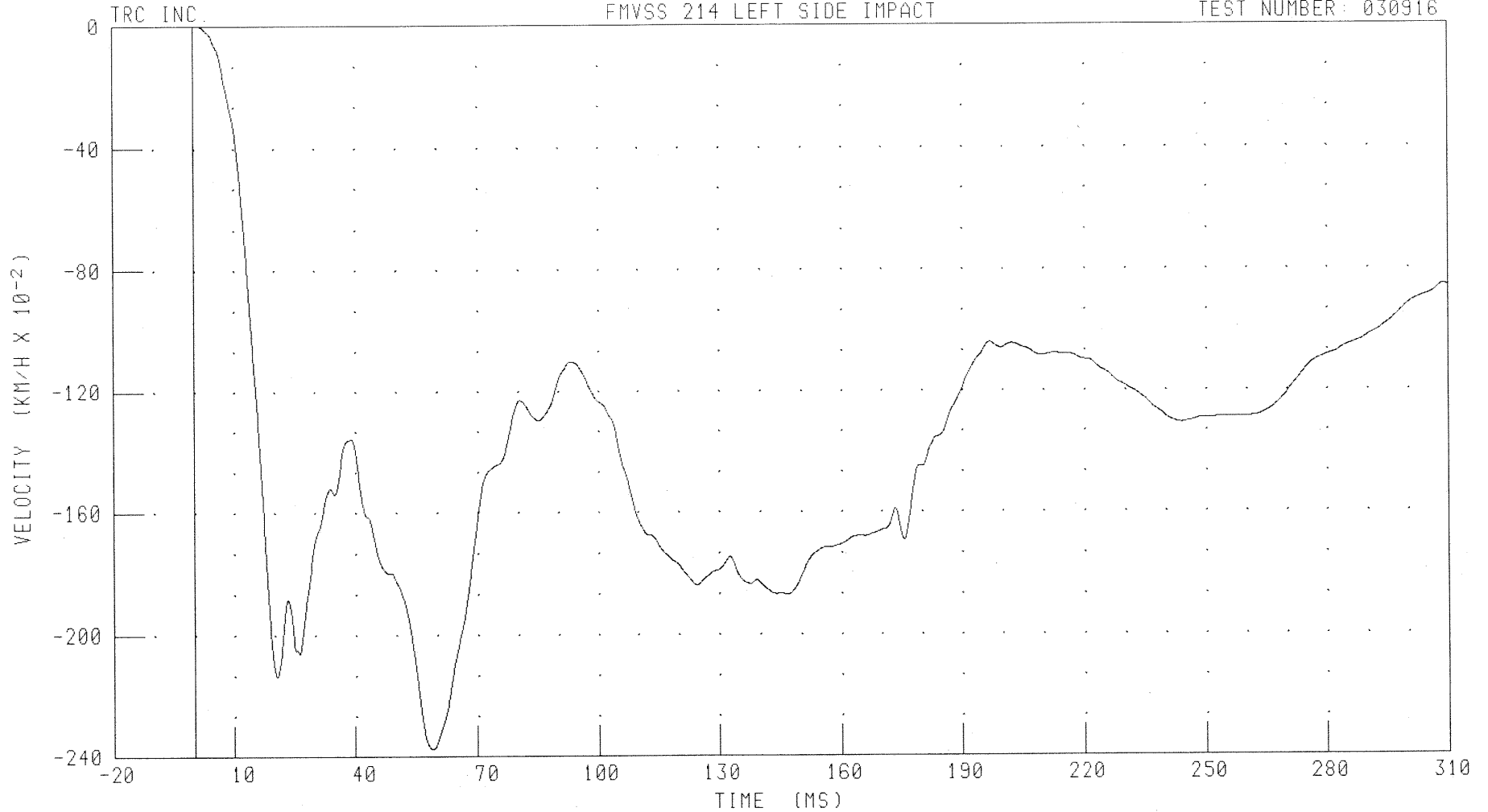
B-86

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
RIGHT SIDE SILL AT FRONT SEAT X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: RFSXV1 FILTER: CH. CLASS 180

PEAK DATA: 0.00 KM/H @ 1.12 MS; -23.8 KM/H @ 58.88 MS

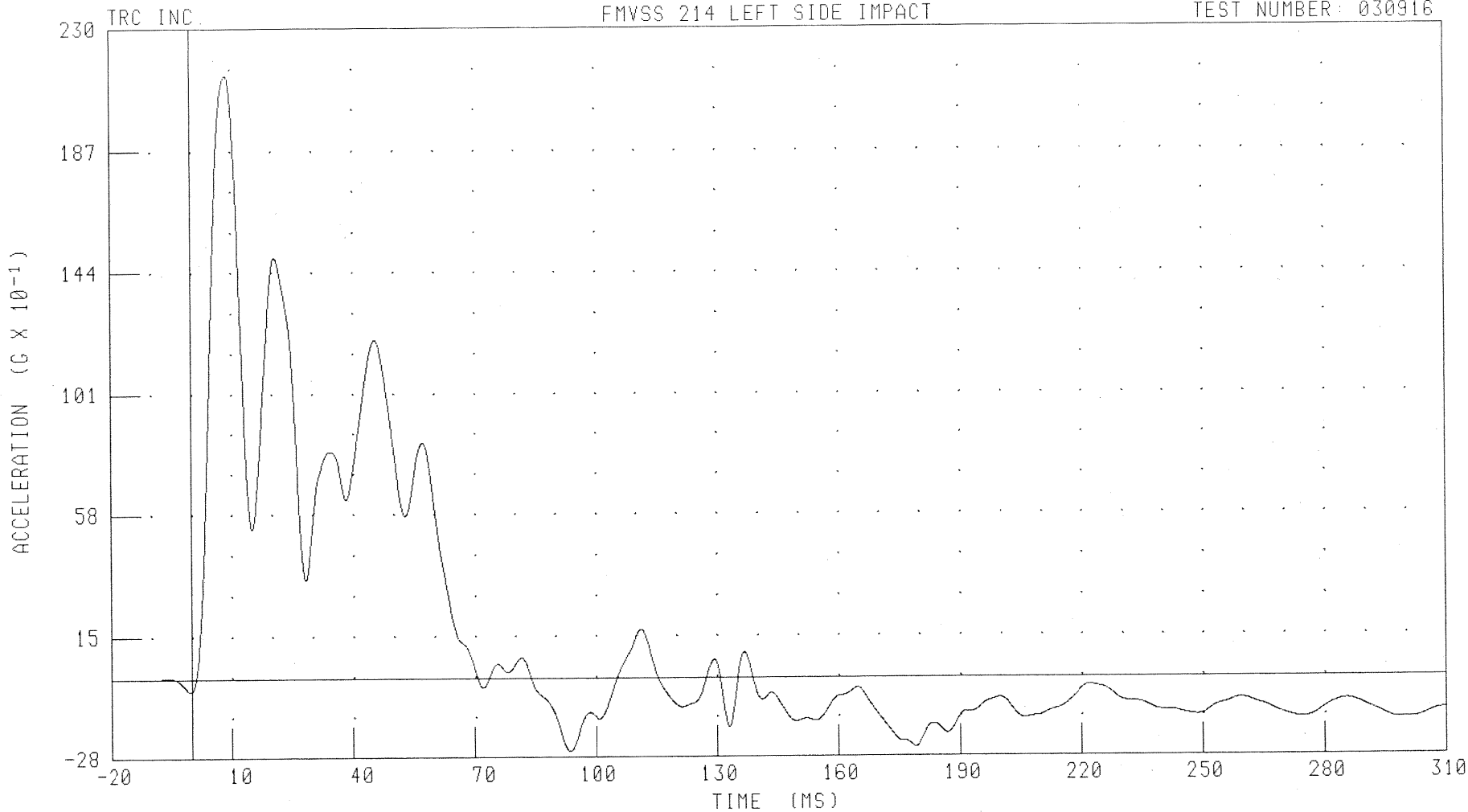
B-87

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
RIGHT SIDE SILL AT FRONT SEAT Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: RFSYG1 FILTER: CH. CLASS 60

PEAK DATA: 21.35 G @ 8.88 MS; -2.60 G @ 93.60 MS

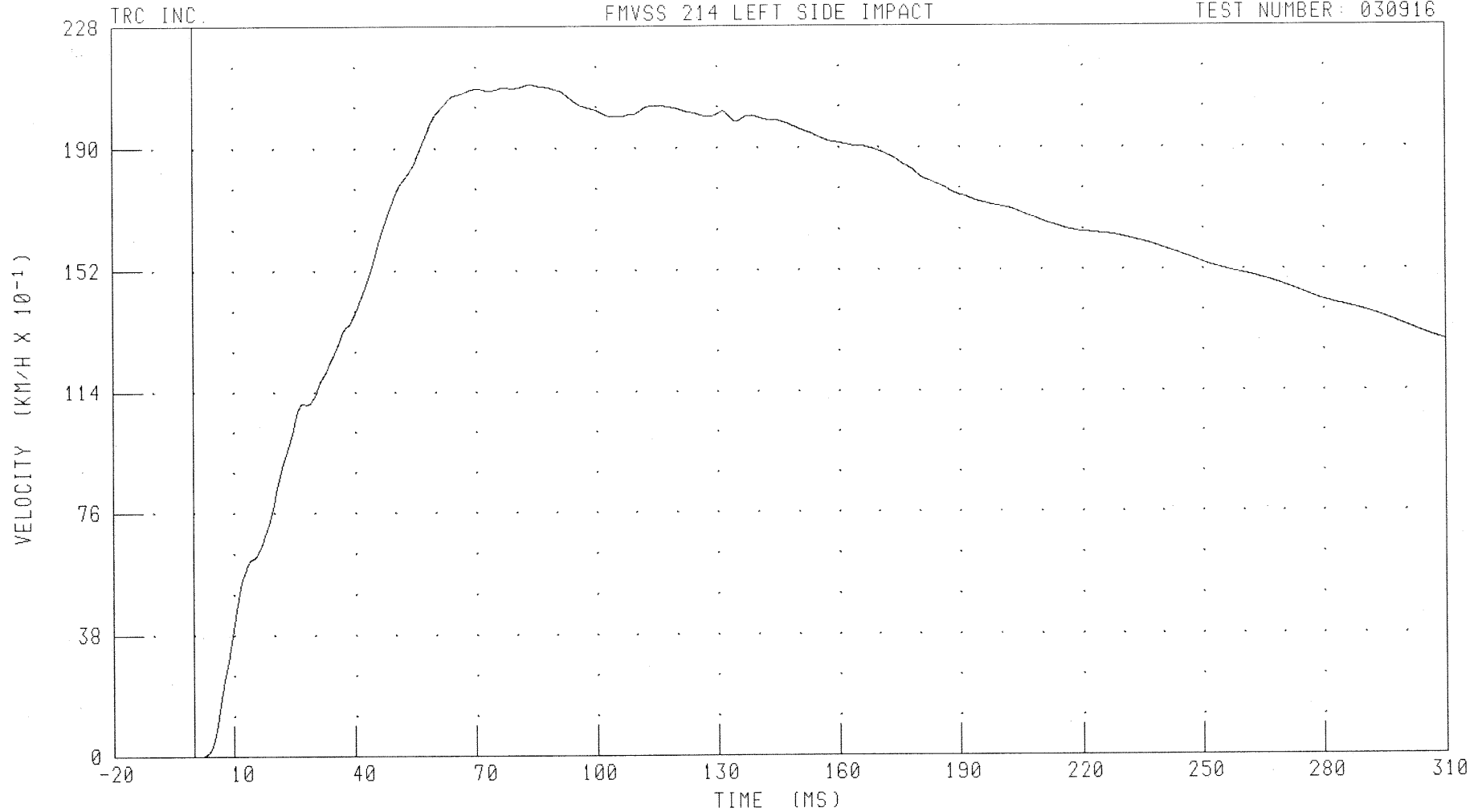
B-88

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
RIGHT SIDE SILL AT FRONT SEAT Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: RFSYV1 FILTER: CH. CLASS 180

PEAK DATA: 20.98 KM/H @ 83.76 MS; 0.00 KM/H @ 0.00 MS

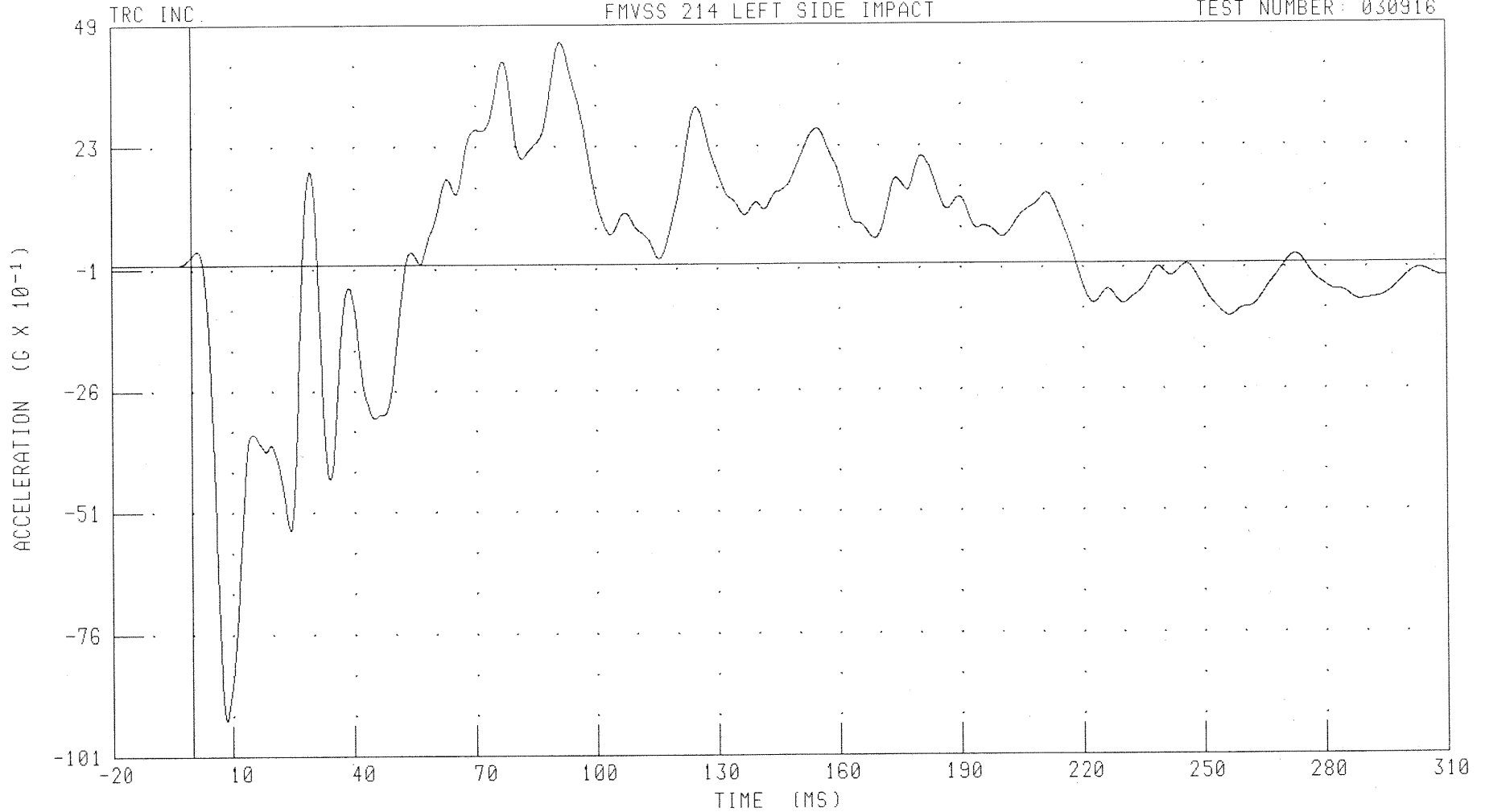
B-89

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
RIGHT SIDE SILL AT FRONT SEAT Z-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: RFSZG1

FILTER: CH. CLASS 60

PEAK DATA: 4.54 G @ 91.44 MS; -9.36 G @ 8.48 MS

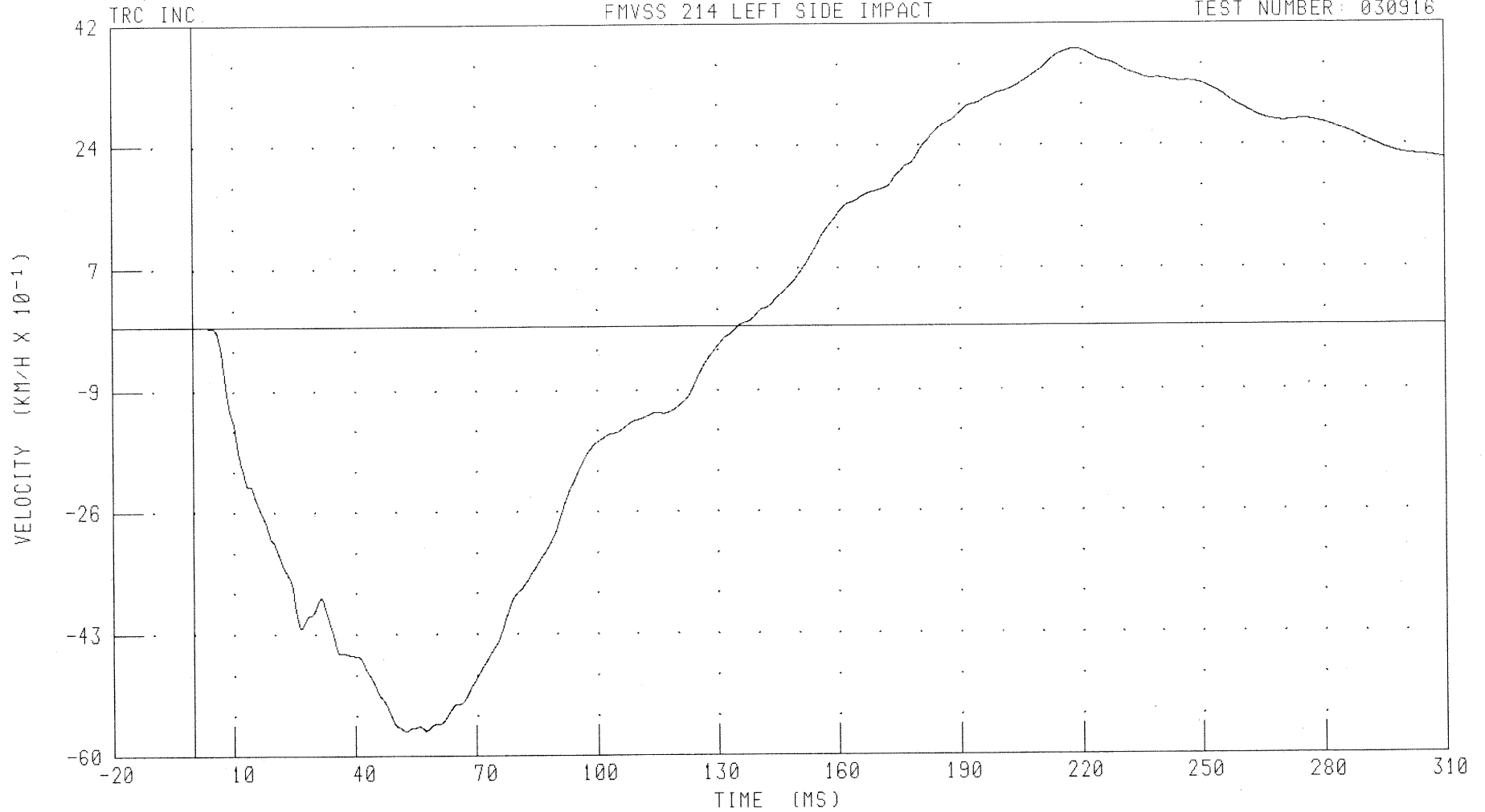
B-90

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
RIGHT SIDE SILL AT FRONT SEAT Z-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: RFSZV1 FILTER: CH. CLASS 180

PEAK DATA: 3.85 KM/H @ 218.56 MS; -5.66 KM/H @ 52.48 MS

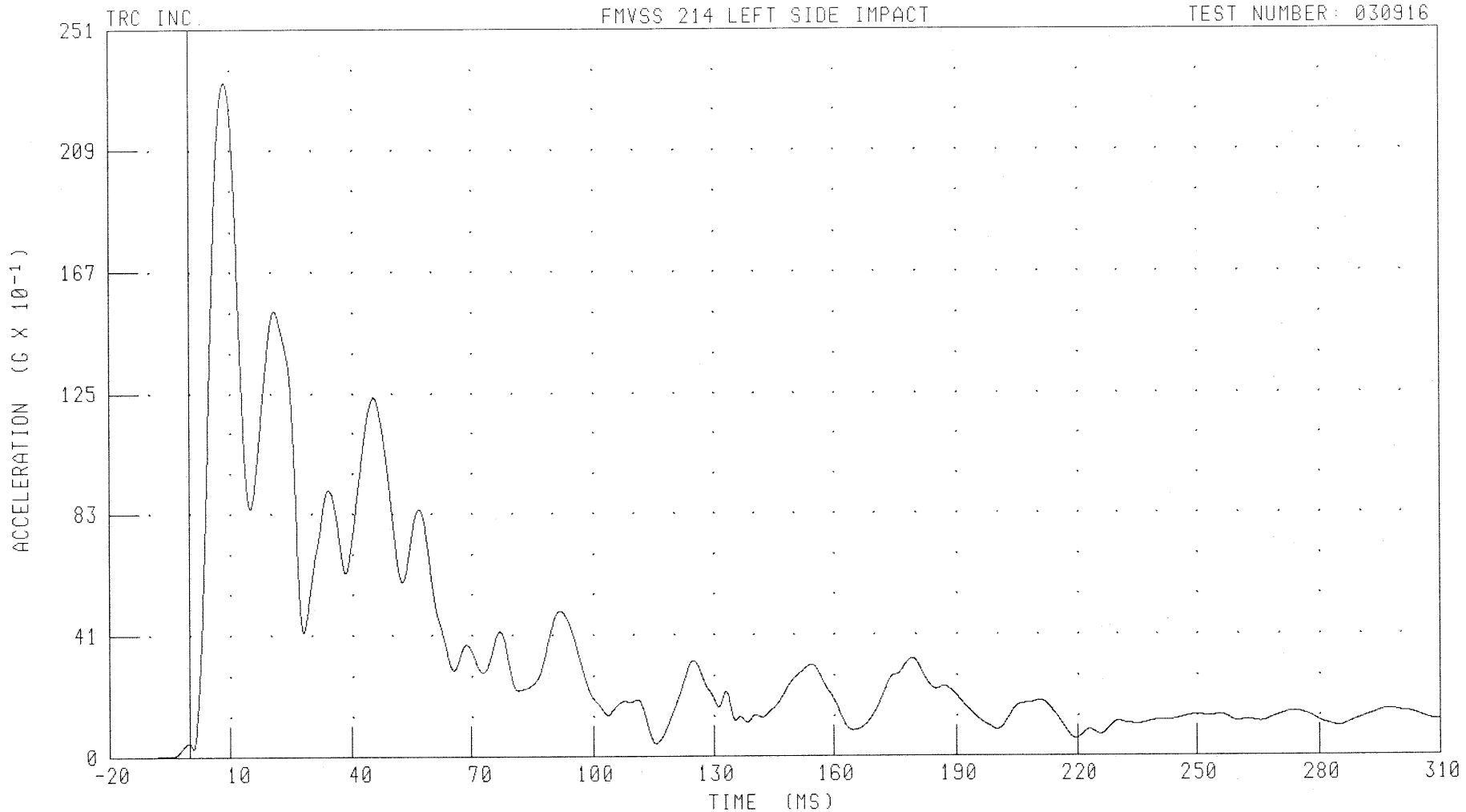
B-91

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: RFSRG1

FILTER: CH. CLASS 60

PEAK DATA: 23.37 G @ 8.80 MS; 0.01 G @ -17.68 MS

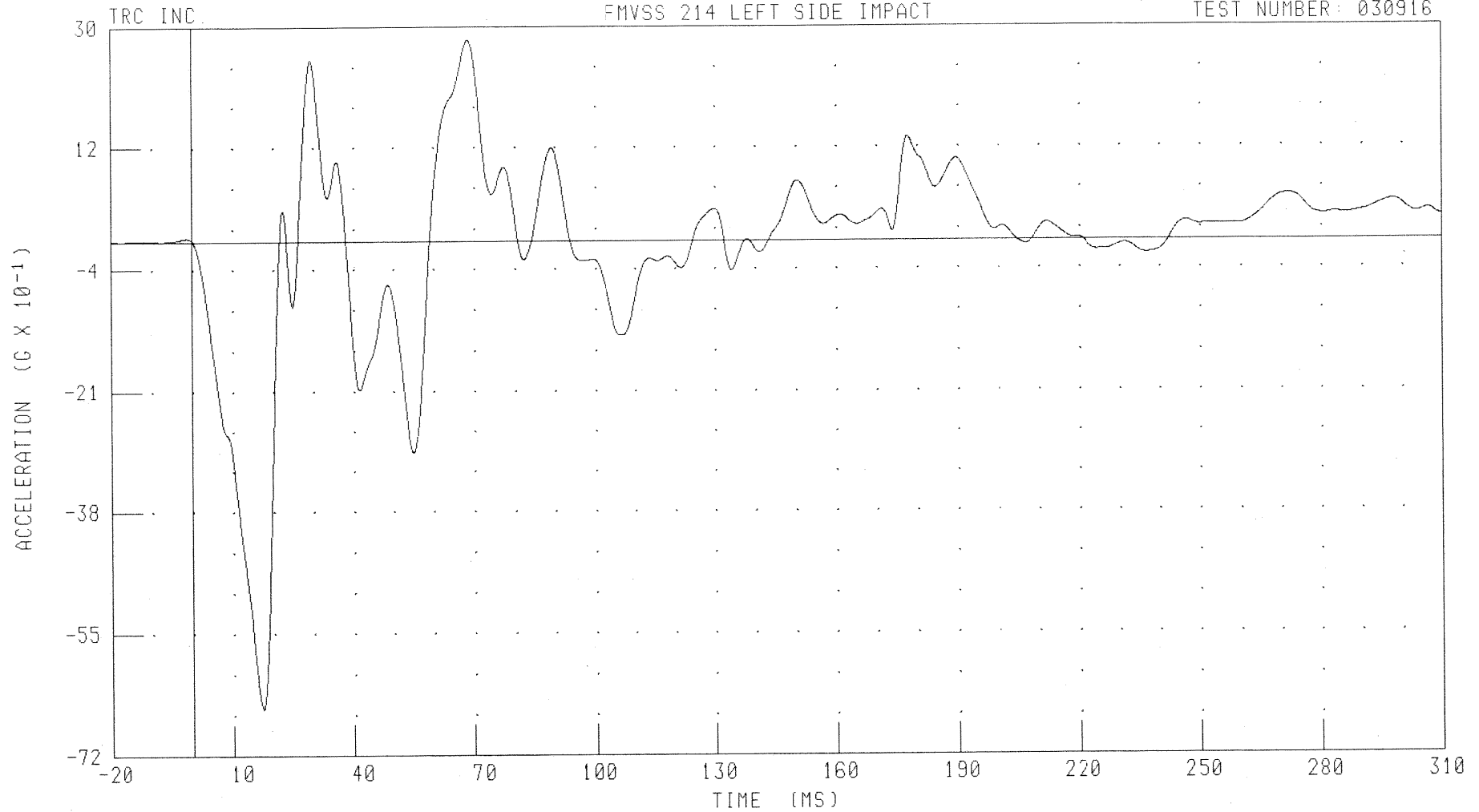
B-92

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
RIGHT SIDE SILL AT REAR SEAT X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: RRSXG1

FILTER: CH. CLASS 60

PEAK DATA: 2.82 G @ 68.64 MS; -6.55 G @ 17.36 MS

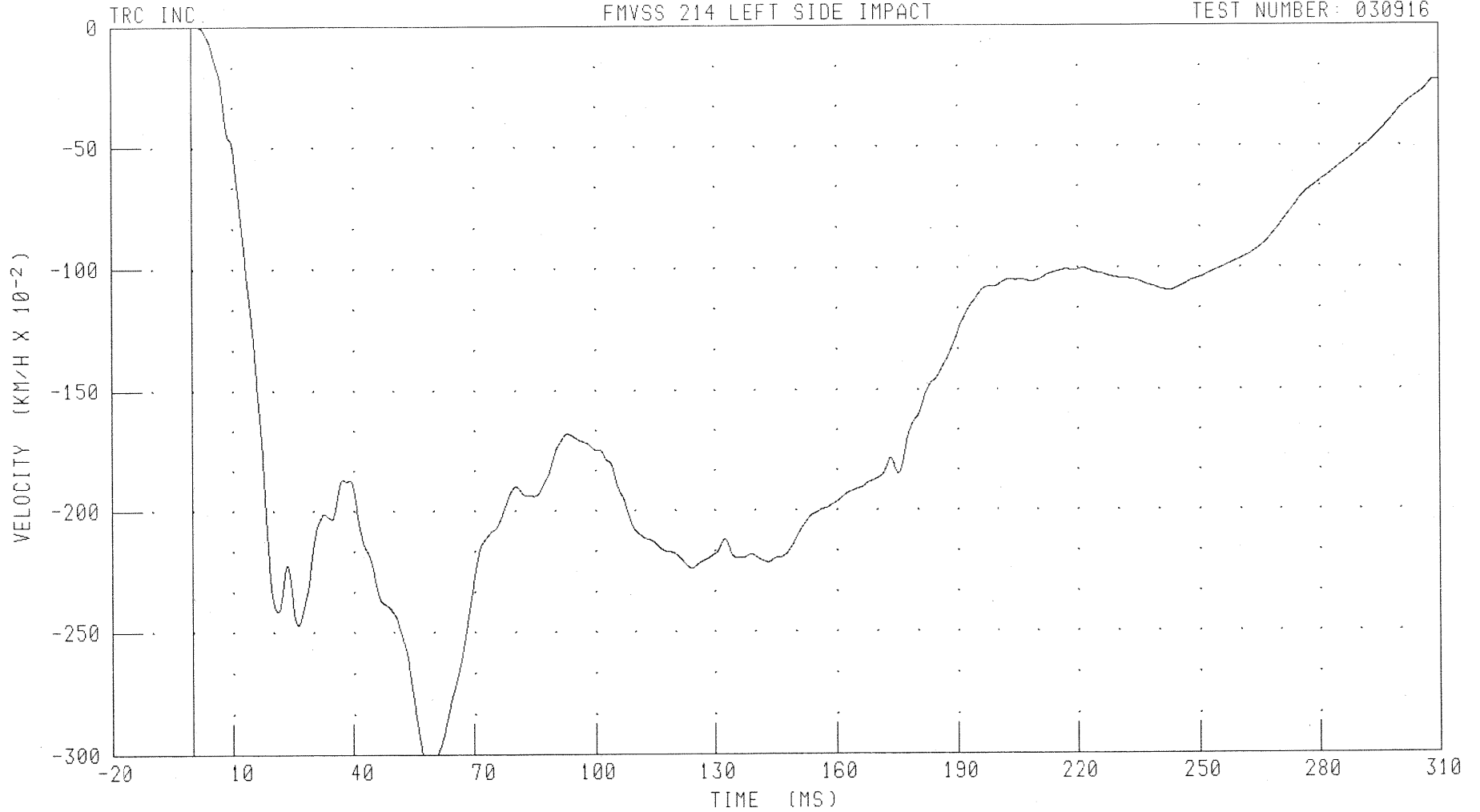
B-93

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
RIGHT SIDE SILL AT REAR SEAT X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: RRSXV1

FILTER: CH. CLASS 100

PEAK DATA: 0.00 KM/H @ 1.52 MS, -3.06 KM/H @ 58.56 MS

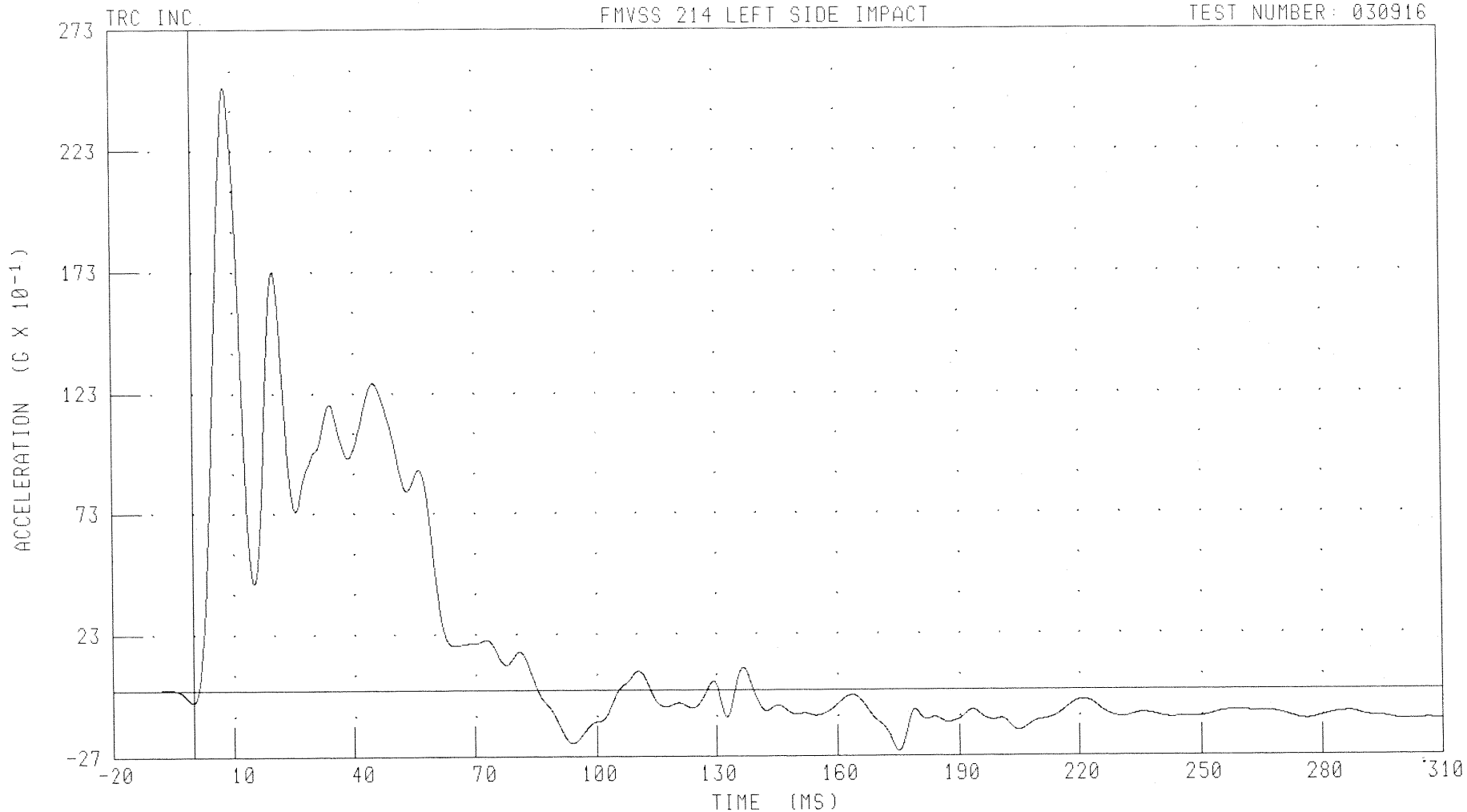
B-94

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
RIGHT SIDE SILL AT REAR SEAT Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



B-95

030916

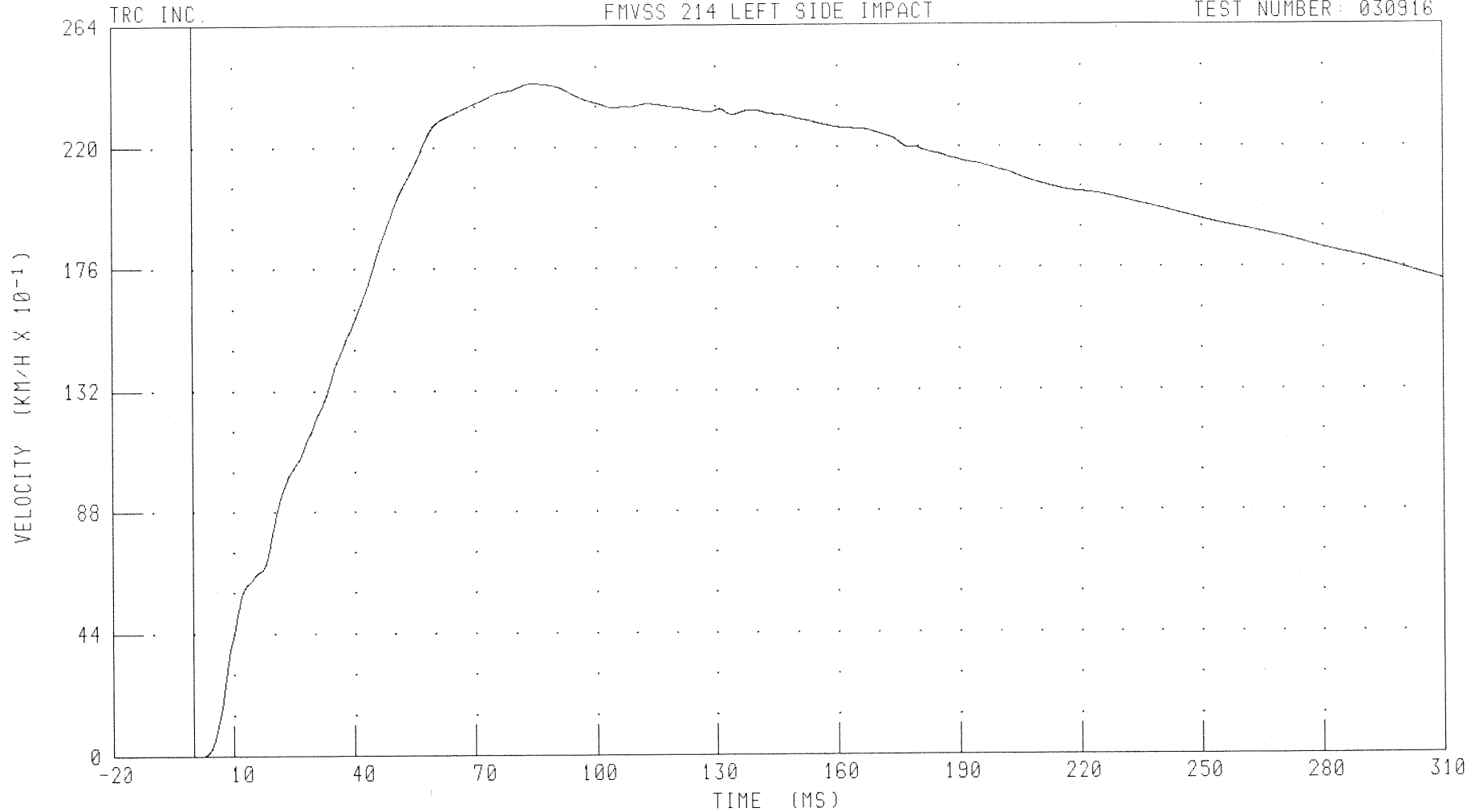
CHANNEL: RRSYG1 FILTER: CH. CLASS 60

PEAK DATA: 24.94 G @ 8.32 MS; -2.50 G @ 175.04 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
RIGHT SIDE SILL AT REAR SEAT Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: RRSYV1 FILTER: CH. CLASS 180

PEAK DATA: 24.32 KM/H @ 84.96 MS; 0.00 KM/H @ 1.92 MS

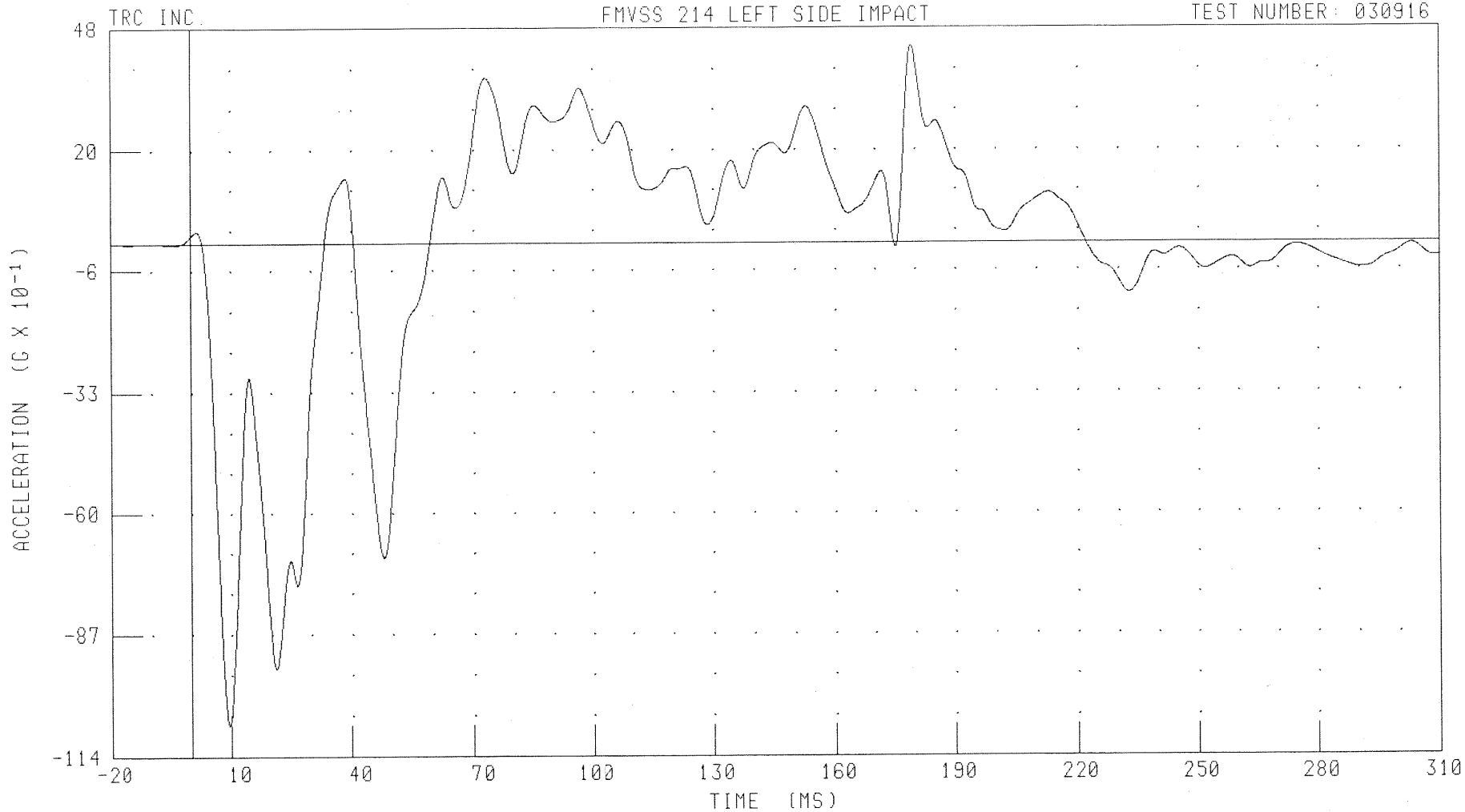
B-96

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
RIGHT SIDE SILL AT REAR SEAT Z-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



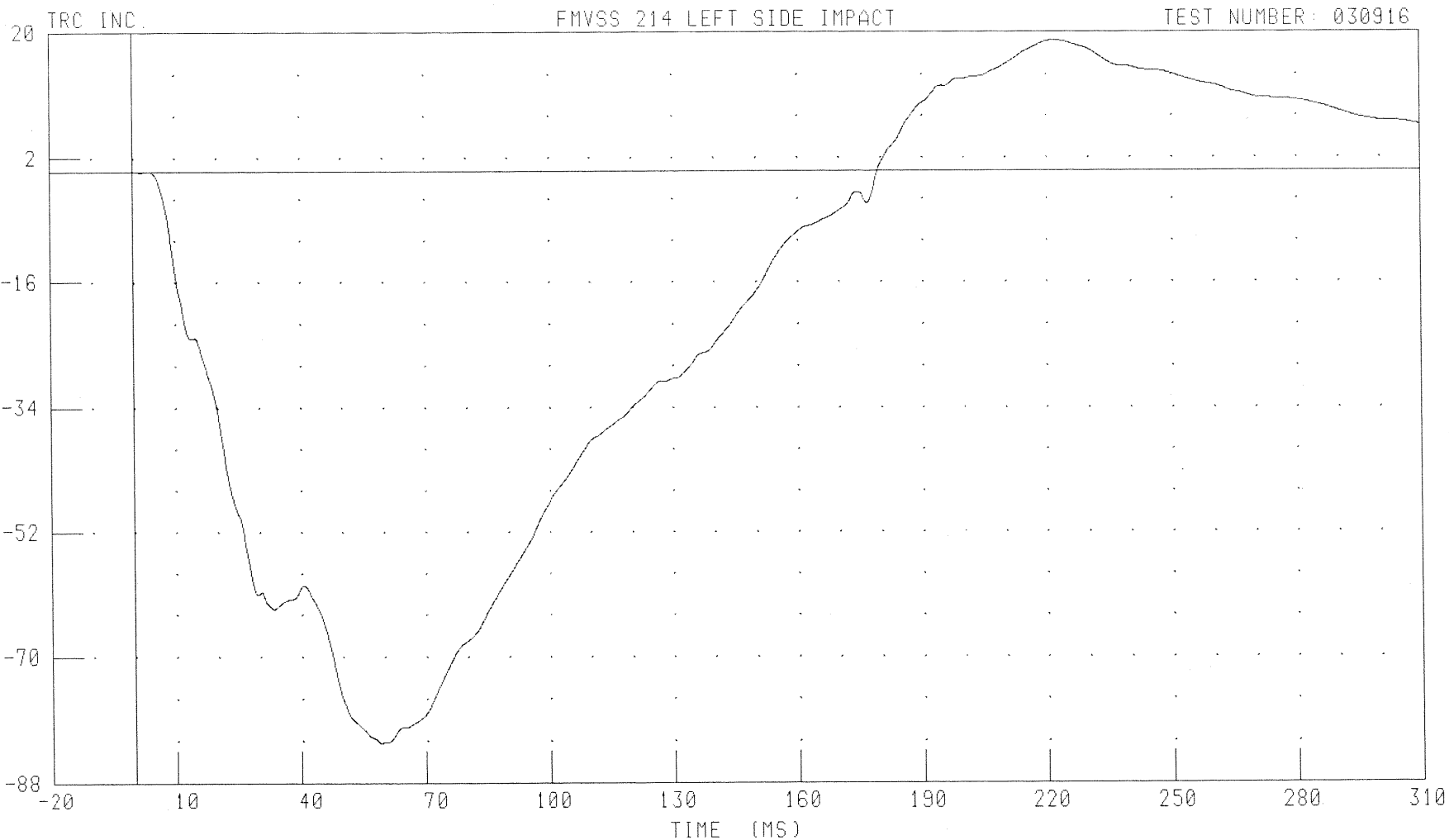
CHANNEL: RRSZG1 FILTER: CH. CLASS 60

PEAK DATA: 4.40 G @ 179.28 MS; -10.71 G @ 9.52 MS

B-97

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
RIGHT SIDE SILL AT REAR SEAT Z-AXIS VELOCITY



CHANNEL: RRSZV1 FILTER: CH. CLASS 180

PEAK DATA: 1.88 KM/H @ 222.88 MS; -8.23 KM/H @ 59.04 MS

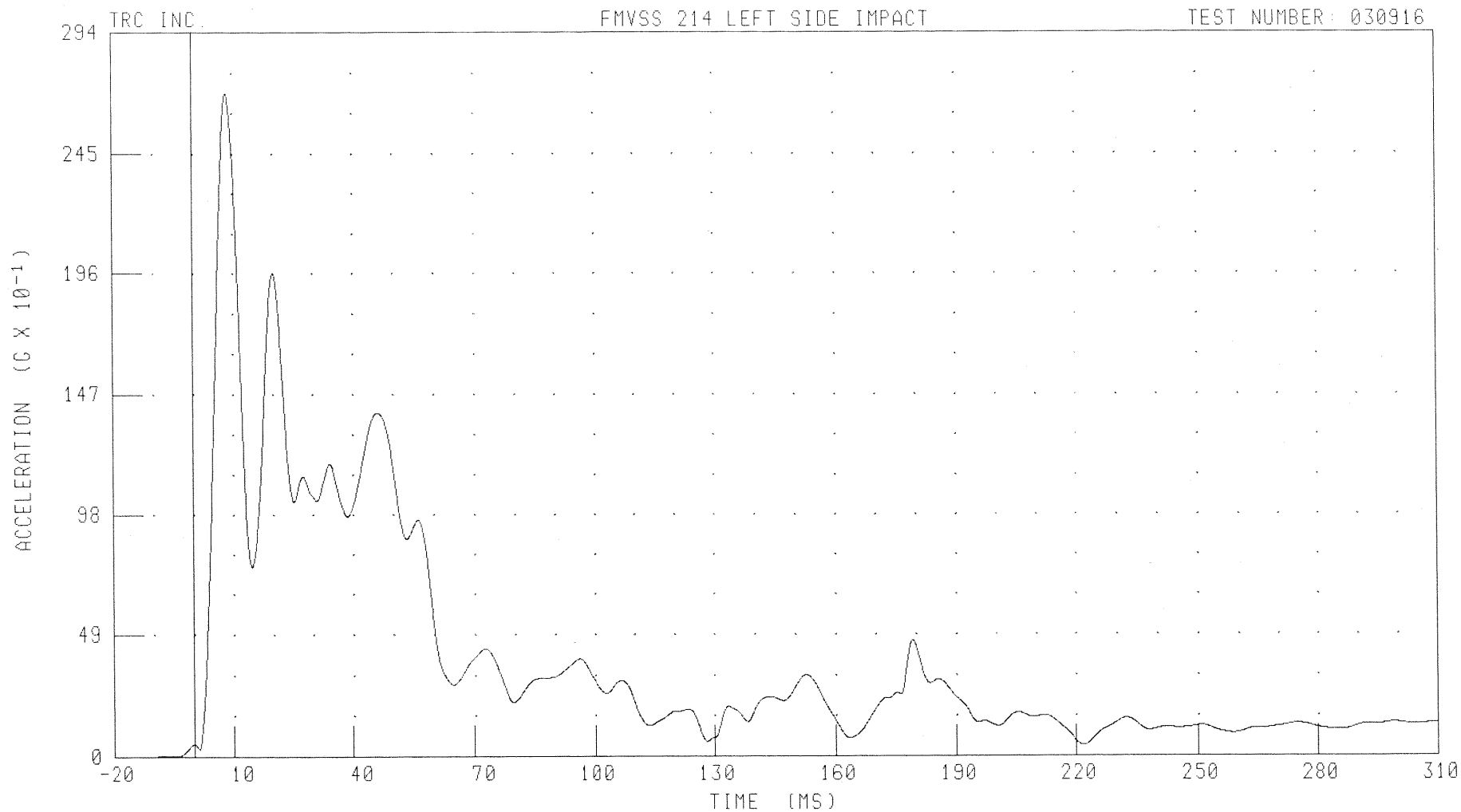
B-98

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: RRSRC1 FILTER: CH. CLASS 60

PEAK DATA: 26.97 G @ 8.48 MS; 0.01 G @ -20.00 MS

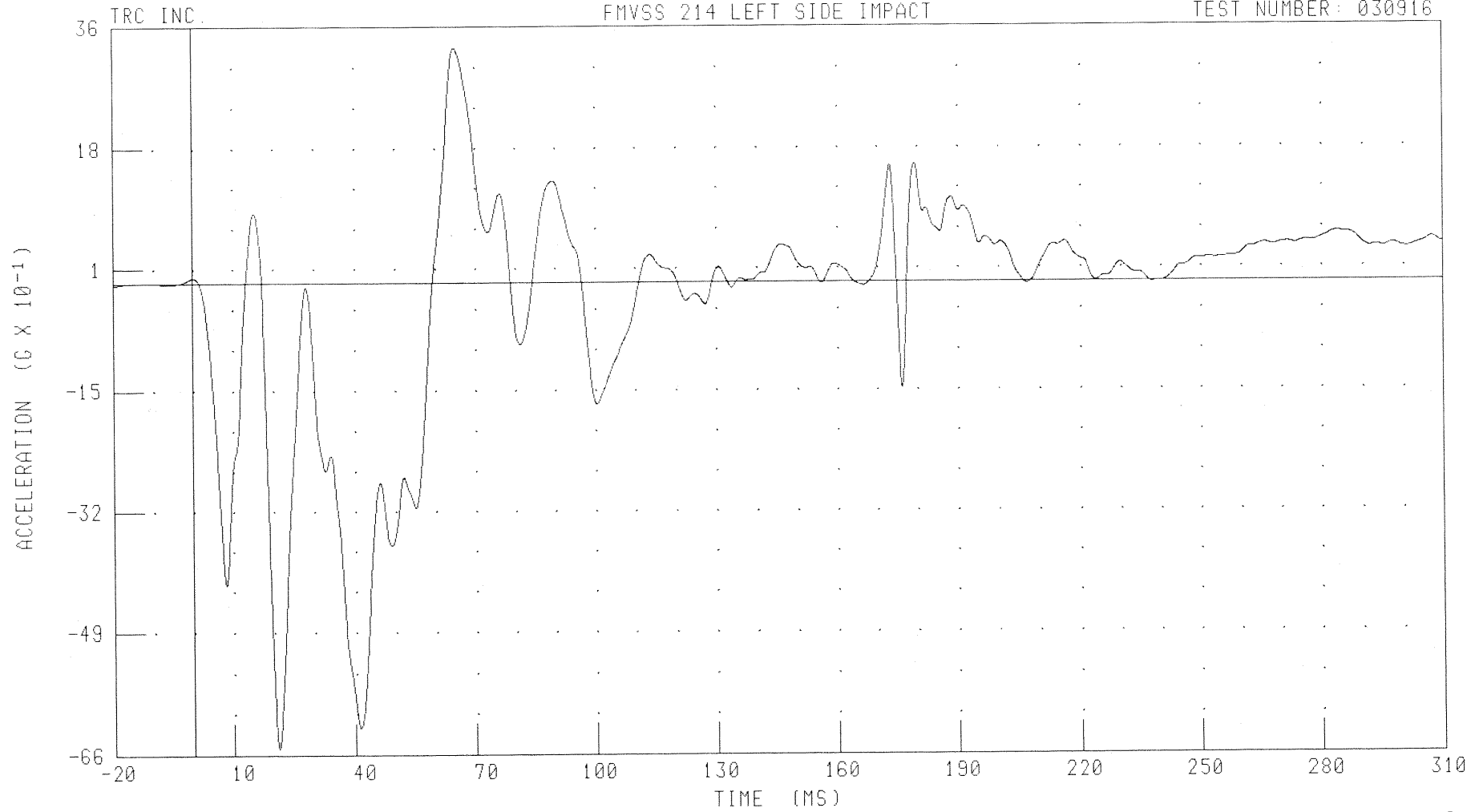
B-99

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
REAR FLOORPAN ABOVE AXLE X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: RDKXG1 FILTER: CH. CLASS 60

PEAK DATA: 3.30 G @ 65.04 MS; -6.51 G @ 21.12 MS

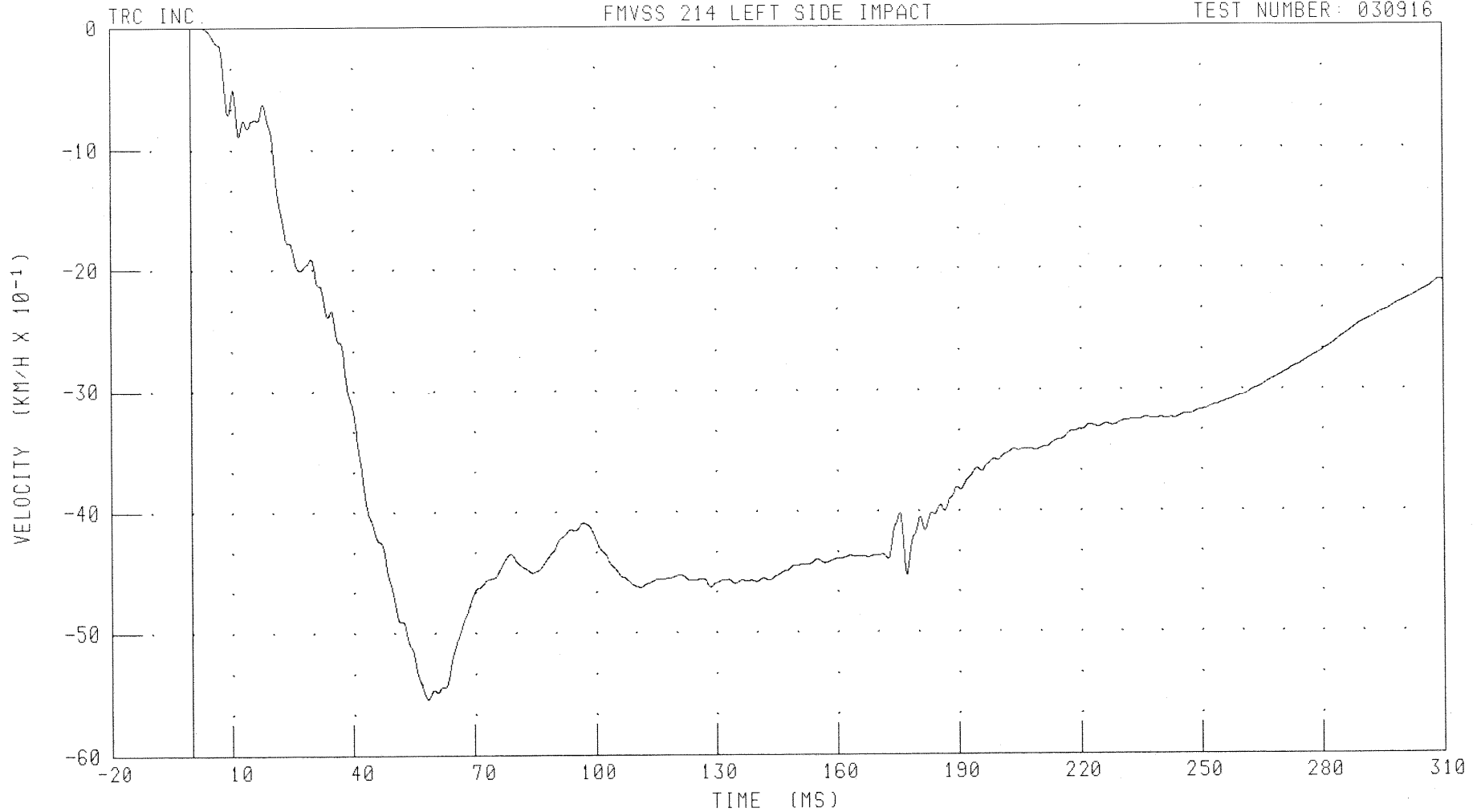
B-100

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
REAR FLOORPAN ABOVE AXLE X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: RDKXV1 FILTER: CH. CLASS 180

PEAK DATA: 0.00 KM/H @ 1.60 MS; -5.54 KM/H @ 58.40 MS

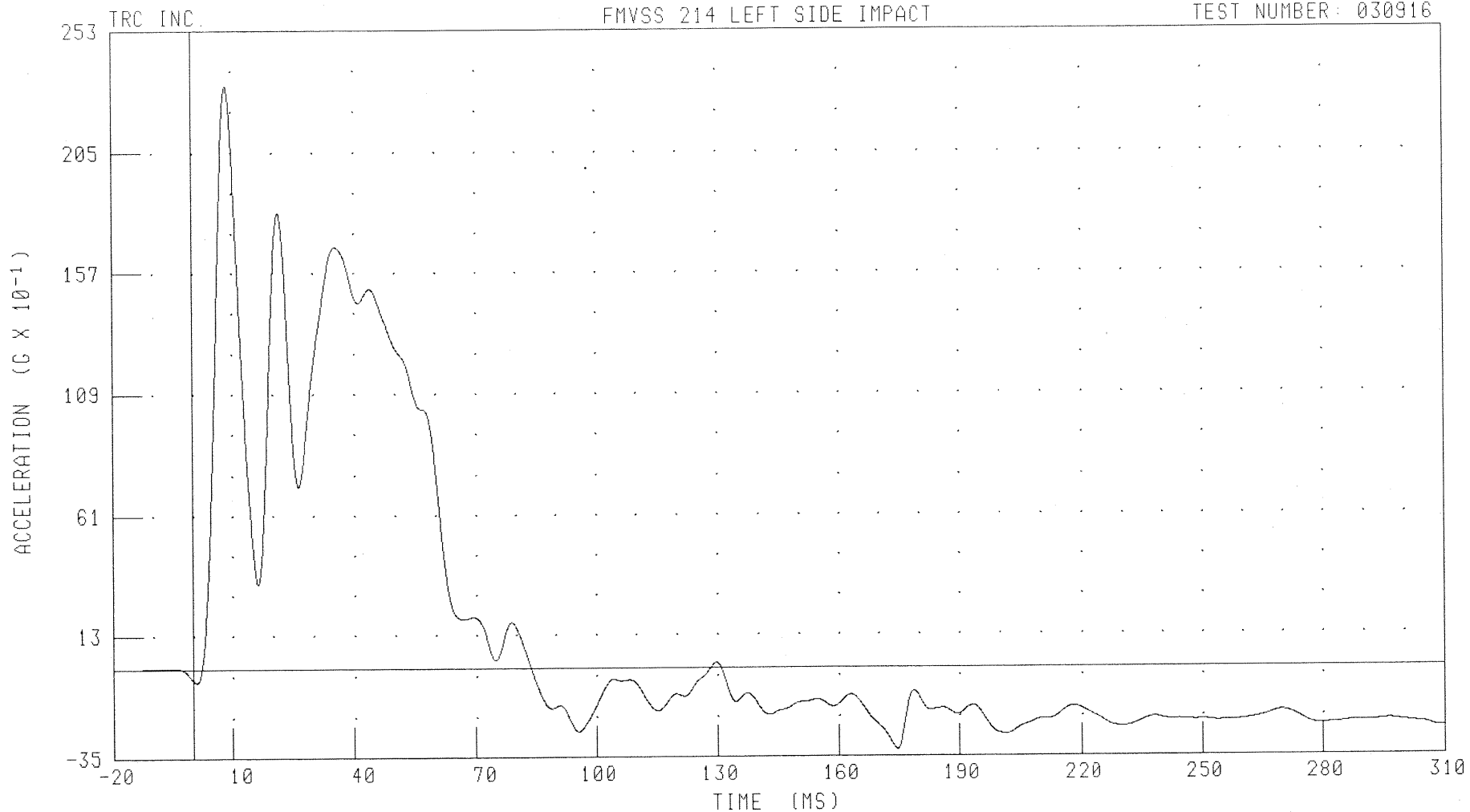
B-101

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
REAR FLOORPAN ABOVE AXLE Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: RDKYG1 FILTER: CH. CLASS 60

PEAK DATA: 23.10 G @ 8.64 MS; -3.24 G @ 174.64 MS

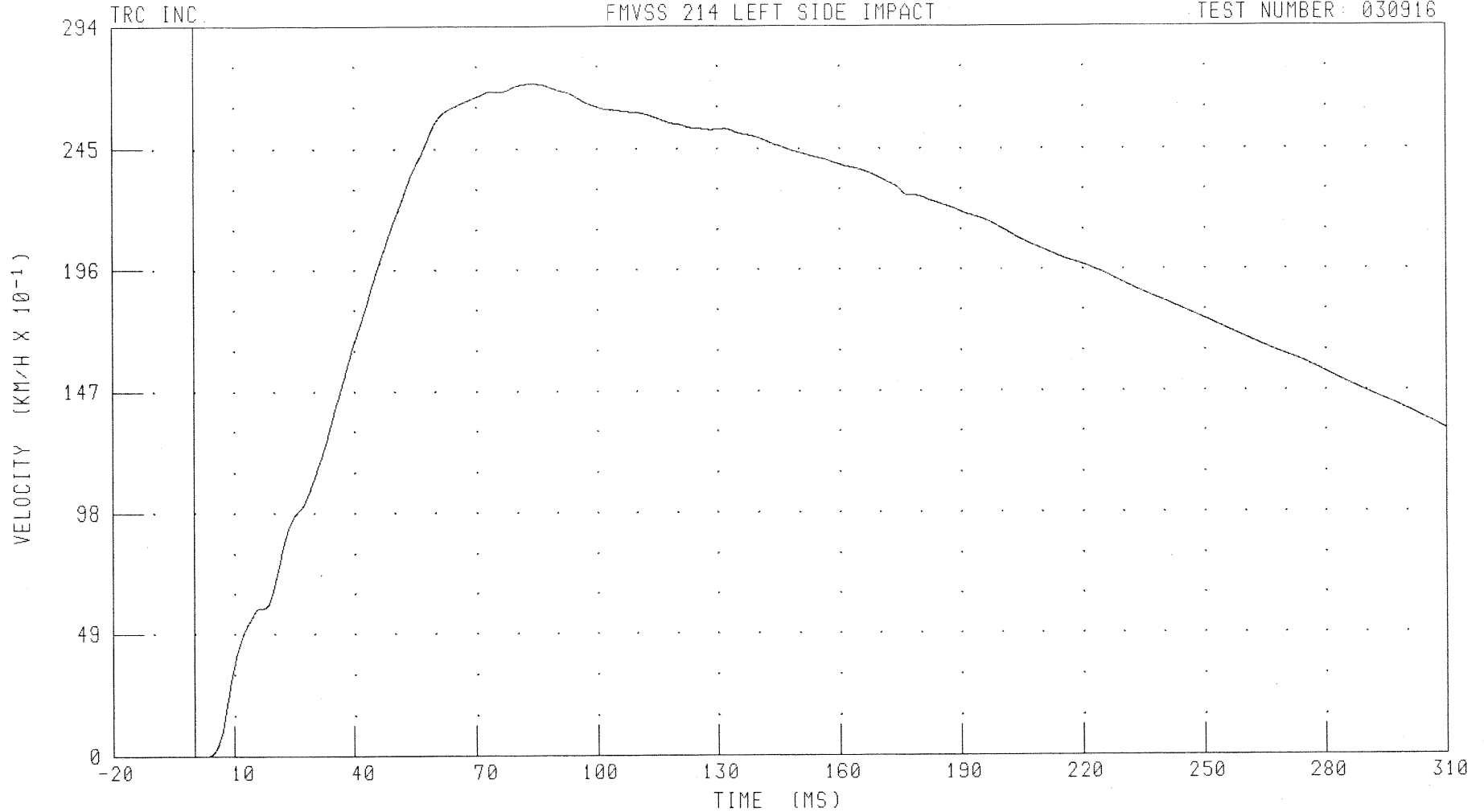
B-102

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
REAR FLOORPAN ABOVE AXLE Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: RDKYV1 FILTER: CH. CLASS 180

PEAK DATA: 27.09 KM/H @ 83.76 MS; 0.00 KM/H @ 0.00 MS

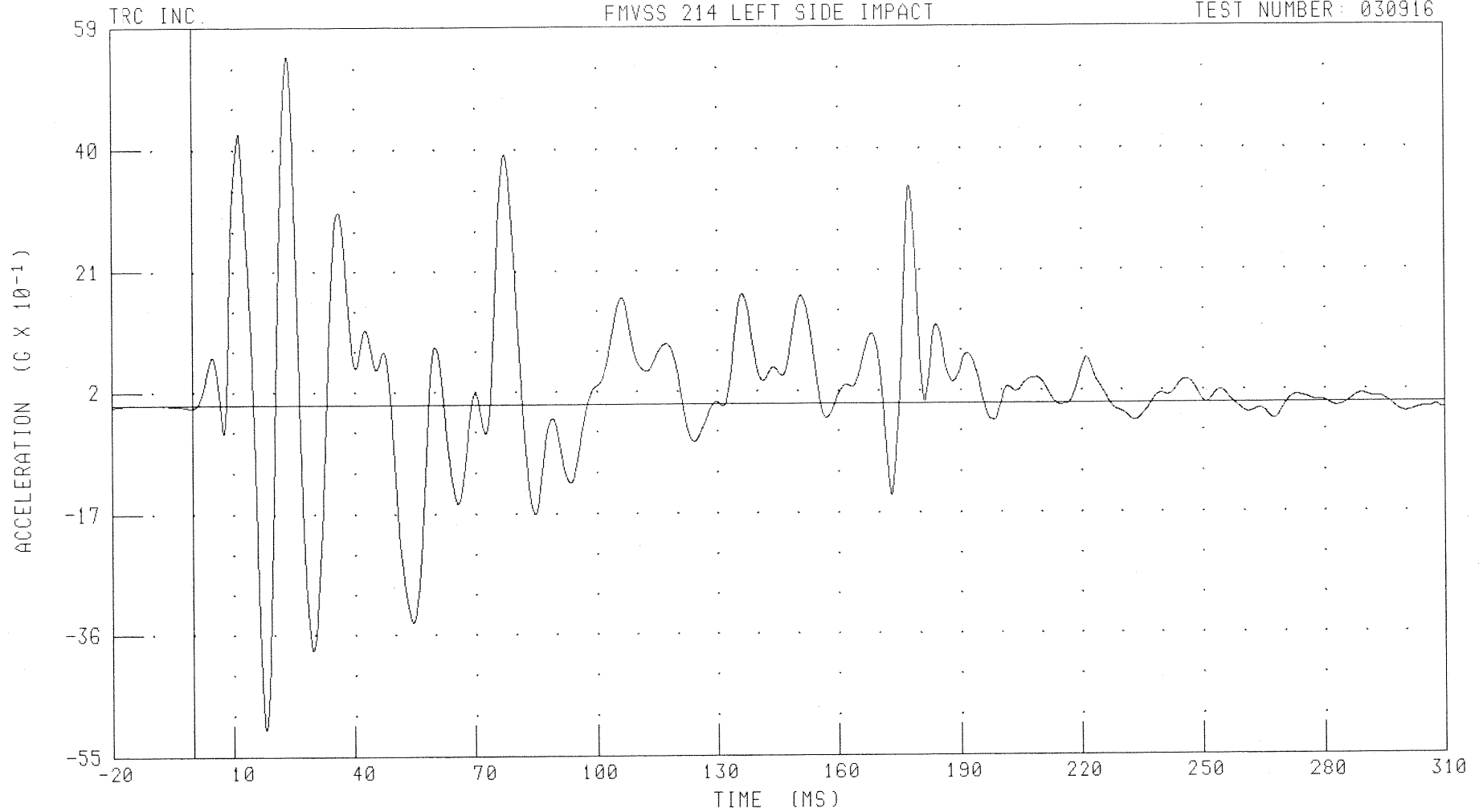
B-103

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
REAR FLOORPAN ABOVE AXLE Z-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



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030916

CHANNEL: RDKZG1

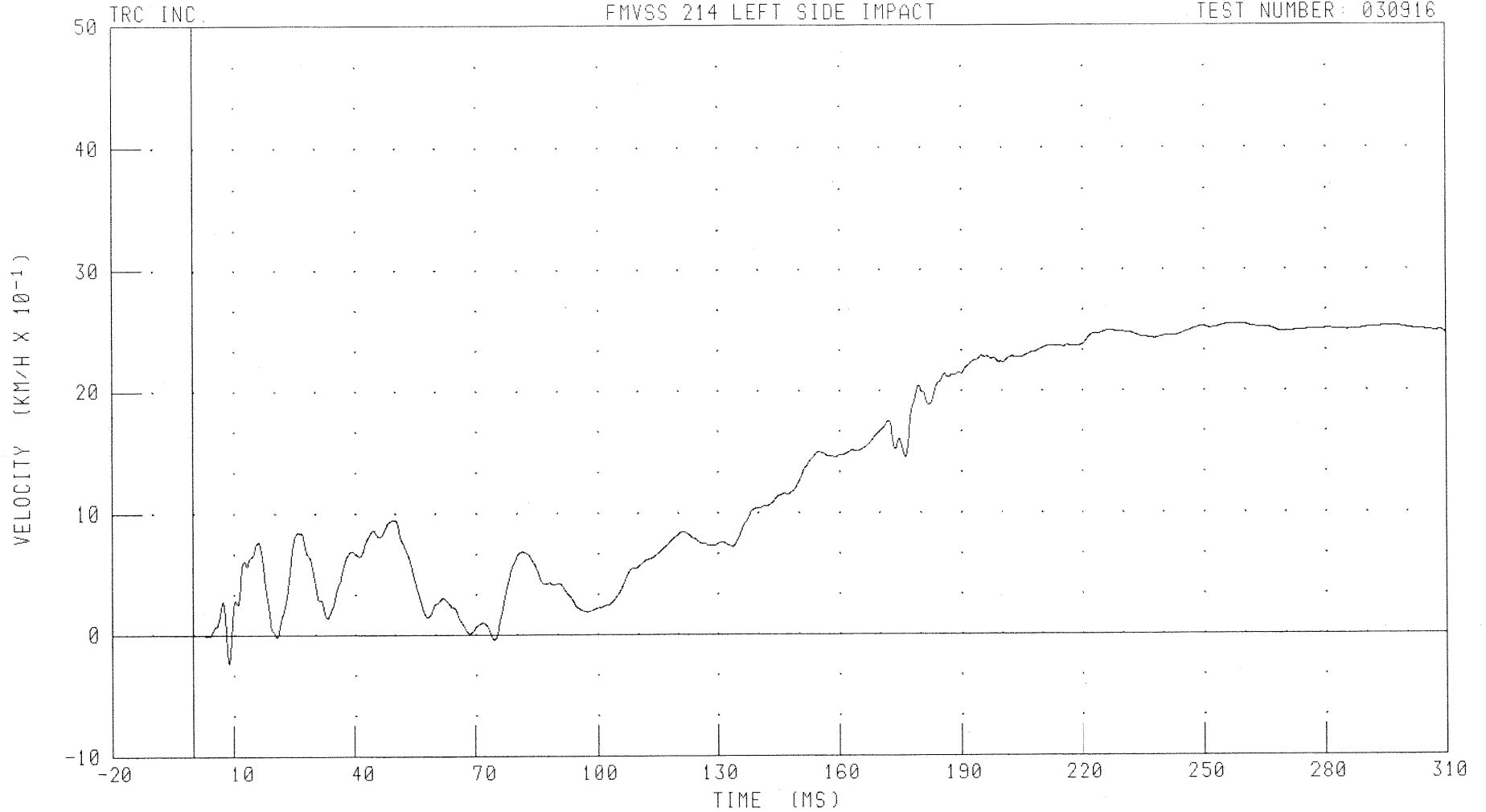
FILTER: CH. CLASS 60

PEAK DATA: 5.45 G @ 23.60 MS; -5.08 G @ 18.00 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
REAR FLOORPAN ABOVE AXLE Z-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: RDKZV1 FILTER: CH. CLASS 180

PEAK DATA: 25.5 KM/H @ 256.16 MS, -0.24 KM/H @ 8.88 MS

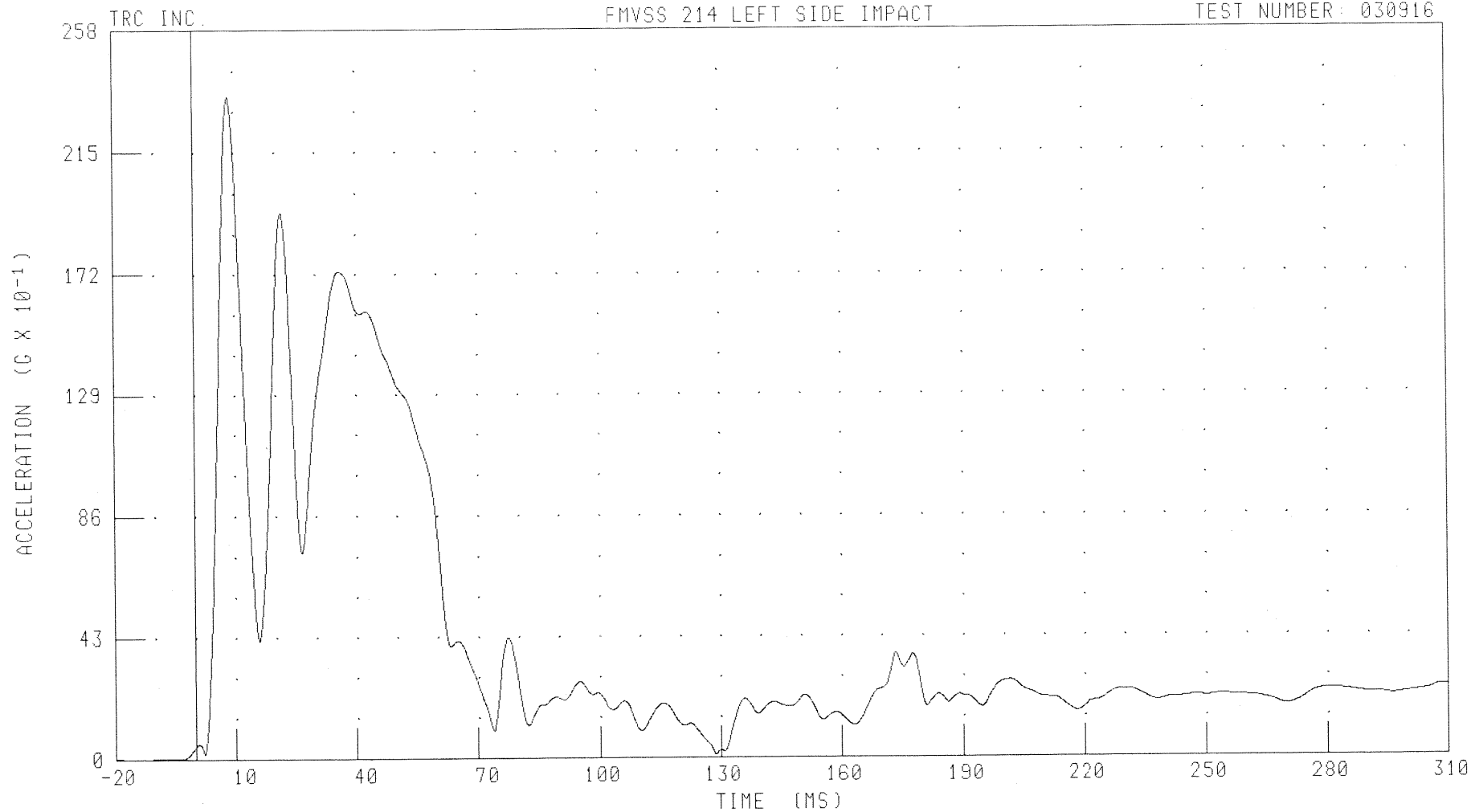
B-105

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: RDKRG1 FILTER: CH. CLASS 60

PEAK DATA: 23.46 G @ 8.64 MS; 0.01 G @ -16.08 MS

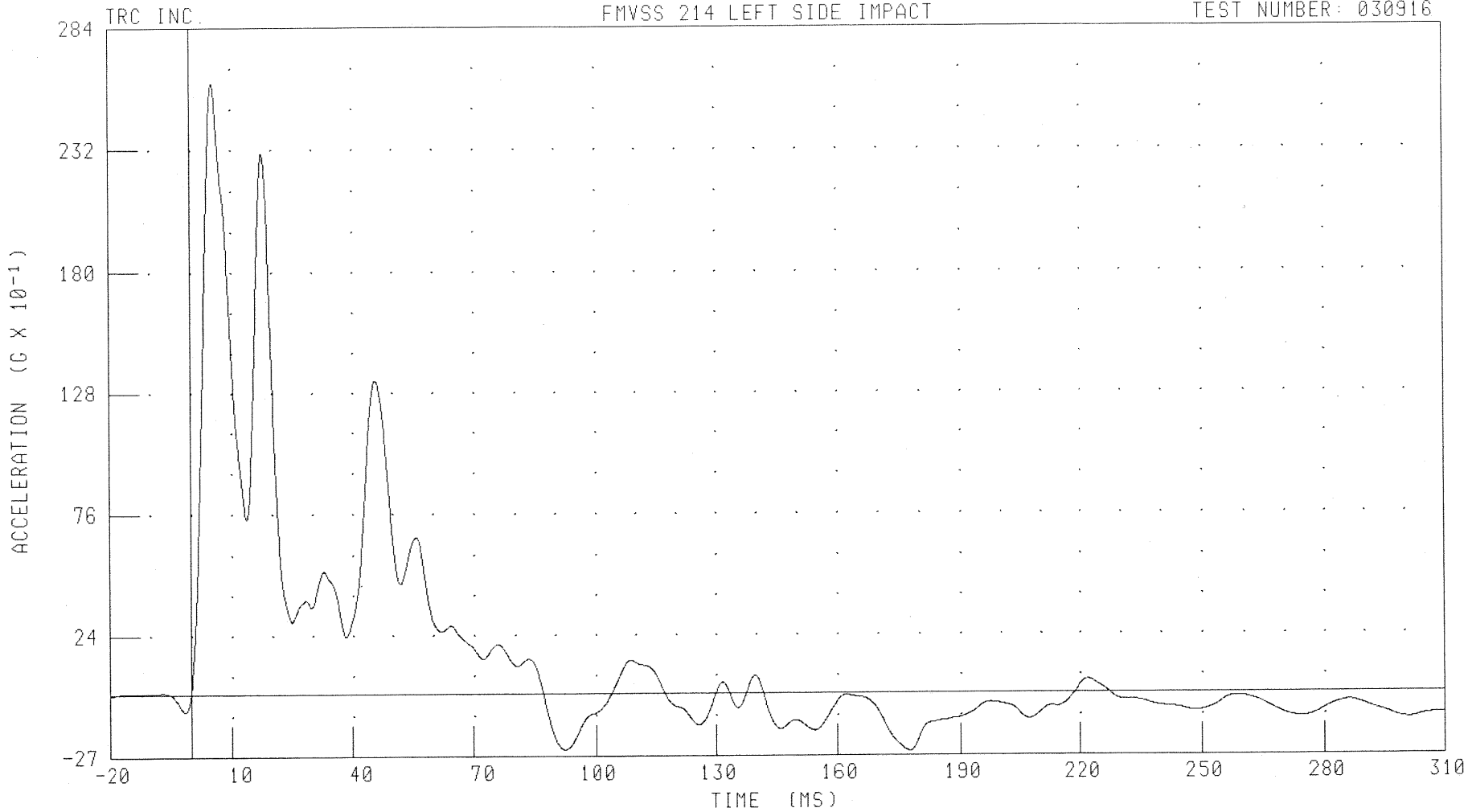
B-106

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT SIDE SILL AT FRONT SEAT Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LFSYG1

FILTER: CH. CLASS 60

PEAK DATA: 26.13 G @ 5.44 MS; -2.52 G @ 177.68 MS

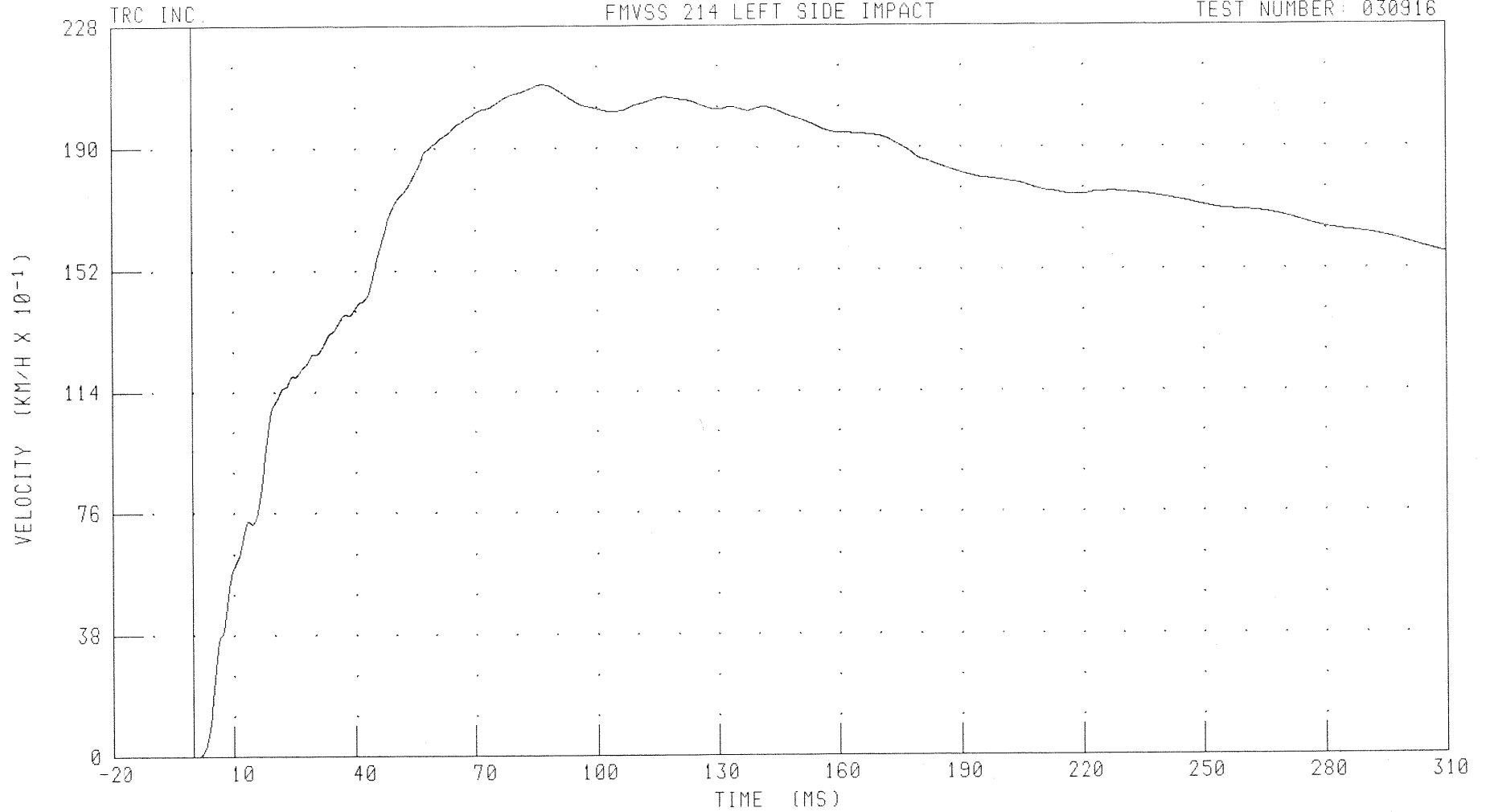
B-107

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT SIDE SILL AT FRONT SEAT Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LFSYV1 FILTER: CH. CLASS 180

