

Vehicle Research and Test Center
1999 Mitsubishi Montero Sport into Left Front of
1997 Honda Accord - 50% Offset - Oblique 30°
TRC Inc. Test Number: 021113

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Section 1.0

Purpose and Test Procedure

Purpose

This 56.3 km/h (35 mph), 50% offset, 30° oblique, vehicle-to-vehicle 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 test mode was defined with both vehicles moving at 56.3 km/h to impact the bullet vehicle into the left front corner of the target, offset 50%, at an impact angle of 30 degrees. The purpose of this test was to evaluate the aggressiveness of the bullet vehicle, a 1999 Mitsubishi Montero Sport MPV, and the vehicle and occupant response of the target vehicle, a 1997 Honda Accord 4-door sedan, in this vehicle-to-vehicle impact mode.

Test Procedure

This test was conducted in accordance with VRTC instructions for a 50% offset 30° oblique, vehicle-to-vehicle test. Data was obtained relative to FMVSS 208, "Occupant Crash Protection" (December 18, 2001) performance for the 35 mph test mode.

The target vehicle, a 1997 Honda Accord 4-door sedan, was instrumented with twenty-four (24) accelerometers to measure longitudinal, lateral and vertical axis accelerations. The driver's airbag signal was monitored with an inductive pickup. The vehicle's specified impact velocity range was 55.5 to 57.1 km/h.

The bullet vehicle, a 1999 Mitsubishi Montero Sport, was instrumented with twenty-four (24) accelerometers to measure longitudinal, lateral and vertical axis accelerations. The driver's and passenger's airbag signals were monitored with inductive pickups. The vehicle's specified impact velocity range was 55.5 to 57.1 km/h.

The bullet vehicle impacted the left front corner of the target, offset 50%, at an impact angle of 30 degrees. The bullet vehicle's left edge was aligned with the target vehicle's centerline.

One (1) 50th percentile adult male Hybrid III dummy was placed in the target vehicle's left front designated seating position, according to FMVSS 208 procedures (December 18, 2001). The driver dummy was both belted and was restrained with a front single stage airbag. No dummy was placed in the target vehicle right front passenger position, but the weight of a 5th percentile female dummy was used to obtain fully loaded weight and calculate test weight.

The target vehicle's driver dummy was instrumented with six (6) accelerometers in the head, plus six (6) chest, and three (3) pelvis accelerometers to measure longitudinal, lateral, and vertical accelerations (primary and redundant in the head and chest). The driver dummy was also instrumented with upper neck moment and force load cells, a chest deflection potentiometer, left and right femur load cells to measure moments and forces, and tibia to femur displacement potentiometers at each knee. The driver dummy was also equipped with upper and lower tibia load cells to measure forces and moments.

One (1) 50th percentile adult male Hybrid III dummy and one (1) 5th percentile adult female dummy were placed in the bullet vehicle's front outboard designated seating positions according to FMVSS 208 (December 18, 2001). The driver dummy and passenger dummy were both belted and were restrained with front single stage airbags.

The bullet vehicle driver dummy was instrumented with an array of three (3) accelerometers in the head, plus three (3) chest, and three (3) pelvis accelerometers to measure longitudinal, lateral, and vertical accelerations. The driver dummy was also instrumented with upper neck moment and force load cells, a chest deflection potentiometer, left and right 6-channel femur load cells to measure axial moments and forces, and a tibia to femur displacement potentiometer at each knee.

The bullet vehicle's passenger dummy was instrumented with six (6) accelerometers in the head, plus six (6) chest and three (3) pelvis accelerometers to measure longitudinal, lateral, and vertical accelerations (primary and redundant in the head and chest). The bullet passenger dummy was also instrumented with upper neck moment and force load cells, left and right femur load cells to measure axial forces, a chest deflection potentiometer, and a tibia to femur displacement potentiometer at each knee.

The 155 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 fourteen (14) high-speed motion picture cameras. The pre- and post-test conditions were recorded by one (1) real-time motion picture camera.

The test summary data are presented in Section 2.0. The summary of FMVSS 208 data are presented in Section 3.0. The occupant, camera, and vehicle measurements are presented in Section 4.0. Appendix A contains the still photographic prints. Appendix B contains the dummy and vehicle data plots. Appendix C contains the dummy verification data. Appendix D contains miscellaneous test information. Appendix E contains an INSIA report which was the basis for the Structural Measurements presented in Tables 13 and 16 of this report. Appendix F contains the vehicle manufacturer's information.

Section 2.0

Left Front Oblique Impact Test Summary

Test Results Summary

This 56.3 km/h 30° left front oblique, 50% offset, vehicle-to-vehicle impact test was conducted by TRC Inc. on November 13, 2002.

The target test vehicle, a 1997 Honda Accord 4-door sedan, was equipped with a 2.2-liter transverse engine, automatic transmission, power steering, power brakes, and single stage front airbags. The target vehicle's test weight was 1498.2 kg. The target vehicle's impact speed was 56.4 km/h. The target vehicle sustained 703 mm of static crush during the impact (measured without bumper fascia). The bullet test vehicle, a 1999 Mitsubishi Montero Sport MPV, was equipped with a 3-liter inline engine, automatic transmission, power steering, power brakes, and single stage front airbags. The bullet vehicle's test weight was 2112 kg. The bullet vehicle's impact speed was 56.6 km/h. The bullet vehicle sustained 333 mm of static crush during the impact (measured without bumper fascia).

The target vehicle driver dummy's 36-millisecond Head Injury Criteria (HIC) was 545. The target vehicle driver dummy's 15-millisecond HIC was 323. The target vehicle driver dummy's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 58.2 g. The target vehicle driver dummy's maximum chest deflection was 32 mm. The target vehicle driver dummy's left and right femur maximum axial compressive forces were 9695 N and 9744 N, respectively. The target vehicle driver dummy's upper neck injury calculations were as follows: neck tension-flexion (NTF), 0.15; neck tension-extension (NTE), 0.65; neck compression-flexion (NCF), 0.00; and neck compression-extension (NCE), 0.25. The target vehicle driver dummy's peak upper neck tension force was 1495 N and peak upper neck compression force was 815 N.

The bullet vehicle driver dummy's 36-millisecond HIC was 82. The bullet vehicle driver dummy's 15-millisecond HIC was 36. The bullet vehicle driver dummy's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 31.9 g. The bullet vehicle driver dummy's maximum chest deflection was 36 mm. The bullet vehicle driver dummy's left and right femur maximum axial compressive forces were 3085 N and 3224 N, respectively. The bullet vehicle driver dummy's upper neck injury calculations were as follows:

NTF, 0.09; NTE, 0.26; NCF, 0.02; and NCE, 0.01. The bullet vehicle driver dummy's peak upper neck tension force was 1104 N and peak upper neck compression force was 98 N.

The bullet vehicle right front passenger dummy's 36-millisecond HIC was 128. The bullet vehicle passenger dummy's 15-millisecond HIC was 81. The bullet vehicle passenger dummy's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 31.3 g. The bullet vehicle passenger dummy's maximum chest deflection was 32 mm. The bullet vehicle passenger dummy's left and right femur maximum axial compressive forces were 2812 N and 2145 N, respectively. The bullet vehicle right front passenger dummy's upper neck injury calculations were as follows: NTF, 0.21; NTE, 0.61; NCF, 0.05; NCE, and 0.02. The bullet vehicle right front passenger dummy's peak upper neck tension force was 1089 N and peak upper neck compression force was 85 N.

Data Acquisition Explanations

The target vehicle's instrument panel center X-axis acceleration data channel, DPCXG1, went open at approximately 66 milliseconds and recorded no valid data after that.

An anomalous data spike appeared at approximately 0.7-0.9 milliseconds on several bullet passenger dummy neck load cell channels. It was apparently caused by interference from the strobe light used to indicate time-zero in camera views. The calculated peak moment about the occipital condyle and the peak neck injury values (NIJ) were not affected, except the passenger neck compression/extension value, NCEB, which was very low. The channels noticeably affected include:

bullet passenger upper neck X-axis shear force, NEKXFB

bullet passenger upper neck Y-axis shear force, NEKYFB

bullet passenger upper neck Z-axis axial force, NEKZFB

bullet passenger upper neck moment about the Y-axis, NEKYMB

Table 1 Crash Test Summary

Test mode:	Left Front Oblique Impact		
Test date:	11/13/02		
Test time:	1338		
Ambient temperature:	11° C		
Target vehicle year/make/ model/body style:	1997/Honda/Accord/4-door sedan		
Target vehicle test weight:	1498.2 kg		
Bullet vehicle year/make/ model/body style:	1999/Mitsubishi/Montero Sport/MPV		
Bullet vehicle test weight:	2112.0 kg		
Impact angle: ¹	330°		
Impact velocity: ²	Target vehicle = 56.4 km/h Bullet vehicle = 56.6 km/h		
Target vehicle maximum static crush: ³	703 mm		
Bullet vehicle maximum static crush: ³	333 mm		
Total number of data channels:	155		
Number of cameras:	High-speed	14	Real-time 1
<u>Target vehicle dummies:</u>	<u>Driver #168</u>	<u>Passenger</u>	
Type:	HIII 50 th (Part 572E)	None	
Location:	Left Front		
Restraint:	3-point belt; single stage airbag		
<u>Bullet vehicle dummies:</u>	<u>Driver #169</u>	<u>Passenger #416</u>	
Type:	HIII 50 th (Part 572E)	HIII 5 th (Part 572O)	
Location:	Left Front	Right Front	
Restraint:	3-point belt; single stage airbag	3-point belt; single stage airbag	

¹ With respect to tow track centerline.

² Speed trap measurement ($\pm .08$ km/h accuracy)

³ The maximum crush was at a point on the vehicle front end where the fascia was separated during the test; these crush values are derived from pre- and post-test measurements with the bumper fascia removed. The target vehicle's leftmost point could not be measured.

Table 1 Crash Test Summary, Cont'd.

Target vehicle seat track position for test:

Driver: Mid (11th of 21 positions)

Passenger: N/A

Target vehicle seat back position for test:

Driver: 21.8°

Passenger: N/A

Target vehicle head restraint position for test:

Driver: Full up

Passenger: N/A

Steering column position: Mid

D-ring position for test: Mid

Bullet vehicle seat track position for test:

Driver: Mid

Passenger: One notch rear of full forward

Bullet vehicle seat back position for test:

Driver: 22° (9.9° measured on headrest post)

Passenger: 13.9° (4.3° measured on headrest post)

Bullet vehicle head restraint position for test:

Driver: Full Up

Passenger: Full Down

Steering column position: Mid

D-ring position for test: Mid (3 of 5)

Table 2 Target General Test and Vehicle Parameter Data

Vehicle year/make/
model/body style: 1997/Honda/Accord/4-door sedan

VIN: 1HGCD5639VA026924

Model year: 1997

Body style: 4-door sedan

Color: Grey

Engine data:

 Cylinders: 4

 Displacement 2.2 liters

 Cylinder placement: Straight

 Engine placement: Transverse

Transmission data: 4 speed, ___ manual, X automatic, ___ overdrive

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

Date vehicle received:

Odometer reading: 88126

Dealer's name and address: N/A
(Supplied by VRTC)

Accessories:

Power steering	Yes	Automatic transmission	Yes
Power brakes	Yes	Automatic speed control	Yes
Power seats	No	Tilting steering wheel	Yes
Power windows	Yes	Telescoping steering wheel	No
Tinted glass	Yes	Air conditioning	Yes
Radio	Yes	Anti-skid brake	No
Clock	Yes	Rear window defroster	Yes
Other	No	Power door locks	Yes

Certification data from vehicle's label:

Vehicle manufactured by: Honda of America Mfg., Inc

Date of manufacture: 10/96

VIN: 1HGCD5639VA026924

GVWR: 3915 lbs. (1780 kg)

GAWR: Front: 2140 lbs. (973 kg)

 Rear: 1810 lbs. (823 kg)

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

Tires on vehicle (mfr., line, size): Michelin, Rainforce, 185/65R15
Tire pressure with maximum capacity vehicle load:
Front: 32 psi (220 kPa)
Rear: 32 psi (220 kPa)
Spare tire (mfr., line, size): Goodyear, Temporary Spare, T115/70D14
Type of seats:
Front Bucket
Rear Bench
Maximum width: 1780 mm
Wheelbase: 2710 mm

Location of "Recommended Tire Pressure" label:

The label was located on driver side lower B-pillar.

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

Recommended tire size: 185/65R15
Recommended cold tire pressure:
Front: 32 psi (220 kPa)
Rear: 32 psi (220 kPa)

Vehicle Capacity Data:

Number of Occupants (Designated seating capacity):

Front 2
Rear 3
Total 5

Vehicle capacity weight: 850 lbs. (385.6 kg)

Rated cargo/luggage weight:¹ 100 lbs. (45.4 kg)

Test vehicle attitude:

Delivered attitude:	LF	702 mm;	RF	680 mm;	LR	707 mm;	RR	687 mm
Fully loaded attitude:	LF	686 mm;	RF	665 mm;	LR	667 mm;	RR	650 mm
Pre-test attitude:	LF	695 mm;	RF	685 mm;	LR	660 mm;	RR	658 mm
Post-test attitude: ²	LF	N/A mm;	RF	657 mm;	LR	650 mm;	RR	698 mm

¹ By calculation; not on label.

² Left front tire flattened; left front fender missing.

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

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

Right front	410.0 kg	Right rear	262.5 kg
Left front	409.5 kg	Left rear	250.5 kg
Total front weight	819.5 kg	(61.5 % of total vehicle weight)	
Total rear weight	513.0 kg	(38.5 % of total vehicle weight)	
Total delivered weight	1332.5 kg		

Calculation of test vehicle's target test weight:

Total Delivered Weight (UDW) =	1332.5 kg
Rated Cargo/Luggage Weight (RCLW) ¹ =	45.4 kg
Weight of 1 Part 572E Dummy @ 76 kg and 1 Part 572O Dummies @ 49 kg =	125.0 kg
Target test weight =	1502.9 kg

Weight of test vehicle with required dummies and 40.7 kg of cargo weight:

Right front	431.6 kg	Right rear	309.6 kg
Left front	441.0 kg	Left rear	316.0 kg
Total front weight	872.6 kg	(58.2% of total vehicle weight)	
Total rear weight	625.6 kg	(41.8% of total vehicle weight)	
Total test weight	1498.2 kg	(0.3% under target test weight)	

Weight of ballast secured in vehicle: 0

Components removed to meet target test weight: All glass from doors, right front passenger door panel, rear door panels, exhaust system, trunk lid, speakers, rear bumper fascia, rear interior trim, trunk lid, front passenger and rear seats, fuel

Location of Vehicle's CG: 1132 mm rearward of front wheel centerline

Fuel System Data:

Usable fuel system capacity	64.4 liters (from manufacturer's information)
Actual test volume: ²	0.0 liters (0% 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.

² Fuel drained to achieve test weight.

Table 3 Bullet General Test and Vehicle Parameter Data

Vehicle year/make/
model/body style: 1999/Mitsubishi/Montero Sport/MPV

VIN: JA4MT31H7XP009773

Model year: 1999

Body style: MPV

Color: Green Gold

Engine data:

 Cylinders: 6

 Displacement 3.0 liters

 Cylinder placement: V

 Engine placement: inline

Transmission data: 4 speed, ___ manual, X automatic, ___ overdrive

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

Date vehicle received: 11/01/02

Odometer reading: 77573

Dealer's name
and address: N/A
(Supplied by VRTC)

Accessories:

Power steering	Yes	Automatic transmission	Yes
Power brakes	Yes	Automatic speed control	Yes
Power seats	No	Tilting steering wheel	Yes
Power windows	Yes	Telescoping steering wheel	No
Tinted glass	Yes	Air conditioning	Yes
Radio	Yes	Anti-skid brake	Yes
Clock	Yes	Rear window defroster	Yes
Other	N/A	Power door locks	Yes

Certification data from vehicle's label:

Vehicle manufactured by: Mitsubishi Motors Corporation

Date of manufacture: July 1998

VIN: JA4MT31H7XP009773

GVWR: 2427 kg (5350 lbs.)

GAWR: Front: 1200 kg (2645 lbs.)

 Rear: 1600 kg (3525 lbs.)

Table 3 Bullet General Test and Vehicle Parameter Data, Cont'd.

Tires on vehicle (mfr., line, size): Yokohama, Supper Digger, 265/70R15

Tire pressure with maximum capacity vehicle load:

Front: 26 psi (180 kPa)
Rear: 26 psi (180 kPa)

Spare tire (mfr., line, size): Yokohama, Supper Digger, 265/70R15

Type of seats:

Front Bucket
Rear Split bench

Maximum width: 1705 mm

Wheelbase: 2727 mm

Location of "Recommended Tire Pressure" label:

Driver Side "B" Pillar

Data from vehicle's "Recommended Tire Pressure" label¹:

Recommended tire size: 265/70R15

Recommended cold tire pressure:

Front: 26 psi (180 kPa)
Rear: 26 psi (180 kPa)

Vehicle Capacity Data:¹

Number of Occupants (Designated seating capacity):

Front 2
Rear 3
Total 5

Vehicle capacity weight: 568 kg (1289.2 lbs.)

Rated cargo/luggage weight N/A

Test vehicle attitude:

Delivered attitude: LF 858 mm; RF 868 mm; LR 885 mm; RR 898 mm
Fully loaded attitude: LF 846 mm; RF 858 mm; LR 850 mm; RR 864 mm
Pre-test attitude: LF 824 mm; RF 843 mm; LR 840 mm; RR 860 mm
Post-test attitude: LF 835 mm; RF 850 mm; LR 835 mm; RR 892 mm

¹ Capacity information not on label: seating capacity derived from counting seat belts; capacity and rated cargo/luggage weight derived by calculation.

Table 3 Bullet General Test and Vehicle Parameter Data Cont'd

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

Right front	495.0 kg	Right rear	404.5 kg
Left front	521.5 kg	Left rear	438.0 kg
Total front weight	1016.5 kg	(54.7 % of total vehicle weight)	
Total rear weight	842.5 kg	(45.3 % of total vehicle weight)	
Total delivered weight	1859.0 kg		

Calculation of test vehicle's target test weight:

Total Delivered Weight (UDW) =	1859.0 kg
Rated Cargo/Luggage Weight (RCLW) ¹ =	136.0 kg
Weight of 1 Part 572O Dummy @ 49 kg and 1 Part 572E Dummy @ 76 kg =	125.0 kg
Target test weight =	2120.0 kg

Weight of test vehicle with required dummies and 128 kg of cargo weight:

Right front	521.0 kg	Right rear	477.0 kg
Left front	578.0 kg	Left rear	536.0 kg
Total front weight	1099.0 kg	(52.0% of total vehicle weight)	
Total rear weight	1013.0 kg	(48.0% of total vehicle weight)	
Total test weight	2112.0 kg	(0.4% under target test weight)	

Weight of ballast secured in vehicle: 0

Components removed to meet target test weight: Rear bumper, rear bumper fascia, rear door trim, rear hatch trim

Location of Vehicle's CG: 1308 mm rearward of front wheel centerline

Fuel System Data:

Usable fuel system capacity	73.8 liters (from owner's manual)
Actual test volume:	68.5 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 4 Post-Impact Data

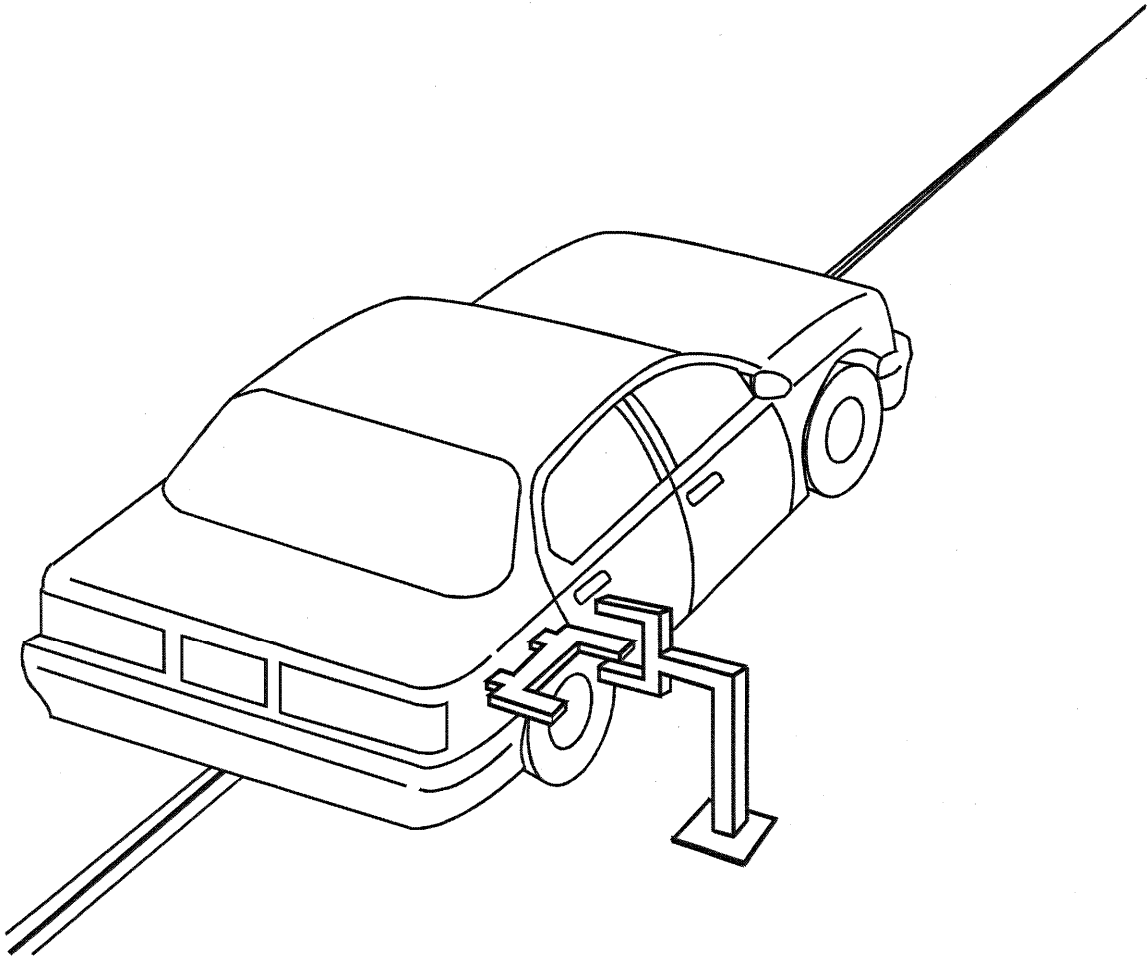
Test number: 021113
Test date: 11/13/02
Test time: 1338
Test type: Vehicle to Vehicle Oblique 30 Degree Impact
Impact angle: 30°
Ambient temperature
at impact area: 11° C
Impact velocity:
Target vehicle: 56.4 km/h
Bullet vehicle: 56.6 km/h
Required impact velocity range: 55.5 to 57.1 km/h

Distance from each vehicle to intended impact point:

Entering velocity trap: 661 mm
Exiting velocity trap: 51 mm, approximately

Impact point: 0 mm from intended impact point (referenced to target vehicle coordinate system)

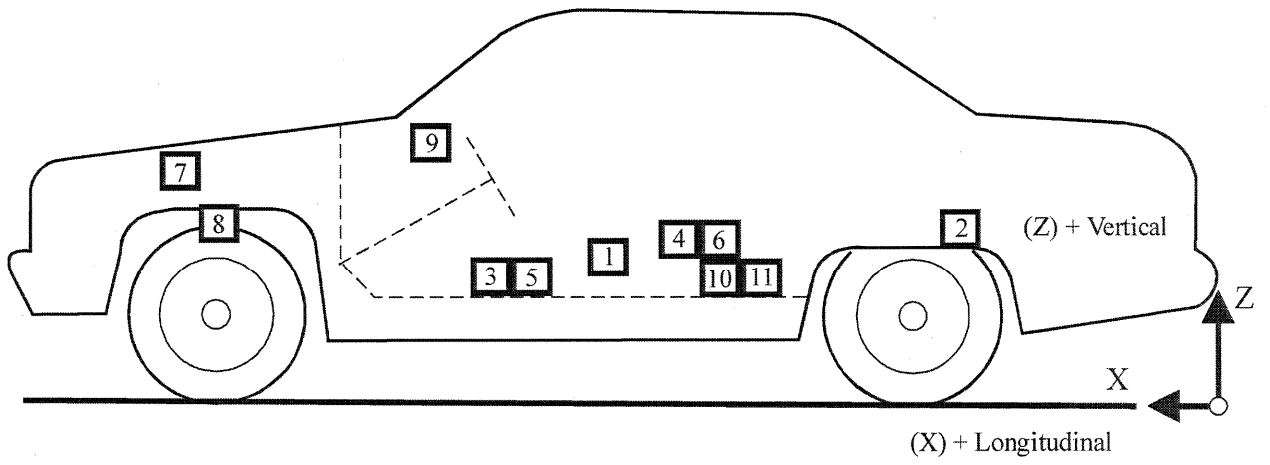
Figure 1 Impact Velocity Measurement System



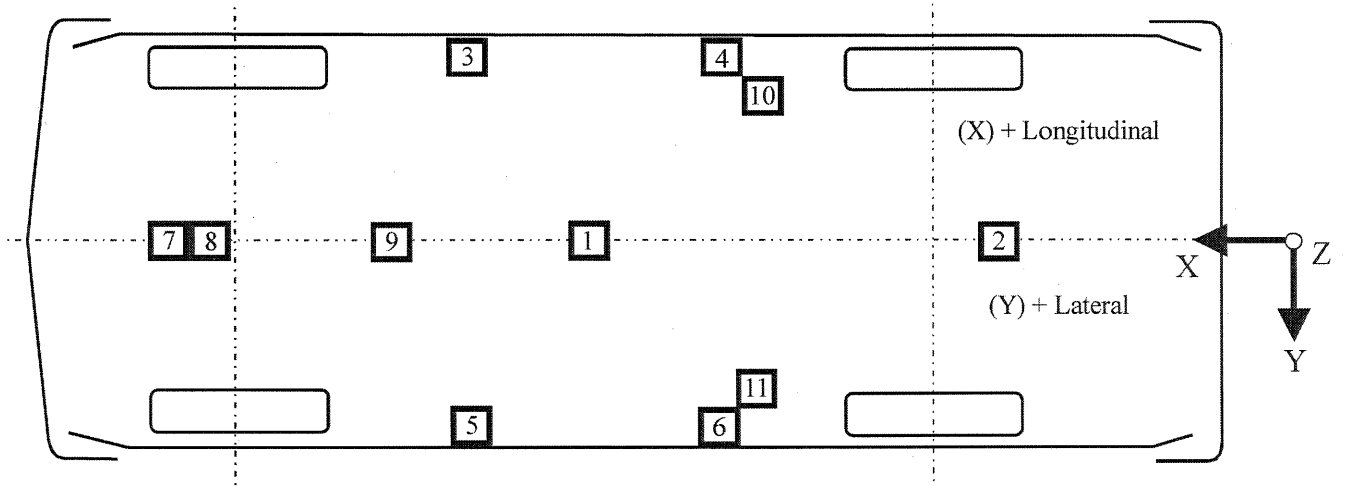
The final vane clears the final emitter/receiver pair approximately 51 millimeters before impact.

The vanes have 610-millimeter spacing.

Figure 2 Target Vehicle Accelerometer Placement



Side View



Bottom View

Table 5 Target Vehicle Accelerometer Locations and Data Summary

TEST NUMBER: 021113 No. LOCATION	X	Y	Z	POSITIVE DIRECTION		NEGATIVE DIRECTION	
1 VEHICLE CENTER OF GRAVITY	2642 mm	0 mm	413 mm				
LONGITUDINAL				7.1 g	@ 138.2 ms	37.9 g	@ 92.8 ms
LATERAL				46.1 g	@ 86.0 ms	79.0 g	@ 90.7 ms
VERTICAL				33.4 g	@ 56.1 ms	27.9 g	@ 79.9 ms
RESULTANT				84.1 g	@ 90.8 ms		
2 REAR DECK	NA	NA	NA				
LONGITUDINAL				3.6 g	@ 33.8 ms	35.2 g	@ 40.8 ms
LATERAL				12.8 g	@ 75.4 ms	2.8 g	@ 29.6 ms
VERTICAL				10.8 g	@ 118.5 ms	17.6 g	@ 58.0 ms
RESULTANT				36.7 g	@ 41.3 ms		
3 LEFT FRONT SILL ¹	NA	NA	NA				
LONGITUDINAL				44.3 g	@ 118.4 ms	66.5 g	@ 63.0 ms
LATERAL				42.2 g	@ 39.0 ms	47.4 g	@ 107.8 ms
4 LEFT REAR SILL ¹	NA	NA	NA				
LONGITUDINAL				4.5 g	@ 73.7 ms	49.4 g	@ 62.8 ms
LATERAL				24.6 g	@ 117.8 ms	33.3 g	@ 110.8 ms
5 RIGHT FRONT SILL ²	NA	NA	NA				
LONGITUDINAL				1.0 g	@ 250.1 ms	31.9 g	@ 40.3 ms
LATERAL				40.1 g	@ 41.0 ms	12.8 g	@ 71.4 ms
6 RIGHT REAR SILL ²	NA	NA	NA				
LONGITUDINAL				0.9 g	@ 250.4 ms	29.4 g	@ 40.6 ms
LATERAL				21.5 g	@ 44.4 ms	2.4 g	@ 75.0 ms
7 ENGINE TOP	NA	NA	NA				
LONGITUDINAL				8.8 g	@ 67.8 ms	63.8 g	@ 25.4 ms
LATERAL				58.6 g	@ 28.6 ms	26.6 g	@ 49.2 ms

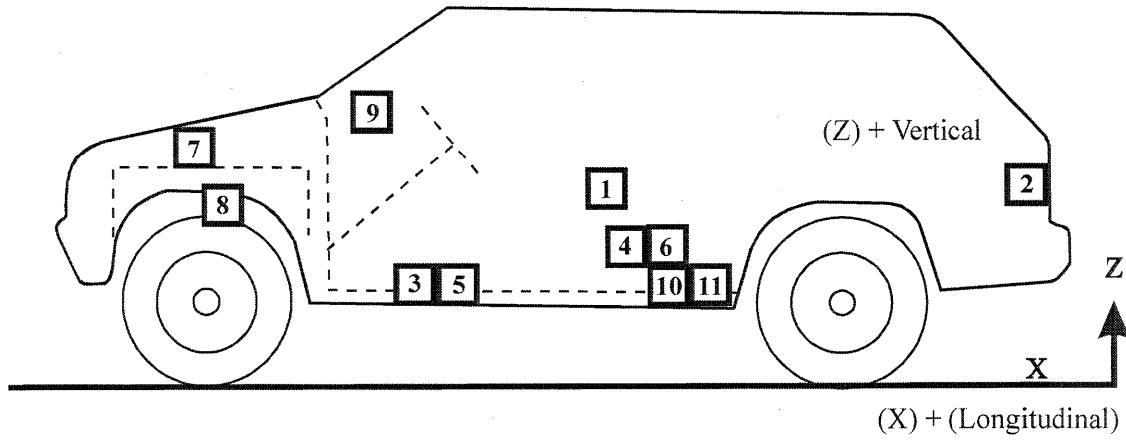
Table 5 Target Vehicle Accelerometer Locations and Data Summary, Cont'd.

TEST NUMBER: 021113 No. LOCATION	X	Y	Z	POSITIVE DIRECTION		NEGATIVE DIRECTION	
8 ENGINE BOTTOM	NA	NA	NA				
LONGITUDINAL				15.6 g	@ 50.5 ms	99.6 g	@ 35.6 ms
LATERAL				39.0 g	@ 22.7 ms	50.0 g	@ 34.2 ms
9 INSTRUMENT PANEL CENTER	NA	NA	NA				
LONGITUDINAL ³				---	---	---	---
LATERAL				47.2 g	@ 42.5 ms	18.4 g	@ 72.6 ms
10 LEFT REAR SEAT CROSSMEMBER	NA	NA	NA				
LONGITUDINAL				1.4 g	@ 247.4 ms	36.5 g	@ 54.5 ms
LATERAL				19.5 g	@ 44.1 ms	7.6 g	@ 70.8 ms
11 RIGHT REAR SEAT CROSSMEMBER	NA	NA	NA				
LONGITUDINAL				2.7 g	@ 71.3 ms	16.3 g	@ 45.0 ms
LATERAL				31.9 g	@ 40.8 ms	0.9 g	@ 188.2 ms

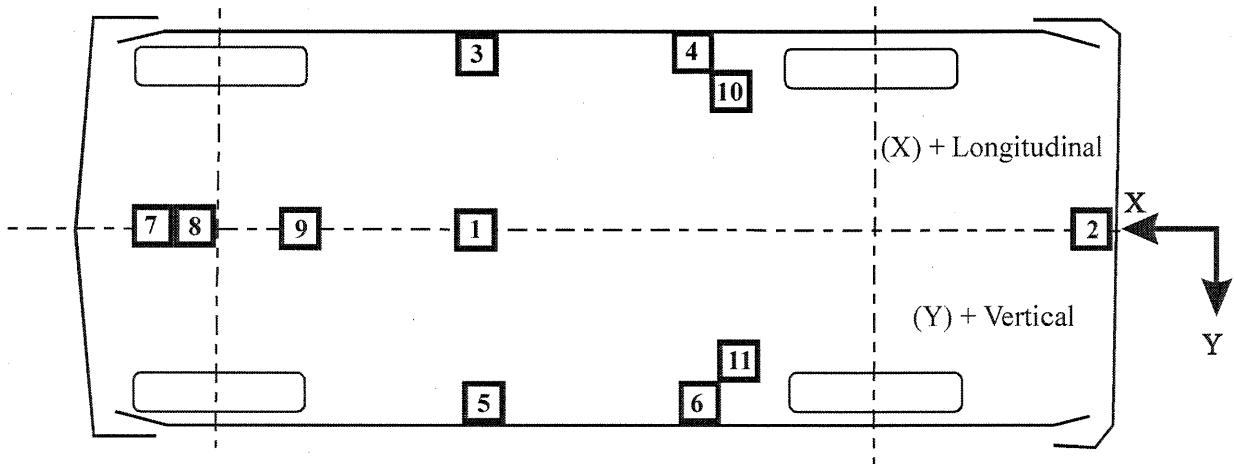
REFERENCE: X: + FORWARD FROM REAR BUMPER
 Y: + RIGHTWARD FROM VEHICLE CENTERLINE
 Z: + UPWARD FROM GROUND LEVEL

- ¹ The X-axis distance between the left front sill and left rear sill accelerometer locations is 1000 mm.
² The X-axis distance between the right front sill and right rear sill accelerometer locations is 1000 mm.
³ See DATA ACQUISITION EXPLANATIONS

Figure 3 Bullet Vehicle Accelerometer Placement



Side View



Bottom View

Table 6 Bullet Vehicle Accelerometer Locations and Data Summary

TEST NUMBER: 021113 No. LOCATION	X	Y	Z	POSITIVE DIRECTION		NEGATIVE DIRECTION	
1 VEHICLE CENTER OF GRAVITY	2490 mm	0 mm	563 mm				
LONGITUDINAL				0.8 g	@ 275.4 ms	19.3 g	@ 42.8 ms
LATERAL				12.2 g	@ 41.3 ms	9.2 g	@ 88.6 ms
VERTICAL				22.7 g	@ 47.0 ms	21.9 g	@ 56.4 ms
RESULTANT				29.1 g	@ 46.7 ms		
2 REAR DECK	NA	NA	NA				
LONGITUDINAL				3.5 g	@ 197.1 ms	21.0 g	@ 31.0 ms
LATERAL				15.6 g	@ 89.8 ms	2.4 g	@ 201.4 ms
VERTICAL				6.1 g	@ 112.0 ms	12.4 g	@ 36.2 ms
RESULTANT				24.1 g	@ 32.3 ms		
3 LEFT FRONT SILL ¹	NA	NA	NA				
LONGITUDINAL				1.0 g	@ 213.4 ms	25.7 g	@ 33.9 ms
LATERAL				14.9 g	@ 41.4 ms	16.4 g	@ 87.8 ms
4 LEFT REAR SILL ¹	NA	NA	NA				
LONGITUDINAL				1.7 g	@ 204.2 ms	23.1 g	@ 55.2 ms
LATERAL				13.0 g	@ 42.9 ms	6.8 g	@ 61.2 ms
5 RIGHT FRONT SILL ²	NA	NA	NA				
LONGITUDINAL				0.3 g	@ 4.7 ms	21.6 g	@ 43.4 ms
LATERAL				11.7 g	@ 44.6 ms	12.1 g	@ 69.4 ms
6 RIGHT REAR SILL ²	NA	NA	NA				
LONGITUDINAL				1.2 g	@ 280.8 ms	19.9 g	@ 44.5 ms
LATERAL				5.0 g	@ 61.5 ms	10.8 g	@ 39.1 ms
7 ENGINE TOP	NA	NA	NA				
LONGITUDINAL				8.3 g	@ 66.5 ms	50.7 g	@ 35.0 ms
LATERAL				28.2 g	@ 31.8 ms	24.9 g	@ 49.0 ms

Table 6 Bullet Vehicle Accelerometer Locations and Data Summary, Cont'd.

TEST NUMBER: 021113 No. LOCATION	X	Y	Z	POSITIVE DIRECTION		NEGATIVE DIRECTION	
8 ENGINE BOTTOM LONGITUDINAL LATERAL	NA	NA	NA	0.2 g	@ 56.5 ms	44.4 g	@ 33.4 ms
				12.5 g	@ 45.9 ms	41.6 g	@ 33.7 ms
9 INSTRUMENT PANEL CENTER LONGITUDINAL LATERAL	NA	NA	NA	6.5 g	@ 89.2 ms	45.6 g	@ 45.0 ms
				11.2 g	@ 48.6 ms	18.1 g	@ 90.0 ms
10 LEFT REAR SEAT CROSSMEMBER LONGITUDINAL LATERAL	NA	NA	NA	2.2 g	@ 201.9 ms	20.9 g	@ 33.4 ms
				11.8 g	@ 43.1 ms	5.5 g	@ 61.5 ms
11 RIGHT REAR SEAT CROSSMEMBER LONGITUDINAL LATERAL	NA	NA	NA	1.1 g	@ 278.3 ms	19.1 g	@ 36.2 ms
				11.3 g	@ 43.2 ms	5.5 g	@ 75.1 ms

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

- ¹ The X-axis distance between the left front sill and left rear sill accelerometer locations is 1110 mm.
- ² The X-axis distance between the right front sill and right rear sill accelerometer locations is 1120 mm.

Section 3.0

Summary of FMVSS 208 Data

Table 7 Target Vehicle Dummy Injury Criteria Data

<u>Maximum Acceleration¹</u>								
Head					Chest			
	X	Y	Z	R	X	Y	Z	R
Driver	-89.6 g	99.6 g	28.7 g	132.3 g	-59.6 g	34.4 g	-34.9 g	61.8 g

<u>Maximum Femur Compressive Force</u>		
	Left Femur	Right Femur
Driver	9695 N	9744 N

<u>Head Injury Criteria²</u>			
36 millisecond			
	HIC	Start Time t ₁	End Time t ₂
Driver	545	63.84 ms	99.84 ms

15 millisecond			
	HIC	Start Time t ₁	End Time t ₂
Driver	323	86.08 ms	101.12 ms

<u>Chest Maximum Resultant Acceleration³</u>			
	Acceleration	Start Time t ₁	End Time t ₂
Driver	58.2 g	72.17 ms	75.13 ms

Table 7 Target Vehicle Dummy Injury Criteria Data, Cont'd.

Maximum Chest Deflection

Driver 32 mm

Neck Injury Calculations (Nij)²

	NTF	NTE	NCF	NCE
Driver	0.15	0.65	0.00	0.25

Upper Neck Axial Force

	Tension	Compression
Driver	1495 N	815 N

Tibia Index

	Upper Tibia	Lower Tibia
Driver-left	1.02	1.48
Driver-right	1.14	1.61

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 8 Bullet Vehicle Dummy Injury Criteria Data

	<u>Maximum Acceleration¹</u>							
	Head				Chest			
	X	Y	Z	R	X	Y	Z	R
Driver	-23.5 g	-11.3 g	13.3 g	24.8 g	-32.2 g	3.0 g	-7.4 g	32.2 g
Passenger	-31.9 g	-5.3 g	20.3 g	33.6 g	-32.0 g	-3.5 g	7.8 g	32.2 g

	<u>Maximum Femur Compressive Force</u>	
	Left Femur	Right Femur
Driver	3085 N	3224 N
Passenger	2812 N	2145 N

	<u>Head Injury Criteria²</u>		
	36 millisecond		
	HIC	Start Time t ₁	End Time t ₂
Driver	82	69.60 ms	105.60 ms
Passenger	128	61.20 ms	97.20 ms

	15 millisecond		
	HIC	Start Time t ₁	End Time t ₂
	Driver	36	83.28 ms
Passenger	81	65.84 ms	80.88 ms

	<u>Chest Maximum Resultant Acceleration³</u>		
	Acceleration	Start Time t ₁	End Time t ₂
Driver	31.9 g	79.16 ms	83.18 ms
Passenger	31.3 g	71.48 ms	74.44 ms

Table 8 Bullet Vehicle Dummy Injury Criteria Data, Cont'd.

Maximum Chest Deflection

Driver	36 mm
Passenger	32 mm

Upper Neck Injury Calculations (Nij)²

	NTF	NTE	NCF	NCE
Driver	0.09	0.26	0.02	0.01
Passenger	0.21	0.61	0.05	0.02 ⁴

Upper Neck Axial Force

	Tension	Compression
Driver	1104 N	98 N
Passenger	1089 N	85 N

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.

⁴ See Data Acquisition Explanation in Section 2.0

Table 9 Target Vehicle Post-Impact Dummy/Vehicle Data

Visible Dummy Contact Points:

	<u>Driver</u>	<u>Passenger</u>
Head	Airbag, dummy left hand, window frame, door panel, head restraint	
Chest	Airbag, steering wheel	
Abdomen		
Left knee	Knee bolster	
Right knee	Knee bolster	

Door opening:

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

Seat movement:

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

Glazing damage: Entire windshield damaged

Other notable impact effects: Left front tire flattened. Bumper fascia separated.

Table 10 Bullet Vehicle Post-Impact Dummy/Vehicle Data

Visible Dummy Contact Points:

	<u>Driver</u>	<u>Passenger</u>
Head	Airbag, side roof rail	Airbag
Chest	Airbag	Airbag
Abdomen		
Left knee	Knee Bolster	Glove Box
Right knee	Knee Bolster	Glove Box

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	None
Right Front	None	None
Left Rear	N/A	N/A
Right Rear	N/A	N/A

Glazing damage: Cracked at driver upper A-pillar

Other notable impact effects: None

¹ Doors locked at impact; easy to open after unlocking.

Section 4.0

Occupant, Camera, and Vehicle Information

Target Vehicle Dummy Kinematic Summary

Driver Dummy

Upon impact, the target driver dummy translated forward with the head and chest initially going squarely into the airbag. The knees contacted the dash panel. The dummy was then forced outboard. The head and neck extended leftward and contacted the window frame and door panel; the torso contacted the inner door panel. The head also contacted the left hand and the abdomen contacted the steering wheel. On rebound from the door the neck extended rightward. The head contacted the underside of the driver airbag and the head restraint. The dummy came to rest seated in the driver's seat.

Bullet Vehicle Dummy Kinematic Summary

Driver Dummy

Upon impact, the bullet driver dummy translated forward with the head and neck flexing slightly forward as the head and chest contacted the airbag. The knees contacted the dash panel. The head and neck straightened and then extended slightly on rebound. The driver dummy's head contacted the side roof rail. The dummy came to rest seated in the driver's seat, leaning inboard.

Right Front Passenger Dummy

Upon impact, the bullet passenger dummy translated forward with the head and chest contacting the airbag. The knees contacted the dash panel. The dummy rebounded into the seatback with the head contacting the outboard side of the passenger head restraint. The dummy came to rest seated in the passenger seat, leaning inboard.

Figure 4 Vehicle Dummy Measurement Locations for Front Seat Occupants

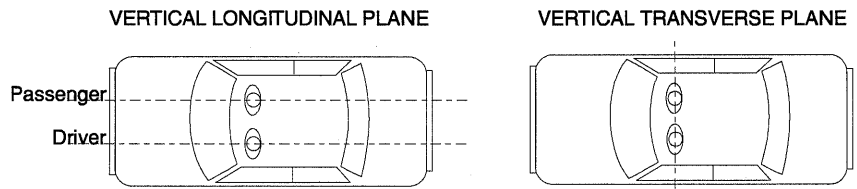
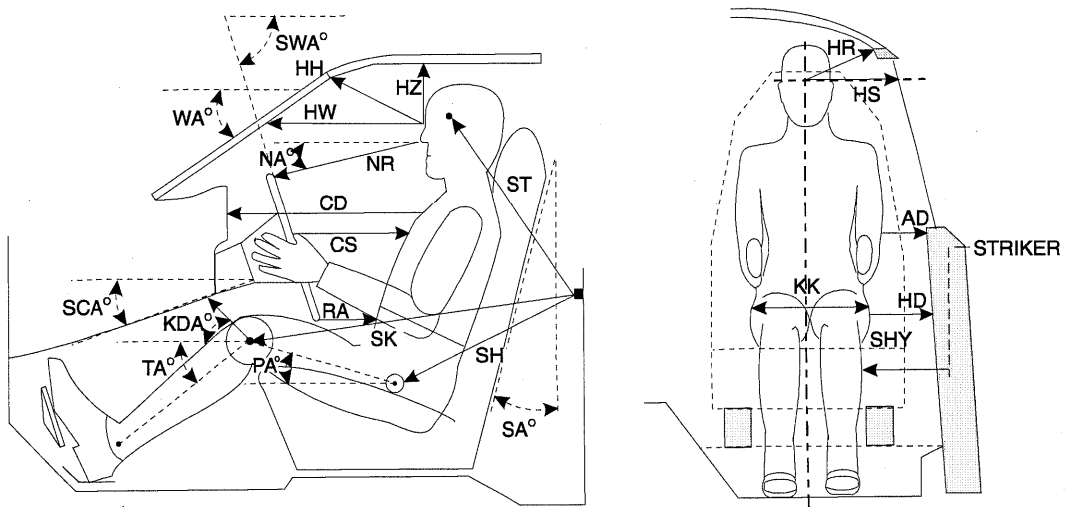


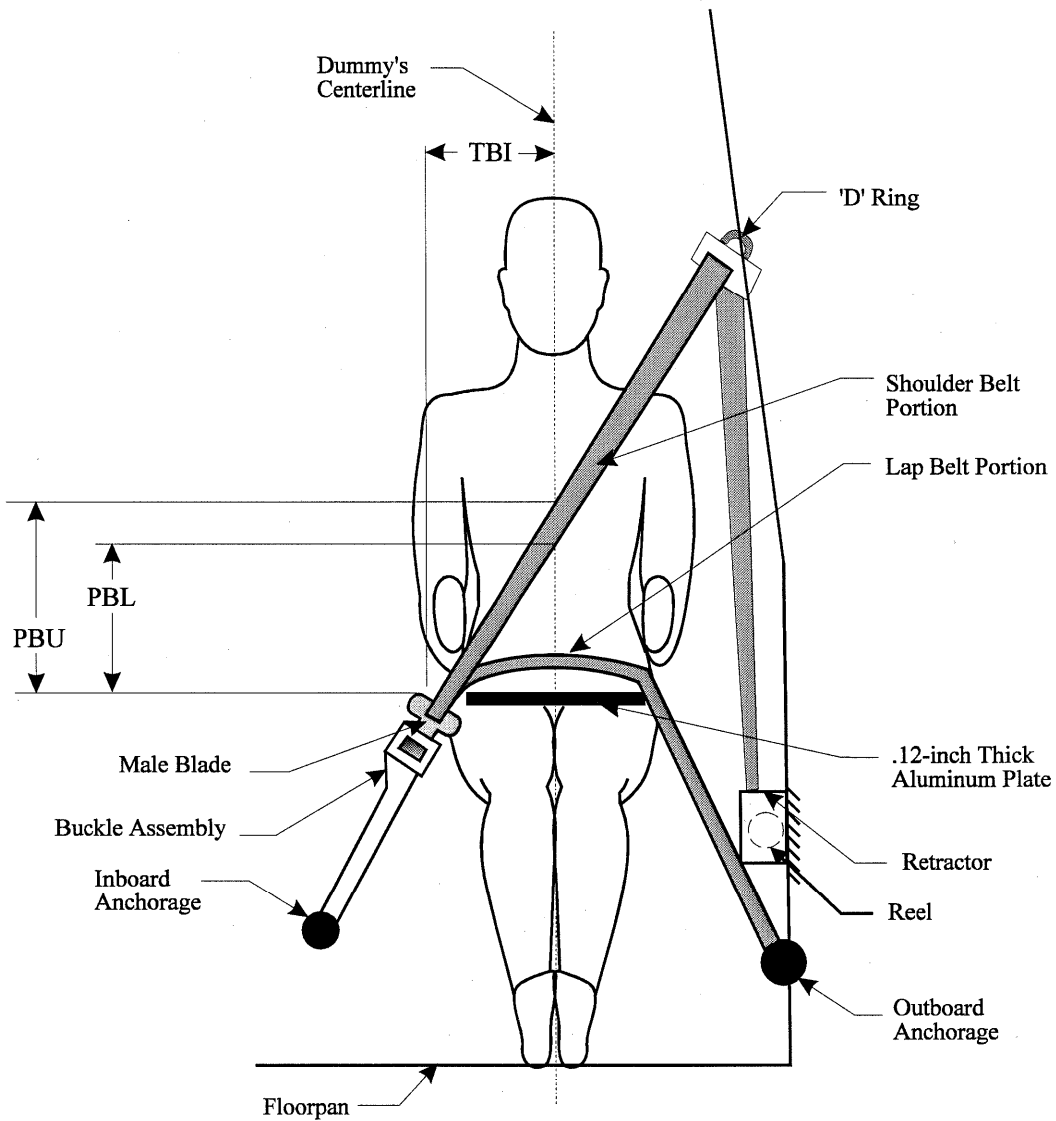
Table 11 Target Vehicle Dummy Measurement Data For Front Seat Occupants

<u>Designation</u>	<u>Type of Measurement</u>	<u>Driver (Serial # 168)</u>	<u>Passenger (Serial # N/A)</u>
WA	Windshield angle	27.5°	
SWA	Steering wheel angle	63.8°	
SCA	Steering column angle	26.2°	
SA	Seat back angle	21.8°	
HZ	Head to roof	190 mm	
HH	Head to header	335 mm	
HW	Head to windshield	581 mm	
HR	Head to side header	195 mm	
NR	Nose to rim	433 mm	
NA	Nose to rim angle	10.6°	
CD	Chest to dash	562 mm	
CS	Steering wheel to chest	325 mm	
RA	Rim to abdomen	208 mm	
KDL	Left knee to dash	178 mm	
KDR	Right knee to dash	187 mm	
KDA	Outboard knee to dash angle	63.2°	
PA	Pelvic angle	24.2°	
TA	Tibia angle	43.0°	
KK	Knee to knee	275 mm	
ST ¹	Striker to head	510 mm	
	Striker to head angle	-83.2°	
SK ¹	Striker to knee	560 mm	
	Striker to knee angle	7.6°	
SH ¹	Striker to H-point	245 mm	
	Striker to H-point angle	45.0°	
SHY	Striker to H-point (Y dir.)	243 mm	
HS	Head to side window	222 mm	
HD	H-point to door	135 mm	
AD	Arm to door	106 mm	

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

¹ A negative angle indicates the measurement point was above the striker.

Figure 5 Target Vehicle Seat Belt Positioning Data



	Driver Dummy	Passenger Dummy
PBU - Top surface of aluminum plate to belt upper edge	315 mm	N/A
PBL - Top surface of aluminum plate to belt lower edge	235 mm	N/A
TBI - Dummy centerline to intersection of upper torso belt and lap belt	260 mm	N/A

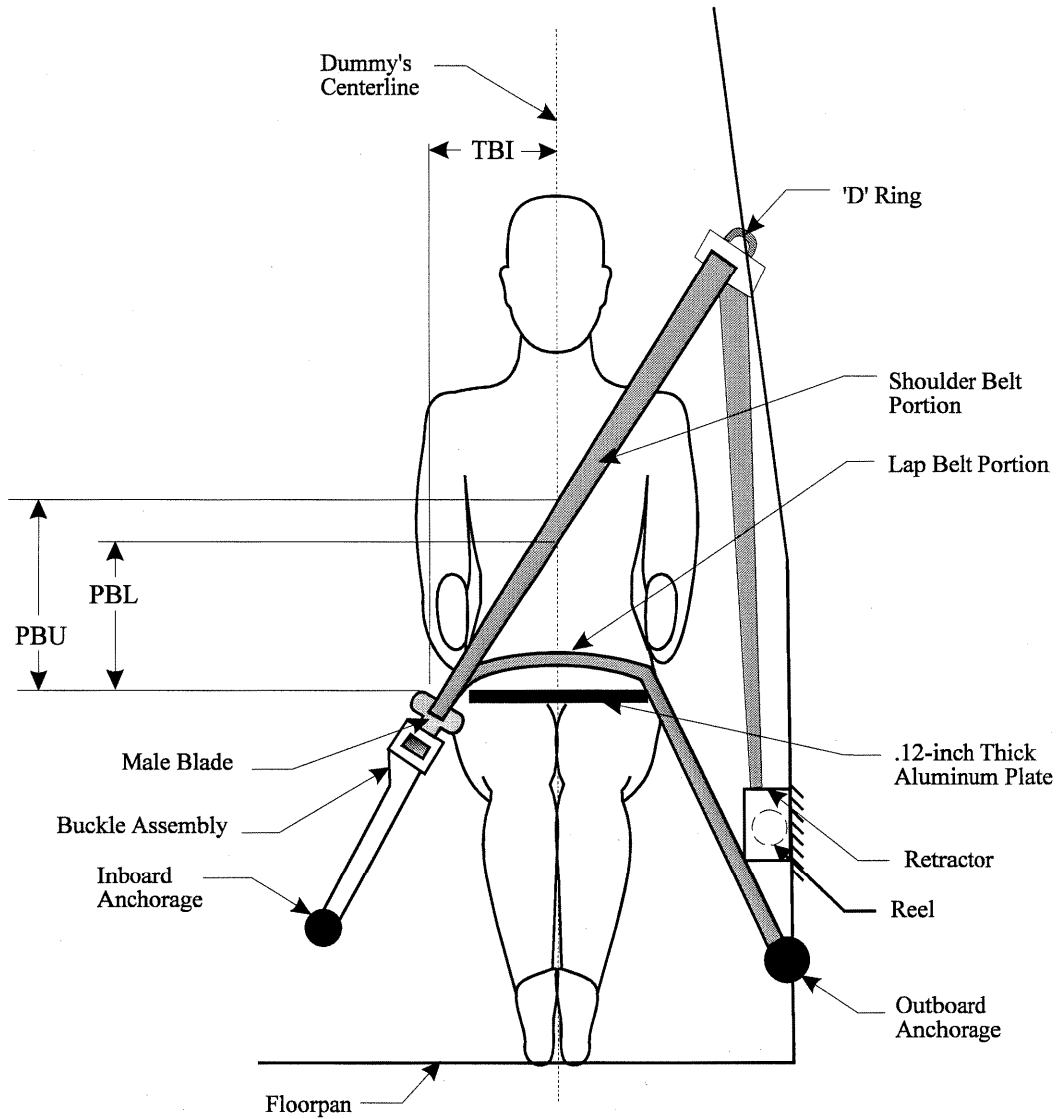
Table 12 Bullet Vehicle Dummy Measurement Data For Front Seat Occupants

<u>Designation</u>	<u>Type of Measurement</u>	<u>Driver (Serial # 169)</u>	<u>Passenger (Serial # 416)</u>
WA	Windshield angle	36.2°	N/A
SWA	Steering wheel angle	58.6°	N/A
SCA	Steering column angle	31.4°	N/A
SA	Seat back angle	22.0°	13.9°
HZ	Head to roof	200 mm	250 mm
HH	Head to header	467 mm	344 mm
HW	Head to windshield	645 mm	543 mm
HR	Head to side header	240 mm	275 mm
NR	Nose to rim	458 mm	N/A
NA	Nose to rim angle	12.0°	N/A
CD	Chest to dash	594 mm	443 mm
CS	Steering wheel to chest	320 mm	N/A
RA	Rim to abdomen	188 mm	N/A
KDL	Left knee to dash	192 mm	80 mm
KDR	Right knee to dash	193 mm	78 mm
KDA	Outboard knee to dash angle	75.0°	66.0°
PA	Pelvic angle	22.6°	21.3°
TA	Tibia angle	43.9°	47.1°
KK	Knee to knee	270 mm	170 mm
ST ¹	Striker to head	565 mm	560 mm
	Striker to head angle	-81.0°	-61.3°
SK ¹	Striker to knee	542 mm	676 mm
	Striker to knee angle	-1.1°	4.2°
SH ¹	Striker to H-point	185 mm	350 mm
	Striker to H-point angle	41.0°	15.9°
SHY	Striker to H-point (Y dir.)	233 mm	255 mm
HS	Head to side window	260 mm	277 mm
HD	H-point to door	149 mm	171 mm
AD	Arm to door	118 mm	155 mm

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

¹ A negative angle indicates the measurement point was above the striker.

Figure 6 Bullet Vehicle Seat Belt Positioning Data



	Driver Dummy	Passenger Dummy
PBU - Top surface of aluminum plate to belt upper edge	303 mm	265 mm
PBL - Top surface of aluminum plate to belt lower edge	230 mm	177 mm
TBI - Dummy centerline to intersection of upper torso belt and lap belt	260 mm	260 mm

Table 13 Target Vehicle Structural Measurements^{1,2}

	Elements	Pre-Test
1	Total Length	4688
2	Total Width	1780
3	Bumper Top Height	558
4	Bumper Bottom Height	418
5	Longitudinal Member Top Height	498
6	Longitudinal Member Bottom Height	288
7	Distance Between Longitudinal Members	1100
7'	Longitudinal Member Width	80
8	Engine Top Height	758
9	Engine Bottom Height	177
10	Engine and Gearbox Width	930
11	Front Bumper - Engine Distance	450
12	Front Shock Absorber Fixing Height	917
13	Bonnet Leading Edge Height	638
14	Front Shock Absorber Fixing Width	788
15	Front Bumper - Front Axle Distance	920
16	Front Axle - A Pillar Distance	540
17	A Pillar - B Pillar Distance	1105
18	B Pillar - Rear Axle Distance	1104
19	B Pillar - C Pillar Distance	1440
20	Roof Sill Bottom Height	1078
21	Roof Sill Top Height	1213
22	Floor Sill Bottom Height	189
23	Floor Sill Top Height	336

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 These structural measurements, except total length and width and front bumper to axle distance, are taken from a different 1997 Honda Accord; the vertical measurements from ground are adjusted based on this test vehicle's pre-test attitude measurements.

Figure 7 Target Vehicle Pre-Test And Post-Test Measurement Points

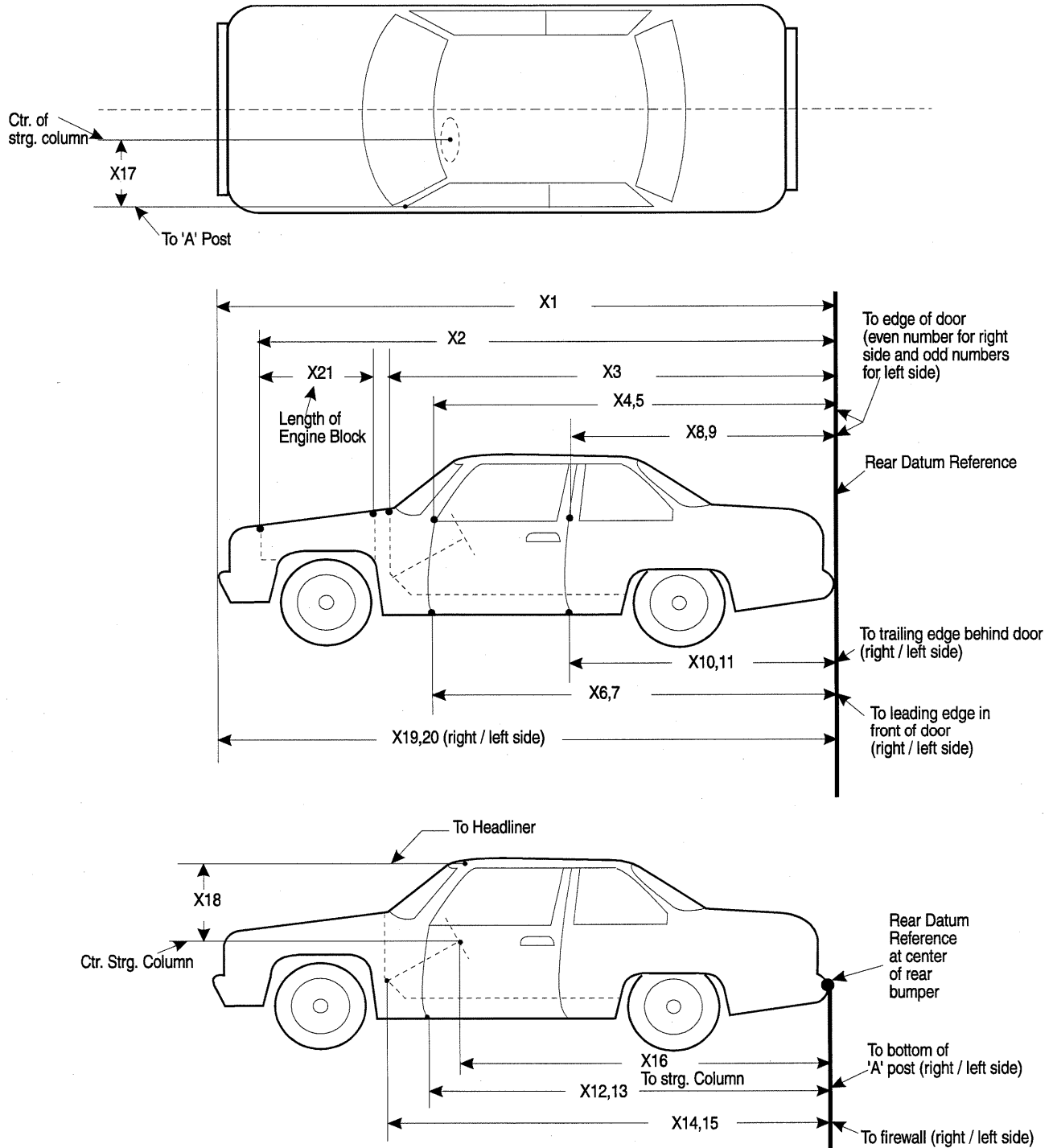


Table 14 Target Vehicle Impacted Measurements

Test number: 021113

Vehicle year/make/model/body style: 1997/Honda/Accord/4-door sedan

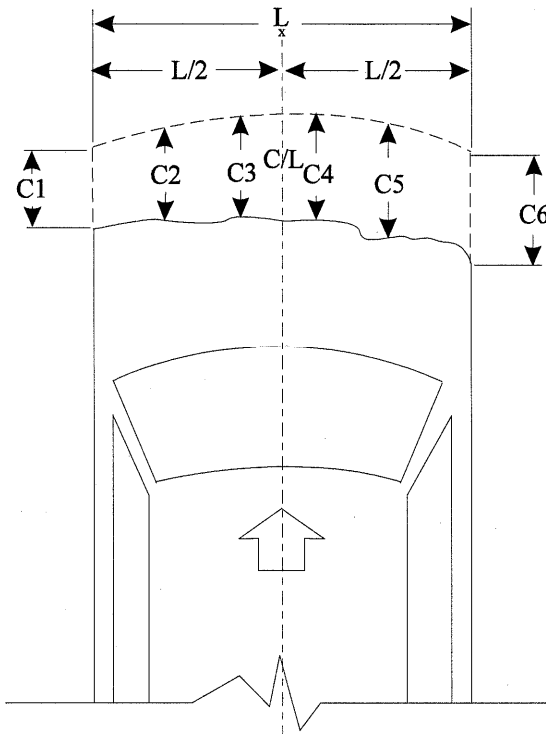
No.	Type of measurement	Pre-Test	Post-Test	Difference
X1	Total Length of Vehicle at Centerline	4688	4233 ¹	455 ¹
X2	Rear Surface of Vehicle to Front of Engine Block	3828	3638	190
X3	Rear Surface of Vehicle to Firewall	3572	3284	288
X4	Rear Surface of Veh. to Upper Leading Edge of Right Door	3211	3209	2
X5	Rear Surface of Veh. to Upper Leading Edge of Left Door	3217	2792	425
X6	Rear Surface of Veh. to Lower Leading Edge of Right Door	3238	3207	31
X7	Rear Surface of Veh. to Lower Leading Edge of Left Door	3241	2905	336
X8	Rear Surface of Veh. to Upper Trailing Edge of Right Door	2168	2165	3
X9	Rear Surface of Veh. to Upper Trailing Edge of Left Door	2170	2063	107
X10	Rear Surface of Veh. to Lower Trailing Edge of Right Door	2188	2160	28
X11	Rear Surface of Veh. to Lower Trailing Edge of Left Door	2190	1901	289
X12	Rear Surface of Veh. to Bottom of " A " Post on Right Side	3248	3231	17
X13	Rear Surface of Veh. to Bottom of " A " Post on Left Side	3248	2801	447
X14	Rear Surface of Vehicle to Firewall - Right Side	3521	3464	57
X15	Rear Surface of Vehicle to Firewall - Left Side	3517	2932	585
X16	Rear Surface of Vehicle to Steering Wheel Center	2742	2375	367
X17	Center of Steering Column to " A " Post	290	339	-49
X18	Center of Steering Column to Headliner	430	573	-143
X19	Rear Surface of Vehicle to Right Side of Front Bumper	4514	4603 ¹	-89 ¹
X20	Rear Surface of Vehicle to Left Side of Front Bumper	4512	N/A ²	N/A ²
X21	Length of Engine Block	440	440	0
RD	Rear Surface of Vehicle to Right Side of Dash Panel	3030	3021	9
CD	Rear Surface of Vehicle to Center of Dash Panel	3059	2811	248
LD	Rear Surface of Vehicle to Left Side of Dash Panel	3023	2455	568

All distance measurements are in millimeters.

¹ Post-test measurement was taken without bumper fascia which separated during impact. The difference is affected.

² Post-test measurement point could not be located.

Figure 8 Target Vehicle Crush



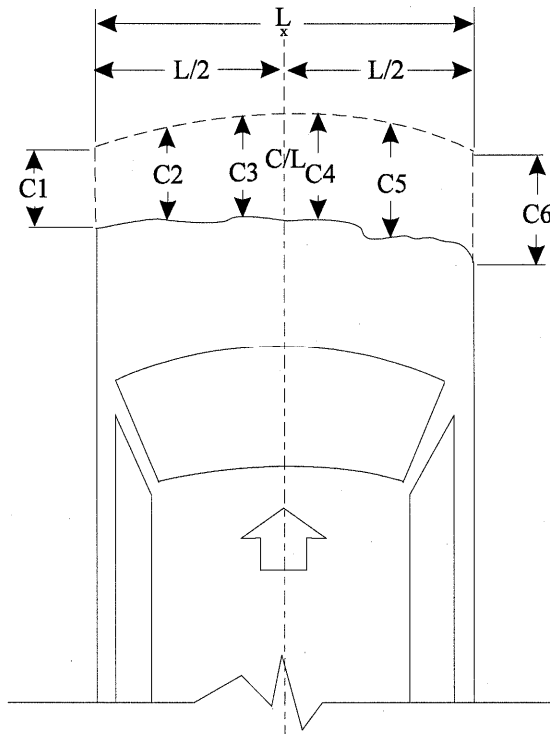
Notes: L is pre-test length of contact surface.
 C1 through C6 are spaced equally apart.
 CL is vehicle centerline.

Vehicle: 1997 Honda Accord
 Measured with bumper fascia:

Location	Pre-test	Post-test ¹	Difference ¹
L	1525 mm		
C1	4512 mm	N/A	N/A
C2	4626 mm	N/A	N/A
C3	4686 mm	N/A	N/A
C4	4686 mm	N/A	N/A
C5	4627 mm	N/A	N/A
C6	4514 mm	N/A	N/A
CL	4688 mm	N/A	N/A

¹ Bumper fascia separated during impact.

Figure 8 Target Vehicle Crush, Cont'd.



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

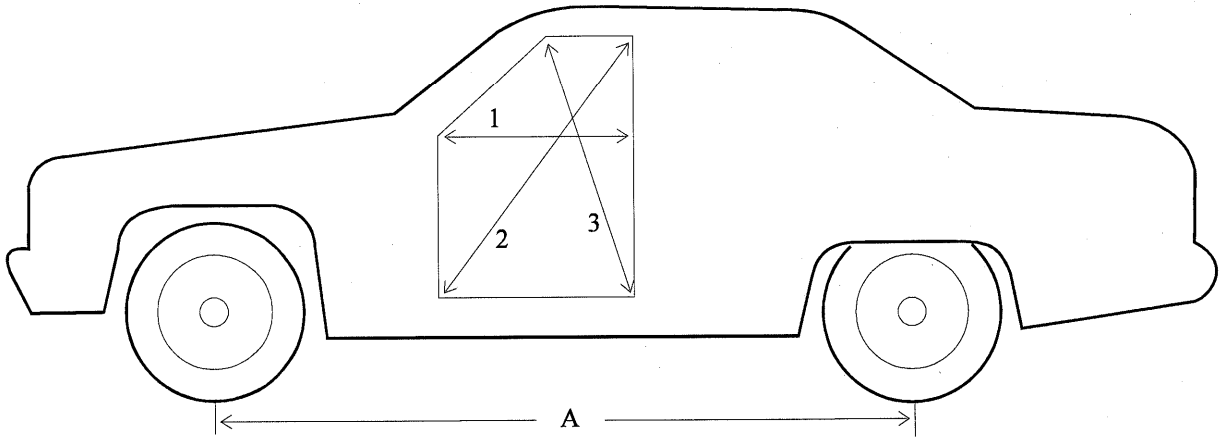
Vehicle: 1997 Honda Accord
 Measured to bumper beam without bumper fascia:

Location	Pre-test	Post-test	Difference
L	1525 mm		
C1	4460 mm	N/A ¹	N/A ¹
C2	4588 mm	3885 mm	703 mm
C3	4635 mm	4139 mm	496 mm
C4	4634 mm	4349 mm	285 mm
C5	4589 mm	4508 mm	81 mm
C6	4448 mm	4603 mm	-155 mm
CL	4641 mm	4233 mm	408 mm

¹ Measurement point could not be located.

Figure 9 Target Vehicle Intrusion Measurements

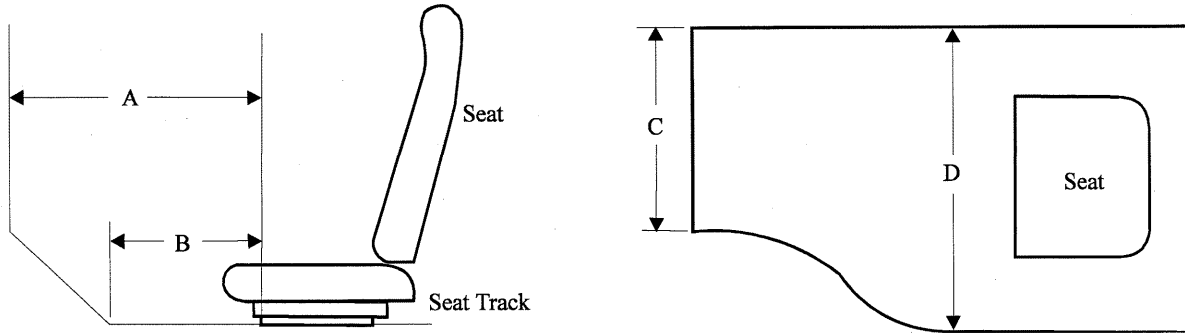
Door Opening Width



Units (mm)	Left			Right		
Measurement	1	2	3	1	2	3
Pre-Test	950 mm	1461 mm	939 mm	938 mm	940 mm	1470 mm
Post-Test	613 mm	1308 mm	1200 mm	932 mm	935 mm	1470 mm
Difference	337 mm	153 mm	-261 mm	6 mm	5 mm	0 mm

Units (mm)	A = Wheelbase Left	A = Wheelbase Right
Pre-Test	2710 mm	2710 mm
Post-Test	2091 mm	2885 mm
Difference	619 mm	-175 mm

Figure 10 Target Vehicle Intrusion Measurements
Static Footwell Deformation



Driver's Side

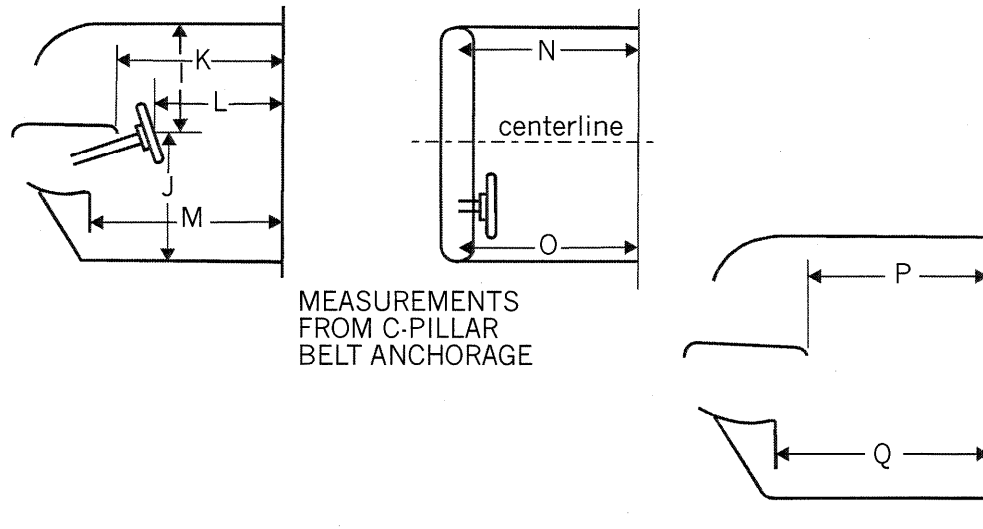
Measurement	Pre-Test	Post-Test	Difference
A	811 mm	550 mm	261 mm
B	615 mm	525 mm	90 mm
C	394 mm	340 mm	54 mm
D	428 mm	430 mm	-2 mm

Passenger's Side

Measurement	Pre-Test	Post-Test	Difference
A	786 mm	788 mm	-2 mm
B	614 mm	612 mm	2 mm
C	406 mm	390 mm	16 mm
D	519 mm	527 mm	-8 mm

Figure 11 Target Vehicle Intrusion Measurements

Static Passenger Compartment Intrusion

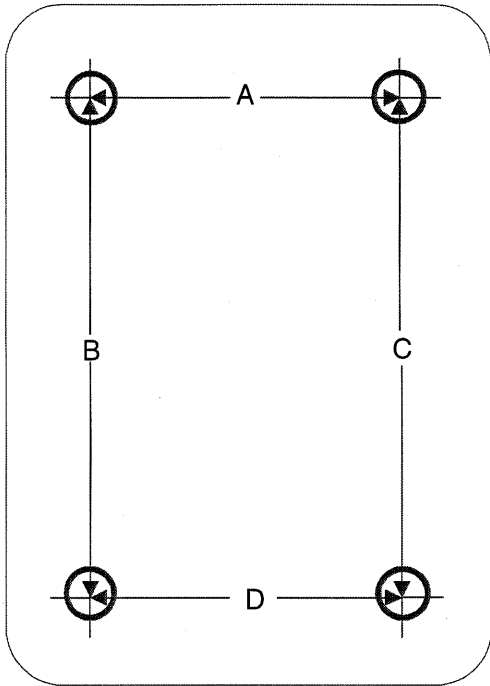


Measurement	Pre-Test	Post-Test	Difference
I	448 mm	549 mm	-101 mm
J	642 mm	566 mm	76 mm
K (driver's side)	1551 mm	1108 mm	443 mm
L	1273 mm	977 mm	296 mm
M (driver's side)	1619 mm	N/A ¹	N/A ¹
N (passenger's side)	1468 mm	1487 mm	-19 mm
O (driver's side)	1461 mm	1030 mm	431 mm
P (passenger's side)	1562 mm	1590 mm	-28 mm
Q (passenger's side)	1623 mm	1636 mm	-13 mm

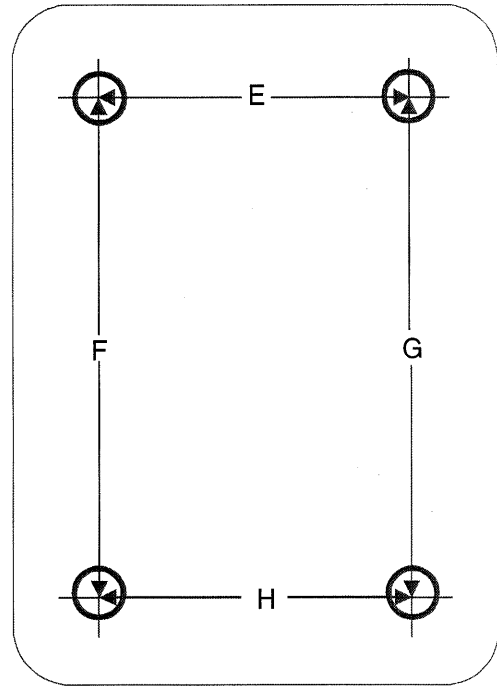
¹ Measurement point could not be located.

Figure 12 Target Vehicle Floorboard Deformation

DRIVERS SIDE

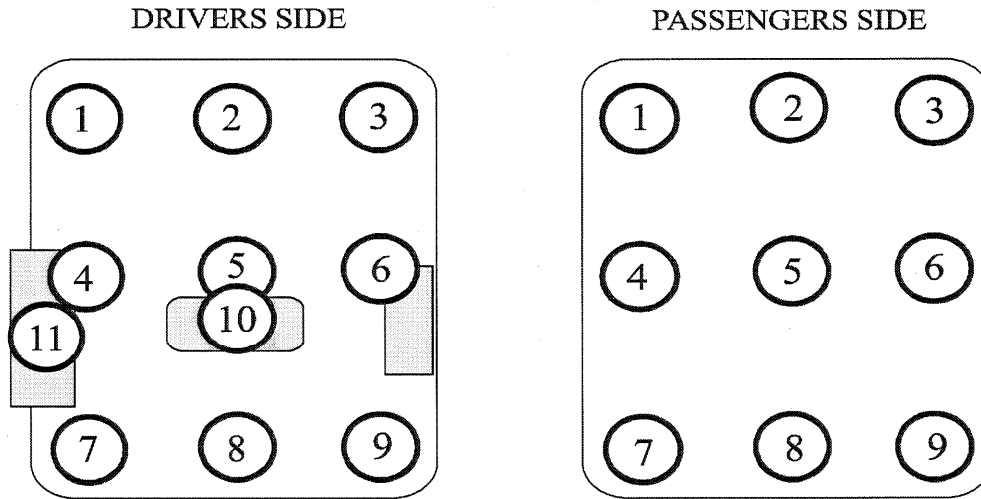


PASSENGERS SIDE



Measurement	Pre-Test	Post-Test	Difference
A	394 mm	340 mm	54 mm
B	506 mm	400 mm	106 mm
C	514 mm	392 mm	122 mm
D	428 mm	430 mm	-2 mm
E	406 mm	390 mm	16 mm
F	520 mm	475 mm	45 mm
G	517 mm	516 mm	1 mm
H	519 mm	527 mm	-8 mm

Figure 13 Target Vehicle Toeboard Measurements



Driver's Side Toeboard Measurements in Millimeters

Toeboard Location	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	3413	502	309	3066	385	206	347	117	103
2	3393	333	313	3063	289	227	330	44	86
3	3412	225	291	3146	141	183	266	84	108
4	3370	500	279	3078	408	151	292	92	128
5	3359	332	271	3066	313	160	293	19	111
6	3371	224	255	3166	141	110	205	83	145
7	3322	503	225	3090	422	75	232	81	150
8	3312	334	236	3086	298	53	226	36	183
9	3339	225	232	3183	141	51	156	84	181
10	3263	330	399	2840	366	289	426	-36	110
11	3377	547	281	3083	437	151	294	110	130

Passenger's Side Toeboard Measurements in Millimeters

Toeboard Location	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	3378	202	400	3286	274	322	92	-72	78
2	3391	335	400	3316	403	339	75	-68	61
3	3381	495	400	3360	558	340	21	-63	60
4	3357	200	357	3260	274	300	97	-74	57
5	3345	337	357	3286	404	289	59	-67	68
6	3353	500	357	3330	560	298	23	-60	59
7	3306	201	310	3234	274	247	72	-73	63
8	3303	340	310	3252	407	247	51	-67	63
9	3312	505	310	3291	563	263	21	-58	47

Pre- and post-test measurement reference: +X forward from rear bumper; +Y from centerline; +Z upward from ground level

Table 15 Target Vehicle Intrusion of Upper Instrument Panel

Pre-Test	X	Y	Z
Driver Left Knee	3000	495	651
Driver Right Knee	3022	250	650
Passenger Left Knee	N/A	N/A	N/A
Passenger Right Knee	N/A	N/A	N/A
Steering Wheel	2742	361	N/A
Driver Front Outboard Seat Attachment Bolt	2673	613	254
Passenger Front Outboard Seat Attachment Bolt	2688	585	254

Post-Test	X	Y	Z
Driver Left Knee ¹	N/A	N/A	N/A
Driver Right Knee ¹	N/A	N/A	N/A
Passenger Left Knee	N/A	N/A	N/A
Passenger Right Knee	N/A	N/A	N/A
Steering Wheel	2375	349	865
Driver Front Outboard Seat Attachment Bolt	2616	690	61
Passenger Front Outboard Seat Attachment Bolt	2683	490	231

Difference	X	Y	Z
Driver Left Knee ¹	N/A	N/A	N/A
Driver Right Knee ¹	N/A	N/A	N/A
Passenger Left Knee	N/A	N/A	N/A
Passenger Right Knee	N/A	N/A	N/A
Steering Wheel	367	12	N/A
Driver Front Outboard Seat Attachment Bolt	57	-77	193
Passenger Front Outboard Seat Attachment Bolt	5	-95	23

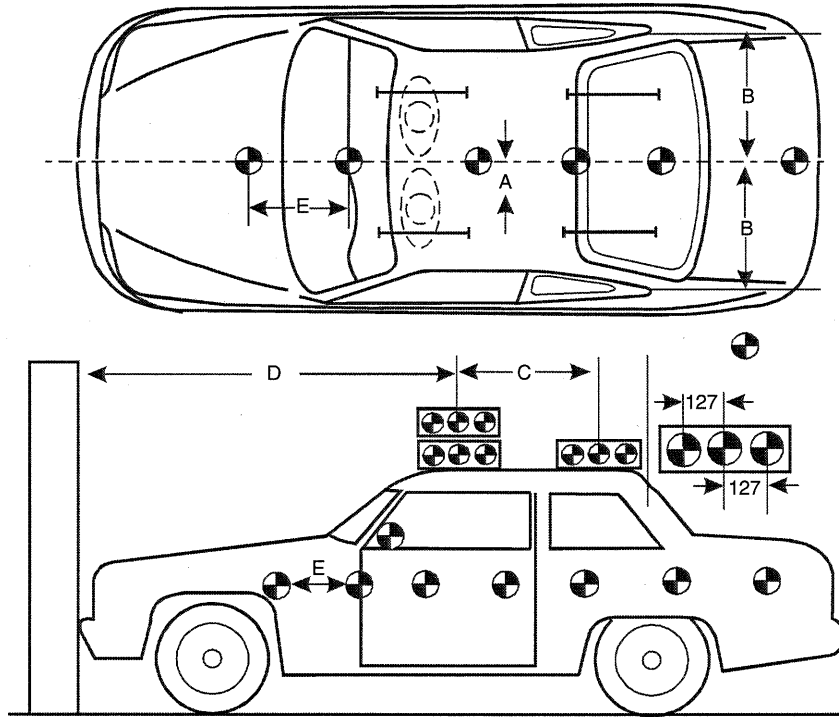
All measurements are in millimeters.

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

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

¹ Driver knee bolster separated during impact.

Figure 14 Target Vehicle Reference Photo Target Locations



Measurement	Pre-Test
A	Left 353 mm Right 353 mm
B	N/A
C	Left 610 mm Right 610 mm
D	N/A
E ¹	300 mm

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

Table 16 Bullet Vehicle Structural Measurements^{1,2}

	Elements	Pre-Test
1	Total Length	4534
2	Total Width	1705
3	Bumper Top Height	771
4	Bumper Bottom Height	676
5	Longitudinal Member Top Height	463
6	Longitudinal Member Bottom Height	387
7	Distance Between Longitudinal Members	805
7'	Longitudinal Member Width	52
8	Engine Top Height	1068
9	Engine Bottom Height	184
10	Engine and Gearbox Width	640
11	Front Bumper - Engine Distance	436
12	Front Shock Absorber Fixing Height	651
13	Bonnet Leading Edge Height	958
14	Front Shock Absorber Fixing Width	920
15	Front Bumper - Front Axle Distance	730
16	Front Axle - A Pillar Distance	570
17	A Pillar - B Pillar Distance	970
18	B Pillar - Rear Axle Distance	1191
19	B Pillar - C Pillar Distance	1035
20	Roof Sill Bottom Height	1476
21	Roof Sill Top Height	1581
22	Floor Sill Bottom Height	366
23	Floor Sill Top Height	517

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 These structural measurements, except total length and width and front bumper to axle distance, are taken from a different 1999 Mitsubishi Montero; the vertical measurements from ground are adjusted based on this test vehicle's pre-test attitude measurements.

Figure 15 Bullet Pre-Test And Post-Test Measurement Points

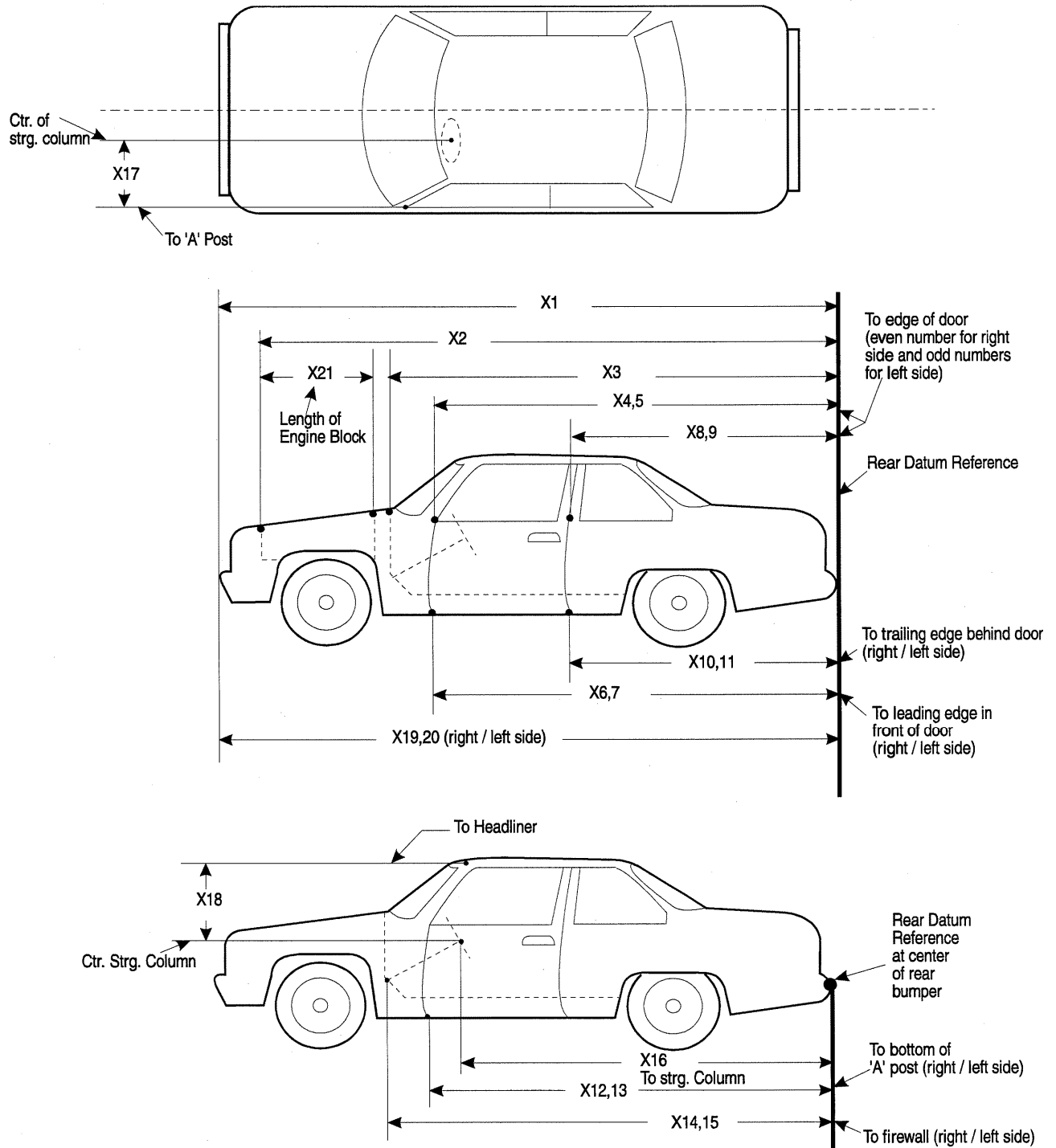


Table 17 Bullet Vehicle Impacted Measurements

Test number: 021113

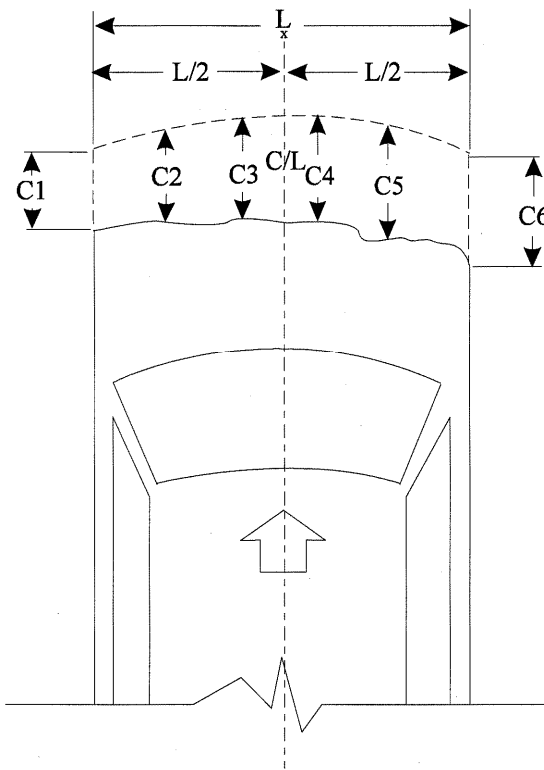
Vehicle year/make/model/body style: 1999/Mitsubishi/Montero Sport/MPV

No.	Type of measurement	Pre-Test	Post-Test	Difference
X1	Total Length of Vehicle at Centerline	4516	4309	207
X2	Rear Surface of Vehicle to Front of Engine Block	4056	3972	84
X3	Rear Surface of Vehicle to Firewall	3537	3525	12
X4	Rear Surface of Veh. to Upper Leading Edge of Right Door	3186	3192	-6
X5	Rear Surface of Veh. to Upper Leading Edge of Left Door	3179	3158	21
X6	Rear Surface of Veh. to Lower Leading Edge of Right Door	3190	3176	14
X7	Rear Surface of Veh. to Lower Leading Edge of Left Door	3191	3150	41
X8	Rear Surface of Veh. to Upper Trailing Edge of Right Door	2286	2291	-5
X9	Rear Surface of Veh. to Upper Trailing Edge of Left Door	2279	2258	21
X10	Rear Surface of Veh. to Lower Trailing Edge of Right Door	2277	2264	13
X11	Rear Surface of Veh. to Lower Trailing Edge of Left Door	2279	2239	40
X12	Rear Surface of Veh. to Bottom of " A " Post on Right Side	3223	3222	1
X13	Rear Surface of Veh. to Bottom of " A " Post on Left Side	3219	3186	33
X14	Rear Surface of Vehicle to Firewall - Right Side	3512	3524	-12
X15	Rear Surface of Vehicle to Firewall - Left Side	3512	3491	21
X16	Rear Surface of Vehicle to Steering Wheel Center	2796	2791	5
X17	Center of Steering Column to " A " Post	280	279	1
X18	Center of Steering Column to Headliner	440	406	34
X19	Rear Surface of Vehicle to Right Side of Front Bumper	4418	4452	-34
X20	Rear Surface of Vehicle to Left Side of Front Bumper	4409	N/A ¹	N/A ¹
X21	Length of Engine Block	470	470	0
RD	Rear Surface of Vehicle to Right Side of Dash Panel	3082	3092	-10
CD	Rear Surface of Vehicle to Center of Dash Panel	3050	3041	9
LD	Rear Surface of Vehicle to Left Side of Dash Panel	3066	3058	8

All distance measurements are in millimeters.

¹ Post-test measurement point could not be located.

Figure 16 Bullet Vehicle Crush



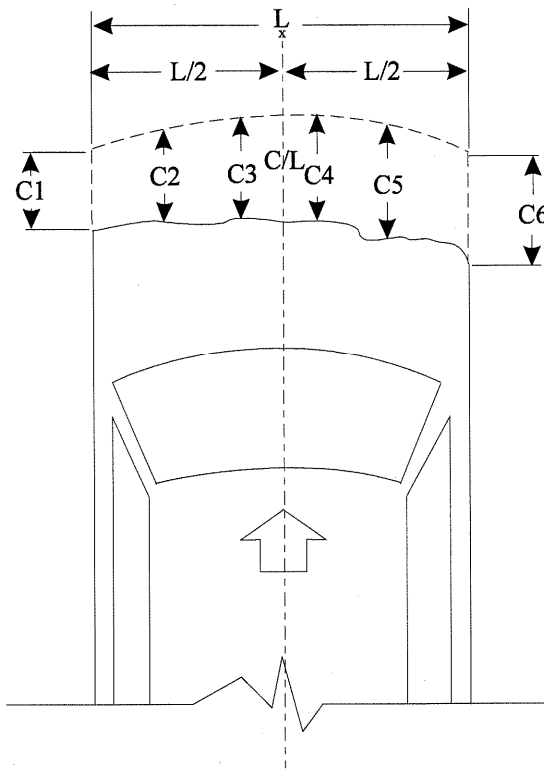
Notes: L is pre-test length of contact surface.
 C1 through C6 are spaced equally apart.
 CL is vehicle centerline.

Vehicle: 1999 Mitsubishi Montero Sport
 Measured with bumper fascia:

Location	Pre-test	Post-test	Difference
L	1525 mm		
C1	4409 mm	N/A ¹	N/A ¹
C2	4497 mm	4183 mm	314 mm
C3	4532 mm	4263 mm	269 mm
C4	4534 mm	4346 mm	188 mm
C5	4507 mm	4417 mm	90 mm
C6	4418 mm	4452 mm	-34 mm
CL	4516 mm	4309 mm	207 mm

¹ Post-test measurement point could not located.

Figure 16 Bullet Vehicle Crush, Cont'd.



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

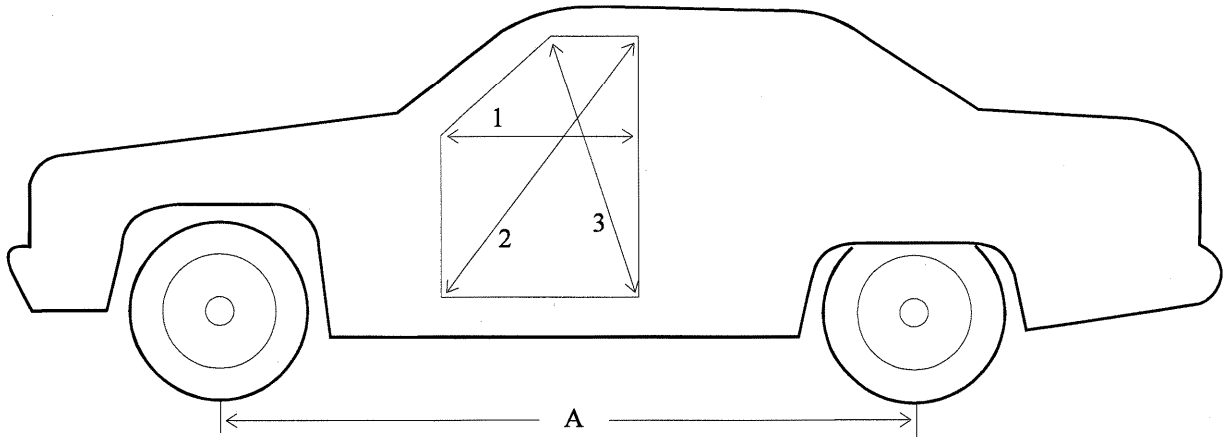
Vehicle: 1999 Mitsubishi Montero Sport
 Measured to bumper beam without bumper fascia:

Location	Pre-test	Post-test	Difference
L^1	1016 mm		
$C1^1$	4421 mm	4088 mm	333 mm
$C2$	4427 mm	4197 mm	230 mm
$C3$	4436 mm	4165 mm	271 mm
$C4$	4434 mm	4188 mm	246 mm
$C5$	4428 mm	4286 mm	142 mm
$C6^1$	4421 mm	4380 mm	41 mm
CL	4438 mm	4165 mm	273 mm

¹ Measurement points $C1$ and $C6$ were moved inboard to catch the bumper beam.

Figure 17 Bullet Vehicle Intrusion Measurements

Door Opening Width

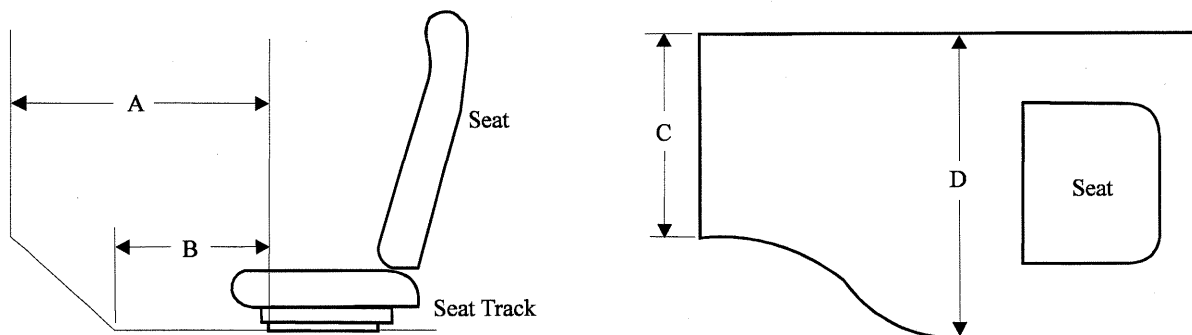


Units (mm)	Left			Right		
Measurement	1	2	3	1	2	3
Pre-Test	951 mm	1385 mm	1061 mm	924 mm	1400 mm	1077 mm
Post-Test	921 mm	1372 mm	1115 mm	924 mm	1381 mm	1078 mm
Difference	30 mm	13 mm	-54 mm	0 mm	19 mm	-1 mm

Units (mm)	A = Wheelbase Left	A = Wheelbase Right
Pre-Test	2727 mm	2727 mm
Post-Test	2604 mm	2745 mm
Difference	123 mm	-18 mm

Figure 18 Bullet Vehicle Intrusion Measurements

Static Footwell Deformation



Driver's Side

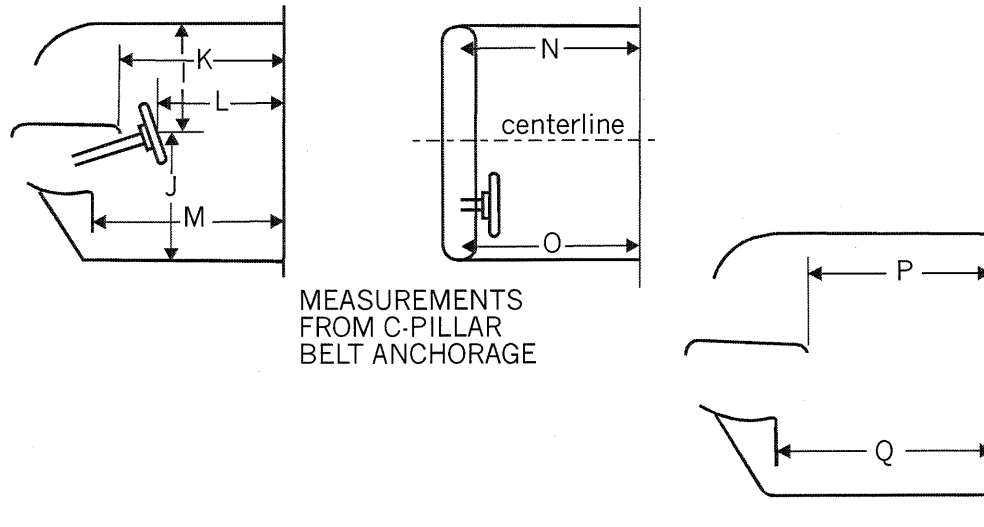
Measurement	Pre-Test	Post-Test	Difference
A	783 mm	771 mm	12 mm
B	599 mm	589 mm	10 mm
C	402 mm	400 mm	2 mm
D	468 mm	468 mm	0 mm

Passenger's Side

Measurement	Pre-Test	Post-Test	Difference
A	766 mm	766 mm	0 mm
B	573 mm	573 mm	0 mm
C	430 mm	430 mm	0 mm
D	421 mm	421 mm	0 mm

Figure 19 Bullet Vehicle Intrusion Measurements

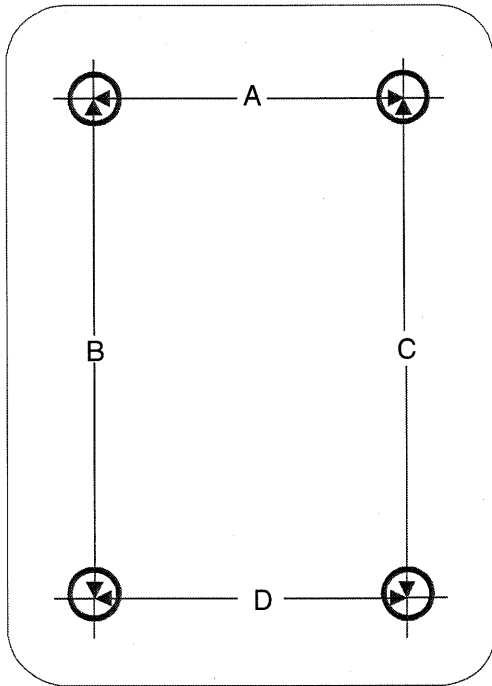
Static Passenger Compartment Intrusion



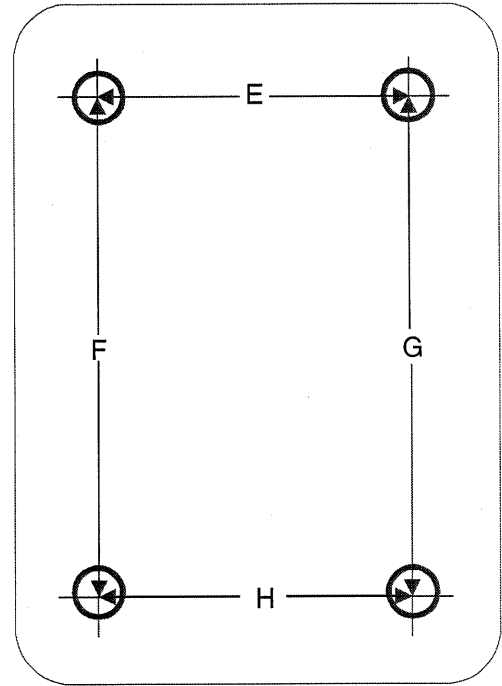
Measurement	Pre-Test	Post-Test	Difference
I	441 mm	406 mm	35 mm
J	640 mm	706 mm	-66 mm
K (driver's side)	1532 mm	1537 mm	-5 mm
L	1280 mm	1314 mm	-34 mm
M (driver's side)	1627 mm	1624 mm	3 mm
N (passenger's side)	1500 mm	1525 mm	-25 mm
O (driver's side)	1467 mm	1470 mm	-3 mm
P (passenger's side)	1539 mm	1568 mm	-29 mm
Q (passenger's side)	1616 mm	1627 mm	-11 mm

Figure 20 Bullet Vehicle Floorboard Deformation

DRIVERS SIDE

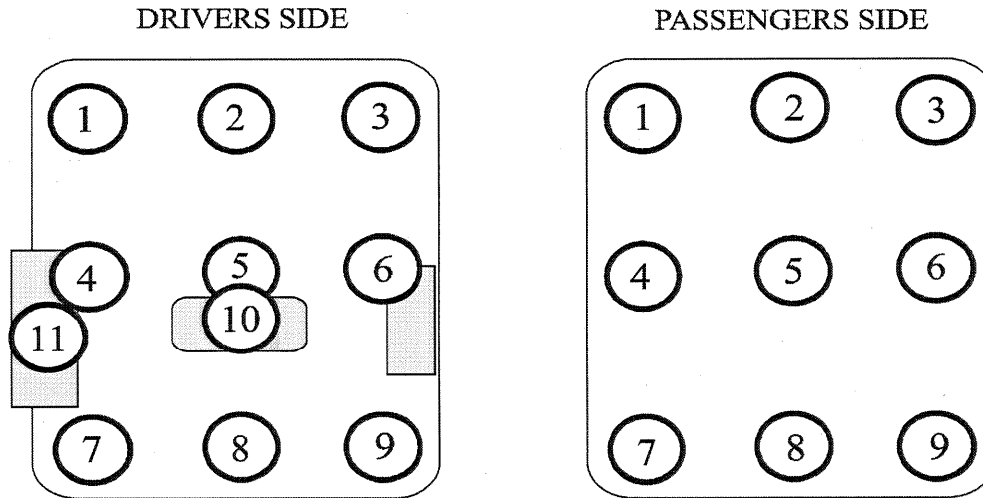


PASSENGERS SIDE



Measurement	Pre-Test	Post-Test	Difference
A	402 mm	400 mm	2 mm
B	500 mm	500 mm	0 mm
C	479 mm	479 mm	0 mm
D	468 mm	468 mm	0 mm
E	430 mm	430 mm	0 mm
F	490 mm	490 mm	0 mm
G	498 mm	498 mm	0 mm
H	421 mm	421 mm	0 mm

Figure 21 Bullet Vehicle Toeboard Measurements



Driver's Side Toeboard Measurements in Millimeters

Toeboard Location	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	3451	441	575	3436	456	543	15	-15	32
2	3448	323	568	3433	336	543	15	-13	25
3	3434	220	564	3431	232	536	3	-12	28
4	3405	450	531	3393	462	495	12	-12	36
5	3400	338	534	3374	350	514	26	-12	20
6	3395	220	524	3392	224	503	3	-4	21
7	3363	452	497	3356	448	436	7	4	61
8	3345	342	495	3325	338	481	20	4	14
9	3345	220	491	3344	215	460	1	5	31
10	3284	346	654	3265	366	602	19	-20	52
11	3338	553	550	3311	553	526	27	0	24

Passenger's Side Toeboard Measurements in Millimeters

Toeboard Location	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	3461	215	603	3459	202	588	2	13	15
2	3472	359	589	3469	359	580	3	0	9
3	3471	477	616	3465	477	616	6	0	0
4	3408	215	542	3408	212	551	0	3	-9
5	3411	356	555	3407	356	556	4	0	-1
6	3425	477	558	3423	477	559	2	0	-1
7	3349	215	481	3348	215	490	1	0	-9
8	3352	359	482	3352	359	500	0	0	-18
9	3364	480	482	3361	180	499	3	300	-17

Pre- and post-test measurement reference: +X forward from rear bumper; +Y from centerline; +Z upward from ground level

Table 18 Bullet Vehicle Intrusion of Upper Instrument Panel

Pre-Test	X	Y	Z
Driver Left Knee	3029	484	898
Driver Right Knee	3033	229	895
Passenger Left Knee	3028	237	892
Passenger Right Knee	3026	476	902
Steering Wheel	2796	350	1099
Driver Front Outboard Seat Attachment Bolt	2756	570	520
Passenger Front Outboard Seat Attachment Bolt	2784	588	545

Post-Test	X	Y	Z
Driver Left Knee ¹	3007	483	870
Driver Right Knee ¹	3010	232	874
Passenger Left Knee	3007	236	885
Passenger Right Knee	3016	477	894
Steering Wheel	2791	380	1138
Driver Front Outboard Seat Attachment Bolt	2724	570	465
Passenger Front Outboard Seat Attachment Bolt	2728	588	537

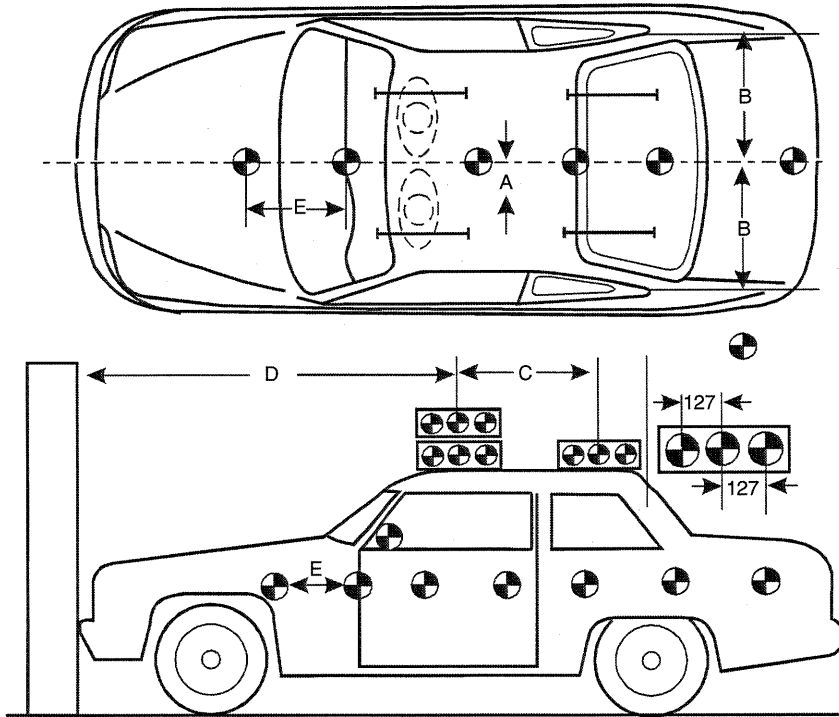
Difference	X	Y	Z
Driver Left Knee ¹	22	1	28
Driver Right Knee ¹	23	-3	21
Passenger Left Knee	21	1	7
Passenger Right Knee	10	-1	8
Steering Wheel	5	-30	-39
Driver Front Outboard Seat Attachment Bolt	32	0	55
Passenger Front Outboard Seat Attachment Bolt	56	0	8

All measurements are in millimeters.

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

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

Figure 22 Bullet Vehicle Reference Photo Target Locations



Measurement	Pre-Test
A	Left 355 mm Right 355 mm
B	N/A
C	Left 610 mm Right 610 mm
D	N/A
E ¹	300 mm

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

Figure 23 Camera Positions

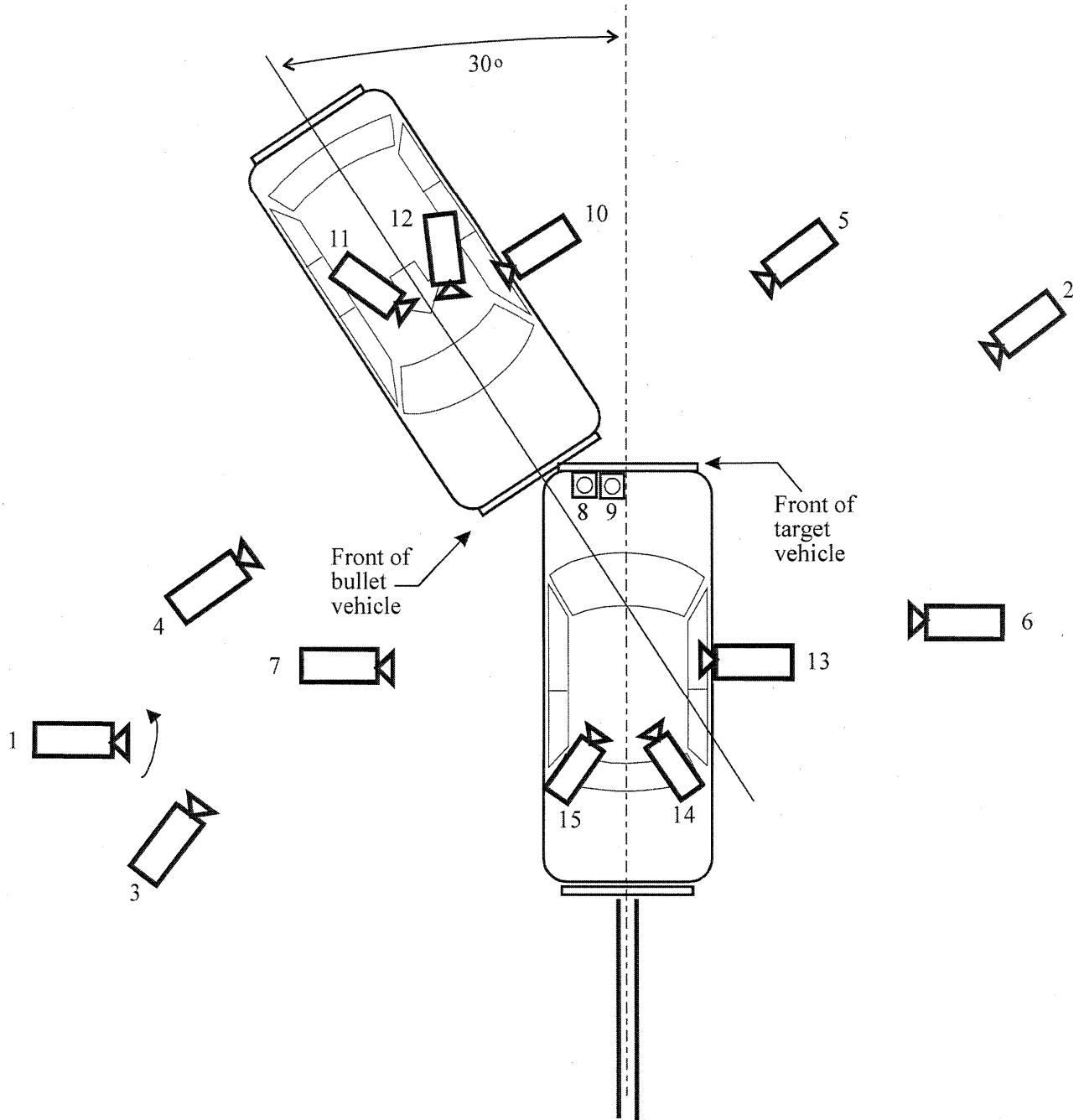


Table 19 Camera Information

Camera Number	Location	Type	Lens (mm)	Speed (fps)	Purpose of camera data
1	Panning	Bolex	Zoom	24	Vehicle dynamics
2	Right wide (referenced to target vehicle)	Photosonic	13	1000	Vehicle dynamics
3	Left wide (referenced to target vehicle)	Photosonic	25	1000	Vehicle dynamics
4	Bullet vehicle right medium	Photosonic	25	837	Vehicle dynamics
5	Bullet vehicle left medium	Photosonic	25	1005	Vehicle dynamics
6	Target vehicle right medium	Hycam	25	1005	Vehicle dynamics
7	Target vehicle left medium	Photosonic	13	N/A ¹	Vehicle dynamics
8	Overhead wide	Photosonic	8.5	N/A ¹	Vehicle dynamics
9	Overhead tight	Photosonic	13	N/A ¹	Vehicle crush
10	Onboard bullet vehicle - side	Photosonic	8	N/A ¹	Dummy kinematics
11	Onboard bullet vehicle - driver	Digital HG	13	1000	Dummy kinematics
12	Onboard bullet vehicle - passenger	Digital HG	13	1000	Dummy kinematics
13	Onboard target vehicle - driver torso	Digital HG	8	1000	Dummy kinematics
14	Onboard target vehicle - driver legs	Digital HG	8	1000	Dummy kinematics
15	Onboard target vehicle - driver over shoulder	Digital HG	8	1000	Dummy kinematics

¹ No LED's; unable to time (cameras were set to run at 1000 frames per second).

Appendix A

Photographs



Figure A-1 Pre-Test Overall - View 1



Figure A-2 Pre-Test Overall - View 2



Figure A-3 Pre-Test Target Vehicle Front View



Figure A-4 Post-Test Target Vehicle Front View



Figure A-5 Pre-Test Target Vehicle Left Front View



Figure A-6 Post-Test Target Vehicle Left Front View



Figure A-7 Pre-Test Target Vehicle Left Side View



Figure A-8 Post-Test Target Vehicle Left Side View



Figure A-9 Pre-Test Target Vehicle Left Rear View

Intentionally Left Blank



Figure A-10 Pre-Test Target Vehicle Rear View



Figure A-11 Post-Test Target Vehicle Rear View



Figure A-12 Pre-Test Target Vehicle Right Rear View

Intentionally Left Blank



Figure A-13 Pre-Test Target Vehicle Right Side View



Figure A-14 Post-Test Target Vehicle Right Side View



Figure A-15 Pre-Test Target Vehicle Right Front View



Figure A-16 Post-Test Target Vehicle Right Front View



Figure A-17 Pre-Test Target Vehicle Engine Compartment View

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Figure A-18 Pre-Test Target Vehicle Front Underbody View



Figure A-19 Post-Test Target Vehicle Front Underbody View



Figure A-20 Pre-Test Target Vehicle Rear Underbody View



Figure A-21 Post-Test Target Vehicle Rear Underbody View



Figure A-22 Pre-Test Bullet Vehicle Front View



Figure A-23 Post-Test Bullet Vehicle Front View



Figure A-24 Pre-Test Bullet Vehicle Left Front View



Figure A-25 Post-Test Bullet Vehicle Left Front View



Figure A-26 Pre-Test Bullet Vehicle Left Side View



Figure A-27 Post-Test Bullet Vehicle Left Side View



Figure A-28 Pre-Test Bullet Vehicle Left Rear View

Intentionally Left Blank



Figure A-29 Pre-Test Bullet Vehicle Rear View



Figure A-30 Post-Test Bullet Vehicle Rear View



Figure A-31 Pre-Test Bullet Vehicle Right Rear View

Intentionally Left Blank



Figure A-32 Pre-Test Bullet Vehicle Right Side View



Figure A-33 Post-Test Bullet Vehicle Right Side View



Figure A-34 Pre-Test Bullet Vehicle Right Front View



Figure A-35 Post-Test Bullet Vehicle Right Front View



Figure A-36 Pre-Test Bullet Vehicle Engine Compartment View

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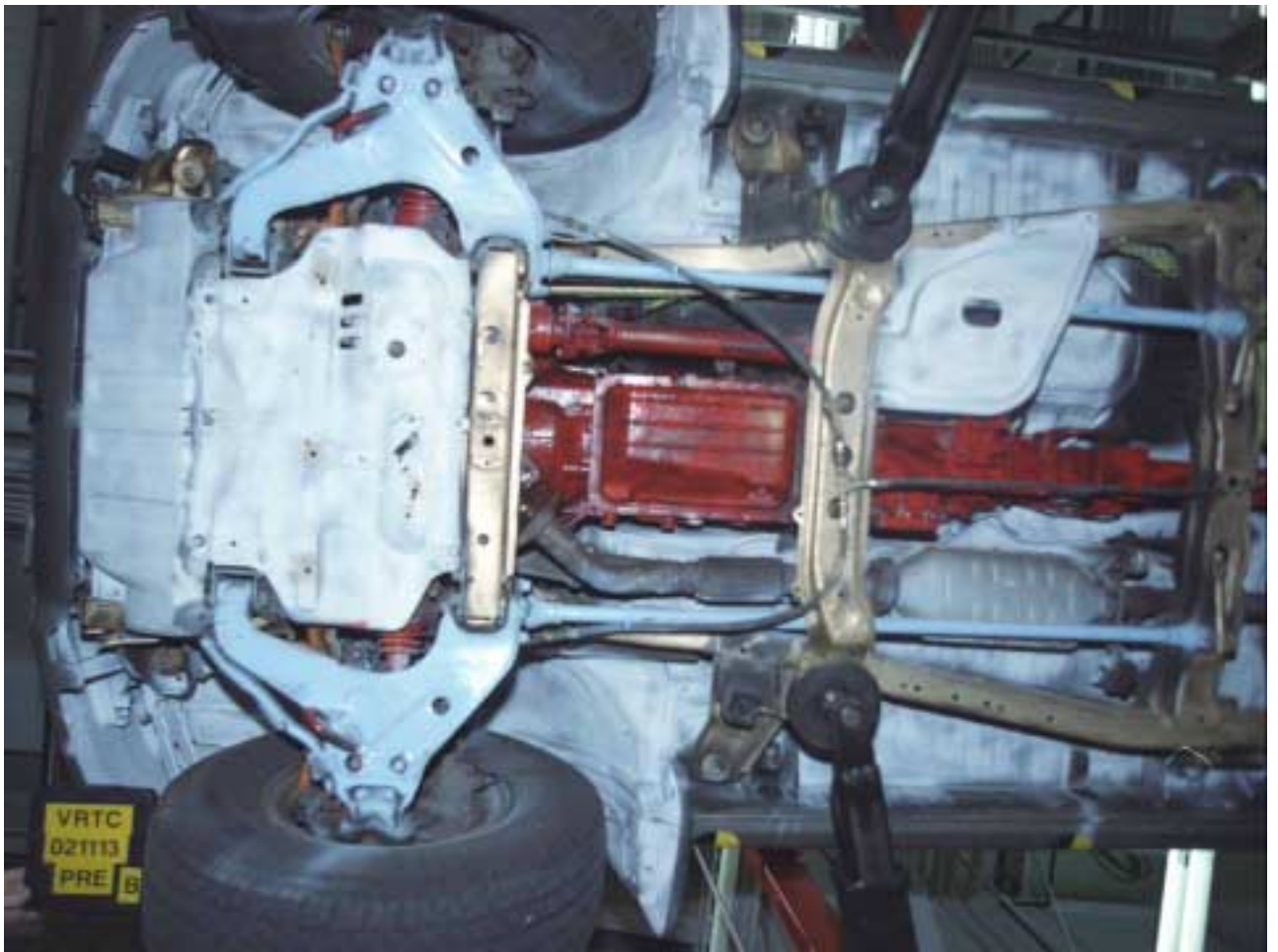


Figure A-37 Pre-Test Bullet Vehicle Front Underbody View

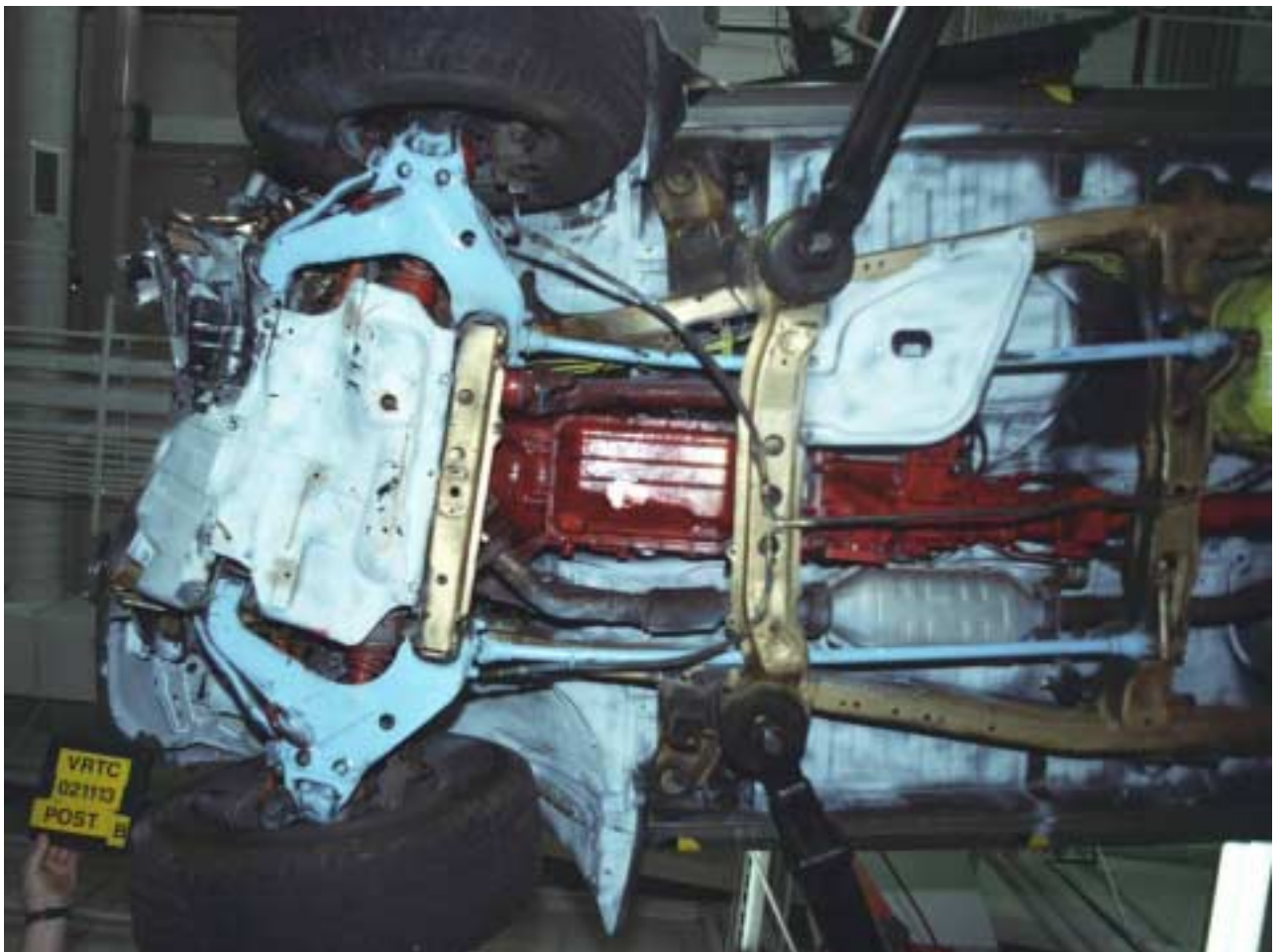


Figure A-38 Post-Test Bullet Vehicle Front Underbody View



Figure A-39 Pre-Test Bullet Vehicle Rear Underbody View



Figure A-40 Post-Test Bullet Vehicle Rear Underbody View

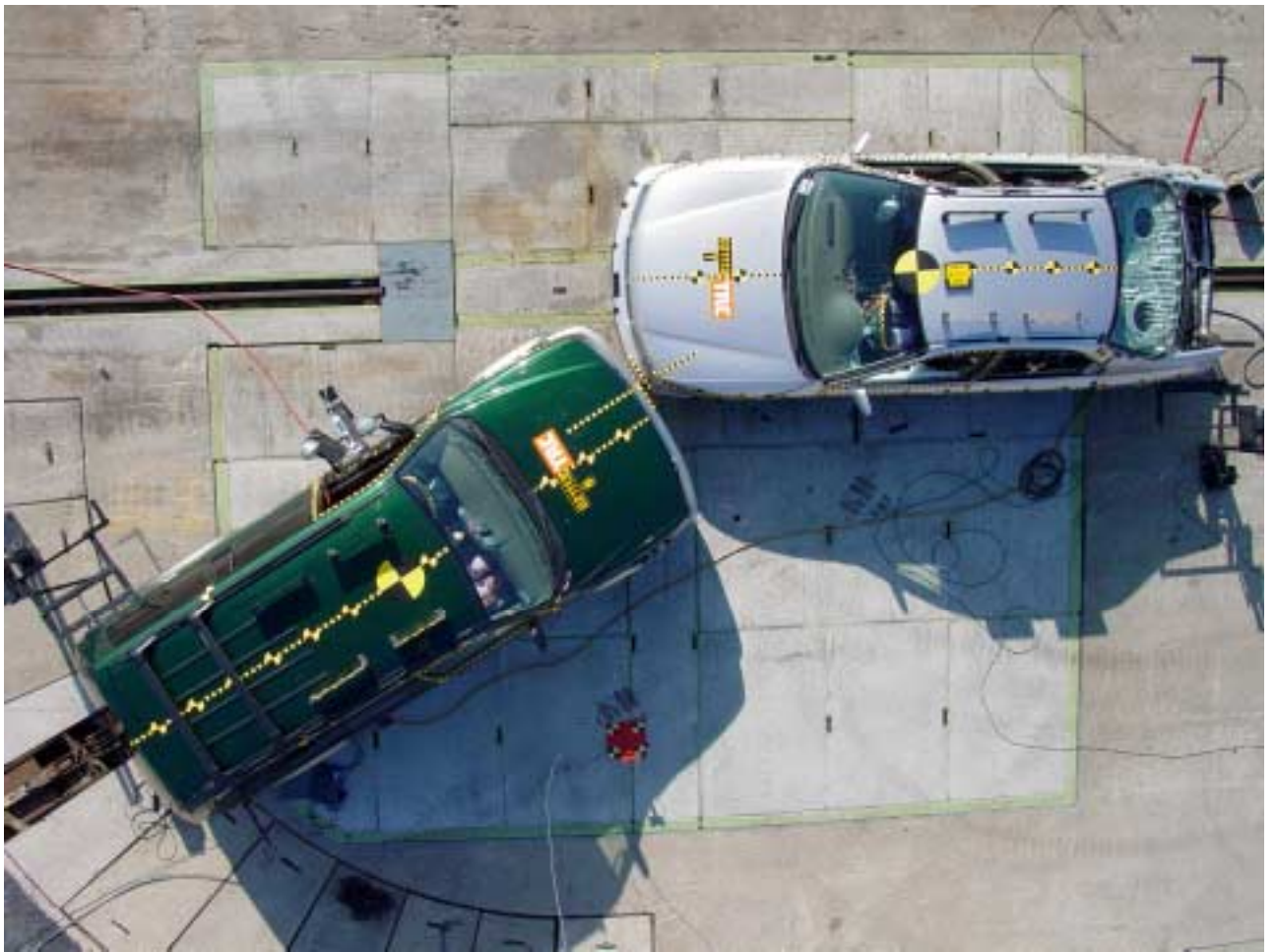


Figure A-41 Pre-Test Overhead Wide View

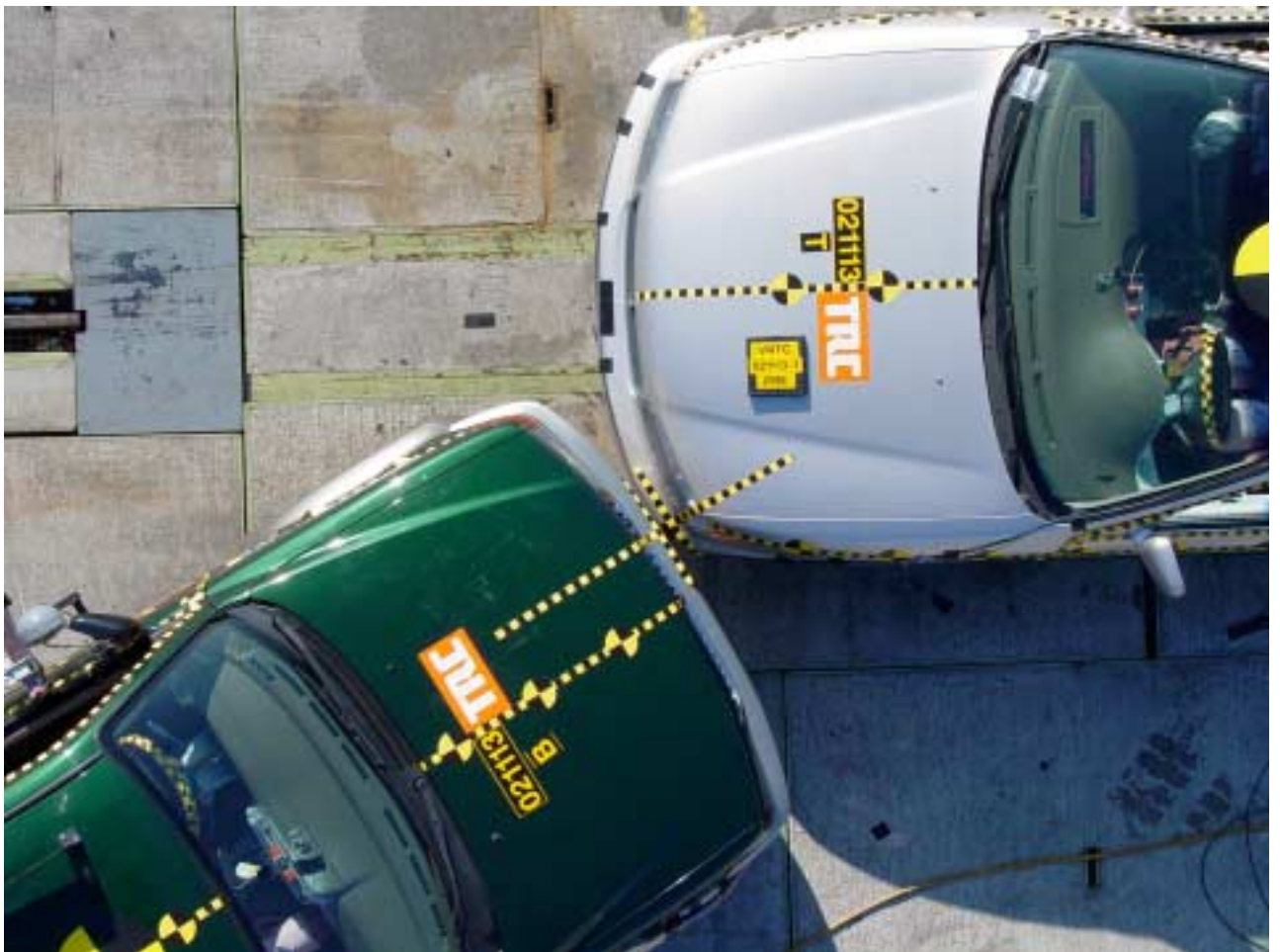


Figure A-42 Pre-Test Overhead Close-up View



Figure A-43 Pre-Test Target Vehicle Driver Dummy - View 1



Figure A-44 Post-Test Target Vehicle Driver Dummy - View 1



Figure A-45 Pre-Test Target Vehicle Driver Dummy - View 2



Figure A-46 Post-Test Target Vehicle Driver Dummy - View 2



Figure A-47 Pre-Test Target Vehicle Driver Dummy - View 3



Figure A-48 Pre-Test Target Vehicle Driver Dummy - View 4



Figure A-49 Pre-Test Bullet Vehicle Driver and Passenger Dummies through Windshield View



Figure A-50 Post-Test Bullet Vehicle Driver and Passenger Dummies through Windshield View



Figure A-51 Pre-Test Bullet Vehicle Driver Dummy - View 1



Figure A-52 Post-Test Bullet Vehicle Driver Dummy - View 1



Figure A-53 Pre-Test Bullet Vehicle Driver Dummy - View 2



Figure A-54 Post-Test Bullet Vehicle Driver Dummy - View 2



Figure A-55 Pre-Test Bullet Vehicle Driver Dummy - View 3



Figure A-56 Post-Test Bullet Vehicle Driver Dummy - View 3



Figure A-57 Pre-Test Bullet Vehicle Driver Dummy - View 4



Figure A-58 Post-Test Bullet Vehicle Driver Dummy - View 4



Figure A-59 Pre-Test Bullet Vehicle Passenger Dummy - View 1



Figure A-60 Post-Test Bullet Vehicle Passenger Dummy - View 1



Figure A-61 Pre-Test Bullet Vehicle Passenger Dummy - View 2



Figure A-62 Post-Test Bullet Vehicle Passenger Dummy - View 2



Figure A-63 Pre-Test Bullet Vehicle Passenger Dummy - View 3



Figure A-64 Post-Test Bullet Vehicle Passenger Dummy - View 3



Figure A-65 Pre-Test Bullet Vehicle Passenger Dummy - View 4



Figure A-66 Post-Test Bullet Vehicle Passenger Dummy - View 4

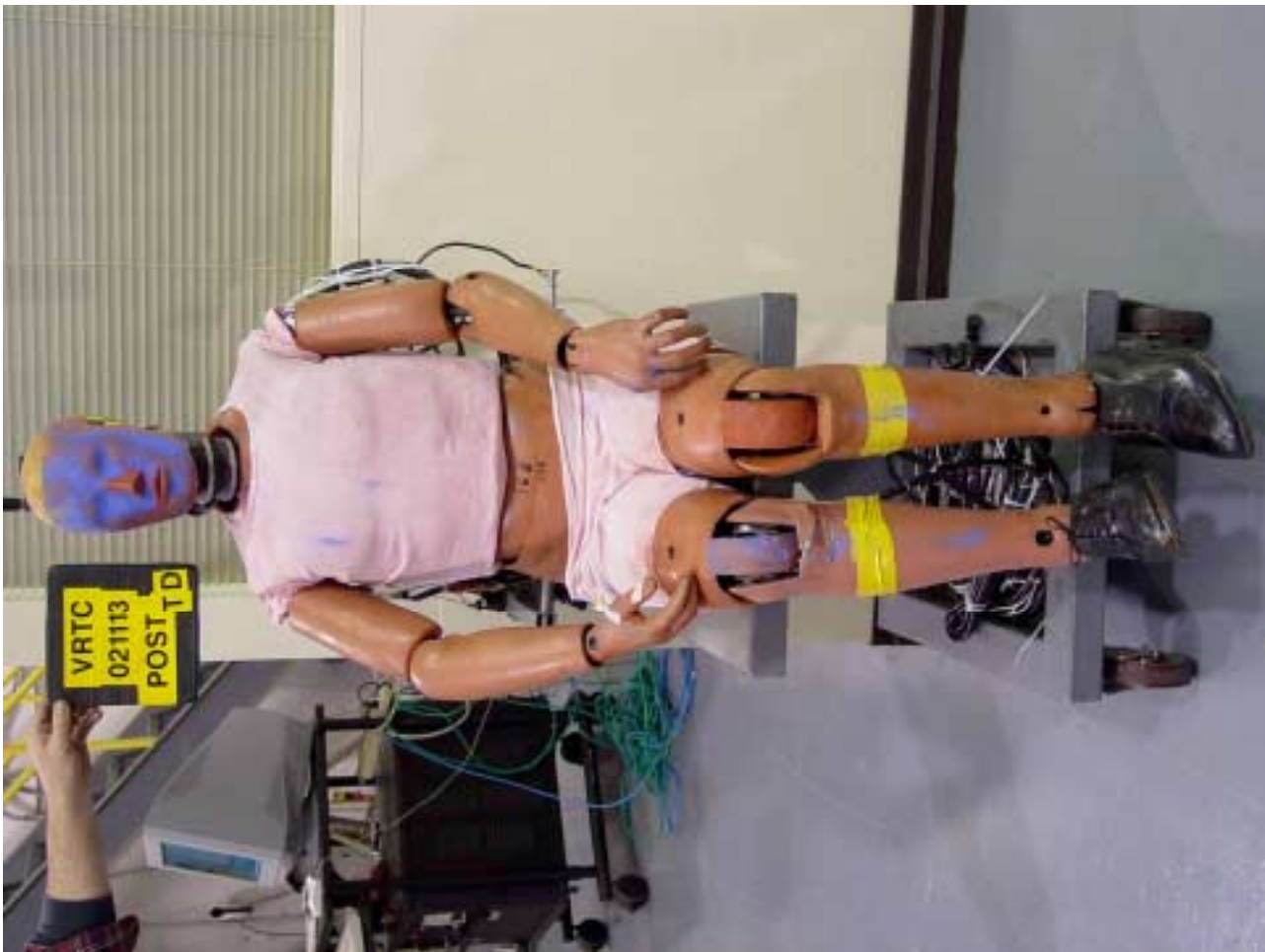


Figure A-67 Post-Test Target Vehicle Driver Dummy Overall Contact View



Figure A-68 Post-Test Target Vehicle Driver Dummy Head Contact - View 1



Figure A-69 Post-Test Target Vehicle Driver Dummy Head Contact - View 2



Figure A-70 Post-Test Target Vehicle Driver Dummy Head Contact - View 3



Figure A-71 Post-Test Target Vehicle Driver Dummy Head Contact - View 4



Figure A-72 Post-Test Target Vehicle Driver Dummy Head Contact - View 5



Figure A-73 Post-Test Target Vehicle Driver Dummy Head Contact - View 6



Figure A-74 Post-Test Target Vehicle Driver Dummy Head Contact - View 7

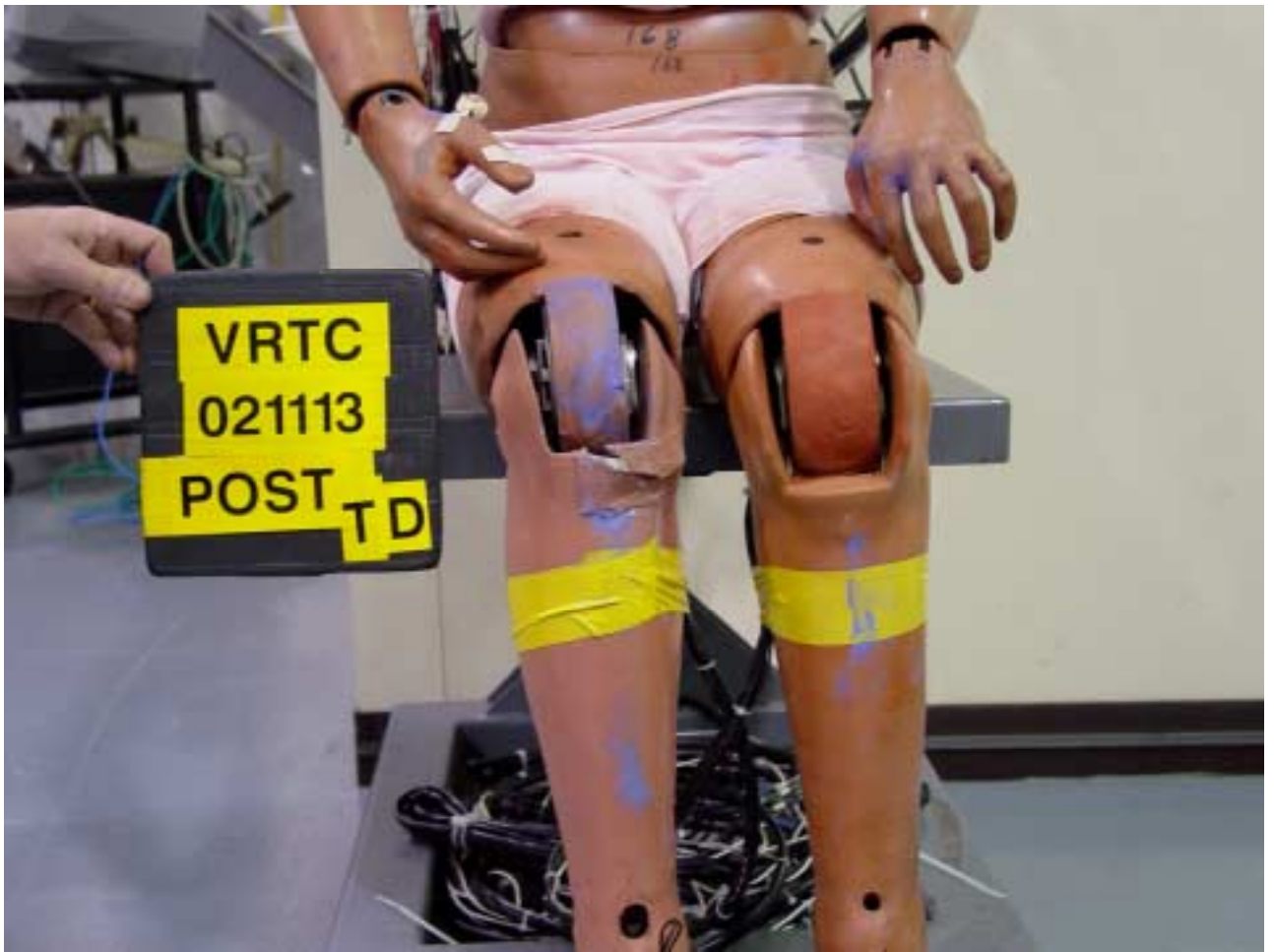


Figure A-75 Post-Test Target Vehicle Driver Dummy Knee Contact - View 1



Figure A-76 Post-Test Target Vehicle Driver Dummy Knee Contact - View 2



Figure A-77 Post-Test Target Vehicle Driver Dummy Knee Contact - View 3

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Figure A-78 Post-Test Bullet Vehicle Driver Dummy Overall Contact View



