

**Vehicle Research and Test Center
2002 Nissan Altima into
Fixed 40% Left Offset Deformable Barrier
Load Cell Barrier at 60.0 km/h
TRC Inc. Test Number: 030611**

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

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

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Section 1.0

Purpose and Test Procedure

Purpose

This 60.1 km/h (37.4 mph) fixed 40% left offset deformable load cell barrier impact test was conducted for the National Highway Traffic Safety Administration (NHTSA) and Vehicle Research and Test Center (VRTC) by Transportation Research Center Inc. (TRC Inc.).

The purpose of this test was to evaluate frontal crash protection in a 40% offset frontal barrier impact test. The subject vehicle was a 2002 Nissan Altima 4-door.

Test Procedure

This test was conducted in accordance with VRTC instructions for a vehicle into a fixed 40% left offset deformable load cell barrier test. Data was obtained relative to FMVSS 208, "Occupant Crash Protection"; FMVSS 212, "Windshield Retention"; and FMVSS 219, "Windshield Zone Intrusion", performance in an increased speed test mode using 5th percentile female anthropomorphic test devices (dummies).

The test vehicle, a 2002 Nissan Altima, was instrumented with sixteen (16) accelerometers to measure longitudinal, lateral and vertical axis accelerations, one (1) displacement potentiometer, and four (4) seat belt load cells. The driver's and passenger's airbag signals were monitored with inductive pickups. The vehicle impacted a fixed offset deformable load cell barrier. The vehicle's specified impact velocity range was 59.2 to 60.8 km/h.

The deformable barrier face was offset to the left so that the right edge of the face was 177 millimeters left of the vehicle centerline. The bottom edge of the barrier face was 200 millimeters above the floor. The offset deformable barrier was instrumented with fifty (50) load cells to measure longitudinal forces.

The test vehicle contained two (2) Part 572E 50th percentile adult male Hybrid III dummies. The dummies were positioned in the front outboard designated seating positions according to FMVSS 208 (December 18, 2001). The driver dummy and the passenger dummy were both belted and were restrained with front dual stage airbags.

Both dummies were instrumented with six (6) head, plus six (6) chest, and three (3) pelvis, accelerometers to measure longitudinal, lateral, and vertical accelerations. The dummies were also instrumented with upper neck moment and force load cells, left and right femur load cells to measure triaxial forces and moments, and chest deflection potentiometers. Both dummies were also equipped with THOR-LX legs, which included upper and lower tibia load cells to measure triaxial forces and moments, tibia accelerometers in two axes, foot accelerometers in three axes, a tibia to femur displacement potentiometer at each knee, and three (3) rotary potentiometers at each ankle to measure foot rotations about three axes.

The 199 data channels were digitally sampled and recorded at 12,500 samples per second and processed per SAE J211 March 1995.

The crash event was recorded by one (1) real-time panning motion picture camera and nine (9) high-speed motion picture cameras. The pre- and post-test conditions were recorded by one (1) real-time motion picture camera.

The barrier test summary data are presented in Section 2.0. The summary of FMVSS 208, 212, and 219 data are presented in Section 3.0. The occupant, camera, vehicle, and barrier measurements are presented in Section 4.0. Appendix A contains the still photographic prints. Appendix B contains the dummy and vehicle data plots. Appendix C contains the dummy verification data. Appendix D contains test equipment and instrumentation calibration information. Appendix E contains a copy of the INSIA Report on Structural Measurements. Appendix F contains miscellaneous manufacturer's information.

Section 2.0

Fixed 40% Left Offset Deformable Load Cell Barrier Test Summary

Test Results Summary

This fixed 40% left offset load cell barrier test was conducted by TRC Inc. on June 11, 2003.

The test vehicle, a 2002 Nissan Altima 4-door, was equipped with a 2.5-liter transverse engine, automatic transmission, power steering, power brakes and dual stage front airbags. The vehicle's test weight was 1595.0 kg. The vehicle's impact speed was 60.1 km/h. The vehicle impacted 4 mm to the left of the 40% offset target line.

The driver's 36 millisecond Head Injury Criteria (HIC) was 307. The driver's 15 millisecond HIC was 180. The driver's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 36.2 g. The driver's maximum chest deflection was 28 mm. The driver's left and right femur maximum axial compressive forces were 137 N and 1603 N, respectively. The driver dummy's upper neck injury calculations were: neck tension-flexion (NTF), 0.12; neck tension-extension (NTE), 0.24; neck compression-flexion (NCF), 0.12 and neck compression-extension (NCE), 0.21. The driver dummy's peak upper neck tension force was 1035 N and peak neck compression force was 311 N.

The right front passenger's 36 millisecond HIC was 270. The passenger's 15 millisecond HIC was 150. The passenger's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 27.9 g. The passenger's maximum chest deflection was 30 mm. The passenger's left and right femur maximum axial compressive forces were 1956 N and 332 N, respectively. The right front passenger's upper neck injury calculations were: NTF, 0.13; NTE, 0.15; NCF, 0.08 and NCE, 0.12. The right front passenger dummy's peak upper neck tension force was 639 N and peak neck compression force was 150 N.

There was 100% windshield periphery retention. There was no penetration through the windshield.

Data Acquisition Explanations

The right front passenger dummy's right knee displacement data channel, KNRXD2, lost data after 150 milliseconds.

The right front passenger dummy's left upper tibia X-axis and Z-axis force and X-axis and Y-axis moment data channels, TBLXF2, TBLZF2, TBLXM2, and TBLYM2, recorded intermittent data spikes between 40 and 105 milliseconds and between 300 and 311 milliseconds.

The right front passenger dummy's right tibia X-axis acceleration data channel, TBRXG2, recorded questionable data spikes between 300 and 311 milliseconds.

The right front passenger dummy's right lower tibia Y-axis moment data channel, ANRYM2, recorded questionable data after 158 milliseconds.

The barrier load cell C7 X-axis force data channel, LCC7XF, recorded questionable data throughout the impact event.

Inductive pickups to monitor airbag fire times were labeled "A" and "B", rather than primary and secondary, because wiring information to distinguish between the two airbag stages was not available.

Table 1 Crash Test Summary

Test mode:	Fixed 40% left offset load cell barrier		
Test date:	06/11/03		
Test time:	15:37		
Ambient temperature:	21° C		
Vehicle year/make/ model/body style:	2002/Nissan/Altima/4-door		
Vehicle test weight:	1595.0 kg		
Impact angle ¹ :	0°		
Impact velocity ² :	60.1 km/h		
Maximum static crush ³ :	735 mm		
Number of data channels:	199		
Number of cameras:	High-speed	9	Real-time 1
<u>Dummies:</u>	<u>Driver #168</u>		<u>Passenger #169</u>
Type:	HIII-50 th Male (Part 572E)		HIII-50 th Male (Part 572E)
Location:	Left Front		Right Front
Restraint:	Dual stage airbag, 3-point seat belt		Dual stage airbag, 3-point seat belt
<u>Seat track position for test:</u>			
Driver:	Mid		
Passenger:	Mid		
<u>Seat back position for test:</u>			
Driver:	12.5°		
Passenger:	15.0°		
<u>Head restraint position for test:</u>			
Driver:	Full up		
Passenger:	Full up		
Steering column position:	Mid		

¹ With respect to tow track centerline.

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

³ Measured at the front of hood.

Table 2 General Test and Vehicle Parameter Data

Vehicle year/make/
model/body style: 2002/Nissan/Altima/4-door

VIN: 1N4AL11D42C108440

Model year: 2002

Body style: 4-door

Color: Light Blue

Engine data:

 Cylinders: 4

 Displacement 2.5 liters

 Cylinder placement: Straight

 Engine placement: Transverse

Transmission data: 3 speed, ___ manual, X automatic, ___ overdrive

 Final drive: X FWD, ___ RWD, ___ 4WD

Date vehicle received: 06/10/03

Odometer reading: 32614

Dealer's name
and address: N/A

Accessories:

Power steering	Yes	Automatic transmission	Yes
Power brakes	Yes	Automatic speed control	Yes
Power seats	Yes	Tilting steering wheel	Yes
Power windows	Yes	Telescoping steering wheel	No
Tinted glass	Yes	Air conditioning	Yes
Radio	Yes	Anti-skid brake	Yes
Clock	Yes	Rear window defroster	Yes
Other	None	Power door locks	Yes

Certification data from vehicle's label:

Vehicle manufactured by: Nissan Motor Company, LTD.

Date of manufacture: 08/01

VIN: 1N4AL11D42C108440

GVWR: 1906 kg (4202 lbs.)

GAWR: Front: 1020 kg (2249 lbs.)

 Rear: 893 kg (1969 lbs.)

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

Tires on vehicle (mfr., line, size): Bridgestone, Turanza EL42, P205/65R16

Tire pressure with maximum capacity vehicle load:

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

Spare tire (mfr., line, size): Firestone, Temporary, T135/70R16

Type of seats:

Front Bucket
Rear Split bench

Maximum width: 1777 mm

Wheelbase: 2800 mm

Location of "Recommended Tire Pressure" label:

The label was located on console.

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

Recommended tire size: P205/65R16

Recommended cold tire pressure:

Front: 29 psi (200 kPa)
Rear: 29 psi (200 kPa)

Vehicle Capacity Data:

Number of Occupants (Designated seating capacity):

Front 2
Rear 3
Total 5

Vehicle capacity weight: 390 kg (860 lbs.)

Rated cargo/luggage weight 50 kg (110 lbs.)

Test vehicle attitude:

Delivered attitude: LF 716 mm; RF 726 mm; LR 710 mm; RR 707 mm
Fully loaded attitude: LF 693 mm; RF 704 mm; LR 682 mm; RR 677 mm
Pre-test attitude: LF 701 mm; RF 708 mm; LR 657 mm; RR 669 mm
Post-test attitude: LF 810 mm; RF 682 mm; LR 651 mm; RR 690 mm

Table 2 General Test and Vehicle Parameter Data Cont'd

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

Right front	418.5 kg	Right rear	278.0 kg
Left front	438.5 kg	Left rear	264.0 kg
Total front weight	857.0 kg	(61.3 % of total vehicle weight)	
Total rear weight	542.0 kg	(38.7 % of total vehicle weight)	
Total delivered weight	1399.0 kg		

Calculation of test vehicle's target test weight:

Total Delivered Weight (UDW) =	1399 kg
Rated Cargo/Luggage Weight (RCLW) ¹ =	50 kg
Weight of 2 Part 572E Dummies @ 76 kg each =	152 kg
Target test weight =	1601.0 kg

Weight of test vehicle with required dummies and 44.0 kg of cargo weight:

Right front	446.6 kg	Right rear	335.2 kg
Left front	466.4 kg	Left rear	346.8 kg
Total front weight	913.0 kg	(57.2% of total vehicle weight)	
Total rear weight	682.0 kg	(42.8% of total vehicle weight)	
Total test weight	1595.0 kg	(3.7% under target test weight)	

Weight of ballast secured in vehicle: 0 kg

Components removed to meet target test weight: Rear door skins and glass, rear fascia and trunk seal.

Location of Vehicle's CG: 1197 mm rearward of front wheel centerline

Fuel System Data:

Usable fuel system capacity	75.7 liters (from owner's manual)
Actual test volume:	70.4 liters (93% of usable)

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

Table 3 Post-Impact Data

Test number: 030611
Test date: 06/11/03
Test time: 15:37
Test type: Fixed 40% left offset deformable load cell barrier
Impact angle: 0°
Ambient temperature
at impact area: 21° C
Required impact velocity range: 59.2 to 60.8 km/h

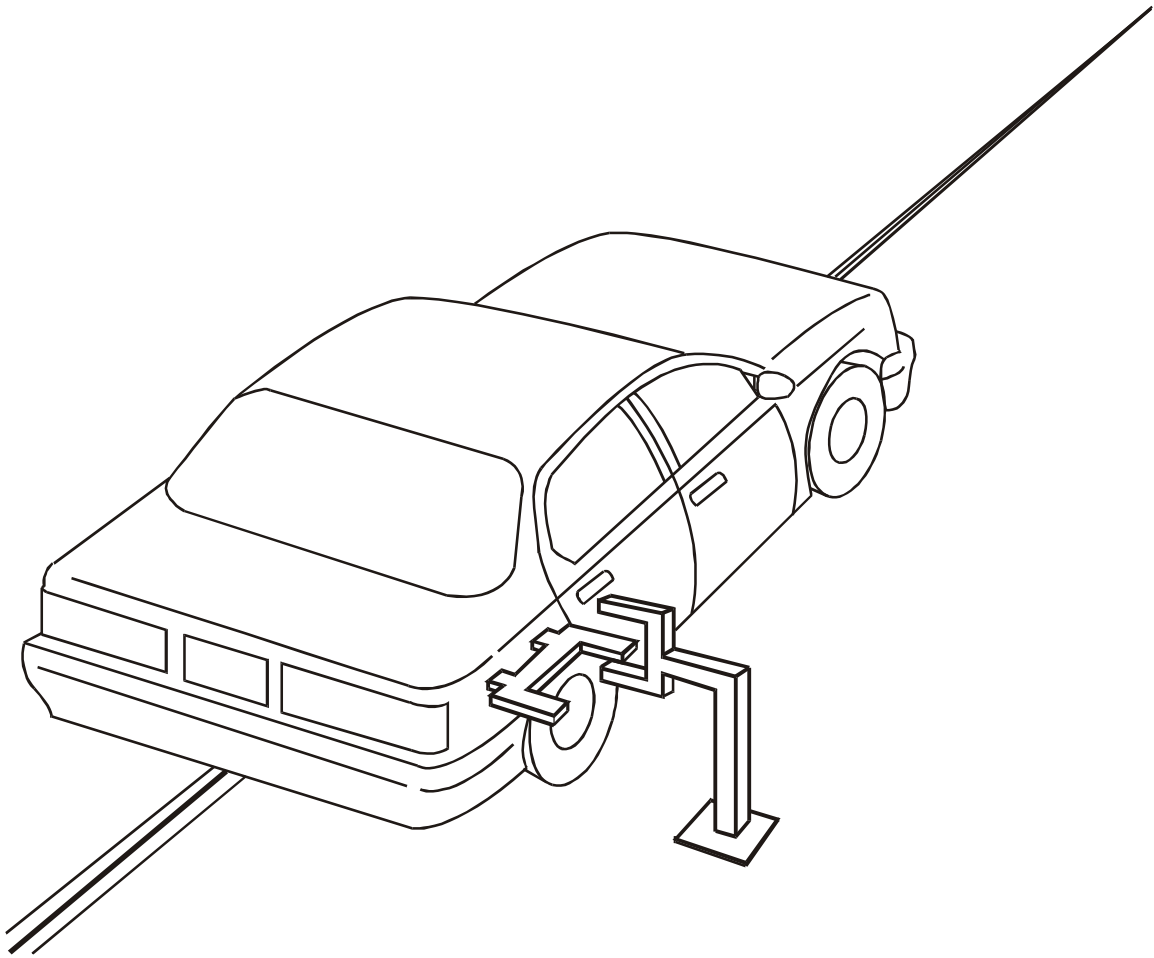
Barrier impact velocity:

Primary: 60.1 km/h
Secondary: 60.1 km/h
Distance from vehicle to barrier:
Entering velocity trap: 661 mm
Exiting velocity trap: 51 mm

Barrier offset (at right edge of barrier):

Target offset: 177 mm left of vehicle centerline
Impact point variance: 4 mm left
Actual offset: 173 mm left of vehicle centerline

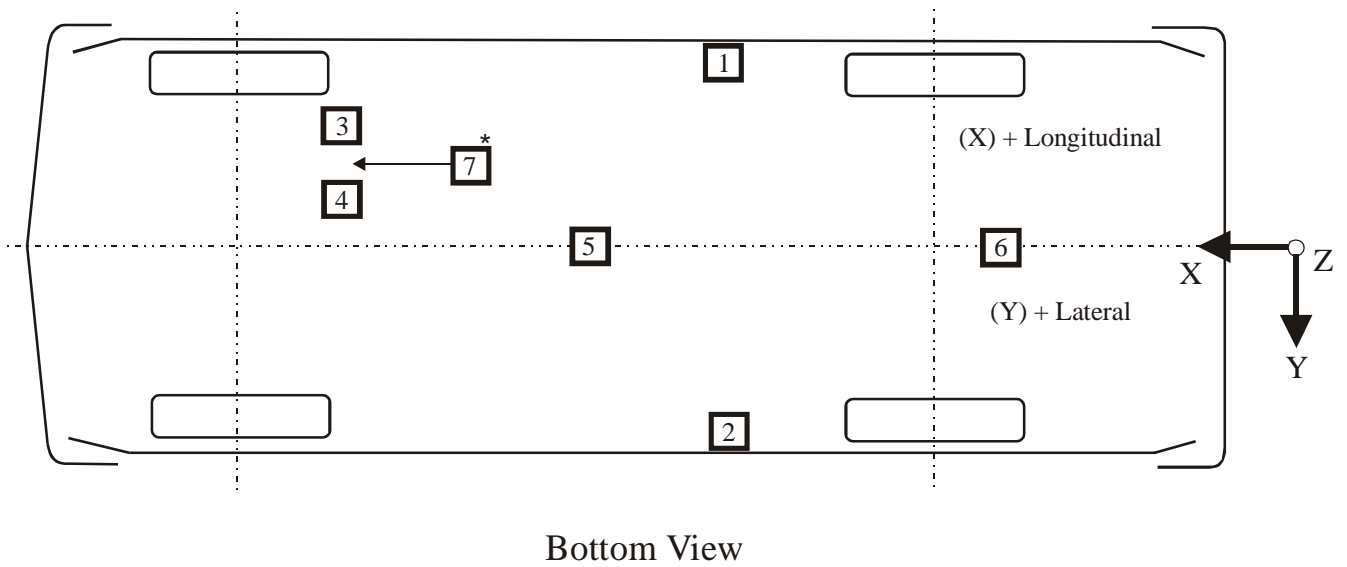
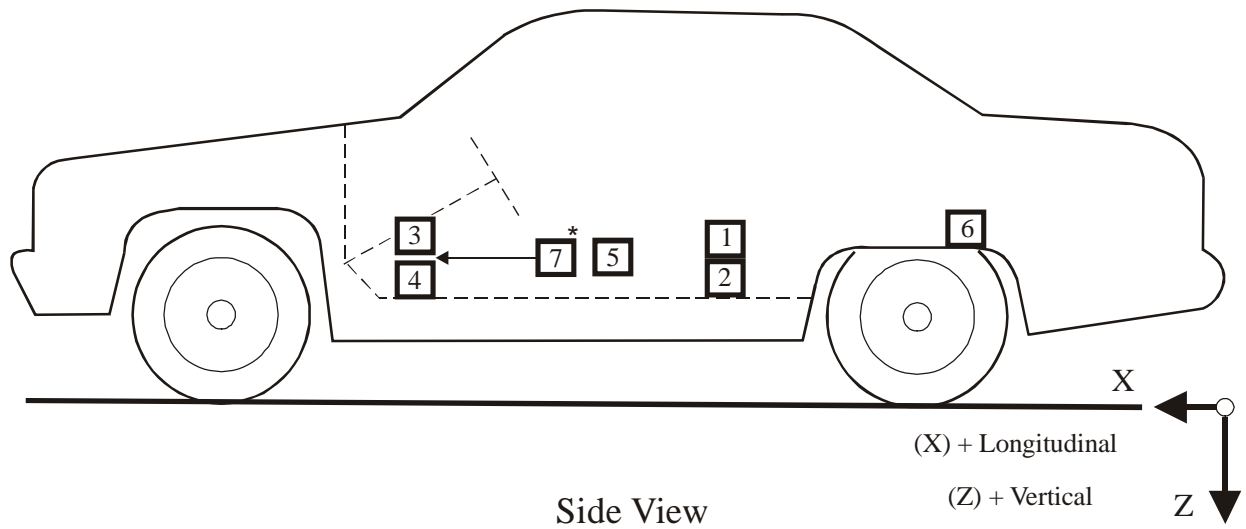
Figure 1 Impact Velocity Measurement System



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

The vanes have 610-millimeter spacing.

Figure 2 Vehicle Accelerometer and String Potentiometer Placement



* String potentiometer mounted under driver seat with string attached to toeboard to measure displacement.

Table 4 Vehicle Accelerometer Locations and Instrumentation Data Summary

TEST NUMBER: 030611-1

No. LOCATION	X	Y	Z	POSITIVE DIRECTION		NEGATIVE DIRECTION	
1 VEHICLE CENTER OF GRAVITY	2711 mm	0 mm	-517 mm				
LONGITUDINAL				5.0 g	@ 183.9 ms	30.5 g	@ 85.3 ms
LATERAL				27.0 g	@ 86.8 ms	15.7 g	@ 118.7 ms
VERTICAL				26.3 g	@ 111.2 ms	25.4 g	@ 120.2 ms
RESULTANT				38.6 g	@ 86.1 ms		
2 REAR DECK VERTICAL	233 mm	0 mm	-480 mm	8.4 g	@ 130.0 ms	10.7 g	@ 50.5 ms
3 LEFT REAR SEAT CROSSMEMBER	1875 mm	-620 mm	-346 mm				
LONGITUDINAL				3.2 g	@ 171.2 ms	27.9 g	@ 97.1 ms
LATERAL				13.7 g	@ 76.9 ms	2.2 g	@ 72.1 ms
VERTICAL				5.0 g	@ 159.9 ms	8.5 g	@ 123.0 ms
RESULTANT				28.1 g	@ 97.1 ms		
4 RIGHT REAR SEAT CROSSMEMBER	1898 mm	625 mm	-349 mm				
LONGITUDINAL				0.8 g	@ 232.1 ms	25.4 g	@ 78.2 ms
LATERAL				17.8 g	@ 76.9 ms	1.2 g	@ 136.2 ms
VERTICAL				4.3 g	@ 73.8 ms	4.5 g	@ 80.1 ms
RESULTANT				30.7 g	@ 77.3 ms		
5 DRIVERS LEFT SIDE TOE PAN	3461 mm	-515 mm	-257 mm				
LONGITUDINAL				3.8 g	@ 169.4 ms	29.0 g	@ 71.8 ms
LATERAL				20.4 g	@ 72.0 ms	17.0 g	@ 112.9 ms
VERTICAL				23.3 g	@ 75.0 ms	11.6 g	@ 117.2 ms
RESULTANT				38.6 g	@ 72.7 ms		

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

TEST NUMBER: 030611-1 No. LOCATION	X	Y	Z	POSITIVE DIRECTION		NEGATIVE DIRECTION	
6 DRIVERS RIGHT SIDE TOE PAN	3435 mm	-275 mm	-225 mm				
LONGITUDINAL				18.9 g	@ 86.2 ms	40.6 g	@ 80.2 ms
LATERAL				33.2 g	@ 73.4 ms	15.3 g	@ 112.9 ms
VERTICAL				31.4 g	@ 77.0 ms	17.3 g	@ 65.8 ms
RESULTANT				42.9 g	@ 80.0 ms		
7 DRIVERS TOE PAN DISPLACEMENT	NA	NA	NA				
LONGITUDINAL				6.4 mm	@ 178.5 ms	61.8 mm	@ 115.4 ms
8 DRIVER SEAT BELT LOAD CELLS	NA	NA	NA				
LAP BELT				4956.0 N	@ 113.5 ms	53.1 N	@ 309.4 ms
SHOULDER BELT				5985.4 N	@ 118.6 ms	27.6 N	@ 24.5 ms
9 PASSENGER SEAT BELT LOAD CELLS	NA	NA	NA				
LAP BELT				4492.4 N	@ 105.1 ms	7.3 N	@ 10.2 ms
SHOULDER BELT				5616.5 N	@ 103.4 ms	26.3 N	@ 24.5 ms

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

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Section 3.0

Summary of FMVSS 208, 212 and 219 (partial) Data

Table 5 Dummy Injury Criteria Data

	<u>Maximum Acceleration¹</u>							
	Head				Chest			
	X	Y	Z	R	X	Y	Z	R
Driver	-40.6 g	15.3 g	24.6 g	44.8 g	-33.7 g	15.8 g	-7.5 g	37.1 g
Passenger	-36.7 g	8.2 g	25.2 g	43.5 g	28.3 g	8.8 g	-6.7 g	29.1 g

	<u>Maximum Femur Compressive Force</u>	
	Left Femur	Right Femur
Driver	136 N	1603 N
Passenger	1956 N	332 N

	<u>Head Injury Criteria²</u>		
	36 millisecond		
	HIC	Start Time t ₁	End Time t ₂
Driver	307	88.32 ms	124.32 ms
Passenger	270	96.48 ms	132.48 ms

	15 millisecond		
	HIC	Start Time t ₁	End Time t ₂
	Driver	180	100.8 ms
Passenger	150	110.8 ms	125.84 ms

	<u>Chest Maximum Resultant Acceleration³</u>		
	Acceleration	Start Time t ₁	End Time t ₂
	Driver	36.2 g	105.95 ms
Passenger	27.9 g	113.323 ms	116.283 ms

Table 5 Dummy Injury Criteria Data, Cont'd.

Maximum Chest Deflection

Driver	28 mm
Passenger	30 mm

Neck Injury Calculations (Nij)²

	NTF	NTE	NCF	NCE
Driver	0.12	0.24	0.12	0.21
Passenger	0.13	0.15	0.08	0.12

Upper Neck Axial Force

	Tension	Compression
Driver	1035 N	311 N
Passenger	639 N	150 N

Tibia Index

	Upper Tibia	Lower Tibia
Driver-left	0.30	0.28
Driver-right	0.32	0.38
Passenger-left	0.60	0.22
Passenger-right	0.26	0.22

¹ See Report Sign Convention in Appendix D.

² As defined in FMVSS No. 208.

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

Table 6 Post-Impact Dummy/Vehicle Data

Visible Dummy Contact Points:

	<u>Driver</u>	<u>Passenger</u>
Head	Airbag, head restraint, B-pillar, D-ring	Airbag, head restraint
Chest	Airbag	Airbag
Abdomen	None	None
Left knee	Knee bolster	Glove box
Right knee	Knee bolster	None

Door opening:

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

Seat movement:

	<u>Seat back failure</u>	<u>Seat shift</u>
Left Front	None	Shifted forward on inboard track.
Right Front	None	None
Left Rear	None	None
Right Rear	None	None

Glazing damage: Driver and passenger along lower edge and passenger airbag damage.

Other notable impact effects: None

Figure 3 FMVSS 212 Test Data

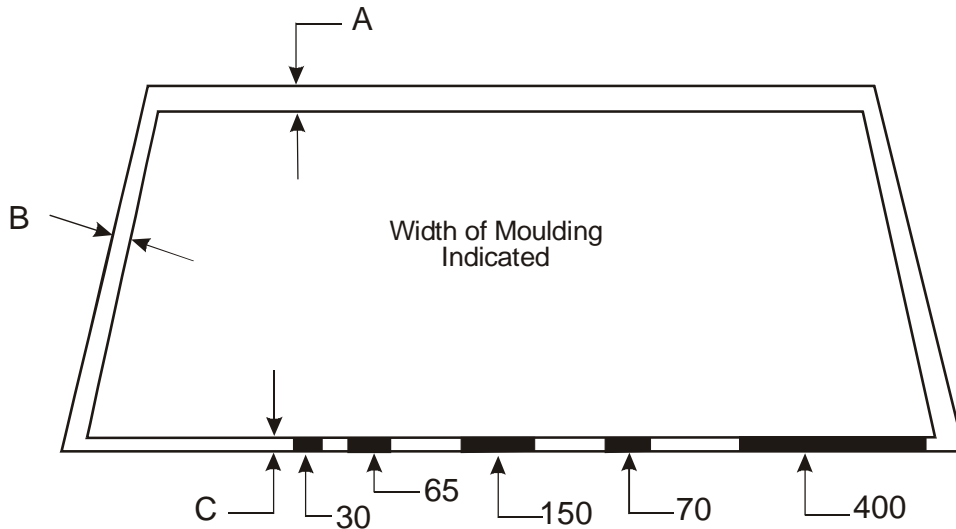
Details of windshield mounting such as retention method, trim type, etc.: Adhesive, Plastic and rubber

FMVSS 212 requirements: The post-test periphery retention amount must be at least 75% of the pre-test periphery measurement for vehicles NOT equipped with automatic restraints, and 50% for each side of windshield for vehicles equipped with automatic restraint systems for front occupants.

Windshield periphery measurements:

	<u>Pre-test</u>	<u>Post-test</u>	<u>Percent retention</u>
Right side	2190 mm	2190 mm	100%
Left side	2190 mm	2190 mm	100%
Total	4380 mm	4380 mm	100%

A = 15 mm
 B = 16 mm
 C = 9 mm



Front view of windshield¹

Loss of windshield retention lengths: 30 mm, 65 mm, 150 mm, 70 mm, 400 mm

¹ Indicate areas of loss of retention, if any, on windshield diagram.

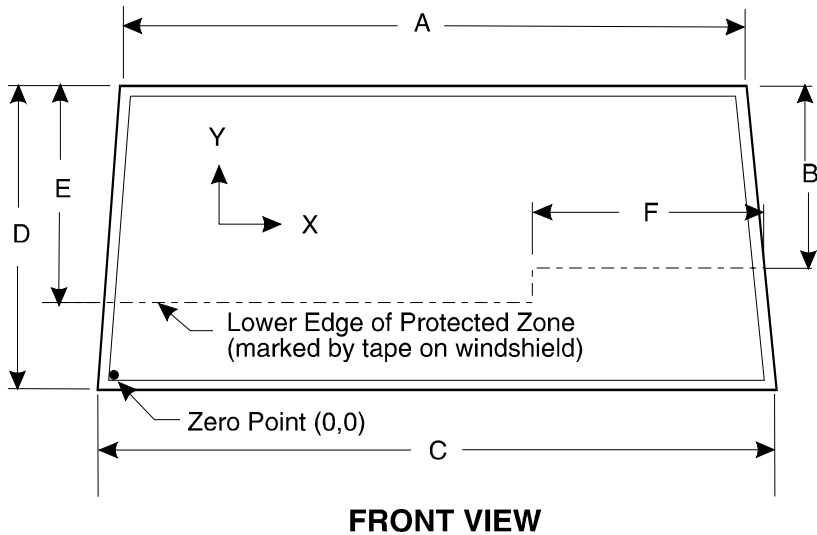
Figure 4 FMVSS 219 (partial) Test Data

Protected zone lower edge requirement:

The lower edge of the protected zone is determined by placing a 165-millimeter diameter rigid sphere weighing 6.8 kg in a position such that it simultaneously contacts the inner surface of the windshield and the top surface of the instrument panel including padding. Draw the locus of points on the inner surface of the windshield contactable by the sphere across the width of the instrument panel. From the outermost contactable points, extend the locus line horizontally to the edges of the windshield, and then draw a line on the inner surface of the windshield below and 13 millimeters from the locus line. The **lower edge of the protected zone** is the longitudinal projection onto the outer surface of the windshield of this line.

Windshield measurements:

- A = 1174 mm
- B = 610 mm
- C = 1529 mm
- D = 840 mm
- E = 601 mm
- F = 552 mm



Method of adhering protected zone template to windshield:

Areas of windshield template penetration greater than 6 mm: None

	Coordinates	
	X	Y
1.	None	
2.		
3.		

Areas of windshield penetration, below the protected zone, through the inner surface of the windshield: None

1.	None
2.	
3.	

Section 4.0

Occupant, Vehicle, Camera, and Barrier Information

Dummy Kinematic Summary

Driver Dummy

Upon impact, the driver dummy translated forward on the seat impacting both knees into the instrument panel. The dummy's head rotated forward and contacted the airbag. As the head and chest contacted the airbag, the torso leaned leftward and the neck rotated left ear towards left shoulder. On rebound, the head and neck extended back contacting the head rest, B-pillar, and D-ring mount. The dummy came to rest seated upright in the driver's seat.

Right Front Passenger Dummy

Upon impact, the passenger dummy translated forward on the seat impacting left knee into the dashboard. The head and chest impacted the airbag. The dummy rebounded into the seat; the neck extended and the head contacted the head restraint. The dummy came to rest seated upright in the passenger seat.

Figure 5 Dummy Measurement Locations for Front Seat Occupants

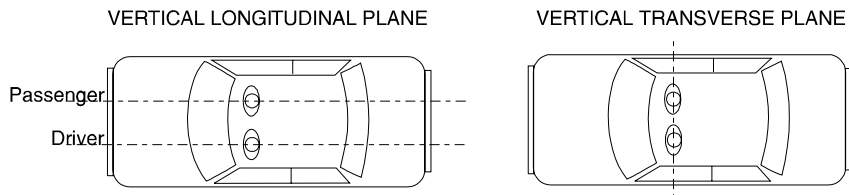
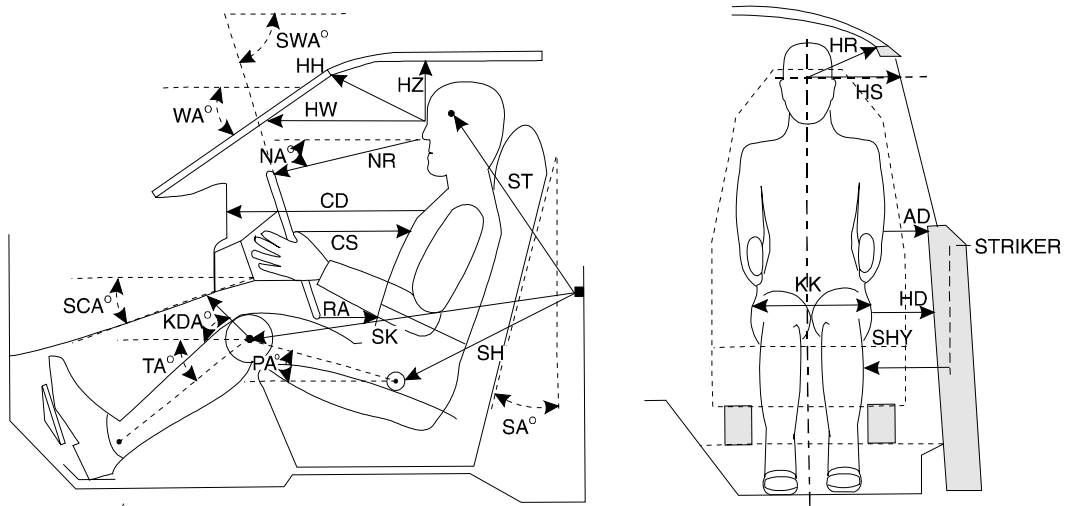


Table 7 Dummy Measurement Data For Front Seat Occupants

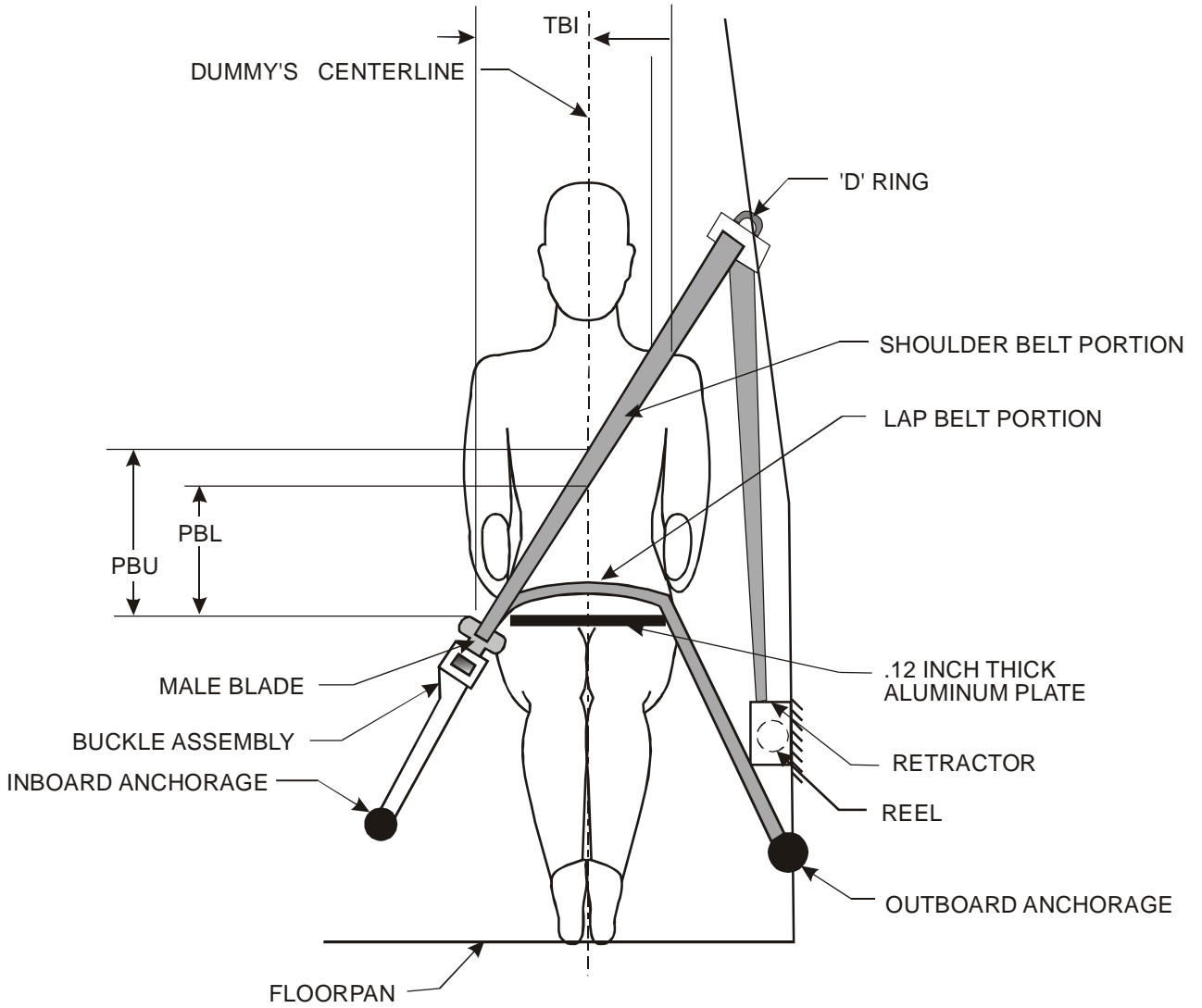
Designation	Type of Measurement	Driver (Serial # 168)	Passenger (Serial # 169)
WA	Windshield angle	26.4°	N/A
SWA	Steering wheel angle	25.0°	N/A
SCA	Steering column angle	65.0°	N/A
SA ¹	Seat back angle	12.5°	15.0°
HZ	Head to roof	190 mm	185 mm
HH	Head to header	332 mm	355 mm
HW	Head to windshield	642 mm	640 mm
HR	Head to side header	220 mm	214 mm
NR	Nose to rim	370 mm	N/A
NA	Nose to rim angle	14.0°	N/A
CD	Chest to dash	558 mm	581 mm
CS	Steering wheel to chest	301 mm	N/A
RA	Rim to abdomen	168 mm	N/A
KDL	Left knee to dash	180 mm	170 mm
KDR	Right knee to dash	140 mm	198 mm
KDA	Outboard knee to dash angle	28.8°	26.8°
PA	Pelvic angle	23.8°	24.0°
TA	Tibia angle	47.5°	42.8°
KK	Knee to knee	350 mm	280 mm
ST ²	Striker to head	526 mm	516 mm
	Striker to head angle	-72.6°	-79.8°
SK ²	Striker to knee	622 mm	615 mm
	Striker to knee angle	2.3°	-0.6°
SH ²	Striker to H-point	280 mm	257 mm
	Striker to H-point angle	29.1°	21.6°
SHY	Striker to H-point (Y dir.)	260 mm	219 mm
HS	Head to side window	316 mm	314 mm
HD	H-point to door	155 mm	128 mm
AD	Arm to door	119 mm	105 mm

The seat back angle (SA°) is measured relative to vertical, all other angles are measured relative to horizontal.

¹ Measured at the head restraint.

² A negative angle indicates the measurement point was above the striker.

Figure 6 Vehicle Seat Belt Positioning Data



	Driver Dummy	Passenger Dummy
PBU - Top surface of aluminum plate to belt upper edge	324 mm	296 mm
PBL - Top surface of aluminum plate to belt lower edge	245 mm	217 mm
TBI - Dummy centerline to intersection of upper torso belt and lap belt	250 mm	272 mm

Table 8 Vehicle Structural Measurements^{1,2}

	Elements	Pre-Test
1	Total Length	4863
2	Total Width	1800
3	Bumper Top Height	56
4	Bumper Bottom Height	21
5	Longitudinal Member Top Height	268
6	Longitudinal Member Bottom Height	194
7	Distance Between Longitudinal Members	1143
7'	Longitudinal Member Width	933
8	Engine Top Height	866
9	Engine Bottom Height	152
10	Engine and Gearbox Width	911
11	Front Bumper - Engine Distance	455
12	Front Shock Absorber Fixing Height	858
13	Bonnet Leading Edge Height	684
14	Front Shock Absorber Fixing Width	1090
15	Front Bumper - Front Axle Distance	955
16	Front Axle - A Pillar Distance	522
17	A Pillar - B Pillar Distance	1114
18	B Pillar - Rear Axle Distance	1180
19	B Pillar - C Pillar Distance	1098
20	Roof Sill Bottom Height	1260
21	Roof Sill Top Height	1355
22	Floor Sill Bottom Height	183
23	Floor Sill Top Height	327

All distance measurements are in millimeters.

¹ Taken from INSIA report, “Structural Survey of Cars, Methodology of the Main Resistant Elements in the Car Body”, March 1999. This report is included in Appendix E.

² The vertical measurements from the ground are adjusted based on the test vehicle’s pre-test attitude measurements.

Figure 7 Pre-Test And Post-Test Measurement Points

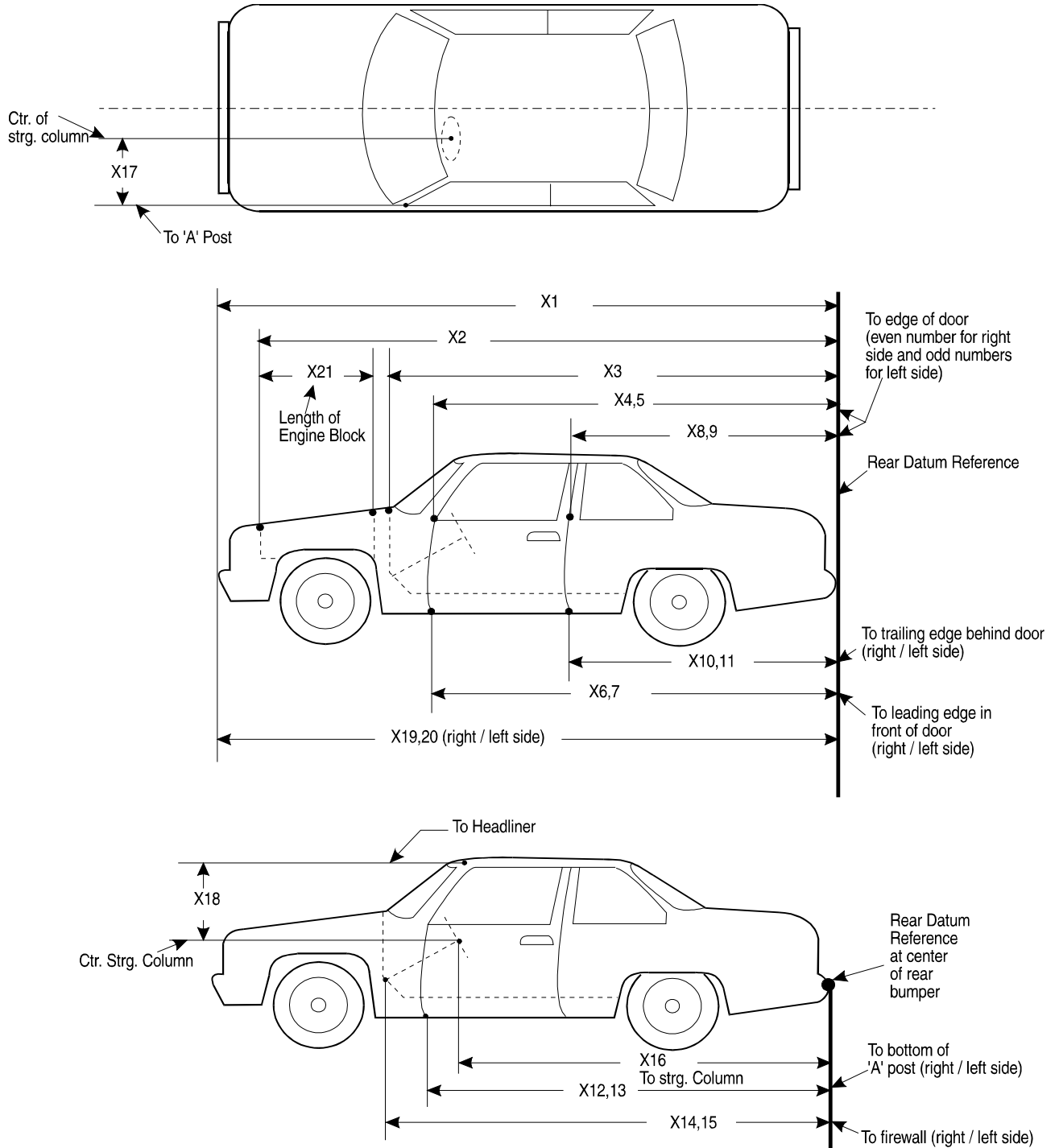


Table 9 Impacted Vehicle Measurements

Test number: 030611

Vehicle year/make/model/body style: 2002/Nissan/Altima/4-door

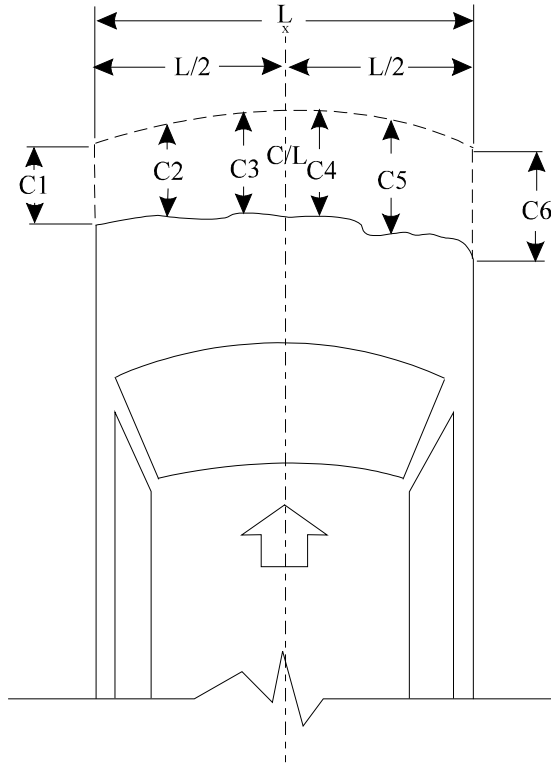
No.	Type of measurement	Pre-Test	Post-Test	Difference
X1	Total Length of Vehicle at Centerline ¹	4863	4783	80
X2	Rear Surface of Vehicle to Front of Engine Block	4196	4125	71
X3	Rear Surface of Vehicle to Firewall	3733	3579	154
X4	Rear Surface of Veh. to Upper Leading Edge of Right Door	3358	3353	5
X5	Rear Surface of Veh. to Upper Leading Edge of Left Door	3358	3348	10
X6	Rear Surface of Veh. to Lower Leading Edge of Right Door	3348	3351	-3
X7	Rear Surface of Veh. to Lower Leading Edge of Left Door	3349	3345	4
X8	Rear Surface of Veh. to Upper Trailing Edge of Right Door	2280	2278	2
X9	Rear Surface of Veh. to Upper Trailing Edge of Left Door	2279	2272	7
X10	Rear Surface of Veh. to Lower Trailing Edge of Right Door	2273	2288	-15
X11	Rear Surface of Veh. to Lower Trailing Edge of Left Door	2287	2285	2
X12	Rear Surface of Veh. to Bottom of " A " Post on Right Side	3358	3360	-2
X13	Rear Surface of Veh. to Bottom of " A " Post on Left Side	3368	3350	18
X14	Rear Surface of Vehicle to Firewall - Right Side	3783	3785	-2
X15	Rear Surface of Vehicle to Firewall - Left Side	3773	3676	97
X16	Rear Surface of Vehicle to Steering Wheel Center	2883	2853	30
X17	Center of Steering Column to " A " Post	300	286	14
X18	Center of Steering Column to Headliner	450	419	31
X19	Rear Surface of Vehicle to Right Side of Front Bumper ²	4698	N/A	N/A
X20	Rear Surface of Vehicle to Left Side of Front Bumper ²	4683	N/A	N/A
X21	Length of Engine Block	530	530	0
RD	Rear Surface of Vehicle to Right Side of Dash Panel	3215	3216	-1
CD	Rear Surface of Vehicle to Center of Dash Panel	3236	3188	48
LD	Rear Surface of Vehicle to Left Side of Dash Panel	3218	3175	43

All distance measurements are in millimeters.

¹ Post-test measurement made without bumper fascia. The difference is affected.

² Post-test measurement point could not be located.

Figure 8 Vehicle Crush



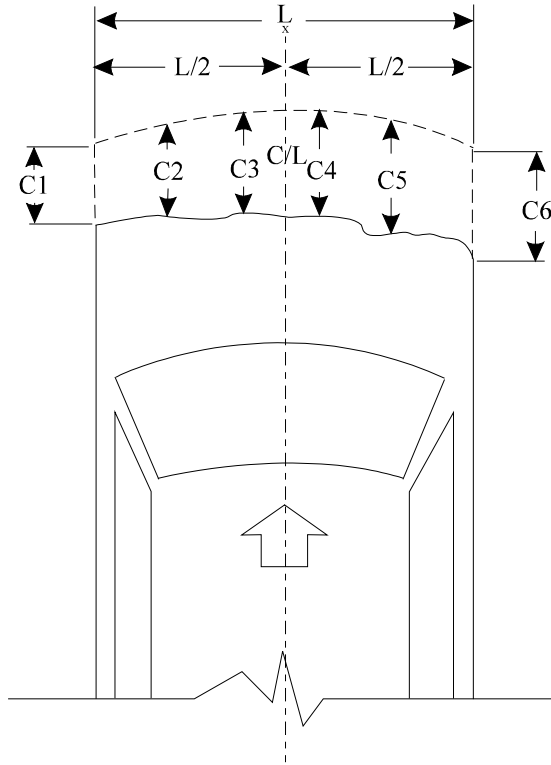
Notes: L is pre-test length of contact surface.
 C1 through C6 are spaced equally apart.
 CL is vehicle centerline.

Vehicle: 2002 Nissan Altima
 Measured with bumper fascia:

Location	Pre-test	Post-test ¹	Difference ¹
L	1525 mm		
C1	4683 mm	N/A	N/A
C2	4793 mm	N/A	N/A
C3	4843 mm	N/A	N/A
C4	4843 mm	N/A	N/A
C5	4813 mm	N/A	N/A
C6	4698 mm	N/A	N/A
CL	4863 mm	N/A	N/A

¹ Bumper fascia separated during test.

Figure 8 Vehicle Crush, Cont'd.



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

Vehicle: 2002 Nissan Altima

Measured to bumper beam without bumper fascia:

Location	Pre-test	Post-test	Difference ¹
L	1173 mm		
C1	4743 mm	4226 mm	517 mm
C2	4773 mm	4258 mm	515 mm
C3	4783 mm	4301 mm	482 mm
C4	4783 mm	4479 mm	304 mm
C5	4774 mm	4628 mm	146 mm
C6	4738 mm	4728 mm	10 mm
CL	4783 mm	4393 mm	390 mm

¹ The difference for point C3, measured without the bumper fascia, is included in the NHTSA database submission as Damage Profile Distance 3.

Table 10 Test Vehicle Frontal Profile Data

		Pre-Test Profile					
		Vehicle Left			Vehicle Right		
		Point 1	Point 2	Point 3	Point 4	Point 5	Point 6
Bottom of Front Bumper	X	4698 mm	4823 mm	4863 mm	4860 mm	4818 mm	4693 mm
	Y	-770 mm	-457 mm	-150 mm	153 mm	458 mm	764 mm
	Z	-400 mm	-409 mm	-399 mm	-400 mm	-410 mm	-418 mm
Top of Front Bumper	X	4689 mm	4798 mm	4843 mm	4841 mm	4788 mm	4673 mm
	Y	-768 mm	-455 mm	-152 mm	154 mm	459 mm	767 mm
	Z	-456 mm	-497 mm	-476 mm	-481 mm	-508 mm	-498 mm
Center of Grille	X	4665 mm	4767 mm	4801 mm	4798 mm	4758 mm	4653 mm
	Y	-768 mm	-456 mm	-153 mm	157 mm	463 mm	764 mm
	Z	-539 mm	-573 mm	-585 mm	-587 mm	-567 mm	-550 mm
Front of Hood	X	4405 mm	4689 mm	4743 mm	4738 mm	4678 mm	4383 mm
	Y	-730 mm	-458 mm	-153 mm	153 mm	459 mm	725 mm
	Z	-763 mm	-677 mm	-695 mm	-703 mm	-693 mm	-770 mm

		Post-Test Profile					
		Vehicle Left			Vehicle Right		
		Point 1	Point 2	Point 3	Point 4	Point 5	Point 6
Bottom of Front Bumper ¹	X	N/A	N/A	N/A	N/A	N/A	N/A
	Y	N/A	N/A	N/A	N/A	N/A	N/A
	Z	N/A	N/A	N/A	N/A	N/A	N/A
Top of Front Bumper ¹	X	N/A	N/A	N/A	N/A	N/A	N/A
	Y	N/A	N/A	N/A	N/A	N/A	N/A
	Z	N/A	N/A	N/A	N/A	N/A	N/A
Center of Grille ¹	X	N/A	N/A	N/A	N/A	N/A	N/A
	Y	N/A	N/A	N/A	N/A	N/A	N/A
	Z	N/A	N/A	N/A	N/A	N/A	N/A
Front of Hood	X	3670 mm	4119 mm	4291 mm	4401 mm	4392 mm	3915 mm
	Y	-720 mm	-450 mm	-147 mm	153 mm	454 mm	725 mm
	Z	-980 mm	-685 mm	-670 mm	-677 mm	-745 mm	-905 mm

		Difference					
		Vehicle Left			Vehicle Right		
		Point 1	Point 2	Point 3	Point 4	Point 5	Point 6
Bottom of Front Bumper ¹	X	N/A	N/A	N/A	N/A	N/A	N/A
	Y	N/A	N/A	N/A	N/A	N/A	N/A
	Z	N/A	N/A	N/A	N/A	N/A	N/A
Top of Front Bumper ¹	X	N/A	N/A	N/A	N/A	N/A	N/A
	Y	N/A	N/A	N/A	N/A	N/A	N/A
	Z	N/A	N/A	N/A	N/A	N/A	N/A
Center of Grille ¹	X	N/A	N/A	N/A	N/A	N/A	N/A
	Y	N/A	N/A	N/A	N/A	N/A	N/A
	Z	N/A	N/A	N/A	N/A	N/A	N/A
Front of Hood ²	X	735 mm	570 mm	452 mm	337 mm	286 mm	468 mm
	Y	-10 mm	-8 mm	-6 mm	0 mm	5 mm	0 mm
	Z	217 mm	8 mm	-25 mm	-26 mm	52 mm	135 mm

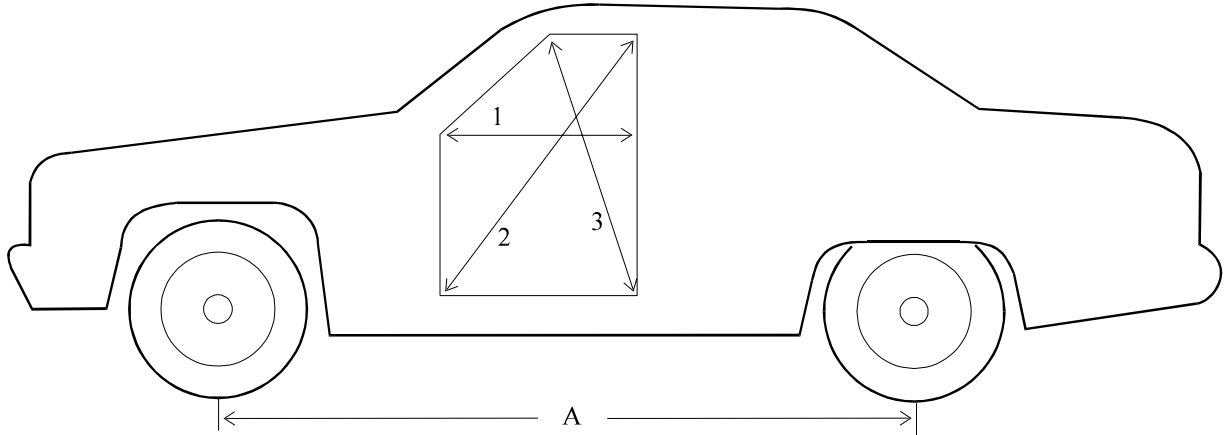
Note: Six points divide the width of the car. Pre-test and post-test measurement references: +X, forward of rear bumper; +Y, rightward from vehicle centerline; +Z, downward from ground level.

¹ Measurement point could not be located post-test.

² The difference for points 1, 2, 4-6, measured at the front of the hood, are included in the NHTSA database submission as Damage Profile Distance 1, 2, 4-6.

Figure 9 Vehicle Intrusion Measurements

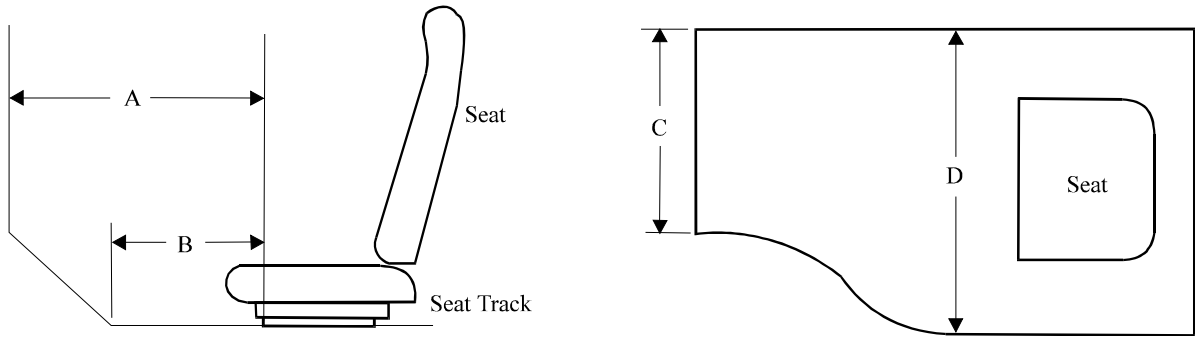
Door Opening Width



Units (mm)	Left			Right		
Measurement	1	2	3	1	2	3
Pre-Test	1051 mm	1506 mm	990 mm	975 mm	1485 mm	980 mm
Post-Test	1038 mm	1498 mm	1000 mm	982 mm	1482 mm	980 mm
Difference	13 mm	8 mm	-10 mm	-7 mm	3 mm	0 mm

Units (mm)	A = Wheelbase Left	A = Wheelbase Right
Pre-Test	2800 mm	2800 mm
Post-Test	2675 mm	2820 mm
Difference	125 mm	-20 mm

Figure 10 Vehicle Intrusion Measurements
Static Footwell Deformation



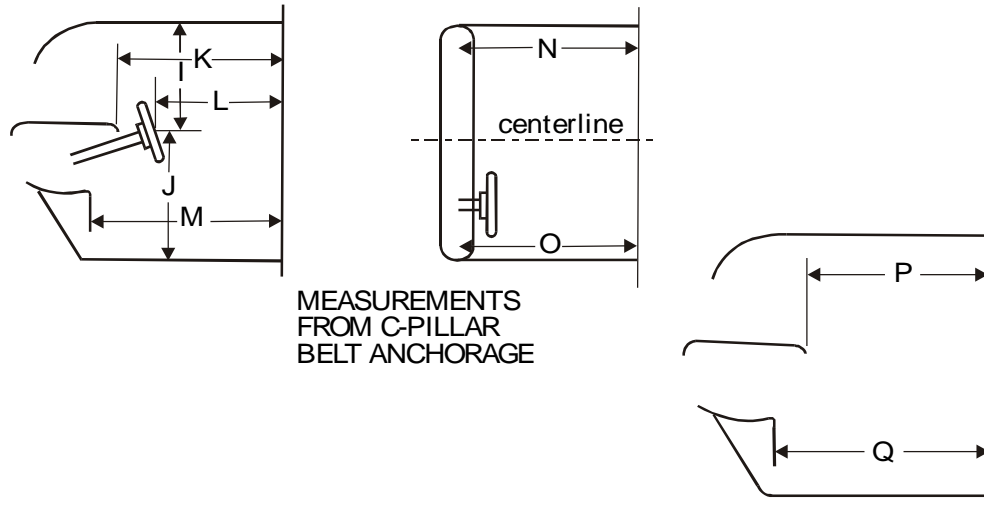
Driver's Side

Measurement	Pre-Test	Post-Test	Difference
A	834 mm	690 mm	144 mm
B	604 mm	593 mm	11 mm
C	524 mm	520 mm	4 mm
D	500 mm	490 mm	10 mm

Passenger's Side

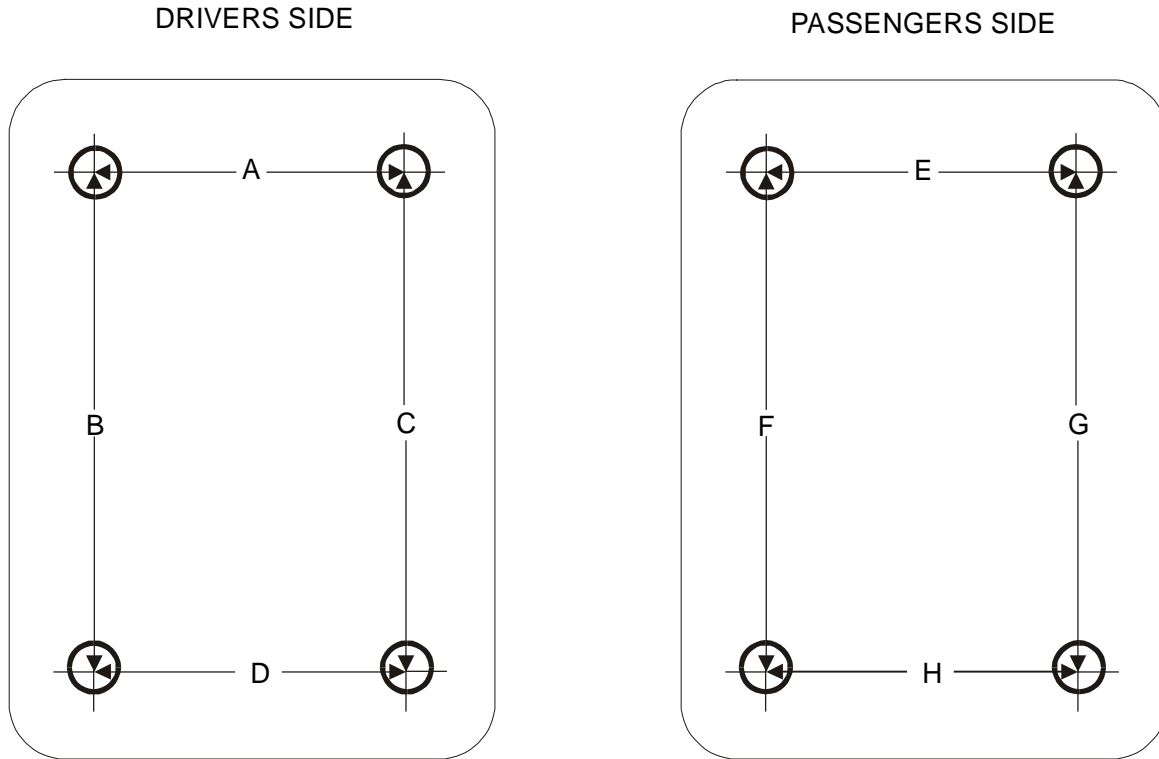
Measurement	Pre-Test	Post-Test	Difference
A	723 mm	720 mm	3 mm
B	587 mm	585 mm	2 mm
C	495 mm	505 mm	-10 mm
D	521 mm	523 mm	-2 mm

Figure 11 Vehicle Intrusion Measurements
Static Passenger Compartment Intrusion



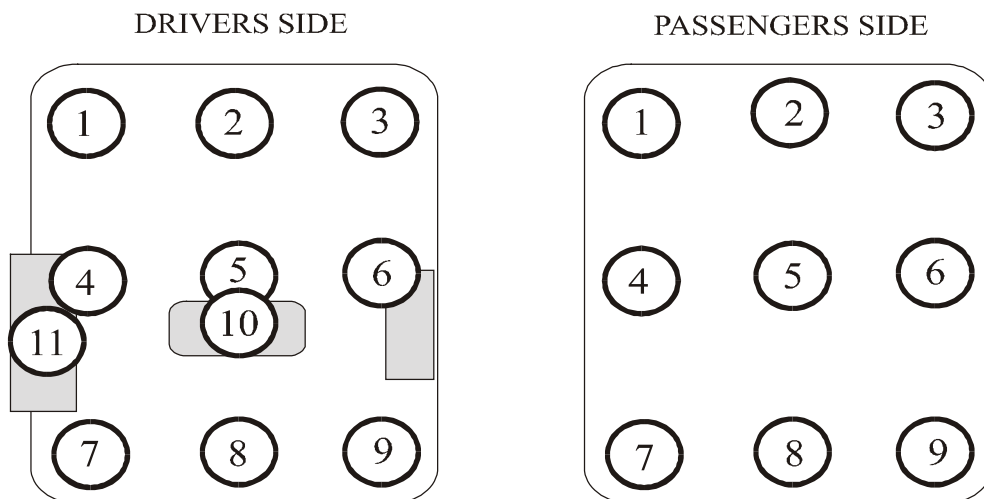
Measurement	Pre-Test	Post-Test	Difference
I	426 mm	419 mm	7 mm
J	642 mm	680 mm	-38 mm
K (driver's side)	2090 mm	2057 mm	33 mm
L	1798 mm	1770 mm	28 mm
M (driver's side)	2200 mm	2191 mm	9 mm
N (passenger's side)	2020 mm	2002 mm	18 mm
O (driver's side)	2045 mm	2028 mm	17 mm
P (passenger's side)	2095 mm	2130 mm	-35 mm
Q (passenger's side)	2222 mm	2220 mm	2 mm

Figure 12 Floorboard Deformation



Measurement	Pre-Test	Post-Test	Difference
A	524 mm	520 mm	4 mm
B	535 mm	534 mm	1 mm
C	535 mm	528 mm	7 mm
D	500 mm	490 mm	10 mm
E	495 mm	505 mm	-10 mm
F	520 mm	512 mm	8 mm
G	540 mm	535 mm	5 mm
H	521 mm	523 mm	-2 mm

Figure 13 Toeboard Measurements



Driver Toe Pan

Pre-Test			
Index	Xmm	Ymm	Zmm
1	3385	-544	253
2	3418	-362	282
3	3414	-148	287
4	3341	-558	365
5	3340	-362	353
6	3348	-144	359
7	3262	-560	423
8	3261	-371	410
9	3278	-159	429
10	3224	-342	220
11	3288	-605	311

Post-Test		
Xmm	Ymm	Zmm
3305	-514	249
3341	-329	267
3341	-113	277
3308	-527	361
3275	-334	346
3307	-118	374
3256	-535	435
3231	-348	434
3266	-142	460
3204	-481	225
3240	-583	326

Difference		
Xmm	Ymm	Zmm
80	-30	4
77	-33	15
73	-35	10
33	-31	4
65	-28	7
41	-26	-15
6	-25	-12
30	-23	-24
12	-17	-31
20	139	-5
48	-22	-15

Passenger Toe Pan

Pre-Test			
Index	Xmm	Ymm	Zmm
1	3423	203	283
2	3434	398	269
3	3342	616	241
4	3359	218	360
5	3348	390	350
6	3326	632	343
7	3286	213	422
8	3268	407	404
9	3259	638	425

Post-Test		
Xmm	Ymm	Zmm
3419	221	279
3433	414	265
3346	635	235
3356	240	363
3350	411	350
3331	652	337
3289	238	429
3274	426	410
3264	659	421

Difference		
Xmm	Ymm	Zmm
4	-18	4
1	-16	4
-4	-19	6
3	-22	-3
-2	-21	0
-5	-20	6
-3	-25	-7
-6	-19	-6
-5	-21	4

Reference: +X forward from rear bumper; +Y rightward from vehicle centerline; +Z downward from vehicle reference point

Table 11 Intrusion of Upper Instrument Panel

Driver Instrument Panel - Lower

Pre-Test				Post-Test			Difference		
Index	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm
Left	2995	-509	-14	2969	-508	-12	26	-1	-2
Right	2981	-216	-8	2962	-214	-5	19	-2	-3

Driver Knees

Pre-Test				Post-Test			Difference		
Index	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm
Left	2956	-517	-66	2927	-516	-60	29	-1	-6
Right	2933	-212	-65	2910	-213	-64	23	1	-1

Passenger Knees

Pre-Test				Post-Test			Difference		
Index	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm
Left	2949	225	-47	2944	241	-35	5	-16	-12
Right	2974	532	-55	2972	548	-58	2	-16	3

Steering Wheel Center

Pre-Test				Post-Test			Difference		
Index	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm
1	2697	-362	-253	2704	-368	-271	-7	6	18

Driver Front Outboard Seat Attachment Bolt

Pre-Test				Post-Test			Difference		
Index	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm
1	2667	-586	313	2673	-580	321	-6	-6	-8

Passenger Front Outboard Seat Attachment Bolt

Pre-Test				Post-Test			Difference		
Index	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm
1	2665	588	311	2674	604	312	-9	-16	-1

Knee intrusions are points measured pre and post, which are located just above where the four knees would be expected to contact the instrument panel.

+X: Forward from rear reference point

+Y: Rightward from centerline

+Z: Downward from vehicle reference point

Table 12 Insurance Institute Measurement Locations and Floor Pan Deformation Data

IIHS Measurement Location Data (in millimeters)

Meas. Loc.*	X-Axis Measurement			Y-Axis Measurement			Z-Axis Measurement		
	Pre	Post	Difference	Pre	Post	Difference	Pre	Post	Difference
1	456	518	-62	-3	70	-73	628	574	54
2	456	501	-45	94	165	-71	629	584	45
3	456	477	-21	196	264	-68	629	590	39
4	456	441	15	295	357	-62	627	587	40
5	456	384	72	396	435	-39	627	566	61
6	456	351	105	495	526	-31	628	557	71
7	456	380	76	595	612	-17	629	584	45
8	456	382	74	697	711	-14	628	597	31
17	456	426	30	494	541	-47	494	459	35
18	456	392	64	595	634	-39	494	464	30

Floor Pan Deformation Measurement Data (in millimeters)

Meas. Loc.**	X-Axis Measurement			Y-Axis Measurement			Z-Axis Measurement		
	Pre	Post	Difference	Pre	Post	Difference	Pre	Post	Difference
P0	2667	2673	-6	-586	-580	-6	313	321	-8
P1	3201	3198	3	-663	-641	-22	429	433	-4
P2	3192	3185	7	-432	-413	-19	422	447	-25
P3	3190	3181	9	-151	-135	-16	433	459	-26
P4	2958	2957	1	-669	-651	-18	432	434	-2
P5	2959	2954	5	-428	-413	-15	427	445	-18
P6	2976	2970	6	-151	-143	-8	435	448	-13
P7	2715	2714	1	-660	-647	-13	434	437	-3
P8	2724	2719	5	-412	-401	-11	426	436	-10
P9	2721	2718	3	-158	-149	-9	435	442	-7

Pre-test and post-test measurement references: +X, forward of rear bumper; +Y, rightward from vehicle centerline; +Z, downward from ground level.

* Measurement Location Descriptions

P0 Front Outside Seat Anchor Bolt

- 1 Steering Column - Geometric center of the steering wheel on airbag door.
- 2 Lower Instrument Panel Left - Taken 45 cm above floorpan and 15 cm to the left of the steering wheel center.
- 3 Lower Instrument Panel Right - Taken 45 cm above floorpan and 15 cm to the right of the steering wheel center.
- 4 Brake Pedal - Geometric center of the brake pedal.
- 5 Toepan Left - Taken 15 cm to the left of the brake pedal center on the same vertical plane on the vehicle toepan.
- 6 Toepan Center - Taken directly behind the brake pedal center on the same vertical plane on the vehicle.
- 7 Toepan Right - Taken 15 cm to the right of the brake pedal center on the same vertical plane on the vehicle toepan.
- 8 Left Footrest - Taken 25 cm to the left of the brake pedal center on the same vertical plane on the vehicle toepan.
- 17 A-Pillar - Taken on the vehicle exterior at the same vertical coordinate as the base of the left front window.
- 18 B-Pillar - Taken on the vehicle exterior at the same vertical coordinate as the lower A-pillar mark.

** There is an equal spaced 3x3 floor pan matrix. Position 1 is floor pan left side forwardmost position; Position 9 is located on the right side rearmost position of the 3x3 grid.

Figure 14 Camera Positions

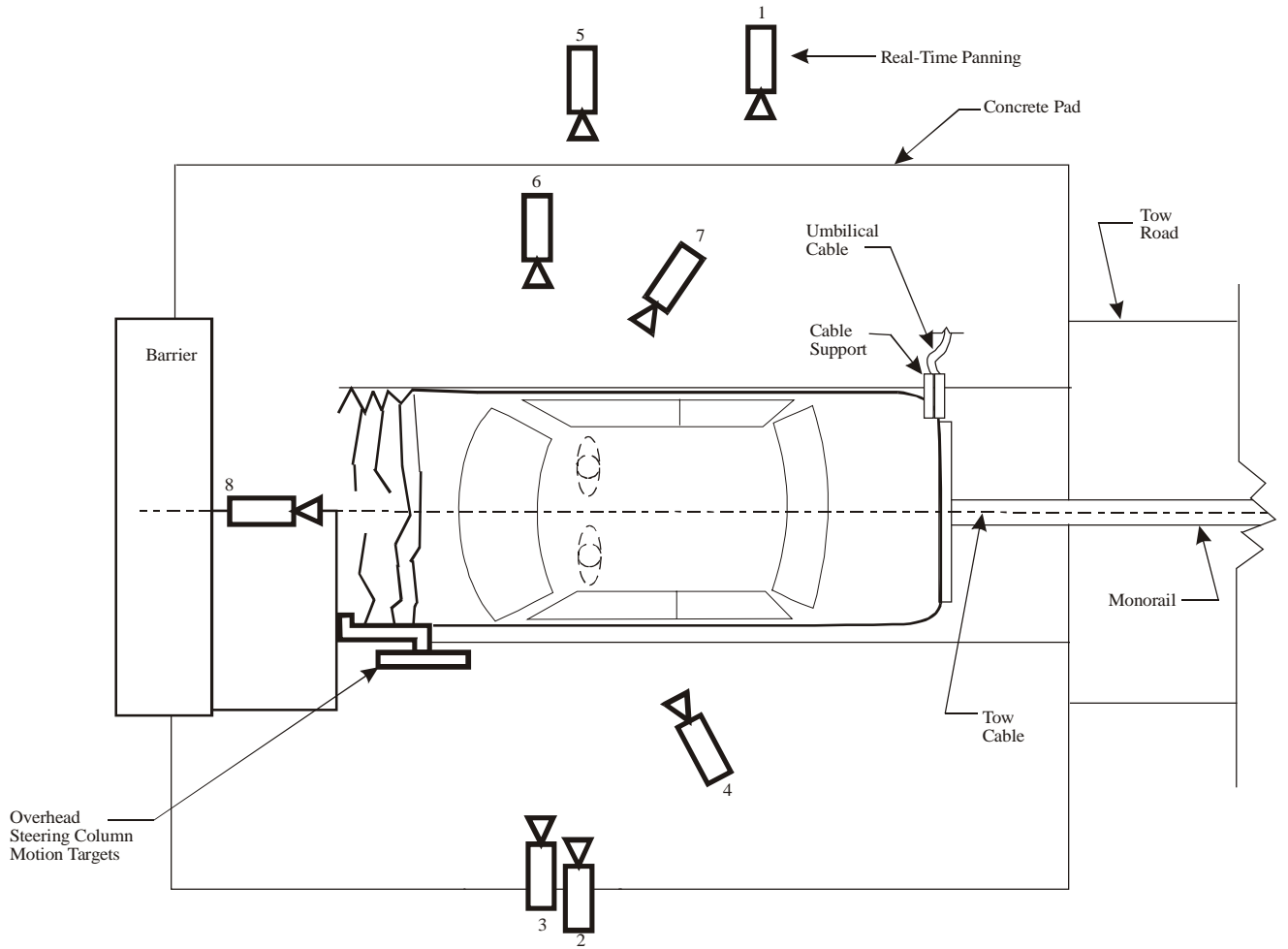


Figure 14 Camera Positions, Cont'd.

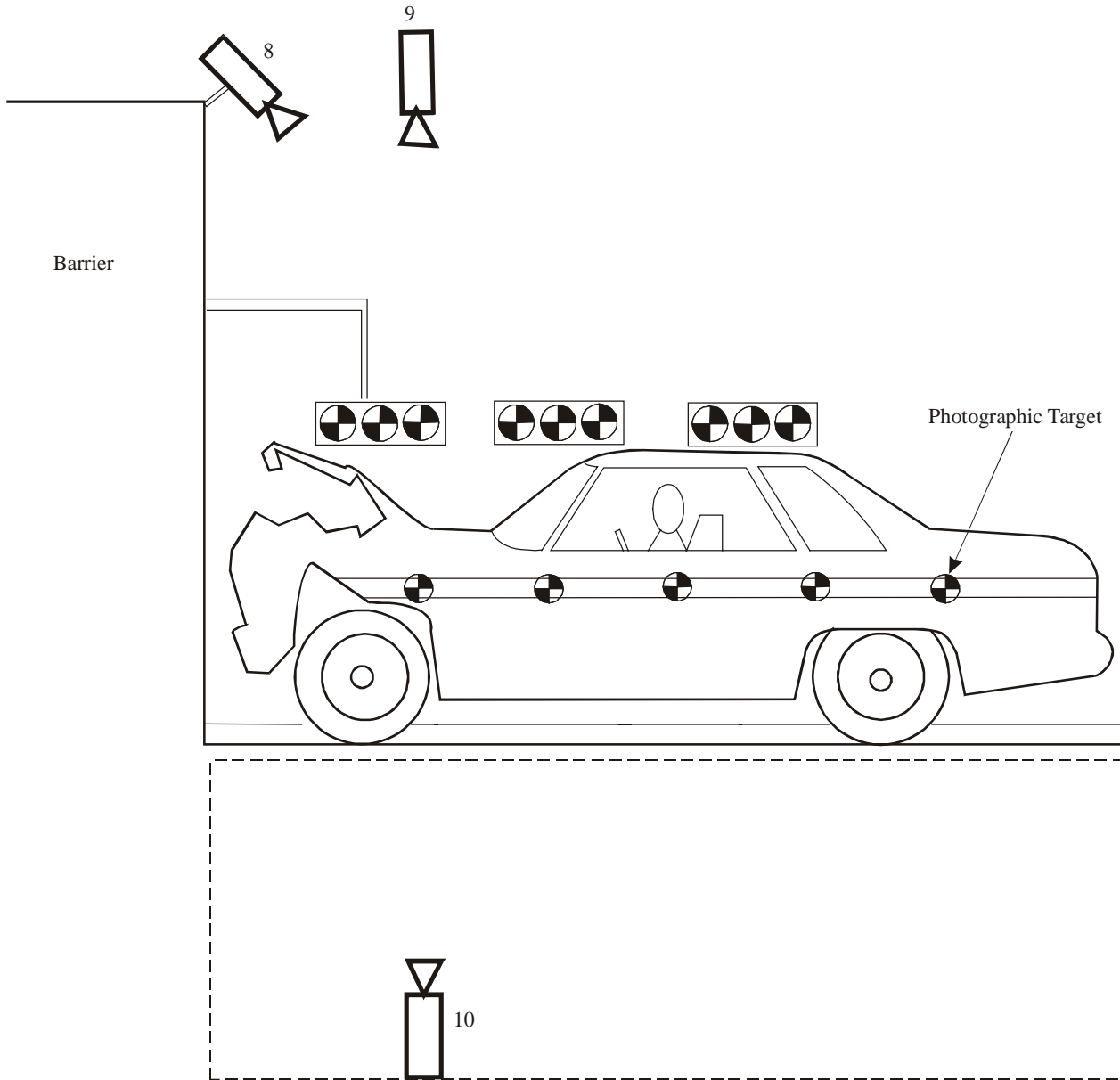
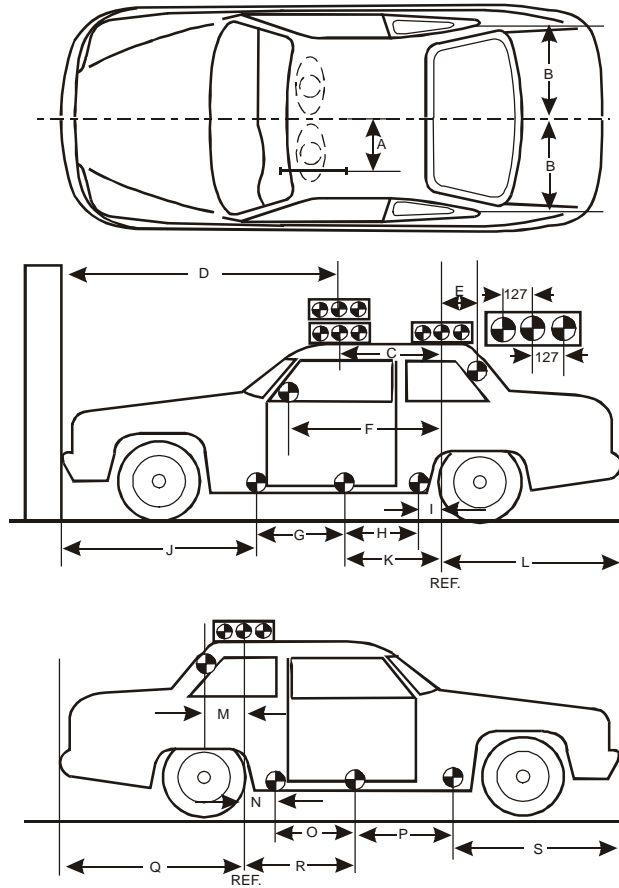


Table 13 Camera Information

Camera Number	Location	Type	Lens (mm)	Speed (fps)	Purpose of camera data
1	Panning	Bolex		24	Vehicle dynamics
2	Left perpendicular overall	Digital HG	13	1000	Vehicle crush
3	Left tight dummy	Digital HG	25	1000	Dummy kinematics
4	Left angled on dummy	Digital HG	25	1000	Dummy and airbag
5	Right perpendicular overall	Digital HG	13	1000	Vehicle crush
6	Right tight dummy	Digital HG	25	1000	Dummy kinematics
7	Right angled on dummy	Digital HG	Zoom	1000	Dummy and airbag
8	Driver and passenger from barrier	Digital HG	13	1000	Airbag deployment
9	Overhead	Photosonic	17	1002	Vehicle dynamics
10	Pit front	Photosonic	13	1002	Vehicle crush

Figure 15 Vehicle Reference Photo Target Locations



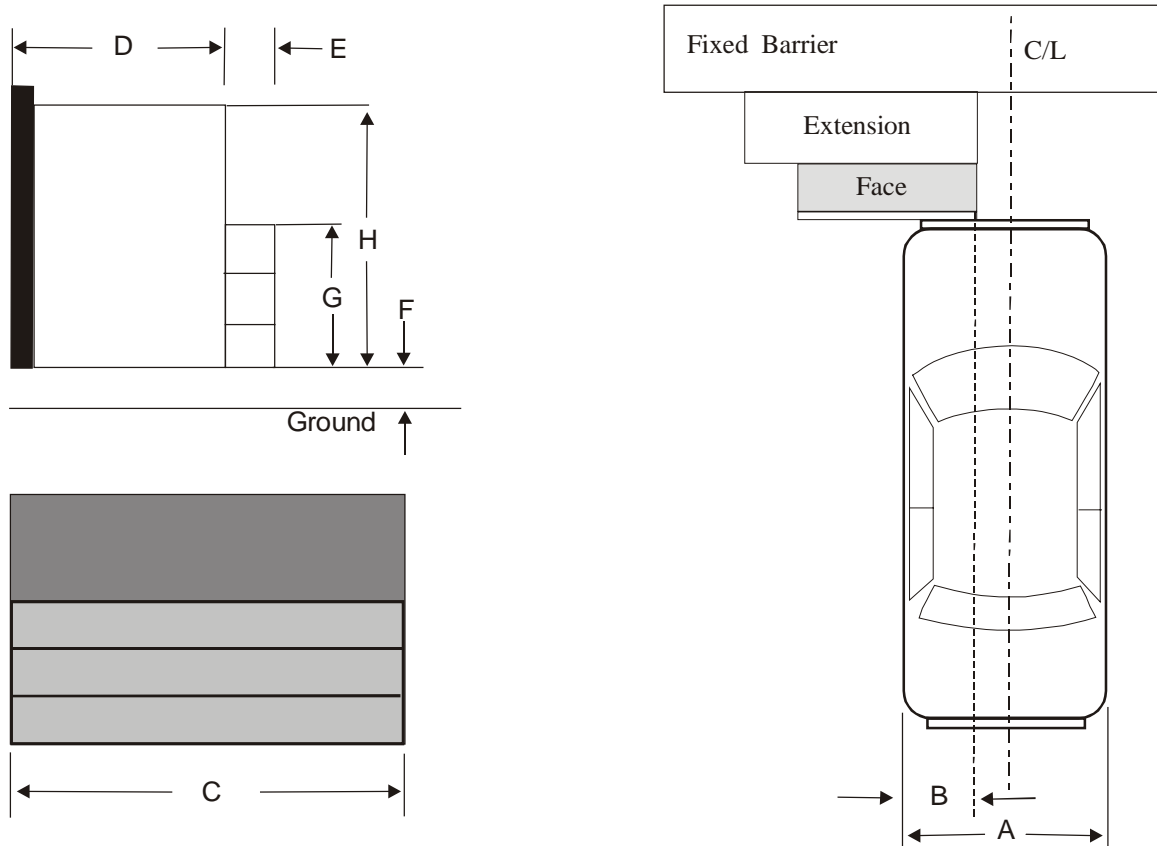
Measurement	Pre-Test
A	Left 316 mm Right 316 mm
B	Left 615 mm Right 615 mm
C	Left 621 mm Right 610 mm
E	619 mm
F	1355 mm
G	954 mm
H	947 mm
I	-188 mm
J	1221 mm
K	762 mm
L	1746 mm
M	601 mm
N	-177 mm
O	960 mm
P	945 mm
Q	1730 mm
R	783 mm
S	1240 mm

Figure 16 Offset Barrier and Vehicle Orientation

Vehicle: 2002 Nissan Altima

Barrier Manufacturer: Plascore

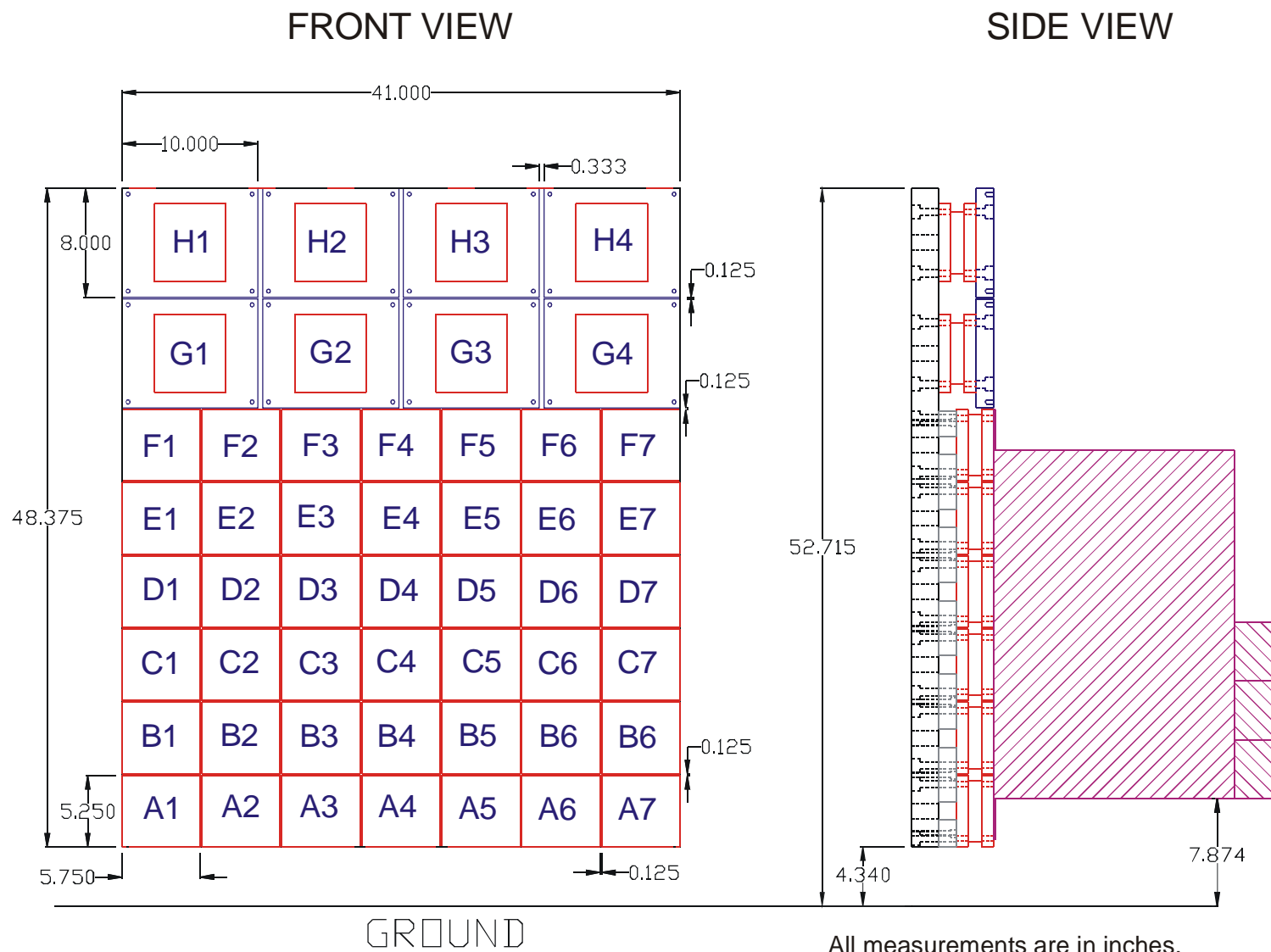
Serial Number: 044B0103, 109C0103



A	Total Vehicle Width	<u>1777</u>	mm
B	40% Overlap Distance	<u>711</u>	mm
C	Deformable Face Width	<u>1000</u>	mm
D	Single Stage Honeycomb Depth	<u>448</u>	mm
E	Bumper Element Depth	<u>90</u>	mm
F	Lower Edge Height From Ground	<u>200</u>	mm
G*	Bumper Element Height	<u>329</u>	mm
H	Deformable Barrier Honeycomb Height	<u>650</u>	mm

* The bumper element consists of three 110 mm height blocks of 1.723 MPa honeycomb.

Figure 17 Load Cell Location on Fixed Offset Barrier¹

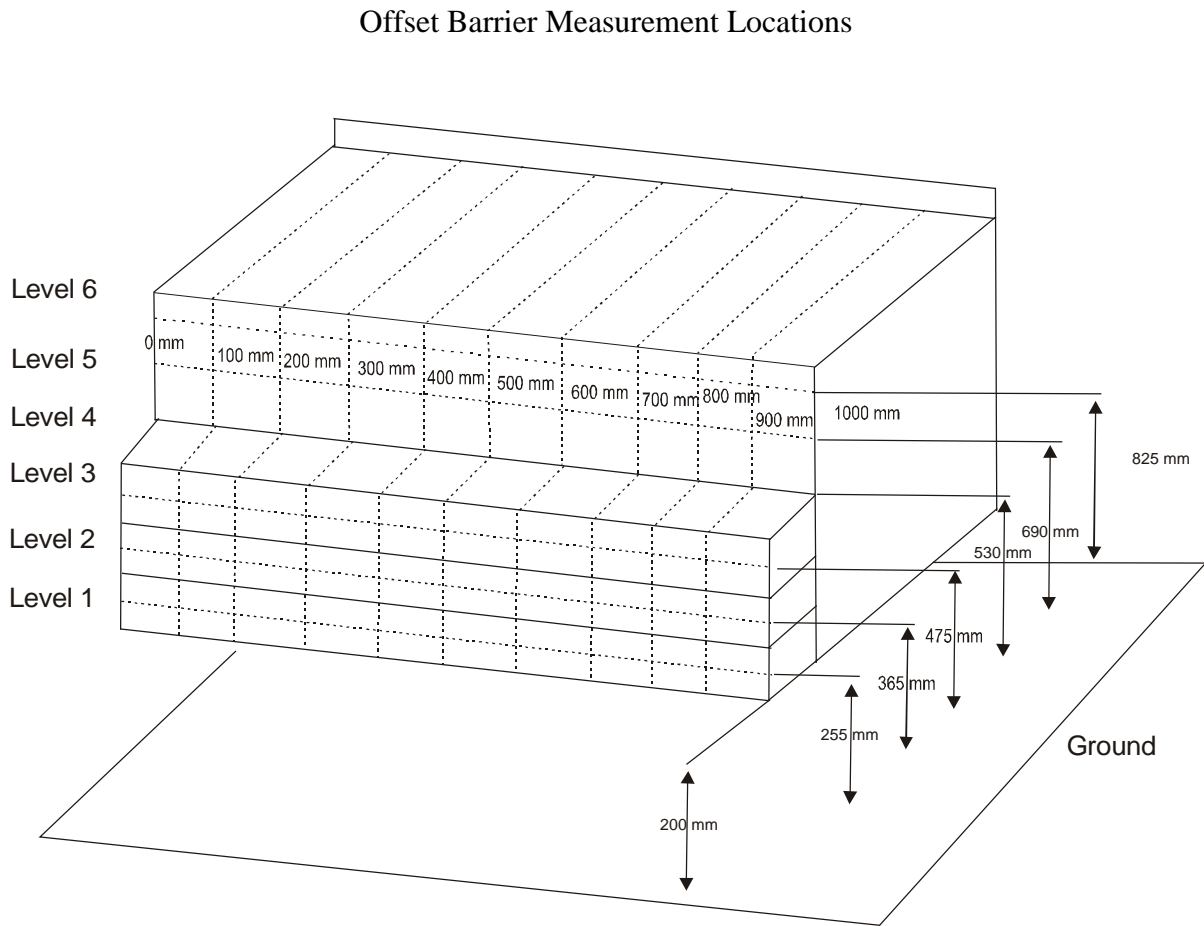


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¹Load cell data is presented as plots in Appendix B.

Figure 18 Offset Barrier Deformation Measurement Locations



Height of levels at centerline:

Level 6 - Top stack	825 mm
Level 5 - Mid stack	690 mm
Level 4 - Stack at top of bumper	550 mm
Level 3 - Bumper top	475 mm
Level 2 - Bumper mid	365 mm
Level 1 - Bumper low	255 mm

Table 14 Deformable Barrier Face Profile

Pre-Test			
Index	Xmm	Ymm	Zmm
1	456.1	-3.3	628.4
2	455.8	94.1	629.0
3	456.2	195.7	629.3
4	456.3	294.8	627.4
5	455.9	395.5	627.3
6	456.0	495.2	628.3
7	455.9	594.7	629.3
8	456.2	697.1	628.3
9	456.0	795.4	629.2
10	456.0	895.1	628.9
11	455.7	991.9	629.2
12	456.1	-4.3	493.6
13	456.0	94.6	493.6
14	456.3	194.4	493.7
15	455.9	294.5	494.5
16	455.8	394.7	494.2
17	456.2	494.5	493.9
18	456.1	594.8	494.2
19	456.8	695.1	494.2
20	456.6	795.6	493.7
21	456.6	893.8	494.1
22	456.5	991.2	494.3

Post-Test			
Index	Xmm	Ymm	Zmm
1	517.7	69.8	574.1
2	501.0	165.3	583.7
3	476.6	264.0	590.5
4	441.5	356.9	586.5
5	383.5	434.9	566.0
6	350.6	526.3	556.9
7	379.5	612.1	584.3
8	381.6	711.3	597.2
9	352.7	805.6	596.5
10	309.0	895.1	595.0
11	259.0	978.3	595.7
12	525.9	80.8	442.3
13	498.1	174.8	449.5
14	491.6	273.7	457.2
15	456.7	363.1	471.6
16	441.0	442.7	460.3
17	426.2	541.2	458.7
18	391.8	633.8	464.2
19	354.0	693.8	473.4
20	299.4	777.0	479.5
21	250.5	861.2	482.1
22	207.1	948.2	478.1

Difference			
Index	Xmm	Ymm	Zmm
1	-61.6	-73.1	54.3
2	-45.2	-71.2	45.4
3	-20.5	-68.2	38.8
4	14.9	-62.2	40.9
5	72.4	-39.4	61.3
6	105.5	-31.1	71.4
7	76.4	-17.4	45.0
8	74.7	-14.2	31.0
9	103.3	-10.2	32.7
10	147.0	0.0	34.0
11	196.7	13.6	33.5
12	-69.8	-85.1	51.3
13	-42.1	-80.3	44.1
14	-35.3	-79.2	36.5
15	-0.8	-68.6	22.9
16	14.8	-48.0	33.9
17	30.0	-46.7	35.2
18	64.3	-39.1	30.0
19	102.8	1.3	20.7
20	157.2	18.6	14.2
21	206.1	32.7	12.0
22	249.4	43.0	16.2

Table 14 Deformable Barrier Face Profile Cont'd.

Pre-Test			
Index	Xmm	Ymm	Zmm
23	456.5	-3.9	353.4
24	456.3	95.2	353.3
25	457.1	193.6	353.5
26	457.3	294.2	354.4
27	456.6	394.5	353.8
28	456.8	494.0	353.6
29	456.5	594.3	353.2
30	456.5	693.9	353.9
31	456.5	793.8	353.2
32	456.9	894.5	354.5
33	456.8	992.0	354.2
34	546.5	-6.9	276.6
35	545.9	92.1	278.3
36	546.3	191.1	278.3
37	546.4	291.0	281.0
38	546.3	392.2	278.9
39	546.6	492.8	279.9
40	546.9	592.2	278.7
41	546.8	693.5	281.0
42	547.0	794.2	280.2
43	547.1	892.8	280.9
44	547.0	990.8	281.7

Post-Test			
Index	Xmm	Ymm	Zmm
23	515.6	37.8	100.6
24	451.1	104.4	131.1
25	458.3	277.3	322.1
26	395.4	348.5	351.2
27	329.7	425.6	389.0
28	219.2	360.0	246.3
29	168.3	434.7	286.5
30	120.7	593.7	330.7
31	111.4	692.4	337.7
32	103.1	791.8	351.1
33	94.7	886.5	369.6
34	551.6	157.5	50.7
35	475.7	214.0	80.5
36	396.5	265.6	108.9
37	341.2	342.5	140.3
38	281.8	421.2	168.2
39	219.5	495.3	200.1
40	147.0	535.1	228.5
41	98.8	606.7	268.9
42	92.9	705.1	278.1
43	92.8	803.3	289.5
44	86.5	895.5	311.5

Difference			
Index	Xmm	Ymm	Zmm
23	-59.0	-41.7	252.8
24	5.2	-9.2	222.2
25	-1.3	-83.6	31.4
26	61.9	-54.3	3.2
27	126.9	-31.1	-35.2
28	237.7	134.1	107.3
29	288.2	159.5	66.8
30	335.8	100.2	23.1
31	345.2	101.4	15.5
32	353.7	102.7	3.4
33	362.2	105.5	-15.4
34	-5.1	-164.4	225.9
35	70.1	-121.9	197.8
36	149.8	-74.5	169.4
37	205.2	-51.5	140.7
38	264.5	-28.9	110.7
39	327.2	-2.6	79.8
40	399.9	57.0	50.3
41	448.0	86.8	12.1
42	454.1	89.1	2.1
43	454.3	89.5	-8.6
44	460.6	95.3	-29.8

Table 14 Deformable Barrier Face Profile Cont'd.

Pre-Test			
Index	Xmm	Ymm	Zmm
45	545.9	-6.2	168.3
46	546.0	94.0	169.2
47	546.2	193.9	169.7
48	545.9	292.3	168.7
49	546.5	392.9	169.5
50	546.3	493.4	170.0
51	546.6	592.8	169.6
52	547.2	692.5	169.2
53	547.6	792.0	169.1
54	547.4	892.3	169.6
55	547.0	991.4	170.4
56	545.3	-6.0	58.8
57	546.2	93.3	59.9
58	546.2	193.4	59.6
59	546.3	292.4	59.4
60	546.2	392.9	60.1
61	546.0	493.0	58.7
62	546.9	593.2	59.5
63	546.9	693.9	59.7
64	547.1	794.6	59.7
65	547.6	893.1	59.8
66	547.1	991.2	60.0

Post-Test			
Index	Xmm	Ymm	Zmm
45	515.1	172.5	-62.5
46	448.2	239.2	-28.9
47	384.2	307.0	4.0
48	330.3	381.8	39.4
49	268.7	451.7	79.3
50	209.5	523.9	116.9
51	125.7	552.8	134.7
52	85.0	622.0	136.0
53	79.4	719.3	151.9
54	76.4	817.8	171.1
55	63.4	913.9	181.0
56	489.0	183.4	-160.4
57	436.7	261.2	-127.3
58	383.0	339.6	-95.3
59	330.2	417.7	-63.2
60	264.9	488.5	-28.9
61	210.4	563.2	8.0
62	131.0	593.2	33.9
63	89.6	628.1	42.3
64	119.1	718.1	54.4
65	119.6	814.6	70.1
66	79.1	898.2	94.1

Difference			
Index	Xmm	Ymm	Zmm
45	30.8	-178.7	230.8
46	97.8	-145.2	198.1
47	162.1	-113.1	165.7
48	215.7	-89.5	129.4
49	277.8	-58.8	90.2
50	336.7	-30.6	53.1
51	421.0	40.0	34.9
52	462.2	70.5	33.2
53	468.1	72.7	17.1
54	471.0	74.6	-1.5
55	483.6	77.5	-10.6
56	56.3	-189.5	219.2
57	109.6	-168.0	187.1
58	163.2	-146.2	154.9
59	216.1	-125.3	122.5
60	281.3	-95.6	89.0
61	335.6	-70.2	50.7
62	415.9	0.0	25.6
63	457.3	65.8	17.5
64	428.0	76.5	5.3
65	427.9	78.5	-10.3
66	467.9	93.0	-34.1

Figure 19 Deformable Barrier Face Profile 1-11

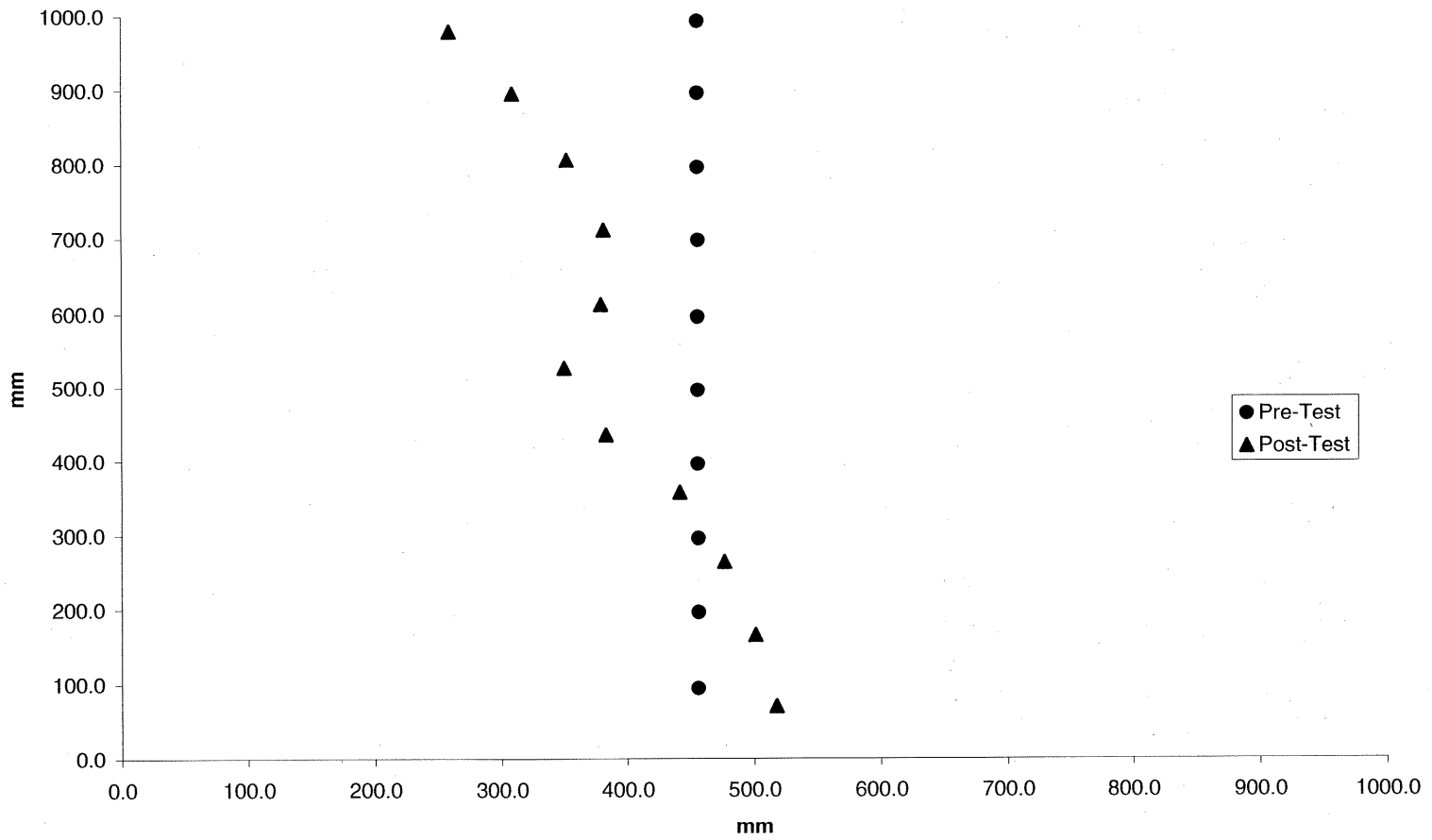


Figure 19 Deformable Barrier Face Profile 12-22

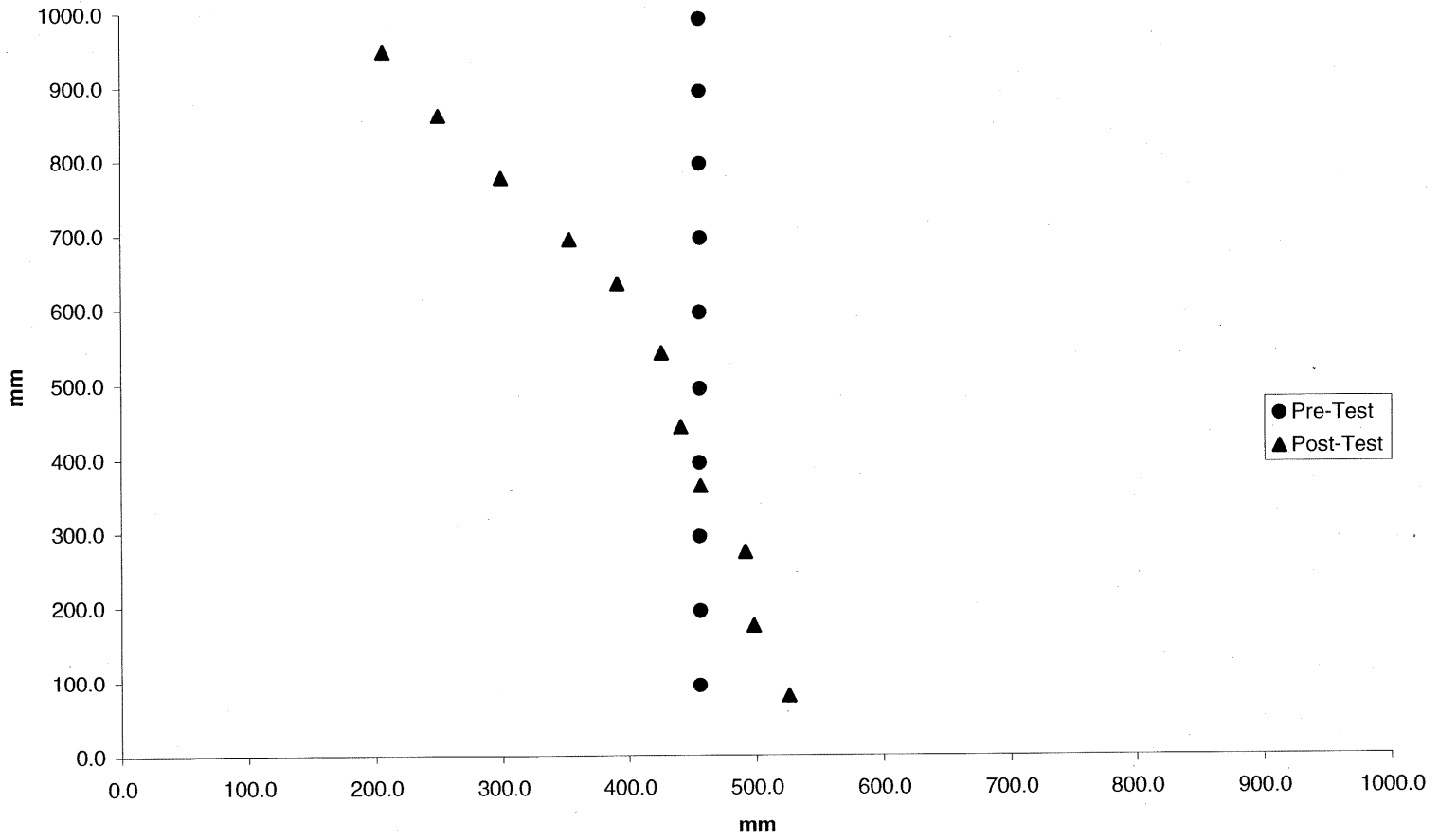


Figure 19 Deformable Barrier Face Profile 23-33

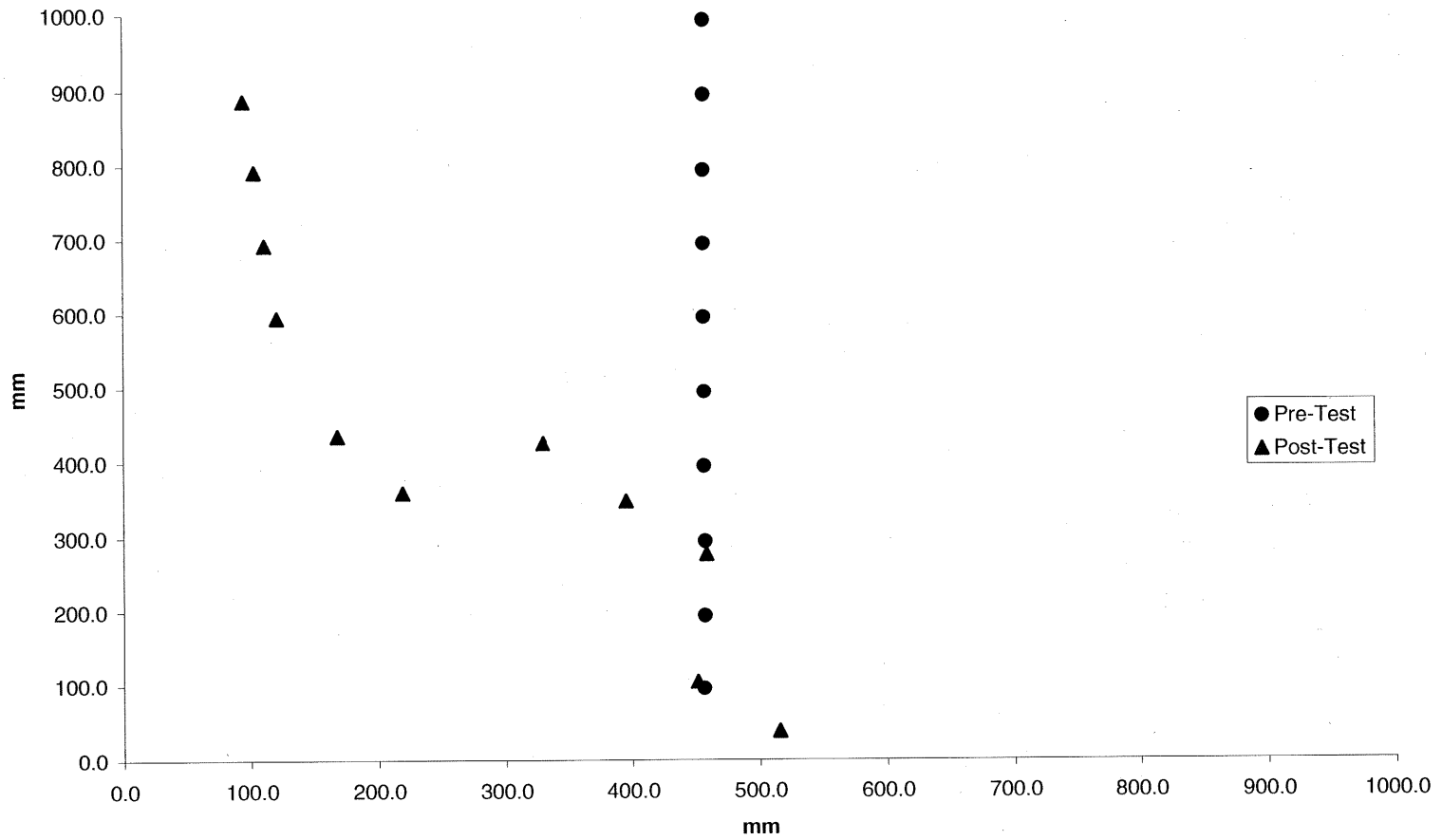


Figure 19 Deformable Barrier Face Profile 34-44

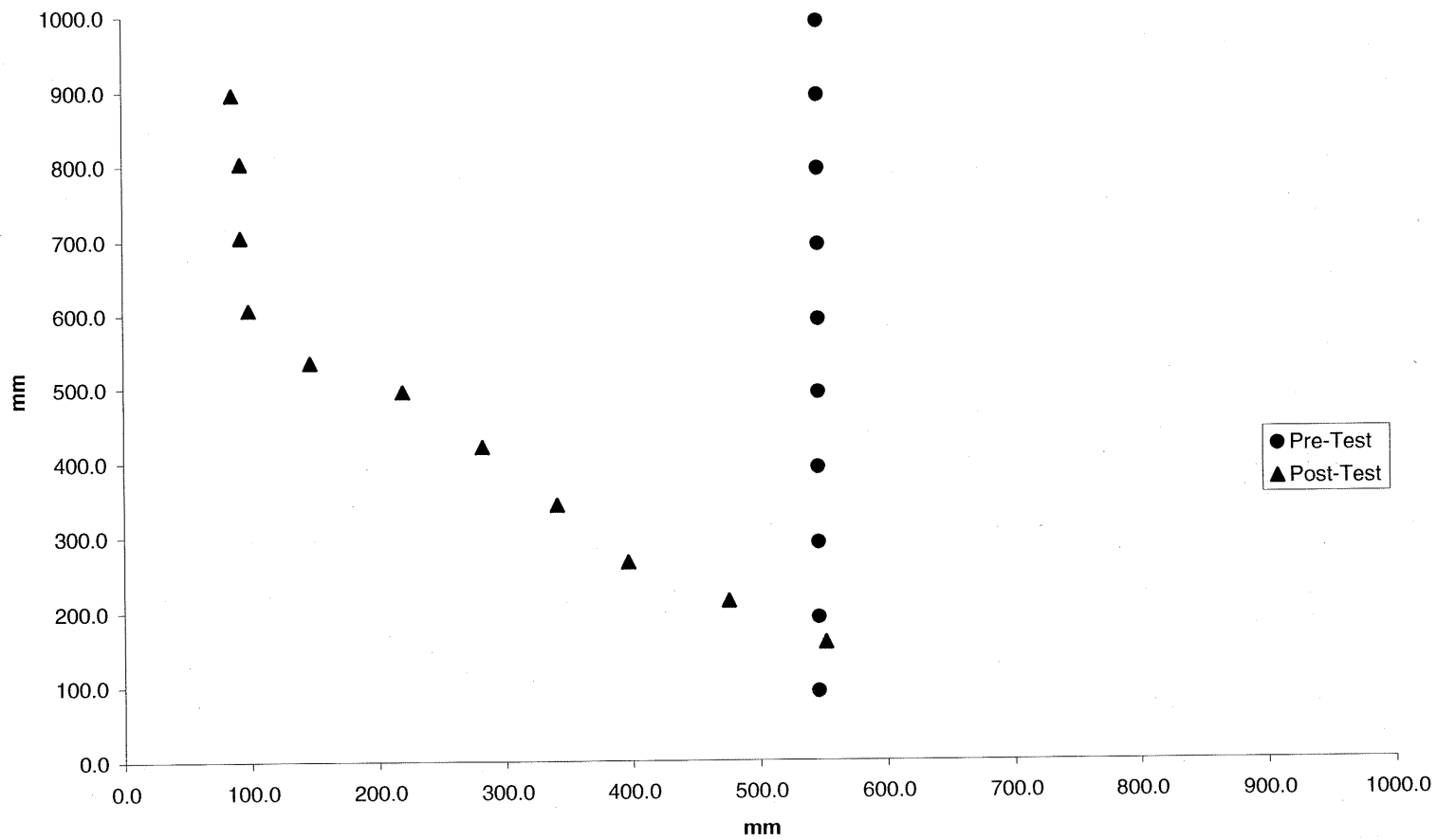


Figure 19 Deformable Barrier Face Profile 45-55

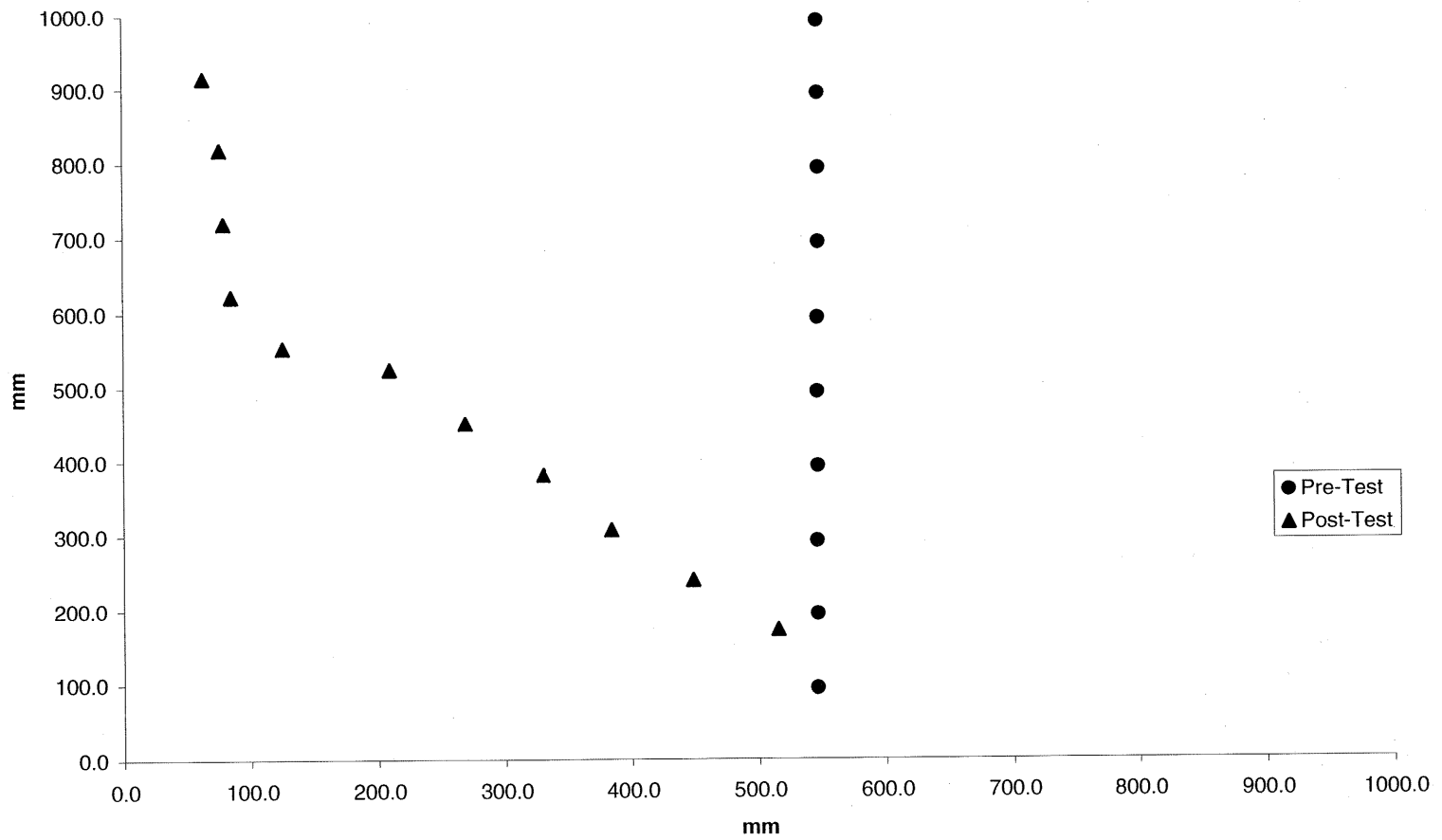
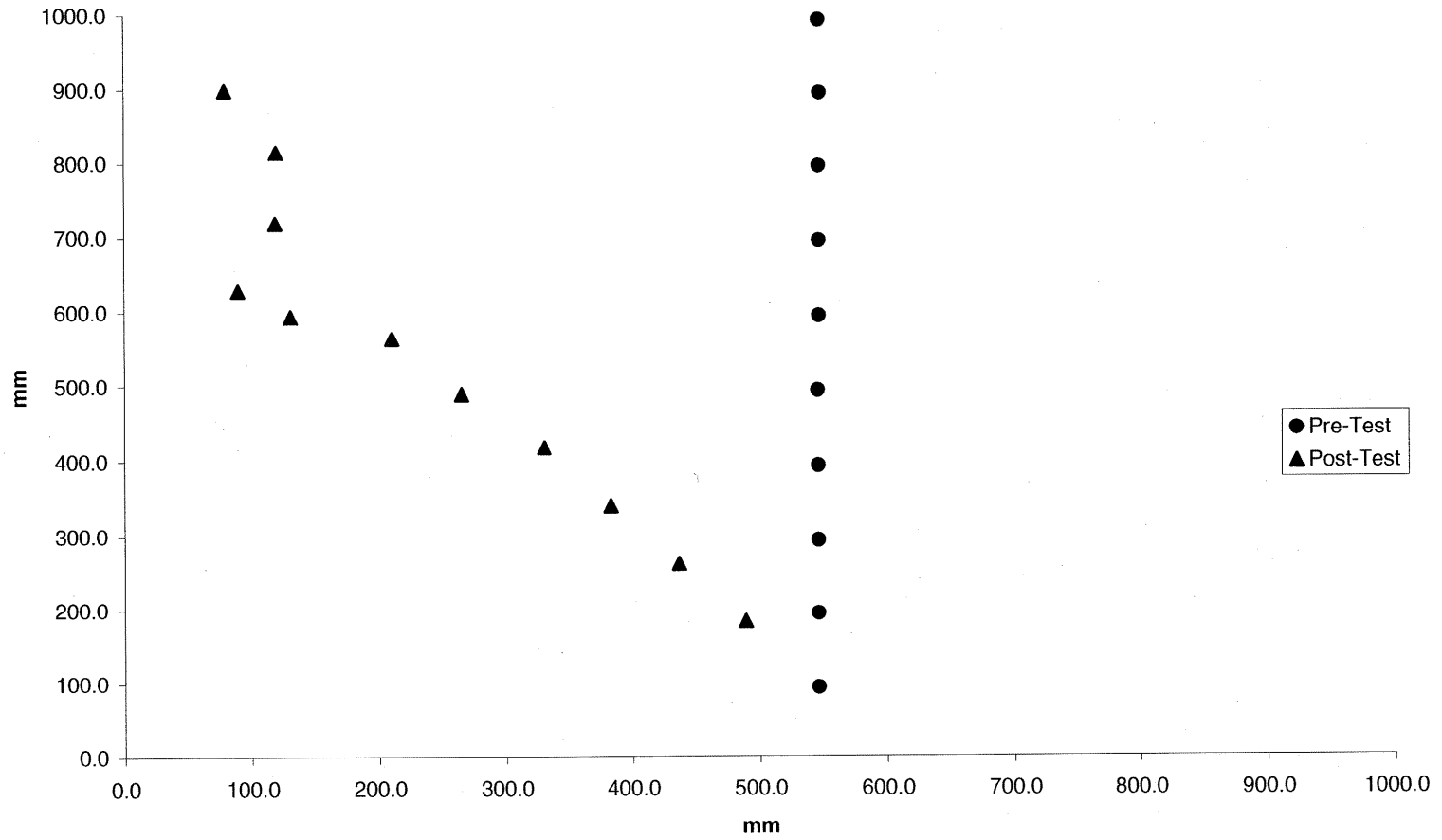


Figure 19 Deformable Barrier Face Profile 56-66



Appendix A

Photographs



Figure A-1 Pre-Test Front View



Figure A-2 Post-Test Front View



Figure A-3 Pre-Test Left Front View



Figure A-4 Post-Test Left Front View



Figure A-5 Pre-Test Left Side View



Figure A-6 Post-Test Left Side View



Figure A-7 Pre-Test Left Rear View



Figure A-8 Post-Test Left Rear View



Figure A-9 Pre-Test Rear View



Figure A-10 Post-Test Rear View



Figure A-11 Pre-Test Right Rear View



Figure A-12 Post-Test Right Rear View



Figure A-13 Pre-Test Right Side View



Figure A-14 Post-Test Right Side View



Figure A-15 Pre-Test Right Front View

Intentionally Left Blank



Figure A-16 Pre-Test Overhead View

Intentionally Left Blank



Figure A-17 Pre-Test Front Underbody View



Figure A-18 Post-Test Front Underbody View

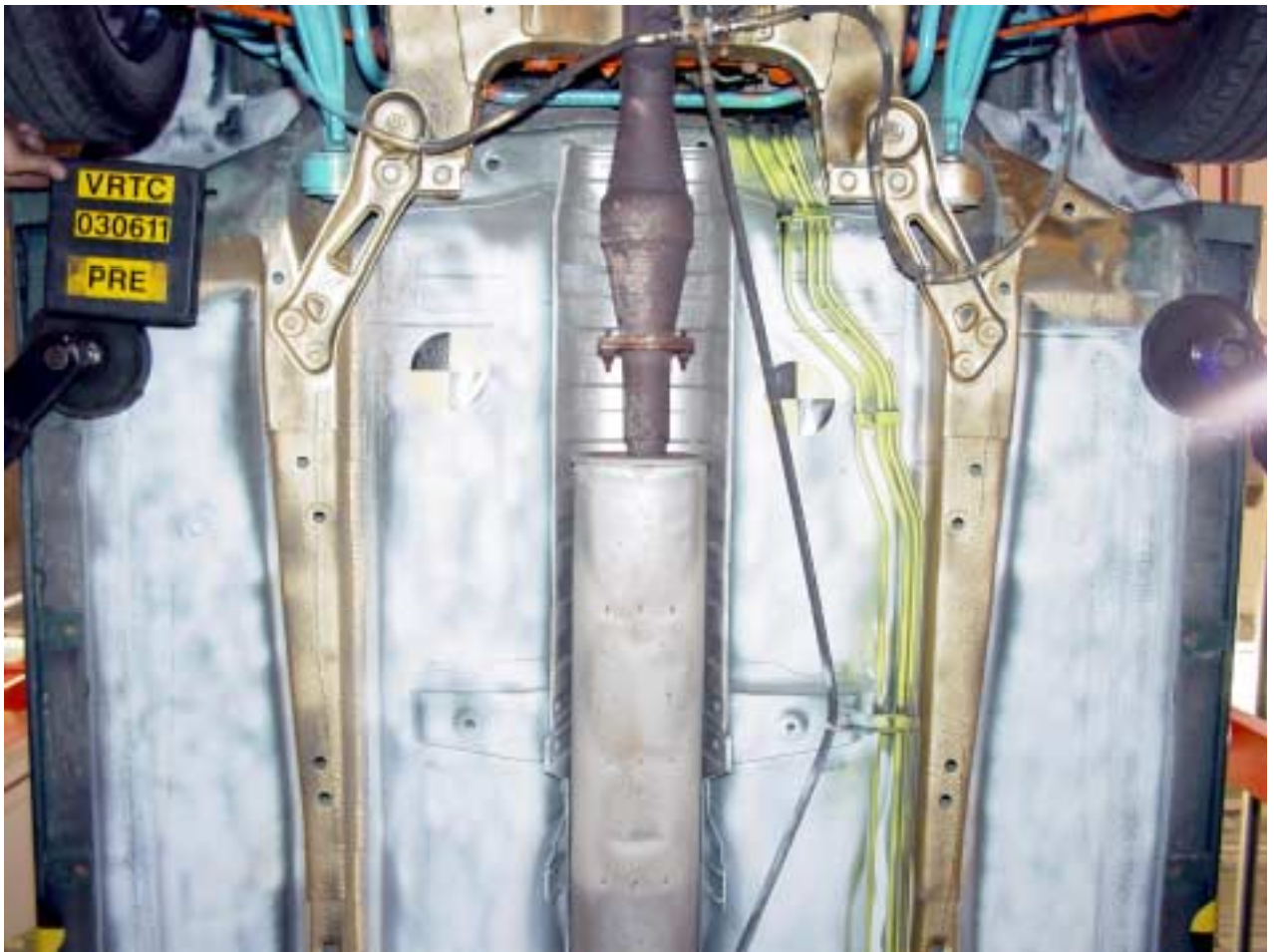


Figure A-19 Pre-Test Front Mid Underbody View

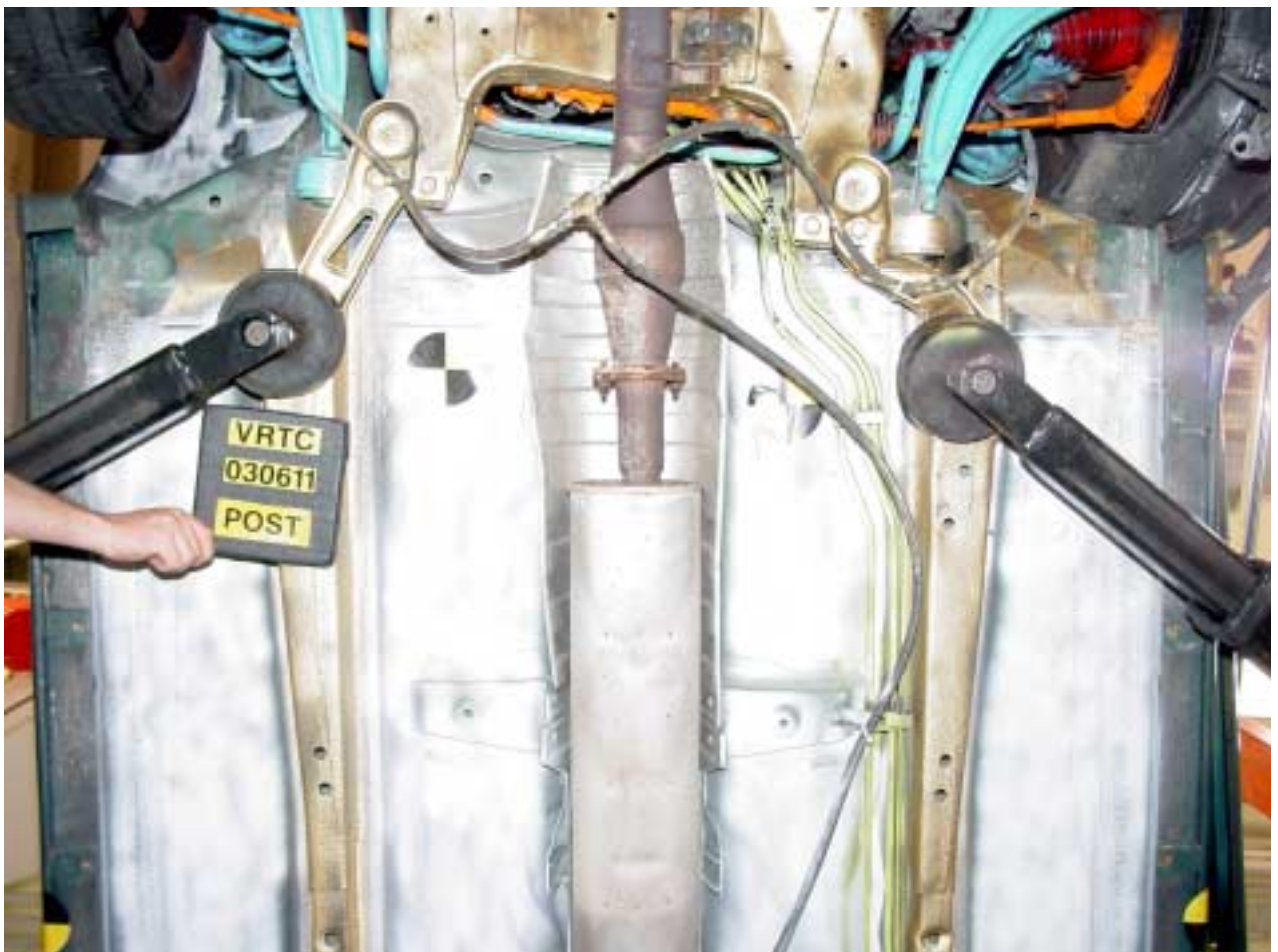


Figure A-20 Post-Test Front Mid Underbody View

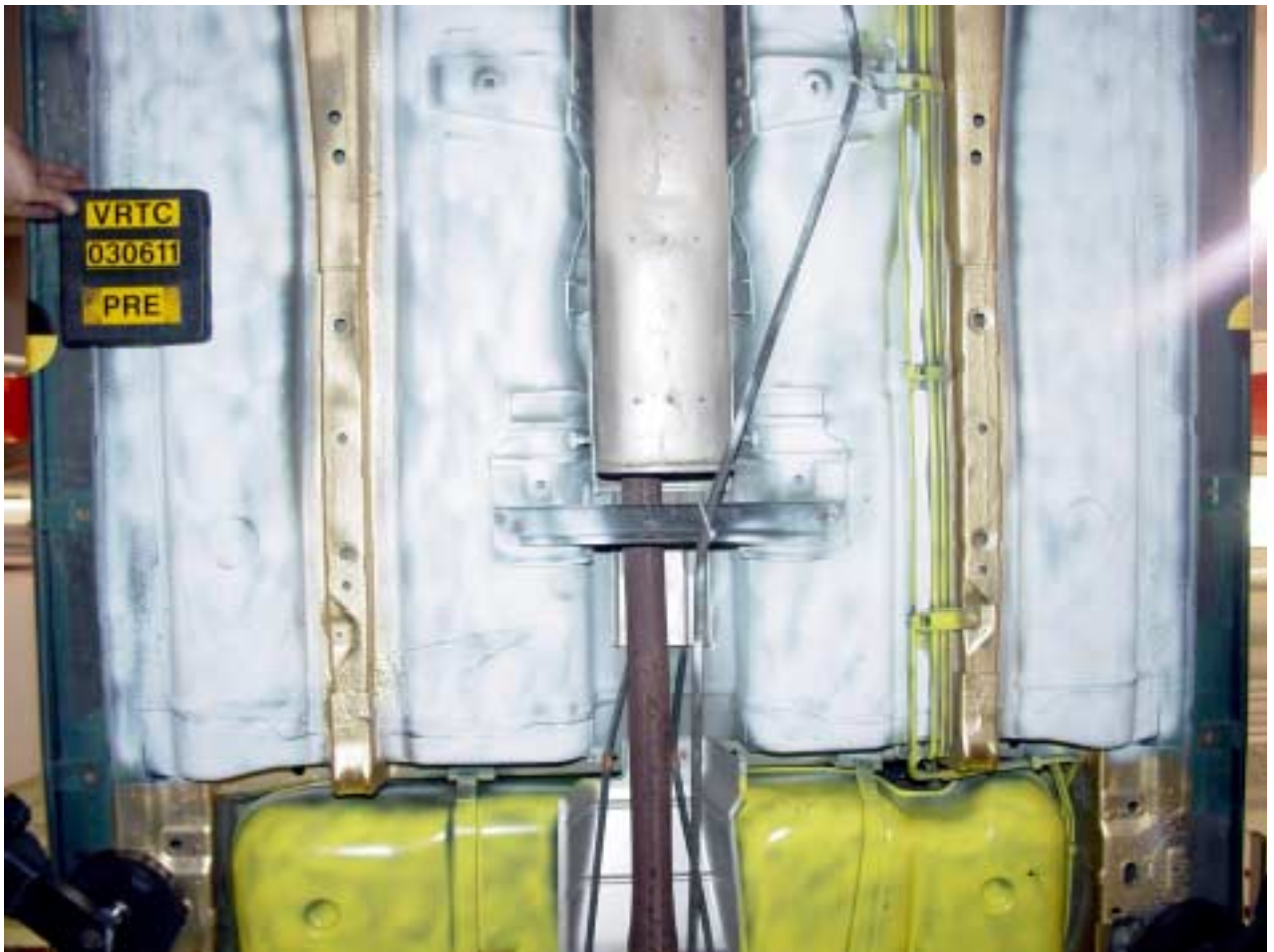


Figure A-21 Pre-Test Mid Underbody View



Figure A-22 Post-Test Mid Underbody View

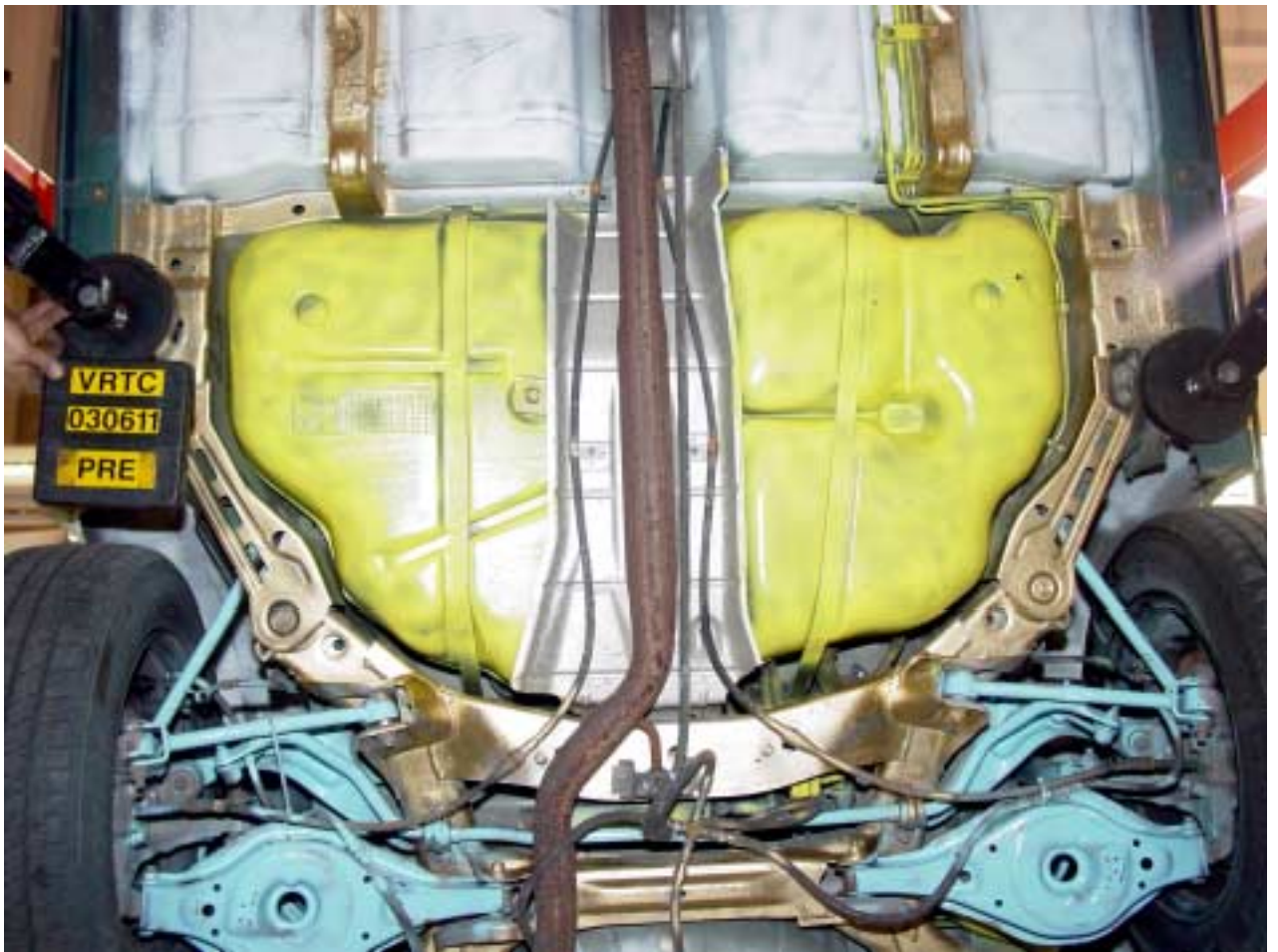


Figure A-23 Pre-Test Rear Mid Underbody View



Figure A-24 Post-Test Rear Mid Underbody View

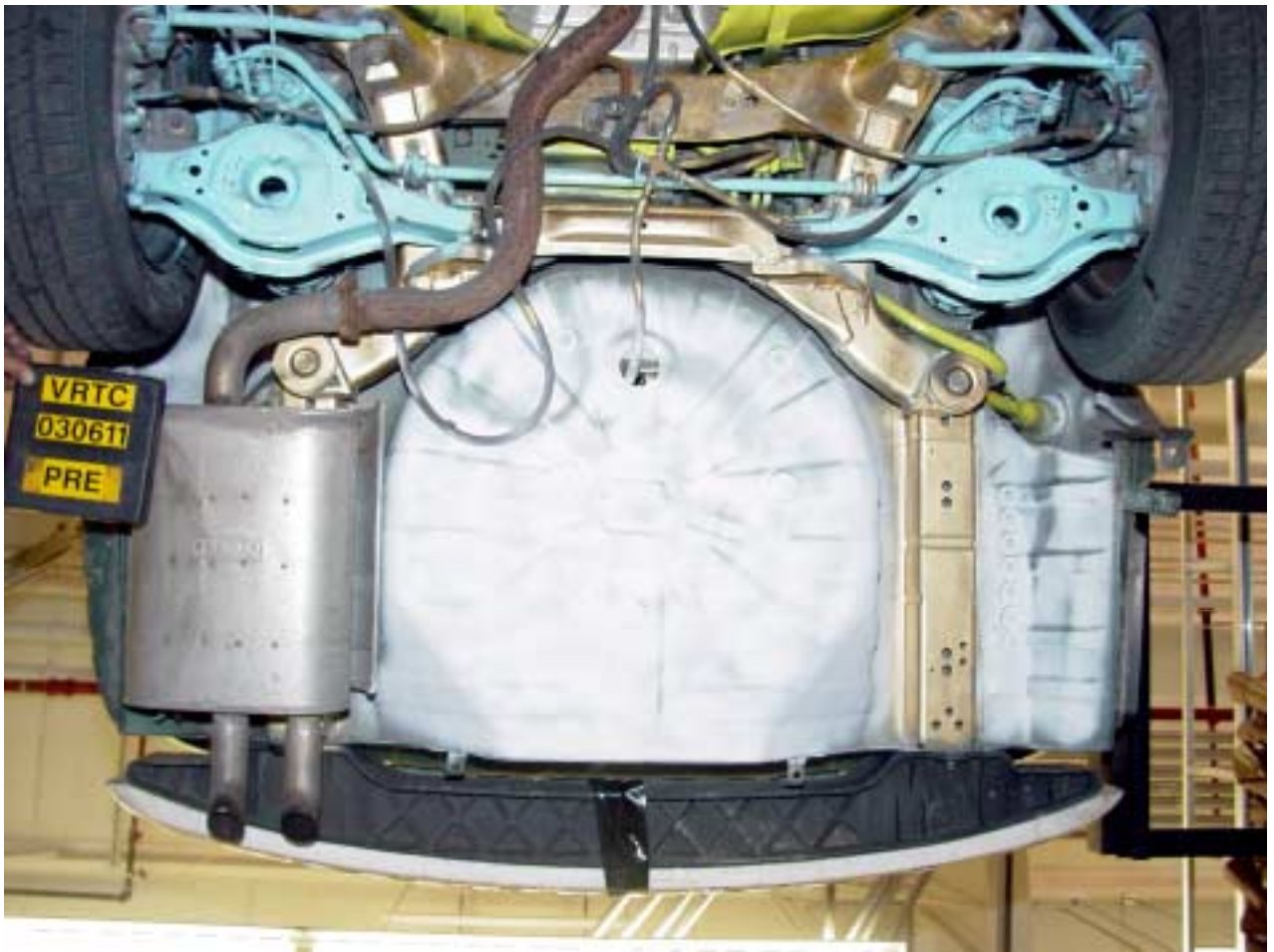


Figure A-25 Pre-Test Rear Underbody View

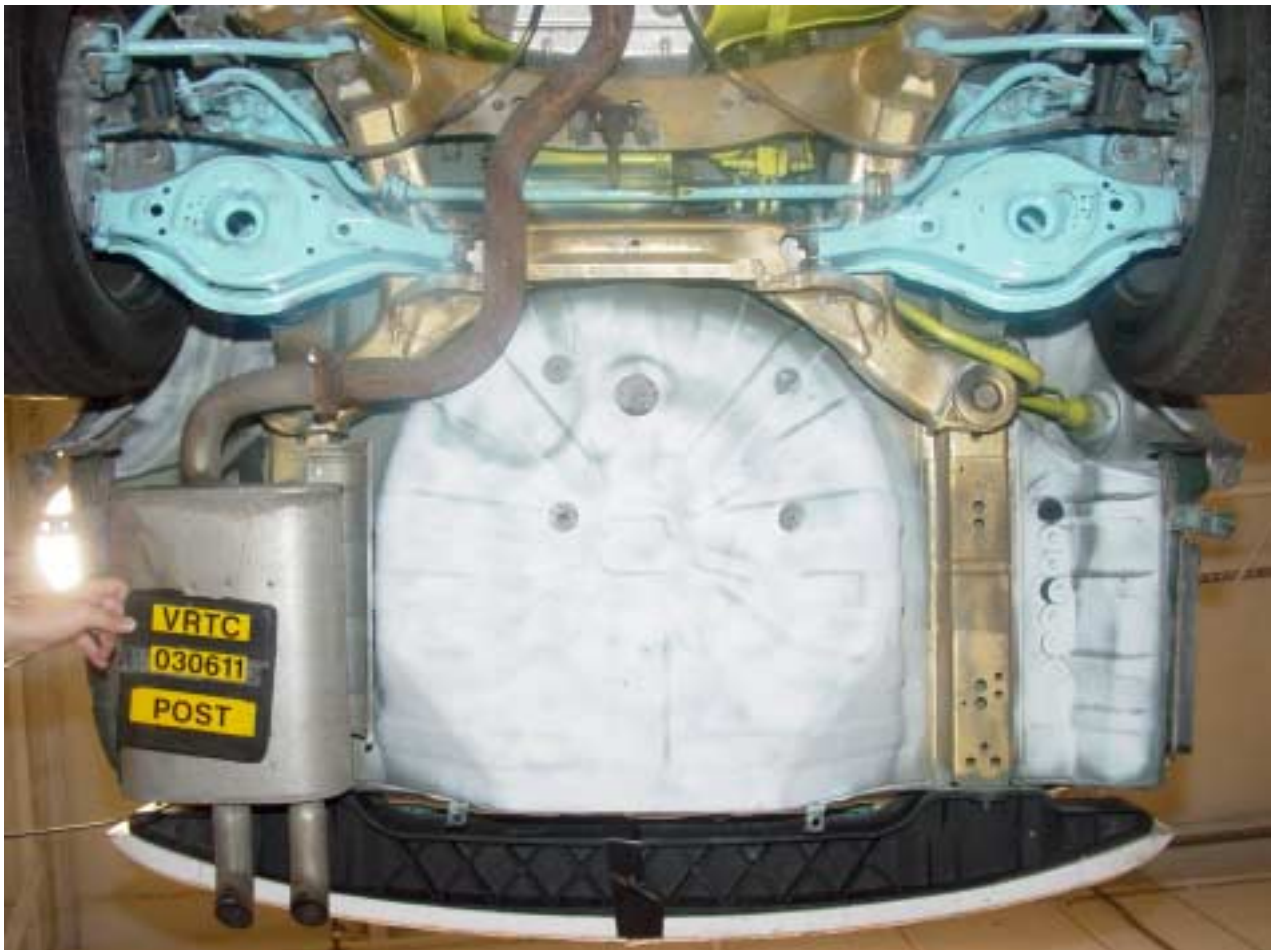


Figure A-26 Post-Test Rear Underbody View



Figure A-27 Pre-Test Engine Compartment View



Figure A-28 Post-Test Engine Compartment View



Figure A-29 Pre-Test Windshield View



Figure A-30 Post-Test Windshield View



Figure A-31 Pre-Test Left Side Angled Windshield View



Figure A-32 Post-Test Left Side Angled Windshield View



Figure A-33 Pre-Test Right Side Angled Windshield View



Figure A-34 Post-Test Right Side Angled Windshield View



Figure A-35 Pre-Test Front Barrier Face View



Figure A-36 Post-Test Front Barrier Face View



Figure A-37 Pre-Test Left Side Barrier Face View



Figure A-38 Post-Test Left Side Barrier Face View



Figure A-39 Pre-Test Right Side Barrier Face View



Figure A-40 Post-Test Right Side Barrier Face View



Figure A-41 Pre-Test Overhead Barrier Face View



Figure A-42 Post-Test Overhead Barrier Face View

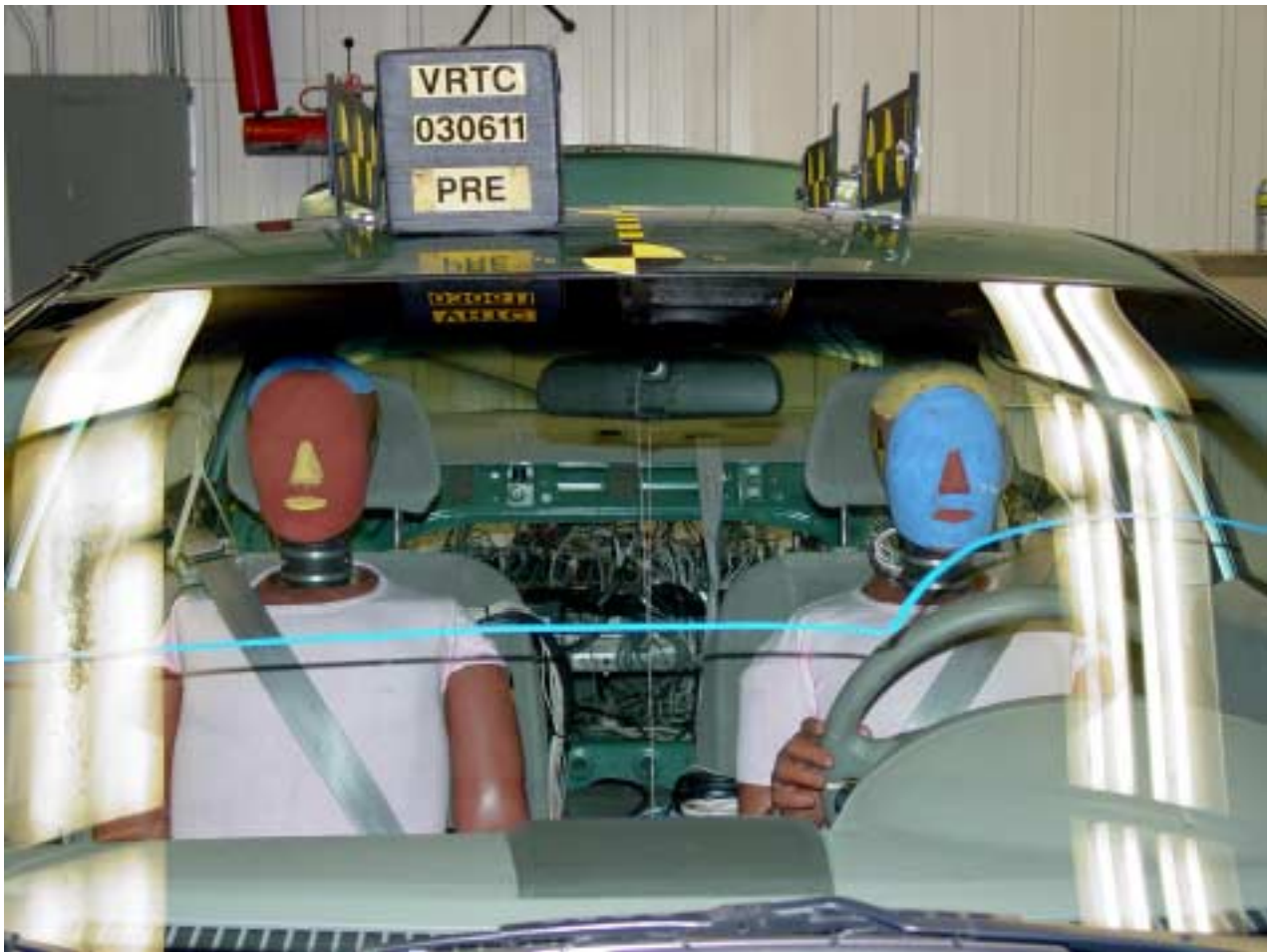


Figure A-43 Pre-Test Driver and Passenger Dummies Front View



Figure A-44 Post-Test Driver and Passenger Dummies Front View



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

Intentionally Left Blank



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



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

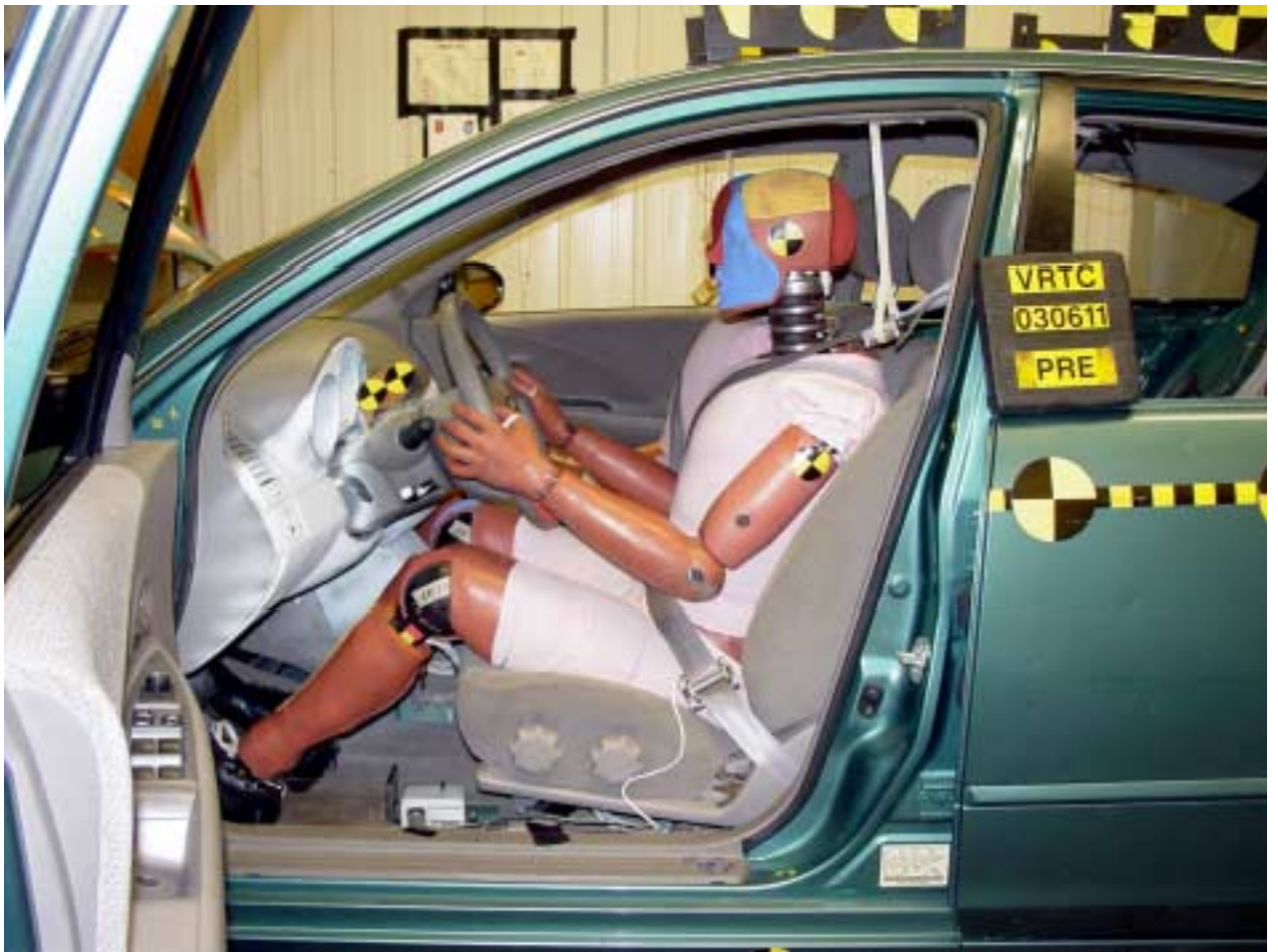


Figure A-48 Pre-Test Driver Dummy & Vehicle Interior - View 1



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



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



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



Figure A-52 Pre-Test Driver Dummy & Vehicle Interior - View 3



Figure A-53 Post-Test Driver Dummy & Vehicle Interior - View 3

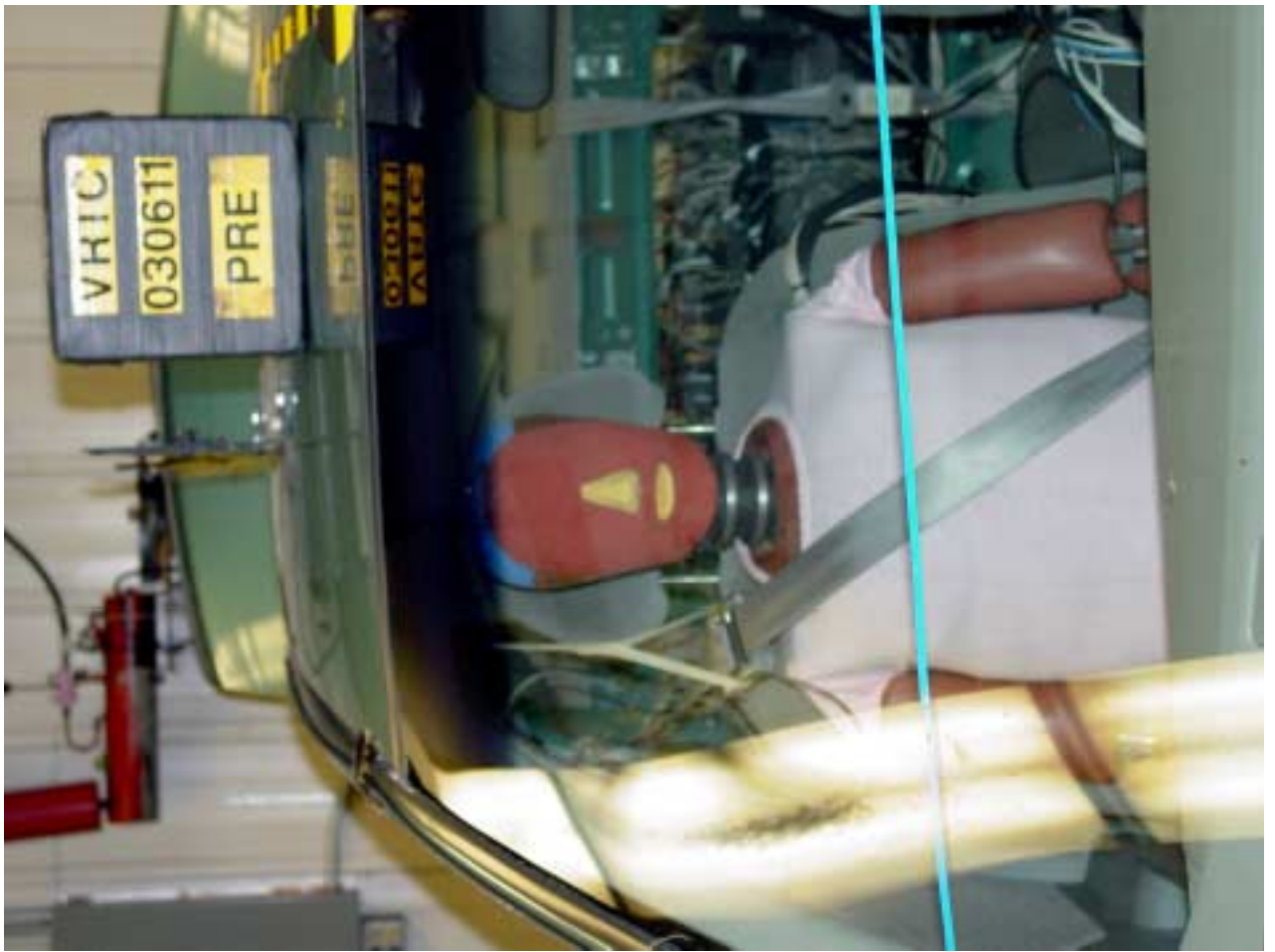


Figure A-54 Pre-Test Passenger Dummy Position - View 1

Intentionally Left Blank



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



Figure A-56 Post-Test Passenger Dummy Position - View 2



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



Figure A-58 Post-Test Passenger Dummy & Vehicle Interior - View 1



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



Figure A-60 Post-Test Passenger Dummy & Vehicle Interior - View 2



Figure A-61 Pre-Test Passenger Dummy & Vehicle Interior - View 3



Figure A-62 Post-Test Passenger Dummy & Vehicle Interior - View 3



Figure A-63 Post-Test Driver Dummy Overall View



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



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



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



Figure A-67 Post-Test Driver Knee Contact - View 1



Figure A-68 Post-Test Driver Knee Contact - View 2



Figure A-69 Post-Test Passenger Dummy Overall View



Figure A-70 Post-Test Passenger Dummy Head Contact - View 1



Figure A-71 Post-Test Passenger Dummy Head Contact - View 2



Figure A-72 Post-Test Passenger Dummy Head Contact - View 3

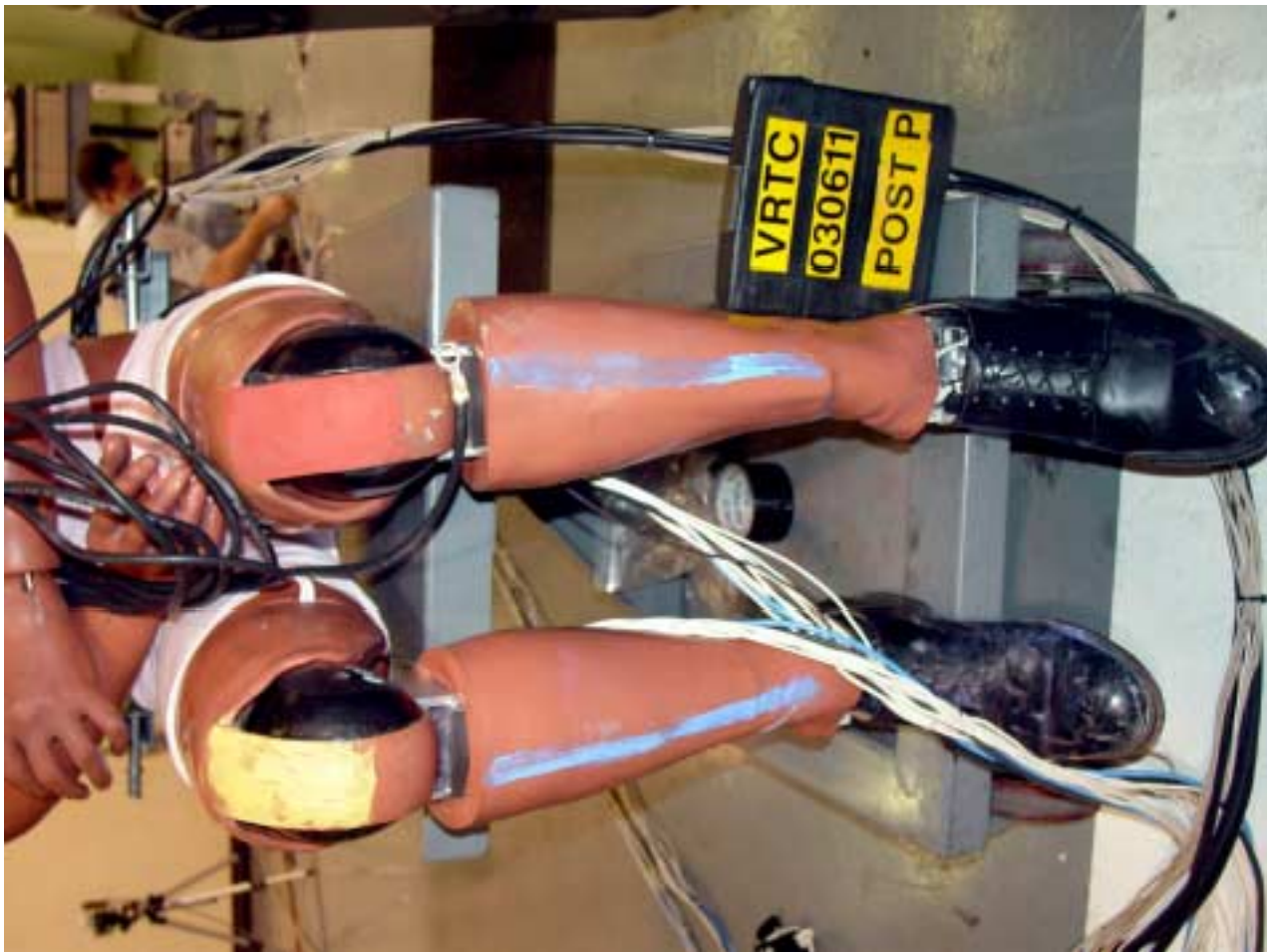


Figure A-73 Post-Test Passenger Dummy Knee Contact - View 1



Figure A-74 Post-Test Passenger Dummy Knee Contact - View 2



Figure A-75 Post-Test Bumper to Rail Attachment View



Figure A-76 Post-Test Wheel/Tire Deformation View



Figure A-77 Post-Test Wheel Well View



Figure A-78 Post-Test Wheel to Rocker Contact View



Figure A-79 Post-Test Vehicle Sub-Frame Damage View



Figure A-80 Post-Test Vehicle Roof Deformation - View 1



Figure A-81 Post-Test Vehicle Roof Deformation - View 2



Figure A-82 Vehicle Certification Label View

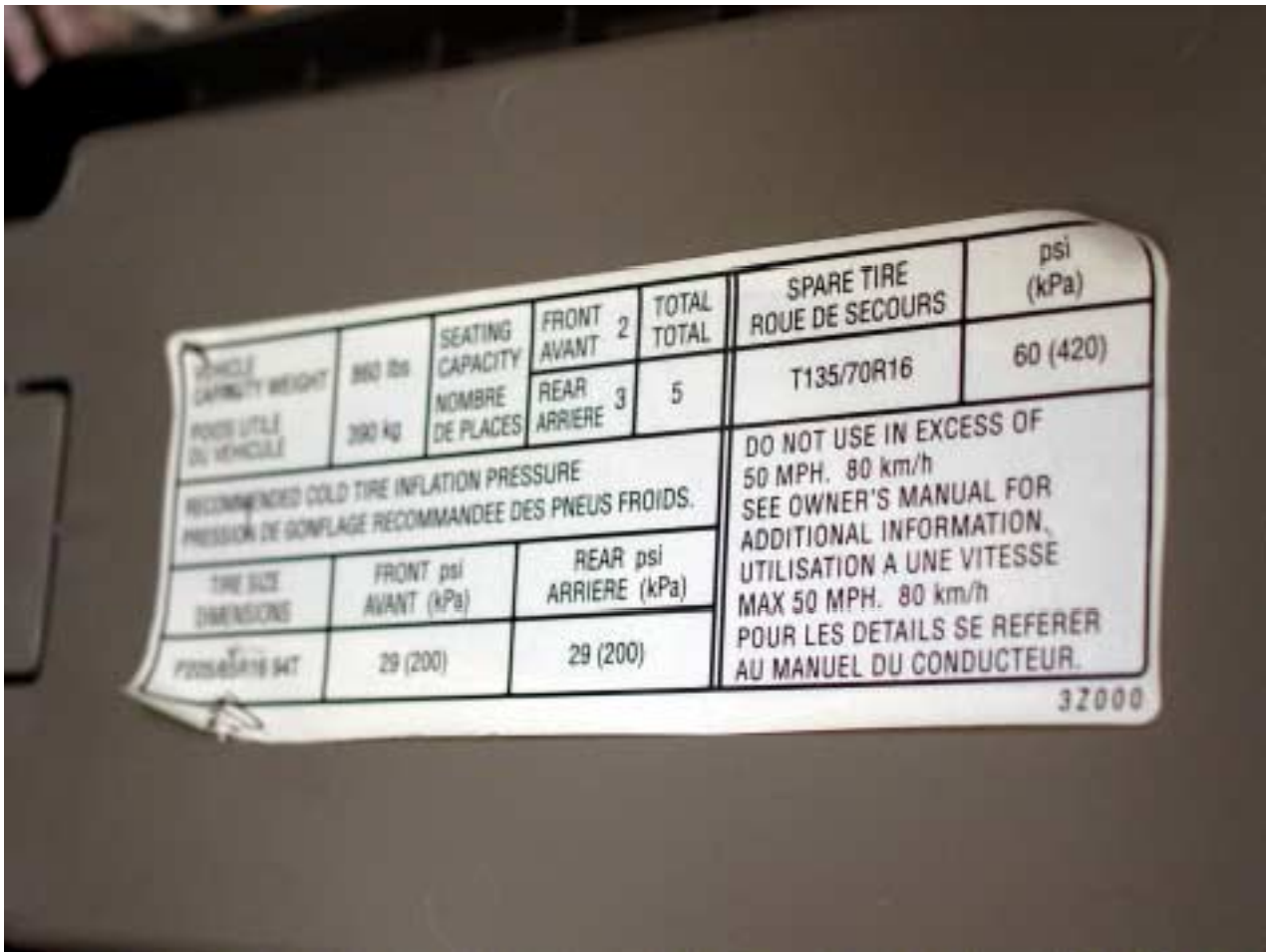


Figure A-83 Tire Load Label View

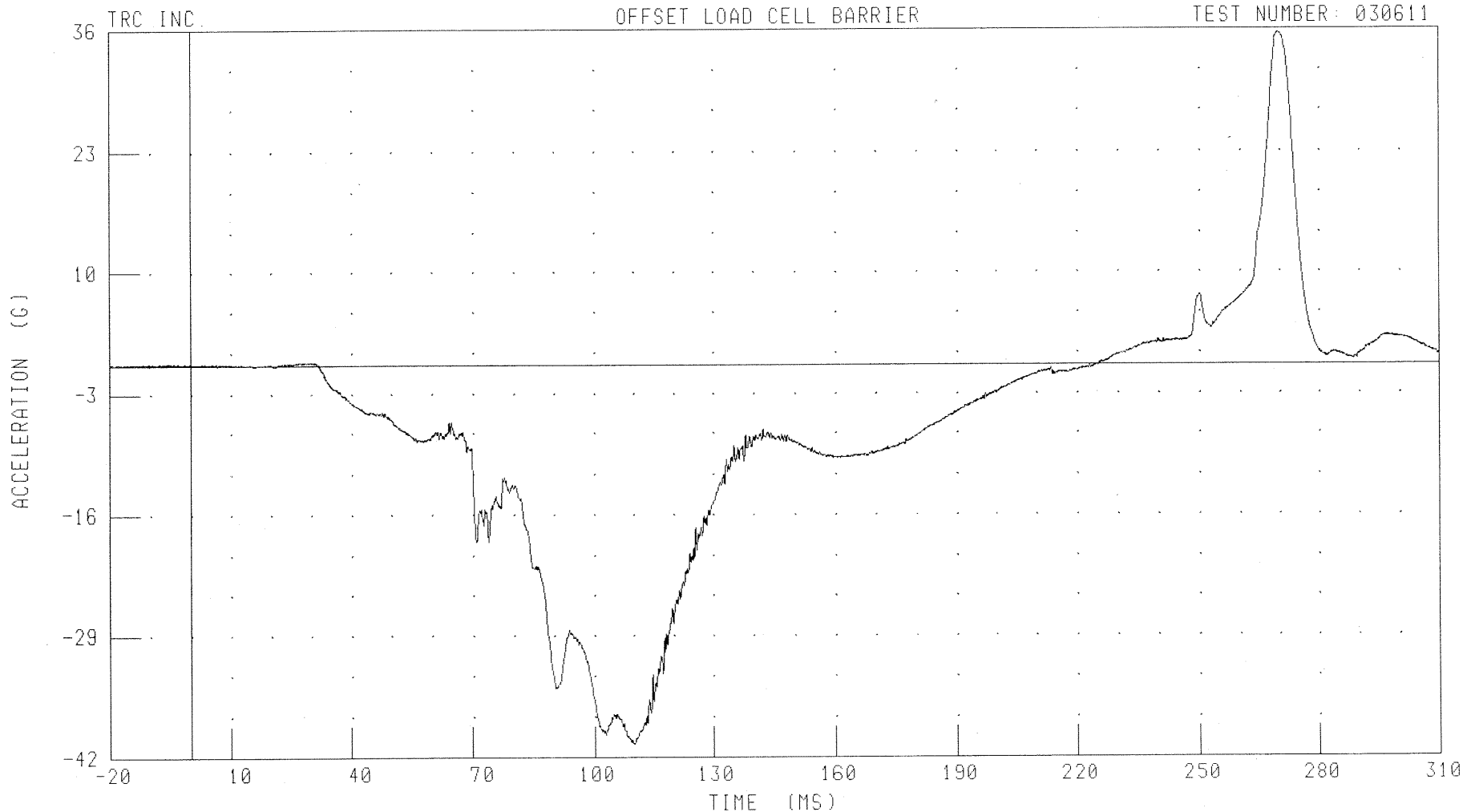
Appendix B

Data Plots

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER HEAD X-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: HEDXG1 FILTER: CH. CLASS 1000