PEAK DATA: 20.97 KM/H @ 86.80 MS; 0.00 KM/H @ 0.88 MS

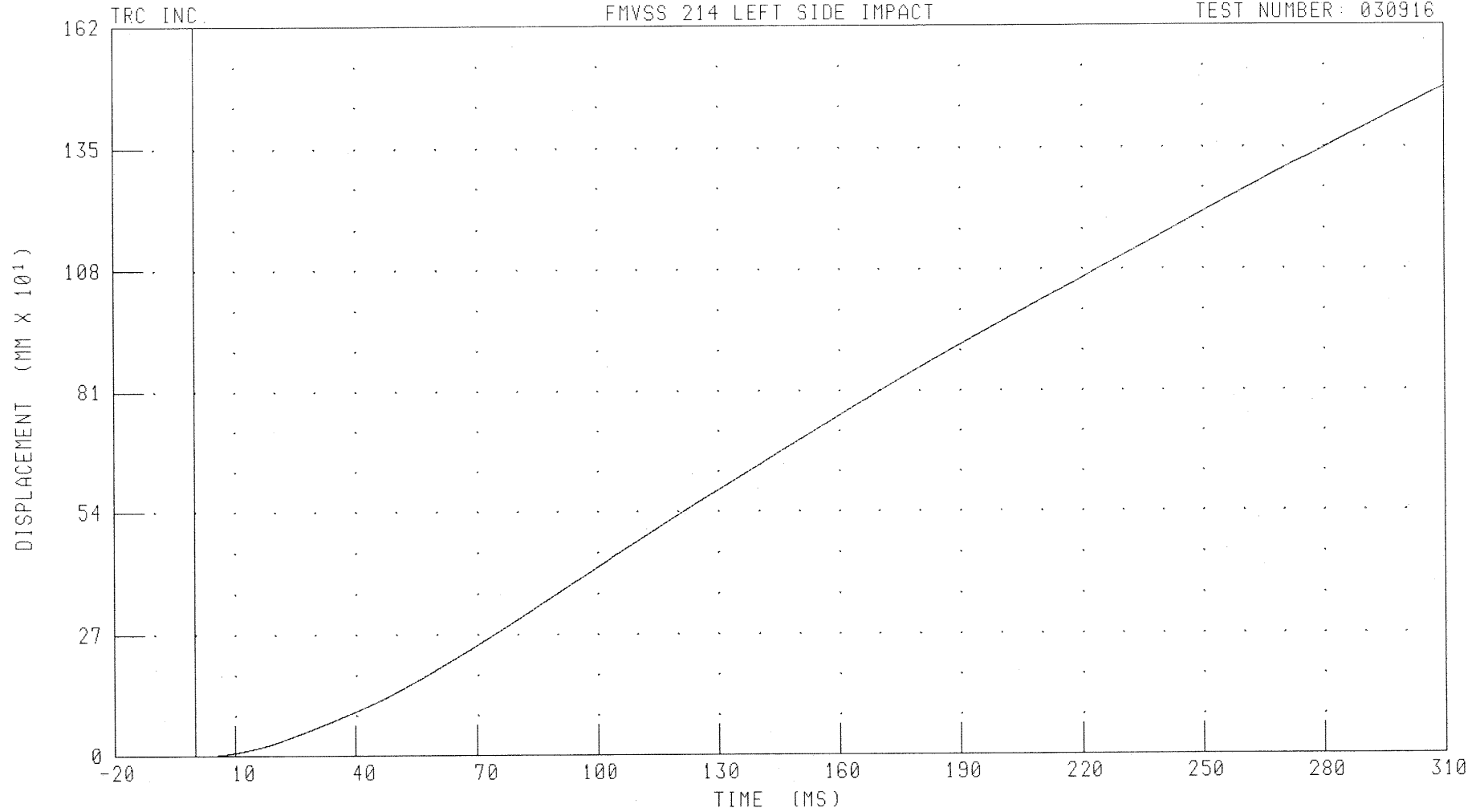
B-108

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT SIDE SILL AT FRONT SEAT Y-AXIS DISPLACEMENT

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LFSYD1

FILTER: CH. CLASS 180

PEAK DATA: 1481.83 MM @ 310.00 MS; 0.00 MM @ 1.20 MS

B-109

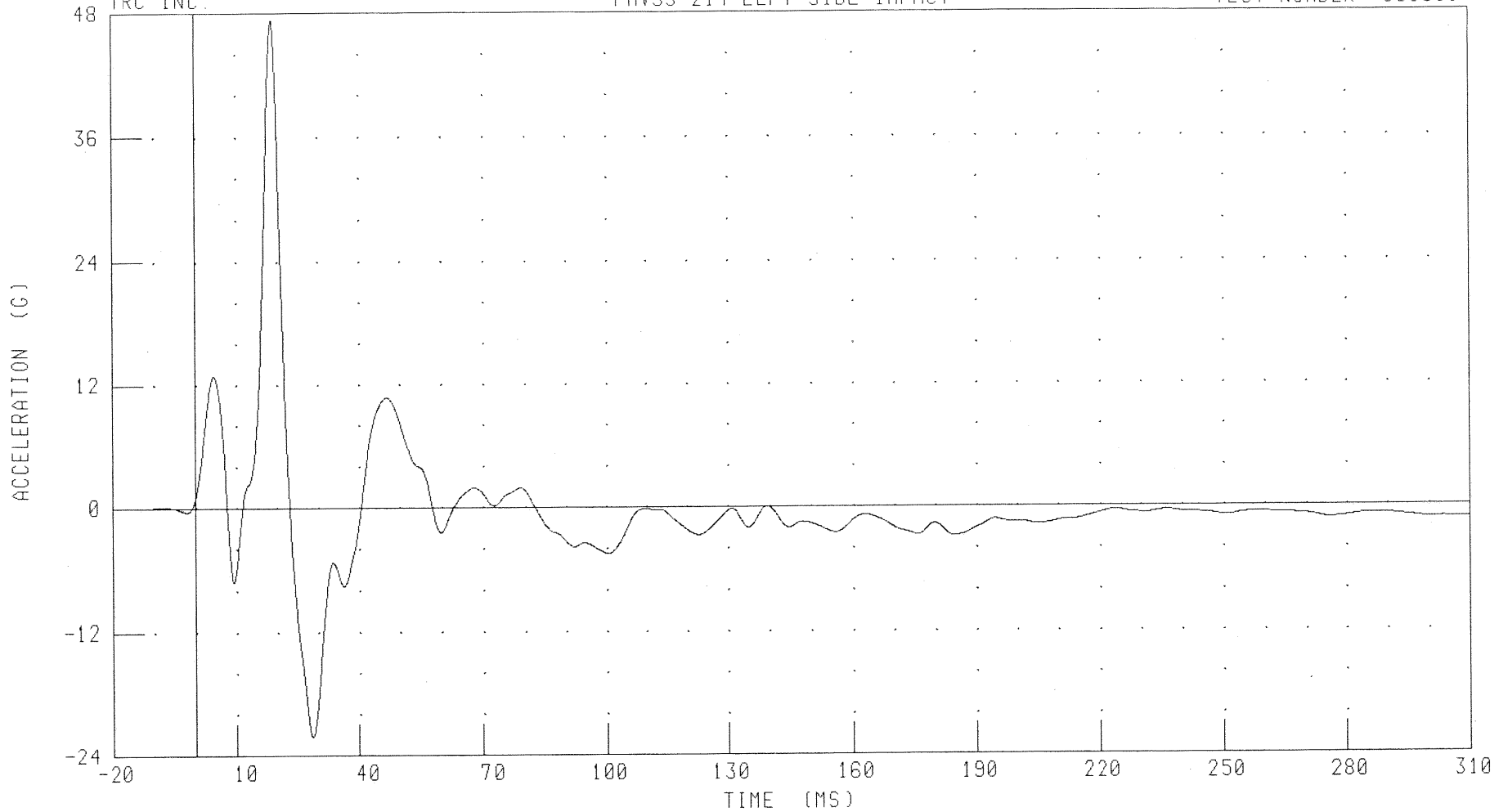
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT SIDE SILL AT REAR SEAT Y-AXIS ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LRSYG1

FILTER: CH. CLASS 60

PEAK DATA: 47.32 G @ 18.88 MS; -22.20 G @ 28.64 MS

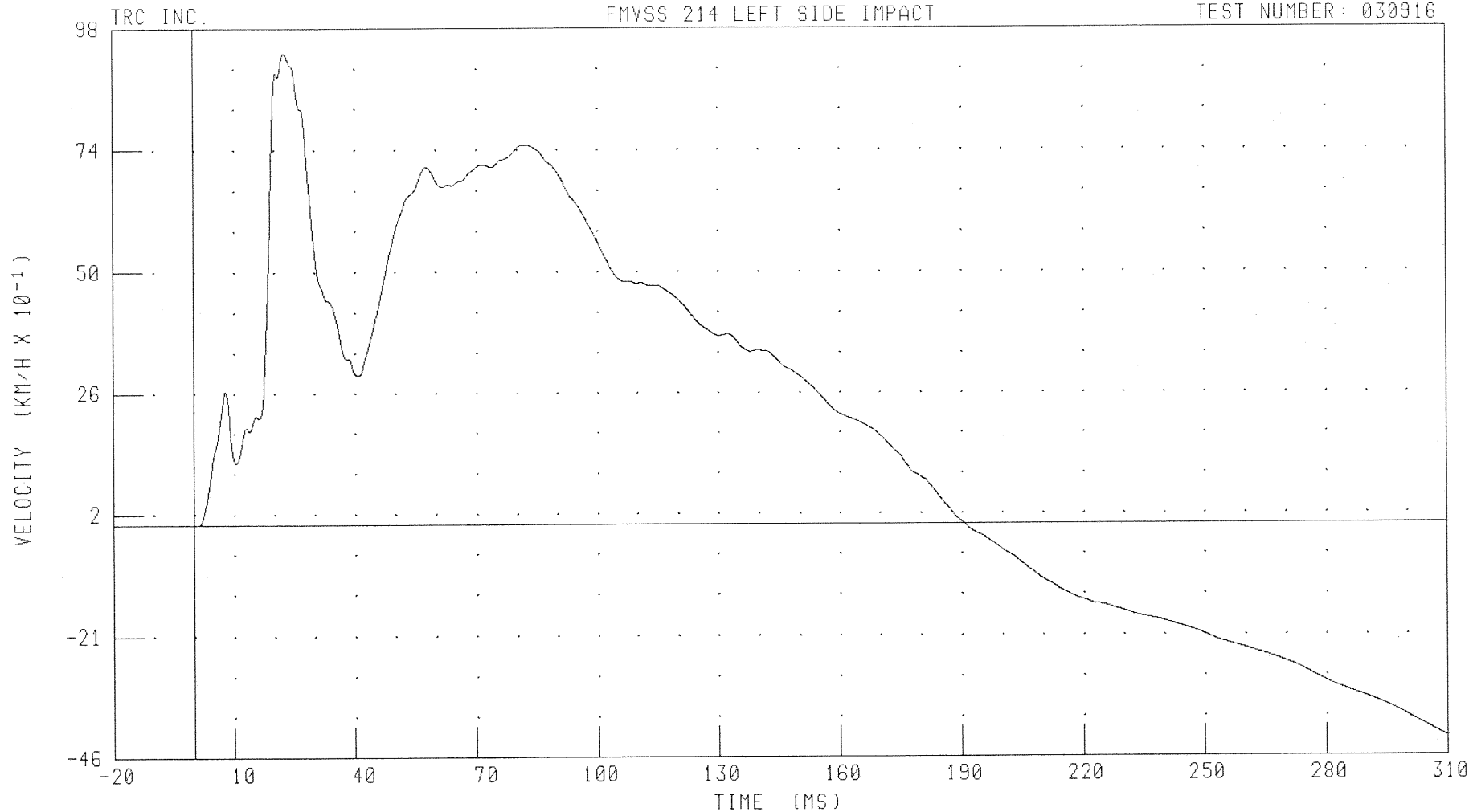
B-110

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT SIDE SILL AT REAR SEAT Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LRSYV1 FILTER: CH. CLASS 180

PEAK DATA: 9.30 KM/H @ 22.72 MS; -4.23 KM/H @ 310.00 MS

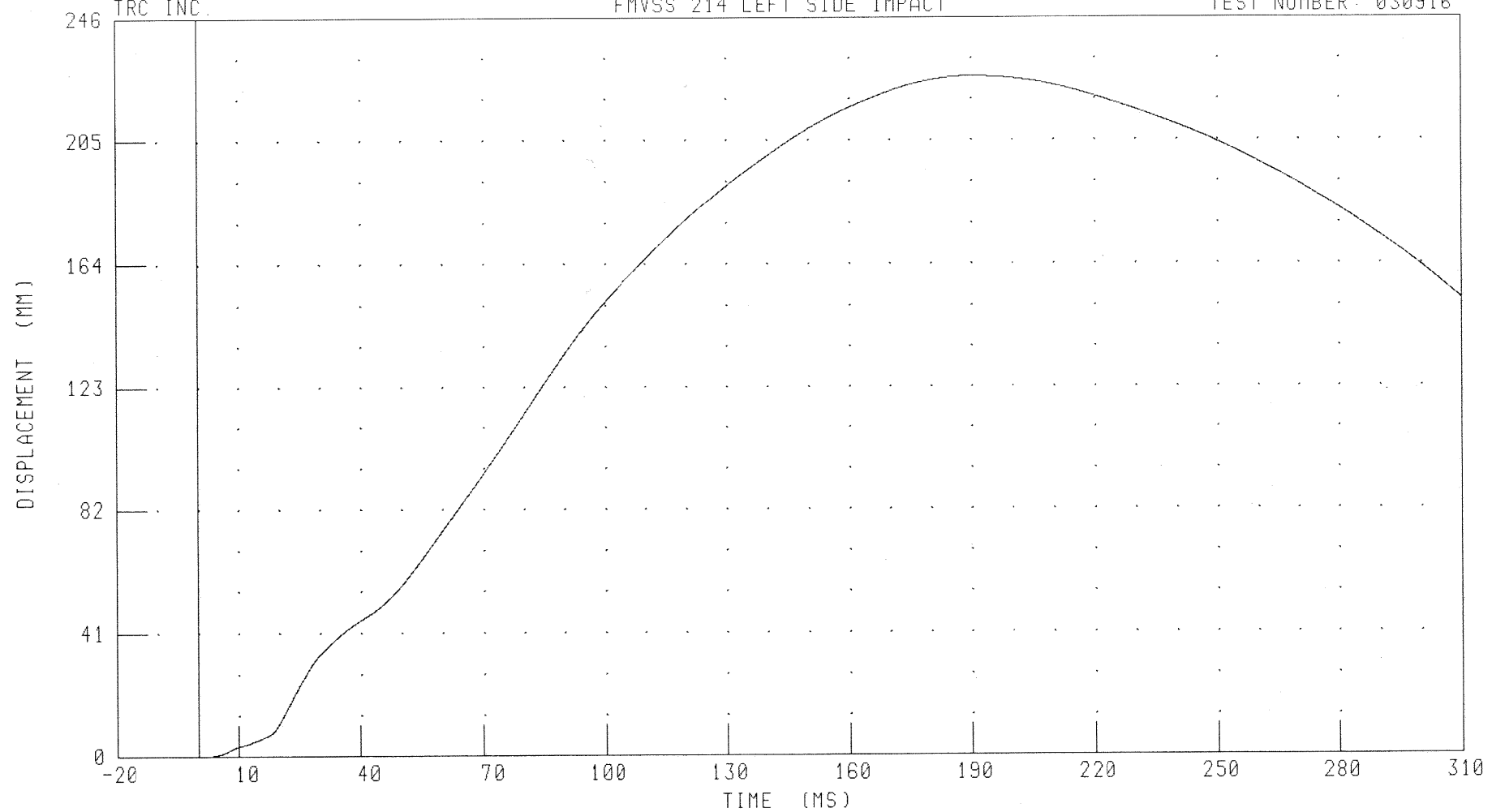
B-111

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT SIDE SILL AT REAR SEAT Y-AXIS DISPLACEMENT

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LRSYD1

FILTER: CH. CLASS 180

PEAK DATA: 226.24 MM @ 190.64 MS; 0.00 MM @ 1.44 MS

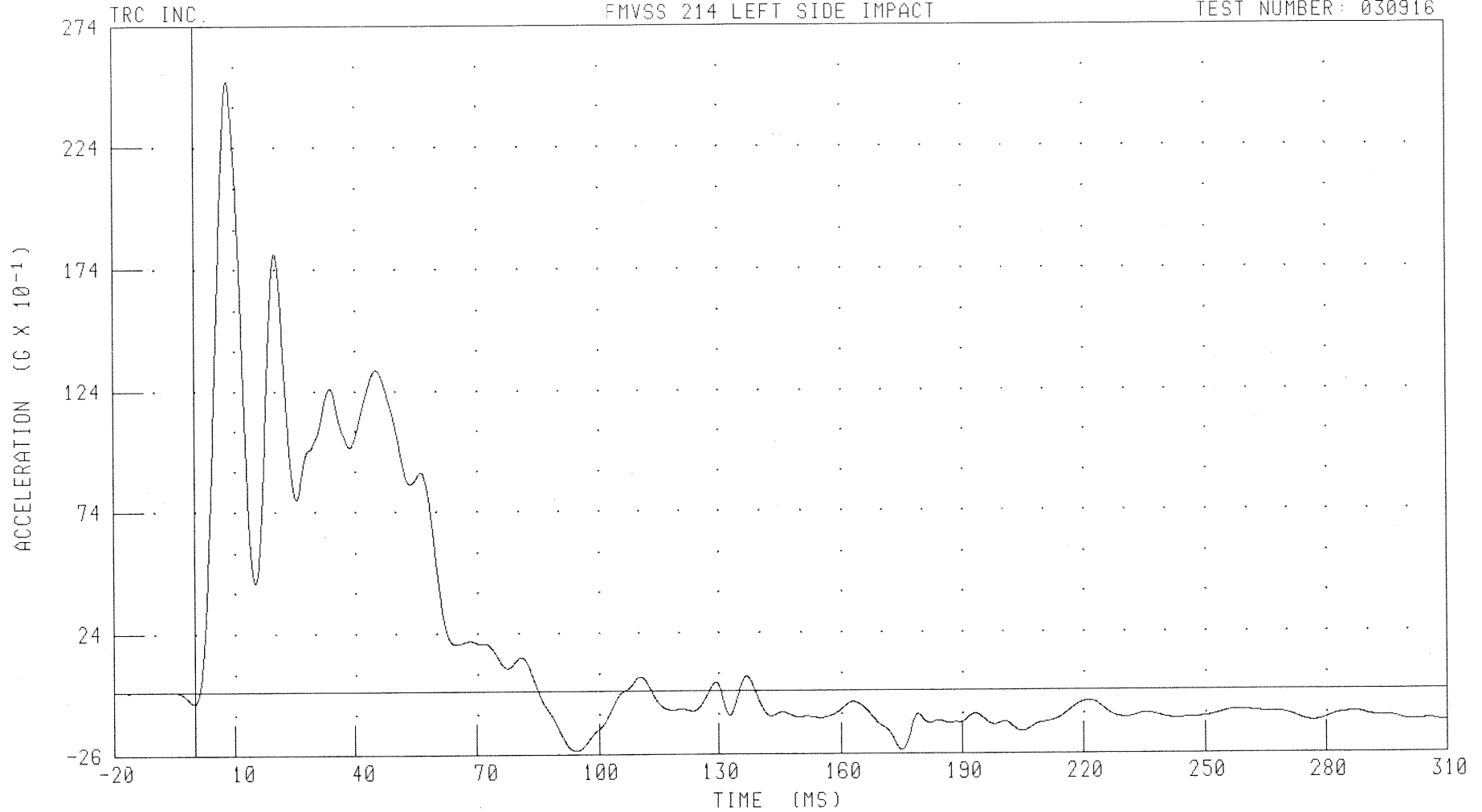
B-112

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: RRTYG1 FILTER: CH. CLASS 60

PEAK DATA: 25.10 G @ 8.32 MS; -2.45 G @ 94.40 MS

B-113

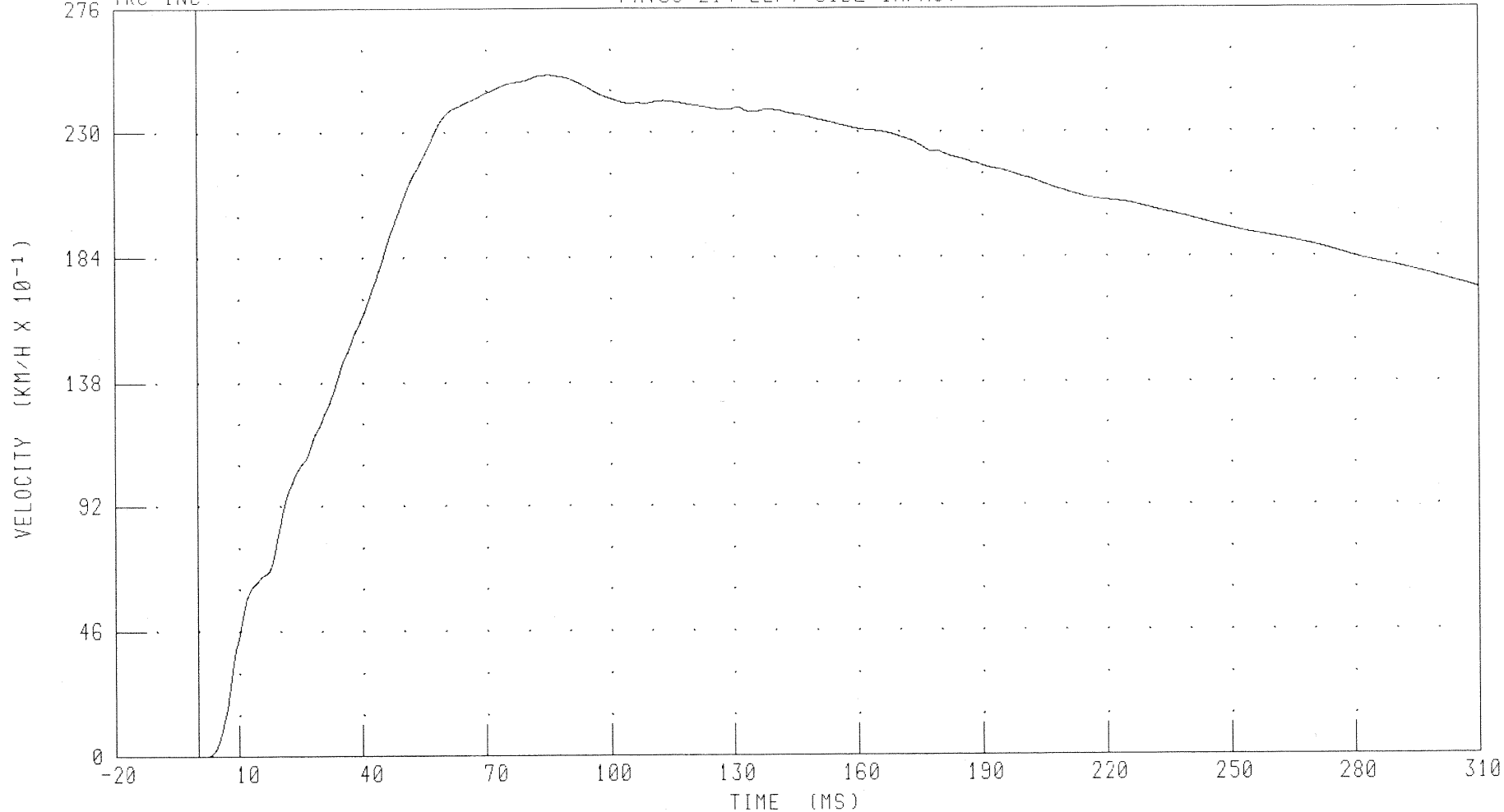
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS VELOCITY

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: RRTYV1

FILTER: CH. CLASS 100

PEAK DATA: 25.14 KM/H @ 85.04 MS; 0.00 KM/H @ 1.84 MS

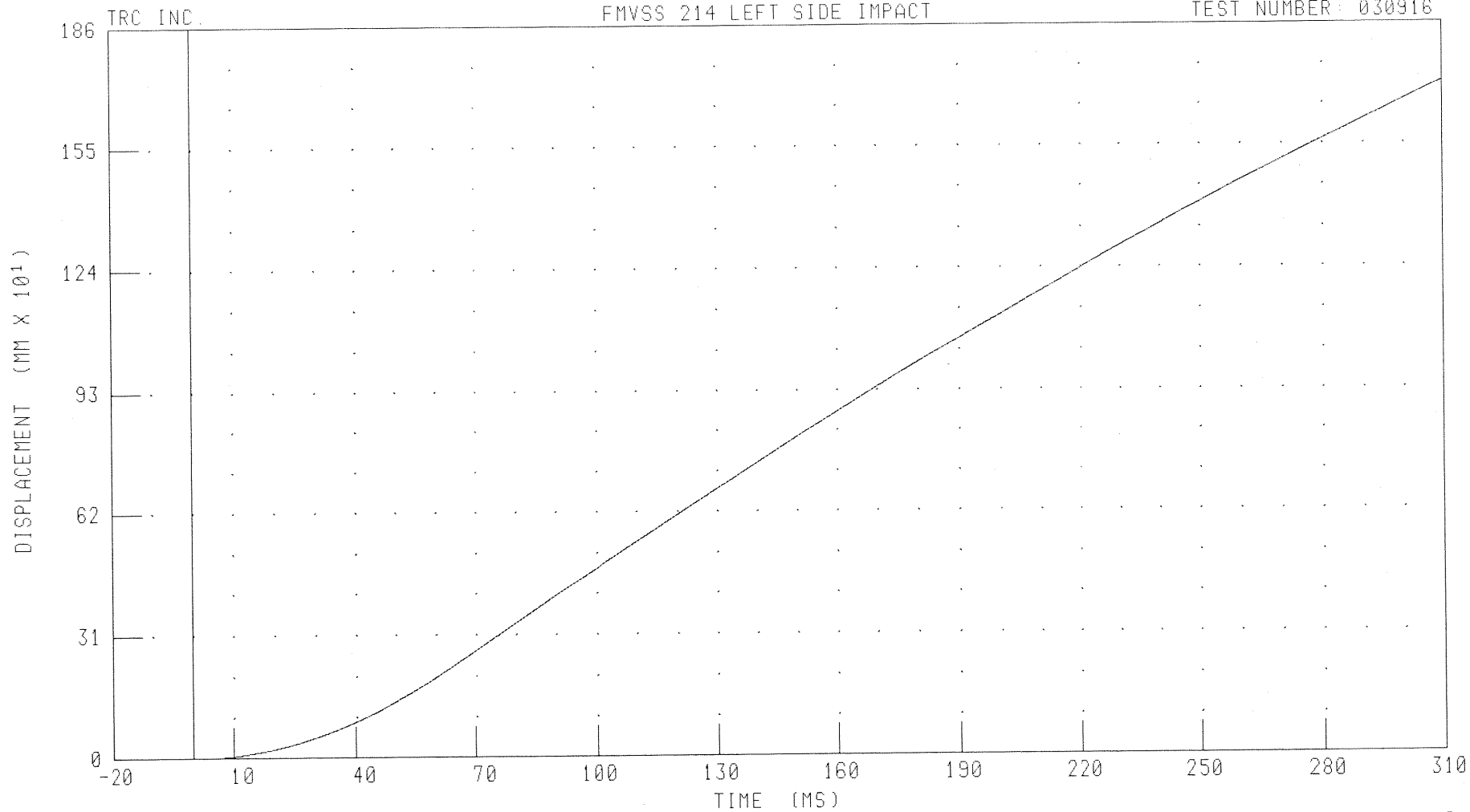
B-114

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS DISPLACEMENT

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: RRTYD1

FILTER: CH. CLASS 180

PEAK DATA: 1709.97 MM @ 310.00 MS; 0.00 MM @ 0.00 MS

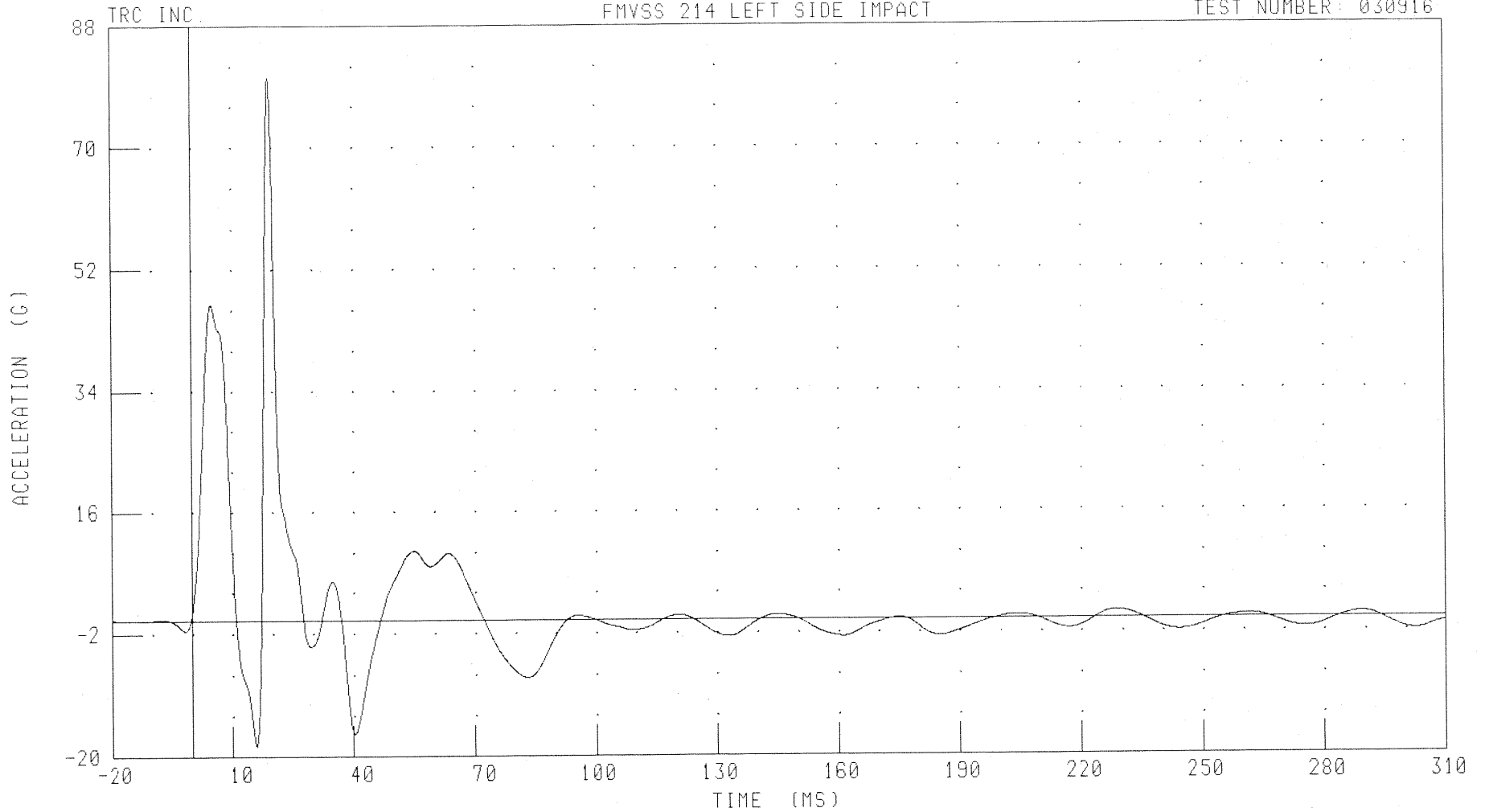
B-115

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT LOWER A-POST Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LLAYG1 FILTER: CH. CLASS 60

PEAK DATA: 80.48 G @ 19.36 MS; -18.42 G @ 16.00 MS

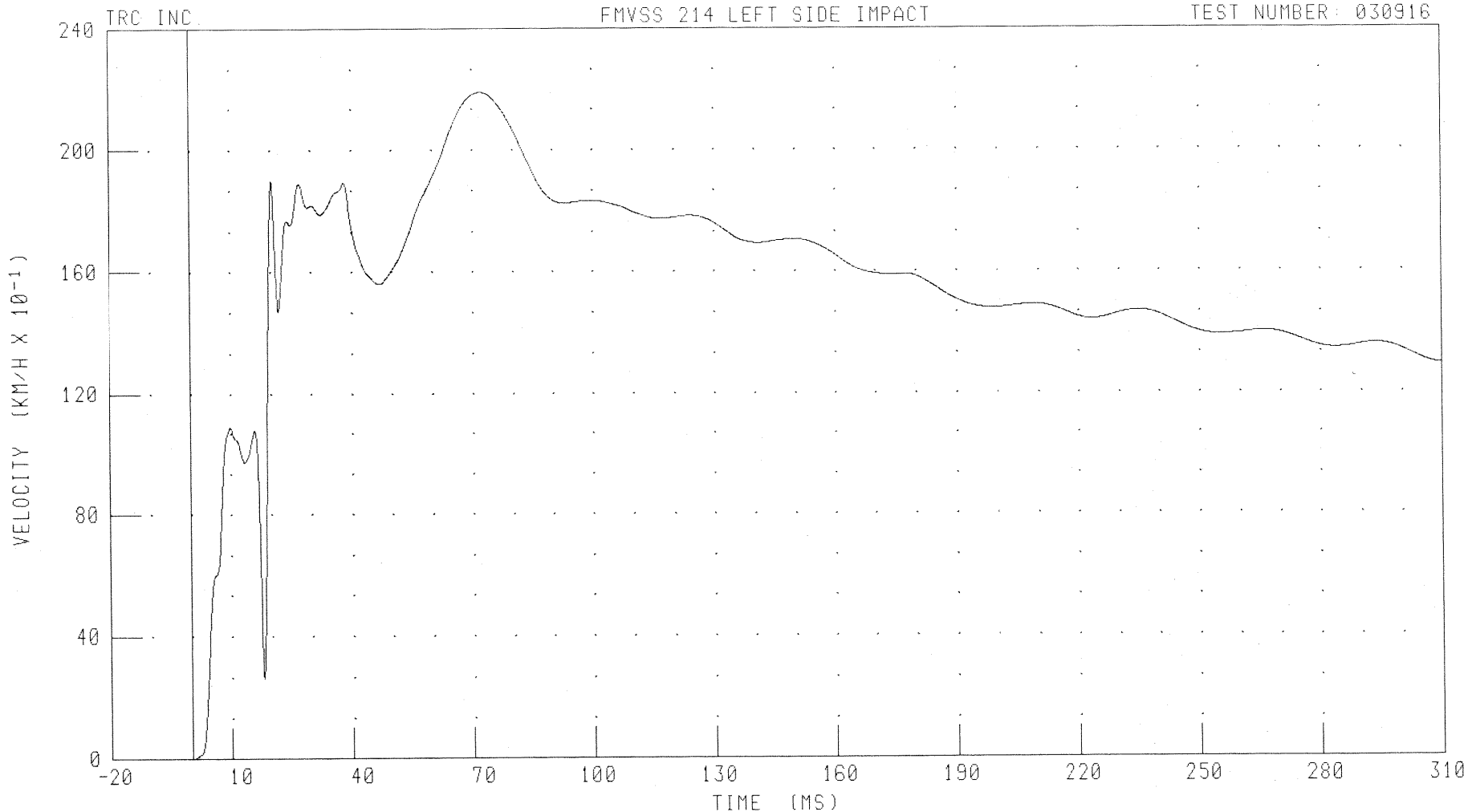
B-116

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT LOWER A-POST Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LLAYV1

FILTER: CH. CLASS 180

PEAK DATA: 21.90 KM/H @ 72.32 MS; 0.00 KM/H @ 0.00 MS

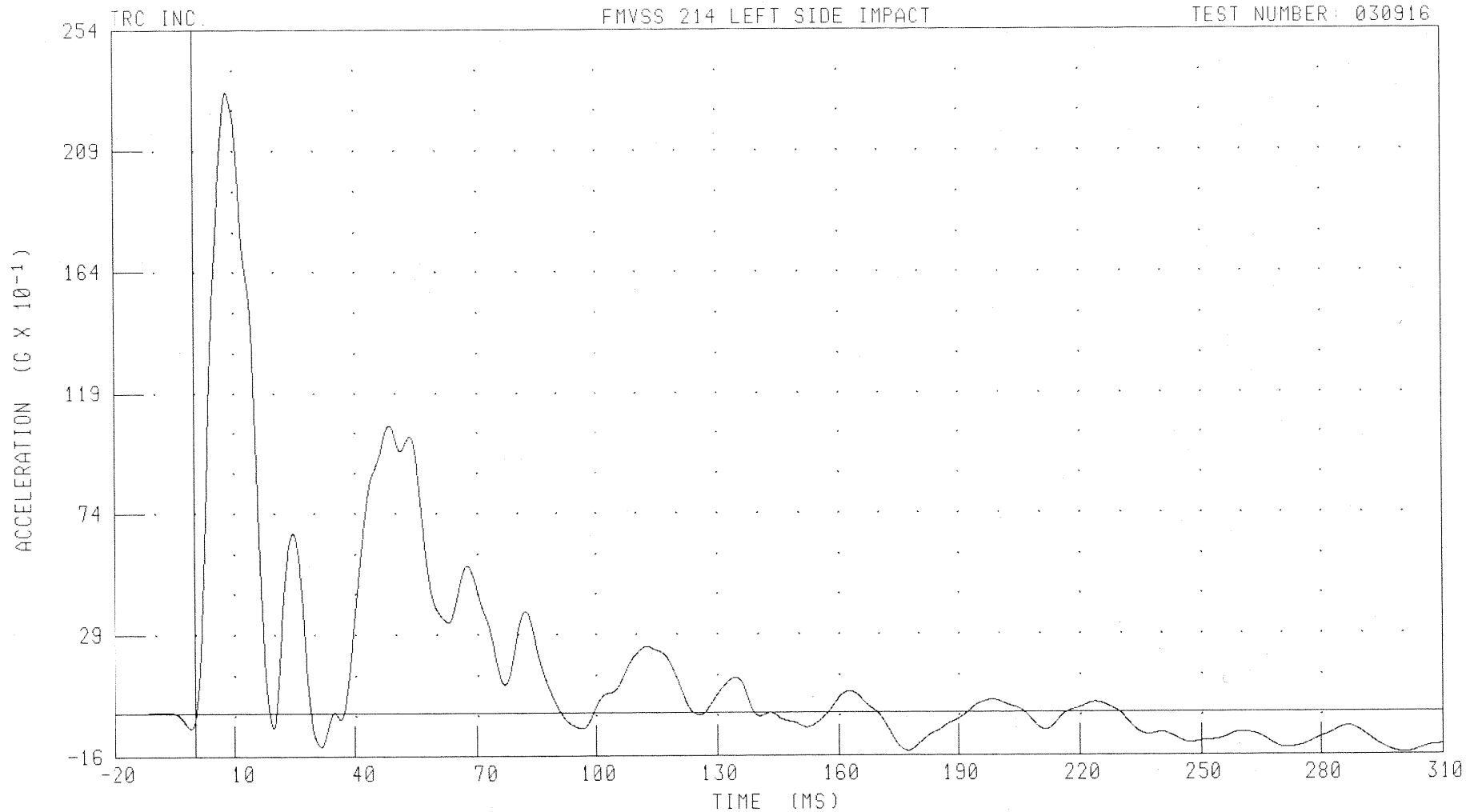
B-117

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT MIDDLE A-POST Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LMAYG1

FILTER: CH. CLASS 60

PEAK DATA: 23.08 G @ 8.40 MS; -1.53 G @ 300.56 MS

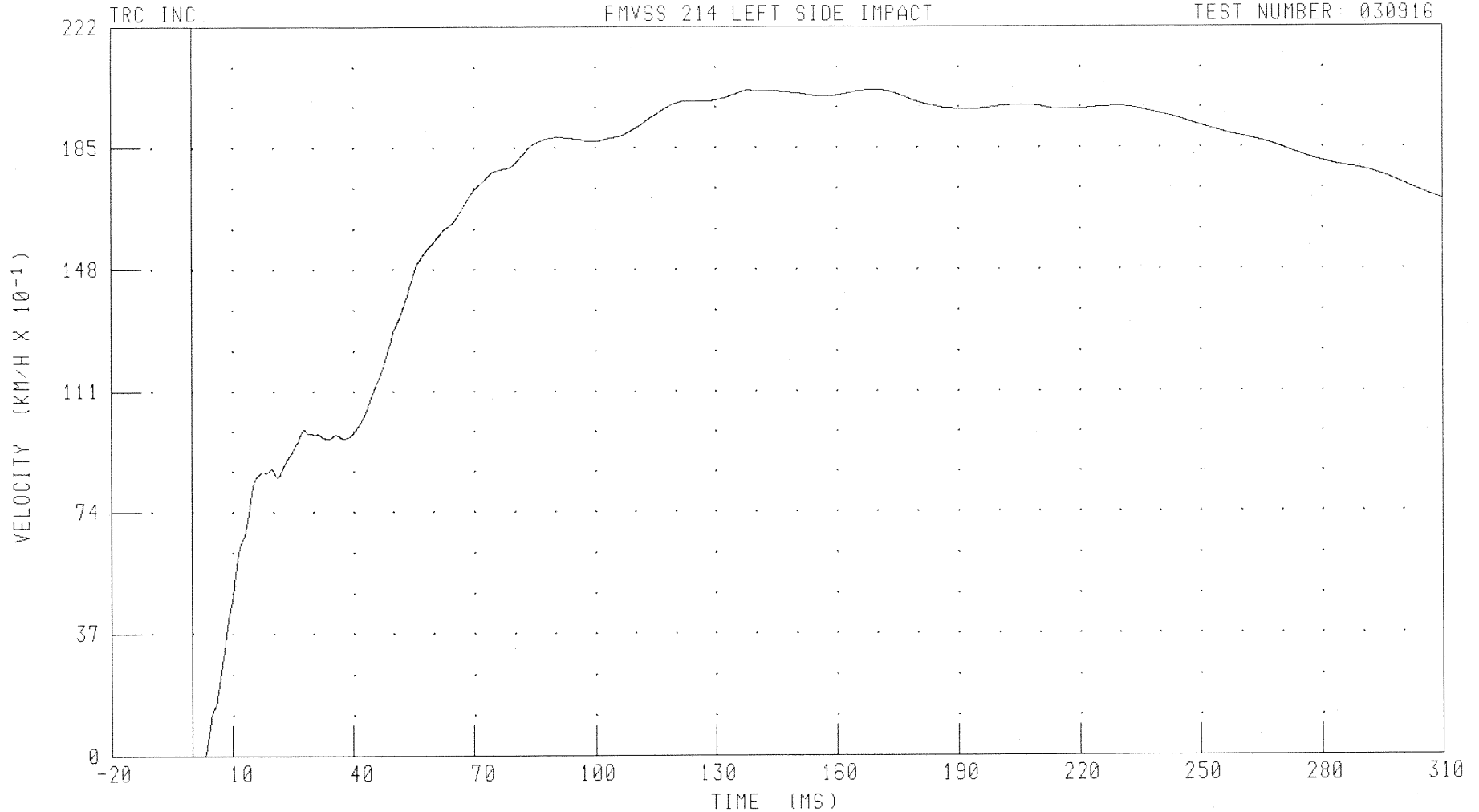
B-118

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT MIDDLE A-POST Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LMAYV1 FILTER: CH. CLASS 100

PEAK DATA: 20.26 KM/H @ 170.32 MS; -0.01 KM/H @ 2.32 MS

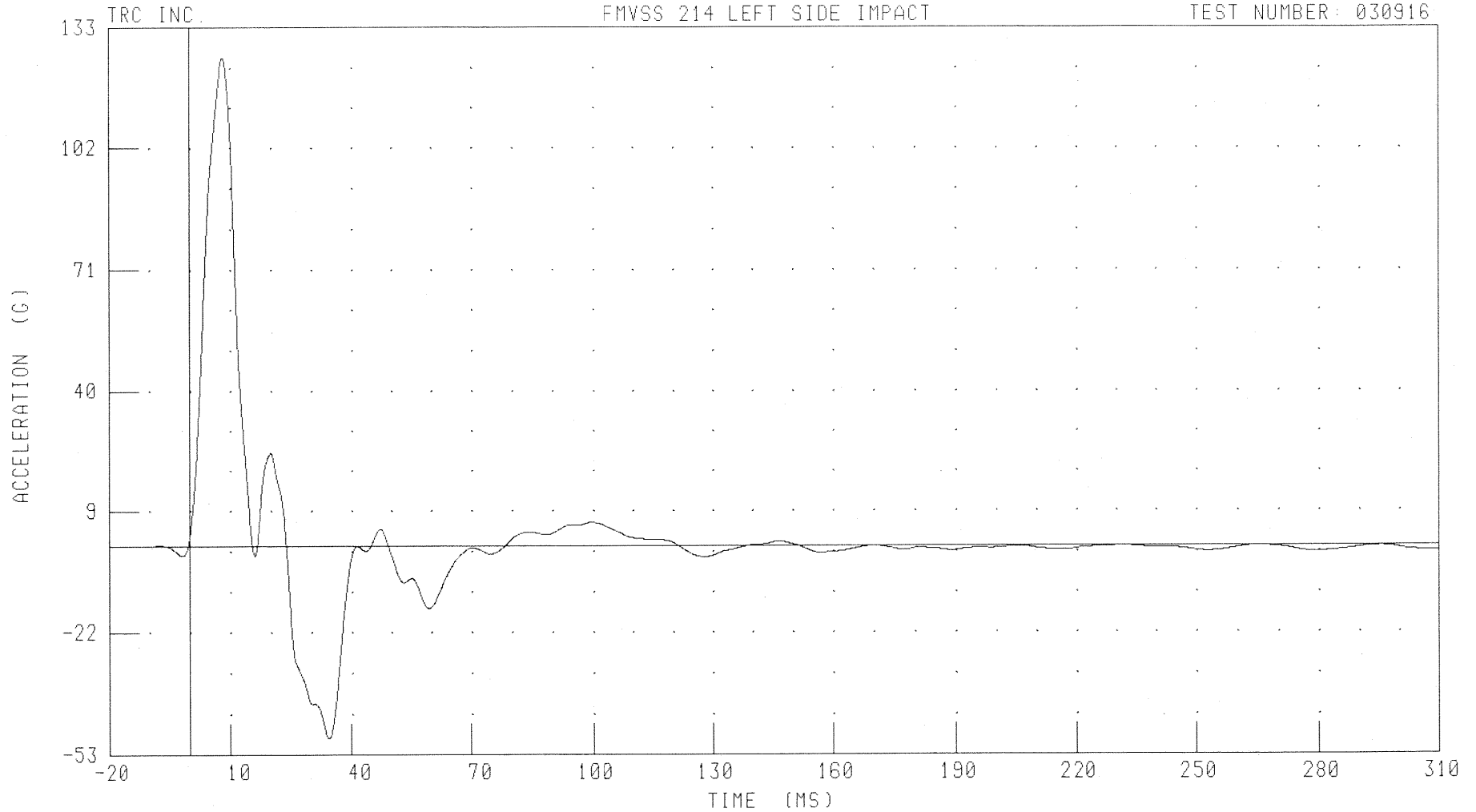
B-119

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT LOWER B-POST Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LLBYG1

FILTER: CH. CLASS 60

PEAK DATA: 125.28 G @ 8.16 MS; -48.85 G @ 34.40 MS

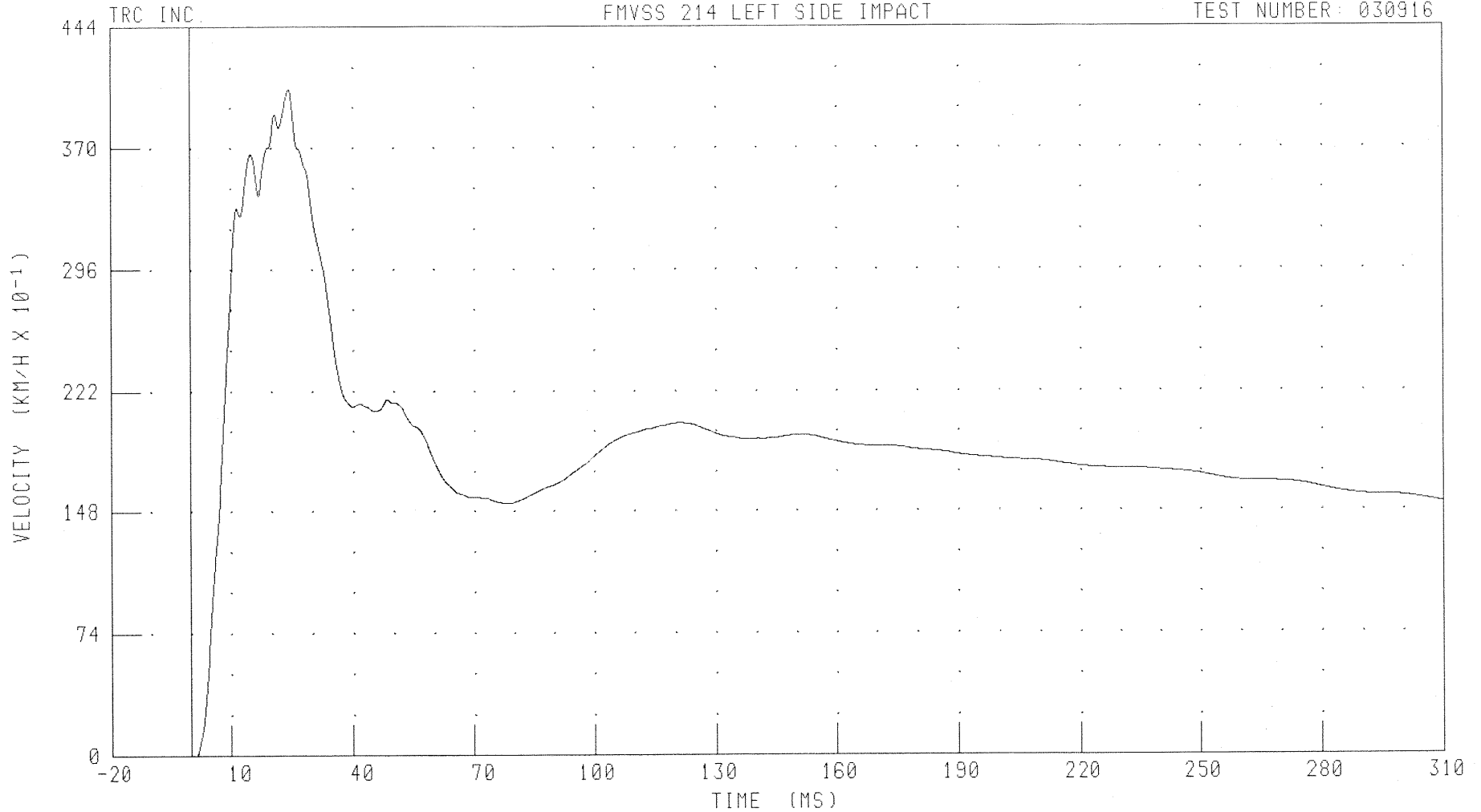
B-120

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT LOWER B-POST Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LLBYV1

FILTER: CH. CLASS 180

PEAK DATA: 40.61 KM/H @ 24.48 MS; -0.03 KM/H @ 0.88 MS

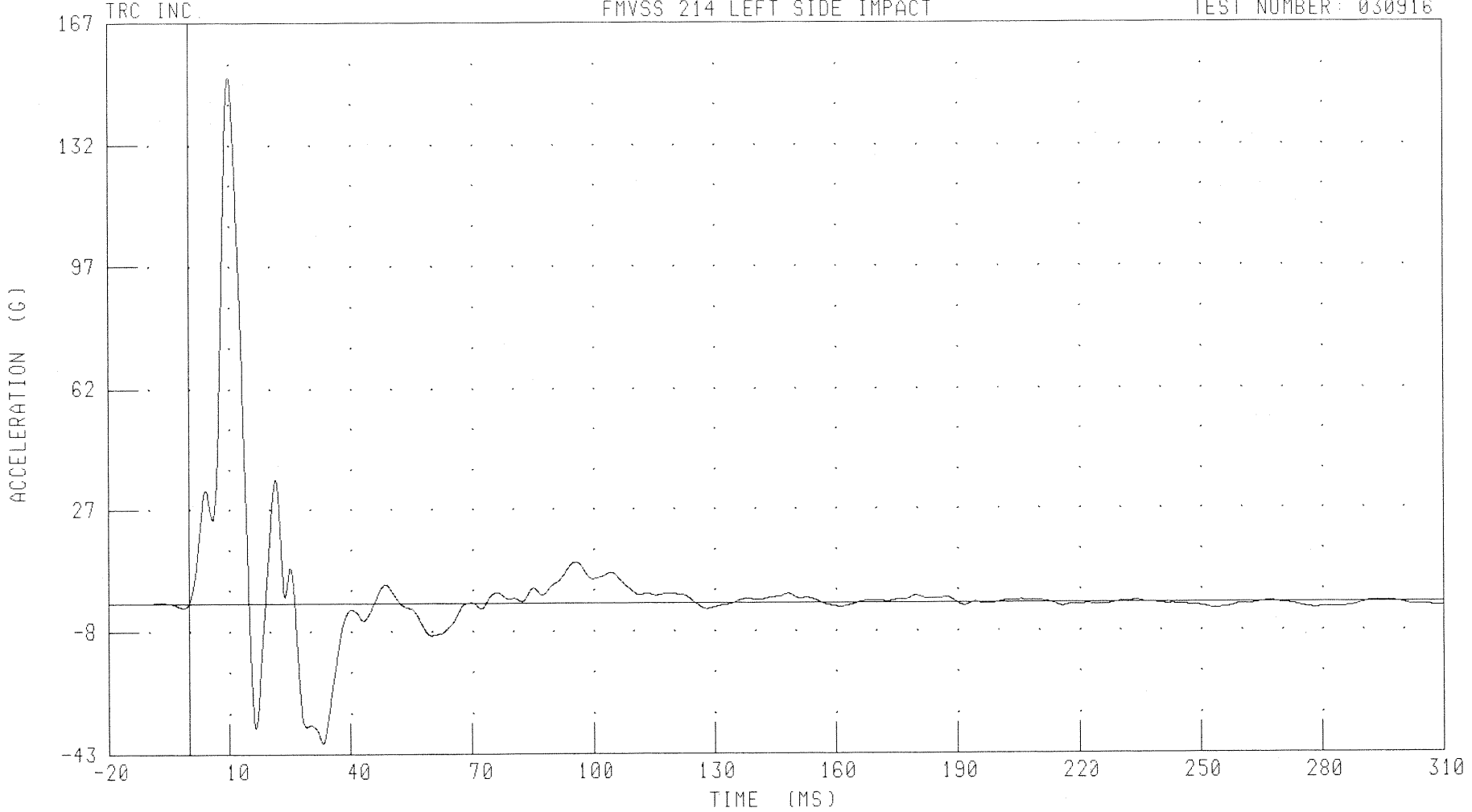
B-121

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT MIDDLE B-POST Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LMBYG1

FILTER: CH. CLASS 60

PEAK DATA: 151.78 G @ 9.92 MS; -39.80 G @ 33.12 MS

B-122

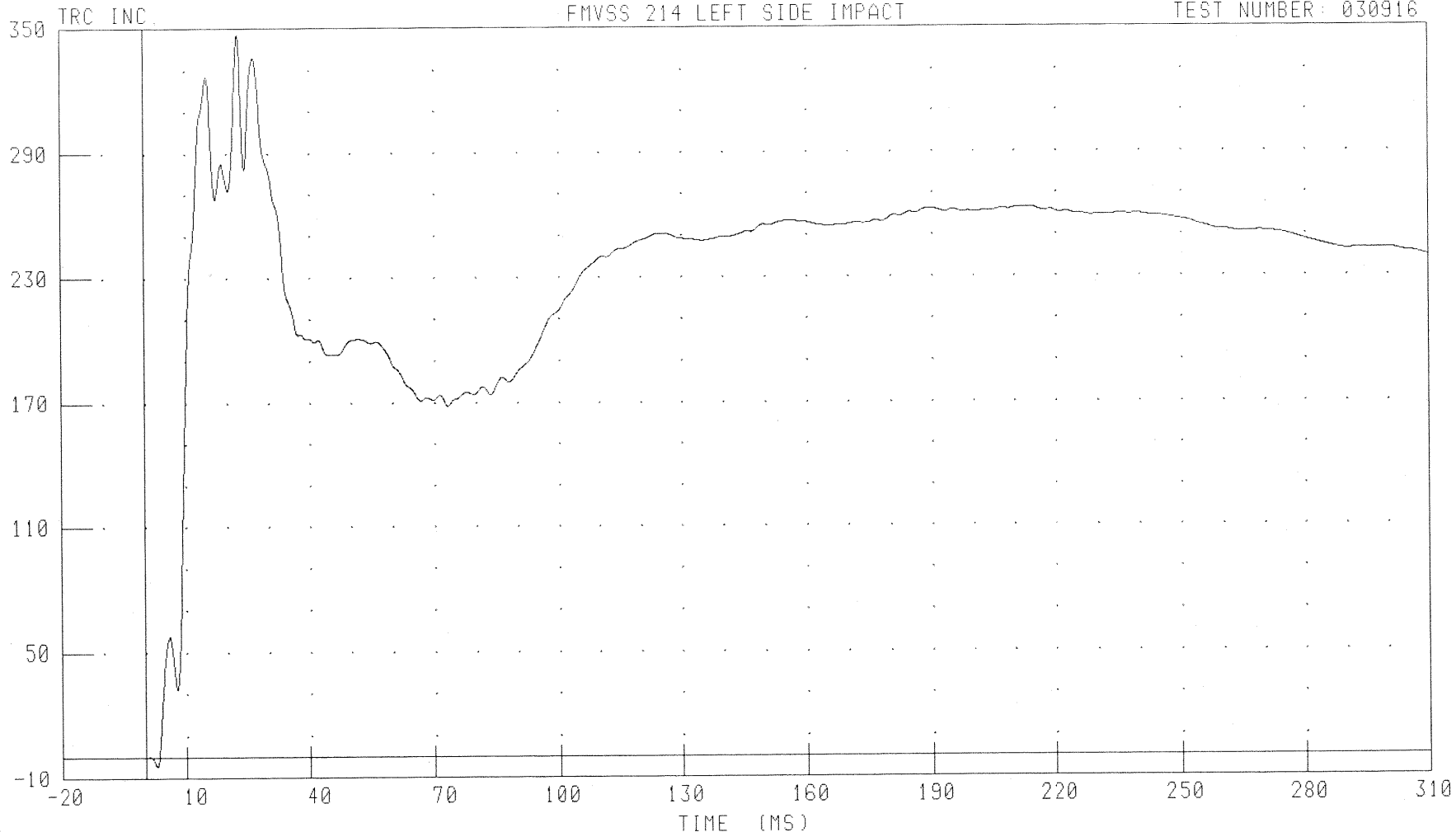
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR

LEFT MIDDLE B-POST Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



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030916

CHANNEL: LMBYV1 FILTER: CH. CLASS 180

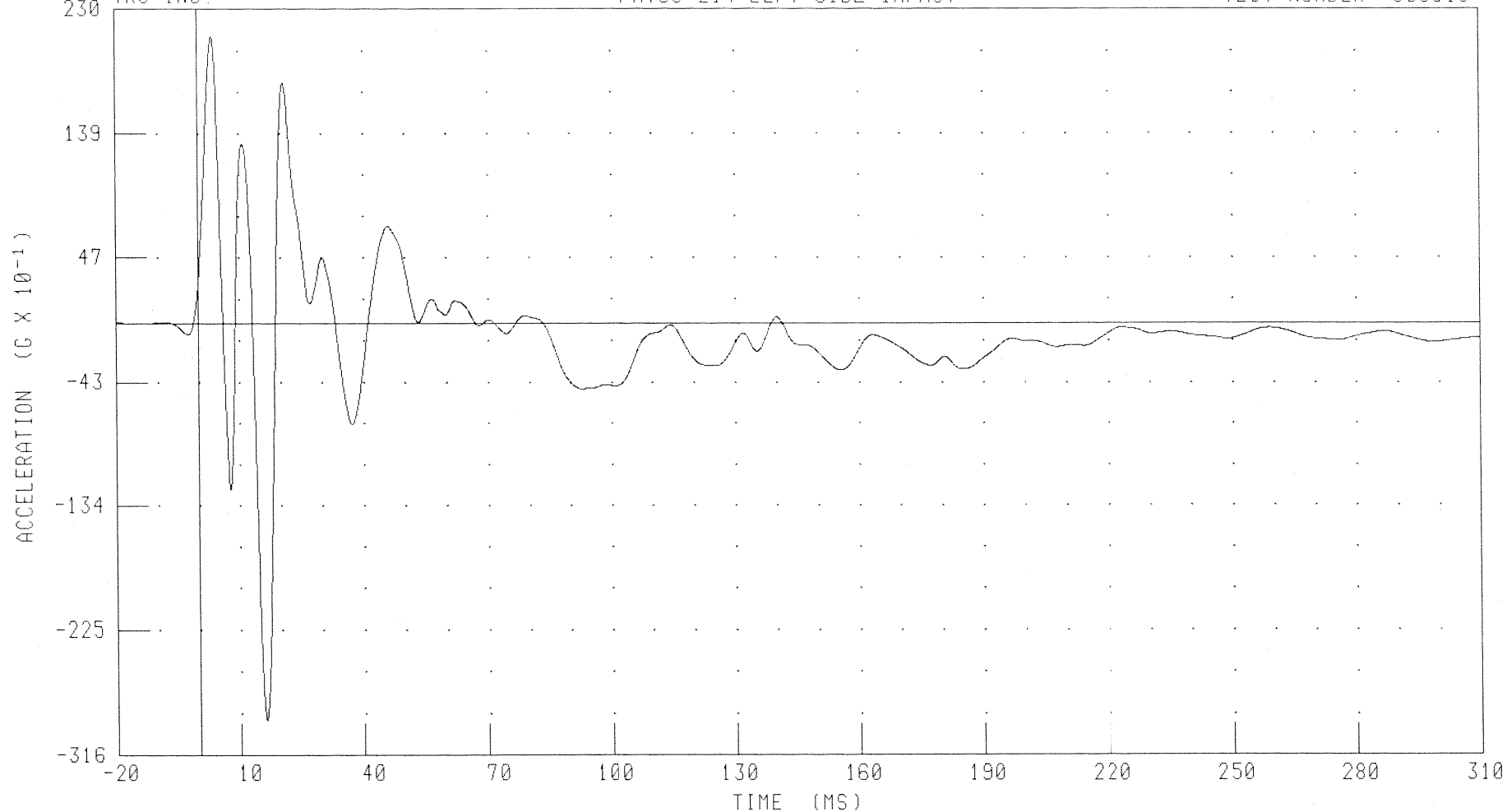
PEAK DATA: 34.72 KM/H @ 22.80 MS, -0.43 KM/H @ 2.80 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT FRONT SEAT TRACK Y-AXIS ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



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030916

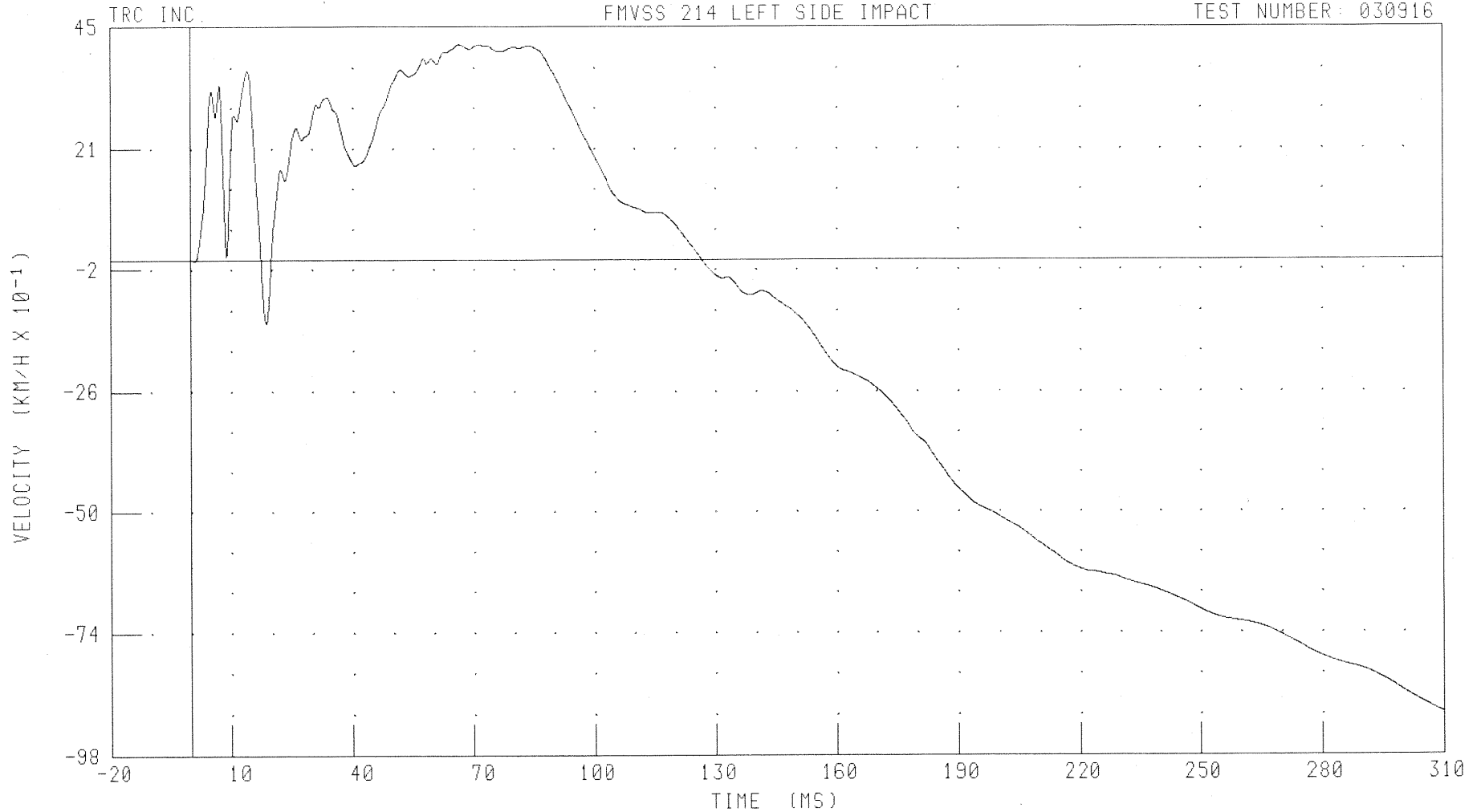
CHANNEL: LFTYG1 FILTER: CH. CLASS 60

PEAK DATA: 20.98 G @ 3.52 MS; -29.04 G @ 16.24 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT FRONT SEAT TRACK Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LFTYV1 FILTER: CH. CLASS 180

PEAK DATA: 4.25 KM/H @ 66.48 MS; -8.98 KM/H @ 310.00 MS

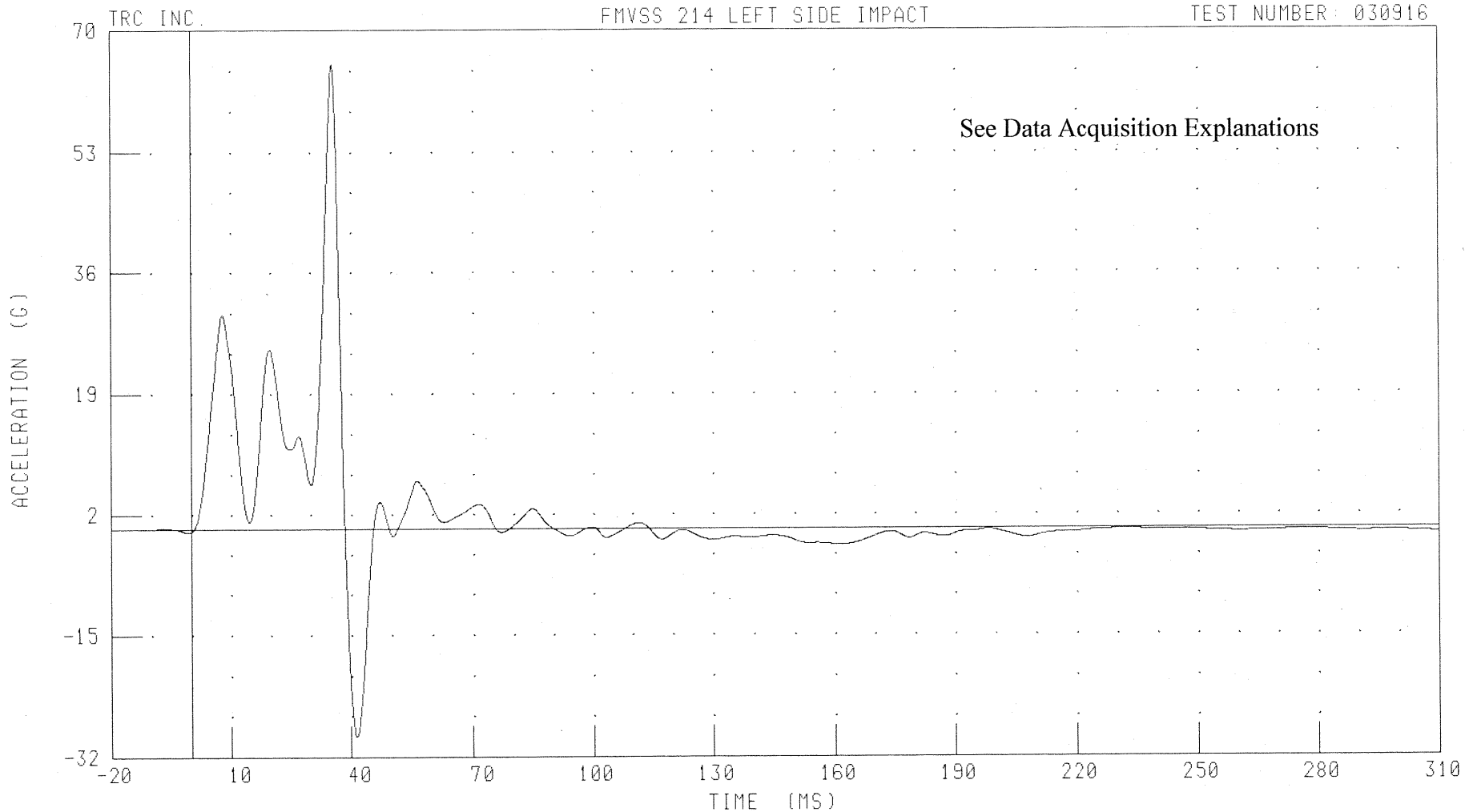
B-125

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR SEAT TRACK Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LRTYG1 FILTER: CH. CLASS 60

PEAK DATA: 65.27 G @ 35.52 MS; -29.16 G @ 41.36 MS

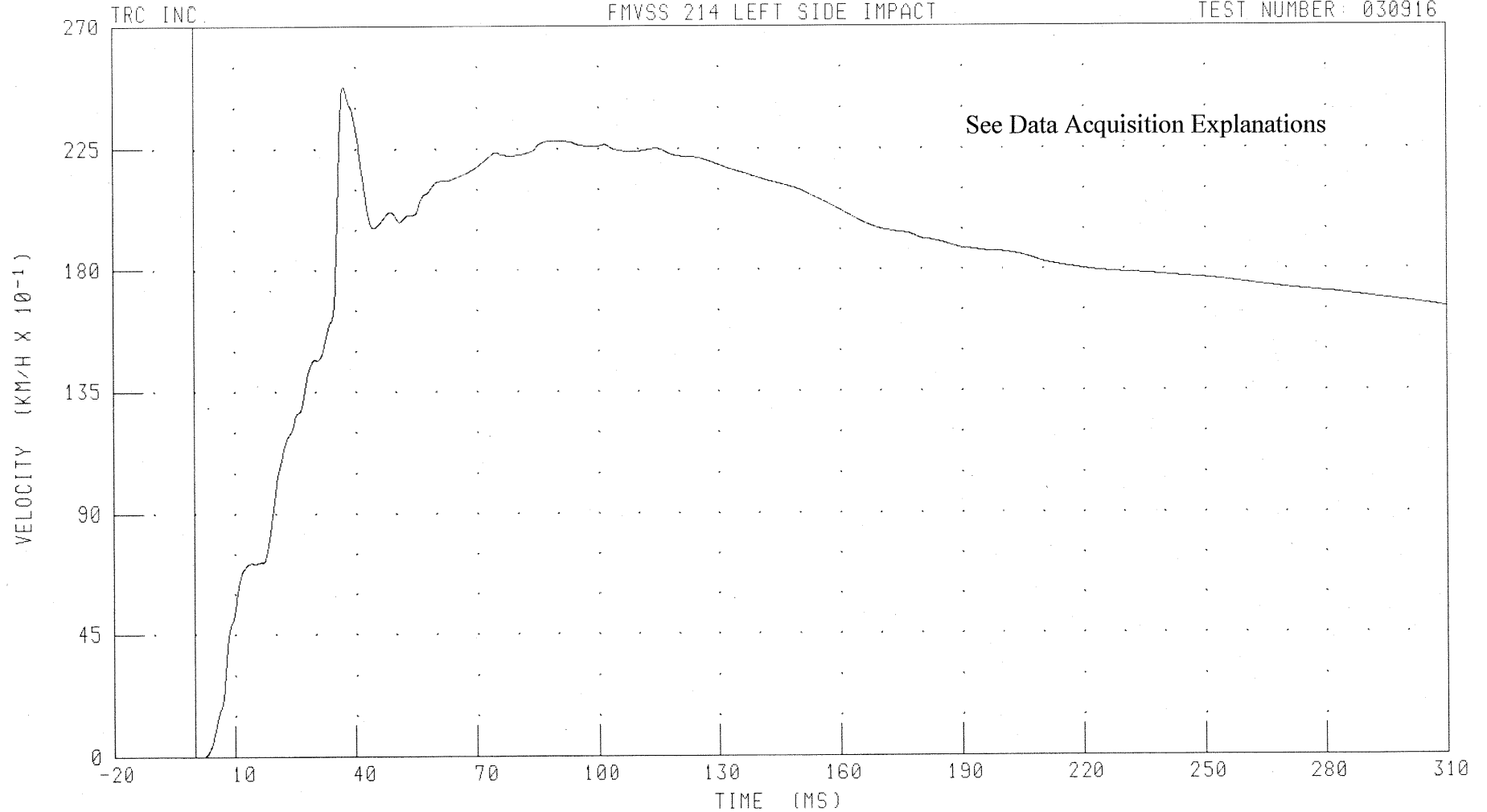
B-126

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR SEAT TRACK Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LRTYV1

FILTER: CH. CLASS 180

PEAK DATA: 24.77 KM/H @ 37.12 MS; -0.01 KM/H @ 1.68 MS

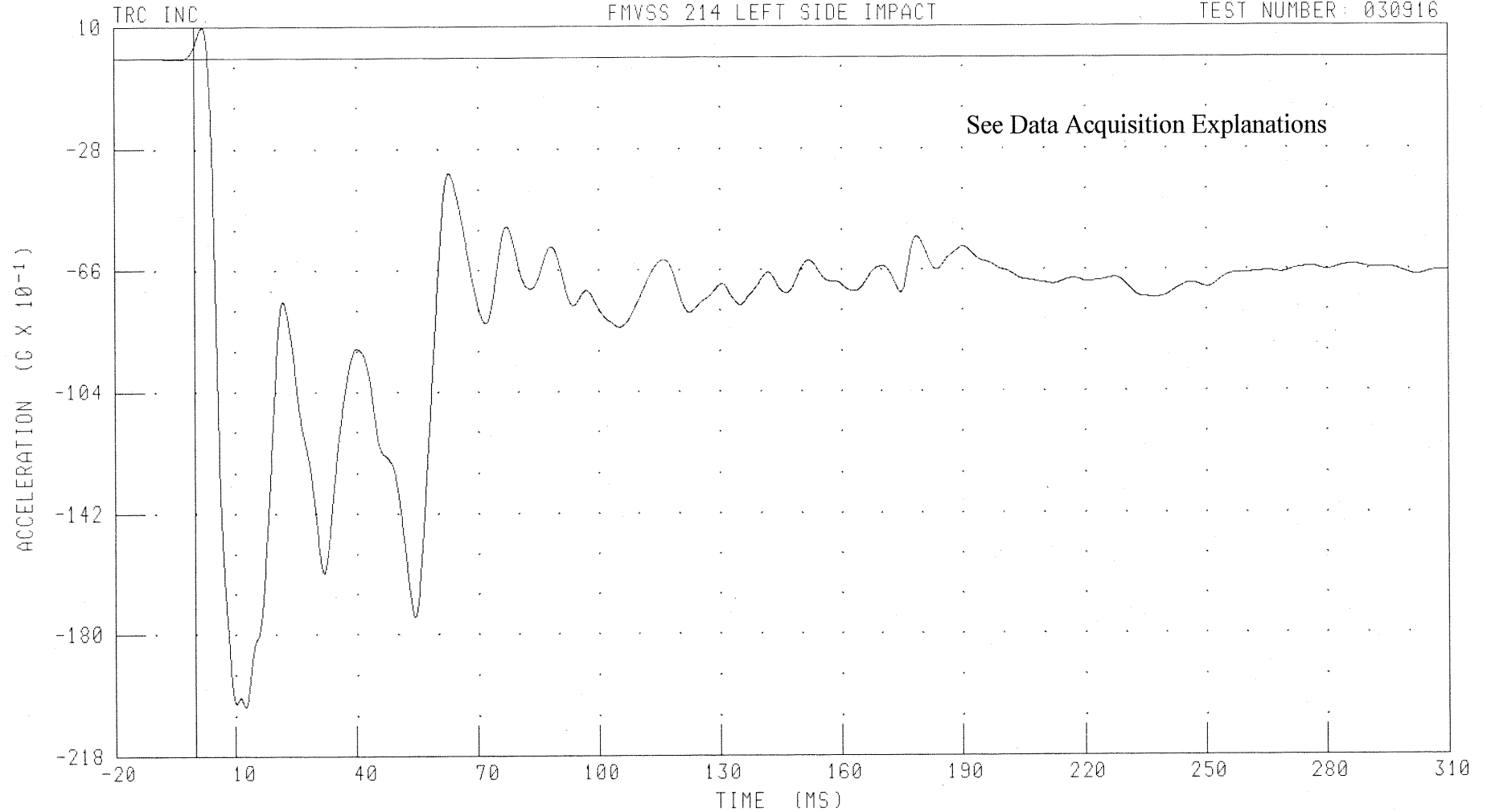
B-127

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
VEHICLE CENTER OF GRAVITY X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: VCGXG1

FILTER: CH. CLASS 60

PEAK DATA: 0.99 G @ 2.00 MS; -20.27 G @ 12.56 MS

B-128

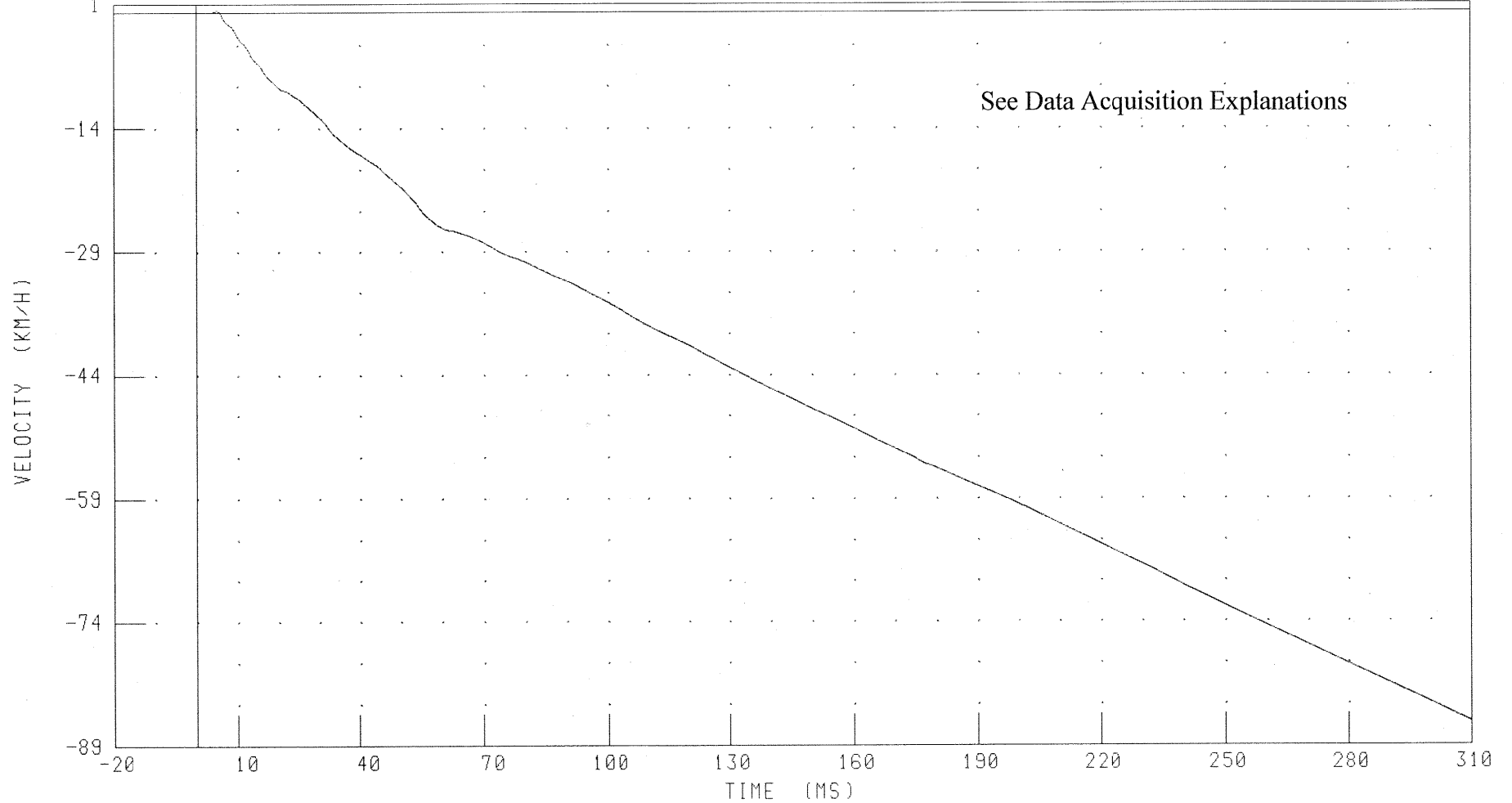
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
VEHICLE CENTER OF GRAVITY X-AXIS VELOCITY

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: VCGXV1

FILTER: CH. CLASS 180

PEAK DATA: 0.23 KM/H @ 4.96 MS; -86.22 KM/H @ 310.00 MS

B-129

030916

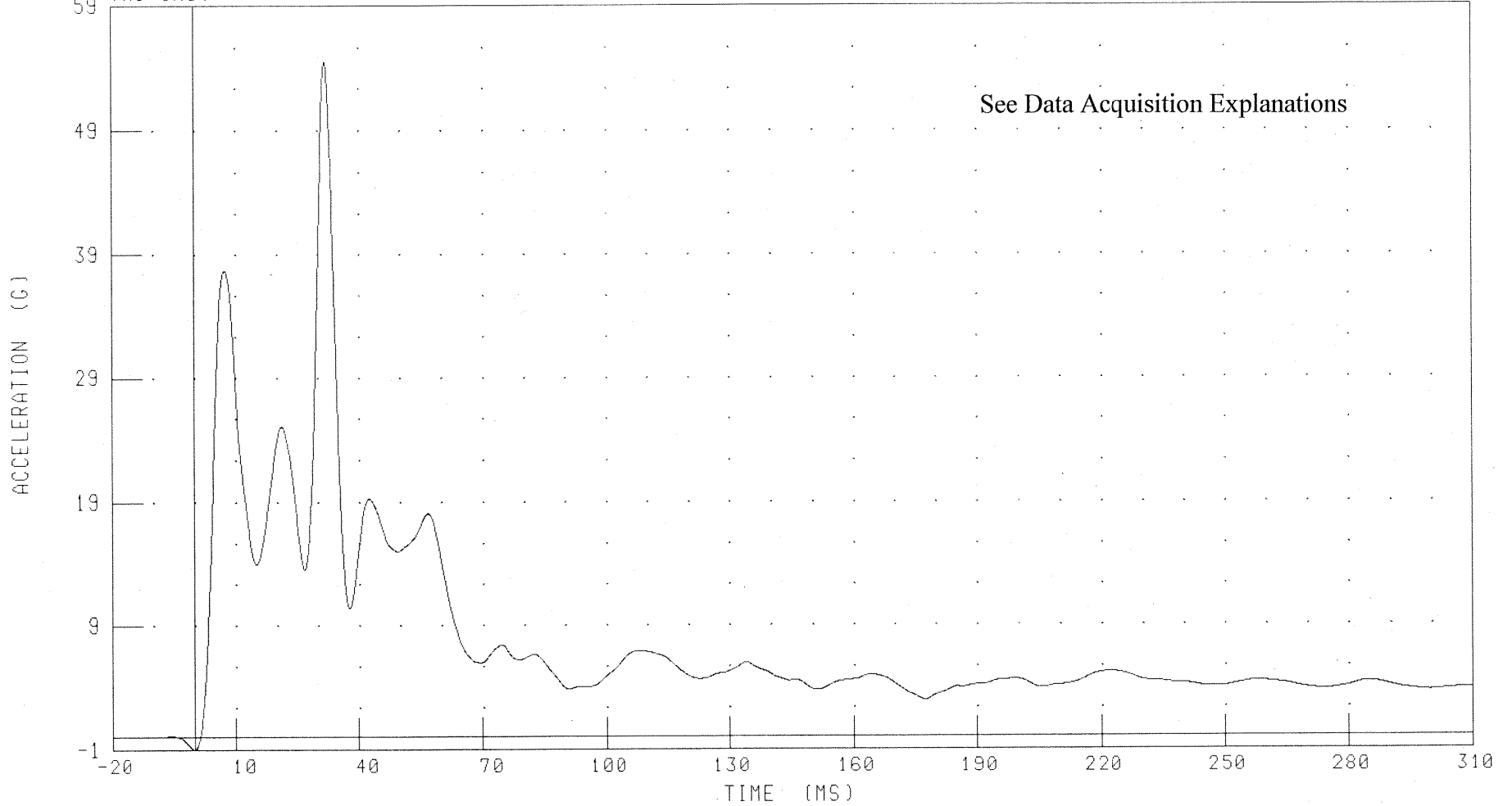
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
VEHICLE CENTER OF GRAVITY Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916

TRC INC.