Figure A-79 Post-Test Bullet Vehicle Driver Dummy Head Contact - View 1



Figure A-80 Post-Test Bullet Vehicle Driver Dummy Head Contact - View 2



Figure A-81 Post-Test Bullet Vehicle Driver Dummy Head Contact - View 3



Figure A-82 Post-Test Bullet Vehicle Driver Dummy Knee Contact - View 1



Figure A-83 Post-Test Bullet Vehicle Driver Dummy Knee Contact - View 2



Figure A-84 Post-Test Bullet Vehicle Passenger Dummy Overall Contact View



Figure A-85 Post-Test Bullet Vehicle Passenger Dummy Head Contact - View 1



Figure A-86 Post-Test Bullet Vehicle Passenger Dummy Head Contact - View 2



Figure A-87 Post-Test Bullet Vehicle Passenger Dummy Knee Contact - View 1



Figure A-88 Post-Test Bullet Vehicle Passenger Dummy Knee Contact - View 2



Figure A-89 Pre-Test Target Vehicle Certification Label View



Figure A-90 Pre-Test Target Vehicle Tire Load Label View



Figure A-91 Pre-Test Bullet Vehicle Certification Label View



Figure A-92 Pre-Test Bullet Vehicle Tire Pressure Label View



Figure A-93 Post-Test Target Vehicle Damage Close-up View

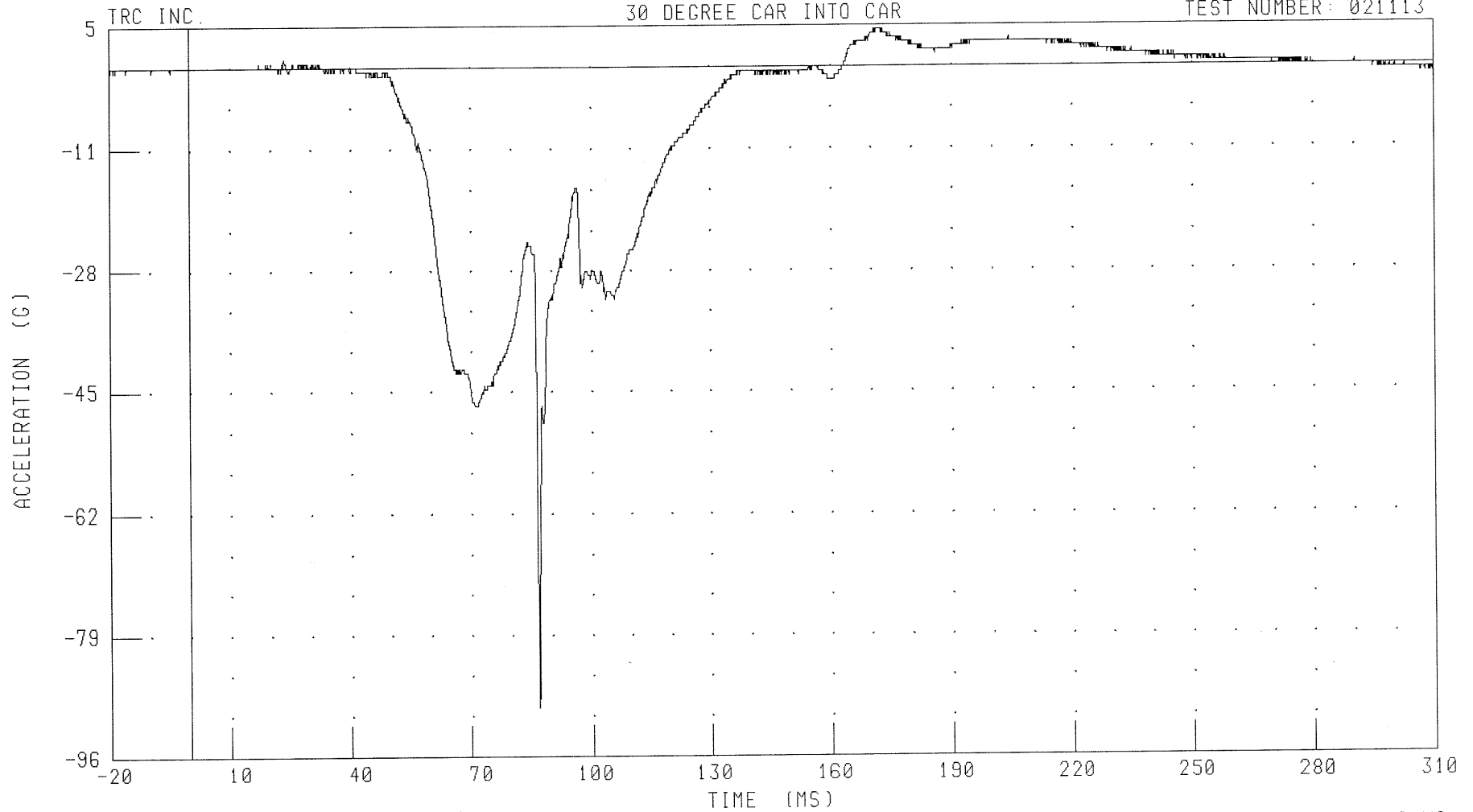
Appendix B

Data Plots

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER HEAD X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



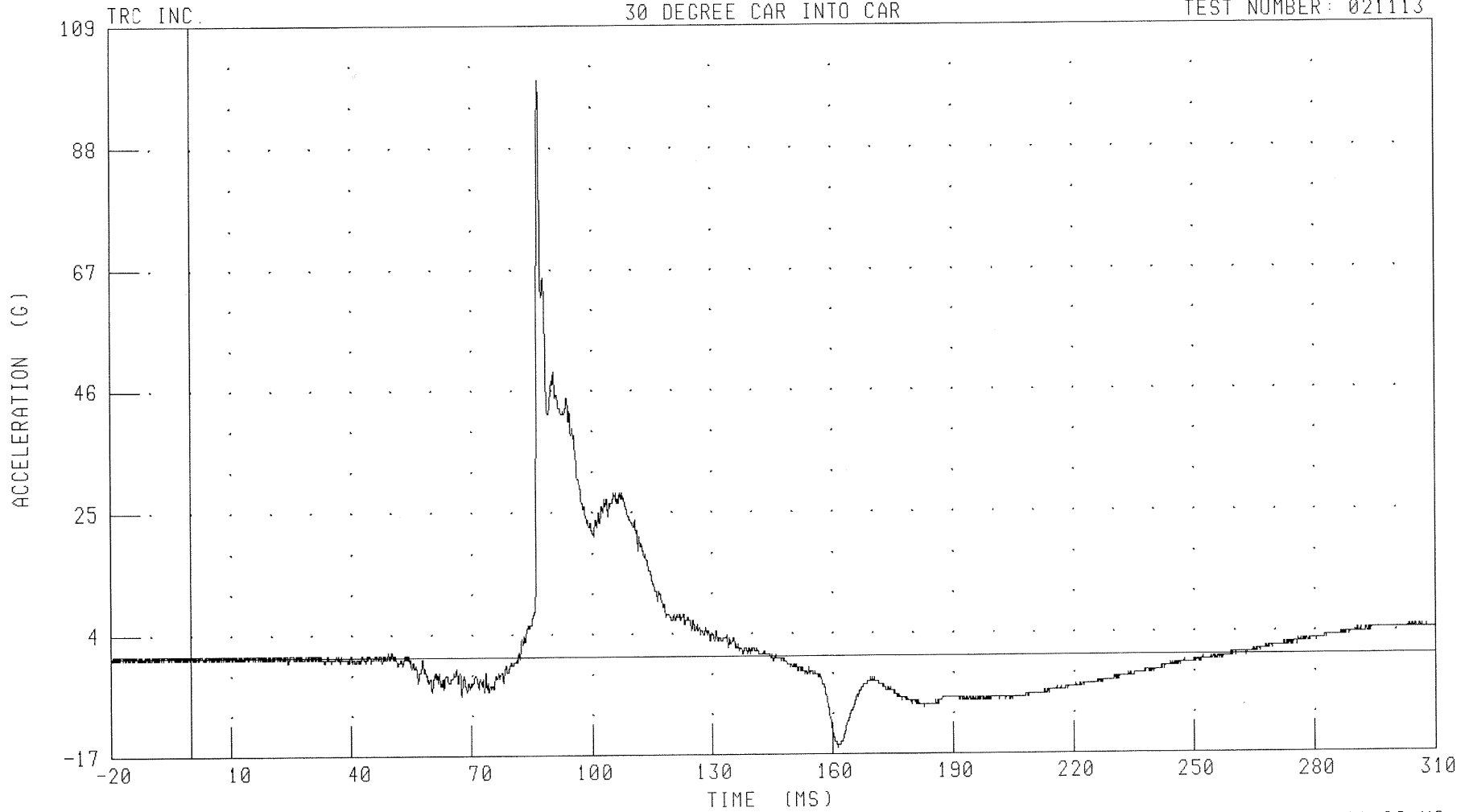
CHANNEL: HEDXC1 FILTER: CH. CLASS 1000

PEAK DATA: 5.22 G @ 171.04 MS; -89.60 G @ 86.72 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER HEAD Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: HEDYG1

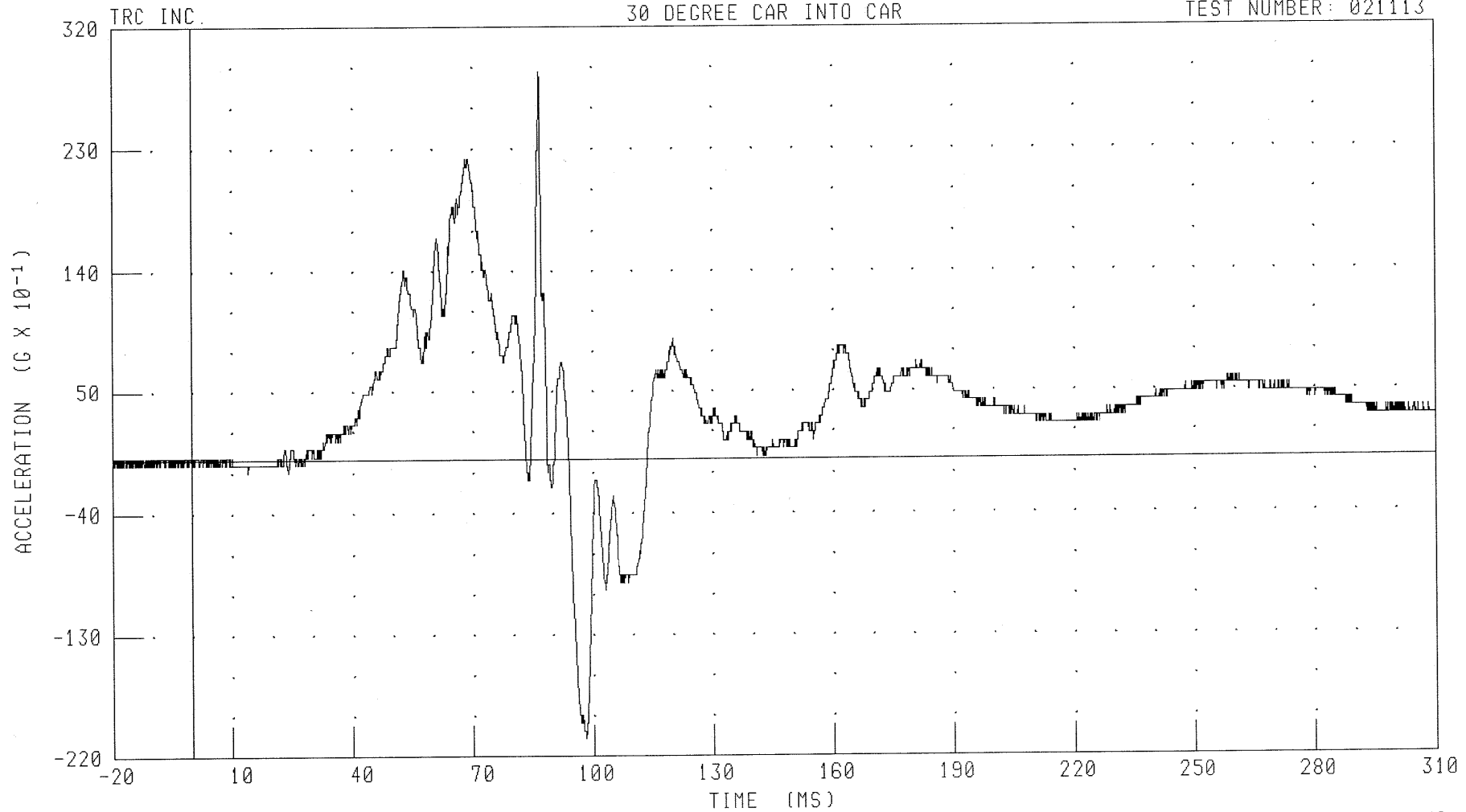
FILTER: CH. CLASS 1000

PEAK DATA: 99.56 G @ 86.96 MS; -15.99 G @ 161.28 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER HEAD Z-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: HEDZG1

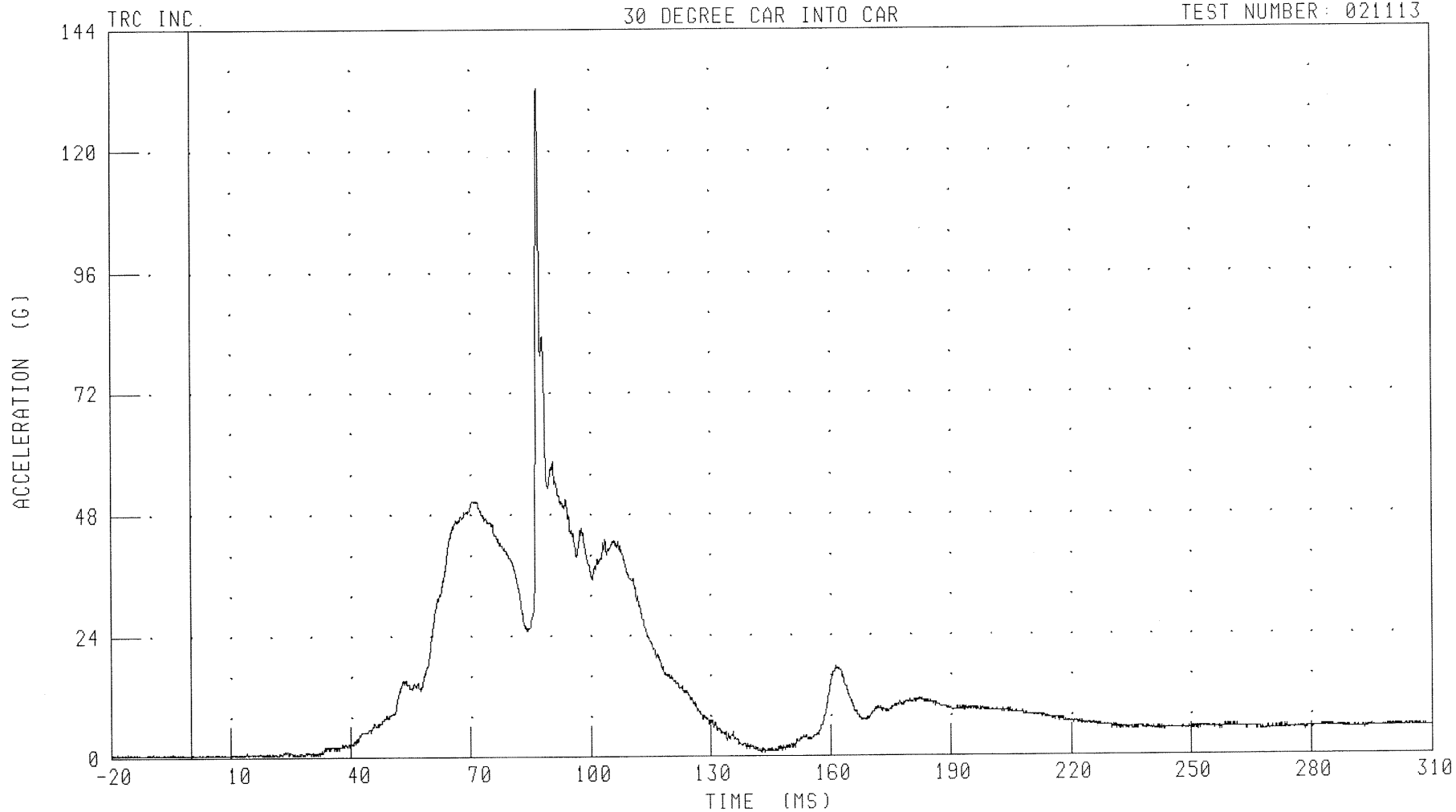
FILTER: CH. CLASS 1000

PEAK DATA: 28.65 G @ 86.96 MS; -20.73 G @ 98.16 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER HEAD RESULTANT ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: HEDRG1

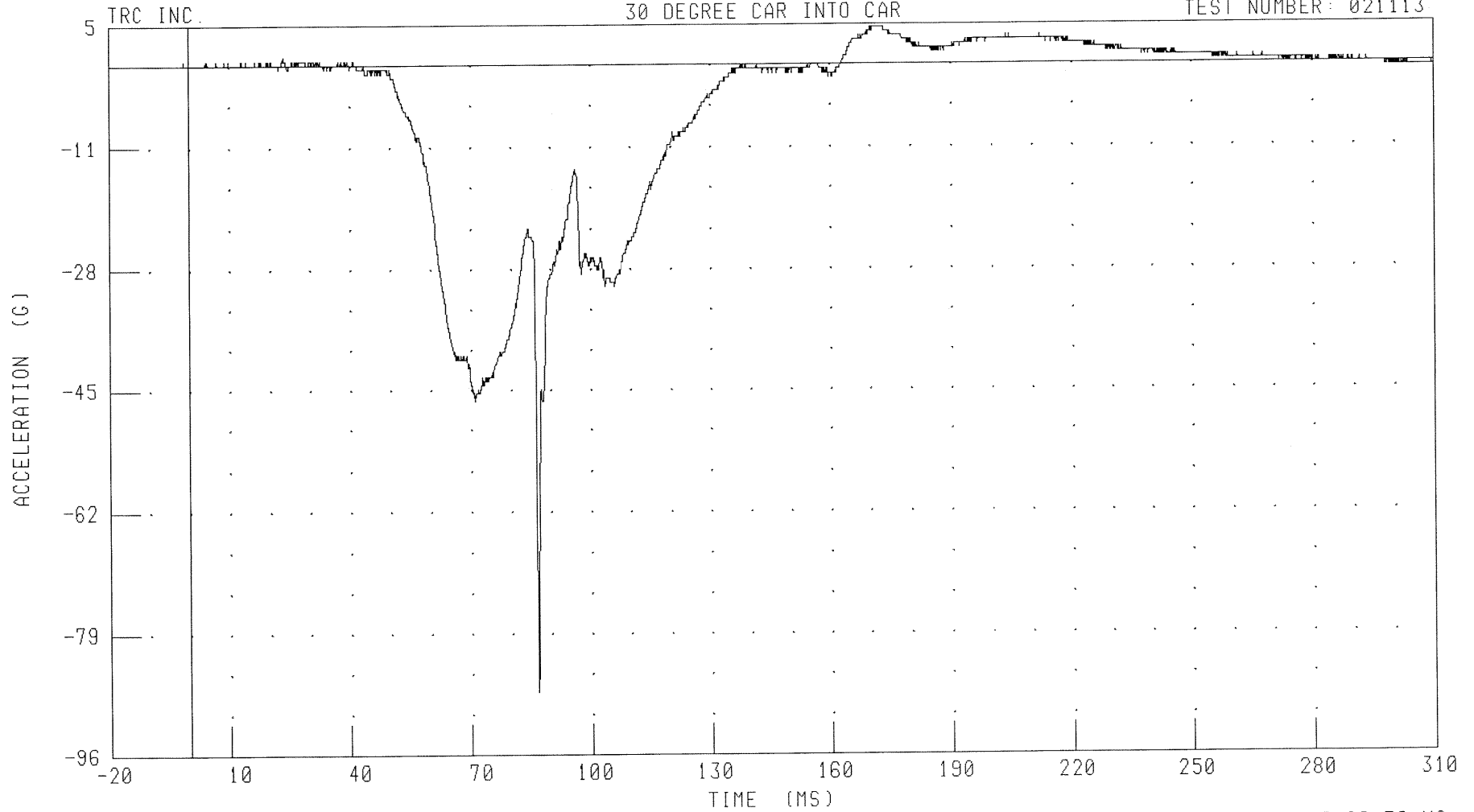
FILTER: CH. CLASS 1000

PEAK DATA: 132.32 G @ 86.80 MS; 0.30 G @ -19.68 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER HEAD X-AXIS ACCELERATION REDUNDANT

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: HEDXR1

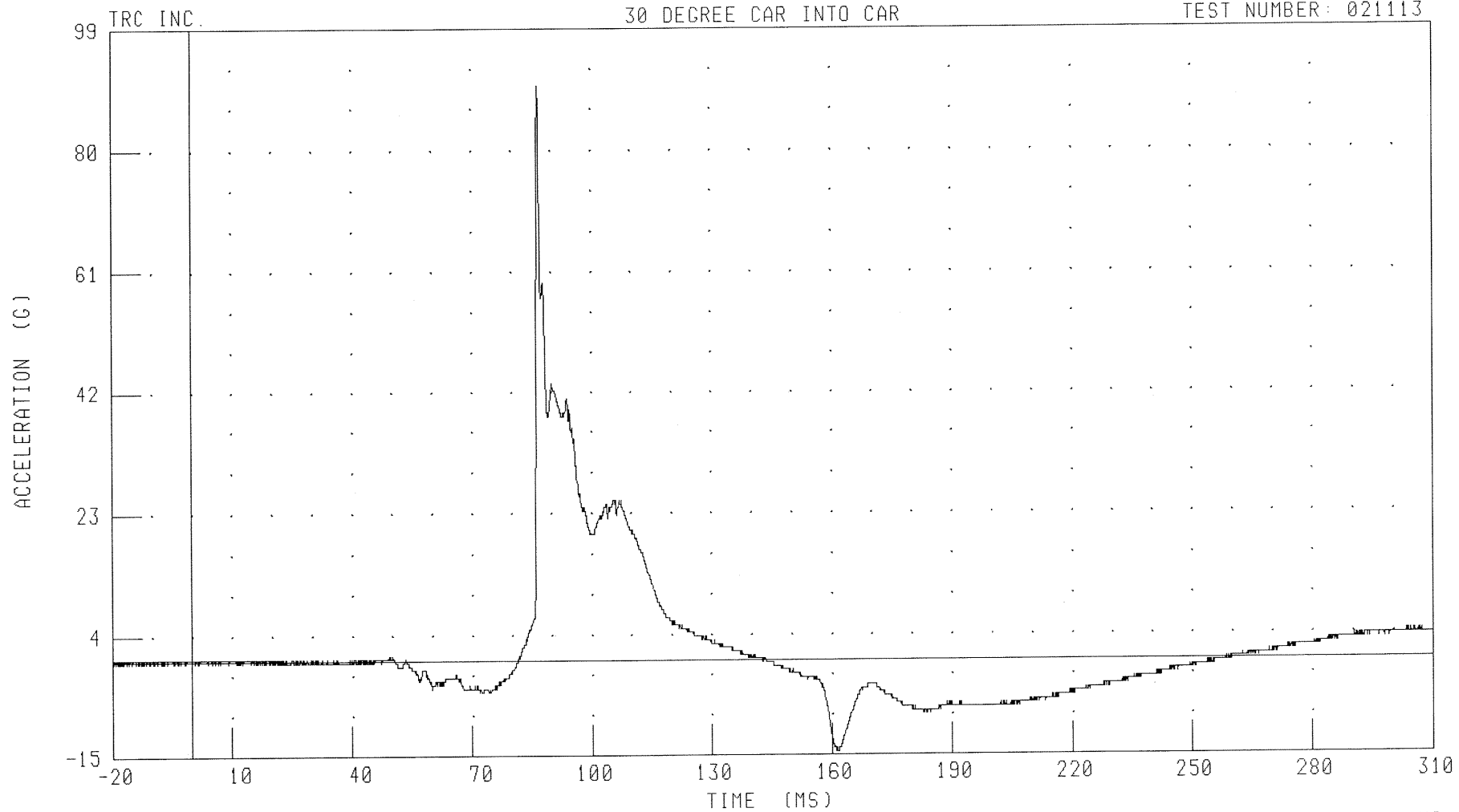
FILTER: CH. CLASS 1000

PEAK DATA: 5.17 G @ 170.24 MS; -87.57 G @ 86.72 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER HEAD Y-AXIS ACCELERATION REDUNDANT

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: HEDYR1 FILTER: CH. CLASS 1000

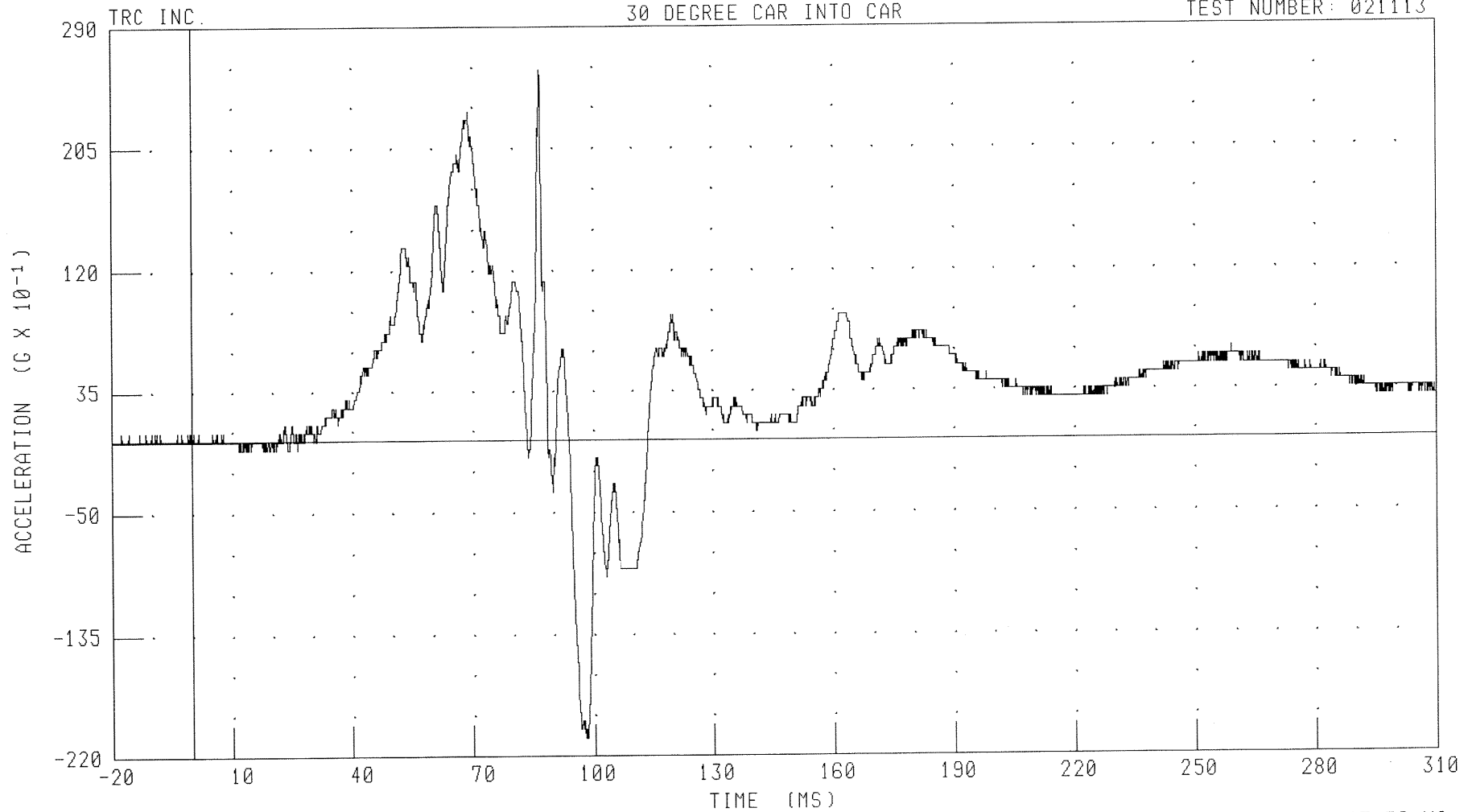
PEAK DATA: 90.04 G @ 86.96 MS; -14.54 G @ 161.04 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

TARGET DRIVER HEAD Z-AXIS ACCELERATION REDUNDANT

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: HEDZR1 FILTER: CH. CLASS 1000

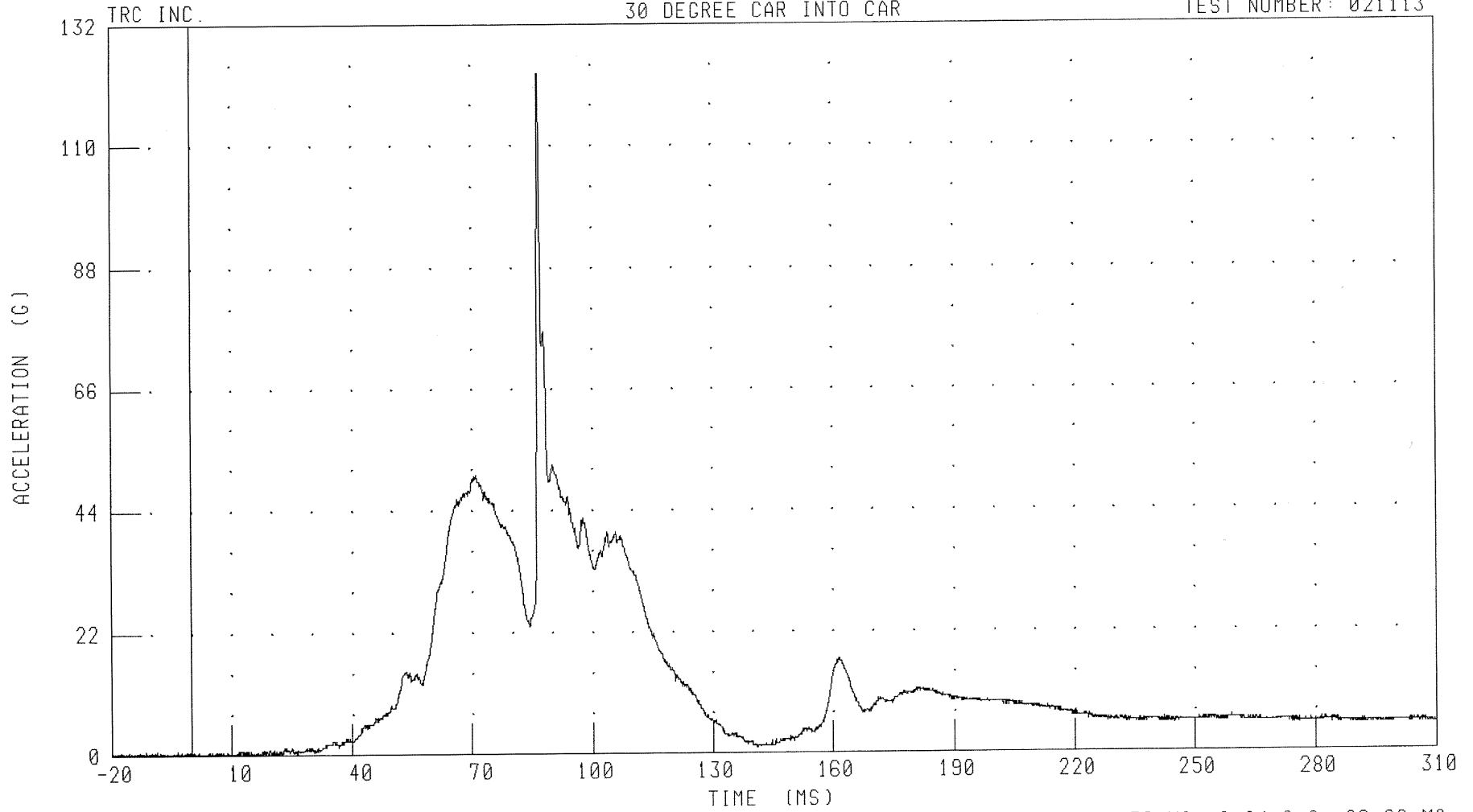
PEAK DATA: 26.02 G @ 86.96 MS; -20.76 G @ 97.76 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

TARGET DRIVER HEAD RESULTANT ACCELERATION REDUNDANT

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: HEDRR1

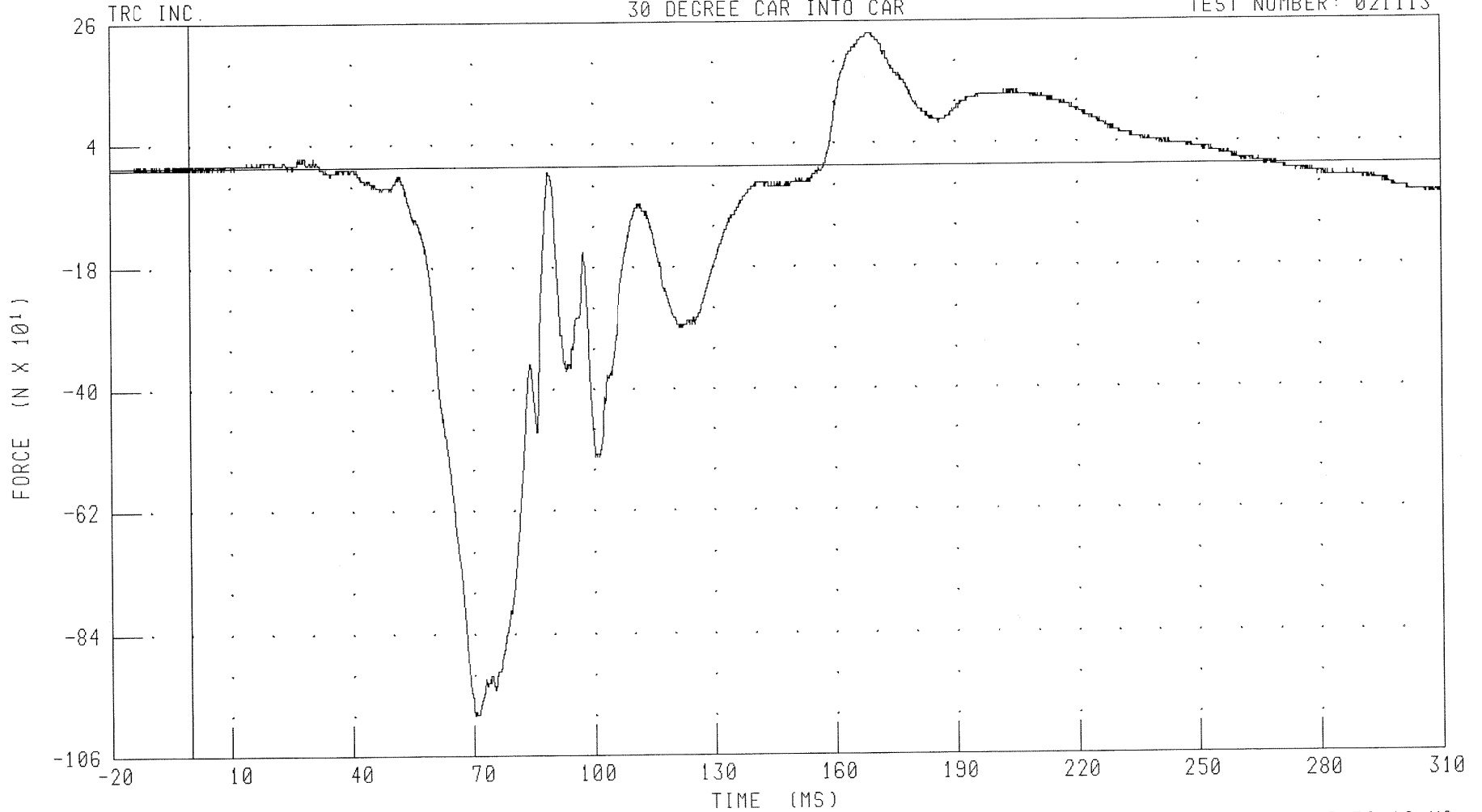
FILTER: CH. CLASS 1000

PEAK DATA: 123.09 G @ 86.72 MS; 0.24 G @ -20.00 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER NECK X-AXIS SHEAR FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: NEKXF1 FILTER: CH. CLASS 1000

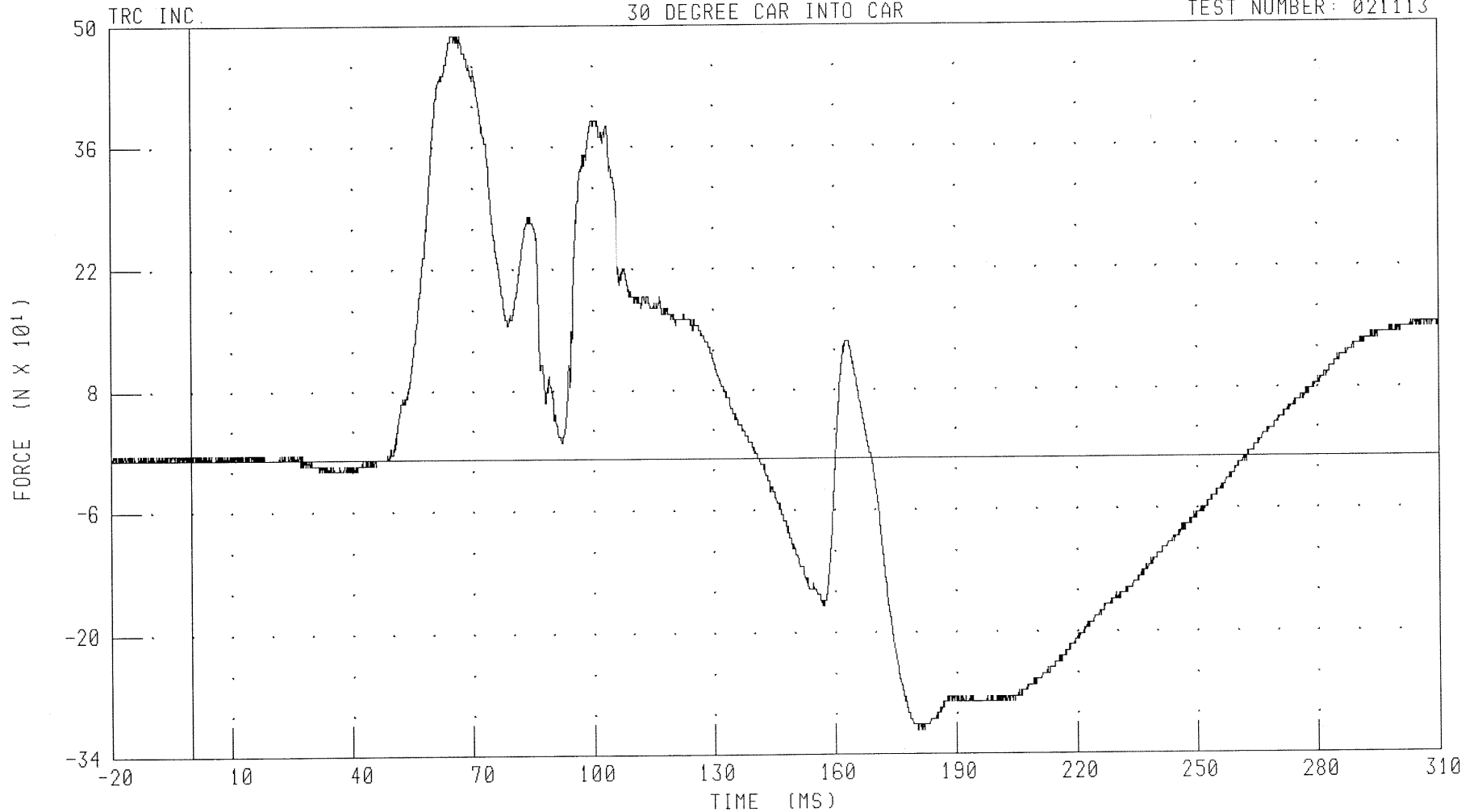
PEAK DATA: 237.68 N @ 168.08 MS; -985.91 N @ 70.16 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

TARGET DRIVER NECK Y-AXIS SHEAR FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



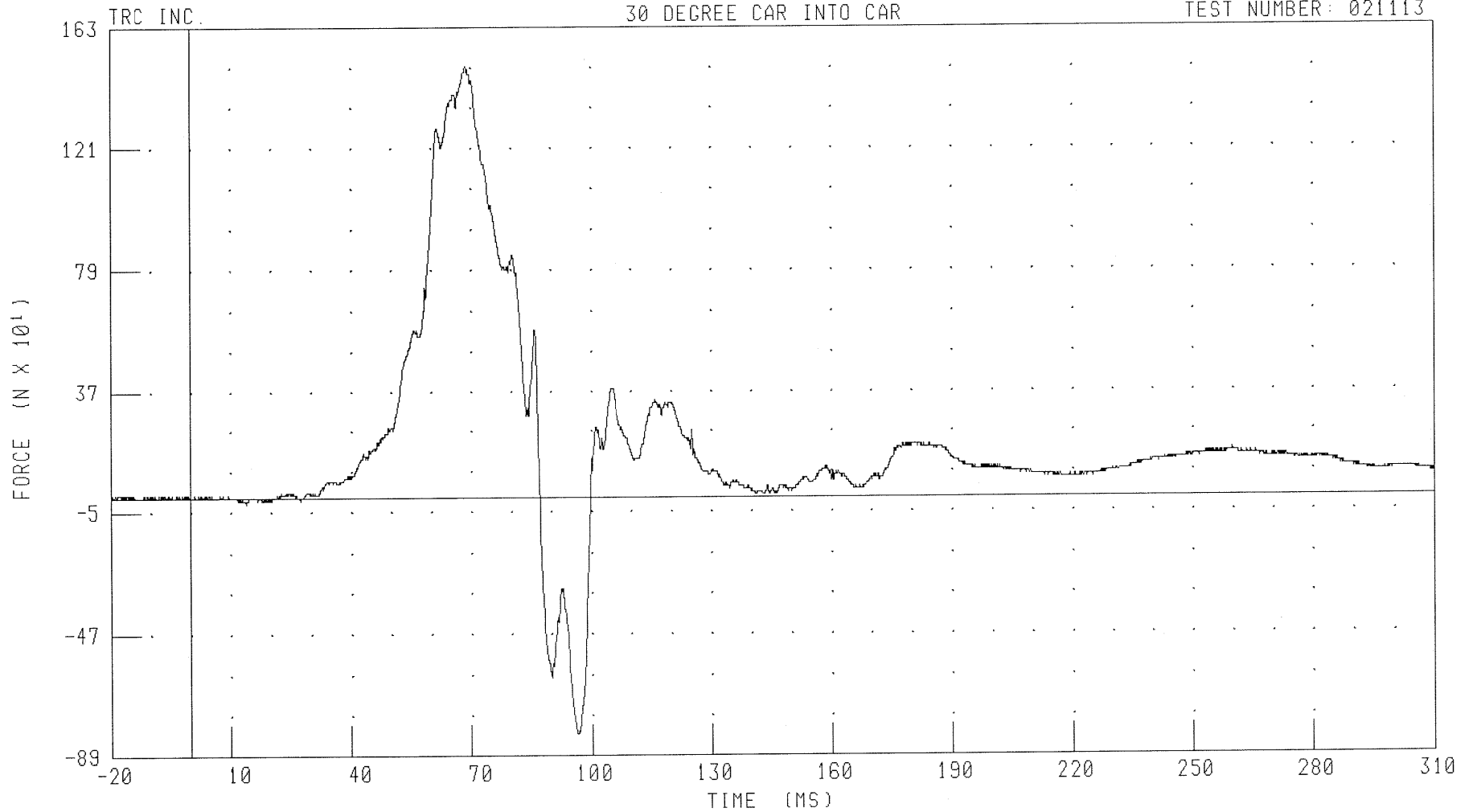
CHANNEL: NEKYF1 FILTER: CH. CLASS 1000

PEAK DATA: 487.87 N @ 64.80 MS; -312.68 N @ 180.40 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER NECK Z-AXIS AXIAL FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



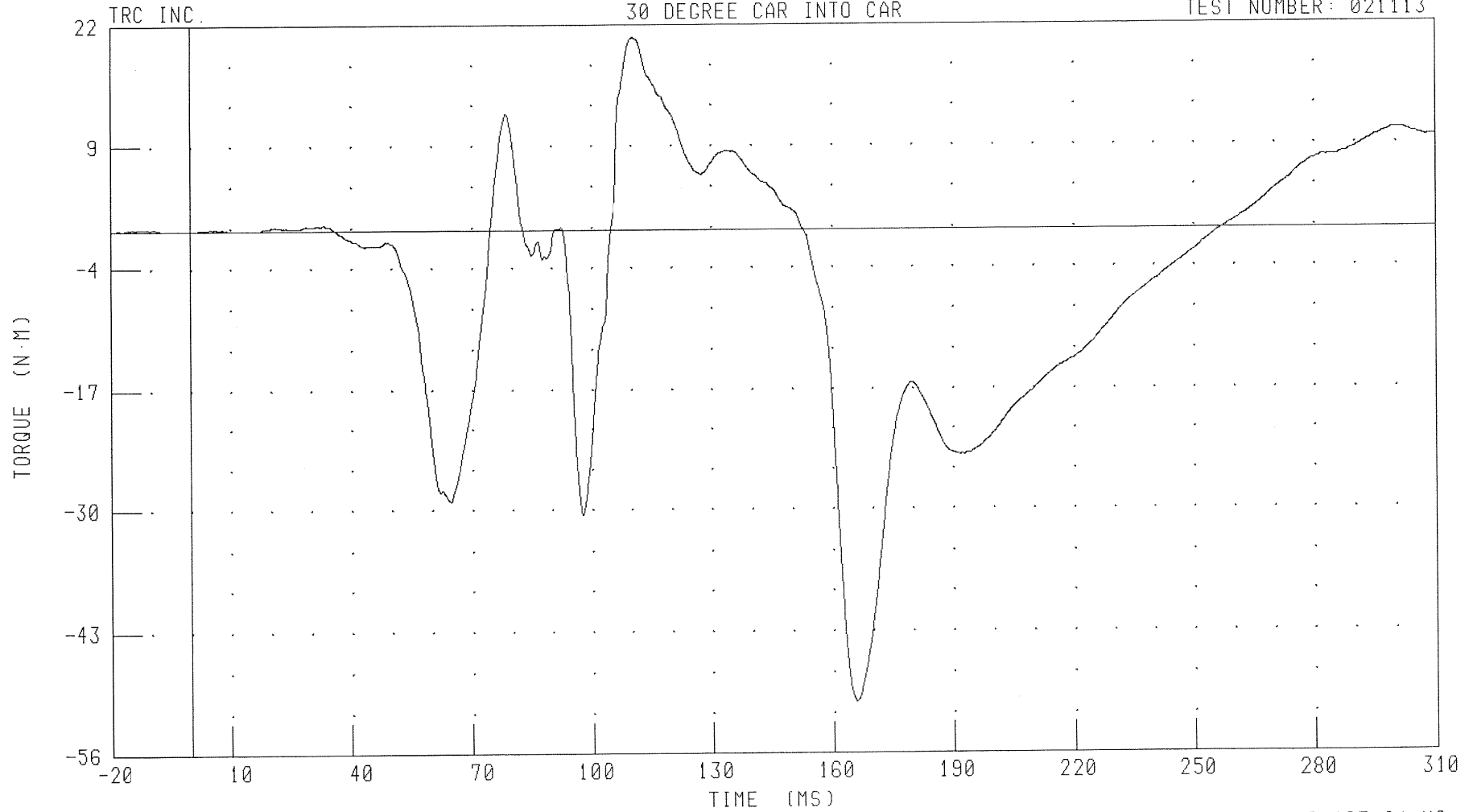
CHANNEL: NEKZF1 FILTER: CH. CLASS 1000

PEAK DATA: 1495.40 N @ 68.80 MS; -814.50 N @ 96.40 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER NECK MOMENT ABOUT X AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



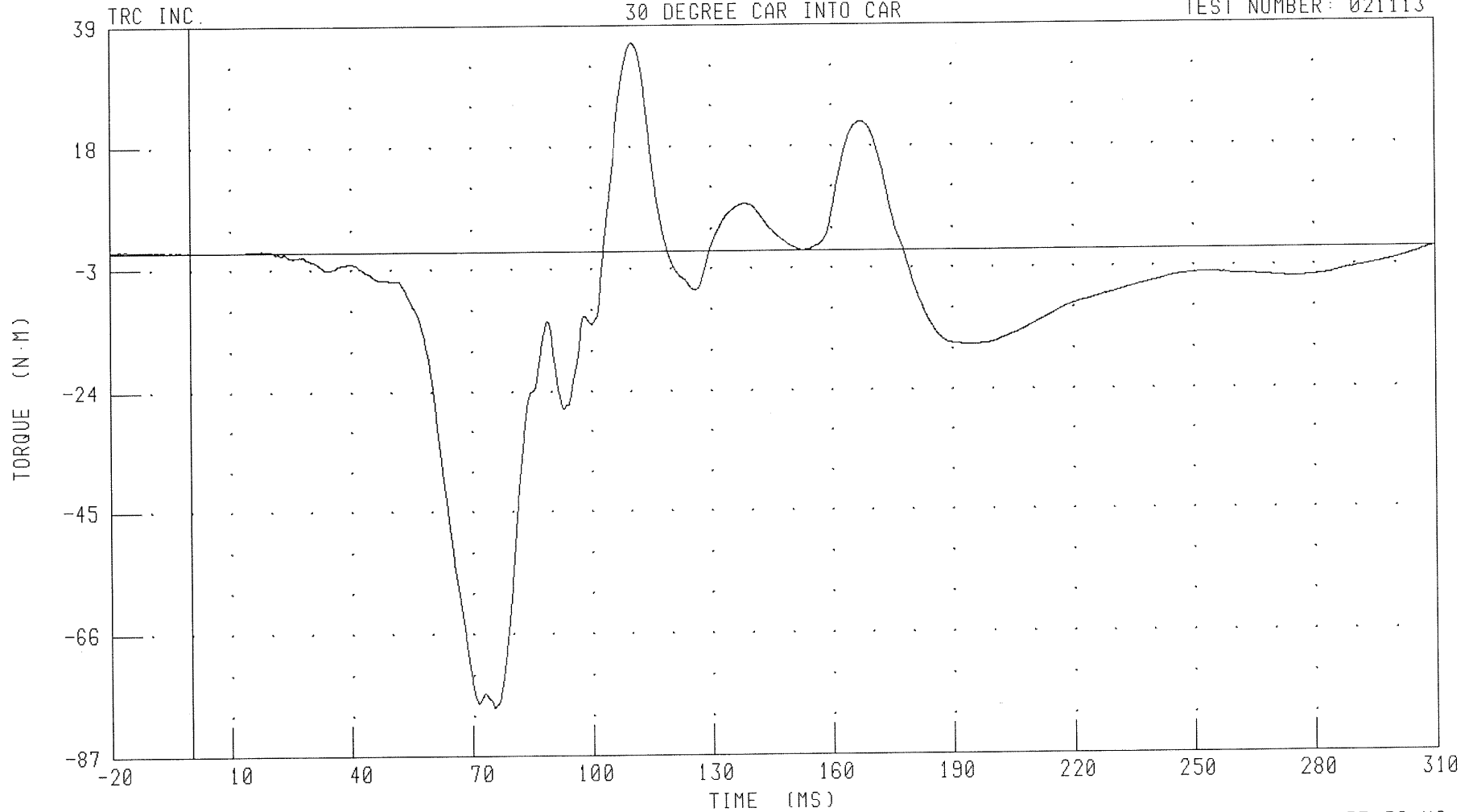
CHANNEL: NEKXM1 FILTER: CH. CLASS 600

PEAK DATA: 20.70 N·M @ 110.64 MS; -50.50 N·M @ 165.84 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER NECK MOMENT ABOUT Y AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: NEKYM1 FILTER: CH. CLASS 600

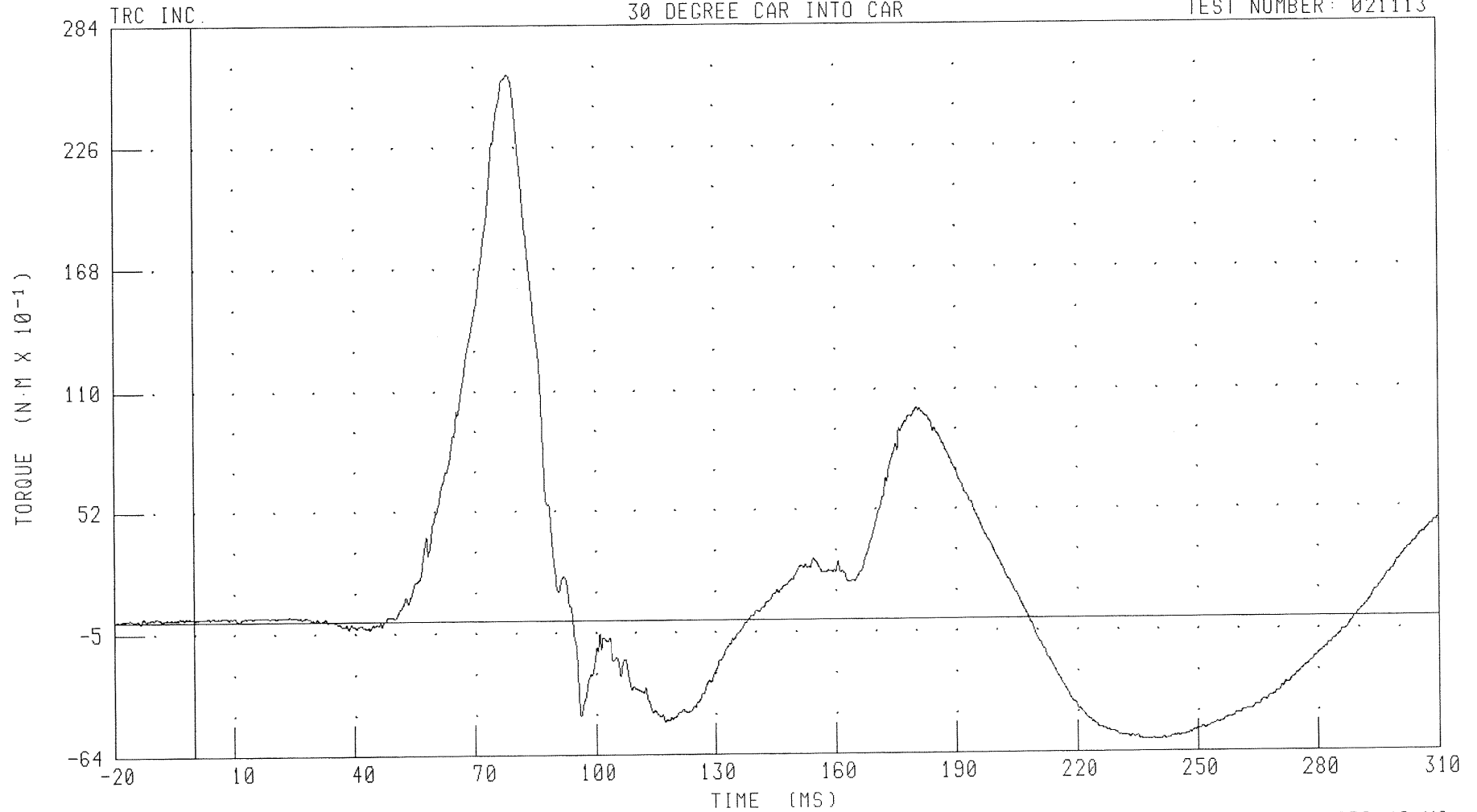
PEAK DATA: 36.03 N·M @ 110.64 MS; -78.59 N·M @ 75.36 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

TARGET DRIVER NECK MOMENT ABOUT Z AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



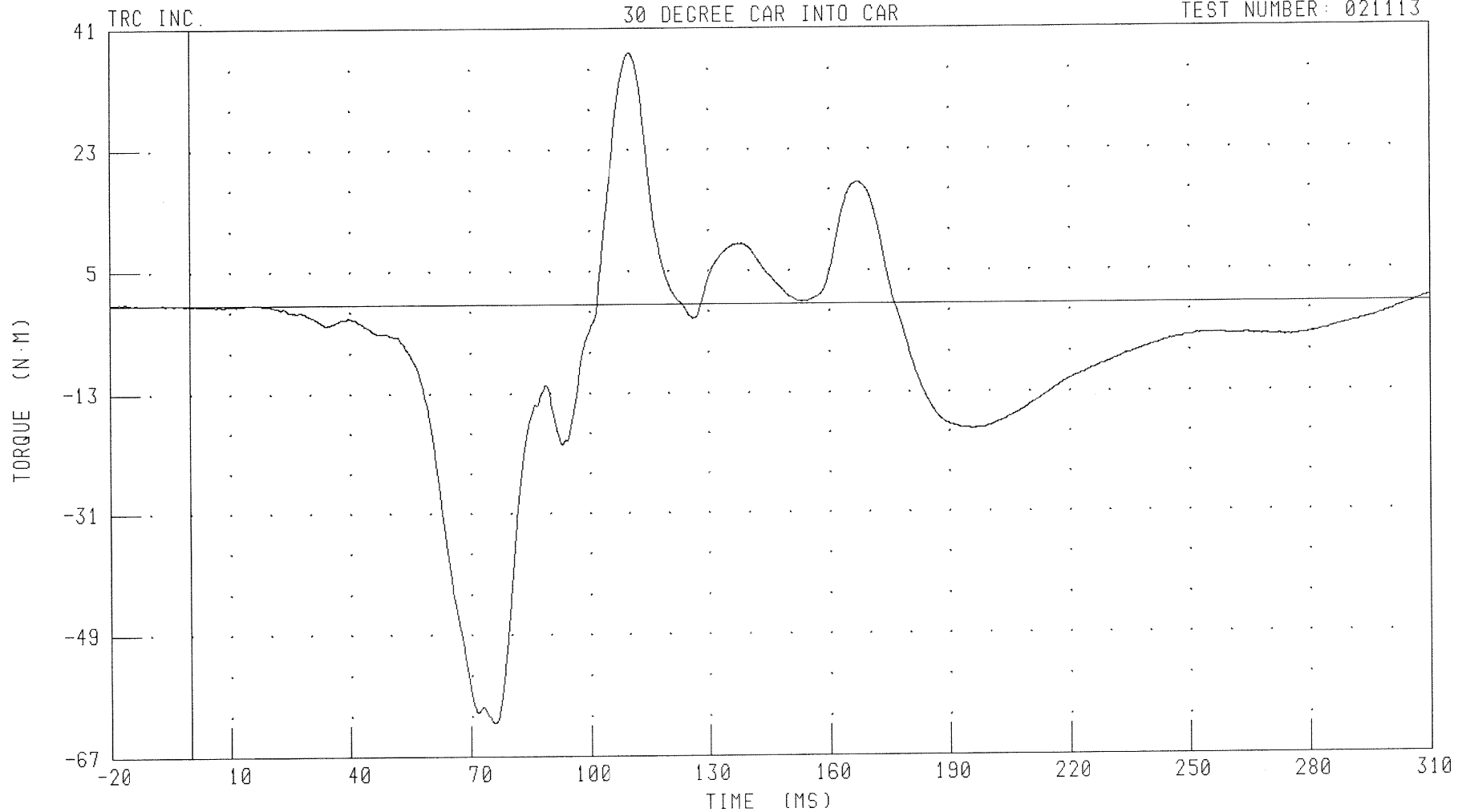
CHANNEL: NEKZM1 FILTER: CH. CLASS 600

PEAK DATA: 26.08 N·M @ 78.48 MS; -5.84 N·M @ 236.40 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER NECK OCCIPITAL CONDYLE MOMENT ABOUT Y AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



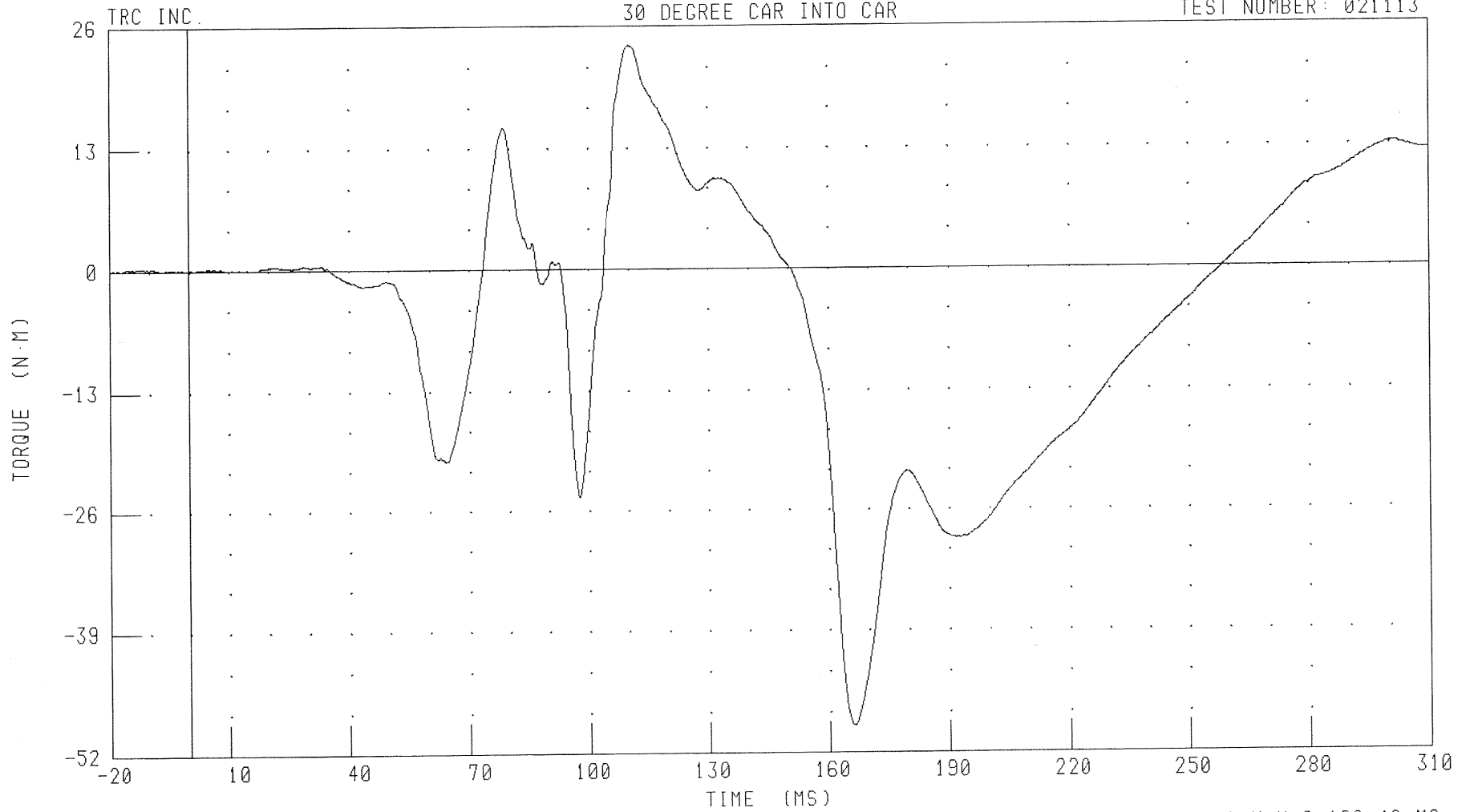
CHANNEL: NEKOM1 FILTER: CH. CLASS 600

PEAK DATA: 37.39 N·M @ 110.56 MS; -61.95 N·M @ 75.76 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER NECK OCCIPITAL CONDYLE MOMENT ABOUT X AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



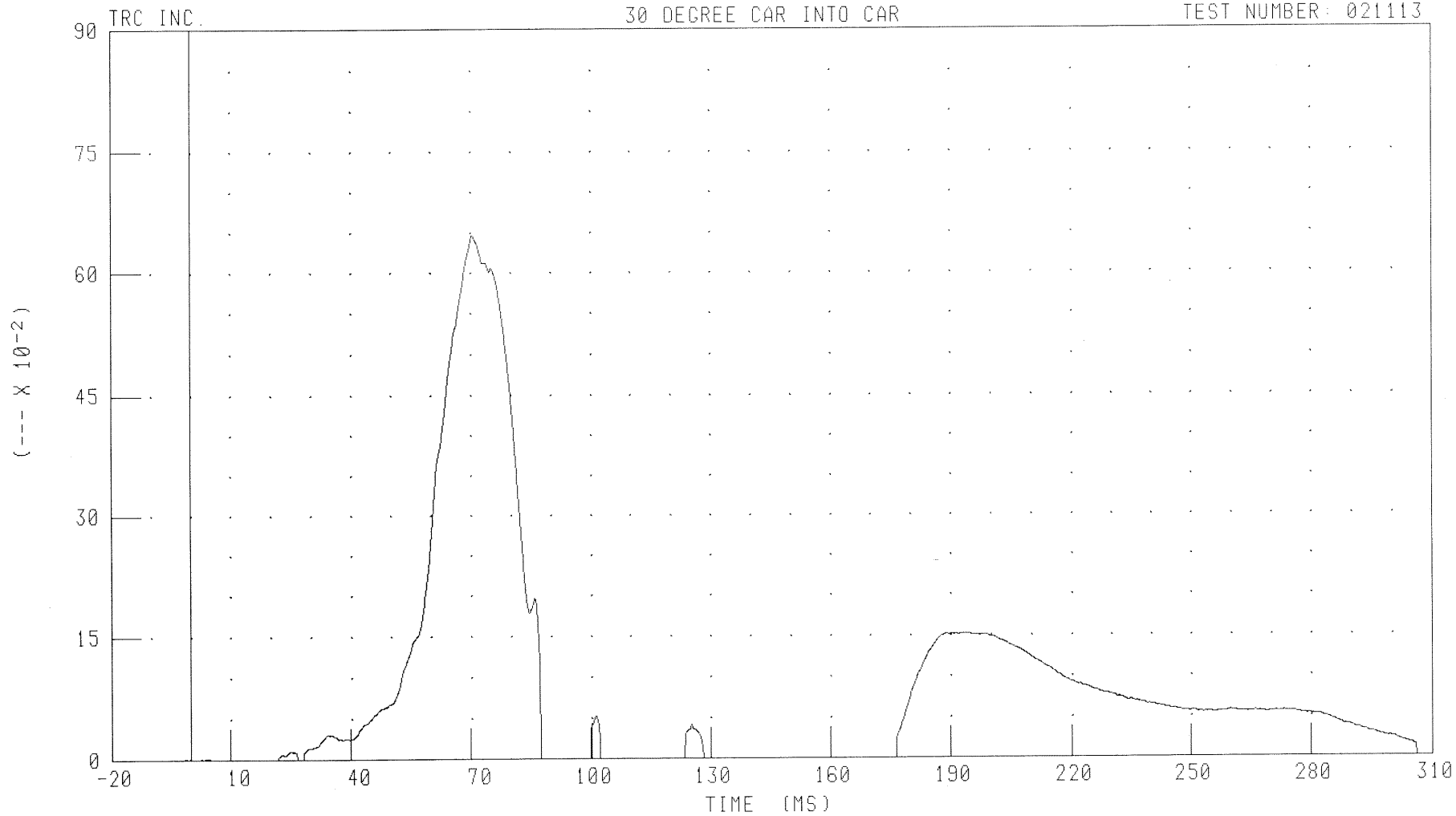
CHANNEL: NK0XM1 FILTER: CH. CLASS 600

PEAK DATA: 23.99 N·M @ 110.64 MS; -49.11 N·M @ 166.40 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER NIJ TENSION/EXTENSION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: NTE1

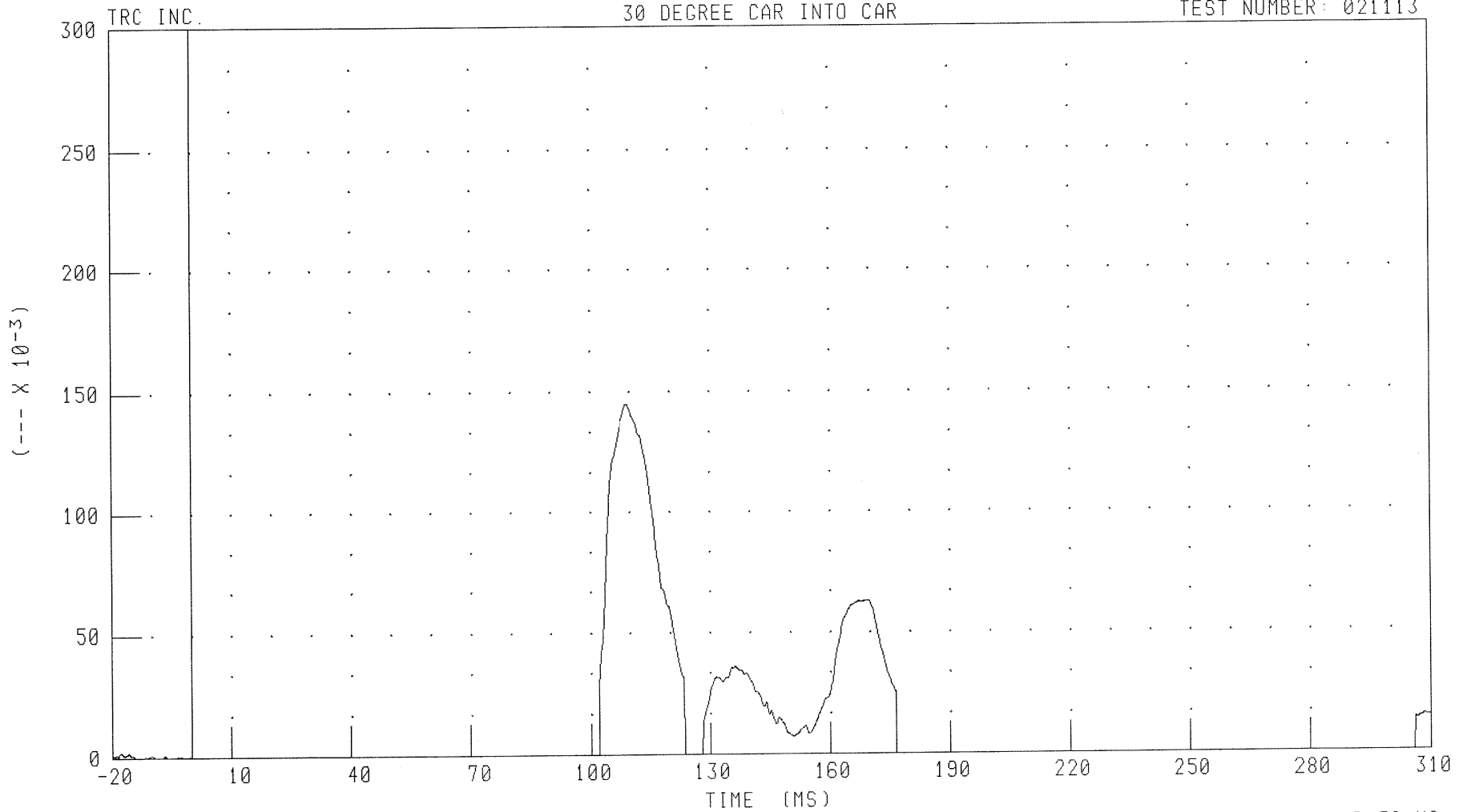
FILTER: CH. CLASS 600

PEAK DATA: 0.65 --- @ 70.56 MS; 0.00 --- @ -20.00 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER NIJ TENSION/FLEXION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: NTF1

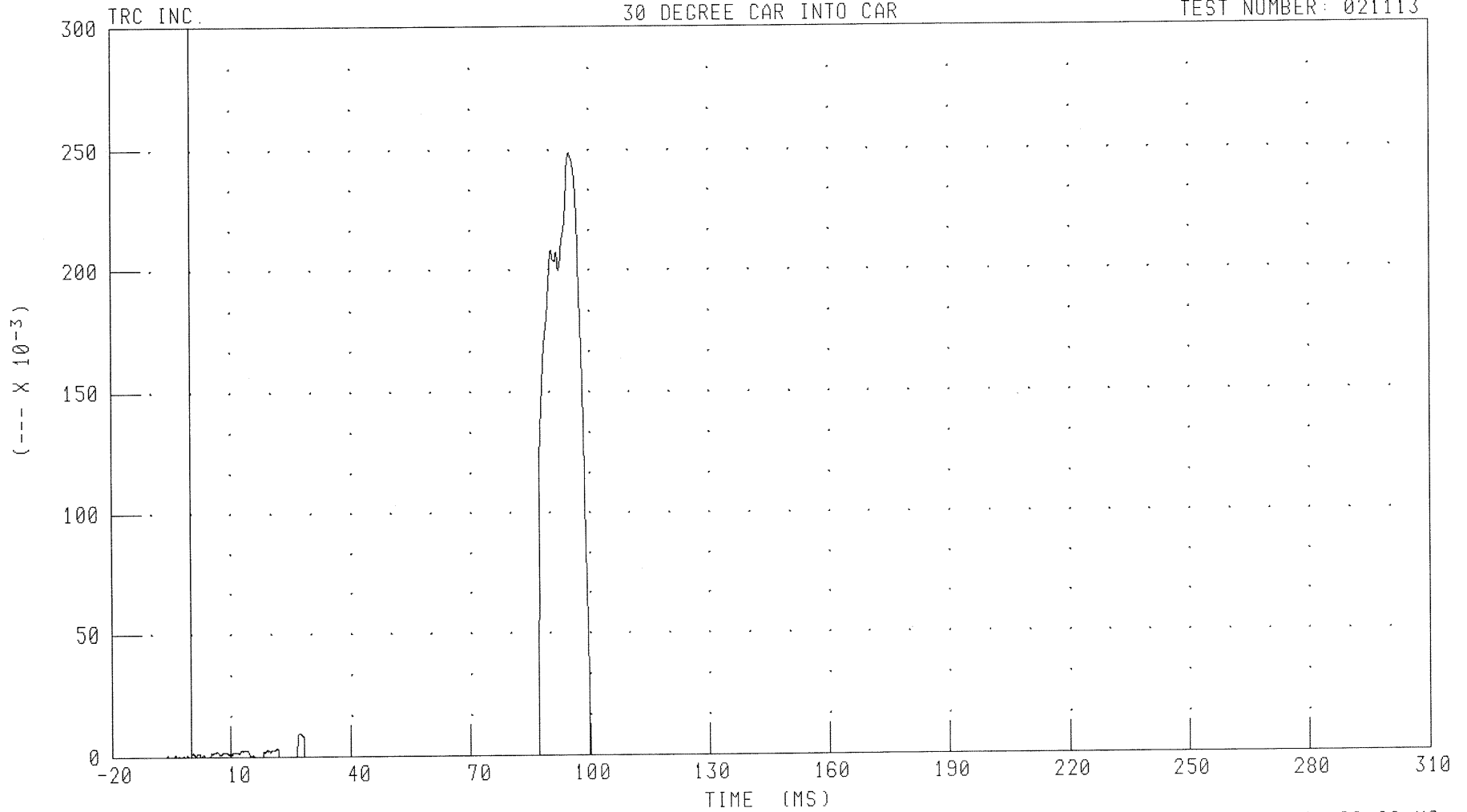
FILTER: CH. CLASS 600

PEAK DATA: 0.14 --- @ 109.52 MS; 0.00 --- @ -19.52 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER NIJ COMPRESSION/EXTENSION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: NCE1

FILTER: CH. CLASS 600

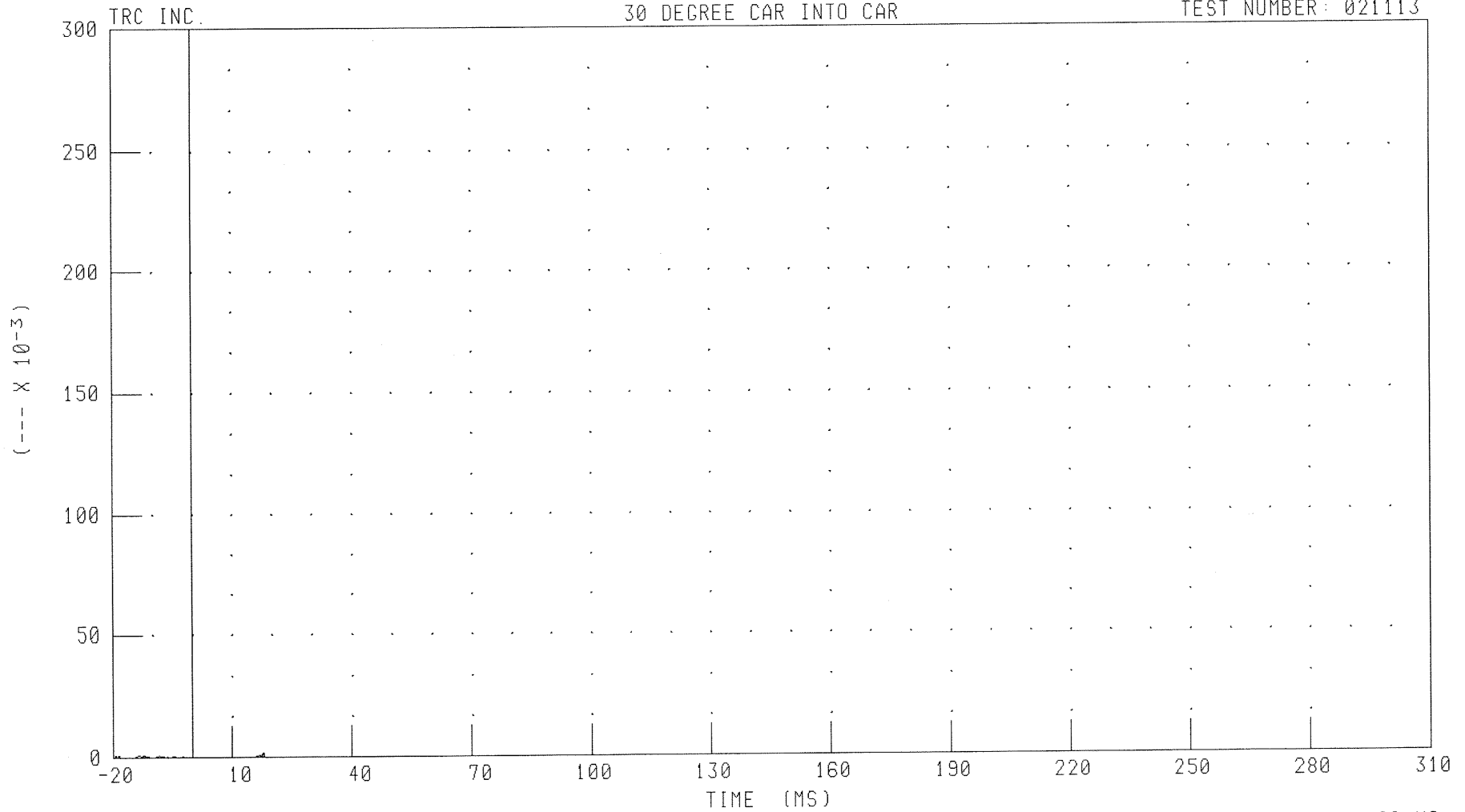
PEAK DATA: 0.25 --- @ 95.20 MS; 0.00 --- @ -20.00 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

TARGET DRIVER NIJ COMPRESSION/FLEXION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



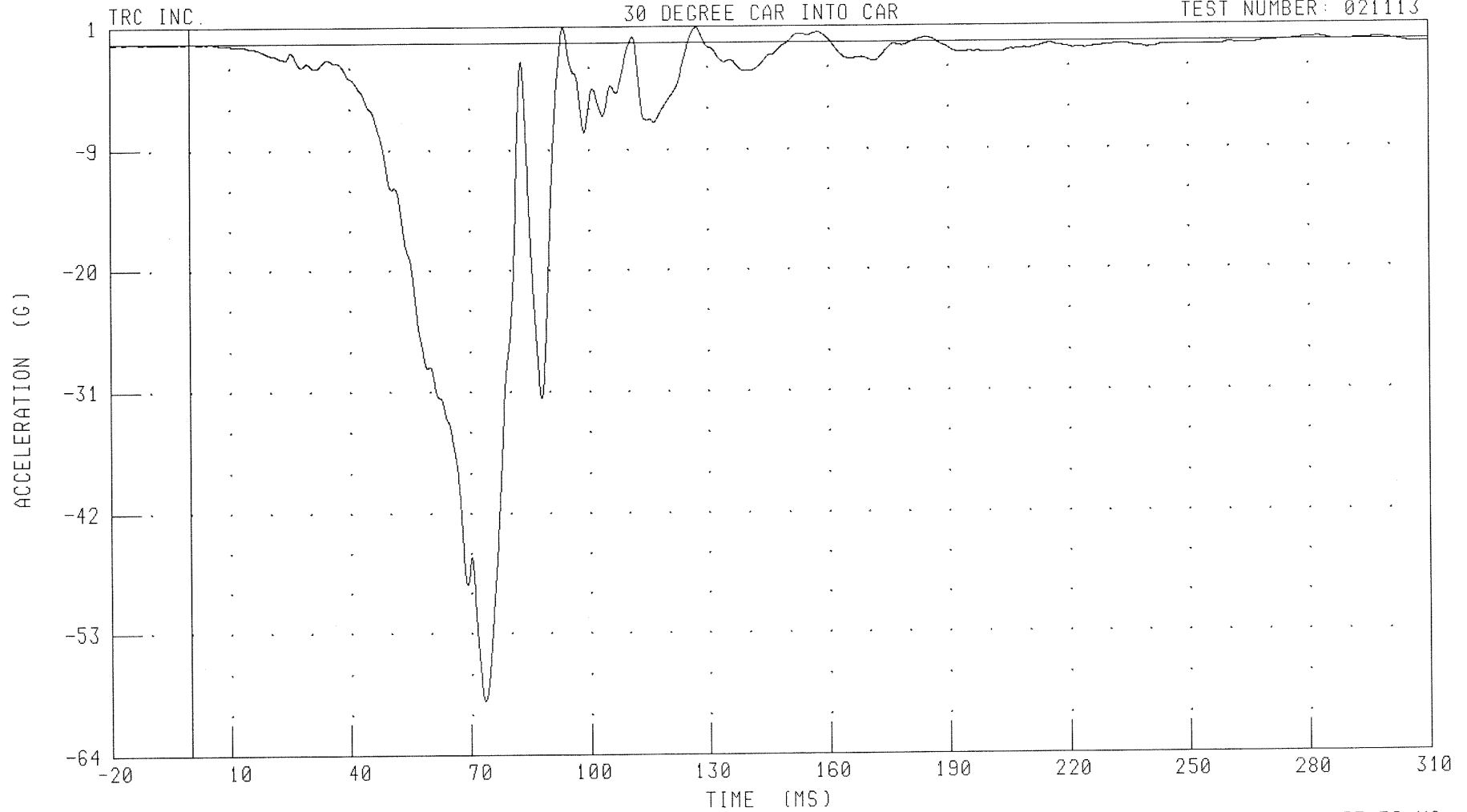
CHANNEL: NCF1

FILTER: CH. CLASS 600

PEAK DATA: 0.00 --- @ 17.92 MS; 0.00 --- @ -20.00 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER CHEST X-AXIS ACCELERATION

TEST NUMBER: 021113



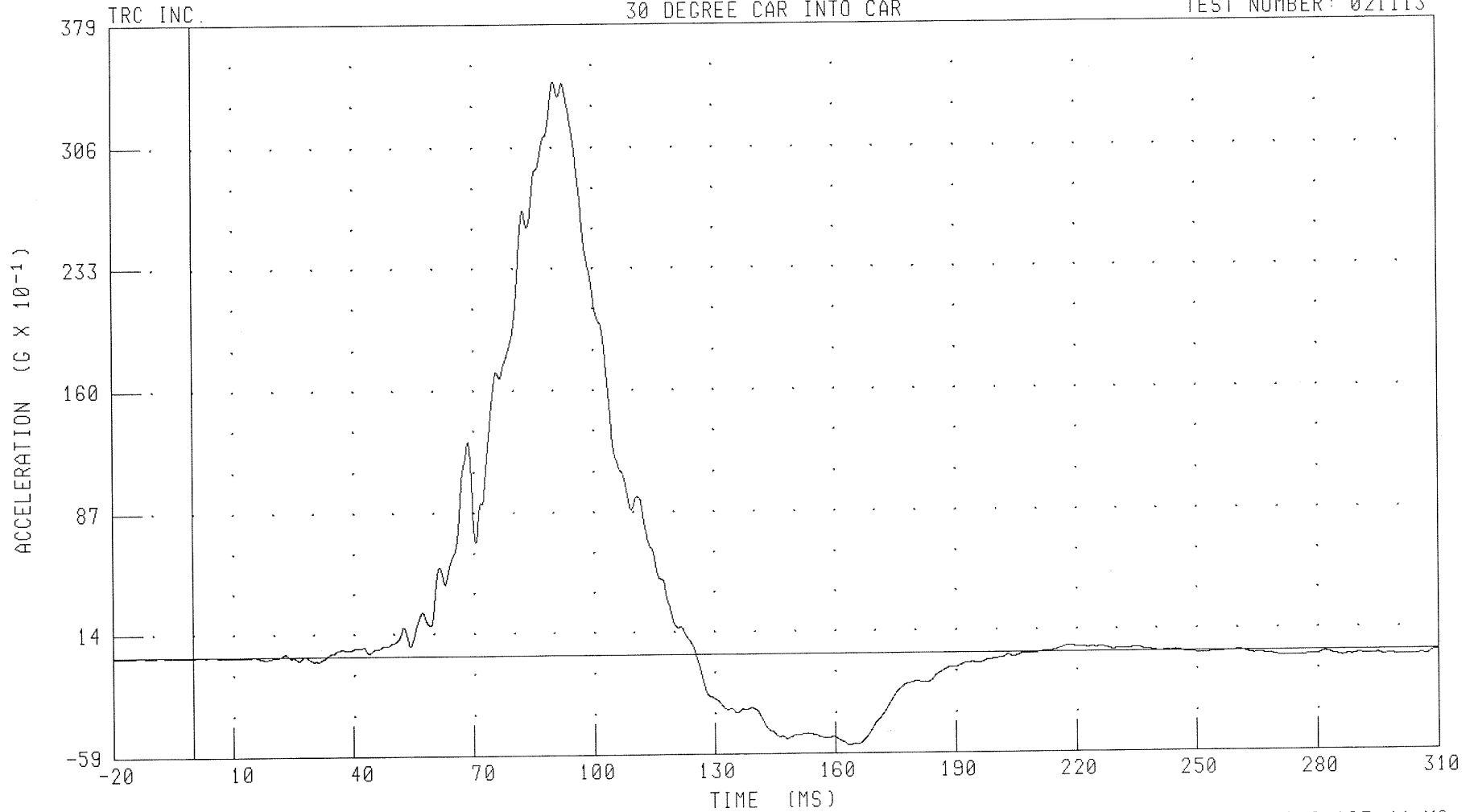
CHANNEL: CSTXG1 FILTER: CH. CLASS 180

PEAK DATA: 1.44 G @ 127.36 MS; -59.63 G @ 73.52 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER CHEST Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



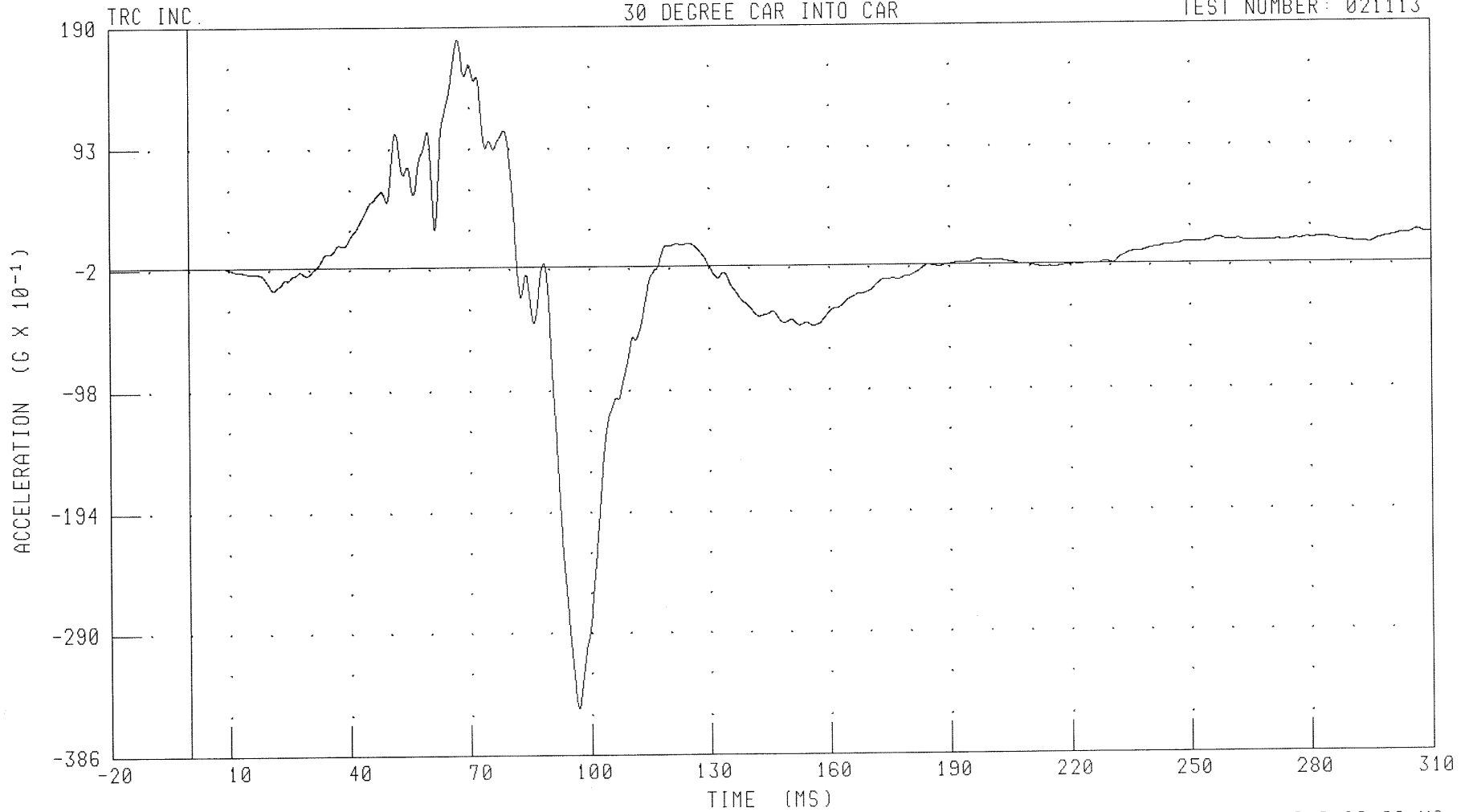
CHANNEL: CSTYG1 FILTER: CH. CLASS 180

PEAK DATA: 34.44 G @ 90.56 MS; -5.41 G @ 163.44 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER CHEST Z-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: CSTZG1

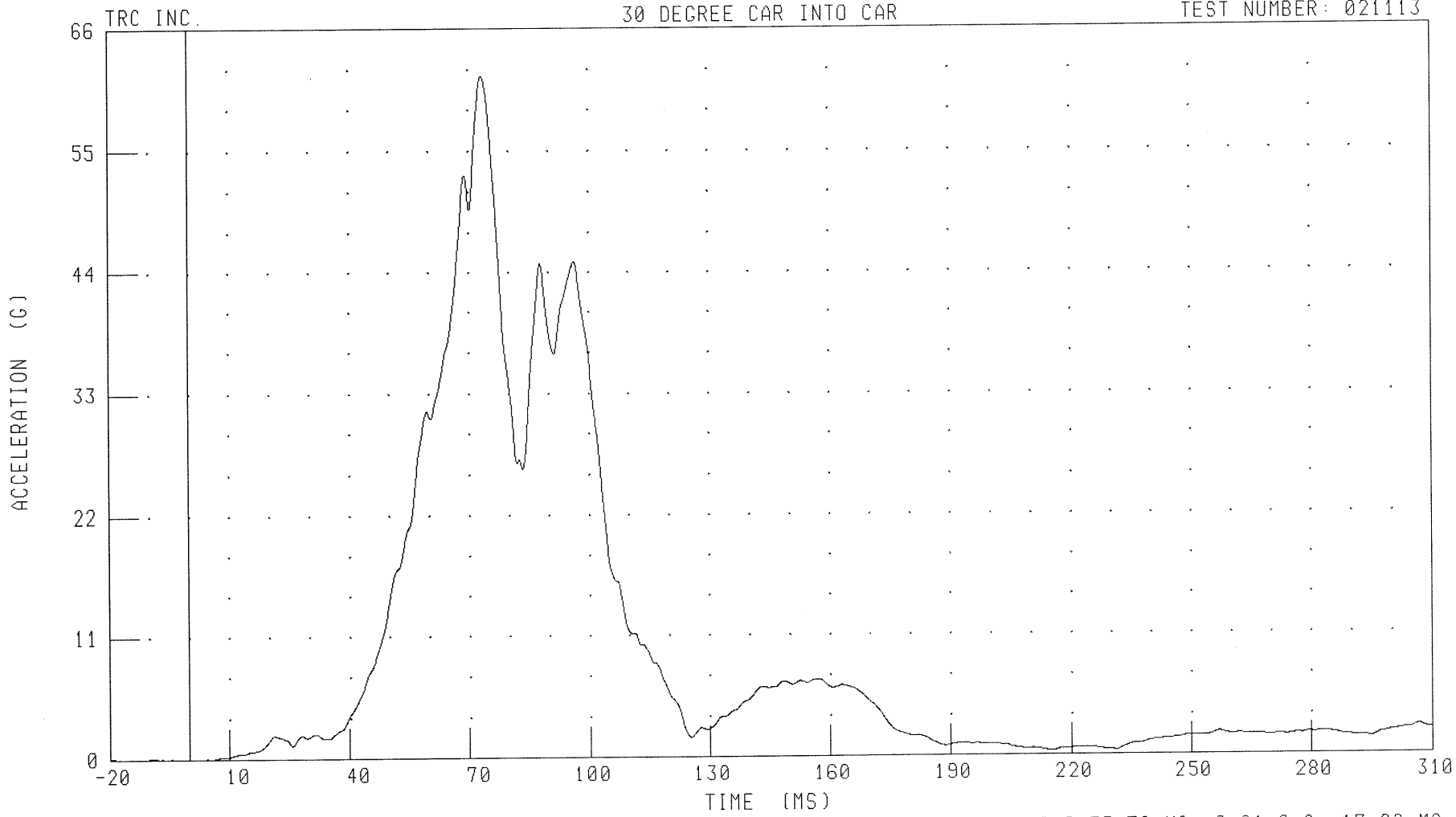
FILTER: CH. CLASS 180

PEAK DATA: 17.98 G @ 67.28 MS; -34.90 G @ 96.88 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER CHEST RESULTANT ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



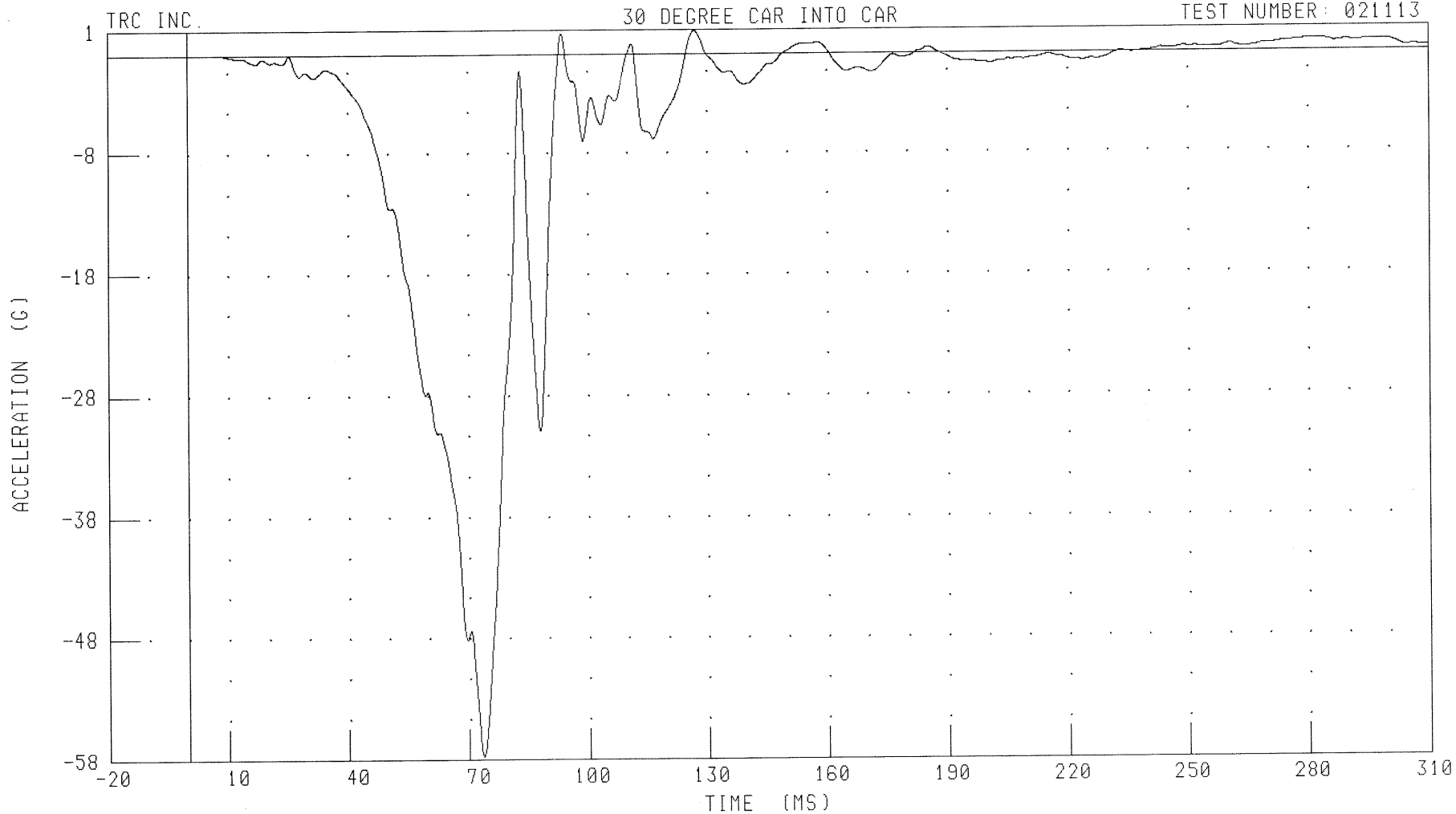
CHANNEL: CSTRG1

FILTER: CH. CLASS 180

PEAK DATA: 61.77 G @ 73.52 MS; 0.01 G @ -17.28 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER CHEST X-AXIS REDUNDANT ACCELERATION

TEST NUMBER: 021113



CHANNEL: CSTXR1

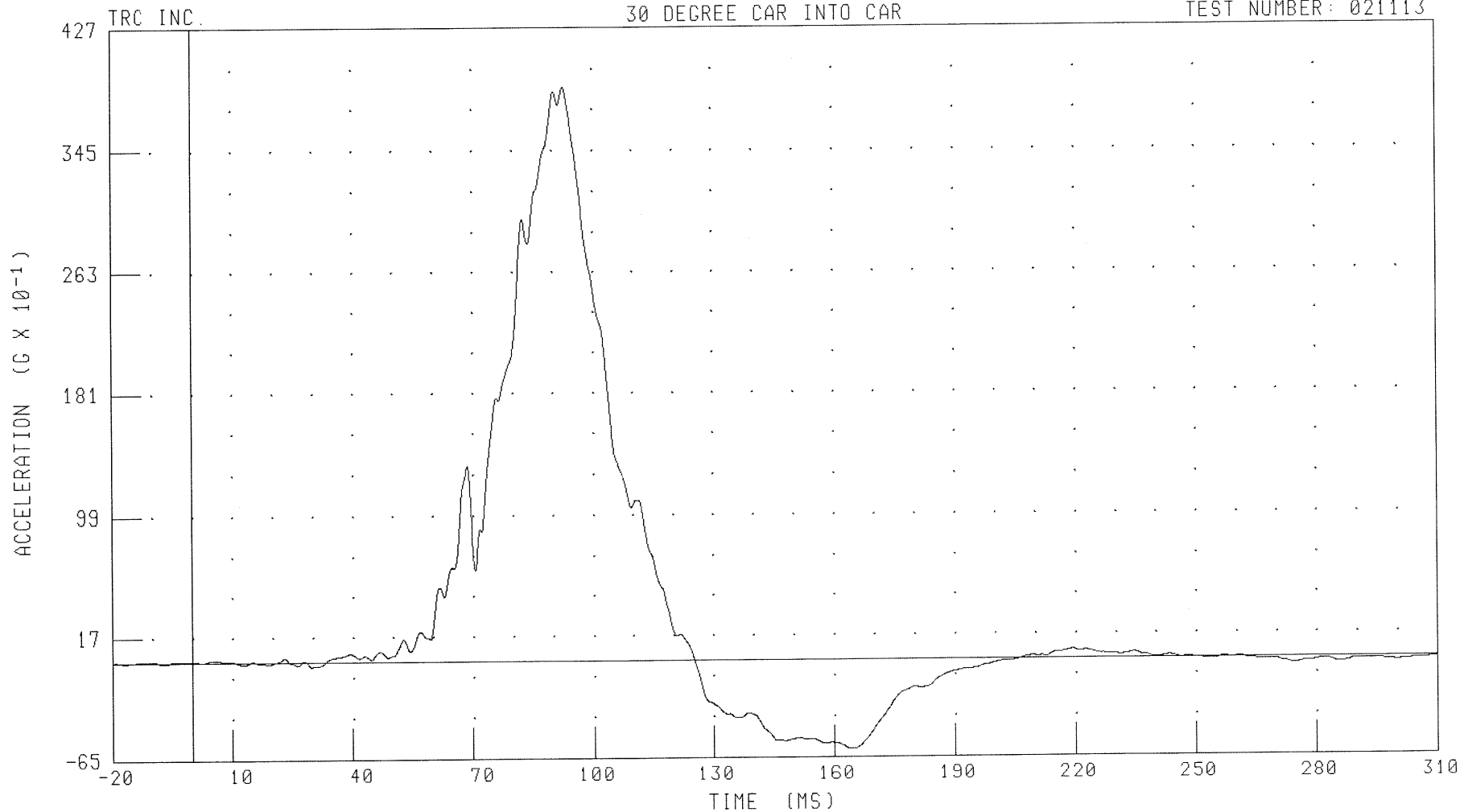
FILTER: CH. CLASS 180

PEAK DATA: 1.81 G @ 127.04 MS; -57.82 G @ 73.44 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER CHEST Y-AXIS REDUNDANT ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: CSTYR1

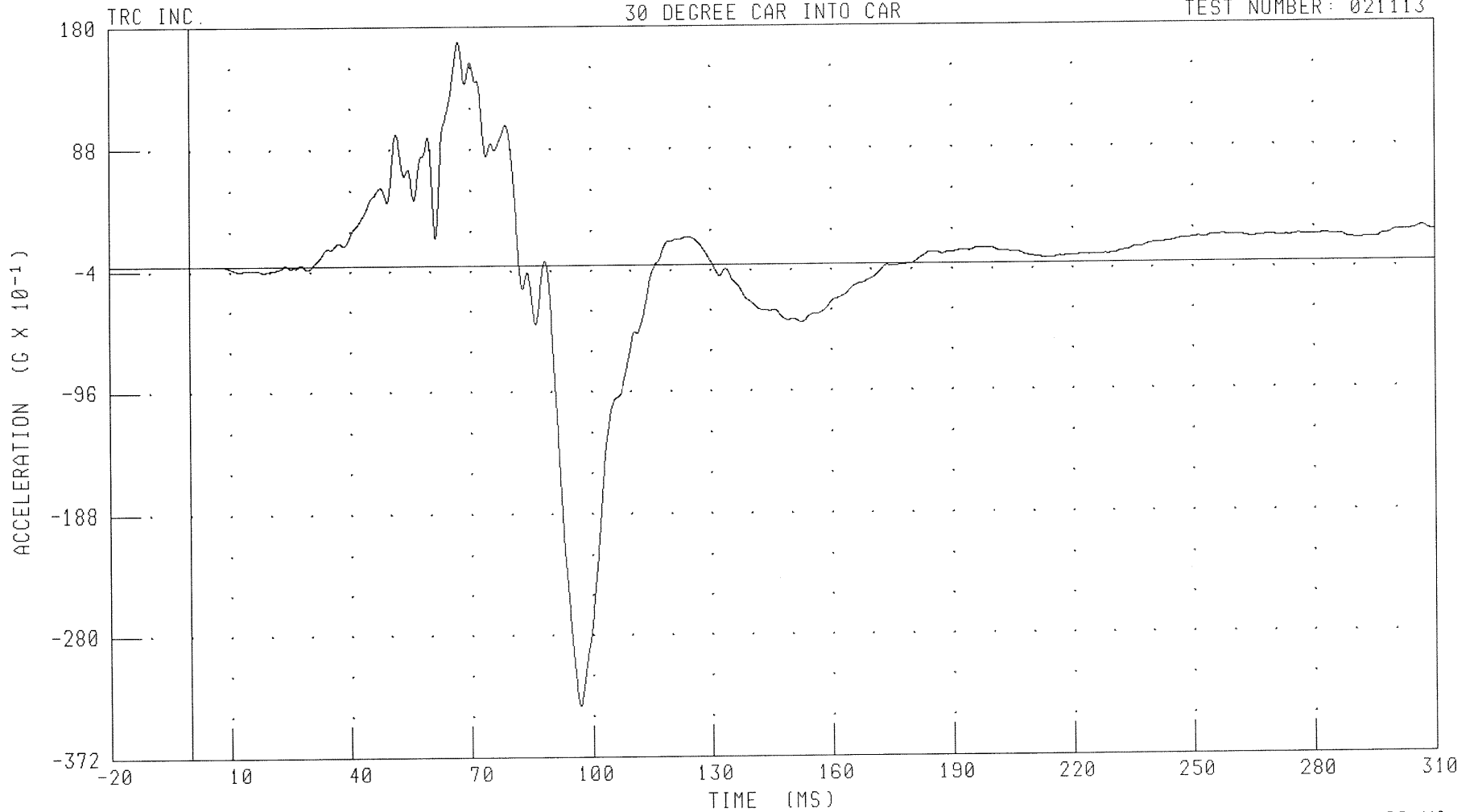
FILTER: CH. CLASS 180

PEAK DATA: 38.76 G @ 92.96 MS; -5.98 G @ 164.56 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER CHEST Z-AXIS REDUNDANT ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



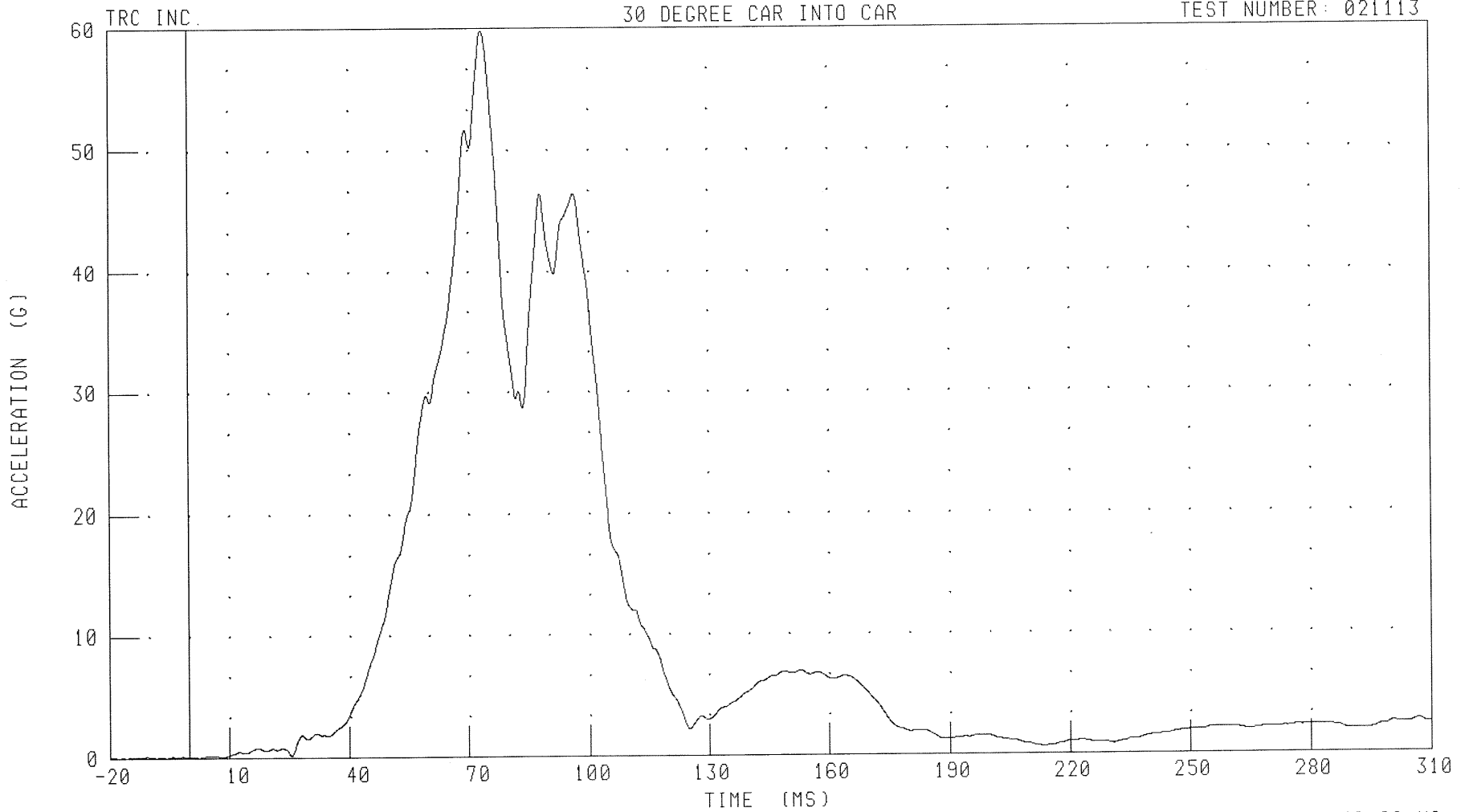
CHANNEL: CSTZR1 FILTER: CH. CLASS 180

PEAK DATA: 16.83 G @ 67.20 MS; -33.37 G @ 96.88 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER CHEST REDUNDANT RESULTANT ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: CSTRR1

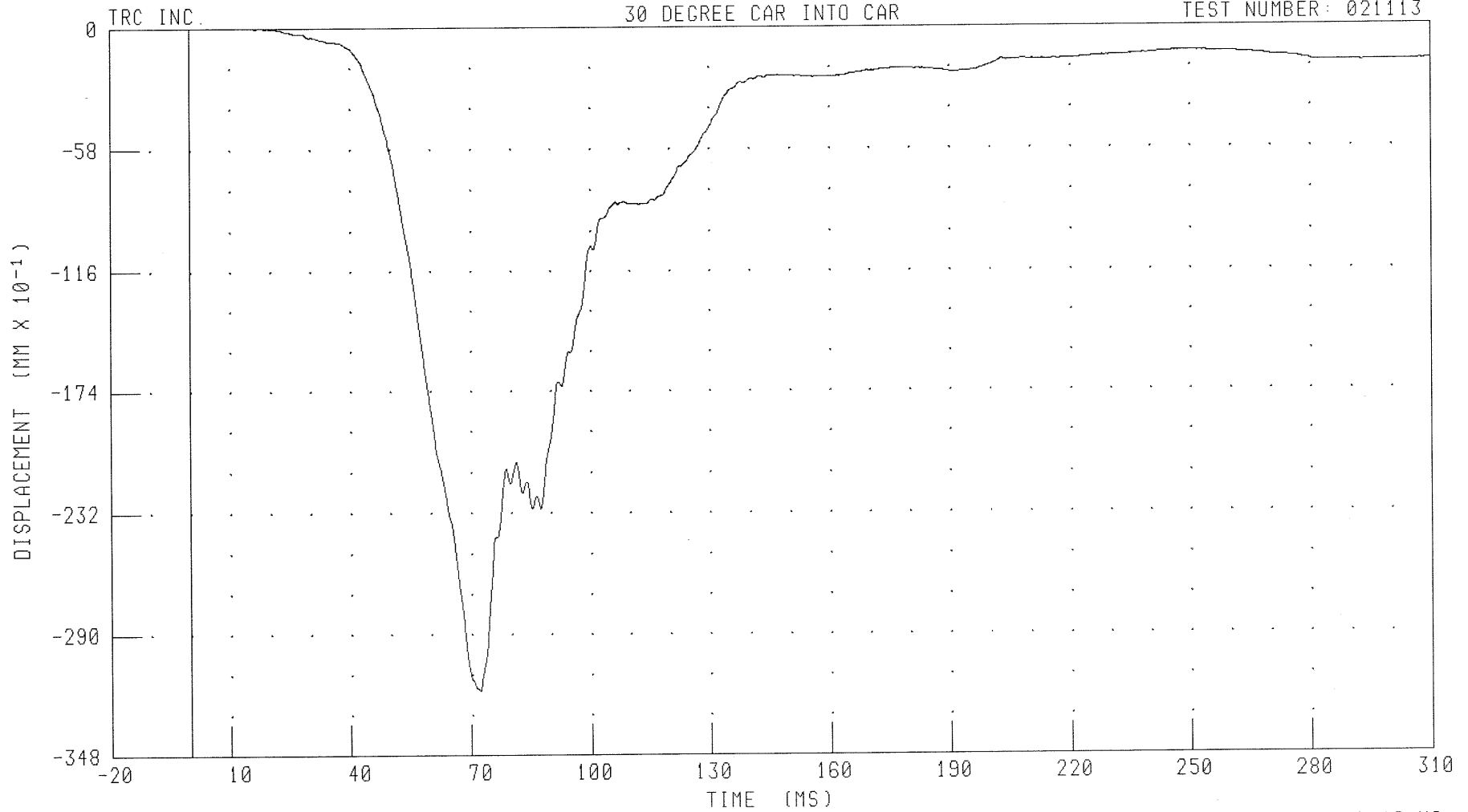
FILTER: CH. CLASS 180

PEAK DATA: 59.80 G @ 73.52 MS; 0.01 G @ -20.00 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER CHEST DEFLECTION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: CSTXD1

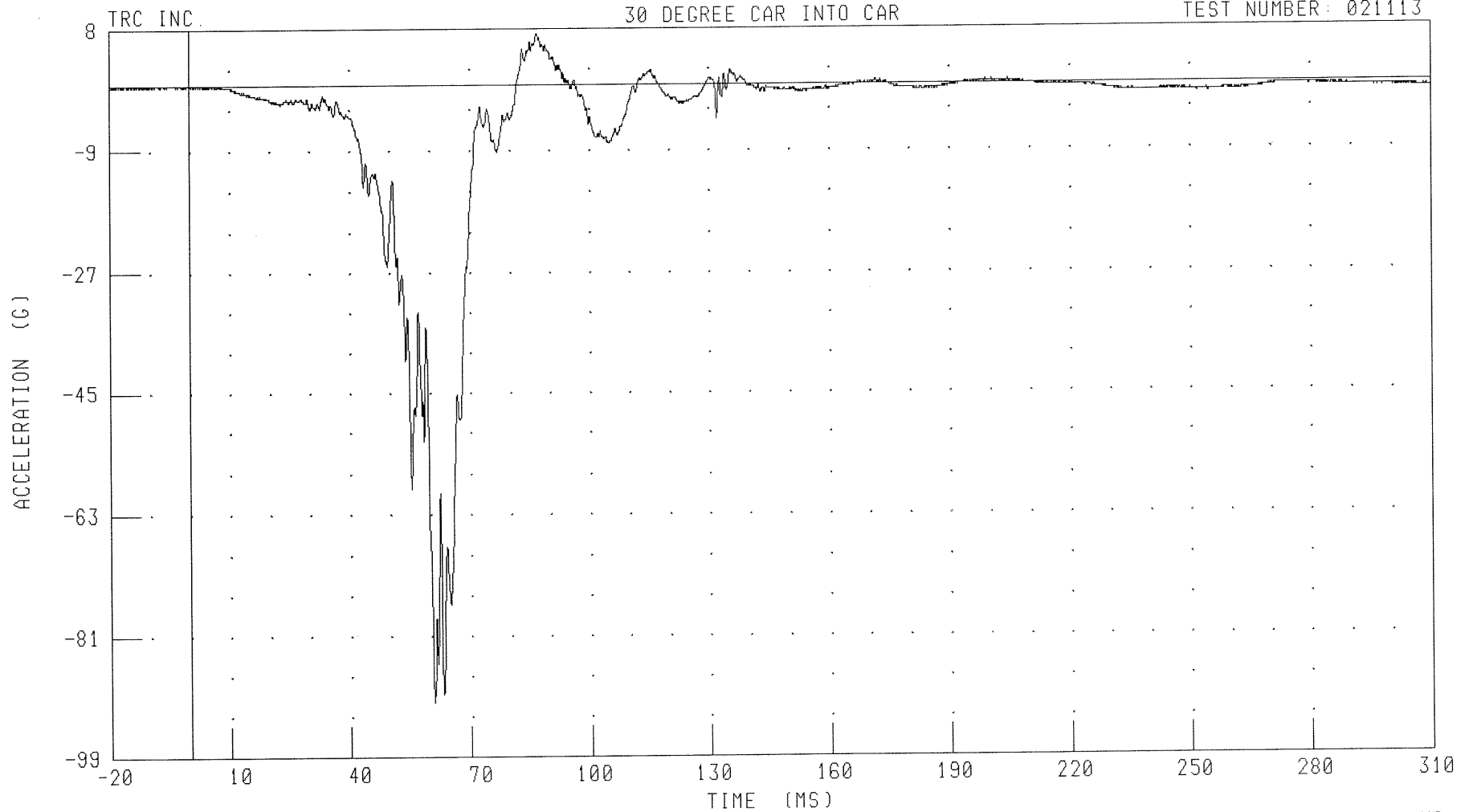
FILTER: CH. CLASS 600

PEAK DATA: 0.00 MM @ 16.00 MS; -31.72 MM @ 72.16 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

TARGET DRIVER PELVIS X-AXIS ACCELERATION

TEST NUMBER: 021113



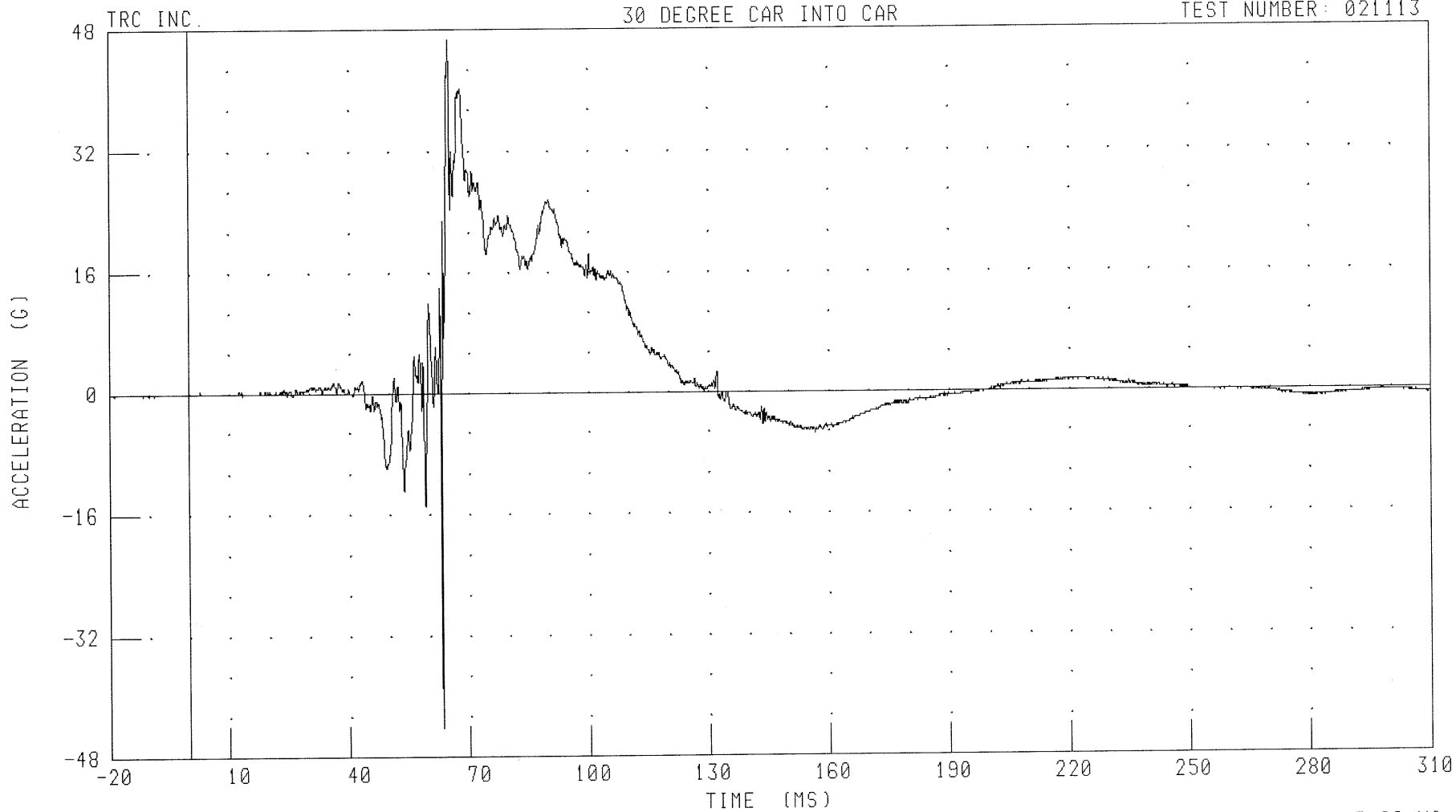
CHANNEL: PEVXG1 FILTER: CH. CLASS 1000

PEAK DATA: 7.69 G @ 86.96 MS; -91.55 G @ 60.72 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER PELVIS Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: PEVYG1

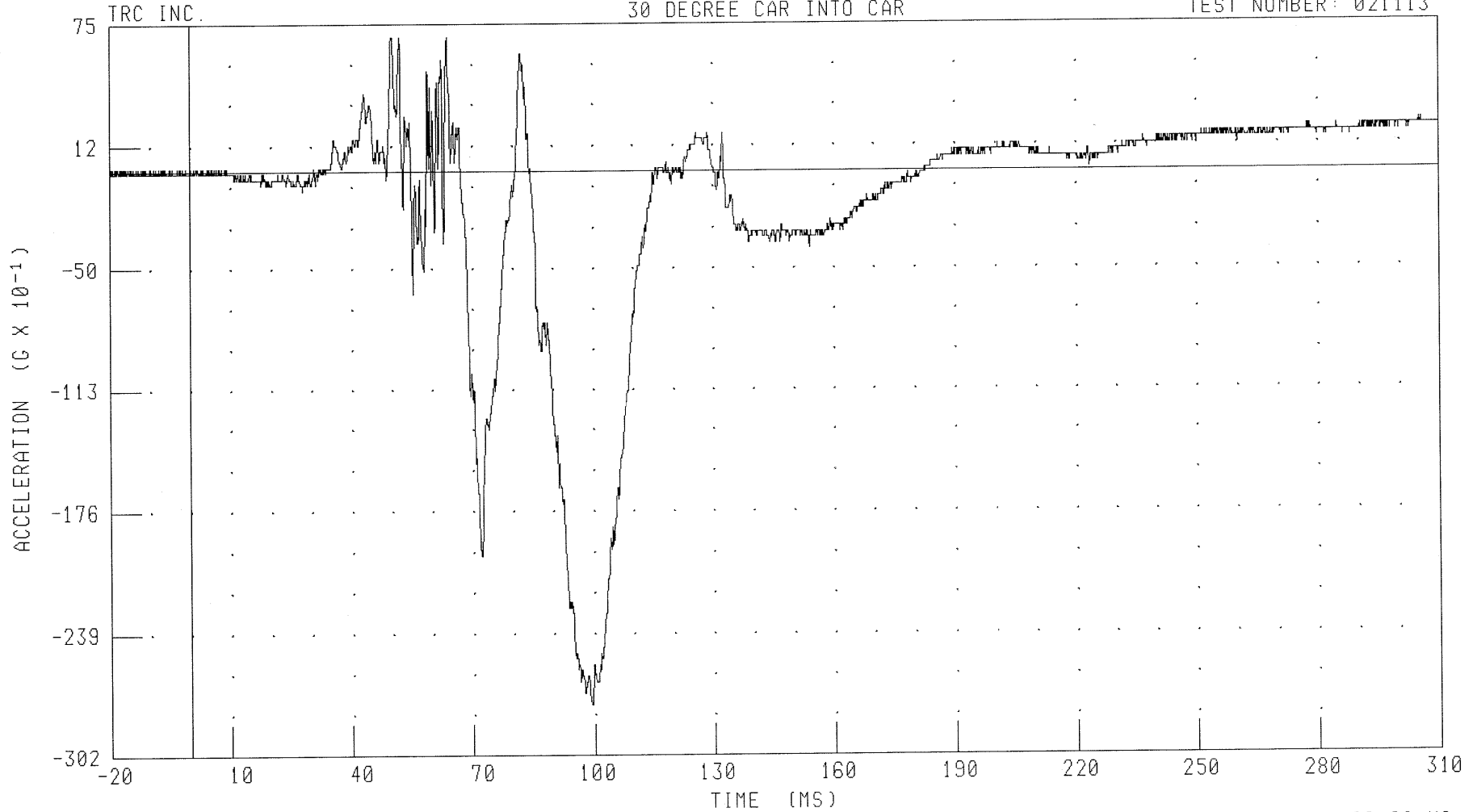
FILTER: CH. CLASS 1000

PEAK DATA: 46.64 G @ 65.04 MS; -44.28 G @ 63.20 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER PELVIS Z-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



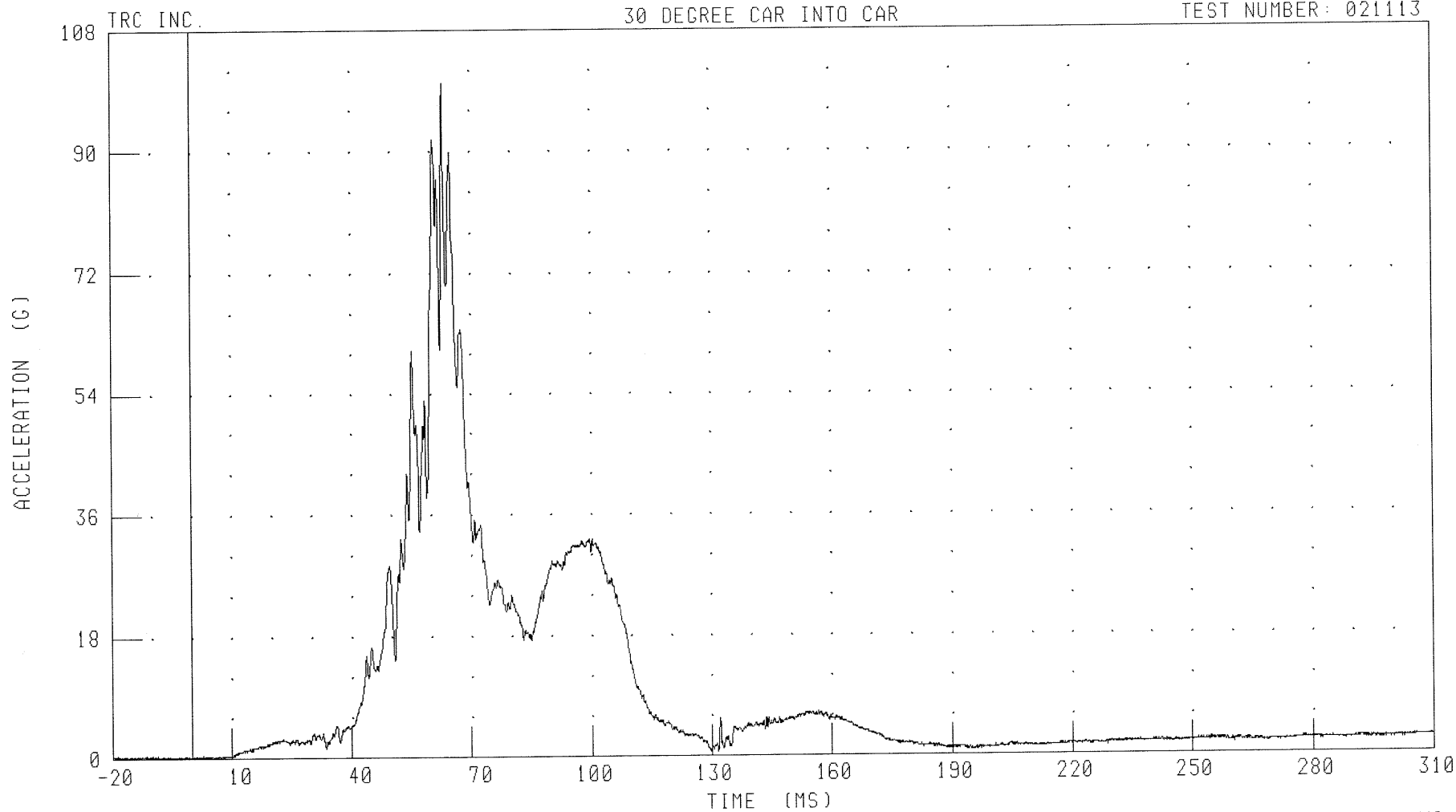
CHANNEL: PEVZG1 FILTER: CH. CLASS 1000

PEAK DATA: 6.94 G @ 50.00 MS; -27.57 G @ 99.28 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER PELVIS RESULTANT ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: PEVRG1

FILTER: CH. CLASS 1000

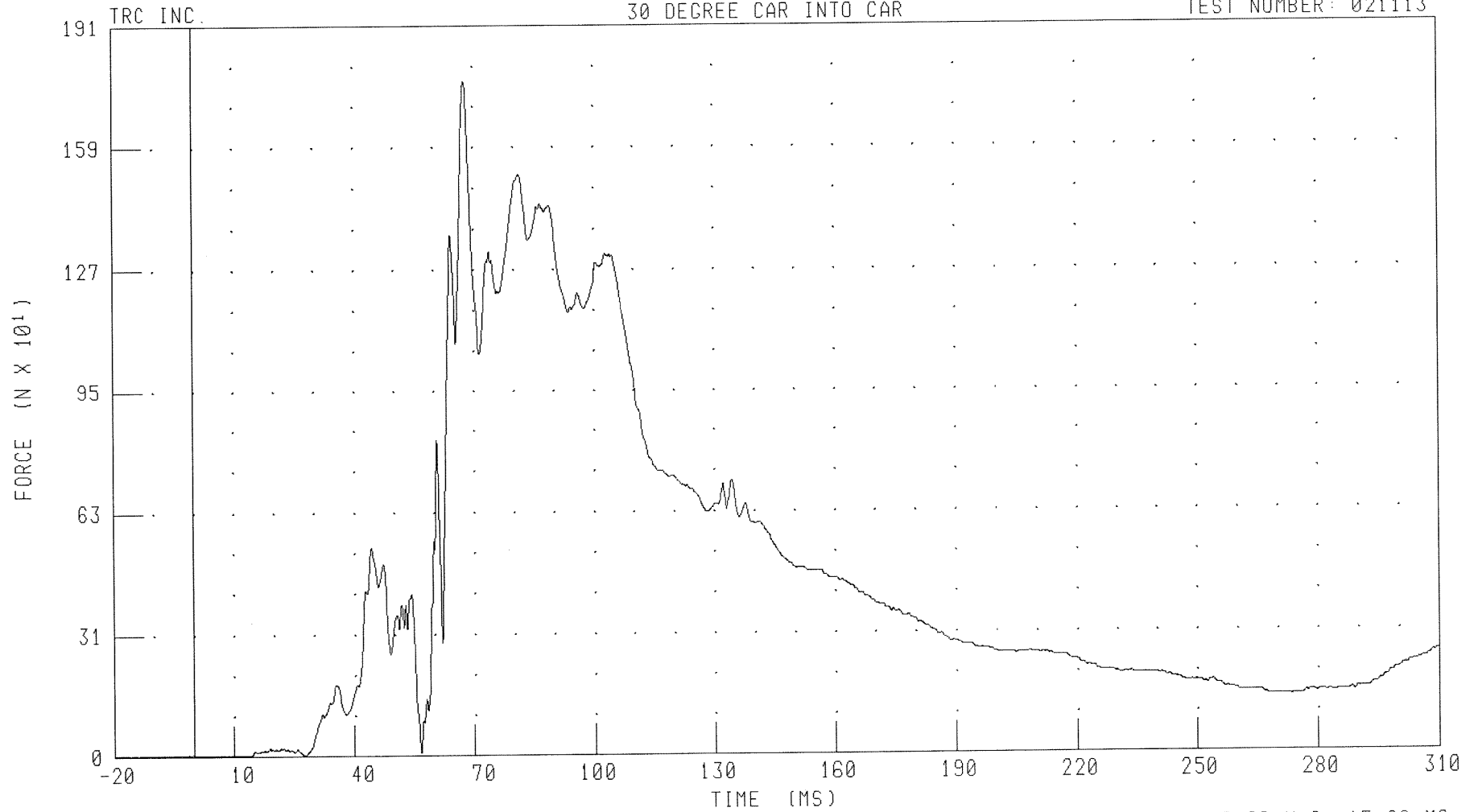
PEAK DATA: 100.15 G @ 63.20 MS; 0.15 G @ -19.52 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

TARGET DRIVER LEFT FEMUR X-AXIS FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



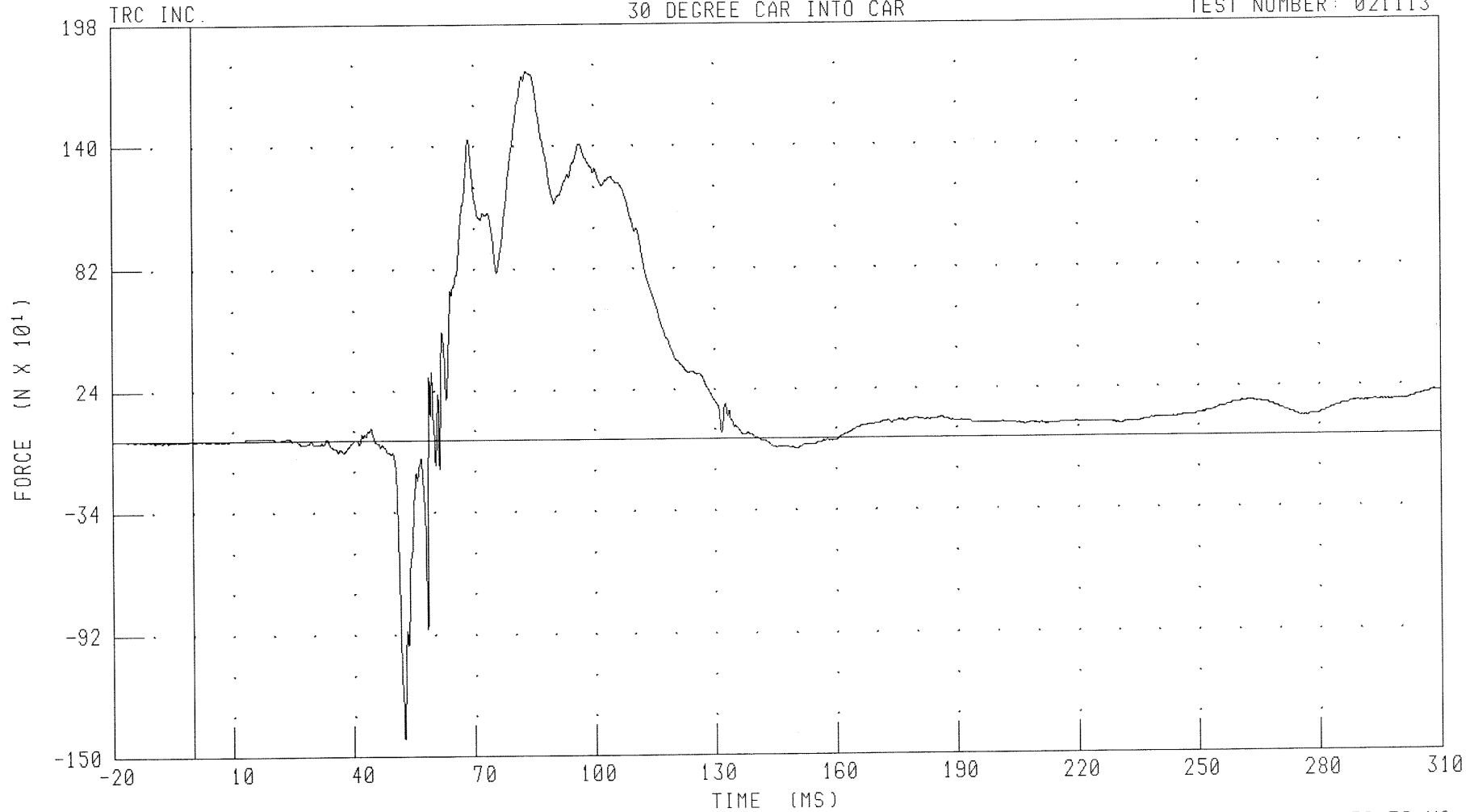
CHANNEL: LFMXF1 FILTER: CH. CLASS 600

PEAK DATA: 1773.68 N @ 67.92 MS; -0.22 N @ -15.92 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER LEFT FEMUR Y-AXIS FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



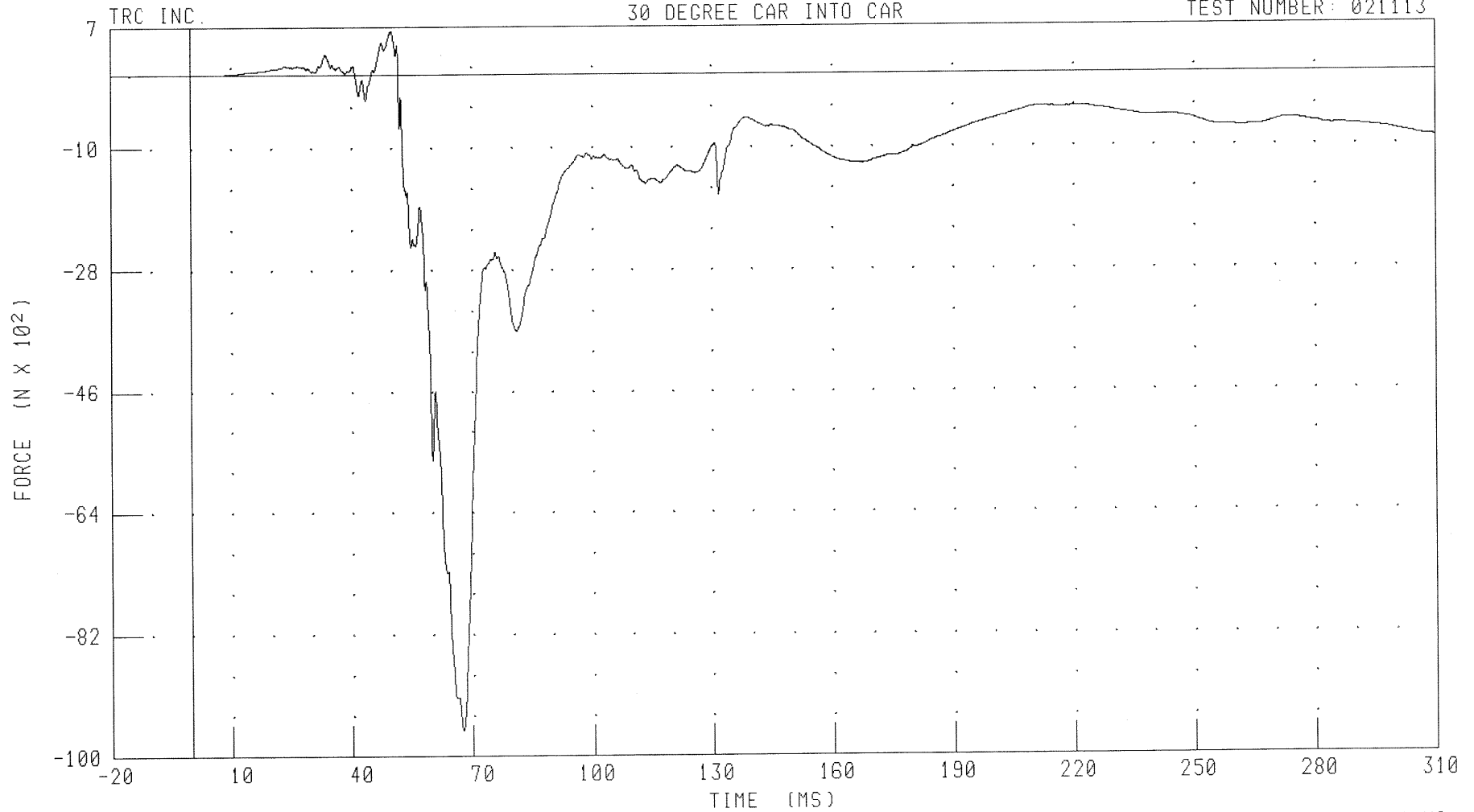
CHANNEL: LFMF1 FILTER: CH. CLASS 600

PEAK DATA: 1753.62 N @ 83.20 MS; -1417.06 N @ 52.56 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER LEFT FEMUR Z-AXIS FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



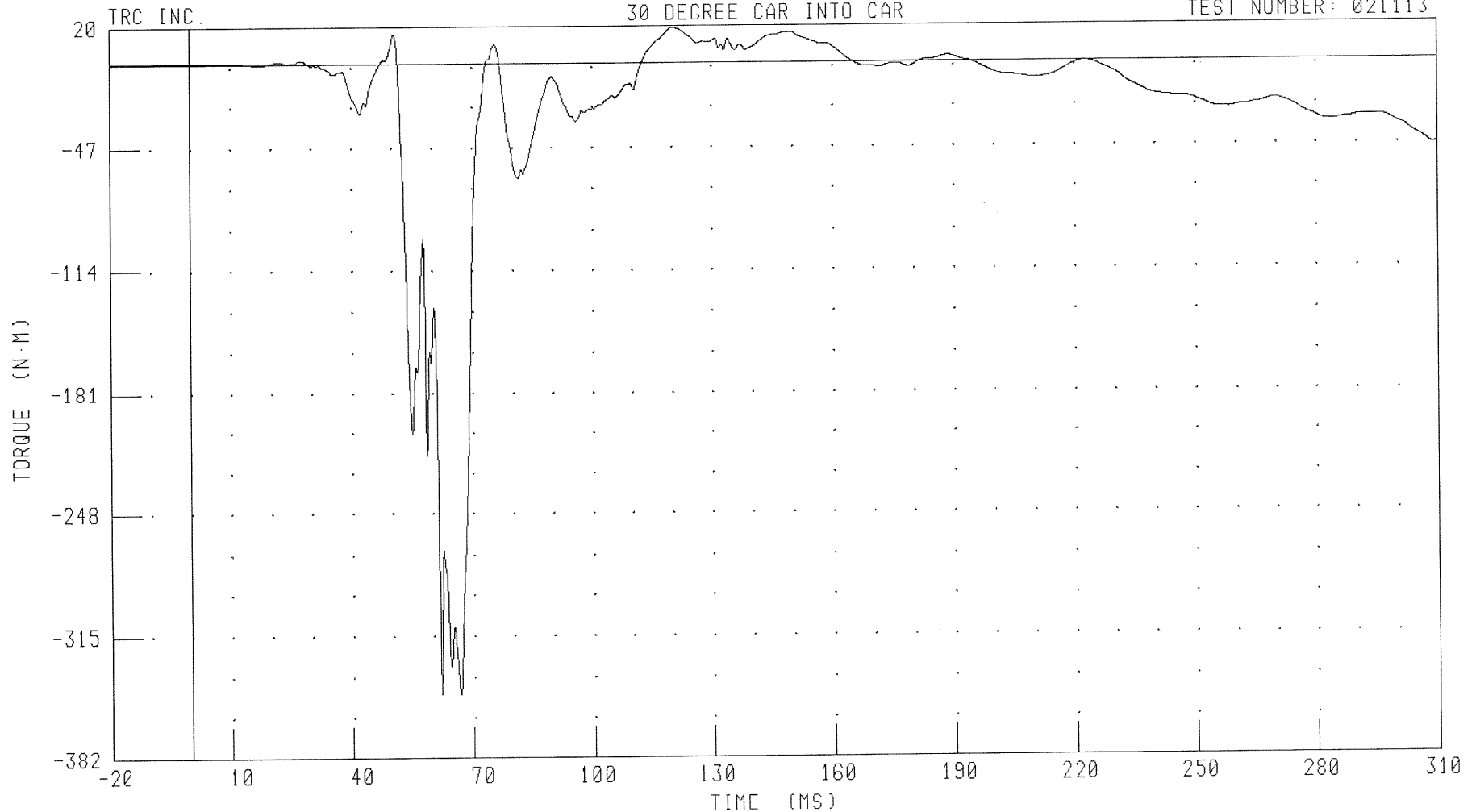
CHANNEL: LFMZF1 FILTER: CH. CLASS 600

PEAK DATA: 661.03 N @ 50.16 MS; -9695.46 N @ 67.44 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER LEFT FEMUR MOMENT ABOUT X AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



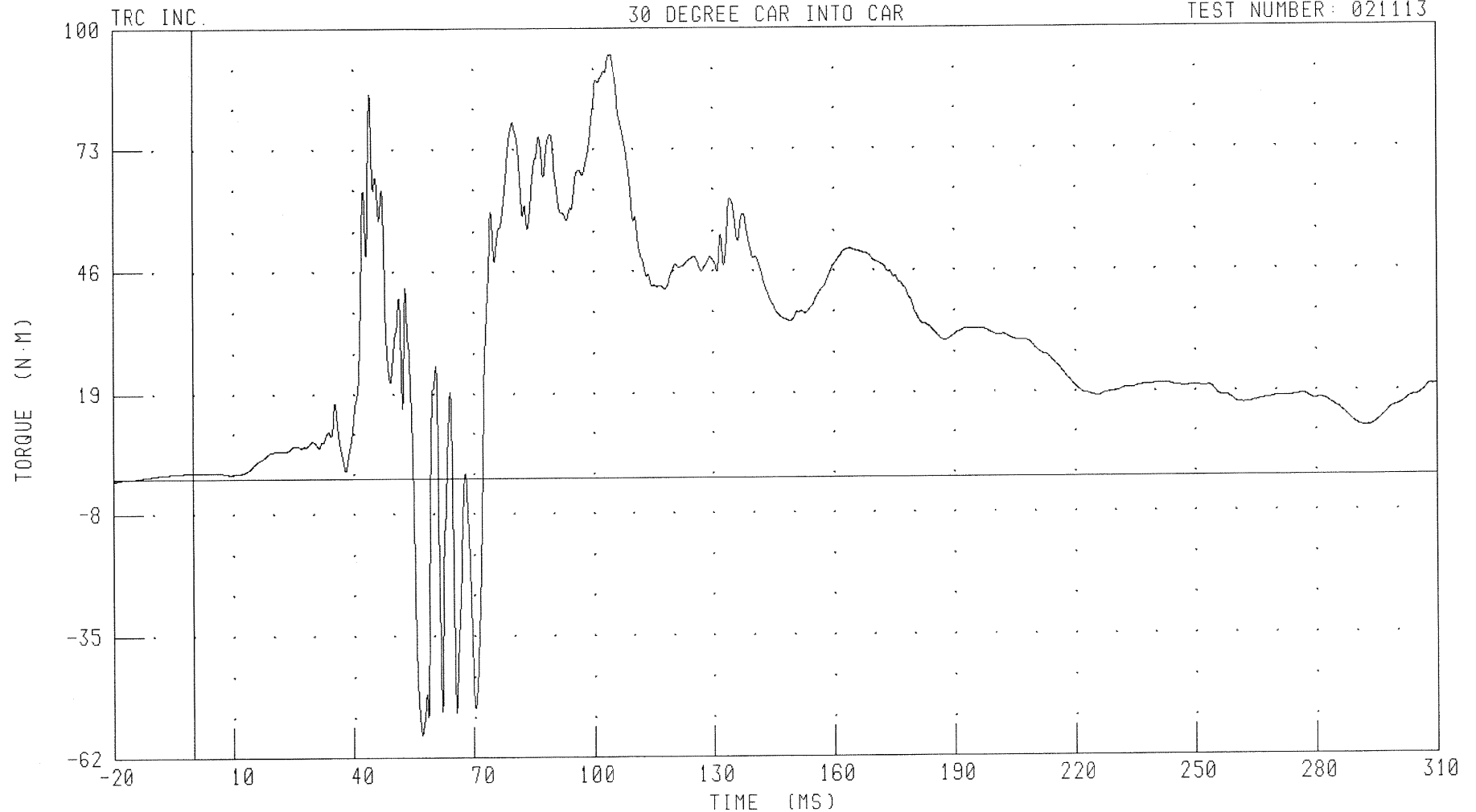
CHANNEL: LFMXM1 FILTER: CH. CLASS 600

PEAK DATA: 19.02 N·M @ 120.64 MS; -347.13 N·M @ 66.72 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER LEFT FEMUR MOMENT ABOUT Y AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