PEAK DATA 35.62 G @ 269.60 MS, -40.58 G @ 110.08 MS

B-2

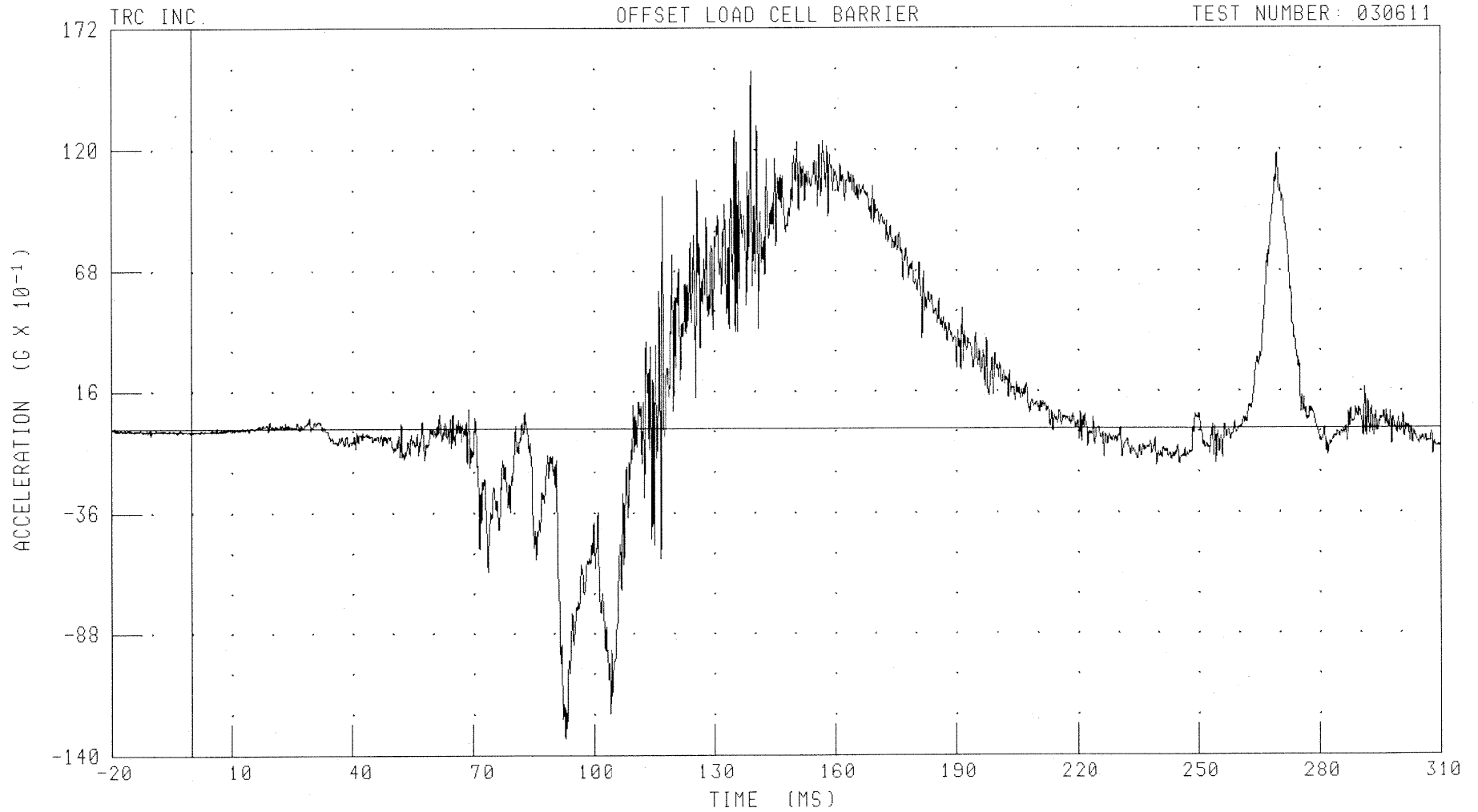
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER HEAD Y-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: HEDYG1 FILTER: CH. CLASS 1000

PEAK DATA: 15.34 G @ 139.12 MS; -13.29 G @ 92.88 MS

B-3

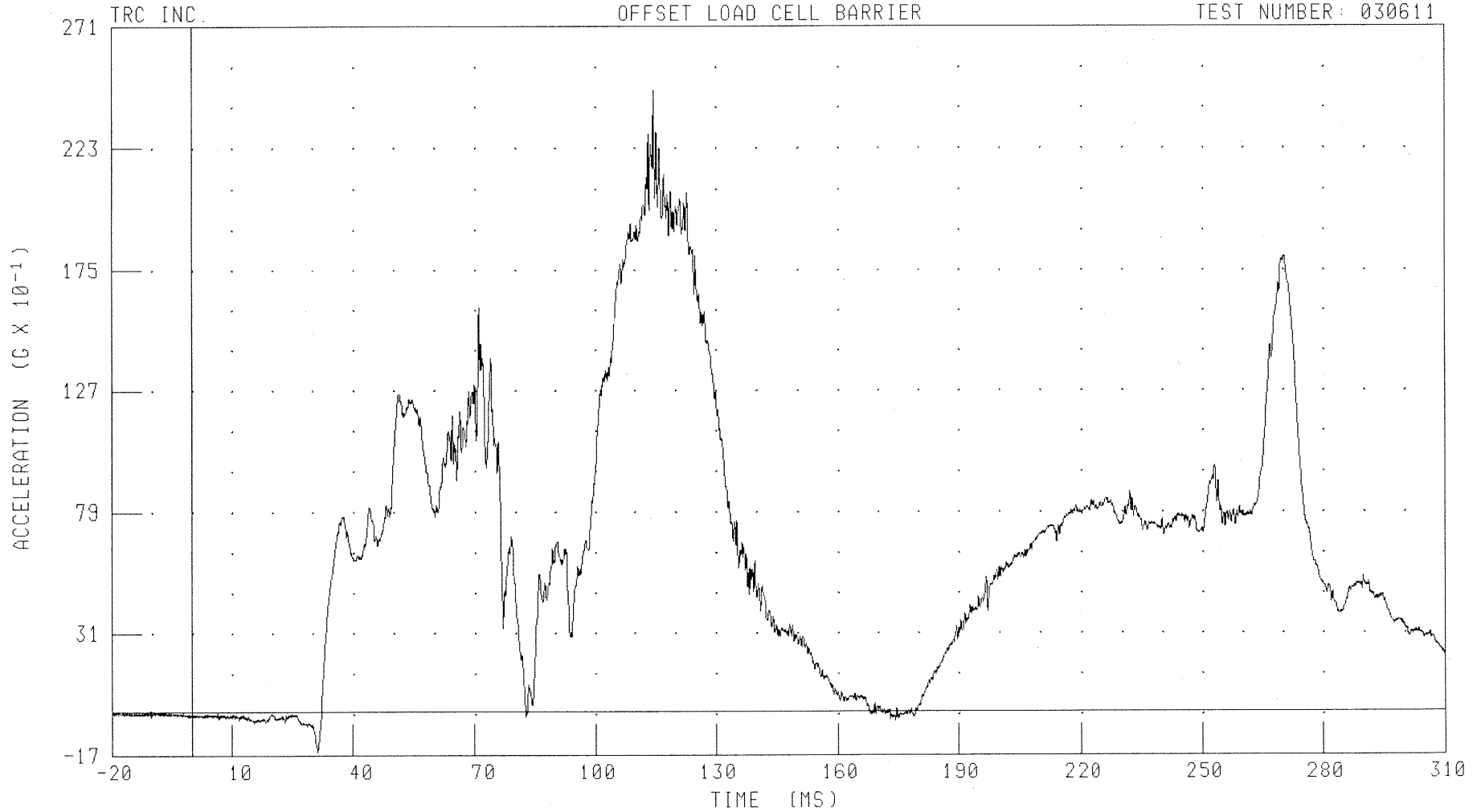
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER HEAD Z-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: HEDZG1

FILTER: CH. CLASS 1000

PEAK DATA: 24.60 G @ 114.80 MS; -1.59 G @ 31.36 MS

B-4

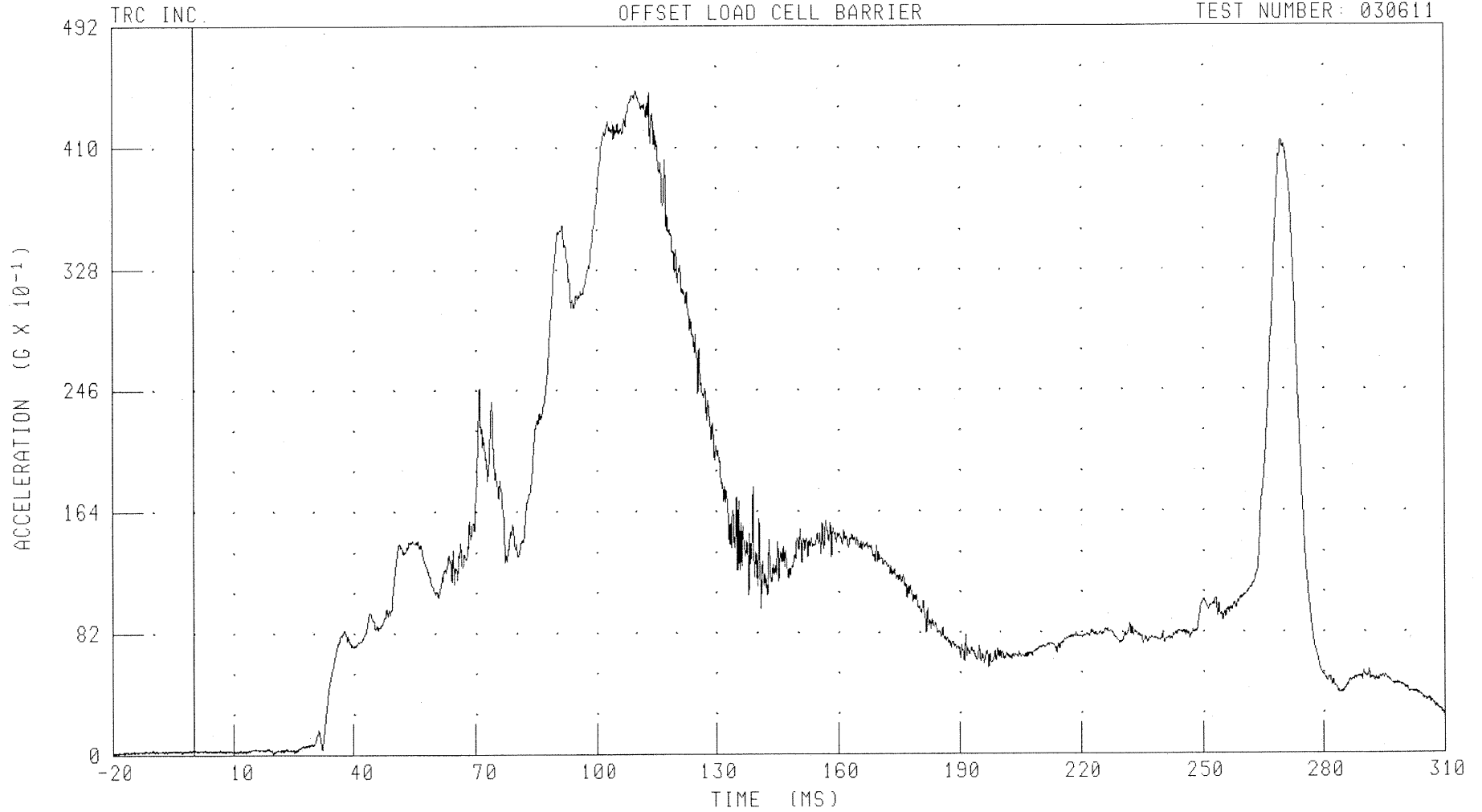
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER HEAD RESULTANT ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: HEDRG1

FILTER: CH. CLASS 1000

PEAK DATA: 44.84 G @ 110.08 MS; 0.06 G @ -18.88 MS

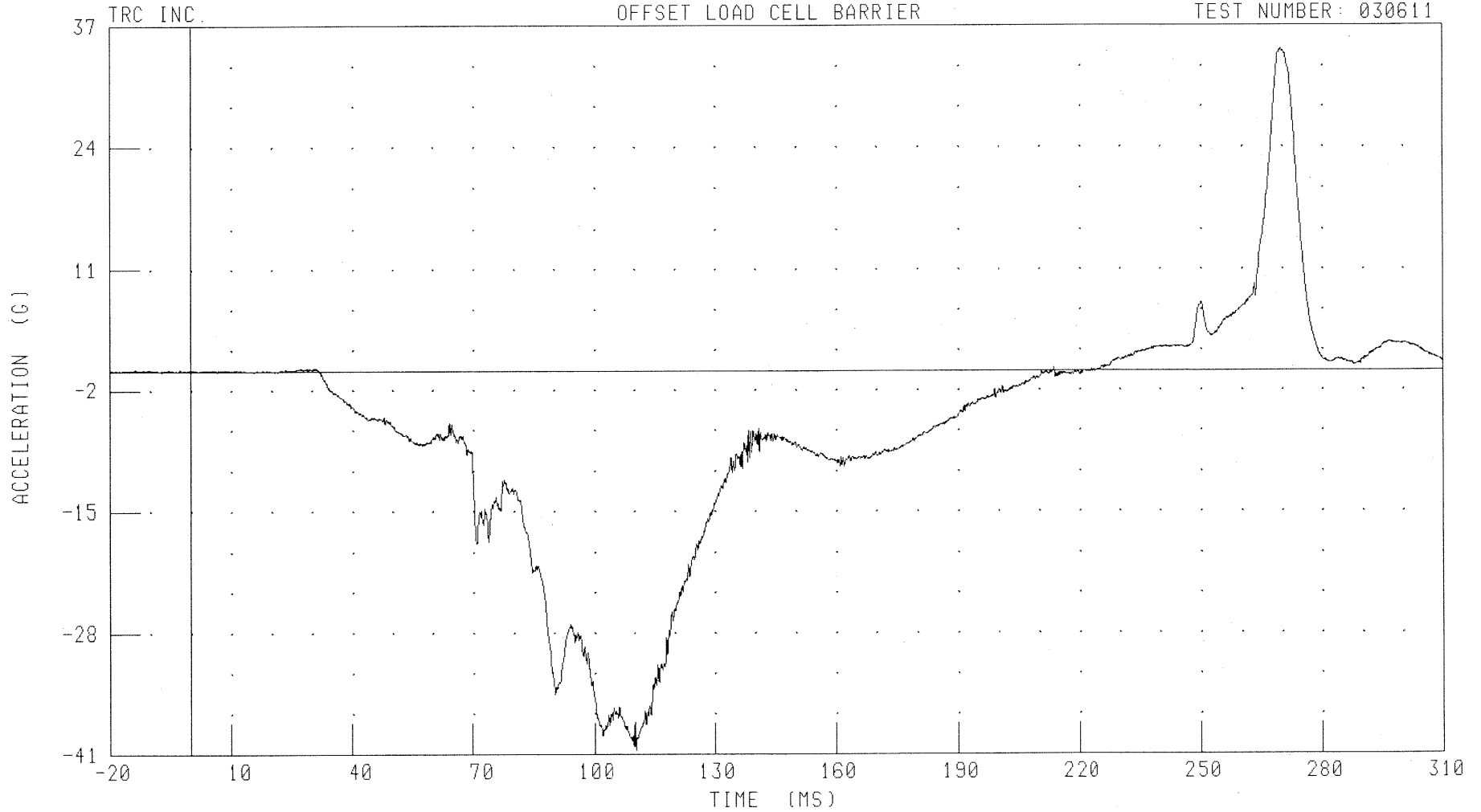
B-5

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER HEAD X-AXIS ACCELERATION REDUNDANT

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: HEDXR1

FILTER: CH. CLASS 1000

PEAK DATA: 34.52 G @ 269.76 MS; -40.58 G @ 110.40 MS

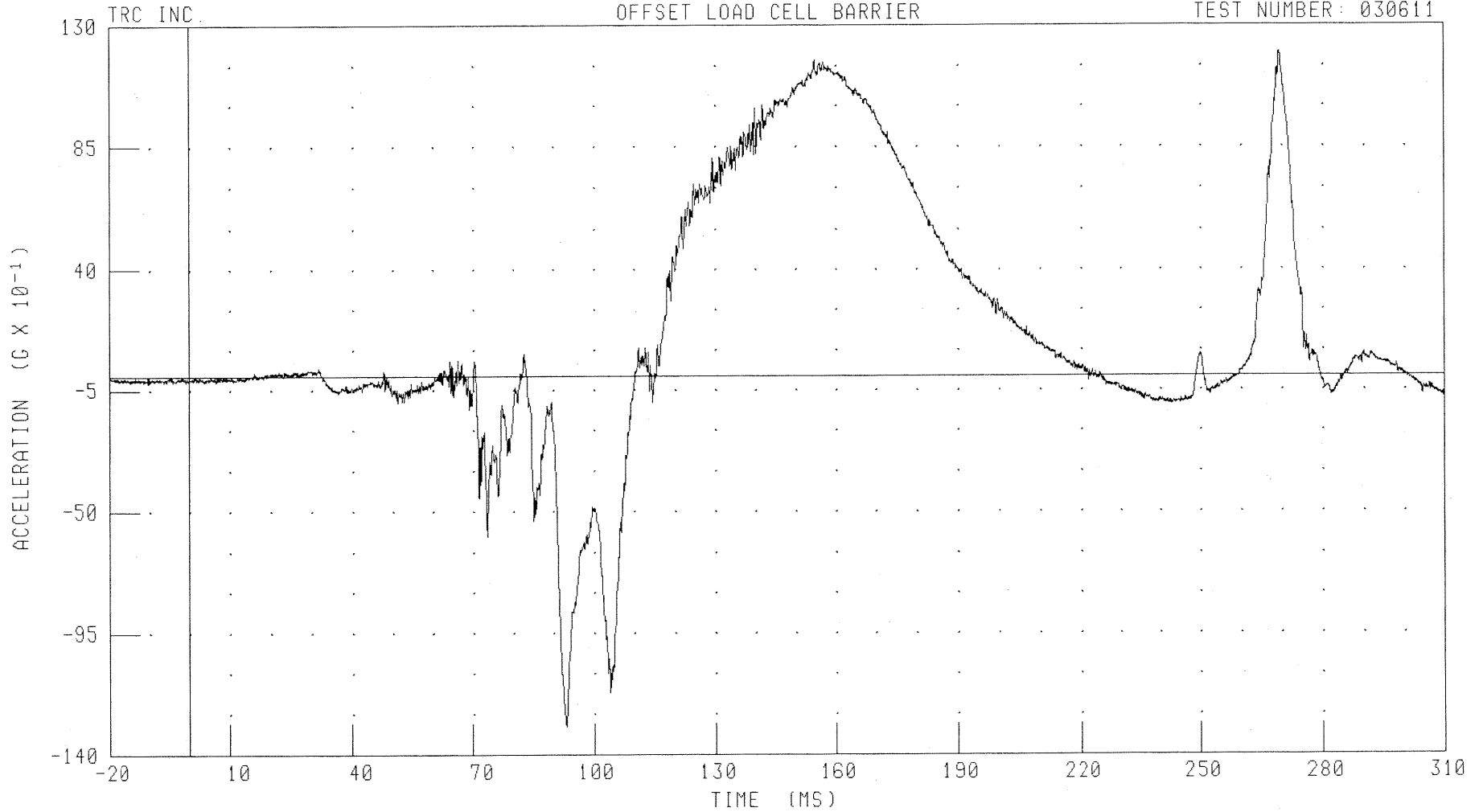
B-6

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER HEAD Y-AXIS ACCELERATION REDUNDANT

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: HEDYR1 FILTER: CH. CLASS 1000

PEAK DATA: 12.04 G @ 269.44 MS; -12.97 G @ 93.20 MS

B-7

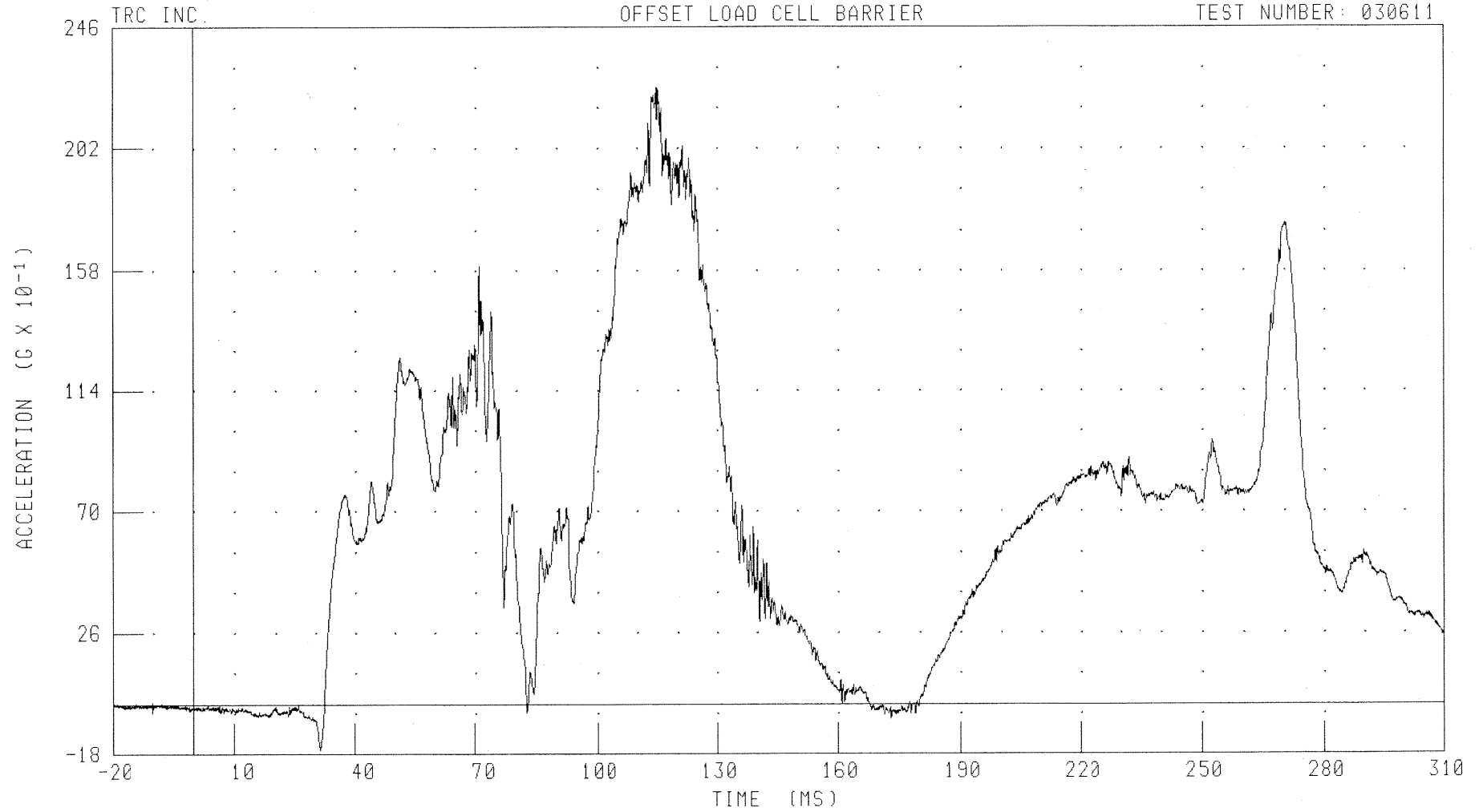
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER HEAD Z-AXIS ACCELERATION REDUNDANT

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: HEDZR1 FILTER: CH. CLASS 1000

PEAK DATA: 22.43 G @ 114.80 MS; -1.65 G @ 31.36 MS

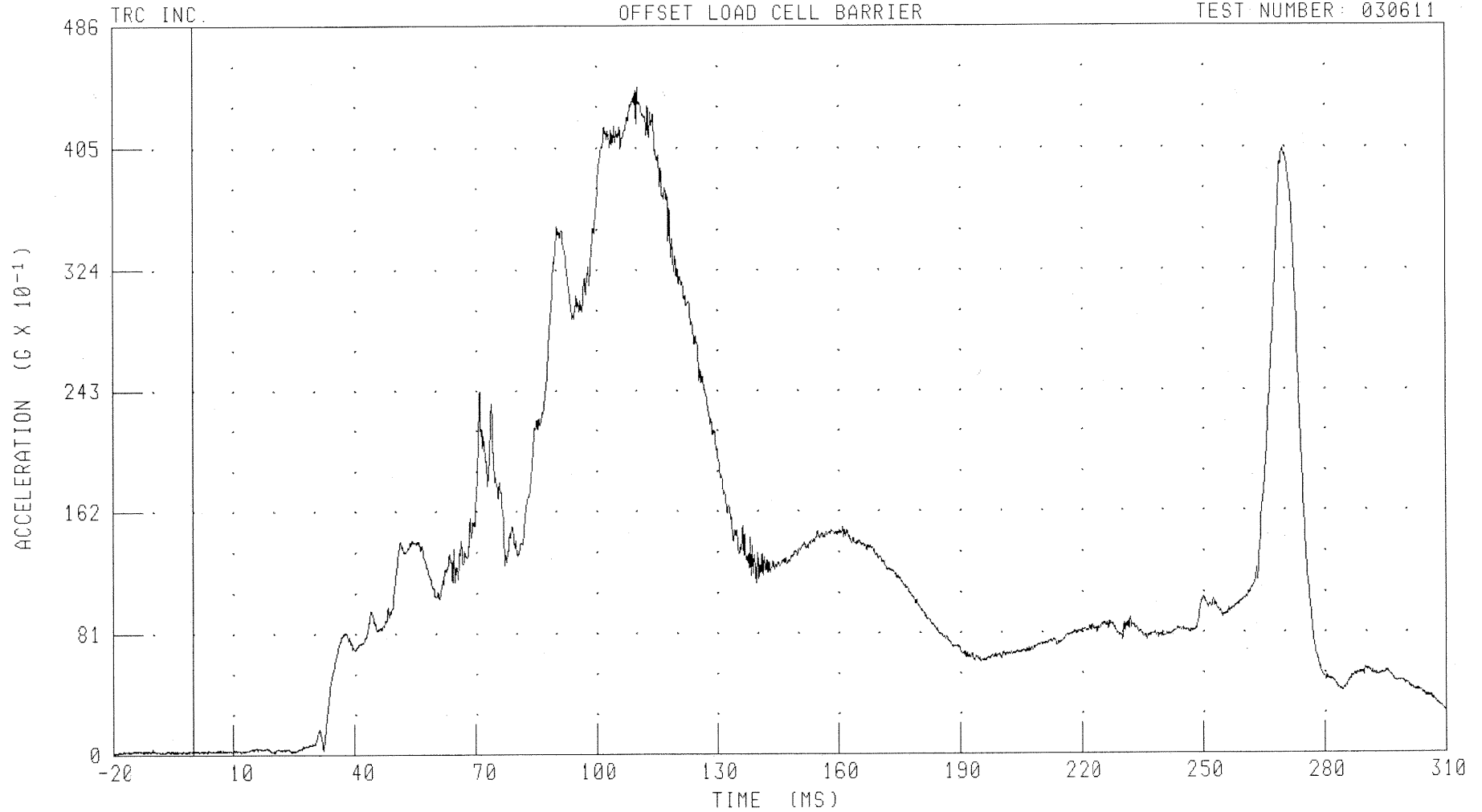
B-8

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER HEAD RESULTANT ACCELERATION REDUNDANT

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: HEDRR1

FILTER: CH. CLASS 1000

PEAK DATA: 44.51 G @ 110.40 MS; 0.06 G @ -19.12 MS

B-9

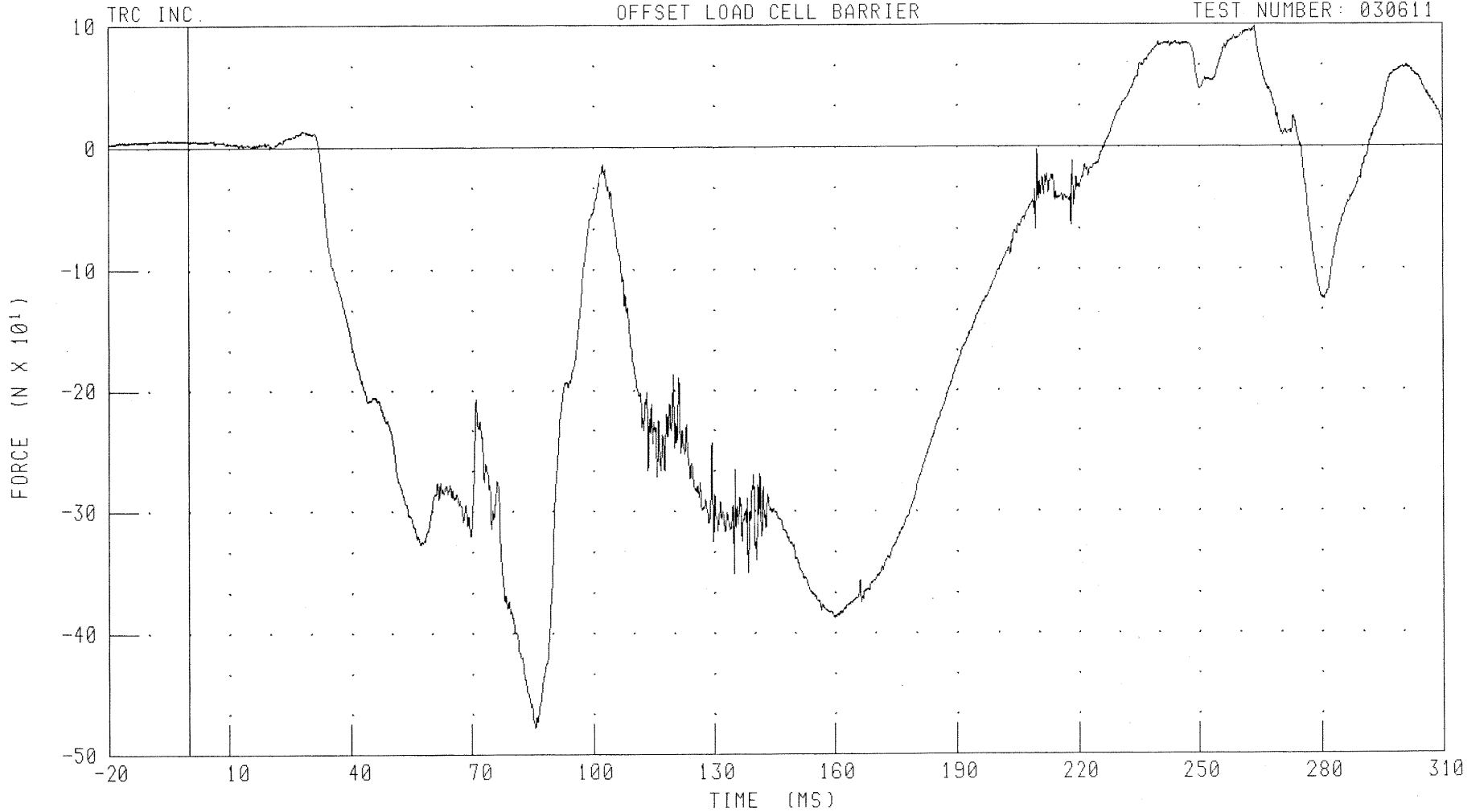
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER NECK X-AXIS SHEAR FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



B-10

030611

CHANNEL: NEKXF1

FILTER: CH. CLASS 1000

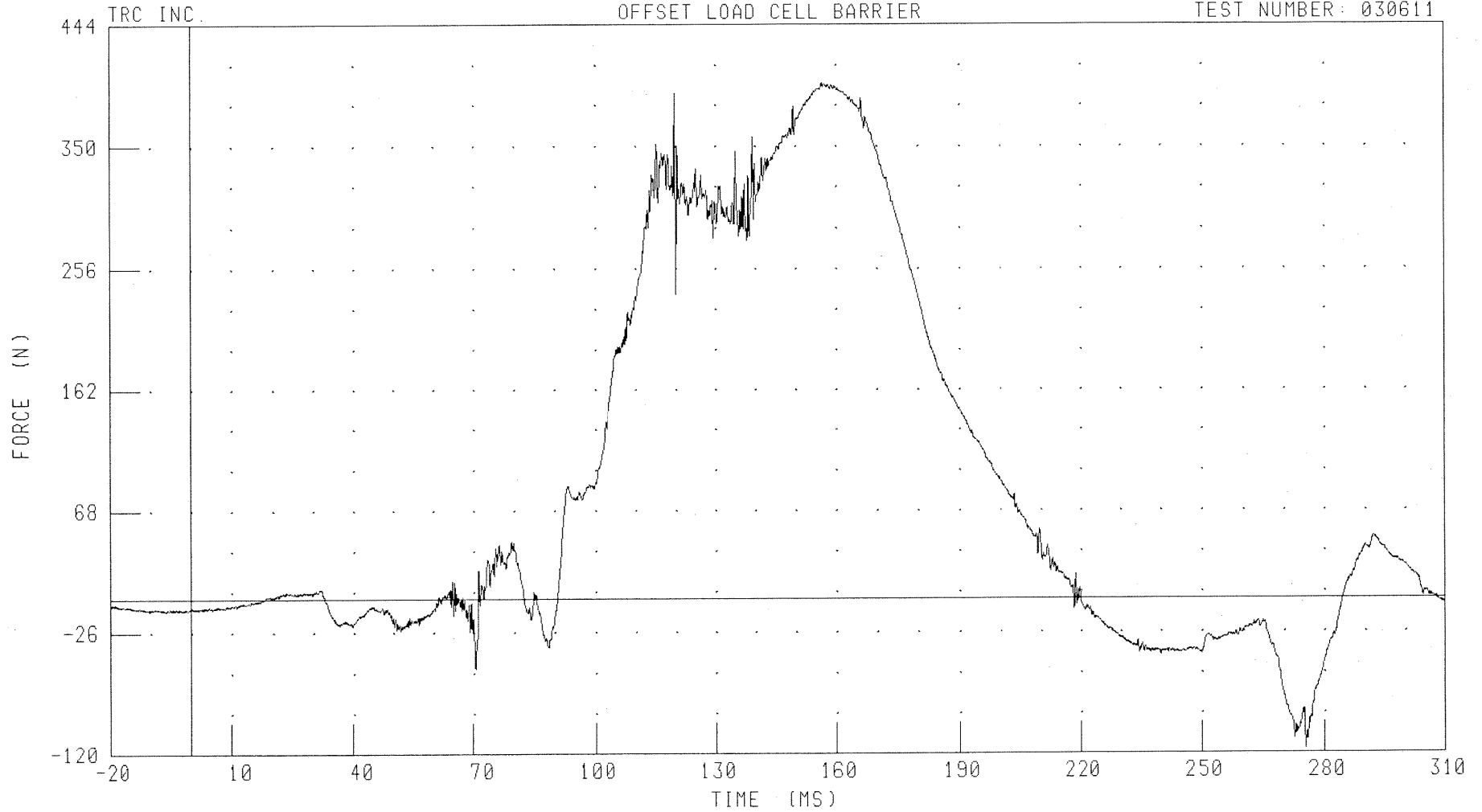
PEAK DATA: 98.12 N @ 263.60 MS; -477.87 N @ 85.68 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER NECK Y-AXIS SHEAR FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: NEKYF1

FILTER: CH. CLASS 1000

PEAK DATA: 399.12 N @ 156.64 MS; -117.09 N @ 275.36 MS

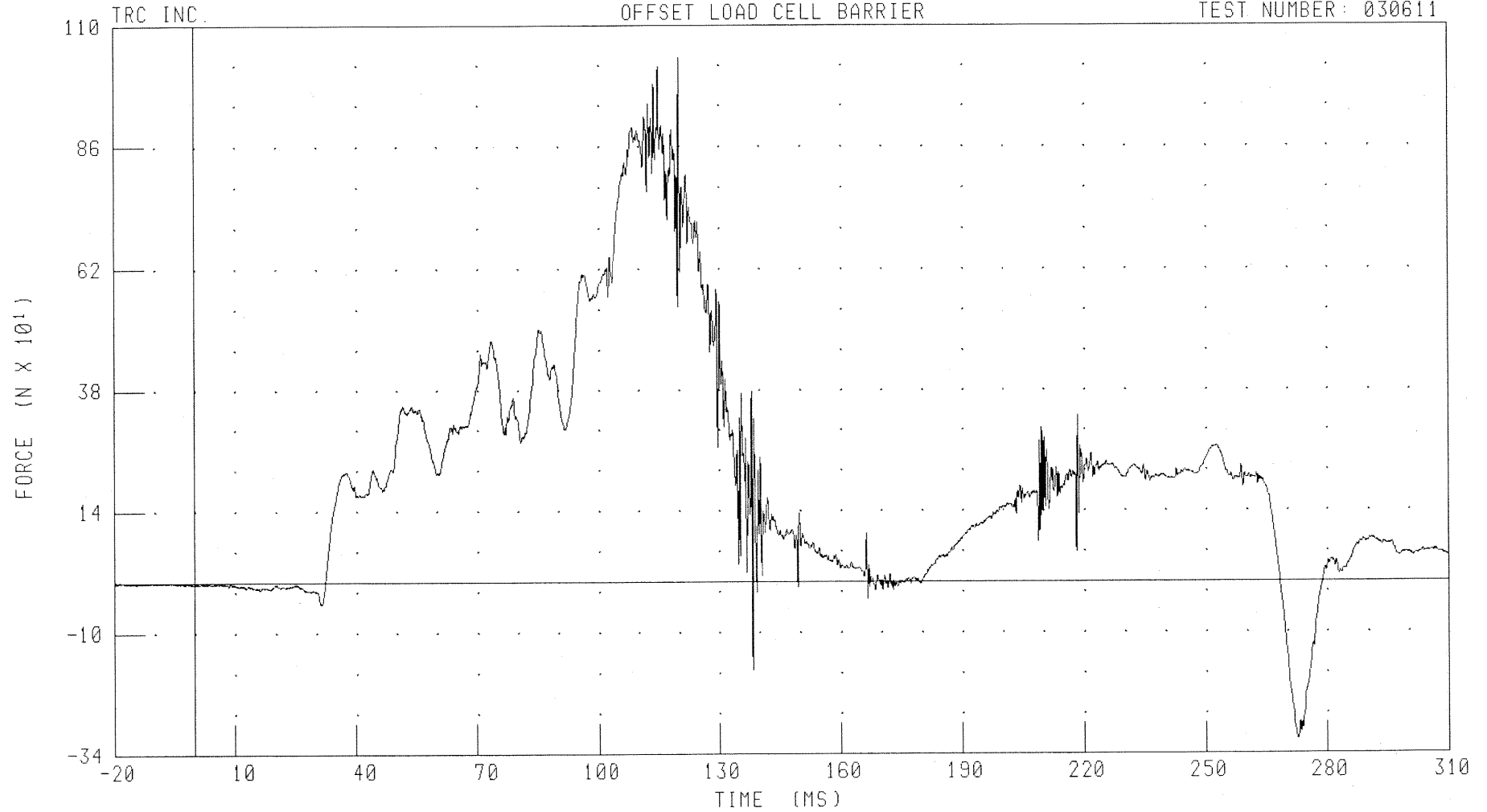
B-11

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER NECK Z-AXIS AXIAL FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: NEKZF1 FILTER: CH. CLASS 1000

PEAK DATA: 1035.30 N @ 120.08 MS; -311.12 N @ 272.64 MS

B-12

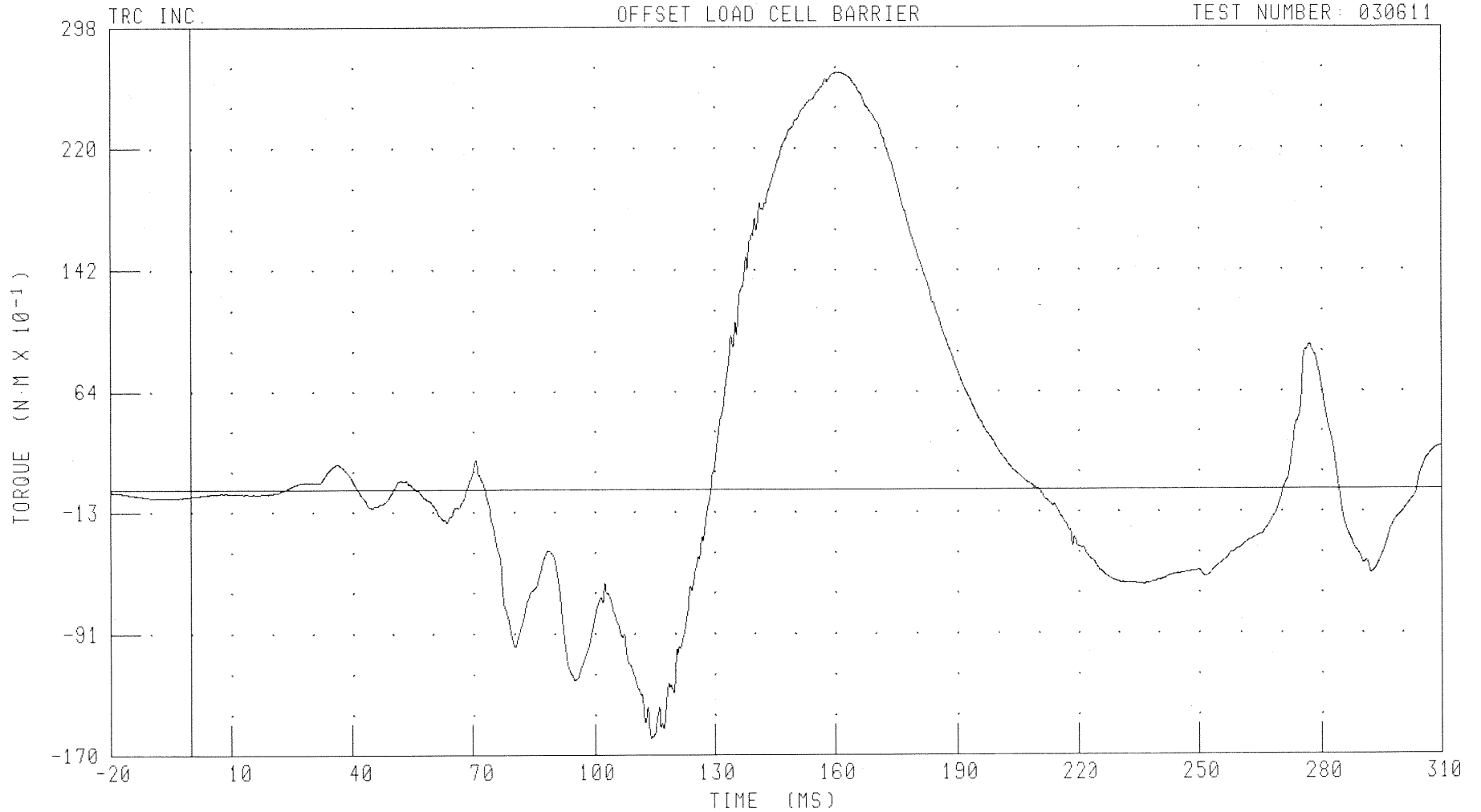
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER NECK MOMENT ABOUT X AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: NEKXMI

FILTER: CH. CLASS 600

PEAK DATA: 26.87 N·M @ 160.72 MS; -15.93 N·M @ 114.16 MS

B-13

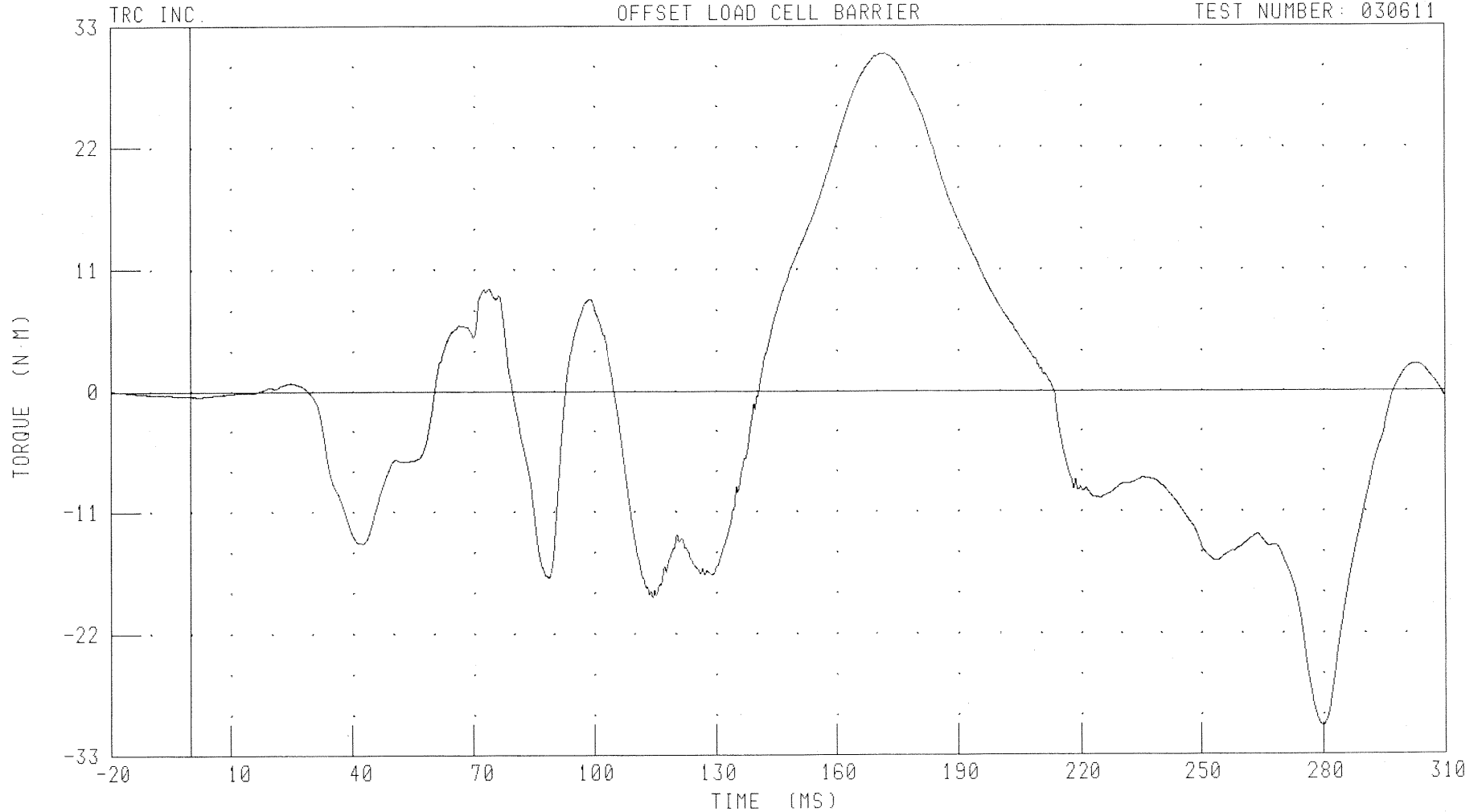
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER NECK MOMENT ABOUT Y AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: NEKYM1

FILTER: CH. CLASS 600

PEAK DATA: 30.49 N.M @ 172.24 MS; -30.42 N.M @ 279.84 MS

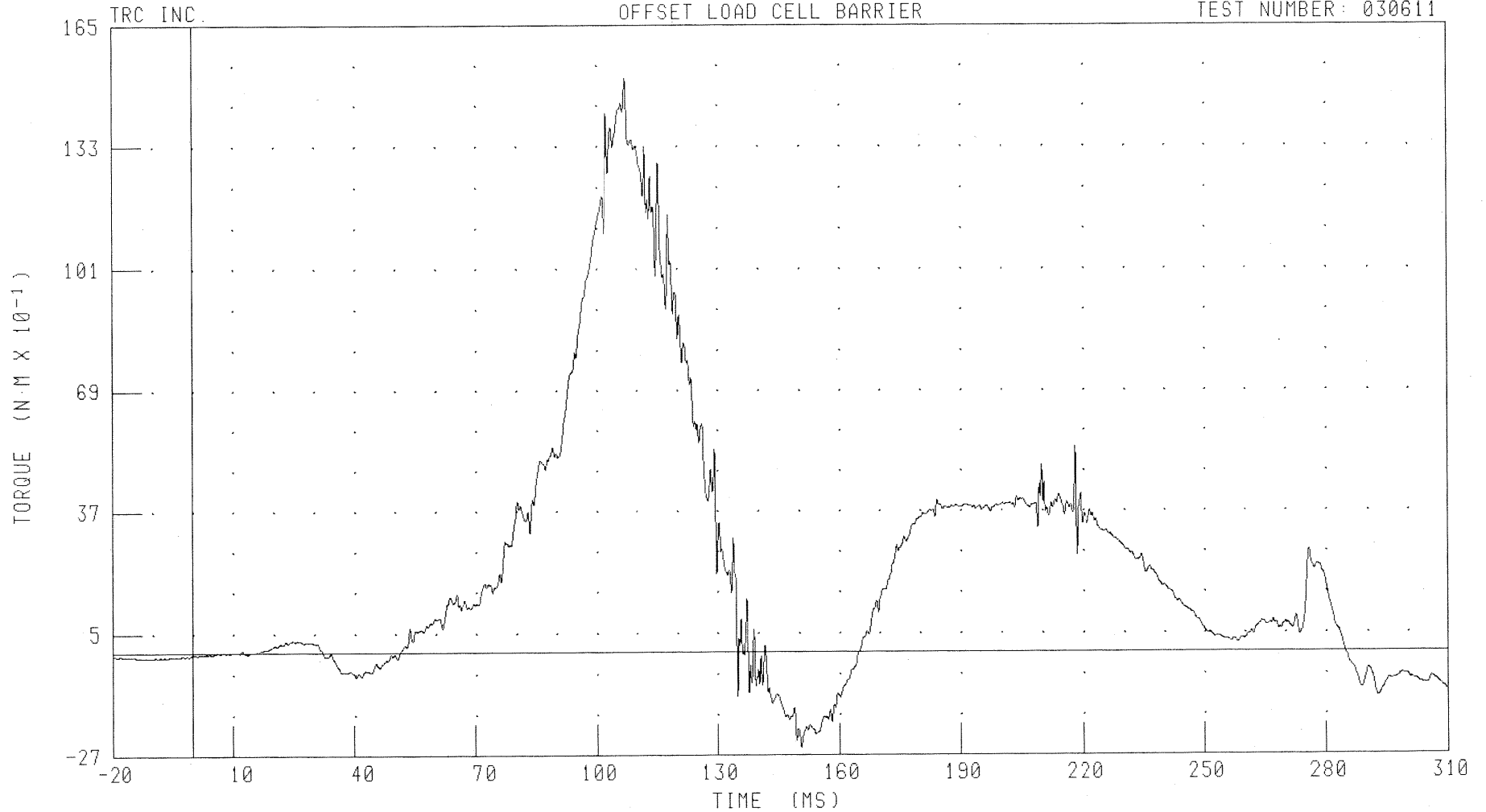
B-14

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER NECK MOMENT ABOUT Z AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: NEKZM1 FILTER: CH. CLASS 600

PEAK DATA: 15.10 N·M @ 107.28 MS; -2.52 N·M @ 150.56 MS

B-15

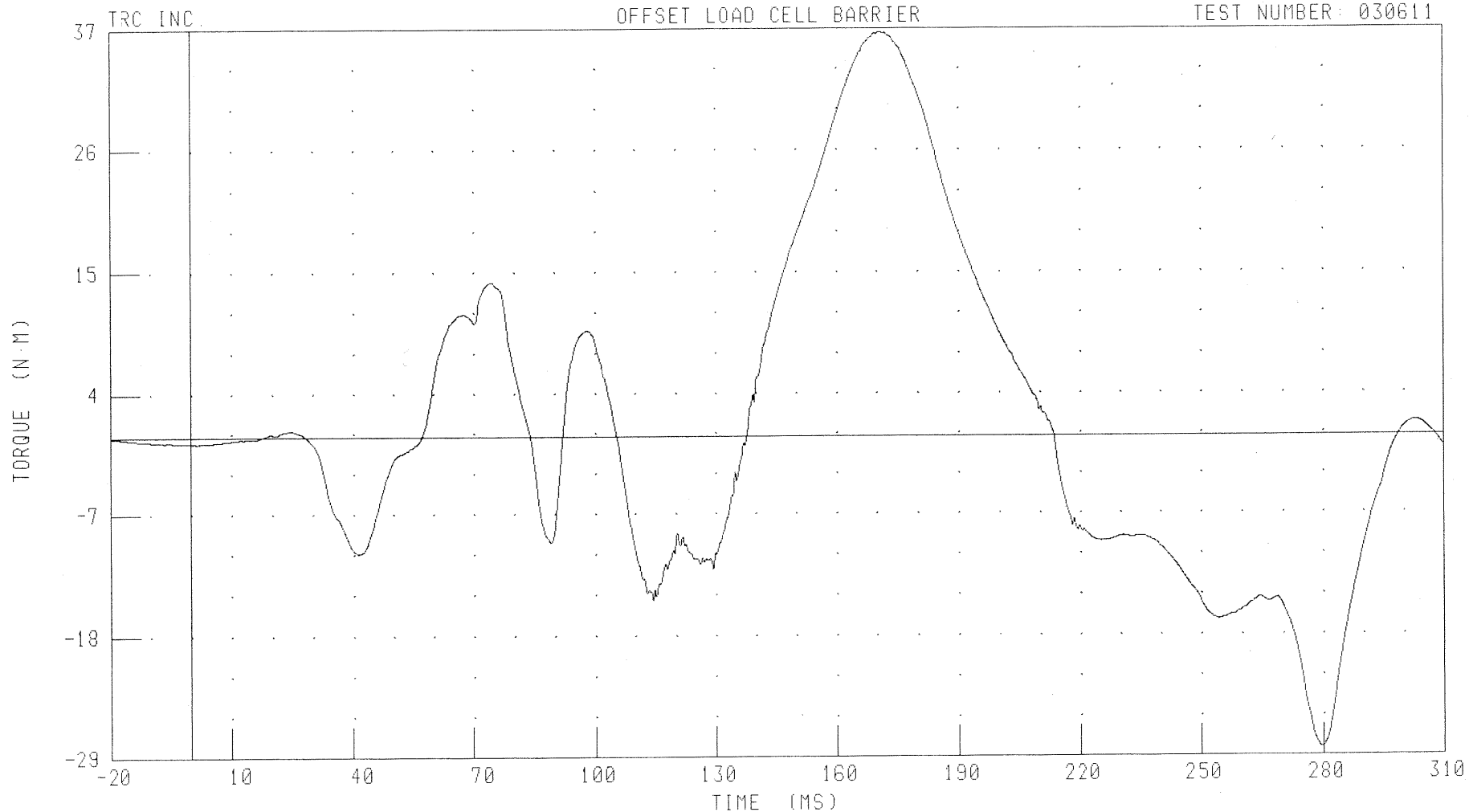
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER NECK OCCIPITAL CONDYLE MOMENT ABOUT Y AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611

B-16



CHANNEL: NEKOM1 FILTER: CH. CLASS 600

PEAK DATA: 36.66 N·M @ 170.96 MS; -28.25 N·M @ 279.68 MS

030611

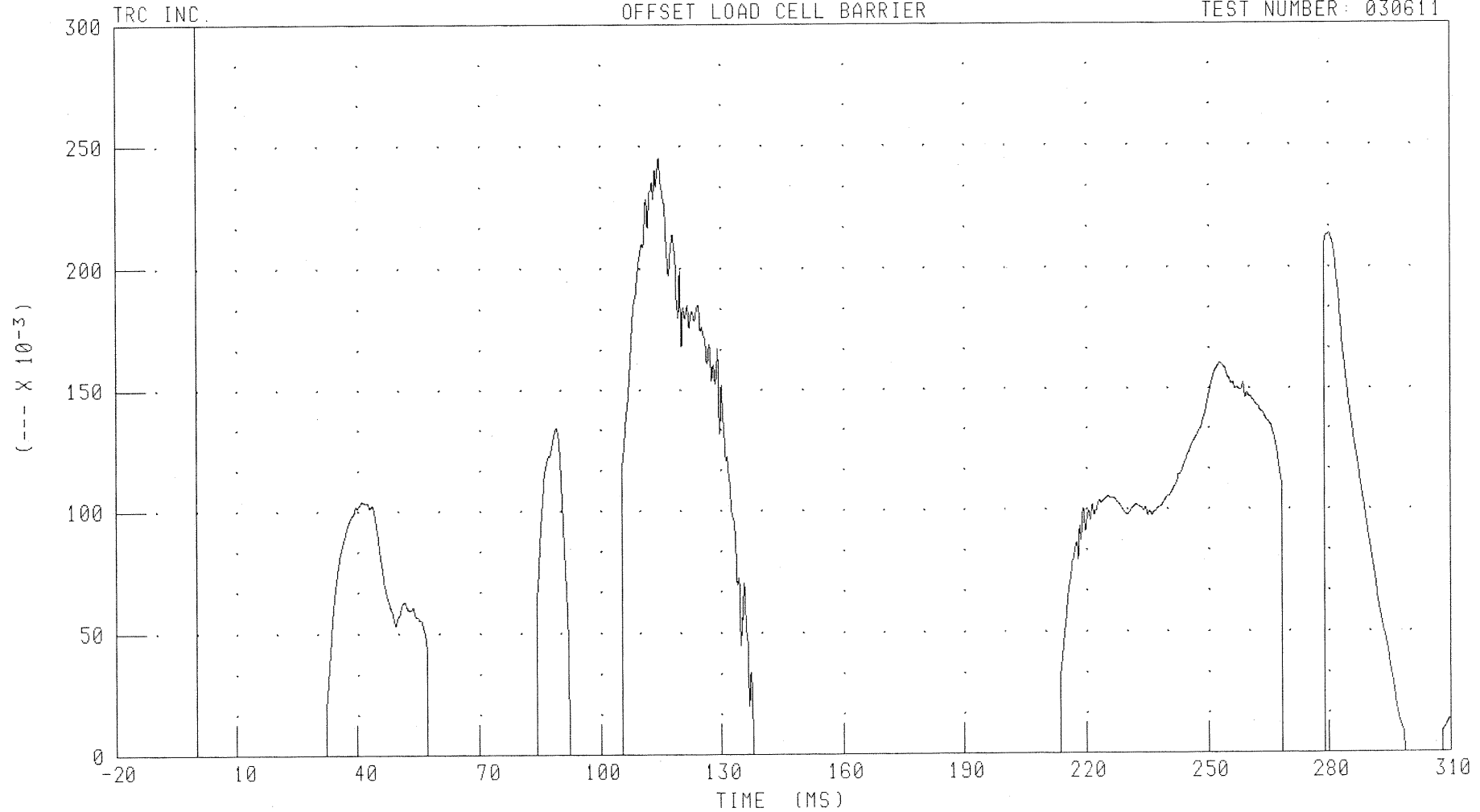
2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER NIJ TENSION/EXTENSION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611

B-17



030611

CHANNEL: NTE1

FILTER: CH. CLASS 600

PEAK DATA: 0.25 --- @ 115.04 MS; 0.00 --- @ -20.00 MS

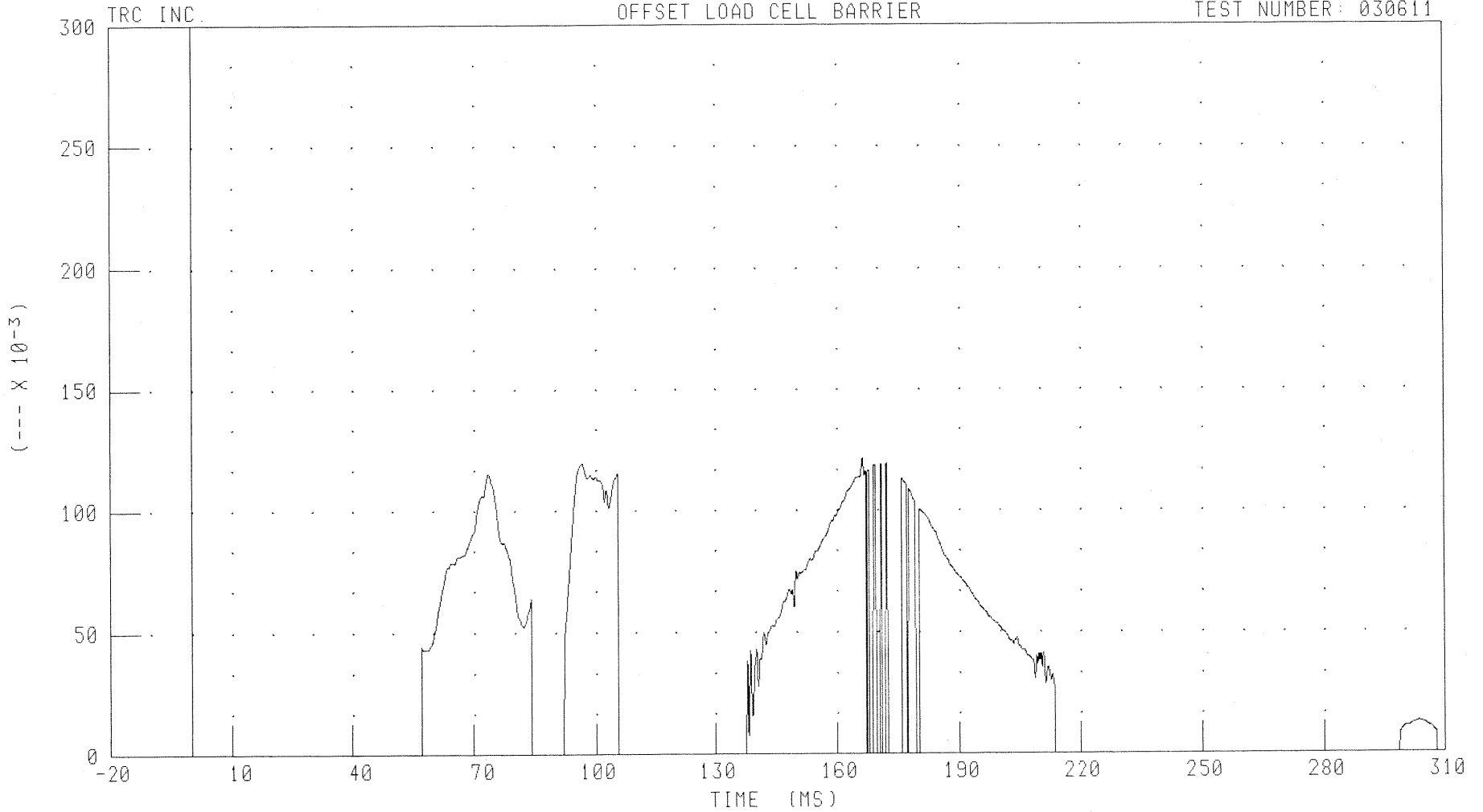
2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER NIJ TENSION/FLEXION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611

B-18



030611

CHANNEL: NTF1

FILTER: CH. CLASS 600

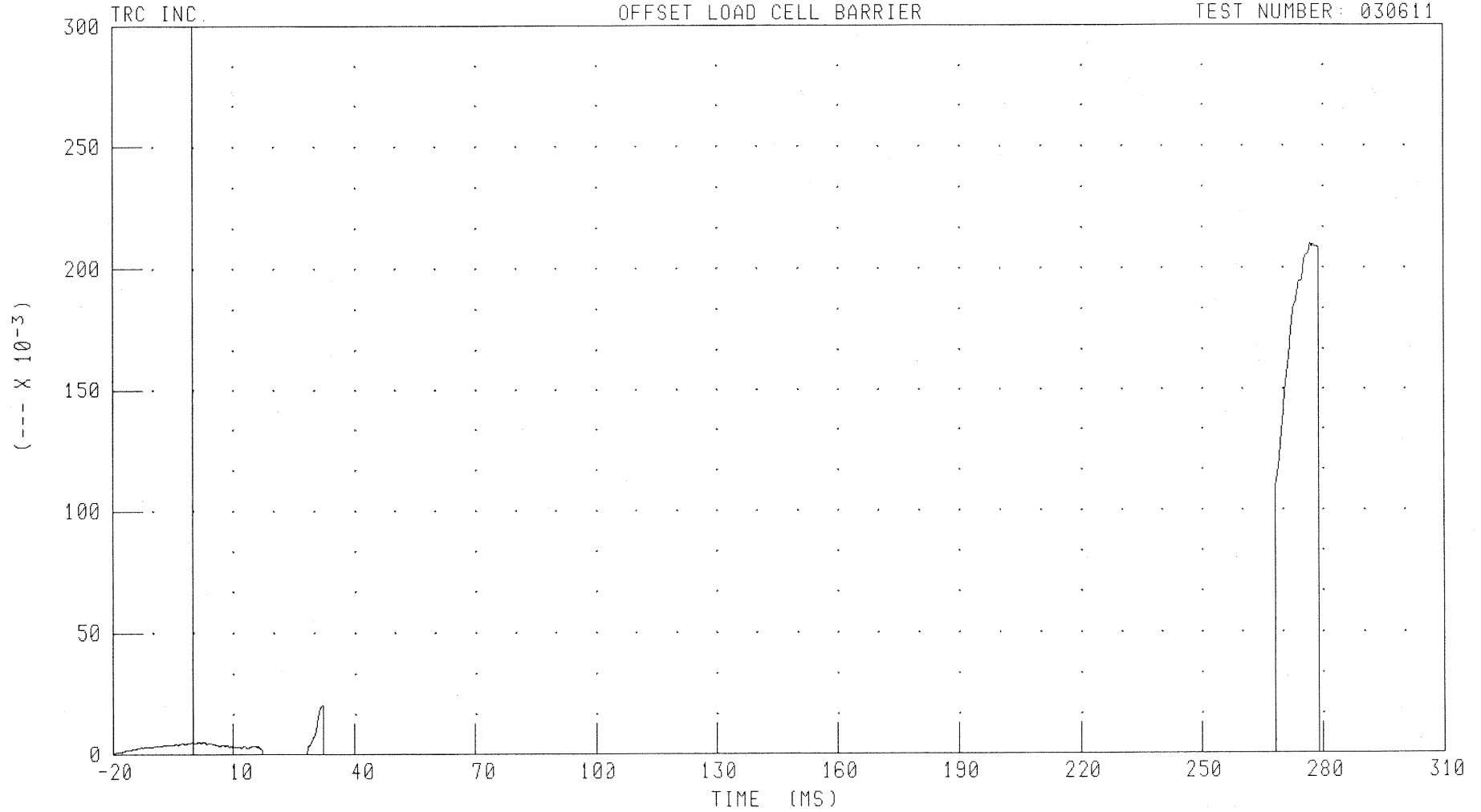
PEAK DATA: 0.12 --- @ 166.32 MS; 0.00 --- @ -20.00 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER NIJ COMPRESSION/EXTENSION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: NCE1

FILTER: CH. CLASS 600

PEAK DATA: 0.21 --- @ 276.88 MS; 0.00 --- @ 17.28 MS

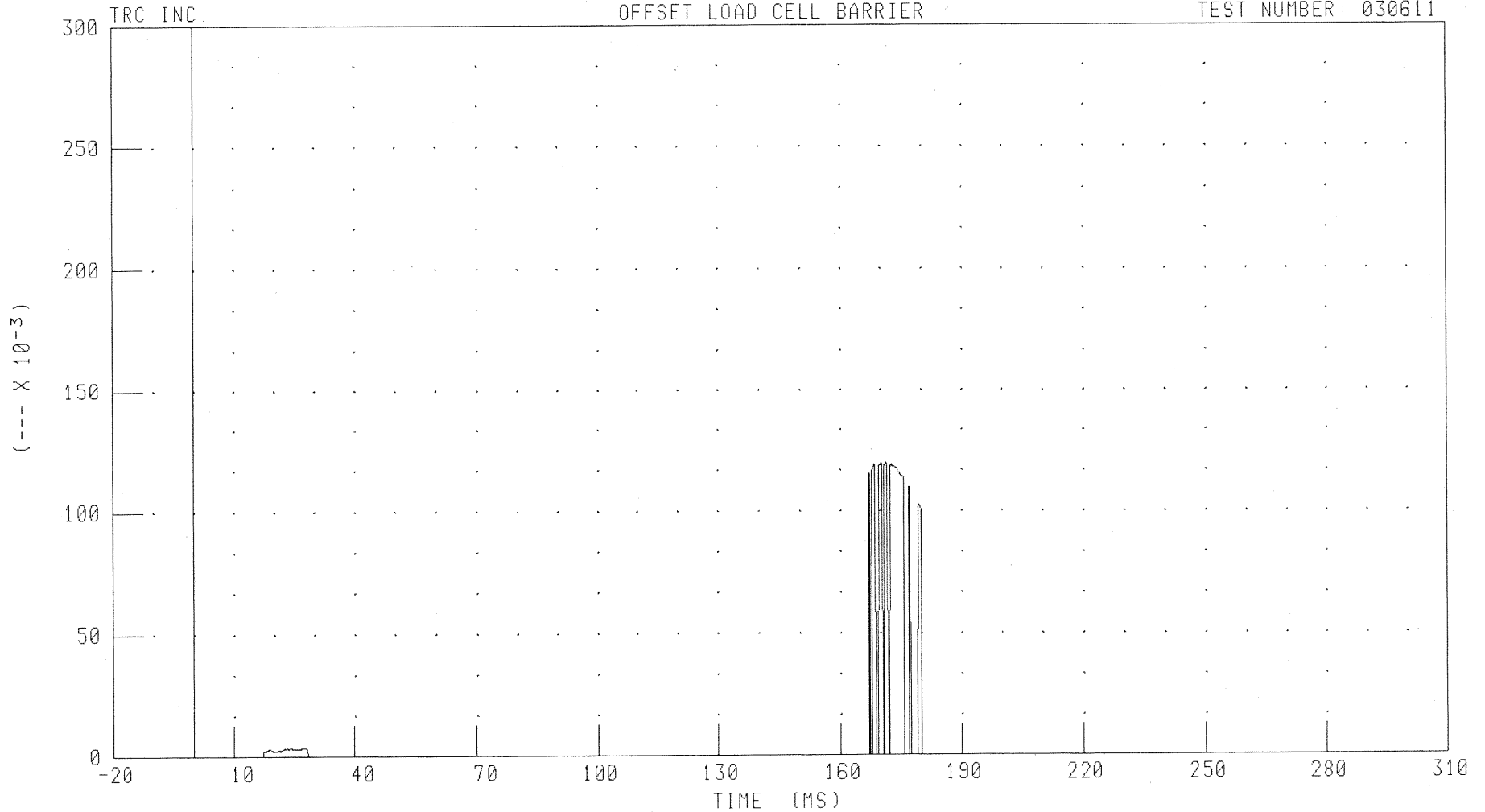
B-19

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER NIJ COMPRESSION/FLEXION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: NCF1

FILTER: CH. CLASS 600

PEAK DATA: 0.12 --- @ 171.60 MS; 0.00 --- @ -20.00 MS

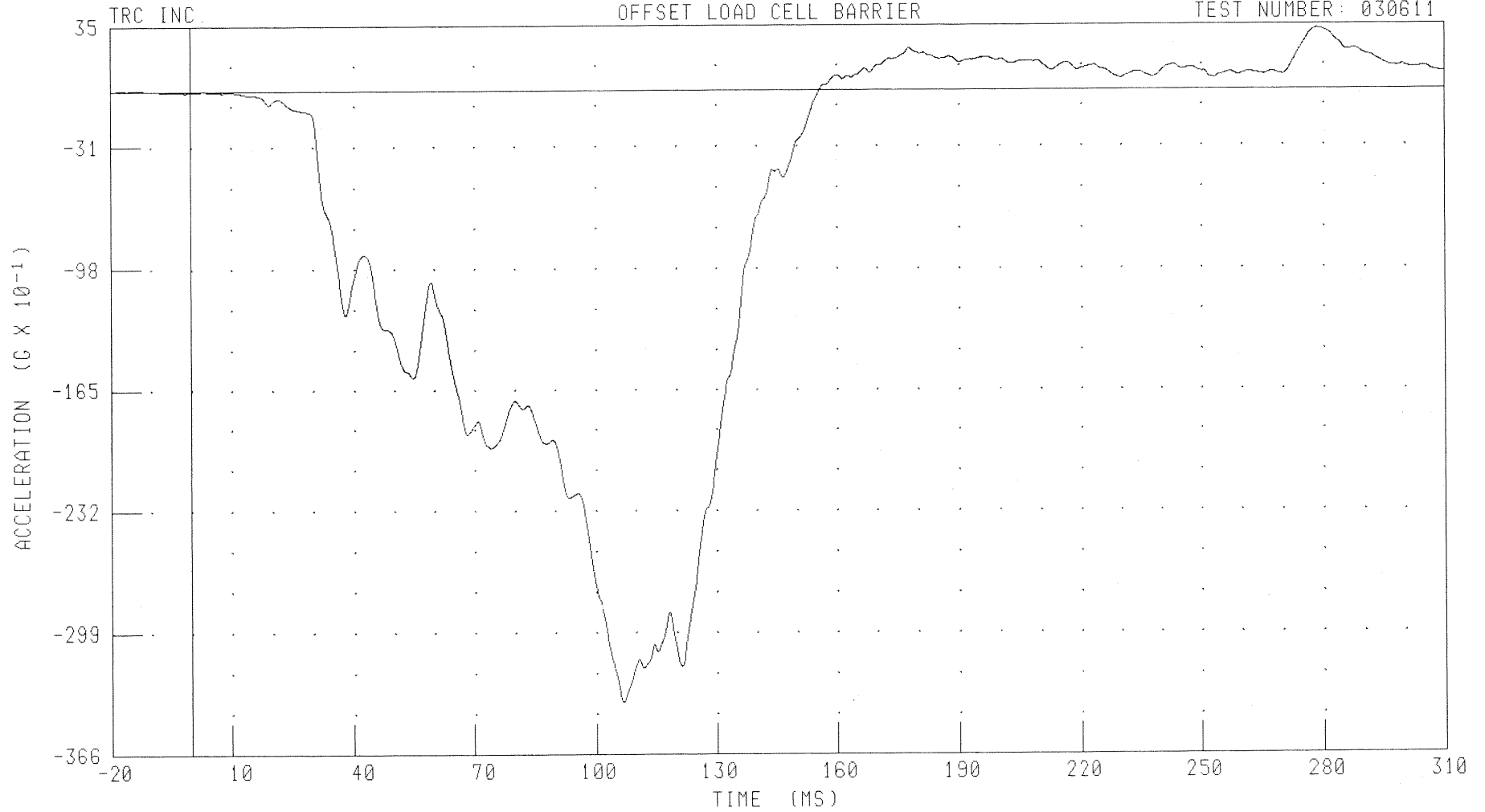
B-20

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER CHEST X-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: CSTXG1 FILTER: CH. CLASS 180

PEAK DATA: 3.36 G @ 278.56 MS; -33.71 G @ 106.96 MS

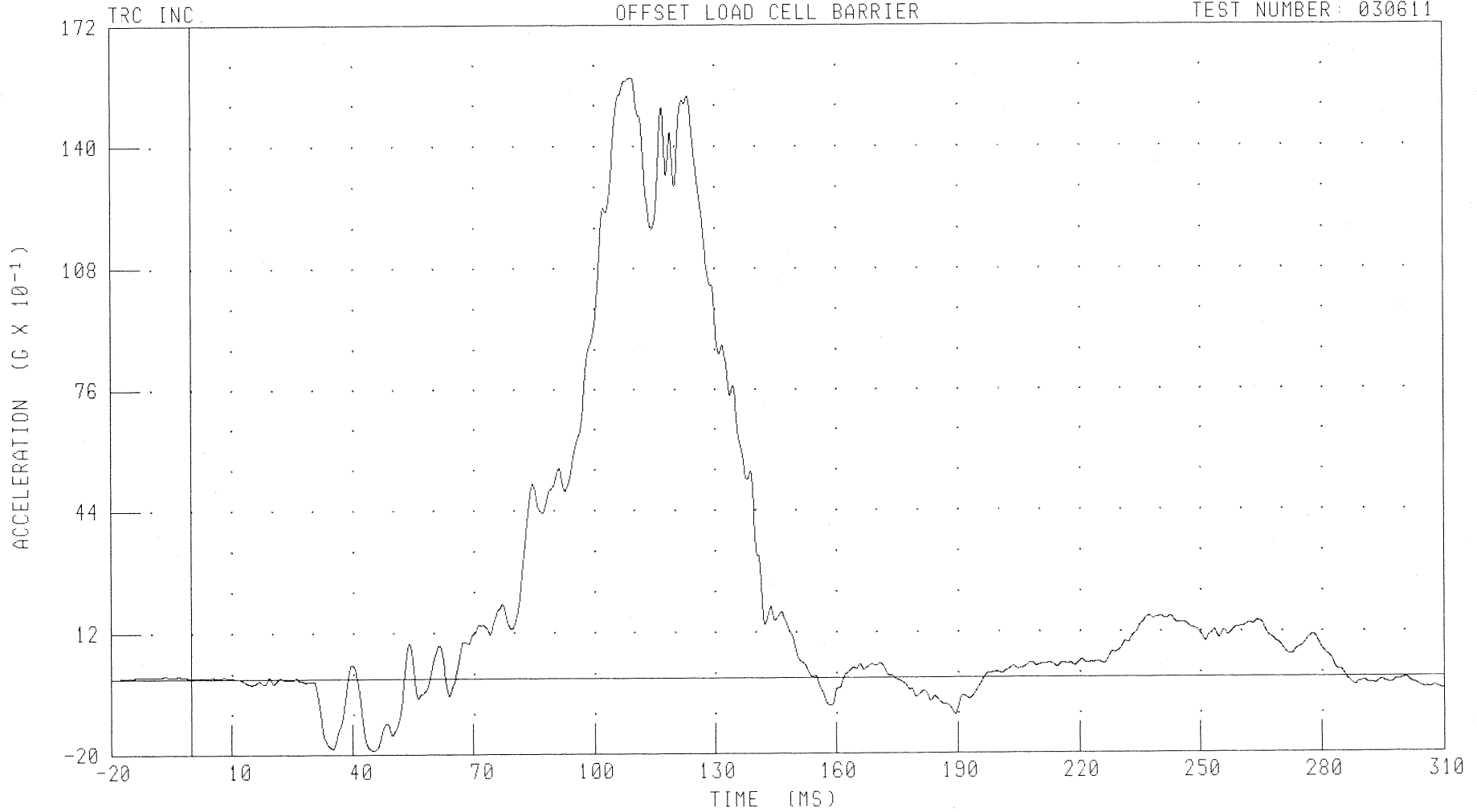
B-21

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER CHEST Y-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: CSTYG1

FILTER: CH. CLASS 100

PEAK DATA: 15.80 G @ 109.76 MS; -1.91 G @ 45.36 MS

B-22

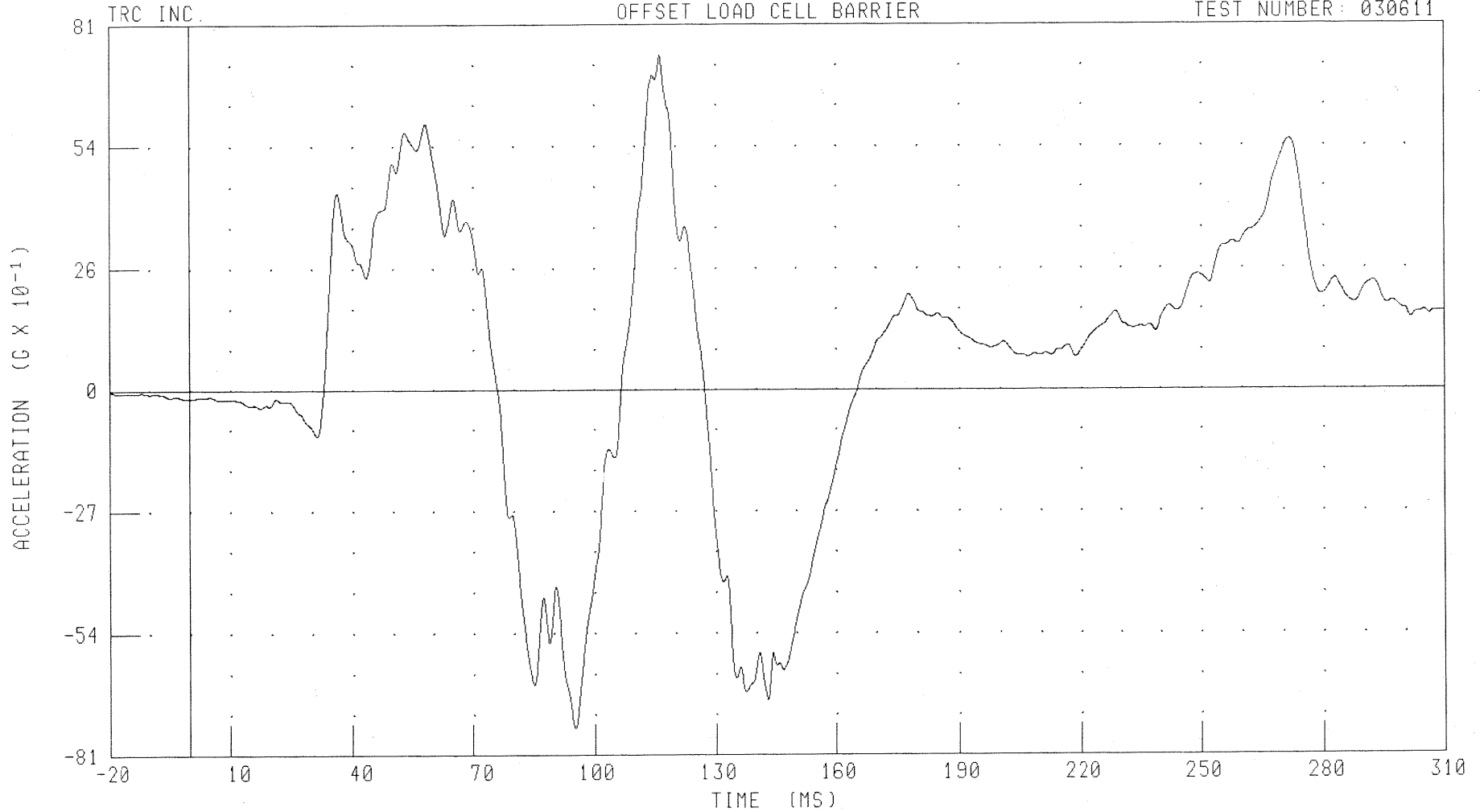
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER CHEST Z-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



B-23

030611

CHANNEL: CSTZG1

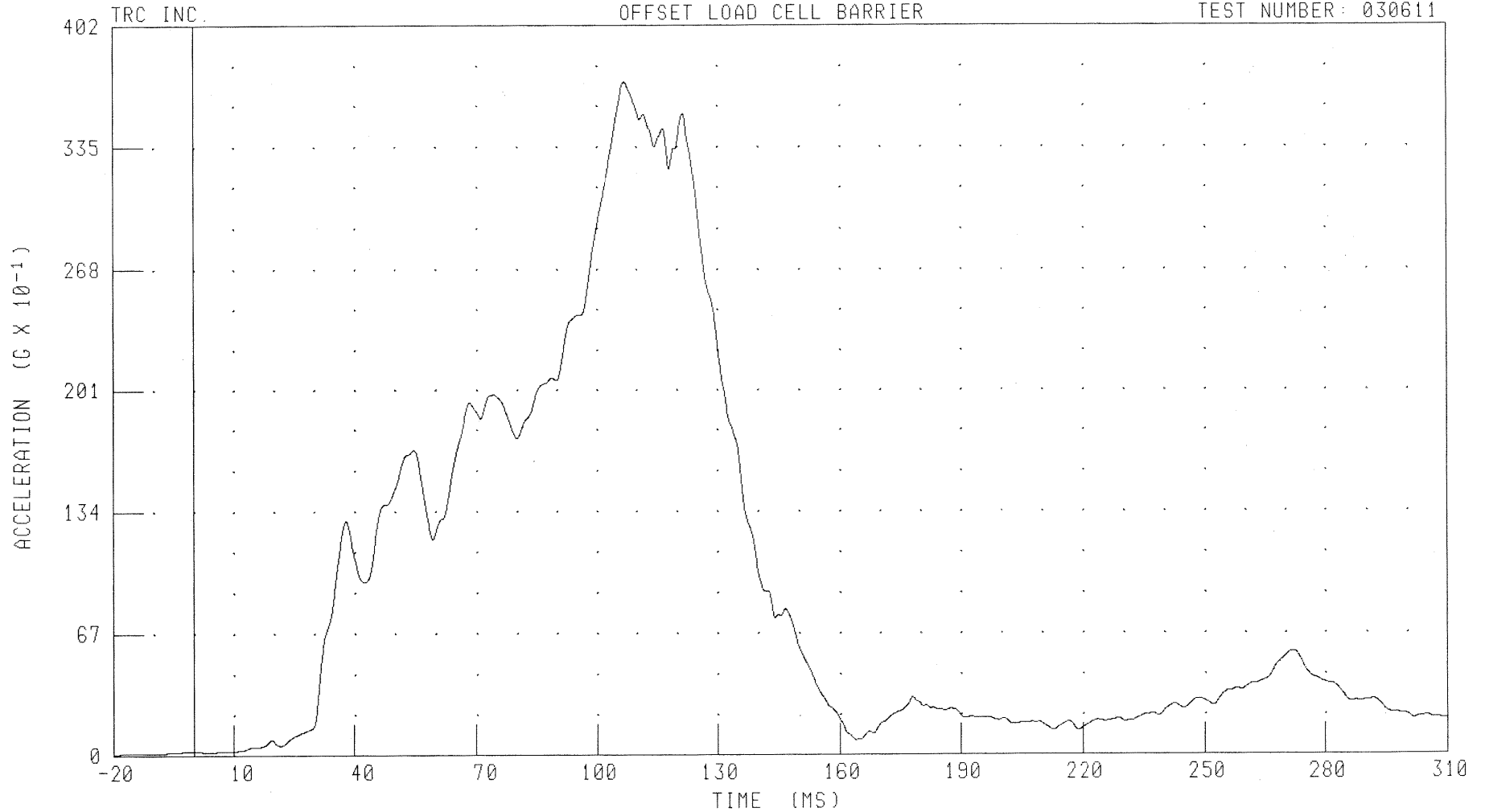
FILTER: CH. CLASS 180

PEAK DATA: 7.42 G @ 116.40 MS; -7.51 G @ 95.28 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER CHEST RESULTANT ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: CSTRG1 FILTER: CH. CLASS 180

PEAK DATA: 37.08 G @ 107.12 MS; 0.00 G @ -20.00 MS

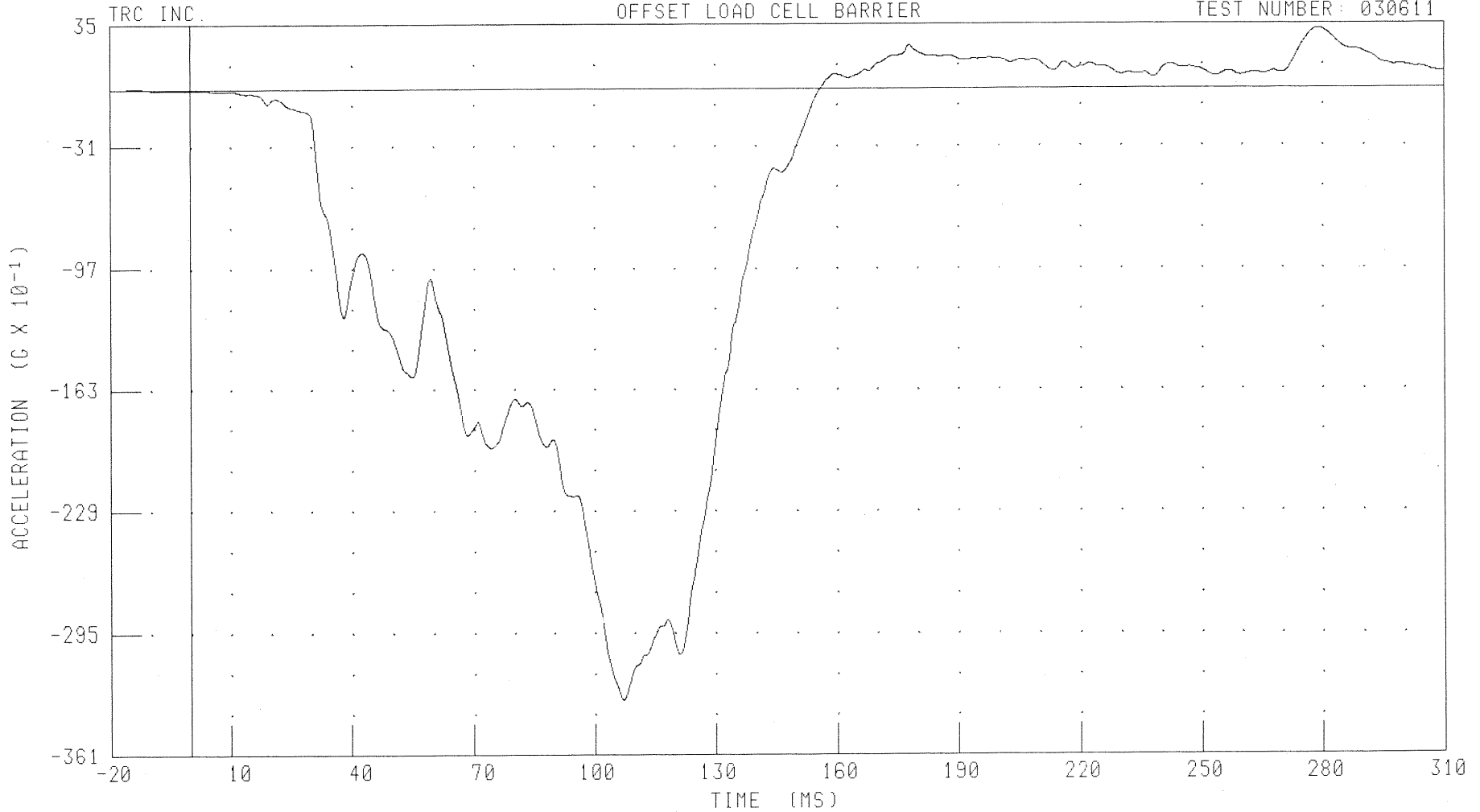
B-24

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER CHEST X-AXIS REDUNDANT ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



B-25

030611

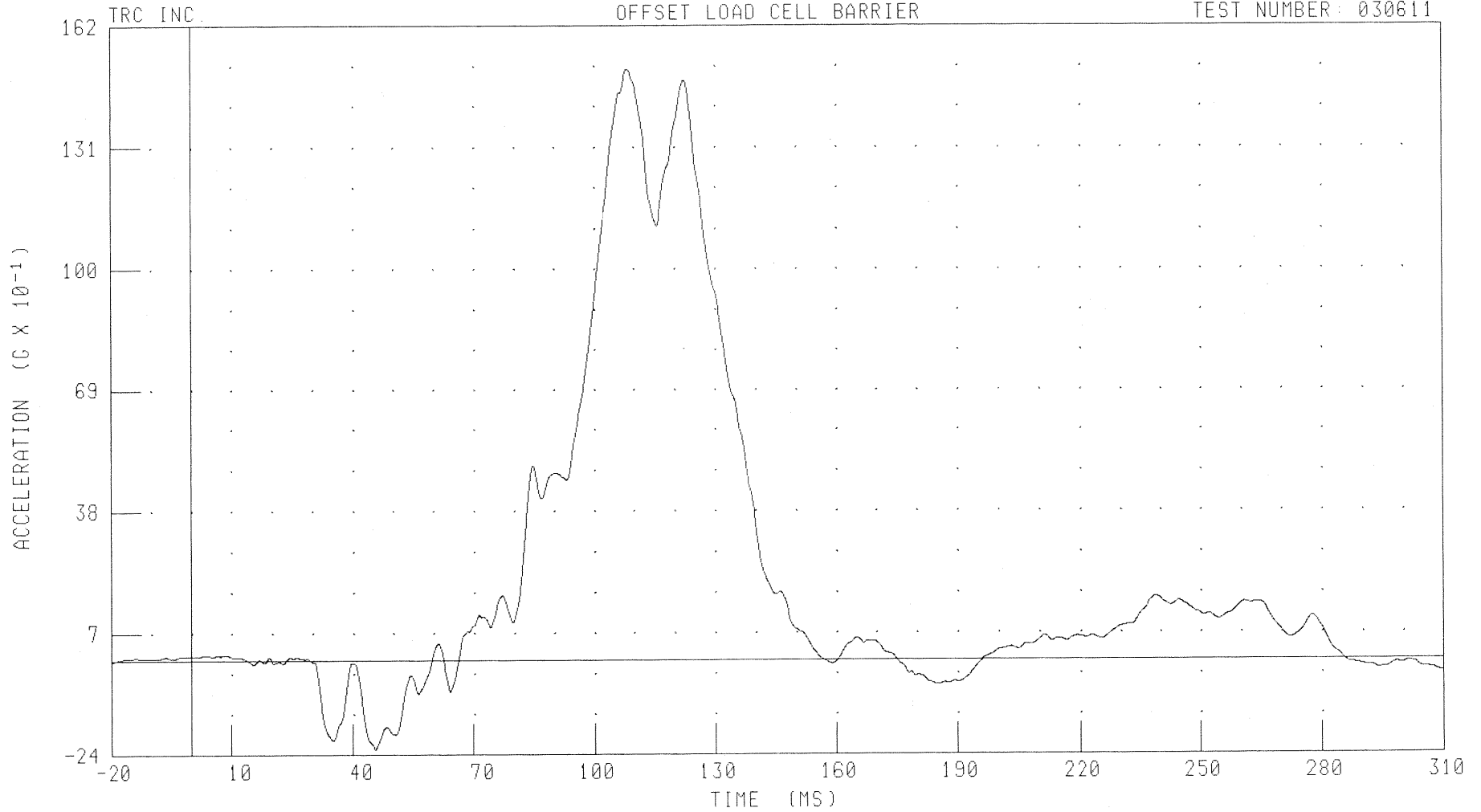
CHANNEL: CSTXR1 FILTER: CH. CLASS 180

PEAK DATA: 3.25 G @ 278.80 MS; -33.12 G @ 107.28 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER CHEST Y-AXIS REDUNDANT ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: CSTYR1 FILTER: CH. CLASS 100

PEAK DATA: 15.09 G @ 108.56 MS; -2.27 G @ 45.60 MS

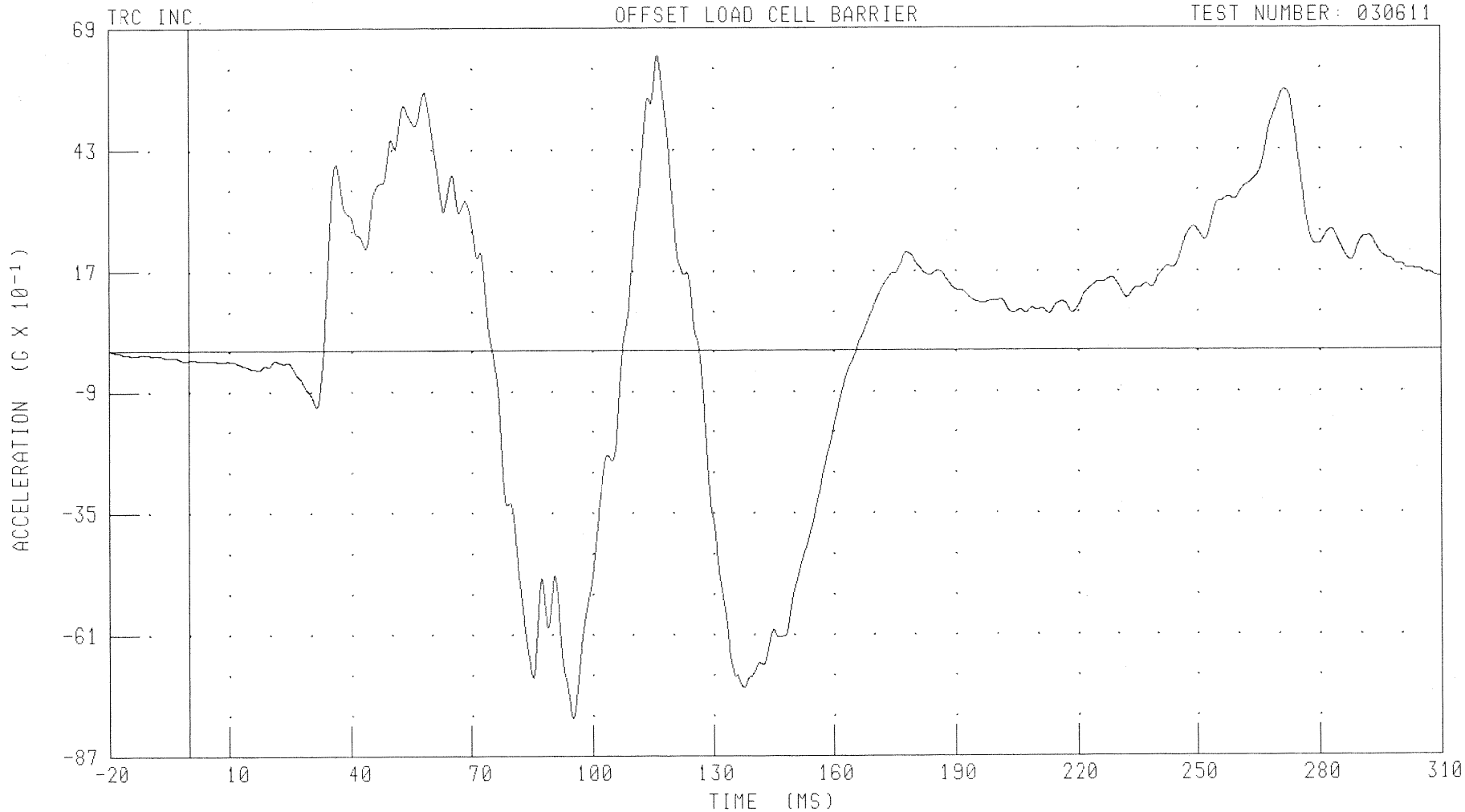
B-26

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER CHEST Z-AXIS REDUNDANT ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: CSTZR1

FILTER: CH. CLASS 100

PEAK DATA: 6.32 G @ 116.32 MS; -7.89 G @ 95.20 MS

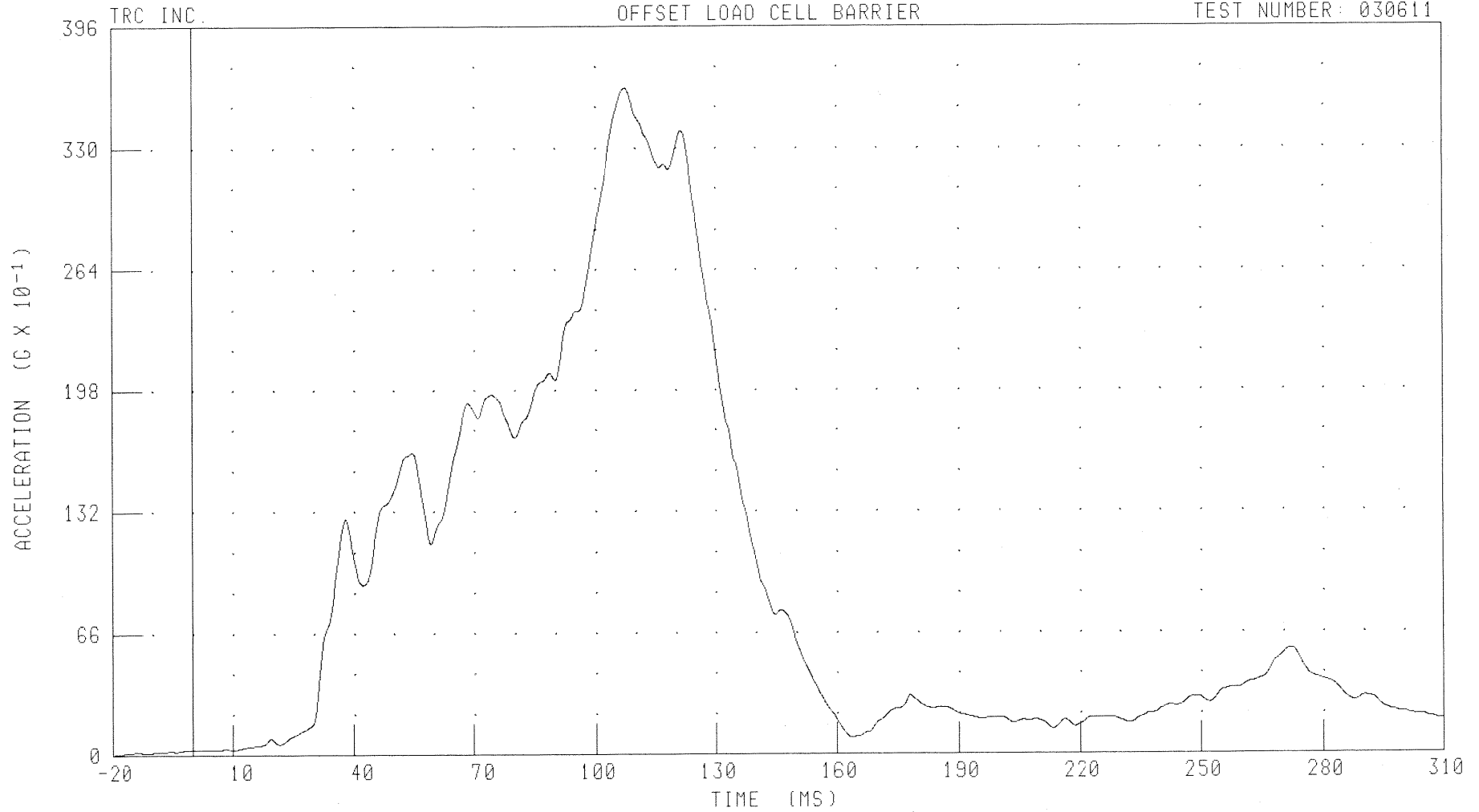
B-27

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER CHEST REDUNDANT RESULTANT ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: CSTRR1 FILTER: CH. CLASS 180

PEAK DATA: 36.24 G @ 107.68 MS; 0.00 G @ -20.00 MS

B-28

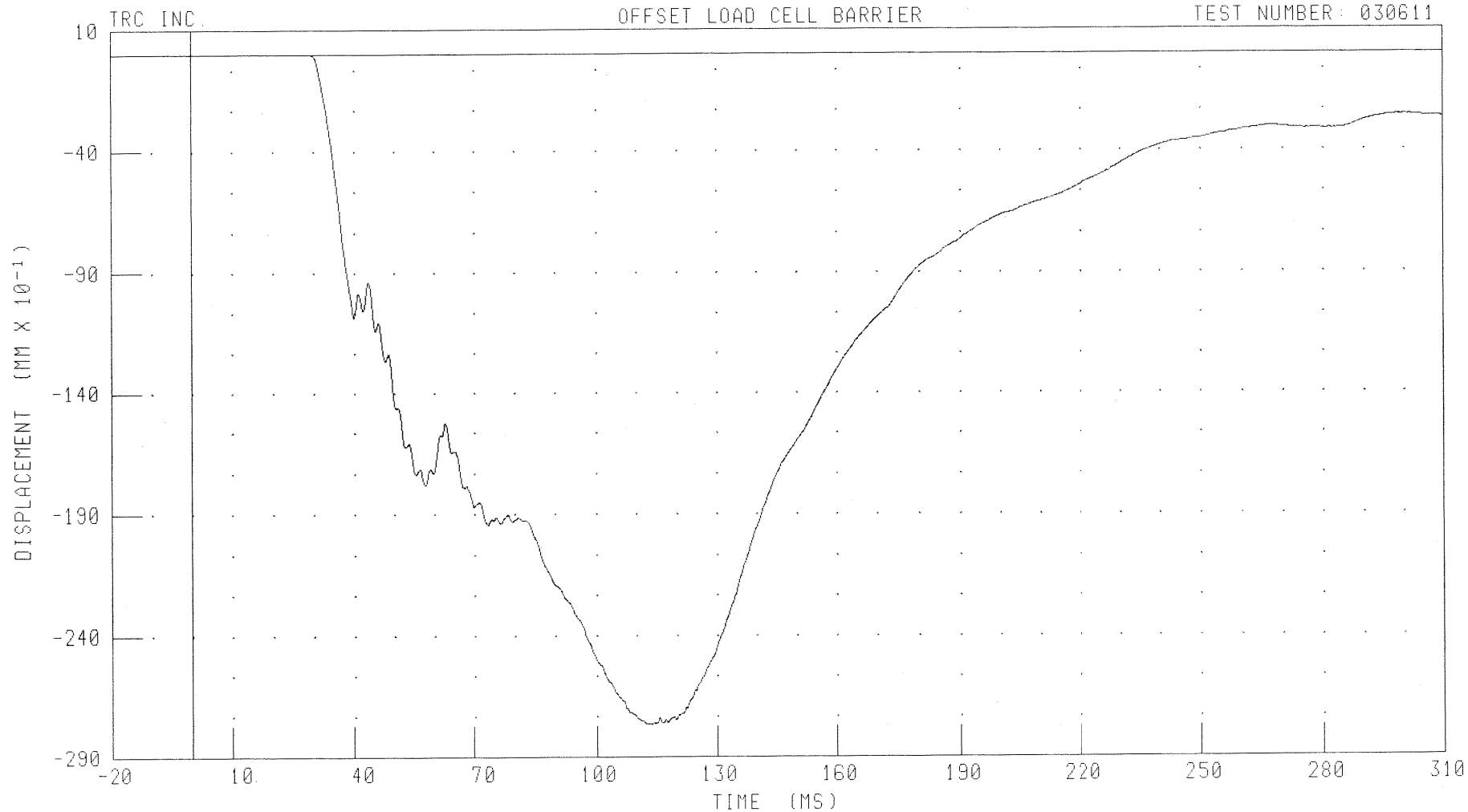
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER CHEST DEFLECTION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: CSTXD1

FILTER: CH. CLASS 600

PEAK DATA: 0.01 MM @ -0.48 MS, -276.8 MM @ 113.84 MS

B-29

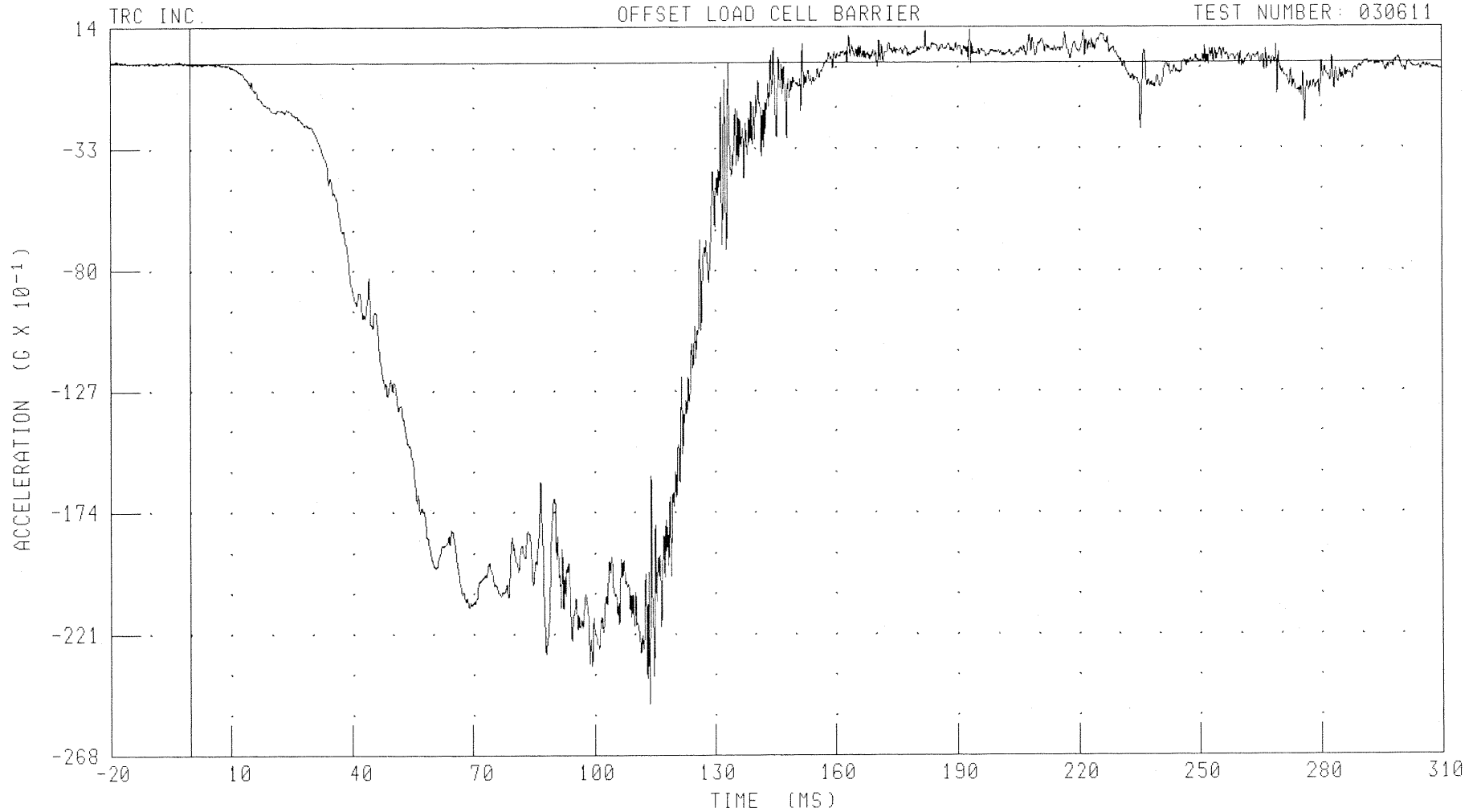
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER PELVIS X-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: PEVXC1

FILTER: CH. CLASS 1000

PEAK DATA: 12.8 G @ 193.04 MS; -24.80 G @ 113.84 MS

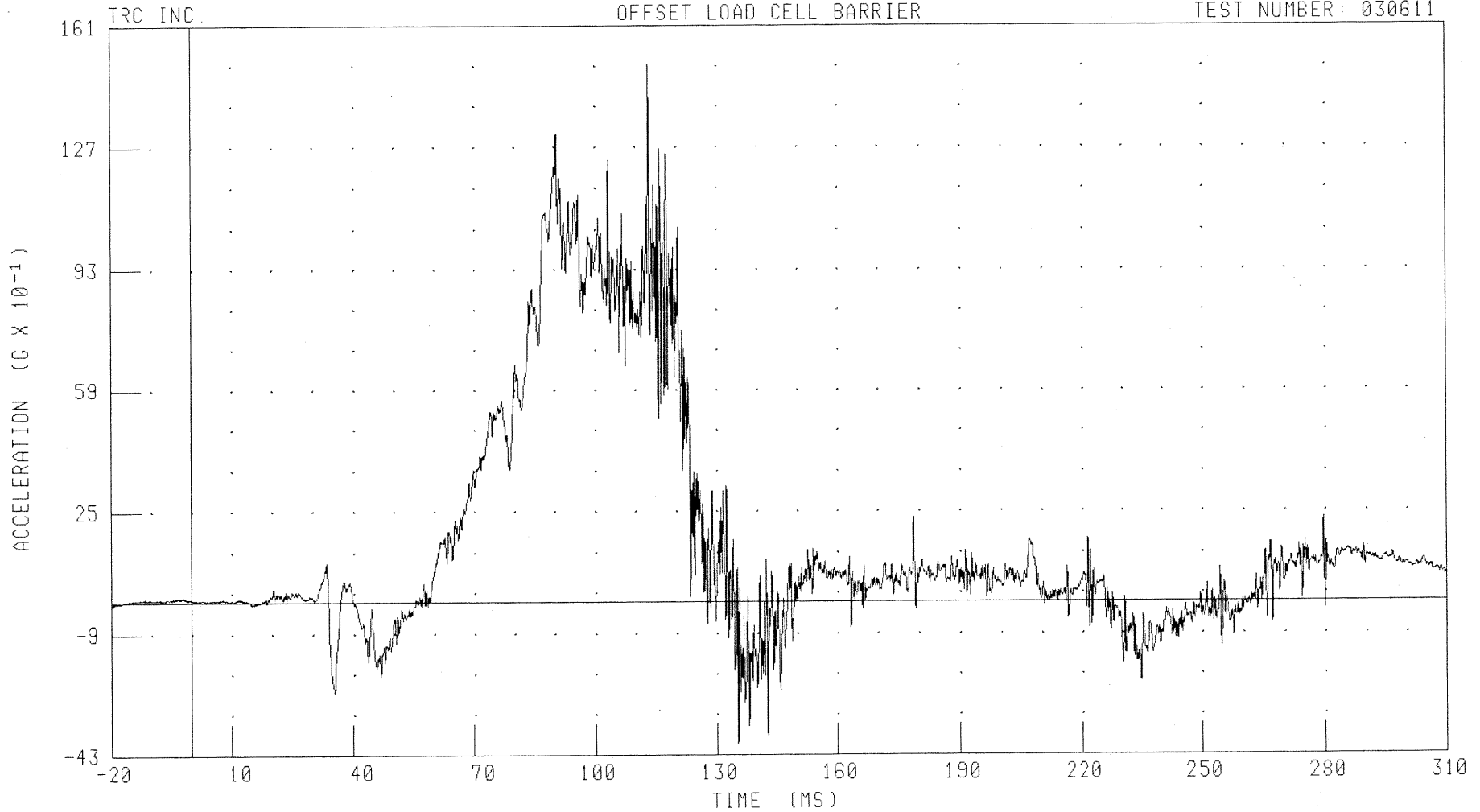
B-30

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER PELVIS Y-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: PEVYG1

FILTER: CH. CLASS 1000

PEAK DATA: 15.01 G @ 113.36 MS; -3.97 G @ 135.28 MS

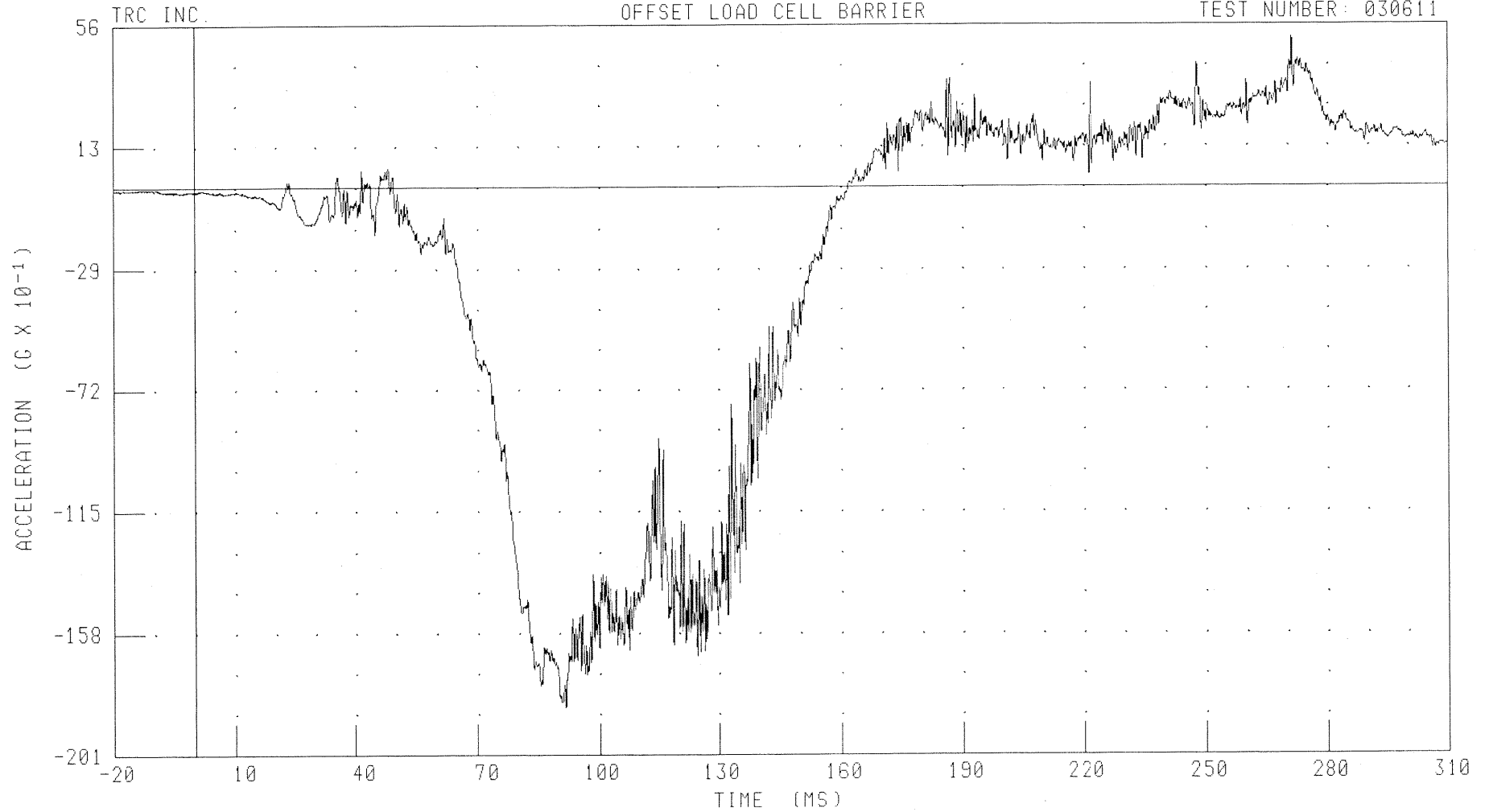
B-31

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER PELVIS Z-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: PEVZG1 FILTER: CH. CLASS 1000

PEAK DATA: 5.23 G @ 271.12 MS; -18.42 G @ 91.52 MS

B-32

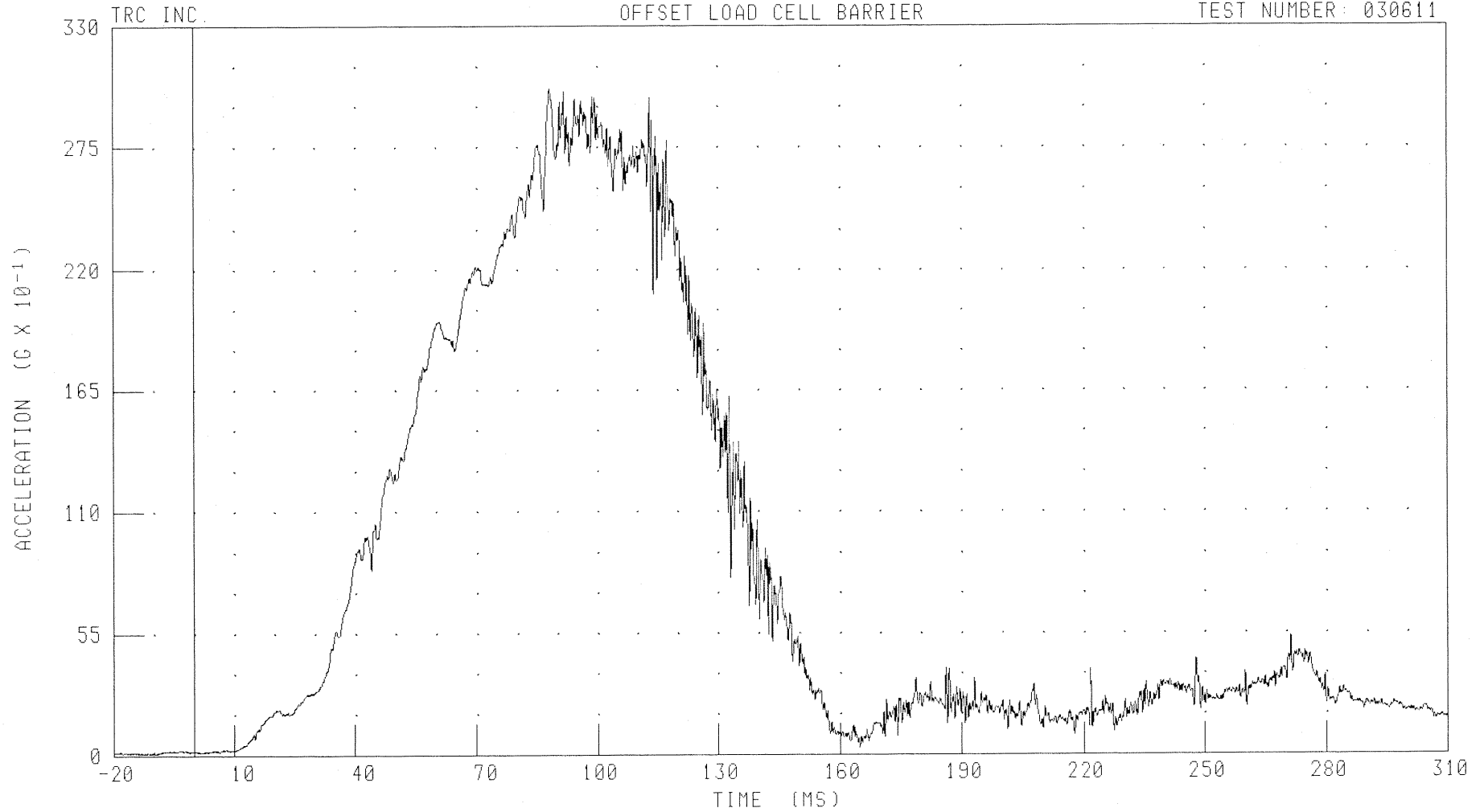
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER PELVIS RESULTANT ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: PEVRG1 FILTER: CH. CLASS 1000

PEAK DATA: 30.16 G @ 88.08 MS; 0.08 G @ -11.92 MS

B-33

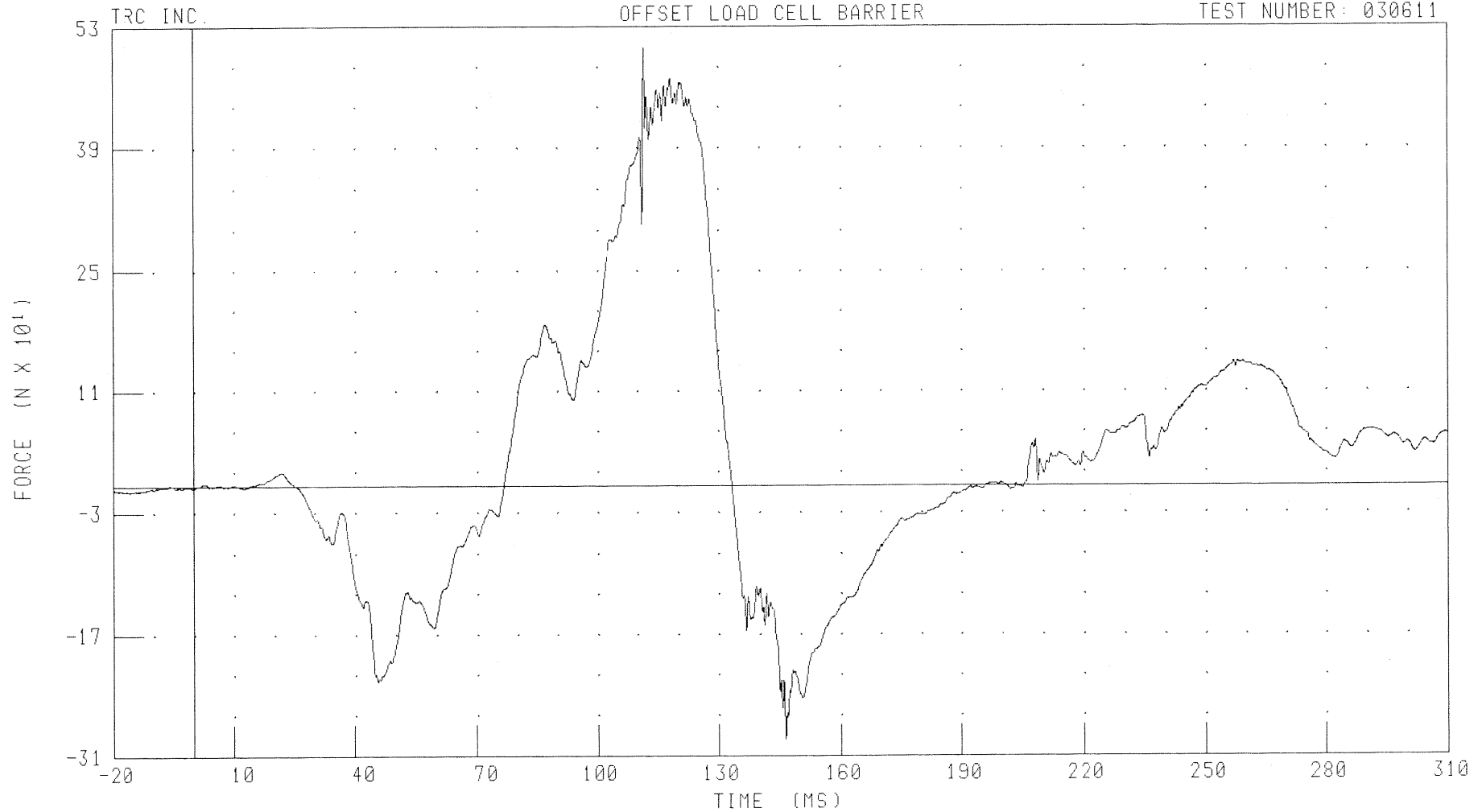
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER LEFT FEMUR X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LFMXF1 FILTER: CH. CLASS 600

PEAK DATA: 504.78 N @ 111.76 MS; -290.82 N @ 146.40 MS

B-34

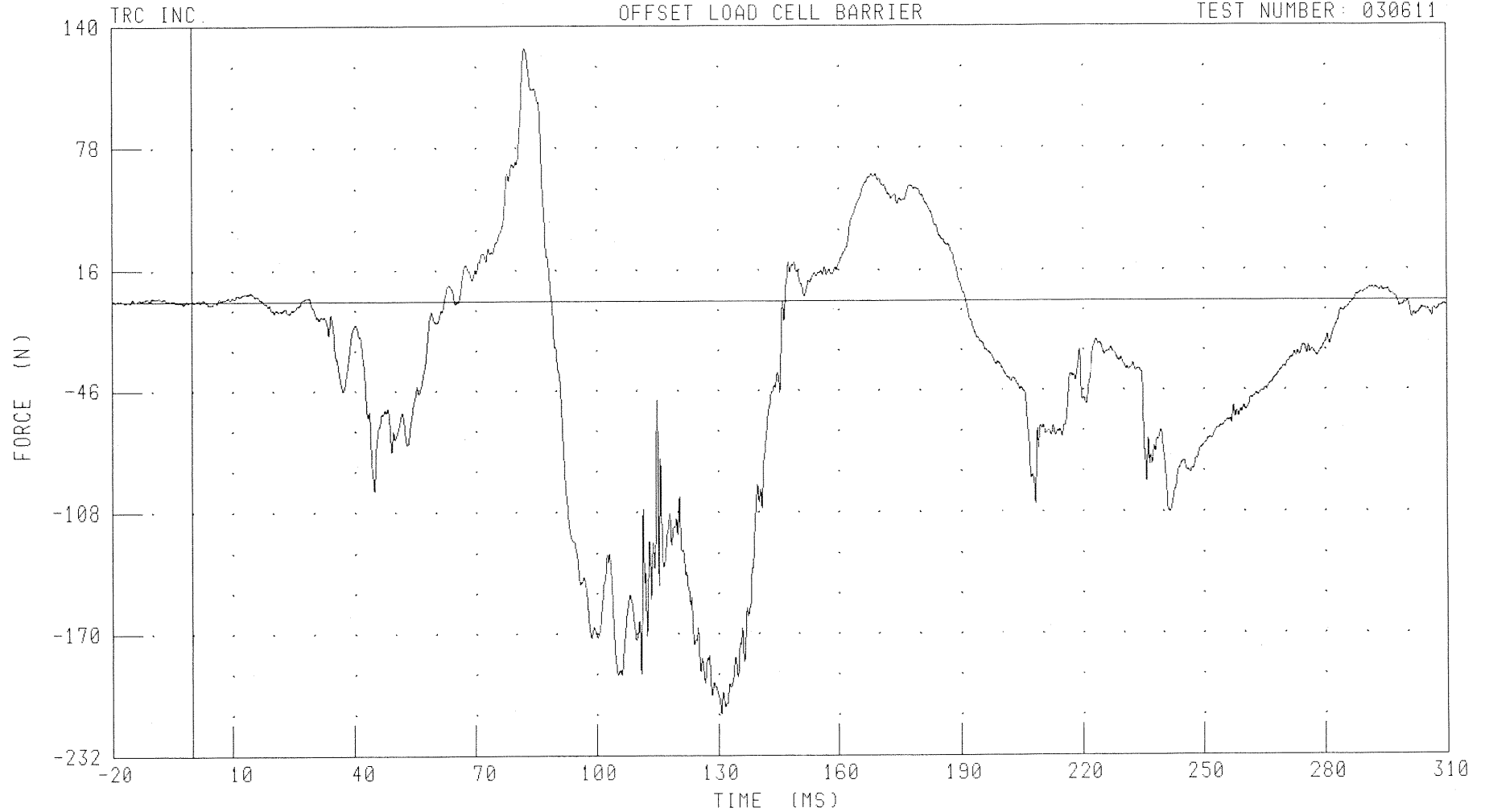
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER LEFT FEMUR Y-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



B-35

030611

CHANNEL: LFMF1

FILTER: CH CLASS 600

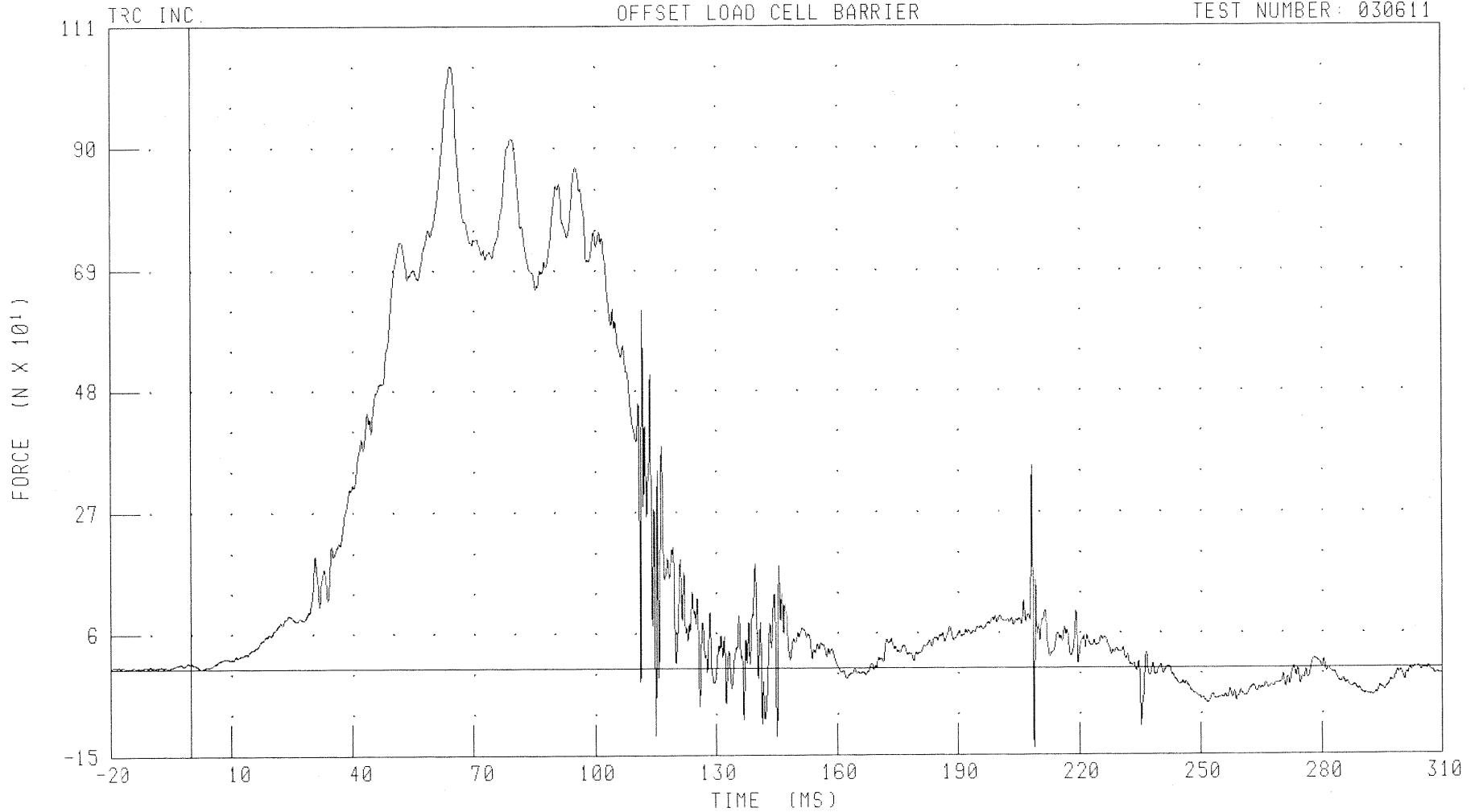
PEAK DATA: 128.42 N @ 82.40 MS; -211.02 N @ 130.72 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER LEFT FEMUR Z-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LFMZF1 FILTER: CH. CLASS 600

PEAK DATA: 1040.58 N @ 64.40 MS; -136.92 N @ 208.72 MS

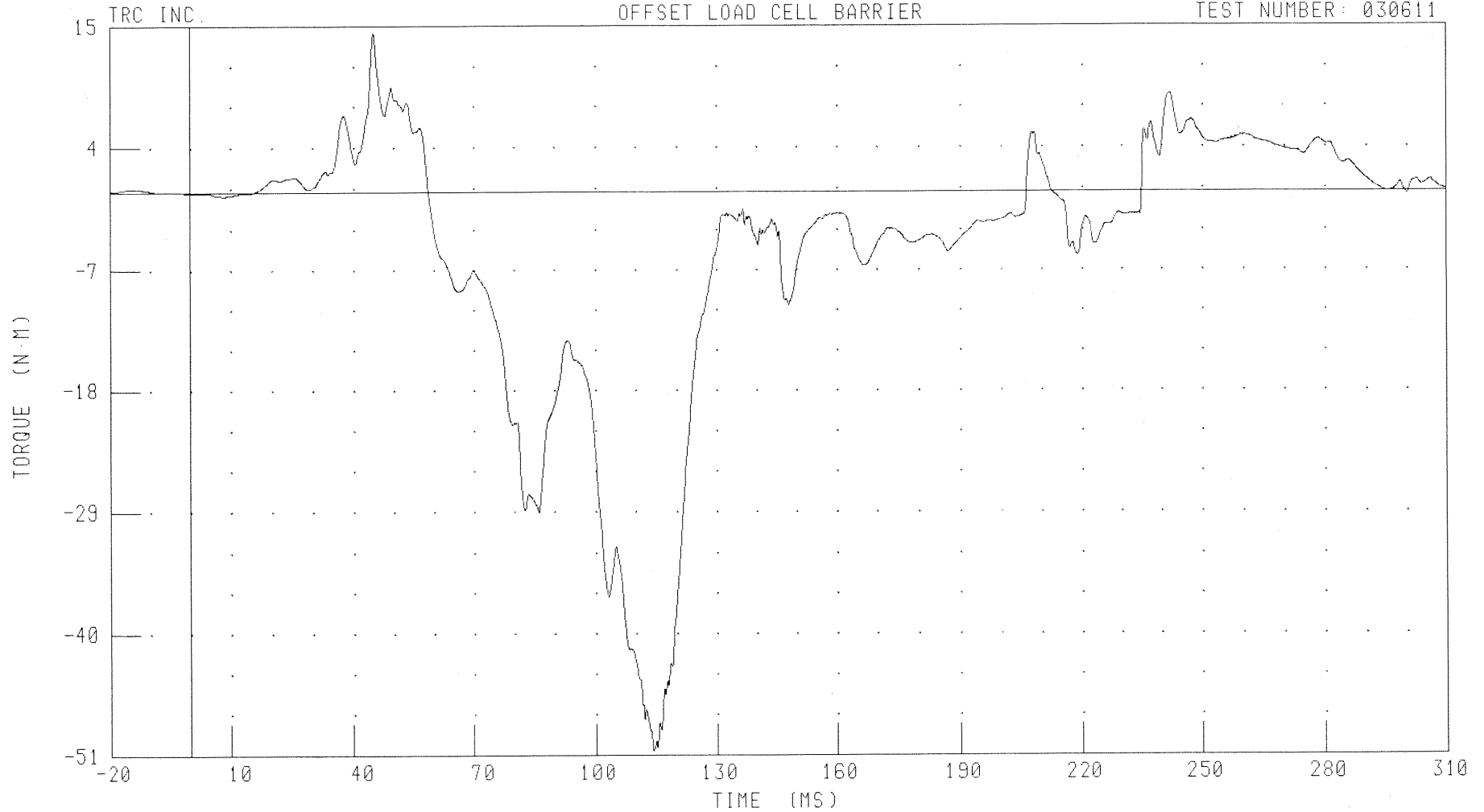
B-36

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER LEFT FEMUR MOMENT ABOUT X AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LFMXM1

FILTER: CH. CLASS 600

PEAK DATA: 14.39 N.M @ 45.04 MS; -50.68 N.M @ 114.32 MS

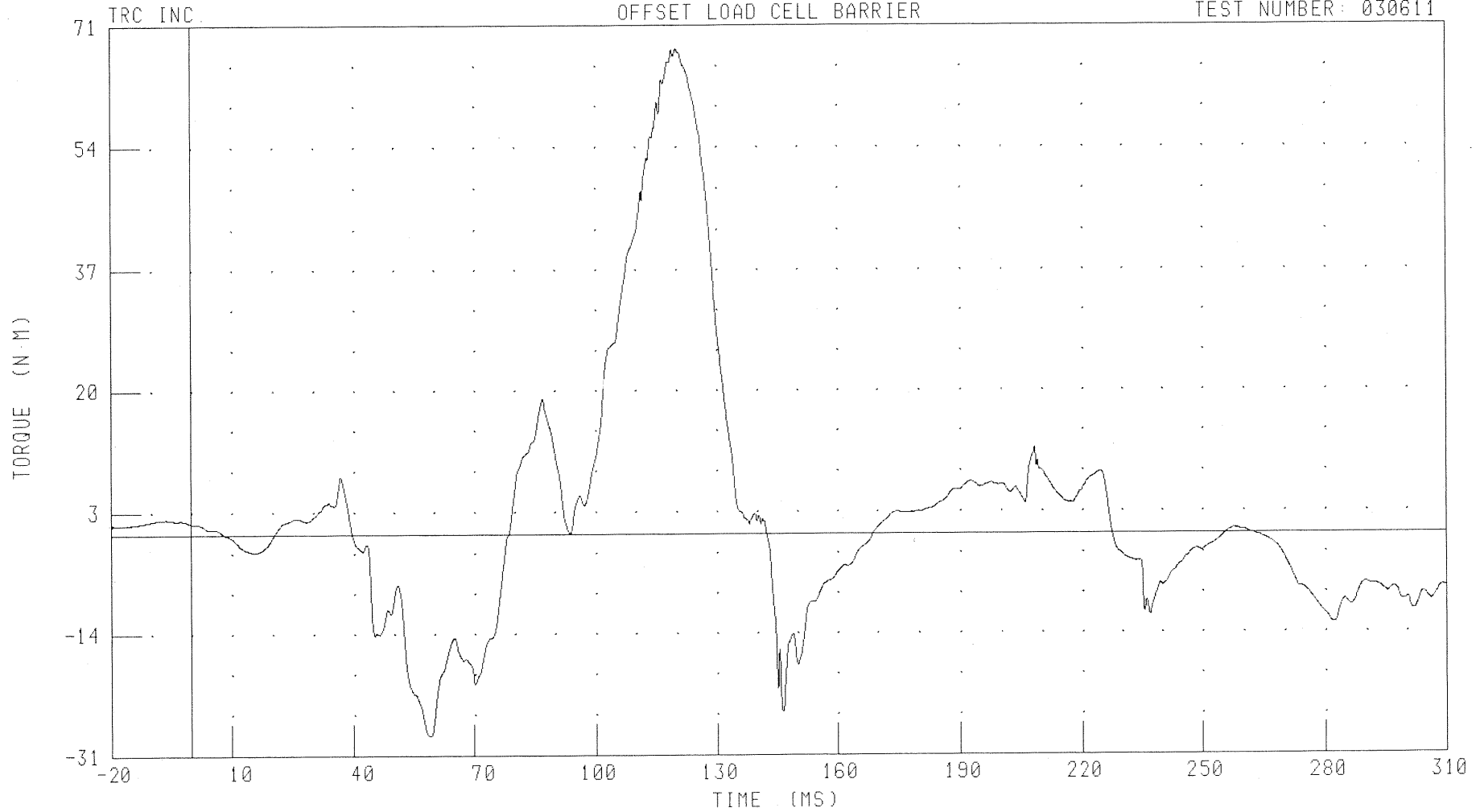
B-37

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER LEFT FEMUR MOMENT ABOUT Y AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LFMYM1

FILTER: CH. CLASS 600

PEAK DATA: 67.69 N·M @ 120.16 MS; -28.27 N·M @ 59.04 MS

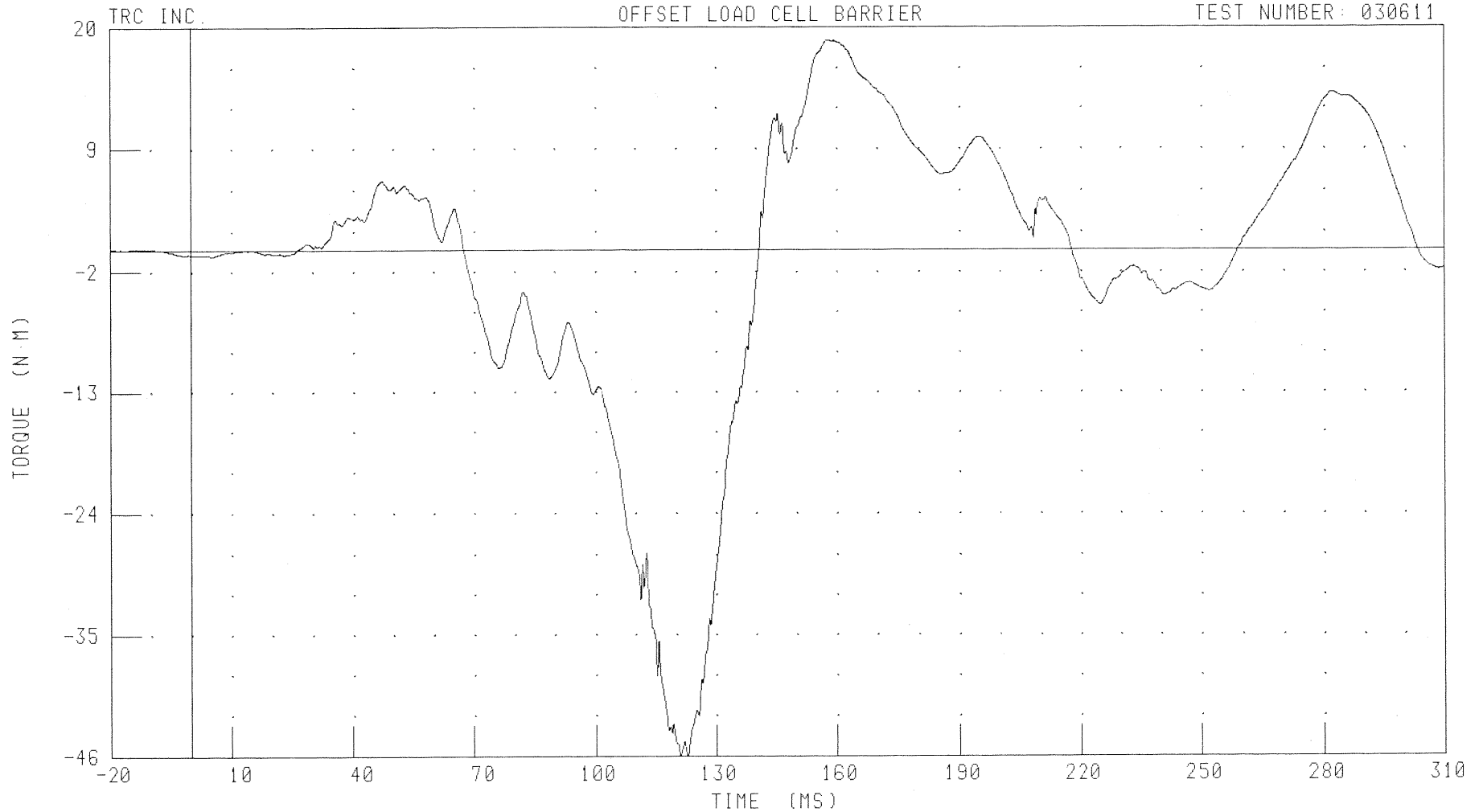
B-38

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER LEFT FEMUR MOMENT ABOUT Z AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LFMZM1 FILTER: CH CLASS 600

PEAK DATA: 18.84 N·M @ 158.00 MS; -46.14 N·M @ 121.12 MS

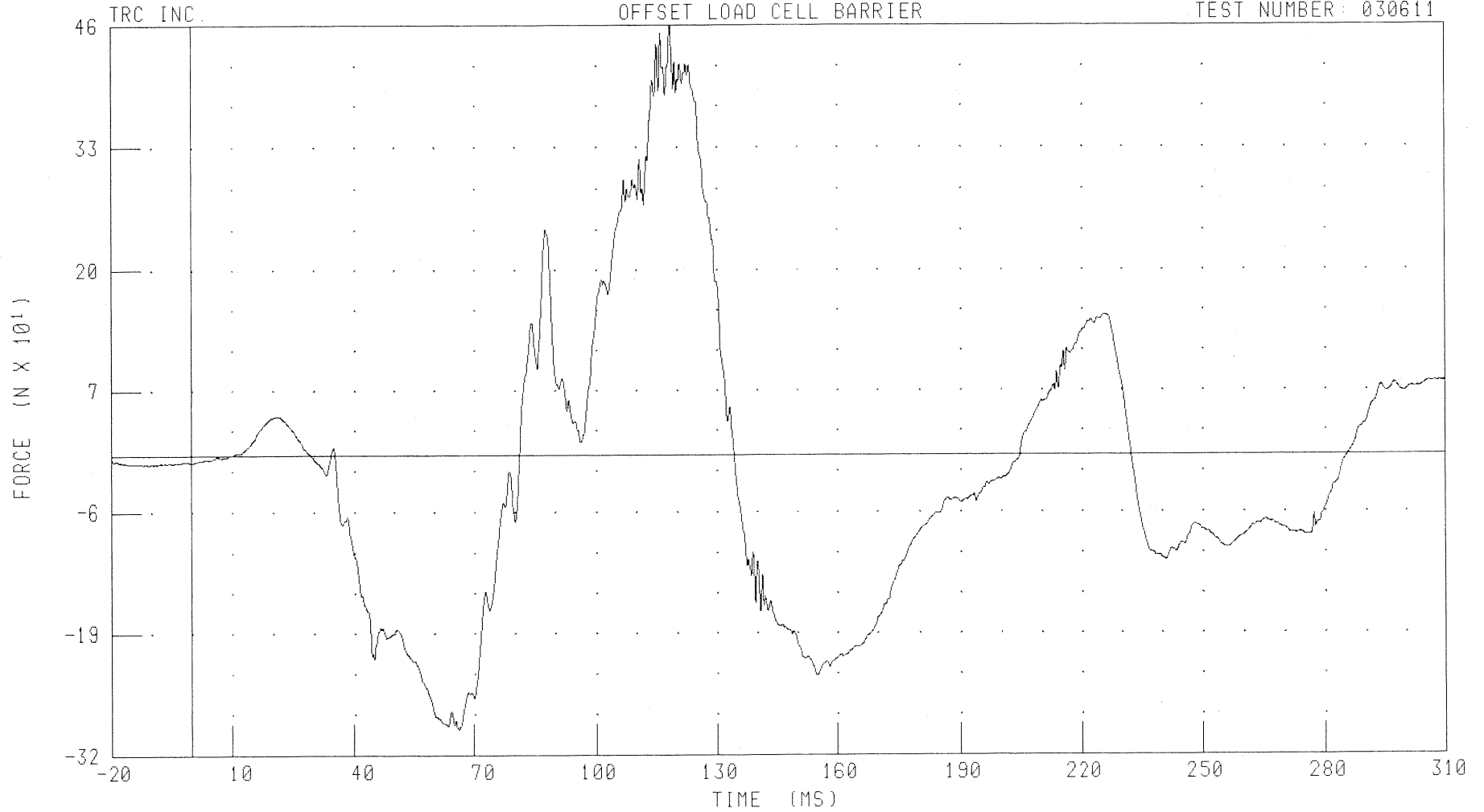
B-39

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER RIGHT FEMUR X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: RFMXF1 FILTER: CH. CLASS 600

PEAK DATA: 462.32 N @ 118.48 MS; -292.39 N @ 66.08 MS

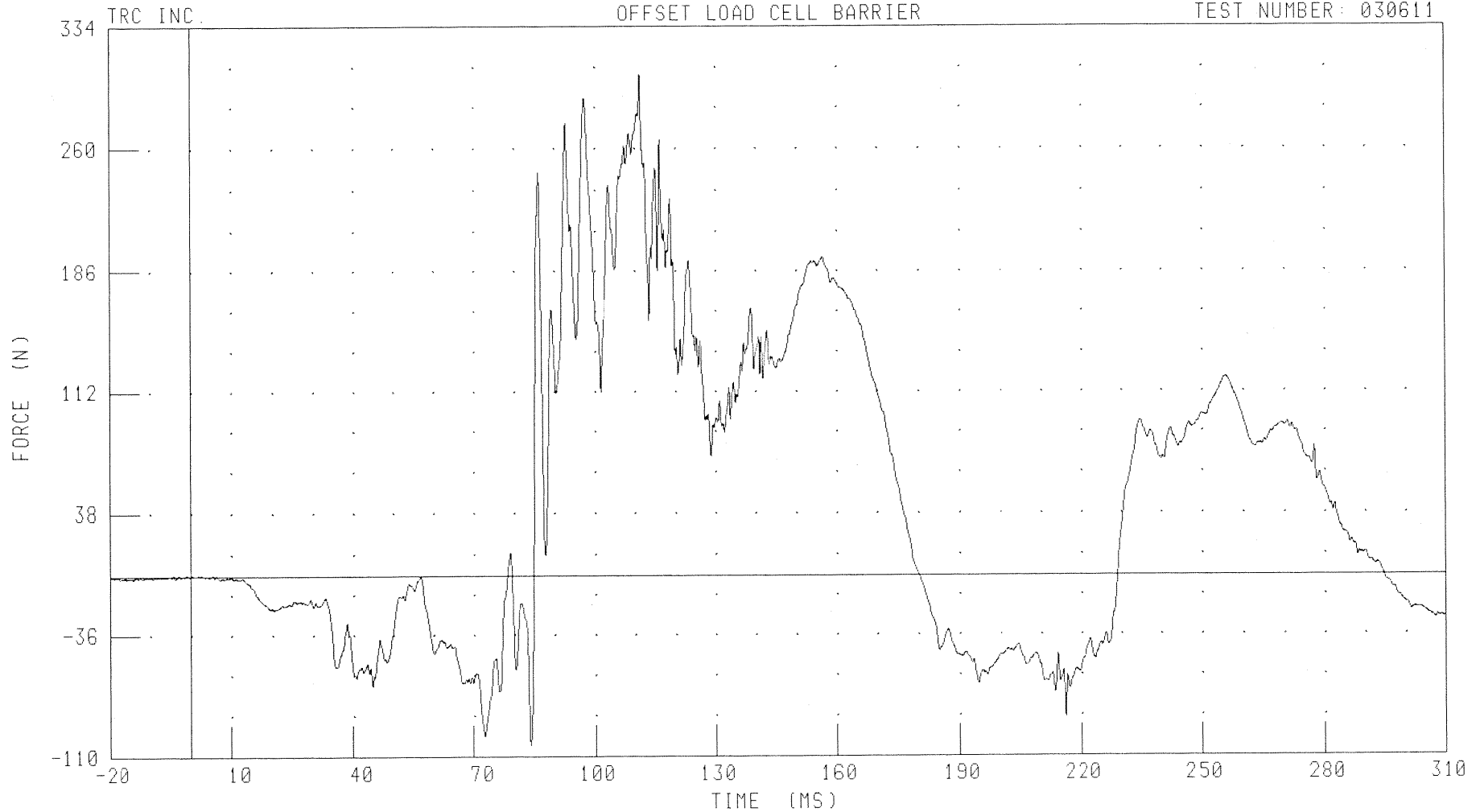
B-40

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER RIGHT FEMUR Y-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: RFMYF1

FILTER: CH. CLASS 600

PEAK DATA: 304.96 N @ 111.36 MS; -103.44 N @ 84.08 MS

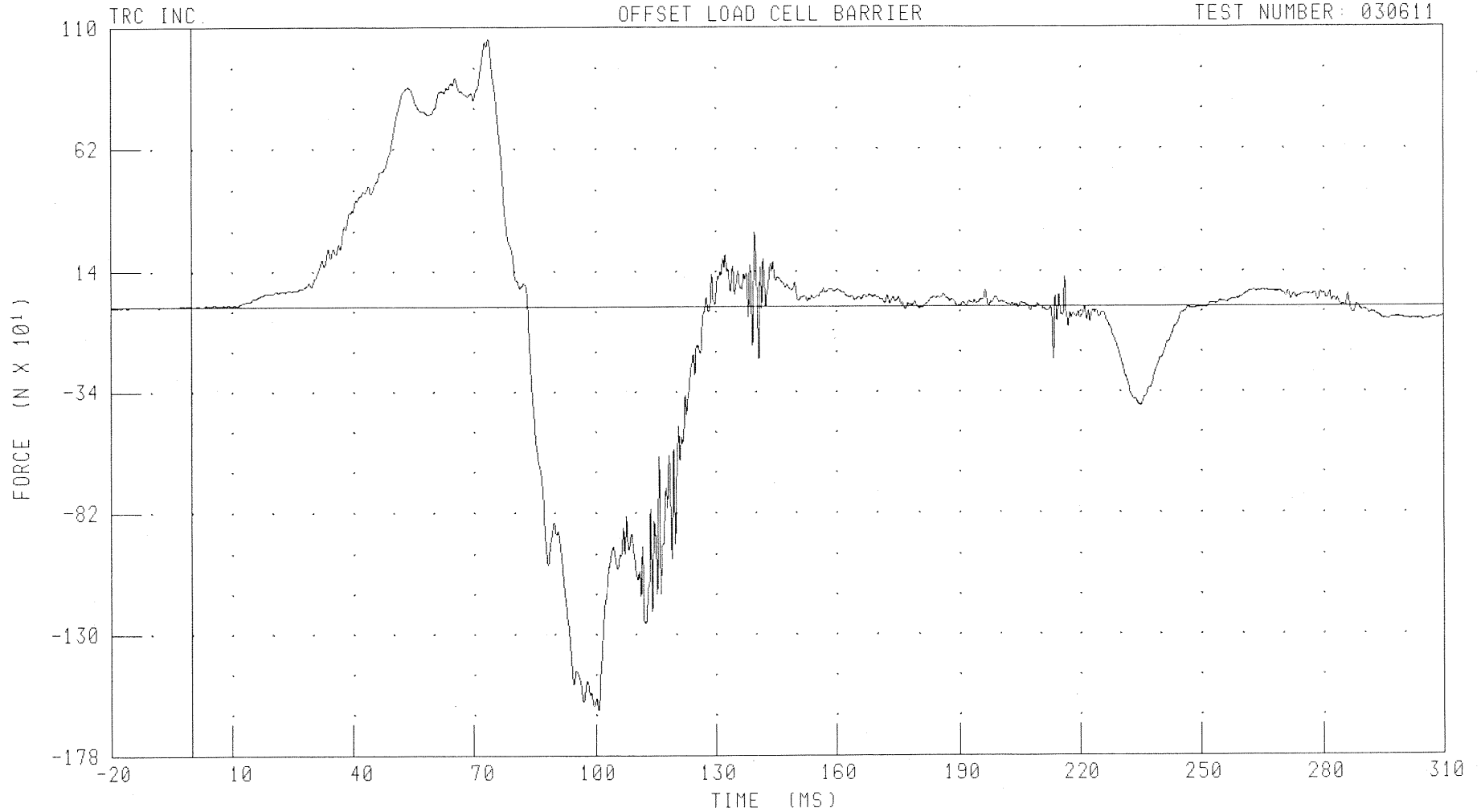
B-41

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER RIGHT FEMUR Z-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: RFMZFI

FILTER: CH. CLASS 600

PEAK DATA: 1052.21 N @ 73.76 MS; -1603.40 N @ 100.72 MS

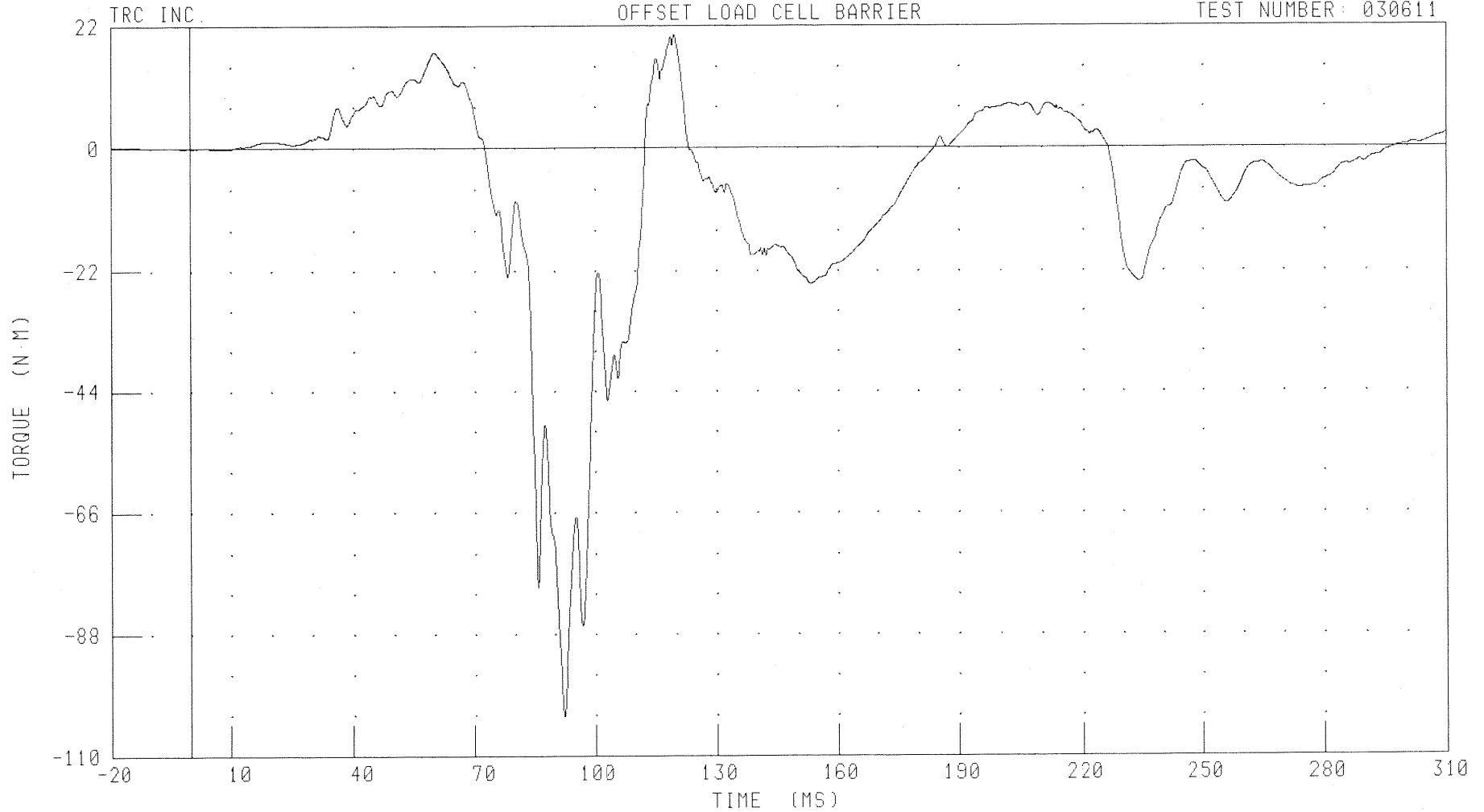
B-42

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER RIGHT FEMUR MOMENT ABOUT X AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: RFMXM1

FILTER: CH. CLASS 600

PEAK DATA: 20.44 N·M @ 119.34 MS; -102.94 N·M @ 92.32 MS

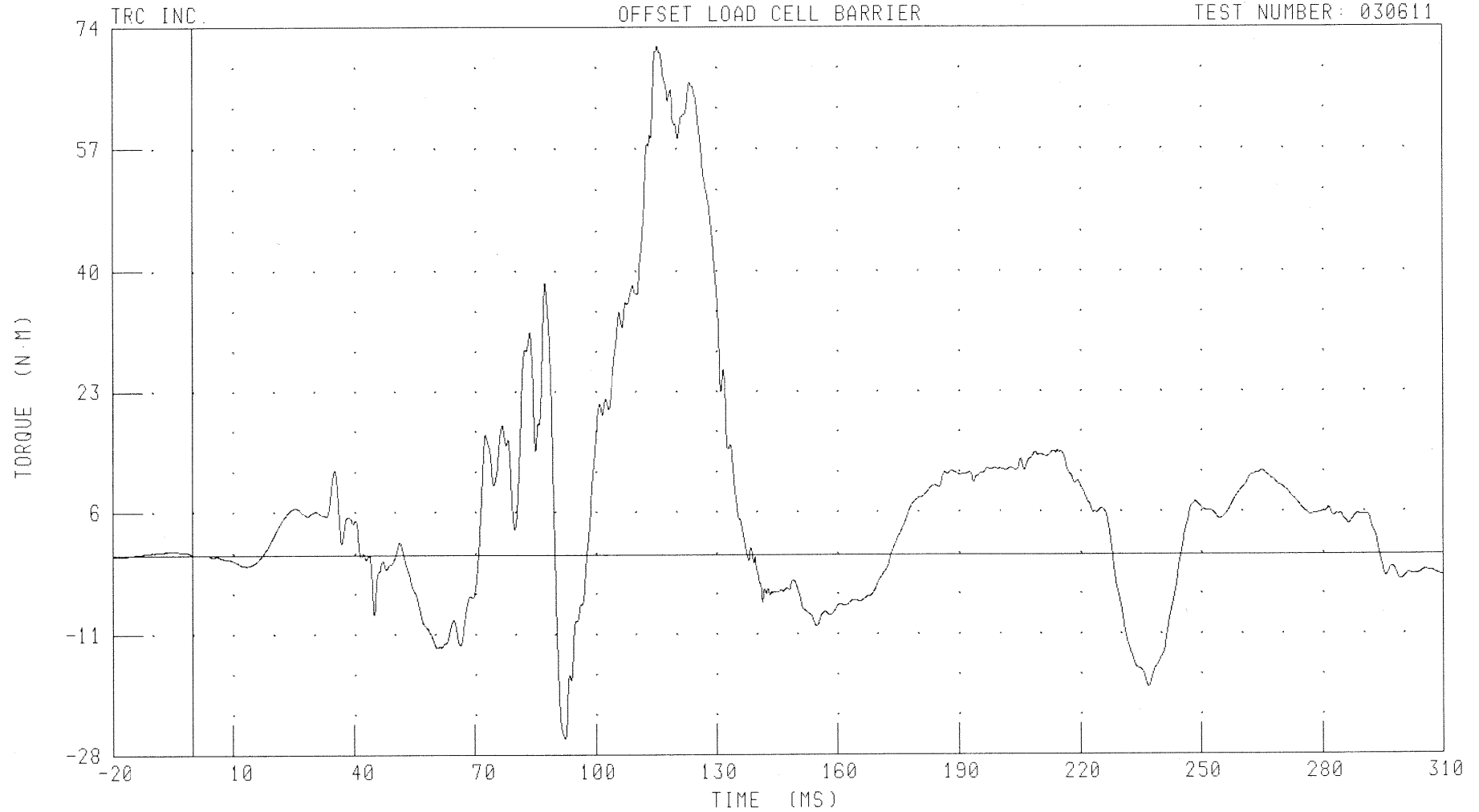
B-43

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER RIGHT FEMUR MOMENT ABOUT Y AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: RFMYM1

FILTER: CH. CLASS 600

PEAK DATA: 71.35 N·M @ 115.52 MS, -25.78 N·M @ 92.40 MS

B-44

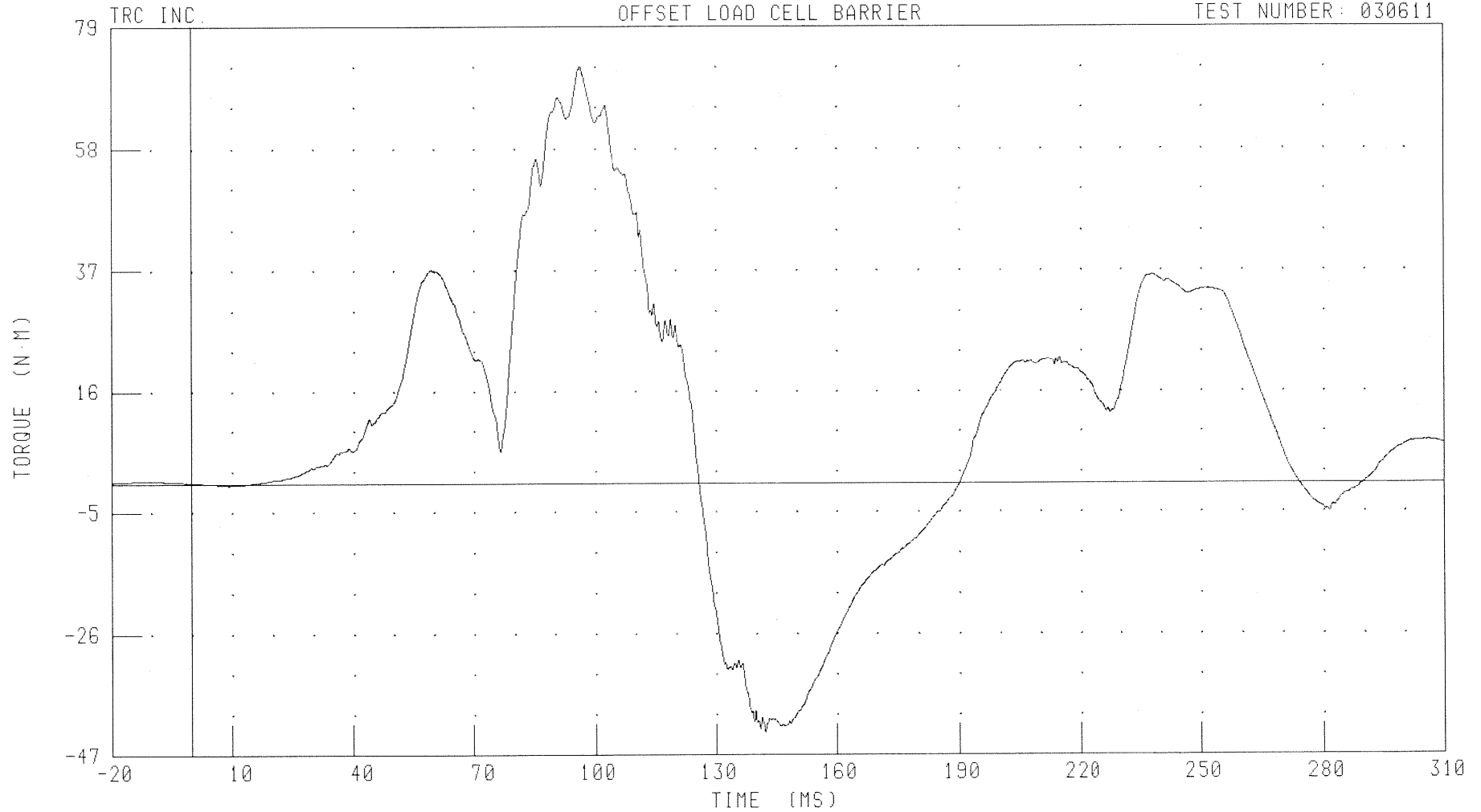
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER RIGHT FEMUR MOMENT ABOUT Z AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: RFMZM1