See Data Acquisition Explanations



CHANNEL: VCGYG1

FILTER: CH. CLASS 60

PEAK DATA: 54.53 G @ 31.84 MS, -0.99 G @ -0.08 MS

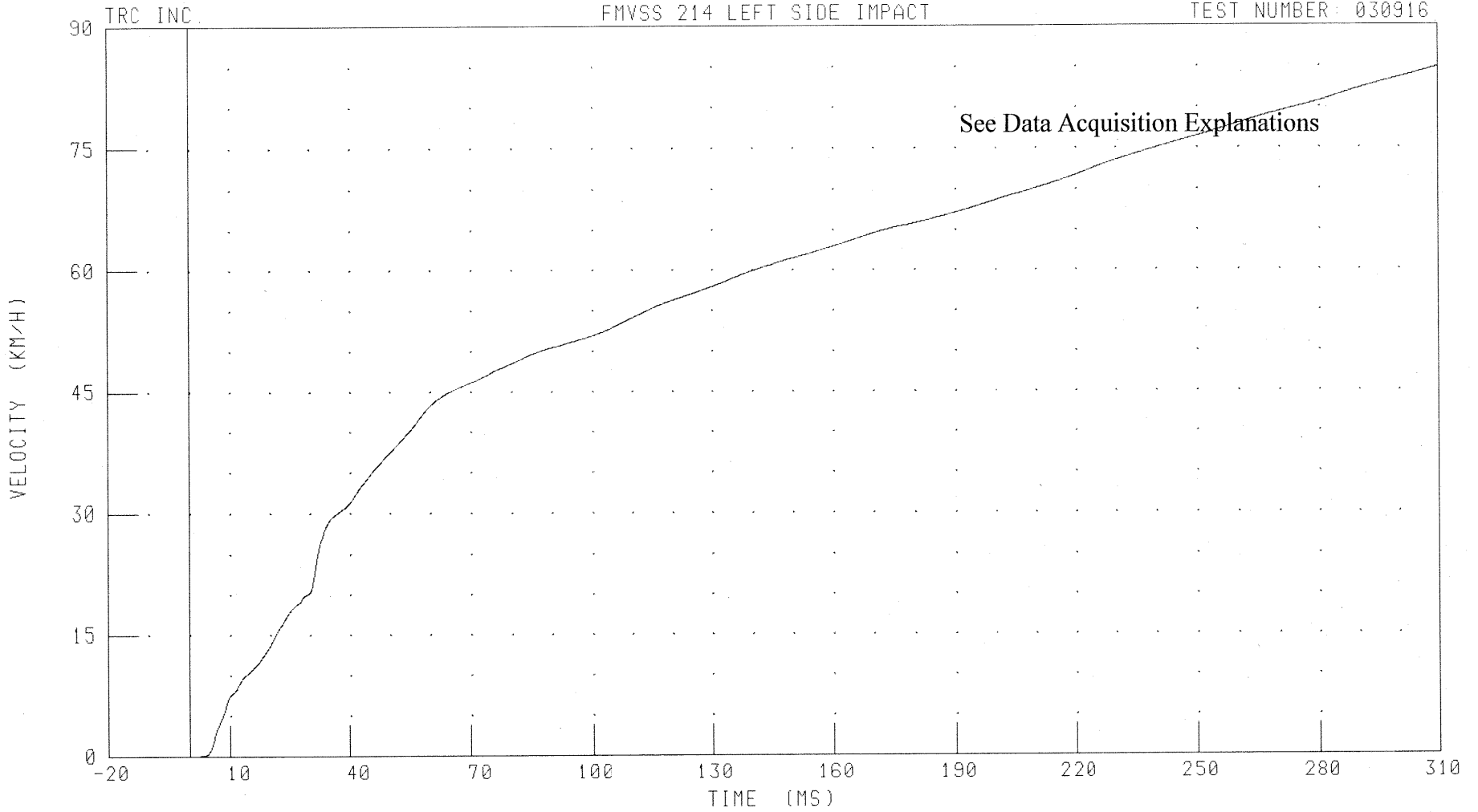
B-130

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
VEHICLE CENTER OF GRAVITY Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: VCCYV1

FILTER: CH. CLASS 180

PEAK DATA: 84.87 KM/H @ 310.00 MS; 0.00 KM/H @ 0.80 MS

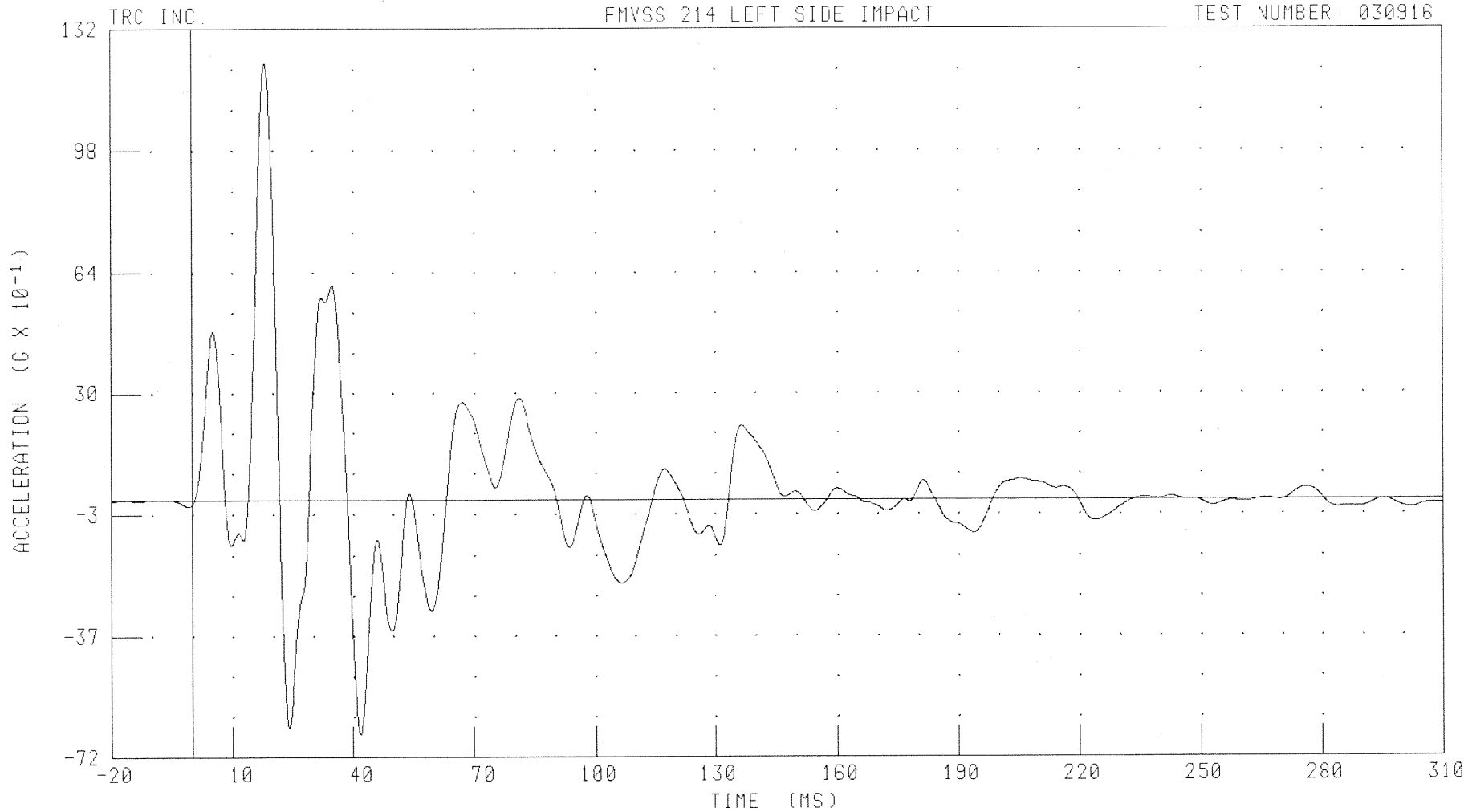
B-131

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
VEHICLE CENTER OF GRAVITY Z-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: VCGZG1 FILTER: CH. CLASS 60

PEAK DATA: 12.23 G @ 18.16 MS; -6.56 G @ 41.84 MS

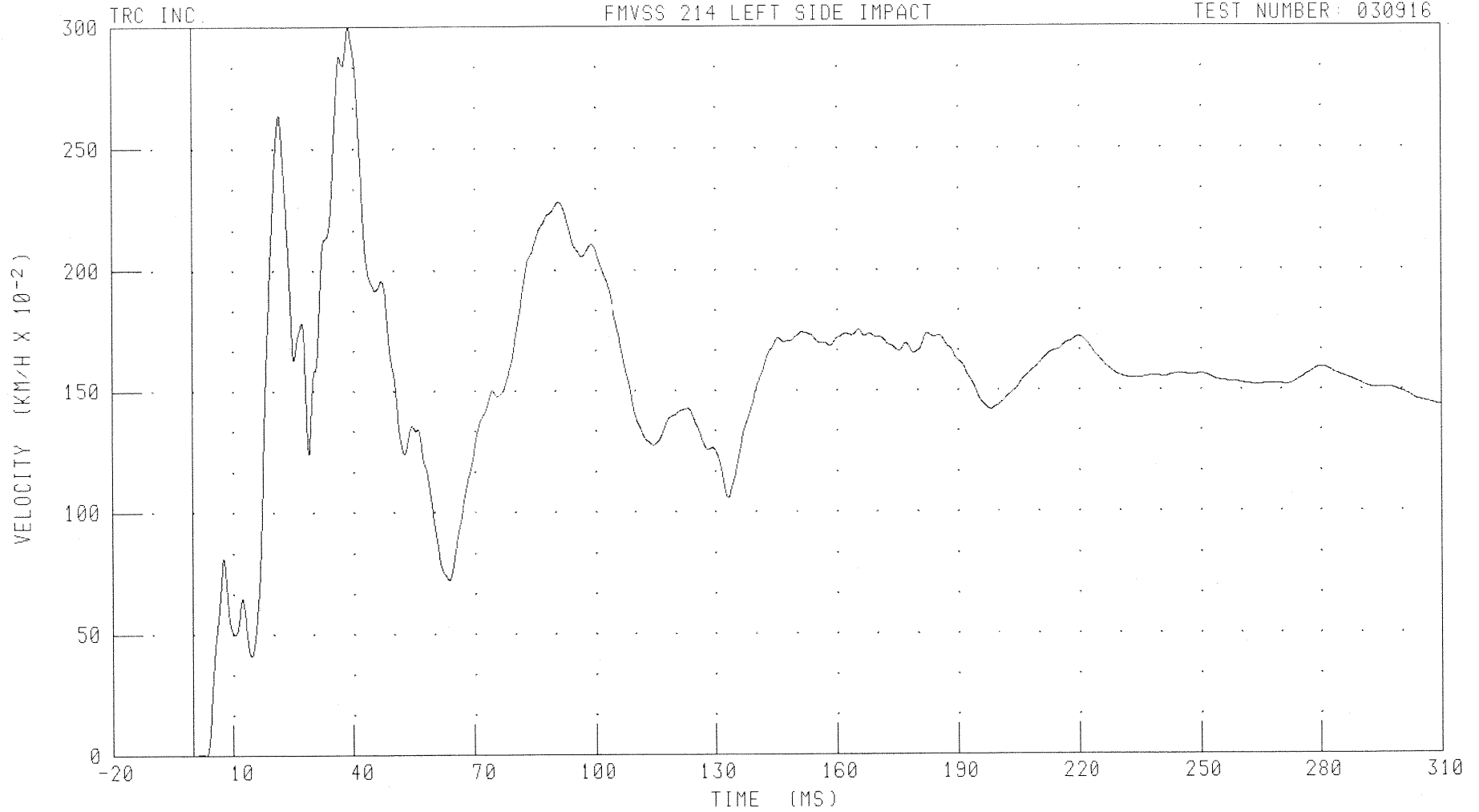
B-132

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
VEHICLE CENTER OF GRAVITY Z-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: VCGZV1

FILTER: CH. CLASS 180

PEAK DATA: 3 00 KM/H @ 39.04 MS; 0 00 KM/H @ 3.28 MS

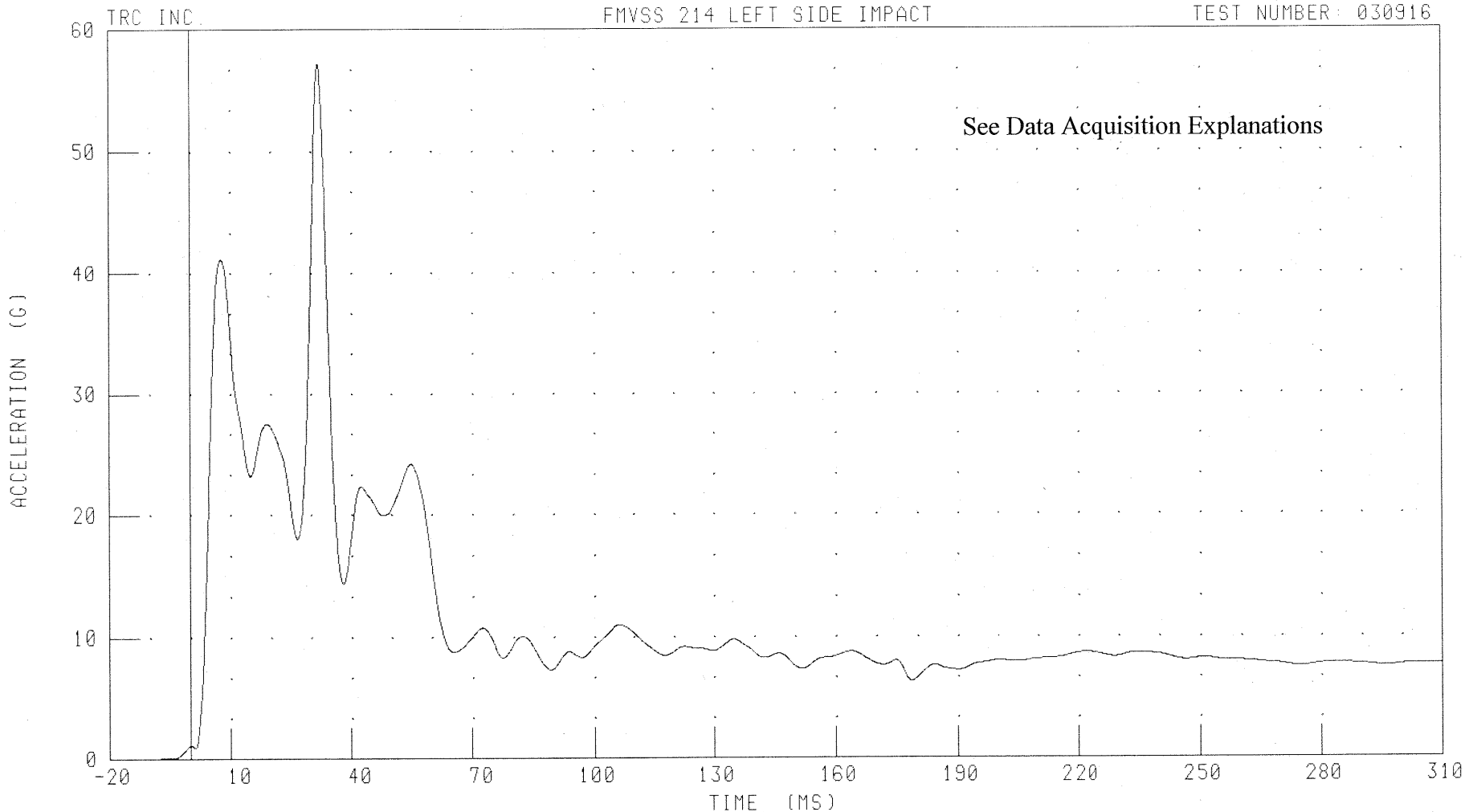
B-133

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
VEHICLE CENTER OF GRAVITY RESULTANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: VCGRG1 FILTER: CH. CLASS 60

PEAK DATA: 57.12 G @ 31.84 MS, 0.01 G @ -9.52 MS

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030916

MDB Instrumentation Plots

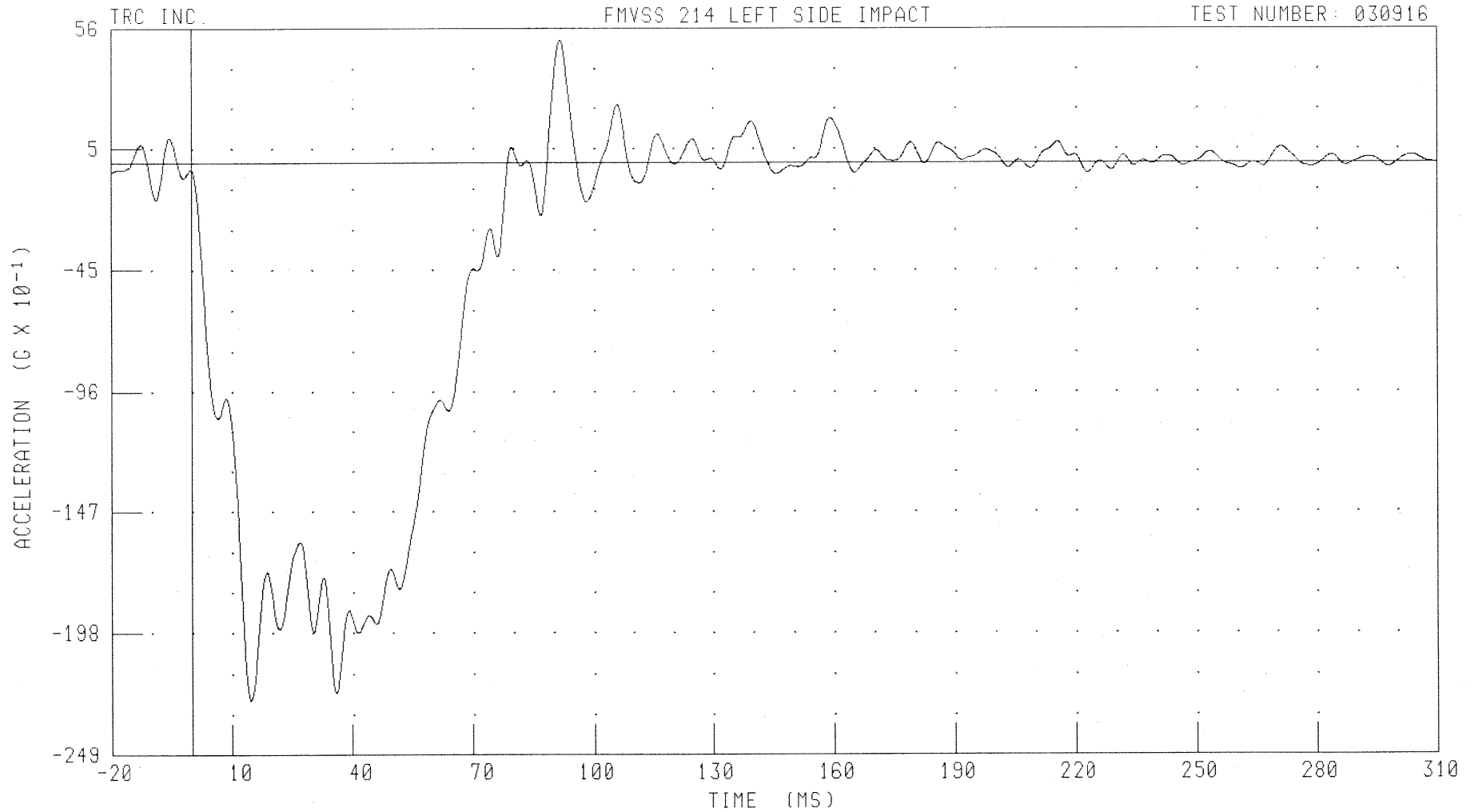
Acceleration Data - Filter Class 60

Integration Data - Filter Class 180

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
MDB CENTER OF GRAVITY X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: BCGXG1

FILTER: CH. CLASS 60

PEAK DATA: 5.21 G @ 91.60 MS; -22.62 G @ 14.64 MS

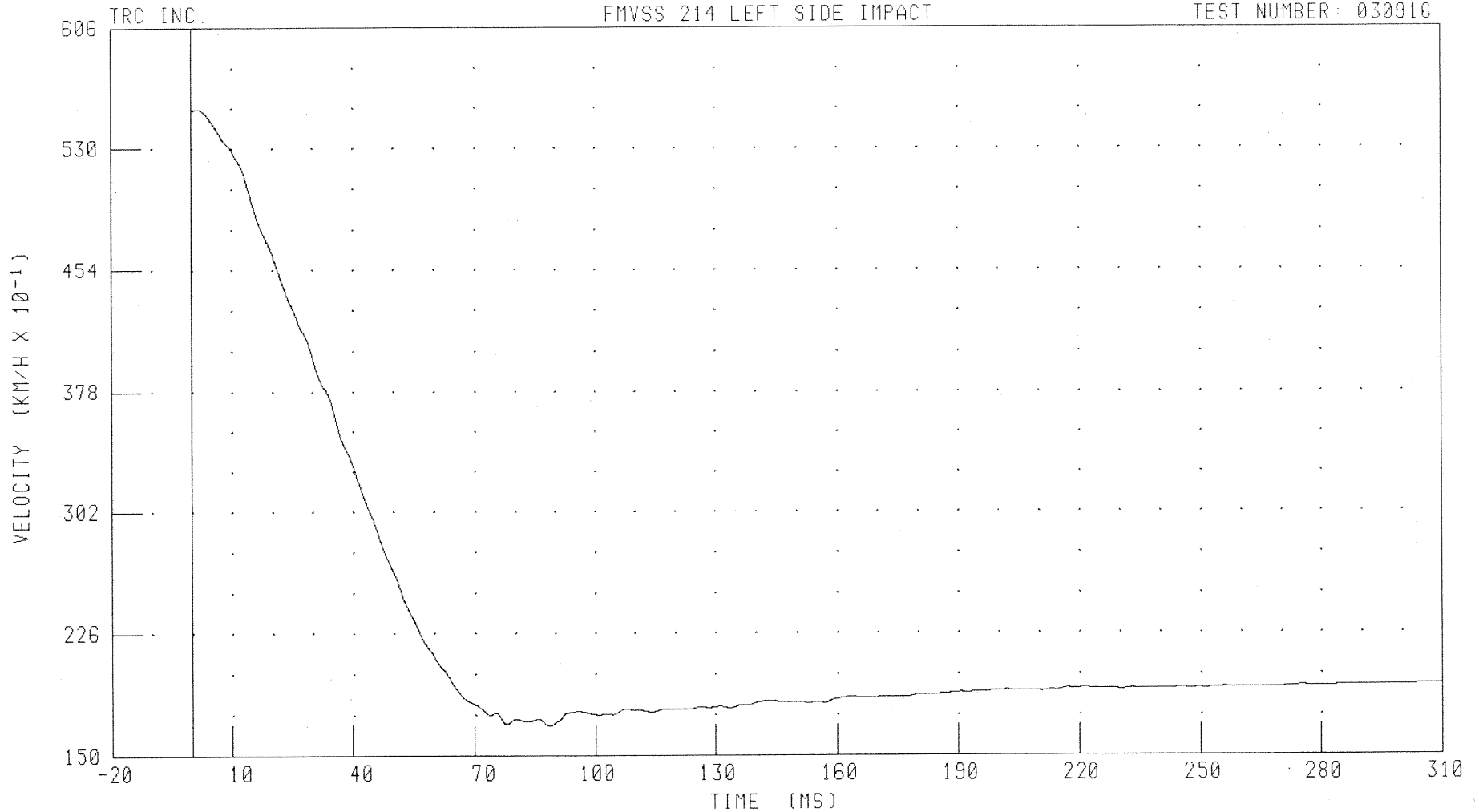
B-136

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
MOB CENTER OF GRAVITY X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: BCGXV1 FILTER: CH. CLASS 180

PEAK DATA: 55.48 KM/H @ 1.52 MS; 16.85 KM/H @ 88.64 MS

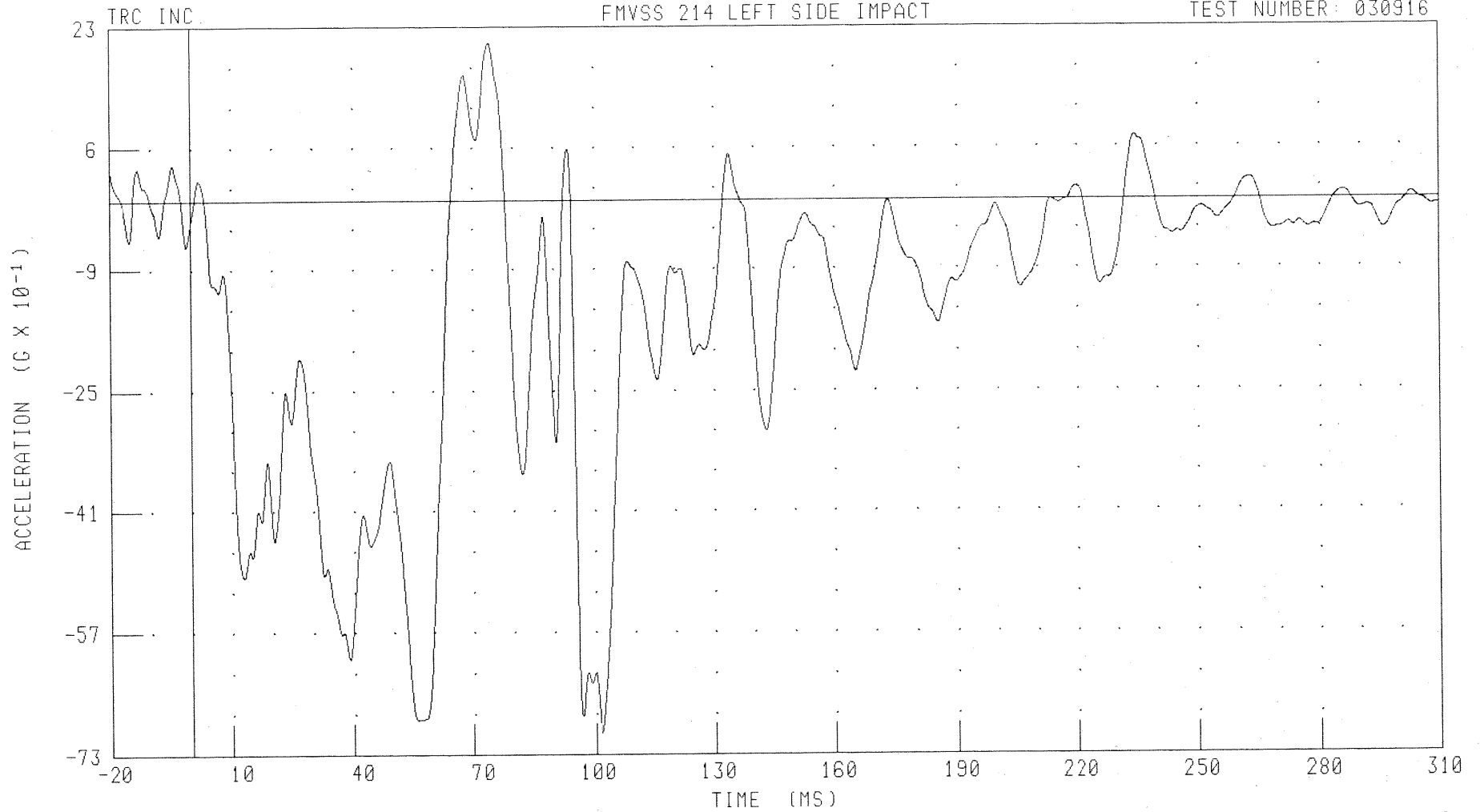
B-137

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
MDB CENTER OF GRAVITY Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



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030916

CHANNEL: BCGYG1

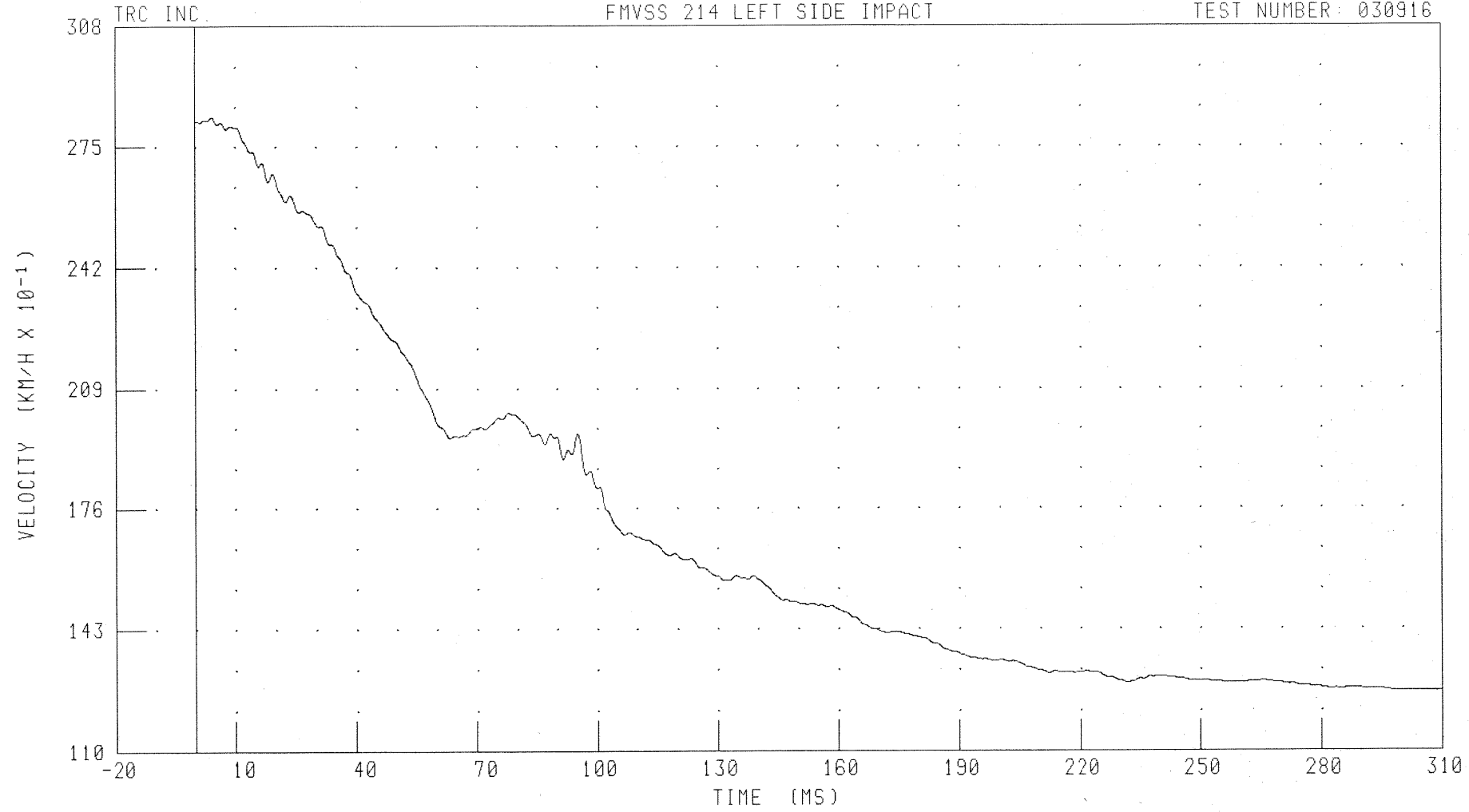
FILTER: CH. CLASS 60

PEAK DATA: 2.09 G @ 74.40 MS, -7.02 G @ 101.68 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
MDB CENTER OF GRAVITY Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



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030916

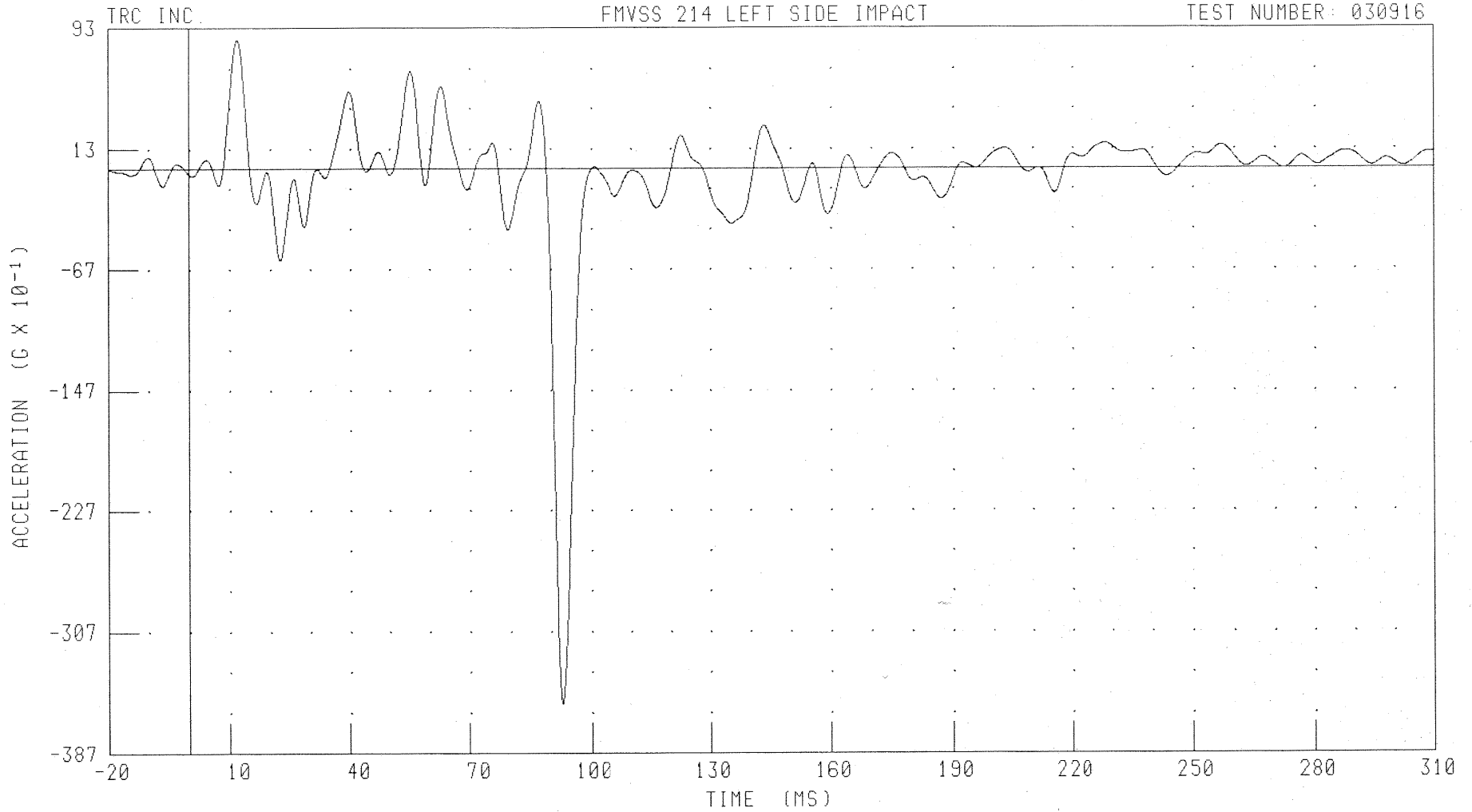
CHANNEL: BCGYV1 FILTER: CH. CLASS 180

PEAK DATA: 28.33 KM/H @ 4.24 MS; 12.60 KM/H @ 308.56 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
MDB CENTER OF GRAVITY Z-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: BCGZG1

FILTER: CH. CLASS 60

PEAK DATA: 8.52 G @ 12.00 MS; -35.48 G @ 92.88 MS

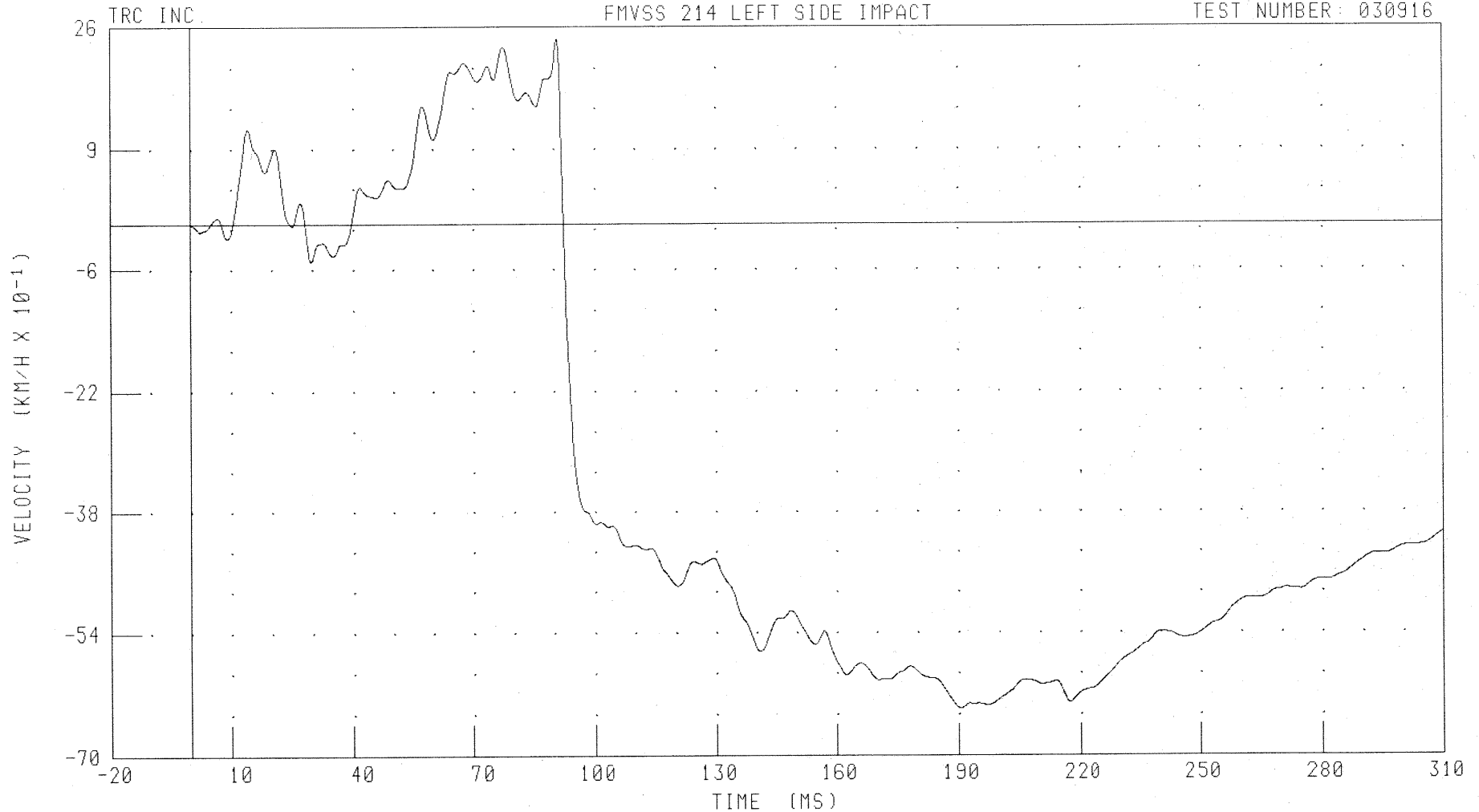
B-140

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
MDB CENTER OF GRAVITY Z-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: BCGZV1

FILTER: CH. CLASS 180

PEAK DATA: 2.45 KM/H @ 90.80 MS; -6.39 KM/H @ 190.56 MS

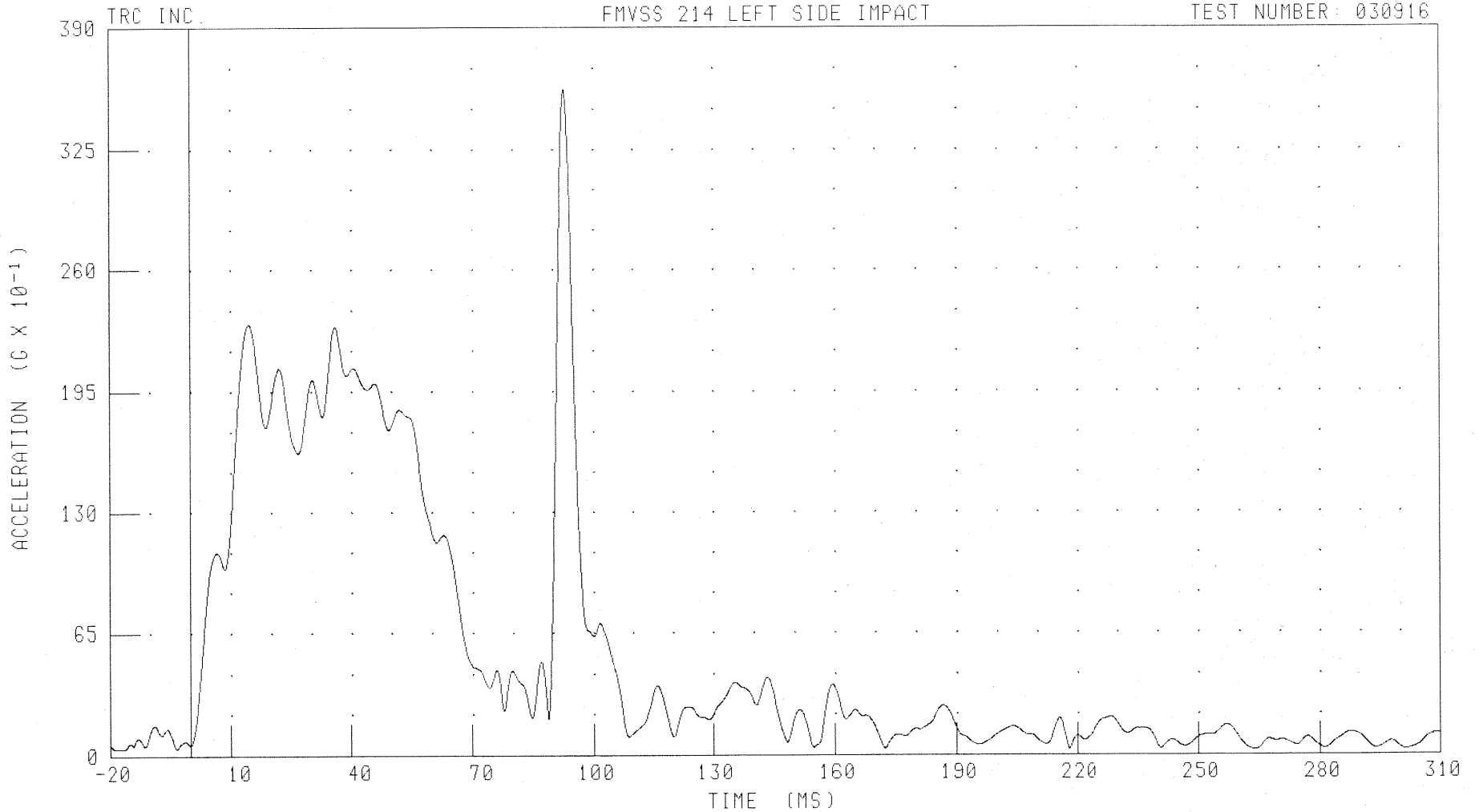
B-141

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
MDB CENTER OF GRAVITY RESULTANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: BCGRG1

FILTER: CH. CLASS 60

PEAK DATA: 35.73 G @ 92.80 MS; 0.26 G @ 301.20 MS

B-142

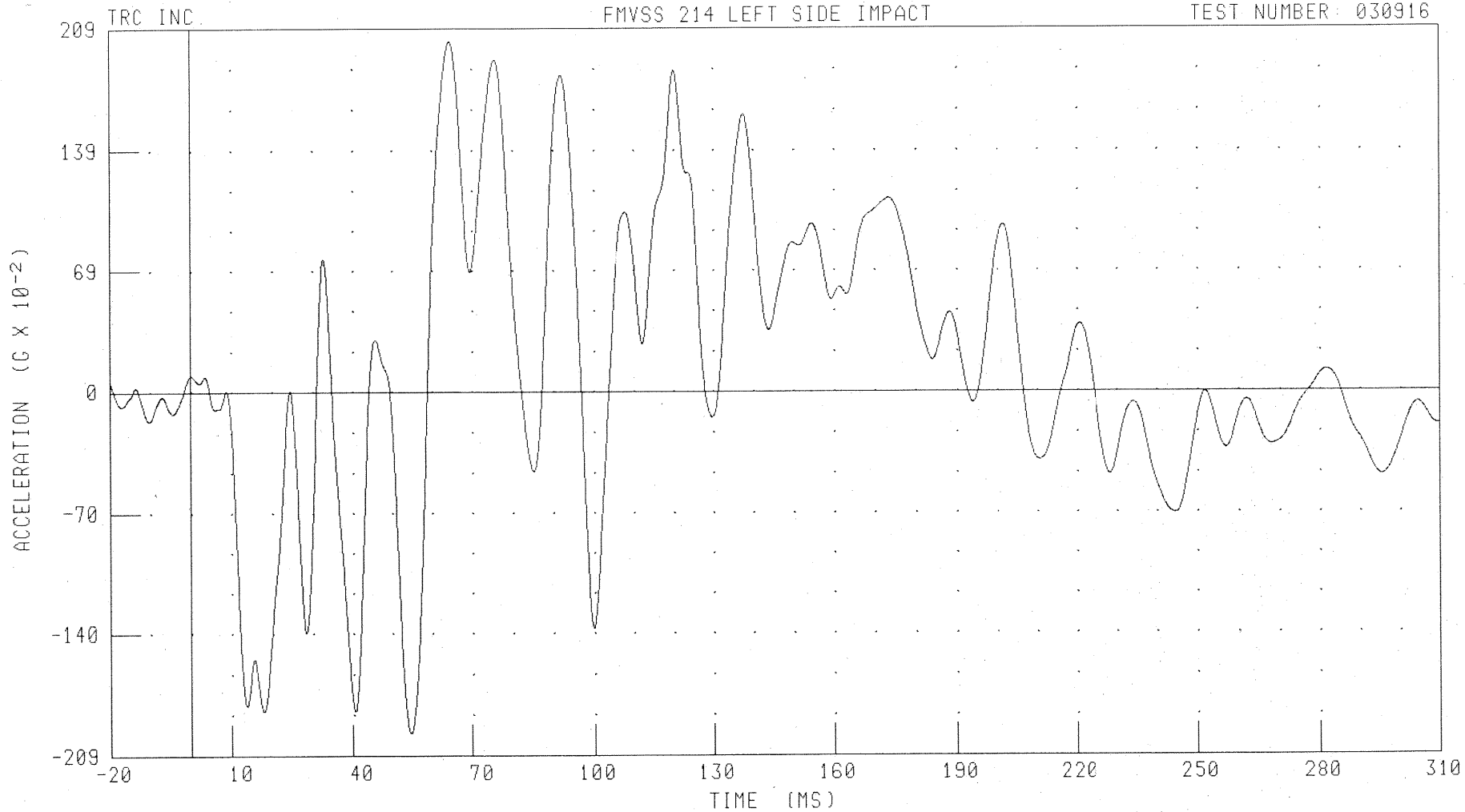
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR

MDB LEFT REAR X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LRRXG1

FILTER: CH. CLASS 60

PEAK DATA: 2.02 G @ 64.64 MS, -1.97 G @ 54.64 MS

B-143

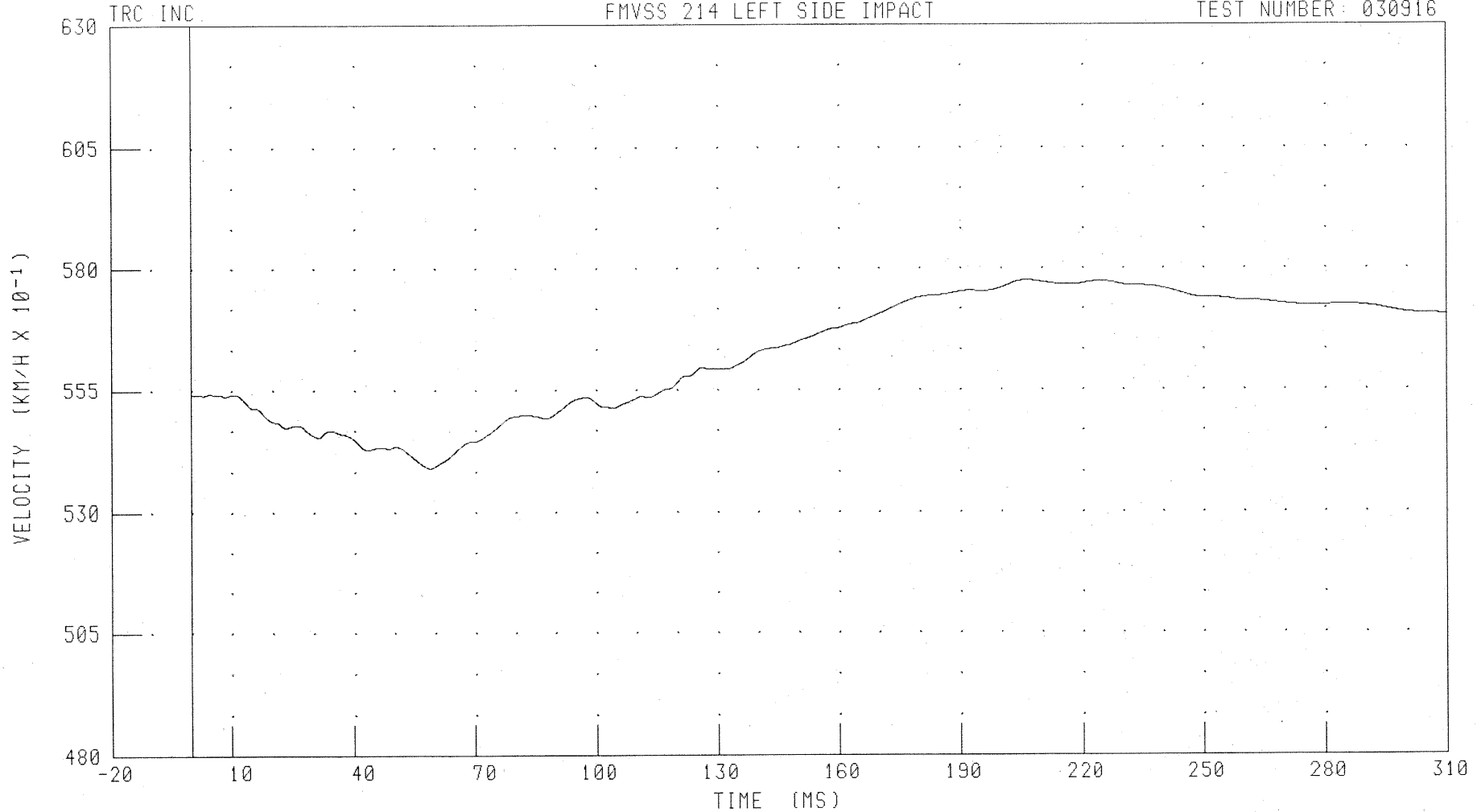
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR

MDB LEFT REAR X-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LRRXV1

FILTER: CH. CLASS 180

TIME (MS)

PEAK DATA: 57.75 KM/H @ 206.48 MS; 53.91 KM/H @ 58.80 MS

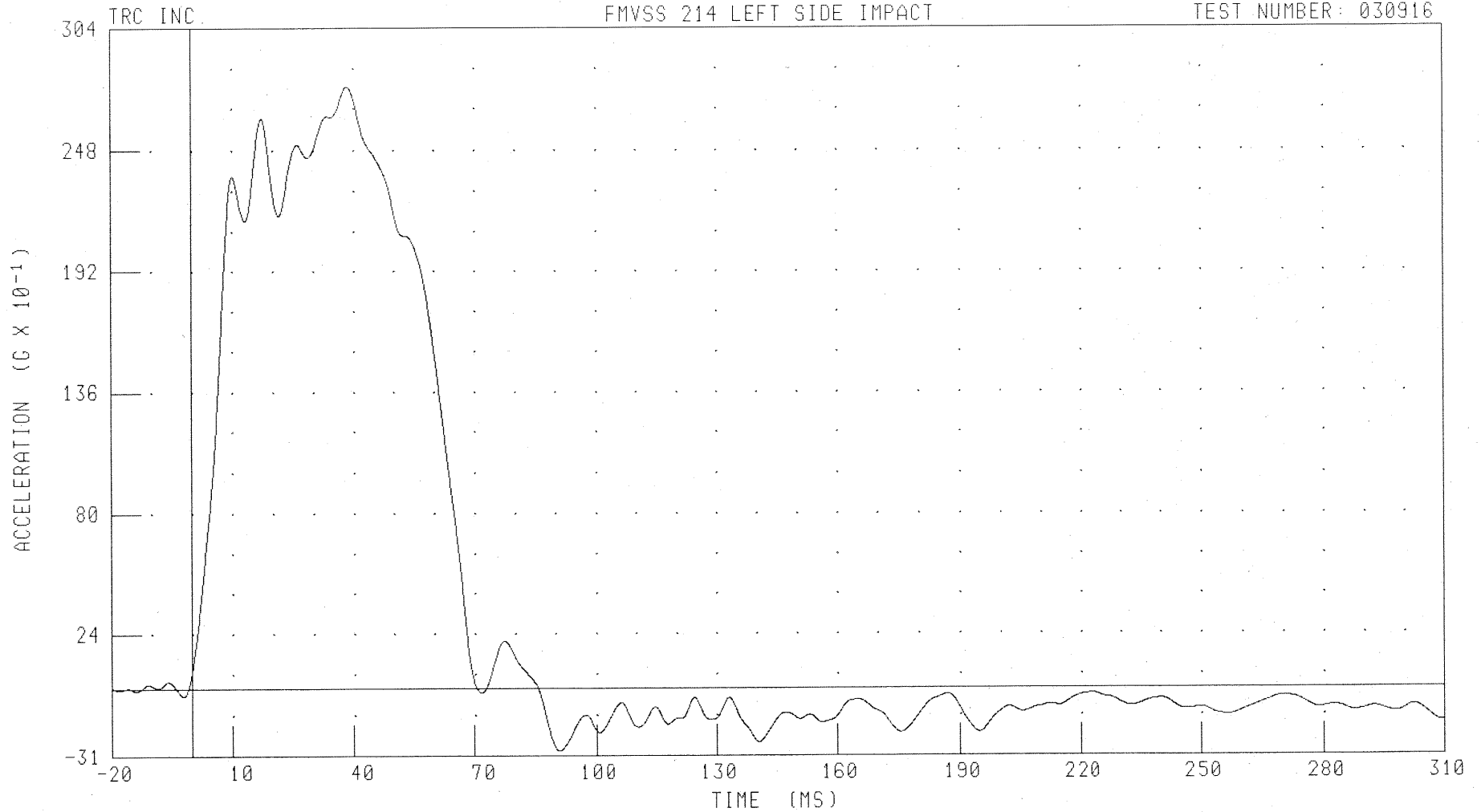
B-144

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
MOB LEFT REAR Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LRRYG1

FILTER: CH. CLASS 60

PEAK DATA: 27.78 G @ 38.56 MS; -2.88 G @ 90.96 MS

B-145

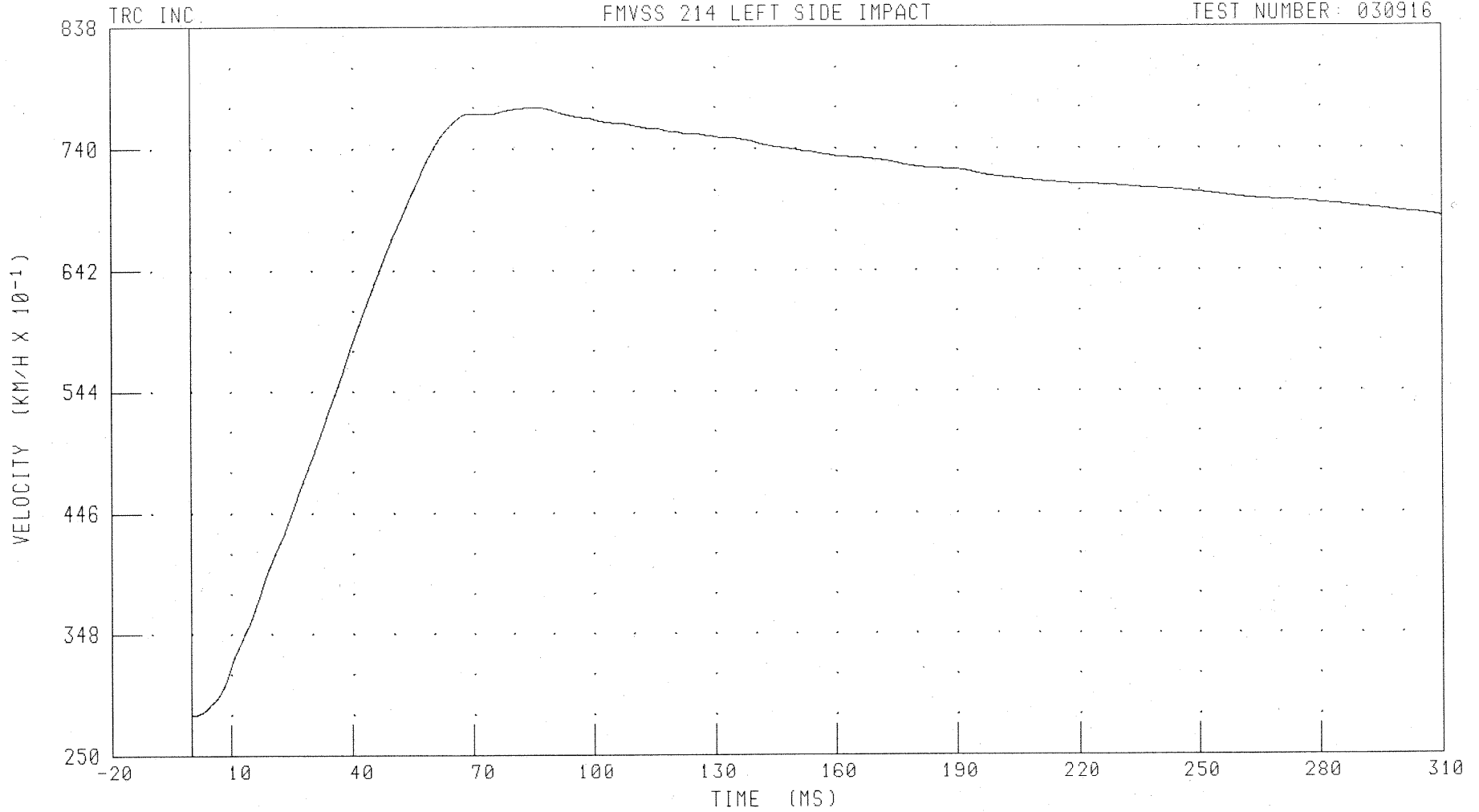
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR

MOB LEFT REAR Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LRRYV1 FILTER: CH. CLASS 180

PEAK DATA: 77.27 KM/H @ 86.56 MS; 28.20 KM/H @ 0.00 MS

B-146

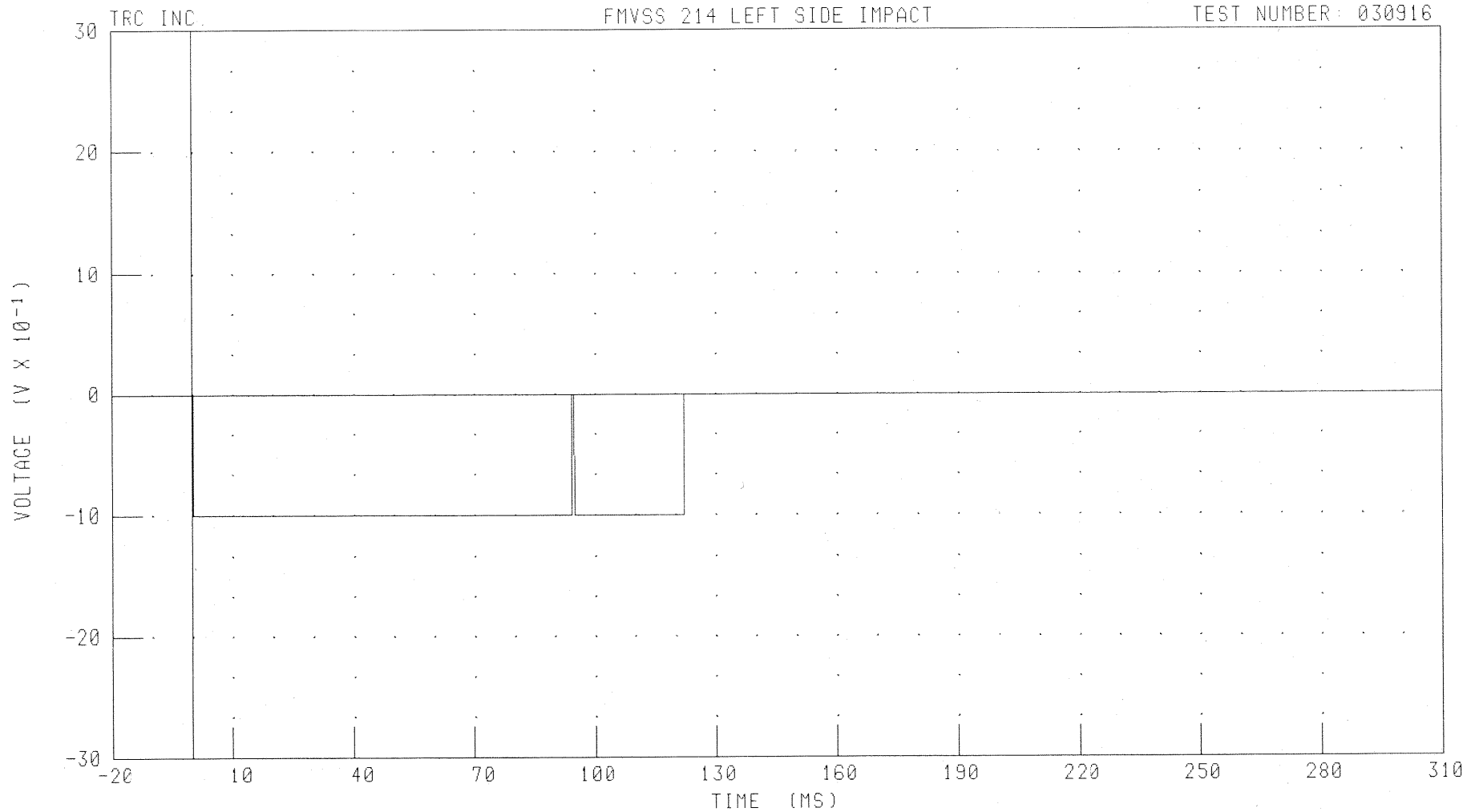
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR

MDB RIGHT SIDE CONTACT SWITCH

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: MDBR1

FILTER: CH. CLASS 1000

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

B-147

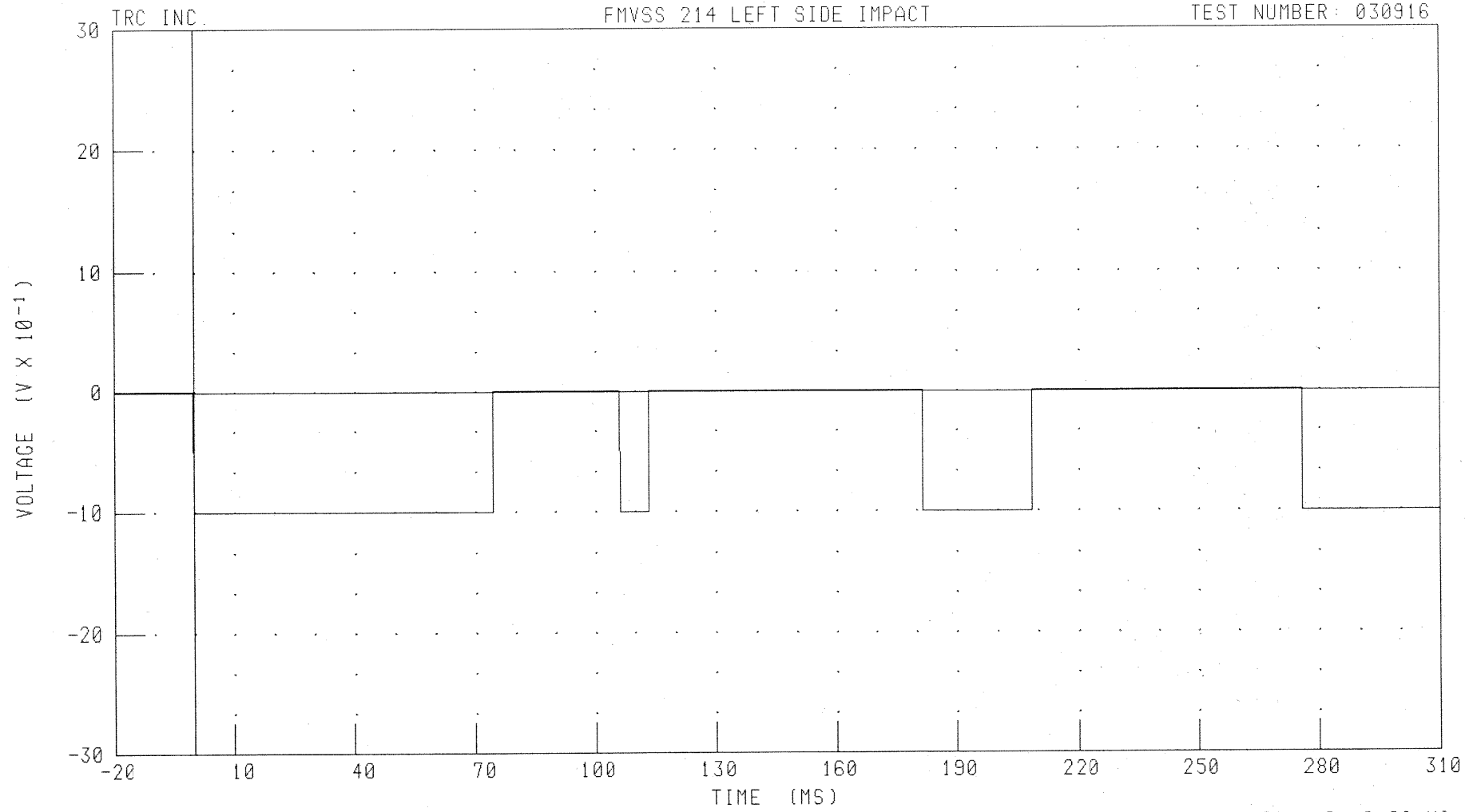
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR

MDB LEFT SIDE CONTACT SWITCH

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



TRC INC.

VOLTAGE ($V \times 10^{-1}$)

TIME (MS)

CHANNEL: MDBL1

FILTER: CH. CLASS 1000

PEAK DATA: 0.00 V @ -20.00 MS, -1.00 V @ -0.08 MS

B-148

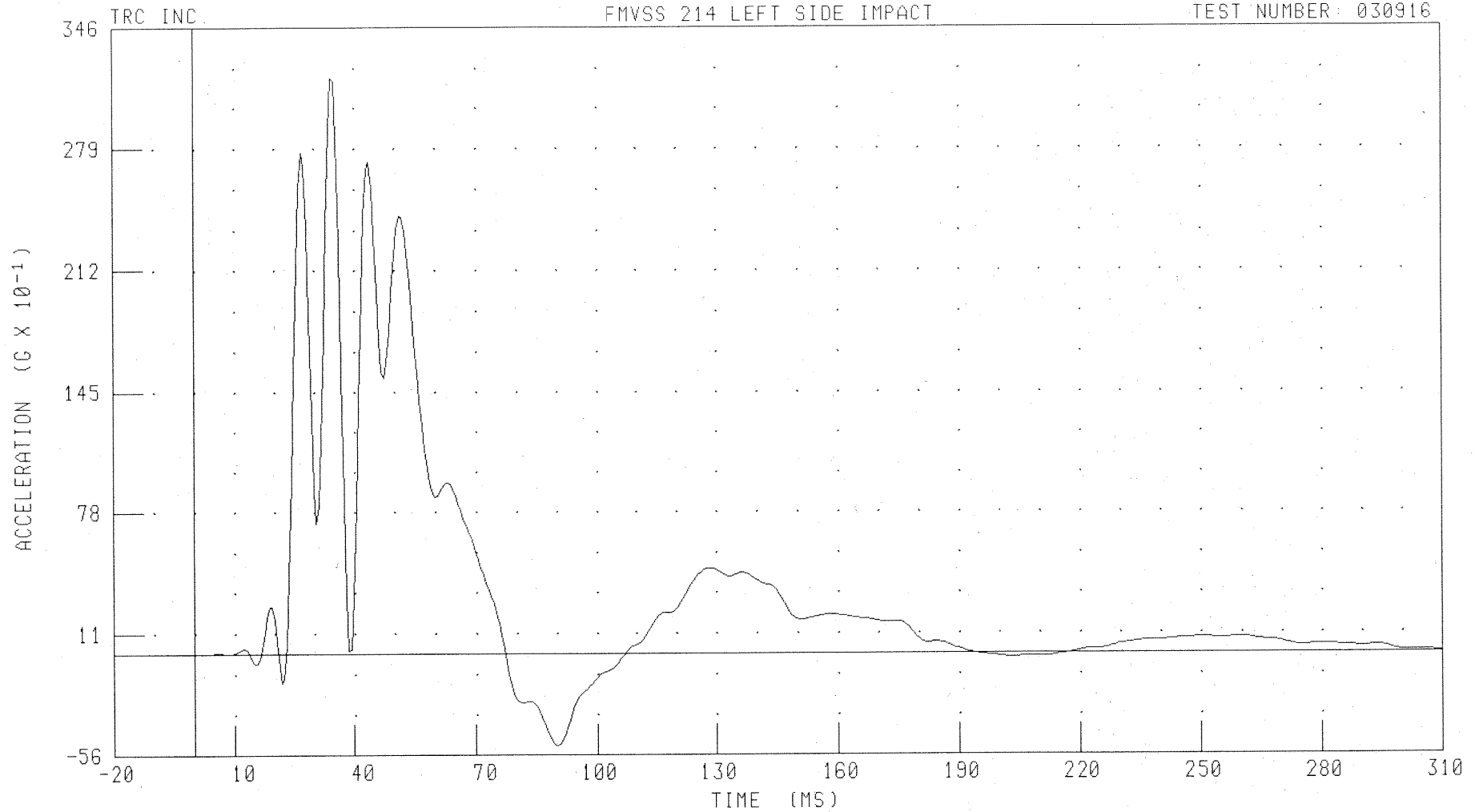
030916

Driver and Passenger Dummy Instrumentation Plots
Acceleration Data - FIR Filtered

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER UPPER RIB Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LURYG1 FILTER: FIR 100

PEAK DATA: 31.81 G @ 34.38 MS; -5.11 G @ 90.00 MS

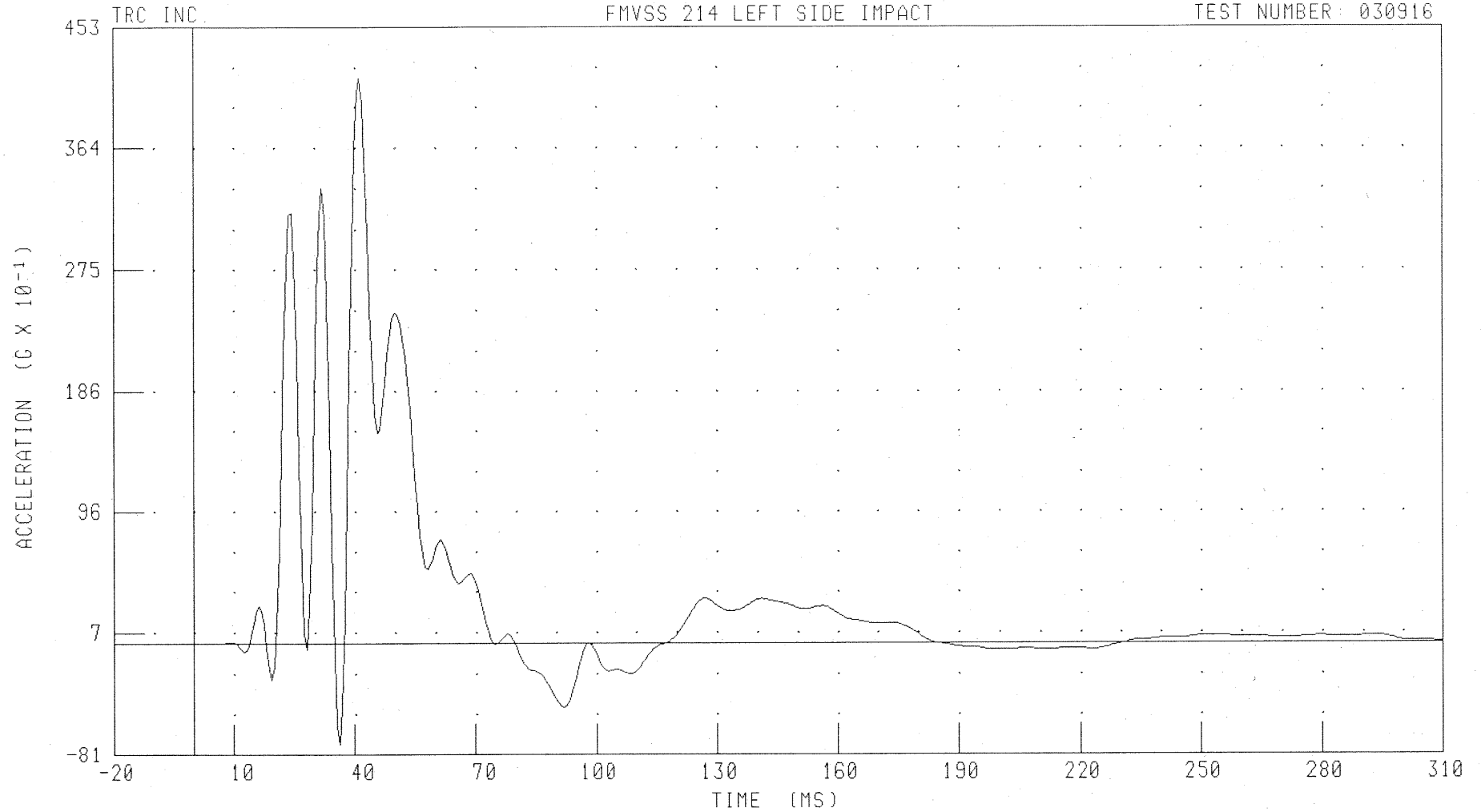
B-150

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER LOWER RIB Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LLRYG1 FILTER: FIR 100

PEAK DATA: 41.55 G @ 41.25 MS; -7.38 G @ 36.25 MS

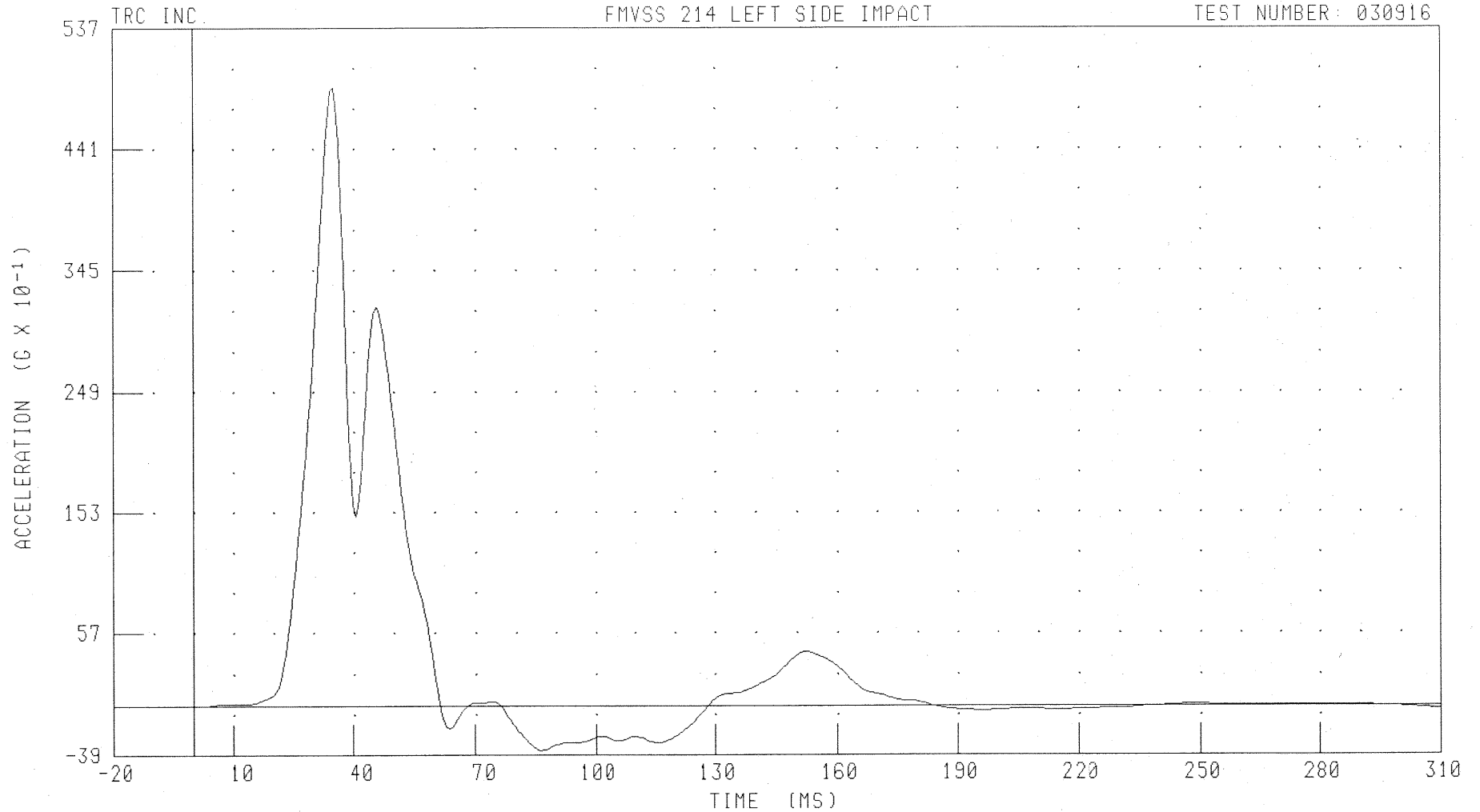
B-151

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER LOWER SPINE Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: T12YG1

FILTER: FIR 100

PEAK DATA: 49.02 G @ 35.00 MS; -3.55 G @ 86.25 MS

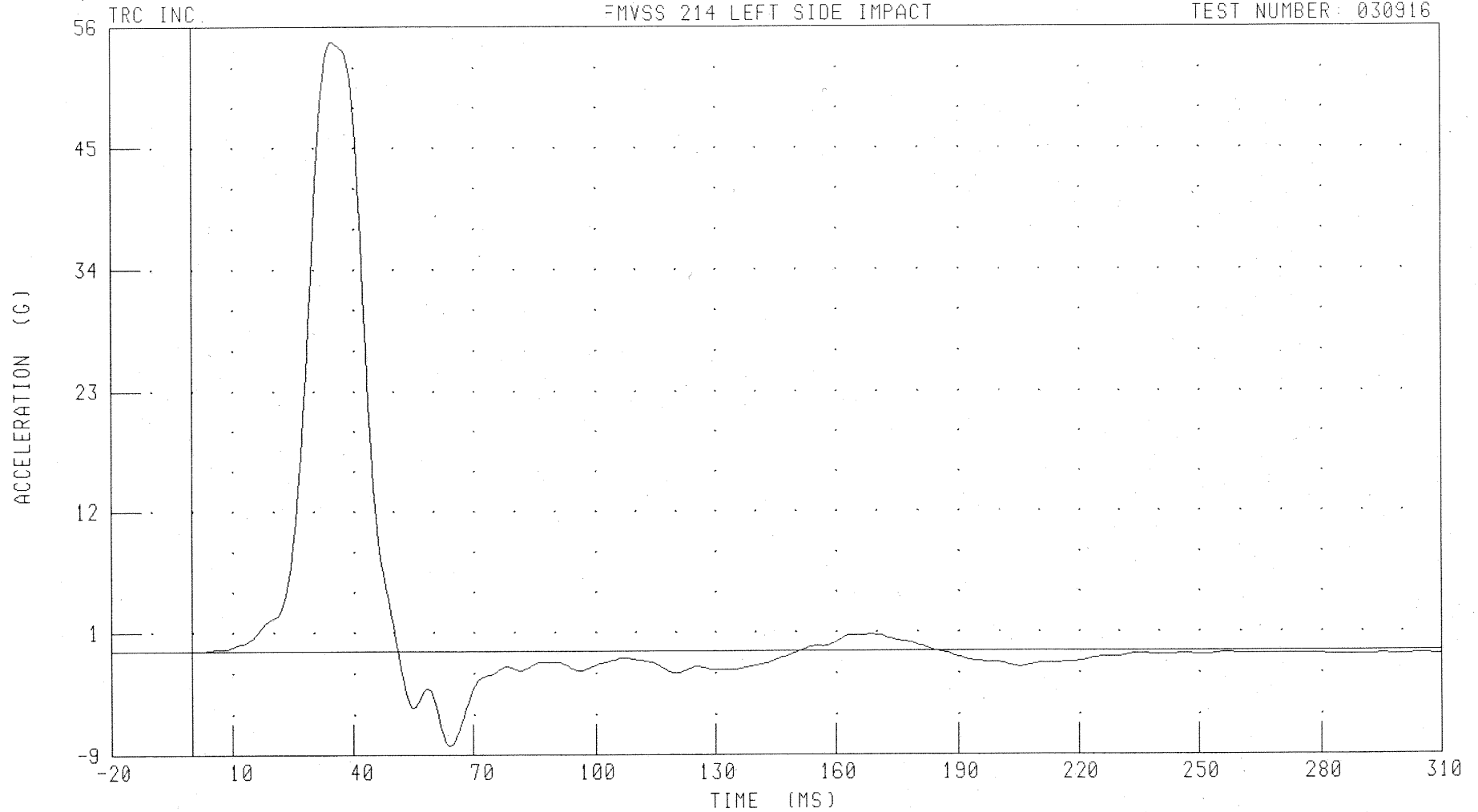
B-152

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER PELVIS Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: PEVYG1 FILTER: FIR 100

PEAK DATA: 55.30 G @ 35.00 MS; -8.52 G @ 64.38 MS

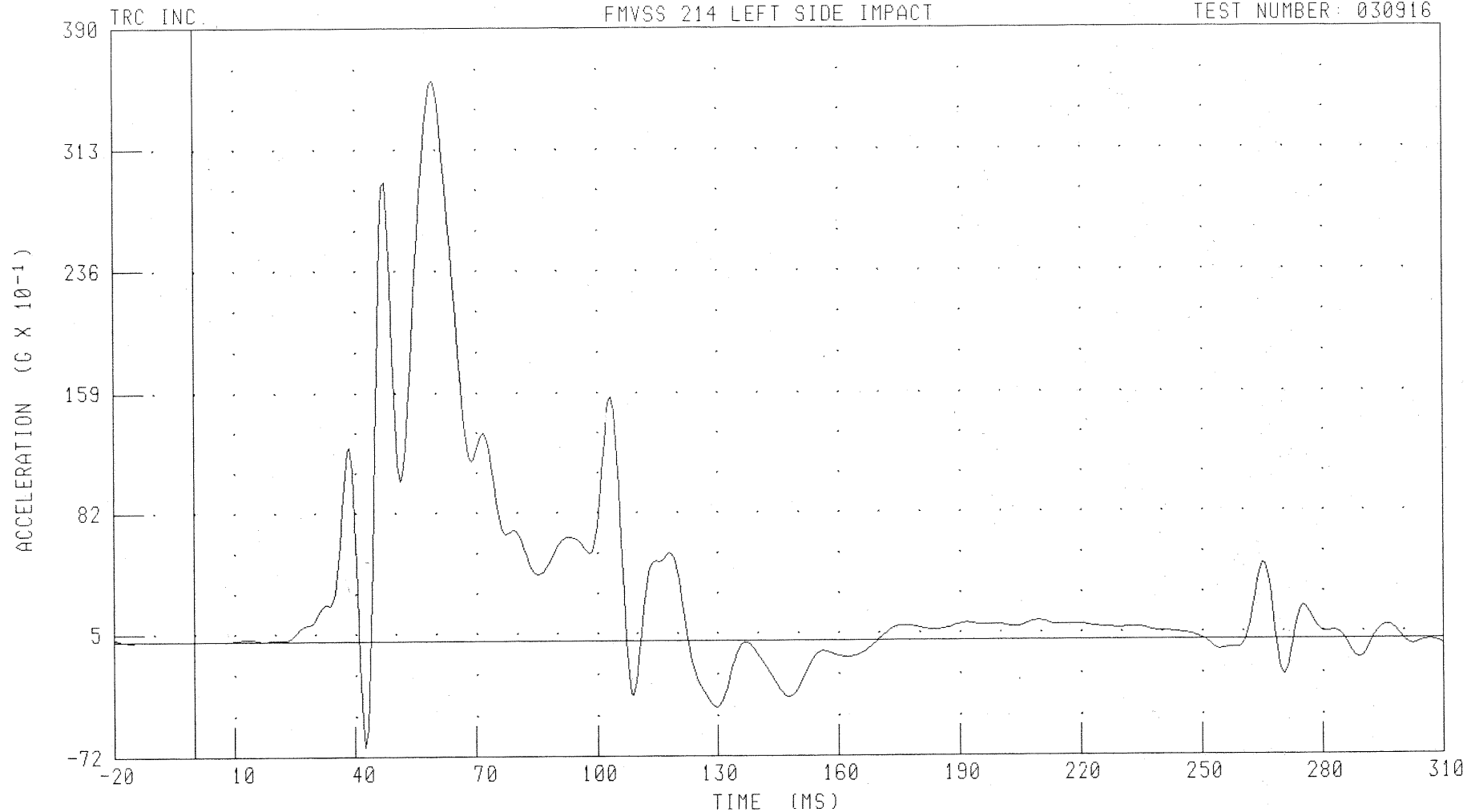
B-153

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER UPPER RIB Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LURYG4 FILTER: FIR 100

PEAK DATA: 35.67 G @ 59.38 MS; -6.63 G @ 42.50 MS

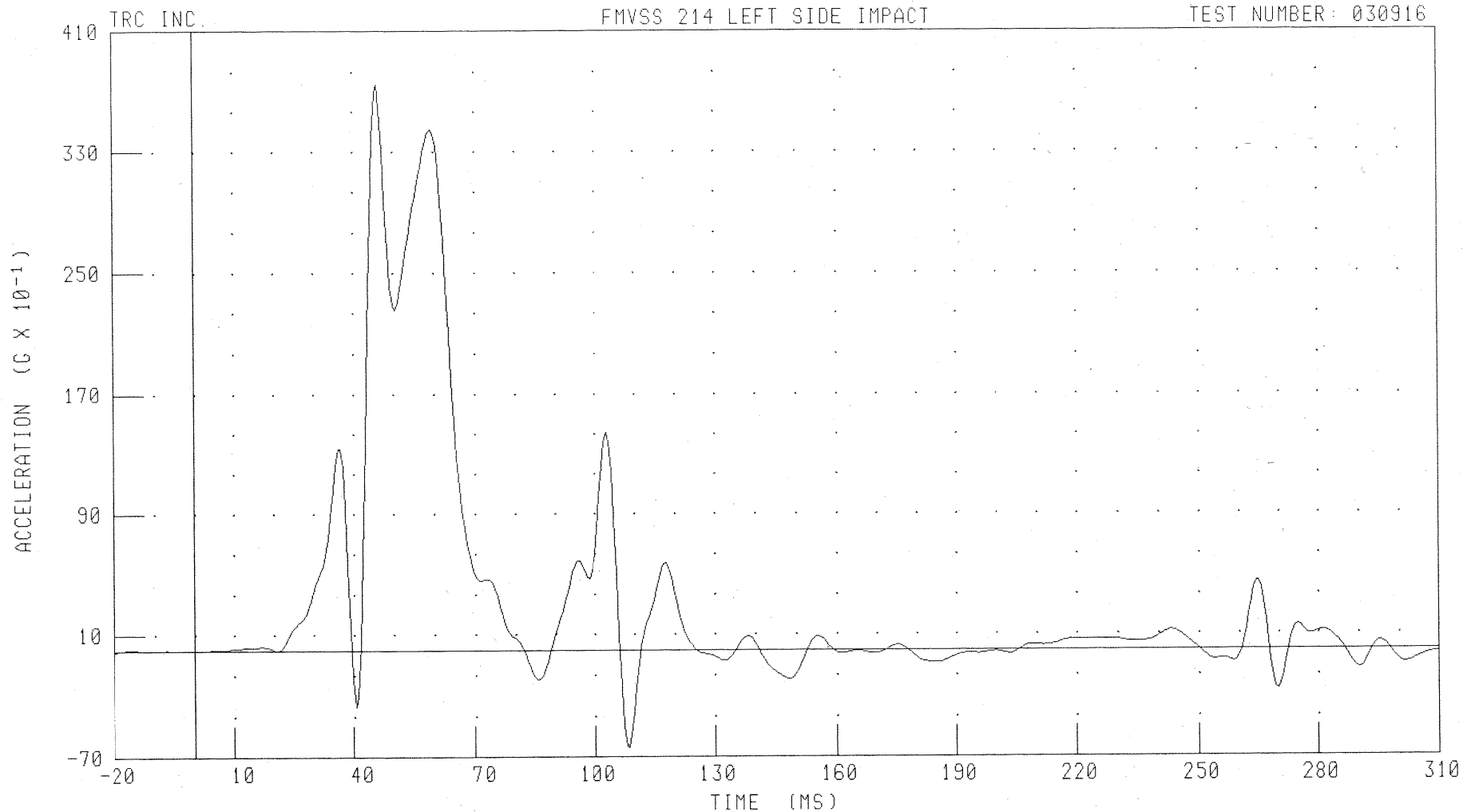
B-154

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER LOWER RIB Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LLRYG4 FILTER: FIR 100

PEAK DATA: 37.50 G @ 46.25 MS; -6.41 G @ 108.75 MS

B-155

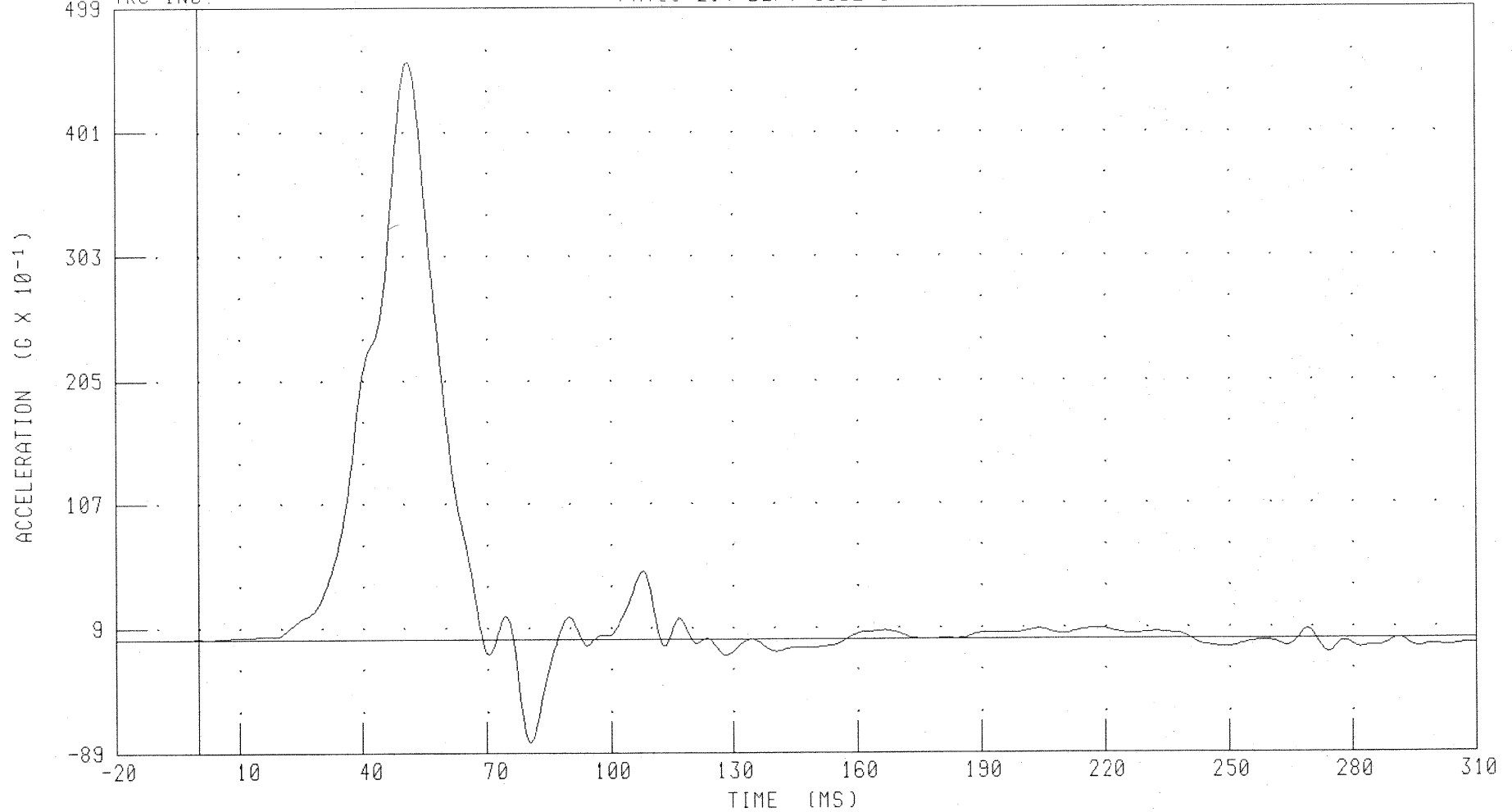
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER LOWER SPINE Y-AXIS ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: T12YG4 FILTER: FIR 100

PEAK DATA: 45.73 G @ 51.25 MS; -8.11 G @ 80.63 MS

B-156

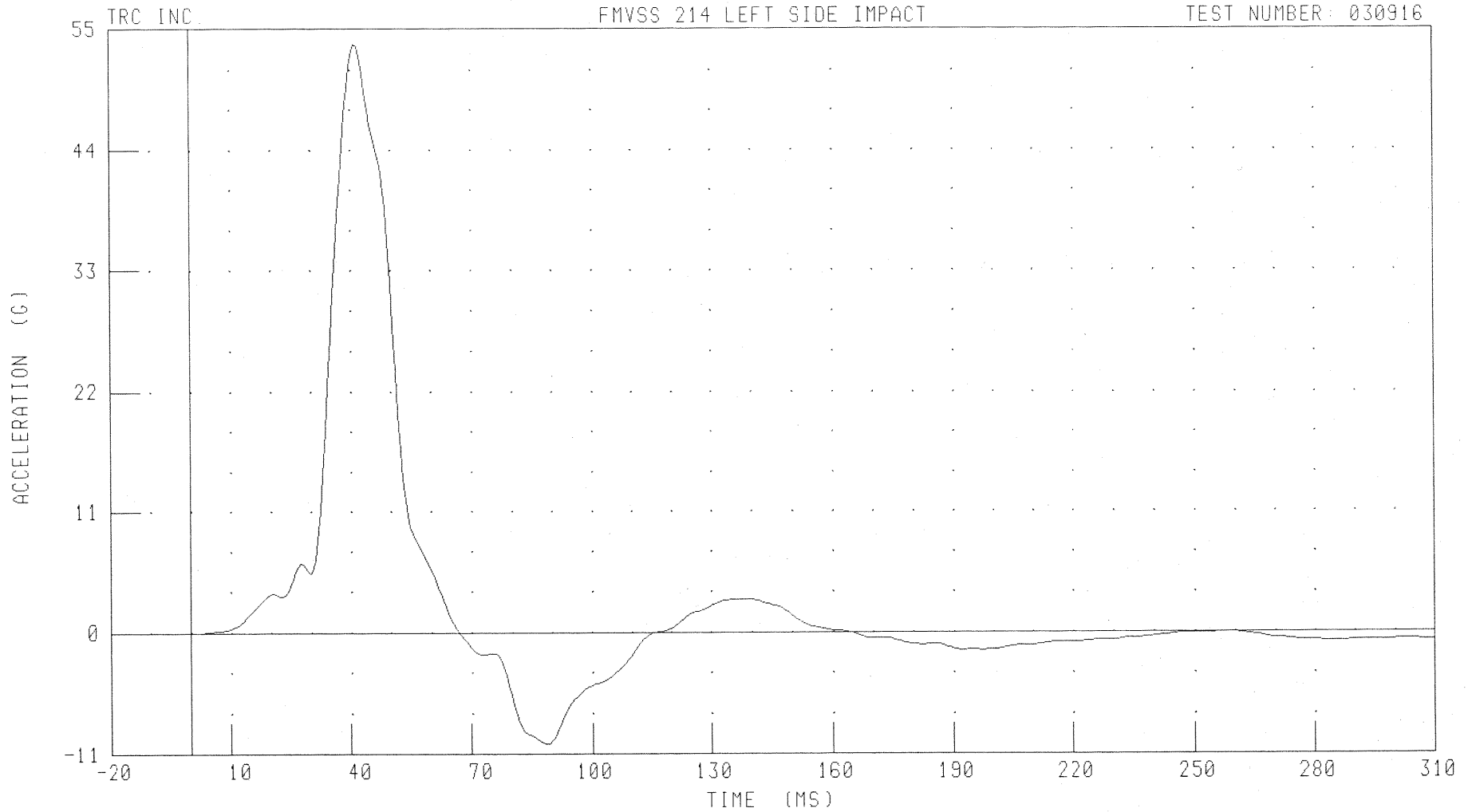
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR