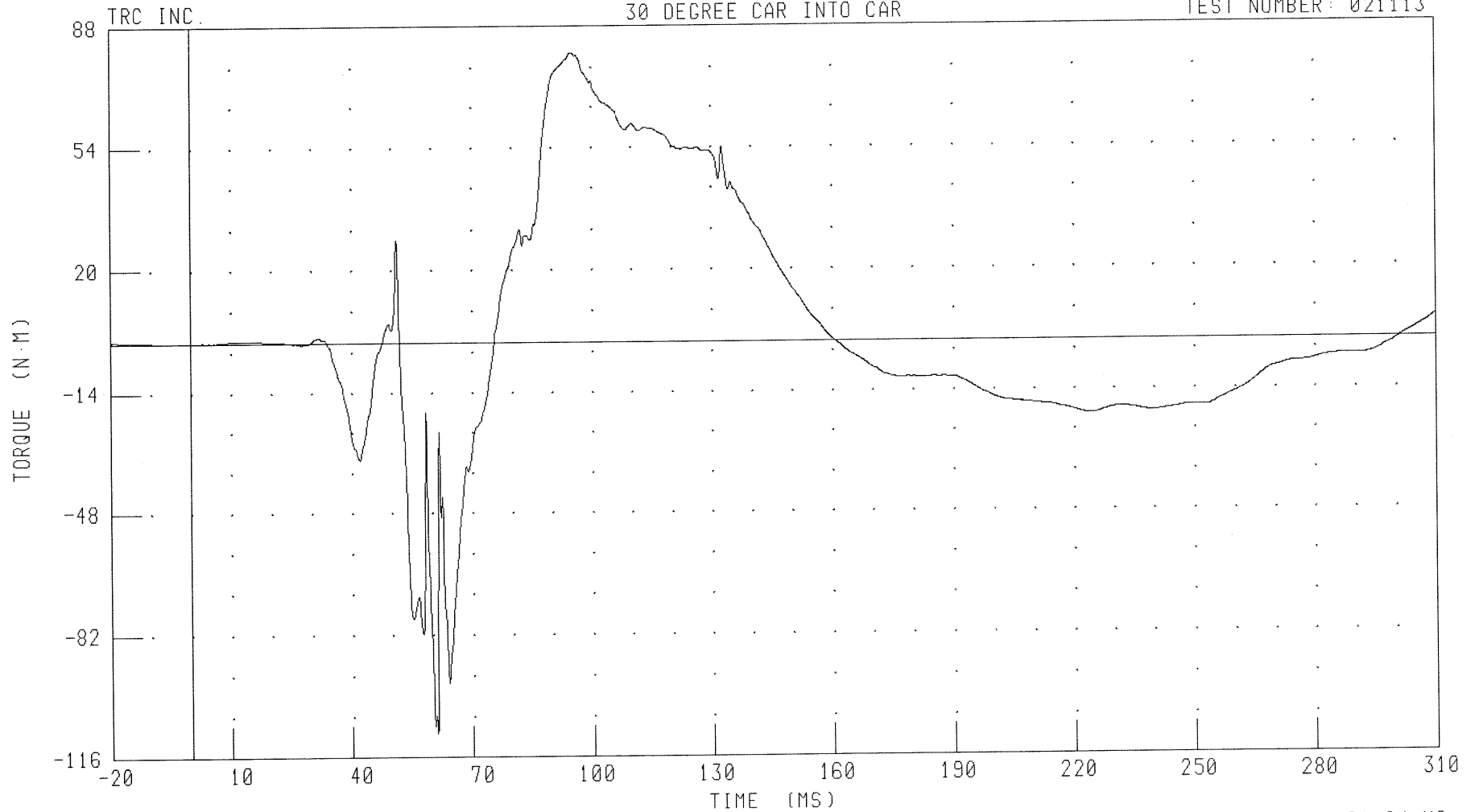
CHANNEL: LFMYM1 FILTER: CH. CLASS 600

PEAK DATA: 94.07 N·M @ 104.40 MS; -56.98 N·M @ 56.96 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER LEFT FEMUR MOMENT ABOUT Z AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



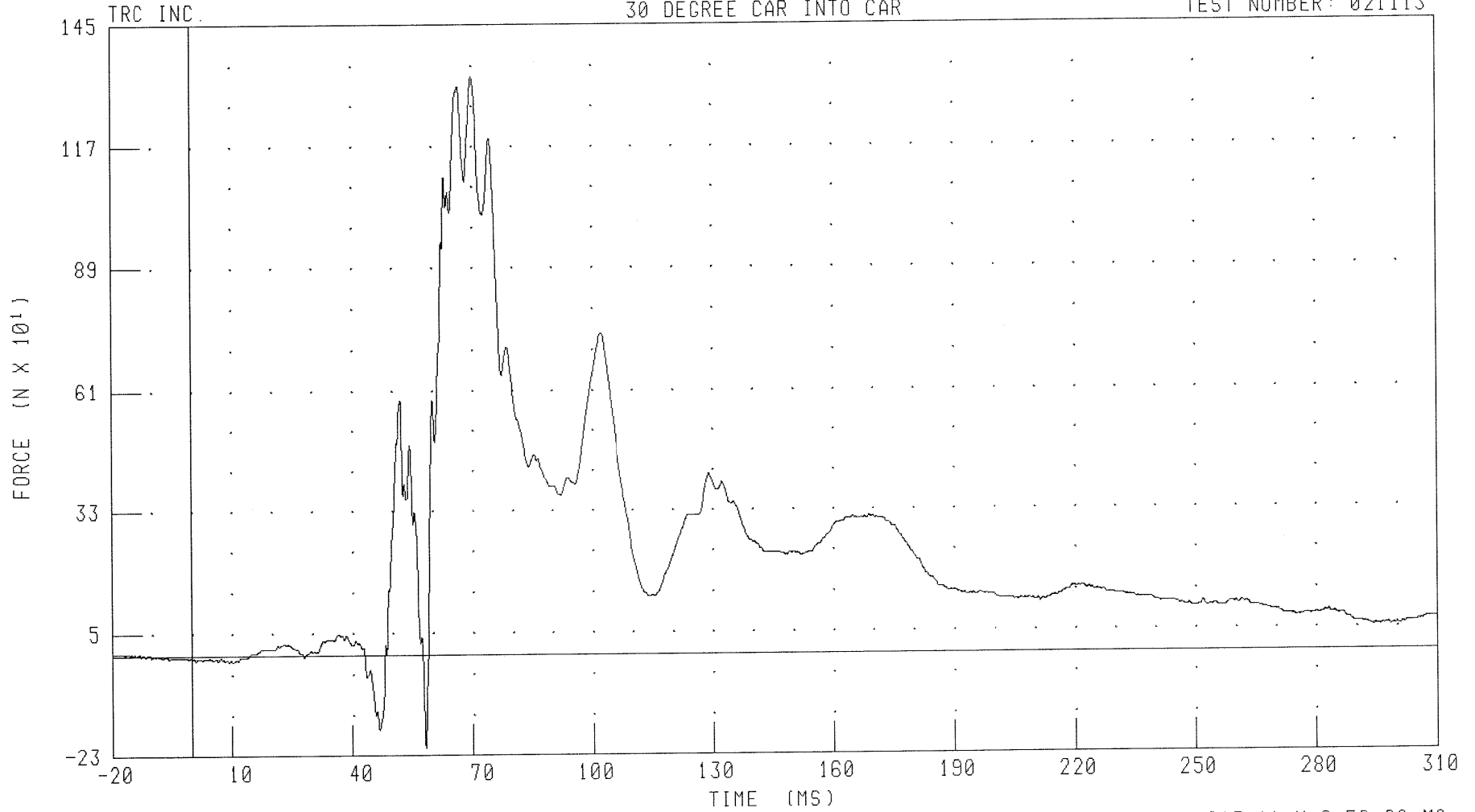
CHANNEL: LFMZM1 FILTER: CH. CLASS 600

PEAK DATA: 80.56 N·M @ 95.04 MS; -109.43 N·M @ 61.04 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER RIGHT FEMUR X-AXIS FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: RFMXF1

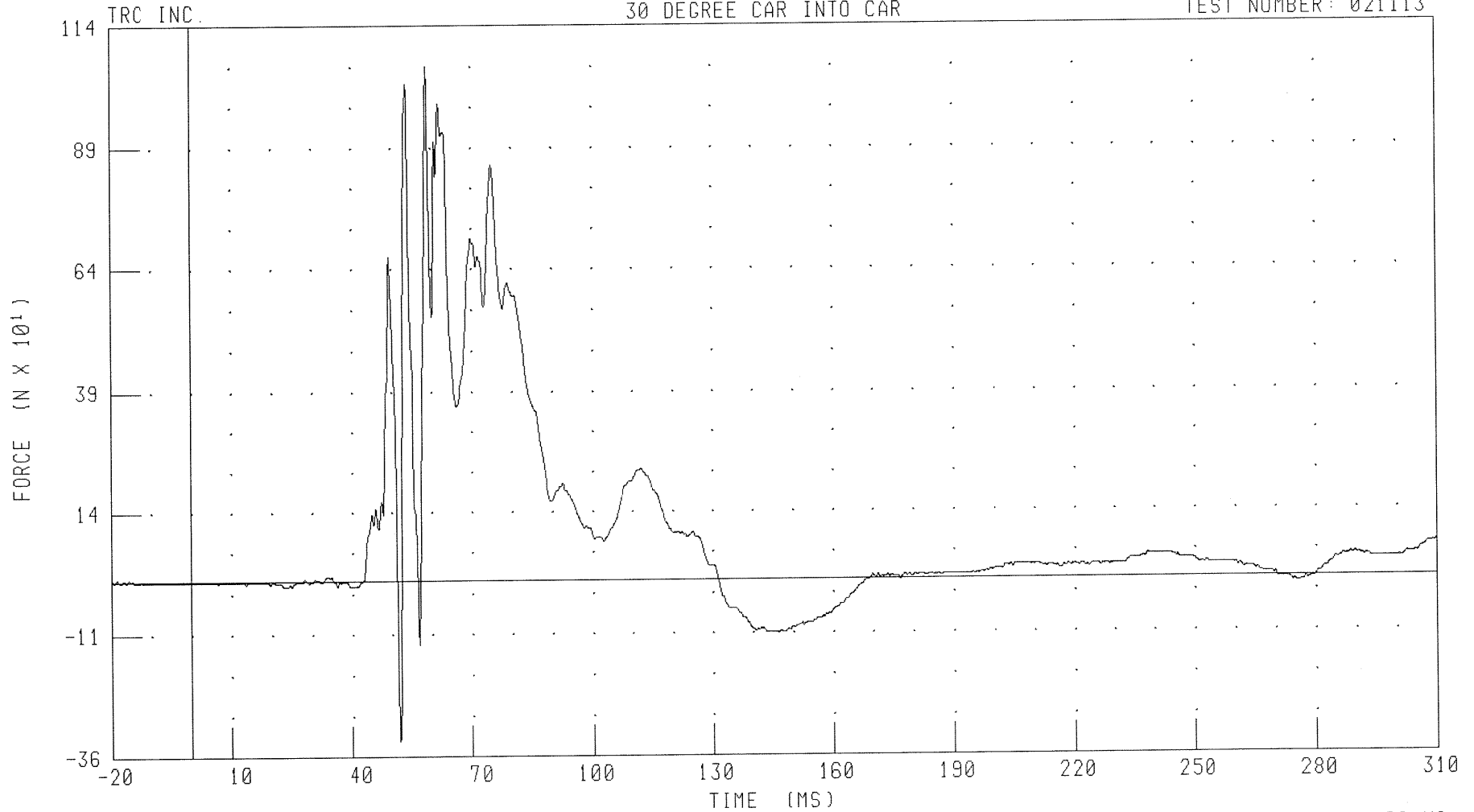
FILTER: CH. CLASS 600

PEAK DATA: 1331.36 N @ 70.16 MS; -213.11 N @ 58.08 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER RIGHT FEMUR Y-AXIS FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



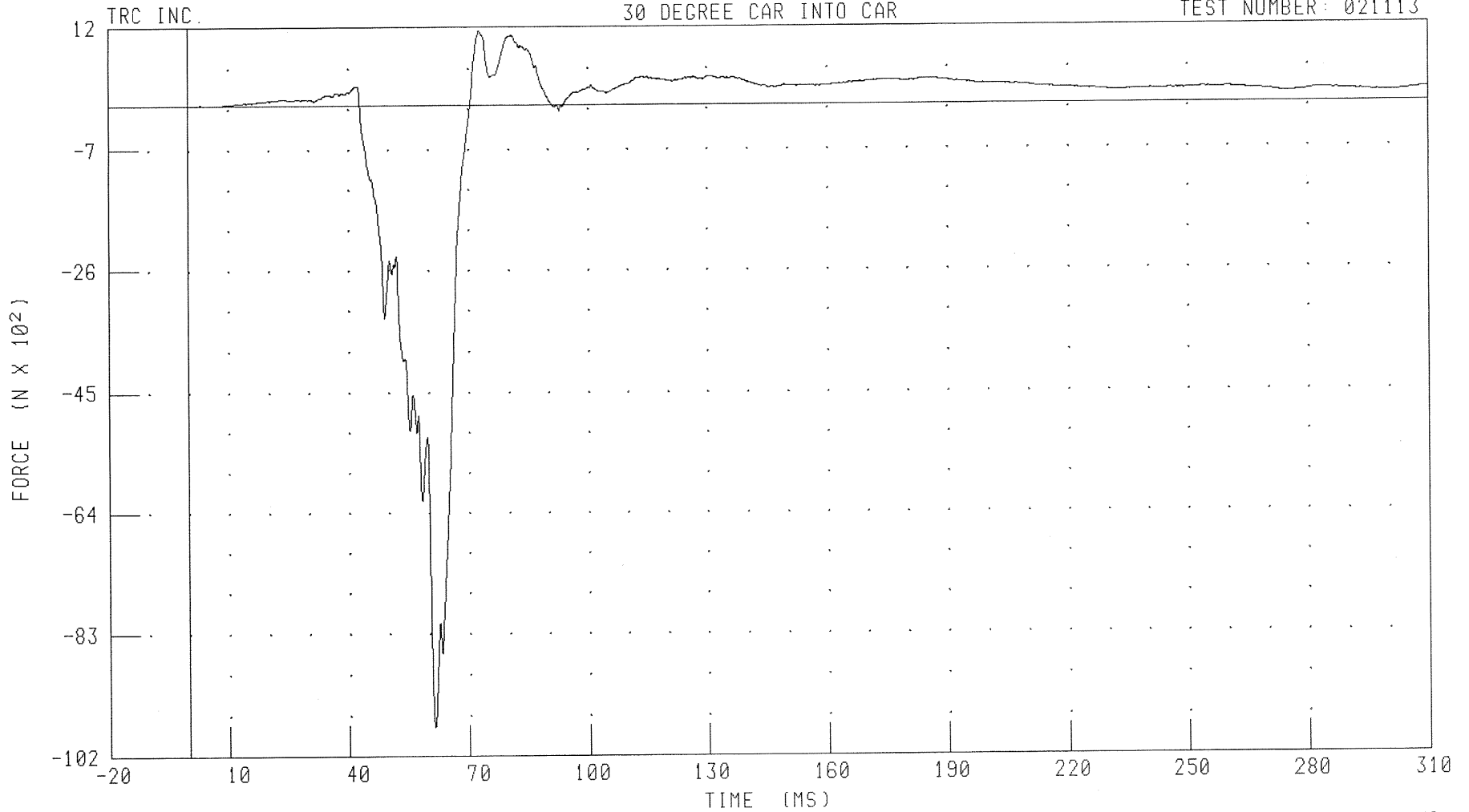
CHANNEL: RFMYF1 FILTER: CH. CLASS 600

PEAK DATA: 1057.04 N @ 58.96 MS; -329.05 N @ 51.92 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER RIGHT FEMUR Z-AXIS FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



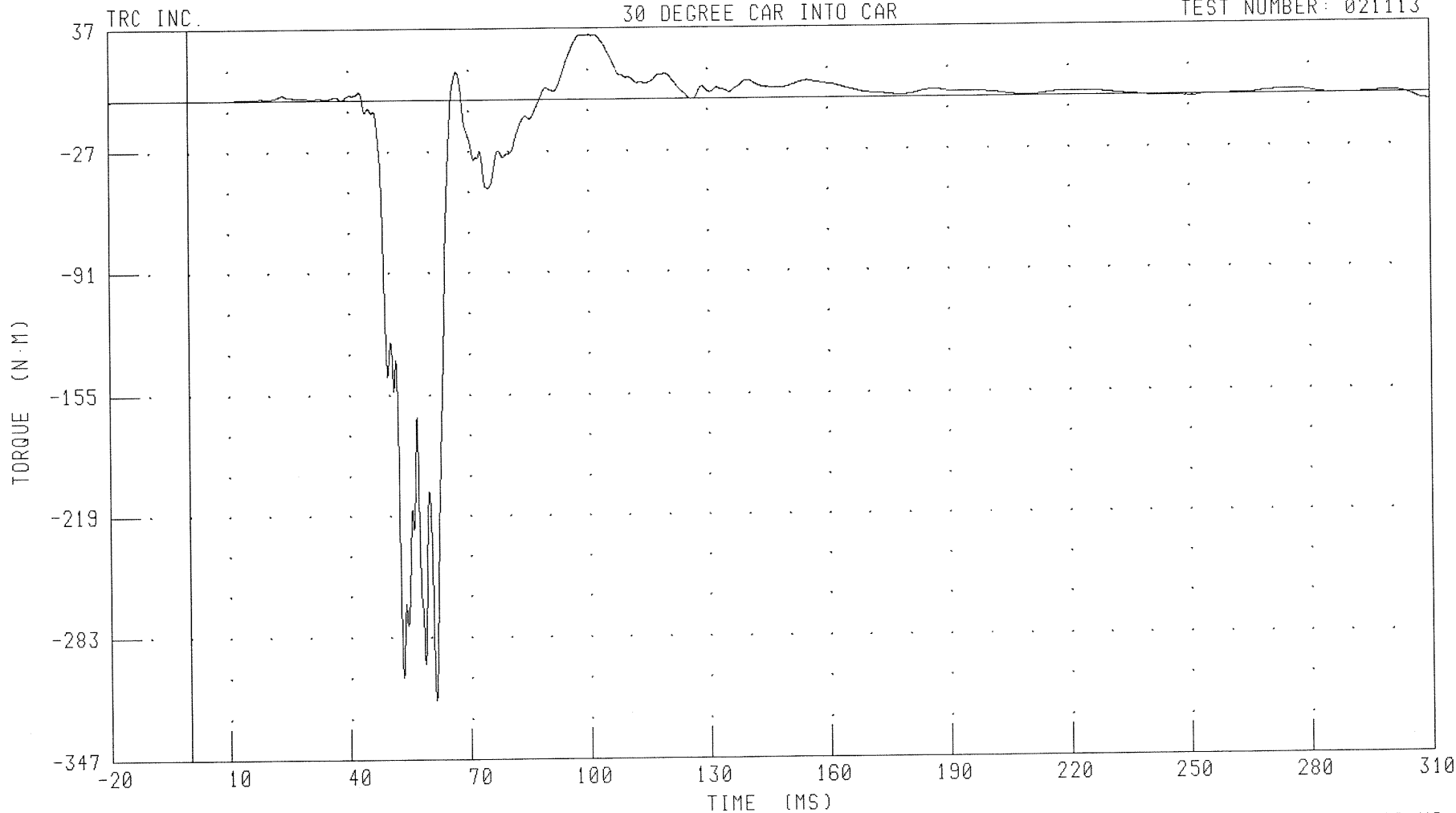
CHANNEL: RFMZFI FILTER: CH. CLASS 600

PEAK DATA: 1142.67 N @ 72.88 MS; -9743.70 N @ 61.36 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER RIGHT FEMUR MOMENT ABOUT X AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: RFMXM1 FILTER: CH. CLASS 600

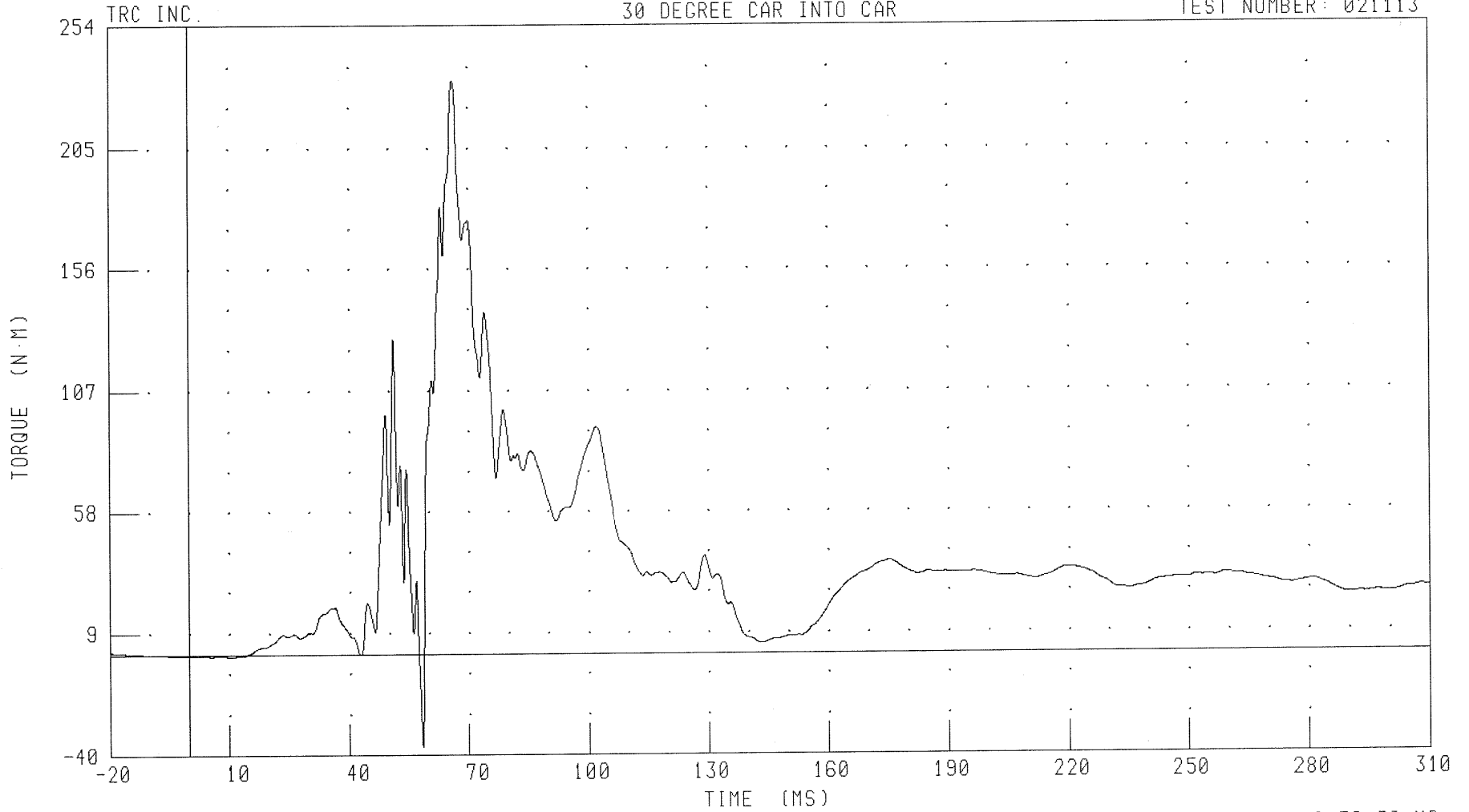
PEAK DATA: 33.69 N·M @ 100.48 MS; -316.13 N·M @ 61.28 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

TARGET DRIVER RIGHT FEMUR MOMENT ABOUT Y AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: RFMYM1 FILTER: CH. CLASS 600

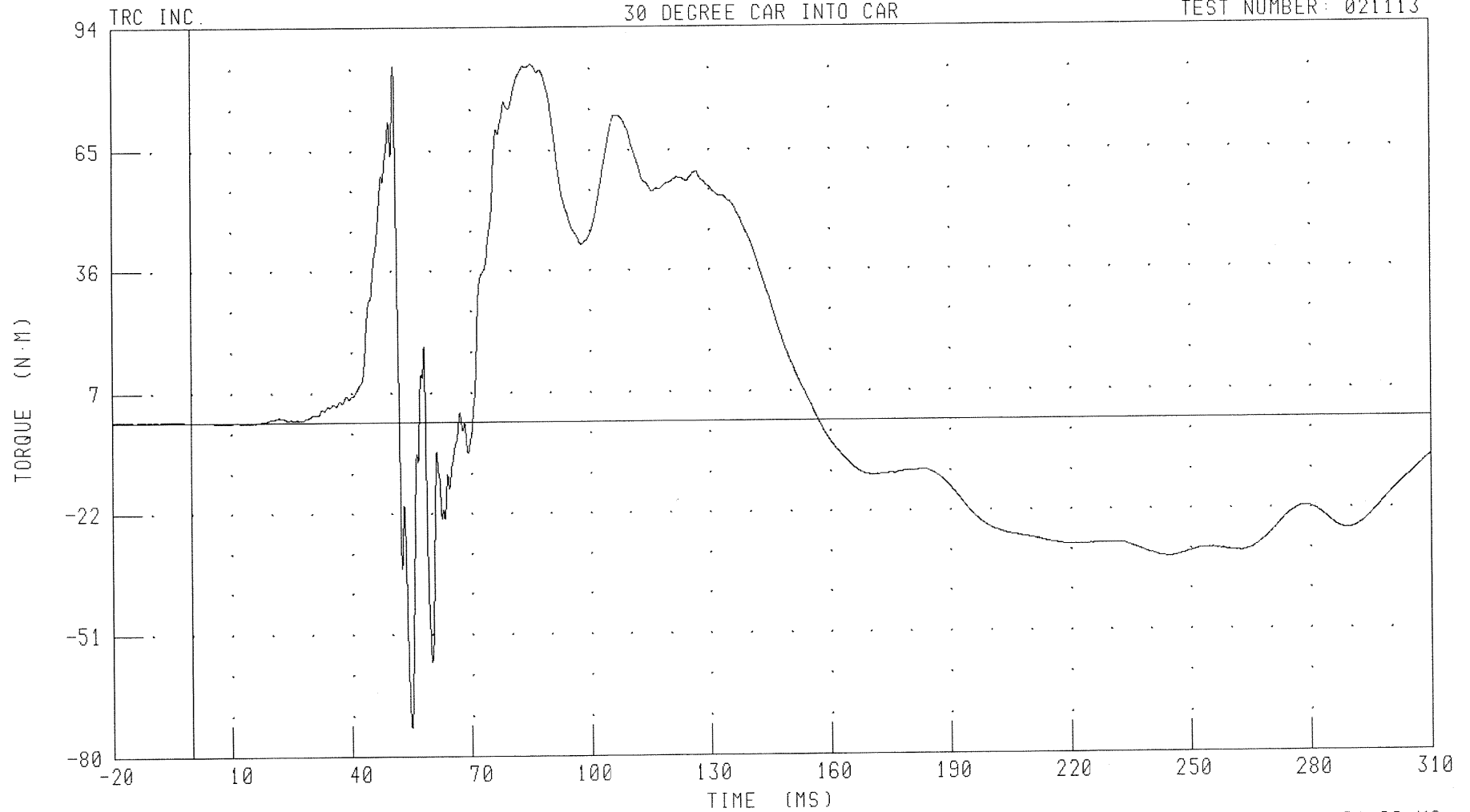
PEAK DATA: 232.12 N·M @ 66.24 MS; -36.52 N·M @ 58.32 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

TARGET DRIVER RIGHT FEMUR MOMENT ABOUT Z AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: RFMZM1 FILTER: CH. CLASS 600

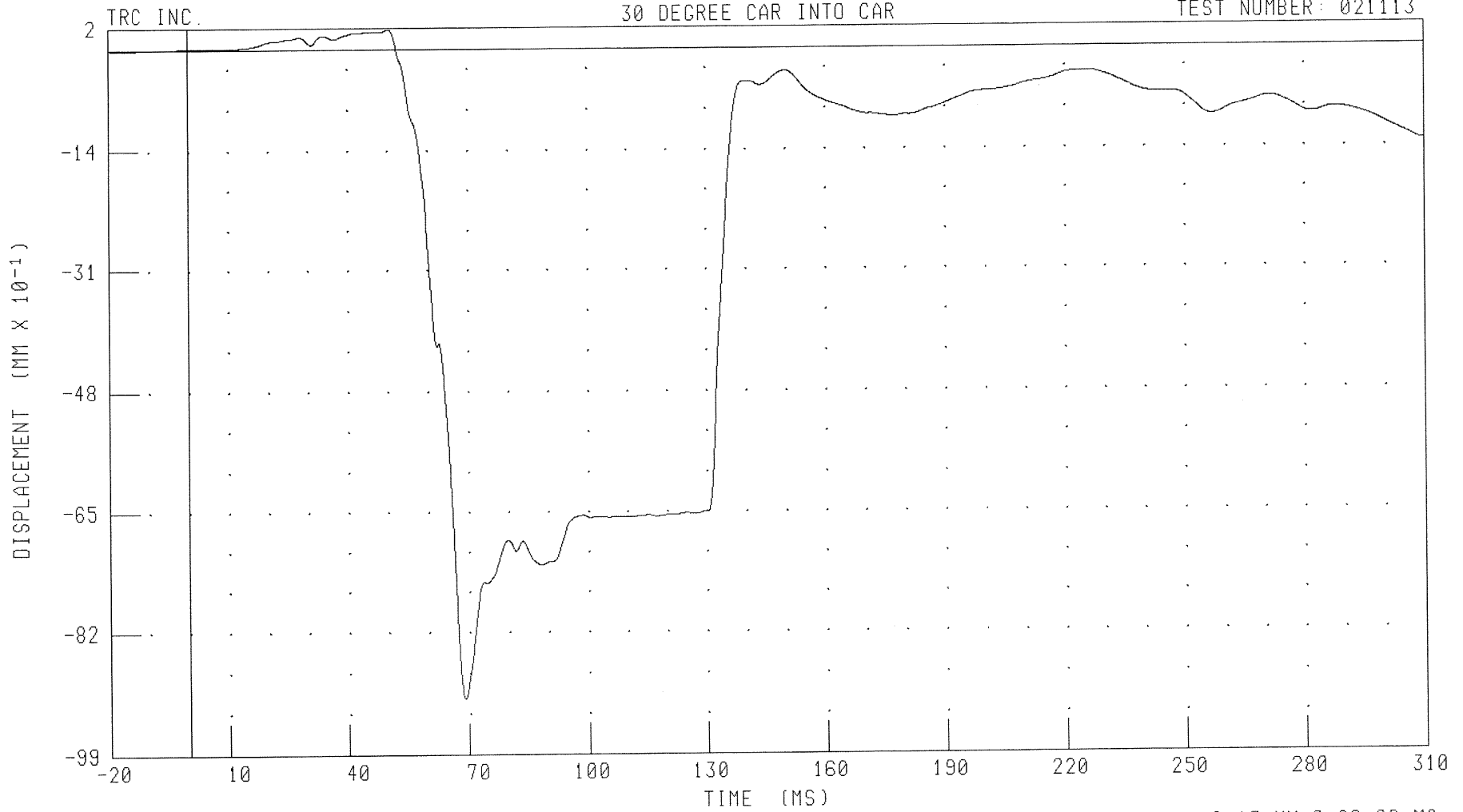
PEAK DATA: 85.39 N·M @ 85.36 MS; -73.14 N·M @ 54.80 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

TARGET DRIVER LEFT KNEE DISPLACEMENT

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: KNLXD1 FILTER: CH. CLASS 180

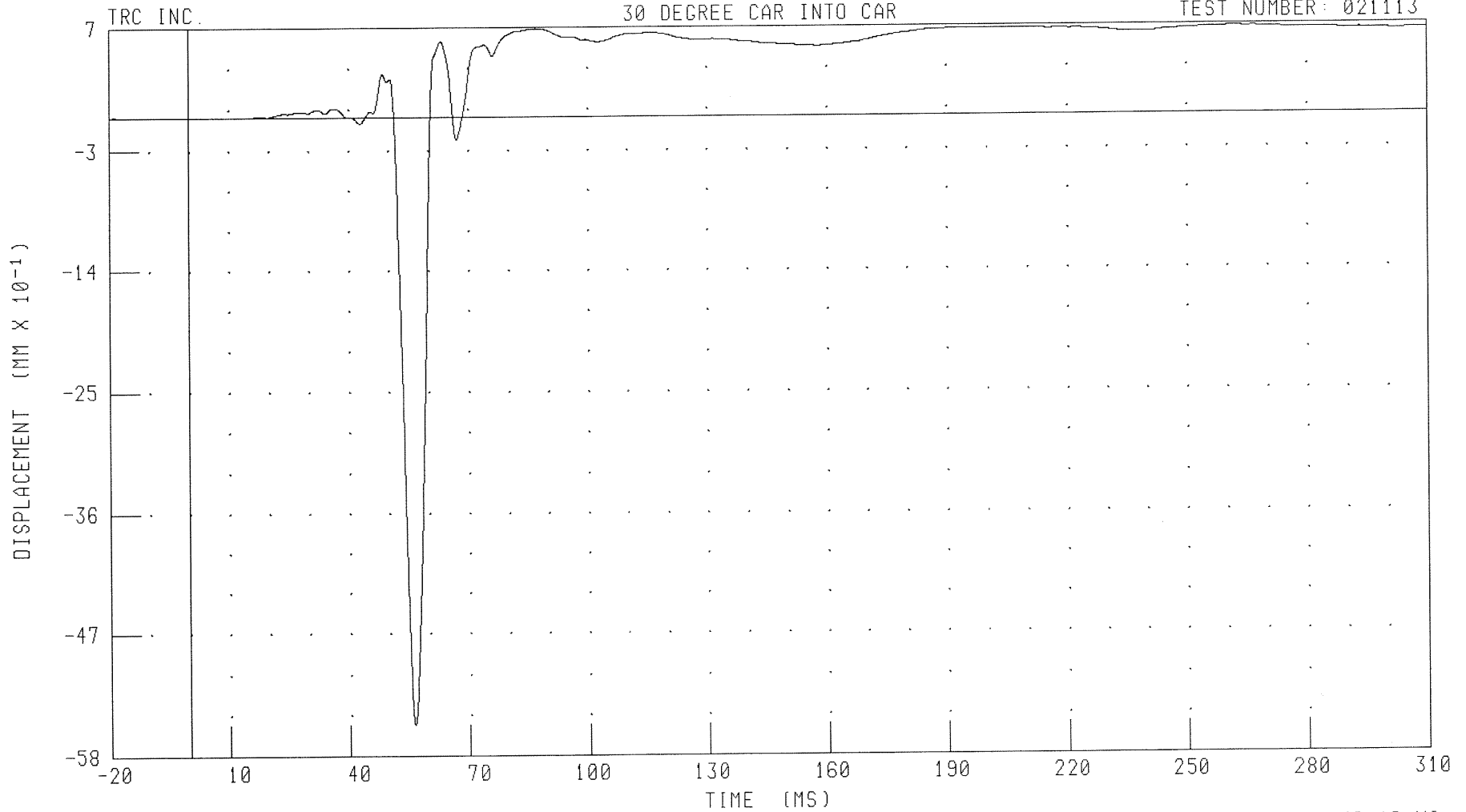
PEAK DATA: 0.28 MM @ 50.56 MS; -91.3 MM @ 68.96 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

TARGET DRIVER RIGHT KNEE DISPLACEMENT

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: KNRXD1 FILTER: CH. CLASS 180

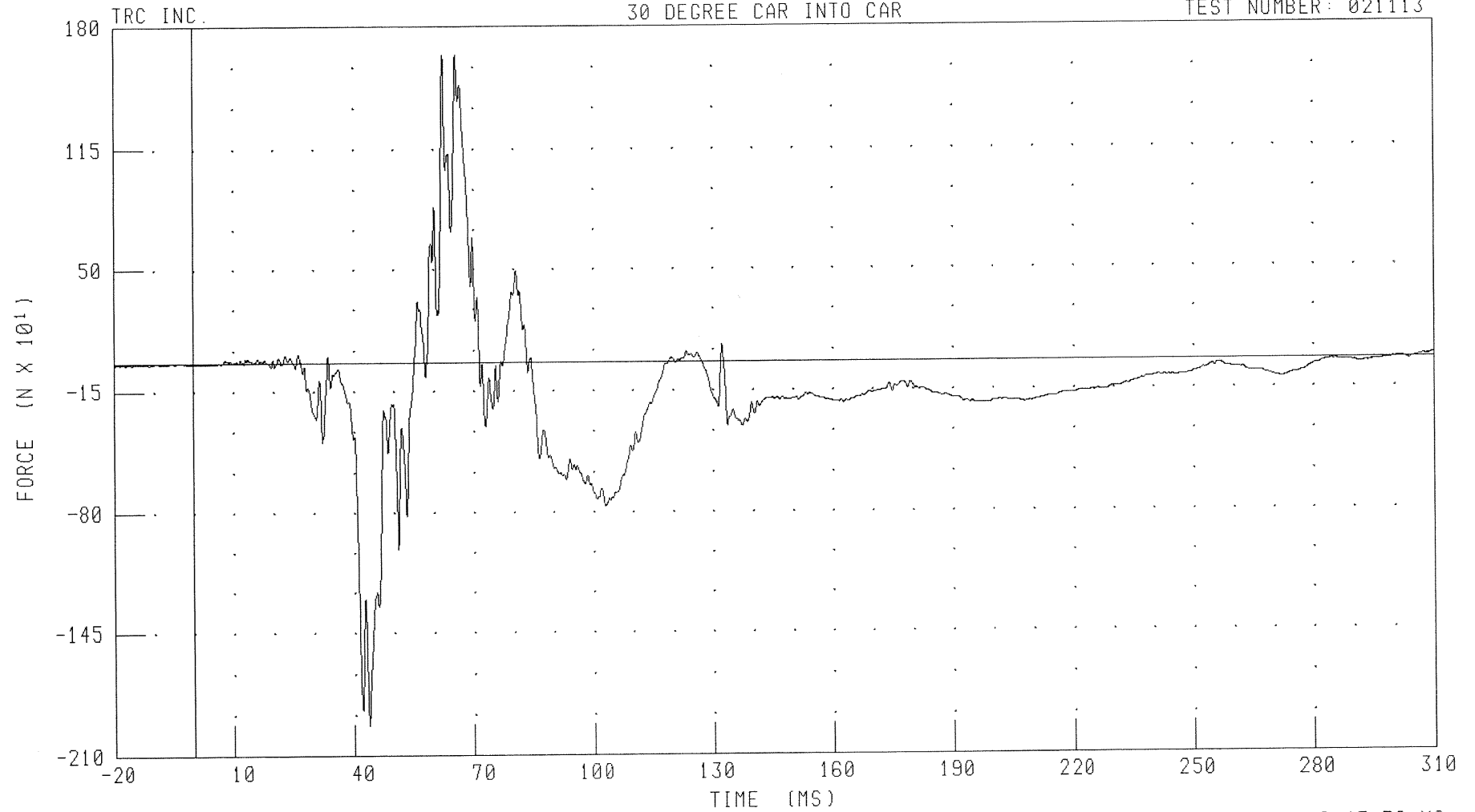
PEAK DATA: 0.79 MM @ 87.04 MS; -5.52 MM @ 56.16 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

TARGET DRIVER LEFT UPPER TIBIA Z-AXIS FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



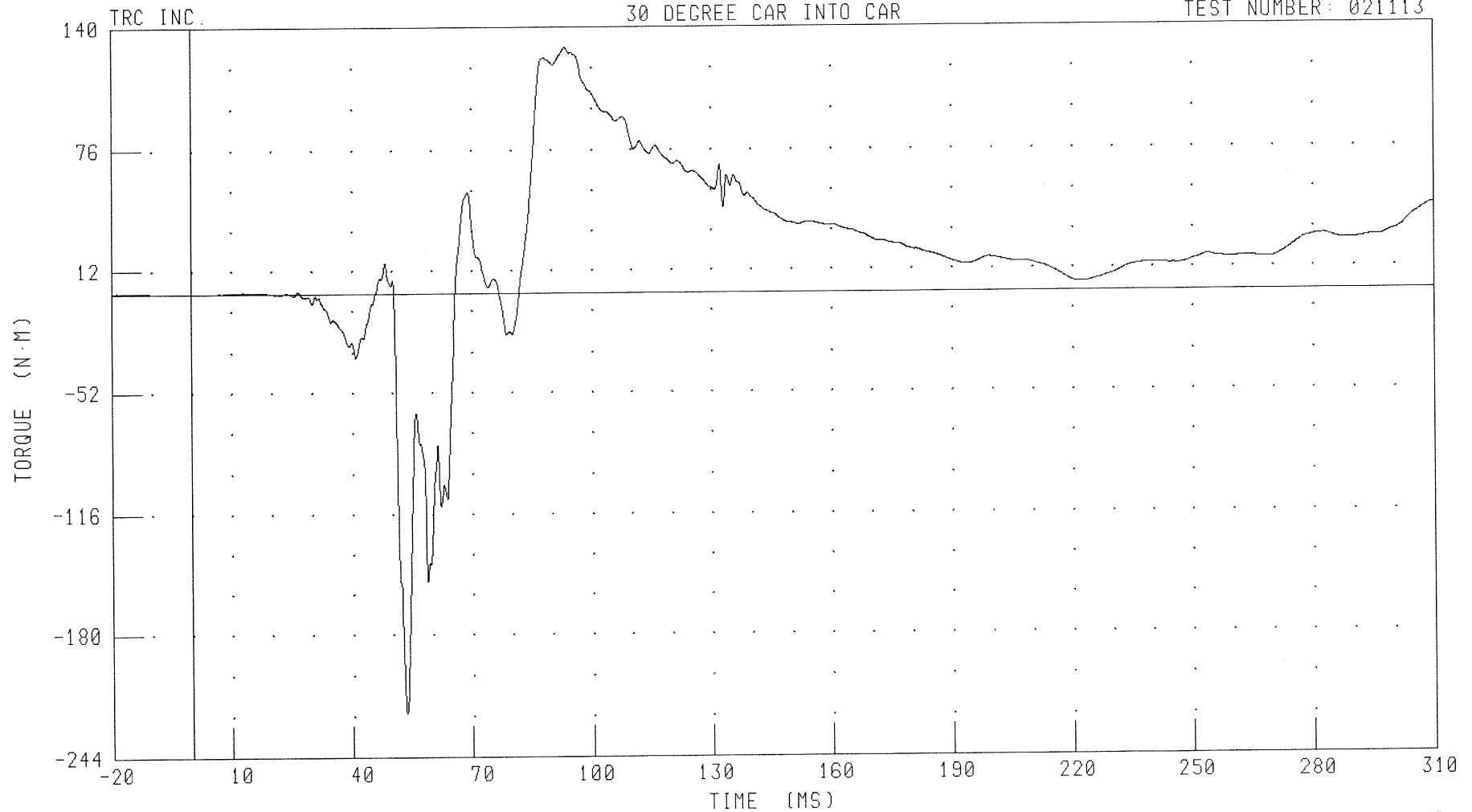
CHANNEL: TBLZF1 FILTER: CH. CLASS 600

PEAK DATA: 1645.11 N @ 65.76 MS; -1943.31 N @ 43.76 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER LEFT UPPER TIBIA MOMENT ABOUT X AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



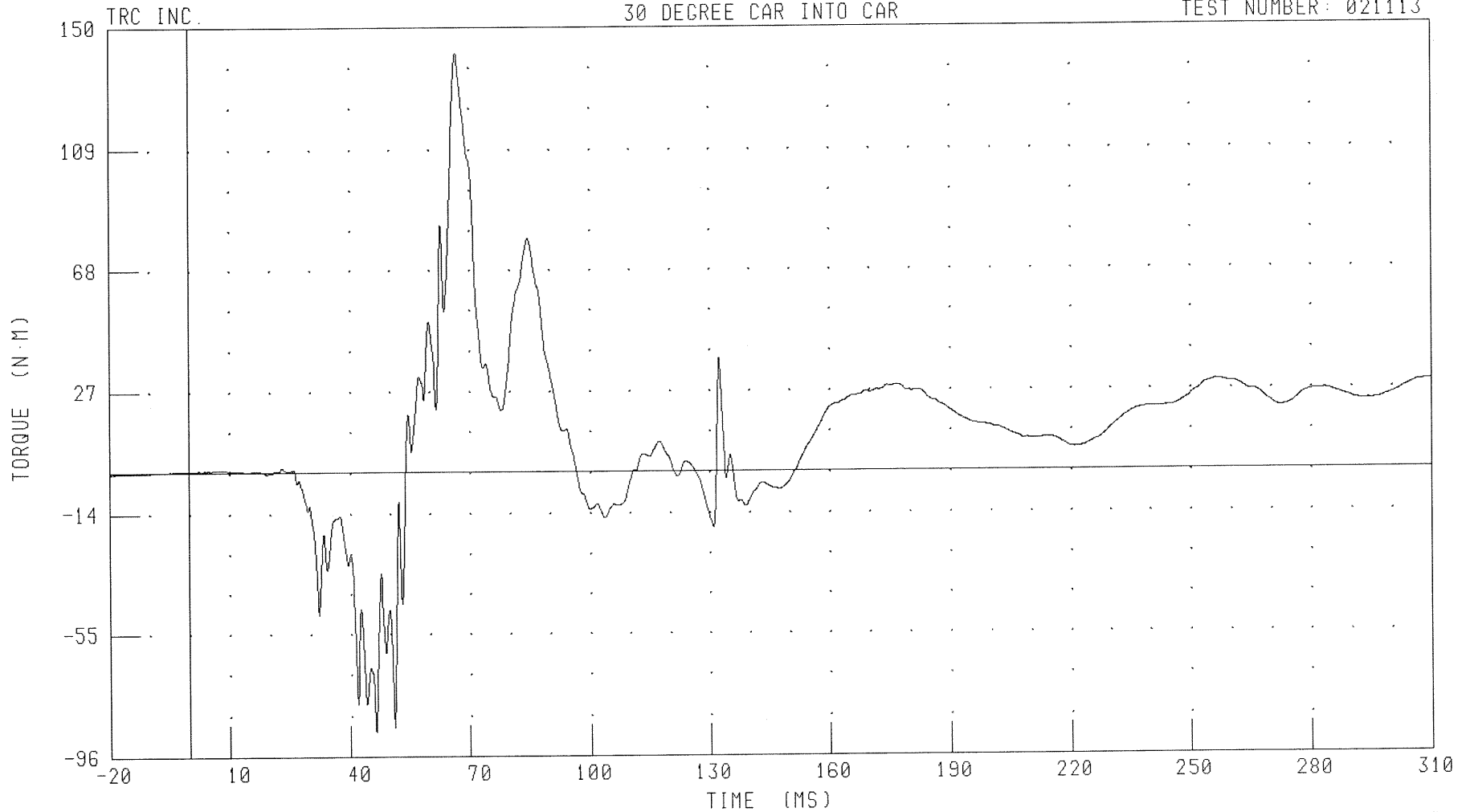
CHANNEL: TBLXM1 FILTER: CH. CLASS 600

PEAK DATA: 129.30 N·M @ 93.60 MS; -221.47 N·M @ 53.36 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER LEFT UPPER TIBIA MOMENT ABOUT Y AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



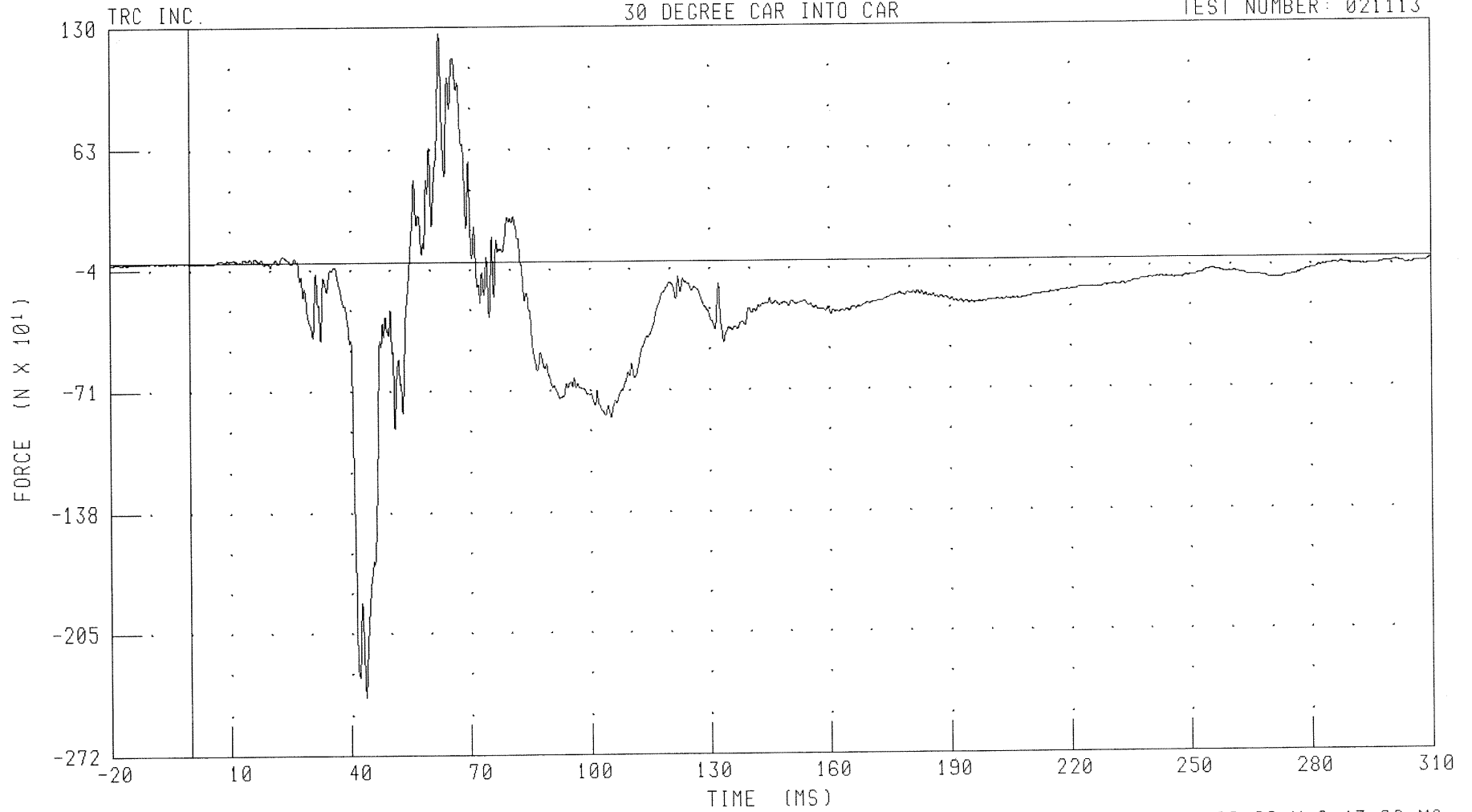
CHANNEL: TBLYM1 FILTER: CH. CLASS 600

PEAK DATA: 141.11 N·M @ 66.80 MS; -87.79 N·M @ 46.40 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER LEFT LOWER TIBIA Z-AXIS FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: ANLZF1 FILTER: CH. CLASS 600

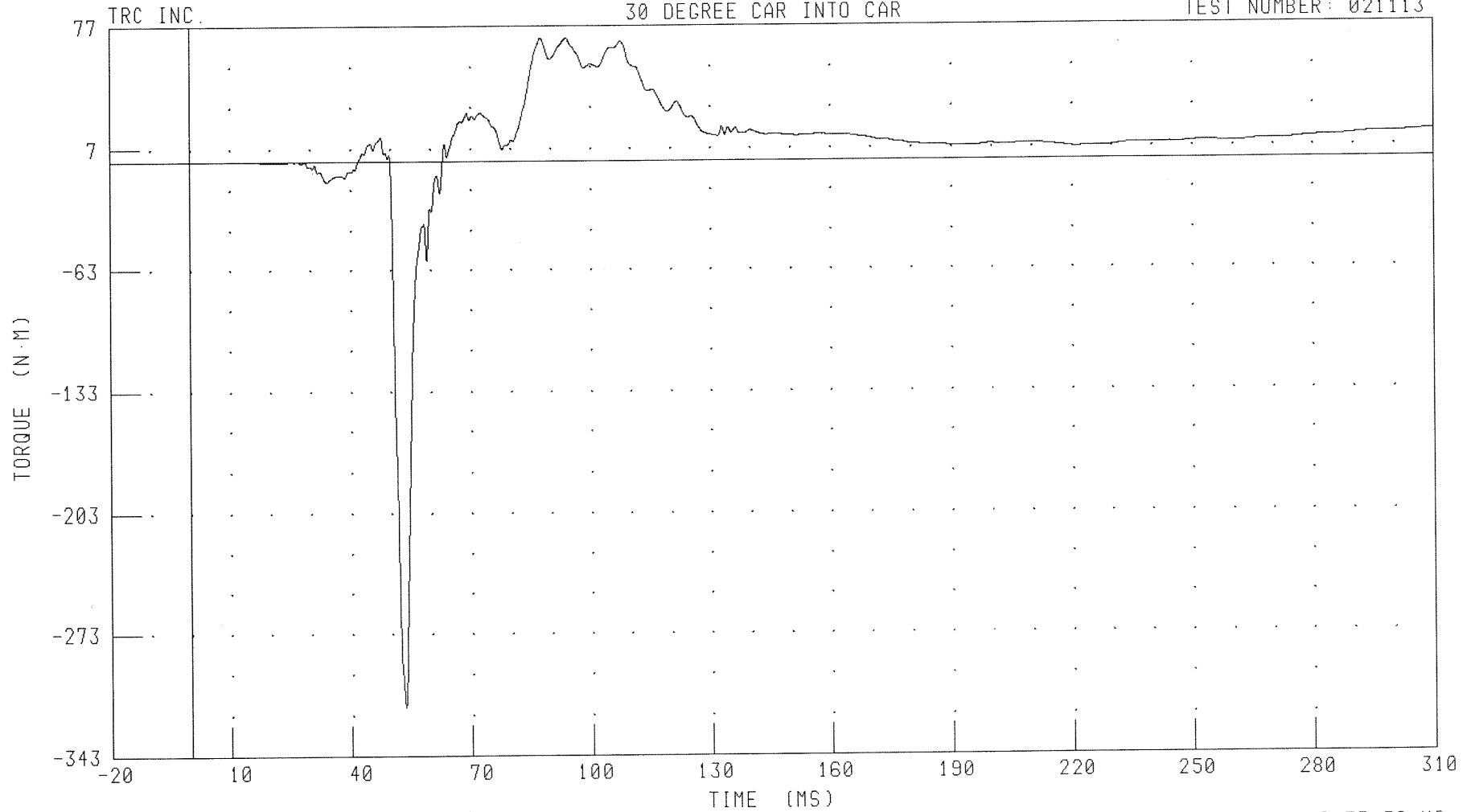
PEAK DATA: 126.73 N @ 62.48 MS; -2400.28 N @ 43.68 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

TARGET DRIVER LEFT LOWER TIBIA MOMENT ABOUT X AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: ANLXM1 FILTER: CH. CLASS 600

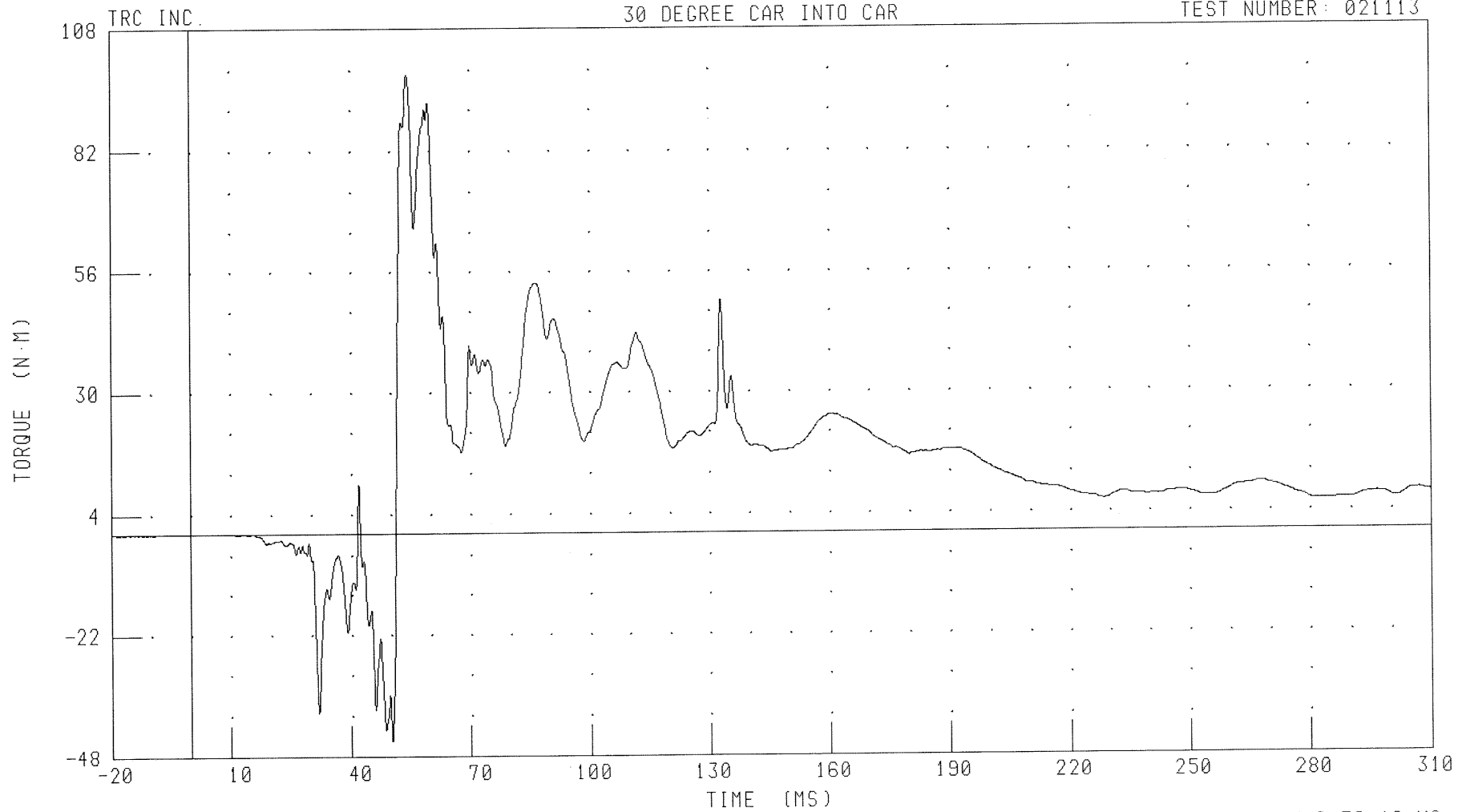
PEAK DATA: 70.29 N·M @ 94.08 MS; -315.16 N·M @ 53.36 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

TARGET DRIVER LEFT LOWER TIBIA MOMENT ABOUT Y AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: ANLYM1

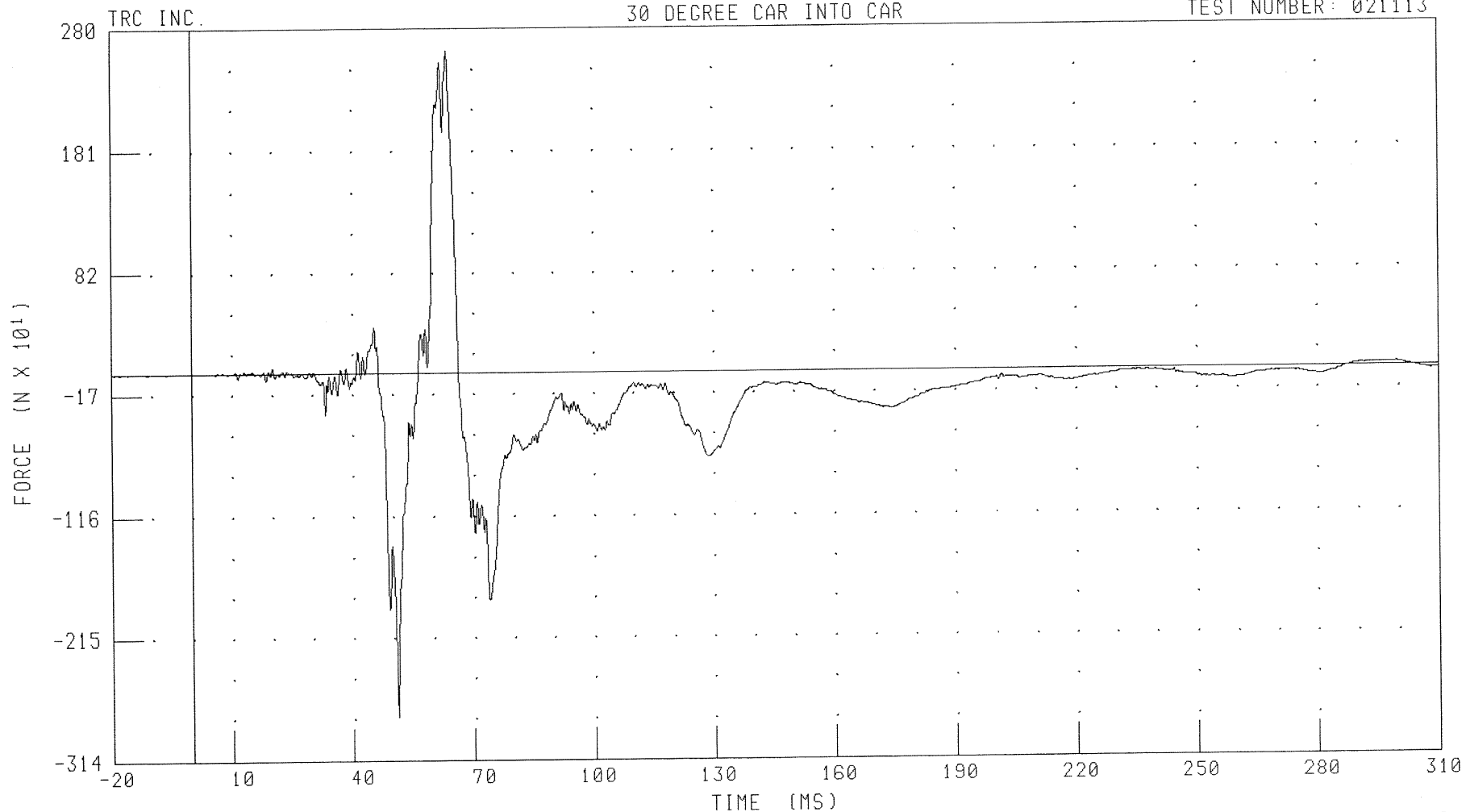
FILTER: CH. CLASS 600

PEAK DATA: 98.33 N·M @ 54.40 MS; -44.54 N·M @ 50.16 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER RIGHT UPPER TIBIA Z-AXIS FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



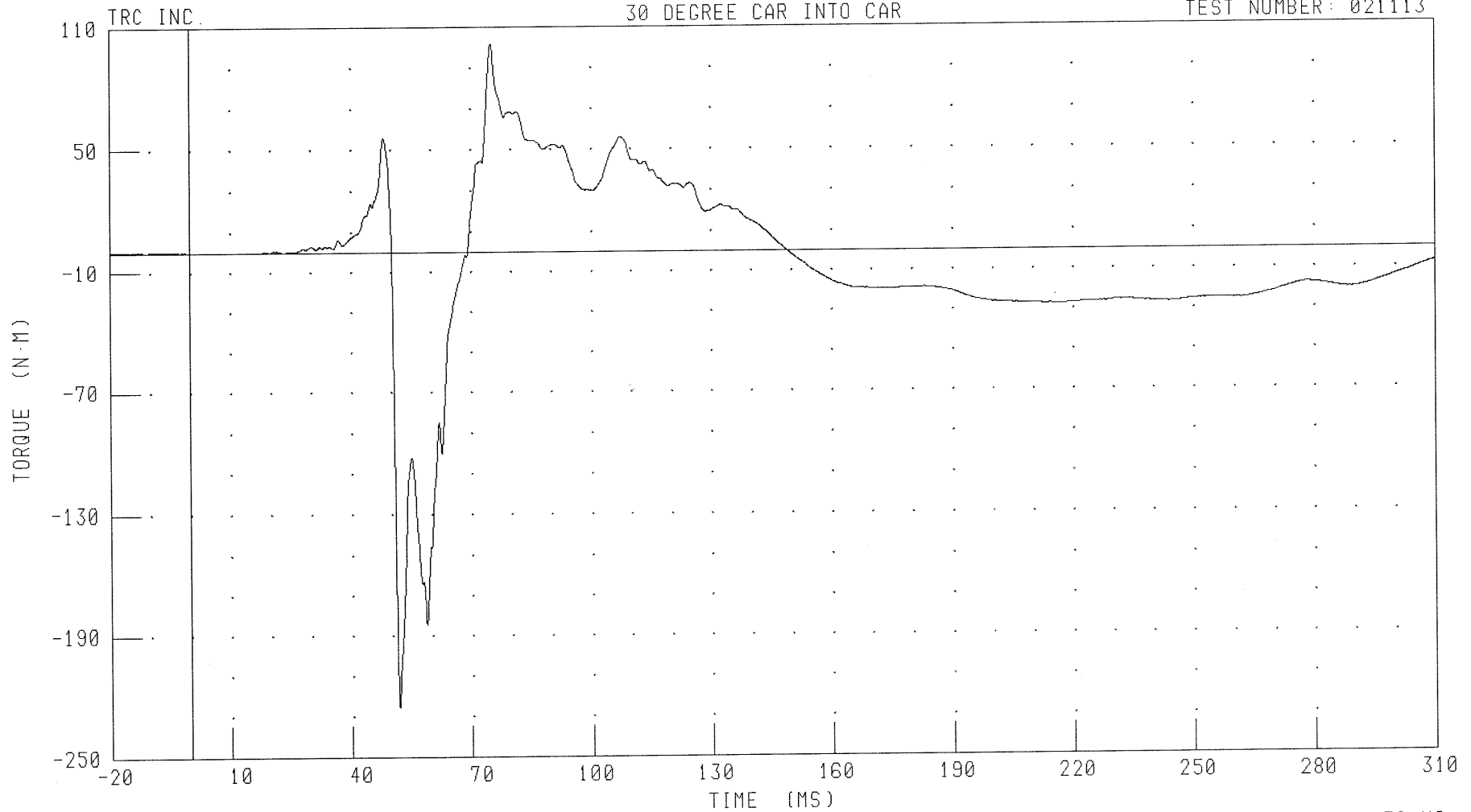
CHANNEL: TBRZF1 FILTER: CH. CLASS 600

PEAK DATA: 2617.27 N @ 63.76 MS; -2793.92 N @ 51.04 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER RIGHT UPPER TIBIA MOMENT ABOUT X AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: TBRXM1

FILTER: CH. CLASS 600

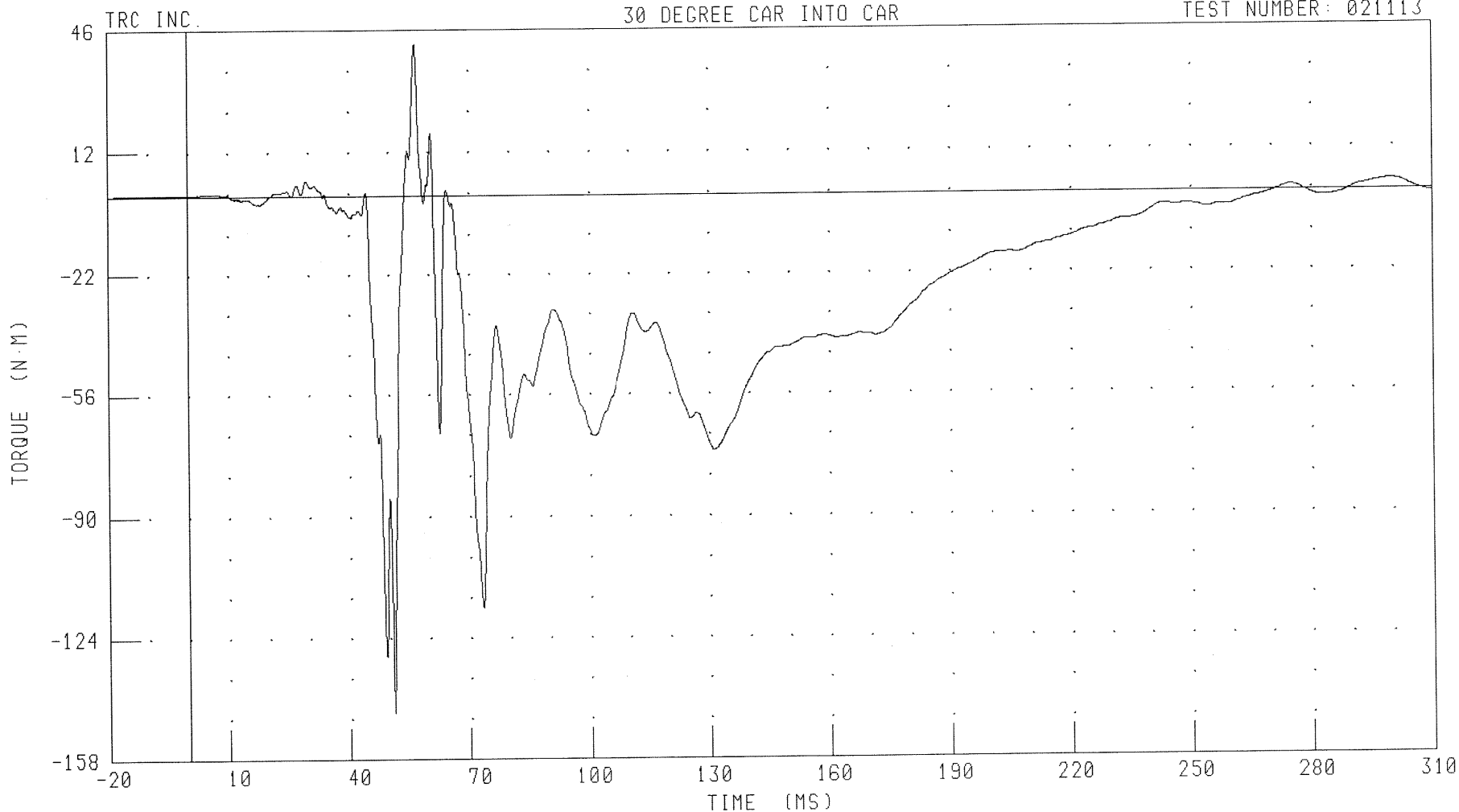
TIME (MS)

PEAK DATA: 101.69 N·M @ 75.28 MS; -225.81 N·M @ 51.76 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER RIGHT UPPER TIBIA MOMENT ABOUT Y AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: TBRYM1

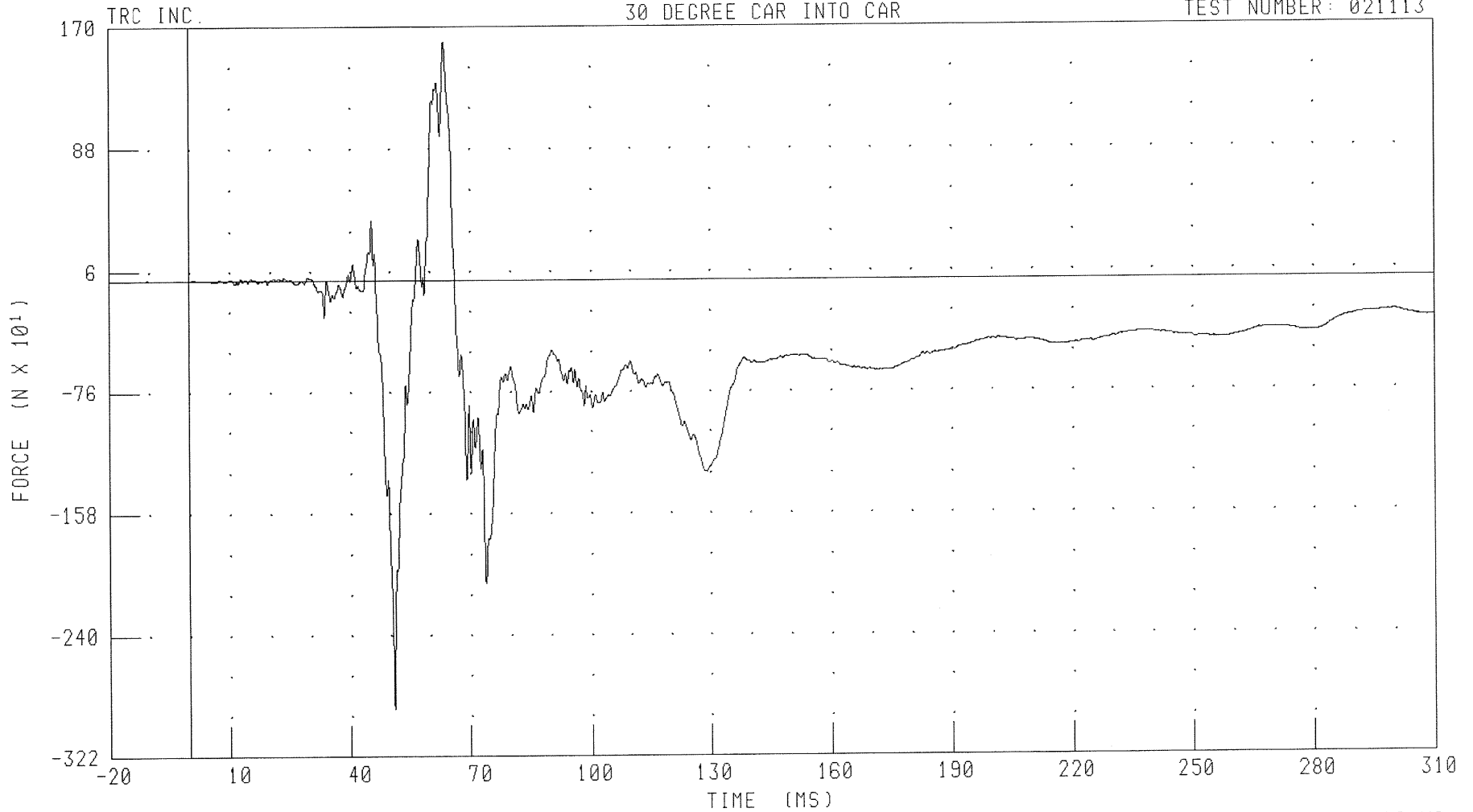
FILTER: CH. CLASS 600

PEAK DATA: 41.92 N·M @ 56.80 MS; -145.21 N·M @ 51.04 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER RIGHT LOWER TIBIA Z-AXIS FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



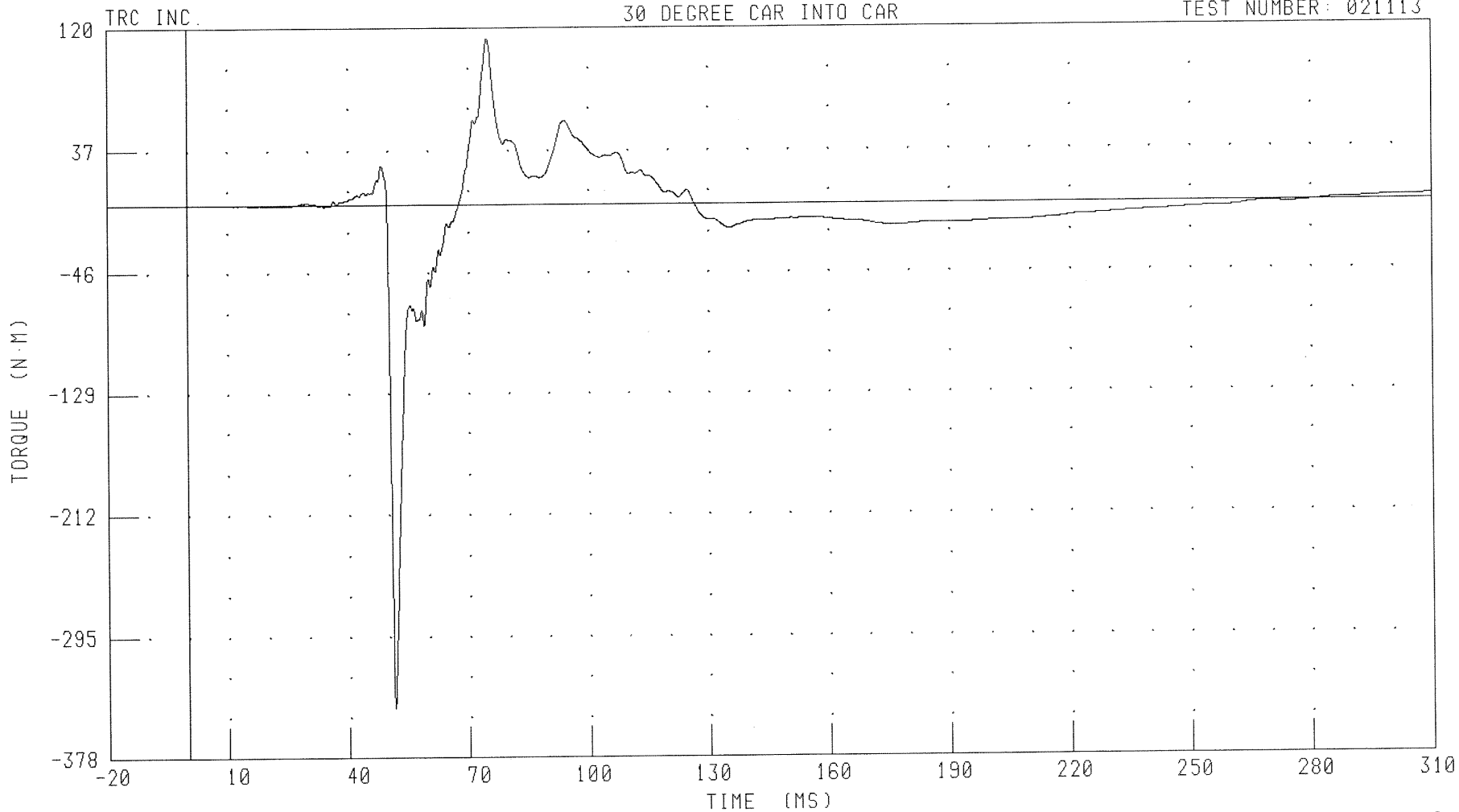
CHANNEL: ANRZF1 FILTER: CH. CLASS 600

PEAK DATA: 1599.49 N @ 63.68 MS; -2900.64 N @ 50.96 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER RIGHT LOWER TIBIA MOMENT ABOUT X AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



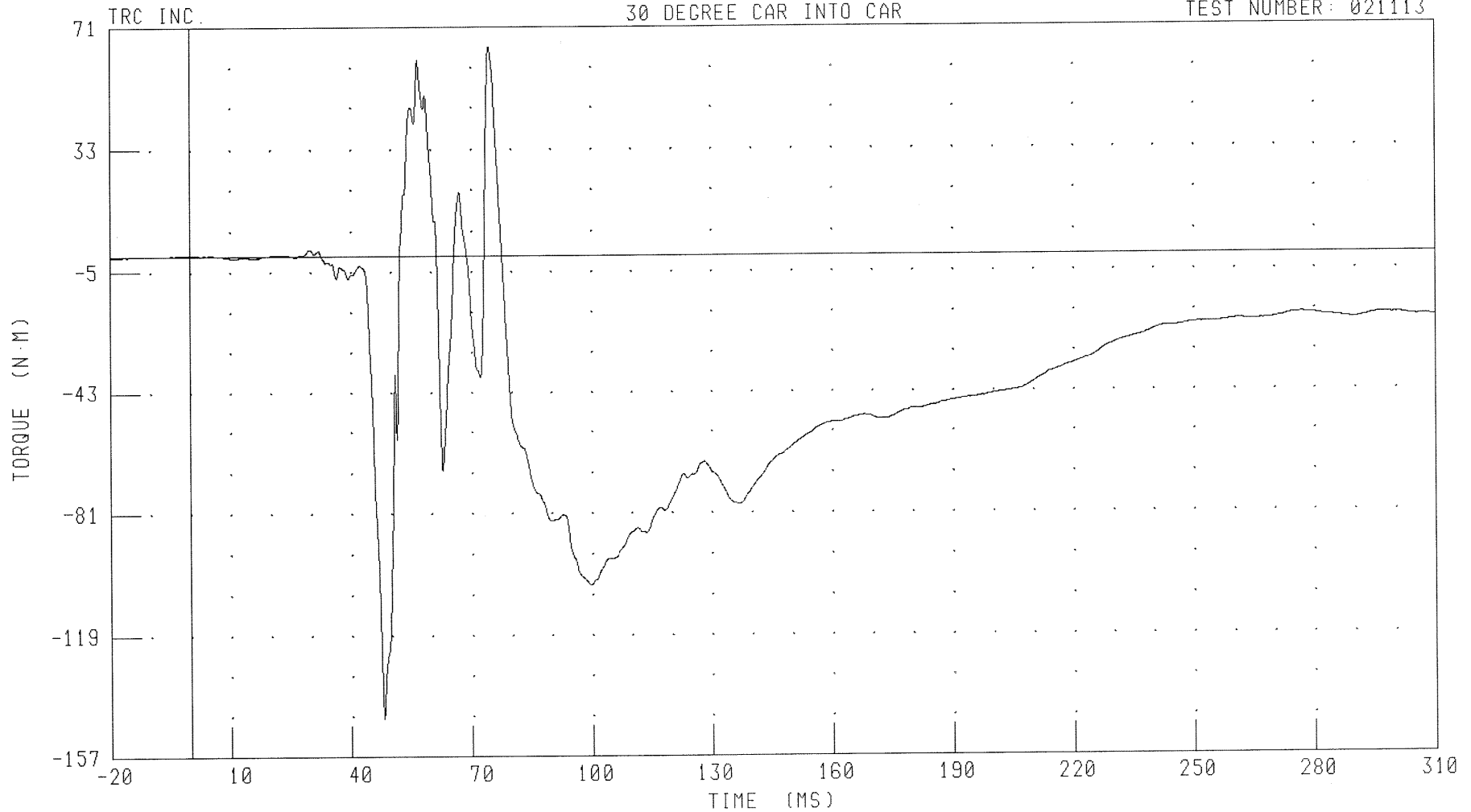
CHANNEL: ANRXM1 FILTER: CH. CLASS 600

PEAK DATA: 112.66 N·M @ 74.96 MS; -344.05 N·M @ 51.36 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER RIGHT LOWER TIBIA MOMENT ABOUT Y AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



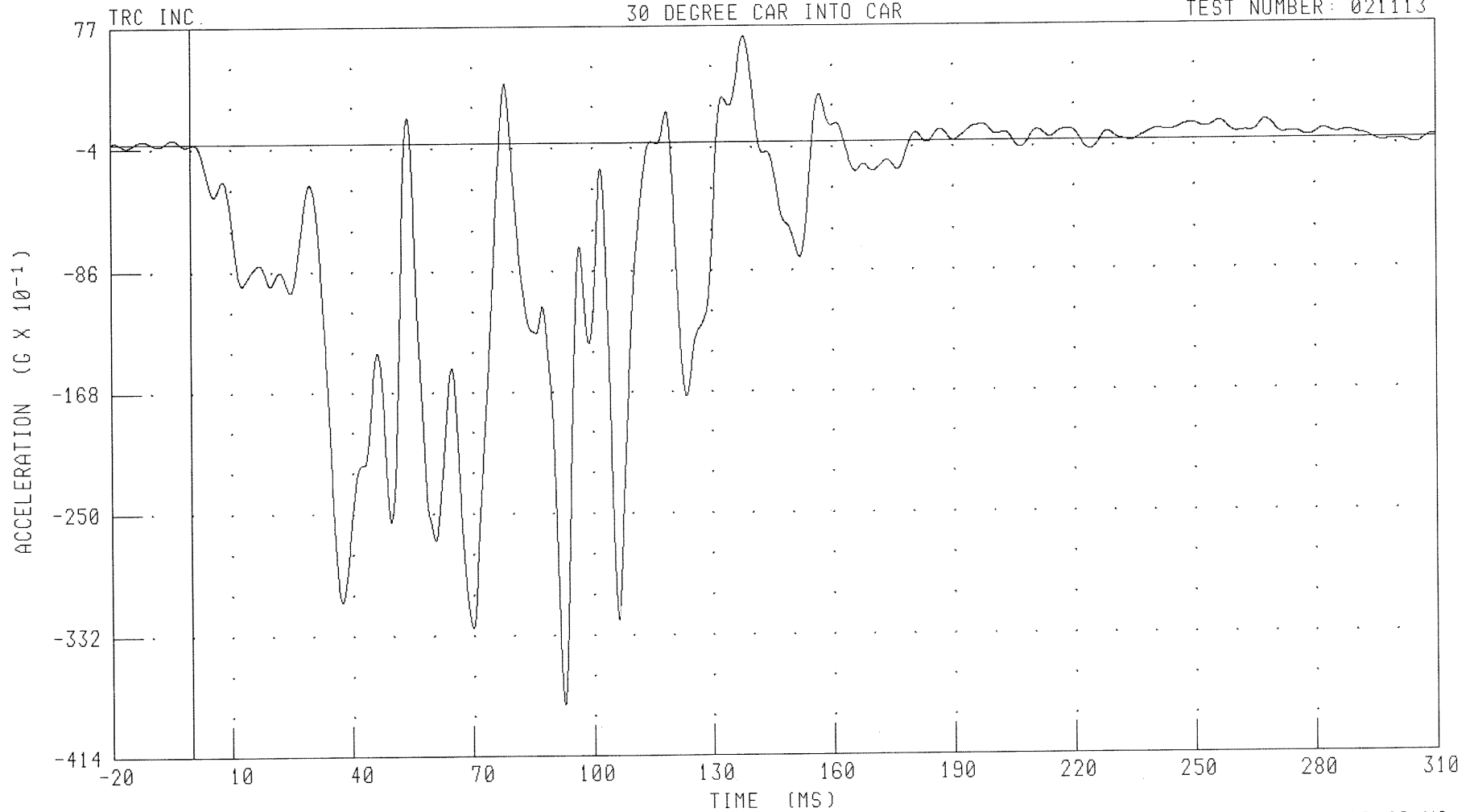
CHANNEL: ANRYM1 FILTER: CH. CLASS 600

PEAK DATA: 64.71 N·M @ 74.56 MS; -145.07 N·M @ 48.08 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET VEHICLE CENTER OF GRAVITY X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: VCGXG1

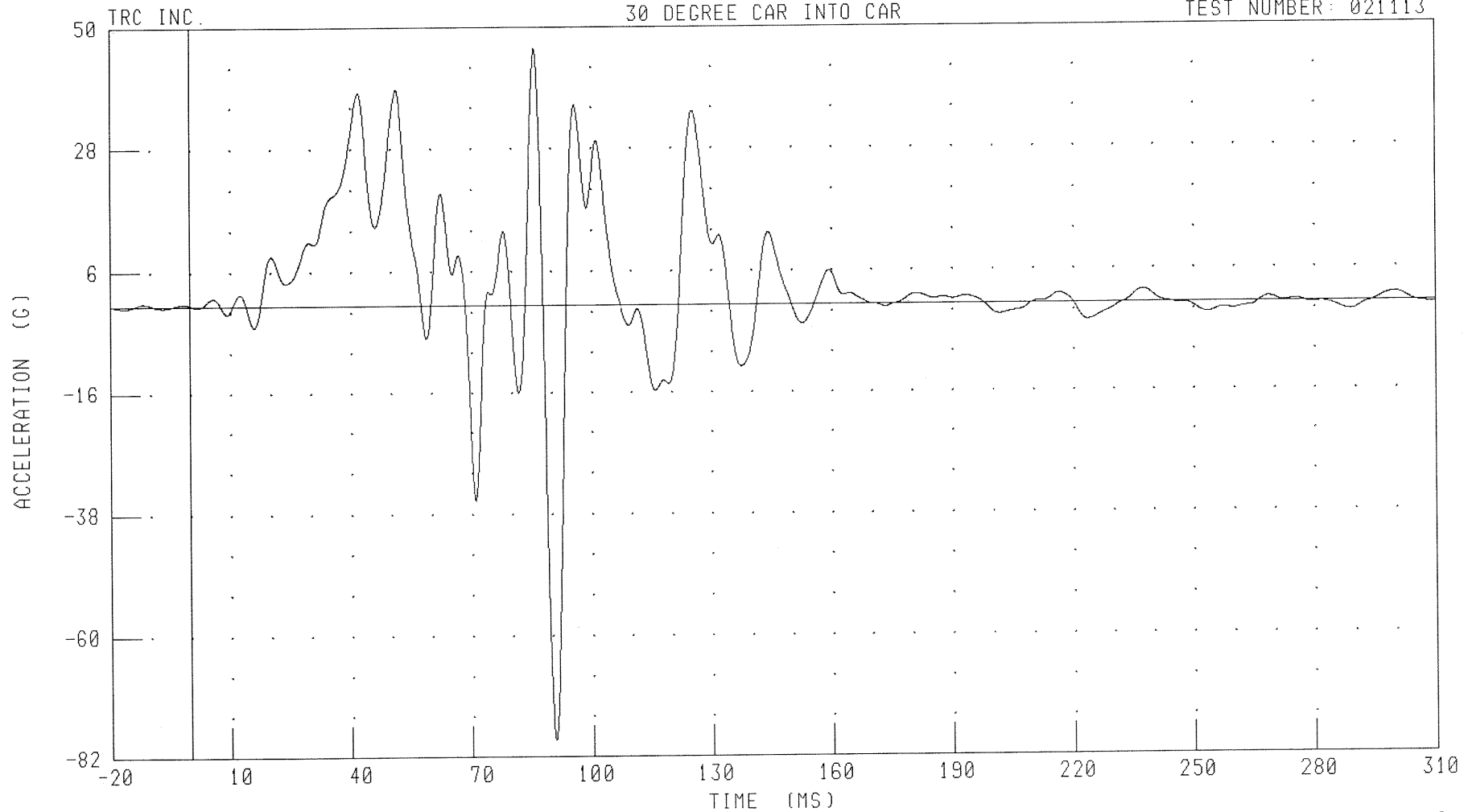
FILTER: CH. CLASS 60

PEAK DATA: 7.10 G @ 138.16 MS; -37.95 G @ 92.80 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET VEHICLE CENTER OF GRAVITY Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: VCGYG1

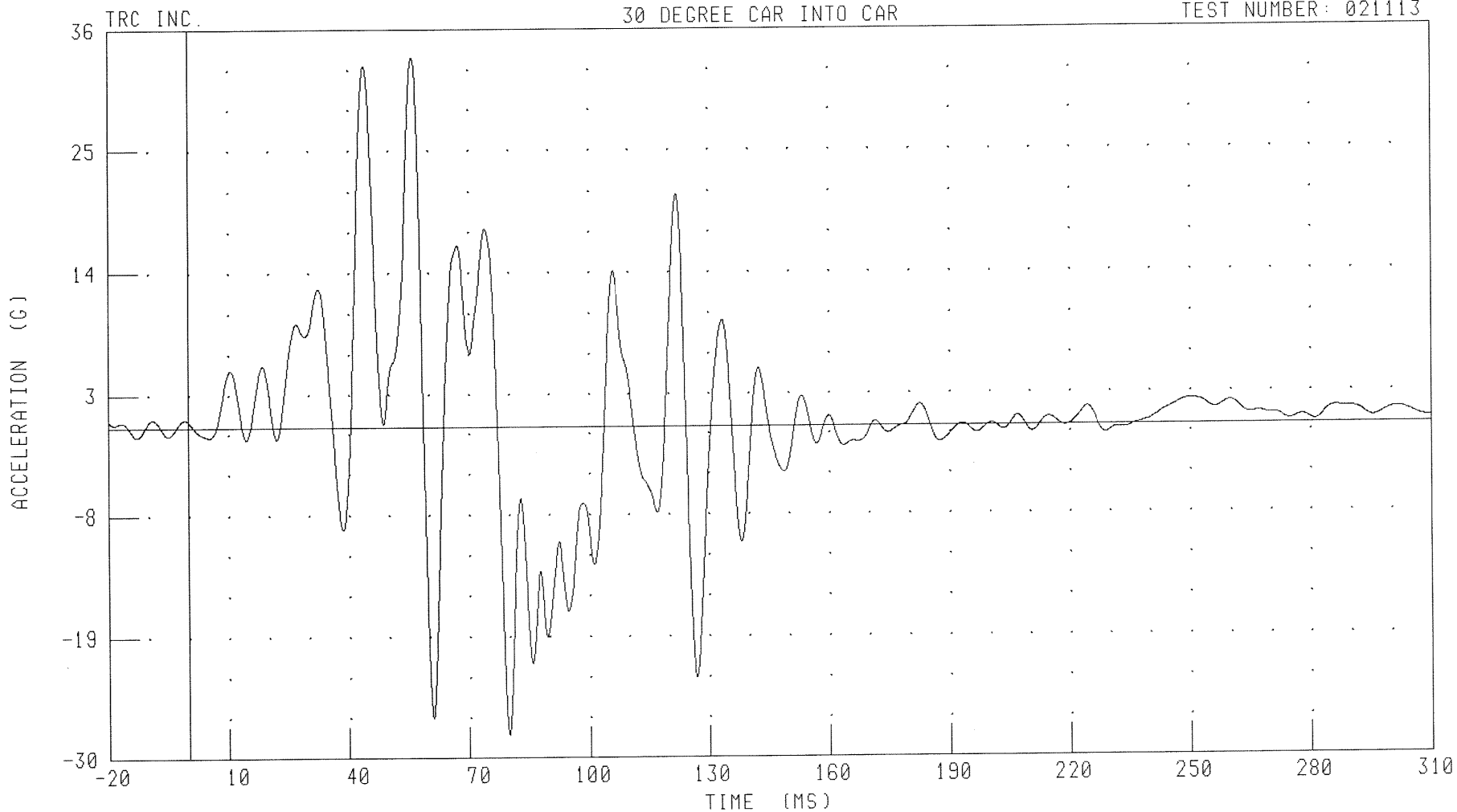
FILTER: CH. CLASS 60

PEAK DATA: 46.08 G @ 86.00 MS; -79.00 G @ 90.72 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET VEHICLE CENTER OF GRAVITY Z-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: VCGZG1

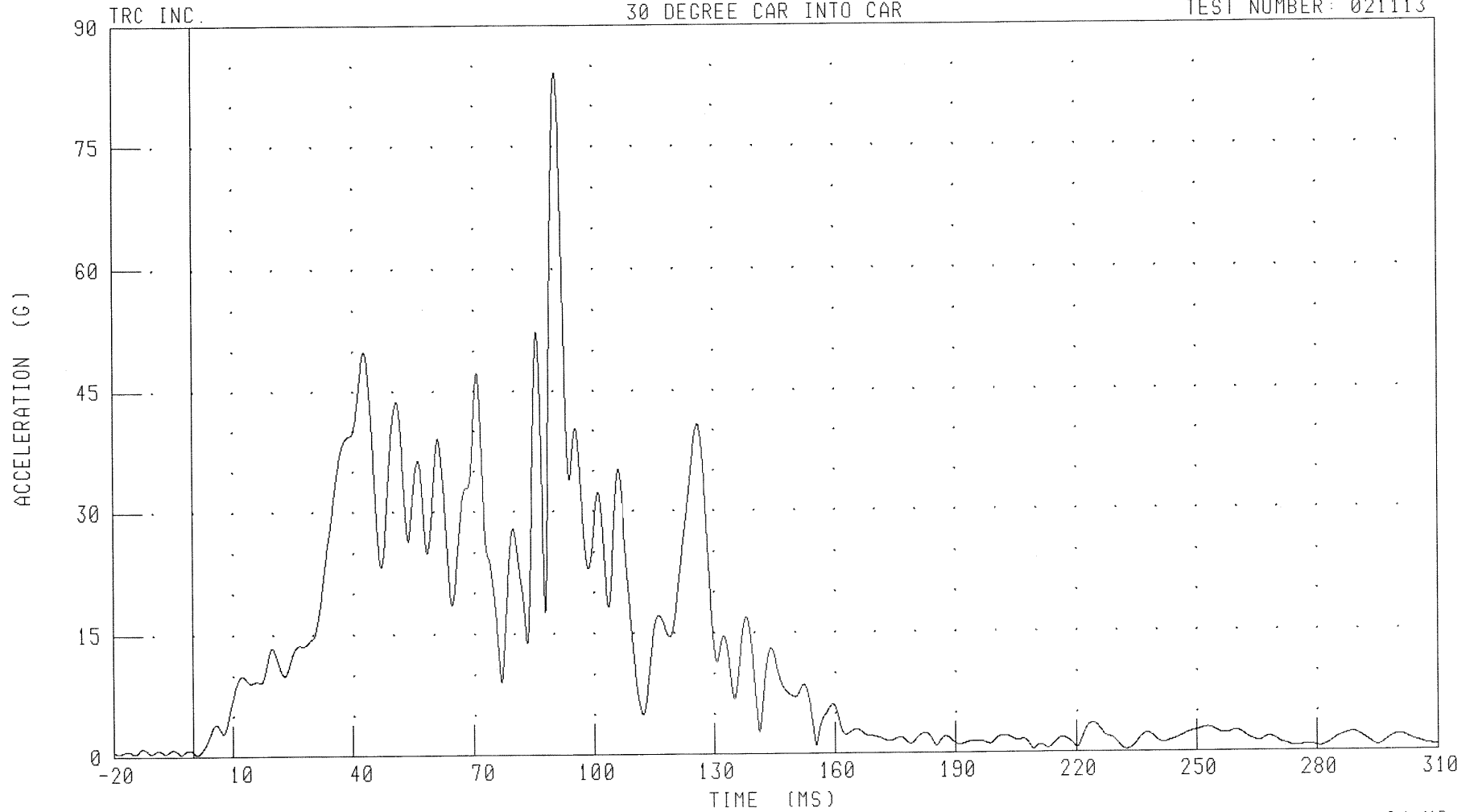
FILTER: CH. CLASS 60

PEAK DATA: 33.42 G @ 56.08 MS; -27.93 G @ 79.92 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET VEHICLE CENTER OF GRAVITY RESULTANT ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: VCGRG1

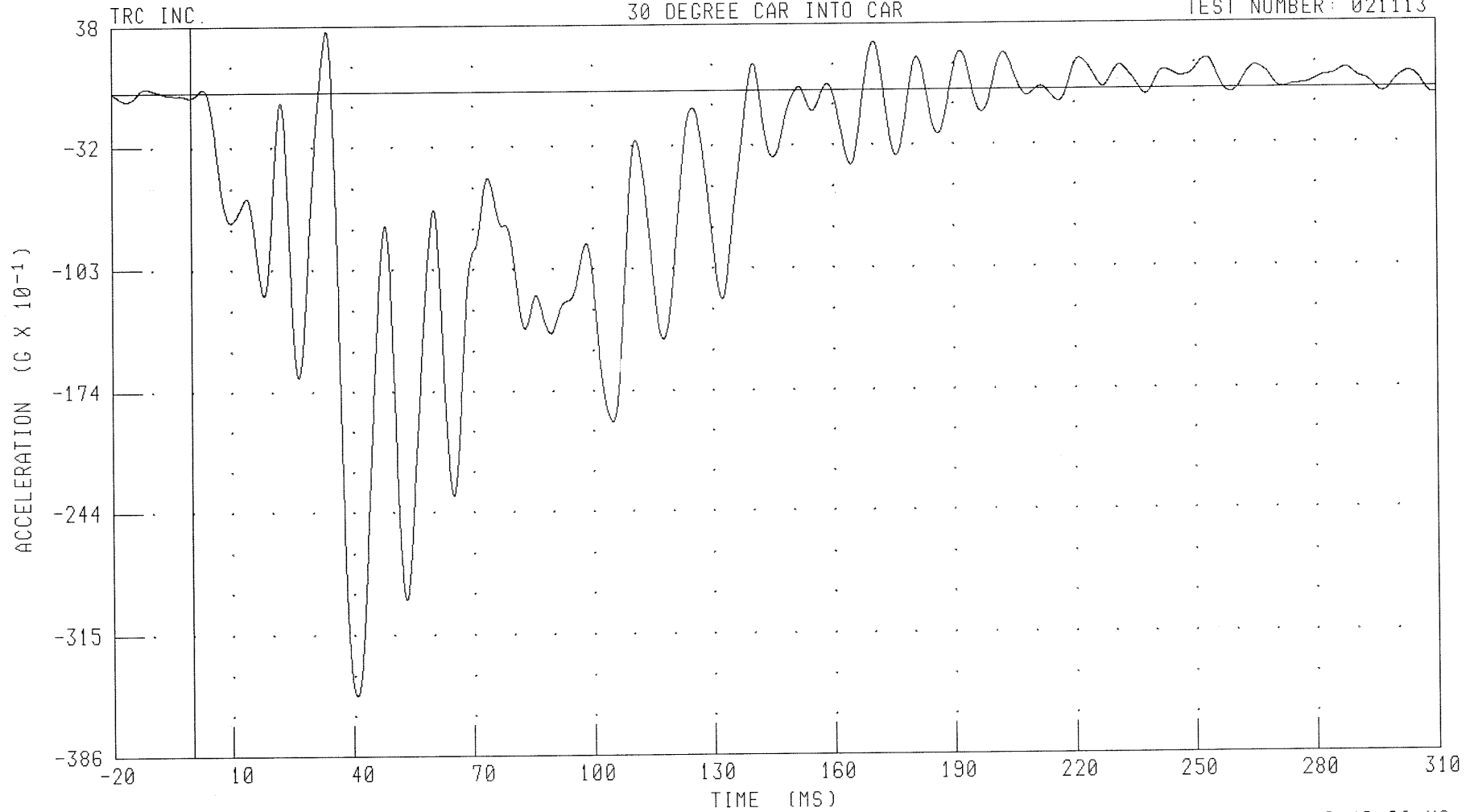
FILTER: CH. CLASS 60

PEAK DATA: 84.12 G @ 90.80 MS; 0.20 G @ 1.04 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET REAR DECK X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: RDKXG1

FILTER: CH. CLASS 60

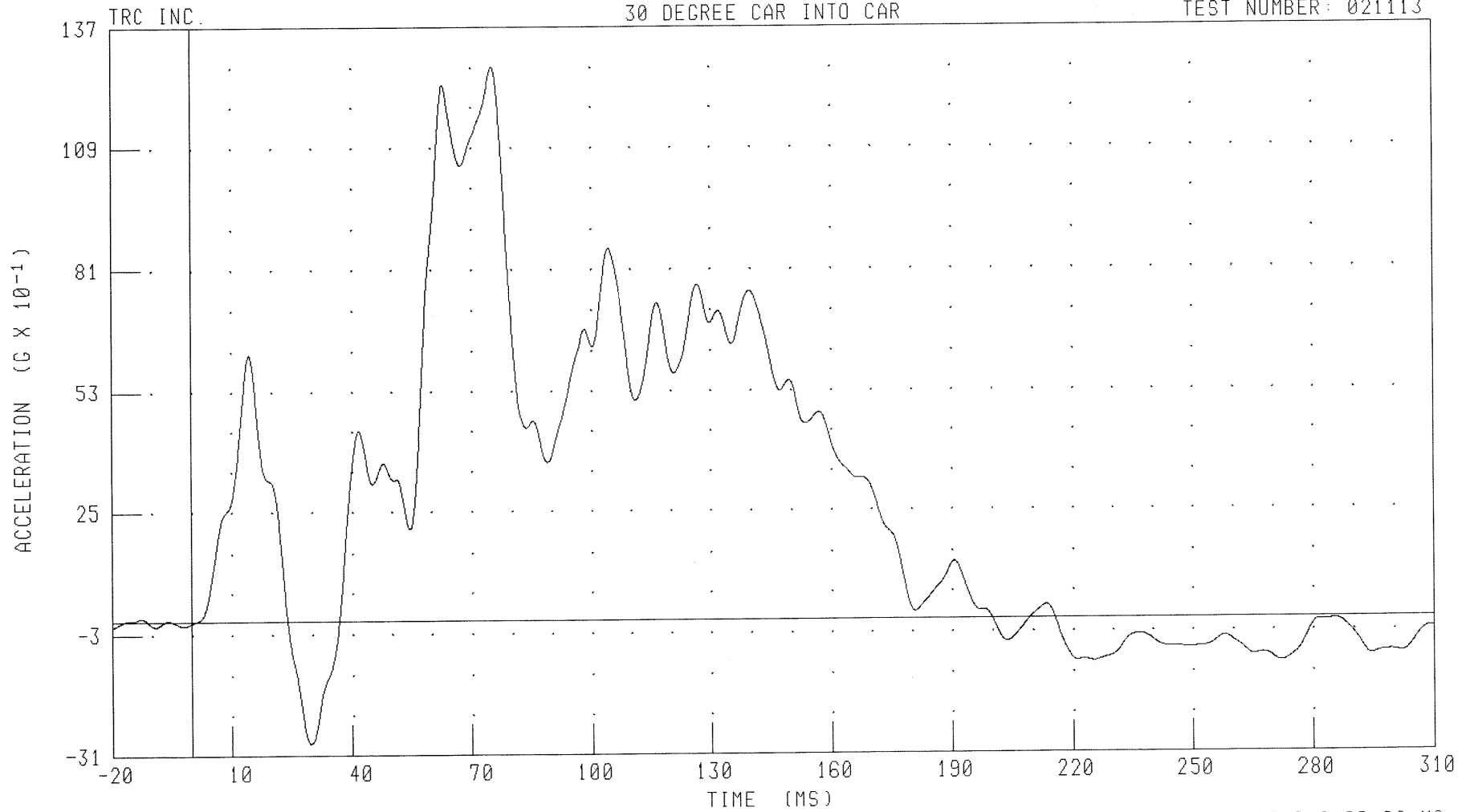
PEAK DATA: 3.61 G @ 33.76 MS; -35.17 G @ 40.80 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

TARGET REAR DECK Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: RDKYG1

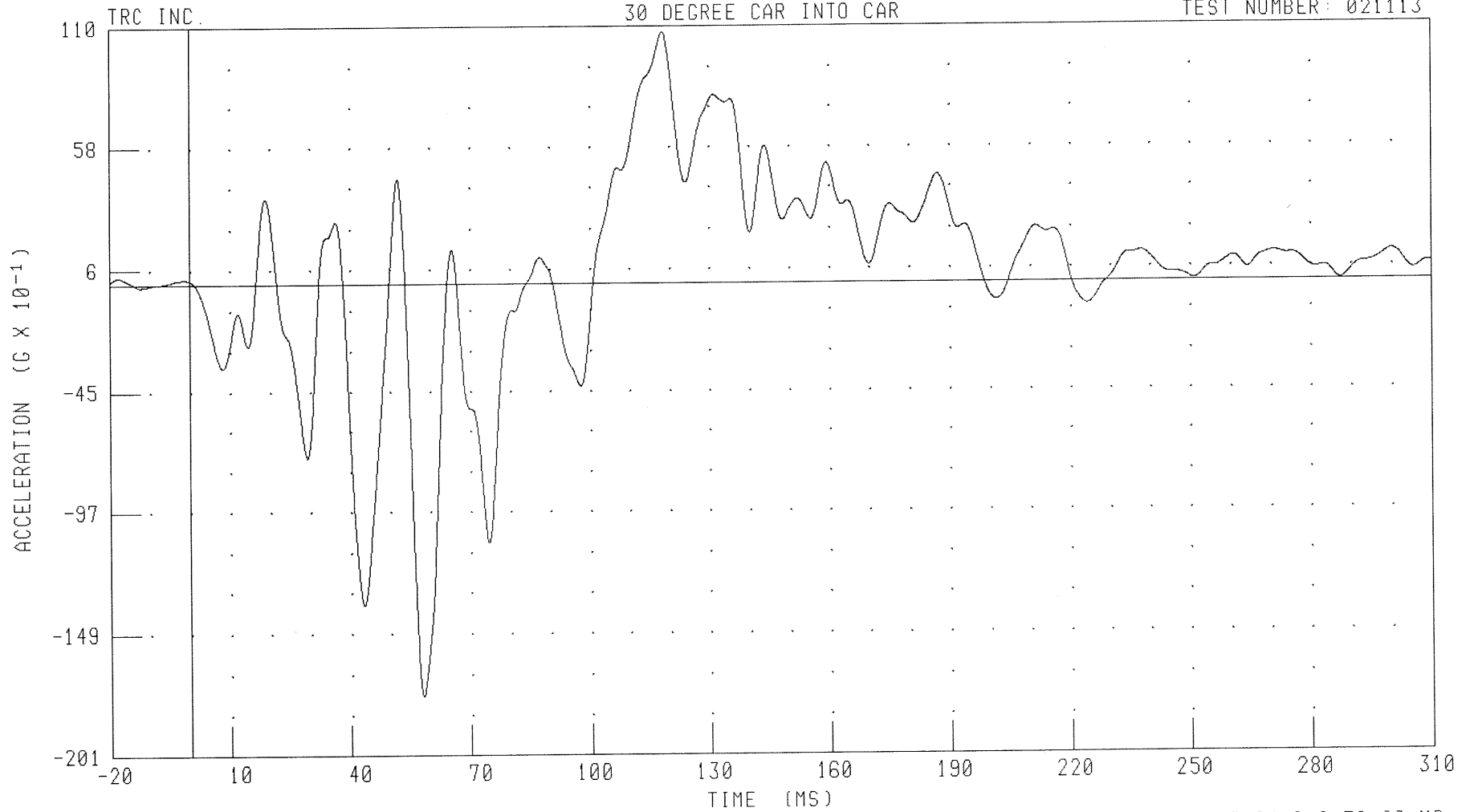
FILTER: CH. CLASS 60

PEAK DATA: 12.78 G @ 75.44 MS; -2.83 G @ 29.60 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET REAR DECK Z-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: RDKZG1

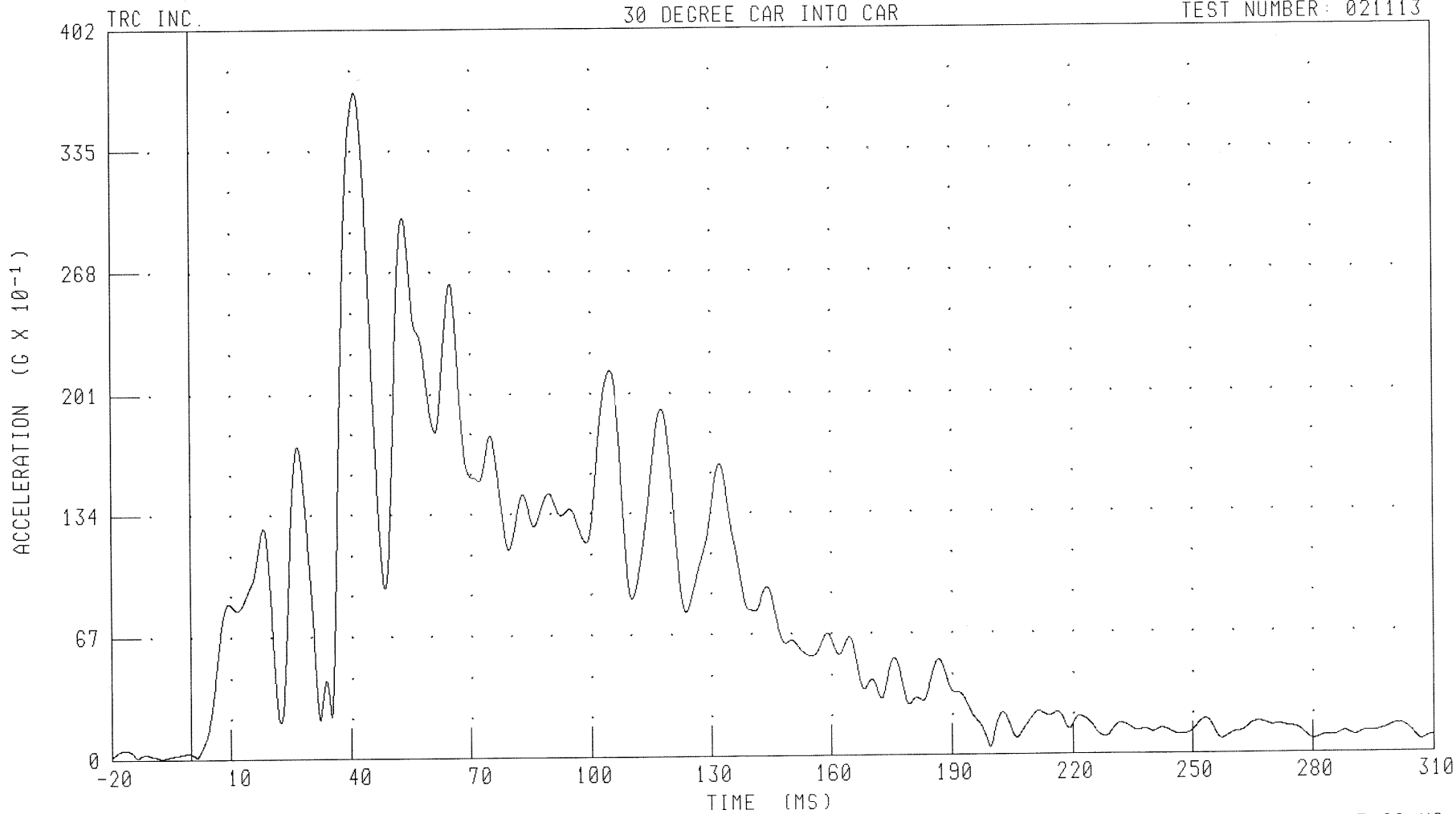
FILTER: CH. CLASS 60

PEAK DATA: 10.75 G @ 118.48 MS; -17.64 G @ 58.00 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET REAR DECK RESULTANT ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



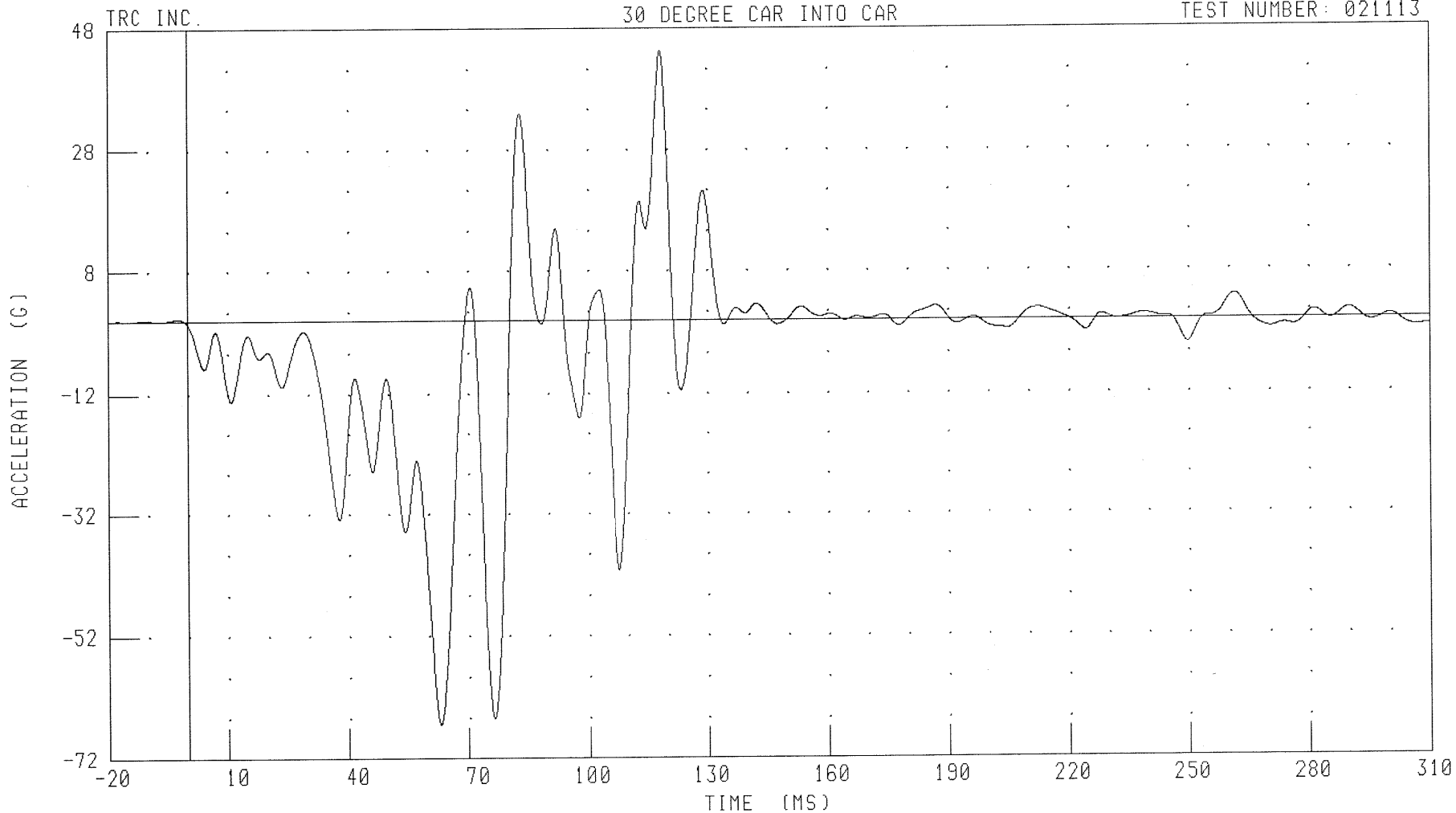
CHANNEL: RDKRG1 FILTER: CH. CLASS 60

PEAK DATA: 36.73 G @ 41.28 MS; 0.03 G @ -7.20 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET LEFT FRONT SILL X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: LFSXG1

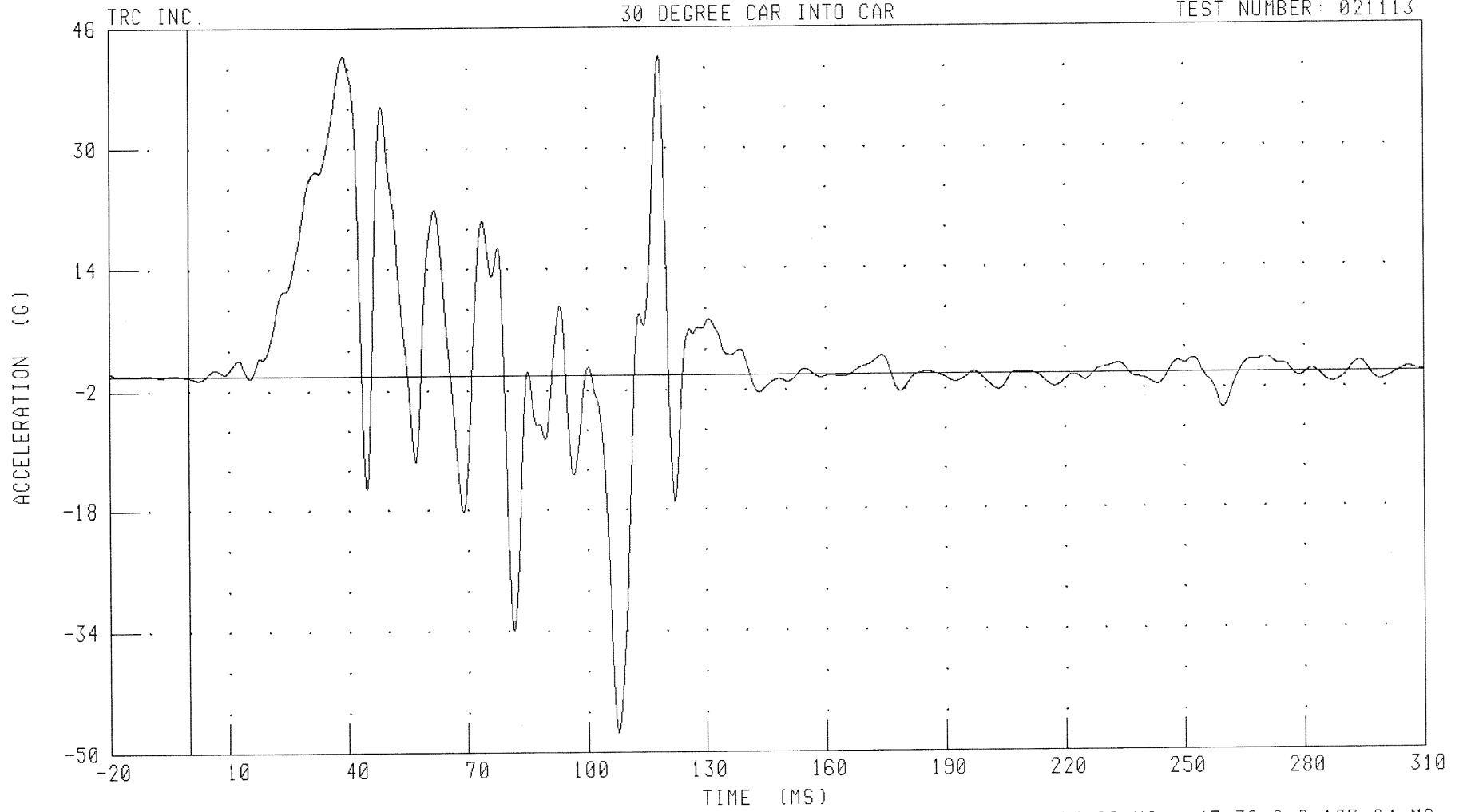
FILTER: CH. CLASS 60

PEAK DATA: 44.32 G @ 118.40 MS; -66.45 G @ 62.96 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET LEFT FRONT SILL Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: LFSYG1

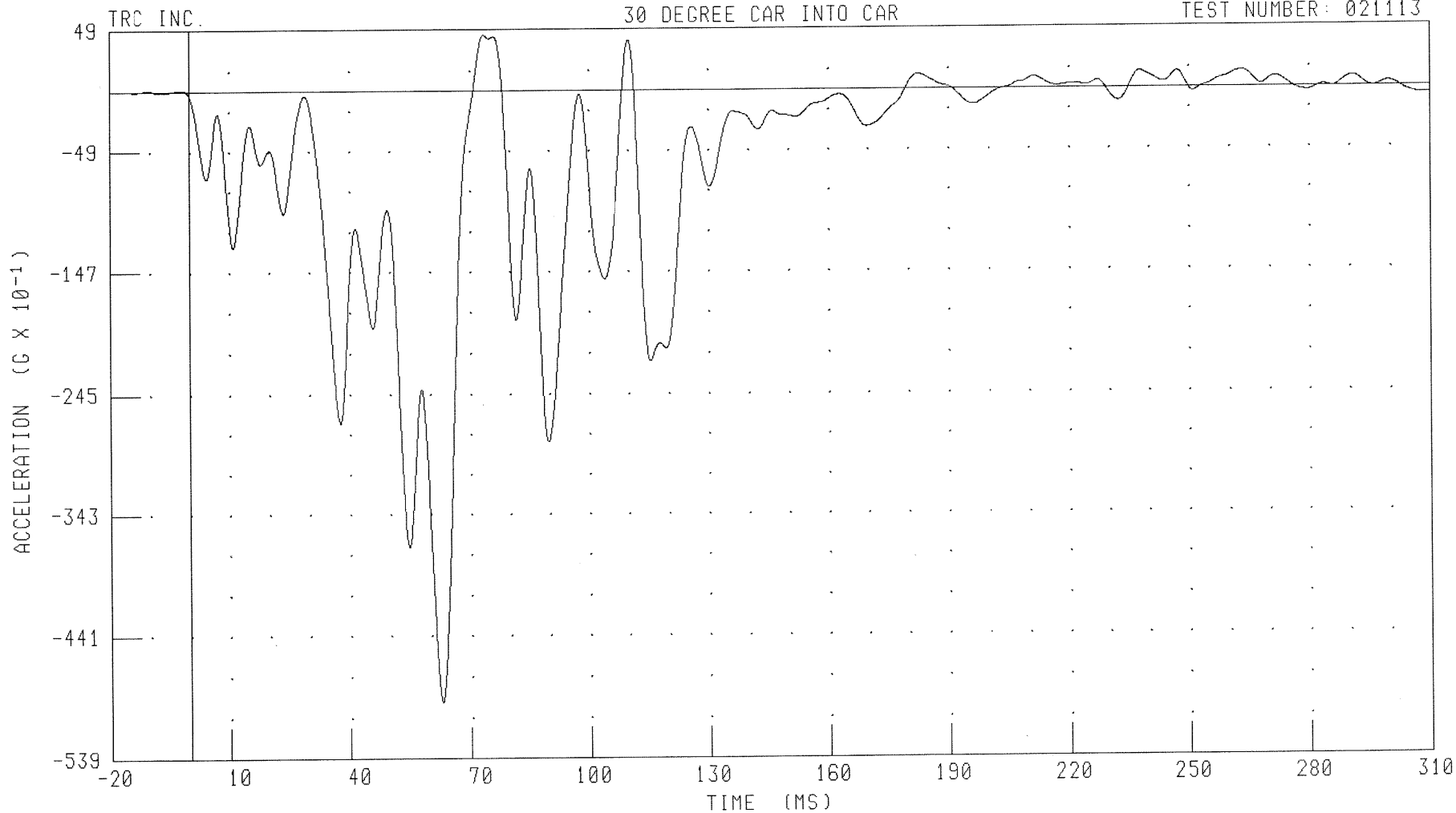
FILTER: CH. CLASS 60

PEAK DATA: 42.25 G @ 38.96 MS; -47.39 G @ 107.84 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET LEFT REAR SILL X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



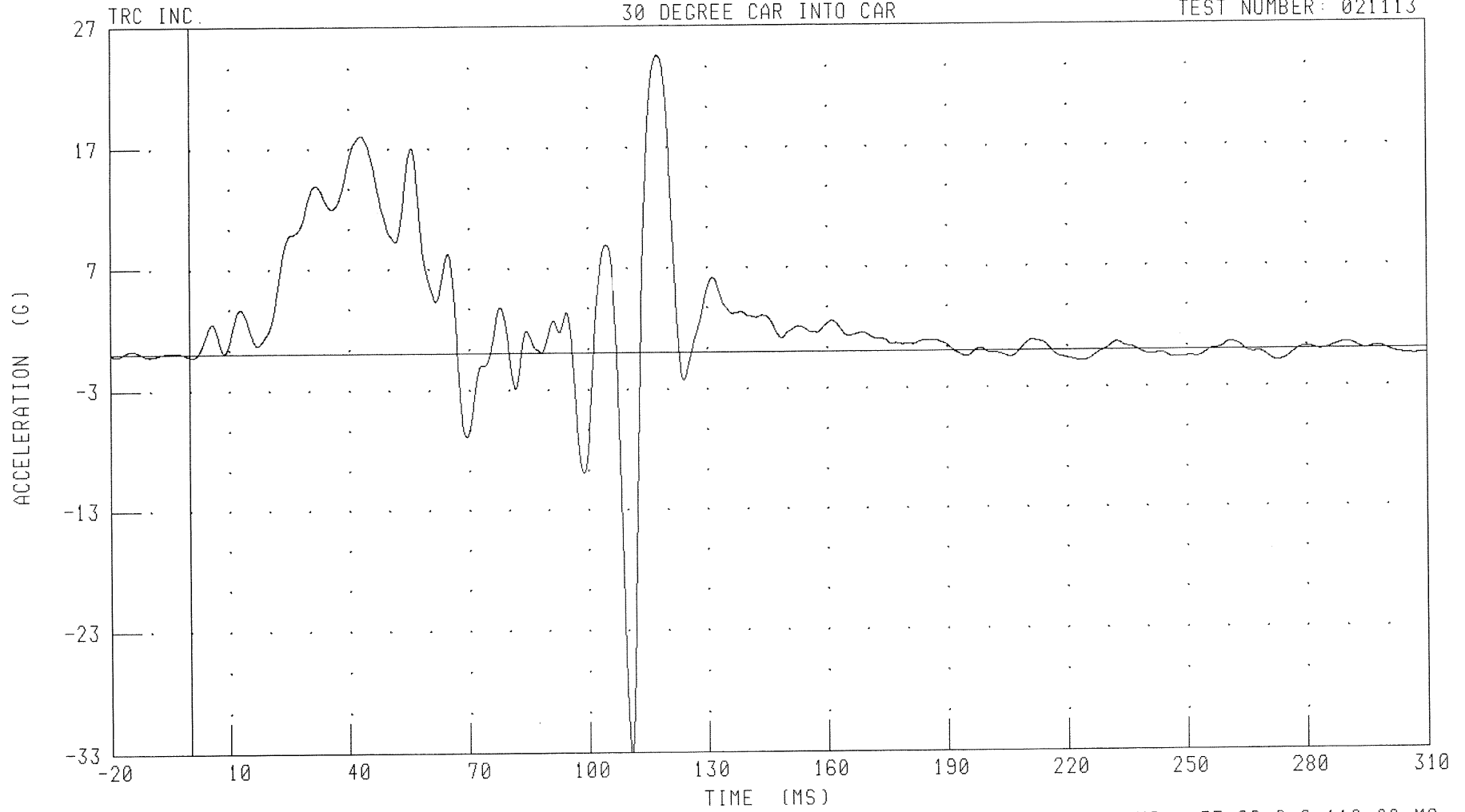
CHANNEL: LRSXG1 FILTER: CH. CLASS 60

PEAK DATA: 4.48 G @ 73.68 MS; -49.40 G @ 62.80 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET LEFT REAR SILL Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



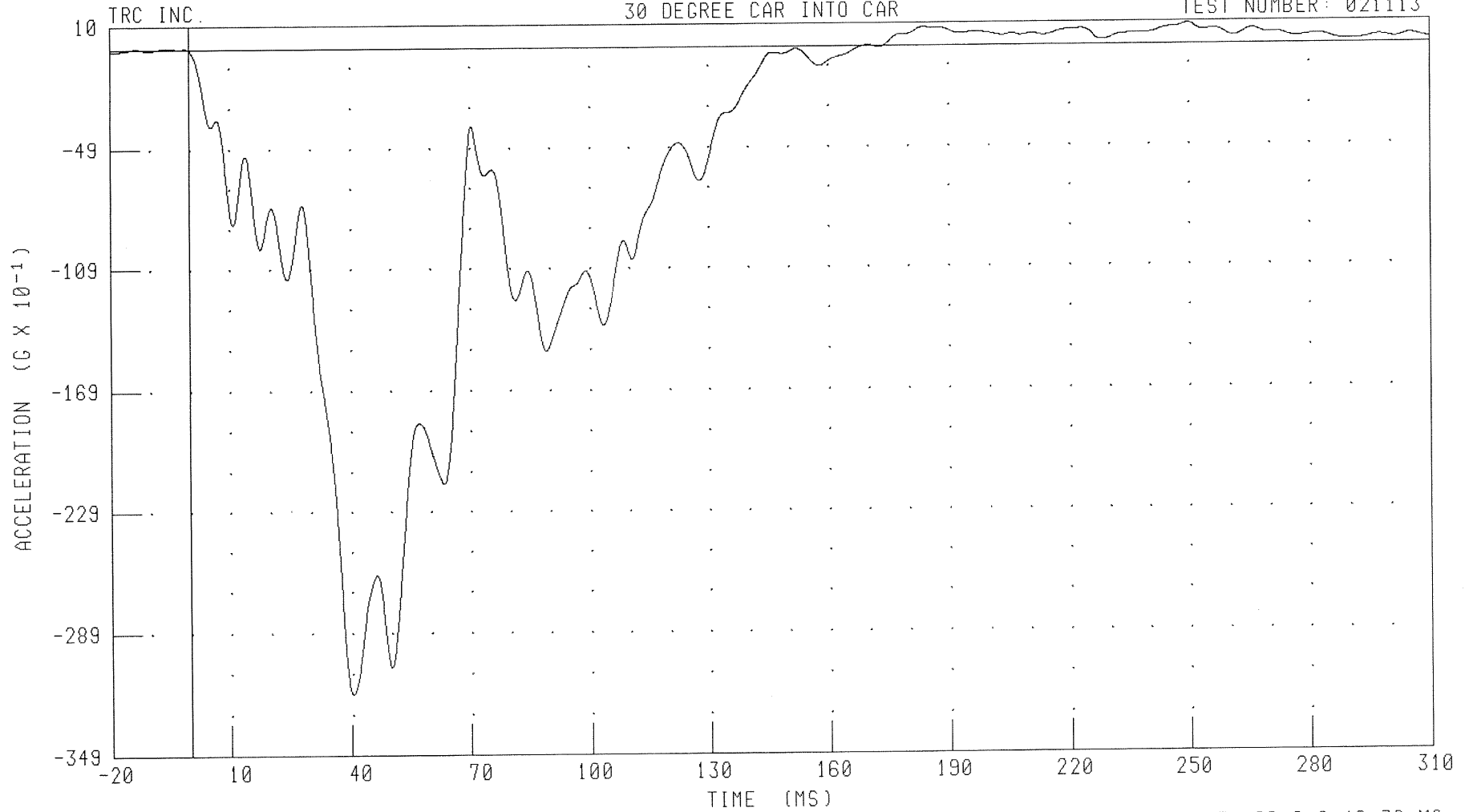
CHANNEL: LRSYG1 FILTER: CH. CLASS 60

PEAK DATA: 24.62 G @ 117.76 MS; -33.28 G @ 110.80 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET RIGHT FRONT SILL X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: RFSXG1

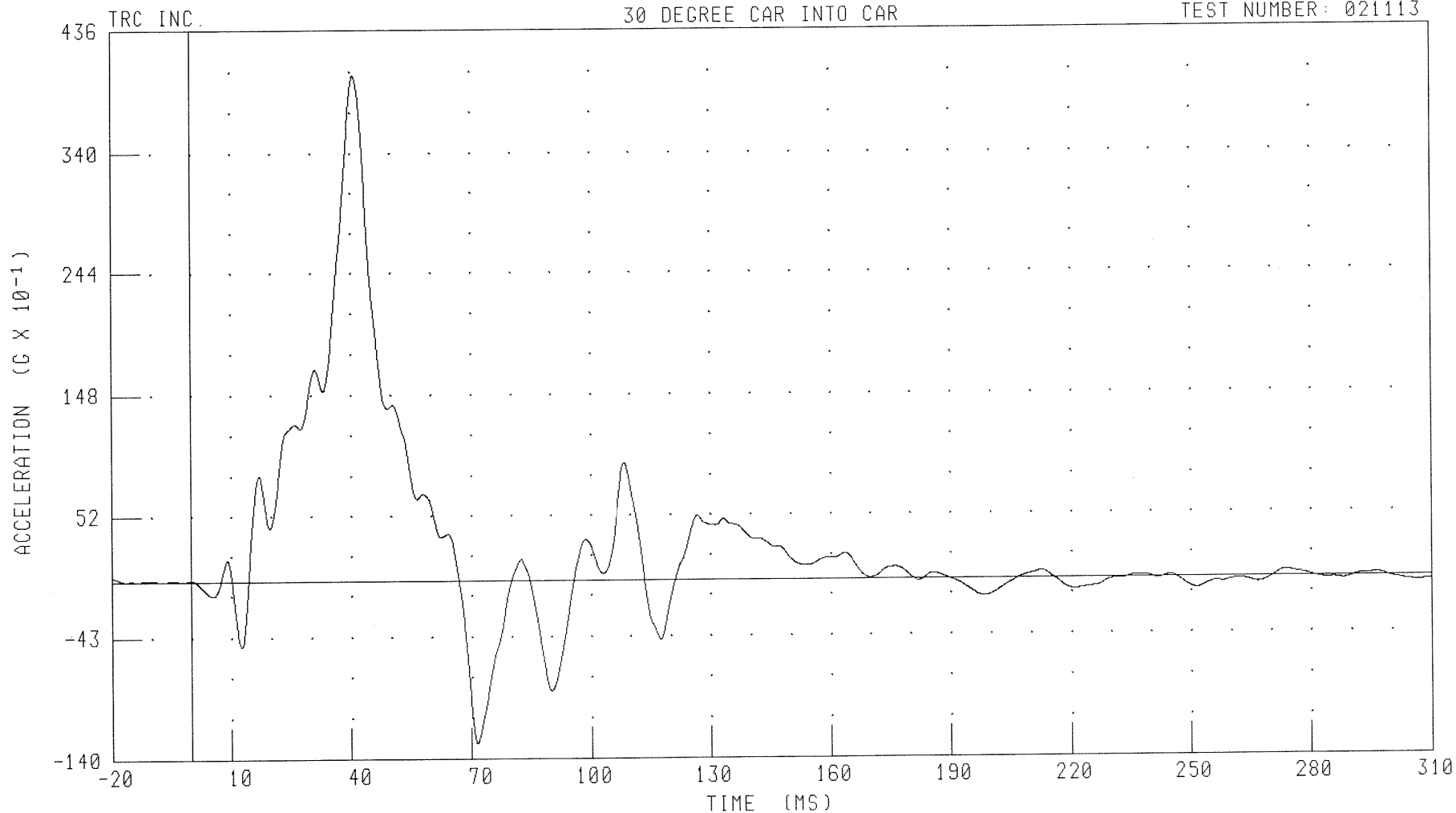
FILTER: CH. CLASS 60

PEAK DATA: 1.00 G @ 250.08 MS; -31.90 G @ 40.32 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET RIGHT FRONT SILL Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



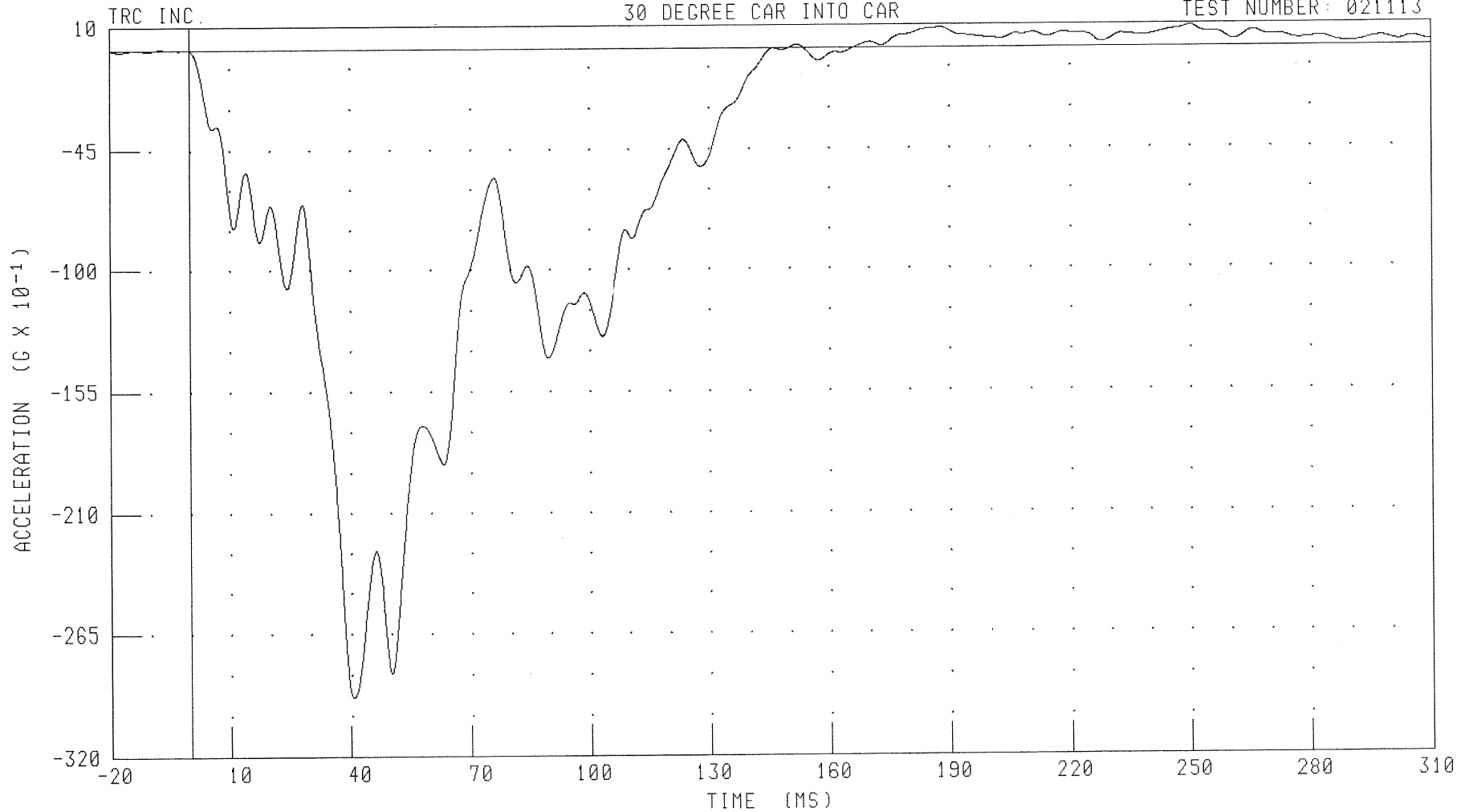
CHANNEL: RFSYG1 FILTER: CH. CLASS 60

PEAK DATA: 40.10 G @ 40.96 MS; -12.80 G @ 71.44 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET RIGHT REAR SILL X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: RRSXG1

FILTER: CH. CLASS 60

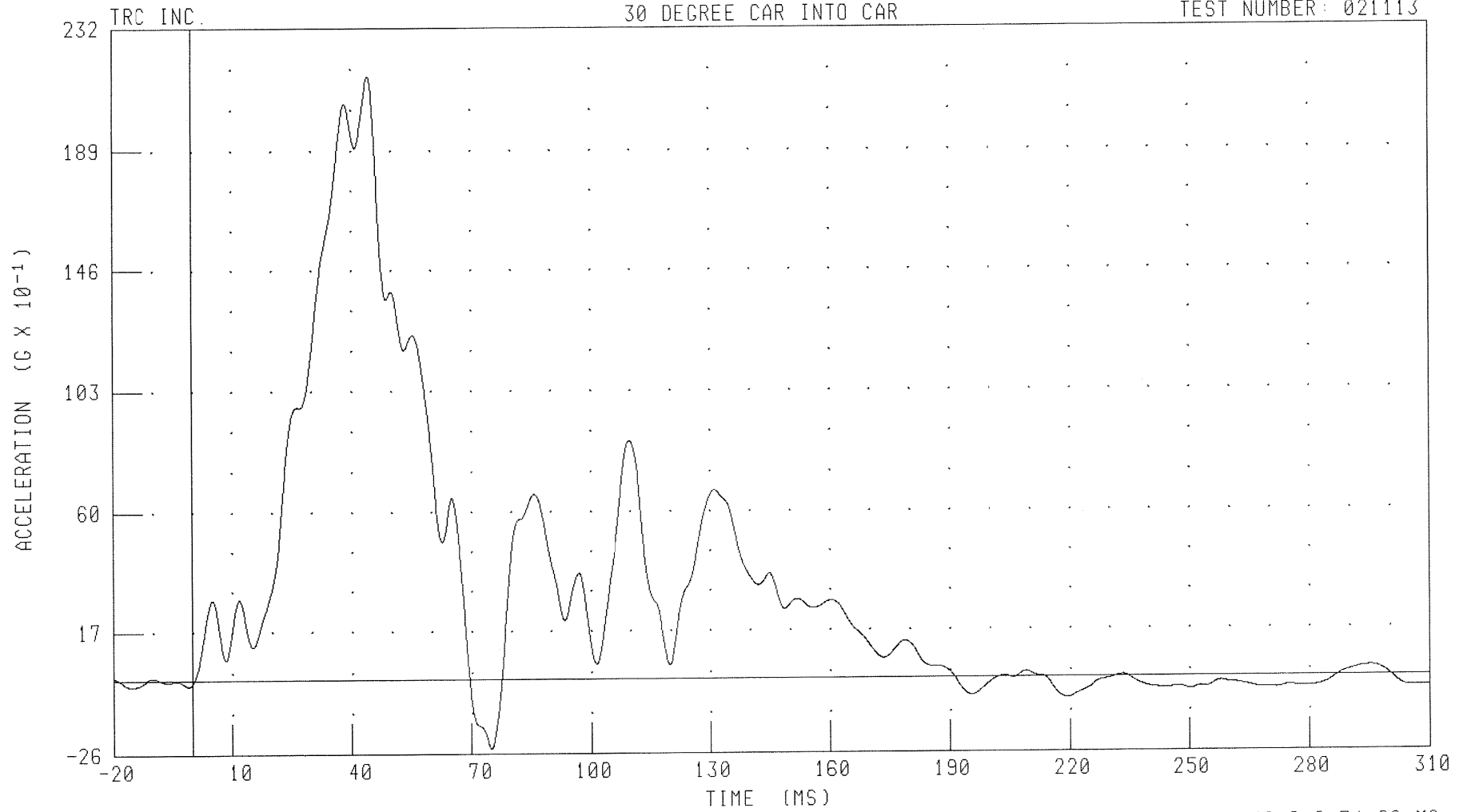
PEAK DATA: 0.92 G @ 250.40 MS; -29.37 G @ 40.64 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