FILTER: CH. CLASS 600

PEAK DATA: 72.05 N·M @ 96.32 MS; -43.08 N·M @ 142.24 MS

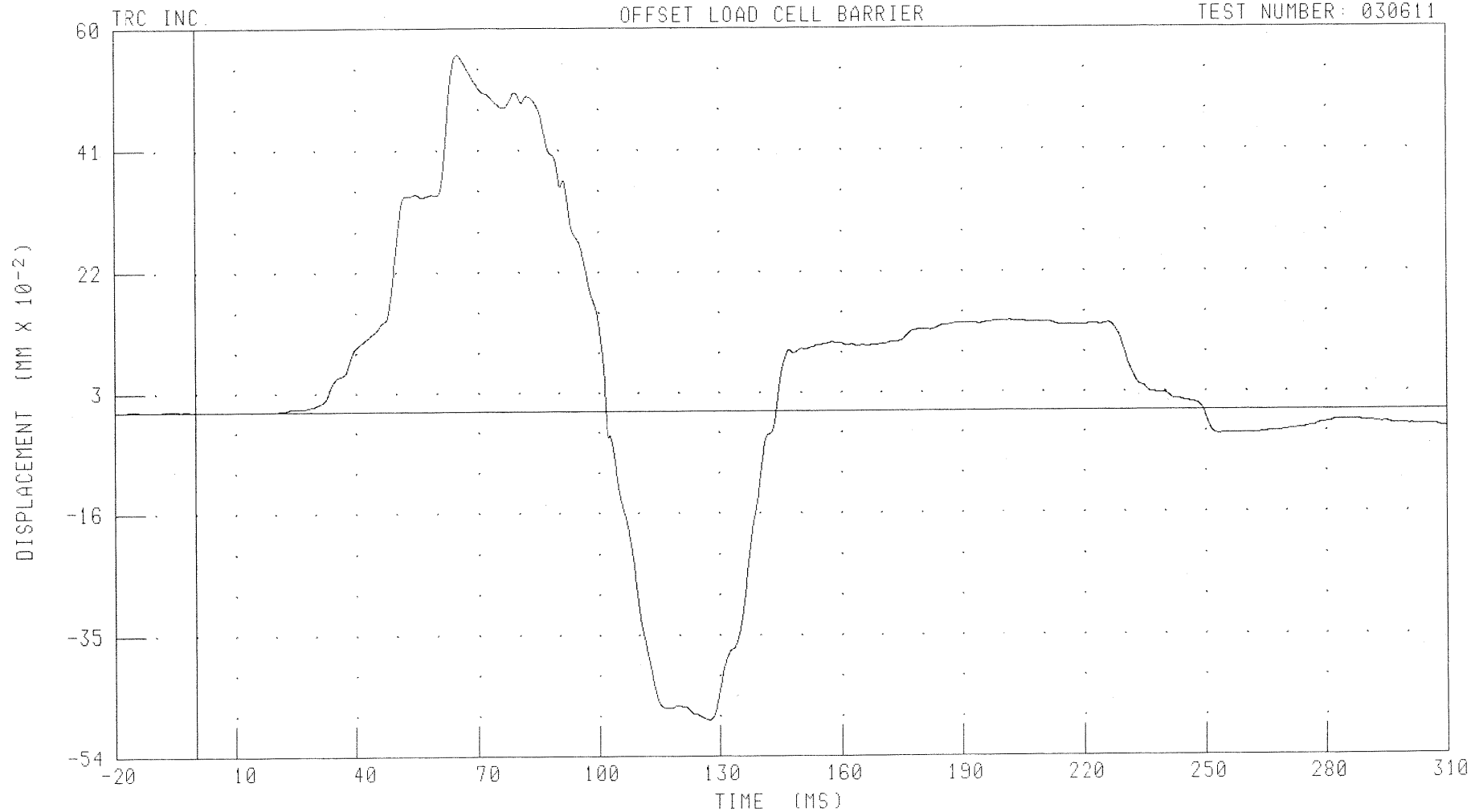
B-45

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER LEFT TIBIA TO FEMUR DISPLACEMENT

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: KNLXD1 FILTER: CH CLASS 180

PEAK DATA: 0 56 MM @ 65 12 MS; -0 48 MM @ 127 52 MS

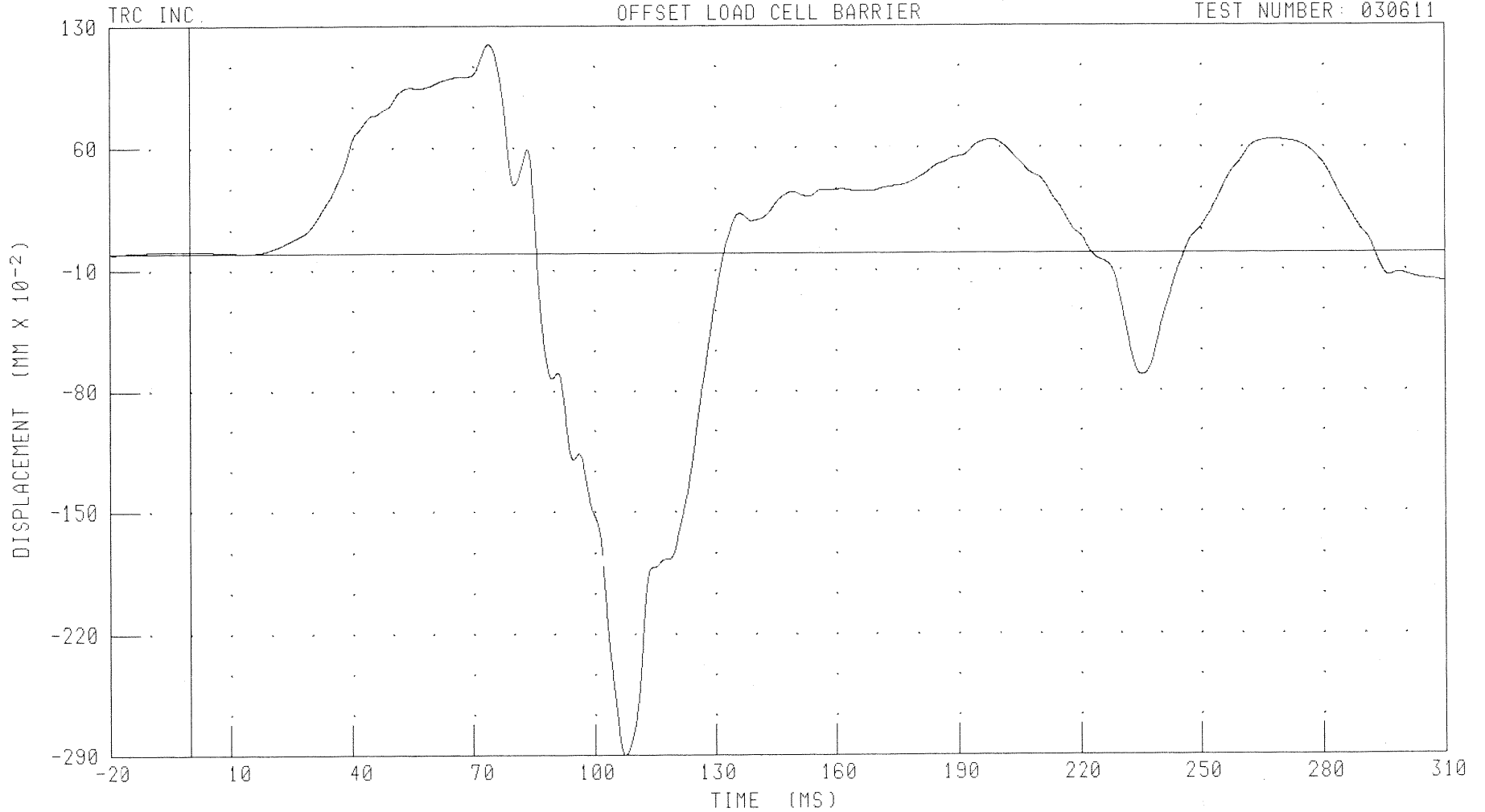
B-46

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER RIGHT TIBIA TO FEMUR DISPLACEMENT

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: KNRXD1

FILTER: CH. CLASS 180

PEAK DATA: 1.19 MM @ 74.00 MS; -2.90 MM @ 107.68 MS

B-47

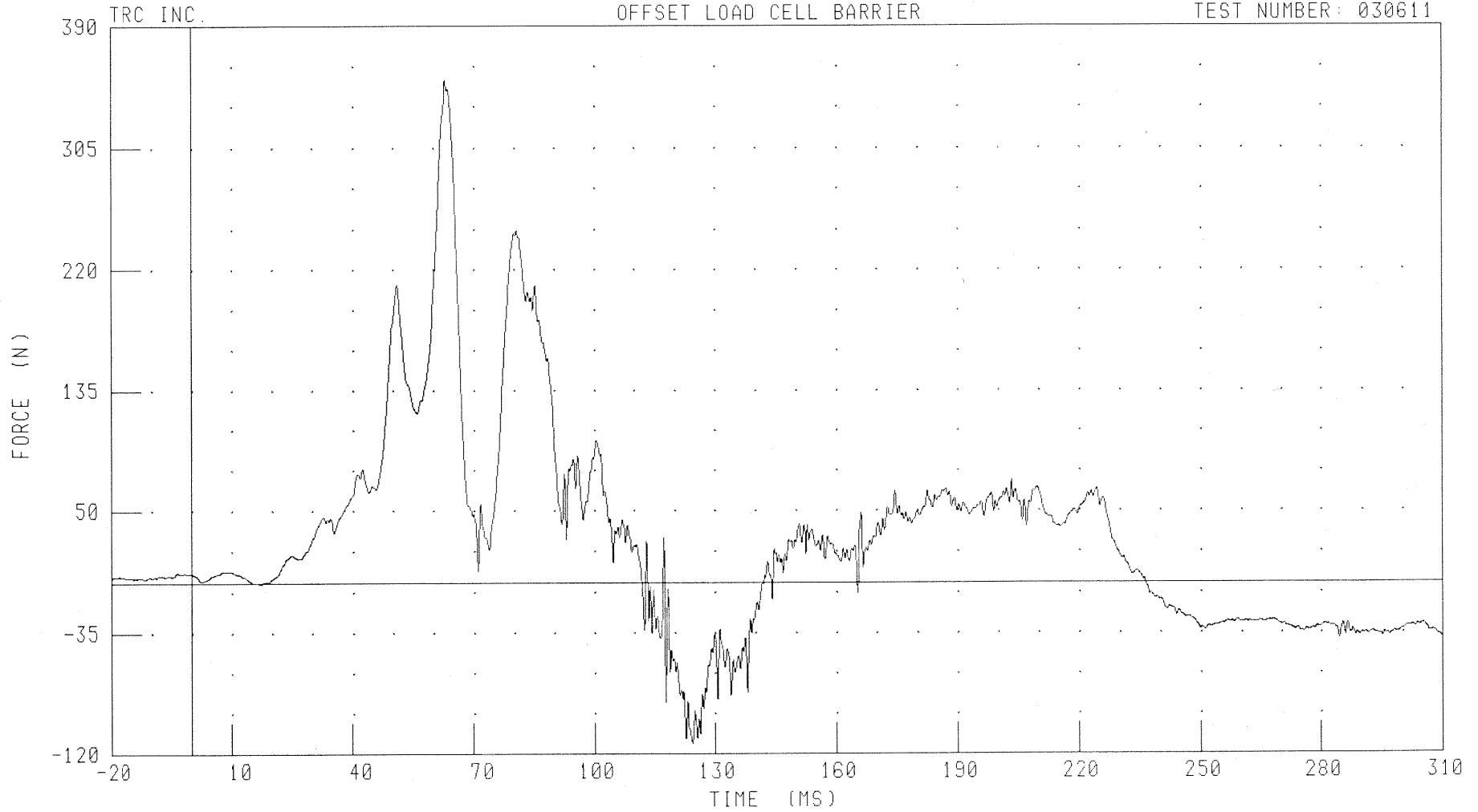
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER LEFT UPPER TIBIA X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: TBLXF1

FILTER: CH. CLASS 600

PEAK DATA: 352.18 N @ 62.96 MS; -112.69 N @ 124.48 MS

B-48

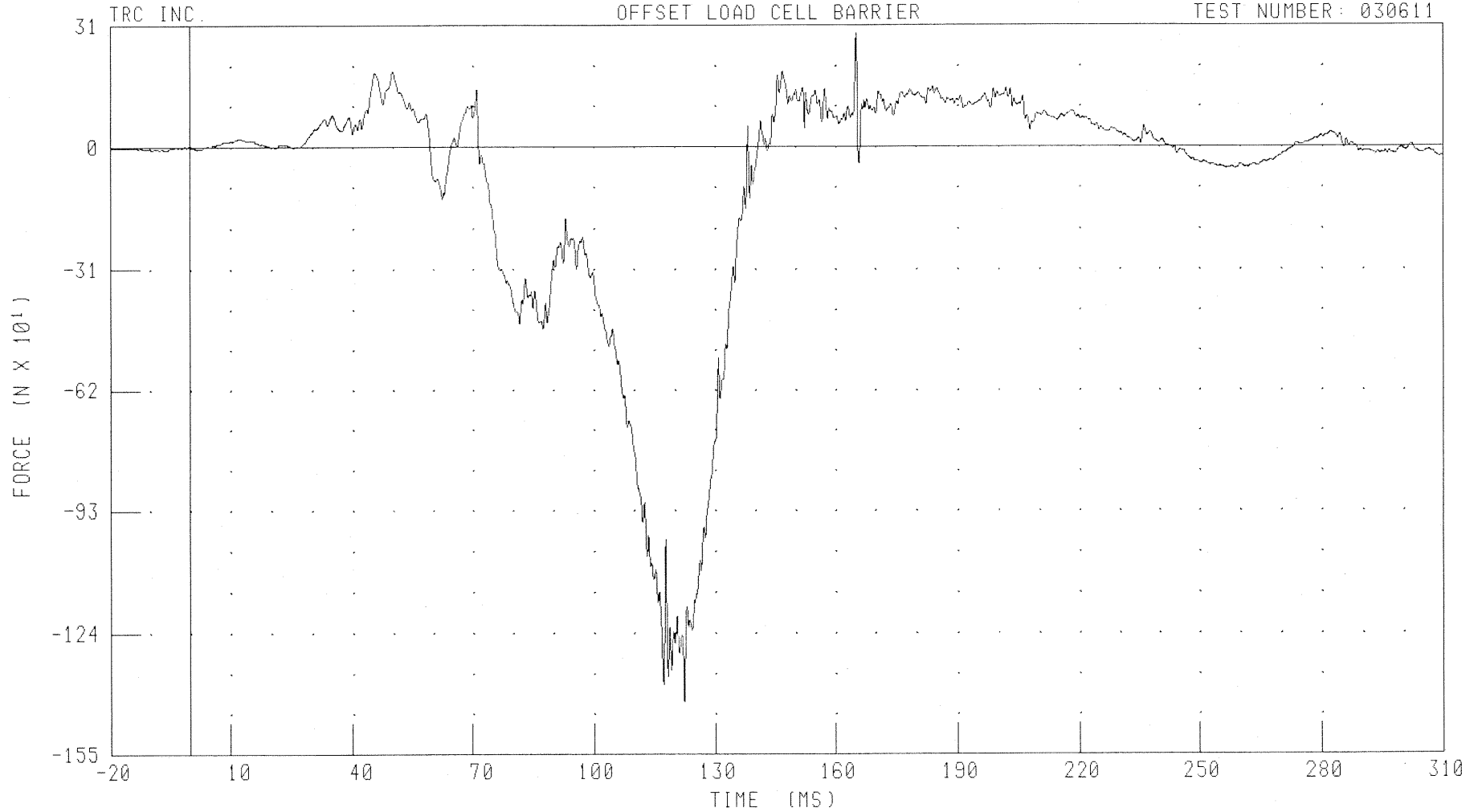
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER LEFT UPPER TIBIA Z-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: TBLZF1 FILTER: CH. CLASS 600

PEAK DATA: 289.98 N @ 165.28 MS; -1417.28 N @ 122.40 MS

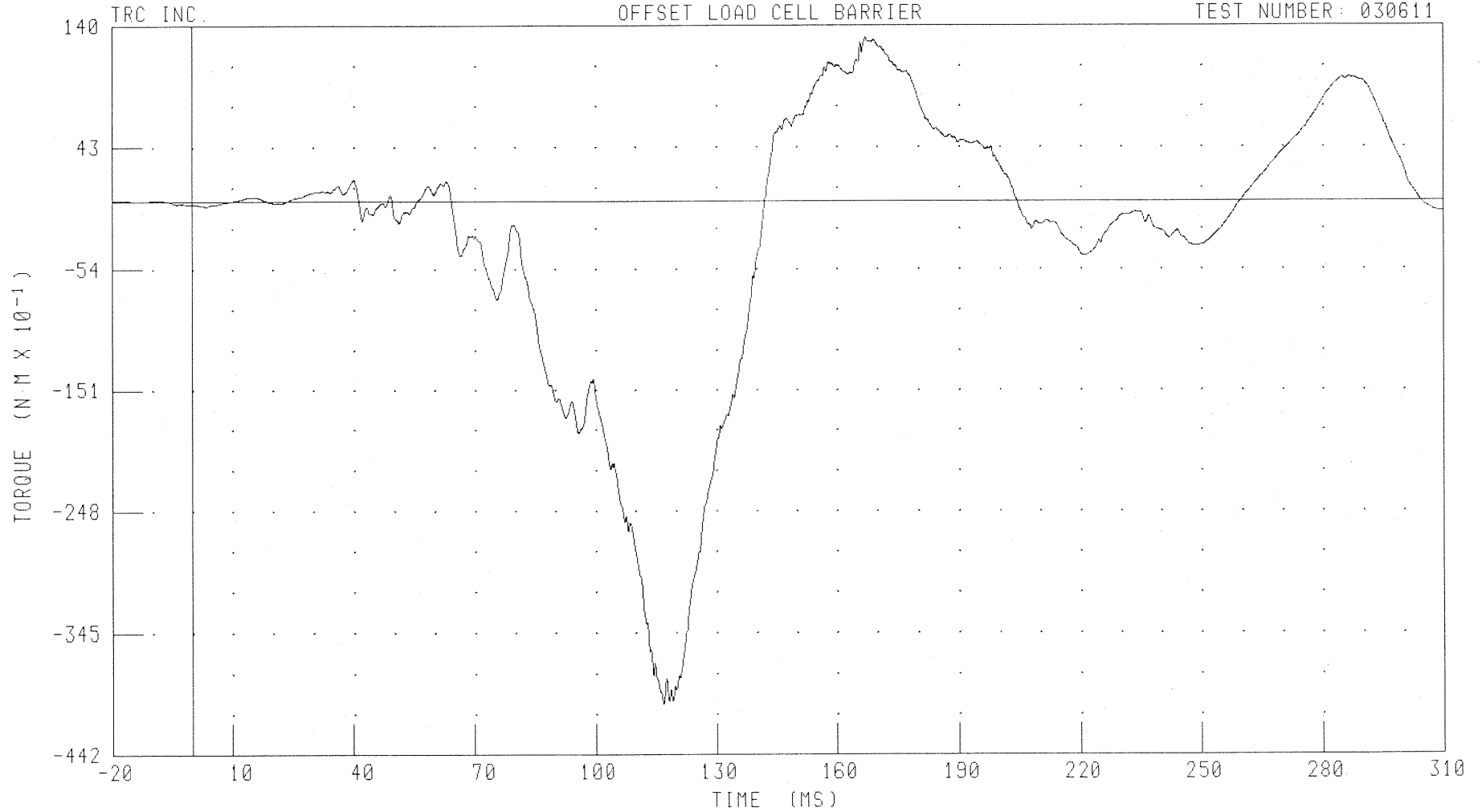
B-49

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER LEFT UPPER TIBIA MOMENT ABOUT X AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: TBLXM1 FILTER: CH. CLASS 600

PEAK DATA: 13.05 N·M @ 167.20 MS; -40.19 N·M @ 116.96 MS

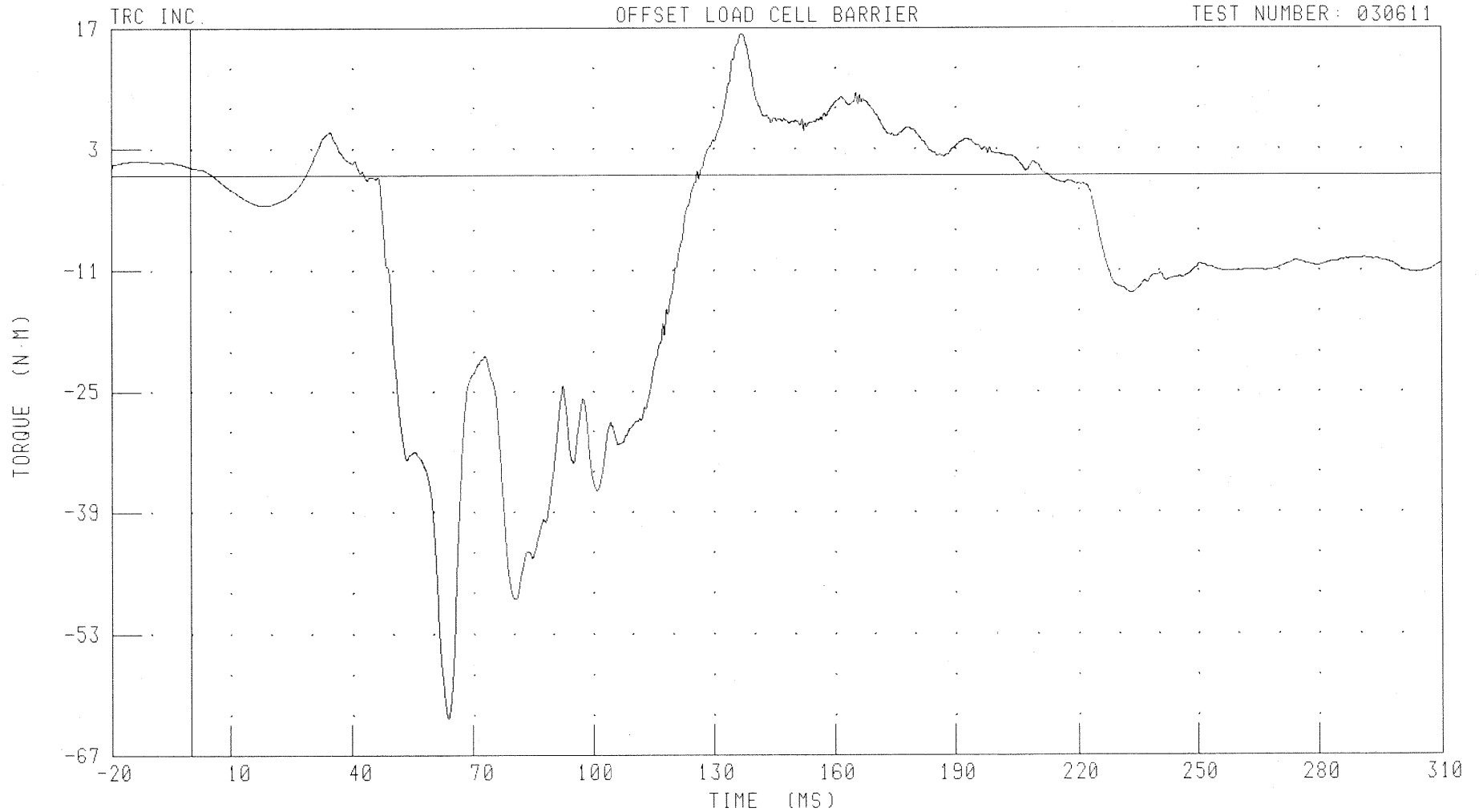
B-50

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER LEFT UPPER TIBIA-MOMENT ABOUT Y AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: TBLYM1

FILTER: CH. CLASS 600

PEAK DATA: 16.36 N·M @ 136.72 MS; -62.78 N·M @ 63.76 MS

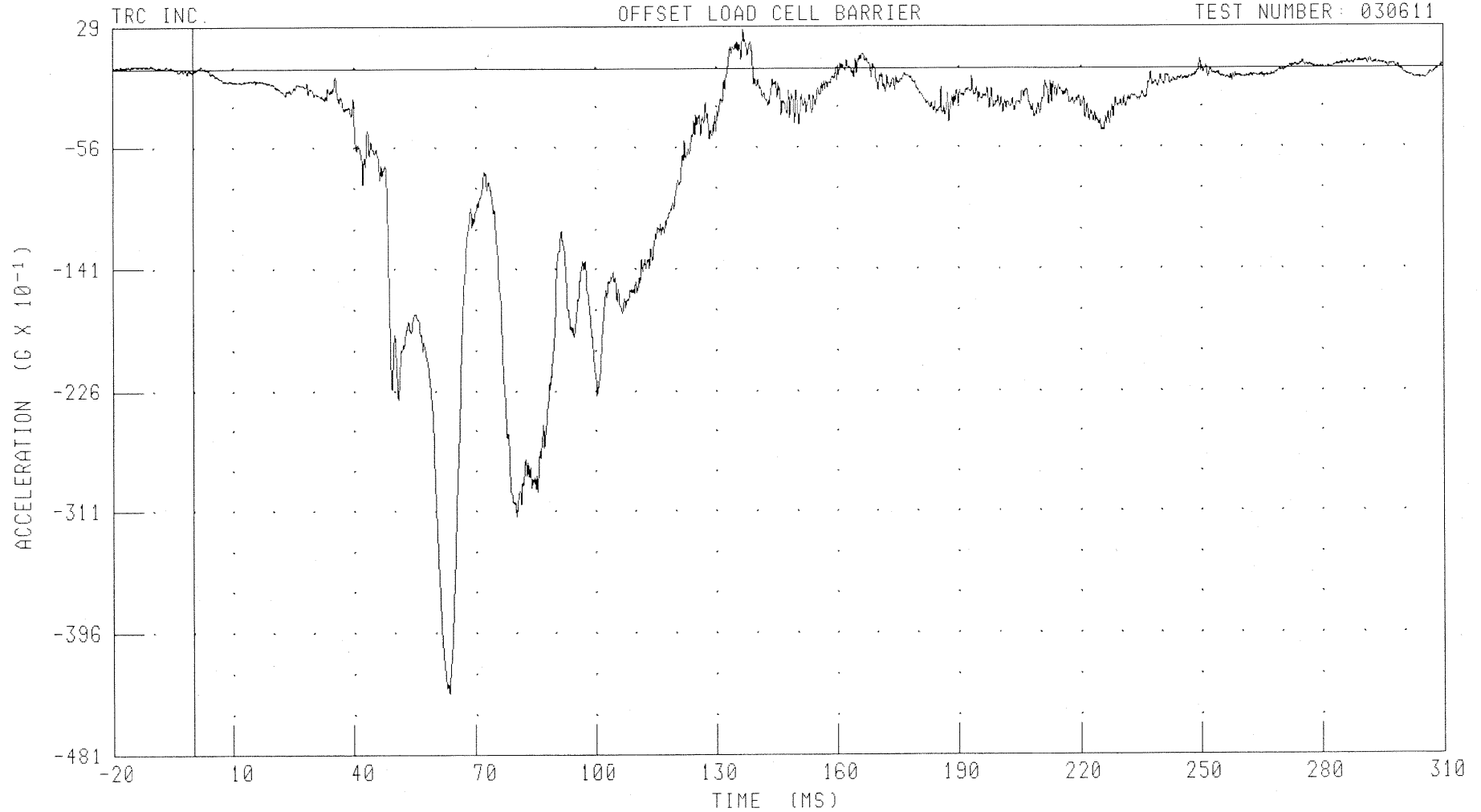
B-51

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER LEFT TIBIA X-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: TBLXG1

FILTER: CH. CLASS 1000

PEAK DATA: 2.68 G @ 136.72 MS; -43.78 G @ 63.44 MS

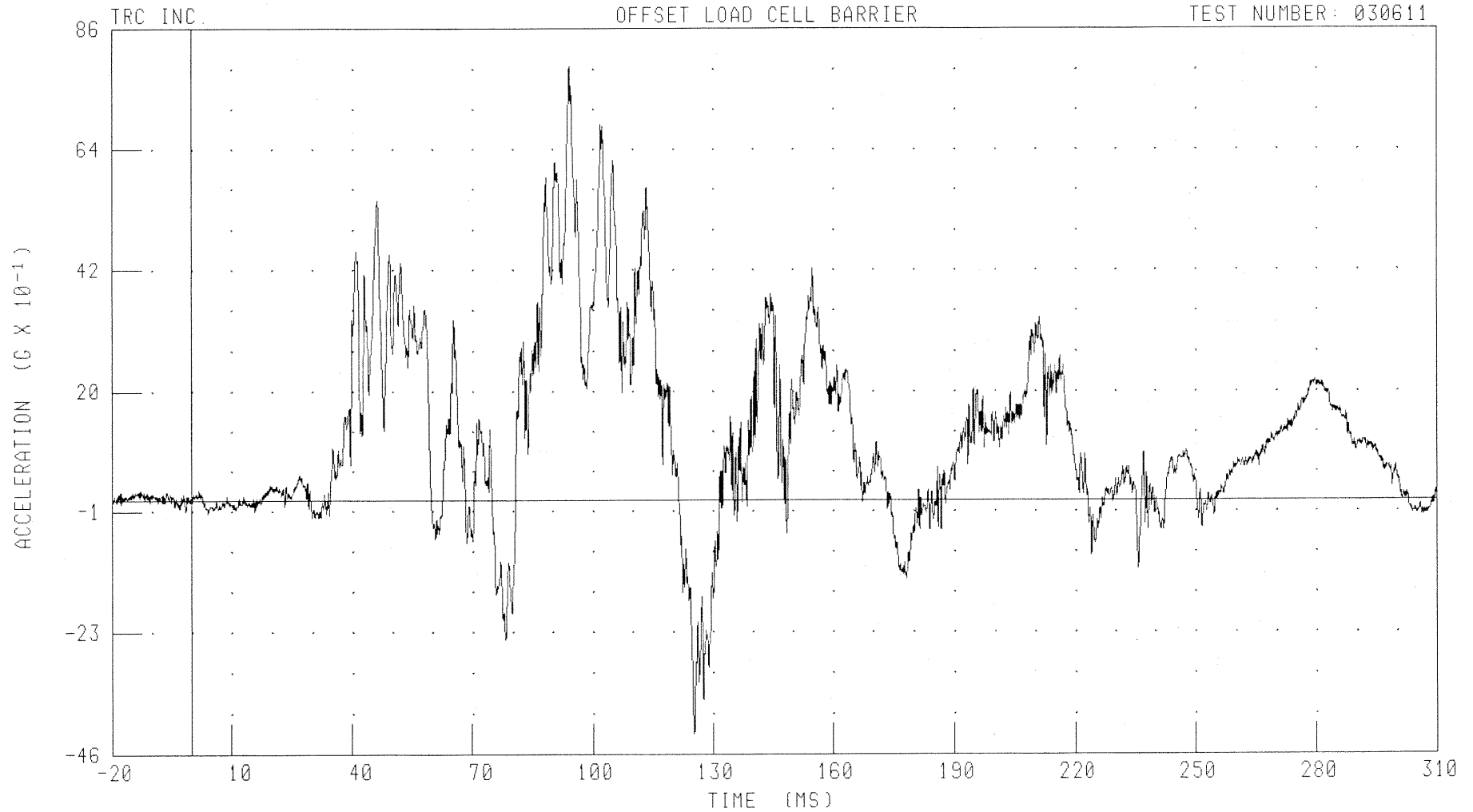
B-52

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER LEFT TIBIA Y-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: TBLYG1 FILTER: CH. CLASS 1000

PEAK DATA: 7.92 G @ 94.16 MS; -4.23 G @ 125.36 MS

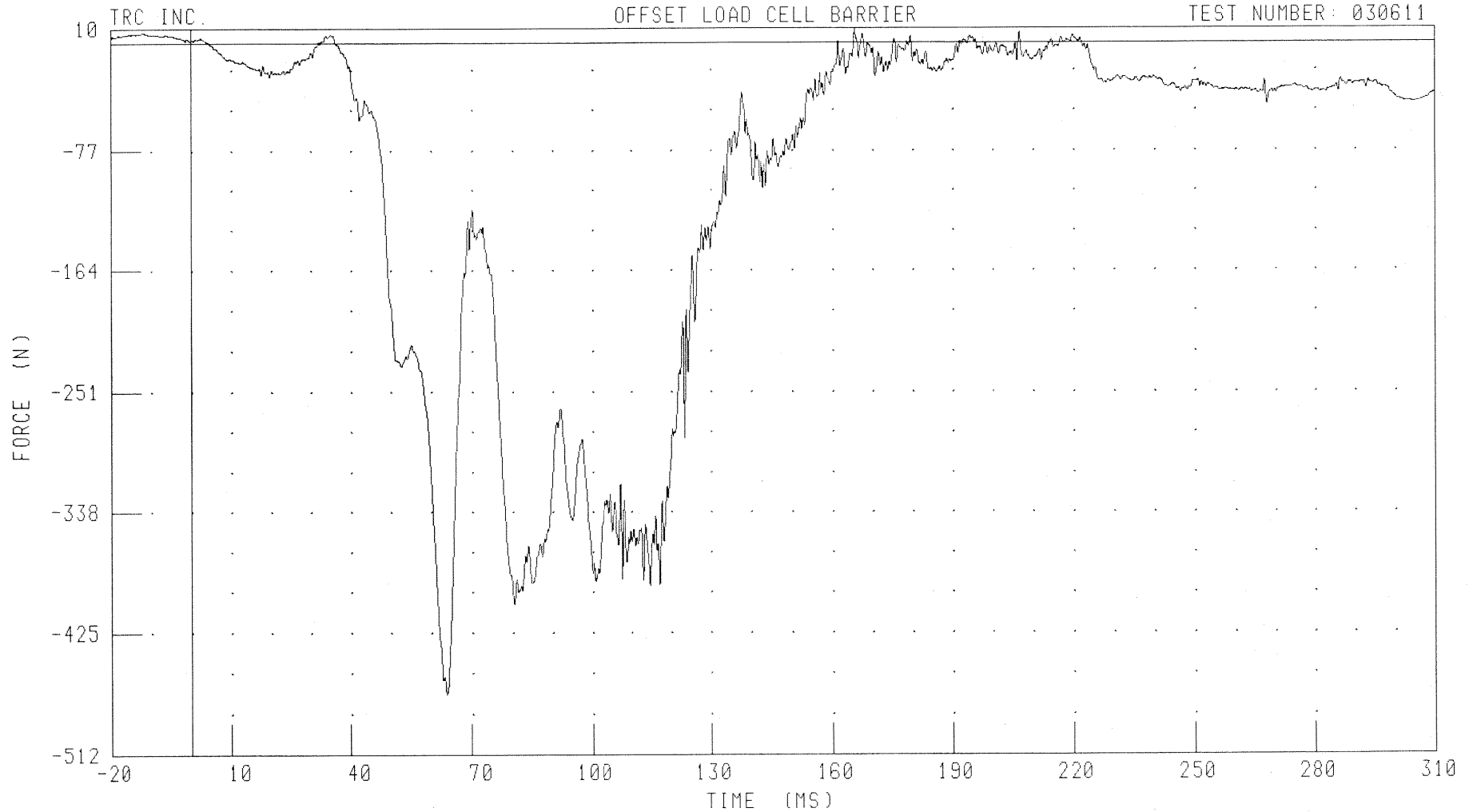
B-53

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER LEFT LOWER TIBIA X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: ANLXF1 FILTER: CH. CLASS 600

PEAK DATA: 9.23 N @ 165.60 MS; -469.24 N @ 63.76 MS

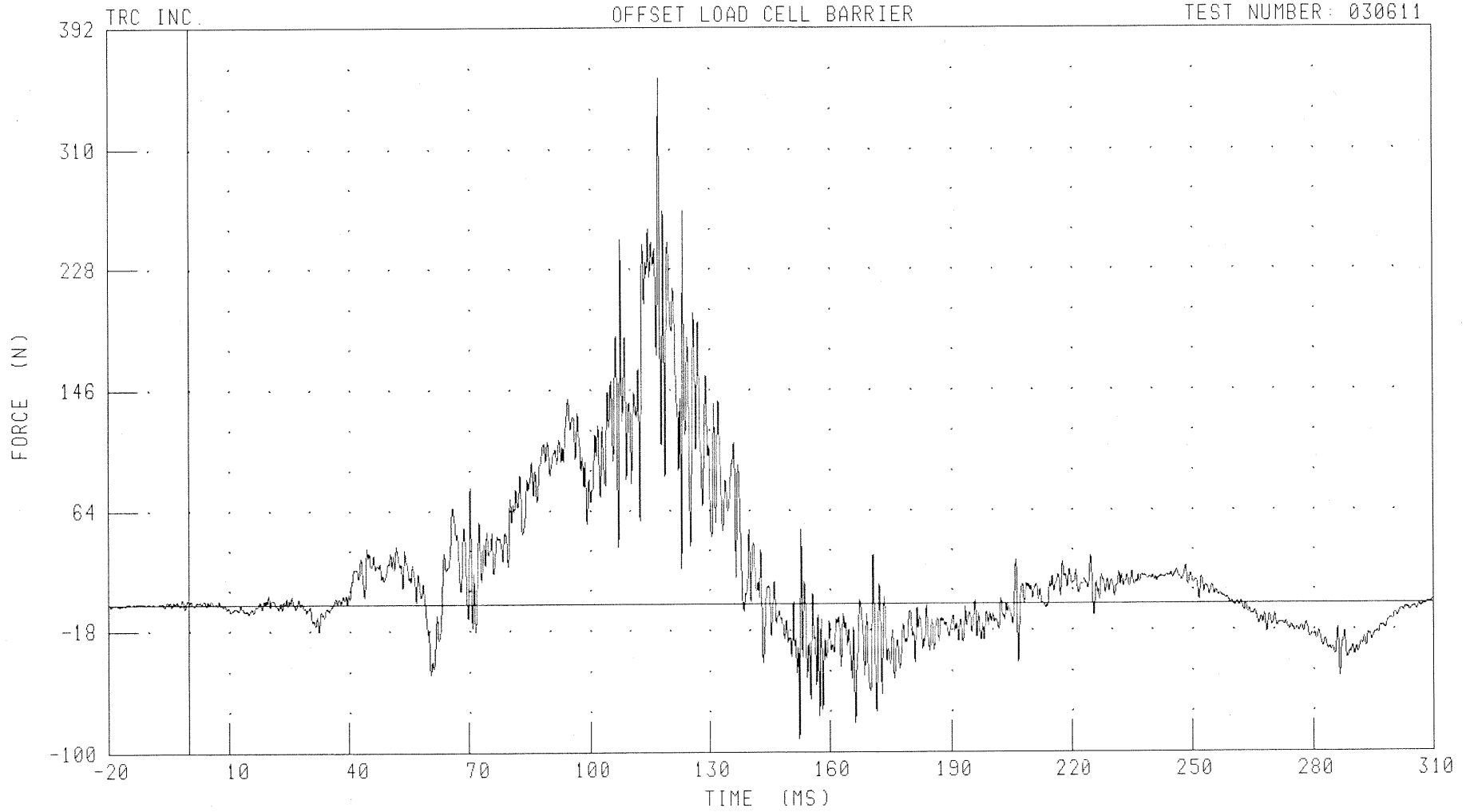
B-54

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER LEFT LOWER TIBIA Y-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: ANLYF1

FILTER: CH. CLASS 600

PEAK DATA: 357.92 N @ 117.36 MS, -90.93 N @ 152.56 MS

B-55

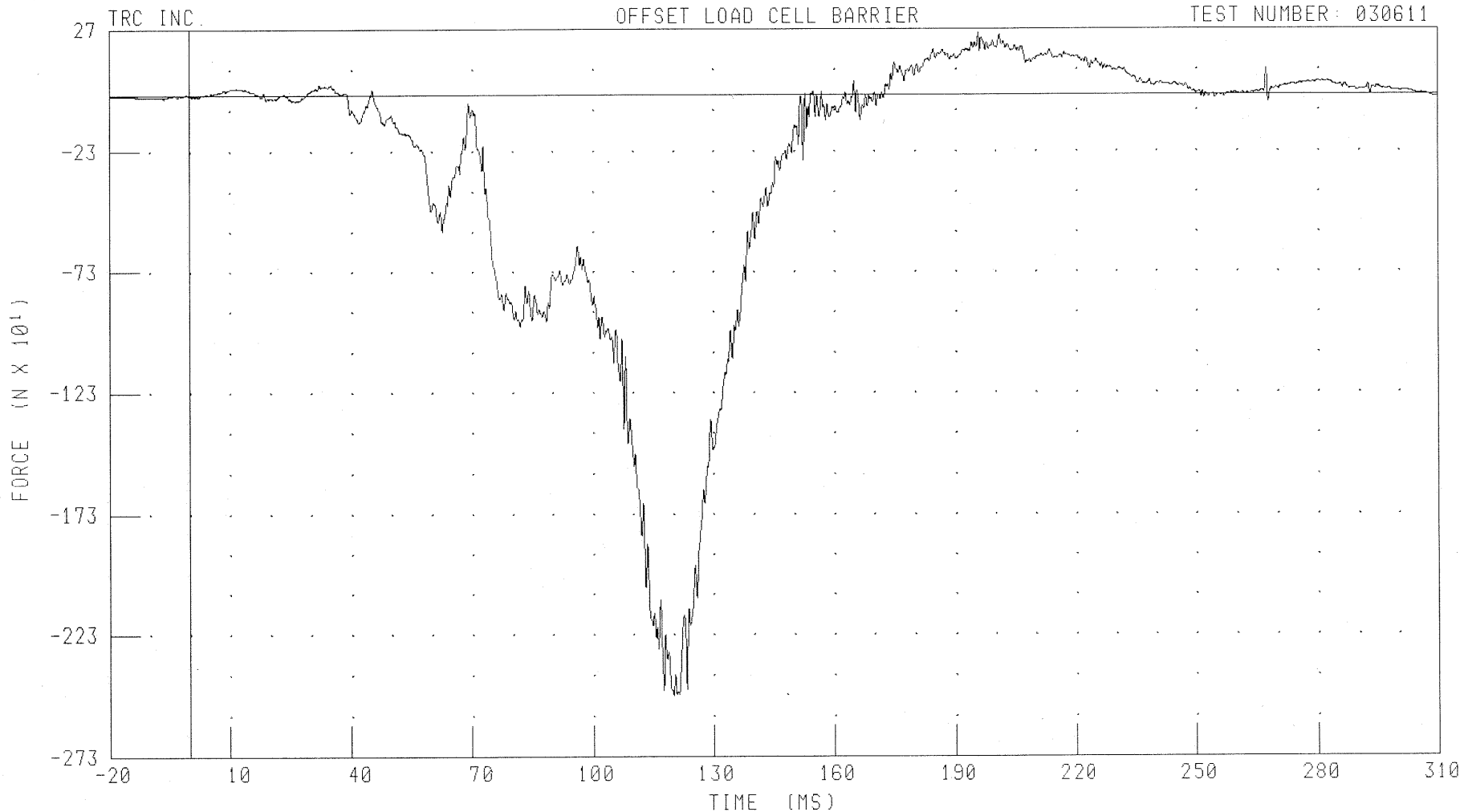
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER LEFT LOWER TIBIA Z-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: ANLZF1

FILTER: CH. CLASS 600

PEAK DATA: 252.66 N @ 195.84 MS, -247.47 N @ 120.08 MS

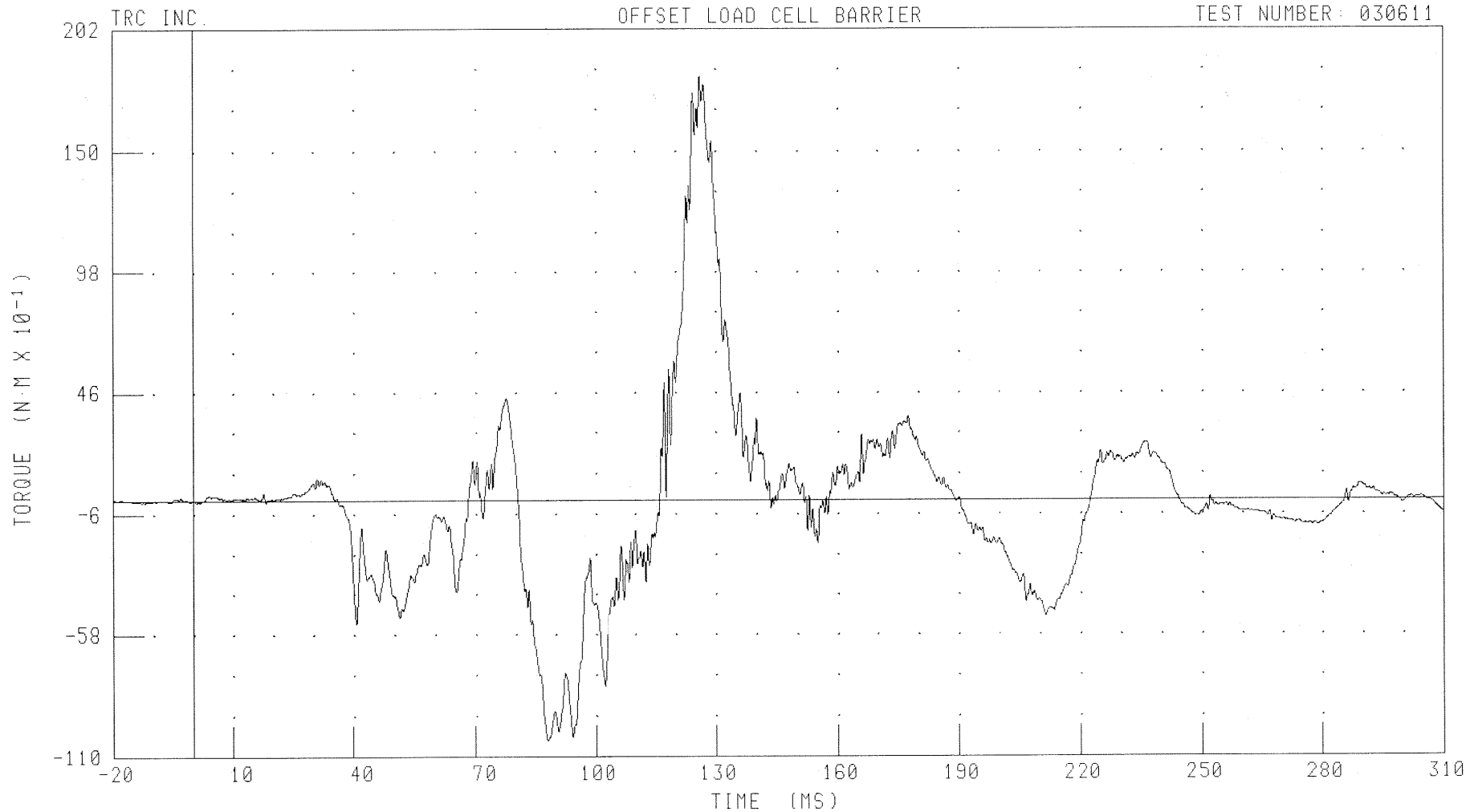
B-56

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER LEFT LOWER TIBIA MOMENT ABOUT X AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: ANLXM1 FILTER: CH. CLASS 600

PEAK DATA: 18.15 N·M @ 126.16 MS; -10.31 N·M @ 87.92 MS

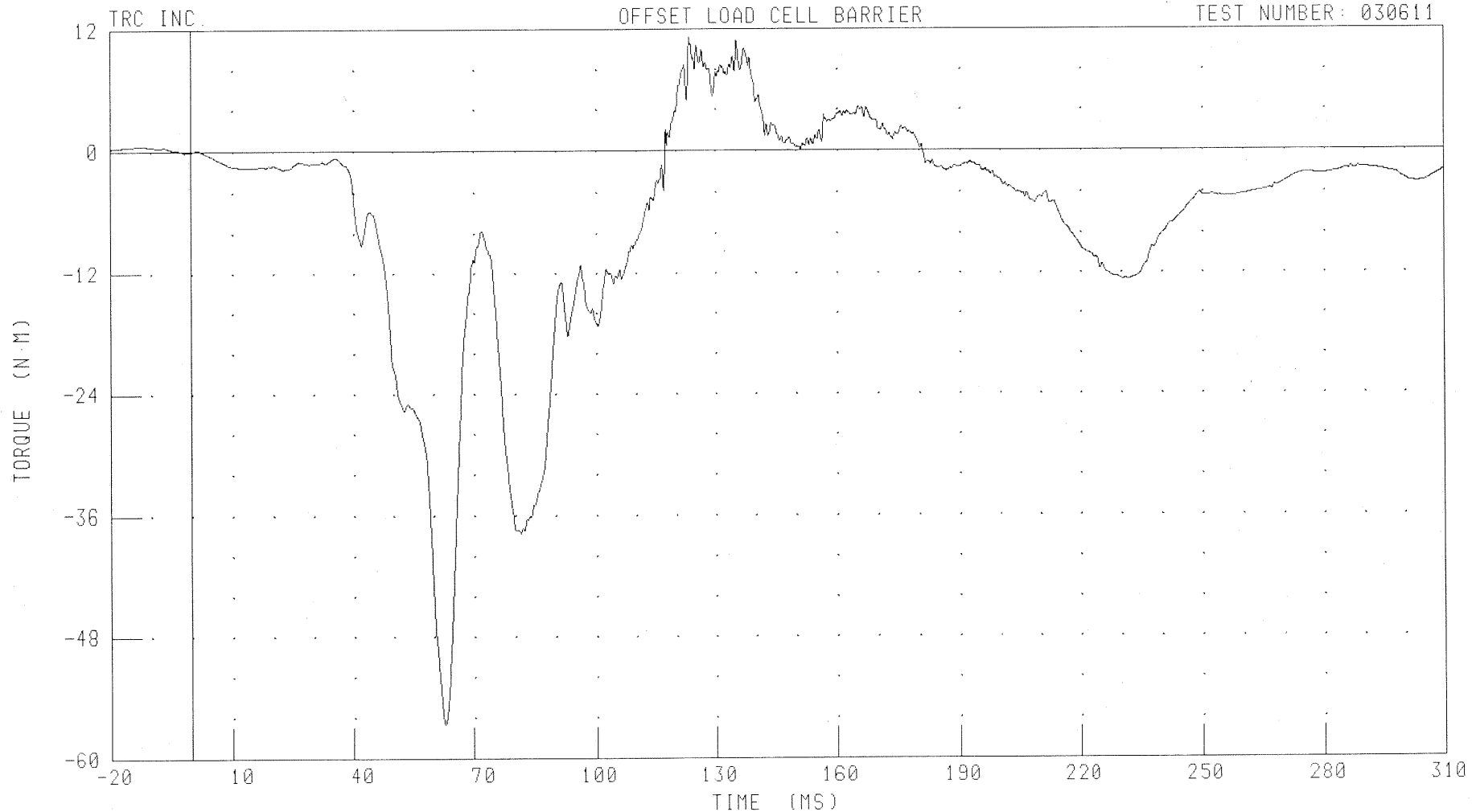
B-57

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER LEFT LOWER TIBIA MOMENT ABOUT Y AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: ANLYM1

FILTER: CH. CLASS 600

PEAK DATA: 11.21 N·M @ 123.44 MS; -56.70 N·M @ 62.72 MS

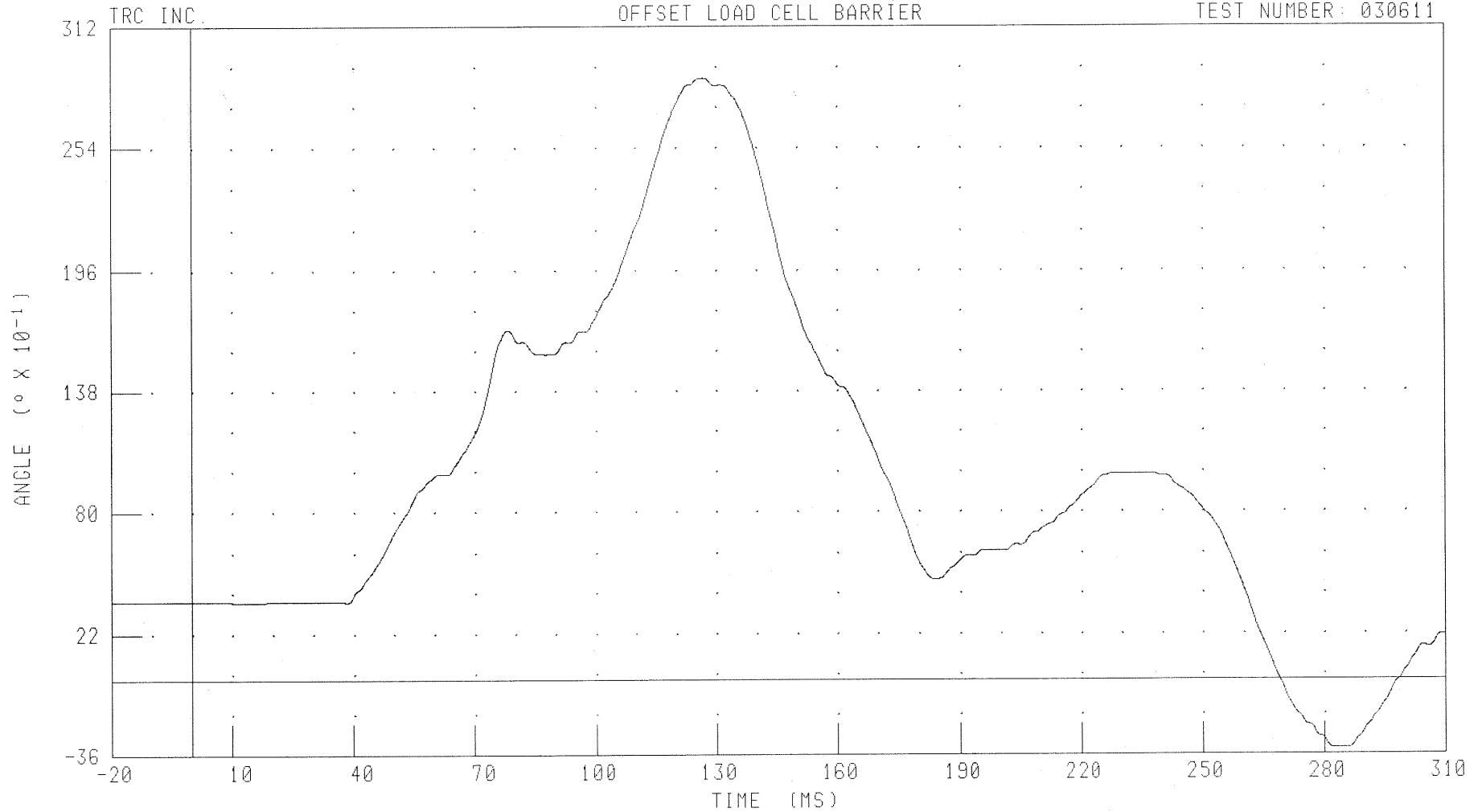
B-58

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER LEFT FOOT TO ANKLE X-AXIS DISPLACEMENT

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FTLXD1

FILTER: CH. CLASS 180

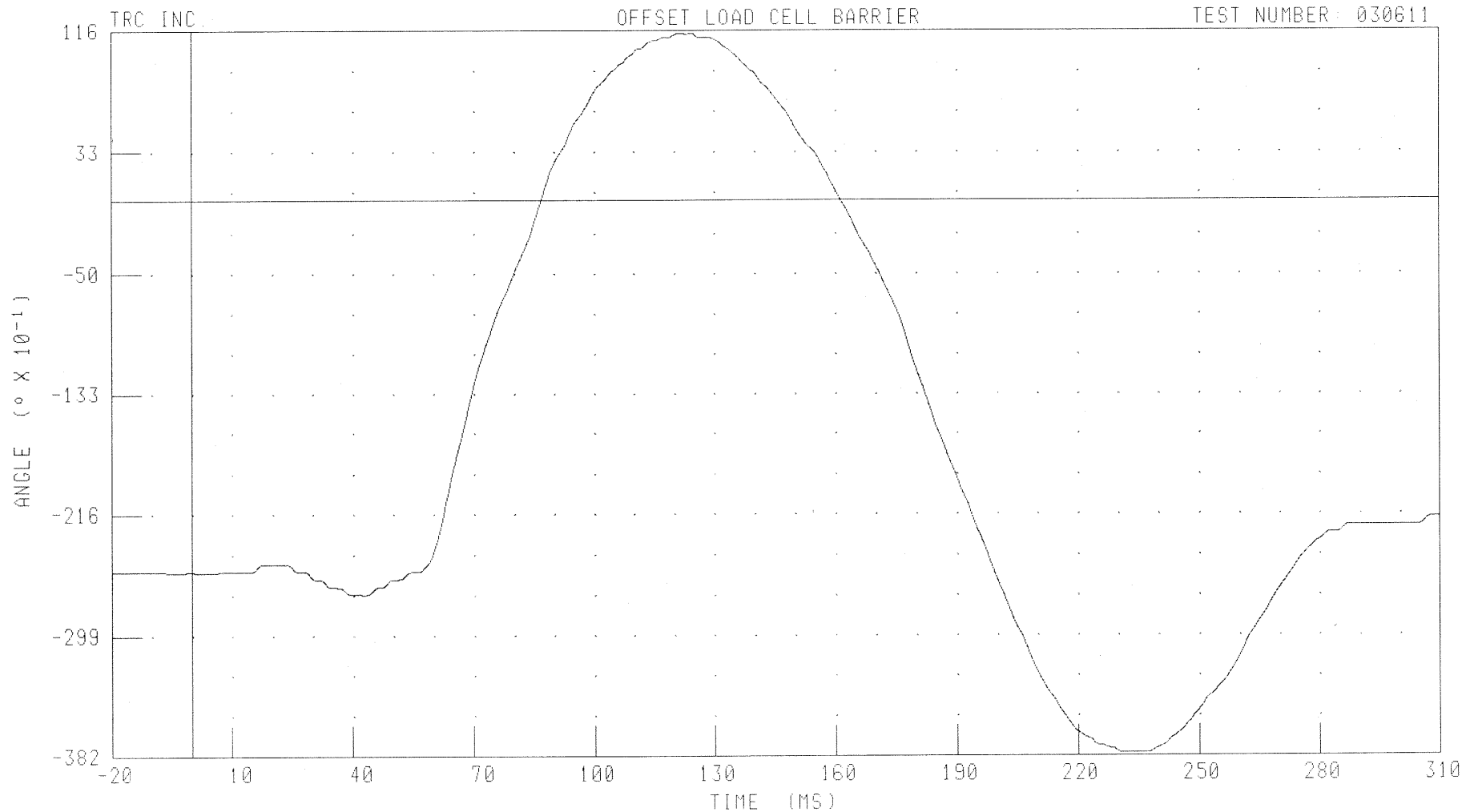
PEAK DATA: 28.73 ° @ 126.72 MS, -3.30 ° @ 282.08 MS

B-59

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER LEFT FOOT TO ANKLE Y-AXIS DISPLACEMENT

TEST NUMBER: 030611



CHANNEL: FTLYD1 FILTER: CH. CLASS 180

PEAK DATA: 11.42 $^{\circ}$ @ 124.48 MS, -38.00 $^{\circ}$ @ 233.68 MS

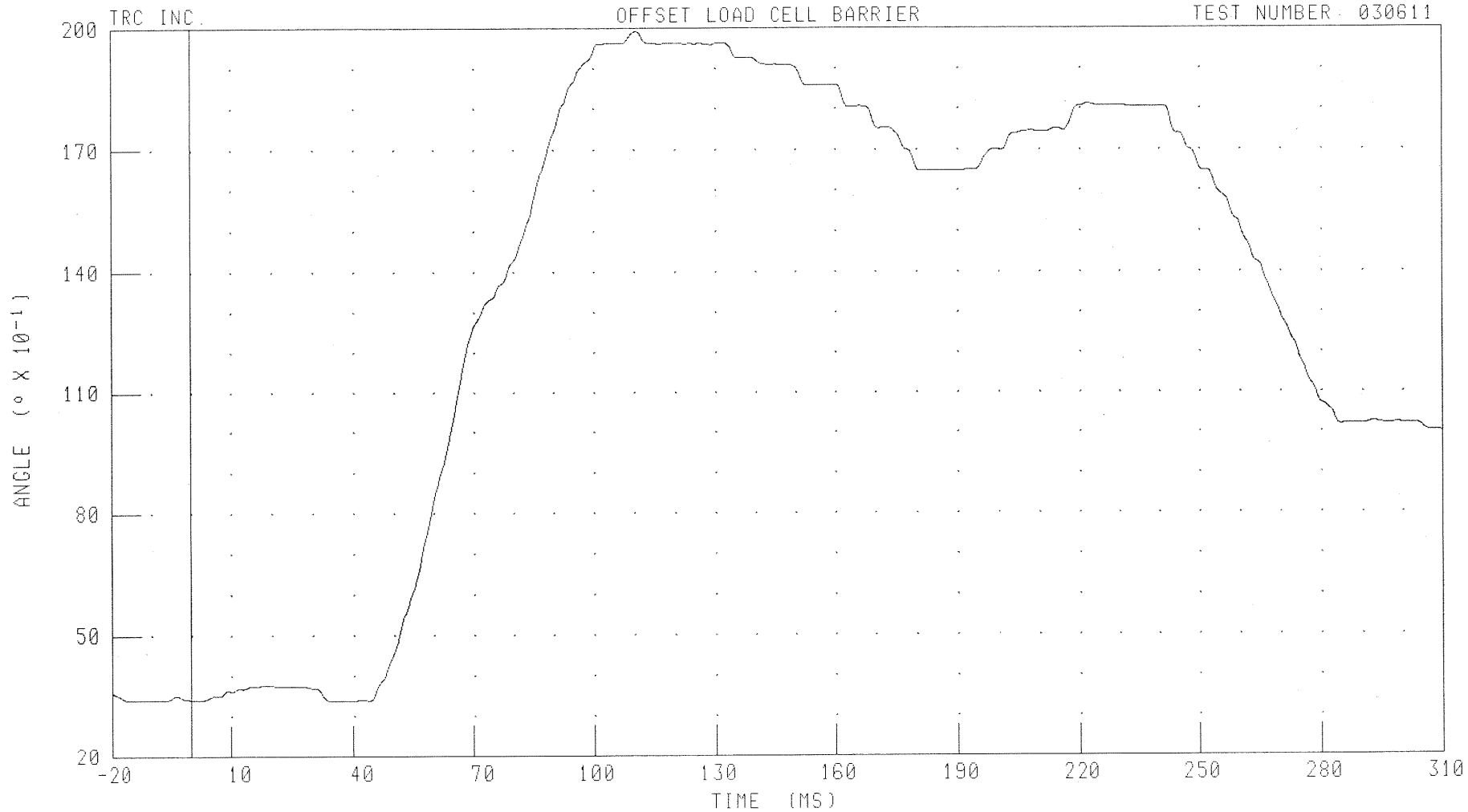
B-60

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER LEFT FOOT TO ANKLE Z-AXIS DISPLACEMENT

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FTLZD1 FILTER: CH CLASS 180

PEAK DATA: 19.92 ° @ 110.64 MS, 3.36 ° @ 39.36 MS

B-61

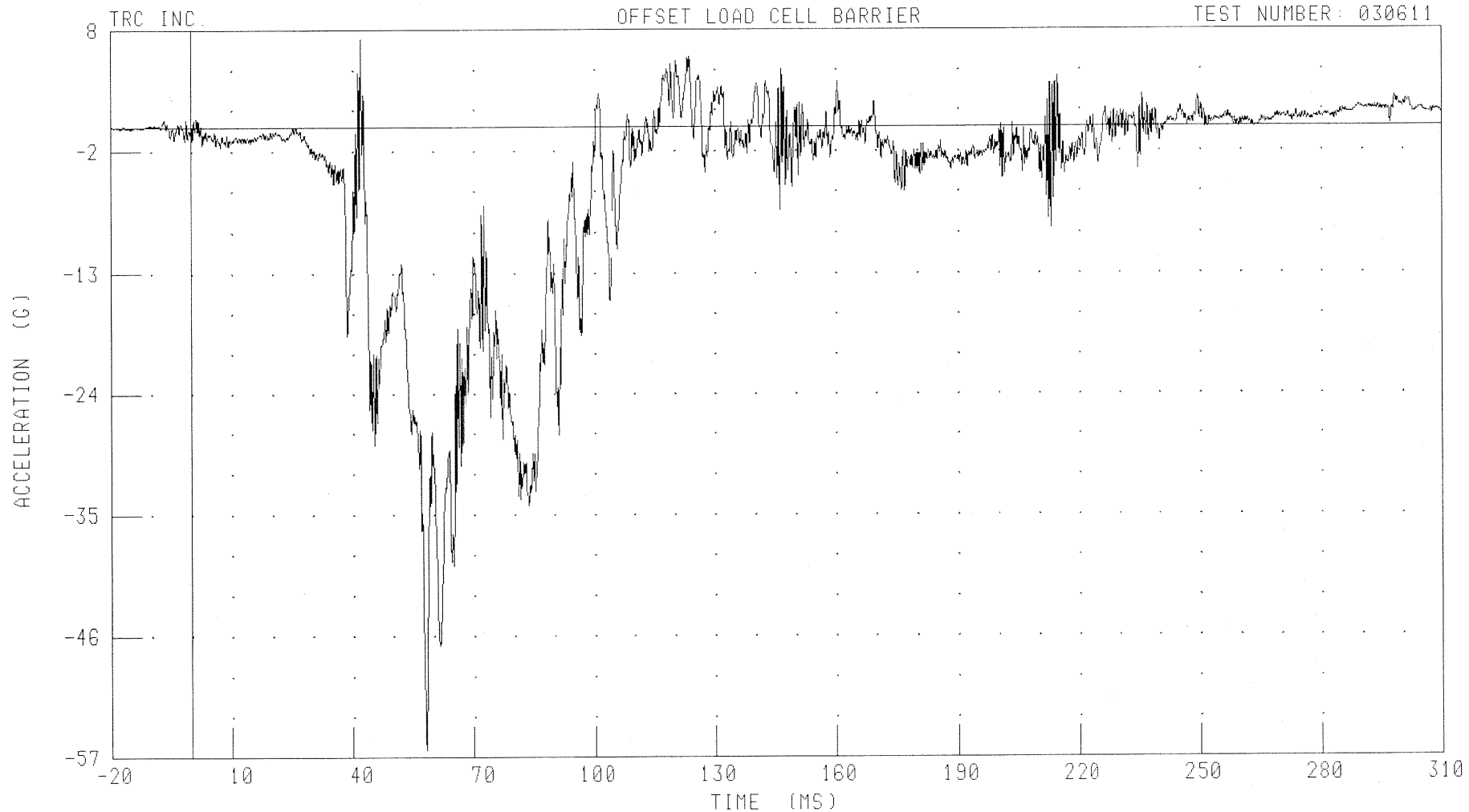
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER LEFT FOOT X-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FTLXG1

FILTER: CH. CLASS 1000

PEAK DATA: 8.01 G @ 42.16 MS; -56.57 G @ 58.08 MS

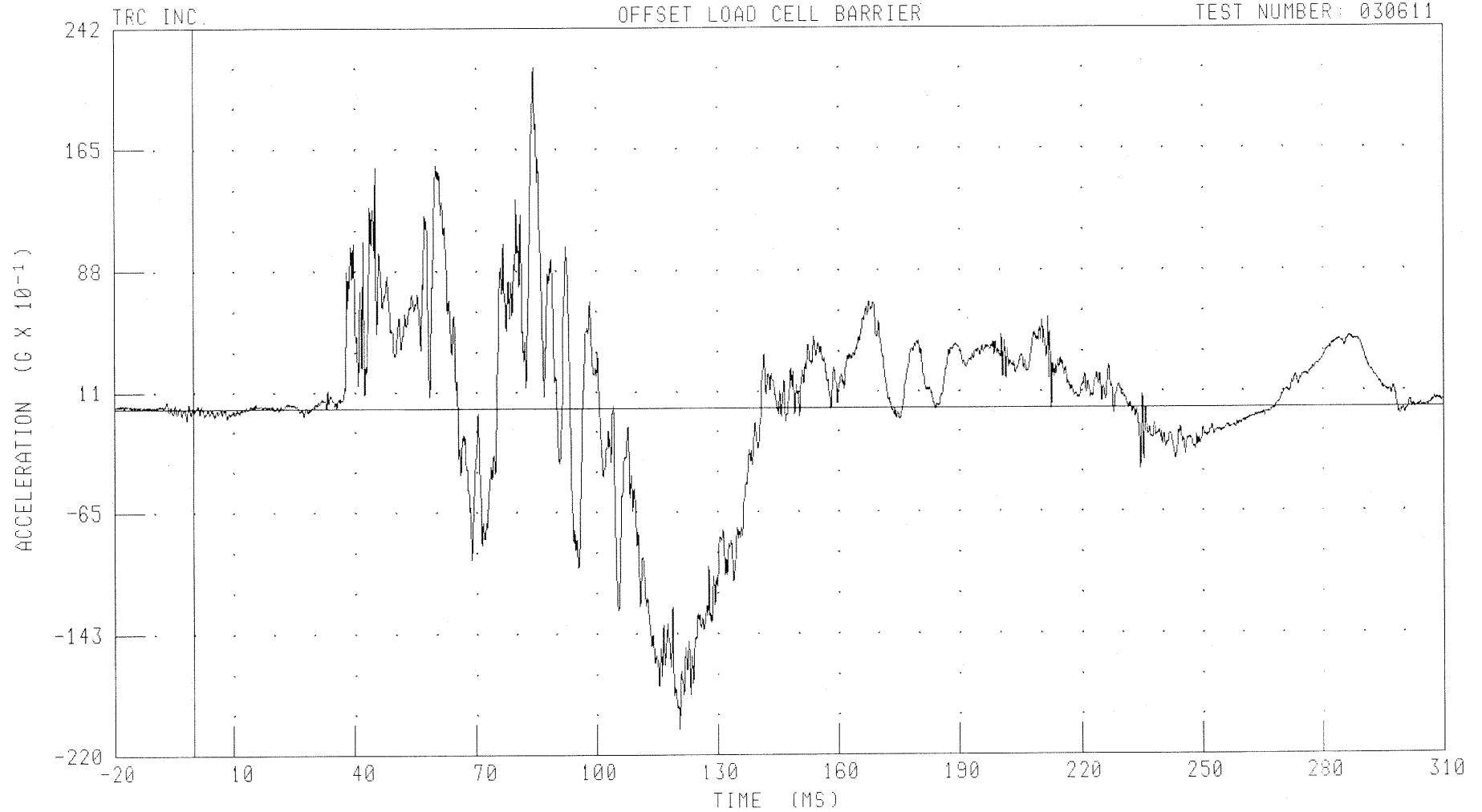
B-62

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER LEFT FOOT Y-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FTLYG1

FILTER: CH. CLASS 1000

PEAK DATA: 21.71 G @ 84.48 MS; -20.35 G @ 120.72 MS

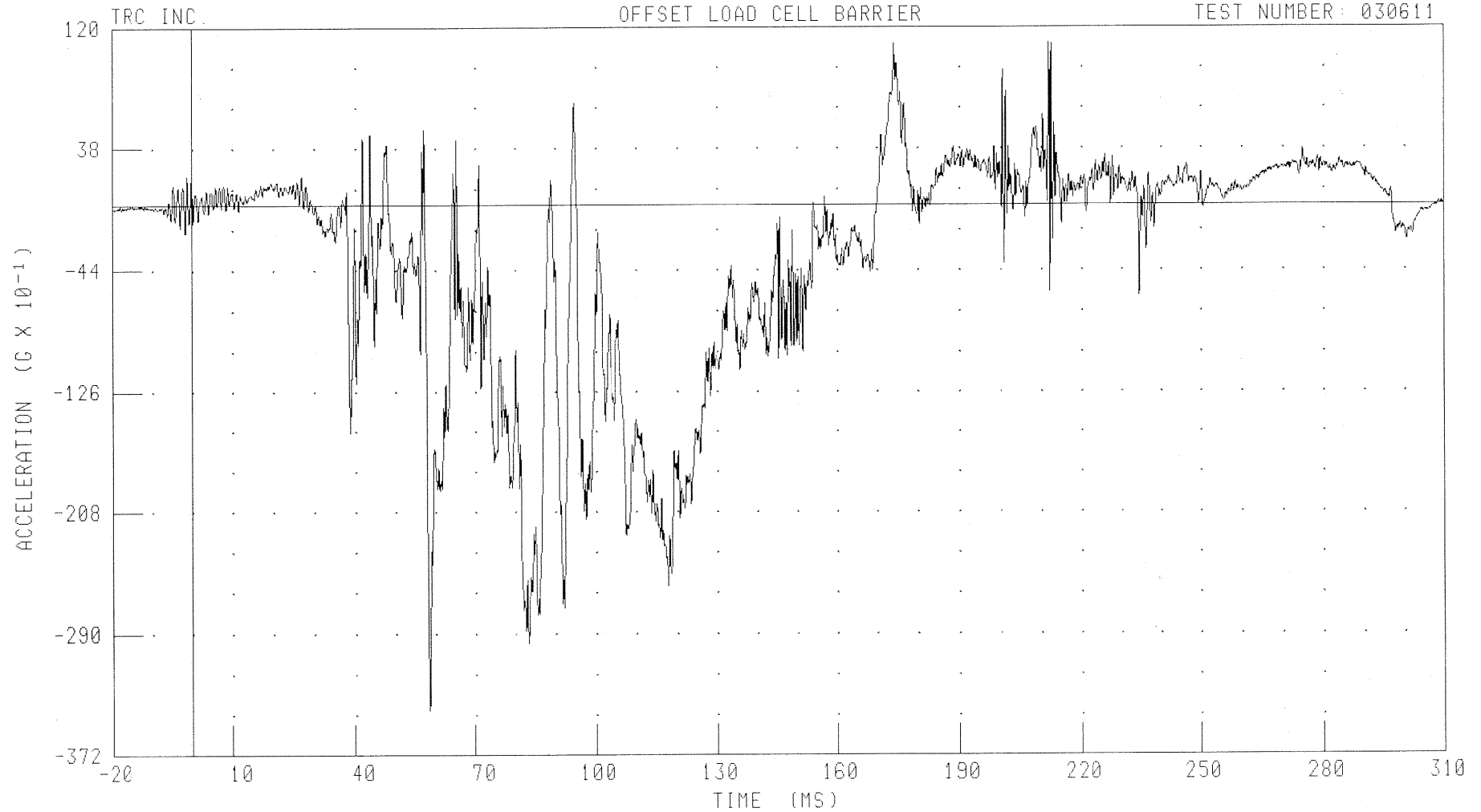
B-63

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER LEFT FOOT Z-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FTLZG1 FILTER: CH. CLASS 1000

PEAK DATA: 10.96 G @ 211.92 MS; -34.16 G @ 58.56 MS

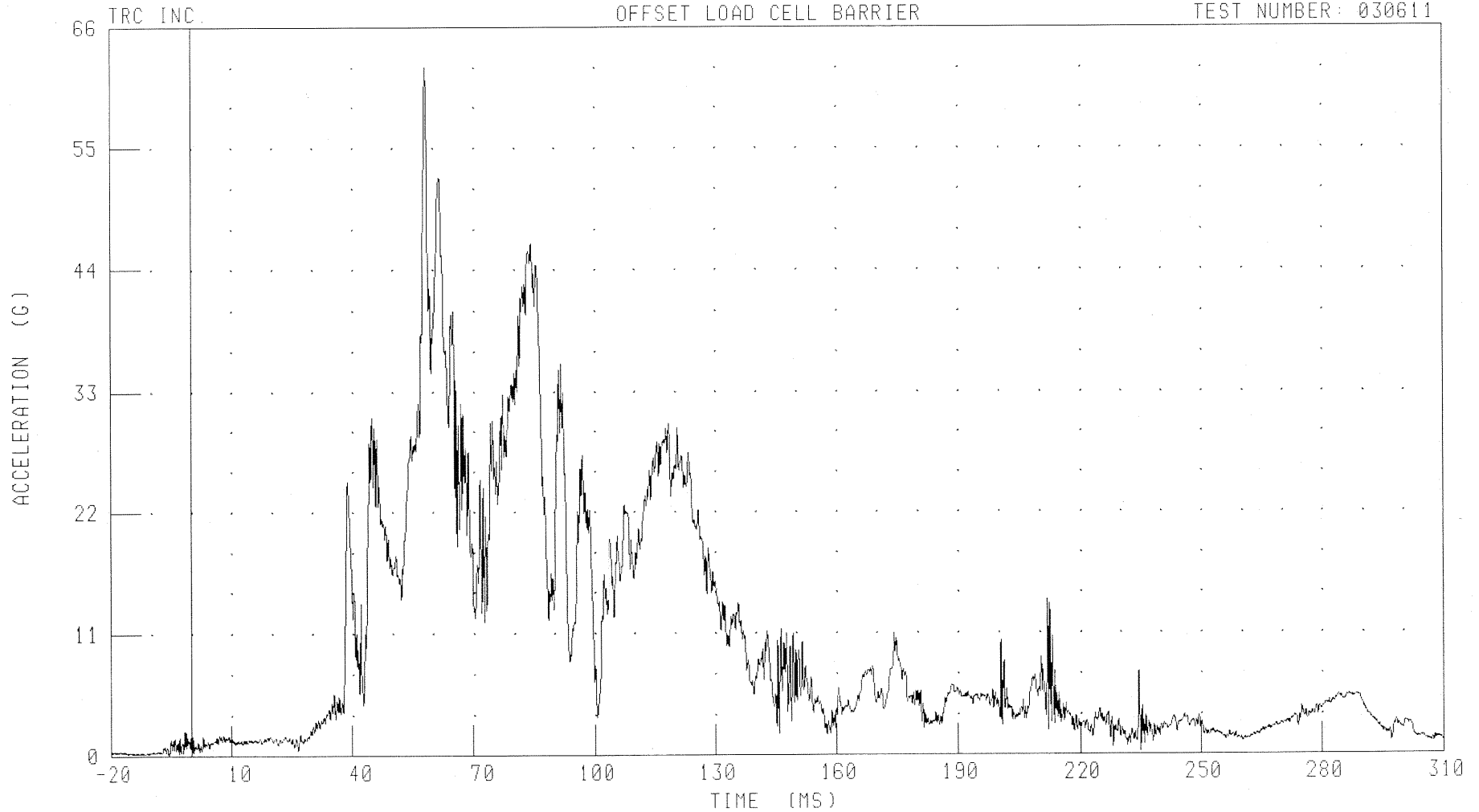
B-64

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER LEFT FOOT RESULTANT ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FTLRG1 FILTER: CH. CLASS 1000

PEAK DATA: 62.41 G @ 58.16 MS; 0.04 G @ -5.44 MS

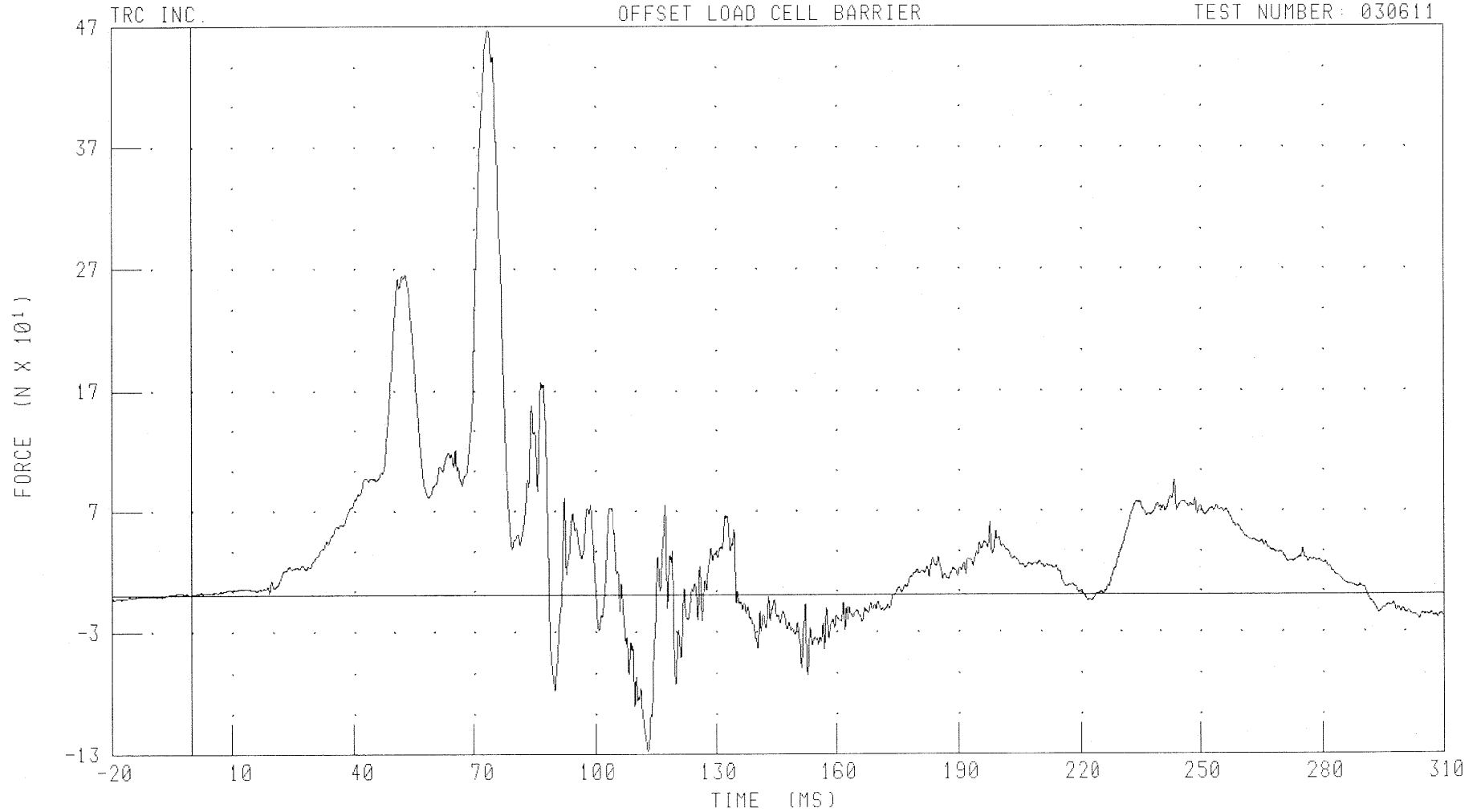
B-65

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER RIGHT UPPER TIBIA X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: TBRXF1

FILTER: CH. CLASS 600

PEAK DATA: 466.97 N @ 73.68 MS; -127.21 N @ 113.04 MS

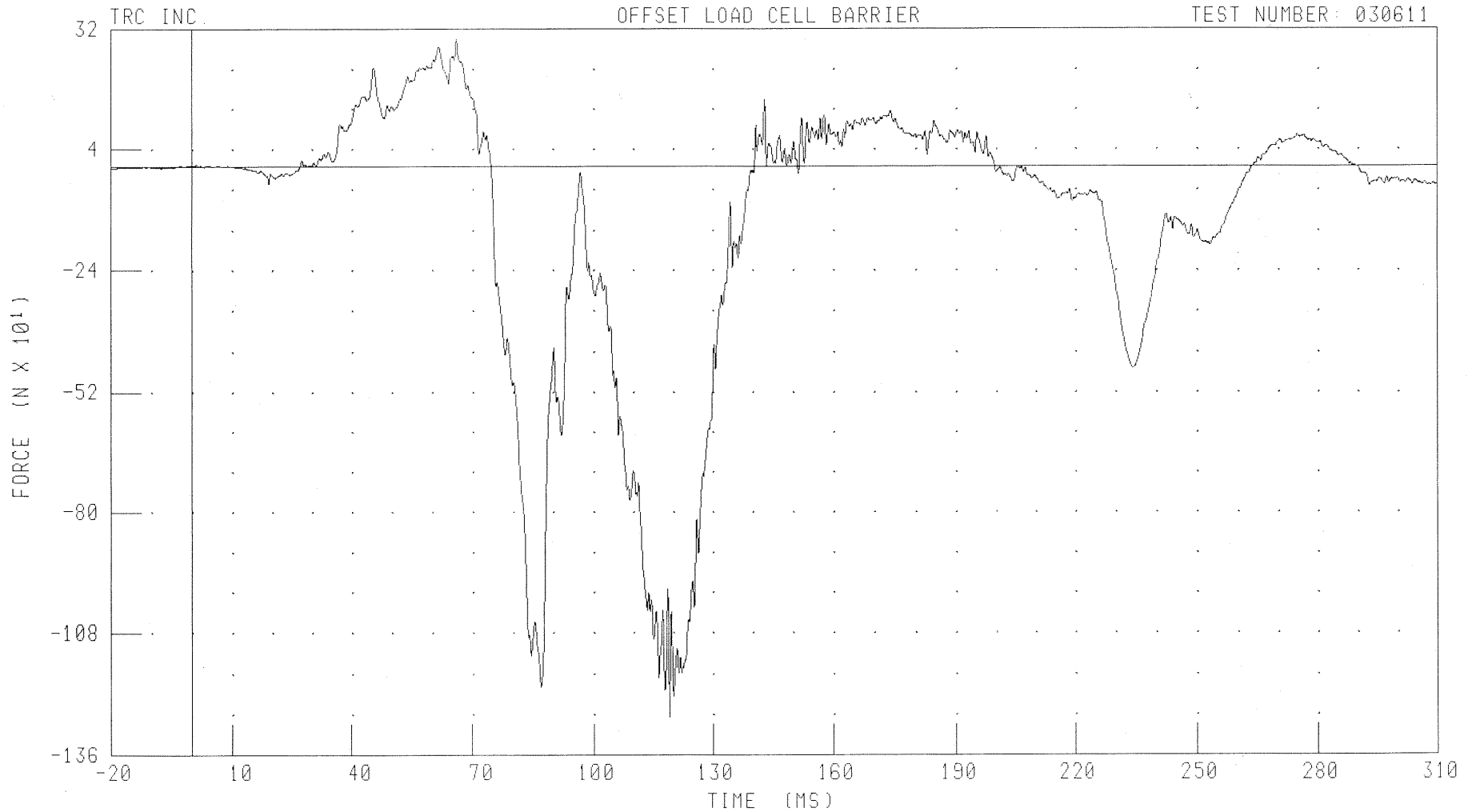
B-66

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER RIGHT UPPER TIBIA Z-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: TBRZF1

FILTER: CH. CLASS 600

PEAK DATA: 295.79 N @ 66.08 MS, -1272.93 N @ 119.12 MS

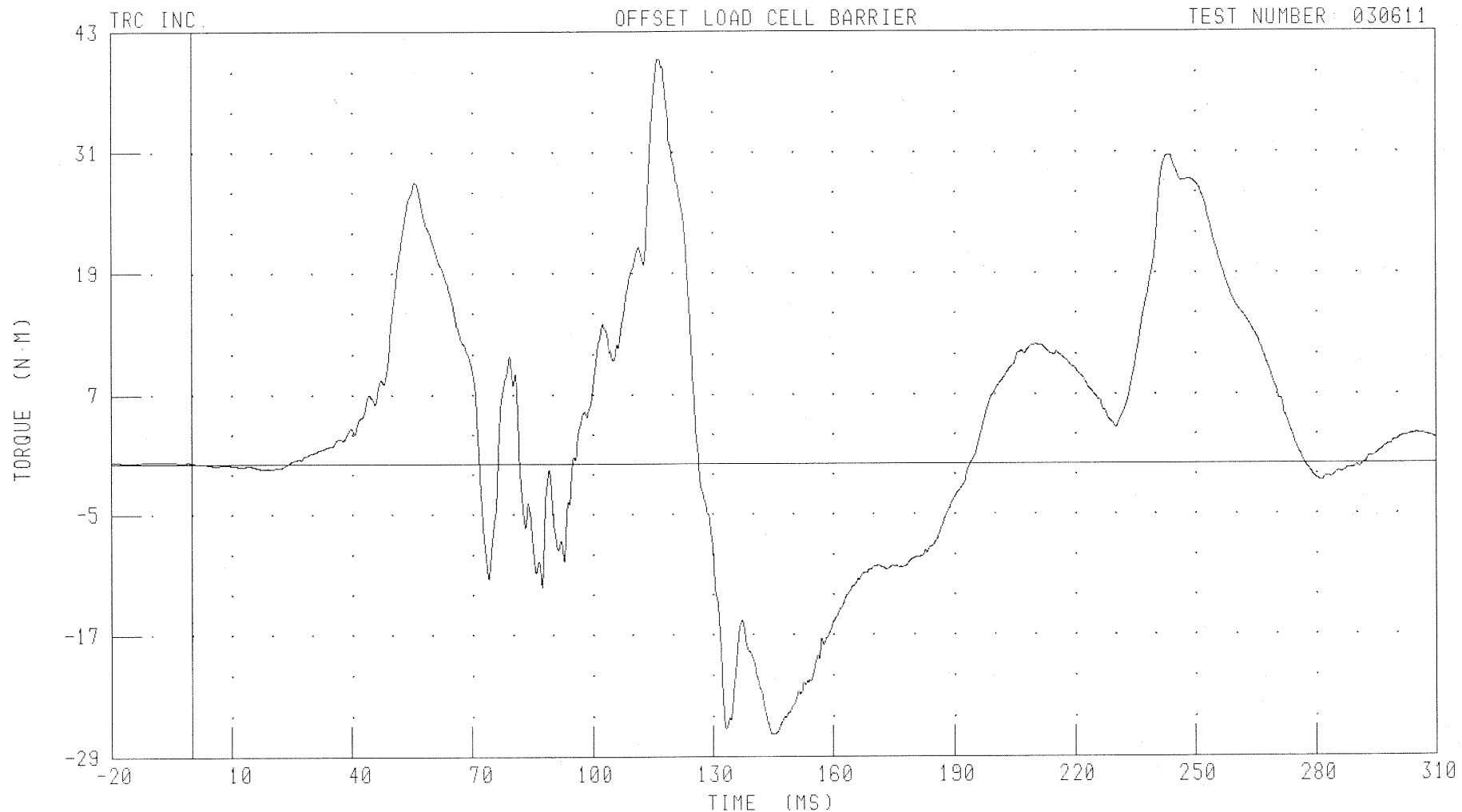
B-67

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER RIGHT UPPER TIBIA MOMENT ABOUT X AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: TBRXM1 FILTER: CH. CLASS 600

PEAK DATA: 40.28 N·M @ 116.80 MS, -26.82 N·M @ 145.52 MS

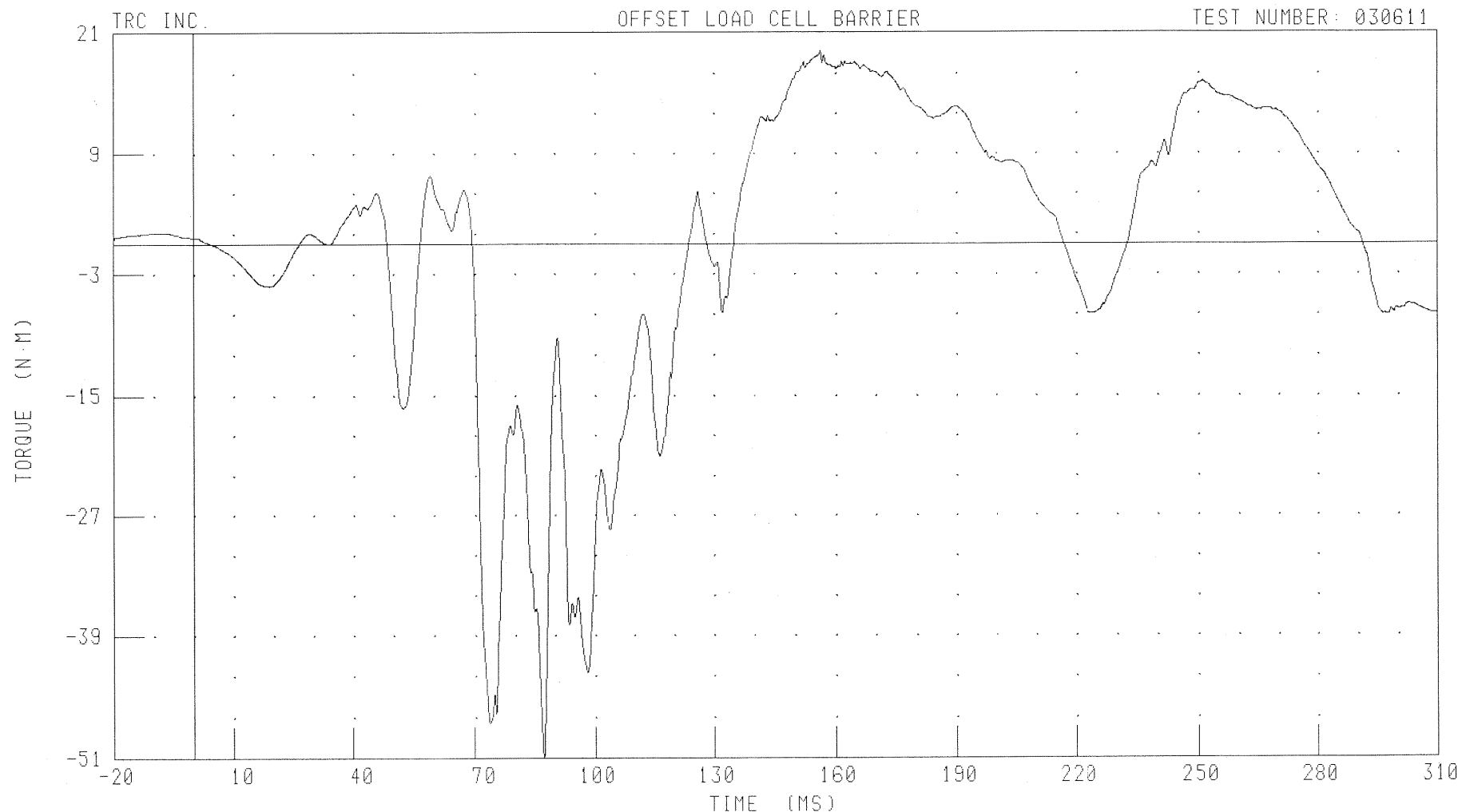
B-68

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER RIGHT UPPER TIBIA MOMENT ABOUT Y AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: TBRYM1 FILTER: CH. CLASS 600

PEAK DATA: 19.19 N·M @ 156.48 MS; -51.11 N·M @ 87.20 MS

B-69

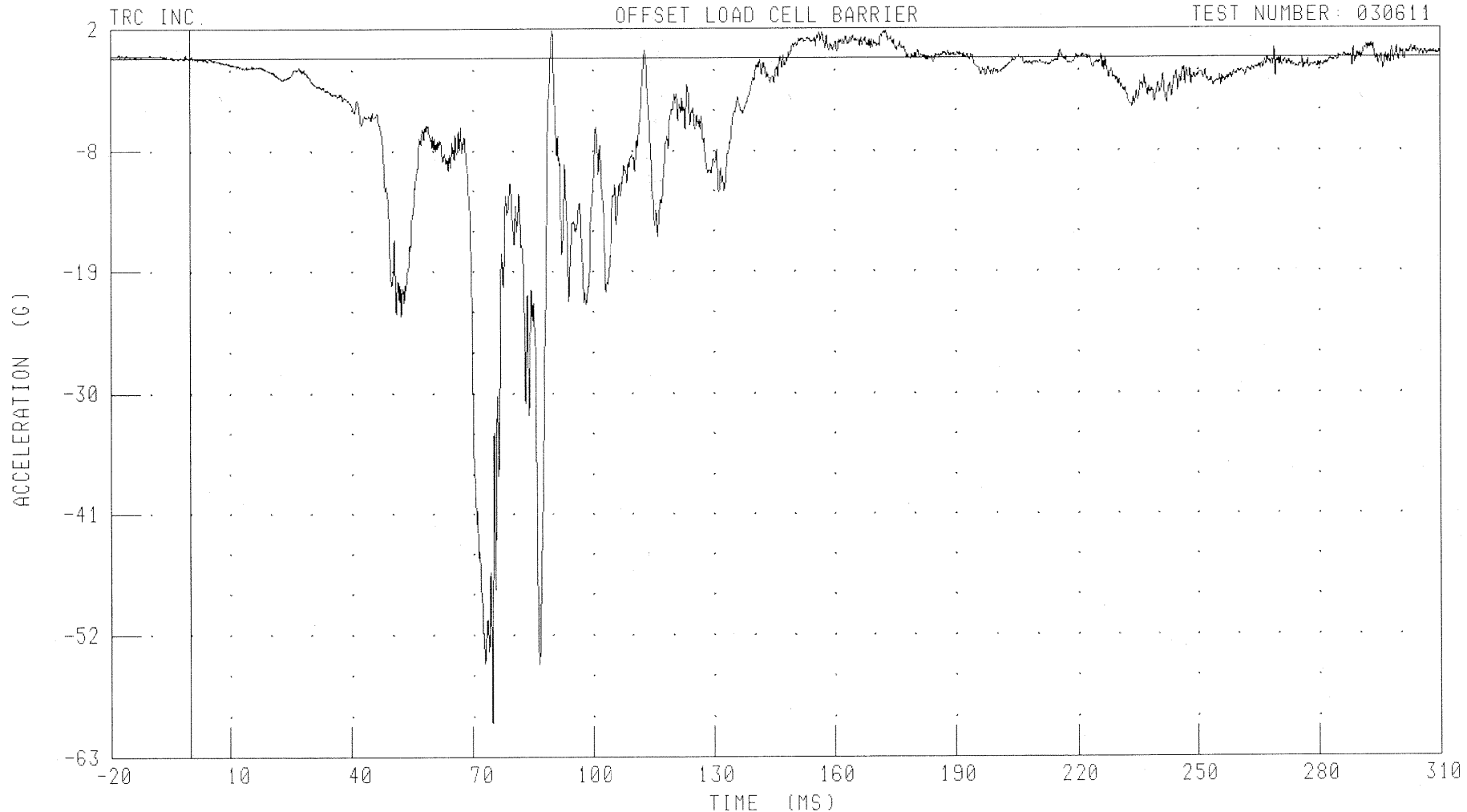
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER RIGHT TIBIA X-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: TBRXG1 FILTER: CH. CLASS 1000

PEAK DATA: 2.45 G @ 89.92 MS, -60.33 G @ 74.88 MS

B-70

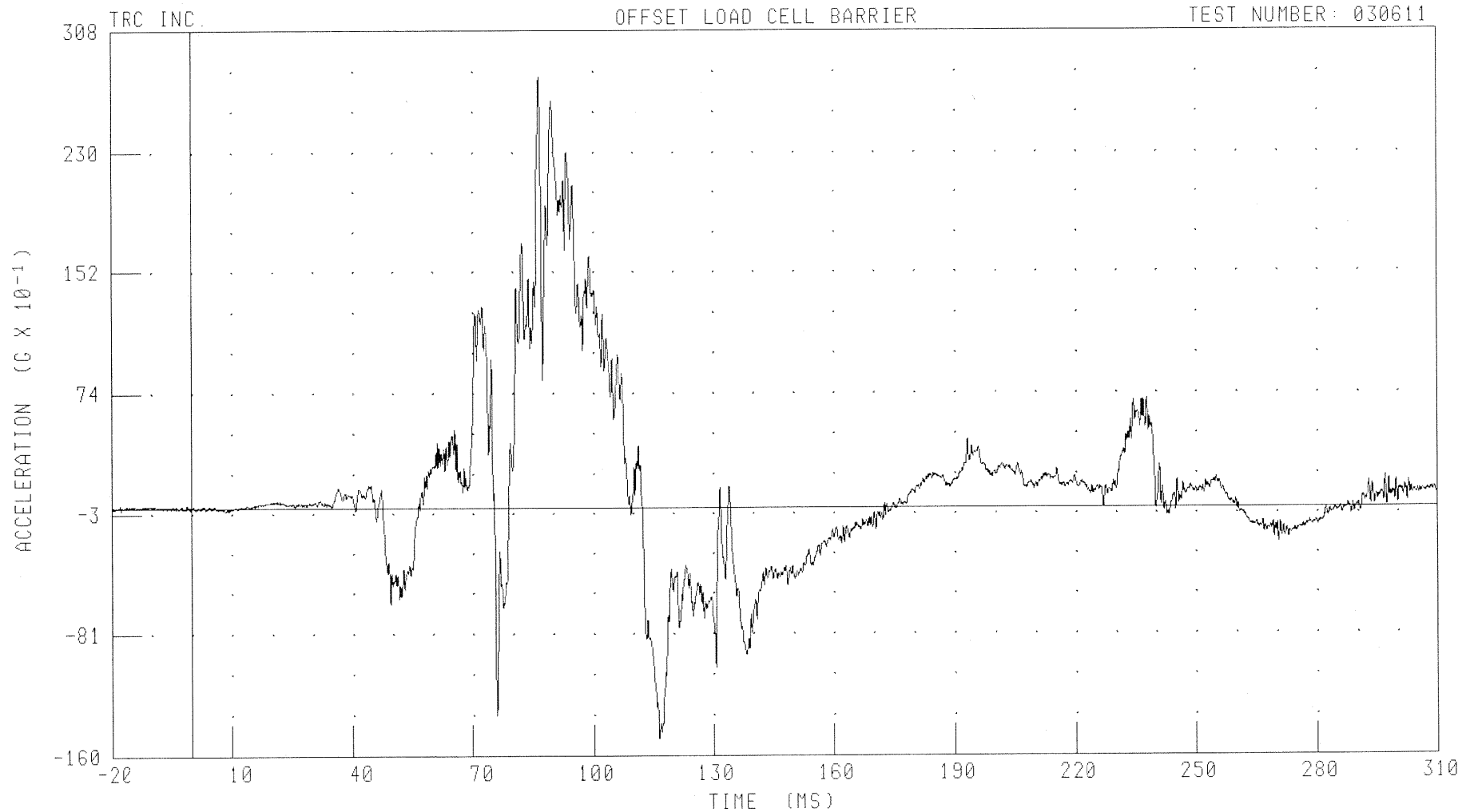
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER RIGHT TIBIA Y-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: TBRYG1 FILTER: CH. CLASS 1000

PEAK DATA: 27.83 G @ 86.56 MS; -14.91 G @ 116.56 MS

B-71

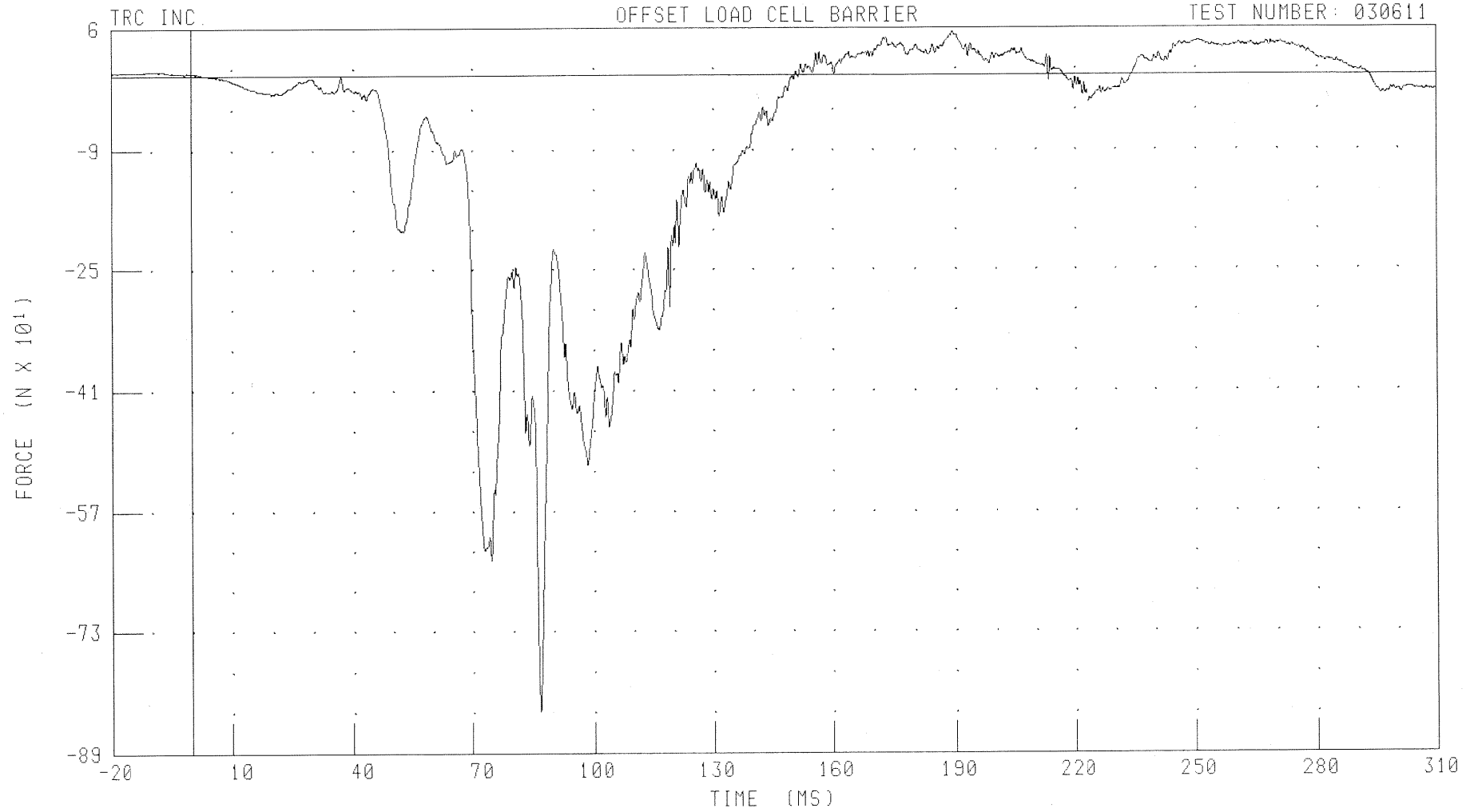
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER RIGHT LOWER TIBIA X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: ANRXF1 FILTER: CH. CLASS 600

PEAK DATA: 56.65 N @ 189.36 MS, -843.84 N @ 86.72 MS

B-72

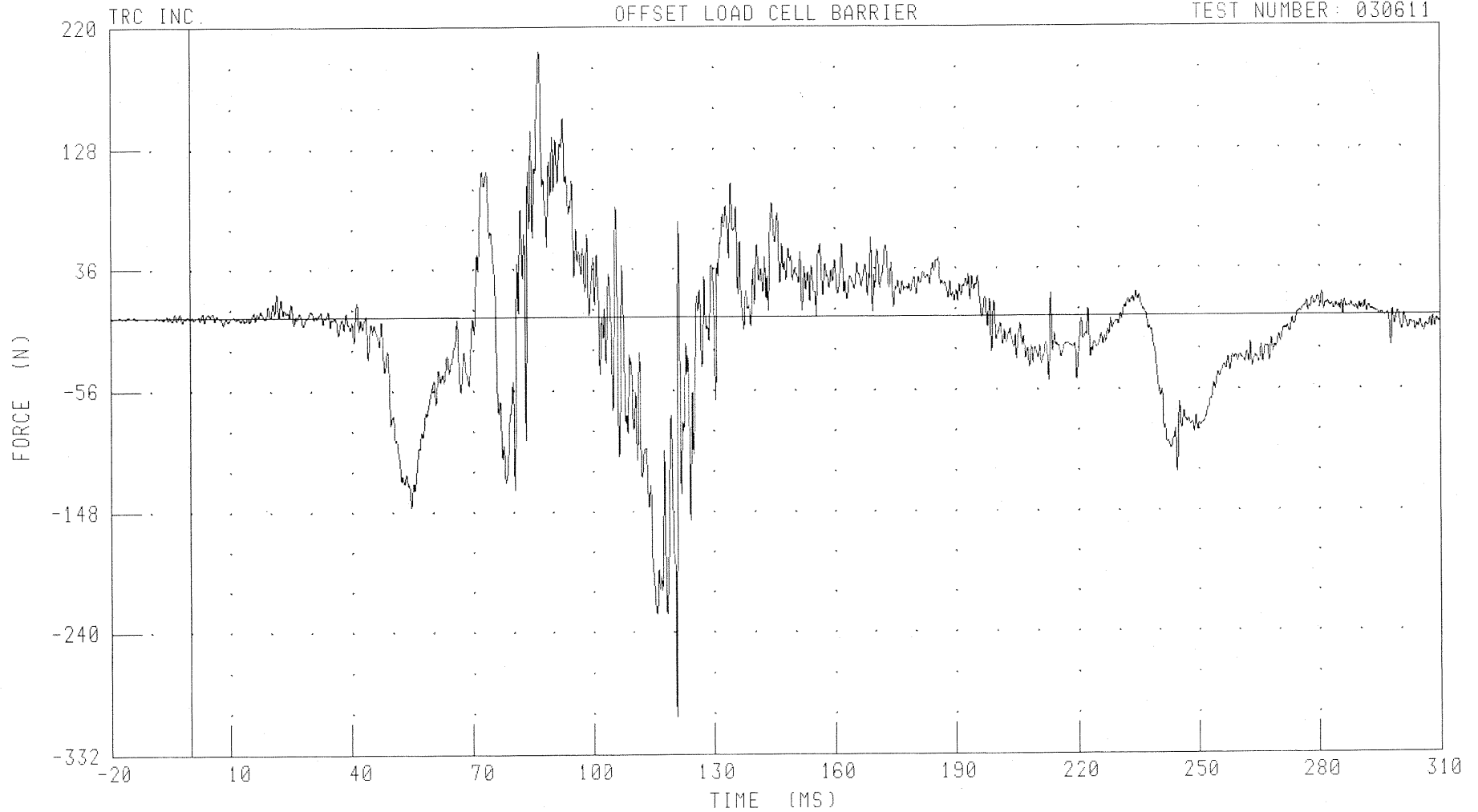
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER RIGHT LOWER TIBIA Y-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



B-73

030611

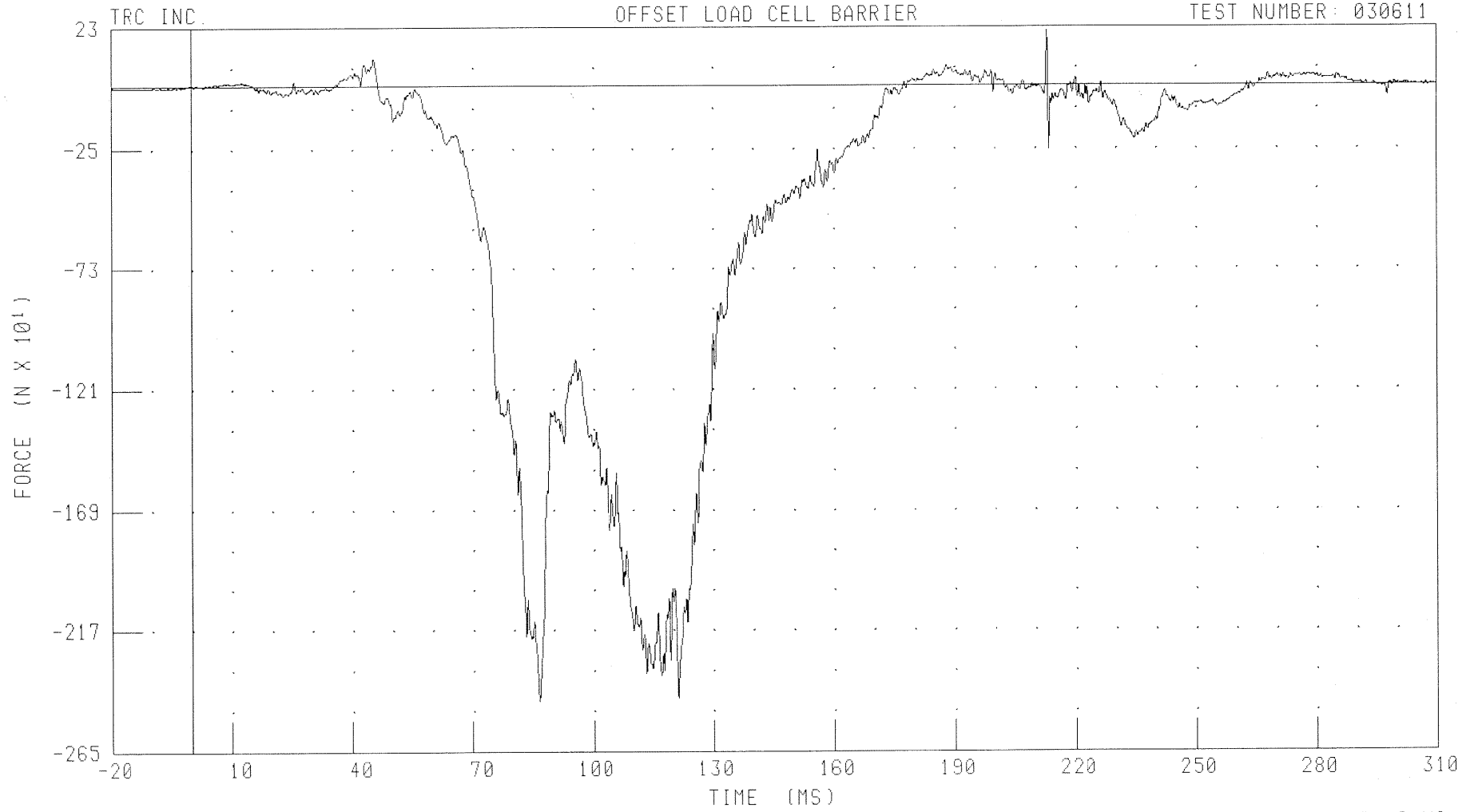
CHANNEL: ANRYF1 FILTER: CH. CLASS 600

PEAK DATA: 201.28 N @ 86.72 MS, -304.25 N @ 120.88 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER RIGHT LOWER TIBIA Z-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: ANRZF1 FILTER: CH. CLASS 600

PEAK DATA: 214.91 N @ 212.96 MS; -2449.48 N @ 86.40 MS

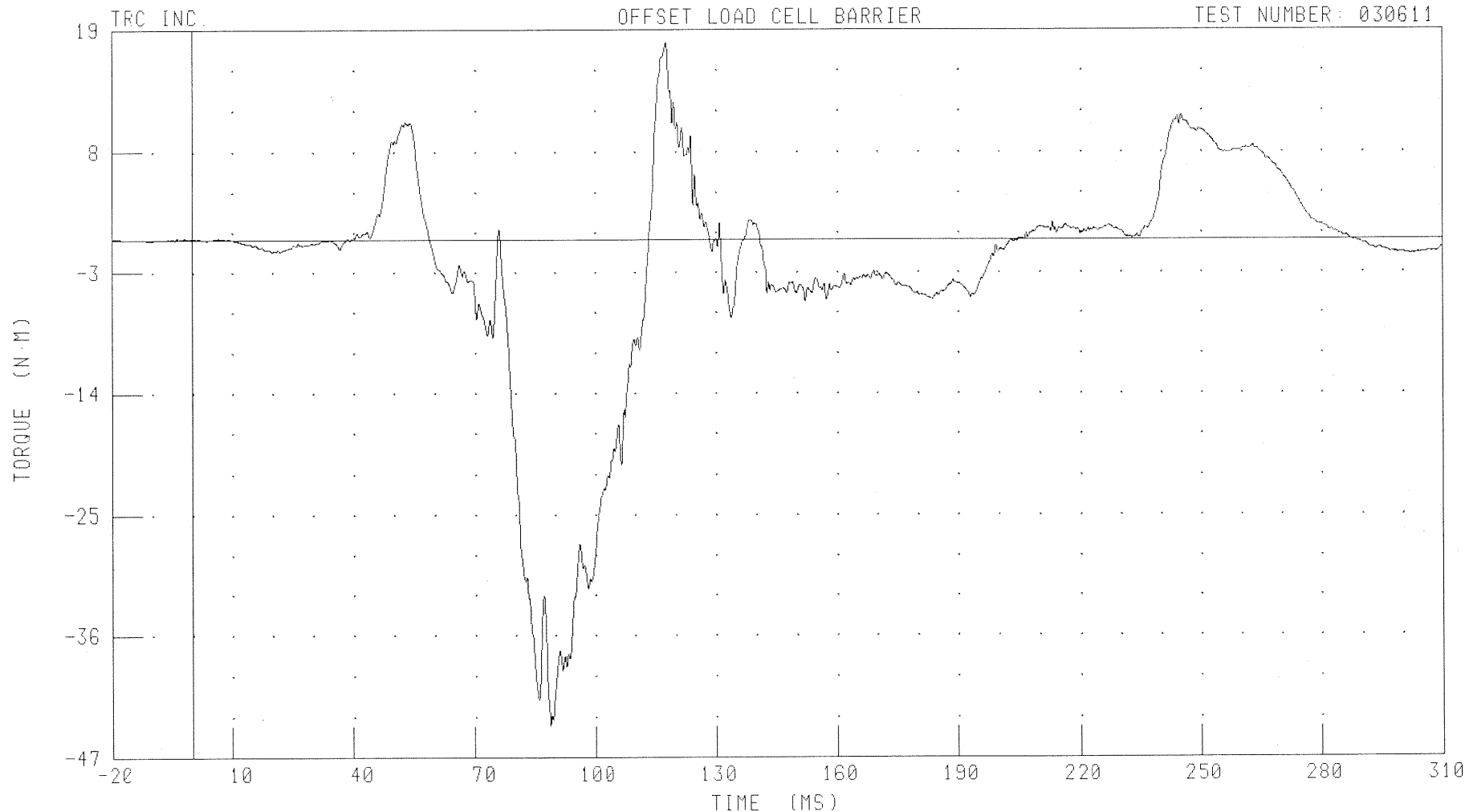
B-74

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER RIGHT LOWER TIBIA MOMENT ABOUT X AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: ANRXM1 FILTER: CH. CLASS 600

PEAK DATA: 17.78 N·M @ 117.84 MS; -44.10 N·M @ 88.80 MS

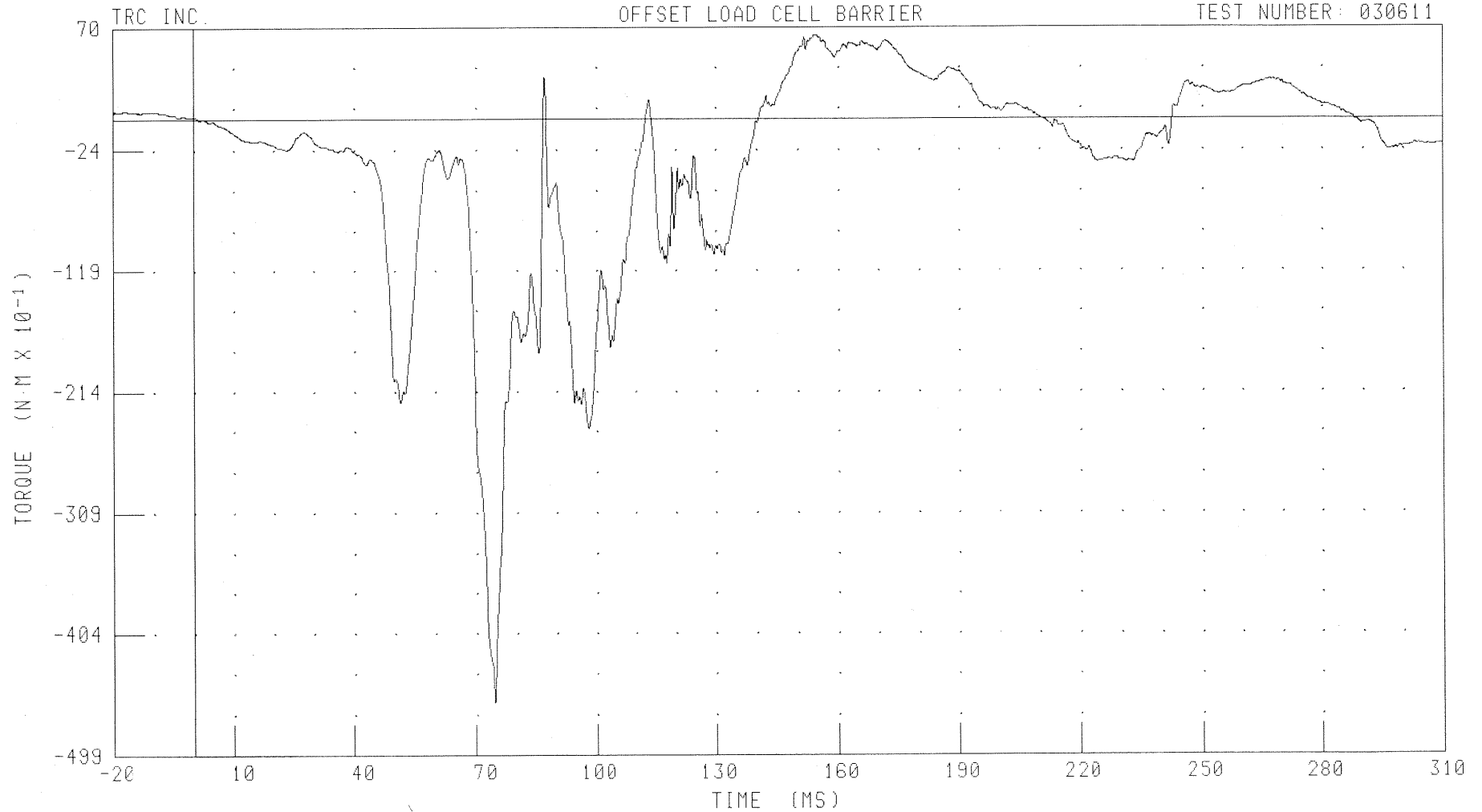
B-75

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER RIGHT LOWER TIBIA MOMENT ABOUT Y AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: ANRYM1

FILTER: CH. CLASS 600

PEAK DATA: 6.51 N·M @ 154.64 MS; -45.81 N·M @ 74.56 MS

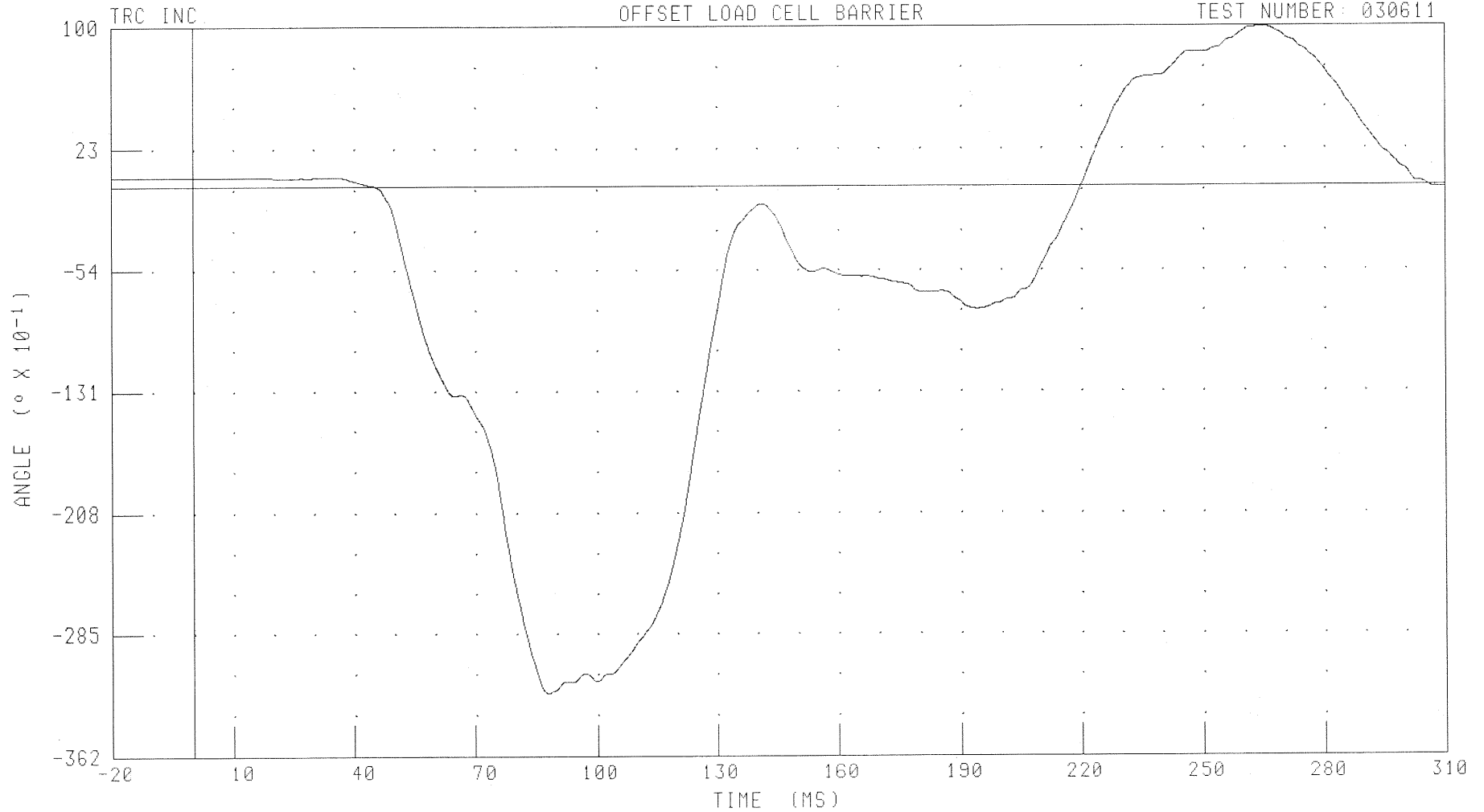
B-76

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER RIGHT FOOT TO ANKLE X-AXIS DISPLACEMENT

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FTRXD1 FILTER: CH. CLASS 180

PEAK DATA: 9.93 ° @ 265.36 MS; -32.32 ° @ 87.84 MS

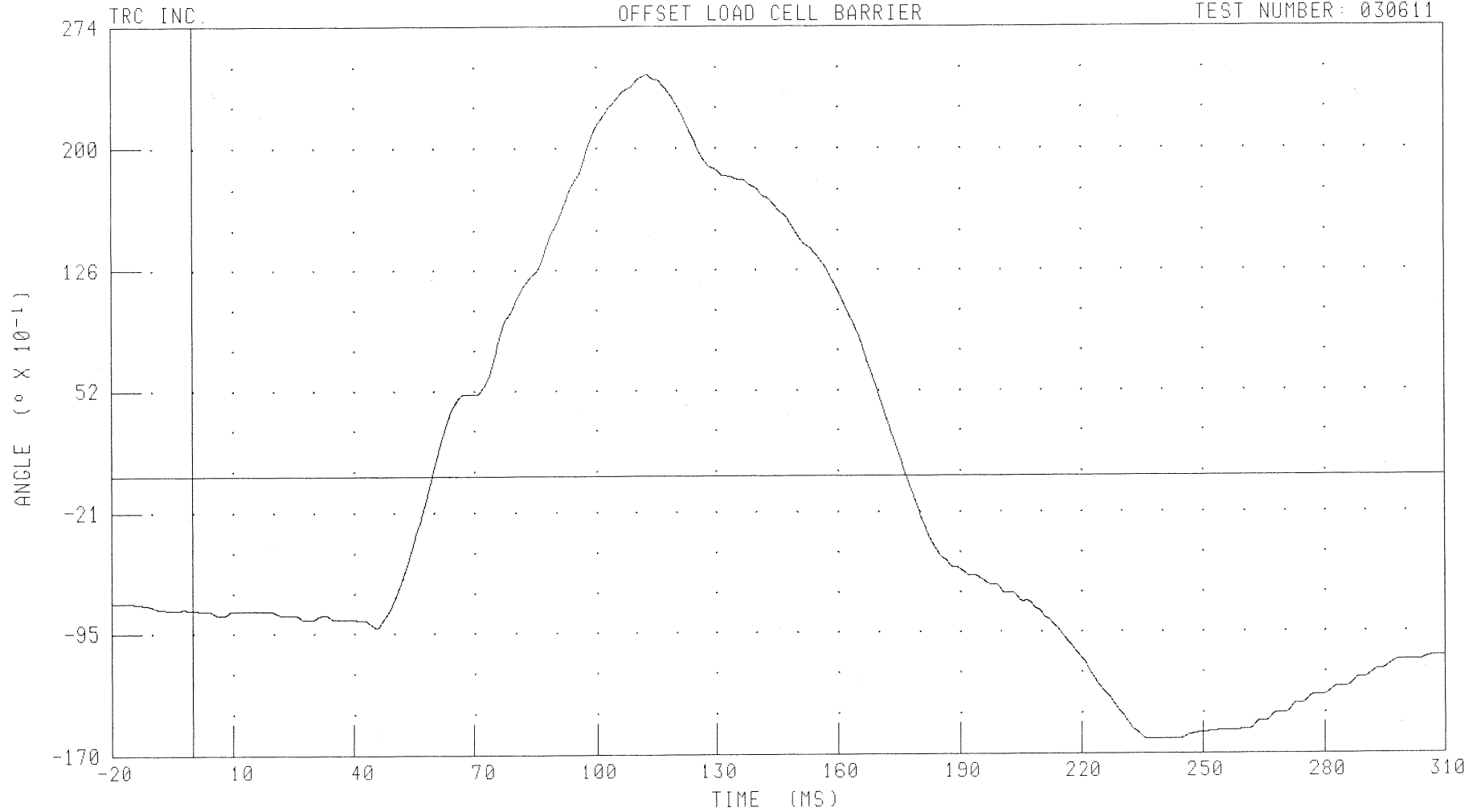
B-77

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER RIGHT FOOT TO ANKLE Y-AXIS DISPLACEMENT

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FTRYD1 FILTER: CH. CLASS 180

PEAK DATA: 24.45 $^{\circ}$ @ 112.96 MS; -16.15 $^{\circ}$ @ 236.88 MS

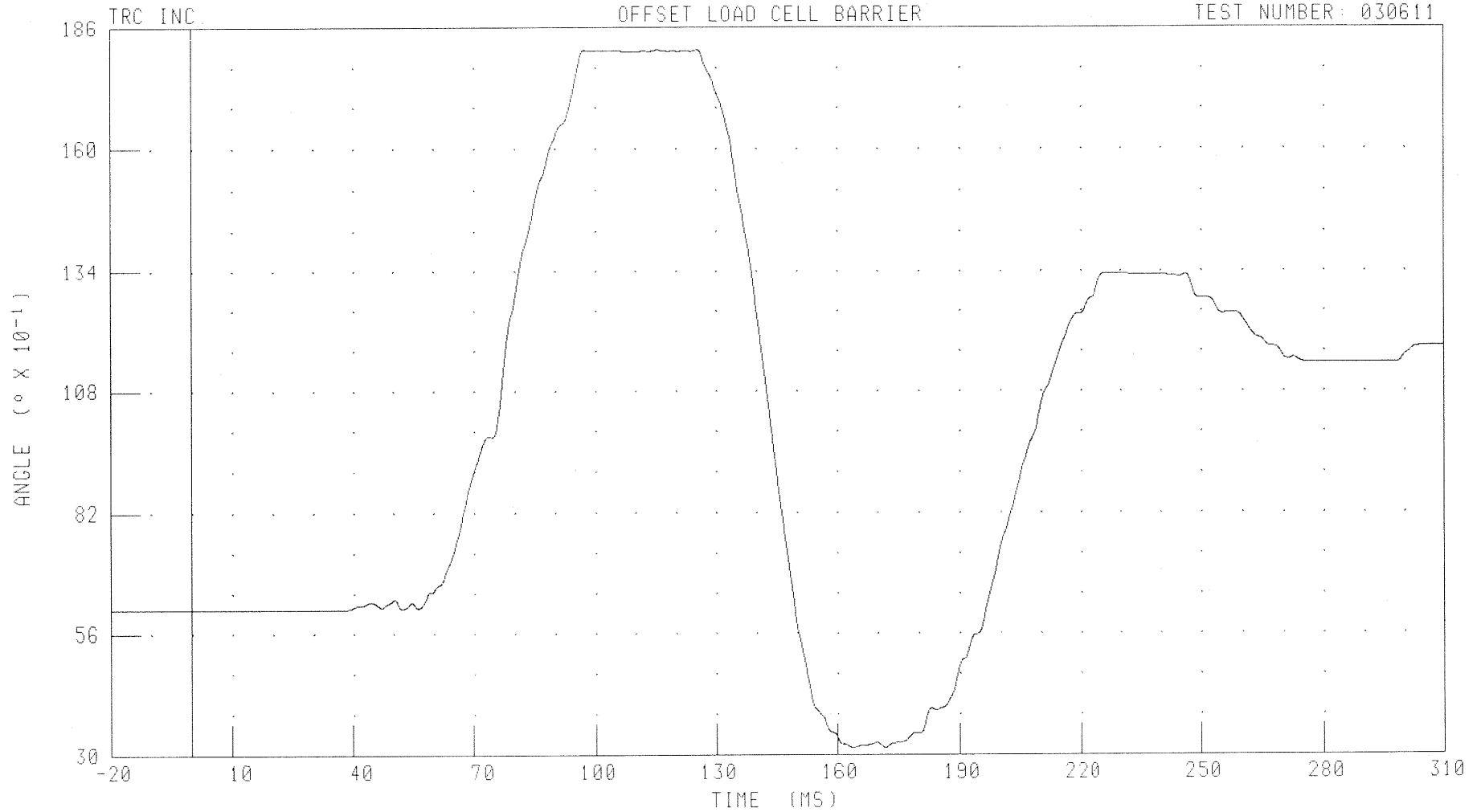
B-78

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER RIGHT FOOT TO ANKLE Z-AXIS DISPLACEMENT

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FTRZD1

FILTER: CH. CLASS 180

PEAK DATA: 18.11 ° @ 115.60 MS, 3.15 ° @ 163.92 MS

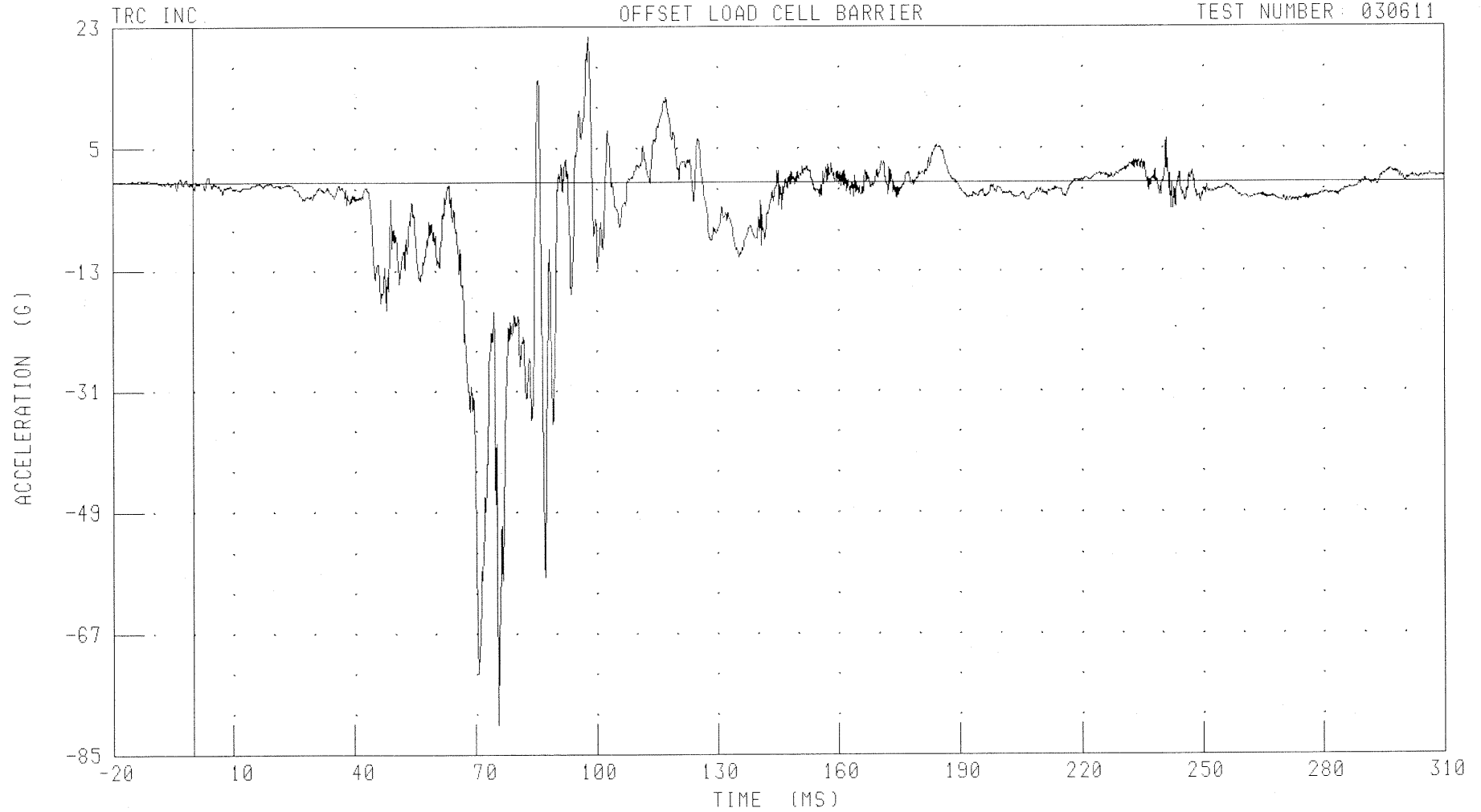
B-79

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER RIGHT FOOT X-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FTRXG1 FILTER: CH. CLASS 1000

PEAK DATA: 21.46 G @ 98.08 MS; -80.57 G @ 75.44 MS

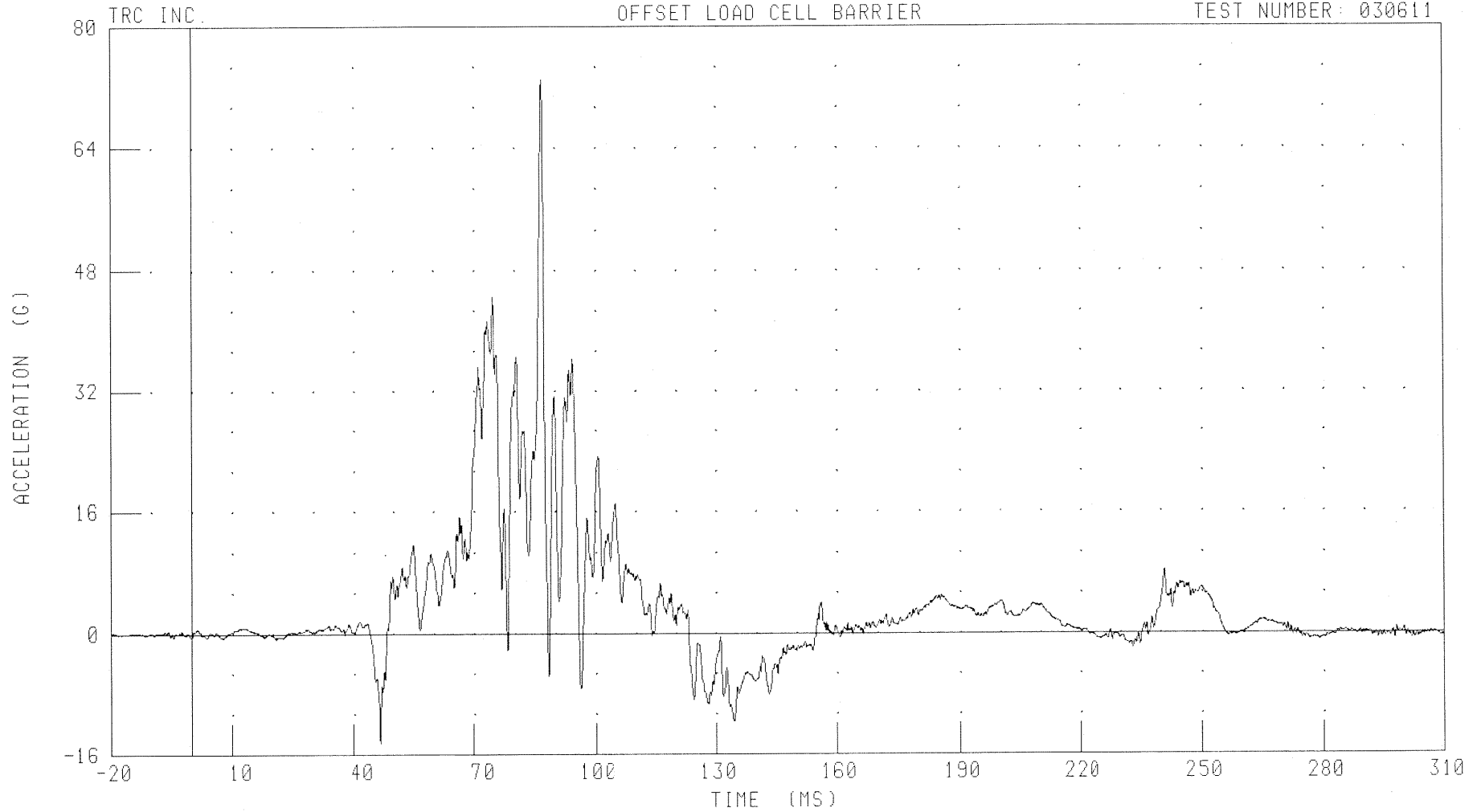
B-80

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER RIGHT FOOT Y-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FTRYG1

FILTER: CH. CLASS 1000

PEAK DATA 73.02 G @ 86.80 MS; -14.58 G @ 46.72 MS

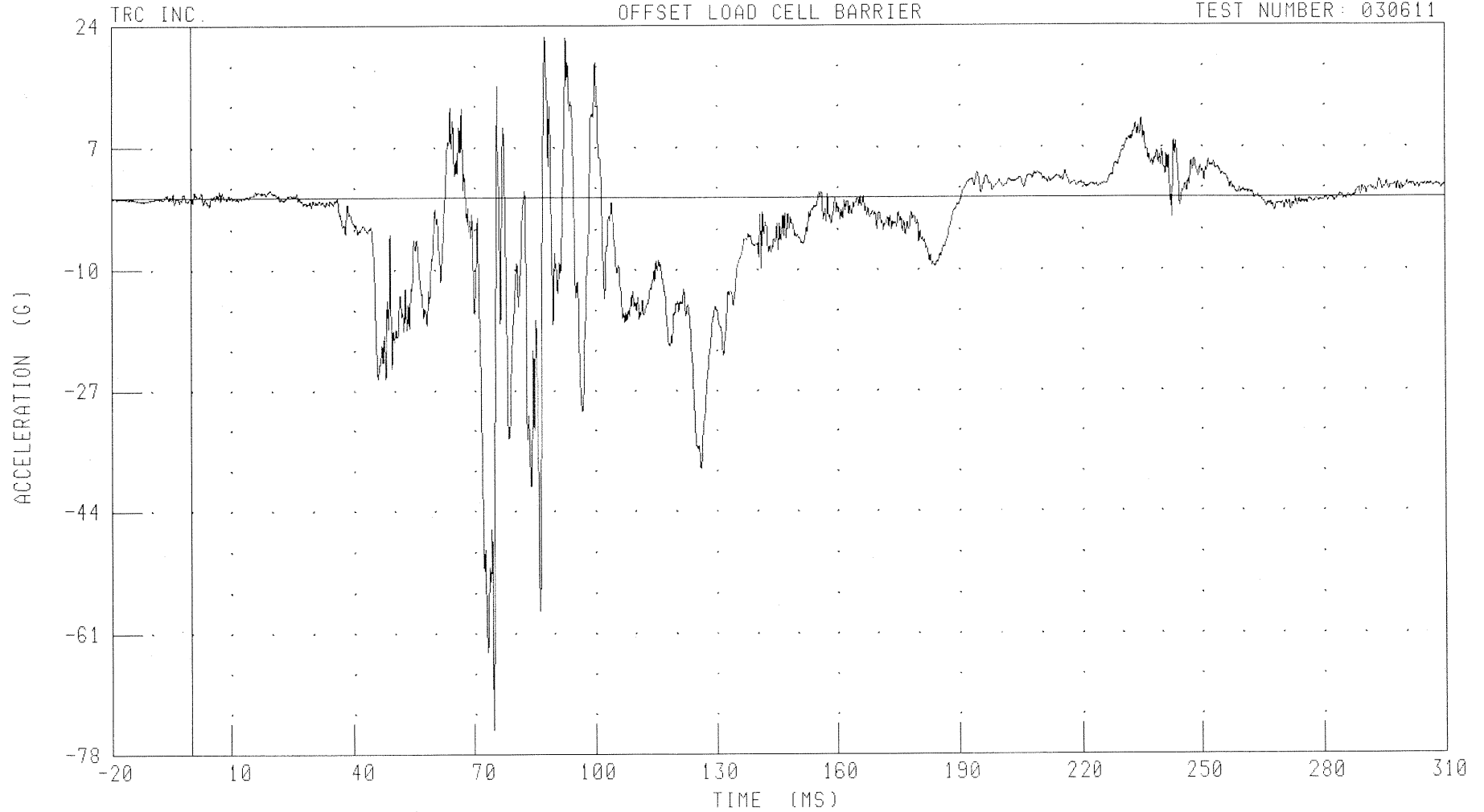
B-81

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER RIGHT FOOT Z-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FTRZG1 FILTER: CH. CLASS 1000

PEAK DATA: 22.46 G @ 87.76 MS; -74.63 G @ 74.72 MS

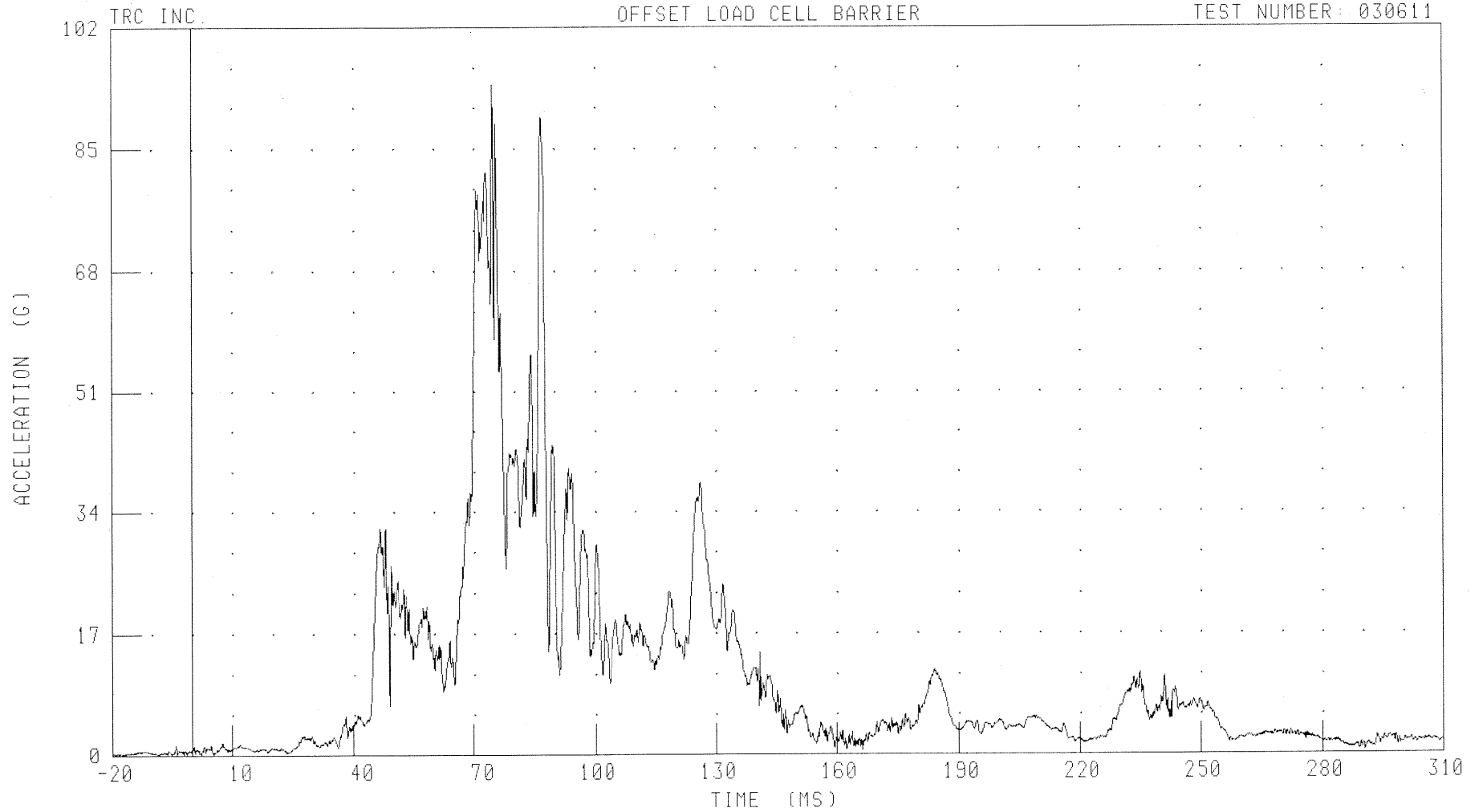
B-82

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVER RIGHT FOOT RESULTANT ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FTTRG1 FILTER: CH. CLASS 1000

PEAK DATA: 94.04 G @ 74.80 MS; 0.11 G @ 2.32 MS

B-83

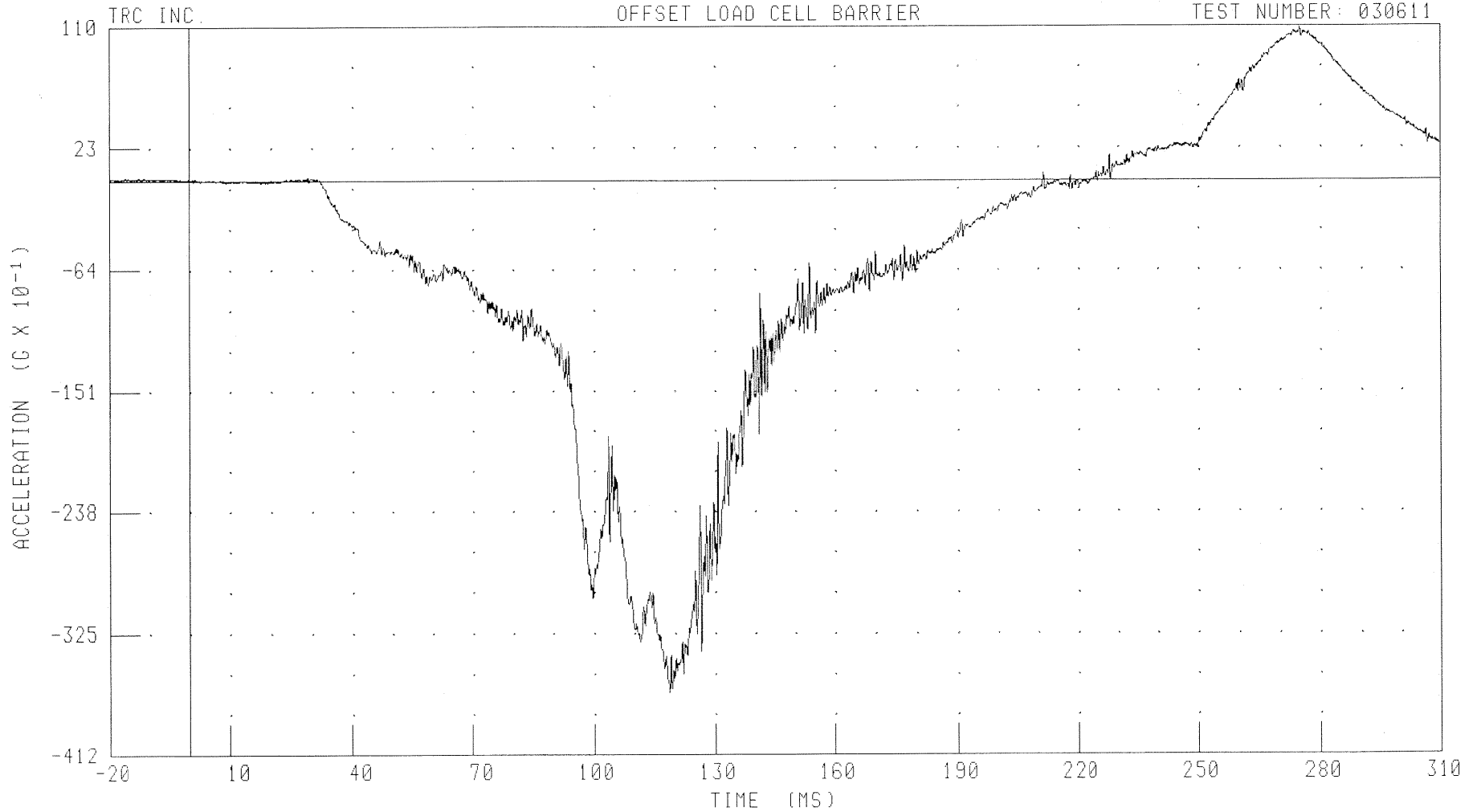
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER HEAD X-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: HEDXC2 FILTER: CH. CLASS 1000

PEAK DATA: 10.83 G @ 274.88 MS; -36.74 G @ 118.72 MS

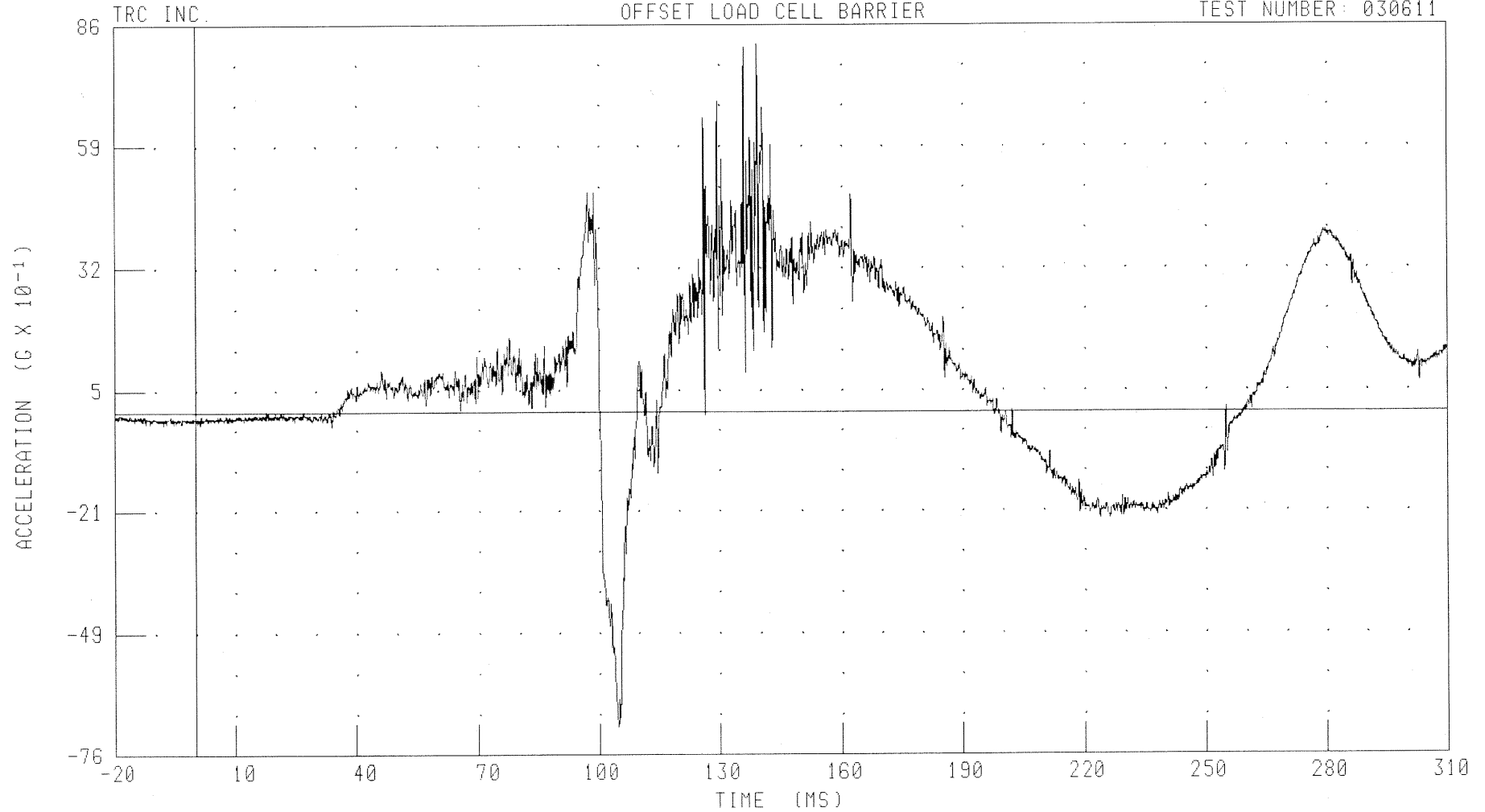
B-84

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER HEAD Y-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: HEDYG2 FILTER: CH CLASS 1000

PEAK DATA: 8.18 G @ 139.28 MS; -6.99 G @ 105.04 MS

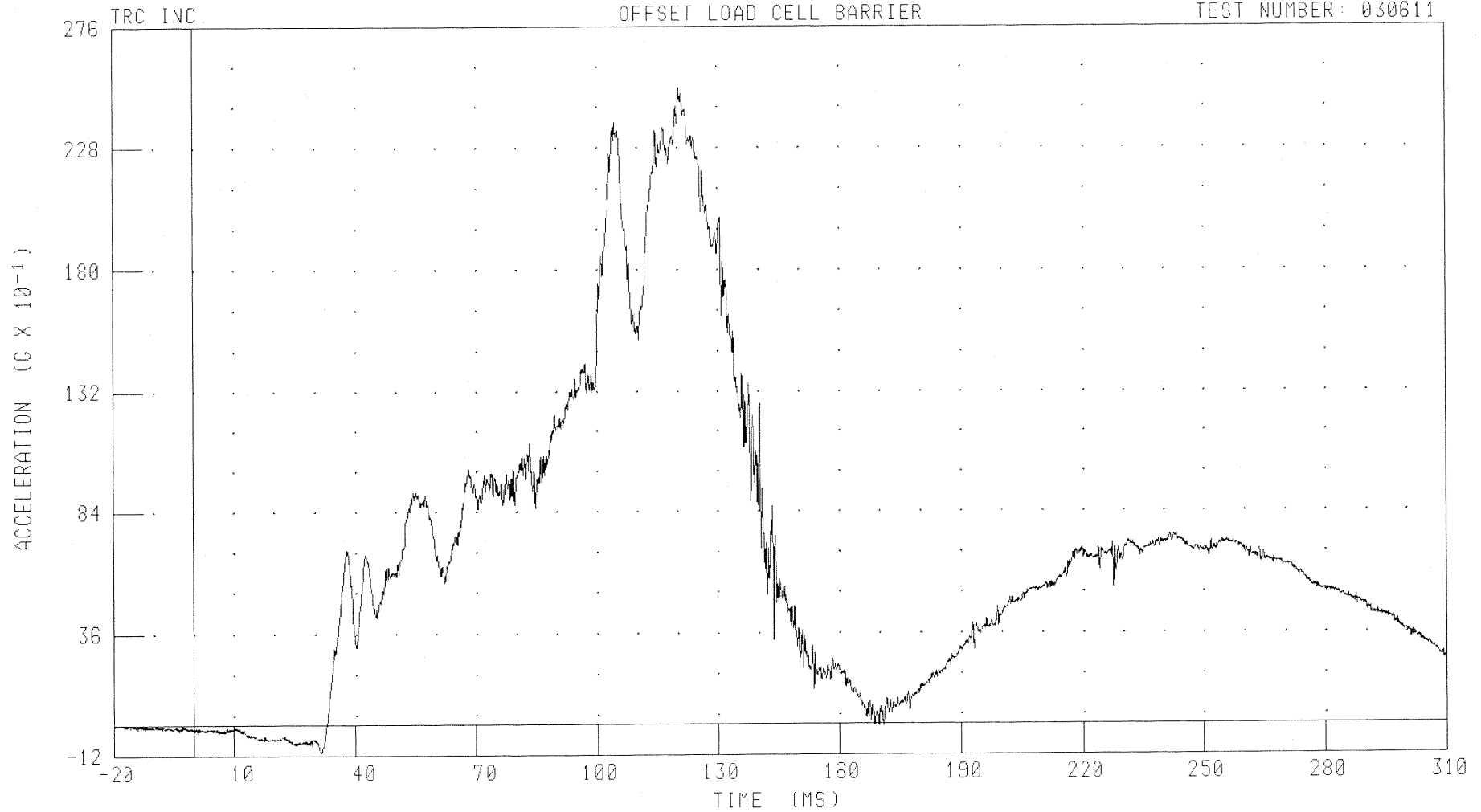
B-85

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER HEAD Z-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: HEDZG2

FILTER: CH. CLASS 1000

PEAK DATA: 25.18 G @ 120.56 MS; -1.10 G @ 31.52 MS

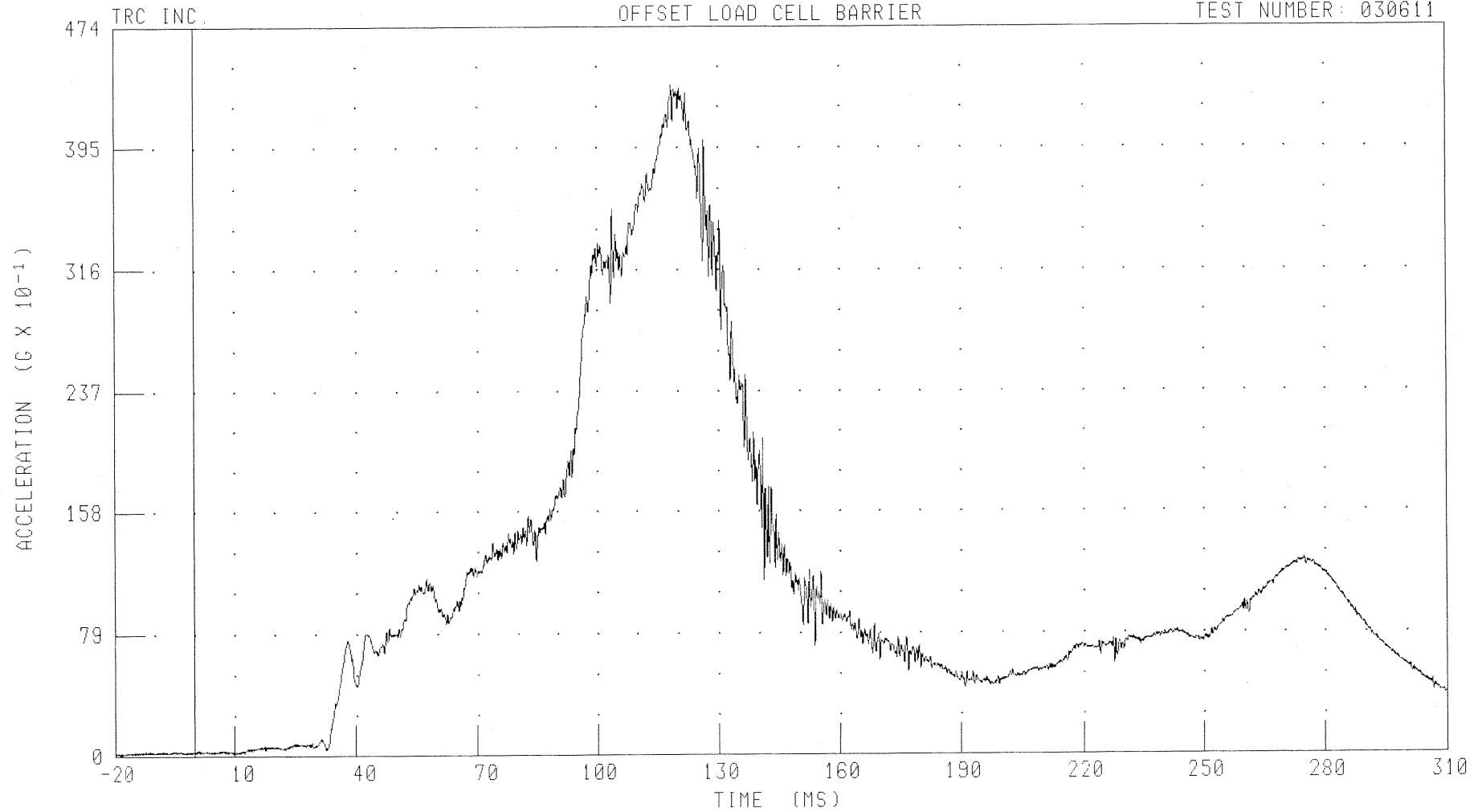
B-86

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER HEAD RESULTANT ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: HEDRG2

FILTER: CH. CLASS 1000

PEAK DATA: 43.50 G @ 118.72 MS; 0.08 G @ -18.24 MS

B-87

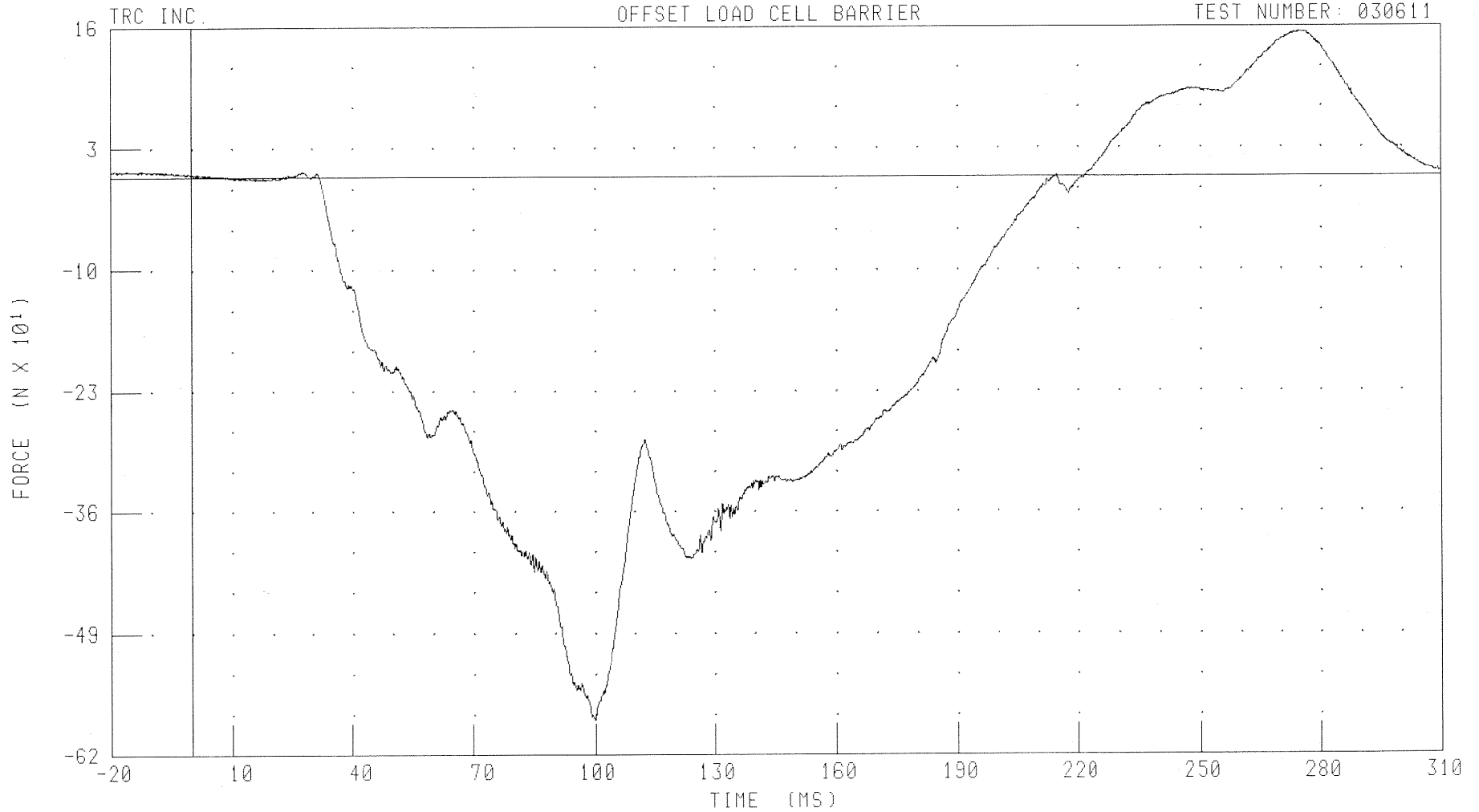
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER NECK X-AXIS SHEAR FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: NEKXF2

FILTER: CH. CLASS 1000

PEAK DATA: 154.47 N @ 274.56 MS; -582.88 N @ 99.92 MS

B-88

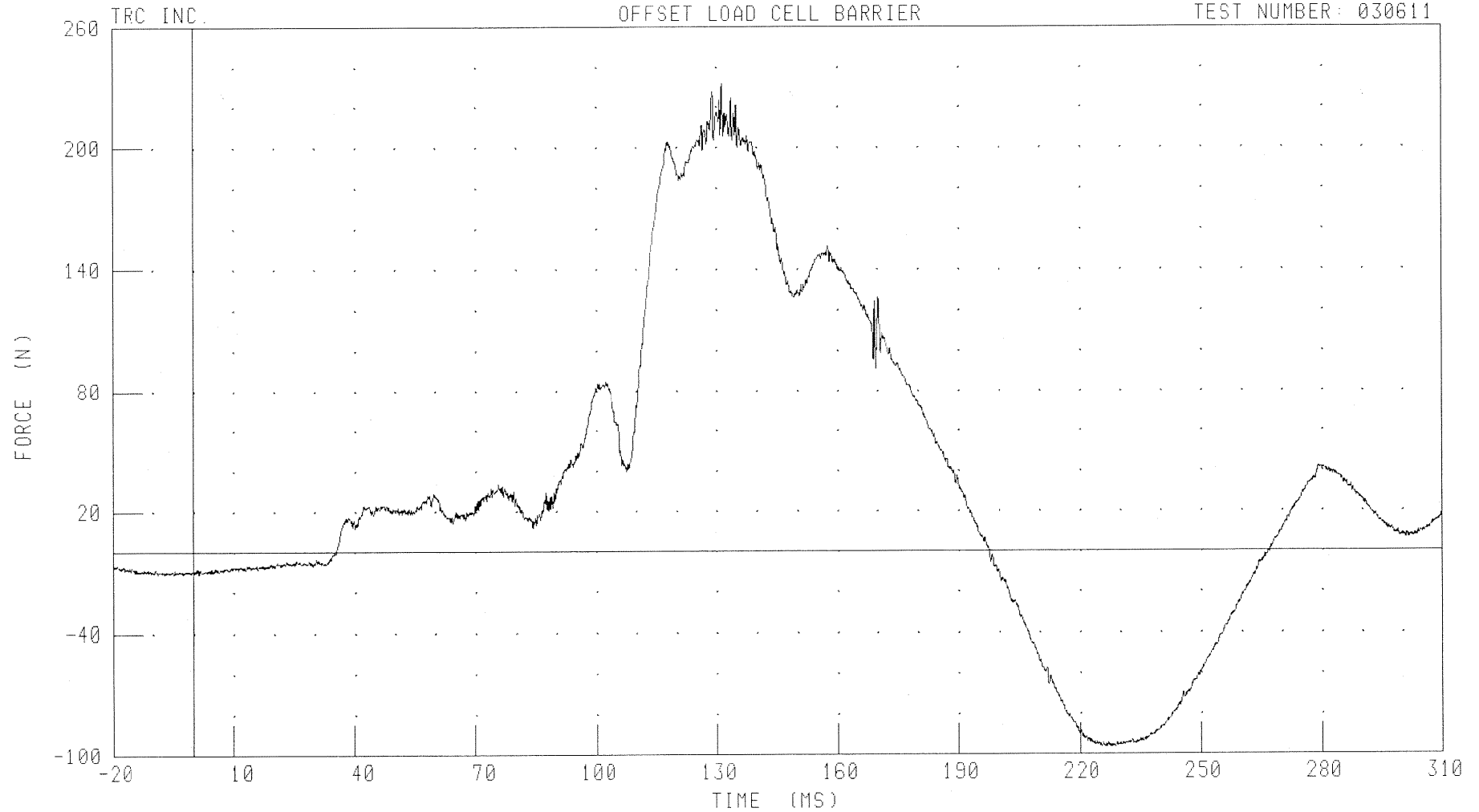
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER NECK Y-AXIS SHEAR FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