LEFT REAR PASSENGER PELVIS Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: PEVYG4 FILTER: FIR 100

PEAK DATA: 53.65 G @ 41.25 MS; -10.12 G @ 88.75 MS

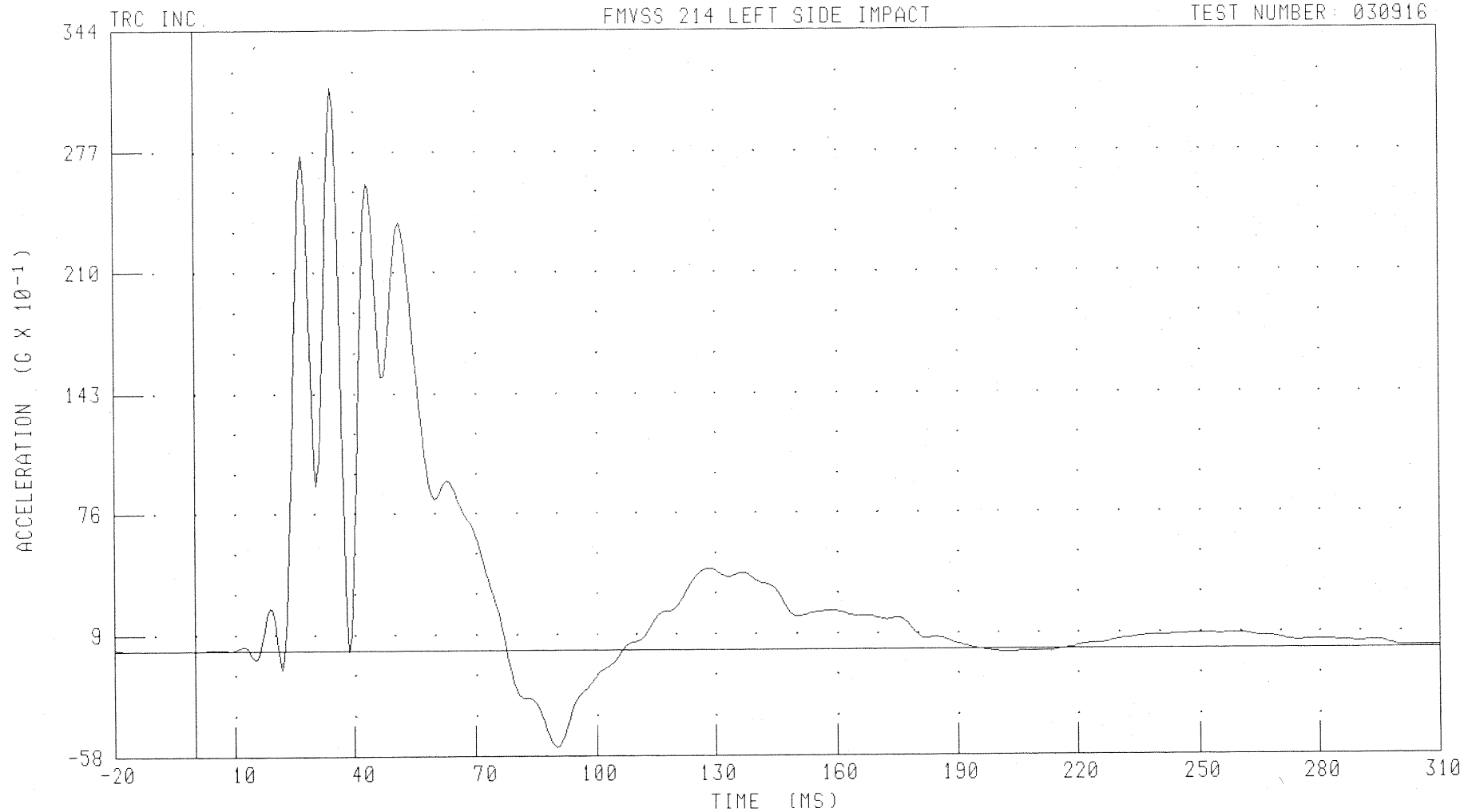
B-157

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



B-158

030916

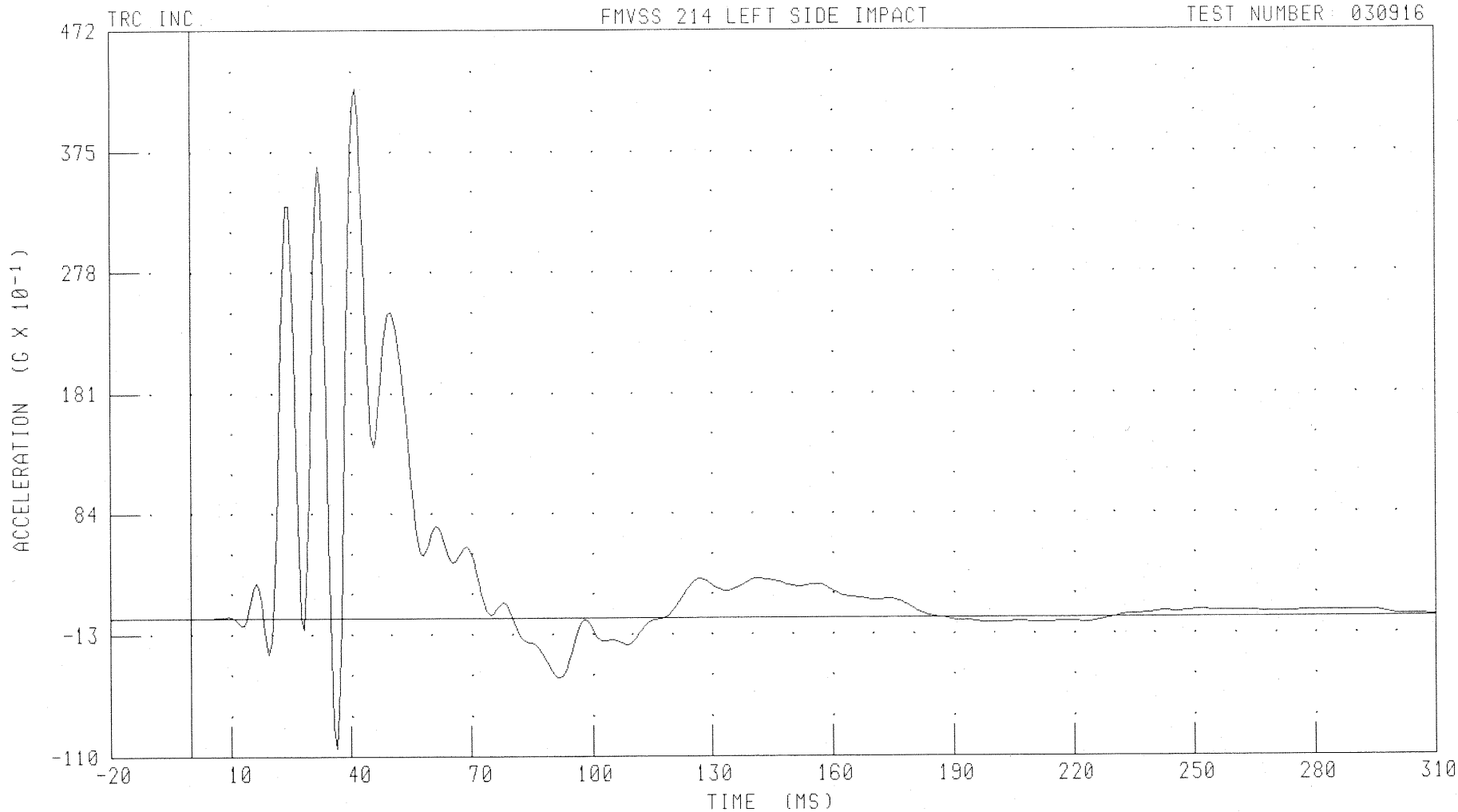
CHANNEL: LURYR1 FILTER: FIR 100

PEAK DATA: 31.27 G @ 34.38 MS; -5.33 G @ 90.00 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER LOWER RIB Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LLRYR1 FILTER: FIR 100

PEAK DATA: 42.64 G @ 41.25 MS; -10.33 G @ 36.25 MS

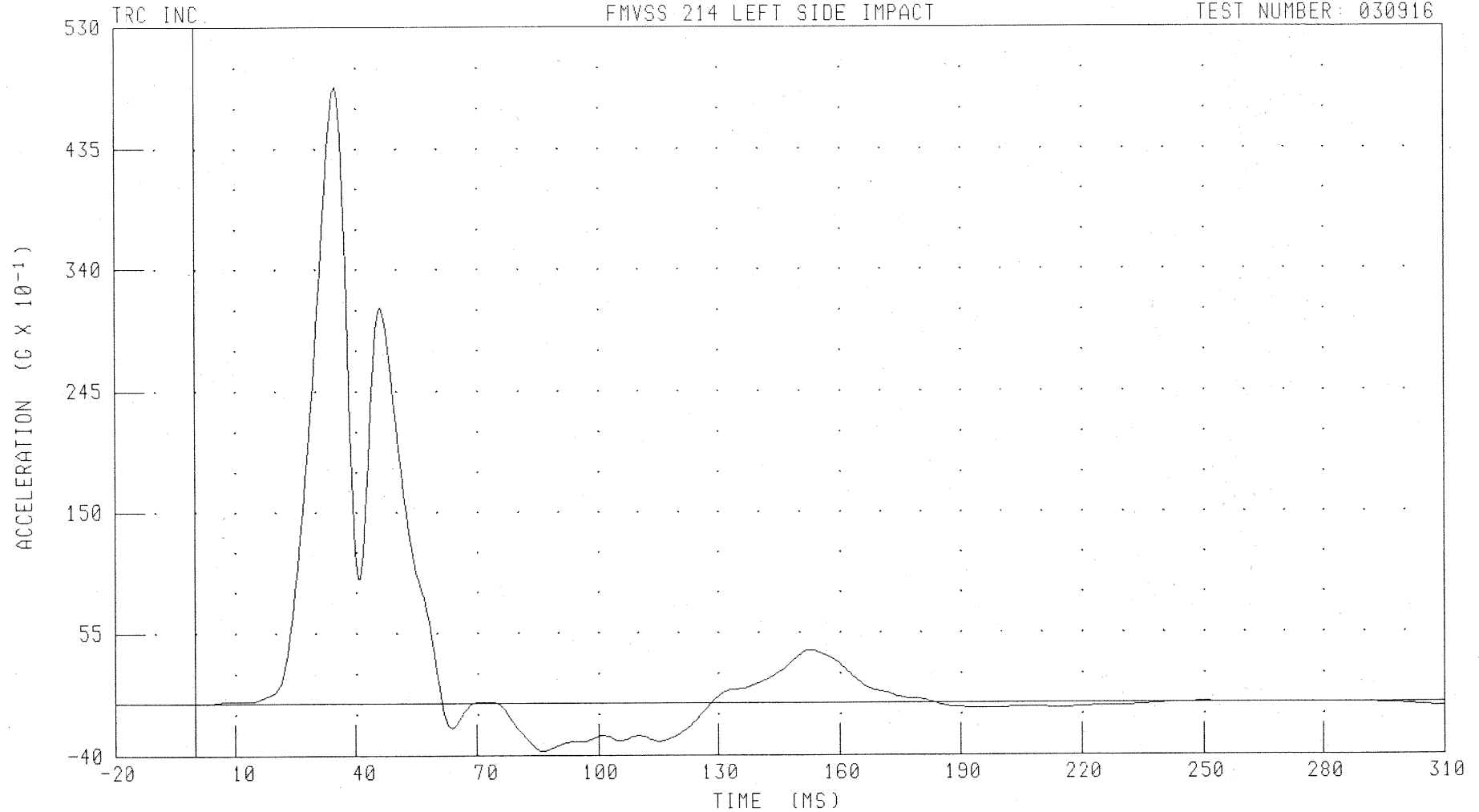
B-159

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: T12YR1 FILTER: FIR 100

PEAK DATA: 48.39 G @ 35.00 MS; -3.70 G @ 86.25 MS

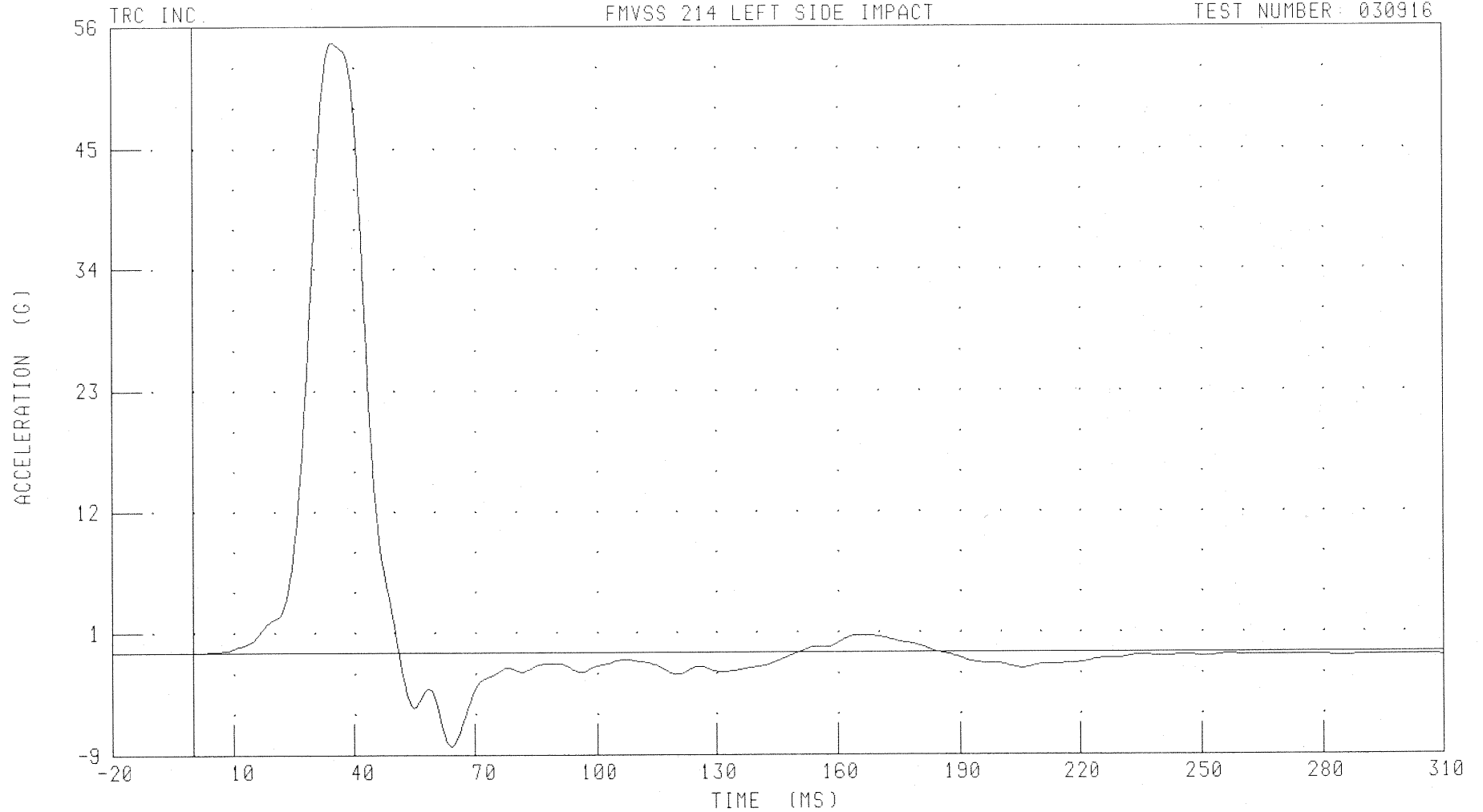
B-160

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
DRIVER PELVIS Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: PEVYR1 FILTER: FIR 100

PEAK DATA: 55.34 G @ 35.00 MS; -8.42 G @ 64.38 MS

B-161

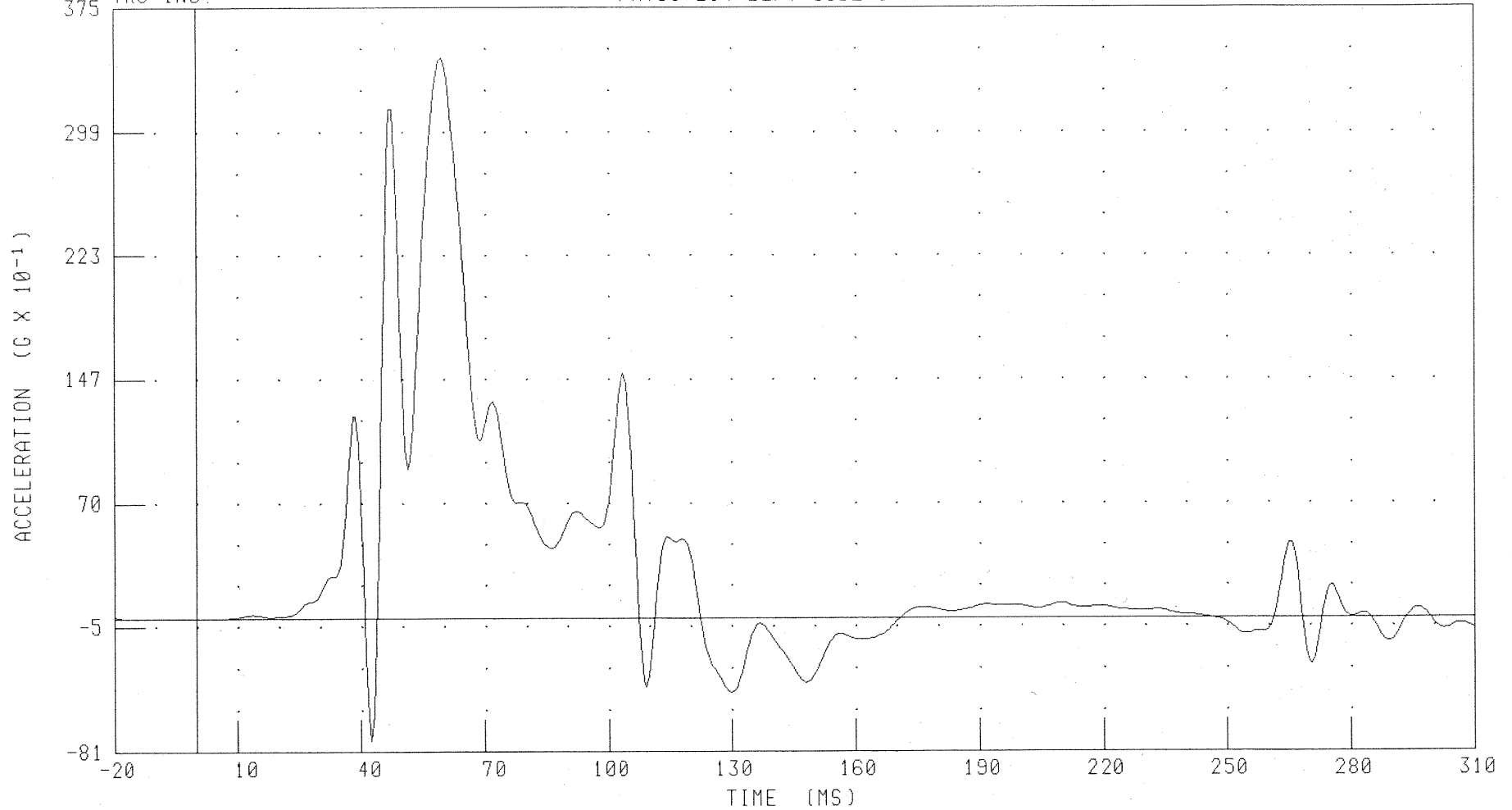
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LURYR4 FILTER: FIR 100

PEAK DATA: 34.44 G @ 59.38 MS, -7.44 G @ 42.50 MS

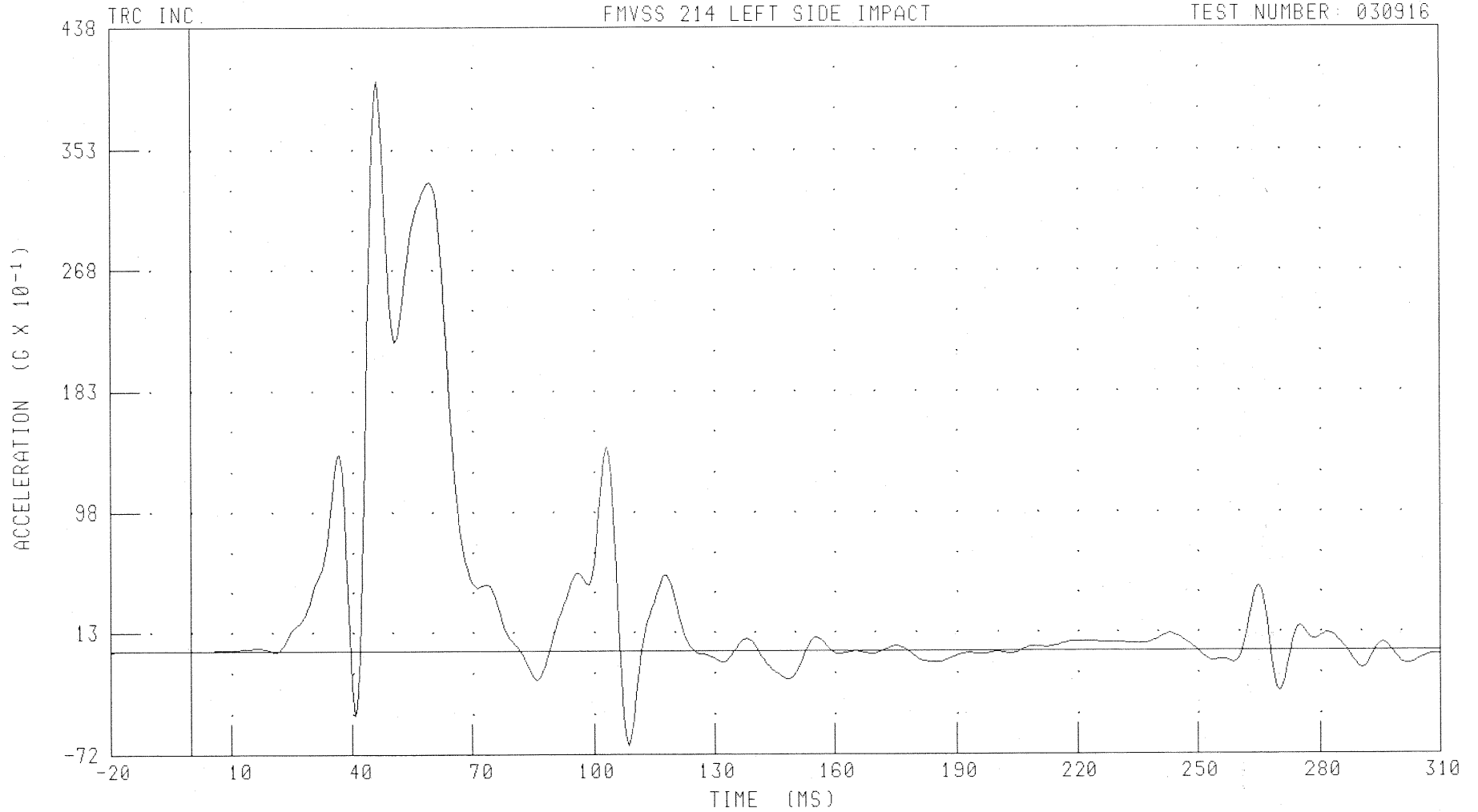
B-162

030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER LOWER RIB Y-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: LLRYR4

FILTER: FIR 100

PEAK DATA: 40.05 G @ 46.25 MS; -6.63 G @ 108.75 MS

B-163

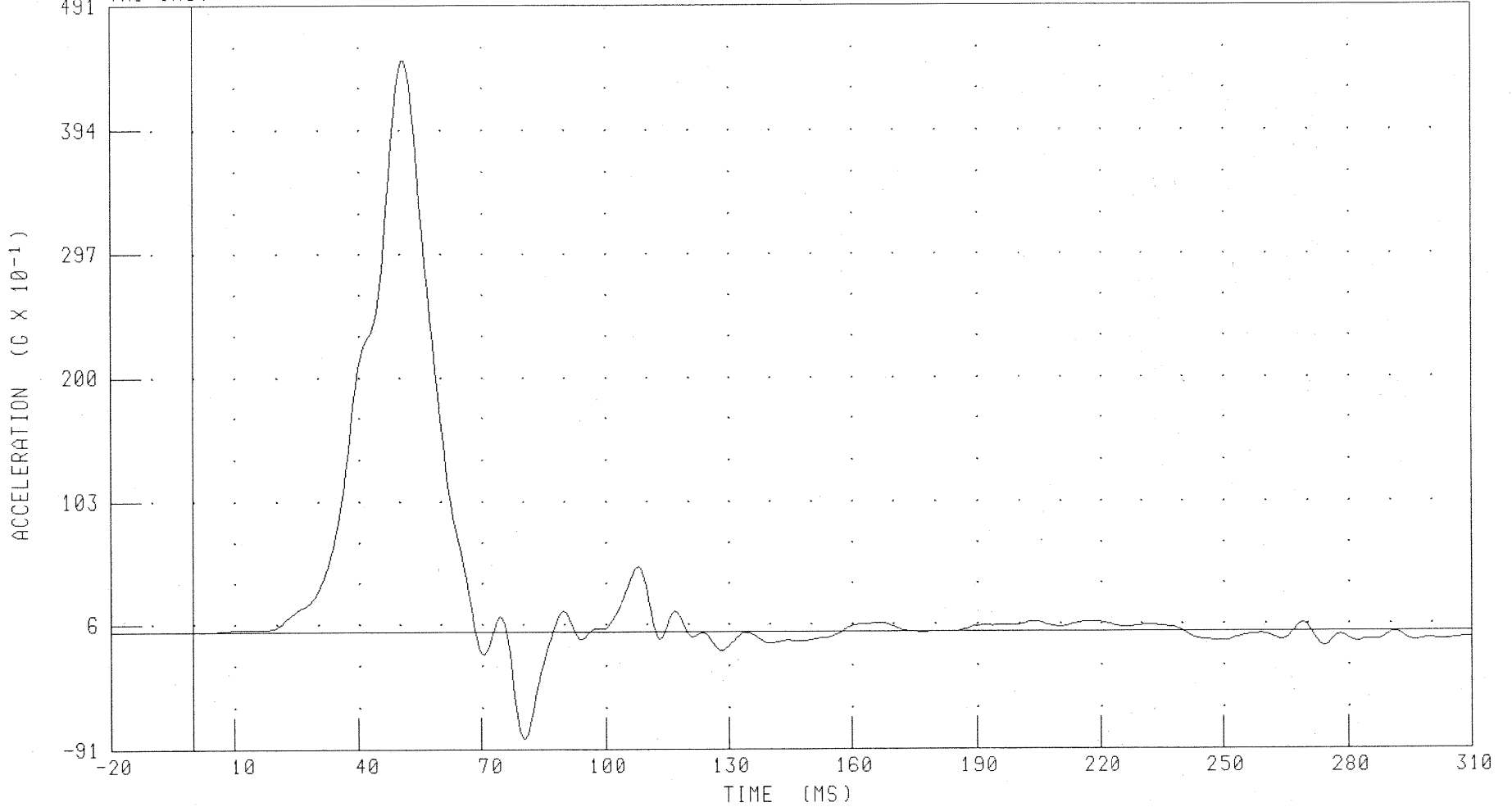
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: T12YR4

FILTER: FIR 100

PEAK DATA: 44.79 G @ 51.25 MS; -8.33 G @ 80.63 MS

B-164

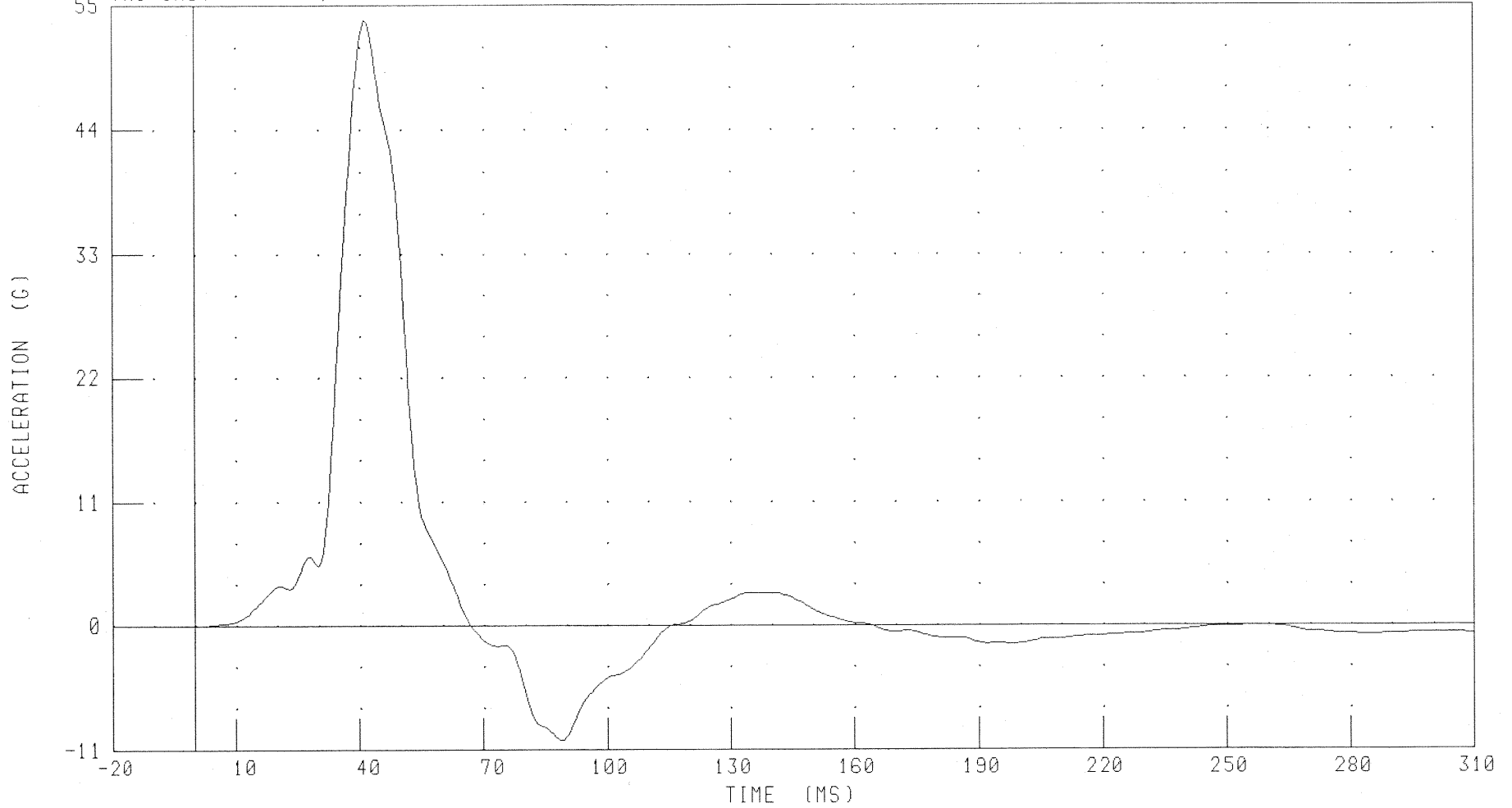
030916

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2004 MITSUBISHI ENDEAVOR
LEFT REAR PASSENGER PELVIS Y-AXIS REDUNDANT ACCELERATION

TRC INC.

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030916



CHANNEL: PEVYR4 FILTER: FIR 100

PEAK DATA: 53.69 G @ 41.25 MS; -10.17 G @ 88.75 MS

B-165

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Appendix C

SID HIII Configuration and Performance Verification Data

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

Date: September 16, 2003 TRC Inc. Test Number: SN 055 & SN 059
 Laboratory Technician: Jack Willeke

Test Parameter	Specification	SID HIII 055		SID HIII 059	
		Pre-Test	Post-Test	Pre-Test	Post-Test
SH - Seated Height (mm)	889-909	899	N/A ¹	897	909
RH - Rib Height (mm)	502-520	508	N/A ¹	505	519
HP - Hip Pivot Height (mm)	99 ref	99.1	N/A ¹	99.1	99.1
RD - Rib from Back Line (mm)	229-241	235	N/A ¹	234	229
KH - Knee Pivot from Back Line (mm)	511-526	519	N/A ¹	516	521
KV - Knee Pivot to Floor (mm)	490-505	497	N/A ¹	499	492
HW - Hip Width (mm)	356-391	371	N/A ¹	368	365
Thorax Impacts					
Temperature (°C)	18.9-25.5	21.1	21.1	21.1	21.2
Relative Humidity (%)	10-70	63.0	41.0	60.0	38.0
Probe Speed (m/s)	4.27-4.33	4.31	4.29	4.28	4.29
Upper Rib (g's)	37-46	40.4	40.9	44.7	48.8
Lower Rib (g's)	37-46	38.1	39.8	44.1	45.8
Lower Spine (g's)	15-22	18.1	19.3	19.9	22.6
Pelvis Impacts					
Temperature (°C)	18.9-25.5	21.1	21.1	21.1	20.9
Relative Humidity (%)	10-70	61.0	40.0	63.0	43.0
Probe Speed (m/s)	4.27-4.33	4.29	4.27	4.29	4.27
Pelvis (g's)	40-60	40.3	44.2	44.4	47.6

¹ Post-test external dimensions were not collected.

Calibration Test Results

Pre-Test

SID HIII: 055


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.
Thoracic Shock Absorber Test:	The thoracic shock absorber passed all test requirements
Lateral Thorax Impact Test:	The thorax passed all impact 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.

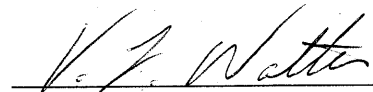
Transportation Research Center Inc.
SID/HIII Dummy
External Dimensions
Serial No. 055 Calibration No. 07

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	899 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	508 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Rib From Backline	RD	228.6 - 241.3 mm	235 mm	Yes
Knee Pivot From Backline	KH	510.5 - 525.8 mm	519 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	497 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	371 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	172 mm	Yes
Difference Between Top & Bottom Rib Width from C/L		<= 2.5 mm	2.0 mm	Yes

Technician



Approved





TRANSPORTATION RESEARCH CENTER INC.

LATERAL HEAD DROP TEST

HYBRIDI III SID DUMMY

15-SEP-03

LEFT SIDE CONFIGURATION

TRC INC. TEST NO. HDL05507 572M SID/HIII SN055 HEAD CAL07

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6 deg. C	21.11 deg. C
RELATIVE HUMIDITY	10 - 70 %	62.00 %
PEAK RESULTANT ACCELERATION	120 - 150 G	121.43 G
PEAK LONGITUDINAL ACCELERATION	15 G MAX	-8.17 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 091503.1430;1

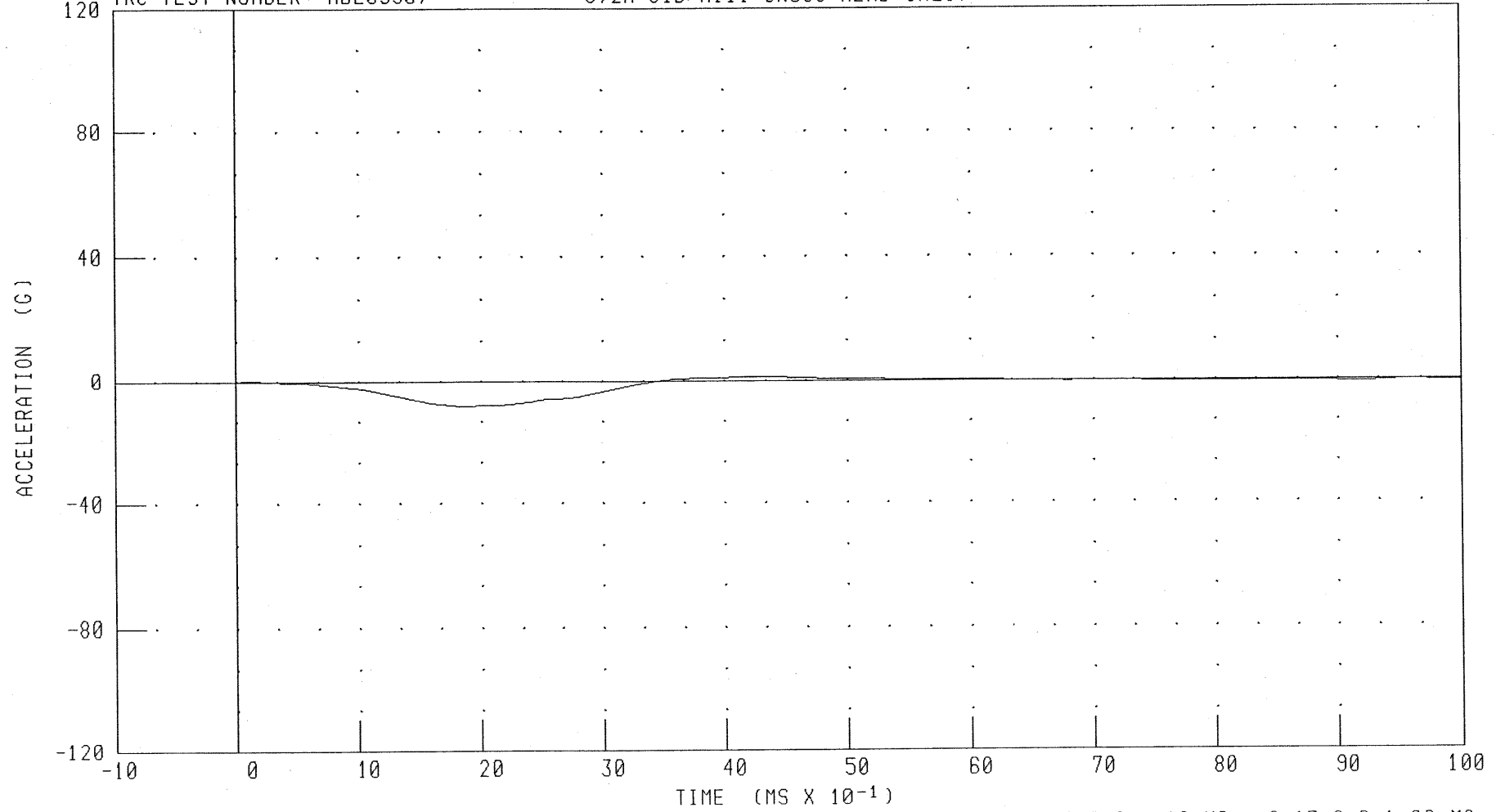
572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION X AXIS

TRC TEST NUMBER: HDL05507

572M SID/HIII SN055 HEAD CAL07

RUN NUMBER: 091503.1430;1



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030916

CHANNEL: HEDXC

FILTER: CH. CLASS 1000

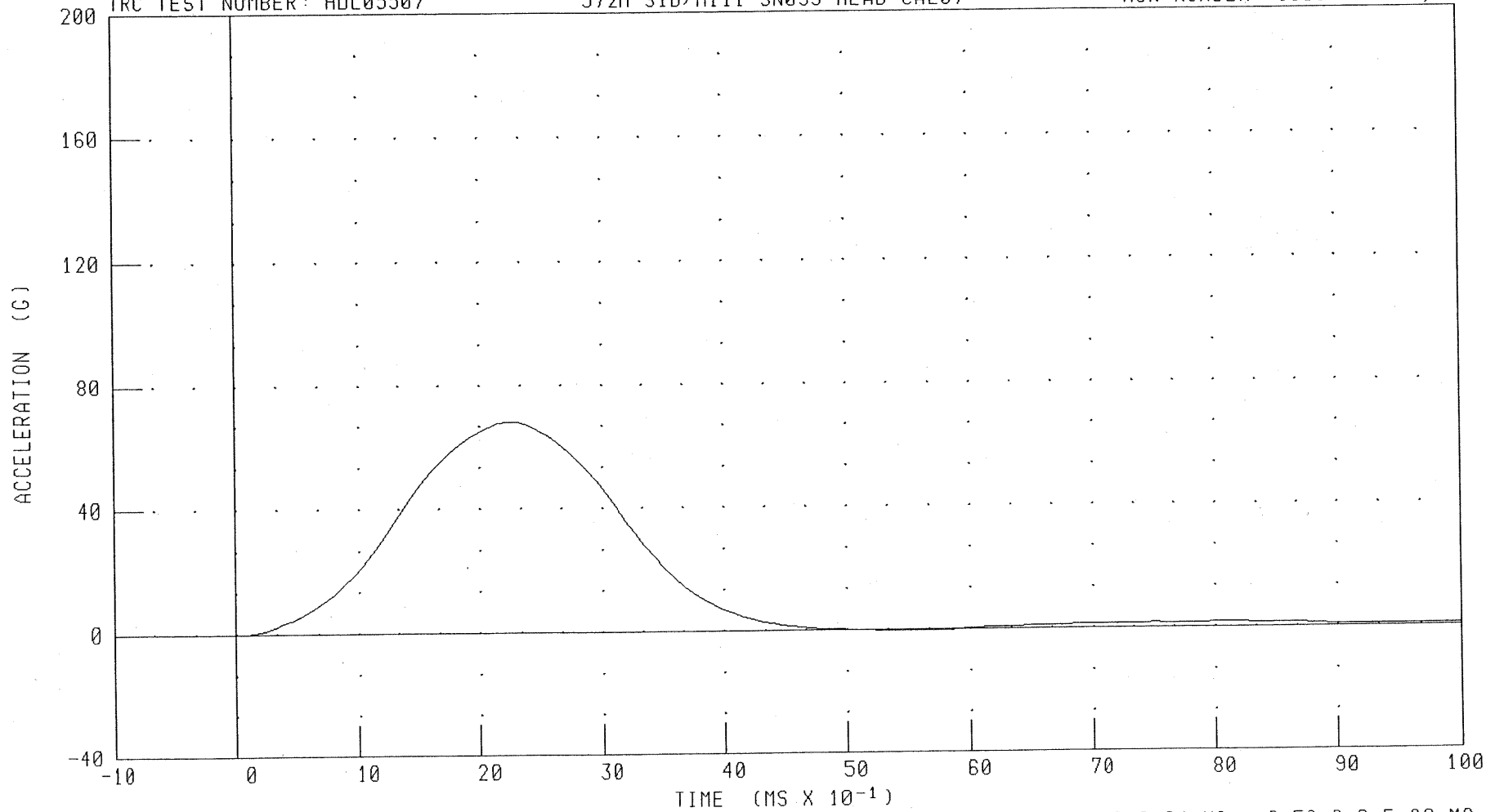
PEAK DATA: 1.12 G @ 4.16 MS; -8.17 G @ 1.92 MS

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

TRC TEST NUMBER: HDL05507

572M SID/HIII SN055 HEAD CAL07

RUN NUMBER: 091503.1430;1



CHANNEL: HEDYG

FILTER: CH. CLASS 1000

PEAK DATA: 68.13 G @ 2.24 MS; -0.50 G @ 5.68 MS

C-7

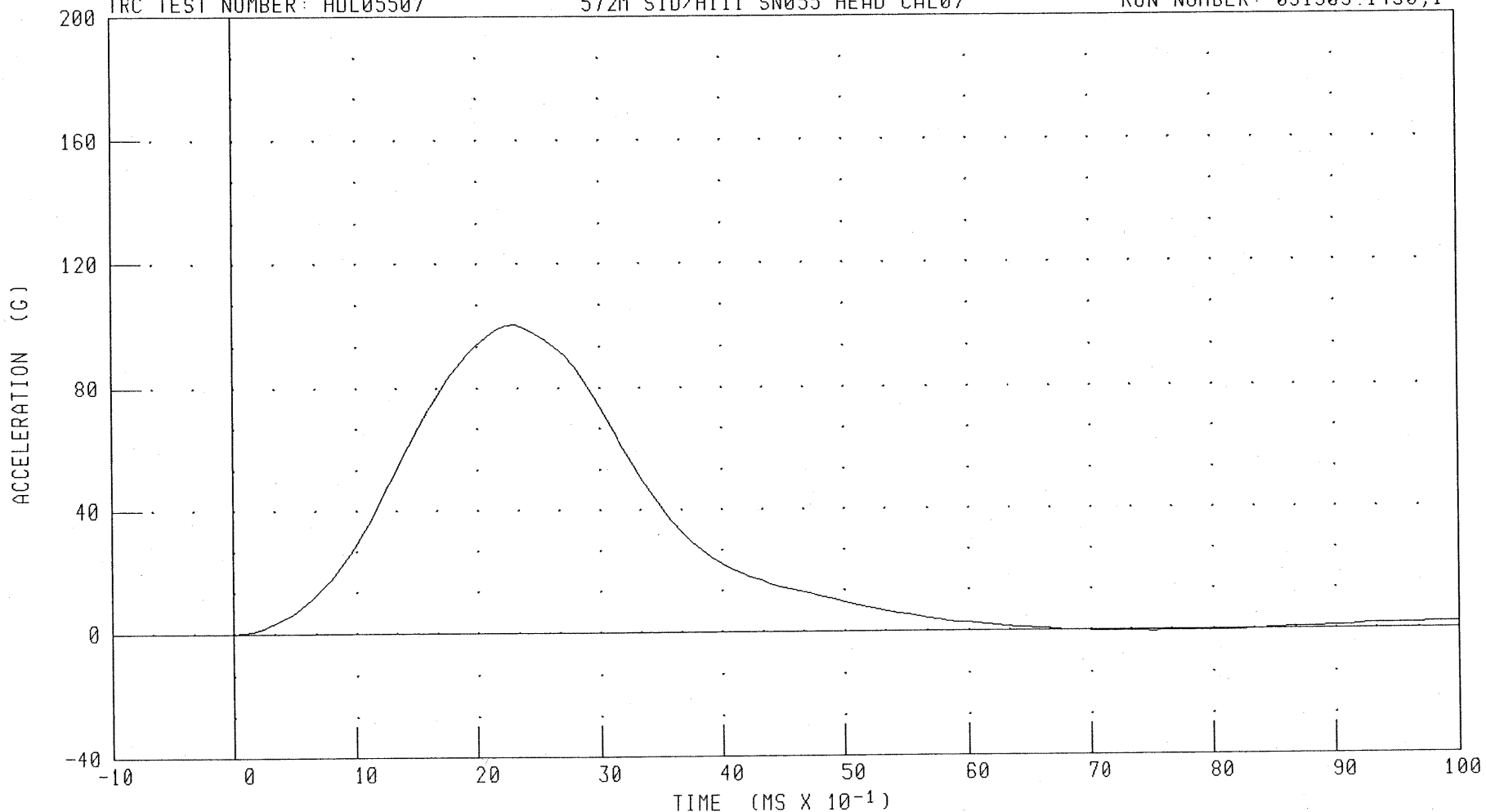
030916

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

TRC TEST NUMBER: HDL05507

572M SID/HIII SN055 HEAD CAL07

RUN NUMBER: 091503.1430;1



CHANNEL: HEDZG

FILTER: CH. CLASS 1000

PEAK DATA: 100.35 G @ 2.32 MS; -0.70 G @ 7.52 MS

C-8

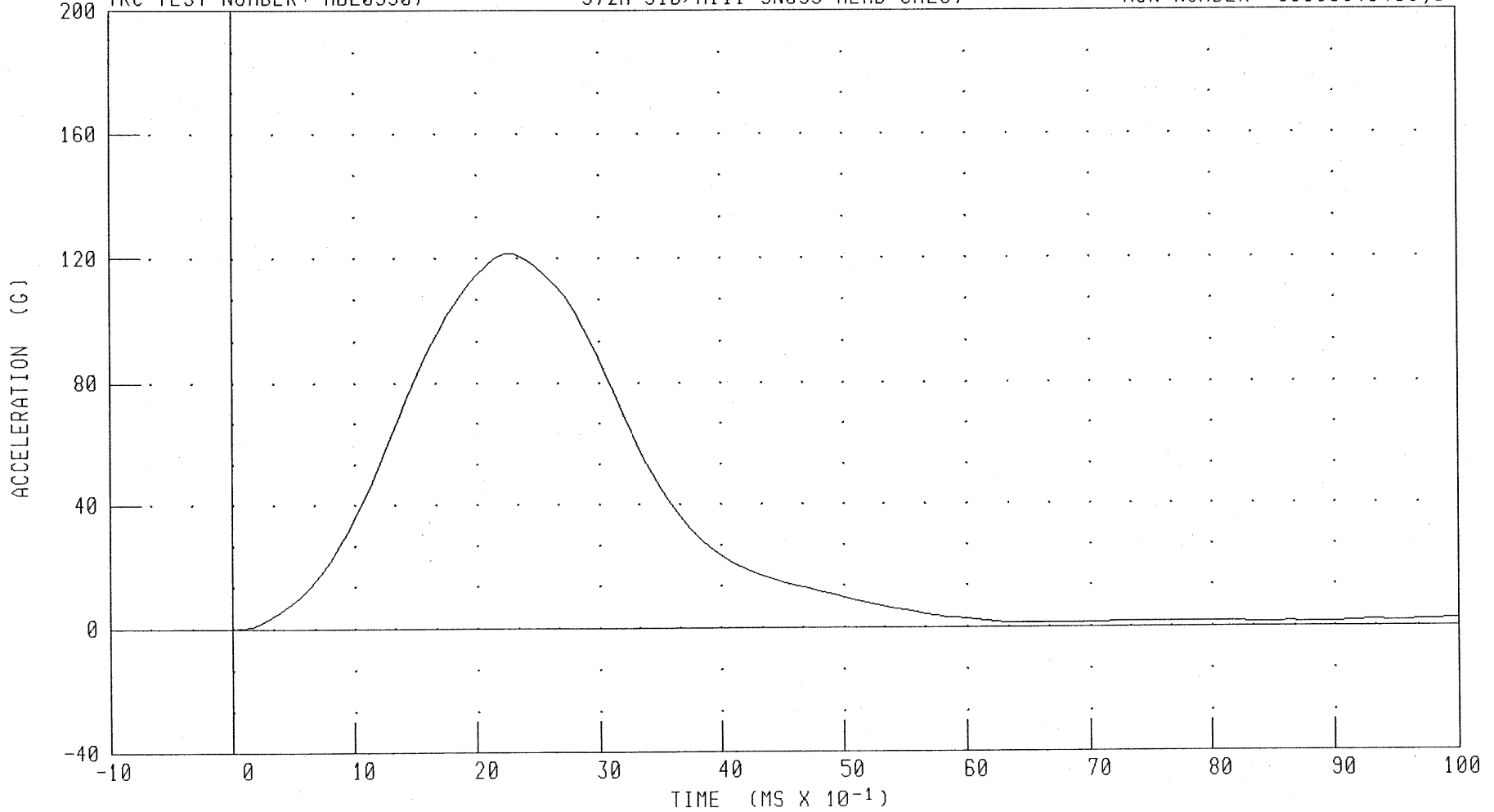
030916

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

TRC TEST NUMBER: HDL05507

572M SID/HIII SN055 HEAD CAL07

RUN NUMBER: 091503.1430;1



CHANNEL: HEDRG

FILTER: CH. CLASS 1000

PEAK DATA: 121.43 G @ 2.24 MS; 0.02 G @ -0.64 MS

C-9

030916

TRANSPORTATION RESEARCH CENTER INC.

LATERAL NECK TEST

HYBRIDIII SID DUMMY

15-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO. NFL05507

572M H3/SID SN055 NECK CAL07

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6 - 22.2 deg. C	21.67 deg. C
RELATIVE HUMIDITY	10 - 70 %	22.00 %
IMPACT VELOCITY	6.89 - 7.13 M/S	7.06 M/S
INTEGRATED VELOCITY	10 MS 1.96 - 2.55 M/S	2.54 M/S
	20 MS 4.12 - 5.10 M/S	4.96 M/S
	30 MS 5.73 - 7.01 M/S	6.76 M/S
	40 - 70 MS 6.27 - 7.64 M/S	7.12- 7.24 M/S
MAXIMUM MIDSAGGITAL PLANE ROTATION	66 - 82 deg.	66.27 deg.
ROTATION ANGLE DECAY TIME FROM PEAK TO ZERO	58 - 67 MS	60.32 MS
MAXIMUM MOMENT ABOUT OCCIPITAL CONDYLE	72 - 88 NM	86.60 NM
POSITIVE MOMENT DECAY TIME FROM PEAK TO ZERO	49 - 64 MS	50.08 MS
TIME OF MAXIMUM ROTATION AFTER MAXIMUM MOMENT	2 - 16 MS	6.24 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN 

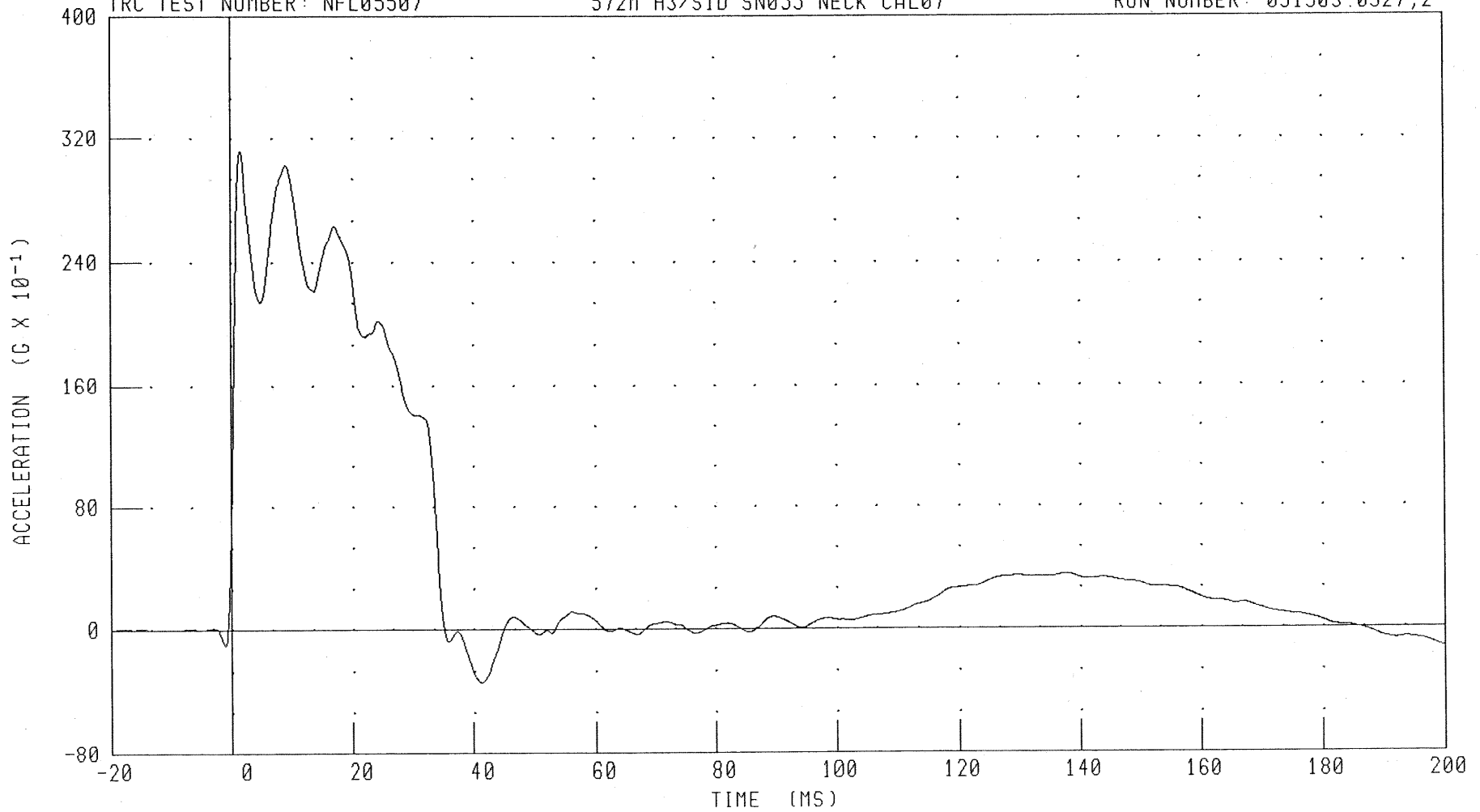
RUN NUMBER: 091503.0927;2

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

TRC TEST NUMBER: NFL05507

572M H3/SID SN055 NECK CAL07

RUN NUMBER: 091503.0927;2



C-11

CHANNEL: PENXG

FILTER: CH. CLASS 180

PEAK DATA: 31.17 G @ 1.60 MS; -3.40 G @ 41.28 MS

030916

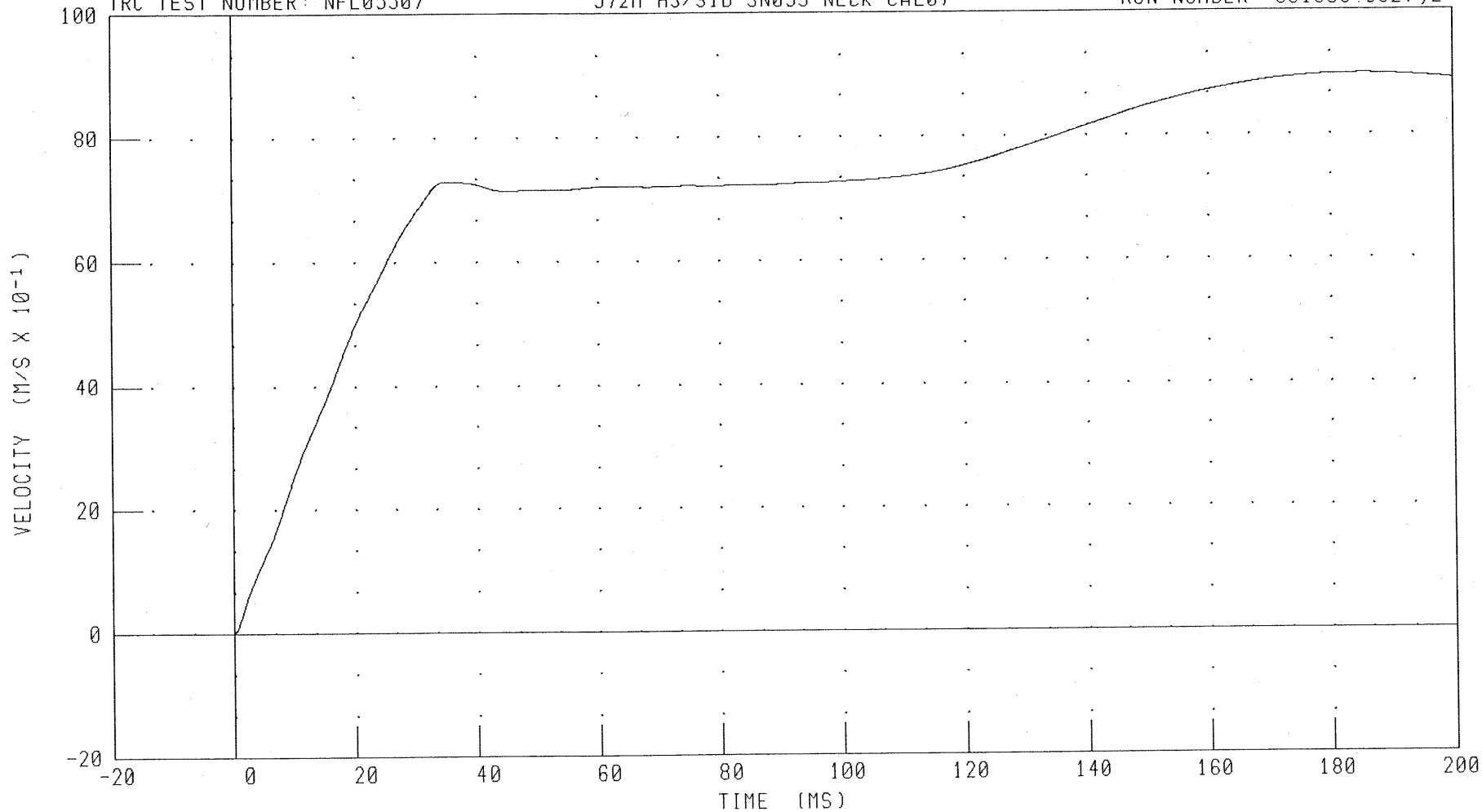
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

INTEGRATED PENDULUM VELOCITY

TRC TEST NUMBER: NFL05507

572M H3/SID SN055 NECK CAL07

RUN NUMBER: 091503.0927;2



CHANNEL: PENXVI

FILTER: CH. CLASS 180

PEAK DATA: 8.98 M/S @ 185.68 MS; -0.01 M/S @ -0.64 MS

C-12

030916

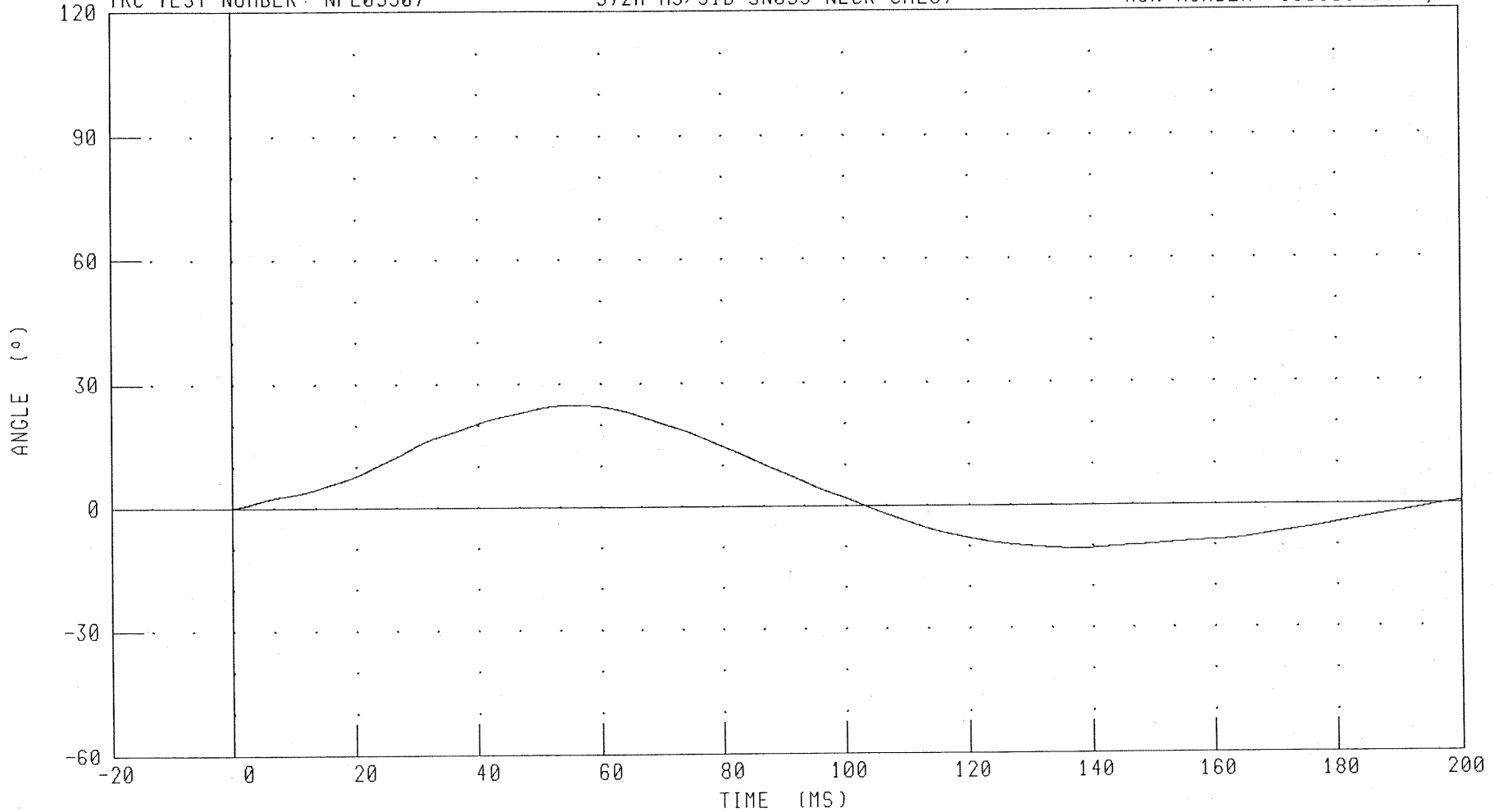
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER: NFL05507

572M H3/SID SN055 NECK CAL07

RUN NUMBER: 091503.0927;2



CHANNEL: BETA

FILTER: CH. CLASS 60

PEAK DATA: 24.85 ° @ 55.60 MS; -10.72 ° @ 137.68 MS

C-13

030916

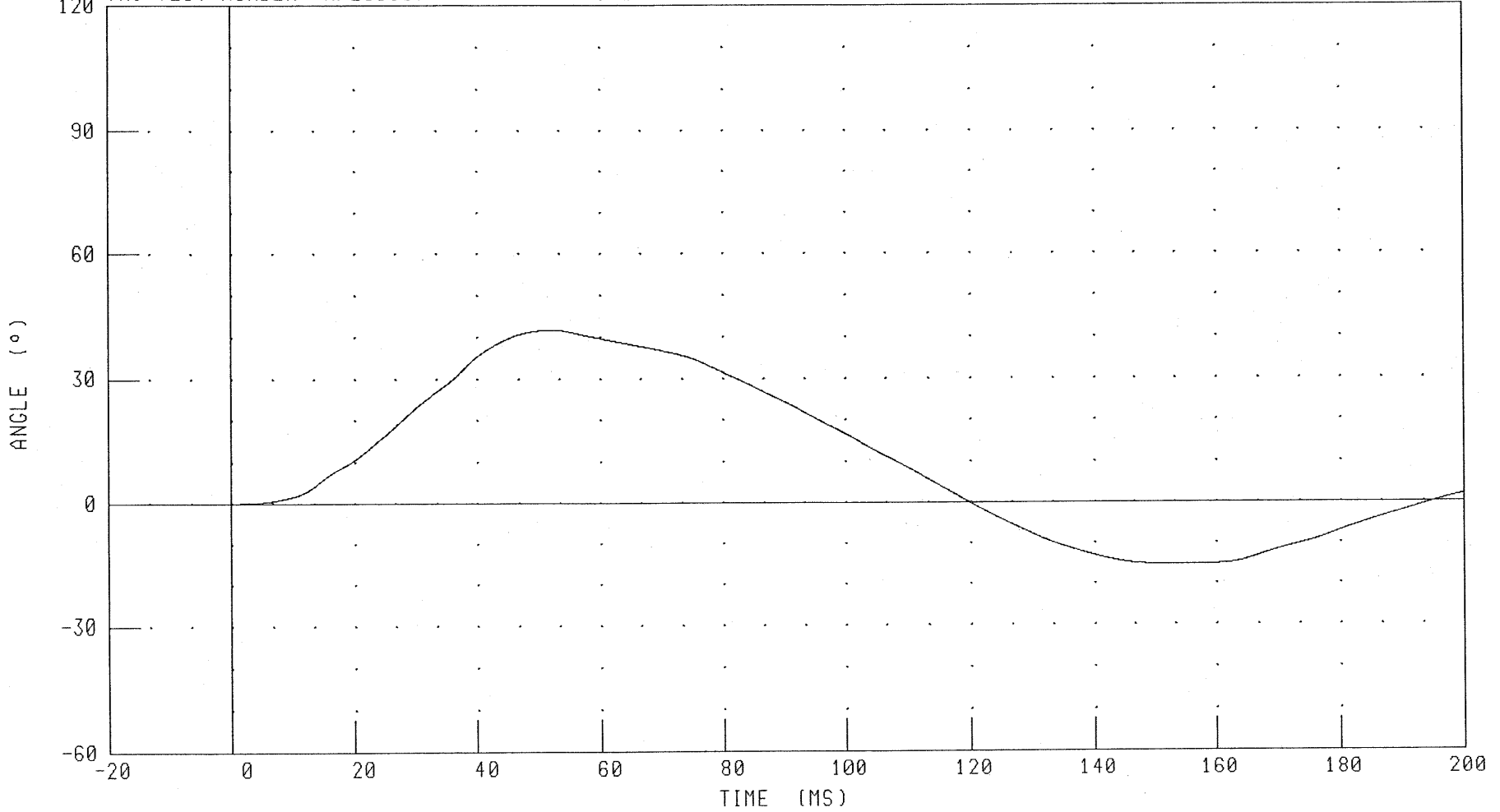
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: NFL05507

572M H3/SID SN055 NECK CAL07

RUN NUMBER: 091503.0927;2



CHANNEL: THETA

FILTER: CH. CLASS 60

PEAK DATA: 41.65 ° @ 52.00 MS; -15.34 ° @ 152.88 MS

C-14

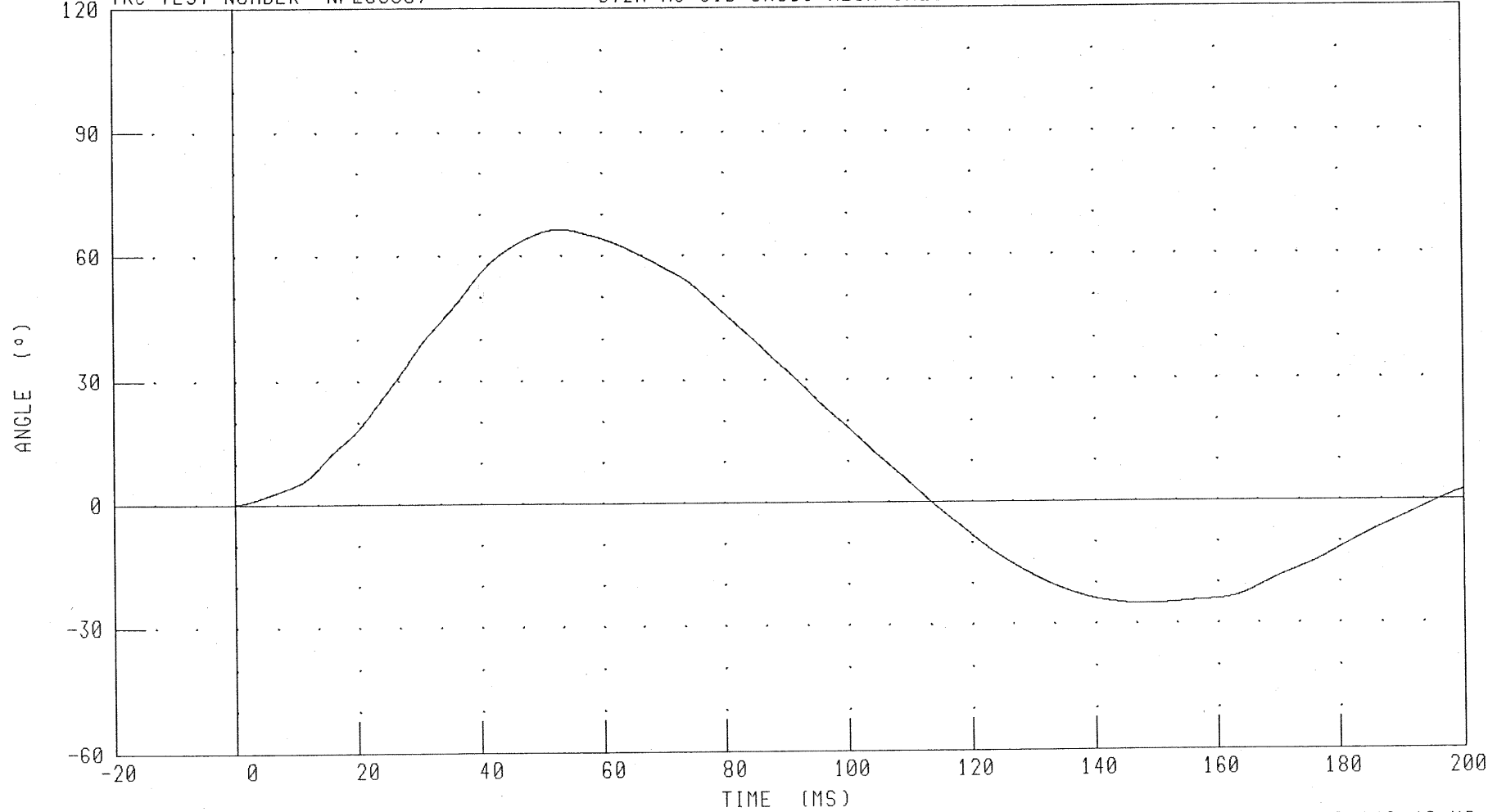
030916

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

TRC TEST NUMBER: NFL05507

572M H3/SID SN055 NECK CAL07

RUN NUMBER: 091503.0927;2



CHANNEL: TOTAN

FILTER: CH. CLASS 60

PEAK DATA: 66.27 ° @ 53.20 MS; -25.09 ° @ 148.40 MS

C-15

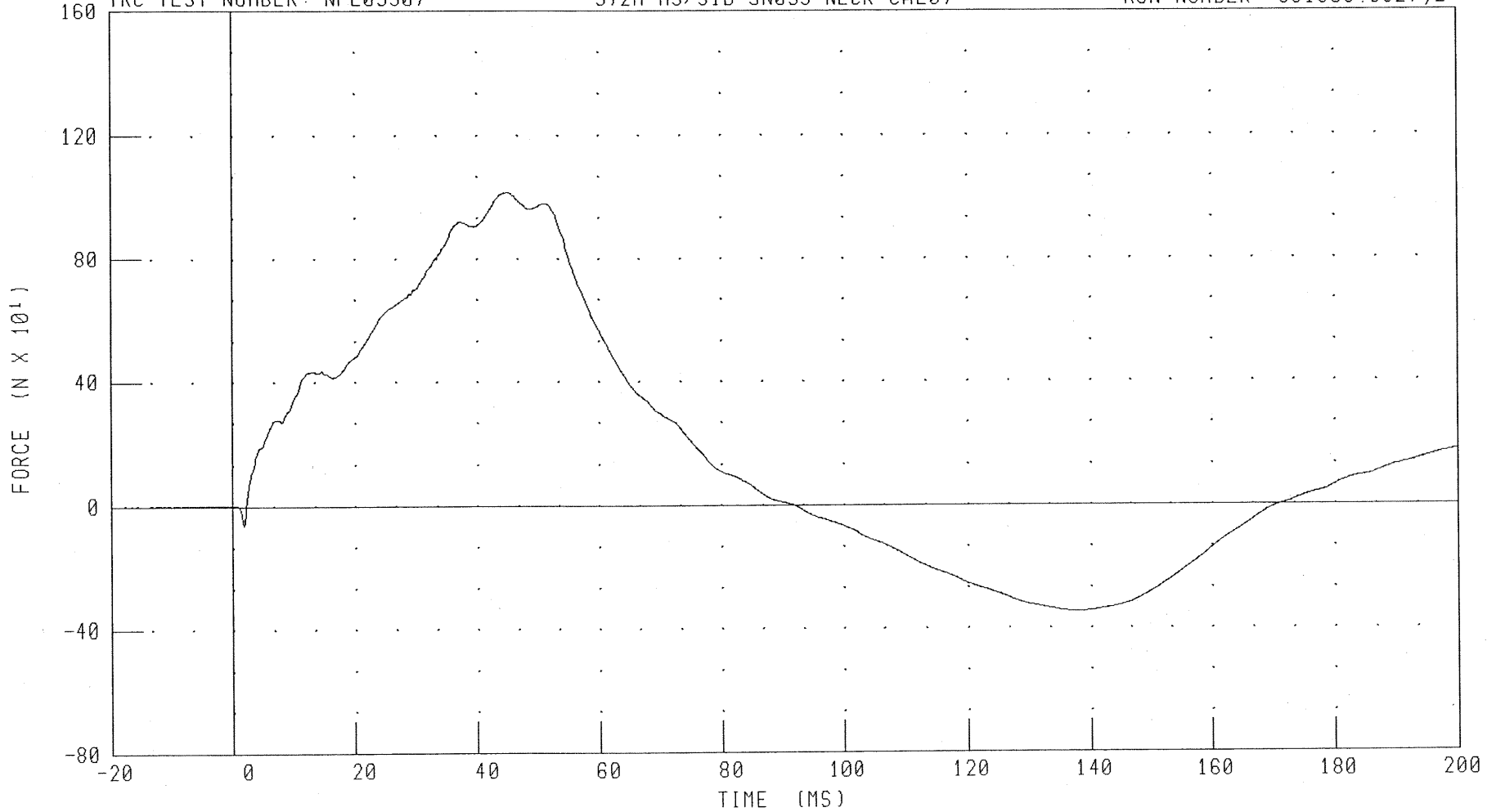
030916

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

TRC TEST NUMBER: NFL05507

572M H3/SID SN055 NECK CAL07

RUN NUMBER: 091503.0927;2



CHANNEL: NEKYF

FILTER: CH. CLASS 1000

PEAK DATA: 1014.97 N @ 45.04 MS; -347.30 N @ 137.12 MS

C-16

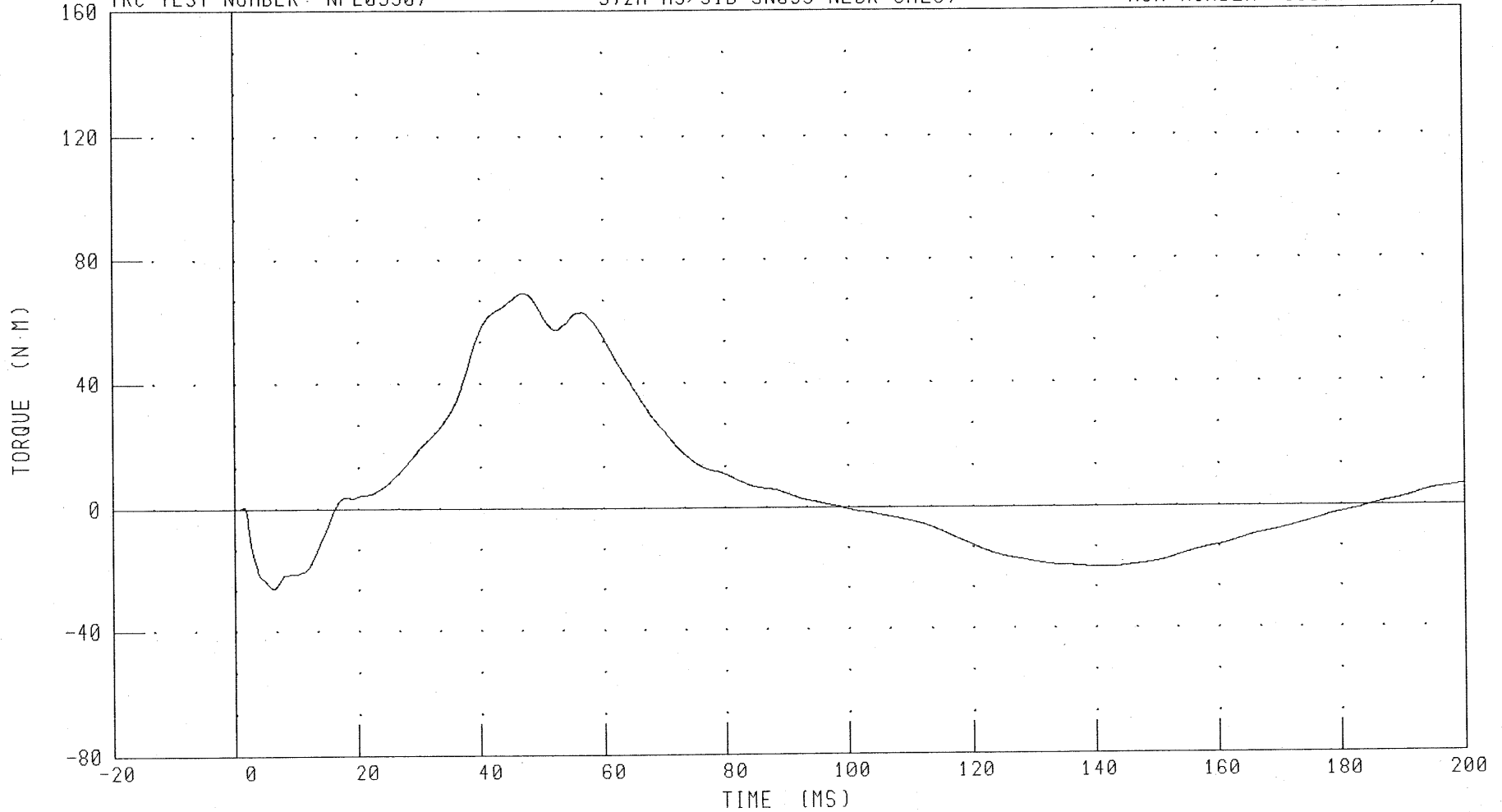
030916

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

TRC TEST NUMBER: NFL05507

572M H3/SID SN055 NECK CAL07

RUN NUMBER: 091503.0927;2



C-17

030916

CHANNEL: NEKXM FILTER: CH. CLASS 600

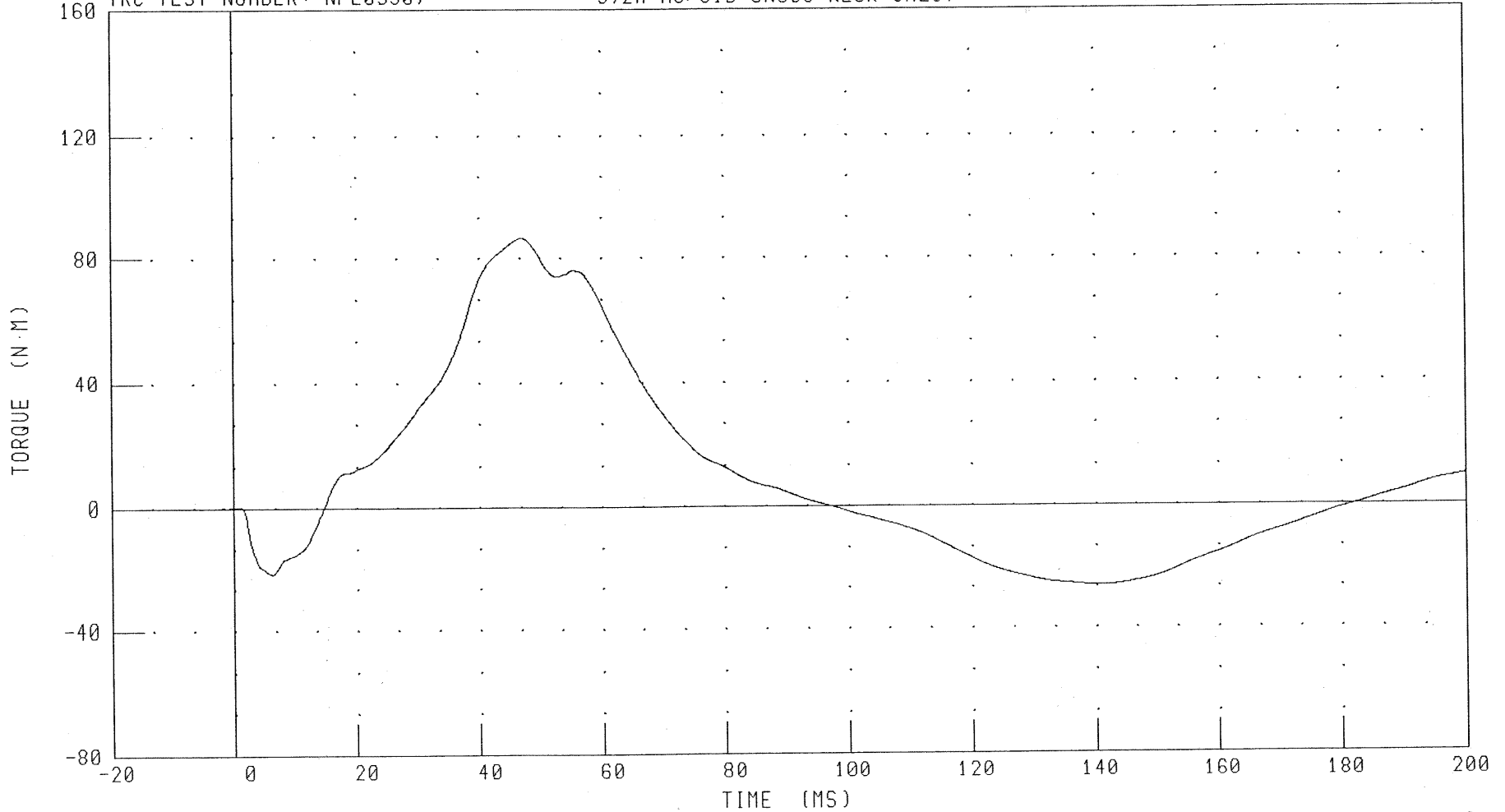
PEAK DATA: 69.13 N.M @ 47.12 MS; -26.22 N.M @ 6.32 MS

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

TRC TEST NUMBER: NFL05507

572M H3/SID SN055 NECK CAL07

RUN NUMBER: 091503.0927;2



CHANNEL: NEKOM

FILTER: CH. CLASS 600

PEAK DATA: 86.60 N·M @ 46.96 MS; -26.27 N·M @ 140.16 MS

C-18

030916

TRANSPORTATION RESEARCH CENTER INC.

THORACIC SHOCK ABSORBER TESTS

SIDE IMPACT DUMMY

15-SEP-03

TRC INC.