TARGET RIGHT REAR SILL Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



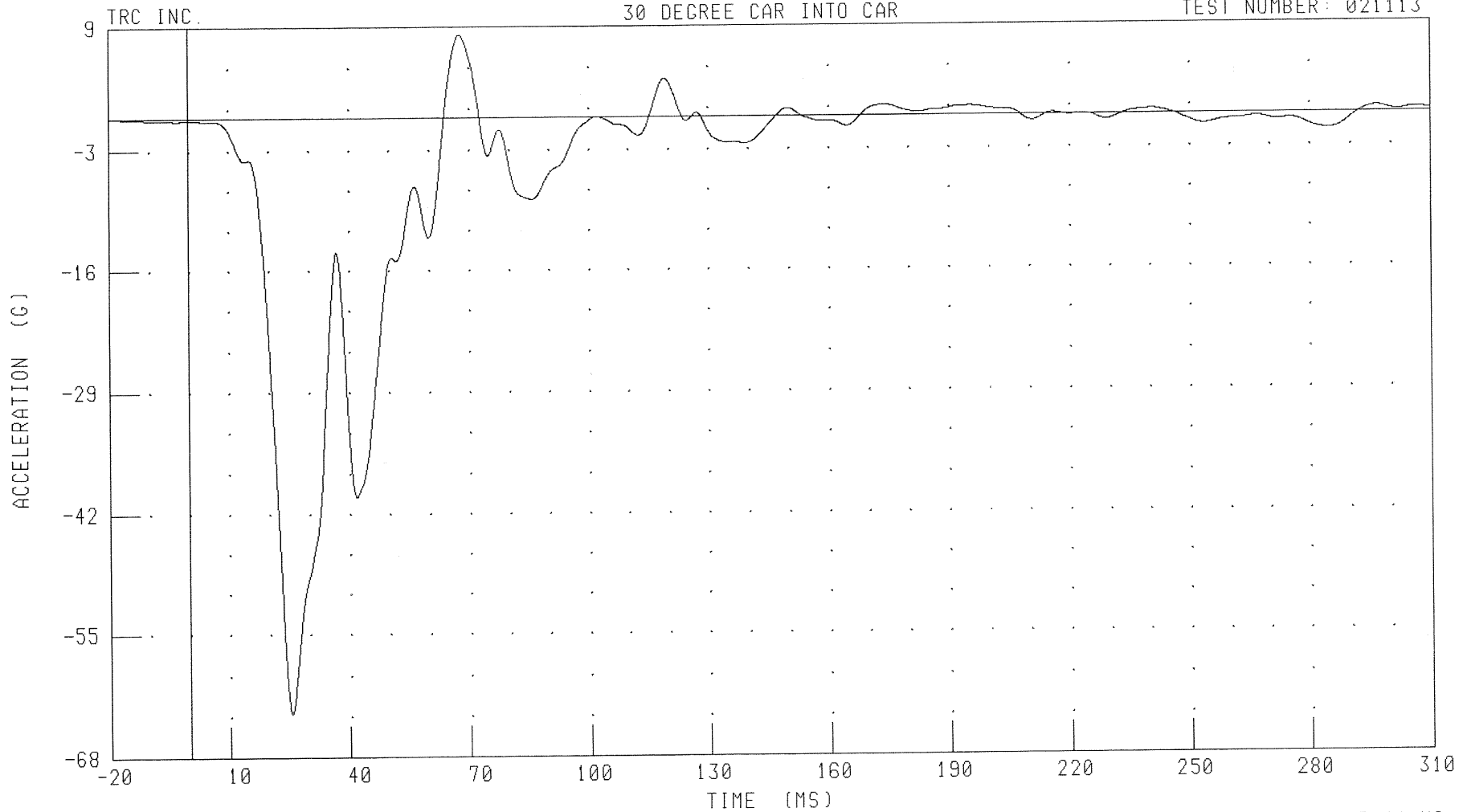
CHANNEL: RRSYG1 FILTER: CH. CLASS 60

PEAK DATA: 21.51 G @ 44.40 MS; -2.42 G @ 74.96 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET ENGINE TOP X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



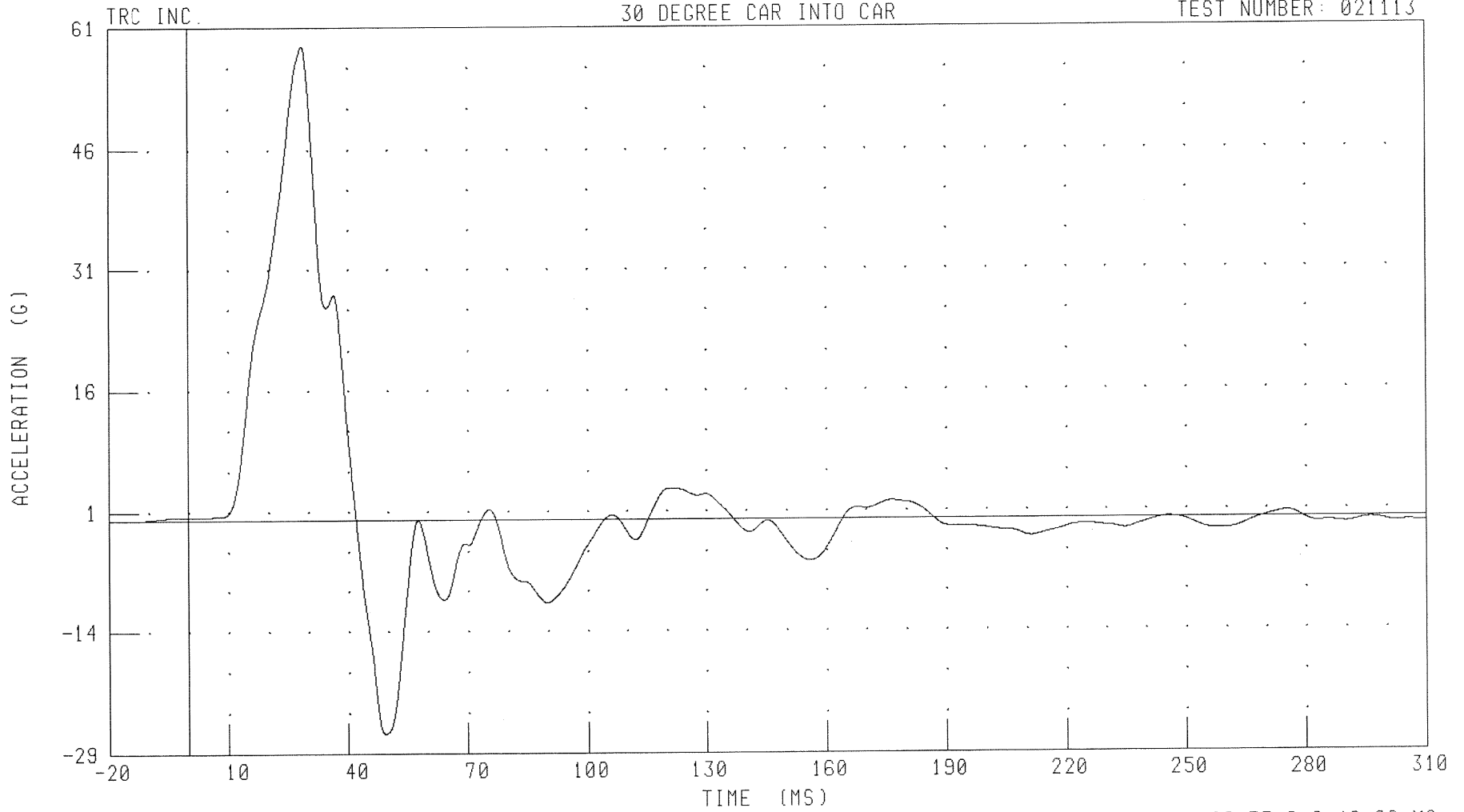
CHANNEL: ENGXC1 FILTER: CH. CLASS 60

PEAK DATA: 8.80 G @ 67.76 MS; -63.78 G @ 25.44 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET ENGINE TOP Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



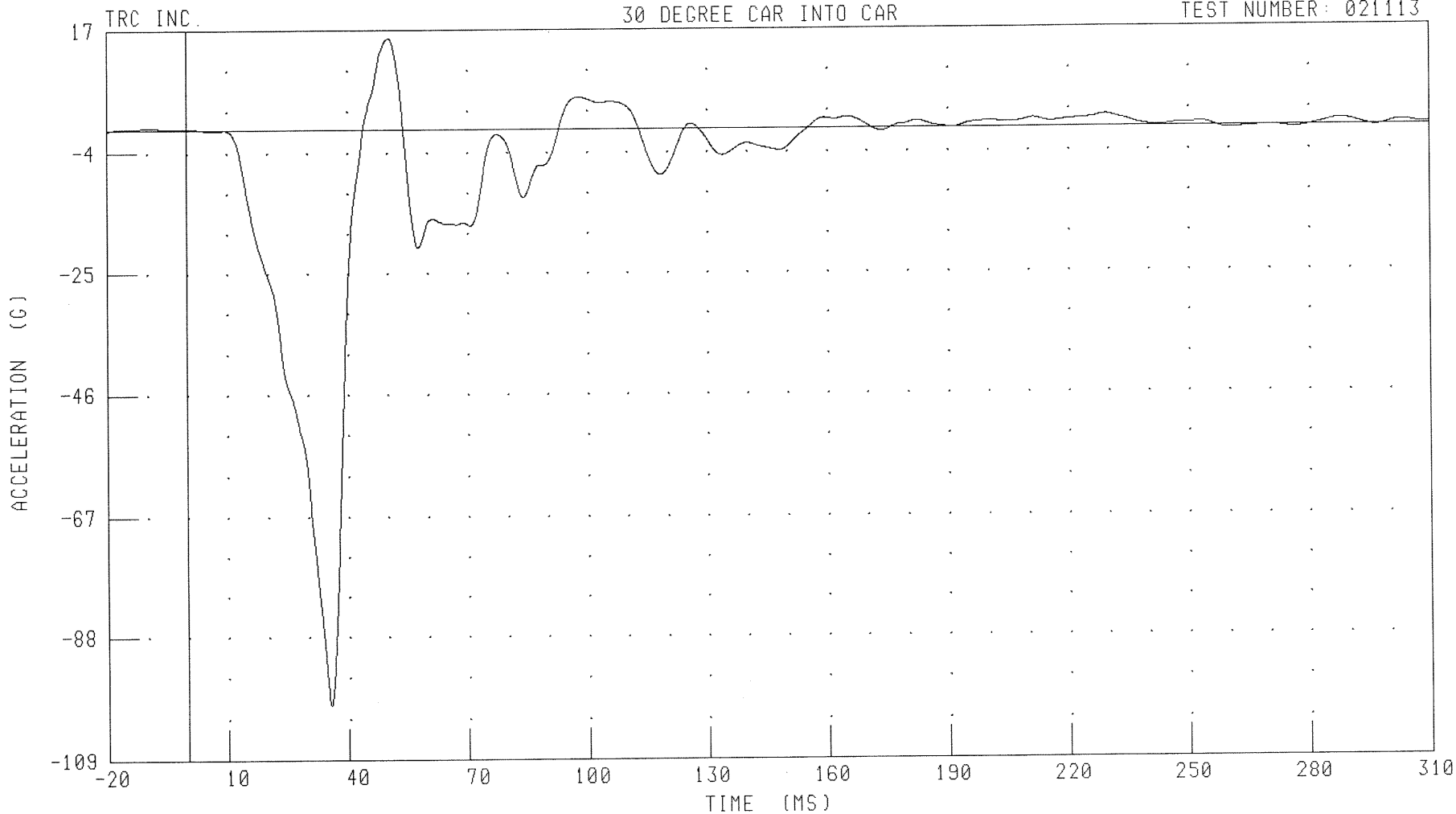
CHANNEL: ENCYG1 FILTER: CH. CLASS 60

PEAK DATA: 58.62 G @ 28.56 MS; -26.57 G @ 49.20 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET ENGINE BOTTOM X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



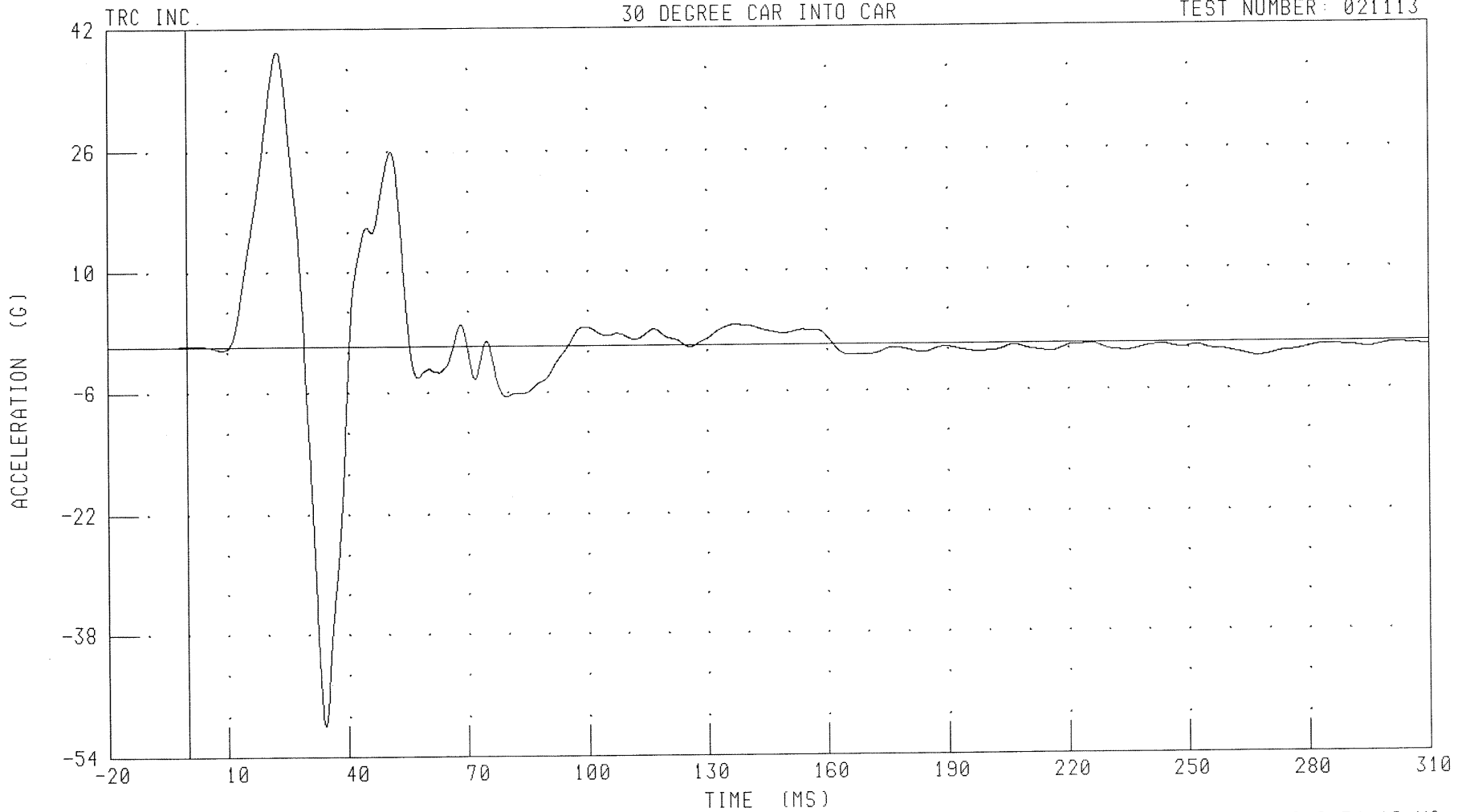
CHANNEL: ENGCG2 FILTER: CH. CLASS 60

PEAK DATA: 15.57 G @ 50.48 MS; -99.62 G @ 35.60 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET ENGINE BOTTOM Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: ENCYG2

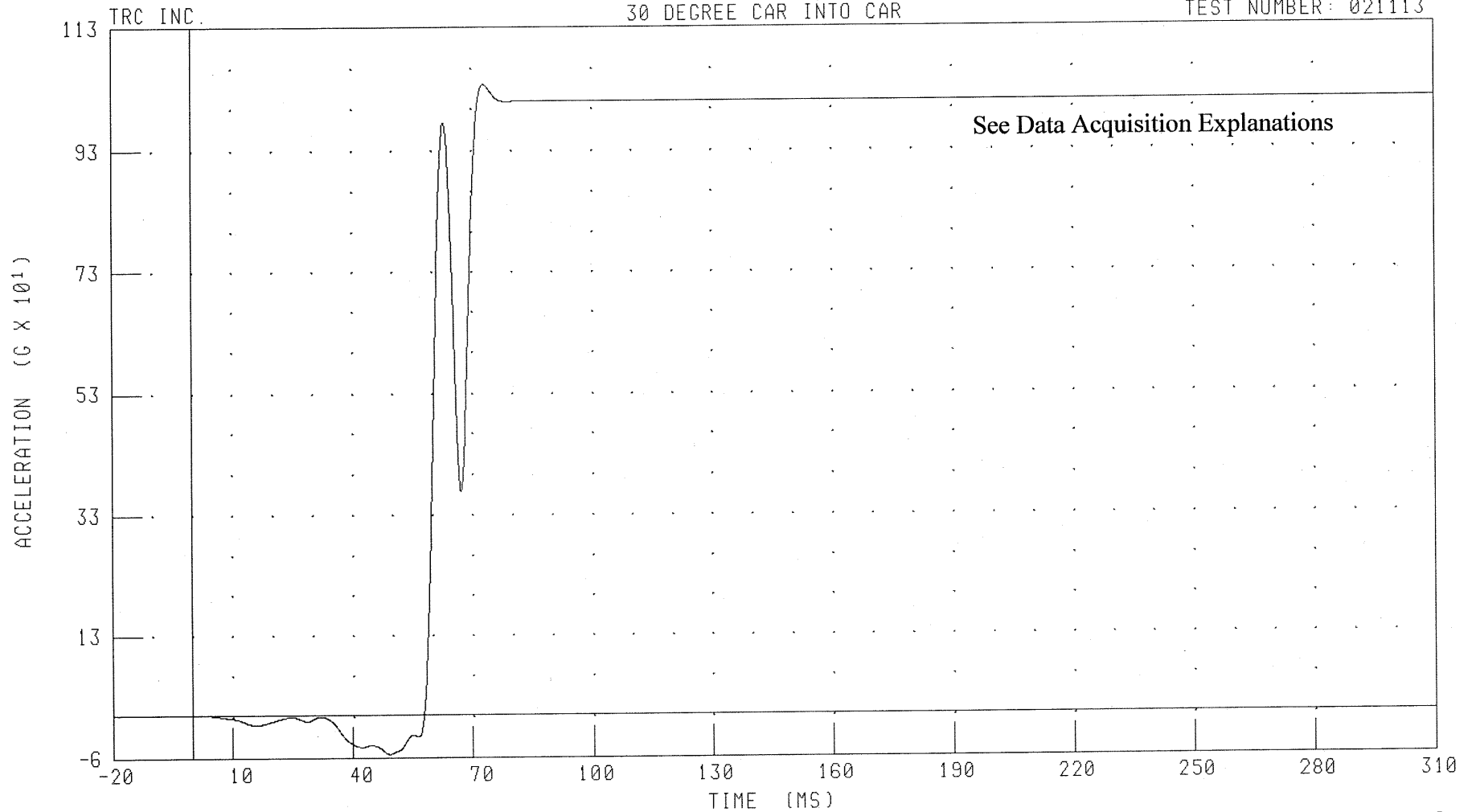
FILTER: CH. CLASS 60

PEAK DATA: 38.98 G @ 22.72 MS; -49.98 G @ 34.16 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET INSTRUMENT PANEL CENTER X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



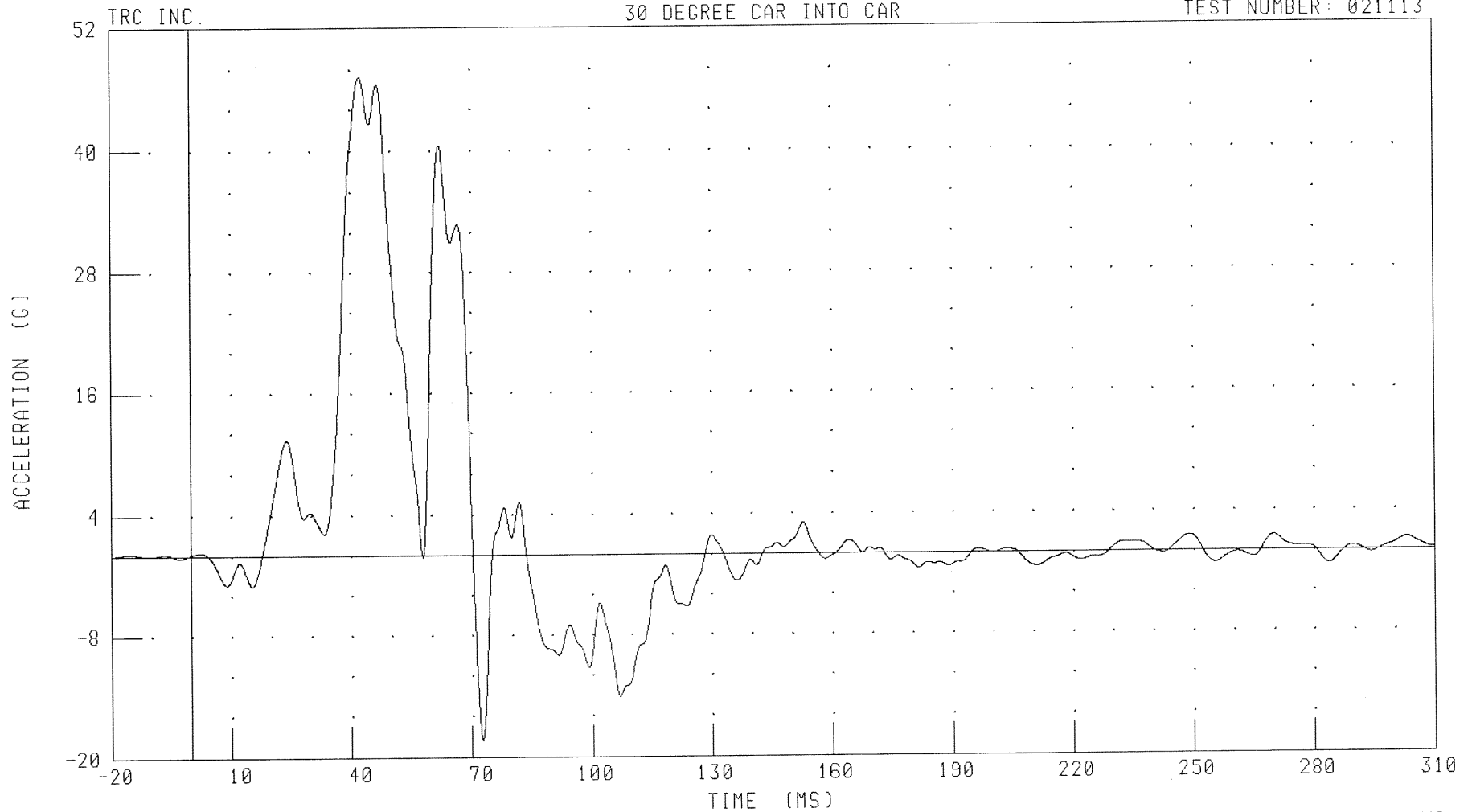
CHANNEL: DPCXG1 FILTER: CH. CLASS 60

PEAK DATA: 1037.87 G @ 73.28 MS; -63.53 G @ 49.12 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET INSTRUMENT PANEL CENTER Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: DPCYG1

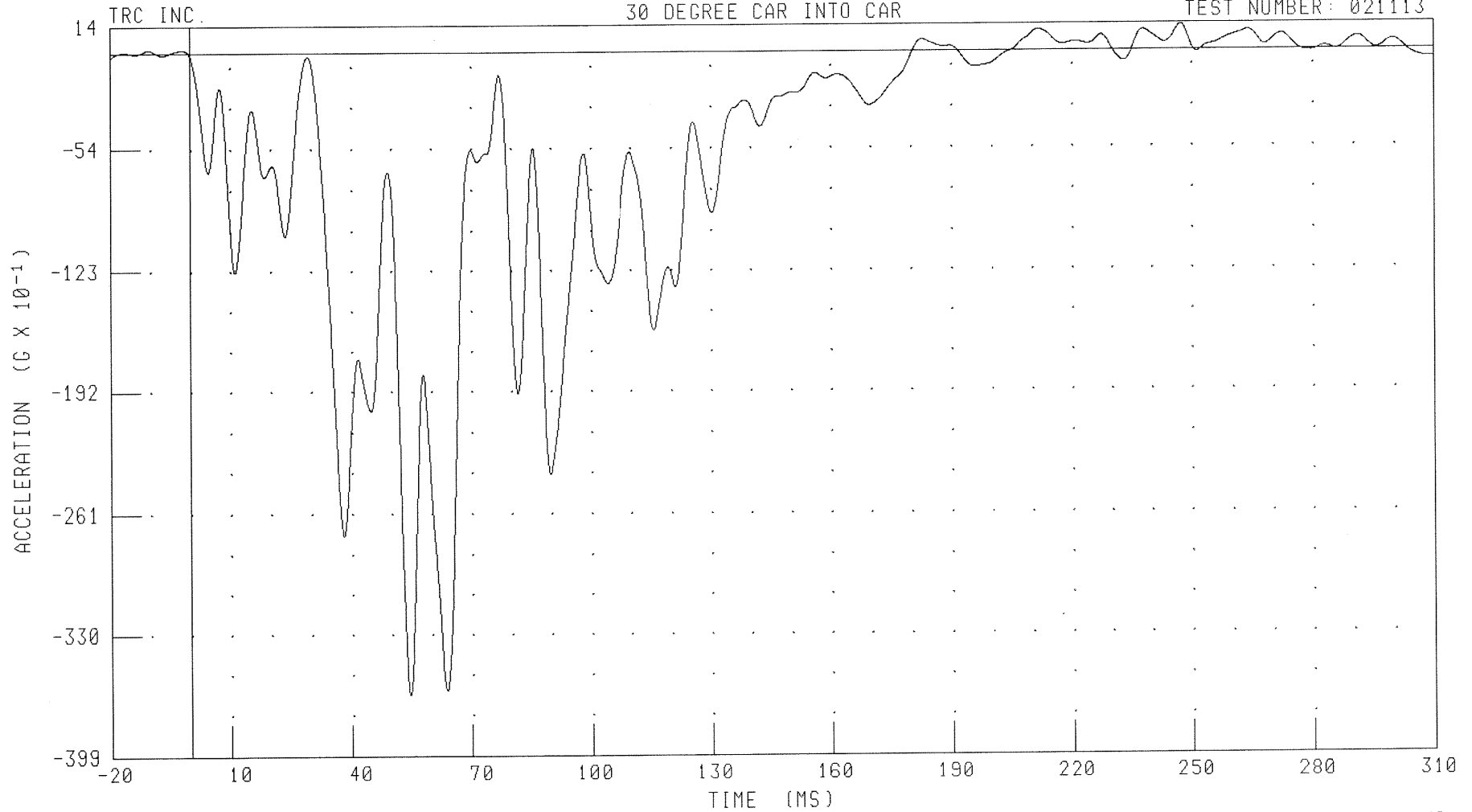
FILTER: CH. CLASS 60

PEAK DATA: 47.23 G @ 42.48 MS; -18.43 G @ 72.64 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET LEFT REAR SEAT CROSSMEMBER X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: LRXXG1

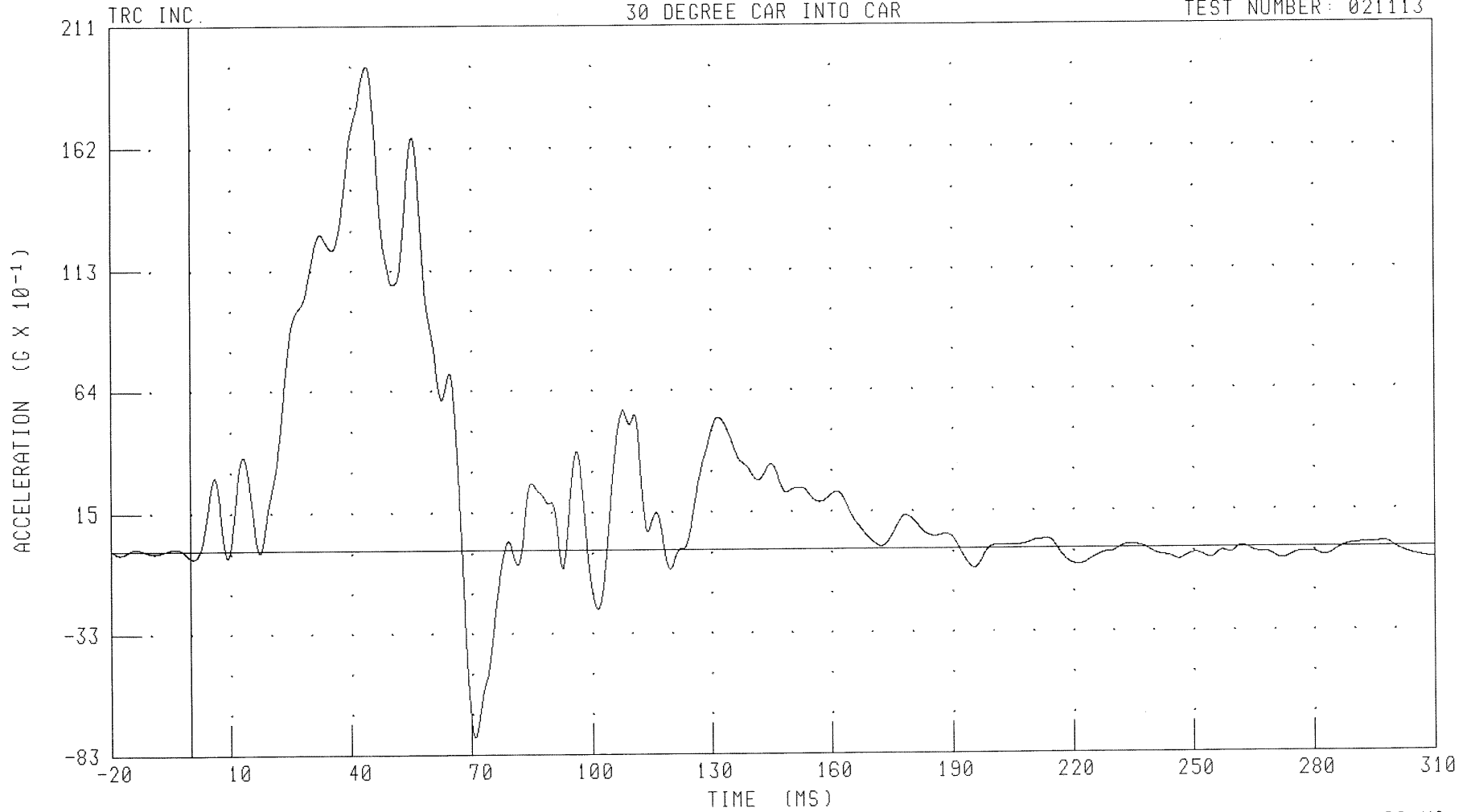
FILTER: CH. CLASS 60

PEAK DATA: 1.41 G @ 247.44 MS; -36.49 G @ 54.48 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET LEFT REAR SEAT CROSSMEMBER Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: LRXYG1

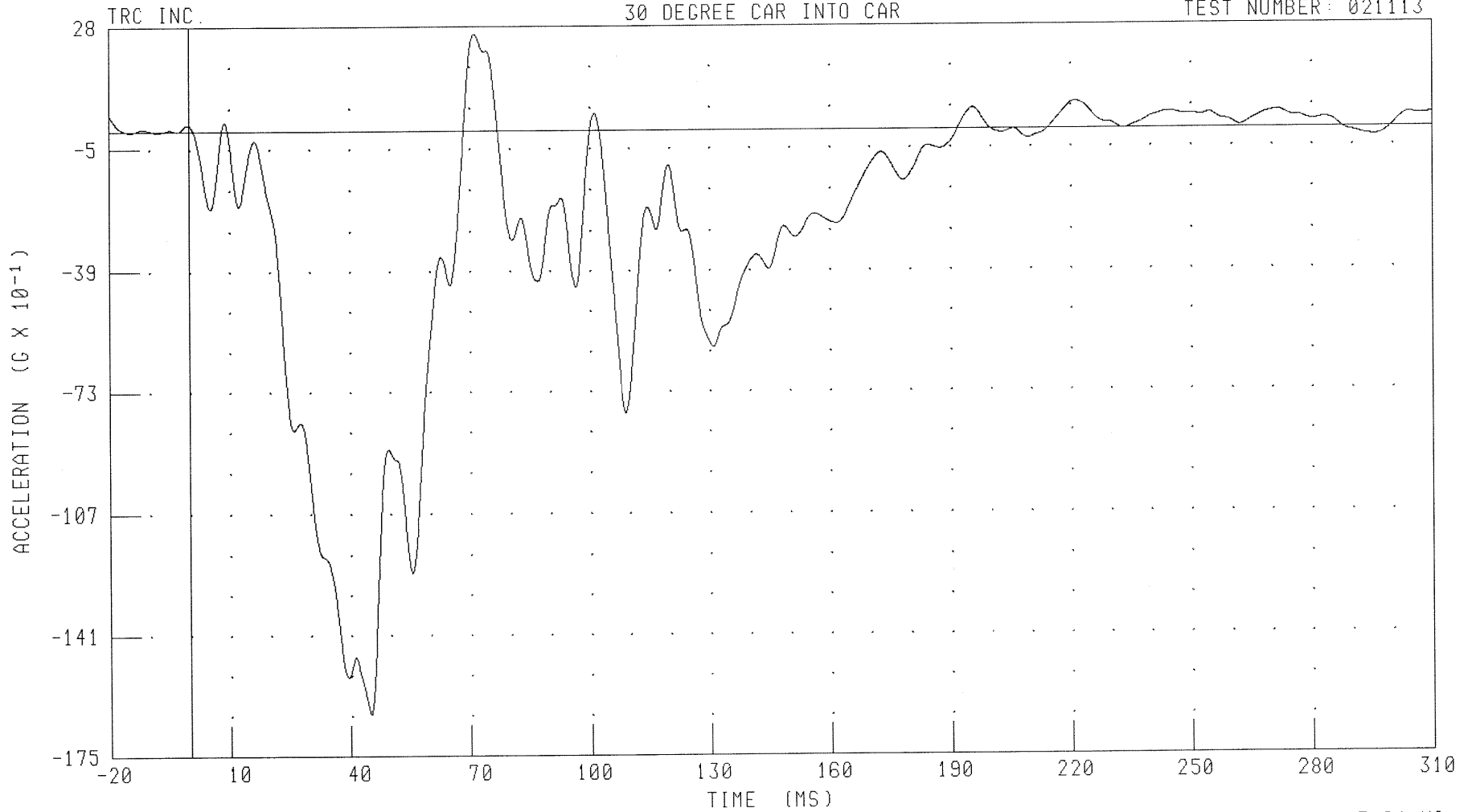
FILTER: CH. CLASS 60

PEAK DATA: 19.47 G @ 44.08 MS; -7.61 G @ 70.80 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET RIGHT REAR SEAT CROSSMEMBER X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: RRXXG1

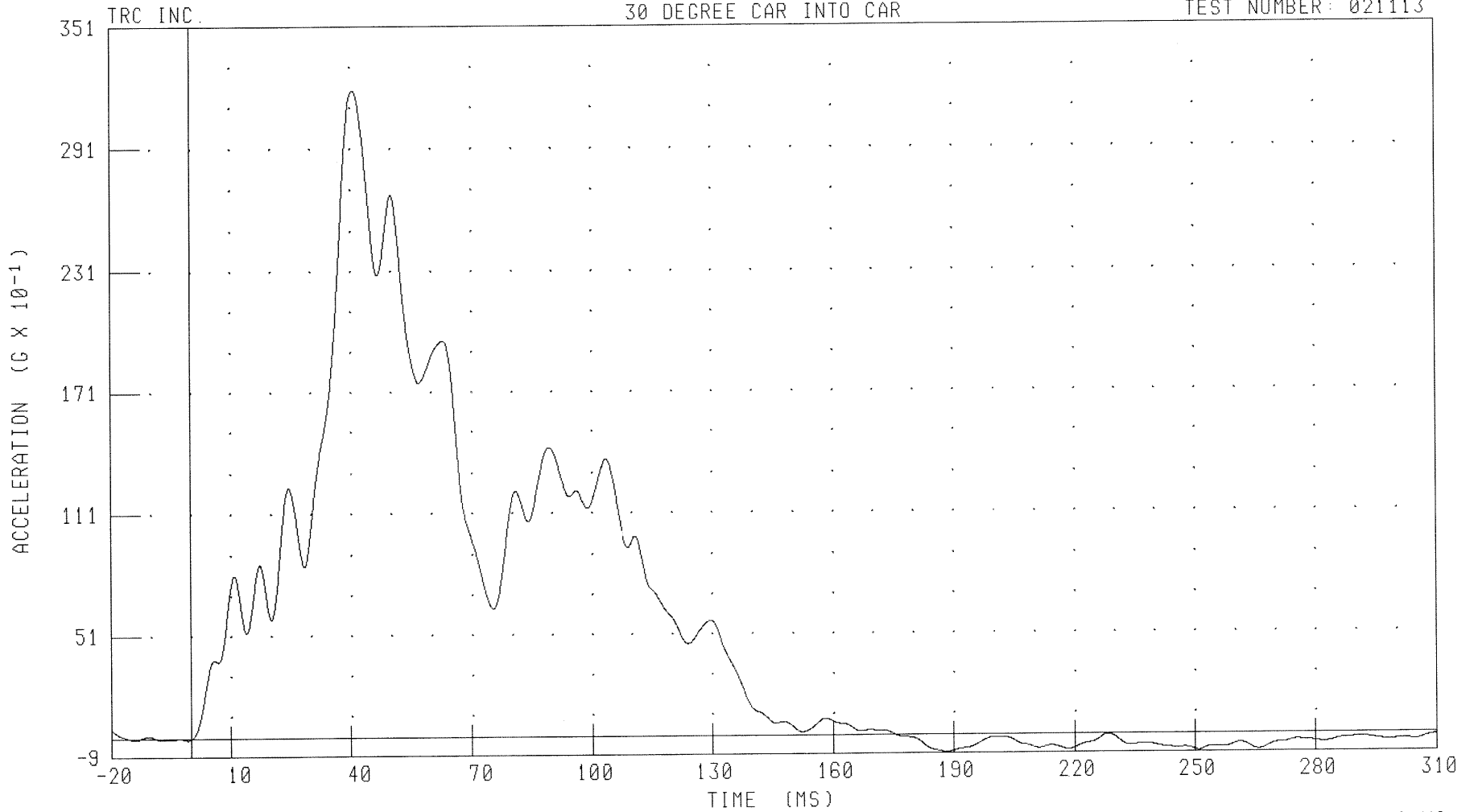
FILTER: CH. CLASS 60

PEAK DATA: 2.69 G @ 71.28 MS; -16.33 G @ 45.04 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET RIGHT REAR SEAT CROSSMEMBER Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: RRXYG1

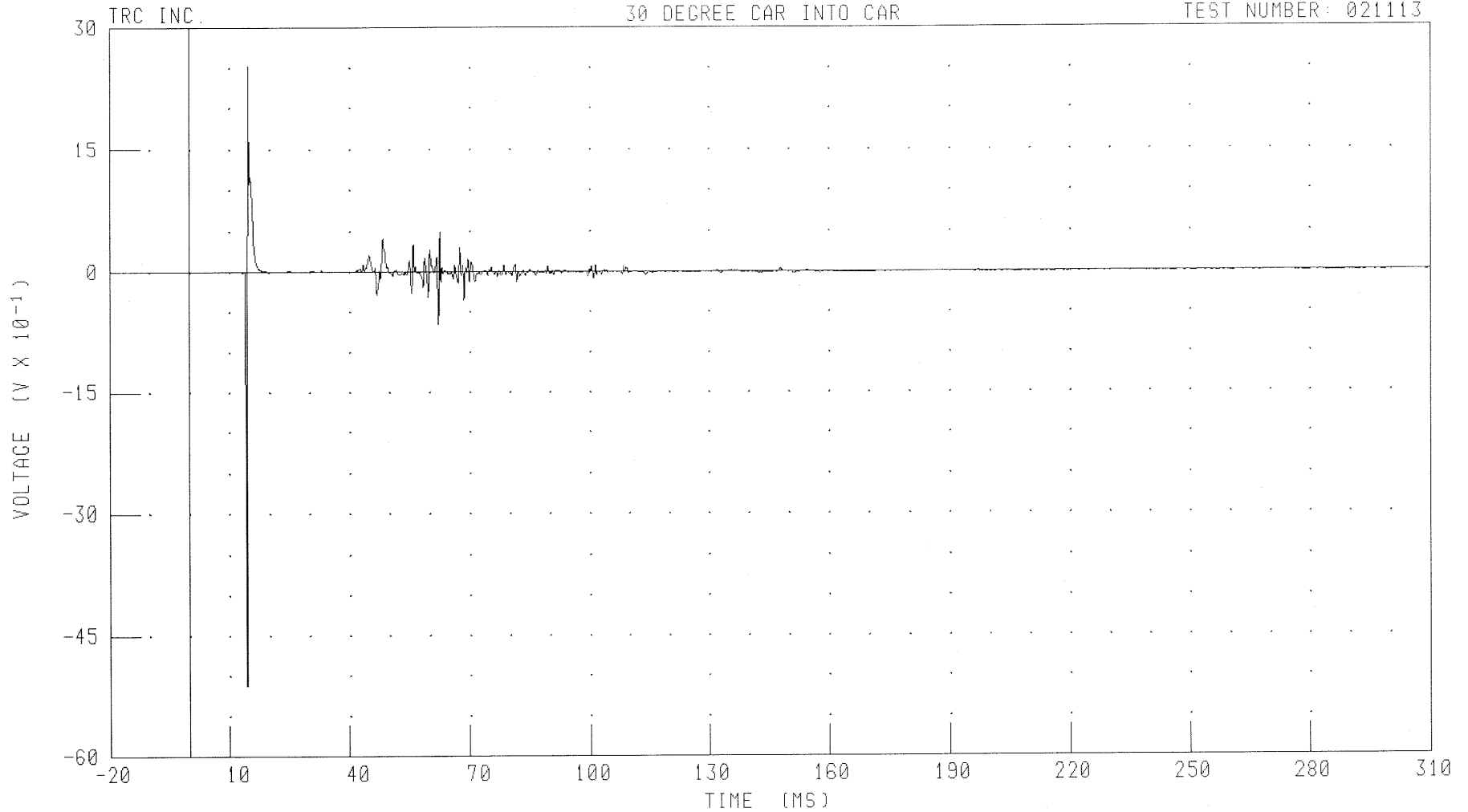
FILTER: CH. CLASS 60

PEAK DATA: 31.93 G @ 40.80 MS; -0.85 G @ 188.16 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
TARGET DRIVER AIRBAG EVENT

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: DABET1

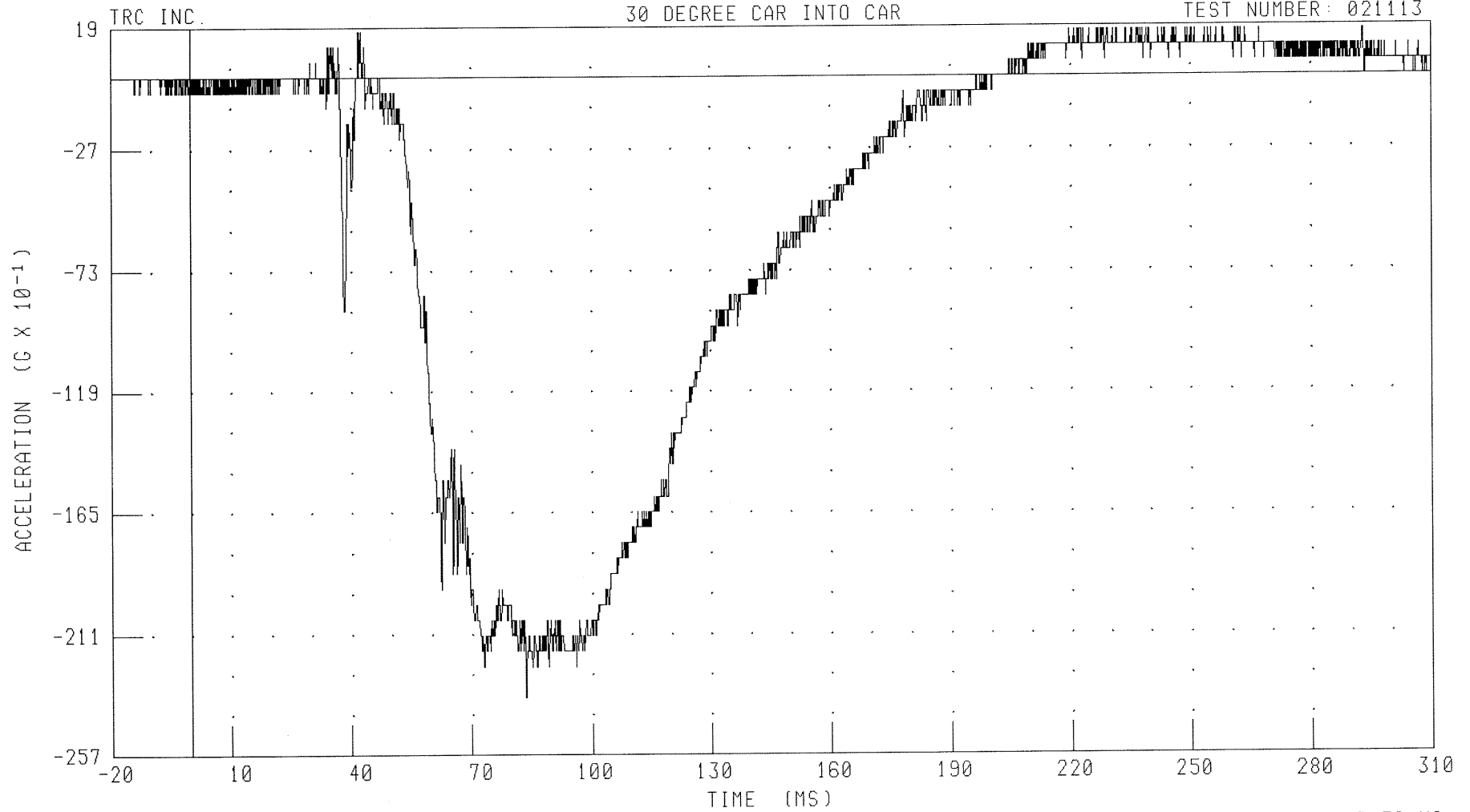
FILTER: CH. CLASS 1000

PEAK DATA: 2.52 V @ 14.72 MS; -5.12 V @ 14.24 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

BULLET DRIVER HEAD X-AXIS ACCELERATION

TEST NUMBER: 021113



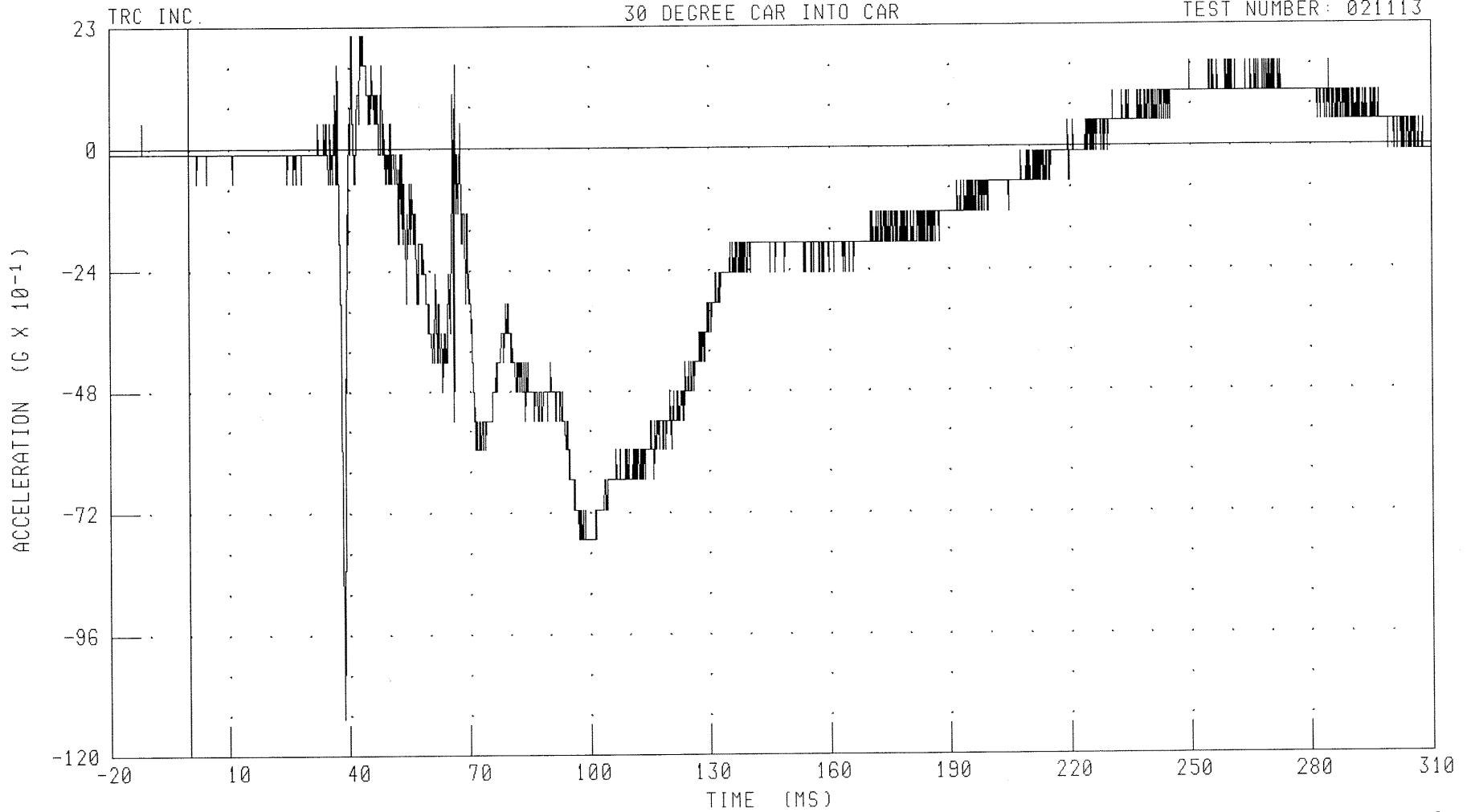
CHANNEL: HEDXGA FILTER: CH. CLASS 1000

PEAK DATA: 1.76 G @ 42.00 MS; -23.51 G @ 83.36 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER HEAD Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: HEDYGA

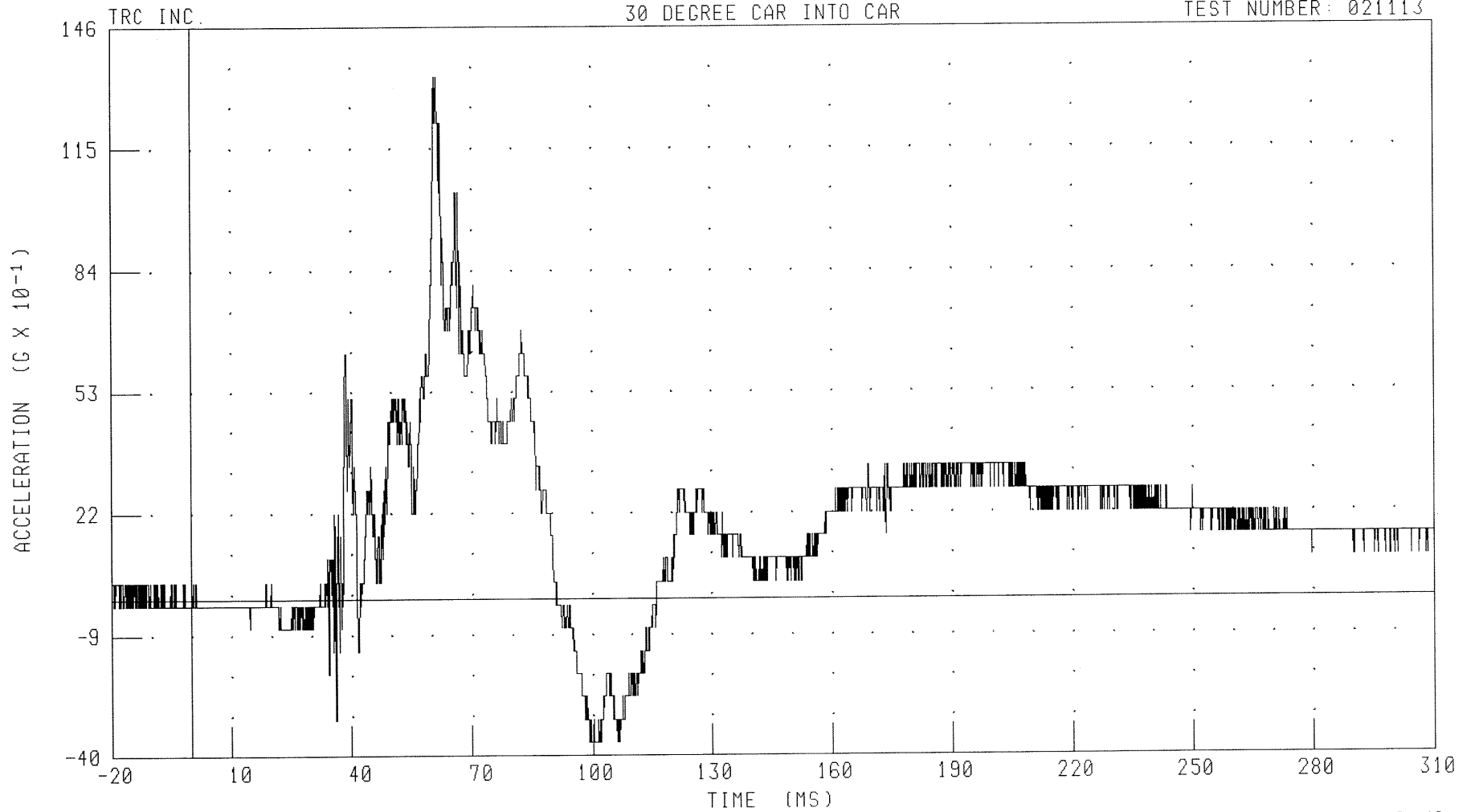
FILTER: CH. CLASS 1000

PEAK DATA: 2.25 G @ 40.72 MS; -11.26 G @ 38.64 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER HEAD Z-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: HEDZGA

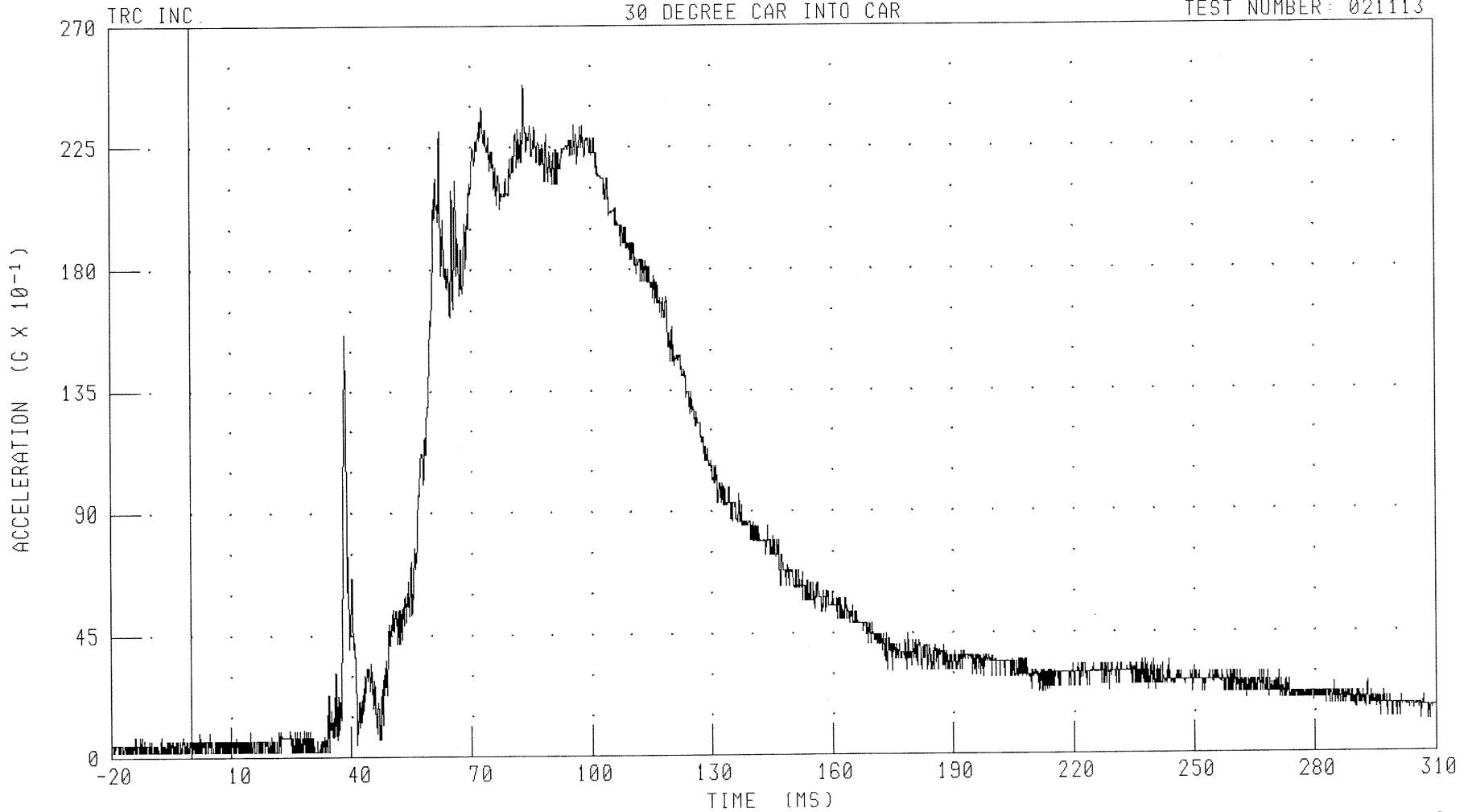
FILTER: CH. CLASS 1000

PEAK DATA: 13.31 G @ 60.88 MS; -3.66 G @ 99.12 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER HEAD RESULTANT ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: HEDRGA

FILTER: CH. CLASS 1000

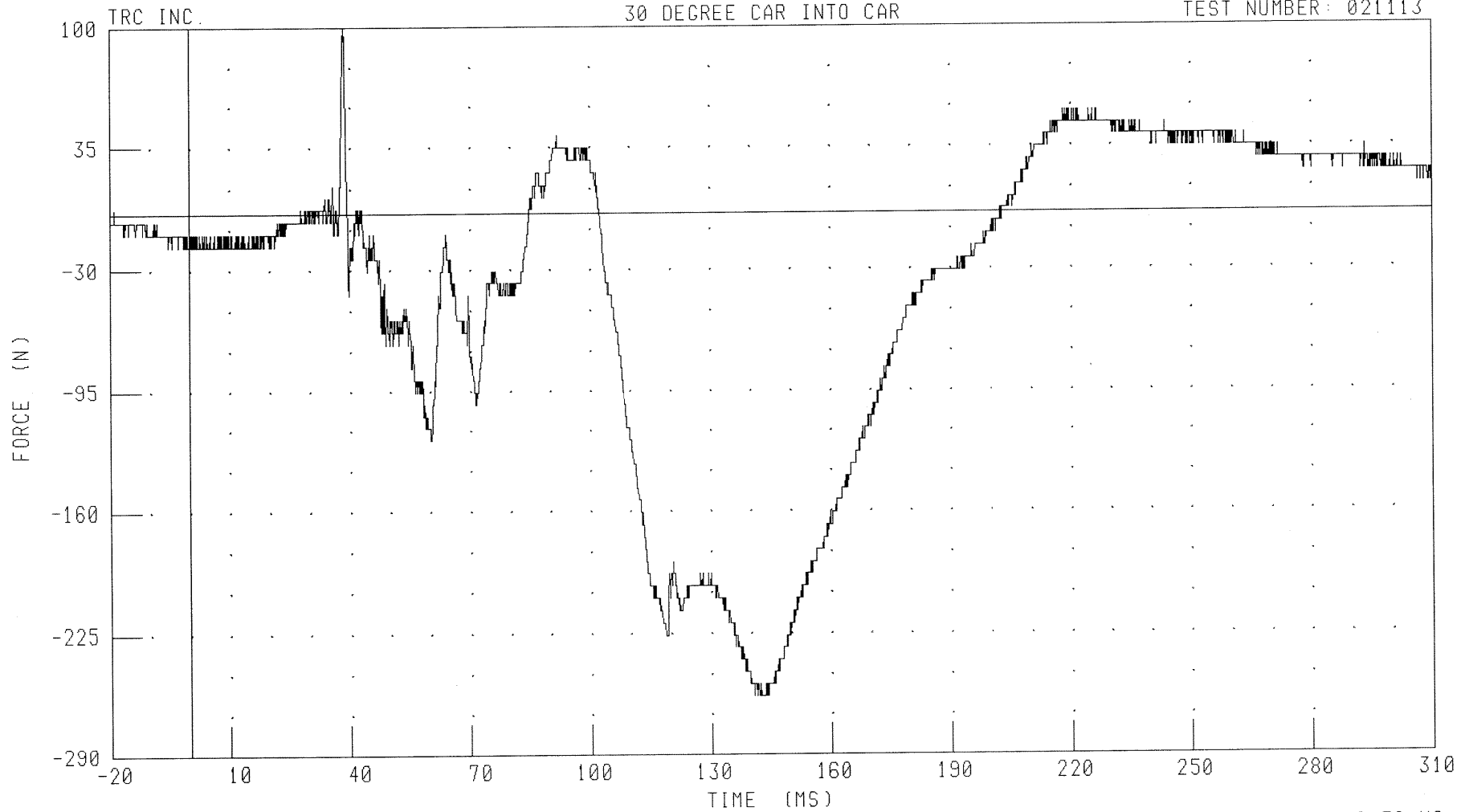
PEAK DATA: 24.81 G @ 83.36 MS; 0.18 G @ -19.52 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

BULLET DRIVER NECK X-AXIS SHEAR FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



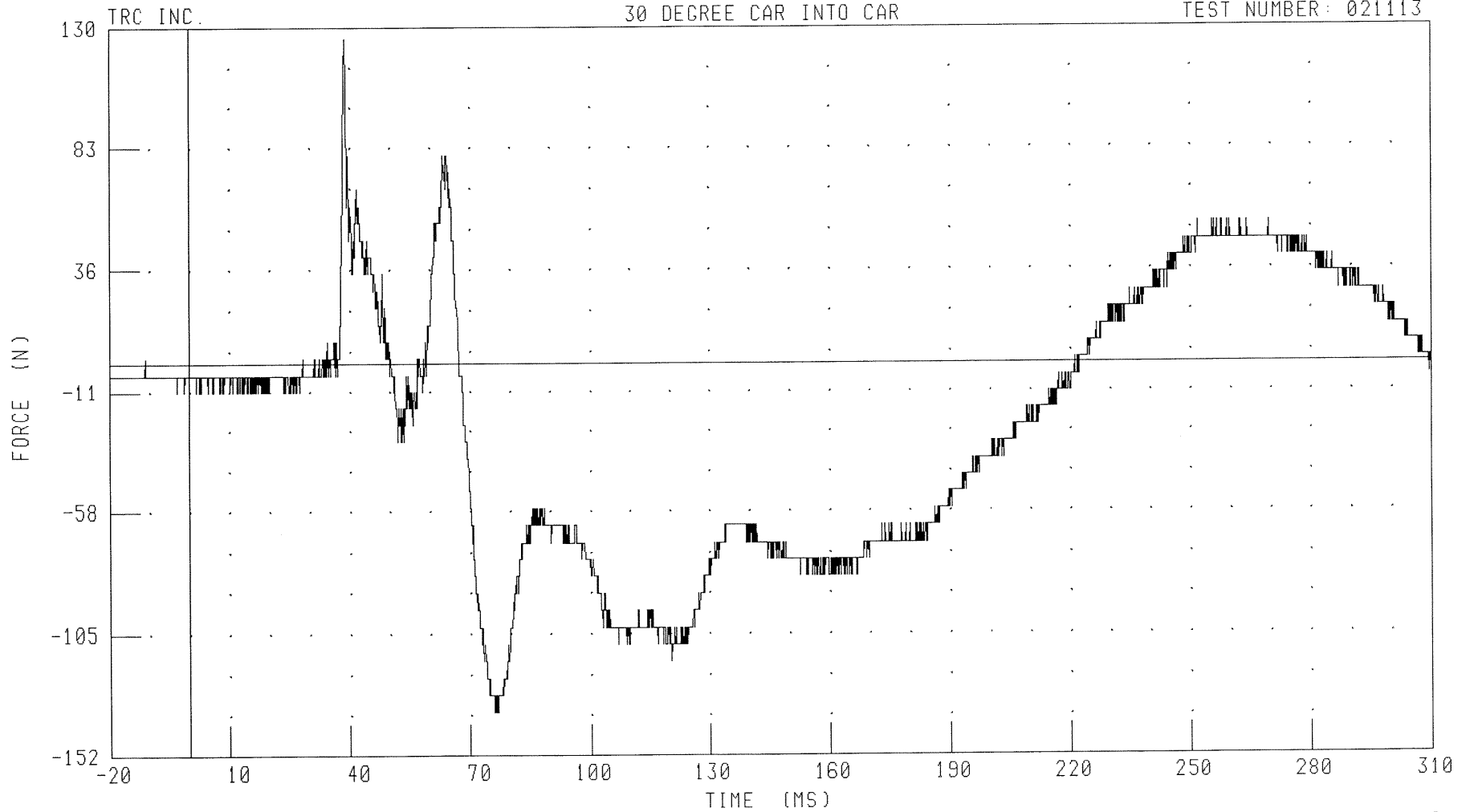
CHANNEL: NEKXFA FILTER: CH: CLASS 1000

PEAK DATA: 99.66 N @ 38.56 MS; -258.54 N @ 140.72 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER NECK Y-AXIS SHEAR FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



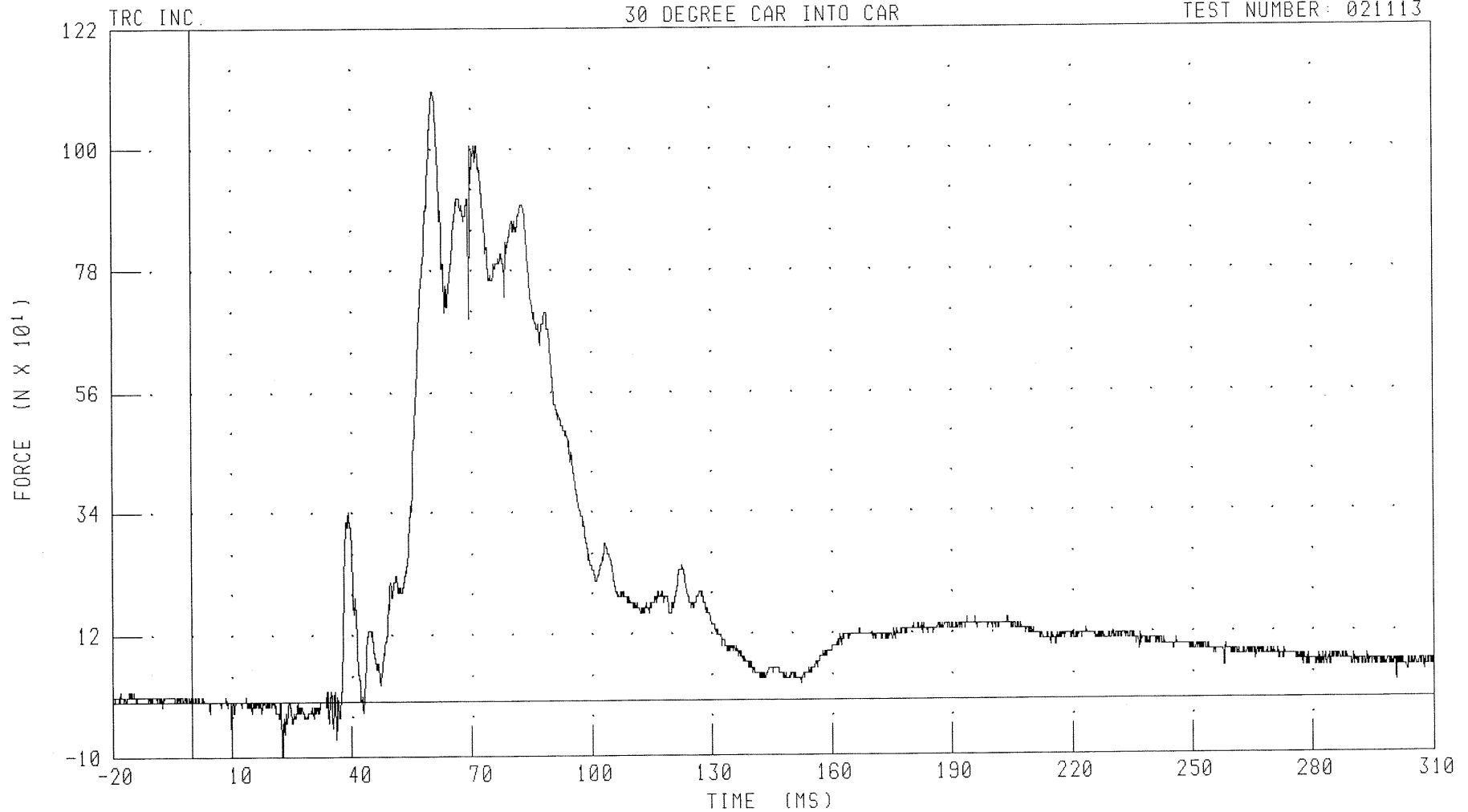
CHANNEL: NEKYFA FILTER: CH. CLASS 1000

PEAK DATA: 125.77 N @ 38.88 MS; -135.15 N @ 76.00 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

BULLET DRIVER NECK Z-AXIS AXIAL FORCE

TEST NUMBER: 021113



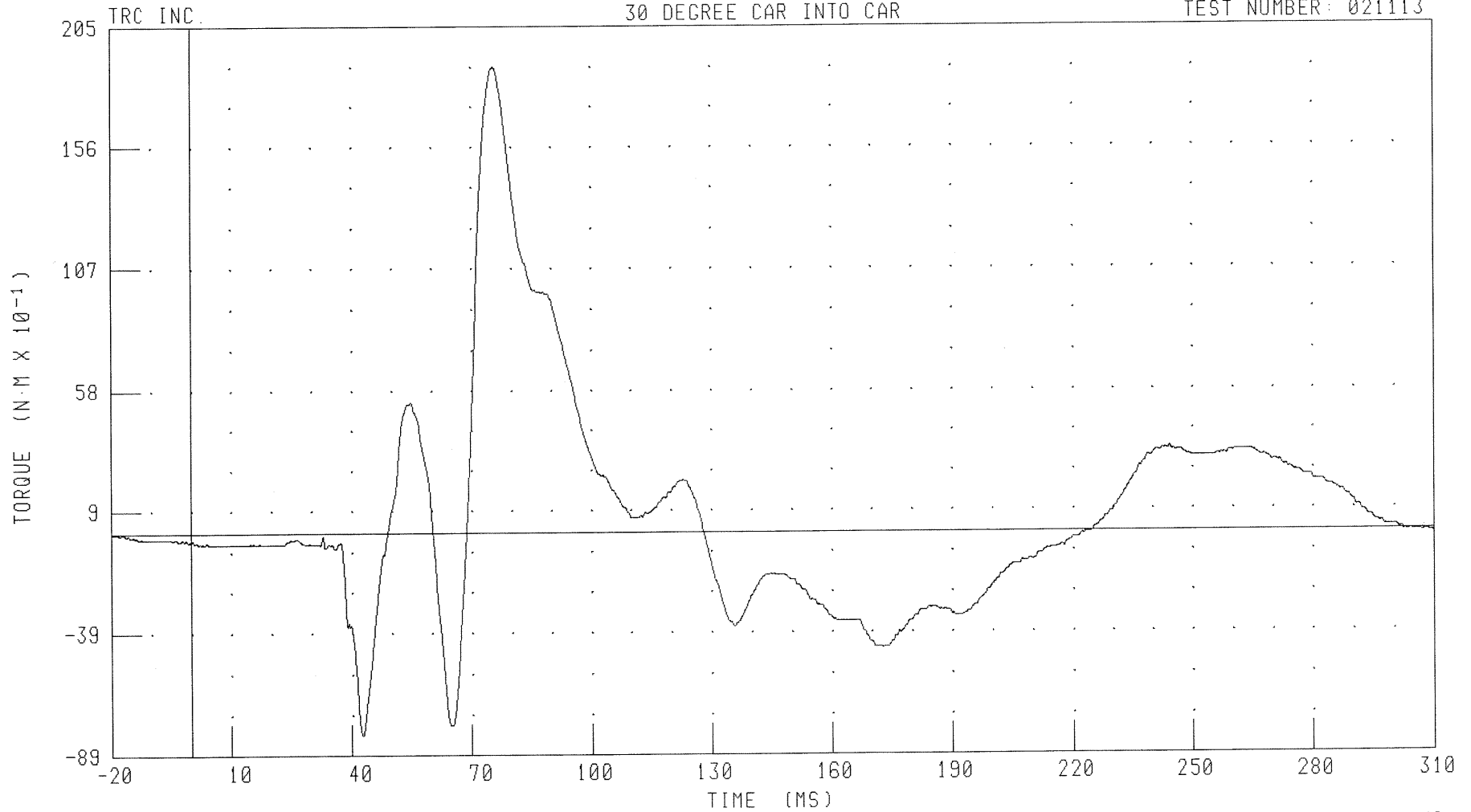
CHANNEL: NEKZFA FILTER: CH. CLASS 1000

PEAK DATA: 1104.29 N @ 60.56 MS; -97.57 N @ 22.48 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER NECK MOMENT ABOUT X AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: NEKXMA

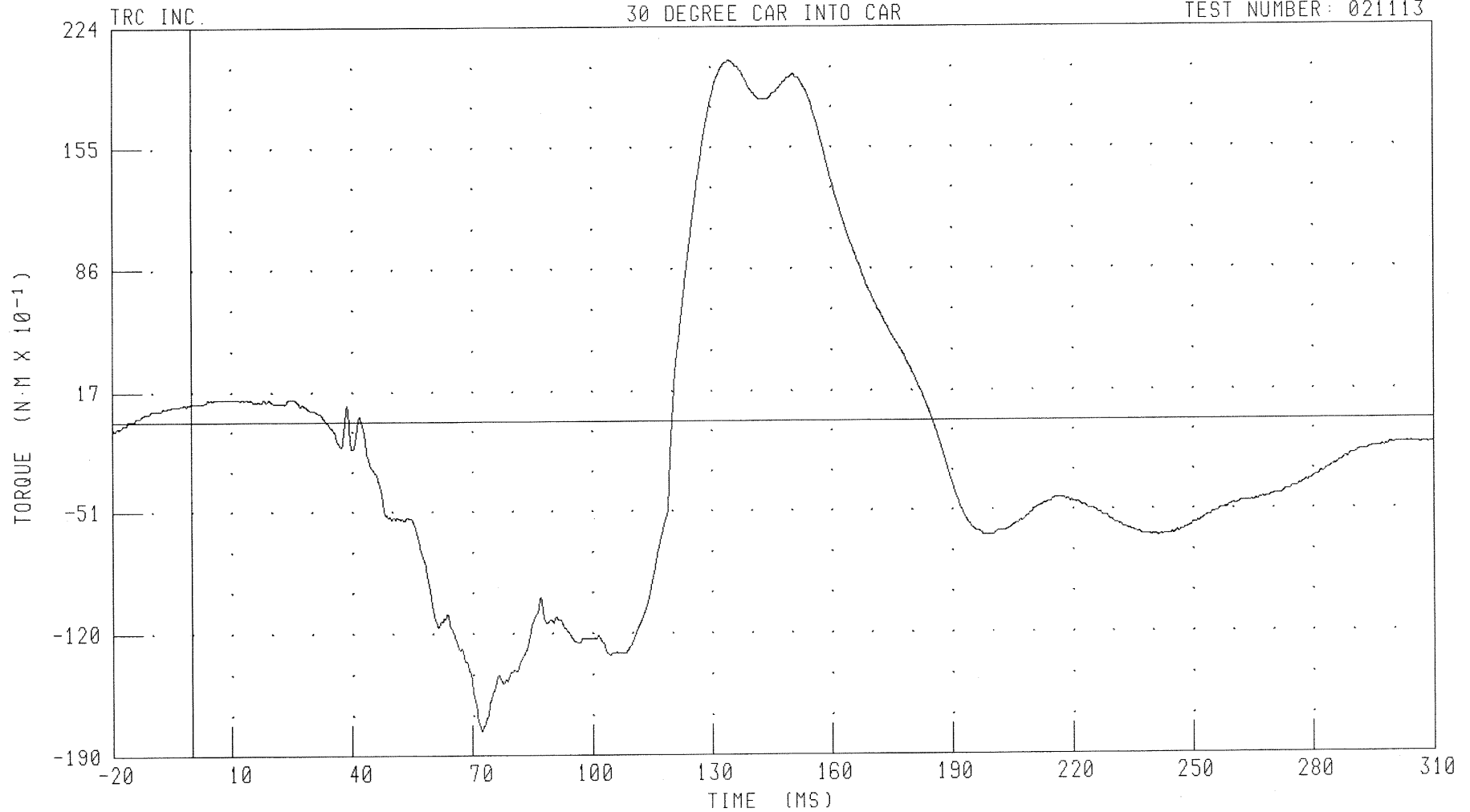
FILTER: CH. CLASS 600

PEAK DATA: 18.88 N·M @ 75.76 MS; -8.12 N·M @ 42.72 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER NECK MOMENT ABOUT Y AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



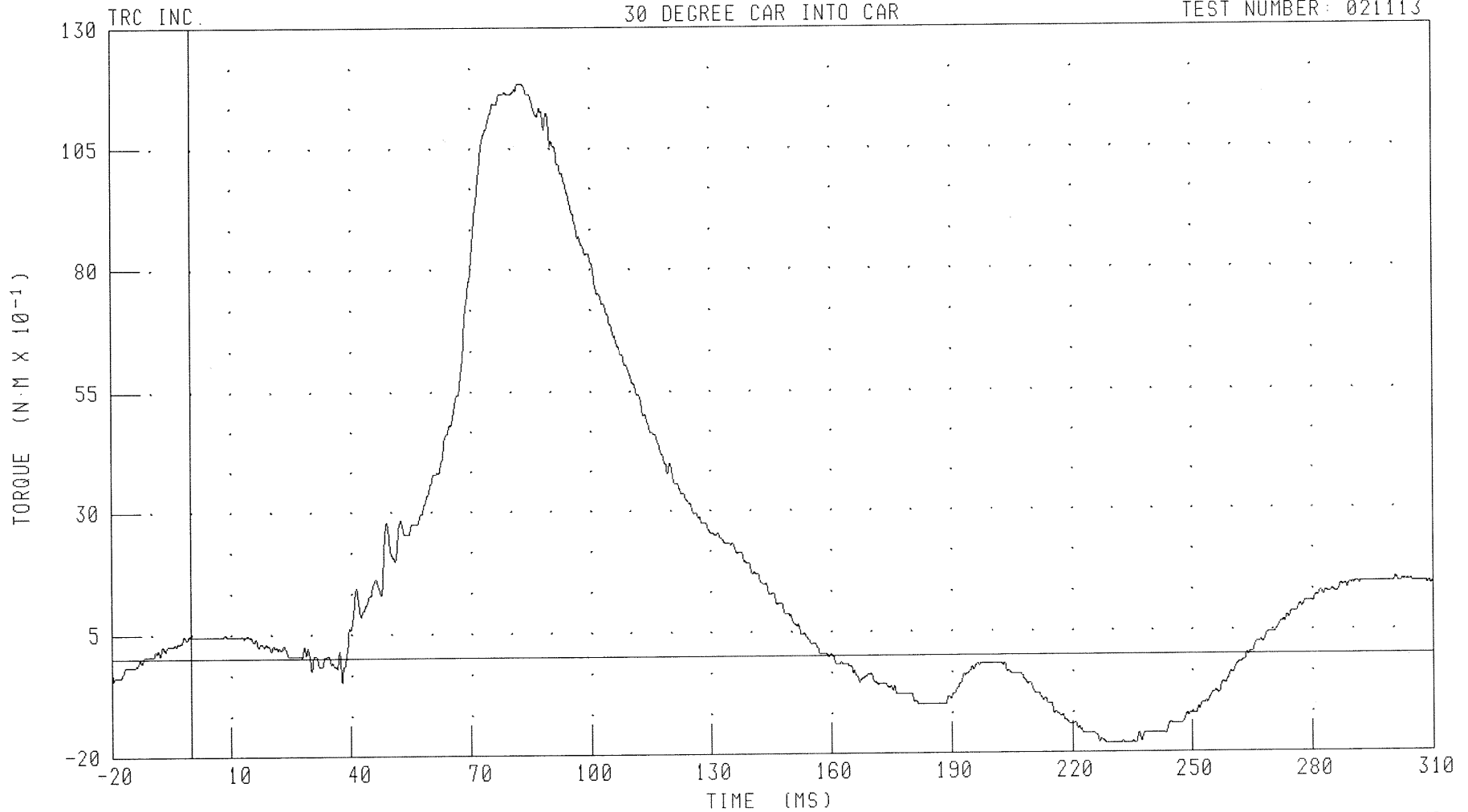
CHANNEL: NEKYMA FILTER: CH. CLASS 600

PEAK DATA: 20.50 N·M @ 134.64 MS; -17.59 N·M @ 72.24 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER NECK MOMENT ABOUT Z AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



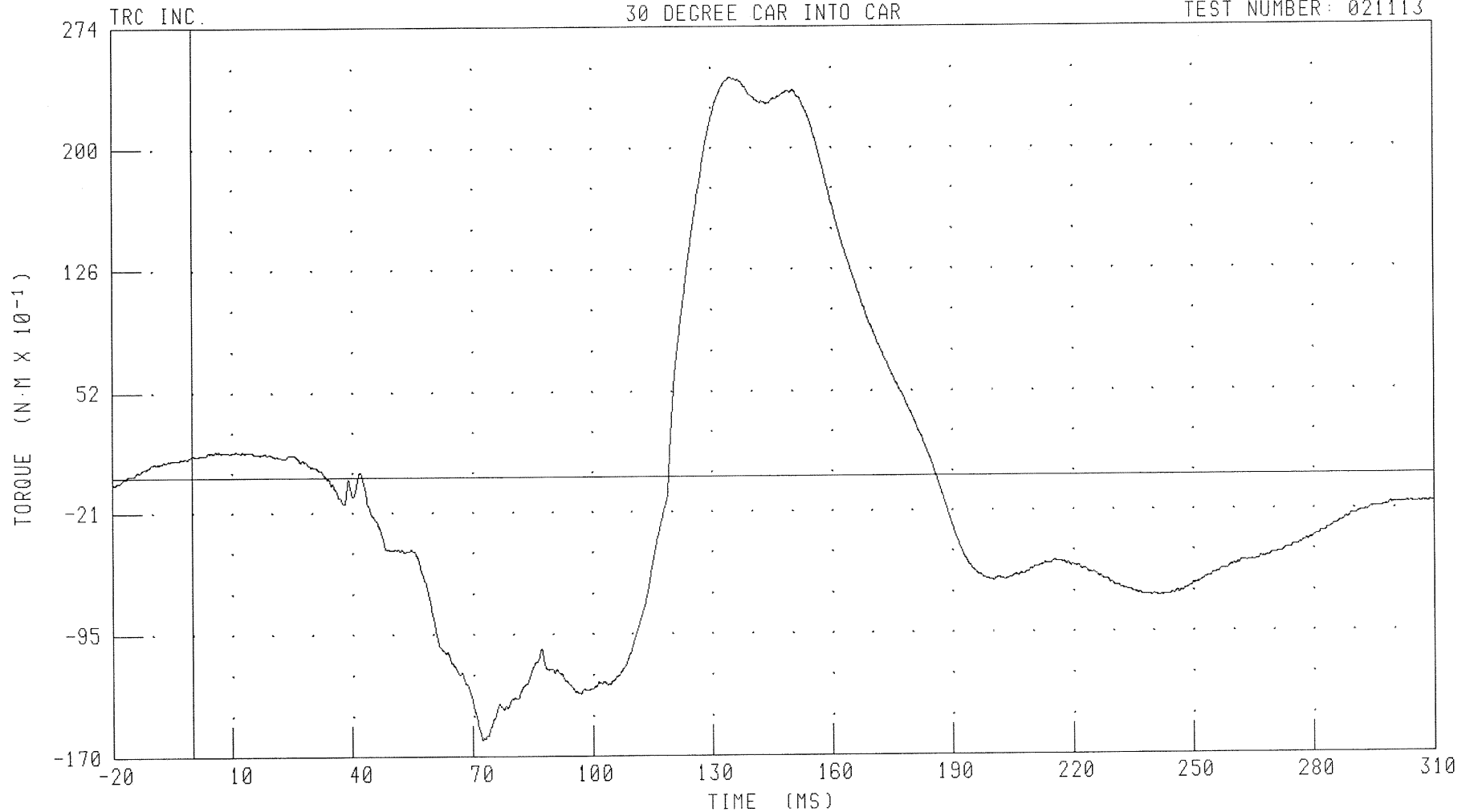
CHANNEL: NEKZMA FILTER: CH. CLASS 600

PEAK DATA: 11.84 N·M @ 82.24 MS; -1.82 N·M @ 235.84 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER NECK OCCIPITAL CONDYLE MOMENT ABOUT Y AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: NEKOMA

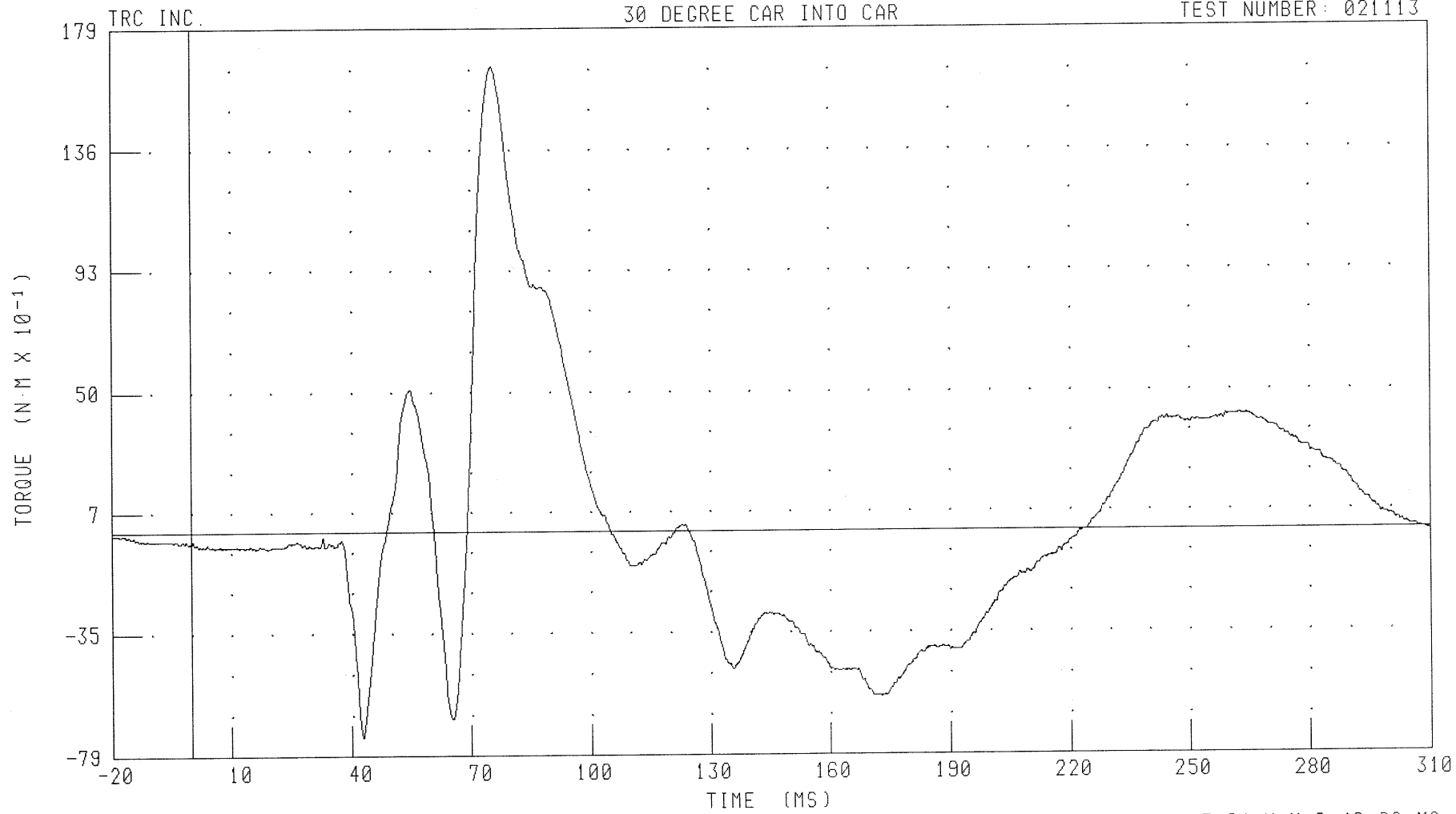
FILTER: CH. CLASS 600

PEAK DATA: 24.35 N·M @ 134.88 MS; -16.03 N·M @ 72.40 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER NECK OCCIPITAL CONDYLE MOMENT ABOUT X AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: NK0XMA

FILTER: CH. CLASS 600

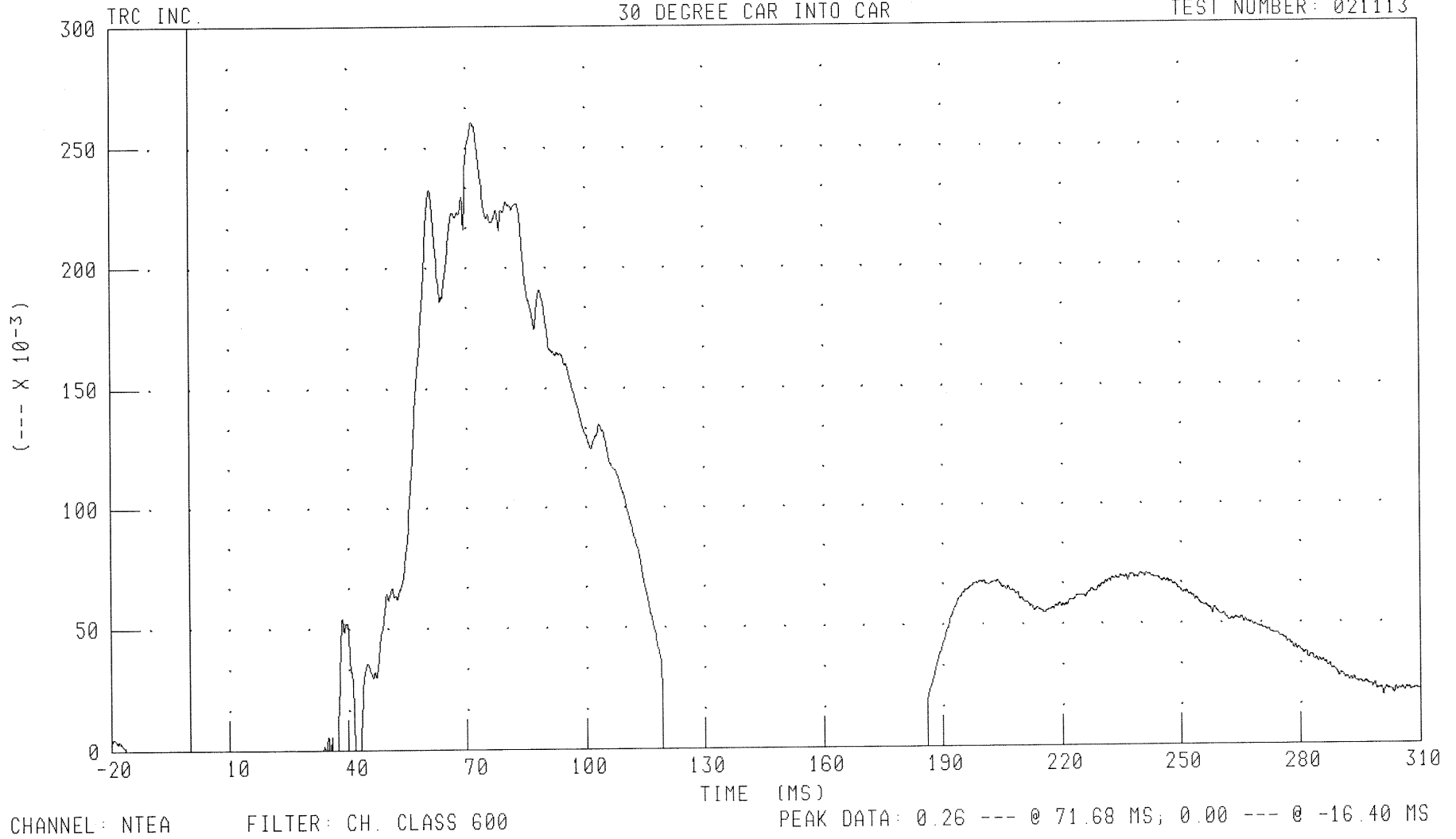
PEAK DATA: 16.59 N·M @ 75.68 MS; -7.24 N·M @ 42.80 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

BULLET DRIVER NIJ TENSION/EXTENSION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113

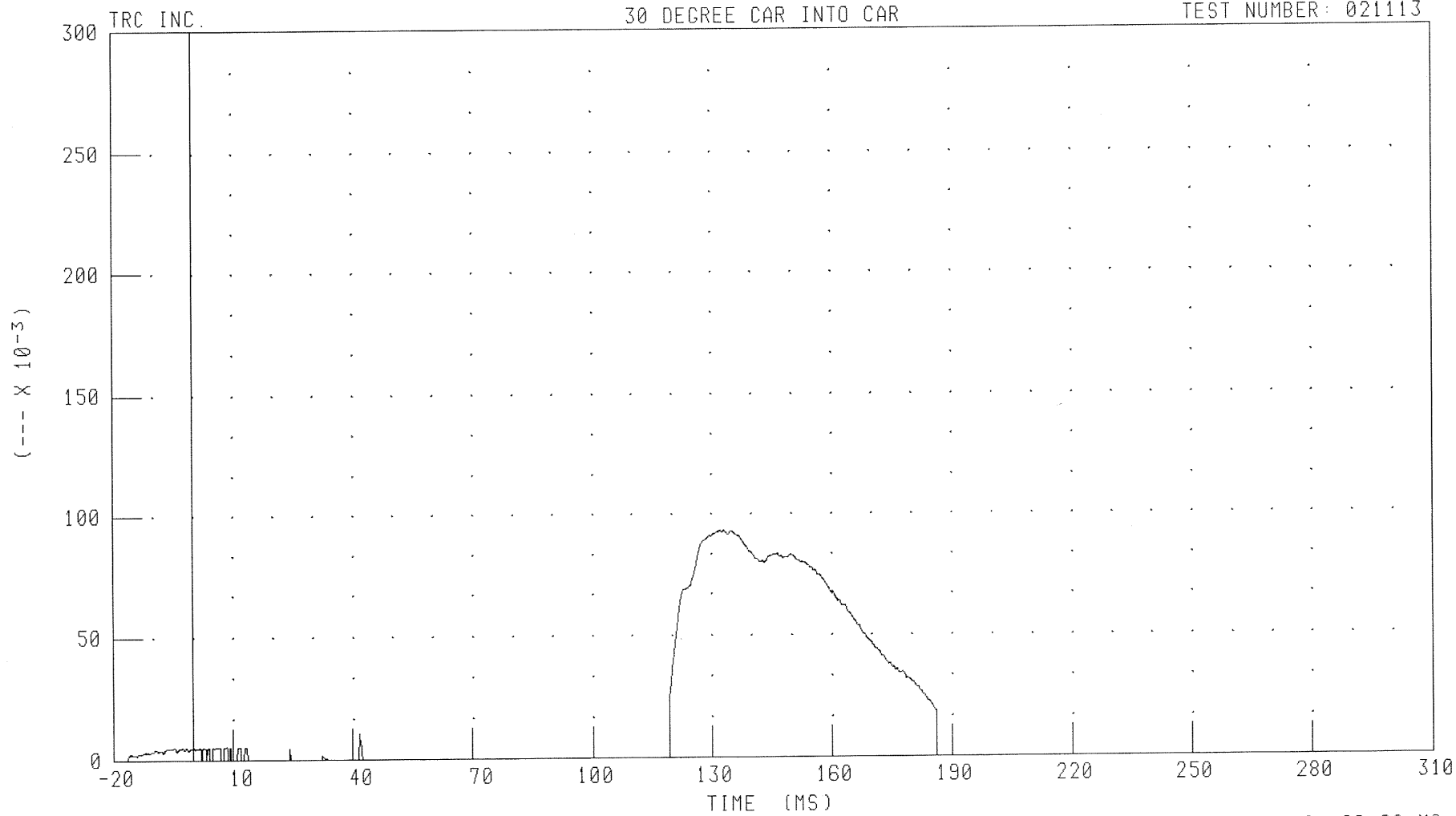


1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

BULLET DRIVER NIJ TENSION/FLEXION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: NTFA

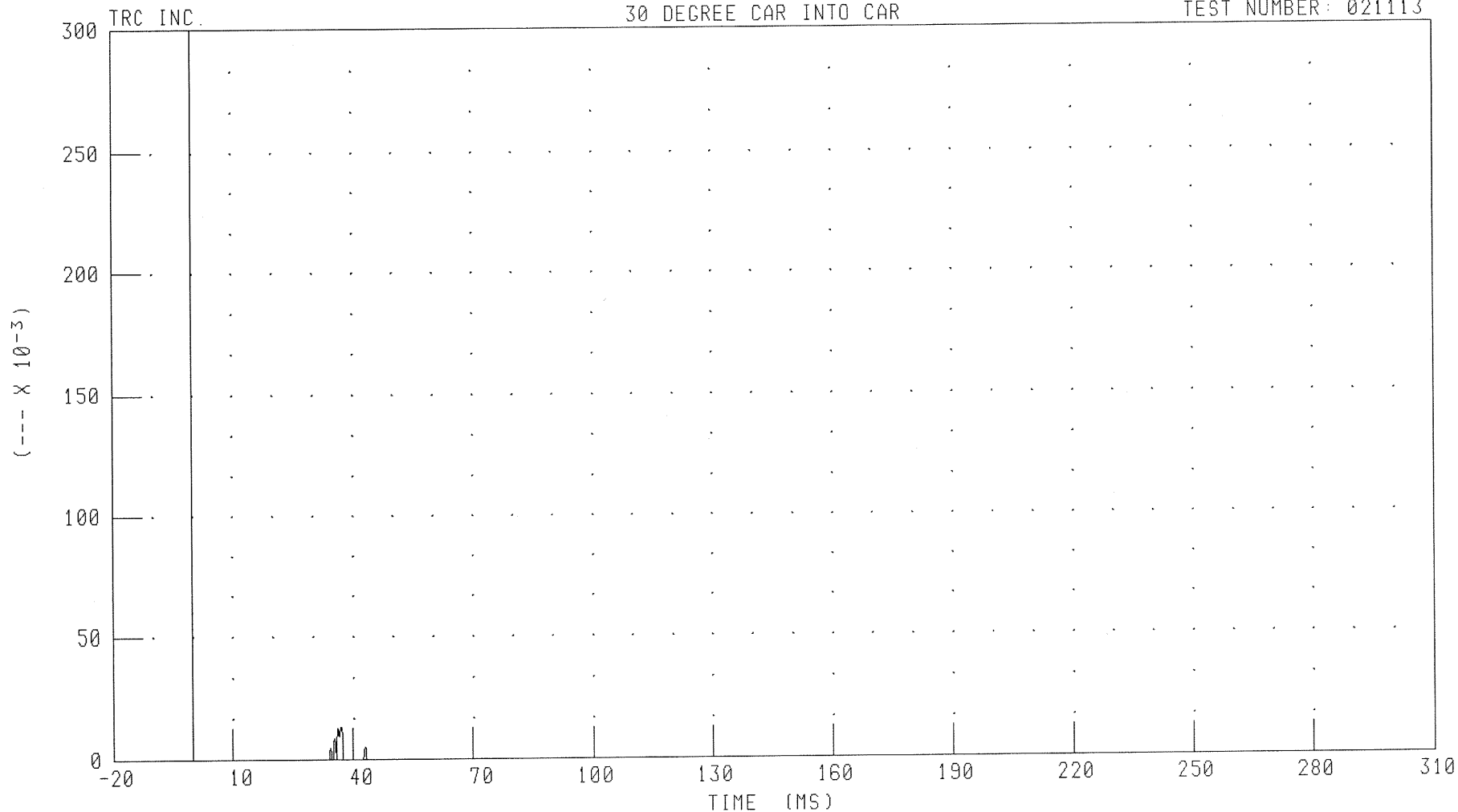
FILTER: CH. CLASS 600

PEAK DATA: 0.09 --- @ 132.32 MS; 0.00 --- @ -20.00 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER NIJ COMPRESSION/EXTENSION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: NCEA

FILTER: CH. CLASS 600

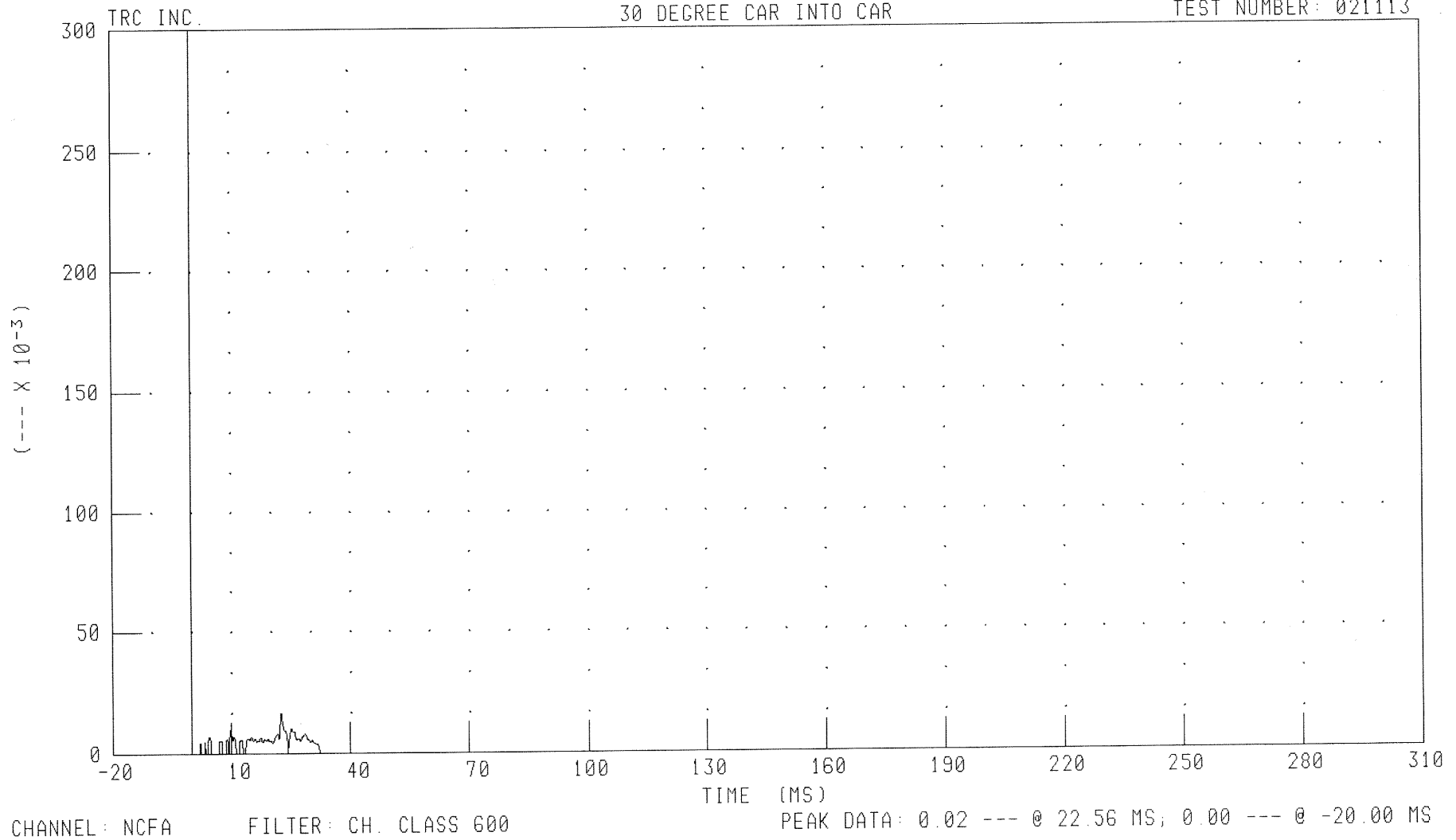
PEAK DATA: 0.01 --- @ 36.96 MS; 0.00 --- @ -20.00 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

BULLET DRIVER NIJ COMPRESSION/FLEXION

30 DEGREE CAR INTO CAR

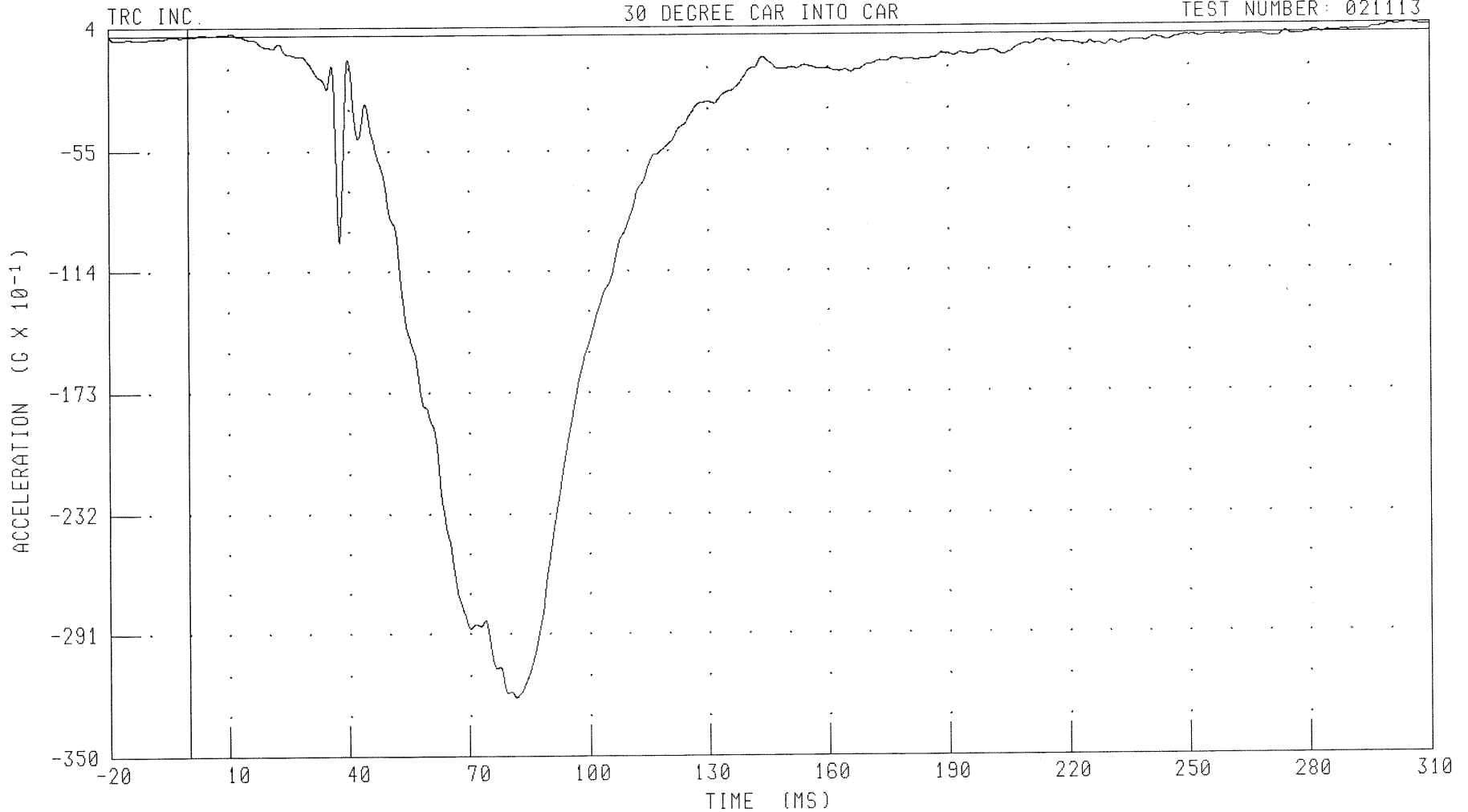
TEST NUMBER: 021113



1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER CHEST X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: CSTXGA

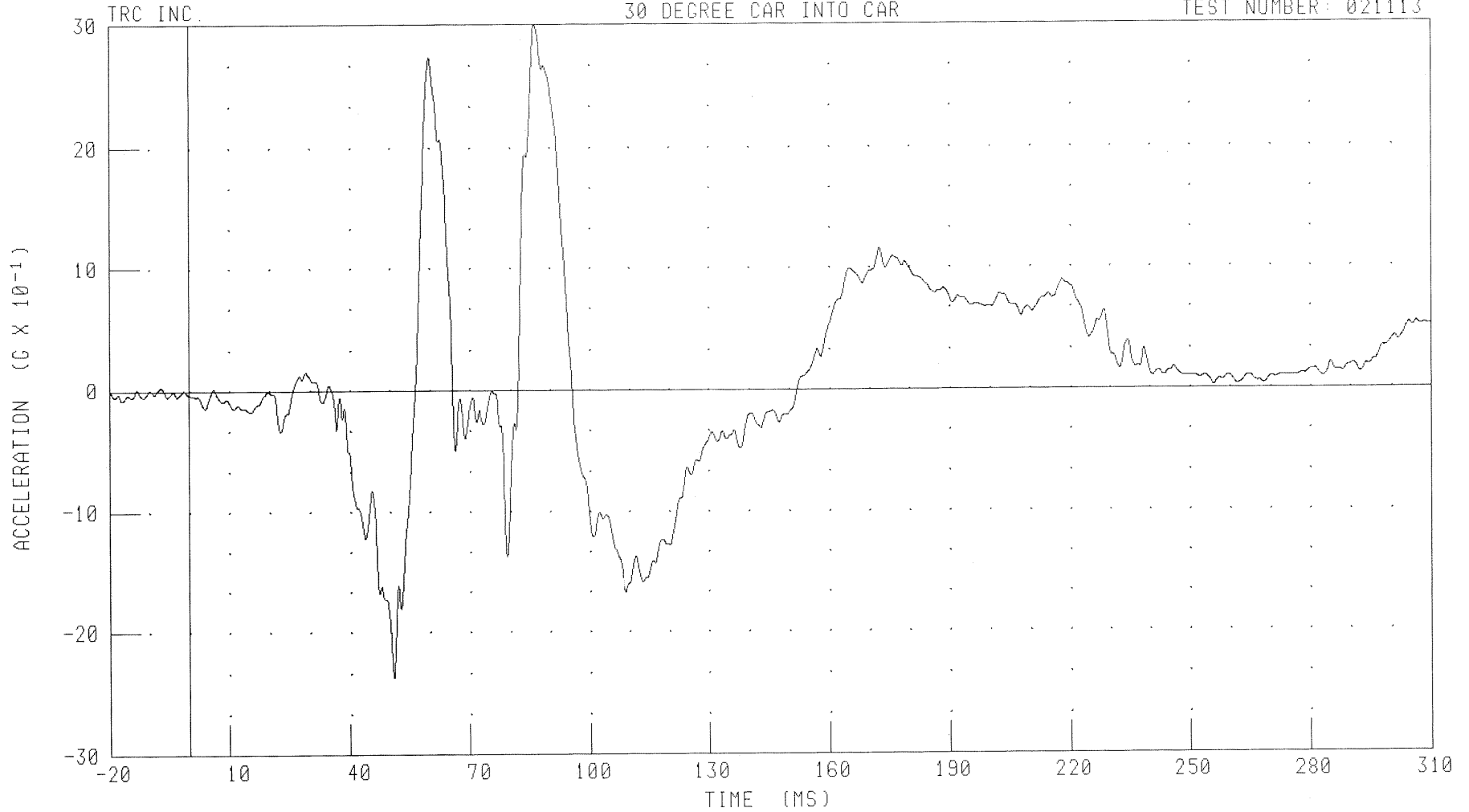
FILTER: CH. CLASS 180

PEAK DATA: 0.40 G @ 305.12 MS; -32.19 G @ 81.60 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER CHEST Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: CSTYGA

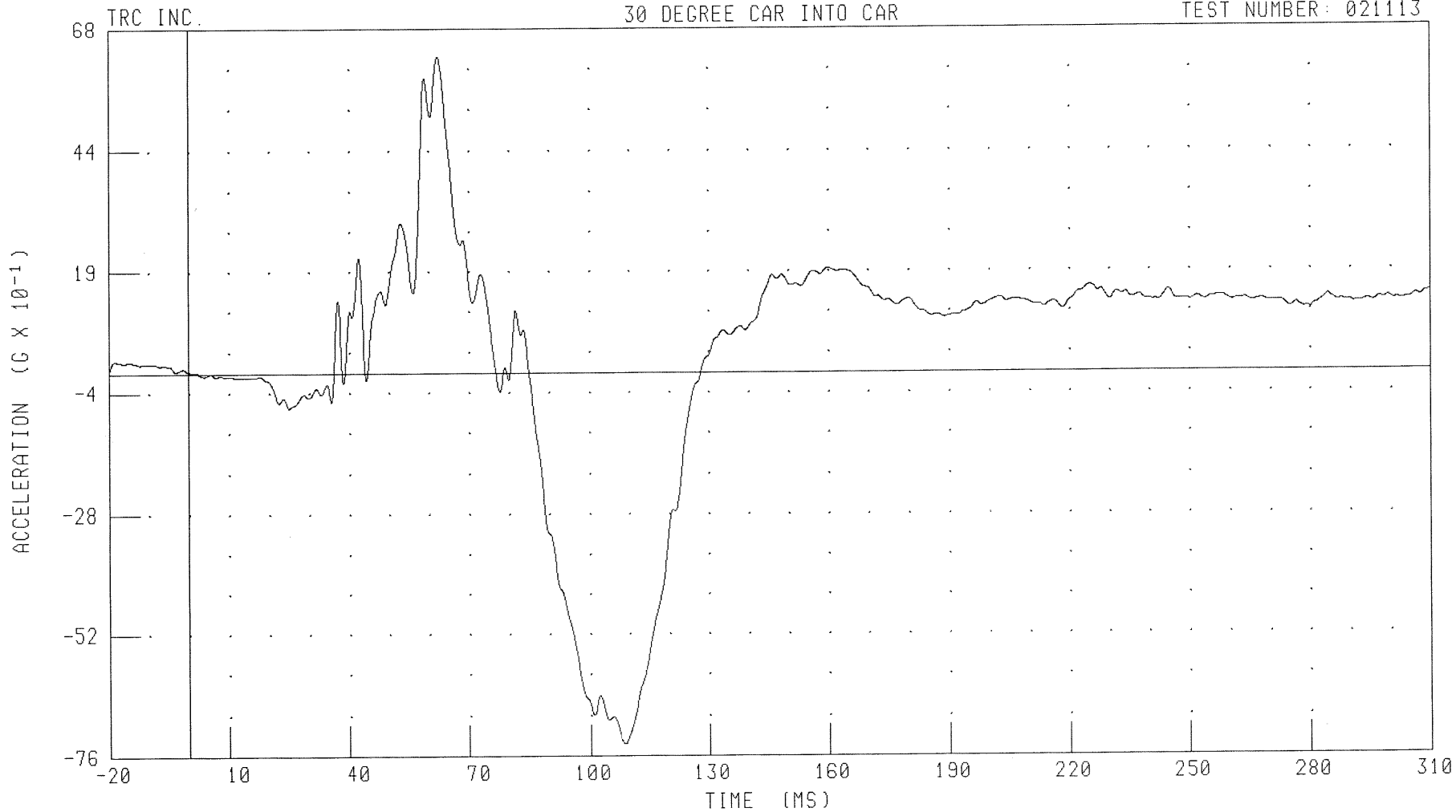
FILTER: CH. CLASS 180

PEAK DATA: 3.00 G @ 86.32 MS; -2.37 G @ 50.88 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER CHEST Z-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: CSTZGA

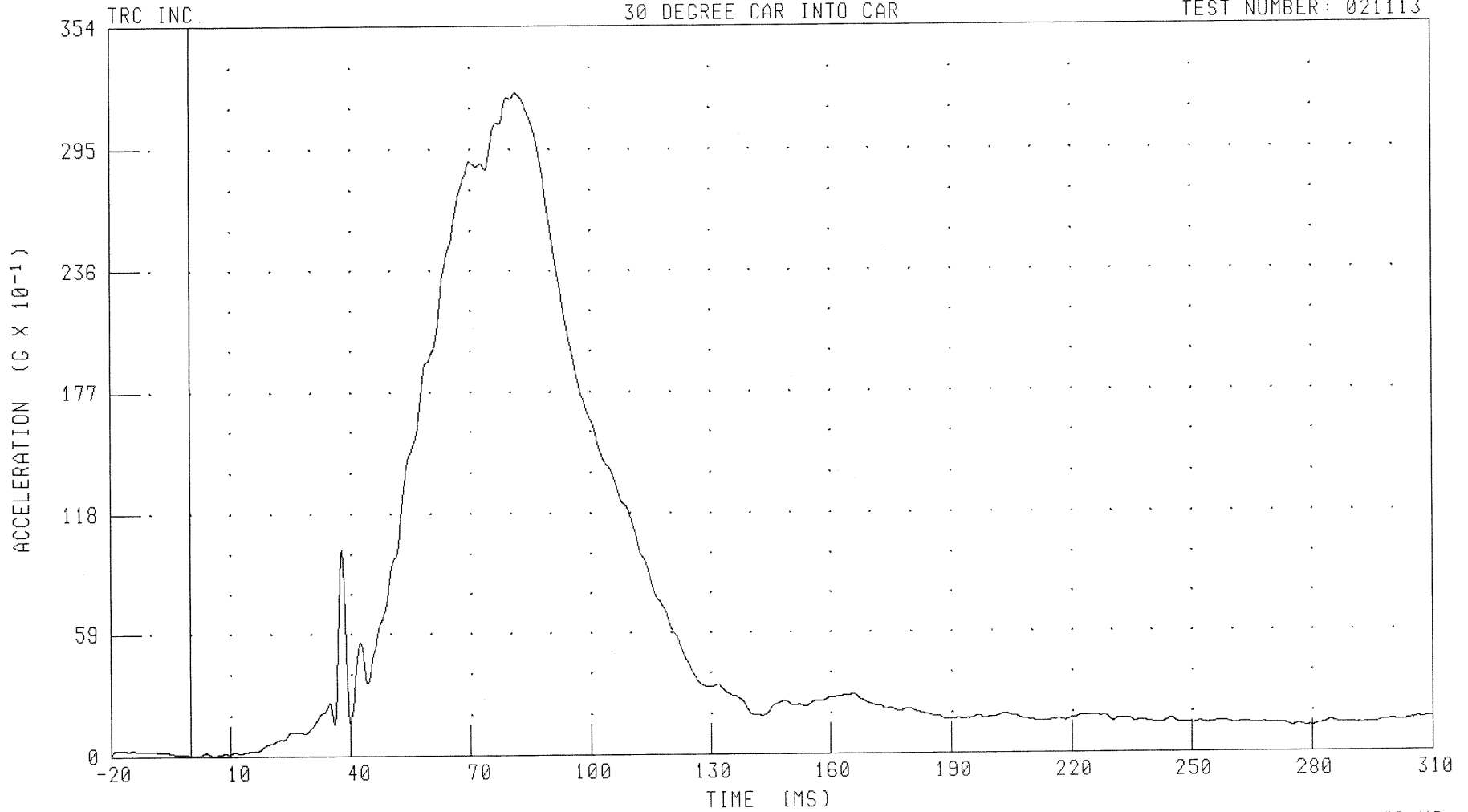
FILTER: CH. CLASS 180

PEAK DATA: 6.24 G @ 62.32 MS; -7.36 G @ 108.88 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER CHEST RESULTANT ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: CSTRGA

FILTER: CH. CLASS 180

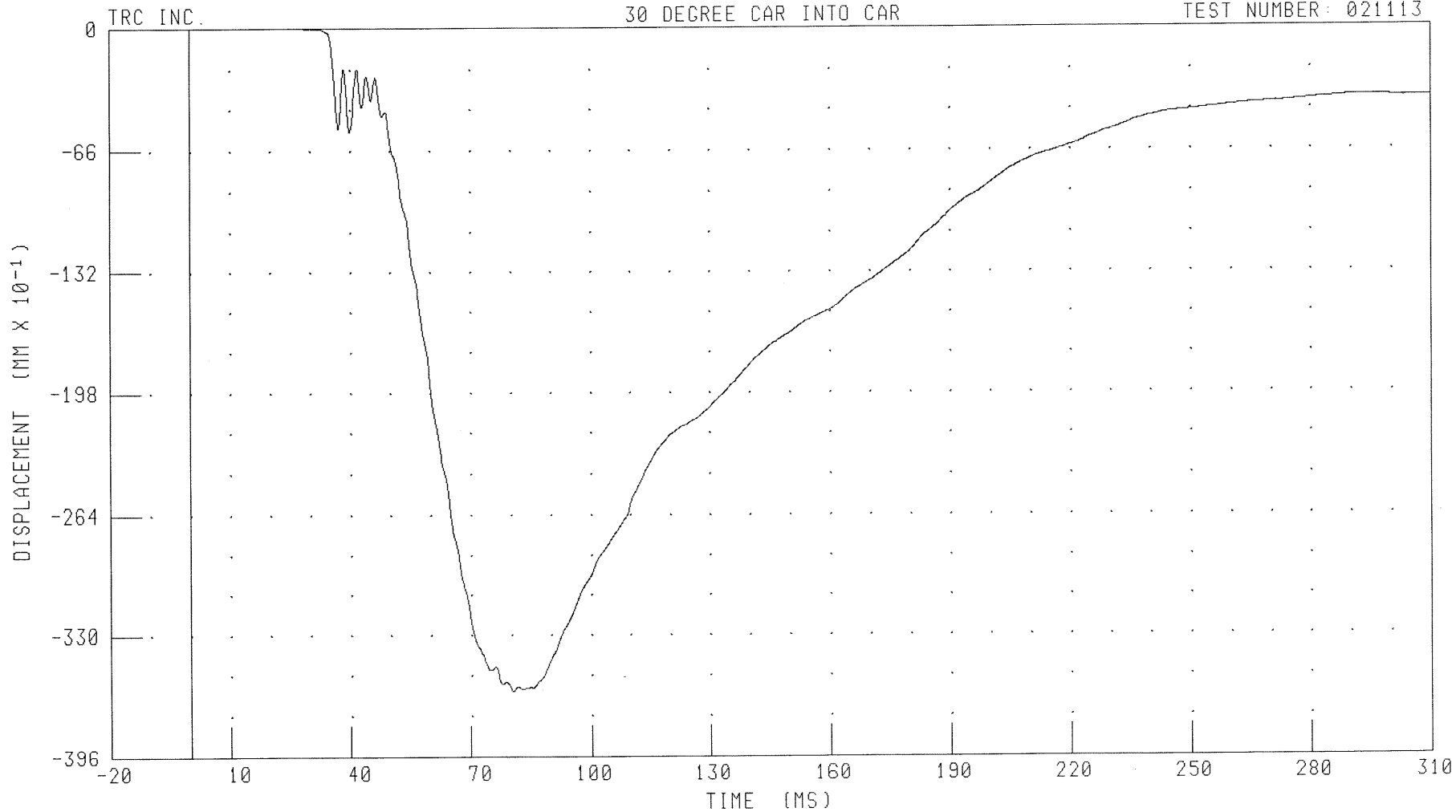
PEAK DATA: 32.21 G @ 81.60 MS; 0.02 G @ 5.76 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

BULLET DRIVER CHEST DEFLECTION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: CSTXDA

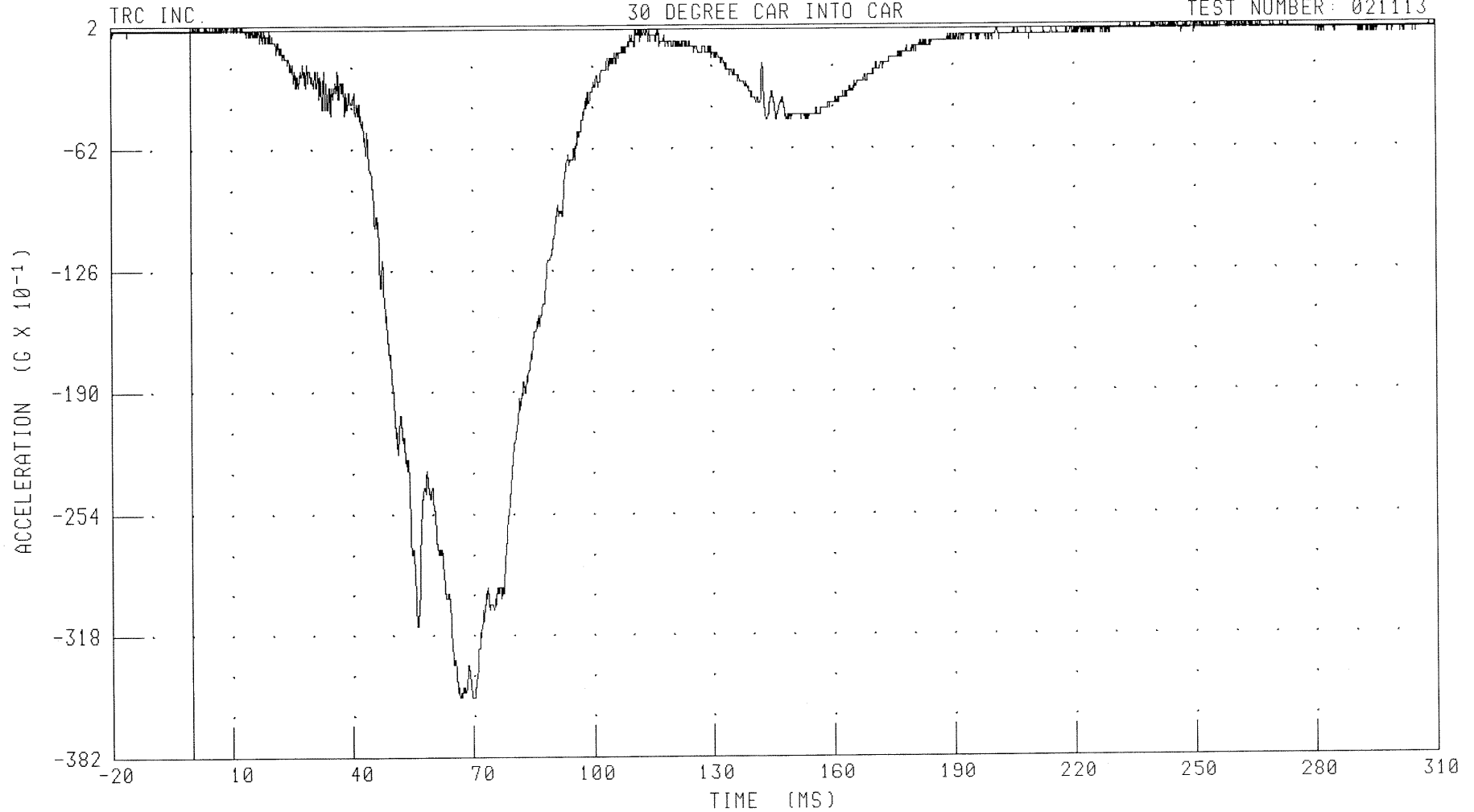
FILTER: CH. CLASS 600

PEAK DATA: 0.05 MM @ -9.84 MS; -36.11 MM @ 80.48 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER PELVIS X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: PEVXGA

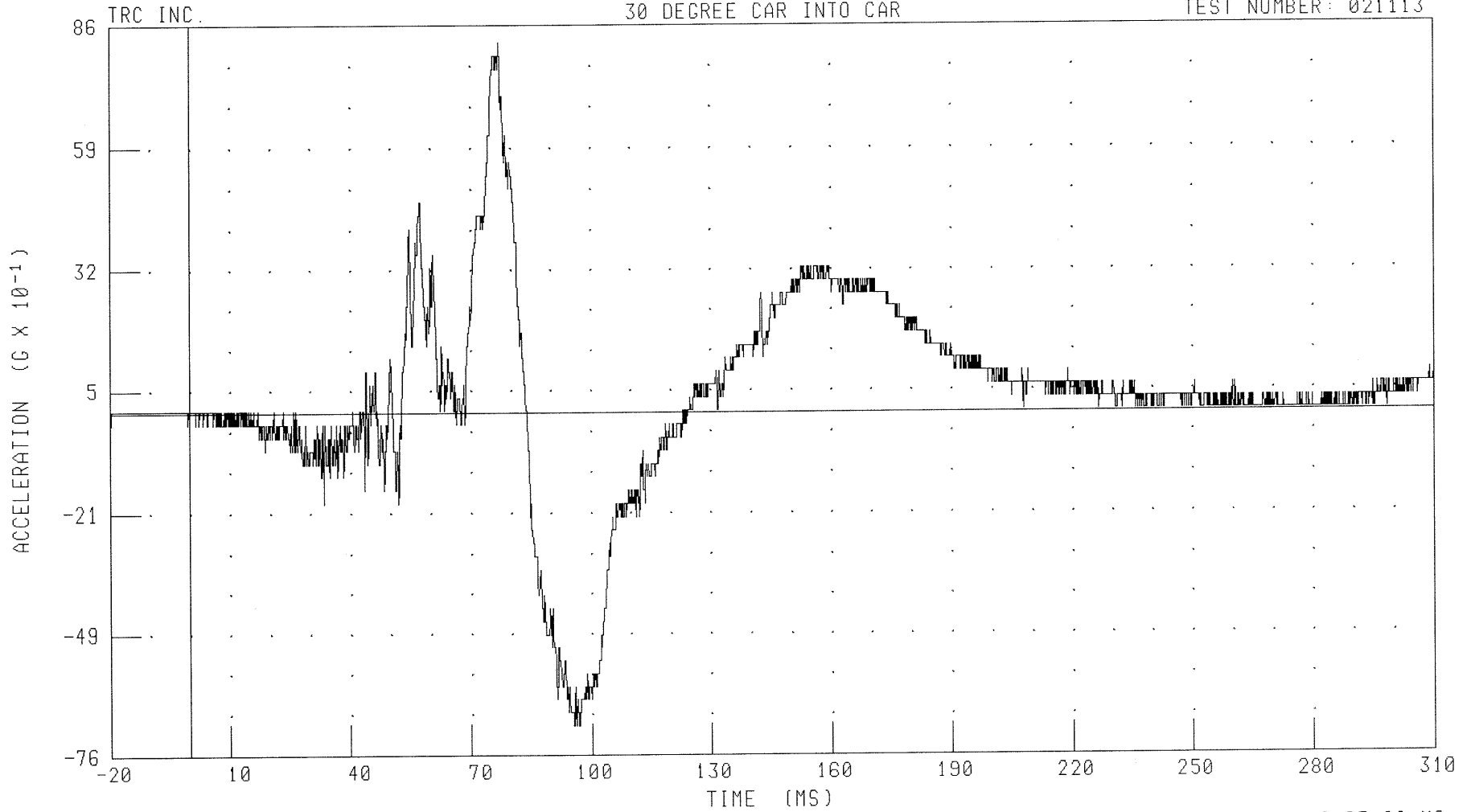
FILTER: CH. CLASS 1000

PEAK DATA: 0.24 G @ 0.56 MS; -35.14 G @ 66.48 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER PELVIS Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113

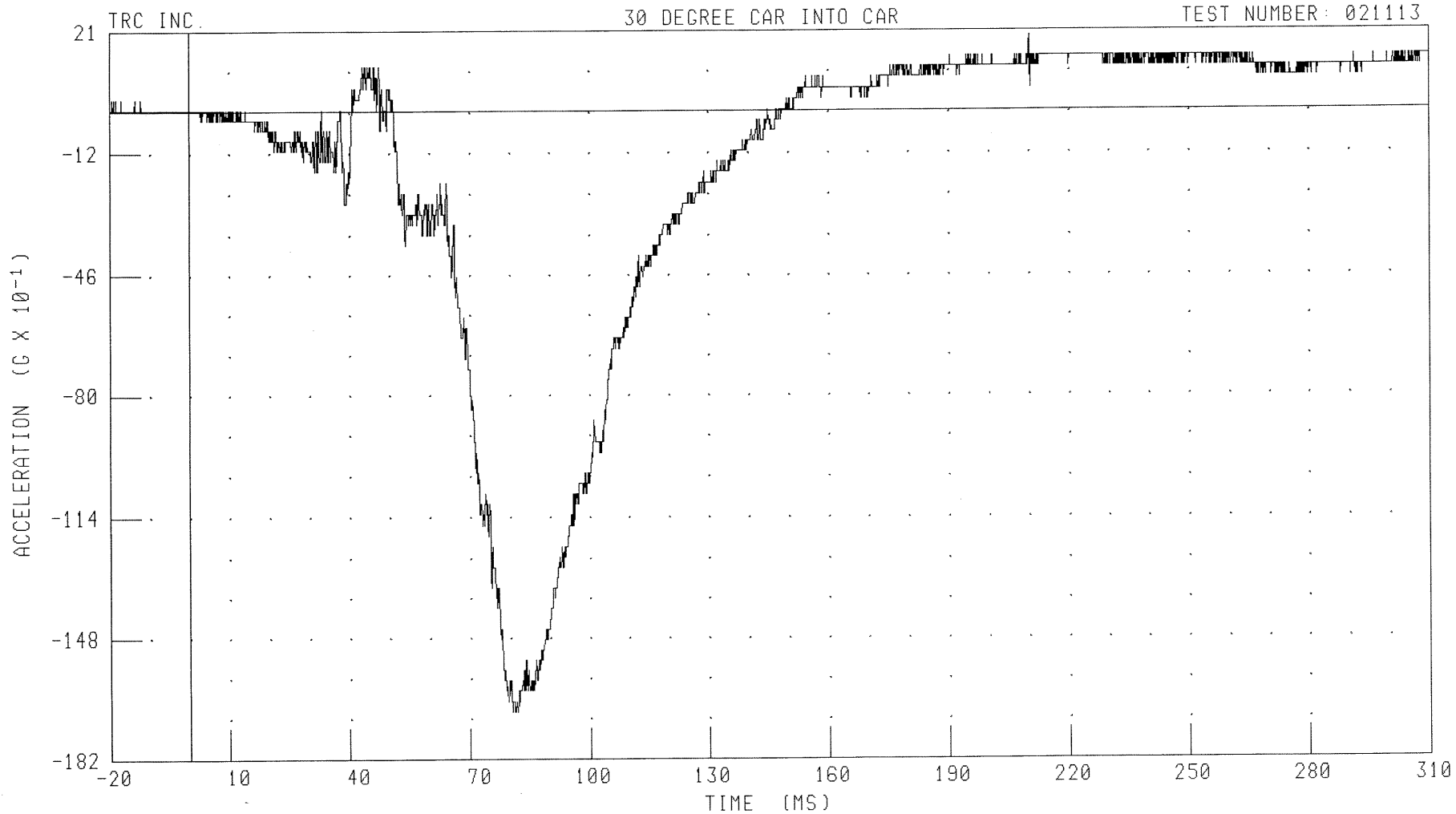


CHANNEL: PEVYGA FILTER: CH. CLASS 1000

PEAK DATA: 8.22 G @ 77.28 MS; -6.96 G @ 95.60 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER PELVIS Z-AXIS ACCELERATION

TEST NUMBER: 021113



CHANNEL: PEVZGA

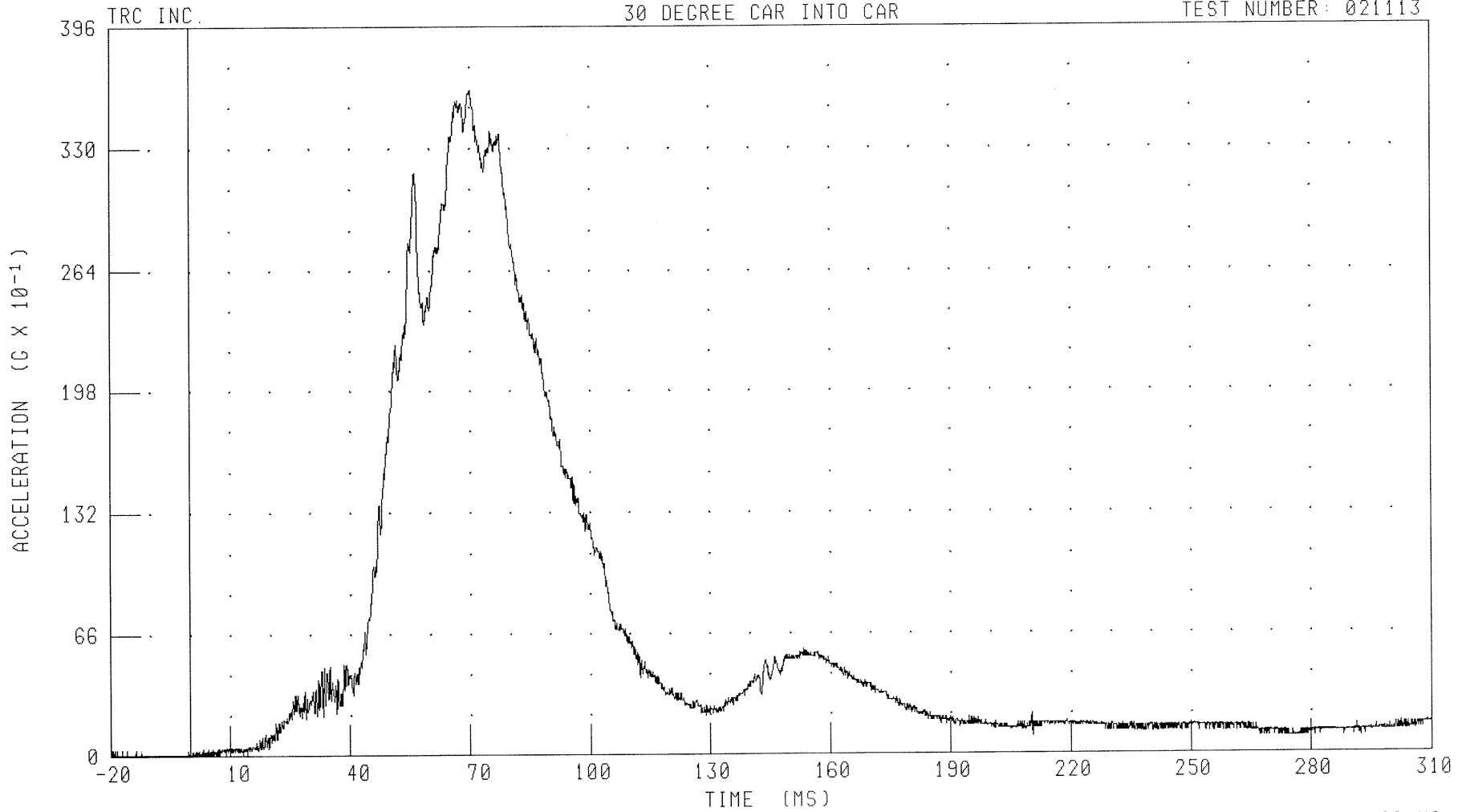
FILTER: CH. CLASS 1000

PEAK DATA: 2.07 G @ 210.24 MS; -16.87 G @ 80.56 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER PELVIS RESULTANT ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: PEVRGA FILTER: CH. CLASS 1000

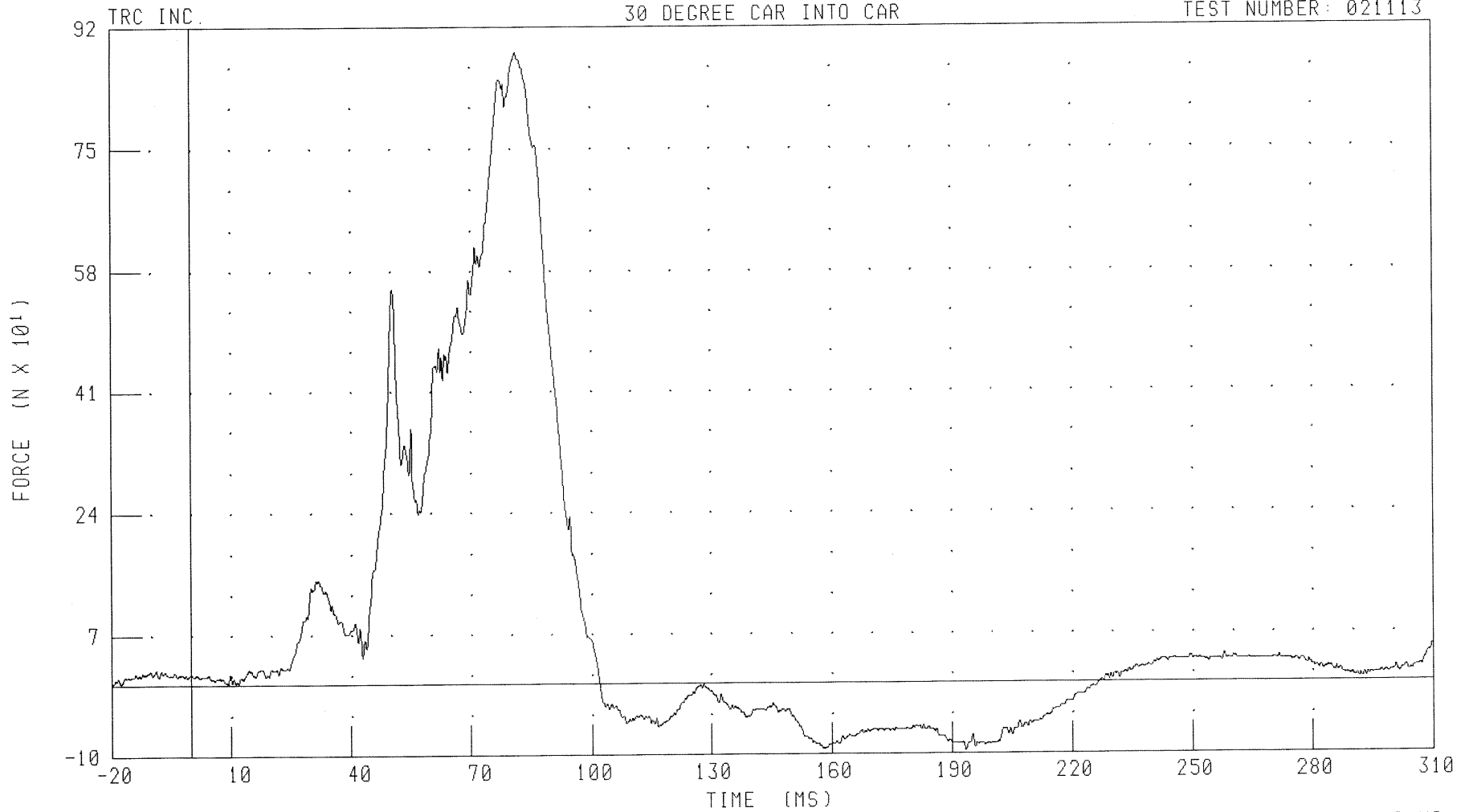
PEAK DATA: 36.15 G @ 70.32 MS; 0.07 G @ -19.92 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

BULLET DRIVER LEFT FEMUR X-AXIS FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



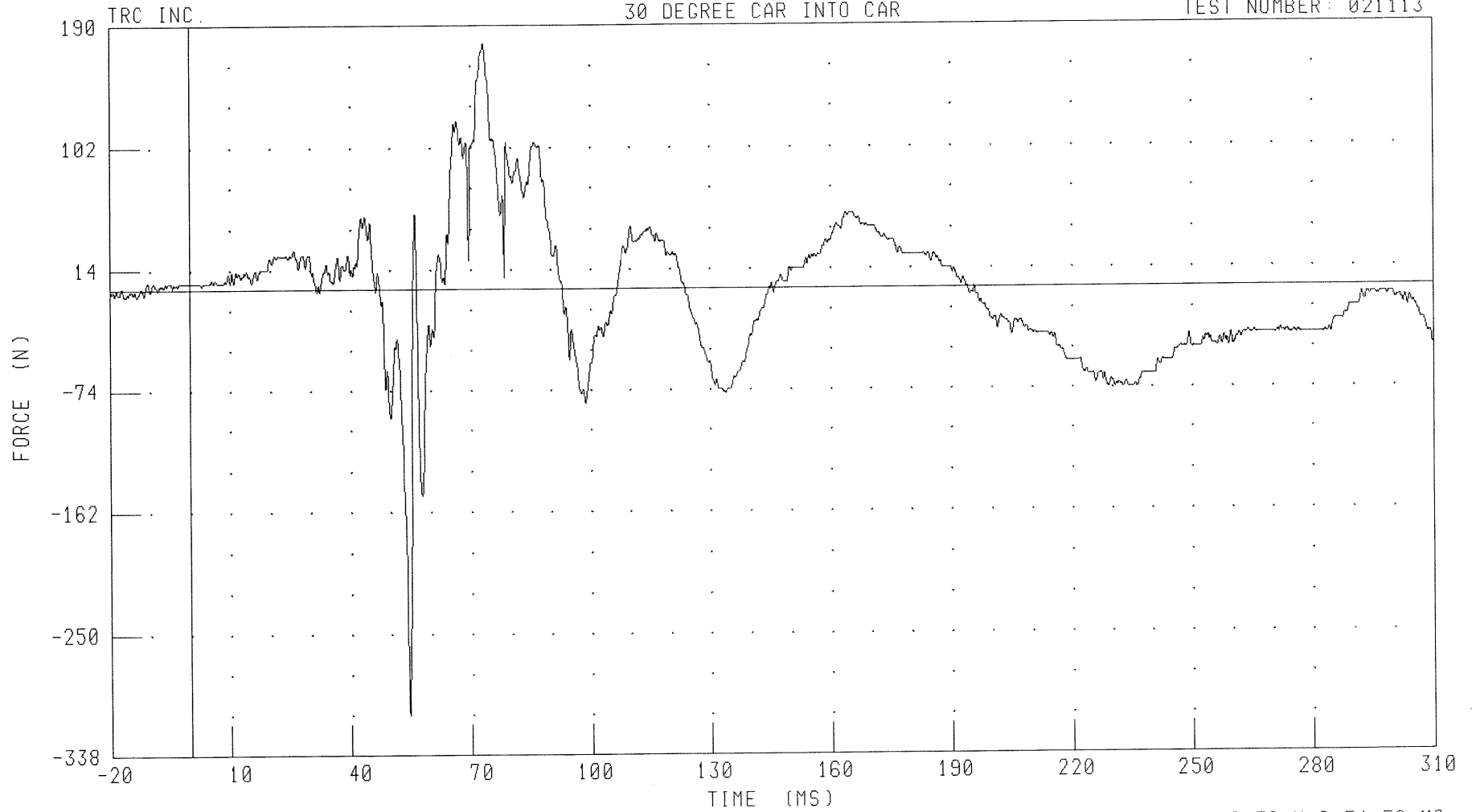
CHANNEL: LFMXFA FILTER: CH. CLASS 600

PEAK DATA: 883.91 N @ 81.44 MS; -95.79 N @ 193.52 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER LEFT FEMUR Y-AXIS FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: LFMFYFA