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030611

CHANNEL: NEKYF2

FILTER: CH. CLASS 1000

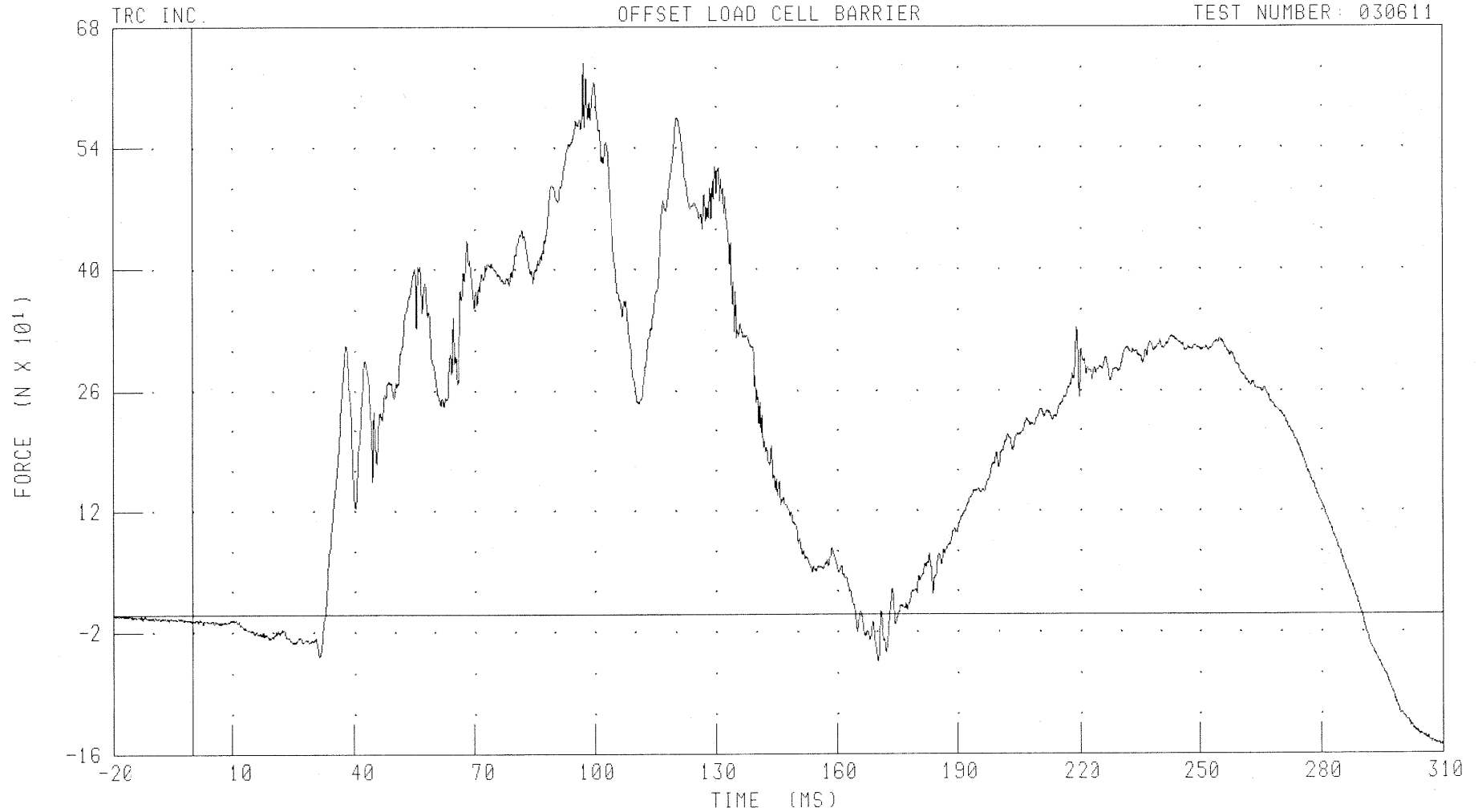
PEAK DATA: 231.86 N @ 131.52 MS; -96.72 N @ 226.80 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER NECK Z-AXIS AXIAL FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: NEKZF2 FILTER: CH. CLASS 1000

PEAK DATA: 638.70 N @ 97.28 MS; -150.33 N @ 309.20 MS

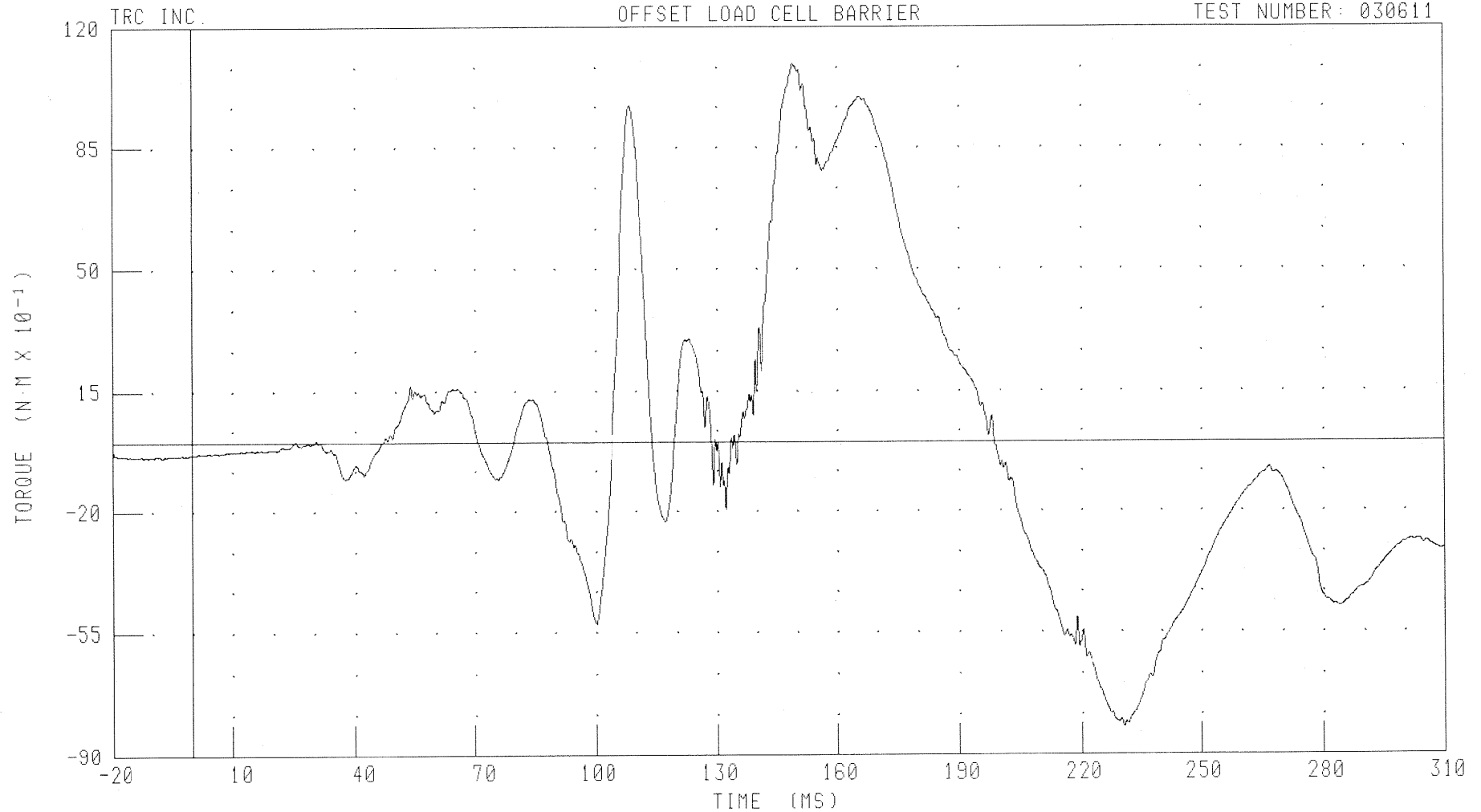
B-90

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER NECK MOMENT ABOUT X AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: NEKXM2

FILTER: CH. CLASS 600

PEAK DATA: 10.94 N·m @ 149.12 MS, -8.20 N·m @ 230.72 MS

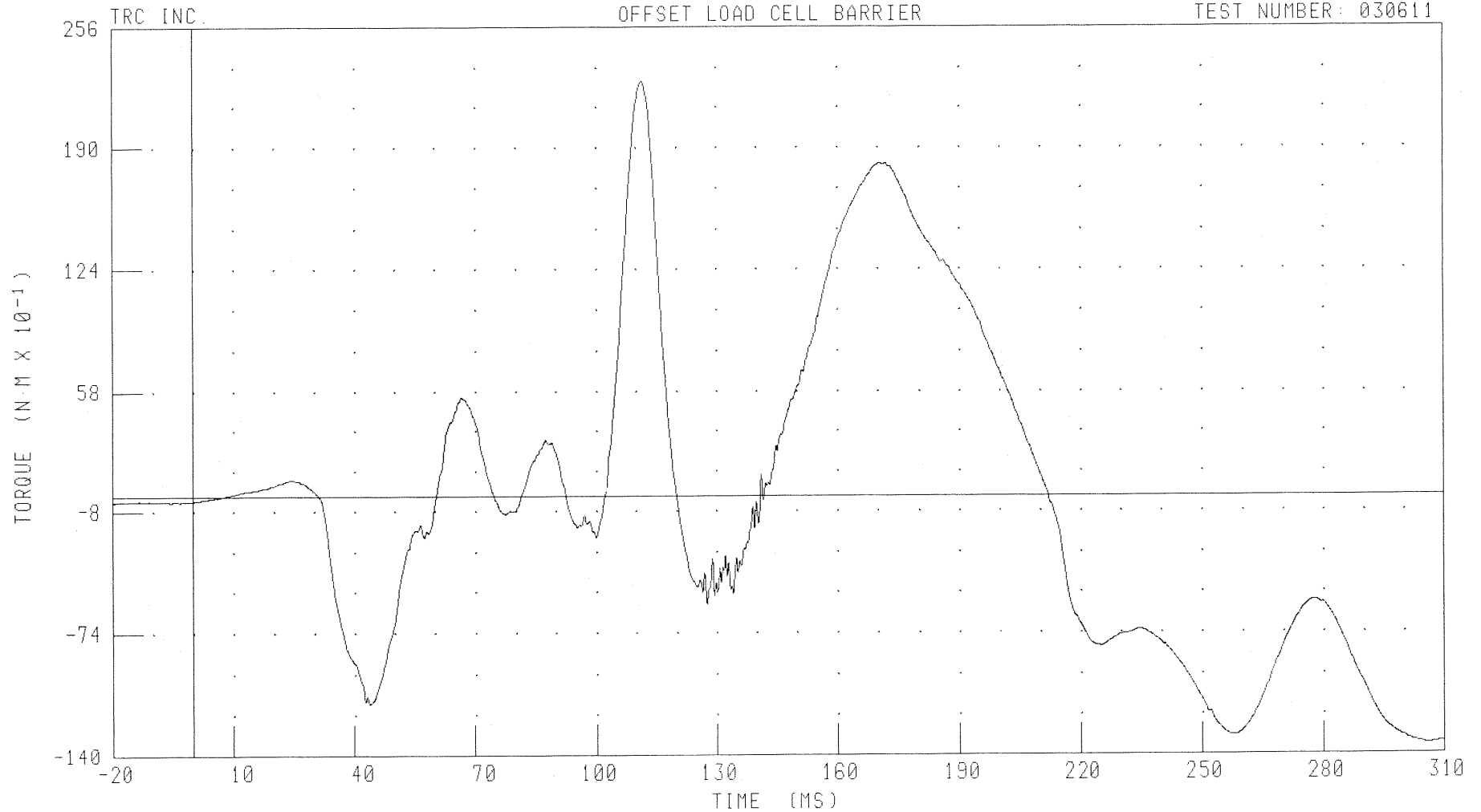
B-91

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER NECK MOMENT ABOUT Y AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: NEKYM2 FILTER: CH. CLASS 600

PEAK DATA: 22.66 N·M @ 111.52 MS; -13.44 N·M @ 305.44 MS

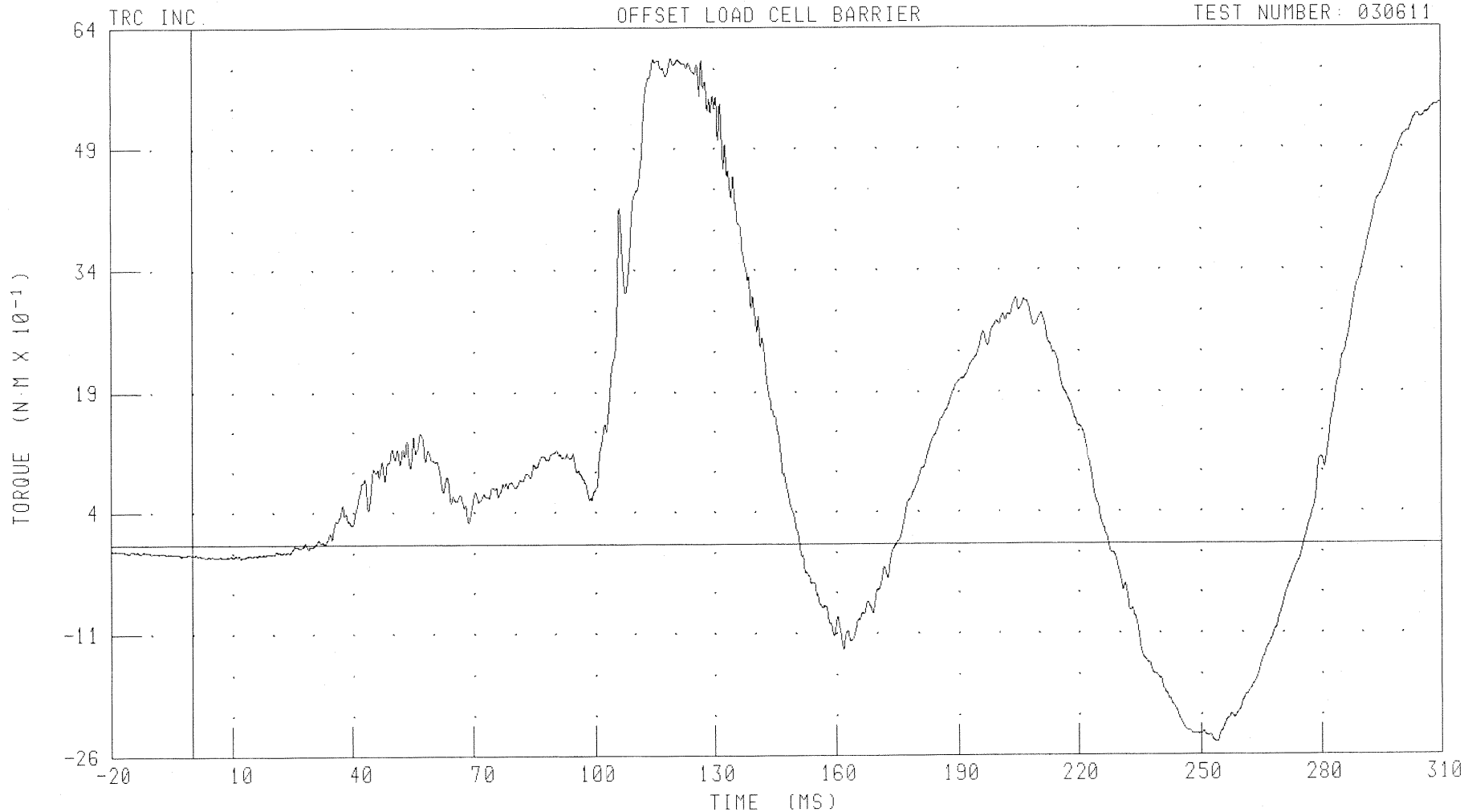
B-92

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER NECK MOMENT ABOUT Z AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: NEKZM2 FILTER: CH. CLASS 600

PEAK DATA: 6.03 N·M @ 119.36 MS; -2.44 N·M @ 253.52 MS

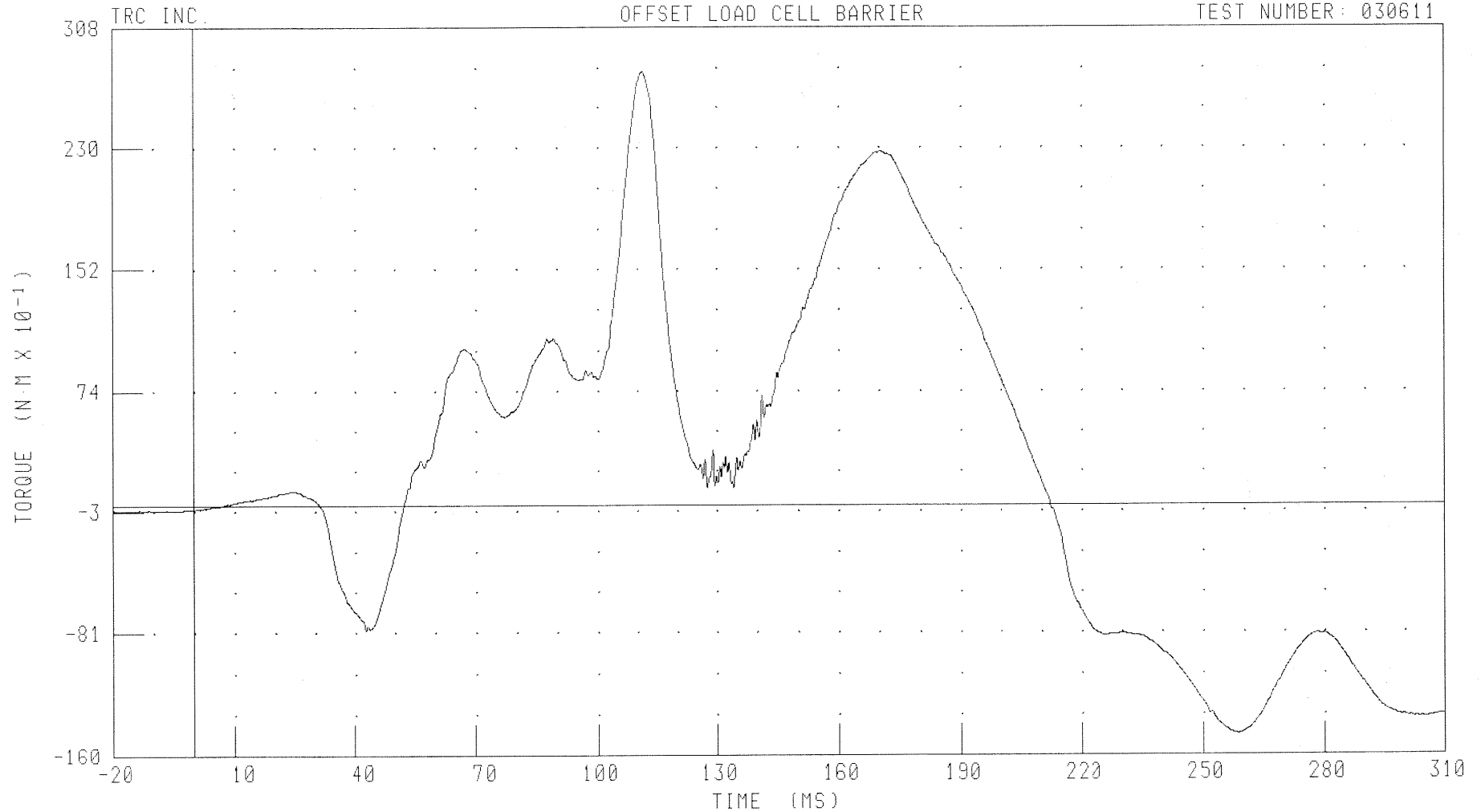
B-93

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER NECK OCCIPITAL CONDYLE MOMENT ABOUT Y AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: NEKOM2

FILTER: CH. CLASS 600

PEAK DATA: 27.96 N·M @ 111.44 MS; -14.67 N·M @ 258.64 MS

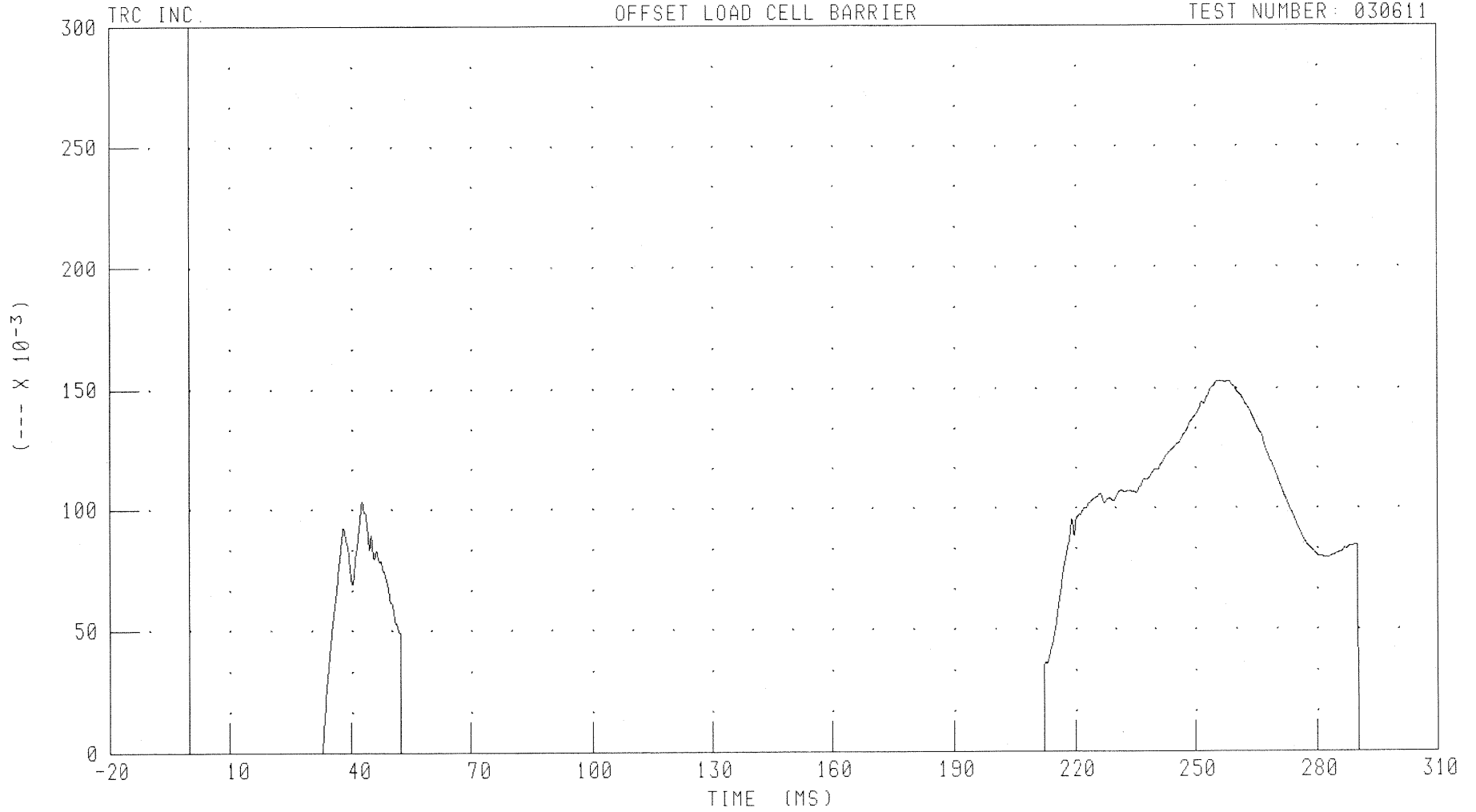
B-94

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER NIJ TENSION/EXTENSION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: NTE2

FILTER: CH. CLASS 600

PEAK DATA: 0.15 --- @ 256.64 MS; 0.00 --- @ -20.00 MS

B-95

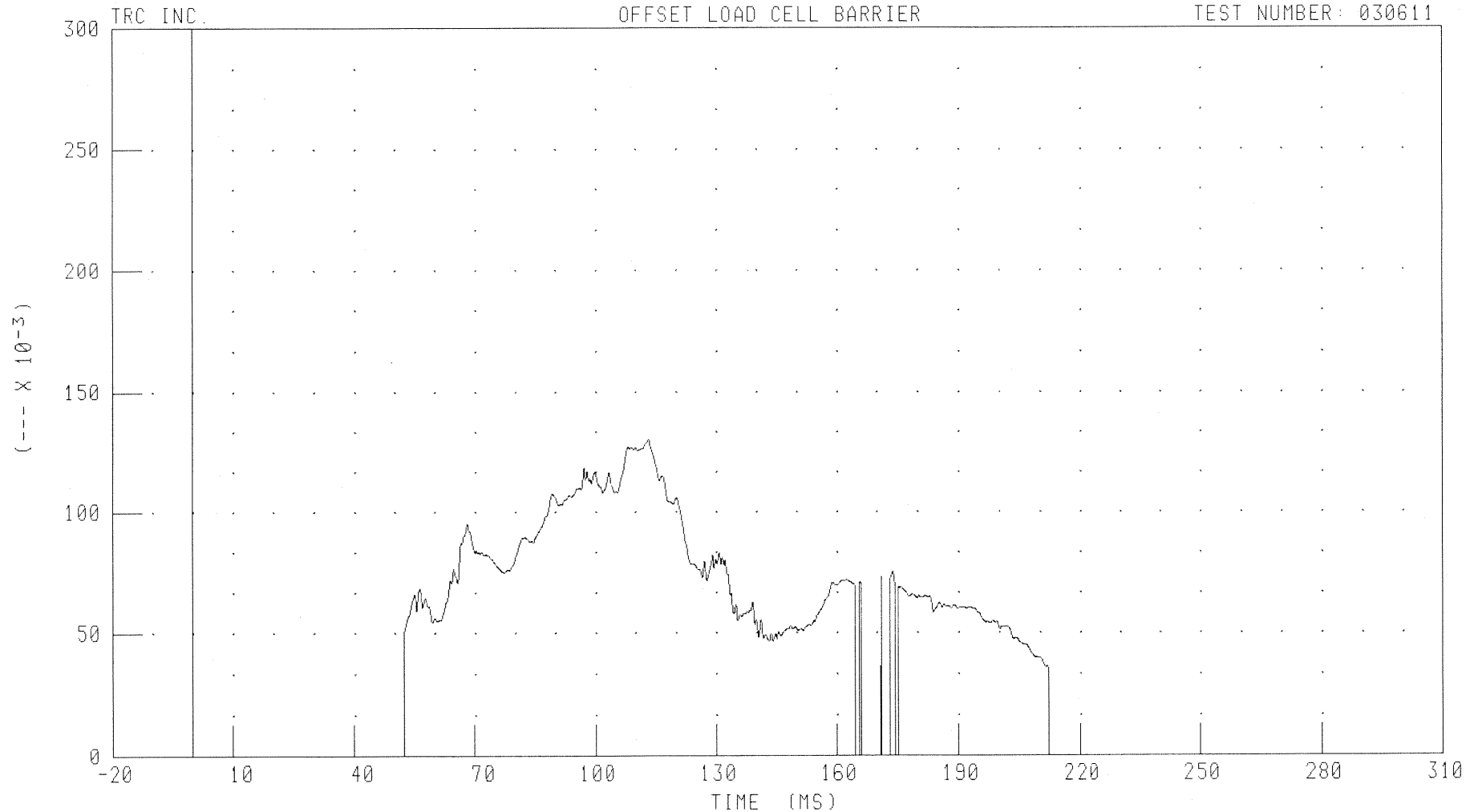
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER NIJ TENSION/FLEXION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: NTF2

FILTER: CH. CLASS 600

PEAK DATA: 0.13 --- @ 113.28 MS, 0.00 --- @ -20.00 MS

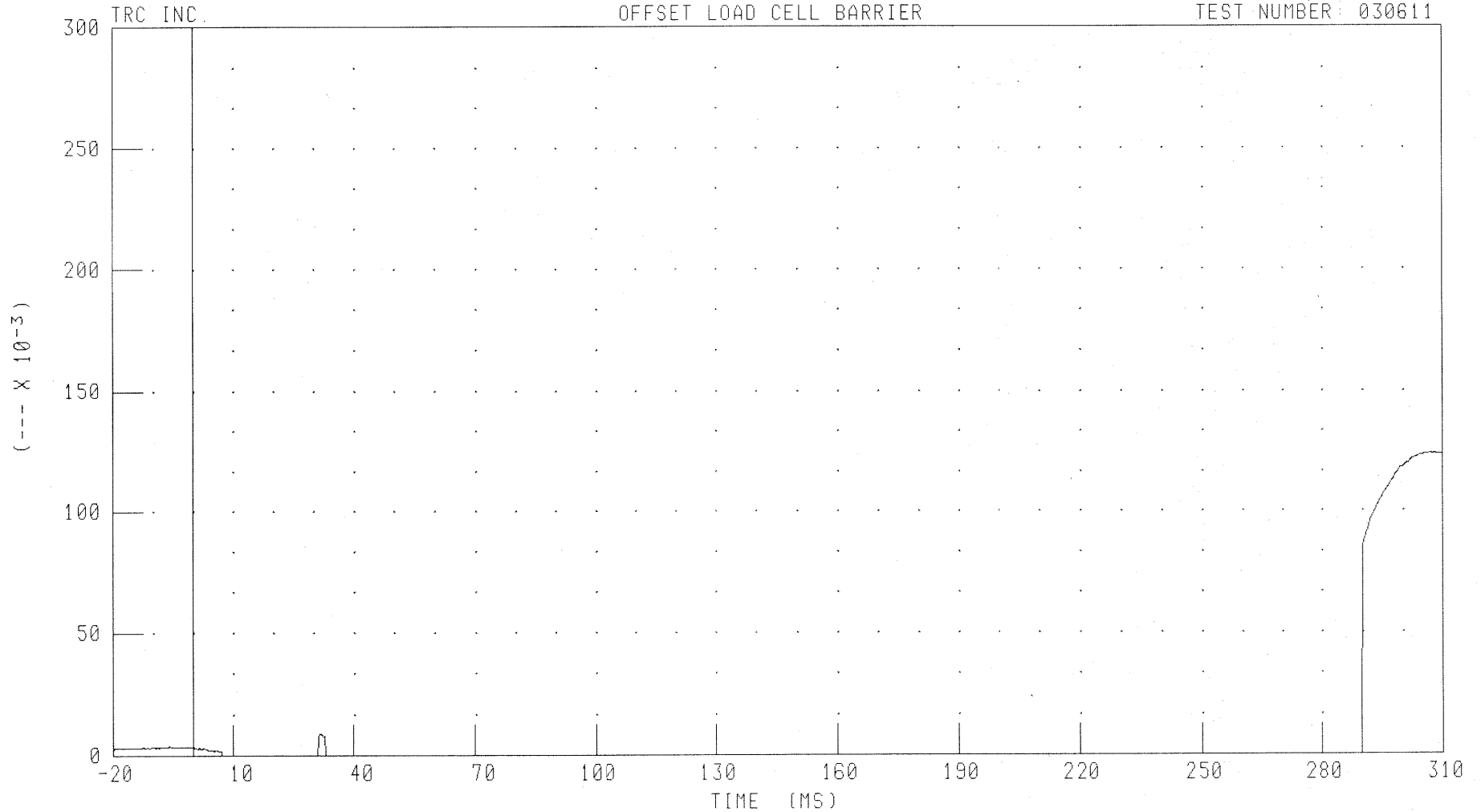
B-96

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER NIJ COMPRESSION/EXTENSION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: NCE2 FILTER: CH. CLASS 600

PEAK DATA: 0.12 --- @ 306.72 MS; 0.00 --- @ 7.20 MS

B-97

030611

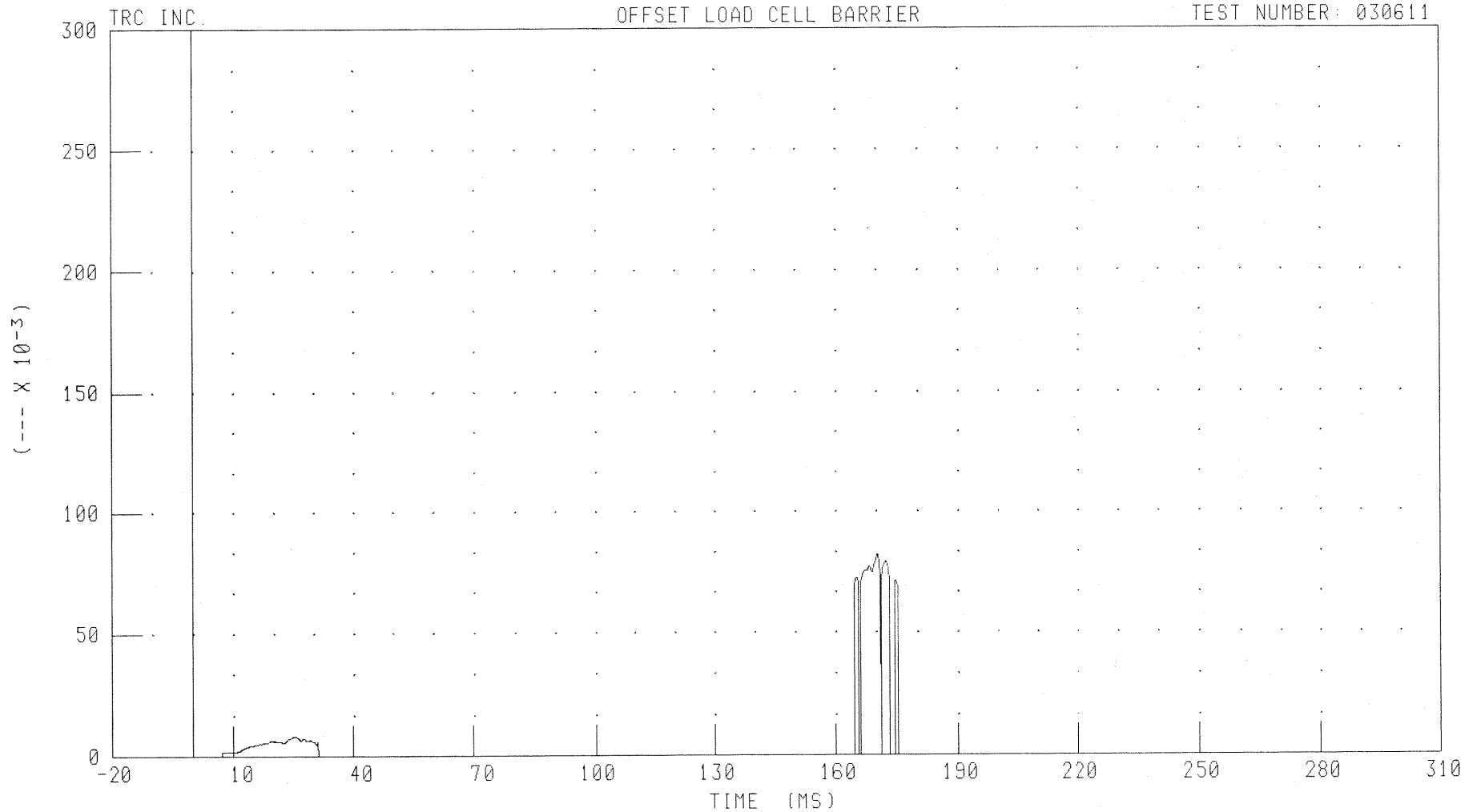
2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER NIJ COMPRESSION/FLEXION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611

B-98



030611

CHANNEL: NCF2

FILTER: CH. CLASS 600

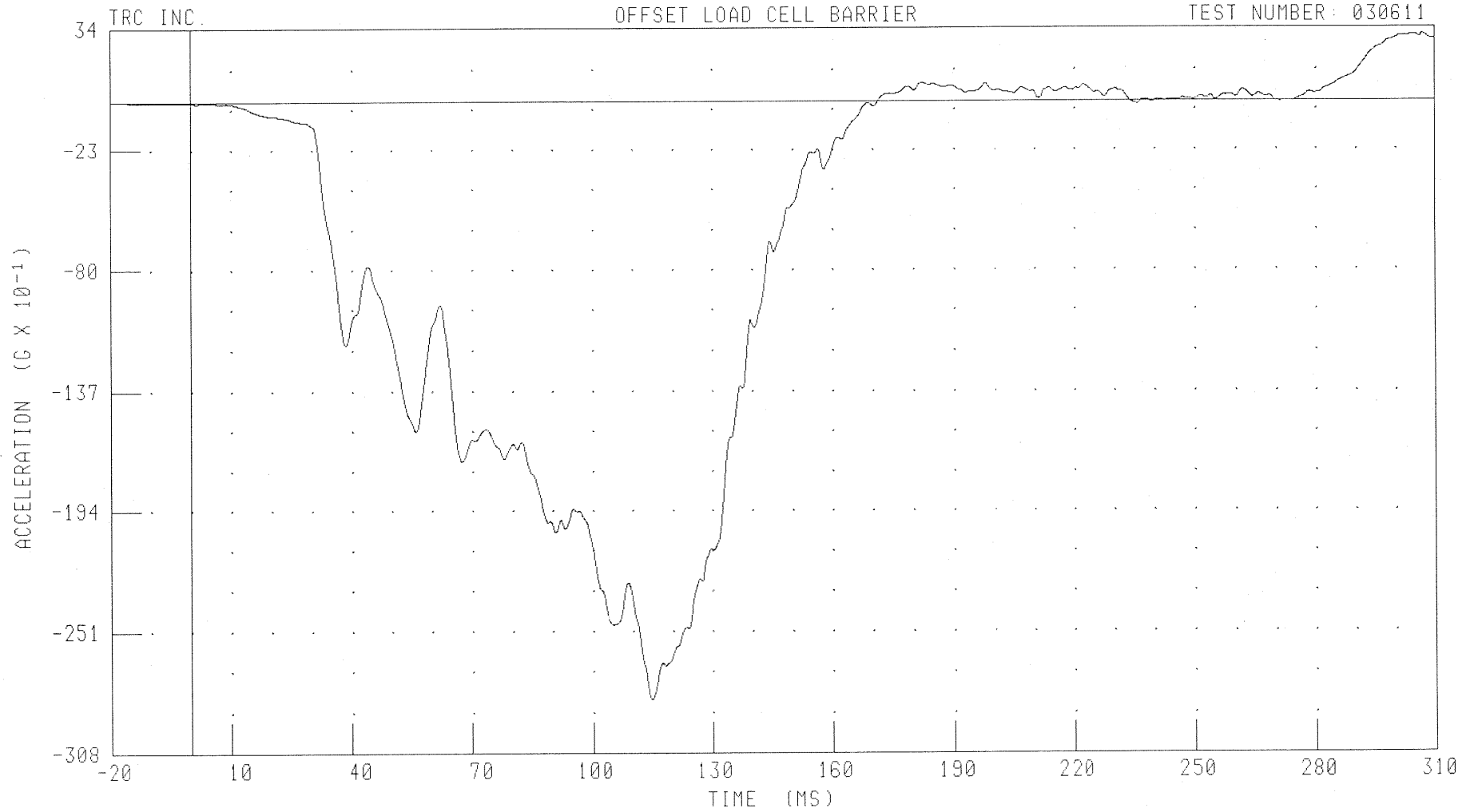
PEAK DATA: 0.08 --- @ 170.40 MS; 0.00 --- @ -20.00 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER CHEST X-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: CSTXG2

FILTER: CH. CLASS 180

PEAK DATA: 3.11 G @ 306.80 MS; -28.31 G @ 114.80 MS

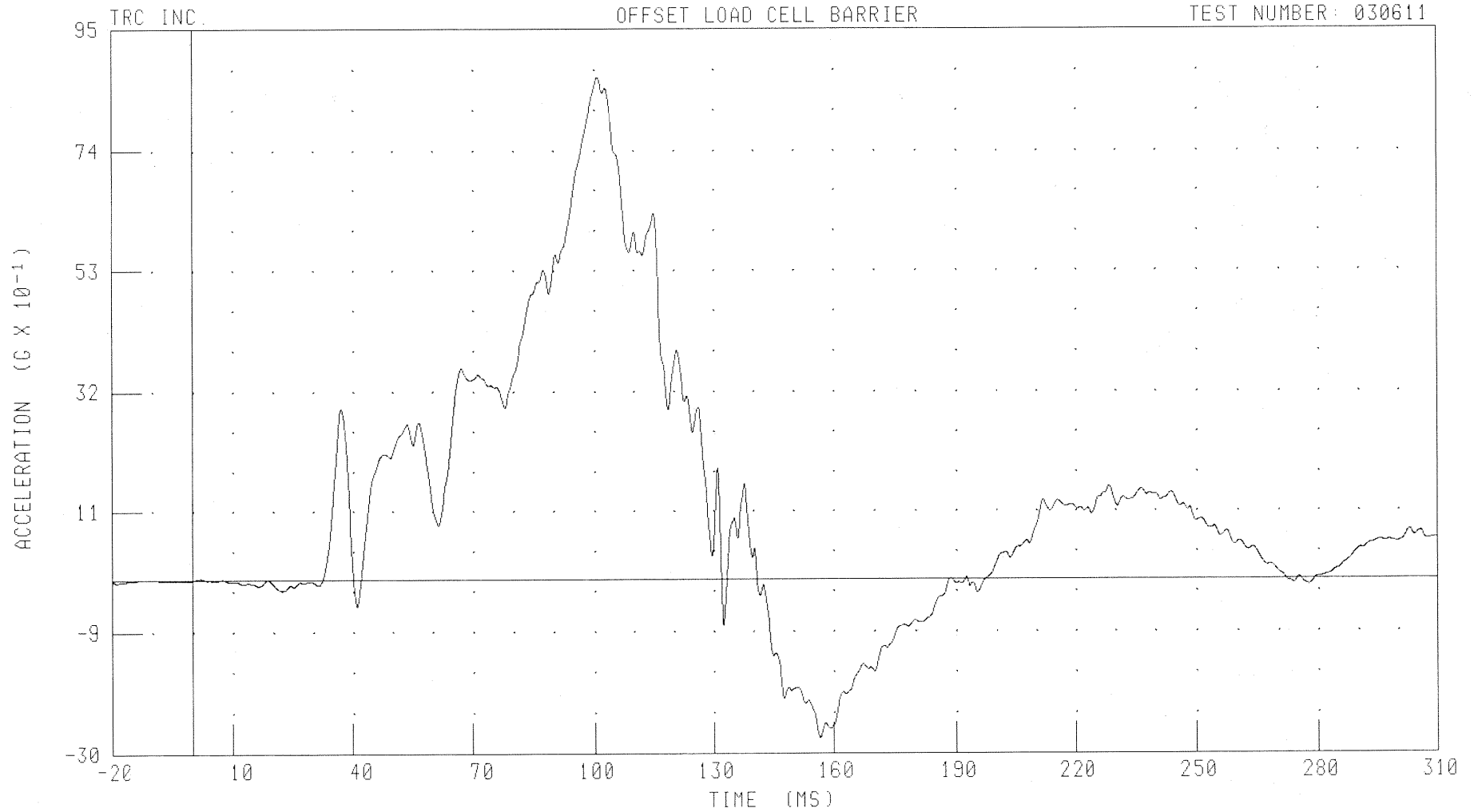
B-99

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER CHEST Y-AXIS ACCELERATION

TEST NUMBER: 030611



B-100

030611

CHANNEL: CSTYG2

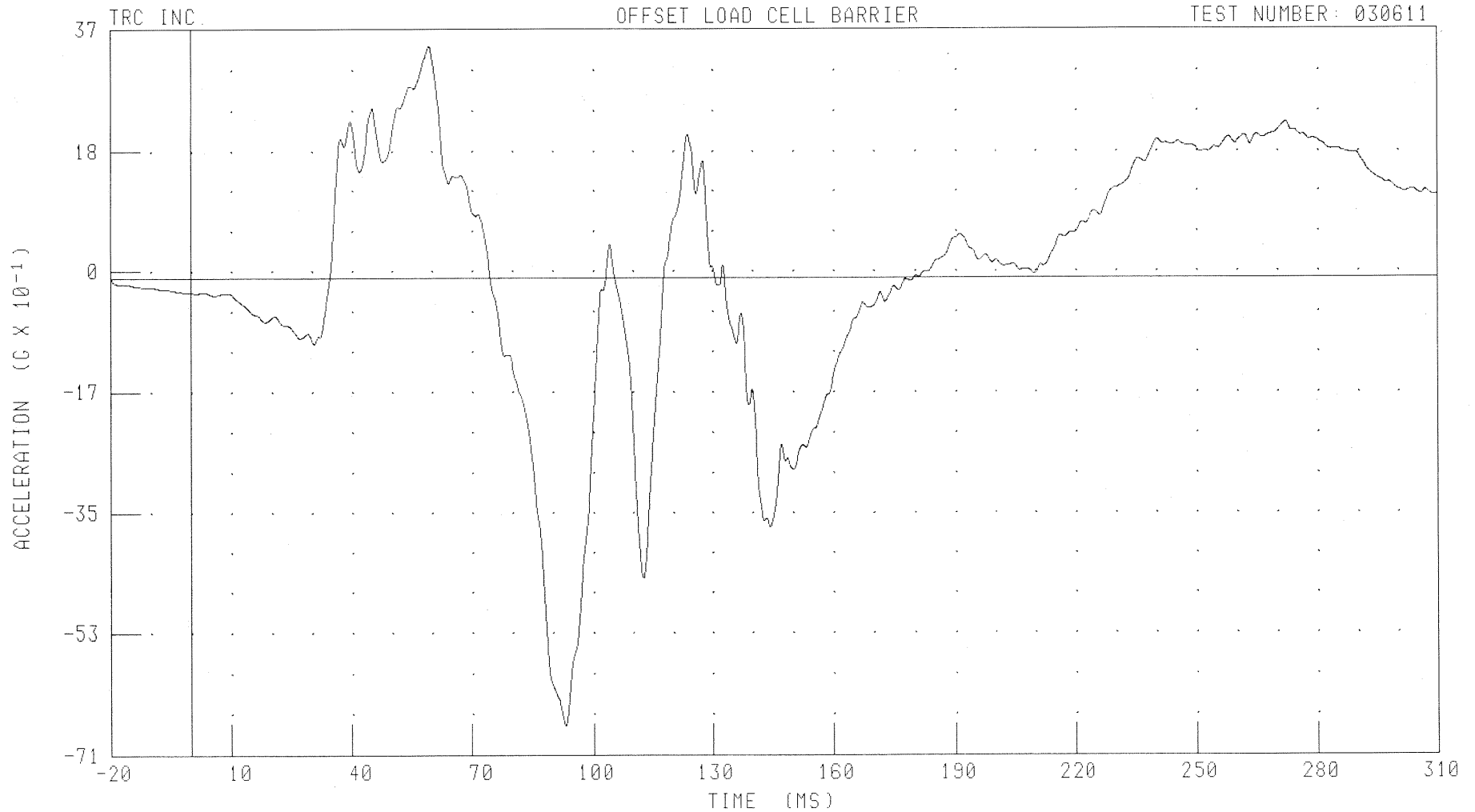
FILTER: CH. CLASS 180

PEAK DATA: 8.77 G @ 100.96 MS; -2.73 G @ 156.64 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER CHEST Z-AXIS ACCELERATION

TEST NUMBER: 030611



CHANNEL: CSTZG2 FILTER: CH. CLASS 180

PEAK DATA: 3.44 G @ 59.36 MS, -6.67 G @ 93.12 MS

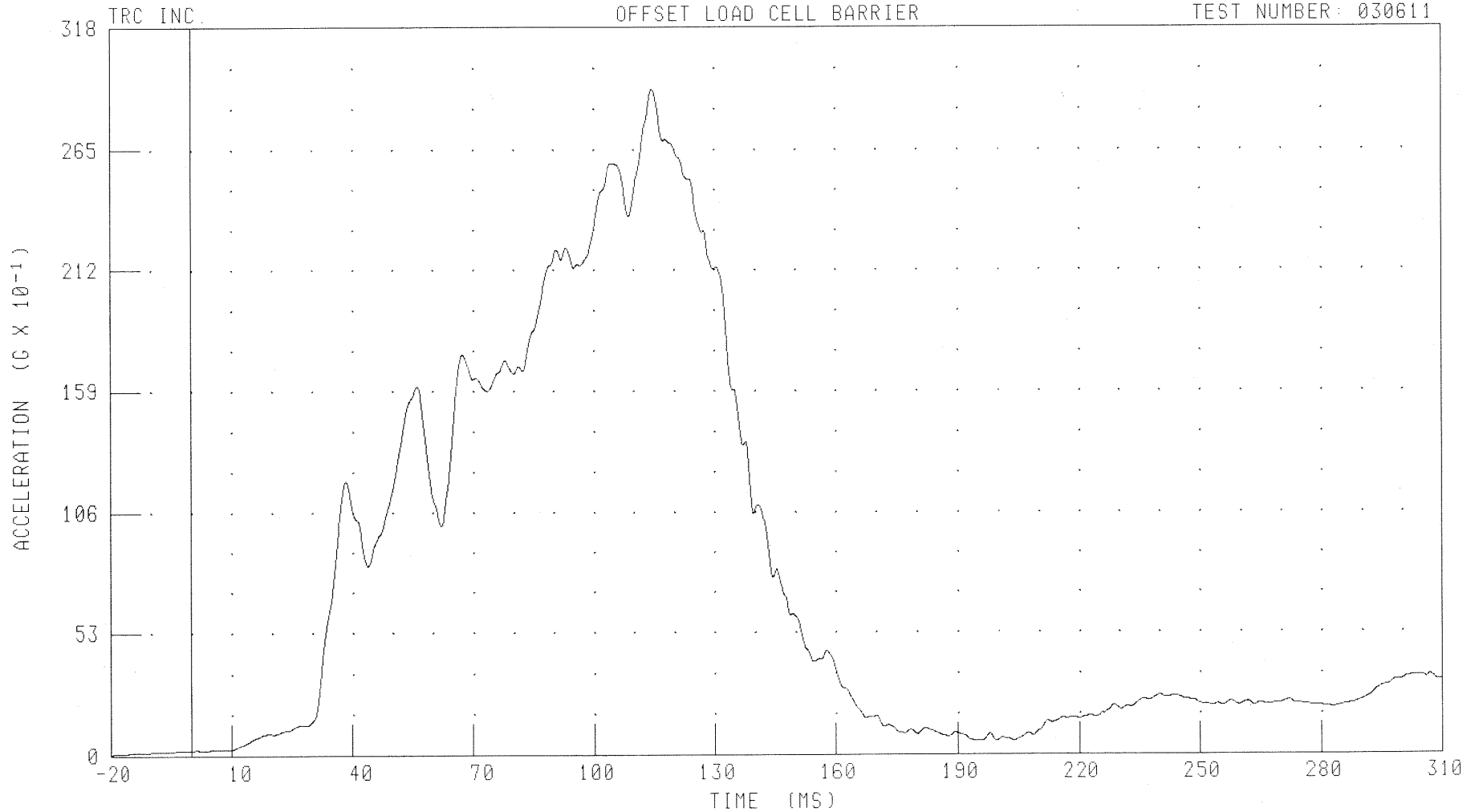
B-101

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER CHEST RESULTANT ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: CSTRG2 FILTER: CH. CLASS 180

PEAK DATA: 29.12 G @ 114.80 MS; 0.01 G @ -20.00 MS

B-102

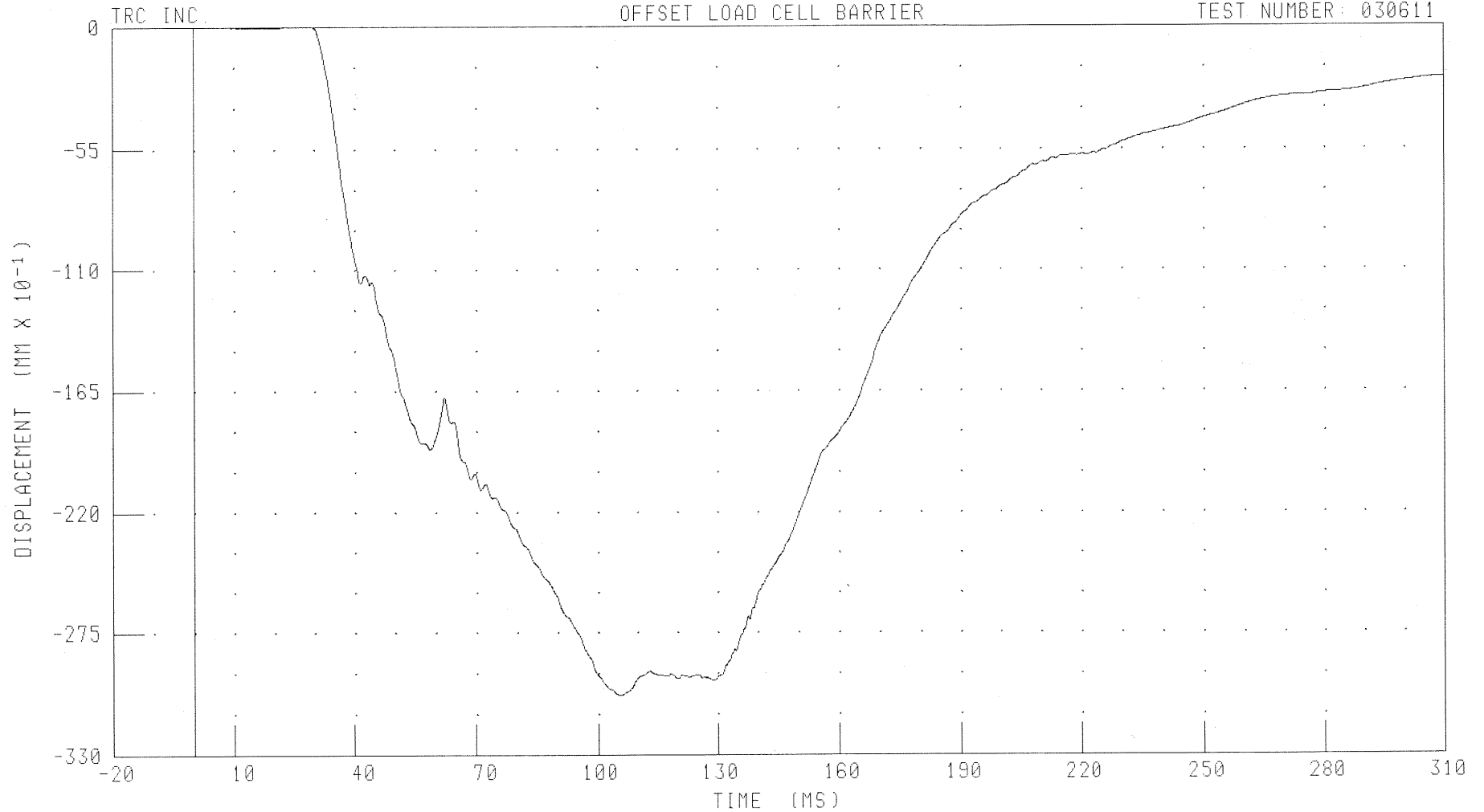
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER CHEST DEFLECTION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



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030611

CHANNEL: CSTXD2

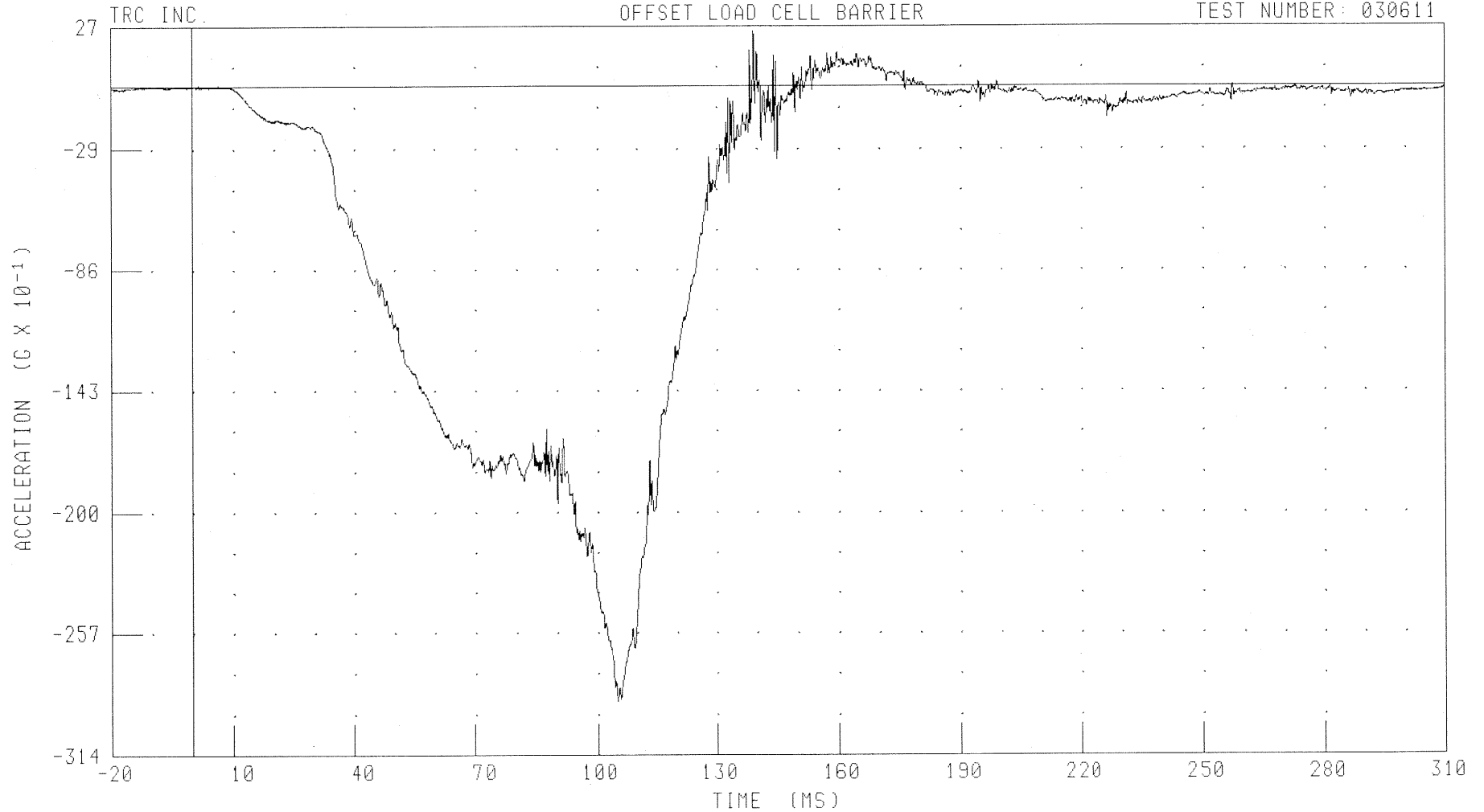
FILTER: CH. CLASS 600

PEAK DATA: 0.03 MM @ 29.12 MS, -30.32 MM @ 105.92 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER PELVIS X-AXIS ACCELERATION

TEST NUMBER: 030611



CHANNEL: PEVXC2

FILTER: CH. CLASS 1000

PEAK DATA: 2.58 G @ 139.28 MS; -28.87 G @ 105.20 MS

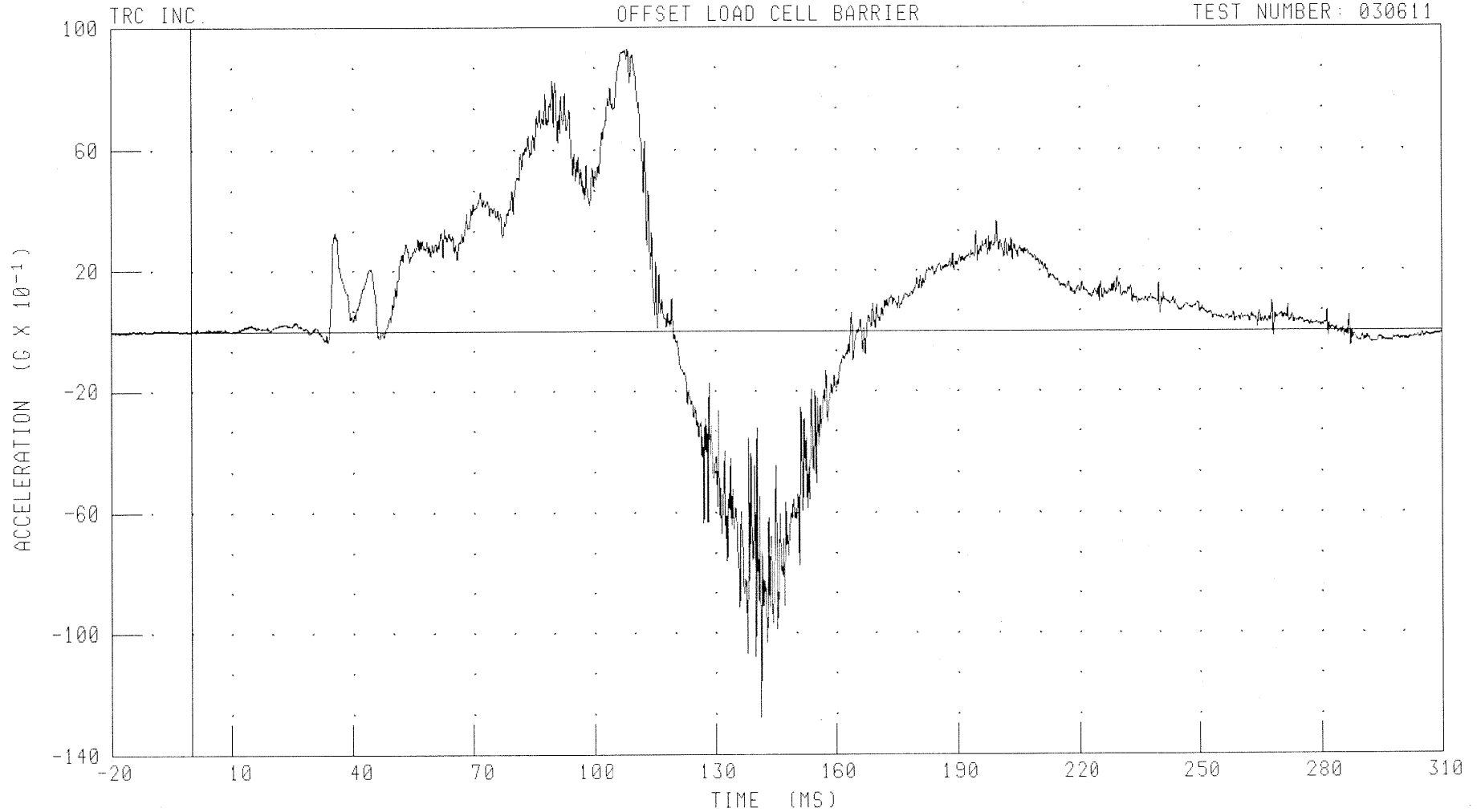
B-104

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER PELVIS Y-AXIS ACCELERATION

TEST NUMBER: 030611



CHANNEL: PEVYG2

FILTER: CH. CLASS 1000

PEAK DATA: 9.28 G @ 108.56 MS; -12.80 G @ 141.28 MS

B-105

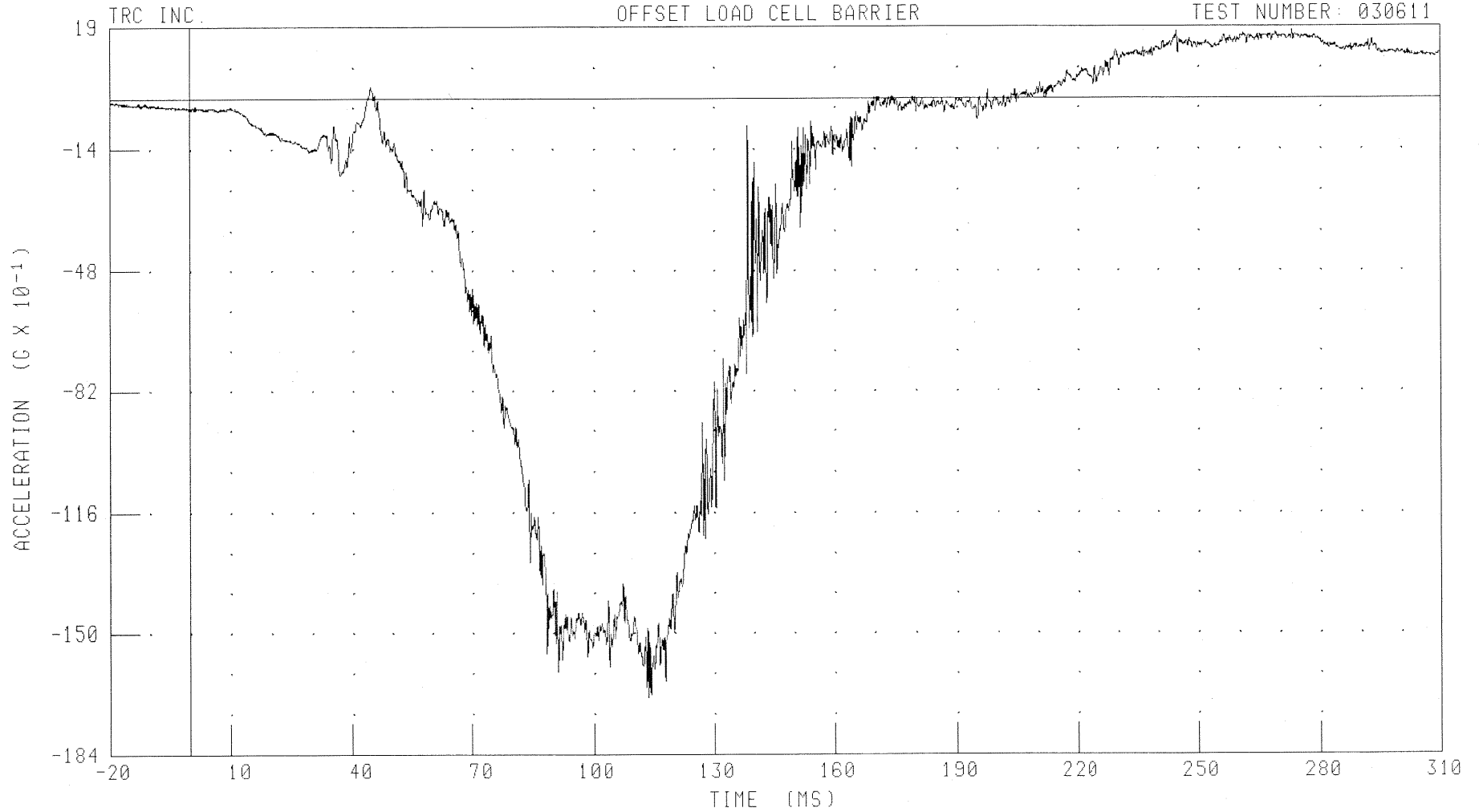
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER PELVIS Z-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: PEVZG2 FILTER: CH. CLASS 1000

PEAK DATA: 1.89 G @ 273.04 MS, -16.81 G @ 113.68 MS

B-106

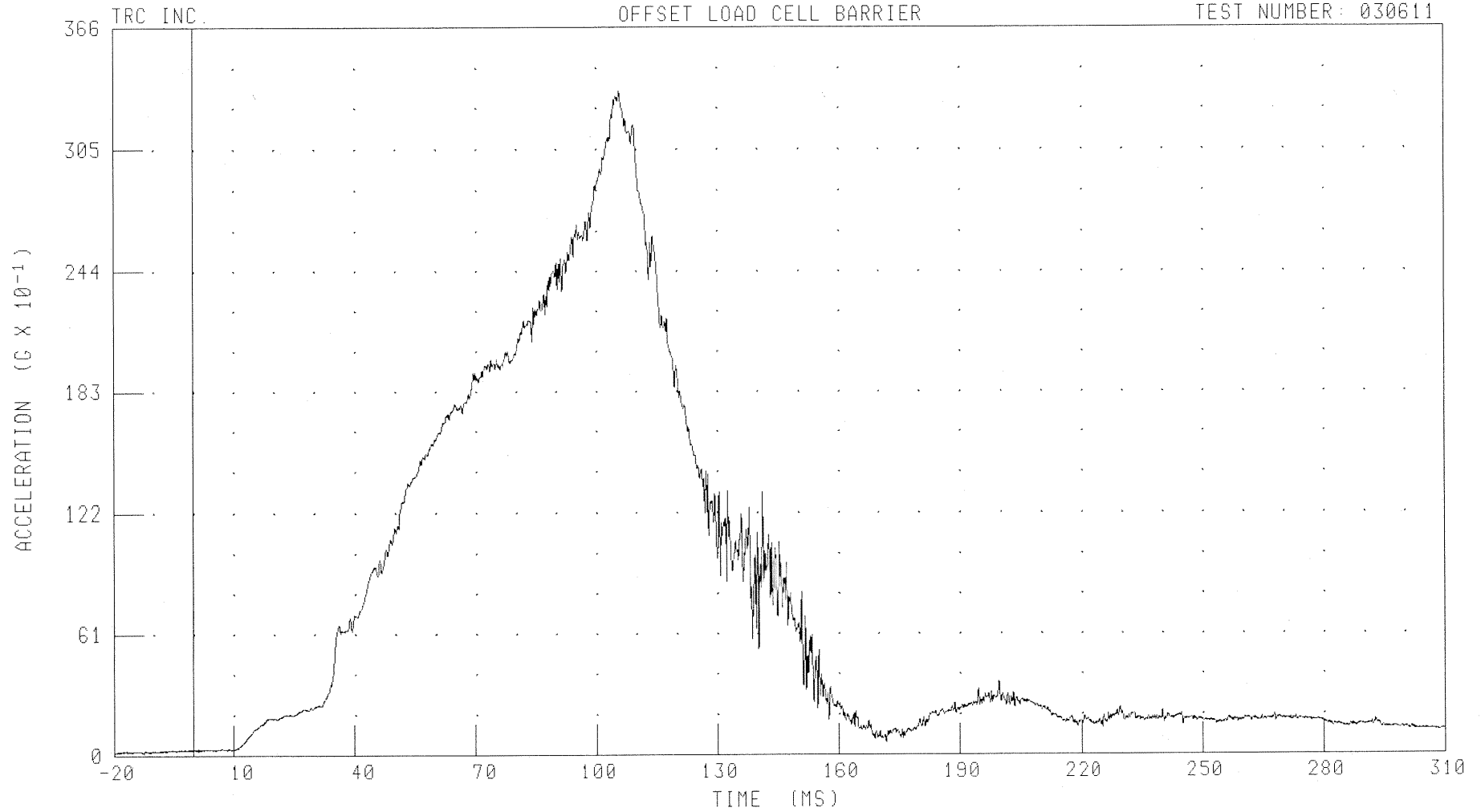
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER PELVIS RESULTANT ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: PEVRC2

FILTER: CH. CLASS 1000

PEAK DATA: 33.39 G @ 106.00 MS, 0.12 G @ -12.48 MS

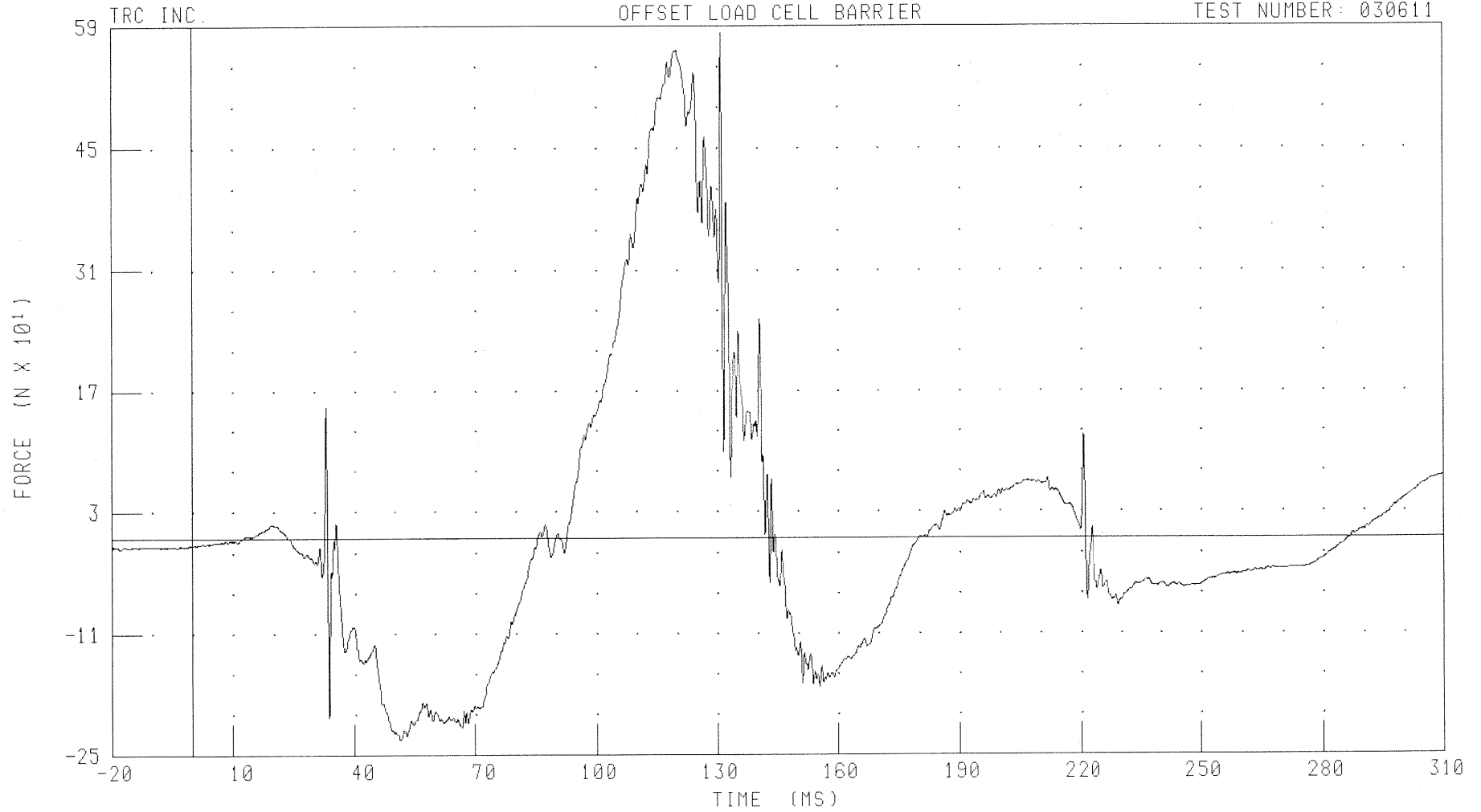
B-107

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER LEFT FEMUR X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LFMXF2

FILTER: CH. CLASS 600

PEAK DATA: 582.45 N @ 131.12 MS; -232.86 N @ 51.36 MS

B-108

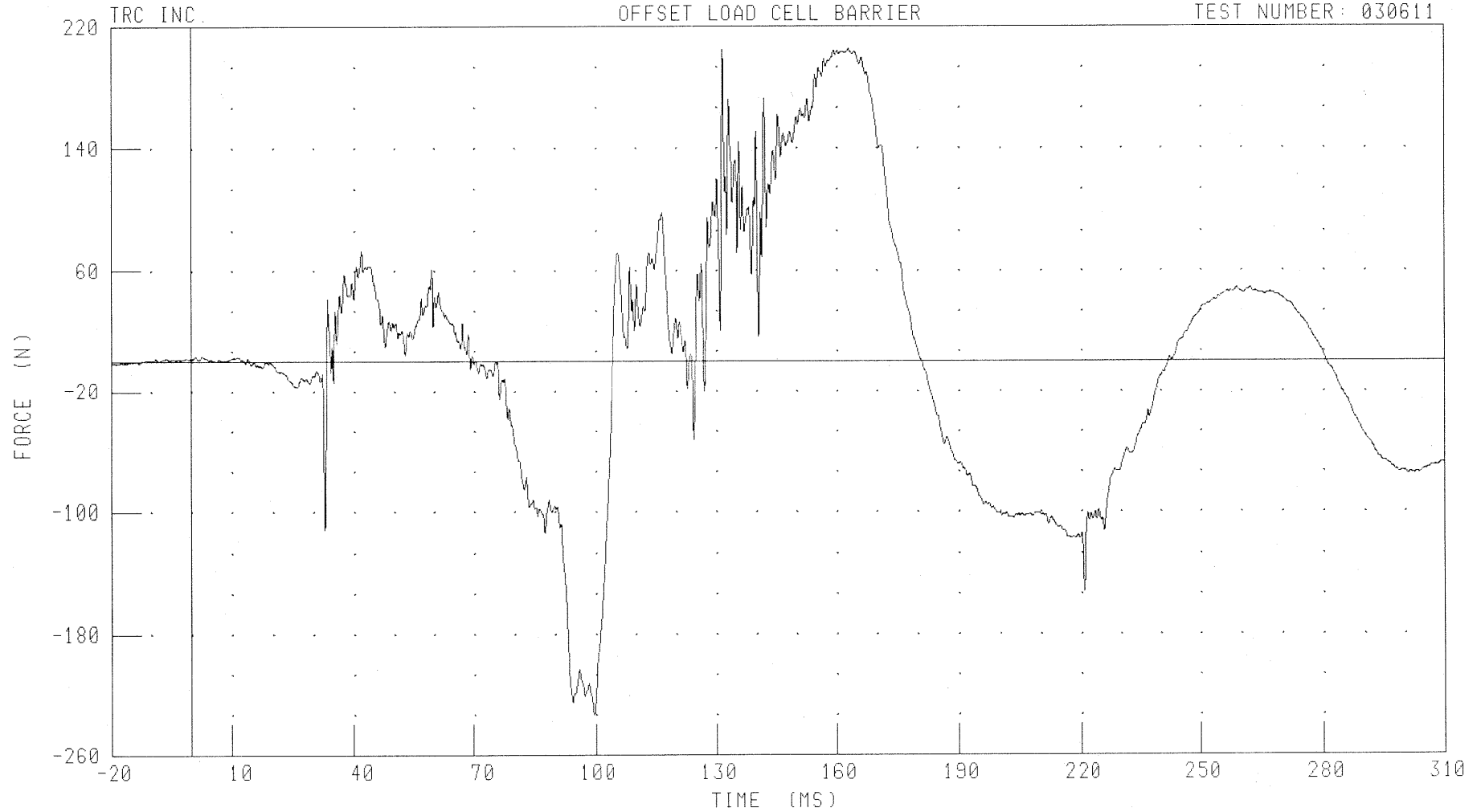
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER LEFT FEMUR Y-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LFMF2 FILTER: CH. CLASS 600

PEAK DATA: 205.03 N @ 163.04 MS; -233.89 N @ 99.60 MS

B-109

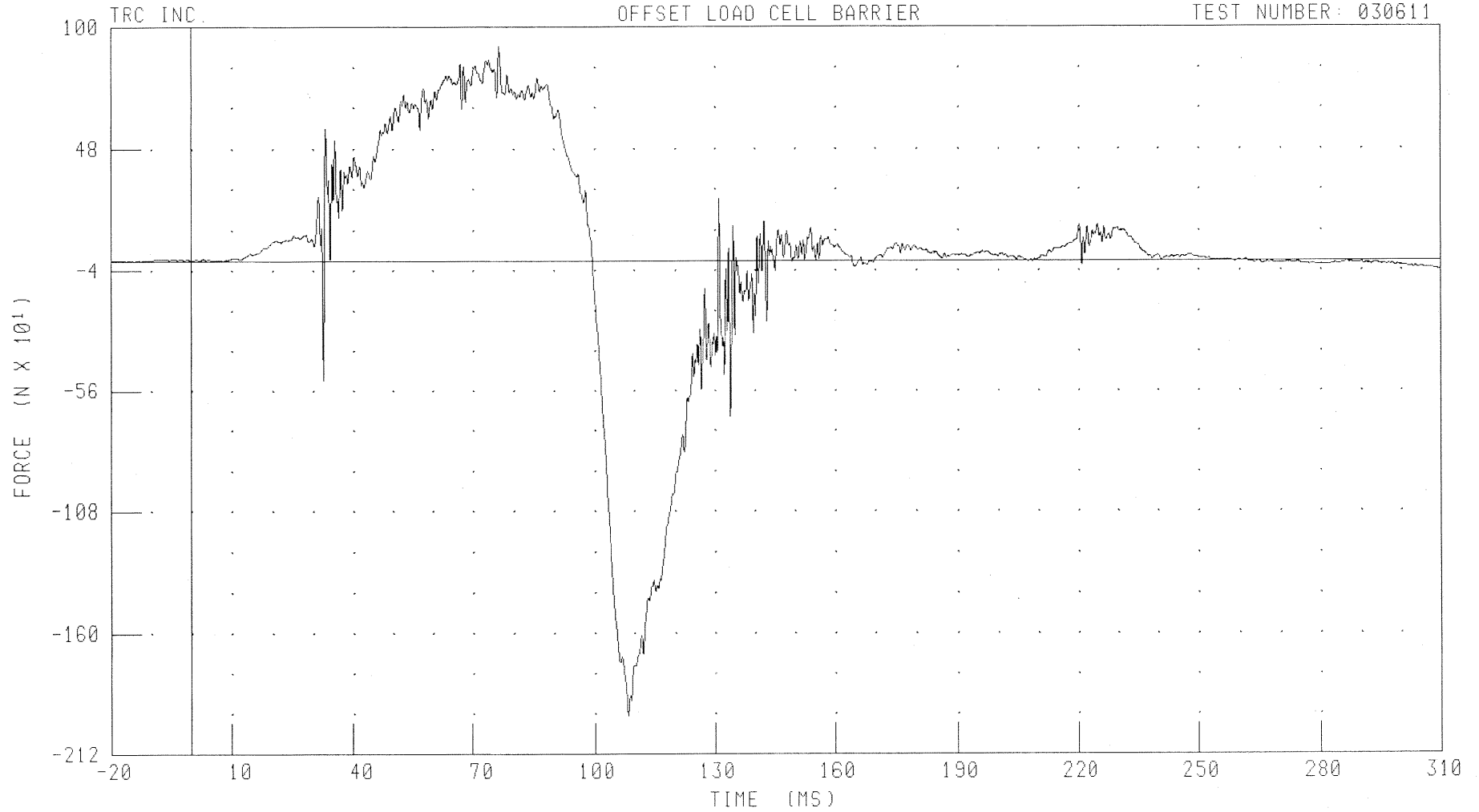
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER LEFT FEMUR Z-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LFMZF2

FILTER: CH. CLASS 600

PEAK DATA: 917.02 N @ 76.48 MS; -1955.90 N @ 108.48 MS

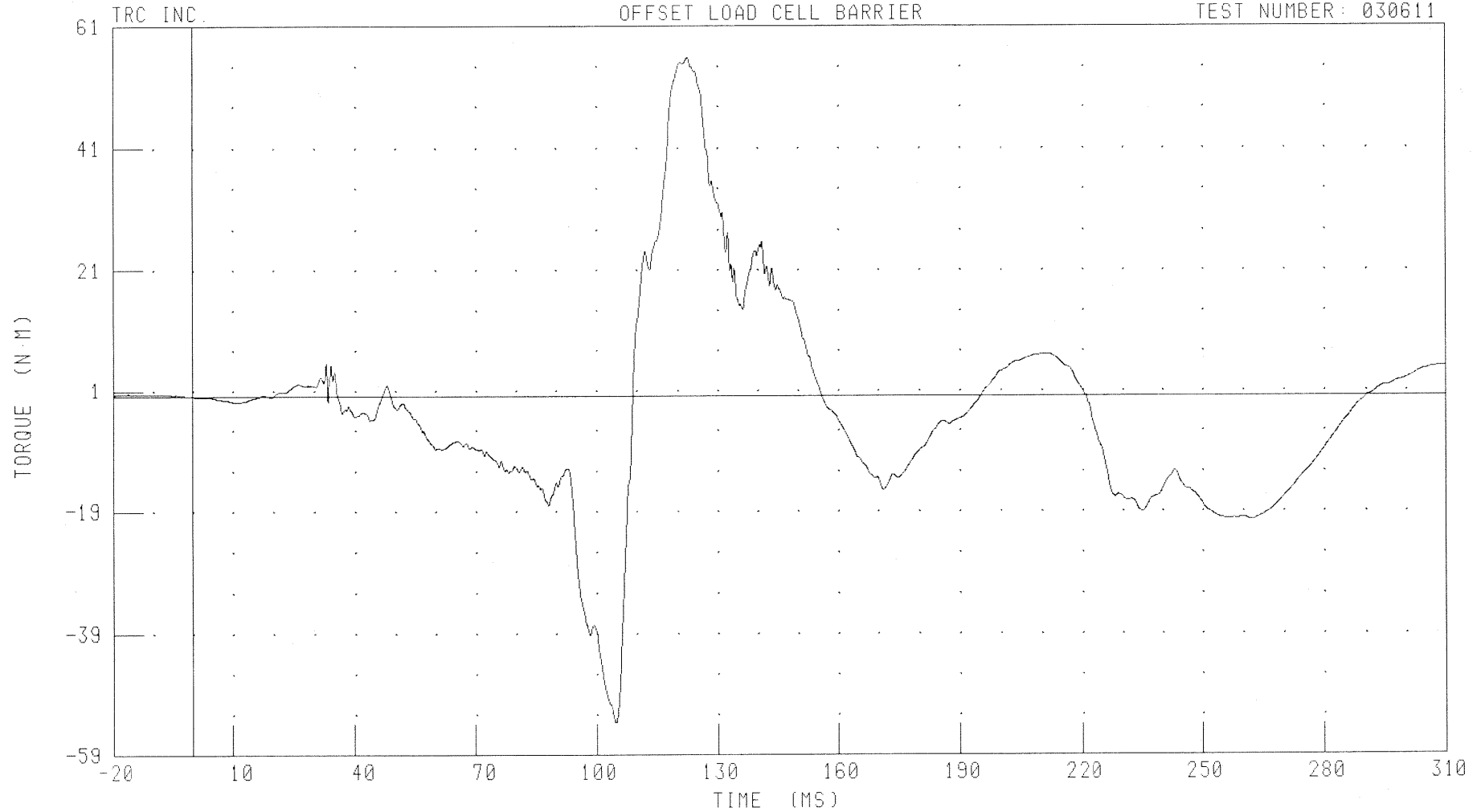
B-110

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER LEFT FEMUR MOMENT ABOUT X AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LFMX2 FILTER: CH. CLASS 600

PEAK DATA: 55.78 N·M @ 122.64 MS; -53.67 N·M @ 104.96 MS

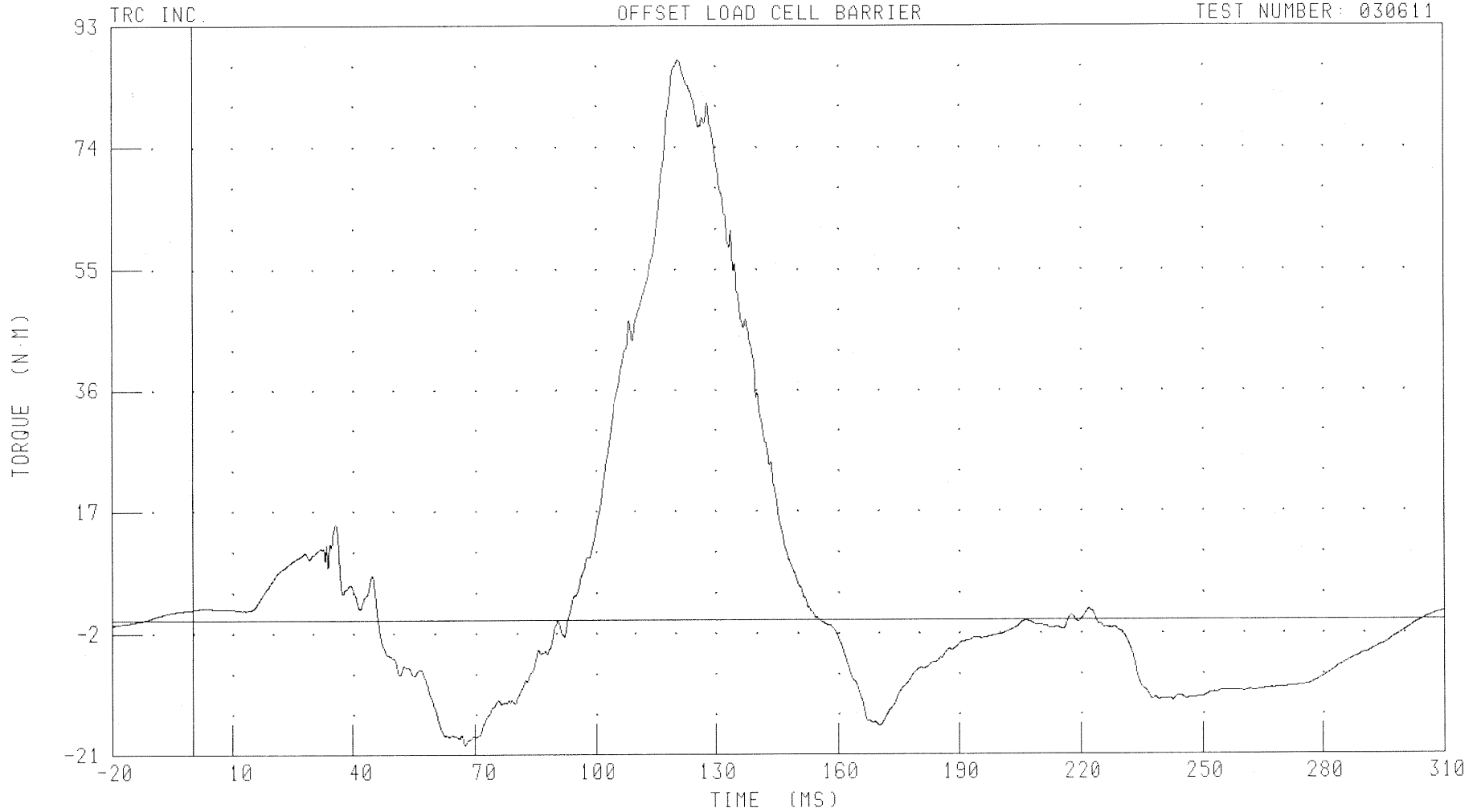
B-111

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER LEFT FEMUR MOMENT ABOUT Y AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LFMYM2

FILTER: CH. CLASS 600

PEAK DATA: 87.53 N·M @ 120.88 MS, -19.52 N·M @ 67.44 MS

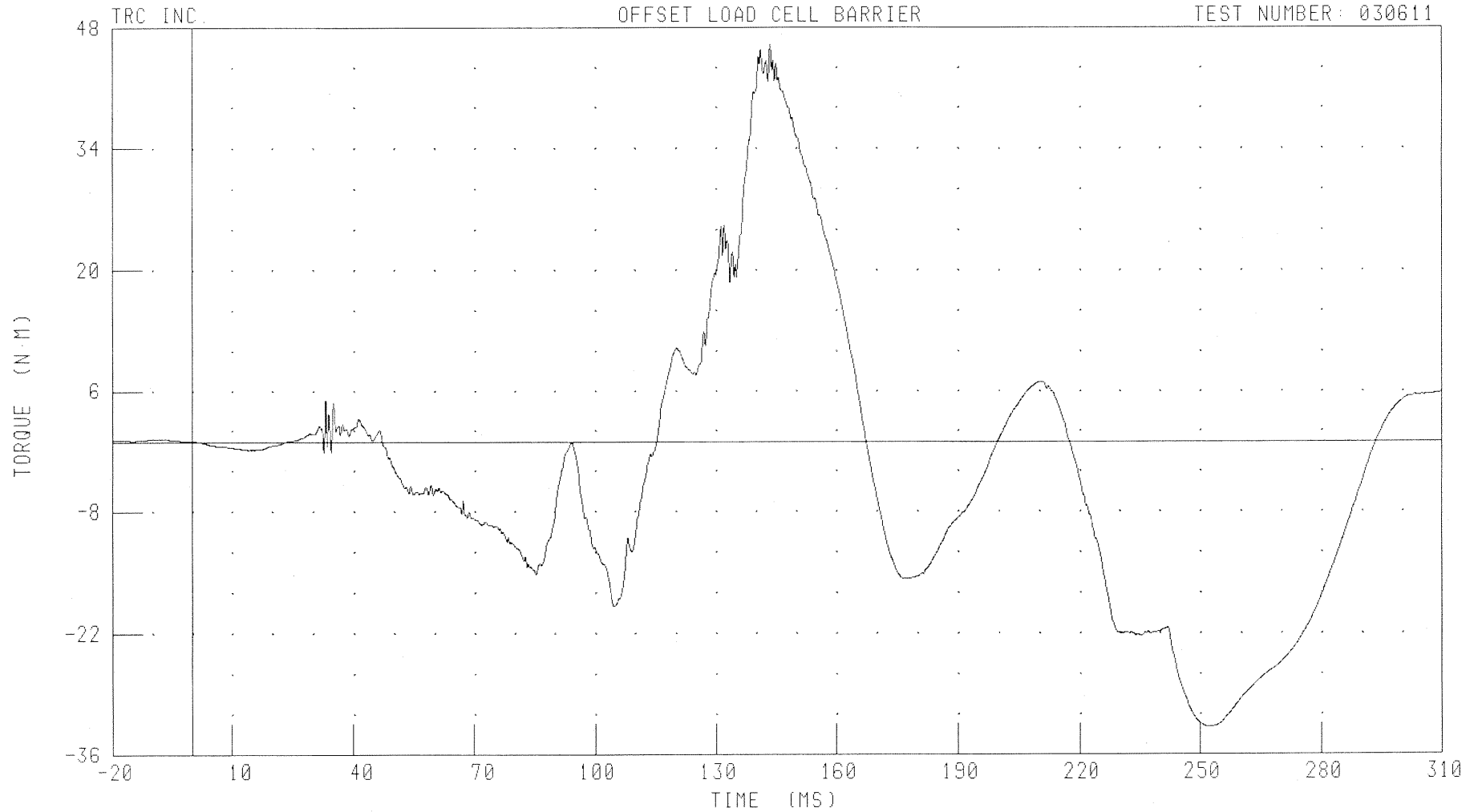
B-112

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER LEFT FEMUR MOMENT ABOUT Z AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LFMZM2

FILTER: CH. CLASS 600

PEAK DATA: 45.97 N·M @ 143.52 MS; -32.86 N·M @ 252.64 MS

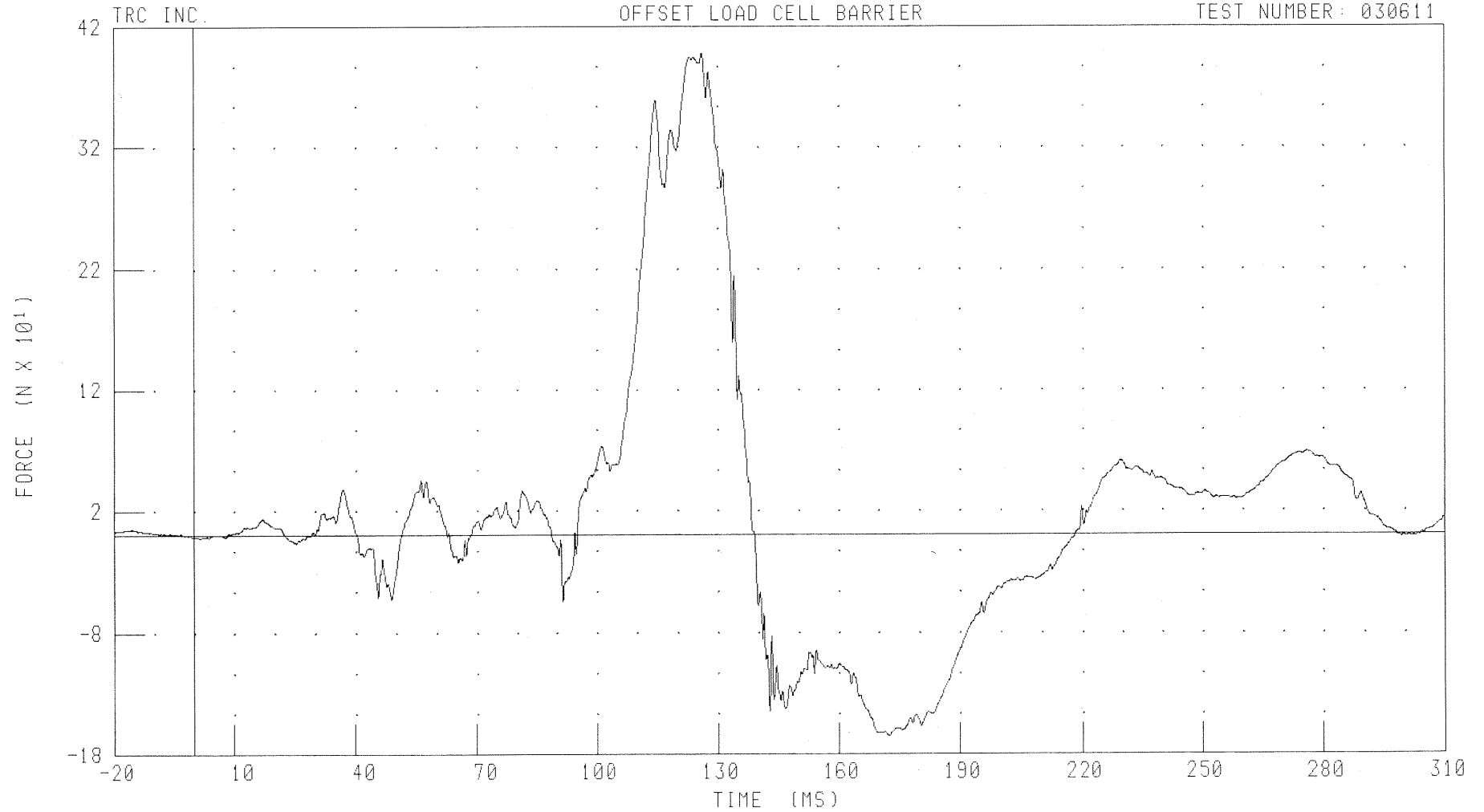
B-113

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER RIGHT FEMUR X-AXIS FORCE

TEST NUMBER: 030611



CHANNEL: RFMXF2

FILTER: CH. CLASS 600

PEAK DATA: 397.44 N @ 126.16 MS, -165.13 N @ 172.56 MS

B-114

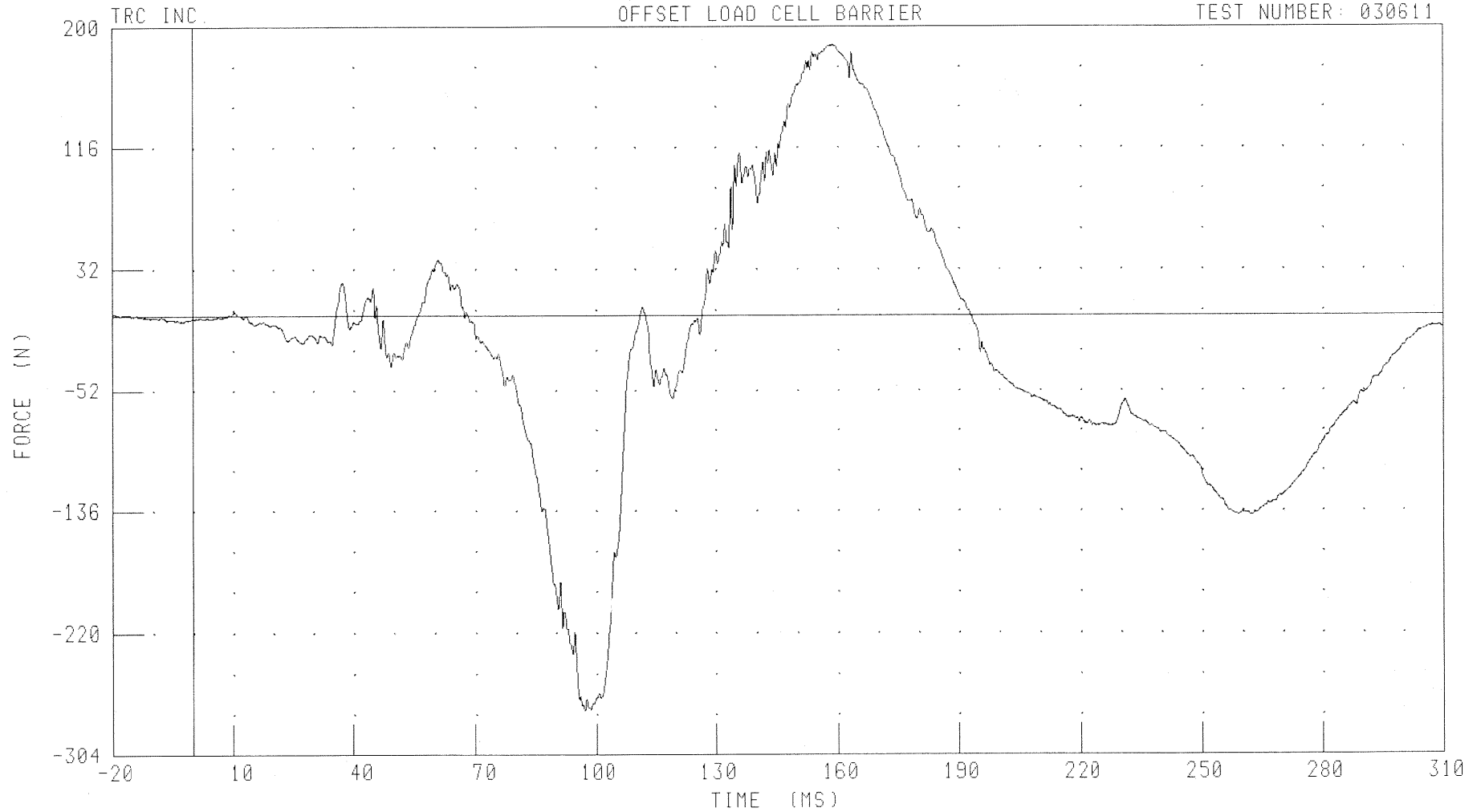
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER RIGHT FEMUR Y-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: RFMYF2 FILTER: CH. CLASS 600

PEAK DATA: 187.73 N @ 158.88 MS; -273.80 N @ 97.04 MS

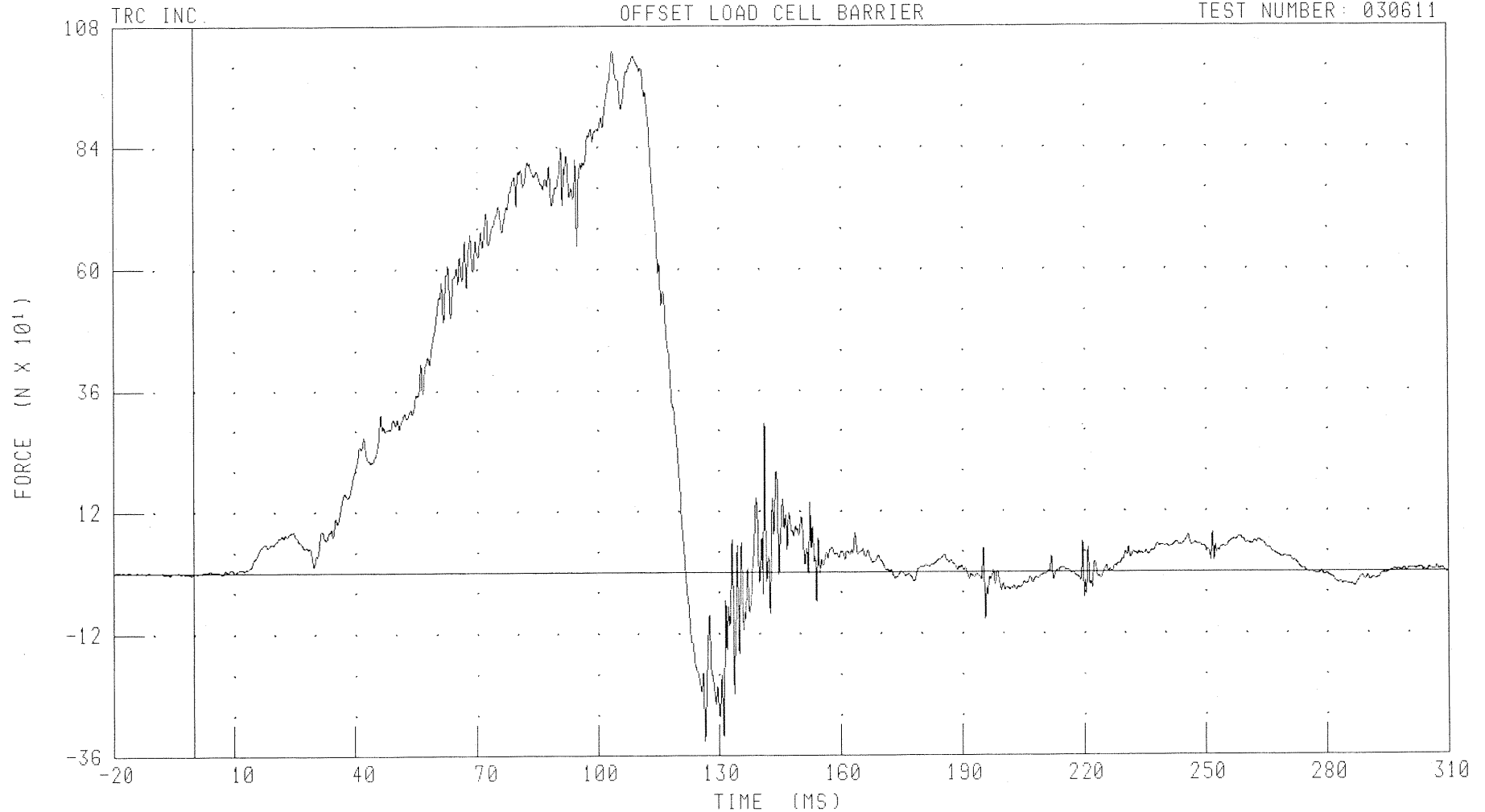
B-115

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER RIGHT FEMUR Z-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: RFMZ F2

FILTER: CH. CLASS 600

PEAK DATA: 1029.29 N @ 103.92 MS; -332.33 N @ 126.56 MS

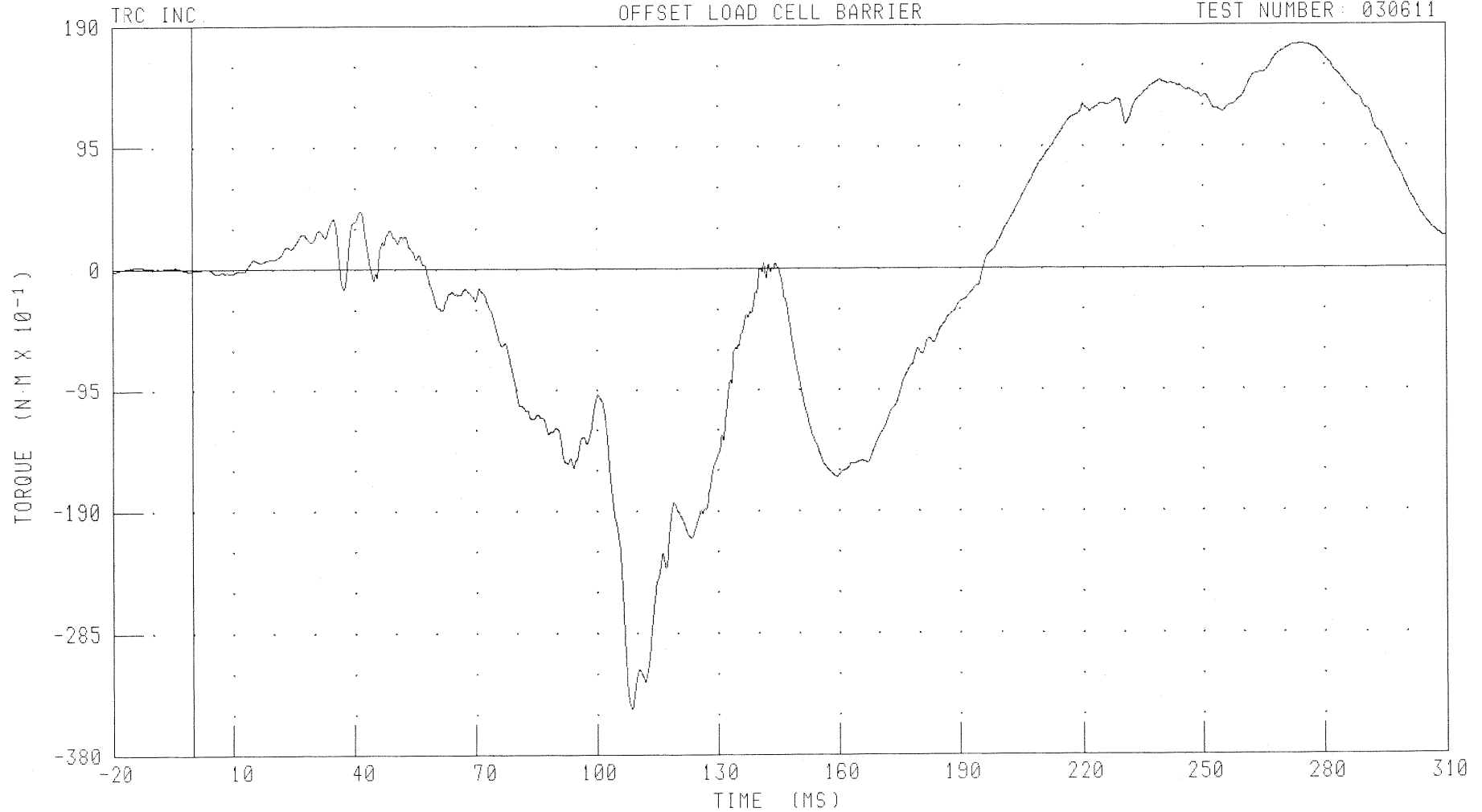
B-116

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER RIGHT FEMUR MOMENT ABOUT X AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: RFMXM2

FILTER: CH. CLASS 600

PEAK DATA: 17.50 N·M @ 274.72 MS; -34.40 N·M @ 108.88 MS

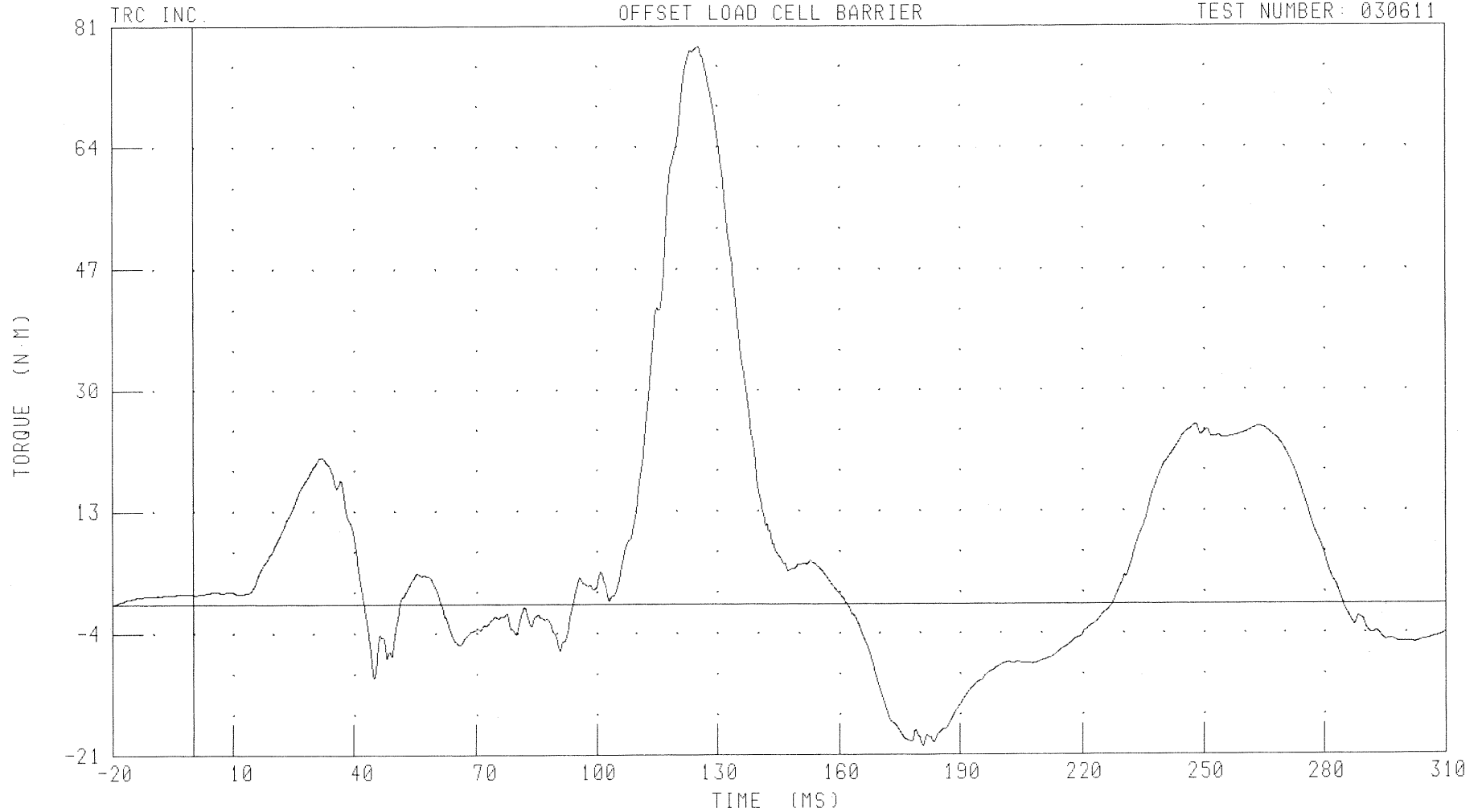
B-117

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER RIGHT FEMUR MOMENT ABOUT Y AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: RFMYM2 FILTER: CH CLASS 600

PEAK DATA: 77.98 N.M @ 125.60 MS; -19.81 N.M @ 180.80 MS

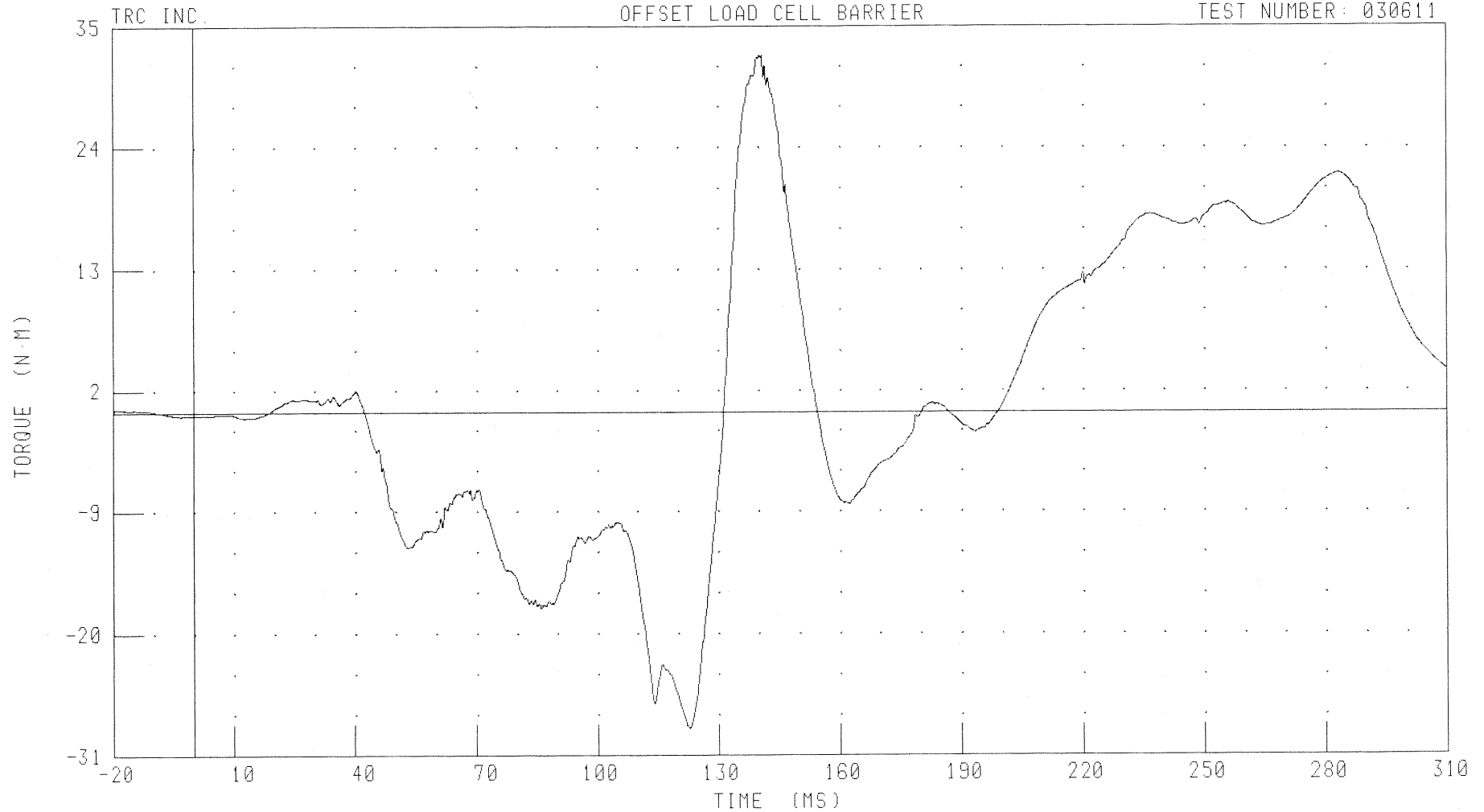
B-118

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER RIGHT FEMUR MOMENT ABOUT Z AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: RFMZM2 FILTER: CH. CLASS 600

PEAK DATA: 32.35 N·M @ 140.88 MS; -28.55 N·M @ 122.88 MS

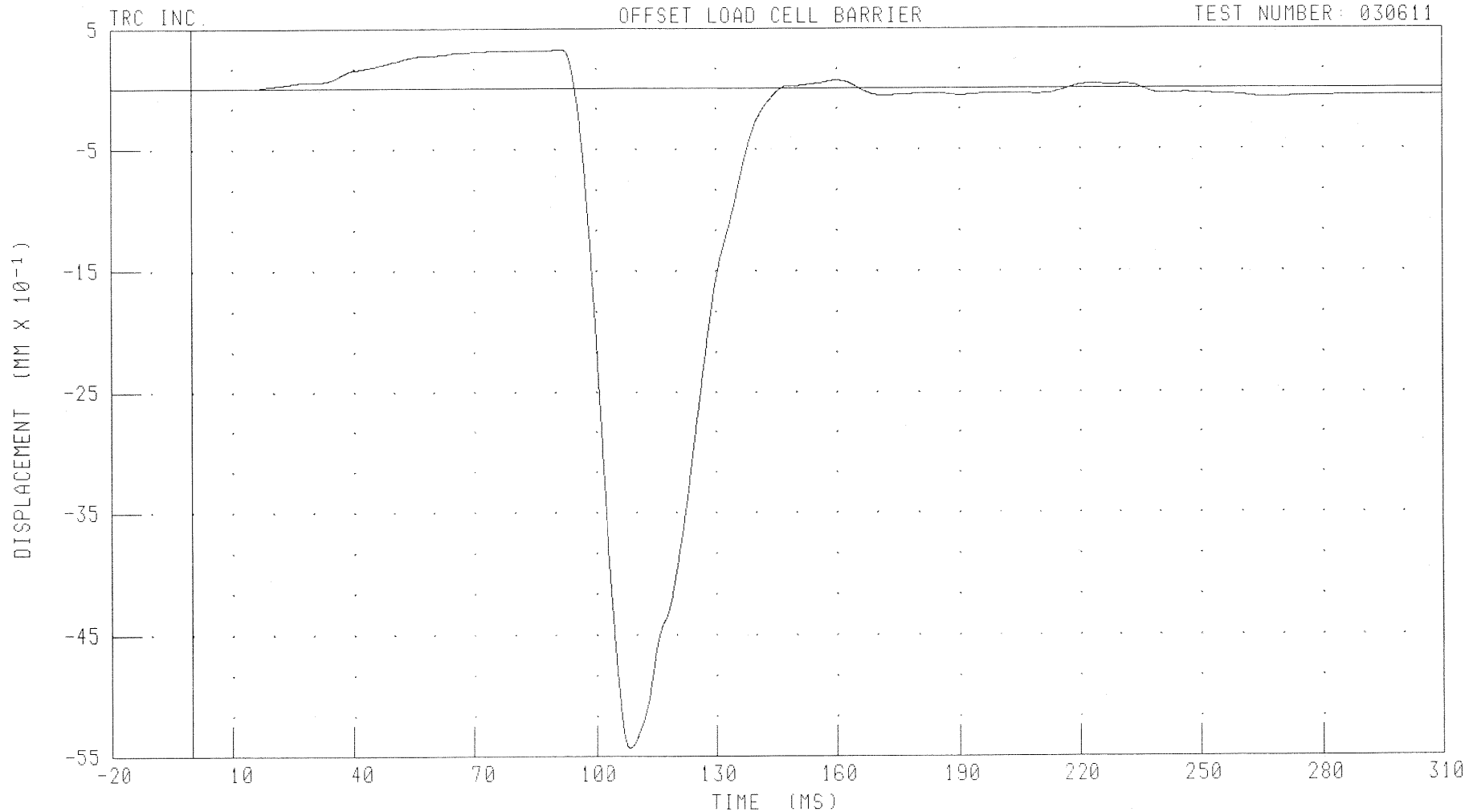
B-119

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER LEFT TIBIA TO FEMUR DISPLACEMENT

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: KNLXD2

FILTER: CH. CLASS 180

PEAK DATA 0 32 MM @ 91 28 MS; -5 43 MM @ 108 48 MS

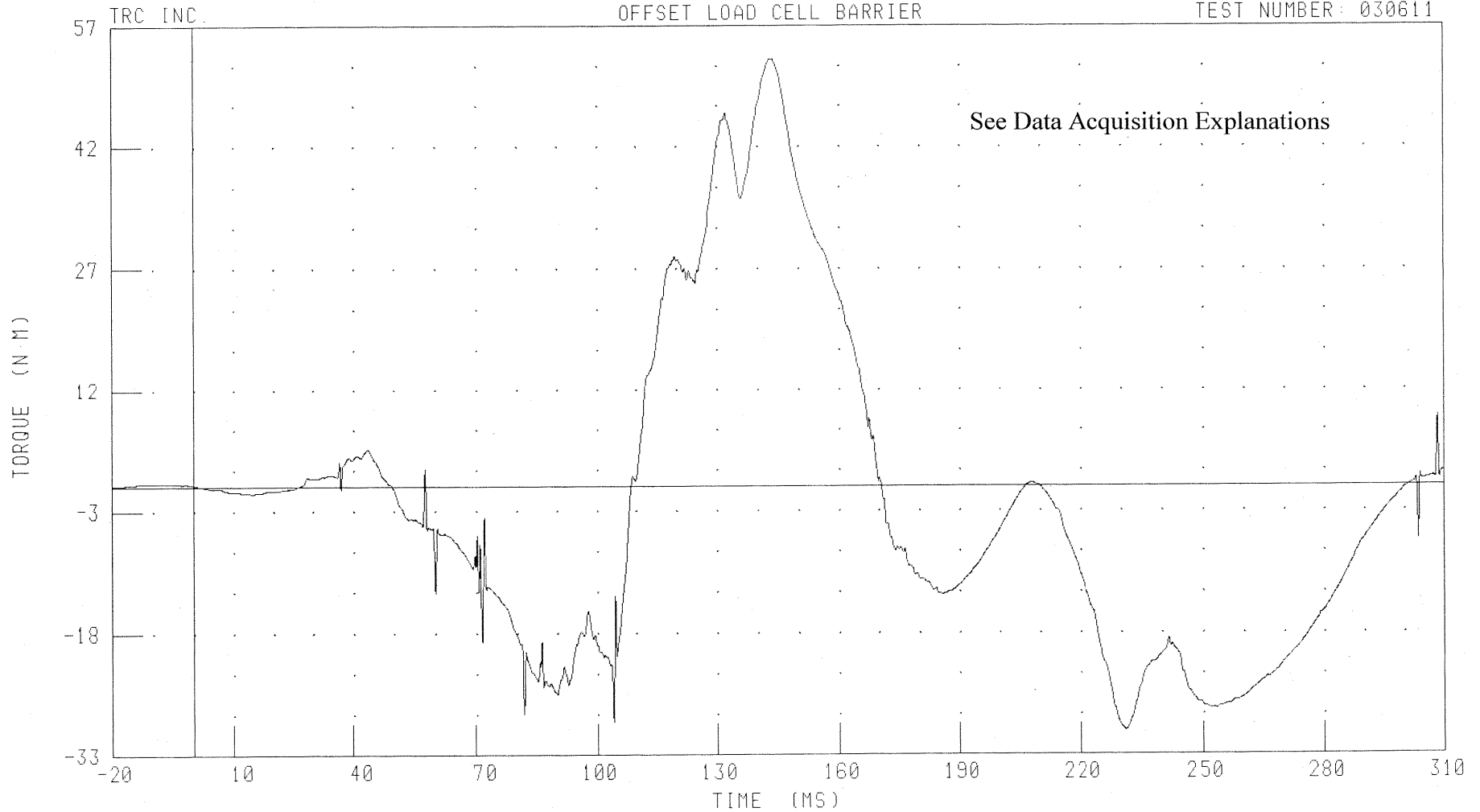
B-120

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER LEFT UPPER TIBIA MOMENT ABOUT X AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: TBLXM2 FILTER: CH. CLASS 600

PEAK DATA: 52.83 N·m @ 143.28 MS; -30.03 N·m @ 231.28 MS

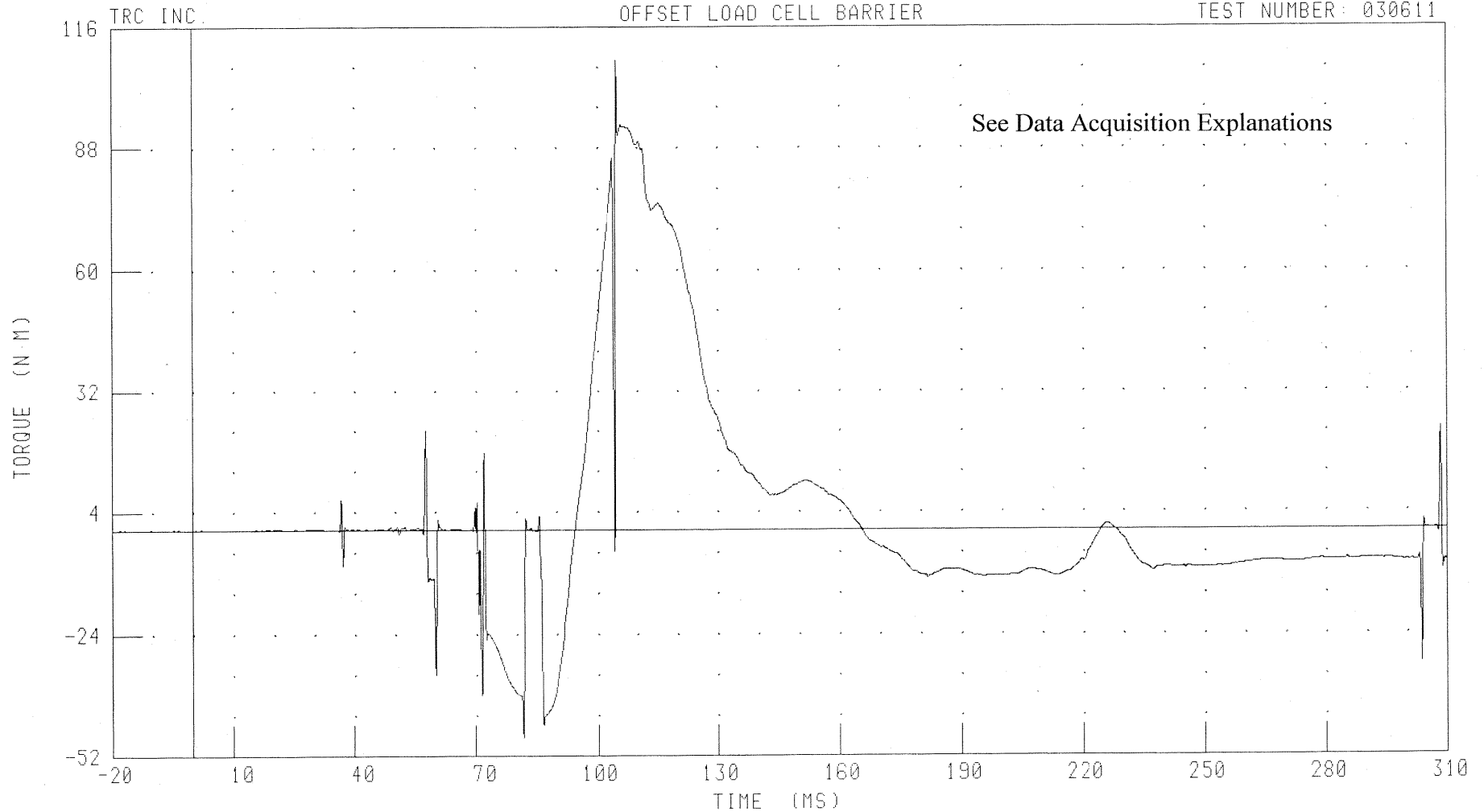
B-122

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER LEFT UPPER TIBIA MOMENT ABOUT Y AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: TBL YM2 FILTER: CH CLASS 600

PEAK DATA: 108.34 N.M @ 104.96 MS; -47.74 N.M @ 81.76 MS

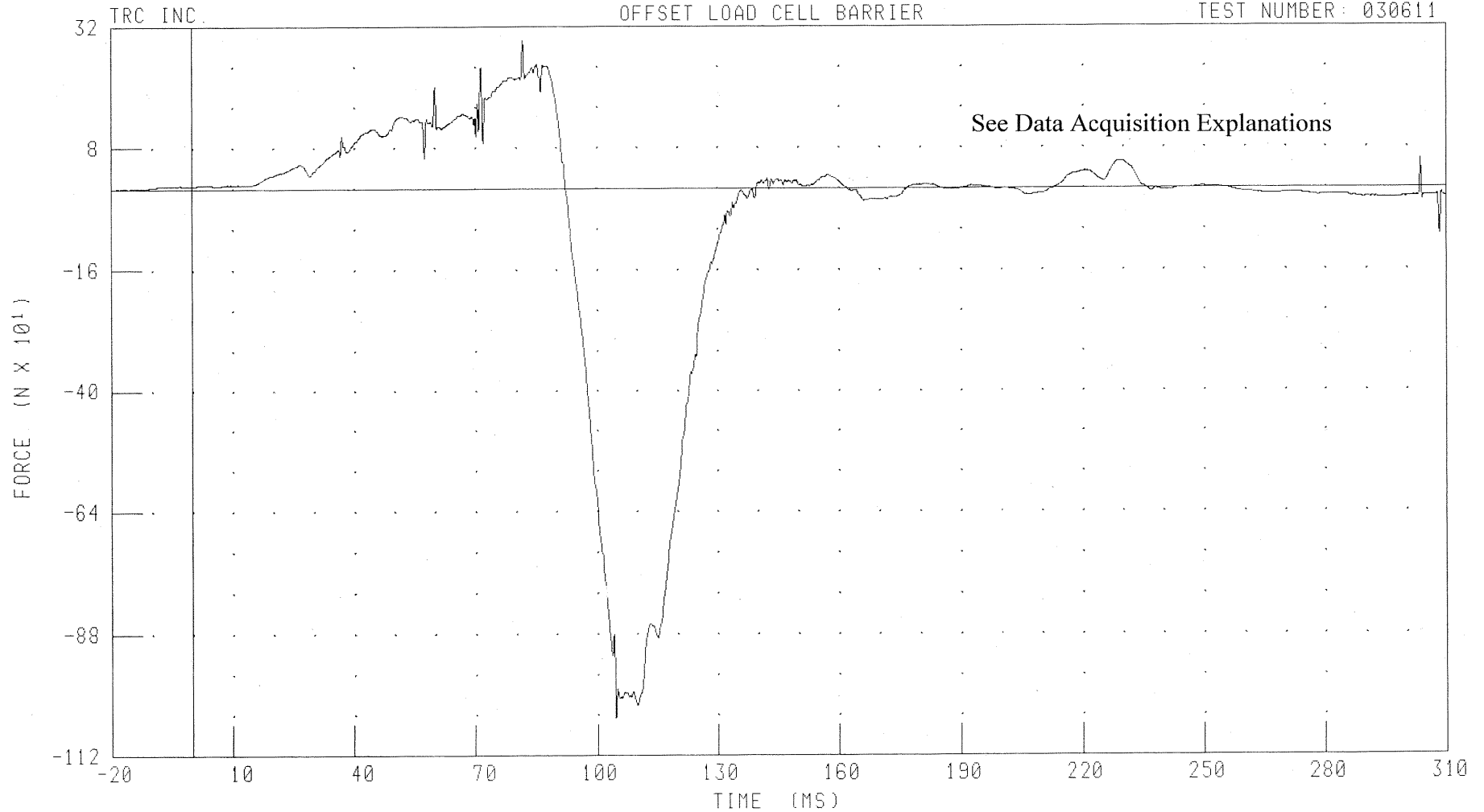
B-121

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER LEFT UPPER TIBIA X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: TBLXF2 FILTER: CH. CLASS 600

PEAK DATA: 292.21 N @ 81.92 MS; -1046.60 N @ 104.80 MS

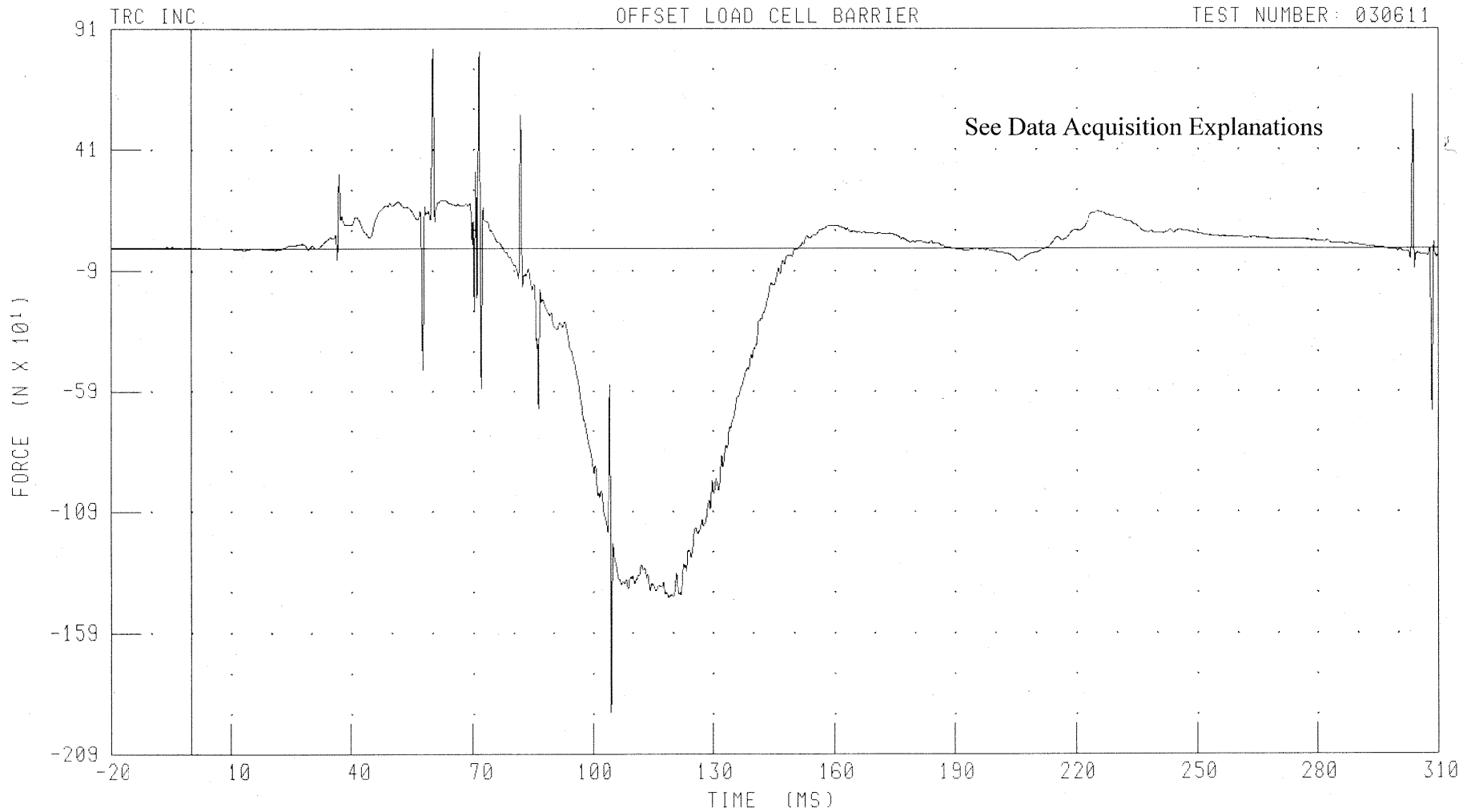
B-124

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER LEFT UPPER TIBIA Z-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: TBLZF2 FILTER: CH. CLASS 600

PEAK DATA: 827.28 N @ 60.16 MS, -1914.71 N @ 104.80 MS

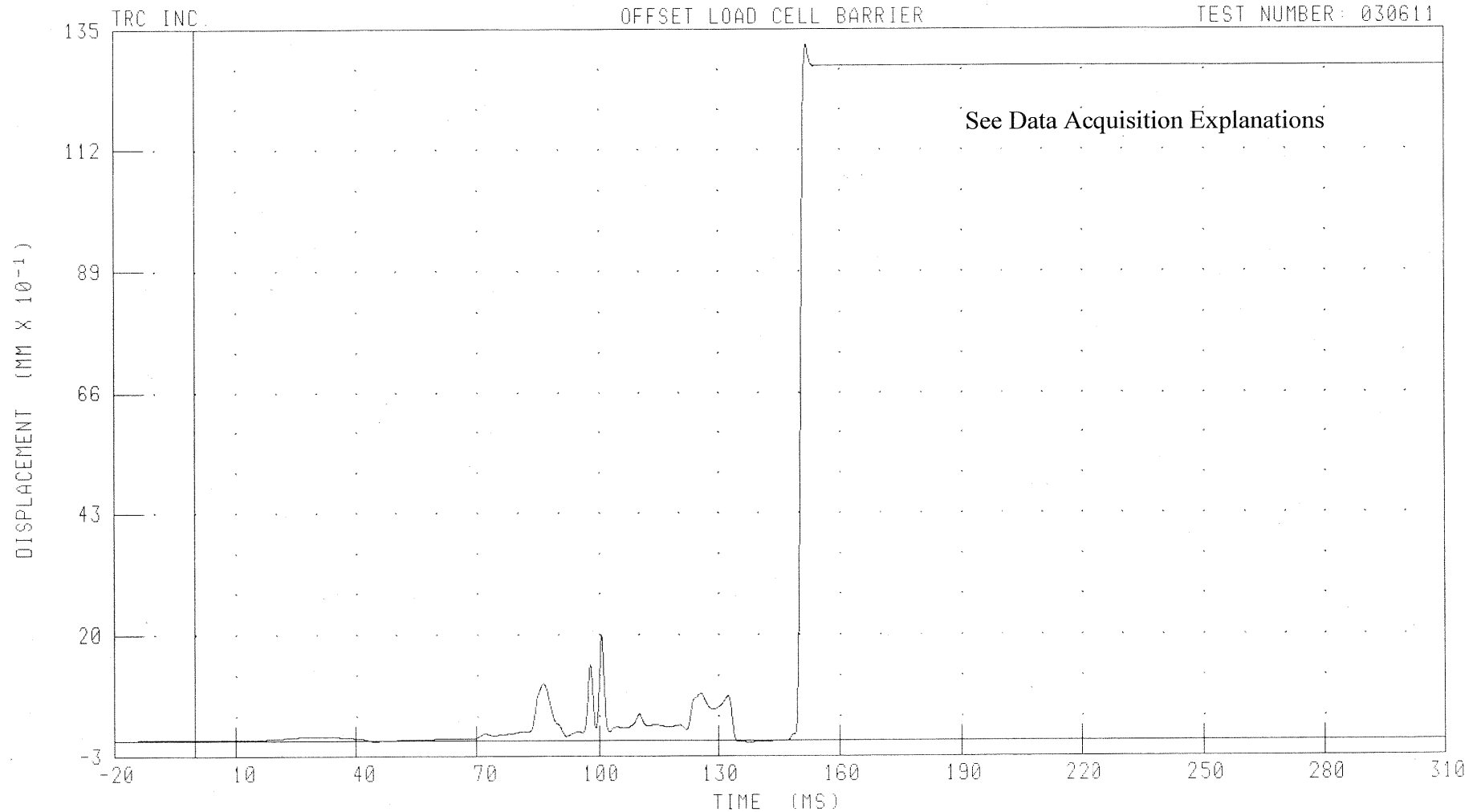
B-123

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER RIGHT TIBIA TO FEMUR DISPLACEMENT

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: KNRXD2 FILTER: CH CLASS 180

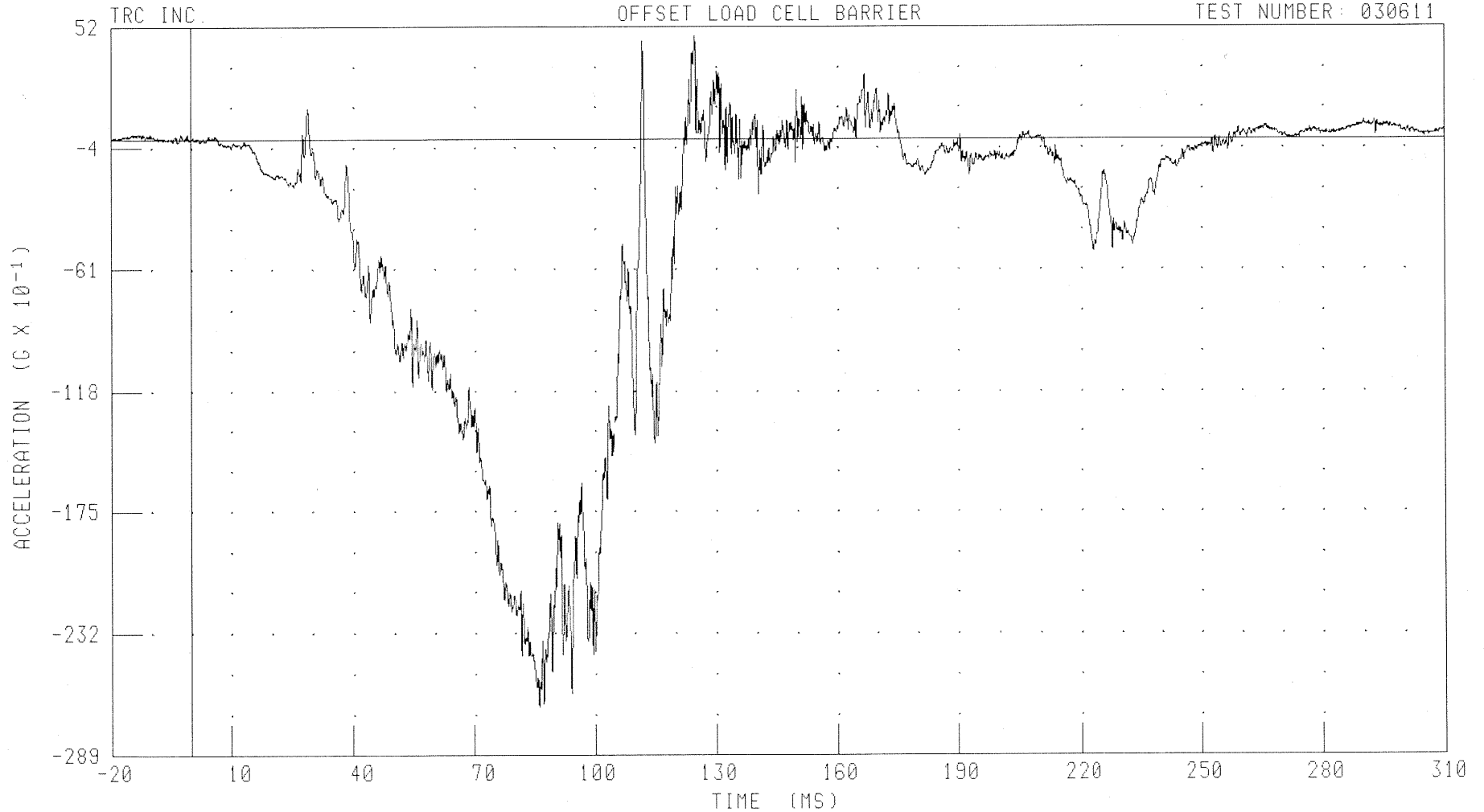
PEAK DATA 13.21 MM @ 152.00 MS; -0.04 MM @ 137.76 MS

B-125

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER LEFT TIBIA X-AXIS ACCELERATION

TEST NUMBER: 030611



B-126

030611

CHANNEL: TBLXG2

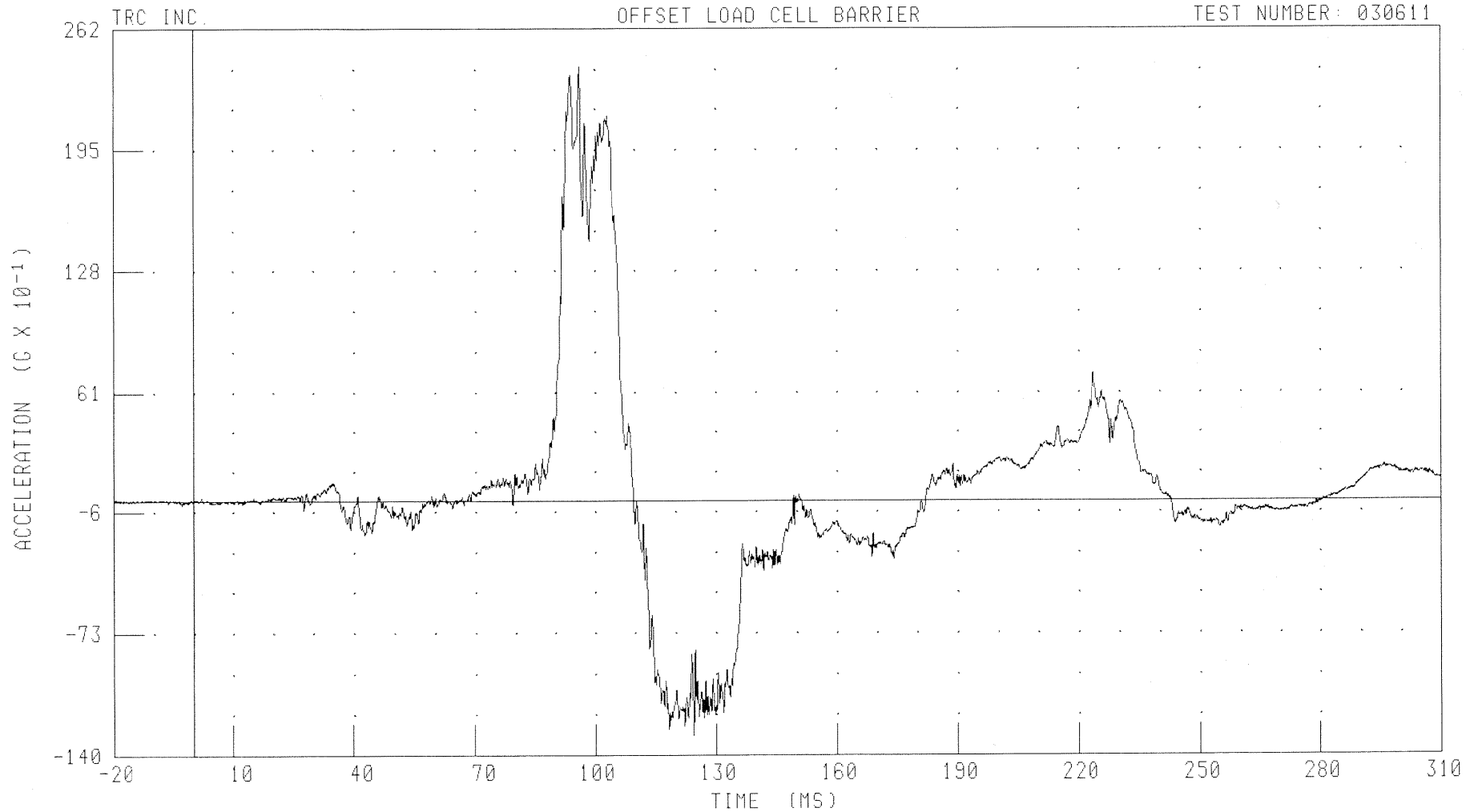
FILTER: CH. CLASS 1000

PEAK DATA: 4.87 G @ 124.80 MS; -26.63 G @ 86.08 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER LEFT TIBIA Y-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: TBLYG2

FILTER: CH. CLASS 1000

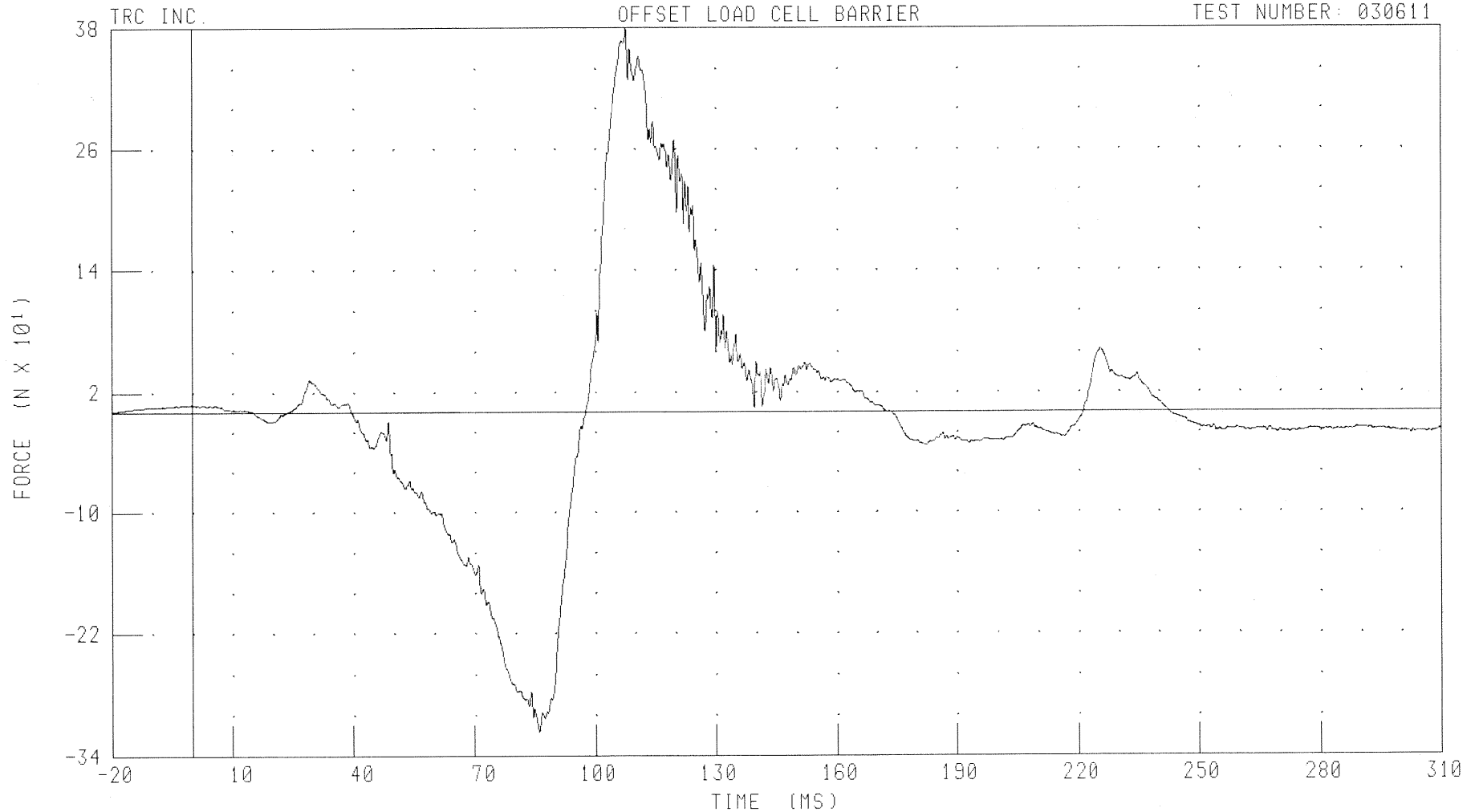
PEAK DATA: 24.14 G @ 96.32 MS; -12.91 G @ 124.56 MS

B-127

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER LEFT LOWER TIBIA X-AXIS FORCE

TEST NUMBER: 030611



CHANNEL: ANLXF2 FILTER: CH. CLASS 600

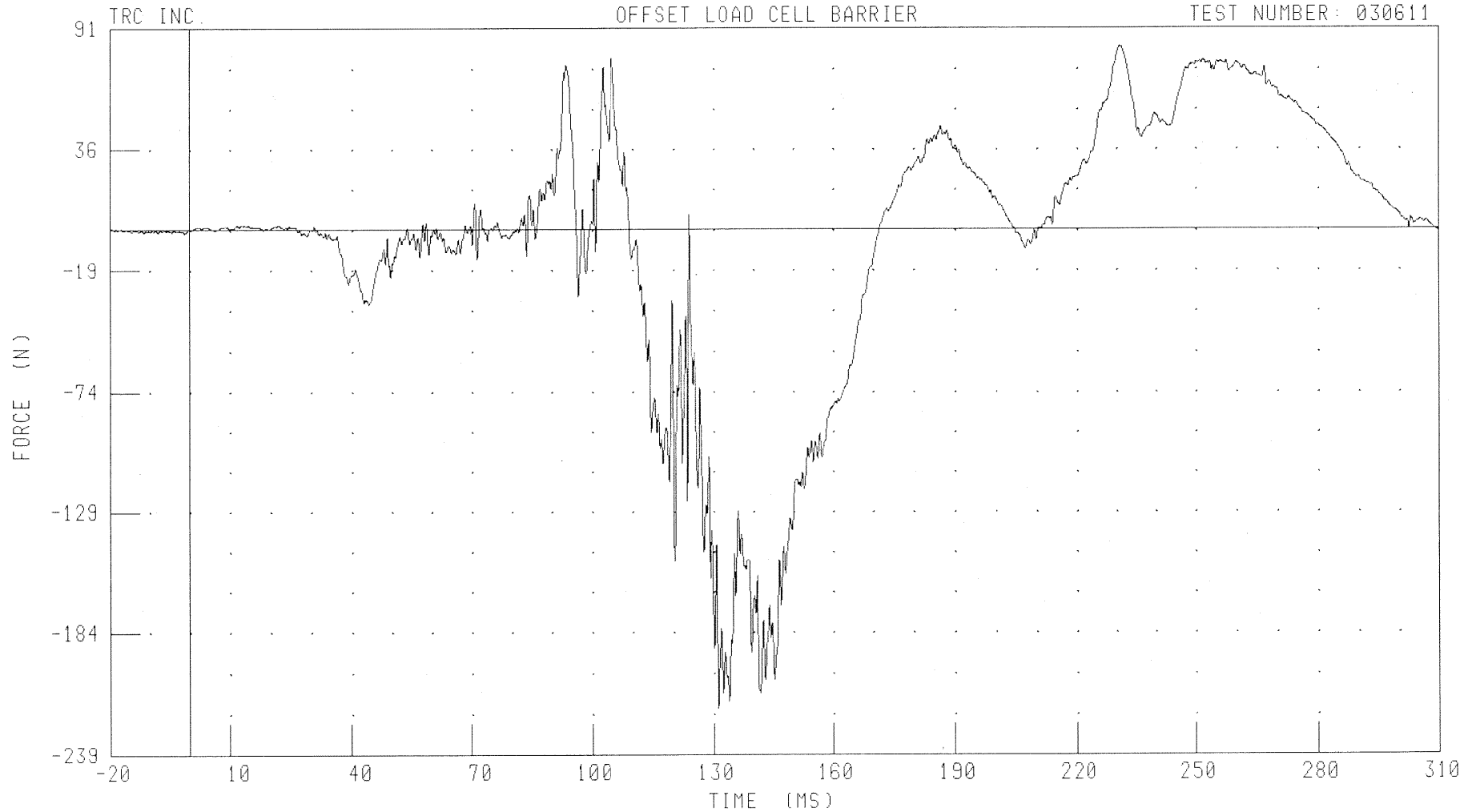
PEAK DATA: 379.03 N @ 107.84 MS; -317.22 N @ 85.92 MS

B-128

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER LEFT LOWER TIBIA Y-AXIS FORCE

TEST NUMBER: 030611



CHANNEL: ANLYF2

FILTER: CH. CLASS 600

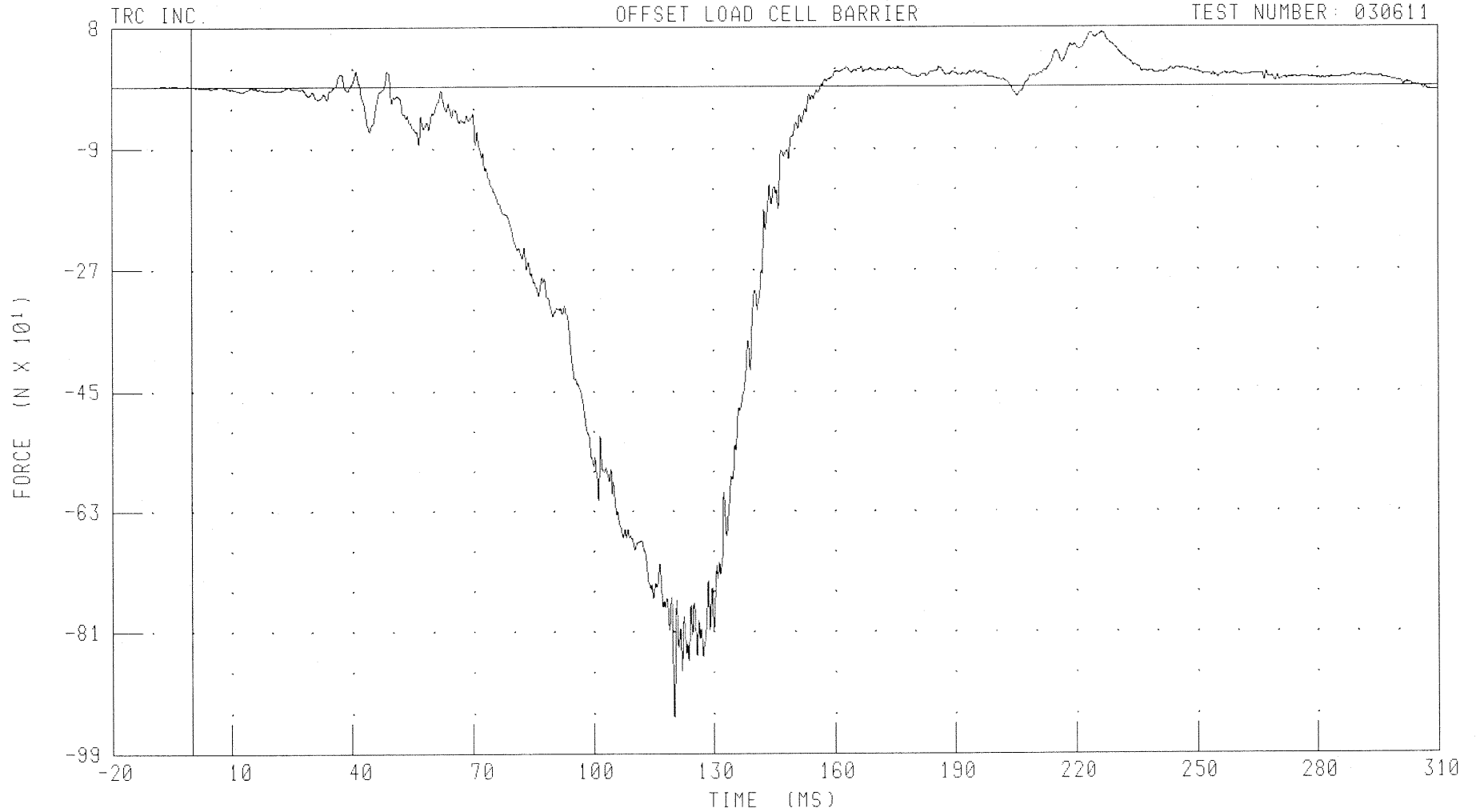
PEAK DATA: 83.08 N @ 230.96 MS; -218.08 N @ 131.20 MS

B-129

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER LEFT LOWER TIBIA Z-AXIS FORCE

TEST NUMBER: 030611



CHANNEL: ANLZF2 FILTER: CH. CLASS 600

PEAK DATA: 79.60 N @ 226.48 MS; -938.79 N @ 120.32 MS

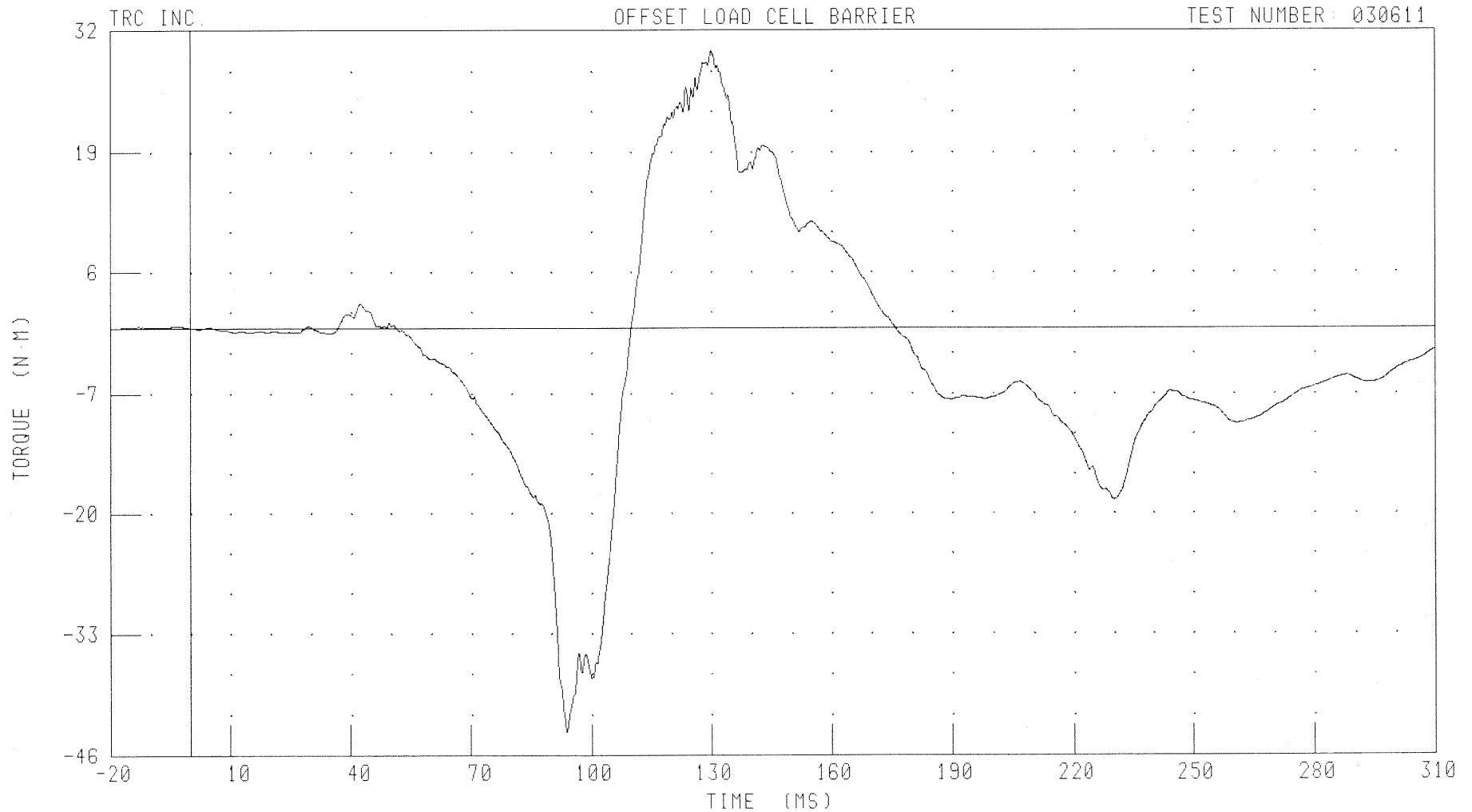
B-130

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER LEFT LOWER TIBIA MOMENT ABOUT X AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: ANLXM2 FILTER: CH. CLASS 600

PEAK DATA: 29.79 N·M @ 130.00 MS, -43.49 N·M @ 93.92 MS

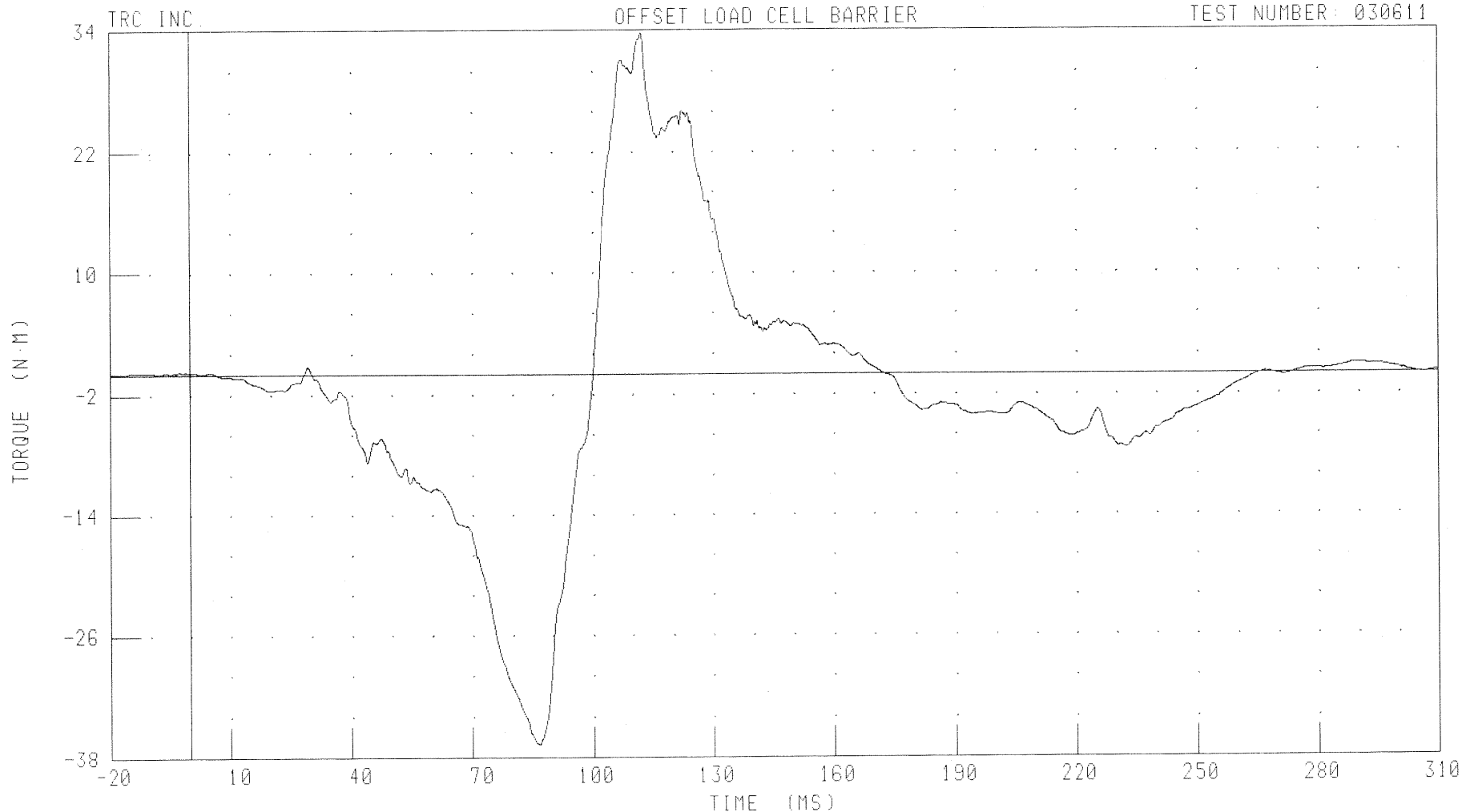
B-131

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER LEFT LOWER TIBIA MOMENT ABOUT Y AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL ANLYM2 FILTER: CH CLASS 600