572F SN055 DAMPER TEST CAL07

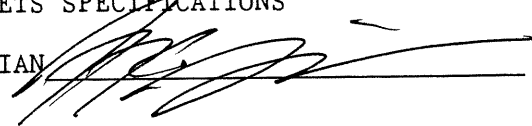
TEST NUMBERS: DP05507A,DP05507B,DP05507C

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY		10 - 70 %	65.0 %
VELOCITY	FORCE	667 - 925 N	806 N
2.74 M/S	DISPLACEMENT	29.7 - 34.5 MM	29.8 MM
VELOCITY	FORCE	1706 - 2072 N	1858 N
4.24 M/S	DISPLACEMENT	31.6 - 37.2 MM	32.8 MM
VELOCITY	FORCE	4116 - 4880 N	4562 N
6.38 M/S	DISPLACEMENT	33.5 - 39.8 MM	36.0 MM

DAMPER SETTING = 6.5

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 091503.1426;1

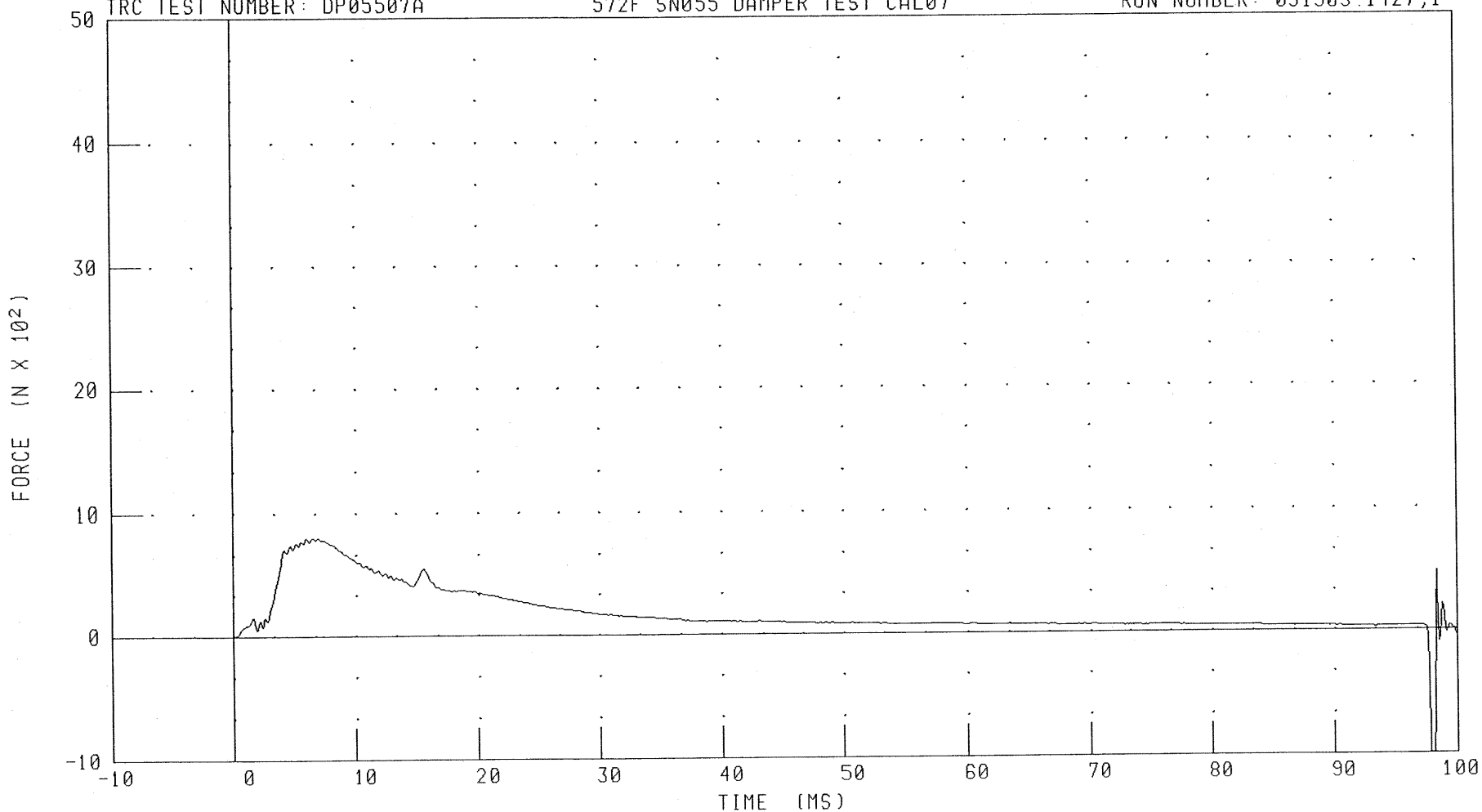
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (3.0 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

TRC TEST NUMBER: DP05507A

572F SN055 DAMPER TEST CAL07

RUN NUMBER: 091503.1427;1



C-20

CHANNEL: DAMPF

FILTER: CH. CLASS 1000

PEAK DATA: 805.97 N @ 6.48 MS; -2638.27 N @ 97.92 MS

030916

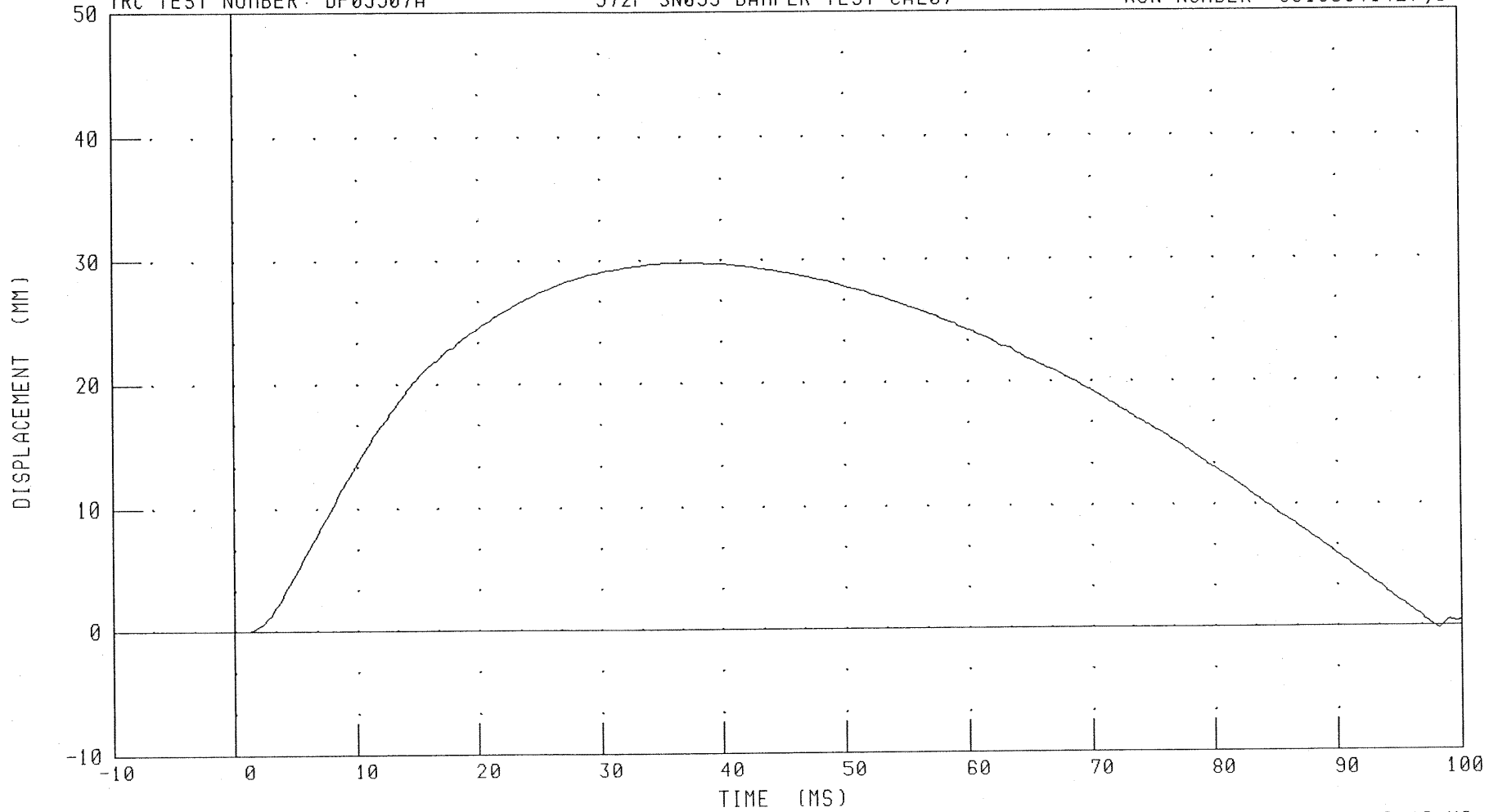
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (3.0 M/SEC)

SHOCK ABSORBER DISPLACEMENT

TRC TEST NUMBER: DP05507A

572F SN055 DAMPER TEST CAL07

RUN NUMBER: 091503.1427;1



CHANNEL: CSTYD

FILTER: CH. CLASS 1000

PEAK DATA: 29.76 MM @ 35.92 MS; -0.24 MM @ 98.16 MS

C-21

030916

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

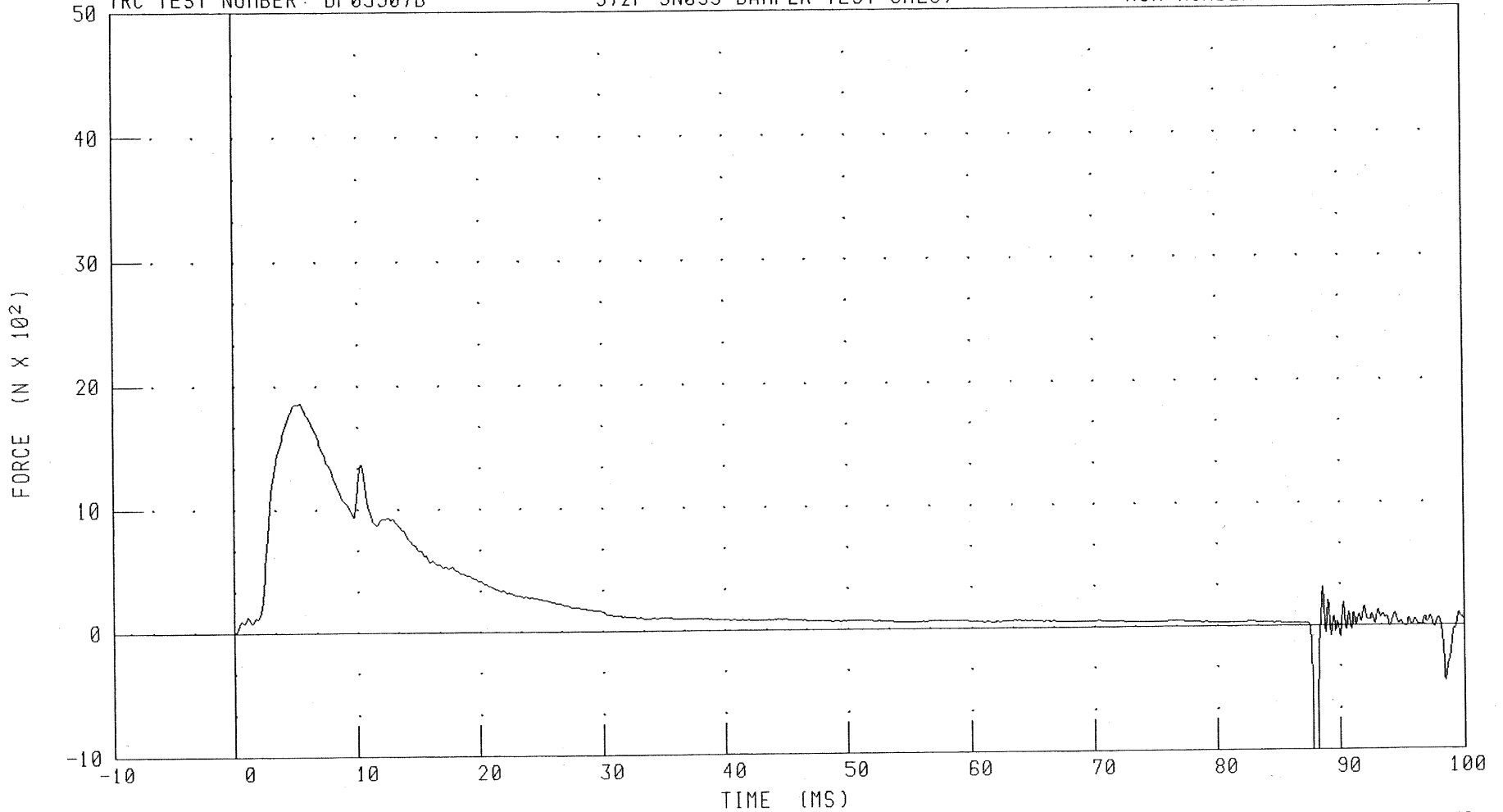
SHOCK ABSORBER RESISTIVE FORCE

TRC TEST NUMBER: DP05507B

572F SN055 DAMPER TEST CAL07

RUN NUMBER: 091503.1427;1

C-22



CHANNEL: DAMPF

FILTER: CH. CLASS 1000

PEAK DATA: 1857.92 N @ 5.36 MS; -2558.33 N @ 88.00 MS

030916

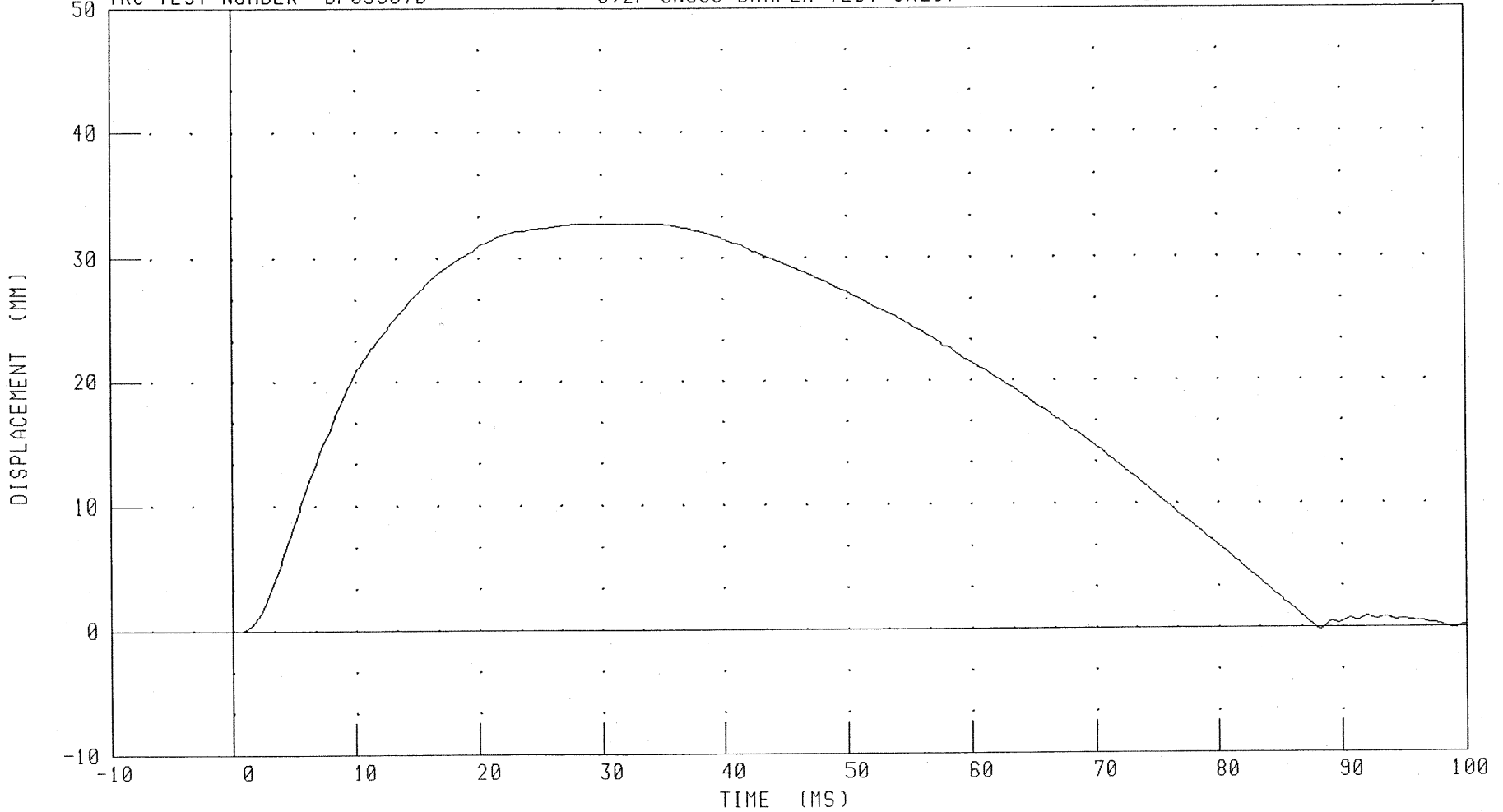
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (4.3 M/SEC)

SHOCK ABSORBER DISPLACEMENT

TRC TEST NUMBER: DP05507B

572F SN055 DAMPER TEST CAL07

RUN NUMBER: 091503.1427;1



CHANNEL: CSTYD

FILTER: CH. CLASS 1000

PEAK DATA: 32.77 MM @ 31.20 MS; -0.23 MM @ 88.24 MS

C-23

030916

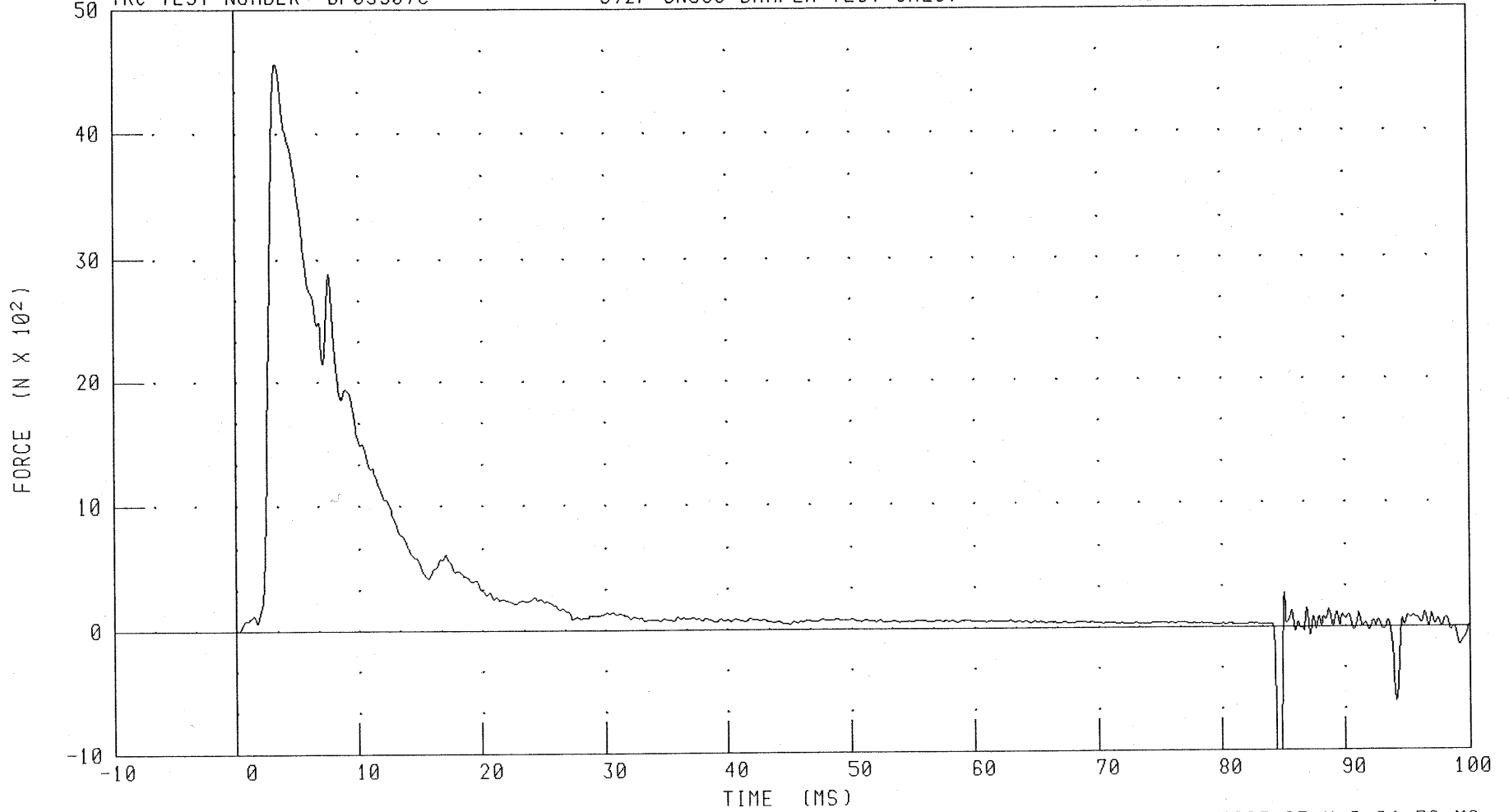
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (6.1 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

TRC TEST NUMBER: DP05507C

572F SN055 DAMPER TEST CAL07

RUN NUMBER: 091503.1427;1



CHANNEL: DAMPF FILTER: CH. CLASS 1000

PEAK DATA: 4562.46 N @ 3.28 MS; -2683.85 N @ 84.72 MS

C-24

030916

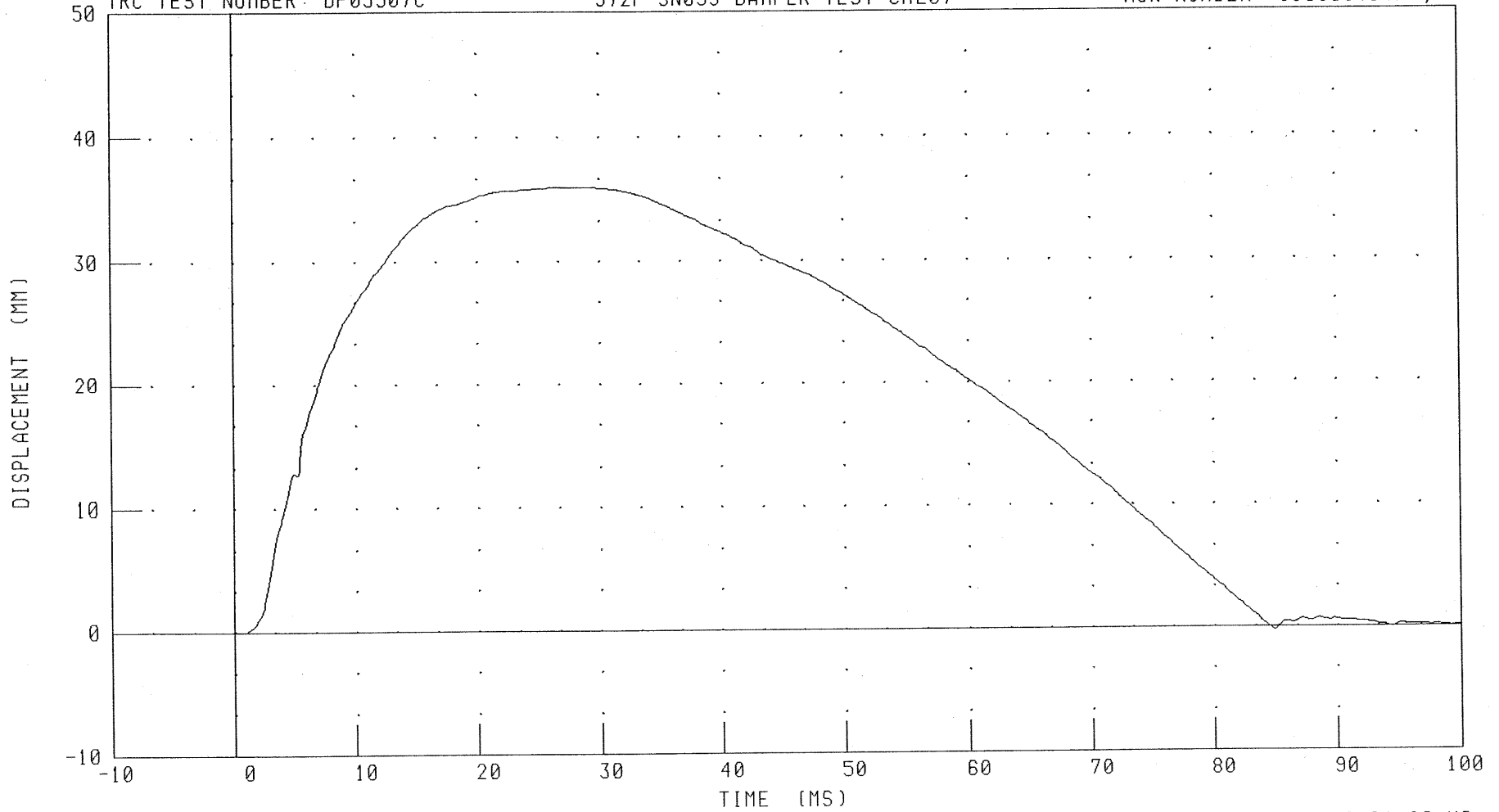
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (6.1 M/SEC)

SHOCK ABSORBER DISPLACEMENT

TRC TEST NUMBER: DP05507C

572F SN055 DAMPER TEST CAL07

RUN NUMBER: 091503.1427;1



C-25

030916

CHANNEL: CSTYD

FILTER: CH. CLASS 1000

PEAK DATA: 35.97 MM @ 27.76 MS; -0.28 MM @ 84.88 MS

TRANSPORTATION RESEARCH CENTER INC.

LATERAL THORAX IMPACT TEST

SIDE IMPACT DUMMY

15-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

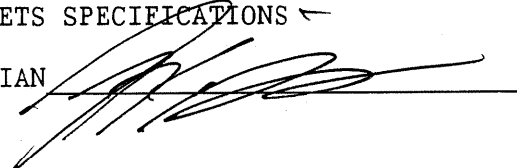
TEST NO: STL05507

572F SID SN055 L.THORAX CAL07

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	63.0 %
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	38.1 G
PEAK ACCELERATION: LOWER THORACIC SPINE	15 - 22 G	18.1 G

TEST MEETS SPECIFICATIONS

TECHNICIAN



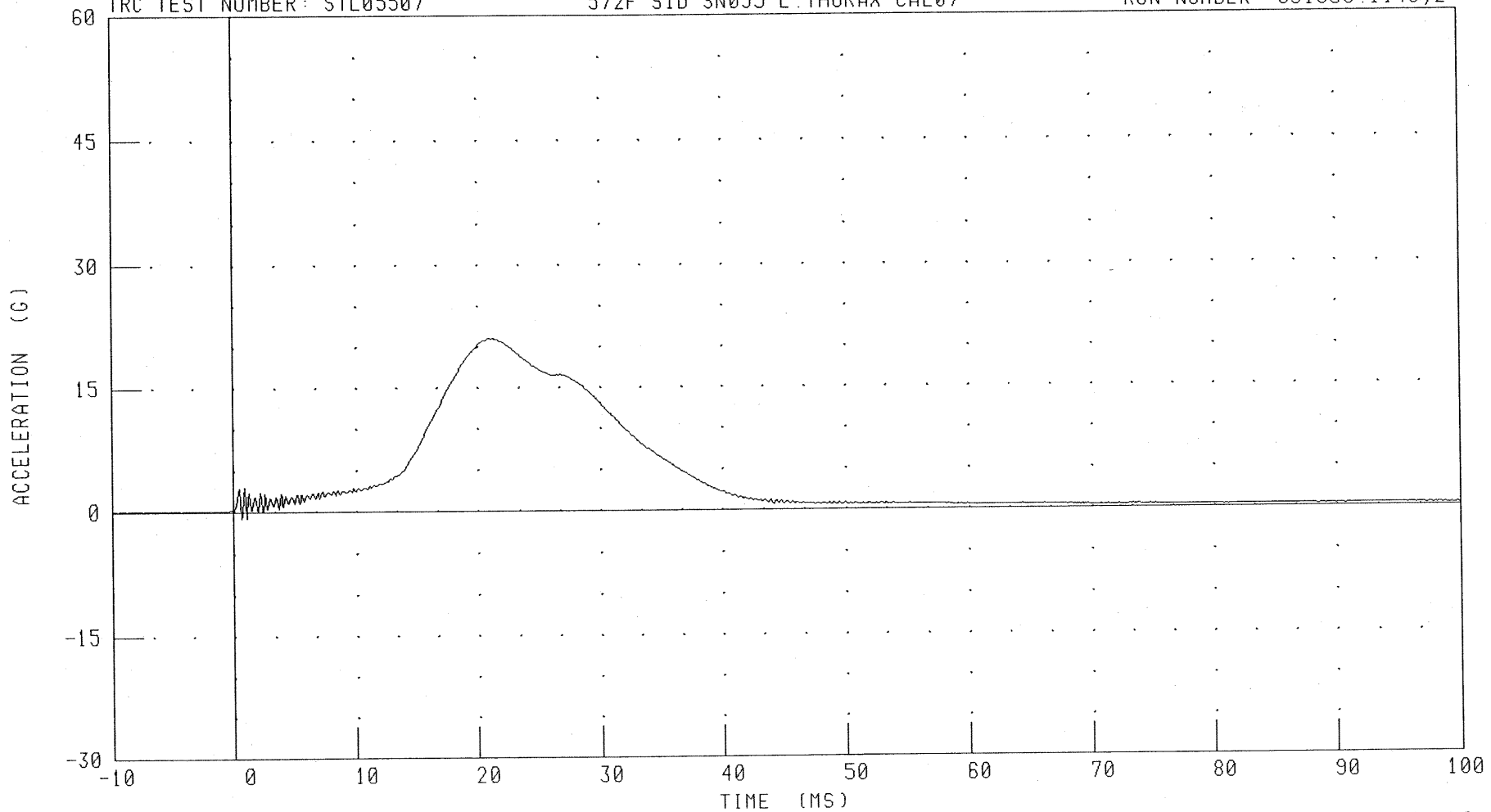
RUN NUMBER: 091503.1140;2

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

TRC TEST NUMBER: STL05507

572F SID SN055 L THORAX CAL07

RUN NUMBER: 091503.1140;2



CHANNEL: PENXC FILTER: CH. CLASS 1000

PEAK DATA: 21.03 G @ 21.20 MS; -0.81 G @ 0.64 MS

C-27

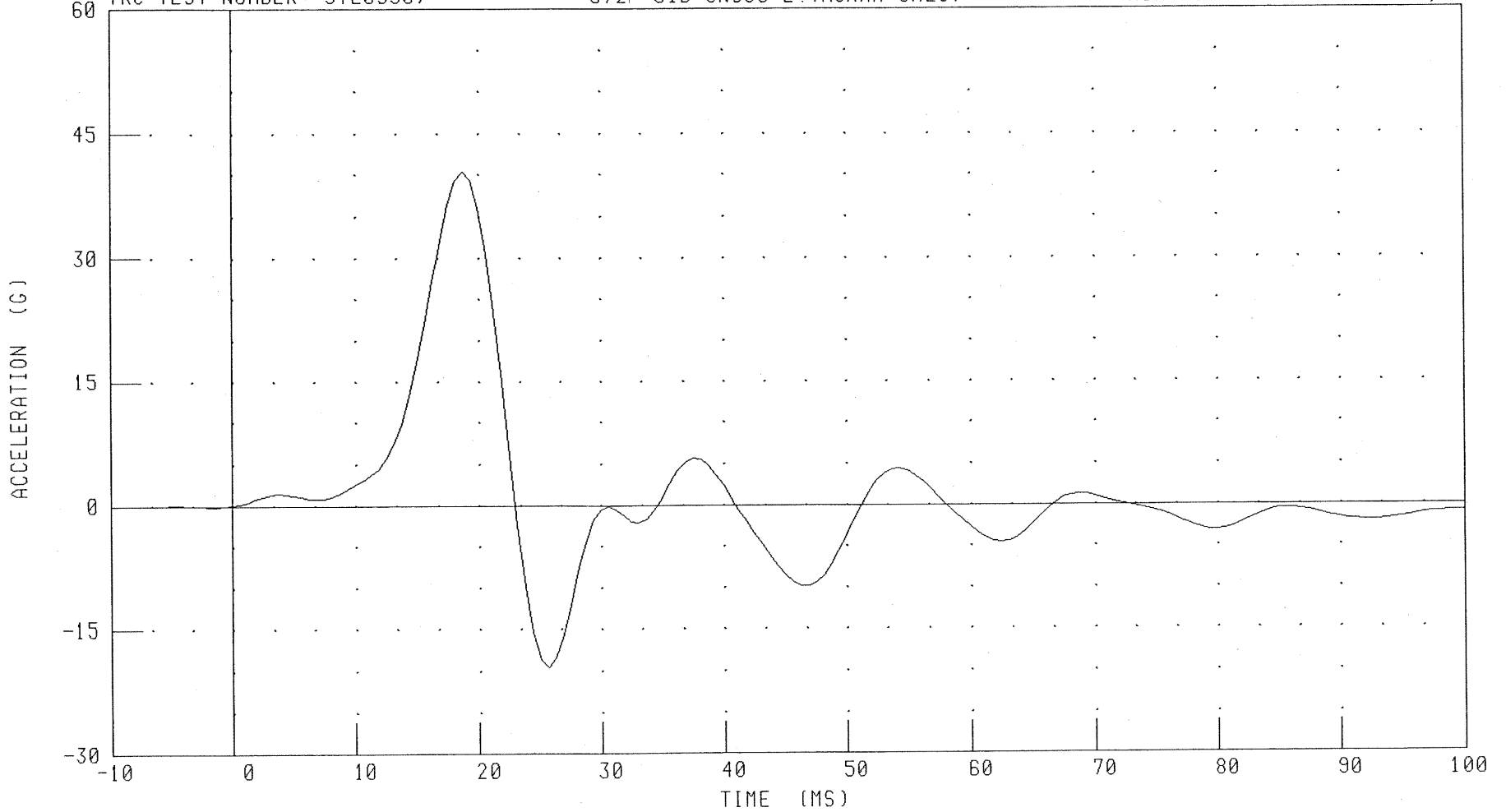
030916

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

TRC TEST NUMBER: STL05507

572F SID SN055 L.THORAX CAL07

RUN NUMBER: 091503.1140;2



CHANNEL: LURYG

FILTER: FIR 100

PEAK DATA: 40.39 G @ 18.75 MS; -19.64 G @ 25.63 MS

C-28

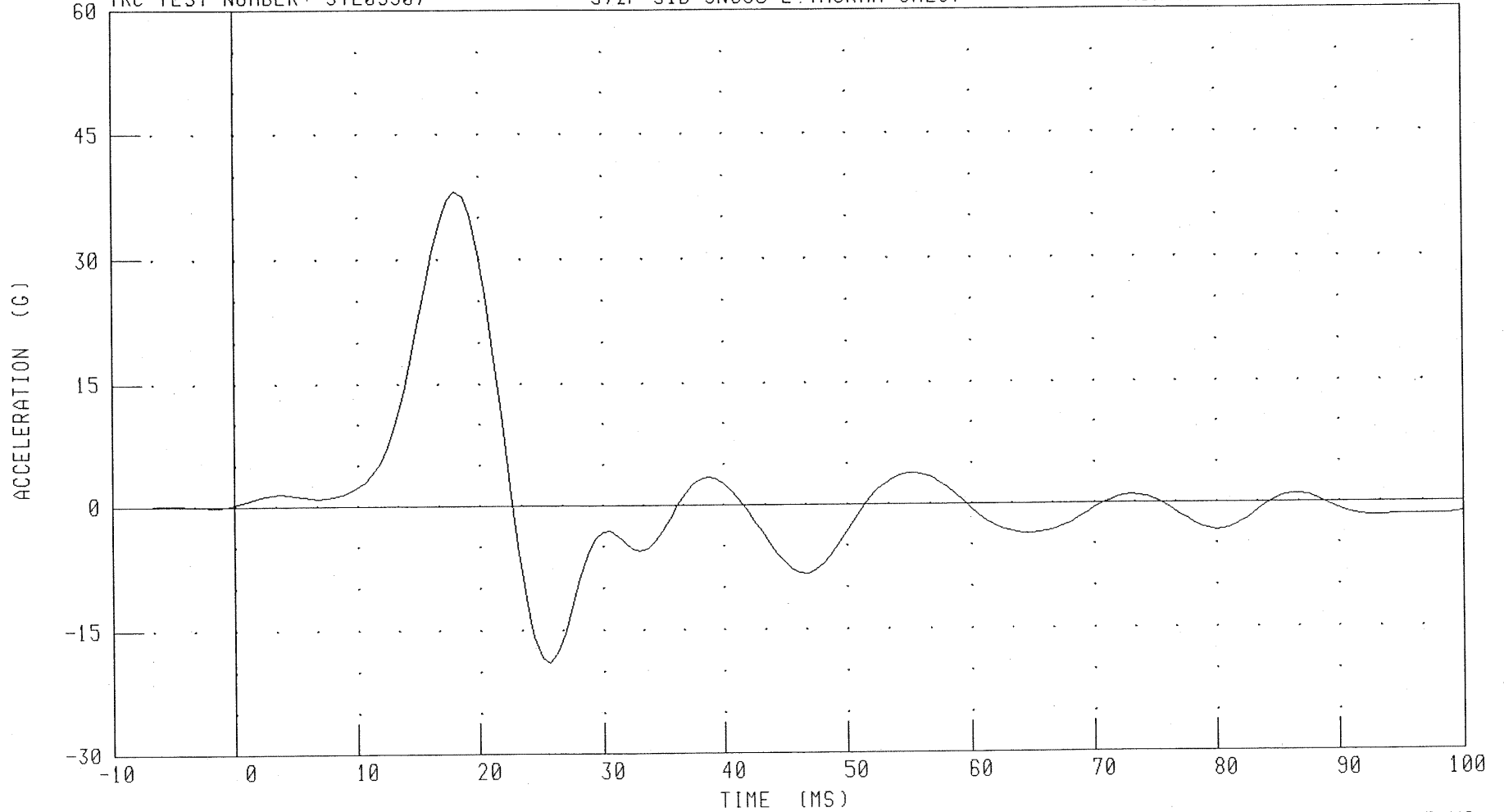
030916

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

TRC TEST NUMBER: STL05507

572F SID SN055 L THORAX CAL07

RUN NUMBER: 091503.1140;2



CHANNEL: LLRYG

FILTER: FIR 100

PEAK DATA: 38.06 G @ 18.13 MS; -18.99 G @ 25.63 MS

C-29

030916

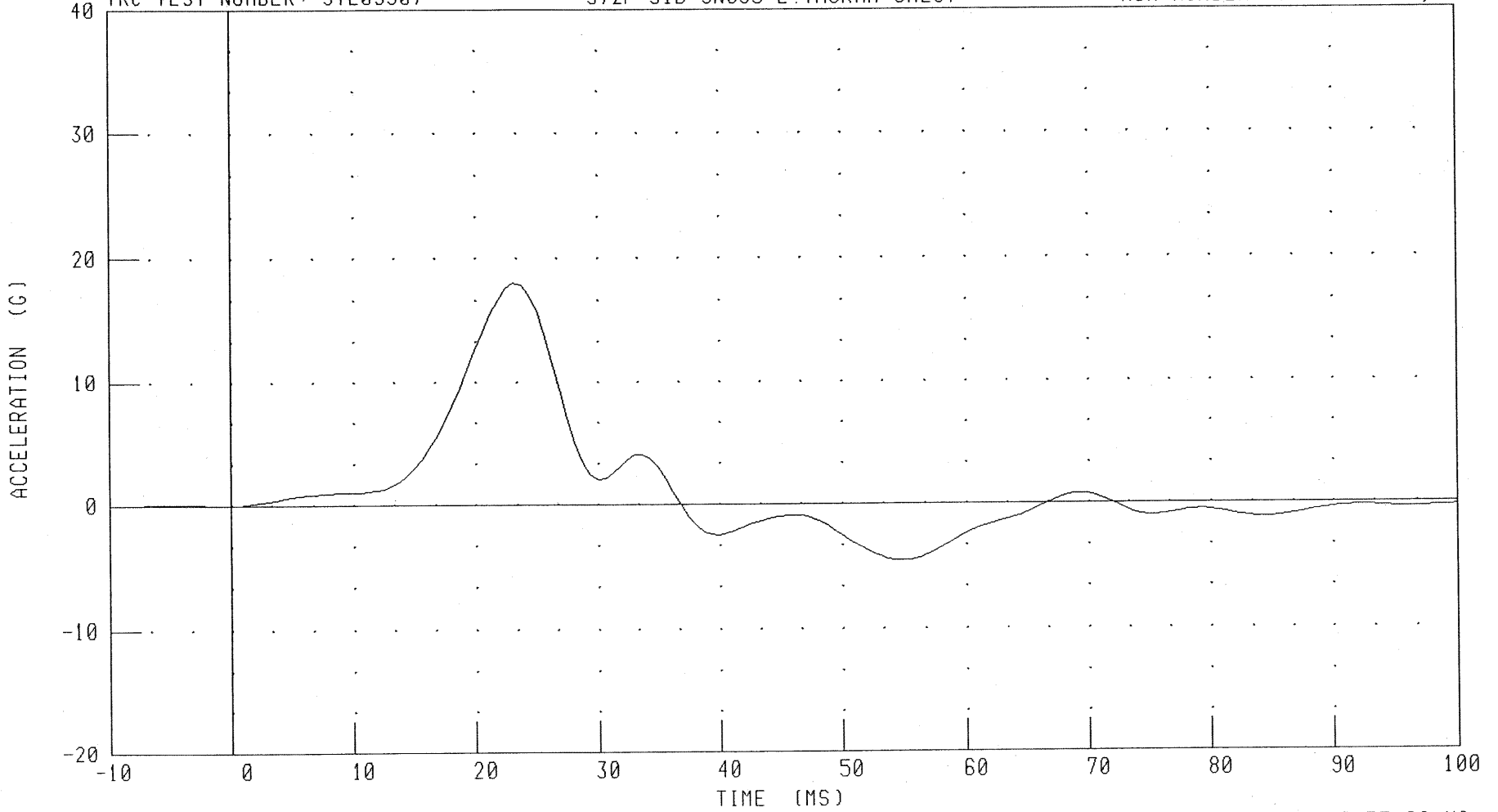
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LOWER SPINE ACCELERATION Y AXIS

TRC TEST NUMBER: STL05507

572F SID SN055 L.THORAX CAL07

RUN NUMBER: 091503.1140;2



CHANNEL: T12YG

FILTER: FIR 100

PEAK DATA: 18.05 G @ 23.13 MS; -4.63 G @ 55.00 MS

C-30

030916

Transportation Research Center Inc.

572B Abdomen Compression Test

HIII SID Serial No. 055 Calibration No. 07 - 1

Test Date 09/15/2003

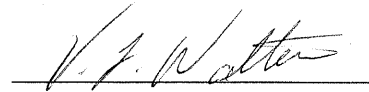
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	61 %	Yes
Displacement Rate	6.35 - 8.89 mm/s	6.8 - 8.0 mm/s	Yes
Data Within Required Corridor	Yes	Yes	Yes

Comments:

Technician



Approved



09.15.2003 06:50:26 911

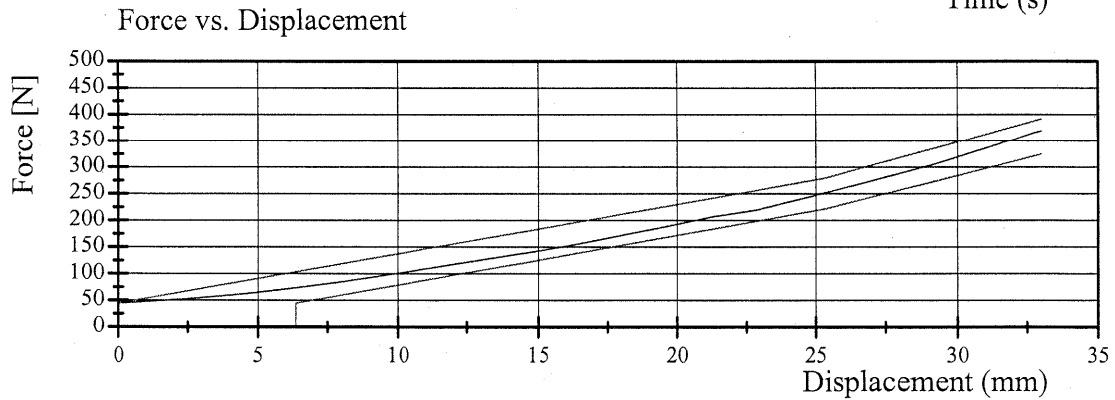
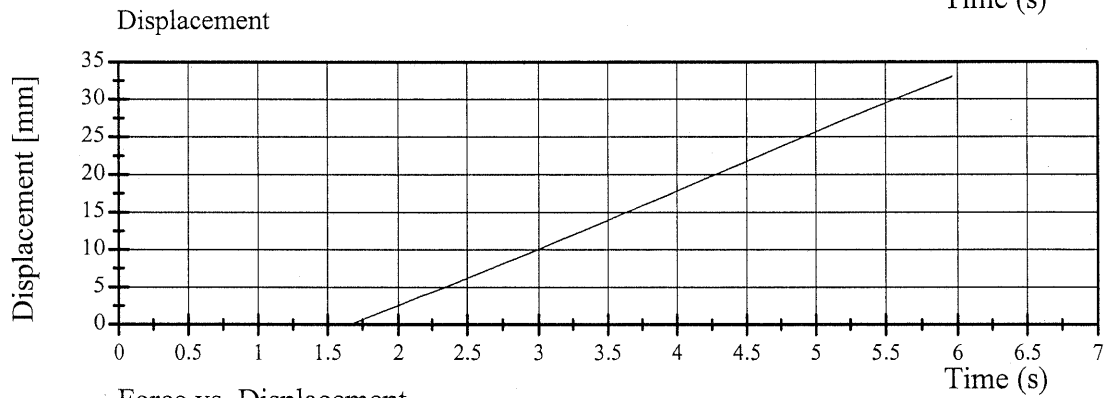
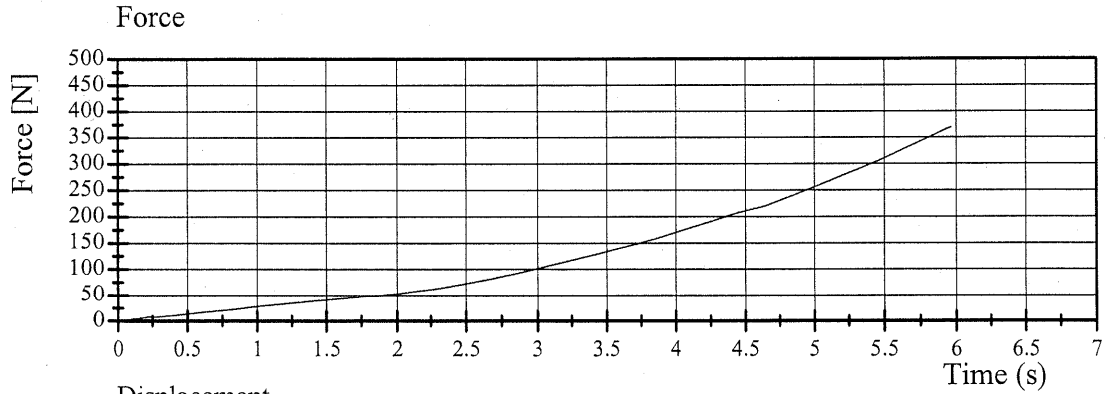


Transportation Research Center Inc.

572B Abdomen Compression Test

HIII SID Serial No. 055 Calibration No. 07 - 1

Test Date 09/15/2003



TRANSPORTATION RESEARCH CENTER INC.

PART 572B LUMBAR FLEXION TEST

SID HIII

CAL DATE: 15-Sep-03

TRC, INC. TEST NO: 055C07TF1 SID/HIII SN 055 TORSO FLEX CAL 07

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6° C	21.1 °C
RELATIVE HUMIDITY	10 – 70 %	63 %
FORCE AT 0 DEG. FLEXION	-27 – 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 – 151 N	124.6 N
FORCE AT 30 DEG OF FLEXION	151 – 205 N	173.5 N
FORCE AT 40 DEG OF FLEXION	205 – 258 N	240.2 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	6 °

TEST MEETS SPECIFICATIONS

TECHNICIAN



TRANSPORTATION RESEARCH CENTER INC.

LATERAL PELVIS IMPACT TEST

SIDE IMPACT DUMMY

15-SEP-03

LEFT SIDE CONFIGURATION

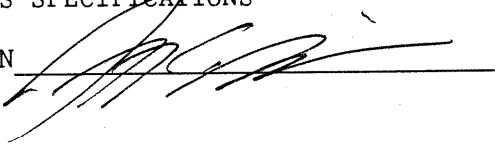
TRC INC.

TEST NO: SPL05507

572F SN055 LEFT PELVIS CAL07

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	61.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.29 M/S
PEAK PELVIC ACCELERATION	40 - 60 G	40.3 G
TIME ABOVE 20 G LEVEL	3 - 7 MS	6.2 MS
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 091503.1125;2

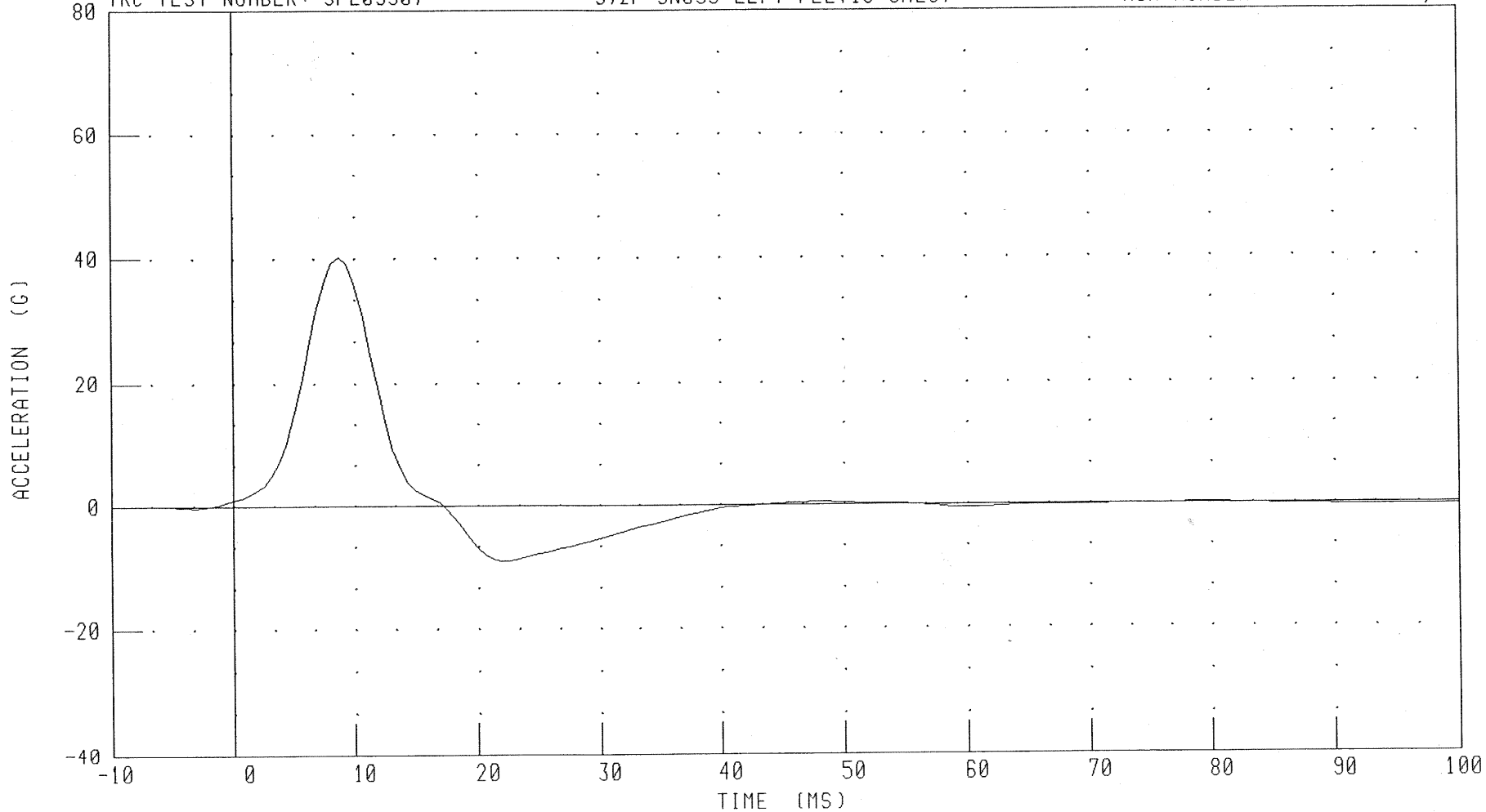
PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PELVIS ACCELERATION Y AXIS

TRC TEST NUMBER: SPL05507

572F SN055 LEFT PELVIS CAL07

RUN NUMBER: 091503.1148;2



CHANNEL: PEVYG FILTER: FIR 100

PEAK DATA: 40.33 G @ 8.75 MS; -9.11 G @ 22.50 MS

C-35

030916

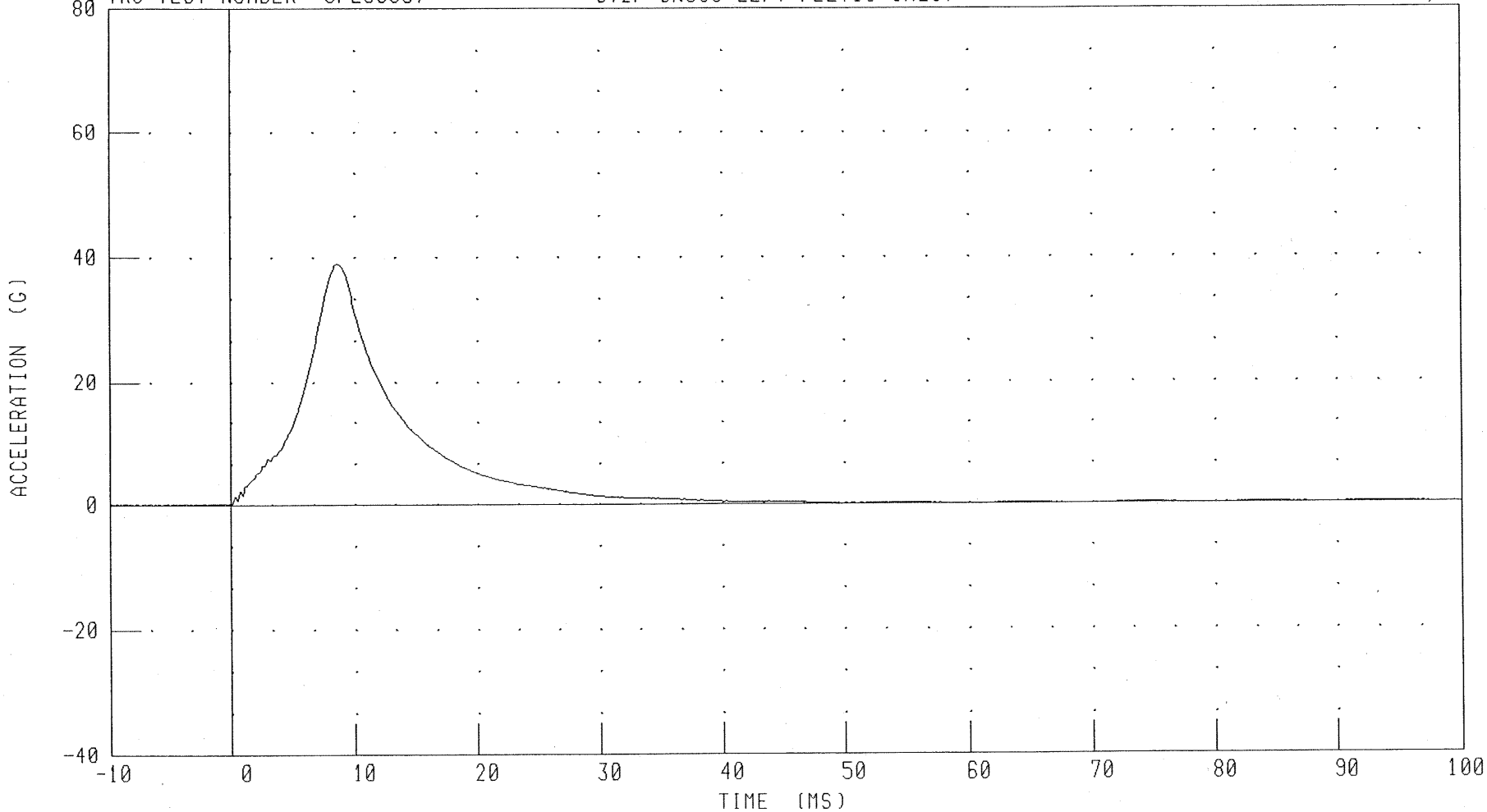
PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PENDULUM DECELERATION

TRC TEST NUMBER: SPL05507

572F SN055 LEFT PELVIS CAL07

RUN NUMBER: 091503.1148;2



C-36

030916

CHANNEL: PENXG

FILTER: CH. CLASS 1000

PEAK DATA: 38.98 G @ 8.64 MS; -0.09 G @ 79.04 MS

Calibration Test Results

Pre-Test

SID HIII: 059

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.
Thoracic Shock Absorber Test:	The thoracic shock absorber passed all test requirements
Lateral Thorax Impact Test:	The thorax passed all impact 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.

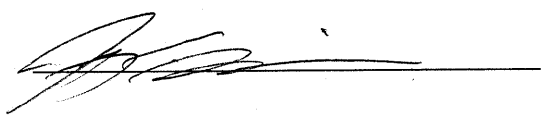
SID/HIII Dummy

External Dimensions

Serial No. 059 Calibration No. 01

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	897 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	234 mm	Yes
Knee Pivot From Backline	KH	510.5 - 525.8 mm	516 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	499 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	368 mm	Yes
Top Rib Width From C/L	RW-1	165.1 - 180.3 mm	171 mm	Yes
Bottom Rib Width From C/L	RW-2	165.1 - 180.3 mm	171 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

HYBRIDIII SID DUMMY

11-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO. HDL05901

572M SID/HIII SN059 HEAD CAL01

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6 deg. C	21.11 deg. C
RELATIVE HUMIDITY	10 - 70 %	59.00 %
PEAK RESULTANT ACCELERATION	120 - 150 G	148.54 G
PEAK LONGITUDINAL ACCELERATION	15 G MAX	-7.31 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 091503.1333;2

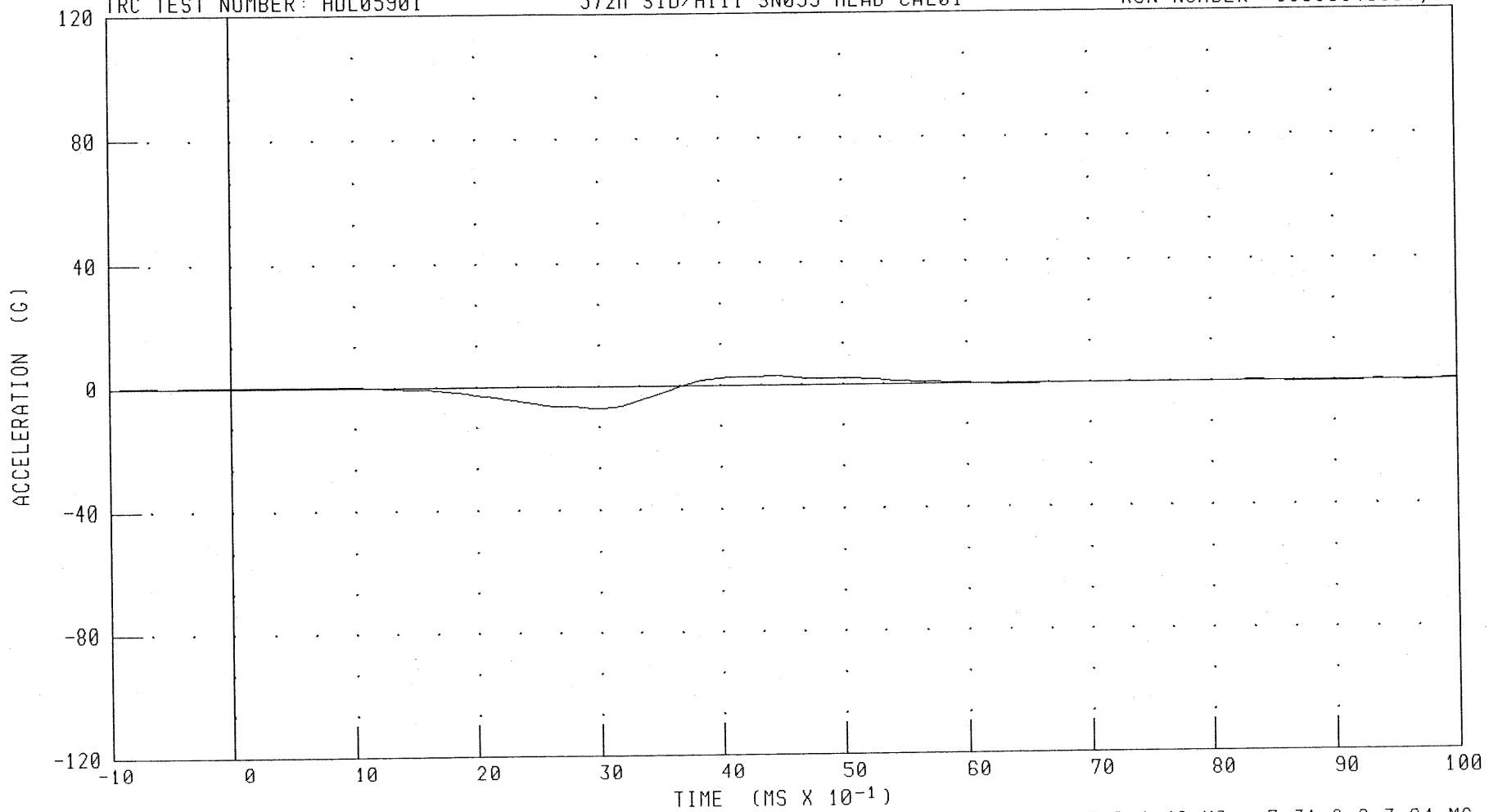
572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION X AXIS

TRC TEST NUMBER: HDL05901

572M SID/HIII SN059 HEAD CAL01

RUN NUMBER: 091503.1333;1



CHANNEL: HEDXC

FILTER: CH. CLASS 1000

PEAK DATA: 2.89 G @ 4.48 MS; -7.31 G @ 3.04 MS

C-40

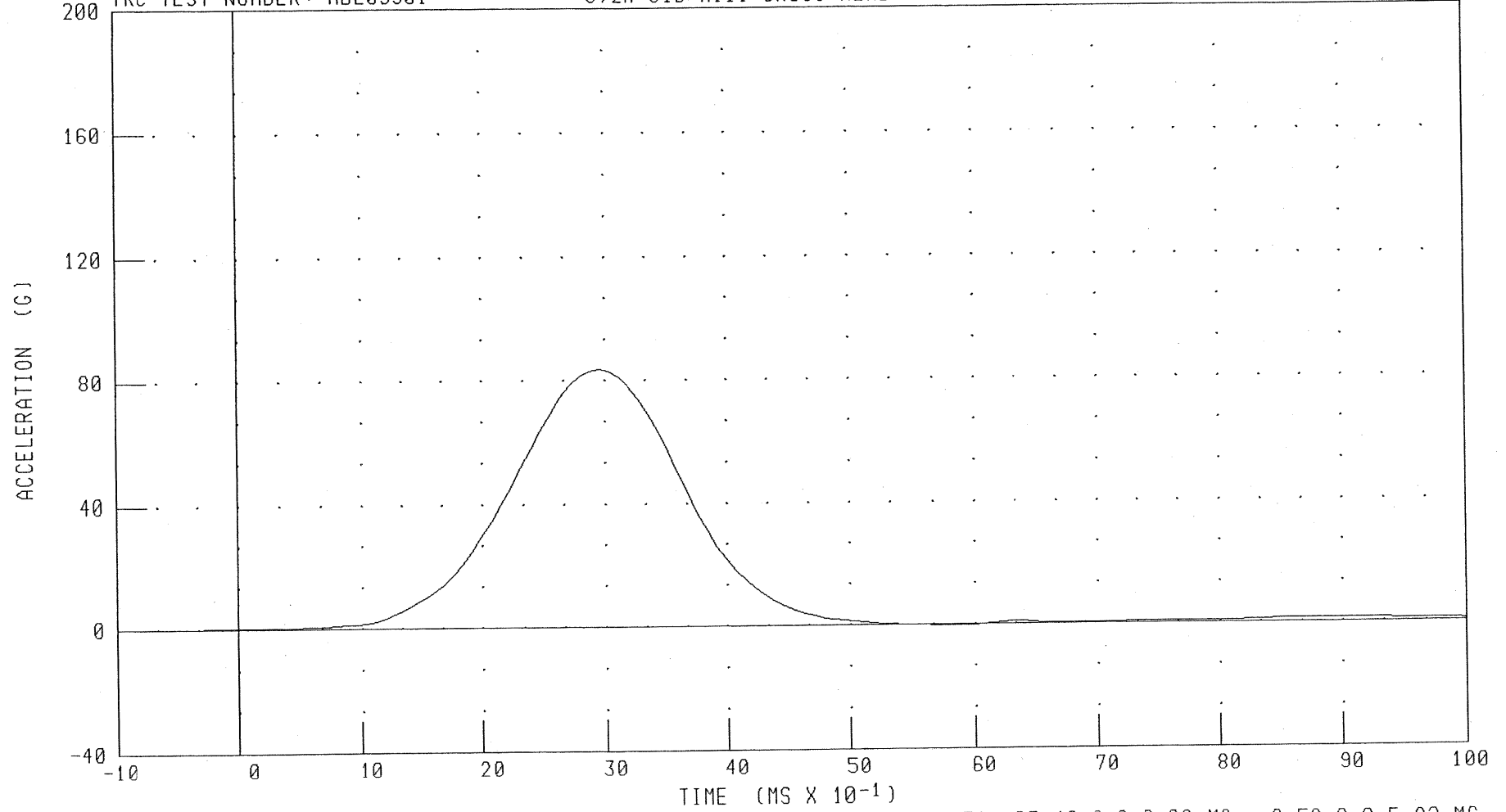
030916

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

TRC TEST NUMBER: HDL05901

572M SID/HIII SN059 HEAD CAL01

RUN NUMBER: 091503.1333;1



C-41

CHANNEL: HEDYG

FILTER: CH. CLASS 1000

PEAK DATA: 83.49 G @ 2.96 MS; -0.52 G @ 5.92 MS

030916

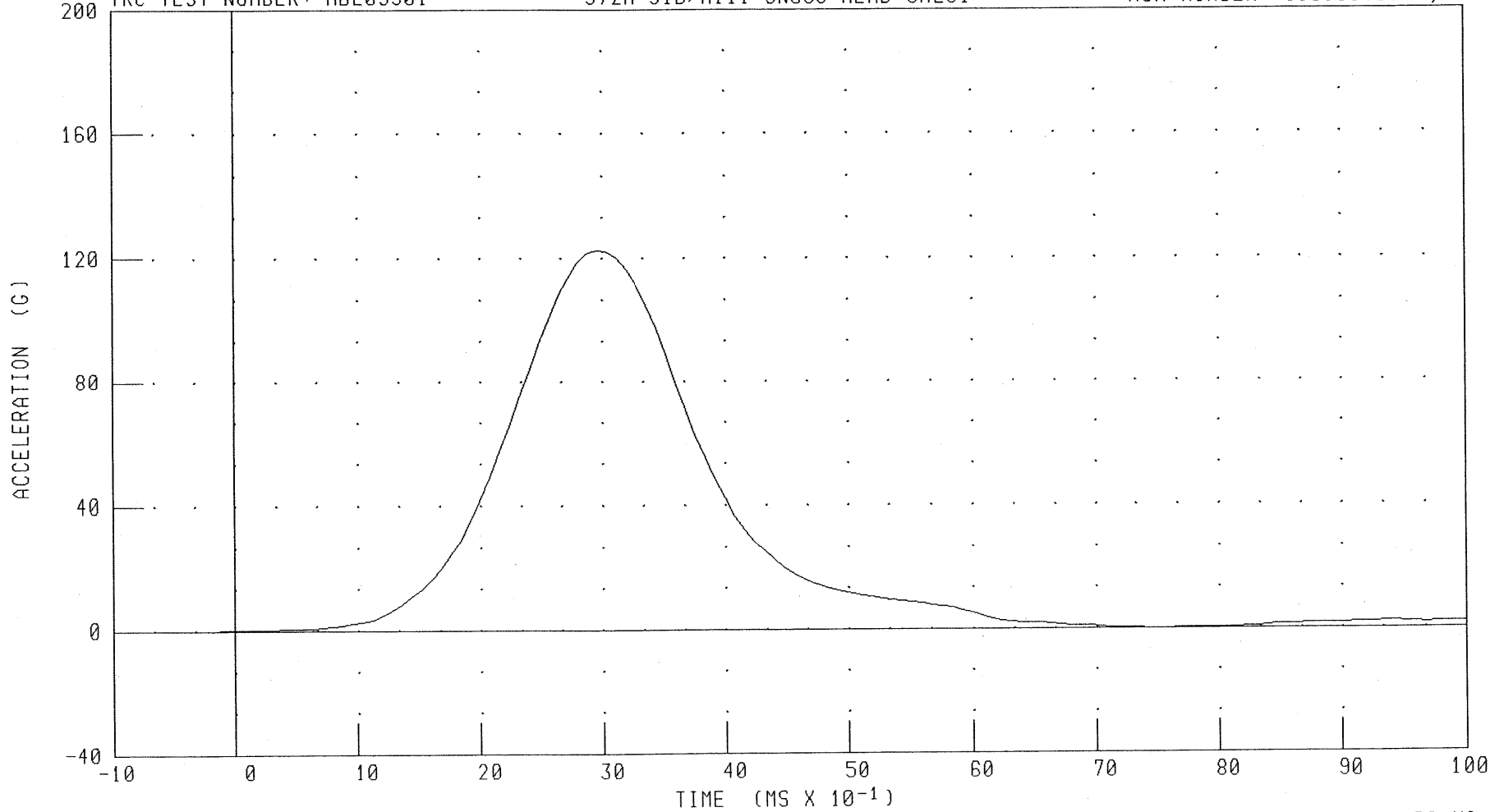
572M SID/HIII DUMMY CALIBRATION -- 35 DEGREE LEFT LATERAL HEAD DROP

HEAD ACCELERATION Z AXIS

TRC TEST NUMBER: HDL05901

572M SID/HIII SN059 HEAD CAL01

RUN NUMBER: 091503.1333;1



CHANNEL: HEDZG

FILTER: CH. CLASS 1000

PEAK DATA: 122.65 G @ 2.96 MS; -0.03 G @ -0.80 MS

C-42

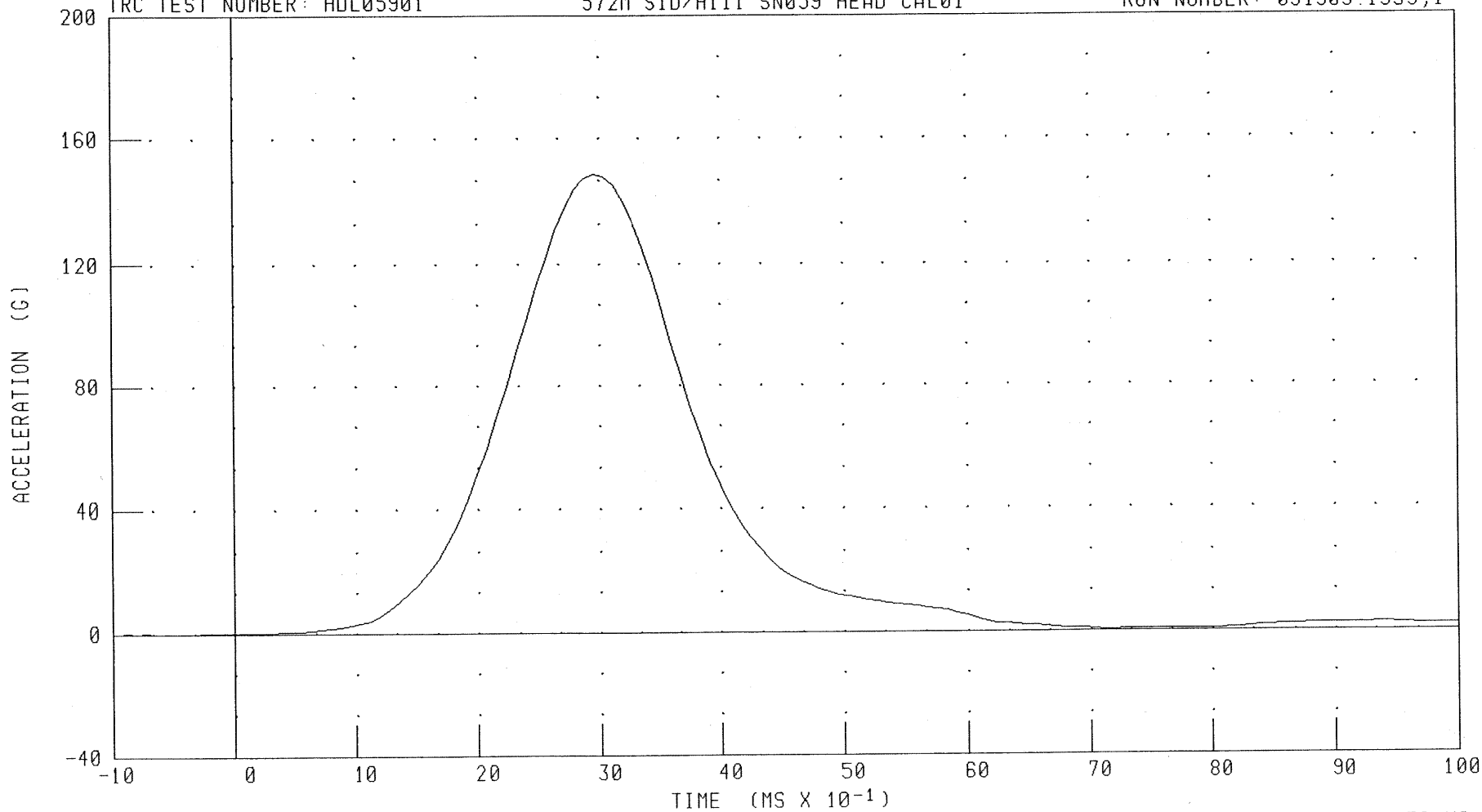
030916

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

TRC TEST NUMBER: HDL05901

572M SID/HIII SN059 HEAD CAL01

RUN NUMBER: 091503.1333;1



C-43

CHANNEL: HEDRG

FILTER: CH. CLASS 1000

PEAK DATA: 148.54 G @ 2.96 MS; 0.05 G @ -0.56 MS

030916

TRANSPORTATION RESEARCH CENTER INC.

LATERAL NECK TEST

HYBRIDIII SID DUMMY

11-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO. NFL05901

572M H3/SID SN059 NECK CAL01

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6 - 22.2 deg. C	21.11 deg. C
RELATIVE HUMIDITY	10 - 70 %	62.00 %
IMPACT VELOCITY	6.89 - 7.13 M/S	6.99 M/S
INTEGRATED VELOCITY	10 MS 1.96 - 2.55 M/S	2.47 M/S
	20 MS 4.12 - 5.10 M/S	4.95 M/S
	30 MS 5.73 - 7.01 M/S	6.85 M/S
	40 - 70 MS 6.27 - 7.64 M/S	7.06 - 7.15 M/S
MAXIMUM MIDSAGGITAL PLANE ROTATION	66 - 82 deg.	71.83 deg.
ROTATION ANGLE DECAY TIME FROM PEAK TO ZERO	58 - 67 MS	64.64 MS
MAXIMUM MOMENT ABOUT OCCIPITAL CONDYLE	73 - 88 NM	77.62 NM
POSITIVE MOMENT DECAY TIME FROM PEAK TO ZERO	49 - 64 MS	59.68 MS
TIME OF MAXIMUM ROTATION AFTER MAXIMUM MOMENT	2 - 16 MS	9.84 MS

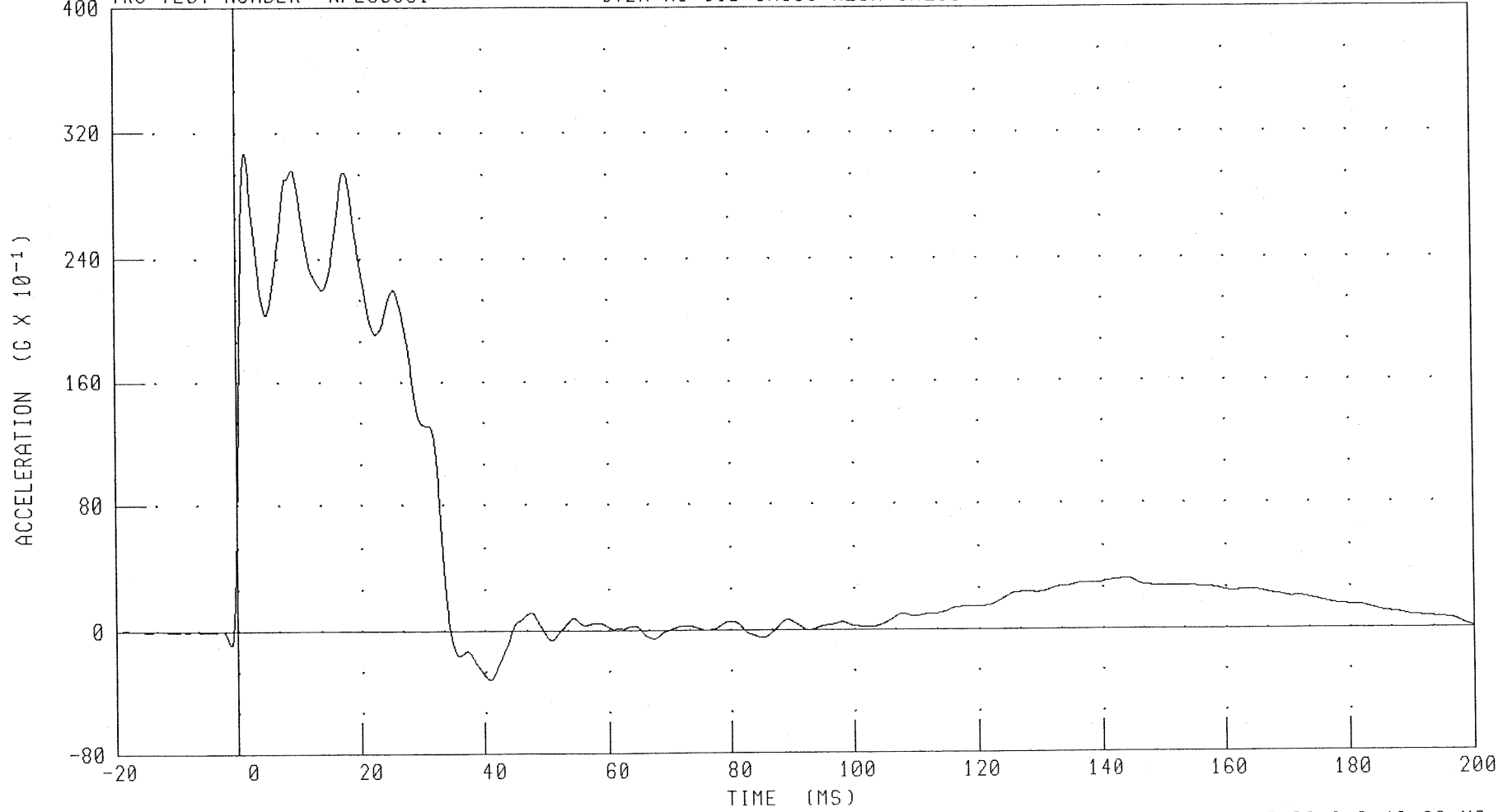
TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 091103.1503;1

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

TRC TEST NUMBER: NFL05901 572M H3/SID SN059 NECK CAL01 RUN NUMBER: 091103.1504;1



C-45

030916

CHANNEL: PENXC

FILTER: CH. CLASS 180

PEAK DATA: 30.69 G @ 1.60 MS; -3.20 G @ 40.88 MS

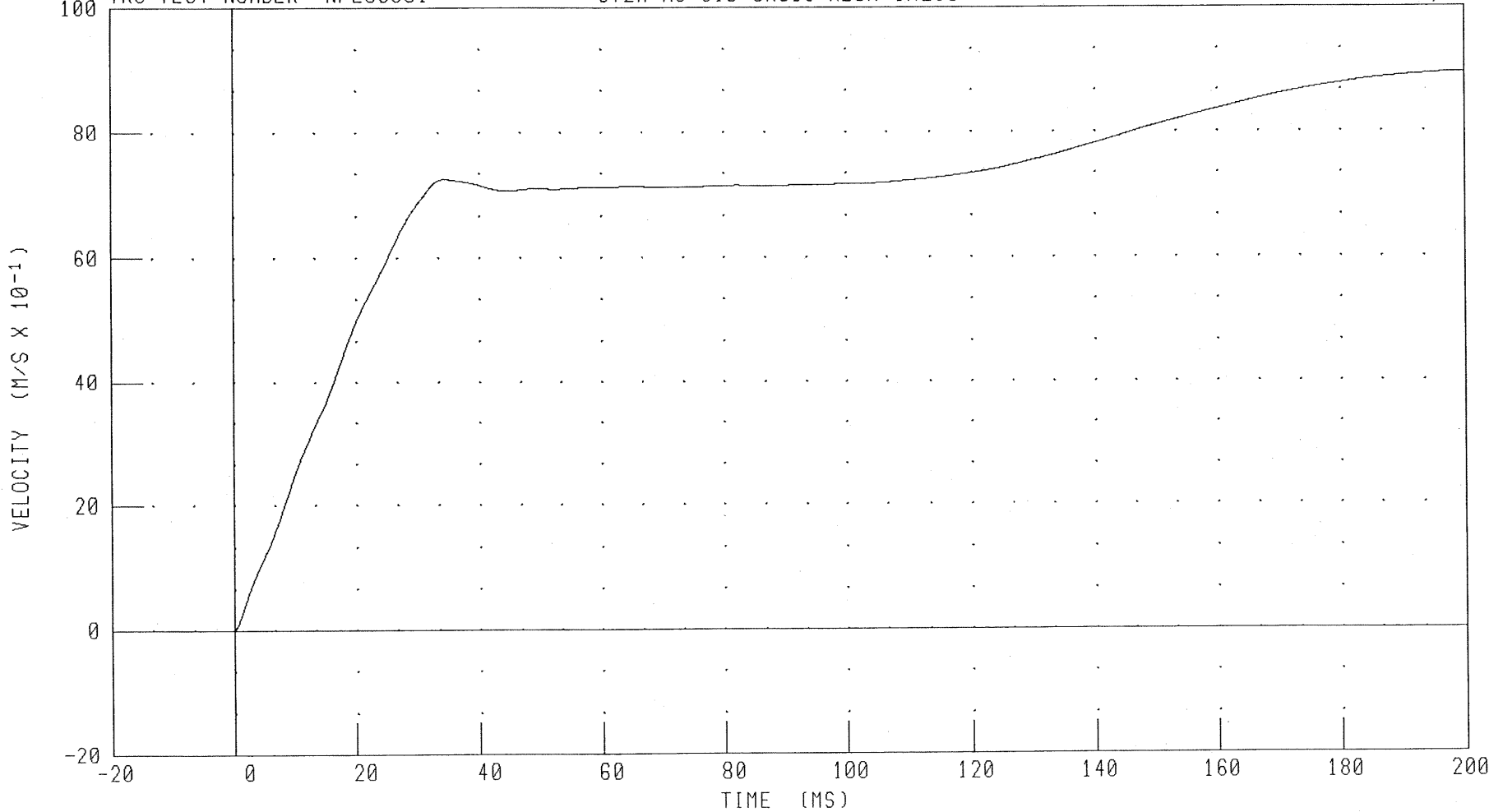
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

INTEGRATED PENDULUM VELOCITY

TRC TEST NUMBER: NFL05901

572M H3/SID SN059 NECK CAL01

RUN NUMBER: 091103.1504;1



CHANNEL: PENXVI

FILTER: CH. CLASS 180

PEAK DATA: 8.94 M/S @ 200.00 MS; -0.01 M/S @ -0.64 MS

C-46

030916

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

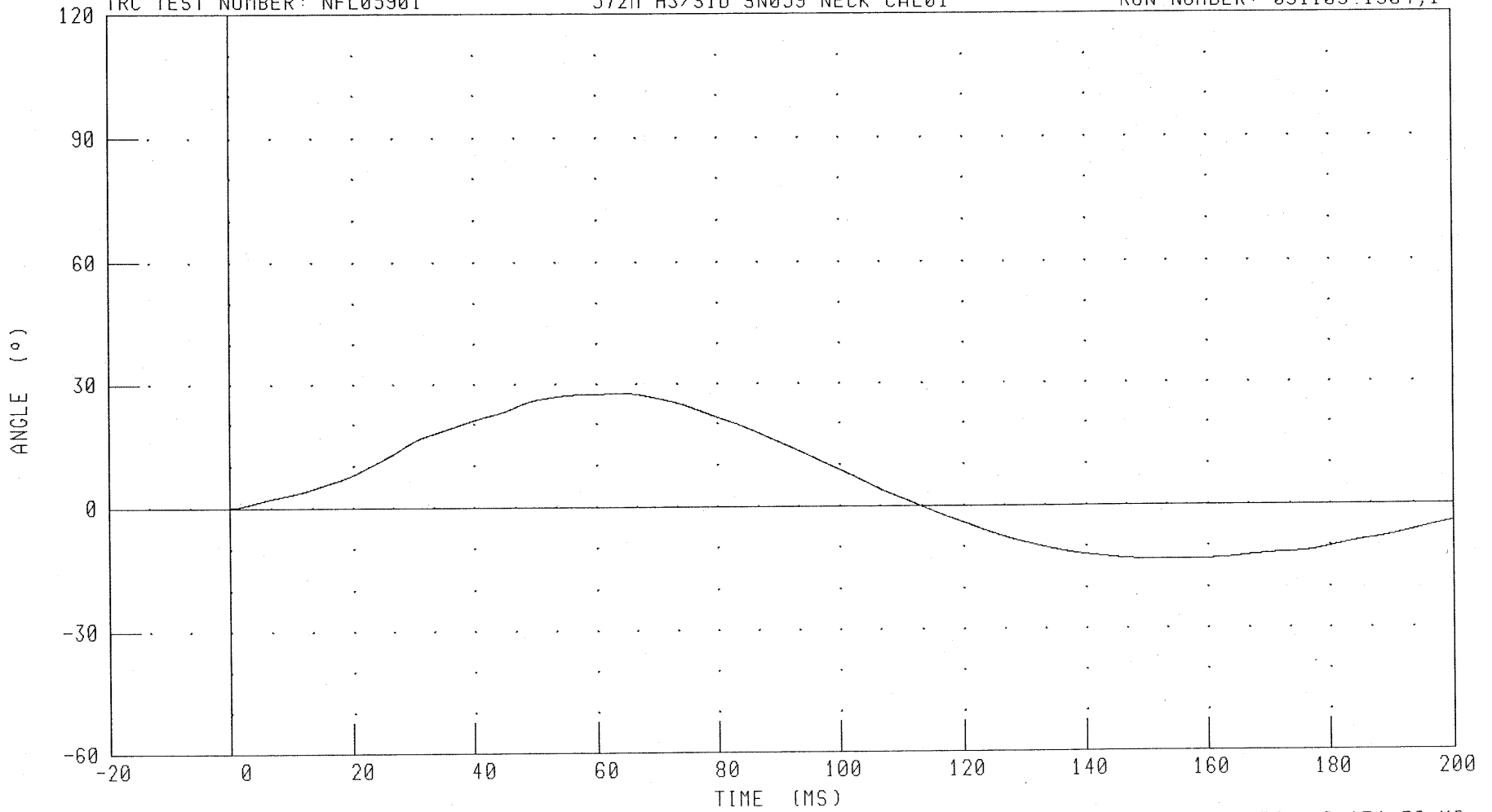
ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER: NFL05901

572M H3/SID SN059 NECK CAL01

RUN NUMBER: 091103.1504;1

C-47



CHANNEL: BETA

FILTER: CH. CLASS 60

PEAK DATA: 27.64 ° @ 64.00 MS; -13.33 ° @ 154.32 MS

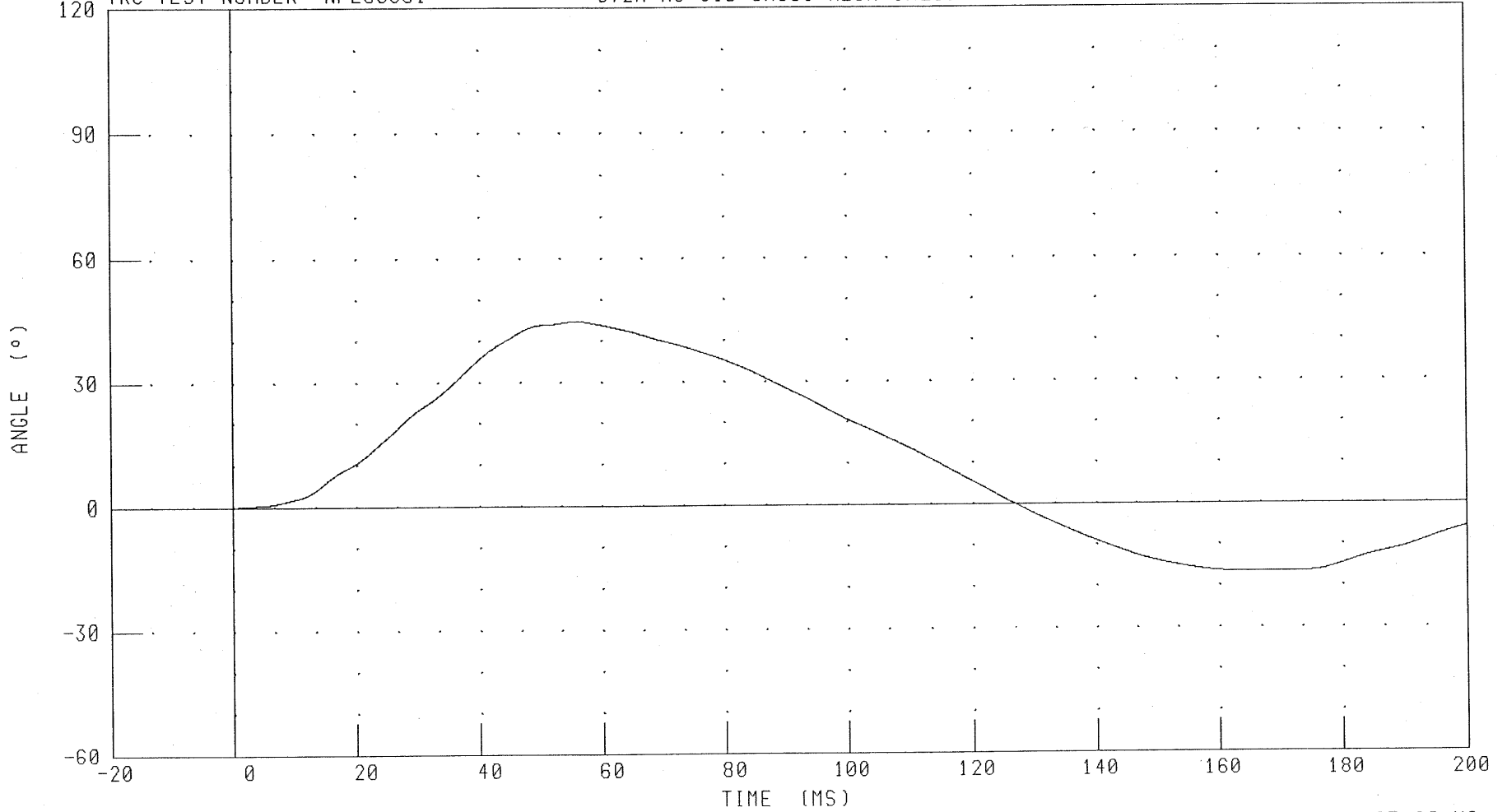
030916

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

TRC TEST NUMBER: NFL05901

572M H3/SID SN059 NECK CAL01

RUN NUMBER: 091103.1504;1



CHANNEL: THETA

FILTER: CH. CLASS 60

PEAK DATA: 44.63 ° @ 55.92 MS; -16.60 ° @ 165.28 MS

C-48

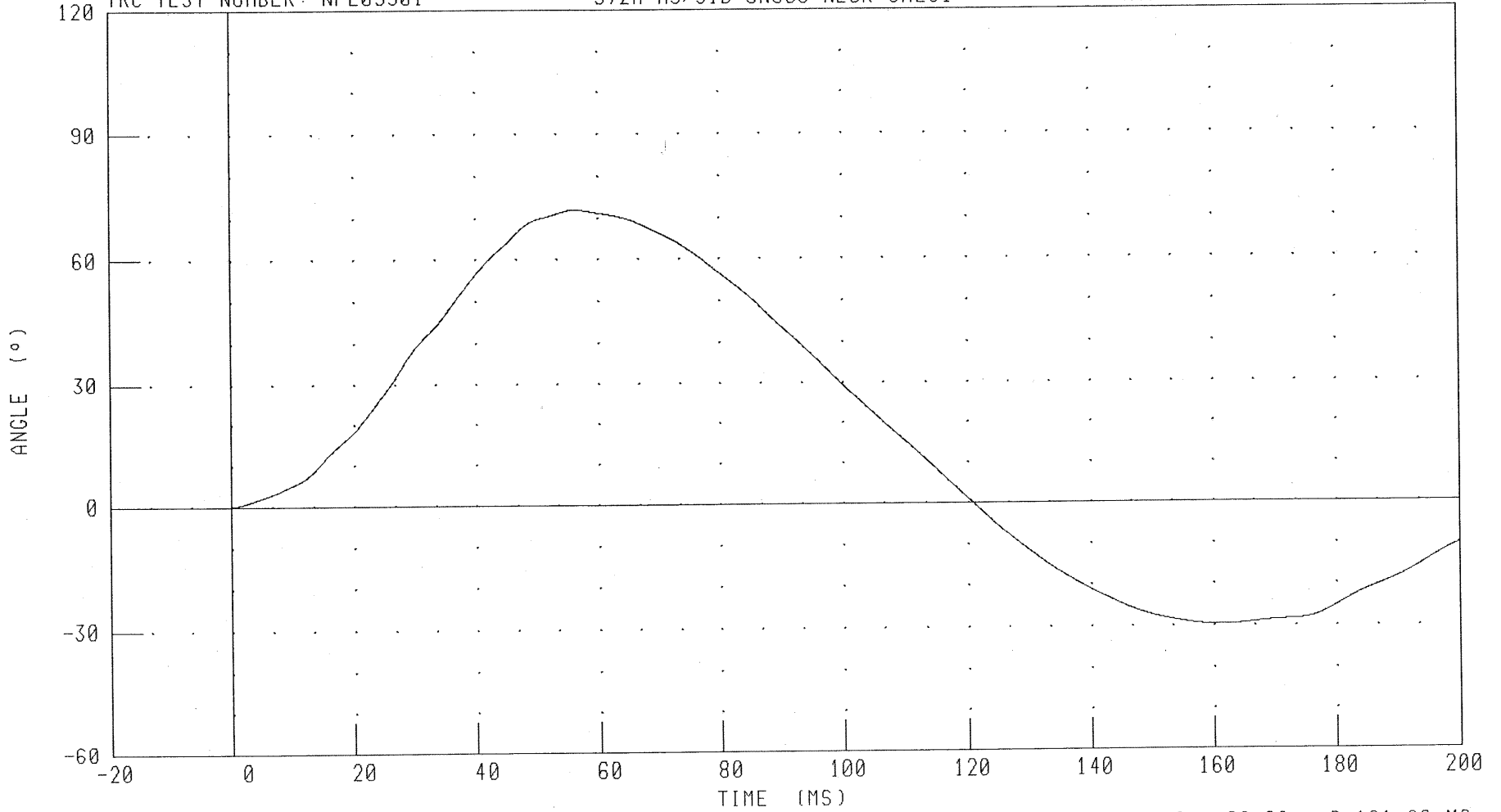
030916

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

TRC TEST NUMBER: NFL05901

572M H3/SID SN059 NECK CAL01

RUN NUMBER: 091103.1504;1



CHANNEL: TOTAN

FILTER: CH. CLASS 60

PEAK DATA: 71.83 ° @ 56.32 MS; -29.66 ° @ 161.20 MS

C-49

030916

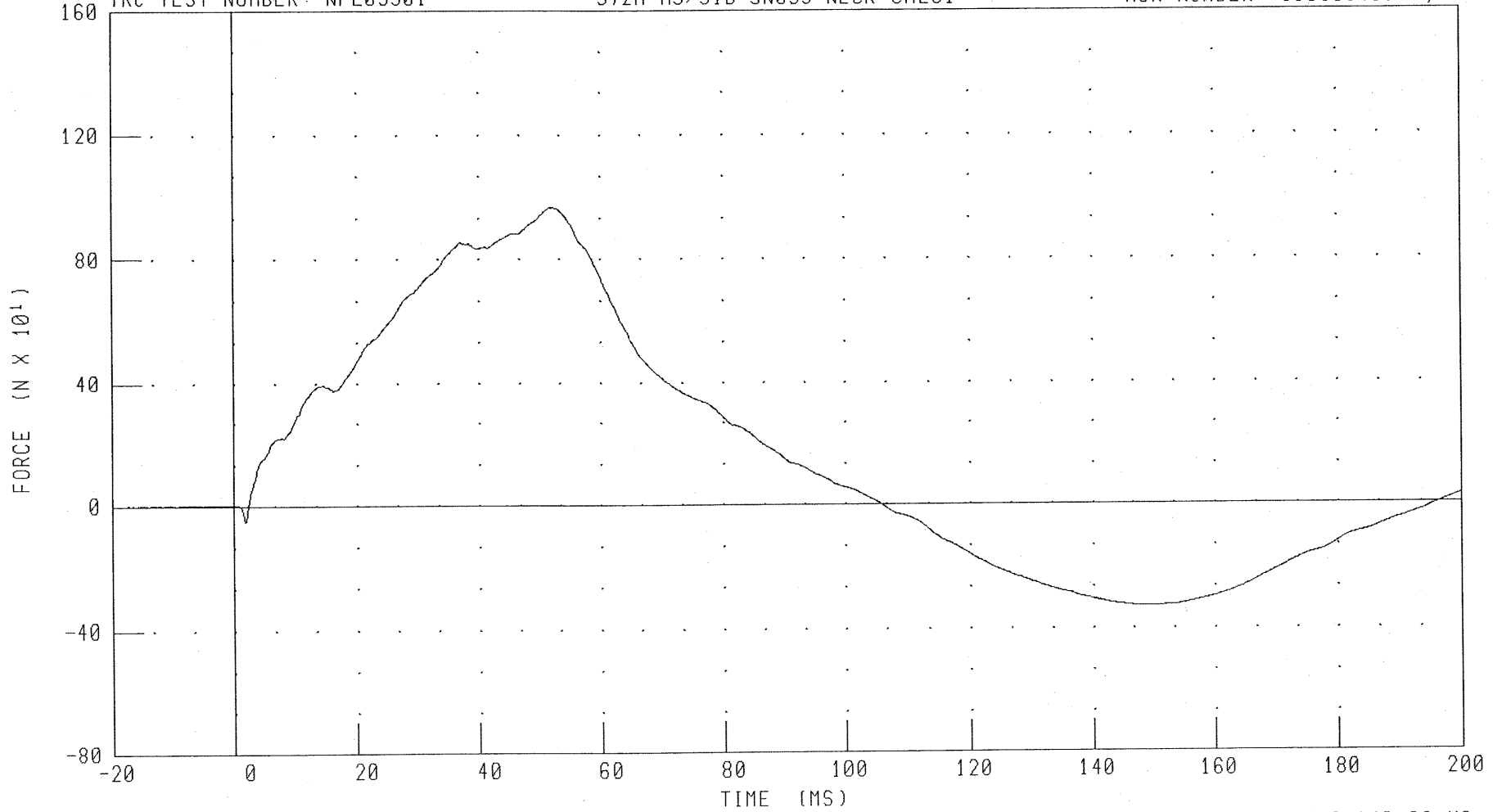
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