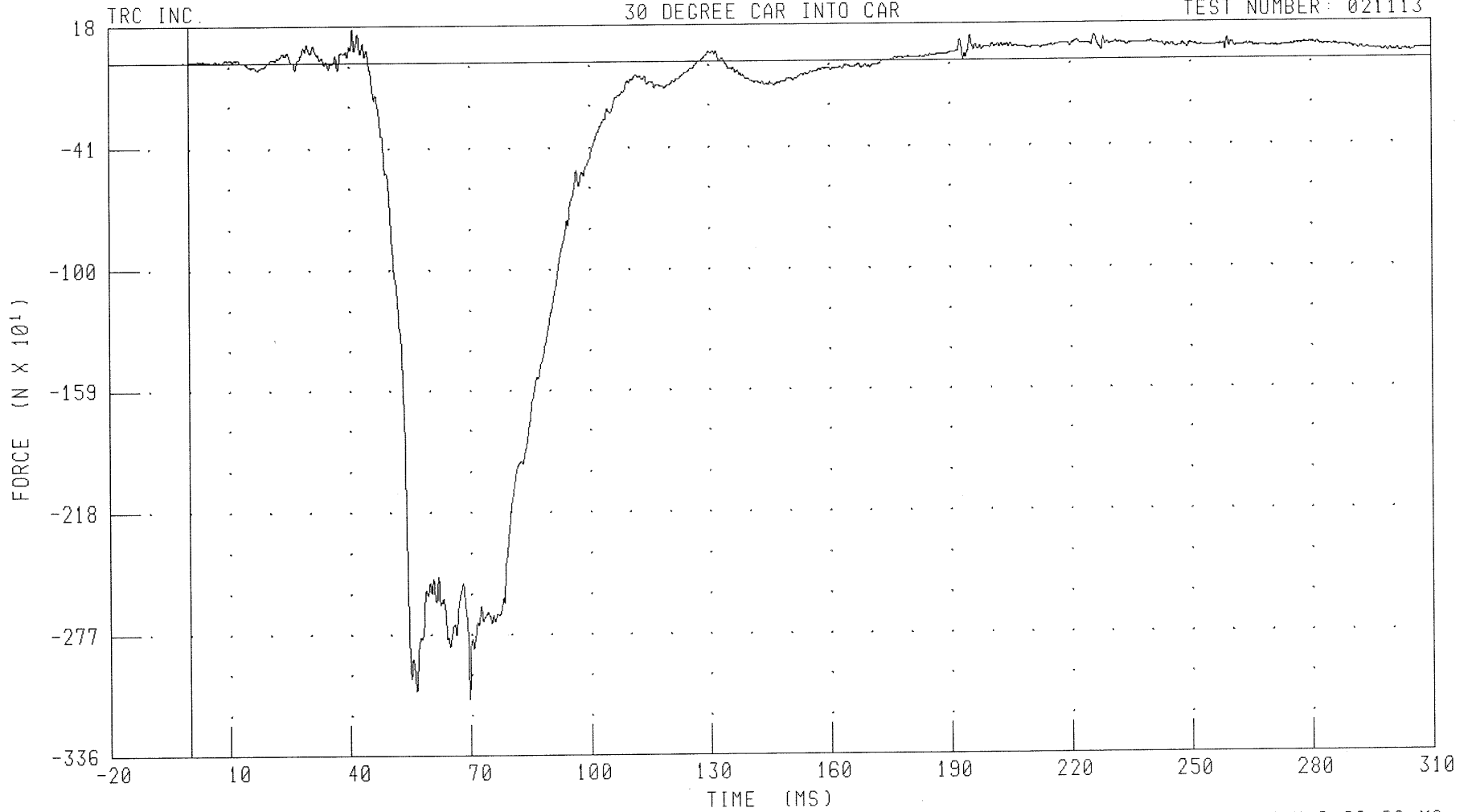
FILTER: CH. CLASS 600

PEAK DATA: 176.60 N @ 73.36 MS; -308.79 N @ 54.56 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER LEFT FEMUR Z-AXIS FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: LFMZFA

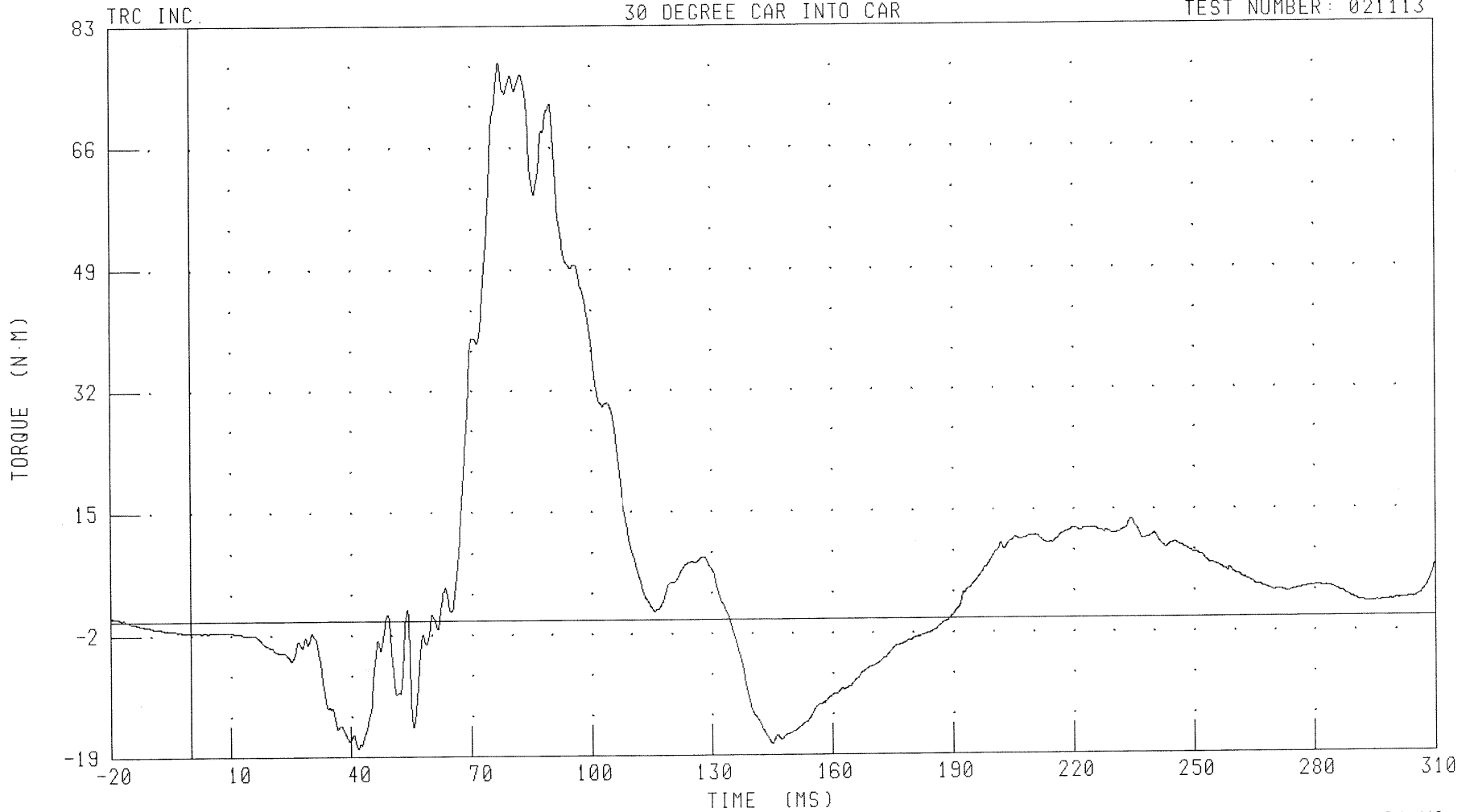
FILTER: CH. CLASS 600

PEAK DATA: 167.58 N @ 41.12 MS; -3085.15 N @ 69.60 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER LEFT FEMUR MOMENT ABOUT X AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: LFMXMA

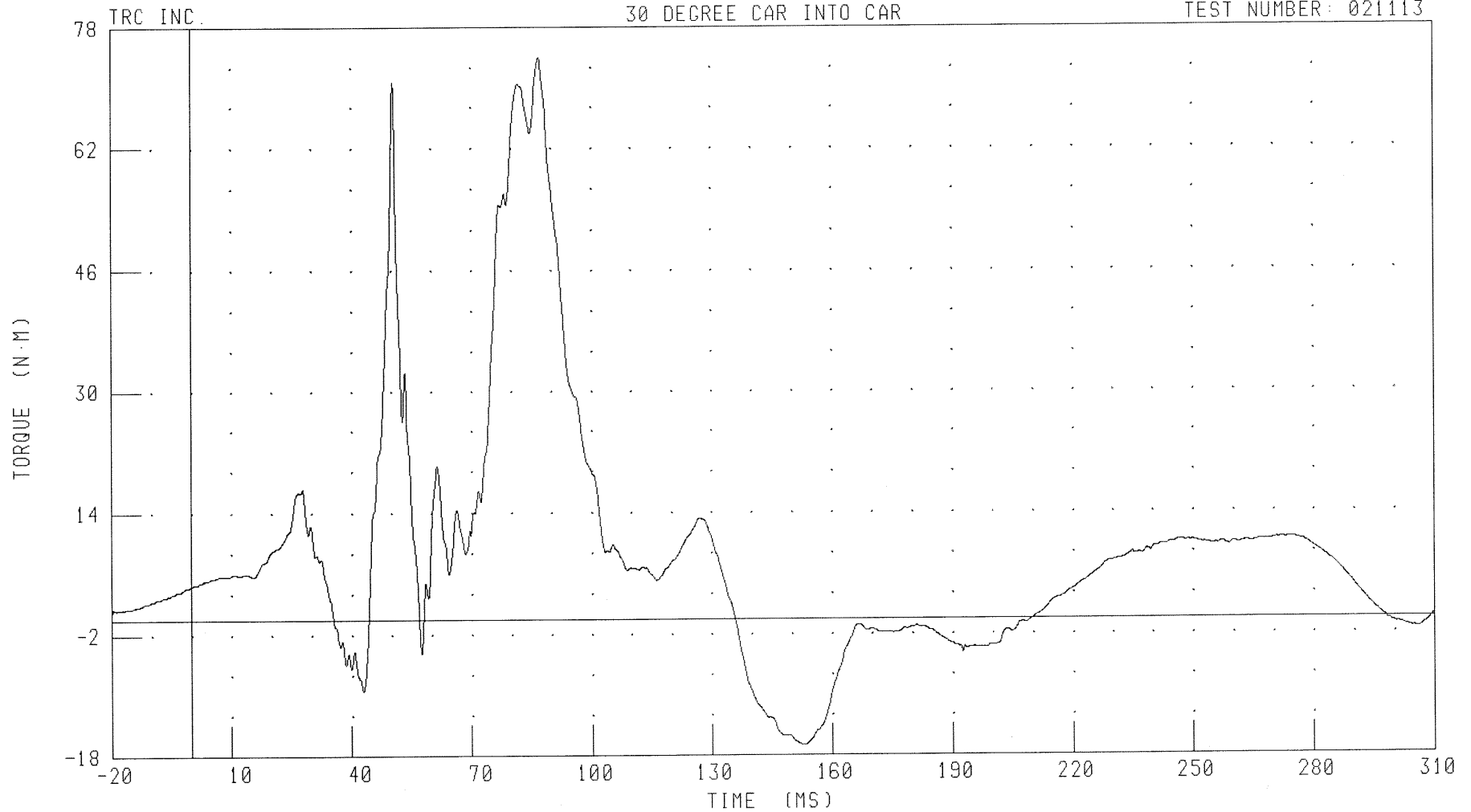
FILTER: CH. CLASS 600

PEAK DATA: 77.88 N·M @ 77.28 MS; -17.87 N·M @ 41.84 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER LEFT FEMUR MOMENT ABOUT Y AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: LFMVMA

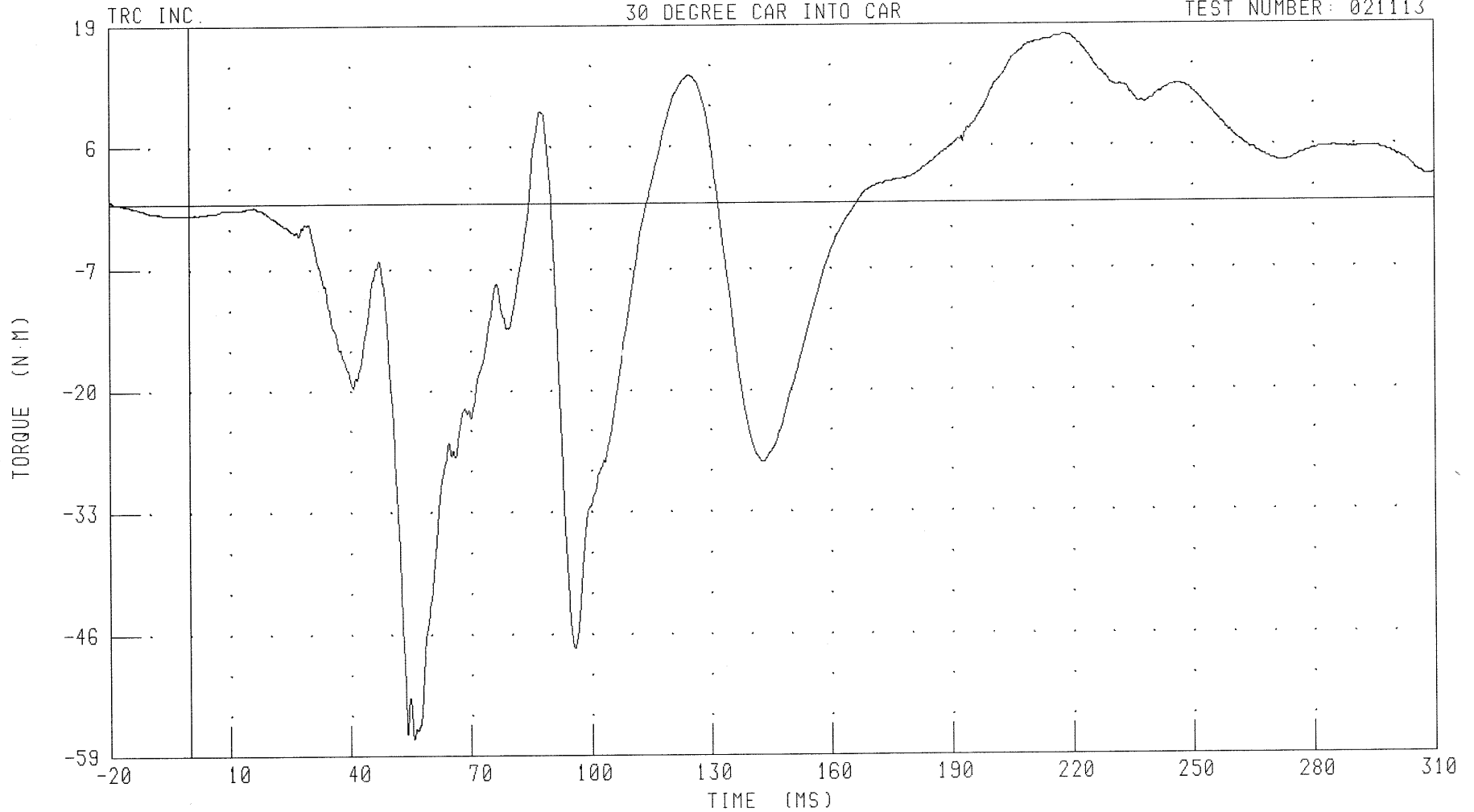
FILTER: CH. CLASS 600

PEAK DATA: 73.94 N·M @ 87.12 MS; -16.69 N·M @ 153.28 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER LEFT FEMUR MOMENT ABOUT Z AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: LFMZMA

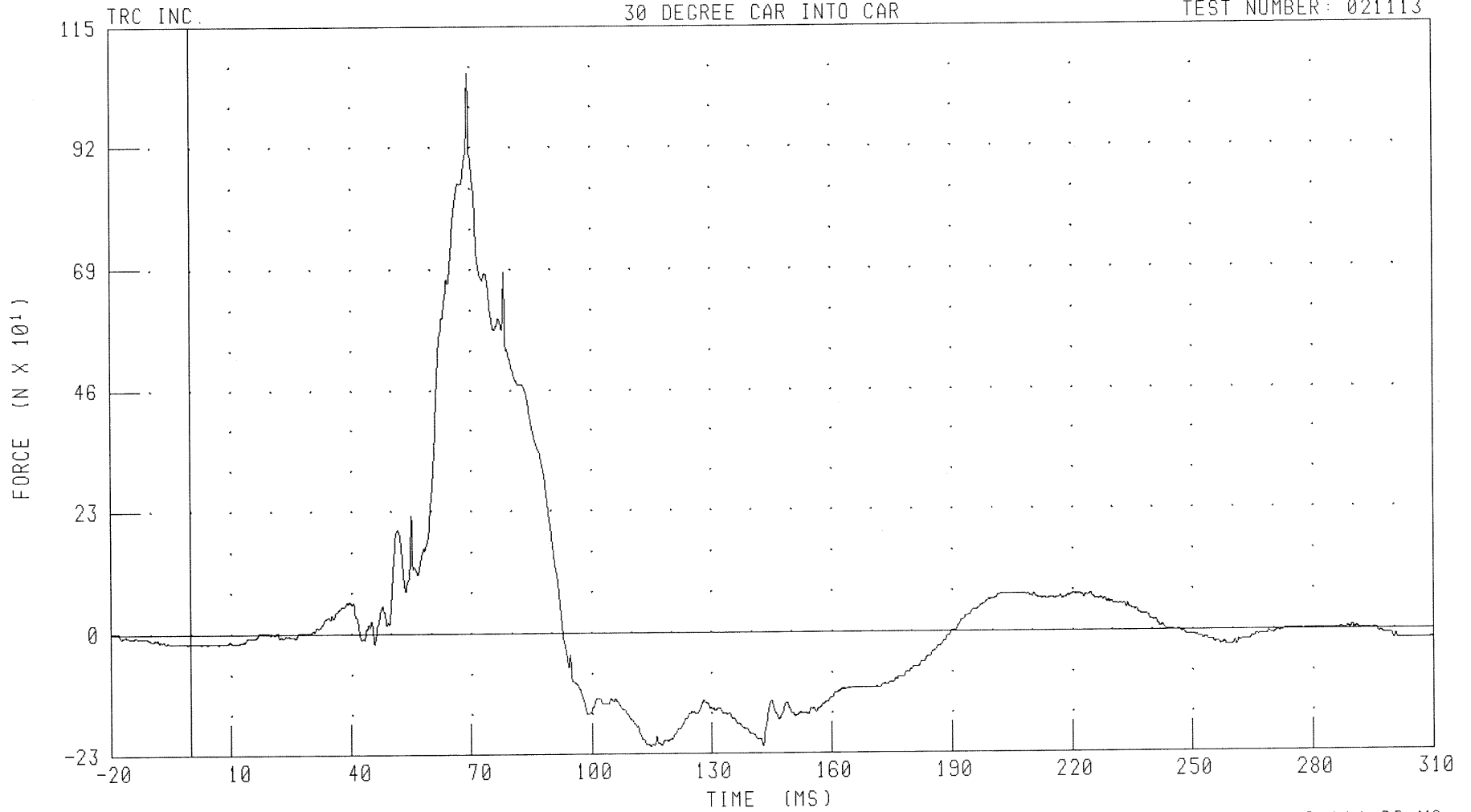
FILTER: CH. CLASS 600

PEAK DATA: 17.93 N·M @ 218.48 MS; -57.21 N·M @ 55.76 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER RIGHT FEMUR X-AXIS FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: RFMXFA

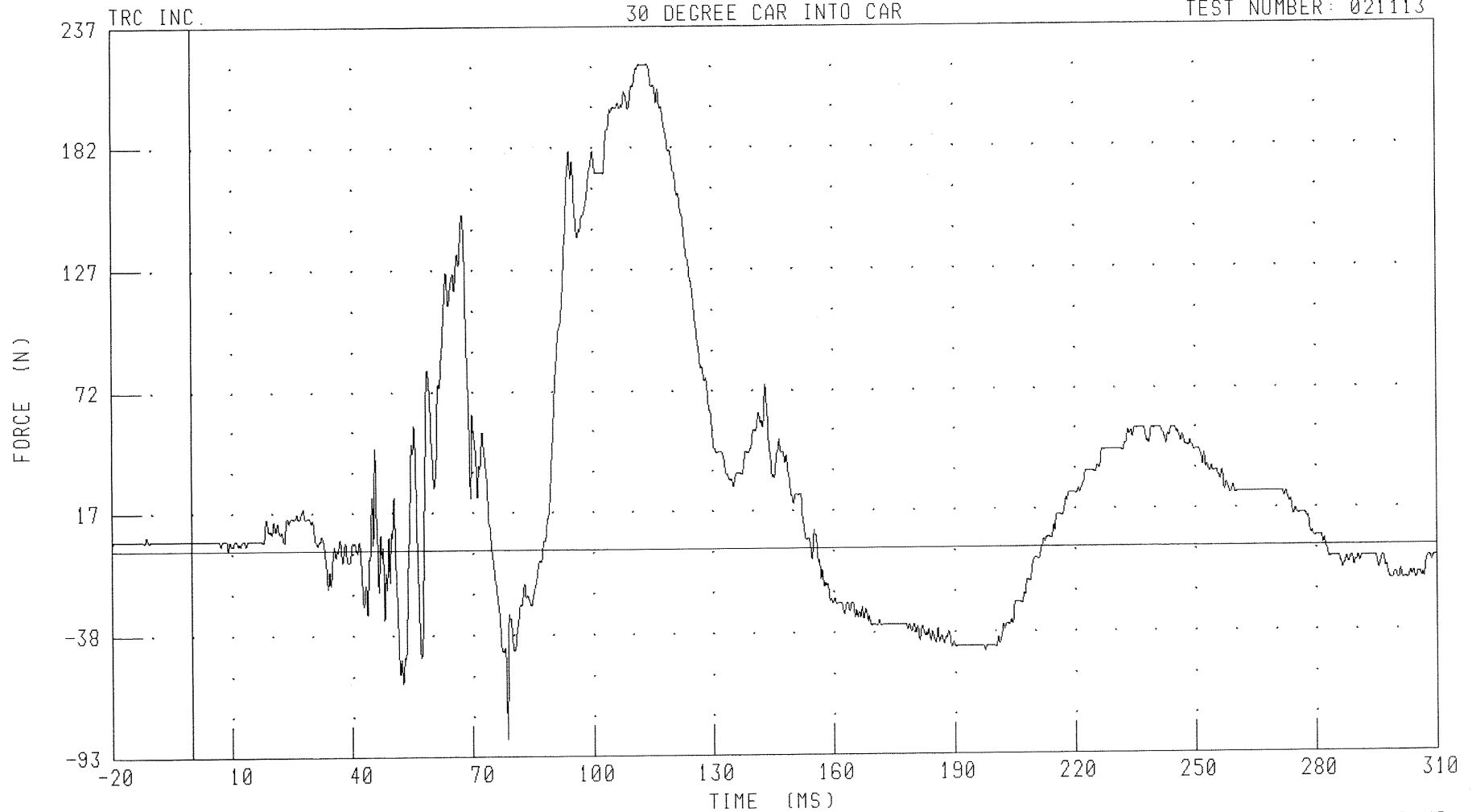
FILTER: CH. CLASS 600

PEAK DATA: 1061.21 N @ 69.60 MS; -217.29 N @ 114.96 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER RIGHT FEMUR Y-AXIS FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



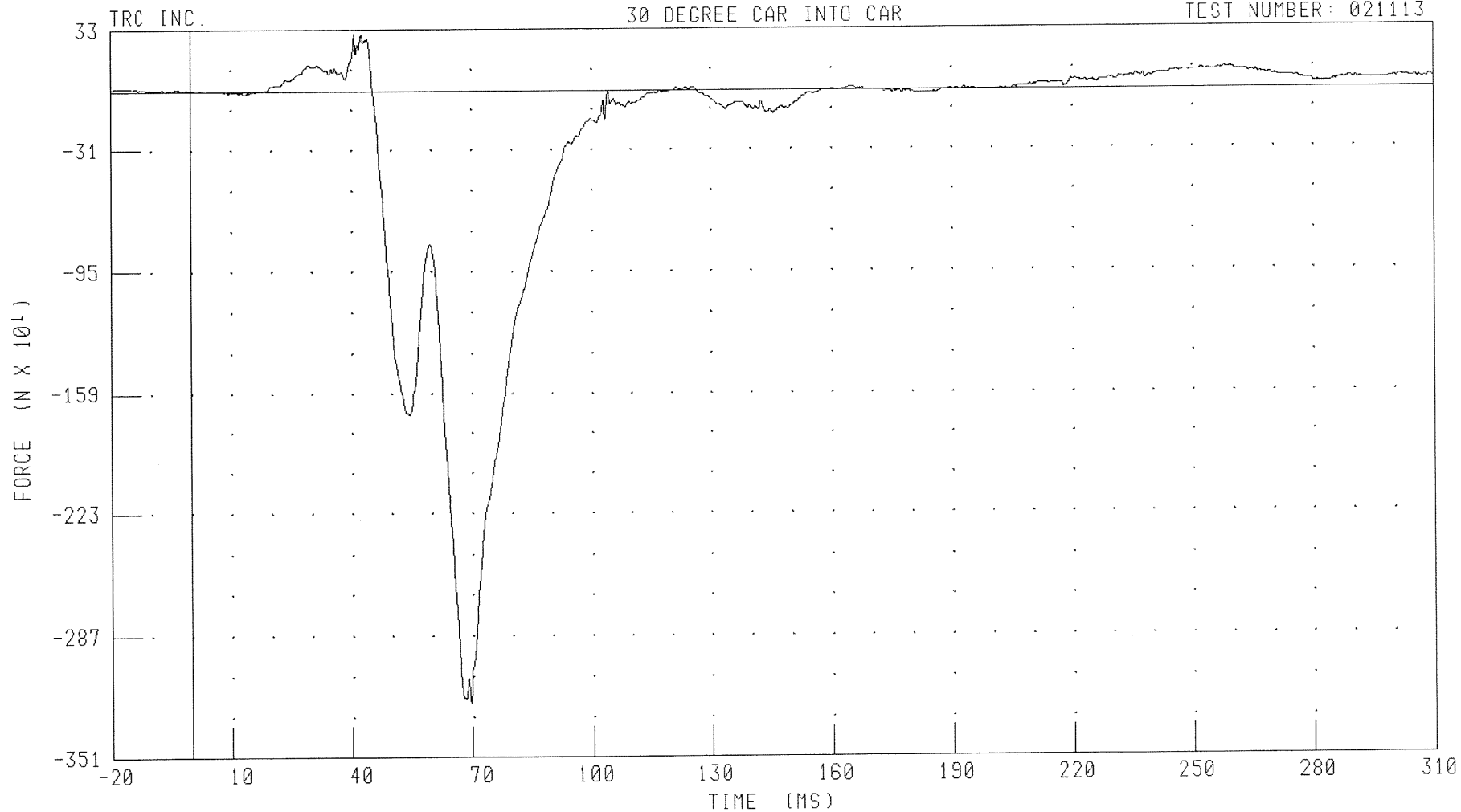
CHANNEL: RMYFA FILTER: CH. CLASS 600

PEAK DATA: 219.66 N @ 114.24 MS; -85.20 N @ 78.48 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER RIGHT FEMUR Z-AXIS FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



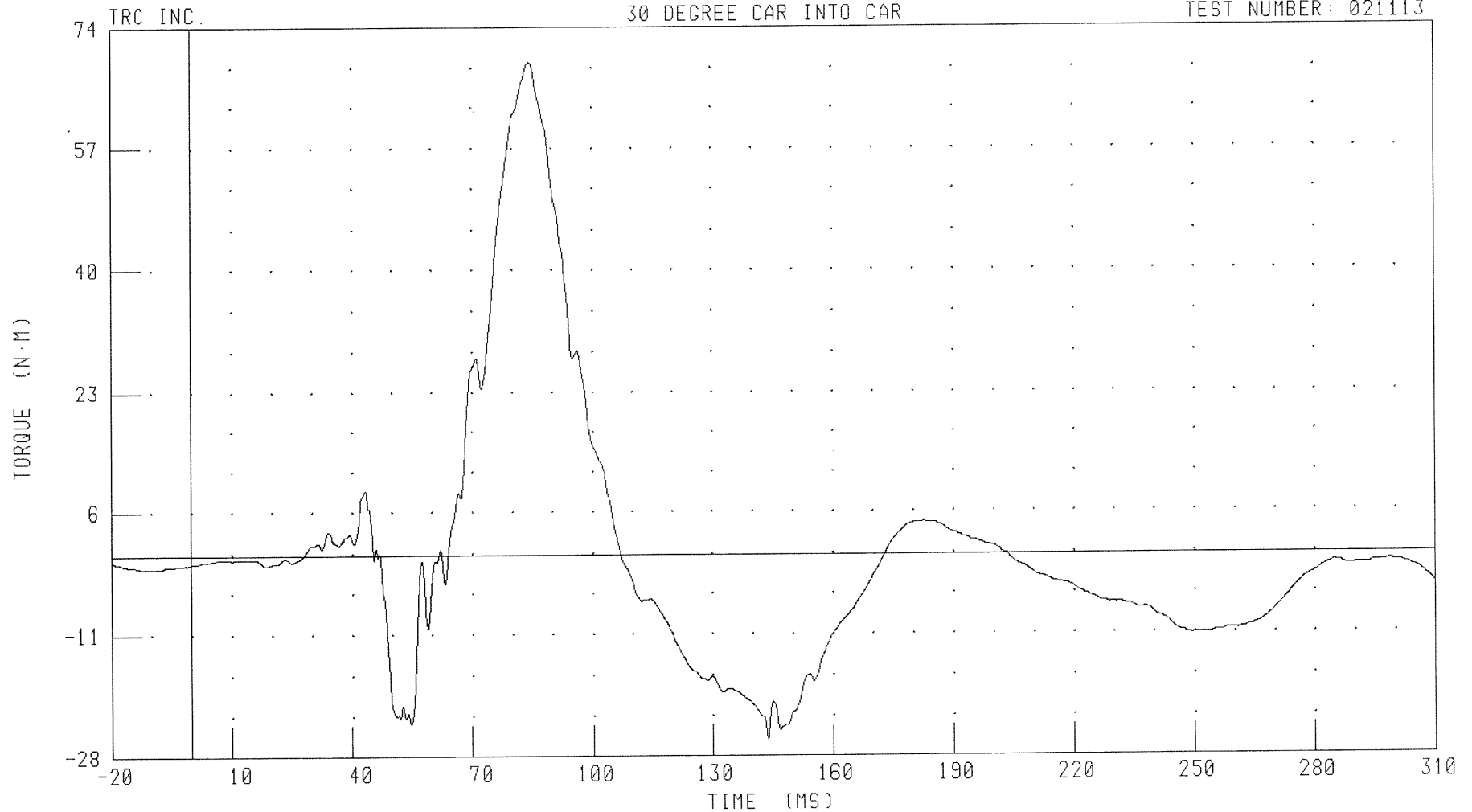
CHANNEL: RFMZFA FILTER: CH. CLASS 600

PEAK DATA: 307.74 N @ 40.88 MS; -3223.60 N @ 69.60 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER RIGHT FEMUR MOMENT ABOUT X AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



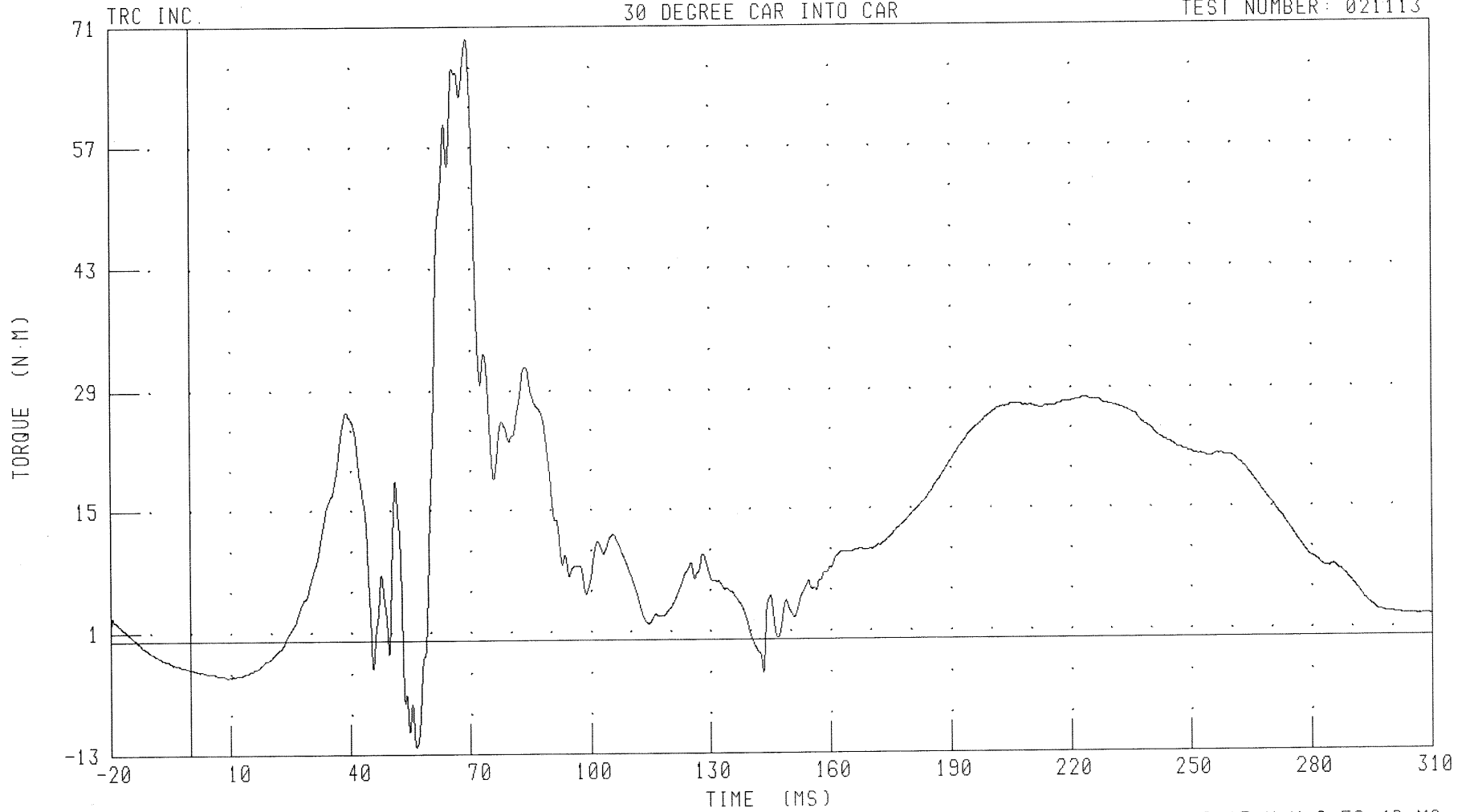
CHANNEL: RFMXMA FILTER: CH. CLASS 600

PEAK DATA: 69.10 N·M @ 84.56 MS; -25.68 N·M @ 143.84 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER RIGHT FEMUR MOMENT ABOUT Y AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



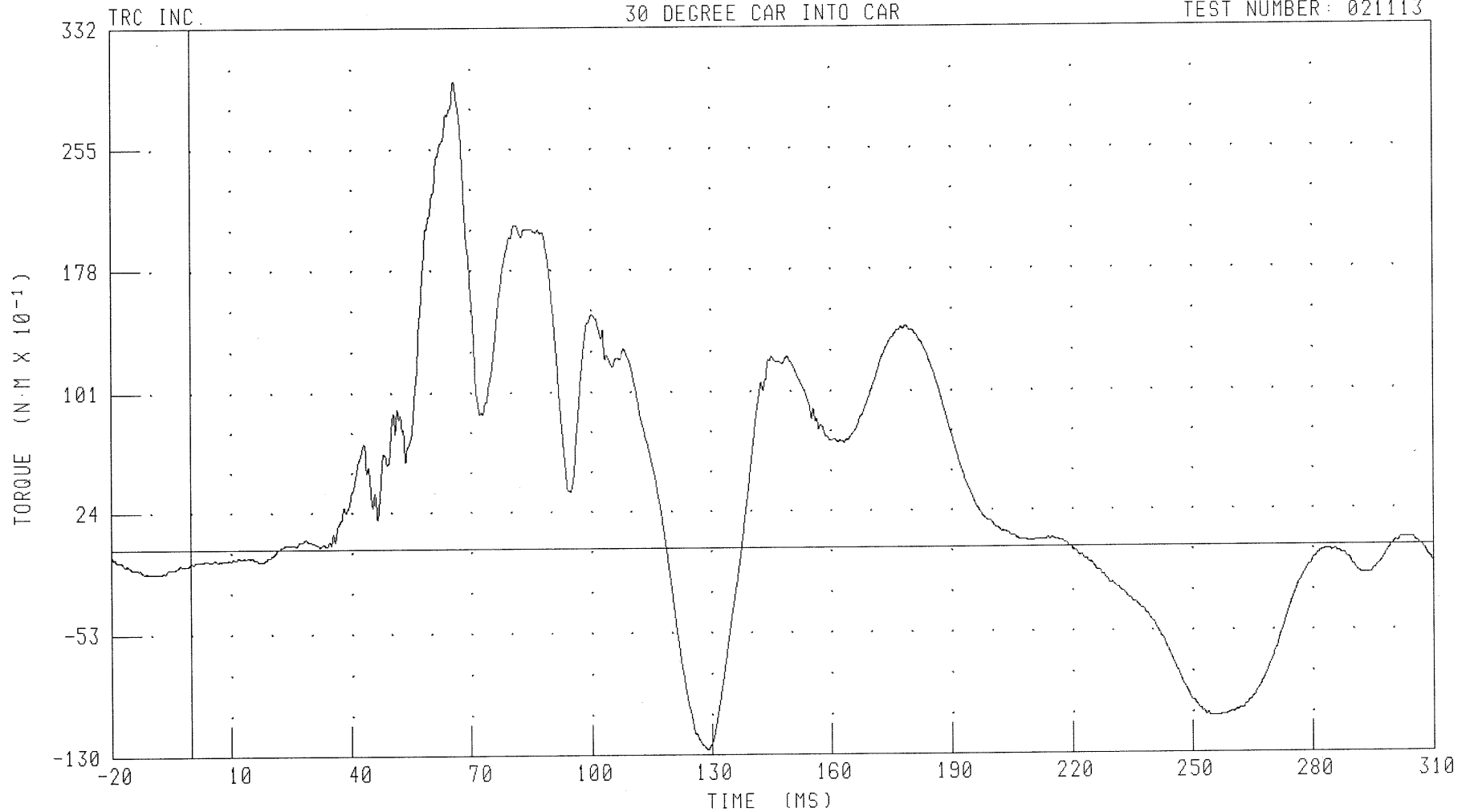
CHANNEL: RFMYMA FILTER: CH. CLASS 600

PEAK DATA: 69.55 N·M @ 69.44 MS; -12.15 N·M @ 56.40 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER RIGHT FEMUR MOMENT ABOUT Z AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



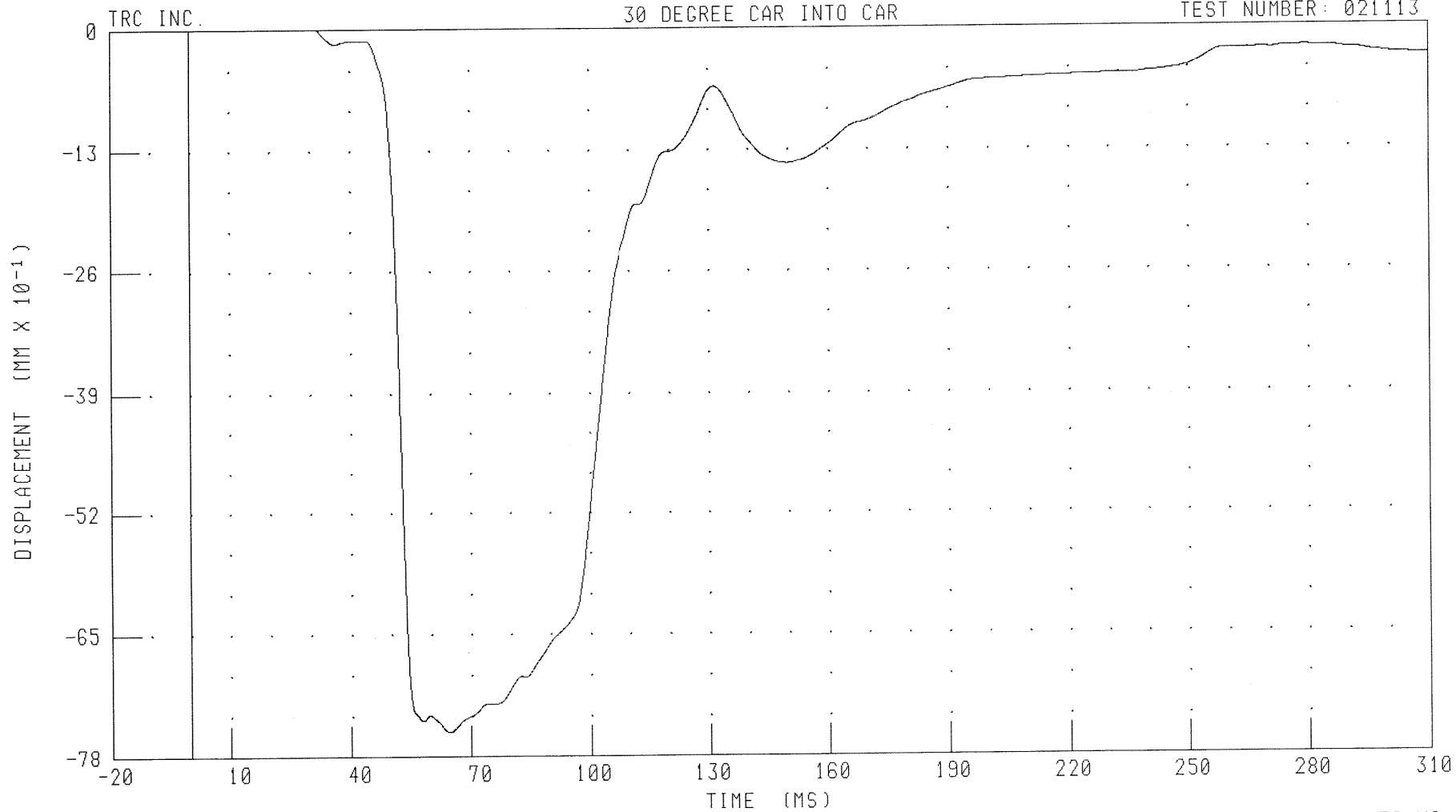
CHANNEL: RFMZMA FILTER: CH. CLASS 600

PEAK DATA: 29.83 N·M @ 66.08 MS; -12.67 N·M @ 129.12 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER LEFT KNEE DISPLACEMENT

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: KNLXDA

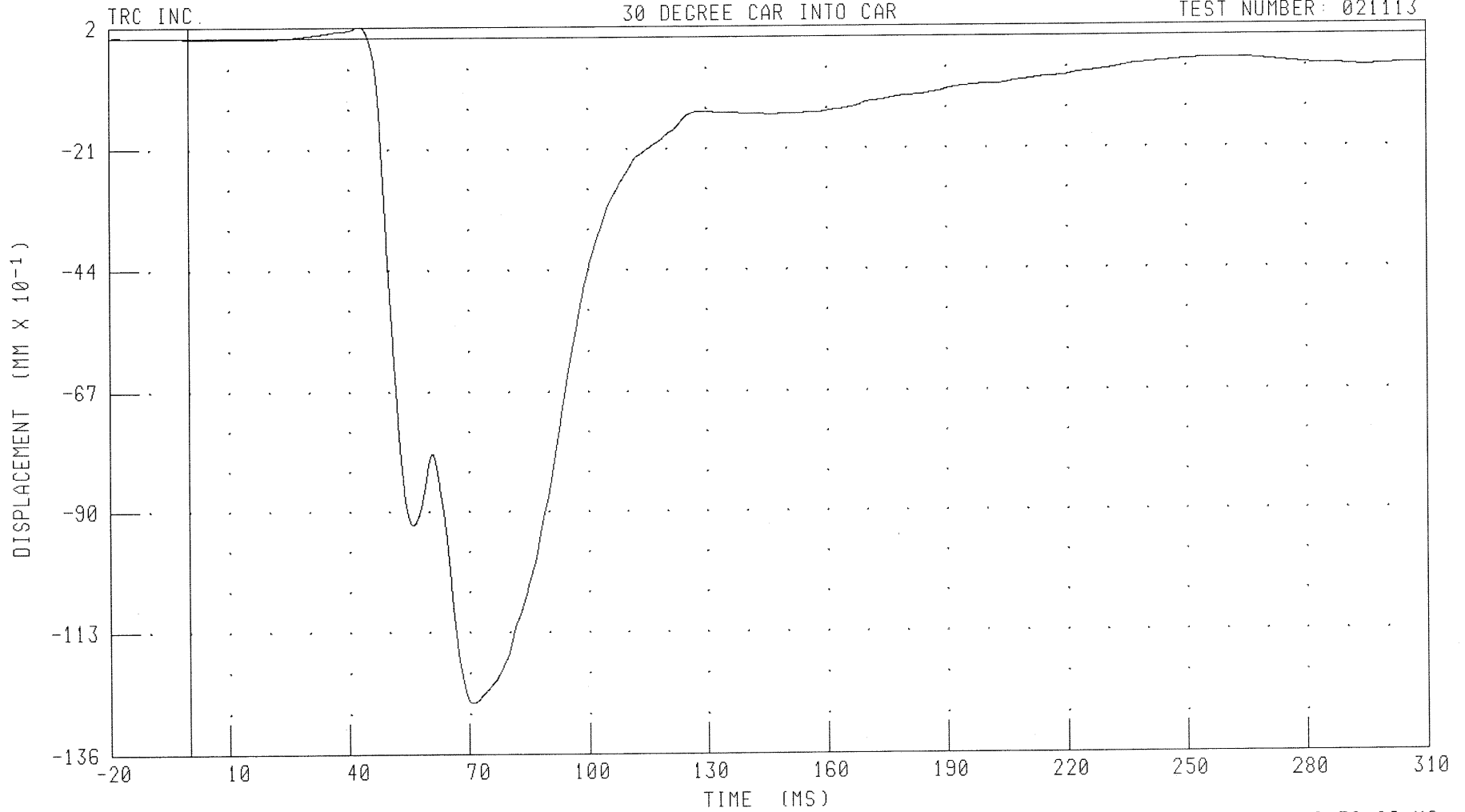
FILTER: CH. CLASS 180

PEAK DATA: 0.08 MM @ 28.40 MS; -7.54 MM @ 64.56 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET DRIVER RIGHT KNEE DISPLACEMENT

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: KNRXDA

FILTER: CH. CLASS 180

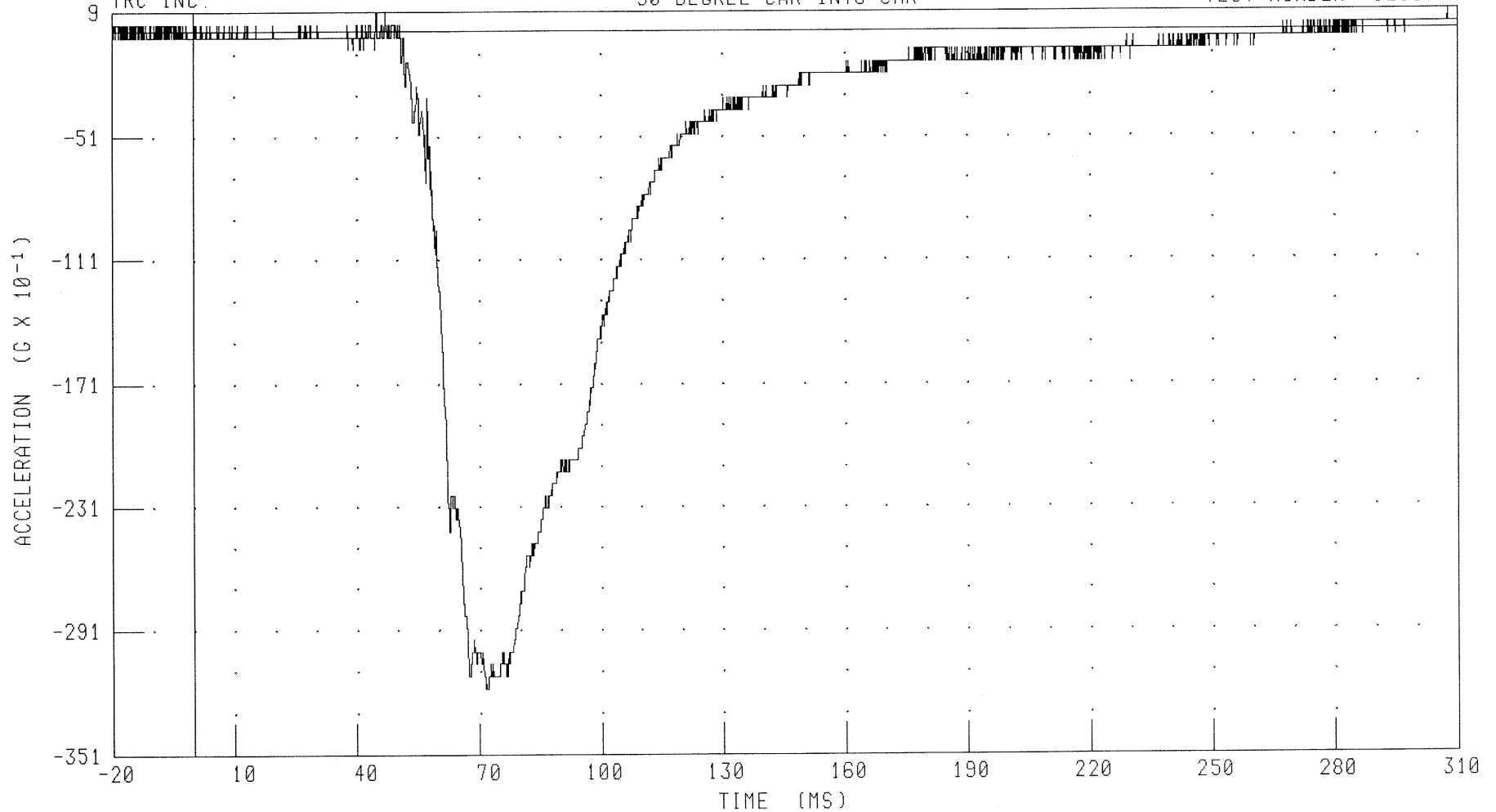
PEAK DATA: 0.23 MM @ 42.96 MS; -12.63 MM @ 70.80 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER HEAD X-AXIS ACCELERATION

TRC INC.

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



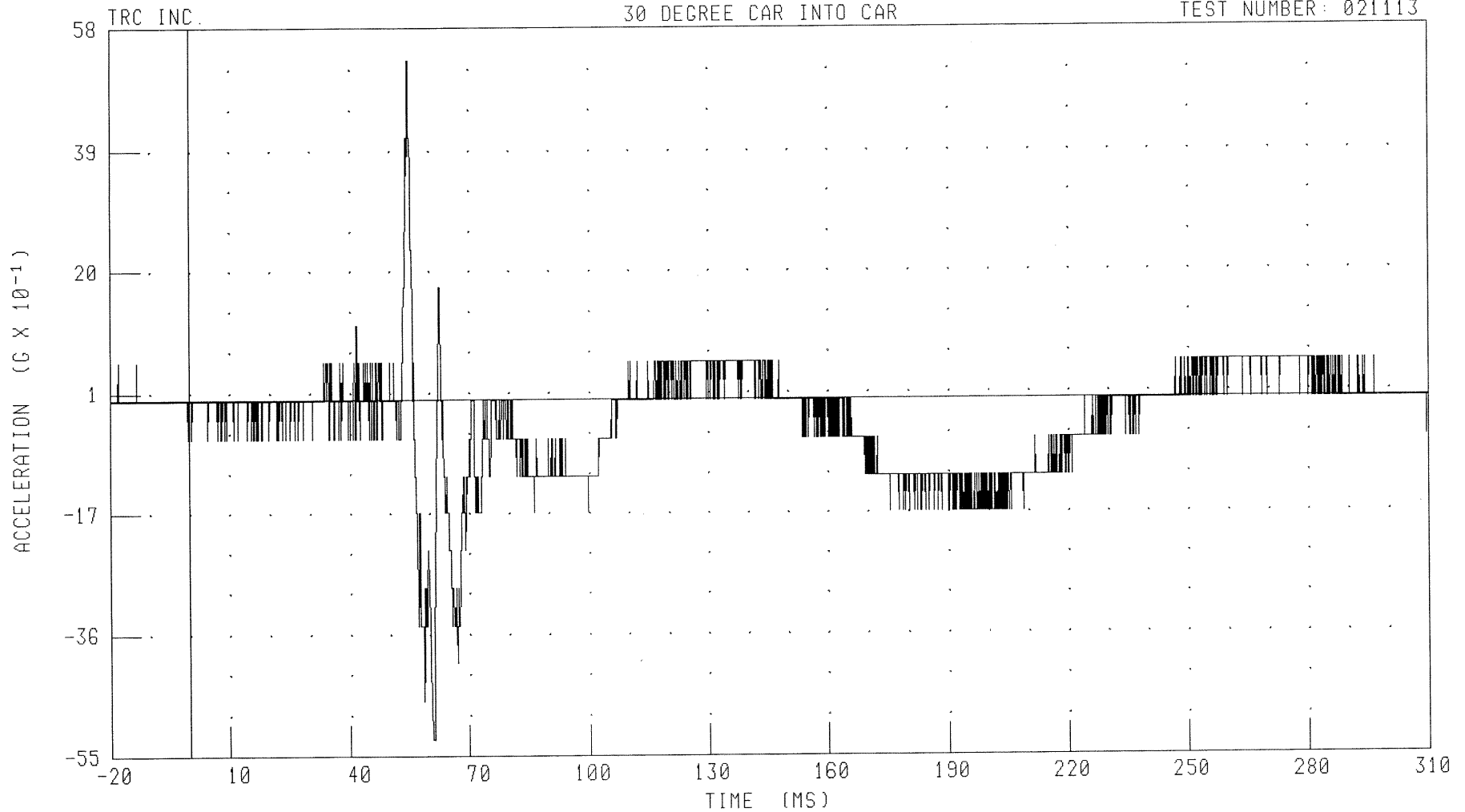
CHANNEL: HEDXGB FILTER: CH. CLASS 1000

PEAK DATA: 0.88 G @ 44.96 MS; -31.93 G @ 71.44 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER HEAD Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



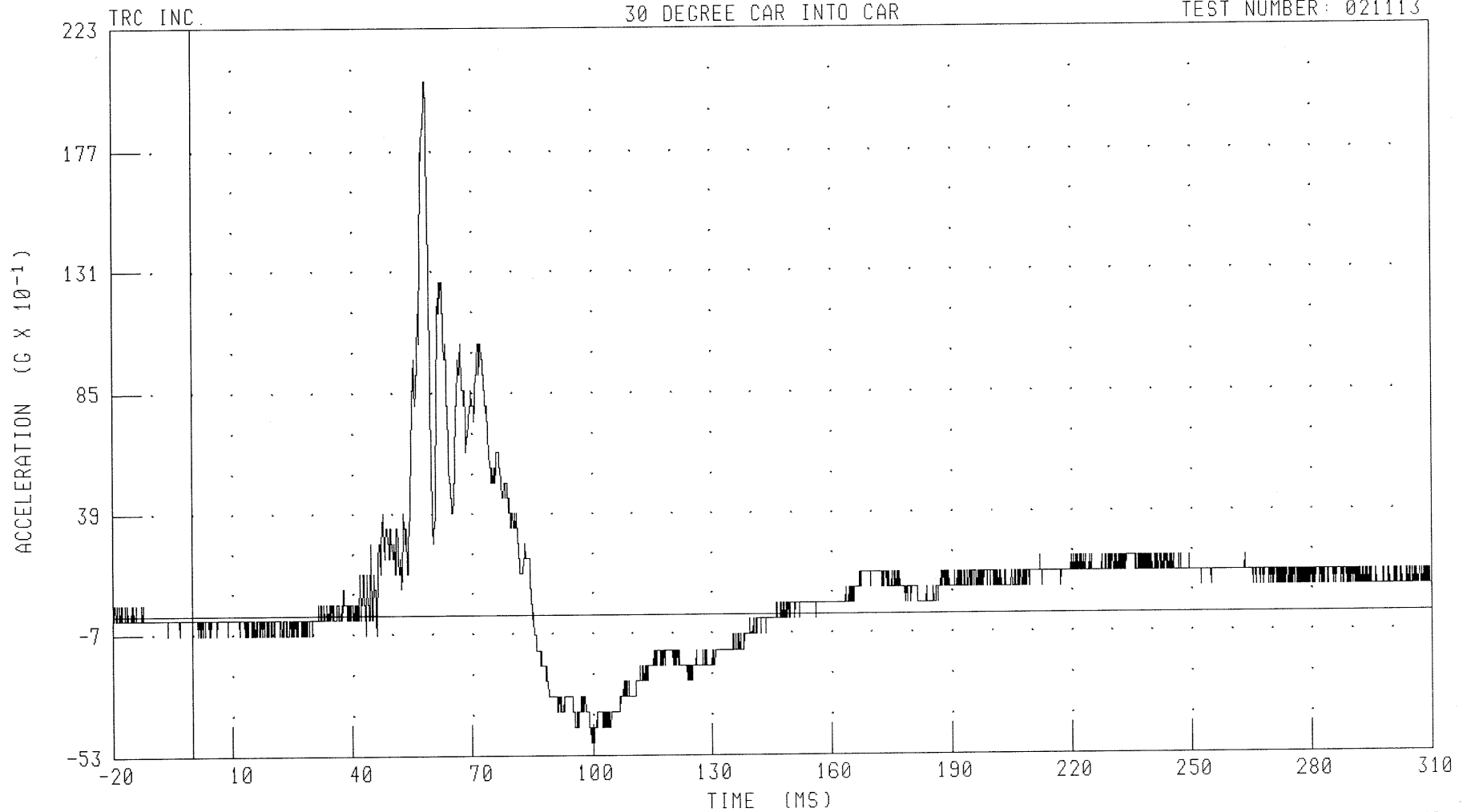
CHANNEL: HEDYGB FILTER: CH. CLASS 1000

PEAK DATA: 5.30 G @ 54.72 MS; -5.34 G @ 60.64 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER HEAD Z-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



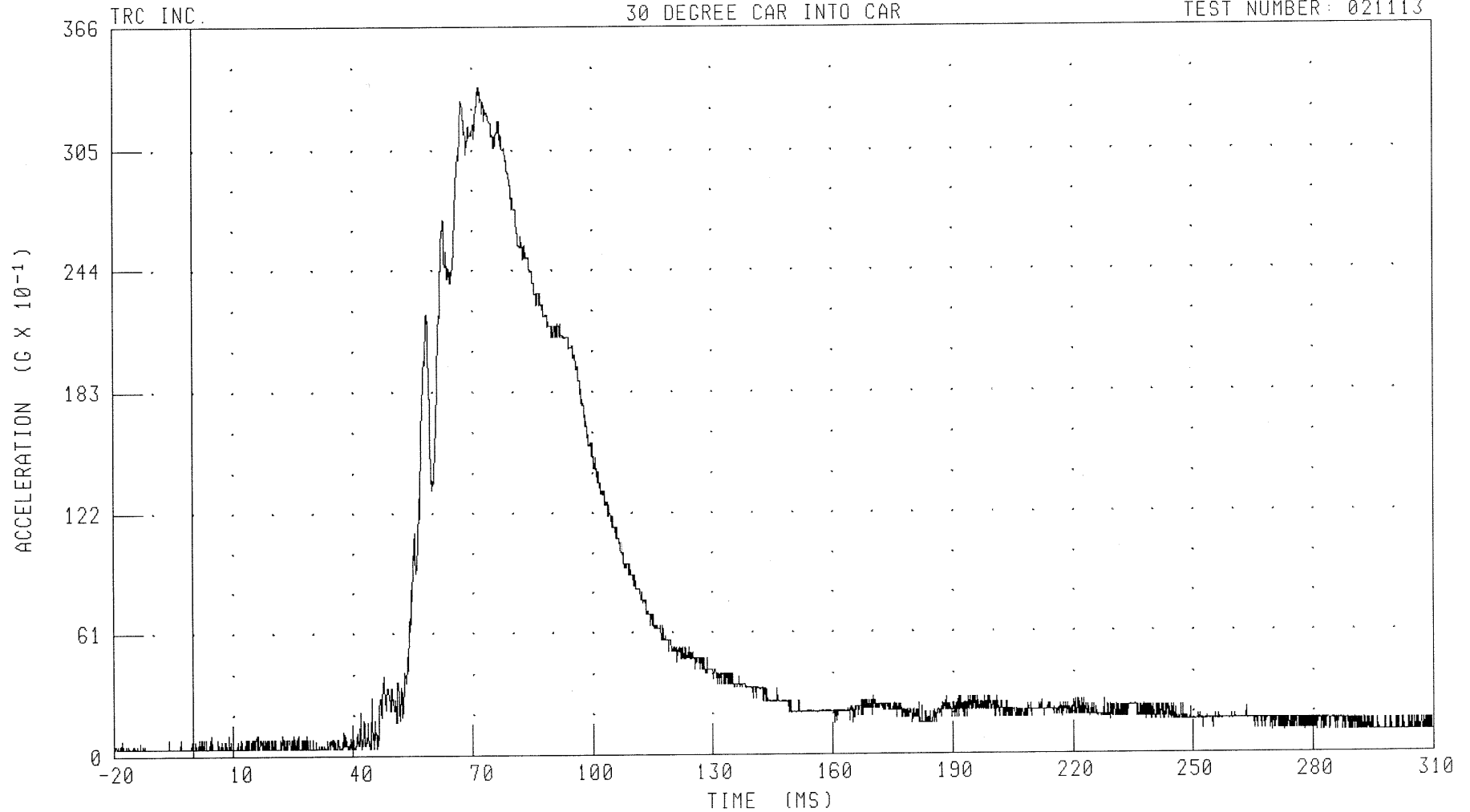
CHANNEL: HEDZGB FILTER: CH. CLASS 1000

PEAK DATA: 20.31 G @ 58.40 MS; -4.83 G @ 99.52 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER HEAD RESULTANT ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: HEDRGB FILTER: CH. CLASS 1000

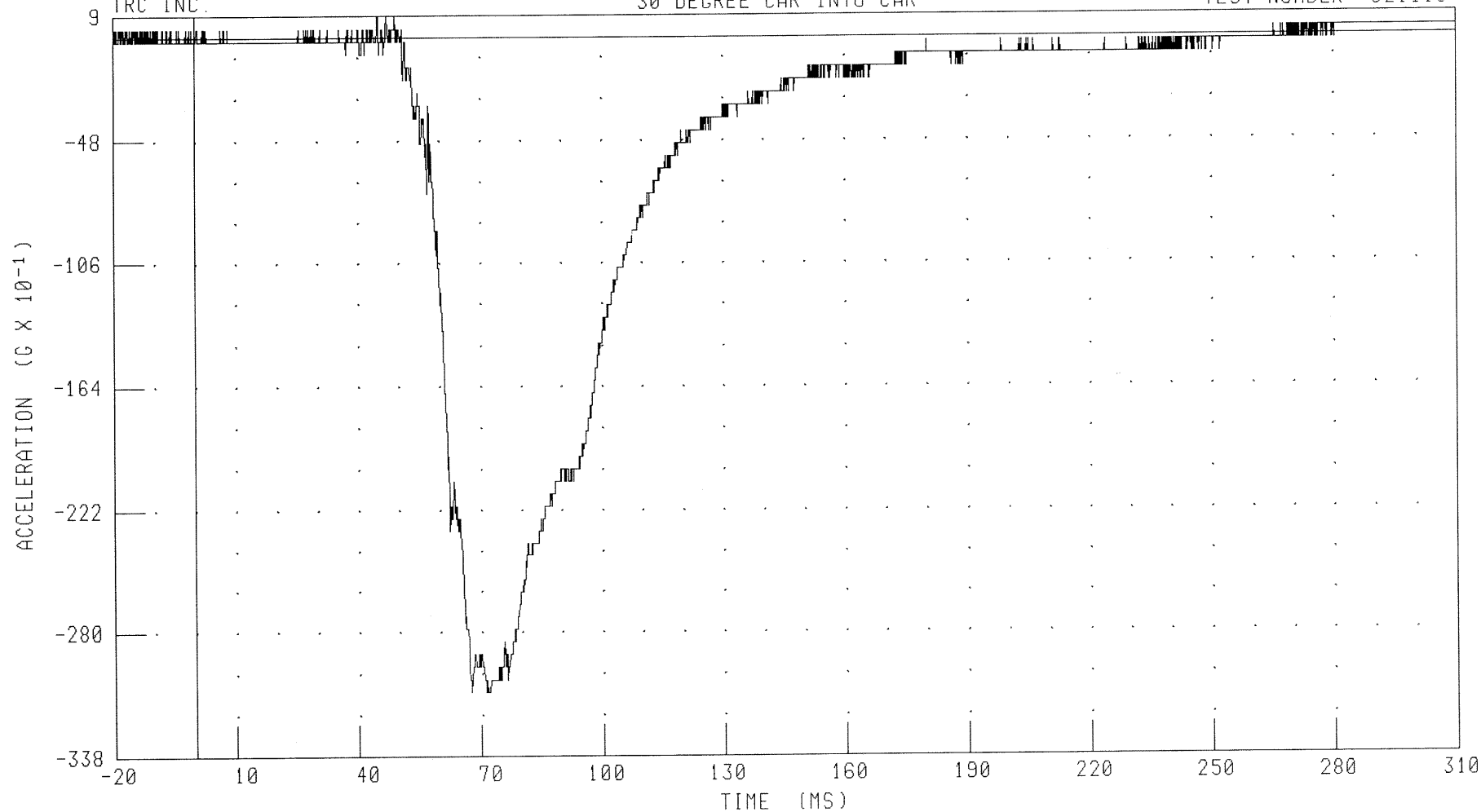
PEAK DATA: 33.62 G @ 71.76 MS; 0.33 G @ -19.84 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER HEAD X-AXIS ACCELERATION REDUNDANT

TRC INC.

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



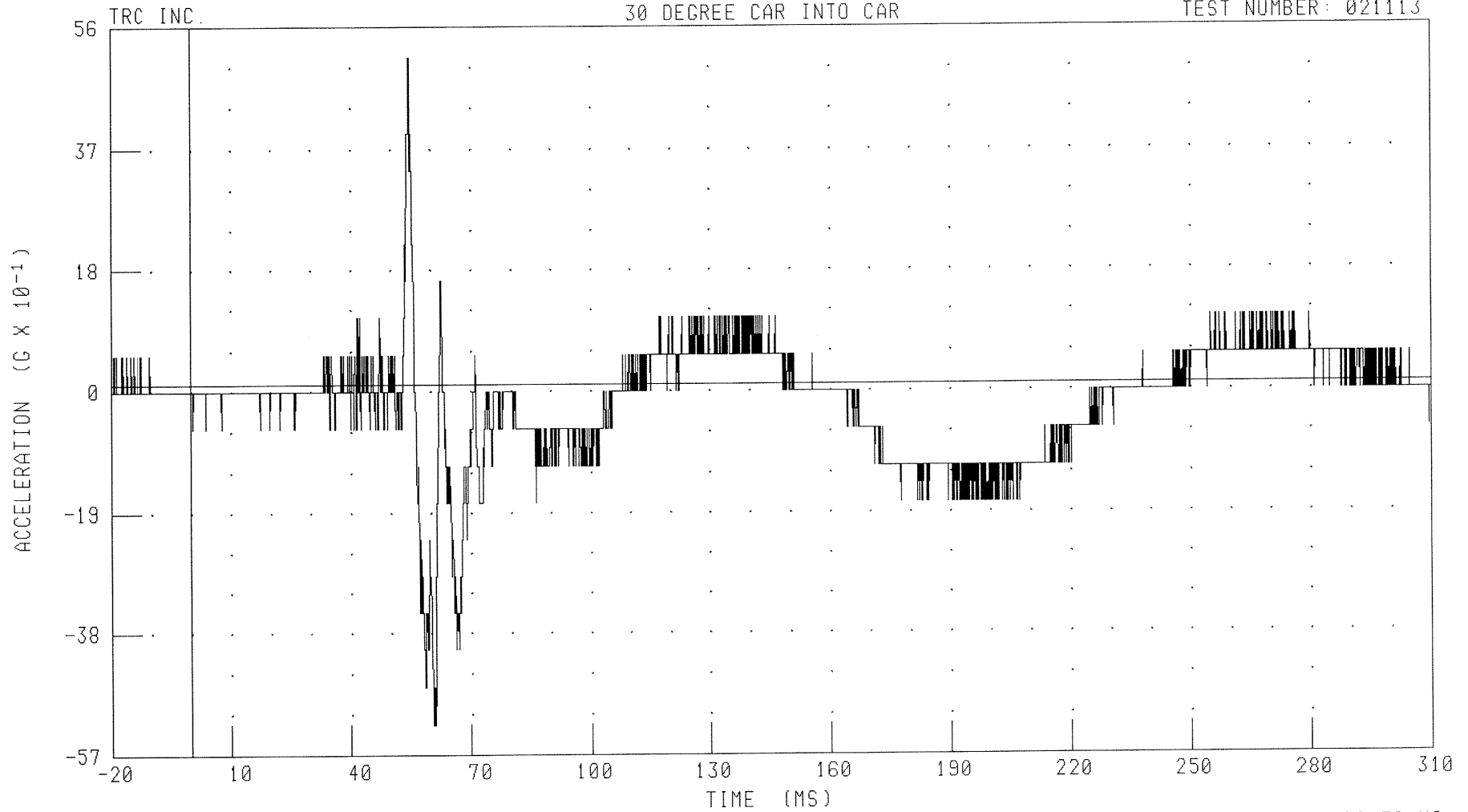
CHANNEL: HEDXRB FILTER: CH. CLASS 1000

PEAK DATA: 0.96 G @ 45.04 MS; -30.83 G @ 67.68 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER HEAD Y-AXIS ACCELERATION REDUNDANT

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



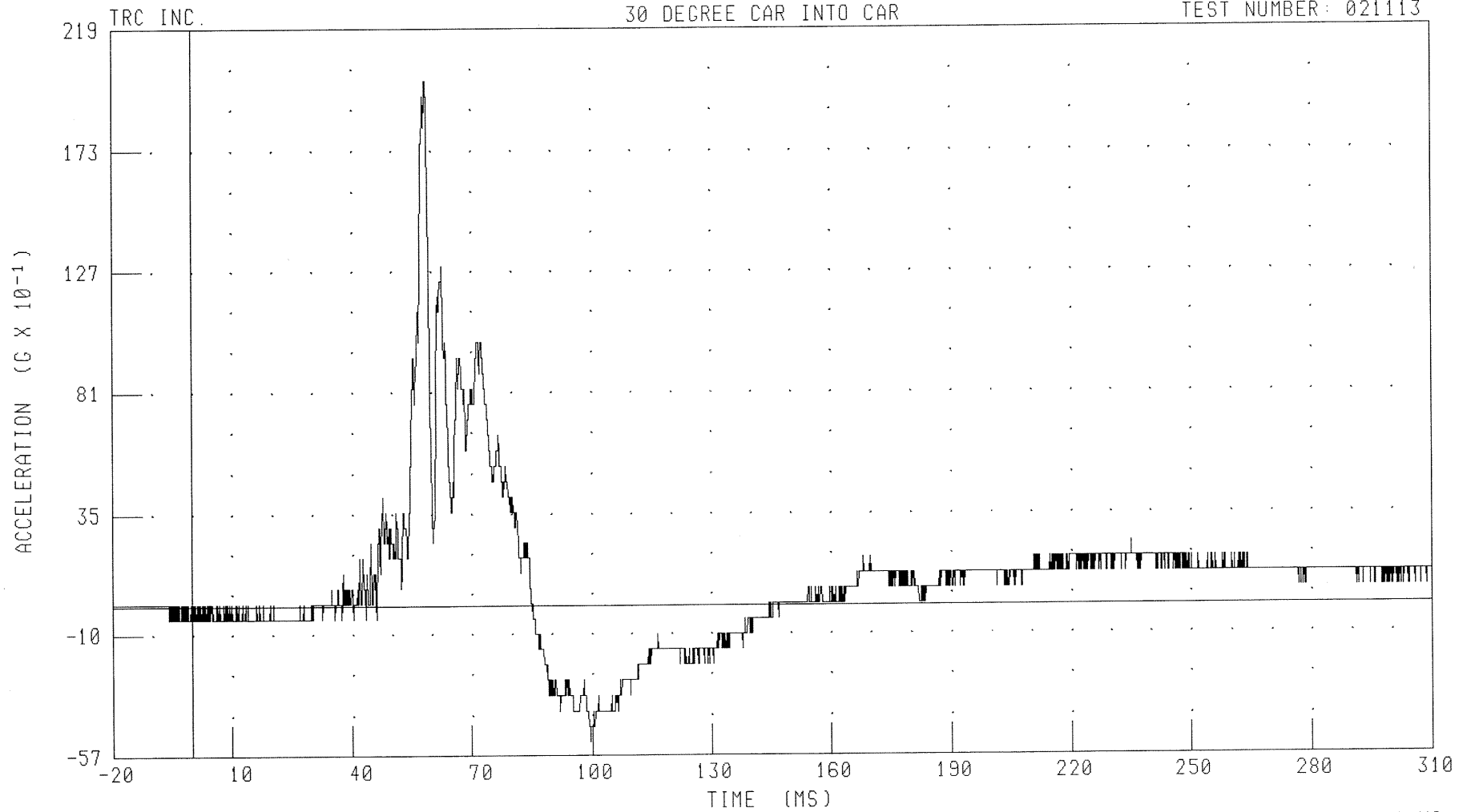
CHANNEL: HEDYRB FILTER: CH. CLASS 1000

PEAK DATA: 5.11 G @ 54.72 MS; -5.33 G @ 60.56 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER HEAD Z-AXIS ACCELERATION REDUNDANT

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



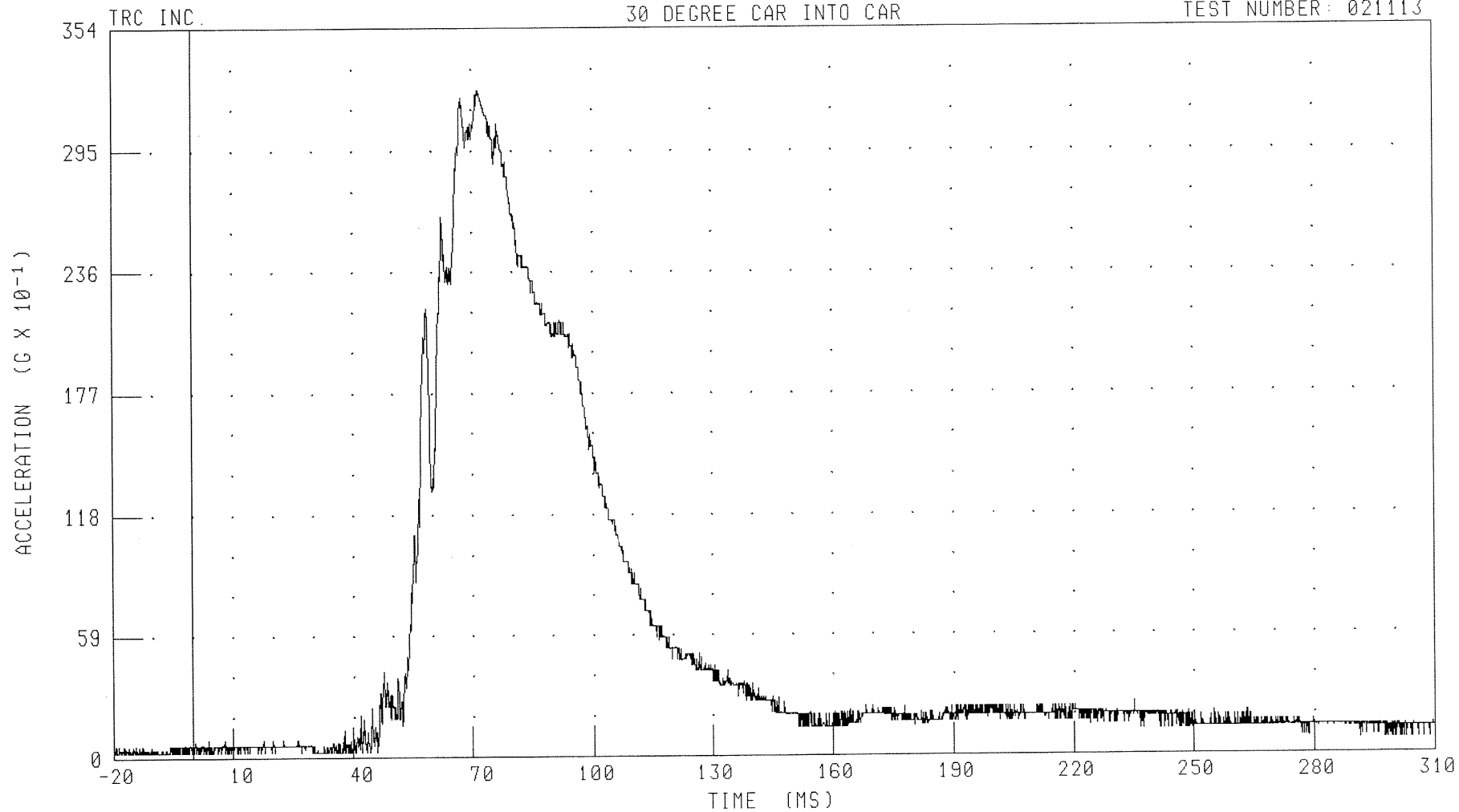
CHANNEL: HEDZRB FILTER: CH. CLASS 1000

PEAK DATA: 19.92 G @ 58.40 MS; -5.20 G @ 99.60 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER HEAD RESULTANT ACCELERATION REDUNDANT

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



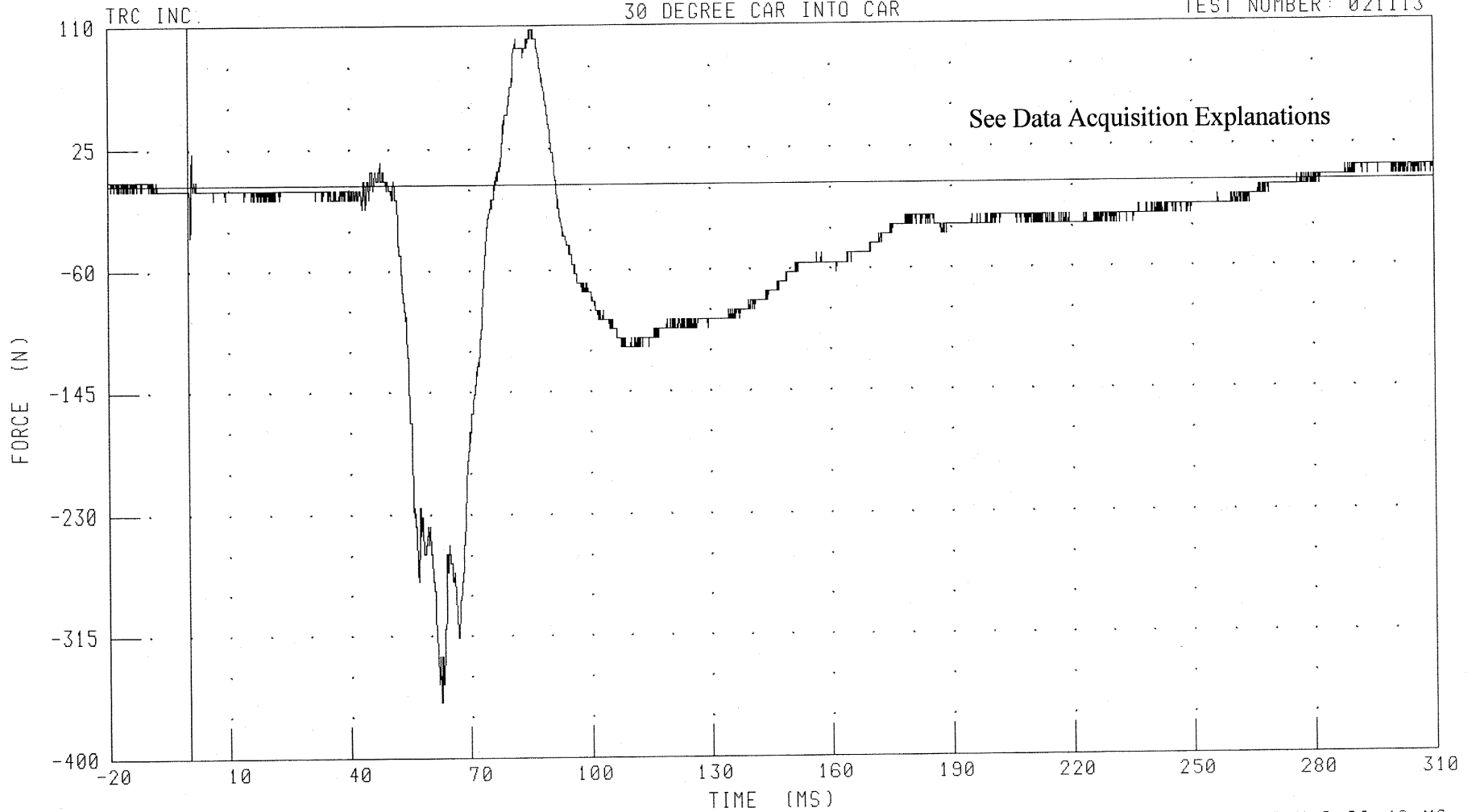
CHANNEL: HEDRRB FILTER: CH. CLASS 1000

PEAK DATA: 32.43 G @ 71.60 MS; 0.25 G @ -20.00 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER NECK X-AXIS SHEAR FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



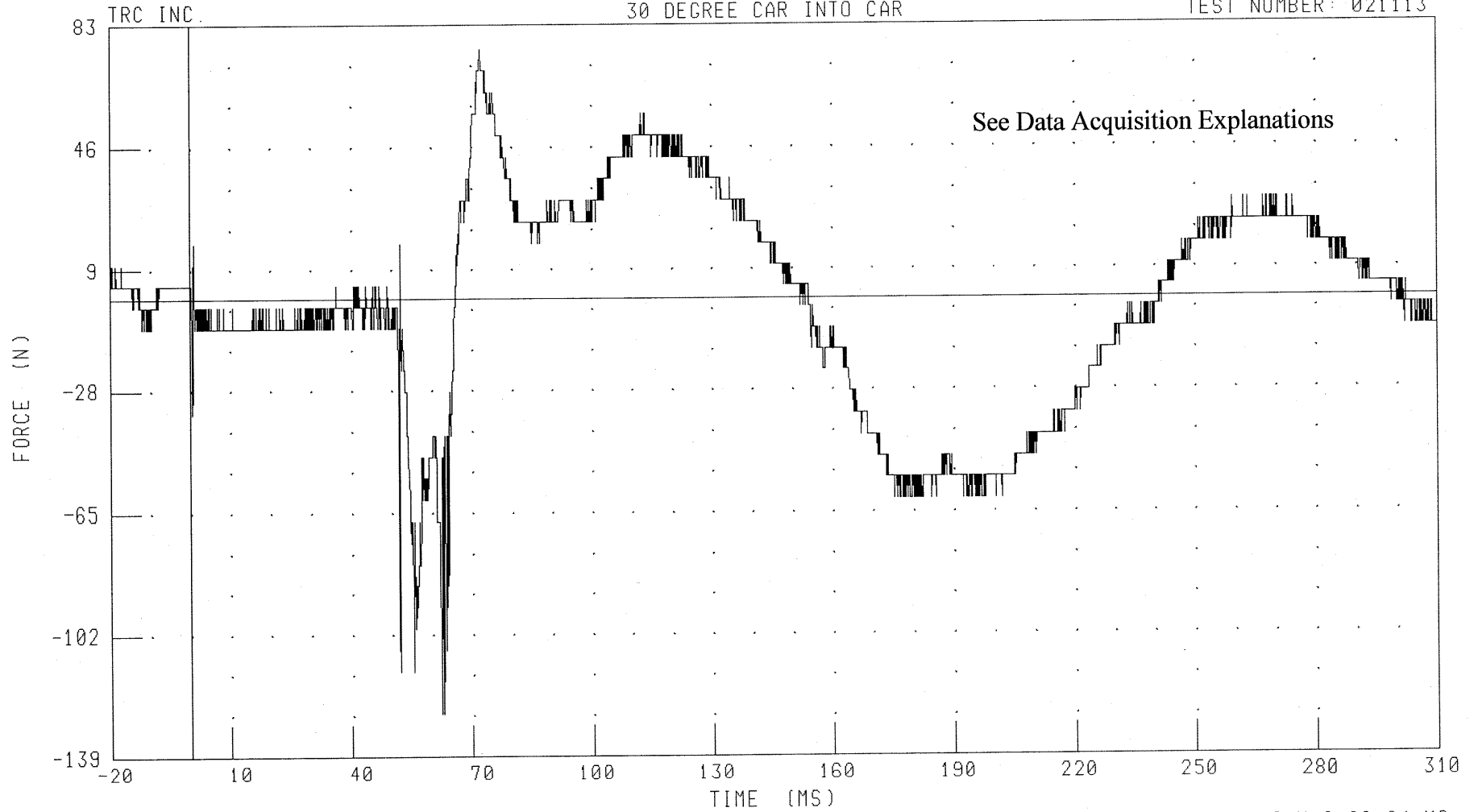
CHANNEL: NEKXFB FILTER: CH. CLASS 1000

PEAK DATA: 107.07 N @ 85.12 MS; -361.87 N @ 62.48 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER NECK Y-AXIS SHEAR FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



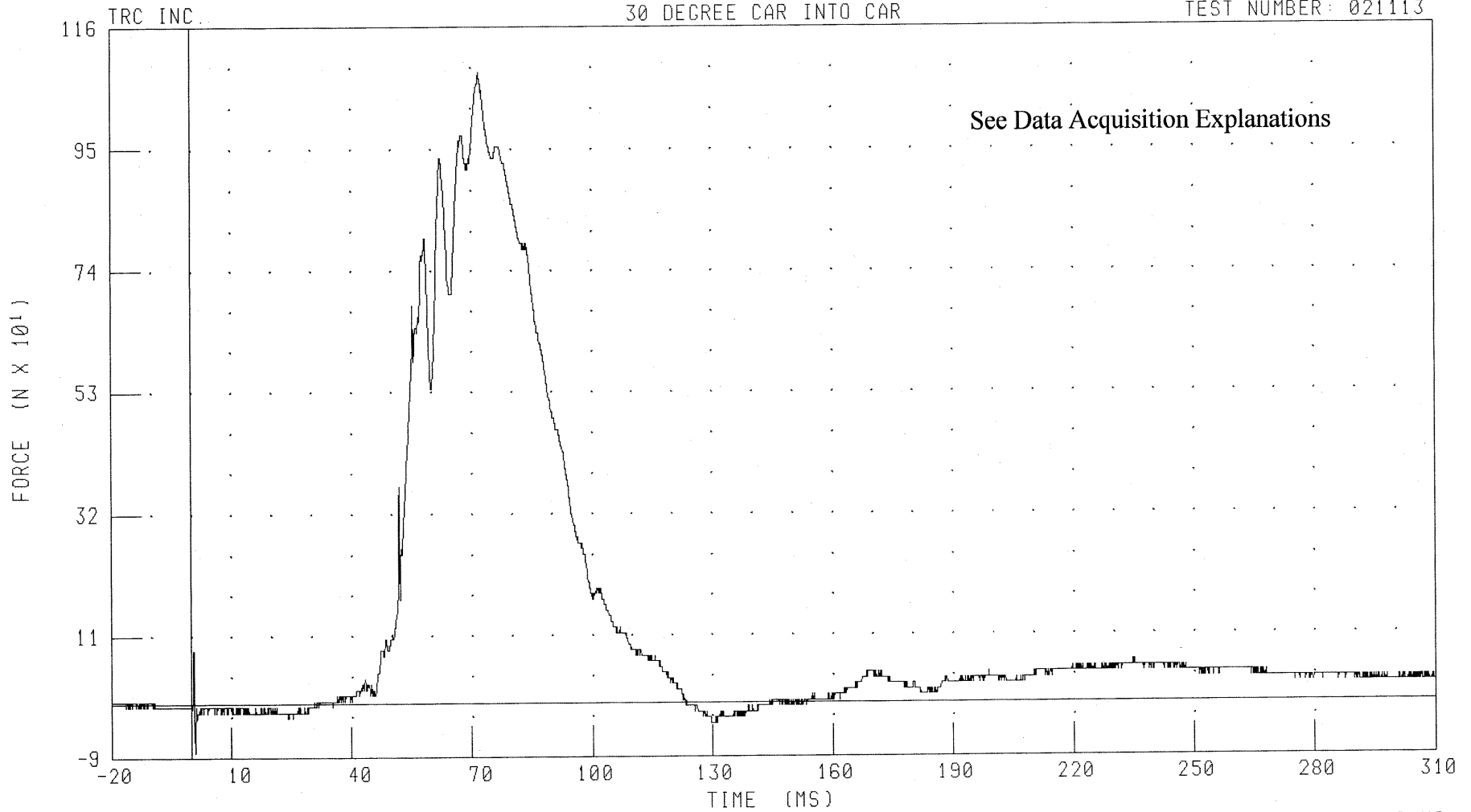
CHANNEL: NEKYFB FILTER: CH. CLASS 1000

PEAK DATA: 75.68 N @ 72.32 MS; -126.22 N @ 62.24 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER NECK Z-AXIS AXIAL FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



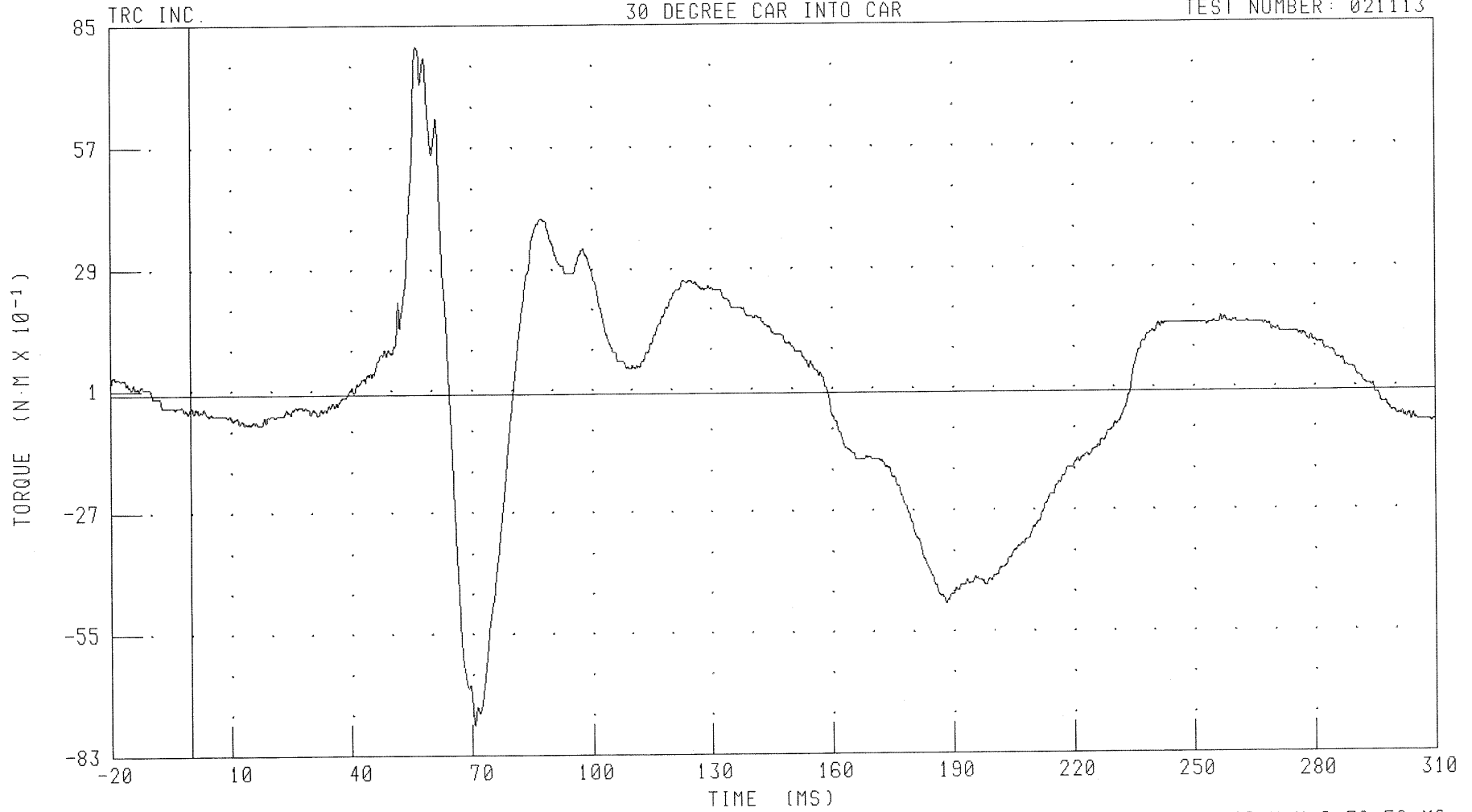
CHANNEL: NEKZFB FILTER: CH. CLASS 1000

PEAK DATA: 1088.52 N @ 72.08 MS; -84.97 N @ 0.96 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER NECK MOMENT ABOUT X AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: NEKXMB

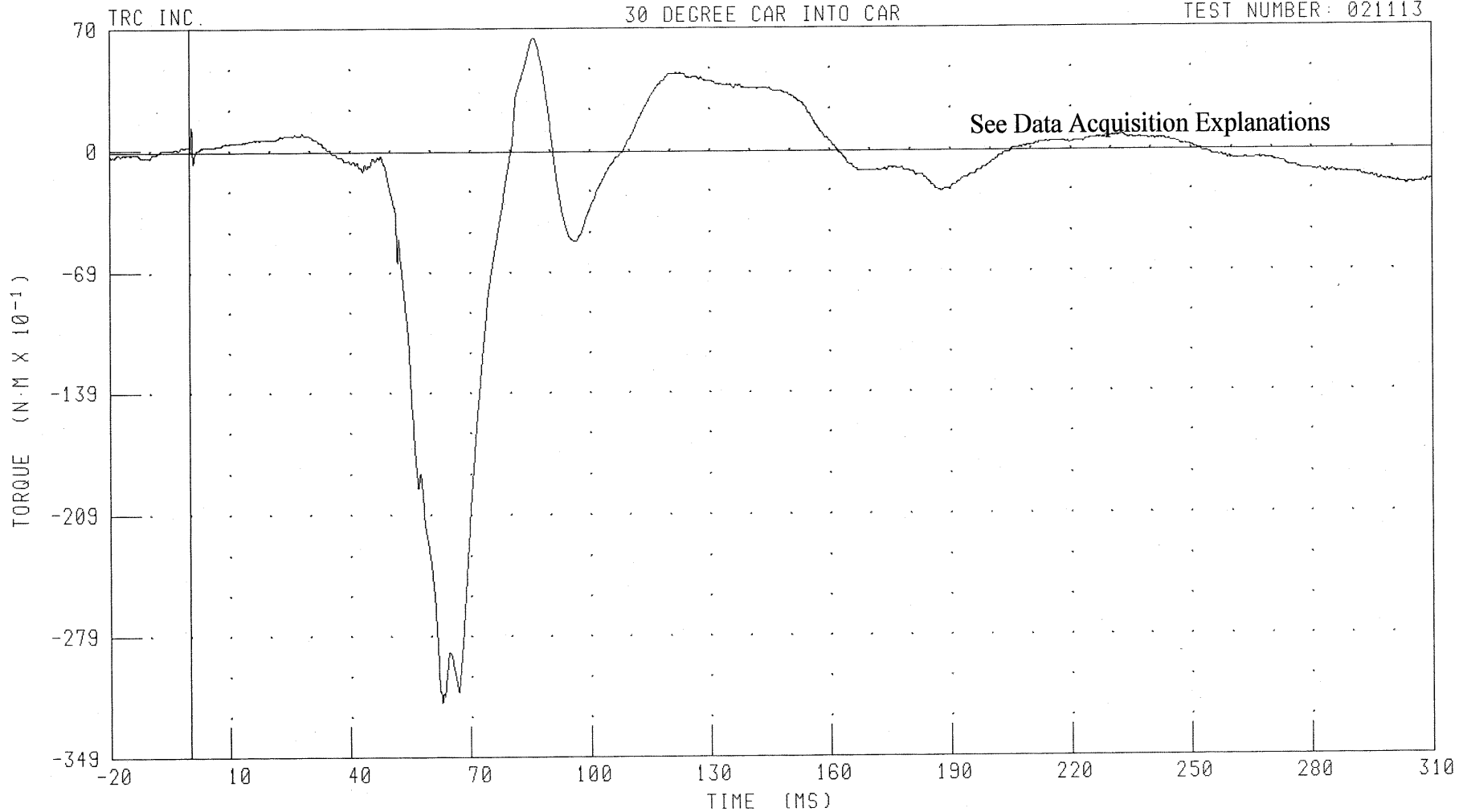
FILTER: CH. CLASS 600

PEAK DATA: 8.00 N·M @ 56.48 MS; -7.62 N·M @ 70.56 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER NECK MOMENT ABOUT Y AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



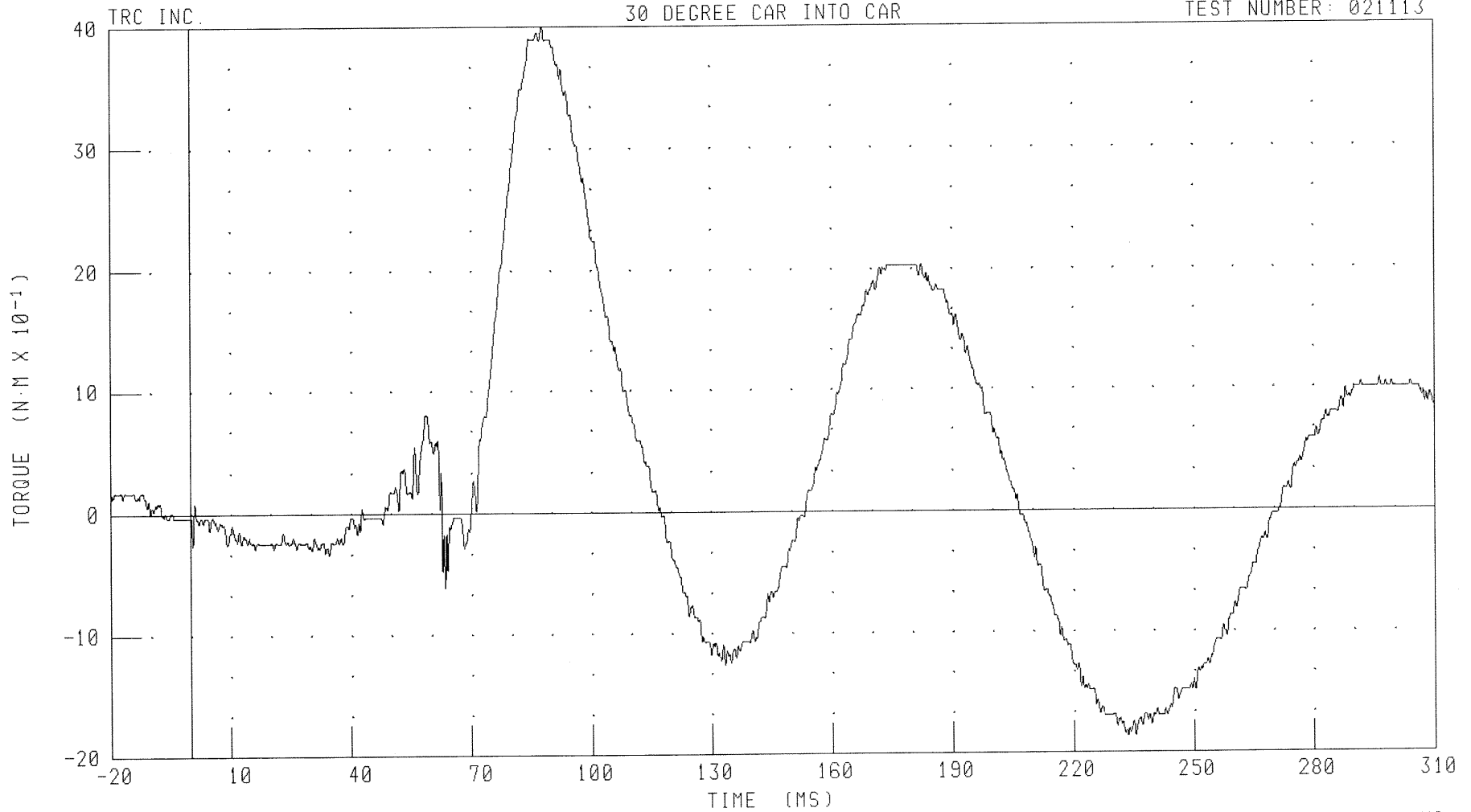
CHANNEL: NEKYMB FILTER: CH. CLASS 600

PEAK DATA: 6.53 N·M @ 86.08 MS; -31.76 N·M @ 62.88 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER NECK MOMENT ABOUT Z AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: NEKZMB

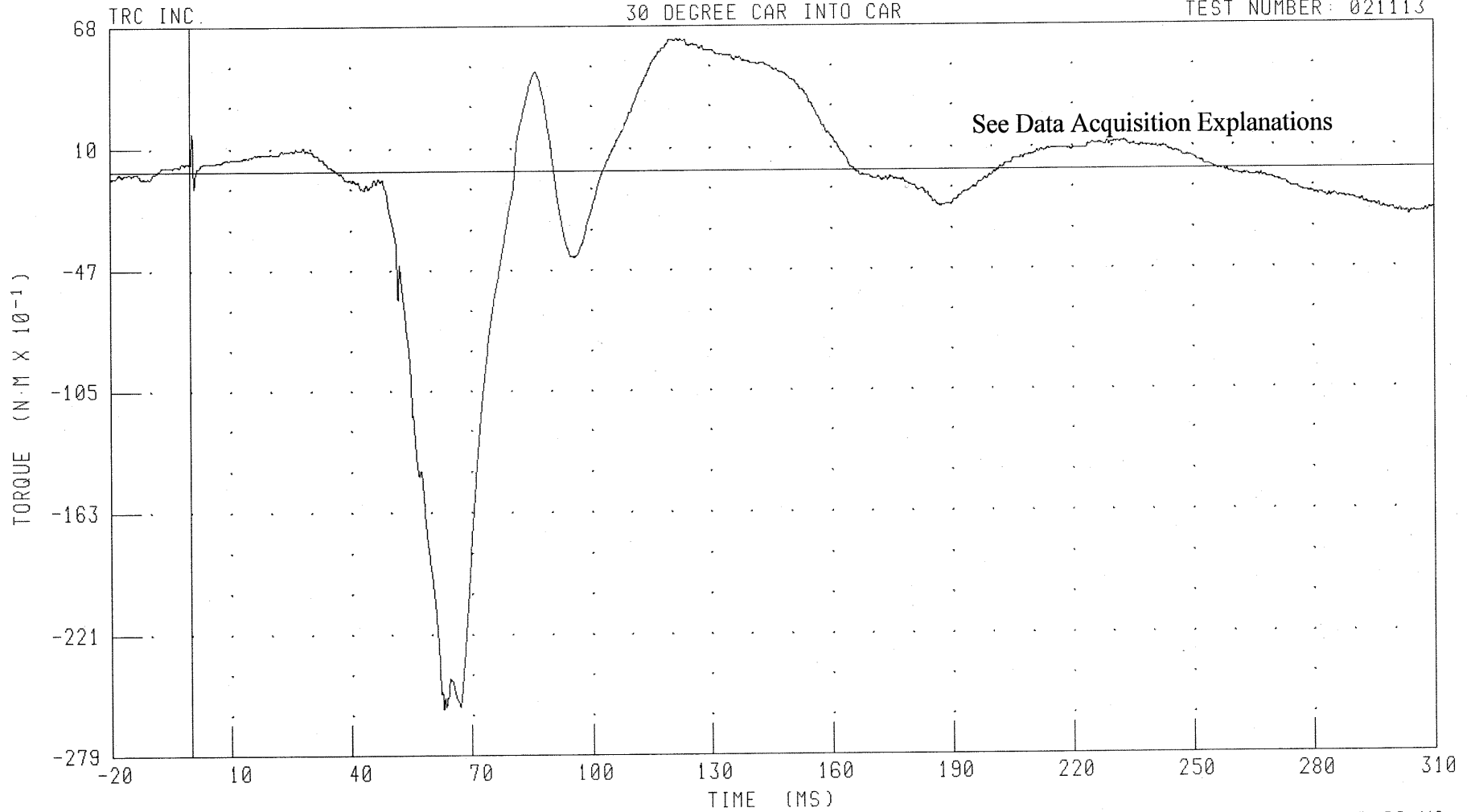
FILTER: CH. CLASS 600

PEAK DATA: 4.01 N·M @ 88.08 MS; -1.87 N·M @ 235.44 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER NECK OCCIPITAL CONDYLE MOMENT ABOUT Y AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: NEKOMB

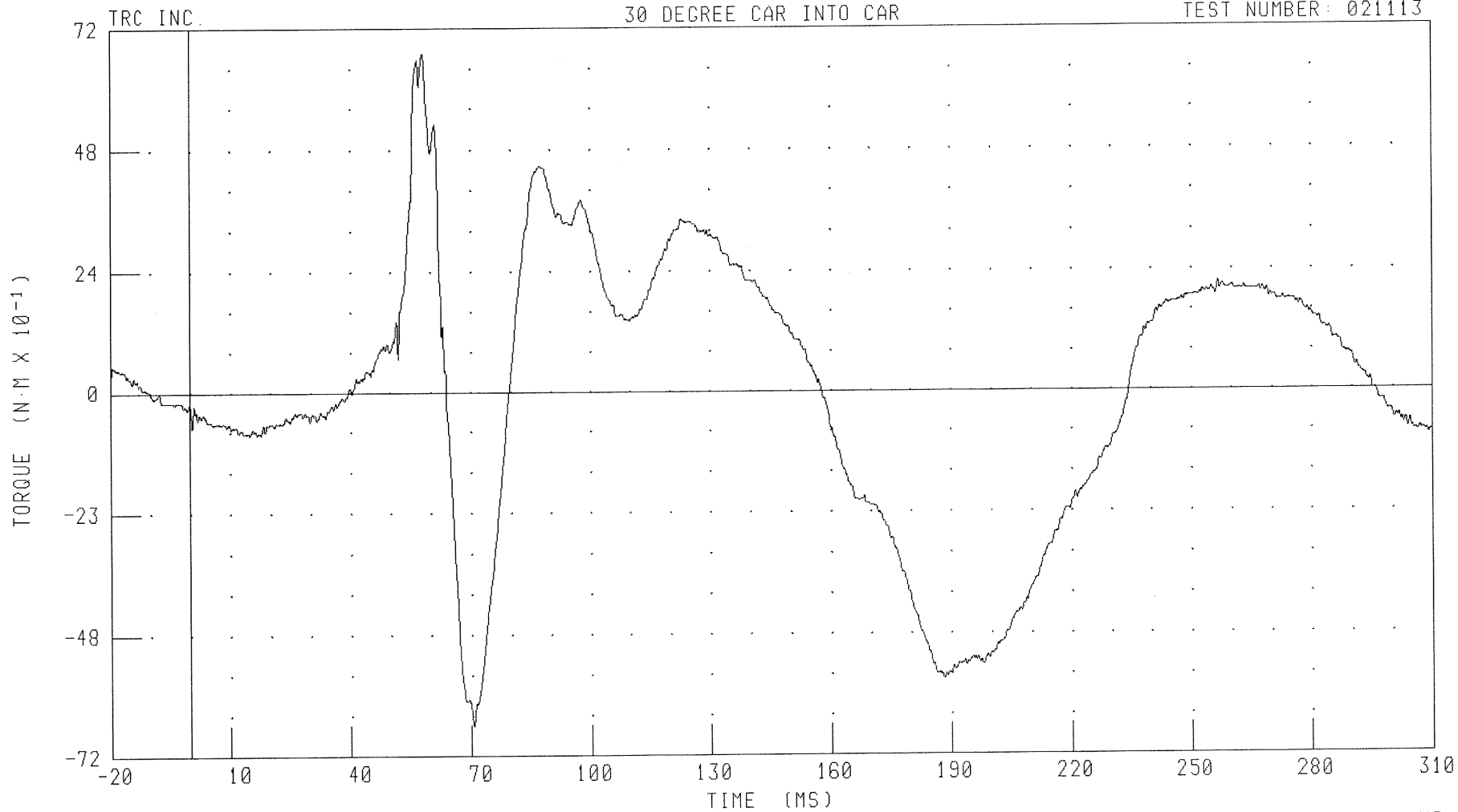
FILTER: CH. CLASS 600

PEAK DATA: 6.29 N·M @ 121.76 MS; -25.71 N·M @ 62.88 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER NECK OCCIPITAL CONDYLE MOMENT ABOUT X AXIS

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: NKOXMB

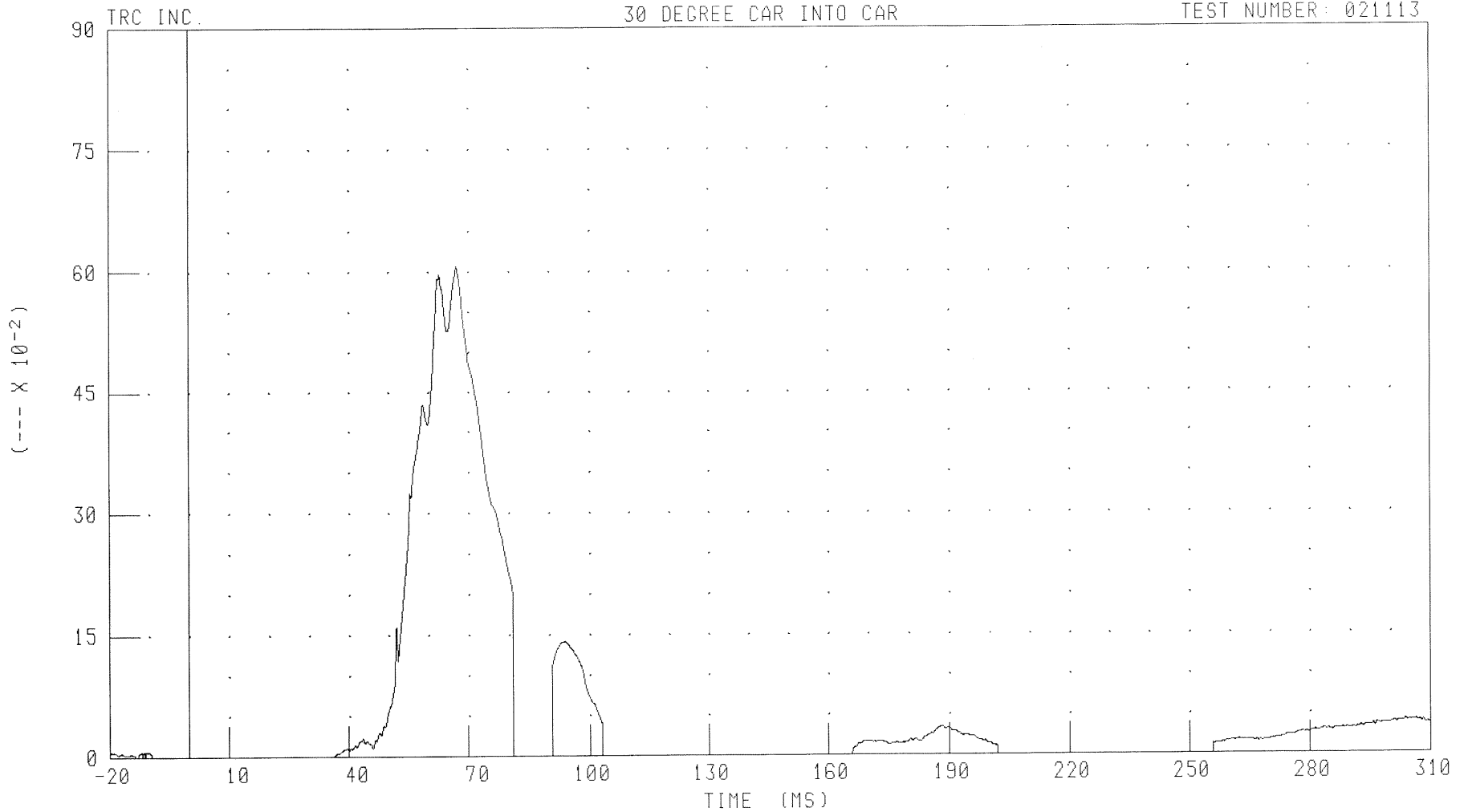
FILTER: CH. CLASS 600

PEAK DATA: 6.70 N·M @ 58.32 MS; -6.62 N·M @ 70.56 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER NIJ TENSION/EXTENSION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: NTEB

FILTER: CH. CLASS 600

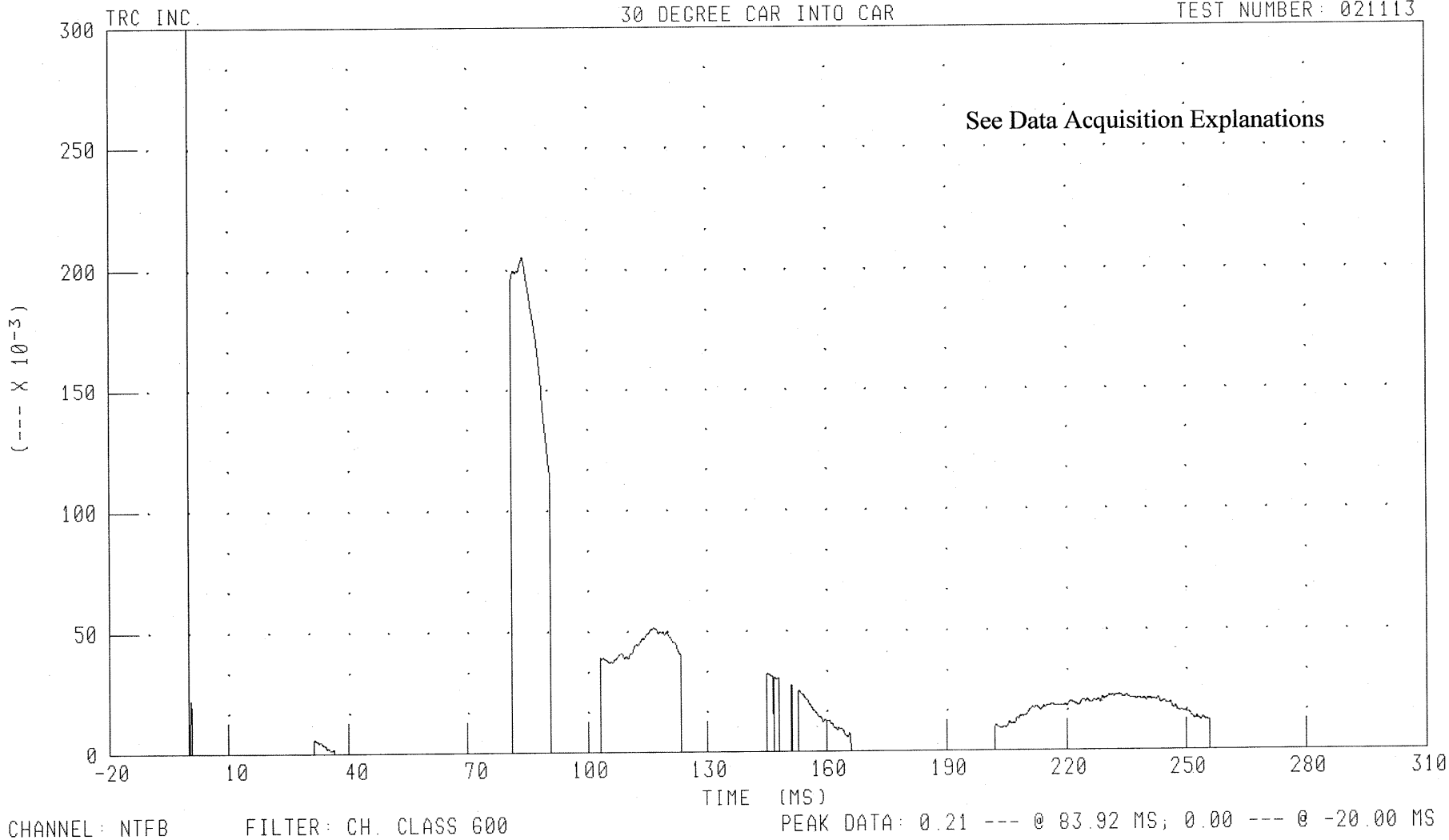
PEAK DATA: 0.61 --- @ 67.12 MS; 0.00 --- @ -13.60 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

BULLET PASSENGER NIJ TENSION/FLEXION

30 DEGREE CAR INTO CAR

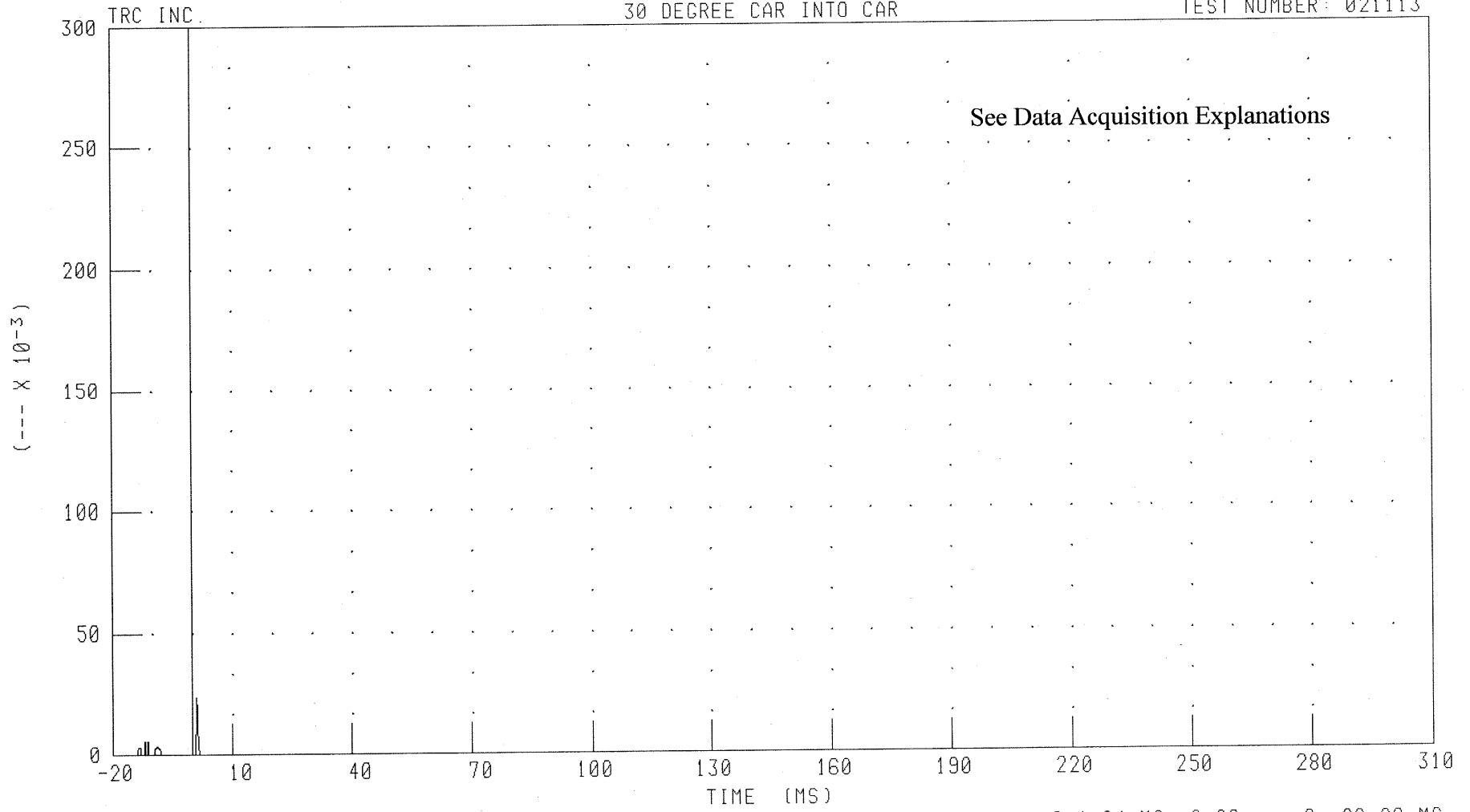
TEST NUMBER: 021113



1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER NIJ COMPRESSION/EXTENSION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: NCEB

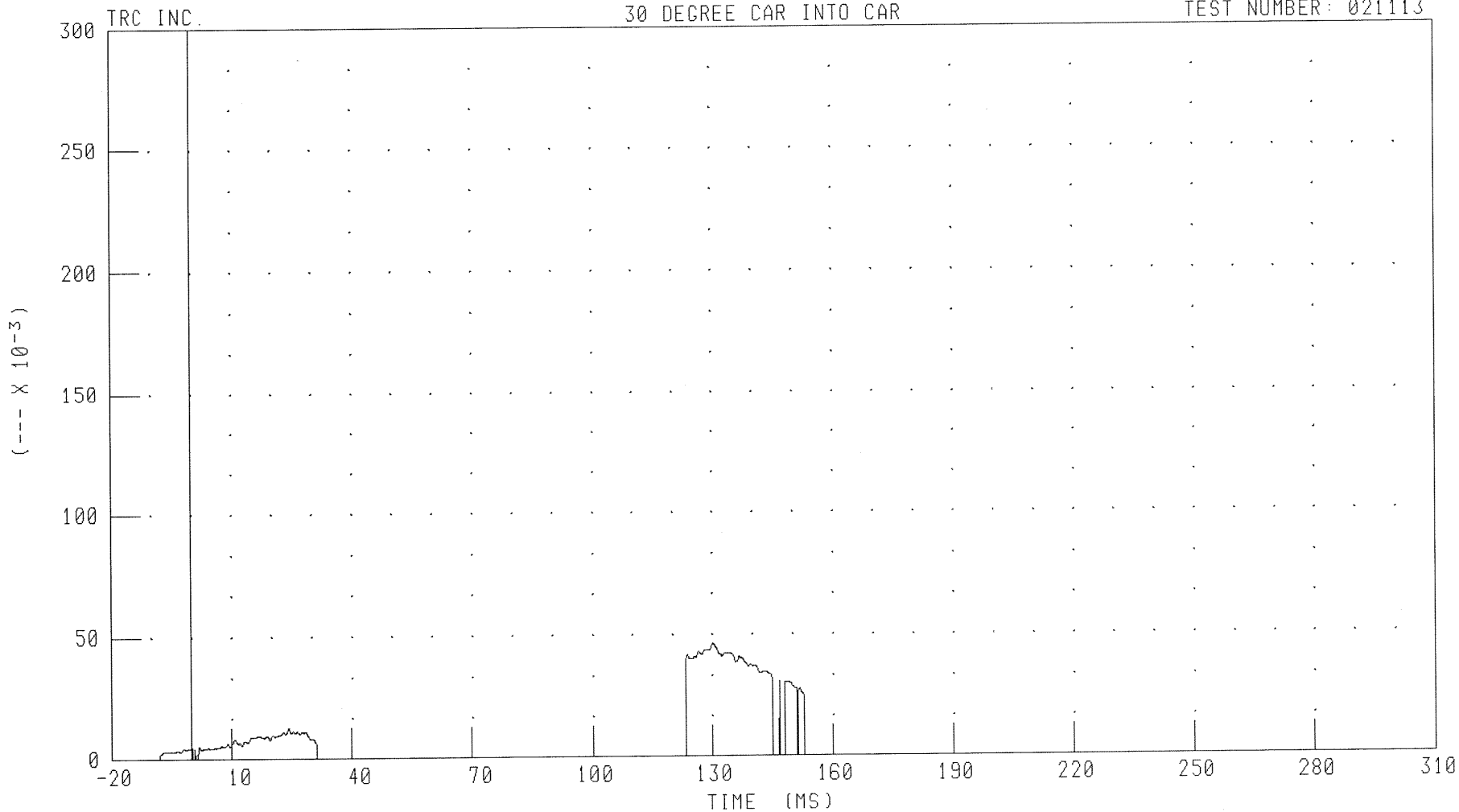
FILTER: CH. CLASS 600

PEAK DATA: 0.02 --- @ 1.04 MS; 0.00 --- @ -20.00 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER NIJ COMPRESSION/FLEXION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: NCFB

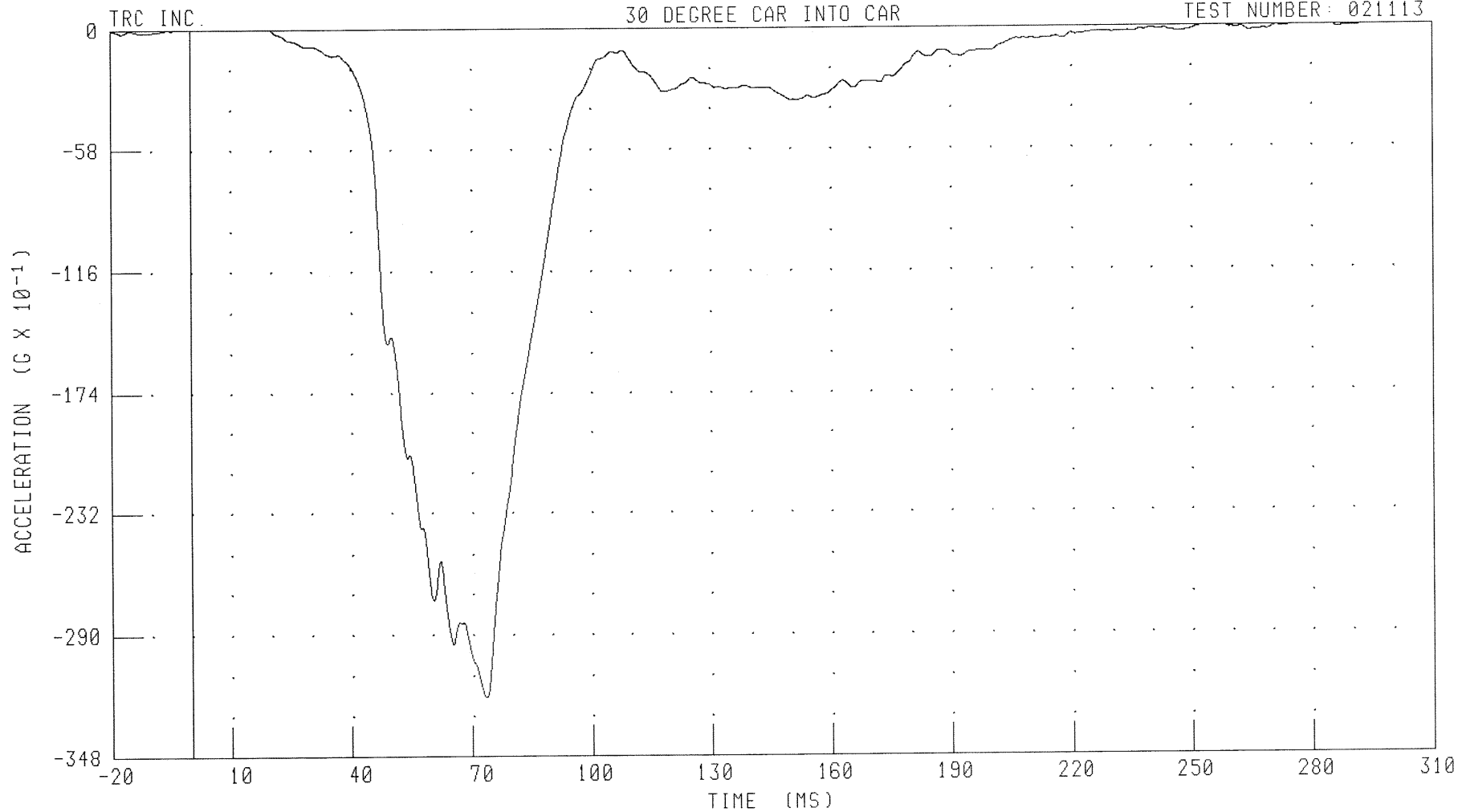
FILTER: CH. CLASS 600

PEAK DATA: 0.05 --- @ 130.32 MS; 0.00 --- @ -20.00 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER CHEST X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: CSTXGB

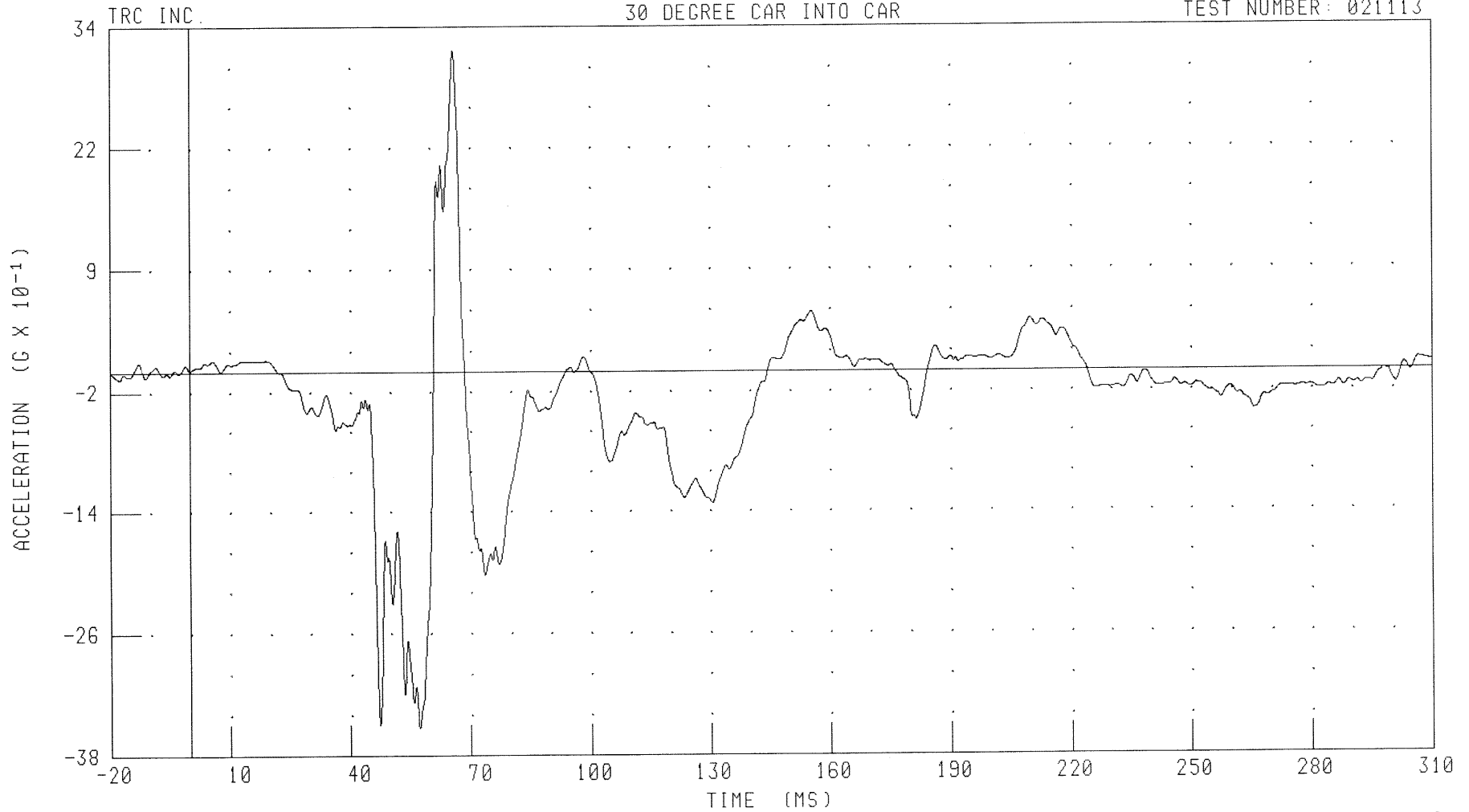
FILTER: CH. CLASS 180

PEAK DATA: 0.08 G @ 12.96 MS, -31.97 G @ 73.36 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER CHEST Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: CSTYGB

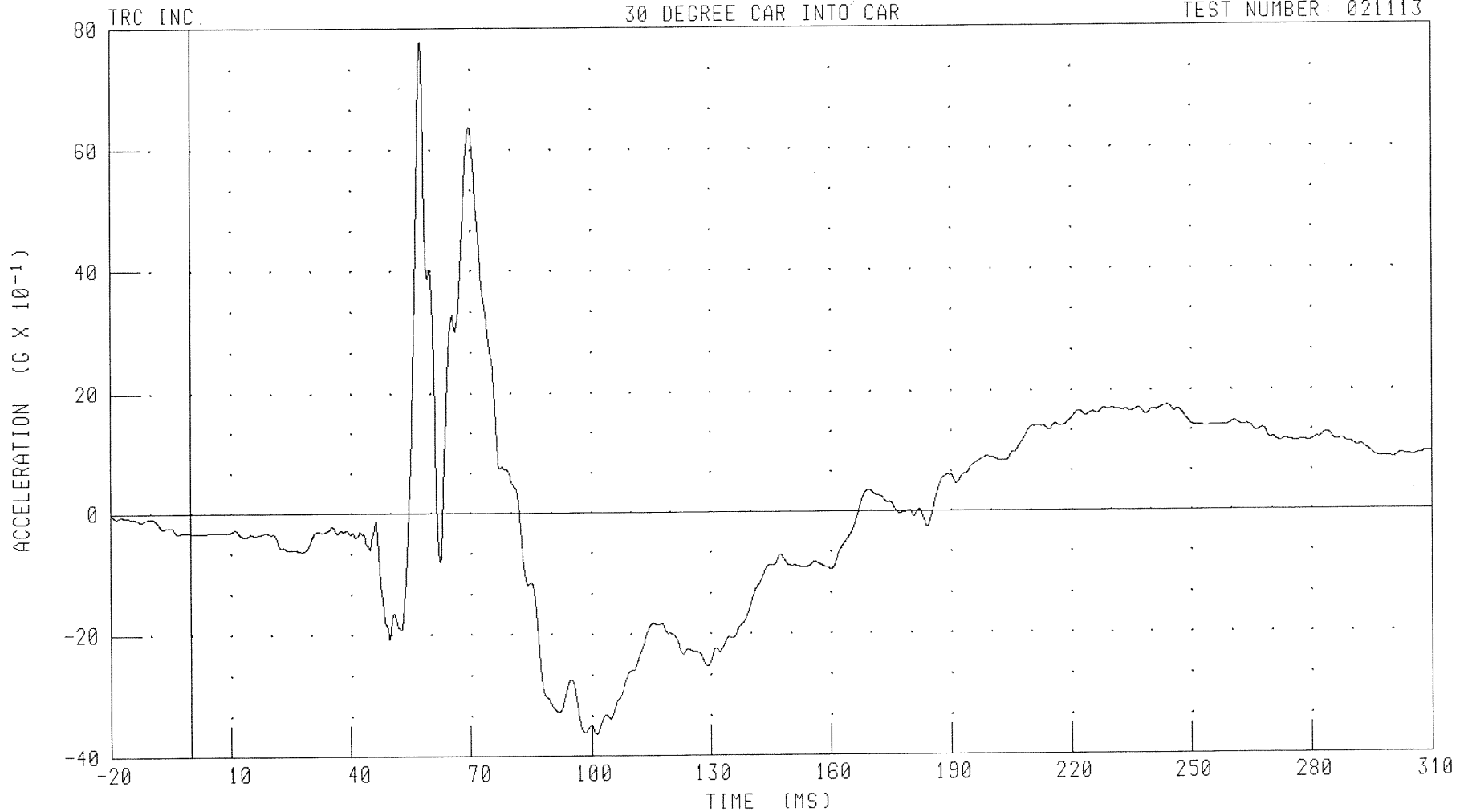
FILTER: CH. CLASS 180

PEAK DATA: 3.16 G @ 65.92 MS; -3.53 G @ 57.20 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER CHEST Z-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: CSTZGB

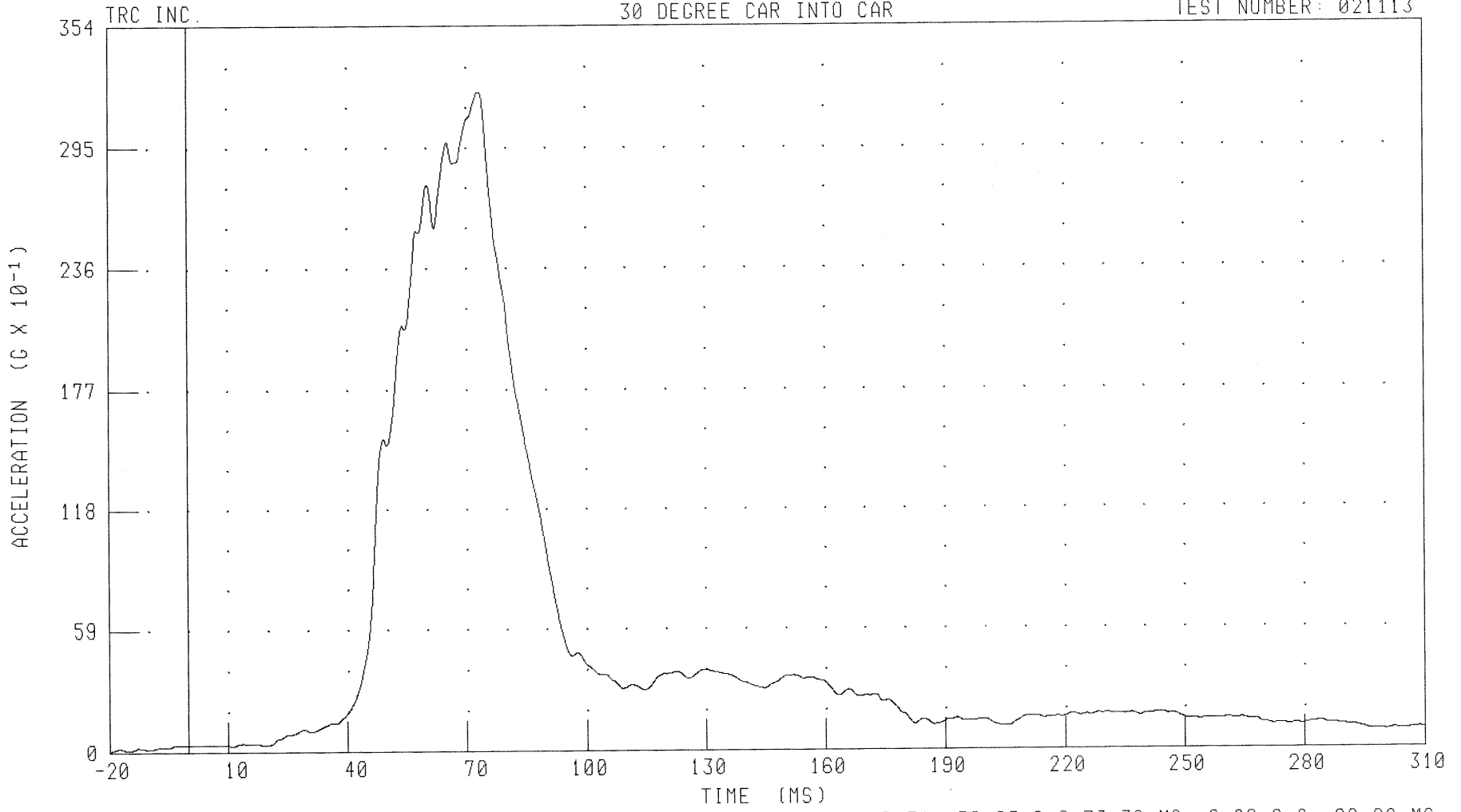
FILTER: CH. CLASS 180

PEAK DATA: 7.79 G @ 57.60 MS; -3.64 G @ 101.36 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER CHEST RESULTANT ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



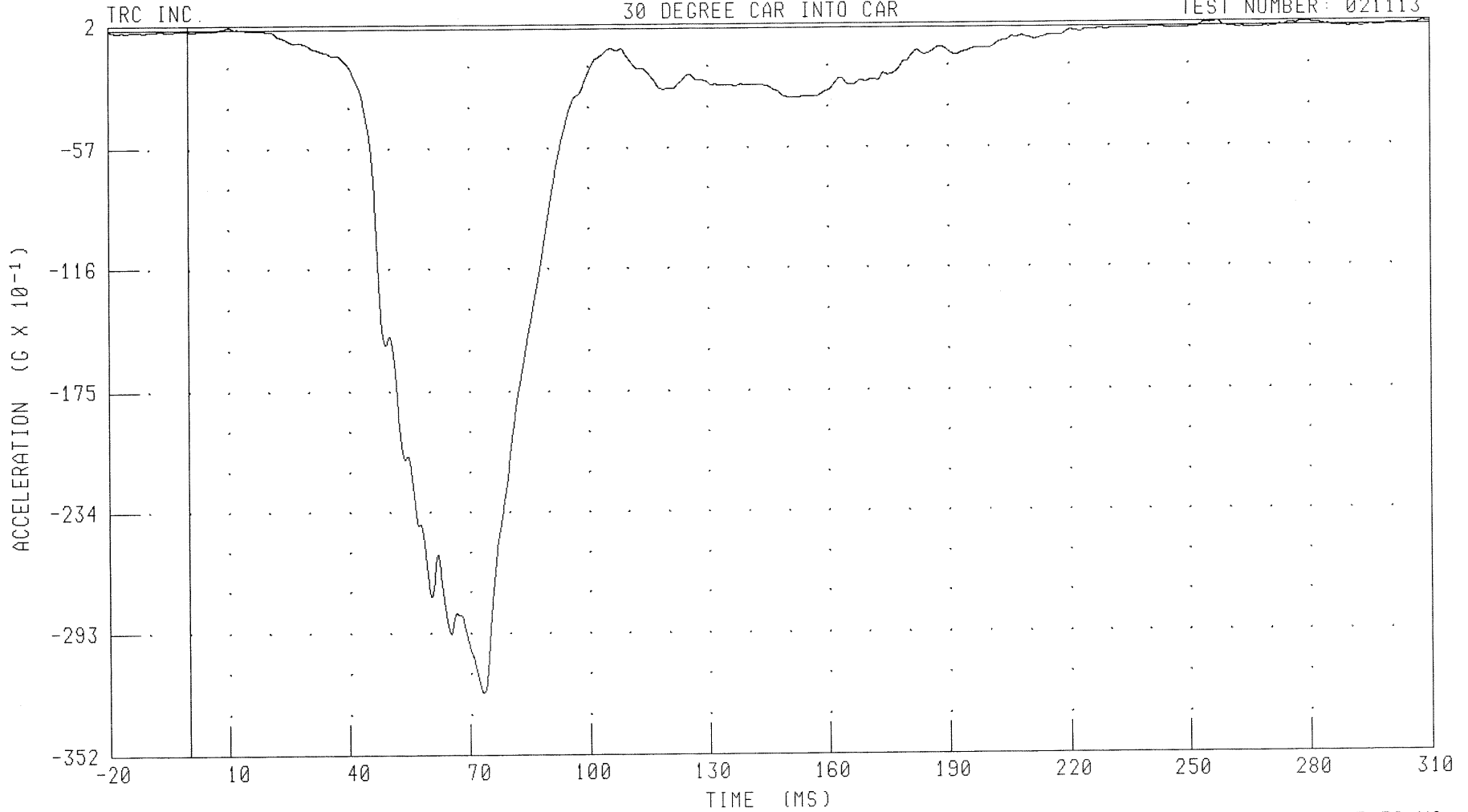
CHANNEL: CSTRGB FILTER: CH. CLASS 180

PEAK DATA: 32.23 G @ 73.36 MS; 0.00 G @ -20.00 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER CHEST X-AXIS ACCELERATION REDUNDANT