PEAK DATA: 33.75 N.M @ 112.40 MS, -36.72 N.M @ 86.72 MS

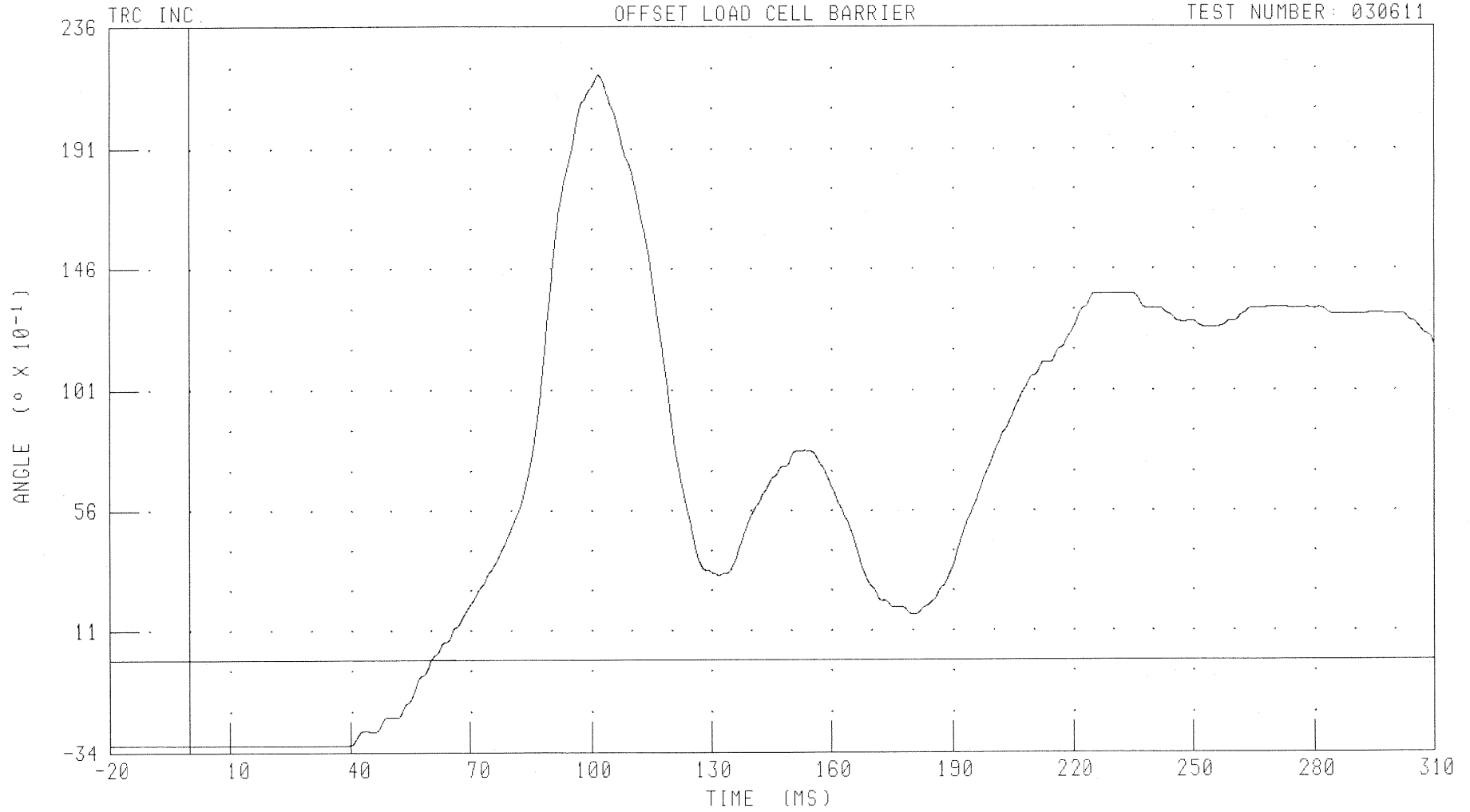
B-132

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER LEFT FOOT TO ANKLE X-AXIS DISPLACEMENT

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FTLXD2 FILTER: CH. CLASS 180

PEAK DATA: 21.85 ° @ 101.68 MS; -3.14 ° @ 25.76 MS

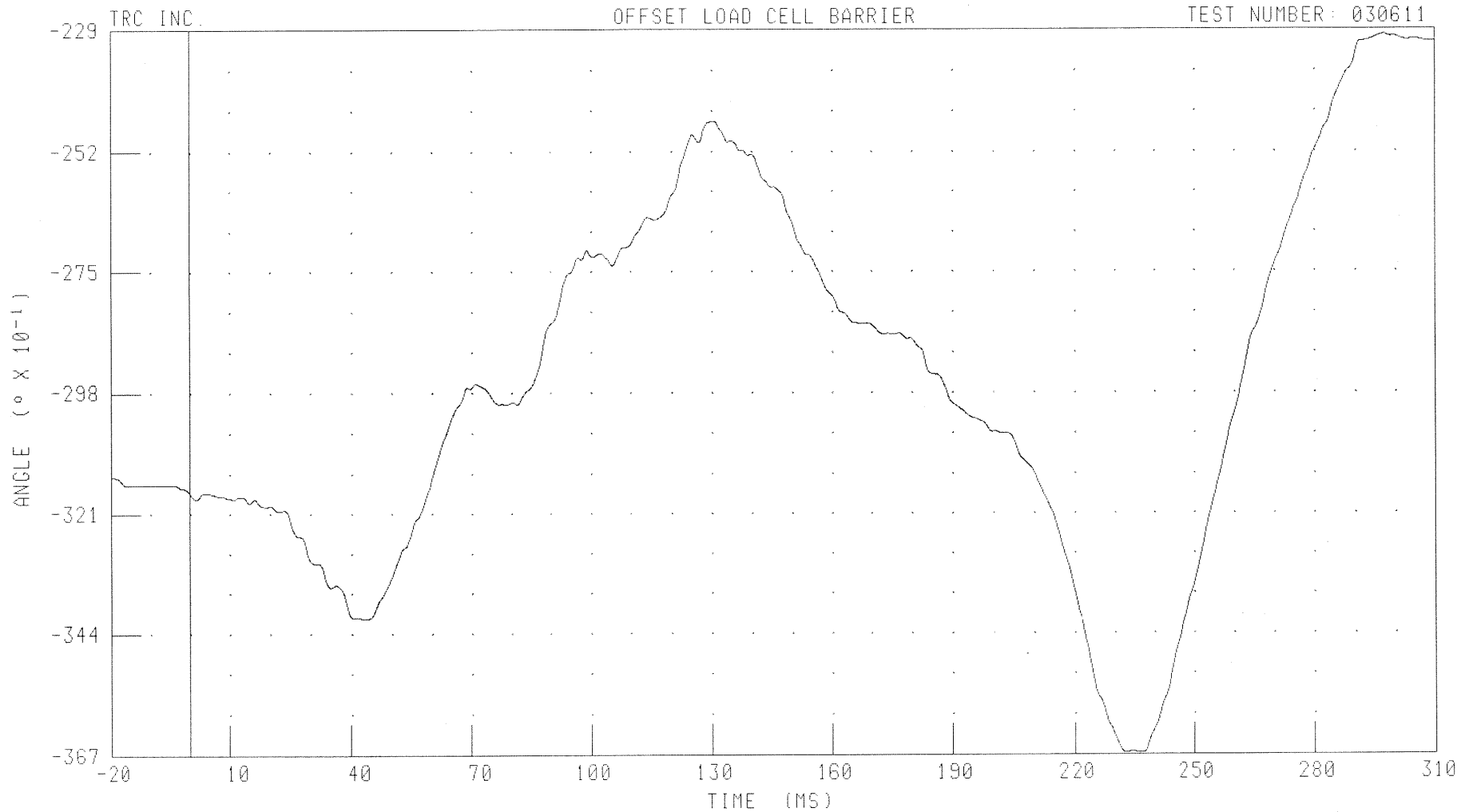
B-133

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER LEFT FOOT TO ANKLE Y-AXIS DISPLACEMENT

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FTLYD2 FILTER: CH CLASS 180

PEAK DATA -23.00 ° @ 297.28 MS, -36.67 ° @ 236.96 MS

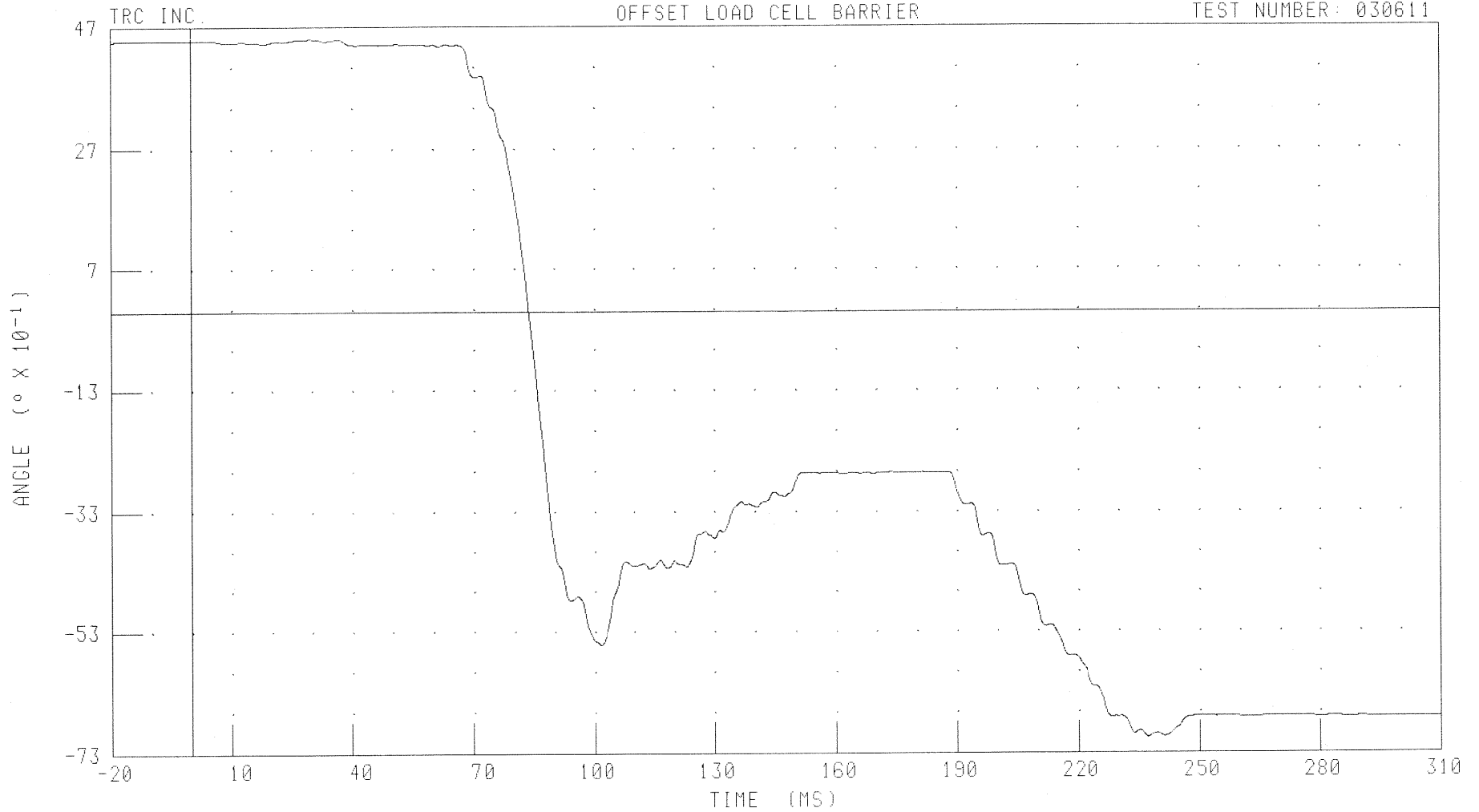
B-134

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER LEFT FOOT TO ANKLE Z-AXIS DISPLACEMENT

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL FTLZD2 FILTER CH CLASS 180

PEAK DATA 4.49 ° @ 29.68 MS, -7.06 ° @ 237.20 MS

B-135

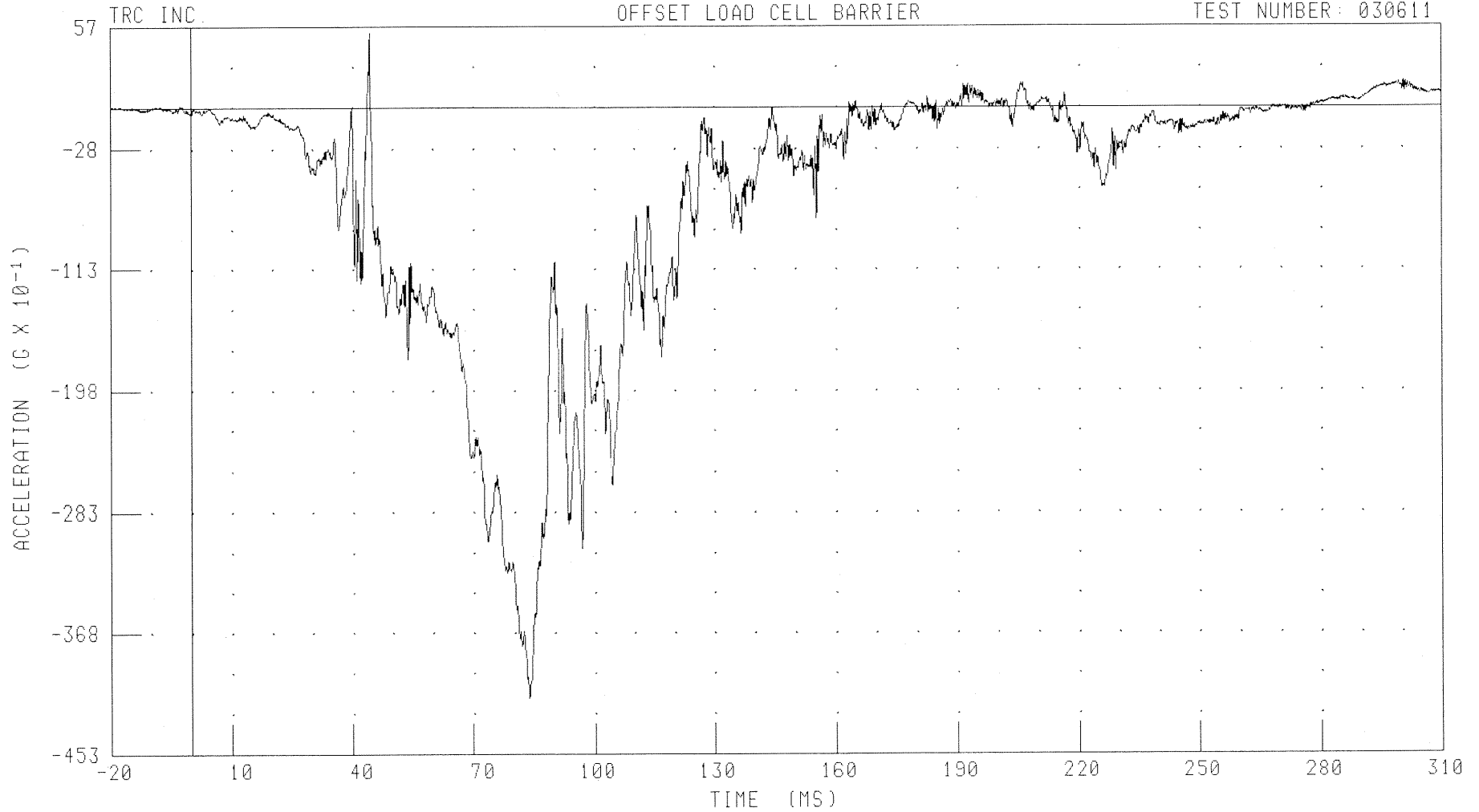
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER LEFT FOOT X-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FTLXG2

FILTER: CH. CLASS 1000

PEAK DATA: 5.25 G @ 44.40 MS; -41.43 G @ 83.68 MS

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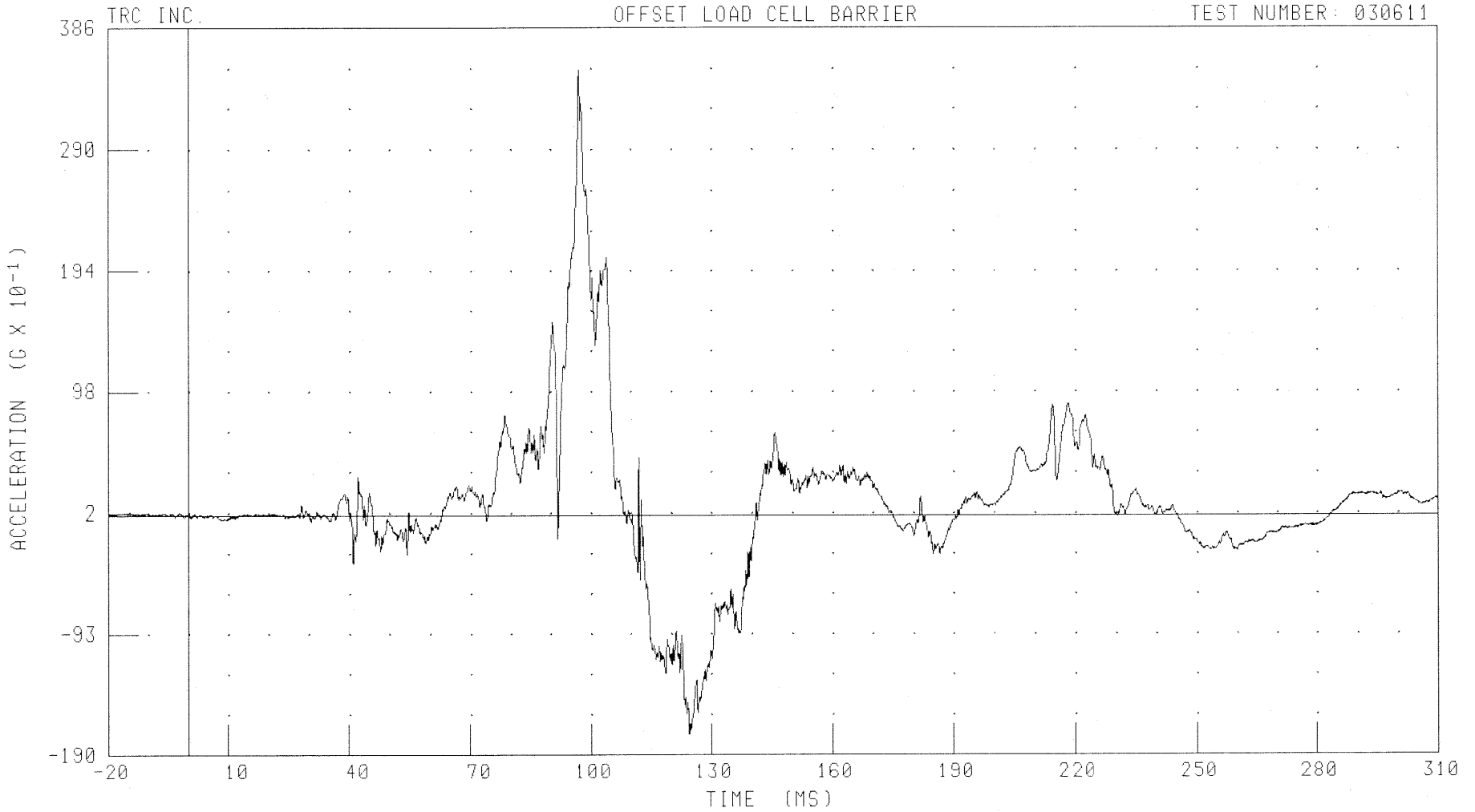
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER LEFT FOOT Y-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FTLYG2 FILTER: CH. CLASS 1000

PEAK DATA: 35.27 G @ 96.96 MS; -17.35 G @ 124.56 MS

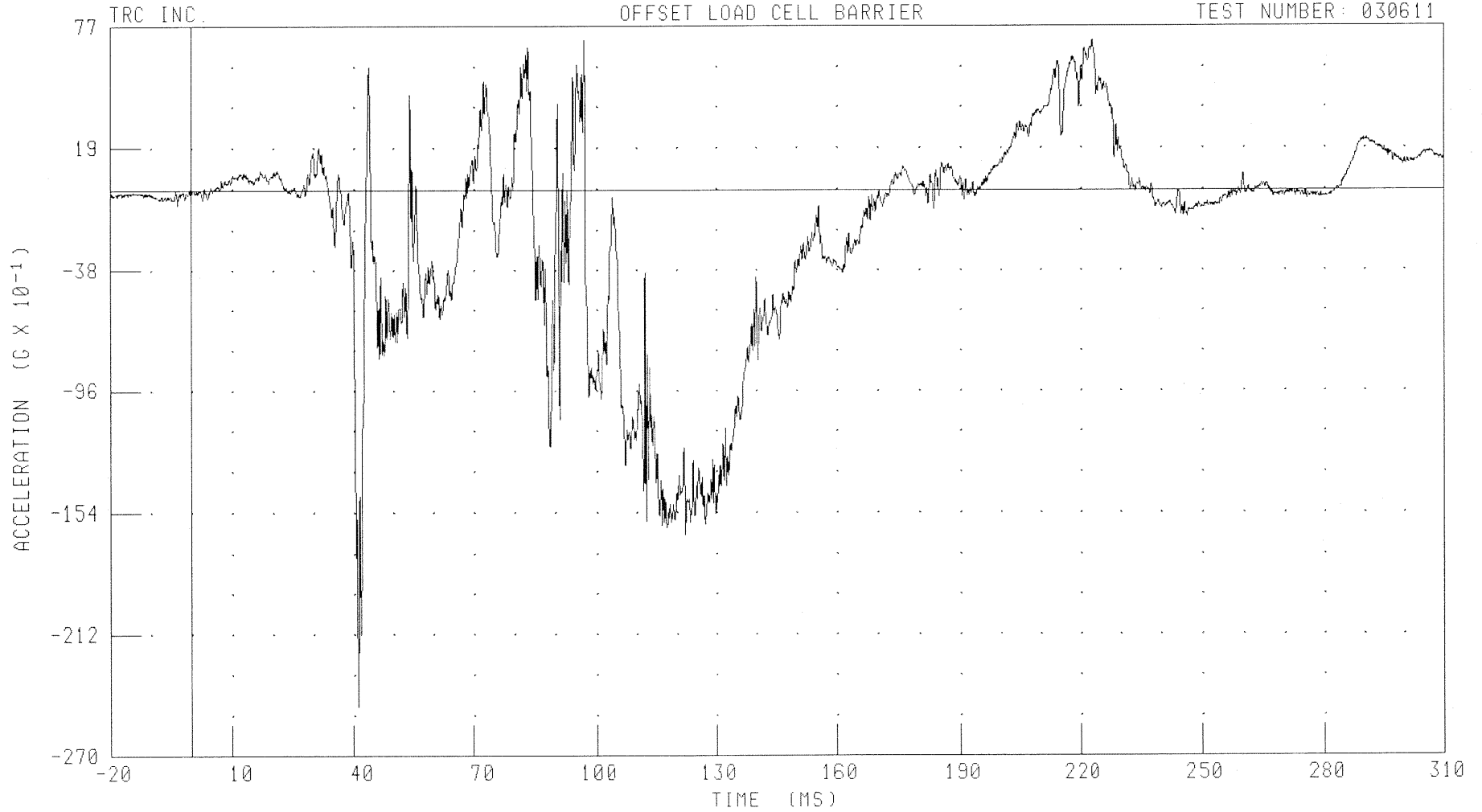
B-137

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER LEFT FOOT Z-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FTLZC2

FILTER: CH. CLASS 1000

PEAK DATA: 7.13 G @ 97.04 MS; -24.67 G @ 41.20 MS

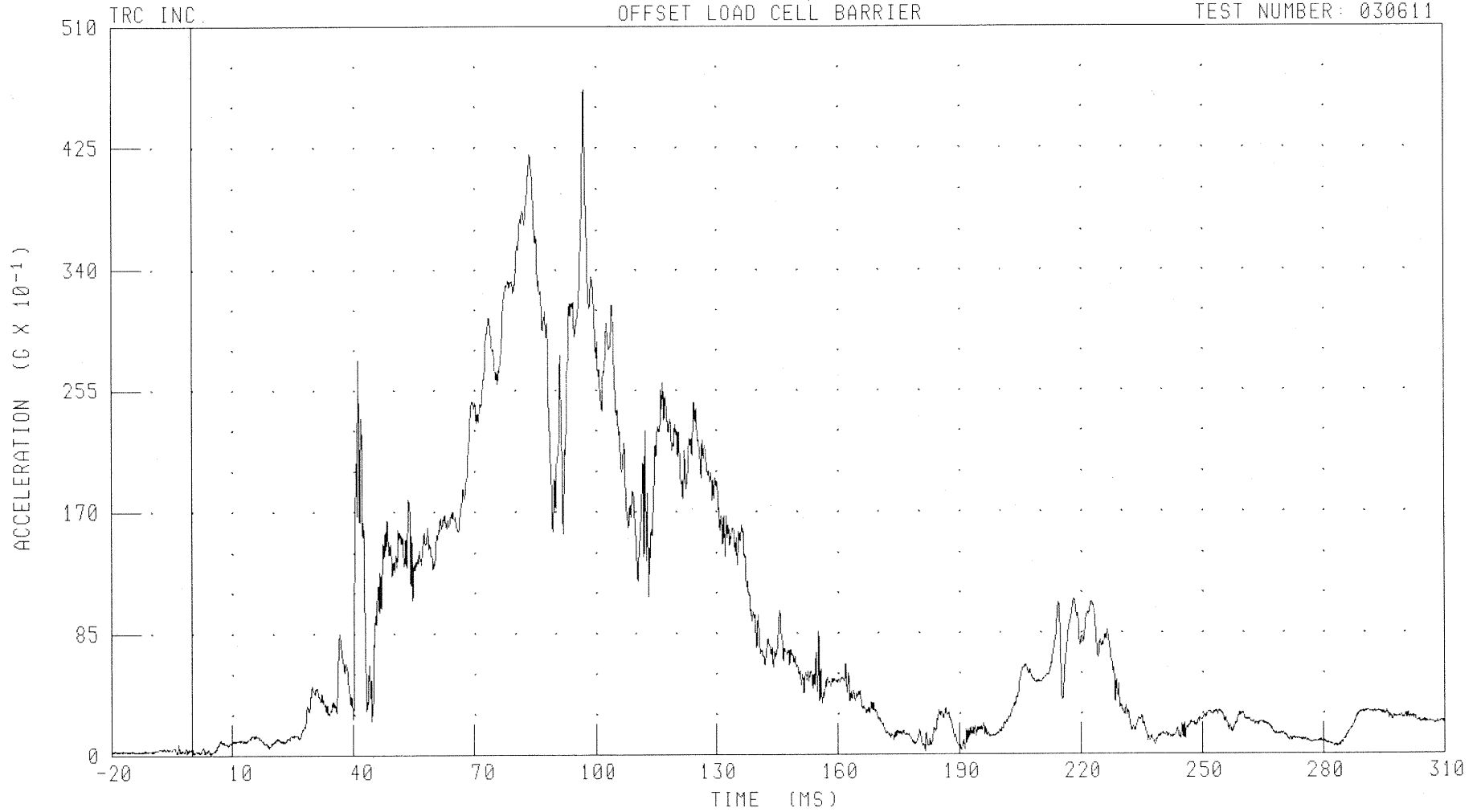
B-138

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER LEFT FOOT RESULTANT ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FTLCR2 FILTER: CH. CLASS 1000

PEAK DATA: 46.53 G @ 96.96 MS, 0.08 G @ 4.48 MS

B-139

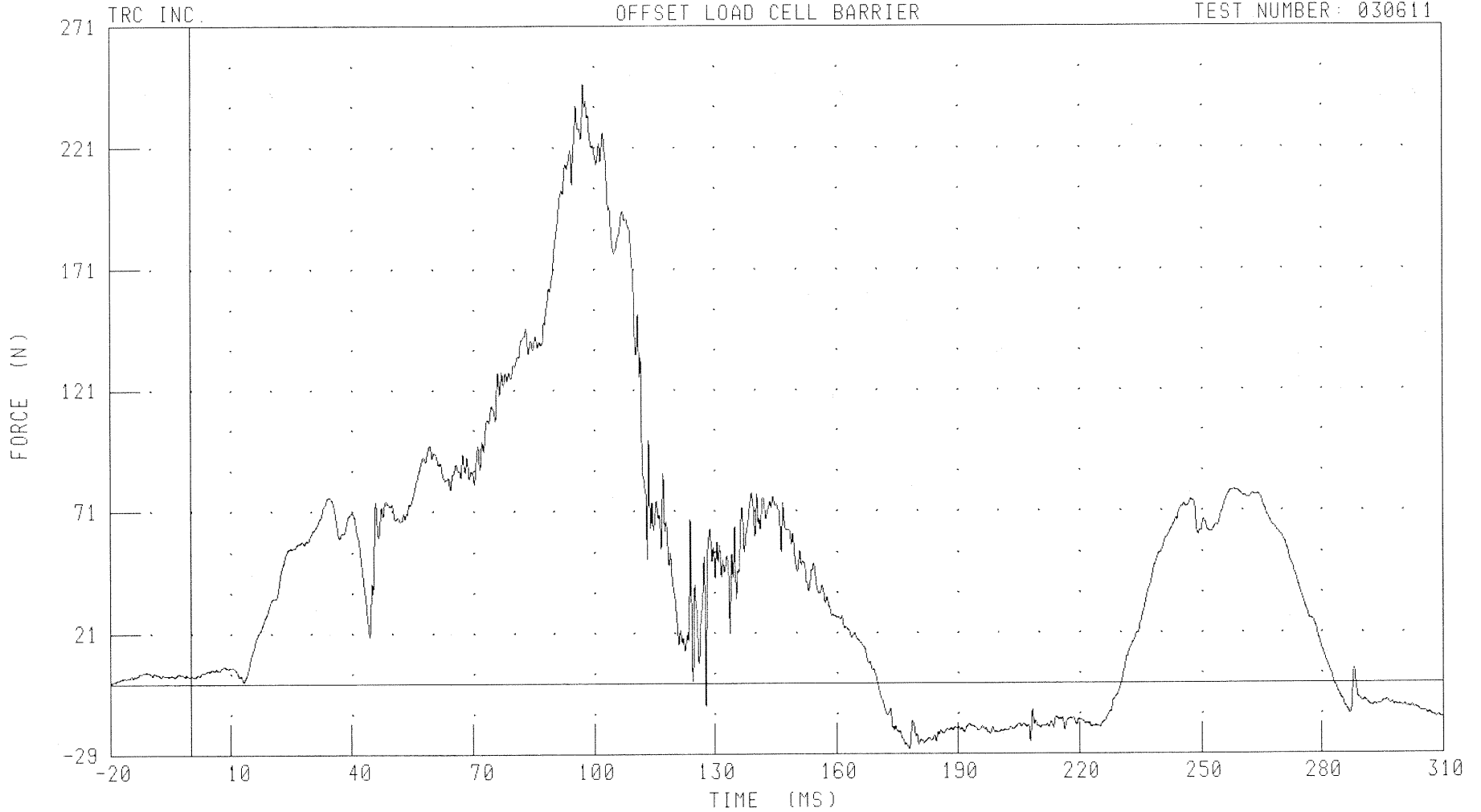
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER RIGHT UPPER TIBIA X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: TBRXF2

FILTER: CH. CLASS 600

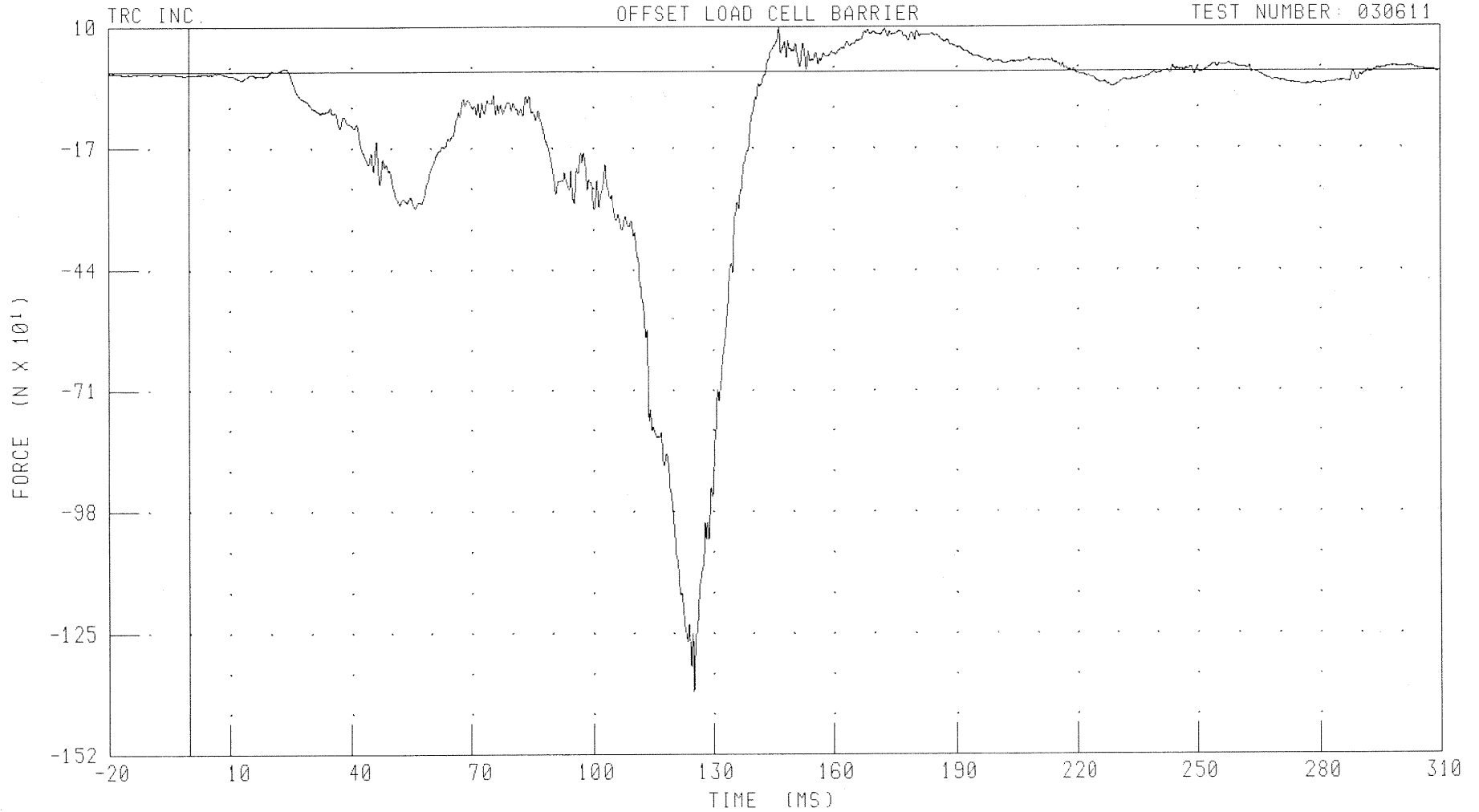
PEAK DATA: 246.97 N @ 97.44 MS, -27.02 N @ 178.00 MS

B-140

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER RIGHT UPPER TIBIA Z-AXIS FORCE

TEST NUMBER: 030611



CHANNEL: TBRZF2 FILTER: CH. CLASS 600

PEAK DATA: 97.62 N @ 146.56 MS; -1380.70 N @ 125.12 MS

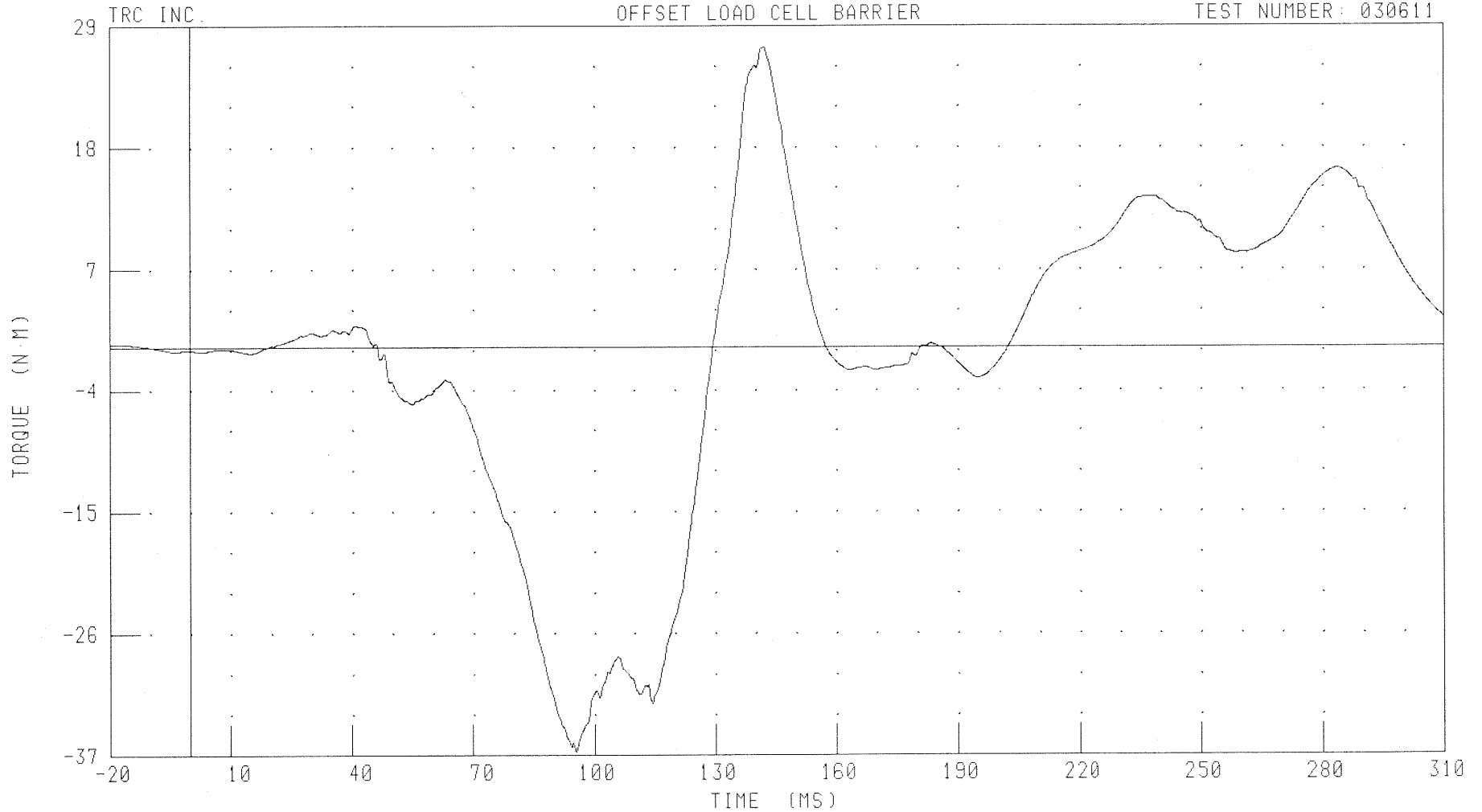
B-141

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER RIGHT UPPER TIBIA MOMENT ABOUT X AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: TBRXM2

FILTER: CH. CLASS 600

PEAK DATA 27.07 N·M @ 142.16 MS; -36.75 N·M @ 95.52 MS

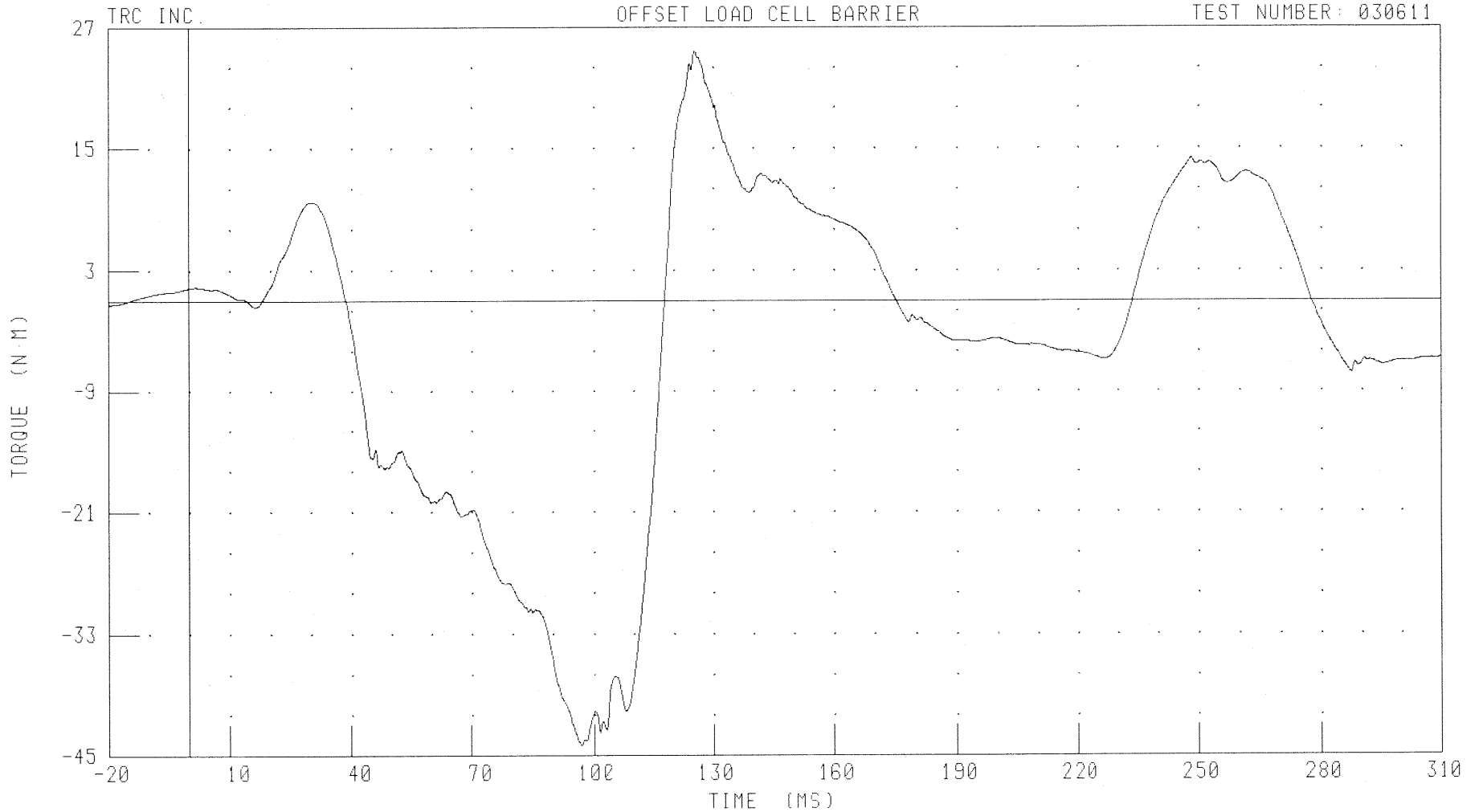
B-142

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER RIGHT UPPER TIBIA MOMENT ABOUT Y AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: TBRYM2

FILTER: CH. CLASS 600

PEAK DATA: 24.62 N·M @ 125.52 MS; -44.01 N·M @ 96.96 MS

B-143

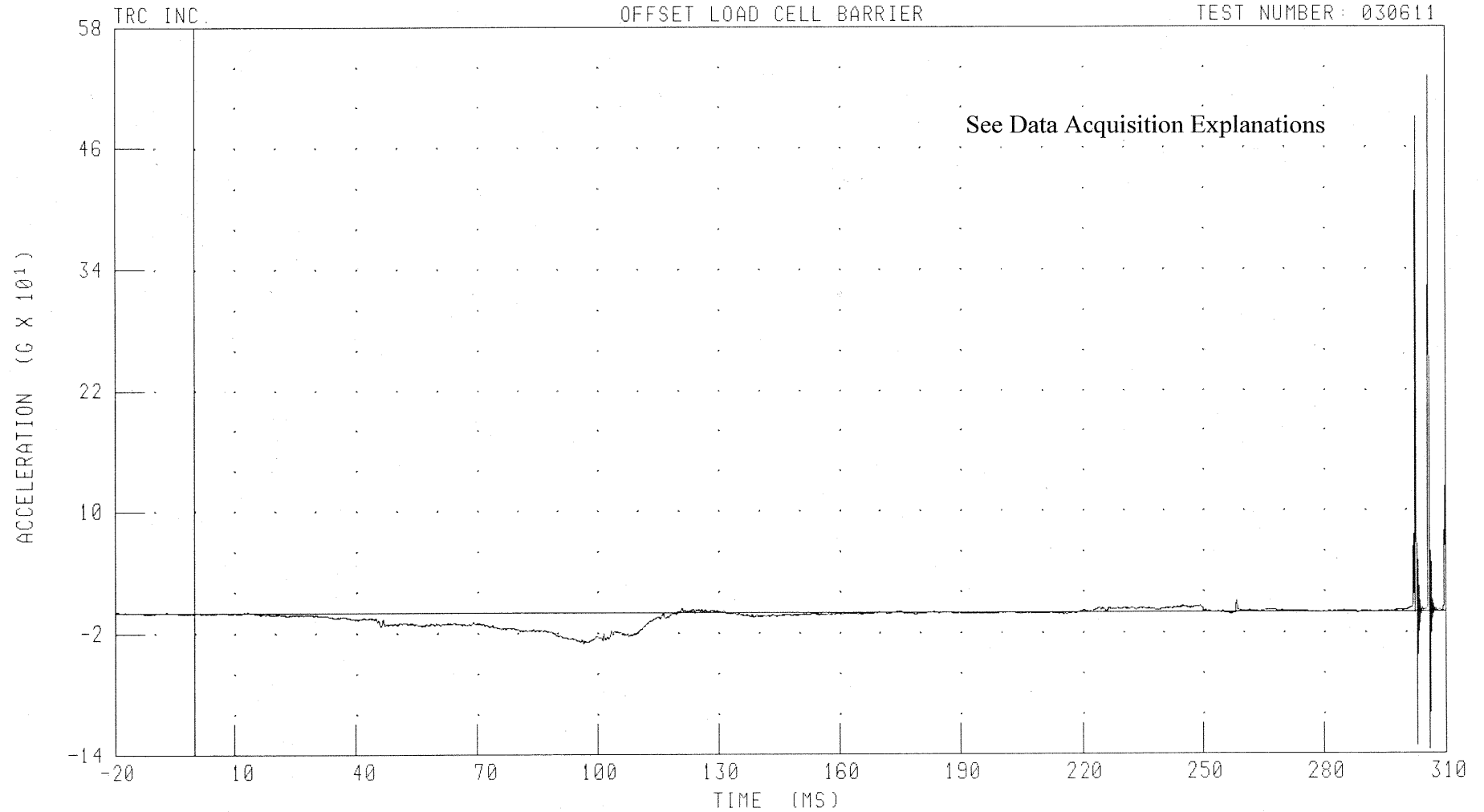
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER RIGHT TIBIA X-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: TBRX02 FILTER: CH. CLASS 1000

PEAK DATA: 530.53 G @ 305.60 MS; -135.56 G @ 305.92 MS

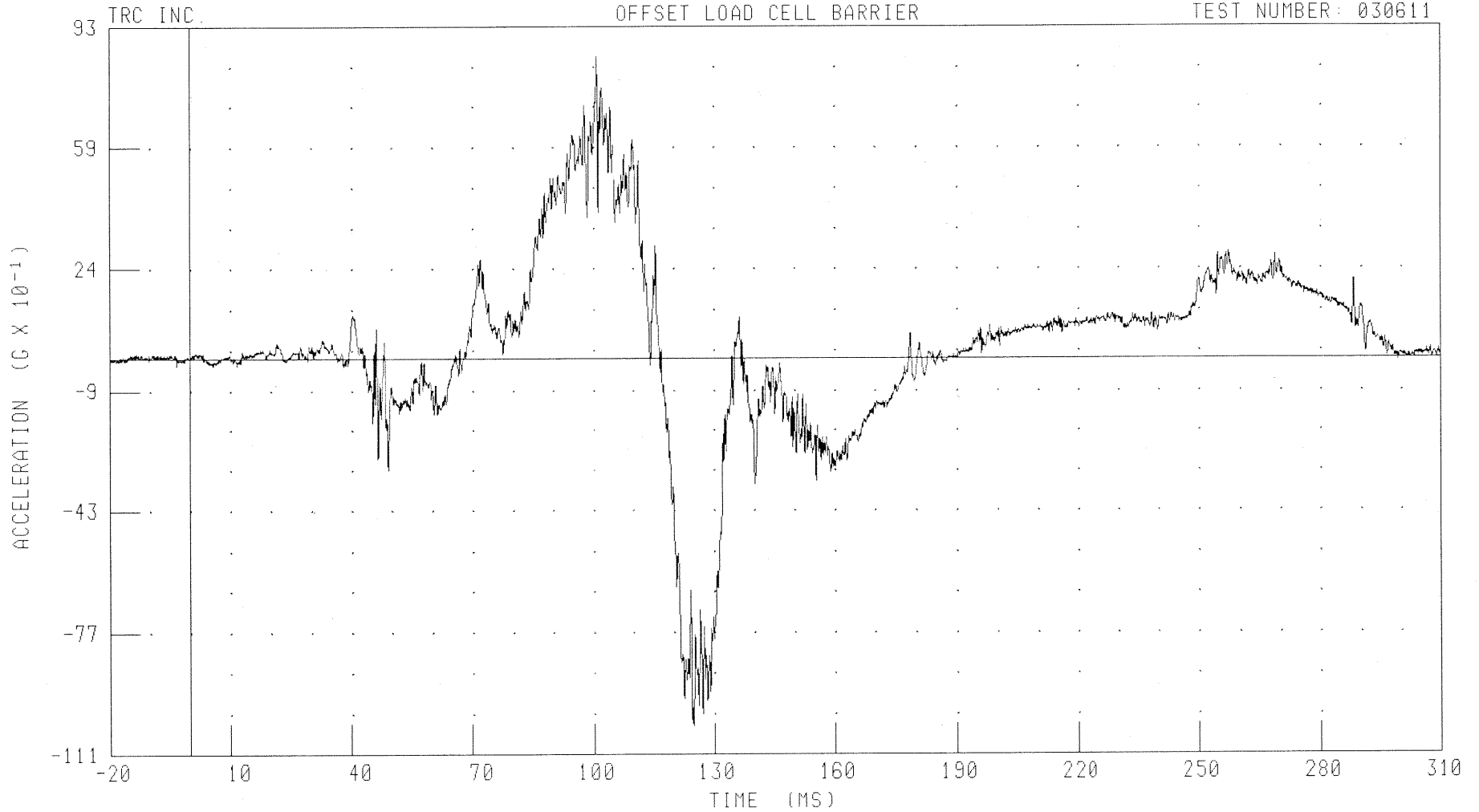
B-144

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER RIGHT TIBIA Y-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: TBRYG2

FILTER: CH. CLASS 1000

PEAK DATA: 8.46 G @ 100.96 MS, -10.29 G @ 125.04 MS

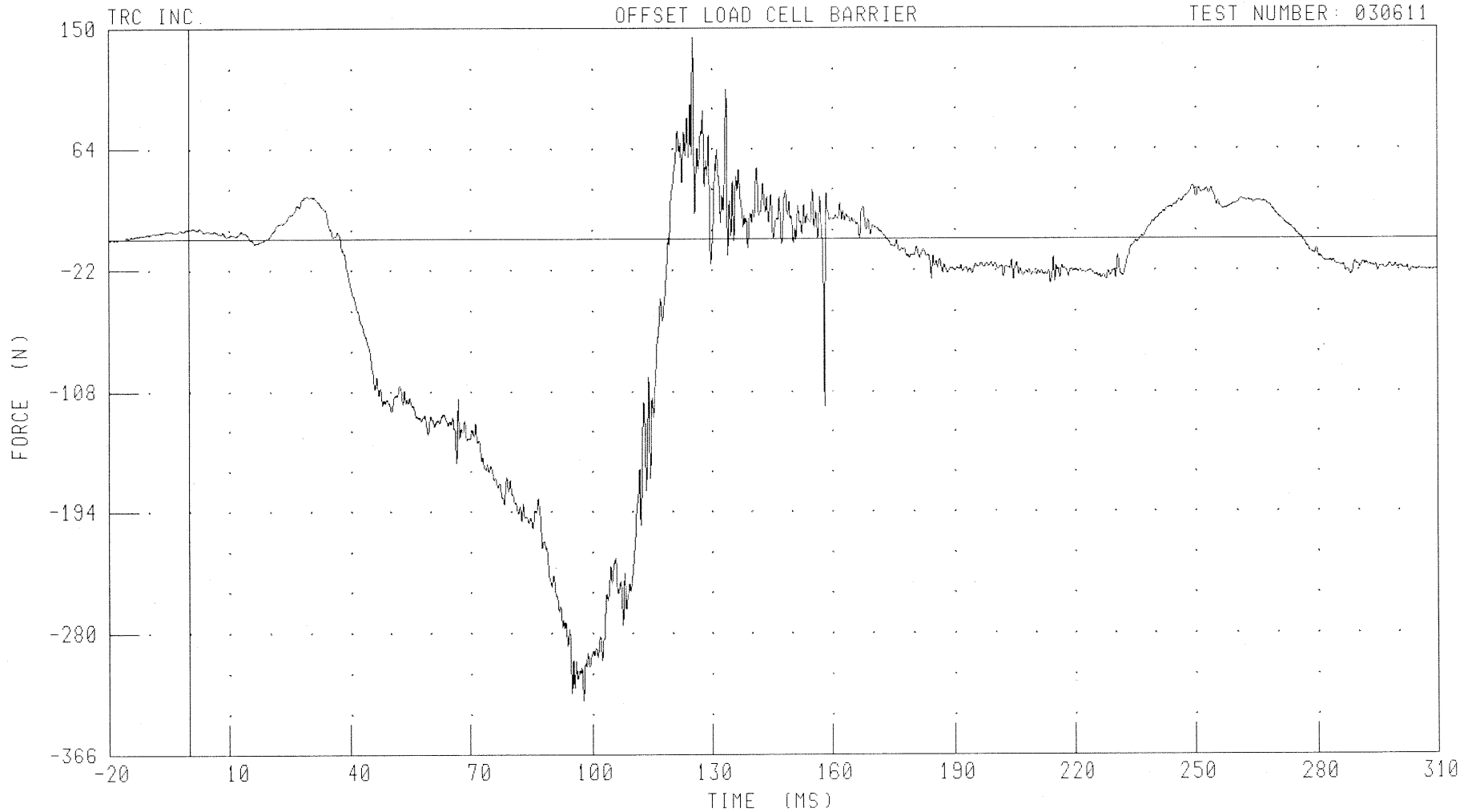
B-145

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER RIGHT LOWER TIBIA X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: ANRXF2 FILTER: CH. CLASS 600

PEAK DATA: 143.40 N @ 125.28 MS; -327.19 N @ 97.84 MS

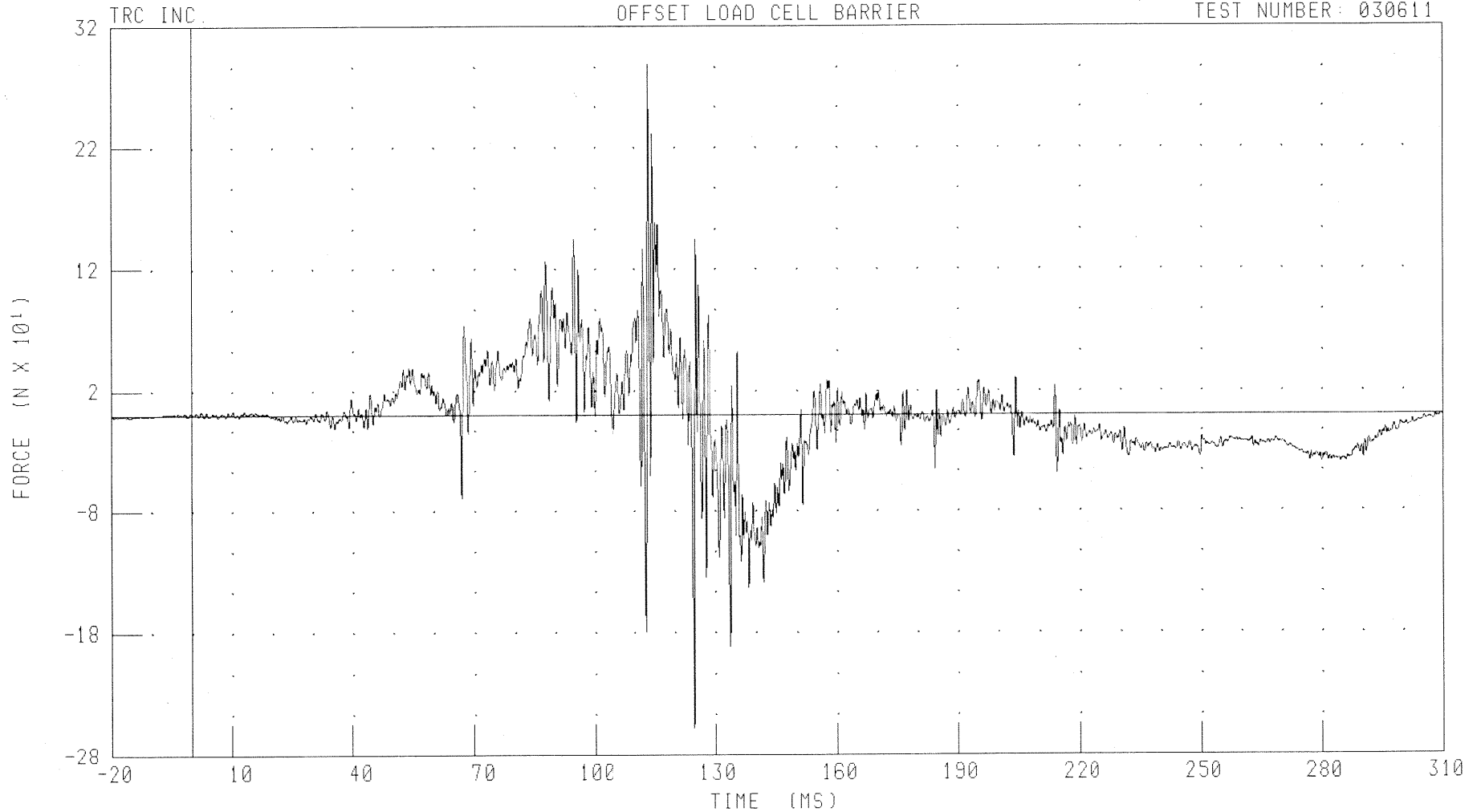
B-146

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER RIGHT LOWER TIBIA Y-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: ANRYF2

FILTER: CH. CLASS 600

PEAK DATA: 288.48 N @ 113.60 MS; -258.18 N @ 124.80 MS

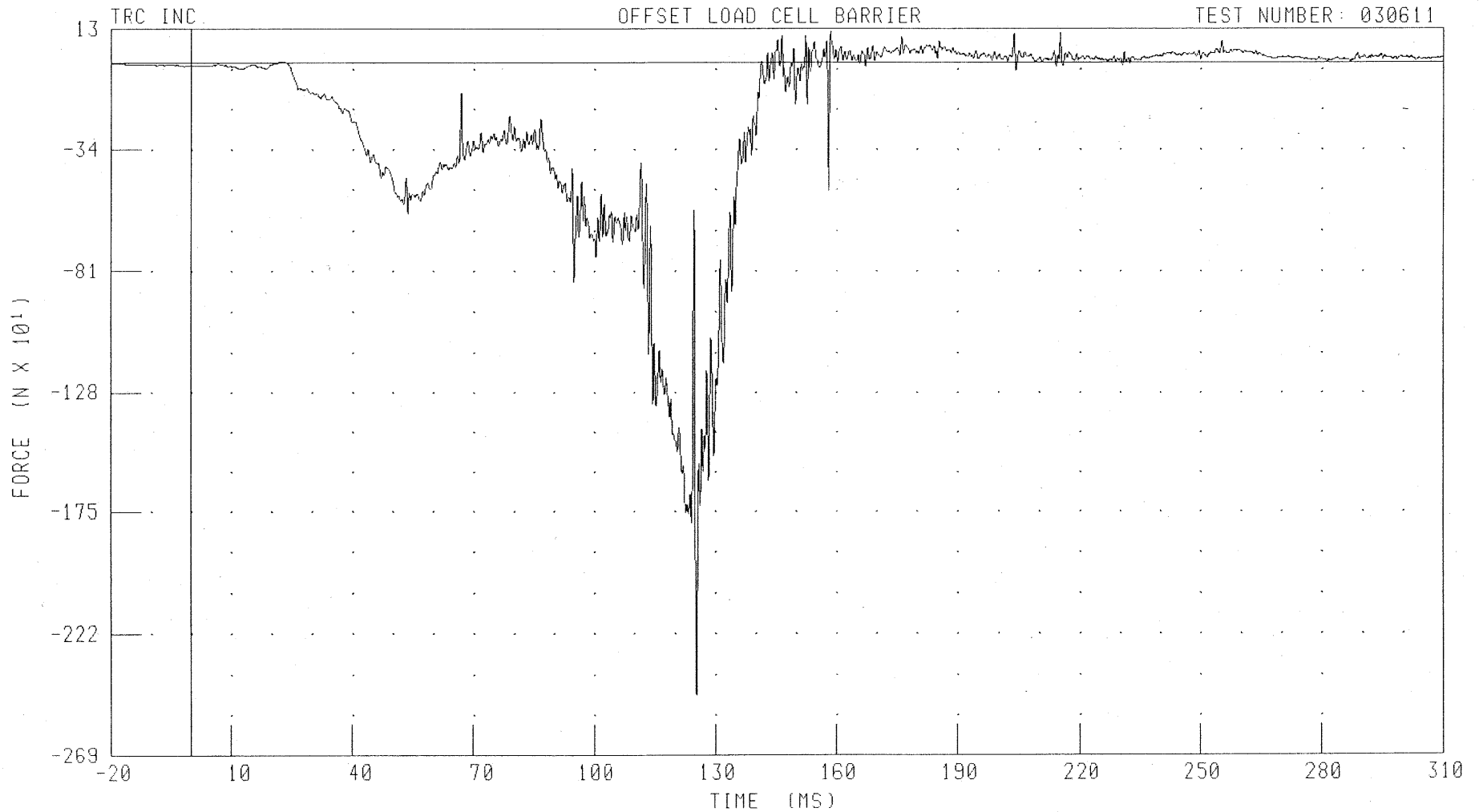
B-147

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER RIGHT LOWER TIBIA Z-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: ANRZF2 FILTER: CH. CLASS 600

PEAK DATA: 120.23 N @ 158.72 MS; -2454.10 N @ 125.44 MS

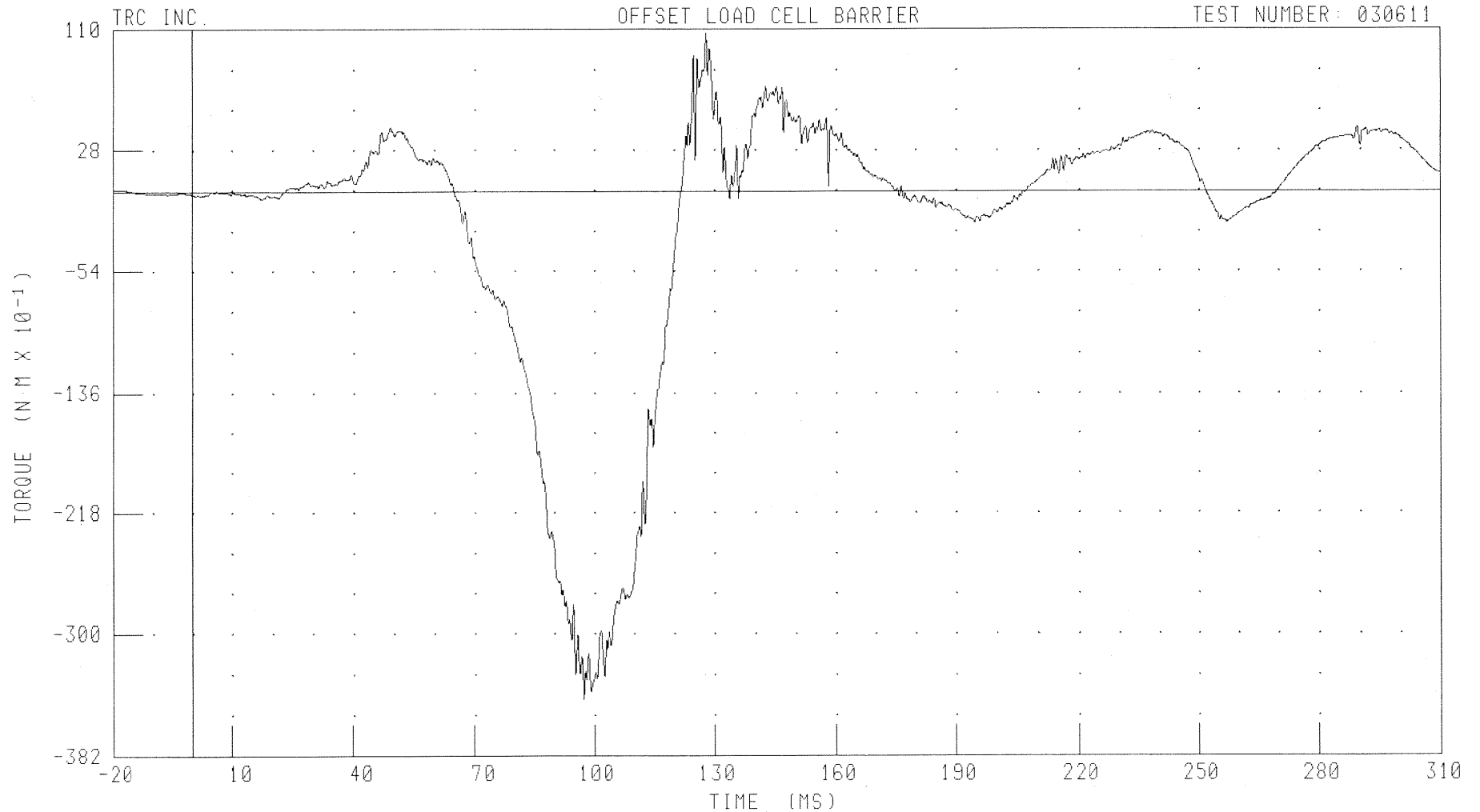
B-148

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER RIGHT LOWER TIBIA MOMENT ABOUT X AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: ANRXM2

FILTER: CH. CLASS 600

PEAK DATA: 10.71 N·M @ 128.08 MS; -34.38 N·M @ 97.36 MS

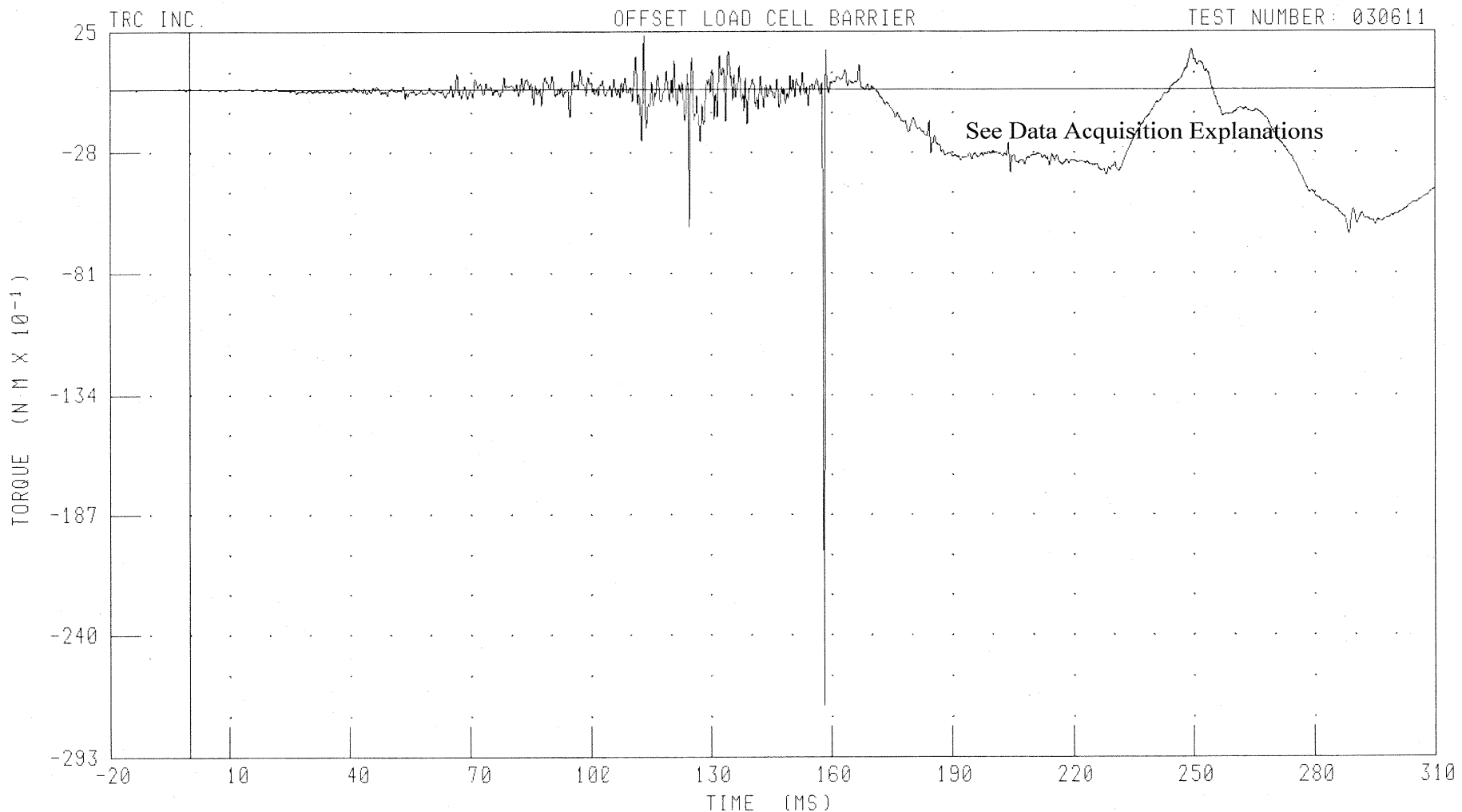
B-149

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER RIGHT LOWER TIBIA MOMENT ABOUT Y AXIS

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: ANRYM2

FILTER: CH. CLASS 600

PEAK DATA: 2.32 N·m @ 113.52 MS; -27.07 N·m @ 158.24 MS

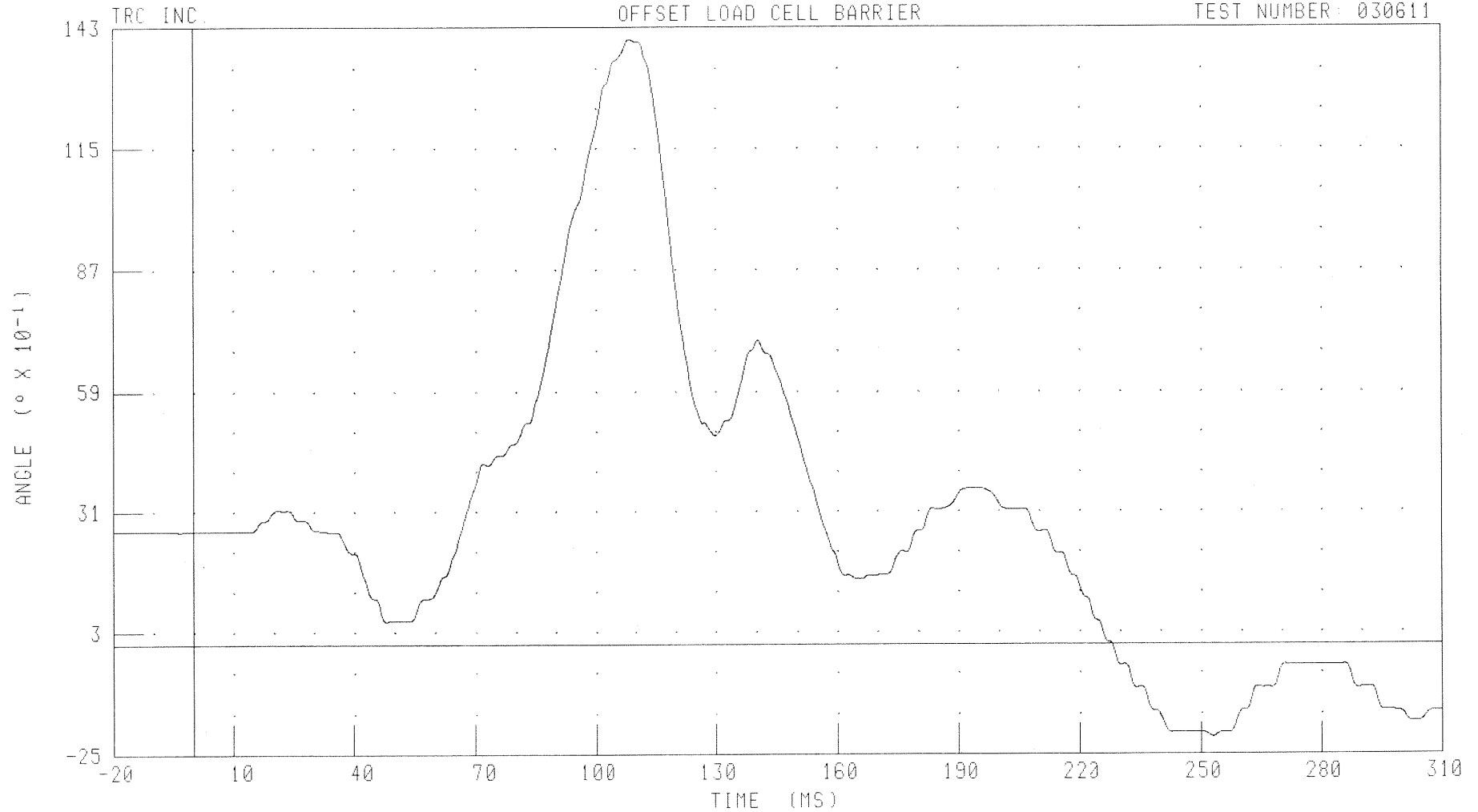
B-150

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER RIGHT FOOT TO ANKLE X-AXIS DISPLACEMENT

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FTRXD2 FILTER CH CLASS 180

PEAK DATA: 14.03 ° @ 108.64 MS, -2.11 ° @ 252.80 MS

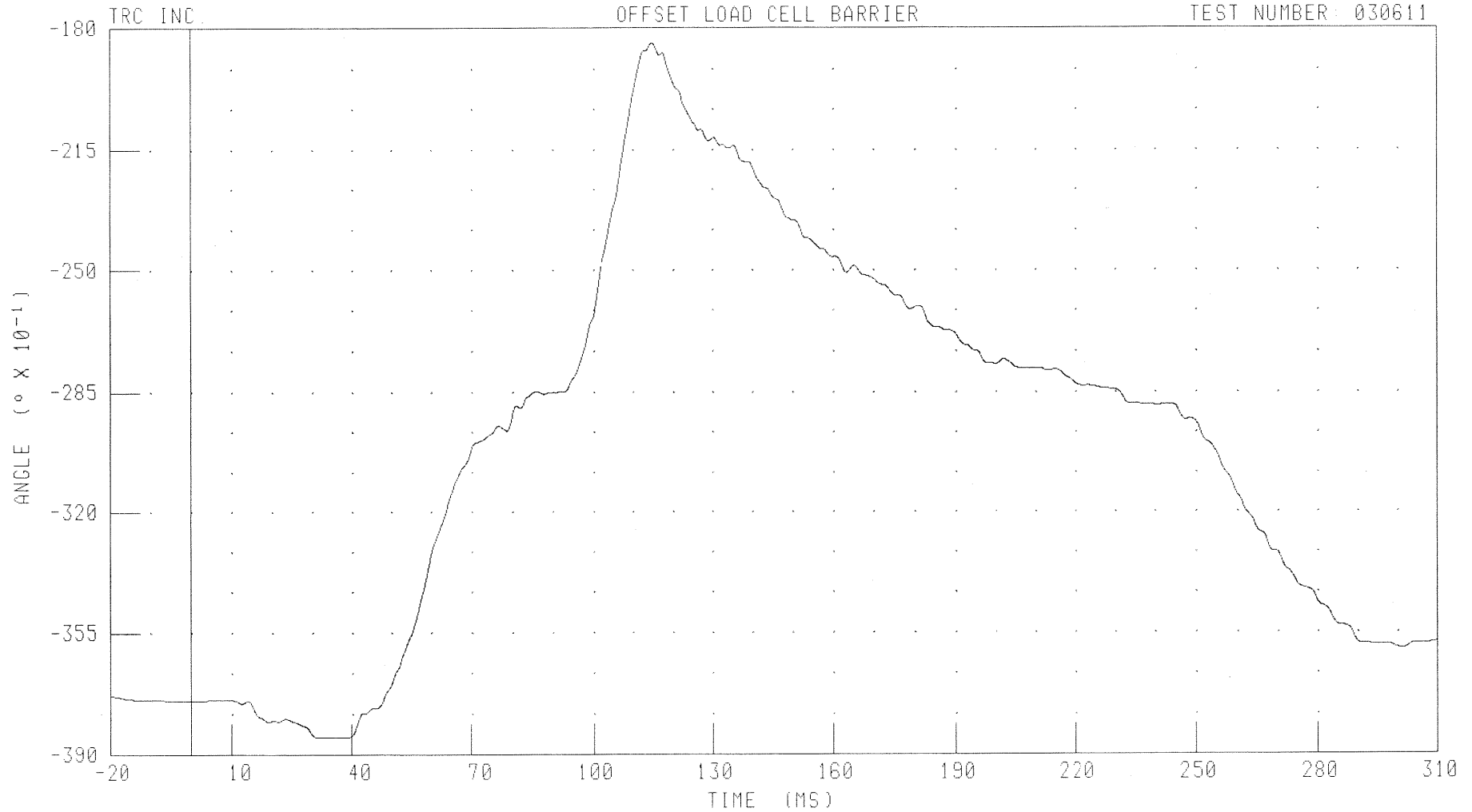
B-151

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER RIGHT FOOT TO ANKLE Y-AXIS DISPLACEMENT

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FTRYD2 FILTER: CH. CLASS 180

PEAK DATA: -18.44 ° @ 114.80 MS, -38.51 ° @ 35.92 MS

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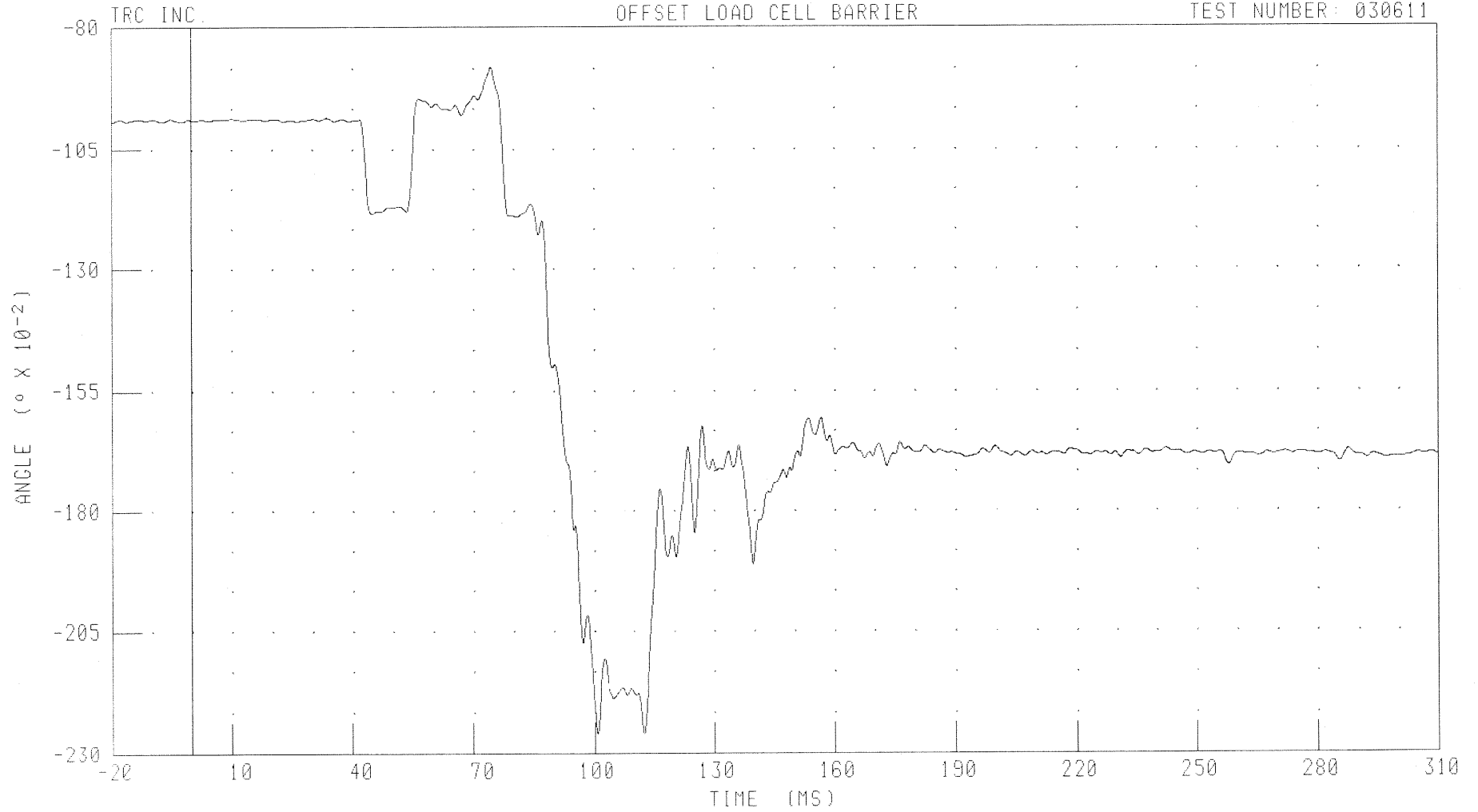
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER RIGHT FOOT TO ANKLE Z-AXIS DISPLACEMENT

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL FTRZD2 FILTER CH CLASS 180

PEAK DATA -0 88 ° @ 74 56 MS, -2 26 ° @ 112 56 MS

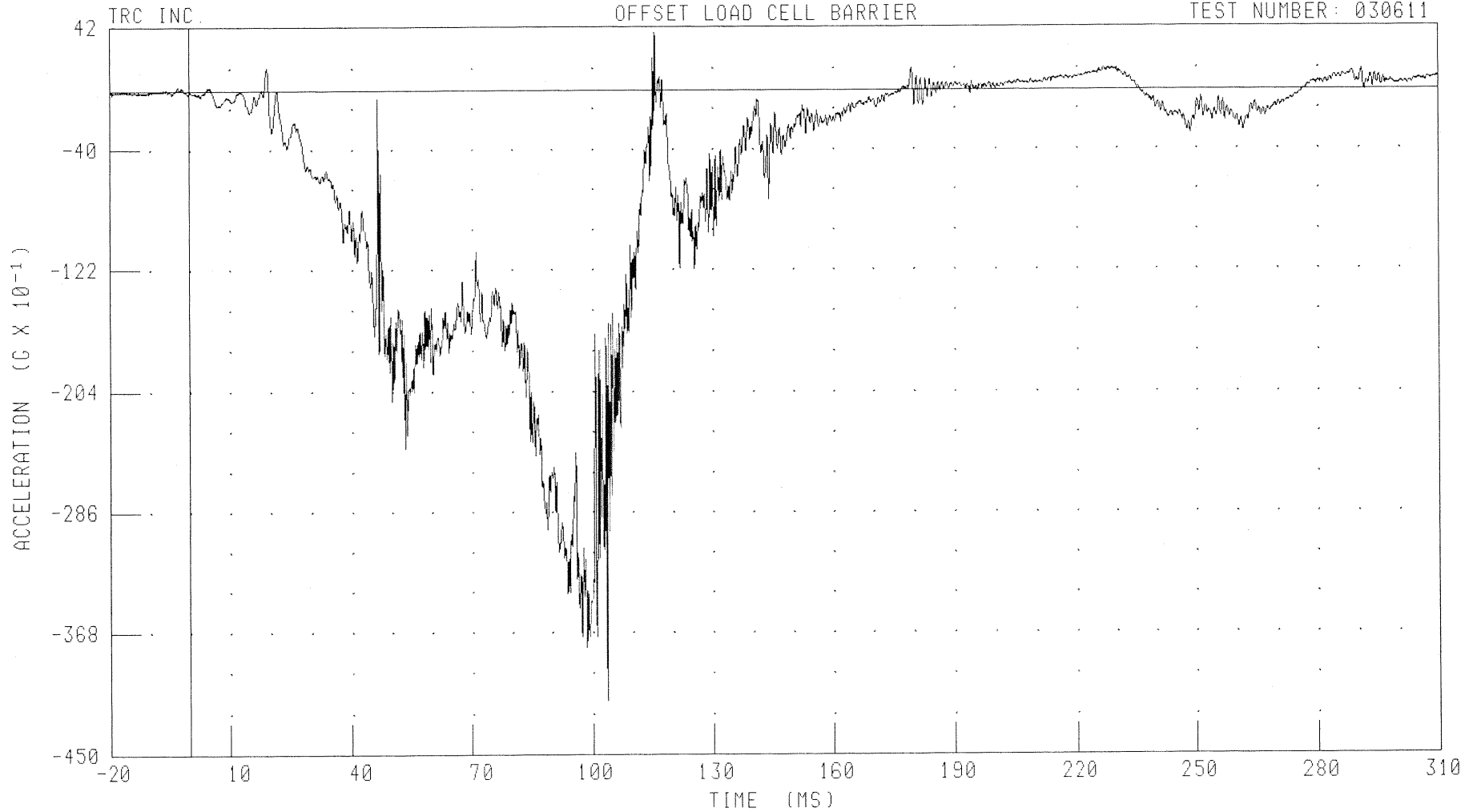
B-153

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER RIGHT FOOT X-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



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030611

CHANNEL: FTRXG2

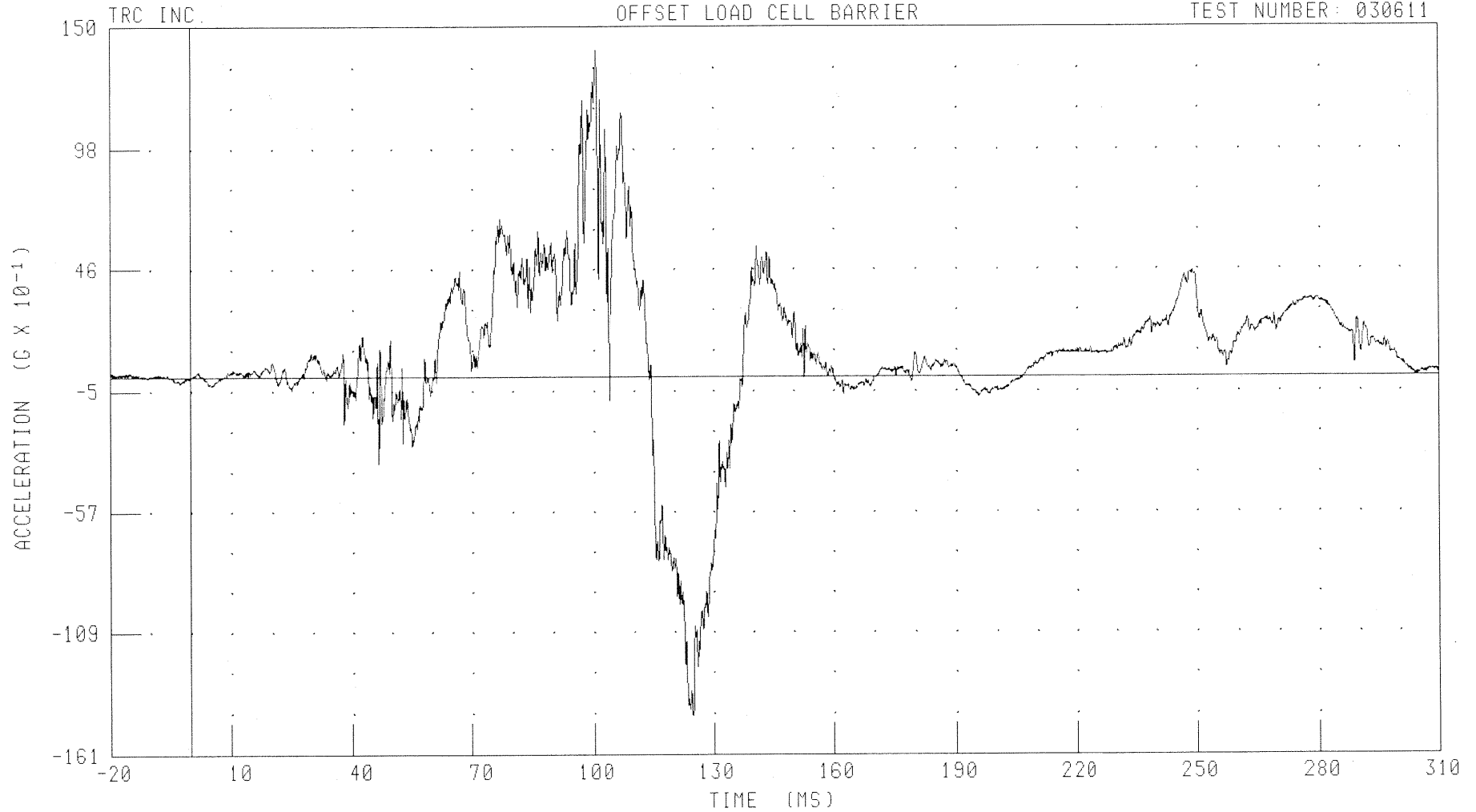
FILTER: CH. CLASS 1000

PEAK DATA: 3.83 G @ 115.68 MS; -41.40 G @ 103.84 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER RIGHT FOOT Y-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FTRYG2

FILTER: CH. CLASS 1000

PEAK DATA: 14.01 G @ 100.64 MS, -14.59 G @ 124.64 MS

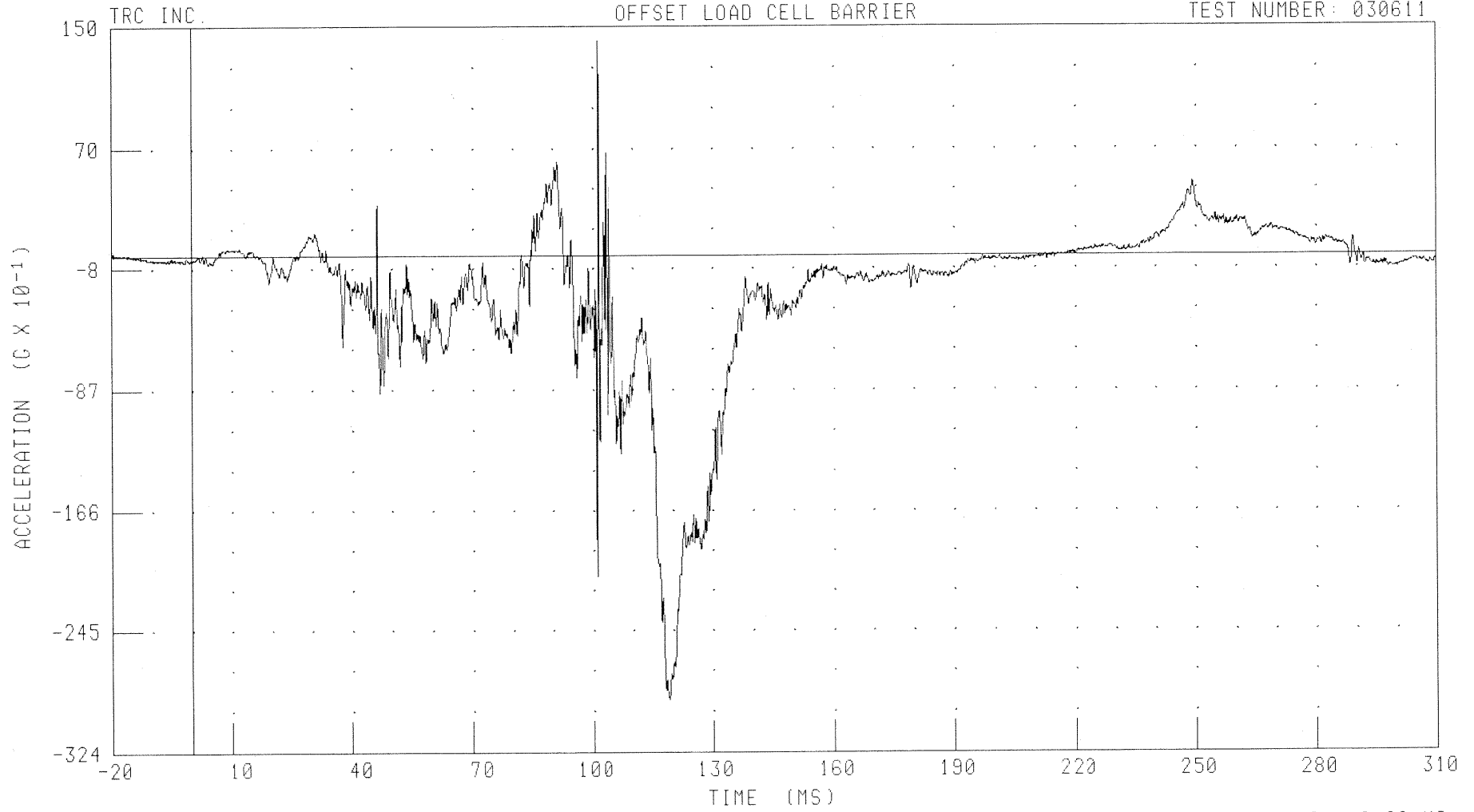
B-155

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER RIGHT FOOT Z-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FTRZG2

FILTER: CH. CLASS 1000

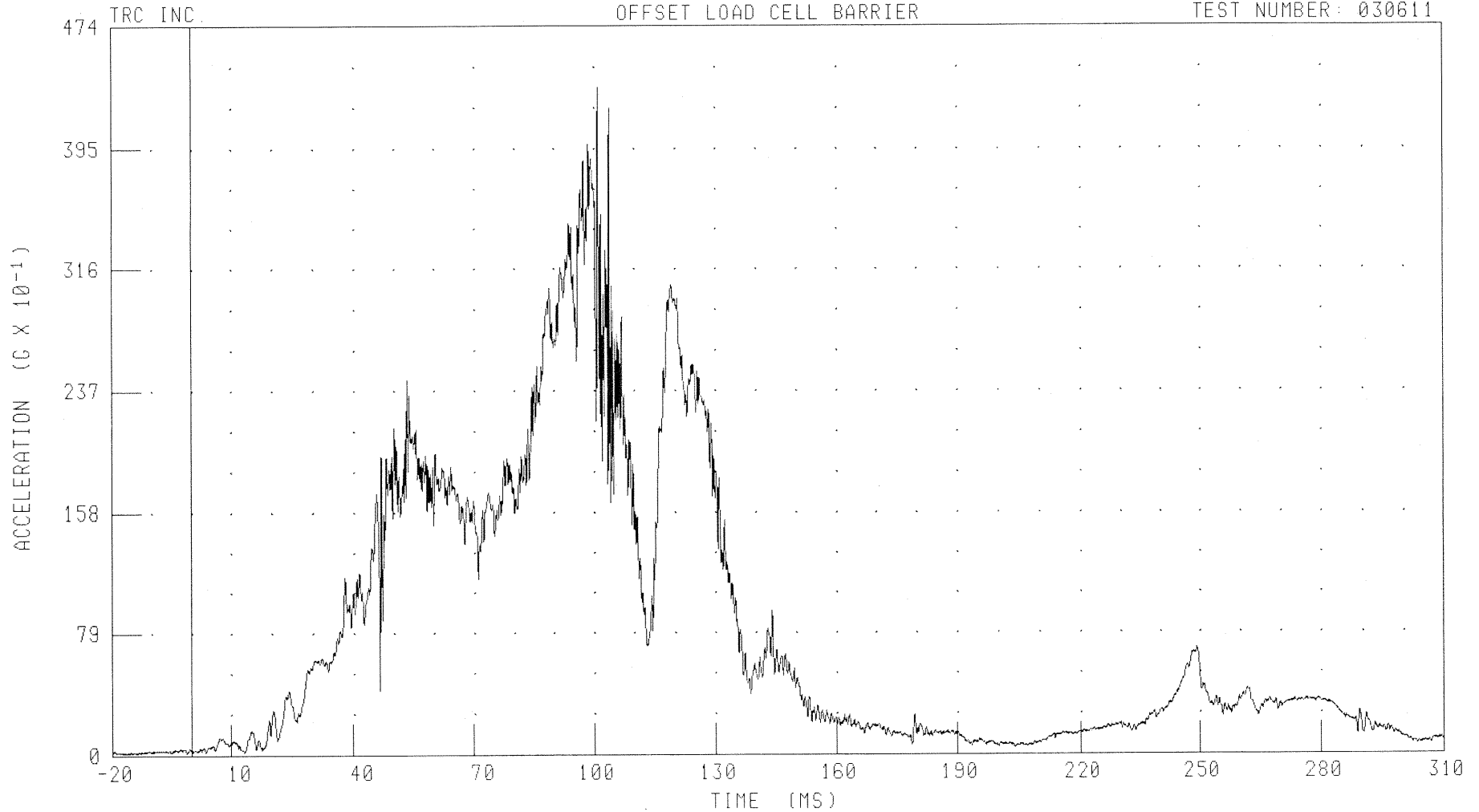
PEAK DATA: 14.07 G @ 101.44 MS; -29.06 G @ 119.20 MS

B-156

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
PASSENGER RIGHT FOOT RESULTANT ACCELERATION

TEST NUMBER: 030611



CHANNEL: FTRRG2

FILTER: CH. CLASS 1000

PEAK DATA: 43.50 G @ 101.04 MS; 0.11 G @ -16.88 MS

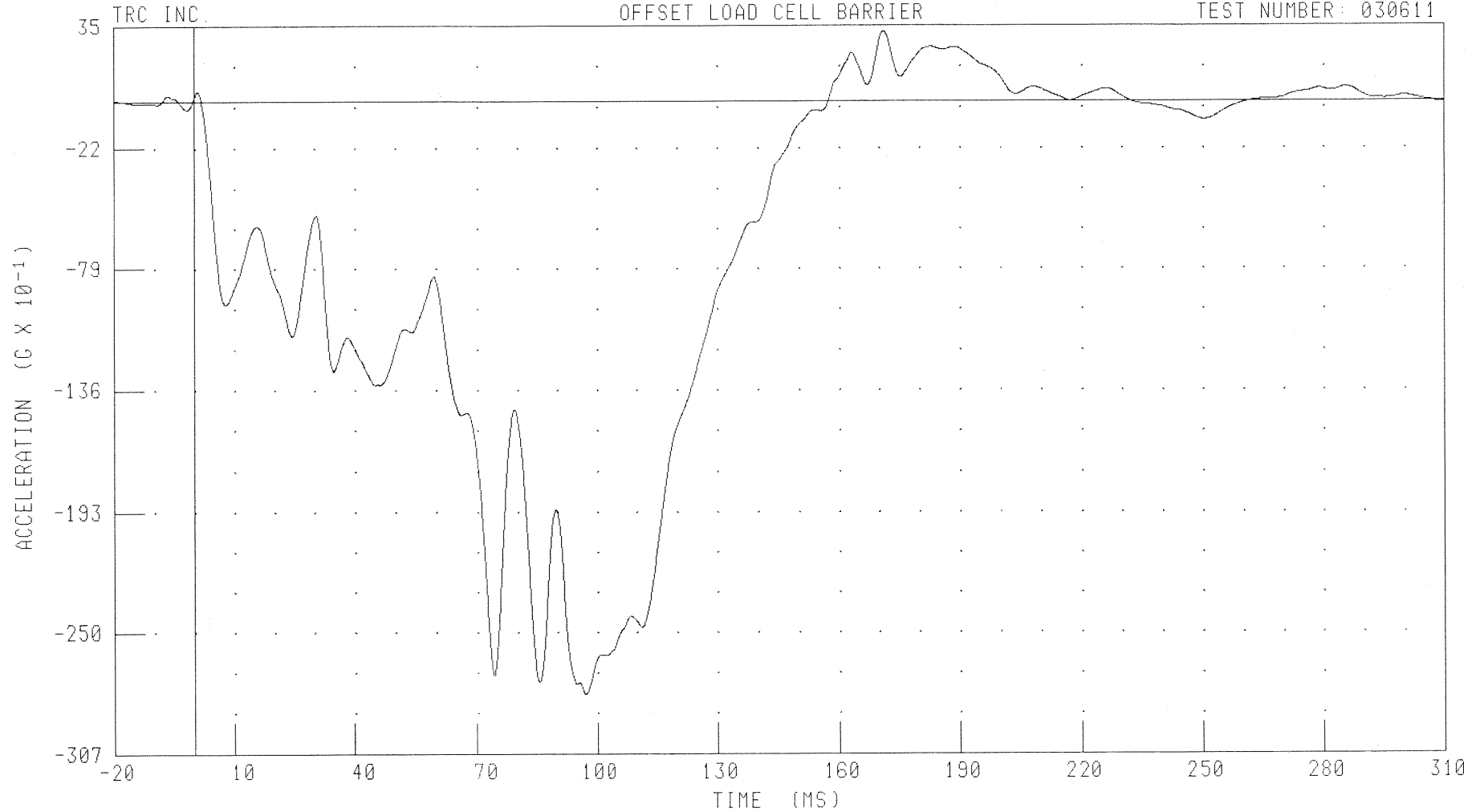
B-157

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
LEFT REAR SEAT CROSSMEMBER X-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LRXXG1

FILTER: CH. CLASS 60

PEAK DATA: 3.23 G @ 171.20 MS; -27.93 G @ 97.12 MS

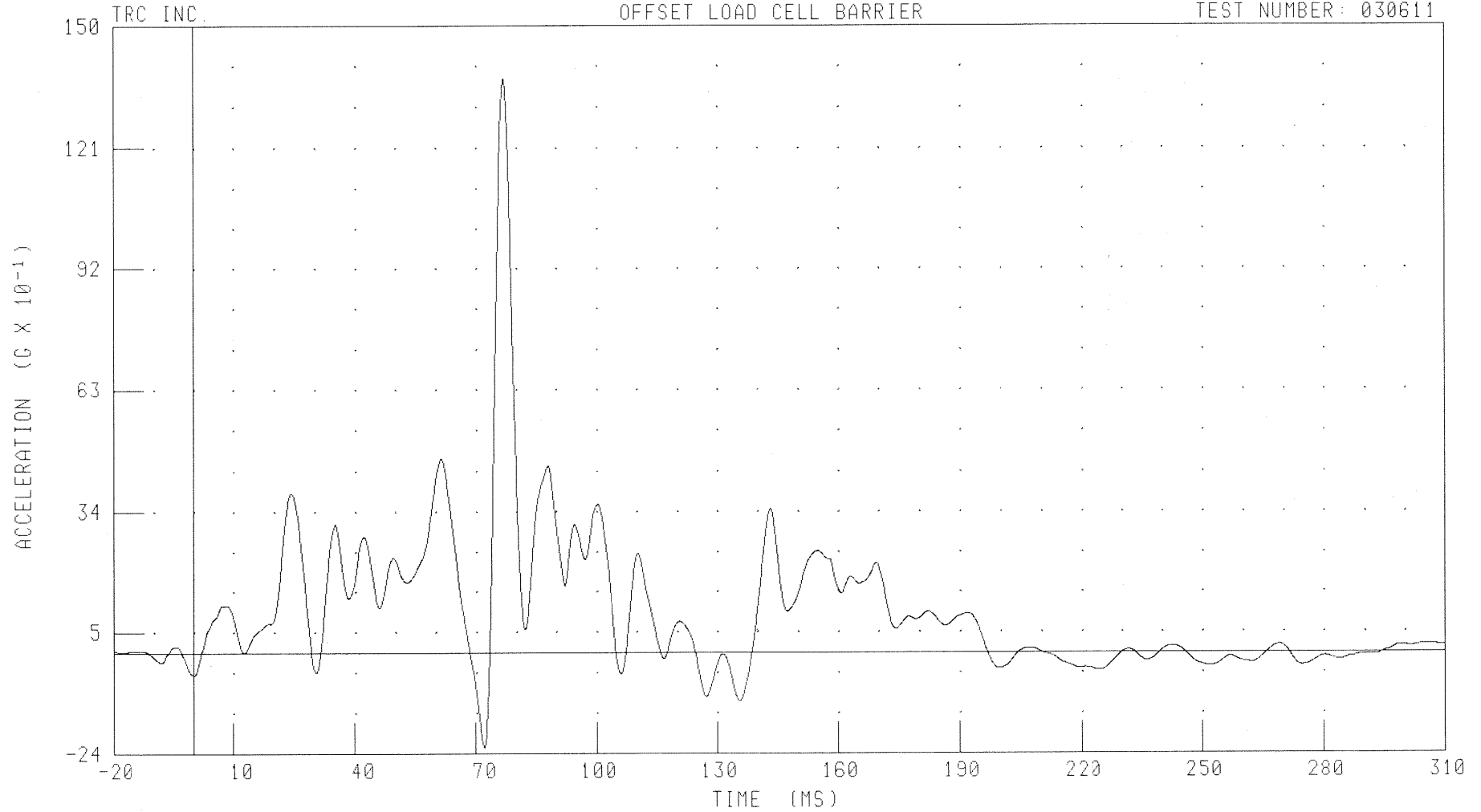
B-158

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
LEFT REAR SEAT CROSSMEMBER Y-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LRXYG1

FILTER: CH. CLASS 60

PEAK DATA: 13.73 G @ 76.88 MS; -2.24 G @ 72.08 MS

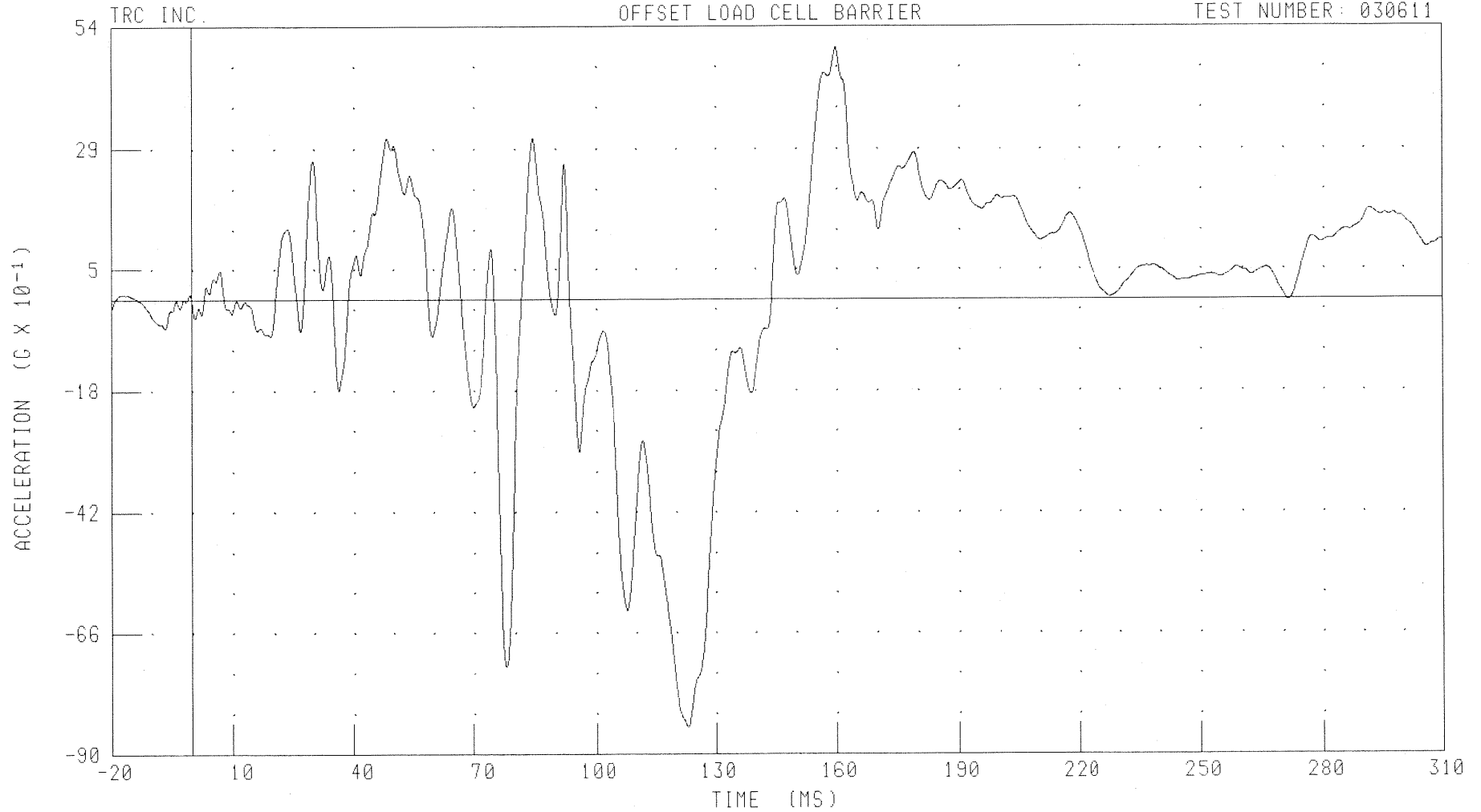
B-159

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
LEFT REAR SEAT CROSSMEMBER Z-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LRXZG1

FILTER: CH. CLASS 60

PEAK DATA: 4.97 G @ 159.92 MS; -8.47 G @ 122.96 MS

B-160

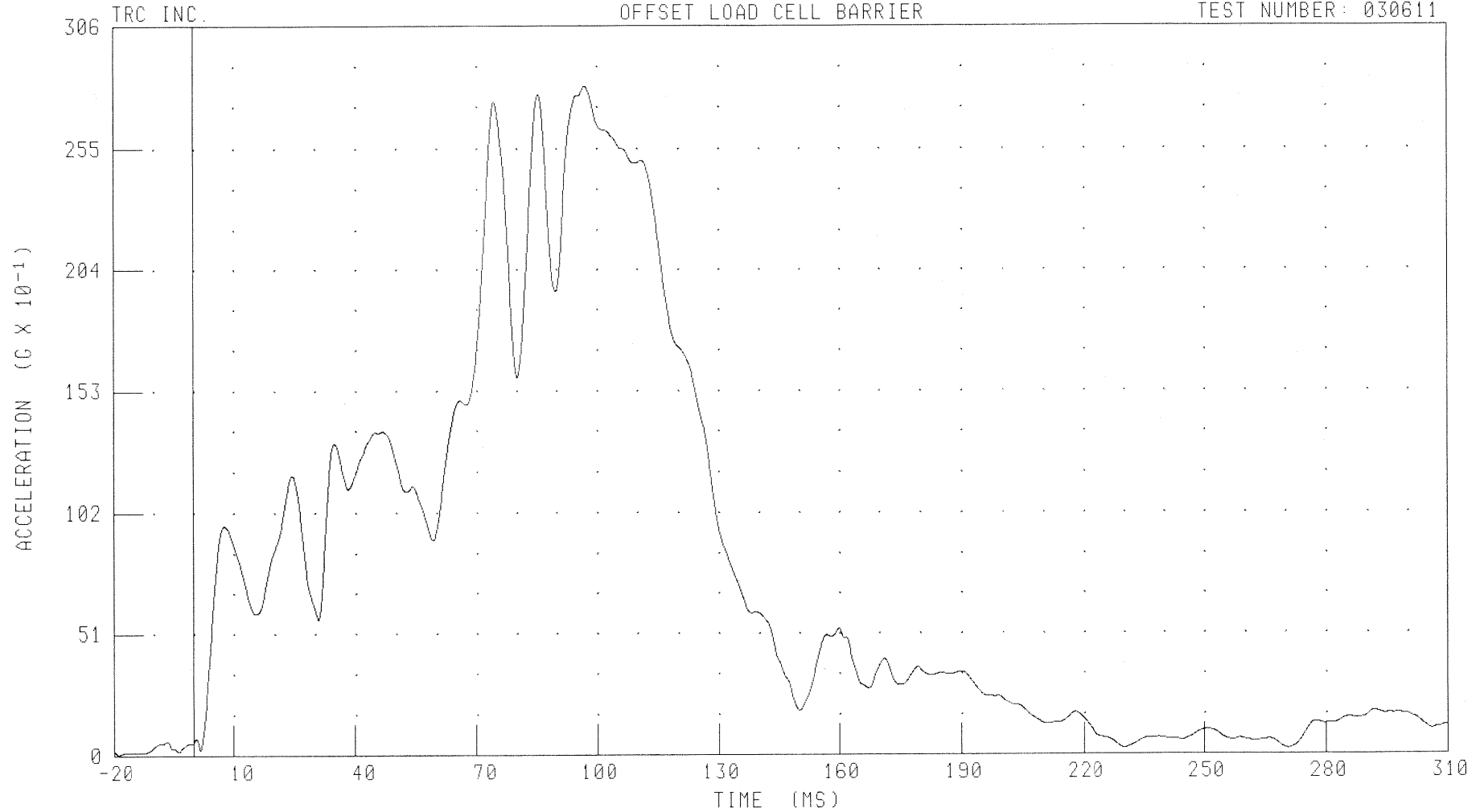
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

LEFT REAR SEAT CROSSMEMBER RESULTANT ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



B-161

030611

CHANNEL: LRXRG1

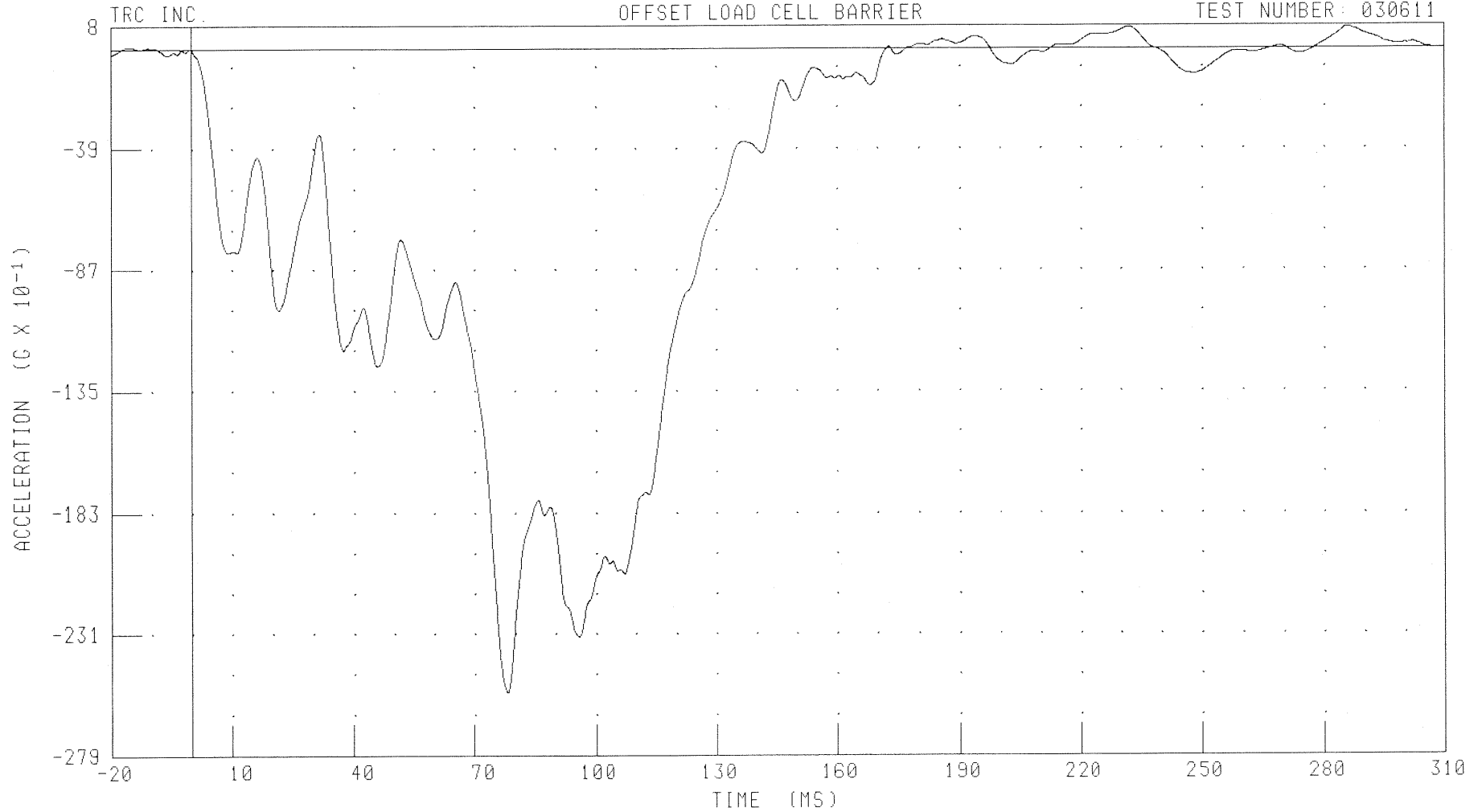
FILTER: CH. CLASS 60

PEAK DATA: 28.08 G @ 97.12 MS; 0.04 G @ -19.04 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
RIGHT REAR SEAT CROSSMEMBER X-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



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030611

CHANNEL: RRXXG1

FILTER: CH. CLASS 60

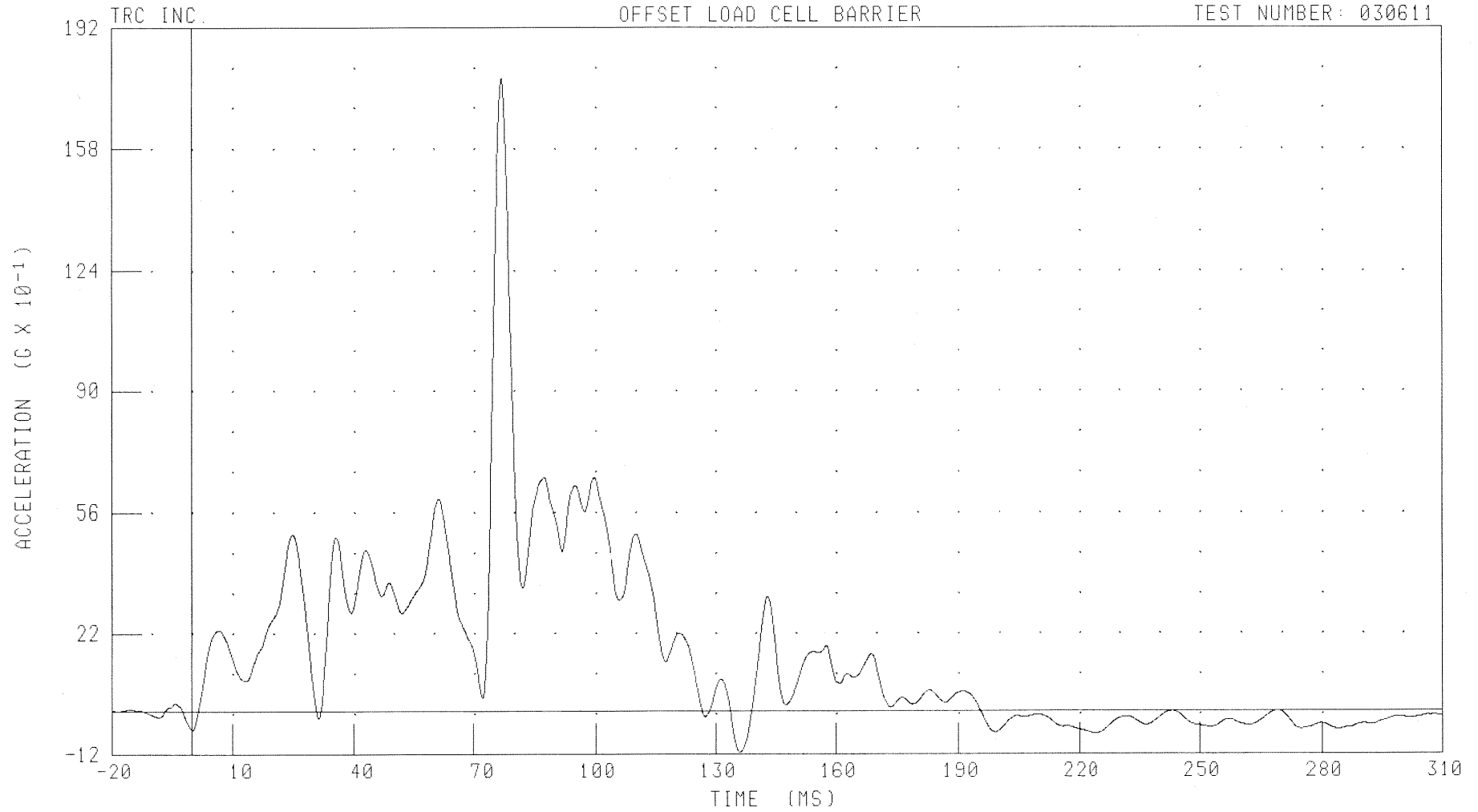
PEAK DATA: 0.84 G @ 232.08 MS; -25.44 G @ 78.24 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

RIGHT REAR SEAT CROSSMEMBER Y-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: RRXYG1

FILTER: CH. CLASS 60

PEAK DATA: 17.76 G @ 76.88 MS; -1.15 G @ 136.16 MS

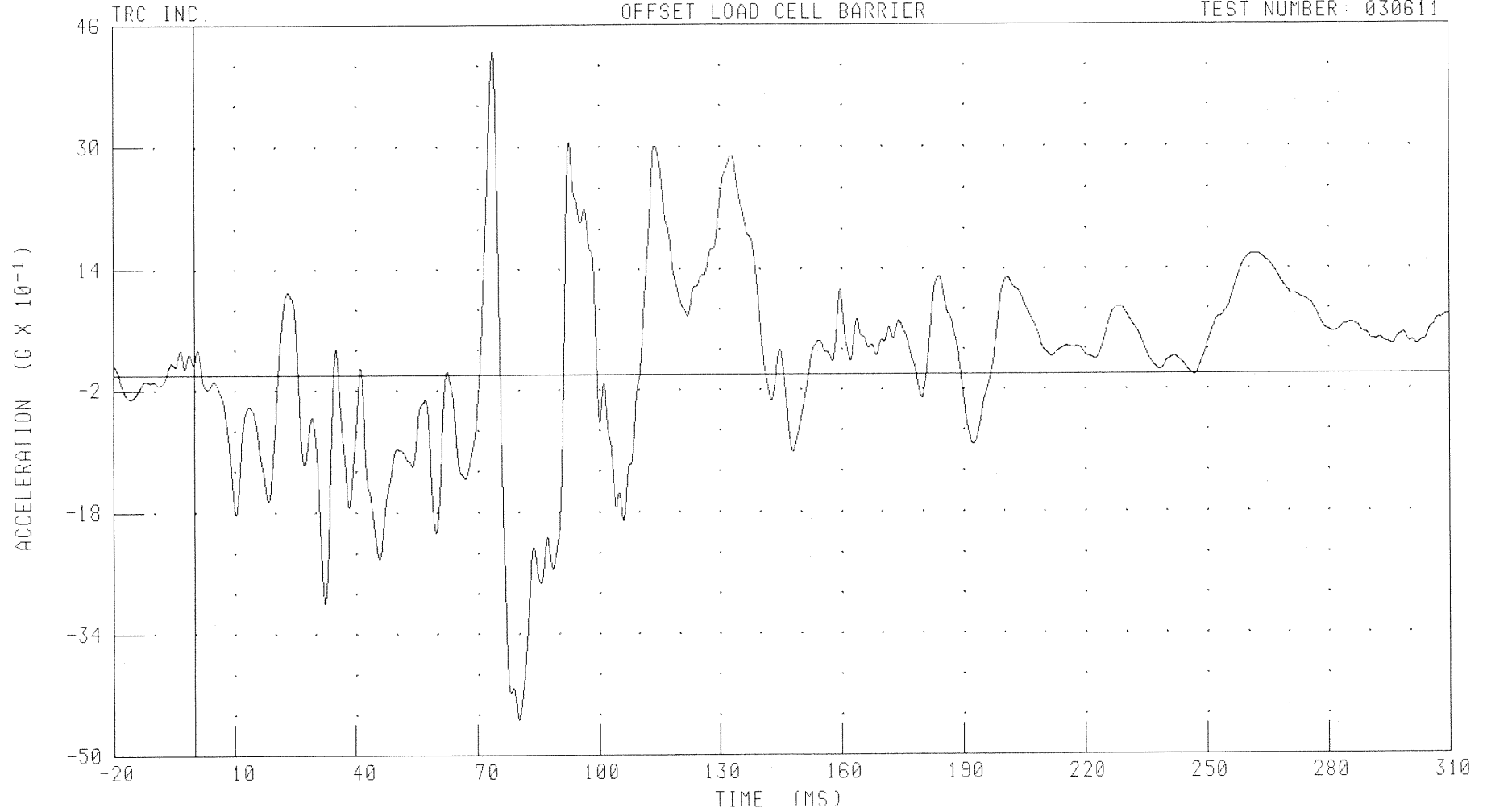
B-163

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
RIGHT REAR SEAT CROSSMEMBER Z-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



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030611

CHANNEL: RRZG1

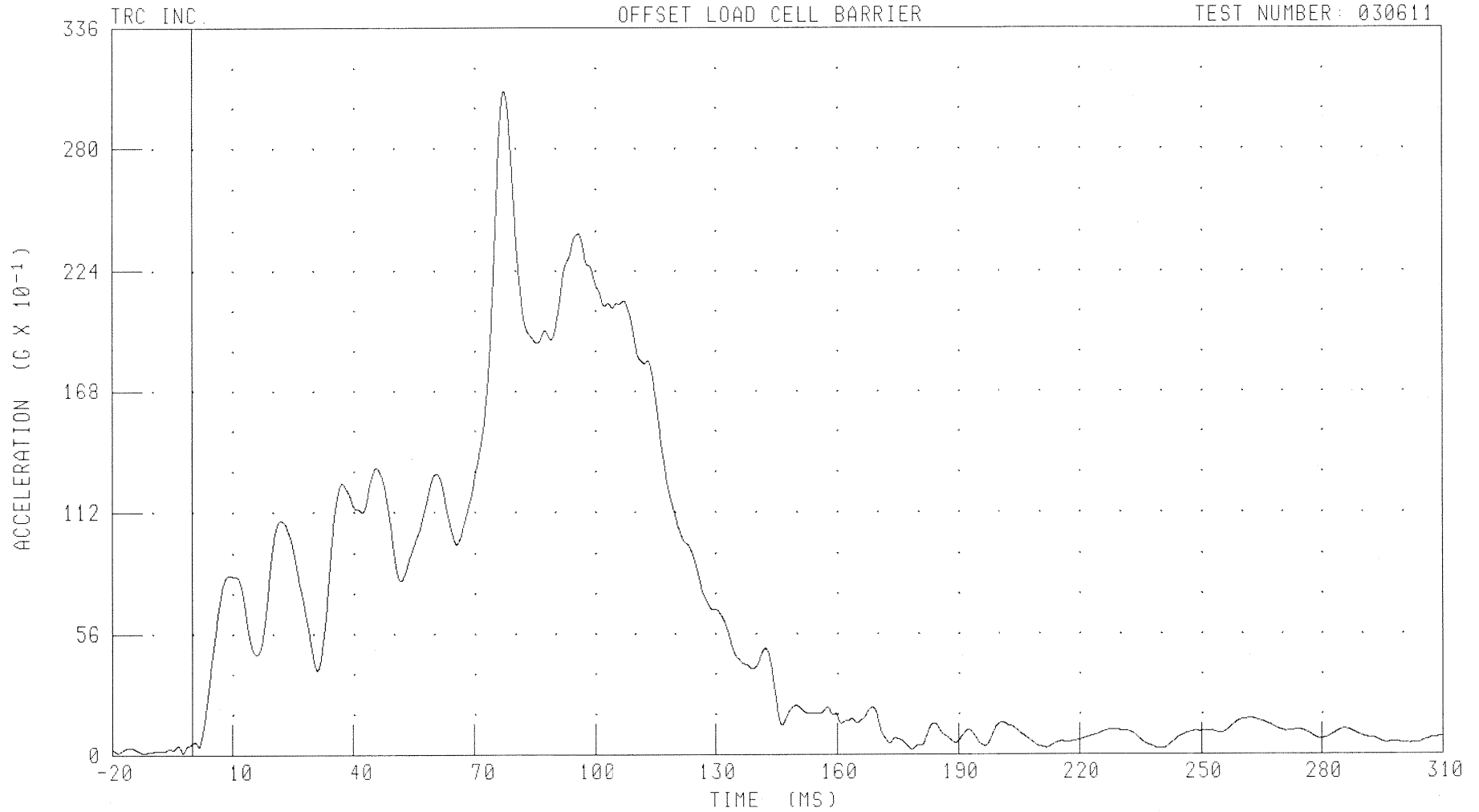
FILTER: CH. CLASS 60

PEAK DATA: 4.25 G @ 73.84 MS; -4.54 G @ 80.08 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
RIGHT REAR SEAT CROSSMEMBER RESULTANT ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: RRXRG1 FILTER: CH CLASS 60

PEAK DATA: 30.66 G @ 77.28 MS; 0.09 G @ -12.00 MS

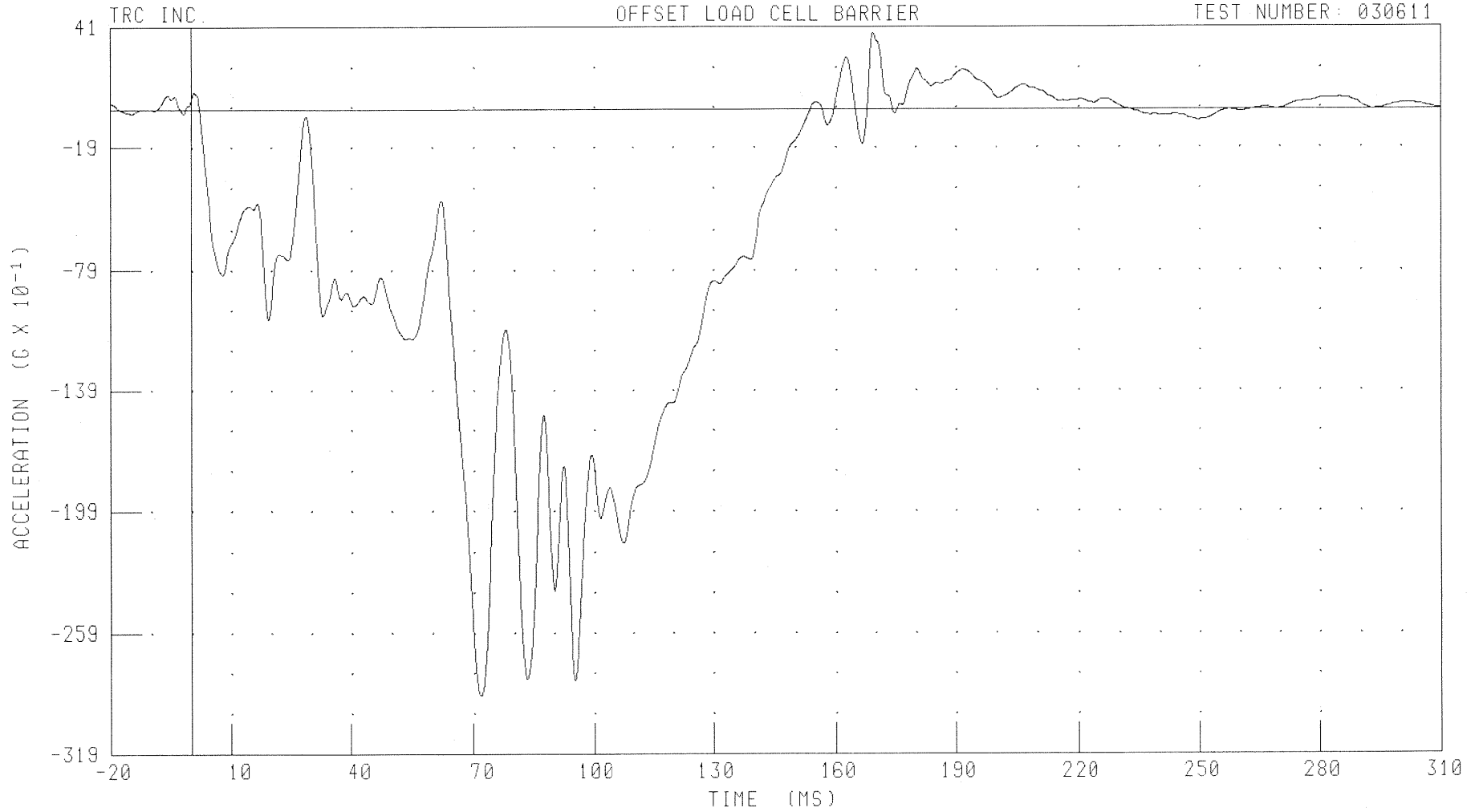
B-165

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVERS LEFT SIDE TDE PAN X-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LTPXG1

FILTER: CH. CLASS 60

PEAK DATA: 3.80 G @ 169.44 MS, -29.03 G @ 71.84 MS

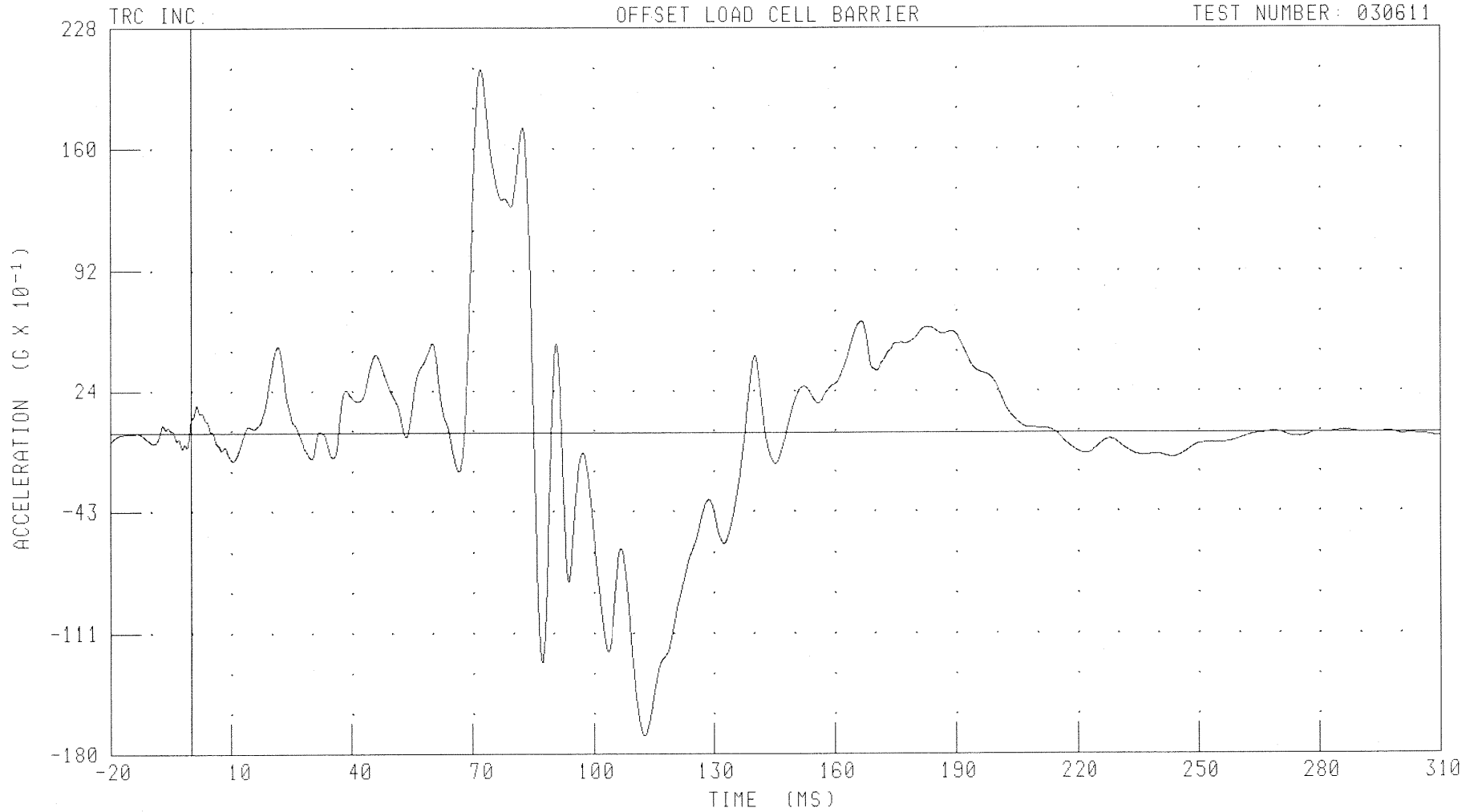
B-166

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVERS LEFT SIDE TOE PAN Y-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LTPYC1

FILTER: CH. CLASS 60

PEAK DATA: 20.45 G @ 72.00 MS; -16.99 G @ 112.88 MS

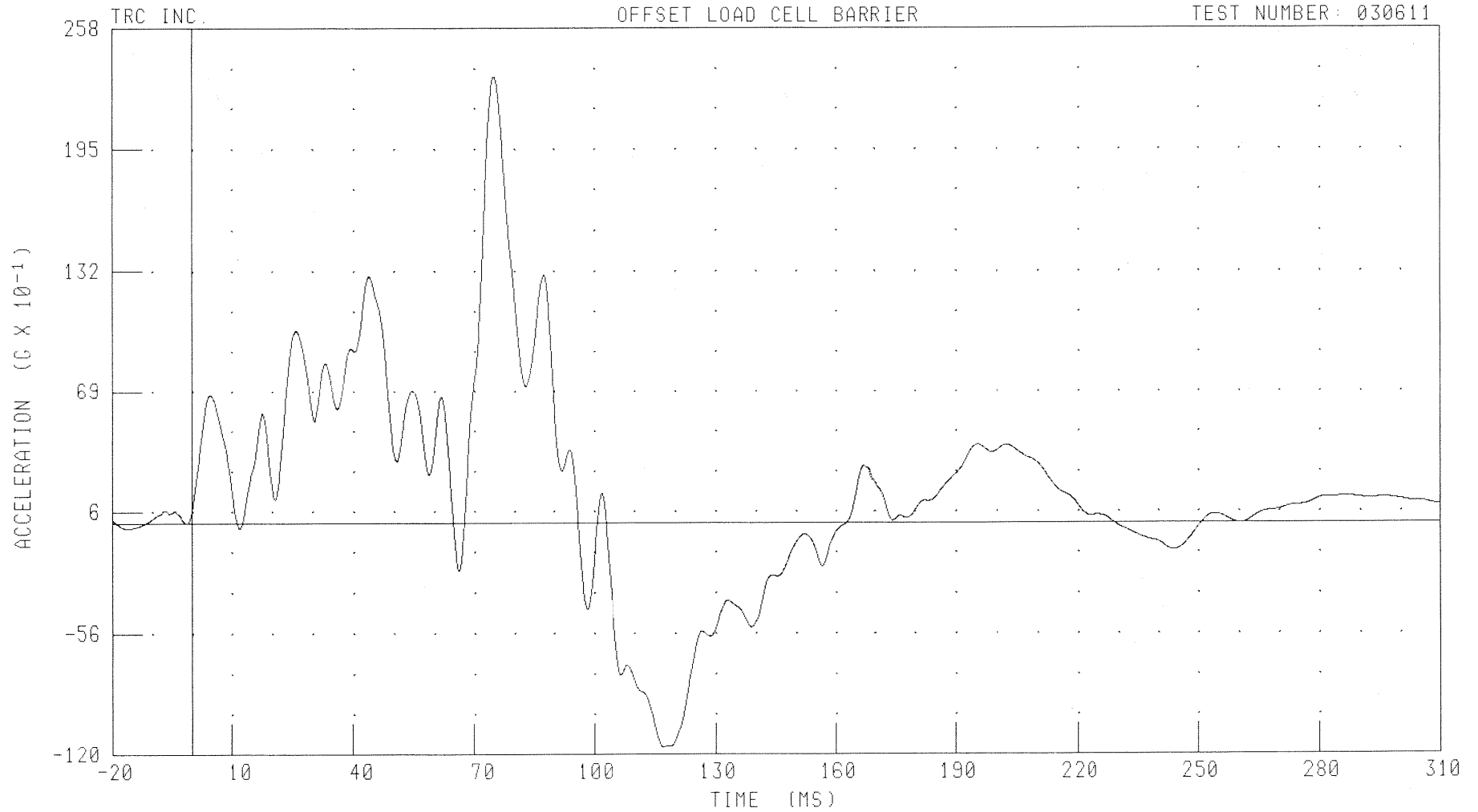
B-167

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVERS LEFT SIDE TOE PAN Z-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LTPZG1

FILTER: CH. CLASS 60

PEAK DATA: 23.28 G @ 74.96 MS; -11.63 G @ 117.20 MS

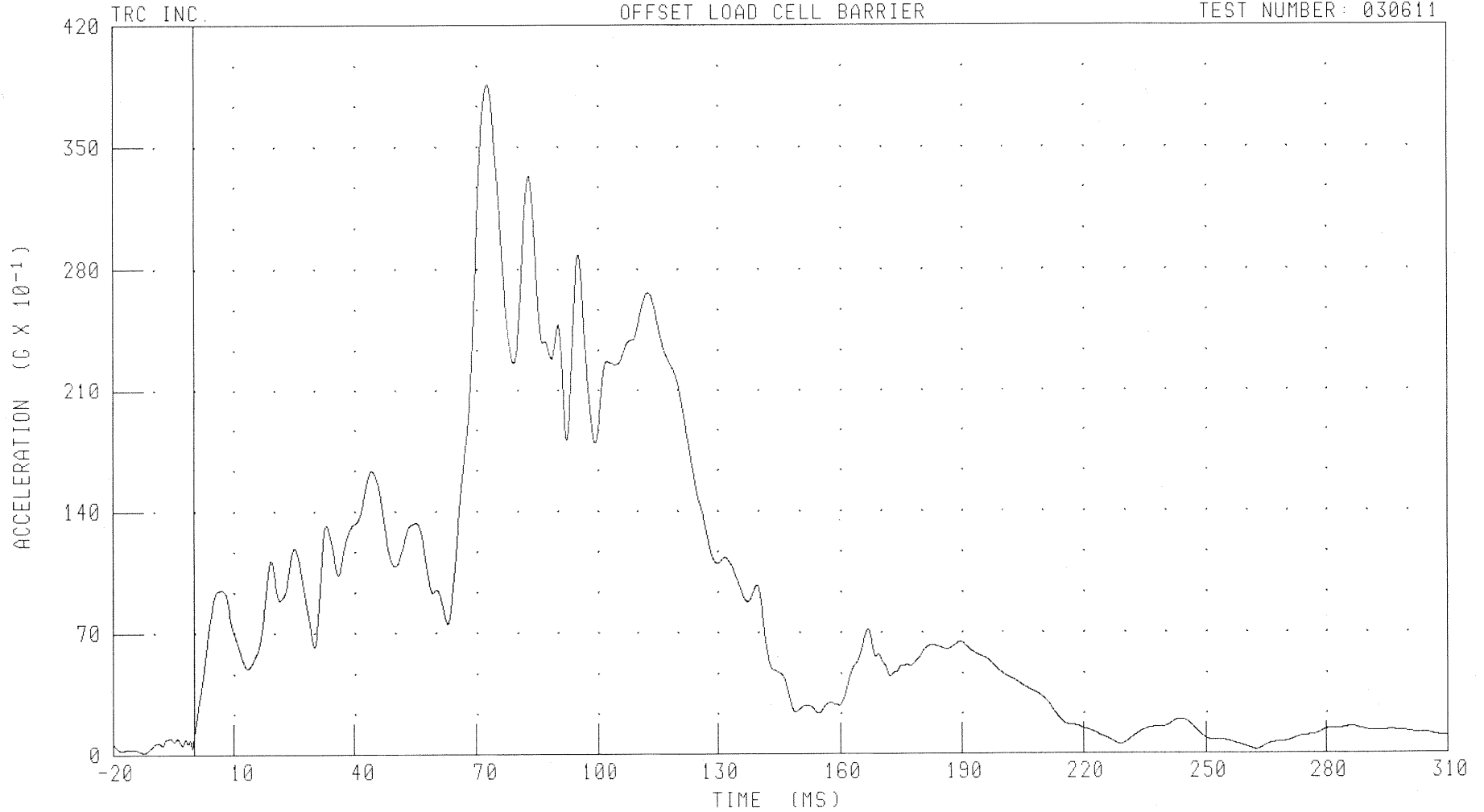
B-168

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVERS LEFT SIDE TOE PAN RESULTANT ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LTPRG1

FILTER: CH. CLASS 60

PEAK DATA: 38.59 G @ 72.72 MS; 0.11 G @ -12.48 MS

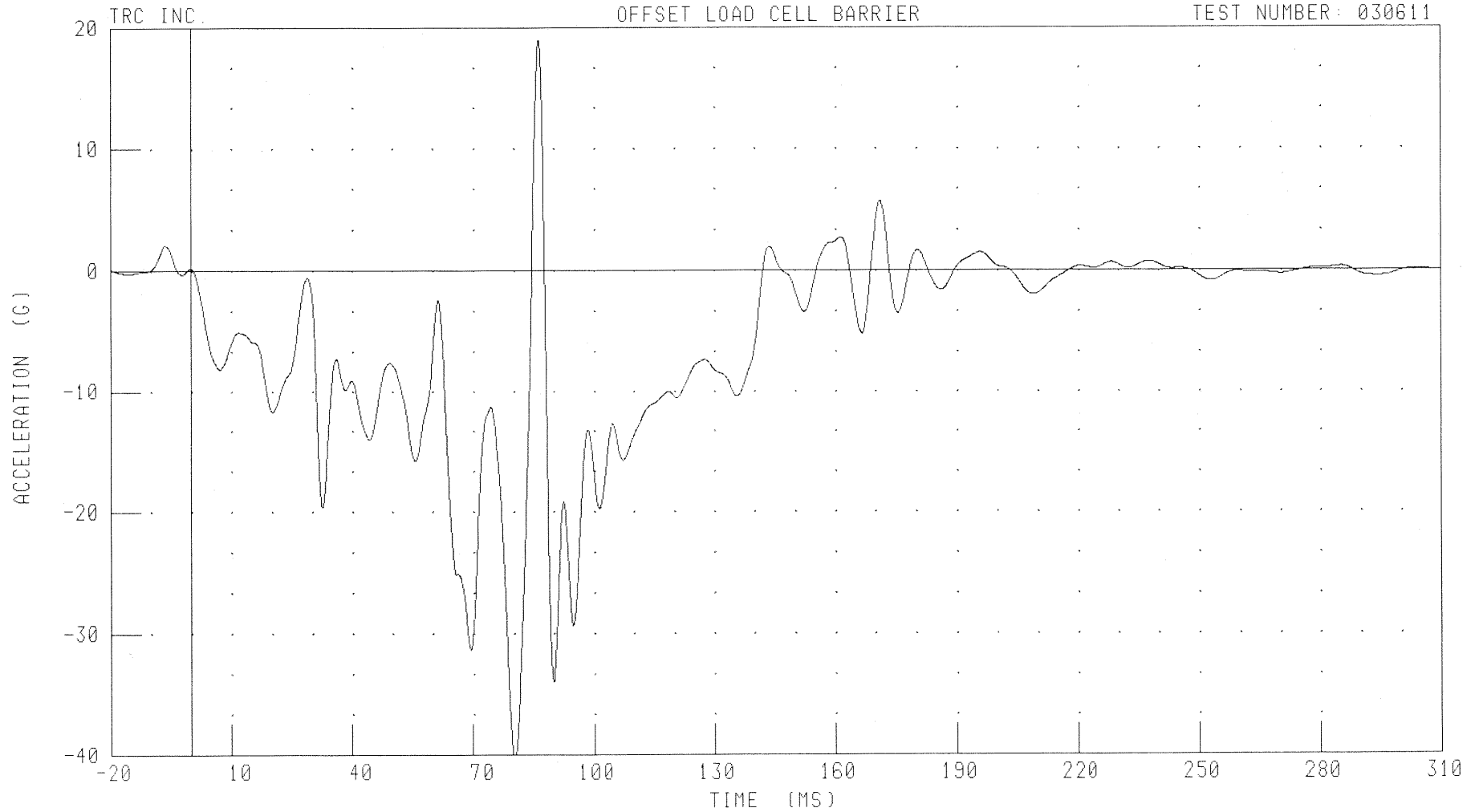
B-169

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVERS RIGHT SIDE TOE PAN X-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: RTPXG1

FILTER: CH. CLASS 60

PEAK DATA: 18.89 G @ 86.24 MS; -40.56 G @ 80.16 MS

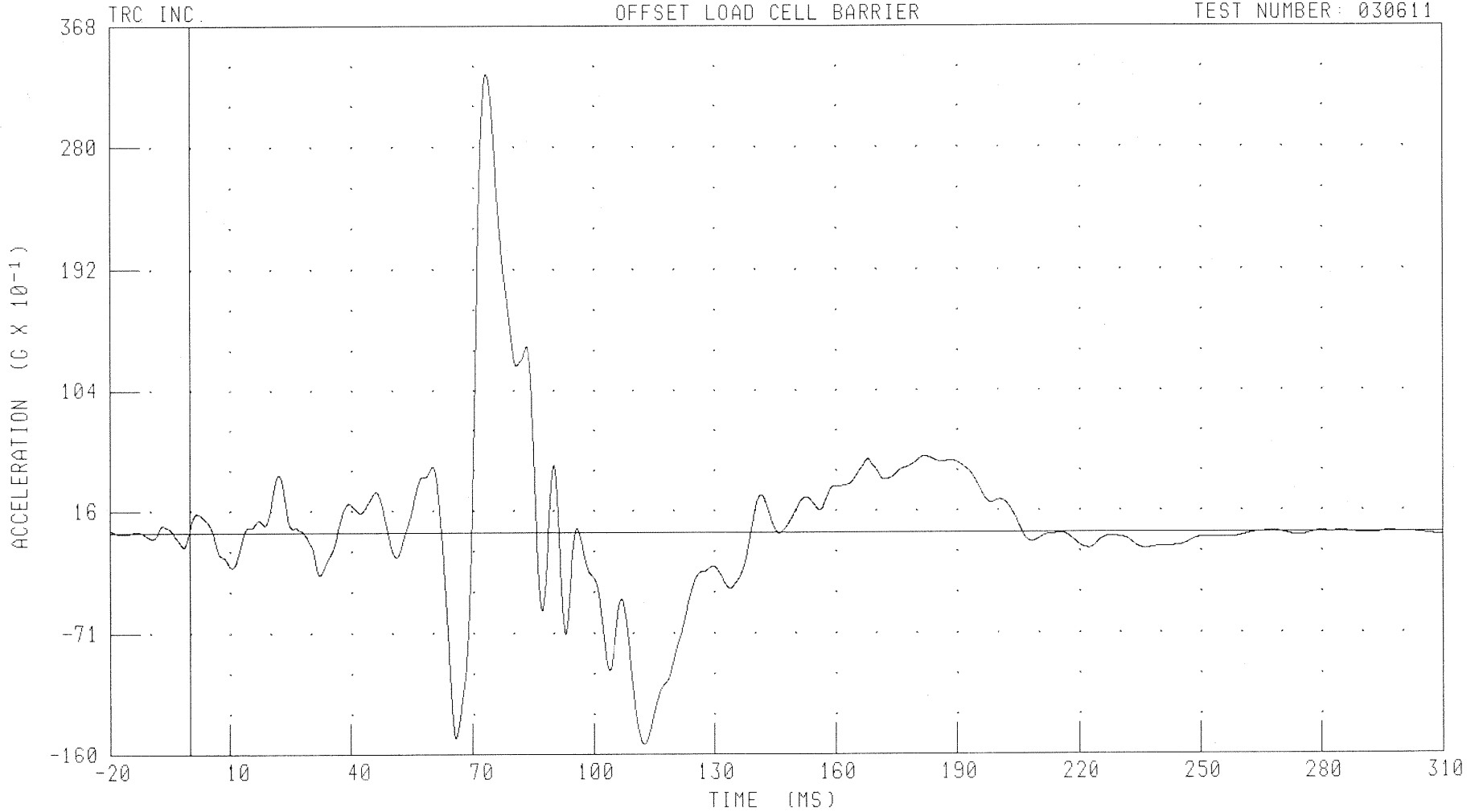
B-170

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVERS RIGHT SIDE TOE PAN Y-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: RTPYG1

FILTER: CH. CLASS 60

PEAK DATA: 33.23 G @ 73.36 MS; -15.28 G @ 112.88 MS

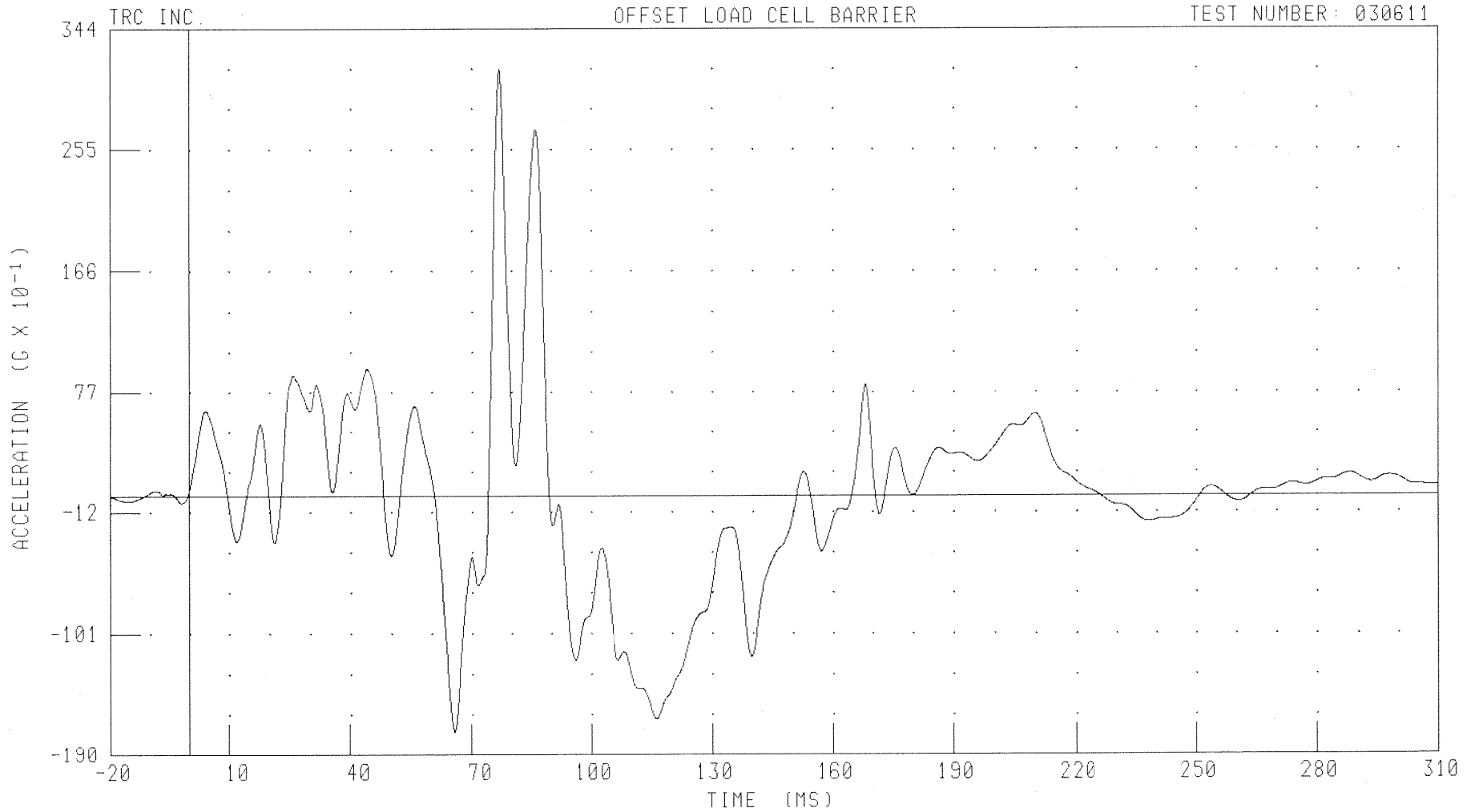
B-171

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVERS RIGHT SIDE TOE PAN Z-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: RTPZG1

FILTER: CH. CLASS 60

PEAK DATA: 31.43 G @ 77.04 MS; -17.35 G @ 65.76 MS

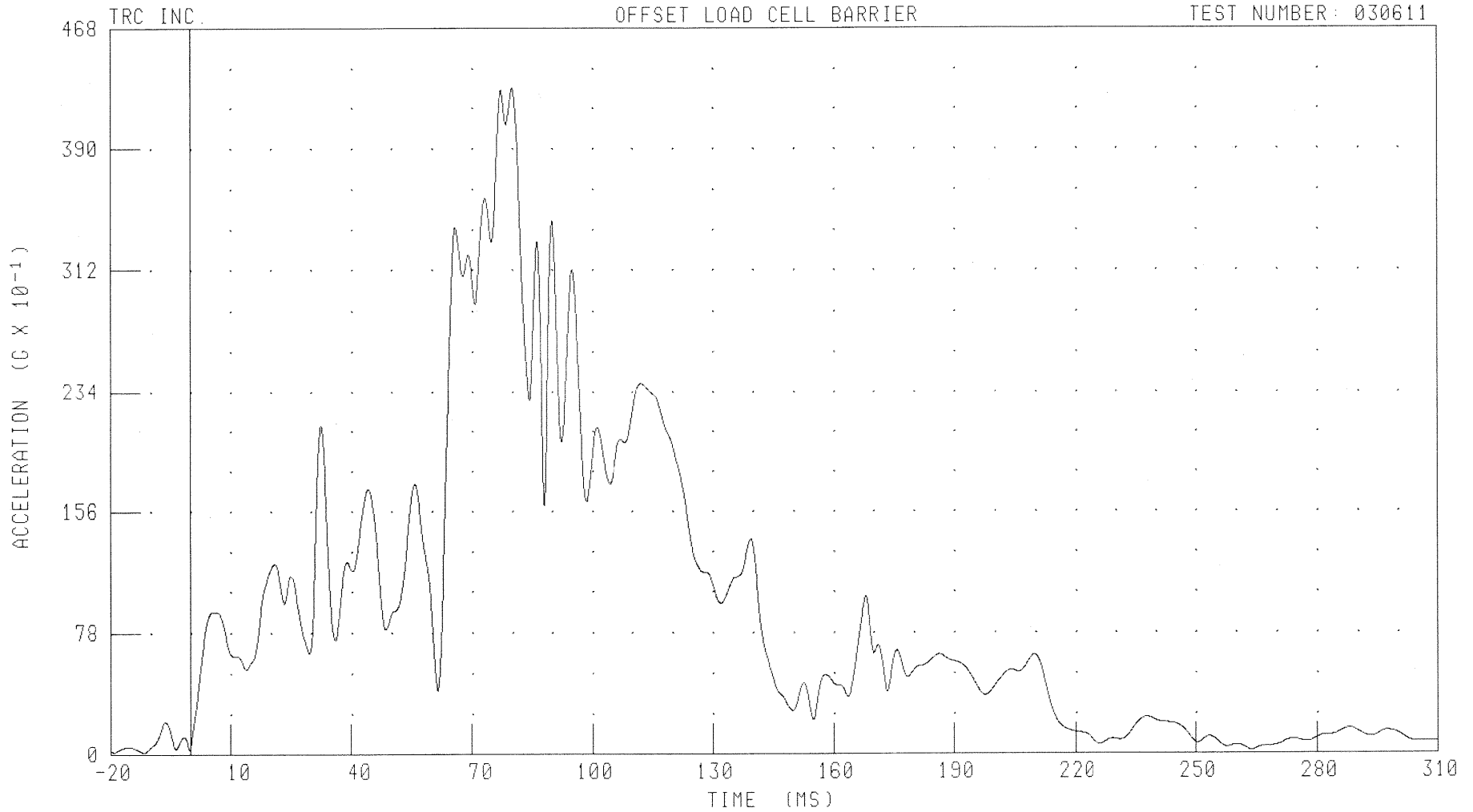
B-172

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
DRIVERS RIGHT SIDE TOE PAN RESULTANT ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: RTPRG1

FILTER: CH. CLASS 60

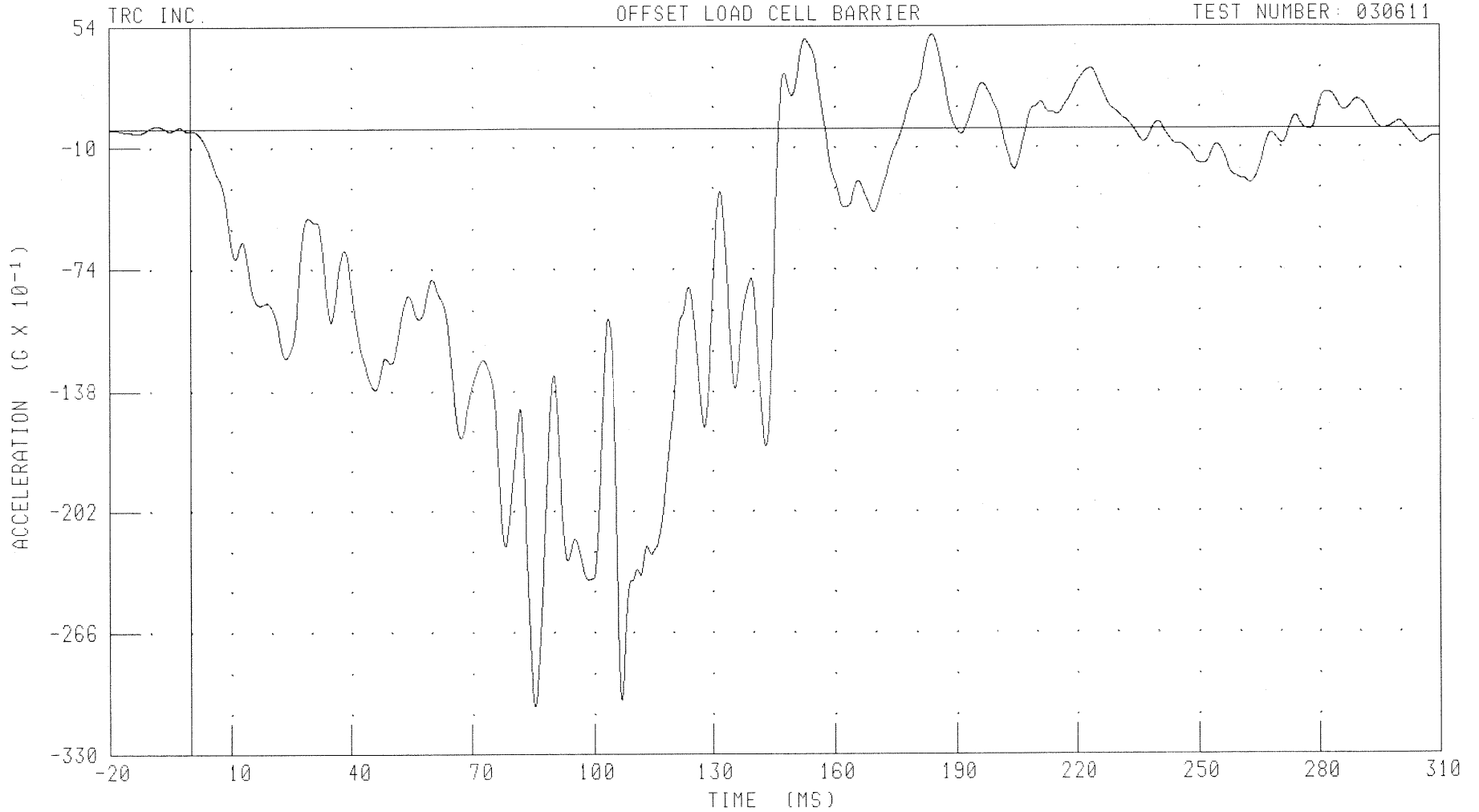
PEAK DATA: 42.95 G @ 80.00 MS; 0.09 G @ -11.68 MS

B-173

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
VEHICLE CENTER OF GRAVITY X-AXIS ACCELERATION

TEST NUMBER: 030611



CHANNEL: VCGXG1

FILTER: CH. CLASS 60

PEAK DATA: 4.98 G @ 183.92 MS; -30.46 G @ 85.28 MS

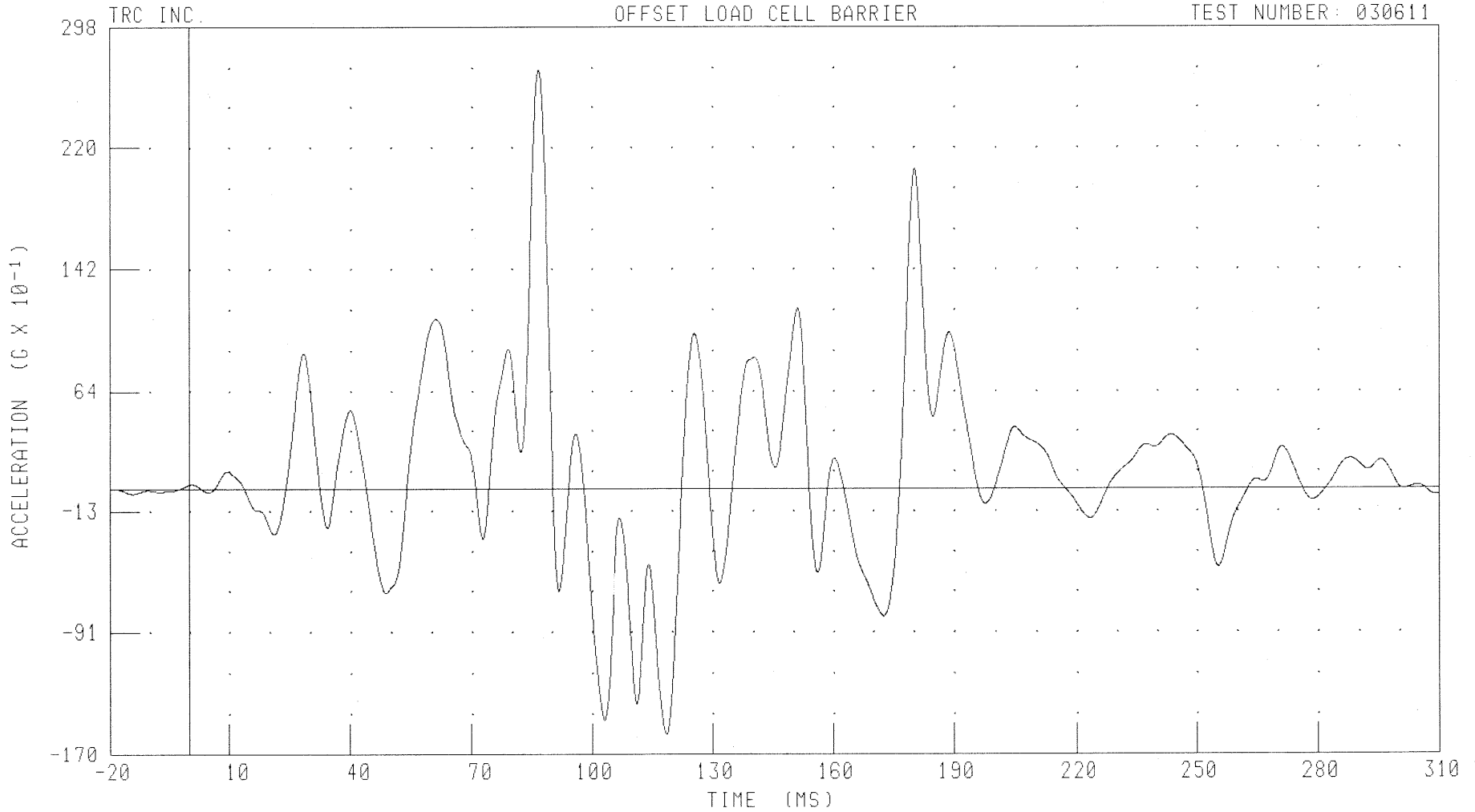
B-174

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
VEHICLE CENTER OF GRAVITY Y-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: VCCYG1 FILTER: CH. CLASS 60

PEAK DATA: 27.04 G @ 86.80 MS; -15.72 G @ 118.72 MS

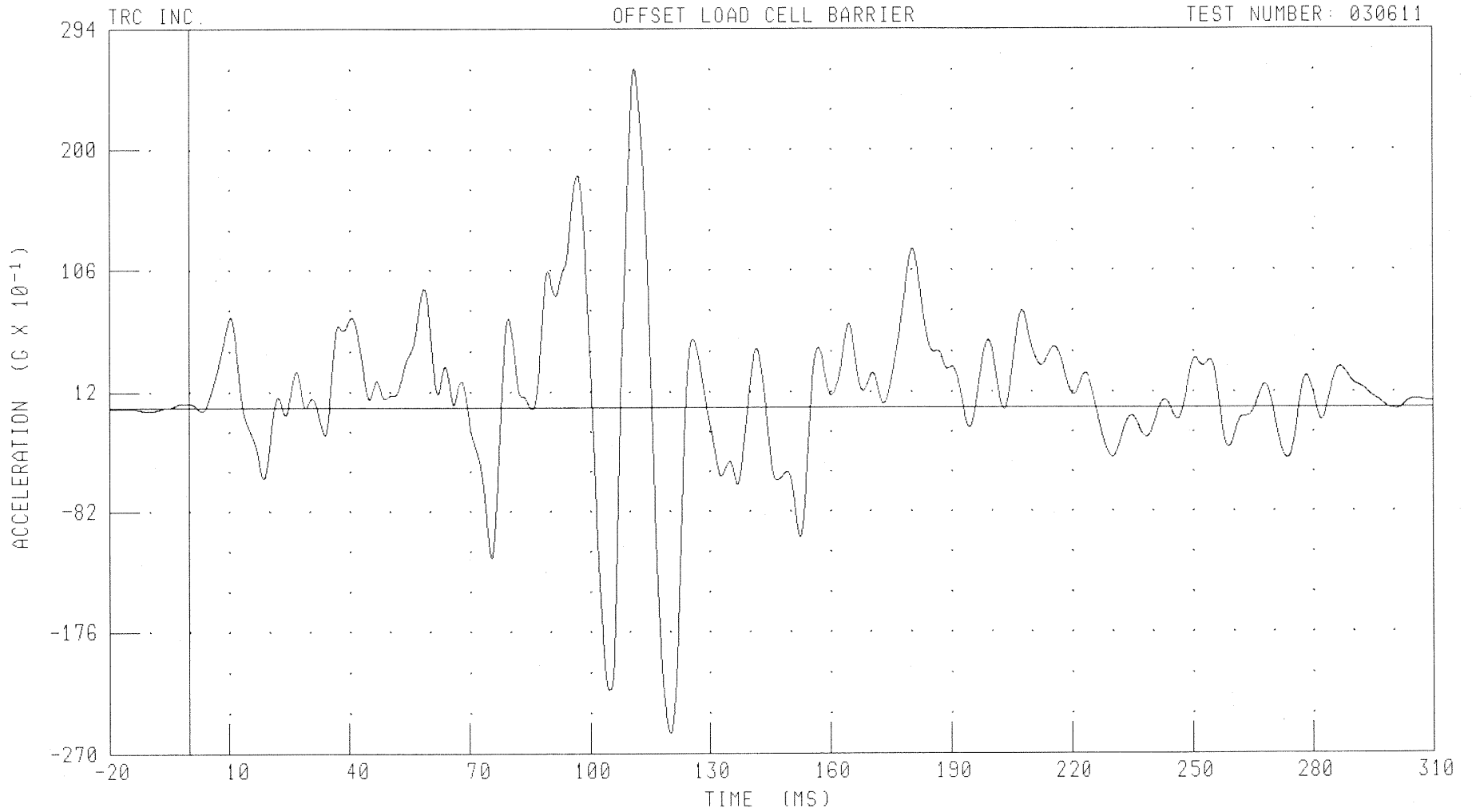
B-175

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
VEHICLE CENTER OF GRAVITY Z-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: VCGZG1