NECK FORCE Y AXIS

TRC TEST NUMBER: NFL05901

572M H3/SID SN059 NECK CAL01

RUN NUMBER: 091103.1504;1



CHANNEL: NEKYF FILTER: CH. CLASS 1000

PEAK DATA: 966.65 N @ 52.32 MS; -331.06 N @ 149.20 MS

C-50

030916

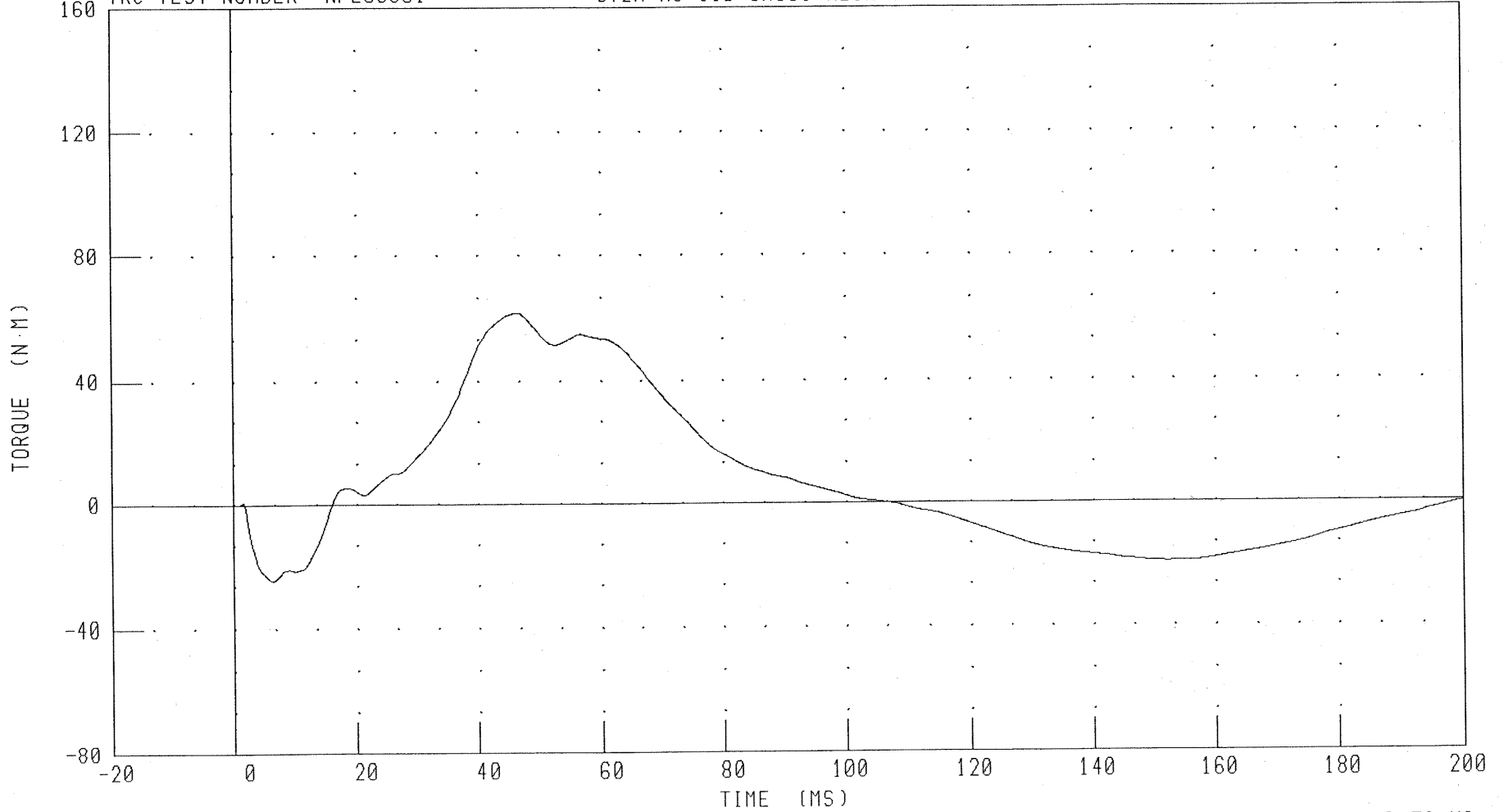
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST
NECK MOMENT X AXIS

TRC TEST NUMBER: NFL05901

572M H3/SID SN059 NECK CAL01

RUN NUMBER: 091103.1504;1

C-51



CHANNEL: NEKXM

FILTER: CH. CLASS 600

PEAK DATA: 61.92 N.M @ 46.48 MS; -25.01 N.M @ 6.32 MS

030916

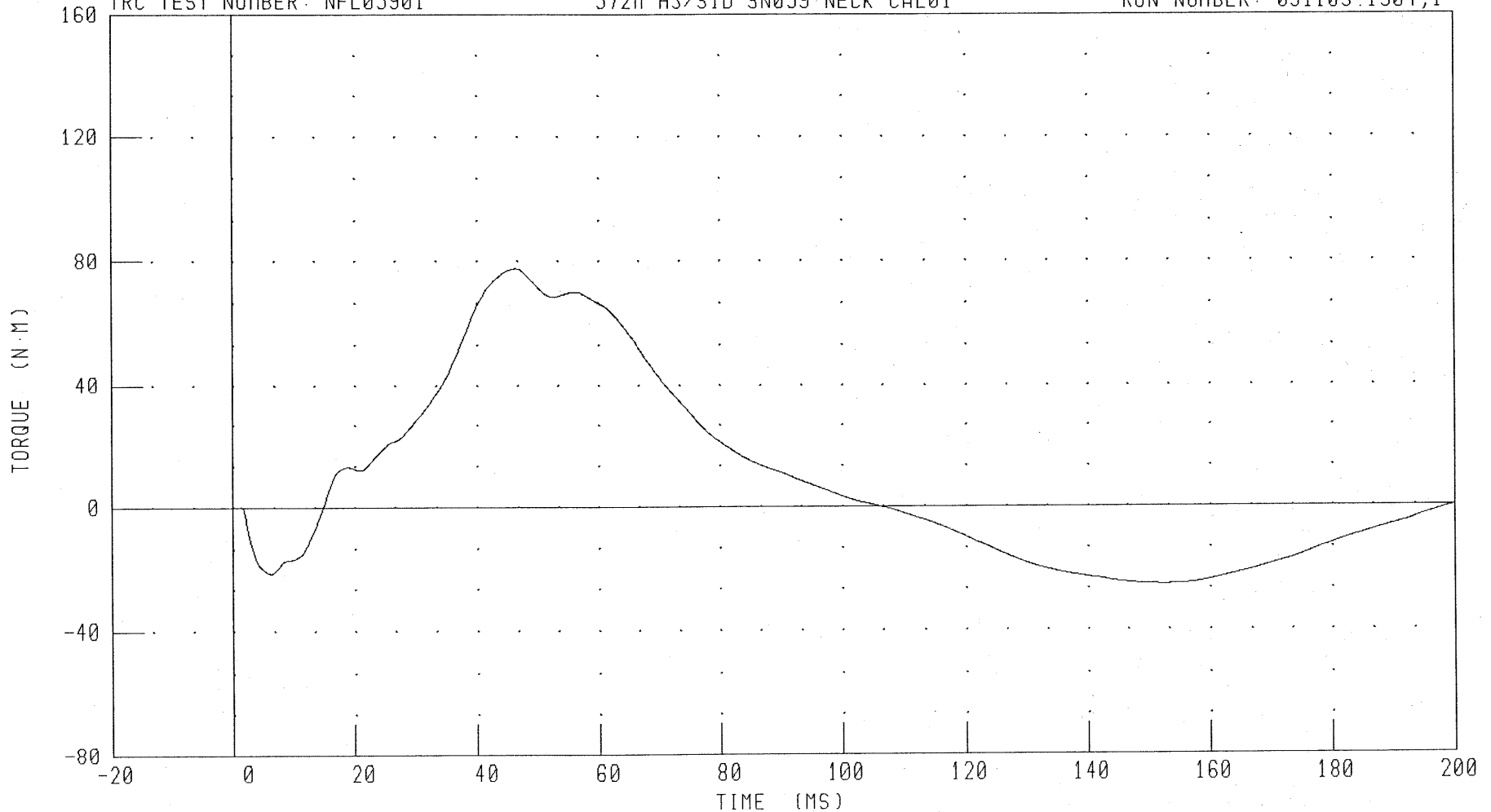
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST
TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: NFL05901

572M H3/SID SN059 NECK CAL01

RUN NUMBER: 091103.1504;1

C-52



CHANNEL: NEKOM

FILTER: CH. CLASS 600

PEAK DATA: 77.62 N·M @ 46.48 MS; -25.43 N·M @ 151.92 MS

030916

TRANSPORTATION RESEARCH CENTER INC.

THORACIC SHOCK ABSORBER TESTS

SIDE IMPACT DUMMY

11-SEP-03

TRC INC.

572F SN059 DAMPER TEST CAL01

TEST NUMBERS: DP05901A,DP05901B,DP05901C

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE		18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY		10 - 70 %	65.0 %
VELOCITY	FORCE	667 - 925 N	749 N
2.75 M/S	DISPLACEMENT	29.7 - 34.5 MM	29.9 MM
VELOCITY	FORCE	1733 - 2100 N	1802 N
4.26 M/S	DISPLACEMENT	31.6 - 37.2 MM	32.7 MM
VELOCITY	FORCE	3703 - 4402 N	3922 N
6.07 M/S	DISPLACEMENT	33.3 - 39.5 MM	35.9 MM

DAMPER SETTING = 5.5

TEST MEETS SPECIFICATIONS

TECHNICIAN 

RUN NUMBER: 091503.1343;2

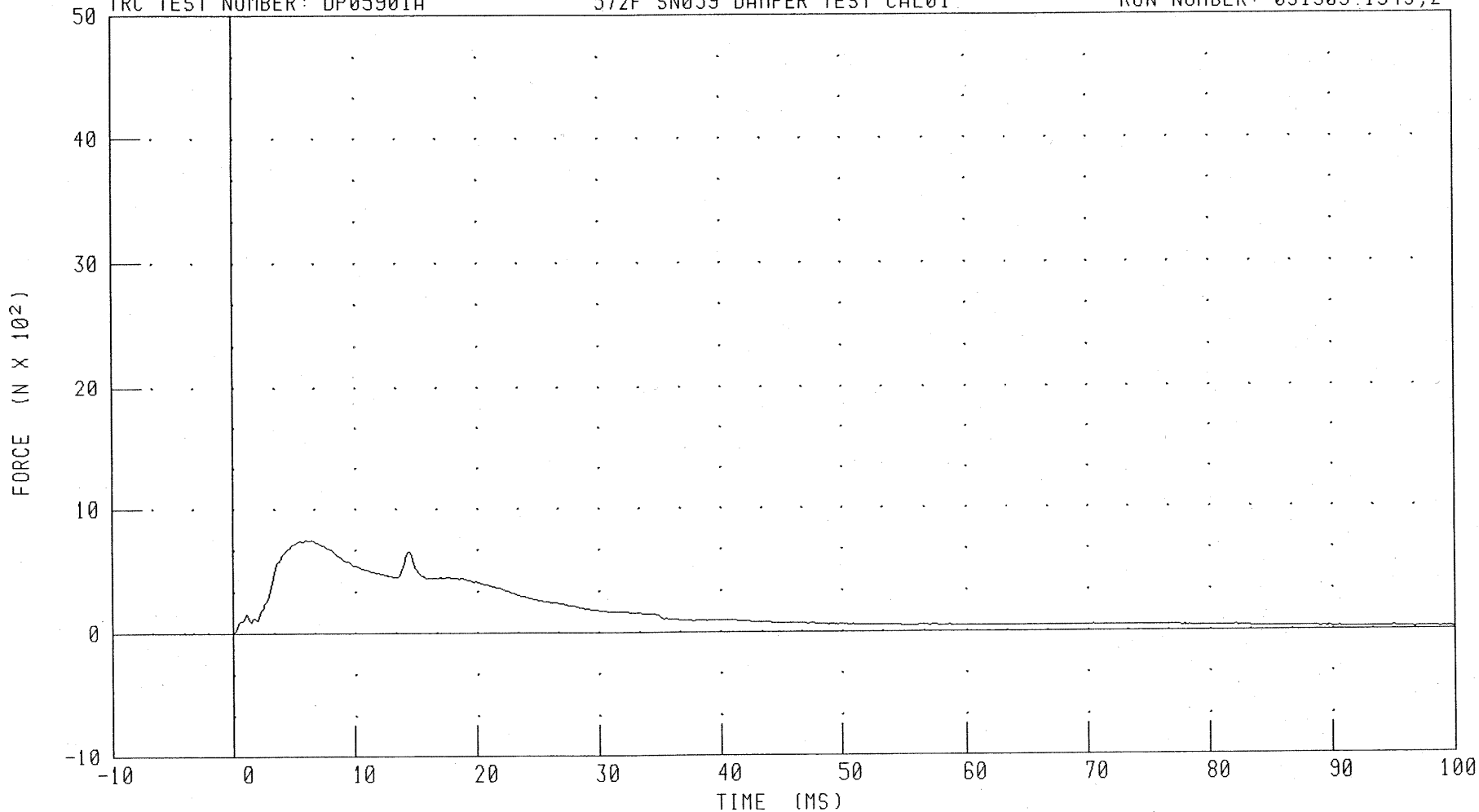
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (3.0 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

TRC TEST NUMBER: DP05901A

572F SN059 DAMPER TEST CAL01

RUN NUMBER: 091503.1343;2



C-54

030916

CHANNEL: DAMPF

FILTER: CH. CLASS 1000

PEAK DATA: 748.99 N @ 6.00 MS; -2.13 N @ -9.04 MS

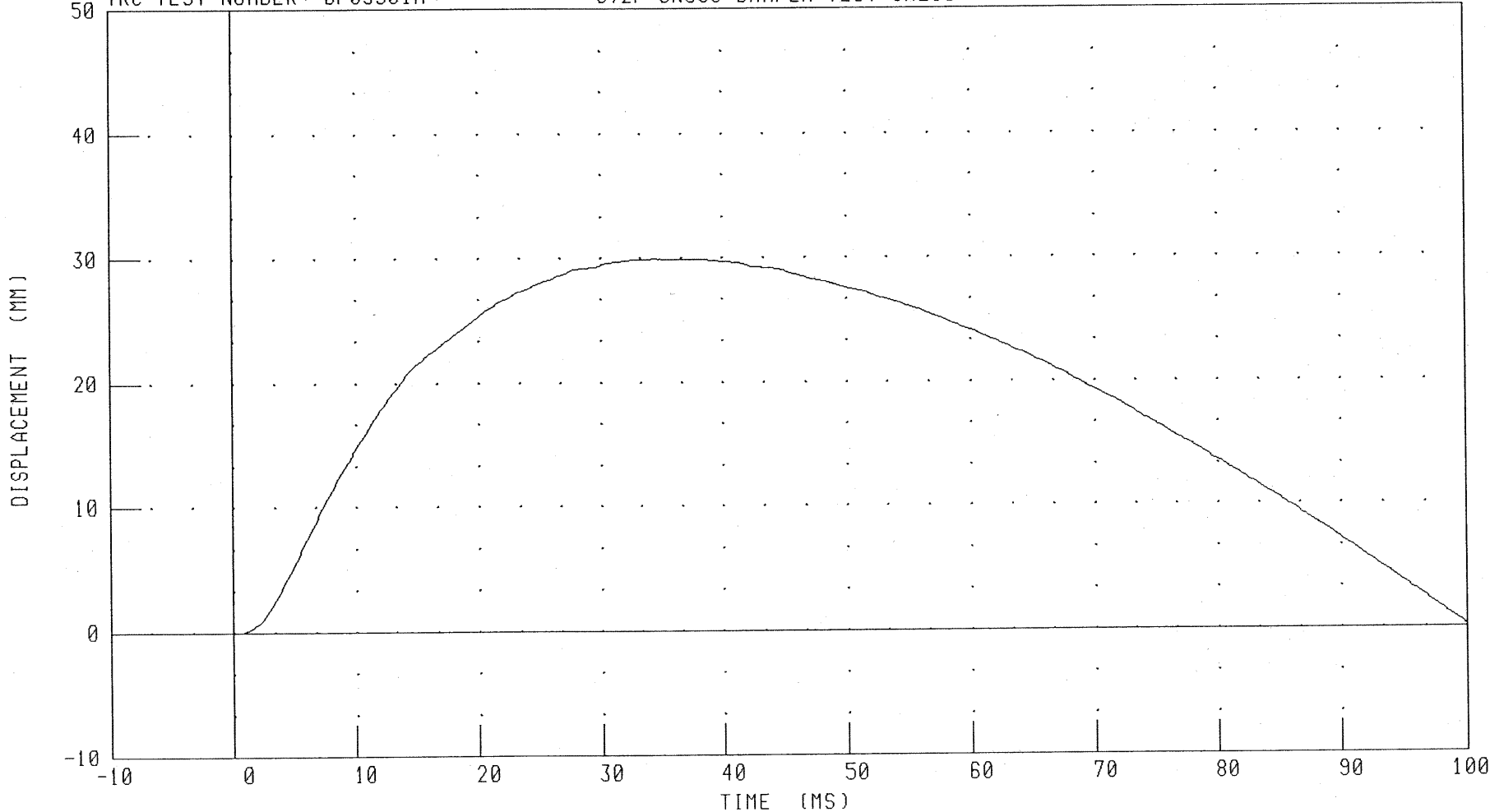
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (3.0 M/SEC)

SHOCK ABSORBER DISPLACEMENT

TRC TEST NUMBER: DP05901A

572F SN059 DAMPER TEST CAL01

RUN NUMBER: 091503.1343;2



C-55

030916

CHANNEL: CSTYD

FILTER: CH. CLASS 1000

PEAK DATA: 29.92 MM @ 34.32 MS; 0.00 MM @ -8.80 MS

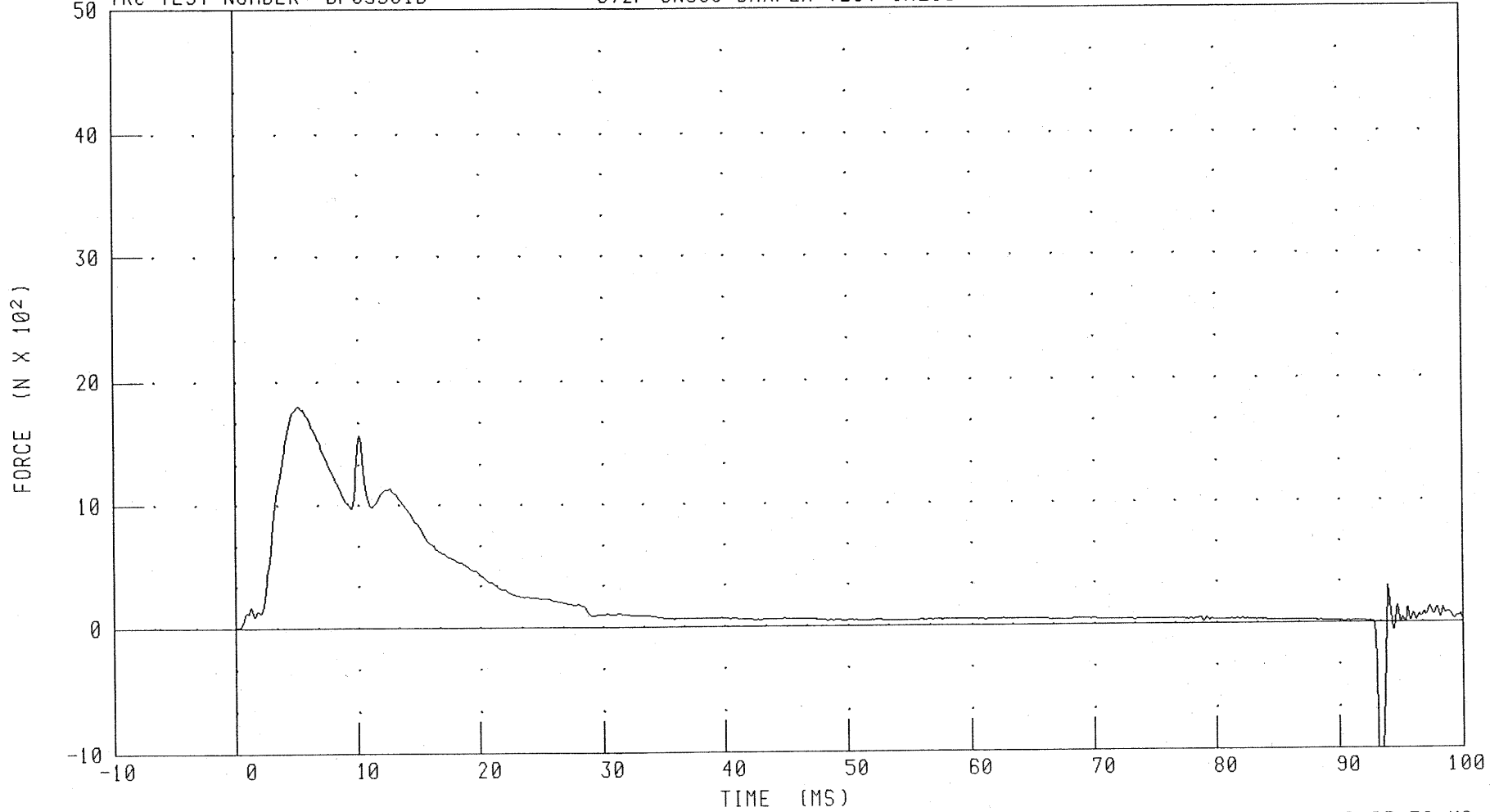
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (4.3 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

TRC TEST NUMBER: DP05901B

572F SN059 DAMPER TEST CAL01

RUN NUMBER: 091503.1343;2



CHANNEL: DAMPF FILTER: CH. CLASS 1000

PEAK DATA: 1801.64 N @ 5.12 MS; -1917.29 N @ 93.36 MS

95-C

030916

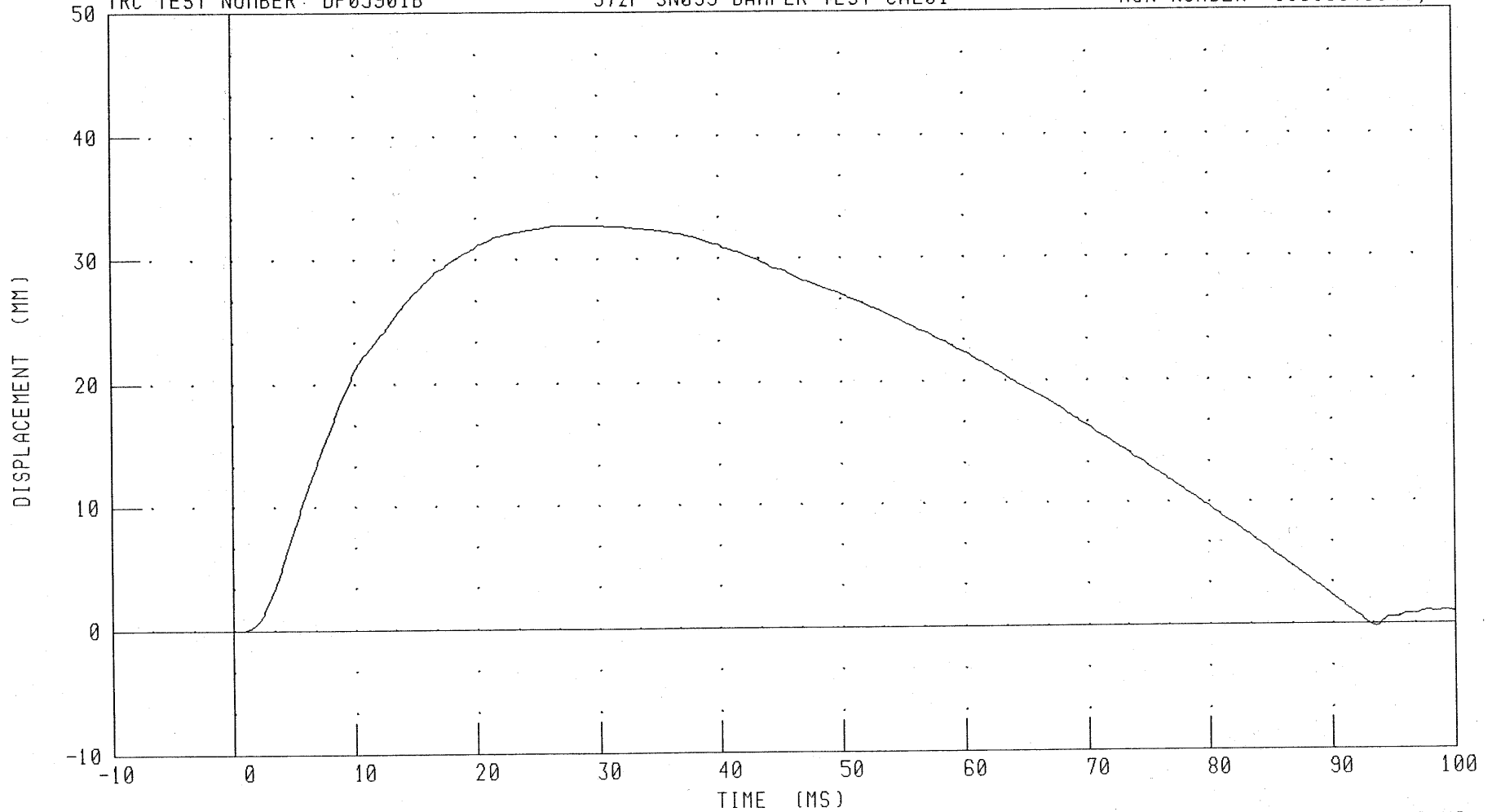
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (4.3 M/SEC)

SHOCK ABSORBER DISPLACEMENT

TRC TEST NUMBER: DP05901B

572F SN059 DAMPER TEST CAL01

RUN NUMBER: 091503.1343;2



CHANNEL: CSTYD

FILTER: CH. CLASS 1000

PEAK DATA: 32.68 MM @ 27.68 MS; -0.23 MM @ 93.60 MS

C-57

030916

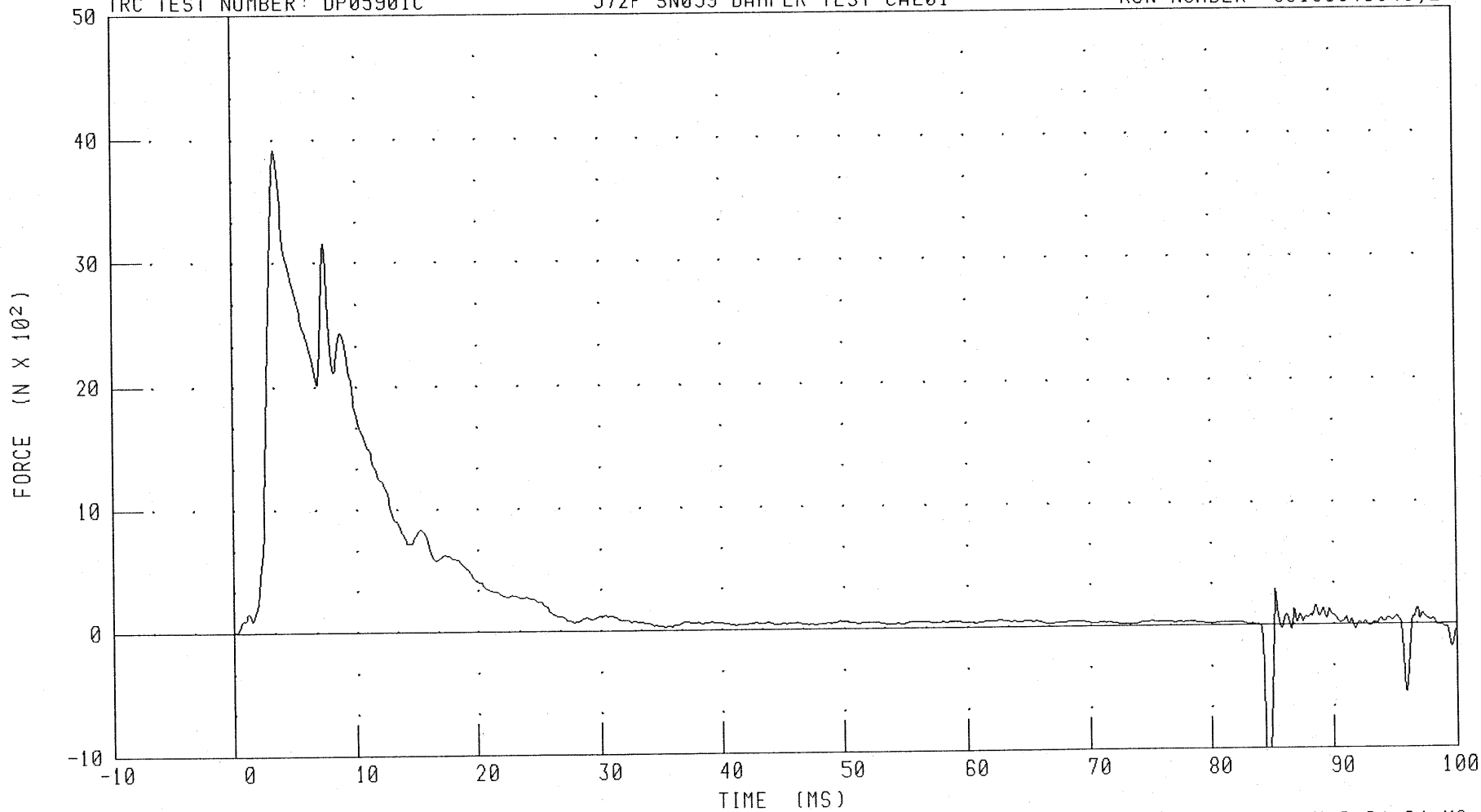
PART 572-F S.I.D. THORACIC SHOCK ABSORBER CALIBRATION (6.1 M/SEC)

SHOCK ABSORBER RESISTIVE FORCE

RUN NUMBER: 091503.1343;2

TRC TEST NUMBER: DP05901C

572F SN059 DAMPER TEST CAL01



CHANNEL: DAMPF

FILTER: CH. CLASS 1000

PEAK DATA: 3922.19 N @ 3.44 MS; -2043.18 N @ 84.64 MS

C-58

030916

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

SHOCK ABSORBER DISPLACEMENT

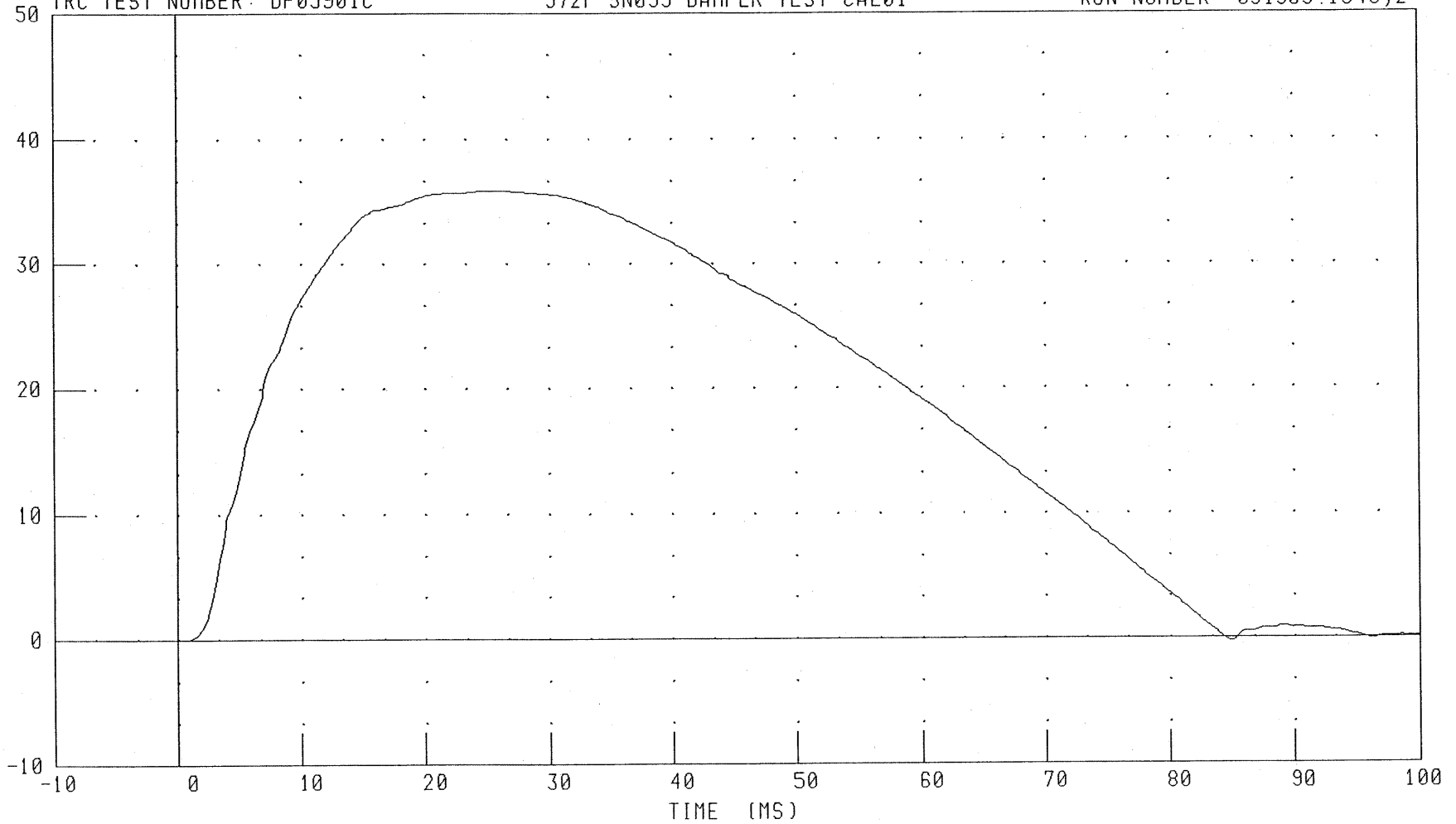
TRC TEST NUMBER: DP05901C

572F SN059 DAMPER TEST CAL01

RUN NUMBER: 091503.1343;2

C-59

DISPLACEMENT (MM)



CHANNEL: CSTYD

FILTER: CH. CLASS 1000

PEAK DATA: 35.88 MM @ 26.08 MS; -0.25 MM @ 84.88 MS

030916

TRANSPORTATION RESEARCH CENTER INC.

LATERAL THORAX IMPACT TEST

SIDE IMPACT DUMMY

15-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO: STL05901

572F SID SN059 L.THORAX CAL01

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	60.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.28 M/S
PEAK ACCELERATION: UPPER RIB BAR	37 - 46 G	44.7 G
PEAK ACCELERATION: LOWER RIB BAR	37 - 46 G	44.1 G
PEAK ACCELERATION: LOWER THORACIC SPINE	15 - 22 G	19.9 G

TEST MEETS SPECIFICATIONS

TECHNICIAN 

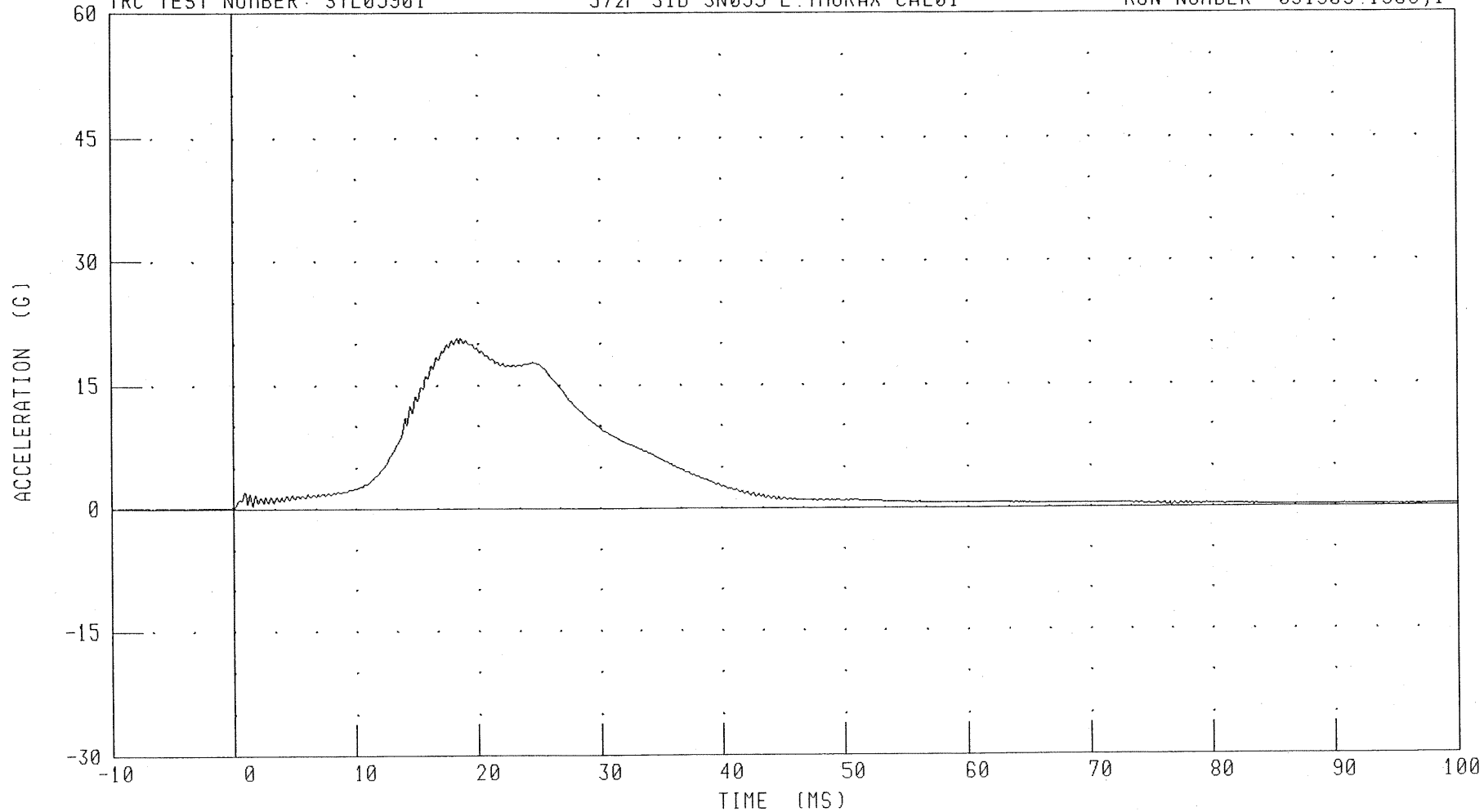
RUN NUMBER: 091503.1300;1

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

TRC TEST NUMBER: STL05901

572F SID SN059 L THORAX CAL01

RUN NUMBER: 091503.1300;1



CHANNEL: PENXC

FILTER: CH. CLASS 1000

PEAK DATA: 20.67 G @ 18.64 MS; 0.00 G @ -7.28 MS

C-61

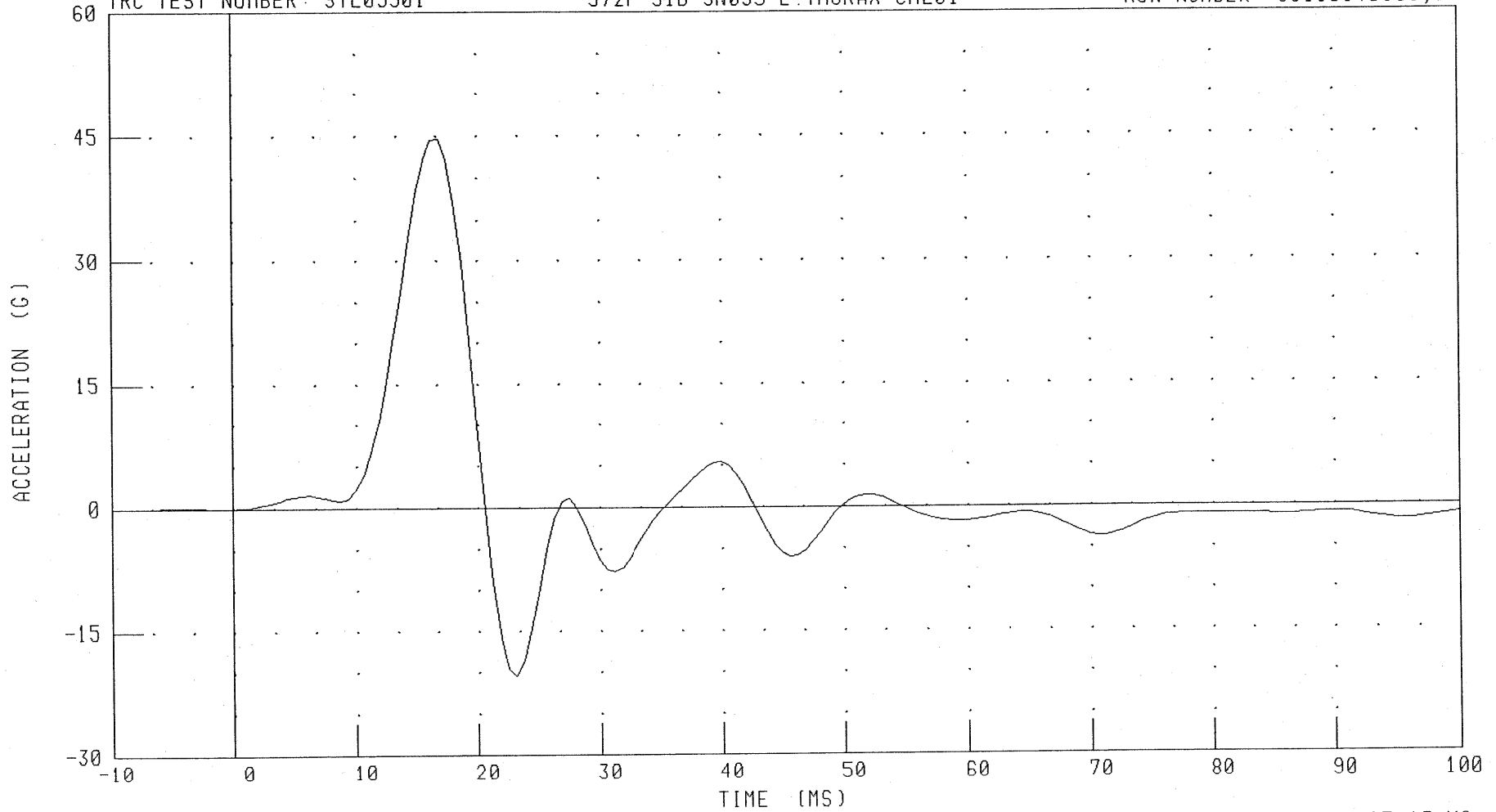
030916

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

TRC TEST NUMBER: STL05901

572F SID SN059 L.THORAX CAL01

RUN NUMBER: 091503.1300;1



CHANNEL: LURYG

FILTER: FIR 100

PEAK DATA: 44.68 G @ 16.87 MS; -20.46 G @ 23.13 MS

C-62

030916

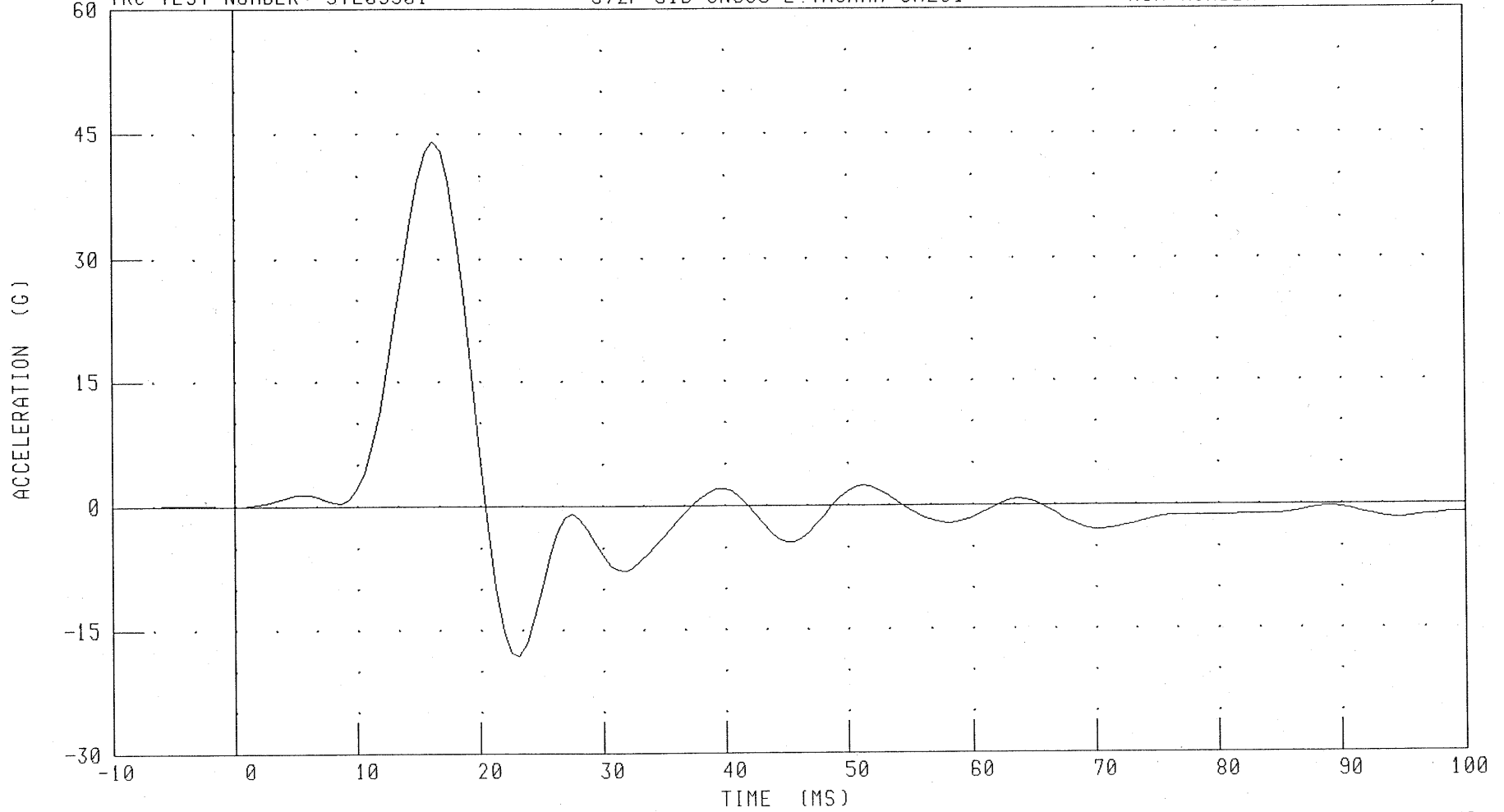
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LEFT LOWER RIB ACCELERATION Y AXIS

TRC TEST NUMBER: STL05901

572F SID SN059 L THORAX CAL01

RUN NUMBER: 091503.1300;1



CHANNEL: LLRYG FILTER: FIR 100

PEAK DATA: 44.09 G @ 16.25 MS; -18.22 G @ 23.13 MS

C-63

030916

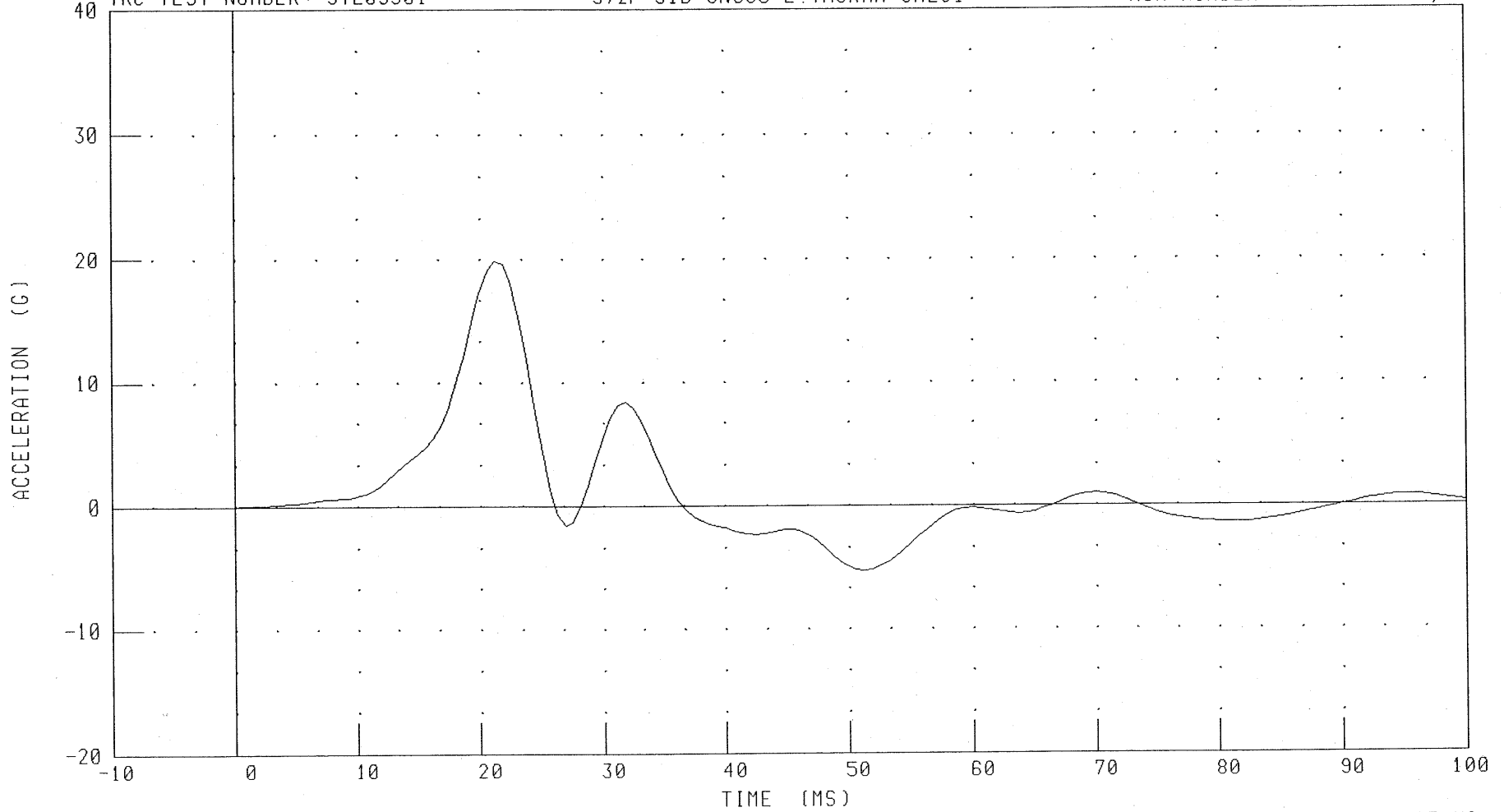
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LOWER SPINE ACCELERATION Y AXIS

TRC TEST NUMBER: STL05901

572F SID SN059 L.THORAX CAL01

RUN NUMBER: 091503.1300;1



CHANNEL: T12YC

FILTER: FIR 100

PEAK DATA: 19.88 G @ 21.25 MS; -5.27 G @ 51.25 MS

C-64

030916

Transportation Research Center Inc.

572B Abdomen Compression Test

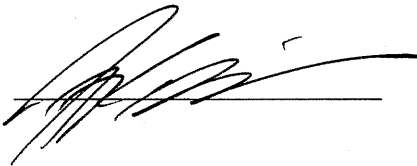
HIII SID Serial No. 059 Calibration No. 01 - 1

Test Date 09/11/2003

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	59 %	Yes
Displacement Rate	6.35 - 8.89 mm/s	7.0 - 8.1 mm/s	Yes
Data Within Required Corridor	Yes	Yes	Yes

Comments:

Technician



Approved



09.11.2003 14:31:02 43

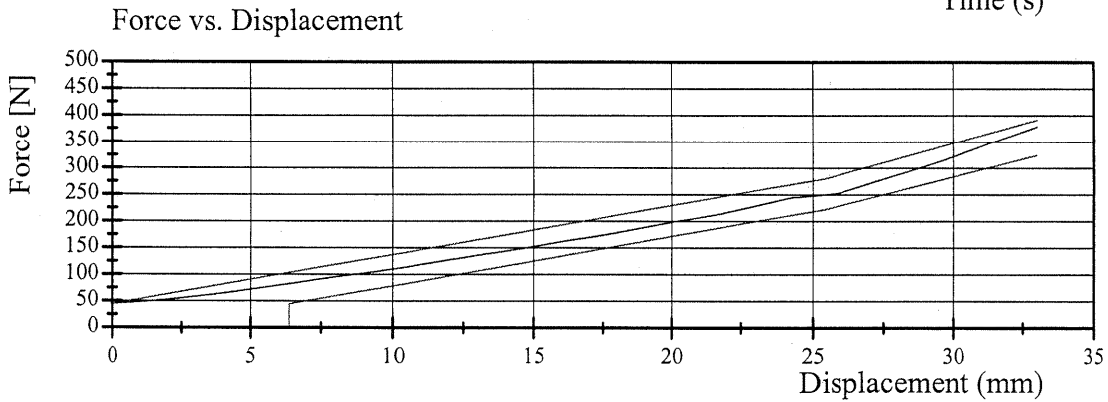
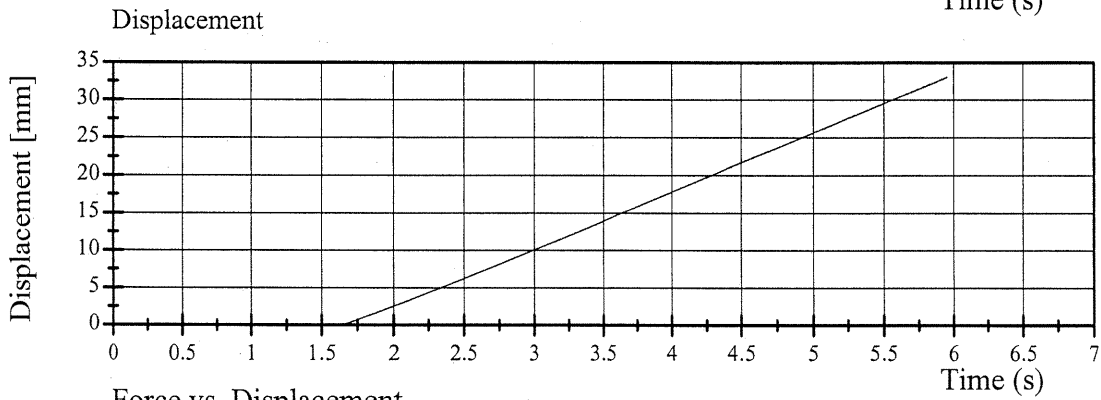
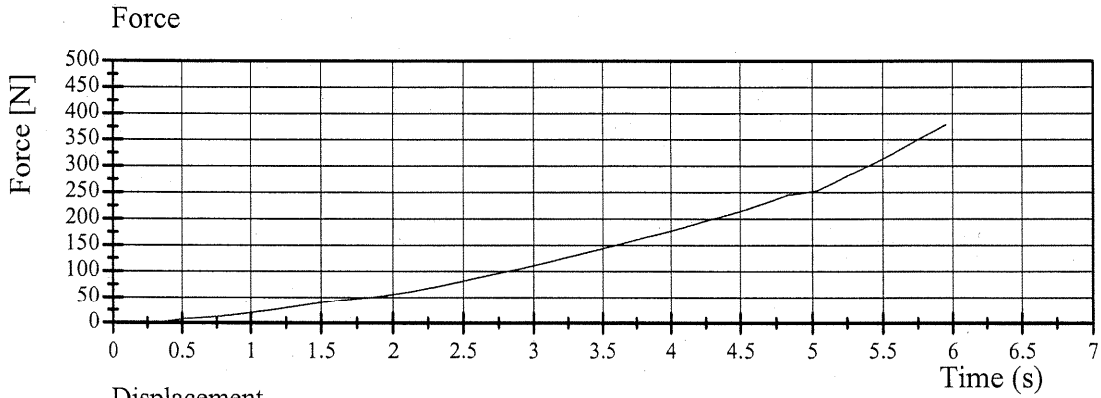


Transportation Research Center Inc.

572B Abdomen Compression Test

HIII SID Serial No. 059 Calibration No. 01 - 1

Test Date 09/11/2003



TRANSPORTATION RESEARCH CENTER INC.

PART 572B LUMBAR FLEXION TEST

SID HIII

CAL DATE: 11-Sep-03

TRC, INC. TEST NO: 059C01TF1 SID/HIII SN 59 TORSO FLEX CAL 01

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6° C	21.1 °C
RELATIVE HUMIDITY	10 – 70 %	65 %
FORCE AT 0 DEG. FLEXION	-27 – 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 – 151 N	111.2 N
FORCE AT 30 DEG OF FLEXION	151 – 205 N	169.0 N
FORCE AT 40 DEG OF FLEXION	205 – 258 N	226.9 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	5 °

TEST MEETS SPECIFICATIONS

TECHNICIAN V. J. Watters

TRANSPORTATION RESEARCH CENTER INC.

LATERAL PELVIS IMPACT TEST

SIDE IMPACT DUMMY

15-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

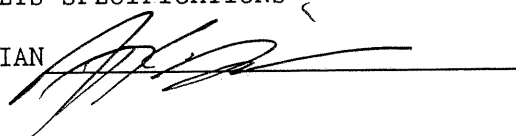
TEST NO: SPL05901

572F SN059 LEFT PELVIS CAL01

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	63.0 %
PENDULUM VELOCITY	4.21 - 4.33 M/S	4.29 M/S
PEAK PELVIC ACCELERATION	40 - 60 G	44.4 G
TIME ABOVE 20 G LEVEL	3 - 7 MS	6.0 MS
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN



RUN NUMBER: 091503.1308;2

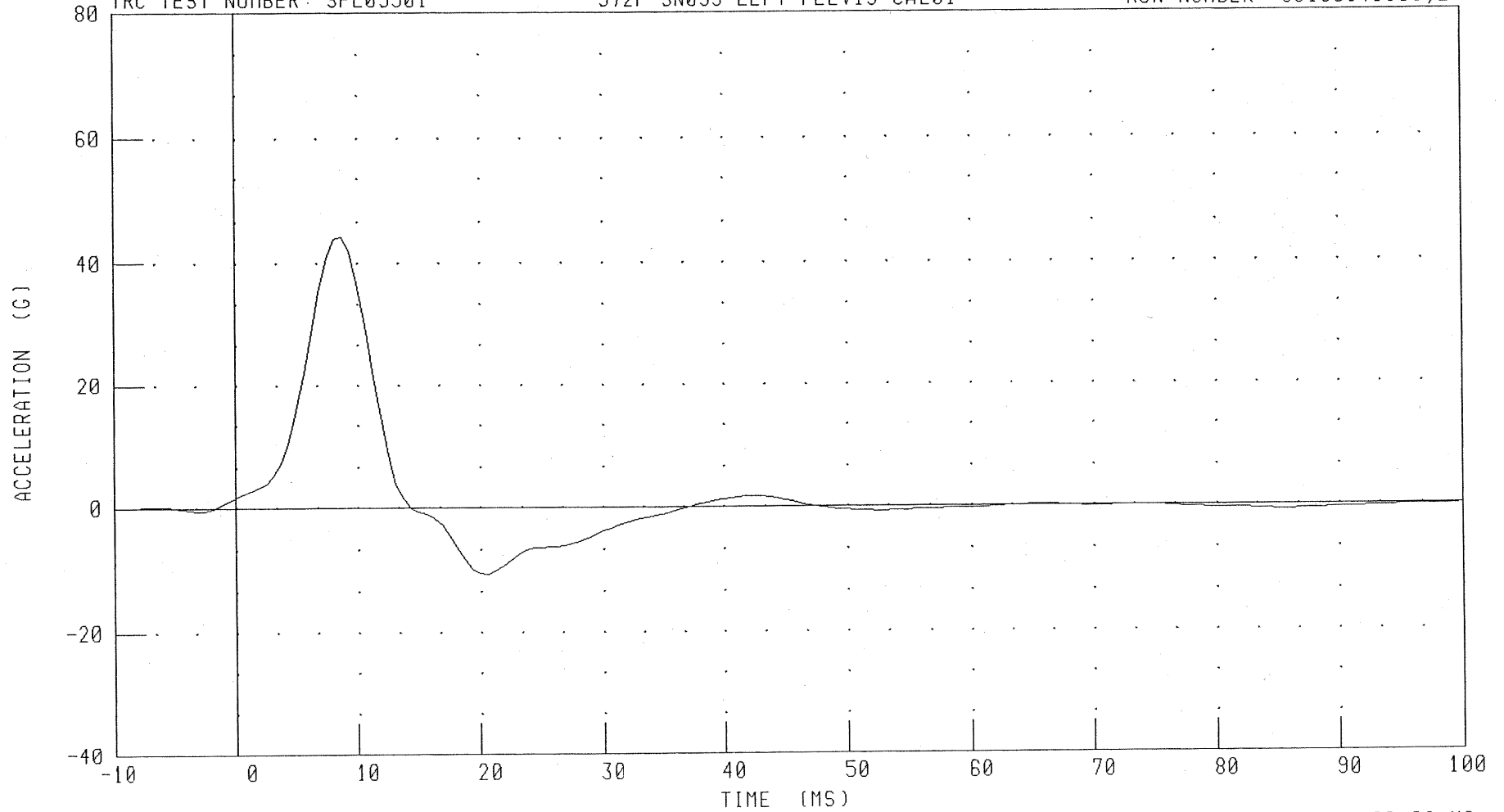
PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PELVIS ACCELERATION Y AXIS

TRC TEST NUMBER: SPL05901

572F SN059 LEFT PELVIS CAL01

RUN NUMBER: 091503.1308;2



C-69

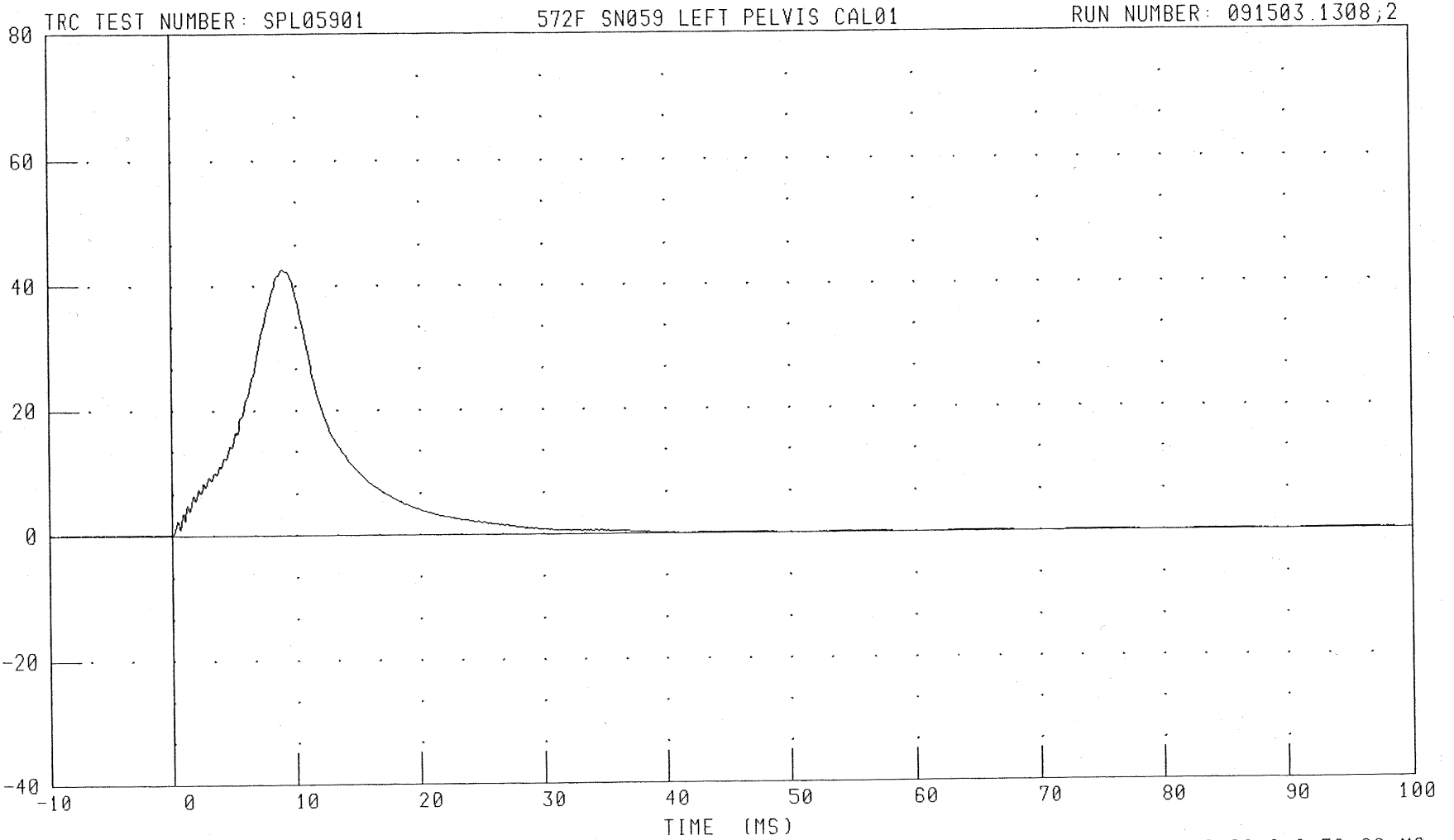
CHANNEL: PEVYC

FILTER: FIR 100

PEAK DATA: 44.37 G @ 8.75 MS; -10.53 G @ 20.62 MS

030916

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



C-70

030916

CHANNEL: PENXC FILTER: CH. CLASS 1000

PEAK DATA: 42.60 G @ 8.96 MS; -0.08 G @ 50.08 MS

Calibration Test Results

Post-Test

SID HIII: 055

Configured for Left Side Impact

External Dimensions:	External Dimensions were not taken.
Lateral Head Drop Test:	The head passed all lateral drop test requirements.
Lateral Neck Test:	The neck passed all impact test requirements.
Thoracic Shock Absorber Test:	The thoracic shock absorber was not tested at this time.
Lateral Thorax Impact Test:	The thorax passed all impact 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.

LATERAL HEAD DROP TEST

HYBRIDIII SID DUMMY

22-SEP-03

LEFT SIDE CONFIGURATION

TRC INC. TEST NO. HLO5508C 572M SID/HIII SN055 HEAD CAL08

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6 deg. C	21.44 deg. C
RELATIVE HUMIDITY	10 - 70 %	51.00 %
PEAK RESULTANT ACCELERATION	120 - 150 G	140.63 G
PEAK LONGITUDINAL ACCELERATION	15 G MAX	-9.39 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN

V.F. Watter

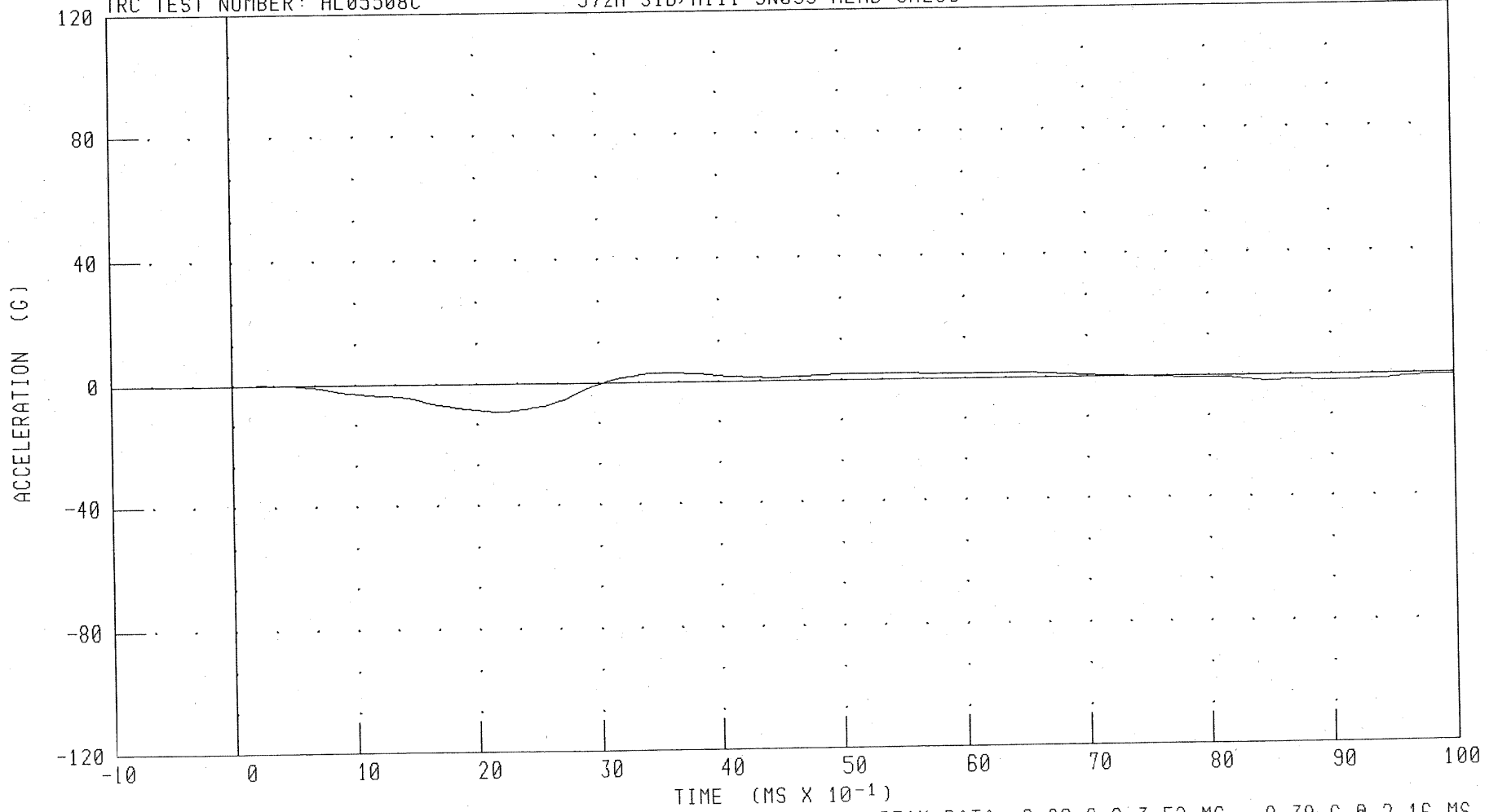
RUN NUMBER: 092703.1859;2

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

TRC TEST NUMBER: HL05508C

572M SID/HIII SN055 HEAD CAL08

RUN NUMBER: 092903.1208;2



CHANNEL: HEDXC

FILTER: CH. CLASS 1000

PEAK DATA: 2.90 G @ 3.52 MS; -9.39 G @ 2.16 MS

C-73

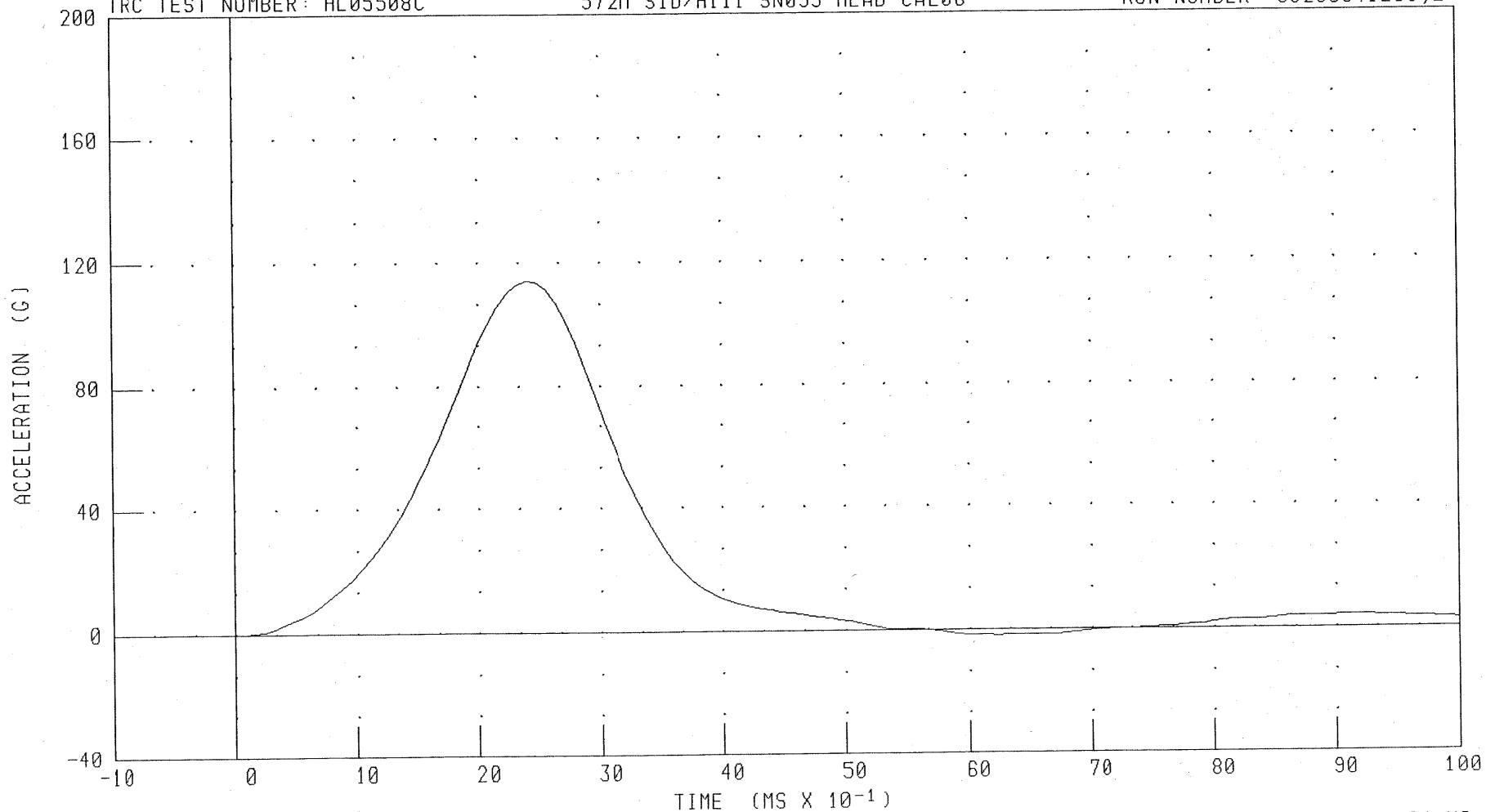
030916

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

TRC TEST NUMBER: HL05508C

572M SID/HIII SN055 HEAD CAL08

RUN NUMBER: 092903.1208;2



CHANNEL: HEDYC

FILTER: CH. CLASS 1000

PEAK DATA: 114.03 G @ 2.40 MS; -1.96 G @ 6.24 MS

C-74

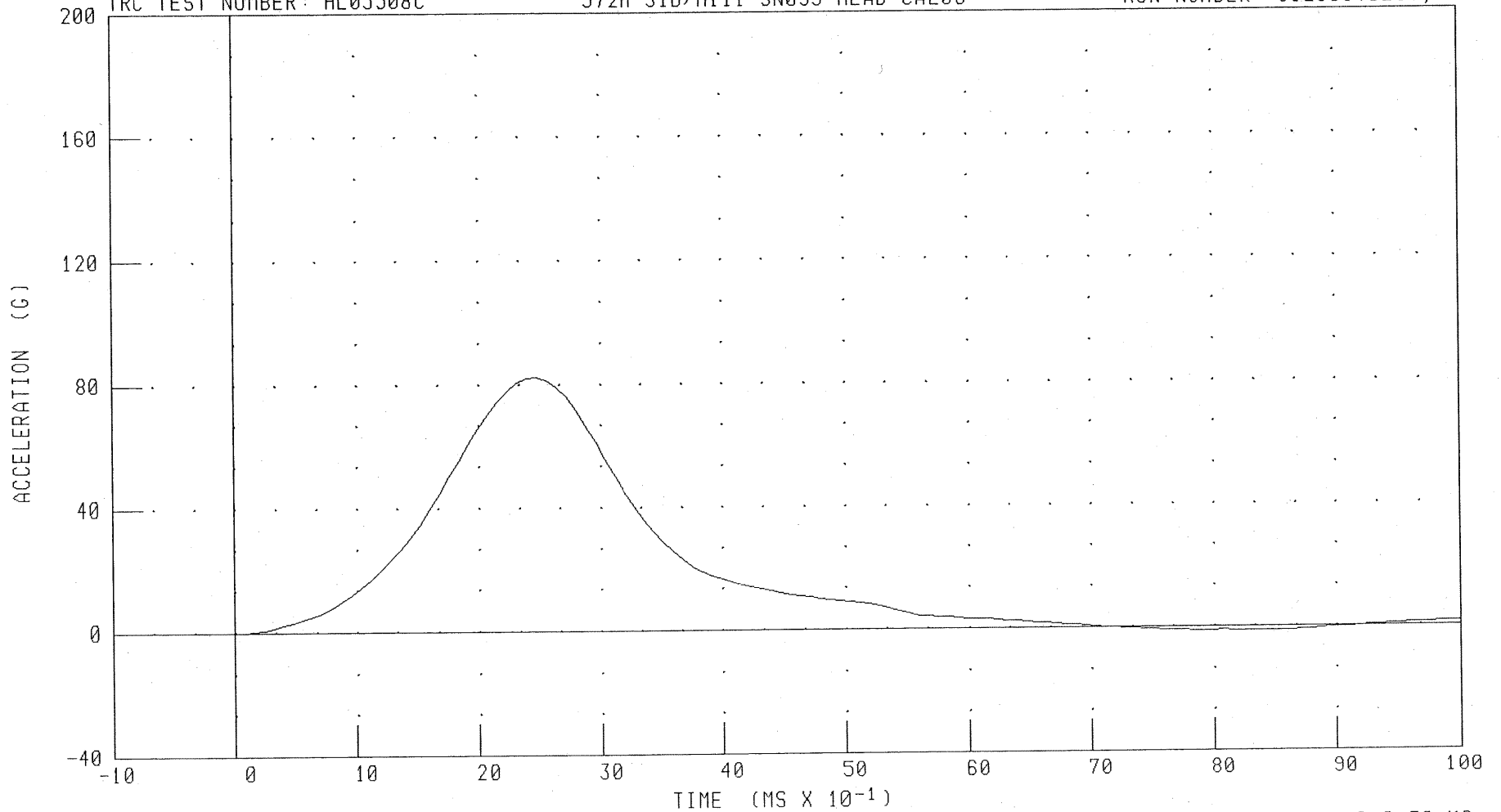
030916

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

TRC TEST NUMBER: HL05508C

572M SID/HIII SN055 HEAD CAL08

RUN NUMBER: 092903.1208;2



CHANNEL: HEDZG

FILTER: CH. CLASS 1000

PEAK DATA: 82.06 G @ 2.48 MS; -1.44 G @ 8.32 MS

C-75

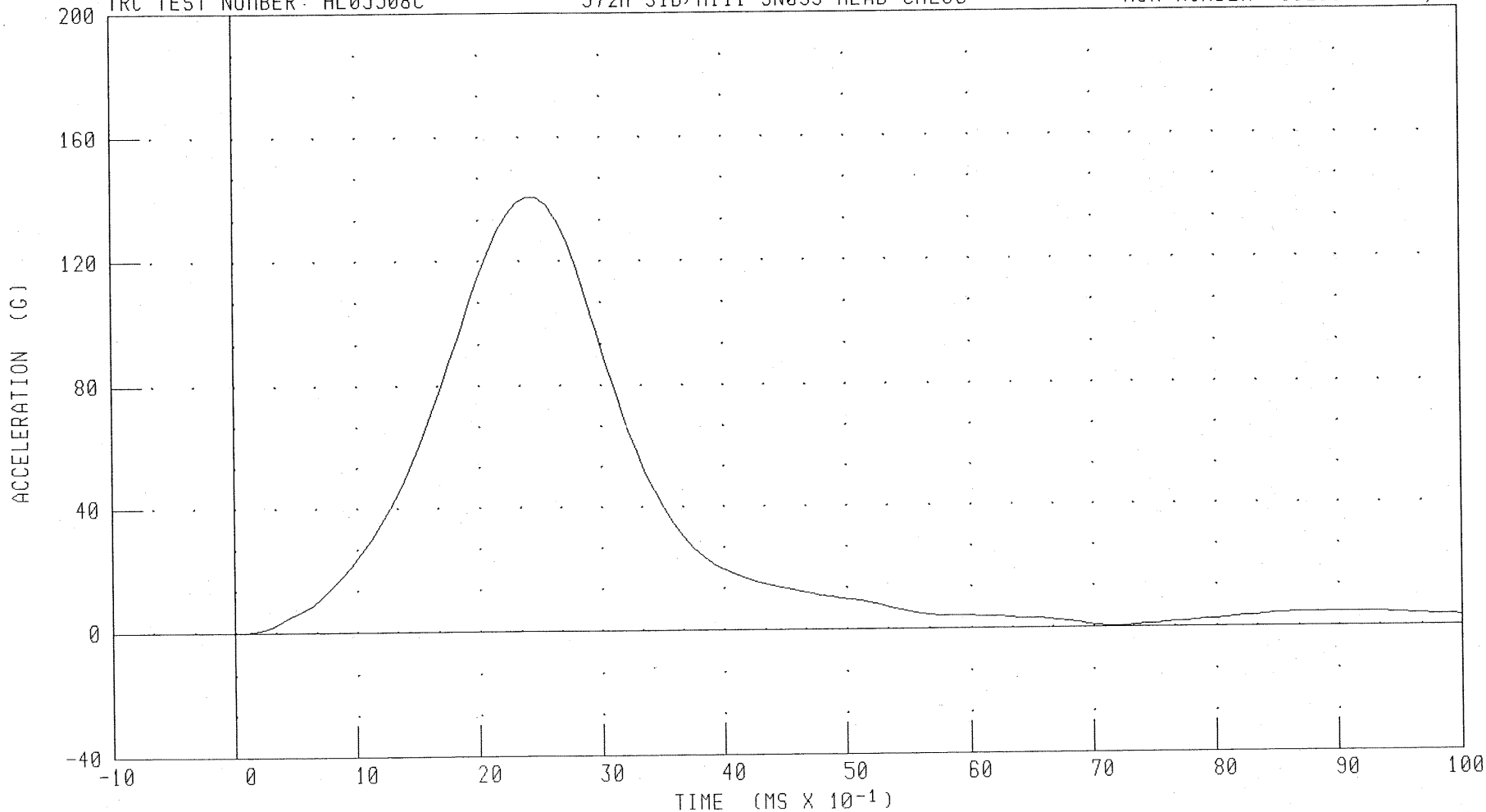
030916

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

TRC TEST NUMBER: HL05508C

572M SID/HIII SN055 HEAD CAL08

RUN NUMBER: 092903.1208;2



CHANNEL: HEDRG

FILTER: CH. CLASS 1000

PEAK DATA: 140.63 G @ 2.40 MS; 0.01 G @ -0.48 MS

C-76

030916

TRANSPORTATION RESEARCH CENTER INC.