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: CSTXRB

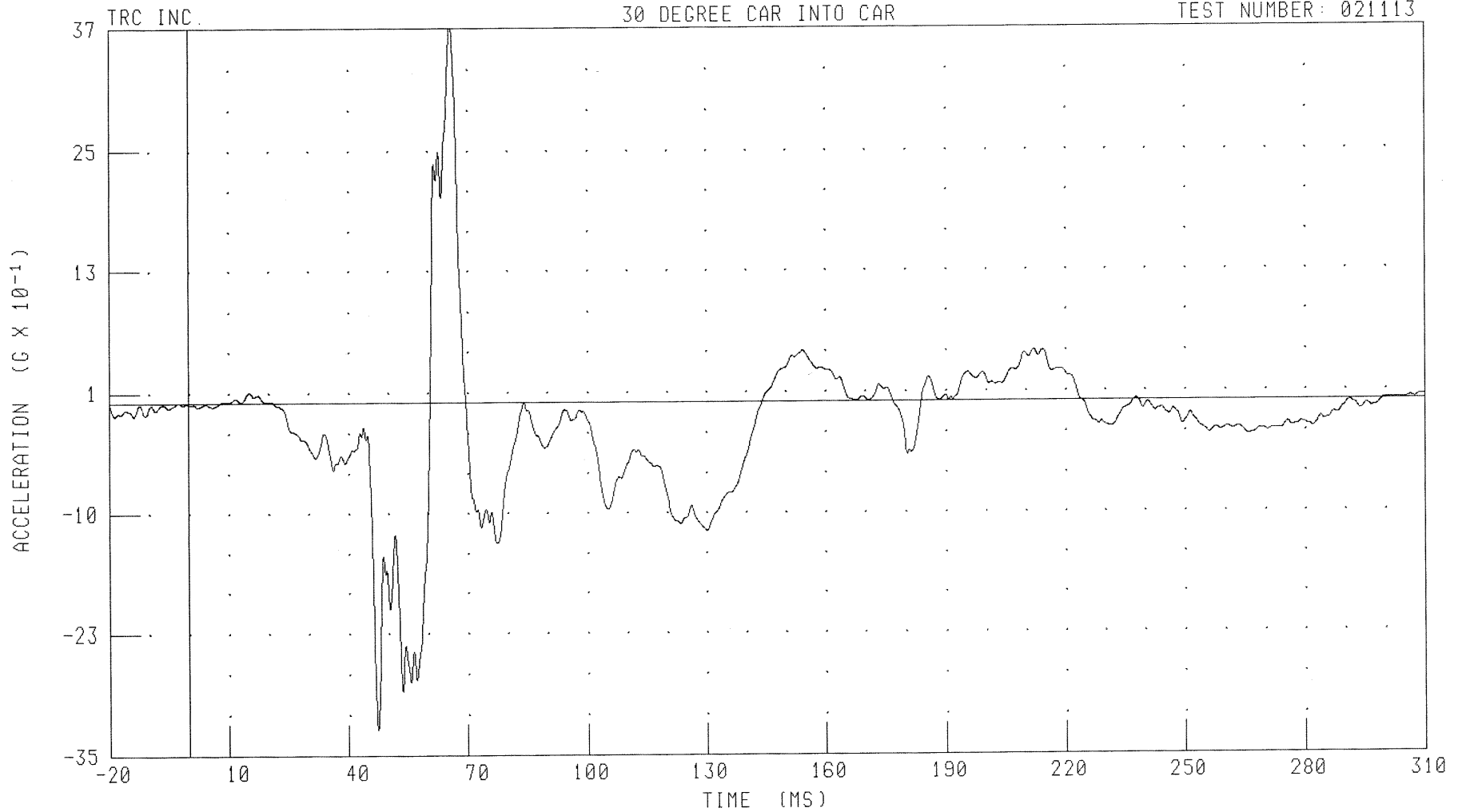
FILTER: CH. CLASS 180

PEAK DATA: 0.21 G @ 257.28 MS; -32.19 G @ 73.36 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER CHEST Y-AXIS ACCELERATION REDUNDANT

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: CSTYRB

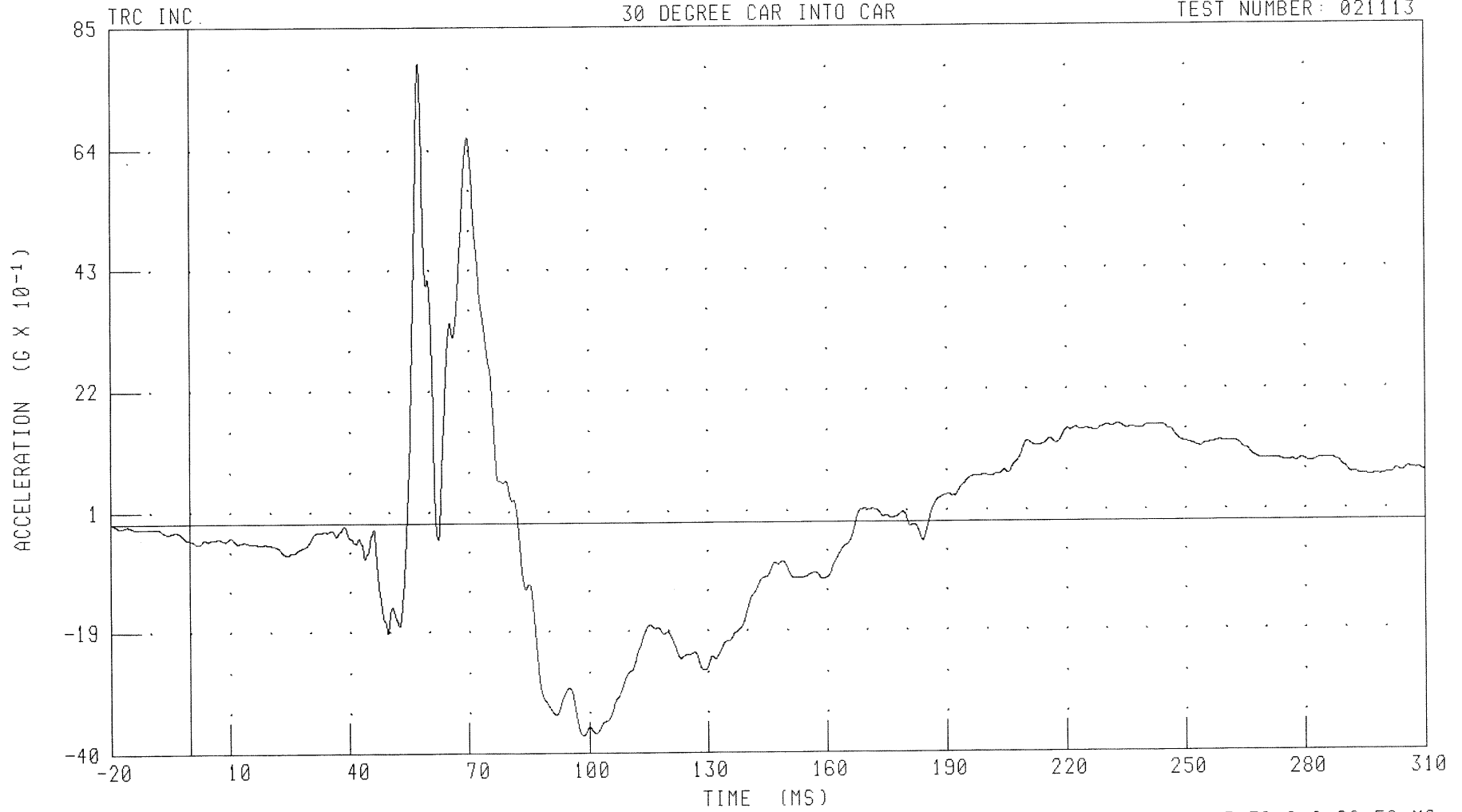
FILTER: CH. CLASS 180

PEAK DATA: 3.76 G @ 65.92 MS; -3.25 G @ 47.28 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER CHEST Z-AXIS ACCELERATION REDUNDANT

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



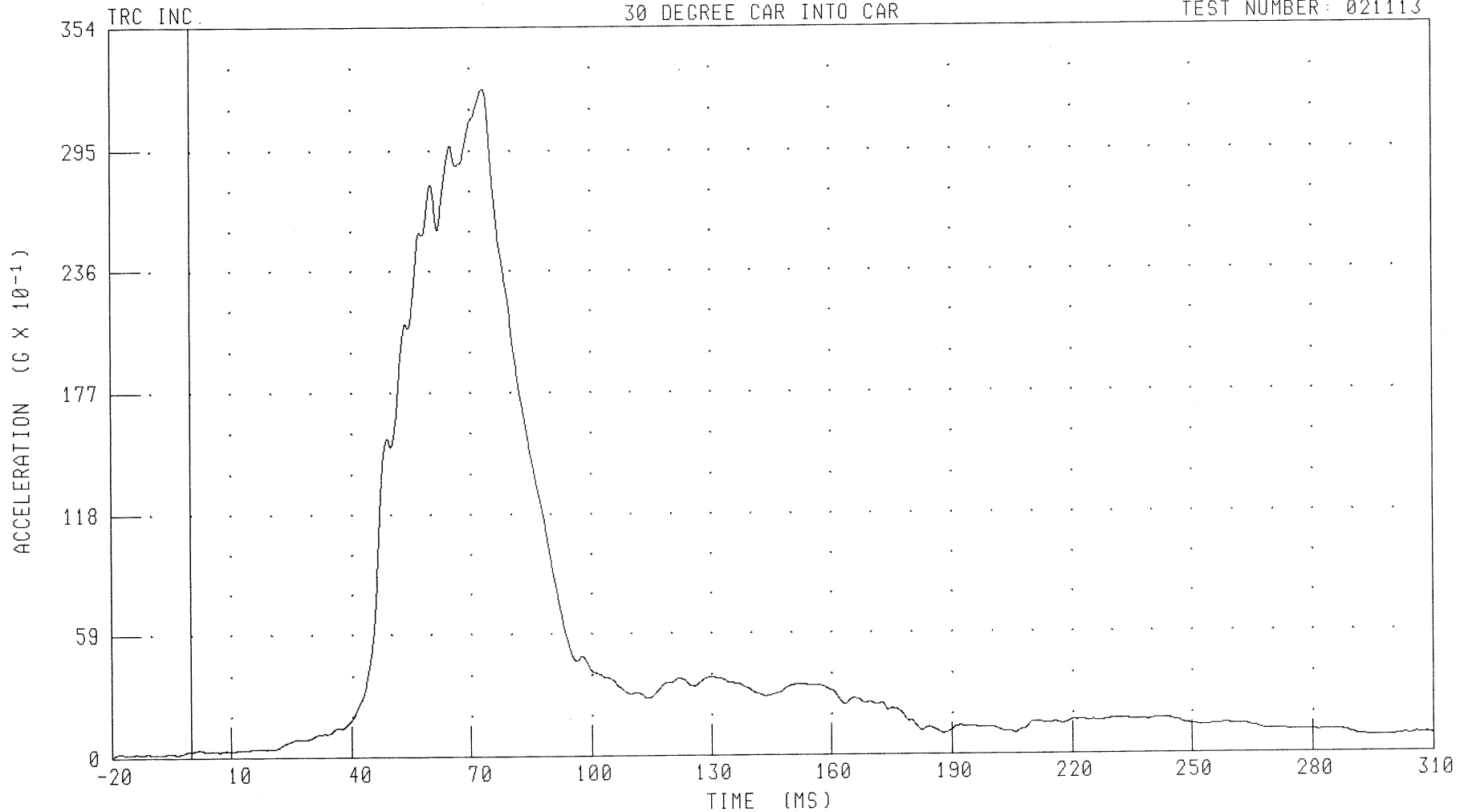
CHANNEL: CSTZRB FILTER: CH. CLASS 180

PEAK DATA: 7.98 G @ 57.60 MS; -3.70 G @ 98.56 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER CHEST RESULTANT ACCELERATION REDUNDANT

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: CSTRRB

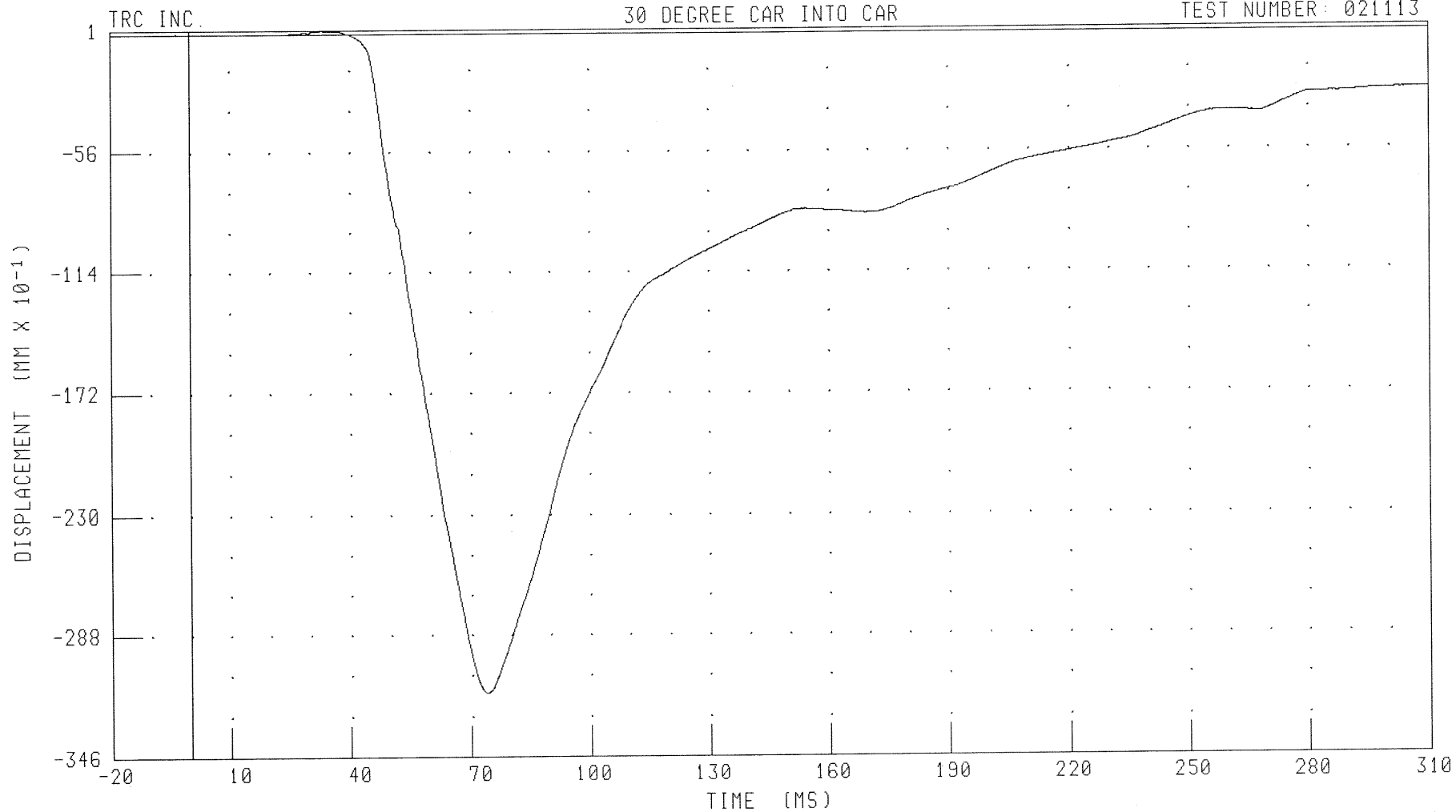
FILTER: CH. CLASS 180

PEAK DATA: 32.43 G @ 73.36 MS; 0.01 G @ -20.00 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER CHEST DEFLECTION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: CSTXDB

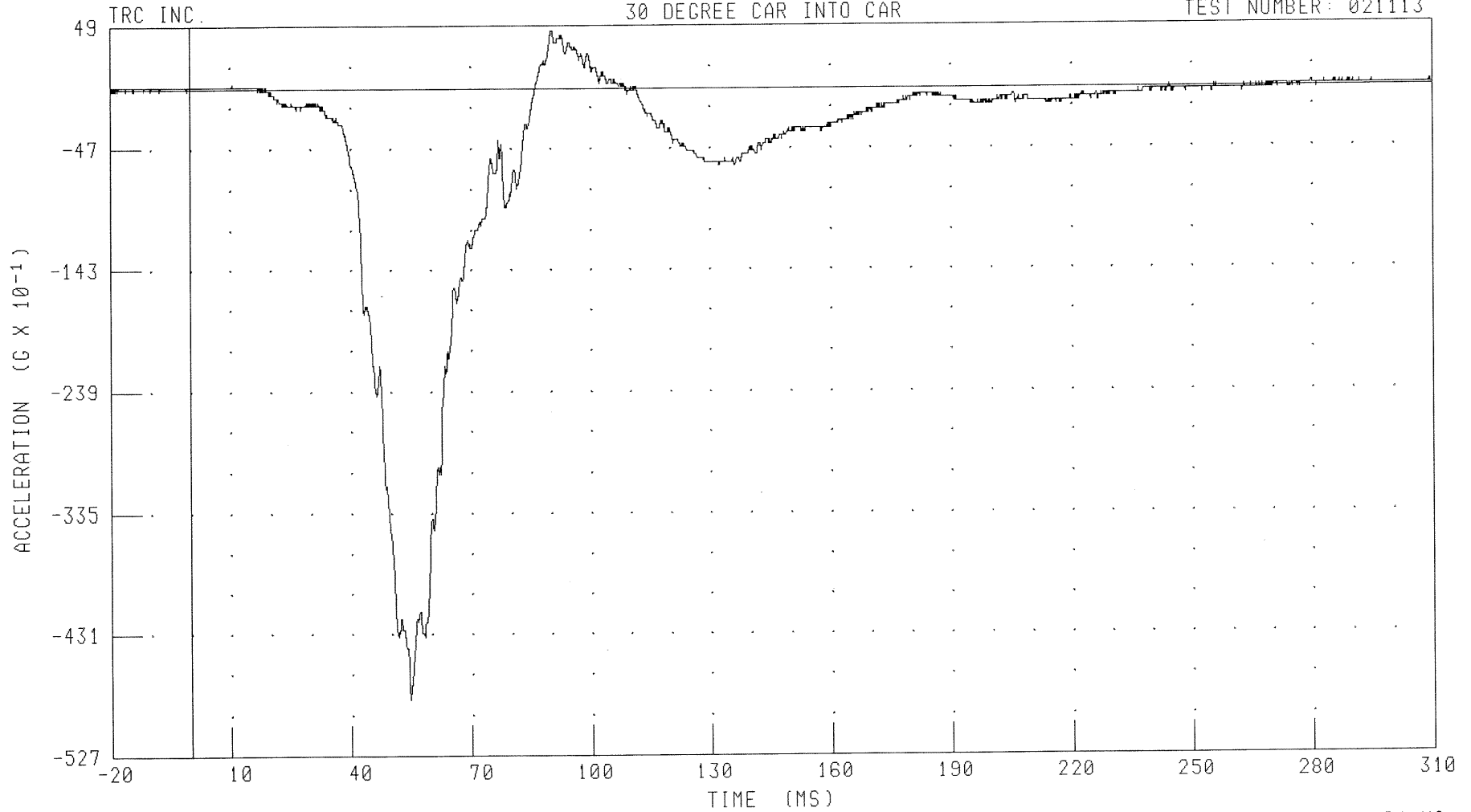
FILTER: CH. CLASS 600

PEAK DATA: 0.19 MM @ 33.20 MS; -31.58 MM @ 73.92 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER PELVIS X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: PEVXGB

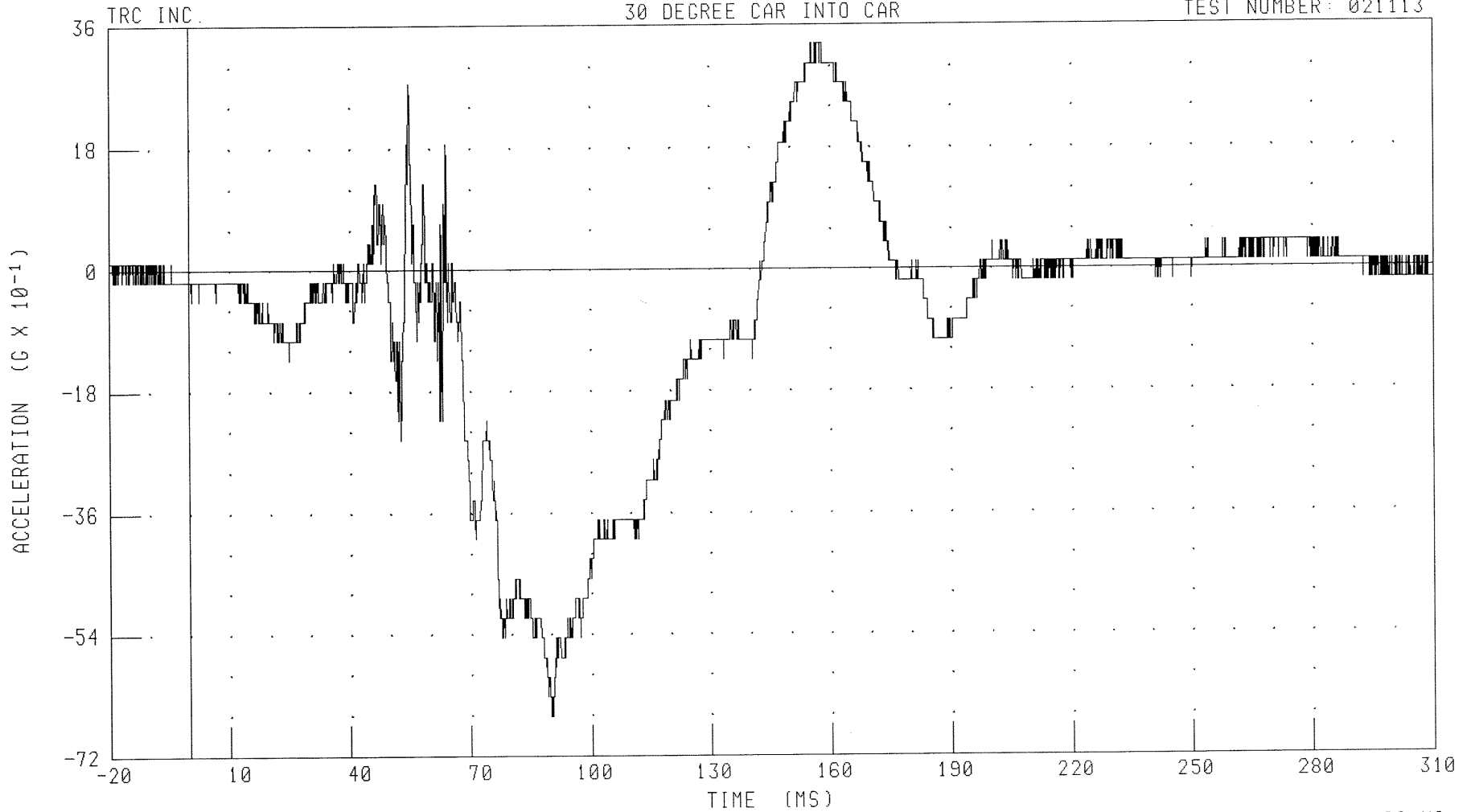
FILTER: CH. CLASS 1000

PEAK DATA: 4.50 G @ 90.16 MS; -48.34 G @ 54.64 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER PELVIS Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: PEVYGB

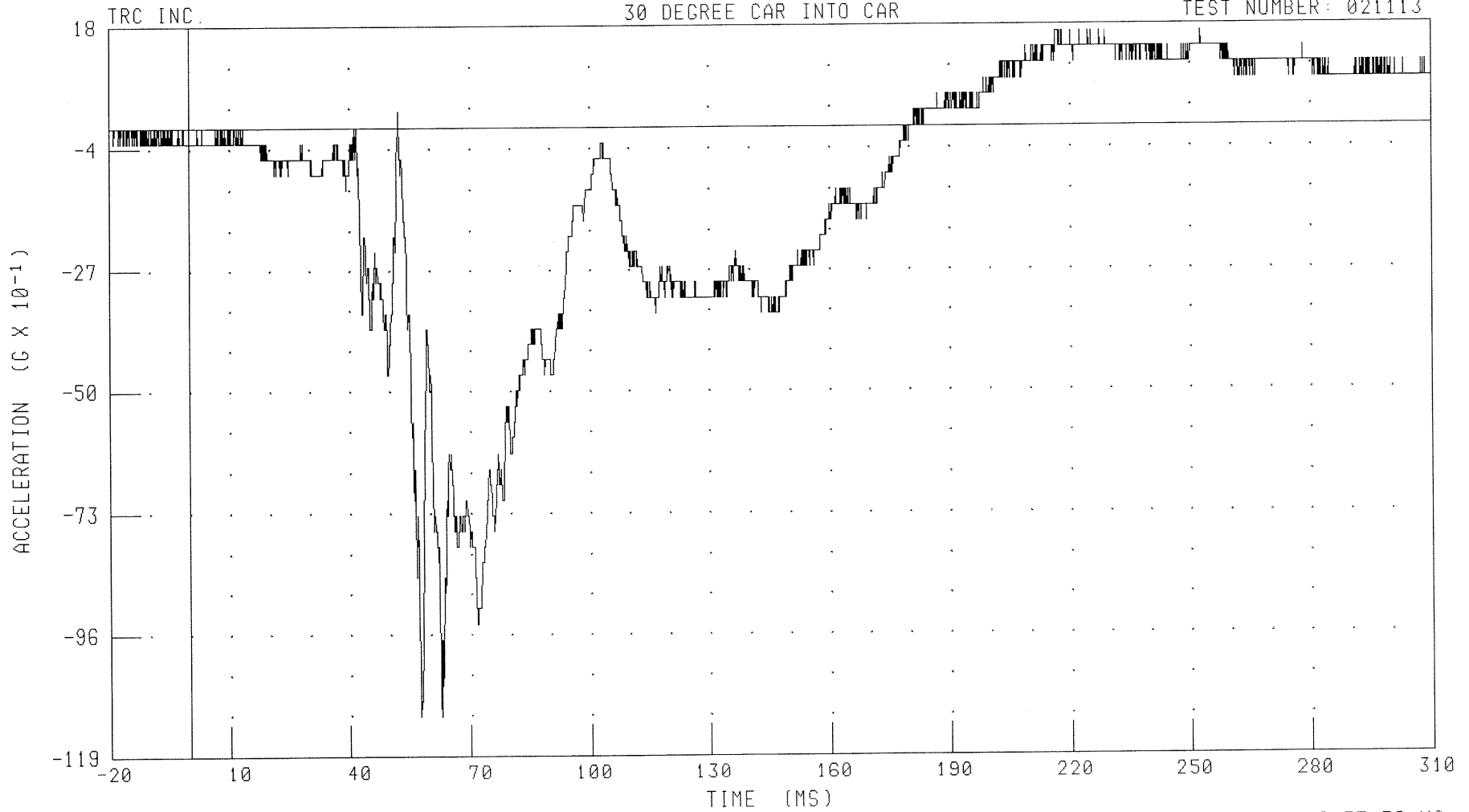
FILTER: CH. CLASS 1000

PEAK DATA: 3.34 G @ 155.52 MS, -6.63 G @ 89.92 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER PELVIS Z-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: PEVZGB

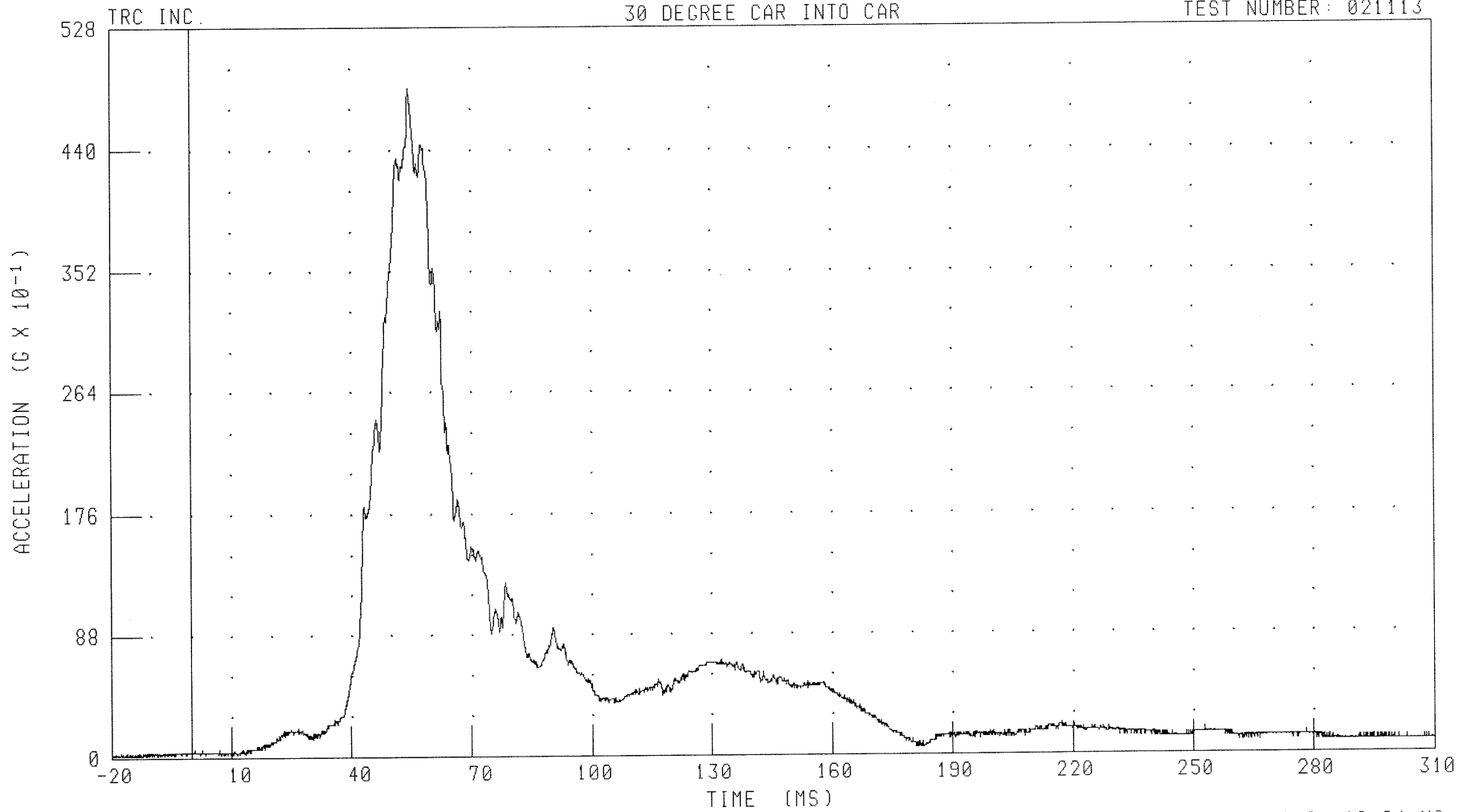
FILTER: CH. CLASS 1000

PEAK DATA: 1.77 G @ 216.56 MS; -11.17 G @ 57.52 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER PELVIS RESULTANT ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: PEVRGB FILTER: CH. CLASS 1000

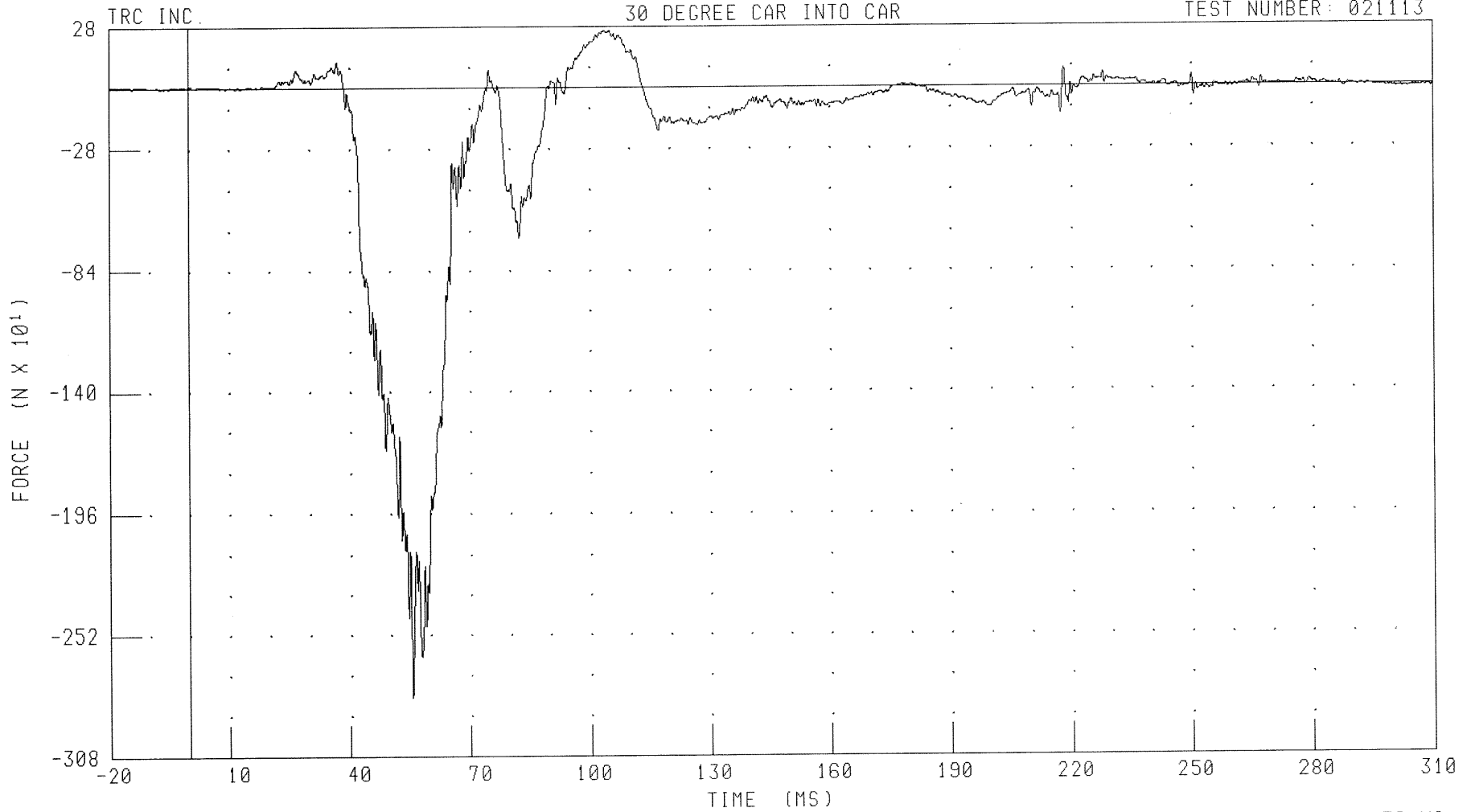
PEAK DATA: 48.52 G @ 54.64 MS; 0.15 G @ -19.84 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

BULLET PASSENGER LEFT FEMUR FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



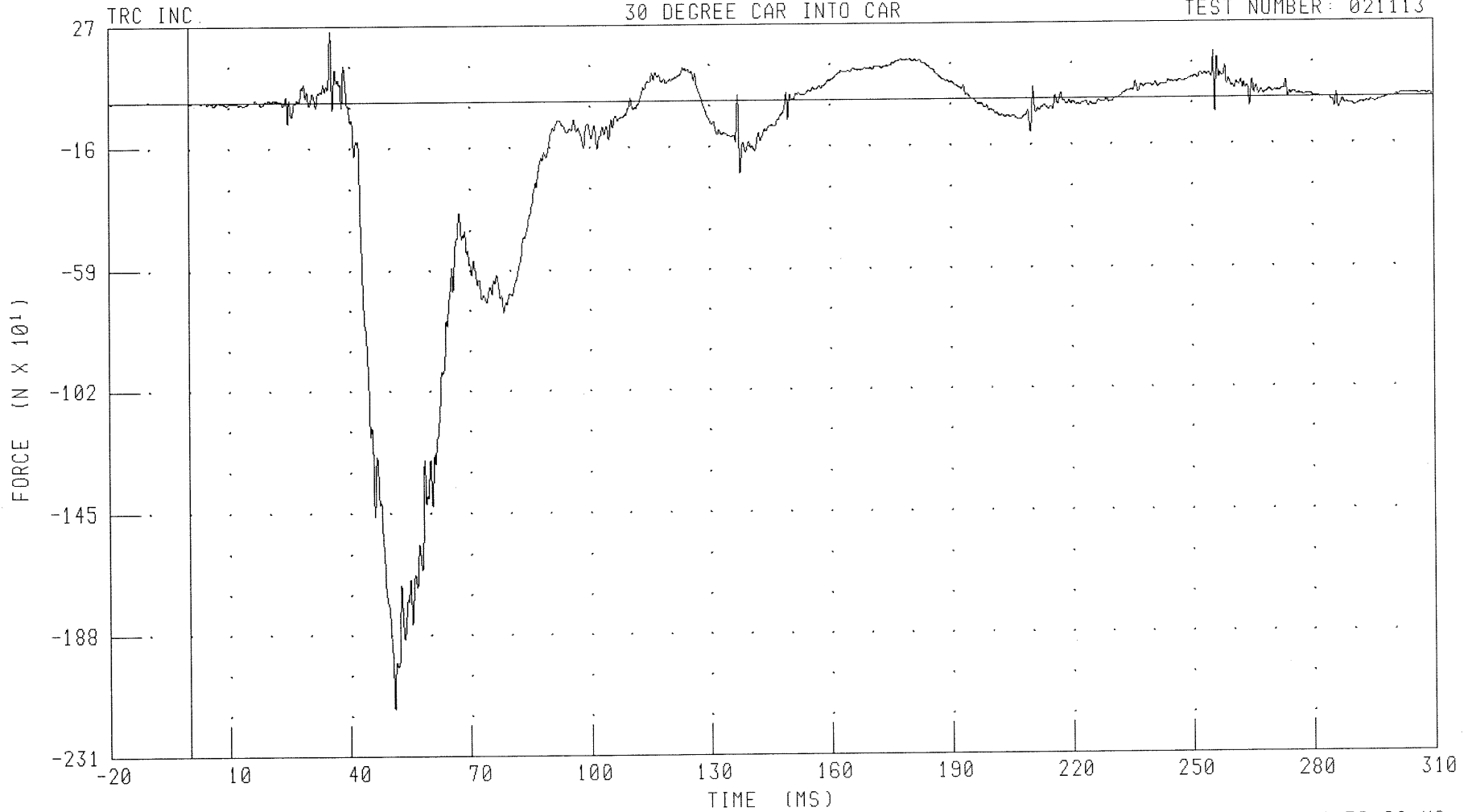
CHANNEL: LFMZFB FILTER: CH. CLASS 600

PEAK DATA: 262.74 N @ 103.84 MS; -2811.73 N @ 55.52 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER RIGHT FEMUR FORCE

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



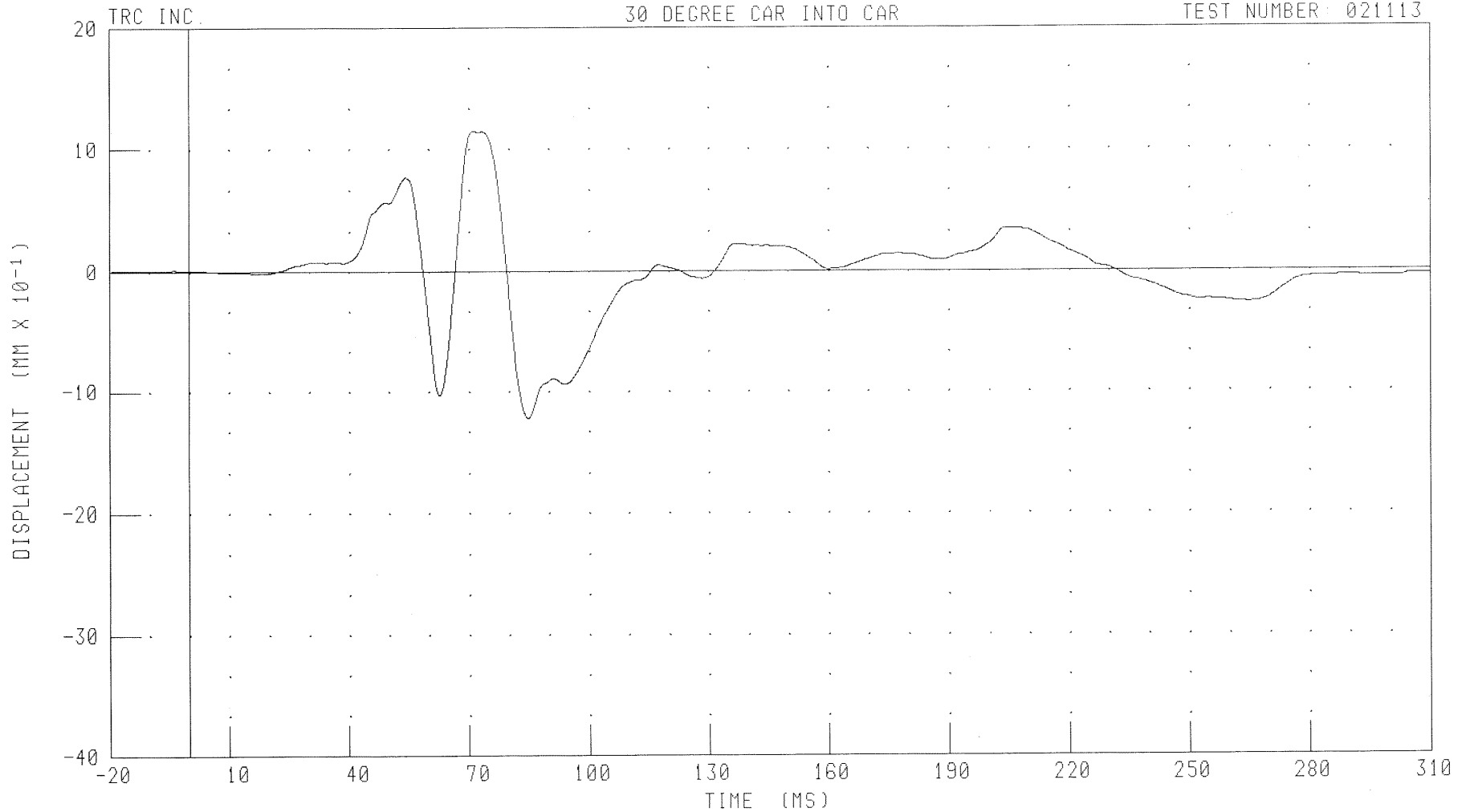
CHANNEL: RFMZFB FILTER: CH CLASS 600

PEAK DATA: 251.69 N @ 35.36 MS; -2144.52 N @ 50.96 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER LEFT KNEE DISPLACEMENT

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: KNLXDB

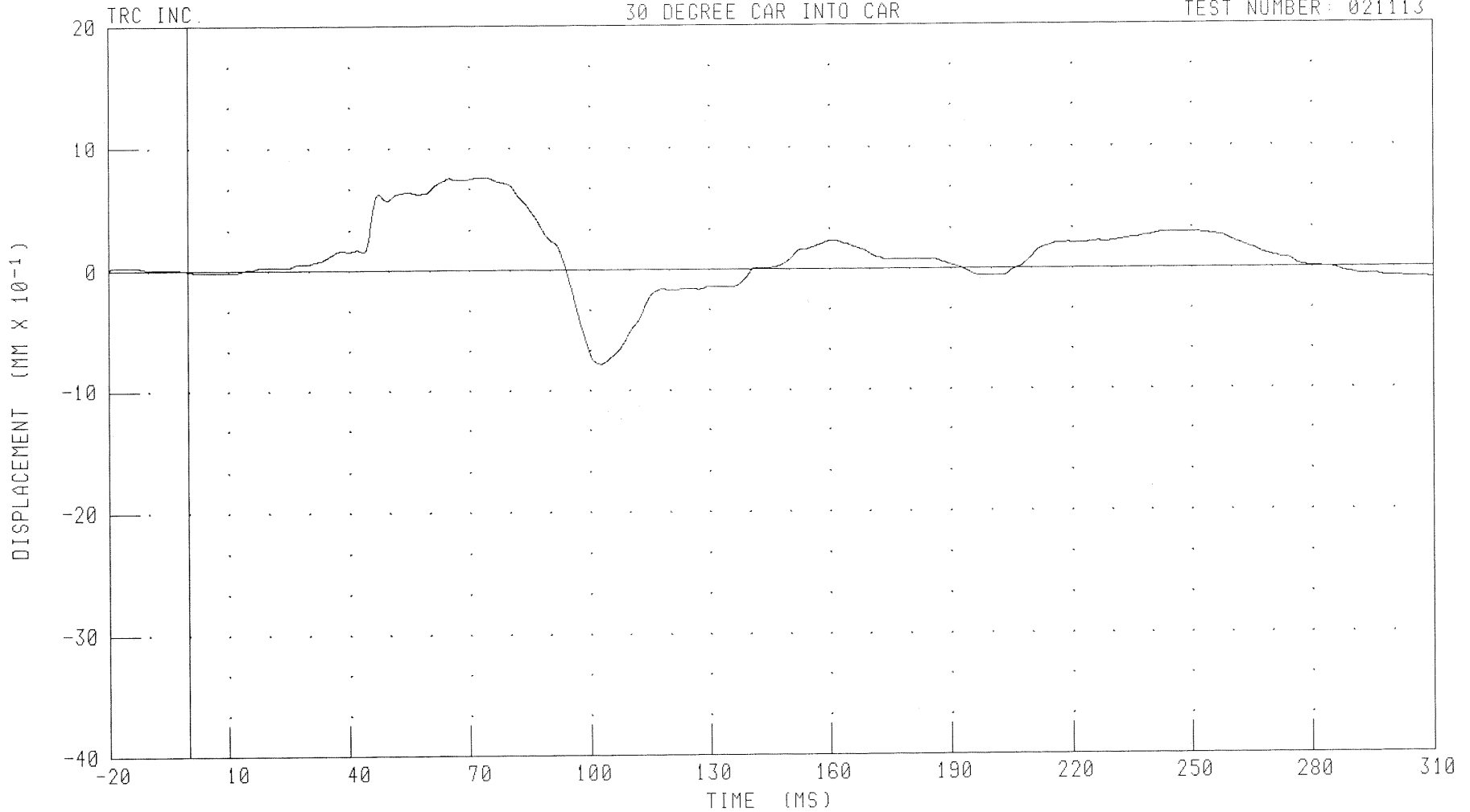
FILTER: CH. CLASS 180

PEAK DATA: 1.16 MM @ 71.20 MS; -1.23 MM @ 84.88 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET PASSENGER RIGHT KNEE DISPLACEMENT

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: KNRXDB

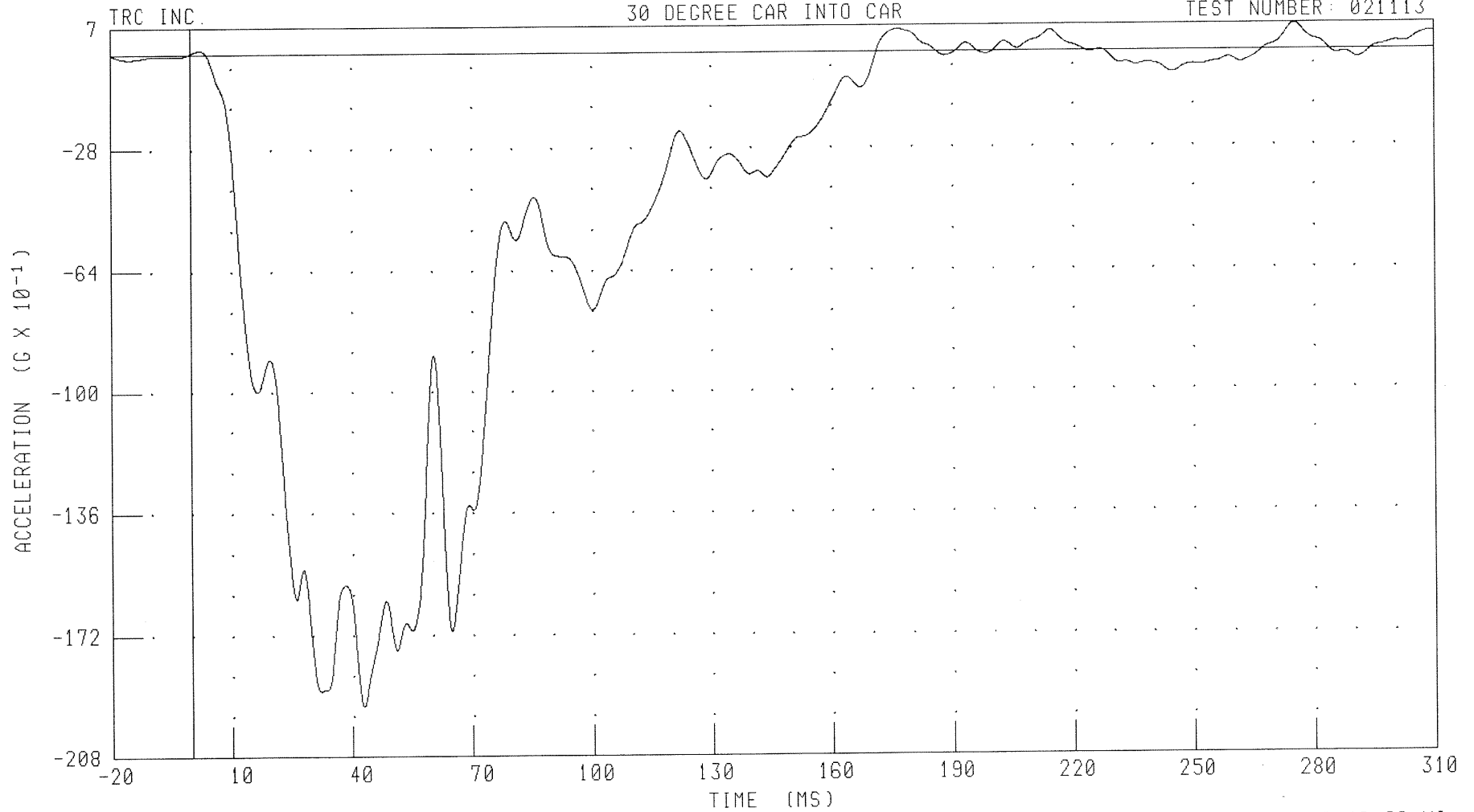
FILTER: CH. CLASS 100

PEAK DATA: 0.76 MM @ 74.00 MS; -0.78 MM @ 102.80 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET VEHICLE CENTER OF GRAVITY X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: VCGXGA

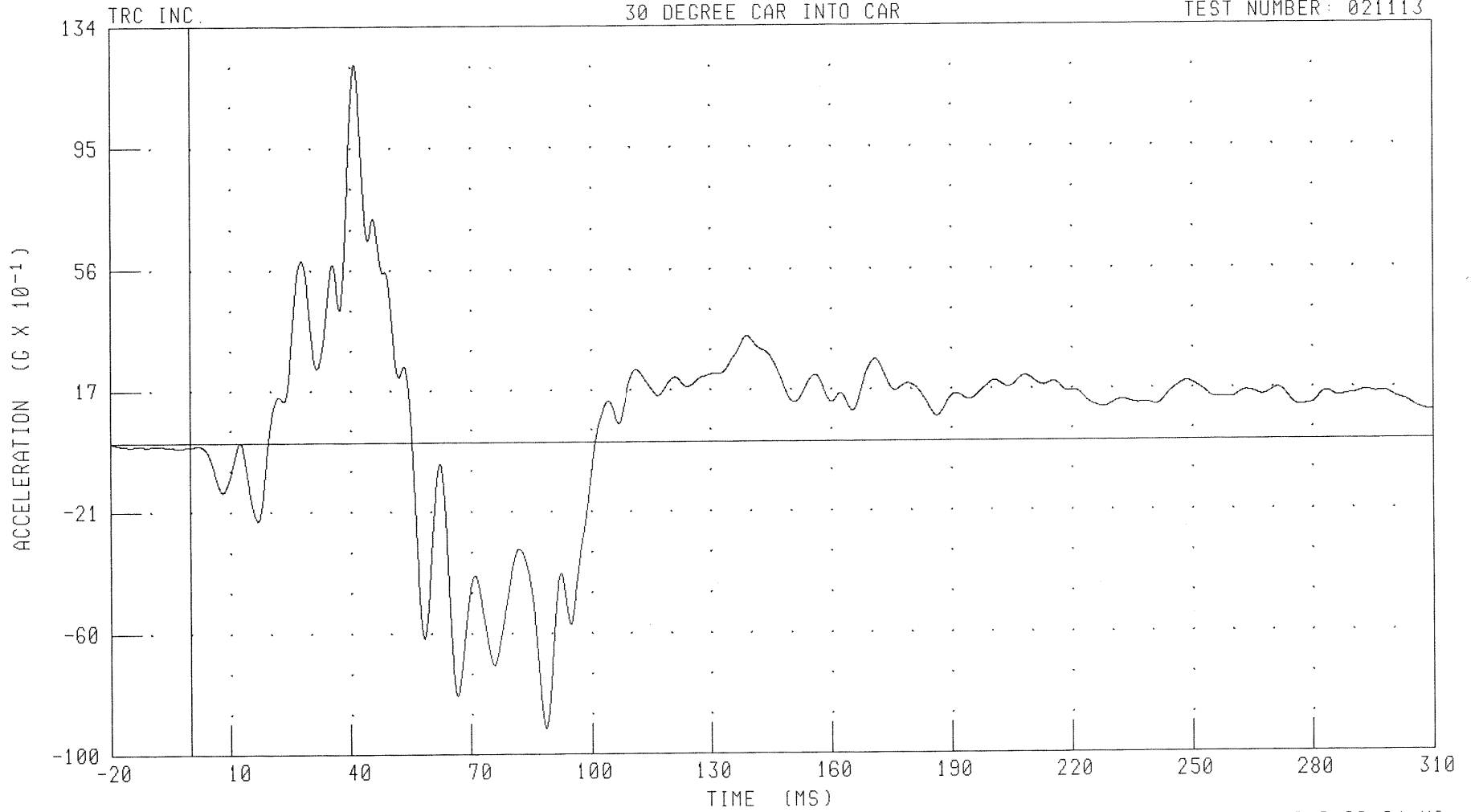
FILTER: CH. CLASS 60

PEAK DATA: 0.79 G @ 275.36 MS; -19.32 G @ 42.80 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET VEHICLE CENTER OF GRAVITY Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: VCGYGA

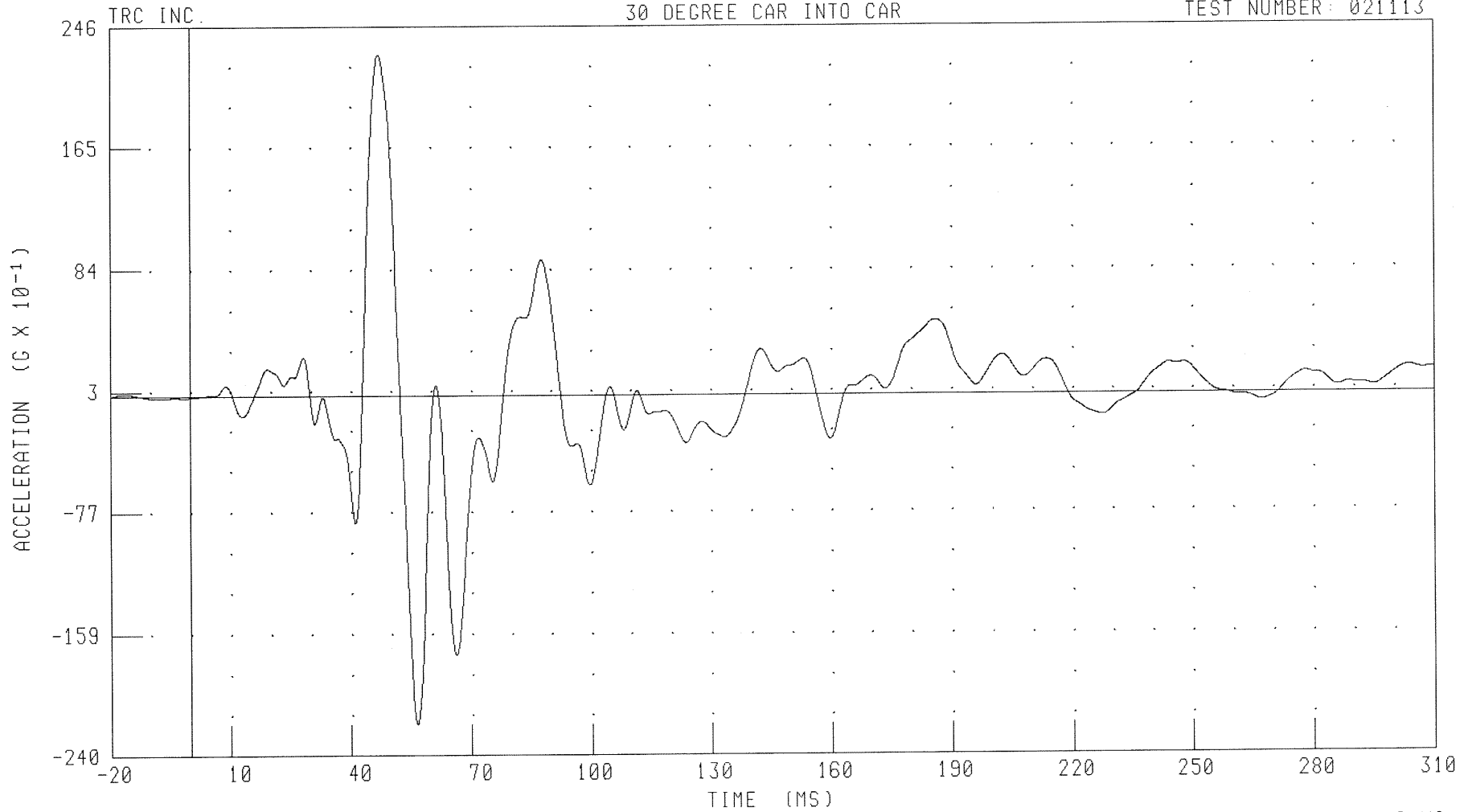
FILTER: CH. CLASS 60

PEAK DATA: 12.18 G @ 41.28 MS; -9.17 G @ 88.64 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET VEHICLE CENTER OF GRAVITY Z-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: VCGZGA

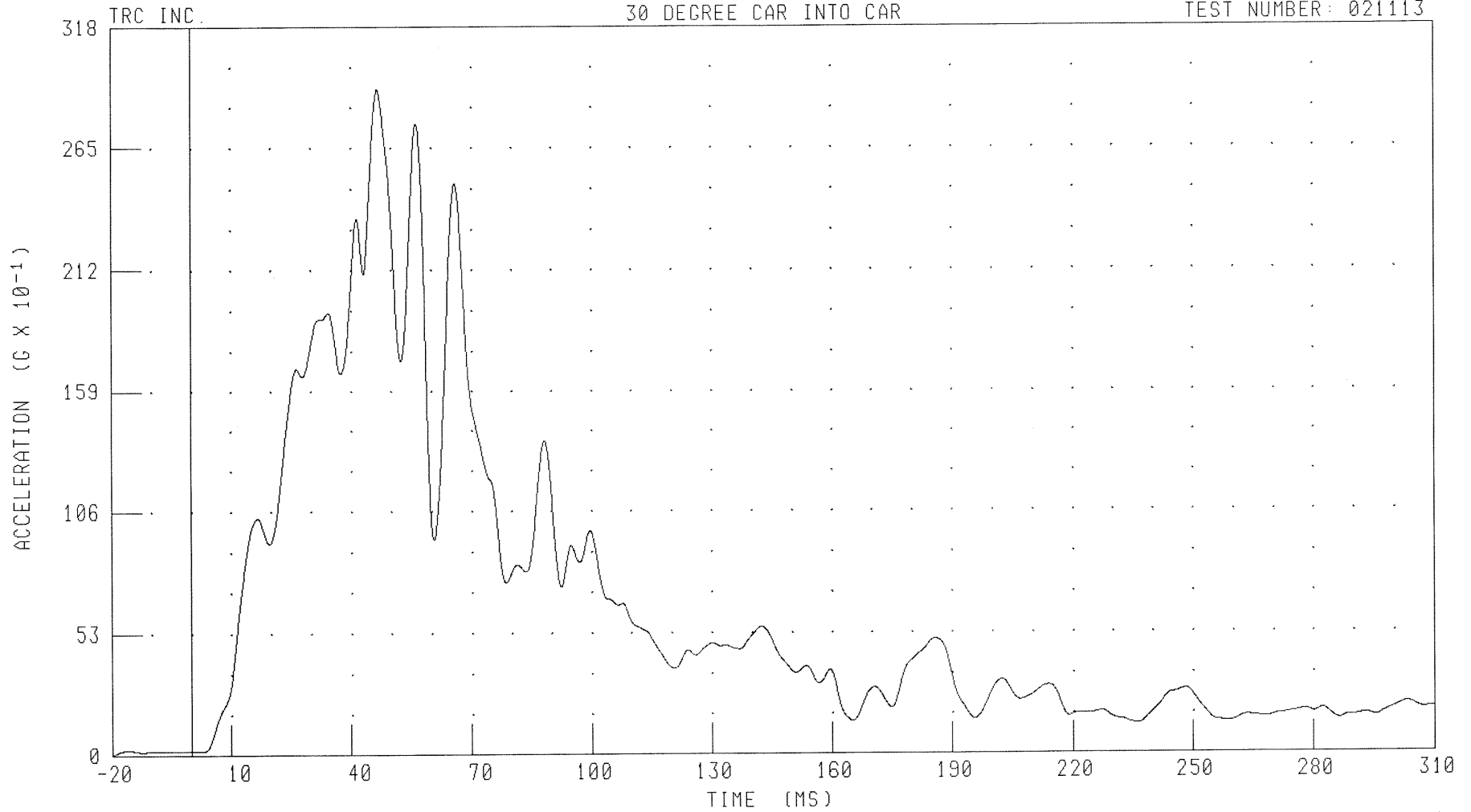
FILTER: CH. CLASS 60

PEAK DATA: 22.69 G @ 47.04 MS; -21.93 G @ 56.40 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET VEHICLE CENTER OF GRAVITY RESULTANT ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



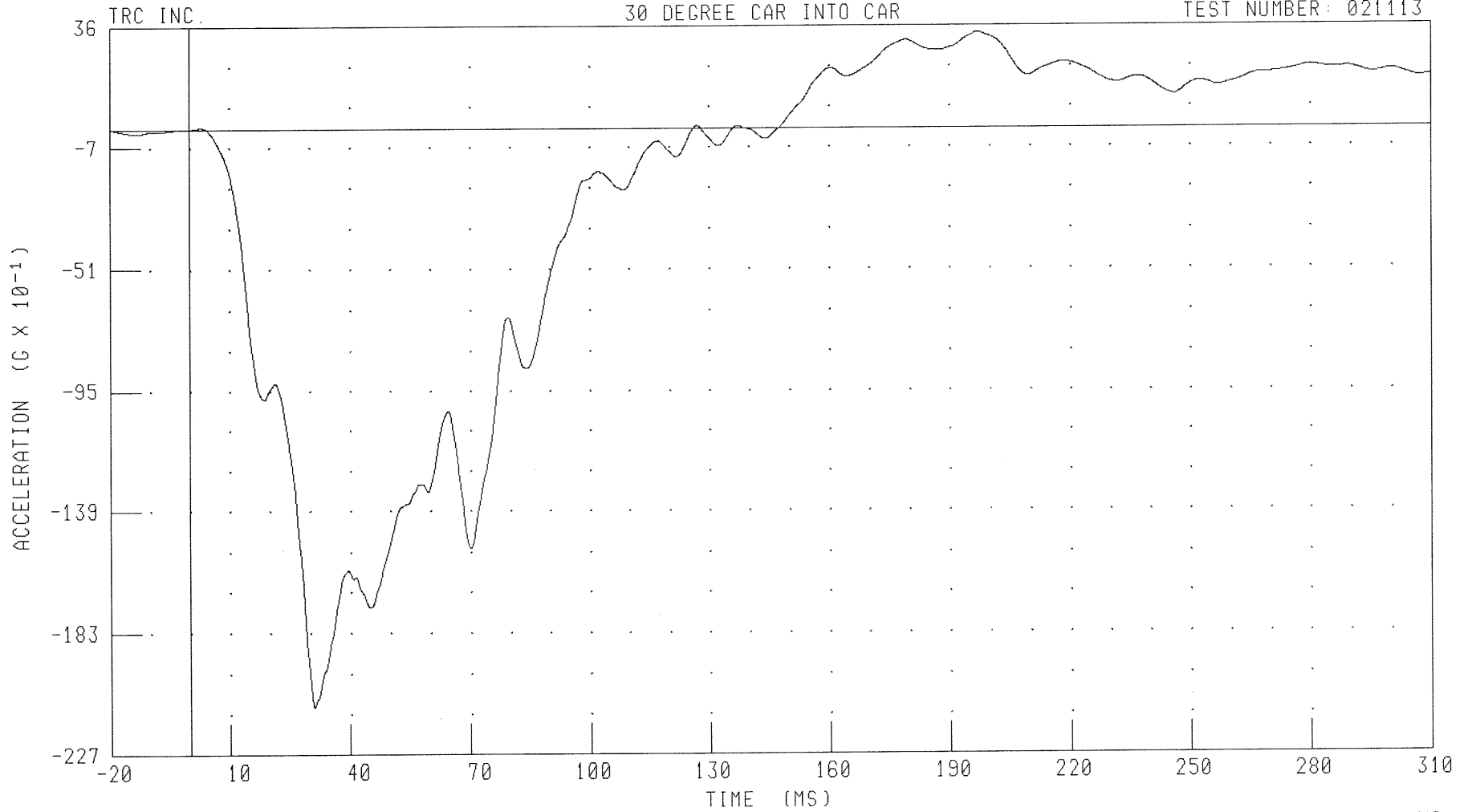
CHANNEL: VCGRGA FILTER: CH CLASS 60

PEAK DATA: 29.07 G @ 46.72 MS; 0.01 G @ -19.92 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET REAR DECK X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: RDKXGA

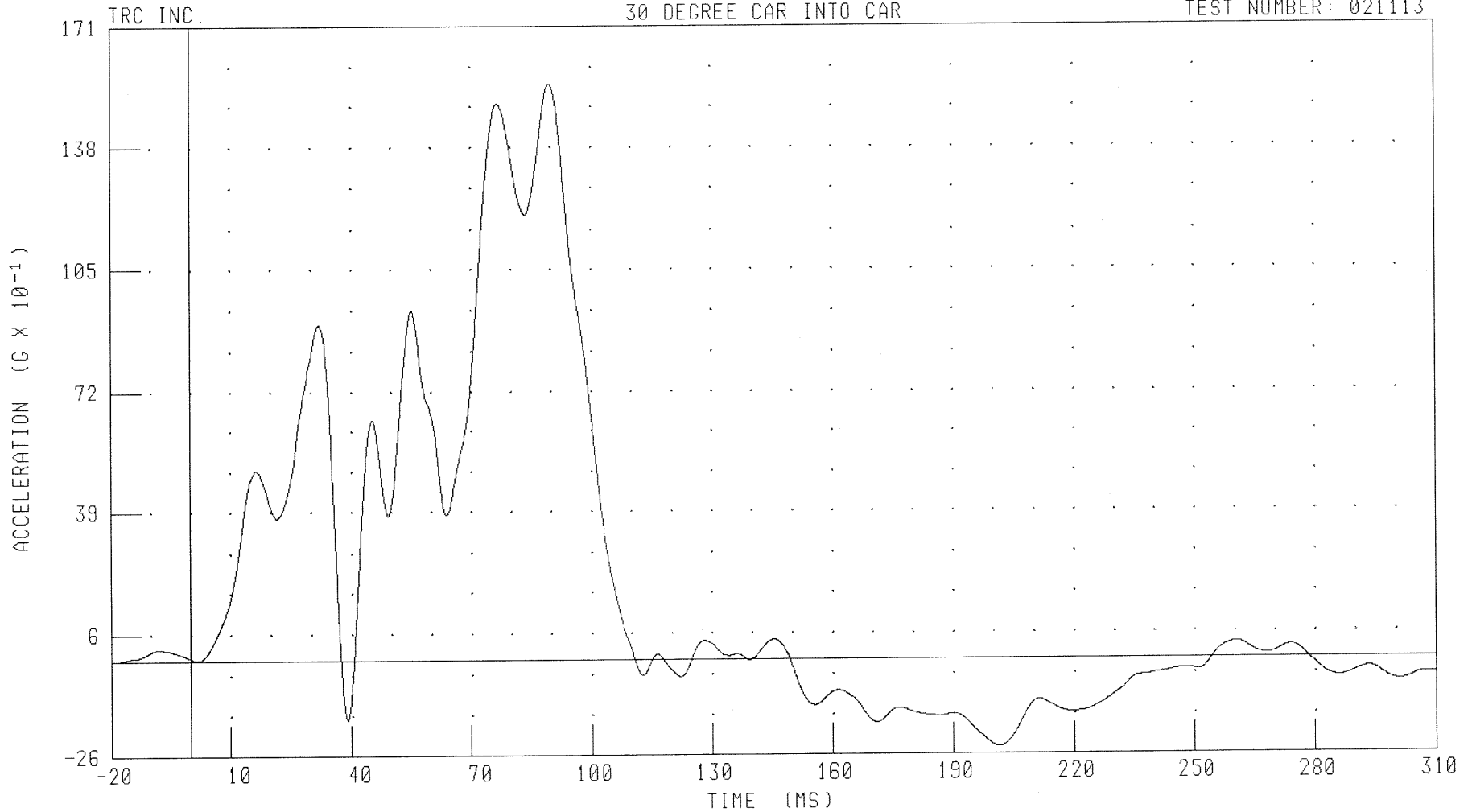
FILTER: CH. CLASS 60

PEAK DATA: 3.45 G @ 197.12 MS; -20.98 G @ 31.04 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET REAR DECK Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: RDKYGA

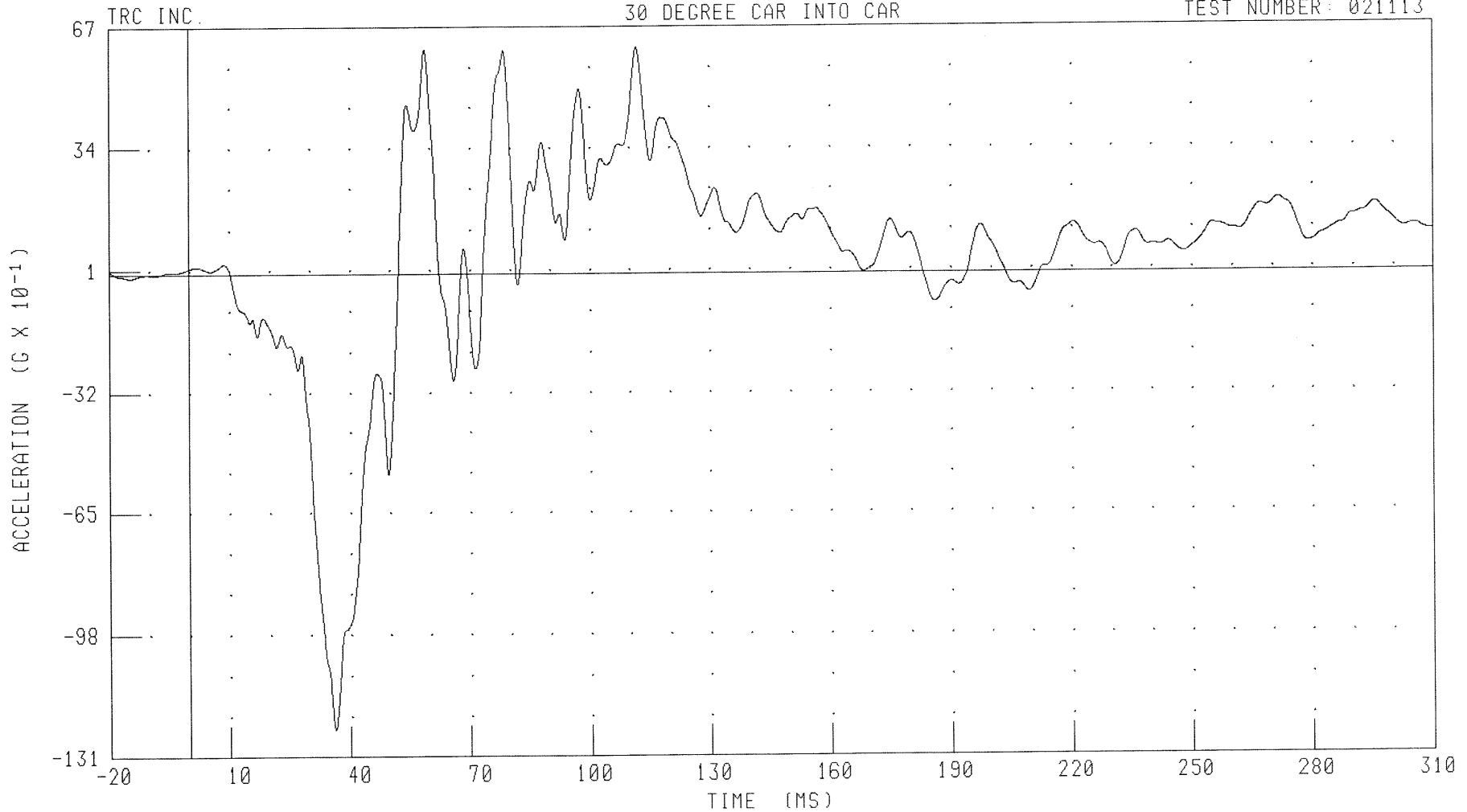
FILTER: CH. CLASS 60

PEAK DATA: 15.61 G @ 89.84 MS; -2.42 G @ 201.44 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET REAR DECK Z-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: RDKZGA

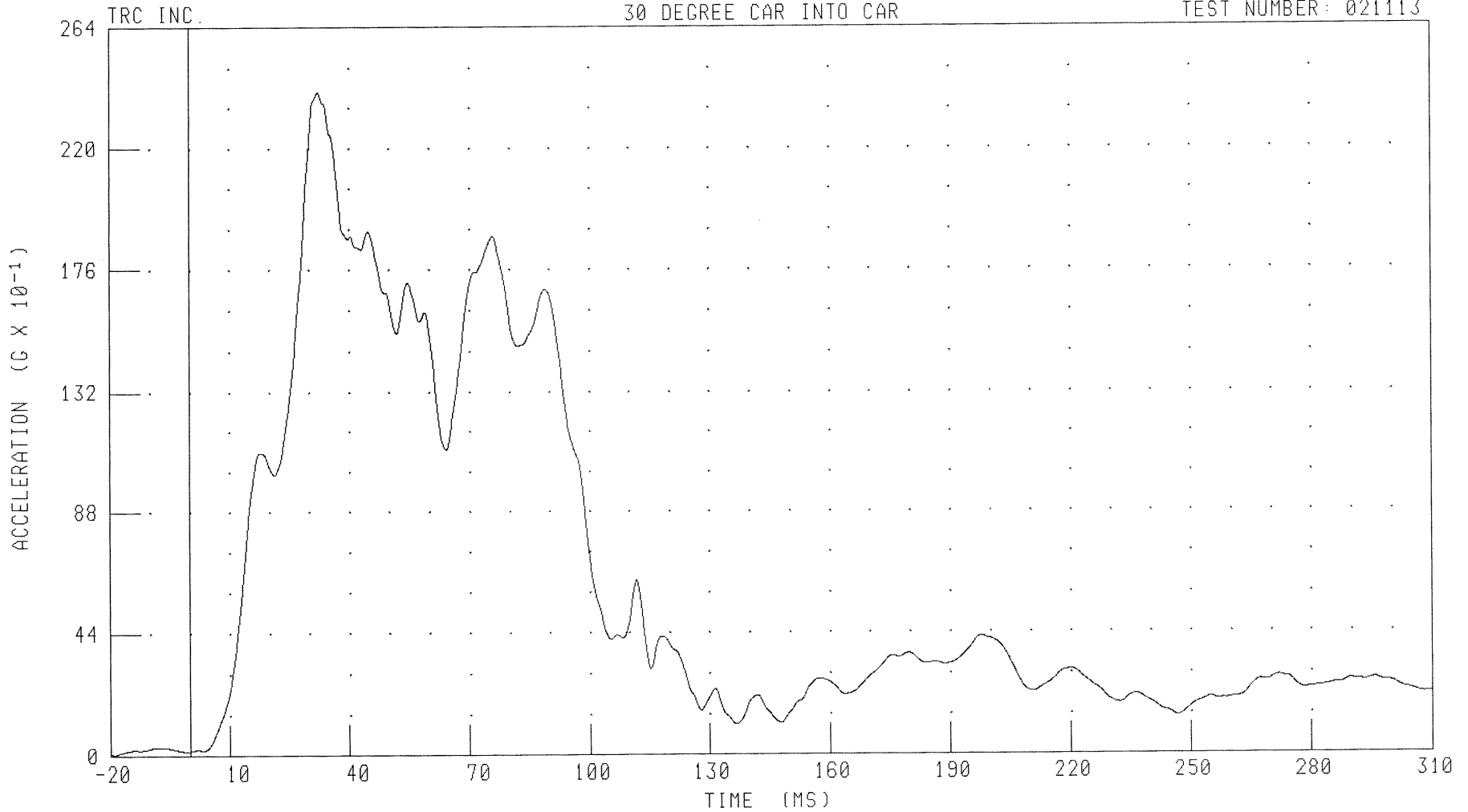
FILTER: CH. CLASS 60

PEAK DATA: 6.13 G @ 112.00 MS; -12.37 G @ 36.16 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET REAR DECK RESULTANT ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: RDKRGA

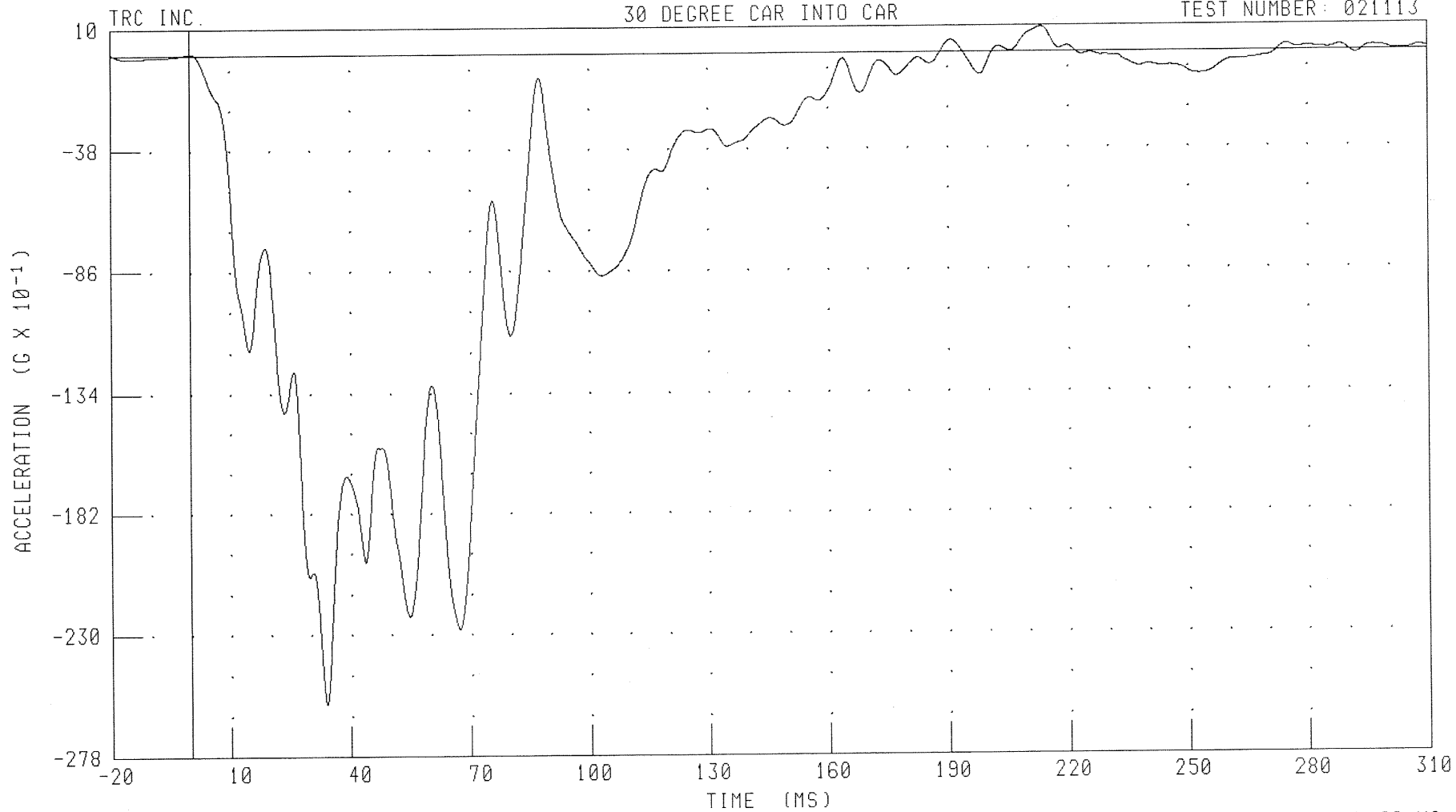
FILTER: CH. CLASS 60

PEAK DATA: 24.06 G @ 32.32 MS; 0.04 G @ -19.04 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET LEFT FRONT SILL X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



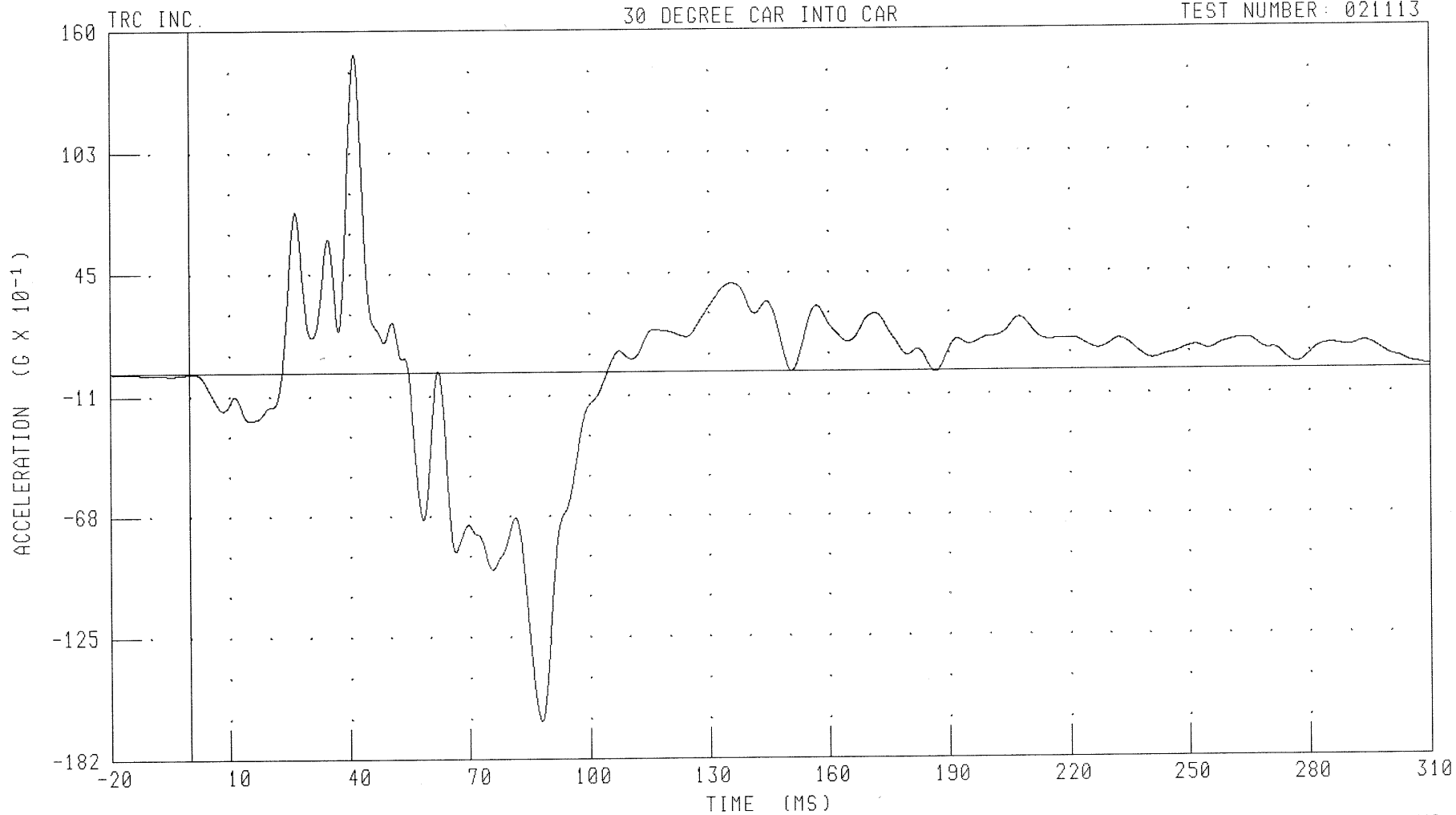
CHANNEL: LFSXGA FILTER: CH. CLASS 60

PEAK DATA: 0.95 G @ 213.36 MS; -25.72 G @ 33.92 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET LEFT FRONT SILL Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: LFSYGA

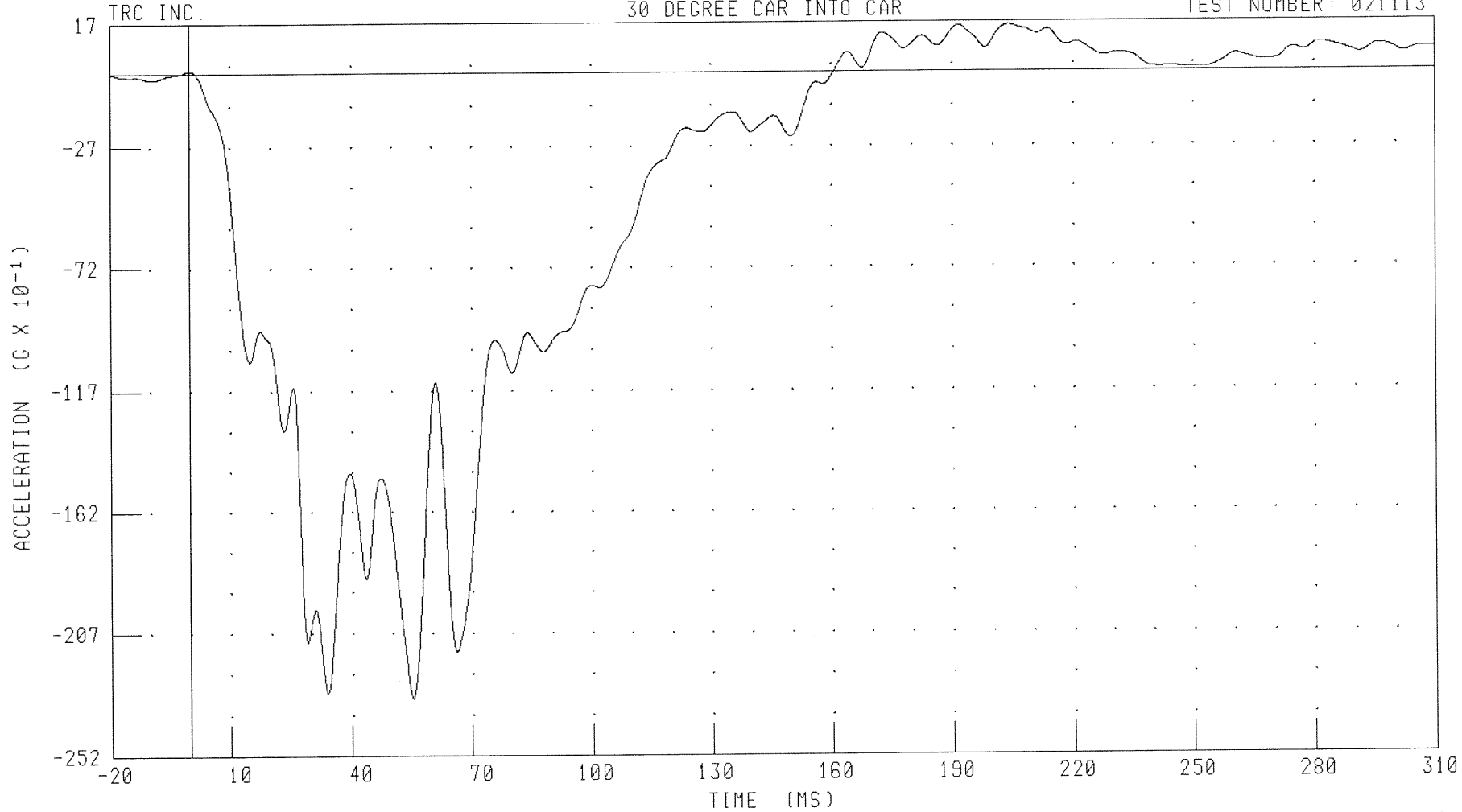
FILTER: CH. CLASS 60

PEAK DATA: 14.90 G @ 41.36 MS; -16.42 G @ 87.84 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET LEFT REAR SILL X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: LRSXGA

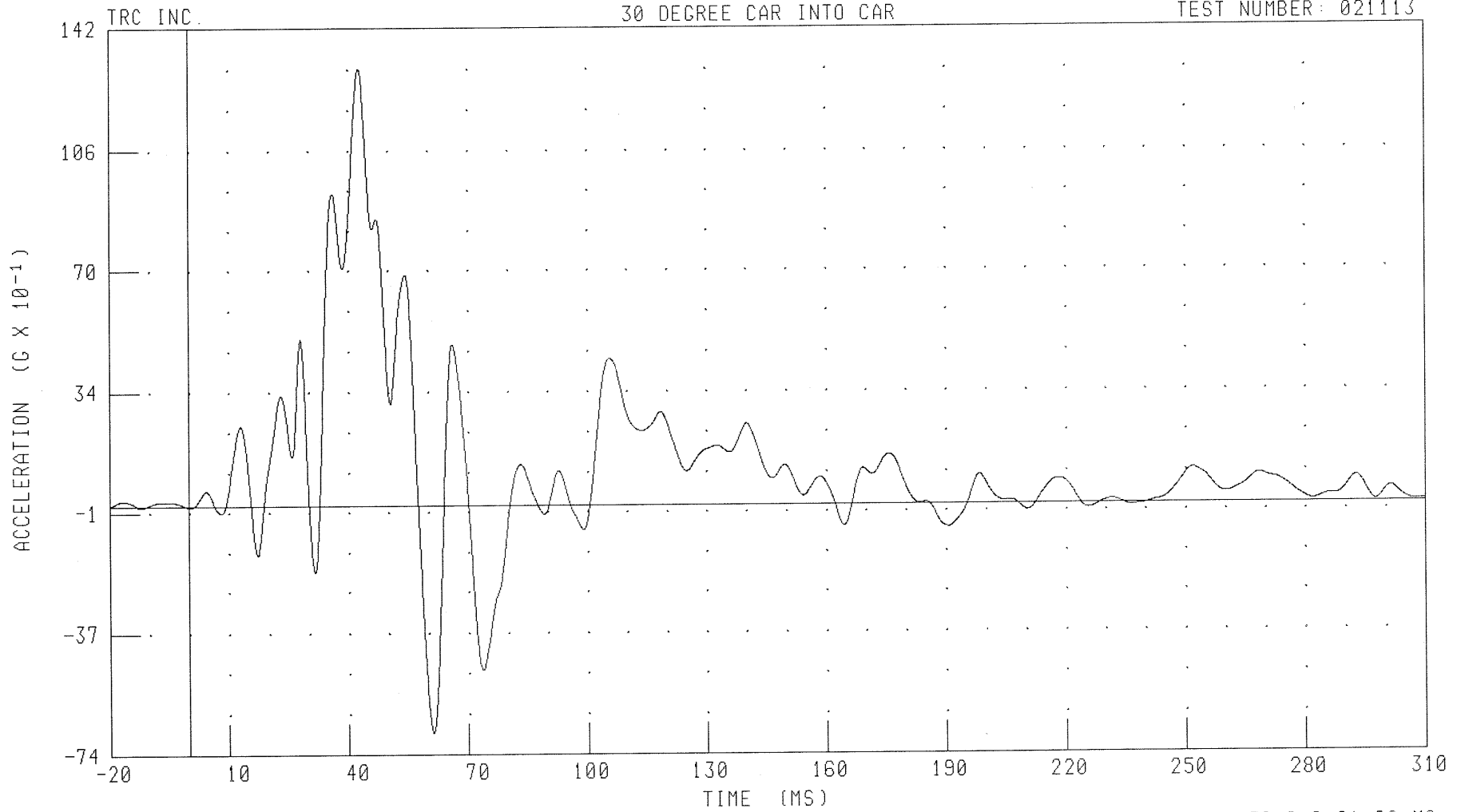
FILTER: CH. CLASS 60

PEAK DATA: 1.68 G @ 204.24 MS; -23.11 G @ 55.20 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET LEFT REAR SILL Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: LRSYGA

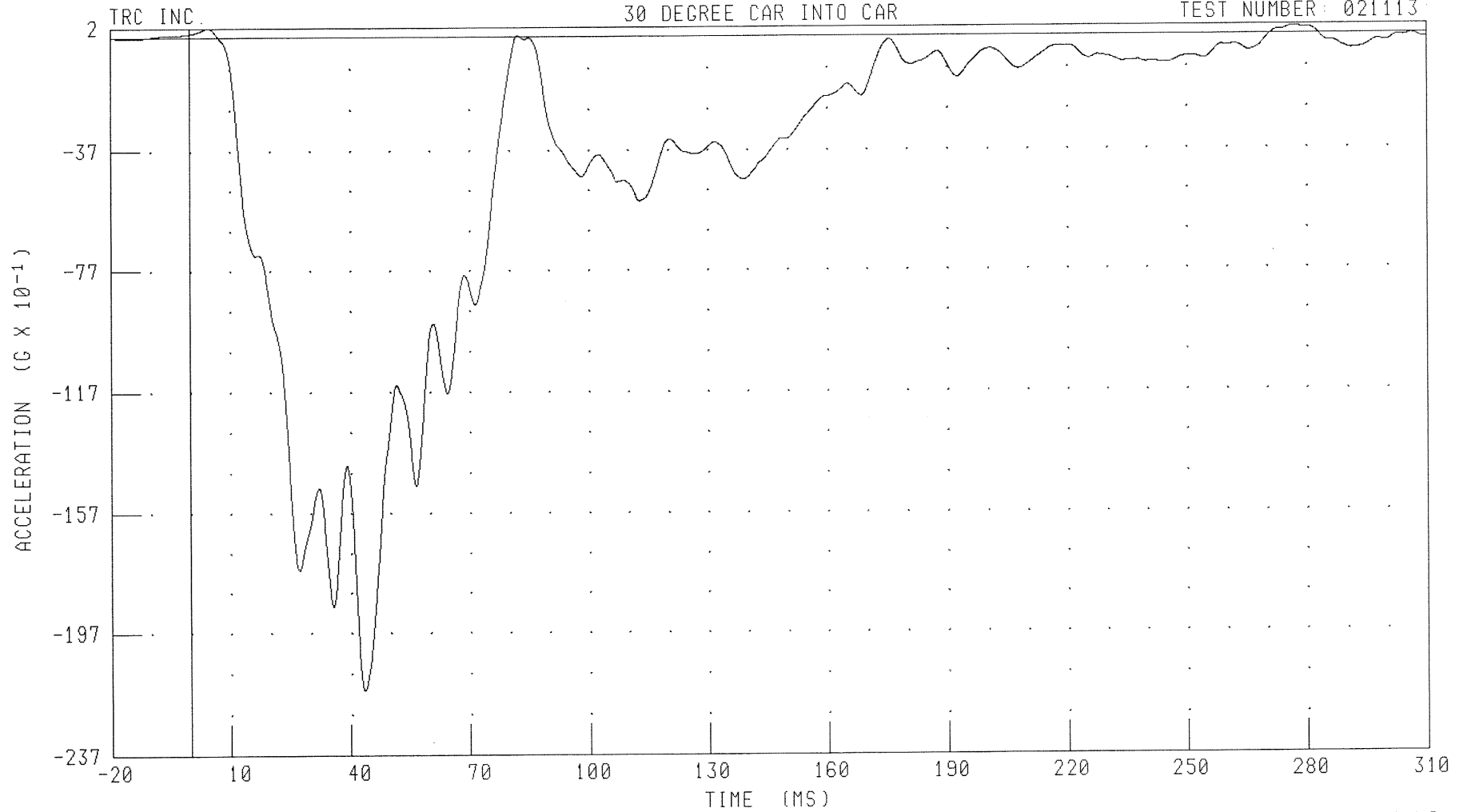
FILTER: CH. CLASS 60

PEAK DATA: 13.02 G @ 42.88 MS; -6.78 G @ 61.20 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET RIGHT FRONT SILL X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: RFSXGA FILTER: CH. CLASS 60

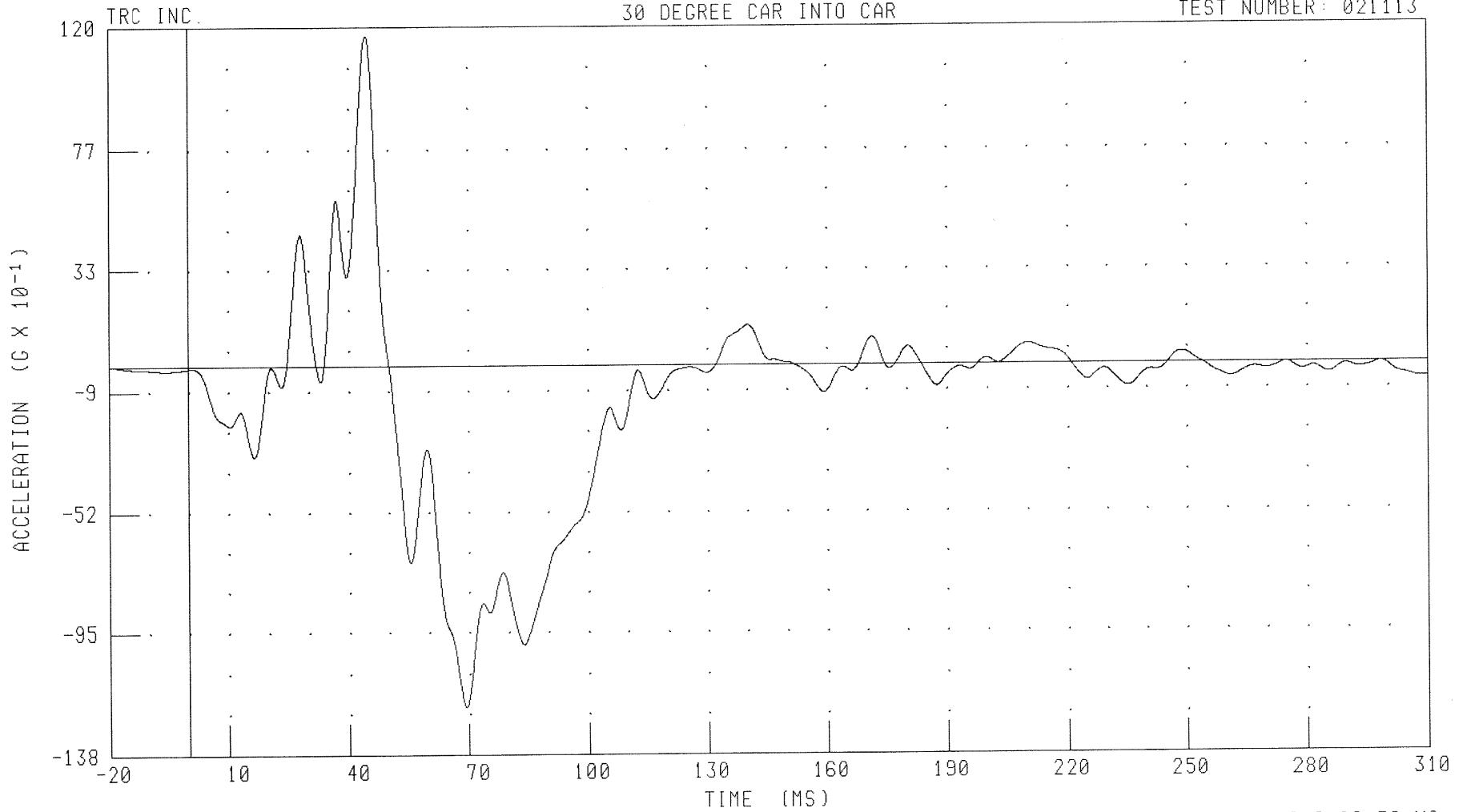
PEAK DATA: 0.31 G @ 4.72 MS; -21.58 G @ 43.44 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

BULLET RIGHT FRONT SILL Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: RFSYGA

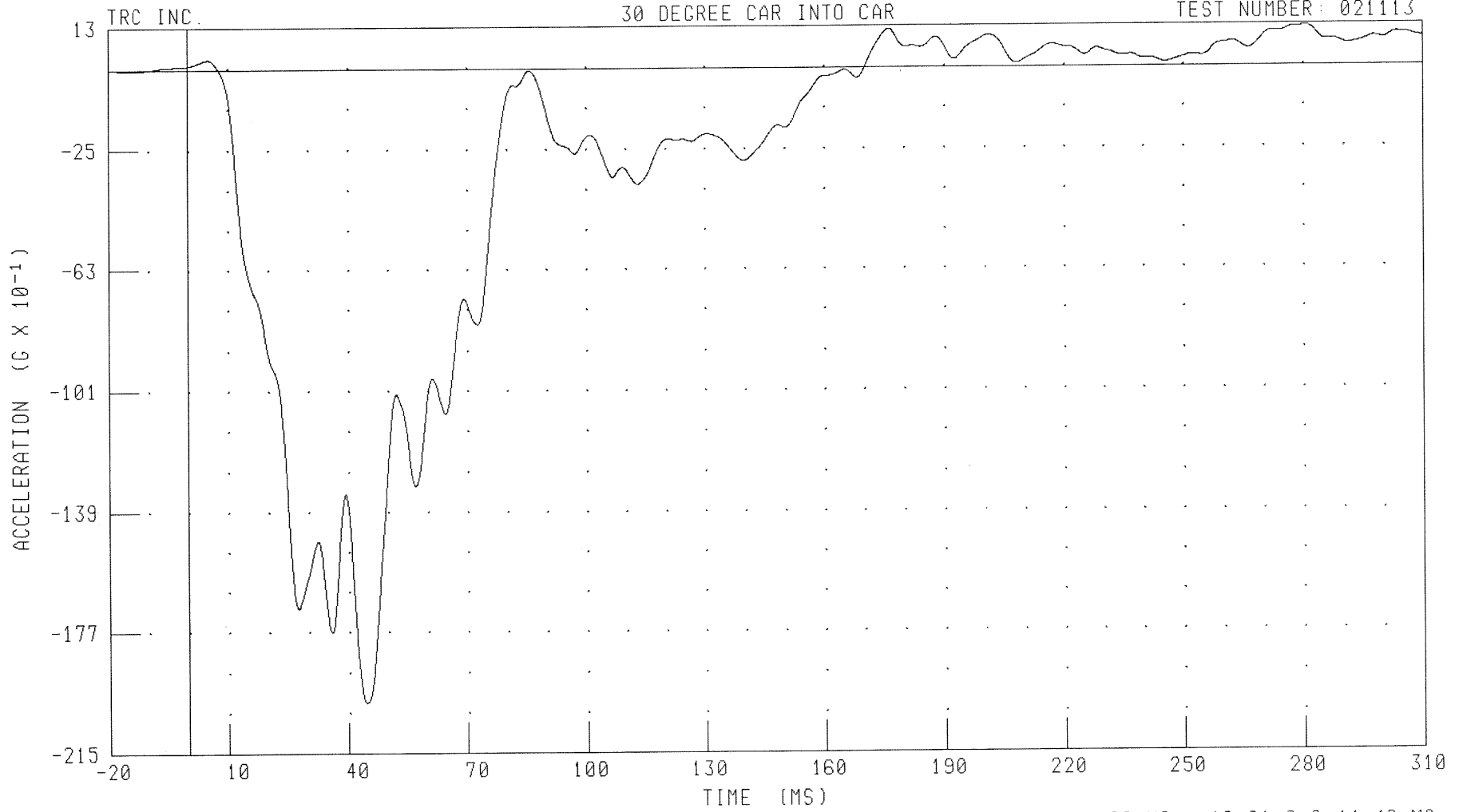
FILTER: CH. CLASS 60

PEAK DATA: 11.69 G @ 44.64 MS; -12.12 G @ 69.36 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET RIGHT REAR SILL X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



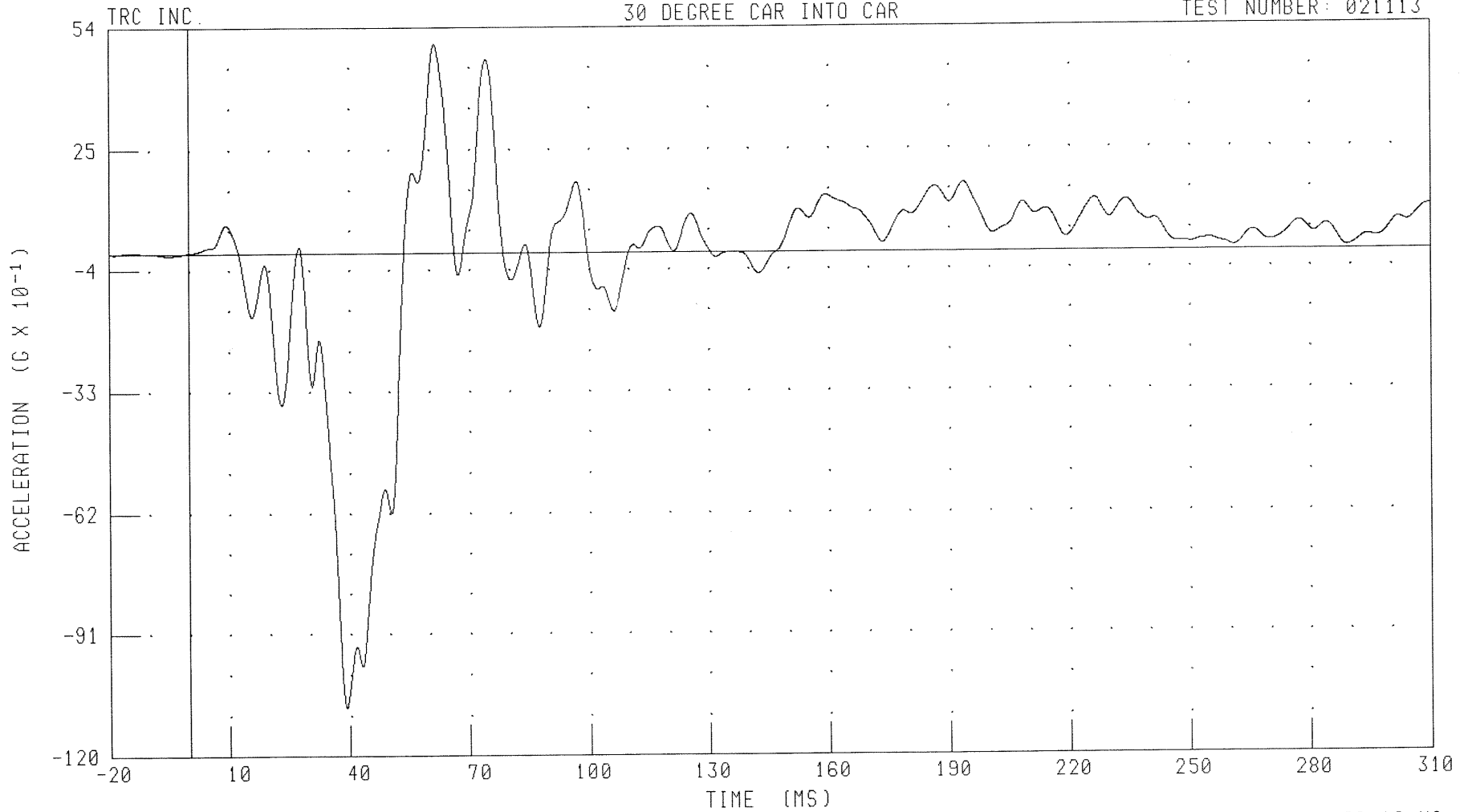
CHANNEL: RRSXGA FILTER: CH. CLASS 60

PEAK DATA: 1.24 G @ 280.80 MS; -19.91 G @ 44.48 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET RIGHT REAR SILL Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: RRSYGA

FILTER: CH. CLASS 60

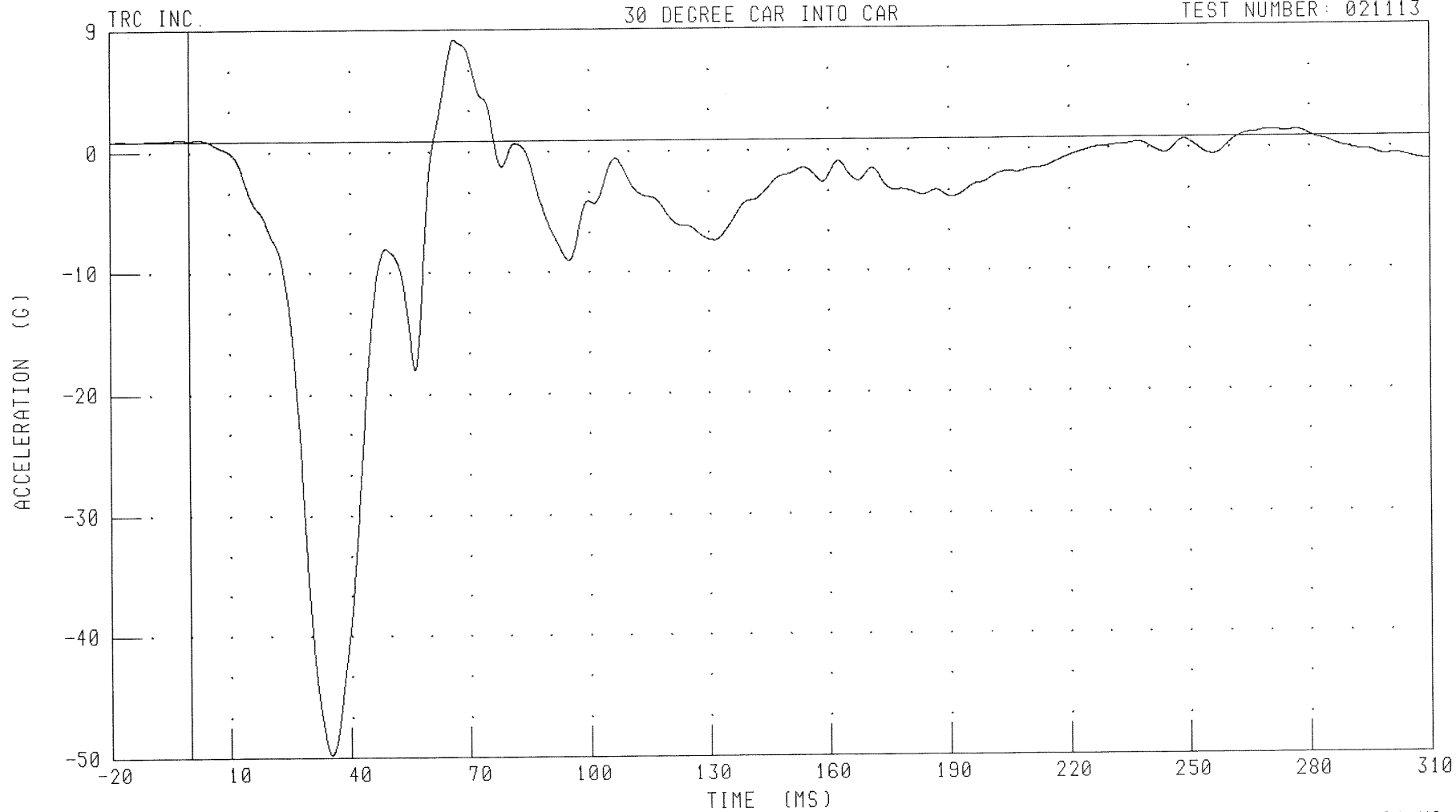
PEAK DATA: 4.98 G @ 61.52 MS; -10.84 G @ 39.12 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

BULLET ENGINE TOP X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: ENGXGA

FILTER: CH. CLASS 60

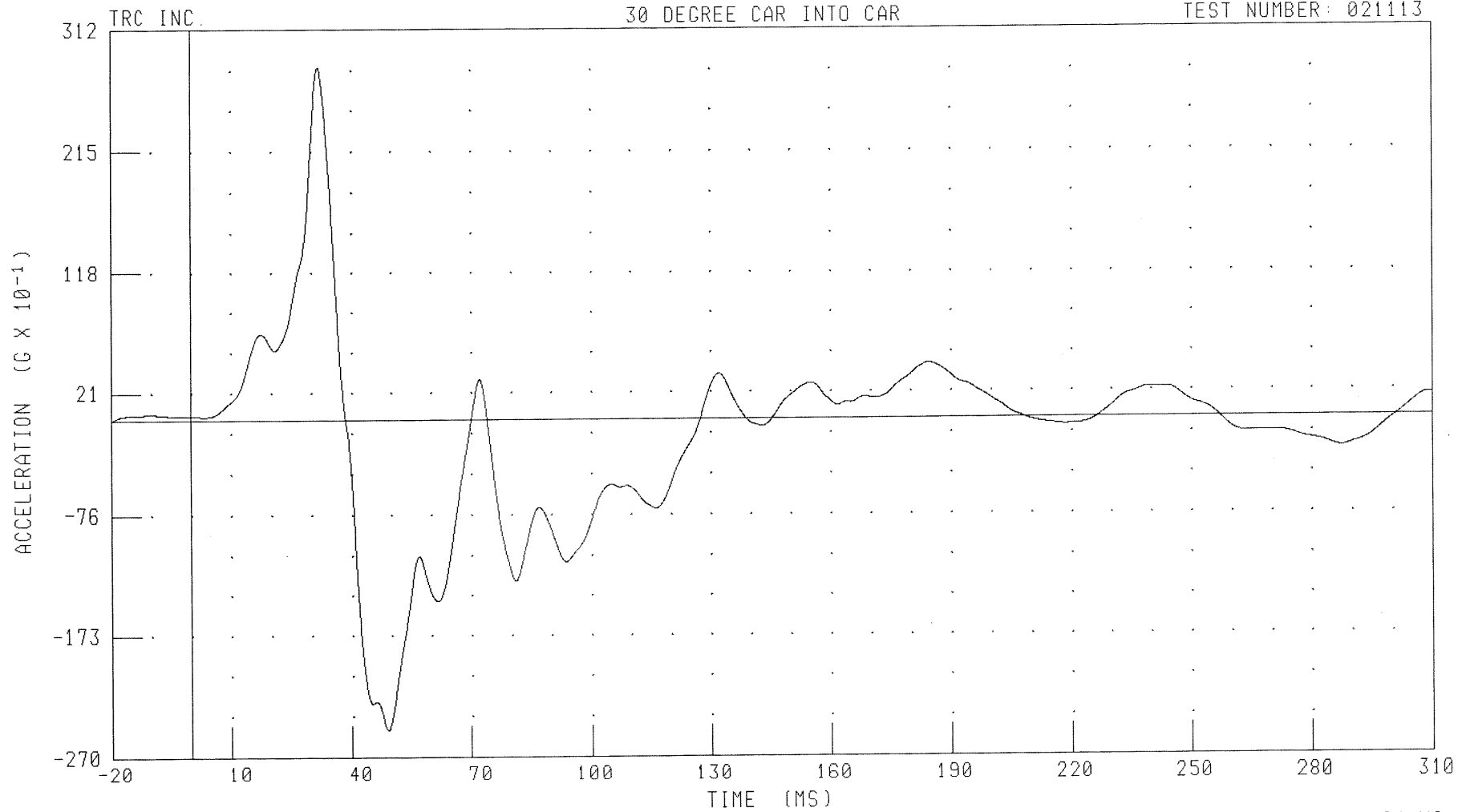
PEAK DATA: 8.28 G @ 66.48 MS; -50.71 G @ 35.04 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

BULLET ENGINE TOP Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: ENGYGA

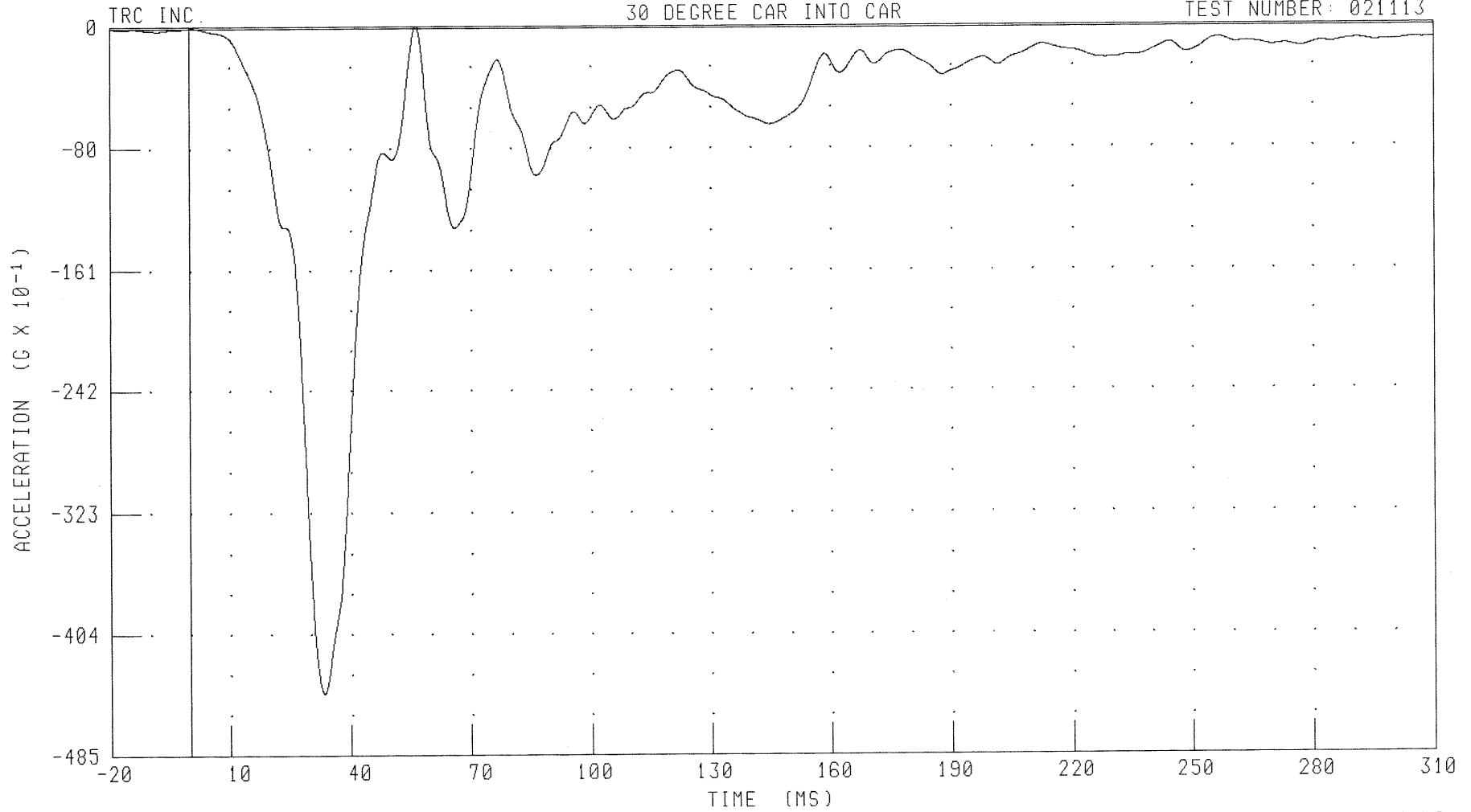
FILTER: CH. CLASS 60

PEAK DATA: 28.20 G @ 31.84 MS; -24.86 G @ 49.04 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET ENGINE BOTTOM X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



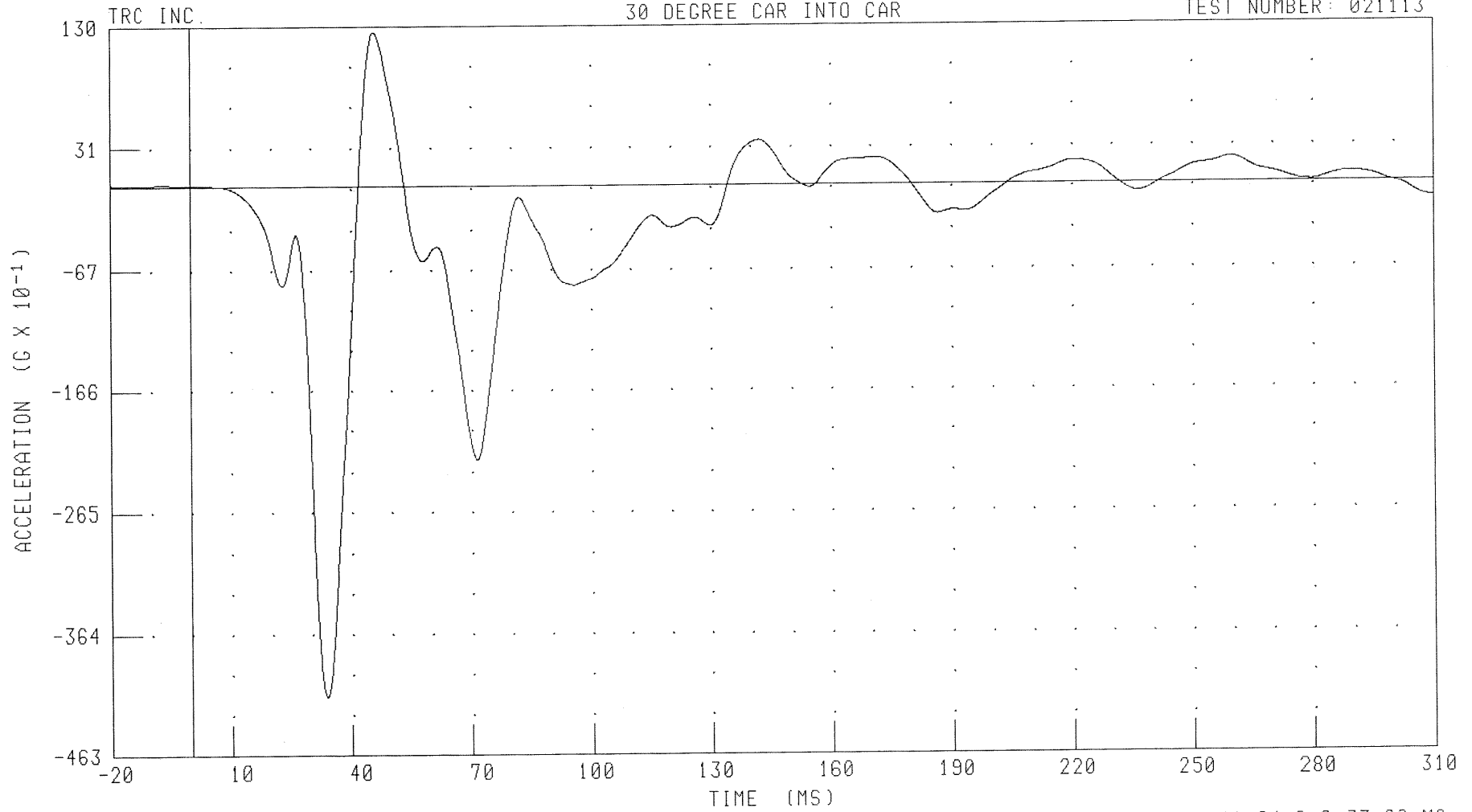
CHANNEL: ENGXGB FILTER: CH. CLASS 60

PEAK DATA: 0.16 G @ 56.48 MS; -44.39 G @ 33.44 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET ENGINE BOTTOM Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: ENGYCB

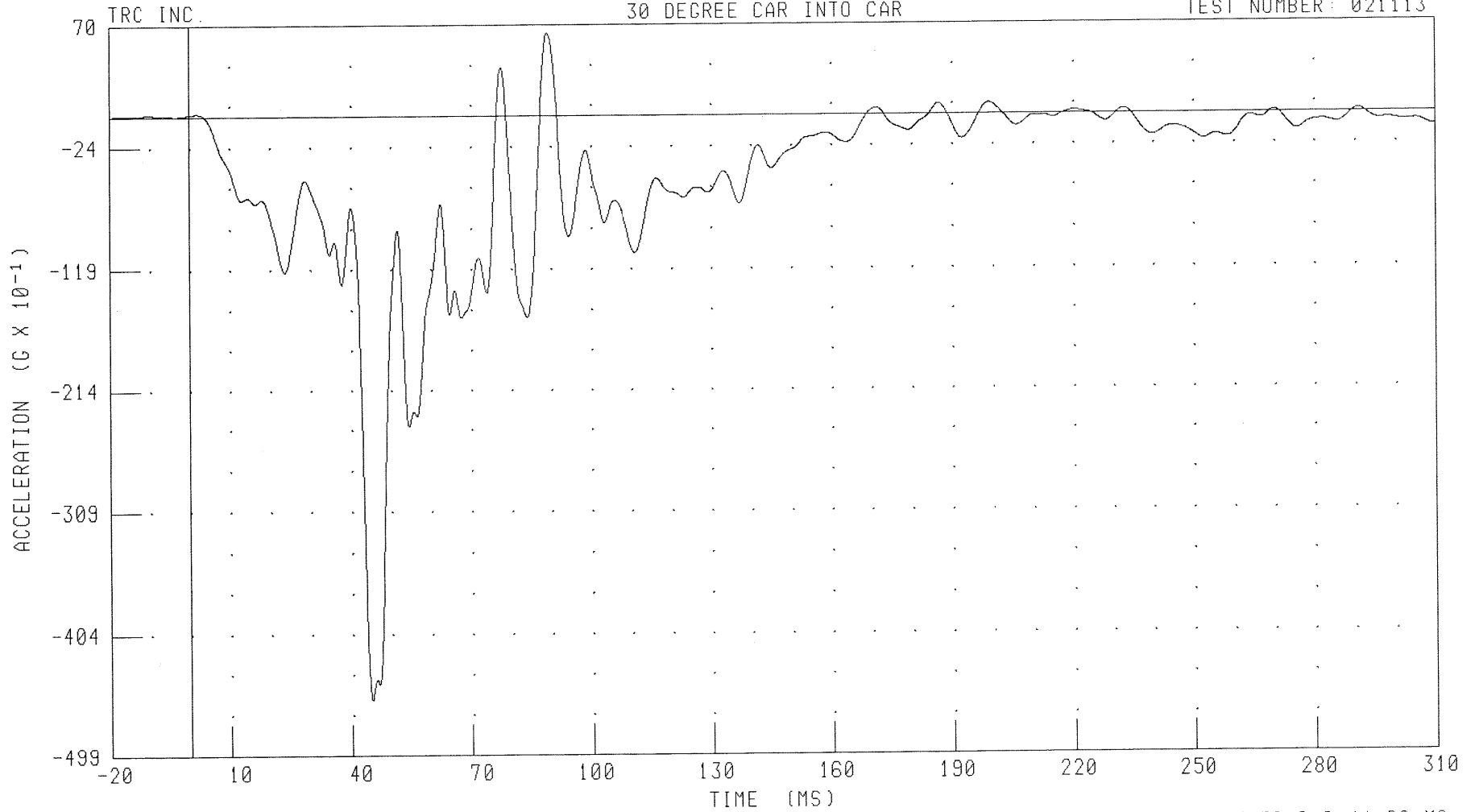
FILTER: CH. CLASS 60

PEAK DATA: 12.53 G @ 45.92 MS; -41.64 G @ 33.68 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET INSTRUMENT PANEL CENTER X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



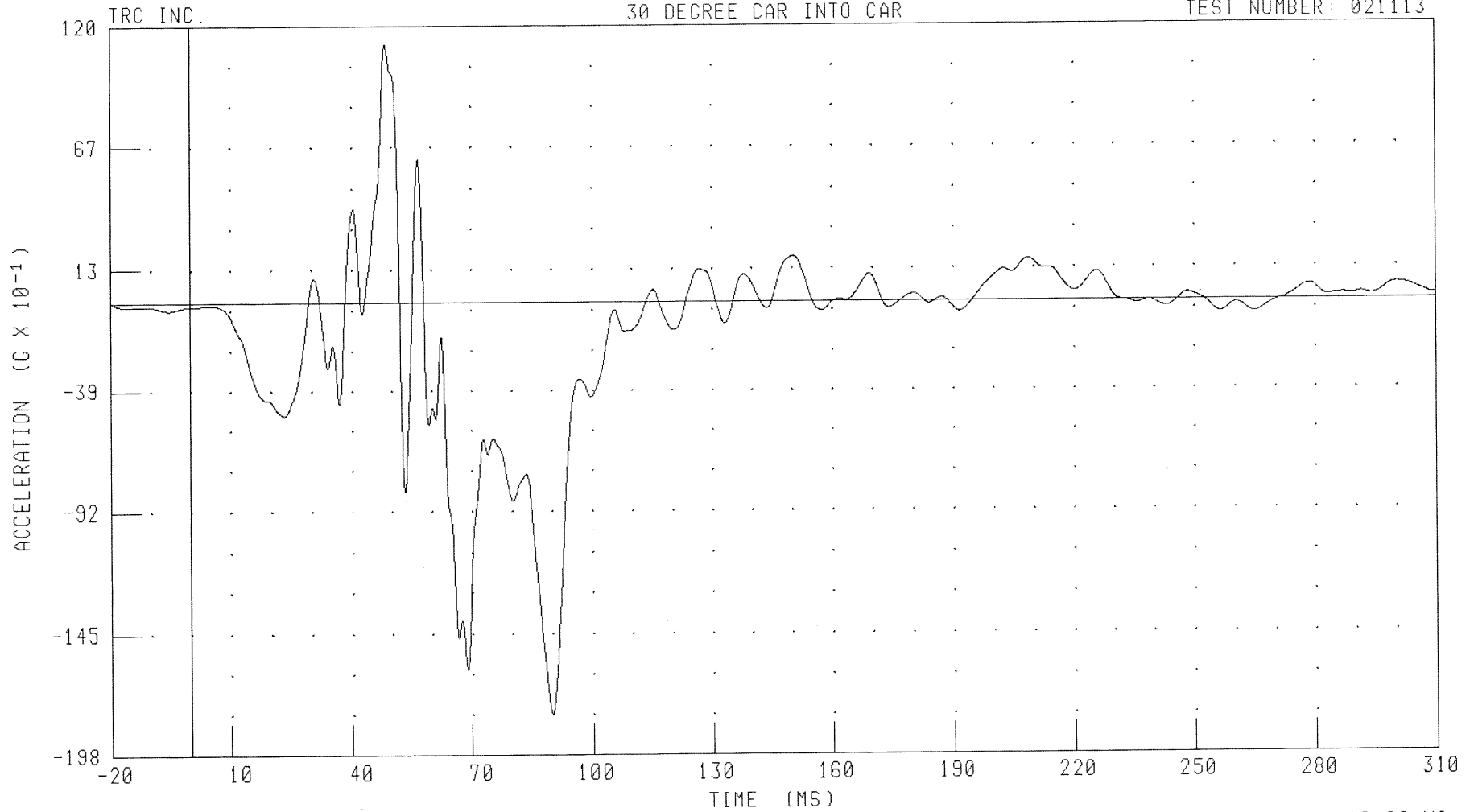
CHANNEL: DPCXGA FILTER: CH. CLASS 60

PEAK DATA: 6.46 G @ 89.20 MS; -45.59 G @ 44.96 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET INSTRUMENT PANEL CENTER Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: DPCYGA

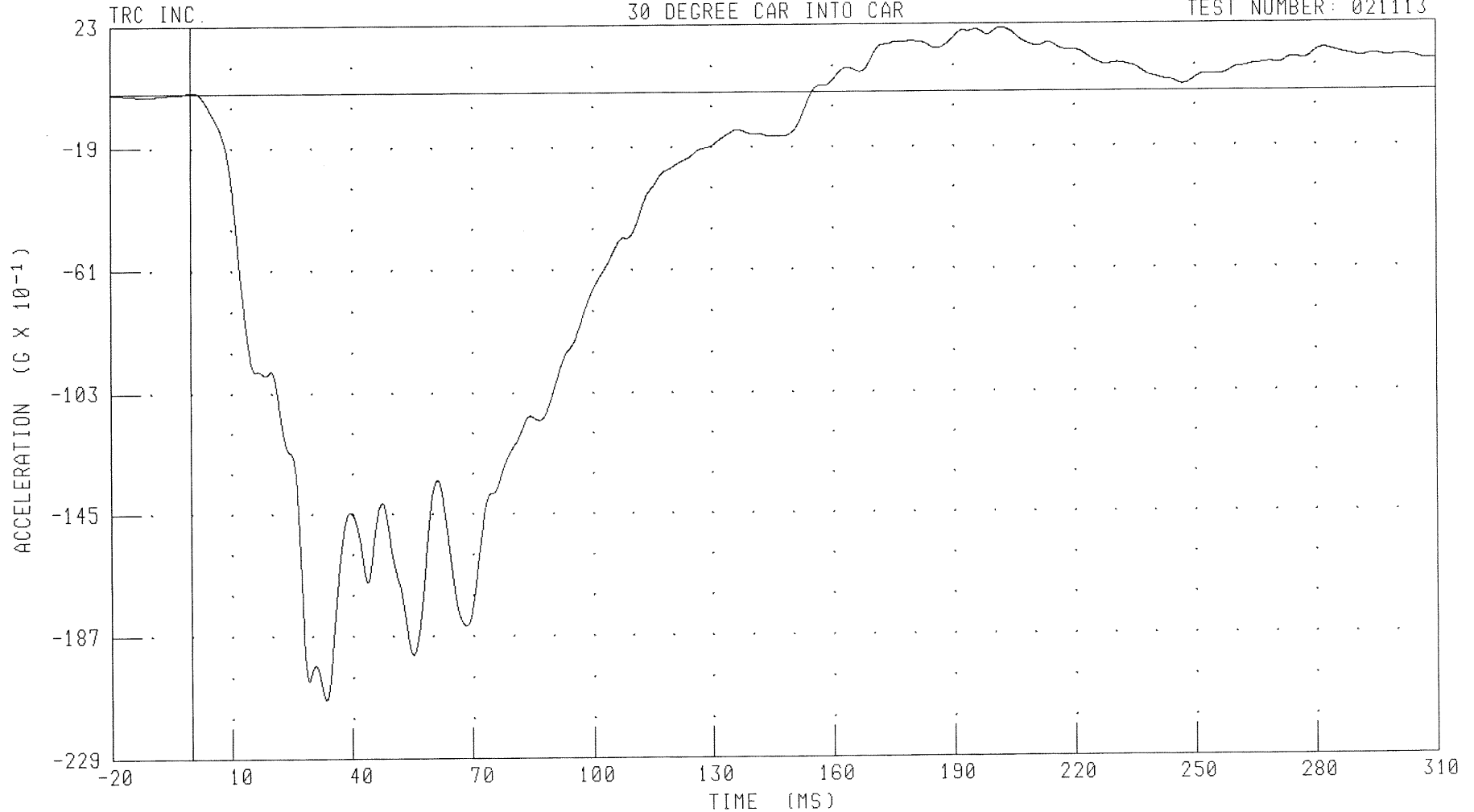
FILTER: CH. CLASS 60

PEAK DATA: 11.19 G @ 48.64 MS; -18.06 G @ 90.00 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET LEFT REAR SEAT CROSSMEMBER X-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



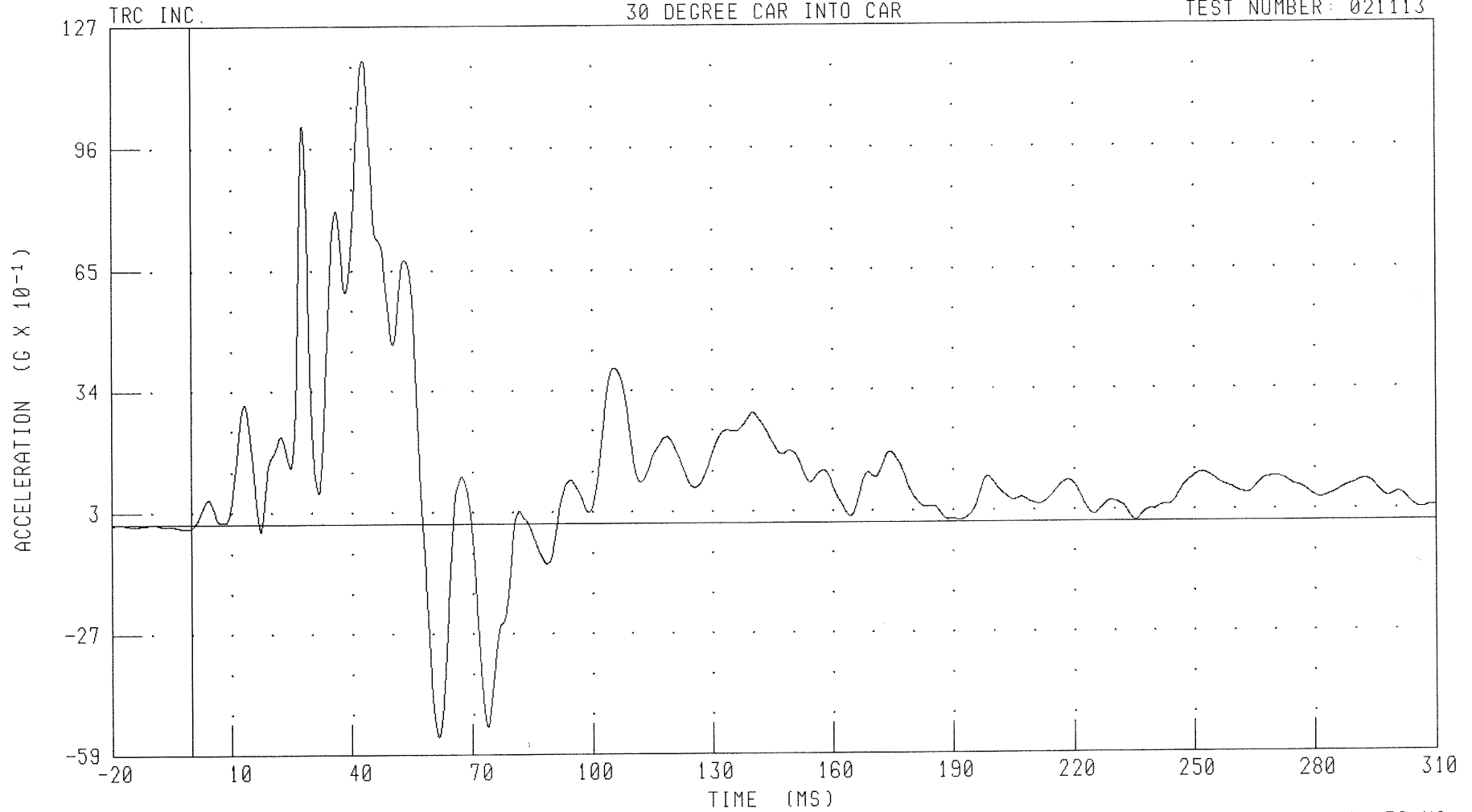
CHANNEL: LRXXGA FILTER: CH. CLASS 60

PEAK DATA: 2.18 G @ 201.92 MS; -20.87 G @ 33.44 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET LEFT REAR SEAT CROSSMEMBER Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: LRXYGA FILTER: CH. CLASS 60

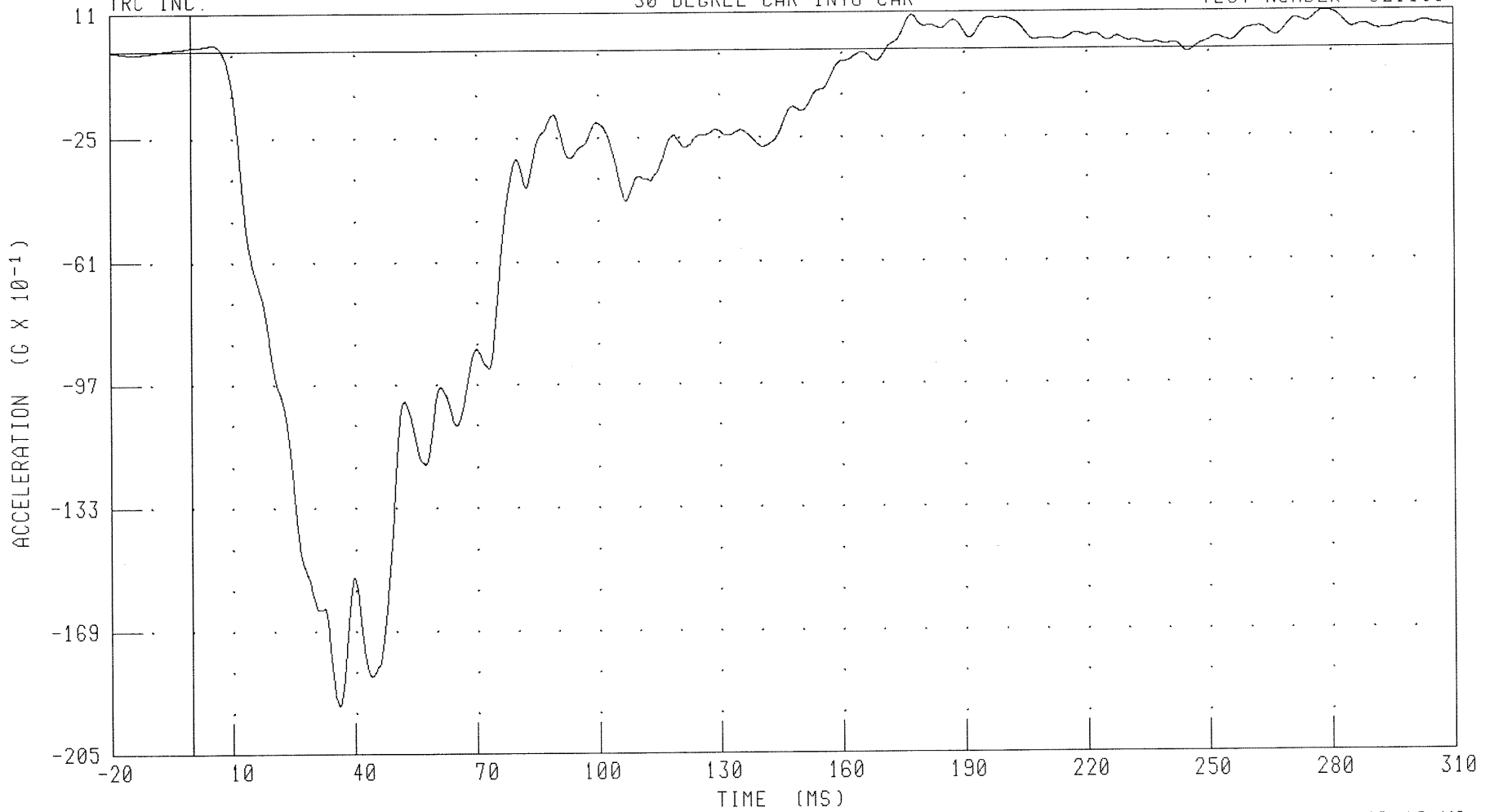
PEAK DATA: 11.82 G @ 43.12 MS; -5.45 G @ 61.52 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET RIGHT REAR SEAT CROSSMEMBER X-AXIS ACCELERATION

TRC INC.