FILTER: CH. CLASS 60

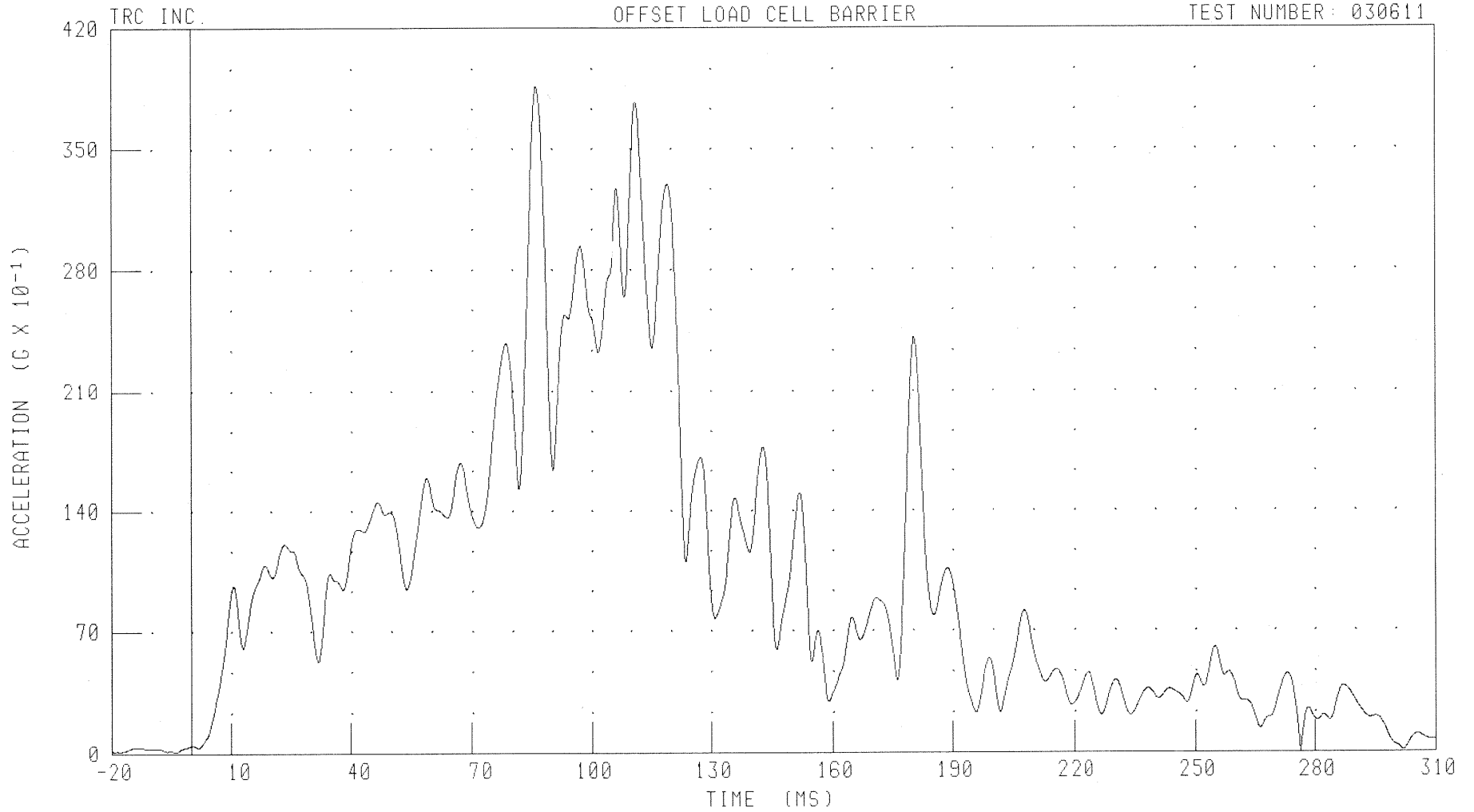
PEAK DATA: 26.30 G @ 111.20 MS; -25.43 G @ 120.24 MS

B-176

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
VEHICLE CENTER OF GRAVITY RESULTANT ACCELERATION

TEST NUMBER: 030611



CHANNEL: VCGRG1

FILTER: CH. CLASS 60

PEAK DATA: 38.63 G @ 86.08 MS; 0.07 G @ 276.40 MS

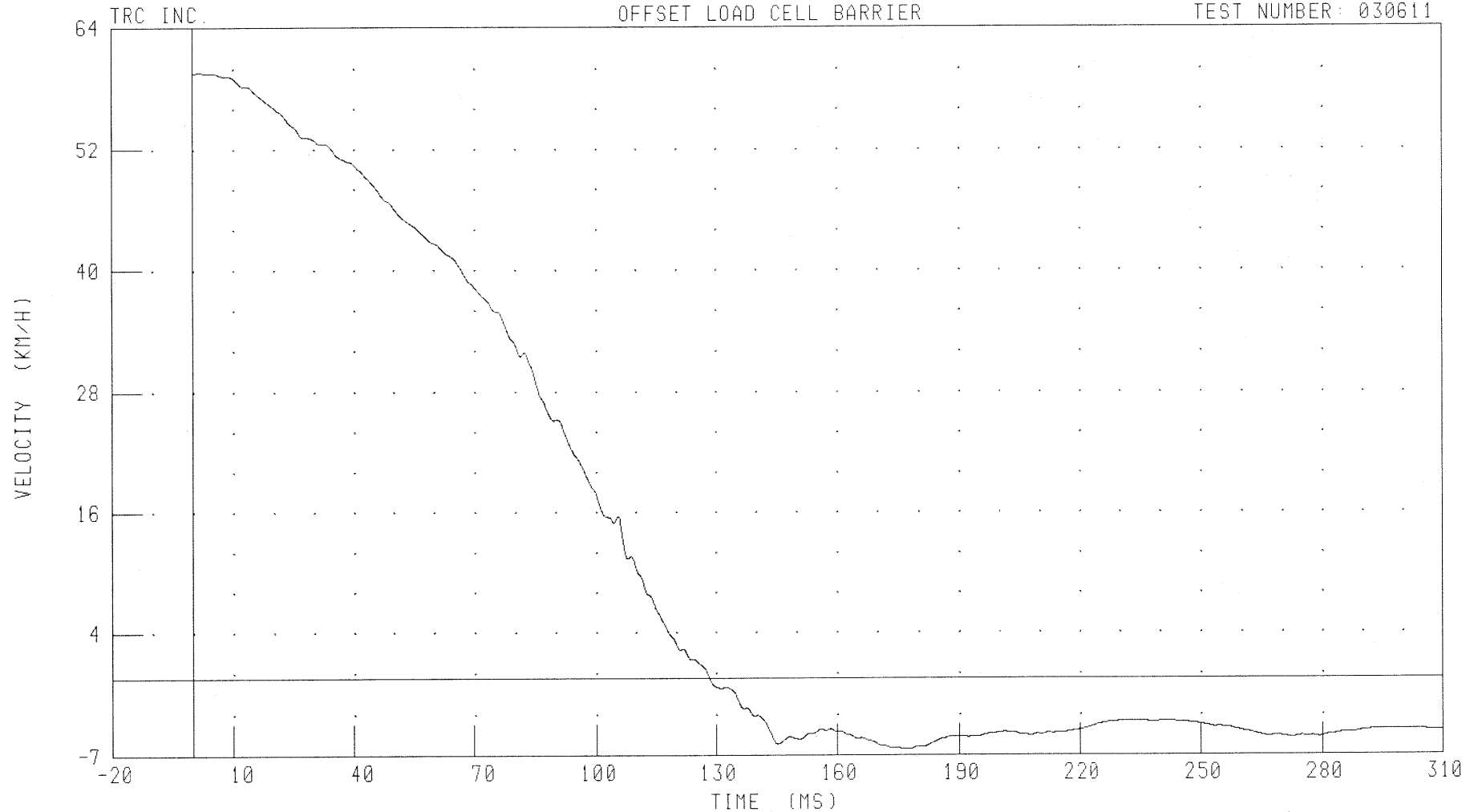
B-177

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
VEHICLE CENTER OF GRAVITY X-AXIS VELOCITY

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: VCGXV1 FILTER: CH. CLASS 180

PEAK DATA: 60.12 KM/H @ 1.76 MS, -6.90 KM/H @ 177.68 MS

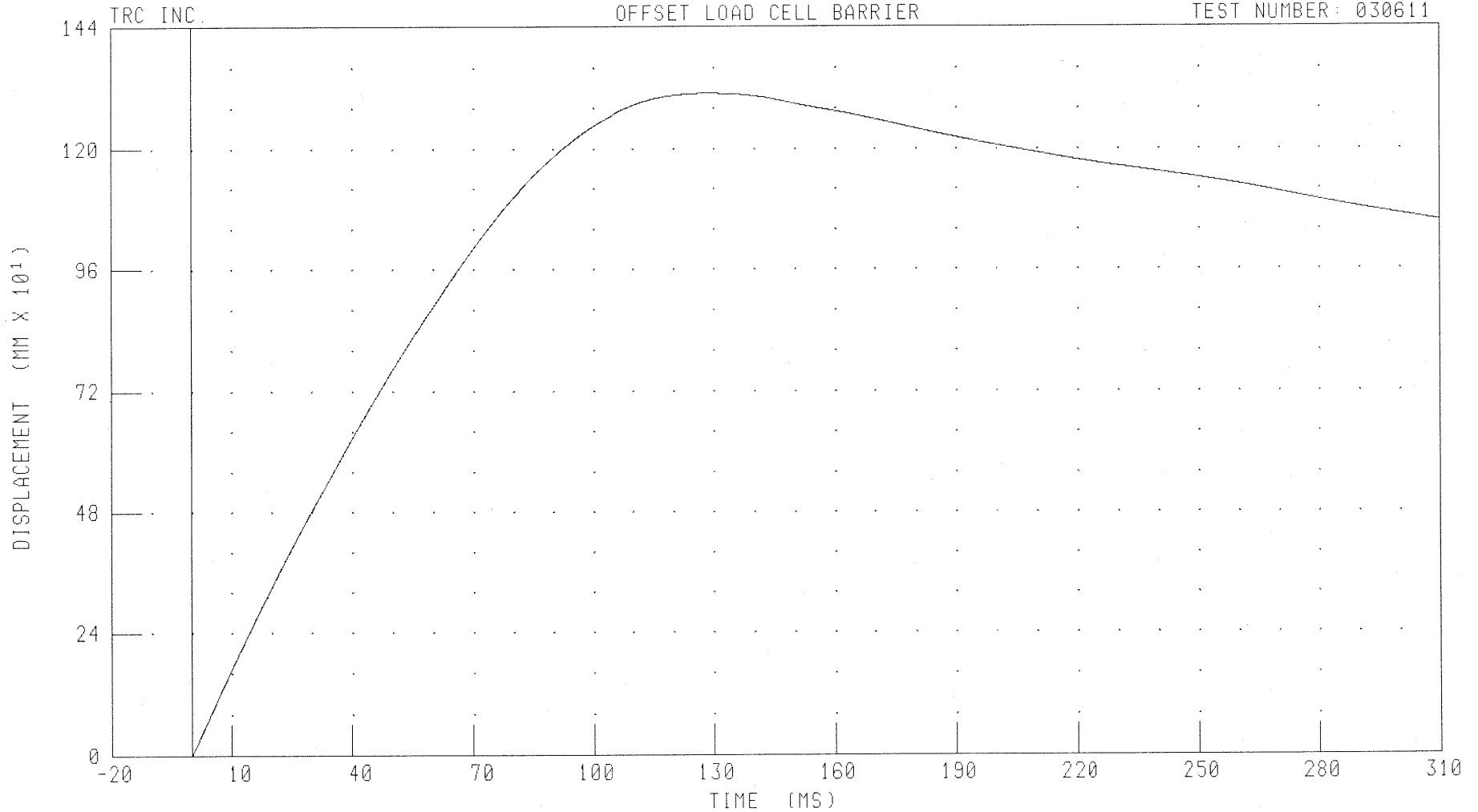
B-178

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
VEHICLE CENTER OF GRAVITY X-AXIS DISPLACEMENT

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: VCGXD1

FILTER: CH. CLASS 180

PEAK DATA: 131.02 MM @ 128.40 MS; 0.00 MM @ 0.00 MS

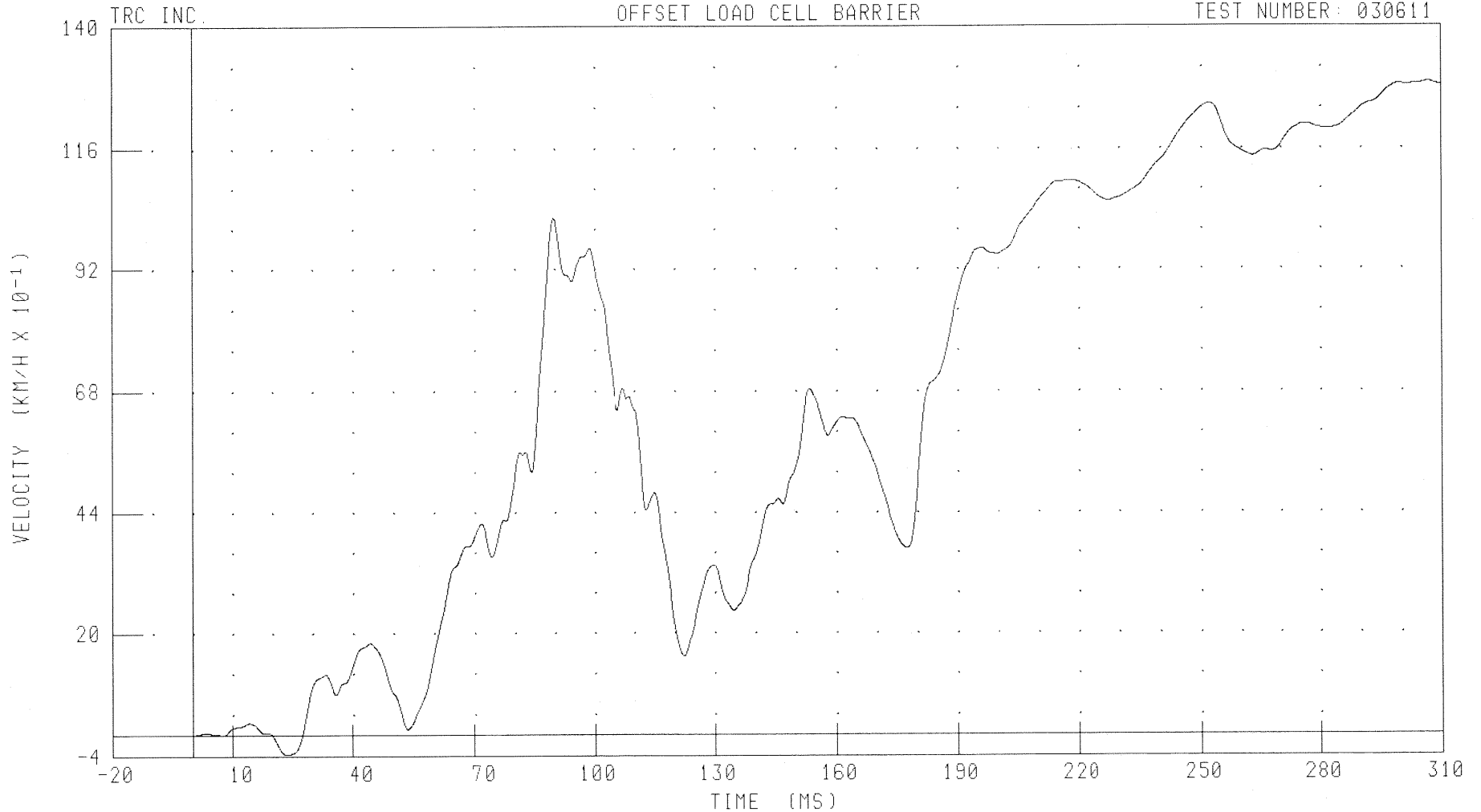
B-179

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
VEHICLE CENTER OF GRAVITY Y-AXIS VELOCITY

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: VCGYV1

FILTER: CH. CLASS 180

PEAK DATA: 12.90 KM/H @ 306.64 MS; -0.37 KM/H @ 23.60 MS

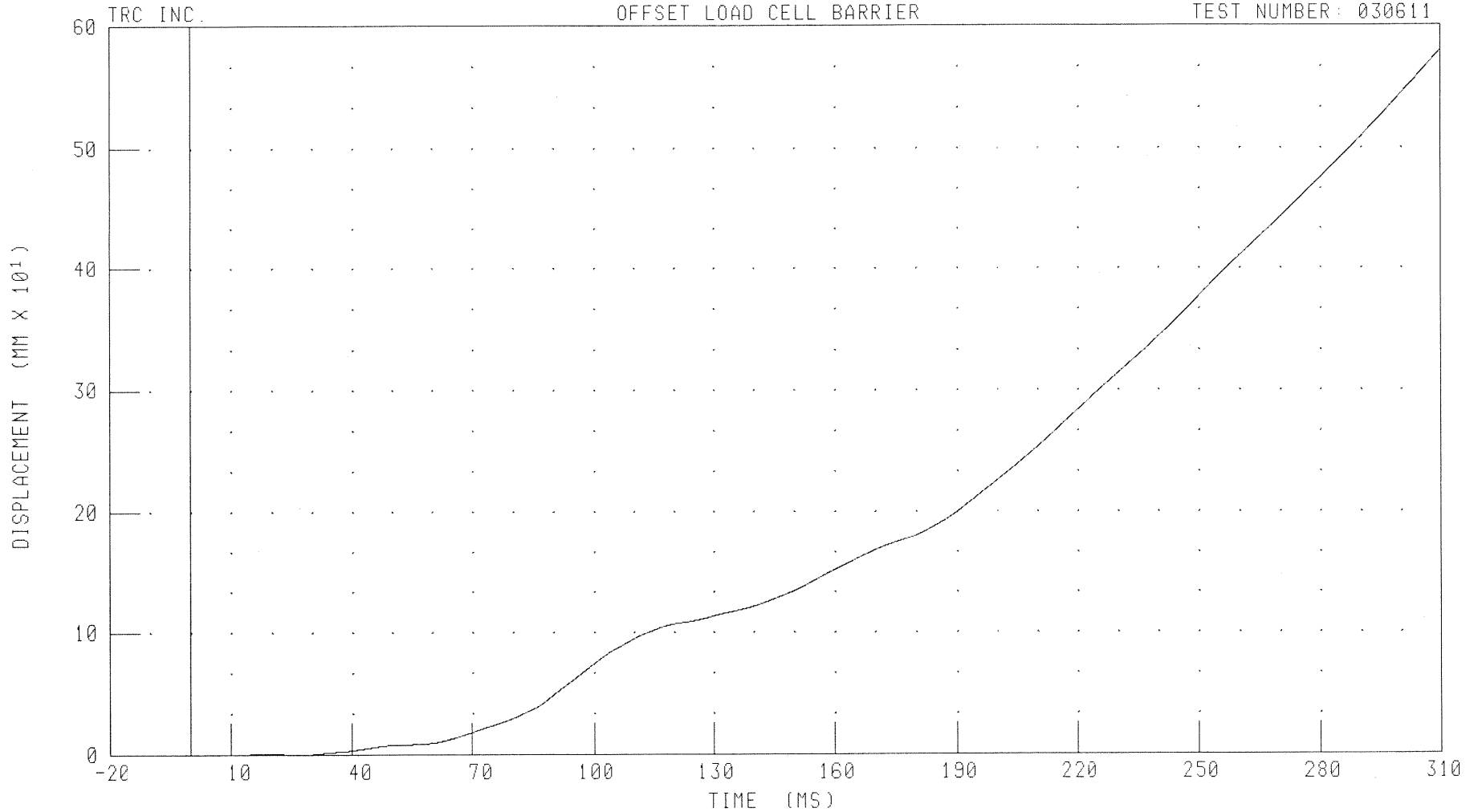
B-180

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
VEHICLE CENTER OF GRAVITY Y-AXIS DISPLACEMENT

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: VCCYD1

FILTER: CH. CLASS 180

PEAK DATA: 580.03 MM @ 310.00 MS; -0.03 MM @ 27.44 MS

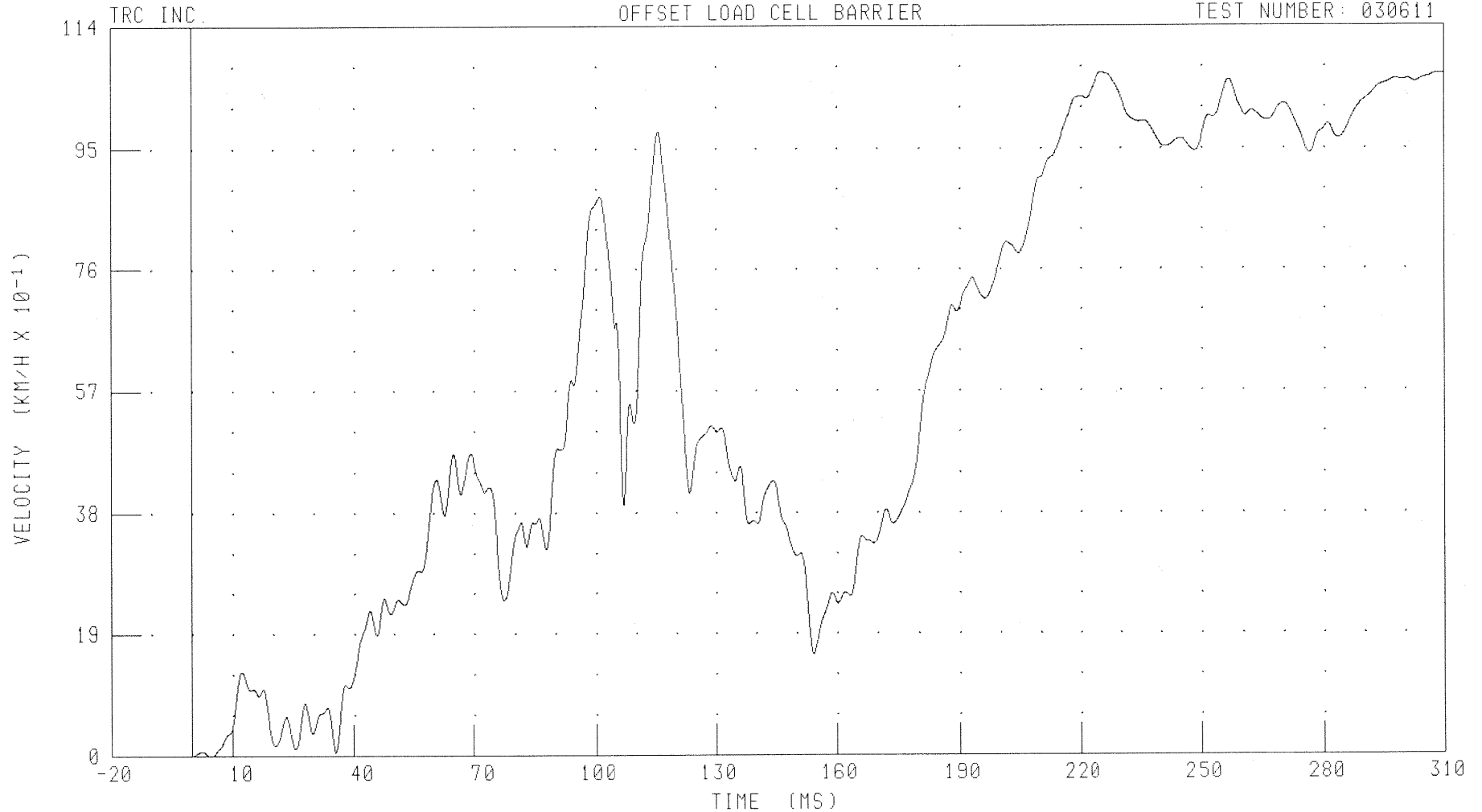
B-181

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
VEHICLE CENTER OF GRAVITY Z-AXIS VELOCITY

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: VCGZV1

FILTER: CH. CLASS 180

PEAK DATA: 10.67 KM/H @ 225.20 MS; -0.02 KM/H @ 4.72 MS

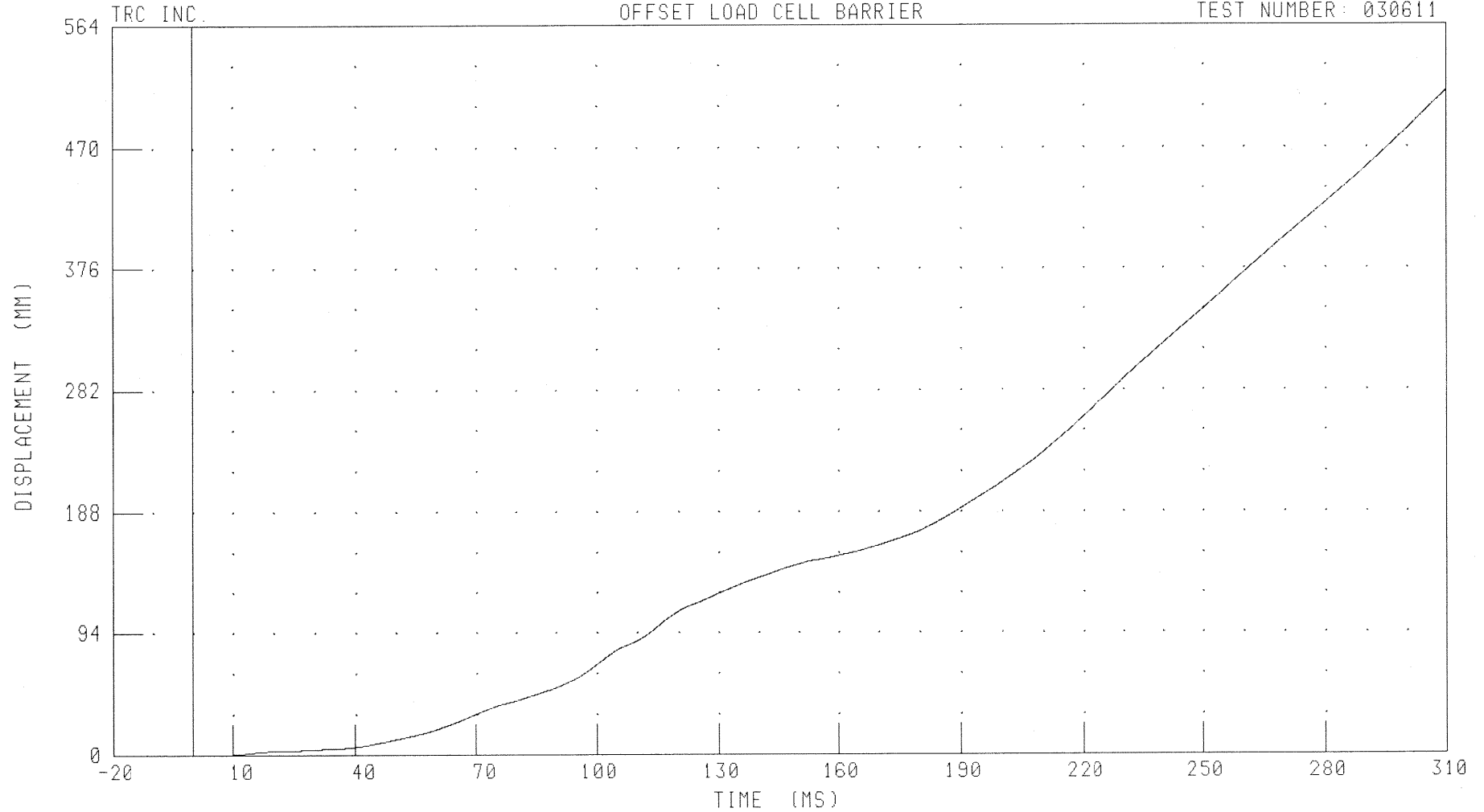
B-182

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
VEHICLE CENTER OF GRAVITY Z-AXIS DISPLACEMENT

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: VCGZD1

FILTER: CH. CLASS 180

PEAK DATA: 513.00 MM @ 310.00 MS; 0.00 MM @ 0.00 MS

B-183

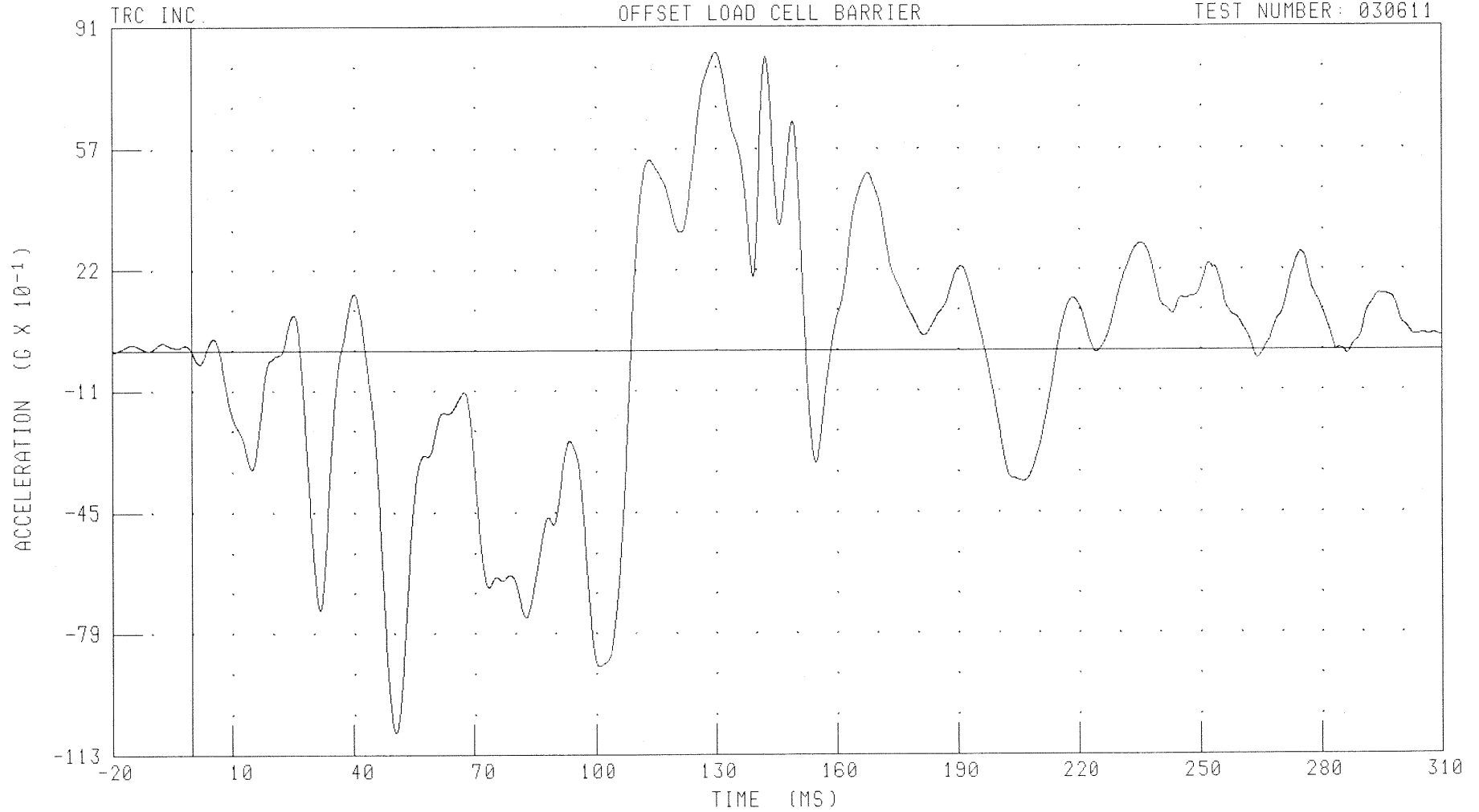
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

REAR DECK Z-AXIS ACCELERATION

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: RDKZG1

FILTER: CH. CLASS 60

PEAK DATA: 8.36 G @ 130.00 MS; -10.67 G @ 50.48 MS

B-184

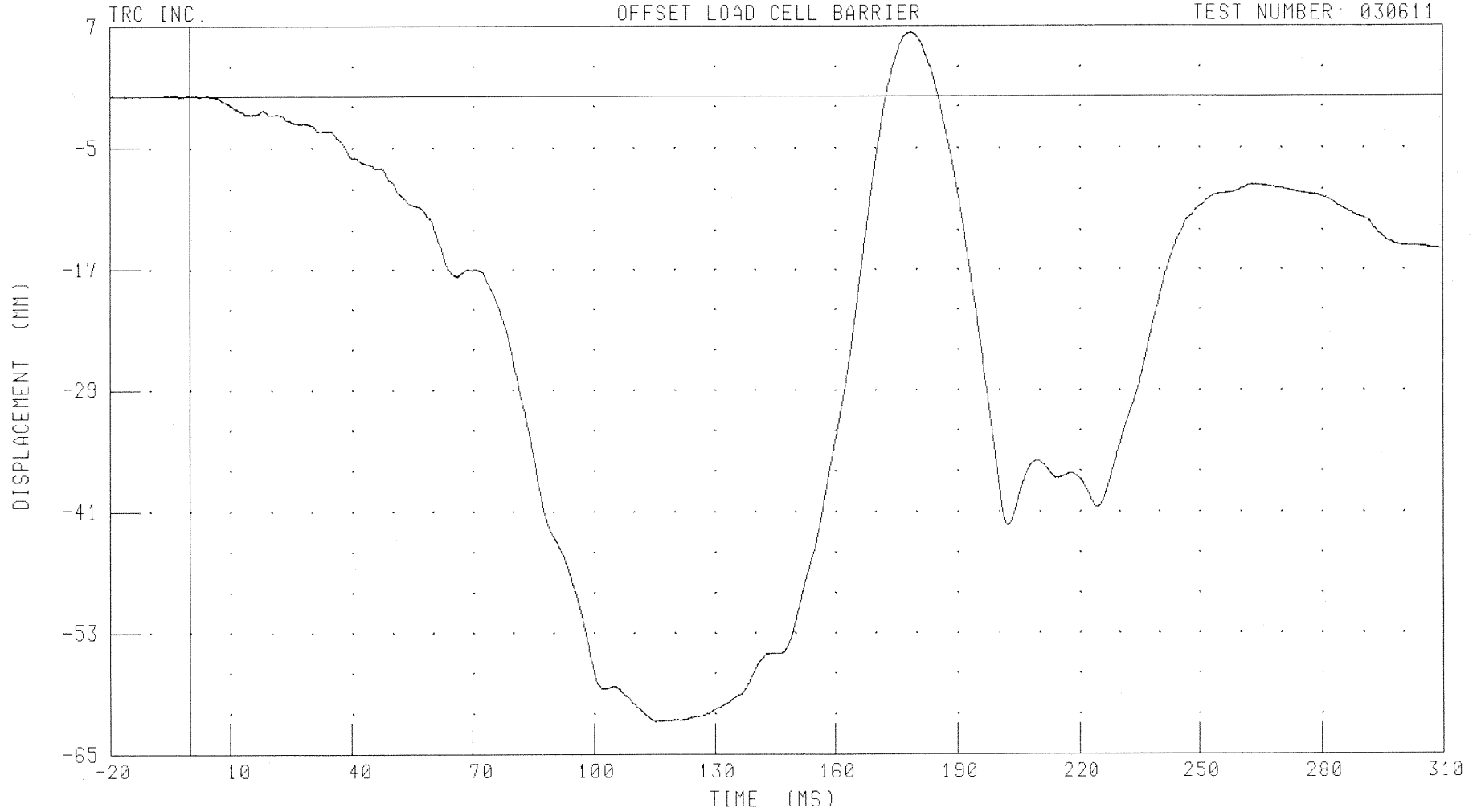
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

TOE PAN X-AXIS DISPLACEMENT

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: TPOXD1 FILTER: CH. CLASS 1000

PEAK DATA: 6.37 MM @ 178.48 MS; -61.81 MM @ 115.44 MS

B-185

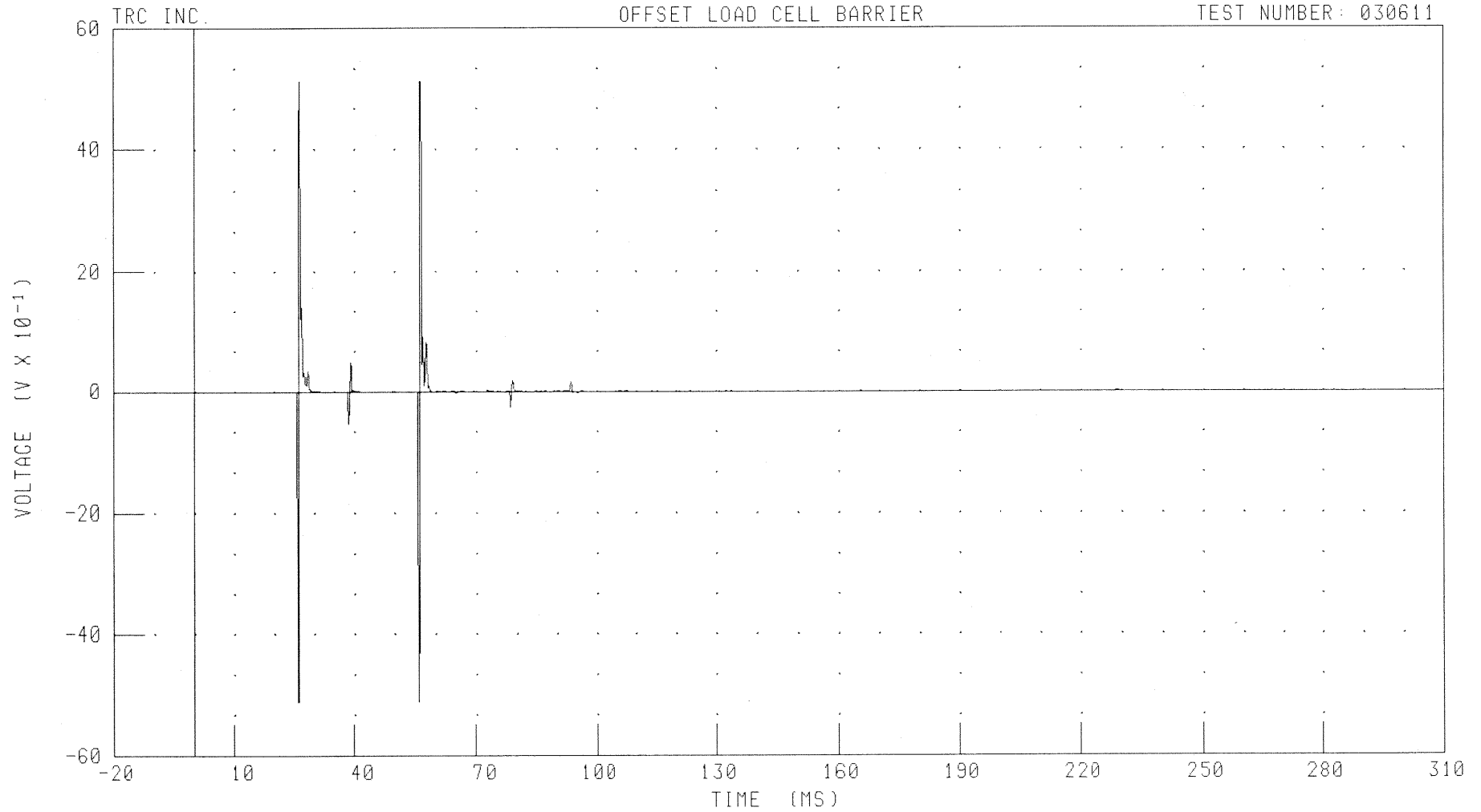
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER AIRBAG EVENT - WIRE A

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: DABETA

FILTER: CH. CLASS 1000

PEAK DATA: 5.12 V @ 26.32 MS; -5.12 V @ 26.00 MS

B-186

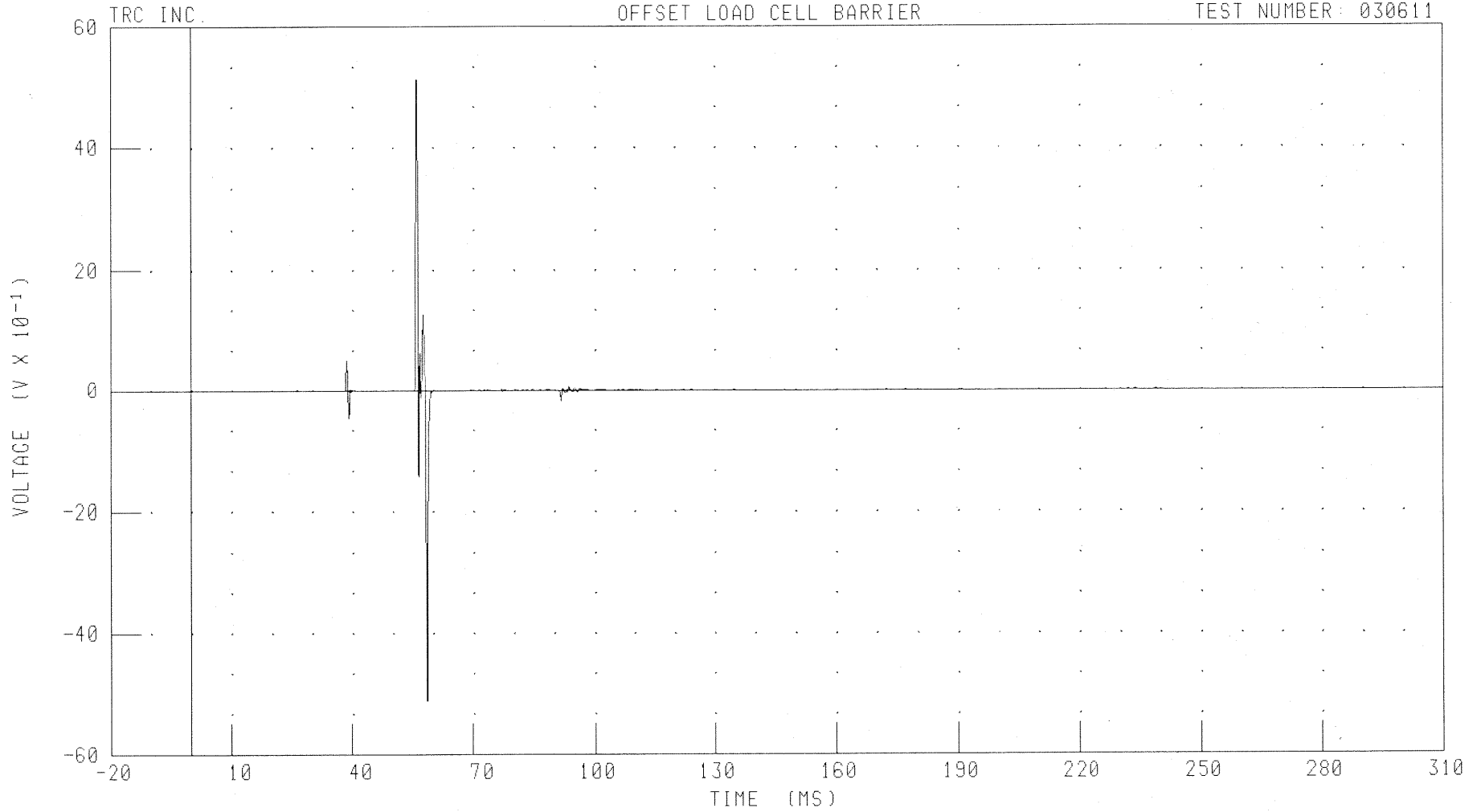
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER AIRBAG EVENT - WIRE B

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: DABETB FILTER: CH. CLASS 1000

PEAK DATA: 5.12 V @ 55.92 MS; -5.12 V @ 58.40 MS

B-187

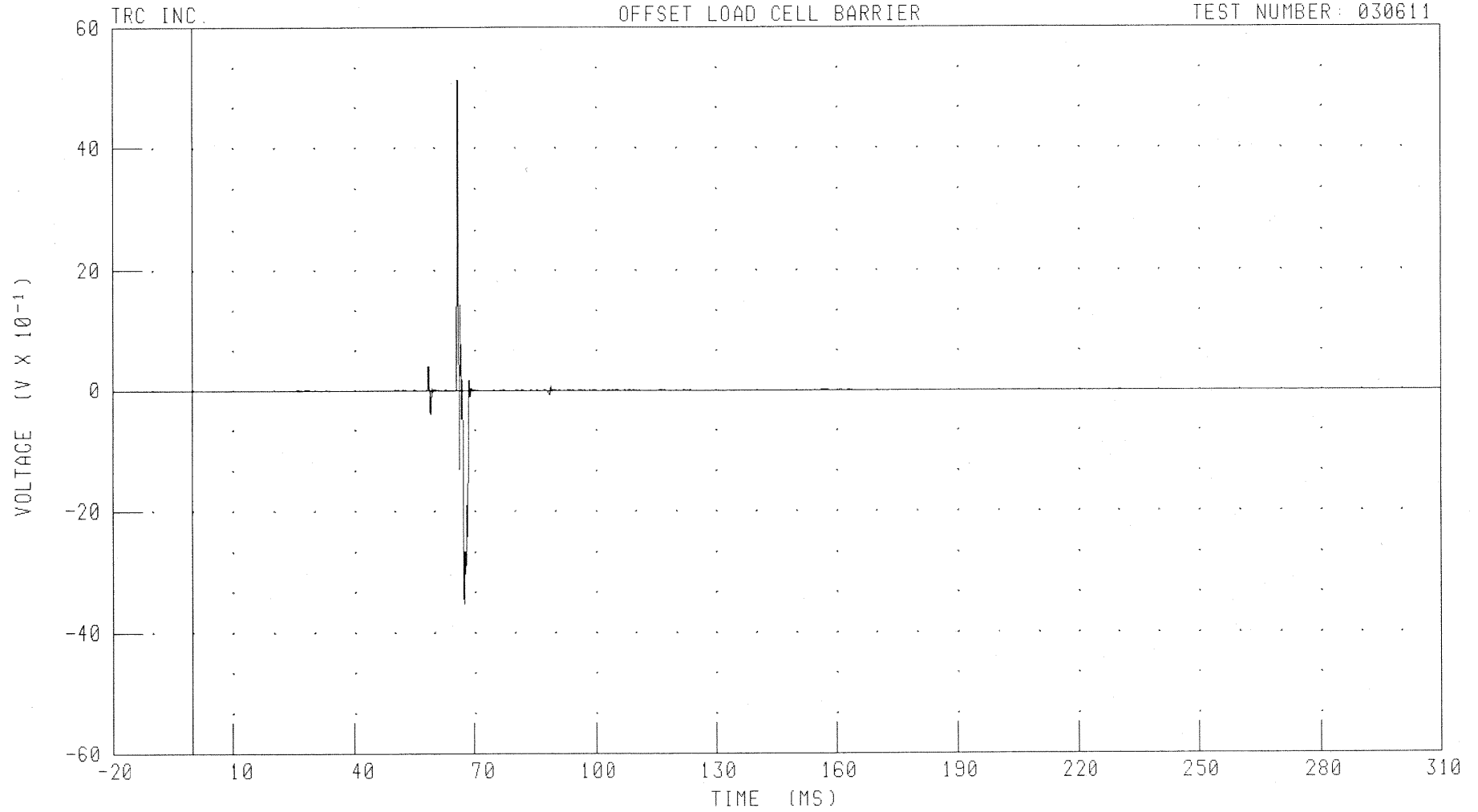
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER AIRBAG EVENT - WIRE A

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: PABETA FILTER: CH. CLASS 1000

PEAK DATA: 5.12 V @ 65.92 MS; -3.53 V @ 67.52 MS

B-188

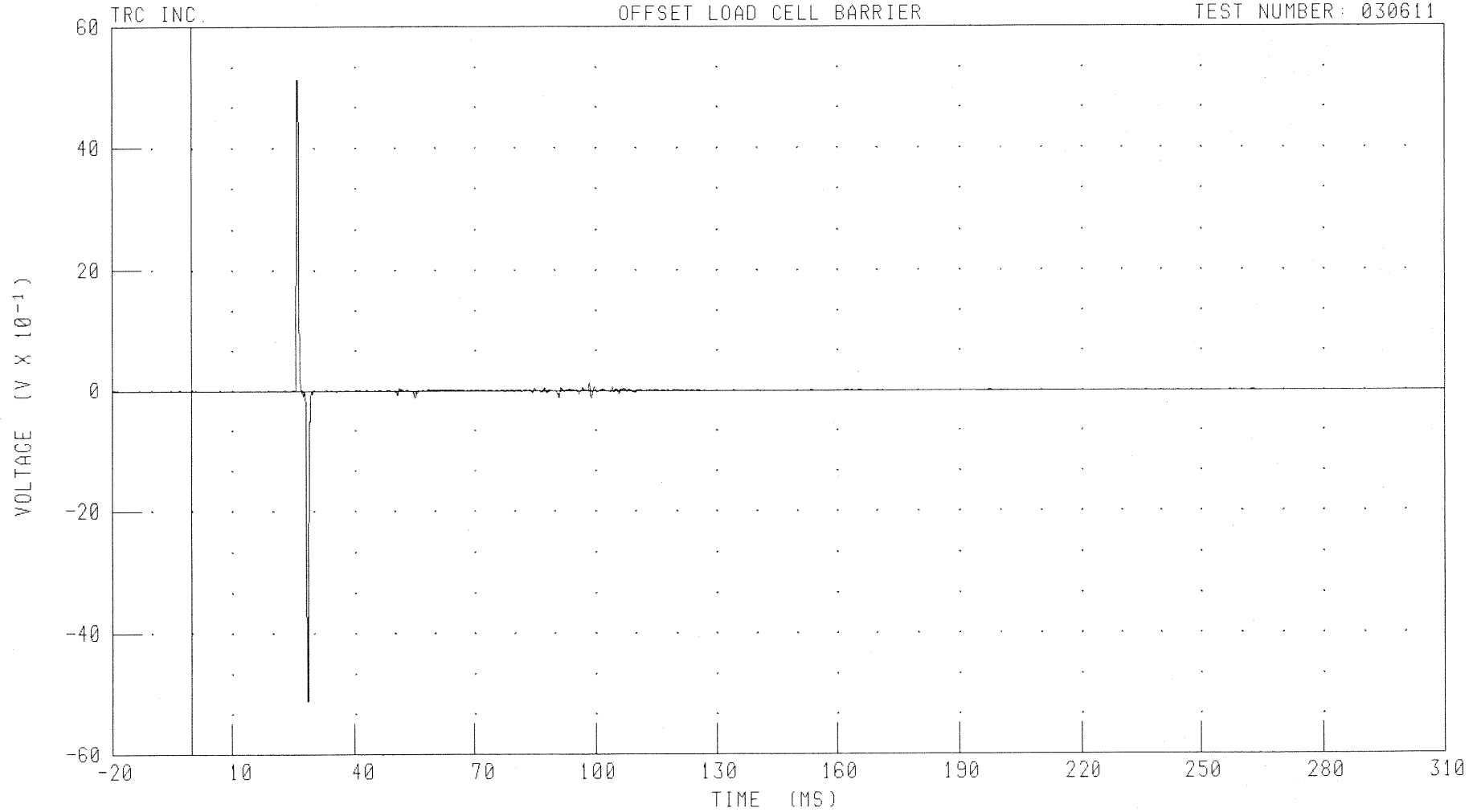
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER AIRBAG EVENT - WIRE B

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: FABETB FILTER: CH. CLASS 1000

PEAK DATA: 5.12 V @ 26.00 MS; -5.12 V @ 28.48 MS

B-189

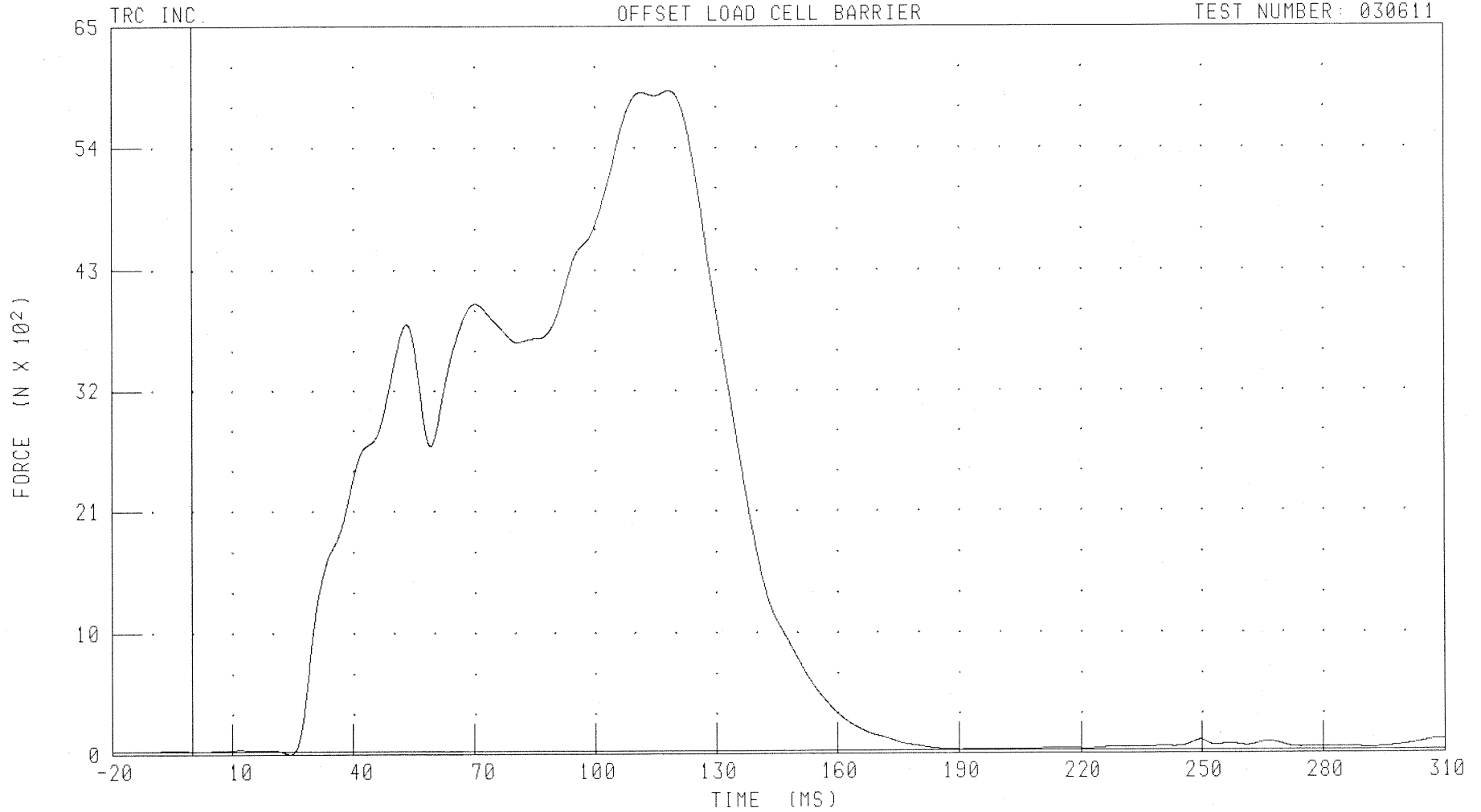
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER SHOULDER BELT FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: SHBF1

FILTER: CH. CLASS 60

PEAK DATA: 5985.41 N @ 118.64 MS; -27.62 N @ 24.48 MS

B-190

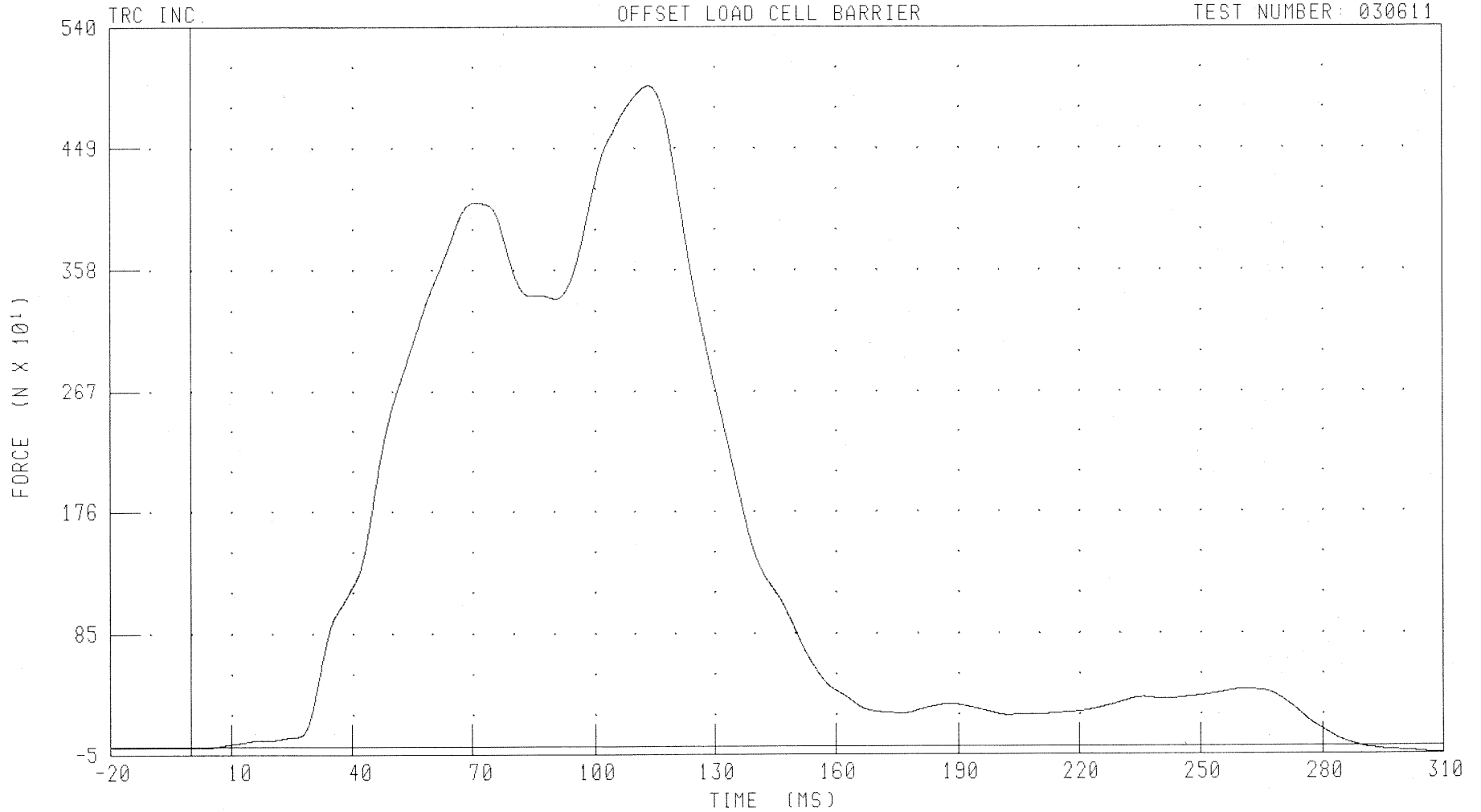
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

DRIVER LAP BELT FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LPBF1

FILTER: CH. CLASS 60

PEAK DATA: 495.97 N @ 113.52 MS; -53.12 N @ 309.36 MS

B-191

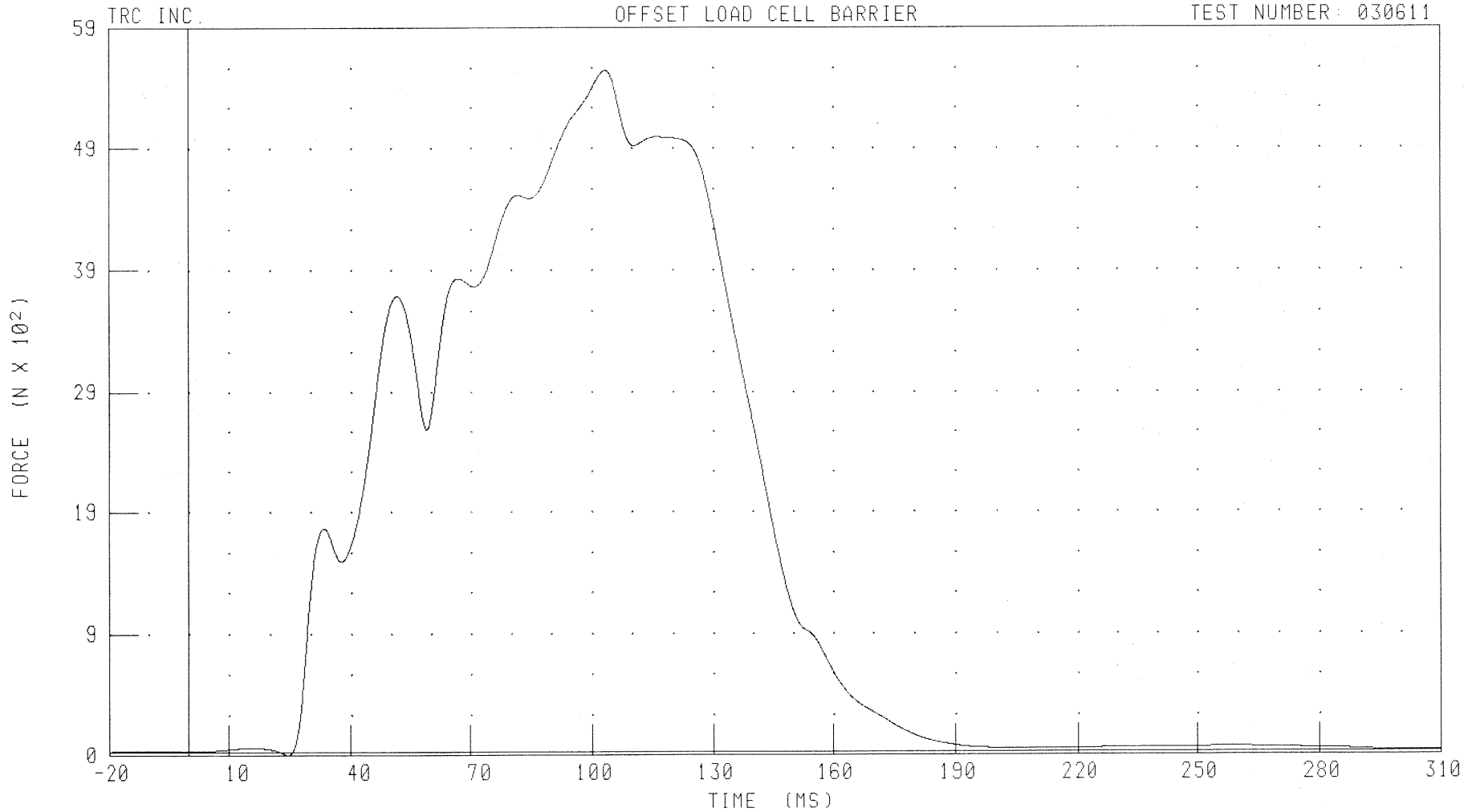
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER SHOULDER BELT FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: SHBF2

FILTER: CH. CLASS 60

PEAK DATA: 5616.53 N @ 103.36 MS; -26.29 N @ 24.48 MS

B-192

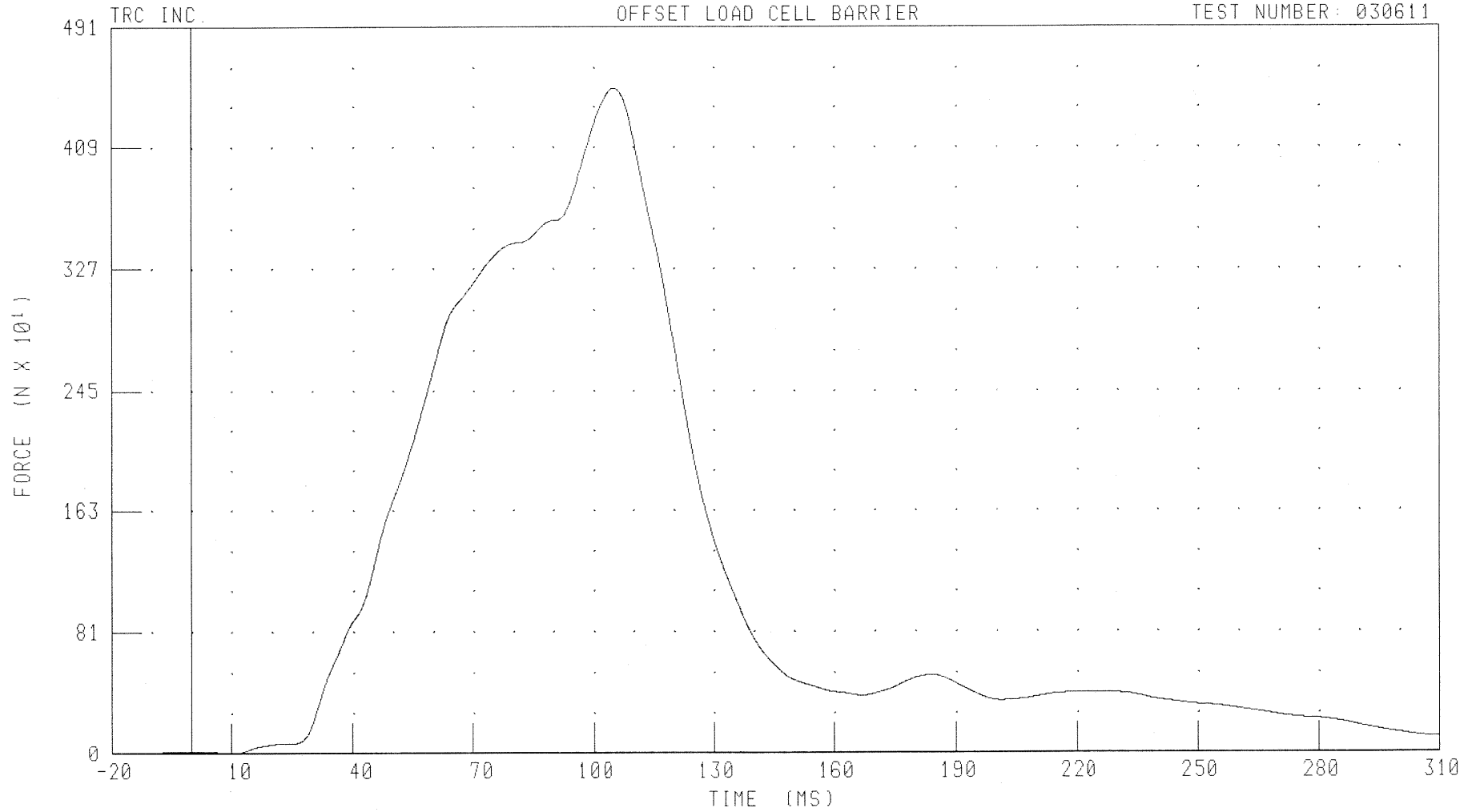
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

PASSENGER LAP BELT FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



B-193

030611

CHANNEL: LPBF2

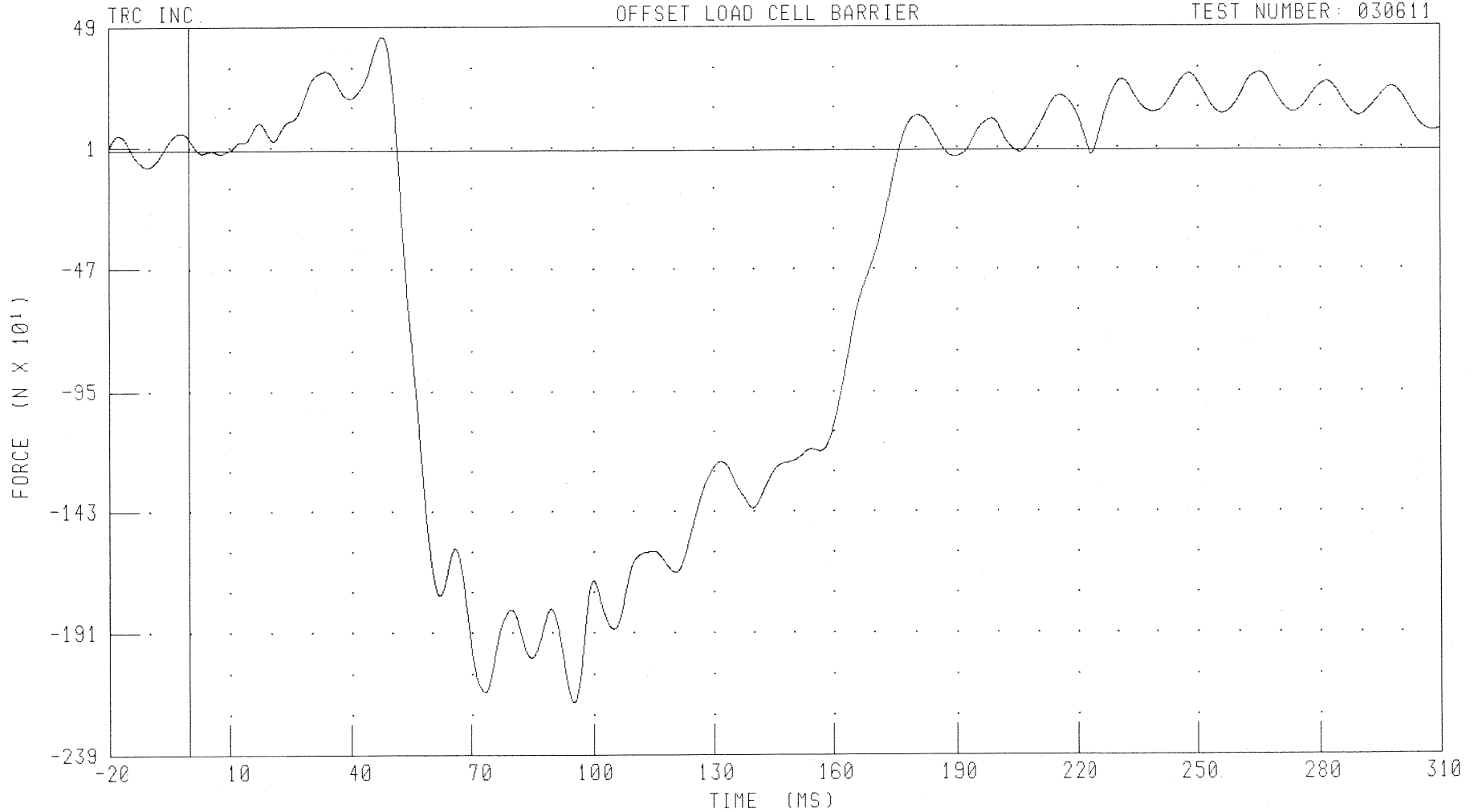
FILTER: CH. CLASS 60

PEAK DATA: 4492.35 N @ 105.12 MS; -7.27 N @ 10.16 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL A1 X-AXIS FORCE

TEST NUMBER: 030611



B-194

030611

CHANNEL: LCA1XF

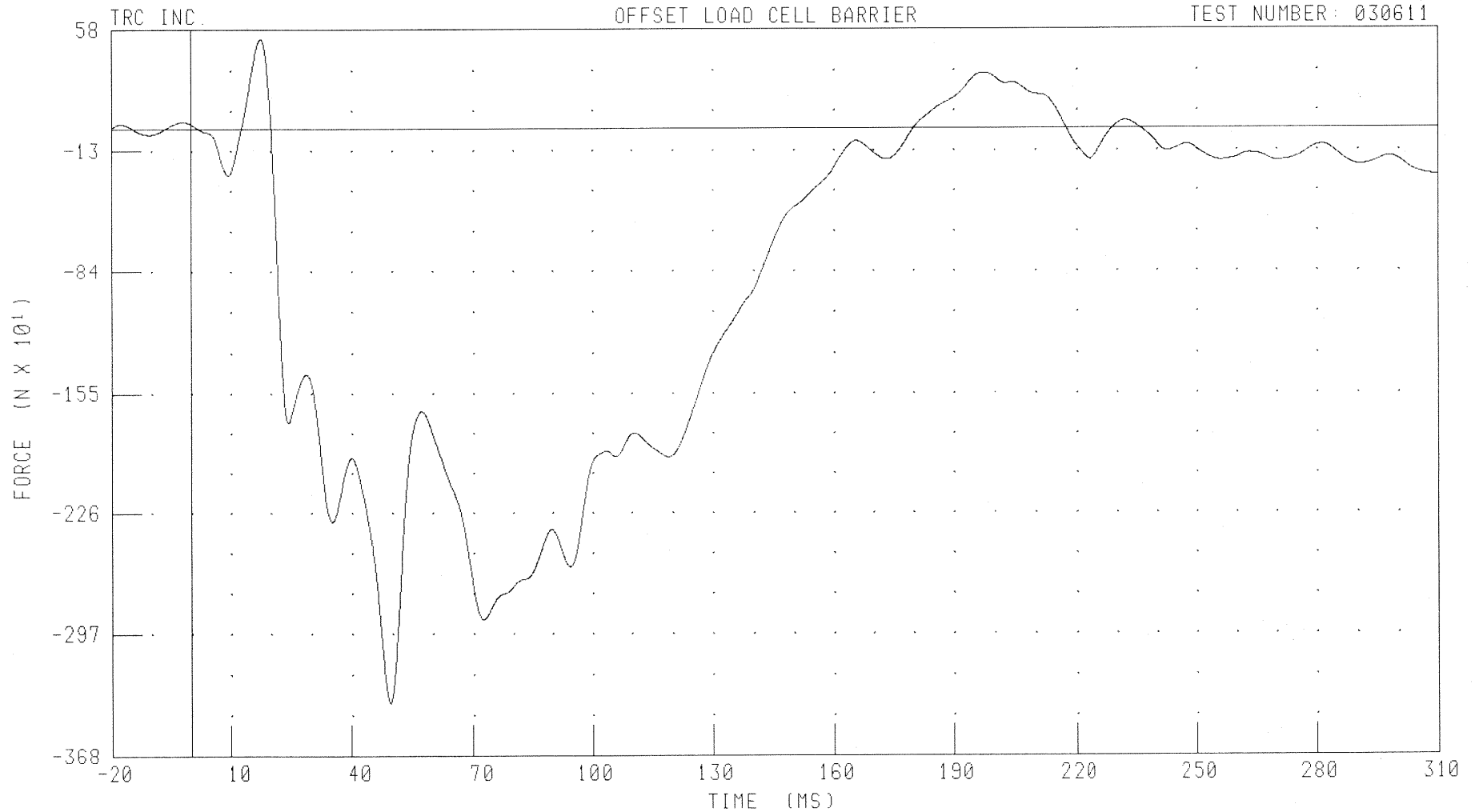
FILTER: CH. CLASS 60

PEAK DATA: 451.59 N @ 47.76 MS; -2183.18 N @ 95.28 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
BARRIER LOAD CELL A2 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCA2XF

FILTER: CH. CLASS 60

PEAK DATA: 529.85 N @ 17.52 MS; -3371.81 N @ 49.52 MS

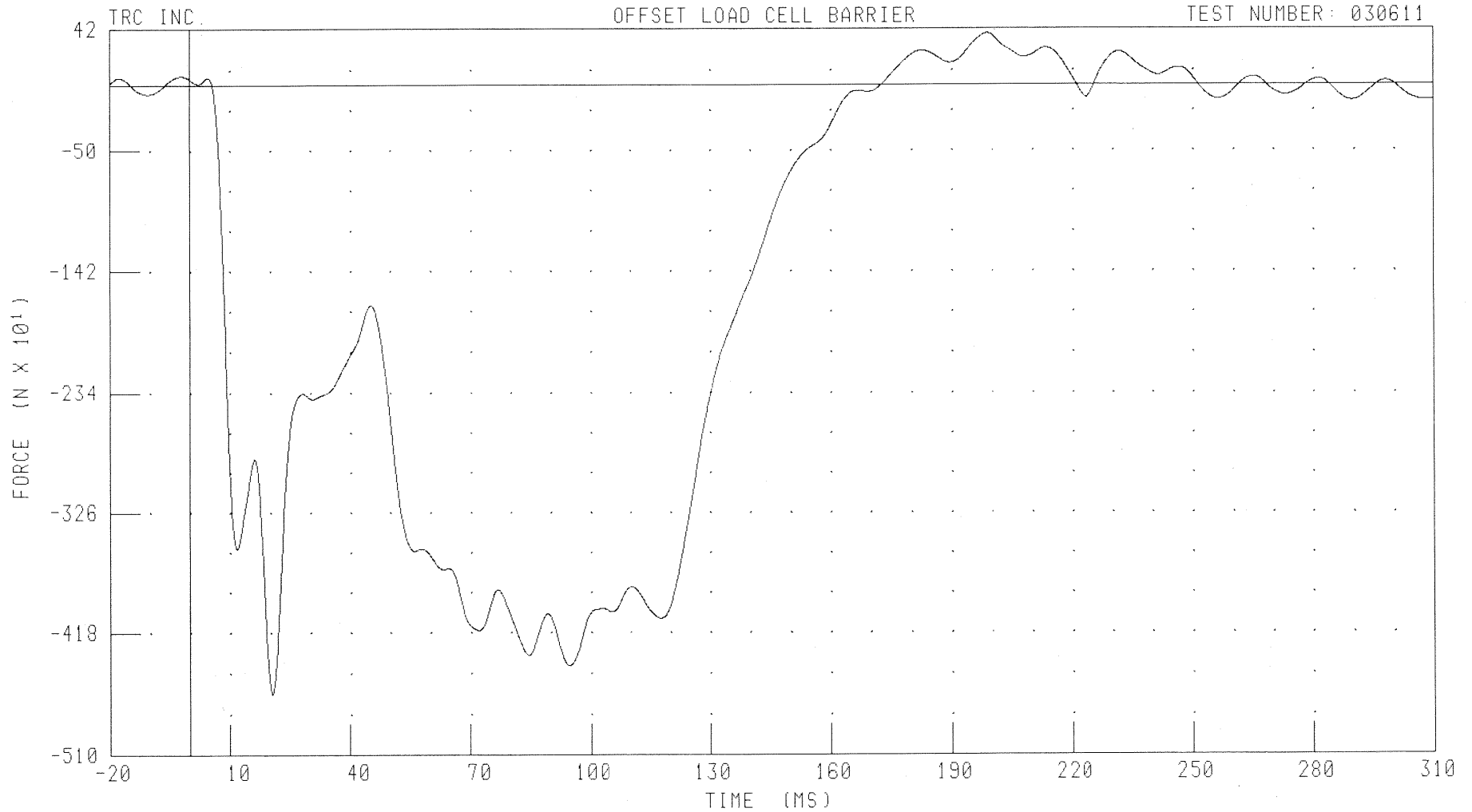
B-195

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL A3 X-AXIS FORCE

TEST NUMBER: 030611



CHANNEL: LCA3XF

FILTER: CH. CLASS 60

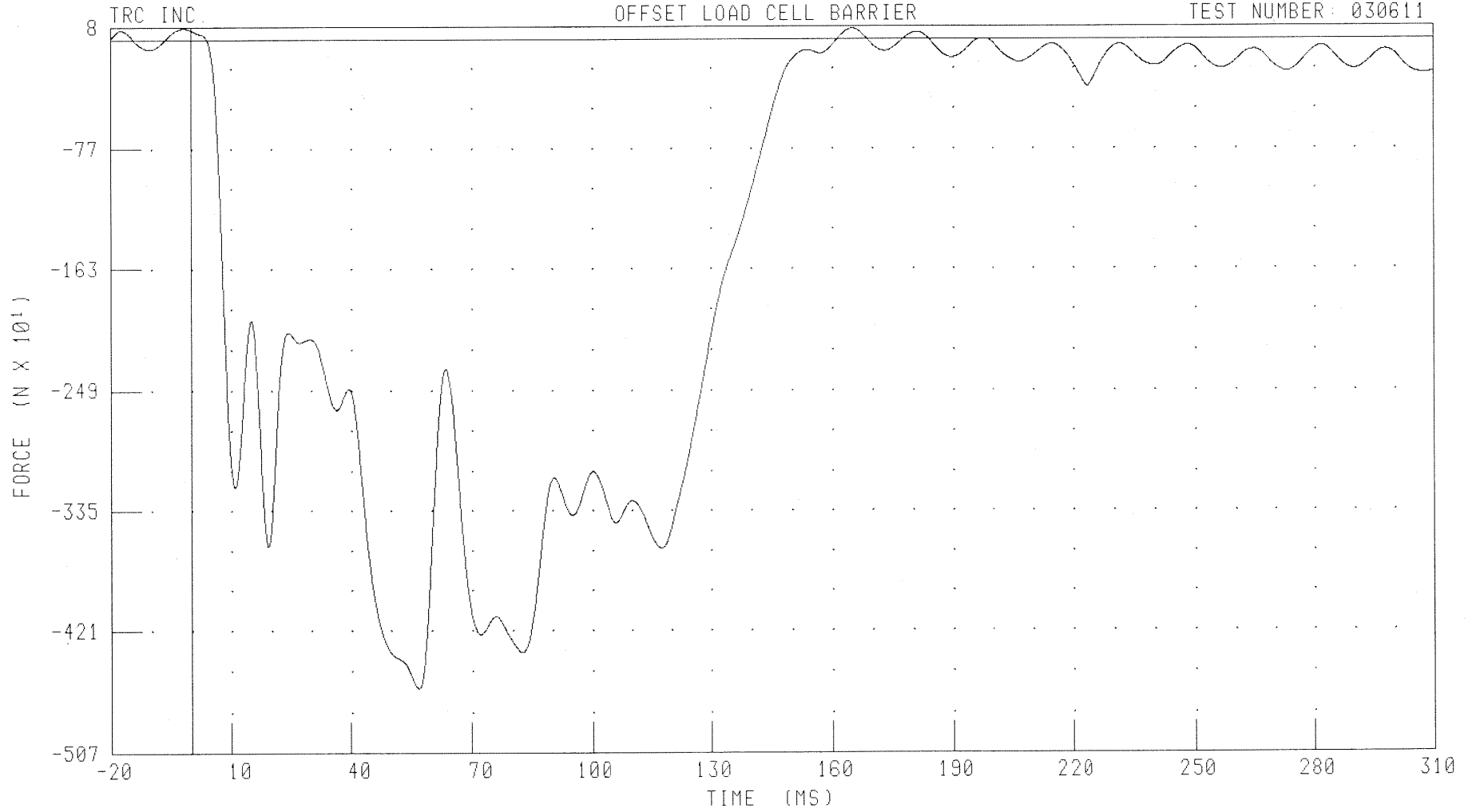
PEAK DATA: 387.66 N @ 198.96 MS, -4638.70 N @ 20.56 MS

B-196

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
BARRIER LOAD CELL A4 X-AXIS FORCE

TEST NUMBER: 030611



CHANNEL: LCA4XF

FILTER: CH. CLASS 60

PEAK DATA: 75.73 N @ -1.84 MS; -4625.92 N @ 56.88 MS

B-197

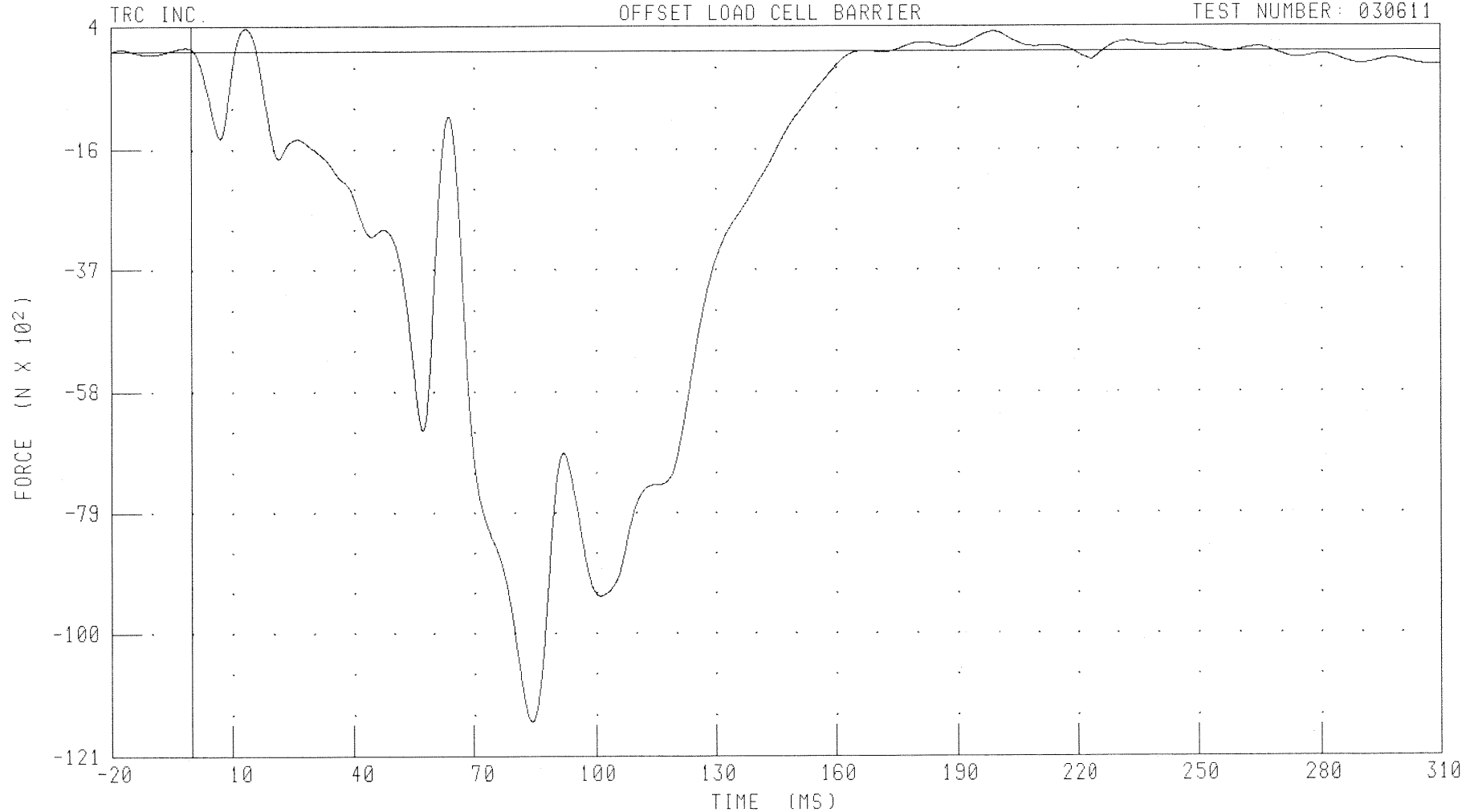
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL A5 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



B-198

030611

CHANNEL: LCA5XF

FILTER: CH. CLASS 60

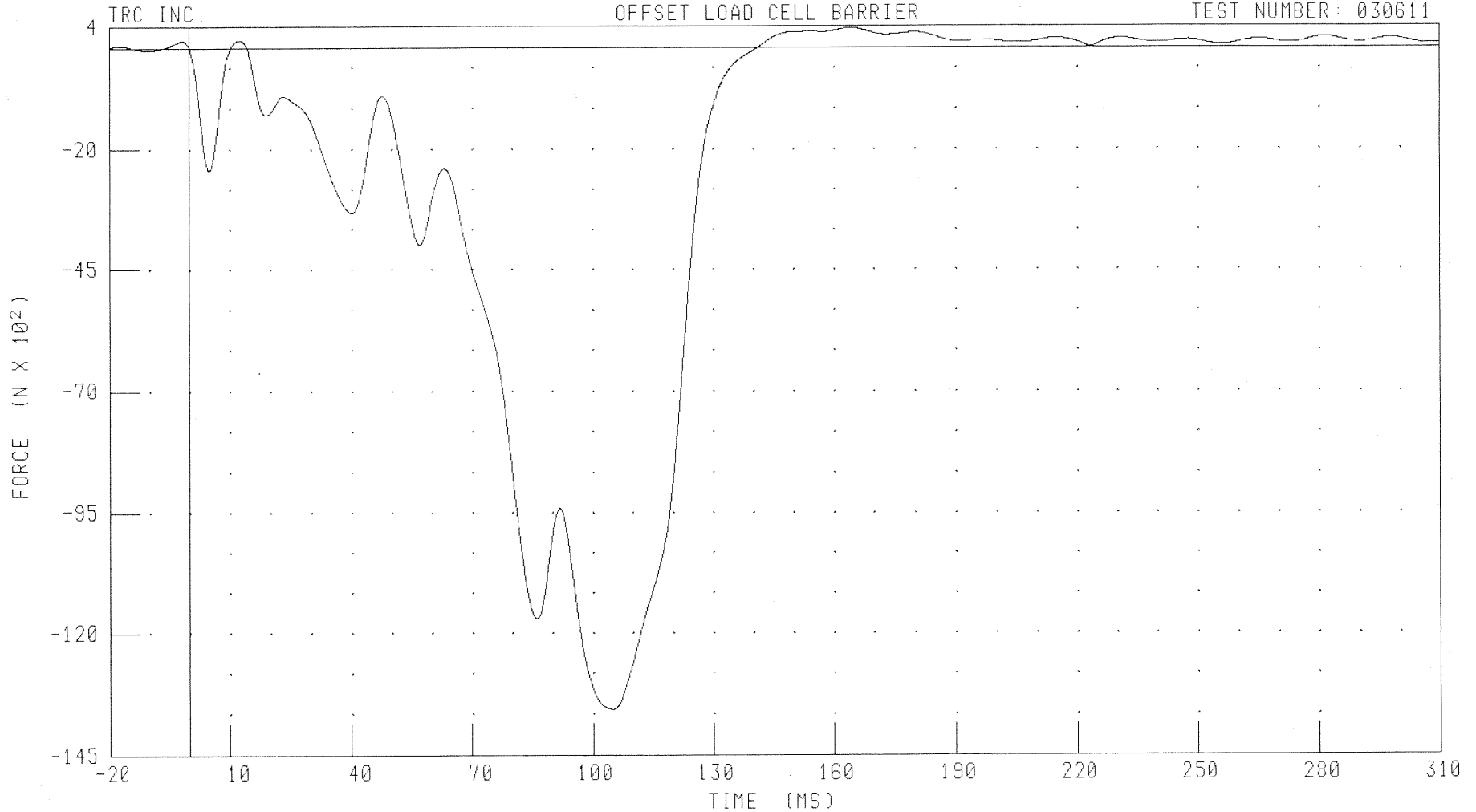
PEAK DATA: 397.96 N @ 13.36 MS, -11588.28 N @ 84.32 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL A6 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



B-199

030611

CHANNEL: LCA6XF

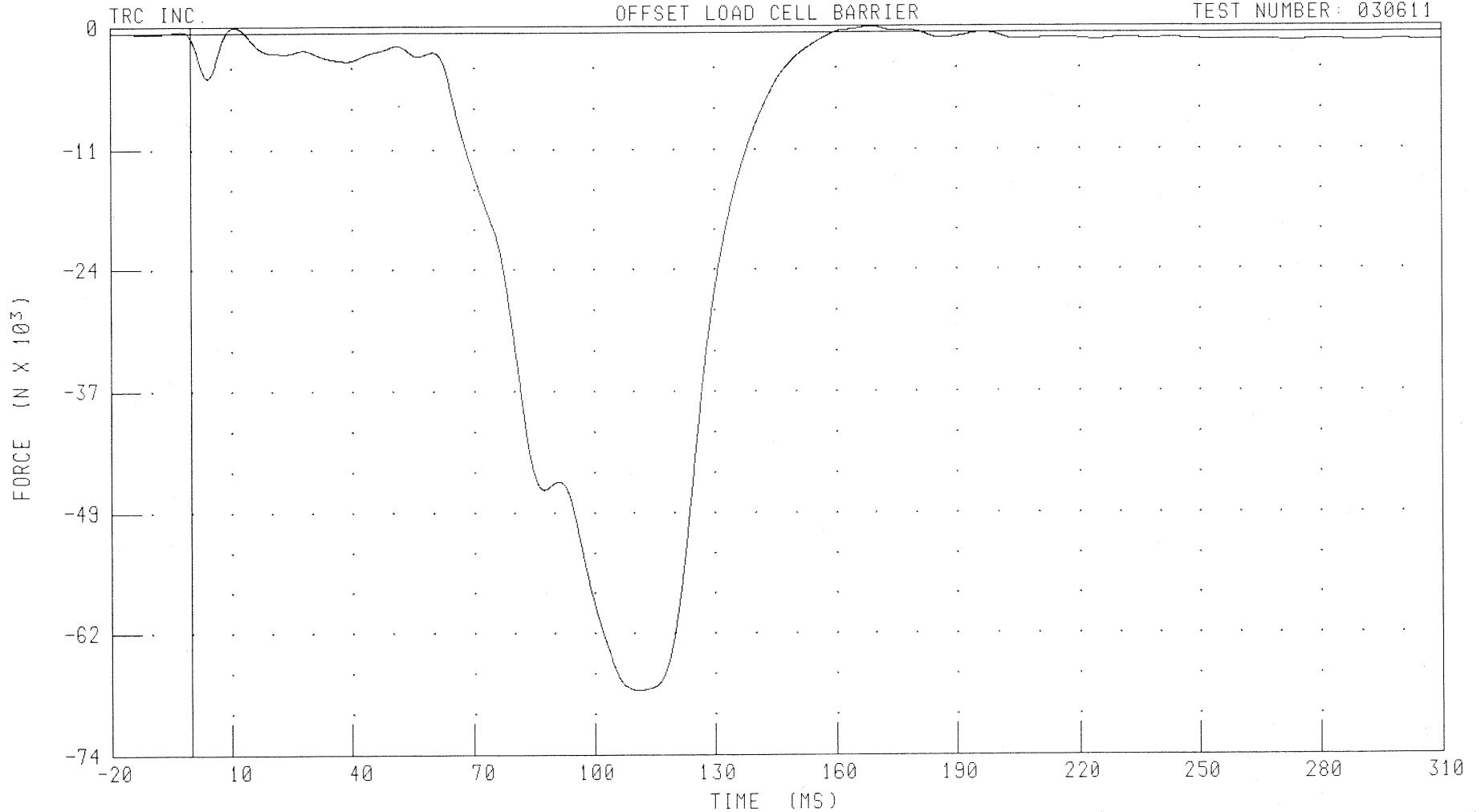
FILTER: CH. CLASS 60

PEAK DATA: 395.76 N @ 164.24 MS; -136.57 N @ 105.12 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL A7 X-AXIS FORCE

TEST NUMBER: 030611



B-200

030611

CHANNEL: LCA7XF

FILTER: CH. CLASS 60

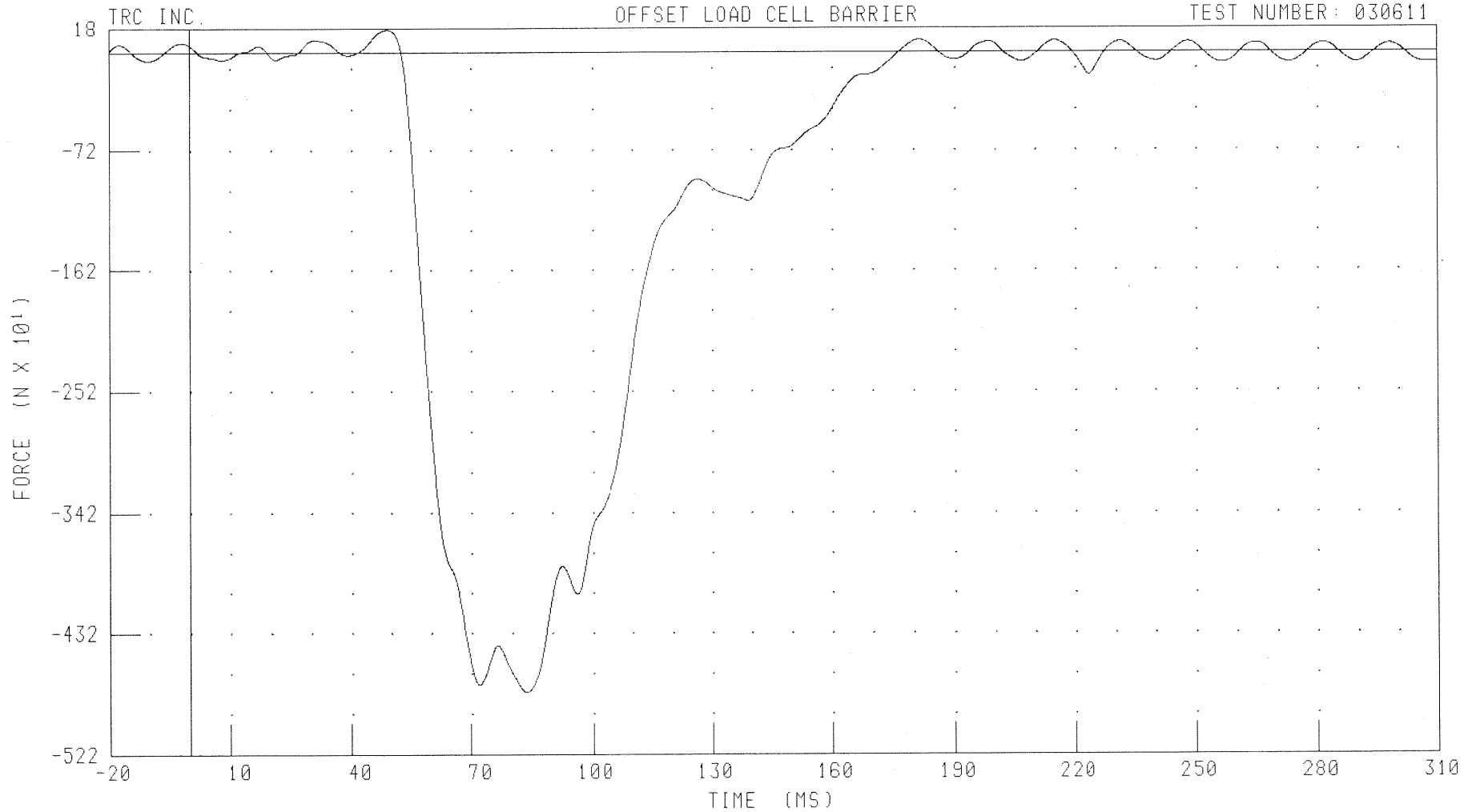
PEAK DATA: 581.83 N @ 10.88 MS, -68388.17 N @ 111.28 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL B1 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCB1XF

FILTER: CH. CLASS 60

PEAK DATA: 170.82 N @ 49.12 MS; -475.631 N @ 83.68 MS

B-201

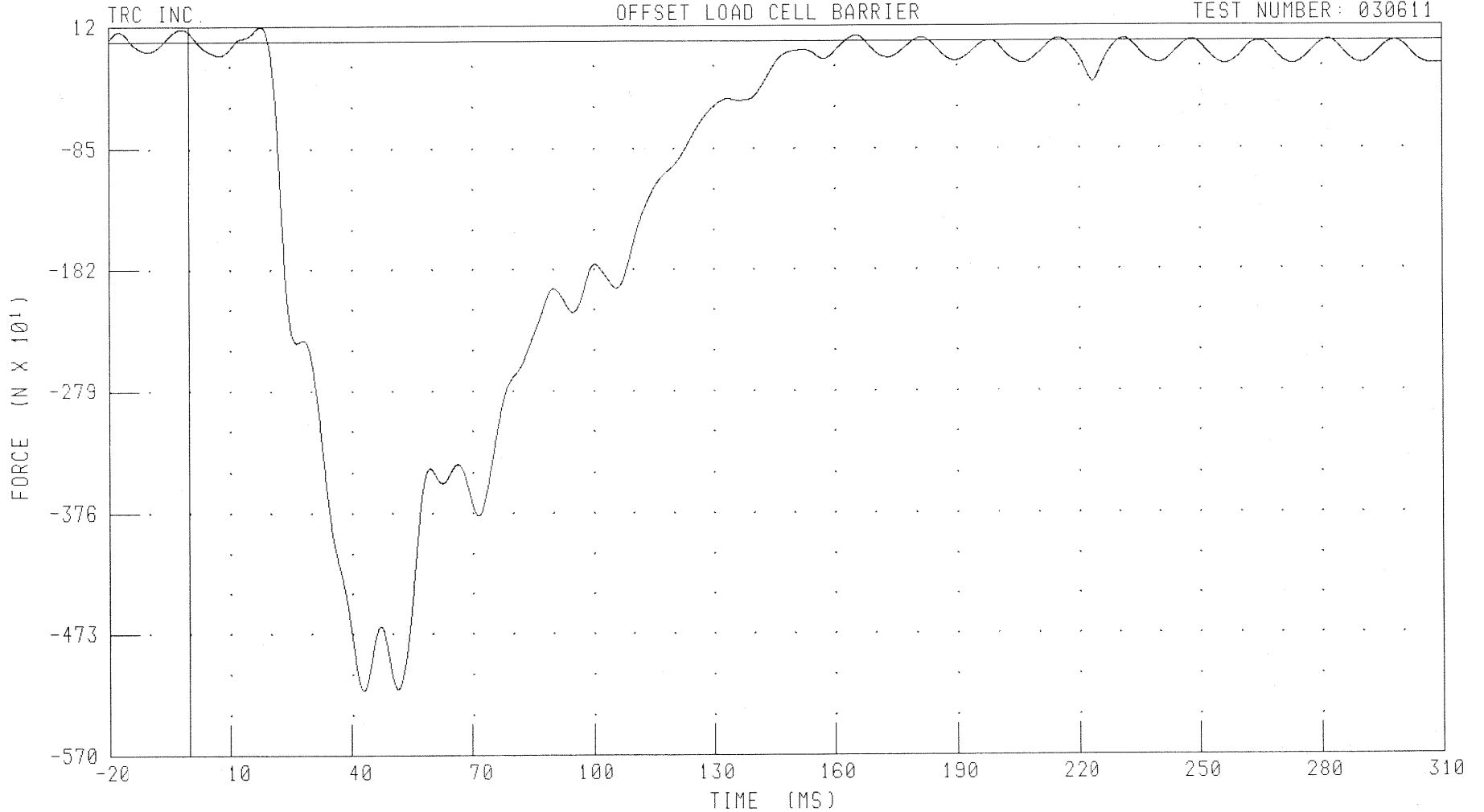
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL B2 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



B-202

030611

CHANNEL: LCB2XF

FILTER: CH. CLASS 60

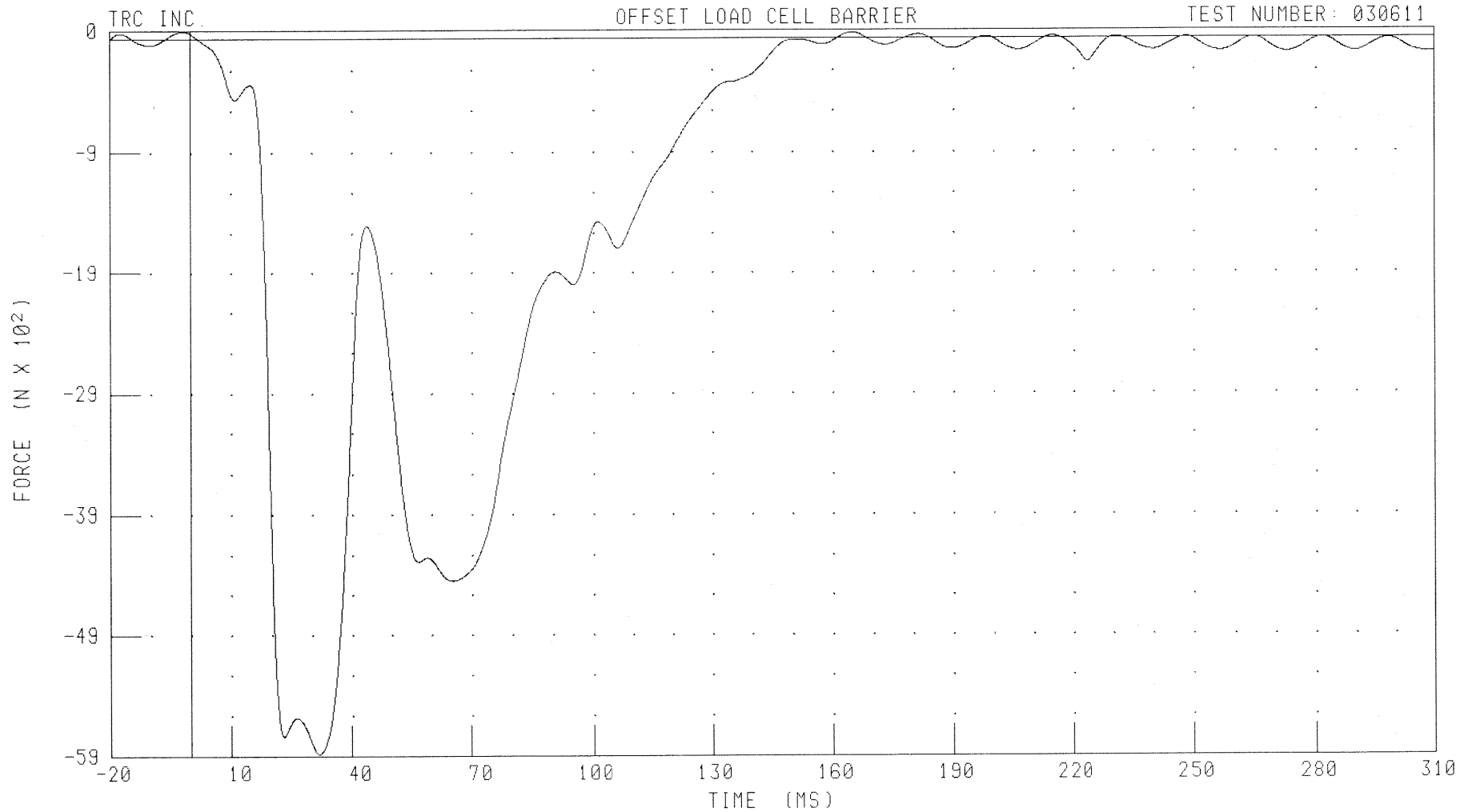
PEAK DATA: 117.96 N @ 17.68 MS; -5187.11 N @ 42.88 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL B3 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCB3XF

FILTER: CH. CLASS 60

PEAK DATA: 62.48 N @ -1.76 MS; -5915.08 N @ 31.76 MS

B-203

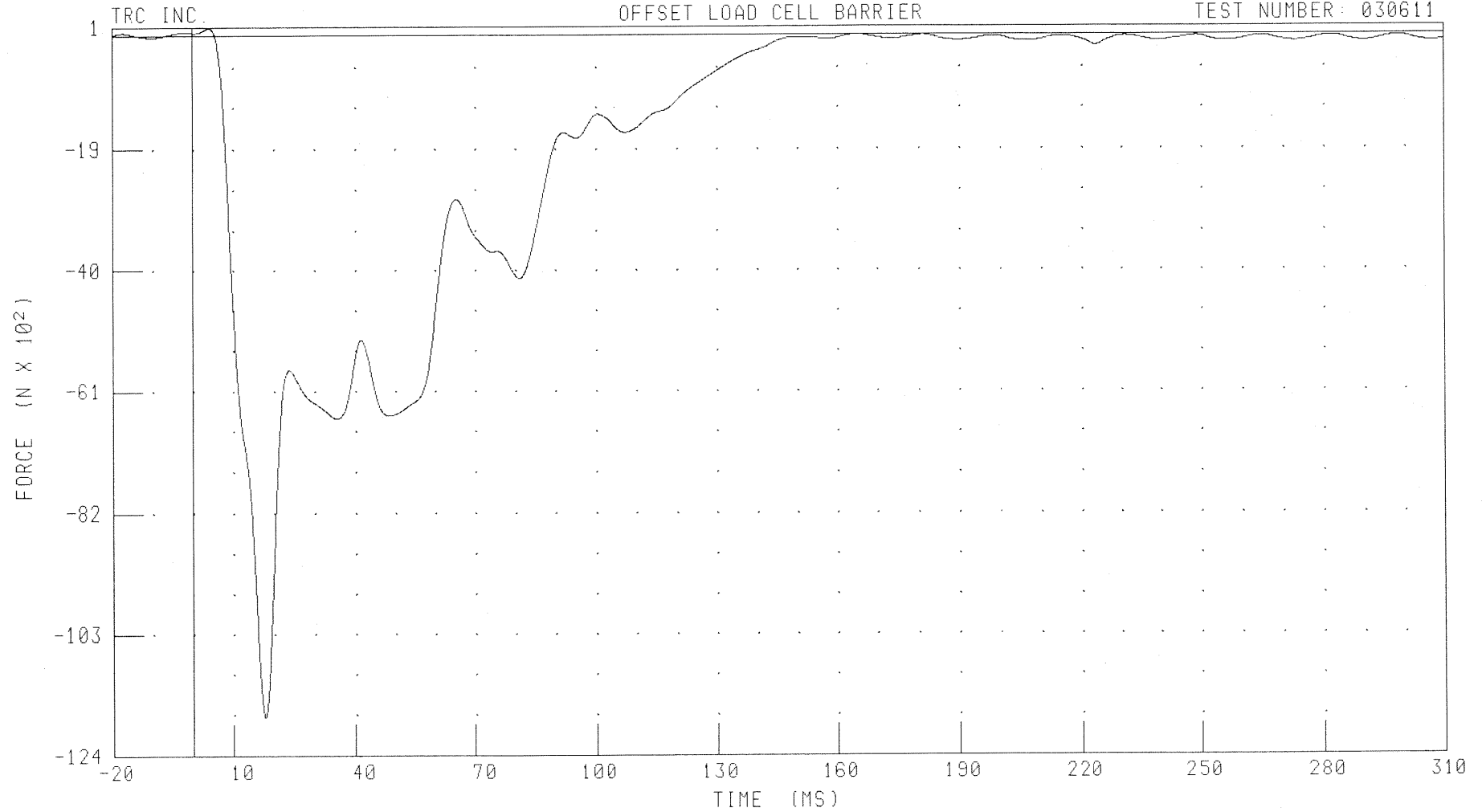
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL B4 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCB4XF

FILTER: CH. CLASS 60

PEAK DATA: 119.44 N @ 4.24 MS; -11818.29 N @ 17.76 MS

B-204

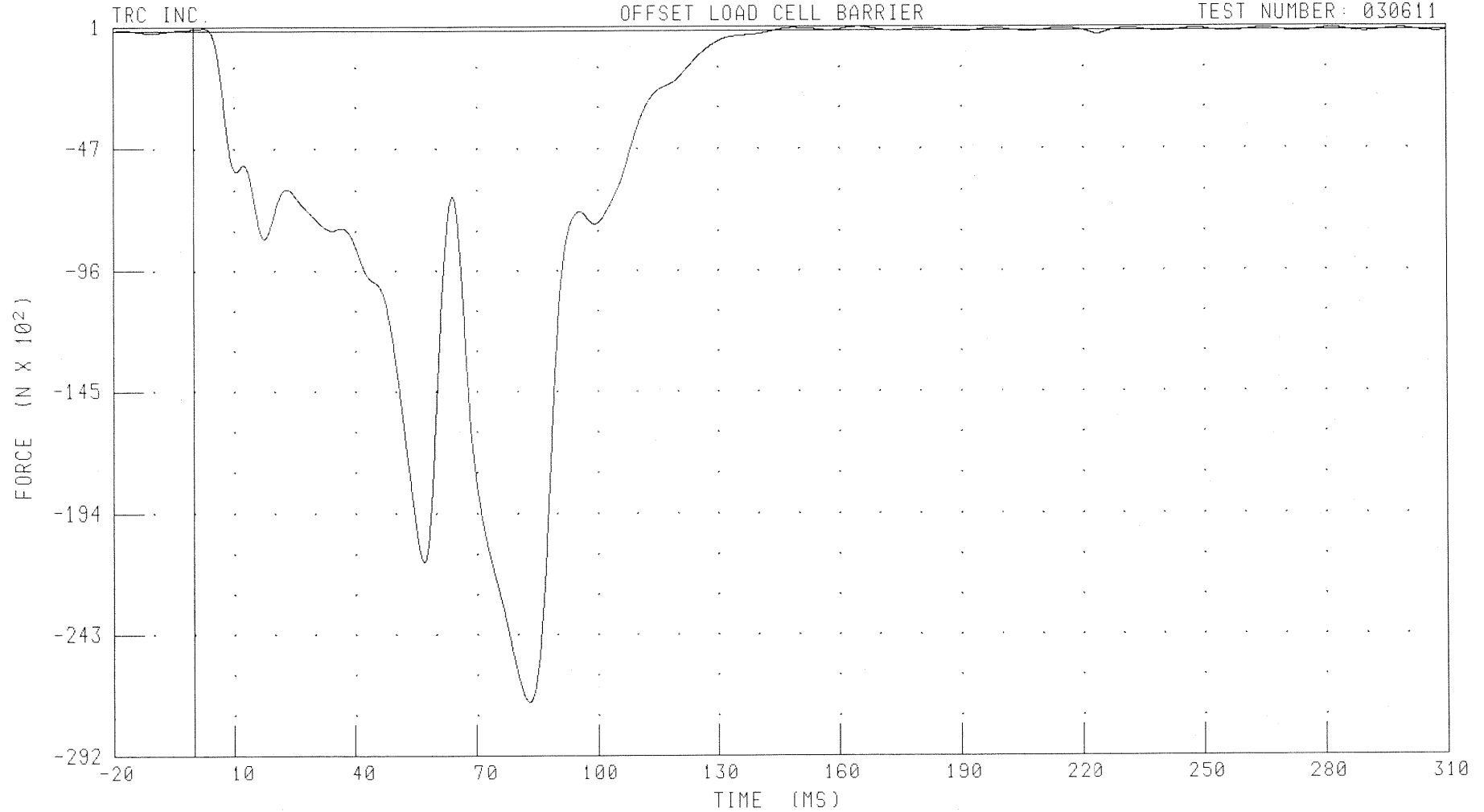
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL B5 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



B-205

030611

CHANNEL: LCB5XF

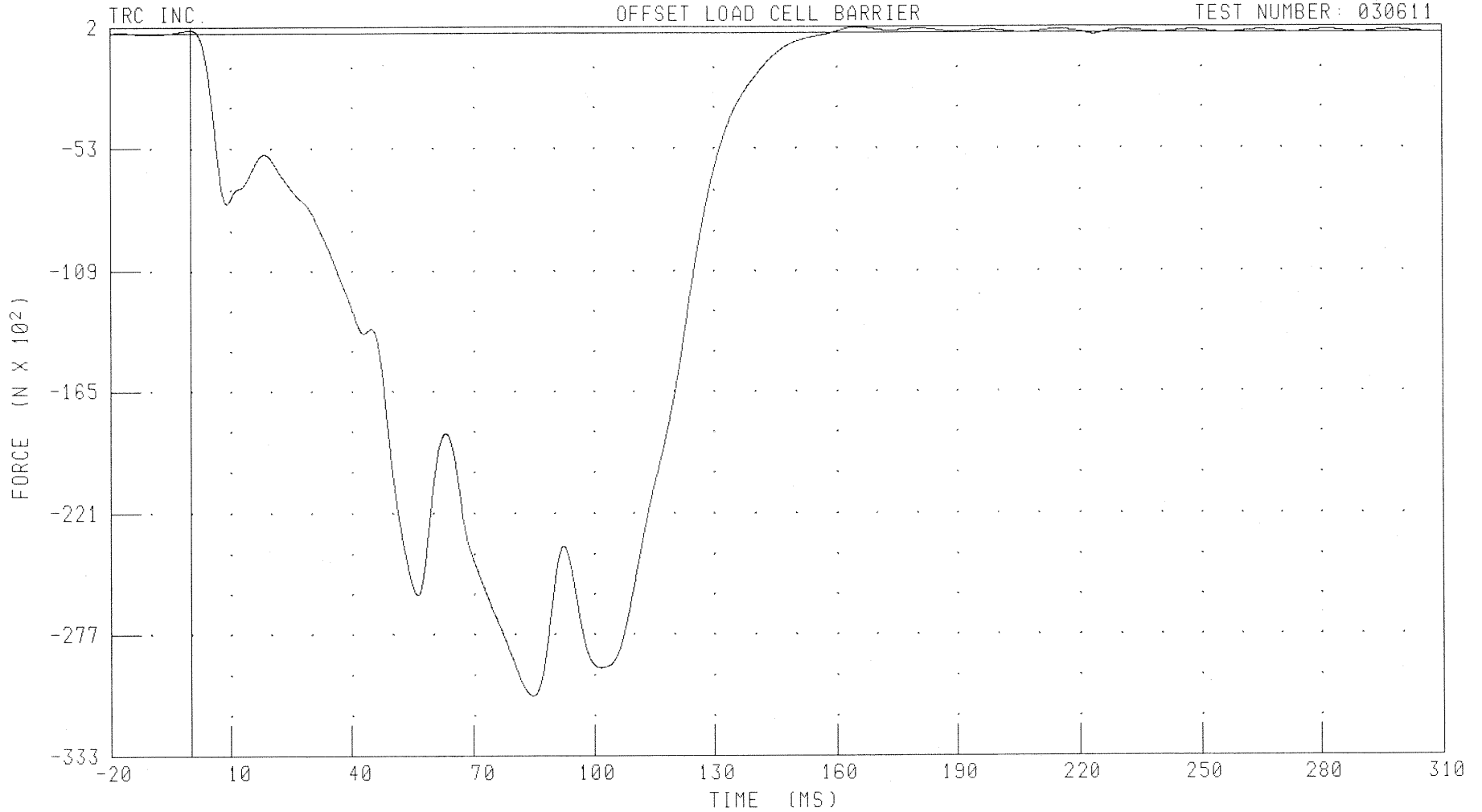
FILTER: CH. CLASS 60

PEAK DATA: 163.12 N @ 164.88 MS, -27078.15 N @ 83.04 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL B6 X-AXIS FORCE

TEST NUMBER: 030611



CHANNEL: LCB6XF

FILTER: CH. CLASS 60

PEAK DATA: 256.22 N @ 165.12 MS; -30568.81 N @ 84.64 MS

B-206

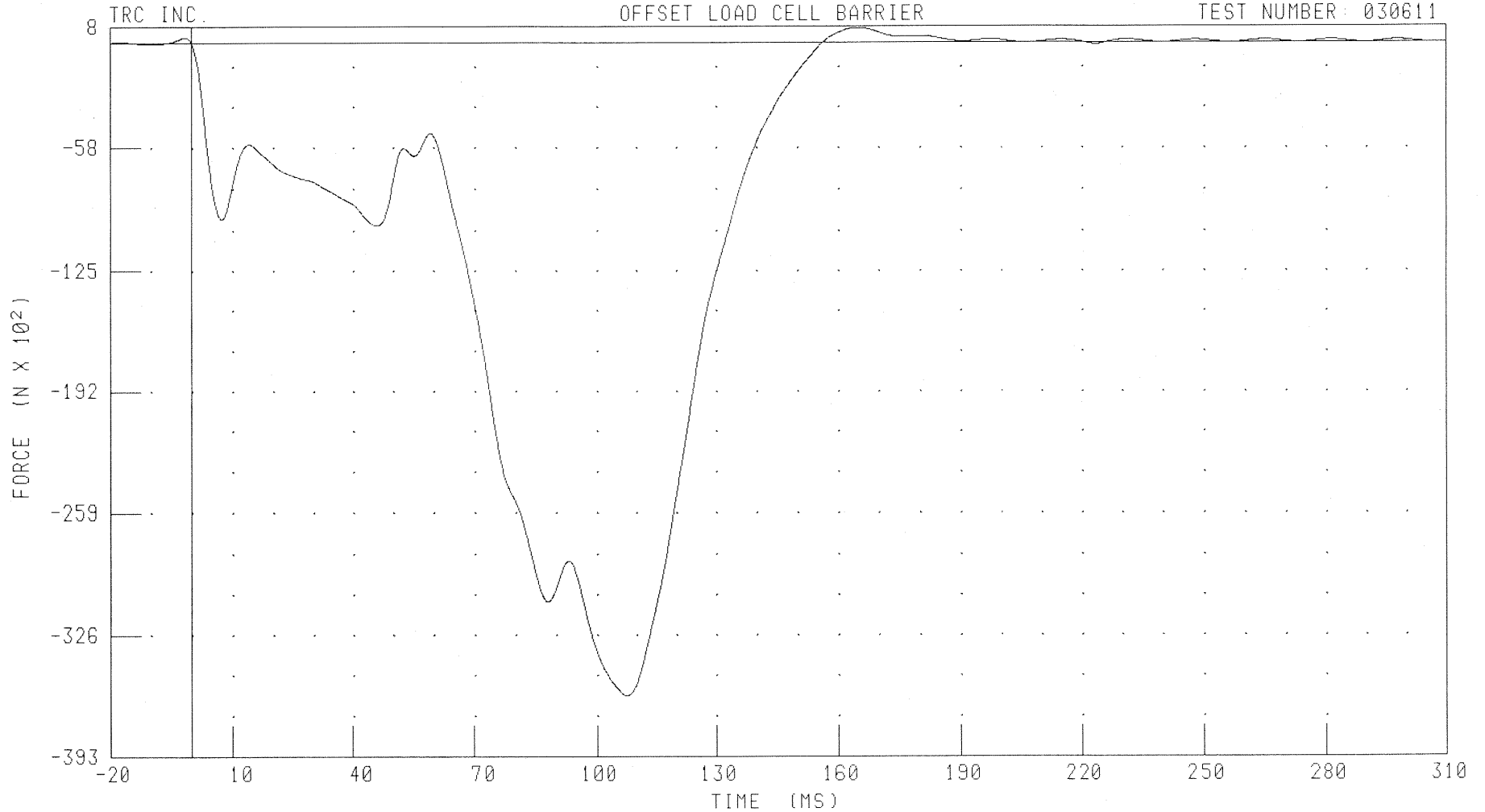
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL B7 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCB7XF FILTER: CH. CLASS 60

PEAK DATA: 812.33 N @ 164.72 MS, -35972.44 N @ 107.60 MS

B-207

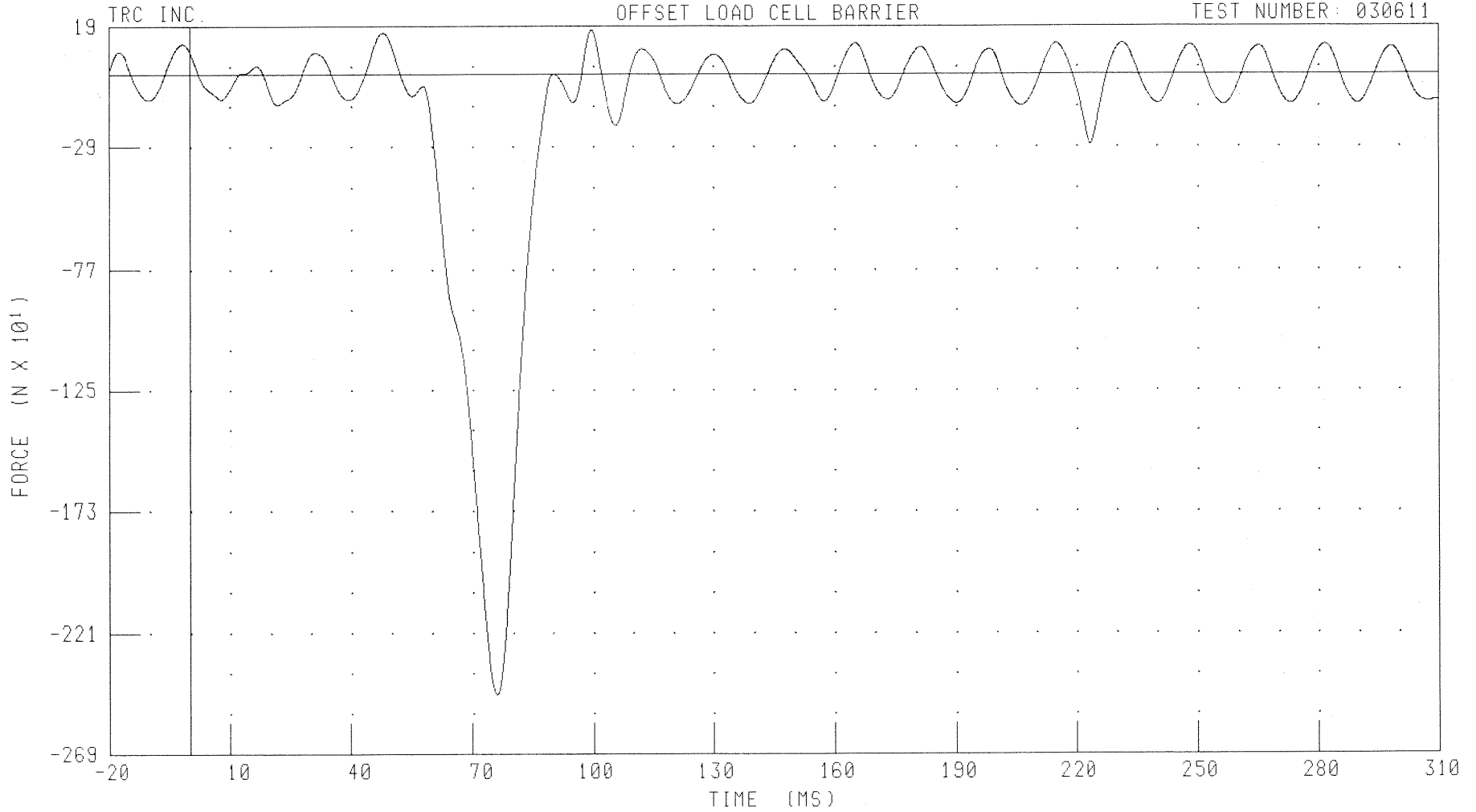
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL C1 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCC1XF

FILTER: CH. CLASS 60

PEAK DATA: 174.46 N @ 99.60 MS; -245.26 N @ 76.08 MS

B-208

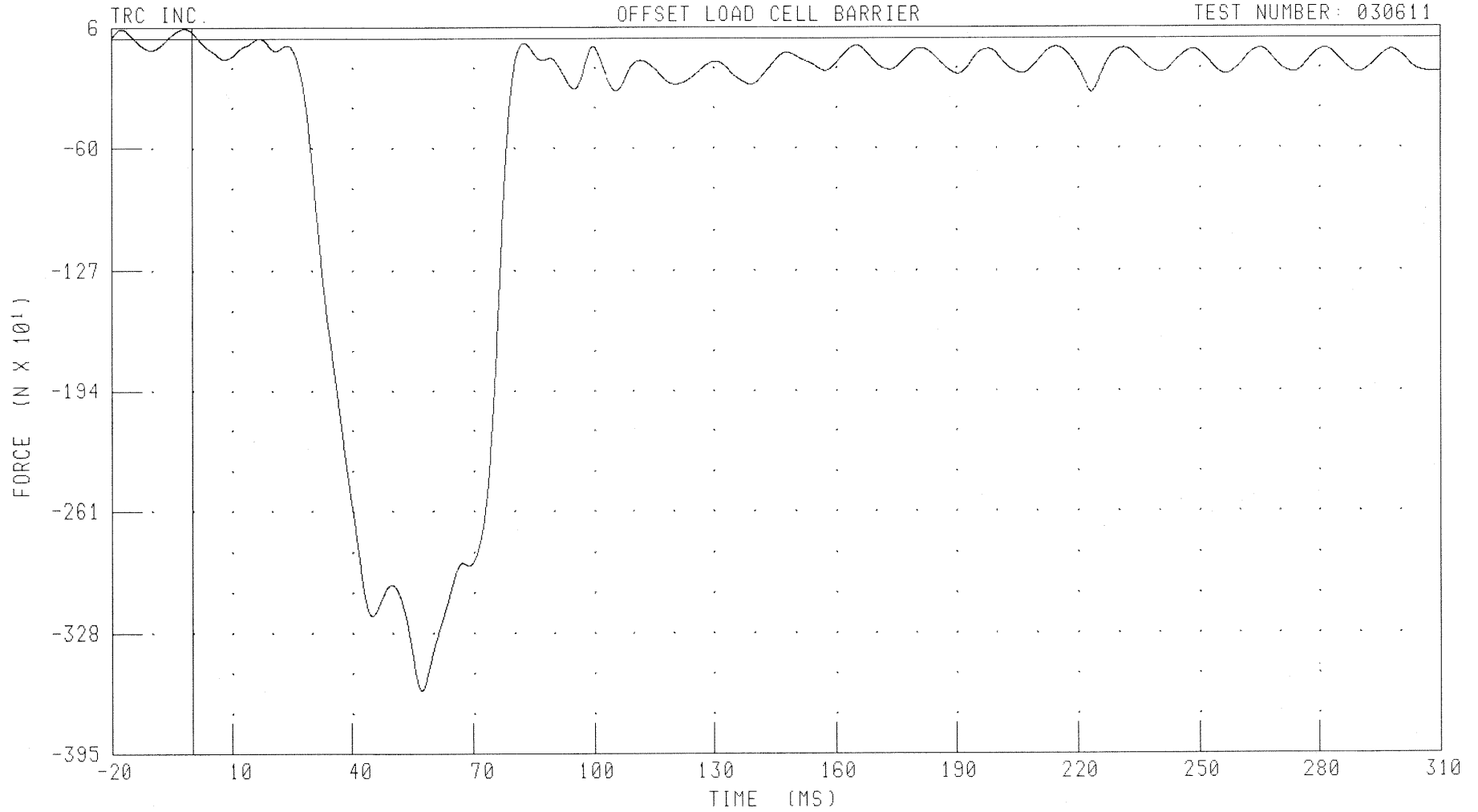
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL C2 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCC2XF

FILTER: CH. CLASS 60

PEAK DATA: 57.43 N @ -1.76 MS, -3606.96 N @ 57.20 MS

B-209

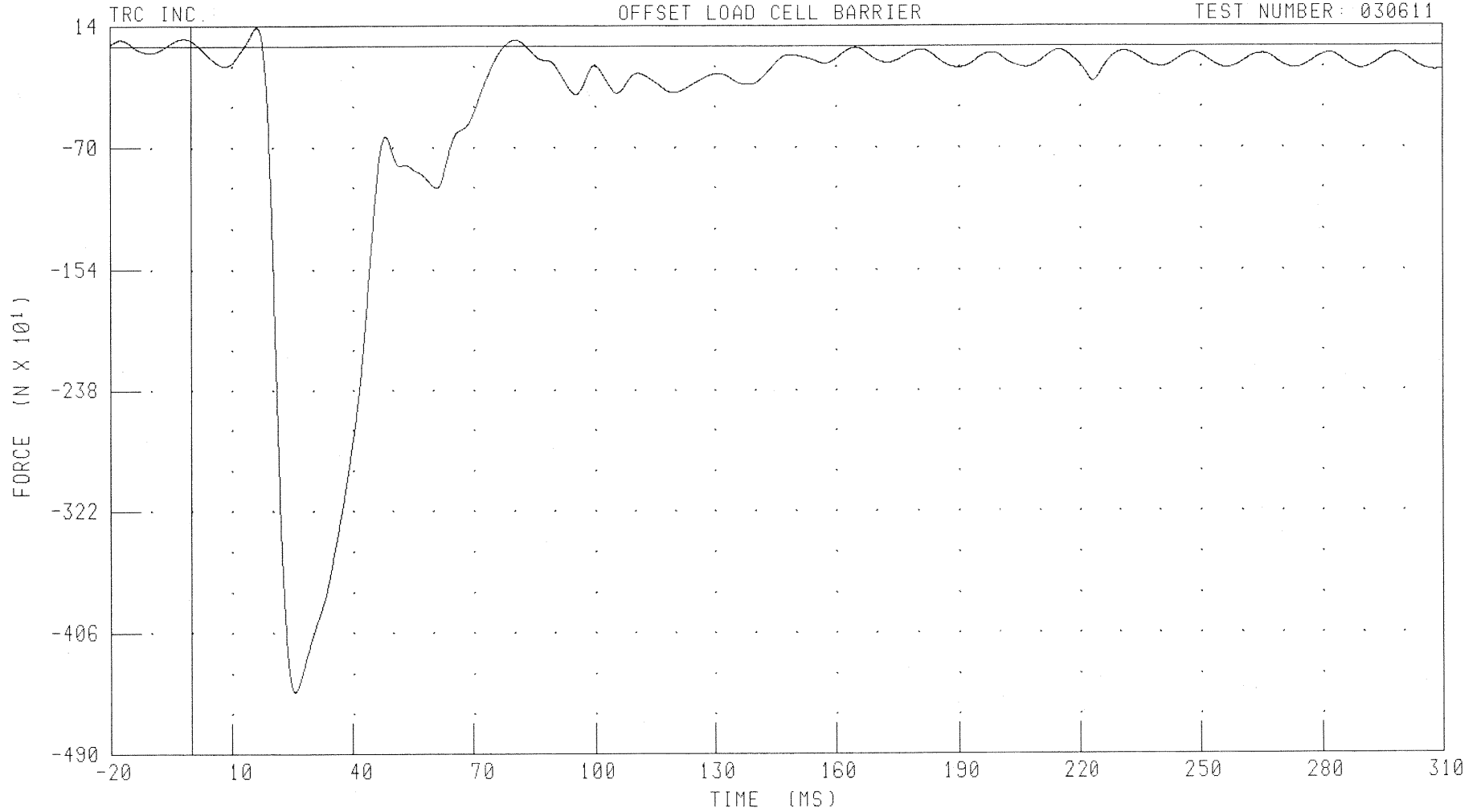
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL C3 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCC3XF FILTER: CH. CLASS 60

PEAK DATA: 131.42 N @ 16.24 MS; -4470.91 N @ 25.52 MS

B-210

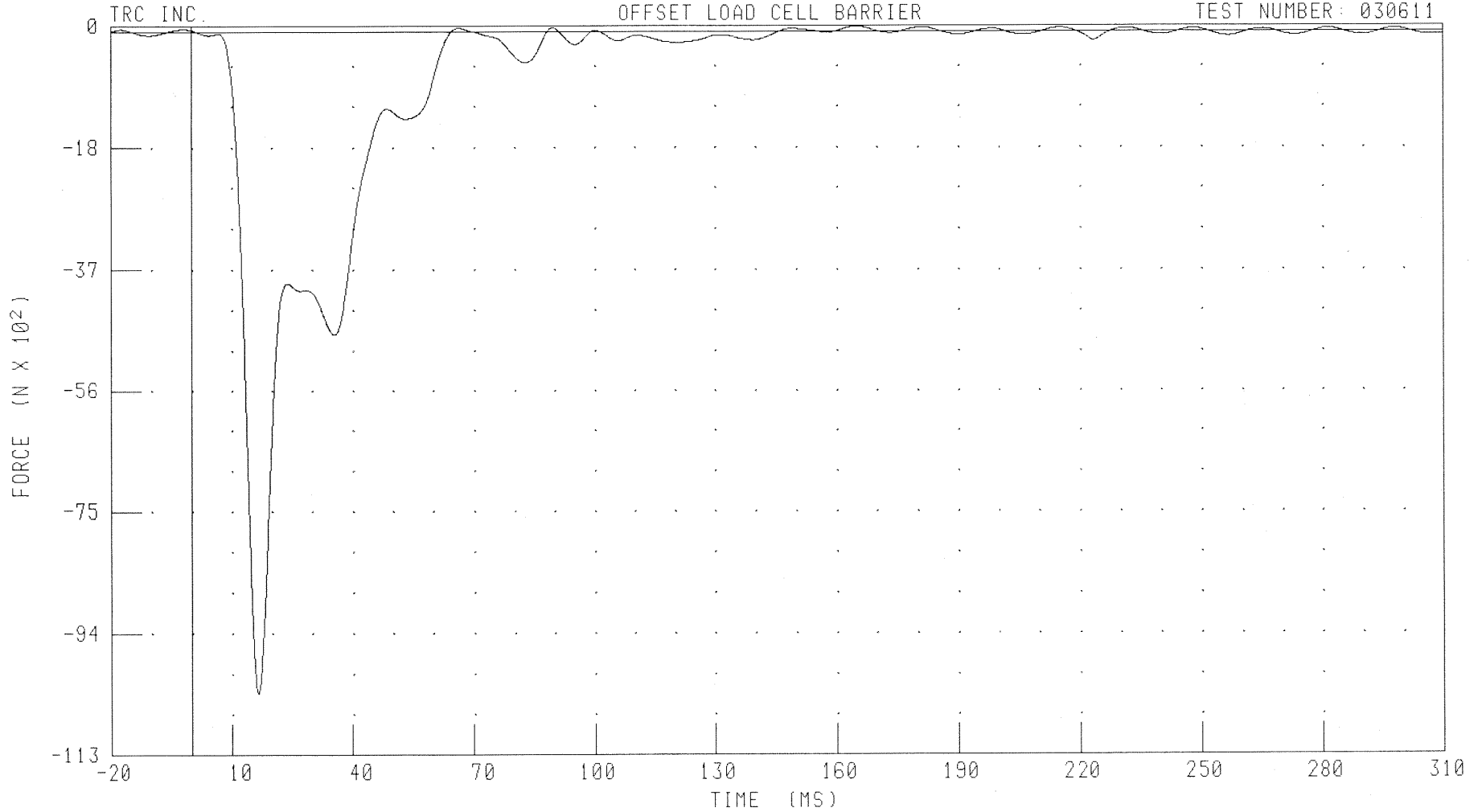
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL C4 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCC4XF

FILTER: CH. CLASS 60

PEAK DATA: 90.10 N @ 164.96 MS, -10337.73 N @ 16.64 MS

B-211

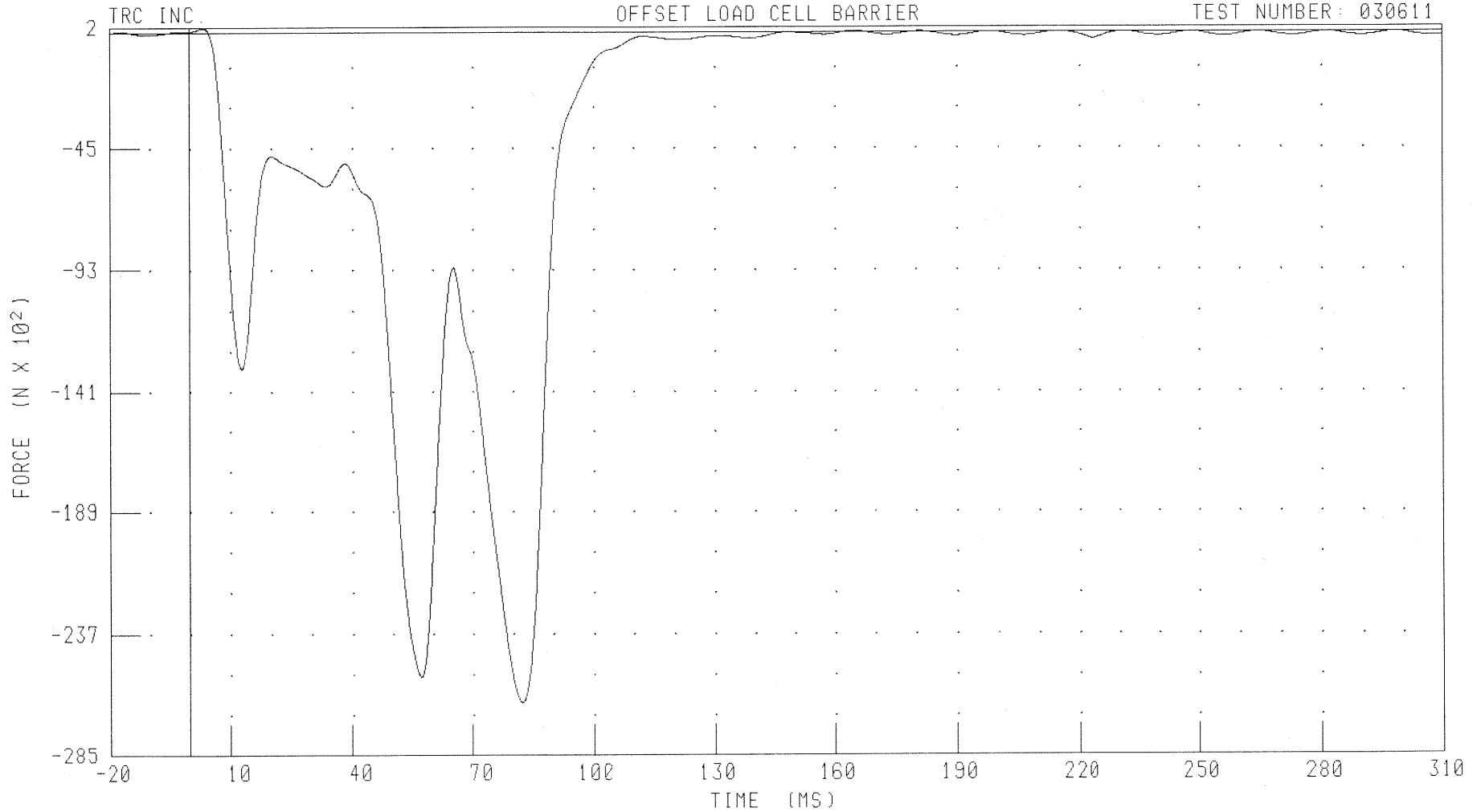
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL C5 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCC5XF

FILTER: CH. CLASS 60

PEAK DATA: 194.95 N @ 3.44 MS; -26502.63 N @ 82.32 MS

B-212

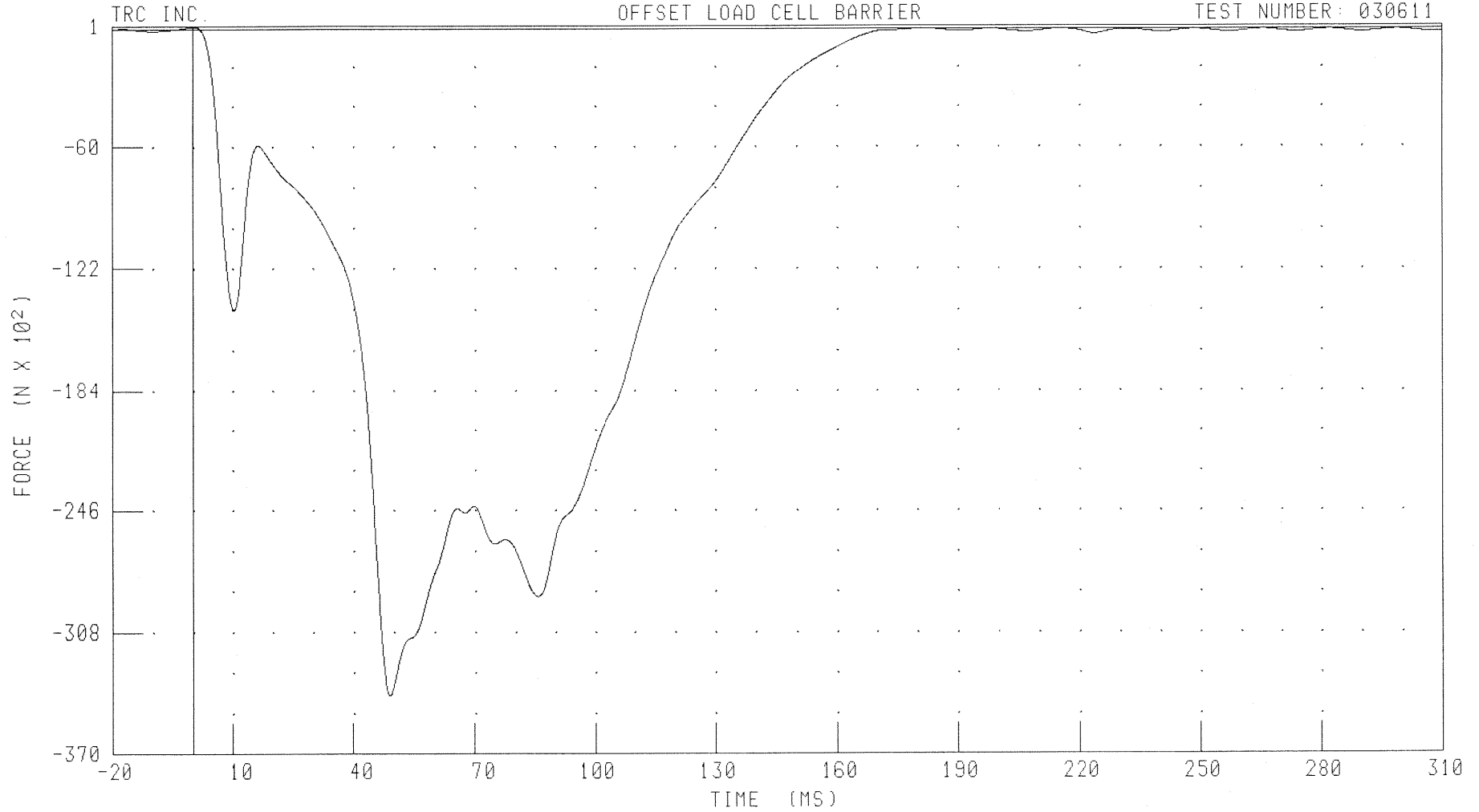
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL C6 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCC6XF

FILTER: CH. CLASS 60

PEAK DATA: 157.78 N @ 0.16 MS; -34055.46 N @ 49.04 MS

B-213

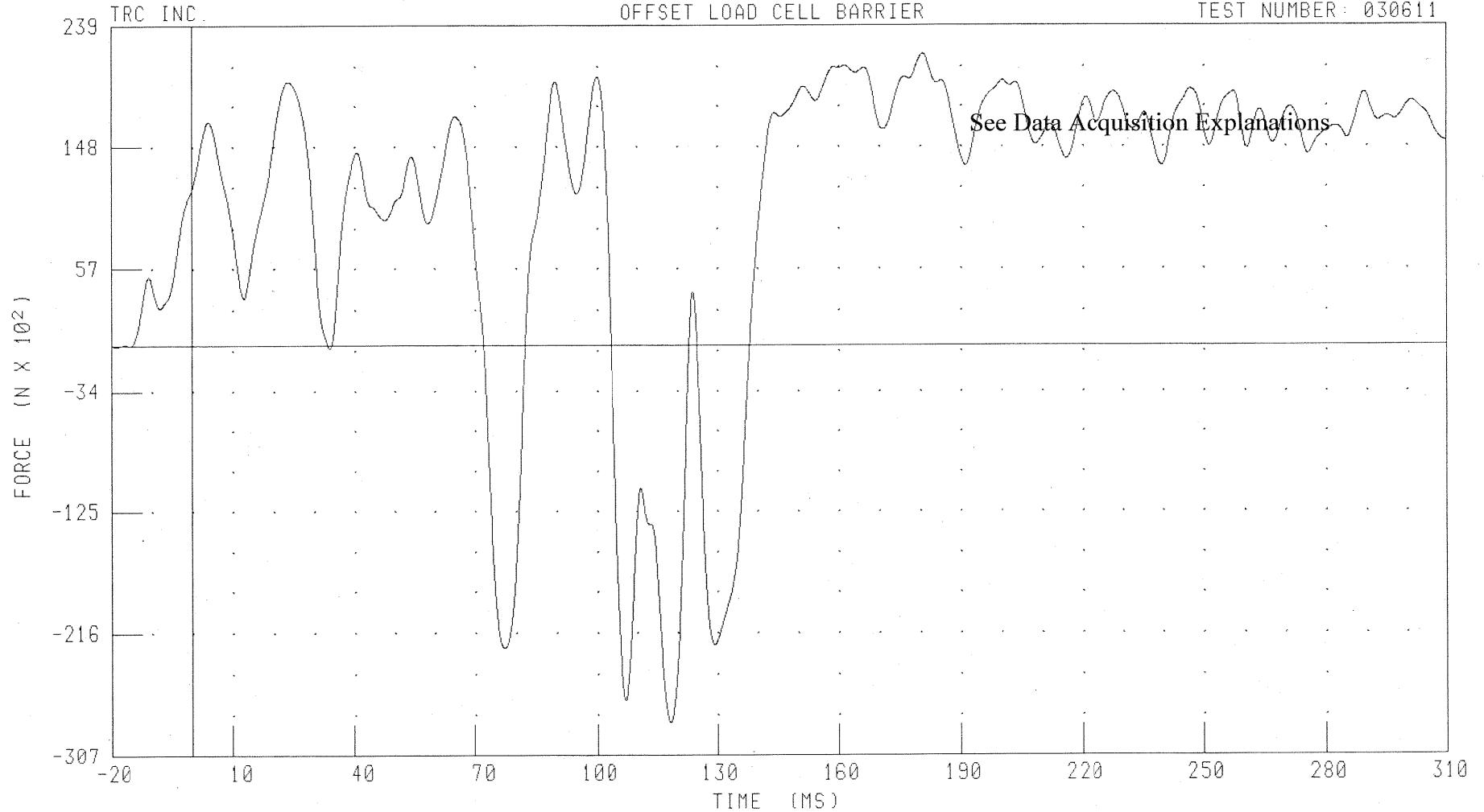
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL C7 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCC7XF

FILTER: CH. CLASS 60

TIME (MS)

PEAK DATA: 21798.44 N @ 180.72 MS; -28257.71 N @ 118.40 MS

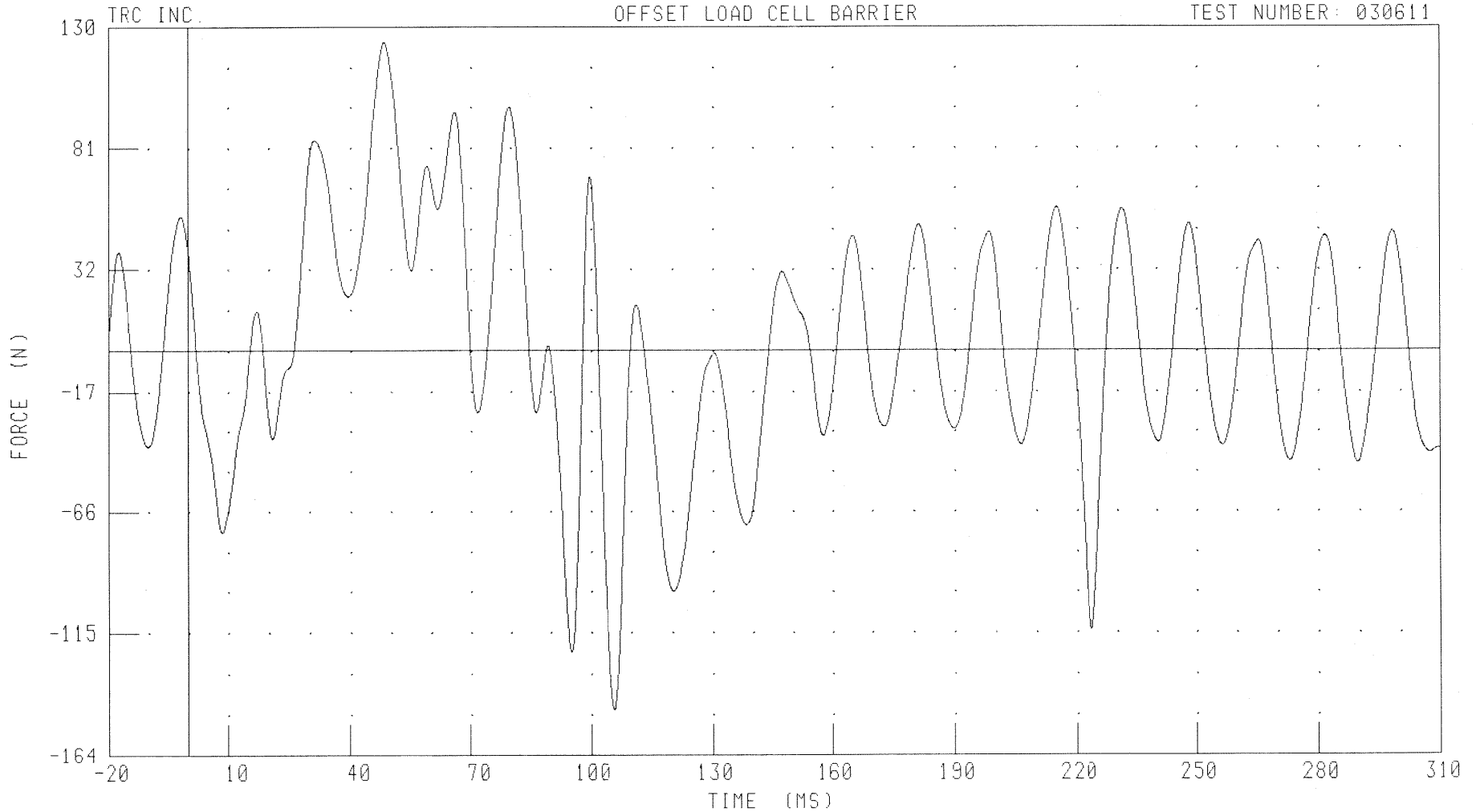
B-214

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
BARRIER LOAD CELL D1 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCD1XF FILTER CH. CLASS 60

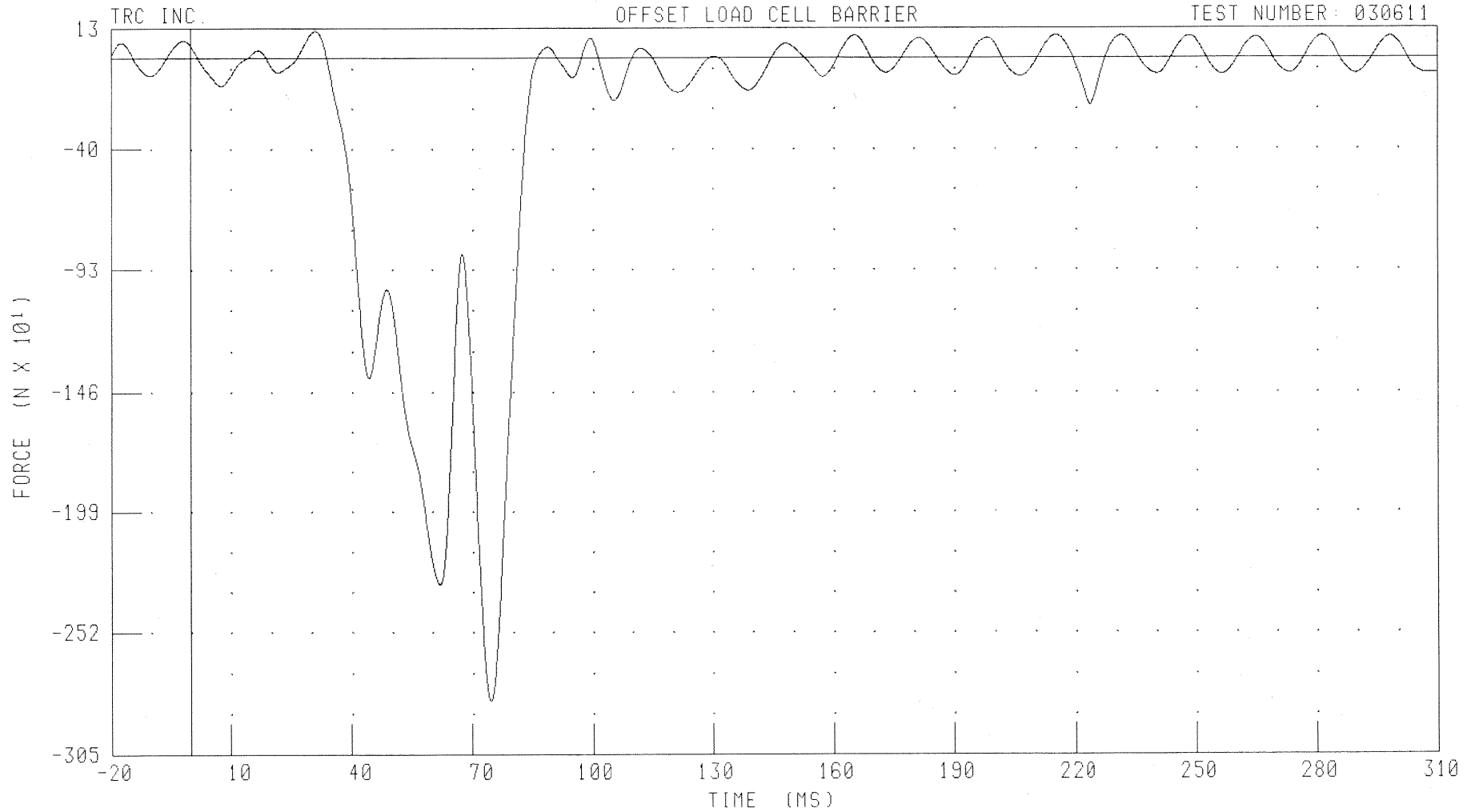
PEAK DATA: 123.89 N @ 48.32 MS, -145.73 N @ 105.92 MS

B-215

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
BARRIER LOAD CELL D2 X-AXIS FORCE

TEST NUMBER: 030611



CHANNEL: LCD2XF

FILTER: CH. CLASS 60

PEAK DATA: 120.02 N @ 31.04 MS; -2816.86 N @ 74.48 MS

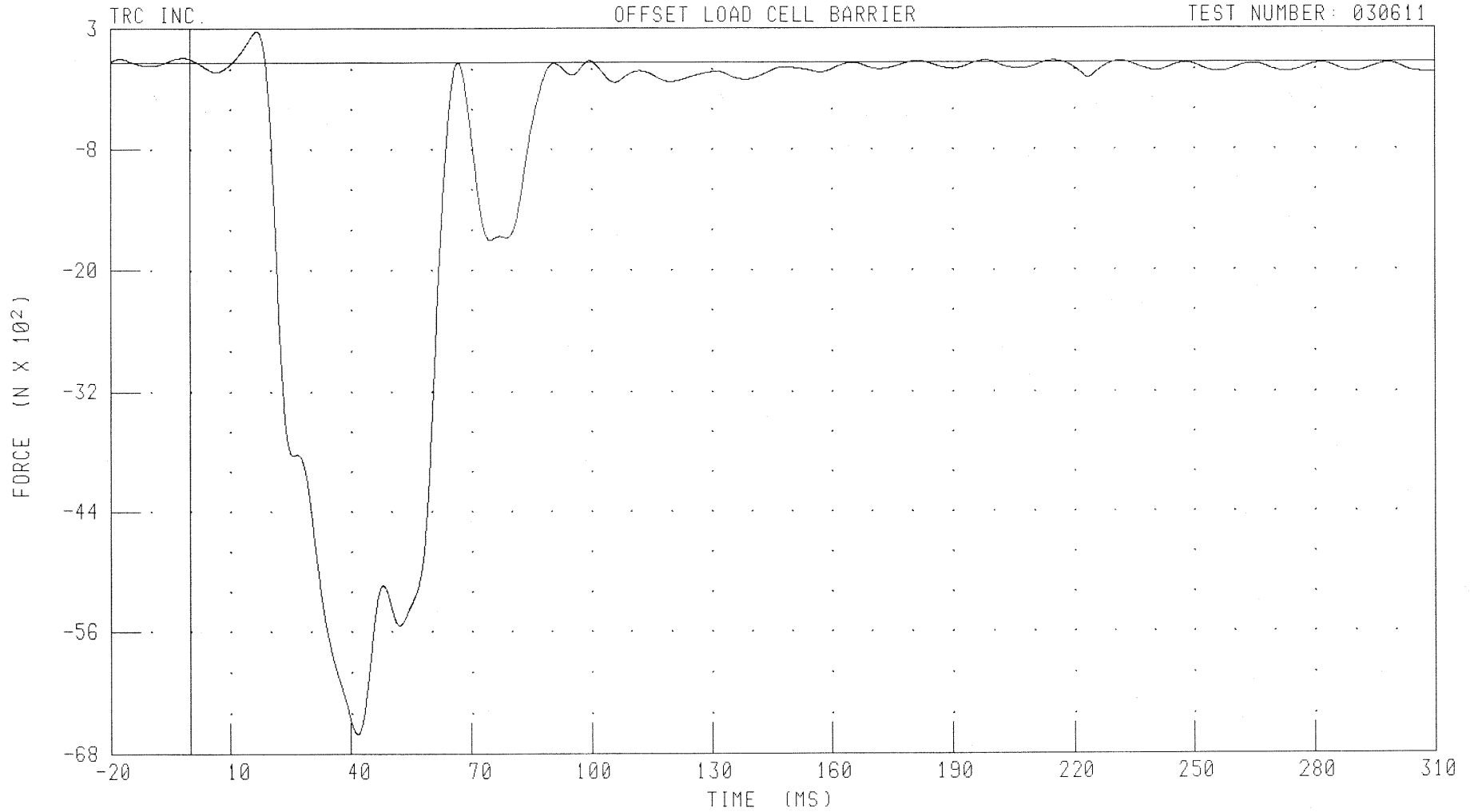
B-216

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
BARRIER LOAD CELL D3 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCD3XF FILTER: CH. CLASS 60

PEAK DATA: 304.17 N @ 16.72 MS; -6677.18 N @ 41.60 MS

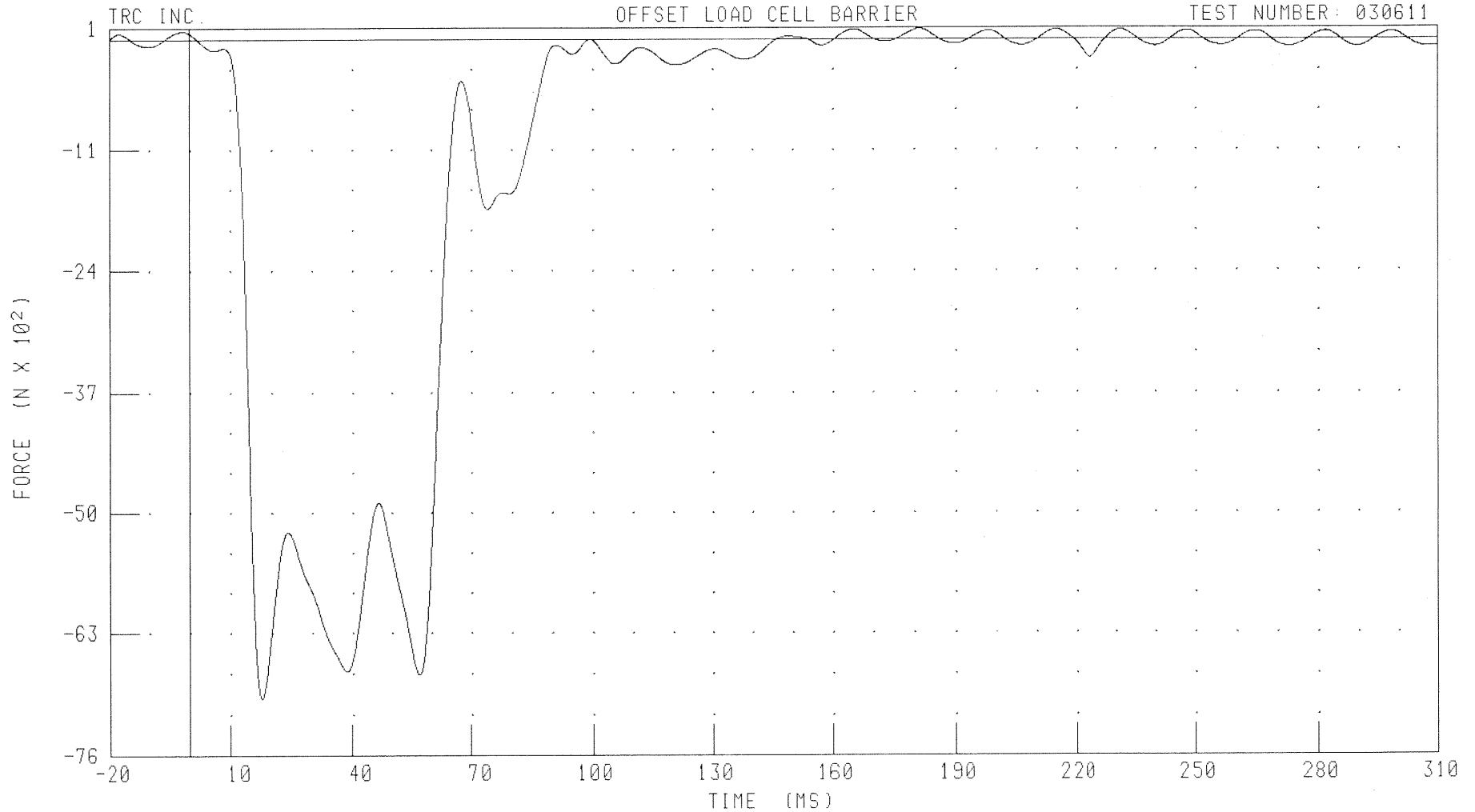
B-217

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL D4 X-AXIS FORCE

TEST NUMBER: 030611



CHANNEL: LCD4XF

FILTER: CH. CLASS 60

PEAK DATA: 110.33 N @ 181.44 MS, -7078.19 N @ 17.60 MS

B-218

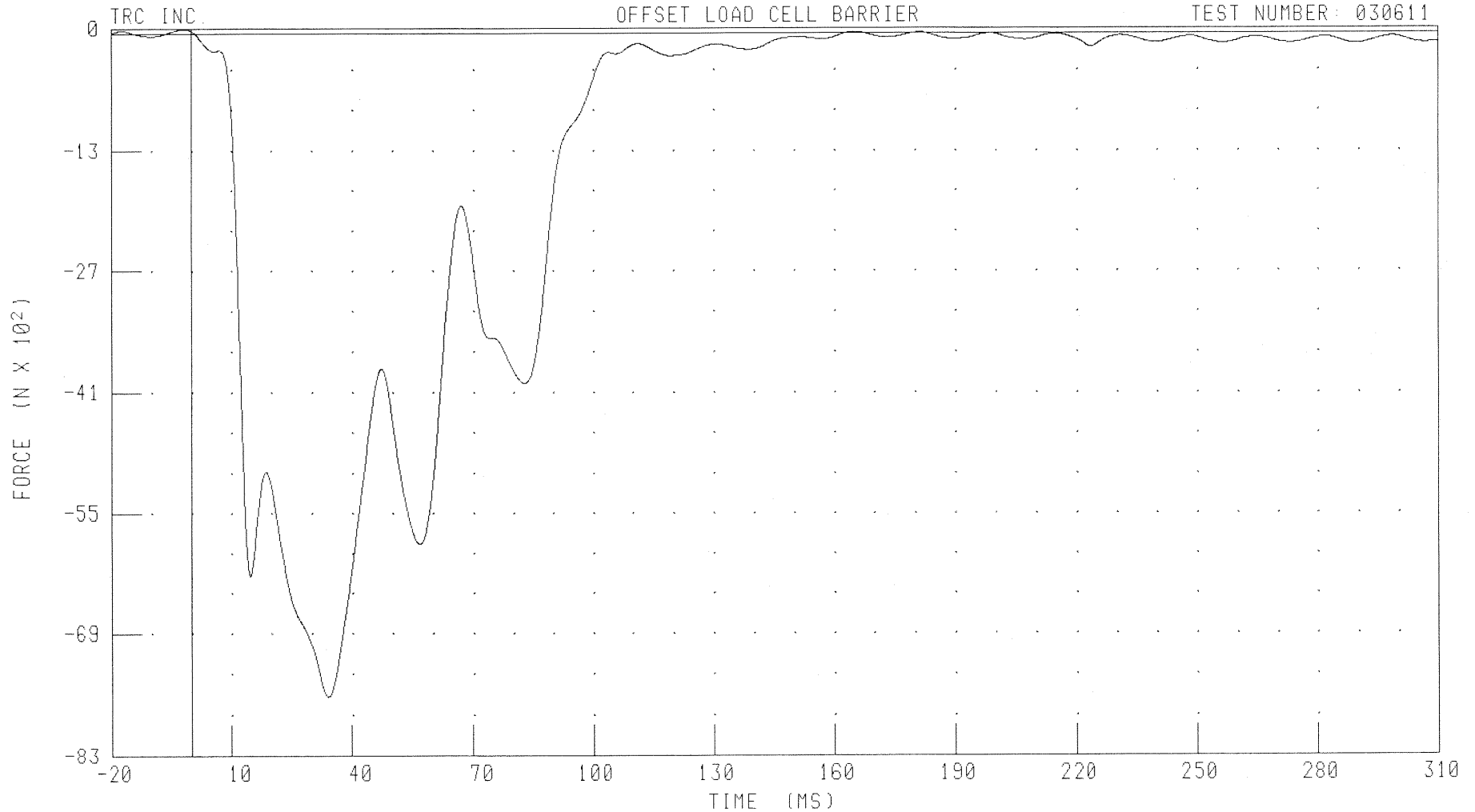
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL D5 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCD5XF

FILTER: CH. CLASS 60

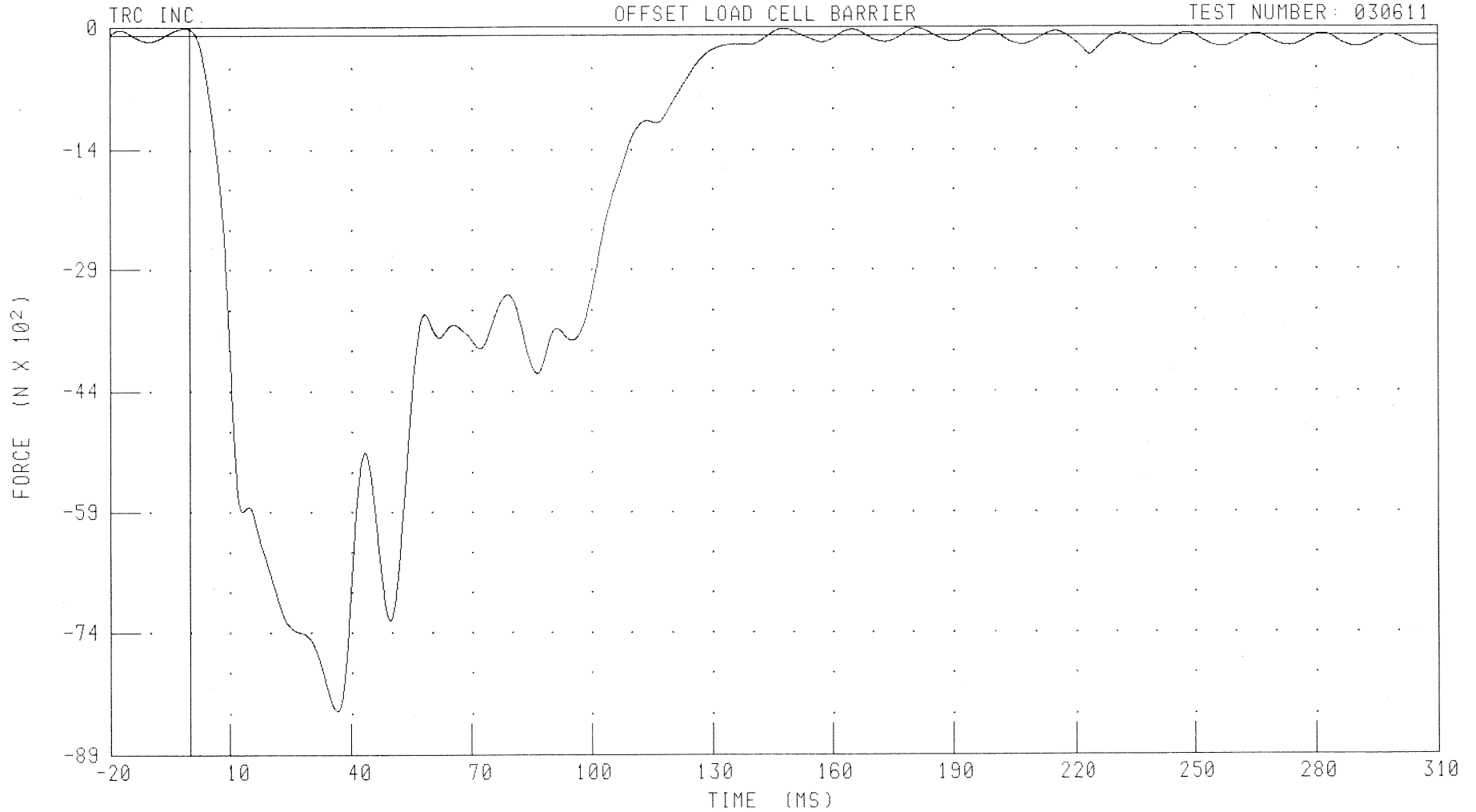
PEAK DATA: 49.17 N @ -1.84 MS, -76.77 N @ 34.16 MS

B-219

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
BARRIER LOAD CELL D6 X-AXIS FORCE