LATERAL NECK TEST

HYBRIDIII SID DUMMY

23-SEP-03

LEFT SIDE CONFIGURATION

TRC INC. TEST NO. NL05508 572M SID/HIII SN055 NECK CAL08

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6 - 22.2 deg. C	21.39 deg. C
RELATIVE HUMIDITY	10 - 70 %	49.00 %
IMPACT VELOCITY	6.89 - 7.13 M/S	7.06 M/S
INTEGRATED VELOCITY	10 MS 1.96 - 2.55 M/S	2.18 M/S
	20 MS 4.12 - 5.10 M/S	4.53 M/S
	30 MS 5.73 - 7.01 M/S	6.61 M/S
	40 - 70 MS 6.27 - 7.64 M/S	7.12- 7.28 M/S
MAXIMUM MIDSAGGITAL PLANE ROTATION	66 - 82 DEG.	71.71 deg.
ROTATION ANGLE DECAY TIME FROM PEAK TO ZERO	58 - 67 MS	59.52 MS
MAXIMUM MOMENT ABOUT OCCIPITAL CONDYLE	73.0 - 88.0 NM	86.27 NM
POSITIVE MOMENT DECAY TIME FROM PEAK TO ZERO	49 - 64 MS	53.84 MS
TIME OF MAXIMUM ROTATION AFTER MAXIMUM MOMENT	2 - 16 MS	10.16 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN V. J. Watts

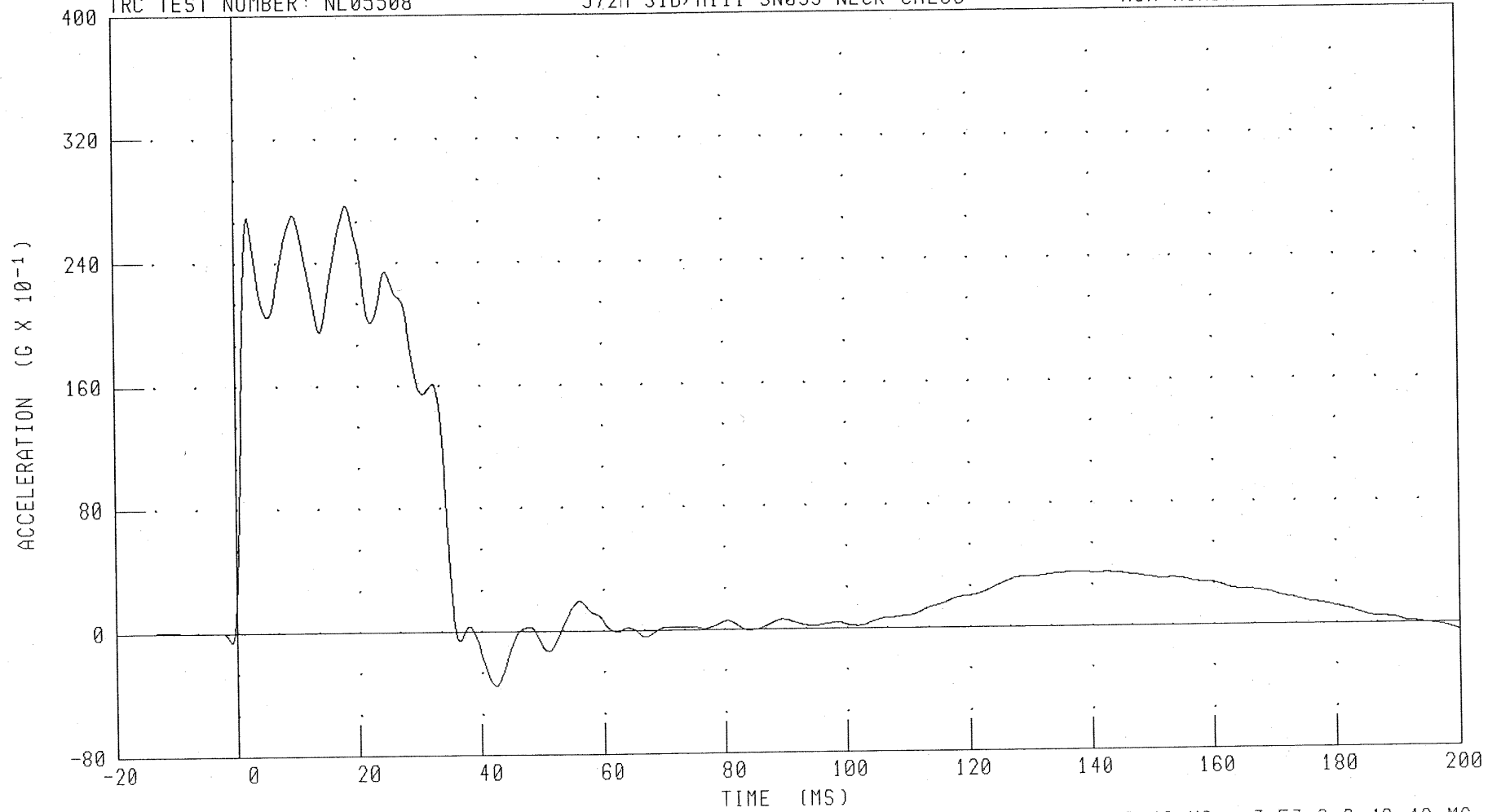
RUN NUMBER: 092703.1903;1

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

TRC TEST NUMBER: NL05508

572M SID/HIII SN055 NECK CAL08

RUN NUMBER: 092903.1215;1



CHANNEL: PENXG

FILTER: CH. CLASS 180

PEAK DATA: 27.67 G @ 18.40 MS; -3.53 G @ 42.48 MS

C-78

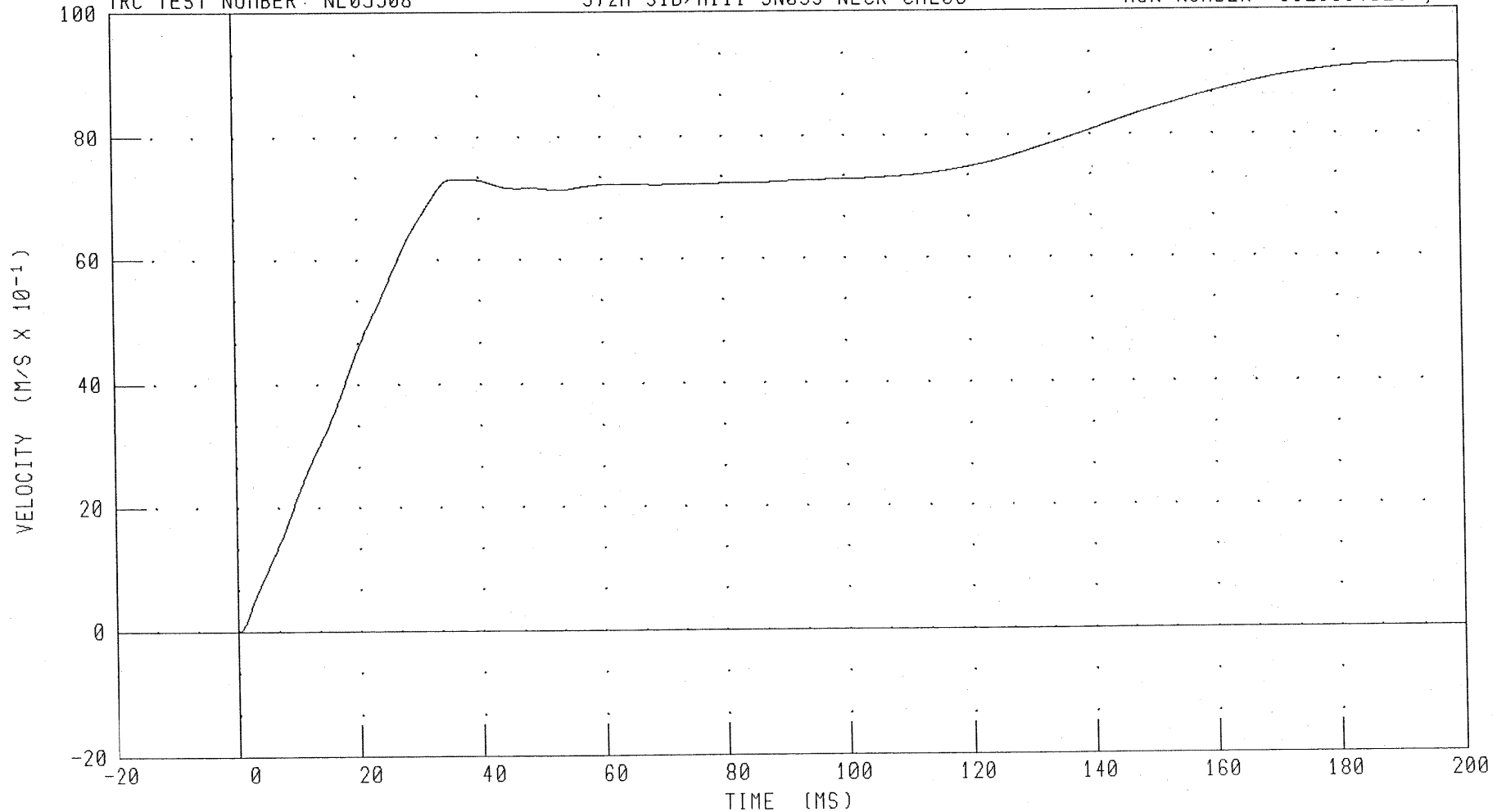
030916

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

TRC TEST NUMBER: NL05508

572M SID/HIII SN055 NECK CAL08

RUN NUMBER: 092903.1215;1



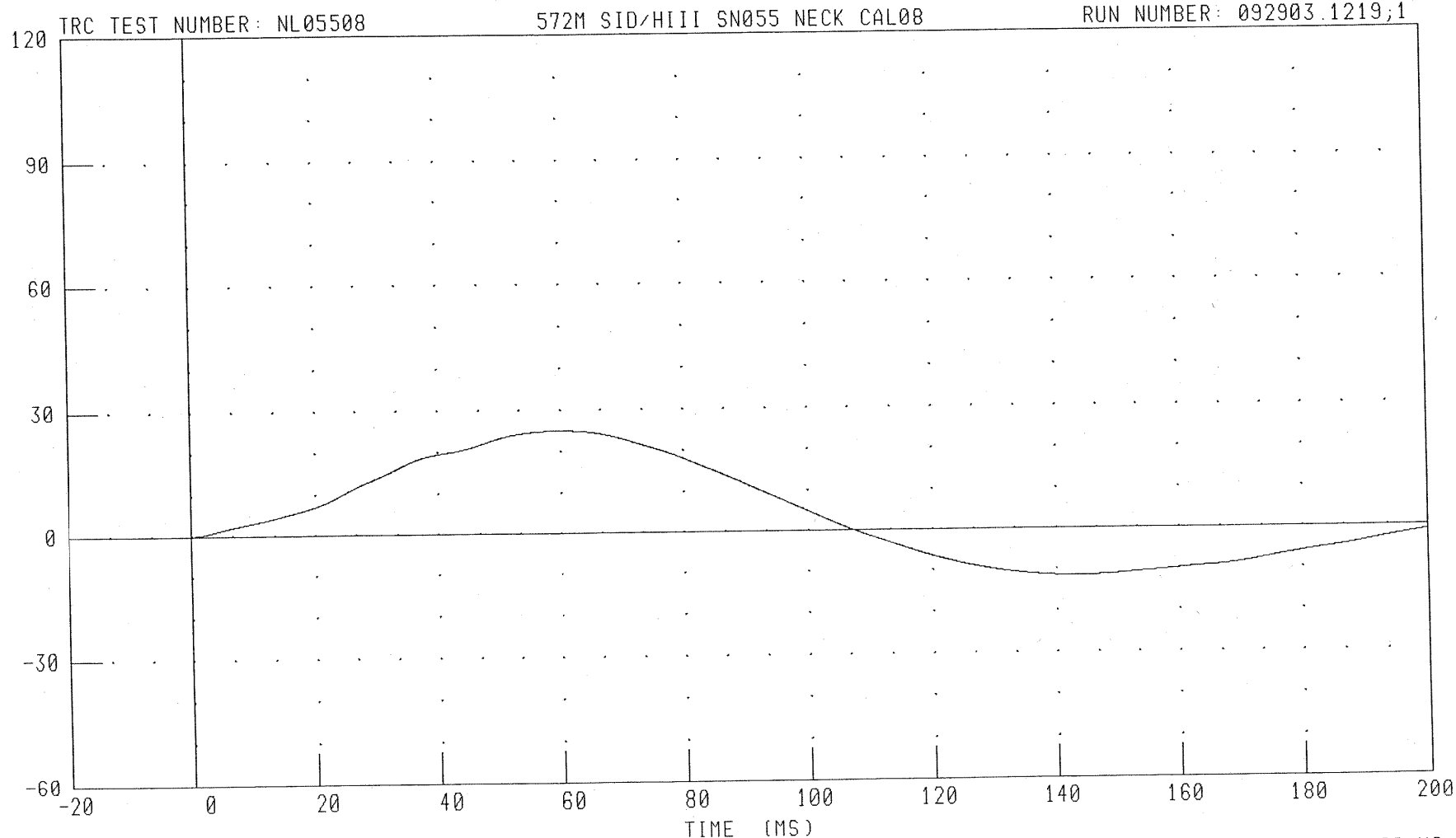
CHANNEL: PENXVI FILTER: CH. CLASS 180

PEAK DATA: 9.14 M/S @ 194.40 MS; -0.01 M/S @ -0.40 MS

C-79

030916

572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST
ROTATION ABOUT BASE OF NECK



CHANNEL: BETA FILTER: CH. CLASS 60 PEAK DATA: 25.03 ° @ 59.84 MS; -11.72 ° @ 143.52 MS

C-80

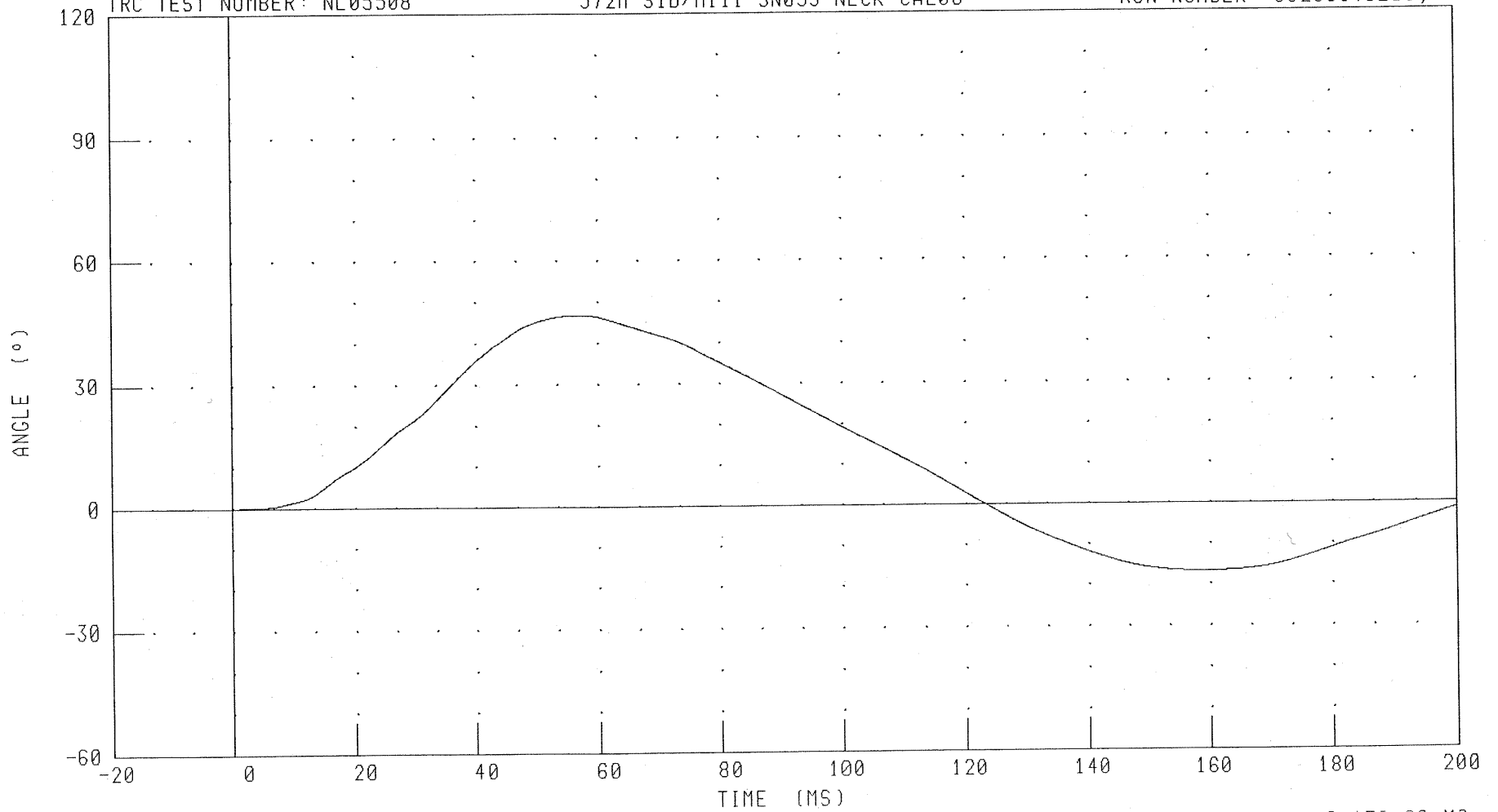
030916

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

TRC TEST NUMBER: NL05508

572M SID/HIII SN055 NECK CAL08

RUN NUMBER: 092903.1215;1



CHANNEL: THETA

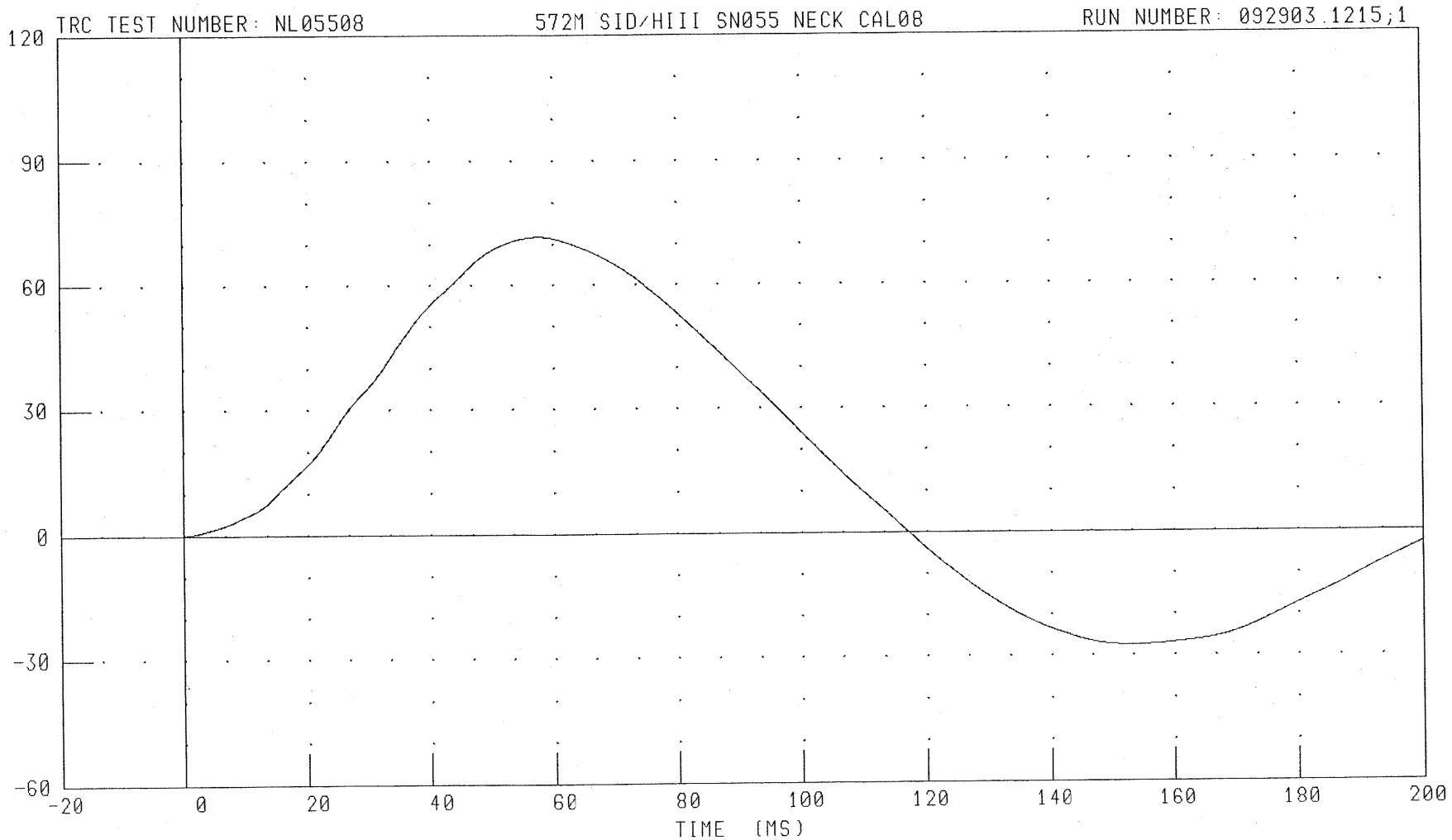
FILTER: CH. CLASS 60

PEAK DATA: 46.78 ° @ 57.04 MS; -16.81 ° @ 158.96 MS

C-81

030916

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



CHANNEL: TOTAN

FILTER: CH. CLASS 60

PEAK DATA: 71.71 ° @ 57.76 MS; -27.49 ° @ 153.20 MS

C-82

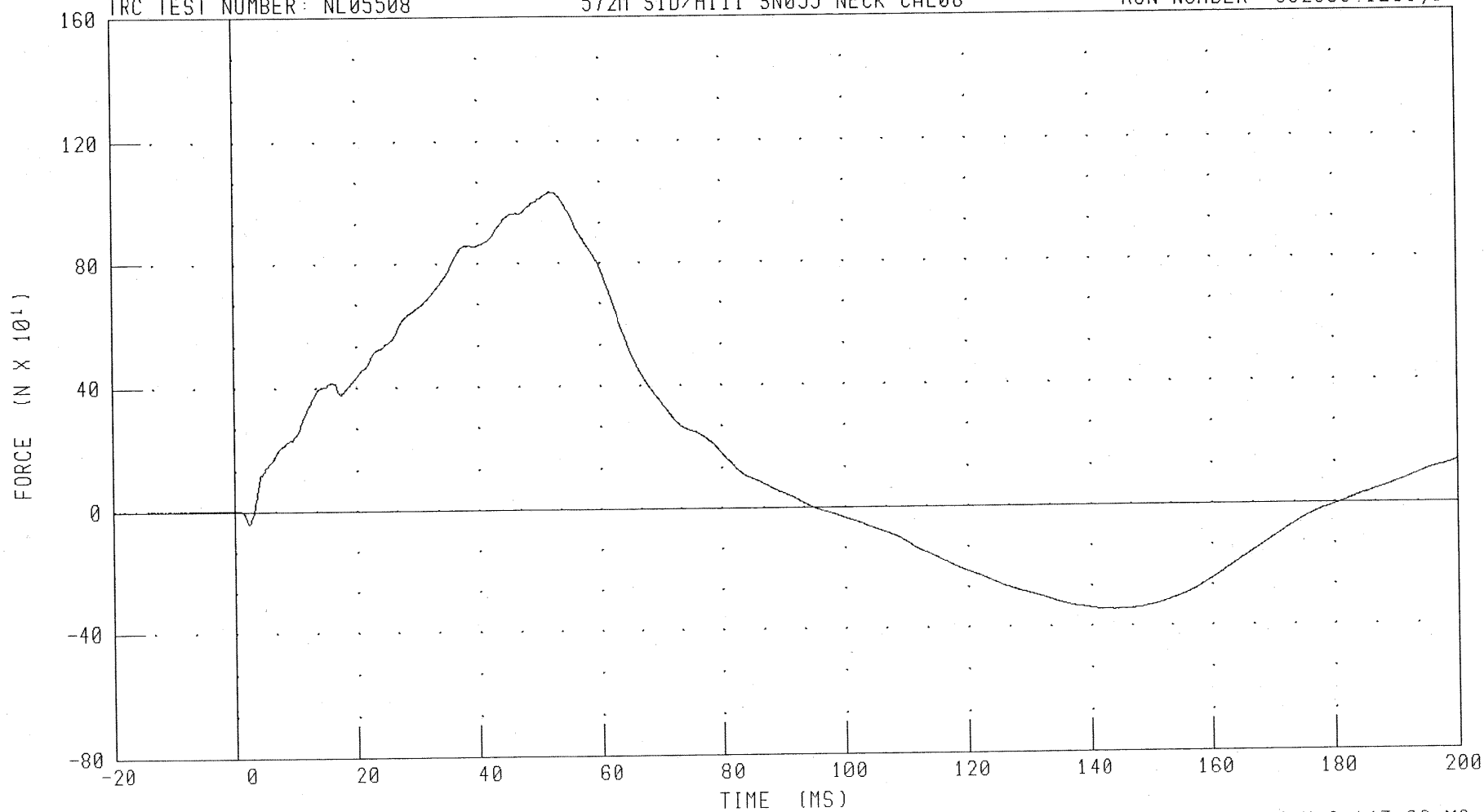
030916

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

TRC TEST NUMBER: NL05508

572M SID/HIII SN055 NECK CAL08

RUN NUMBER: 092903.1215;1



CHANNEL: NEKYF

FILTER: CH. CLASS 1000

PEAK DATA: 1034.29 N @ 51.84 MS; -346.68 N @ 143.92 MS

C-83

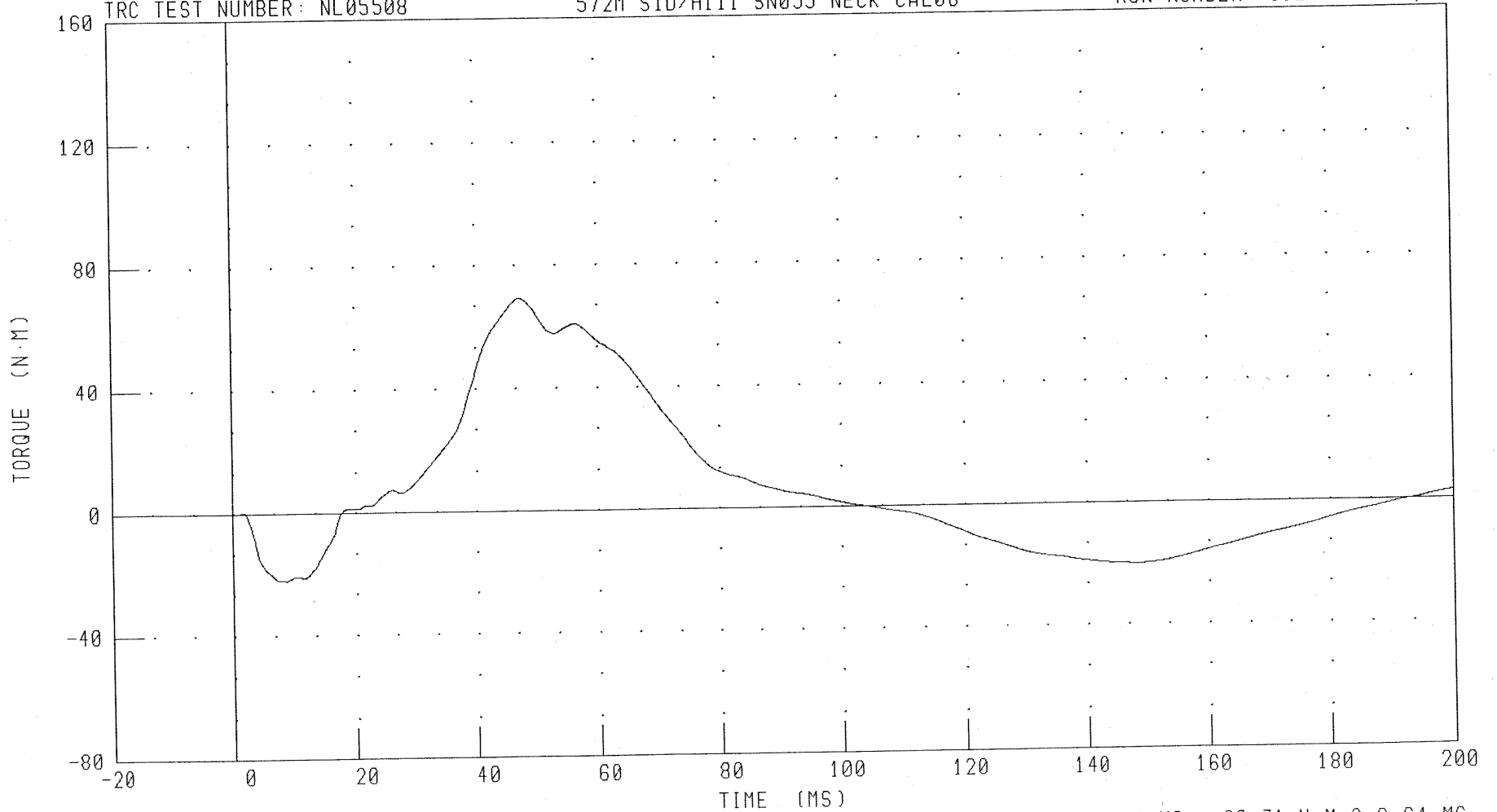
030916

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

TRC TEST NUMBER: NL05508

572M SID/HIII SN055 NECK CAL08

RUN NUMBER: 092903.1215;1



CHANNEL: NEKXM

FILTER: CH. CLASS 600

PEAK DATA: 69.05 N·M @ 47.44 MS; -22.31 N·M @ 8.64 MS

C-84

030916

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

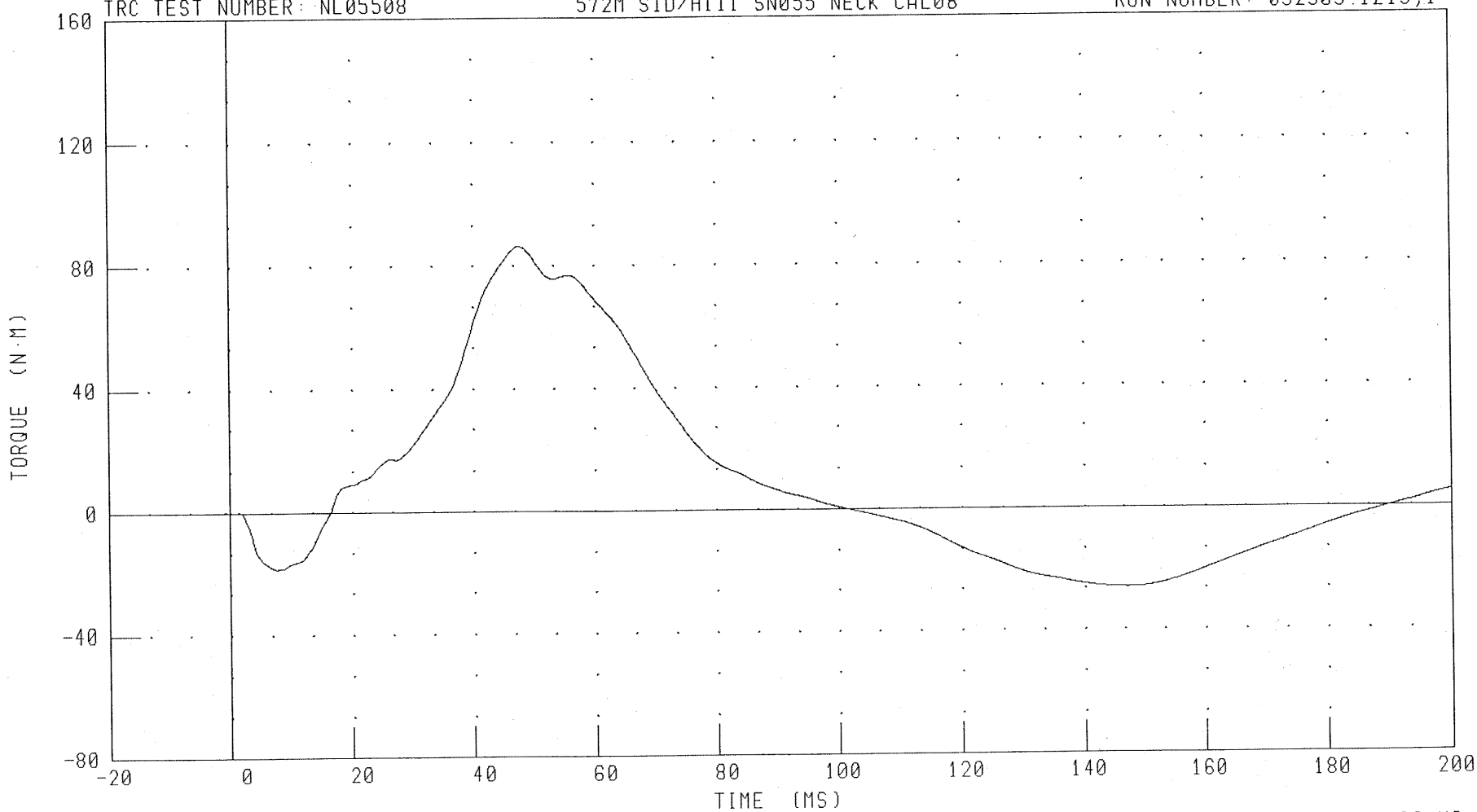
TOTAL MOMENT ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: NL05508

572M SID/HIII SN055 NECK CAL08

RUN NUMBER: 092903.1215,1

C-85



CHANNEL: NEKOM

FILTER: CH. CLASS 600

PEAK DATA: 86.27 N.M @ 47.60 MS; -26.38 N.M @ 147.28 MS

030916

TRANSPORTATION RESEARCH CENTER INC.

PART 572B LUMBAR FLEXION TEST

SID HIII

CAL DATE: 23-Sep-03

TRC, INC. TEST NO: LF05508C SID/HIII SN 055 TORSO FLEX CAL 08

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6° C	21.2 °C
RELATIVE HUMIDITY	10 – 70 %	51 %
FORCE AT 0 DEG. FLEXION	-27 – 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 – 151 N	129.0 N
FORCE AT 30 DEG OF FLEXION	151 – 205 N	169.0 N
FORCE AT 40 DEG OF FLEXION	205 – 258 N	206.8 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	3 °

TEST MEETS SPECIFICATIONS

TECHNICIAN V. Z. Watter

Transportation Research Center Inc.

572B Abdomen Compression Test

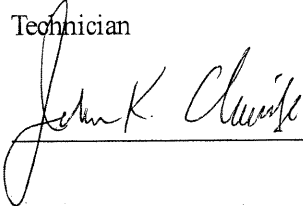
SID HIII Serial No. 055 Calibration No. 08 - 4

Test Date 02/28/2003

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Displacement Rate	6.35 - 8.89 mm/s	6.8 - 7.9 mm/s	Yes
Data Within Required Corridor	Yes	Yes	Yes

Comments:

Technician



Approved



09.23.2003 15:52:58 45

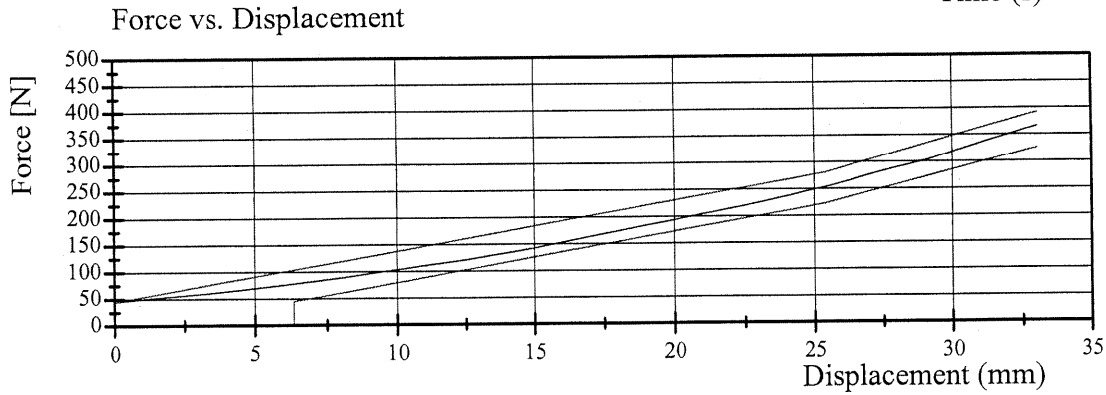
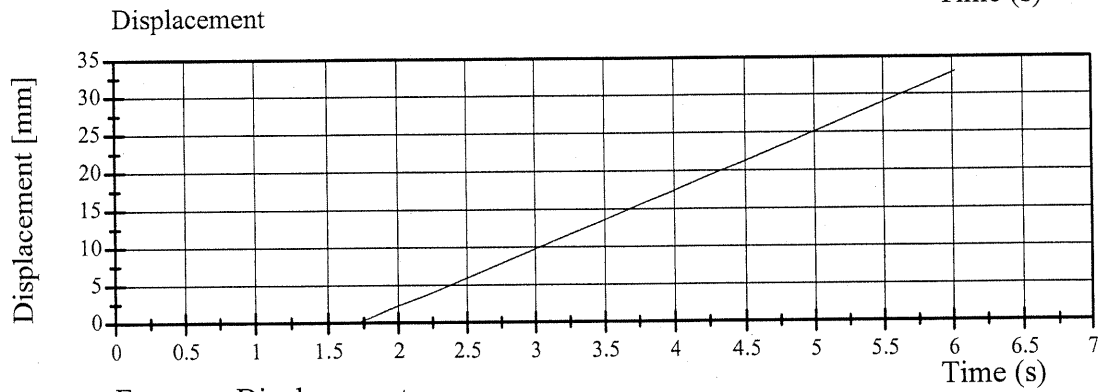
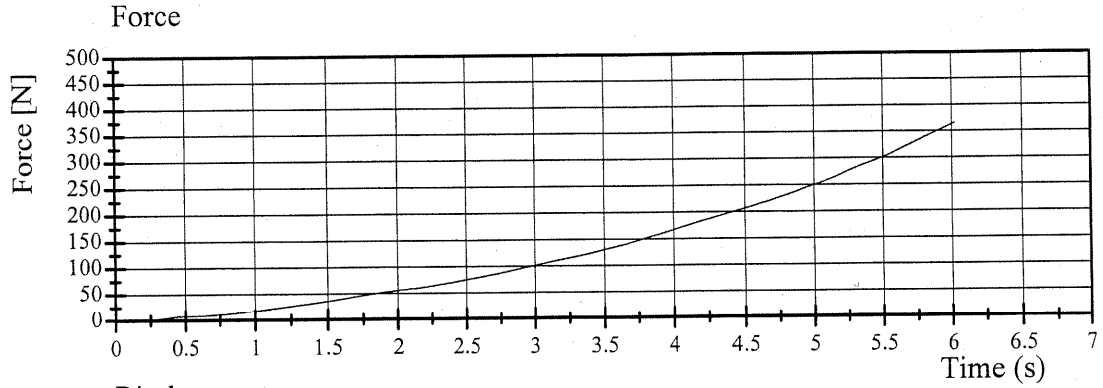


Transportation Research Center Inc.

572B Abdomen Compression Test

SID HIII Serial No. 055 Calibration No. 08 - 4

Test Date 02/28/2003



09.23.2003 15:52:59 45



TRANSPORTATION RESEARCH CENTER INC.

LATERAL THORAX IMPACT TEST

SIDE IMPACT DUMMY

23-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO: STL05508

SID/H3 SN055 L.THORAX CAL08

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	41.0 %
PENDULUM VELOCITY	4.27 - 4.33 M/S	4.29 M/S
PEAK ACCELERATION: UPPER RIB BAR	37 - 46 G	40.9 G
PEAK ACCELERATION: LOWER RIB BAR	37 - 46 G	39.8 G
PEAK ACCELERATION: LOWER THORACIC SPINE	15 - 22 G	19.3 G

TEST MEETS SPECIFICATIONS

TECHNICIAN

V.F. Water

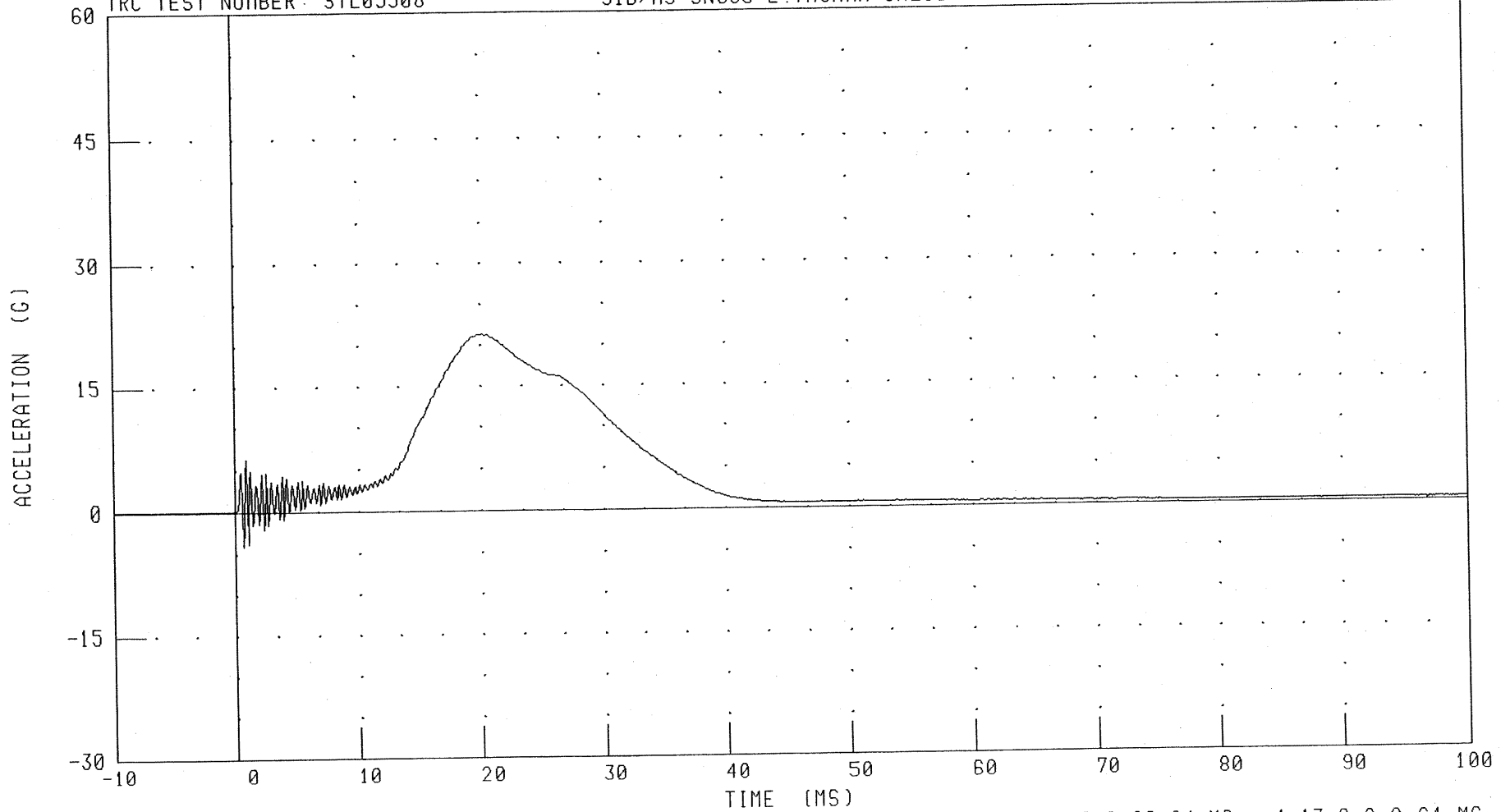
RUN NUMBER: 092703.1924;1

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

TRC TEST NUMBER: STL05508

SID/H3 SN055 L.THORAX CAL08

RUN NUMBER: 092703.1924;1



C-90

030916

CHANNEL: PENXC

FILTER: CH. CLASS 1000

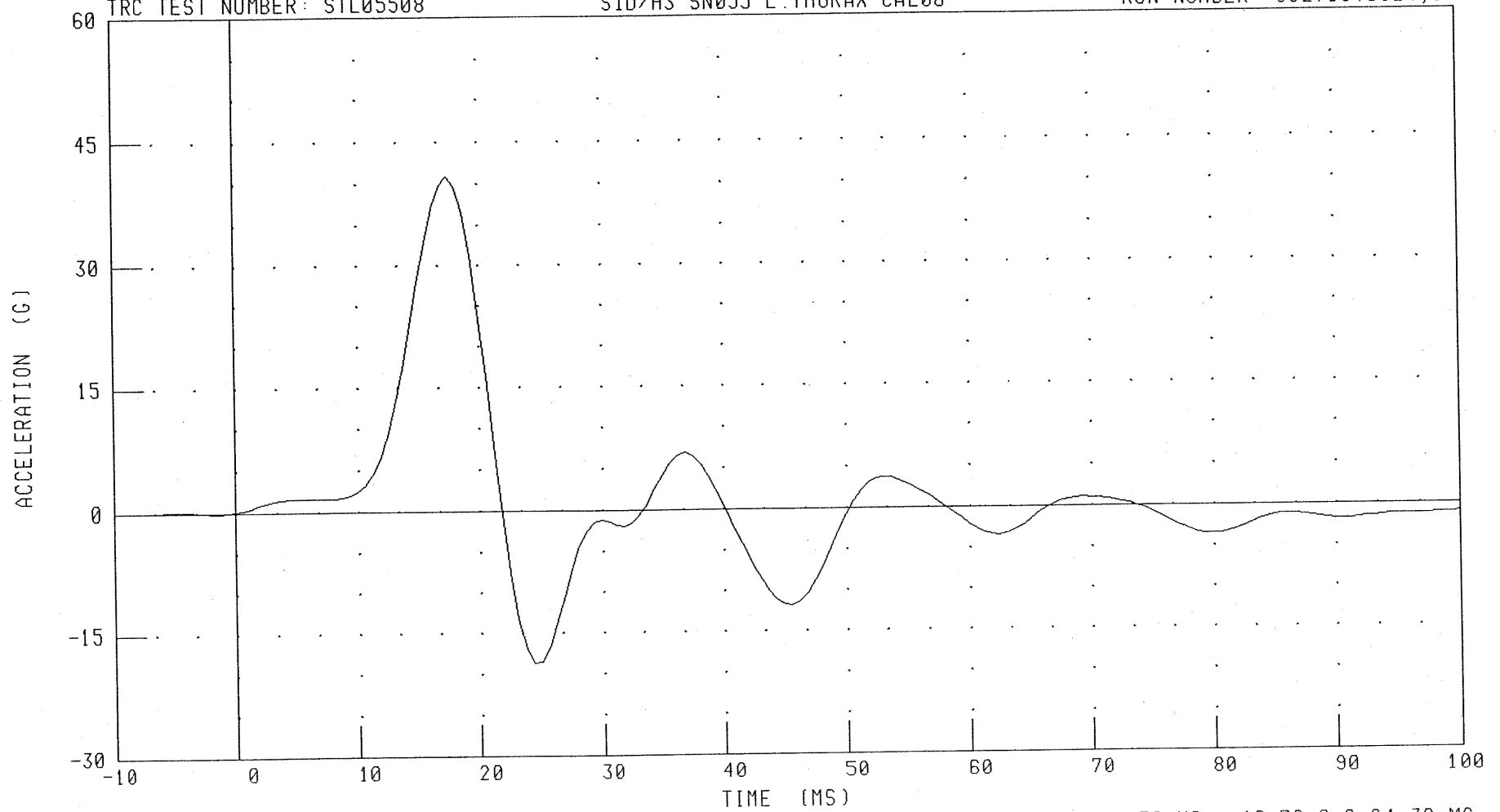
PEAK DATA: 21.40 G @ 20.24 MS; -4.13 G @ 0.64 MS

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

TRC TEST NUMBER: STL05508

SID/H3 SN055 L.THORAX CAL08

RUN NUMBER: 092703.1924;1



CHANNEL: LURYG

FILTER: FIR 100

PEAK DATA: 40.85 G @ 17.50 MS; -18.76 G @ 24.38 MS

C-91

030916

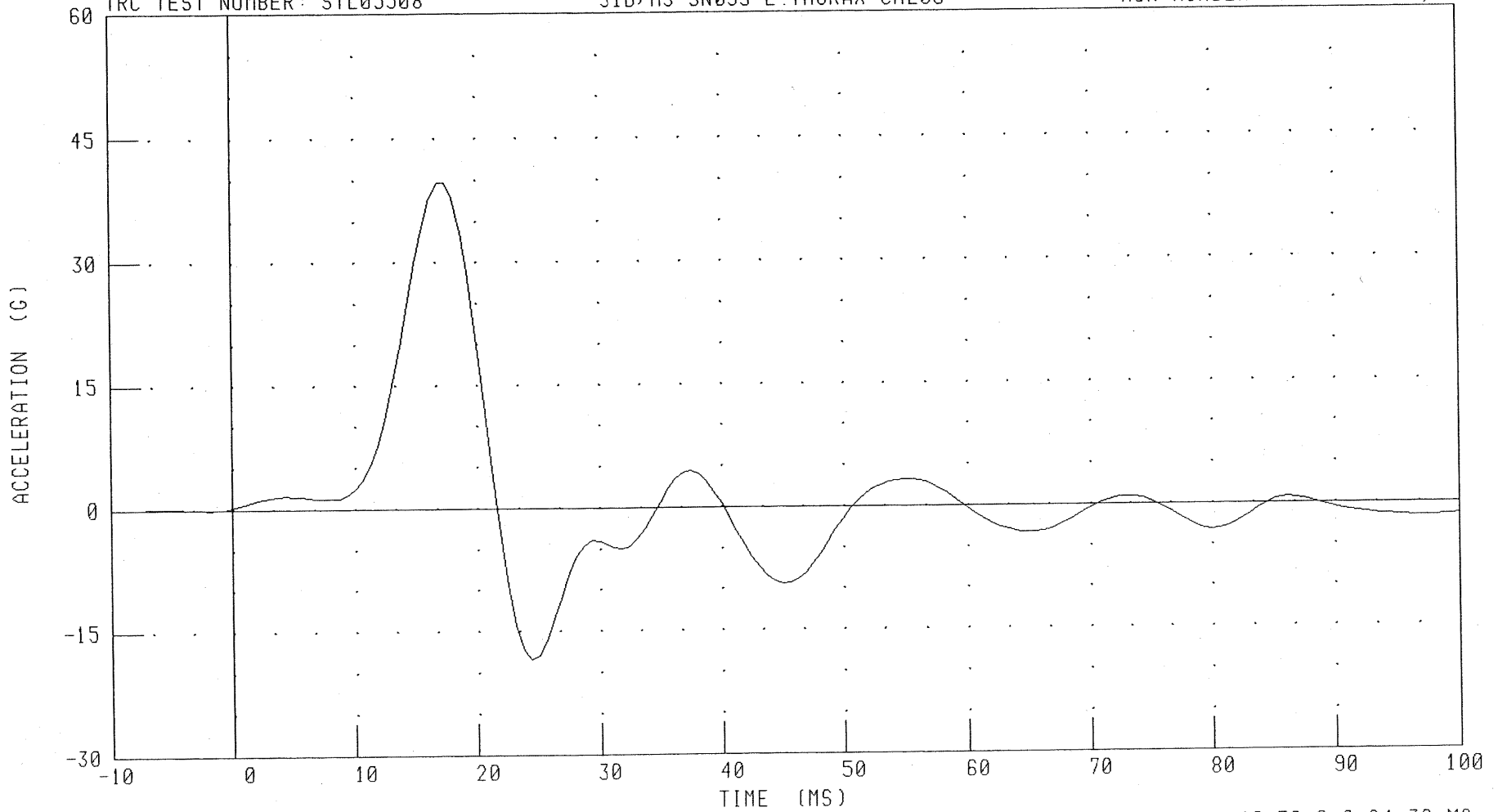
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LEFT LOWER RIB ACCELERATION Y AXIS

SID/H3 SN055 L.THORAX CAL08

RUN NUMBER: 092703.1924;1

TRC TEST NUMBER: STL05508



CHANNEL: LLRYG

FILTER: FIR 100

PEAK DATA: 39.75 G @ 17.50 MS; -18.52 G @ 24.38 MS

C-92

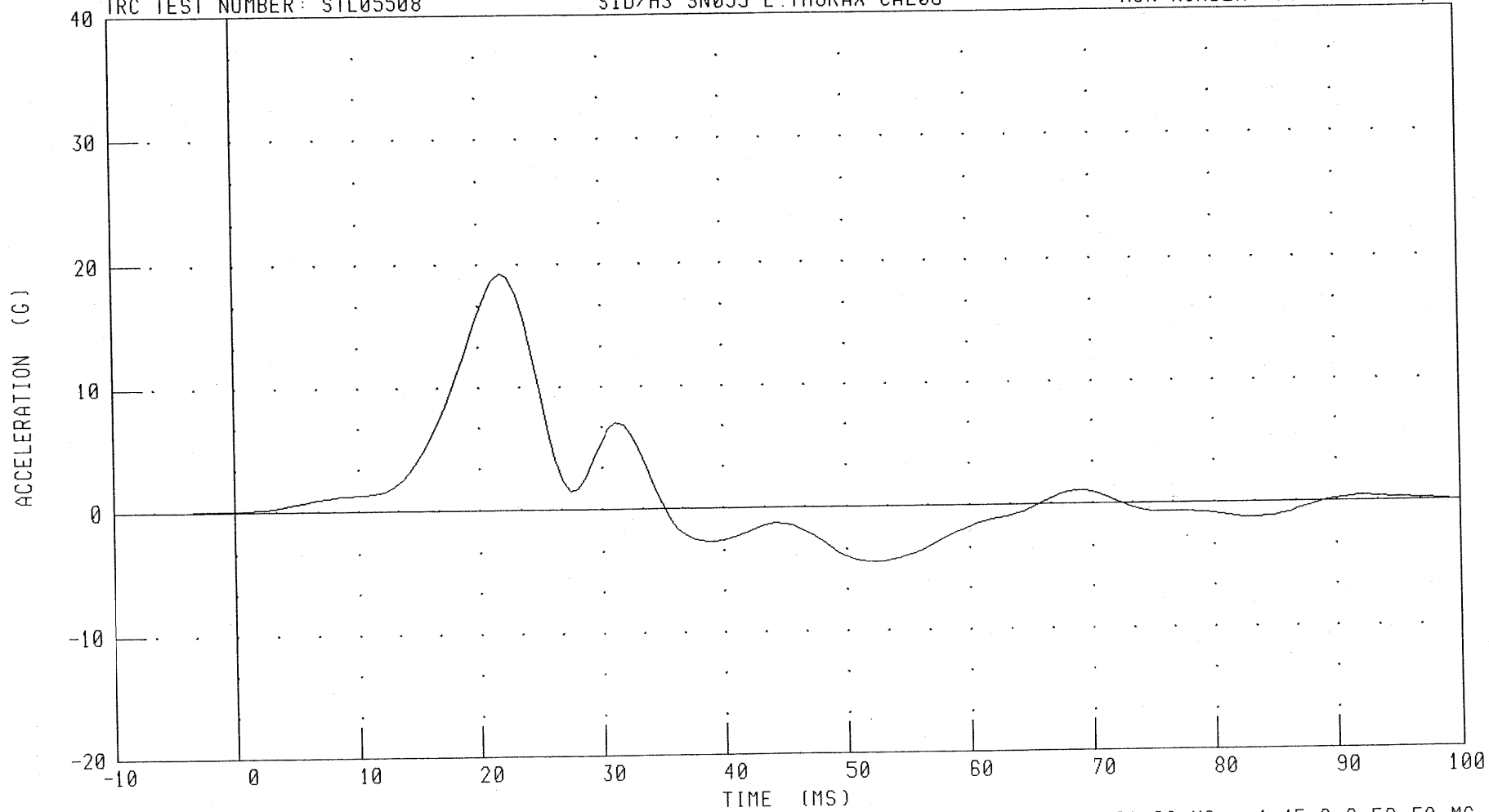
030916

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

TRC TEST NUMBER: STL05508

SID/H3 SN055 L.THORAX CAL08

RUN NUMBER: 092703.1924;1



CHANNEL: T12YG

FILTER: FIR 100

PEAK DATA: 19.25 G @ 21.88 MS; -4.45 G @ 52.50 MS

C-93

030916

TRANSPORTATION RESEARCH CENTER INC.

LATERAL PELVIS IMPACT TEST

SIDE IMPACT DUMMY

23-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO: SPL05508

SID/H3 SN055 LEFT PELVIS CAL08

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.1 DEG. C
RELATIVE HUMIDITY	10 - 70 %	40.0 %
PENDULUM VELOCITY	4.27 - 4.33 M/S	4.27 M/S
PEAK PELVIC ACCELERATION	40 - 60 G	44.2 G
TIME ABOVE 20 G LEVEL	3 - 7 MS	6.0 MS
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN

V. J. Waters

RUN NUMBER: 092703.1916;1

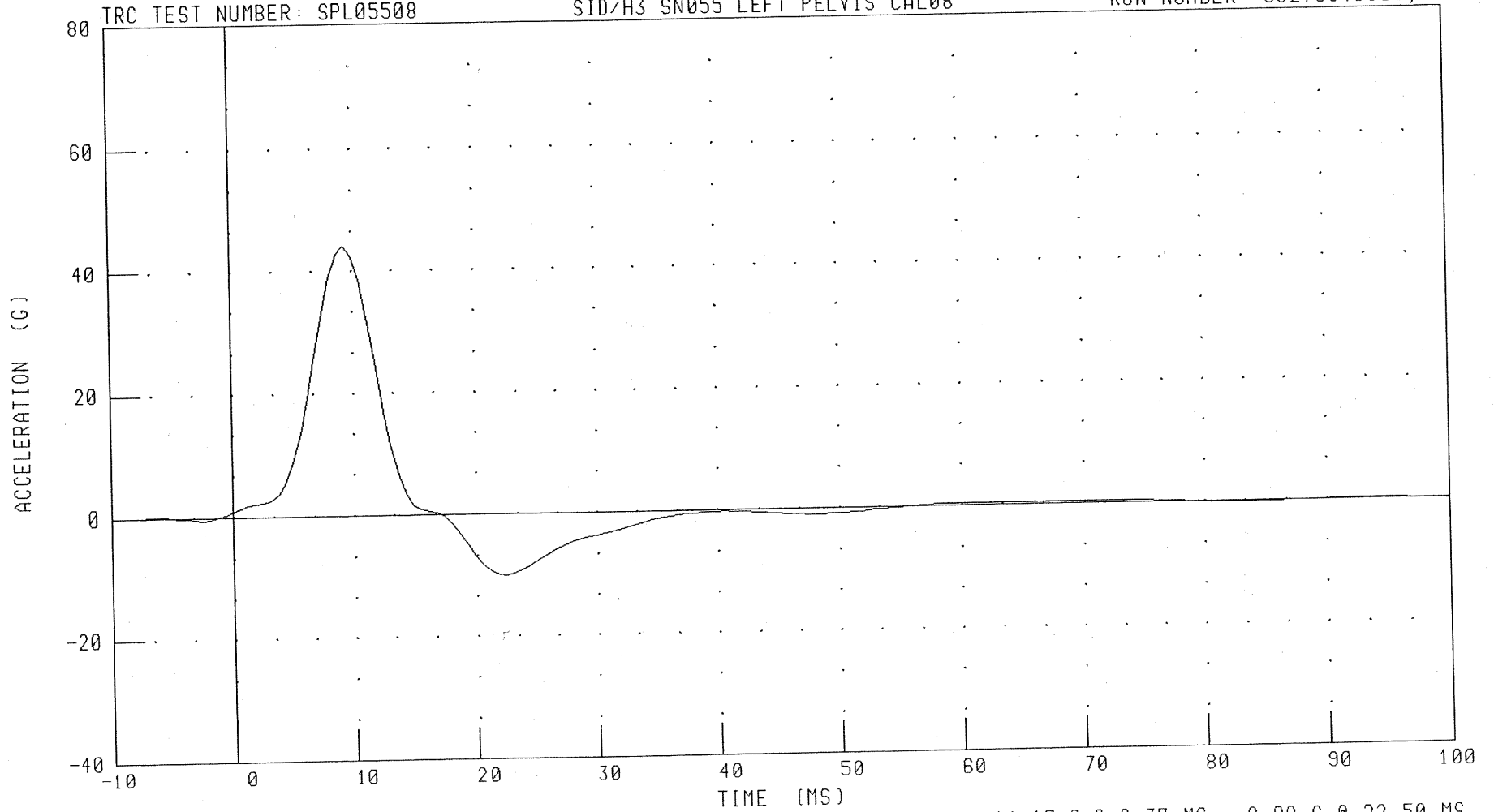
PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PELVIS ACCELERATION Y AXIS

RUN NUMBER: 092703.1916;1

TRC TEST NUMBER: SPL05508

SID/H3 SN055 LEFT PELVIS CAL08



CHANNEL: PEVYG

FILTER: FIR 100

PEAK DATA: 44.17 G @ 9.37 MS; -9.98 G @ 22.50 MS

C-95

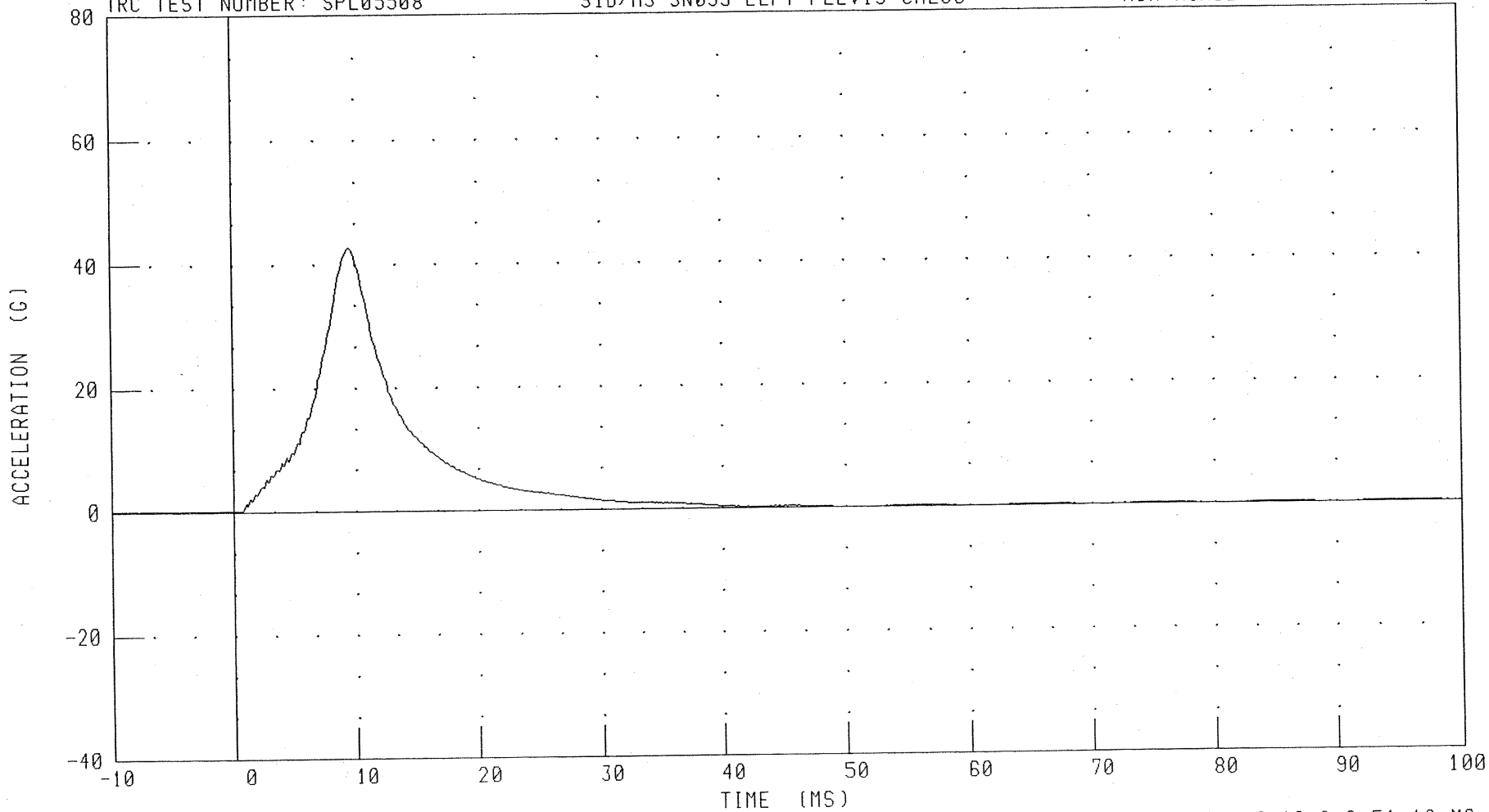
030916

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

TRC TEST NUMBER: SPL05508

SID/H3 SN055 LEFT PELVIS CAL08

RUN NUMBER: 092703.1916;1



CHANNEL: PENXC

FILTER: CH. CLASS 1000

PEAK DATA: 42.76 G @ 9.52 MS; -0.10 G @ 51.12 MS

C-96

030916

Calibration Test Results

Post-Test

SID HIII: 059

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.
Thoracic Shock Absorber Test:	The thoracic shock absorber was not tested at this time.
Lateral Thorax Impact Test:	The thorax failed the peak acceleration upper rib bar and peak acceleration lower thoracic spine tests post-test.
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.

SID/HIII Dummy

External Dimensions

Serial No. 059 Calibration No. 02

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	909 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	519 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Rib From Backline	RD	228.6 - 241.3 mm	229 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	492 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	365 mm	Yes
Top Rib Width From C/L	RW-1	165.1 - 180.3 mm	178 mm	Yes
Bottom Rib Width From C/L	RW-2	165.1 - 180.3 mm	179 mm	Yes
Difference Between Top & Bottom Rib Width from C/L		<= 2.5 mm	1.0 mm	Yes

Technician

John K. Cloude

Approved

V. J. Walter



TRANSPORTATION RESEARCH CENTER INC.

LATERAL HEAD DROP TEST

HYBRIDIII SID DUMMY

23-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO. HLO5902

572M SID/HIII SN059 HEAD CAL02

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 - 25.6 deg. C	21.39 deg. C
RELATIVE HUMIDITY	10 - 70 %	49.00 %
PEAK RESULTANT ACCELERATION	120 - 150 G	149.44 G
PEAK LONGITUDINAL ACCELERATION	15 G MAX	6.32 G
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN

V. F. Watters

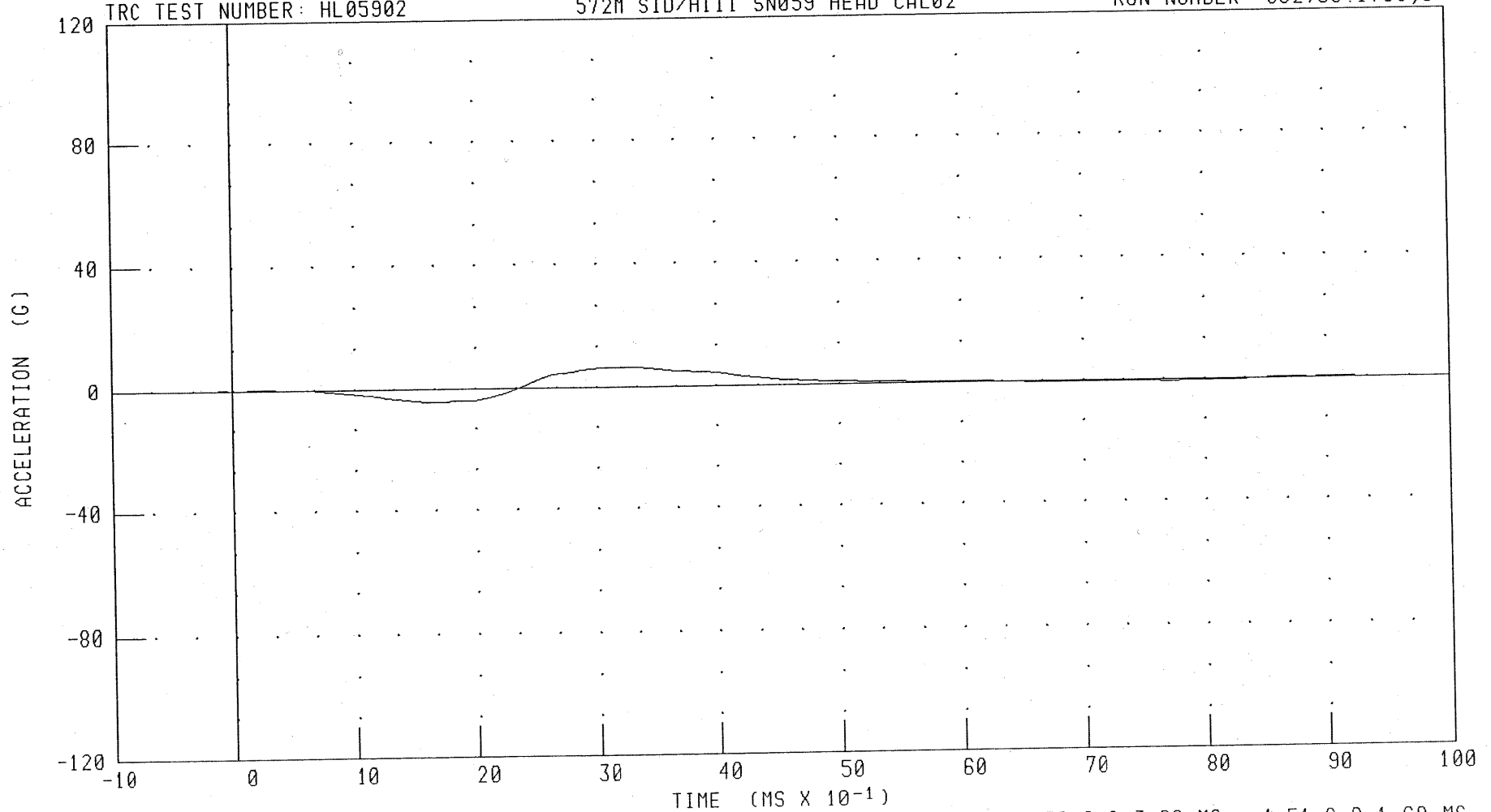
RUN NUMBER: 092703.1655;2

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

TRC TEST NUMBER: HL05902

572M SID/HIII SN059 HEAD CAL02

RUN NUMBER: 092703.1700,3



CHANNEL: HEDXC

FILTER: CH. CLASS 1000

PEAK DATA: 6.32 G @ 3.28 MS; -4.51 G @ 1.68 MS

C-100

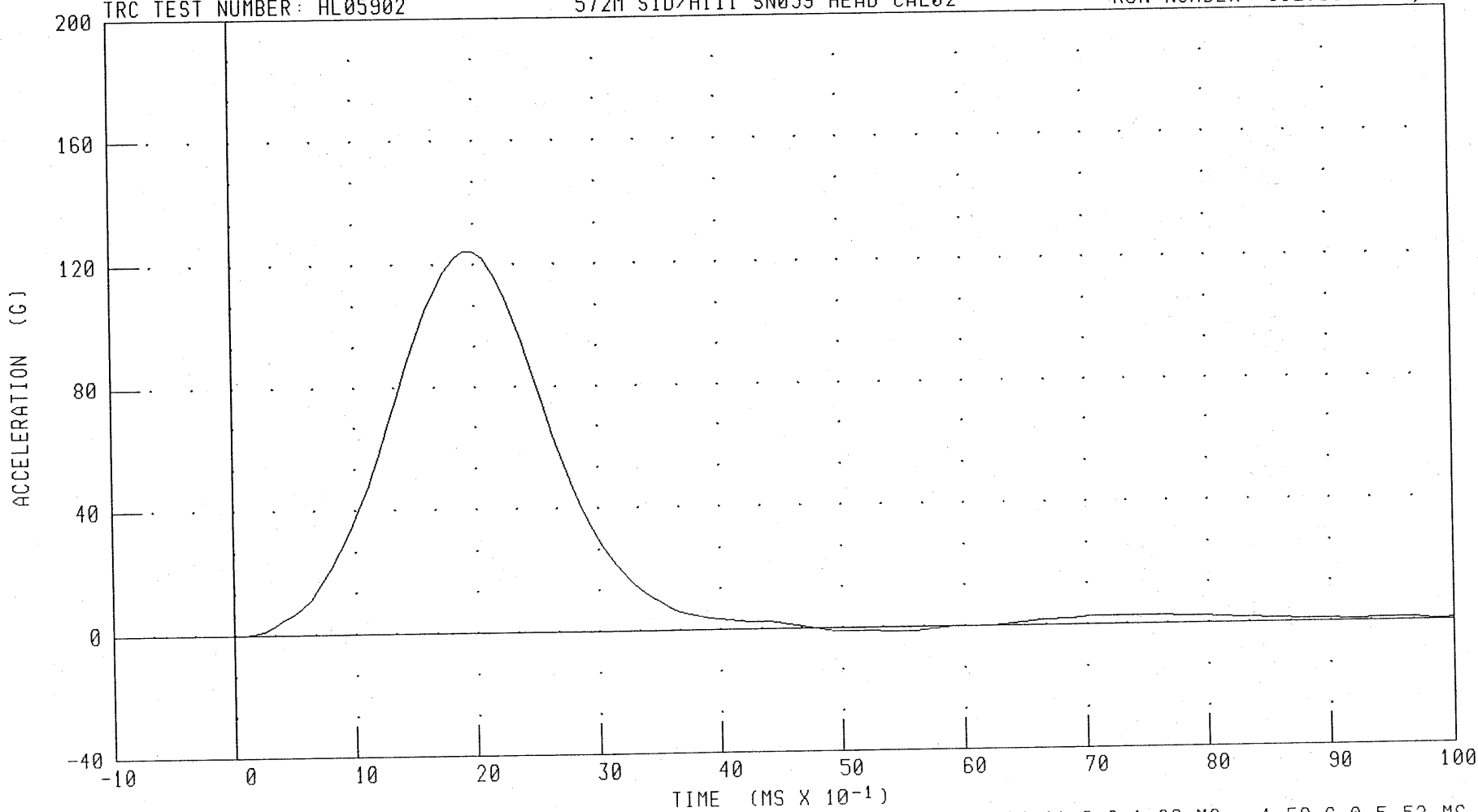
030916

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

TRC TEST NUMBER: HL05902

572M SID/HIII SN059 HEAD CAL02

RUN NUMBER: 092703.1700;3



C-101

030916

CHANNEL: HEDYG

FILTER: CH. CLASS 1000

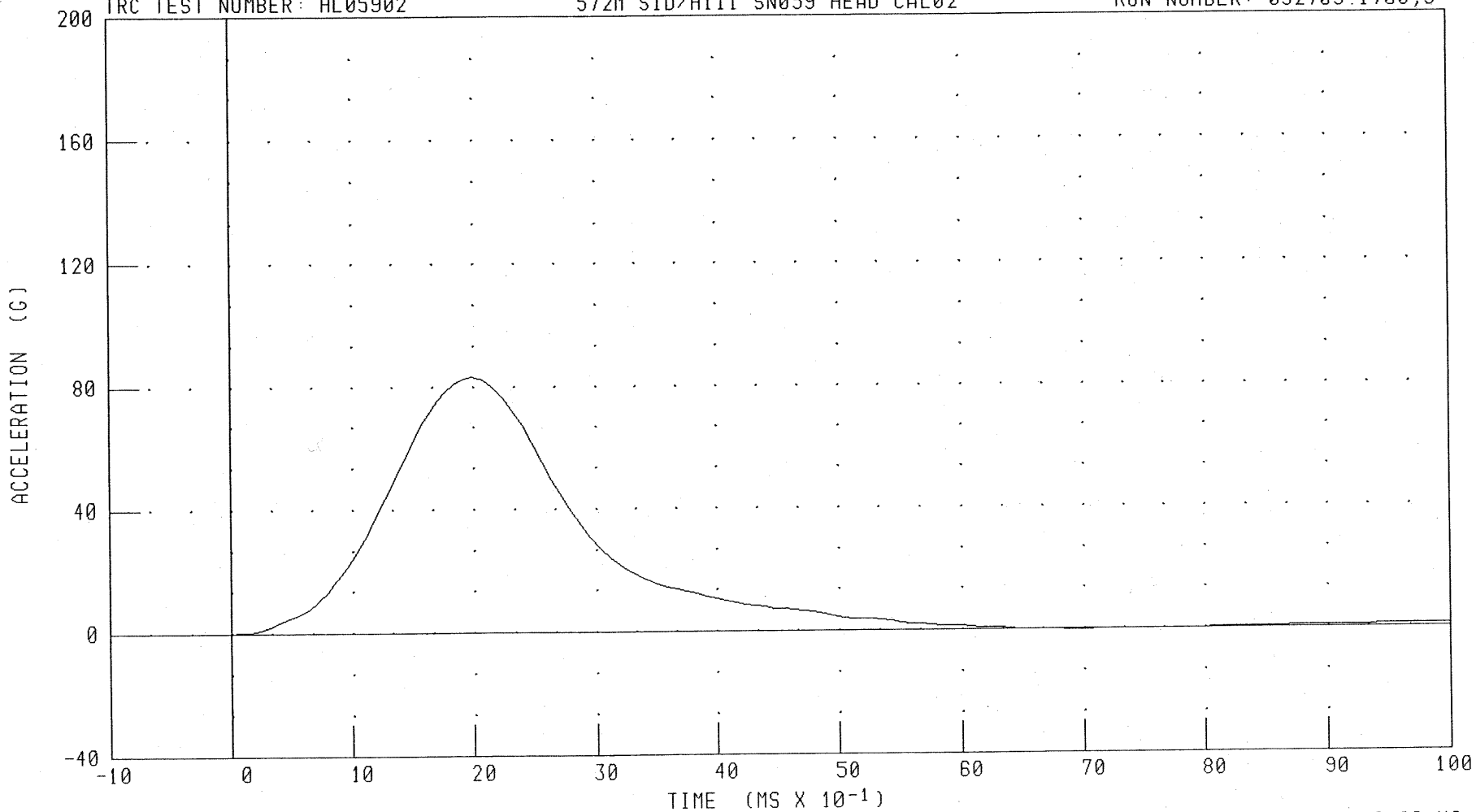
PEAK DATA: 124.11 G @ 1.92 MS; -1.59 G @ 5.52 MS

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

TRC TEST NUMBER: HL05902

572M SID/HIII SN059 HEAD CAL02

RUN NUMBER: 092703.1700;3



CHANNEL: HEDZG

FILTER: CH. CLASS 1000

PEAK DATA: 83.14 G @ 2.00 MS; -0.38 G @ 6.96 MS

C-102

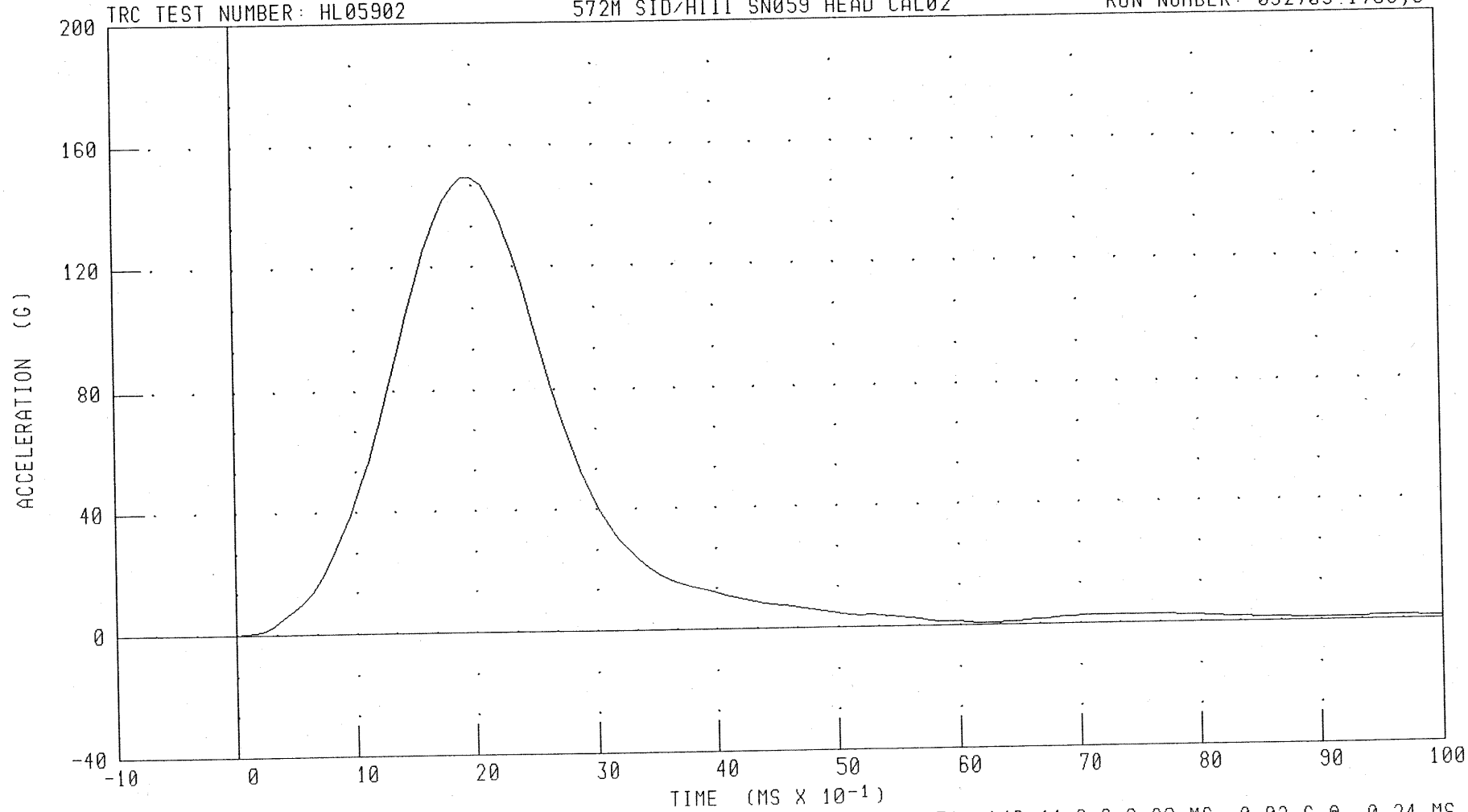
030916

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

TRC TEST NUMBER: HL05902

572M SID/HIII SN059 HEAD CAL02

RUN NUMBER: 092703.1700,3



CHANNEL: HEDRG FILTER: CH. CLASS 1000

PEAK DATA: 149.44 G @ 2.00 MS; 0.02 G @ -0.24 MS

C-103

030916

TRANSPORTATION RESEARCH CENTER INC.