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: RRXXCA

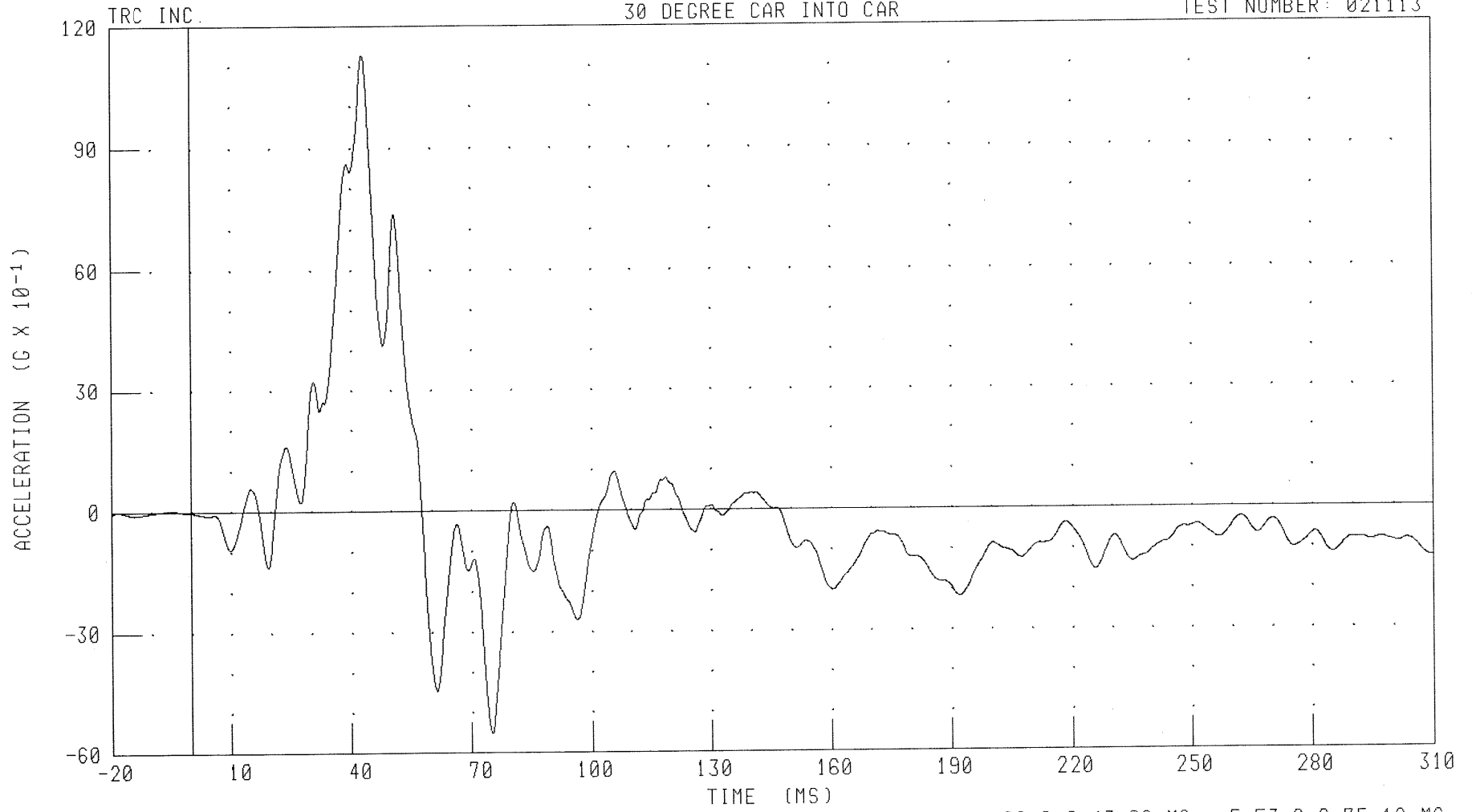
FILTER: CH. CLASS 60

PEAK DATA: 1.08 G @ 278.32 MS; -19.09 G @ 36.16 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES
BULLET RIGHT REAR SEAT CROSSMEMBER Y-AXIS ACCELERATION

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: RRYGA FILTER: CH. CLASS 60

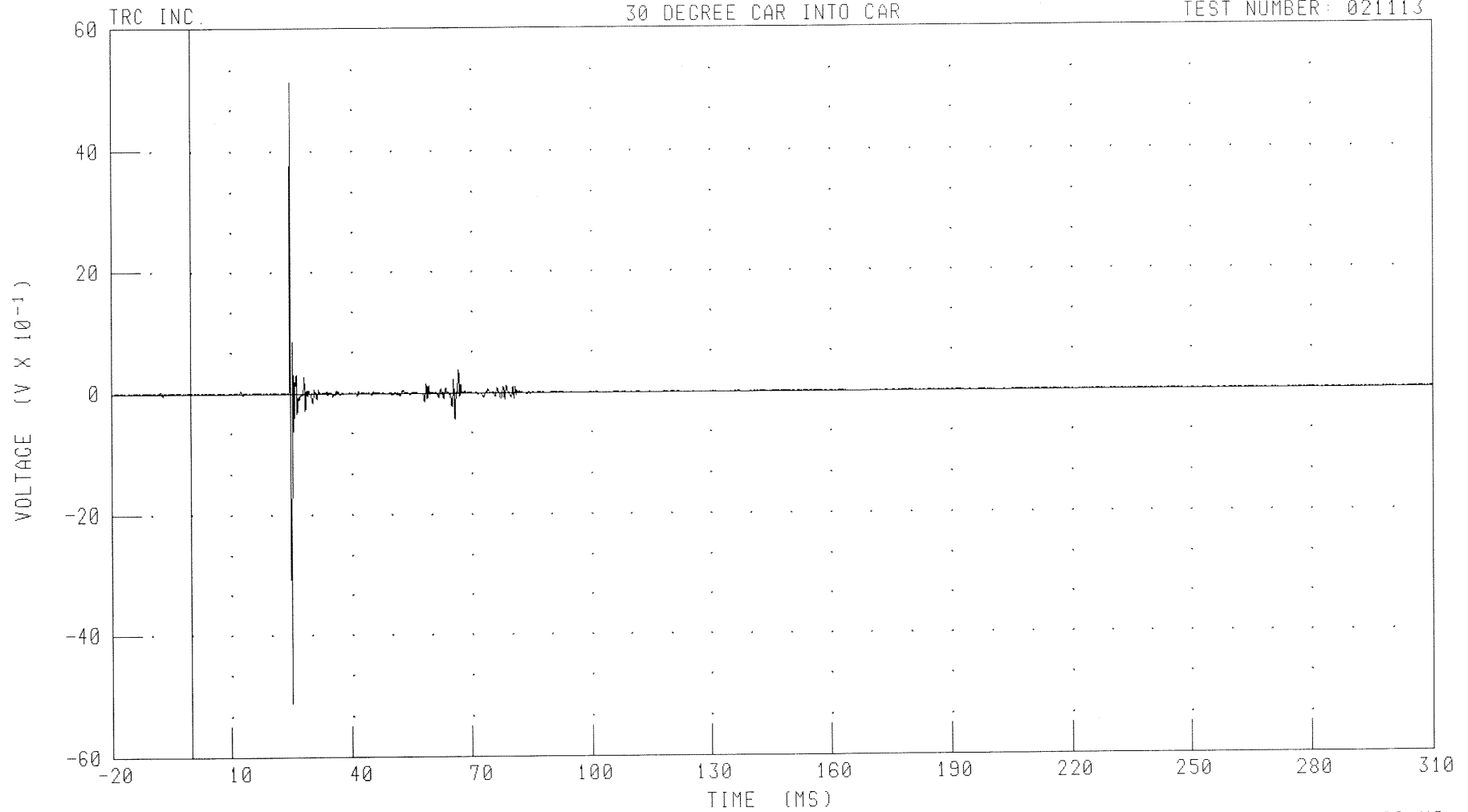
PEAK DATA: 11.28 G @ 43.20 MS; -5.53 G @ 75.12 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

BULLET DRIVER AIRBAG EVENT

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: DABETA FILTER: CH. CLASS 1000

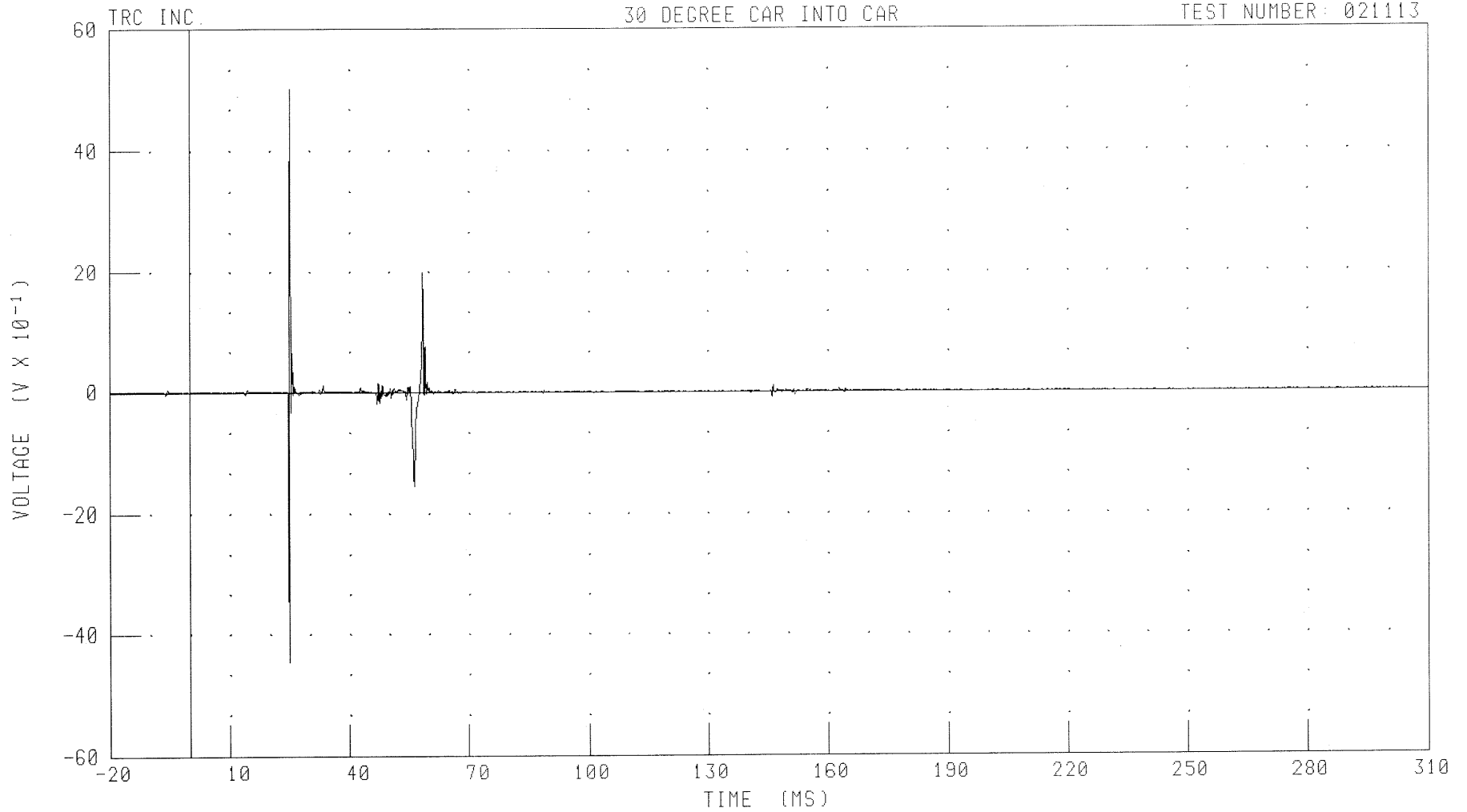
PEAK DATA: 5.12 V @ 24.80 MS; -5.12 V @ 25.20 MS

1999 MITSUBISHI MONTERO SPORT INTO LEFT FRONT OF 1997 HONDA ACCORD - OBLIQUE 30 DEGREES

BULLET PASSENGER AIRBAG EVENT

30 DEGREE CAR INTO CAR

TEST NUMBER: 021113



CHANNEL: PABETA FILTER: CH. CLASS 1000

PEAK DATA: 5.01 V @ 25.12 MS; -4.45 V @ 24.80 MS

Appendix C

Dummy Configuration and Performance Verification Data

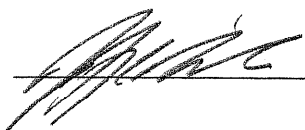
Pre-Test Dummy Configuration and Performance Verification Data

Target Vehicle Driver Dummy S/N: 168

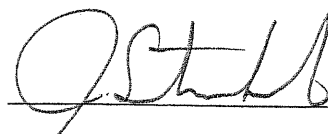
Transportation Research Center Inc.
572E HIII 50th Dummy
External Dimensions
Serial No. 168 Calibration No. 18

Test Parameter	Dimension	Specification	Results	Pass
Location For Chest Circumference	AA	429 - 434 mm	432 mm	Yes
Location For Waist Circumference	BB	226 - 231 mm	229 mm	Yes
Chest Circumference	Y	970 - 1001 mm	981 mm	Yes
Waist Circumference	Z	836 - 866 mm	853 mm	Yes
Chest Depth	O	213 - 229 mm	227 mm	Yes
H-Point Height	C	84 - 89 mm	86 mm	Yes
H-Point From Seatback	D	135 - 140 mm	138 mm	Yes
Skull Cap To Backline	H	41 - 46 mm	46 mm	Yes
Total Sitting Height	A	879 - 889 mm	882 mm	Yes
Thigh Clearance	F	140 - 155 mm	151 mm	Yes
Buttock Knee Length	K	579 - 605 mm	597 mm	Yes
Buttock Popliteal Length	N	452 - 478 mm	473 mm	Yes
Popliteal Height	L	429 - 455 mm	446 mm	Yes
Knee Pivot Height	M	485 - 500 mm	491 mm	Yes
Foot Length	P	252 - 267 mm	260 mm	Yes
Foot Breadth	W	91 - 107 mm	103 mm	Yes
Shoulder Pivot From Backline	E	84 - 94 mm	91 mm	Yes
Shoulder Breadth	V	422 - 437 mm	430 mm	Yes
Shoulder Pivot Height	B	506 - 521 mm	514 mm	Yes
Elbow Rest Height	J	191 - 211 mm	208 mm	Yes
Shoulder-Elbow Length	I	330 - 345 mm	340 mm	Yes
Back Of Elbow To Wrist Pivot	G	290 - 305 mm	299 mm	Yes

Technician



Approved




Transportation Research Center Inc.

572E Head Drop Test

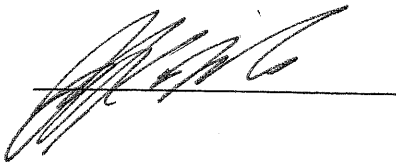
HIII 50th Male Serial No. 168 Calibration No. 18 - 1

Test Date 10/07/2002

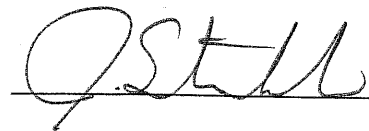
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Peak Resultant Acceleration	225 - 275 g	266.8 g	Yes
Peak Lateral Acceleration	15 g Max	-5.2 g	Yes
Is Acceleration Curve Unimodal?	Yes	Yes	Yes

Comments:

Technician



Approved

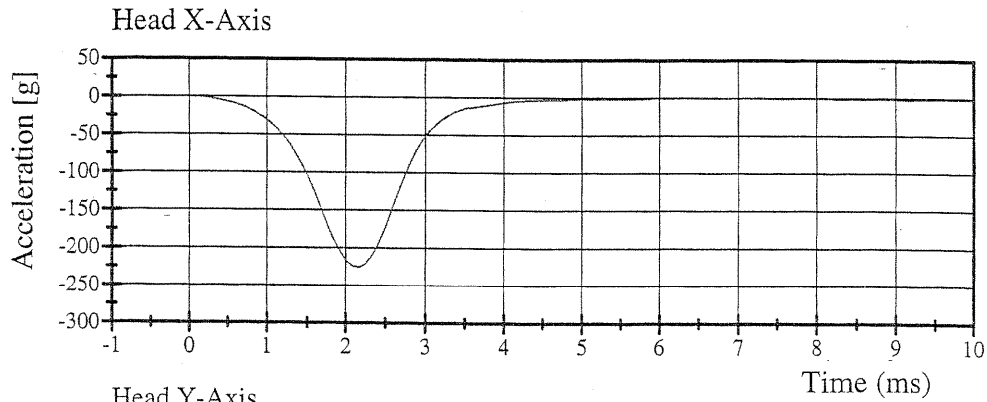


Transportation Research Center Inc.

572E Head Drop Test

HIII 50th Male Serial No. 168 Calibration No. 18 - 1

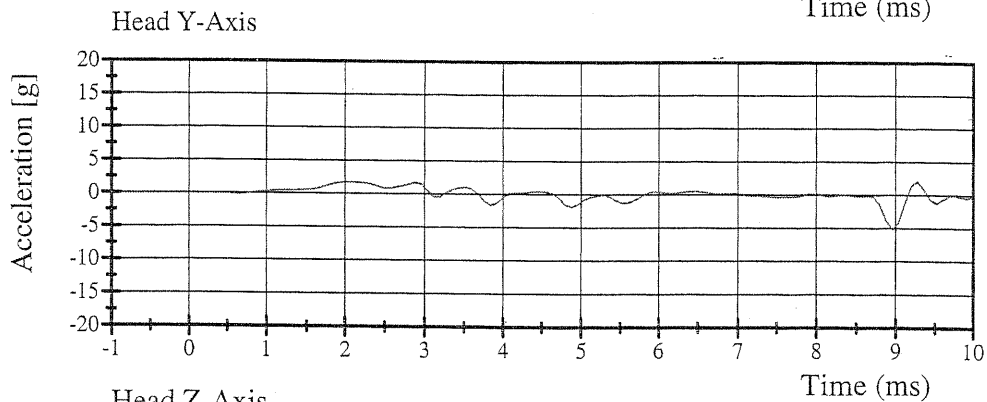
Test Date 10/07/2002



Filter Class: 1000

Max: 0.6 g at 6.4 ms

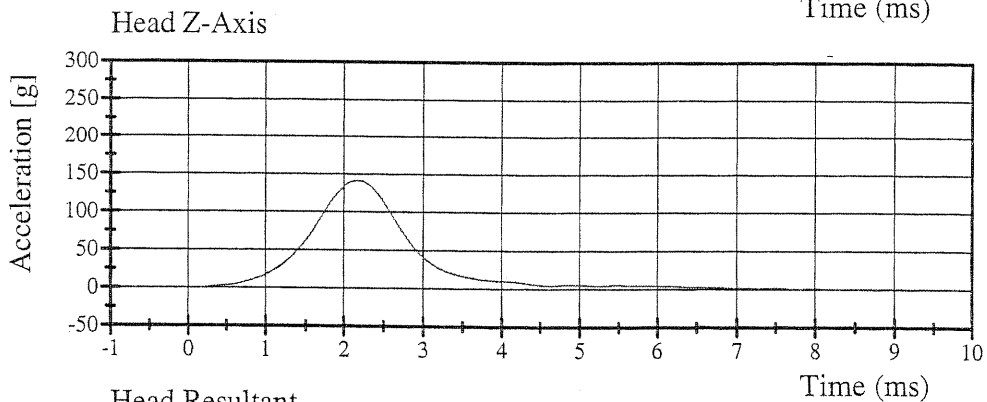
Min: -225.9 g at 2.2 ms



Filter Class: 1000

Max: 2.1 g at 9.3 ms

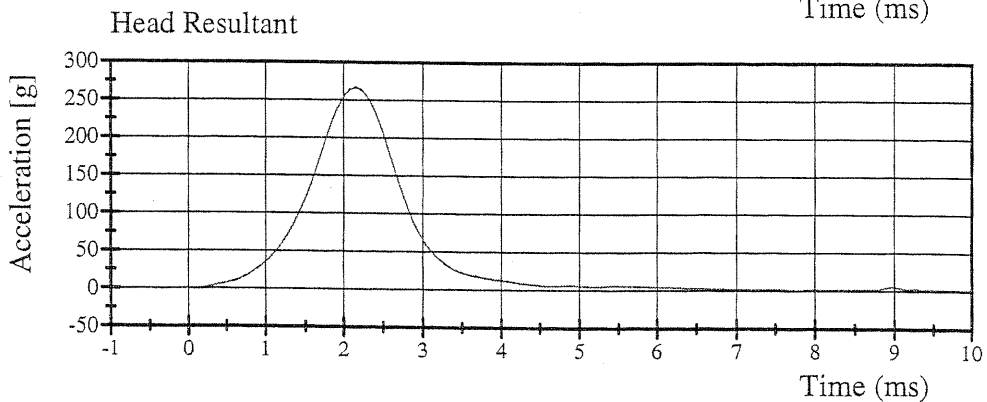
Min: -5.2 g at 9.0 ms



Filter Class: 1000

Max: 142.0 g at 2.2 ms

Min: 0.0 g at 0.0 ms



Filter Class: 1000

Max: 266.8 g at 2.2 ms

Min: 0.0 g at 0.5 ms



Transportation Research Center Inc.

572E Neck Flexion Test - 6 Channel Transducer

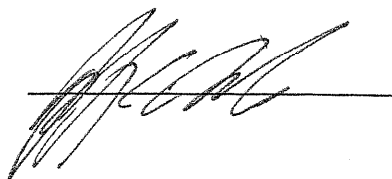
HIII 50th Male Serial No. 168 Calibration No. 18 - 1

Test Date 10/07/2002

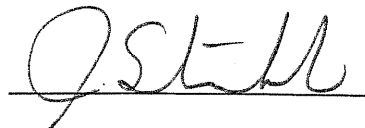
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Impact Velocity	6.89 - 7.13 m/s	7.06 m/s	Yes
Pendulum Deceleration			
10 ms	22.50 - 27.50 g	24.04 g	Yes
20 ms	17.60 - 22.60 g	22.29 g	Yes
30 ms	12.50 - 18.50 g	17.34 g	Yes
Max Pendulum Deceleration	29.00 g	24.25 g	Yes
Max Pendulum Deceleration After 30 ms	29.00 g	17.26 g	Yes
Deceleration-Time Curve			
Decay Time To 5g	34 - 42 ms	39.20 ms	Yes
D Plane Rotation			
Max	64 - 78 °	71.25 °	Yes
Time	57 - 64 ms	57.04 ms	Yes
Moment About Occipital Condyle			
Max	88.2 - 108.4 N·m	102.33 N·m	Yes
Time	47 - 58 ms	52.00 ms	Yes
Rotation Angle-Time Curve			
Decay Time To Zero	113 - 128 ms	114.24 ms	Yes
Positive Moment-Time Curve			
Decay Time To Zero	97 - 107 ms	99.36 ms	Yes

Comments:

Technician



Approved



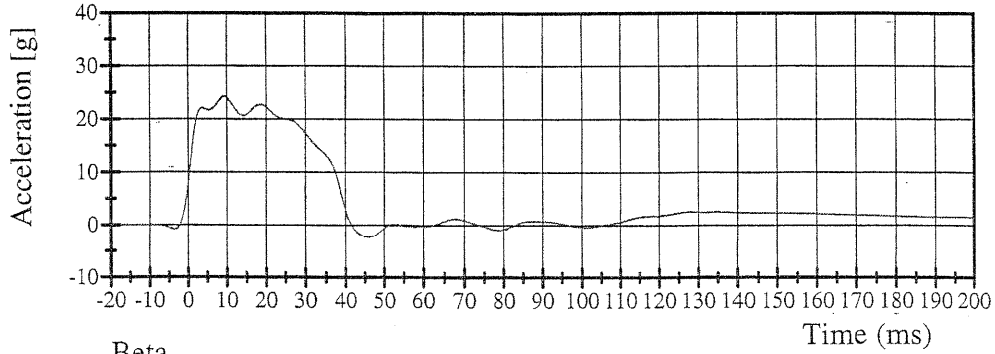
Transportation Research Center Inc.

572E Neck Flexion Test

HIII 50th Male Serial No. 168 Calibration No. 18 - 1

Test Date 10/07/2002

Pendulum Deceleration

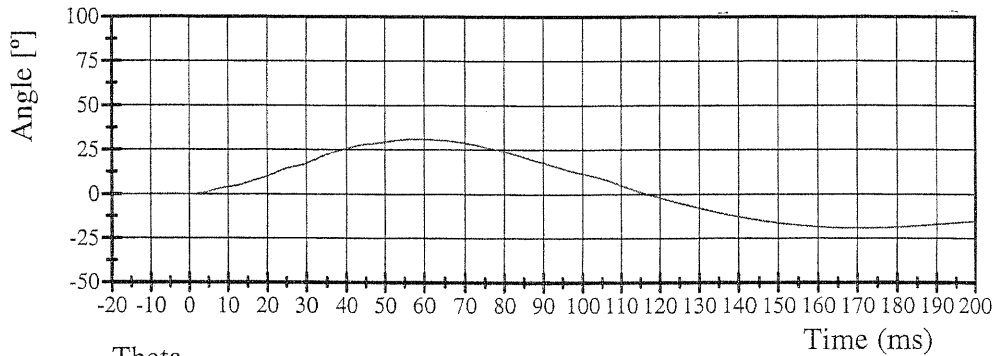


Filter Class: 60

Max: 24.2 g at 9.3 ms

Min: -2.3 g at 45.8 ms

Beta

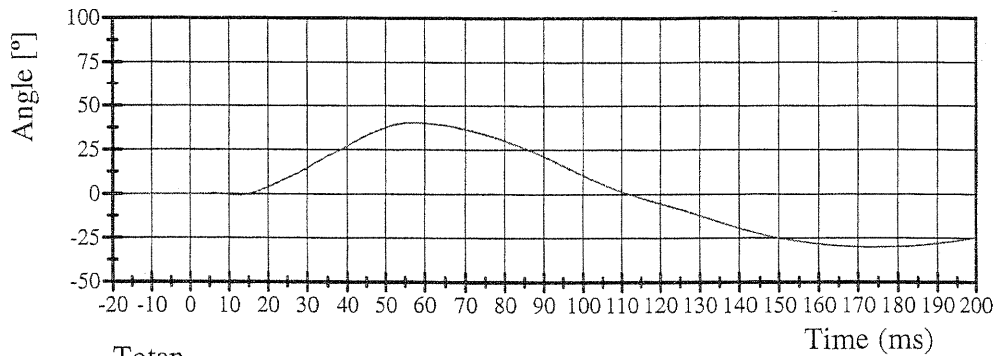


Filter Class: 60

Max: 30.9 ° at 58.4 ms

Min: -19.2 ° at 170.2 ms

Theta

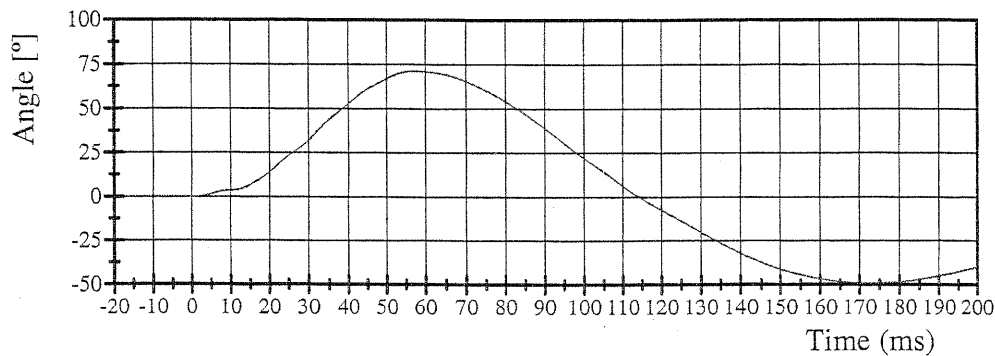


Filter Class: 60

Max: 40.4 ° at 56.6 ms

Min: -30.1 ° at 173.1 ms

Totan



Filter Class: 60

Max: 71.2 ° at 57.0 ms

Min: -49.3 ° at 172.0 ms

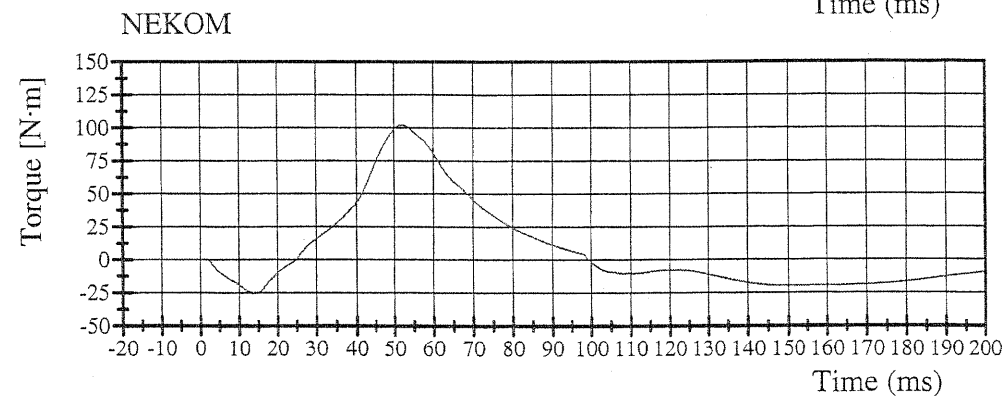
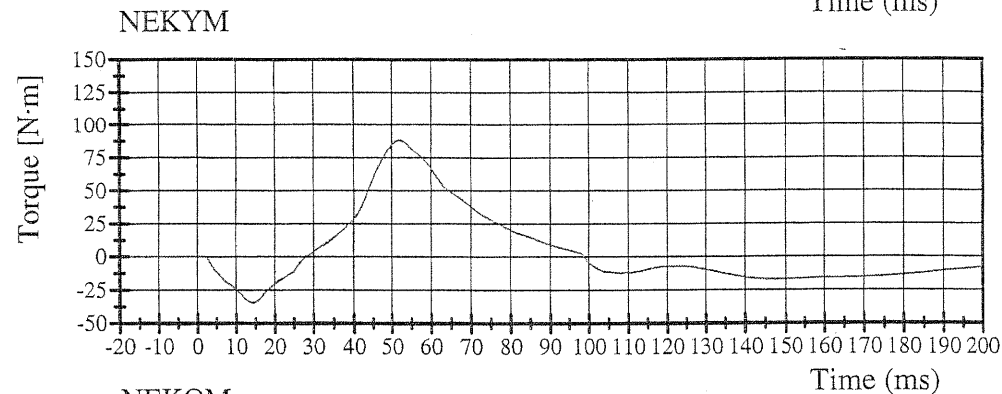
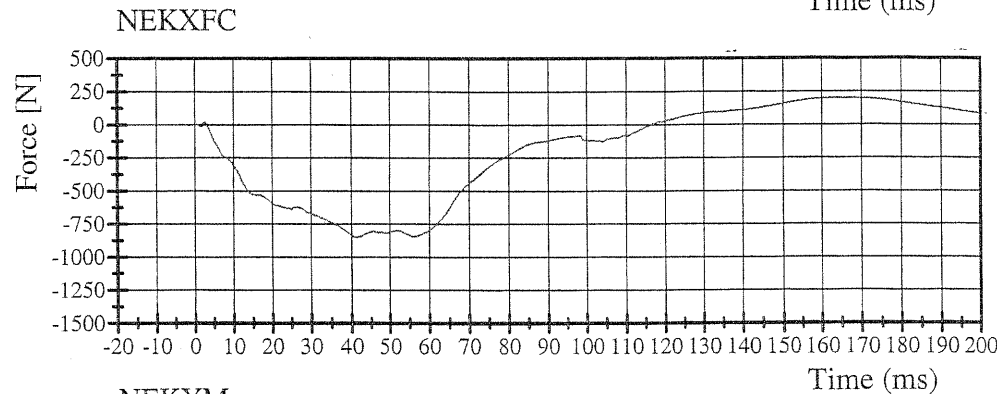
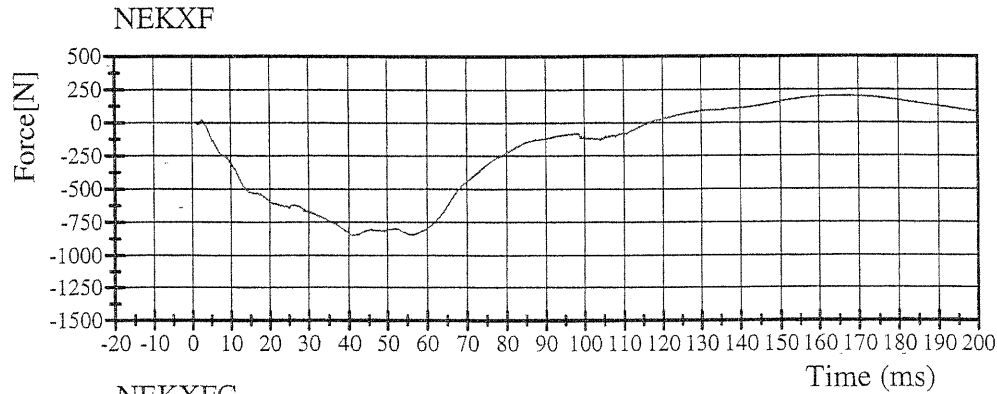


Transportation Research Center Inc.

572E Neck Flexion Test

HIII 50th Male Serial No. 168 Calibration No. 18 - 1

Test Date 10/07/2002



Transportation Research Center Inc.

572E Neck Extension Test - 6 Channel Transducer

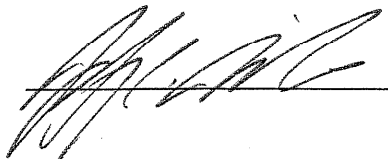
HIII 50th Male Serial No. 168 Calibration No. 18 - 1

Test Date 10/07/2002

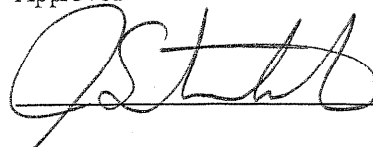
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Impact Velocity	5.95 - 6.19 m/s	6.11 m/s	Yes
Pendulum Deceleration			
10 ms	17.20 - 21.20 g	19.09 g	Yes
20 ms	14.00 - 19.00 g	18.72 g	Yes
30 ms	11.00 - 16.00 g	15.10 g	Yes
Max Pendulum Deceleration	22.00 g	19.32 g	Yes
Max Pendulum Deceleration After 30 ms	22.00 g	15.06 g	Yes
Deceleration-Time Curve Decay Time To 5g	38 - 46 ms	41.04 ms	Yes
D Plane Rotation			
Max	81 - 106 °	95.79 °	Yes
Time	72 - 82 ms	74.64 ms	Yes
Moment About Occipital Condyle			
Min	-80.0 - (-52.9) N·m	-70.39 N·m	Yes
Time	65 - 79 ms	70.64 ms	Yes
Rotation Angle-Time Curve Decay Time To Zero	147 - 174 ms	151.44 ms	Yes
Positive Moment-Time Curve Decay Time To Zero	120 - 148 ms	141.12 ms	Yes

Comments:

Technician



Approved



10.07.2002 16:45:06 532



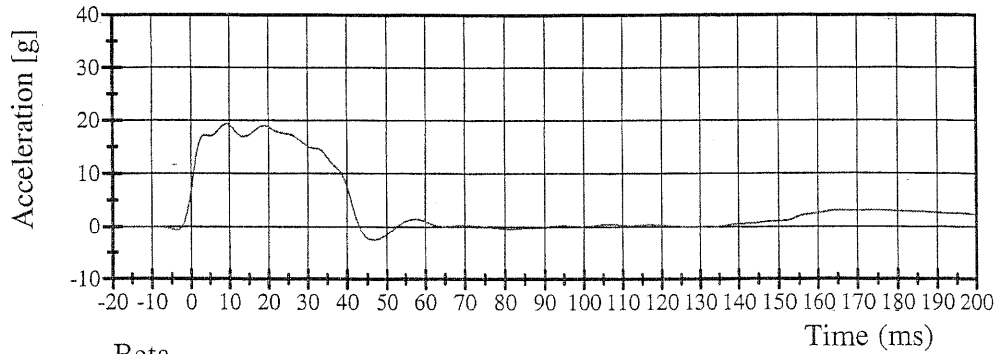
Transportation Research Center Inc.

572E Neck Extension Test

HIII 50th Male Serial No. 168 Calibration No. 18 - 1

Test Date 10/07/2002

Pendulum Deceleration

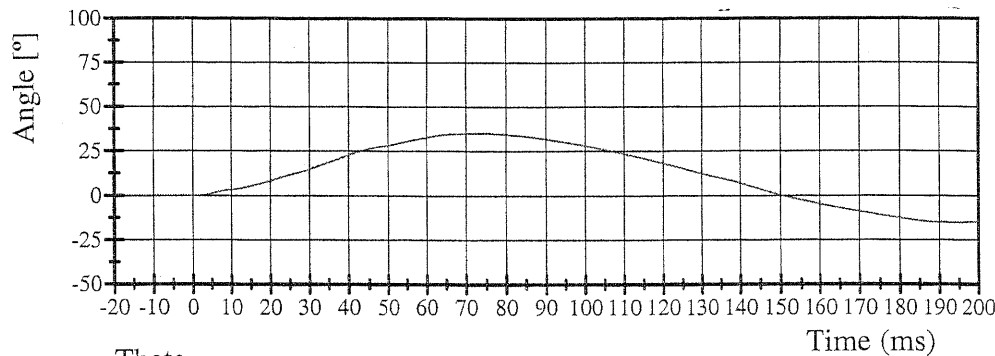


Filter Class: 60

Max: 19.3 g at 9.2 ms

Min: -2.6 g at 46.6 ms

Beta

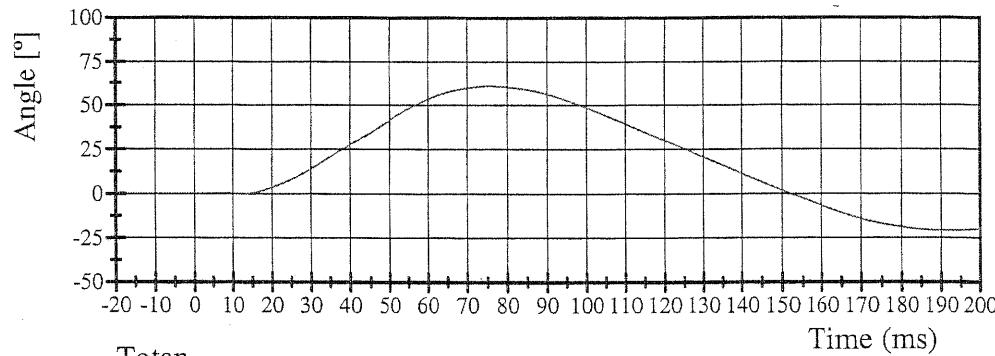


Filter Class: 60

Max: 35.1 ° at 73.4 ms

Min: -15.1 ° at 194.2 ms

Theta

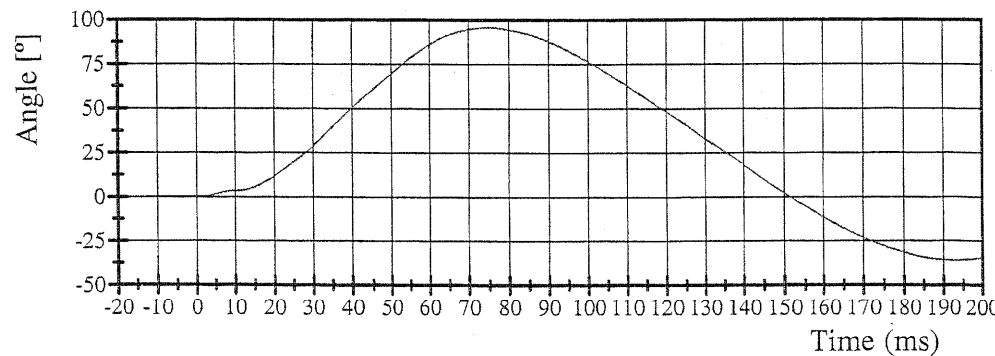


Filter Class: 60

Max: 60.7 ° at 75.3 ms

Min: -20.8 ° at 191.0 ms

Totan



Filter Class: 60

Max: 95.8 ° at 74.6 ms

Min: -35.9 ° at 192.7 ms

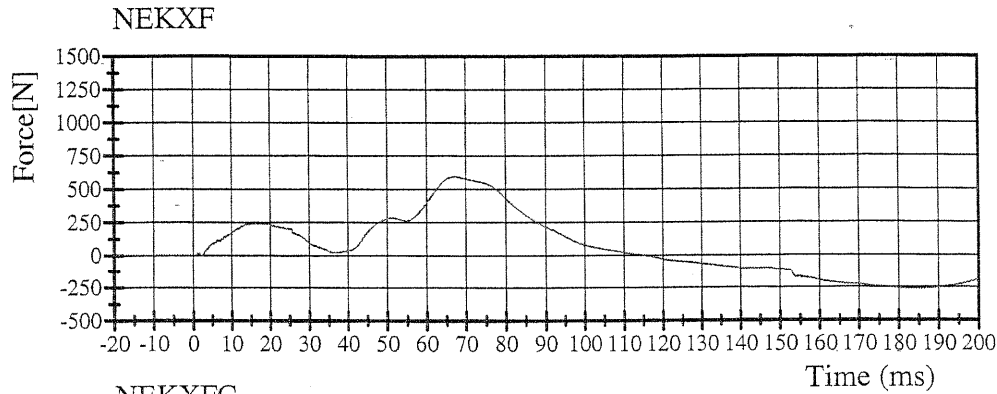


Transportation Research Center Inc.

572E Neck Extension Test

HIII 50th Male Serial No. 168 Calibration No. 18 - 1

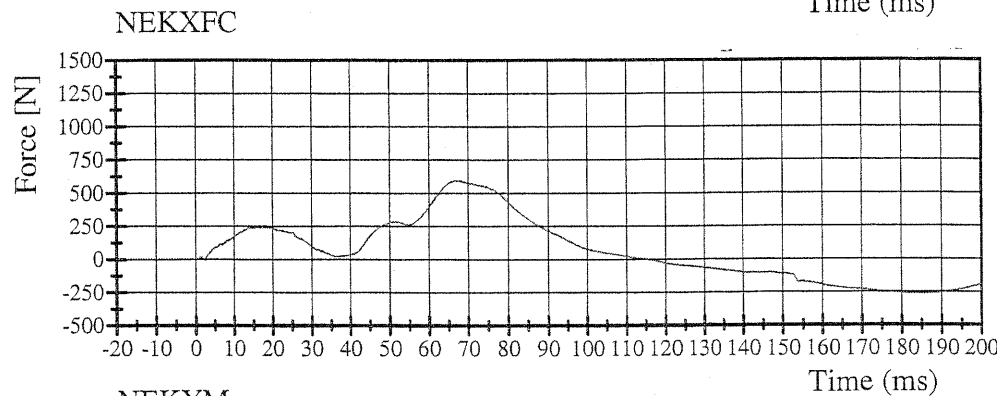
Test Date 10/07/2002



Filter Class: 1000

Max: 594.6 N at 67.1 ms

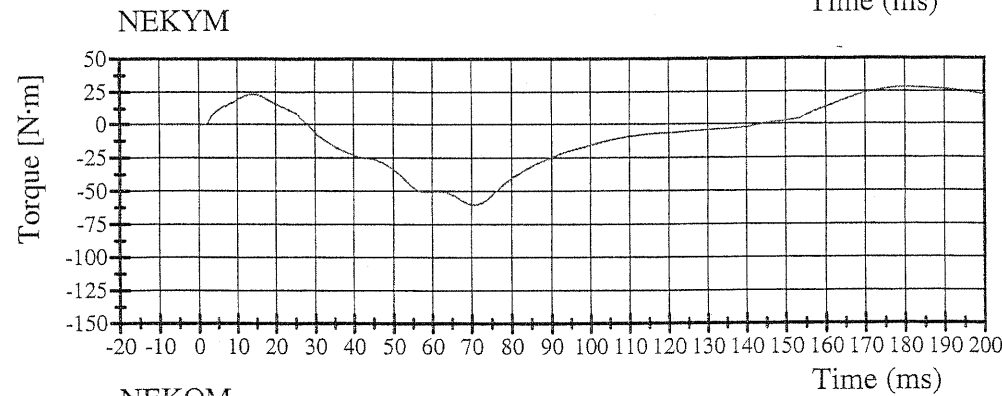
Min: -263.5 N at 183.6 ms



Filter Class: 600

Max: 593.8 N at 67.1 ms

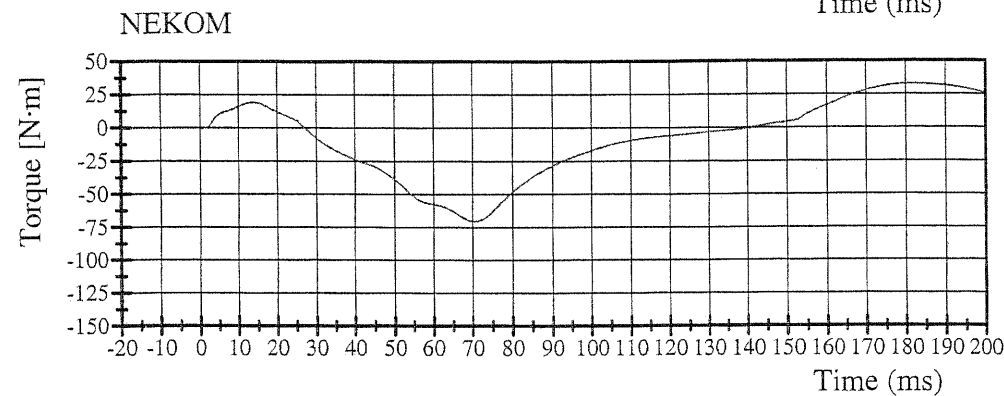
Min: -263.1 N at 184.4 ms



Filter Class: 600

Max: 28.3 N·m at 180.7 ms

Min: -60.3 N·m at 70.7 ms



Filter Class: 600

Max: 32.8 N·m at 180.7 ms

Min: -70.4 N·m at 70.6 ms



Transportation Research Center Inc.

572E Thorax Test

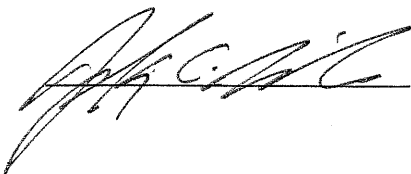
HIII 50th Male Serial No. 168 Calibration No. 18 - 1

Test Date 10/07/2002

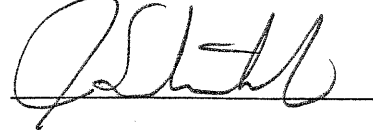
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Pendulum Velocity	6.59 - 6.83 m/s	6.60 m/s	Yes
Maximum Chest Deflection	-72.6 - (-63.5) mm	-66.9 mm	Yes
Maximum Resistive Force	5159 - 5894 N	5782 N	Yes
Internal Hysteresis	69 - 85 %	71 %	Yes

Comments:

Technician



Approved



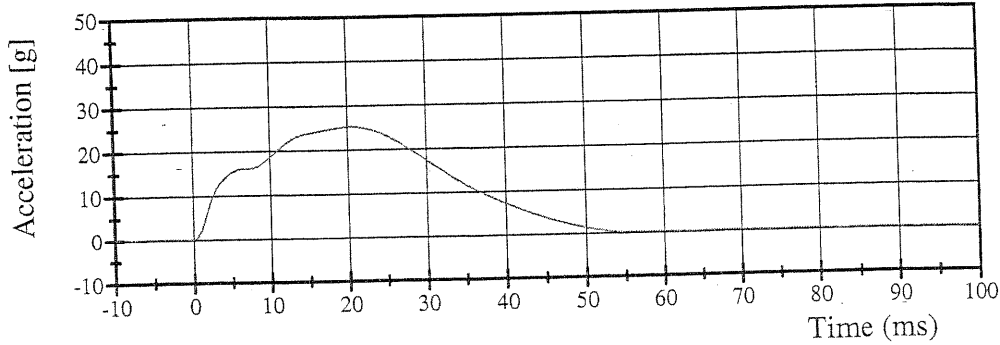
Transportation Research Center Inc.

572E Thorax Test

HIII 50th Male Serial No. 168 Calibration No. 18 - 1

Test Date 10/07/2002

Pendulum Deceleration

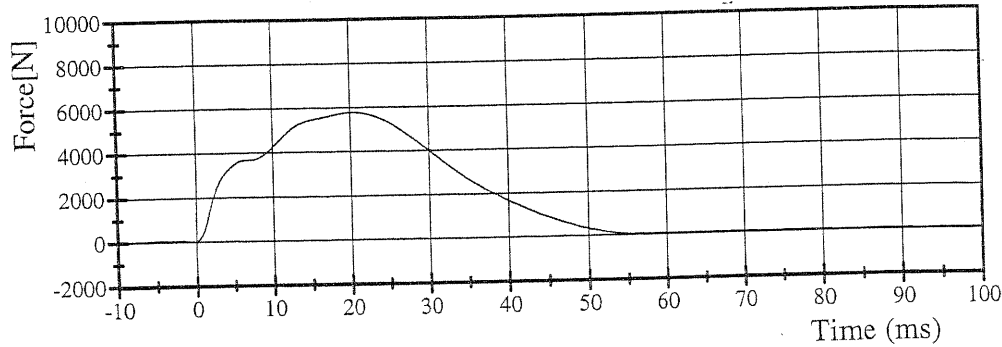


Filter Class: 180

Max: 25.2 g at 20.3 ms

Min: -0.2 g at 356.6 ms

Pendulum Force

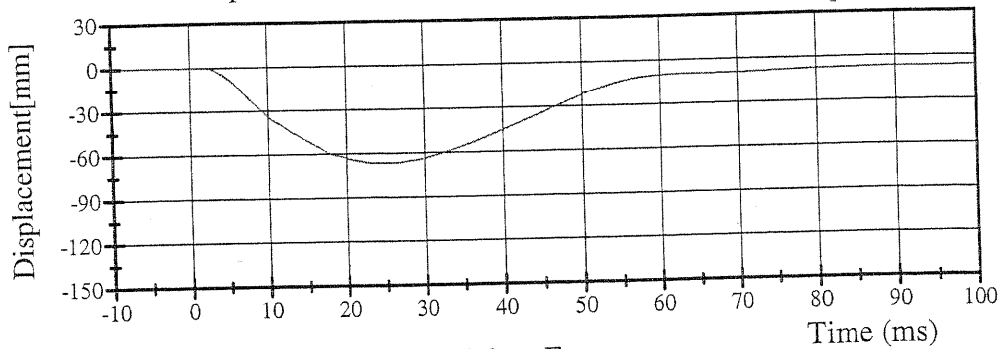


Filter Class: 180

Max: 5781.8 N at 20.3 ms

Min: -35.0 N at 356.6 ms

Chest Displacement

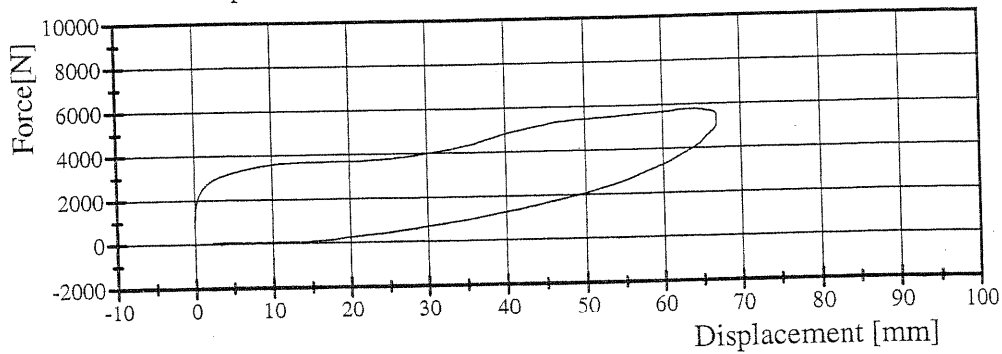


Filter Class: 180

Max: 0.0 mm at 1.0 ms

Min: -66.9 mm at 25.8 ms

Chest Displacement vs. Pendulum Force



Transportation Research Center Inc

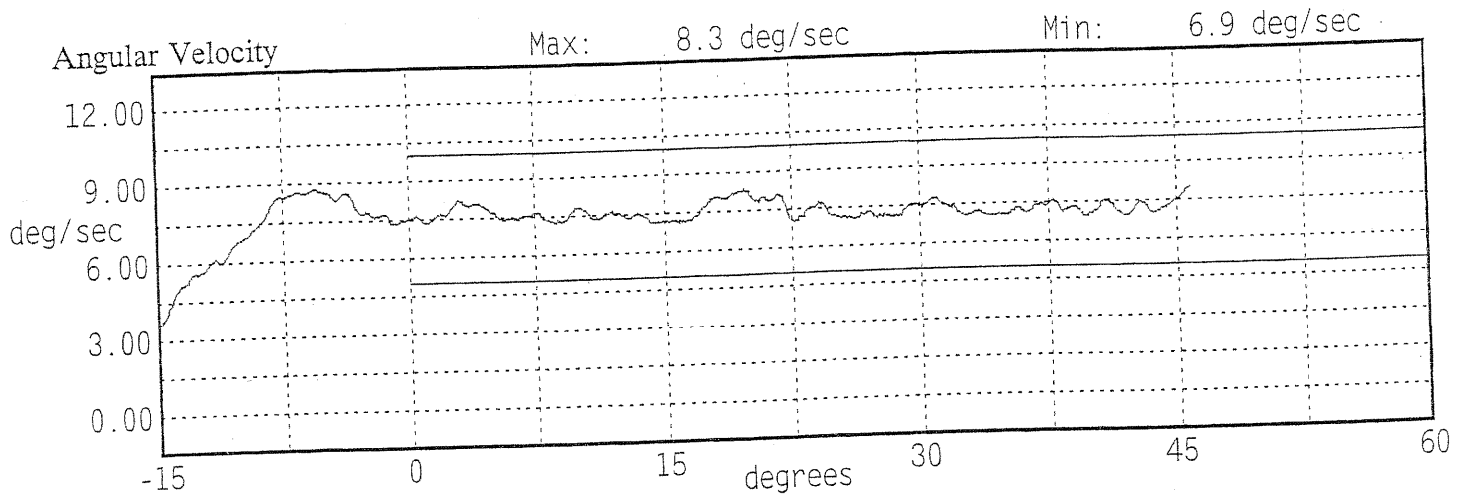
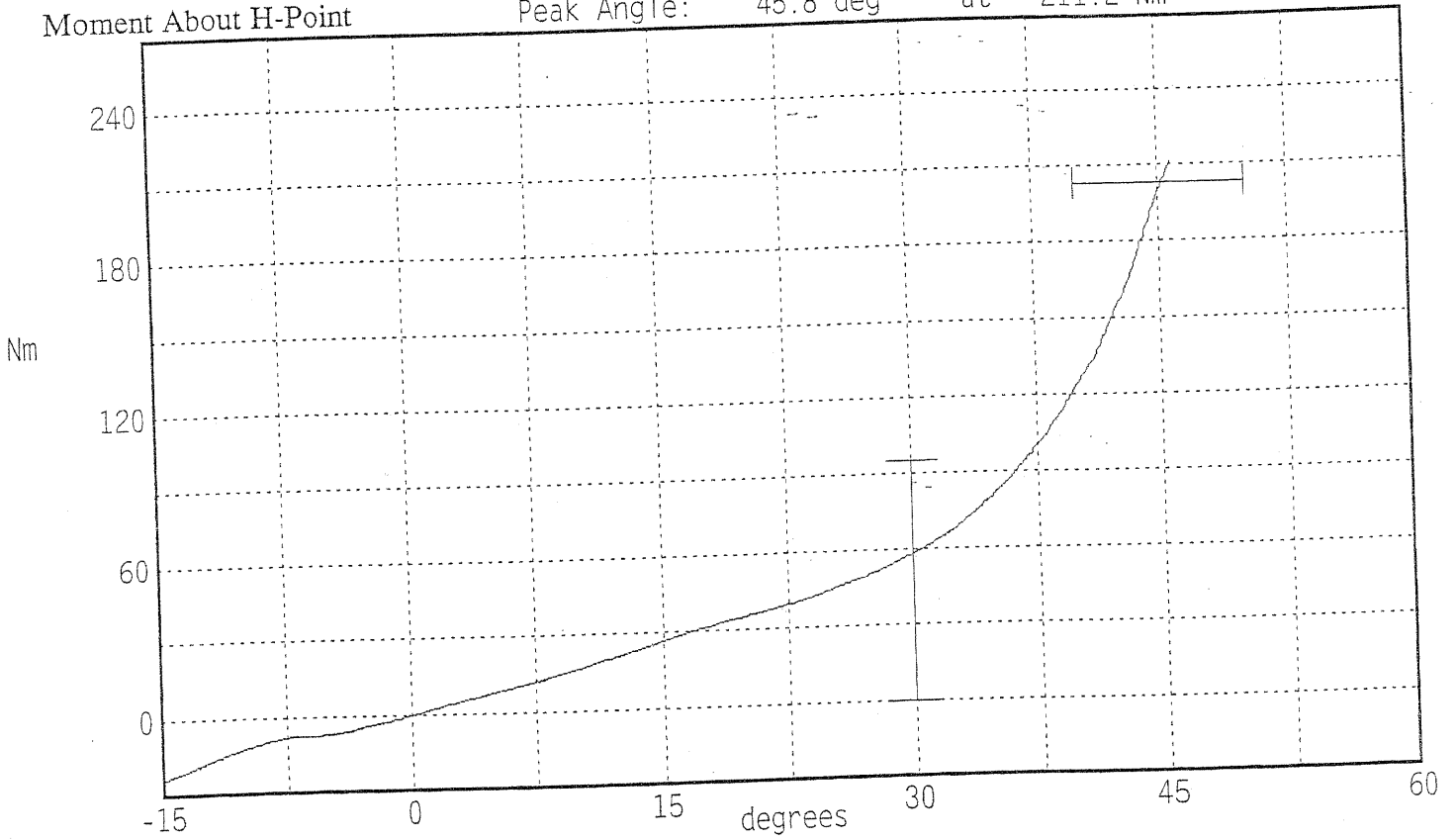
Hybrid III Hip Range of Motion

Serial Number: 168C18
Test Number: 168L
Comments:

Date: 10/07/2002
Time: 16:00

TEST PARAMETER	SPECIFICATION	TEST RESULTS	
Temperature	18.9 - 25.6	21.7 °C	Pass
Humidity	10 - 70	37 %	Pass
Moment at 30 deg	<= 94.9	58.8 Nm	Pass
Angle at 203 Nm	40.0 - 50.0	45.3 deg	Pass
Average Velocity	5.0 - 10.0	7.4 deg/sec	Pass

Moment About H-Point
Peak Moment: 211.2 Nm at 45.8 deg
Peak Angle: 45.8 deg at 211.2 Nm



Transportation Research Center Inc

Hybrid III Hip Range of Motion

Serial Number: 168C18

Date: 10/07/2002

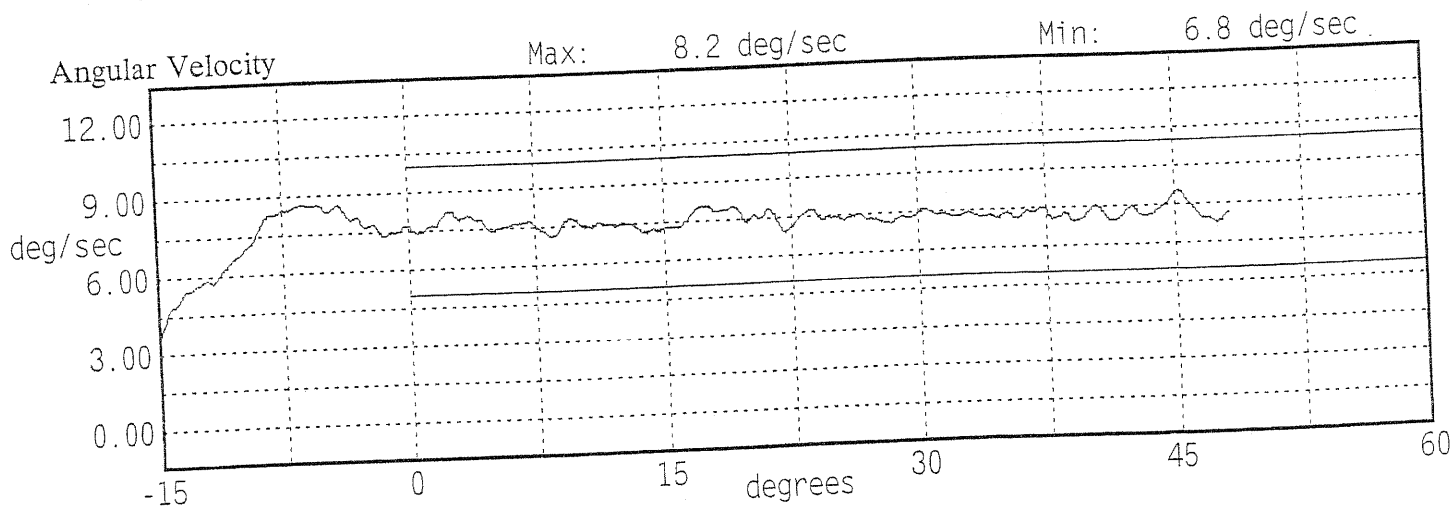
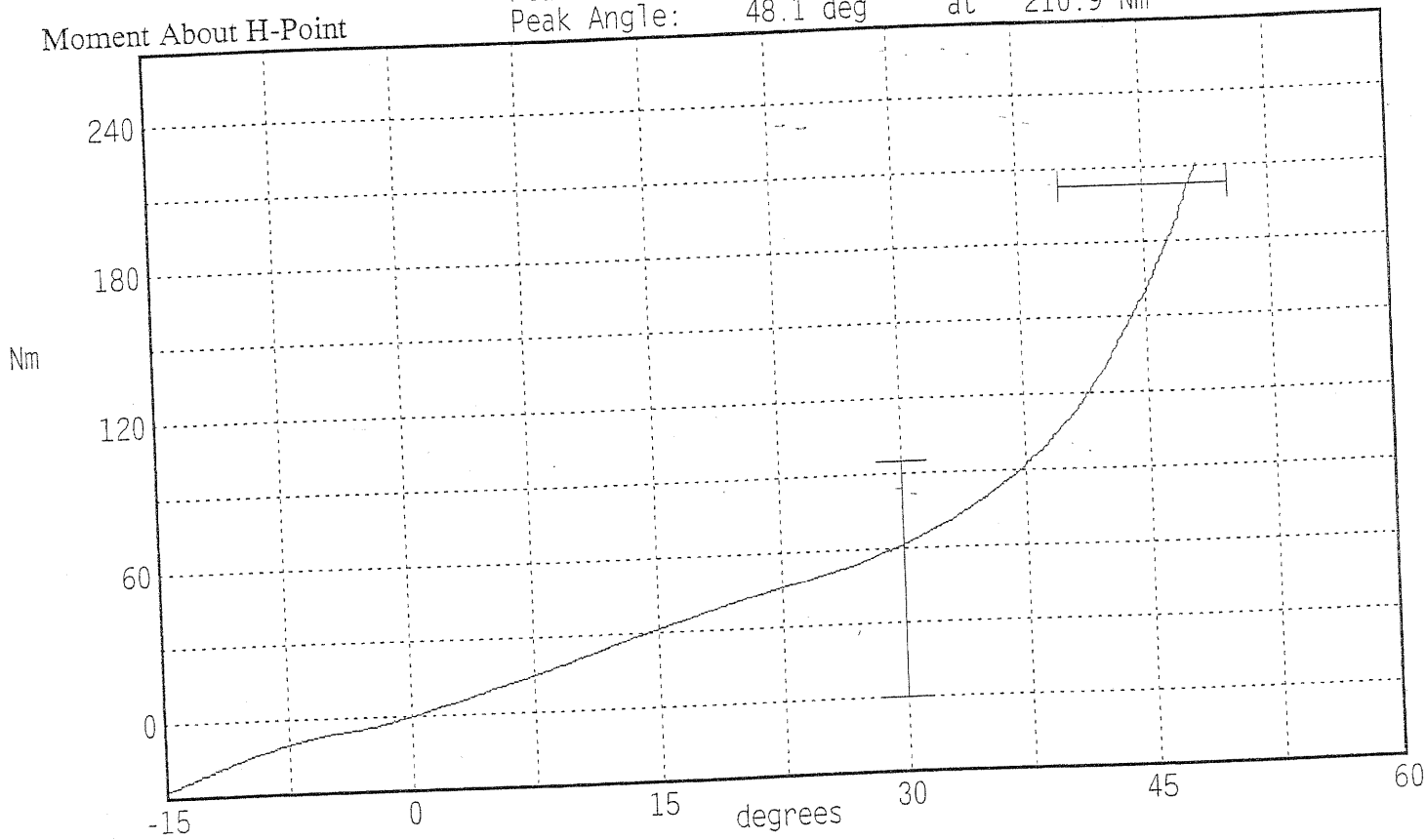
Test Number: 168R

Time: 16:07

Comments:

TEST PARAMETER	SPECIFICATION	TEST RESULTS	
Temperature	18.9 - 25.6	21.7 °C	Pass
Humidity	10 - 70	37 %	Pass
Moment at 30 deg	<= 94.9	61.8 Nm	Pass
Angle at 203 Nm	40.0 - 50.0	47.8 deg	Pass
Average Velocity	5.0 - 10.0	7.4 deg/sec	Pass

Moment About H-Point
 Peak Moment: 210.9 Nm at 48.1 deg
 Peak Angle: 48.1 deg at 210.9 Nm



Transportation Research Center Inc.

572E Left Knee Slider Test

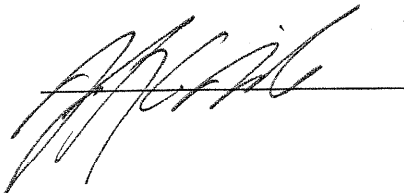
HIII 50th Male Serial No. 168 Calibration No. 18 - 1

Test Date 10/07/2002

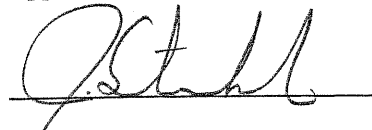
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Pendulum Velocity	2.70 - 2.80 m/s	2.72 m/s	Yes
Force At 10 mm Displacement	-1259 - (-1721) N	-1664 N	Yes
Force At 18 mm Displacement	-2268 - (-3096) N	-3036 N	Yes

Comments:

Technician



Approved

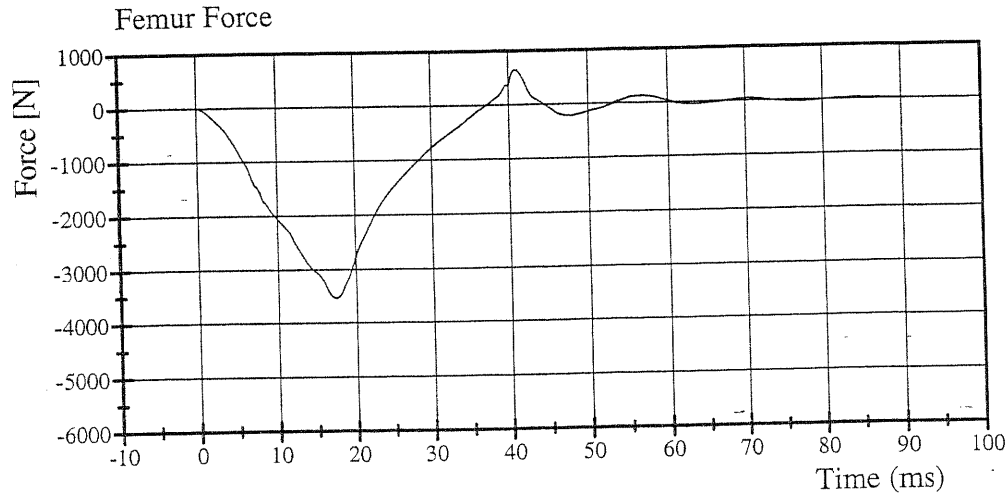


Transportation Research Center Inc.

572E Left Knee Slider Test

HIII 50th Male Serial No. 168 Calibration No. 18 - 1

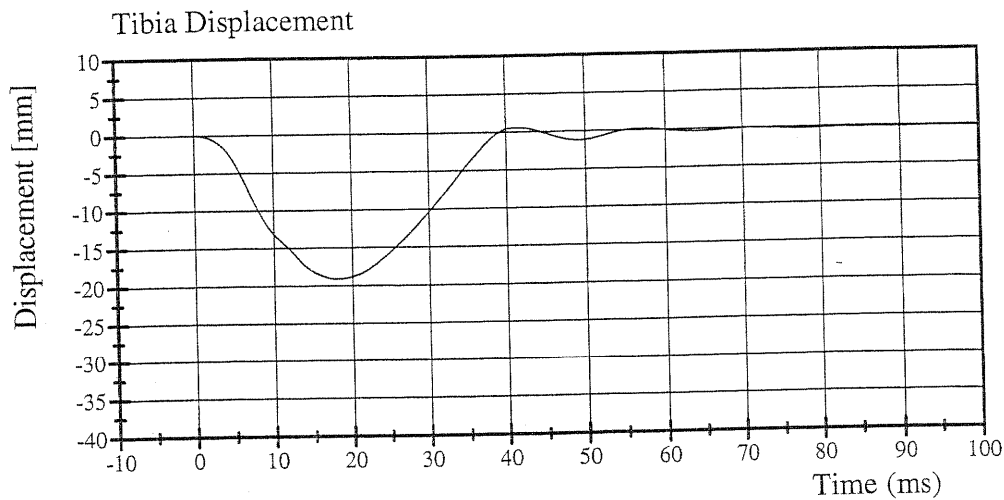
Test Date 10/07/2002



Filter Class: 600

Max: 643.0 N at 40.9 ms

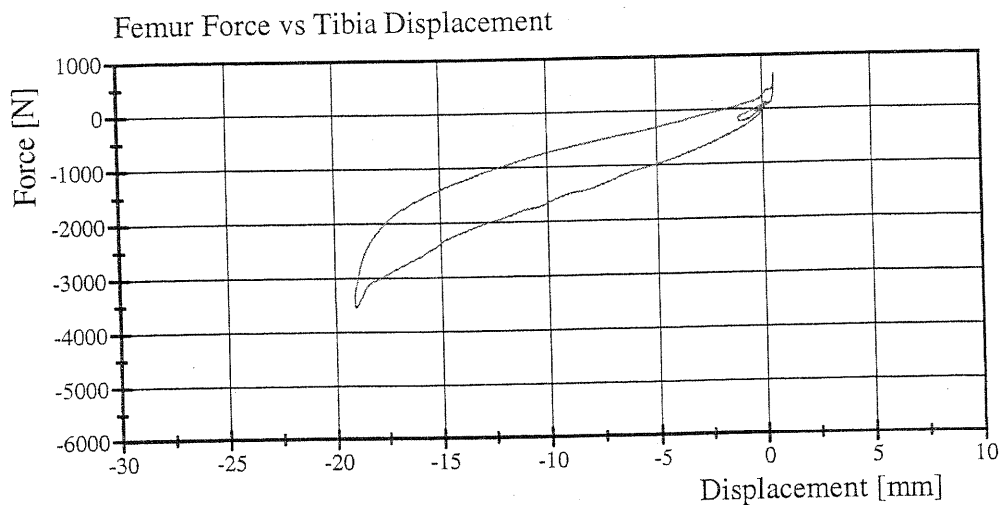
Min: -3539.4 N at 17.4 ms



Filter Class: 600

Max: 0.5 mm at 41.4 ms

Min: -19.1 mm at 18.2 ms



Transportation Research Center Inc.

572E Right Knee Slider Test

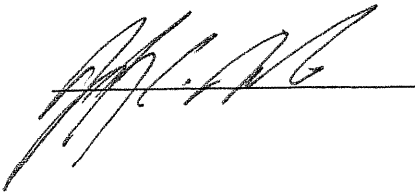
HIII 50th Male Serial No. 168 Calibration No. 18 - 1

Test Date 10/07/2002

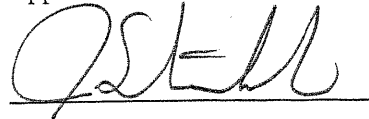
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Pendulum Velocity	2.70 - 2.80 m/s	2.71 m/s	Yes
Force At 10 mm Displacement	-1259 - (-1721) N	-1336 N	Yes
Force At 18 mm Displacement	-2268 - (-3096) N	-2305 N	Yes

Comments:

Technician



Approved

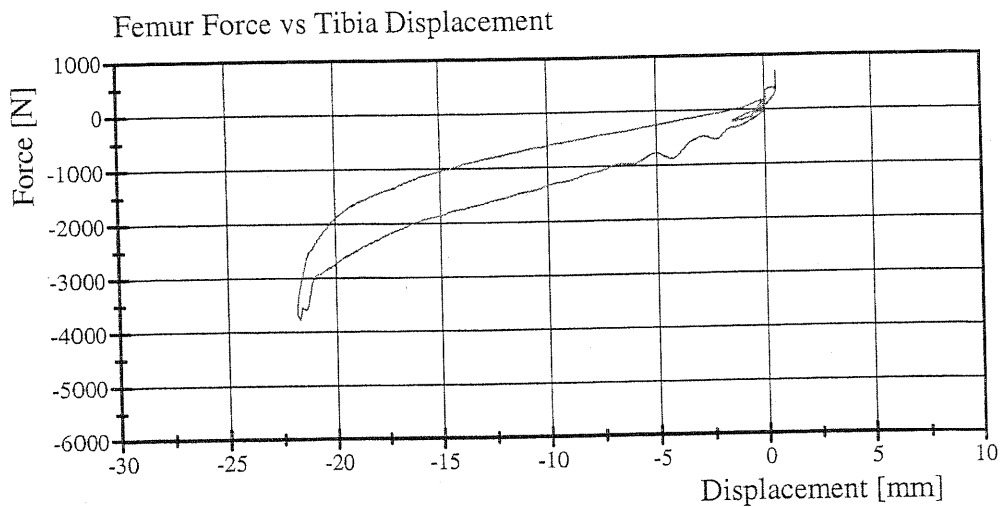
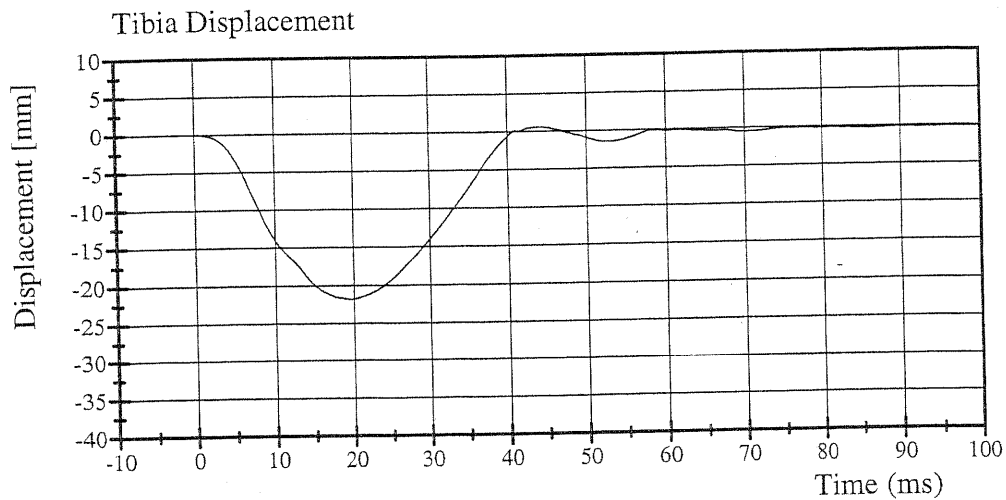
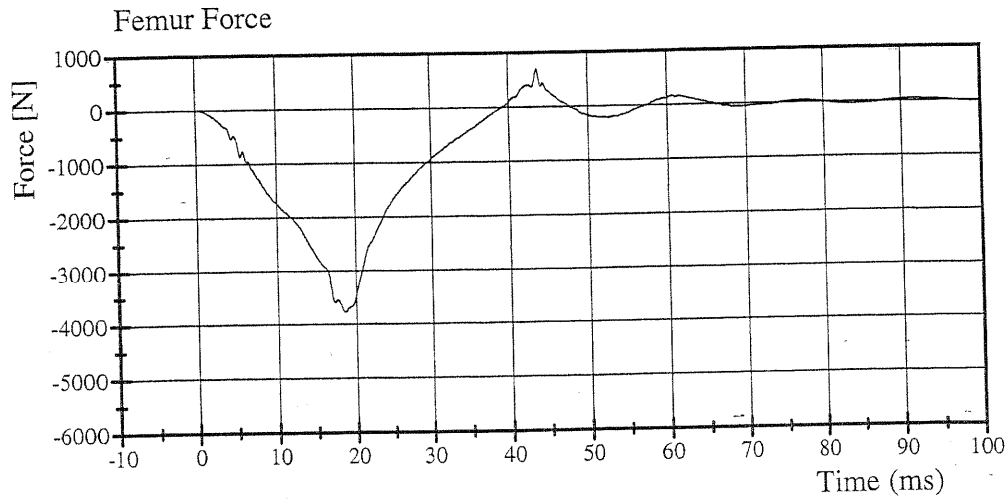


Transportation Research Center Inc.

572E Right Knee Slider Test

HIII 50th Male Serial No. 168 Calibration No. 18 - 1

Test Date 10/07/2002



Transportation Research Center Inc.

572E Left Knee Test

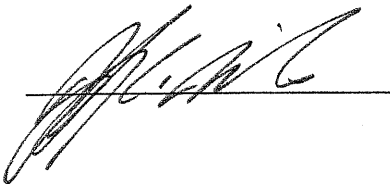
HIII 50th Male Serial No. 168 Calibration No. 18 - 1

Test Date 10/07/2002

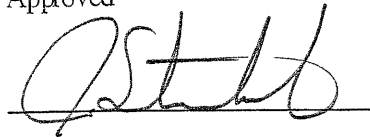
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Pendulum Velocity	2.08 - 2.13 m/s	2.10 m/s	Yes
Maximum Pendulum Force	4716 - 5782 N	5181 N	Yes

Comments:

Technician



Approved



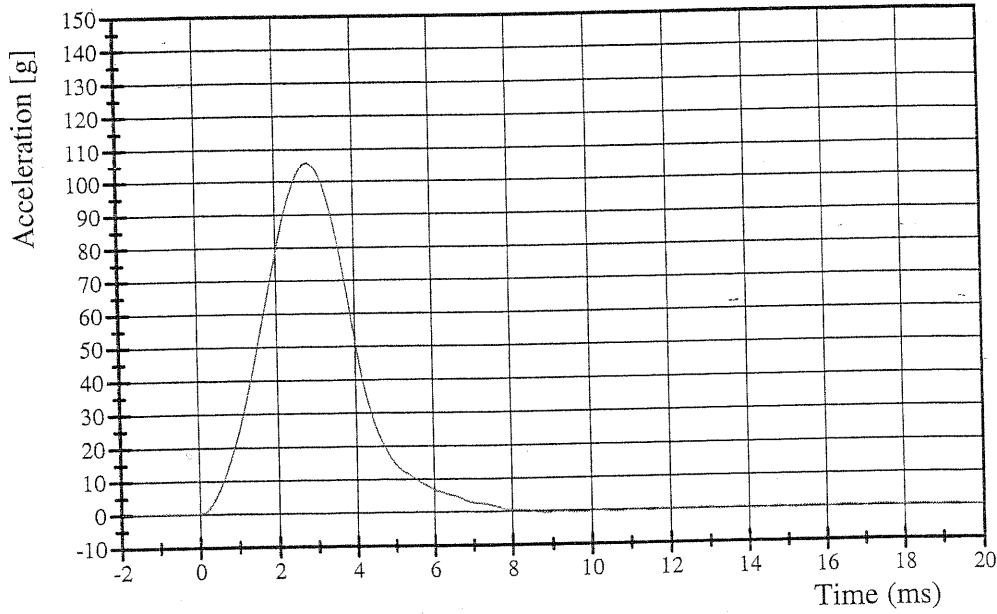
Transportation Research Center Inc.

572E Left Knee Test

HIII 50th Male Serial No. 168 Calibration No. 18 - 1

Test Date 10/07/2002

Pendulum Deceleration

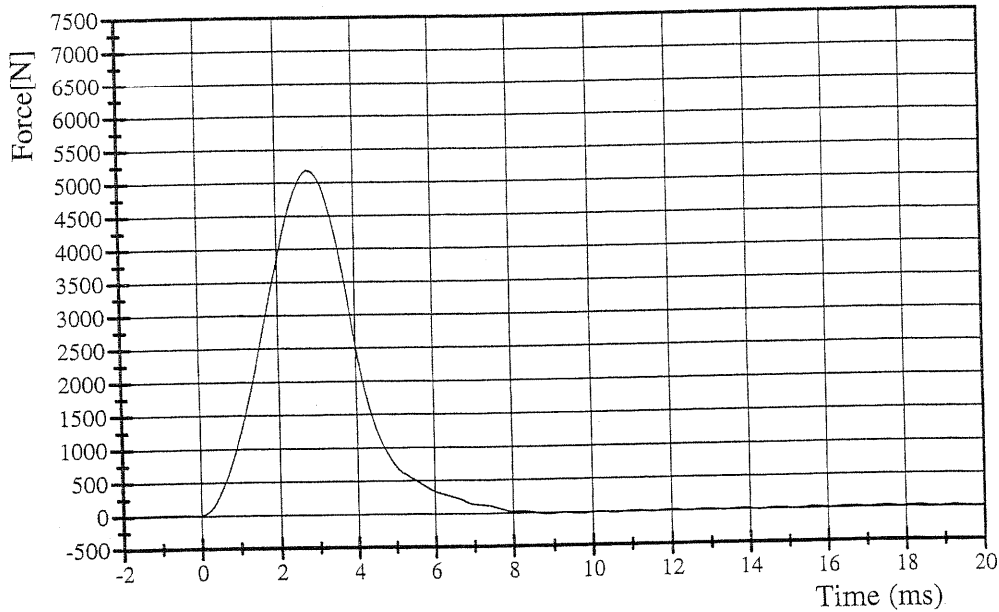


Filter Class: 600

Max: 105.9 g at 2.8 ms

Min: -0.5 g at 8.9 ms

Pendulum Force



Filter Class: 600

Max: 5180.8 N at 2.8 ms

Min: -23.8 N at 8.9 ms



Transportation Research Center Inc.

572E Right Knee Test

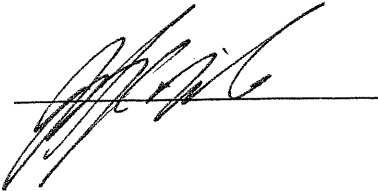
HIII 50th Male Serial No. 168 Calibration No. 18 - 1

Test Date 10/07/2002

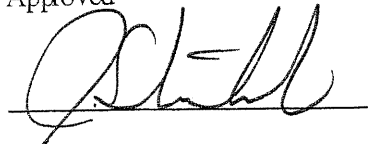
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Pendulum Velocity	2.08 - 2.13 m/s	2.13 m/s	Yes
Maximum Pendulum Force	4716 - 5782 N	5181 N	Yes

Comments:

Technician



Approved

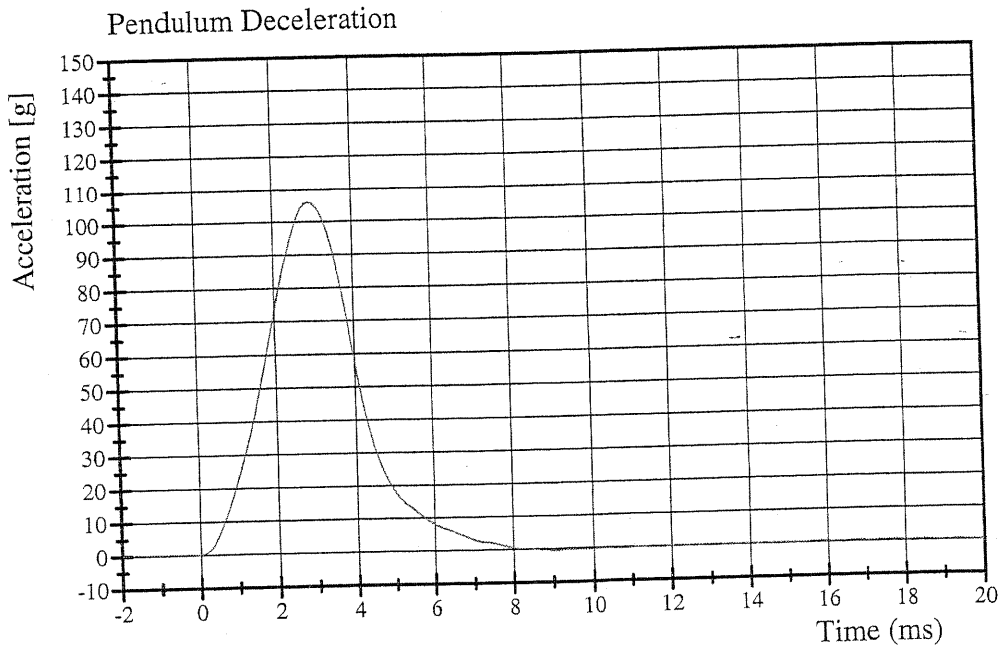


Transportation Research Center Inc.

572E Right Knee Test

HIII 50th Male Serial No. 168 Calibration No. 18 - 1

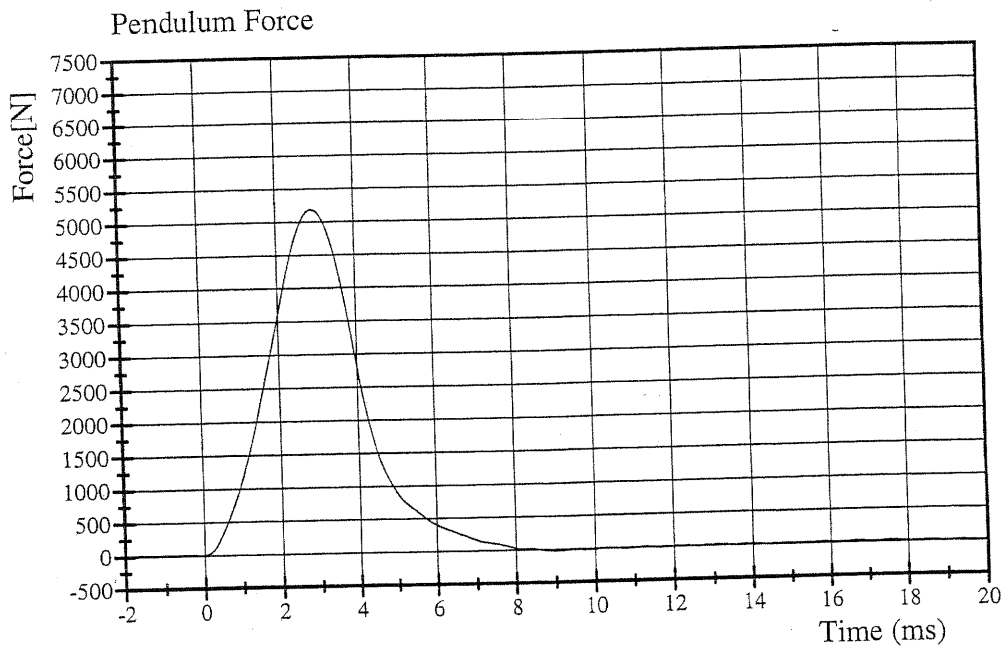
Test Date 10/07/2002



Filter Class: 600

Max: 105.9 g at 2.9 ms

Min: -0.6 g at 9.0 ms



Filter Class: 600

Max: 5181.1 N at 2.9 ms

Min: -27.6 N at 9.0 ms



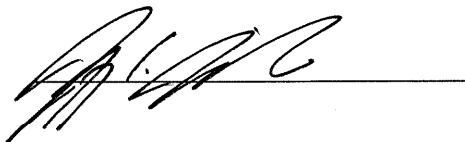
Post-Test Dummy Configuration and Performance Verification Data

Target Vehicle Driver Dummy S/N: 168

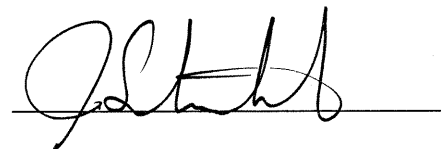
Transportation Research Center Inc.
572E HIII 50th Dummy
External Dimensions
Serial No. 168 Calibration No. 19

Test Parameter	Dimension	Specification	Results	Pass
Location For Chest Circumference	AA	429 - 434 mm	432 mm	Yes
Location For Waist Circumference	BB	226 - 231 mm	229 mm	Yes
Chest Circumference	Y	970 - 1001 mm	983 mm	Yes
Waist Circumference	Z	836 - 866 mm	855 mm	Yes
Chest Depth	O	213 - 229 mm	226 mm	Yes
H-Point Height	C	84 - 89 mm	87 mm	Yes
H-Point From Seatback	D	135 - 140 mm	137 mm	Yes
Skull Cap To Backline	H	41 - 46 mm	43 mm	Yes
Total Sitting Height	A	879 - 889 mm	881 mm	Yes
Thigh Clearance	F	140 - 155 mm	150 mm	Yes
Buttock Knee Length	K	579 - 605 mm	590 mm	Yes
Buttock Popliteal Length	N	452 - 478 mm	475 mm	Yes
Popliteal Height	L	429 - 455 mm	447 mm	Yes
Knee Pivot Height	M	485 - 500 mm	493 mm	Yes
Foot Length	P	252 - 267 mm	262 mm	Yes
Foot Breadth	W	91 - 107 mm	102 mm	Yes
Shoulder Pivot From Backline	E	84 - 94 mm	90 mm	Yes
Shoulder Breadth	V	422 - 437 mm	429 mm	Yes
Shoulder Pivot Height	B	506 - 521 mm	514 mm	Yes
Elbow Rest Height	J	191 - 211 mm	207 mm	Yes
Shoulder-Elbow Length	I	330 - 345 mm	339 mm	Yes
Back Of Elbow To Wrist Pivot	G	290 - 305 mm	297 mm	Yes

Technician



Approved




Transportation Research Center Inc.

572E Head Drop Test

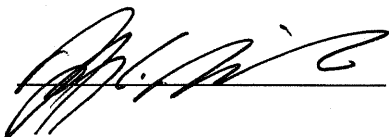
HIII 50th Male Serial No. 168 Calibration No. 19 - 1

Test Date 12/30/2002

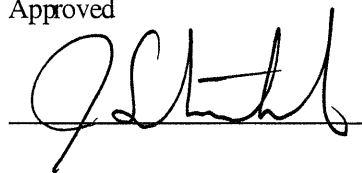
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Peak Resultant Acceleration	225 - 275 g	267.4 g	Yes
Peak Lateral Acceleration	15 g Max	-2.0 g	Yes
Is Acceleration Curve Unimodal?	Yes	Yes	Yes

Comments:

Technician



Approved

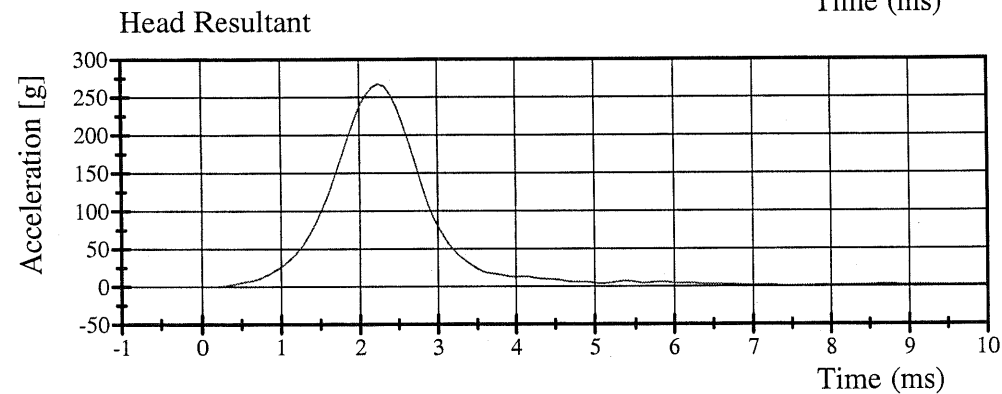
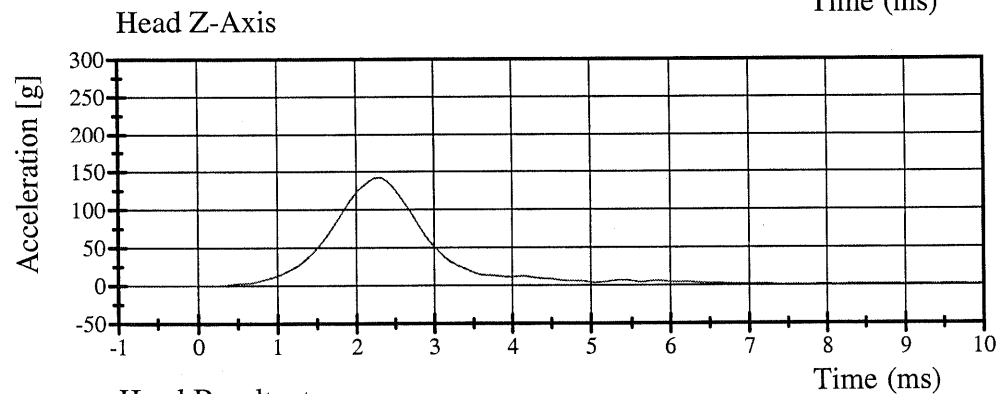
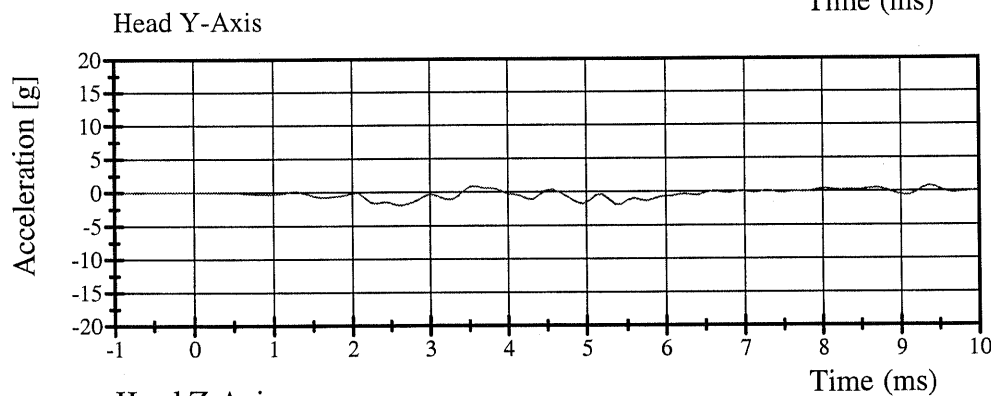
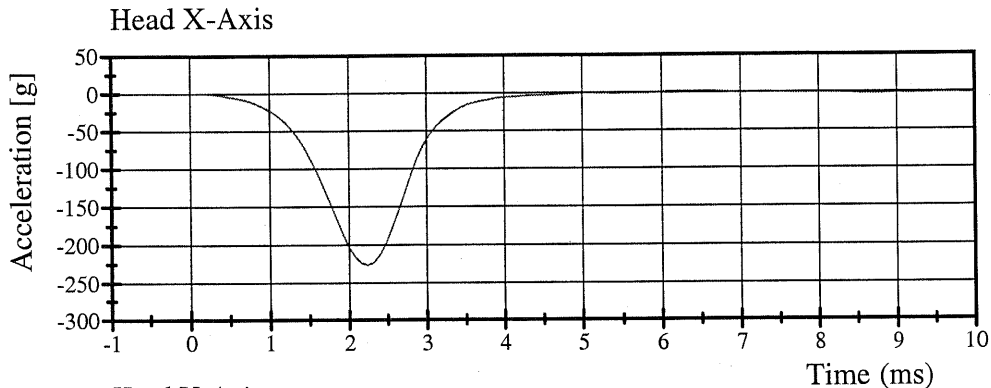


Transportation Research Center Inc.

572E Head Drop Test

HIII 50th Male Serial No. 168 Calibration No. 19 - 1

Test Date 12/30/2002



Transportation Research Center Inc.

572E Neck Flexion Test - 6 Channel Transducer

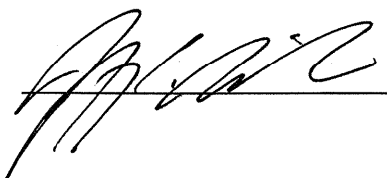
HIII 50th Male Serial No. 168 Calibration No. 19 - 2

Test Date 12/31/2002

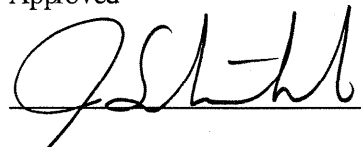
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	41 %	Yes
Impact Velocity	6.89 - 7.13 m/s	7.01 m/s	Yes
Pendulum Deceleration			
10 ms	22.50 - 27.50 g	24.80 g	Yes
20 ms	17.60 - 22.60 g	22.33 g	Yes
30 ms	12.50 - 18.50 g	17.98 g	Yes
Max Pendulum Deceleration	29.00 g	25.11 g	Yes
Max Pendulum Deceleration After 30 ms	29.00 g	17.93 g	Yes
Deceleration-Time Curve			
Decay Time To 5g	34 - 42 ms	36.96 ms	Yes
D Plane Rotation			
Max	64 - 78 °	67.36 °	Yes
Time	57 - 64 ms	60.48 ms	Yes
Moment About Occipital Condyle			
Max	88.2 - 108.4 N·m	103.25 N·m	Yes
Time	47 - 58 ms	50.16 ms	Yes
Rotation Angle-Time Curve			
Decay Time To Zero	113 - 128 ms	116.32 ms	Yes
Positive Moment-Time Curve			
Decay Time To Zero	97 - 107 ms	99.60 ms	Yes

Comments:

Technician



Approved



12.31.2002 09:22:14 461



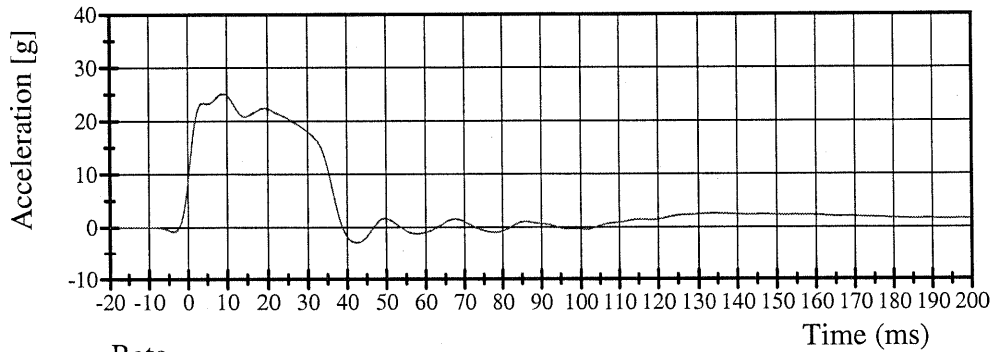
Transportation Research Center Inc.

572E Neck Flexion Test

HIII 50th Male Serial No. 168 Calibration No. 19 - 2

Test Date 12/31/2002

Pendulum Deceleration

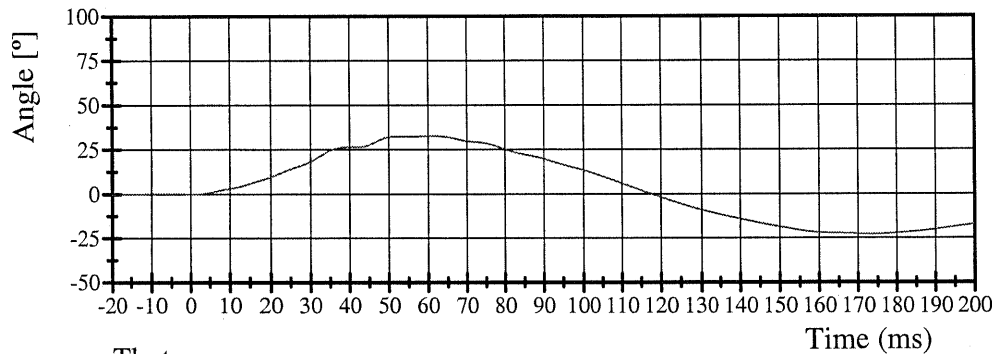


Filter Class: 60

Max: 25.1 g at 9.0 ms

Min: -2.9 g at 42.6 ms

Beta

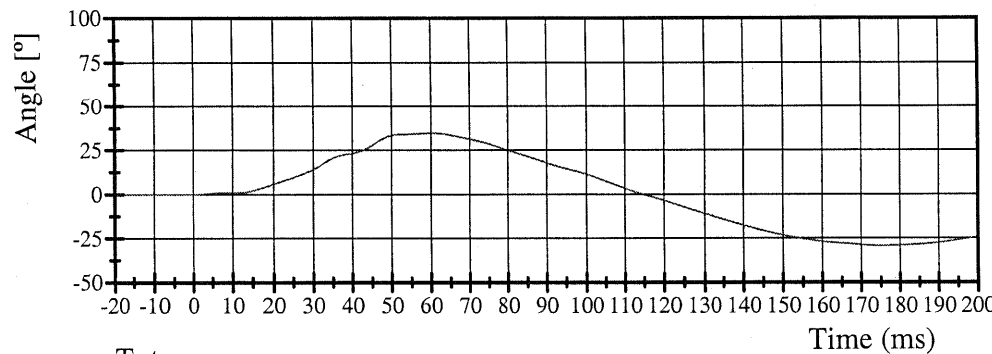


Filter Class: 60

Max: 32.7 ° at 61.0 ms

Min: -22.9 ° at 173.4 ms

Theta

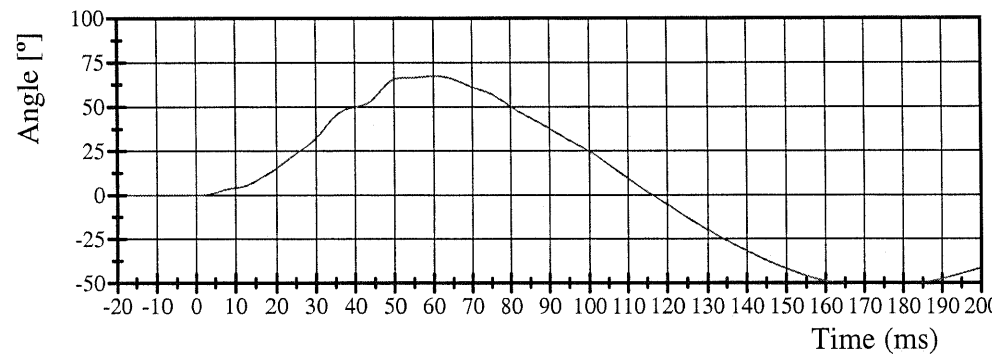


Filter Class: 60

Max: 34.7 ° at 60.2 ms

Min: -29.3 ° at 175.2 ms

Totan



Filter Class: 60

Max: 67.4 ° at 60.5 ms

Min: -52.2 ° at 174.2 ms

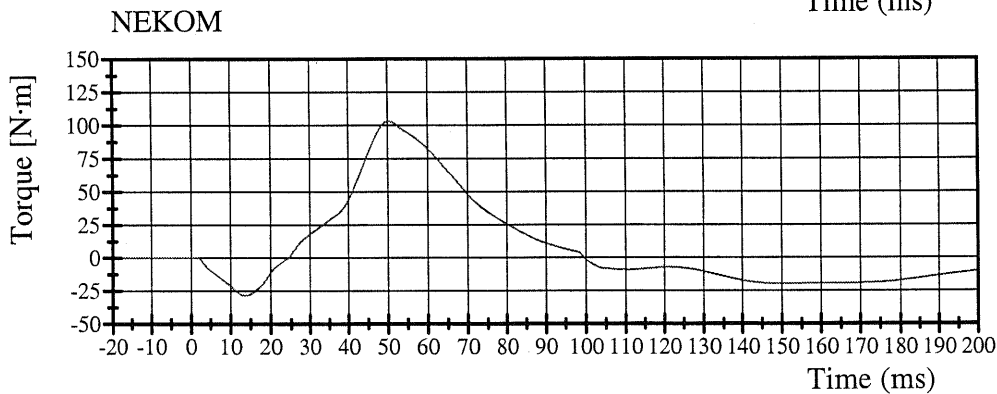
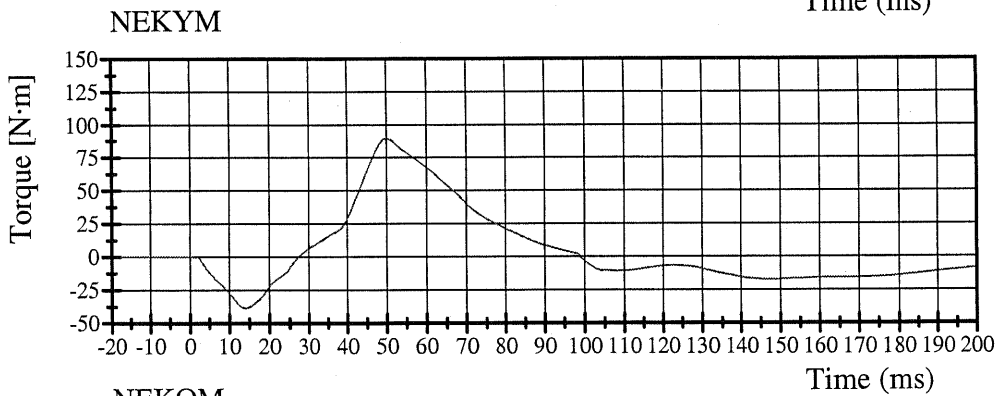
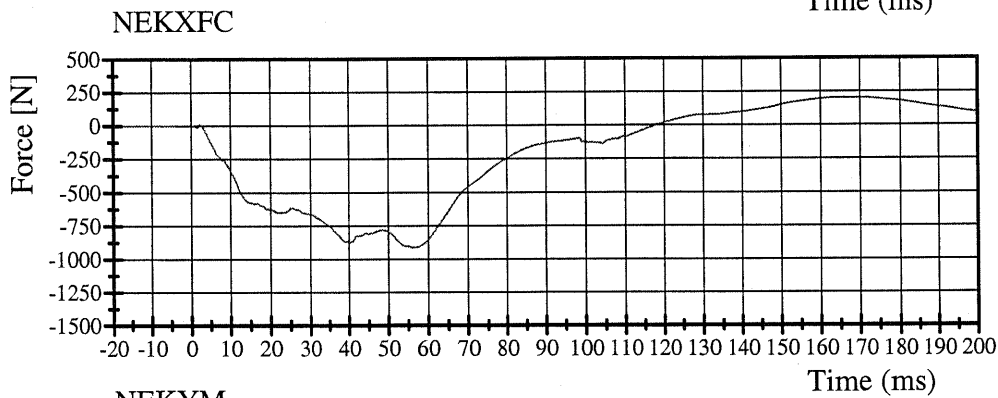
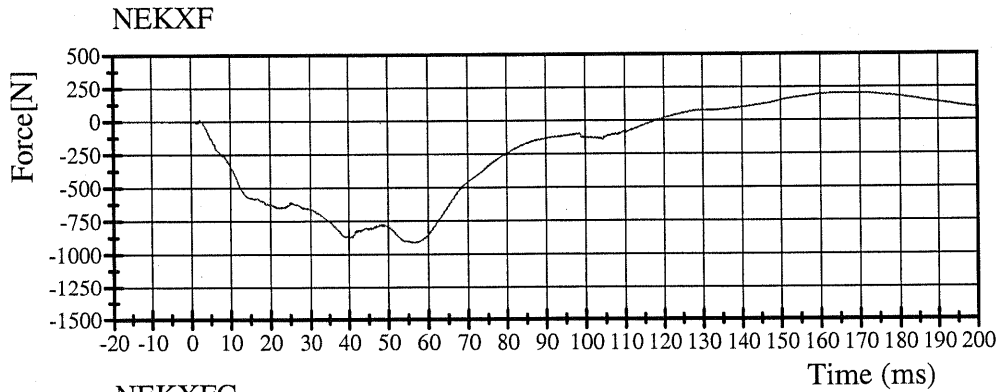


Transportation Research Center Inc.

572E Neck Flexion Test

HIII 50th Male Serial No. 168 Calibration No. 19 - 2

Test Date 12/31/2002



Transportation Research Center Inc.

572E Neck Extension Test - 6 Channel Transducer

HHH 50th Male Serial No. 168 Calibration No. 19 - 1

Test Date 12/31/2002

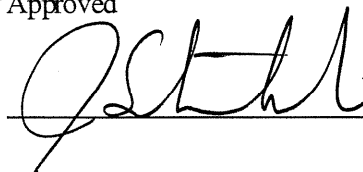
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	41 %	Yes
Impact Velocity	5.95 - 6.19 m/s	6.08 m/s	Yes
Pendulum Deceleration			
10 ms	17.20 - 21.20 g	18.47 g	Yes
20 ms	14.00 - 19.00 g	17.25 g	Yes
30 ms	11.00 - 16.00 g	14.59 g	Yes
Max Pendulum Deceleration	22.00 g	19.00 g	Yes
Max Pendulum Deceleration After 30 ms	22.00 g	14.57 g	Yes
Deceleration-Time Curve			
Decay Time To 5g	38 - 46 ms	41.68 ms	Yes
D Plane Rotation			
Max	81 - 106 °	93.33 °	Yes
Time	72 - 82 ms	75.52 ms	Yes
Moment About Occipital Condyle			
Min	-80.0 - (-52.9) N·m	-70.52 N·m	Yes
Time	65 - 79 ms	70.24 ms	Yes
Rotation Angle-Time Curve			
Decay Time To Zero	147 - 174 ms	151.84 ms	Yes
Positive Moment-Time Curve			
Decay Time To Zero	120 - 148 ms	142.16 ms	Yes

Comments:

Technician



Approved



12.31.2002 10:09:51 540



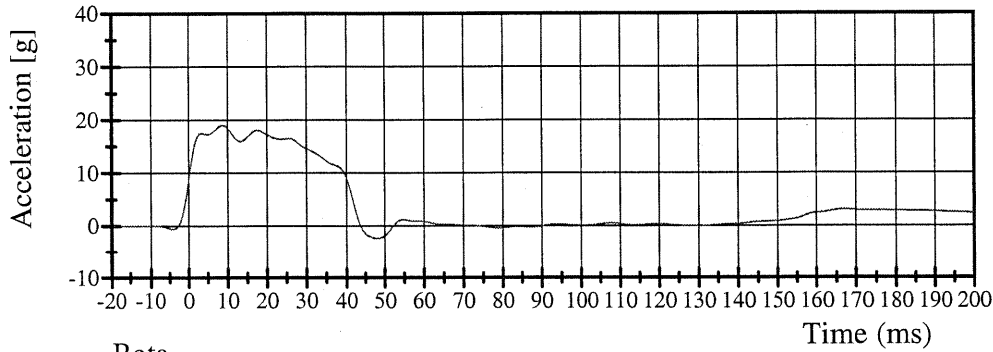
Transportation Research Center Inc.

572E Neck Extension Test

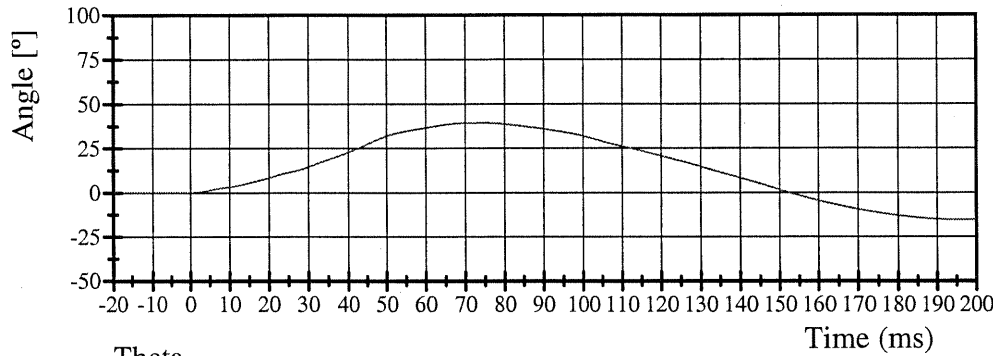
HIII 50th Male Serial No. 168 Calibration No. 19 - 1

Test Date 12/31/2002

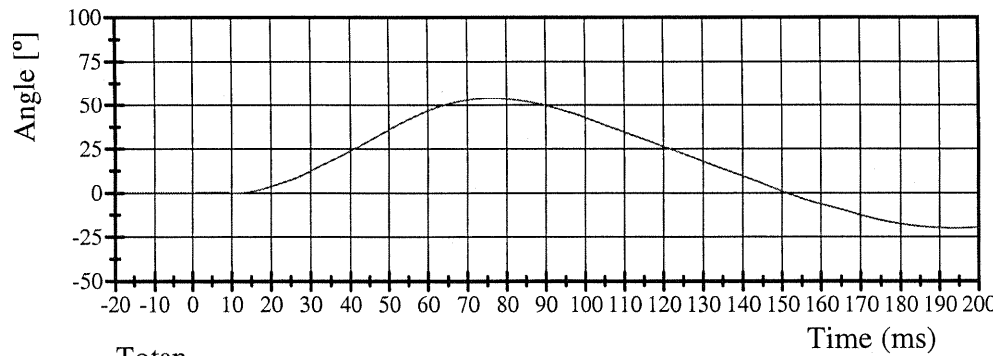
Pendulum Deceleration



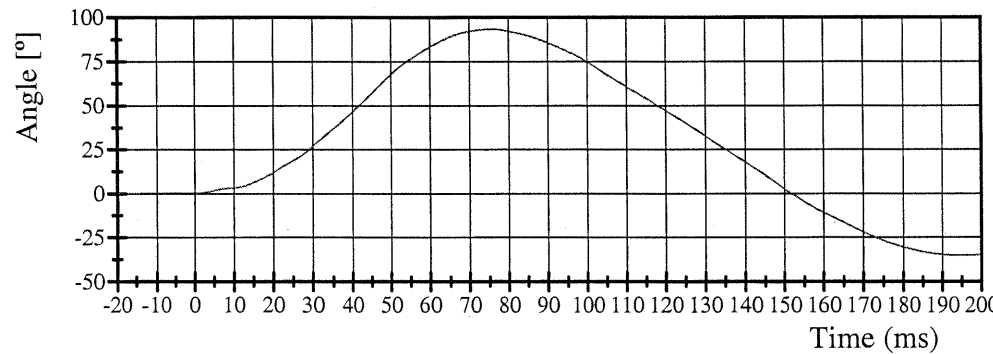
Beta



Theta



Totan

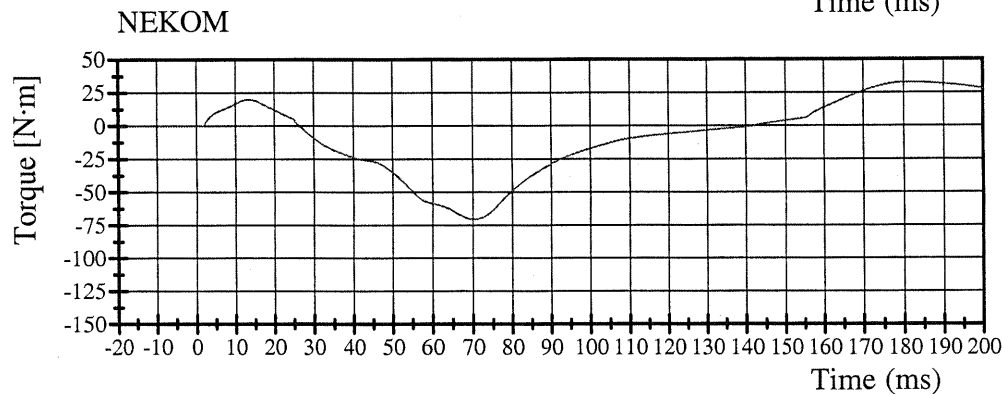
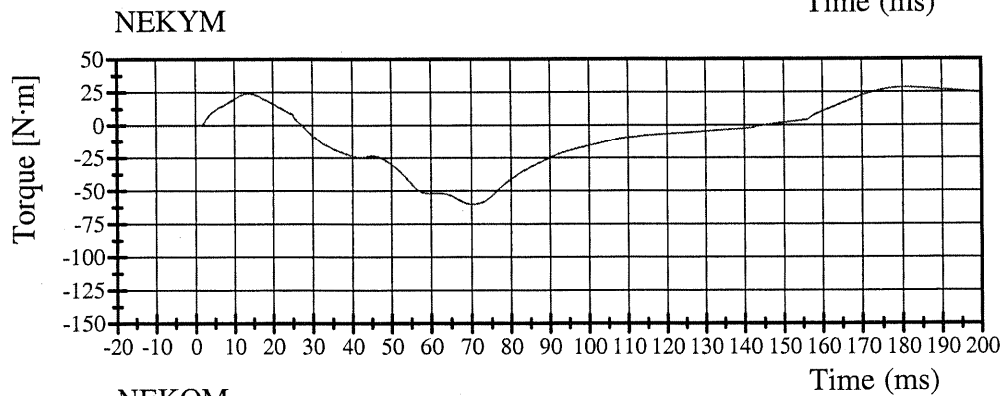
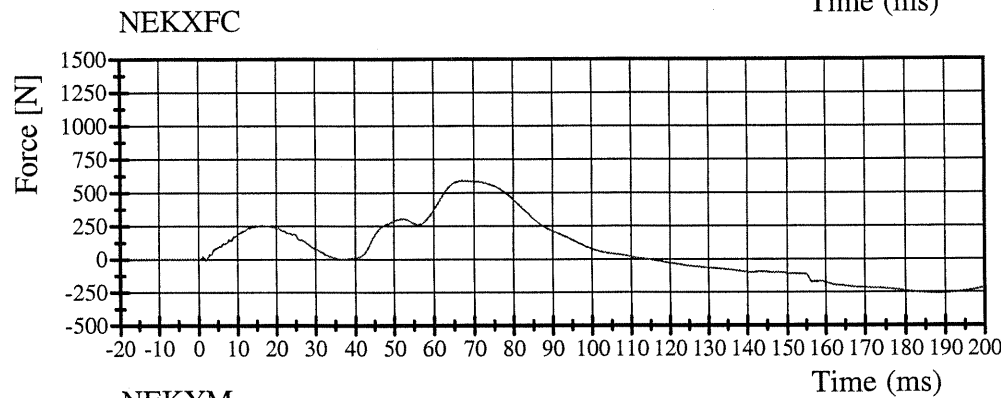
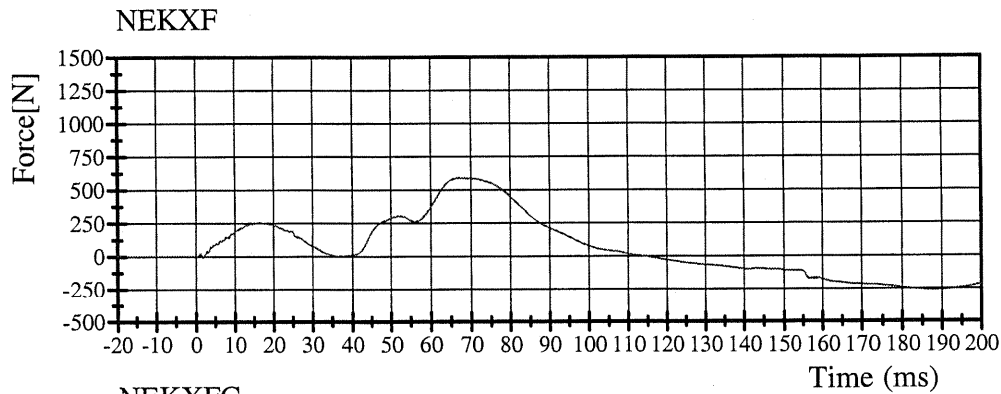


Transportation Research Center Inc.

572E Neck Extension Test

HIII 50th Male Serial No. 168 Calibration No. 19 - 1

Test Date 12/31/2002



Transportation Research Center Inc.

572E Thorax Test

HIII 50th Male Serial No. 168 Calibration No. 19 - 1

Test Date 01/08/2003

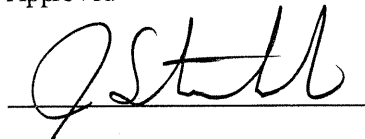
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	28 %	Yes
Pendulum Velocity	6.59 - 6.83 m/s	6.66 m/s	Yes
Maximum Chest Deflection	-72.6 - (-63.5) mm	-70.1 mm	Yes
Maximum Resistive Force	5159 - 5894 N	5825 N	Yes
Internal Hysteresis	69 - 85 %	70 %	Yes

Comments:

Technician



Approved



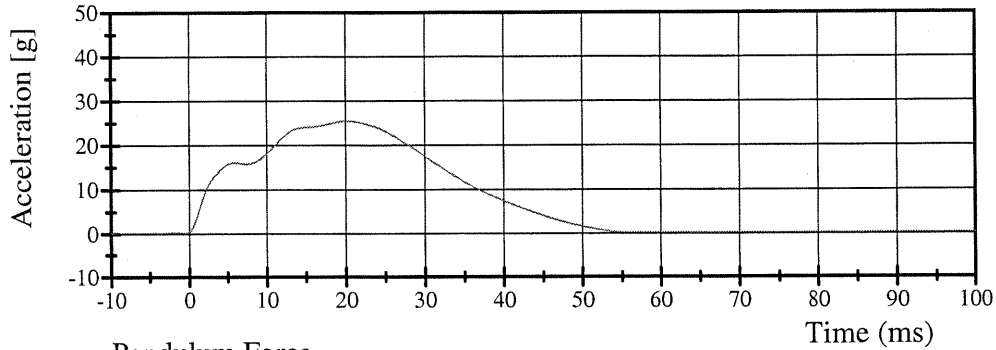
Transportation Research Center Inc.

572E Thorax Test

HIII 50th Male Serial No. 168 Calibration No. 19 - 1

Test Date 01/08/2003

Pendulum Deceleration

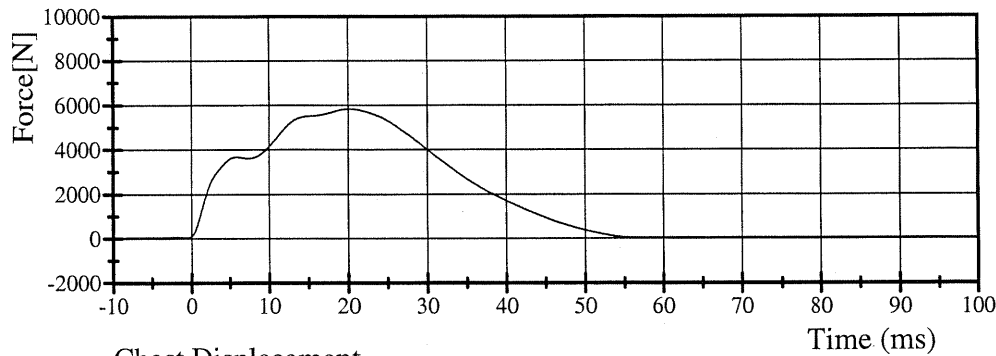


Filter Class: 180

Max: 25.4 g at 20.2 ms

Min: -0.0 g at -73.9 ms

Pendulum Force

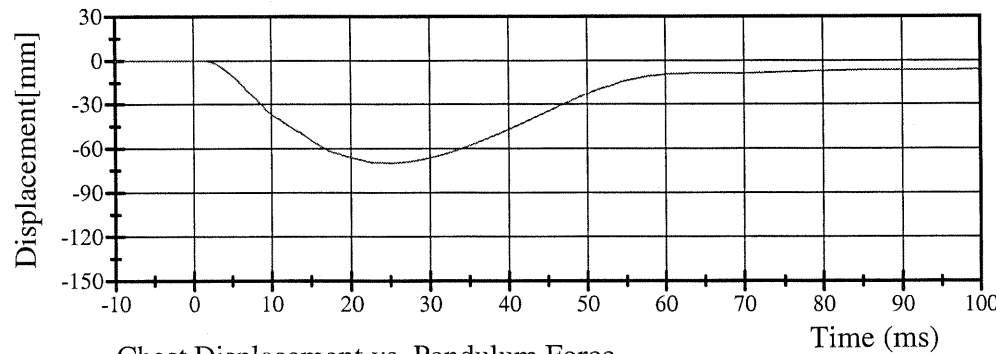


Filter Class: 180

Max: 5824.8 N at 20.2 ms

Min: -9.4 N at -73.9 ms

Chest Displacement

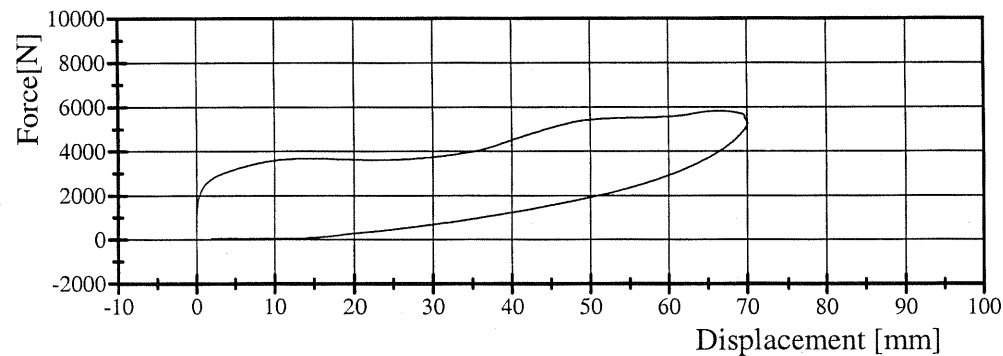


Filter Class: 180

Max: 0.0 mm at 0.7 ms

Min: -70.1 mm at 25.2 ms

Chest Displacement vs. Pendulum Force



Transportation Research Center Inc

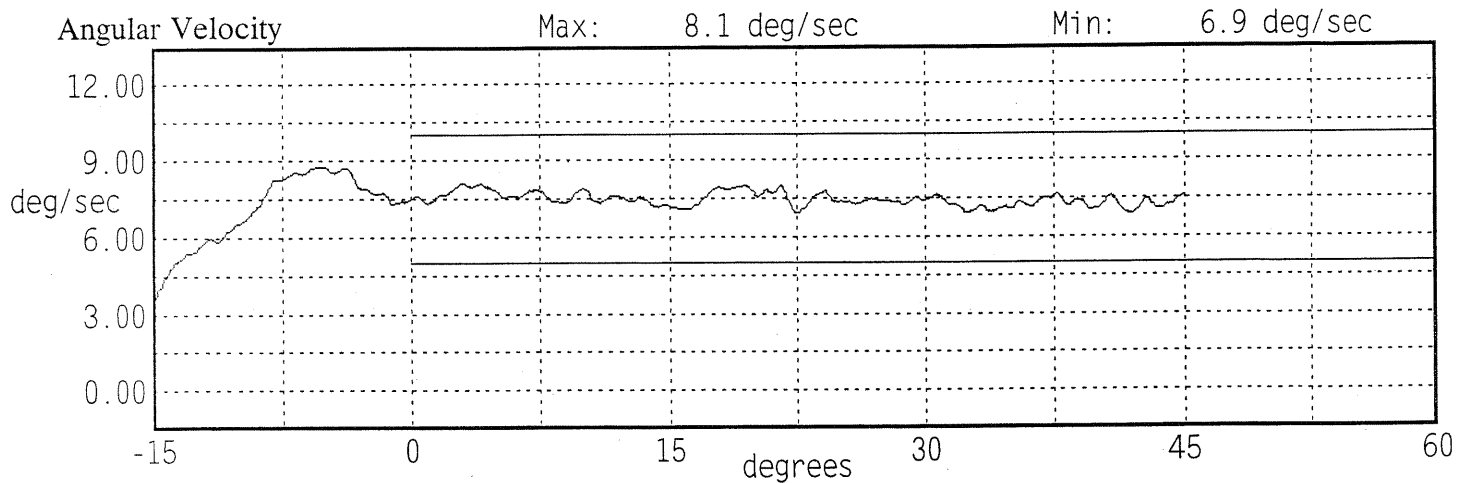
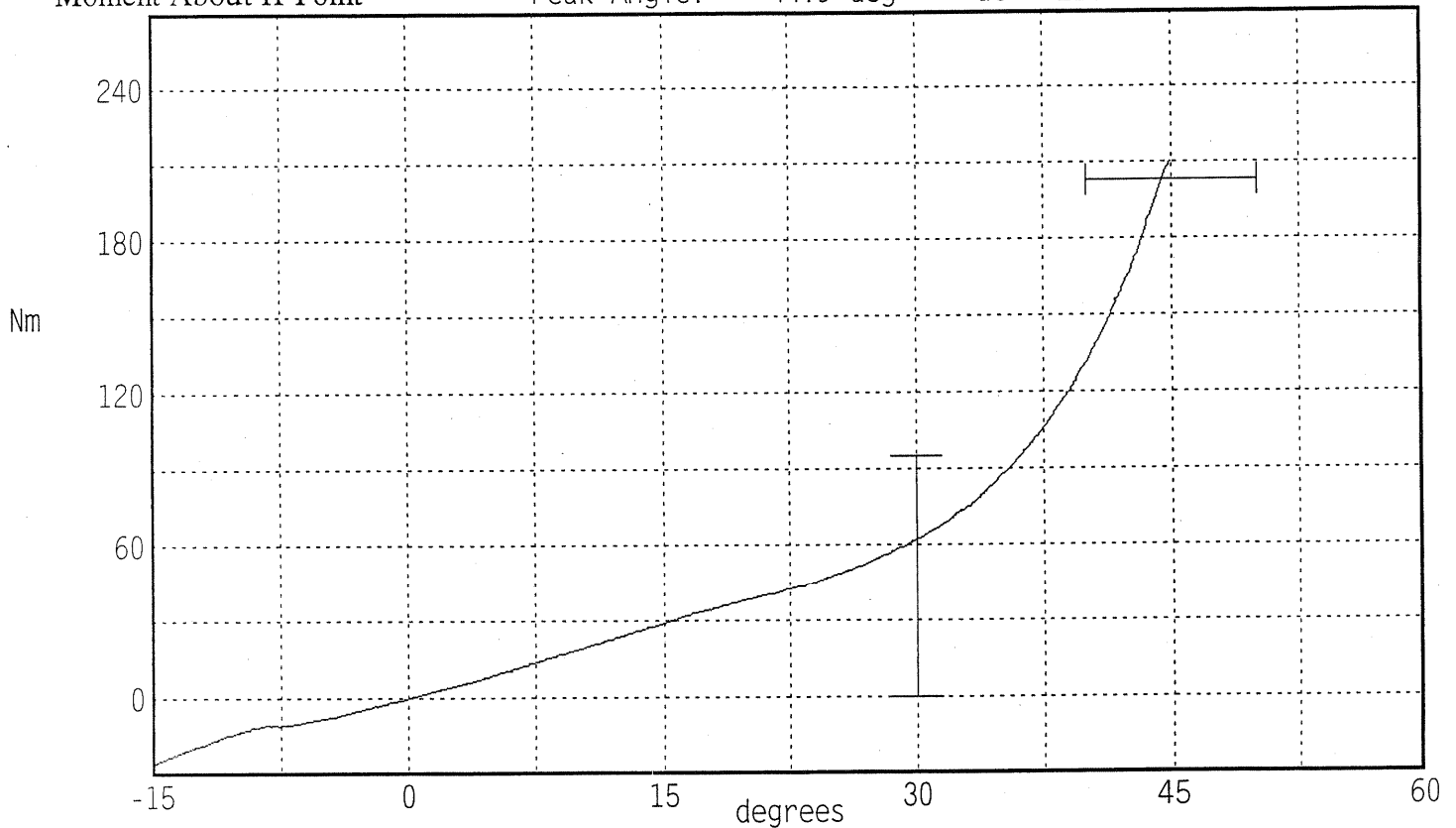
Hybrid III Hip Range of Motion

Serial Number: 168L
Test Number: 168C19
Comments:

Date: 12/30/2002
Time: 14:29

TEST PARAMETER	SPECIFICATION	TEST RESULTS	
Temperature	18.9 - 25.6	21.7 °C	Pass
Humidity	10 - 70	38 %	Pass
Moment at 30 deg	<= 94.9	62.2 Nm	Pass
Angle at 203 Nm	40.0 - 50.0	44.6 deg	Pass
Average Velocity	5.0 - 10.0	7.4 deg/sec	Pass

Moment About H-Point
Peak Moment: 210.2 Nm at 44.9 deg
Peak Angle: 44.9 deg at 210.2 Nm



Transportation Research Center Inc

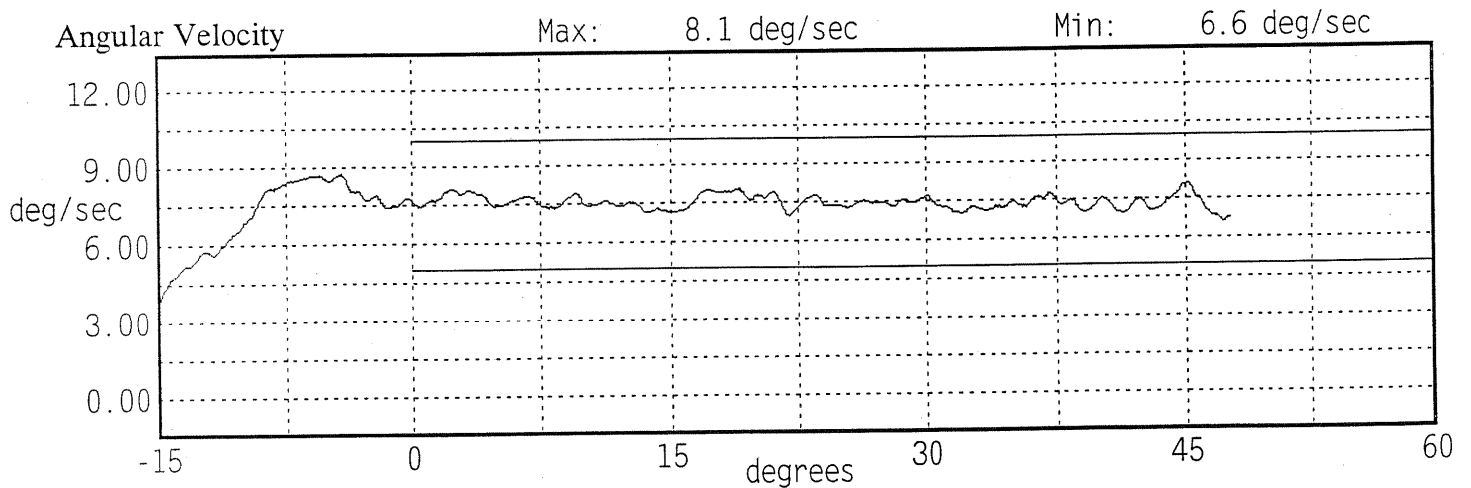
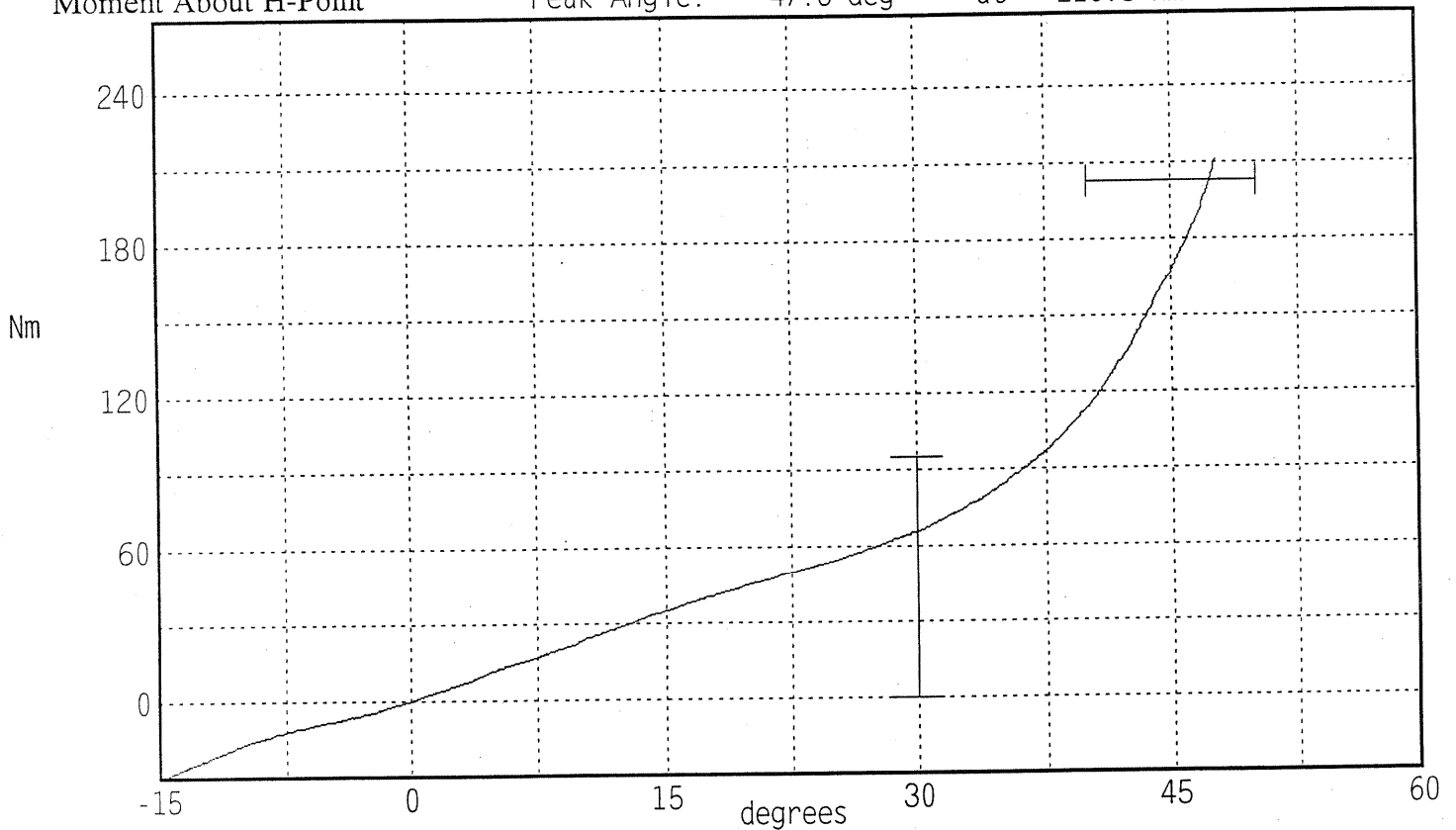
Hybrid III Hip Range of Motion

Serial Number: 168R
Test Number: 168C19
Comments:

Date: 12/30/2002
Time: 14:34

TEST PARAMETER	SPECIFICATION	TEST RESULTS	
Temperature	18.9 - 25.6	21.7 °C	Pass
Humidity	10 - 70	38 %	Pass
Moment at 30 deg	<= 94.9	66.0 Nm	Pass
Angle at 203 Nm	40.0 - 50.0	47.2 deg	Pass
Average Velocity	5.0 - 10.0	7.5 deg/sec	Pass

Moment About H-Point
Peak Moment: 210.8 Nm at 47.6 deg
Peak Angle: 47.6 deg at 210.8 Nm



Transportation Research Center Inc.

572E Left Knee Slider Test

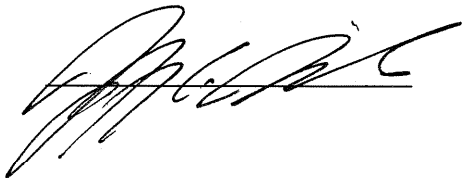
HIII 50th Male Serial No. 168 Calibration No. 19 - 1

Test Date 12/30/2002

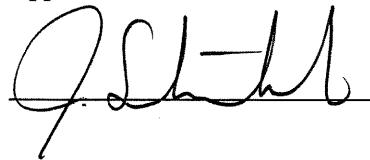
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Pendulum Velocity	2.70 - 2.80 m/s	2.74 m/s	Yes
Force At 10 mm Displacement	-1259 - (-1721) N	-1583 N	Yes
Force At 18 mm Displacement	-2268 - (-3096) N	-3043 N	Yes

Comments:

Technician



Approved

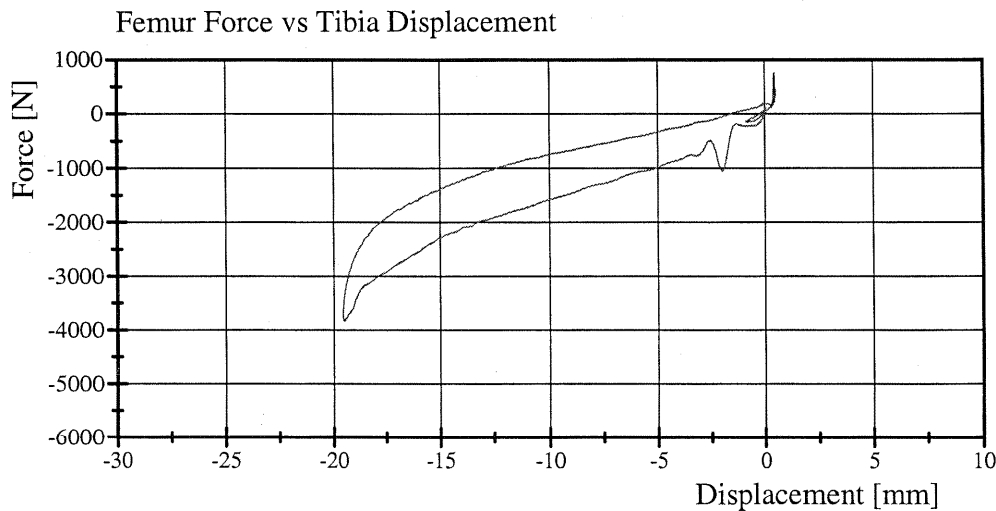
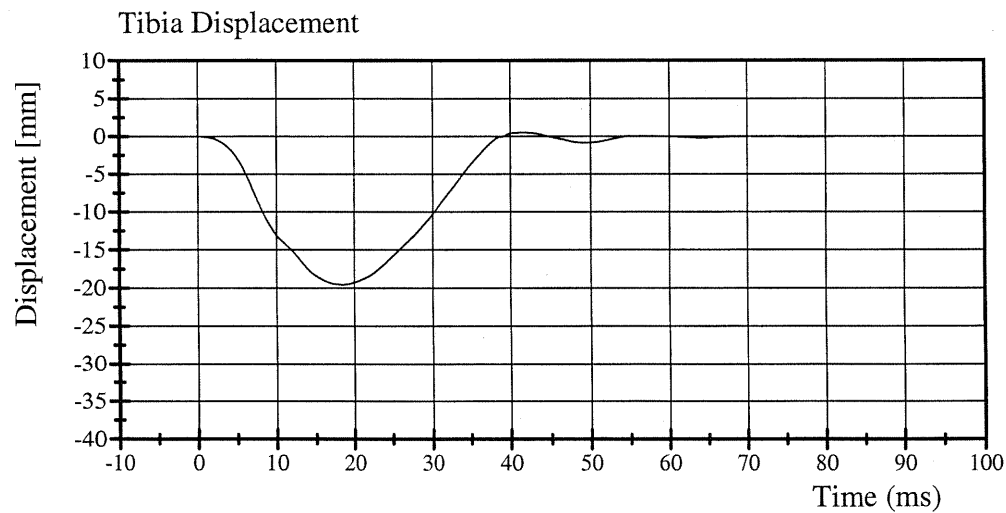
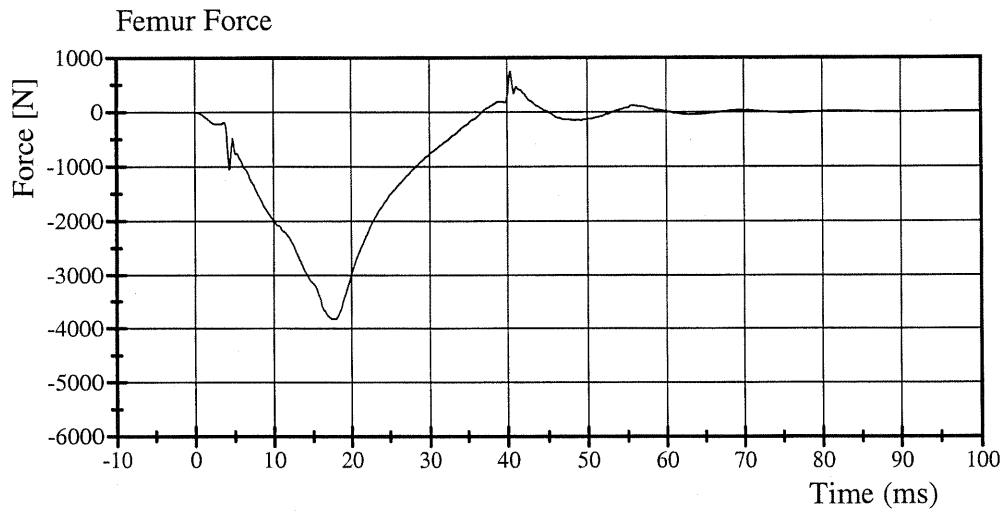


Transportation Research Center Inc.

572E Left Knee Slider Test

HIII 50th Male Serial No. 168 Calibration No. 19 - 1

Test Date 12/30/2002



Transportation Research Center Inc.

572E Right Knee Slider Test

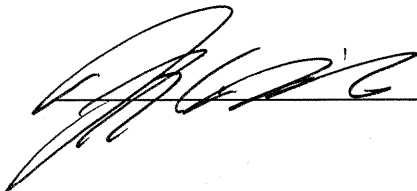
HIII 50th Male Serial No. 168 Calibration No. 19 - 1

Test Date 12/30/2002

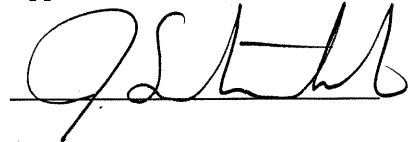
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	33 %	Yes
Pendulum Velocity	2.70 - 2.80 m/s	2.74 m/s	Yes
Force At 10 mm Displacement	-1259 - (-1721) N	-1242 N	No
Force At 18 mm Displacement	-2268 - (-3096) N	-2257 N	No

Comments:

Technician



Approved

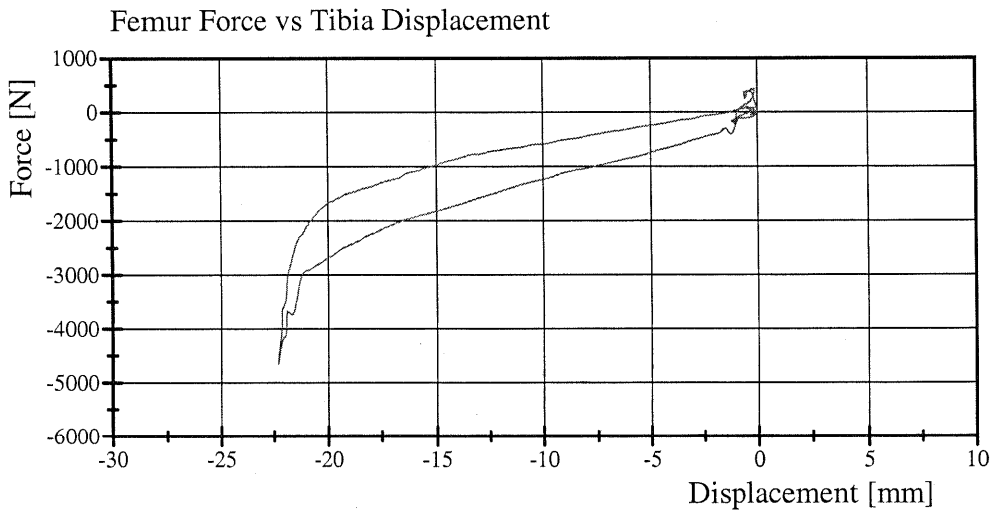
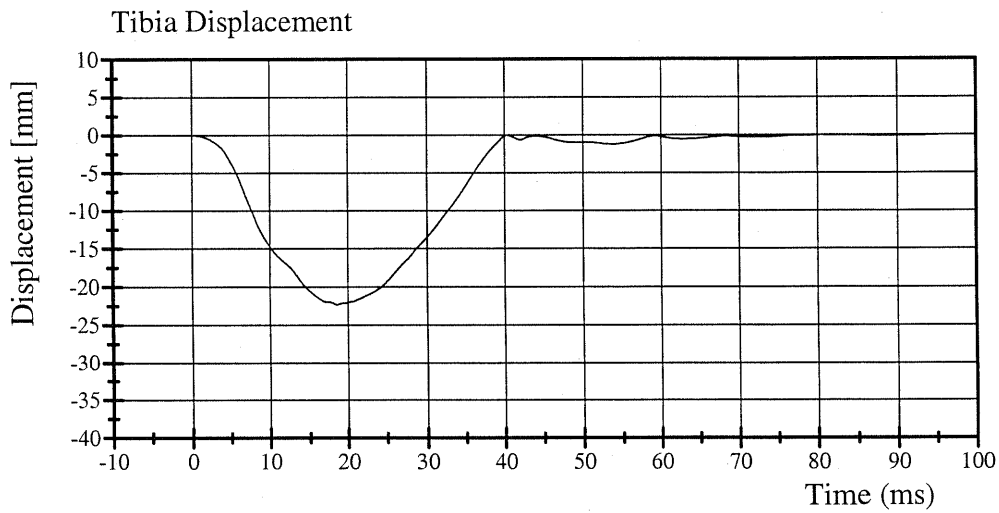
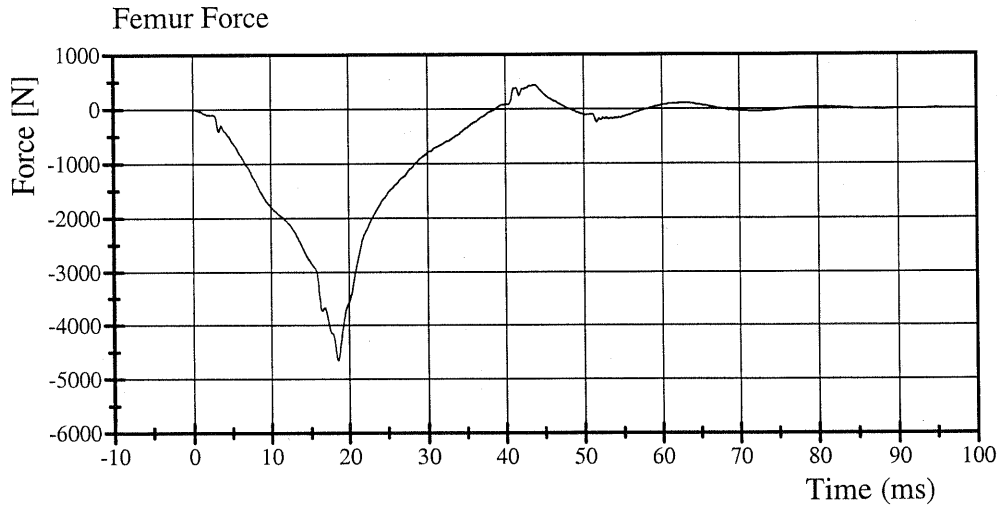


Transportation Research Center Inc.