TEST NUMBER: 030611



CHANNEL: LCD6XF

FILTER: CH. CLASS 60

PEAK DATA: 89.18 N @ -1.04 MS; -8371.25 N @ 36.48 MS

B-220

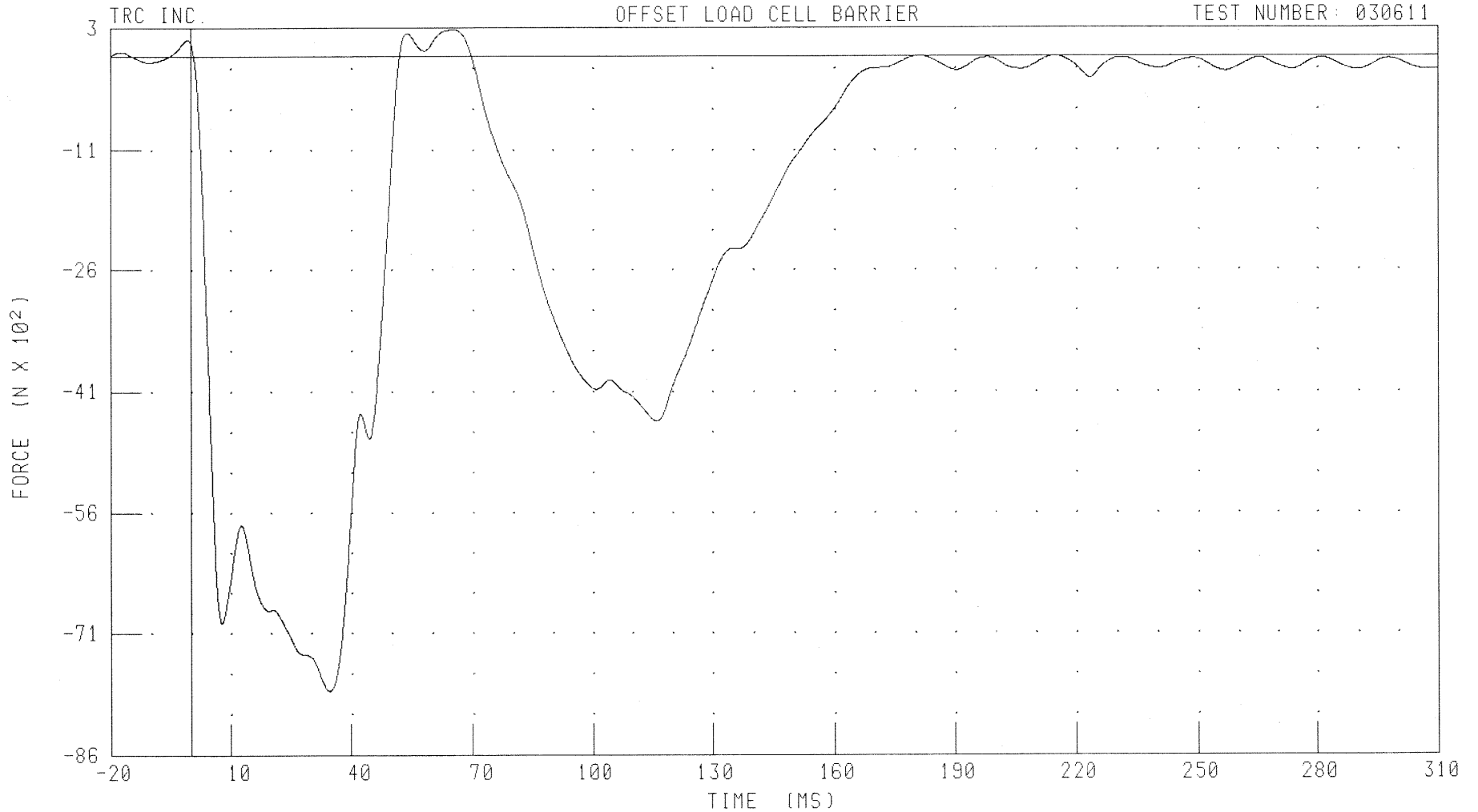
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL D7 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCD7XF

FILTER: CH. CLASS 60

PEAK DATA: 326.79 N @ 65.20 MS; -7871.55 N @ 34.64 MS

B-221

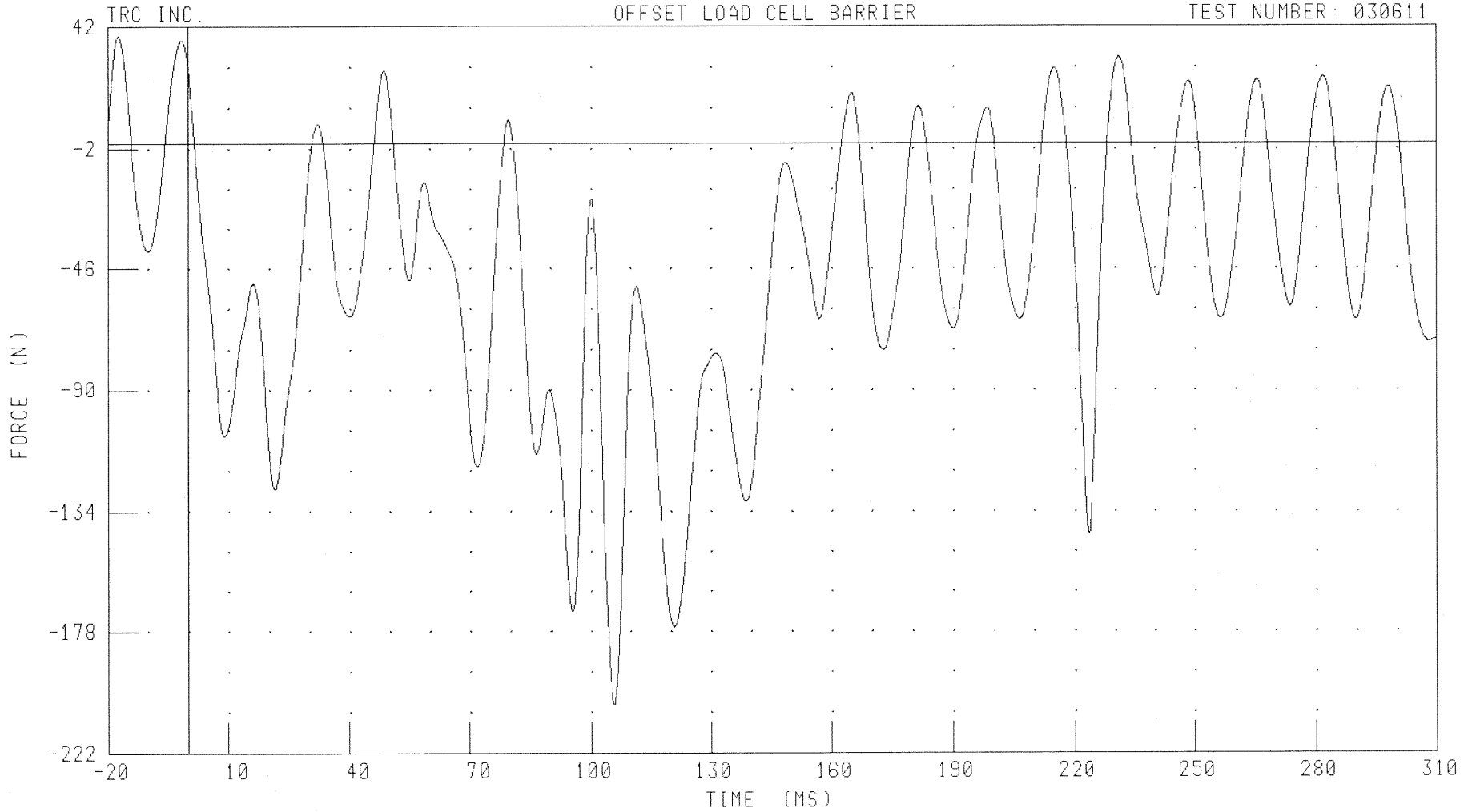
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL E1 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCE1XF FILTER: CH. CLASS 60

PEAK DATA: 38.57 N @ -17.44 MS; -204.72 N @ 105.92 MS

B-222

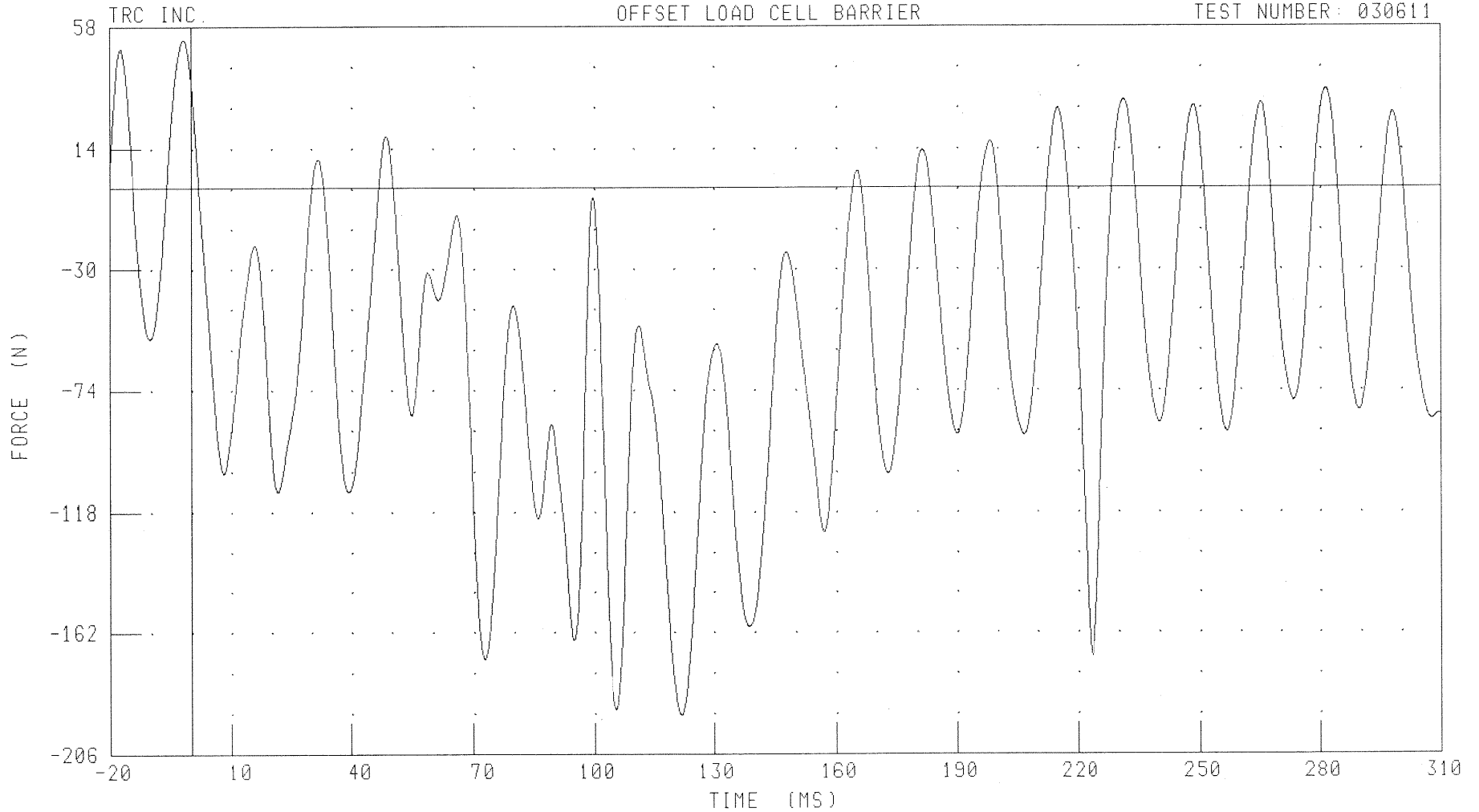
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL E2 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCE2XF

FILTER: CH. CLASS 60

PEAK DATA: 53.28 N @ -1.84 MS; -191.91 N @ 121.84 MS

B-223

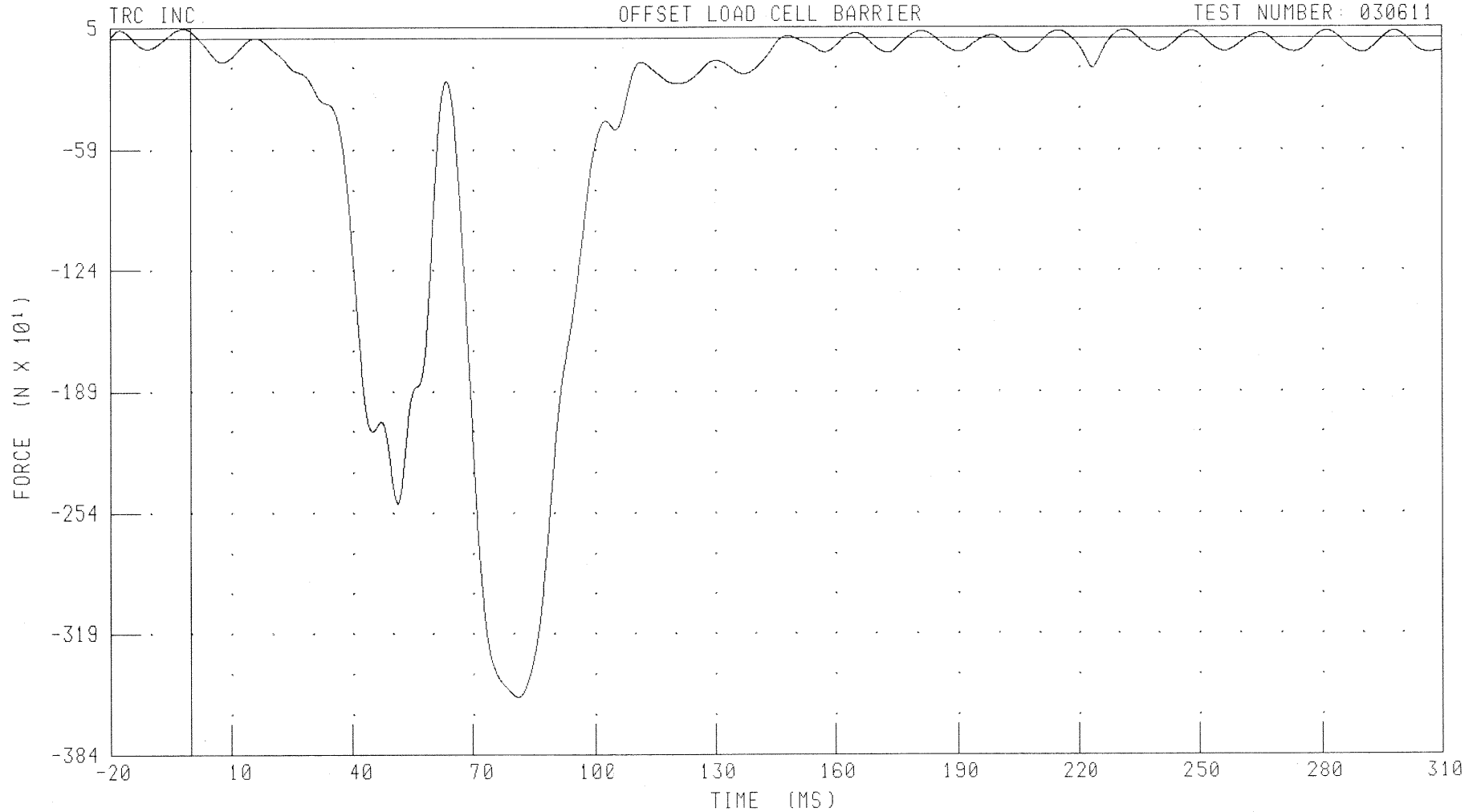
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL E3 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCE3XF

FILTER: CH. CLASS 60

PEAK DATA: 53.39 N @ -1.76 MS; -3534.51 N @ 81.20 MS

B-224

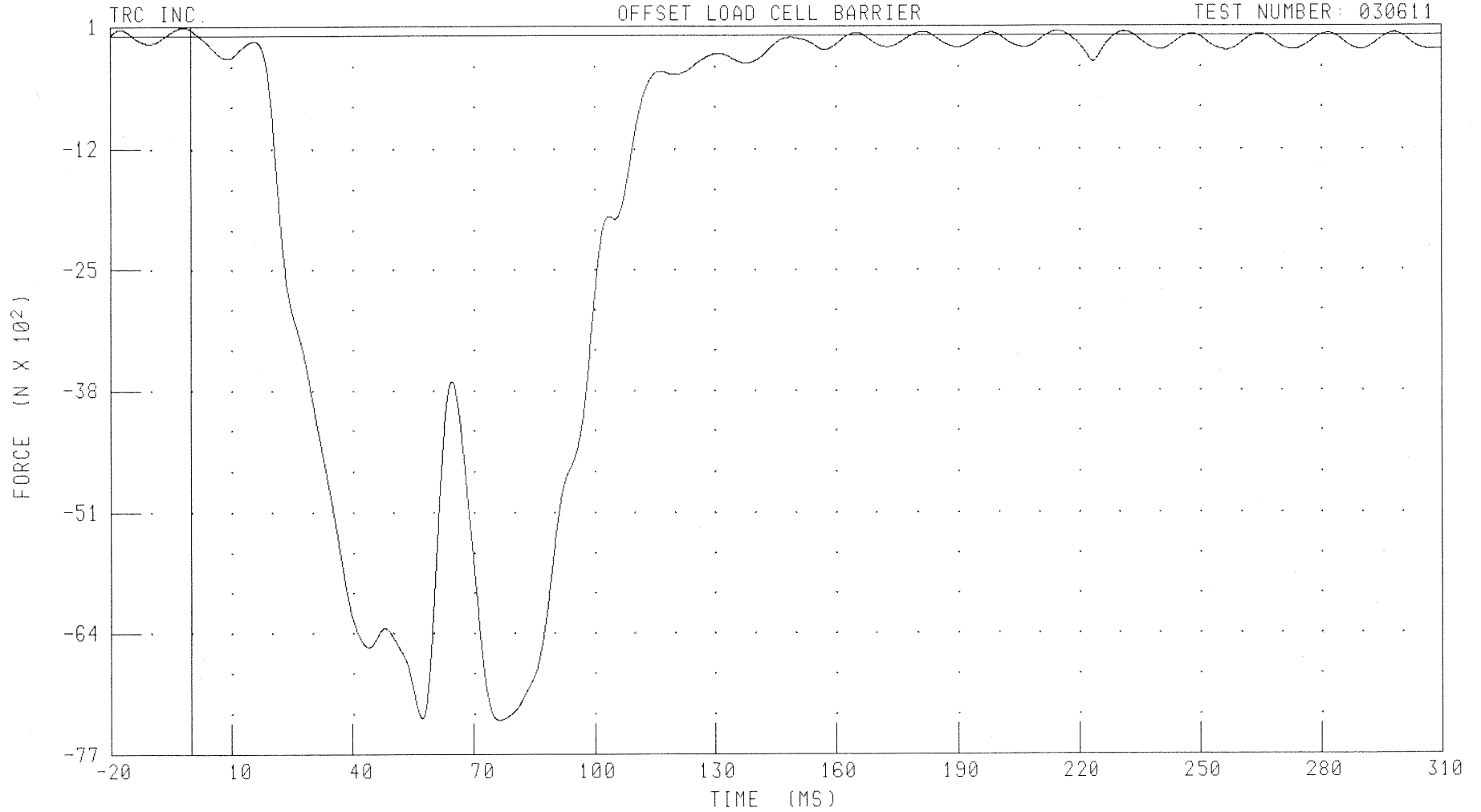
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL E4 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCE4XF

FILTER: CH. CLASS 60

PEAK DATA: 91.36 N @ -1.68 MS; -7335.33 N @ 76.40 MS

B-225

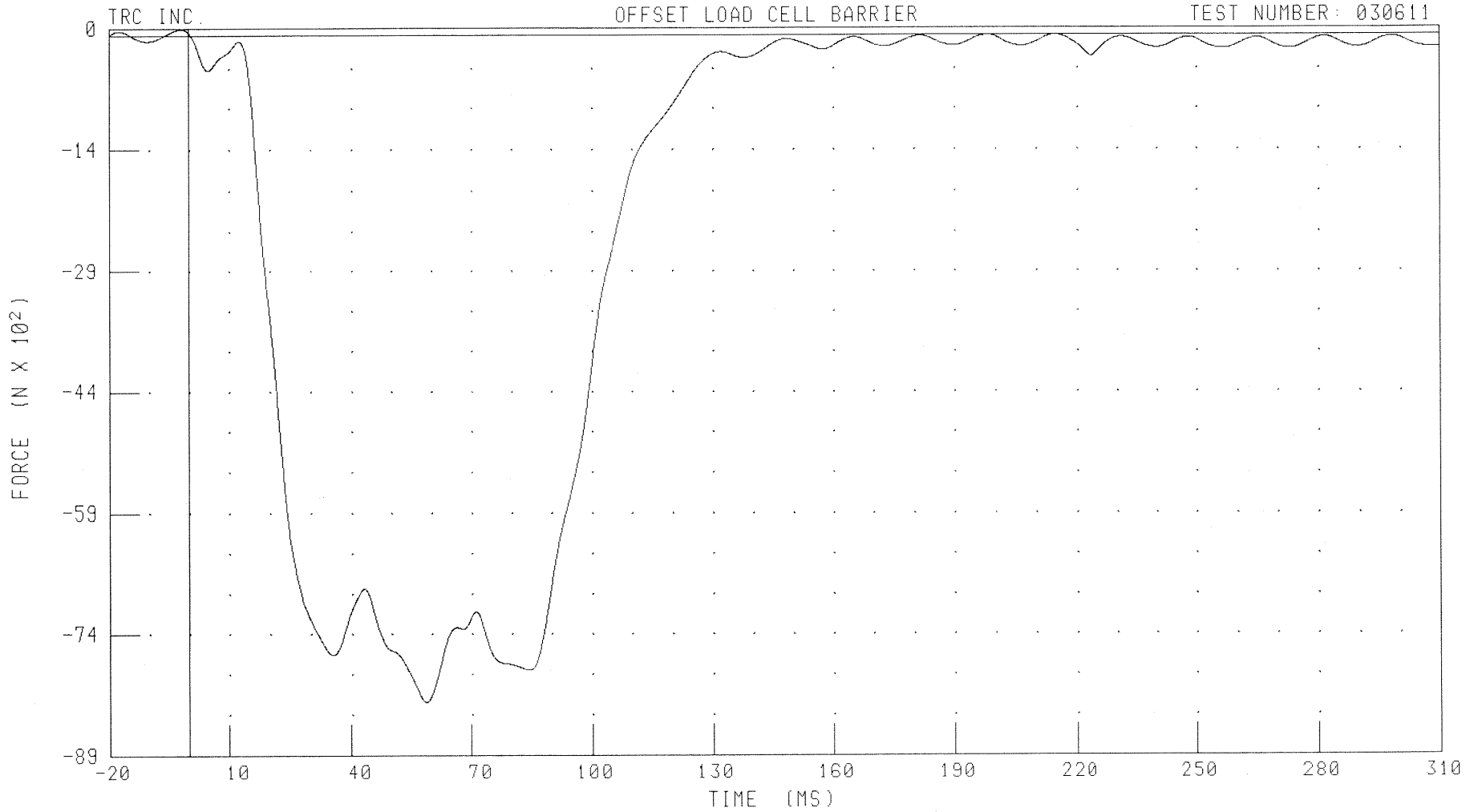
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL E5 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCE5XF

FILTER: CH. CLASS 60

PEAK DATA: 79.73 N @ -1.84 MS; -8264.96 N @ 58.64 MS

B-226

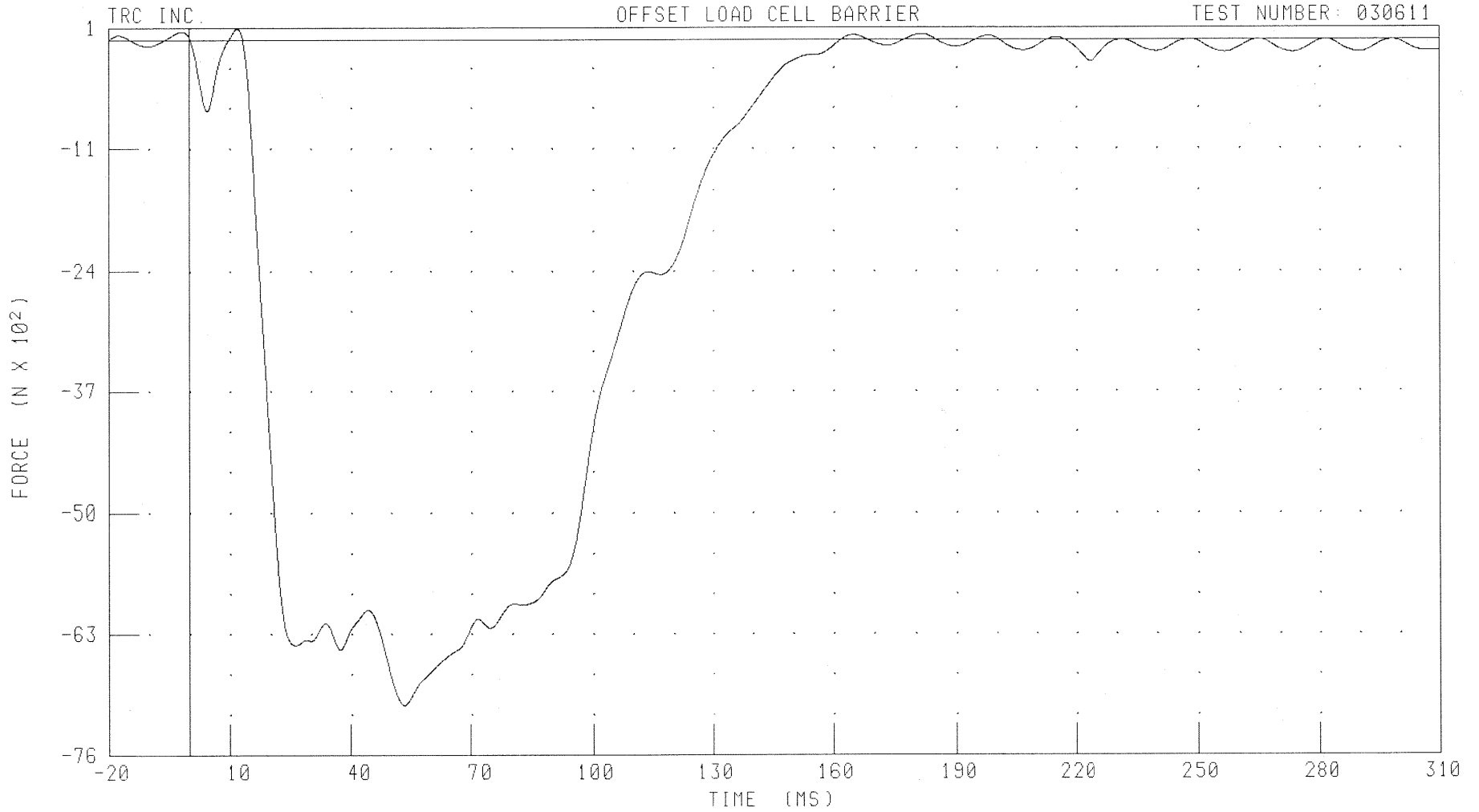
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL E6 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCE6XF FILTER: CH. CLASS 60

PEAK DATA: 123.95 N @ 11.92 MS; -7138.95 N @ 53.36 MS

B-227

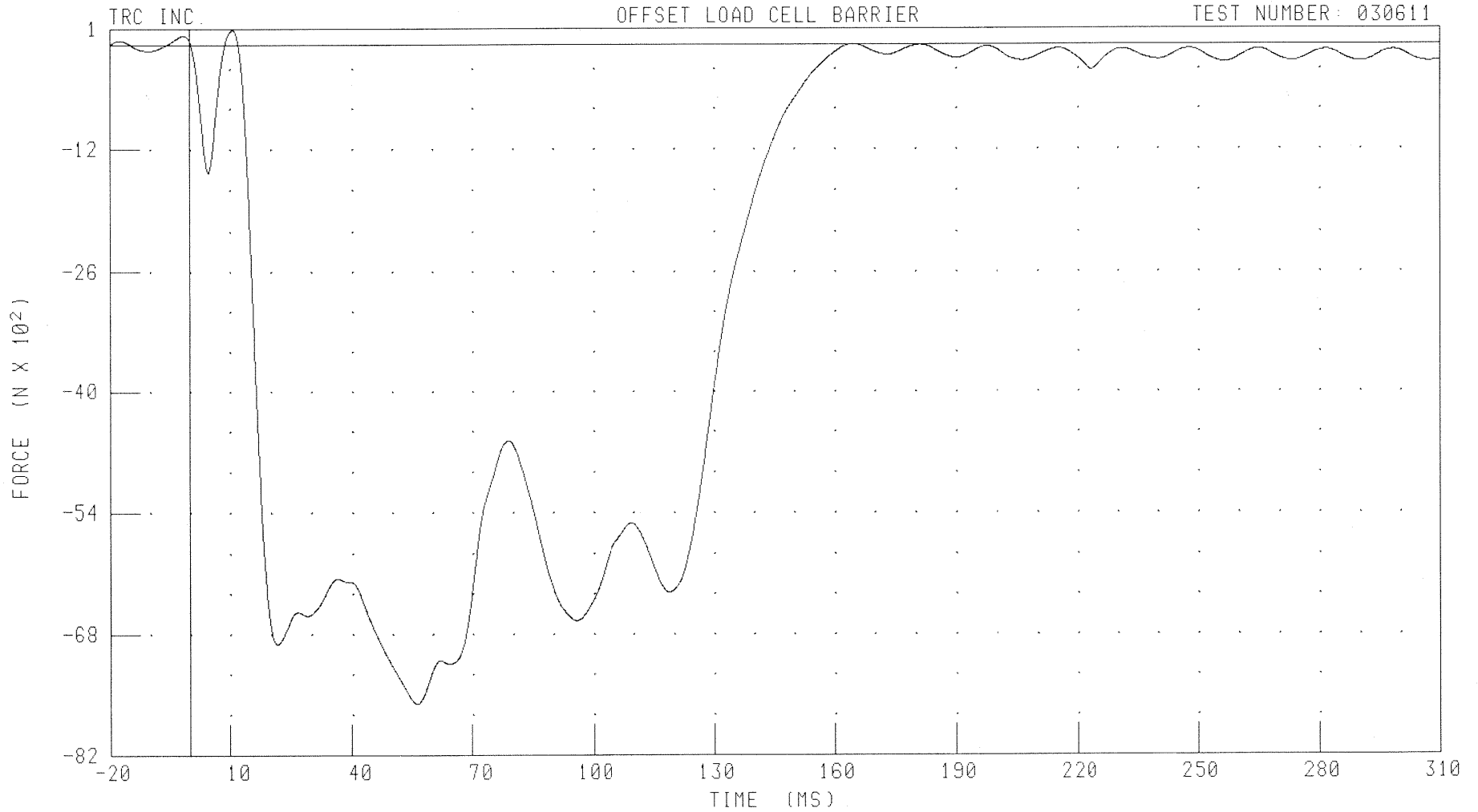
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL E7 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCE7XF

FILTER: CH. CLASS 60

PEAK DATA: 181.02 N @ 10.64 MS; -7622.12 N @ 56.24 MS

B-228

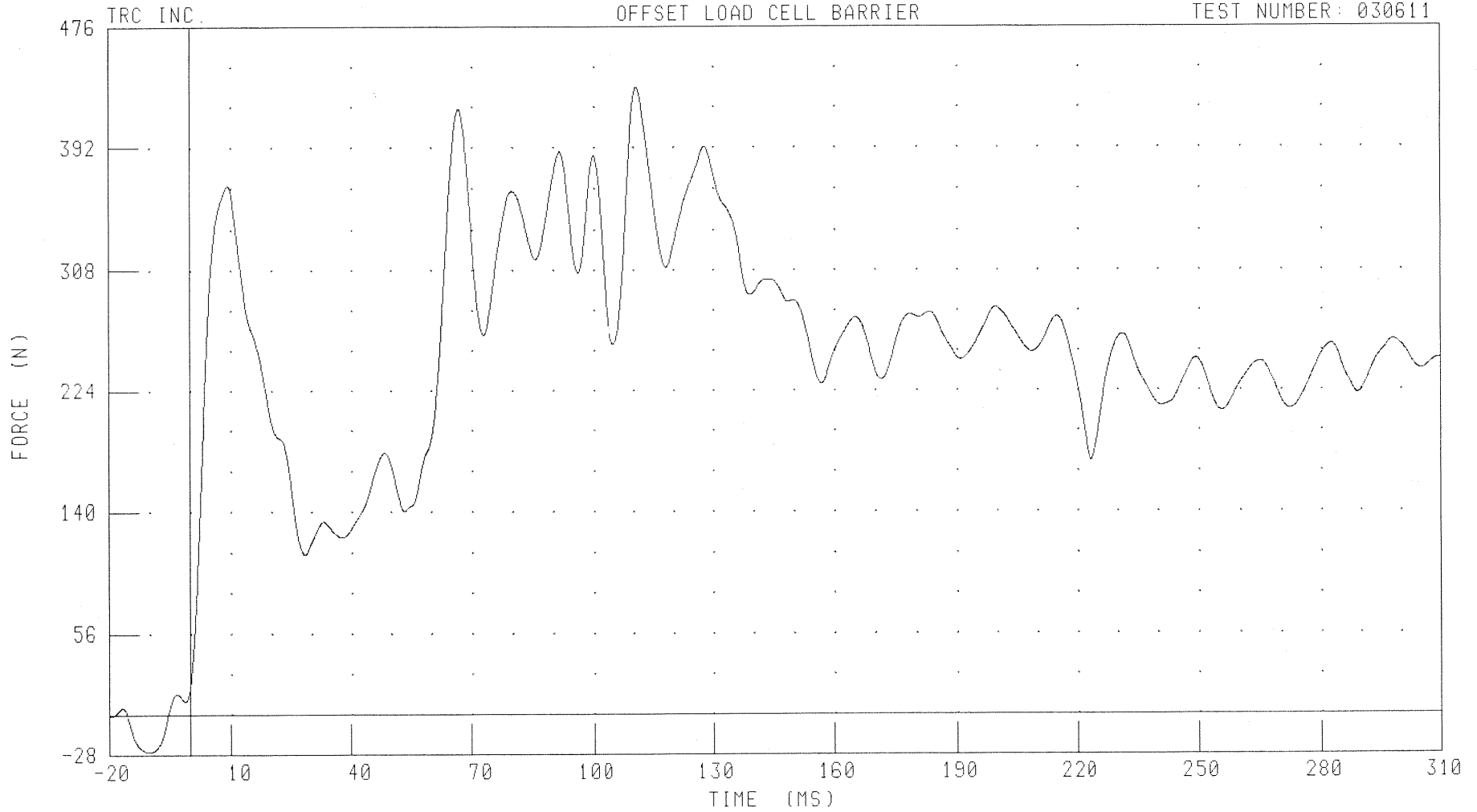
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL F1 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCF1XF

FILTER: CH. CLASS 60

PEAK DATA: 433.58 N @ 110.80 MS; -26.26 N @ -10.00 MS

B-229

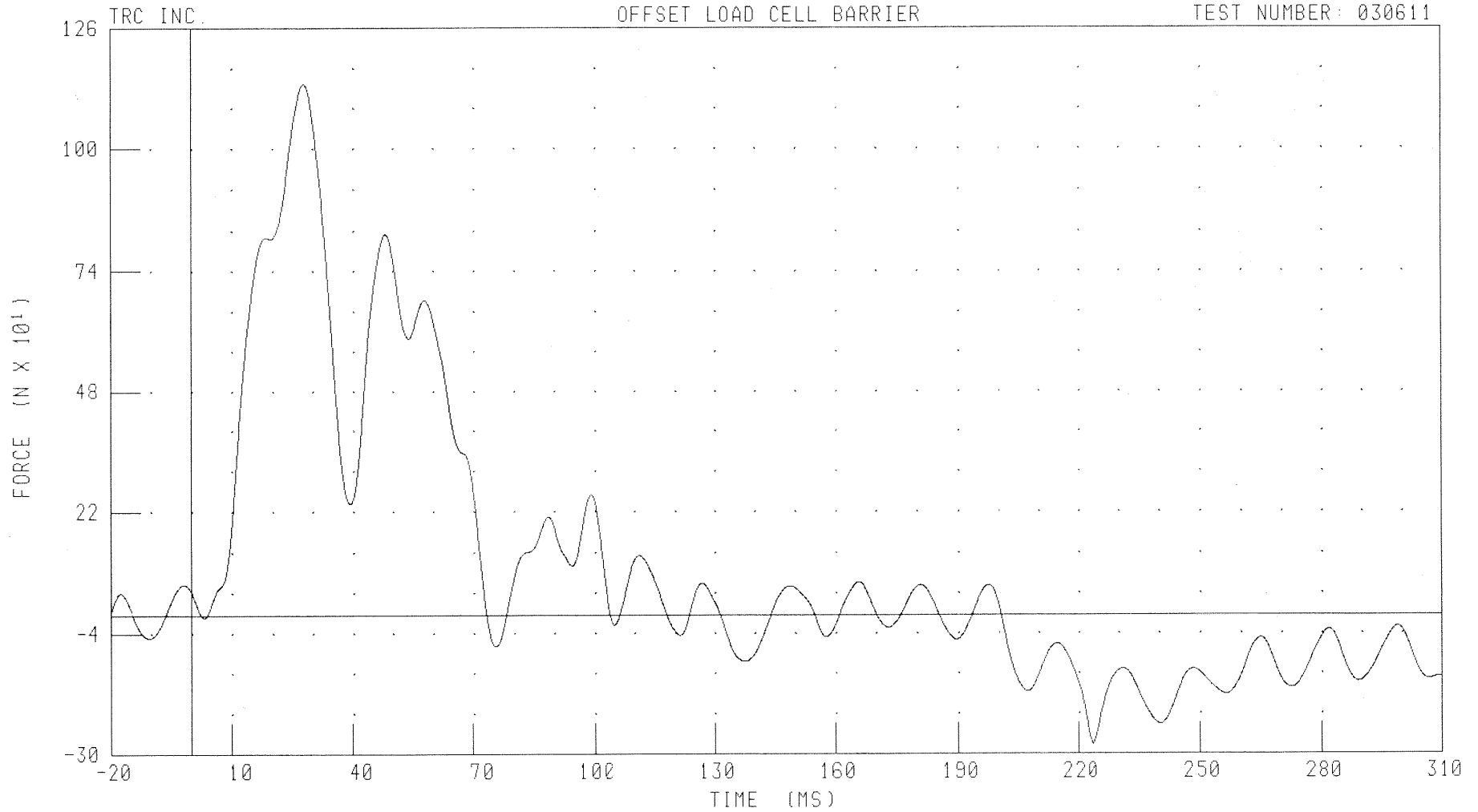
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL F2 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCF2XF

FILTER: CH. CLASS 60

PEAK DATA: 1139.72 N @ 27.84 MS; -279.73 N @ 223.60 MS

B-230

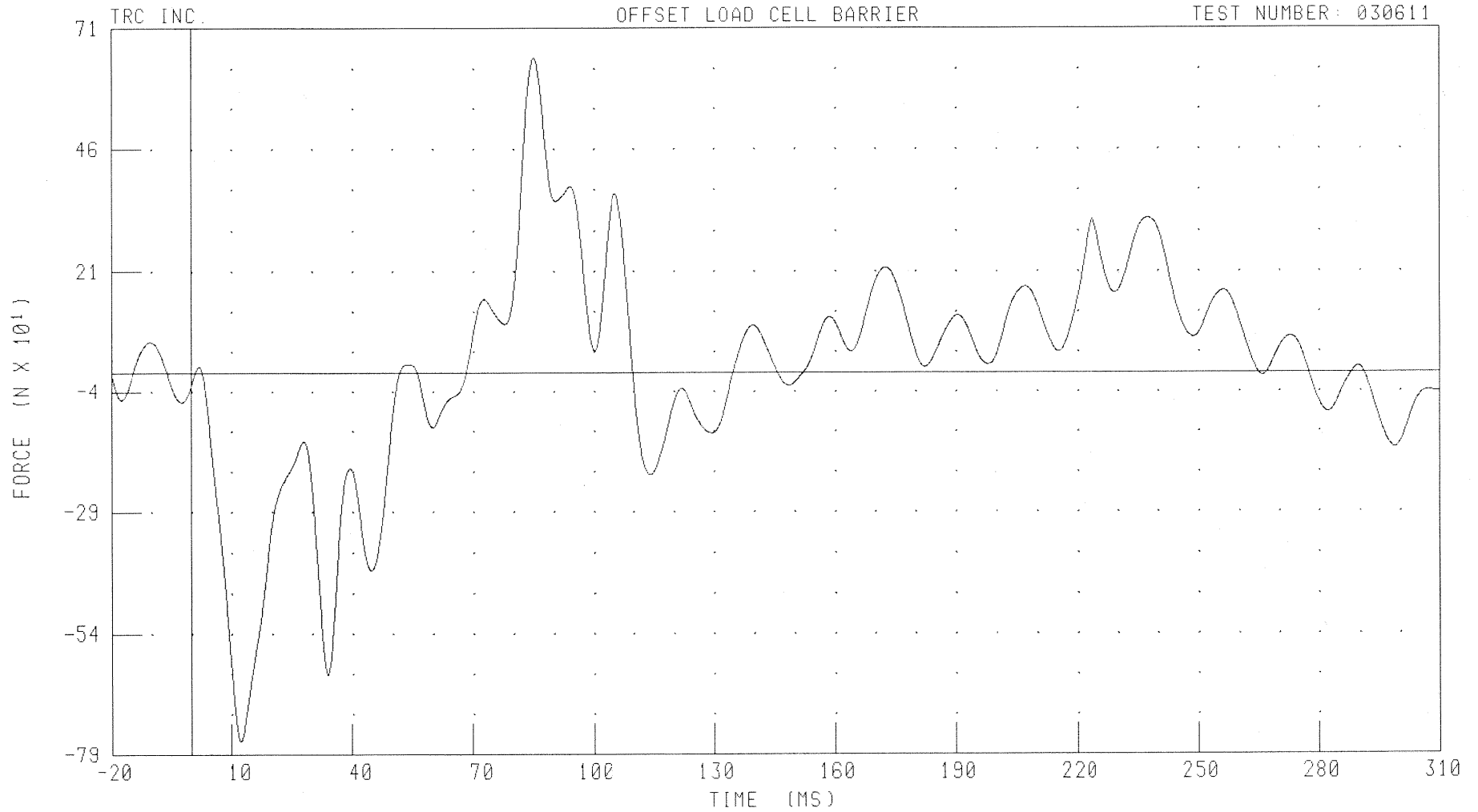
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL F3 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCF3XF

FILTER: CH. CLASS 60

PEAK DATA: 648.53 N @ 85.12 MS, -763.01 N @ 12.32 MS

B-231

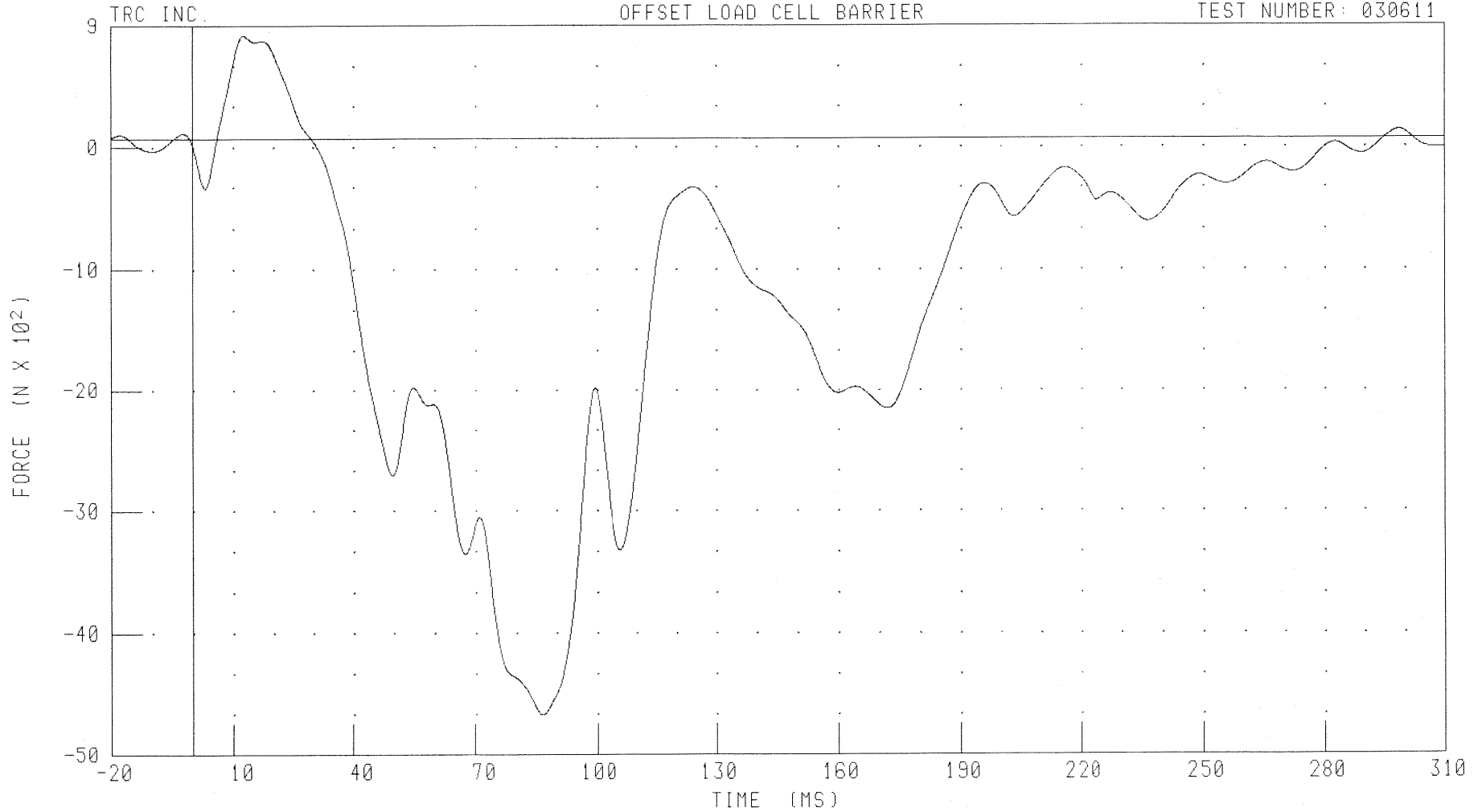
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL F4 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCF4XF

FILTER: CH CLASS 60

PEAK DATA: 849.25 N @ 12.56 MS; -4743.14 N @ 86.56 MS

B-232

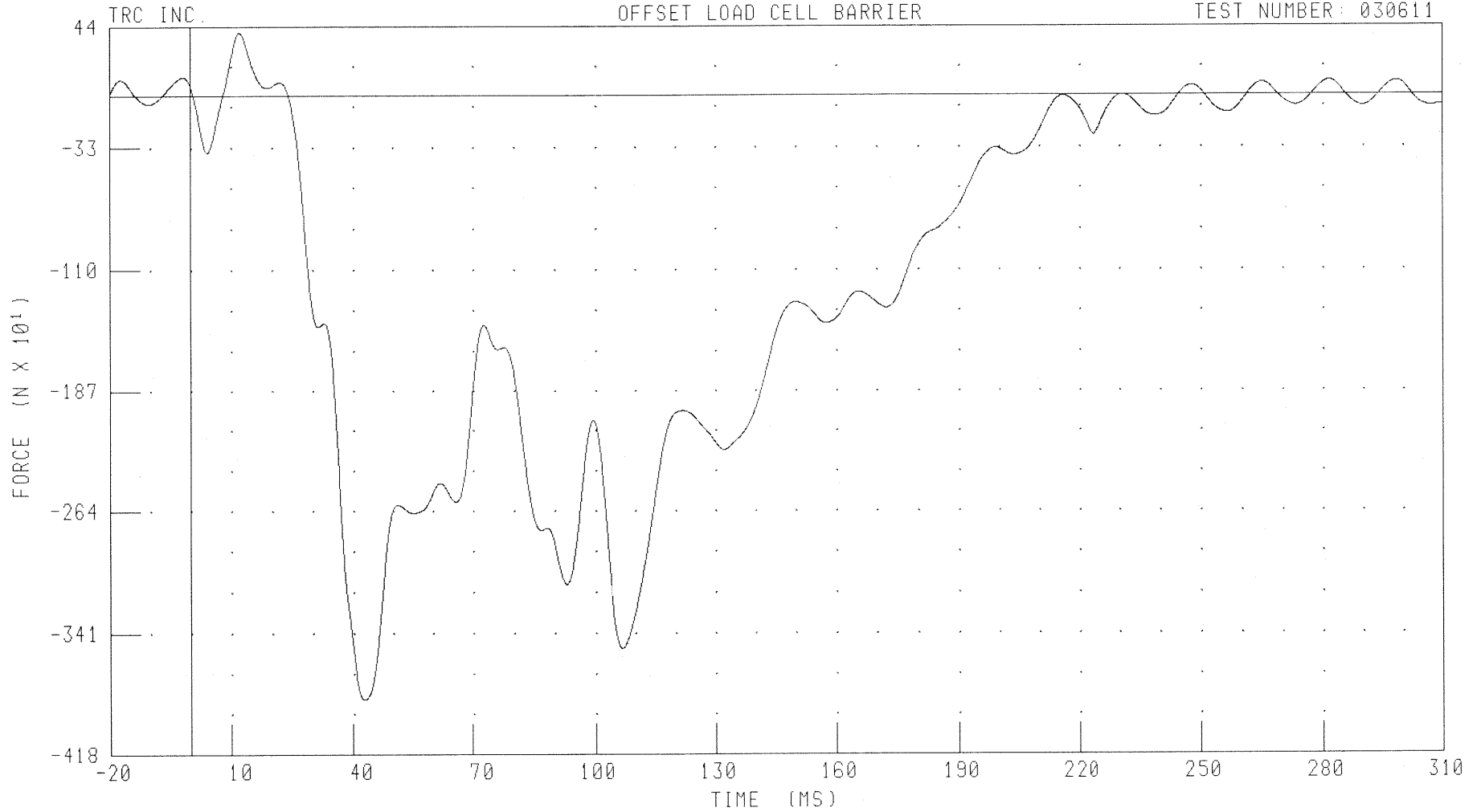
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL F5 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCF5XF

FILTER: CH. CLASS 60

PEAK DATA: 402.84 N @ 12.00 MS; -3830.01 N @ 42.96 MS

B-233

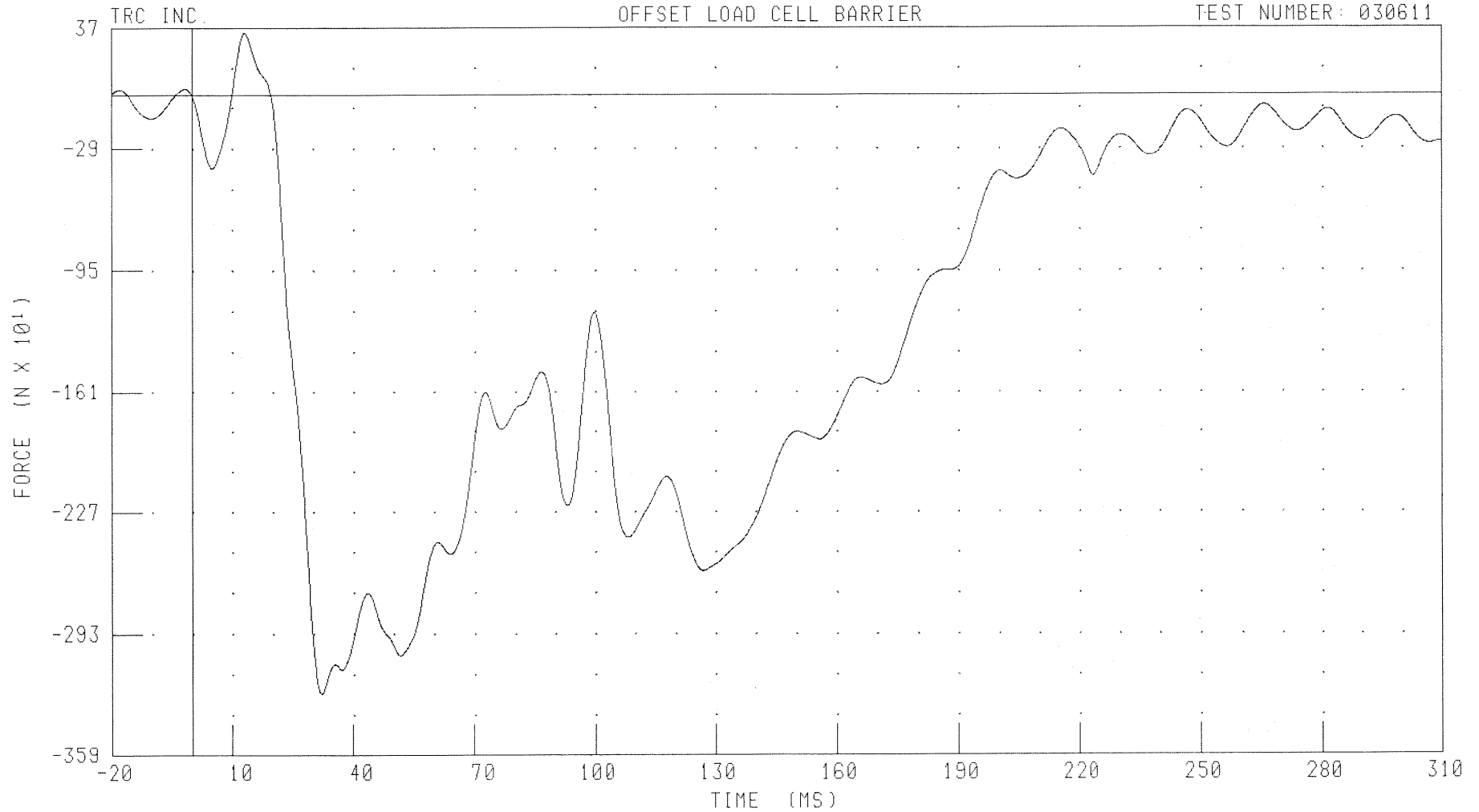
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL F6 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCF6XF

FILTER: CH. CLASS 60

PEAK DATA: 344.87 N @ 13.04 MS, -3256.19 N @ 32.08 MS

B-234

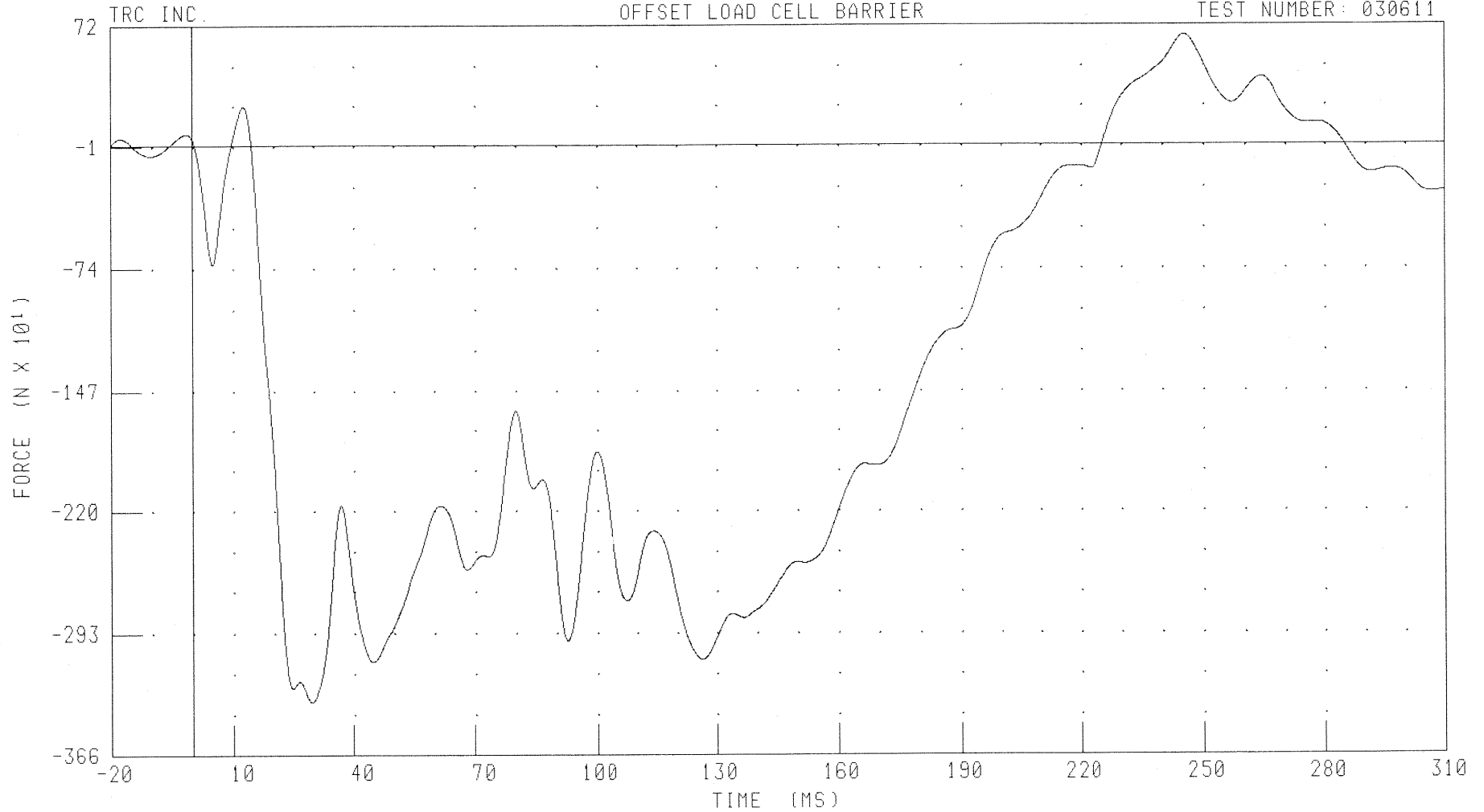
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL F7 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



B-235

030611

CHANNEL: LCF7XF

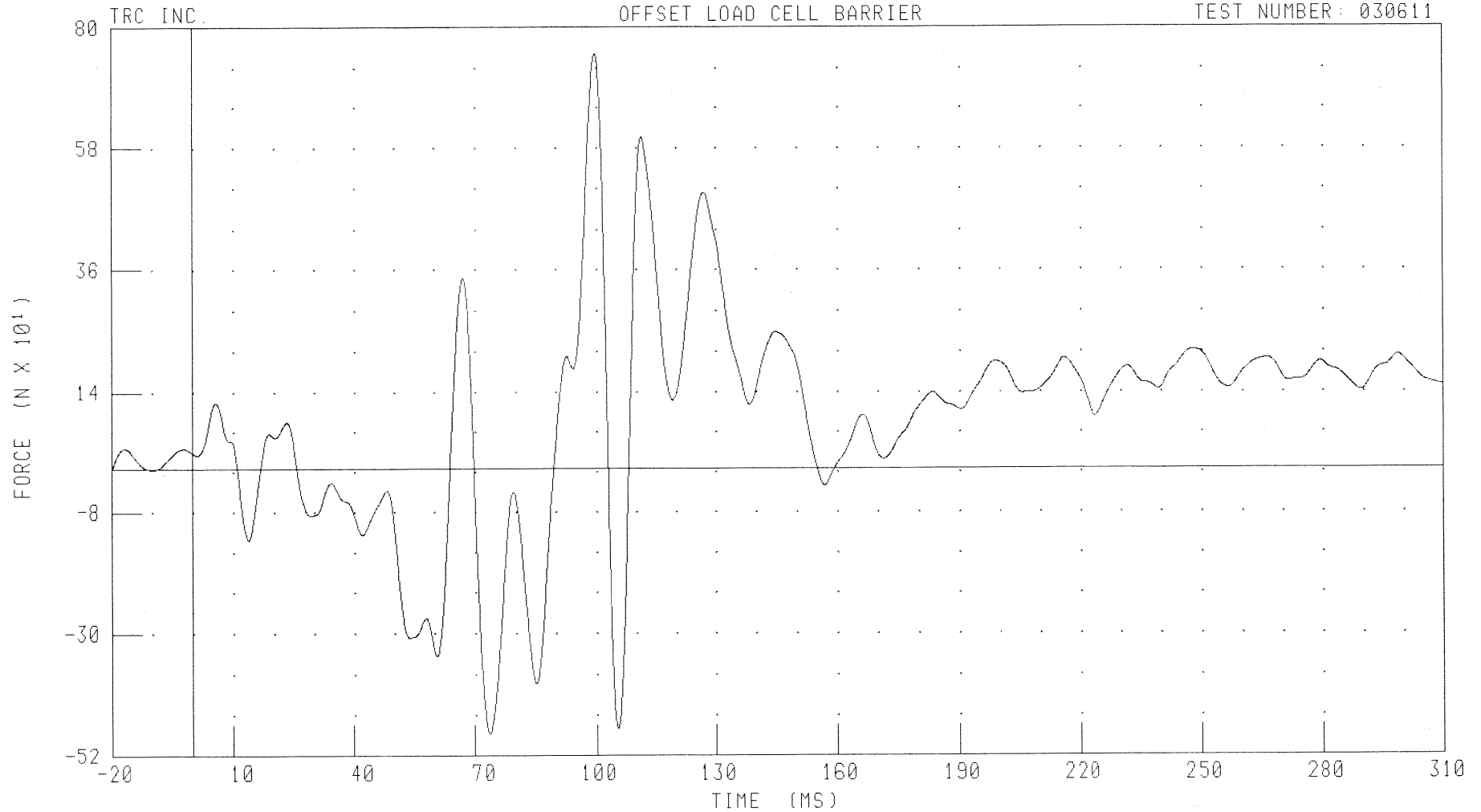
FILTER: CH. CLASS 60

PEAK DATA: 661.03 N @ 245.36 MS; -3341.58 N @ 29.44 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL G1 X-AXIS FORCE

TEST NUMBER: 030611



CHANNEL: LCG1XF

FILTER: CH. CLASS 60

PEAK DATA: 752.01 N @ 99.68 MS; -480.40 N @ 73.68 MS

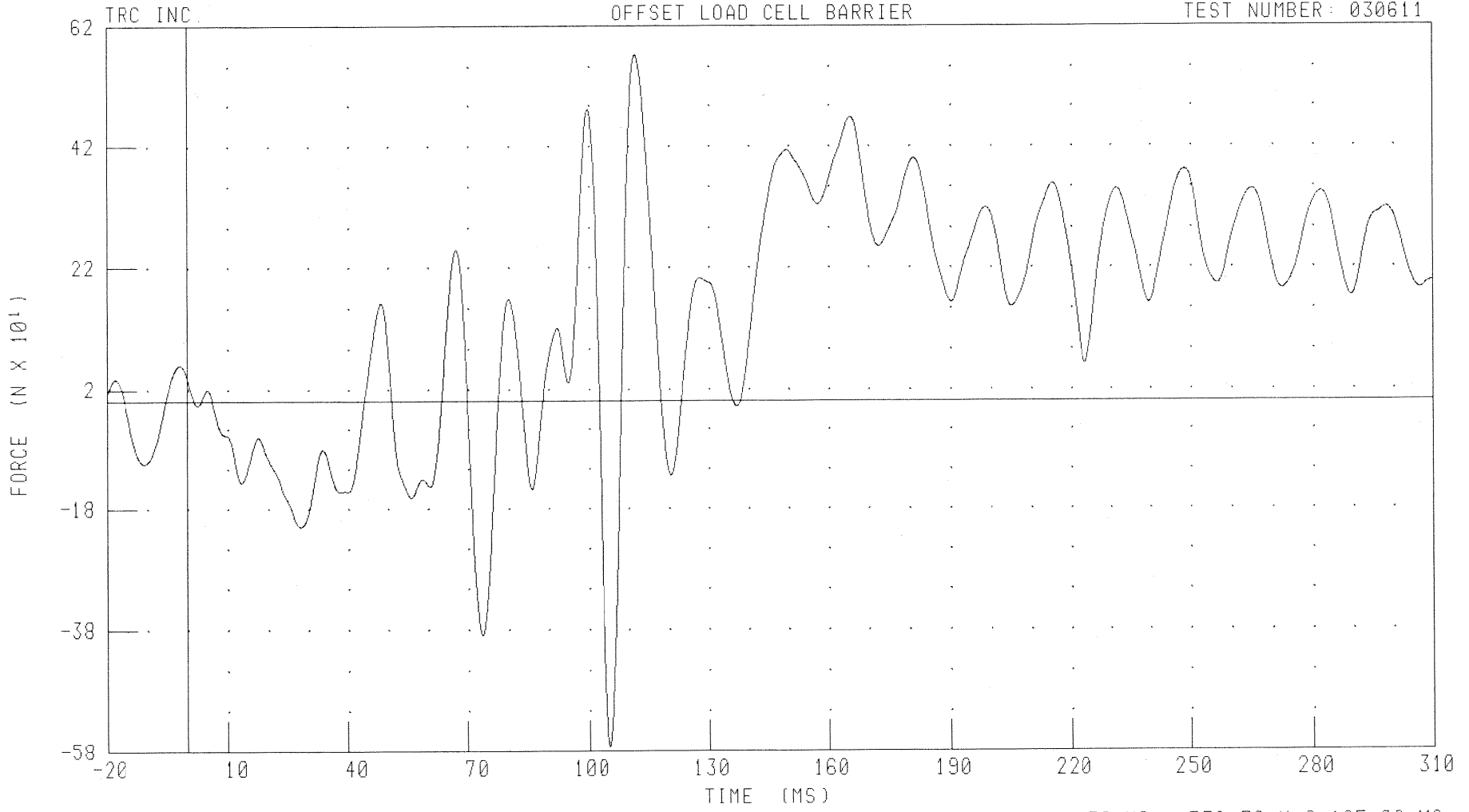
B-236

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
BARRIER LOAD CELL G2 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



B-237

030611

CHANNEL: LCG2XF

FILTER: CH. CLASS 60

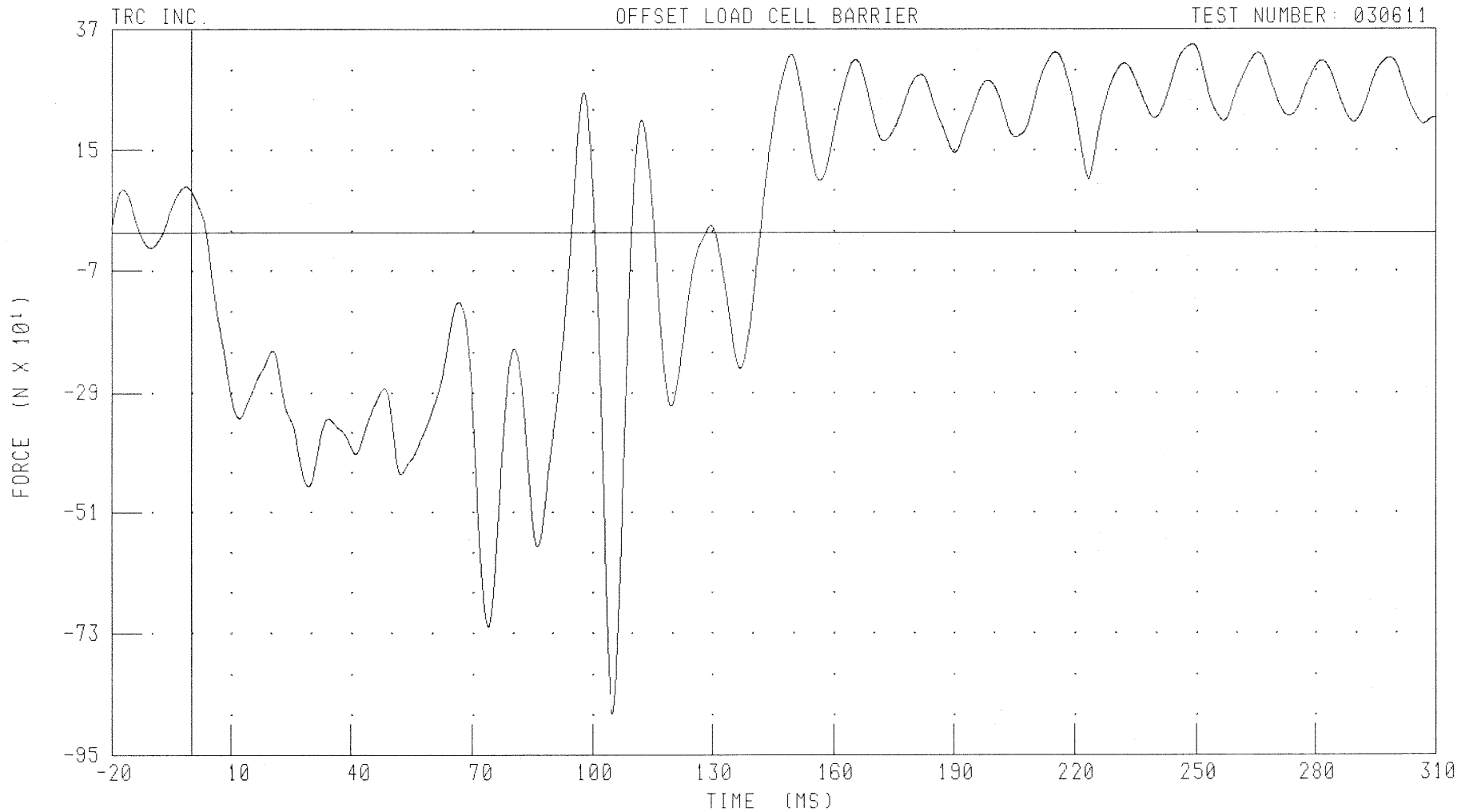
PEAK DATA: 572.24 N @ 111.76 MS; -572.70 N @ 105.28 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL G3 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCG3XF

FILTER: CH. CLASS 60

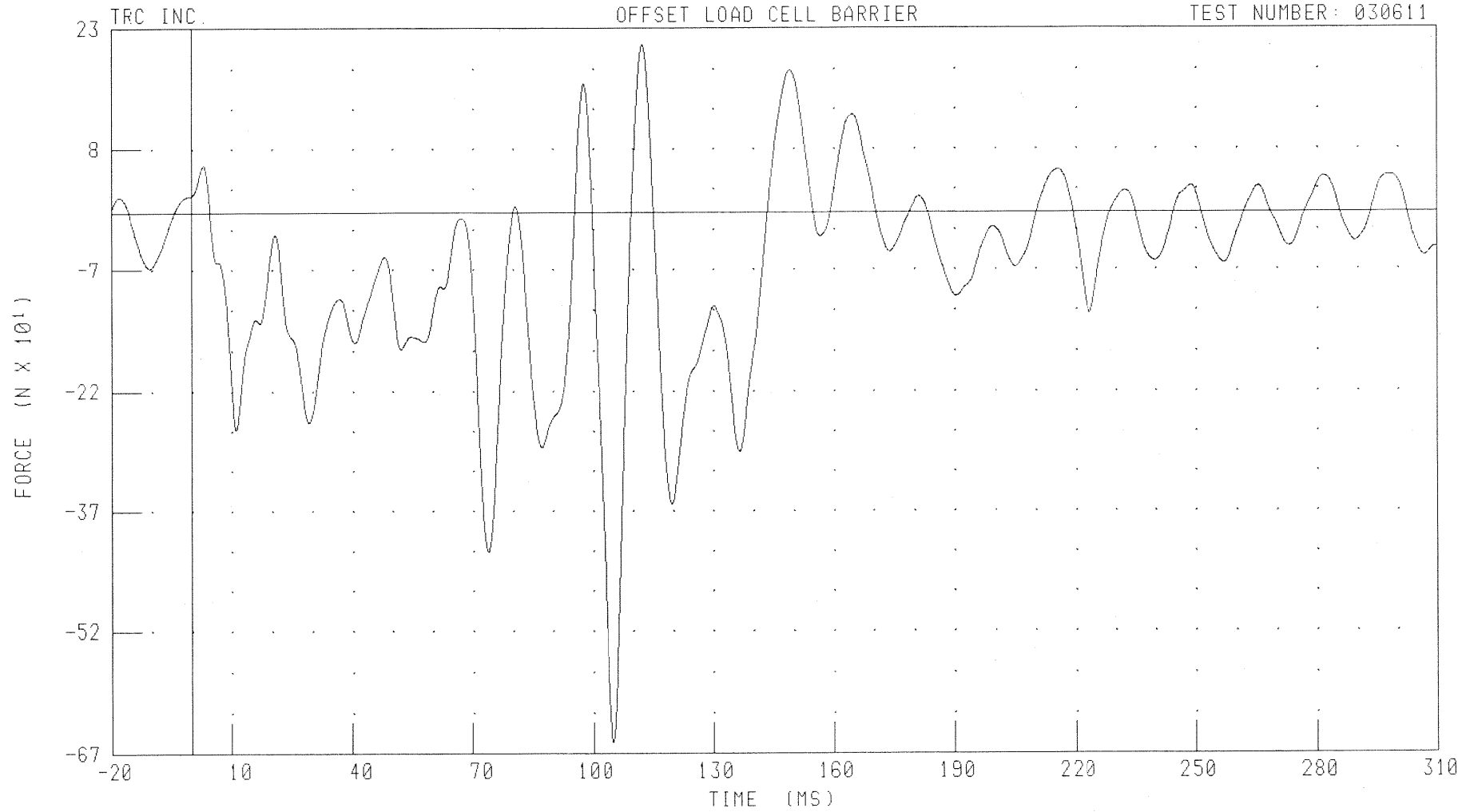
PEAK DATA: 342.61 N @ 248.96 MS; -874.84 N @ 105.12 MS

B-238

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
BARRIER LOAD CELL G4 X-AXIS FORCE

TEST NUMBER: 030611



B-239

030611

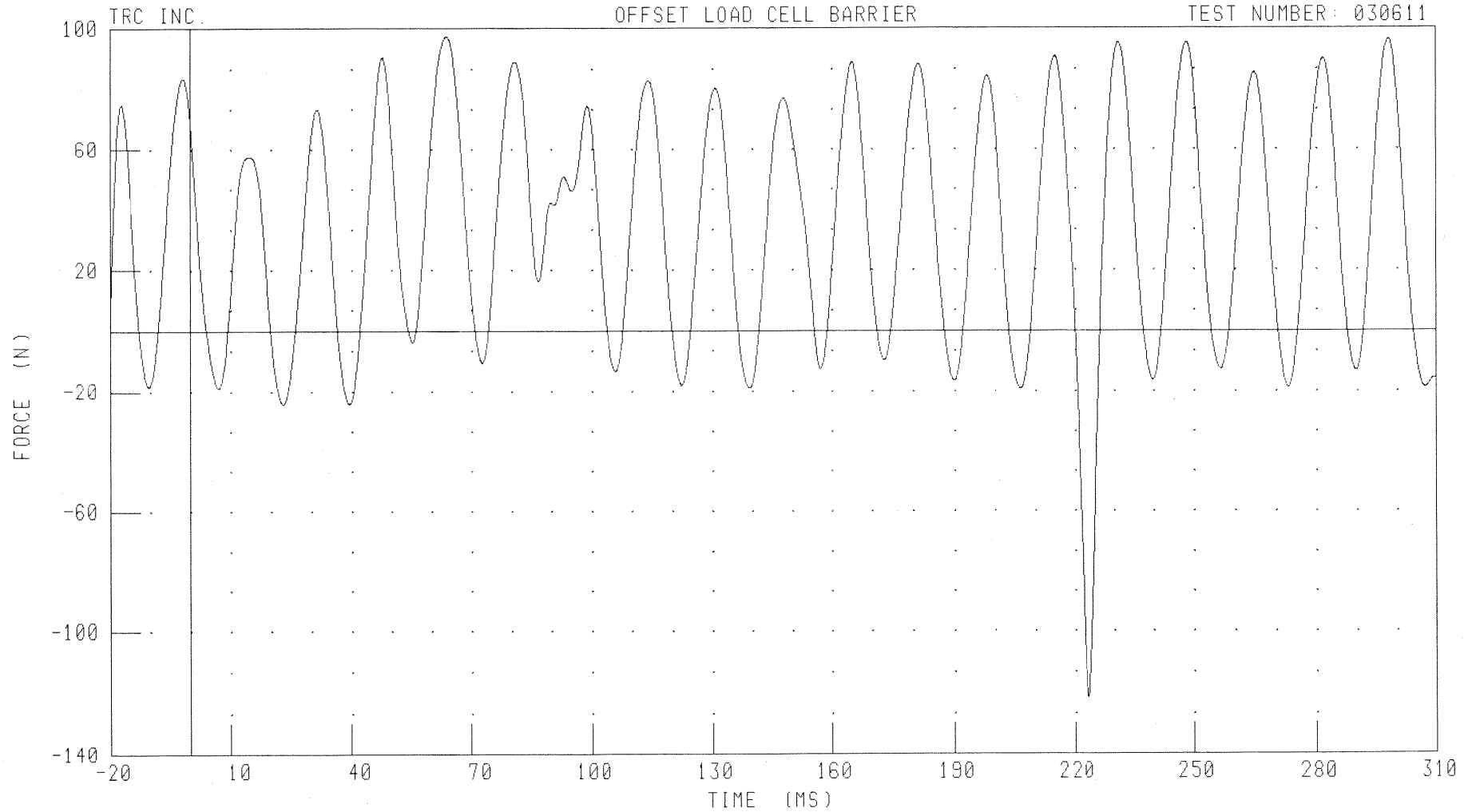
CHANNEL: LCG4XF FILTER: CH. CLASS 60

PEAK DATA: 209.69 N @ 112.40 MS, -656.22 N @ 105.12 MS

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL H1 X-AXIS FORCE

TEST NUMBER: 030611



CHANNEL: LCH1XF

FILTER: CH. CLASS 60

PEAK DATA: 97.27 N @ 63.76 MS; -121.58 N @ 223.44 MS

B-240

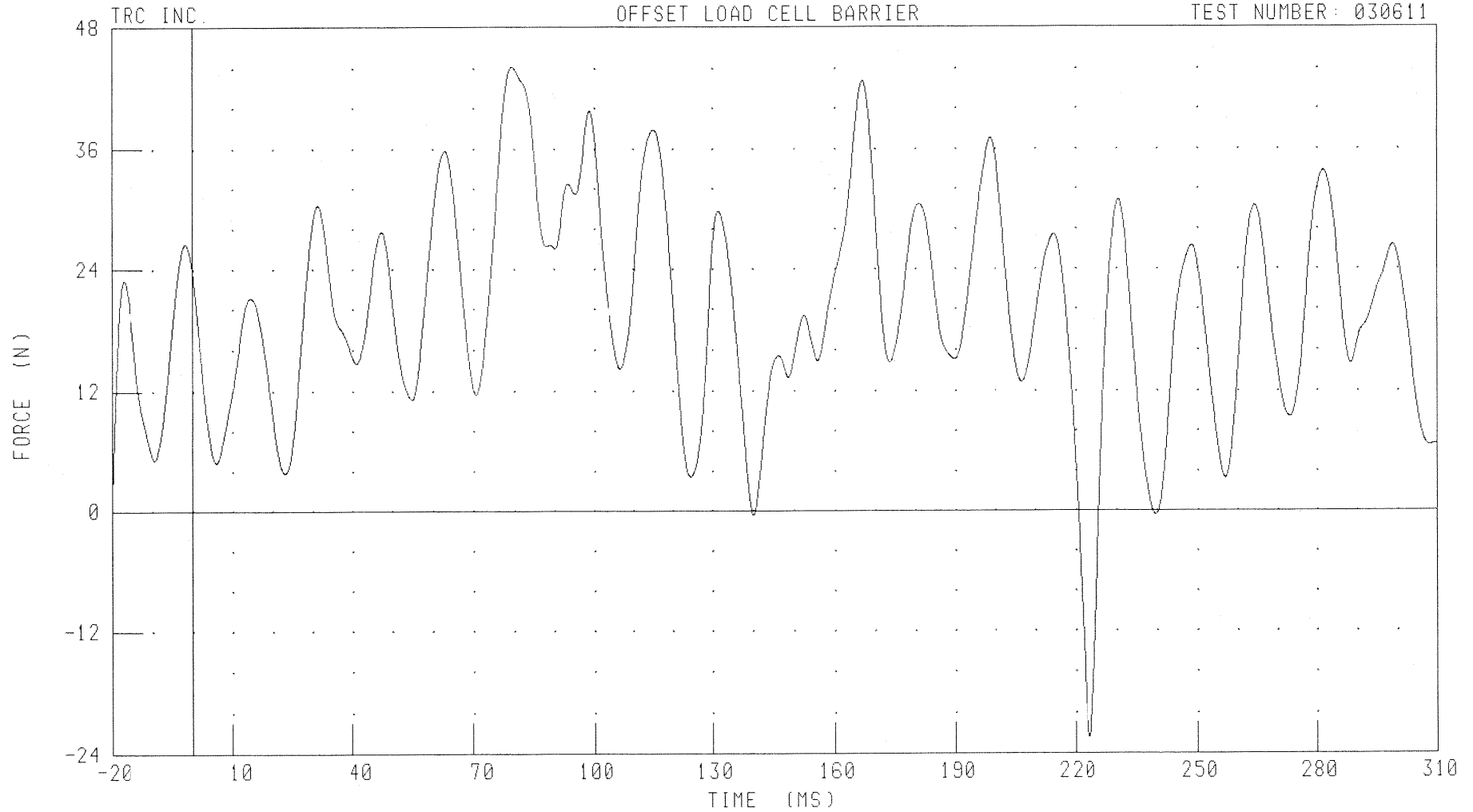
030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL H2 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCH2XF FILTER: CH. CLASS 60

PEAK DATA: 44.16 N @ 79.60 MS; -22.42 N @ 223.44 MS

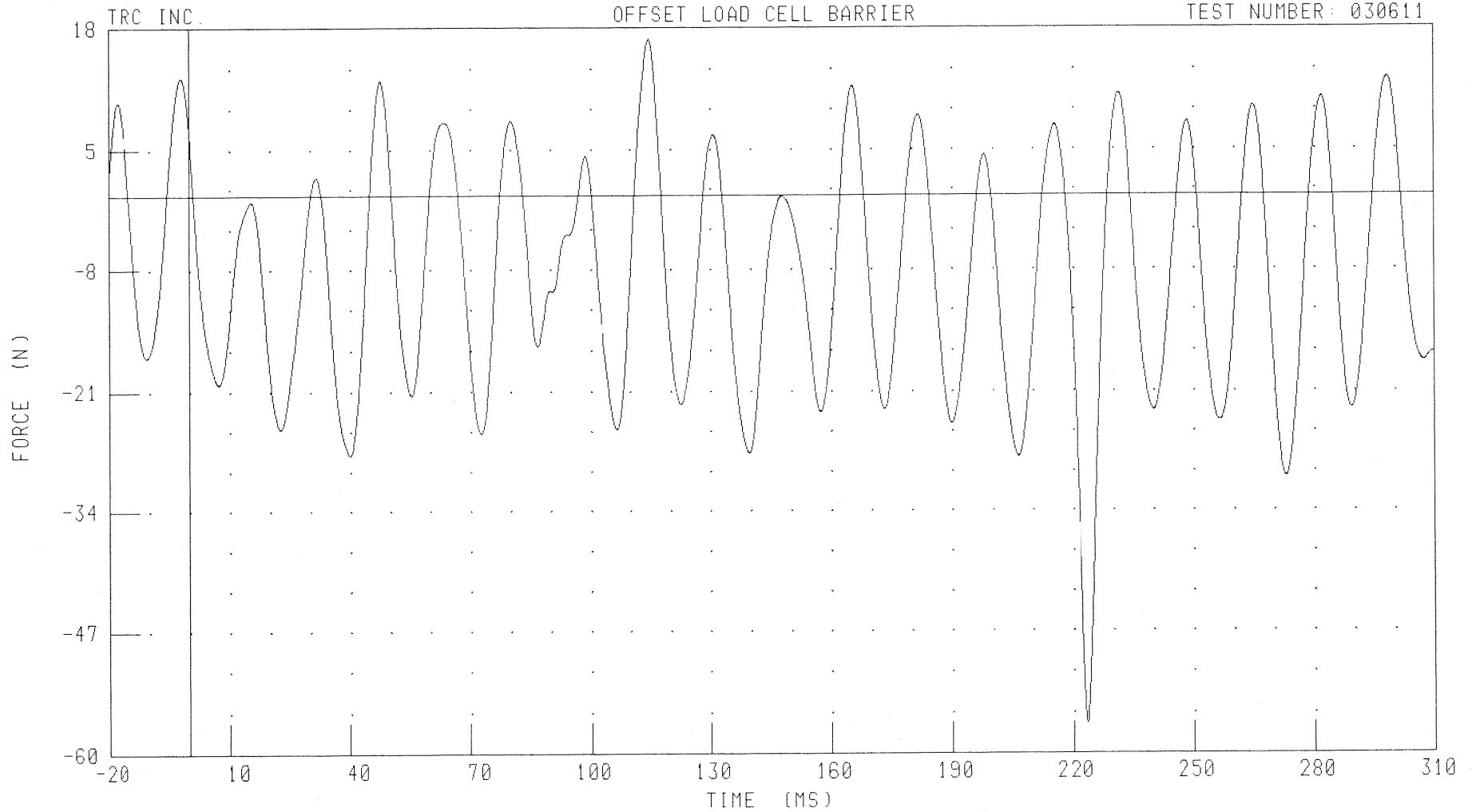
B-241

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H
BARRIER LOAD CELL H3 X-AXIS FORCE

OFFSET LOAD CELL BARRIER

TEST NUMBER: 030611



CHANNEL: LCH3XF FILTER: CH. CLASS 60

PEAK DATA: 16.77 N @ 114.72 MS; -56.83 N @ 223.52 MS

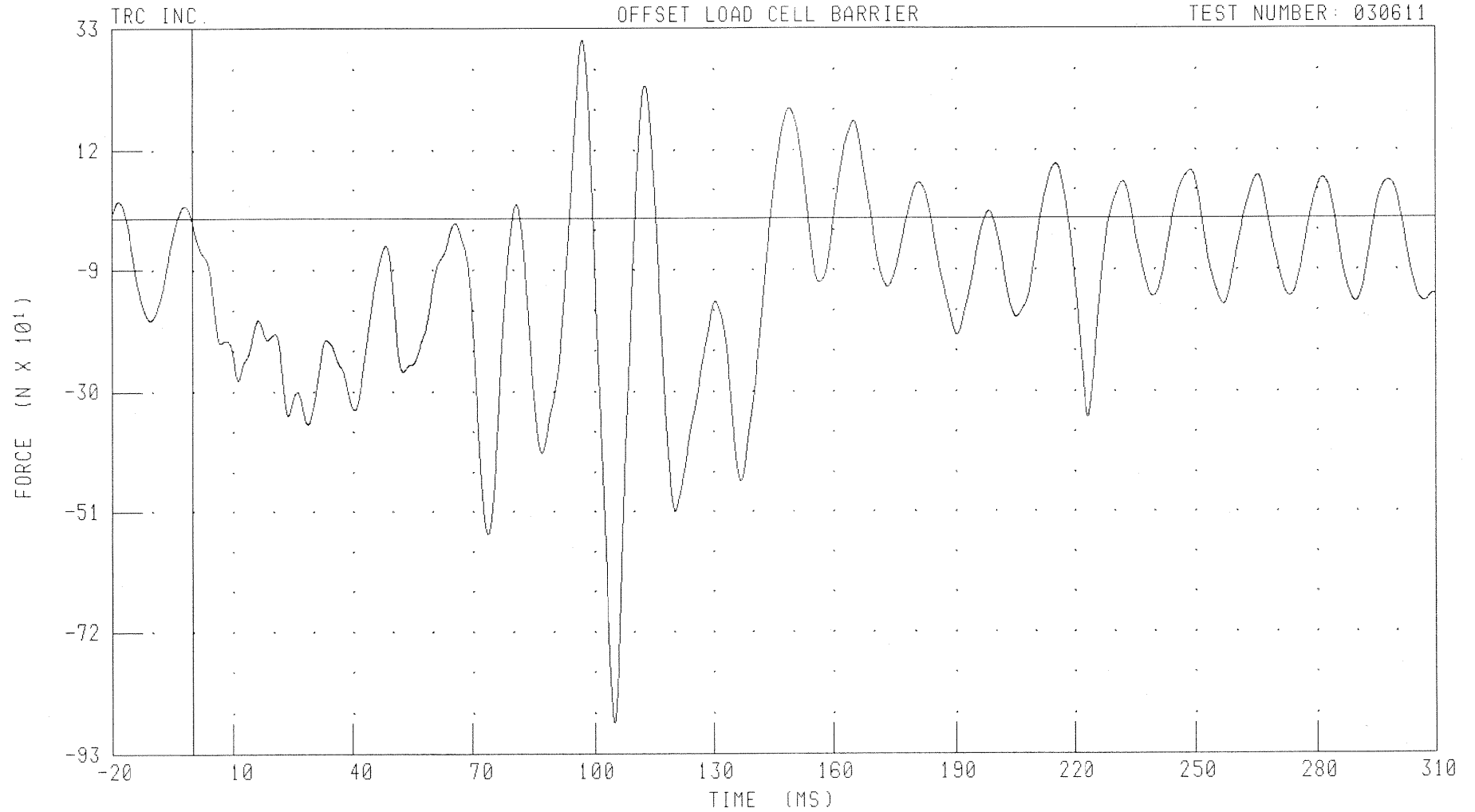
B-242

030611

2002 NISSAN ALTIMA INTO 40% LEFT OFFSET LOAD CELL BARRIER AT 60 KM/H

BARRIER LOAD CELL H4 X-AXIS FORCE

TEST NUMBER: 030611



CHANNEL: LCH4XF FILTER: CH. CLASS 60

PEAK DATA: 308.96 N @ 97.12 MS, -876.44 N @ 105.20 MS

B-243

030611

Appendix C

Dummy Configuration and Performance Verification Data

Pre-Test Dummy Configuration and Performance Verification Data

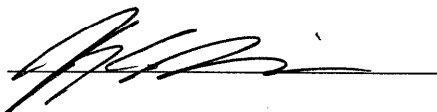
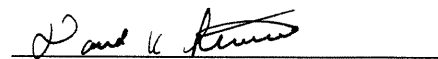
Driver Dummy S/N: 168

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 168 Calibration No. 21

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	880	Yes
B	Shoulder Pivot Height	505.5 - 520.7	517	Yes
C	H-Point Height	83.8 - 88.9	87	Yes
D	H-Point From Seatback	134.6 - 139.7	138	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	91	Yes
F	Thigh Clearance	139.7 - 154.9	146	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	295	Yes
H	Skull Cap To Backline	40.6 - 45.7	43	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	340	Yes
J	Elbow Rest Height	190.5 - 210.8	209	Yes
K	Buttock Knee Length	579.1 - 604.5	585	Yes
L	Popliteal Height	429.3 - 454.7	441	Yes
M	Knee Pivot Height	485.1 - 500.4	490	Yes
N	Buttock Popliteal Length	452.1 - 477.5	473	Yes
O	Chest Depth	213.4 - 228.6	226	Yes
P	Foot Length	251.5 - 266.7	254	Yes
V	Shoulder Breadth	421.6 - 436.9	425	Yes
W	Foot Breadth	91.4 - 106.7	102	Yes
Y	Chest Circumference	970.3 - 1000.8	983	Yes
Z	Waist Circumference	835.7 - 866.1	856	Yes
AA	Location For Chest Circumference	429.3 - 434.3	432	Yes
BB	Location For Waist Circumference	226.1 - 231.1	229	Yes

Technician

Approved

Transportation Research Center Inc.

572E Head Drop Test

HIII 50th Male Serial No. 168 Calibration No. 21 - 1

Test Date 05/27/2003

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	46 %	Yes
Peak Resultant Acceleration	225 - 275 g	270.9 g	Yes
Peak Lateral Acceleration	15 g Max	-12.6 g	Yes
Oscillations After Main Pulse	Less Than 10% of Peak Resultant Acceleration?	Yes	Yes

Comments:

Technician



Approved



05.27.2003 11:13:51 612

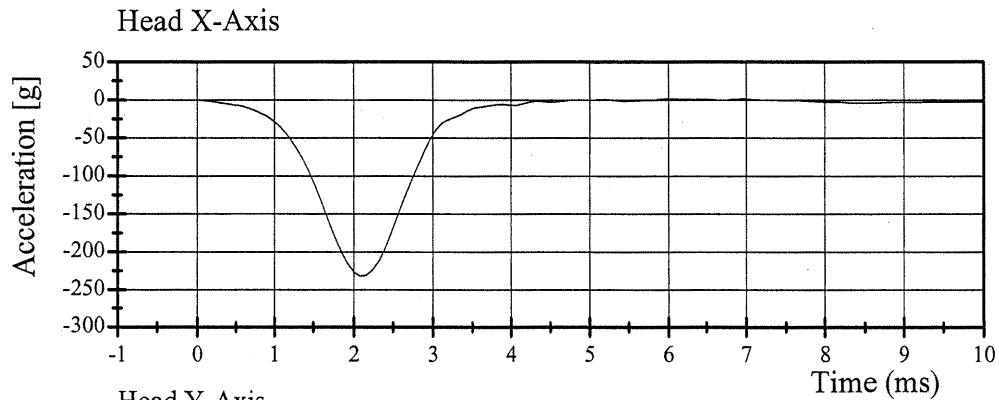


Transportation Research Center Inc.

572E Head Drop Test

HIII 50th Male Serial No. 168 Calibration No. 21 - 1

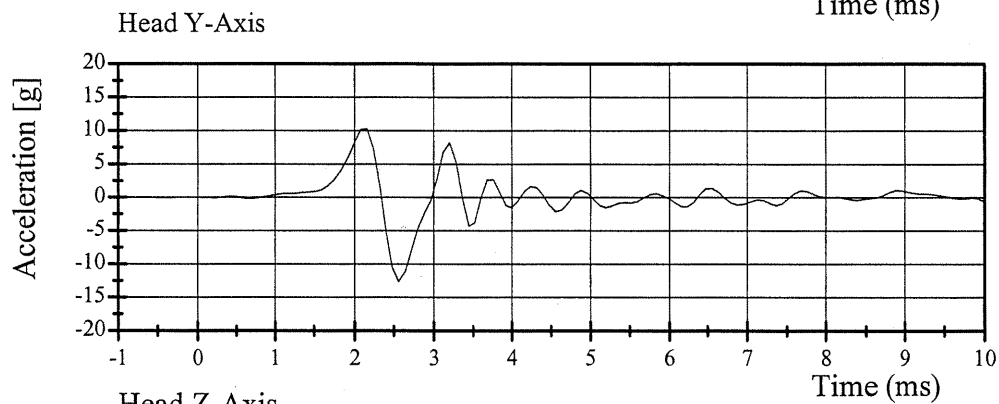
Test Date 05/27/2003



Filter Class: 1000

Max: 1.8 g at 6.1 ms

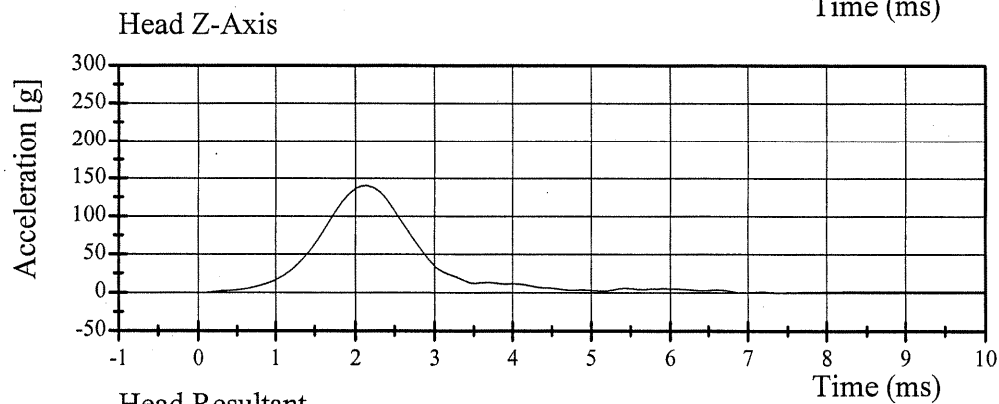
Min: -231.6 g at 2.1 ms



Filter Class: 1000

Max: 10.3 g at 2.2 ms

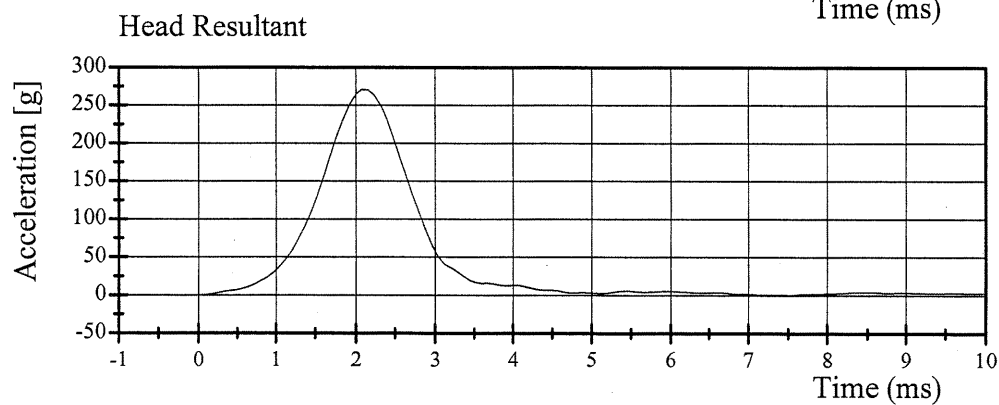
Min: -12.6 g at 2.6 ms



Filter Class: 1000

Max: 140.5 g at 2.2 ms

Min: -0.2 g at 7.4 ms



Filter Class: 1000

Max: 270.9 g at 2.1 ms

Min: 0.0 g at 2.2 ms

Transportation Research Center Inc.

572E Neck Flexion Test - 6 Channel Transducer

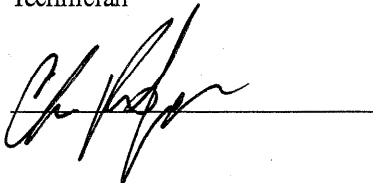
HIII 50th Male Serial No. 168 Calibration No. 21 - 1

Test Date 05/27/2003

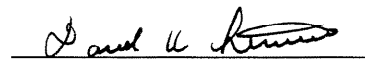
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Impact Velocity	6.89 - 7.13 m/s	7.01 m/s	Yes
Pendulum Deceleration			
10 ms	22.50 - 27.50 g	23.27 g	Yes
20 ms	17.60 - 22.60 g	22.30 g	Yes
30 ms	12.50 - 18.50 g	17.77 g	Yes
Max Pendulum Deceleration	29.00 g	24.27 g	Yes
Max Pendulum Deceleration After 30 ms	29.00 g	17.70 g	Yes
Deceleration-Time Curve			
Decay Time To 5g	34 - 42 ms	37.44 ms	Yes
D Plane Rotation			
Max	64 - 78 °	71.31 °	Yes
Time	57 - 64 ms	60.24 ms	Yes
Moment About Occipital Condyle			
Max	88.1 - 108.5 N·m	96.05 N·m	Yes
Time	47 - 58 ms	50.40 ms	Yes
Rotation Angle-Time Curve			
Decay Time To Zero	113 - 128 ms	116.16 ms	Yes
Positive Moment-Time Curve			
Decay Time To Zero	97 - 107 ms	101.12 ms	Yes

Comments:

Technician



Approved



05.27.2003 12:37:48 492



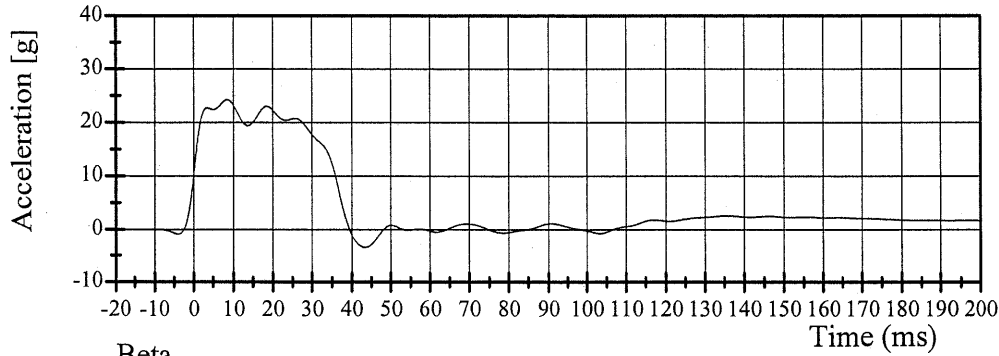
Transportation Research Center Inc.

572E Neck Flexion Test

HIII 50th Male Serial No. 168 Calibration No. 21 - 1

Test Date 05/27/2003

Pendulum Deceleration

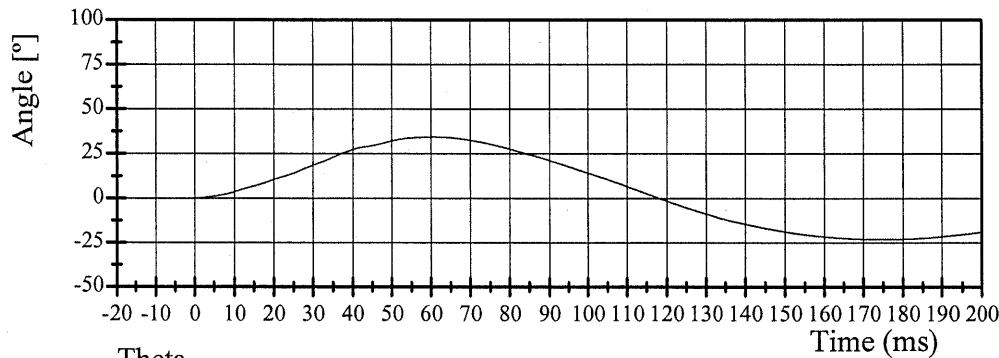


Filter Class: 60

Max: 24.3 g at 8.5 ms

Min: -3.3 g at 43.4 ms

Beta

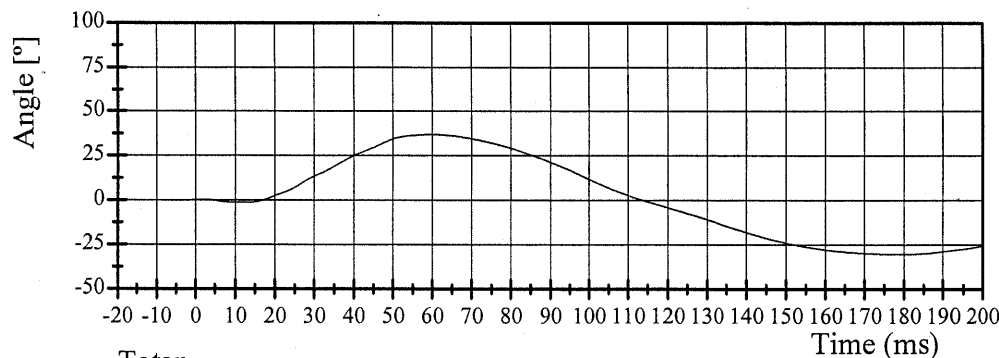


Filter Class: 60

Max: 34.4 ° at 60.8 ms

Min: -23.1 ° at 174.0 ms

Theta

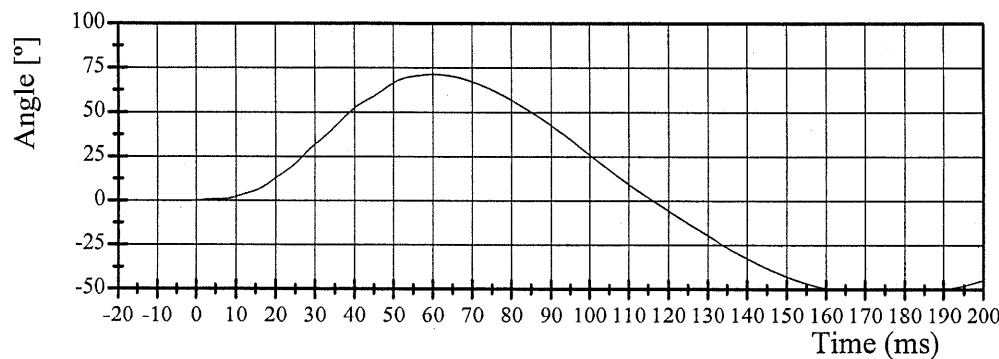


Filter Class: 60

Max: 36.9 ° at 59.8 ms

Min: -30.2 ° at 179.0 ms

Totan



Filter Class: 60

Max: 71.3 ° at 60.2 ms

Min: -53.2 ° at 177.0 ms



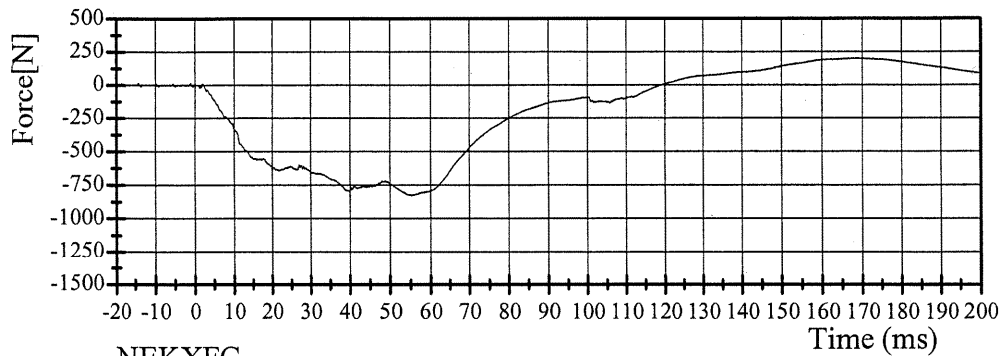
Transportation Research Center Inc.

572E Neck Flexion Test

HIII 50th Male Serial No. 168 Calibration No. 21 - 1

Test Date 05/27/2003

NEKXF

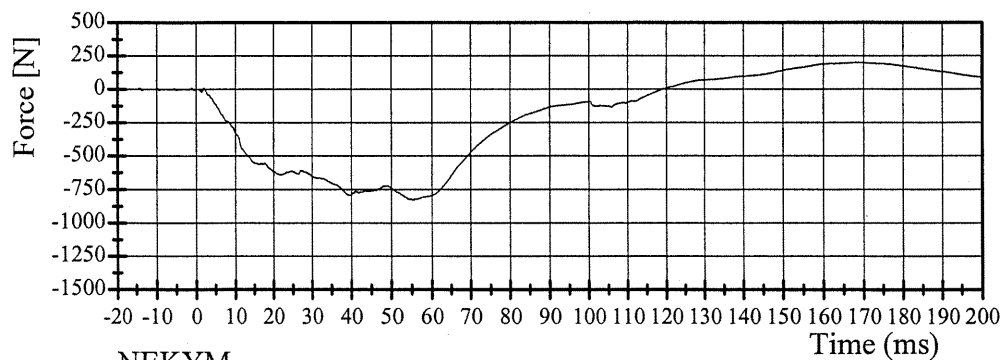


Filter Class: 1000

Max: 199.9 N at 169.1 ms

Min: -826.1 N at 55.2 ms

NEKXFC

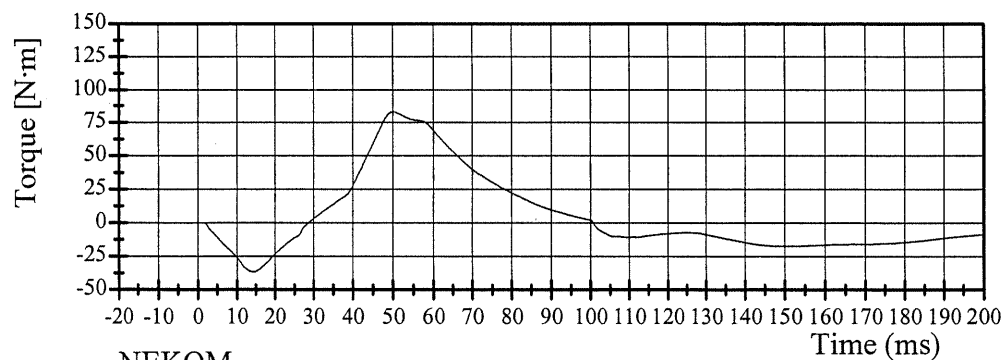


Filter Class: 600

Max: 199.6 N at 169.2 ms

Min: -826.0 N at 55.3 ms

NEKYM

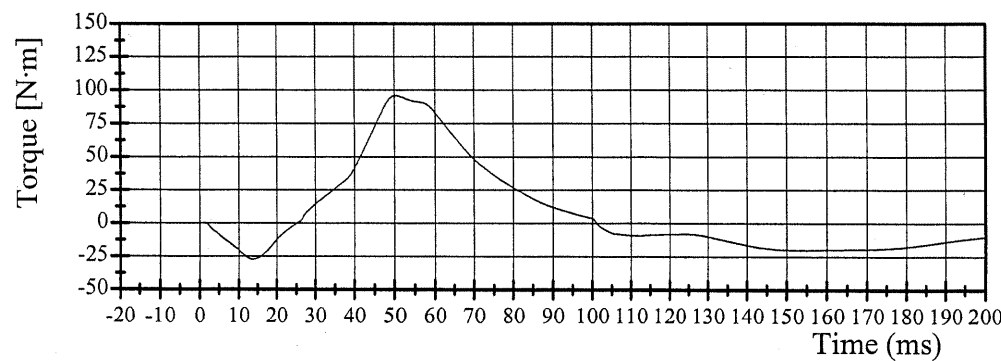


Filter Class: 600

Max: 82.9 N·m at 50.3 ms

Min: -36.6 N·m at 14.4 ms

NEKOM



Filter Class: 600

Max: 96.0 N·m at 50.4 ms

Min: -27.4 N·m at 13.7 ms



Transportation Research Center Inc.

572E Neck Extension Test - 6 Channel Transducer

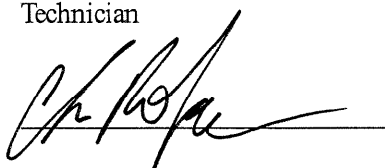
HIII 50th Male Serial No. 168 Calibration No. 21 - 1

Test Date 05/27/2003

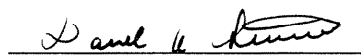
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	46 %	Yes
Impact Velocity	5.95 - 6.19 m/s	6.05 m/s	Yes
Pendulum Deceleration			
10 ms	17.20 - 21.20 g	17.35 g	Yes
20 ms	14.00 - 19.00 g	16.84 g	Yes
30 ms	11.00 - 16.00 g	15.64 g	Yes
Max Pendulum Deceleration	22.00 g	18.08 g	Yes
Max Pendulum Deceleration After 30 ms	22.00 g	15.60 g	Yes
Deceleration-Time Curve			
Decay Time To 5g	38 - 46 ms	41.52 ms	Yes
D Plane Rotation			
Max	81 - 106 °	95.61 °	Yes
Time	72 - 82 ms	76.56 ms	Yes
Moment About Occipital Condyle			
Min	-80.0 - (-52.9) N·m	-65.38 N·m	Yes
Time	65 - 79 ms	71.60 ms	Yes
Rotation Angle-Time Curve			
Decay Time To Zero	147 - 174 ms	154.80 ms	Yes
Negative Moment-Time Curve			
Decay Time To Zero	120 - 148 ms	143.92 ms	Yes

Comments:

Technician



Approved



05.27.2003 13:07:43 575



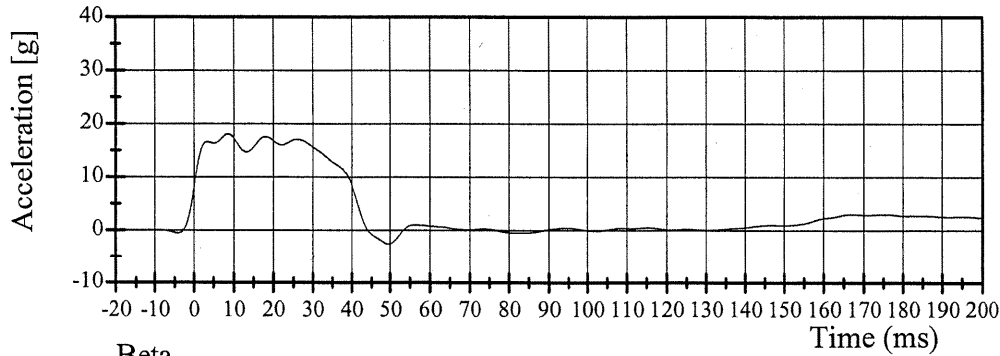
Transportation Research Center Inc.

572E Neck Extension Test

HIII 50th Male Serial No. 168 Calibration No. 21 - 1

Test Date 05/27/2003

Pendulum Deceleration

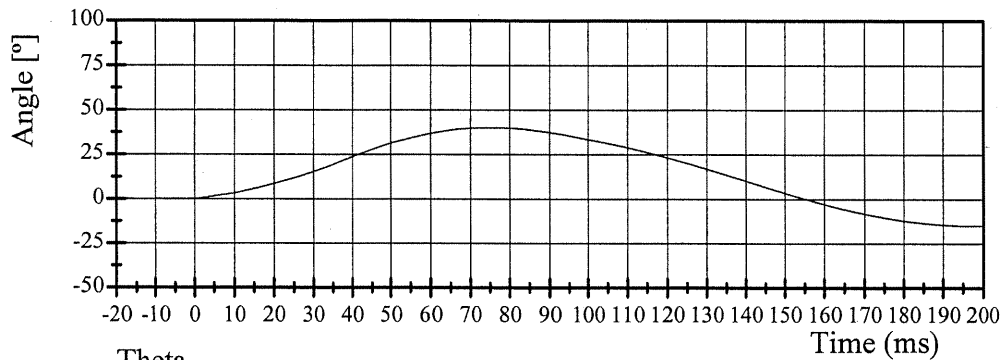


Filter Class: 60

Max: 18.1 g at 8.6 ms

Min: -2.6 g at 49.5 ms

Beta

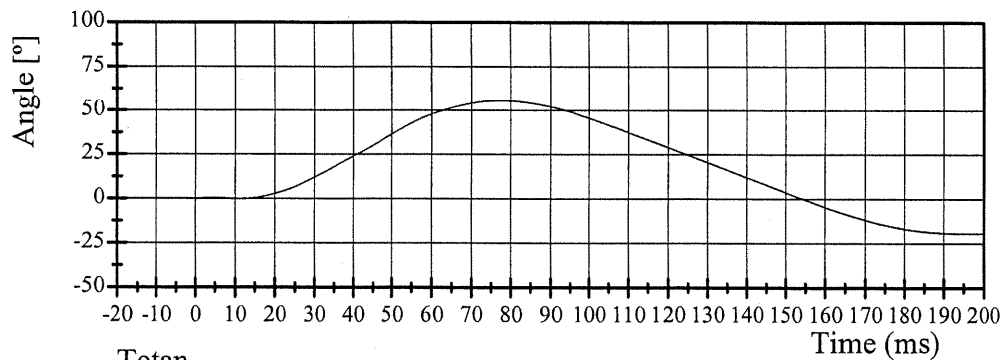


Filter Class: 60

Max: 40.2 ° at 75.0 ms

Min: -14.8 ° at 197.3 ms

Theta

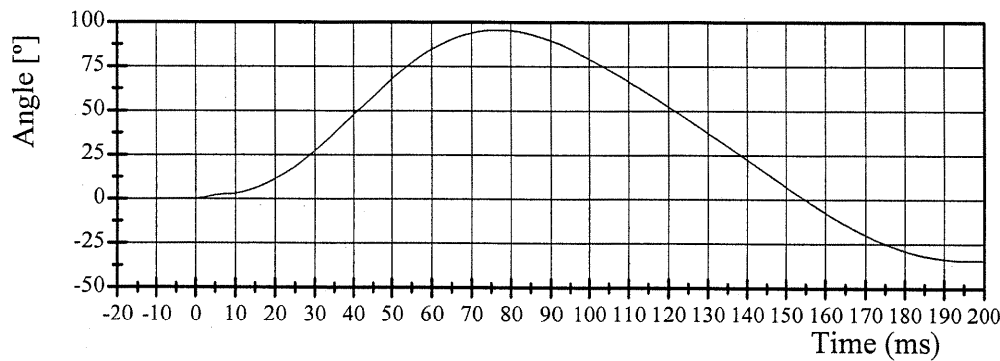


Filter Class: 60

Max: 55.5 ° at 77.8 ms

Min: -19.4 ° at 195.4 ms

Totan



Filter Class: 60

Max: 95.6 ° at 76.6 ms

Min: -34.2 ° at 196.3 ms

05.27.2003 13:07:44 575

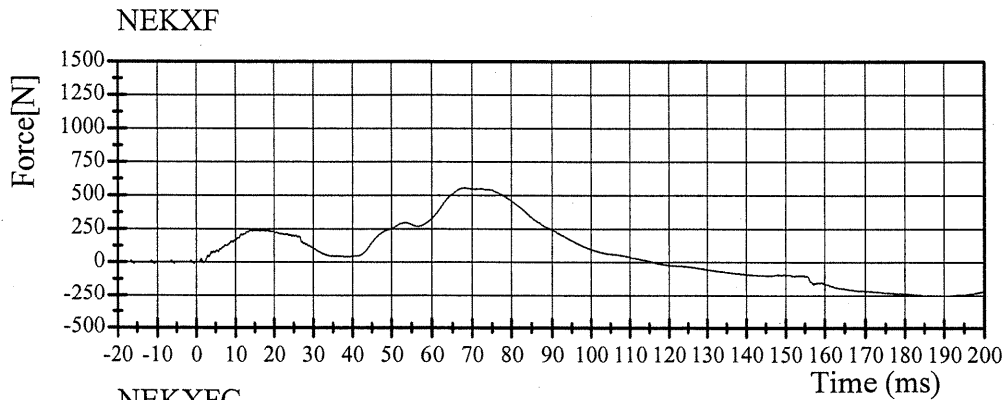


Transportation Research Center Inc.

572E Neck Extension Test

HIII 50th Male Serial No. 168 Calibration No. 21 - 1

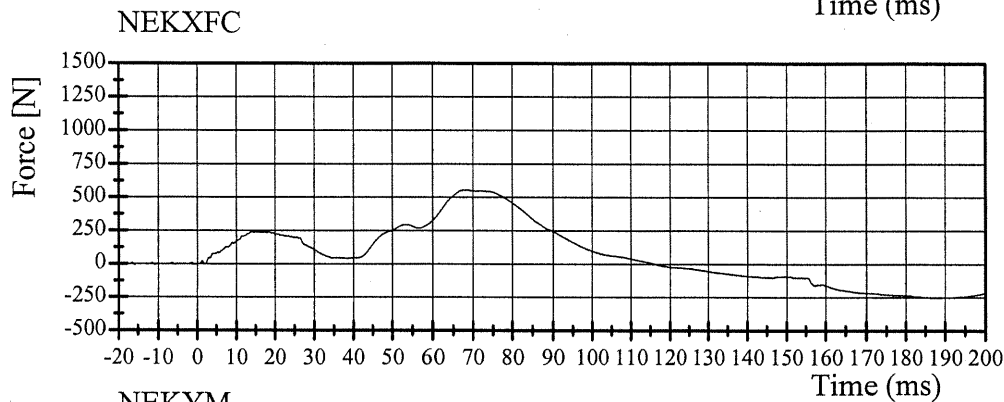
Test Date 05/27/2003



Filter Class: 1000

Max: 556.5 N at 67.8 ms

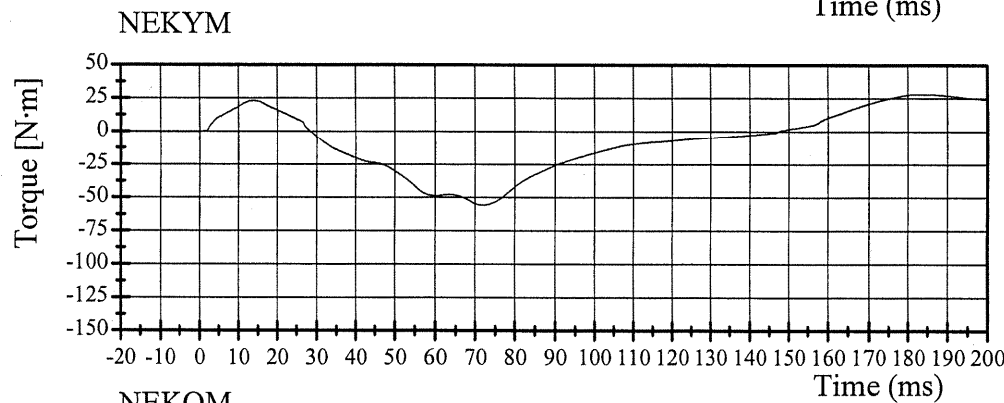
Min: -251.9 N at 187.0 ms



Filter Class: 600

Max: 555.4 N at 67.8 ms

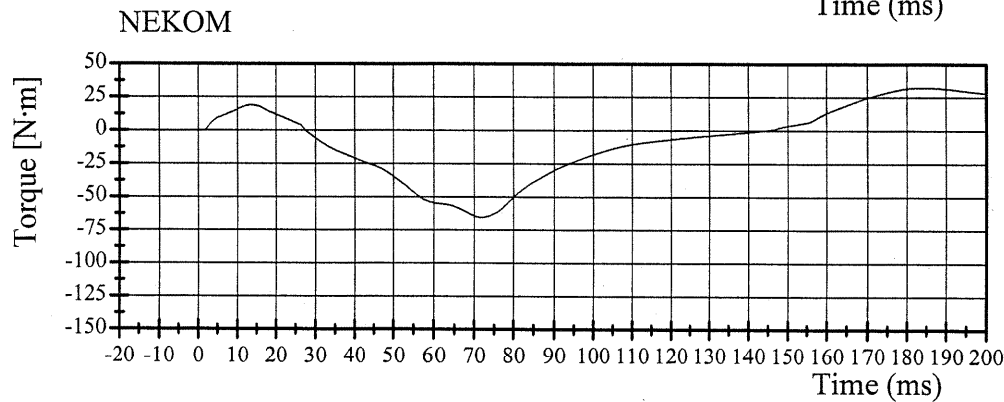
Min: -251.3 N at 187.0 ms



Filter Class: 600

Max: 28.1 N·m at 183.4 ms

Min: -55.7 N·m at 71.5 ms



Filter Class: 600

Max: 32.4 N·m at 184.7 ms

Min: -65.4 N·m at 71.6 ms

05.27.2003 13:07:45 575



Transportation Research Center Inc.

572E Thorax Test

HIII 50th Male Serial No. 168 Calibration No. 21 - 1

Test Date 05/27/2003

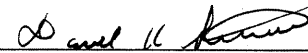
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	47 %	Yes
Pendulum Velocity	6.59 - 6.83 m/s	6.63 m/s	Yes
Maximum Chest Deflection	-72.6 - (-63.5) mm	-64.2 mm	Yes
Maximum Resistive Force	5160 - 5894 N	5708 N	Yes
Internal Hysteresis	69 - 85 %	73 %	Yes

Comments:

Technician



Approved



05.27.2003 08:13:27 945



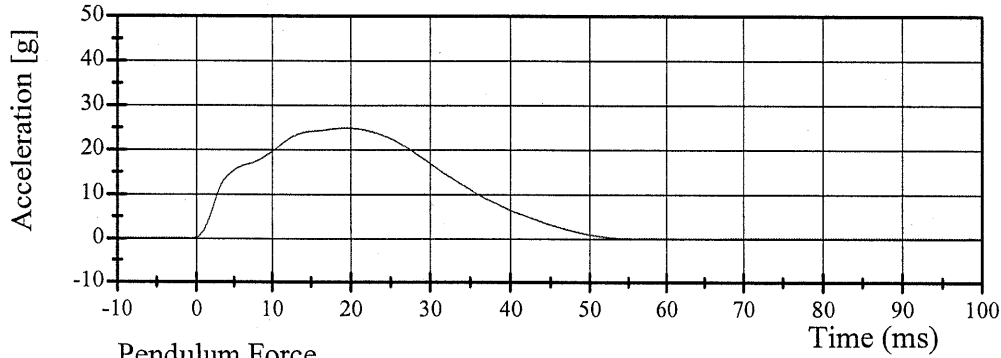
Transportation Research Center Inc.

572E Thorax Test

HIII 50th Male Serial No. 168 Calibration No. 21 - 1

Test Date 05/27/2003

Pendulum Deceleration

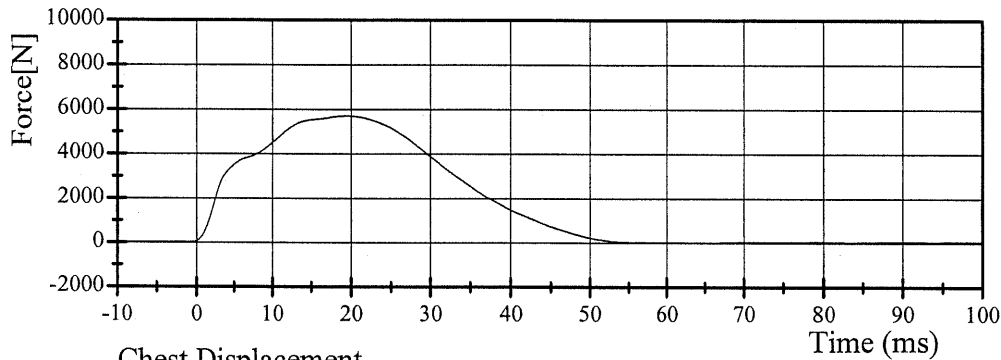


Filter Class: 180

Max: 24.9 g at 19.4 ms

Min: -1.8 g at 467.1 ms

Pendulum Force

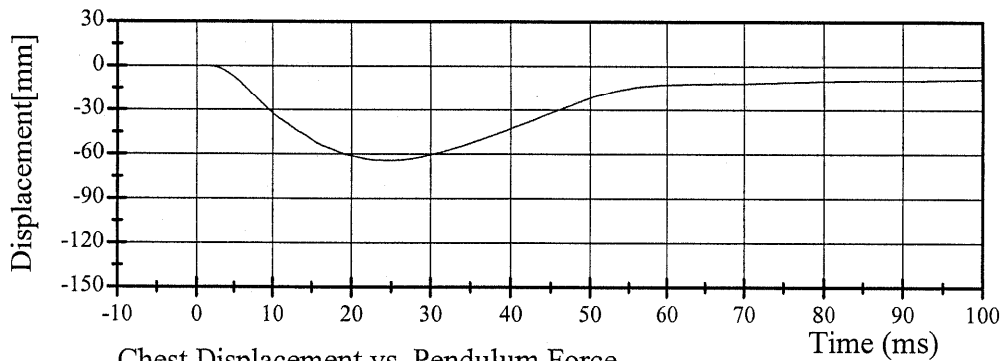


Filter Class: 180

Max: 5707.7 N at 19.4 ms

Min: -407.6 N at 467.1 ms

Chest Displacement

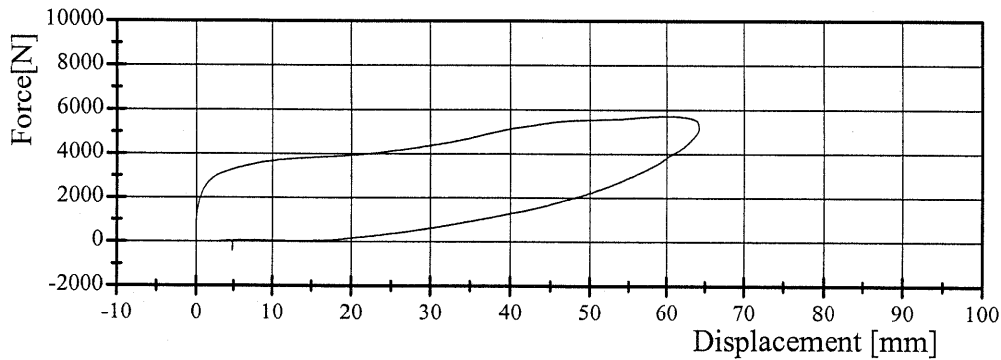


Filter Class: 180

Max: 0.0 mm at 1.2 ms

Min: -64.2 mm at 25.0 ms

Chest Displacement vs. Pendulum Force



05.27.2003 08:13:28 945



Transportation Research Center Inc

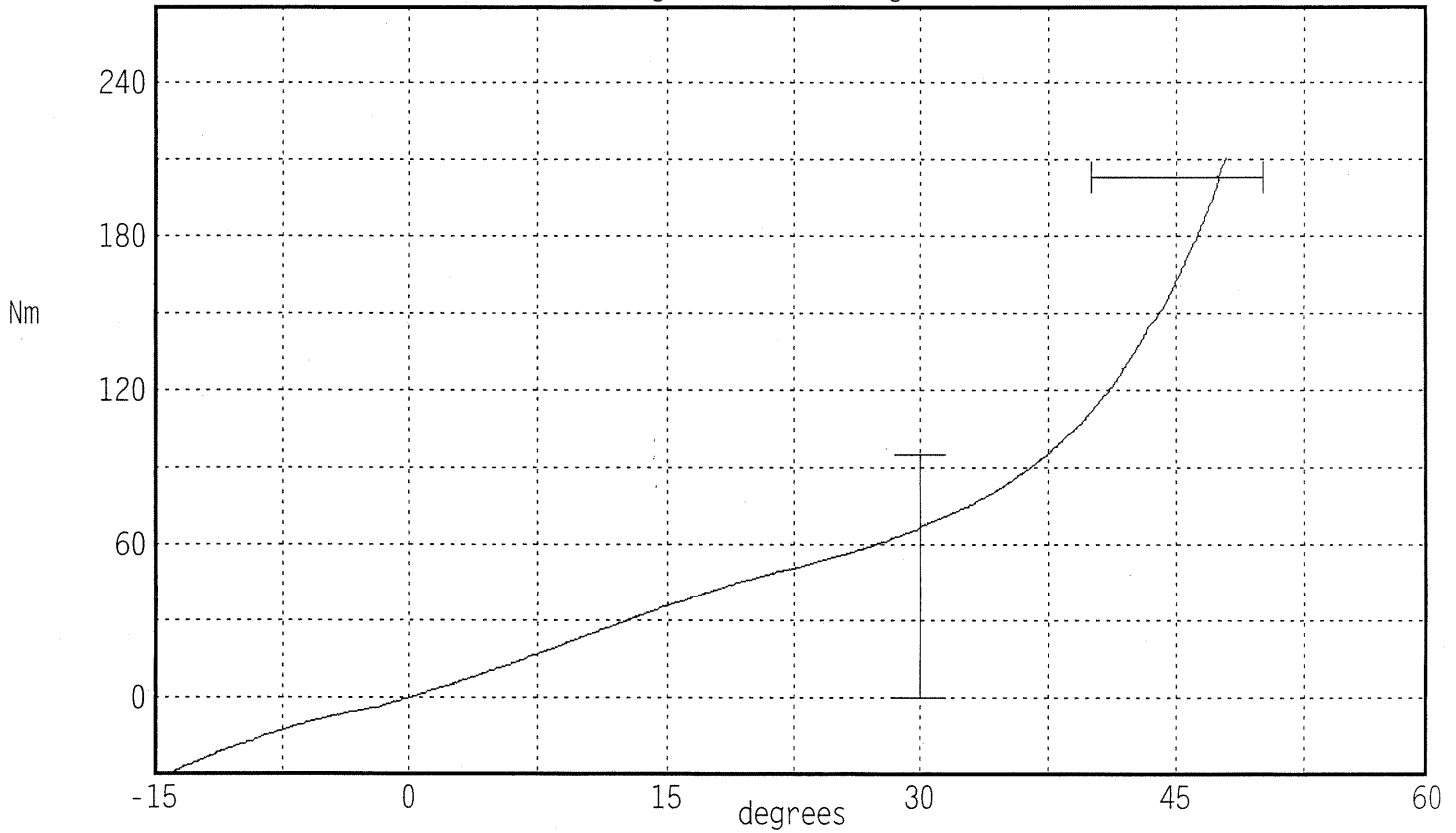
Hybrid III Hip Range of Motion

Serial Number: 168L
Test Number: 168C21
Comments: C

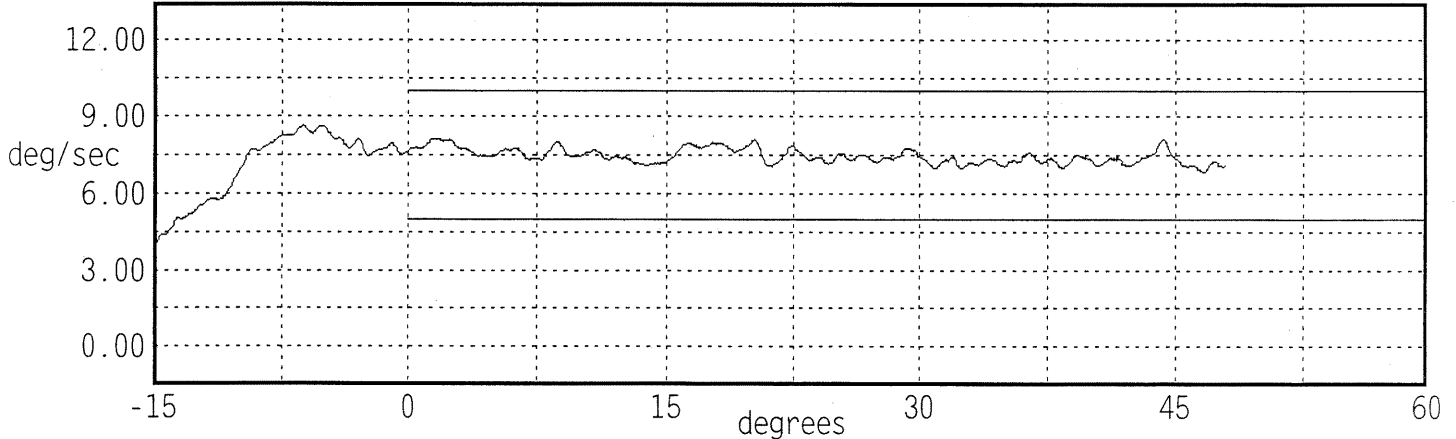
Date: 05/27/2003
Time: 10:11

TEST PARAMETER	SPECIFICATION	TEST RESULTS	
Temperature	18.9 - 25.6	21.7 °C	Pass
Humidity	10 - 70	48 %	Pass
Moment at 30 deg	<= 94.9	66.8 Nm	Pass
Angle at 203 Nm	40.0 - 50.0	47.5 deg	Pass
Average Velocity	5.0 - 10.0	7.4 deg/sec	Pass

Moment About H-Point
Peak Moment: 210.4 Nm at 47.9 deg
Peak Angle: 47.9 deg at 210.4 Nm



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



Transportation Research Center Inc

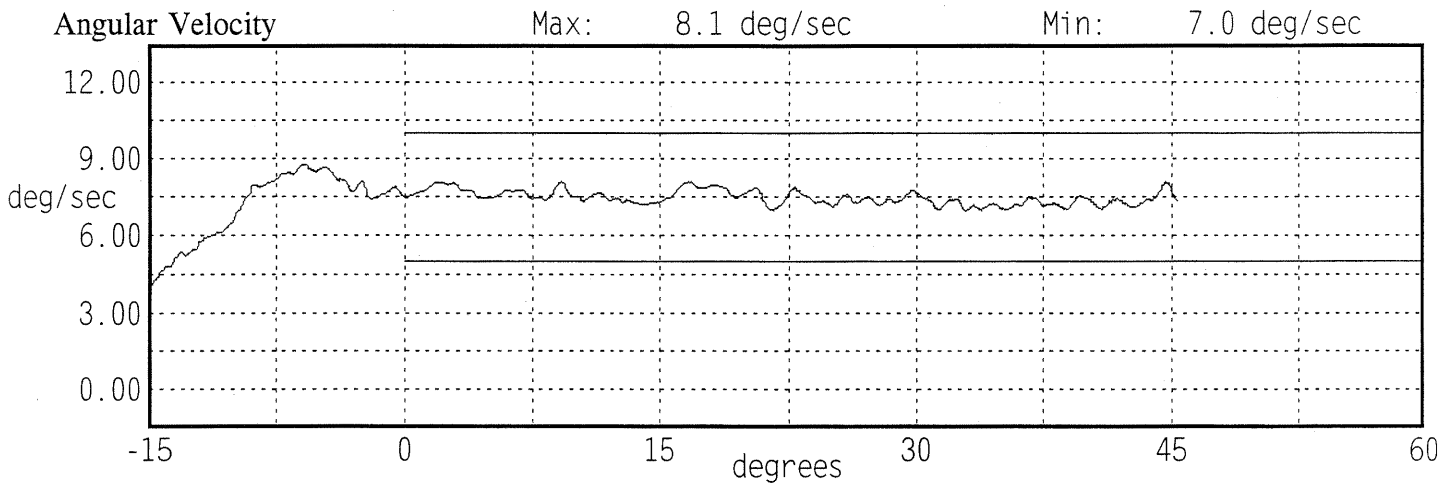
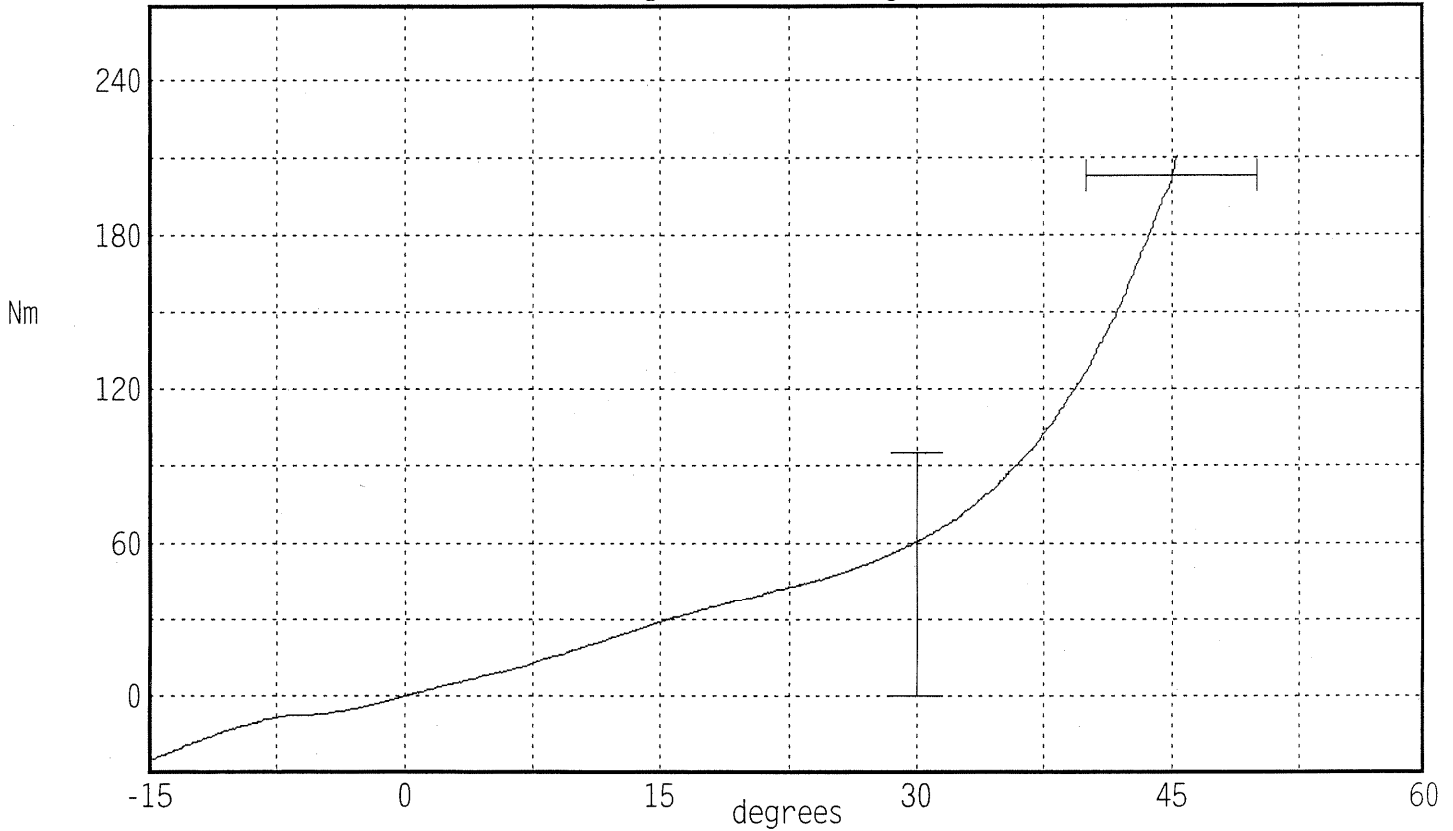
Hybrid III Hip Range of Motion

Serial Number: 168R
Test Number: 168C21
Comments: C

Date: 05/27/2003
Time: 10:15

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.7 °C Pass
Humidity	10 - 70	48 % Pass
Moment at 30 deg	<= 94.9	61.0 Nm Pass
Angle at 203 Nm	40.0 - 50.0	45.0 deg Pass
Average Velocity	5.0 - 10.0	7.5 deg/sec Pass

Moment About H-Point
Peak Moment: 210.3 Nm at 45.3 deg
Peak Angle: 45.3 deg at 210.3 Nm



Transportation Research Center Inc.

572E Left Knee Slider Test

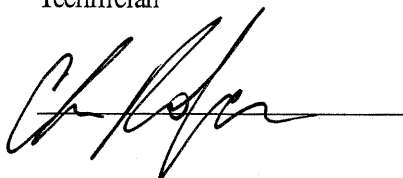
HIII 50th Male Serial No. 168 Calibration No. 21 - 1

Test Date 05/27/2003

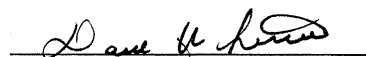
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	47 %	Yes
Pendulum Velocity	2.70 - 2.80 m/s	2.74 m/s	Yes
Force At 10 mm Displacement	-1259 - (-1721) N	-1644 N	Yes
Force At 18 mm Displacement	-2268 - (-3096) N	-2969 N	Yes

Comments:

Technician



Approved



05.27.2003 09:29:13 1767

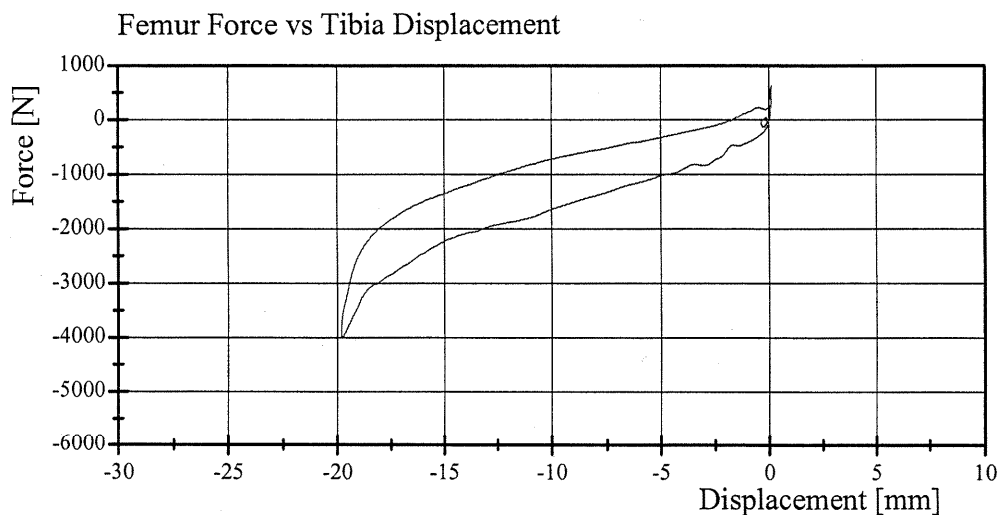
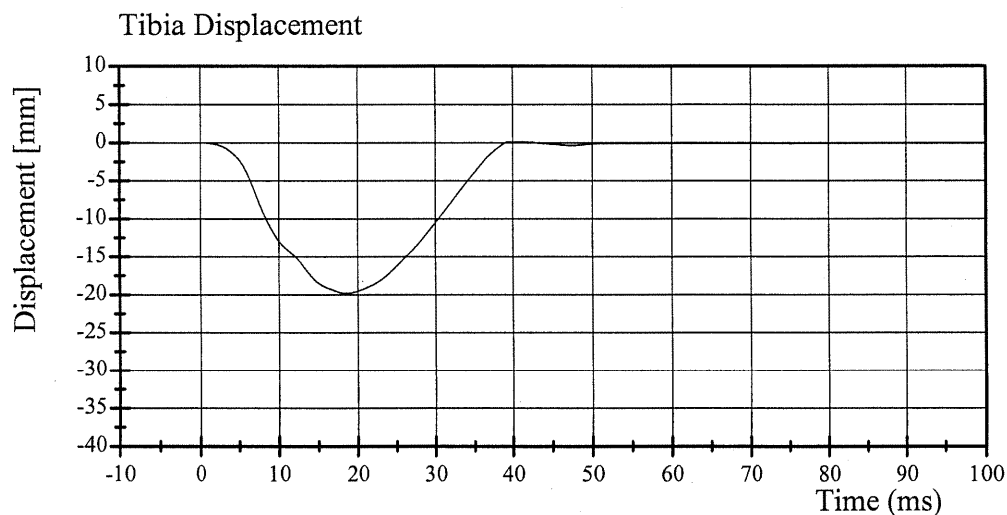
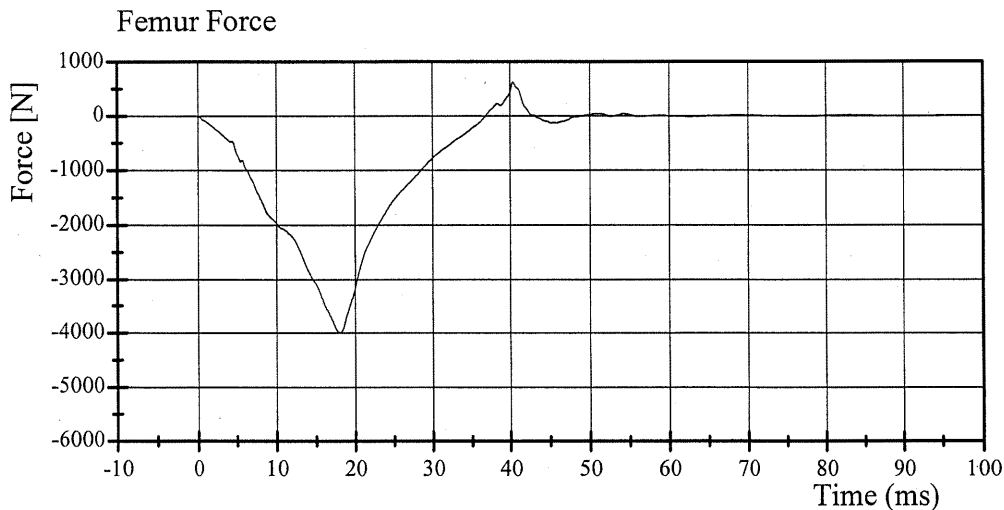


Transportation Research Center Inc.

572E Left Knee Slider Test

HIII 50th Male Serial No. 168 Calibration No. 21 - 1

Test Date 05/27/2003



05.27.2003 09:29:14 1767



Transportation Research Center Inc.

572E Right Knee Slider Test


HIII 50th Male Serial No. 168 Calibration No. 21 - 1

Test Date 05/27/2003

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	46 %	Yes
Pendulum Velocity	2.70 - 2.80 m/s	2.74 m/s	Yes
Force At 10 mm Displacement	-1259 - (-1721) N	-1606 N	Yes
Force At 18 mm Displacement	-2268 - (-3096) N	-2908 N	Yes

Comments:

Technician



Approved



05.27.2003 09:01:48 1767

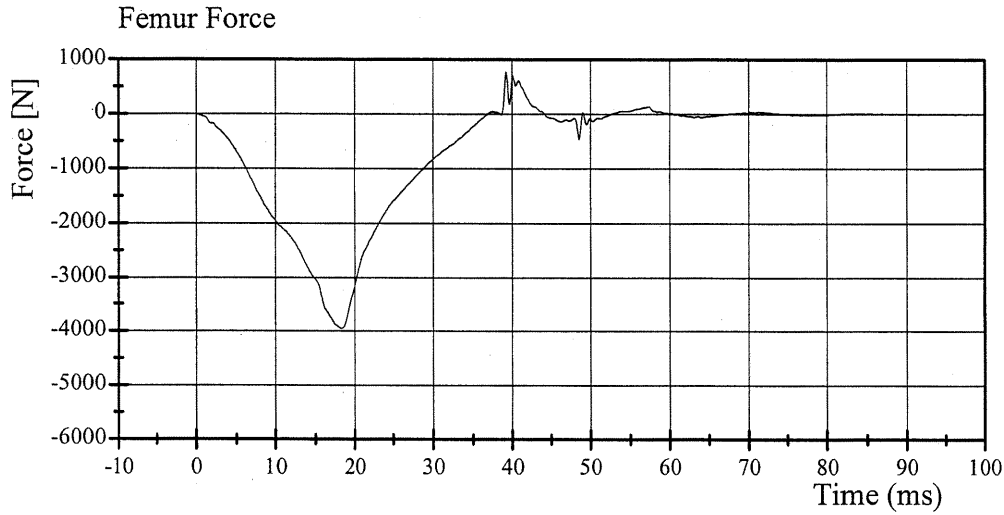


Transportation Research Center Inc.

572E Right Knee Slider Test

HIII 50th Male Serial No. 168 Calibration No. 21 - 1

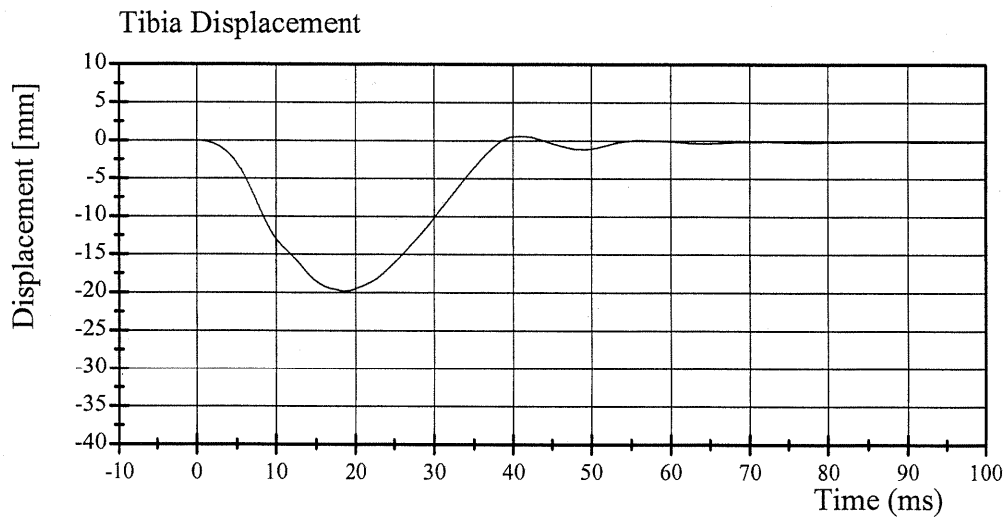
Test Date 05/27/2003



Filter Class: 600

Max: 767.7 N at 39.2 ms

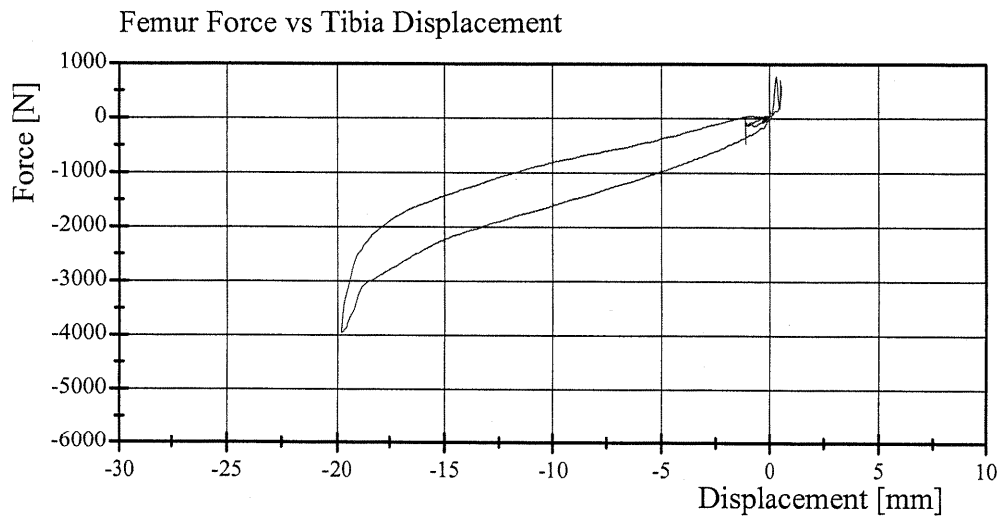
Min: -3952.1 N at 18.2 ms



Filter Class: 600

Max: 0.6 mm at 41.0 ms

Min: -19.8 mm at 18.4 ms



05.27.2003 09:01:49 1767



Transportation Research Center Inc.

572E Left Knee Test

HIII 50th Male Serial No. 168 Calibration No. 21 - 1

Test Date 05/27/2003

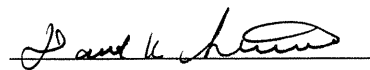
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Pendulum Velocity	2.07 - 2.13 m/s	2.09 m/s	Yes
Maximum Pendulum Force	4715 - 5783 N	5276 N	Yes

Comments:

Technician



Approved



05.27.2003 14:45:26 2108



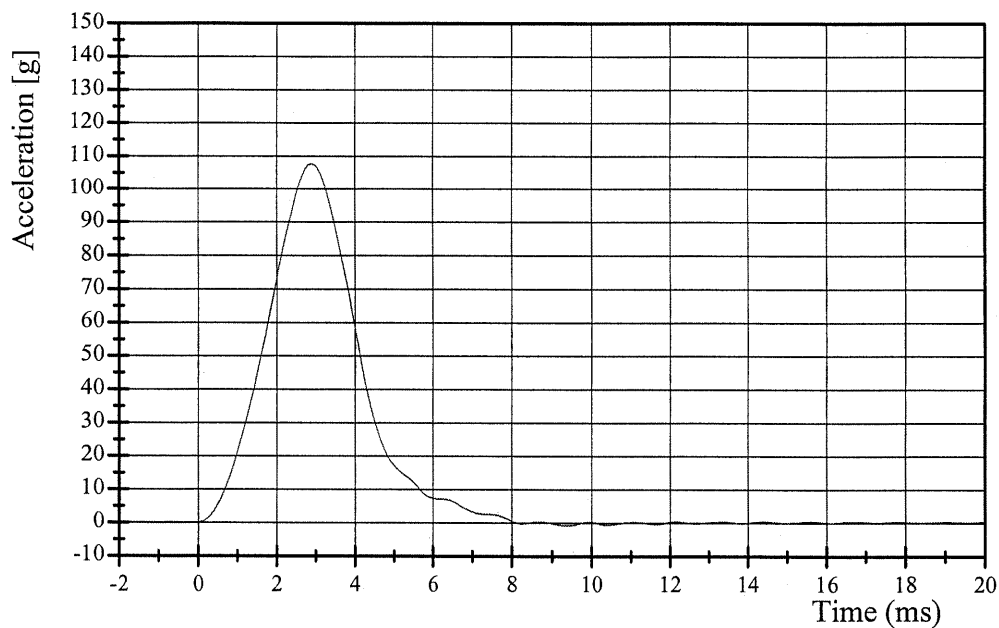
Transportation Research Center Inc.

572E Left Knee Test

HIII 50th Male Serial No. 168 Calibration No. 21 - 1

Test Date 05/27/2003

Pendulum Deceleration

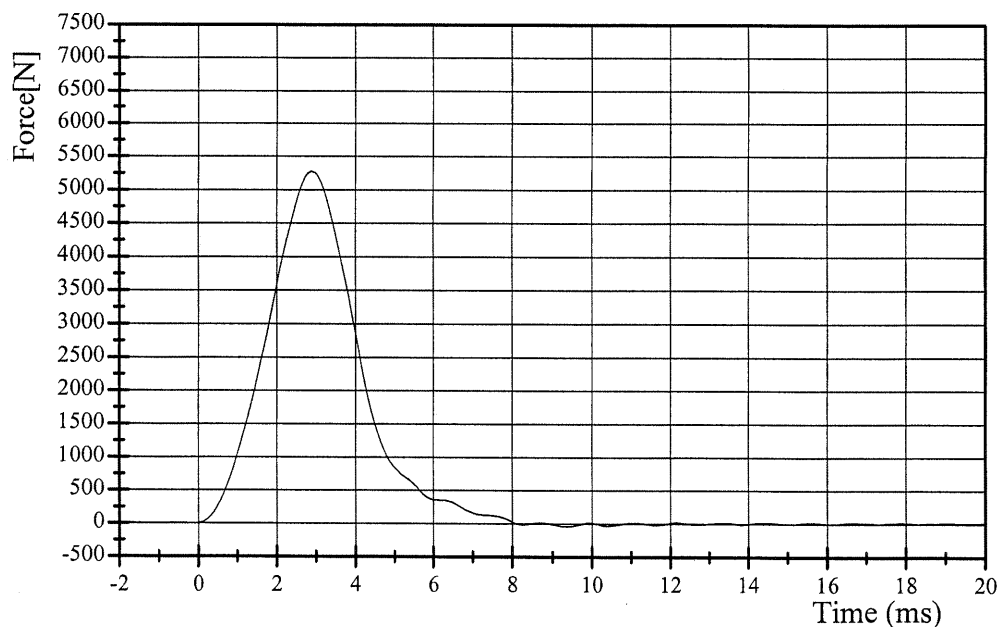


Filter Class: 600

Max: 107.8 g at 2.9 ms

Min: -0.8 g at 9.4 ms

Pendulum Force



Filter Class: 600

Max: 5276.0 N at 2.9 ms

Min: -38.3 N at 9.4 ms



Transportation Research Center Inc.

572E Right Knee Test

HIII 50th Male Serial No. 168 Calibration No. 21 - 1

Test Date 05/27/2003

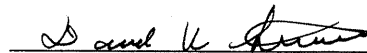
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Pendulum Velocity	2.07 - 2.13 m/s	2.10 m/s	Yes
Maximum Pendulum Force	4715 - 5783 N	4872 N	Yes

Comments:

Technician



Approved



05.27.2003 15:00:48 2110



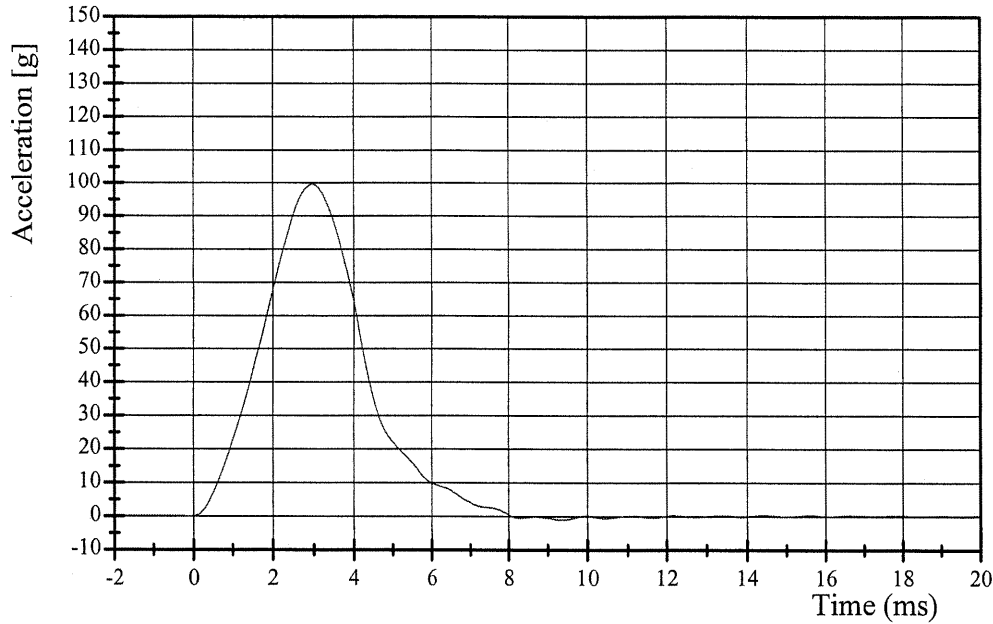
Transportation Research Center Inc.

572E Right Knee Test

HIII 50th Male Serial No. 168 Calibration No. 21 - 1

Test Date 05/27/2003

Pendulum Deceleration

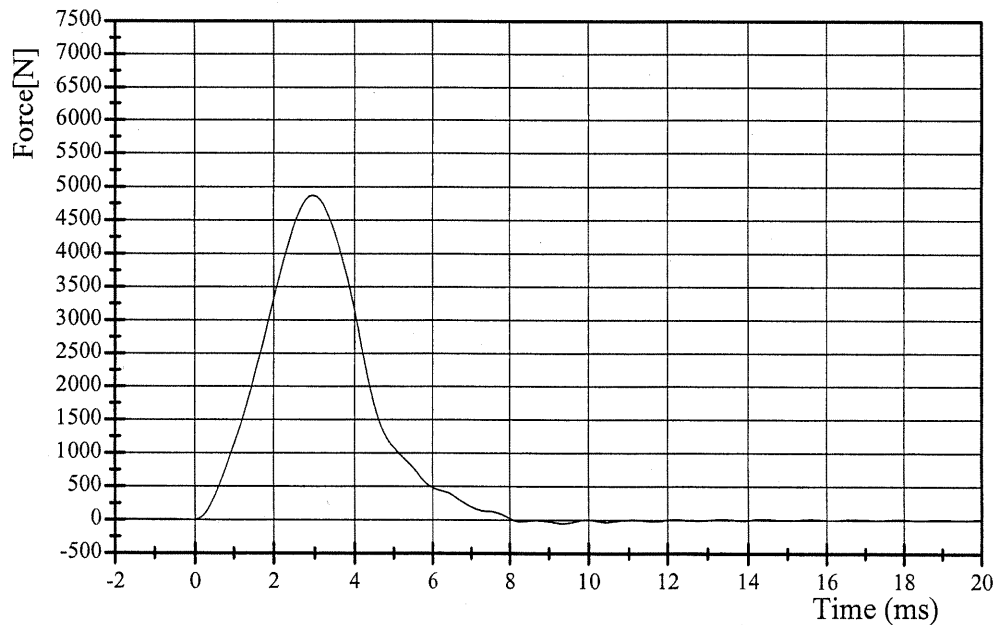


Filter Class: 600

Max: 99.6 g at 3.0 ms

Min: -1.0 g at 9.4 ms

Pendulum Force



Filter Class: 600

Max: 4872.4 N at 3.0 ms

Min: -49.3 N at 9.4 ms



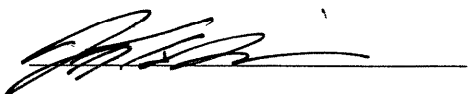
Pre-Test Dummy Configuration and Performance Verification Data

Passenger Dummy S/N: 169

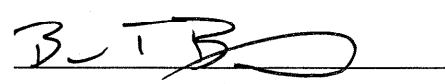
Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 169 Calibration No. 18

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	880	Yes
B	Shoulder Pivot Height	505.5 - 520.7	518	Yes
C	H-Point Height	83.8 - 88.9	88	Yes
D	H-Point From Seatback	134.6 - 139.7	138	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	92	Yes
F	Thigh Clearance	139.7 - 154.9	149	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	297	Yes
H	Skull Cap To Backline	40.6 - 45.7	43	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	344	Yes
J	Elbow Rest Height	190.5 - 210.8	209	Yes
K	Buttock Knee Length	579.1 - 604.5	594	Yes
L	Popliteal Height	429.3 - 454.7	439	Yes
M	Knee Pivot Height	485.1 - 500.4	493	Yes
N	Buttock Popliteal Length	452.1 - 477.5	477	Yes
O	Chest Depth	213.4 - 228.6	221	Yes
P	Foot Length	251.5 - 266.7	252	Yes
V	Shoulder Breadth	421.6 - 436.9	429	Yes
W	Foot Breadth	91.4 - 106.7	102	Yes
Y	Chest Circumference	970.3 - 1000.8	990	Yes
Z	Waist Circumference	835.7 - 866.1	856	Yes
AA	Location For Chest Circumference	429.3 - 434.3	432	Yes
BB	Location For Waist Circumference	226.1 - 231.1	229	Yes

Technician



Approved



Transportation Research Center Inc.

572E Head Drop Test

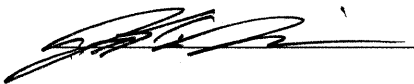
HIII 50th Male Serial No. 169 Calibration No. 18 - 1

Test Date 04/30/2003

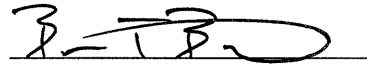
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Peak Resultant Acceleration	225 - 275 g	252.4 g	Yes
Peak Lateral Acceleration	15 g Max	-5.3 g	Yes
Oscillations After Main Pulse	Less Than 10% of Peak Resultant Acceleration?	Yes	Yes

Comments:

Technician



Approved



04.30.2003 10:54:52 616

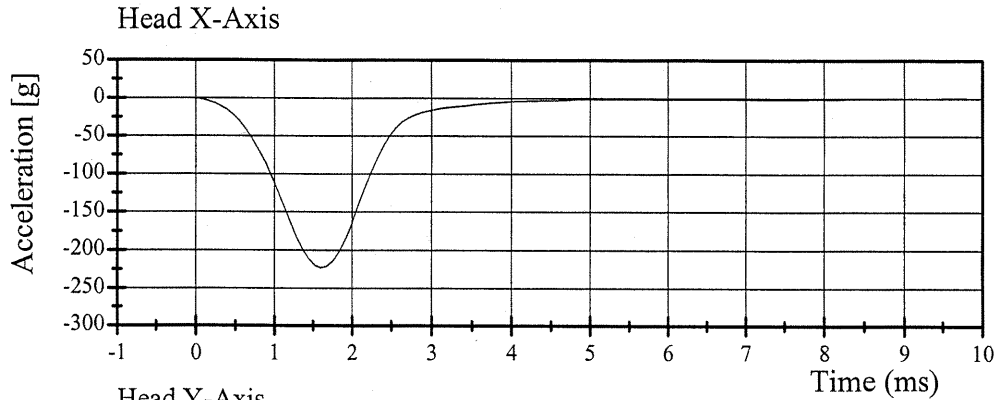


Transportation Research Center Inc.

572E Head Drop Test

HIII 50th Male Serial No. 169 Calibration No. 18 - 1

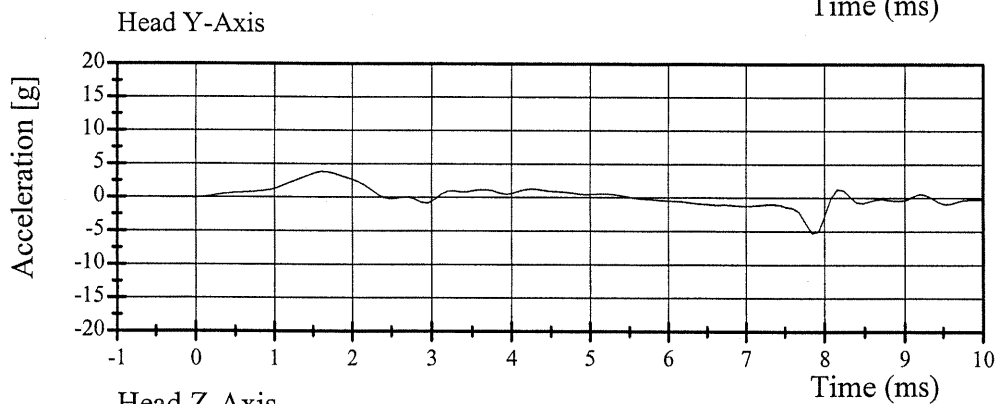
Test Date 04/30/2003



Filter Class: 1000

Max: 0.4 g at 9.6 ms

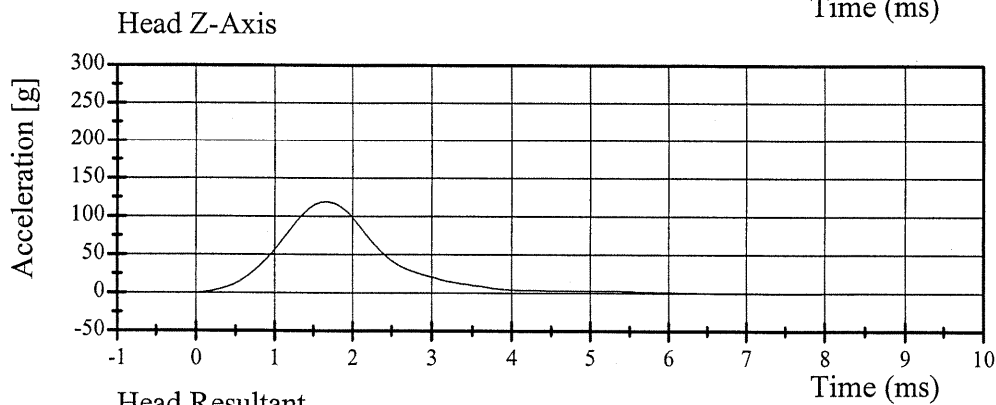
Min: -222.8 g at 1.6 ms



Filter Class: 1000

Max: 3.8 g at 1.6 ms

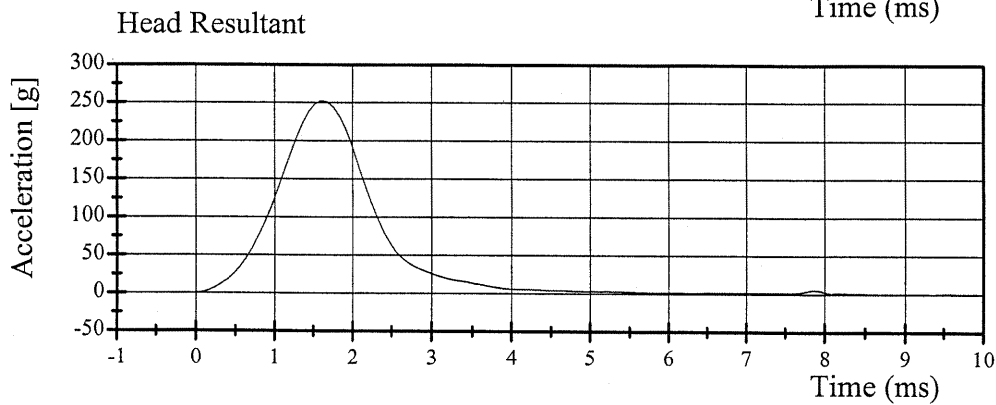
Min: -5.3 g at 7.8 ms



Filter Class: 1000

Max: 119.2 g at 1.7 ms

Min: -0.7 g at 7.2 ms



Filter Class: 1000

Max: 252.4 g at 1.6 ms

Min: 0.0 g at 4.9 ms

04.30.2003 10:54:53 616



Transportation Research Center Inc.