LATERAL NECK TEST

HYBRIDIII SID DUMMY

22-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO. NL05902

572M SID/H3 SN059 NECK CAL02

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6 - 22.2 deg. C	21.39 deg. C
RELATIVE HUMIDITY	10 - 70 %	51.00 %
IMPACT VELOCITY	6.89 - 7.13 M/S	7.06 M/S
INTEGRATED VELOCITY	10 MS 1.96 - 2.55 M/S	2.04 M/S
	20 MS 4.12 - 5.10 M/S	4.34 M/S
	30 MS 5.73 - 7.01 M/S	6.40 M/S
	40 - 70 MS 6.27 - 7.64 M/S	7.15- 7.32 M/S
MAXIMUM MIDSAGGITAL PLANE ROTATION	66 - 82 deg.	72.31 deg.
ROTATION ANGLE DECAY TIME FROM PEAK TO ZERO	58 - 67 MS	61.04 MS
MAXIMUM MOMENT ABOUT OCCIPITAL CONDYLE	73.0 - 88.0 NM	78.70 NM
POSITIVE MOMENT DECAY TIME FROM PEAK TO ZERO	49 - 64 MS	61.04 MS
TIME OF MAXIMUM ROTATION AFTER MAXIMUM MOMENT	2 - 16 MS	11.92 MS

TEST MEETS SPECIFICATIONS

TECHNICIAN

V. J. Watts

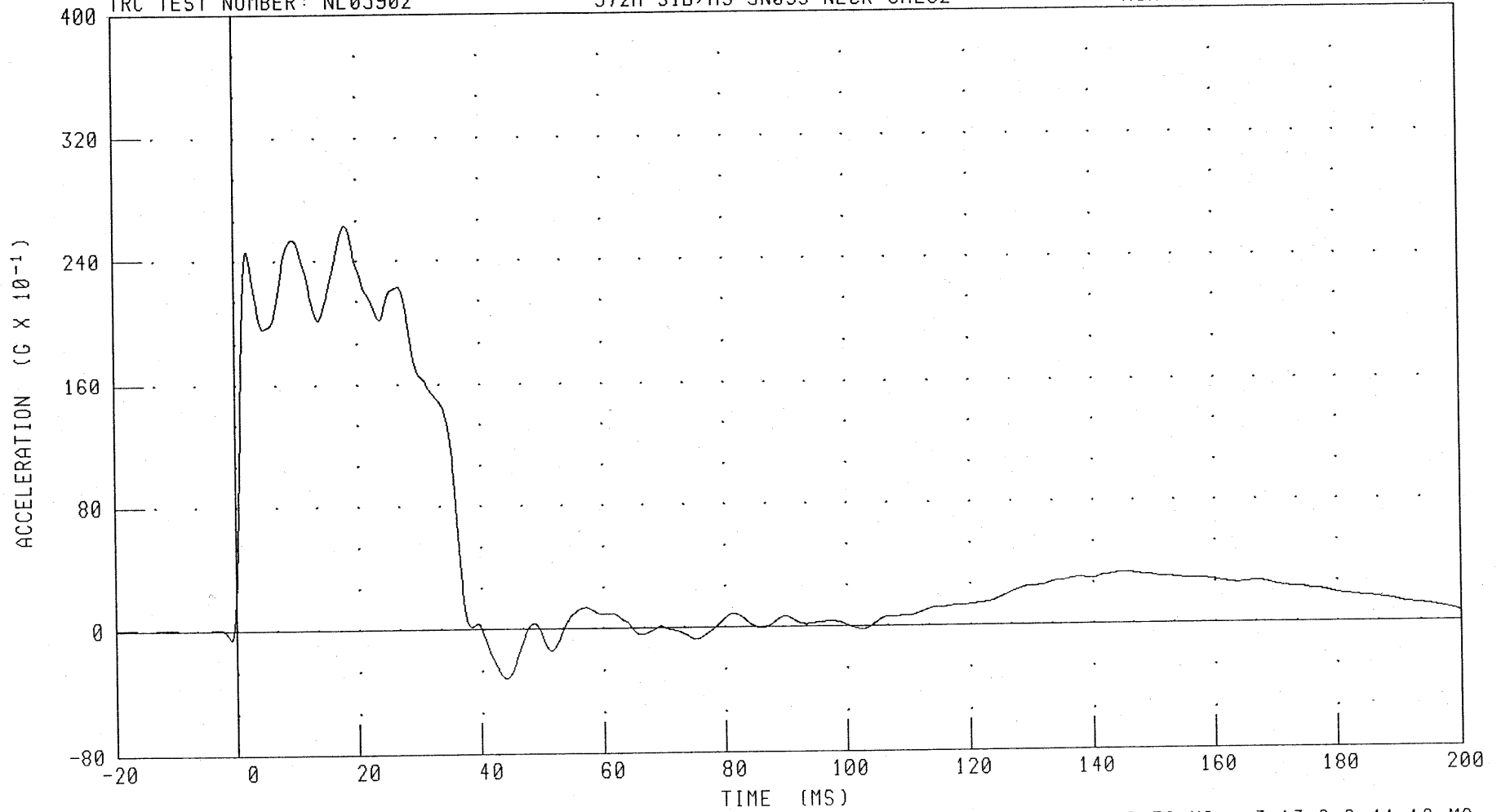
RUN NUMBER: 092703.1751;3

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

TRC TEST NUMBER: NL05902

572M SID/H3 SN059 NECK CAL02

RUN NUMBER: 092703.1757;3



C-105

030916

CHANNEL: PENXG

FILTER: CH. CLASS 180

PEAK DATA: 26.31 G @ 18.32 MS; -3.13 G @ 44.16 MS

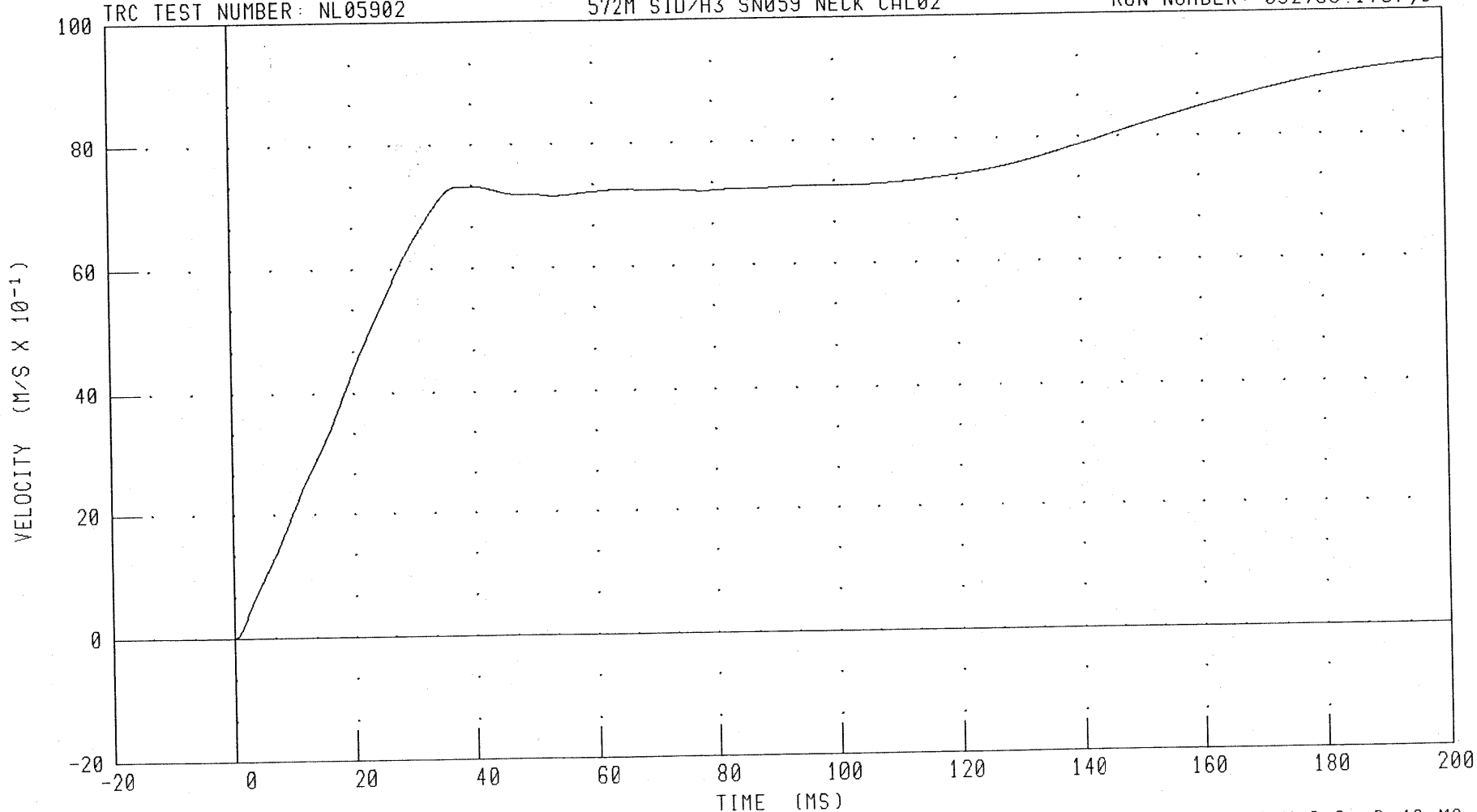
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

INTEGRATED PENDULUM VELOCITY

572M SID/H3 SN059 NECK CAL02

RUN NUMBER: 092703.1757;3

TRC TEST NUMBER: NL05902



CHANNEL: PENXVI

FILTER: CH. CLASS 180

PEAK DATA: 9.21 M/S @ 200.00 MS; -0.01 M/S @ -0.40 MS

C-106

030916

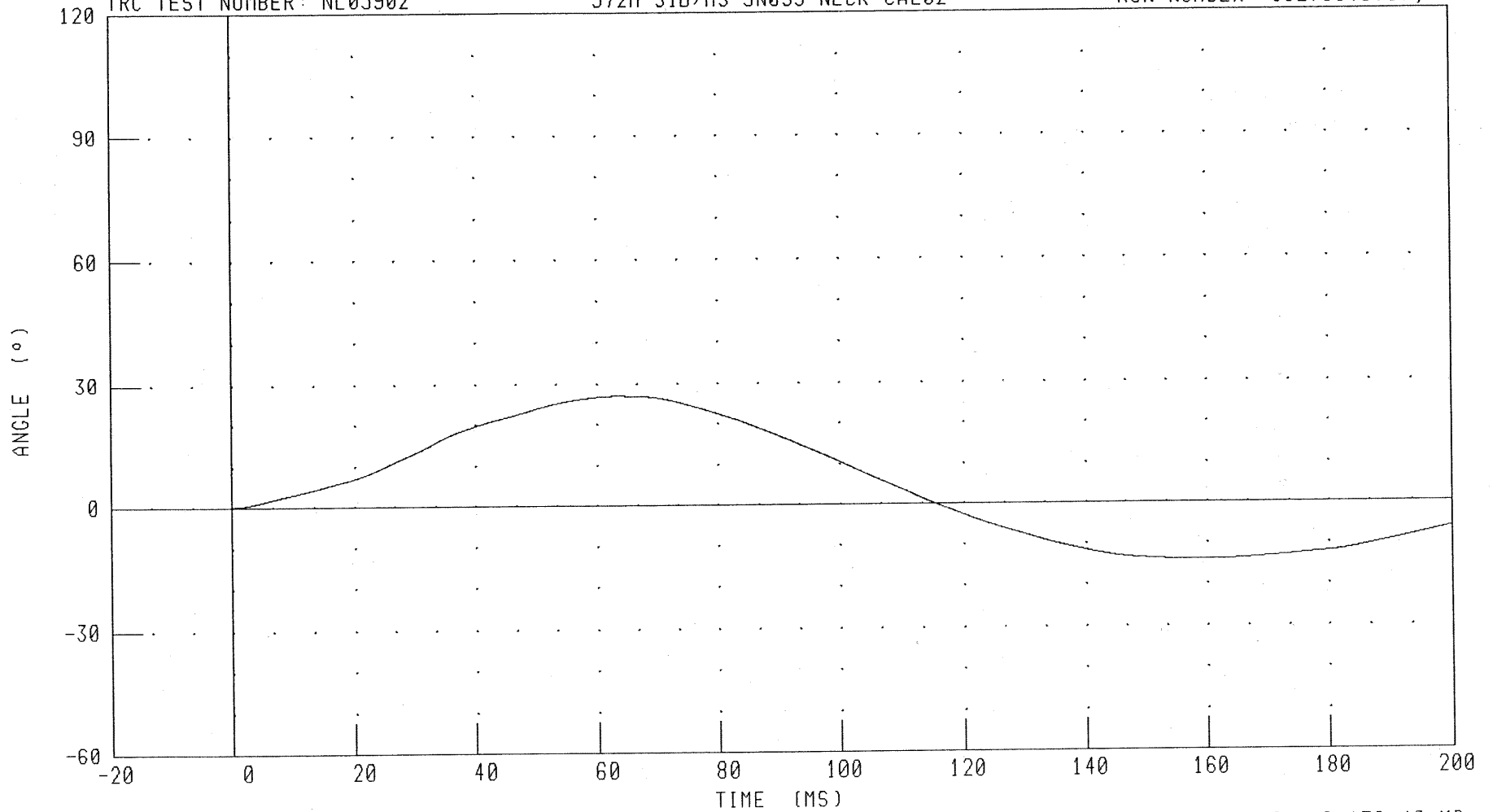
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

ROTATION ABOUT BASE OF NECK

TRC TEST NUMBER: NL05902

572M SID/H3 SN059 NECK CAL02

RUN NUMBER: 092703.1757;3



CHANNEL: BETA

FILTER: CH. CLASS 60

PEAK DATA: 26.99 ° @ 63.44 MS; -14.16 ° @ 158.40 MS

C-107

030916

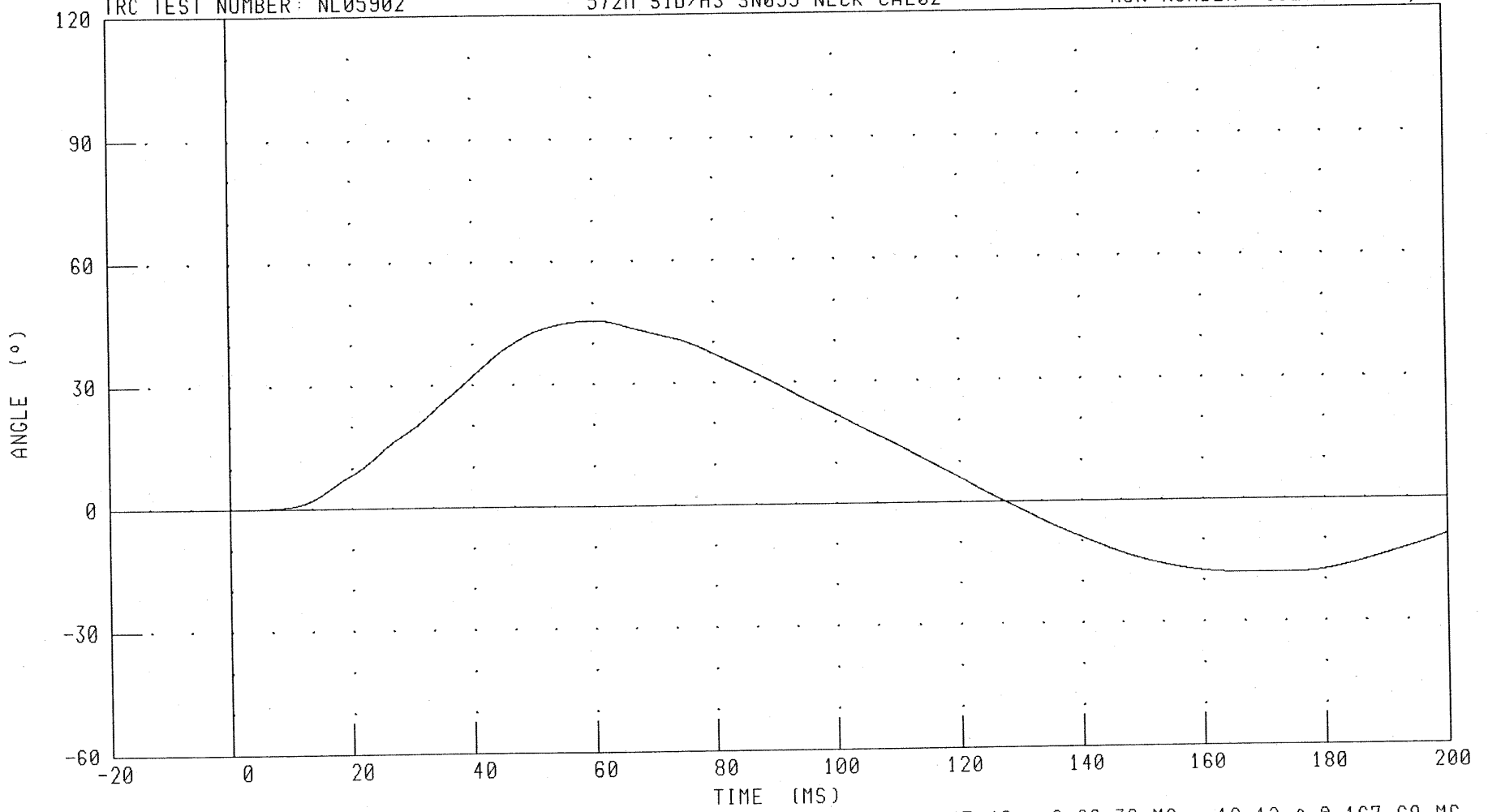
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST
ROTATION ABOUT OCCIPITAL CONDYLE

TRC TEST NUMBER: NL05902

572M SID/H3 SN059 NECK CAL02

RUN NUMBER: 092703.1757;3

C-108



CHANNEL: THETA

FILTER: CH. CLASS 60

PEAK DATA: 45.46 ° @ 60.32 MS; -18.12 ° @ 167.68 MS

030916

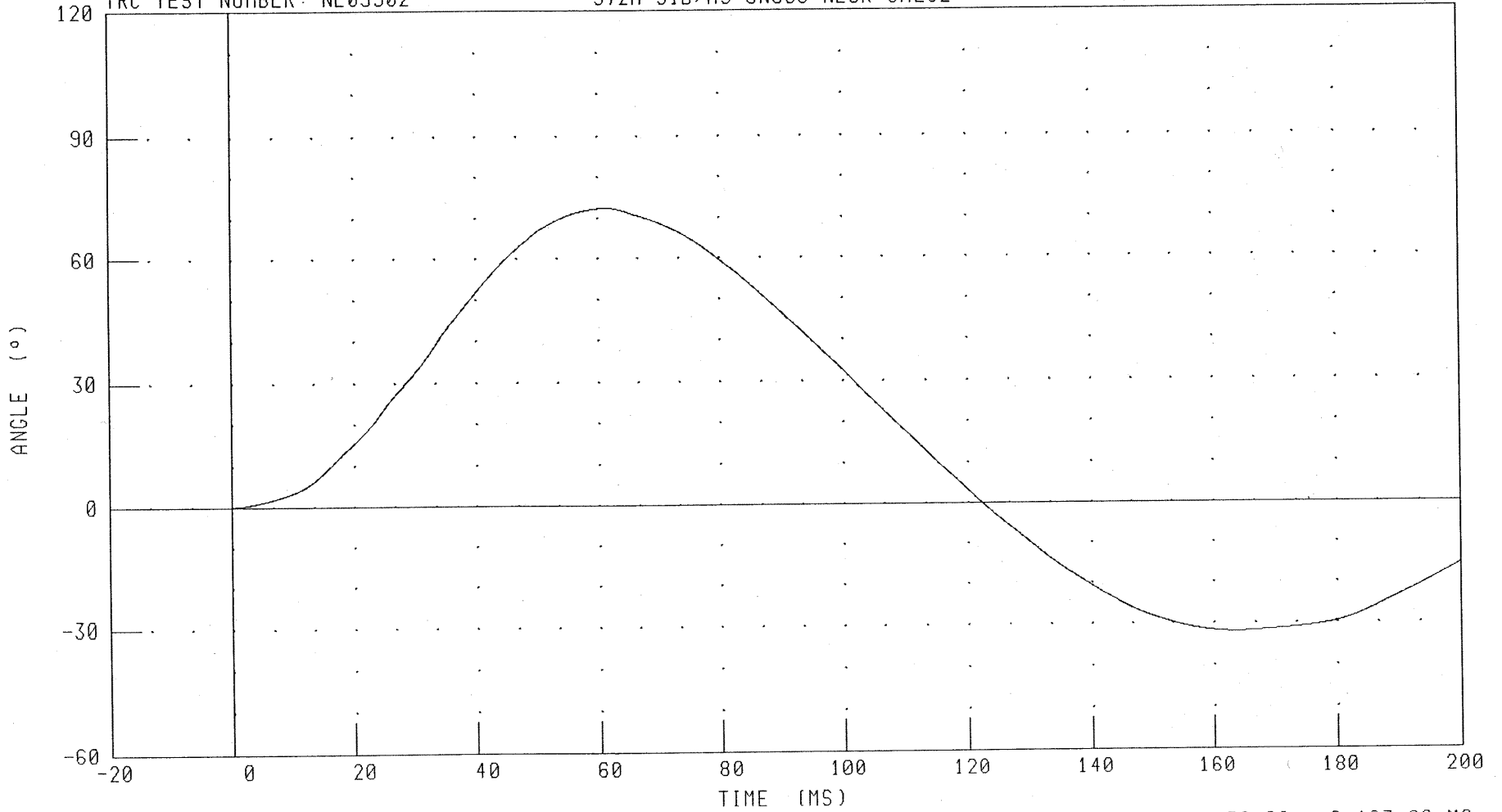
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST
TOTAL ROTATION

TRC TEST NUMBER: NL05902

572M SID/H3 SN059 NECK CAL02

RUN NUMBER: 092703.1757;3

C-109



CHANNEL: TOTAN

FILTER: CH. CLASS 60

PEAK DATA: 72.31 ° @ 61.36 MS; -32.00 ° @ 163.68 MS

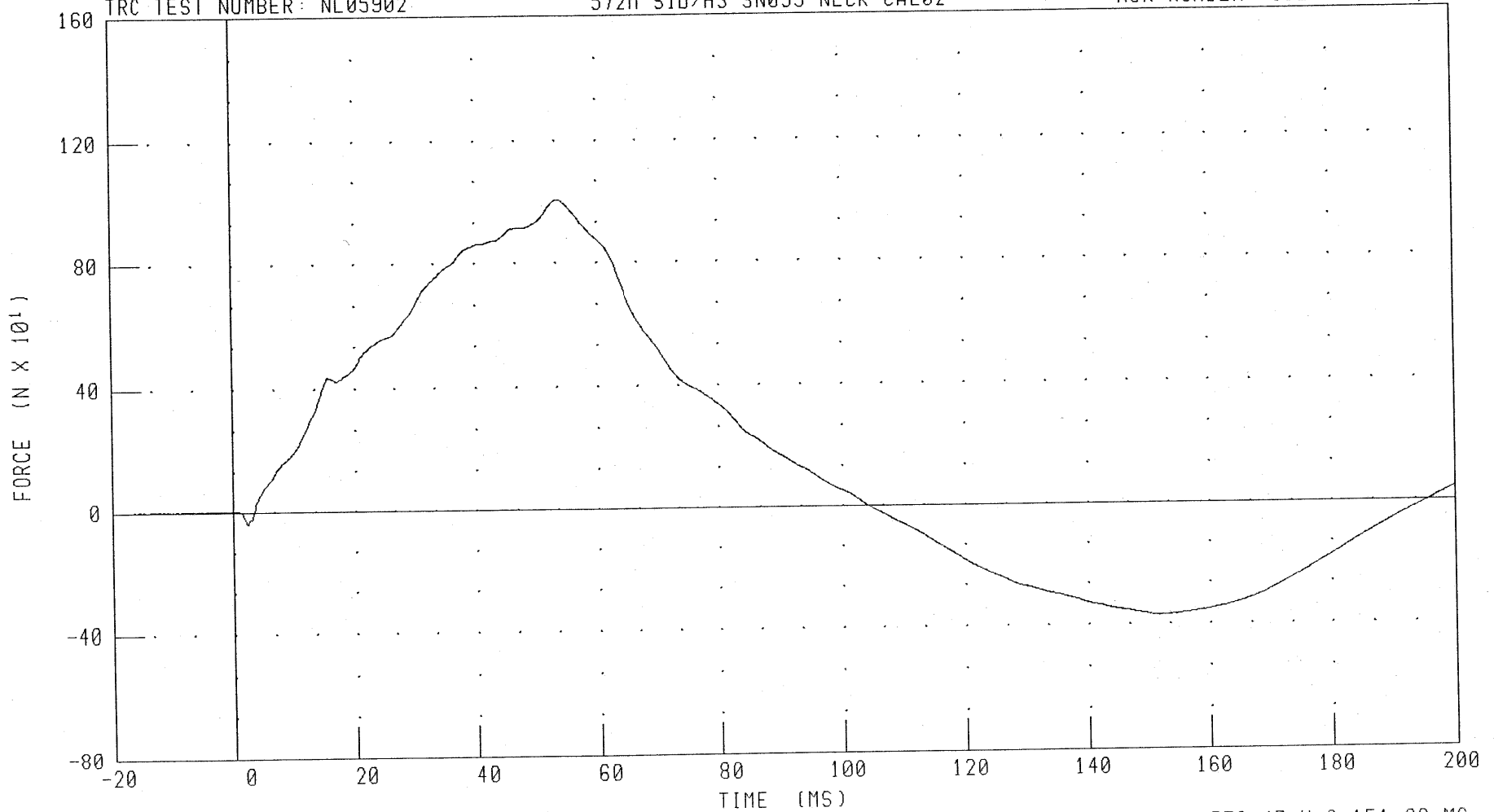
030916

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

TRC TEST NUMBER: NL05902

572M SID/H3 SN059 NECK CAL02

RUN NUMBER: 092703.1757;3



CHANNEL: NEKYF FILTER: CH. CLASS 1000

PEAK DATA: 1004.58 N @ 53.68 MS; -372.47 N @ 151.60 MS

C-110

030916

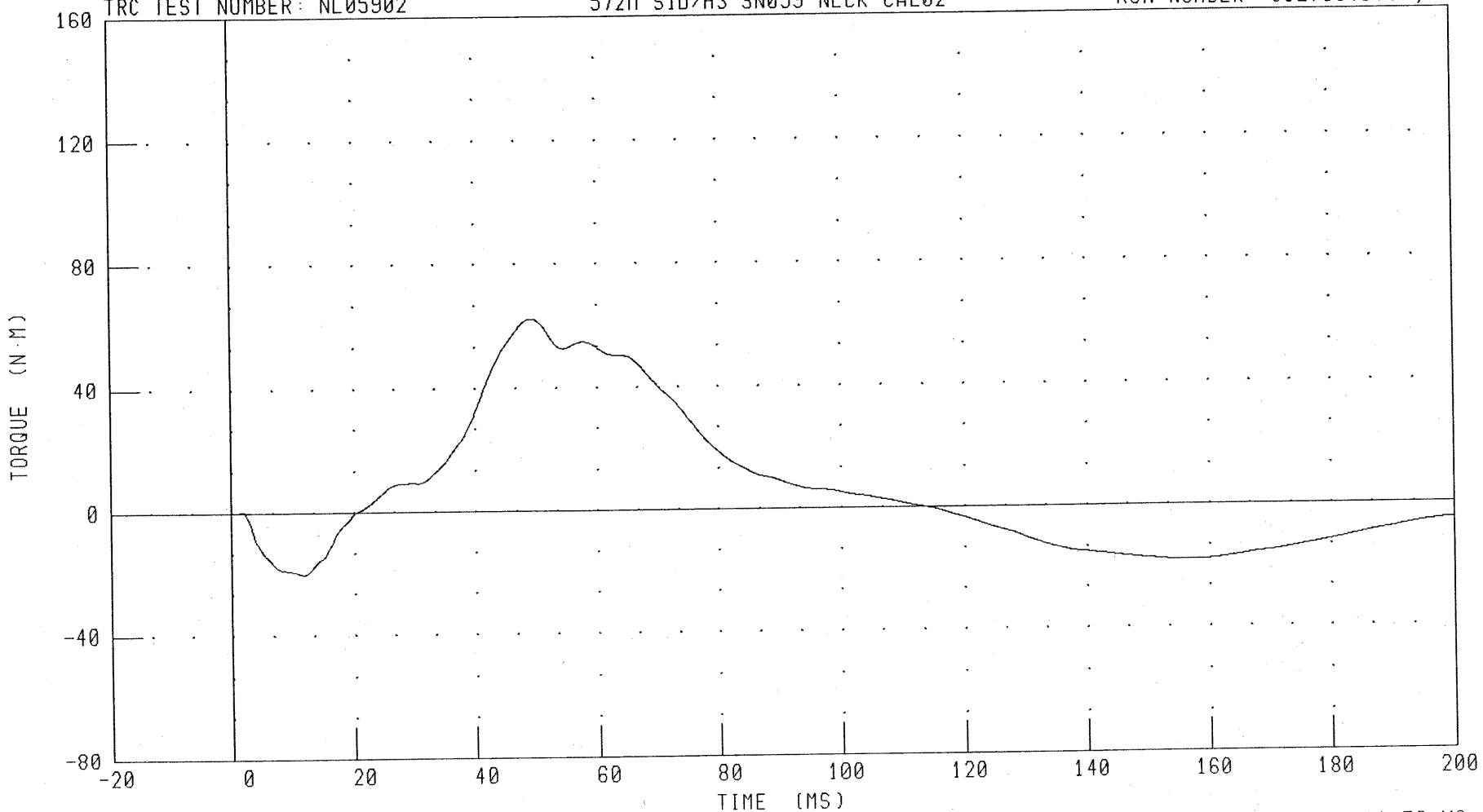
572M H3/SID DUMMY CALIBRATION -- LEFT LATERAL NECK TEST

NECK MOMENT X AXIS

TRC TEST NUMBER: NL05902

572M SID/H3 SN059 NECK CAL02

RUN NUMBER: 092703.1757;3



CHANNEL: NEKXM

FILTER: CH. CLASS 600

PEAK DATA: 62.31 N.M @ 49.20 MS; -20.30 N.M @ 11.76 MS

C-111

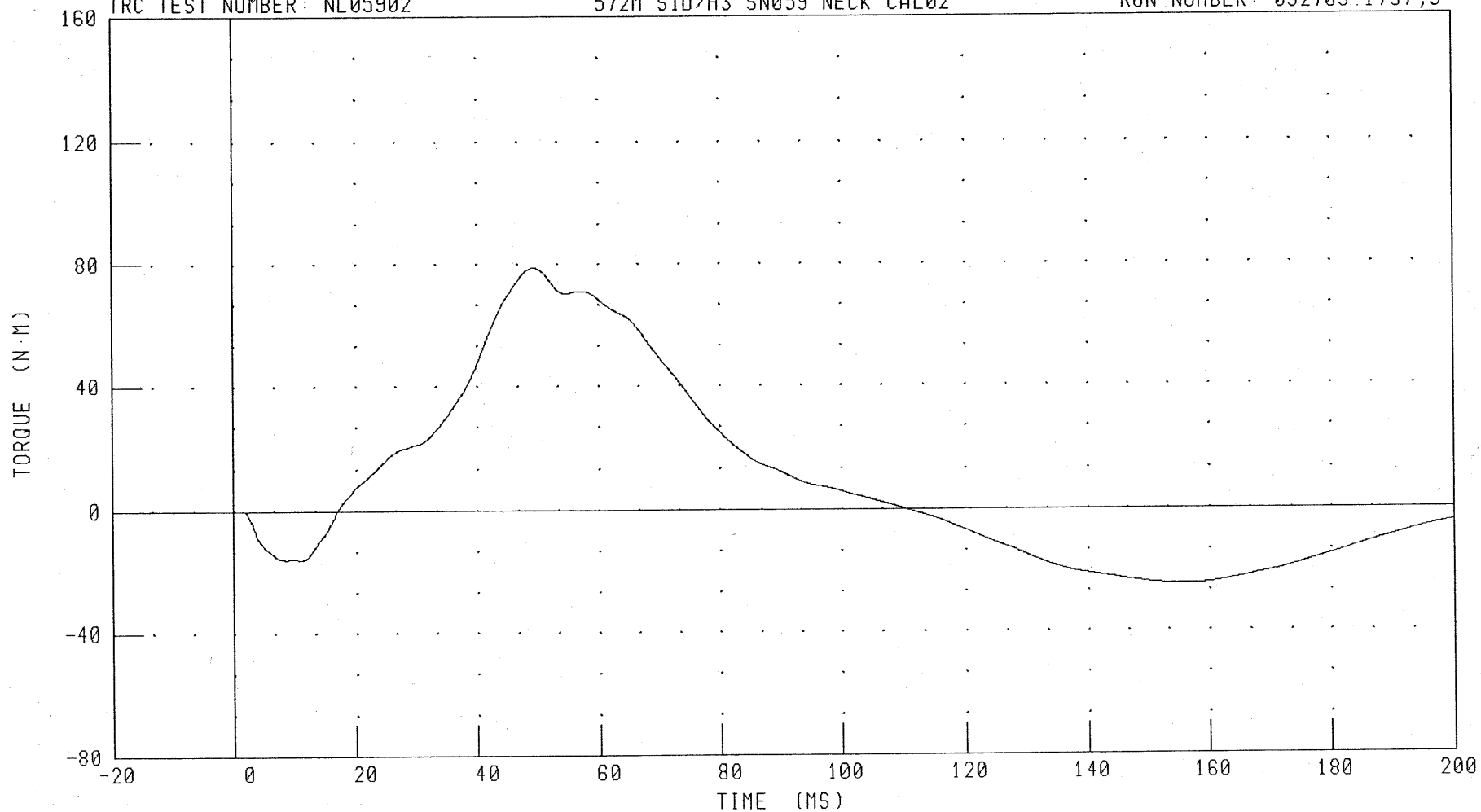
030916

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

TRC TEST NUMBER: NL05902

572M SID/H3 SN059 NECK CAL02

RUN NUMBER: 092703.1757;3



CHANNEL: NEKOM

FILTER: CH. CLASS 600

PEAK DATA: 78.70 N.M @ 49.44 MS; -24.66 N.M @ 155.44 MS

C-112

030916

TRANSPORTATION RESEARCH CENTER INC.

PART 572B LUMBAR FLEXION TEST

SID HIII

CAL DATE: 24-Sep-03

TRC, INC. TEST NO: LF05902 SID/HIII SN 59 TORSO FLEX CAL 02

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6° C	21.1 °C
RELATIVE HUMIDITY	10 – 70 %	45 %
FORCE AT 0 DEG. FLEXION	-27 – 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 – 151 N	142.3 N
FORCE AT 30 DEG OF FLEXION	151 – 205 N	200.2 N
FORCE AT 40 DEG OF FLEXION	205 – 258 N	258.0 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	2 °

TEST MEETS SPECIFICATIONS

TECHNICIAN V. J. Watter

Transportation Research Center Inc.

572B Abdomen Compression Test

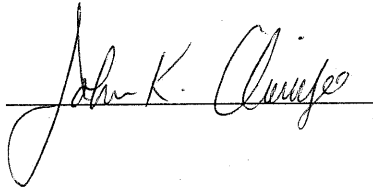
SID HIII Serial No. 059 Calibration No. 02 - 7

Test Date 09/24/2003

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	46 %	Yes
Displacement Rate	6.35 - 8.89 mm/s	6.8 - 8.0 mm/s	Yes
Data Within Required Corridor	Yes	Yes	Yes

Comments:

Technician



Approved



09.24.2003 10:05:55 114

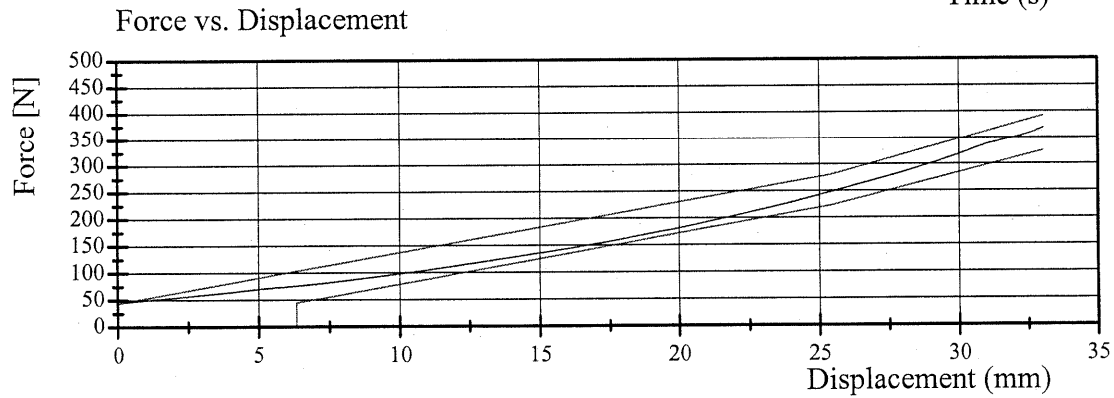
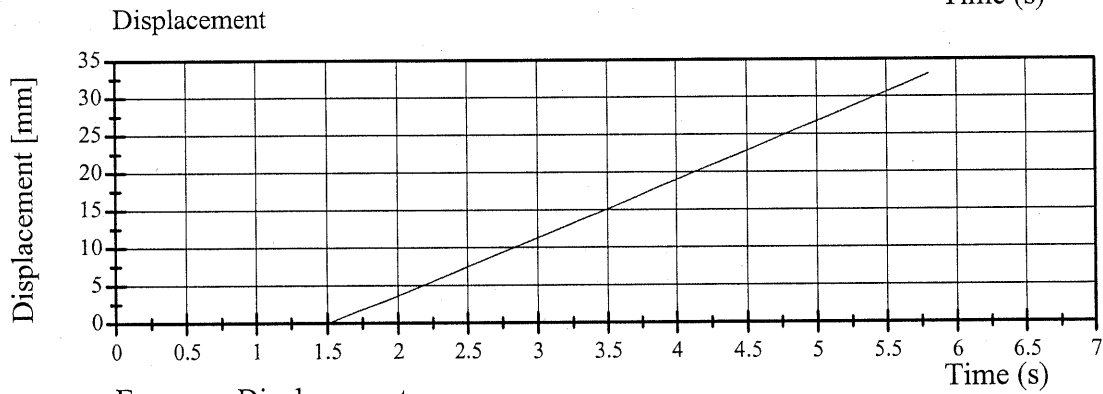
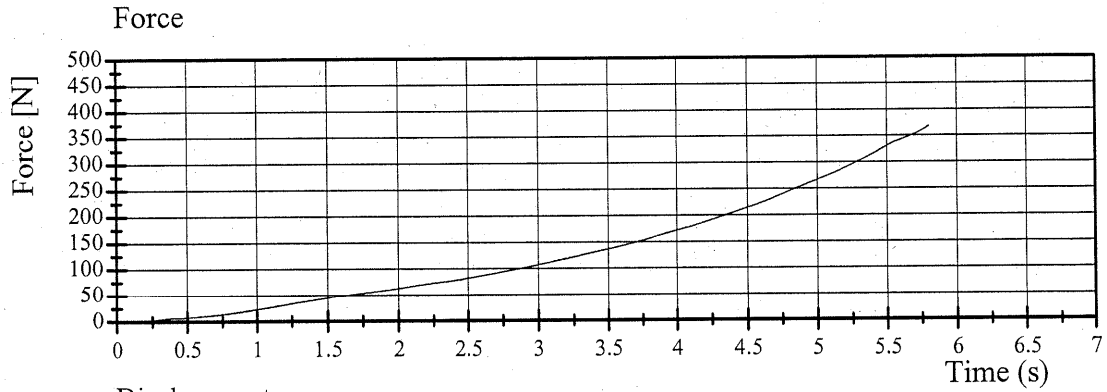


Transportation Research Center Inc.

572B Abdomen Compression Test

SID HIII Serial No. 059 Calibration No. 02 - 7

Test Date 09/24/2003



TRANSPORTATION RESEARCH CENTER INC.

LATERAL THORAX IMPACT TEST

SIDE IMPACT DUMMY

25-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO: STL05902A

572M SID SN059 L.THORAX CAL02

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	21.2 DEG. C
RELATIVE HUMIDITY	10 - 70 %	38.0 %
PENDULUM VELOCITY	4.27 - 4.33 M/S	4.29 M/S
PEAK ACCELERATION: UPPER RIB BAR	37 - 46 G	48.8 G *
PEAK ACCELERATION: LOWER RIB BAR	37 - 46 G	45.8 G
PEAK ACCELERATION: LOWER THORACIC SPINE	15 - 22 G	22.6 G *

* TEST DOES NOT MEET SPECIFICATIONS

TECHNICIAN

V.F. Walter

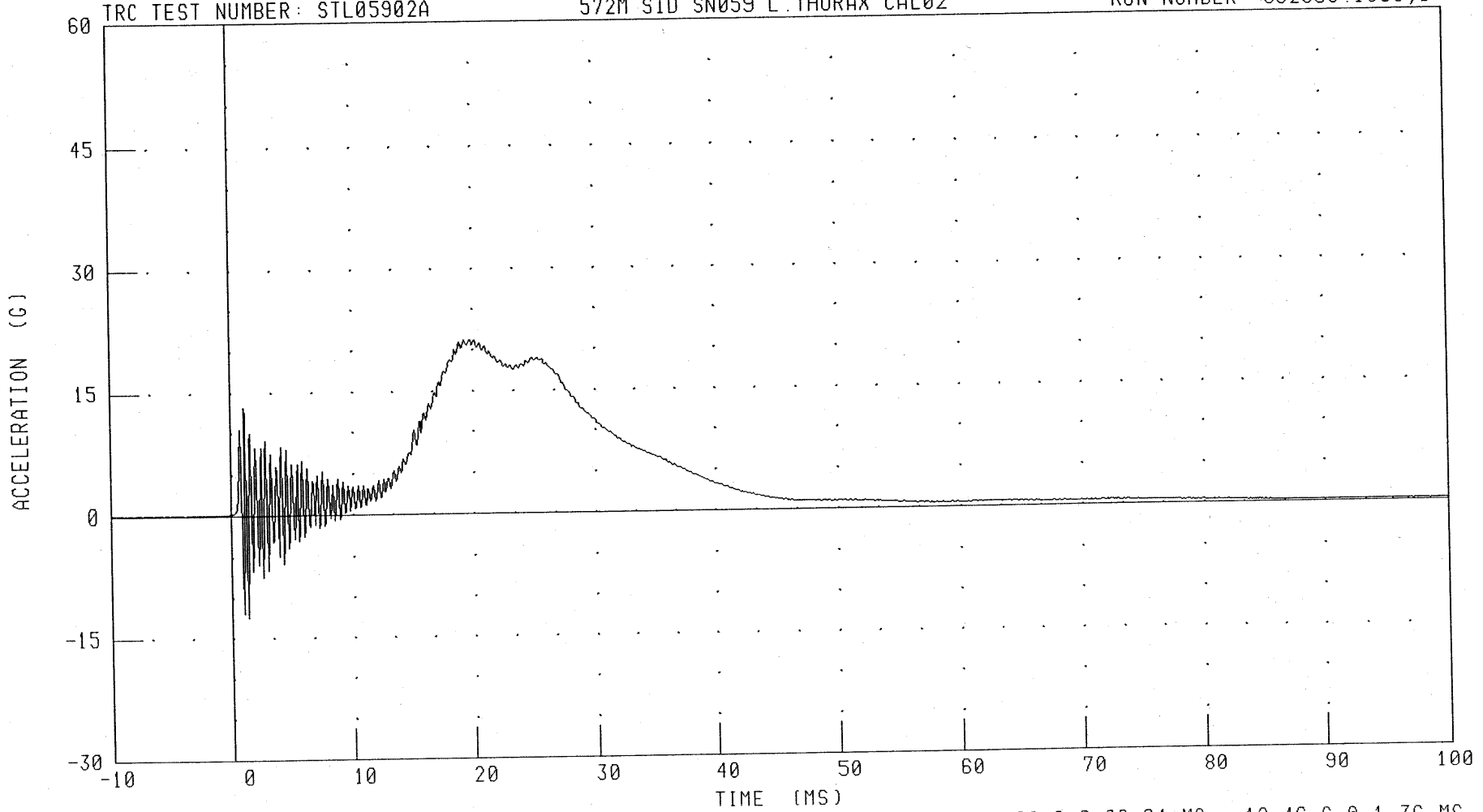
RUN NUMBER: 092503.1605;1

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

TRC TEST NUMBER: STL05902A

572M SID SN059 L.THORAX CAL02

RUN NUMBER: 092503.1606;1



CHANNEL: PENXC

FILTER: CH. CLASS 1000

PEAK DATA: 21.22 G @ 20.24 MS; -12.46 G @ 1.36 MS

C-117

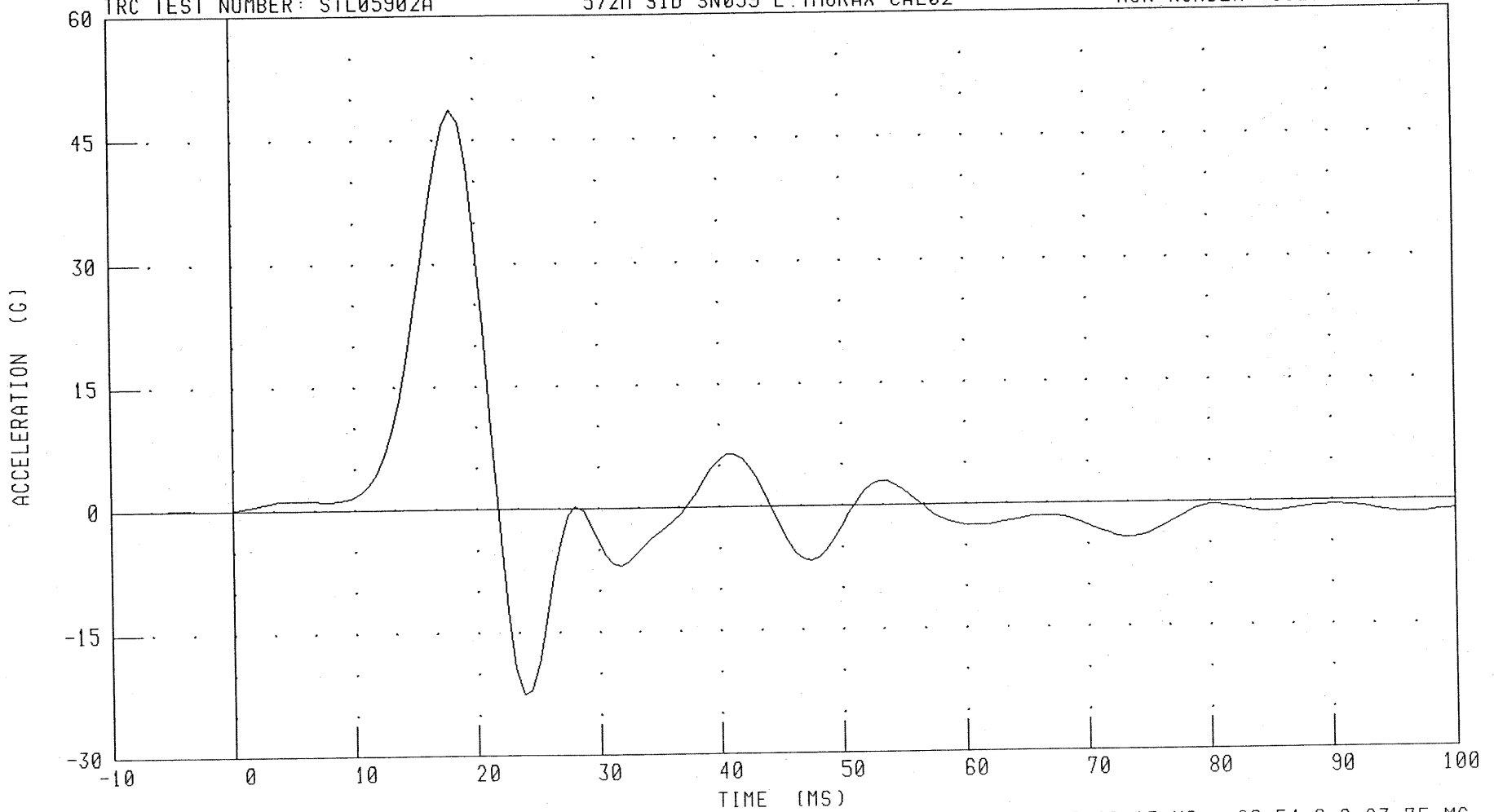
030916

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

TRC TEST NUMBER: STL05902A

572M SID SN059 L THORAX CAL02

RUN NUMBER: 092503.1606;1



CHANNEL: LURYG FILTER: FIR 100

PEAK DATA: 48.77 G @ 18.13 MS; -22.54 G @ 23.75 MS

C-118

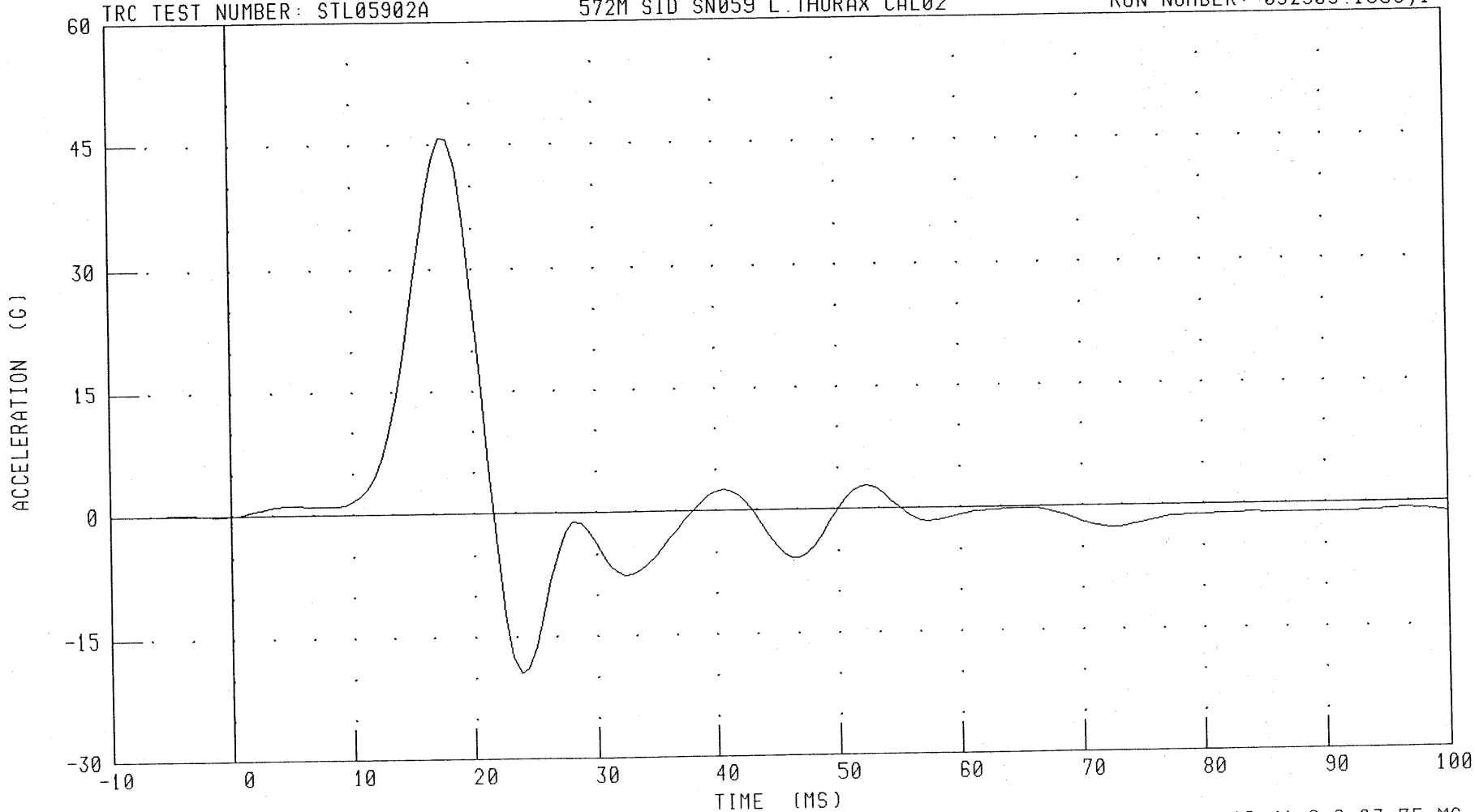
030916

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

TRC TEST NUMBER: STL05902A

572M SID SN059 L.THORAX CAL02

RUN NUMBER: 092503.1606;1



CHANNEL: LLRYG

FILTER: FIR 100

PEAK DATA: 45.78 G @ 17.50 MS; -19.41 G @ 23.75 MS

C-119

030916

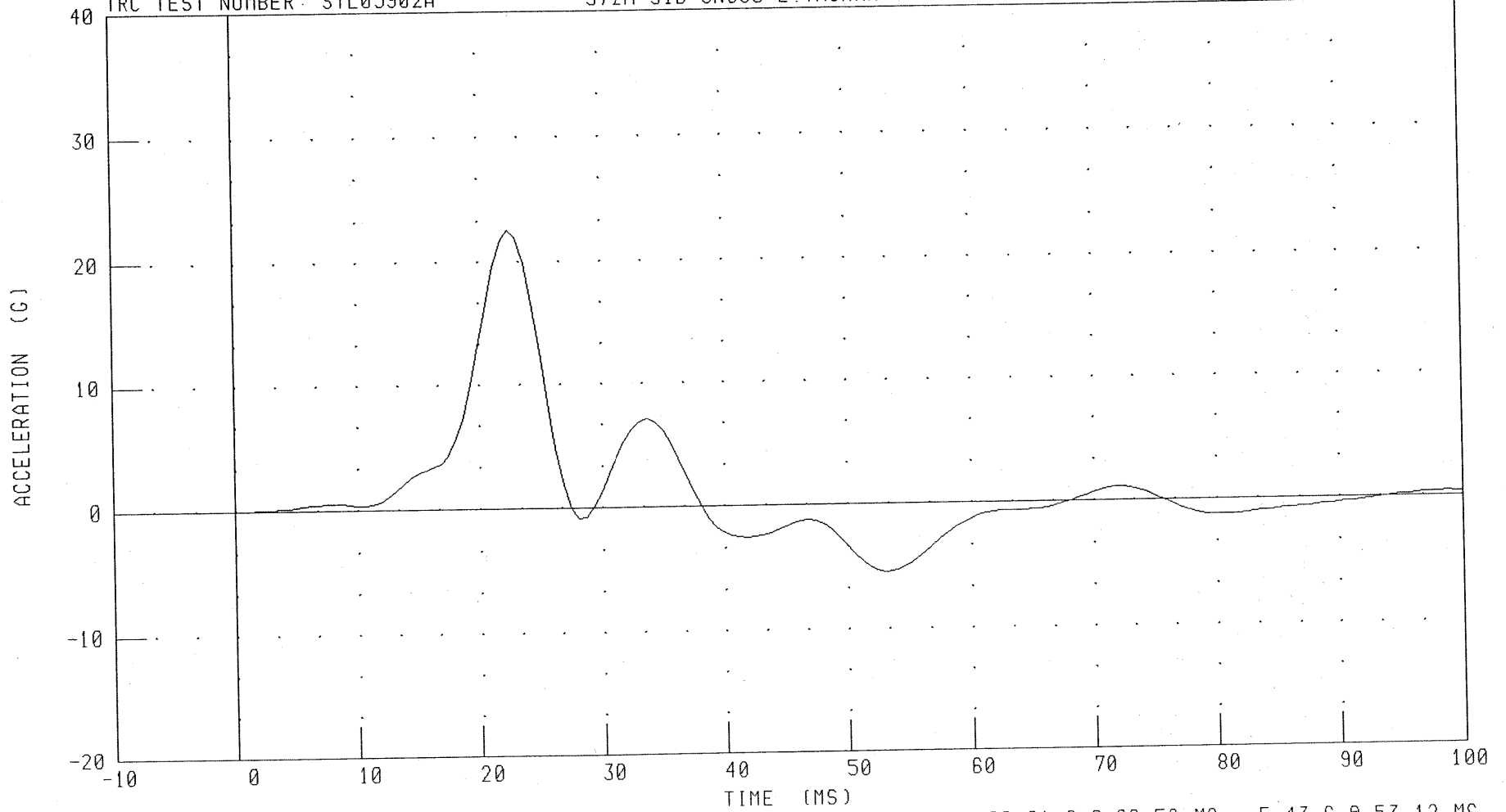
PART 572-F S.I.D. THORAX CALIBRATION - (LEFT SIDE IMPACT)

LOWER SPINE ACCELERATION Y AXIS

572M SID SN059 L THORAX CAL02

RUN NUMBER: 092503.1606;1

TRC TEST NUMBER: STL05902A



CHANNEL: T12YC

FILTER: FIR 100

PEAK DATA: 22.61 G @ 22.50 MS; -5.43 G @ 53.12 MS

C-120

030916

TRANSPORTATION RESEARCH CENTER INC.

LATERAL PELVIS IMPACT TEST

SIDE IMPACT DUMMY

25-SEP-03

LEFT SIDE CONFIGURATION

TRC INC.

TEST NO: SPL05902

SID/H3 SN059 LEFT PELVIS CAL02

TEST PARAMETER	SPECIFICATION (ABSOLUTE VALUE)	TEST RESULTS
TEMPERATURE	18.9 - 25.5 C	20.9 DEG. C
RELATIVE HUMIDITY	10 - 70 %	43.0 %
PENDULUM VELOCITY	4.27 - 4.33 M/S	4.27 M/S
PEAK PELVIC ACCELERATION	40 - 60 G	47.6 G
TIME ABOVE 20 G LEVEL	3 - 7 MS	6.1 MS
IS ACCELERATION CURVE UNIMODAL?	YES	YES

TEST MEETS SPECIFICATIONS

TECHNICIAN

V. J. Watter

RUN NUMBER: 092703.1804;1

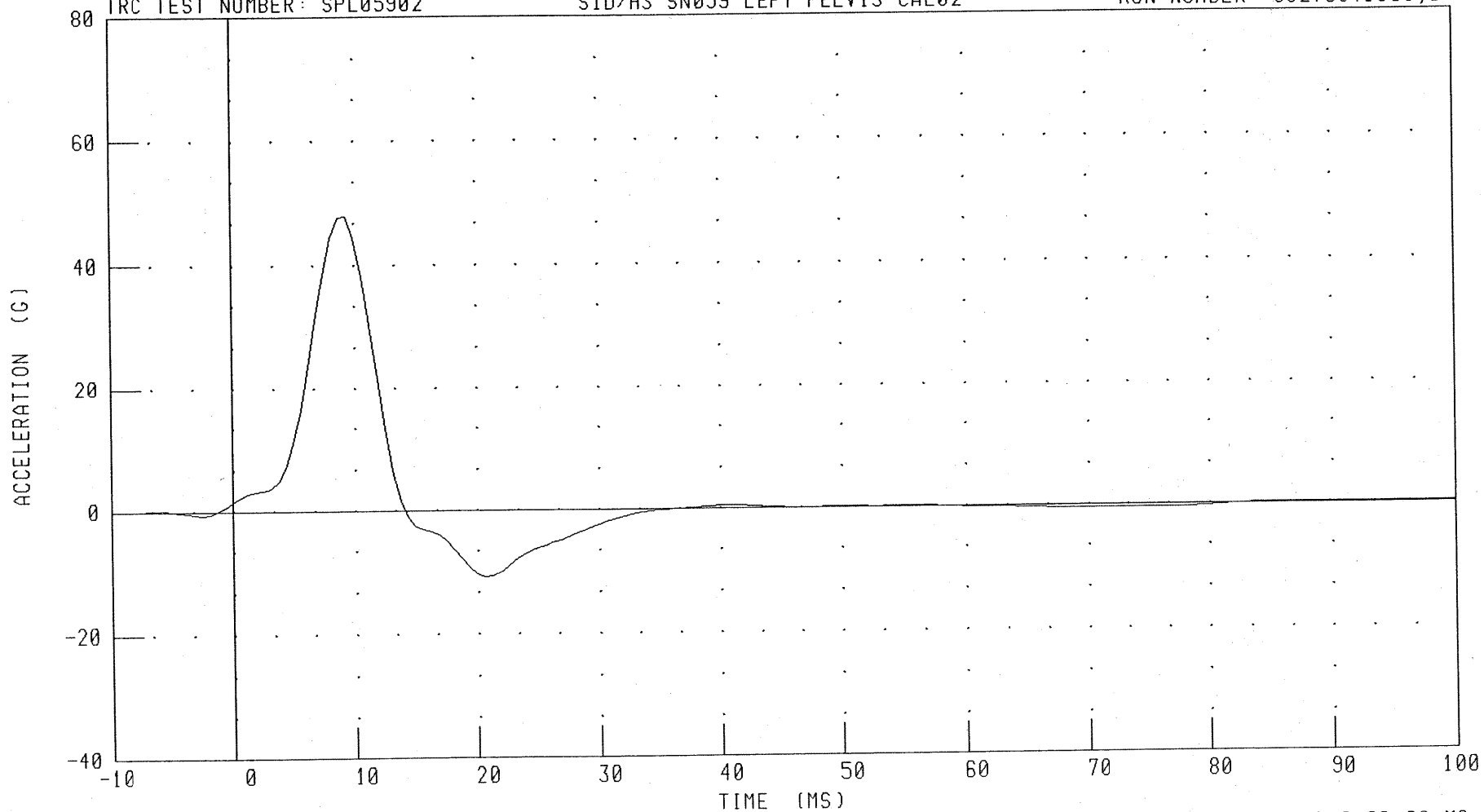
PART 572-F S.I.D. PELVIS CALIBRATION - (LEFT SIDE IMPACT)

PELVIS ACCELERATION Y AXIS

TRC TEST NUMBER: SPL05902

SID/H3 SN059 LEFT PELVIS CAL02

RUN NUMBER: 092703.1809;1



CHANNEL: PEVYG

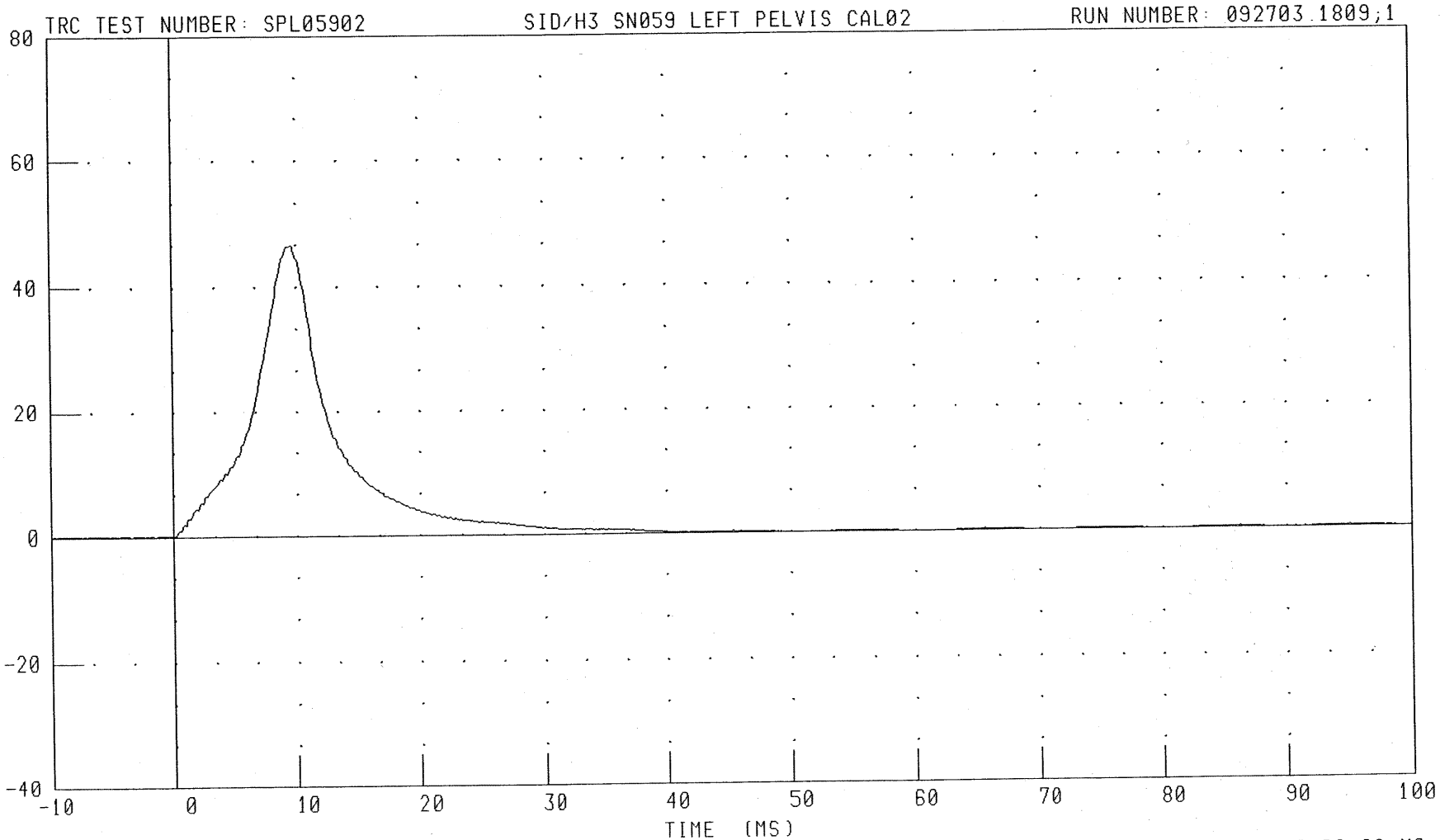
FILTER: FIR 100

PEAK DATA: 47.64 G @ 9.37 MS; -10.87 G @ 20.62 MS

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030916

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



CHANNEL: PENXC FILTER: CH. CLASS 1000 PEAK DATA: 46.57 G @ 9.68 MS; -0.12 G @ 60.00 MS

C-123

030916

Type: SID HIII S/N: 055 Mfr: ASTC Test Date: 09/16/03

Proj./Seg. No.: 20020455-2000 Test Eng.: Walt Dudek

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)	(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	N/A	
* Chest Pot Rod End Nuts and Eyebolt	N/A	
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 (30 ft/lbs)	X	
Breakaway Femur Bolts	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: 09/15/03

Type: SID HIII S/N: 059 Mfr: ASTC Test Date: 09/16/03

Proj./Seg. No.: 20020455-2000 Test Eng.: Walt Dudek

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)	(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	N/A	
* Chest Pot Rod End Nuts and Eyebolt	N/A	
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 (30 ft/lbs)	X	
Breakaway Femur Bolts	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: 09/15/03

Type: SID HIII S/N: 055 Mfr: ASTC Test Date: 09/16/03

Proj./Seg. No.: 20020455-2000 Test Eng.: Walt Dudek

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: 09/22/03

Type: SID HIII S/N: 059 Mfr: ASTC Test Date: 09/16/03

Proj./Seg. No.: 20020455-2000 Test Eng.: Walt Dudek

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: 09/22/03

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

9/16/2003 10:59:10 AM

Name of Test 030916

System K3600

Name of DAU DAU0

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol.	Cal.	Group	Mfg.	Model
0000	EVENT	EVENT	EVENT		10.24	V	+ 10/15/2002	OK -1	TRC	Event
0001	P28620	BCGXG1	MDB CG X-AXIS	FWD	600.37523	g	+ 6/20/2003	OK -1	Endevco	7264C-2K-2-180
0002	P28251	BCGYG1	MDB CG Y-AXIS	LT	597.88637	g	- 6/19/2003	OK -1	Endevco	7264C-2K-2-180
0003	P25042	BCGZG1	MDB CG Z-AXIS	UP	600.86139	g	- 6/17/2003	OK -1	Endevco	7264C-2K-2-180
0004	P27385	LRRXG1	MDB LT RR X-AXIS	FWD	599.33511	g	+ 7/19/2003	OK -1	Endevco	7264C-2K-2-180
0005	P27371	LRRYG1	MDB LT RR Y-AXIS	LT	602.95589	g	- 7/19/2003	OK -1	Endevco	7264C-2K-2-180

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030916

Channel Report

9/16/2003 10:59:10 AM

Name of Test 030916

System MINIDAU

Name of DAU DAUC

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range		Pol.	Cal.	Group	Mfg.	Model
0001	P25298	HEDXG1	Head Accel X	Rwd	801.41499	g	-	9/16/2003	OK -1	Endevco	7264C-2K-2-180
0002	P25061	HEDYG1	Head Accel Y	Lft	807.76208	g	-	8/22/2003	OK 055n	Endevco	7264C-2K-2-180
0003	P25261	HEDZG1	Head Accel Z	Up	803.12465	g	-	8/22/2003	OK 055n	Endevco	7264C-2K-2-180
0004	P25067	HEDXR1	Head Accel X Red	Rwd	803.43972	g	-	8/22/2003	OK 055n	Endevco	7264C-2K-2-180
0005	P24511	HEDYR1	Head Accel Y Red	Lt	789.83092	g	-	8/22/2003	OK 055n	Endevco	7264C-2K-2-180
0006	P25063	HEDZR1	Head Accel Z Red	Up	806.42620	g	-	8/22/2003	OK 055n	Endevco	7264C-2K-2-180
0007	1716-0534-FX	NEKXF1	Neck Force X	Hd	8890.8019	N	-	9/9/2003	OK 055n	Denton	1716
0008	1716-0534-FY	NEKYF1	Neck Force Y	Hd	8885.0977	N	+	9/9/2003	OK 055n	Denton	1716
0009	1716-0534-FZ	NEKZF1	Neck Force Z	Hd	13357.627	N	+	9/9/2003	OK 055n	Denton	1716
0010	1716-0534-MX	NEKXM1	Neck Moment X	Rt Ear	282.37048	N·m	-	9/9/2003	OK 055n	Denton	1716
0011	1716-0534-MY	NEKYM1	Neck Moment Y	Chn	282.42609	N·m	+	9/9/2003	OK 055n	Denton	1716
0012	1716-0534-MZ	NEKZM1	Neck Moment Z	Chn	282.48456	N·m	+	9/9/2003	OK 055n	Denton	1716
0013	P25068	LURYG1	Left Upper Rib Y	Rgt	794.82124	g	+	8/22/2003	OK 055n	Endevco	7264C-2K-2-180
0014	P25069	LURYR1	Left Upper Rib Red Y	Rgt	808.28492	g	+	8/22/2003	OK 055n	Endevco	7264C-2K-2-180
0015	P25305	LLRYG1	Left Lower Rib Y	Rgt	802.92314	g	+	8/22/2003	OK 055n	Endevco	7264C-2K-2-180
0016	P25395	LLRYR1	Left Lower Rib Red Y	Rgt	806.45161	g	+	8/25/2003	OK 055n	Endevco	7264C-2K-2-180
0017	P24393	T12YG1	Lower Spine Y	Lft	402.81973	g	-	9/9/2003	OK 055n	Endevco	7264C-2K-2-180
0018	P24627	T12YR1	Lower Spine Red Y	Lft	402.18373	g	-	8/25/2003	OK 055n	Endevco	7264C-2K-2-180
0019	P25397	PEVYG1	Pelvis Accel Y	Lft	398.38157	g	-	8/25/2003	OK 055n	Endevco	7264C-2K-2-180
0020	P25231	PEVYR1	Pelvis Accel Red Y	Lft	399.27631	g	-	9/9/2003	OK 055n	Endevco	7264C-2K-2-180
0021	P21712	HEDXG4	Head Accel X	Rwd	808.59128	g	-	9/9/2003	OK 059n	Endevco	7264C-2K-2-180
0022	P22733	HEDYG4	Head Accel Y	Lft	799.37548	g	-	9/9/2003	OK 059n	Endevco	7264C-2K-2-180
0023	P21625	HEDZG4	Head Accel Z	Up	806.14686	g	-	9/9/2003	OK 059n	Endevco	7264C-2K-2-180
0024	P25076	HEDXR4	Head Accel X Red	Rwd	794.38962	g	-	9/9/2003	OK 059n	Endevco	7264C-2K-2-180
0025	P16213	HEDYR4	Head Accel Y Red	Lt	807.39268	g	-	9/9/2003	OK 059n	Endevco	7264C-2K-2-180
0026	P18941	HEDZR4	Head Accel Z Red	Up	811.60339	g	-	9/9/2003	OK 059n	Endevco	7264C-2K-2-180
0027	1716A-1532-FX	NEKXF4	Neck Force X	Hd	8910.4831	N	-	9/9/2003	OK 059n	Denton	1716A
0028	1716A-1532-FY	NEKYF4	Neck Force Y	Hd	8903.5686	N	+	9/9/2003	OK 059n	Denton	1716A
0029	1716A-1532-FZ	NEKZF4	Neck Force Z	Hd	13353.823	N	+	9/9/2003	OK 059n	Denton	1716A
0030	1716A-1532-MX	NEKXM4	Neck Moment X	Rt Ear	282.57842	N·m	-	9/9/2003	OK 059n	Denton	1716A
0031	1716A-1532-MY	NEKYM4	Neck Moment Y	Chn	282.17998	N·m	+	9/9/2003	OK 059n	Denton	1716A
0032	1716A-1532-MZ	NEKZM4	Neck Moment Z	Chn	282.95095	N·m	+	9/9/2003	OK 059n	Denton	1716A

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Channel Report

9/16/2003 10:59:10 AM

Name of Test 030916

System MINIDAU

Name of DAU DAUD

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol.	Cal.	Group	Mfg.	Model
0001	P27355	LURYG4	Left Upper Rib Y	Rgt	792.44698	g	+ 9/9/2003	OK 059n	Endevco	7264C-2K-2-180
0002	P27178	LURYR4	Left Upper Rib Red Y	Rgt	798.55262	g	+ 9/9/2003	OK 059n	Endevco	7264C-2K-2-180
0003	P29214	LLRYG4	Left Lower Rib Y	Rgt	803.51537	g	+ 9/9/2003	OK 059n	Endevco	7264C-2K-2-180
0004	P25389	LLRYR4	Left Lower Rib Red Y	Rgt	796.13129	g	+ 9/9/2003	OK 059n	Endevco	7264C-2K-2-180
0005	P27211	T12YG4	Lower Spine Y	Lft	399.22027	g	- 9/9/2003	OK 059n	Endevco	7264C-2K-2-180
0006	P29206	T12YR4	Lower Spine Red Y	Lft	397.99138	g	- 9/9/2003	OK 059n	Endevco	7264C-2K-2-180
0007	P27228	PEVYG4	Pelvis Accel Y	Lft	402.61384	g	- 9/9/2003	OK 059n	Endevco	7264C-2K-2-180
0008	P27230	PEVYR4	Pelvis Accel Red Y	Lft	398.85329	g	- 9/9/2003	OK 059n	Endevco	7264C-2K-2-180
0009	P28119	RFSXG1	RIGHT FRONT SILL X-AXIS	FWD	400.51942	g	+ 7/18/2003	OK -1	Endevco	7264C-2K-2-180
0010	P28265	RFSYG1	RIGHT FRONT SILL Y-AXIS	LT	1012.0177	g	- 6/19/2003	OK -1	Endevco	7264C-2K-2-180
0011	P28081	RFSZG1	RIGHT FRONT SILL Z-AXIS	UP	398.90301	g	- 7/19/2003	OK -1	Endevco	7264C-2K-2-180
0012	P26759	RRSXG1	RIGHT REAR SILL X-AXIS	FWD	398.60488	g	+ 7/21/2003	OK -1	Endevco	7264C-2K-2-180
0013	P27528	RRSYG1	RIGHT REAR SILL Y-AXIS	LT	992.01736	g	- 7/19/2003	OK -1	Endevco	7264C-2K-2-180
0014	P27399	RRSZG1	RIGHT REAR SILL Z-AXIS	UP	399.55674	g	- 5/14/2003	OK -1	Endevco	7264C-2K-2-180
0015	P28320	RDKXG1	REAR DECK X-AXIS	FWD	978.93006	g	+ 6/18/2003	OK -1	Endevco	7264C-2K-2-180
0016	P28325	RDKYG1	REAR DECK Y-AXIS	LT	1012.3178	g	- 6/18/2003	OK -1	Endevco	7264C-2K-2-180
0017	P28599	RDKZG1	REAR DECK Z-AXIS	UP	1001.2124	g	- 6/20/2003	OK -1	Endevco	7264C-2K-2-180
0018	P28103	LRSYG1	LEFT REAR SILL Y-AXIS	RT	1005.0053	g	+ 7/18/2003	OK -1	Endevco	7264C-2K-2-180
0019	P28128	LFSYG1	LEFT FRONT SILL Y-AXIS	RT	993.28754	g	+ 7/18/2003	OK -1	Endevco	7264C-2K-2-180
0020	P27396	RRTYG1	RT RR OCCUPANT COMP.	RT	1504.9528	g	+ 7/19/2003	OK -1	Endevco	7264C-2K-2-180
0021	P28092	LLBYG1	LT LWR B-POST Y-AXIS	RT	1482.5110	g	+ 7/19/2003	OK -1	Endevco	7264C-2K-2-180
0022	P28104	LUBYG1	LT MID B-POST Y-AXIS	RT	1521.6357	g	+ 7/18/2003	OK -1	Endevco	7264C-2K-2-180
0023	P27412	LLAYG1	LT LWR A-POST Y-AXIS	LT	1552.2677	g	- 7/19/2003	OK -1	Endevco	7264C-2K-2-180
0024	P27390	LUAYG1	LT MID A-POST Y-AXIS	LT	1473.8054	g	- 7/19/2003	OK -1	Endevco	7264C-2K-2-180
0025	P28088	LFTYG1	LT FR SEAT TRACK Y-AXIS	RT	1493.9309	g	+ 7/19/2003	OK -1	Endevco	7264C-2K-2-180
0026	P27095	LRTYG1	LT RR SEAT TRACK Y-AXIS	RT	1508.1001	g	+ 7/19/2003	OK -1	Endevco	7264C-2K-2-180
0027	P27929	VCGXG1	VEHICLE CG X-AXIS	FWD	1003.4532	g	+ 7/19/2003	OK -1	Endevco	7264C-2K-2-180
0028	P27912	VCGYG1	VEHICLE CG Y-AXIS	LT	1003.1347	g	- 7/18/2003	OK -1	Endevco	7264C-2K-2-180
0029	P27952	VCGZG1	VEHICLE CG Z-AXIS	UP	989.48670	g	- 7/18/2003	OK -1	Endevco	7264C-2K-2-180

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030916

Digital and System Channel Report

2003-09-16 12:14:42

Name of Test 030916

System K3600

Name of DAU DAU0 descriptio

enable	Channel	Short Name	Type	Data File	Module Type
d					
Yes	0500	DIG0	dig0	DAT00500	KM3650 Sequencer

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

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030916

Dummy 055n Type H3/SID Descriptio NHTSA - 055n SID-LEFT IMP. CONFIG. w/RED ACCELS ICAL'd 8-22-03(DKS)

Chsnam	Location	Model	Name	Manufacturer	Sens./mV/V/	Fullscal	Caldat	Pos Output	Flip
HEDXG	Head Accel X	7264C-2K-2-18	P25298	Endevco	0.02203 g	2000	9/16/2003	Rwd	1
HEDYG	Head Accel Y	7264C-2K-2-18	P25061	Endevco	0.01811 g	2000	8/22/2003	Lft	1
HEDZG	Head Accel Z	7264C-2K-2-18	P25261	Endevco	0.01723 g	2000	8/22/2003	Up	1
HEDXR	Head Accel X Red	7264C-2K-2-18	P25067	Endevco	0.01634 g	2000	8/22/2003	Rwd	1
HEDYR	Head Accel Y Red	7264C-2K-2-18	P24511	Endevco	0.01752 g	2000	8/22/2003	Lt	1
HEDZR	Head Accel Z Red	7264C-2K-2-18	P25063	Endevco	0.01814 g	2000	8/22/2003	Up	1
NEKXF	Neck Force X	1716	1716-0534-FX	Denton	0.000193247 N	8896.4	9/9/2003	Hd Fd,Cst Rr	1
NEKYF	Neck Force Y	1716	1716-0534-FY	Denton	0.000181781 N	8896.4	9/9/2003	Hd Lt,Cst Rt	0
NEKZF	Neck Force Z	1716	1716-0534-FZ	Denton	0.000087114 N	13344.6	9/9/2003	Hd Up,Cst Dn	0
NEKXM	Neck Moment X	1716	1716-0534-MX	Denton	0.00588708 N	282.5	9/9/2003	Rt Ear to Rt Shld	1
NEKYM	Neck Moment Y	1716	1716-0534-MY	Denton	0.005773451 N	282.5	9/9/2003	Chn to Strnm	0
NEKZM	Neck Moment Z	1716	1716-0534-MZ	Denton	0.00839115 N	282.5	9/9/2003	Chn to Lt Shld	0
LURYG	Left Upper Rib Y	7264C-2K-2-18	P25068	Endevco	0.01741 g	2000	8/22/2003	Rgt	0
LURYR	Left Upper Rib Red Y	7264C-2K-2-18	P25069	Endevco	0.01712 g	2000	8/22/2003	Rgt	0
LLRYG	Left Lower Rib Y	7264C-2K-2-18	P25305	Endevco	0.02057 g	2000	8/22/2003	Rgt	0
LLRYR	Left Lower Rib Red Y	7264C-2K-2-18	P25395	Endevco	0.02048 g	2000	8/25/2003	Rgt	0
T12YG	Lower Spine Y	7264C-2K-2-18	P24393	Endevco	0.01986 g	2000	9/9/2003	Lft	1
T12YR	Lower Spine Red Y	7264C-2K-2-18	P24627	Endevco	0.01845 g	2000	8/25/2003	Lft	1
PEVYG	Pelvis Accel Y	7264C-2K-2-18	P25397	Endevco	0.01836 g	2000	8/25/2003	Lft	1
PEVYR	Pelvis Accel Red Y	7264C-2K-2-18	P25231	Endevco	0.01781 g	2000	9/9/2003	Lft	1

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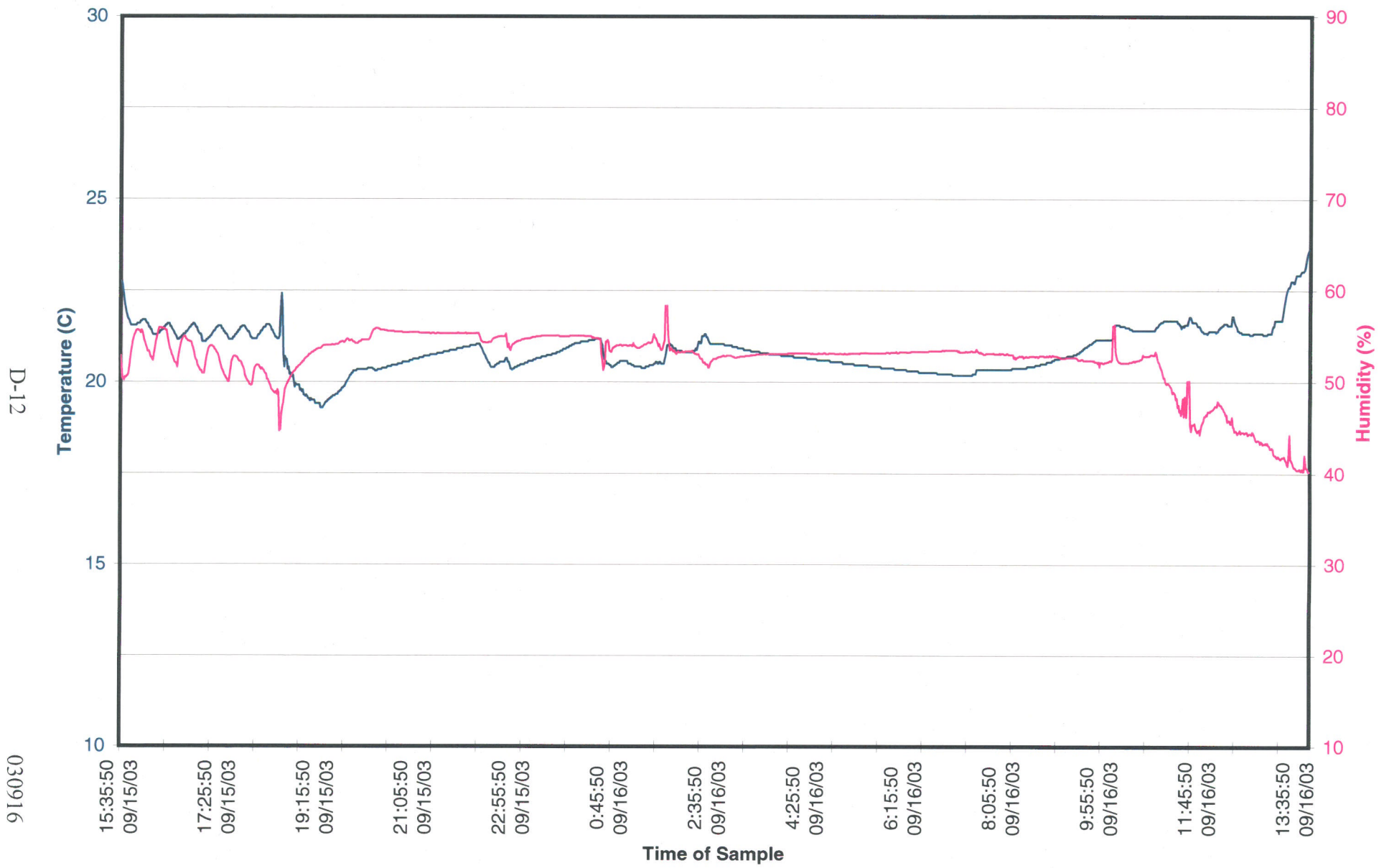
Dummy 059n Type H3/SID Descriptio NHTSA - 059n SID-LEFT IMP. CONFIG. w/RED ACCELS ICAL'd 9-9-03(DKS)

Chsnam	Location	Model	Name	Manufacturer	Sens./mV/V/	Fullscal	Caldat	Pos Output	Flip
HEDXG	Head Accel X	7264C-2K-2-18	P21712	Endevco	0.01583 g	2000	9/9/2003	Rwd	1
HEDYG	Head Accel Y	7264C-2K-2-18	P22733	Endevco	0.0183 g	2000	9/9/2003	Lft	1
HEDZG	Head Accel Z	7264C-2K-2-18	P21625	Endevco	0.01868 g	2000	9/9/2003	Up	1
HEDXR	Head Accel X Red	7264C-2K-2-18	P25076	Endevco	0.01572 g	2000	9/9/2003	Rwd	1
HEDYR	Head Accel Y Red	7264C-2K-2-18	P16213	Endevco	0.01626 g	2000	9/9/2003	Lt	1
HEDZR	Head Accel Z Red	7264C-2K-2-18	P18941	Endevco	0.02035 g	2000	9/9/2003	Up	1
NEKXF	Neck Force X	1716A	1716A-1532-FX	Denton	0.000194123 N	8896.4	9/9/2003	Hd Fd,Cst Rr	1
NEKYF	Neck Force Y	1716A	1716A-1532-FY	Denton	0.000184311 N	8896.4	9/9/2003	Hd Lt,Cst Rt	0
NEKZF	Neck Force Z	1716A	1716A-1532-FZ	Denton	0.00009756 N	13344.6	9/9/2003	Hd Up,Cst Dn	0
NEKXM	Neck Moment X	1716A	1716A-1532-MX	Denton	0.005979823 N	282.5	9/9/2003	Rt Ear to Rt Shld	1
NEKYM	Neck Moment Y	1716A	1716A-1532-MY	Denton	0.005929558 N	282.5	9/9/2003	Chn to Strnm	0
NEKZM	Neck Moment Z	1716A	1716A-1532-MZ	Denton	0.008416283 N	282.5	9/9/2003	Chn to Lt Shld	0
LURYG	Left Upper Rib Y	7264C-2K-2-18	P27355	Endevco	0.02485 g	2000	9/9/2003	Rgt	0
LURYR	Left Upper Rib Red Y	7264C-2K-2-18	P27178	Endevco	0.01781 g	2000	9/9/2003	Rgt	0
LLRYG	Left Lower Rib Y	7264C-2K-2-18	P29214	Endevco	0.02655 g	2000	9/9/2003	Rgt	0
LLRYR	Left Lower Rib Red Y	7264C-2K-2-18	P25389	Endevco	0.01649 g	2000	9/9/2003	Rgt	0
T12YG	Lower Spine Y	7264C-2K-2-18	P27211	Endevco	0.0171 g	2000	9/9/2003	Lft	1
T12YR	Lower Spine Red Y	7264C-2K-2-18	P29206	Endevco	0.02042 g	2000	9/9/2003	Lft	1
PEVYG	Pelvis Accel Y	7264C-2K-2-18	P27228	Endevco	0.03437 g	2000	9/9/2003	Lft	1
PEVYR	Pelvis Accel Red Y	7264C-2K-2-18	P27230	Endevco	0.01808 g	2000	9/9/2003	Lft	1

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030916

C45600 / FMVSS 214 Indicant



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030916



CERTIFICATE OF CONFORMITY

Certificate No. 15082
Serial No. DF 726

Cellbond Composites Ltd
5 Stukeley Business Centre
Blackstone Road
Huntingdon
Cambridgeshire
PE29 6EF
United Kingdom

Product Description	FMVSS 214 - 1750x740x550mm Spec with 1.6 3/8 5052 Painted Grey
Cellbond Part No.	70NHTSAISUS G

telephone
+44 (0) 1480 435302
telefax
+44 (0) 1480 450181
email
sales@cellbond.com
website
www.cellbond.com

	Test Results	GR No.	Blk No.
1	21677-84	P110373-B00	N/A
2	21693-00	P103448-01	N/A

Declaration.

The above moving deformable barrier has been manufactured in accordance with the provisions of FMVSS 214.

Additional Information...

company registration
England 1944904

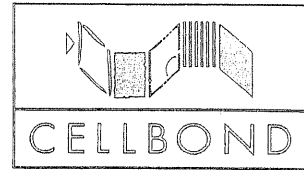
registered office
5 Stukeley Business Centre
Blackstone Road
Huntingdon
Cambridgeshire
PE29 6EF

Cellbond Offices
United Kingdom
Germany
United States of America



ISO 9002
QS 9000





NHTSA DEFORMABLE SIDE IMPACT BARRIER
 ALUMINIUM HONEYCOMB CERTIFICATION
 STATIC TEST RESULTS

BUMPER

Core: 5.2 1/4 3003

Required Crush Strength
 230 PSI to 260 PSI

Test No: 21693-00

GR No: P103448-01

Block No: N/A

	Crush Strength (PSI)			RESULT
	0.25 to 0.38	0.38 to 0.52	0.52 to 0.65	
Sample* 1	255.12	253.87	252.84	PASS
Sample 2	256.17	250.95	251.19	PASS
Sample 3	253.33	248.84	248.56	PASS
Sample 4	255.96	248.29	247.91	PASS
Sample 5	255.09	254.34	250.19	PASS
Sample 6	259.06	257.32	255.79	PASS
Sample 7	244.57	240.82	238.66	PASS
Sample 8	257.65	252.22	252.27	PASS

Seven out of the eight samples must fulfil the crush strength requirement in order to pass the block certification

*Sample size and location as per R94.

RESULT: PASSED

NHTSA DEFORMABLE SIDE IMPACT BARRIER BUMPER

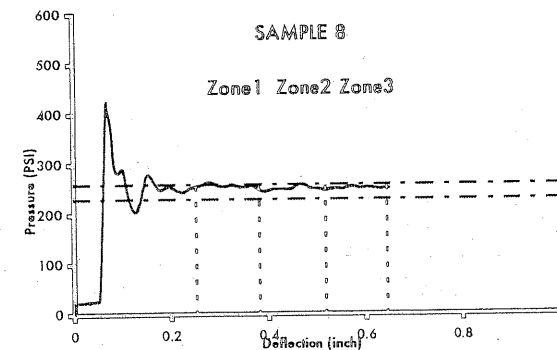
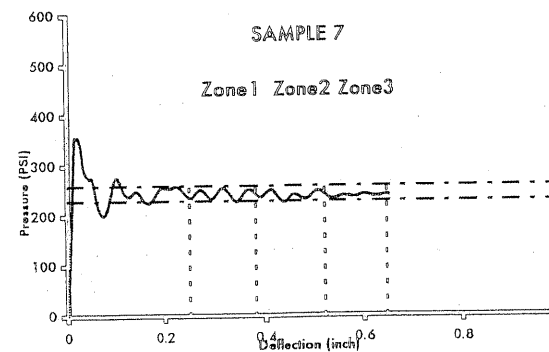
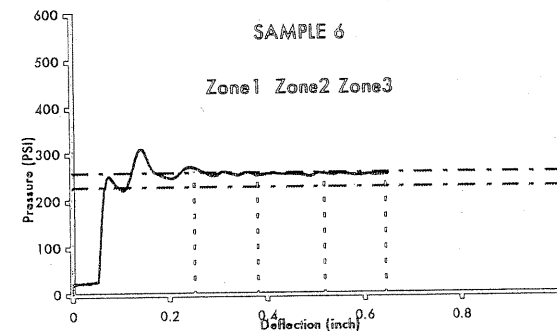
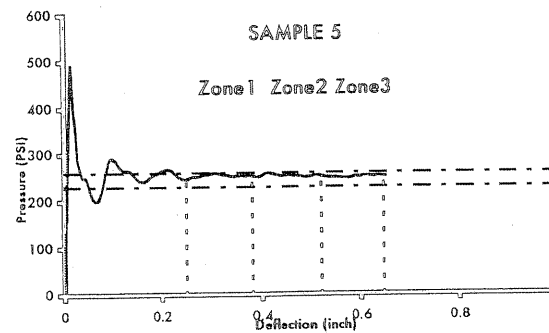
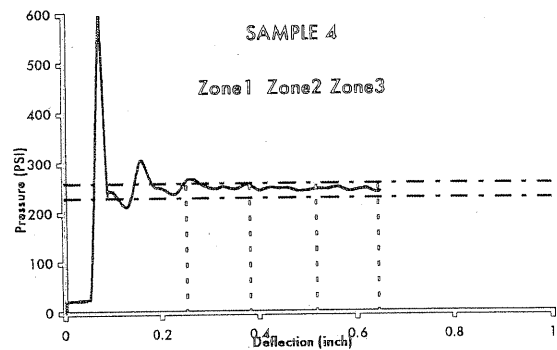
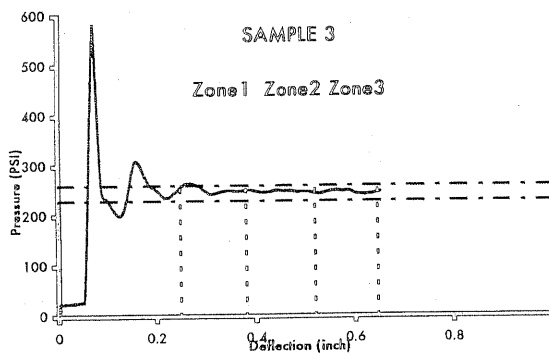
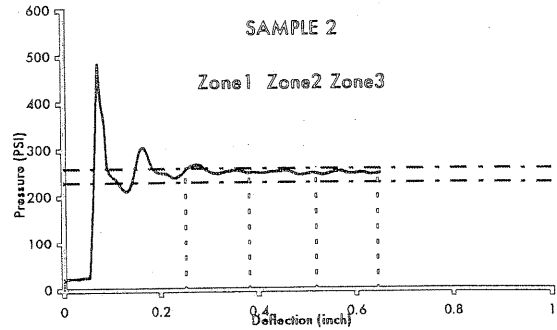
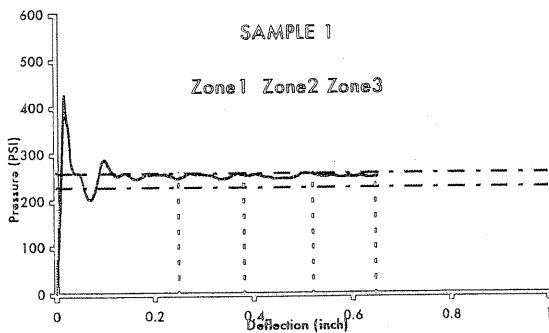
Honeycomb Type: 5.2 1/4 3003
 Higher Acceptable Crush Strength Limit: 260 PSI
 Lower Acceptable Crush Strength Limit: 230 PSI

Section 1: 0.25 - 0.38 inch
 Section 2: 0.38 - 0.52 inch
 Section 3: 0.52 - 0.65 inch
 Speed: 0.25 inch/min

Test No: 21693-00

GR No: P103448-01

Block No: N/A





NHTSA DEFORMABLE SIDE IMPACT BARRIER
 ALUMINIUM HONEYCOMB CERTIFICATION
 STATIC TEST RESULTS

MAIN BLOCK
 Core: 1.6 3/8 5052

Required Crush Strength
 42.5 PSI to 47.5 PSI

Test No: 21677-84

GR No: P110373-B00

Block No: N/A

	Crush Strength (PSI)			RESULT
	0.25 to 0.38 inch	0.38 to 0.52 inch	0.52 to 0.65 inch	
Sample* 1	44.853	44.955	44.714	PASS
Sample 2	45.757	45.959	46.036	PASS
Sample 3	46.027	45.653	45.878	PASS
Sample 4	44.808	44.820	44.564	PASS
Sample 5	45.655	45.226	44.773	PASS
Sample 6	45.777	46.355	45.333	PASS
Sample 7	45.279	45.124	44.829	PASS
Sample 8	46.609	45.972	45.573	PASS

Seven out of the eight samples must fulfil the crush strength requirement in order to pass the block certification

*Sample size and location as per R94.

RESULT: PASSED

NHTSA DEFORMABLE SIDE IMPACT BARRIER
MAIN BLOCK

Honeycomb Type: 1.6 3/8 5052
Higher Acceptable Crush Strength Limit: 47.5 PSI
Lower Acceptable Crush Strength Limit: 42.5 PSI

Section 1: 0.25 - 0.38 inch
Section 2: 0.38 - 0.52 inch
Section 3: 0.52 - 0.65 inch
Speed: 0.25 inch/min
Block No: N/A

Test No: 21677-84

GR No: P110373-B00