572E Neck Flexion Test - 6 Channel Transducer

HIII 50th Male Serial No. 169 Calibration No. 18 - 1

Test Date 05/02/2003

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	47 %	Yes
Impact Velocity	6.89 - 7.13 m/s	6.97 m/s	Yes
Pendulum Deceleration			
10 ms	22.50 - 27.50 g	26.25 g	Yes
20 ms	17.60 - 22.60 g	21.94 g	Yes
30 ms	12.50 - 18.50 g	18.09 g	Yes
Max Pendulum Deceleration	29.00 g	27.57 g	Yes
Max Pendulum Deceleration After 30 ms	29.00 g	17.98 g	Yes
Deceleration-Time Curve			
Decay Time To 5g	34 - 42 ms	34.24 ms	Yes
D Plane Rotation			
Max	64 - 78 °	71.52 °	Yes
Time	57 - 64 ms	60.00 ms	Yes
Moment About Occipital Condyle			
Max	88.1 - 108.5 N·m	97.91 N·m	Yes
Time	47 - 58 ms	47.12 ms	Yes
Rotation Angle-Time Curve			
Decay Time To Zero	113 - 128 ms	113.36 ms	Yes
Positive Moment-Time Curve			
Decay Time To Zero	97 - 107 ms	100.40 ms	Yes

Comments:

Technician



Approved



05.02.2003 07:49:50 497



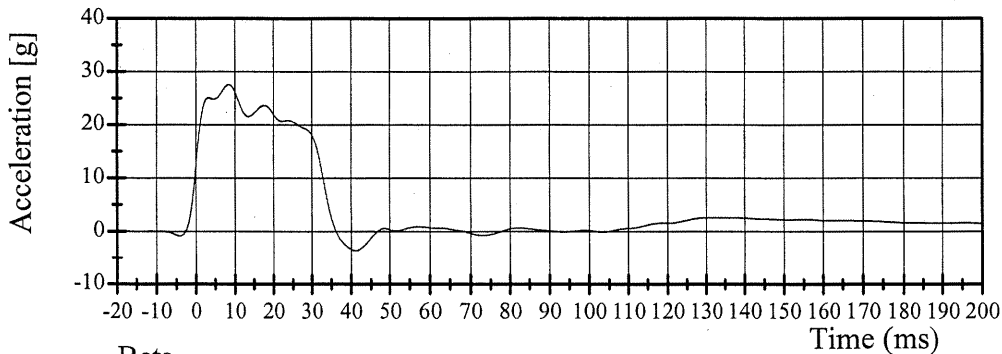
Transportation Research Center Inc.

572E Neck Flexion Test

HIII 50th Male Serial No. 169 Calibration No. 18 - 1

Test Date 05/02/2003

Pendulum Deceleration

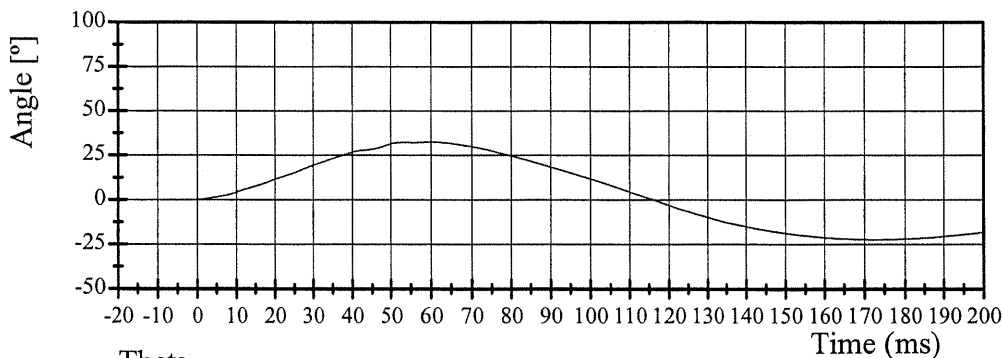


Filter Class: 60

Max: 27.6 g at 8.5 ms

Min: -3.6 g at 41.2 ms

Beta

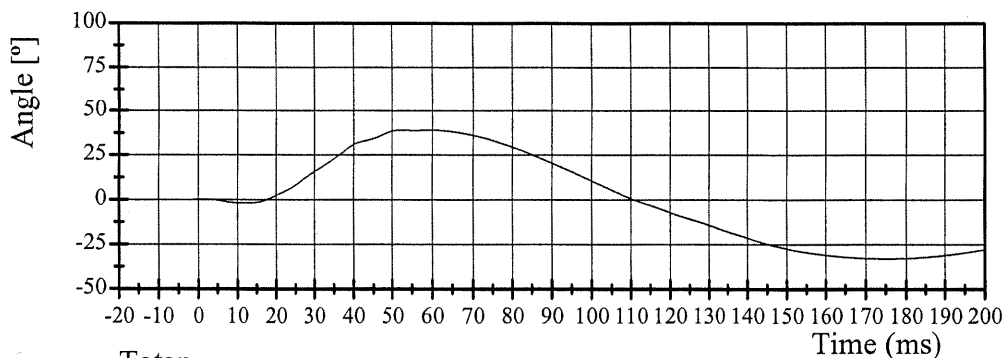


Filter Class: 60

Max: 32.5 ° at 60.4 ms

Min: -22.4 ° at 172.7 ms

Theta

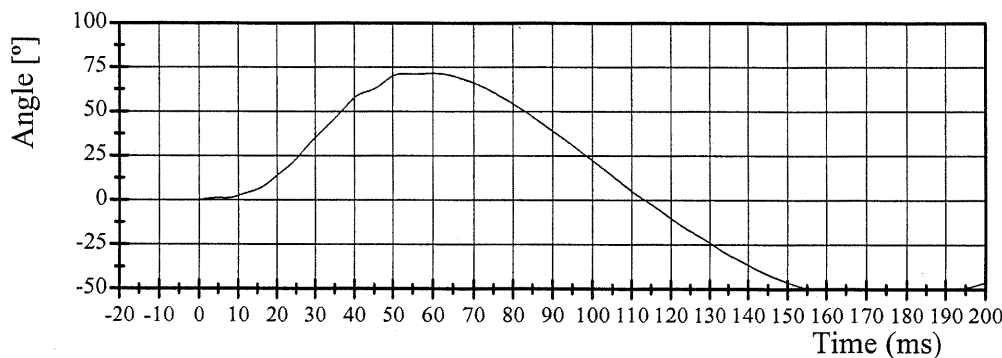


Filter Class: 60

Max: 39.0 ° at 59.5 ms

Min: -32.9 ° at 175.4 ms

Totan



Filter Class: 60

Max: 71.5 ° at 60.0 ms

Min: -55.3 ° at 174.0 ms



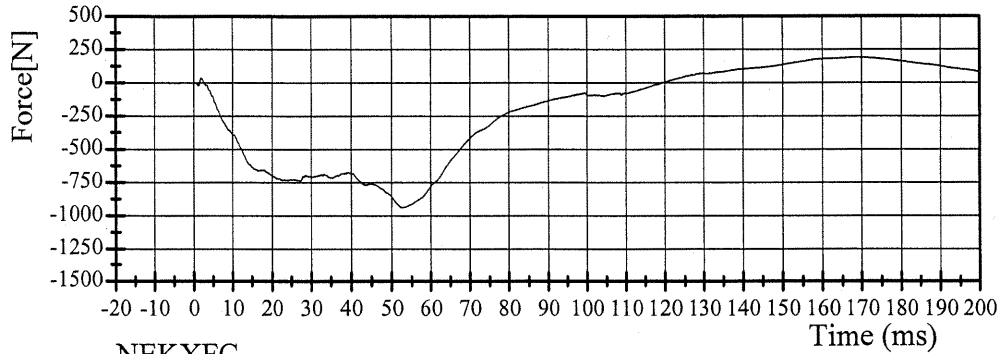
Transportation Research Center Inc.

572E Neck Flexion Test

HIII 50th Male Serial No. 169 Calibration No. 18 - 1

Test Date 05/02/2003

NEKXF

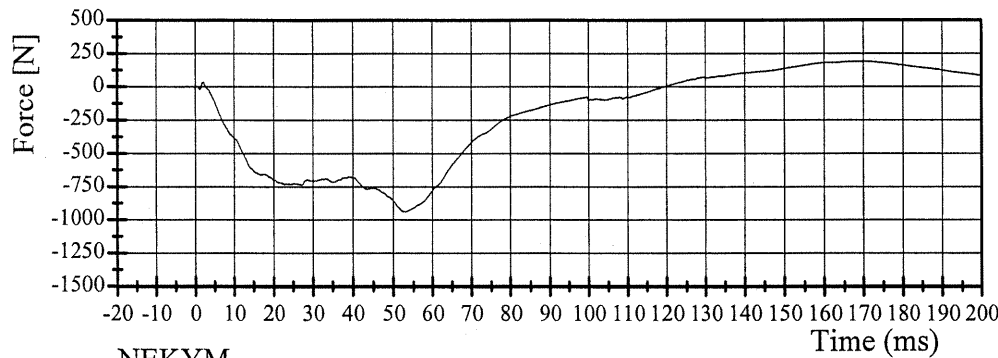


Filter Class: 1000

Max: 190.0 N at 168.9 ms

Min: -938.7 N at 52.9 ms

NEKXFC

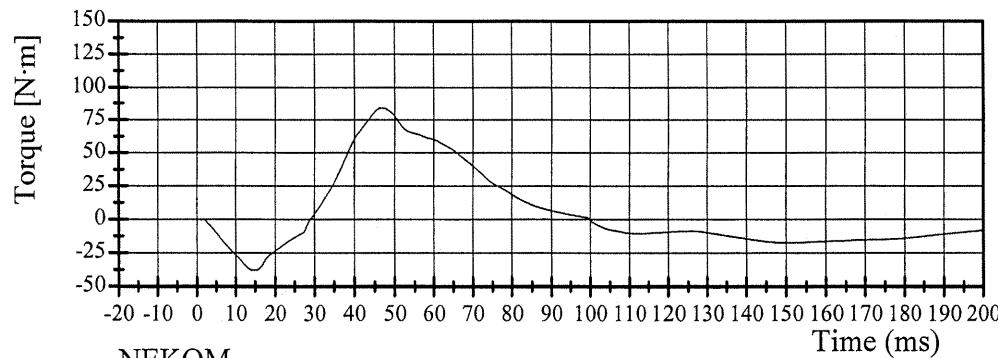


Filter Class: 600

Max: 189.5 N at 169.0 ms

Min: -938.1 N at 52.8 ms

NEKYM

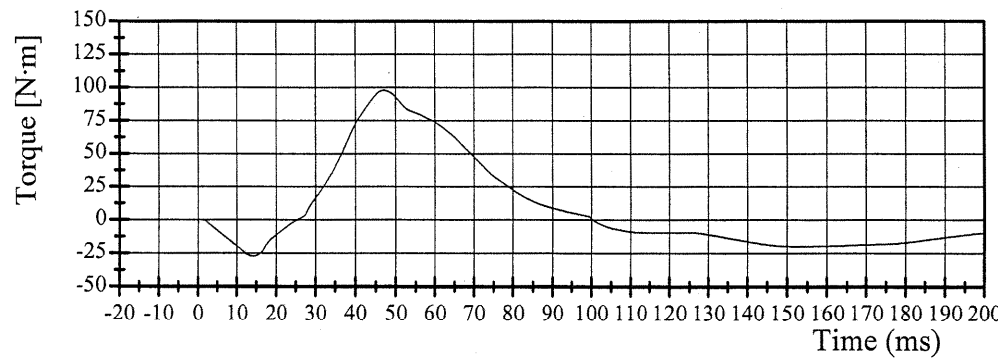


Filter Class: 600

Max: 84.0 N·m at 46.7 ms

Min: -38.0 N·m at 14.5 ms

NEKOM



Filter Class: 600

Max: 97.9 N·m at 47.1 ms

Min: -27.1 N·m at 14.2 ms

05.02.2003 07:49:53 497



Transportation Research Center Inc.

572E Neck Extension Test - 6 Channel Transducer

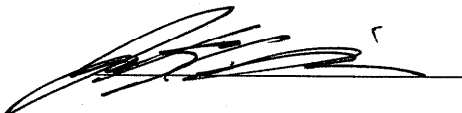
HIII 50th Male Serial No. 169 Calibration No. 18 - 1

Test Date 05/02/2003

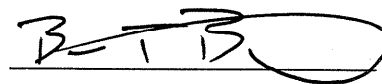
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	46 %	Yes
Impact Velocity	5.95 - 6.19 m/s	6.02 m/s	Yes
Pendulum Deceleration			
10 ms	17.20 - 21.20 g	19.28 g	Yes
20 ms	14.00 - 19.00 g	16.56 g	Yes
30 ms	11.00 - 16.00 g	14.47 g	Yes
Max Pendulum Deceleration	22.00 g	19.76 g	Yes
Max Pendulum Deceleration After 30 ms	22.00 g	14.42 g	Yes
Deceleration-Time Curve			
Decay Time To 5g	38 - 46 ms	39.92 ms	Yes
D Plane Rotation			
Max	81 - 106 °	98.85 °	Yes
Time	72 - 82 ms	74.56 ms	Yes
Moment About Occipital Condyle			
Min	-80.0 - (-52.9) N·m	-71.42 N·m	Yes
Time	65 - 79 ms	69.76 ms	Yes
Rotation Angle-Time Curve			
Decay Time To Zero	147 - 174 ms	155.52 ms	Yes
Negative Moment-Time Curve			
Decay Time To Zero	120 - 148 ms	144.88 ms	Yes

Comments:

Technician



Approved



05.02.2003 08:21:19 575



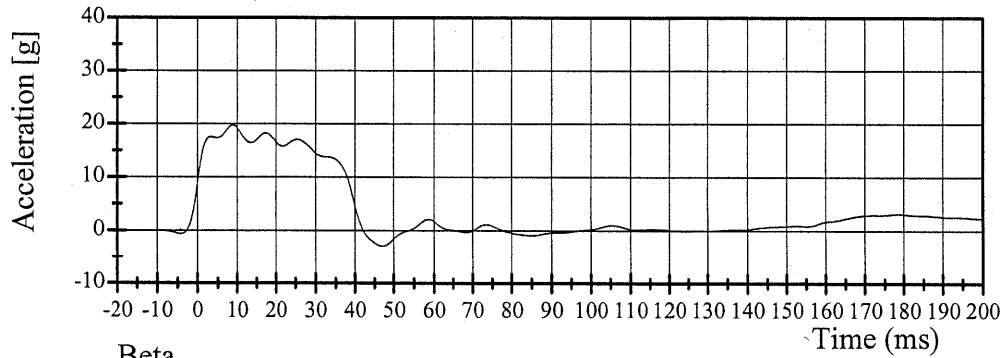
Transportation Research Center Inc.

572E Neck Extension Test

HIII 50th Male Serial No. 169 Calibration No. 18 - 1

Test Date 05/02/2003

Pendulum Deceleration

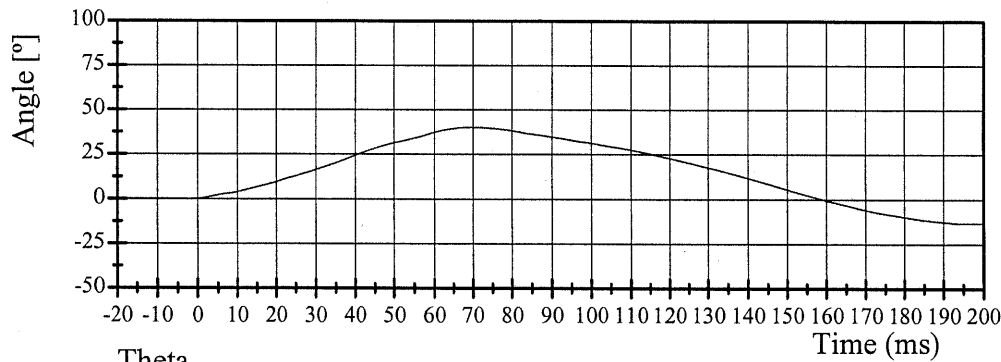


Filter Class: 60

Max: 19.8 g at 8.9 ms

Min: -2.9 g at 47.1 ms

Beta

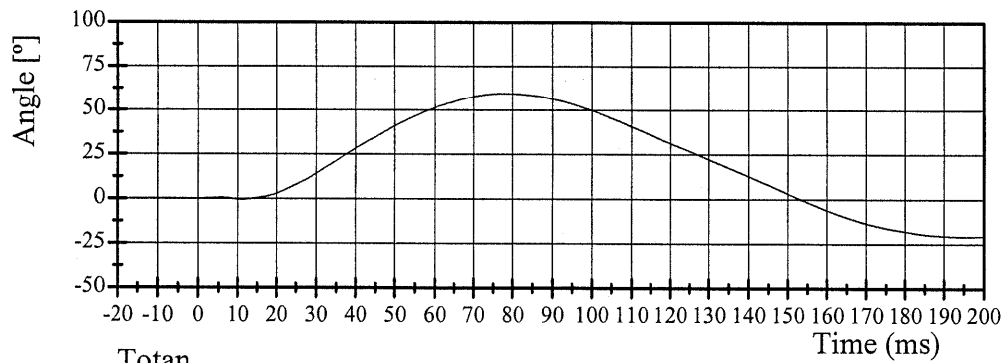


Filter Class: 60

Max: 40.2 ° at 69.9 ms

Min: -13.3 ° at 201.0 ms

Theta

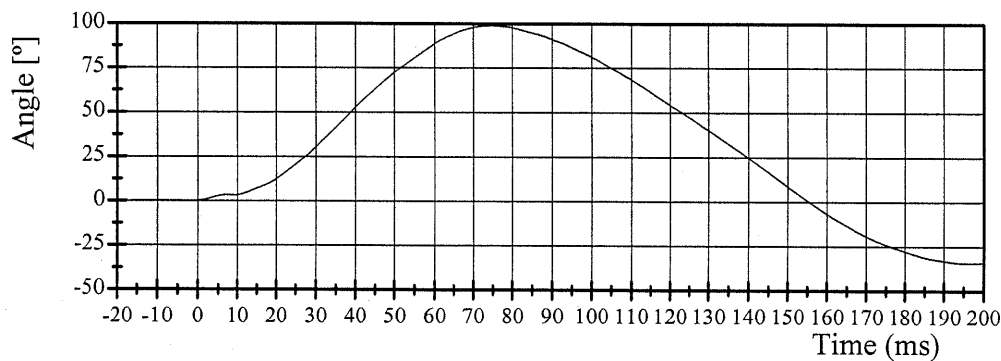


Filter Class: 60

Max: 59.5 ° at 78.7 ms

Min: -20.8 ° at 195.1 ms

Totan



Filter Class: 60

Max: 98.8 ° at 74.6 ms

Min: -34.2 ° at 195.8 ms

05.02.2003 08:21:20 575



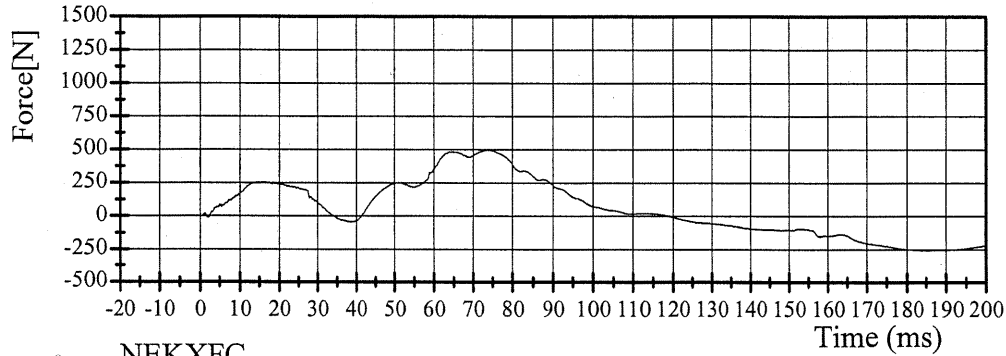
Transportation Research Center Inc.

572E Neck Extension Test

HIII 50th Male Serial No. 169 Calibration No. 18 - 1

Test Date 05/02/2003

NEKXF

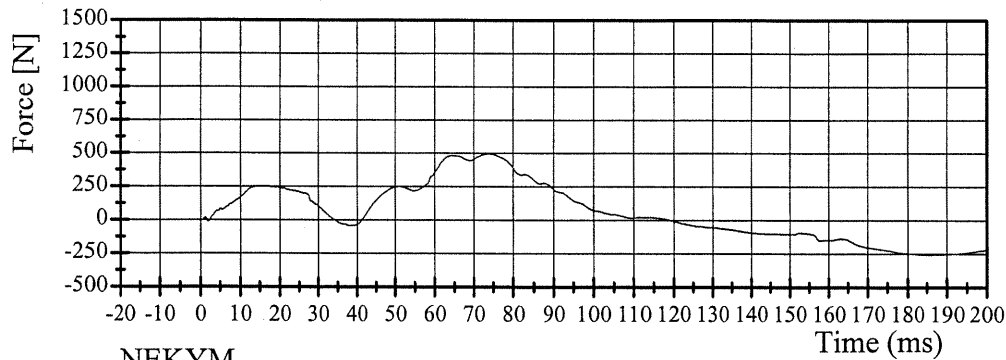


Filter Class: 1000

Max: 497.1 N at 74.2 ms

Min: -256.0 N at 185.7 ms

NEKXFC

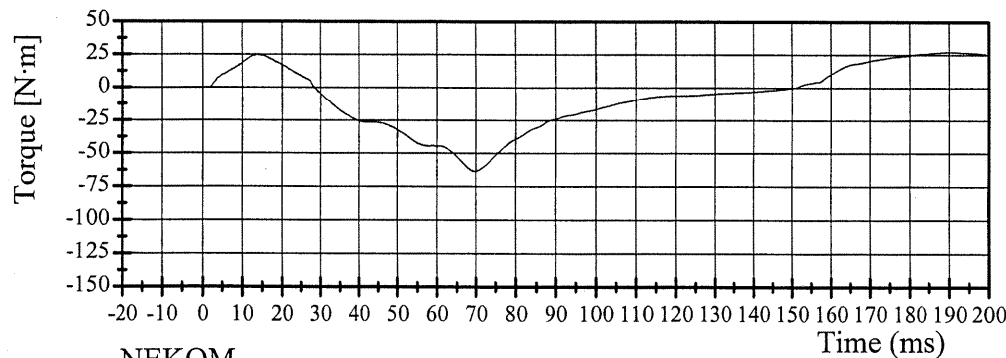


Filter Class: 600

Max: 496.7 N at 74.2 ms

Min: -255.7 N at 185.5 ms

NEKYM

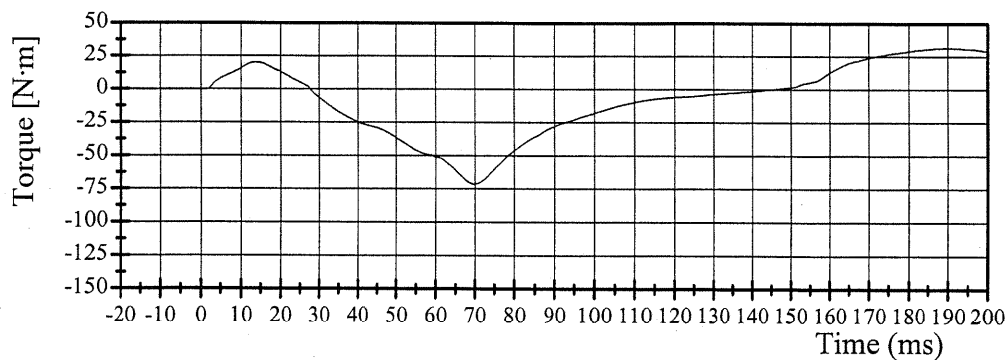


Filter Class: 600

Max: 27.2 N·m at 190.1 ms

Min: -63.5 N·m at 69.7 ms

NEKOM



Filter Class: 600

Max: 31.7 N·m at 190.1 ms

Min: -71.4 N·m at 69.8 ms

05.02.2003 08:21:22 575



Transportation Research Center Inc.

572E Thorax Test

HIII 50th Male Serial No. 169 Calibration No. 18 - 1

Test Date 05/02/2003

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	46 %	Yes
Pendulum Velocity	6.59 - 6.83 m/s	6.66 m/s	Yes
Maximum Chest Deflection	-72.6 - (-63.5) mm	-67.3 mm	Yes
Maximum Resistive Force	5160 - 5894 N	5609 N	Yes
Internal Hysteresis	69 - 85 %	72 %	Yes

Comments:

Technician



Approved



05.02.2003 13:47:00 963



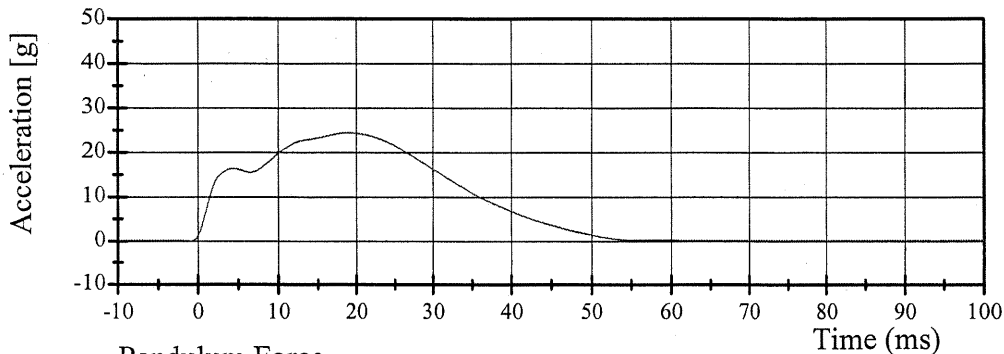
Transportation Research Center Inc.

572E Thorax Test

HIII 50th Male Serial No. 169 Calibration No. 18 - 1

Test Date 05/02/2003

Pendulum Deceleration

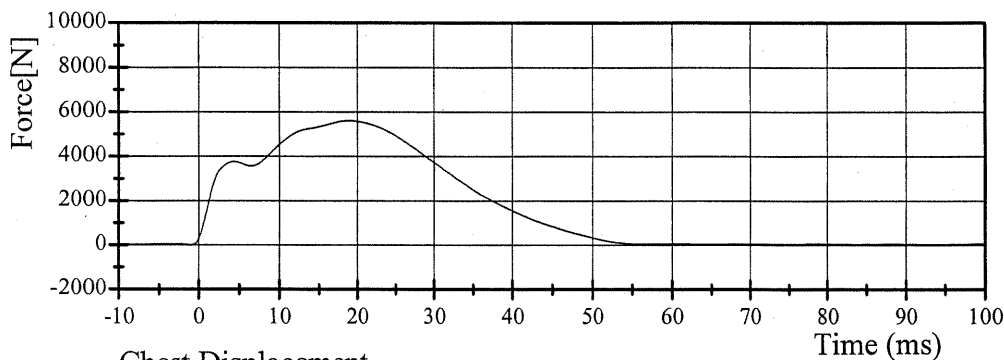


Filter Class: 180

Max: 24.5 g at 18.9 ms

Min: -0.1 g at 261.0 ms

Pendulum Force

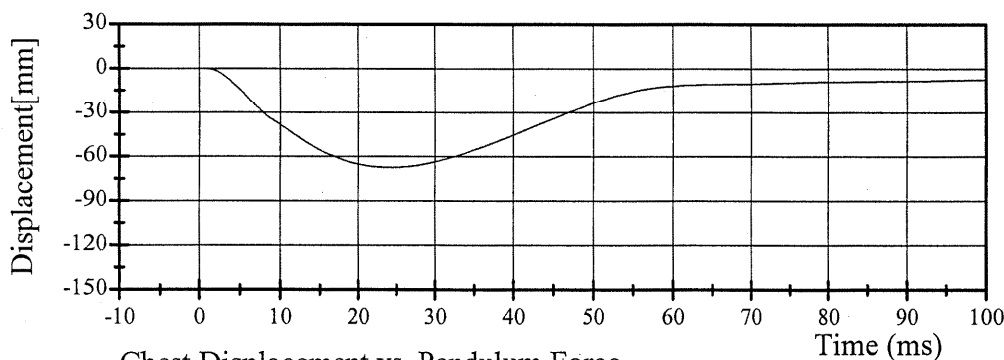


Filter Class: 180

Max: 5608.6 N at 18.9 ms

Min: -19.0 N at 261.0 ms

Chest Displacement

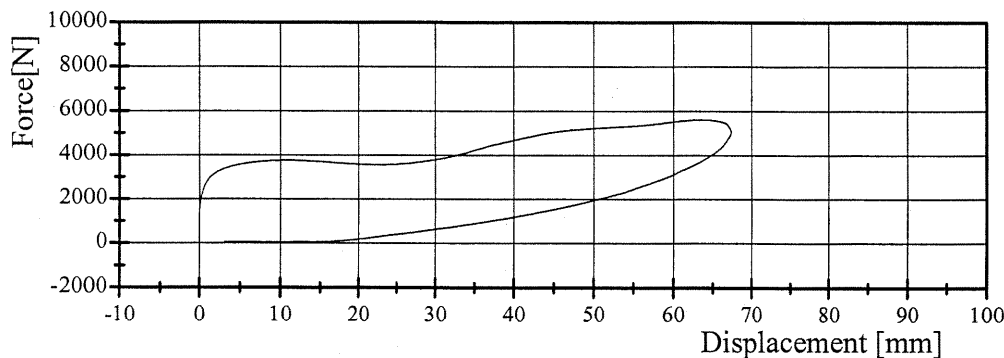


Filter Class: 180

Max: 0.1 mm at 0.5 ms

Min: -67.3 mm at 24.5 ms

Chest Displacement vs. Pendulum Force



05.02.2003 13:47:01 963



Transportation Research Center Inc

Hybrid III Hip Range of Motion

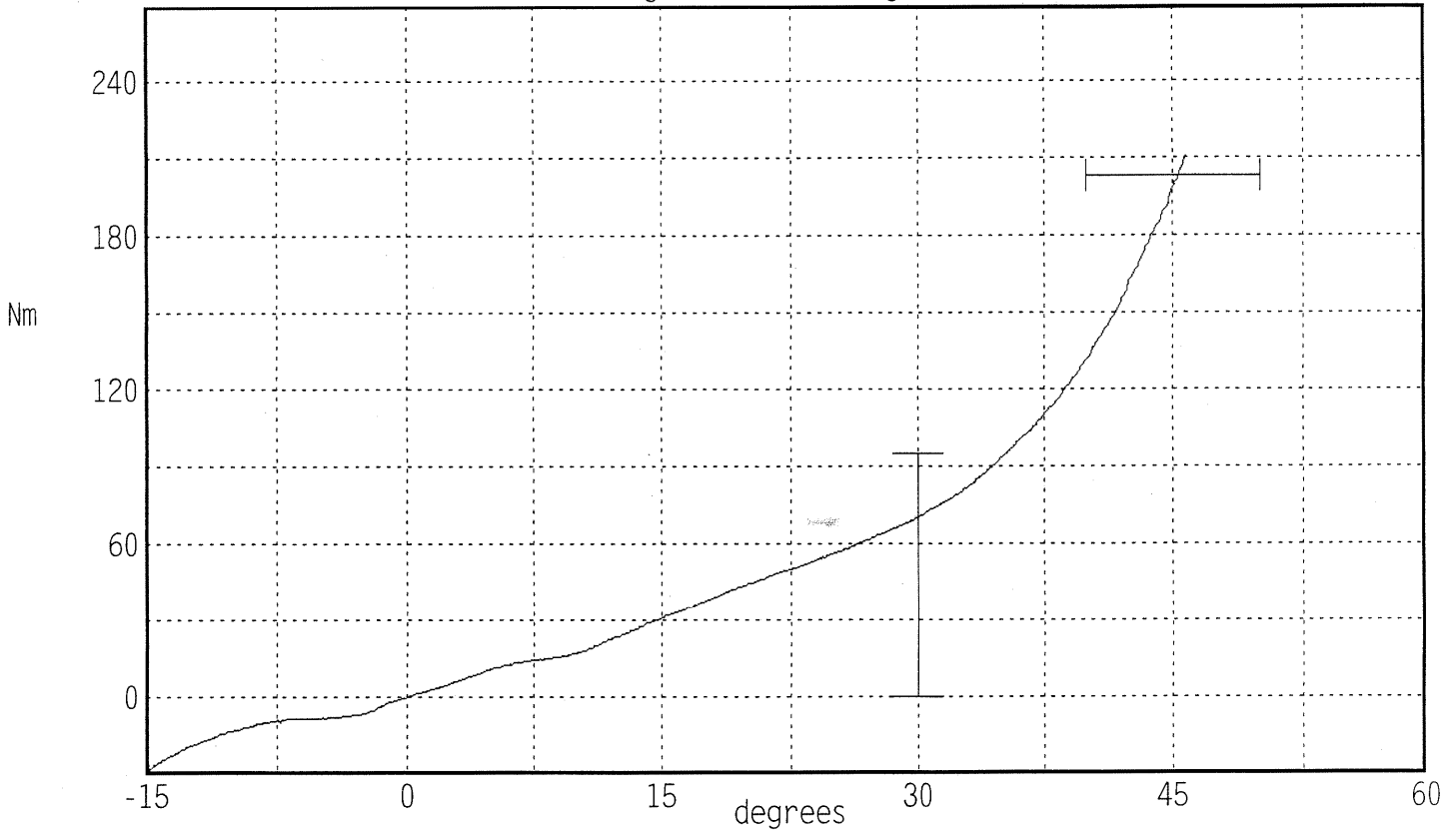
Serial Number: 169L
Test Number: 169C18
Comments:

Date: 04/30/2003
Time: 08:00

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.7 °C Pass
Humidity	10 - 70	34 % Pass
Moment at 30 deg	<= 94.9	70.4 Nm Pass
Angle at 203 Nm	40.0 - 50.0	45.4 deg Pass
Average Velocity	5.0 - 10.0	7.4 deg/sec Pass

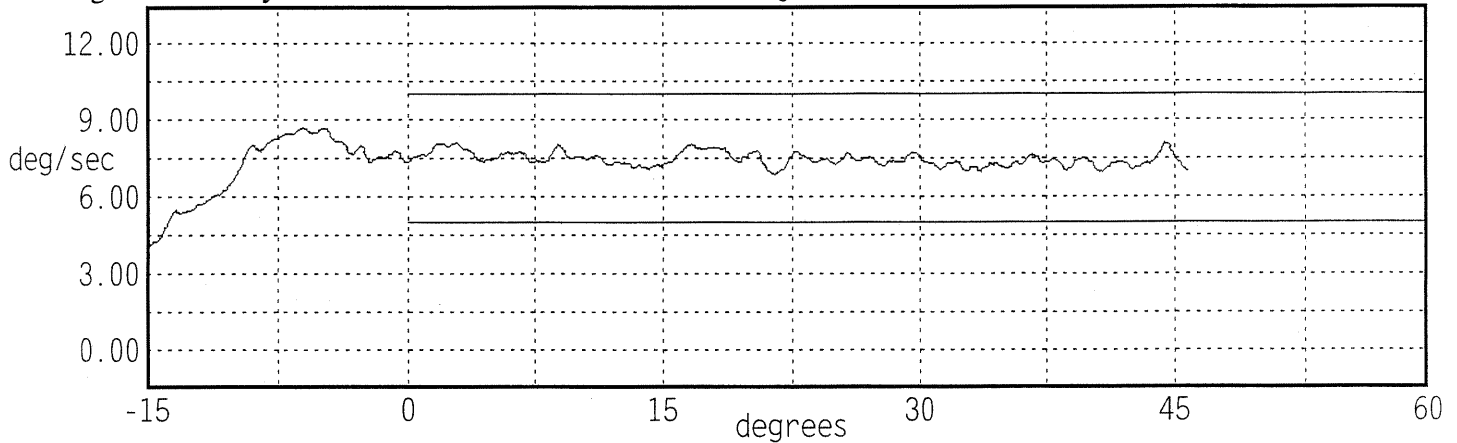
Peak Moment: 210.7 Nm at 45.7 deg
Peak Angle: 45.7 deg at 210.7 Nm

Moment About H-Point



Angular Velocity

Max: 8.1 deg/sec Min: 6.9 deg/sec



Transportation Research Center Inc

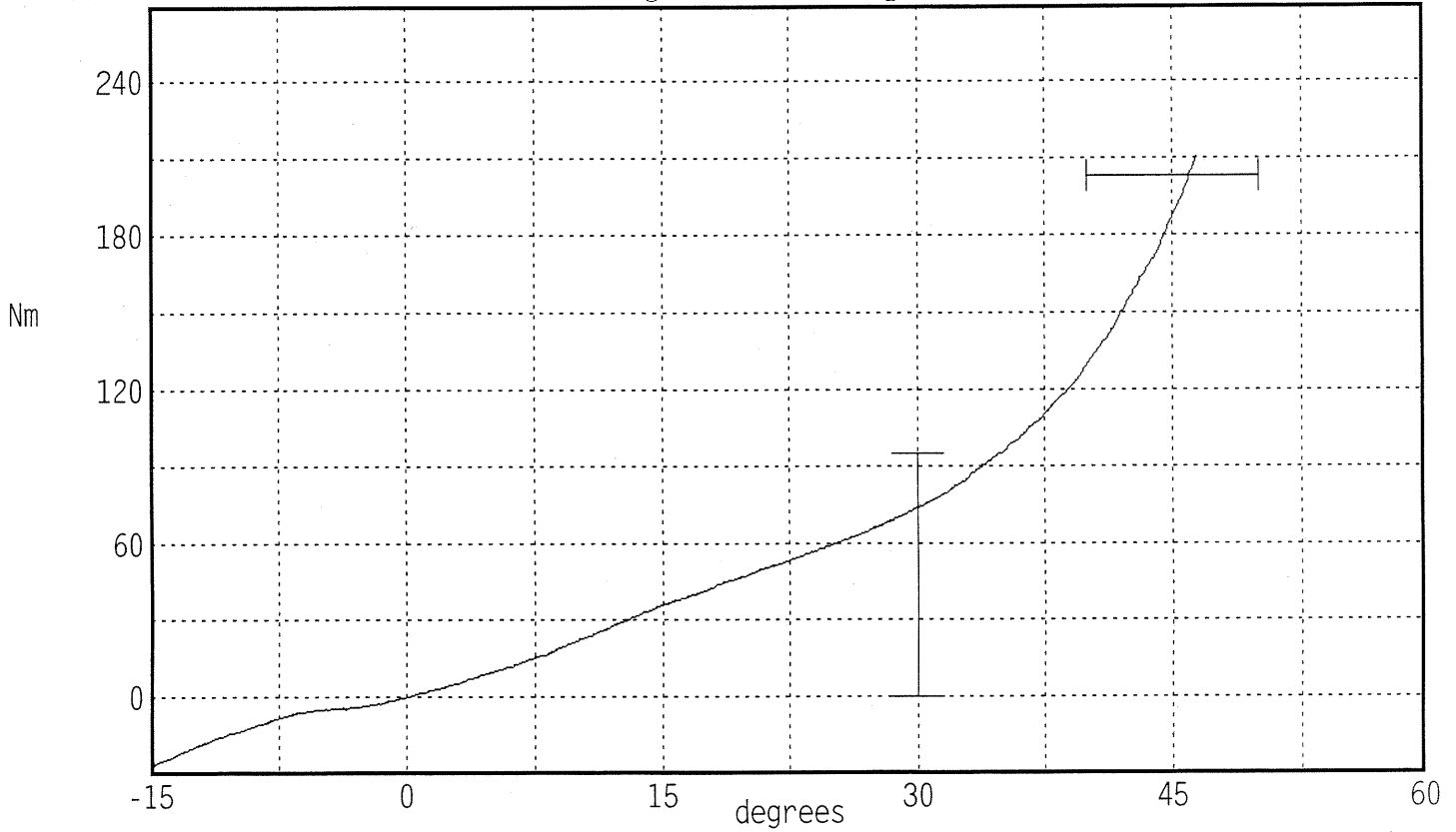
Hybrid III Hip Range of Motion

Serial Number: 169R
Test Number: 169C18
Comments:

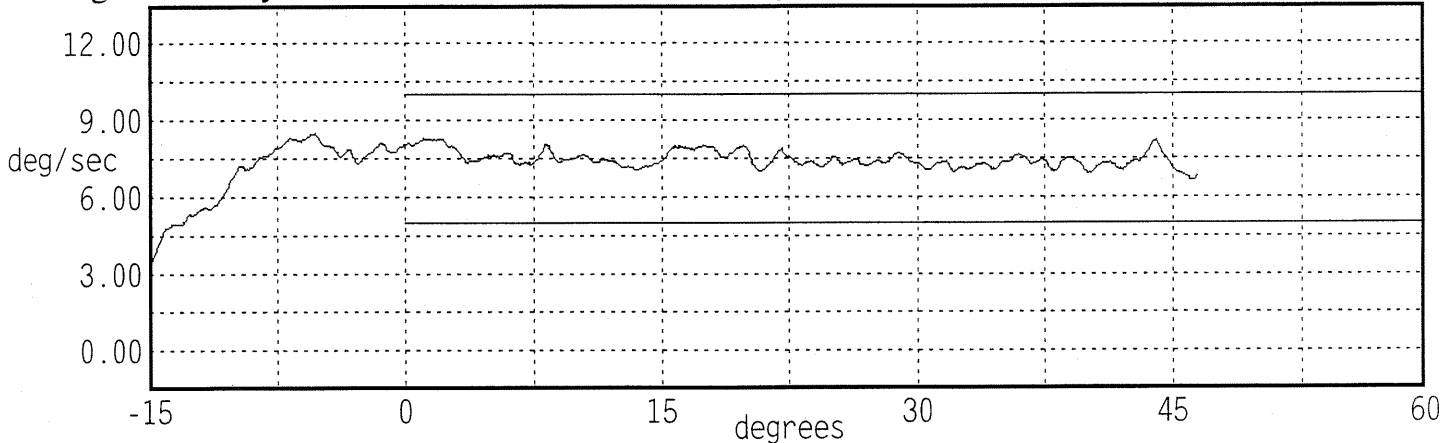
Date: 04/30/2003
Time: 08:04

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.7 °C Pass
Humidity	10 - 70	34 % Pass
Moment at 30 deg	<= 94.9	74.1 Nm Pass
Angle at 203 Nm	40.0 - 50.0	46.1 deg Pass
Average Velocity	5.0 - 10.0	7.4 deg/sec Pass

Moment About H-Point
Peak Moment: 210.4 Nm at 46.4 deg
Peak Angle: 46.4 deg at 210.4 Nm



Angular Velocity Max: 8.3 deg/sec Min: 6.6 deg/sec



Transportation Research Center Inc.

572E Left Knee Slider Test

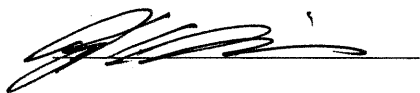
HIII 50th Male Serial No. 169 Calibration No. 18 - 4

Test Date 05/01/2003

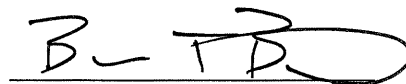
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	43 %	Yes
Pendulum Velocity	2.70 - 2.80 m/s	2.73 m/s	Yes
Force At 10 mm Displacement	-1259 - (-1721) N	-1478 N	Yes
Force At 18 mm Displacement	-2268 - (-3096) N	-3083 N	Yes

Comments:

Technician



Approved



05.01.2003 14:48:48 1824



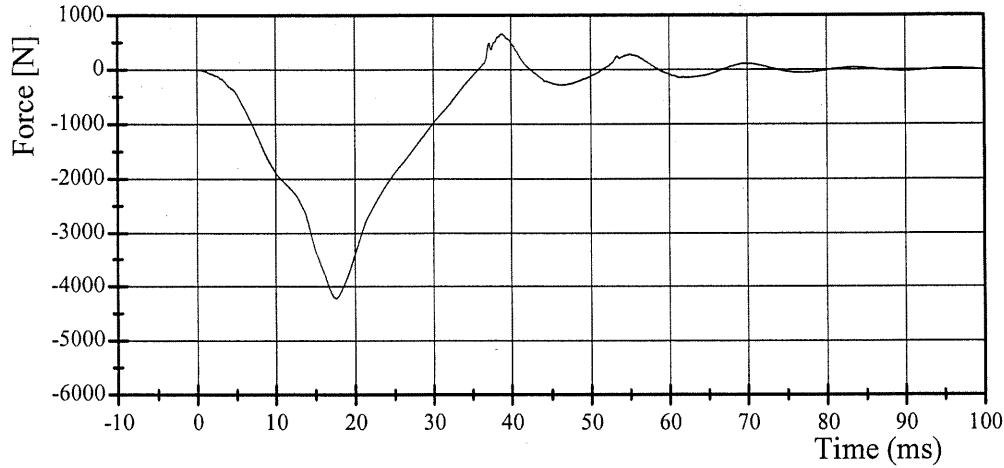
Transportation Research Center Inc.

572E Left Knee Slider Test

HIII 50th Male Serial No. 169 Calibration No. 18 - 4

Test Date 05/01/2003

Femur Force

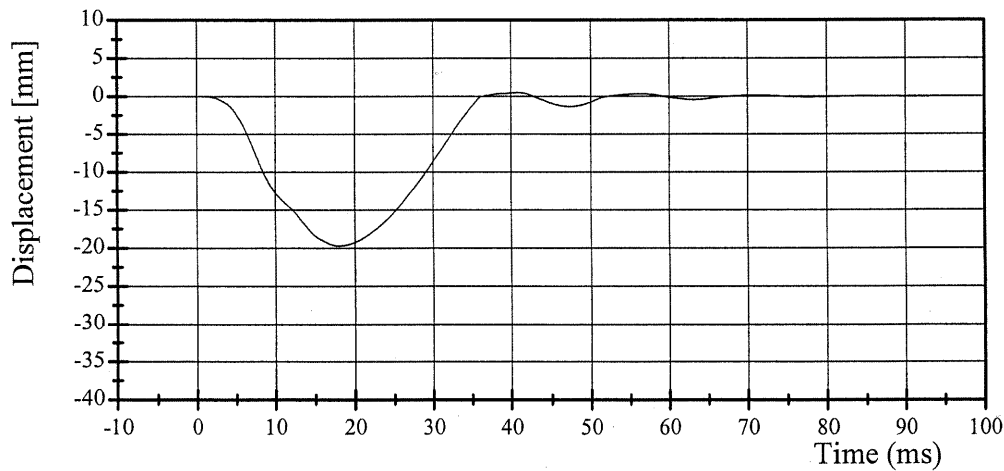


Filter Class: 600

Max: 653.2 N at 38.8 ms

Min: -4218.2 N at 17.6 ms

Tibia Displacement

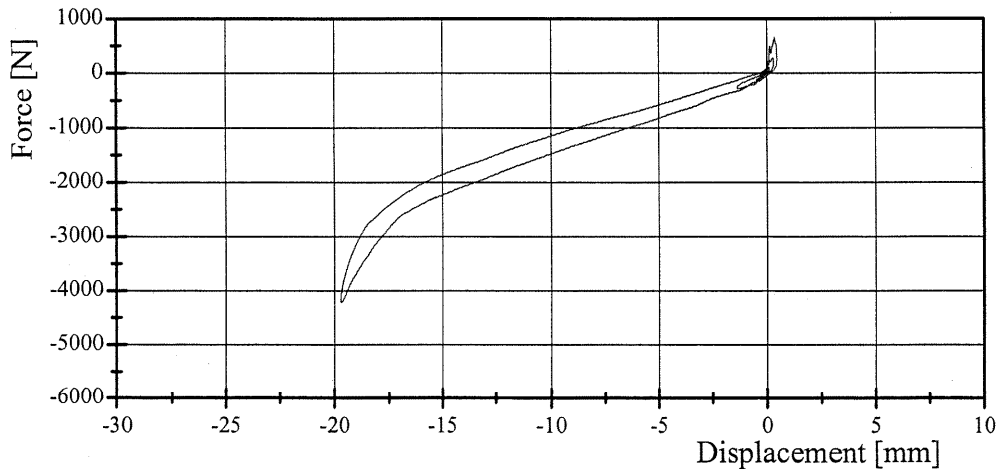


Filter Class: 600

Max: 0.5 mm at 41.0 ms

Min: -19.7 mm at 18.0 ms

Femur Force vs Tibia Displacement



05.01.2003 14:48:49 1824



Transportation Research Center Inc.

572E Right Knee Slider Test

HIII 50th Male Serial No. 169 Calibration No. 18 - 1

Test Date 05/01/2003

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	43 %	Yes
Pendulum Velocity	2.70 - 2.80 m/s	2.73 m/s	Yes
Force At 10 mm Displacement	-1259 - (-1721) N	-1379 N	Yes
Force At 18 mm Displacement	-2268 - (-3096) N	-2486 N	Yes

Comments:

Technician



Approved



05.01.2003 15:48:54 1834

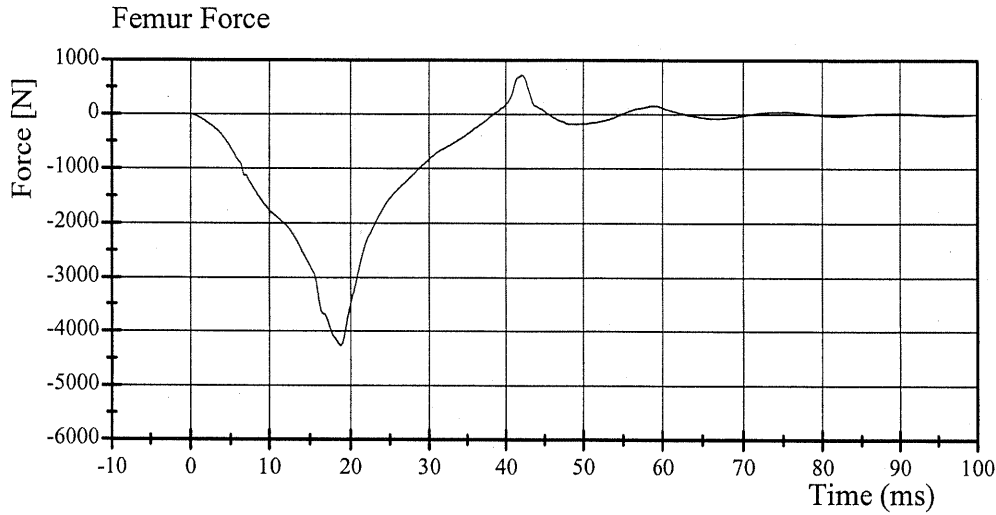


Transportation Research Center Inc.

572E Right Knee Slider Test

HIII 50th Male Serial No. 169 Calibration No. 18 - 1

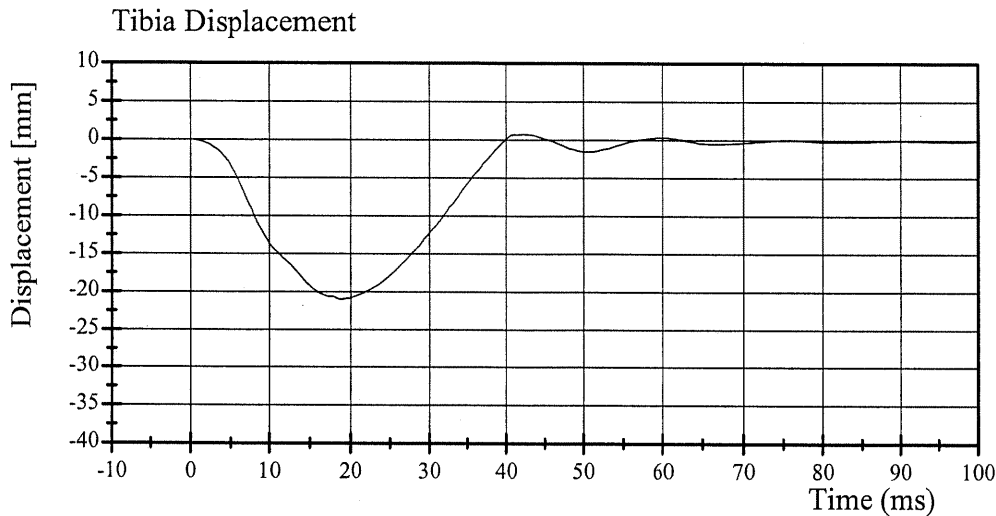
Test Date 05/01/2003



Filter Class: 600

Max: 718.4 N at 42.2 ms

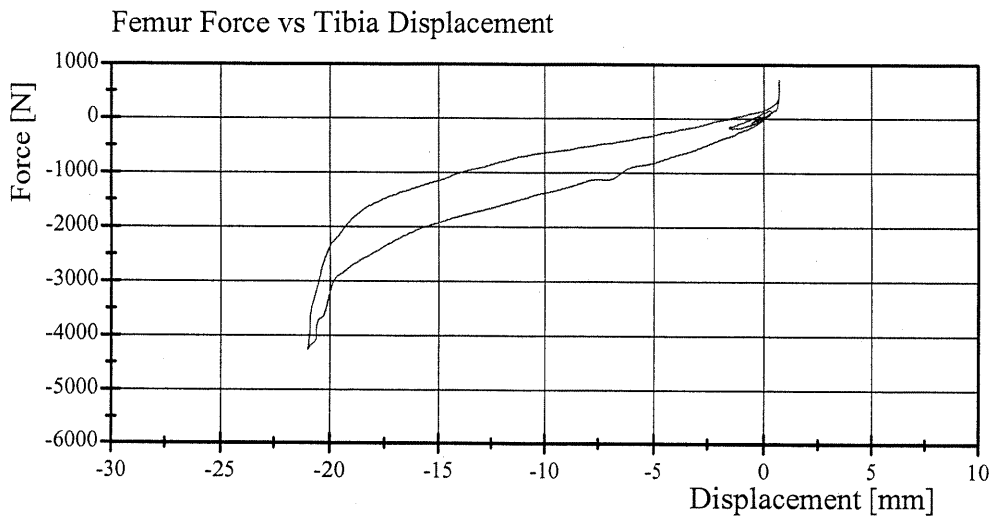
Min: -4269.7 N at 18.7 ms



Filter Class: 600

Max: 0.7 mm at 42.2 ms

Min: -21.0 mm at 18.8 ms



05.01.2003 15:48:55 1834



Transportation Research Center Inc.

572E Left Knee Test

HIII 50th Male Serial No. 169 Calibration No. 18 - 1

Test Date 04/30/2003

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Pendulum Velocity	2.07 - 2.13 m/s	2.11 m/s	Yes
Maximum Pendulum Force	4715 - 5783 N	5521 N	Yes

Comments:

Technician



Approved



05.02.2003 14:47:20 2173



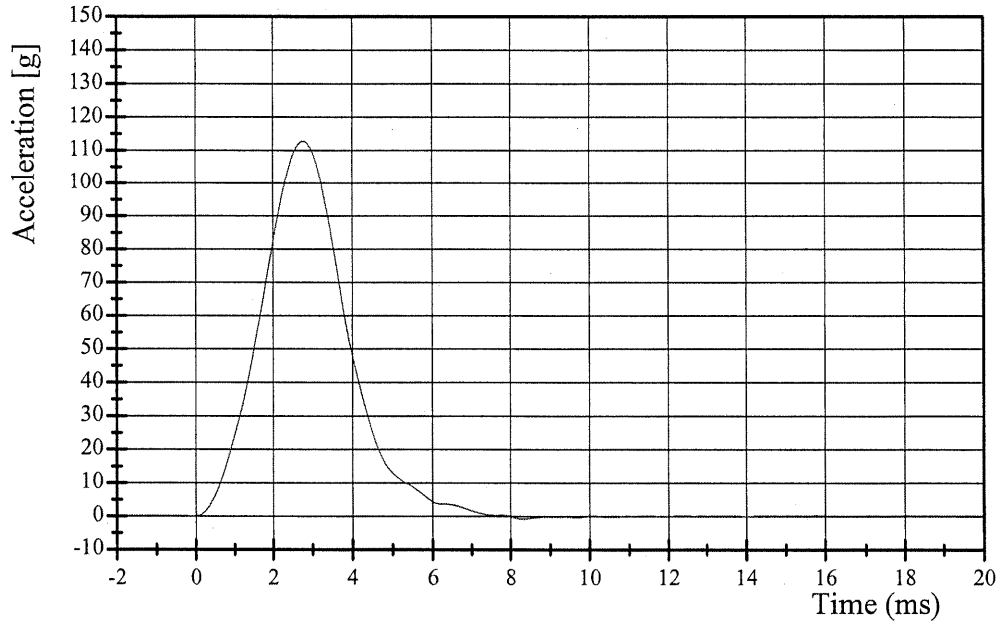
Transportation Research Center Inc.

572E Left Knee Test

HIII 50th Male Serial No. 169 Calibration No. 18 - 1

Test Date 04/30/2003

Pendulum Deceleration

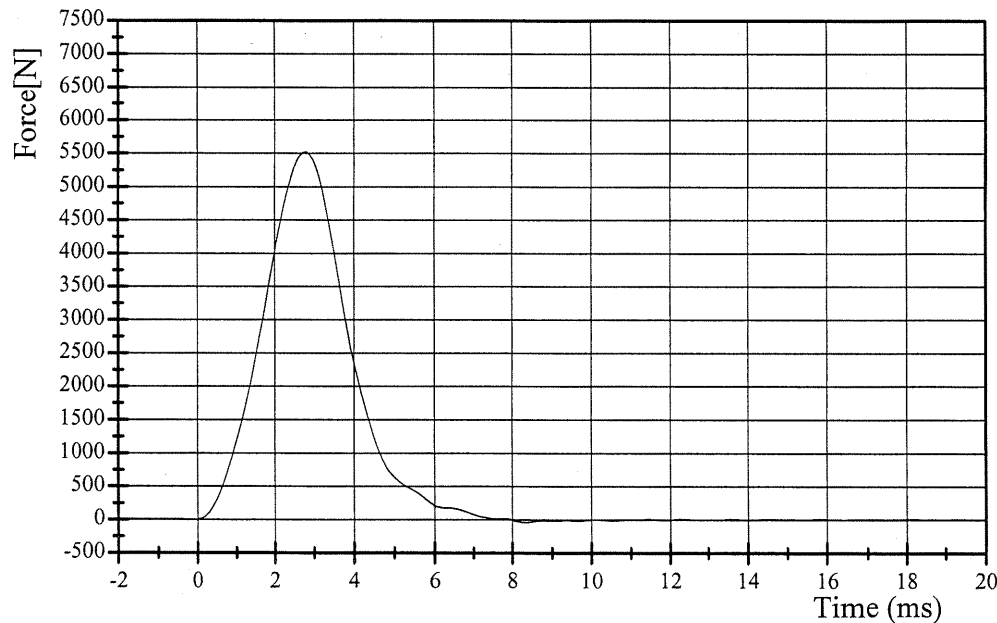


Filter Class: 600

Max: 112.8 g at 2.8 ms

Min: -0.8 g at 8.3 ms

Pendulum Force



Filter Class: 600

Max: 5520.9 N at 2.8 ms

Min: -37.7 N at 8.3 ms



Transportation Research Center Inc.

572E Right Knee Test

HIII 50th Male Serial No. 169 Calibration No. 18 - 1

Test Date 04/30/2003

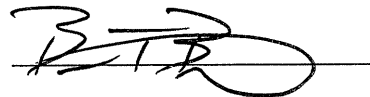
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Pendulum Velocity	2.07 - 2.13 m/s	2.10 m/s	Yes
Maximum Pendulum Force	4715 - 5783 N	5383 N	Yes

Comments:

Technician



Approved



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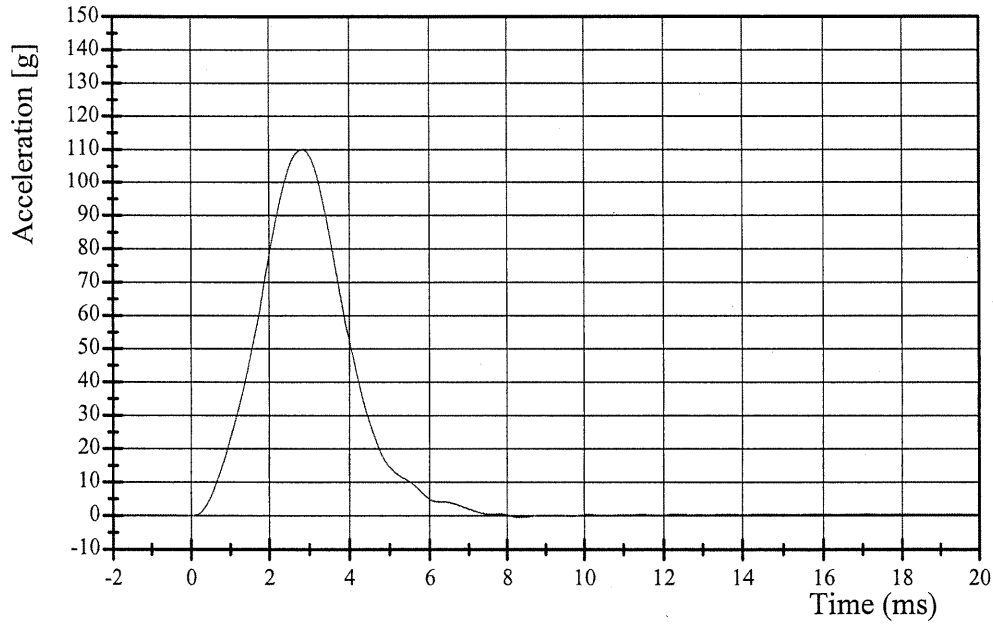
Transportation Research Center Inc.

572E Right Knee Test

HIII 50th Male Serial No. 169 Calibration No. 18 - 1

Test Date 04/30/2003

Pendulum Deceleration

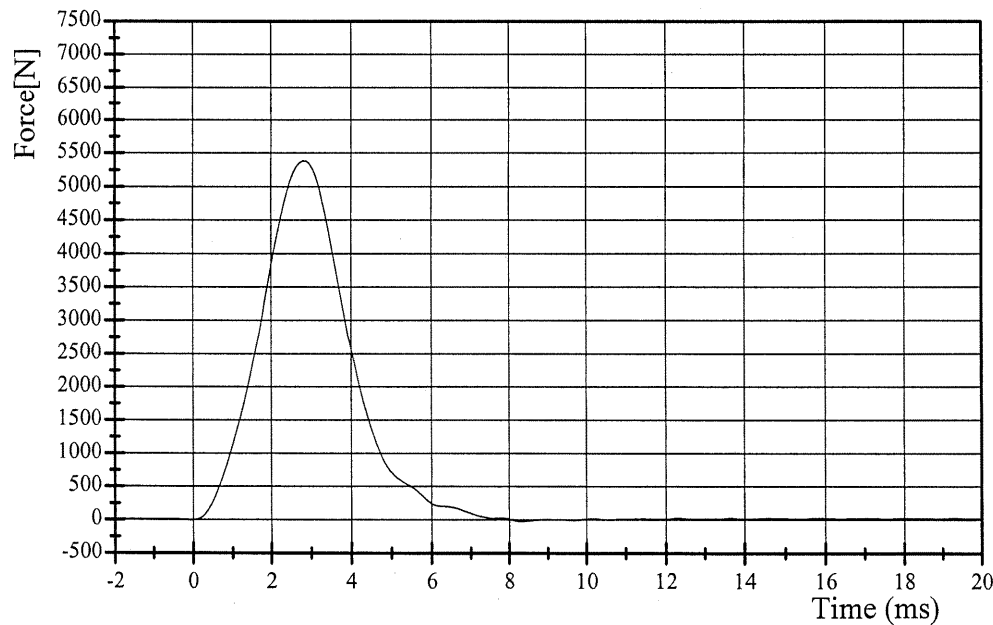


Filter Class: 600

Max: 110.0 g at 2.8 ms

Min: -0.5 g at 8.3 ms

Pendulum Force



Filter Class: 600

Max: 5382.6 N at 2.8 ms

Min: -25.1 N at 8.3 ms

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Appendix D

Miscellaneous Test Information

Sign Convention
SAE J211 MAR95

<u>Accelerometers:</u>	+X: Forward
	+Y: Rightward
	+Z: Downward
<u>Potentiometers:</u>	+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)
<u>Rotation potentiometers:</u>	
	+About the X-axis: Left foot-eversion Right foot-inversion
	+About the Y-axis: Left/right foot-dorsiflexion
	+About the Z-axis: Left foot-internal Right foot-external
<u>Load cells:</u>	+Femur force: Tension
	+Seat belt force: Tension
	+Barrier force: Tension
<u>Neck load cells:</u>	+X force: Head pushed rearward
	+Y force: Head pushed leftward
	+Z force: Head pulled upward (tension on neck)
	+X moment: Left ear rotating toward left shoulder
	+Y moment: Chin rotating toward chest
	+Z moment: Chin rotating toward left shoulder
<u>Tibia load cells:</u>	+X force: Ankle forward, knee rearward
	+Y force: Ankle rightward, knee leftward
	+Z force: Tension
	+X moment: Bottom of tibia moving leftward
	+Y moment: Bottom of tibia moving rearward

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	180
Lumbar	
Forces	1000
Moments	1000
Pelvis	
Accelerations	1000
Forces	1000
Moments	1000
Femur/Knee/Tibia/Ankle	
Forces	600
Moments	600
Displacements	180
Sled Accelerations	60
Steering Column Loads	600
Head form Accelerations	1000

Description Of Timing Marks On TRC High-Speed Film

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

The timing marks appear on the film as small red marks on the right edge of the film. Round marks are left by the Photosonic cameras.

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

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

To locate time-zero, observe the continuous LED that is visible on the left side of the frame at the beginning of each view. Locate the frame where the left side LED is fully extinguished and reverse 4 frames for the Photosonic cameras; reverse 5 frames for Hycam cameras; reverse 2 frames for Stalex cameras. This frame is time-zero.

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.

Dummy 168v+ Type HIII 50TH Descriptio VRTC - 168v w/ Red. Accel & THOR Legs ICAL'd 5-24-02(DKS 6-10-03)J211

Chsnam	Location	Model	Name	Manufacturer	Sens./mV/V/	Fullscal	Caldat	Pos Output	Flip
HEDXG	Head Accel X	7264-2KM5T	J17649	Endevco	0.03243 g	2000	3/12/2003	Rwd	1
HEDYG	Head Accel Y	7264-2000T	AJ454	Endevco	0.02856 g	2000	3/12/2003	Lft	1
HEDZG	Head Accel Z	7264-2000T	J14189	Endevco	0.03309 g	2000	3/12/2003	Up	1
HEDXR	Head Accel Red X S39	7264C-2KLC-2	P17196	Endevco	0.02117 g	2000	3/12/2003	Rwd	1
HEDYR	Head Accel Red Y	EGE-73B6Q-20	B02A25-N09	Entran	0.01897 g	2000	3/12/2003	Lft	1
HEDZR	Head Accel Red Z	EGE-73B6Q-20	01G25-N09	Entran	0.01947 g	2000	3/12/2003	Up	1
NEKXF	Neck Force X	1716A	1716A-851-FX	Denton	0.000193999 N	8896.4	5/29/2002	Hd Fd,Cst Rr	1
NEKYF	Neck Force Y	1716A	1716A-851-FY	Denton	0.000188289 N	8896.4	5/29/2002	Hd Lt,Cst Rt	0
NEKZF	Neck Force Z	1716A	1716A-851-FZ	Denton	0.000147643 N	13344.6	5/29/2002	Hd Up,Cst Dn	0
NEKXM	Neck Moment X	1716A	1716A-851-MX	Denton	0.005989734 N	282.5	5/29/2002	Rt Ear to Rt Shld	1
NEKYM	Neck Moment Y	1716A	1716A-851-MY	Denton	0.005981947 N	282.5	5/29/2002	Chn to Strnm	0
NEKZM	Neck Moment Z	1716A	1716A-851-MZ	Denton	0.008568142 N	282.5	5/29/2002	Chn to Lt Shld	0
CSTXG	Chest Accel X	7264-2000TZ	J35921	Endevco	0.03035 g	2000	3/12/2003	Fwd	0
CSTYG	Chest Accel Y	7264-2000T	AJ7F7	Endevco	0.03042 g	2000	3/12/2003	Lft	1
CSTZG	Chest Accel Z	7264-2000TZ	J36723	Endevco	0.02516 g	2000	3/12/2003	Up	1
CSTXR	Chest Accel Red X	EGE-73BQE0-	99H30-Z14	Entran	0.02071 g	2000	3/12/2003	Rwd	1
CSTYR	Chest Accel Red Y	EGE-73BQ-200	98H14-K05	Entran	0.01747 g	2000	3/12/2003	Lft	1
CSTZR	Chest Accel Red Z	EGE-73BQ-200	98H13-F03	Entran	0.02086 g	2000	3/12/2003	Up	1
CSTXD	Chest Deflection X	14CB1-2847	14CB1-2847-168	Servo	1.1291 m	100	3/19/2003	Strnm Away Frm Spn	0
PEVXG	Pelvis Accel X	7264-2000T	ACCY2	Endevco	0.0237 g	2000	3/12/2003	Rwd	1
PEVYG	Pelvis Accel Y	7264-2KM5T	J27490	Endevco	0.02212 g	2000	3/12/2003	Lft	1
PEVZG	Pelvis Accel Z	7264-2KM5T	J21963	Endevco	0.02531 g	2000	3/12/2003	Up	1
LFMXF	Left Femur Force X	1914A	1914A-362-FX	Denton	0.000143968 N	13344	5/24/2002	Knee Dn,Fem Up	1
LFMYF	Left Femur Force Y	1914A	1914A-362-FY	Denton	0.000144523 N	13344	5/24/2002	Knee Rt,Fem Lt	0
LFMZF	Left Femur Force Z	1914A	1914A-362-FZ	Denton	0.000059074 N	22240	5/24/2002	Knee Fd,Pel Rr	0
LFMXM	Left Femur Moment X	1914A	1914A-362-MX	Denton	0.004464012 N	339	5/24/2002	Knee Rt,Hld Fem	1

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Chsnam	Location	Model	Name	Manufacturer	Sens./mV/V/	Fullscal	Caldat	Pos Output	Flip
LFMYM	Left Femur Moment Y	1914A	1914A-362-MY	Denton	0.004409145 N	339	5/24/2002	Knee Up,Hld Fem	0
LFMZM	Left Femur Moment Z	1914A	1914A-362-MZ	Denton	0.00790413 N	339	5/24/2002	Tib Lt,Hld Pel	0
RFMXF	Right Femur Force X	1914A	1914A-376-FX	Denton	0.000146666 N	13344	5/24/2002	Knee Dn,Fem Up	1
RFMYF	Right Femur Force Y	1914A	1914A-376-FY	Denton	0.000146629 N	13344	5/24/2002	Knee Rt,Fem Lt	0
RFMZF	Right Femur Force Z	1914A	1914A-376-FZ	Denton	0.000059876 N	22240	5/24/2002	Knee Fd,Pel Rr	0
RFMXM	Right Femur Moment X	1914A	1914A-376-MX	Denton	0.004443068 N	339	5/24/2002	Knee Rt,Hld Fem	1
RFMYM	Right Femur Moment Y	1914A	1914A-376-MY	Denton	0.003790977 N	339	5/24/2002	Knee Up,Hld Fem	0
RFMZM	Right Femur Moment Z	1914A	1914A-376-MZ	Denton	0.006787469 N	339	5/24/2002	Tib Lt,Hld Pel	0
KNLXD	Left Knee Displacement	150-0121VR	150-121VR-18026	Space Age	22.993 m	40	3/19/2003	Tib Rr,Hld Fem	1
TBLXF	Left Upper Tibia Force X	4353J	4353J-79-FX	Denton	0.000170486 N	11120.5	7/16/2002	Tib Rr,Knee Fd	1
TBLZF	Left Upper Tibia Force Z	4353J	4353J-79-FZ	Denton	0.000096218 N	11120.5	7/16/2002	Tib Dn,Knee Up	0
TBLXM	Left Upper Tibia Moment X	4353J	4353J-79-MX	Denton	0.007416793 N	395.4	7/16/2002	Tib Rt,Hld Knee	1
TBLYM	Left Upper Tibia Moment Y	4353J	4353J-79-MY	Denton	0.007447900 N	395.4	7/16/2002	Tib Rr,Hld Knee	1
TBLXG	Left Tibia Accel X	EGE-73B6Q-20	01G25-N16	Entran	0.01897 g	2000	5/13/2003	Fwd	0
TBLYG	Left Tibia Accel Y	EGE-73B6Q-20	01G18-F02	Entran	0.0218 g	2000	5/13/2003	Rt	0
ANLXF	Left Lower Tibia Force X	4929J	4929J-77-FX	Denton	0.000172492 N	11120.5	7/16/2002	Ank Fd,Knee Rr	0
ANLYF	Left Lower Tibia Force Y	4929J	4929J-77-FY	Denton	0.000172771 N	11120.5	7/16/2002	Ank Rt,Knee Lt	0
ANLZF	Left Lower Tibia Force Z	4929J	4929J-77-FZ	Denton	0.000095957 N	11120.5	7/16/2002	Ank Dn,Knee Up	0
ANLXM	Left Lower Tibia Moment X	4929J	4929J-77-MX	Denton	0.007497218 N	395.4	7/16/2002	Ank Lt,Hld Knee	0
ANLYM	Left Lower Tibia Moment Y	4929J	4929J-77-MY	Denton	0.007430450 N	395.4	7/16/2002	Ank Fd,Hld Knee	0
FTLXD	Left Foot Disp. X	PD210-4B	LX104X	Contelec	3.169 °	318	7/17/2002	Eversion	0
FTLYD	Left Foot Disp. Y	PD210-4B	LX104Y	Contelec	3.182 °	318	7/17/2002	Dorsiflexion	0
FTLZD	Left Foot Disp. Z	PD210-4B	LX104Z	Contelec	3.1701 °	318	7/17/2002	External Rotation	1
FTLXG	Left Foot Accel X	EGE-73B6Q-20	00L20-A14	Entran	0.01928 g	2000	5/13/2003	Fwd	0
FTLYG	Left Foot Accel Y	EGE-73BQ-200	98H10-F01	Entran	0.01952 g	2000	5/13/2003	Rt	0
FTLZG	Left Foot Accel Z	EGE-73BQE0-	99H12-F03	Entran	0.01888 g	2000	5/13/2003	Dn	0
KNRXD	Right Knee Displacement	150-0121VL	150-121VL-23106	Space Age	23.682 m	40	6/13/2002	Tib Rr,Hld Fem	1
TBRXF	Right Upper Tibia Force X	4353J	4353J-75-FX	Denton	0.000169650 N	11120.5	8/2/2002	Tib Fd,Knee Rr	0

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Chsnam	Location	Model	Name	Manufacturer	Sens./mV/V/	Fullscal	Caldat	Pos Output	Flip
TBRZF	Right Upper Tibia Force Z	4353J	4353J-75-FZ	Denton	0.000095400 N	11120.5	8/2/2002	Tib Dn,Knee Up	0
TBRXM	Right Upper Tibia Moment X	4353J	4353J-75-MX	Denton	0.007378351 N	395.4	8/2/2002	Tib Lt,Hld Knee	0
TBRYM	Right Upper Tibia Moment Y	4353J	4353J-75-MY	Denton	0.007360647 N	395.4	8/2/2002	Tib Fd,Hld Knee	0
TBRXG	Right Tibia Accel X	EGE-73BQE0-	99H12-F08	Entran	0.01791 g	2000	5/13/2003	Fwd	0
TBRYG	Right Tibia Accel Y	EGE-73BQE0-	99H30-Z11	Entran	0.02054 g	2000	5/13/2003	Rt	0
ANRXF	Right Lower Tibia Force X	4929J	4929J-76-FX	Denton	0.000171601 N	11120.5	7/16/2002	Ank Fd,Knee Rr	0
ANRYF	Right Lower Tibia Force Y	4929J	4929J-76-FY	Denton	0.000172995 N	11120.5	7/16/2002	Ank Rt,Knee Lt	0
ANRZF	Right Lower Tibia Force Z	4929J	4929J-76-FZ	Denton	0.000095634 N	11120.5	7/16/2002	Ank Dn,Knee Up	0
ANRXM	Right Lower Tibia Moment X	4929J	4929J-76-MX	Denton	0.007504552 N	395.4	7/16/2002	Ank Lt,Hld Knee	0
ANRYM	Right Lower Tibia Moment Y	4929J	4929J-76-MY	Denton	0.007480020 N	395.4	7/16/2002	Ank Fd,Hld Knee	0
FTRXD	Right Foot Disp. X	PD210-4B	PD210-4B-AK-037	Contelec	3.199 °	318	7/18/2002	Eversion	1
FTRYD	Right Foot Disp. Y	PD210-4B	PD210-4B-0225	Contelec	3.1559 °	318	7/18/2002	Dorsiflexion	0
FTRZD	Right Foot Disp. Z	PD210-4B	PD210-4B-AK-039	Contelec	3.1586 °	318	7/18/2002	Internal Rotation	1
FTRXG	Right Foot Accel X	EGE-73B6Q-20	01J02-F08	Entran	0.02001 g	2000	5/13/2003	Fwd	0
FTRYG	Right Foot Accel Y	EGE-73B6Q-20	01J02-F16	Entran	0.0217 g	2000	5/13/2003	Rt	0
FTRZG	Right Foot Accel Z	EGE-73BQ-200	98H10-F10	Entran	0.0185 g	2000	5/13/2003	Dn	0

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Dummy 169v+ Type HIII 50TH Descriptio VRTC - 169v HIII 50TH w/THOR LEGS ICAL'd 5-24-02 (DKS 6-10-03)J211

Chsnam	Location	Model	Name	Manufacturer	Sens./mV/V/	Fullscal	Caldat	Pos Output	Flip
HEDXG	Head Accel X	7264-2000T	J20083	Endevco	0.02184 g	2000	3/11/2003	Rwd	1
HEDYG	Head Accel Y	7264-2000T	J19843	Endevco	0.02239 g	2000	3/11/2003	Lft	1
HEDZG	Head Accel Z	7264-2KM5T	J20027	Endevco	0.02586 g	2000	3/11/2003	Up	1
NEKXF	Neck Force X	1716A	1716A-782-FX	Denton	0.000190504 N	8896	5/30/2002	Hd Fd,Cst Rr	1
NEKYF	Neck Force Y	1716A	1716A-782-FY	Denton	0.000186052 N	8896	5/30/2002	Hd Lt,Cst Rt	0
NEKZF	Neck Force Z	1716A	1716A-782-FZ	Denton	0.000096548 N	13344	5/30/2002	Hd Up,Cst Dn	0
NEKXM	Neck Moment X	1716A	1716A-782-MX	Denton	0.005812389 N	282.5	5/30/2002	Rt Ear to Rt Shld	1
NEKYM	Neck Moment Y	1716A	1716A-782-MY	Denton	0.005816283 N	282.5	5/30/2002	Chn to Strnm	0
NEKZM	Neck Moment Z	1716A	1716A-782-MZ	Denton	0.008224071 N	282.5	5/30/2002	Chn to Lt Shld	0
CSTXG	Chest Accel X	7264-2000T	J23757	Endevco	0.02807 g	2000	3/12/2003	Fwd	0
CSTYG	Chest Accel Y	7264-2KM5T	J21989	Endevco	0.02343 g	2000	3/12/2003	Lft	1
CSTZG	Chest Accel Z	7264-2000TZ	J35747	Endevco	0.02829 g	2000	3/12/2003	Up	1
CSTXD	Chest Deflection X	14CB1-2847	14CB1-2847-169	Servo	1.1417 m	100	3/19/2003	Strnm Away Frm Spn	0
PEVXG	Pelvis Accel X	7264-2000TZ	J36741	Endevco	0.02309 g	2000	3/11/2003	Rwd	1
PEVYG	Pelvis Accel Y	7264-2000TZ	J36605	Endevco	0.02678 g	2000	3/11/2003	Lft	1
PEVZG	Pelvis Accel Z	7264-2000LC	AAMD7	Endevco	0.0268 g	2000	3/11/2003	Up	1
LFMXF	Left Femur Force X	1914	1914-0261-FX	Denton	0.000144725 N	13344	5/24/2002	Knee Dn,Fem Up	1
LFMYF	Left Femur Force Y	1914	1914-0261-FY	Denton	0.000145182 N	13344	5/24/2002	Knee Rt,Fem Lt	0
LFMZF	Left Femur Force Z	1914	1914-0261-FZ	Denton	0.000053289 N	22240	5/24/2002	Knee Fd,Pel Rr	0
LFMXM	Left Femur Moment X	1914	1914-0261-MX	Denton	0.004356637 N	339	5/24/2002	Knee Rt,Hld Fem	1
LFMYM	Left Femur Moment Y	1914	1914-0261-MY	Denton	0.004435398 N	339	5/24/2002	Knee Up,Hld Fem	0
LFMZM	Left Femur Moment Z	1914	1914-0261-MZ	Denton	0.007827729 N	339	5/24/2002	Tib Lt,Hld Pel	0
RFMXF	Right Femur Force X	1914A	1914A-383-FX	Denton	0.000147685 N	13344	5/24/2002	Knee Dn,Fem Up	1
RFMYF	Right Femur Force Y	1914A	1914A-383-FY	Denton	0.00014785 N	13344	5/24/2002	Knee Rt,Fem Lt	0
RFMZF	Right Femur Force Z	1914A	1914A-383-FZ	Denton	0.00006006 N	22240	5/24/2002	Knee Fd,Pel Rr	0
RFMXM	Right Femur Moment X	1914A	1914A-383-MX	Denton	0.004435103 N	339	5/24/2002	Knee Rt,Hld Fem	1

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Chsnam	Location	Model	Name	Manufacturer	Sens./mV/V/	Fullscal	Caldat	Pos Output	Flip
RFMYM	Right Femur Moment Y	1914A	1914A-383-MY	Denton	0.004437463 N	339	5/24/2002	Knee Up,Hld Fem	0
RFMZM	Right Femur Moment Z	1914A	1914A-383-MZ	Denton	0.008078761 N	339	5/24/2002	Tib Lt,Hld Pel	0
KNLXD	Left Knee Displacement	150-0121VR	150-121VR-17169	Space Age	23.348 m	40	3/11/2003	Tib Rr,Hld Fem	1
TBLXF	Left Upper Tibia Force X	4353J	4353J-78-FX	Denton	0.000171934 N	11120.5	7/17/2002	Tib Rr,Knee Fd	1
TBLZF	Left Upper Tibia Force Z	4353J	4353J-78-FZ	Denton	0.000095643 N	11120.5	7/17/2002	Tib Dn,Knee Up	0
TBLXM	Left Upper Tibia Moment X	4353J	4353J-78-MX	Denton	0.007485837 N	395.4	7/17/2002	Tib Rt,Hld Knee	1
TBLYM	Left Upper Tibia Moment Y	4353J	4353J-78-MY	Denton	0.007496459 N	395.4	7/17/2002	Tib Rr,Hld Knee	1
TBLXG	Left Tibia Accel X	EGE-73BQ-200	98H10-F13	Entran	0.01923 g	2000	5/13/2003	Fwd	0
TBLYG	Left Tibia Accel Y	EGE-73BQ-200	98H10-F12	Entran	0.02364 g	2000	5/13/2003	Rt	0
ANLXF	Left Lower Tibia Force X	4929J	4929J-78-FX	Denton	0.000171601 N	11120.5	7/16/2002	Ank Fd,Knee Rr	0
ANLYF	Left Lower Tibia Force Y	4929J	4929J-78-FY	Denton	0.000171449 N	11120.5	7/16/2002	Ank Rt,Knee Lt	0
ANLZF	Left Lower Tibia Force Z	4929J	4929J-78-FZ	Denton	0.000173490 N	11120.5	7/16/2002	Ank Dn,Knee Up	0
ANLXM	Left Lower Tibia Moment X	4929J	4929J-78-MX	Denton	0.007487860 N	395.4	7/16/2002	Ank Lt,Hld Knee	0
ANLYM	Left Lower Tibia Moment Y	4929J	4929J-78-MY	Denton	0.007416540 N	395.4	7/16/2002	Ank Fd,Hld Knee	0
FTLXD	Left Foot Disp. X	PD210-4B	LX0019X	Contelec	3.167281 °	318	7/23/2002	Eversion	0
FTLYD	Left Foot Disp. Y	PD210-4B	LX0019Y	Contelec	3.165088 °	318	7/23/2002	Dorsiflexion	0
FTLZD	Left Foot Disp. Z	PD210-4B	LX0019Z	Contelec	3.191877 °	318	7/23/2002	External Rotation	1
FTLXG	Left Foot Accel X	EGE-73B6Q-20	01G25-N04	Entran	0.01981 g	2000	5/13/2003	Fwd	0
FTLYG	Left Foot Accel Y	EGE-73B6Q-20	00L13-F29	Entran	0.02132 g	2000	5/13/2003	Rt	0
FTLZG	Left Foot Accel Z	EGE-73B6Q-200	98H10-F18	Entran	0.02088 g	2000	5/13/2003	Dn	0
KNRXD	Right Knee Displacement	150-0121VL	150-121VL-21033	Space Age	23.862 m	40	3/11/2003	Tib Rr,Hld Fem	1
TBRXF	Right Upper Tibia Force X	4353J	4353J-77-FX	Denton	0.000174173 N	11120.5	7/17/2002	Tib Rr,Knee Fd	1
TBRZF	Right Upper Tibia Force Z	4353J	4353J-77-FZ	Denton	0.000096560 N	11120.5	7/17/2002	Tib Dn,Knee Up	0
TBRXM	Right Upper Tibia Moment X	4353J	4353J-77-MX	Denton	0.007570055 N	395.4	7/17/2002	Tib Rt,Hld Knee	1
TBRYM	Right Upper Tibia Moment Y	4353J	4353J-77-MY	Denton	0.007618361 N	395.4	7/17/2002	Tib Rr,Hld Knee	1
TBRXG	Right Tibia Accel X	EGE-73B6Q-20	00L13-F33	Entran	0.02348 g	2000	5/13/2003	Fwd	0
TBRYG	Right Tibia Accel Y	EGE-73B6Q-20	01J02-F19	Entran	0.02246 g	2000	5/13/2003	Rt	0
ANRXF	Right Lower Tibia Force X	4929J	4929J-75-FX	Denton	0.000171925 N	11120.5	7/17/2002	Ank Fd,Knee Rr	0

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Chsnam	Location	Model	Name	Manufacturer	Sens./mV/V/	Fullscal	Caldat	Pos Output	Flip
ANRYF	Right Lower Tibia Force Y	4929J	4929J-75-FY	Denton	0.000173499 N	11120.5	7/17/2002	Ank Rt,Knee Lt	0
ANRZF	Right Lower Tibia Force Z	4929J	4929J-75-FZ	Denton	0.000096434 N	11120.5	7/17/2002	Ank Dn,Knee Up	0
ANRXM	Right Lower Tibia Moment X	4929J	4929J-75-MX	Denton	0.007555639 N	395.4	7/17/2002	Ank Lt,Hld Knee	0
ANRYM	Right Lower Tibia Moment Y	4929J	4929J-77-MY	Denton	0.007430450 N	395.4	7/16/2002	Ank Fd,Hld Knee	0
FTRXD	Right Foot Disp. X	PD210-4B	LX0018X	Contelec	3.133298 °	318	7/23/2002	Eversion	1
FTRYD	Right Foot Disp. Y	PD210-4B	LX0018Y	Contelec	3.155877 °	318	7/23/2002	Dorsiflexion	0
FTRZD	Right Foot Disp. Z	PD210-4B	LX0018Z	Contelec	3.165772 °	318	7/23/2002	Internal Rotation	1
FTRXG	Right Foot Accel X	EGE-73BQ-200	98H13-F20	Entran	0.01855 g	2000	5/13/2003	Fwd	0
FTRYG	Right Foot Accel Y	EGE-73BQ-200	98H10-F19	Entran	0.02068 g	2000	10/5/2001	Rt	0
FTRZG	Right Foot Accel Z	EGE-73B6Q-20	00L20-A15	Entran	0.0192 g	2000	5/13/2003	Dn	0

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Name of Test 030611

System MINIDAU

Name of DAU DAU6

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol.	Cal.	Group	Mfg.	Model
6001	EVENT	SYNC6	SYNC6		5.12	V	+ 10/15/2002	OK -1	TRC	Event
6002	6244-02-119-FZ	LCA1XF	Barr. L.C. A1 X-Axis Force		111120.56	N	- 3/6/2003	OK VRTC	Key	6244-02
6003	6244-02-128-FZ	LCA2XF	Barr. L.C. A2 X-Axis Force		111436.37	N	- 3/5/2003	OK VRTC	Key	6244-02
6004	6244-02-149-FZ	LCA3XF	Barr. L.C. A3 X-Axis Force		110996.64	N	- 3/6/2003	OK VRTC	Key	6244-02
6005	6244-02-131-FZ	LCA4XF	Barr. L.C. A4 X-Axis Force		110991.01	N	- 3/3/2003	OK VRTC	Key	6244-02
6006	6244-02-136-FZ	LCA5XF	Barr. L.C. A5 X-Axis Force		110940.07	N	- 2/28/2003	OK VRTC	Key	6244-02
6007	6244-02-102-FZ	LCA6XF	Barr. L.C. A6 X-Axis Force		111000.11	N	- 3/3/2003	OK VRTC	Key	6244-02
6008	6244-02-145-FZ	LCA7XF	Barr. L.C. A7 X-Axis Force		111119.88	N	- 3/5/2003	OK VRTC	Key	6244-02
6009	6244-02-148-FZ	LCB1XF	Barr. L.C. B1 X-Axis Force		111051.19	N	- 3/6/2003	OK VRTC	Key	6244-02
6010	6244-02-114-FZ	LCB2XF	Barr. L.C. B2 X-Axis Force		111185.98	N	- 3/4/2003	OK VRTC	Key	6244-02
6011	6244-02-132-FZ	LCB3XF	Barr. L.C. B3 X-Axis Force		111059.55	N	- 3/4/2003	OK VRTC	Key	6244-02
6012	6244-02-101-FZ	LCB4XF	Barr. L.C. B4 X-Axis Force		111422.84	N	- 2/28/2003	OK VRTC	Key	6244-02
6013	6244-02-140-FZ	LCB5XF	Barr. L.C. B5 X-Axis Force		111135.71	N	- 2/28/2003	OK VRTC	Key	6244-02
6014	6244-02-143-FZ	LCB6XF	Barr. L.C. B6 X-Axis Force		111341.52	N	- 3/3/2003	OK VRTC	Key	6244-02
6015	6244-02-129-FZ	LCB7XF	Barr. L.C. B7 X-Axis Force		111085.94	N	- 3/5/2003	OK VRTC	Key	6244-02
6016	6244-02-161-FZ	LCC1XF	Barr. L.C. C1 X-Axis Force		110932.96	N	- 2/27/2003	OK VRTC	Key	6244-02
6017	6244-02-166-FZ	LCC2XF	Barr. L.C. C2 X-Axis Force		111213.56	N	- 3/12/2003	OK VRTC	Key	6244-02
6018	6244-02-157-FZ	LCC3XF	Barr. L.C. C3 X-Axis Force		111111.11	N	- 3/12/2003	OK VRTC	Key	6244-02
6019	6244-02-137-FZ	LCC4XF	Barr. L.C. C4 X-Axis Force		111452.38	N	- 3/5/2003	OK VRTC	Key	6244-02
6020	6244-02-118-FZ	LCC5XF	Barr. L.C. C5 X-Axis Force		111009.64	N	- 3/5/2003	OK VRTC	Key	6244-02
6021	6244-02-104-FZ	LCC6XF	Barr. L.C. C6 X-Axis Force		111368.72	N	- 2/27/2003	OK VRTC	Key	6244-02
6022	6244-02-160-FZ	LCC7XF	Barr. L.C. C7 X-Axis Force		111392.20	N	- 3/5/2003	OK VRTC	Key	6244-02
6024	6244-02-165-FZ	LCD1XF	Barr. L.C. D1 X-Axis Force		110972.53	N	- 2/27/2003	OK VRTC	Key	6244-02
6025	6244-02-109-FZ	LCD2XF	Barr. L.C. D2 X-Axis Force		111119.93	N	- 3/5/2003	OK VRTC	Key	6244-02
6026	6244-02-144-FZ	LCD3XF	Barr. L.C. D3 X-Axis Force		111080.52	N	- 3/5/2003	OK VRTC	Key	6244-02
6027	6244-02-106-FZ	LCD4XF	Barr. L.C. D4 X-Axis Force		111035.15	N	- 3/5/2003	OK VRTC	Key	6244-02
6028	6244-02-134-FZ	LCD5XF	Barr. L.C. D5 X-Axis Force		111266.03	N	- 3/3/2003	OK VRTC	Key	6244-02
6029	6244-02-111-FZ	LCD6XF	Barr. L.C. D6 X-Axis Force		110979.61	N	- 3/6/2003	OK VRTC	Key	6244-02
6030	6244-02-142-FZ	LCD7XF	Barr. L.C. D7 X-Axis Force		111042.19	N	- 2/27/2003	OK VRTC	Key	6244-02
6031	6244-02-117-FZ	LCE1XF	Barr. L.C. E1 X-Axis Force		111452.38	N	- 2/28/2003	OK VRTC	Key	6244-02
6032	6244-02-122-FZ	LCE2XF	Barr. L.C. E2 X-Axis Force		111235.86	N	- 3/6/2003	OK VRTC	Key	6244-02

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Name of Test 030611

System MINIDAU

Name of DAU DAU8

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range		Pol.	Cal.	Group	Mfg.	Model
8001	EVENT2	SYNC8	SYNC8		5.12	V	+	10/15/2002	OK -1	TRC	Event
8002	J17649	HEDXG1	Head Accel X	Rwd	1214.4500	g	-	3/12/2003	OK 168v+	Endevco	7264-2KM5T
8003	AJ454	HEDYG1	Head Accel Y	Lft	1195.1447	g	-	3/12/2003	OK 168v+	Endevco	7264-2000T
8004	J14189	HEDZG1	Head Accel Z	Up	1190.2271	g	-	3/12/2003	OK 168v+	Endevco	7264-2000T
8005	P17196	HEDXR1	Head Accel Red X S39	Rwd	1209.2583	g	-	3/12/2003	OK 168v+	Endevco	7264C-2KLC-2-
8006	B02A25-N09	HEDYR1	Head Accel Red Y	Lft	1226.8174	g	-	3/12/2003	OK 168v+	Entran	EGE-73B6Q-200
8007	01G25-N09	HEDZR1	Head Accel Red Z	Up	1195.3121	g	-	3/12/2003	OK 168v+	Entran	EGE-73B6Q-200
8008	1716A-851-FX	NEKXF1	Neck Force X	Hd	13329.236	N	-	5/29/2002	--- 168v+	Denton	1716A
8009	1716A-851-FY	NEKYF1	Neck Force Y	Hd	13329.530	N	+	5/29/2002	--- 168v+	Denton	1716A
8010	1716A-851-FZ	NEKZF1	Neck Force Z	Hd	20045.227	N	+	5/29/2002	--- 168v+	Denton	1716A
8011	1716A-851-MX	NEKXM1	Neck Moment X	Rt Ear	423.16624	N·m	-	5/29/2002	--- 168v+	Denton	1716A
8012	1716A-851-MY	NEKYM1	Neck Moment Y	Chn	423.71713	N·m	+	5/29/2002	--- 168v+	Denton	1716A
8013	1716A-851-MZ	NEKZM1	Neck Moment Z	Chn	423.80316	N·m	+	5/29/2002	--- 168v+	Denton	1716A
8014	J35921	CSTXG1	Chest Accel X	Fwd	602.49470	g	+	3/12/2003	OK 168v+	Endevco	7264-2000TZ
8015	AJ7F7	CSTYG1	Chest Accel Y	Lft	601.10829	g	-	3/12/2003	OK 168v+	Endevco	7264-2000T
8016	J36723	CSTZG1	Chest Accel Z	Up	598.52239	g	-	3/12/2003	OK 168v+	Endevco	7264-2000TZ
8017	99H30-Z14	CSTXR1	Chest Accel Red X	Rwd	602.98430	g	-	3/12/2003	OK 168v+	Entran	EGE-73BQE0-20
8018	98H14-K05	CSTYR1	Chest Accel Red Y	Lft	598.10987	g	-	3/12/2003	OK 168v+	Entran	EGE-73BQ-2000
8019	98H13-F03	CSTZR1	Chest Accel Red Z	Up	598.64836	g	-	3/12/2003	OK 168v+	Entran	EGE-73BQ-2000
8020	14CB1-2847-168	CSTXD1	Chest Deflection X	Strnm	99.661210	mm	+	3/19/2003	OK 168v+	Servo	14CB1-2847
8021	ACCY2	PEVXG1	Pelvis Accel X	Rwd	400.06250	g	-	3/12/2003	OK 168v+	Endevco	7264-2000T
8022	J27490	PEVYG1	Pelvis Accel Y	Lft	399.07713	g	-	3/12/2003	OK 168v+	Endevco	7264-2KM5T
8023	J21963	PEVZG1	Pelvis Accel Z	Up	396.65016	g	-	3/12/2003	OK 168v+	Endevco	7264-2KM5T
8024	1914A-362-FX	LFMXF1	Left Femur Force X	Knee	19979.471	N	-	5/24/2002	--- 168v+	Denton	1914A
8025	1914A-362-FY	LFMYF1	Left Femur Force Y	Knee	20015.190	N	+	5/24/2002	--- 168v+	Denton	1914A
8026	1914A-362-FZ	LFMZF1	Left Femur Force Z	Knee	33334.982	N	+	5/24/2002	--- 168v+	Denton	1914A
8027	1914A-362-MX	LFMXM1	Left Femur Moment X	Knee	509.75569	N·m	-	5/24/2002	--- 168v+	Denton	1914A
8028	1914A-362-MY	LFMYM1	Left Femur Moment Y	Knee	509.30827	N·m	+	5/24/2002	--- 168v+	Denton	1914A
8029	1914A-362-MZ	LFMZM1	Left Femur Moment Z	Tib	510.04931	N·m	+	5/24/2002	--- 168v+	Denton	1914A
8030	150-121VR-1802	KNLXD1	Left Knee Displacement	Tib	40.486630	mm	-	3/19/2003	OK 168v+	Space Age	150-0121VR
8031	4353J-79-FX	TBLXF1	Left Upper Tibia Force X	Tib	8885.0964	N	-	7/16/2002	OK 168v+	Denton	4353J
8032	4353J-79-FZ	TBLZF1	Left Upper Tibia Force Z	Tib	8898.3465	N	+	7/16/2002	OK 168v+	Denton	4353J

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Name of Test 030611

System MINIDAU

Name of DAU DAU9

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol.	Cal.	Group	Mfg.	Model
9001	4353J-79-MX	TBLXM1	Left Upper Tibia Moment X	Tib	281.76543	N·m	- 7/16/2002	OK 168v+	Denton	4353J
9002	4353J-79-MY	TBLYM1	Left Upper Tibia Moment Y	Tib	281.73853	N·m	- 7/16/2002	OK 168v+	Denton	4353J
9003	01G25-N16	TBLXG1	Left Tibia Accel X	Fwd	1226.8174	g	+ 5/13/2003	OK 168v+	Entran	EGE-73B6Q-200
9004	01G18-F02	TBLYG1	Left Tibia Accel Y	Rt	1174.3119	g	+ 5/13/2003	OK 168v+	Entran	EGE-73B6Q-200
9005	4929J-77-FX	ANLXF1	Left Lower Tibia Force X	Ank	8886.9742	N	+ 7/16/2002	OK 168v+	Denton	4929J
9006	4929J-77-FY	ANLYF1	Left Lower Tibia Force Y	Ank	8899.2801	N	+ 7/16/2002	OK 168v+	Denton	4929J
9007	4929J-77-FZ	ANLZF1	Left Lower Tibia Force Z	Ank	8892.7873	N	+ 7/16/2002	OK 168v+	Denton	4929J
9008	4929J-77-MX	ANLXM1	Left Lower Tibia Moment X	Ank	282.19834	N·m	+ 7/16/2002	OK 168v+	Denton	4929J
9009	4929J-77-MY	ANLYM1	Left Lower Tibia Moment Y	Ank	282.40020	N·m	+ 7/16/2002	OK 168v+	Denton	4929J
9010	LX104X	FTLXD1	Left Foot Disp. X	Eversi	161.56516	°	+ 7/17/2002	OK 168v+	Contelec	PD210-4B
9011	LX104Y	FTLYD1	Left Foot Disp. Y	Dorsif	160.90509	°	+ 7/17/2002	OK 168v+	Contelec	PD210-4B
9012	LX104Z	FTLZD1	Left Foot Disp. Z	Exter	161.50910	°	- 7/17/2002	OK 168v+	Contelec	PD210-4B
9013	00L20-A14	FTLXG1	Left Foot Accel X	Fwd	1207.0916	g	+ 5/13/2003	OK 168v+	Entran	EGE-73B6Q-200
9014	98H10-F01	FTLYG1	Left Foot Accel Y	Rt	1192.2503	g	+ 5/13/2003	OK 168v+	Entran	EGE-73BQ-2000
9015	99H12-F03	FTLZG1	Left Foot Accel Z	Dn	1179.0714	g	+ 5/13/2003	OK 168v+	Entran	EGE-73BQE0-20
9016	1914A-376-FX	RFMXF1	Right Femur Force X	Knee	20062.787	N	- 5/24/2002	--- 168v+	Denton	1914A
9017	1914A-376-FY	RFMYF1	Right Femur Force Y	Knee	20067.849	N	+ 5/24/2002	--- 168v+	Denton	1914A
9018	1914A-376-FZ	RFMZ1	Right Femur Force Z	Knee	33402.364	N	+ 5/24/2002	--- 168v+	Denton	1914A
9019	1914A-376-MX	RFMXM1	Right Femur Moment X	Knee	509.89242	N·m	- 5/24/2002	--- 168v+	Denton	1914A
9020	1914A-376-MY	RFMYM1	Right Femur Moment Y	Knee	509.65106	N·m	+ 5/24/2002	--- 168v+	Denton	1914A
9021	1914A-376-MZ	RFMZM1	Right Femur Moment Z	Tib	509.68327	N·m	+ 5/24/2002	--- 168v+	Denton	1914A
9022	150-121VL-2310	KNRDX1	Right Knee Displacement	Tib	39.308719	mm	- 6/13/2002	OK 168v+	Space Age	150-0121VL
9023	4353J-75-FX	TBRXF1	Right Upper Tibia Force X	Tib	8902.5566	N	+ 8/2/2002	OK 168v+	Denton	4353J
9024	4353J-75-FZ	TBRZF1	Right Upper Tibia Force Z	Tib	8900.2563	N	+ 8/2/2002	OK 168v+	Denton	4353J
9025	4353J-75-MX	TBRXM1	Right Upper Tibia Moment X	Tib	282.08210	N·m	+ 8/2/2002	OK 168v+	Denton	4353J
9026	4353J-75-MY	TBRYM1	Right Upper Tibia Moment Y	Tib	281.61578	N·m	+ 8/2/2002	OK 168v+	Denton	4353J
9027	99H12-F08	TBRXG1	Right Tibia Accel X	Fwd	1191.1408	g	+ 5/13/2003	OK 168v+	Entran	EGE-73BQE0-20
9028	99H30-Z11	TBRYG1	Right Tibia Accel Y	Rt	1186.9986	g	+ 5/13/2003	OK 168v+	Entran	EGE-73BQE0-20
9029	4929J-76-FX	ANRXF1	Right Lower Tibia Force X	Ank	8906.4127	N	+ 7/16/2002	OK 168v+	Denton	4929J
9030	4929J-76-FY	ANRYF1	Right Lower Tibia Force Y	Ank	8887.7150	N	+ 7/16/2002	OK 168v+	Denton	4929J
9031	4929J-76-FZ	ANRZF1	Right Lower Tibia Force Z	Ank	8893.2456	N	+ 7/16/2002	OK 168v+	Denton	4929J
9032	4929J-76-MX	ANRXM1	Right Lower Tibia Moment X	Ank	281.92254	N·m	+ 7/16/2002	OK 168v+	Denton	4929J

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Channel Report

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Name of Test 030611

System MINIDAU

Name of DAU DAUA

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range		Pol.	Cal.	Group	Mfg.	Model	
0001	4929J-76-MY	ANRYM1	Right Lower Tibia Moment Y	Ank	281.68318	N·m	+	7/16/2002	OK	168v+	Denton	4929J
0002	PD210-4B-AK-03	FTRXD1	Right Foot Disp. X	Eversi	160.05001	°	-	7/18/2002	OK	168v+	Contelec	PD210-4B
0003	PD210-4B-0225	FTRYD1	Right Foot Disp. Y	Dorsif	162.23581	°	+	7/18/2002	OK	168v+	Contelec	PD210-4B
0004	PD210-4B-AK-03	FTRZD1	Right Foot Disp. Z	Intern	162.09713	°	-	7/18/2002	OK	168v+	Contelec	PD210-4B
0005	01J02-F08	FTRXG1	Right Foot Accel X	Fwd	1218.4383	g	+	5/13/2003	OK	168v+	Entran	EGE-73B6Q-200
0006	01J02-F16	FTRYG1	Right Foot Accel Y	Rt	1179.7235	g	+	5/13/2003	OK	168v+	Entran	EGE-73B6Q-200
0007	98H10-F10	FTRZG1	Right Foot Accel Z	Dn	1203.2902	g	+	5/13/2003	OK	168v+	Entran	EGE-73BQ-2000
0008	J20083	HEDXG2	Head Accel X	Rwd	1172.1611	g	-	3/11/2003	OK	169v+	Endevco	7264-2000T
0009	J19843	HEDYG2	Head Accel Y	Lft	1203.5448	g	-	3/11/2003	OK	169v+	Endevco	7264-2000T
0010	J20027	HEDZG2	Head Accel Z	Up	1237.4323	g	-	3/11/2003	OK	169v+	Endevco	7264-2KM5T
0011	1716A-782-FX	NEKXF2	Neck Force X	Hd	13371.182	N	-	5/30/2002	---	169v+	Denton	1716A
0012	1716A-782-FY	NEKYF2	Neck Force Y	Hd	13358.829	N	+	5/30/2002	---	169v+	Denton	1716A
0013	1716A-782-FZ	NEKZF2	Neck Force Z	Hd	20011.553	N	+	5/30/2002	---	169v+	Denton	1716A
0014	1716A-782-MX	NEKXM2	Neck Moment X	Rt Ear	423.49857	N·m	-	5/30/2002	---	169v+	Denton	1716A
0015	1716A-782-MY	NEKYM2	Neck Moment Y	Chn	423.21504	N·m	+	5/30/2002	---	169v+	Denton	1716A
0016	1716A-782-MZ	NEKZM2	Neck Moment Z	Chn	423.51205	N·m	+	5/30/2002	---	169v+	Denton	1716A
0017	J23757	CSTXG2	Chest Accel X	Fwd	608.00380	g	+	3/12/2003	OK	169v+	Endevco	7264-2000T
0018	J21989	CSTYG2	Chest Accel Y	Lft	607.00905	g	-	3/12/2003	OK	169v+	Endevco	7264-2KM5T
0019	J35747	CSTZG2	Chest Accel Z	Up	603.27559	g	-	3/12/2003	OK	169v+	Endevco	7264-2000TZ
0020	14CB1-2847-169	CSTXD2	Chest Deflection X	Strmm	99.656457	mm	+	3/19/2003	OK	169v+	Servo	14CB1-2847
0021	J36741	PEVXG2	Pelvis Accel X	Rwd	599.30003	g	-	3/11/2003	OK	169v+	Endevco	7264-2000TZ
0022	J36605	PEVYG2	Pelvis Accel Y	Lft	597.46079	g	-	3/11/2003	OK	169v+	Endevco	7264-2000TZ
0023	AAMD7	PEVZG2	Pelvis Accel Z	Up	597.01492	g	-	3/11/2003	OK	169v+	Endevco	7264-2000LC
0024	1914-0261-FX	LFMXF2	Left Femur Force X	Knee	19987.254	N	-	5/24/2002	---	169v+	Denton	1914
0025	1914-0261-FY	LFMYF2	Left Femur Force Y	Knee	20037.545	N	+	5/24/2002	---	169v+	Denton	1914
0026	1914-0261-FZ	LFMZF2	Left Femur Force Z	Knee	33361.064	N	+	5/24/2002	---	169v+	Denton	1914
0027	1914-0261-MX	LFMXM2	Left Femur Moment X	Knee	508.75255	N·m	-	5/24/2002	---	169v+	Denton	1914
0028	1914-0261-MY	LFMYM2	Left Femur Moment Y	Knee	508.52406	N·m	+	5/24/2002	---	169v+	Denton	1914
0029	1914-0261-MZ	LFMZM2	Left Femur Moment Z	Tib	507.04262	N·m	+	5/24/2002	---	169v+	Denton	1914
0030	150-121VR-1716	KNLXD2	Left Knee Displacement	Tib	39.871042	mm	-	3/11/2003	OK	169v+	Space Age	150-0121VR
0031	4353J-78-FX	TBLXF2	Left Upper Tibia Force X	Tib	8889.1775	N	-	7/17/2002	OK	169v+	Denton	4353J
0032	4353J-78-FZ	TBLZF2	Left Upper Tibia Force Z	Tib	8892.4095	N	+	7/17/2002	OK	169v+	Denton	4353J

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Channel Report

6/11/2003 8:27:31 AM

Name of Test 030611

System MINIDAU

Name of DAU DAUB

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol.	Cal.	Group	Mfg.	Model	
0001	6244-02-163-FZ	LCE3XF	Barr. L.C. E3 X-Axis Force		111215.06	N	- 2/27/2003	OK	VRTC	Key	6244-02
0003	6244-02-124-FZ	LCE4XF	Barr. L.C. E4 X-Axis Force		111170.55	N	- 3/5/2003	OK	VRTC	Key	6244-02
0004	6244-02-116-FZ	LCE5XF	Barr. L.C. E5 X-Axis Force		111038.82	N	- 2/27/2003	OK	VRTC	Key	6244-02
0005	6244-02-130-FZ	LCE6XF	Barr. L.C. E6 X-Axis Force		111210.30	N	- 3/3/2003	OK	VRTC	Key	6244-02
0006	6244-02-123-FZ	LCE7XF	Barr. L.C. E7 X-Axis Force		111388.42	N	- 3/5/2003	OK	VRTC	Key	6244-02
0007	6244-02-113-FZ	LCF1XF	Barr. L.C. F1 X-Axis Force		111459.15	N	- 3/4/2003	OK	VRTC	Key	6244-02
0008	6244-02-107-FZ	LCF2XF	Barr. L.C. F2 X-Axis Force		111452.72	N	- 3/5/2003	OK	VRTC	Key	6244-02
0009	6244-02-120-FZ	LCF3XF	Barr. L.C. F3 X-Axis Force		111430.82	N	+ 3/5/2003	OK	-1	Key	6244-02
0010	6244-02-139-FZ	LCF4XF	Barr. L.C. F4 X-Axis Force		110957.99	N	- 2/28/2003	OK	VRTC	Key	6244-02
0011	6244-02-127-FZ	LCF5XF	Barr. L.C. F5 X-Axis Force		111455.92	N	- 3/6/2003	OK	VRTC	Key	6244-02
0012	6244-02-147-FZ	LCF6XF	Barr. L.C. F6 X-Axis Force		111125.45	N	- 3/6/2003	OK	VRTC	Key	6244-02
0013	6244-02-108-FZ	LCF7XF	Barr. L.C. F7 X-Axis Force		111004.15	N	- 3/3/2003	OK	VRTC	Key	6244-02
0014	6244-02-168-FZ	LCG1XF	Barr. L.C. G1 X-Axis Force		111449.71	N	- 2/27/2003	OK	VRTC	Key	6244-02
0015	6244-02-135-FZ	LCG2XF	Barr. L.C. G2 X-Axis Force		110955.08	N	- 3/5/2003	OK	VRTC	Key	6244-02
0016	6244-02-115-FZ	LCG3XF	Barr. L.C. G3 X-Axis Force		111339.92	N	- 2/27/2003	OK	VRTC	Key	6244-02
0017	6244-02-125-FZ	LCG4XF	Barr. L.C. G4 X-Axis Force		111036.31	N	- 3/5/2003	OK	VRTC	Key	6244-02
0018	6244-02-167-FZ	LCH1XF	Barr. L.C. H1 X-Axis Force		111030.44	N	- 2/27/2003	OK	VRTC	Key	6244-02
0020	6244-02-138-FZ	LCH2XF	Barr. L.C. H2 X-Axis Force		111427.76	N	- 3/3/2003	OK	VRTC	Key	6244-02
0021	6244-02-159-FZ	LCH3XF	Barr. L.C. H3 X-Axis Force		111069.55	N	- 2/27/2003	OK	VRTC	Key	6244-02
0022	6244-02-164-FZ	LCH4XF	Barr. L.C. H4 X-Axis Force		111296.60	N	- 4/4/2003	OK	VRTC	Key	6244-02

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Channel Report

6/11/2003 8:27:31 AM

Name of Test 030611

System MINIDAU

Name of DAU DAUC

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range		Pol.	Cal.	Group	Mfg.	Model	
0001	4353J-78-MX	TBLXM2	Left Upper Tibia Moment X	Tib	281.46429	N·m	-	7/17/2002	OK	169v+	Denton	4353J
0002	4353J-78-MY	TBLYM2	Left Upper Tibia Moment Y	Tib	282.22690	N·m	-	7/17/2002	OK	169v+	Denton	4353J
0003	98H10-F13	TBLXG2	Left Tibia Accel X	Fwd	1210.2302	g	+	5/13/2003	OK	169v+	Entran	EGE-73BQ-2000
0004	98H10-F12	TBLYG2	Left Tibia Accel Y	Rt	1203.2336	g	+	5/13/2003	OK	169v+	Entran	EGE-73BQ-2000
0005	4929J-78-FX	ANLXF2	Left Lower Tibia Force X	Ank	8906.4127	N	+	7/16/2002	OK	169v+	Denton	4929J
0006	4929J-78-FY	ANLYF2	Left Lower Tibia Force Y	Ank	8887.8232	N	+	7/16/2002	OK	169v+	Denton	4929J
0007	4929J-78-FZ	ANLZF2	Left Lower Tibia Force Z	Ank	8889.0720	N	+	7/16/2002	OK	169v+	Denton	4929J
0008	4929J-78-MX	ANLXM2	Left Lower Tibia Moment X	Ank	282.55100	N·m	+	7/16/2002	OK	169v+	Denton	4929J
0009	4929J-78-MY	ANLYM2	Left Lower Tibia Moment Y	Ank	281.77504	N·m	+	7/16/2002	OK	169v+	Denton	4929J
0010	LX0019X	FTLXD2	Left Foot Disp. X	Eversi	161.65284	°	+	7/23/2002	OK	169v+	Contelec	PD210-4B
0011	LX0019Y	FTLYD2	Left Foot Disp. Y	Dorsif	161.76485	°	+	7/23/2002	OK	169v+	Contelec	PD210-4B
0012	LX0019Z	FTLZD2	Left Foot Disp. Z	Exter	160.40718	°	-	7/23/2002	OK	169v+	Contelec	PD210-4B
0013	01G25-N04	FTLXG2	Left Foot Accel X	Fwd	1174.7969	g	+	5/13/2003	OK	169v+	Entran	EGE-73B6Q-200
0014	00L13-F29	FTLYG2	Left Foot Accel Y	Rt	1200.7504	g	+	5/13/2003	OK	169v+	Entran	EGE-73B6Q-200
0015	98H10-F18	FTLZG2	Left Foot Accel Z	Dn	1226.0536	g	+	5/13/2003	OK	169v+	Entran	EGE-73BQ-2000
0016	1914A-383-FX	RFMXF2	Right Femur Force X	Knee	20039.527	N	-	5/24/2002	---	169v+	Denton	1914A
0017	1914A-383-FY	RFMYF2	Right Femur Force Y	Knee	20017.163	N	+	5/24/2002	---	169v+	Denton	1914A
0018	1914A-383-FZ	RFMZ F2	Right Femur Force Z	Knee	33300.033	N	+	5/24/2002	---	169v+	Denton	1914A
0019	1914A-383-MX	RFMXM2	Right Femur Moment X	Knee	508.55788	N·m	-	5/24/2002	---	169v+	Denton	1914A
0020	1914A-383-MY	RFMYM2	Right Femur Moment Y	Knee	508.28741	N·m	+	5/24/2002	---	169v+	Denton	1914A
0021	1914A-383-MZ	RFMZM2	Right Femur Moment Z	Tib	507.00843	N·m	+	5/24/2002	---	169v+	Denton	1914A
0022	150-121VL-2103	KNRXd2	Right Knee Displacement	Tib	39.012198	mm	-	3/11/2003	OK	169v+	Space Age	150-0121VL
0023	4353J-77-FX	TBRXF2	Right Upper Tibia Force X	Tib	8907.8549	N	-	7/17/2002	OK	169v+	Denton	4353J
0024	4353J-77-FZ	TBRZF2	Right Upper Tibia Force Z	Tib	8896.6112	N	+	7/17/2002	OK	169v+	Denton	4353J
0025	4353J-77-MX	TBRXM2	Right Upper Tibia Moment X	Tib	281.81210	N·m	-	7/17/2002	OK	169v+	Denton	4353J
0026	4353J-77-MY	TBRYM2	Right Upper Tibia Moment Y	Tib	282.37838	N·m	-	7/17/2002	OK	169v+	Denton	4353J
0027	00L13-F33	TBRXG2	Right Tibia Accel X	Fwd	1211.4328	g	+	5/13/2003	OK	169v+	Entran	EGE-73B6Q-200
0028	01J02-F19	TBRYG2	Right Tibia Accel Y	Rt	1199.7937	g	+	5/13/2003	OK	169v+	Entran	EGE-73B6Q-200
0029	4929J-75-FX	ANRXF2	Right Lower Tibia Force X	Ank	8889.6424	N	+	7/17/2002	OK	169v+	Denton	4929J
0030	4929J-75-FY	ANRYF2	Right Lower Tibia Force Y	Ank	8888.6113	N	+	7/17/2002	OK	169v+	Denton	4929J
0031	4929J-75-FZ	ANRZF2	Right Lower Tibia Force Z	Ank	8893.3040	N	+	7/17/2002	OK	169v+	Denton	4929J
0032	4929J-75-MX	ANR XM2	Right Lower Tibia Moment X	Ank	282.34979	N·m	+	7/17/2002	OK	169v+	Denton	4929J

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Channel Report

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Name of Test 030611

System MINIDAU

Name of DAU DAUD

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range		Pol.	Cal.	Group	Mfg.	Model
0001	4929J-75-MY	ANRYM2	Right Lower Tibia Moment Y	Ank	281.56380	N-m	+	7/17/2002	OK -1	Denton	4929J
0002	LX0018X	FTRXD2	Right Foot Disp. X	Eversi	163.40609	°	-	7/23/2002	OK 169v+	Contelec	PD210-4B
0003	LX0018Y	FTRYD2	Right Foot Disp. Y	Dorsif	162.23699	°	+	7/23/2002	OK 169v+	Contelec	PD210-4B
0004	LX0018Z	FTRZD2	Right Foot Disp. Z	Intern	161.72990	°	-	7/23/2002	OK 169v+	Contelec	PD210-4B
0005	98H13-F20	FTRXG2	Right Foot Accel X	Fwd	1200.0468	g	+	5/13/2003	OK 169v+	Entran	EGE-73BQ-2000
0006	98H10-F19	FTRYG2	Right Foot Accel Y	Rt	1178.9628	g	+	10/5/2001	--- 169v+	Entran	EGE-73BQ-2000
0007	00L20-A15	FTRZG2	Right Foot Accel Z	Dn	1212.1212	g	+	5/13/2003	OK 169v+	Entran	EGE-73B6Q-200
0008	03D03C27-N11	LRXXG1	REAR SEAT X-MEMBER	FWD	989.37198	g	+	4/3/2003	OK -1	Entran	EGE-73B6Q-200
0009	03D03C27-N14	LRXYG1	REAR SEAT Y-MEMBER	LT	981.31288	g	-	6/4/2003	OK -1	Entran	EGE-73B6Q-200
0010	P27498	LRXZG1	REAR SEAT Z-MEMBER	UP	1004.9067	g	-	5/6/2003	OK -1	Endevco	7264C-2K-2-180
0011	P27199	RRXXG1	REAR SEAT X-MEMBER	FWD	1013.1591	g	+	5/7/2003	OK -1	Endevco	7264C-2K-2-180
0012	P27195	RRXYG1	REAR SEAT Y-MEMBER	LT	1003.5673	g	-	5/7/2003	OK -1	Endevco	7264C-2K-2-180
0013	P27191	RRXZG1	REAR SEAT Z-MEMBER	UP	978.59327	g	-	5/7/2003	OK -1	Endevco	7264C-2K-2-180
0014	P27451	LTPXG1	DRIVERS LT. SIDE TOE PAN	RR	994.90886	g	-	5/6/2003	OK -1	Endevco	7264C-2K-2-180
0015	P23362	LTPYG1	DRIVERS LT. SIDE TOE PAN	LT	1010.8189	g	-	3/3/2003	OK -1	Endevco	7264C-2K-2-180
0016	P27472	LTPZG1	DRIVERS LT. SIDE TOE PAN	UP	1003.6460	g	-	5/6/2003	OK -1	Endevco	7264C-2K-2-180
0017	P27363	RTPXG1	DRIVERS RT. SIDE TOE PAN	RR	986.32248	g	-	5/6/2003	OK -1	Endevco	7264C-2K-2-180
0018	P27468	RTPYG1	DRIVERS RT. SIDE TOE PAN	LT	1012.3578	g	-	5/6/2003	OK -1	Endevco	7264C-2K-2-180
0019	P27916	RTPZG1	DRIVERS RT. SIDE TOE PAN	UP	1010.8987	g	-	5/6/2003	OK -1	Endevco	7264C-2K-2-180
0020	P27160	VCGXG1	VEHICLE CG X-AXIS	FWD	1019.4126	g	+	5/7/2003	OK -1	Endevco	7264C-2K-2-180
0021	P27203	VCGYG1	VEHICLE CG Y-AXIS	LT	983.66954	g	-	5/7/2003	OK -1	Endevco	7264C-2K-2-180
0022	P27198	VCGZG1	VEHICLE CG Z-AXIS	UP	991.38348	g	-	5/7/2003	OK -1	Endevco	7264C-2K-2-180
0023	03D03C27-N05	RDKZG1	REAR DECK Z-AXIS	UP	989.37198	g	-	4/3/2003	OK -1	Entran	EGE-73B6Q-200
0024	C0600390	TPDXD1	TOE PAN DISPLACEMENT	SPO4	1049.9260	mm	+	12/19/2002	OK -1	Celesco	PT-101-0050-11
0025	ABFire1	DABETA	DRIVER AIRBAG EVENT -	IP8	5.12	V	+	8/20/2002	OK -1	FLUKE	Y8101A
0026	ABFire2	DABETB	DRIVER AIRBAG EVENT-	IP2	5.12	V	+	8/20/2002	OK -1	FLUKE	Y8101A
0027	ABFire3	PABETA	PASSENGER AIRBAG EVENT	IP4	5.12	V	+	8/20/2002	OK -1	FLUKE	Y8101A
0028	ABFire4	PABETB	PASSENGER AIRBAG EVENT	IP1	5.12	V	+	8/20/2002	OK -1	FLUKE	Y8101A
0029	806	SHBF1	DRIVER SHOULDER FORCE	S222	15592.618	N	+	6/2/2003	OK -1	Lebow	3419T
0030	130	LPBF1	DRIVER LAP FORCE		15597.354	N	+	12/23/2002	OK -1	Lebow	3419T
0031	805	SHBF2	PASSENGER SHOULDER	P12	15579.395	N	+	6/2/2003	OK -1	Lebow	3419T
0032	804	LPBF2	PASSENGER LAP FORCE	S226	15569.888	N	+	4/3/2003	OK -1	Lebow	3419T

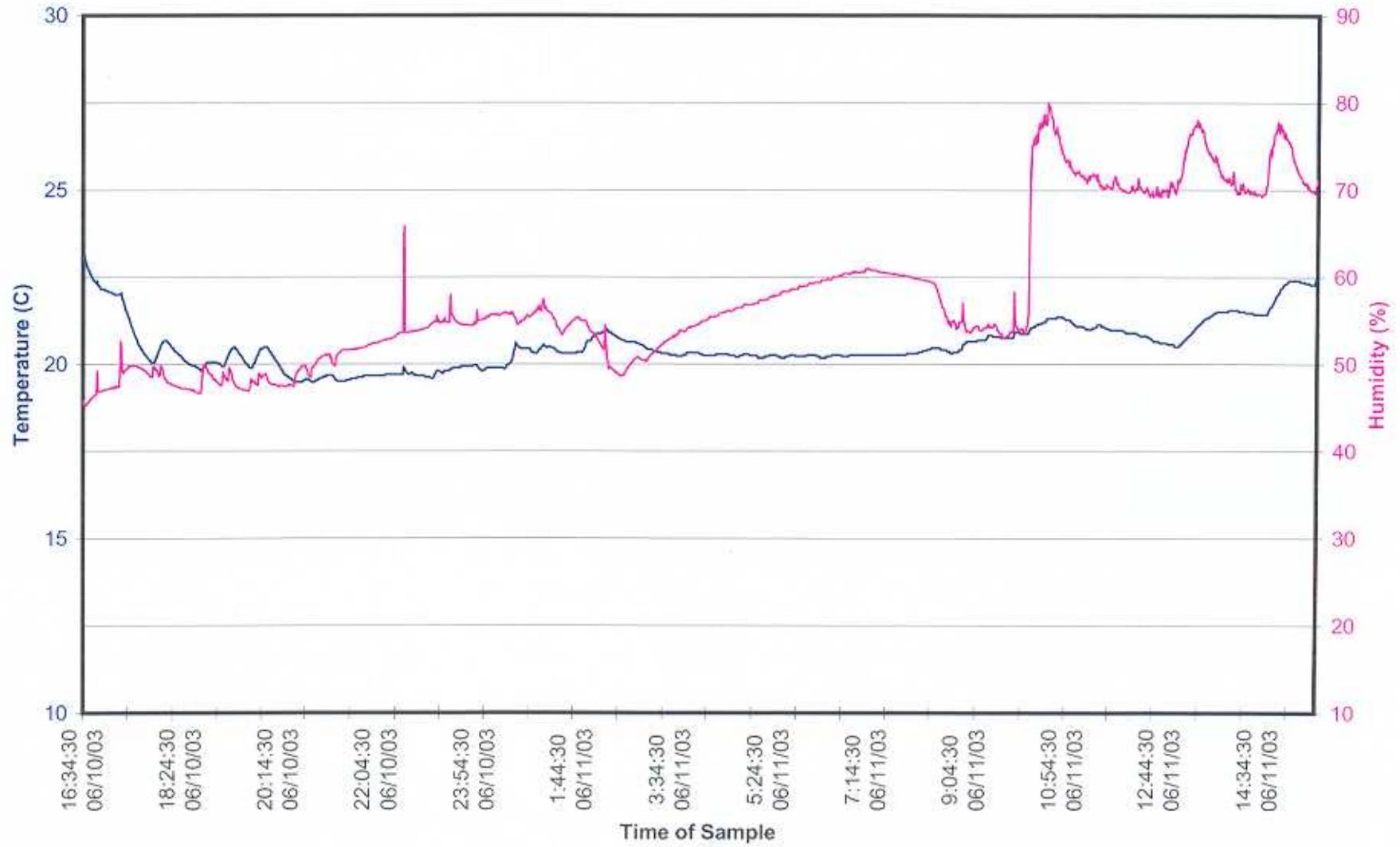
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LEFT OFFSET DEFORMABLE BARRIER/030611

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Appendix E

INSIA Report on Structural Measurements

**STRUCTURAL SURVEY OF CARS.
MEASUREMENT METHODOLOGY OF THE MAIN
RESISTANT ELEMENTS IN THE CAR BODY**

APARICIO IZQUIERDO, FRANCISCO
PÁEZ AYUSO, FRANCISCO JAVIER

INSIA
Carretera de Valencia, km. 7
Campus Sur de la Universidad Politécnica de Madrid
28031 – MADRID – (SPAIN)

March, 1999

REPORT DOCUMENTATION PAGE**Title:**

STRUCTURAL SURVEY OF CARS. MEASUREMENT METHODOLOGY OF THE MAIN RESISTANT ELEMENTS IN THE CAR BODY

Author(s):

Aparicio Izquierdo, Francisco
Páez Ayuso, Francisco Javier

Performing Organisation name and address:

INSIA – University Institute for Automobile Research
Carretera de Valencia, Km. 7 – Campus Sur de la Universidad Politécnica de Madrid
28031 – Madrid – Spain

Supplementary notes:

Under contract to:

THE EUROPEAN COMMUNITY

Project: “Improvement of Crash Compatibility between Cars”

Contract N°: RO – 97 – SC.1064

Abstract:

The main aim of this working package -*Structural Survey of Cars*- is the reduction of incompatibilities, both structural and geometric, between passenger vehicles and their potential collision partners. The understanding of these incompatibilities needs a previous step for the knowledge of the existing car fleet.

Firstly, it is necessary to select the main resistant elements in the car body. These elements have to be chosen from the point of view of the sort of collision that we want to study, that is to say, frontal and side impacts.

Detailed measurements have been taken from exterior and interior elements, spread to a total number of 74 models selected from the main vehicle manufacturers at Spain. All of them are being sold this year. Using the information available from the previous measurements in vehicles, the geometric characteristics of the main resistant elements involved in the geometric compatibility between cars will be defined.

This report shows the methodology followed to get these measurements.

Subject terms:

Crash compatibility, geometric compatibility, resistant elements, measure methodology

Date:

March, 1999

1.- METHODOLOGY.

Detailed measurements have been taken from exterior and interior elements. Using the information available from the previous measurements in vehicles, the geometric characteristics of the main resistant elements involved in the geometric compatibility between cars have been defined. These elements are presented in the following figures, and have been divided in two main groups according to the vehicle zones studied in this project.

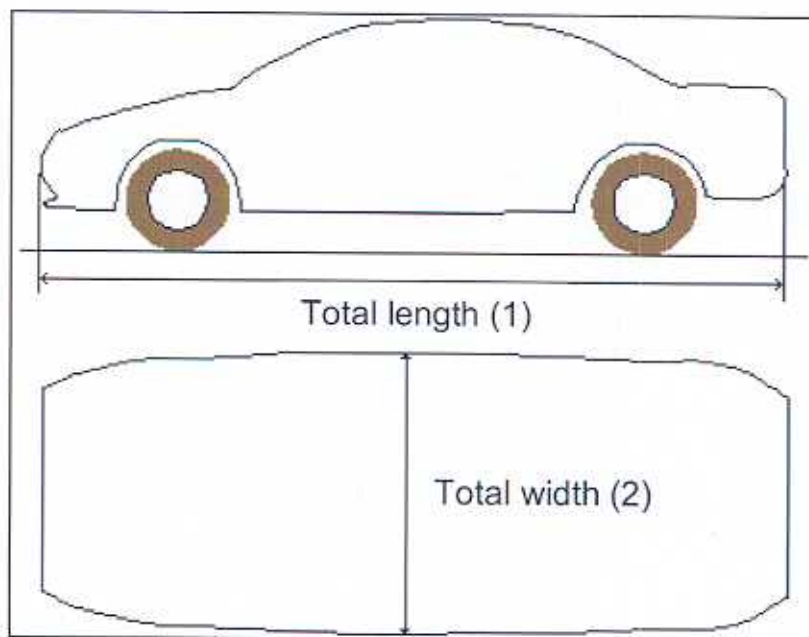


Figure 1.- Definition of the main resistant elements. General dimensions.

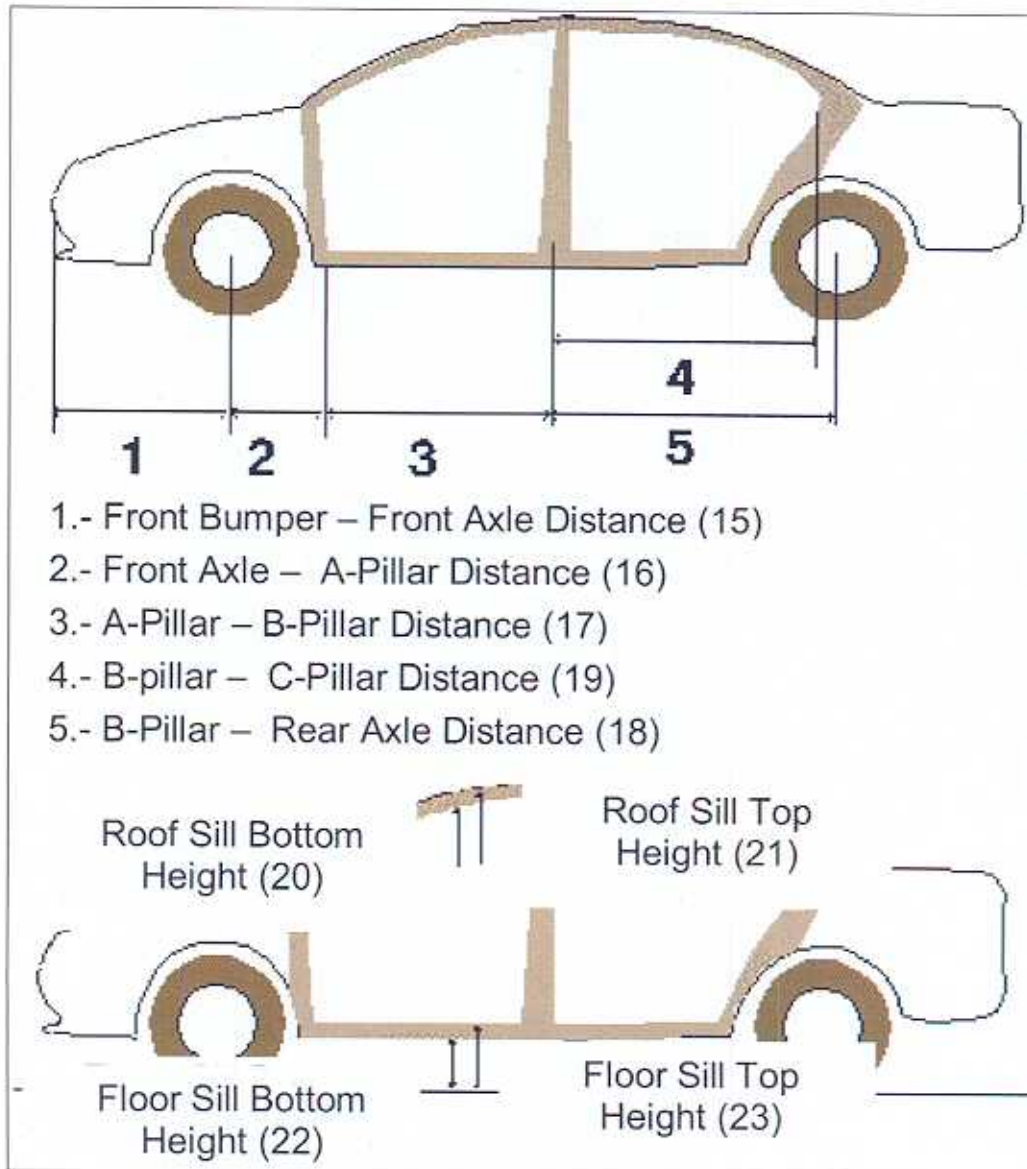


Figure 2.- Definition of the main resistant elements. Side elements.

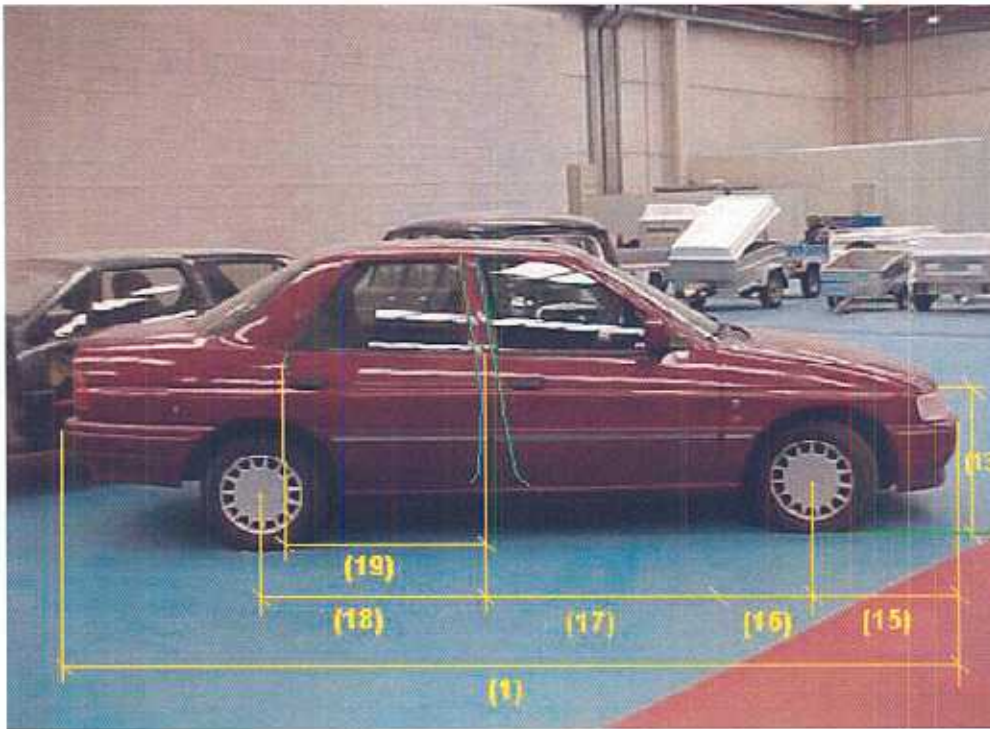
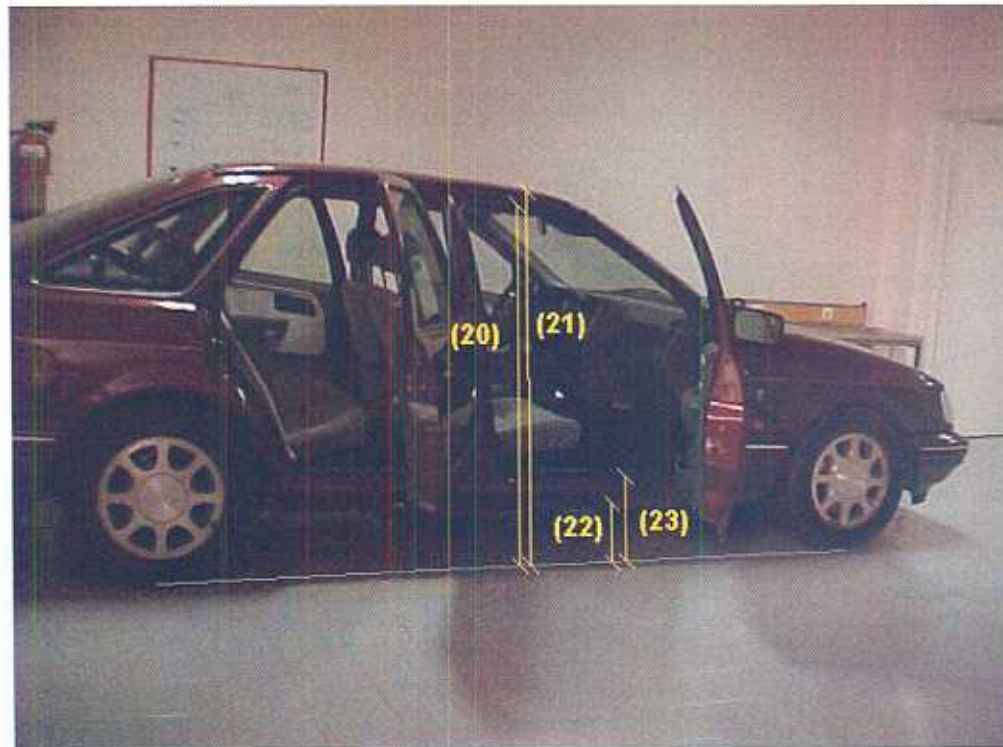


Figure 3.-
Measurements of
the side resistant
elements (outer).

Figure 4.- Measurements
of the side resistant
elements (inner).



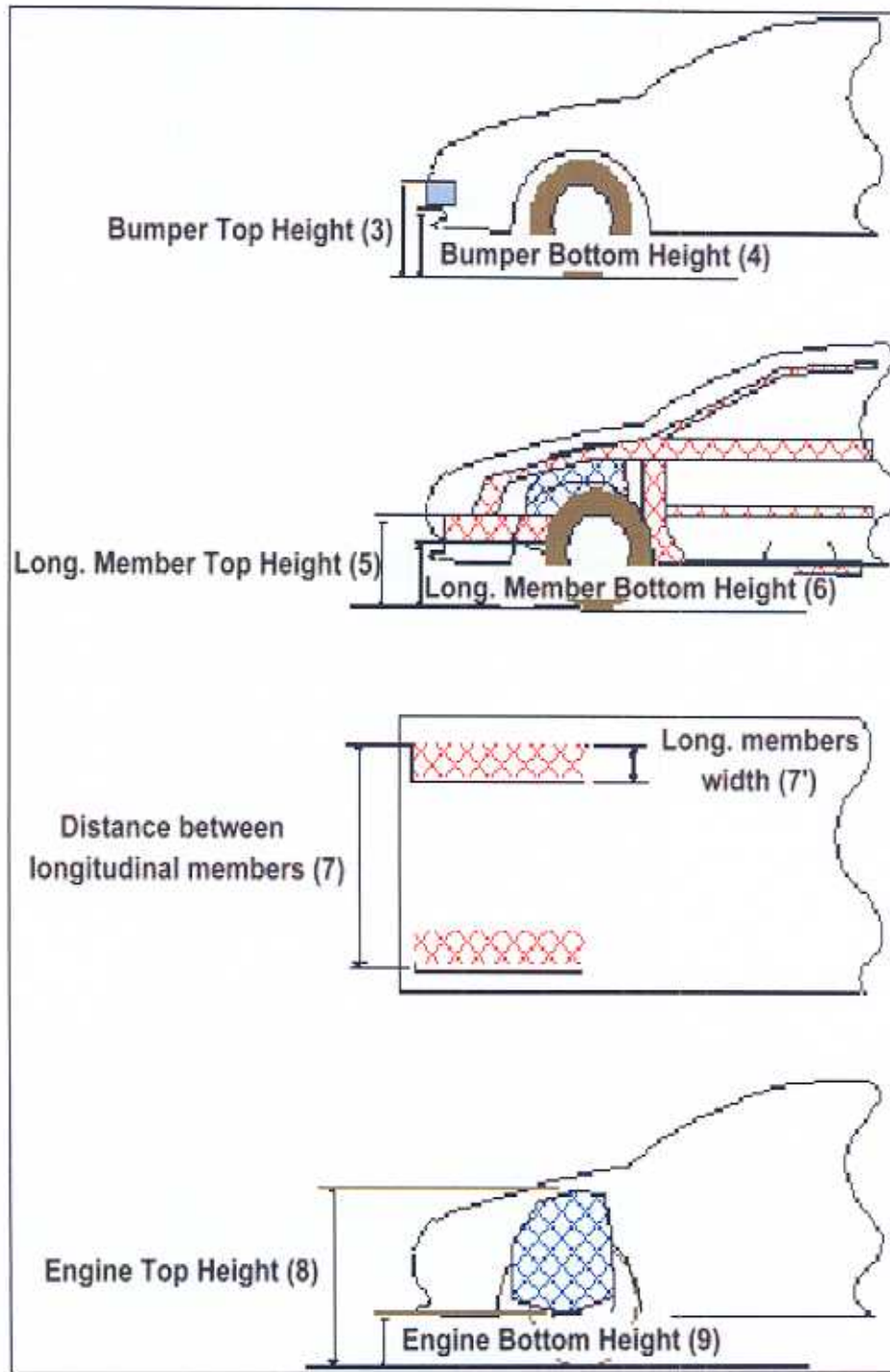


Figure 5.- Definition of the main resistant elements. Front elements.

Figure 6.-
Measurements of the
main resistant elements.
Front elements 1.

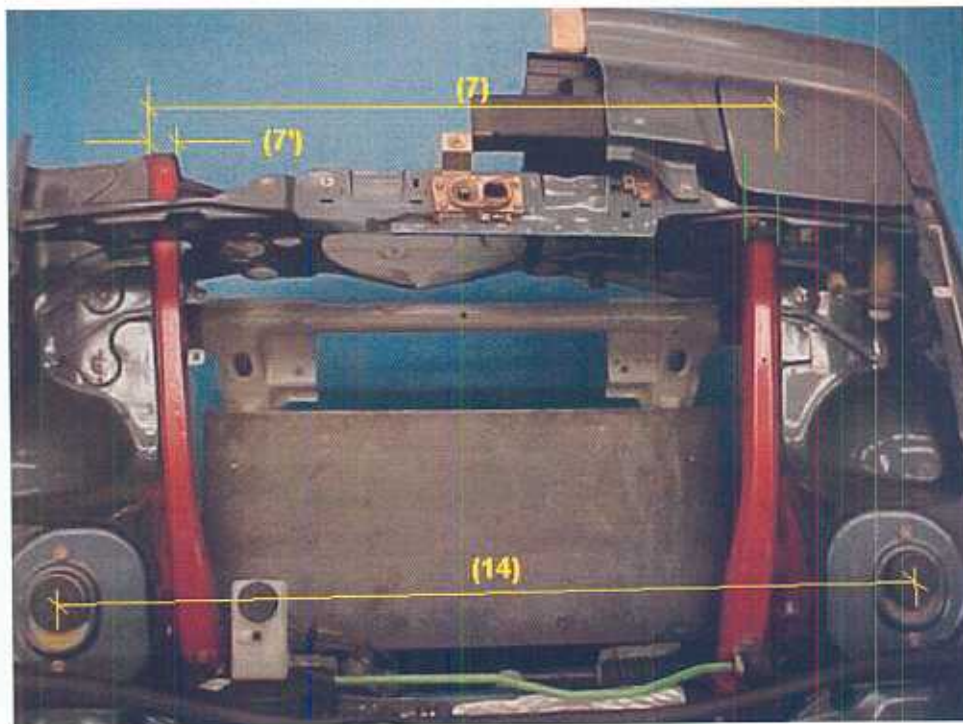
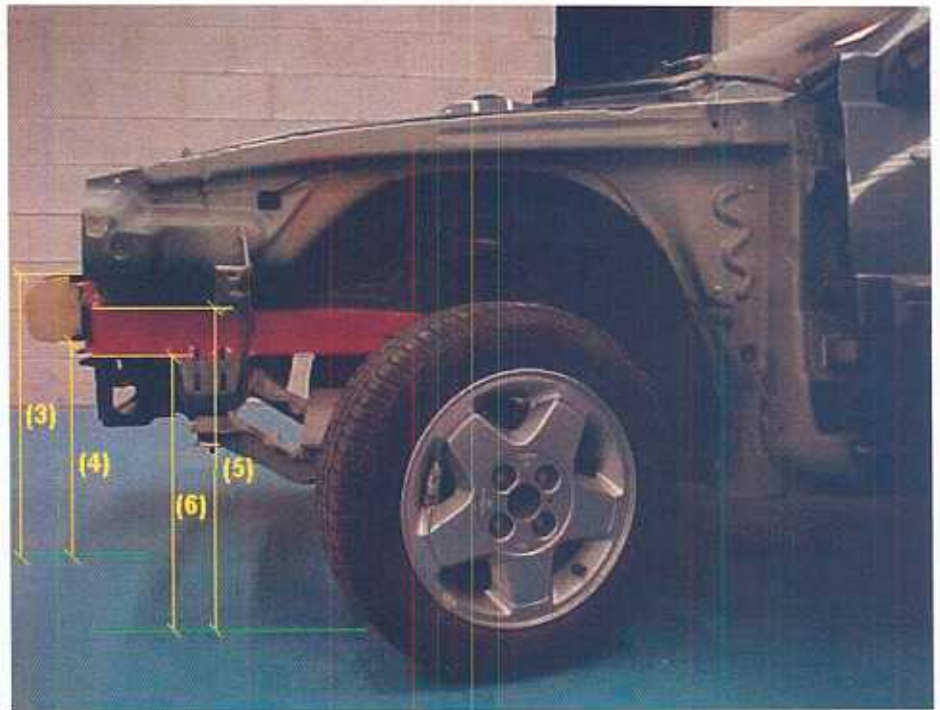


Figure 7.-
Measurements
of the main
resistant
elements. Front
elements 2.

Figure 8.-
Measurements of
the main resistant
elements. Front
elements 3.

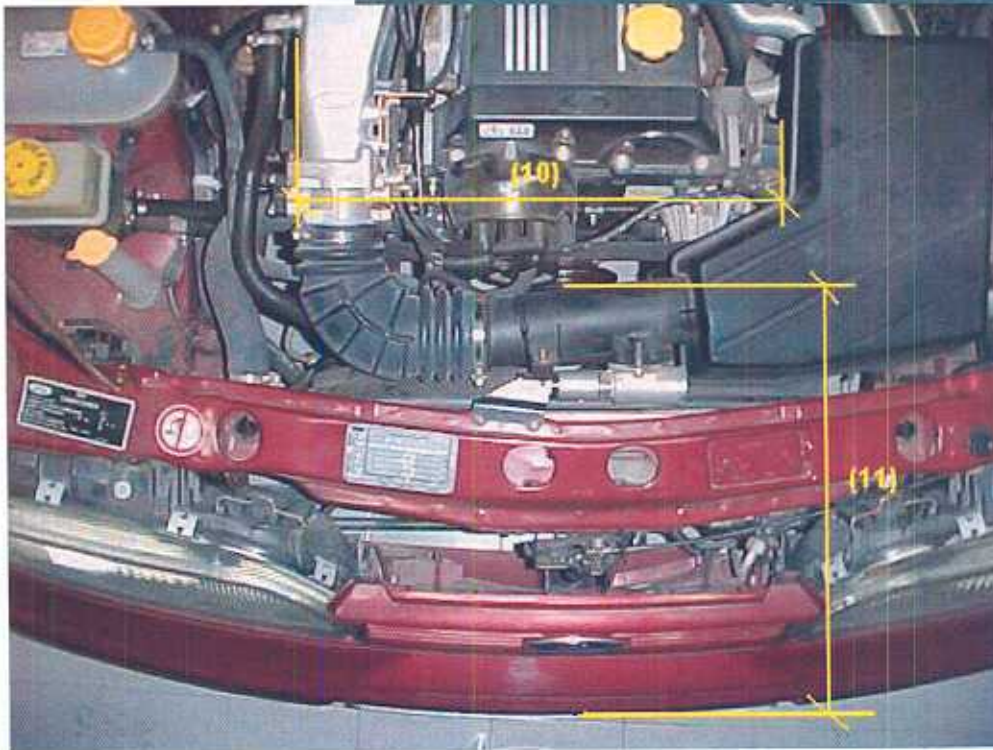
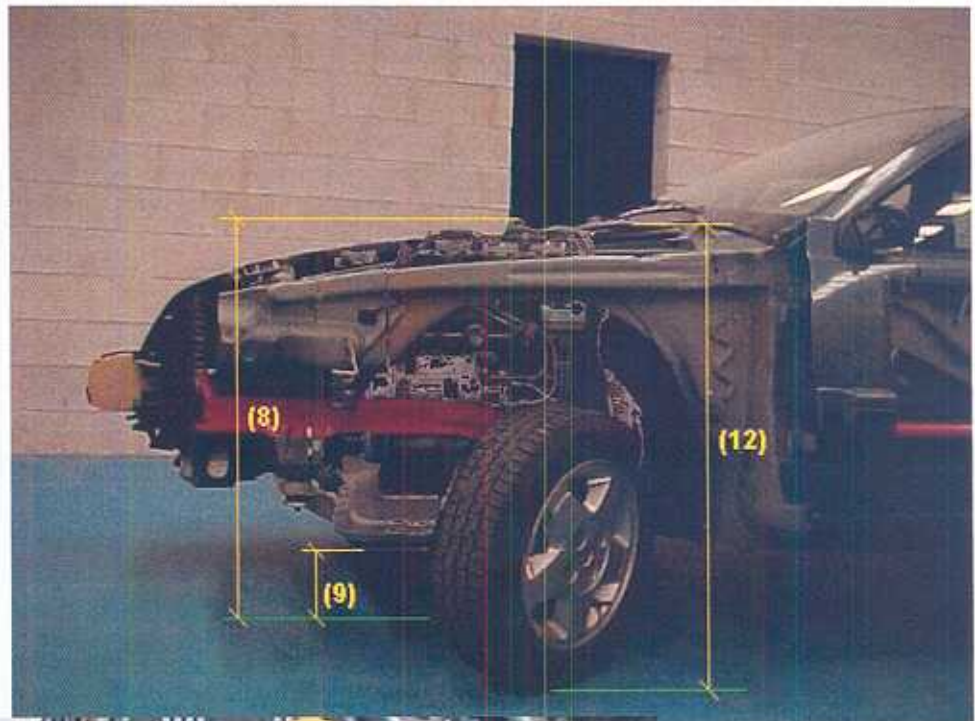


Figure 9.-
Definition of
the main
resistant
elements. Front
elements
(Longitudinal
engine).

The procedure considered to measure these elements is described as follows, where it is indicated the location of these ones in the Excel Sheet (SURVEY.XLS) into brackets:

FRONT ELEMENTS

- **Total Length –(1)- (Side & Front Sheets - C column):** distance between the point in the front bumper further on and the point in the rear bumper further back.
- **Weight (Side & Front Sheets - D column):** mass, including an average driver weight (70 kg), and the fuel tank mass (at half-capacity).
- **Total Width –(2)- (Side & Front Sheets - E column):** distance between the outer side points in a transverse plane of the vehicle (middle plane between the front and rear axles).
- **Bumper bottom height –(4)- (Front Sheet G column):** distance between the ground and the lowest point on the front bumper, being a resistant member (aerodynamic elements under the front bumper are not considered).
- **Bumper top height –(3)- (Front Sheet H column):** distance between the ground and the highest point on the front bumper, being a resistant member (aerodynamic elements are not considered).
- **Longitudinal member top height –(5)- (Front Sheet I column):** distance between the ground and the highest point on the longitudinal members, measured approximately in the front bumper-longitudinal member joint (when accessible).
- **Longitudinal member bottom height –(6)- (Front Sheet J column):** distance between the ground and the lowest point on the longitudinal members, measured approximately in the front bumper-longitudinal member joint.
- **Distance between longitudinal members (Front Sheet K column):** transverse distance between extreme points in longitudinal members, measured approximately in the front bumper-longitudinal member joint.

Depending on the accessibility of these members, the extreme points are the inner points (I) or the outer points (O).

- **Longitudinal member width -7'- (Front Sheet L column):** width of one of the longitudinal members, measured approximately in the front bumper-longitudinal member joint.

- **Engine top height (8) (Front Sheet N column):** distance between the ground and the highest point on the engine that can be a resistant member in case of accident (usually, the highest point on the head, or the highest point of the inlet or exhaust manifolds).
- **Engine bottom height (9) (Front Sheet M column):** distance between the ground and the lowest point on the engine (usually, the lowest point on the crankcase).
- **Engine and Gearbox width (10) (Front Sheet O & P columns):**
 - *Transverse configuration engine:* distance between extreme points in the gearbox-cylinder block unit or others resistant members attached to the cylinder block unit, i.e. fan belts (from a front point of view).
 - *Longitudinal configuration engine:* distance between extreme points in the cylinder block unit (from a front point of view).
- **Front bumper - Engine distance (11) (Front Sheet Q column):** distance between the point in the front bumper further on and the point in the engine further on that is a resistant element, i.e. the further on point of the exhaust manifold placed in the front of the engine.
- **Front shock absorber fixing width (14) (Front Sheet R column):** transverse distance between the front shock absorber - body car joints.
- **Front shock absorber fixing height (12) (Front Sheet S column):** distance between the ground and the front shock absorber-body car joint.
- **Bonnet leading edge height (Front Sheet T column):** distance between the ground and the bonnet edge further on.

SIDE ELEMENTS

- **Front bumper - Front axle distance (15) (Side Sheet G column):** distance between the point in the front bumper further on and the middle point in the front tyre-road contact patch.
- **Front axle - A Pillar distance (16) (Side Sheet H column):** distance between the middle point in the front tyre-road contact patch and the point in the A-pillar further back.
- **A Pillar - B Pillar distance (17) (Side Sheet I column):** distance between the point in the A-pillar further back and the middle point in the B-pillar.
- **B Pillar - C Pillar distance (19) (Side Sheet J column):** distance between the middle point in the B-pillar and the point in the C-pillar further back (only 4/5-door vehicles).
- **B Pillar - Rear axle distance (18) (Side Sheet K column):** distance between the middle point in the B-pillar and the middle point in the rear tyre-road contact patch.
- **Roof sill bottom height (20) (Side Sheet L column):** distance between the ground and the lowest point on the roof sill, measured in the front door middle point.
- **Roof sill top height (21) (Side Sheet M column):** distance between the ground and the highest point on the roof sill (usually located in the sill-roof joint), measured in the front door middle point.
- **Floor sill bottom height (22) (Side Sheet N column):** distance between the ground and the lowest point on the floor sill, measured in the front door middle point.
- **Floor sill top height (23) (Side Sheet O column):** distance between the ground and the highest point on the floor sill, measured in the front door middle point.

NOTE

- N/A: dimension not available.

Appendix F

Manufacturer's Information

TEST VEHICLE INFORMATION

Vehicle Model Year & Make: 2002 NISSAN
 Vehicle Model & Body Style: ALTIMA 4 DOOR SEDAN

1. 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. Indicate, if applicable how the detents are numbered (Is the first detent "0" or "1"?). Indicate if the seat back angle is measured with the dummy in the seat.

Seat back angle for driver's seat = 21° *1
 10.5° *2
 *1 = Nominal Design Angle
 *2 = Measured Angle on seat head rest post

Measurement Instructions:

A) MANUAL SEAT

Measurements are without dummy in the seat.

- 1) Adjust the seat back until it is locked in the full upright position (first detent = "0")
- 2) Release the lock by actuating the reclining lever and push the seat back to the 5th rearward notch.

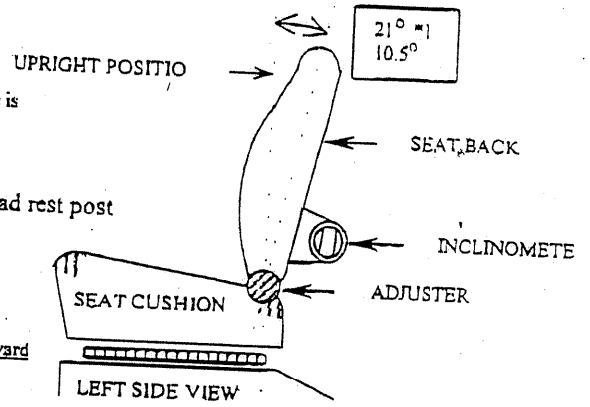
B) POWER SEAT

- 1) Adjust the seat back by the recliner switch to the upright initial position.
- 2) Recline the seat back rearward until the inclinometer read 10.5° at seat head rest post.

Seat back angle for passenger's seat = 21° *1
 10.5° *2

Measurement Instructions:

Same procedure as Driver side.



FRONT SEAT ASSEMBLY

2. SEAT FOR & AFT POSITIONS **

Provide instructions for positioning the driver and front outboard passenger seat(s) in the center of fore and aft travel. For example, indicate how the detents are numbered (Is the first detent "0" or "1"?). Provide information to locate the detent in which the seat track is to be locked.

Positioning of driver's seat:

A: MANUAL SEAT

- 1) Actuate seat track slide mechanism by lifting the lock lever and pull the seat until it is locked in the full forward most position.
- 2) With the initial position designated as "0", release the lock mechanism and adjust the seat to the 10th notch (neutral position, 10 open notch to the rear).

B: POWER SEAT

- Adjust seat track slide to full forward and mark position. Adjust seat track slide to full rearward and mark position (230mm).
Adjust seat track to mid-position(115mm). Refer door check link to seat recliner cover screw is 1005mm)

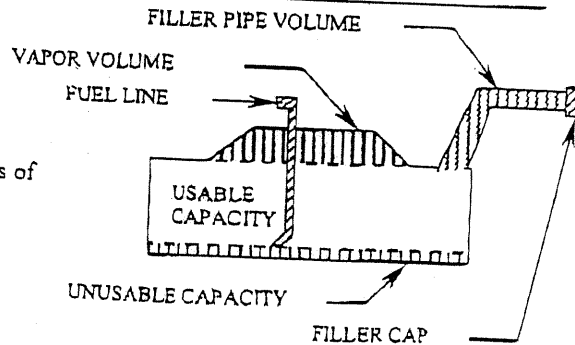
Positioning of the passenger's seat (if applicable):

Same procedure as drive side.

3. FUEL TANK DATA **

- 3.1 A. "Usable Capacity" of standard equipment fuel tank = 19.8 gallons.
- B. "Usable Capacity" of optional equipment fuel tank = N/A gallons.
- C. Capacity used when certification testing to requirements of FMVSS 301 = 18.8 gallons.

Operational Instructions:



VEHICLE FUEL TANK ASSEMBLY

3.2 Amount of Stoddard solvent added to vehicle(s) used for certification test(s) = 18.8 gallons.

3.3 Is vehicle equipped with electric fuel pump? YES NO

If YES, explain the vehicle operating conditions under which the fuel pump will pump fuel.

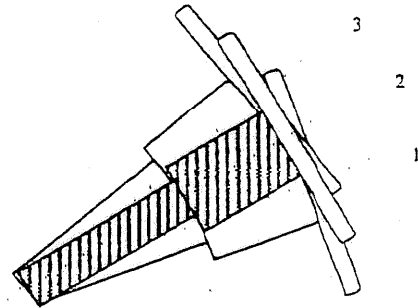
The fuel pump will pump fuel: 1) for 5 seconds after the ignition is switched to "ON".
2) while the engine is running.
3) for 1.5 seconds after the engine stops running.

4. STEERING COLUMN ADJUSTMENTS **

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when it is moved through its full range of driving positions. If the tested vehicle has any of these adjustments, does your company use any specific procedures to determine the geometric center.

Operational Instructions: $\alpha = 25.5^\circ$

- 1) Adjust the steering column and lock it in the full up position. Top Notch is 0.
- 2) Actuate steering column tilt lever and adjust steering column to 3rd notch. The steering column angle should be 25.5°
- 3) Adjust the steering telescopic column and lock it in the full forward position. Measure the dimension from the dash to the top center of the steering wheel rim(145mm).
- 4) Adjust the steering telescopic column and lock it in the full rear position. Measure the dimension from the dash to the top center of the steering wheel rim(50mm total travel).
- 5) Set steering column at mid-position(170mm).



5. ADJUSTABLE SEAT BELT D-RING ANCHORAGE

The front seat safety belt system in the 2002 Nissan ALTIMA is equipped with a load limiting device, seatbelt pretensioners, and adjustable upper seat belt anchorages. The adjustable upper seat belt anchorage is positioned at the topmost position for a 50th percentile adult male occupant.

OFFSET FRONTAL BARRIER CERTIFICATION

Date: February 25, 2003
To: Honda R & D Americas, Inc.
21001 State Route 739
Raymond, OH 43067-9705

PURCHASE ORDER INFORMATION

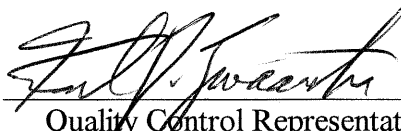
Customer P.O. Number: HOA-332773
Work Order Number: 15894
Quantity: 01 piece

CORE INFORMATION

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

Unit Number: 044B0103

This is to certify that the aluminum honeycomb core supplied, under the unit number provided, meets the crush requirements of 248.1 psi +0, -10% per DWG# WG11.


Quality Control Representative
Karl D. Zwaanstra

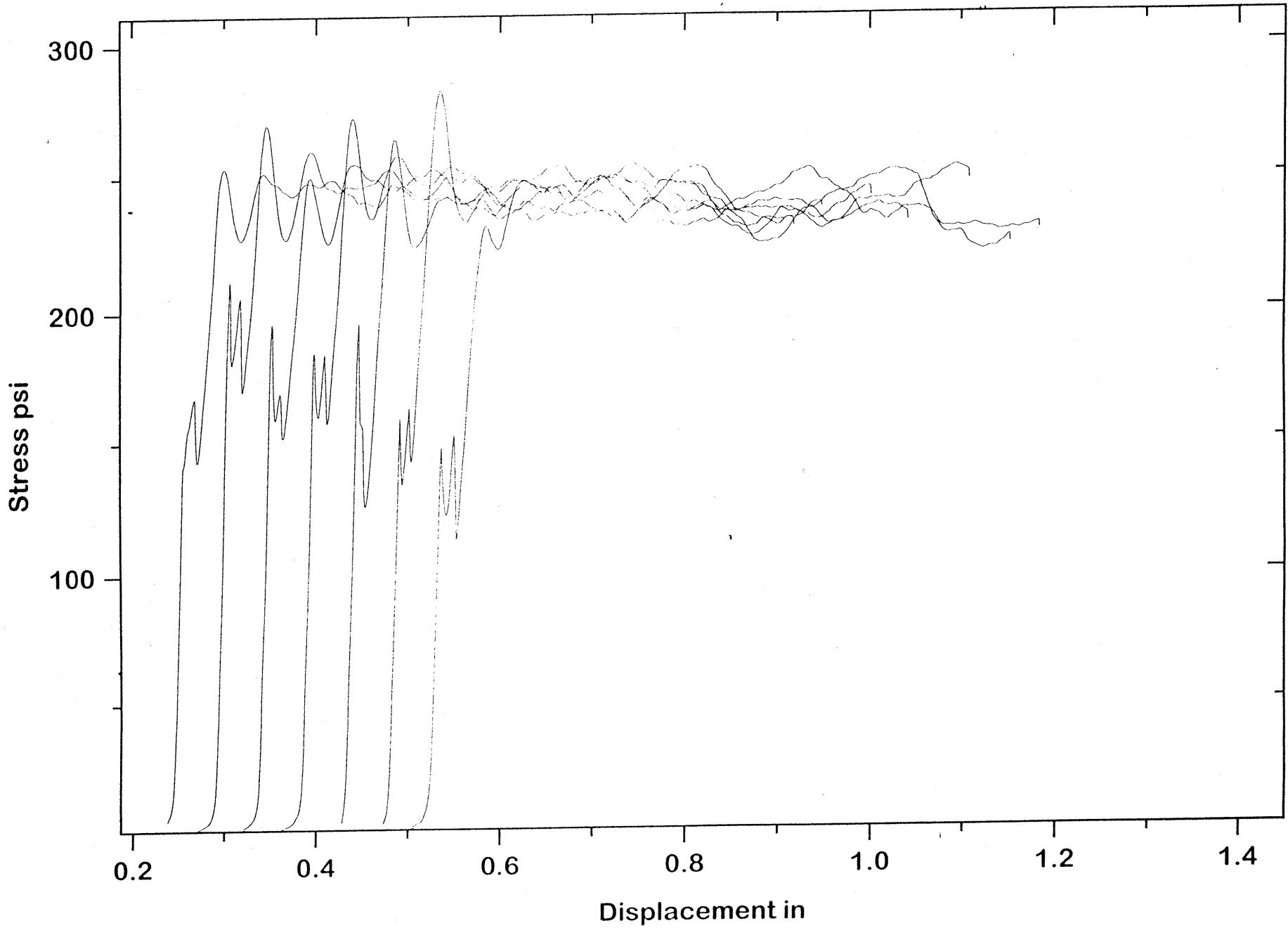


Crush Data
248.1 psi +0, -10% psi per DWG #WG11

Block Number: 044B0103

<u>Specimen Number</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>
1	240.01	235.30	232.82
2	244.26	244.05	234.65
3	245.40	238.38	233.07
4	248.19	241.78	233.76
5	241.32	240.94	238.13
6	244.34	235.85	246.16
7	240.98	242.57	232.99

BLOCK # 044B0103 Sample ID: IN226402



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030611

OFFSET FRONTAL BARRIER CERTIFICATION

Date: February 25, 2003
To: Honda R & D Americas, Inc
21001 State Route 739
Raymond, OH 43067-9705

PURCHASE ORDER INFORMATION

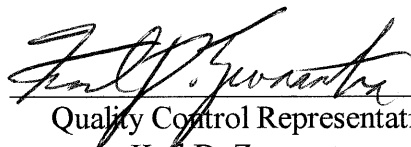
Customer P.O. Number: HOA-332773
Work Order Number: 15894
Quantity: 01 piece

CORE INFORMATION

Core Type: PCGA-3/4-1.8-P-3003-T
Cell Size: 0.750 inch
Density: 1.8 pcf

Unit Number: 109C0103

This is to certify that the aluminum honeycomb core supplied, under the unit number provided, meets the crush requirements of 49.59 psi +0, -10% per DWG# WG11


Quality Control Representative
Karl D. Zwaanstra

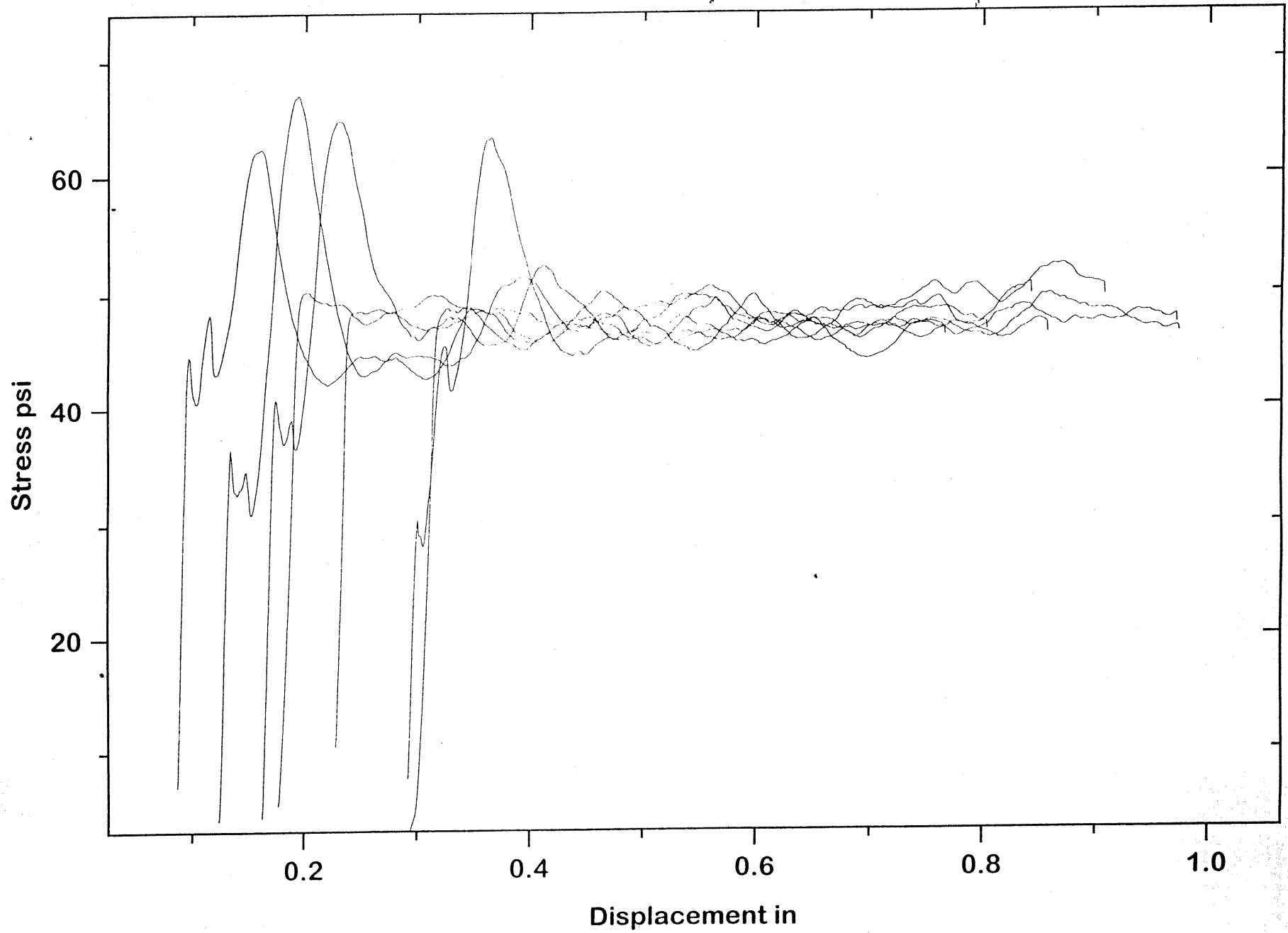


Crush Data
49.59 psi +0, -10% psi per DWG #WG11

Block Number: 109C0103

<u>Specimen Number</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>
1	46.96	48.28	46.66
2	48.42	46.61	47.00
3	47.57	47.21	49.42
4	47.67	47.19	46.70
5	49.19	48.33	48.41
6	47.66	46.03	47.97
7	46.30	46.90	48.75

BLOCK # 109C0103 Sample ID: IN226592



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030611