572E Right Knee Slider Test

HIII 50th Male Serial No. 168 Calibration No. 19 - 1

Test Date 12/30/2002



Transportation Research Center Inc.

572E Left Knee Test

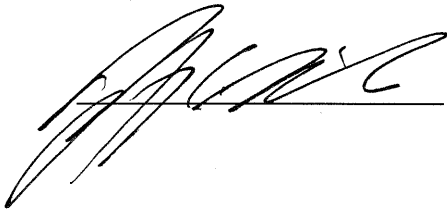
HIII 50th Male Serial No. 168 Calibration No. 19 - 1

Test Date 12/30/2002

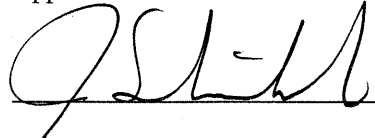
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	29 %	Yes
Pendulum Velocity	2.08 - 2.13 m/s	2.10 m/s	Yes
Maximum Pendulum Force	4716 - 5782 N	5058 N	Yes

Comments:

Technician



Approved



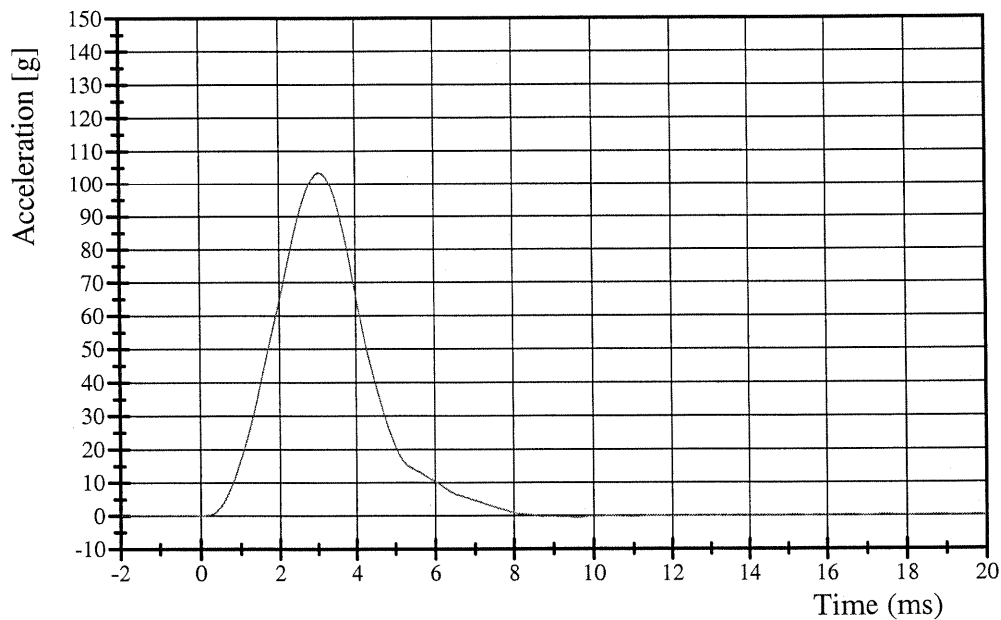
Transportation Research Center Inc.

572E Left Knee Test

HIII 50th Male Serial No. 168 Calibration No. 19 - 1

Test Date 12/30/2002

Pendulum Deceleration

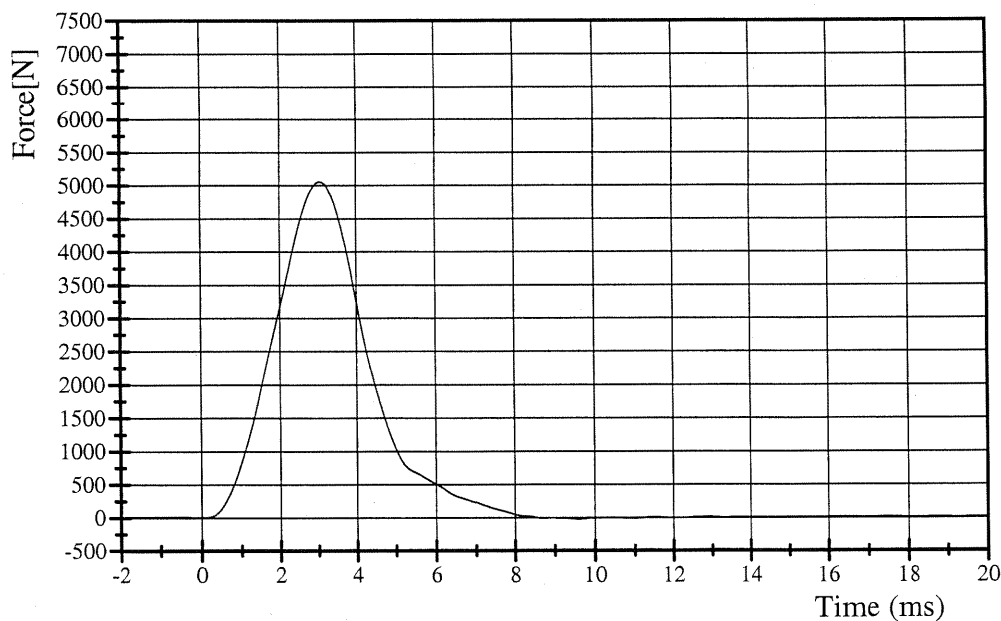


Filter Class: 600

Max: 103.4 g at 3.0 ms

Min: -0.5 g at 9.6 ms

Pendulum Force



Filter Class: 600

Max: 5058.1 N at 3.0 ms

Min: -26.6 N at 9.6 ms

Transportation Research Center Inc.

572E Right Knee Test

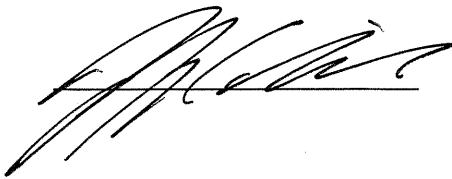
HIII 50th Male Serial No. 168 Calibration No. 19 - 1

Test Date 12/30/2002

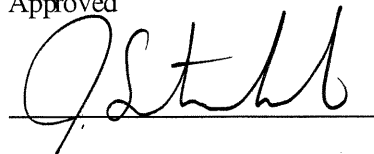
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	26 %	Yes
Pendulum Velocity	2.08 - 2.13 m/s	2.10 m/s	Yes
Maximum Pendulum Force	4716 - 5782 N	5199 N	Yes

Comments:

Technician



Approved

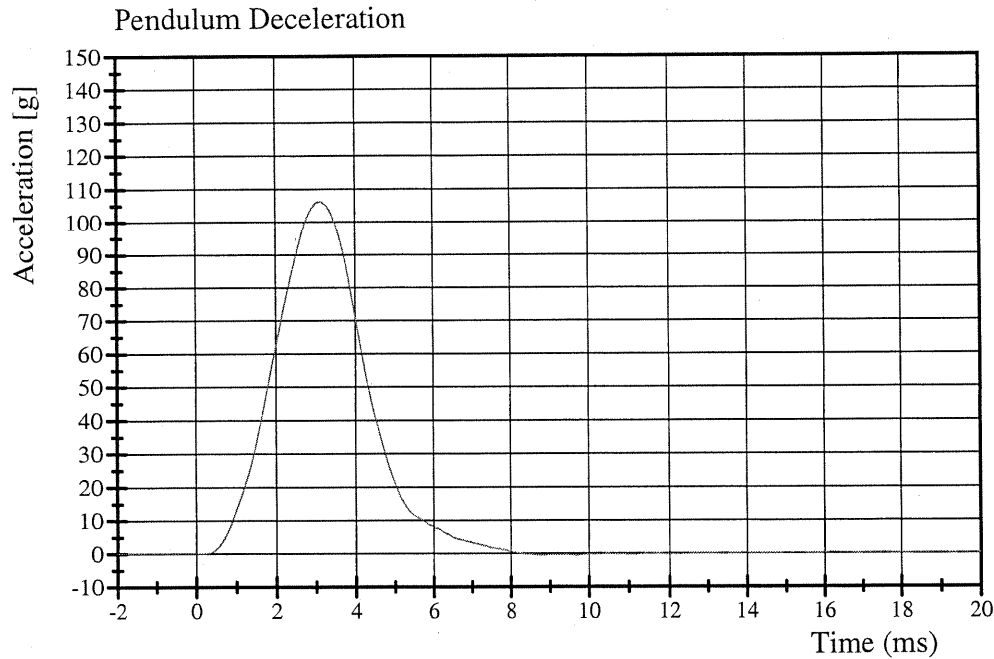


Transportation Research Center Inc.

572E Right Knee Test

HIII 50th Male Serial No. 168 Calibration No. 19 - 1

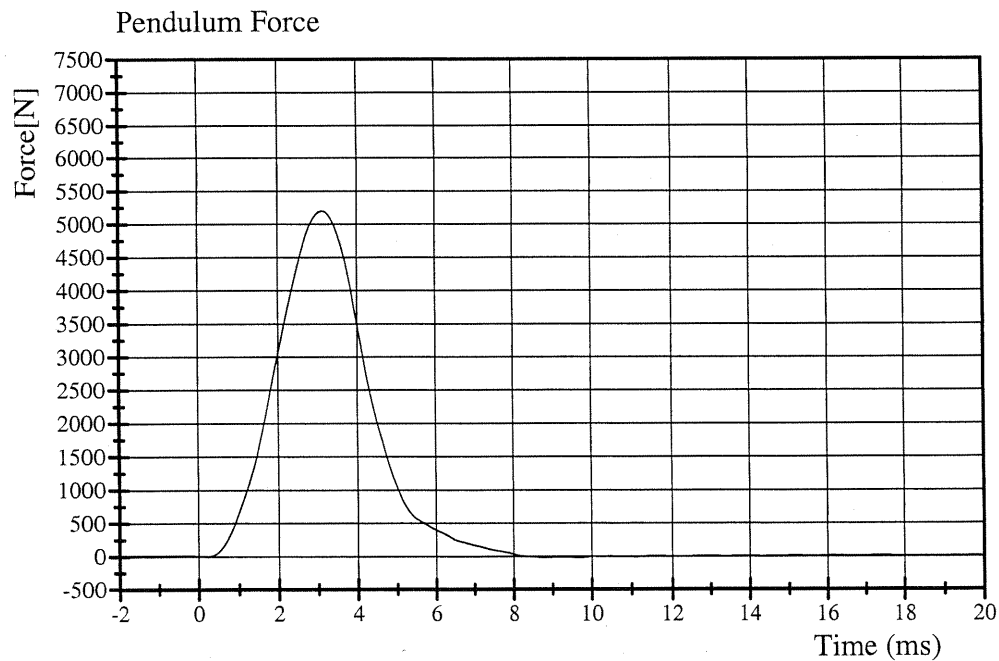
Test Date 12/30/2002



Filter Class: 600

Max: 106.3 g at 3.1 ms

Min: -0.5 g at 9.7 ms



Filter Class: 600

Max: 5199.3 N at 3.1 ms

Min: -23.4 N at 9.7 ms

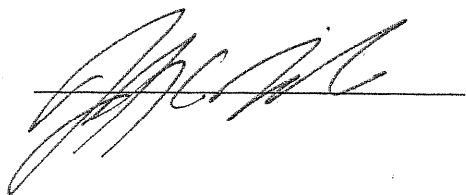
Pre-Test Dummy Configuration and Performance Verification Data

Bullet Vehicle Driver Dummy S/N: 169

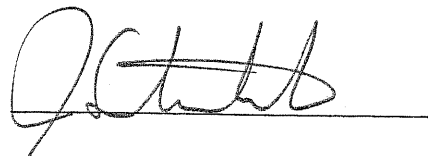
Transportation Research Center Inc.
572E HIII 50th Dummy
External Dimensions
Serial No. 169 Calibration No. 16

Test Parameter	Dimension	Specification	Results	Pass
Location For Chest Circumference	AA	429 - 434 mm	432 mm	Yes
Location For Waist Circumference	BB	226 - 231 mm	229 mm	Yes
Chest Circumference	Y	970 - 1001 mm	993 mm	Yes
Waist Circumference	Z	836 - 866 mm	860 mm	Yes
Chest Depth	O	213 - 229 mm	221 mm	Yes
H-Point Height	C	84 - 89 mm	87 mm	Yes
H-Point From Seatback	D	135 - 140 mm	136 mm	Yes
Skull Cap To Backline	H	41 - 46 mm	44 mm	Yes
Total Sitting Height	A	879 - 889 mm	883 mm	Yes
Thigh Clearance	F	140 - 155 mm	149 mm	Yes
Buttock Knee Length	K	579 - 605 mm	591 mm	Yes
Buttock Popliteal Length	N	452 - 478 mm	474 mm	Yes
Popliteal Height	L	429 - 455 mm	440 mm	Yes
Knee Pivot Height	M	485 - 500 mm	489 mm	Yes
Foot Length	P	252 - 267 mm	253 mm	Yes
Foot Breadth	W	91 - 107 mm	102 mm	Yes
Shoulder Pivot From Backline	E	84 - 94 mm	91 mm	Yes
Shoulder Breadth	V	422 - 437 mm	427 mm	Yes
Shoulder Pivot Height	B	506 - 521 mm	518 mm	Yes
Elbow Rest Height	J	191 - 211 mm	205 mm	Yes
Shoulder-Elbow Length	I	330 - 345 mm	344 mm	Yes
Back Of Elbow To Wrist Pivot	G	290 - 305 mm	295 mm	Yes

Technician



Approved




Transportation Research Center Inc.

572E Head Drop Test

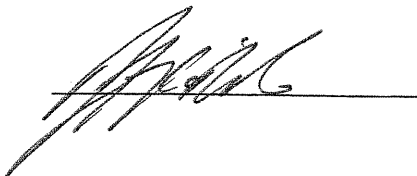
HIII 50th Male Serial No. 169 Calibration No. 16 - 1

Test Date 10/07/2002

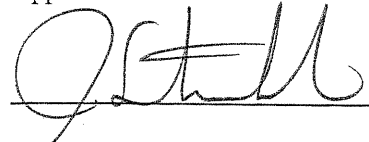
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Peak Resultant Acceleration	225 - 275 g	262.9 g	Yes
Peak Lateral Acceleration	15 g Max	-8.0 g	Yes
Is Acceleration Curve Unimodal?	Yes	Yes	Yes

Comments:

Technician



Approved

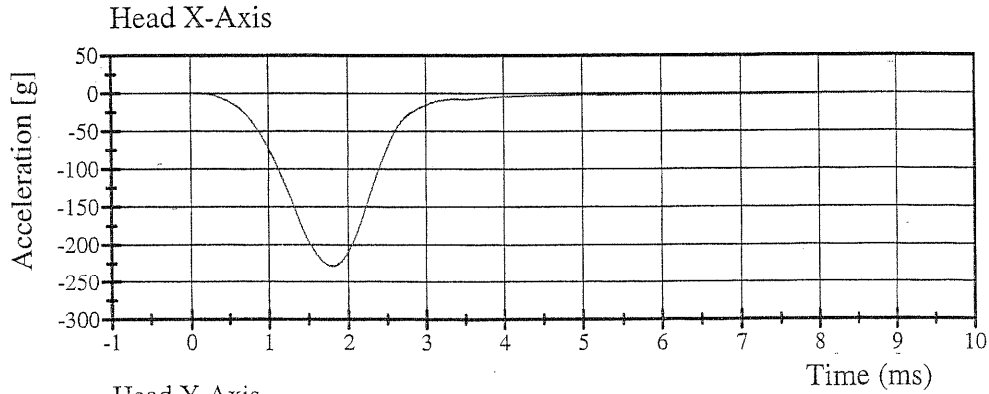


Transportation Research Center Inc.

572E Head Drop Test

HIII 50th Male Serial No. 169 Calibration No. 16 - 1

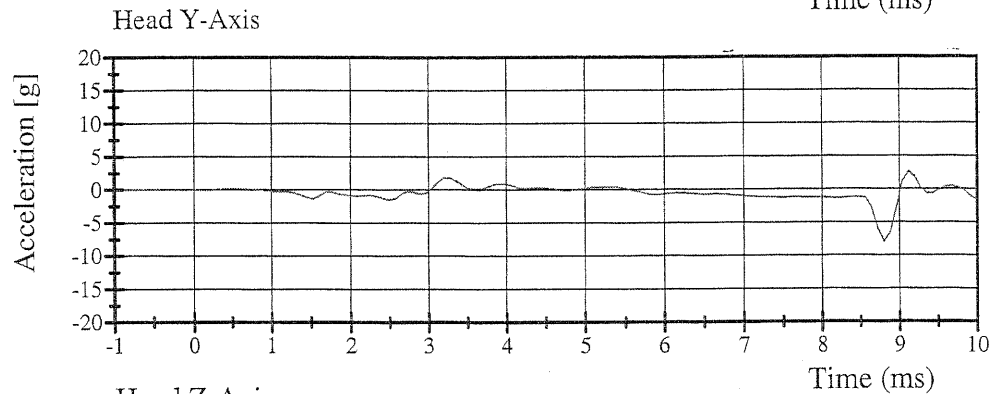
Test Date 10/07/2002



Filter Class: 1000

Max: 0.2 g at 10.0 ms

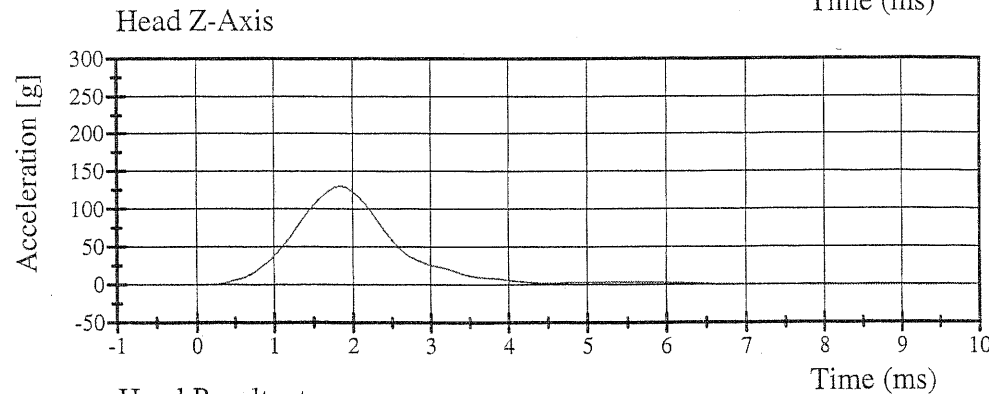
Min: -228.4 g at 1.8 ms



Filter Class: 1000

Max: 2.6 g at 9.1 ms

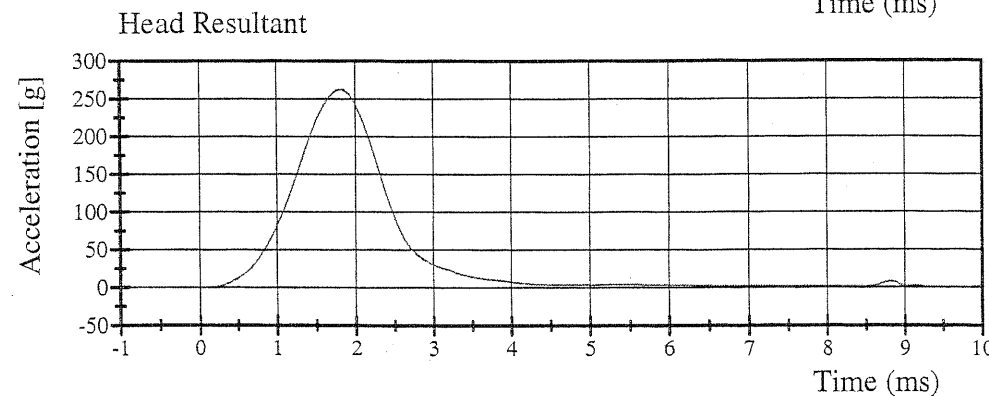
Min: -8.0 g at 8.8 ms



Filter Class: 1000

Max: 130.3 g at 1.8 ms

Min: -0.9 g at 8.8 ms



Filter Class: 1000

Max: 262.9 g at 1.8 ms

Min: 0.0 g at 8.2 ms



Transportation Research Center Inc.

572E Neck Flexion Test - 6 Channel Transducer

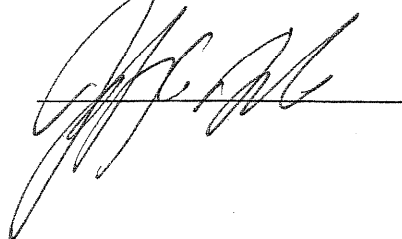
HIII 50th Male Serial No. 169 Calibration No. 16 - 1

Test Date 10/07/2002

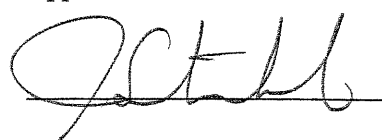
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Impact Velocity	6.89 - 7.13 m/s	7.01 m/s	Yes
Pendulum Deceleration			
10 ms	22.50 - 27.50 g	23.62 g	Yes
20 ms	17.60 - 22.60 g	21.90 g	Yes
30 ms	12.50 - 18.50 g	16.52 g	Yes
Max Pendulum Deceleration	29.00 g	23.97 g	Yes
Max Pendulum Deceleration After 30 ms	29.00 g	16.45 g	Yes
Deceleration-Time Curve Decay Time To 5g	34 - 42 ms	40.72 ms	Yes
D Plane Rotation			
Max	64 - 78 °	71.74 °	Yes
Time	57 - 64 ms	58.88 ms	Yes
Moment About Occipital Condyle			
Max	88.2 - 108.4 N·m	93.48 N·m	Yes
Time	47 - 58 ms	53.36 ms	Yes
Rotation Angle-Time Curve Decay Time To Zero	113 - 128 ms	116.80 ms	Yes
Positive Moment-Time Curve Decay Time To Zero	97 - 107 ms	102.72 ms	Yes

Comments:

Technician



Approved



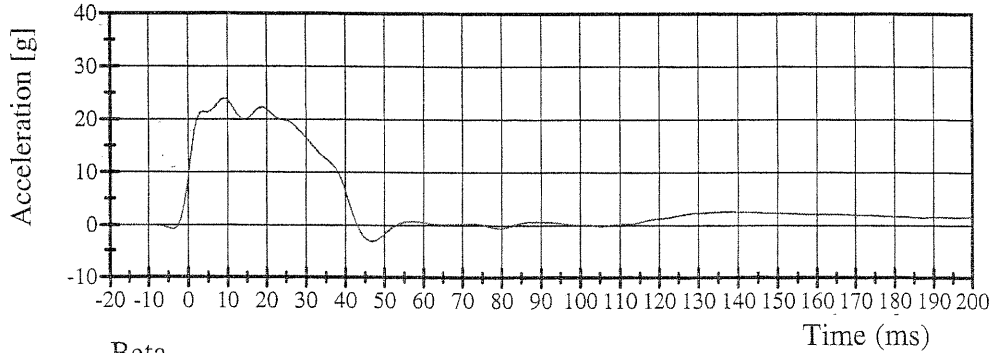
Transportation Research Center Inc.

572E Neck Flexion Test

HIII 50th Male Serial No. 169 Calibration No. 16 - 1

Test Date 10/07/2002

Pendulum Deceleration

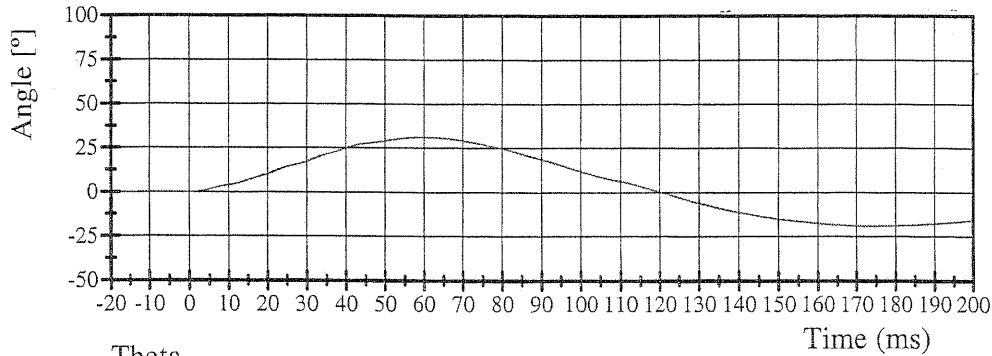


Filter Class: 60

Max: 24.0 g at 9.0 ms

Min: -3.0 g at 46.8 ms

Beta

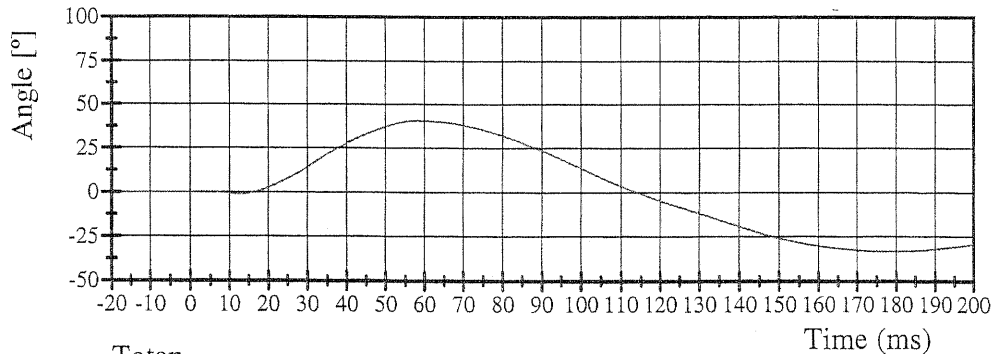


Filter Class: 60

Max: 31.1 ° at 59.8 ms

Min: -19.1 ° at 173.4 ms

Theta

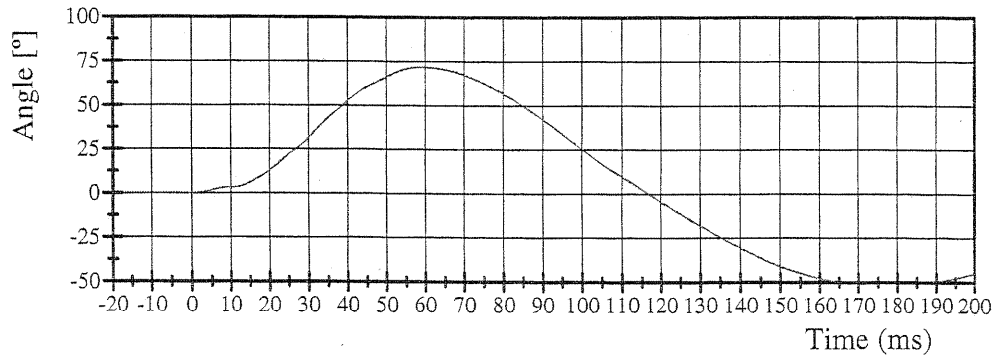


Filter Class: 60

Max: 40.6 ° at 58.3 ms

Min: -33.3 ° at 178.3 ms

Totan



Filter Class: 60

Max: 71.7 ° at 58.9 ms

Min: -52.2 ° at 176.8 ms

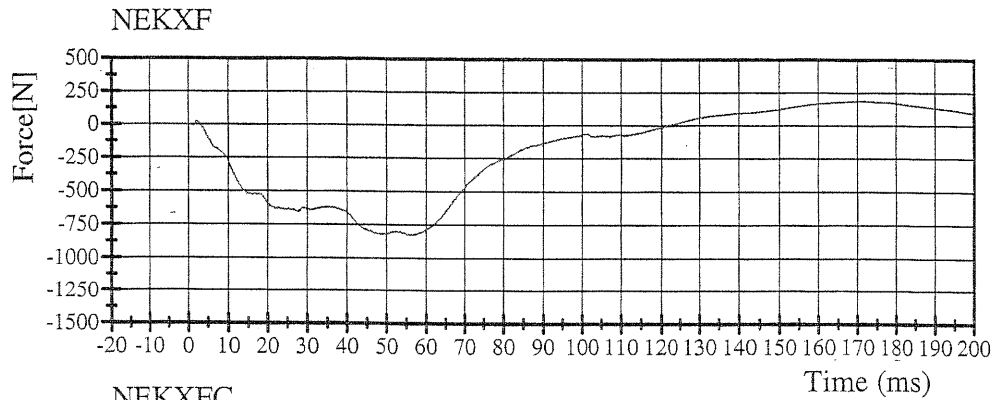


Transportation Research Center Inc.

572E Neck Flexion Test

HIII 50th Male Serial No. 169 Calibration No. 16 - 1

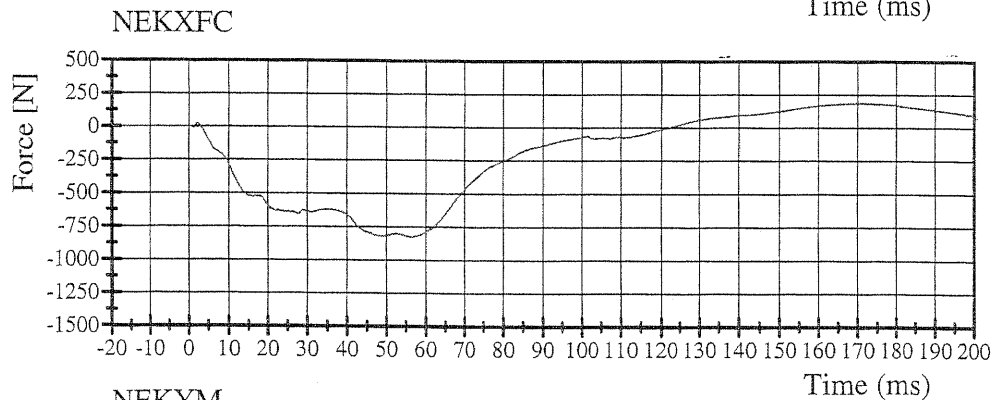
Test Date 10/07/2002



Filter Class: 1000

Max: 185.5 N at 170.4 ms

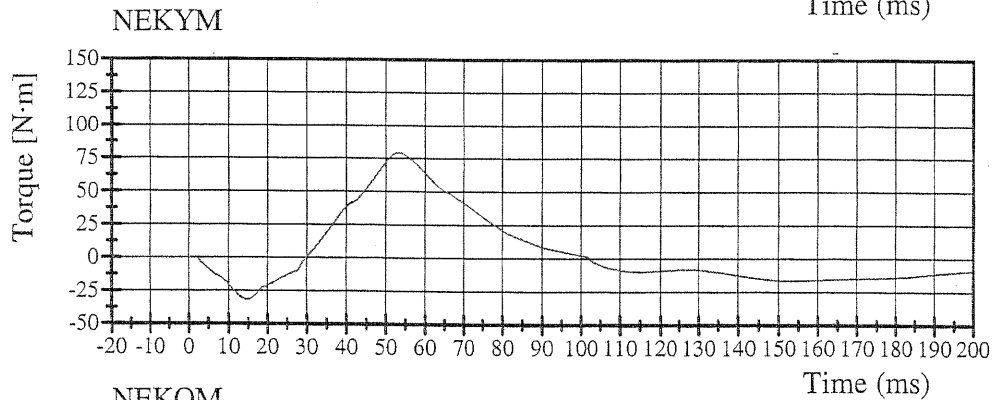
Min: -826.2 N at 56.3 ms



Filter Class: 600

Max: 185.1 N at 171.1 ms

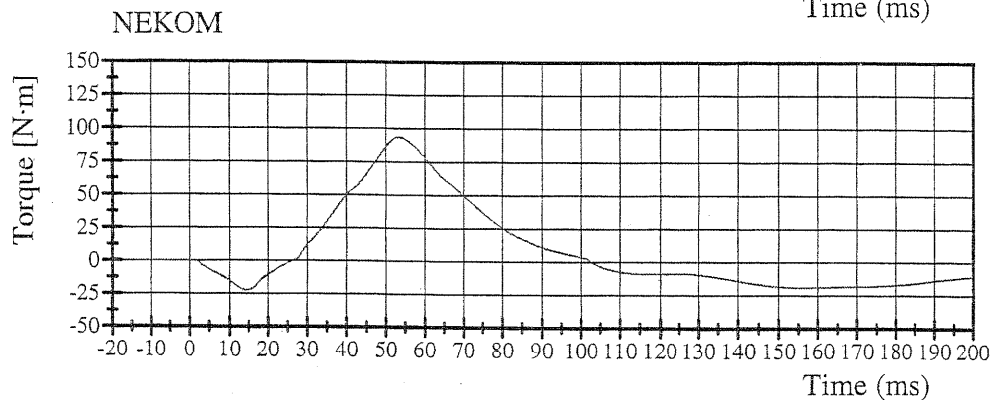
Min: -826.0 N at 56.3 ms



Filter Class: 600

Max: 79.3 N·m at 53.3 ms

Min: -31.6 N·m at 14.6 ms



Filter Class: 600

Max: 93.5 N·m at 53.4 ms

Min: -22.4 N·m at 14.4 ms



Transportation Research Center Inc.

572E Neck Extension Test - 6 Channel Transducer

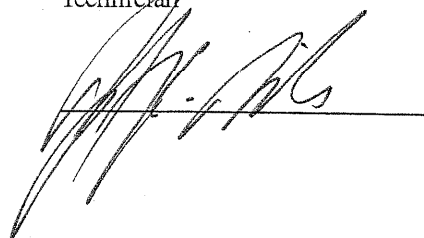
HIH 50th Male Serial No. 169 Calibration No. 16 - 1

Test Date 10/07/2002

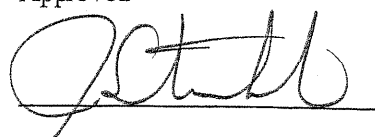
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
Impact Velocity	5.95 - 6.19 m/s	6.11 m/s	Yes
Pendulum Deceleration			
10 ms	17.20 - 21.20 g	17.47 g	Yes
20 ms	14.00 - 19.00 g	17.24 g	Yes
30 ms	11.00 - 16.00 g	14.57 g	Yes
Max Pendulum Deceleration	22.00 g	17.75 g	Yes
Max Pendulum Deceleration After 30 ms	22.00 g	14.56 g	Yes
Deceleration-Time Curve Decay Time To 5g	38 - 46 ms	44.08 ms	Yes
D Plane Rotation			
Max	81 - 106 °	99.77 °	Yes
Time	72 - 82 ms	78.32 ms	Yes
Moment About Occipital Condyle			
Min	-80.0 - (-52.9) N·m	-63.40 N·m	Yes
Time	65 - 79 ms	74.56 ms	Yes
Rotation Angle-Time Curve Decay Time To Zero	147 - 174 ms	157.52 ms	Yes
Positive Moment-Time Curve Decay Time To Zero	120 - 148 ms	147.20 ms	Yes

Comments:

Technician



Approved



10.07.2002 12:10:23 535



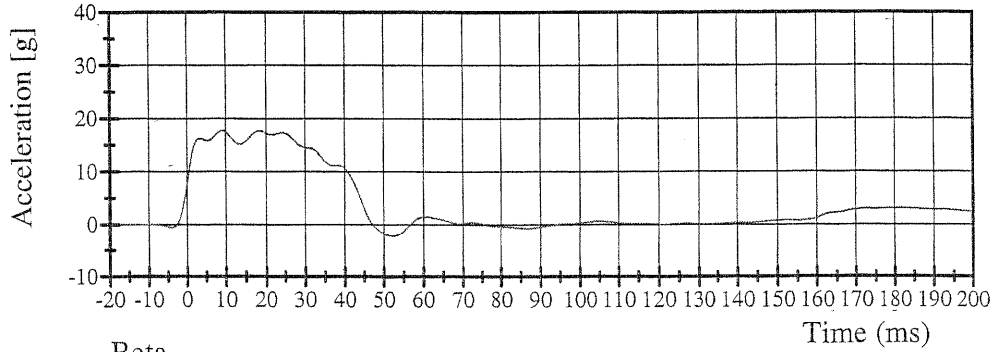
Transportation Research Center Inc.

572E Neck Extension Test

HIII 50th Male Serial No. 169 Calibration No. 16 - 1

Test Date 10/07/2002

Pendulum Deceleration

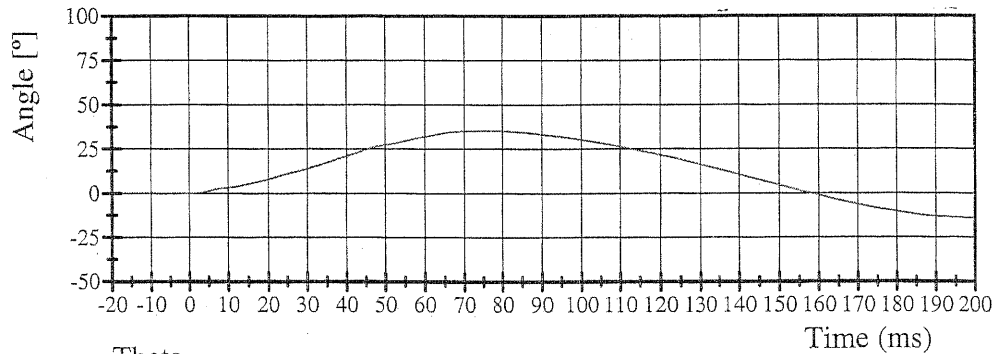


Filter Class: 60

Max: 17.7 g at 9.0 ms

Min: -2.3 g at 52.2 ms

Beta

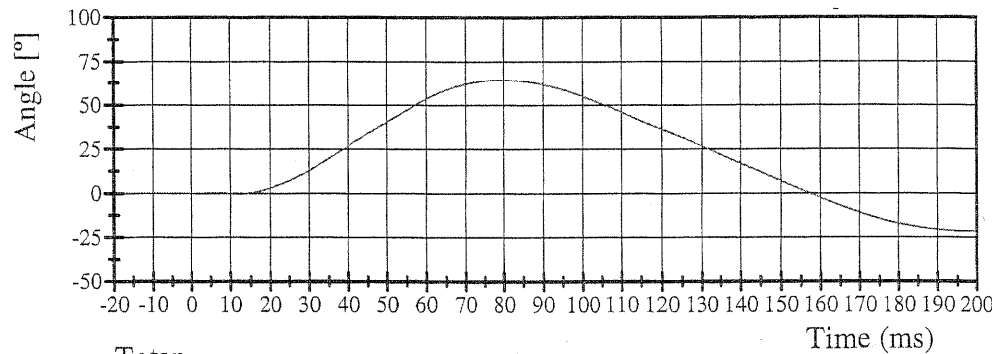


Filter Class: 60

Max: 35.3 ° at 77.0 ms

Min: -13.9 ° at 199.4 ms

Theta

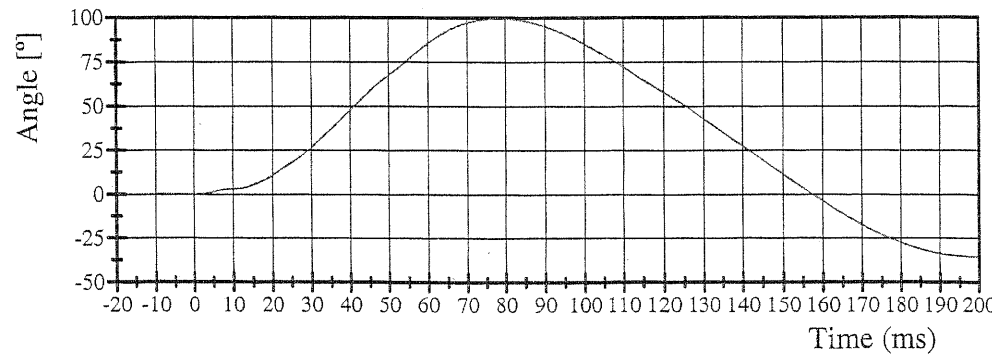


Filter Class: 60

Max: 64.5 ° at 78.8 ms

Min: -21.6 ° at 198.8 ms

Totan



Filter Class: 60

Max: 99.8 ° at 78.3 ms

Min: -35.4 ° at 199.1 ms

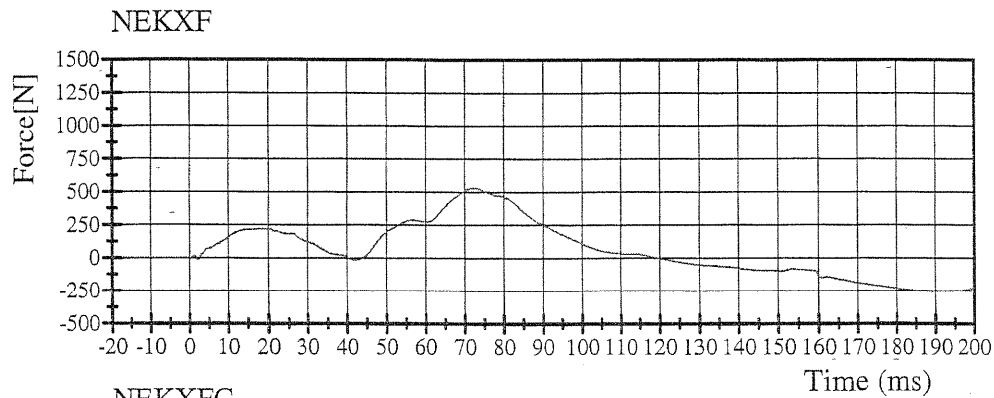


Transportation Research Center Inc.

572E Neck Extension Test

HIII 50th Male Serial No. 169 Calibration No. 16 - 1

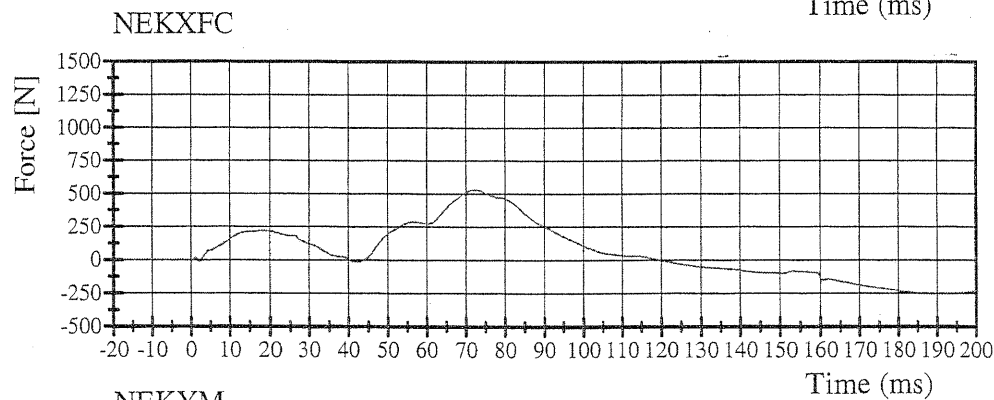
Test Date 10/07/2002



Filter Class: 1000

Max: 531.1 N at 72.2 ms

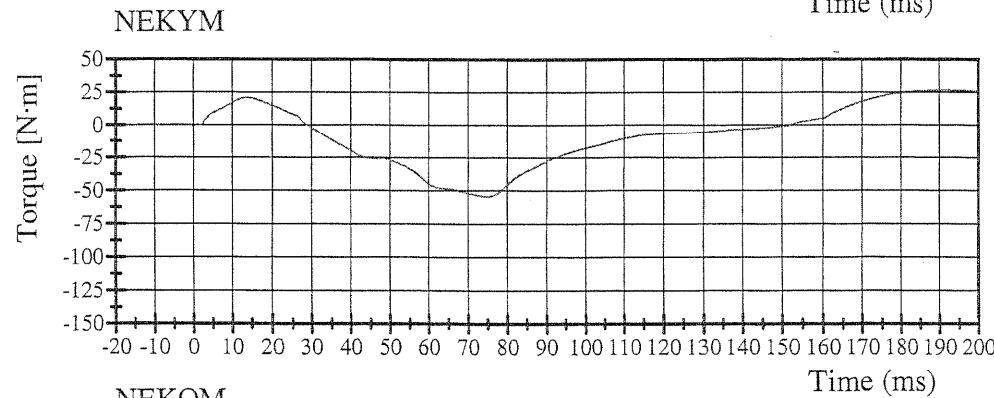
Min: -256.5 N at 189.9 ms



Filter Class: 600

Max: 530.5 N at 72.3 ms

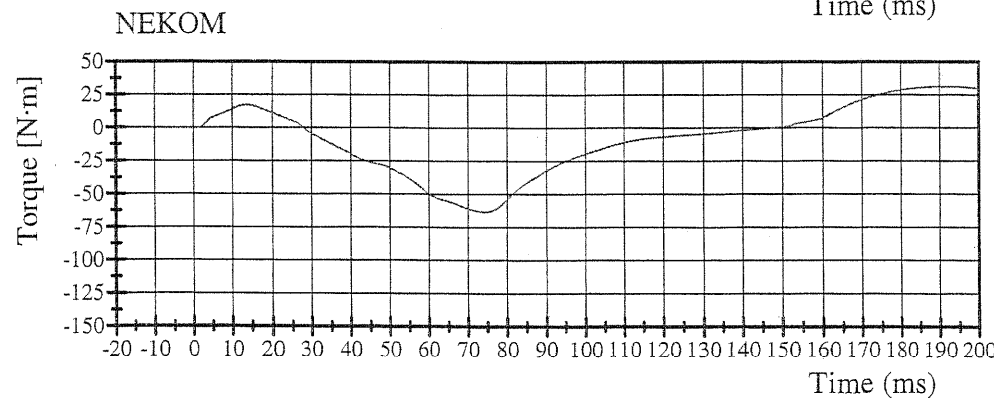
Min: -255.8 N at 190.0 ms



Filter Class: 600

Max: 26.8 N·m at 191.9 ms

Min: -54.4 N·m at 75.0 ms



Filter Class: 600

Max: 31.3 N·m at 191.2 ms

Min: -63.4 N·m at 74.6 ms



Transportation Research Center Inc.

572E Thorax Test

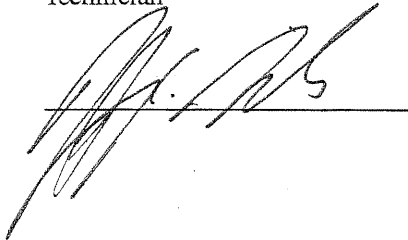
HIII 50th Male Serial No. 169 Calibration No. 16 - 1

Test Date 10/07/2002

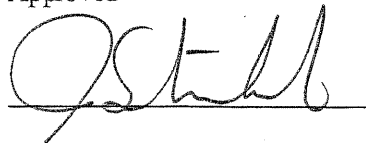
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
Pendulum Velocity	6.59 - 6.83 m/s	6.66 m/s	Yes
Maximum Chest Deflection	-72.6 - (-63.5) mm	-70.5 mm	Yes
Maximum Resistive Force	5159 - 5894 N	5646 N	Yes
Internal Hysteresis	69 - 85 %	71 %	Yes

Comments:

Technician



Approved



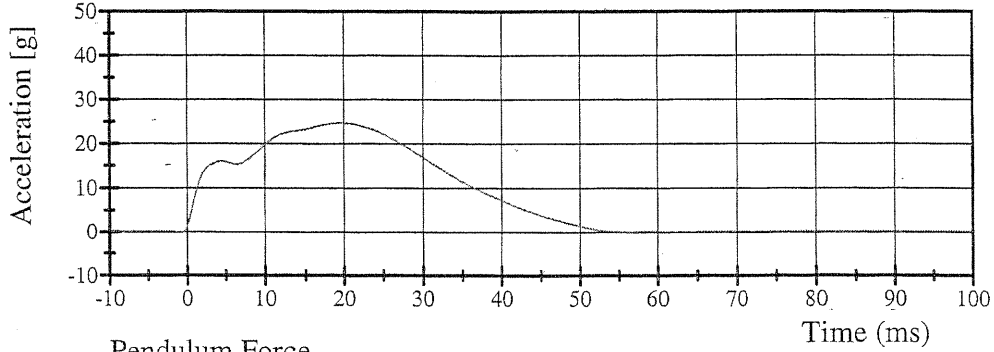
Transportation Research Center Inc.

572E Thorax Test

HIII 50th Male Serial No. 169 Calibration No. 16 - 1

Test Date 10/07/2002

Pendulum Deceleration

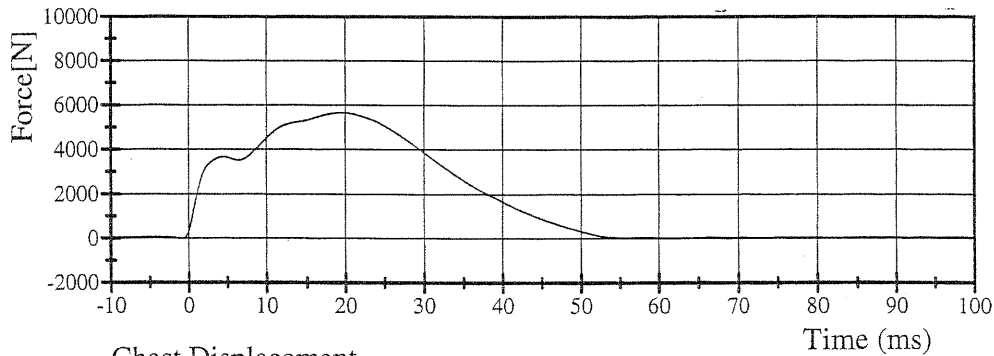


Filter Class: 180

Max: 24.6 g at 19.6 ms

Min: -0.1 g at -0.9 ms

Pendulum Force

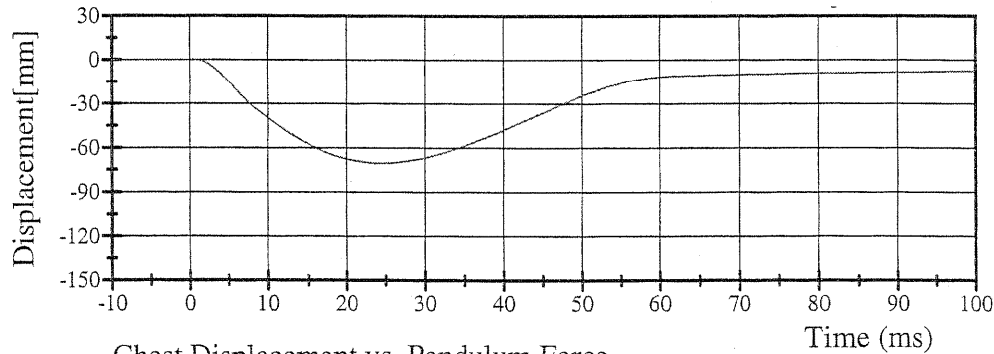


Filter Class: 180

Max: 5646.0 N at 19.6 ms

Min: -14.5 N at -0.9 ms

Chest Displacement

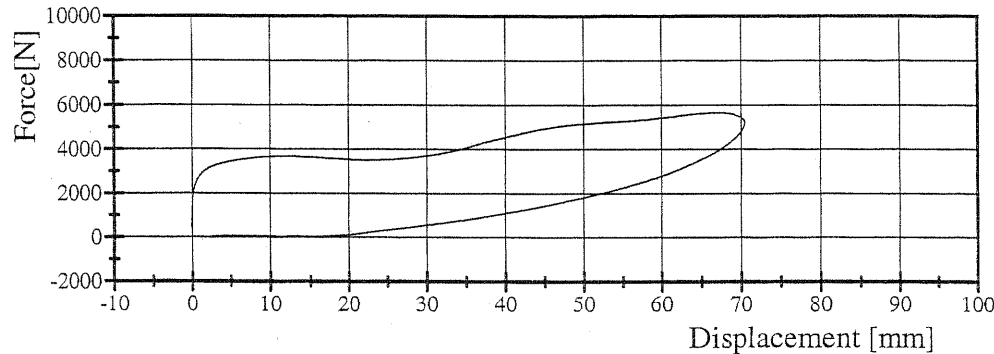


Filter Class: 180

Max: 0.1 mm at 0.3 ms

Min: -70.5 mm at 24.2 ms

Chest Displacement vs. Pendulum Force



Transportation Research Center Inc

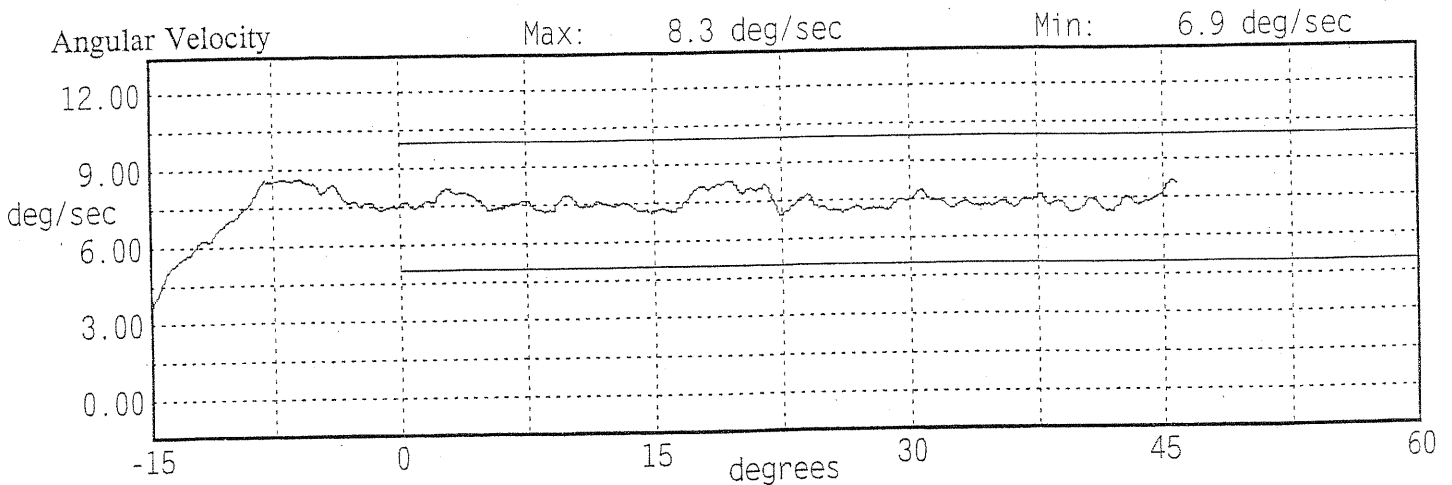
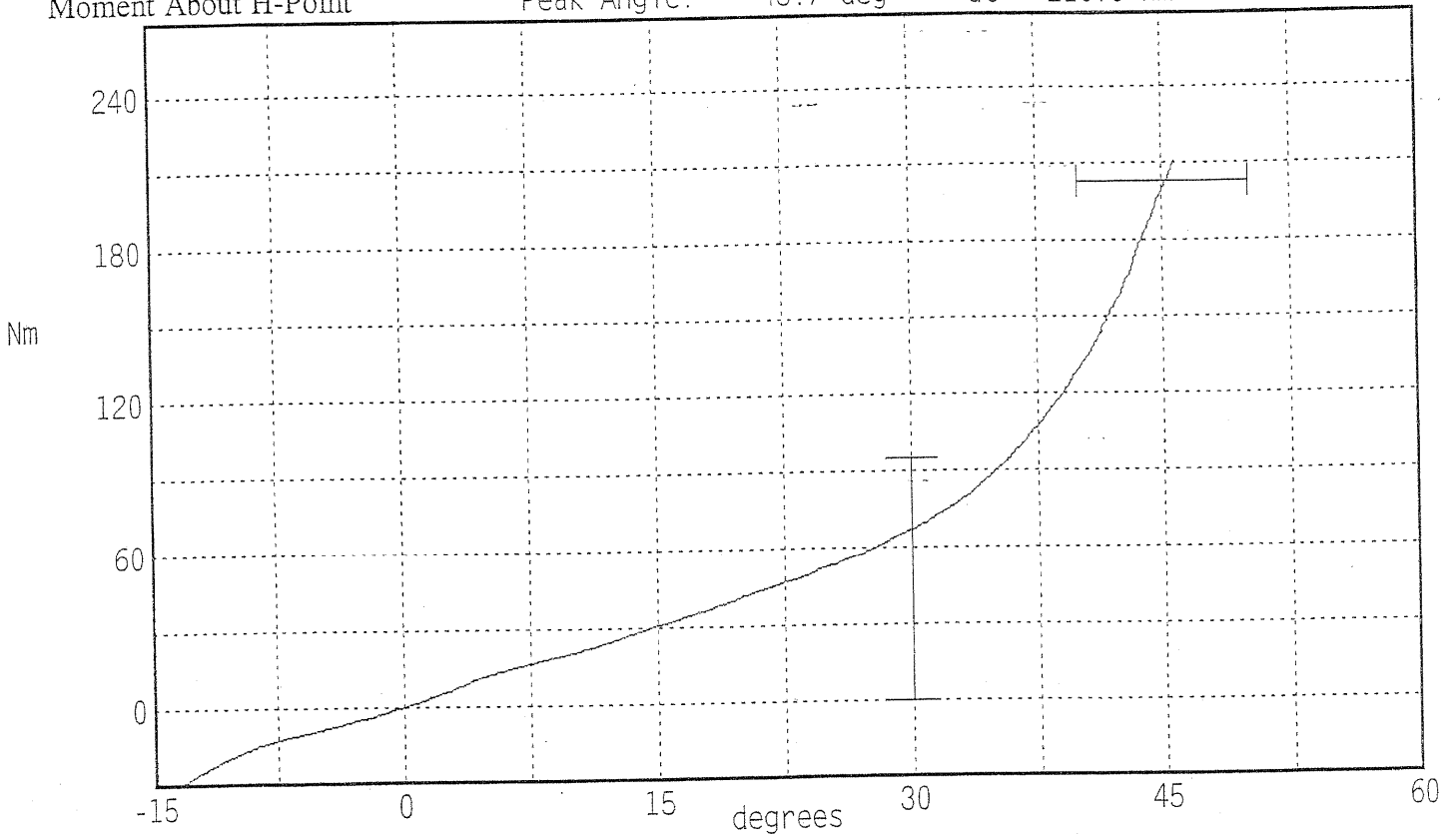
Hybrid III Hip Range of Motion

Serial Number: 169C16
 Test Number: 169L
 Comments:

Date: 10/07/2002
 Time: 09:55

TEST PARAMETER	SPECIFICATION	TEST RESULTS	
Temperature	18.9 - 25.6	21.7 °C	Pass
Humidity	10 - 70	37 %	Pass
Moment at 30 deg	<= 94.9	67.3 Nm	Pass
Angle at 203 Nm	40.0 - 50.0	45.3 deg	Pass
Average Velocity	5.0 - 10.0	7.5 deg/sec	Pass

Moment About H-Point
 Peak Moment: 210.5 Nm at 45.7 deg
 Peak Angle: 45.7 deg at 210.5 Nm



Transportation Research Center Inc

Hybrid III Hip Range of Motion

Serial Number: 169C16

Date: 10/07/2002

Test Number: 169R

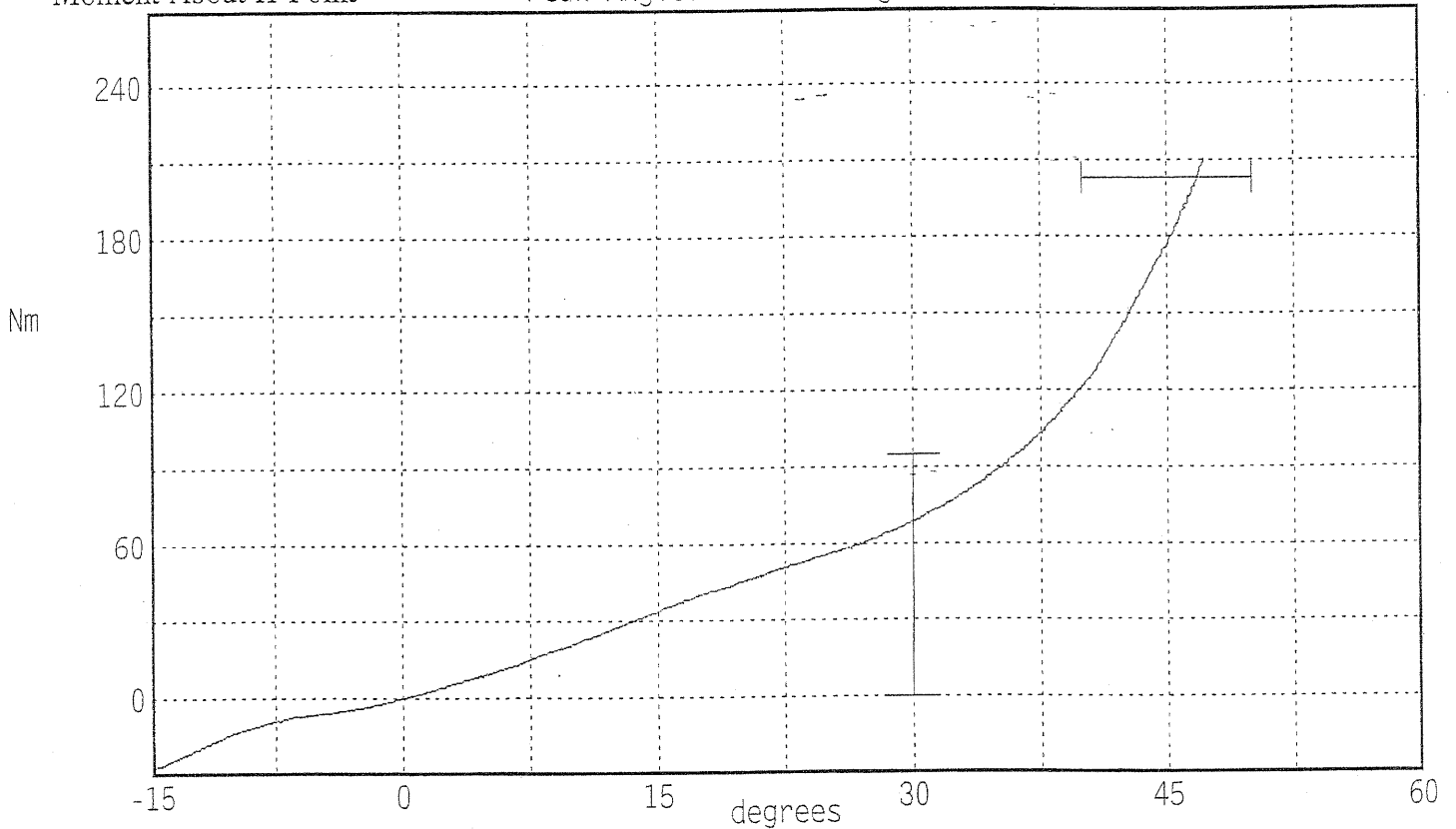
Time: 09:41

Comments:

TEST PARAMETER	SPECIFICATION	TEST RESULTS	
Temperature	18.9 - 25.6	21.7 °C	Pass
Humidity	10 - 70	37 %	Pass
Moment at 30 deg	<= 94.9	68.9 Nm	Pass
Angle at 203 Nm	40.0 - 50.0	46.7 deg	Pass
Average Velocity	5.0 - 10.0	7.5 deg/sec	Pass

Peak Moment: 210.5 Nm at 47.1 deg
 Peak Angle: 47.1 deg at 210.5 Nm

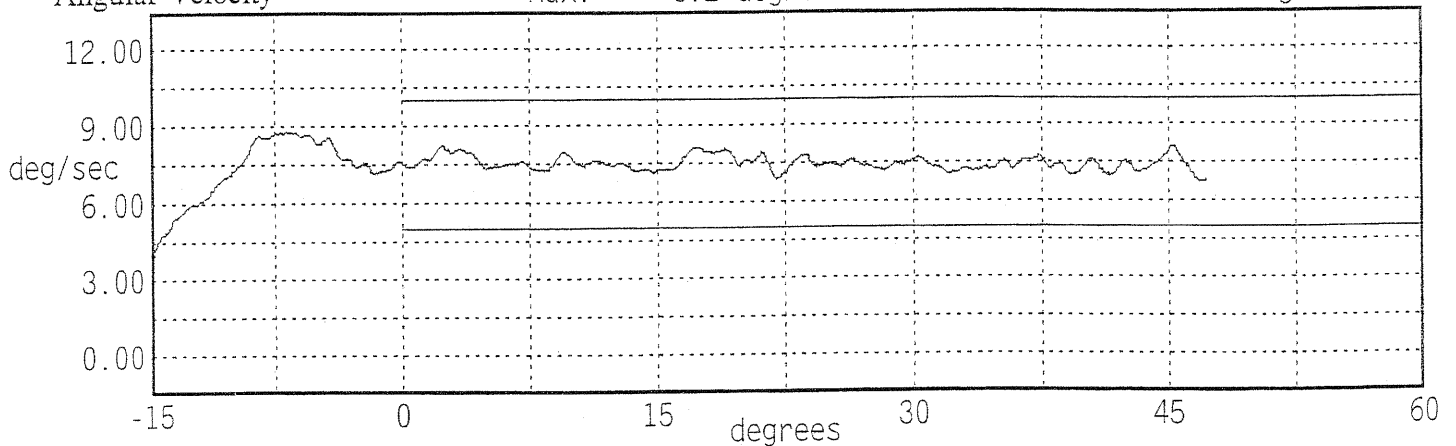
Moment About H-Point



Angular Velocity

Max: 8.2 deg/sec

Min: 6.7 deg/sec



Transportation Research Center Inc.

572E Left Knee Slider Test

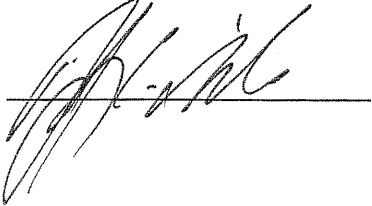
HIII 50th Male Serial No. 169 Calibration No. 16 - 1

Test Date 10/07/2002

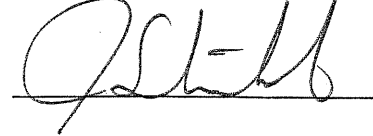
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
Pendulum Velocity	2.70 - 2.80 m/s	2.73 m/s	Yes
Force At 10 mm Displacement	-1259 - (-1721) N	-1314 N	Yes
Force At 18 mm Displacement	-2268 - (-3096) N	-3088 N	Yes

Comments:

Technician



Approved

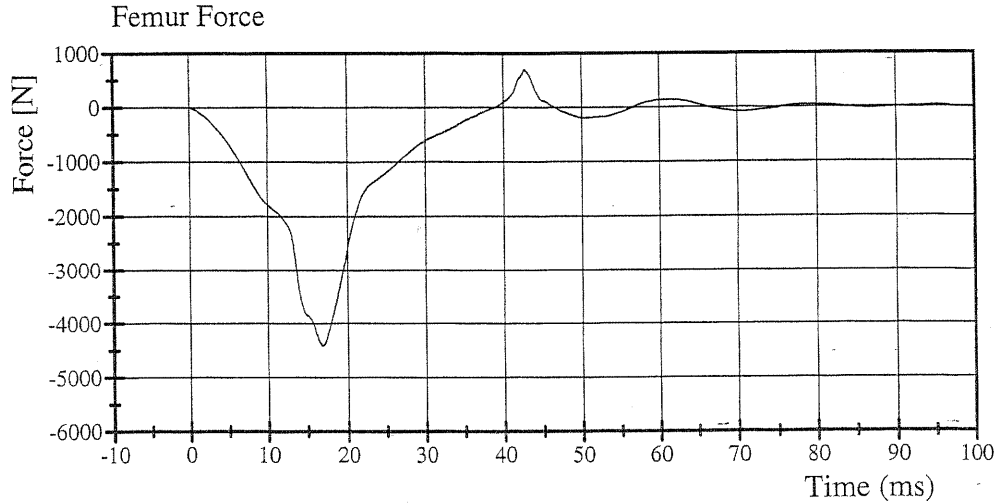


Transportation Research Center Inc.

572E Left Knee Slider Test

HIII 50th Male Serial No. 169 Calibration No. 16 - 1

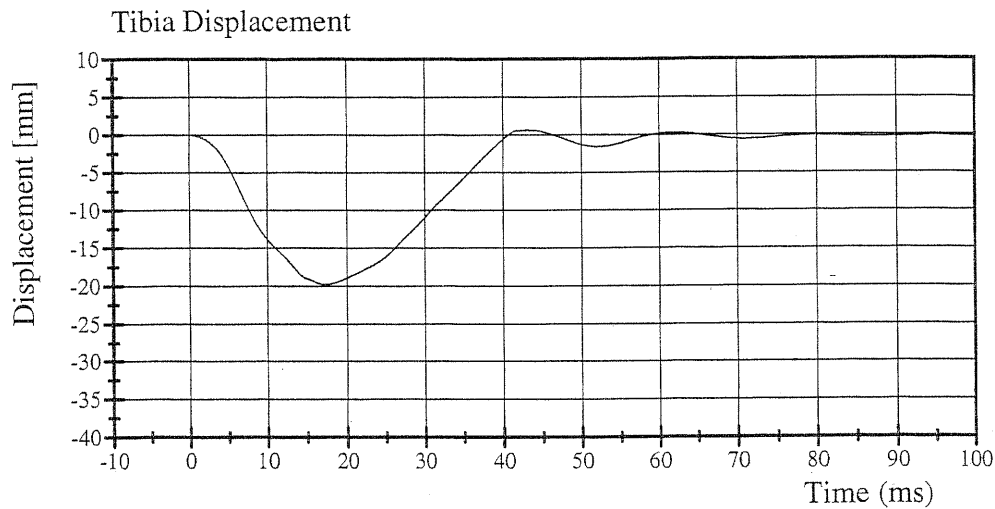
Test Date 10/07/2002



Filter Class: 600

Max: 696.1 N at 42.7 ms

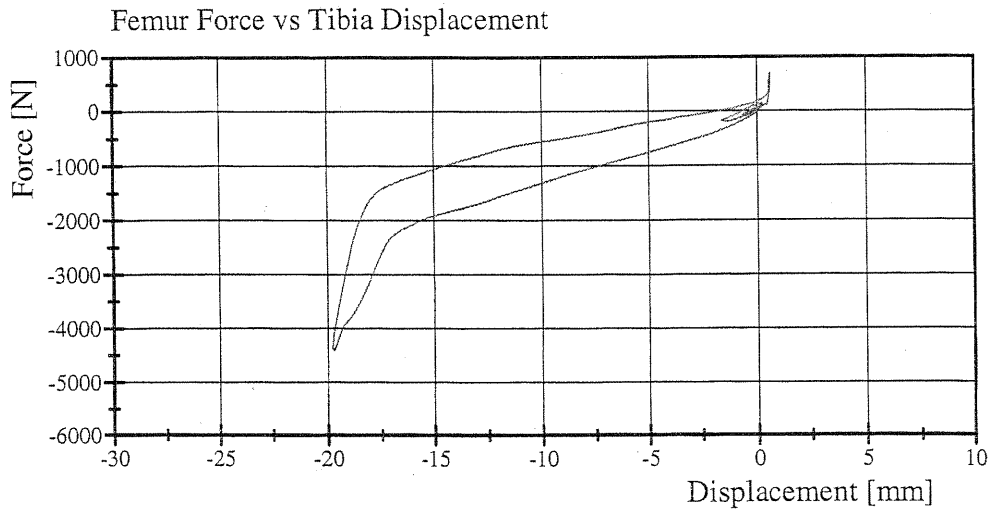
Min: -4410.2 N at 17.0 ms



Filter Class: 600

Max: 0.6 mm at 43.1 ms

Min: -19.8 mm at 17.2 ms



Transportation Research Center Inc.

572E Right Knee Slider Test

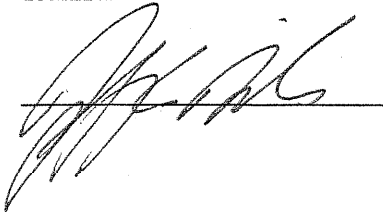
HIII 50th Male Serial No. 169 Calibration No. 16 - 1

Test Date 10/07/2002

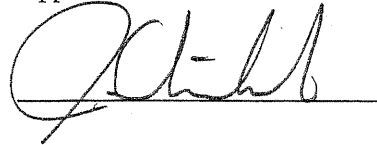
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
Pendulum Velocity	2.70 - 2.80 m/s	2.73 m/s	Yes
Force At 10 mm Displacement	-1259 - (-1721) N	-1364 N	Yes
Force At 18 mm Displacement	-2268 - (-3096) N	-2445 N	Yes

Comments:

Technician



Approved

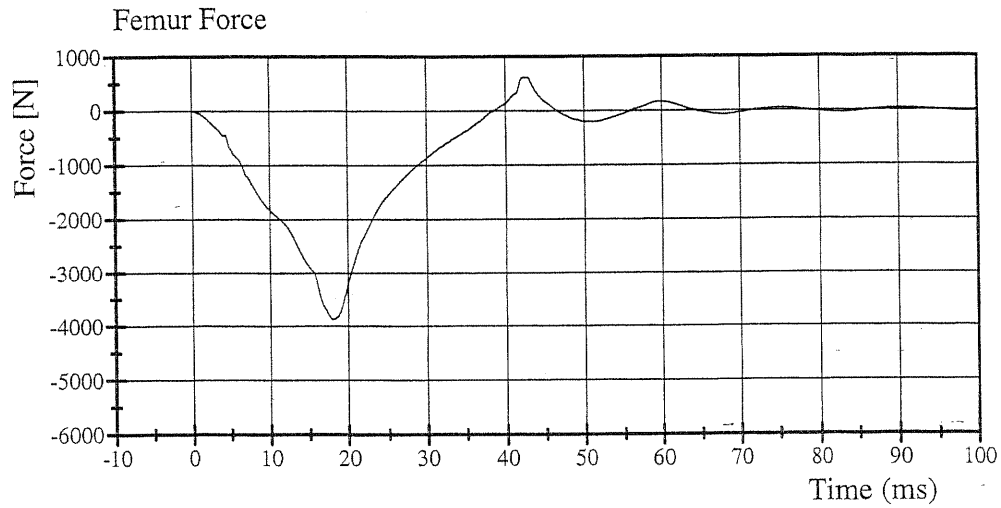


Transportation Research Center Inc.

572E Right Knee Slider Test

HIII 50th Male Serial No. 169 Calibration No. 16 - 1

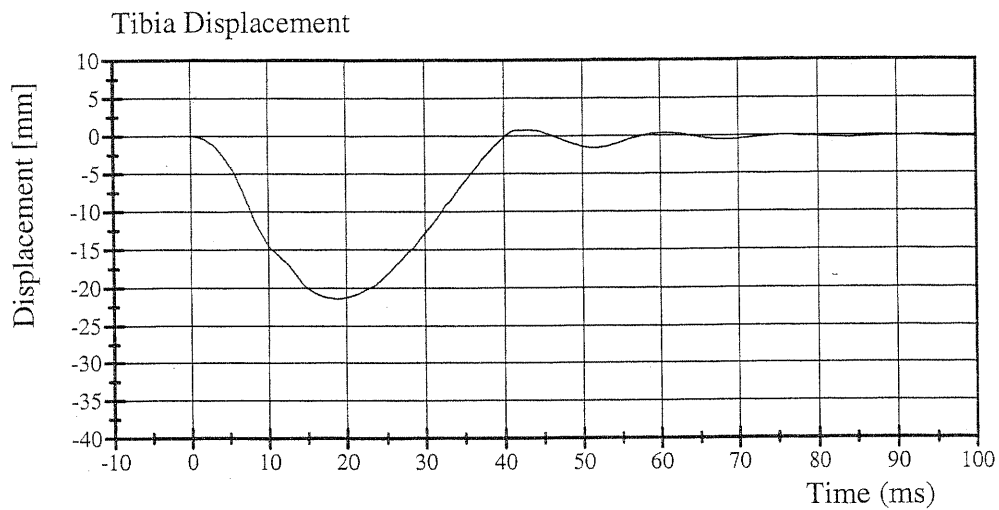
Test Date 10/07/2002



Filter Class: 600

Max: 617.4 N at 42.3 ms

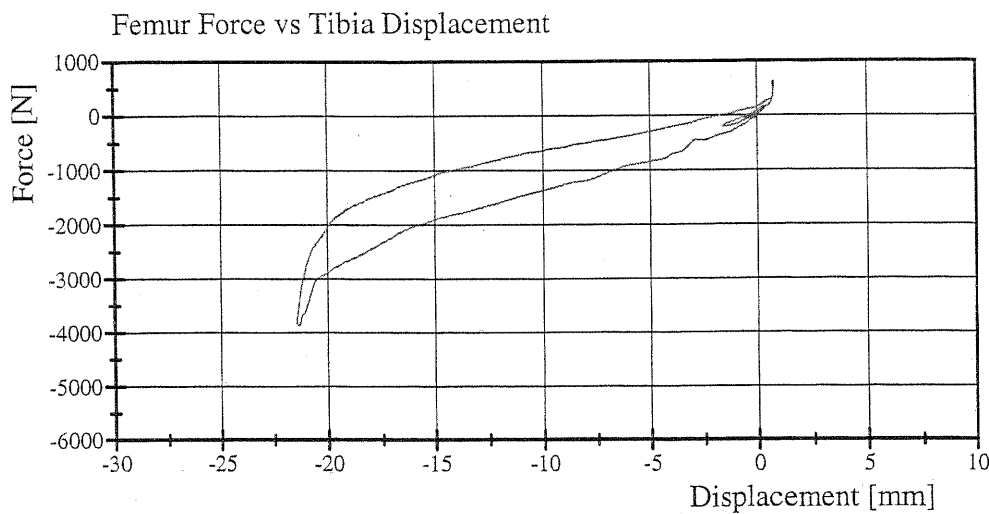
Min: -3870.3 N at 18.0 ms



Filter Class: 600

Max: 0.8 mm at 42.7 ms

Min: -21.5 mm at 18.7 ms



Transportation Research Center Inc.

572E Left Knee Test

HIII 50th Male Serial No. 169 Calibration No. 16 - 1

Test Date 10/07/2002

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
Pendulum Velocity	2.08 - 2.13 m/s	2.08 m/s	Yes
Maximum Pendulum Force	4716 - 5782 N	5386 N	Yes

Comments:

Technician



Approved



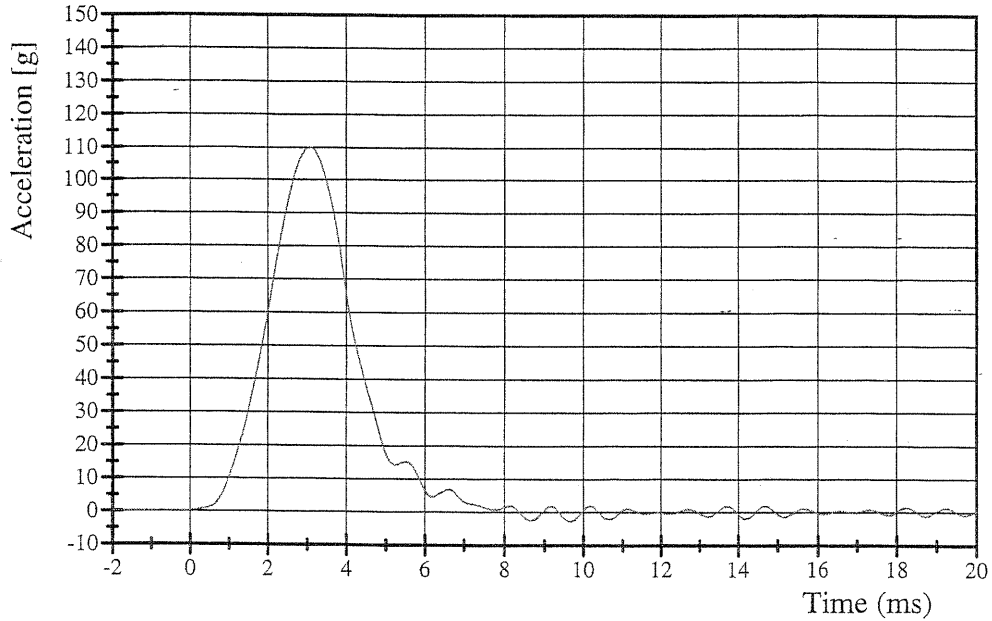
Transportation Research Center Inc.

572E Left Knee Test

HIII 50th Male Serial No. 169 Calibration No. 16 - 1

Test Date 10/07/2002

Pendulum Deceleration

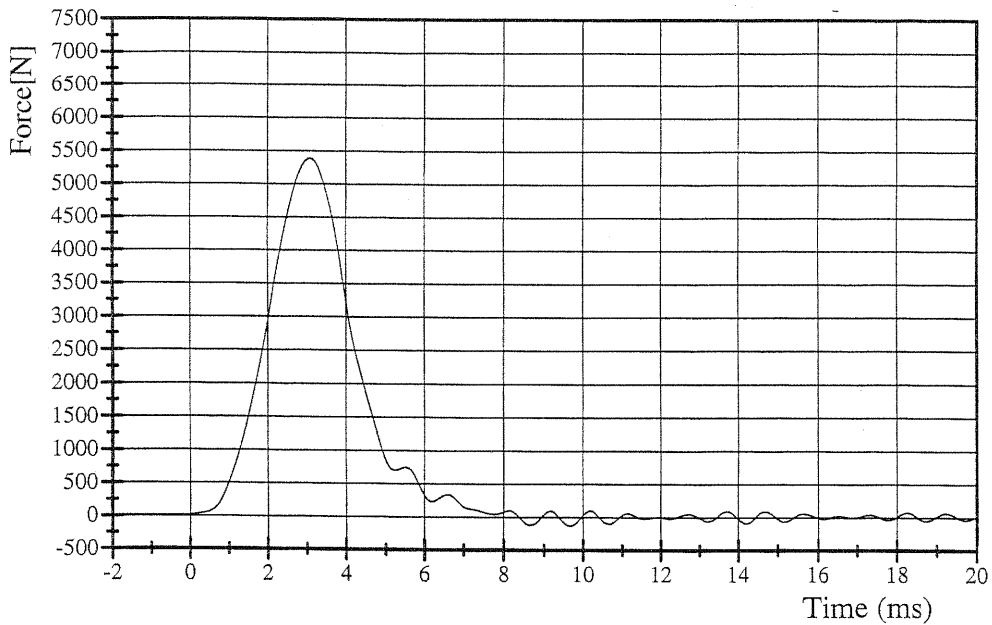


Filter Class: 600

Max: 110.1 g at 3.0 ms

Min: -2.7 g at 9.7 ms

Pendulum Force



Filter Class: 600

Max: 5386.4 N at 3.0 ms

Min: -133.9 N at 9.7 ms



Transportation Research Center Inc.

572E Right Knee Test

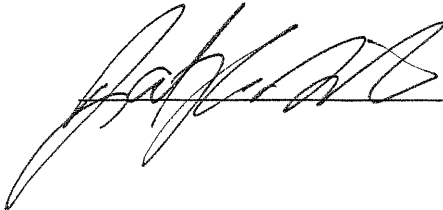
HIII 50th Male Serial No. 169 Calibration No. 16 - 1

Test Date 10/07/2002

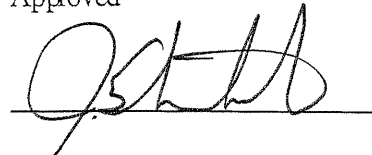
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
Pendulum Velocity	2.08 - 2.13 m/s	2.09 m/s	Yes
Maximum Pendulum Force	4716 - 5782 N	5527 N	Yes

Comments:

Technician



Approved



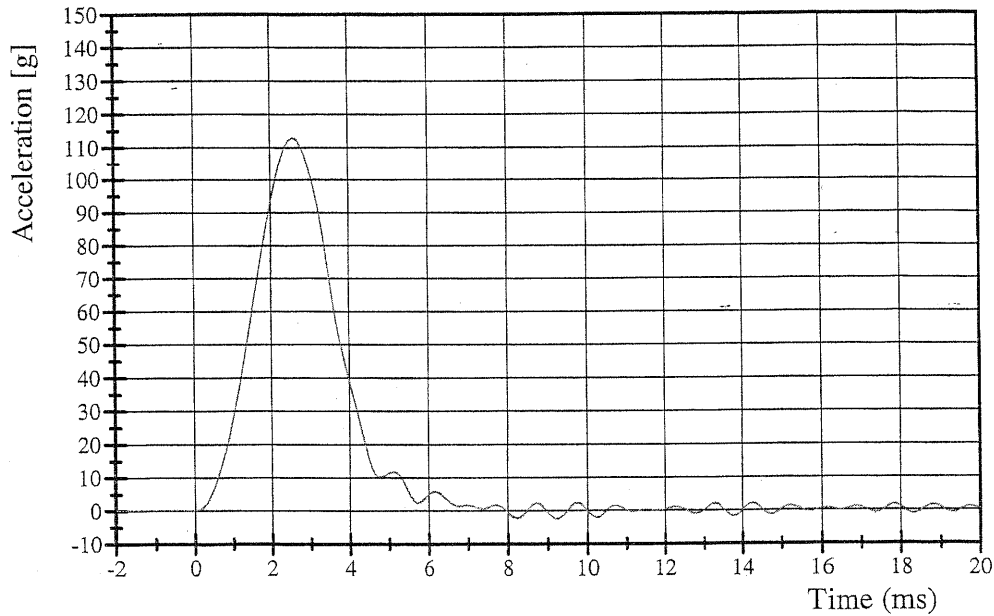
Transportation Research Center Inc.

572E Right Knee Test

HIII 50th Male Serial No. 169 Calibration No. 16 - 1

Test Date 10/07/2002

Pendulum Deceleration

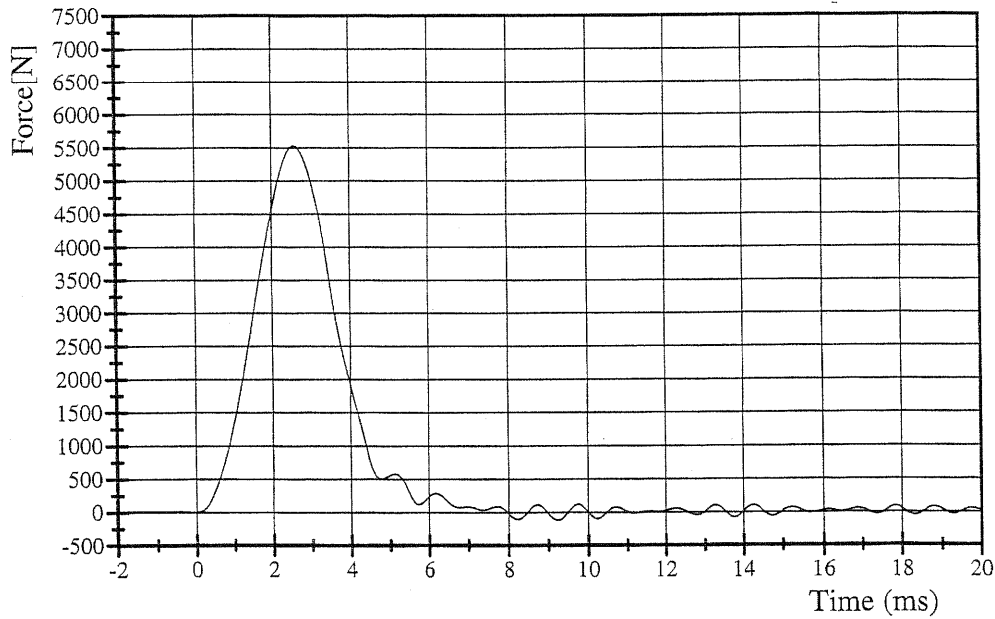


Filter Class: 600

Max: 113.0 g at 2.6 ms

Min: -2.4 g at 9.2 ms

Pendulum Force



Filter Class: 600

Max: 5527.3 N at 2.6 ms

Min: -119.8 N at 9.2 ms



Post-Test Dummy Configuration and Performance Verification Data

Bullet Vehicle Driver Dummy S/N: 169

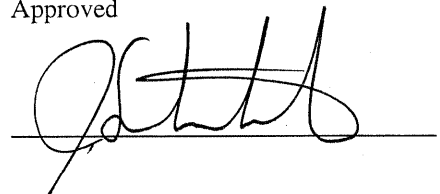
Transportation Research Center Inc.
572E HIII 50th Dummy
External Dimensions
Serial No. 169 Calibration No. 17

Test Parameter	Dimension	Specification	Results	Pass
Location For Chest Circumference	AA	429 - 434 mm	432 mm	Yes
Location For Waist Circumference	BB	226 - 231 mm	229 mm	Yes
Chest Circumference	Y	970 - 1001 mm	991 mm	Yes
Waist Circumference	Z	836 - 866 mm	857 mm	Yes
Chest Depth	O	213 - 229 mm	222 mm	Yes
H-Point Height	C	84 - 89 mm	88 mm	Yes
H-Point From Seatback	D	135 - 140 mm	137 mm	Yes
Skull Cap To Backline	H	41 - 46 mm	43 mm	Yes
Total Sitting Height	A	879 - 889 mm	882 mm	Yes
Thigh Clearance	F	140 - 155 mm	150 mm	Yes
Buttock Knee Length	K	579 - 605 mm	593 mm	Yes
Buttock Popliteal Length	N	452 - 478 mm	476 mm	Yes
Popliteal Height	L	429 - 455 mm	441 mm	Yes
Knee Pivot Height	M	485 - 500 mm	492 mm	Yes
Foot Length	P	252 - 267 mm	252 mm	Yes
Foot Breadth	W	91 - 107 mm	102 mm	Yes
Shoulder Pivot From Backline	E	84 - 94 mm	93 mm	Yes
Shoulder Breadth	V	422 - 437 mm	428 mm	Yes
Shoulder Pivot Height	B	506 - 521 mm	517 mm	Yes
Elbow Rest Height	J	191 - 211 mm	207 mm	Yes
Shoulder-Elbow Length	I	330 - 345 mm	343 mm	Yes
Back Of Elbow To Wrist Pivot	G	290 - 305 mm	295 mm	Yes

Technician



Approved




Transportation Research Center Inc.

572E Head Drop Test

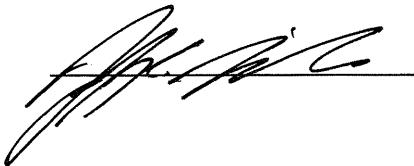
HIII 50th Male Serial No. 169 Calibration No. 17 - 1

Test Date 01/10/2003

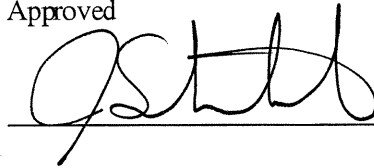
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	22 %	Yes
Peak Resultant Acceleration	225 - 275 g	263.2 g	Yes
Peak Lateral Acceleration	15 g Max	5.7 g	Yes
Is Acceleration Curve Unimodal?	Yes	Yes	Yes

Comments:

Technician



Approved

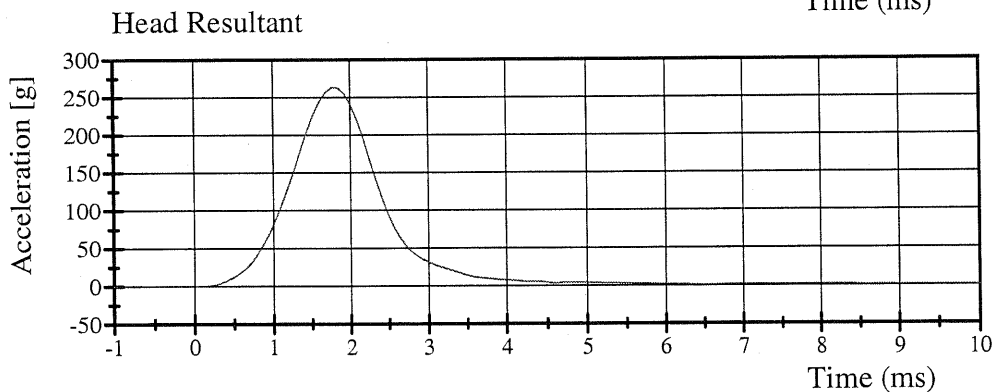
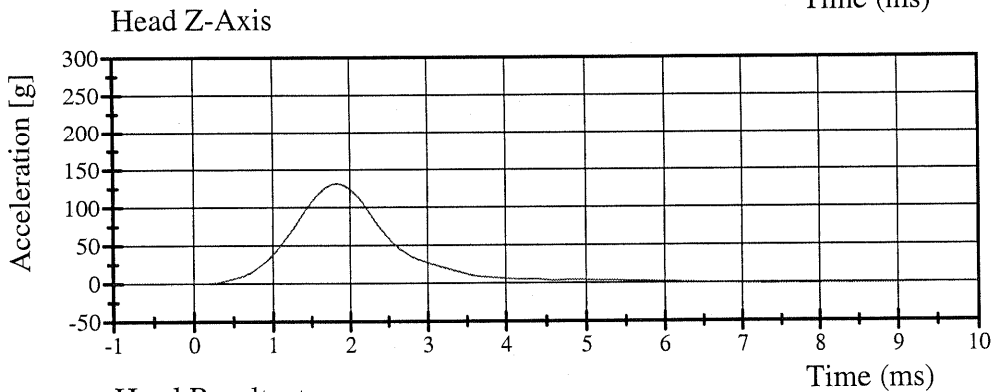
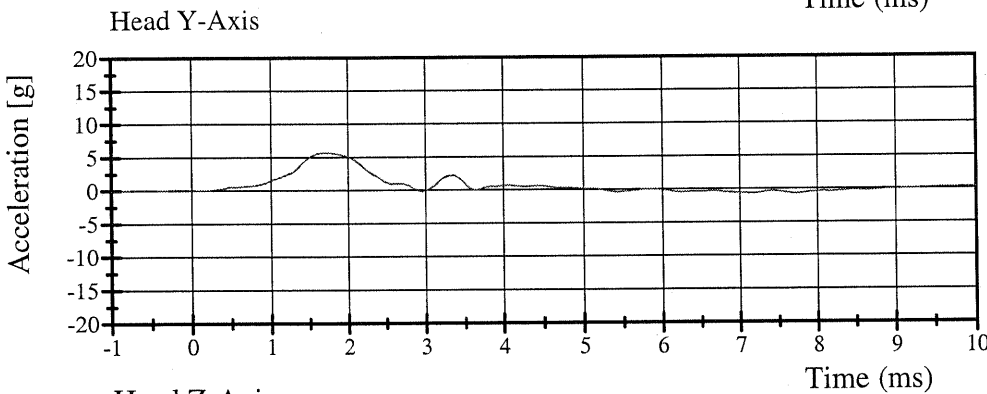
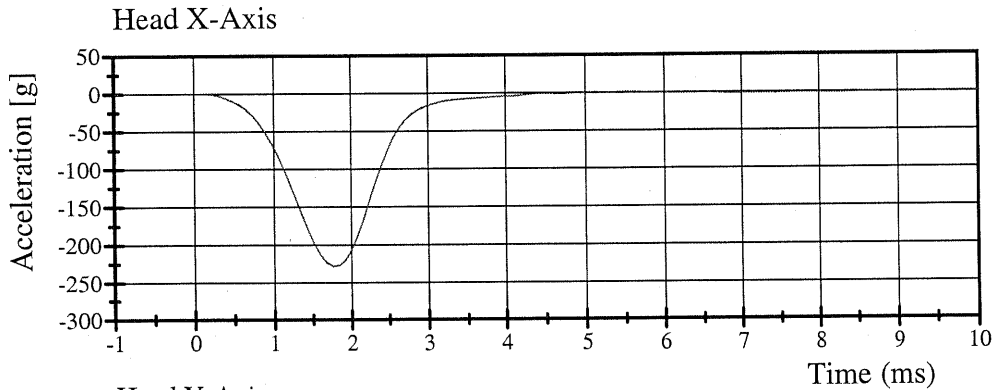


Transportation Research Center Inc.

572E Head Drop Test

HIII 50th Male Serial No. 169 Calibration No. 17 - 1

Test Date 01/10/2003



Transportation Research Center Inc.

572E Neck Flexion Test - 6 Channel Transducer

HIII 50th Male Serial No. 169 Calibration No. 17 - 2

Test Date 01/13/2003

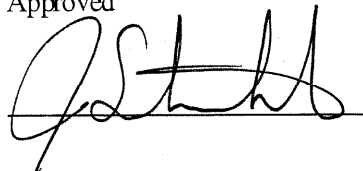
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	19 %	Yes
Impact Velocity	6.89 - 7.13 m/s	6.97 m/s	Yes
Pendulum Deceleration			
10 ms	22.50 - 27.50 g	23.92 g	Yes
20 ms	17.60 - 22.60 g	21.55 g	Yes
30 ms	12.50 - 18.50 g	14.59 g	Yes
Max Pendulum Deceleration	29.00 g	24.46 g	Yes
Max Pendulum Deceleration After 30 ms	29.00 g	14.55 g	Yes
Deceleration-Time Curve			
Decay Time To 5g	34 - 42 ms	40.08 ms	Yes
D Plane Rotation			
Max	64 - 78 °	73.96 °	Yes
Time	57 - 64 ms	60.08 ms	Yes
Moment About Occipital Condyle			
Max	88.2 - 108.4 N·m	98.00 N·m	Yes
Time	47 - 58 ms	53.12 ms	Yes
Rotation Angle-Time Curve			
Decay Time To Zero	113 - 128 ms	116.00 ms	Yes
Positive Moment-Time Curve			
Decay Time To Zero	97 - 107 ms	102.00 ms	Yes

Comments:

Technician



Approved



01.13.2003 11:38:53 470



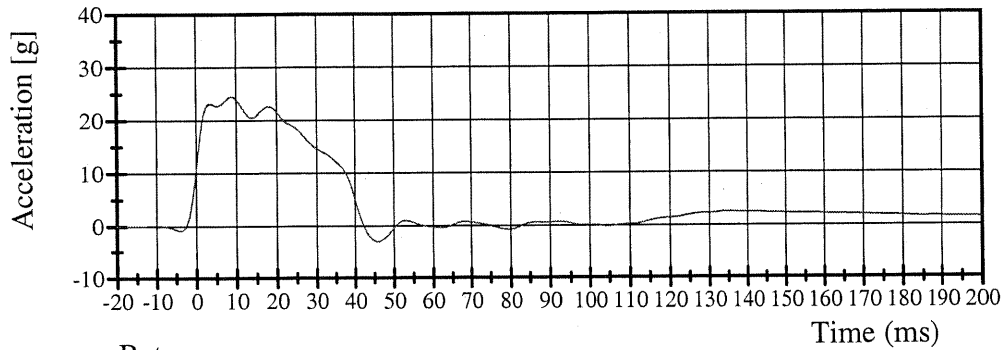
Transportation Research Center Inc.

572E Neck Flexion Test

HIII 50th Male Serial No. 169 Calibration No. 17 - 2

Test Date 01/13/2003

Pendulum Deceleration

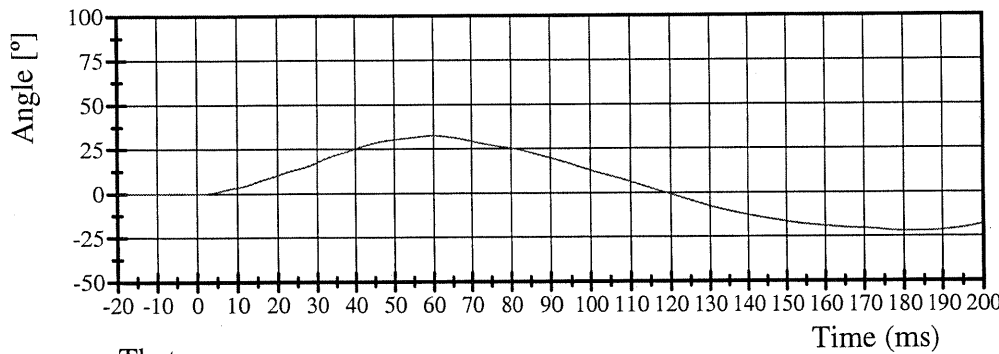


Filter Class: 60

Max: 24.5 g at 8.8 ms

Min: -2.9 g at 45.9 ms

Beta

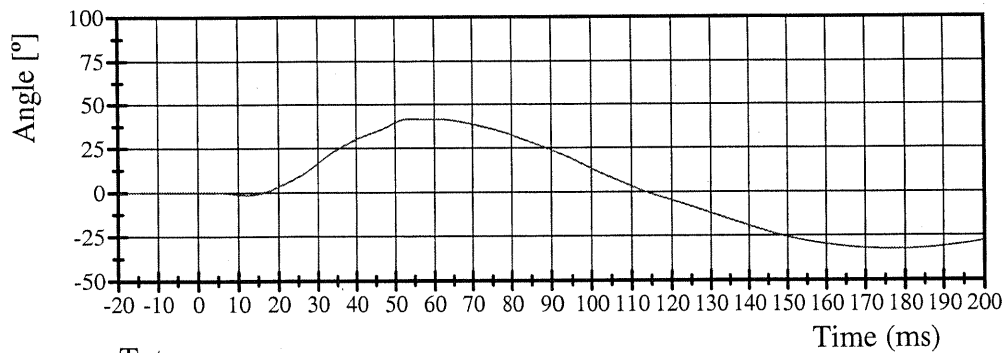


Filter Class: 60

Max: 32.6 ° at 60.0 ms

Min: -22.1 ° at 183.8 ms

Theta

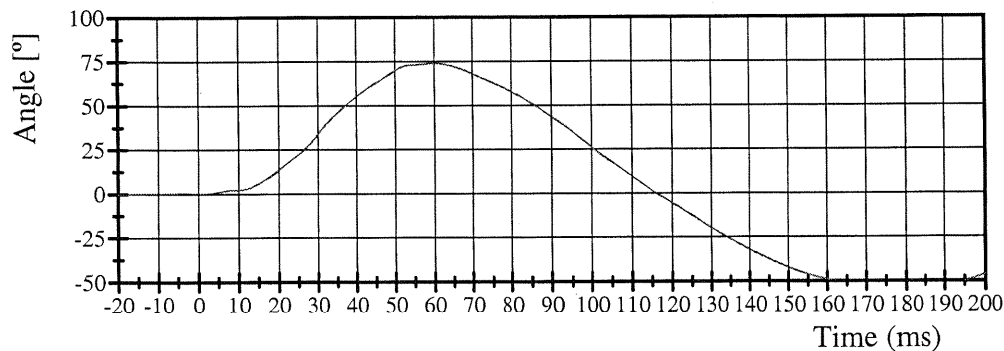


Filter Class: 60

Max: 41.7 ° at 53.9 ms

Min: -32.6 ° at 178.1 ms

Totan



Filter Class: 60

Max: 74.0 ° at 60.1 ms

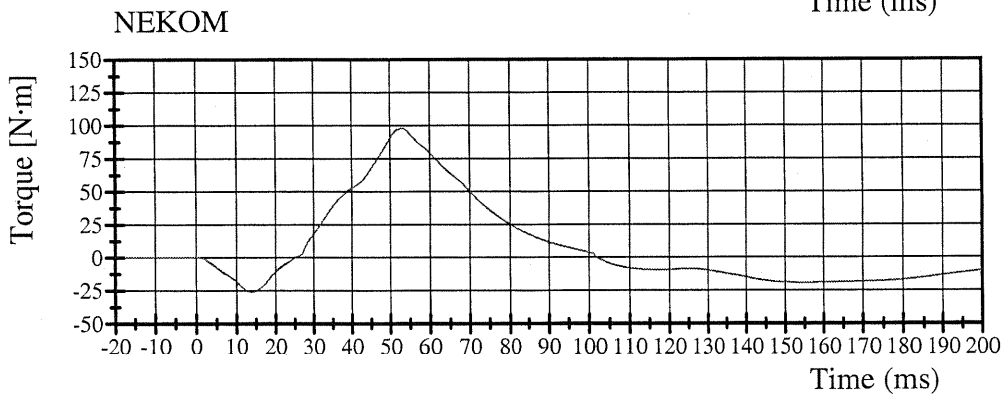
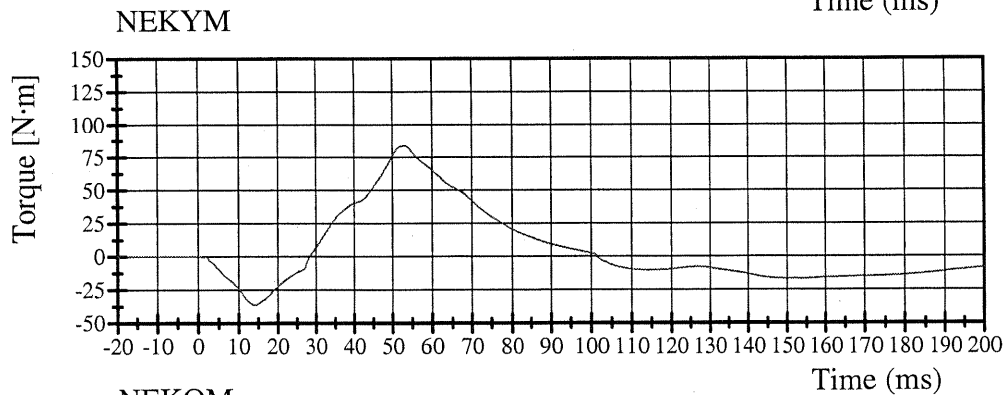
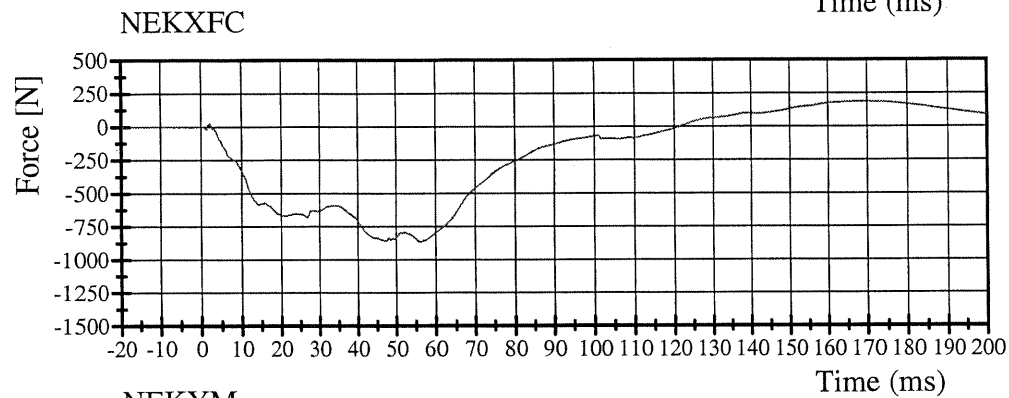
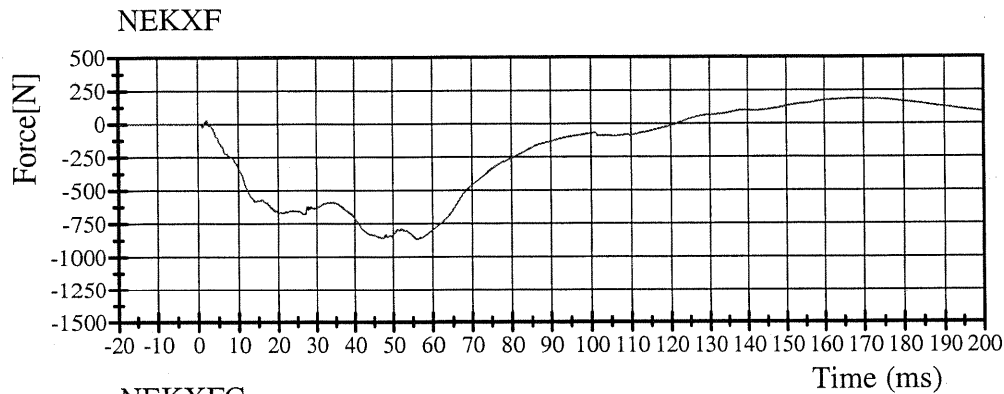
Min: -54.6 ° at 179.9 ms

Transportation Research Center Inc.

572E Neck Flexion Test

HIII 50th Male Serial No. 169 Calibration No. 17 - 2

Test Date 01/13/2003



Transportation Research Center Inc.

572E Neck Extension Test - 6 Channel Transducer

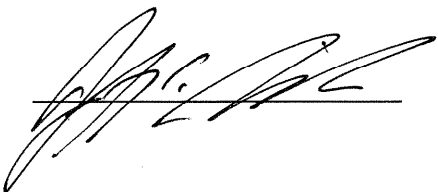
HIII 50th Male Serial No. 169 Calibration No. 17 - 1

Test Date 01/13/2003

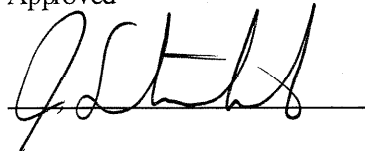
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	18 %	Yes
Impact Velocity	5.95 - 6.19 m/s	6.11 m/s	Yes
Pendulum Deceleration			
10 ms	17.20 - 21.20 g	18.55 g	Yes
20 ms	14.00 - 19.00 g	17.13 g	Yes
30 ms	11.00 - 16.00 g	14.23 g	Yes
Max Pendulum Deceleration	22.00 g	19.14 g	Yes
Max Pendulum Deceleration After 30 ms	22.00 g	14.16 g	Yes
Deceleration-Time Curve			
Decay Time To 5g	38 - 46 ms	43.20 ms	Yes
D Plane Rotation			
Max	81 - 106 °	100.58 °	Yes
Time	72 - 82 ms	77.20 ms	Yes
Moment About Occipital Condyle			
Min	-80.0 - (-52.9) N·m	-67.86 N·m	Yes
Time	65 - 79 ms	71.12 ms	Yes
Rotation Angle-Time Curve			
Decay Time To Zero	147 - 174 ms	153.76 ms	Yes
Positive Moment-Time Curve			
Decay Time To Zero	120 - 148 ms	144.80 ms	Yes

Comments:

Technician



Approved



01.13.2003 12:54:47 543



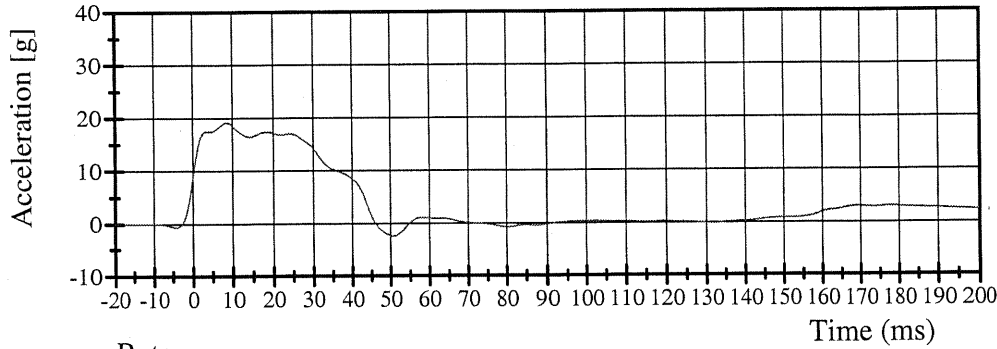
Transportation Research Center Inc.

572E Neck Extension Test

HIII 50th Male Serial No. 169 Calibration No. 17 - 1

Test Date 01/13/2003

Pendulum Deceleration

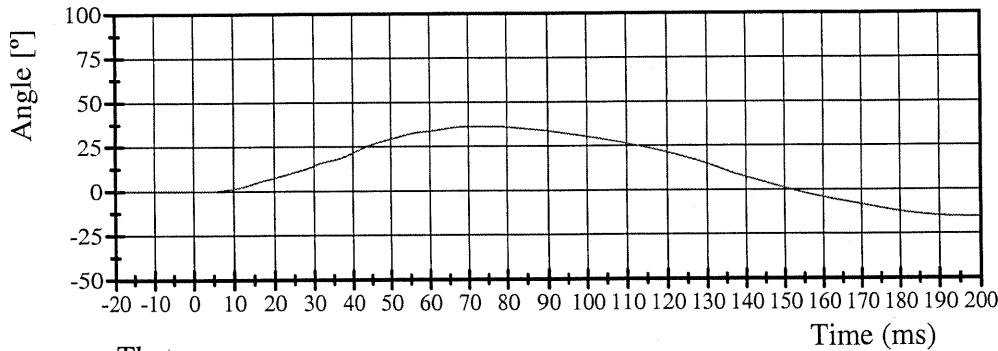


Filter Class: 60

Max: 19.1 g at 8.6 ms

Min: -2.3 g at 50.7 ms

Beta

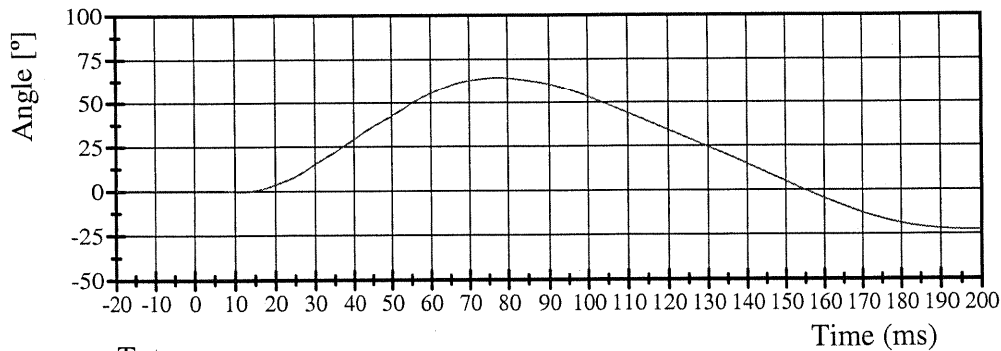


Filter Class: 60

Max: 36.2 ° at 76.3 ms

Min: -15.4 ° at 197.8 ms

Theta

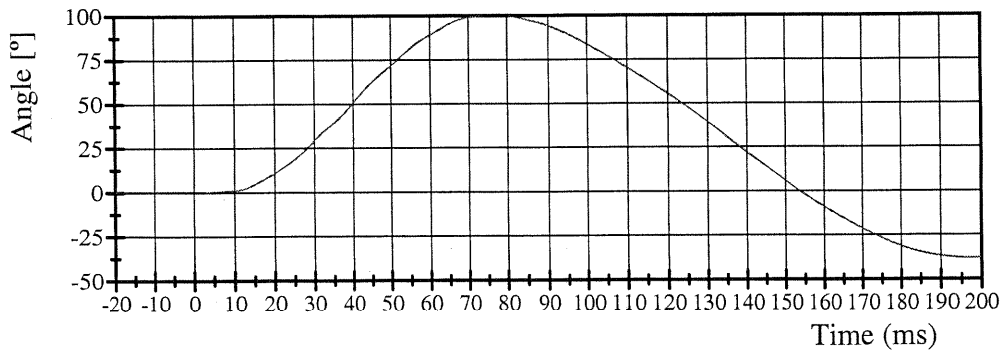


Filter Class: 60

Max: 64.4 ° at 77.6 ms

Min: -22.6 ° at 197.4 ms

Totan



Filter Class: 60

Max: 100.6 ° at 77.2 ms

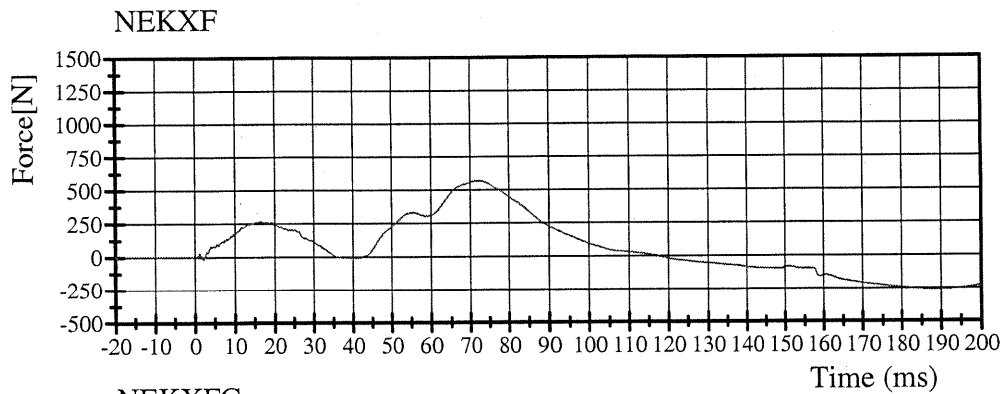
Min: -38.0 ° at 197.5 ms

Transportation Research Center Inc.

572E Neck Extension Test

HIII 50th Male Serial No. 169 Calibration No. 17 - 1

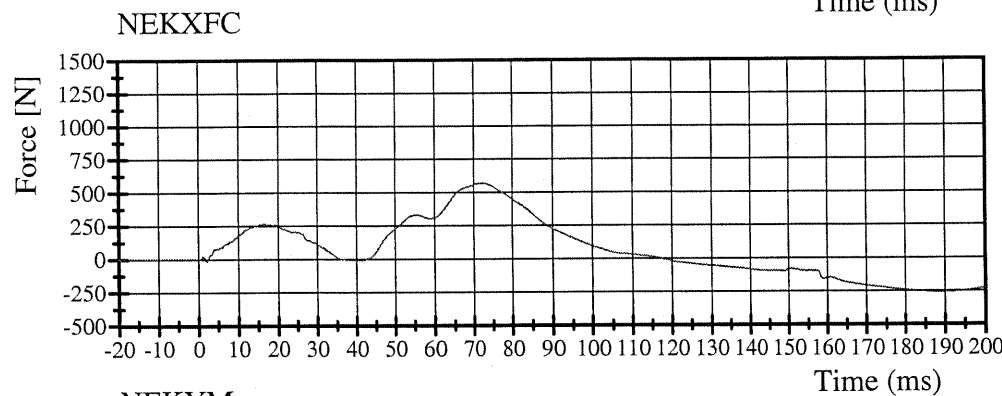
Test Date 01/13/2003



Filter Class: 1000

Max: 569.2 N at 72.4 ms

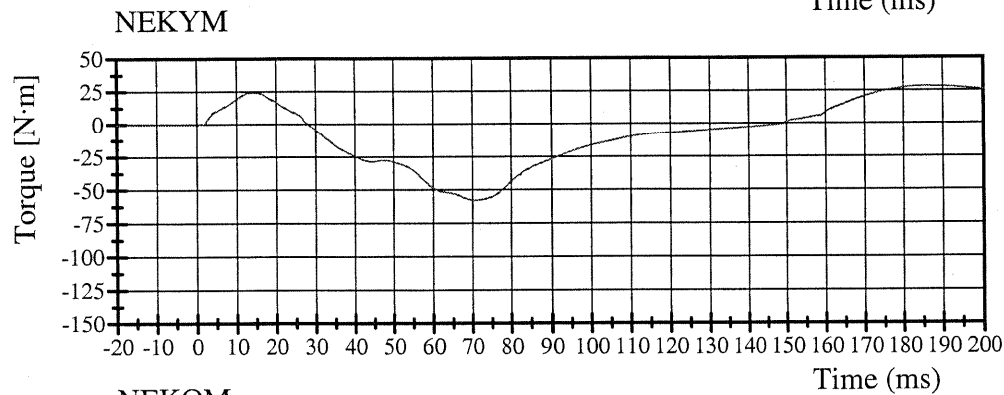
Min: -259.7 N at 188.9 ms



Filter Class: 600

Max: 568.8 N at 72.5 ms

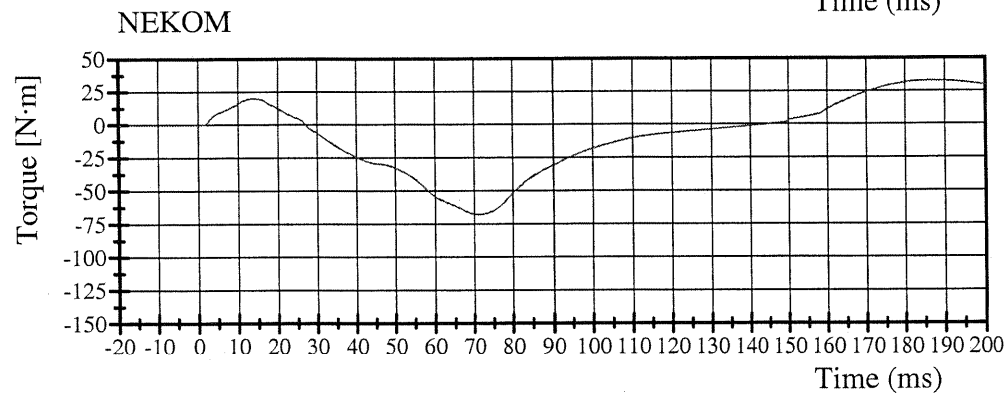
Min: -259.3 N at 188.8 ms



Filter Class: 600

Max: 28.2 N·m at 185.2 ms

Min: -57.9 N·m at 70.8 ms



Filter Class: 600

Max: 32.7 N·m at 185.8 ms

Min: -67.9 N·m at 71.1 ms

Transportation Research Center Inc.

572E Thorax Test

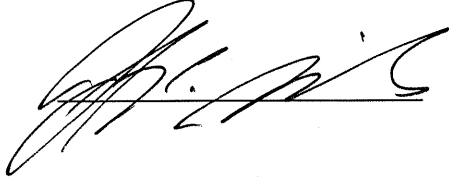
HIII 50th Male Serial No. 169 Calibration No. 17 - 1

Test Date 01/13/2003

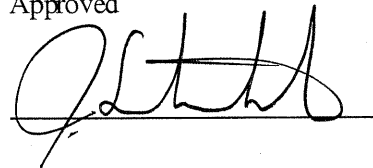
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	18 %	Yes
Pendulum Velocity	6.59 - 6.83 m/s	6.68 m/s	Yes
Maximum Chest Deflection	-72.6 - (-63.5) mm	-67.5 mm	Yes
Maximum Resistive Force	5159 - 5894 N	5658 N	Yes
Internal Hysteresis	69 - 85 %	73 %	Yes

Comments:

Technician



Approved



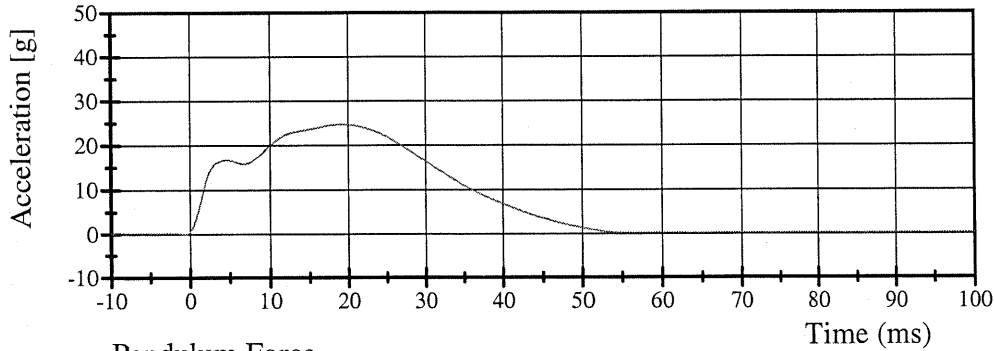
Transportation Research Center Inc.

572E Thorax Test

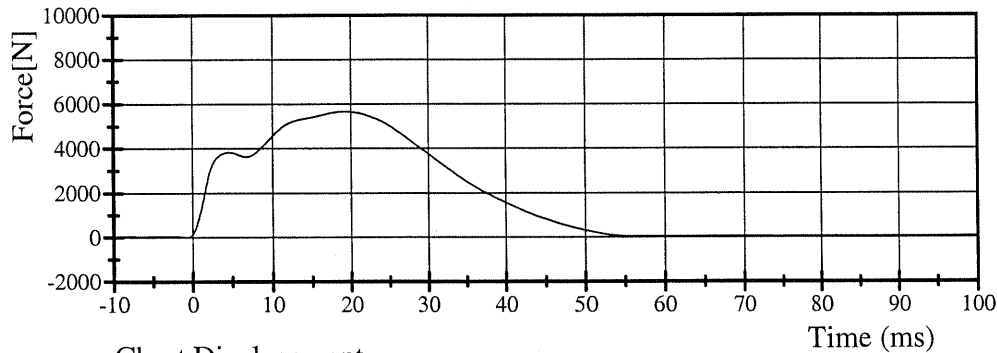
HIII 50th Male Serial No. 169 Calibration No. 17 - 1

Test Date 01/13/2003

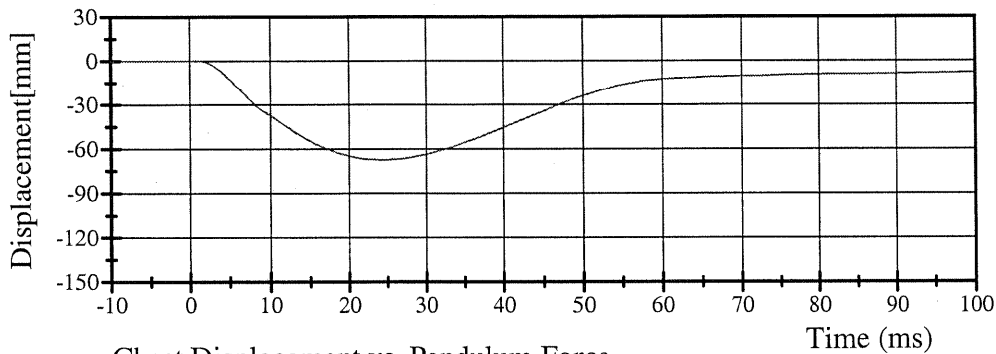
Pendulum Deceleration



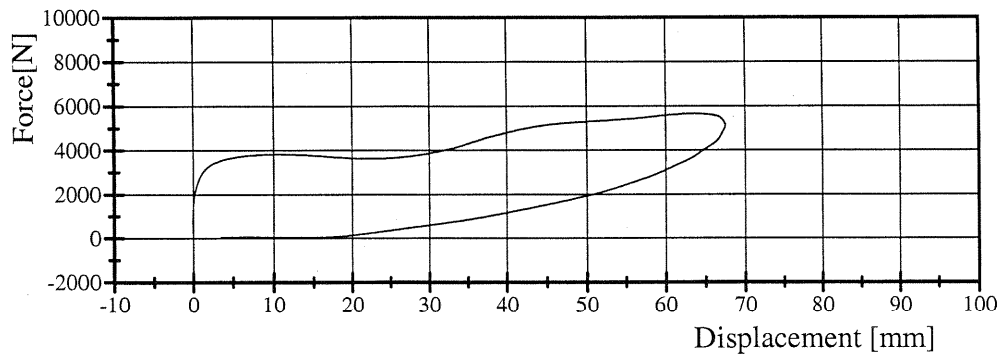
Pendulum Force



Chest Displacement



Chest Displacement vs. Pendulum Force



Transportation Research Center Inc

Hybrid III Hip Range of Motion

Serial Number: 169C17

Date: 01/11/2003

Test Number: 169L

Time: 08:41

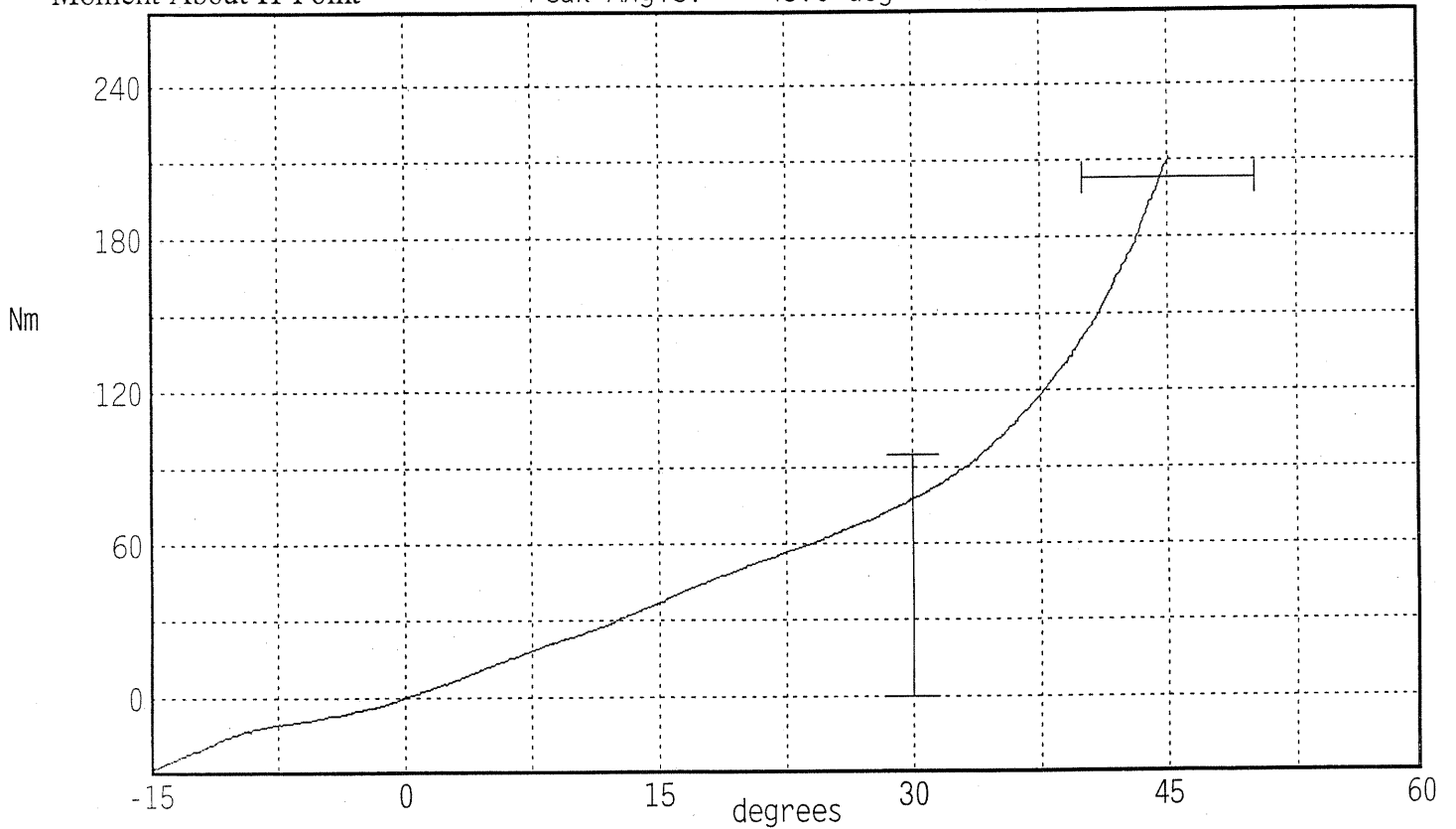
Comments:

TEST PARAMETER	SPECIFICATION	TEST RESULTS	
Temperature	18.9 - 25.6	21.7 °C	Pass
Humidity	10 - 70	14 %	Pass
Moment at 30 deg	<= 94.9	77.5 Nm	Pass
Angle at 203 Nm	40.0 - 50.0	44.6 deg	Pass
Average Velocity	5.0 - 10.0	7.4 deg/sec	Pass

Peak Moment: 210.8 Nm at 45.0 deg

Peak Angle: 45.0 deg at 210.8 Nm

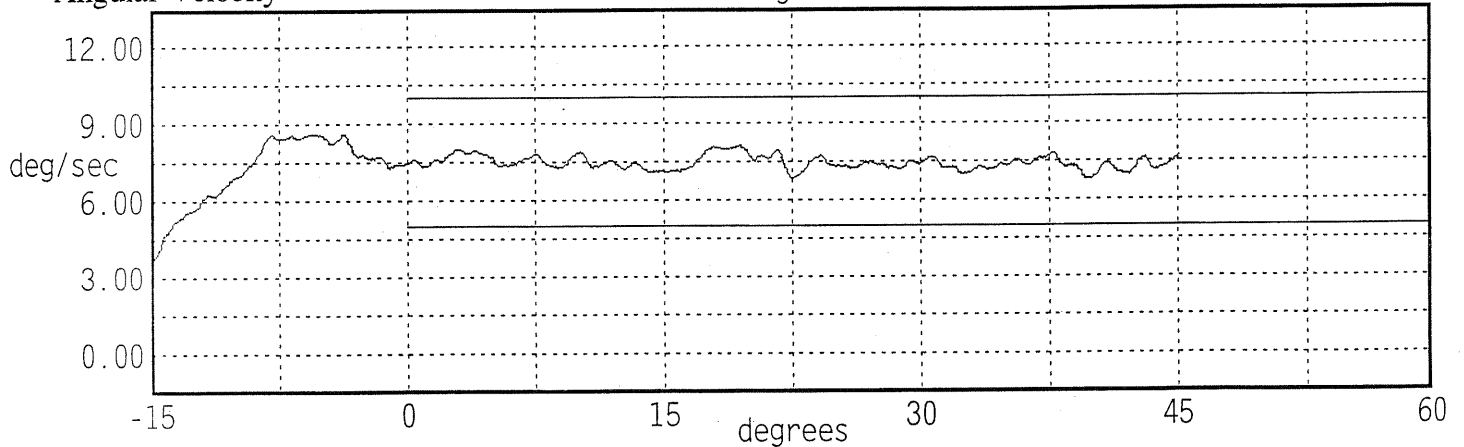
Moment About H-Point



Angular Velocity

Max: 8.2 deg/sec

Min: 6.8 deg/sec



Transportation Research Center Inc

Hybrid III Hip Range of Motion

Serial Number: 169C17

Date: 01/11/2003

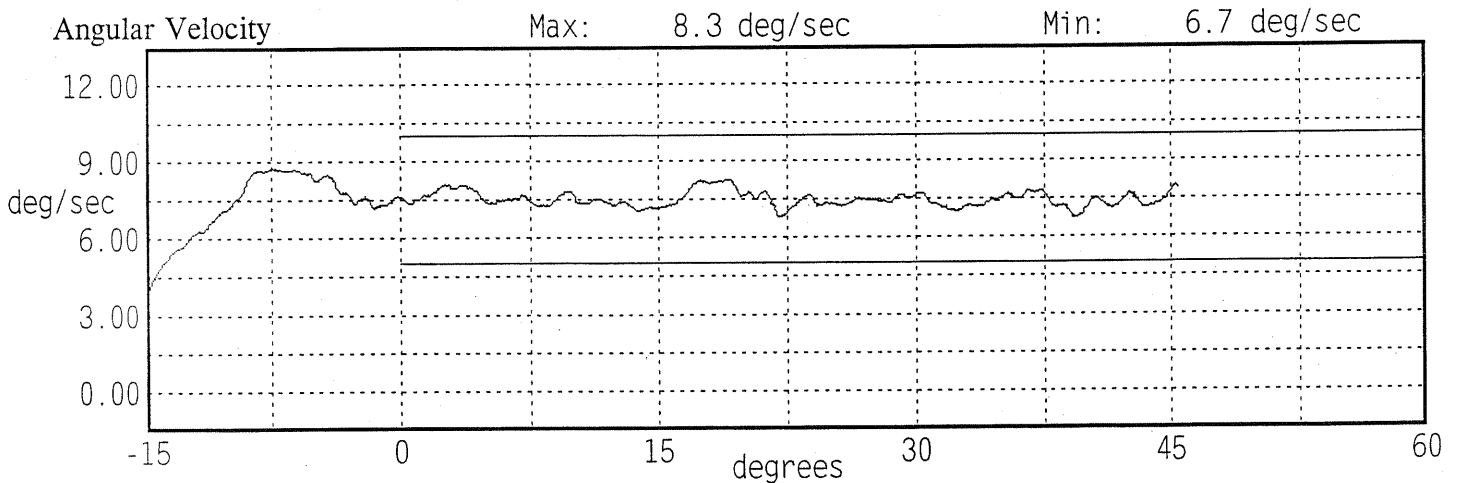
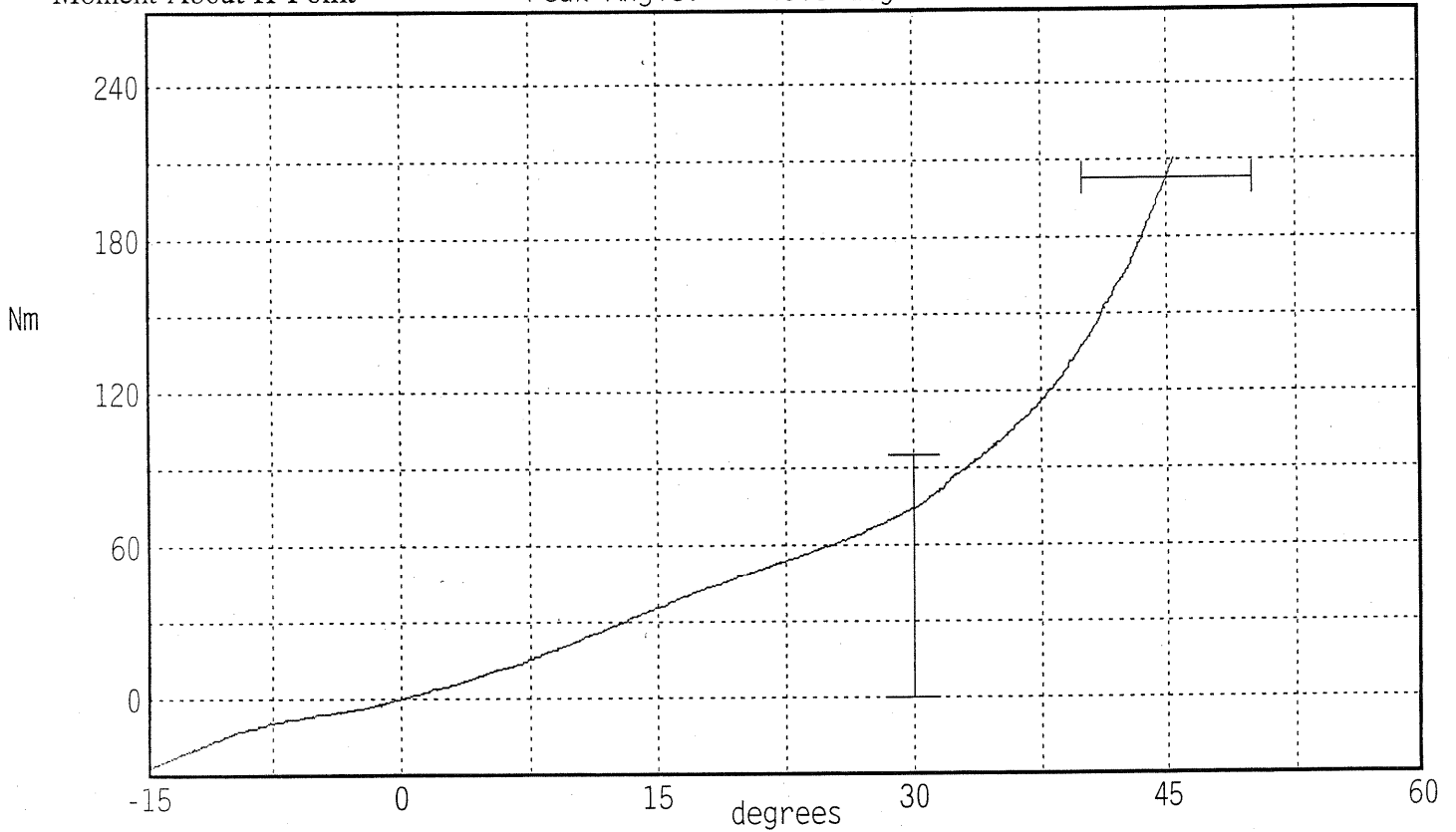
Test Number: 169R

Time: 08:25

Comments:

TEST PARAMETER	SPECIFICATION	TEST RESULTS	
Temperature	18.9 - 25.6	21.7 °C	Pass
Humidity	10 - 70	14 %	Pass
Moment at 30 deg	<= 94.9	74.4 Nm	Pass
Angle at 203 Nm	40.0 - 50.0	45.1 deg	Pass
Average Velocity	5.0 - 10.0	7.5 deg/sec	Pass

Moment About H-Point
 Peak Moment: 210.5 Nm at 45.5 deg
 Peak Angle: 45.5 deg at 210.5 Nm



Transportation Research Center Inc.

572E Left Knee Slider Test

HIII 50th Male Serial No. 169 Calibration No. 17 - 1

Test Date 12/31/2002

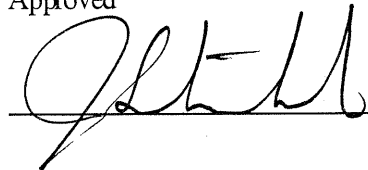
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	42 %	Yes
Pendulum Velocity	2.70 - 2.80 m/s	2.76 m/s	Yes
Force At 10 mm Displacement	-1259 - (-1721) N	-1291 N	Yes
Force At 18 mm Displacement	-2268 - (-3096) N	-2940 N	Yes

Comments:

Technician



Approved

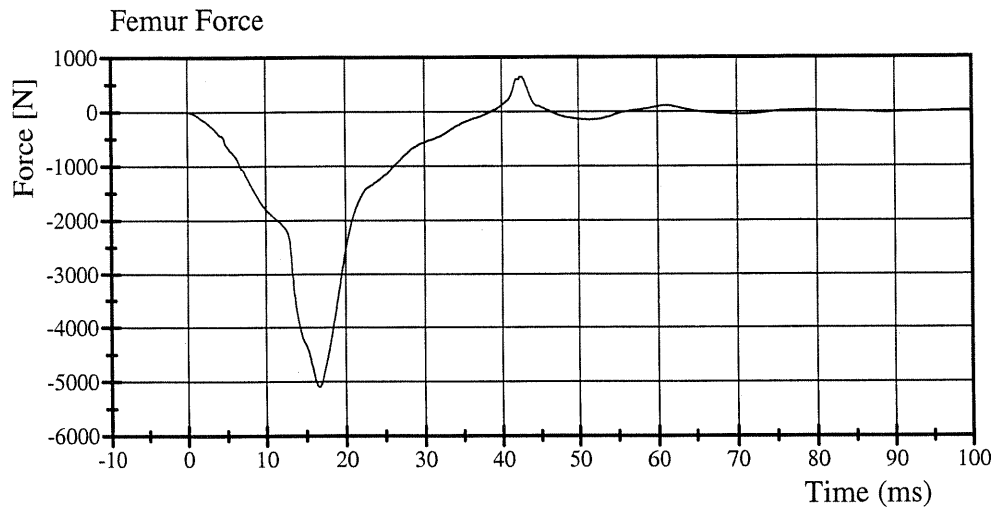


Transportation Research Center Inc.

572E Left Knee Slider Test

HIII 50th Male Serial No. 169 Calibration No. 17 - 1

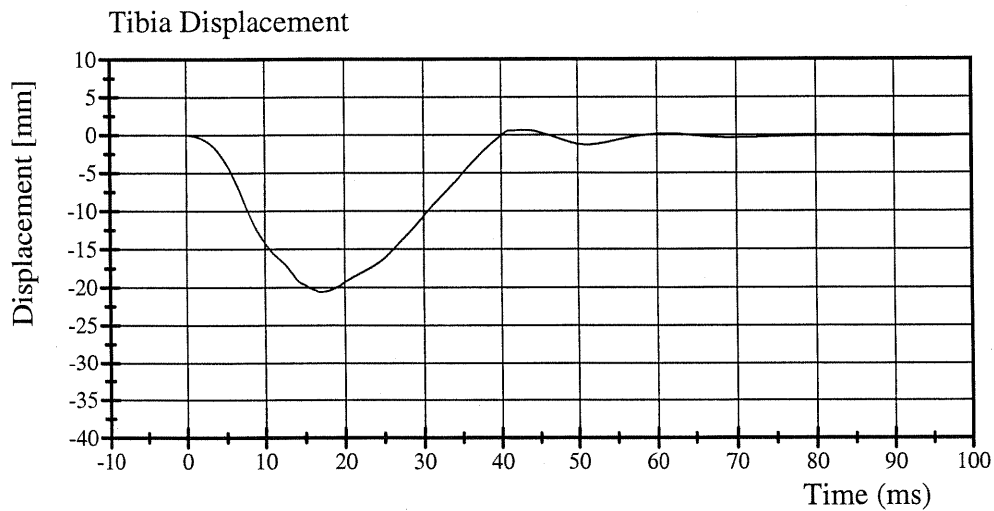
Test Date 12/31/2002



Filter Class: 600

Max: 639.3 N at 42.5 ms

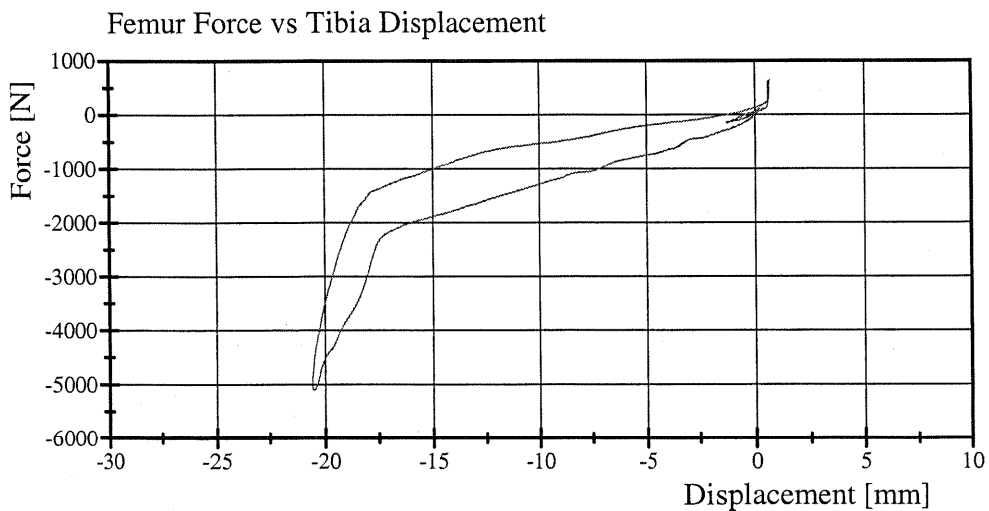
Min: -5096.4 N at 16.6 ms



Filter Class: 600

Max: 0.6 mm at 42.6 ms

Min: -20.6 mm at 17.0 ms



Transportation Research Center Inc.

572E Right Knee Slider Test

HIII 50th Male Serial No. 169 Calibration No. 17 - 1

Test Date 12/31/2002

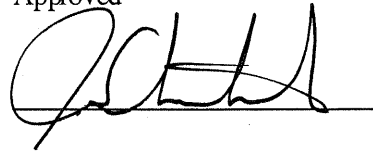
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	42 %	Yes
Pendulum Velocity	2.70 - 2.80 m/s	2.77 m/s	Yes
Force At 10 mm Displacement	-1259 - (-1721) N	-1391 N	Yes
Force At 18 mm Displacement	-2268 - (-3096) N	-2487 N	Yes

Comments:

Technician



Approved

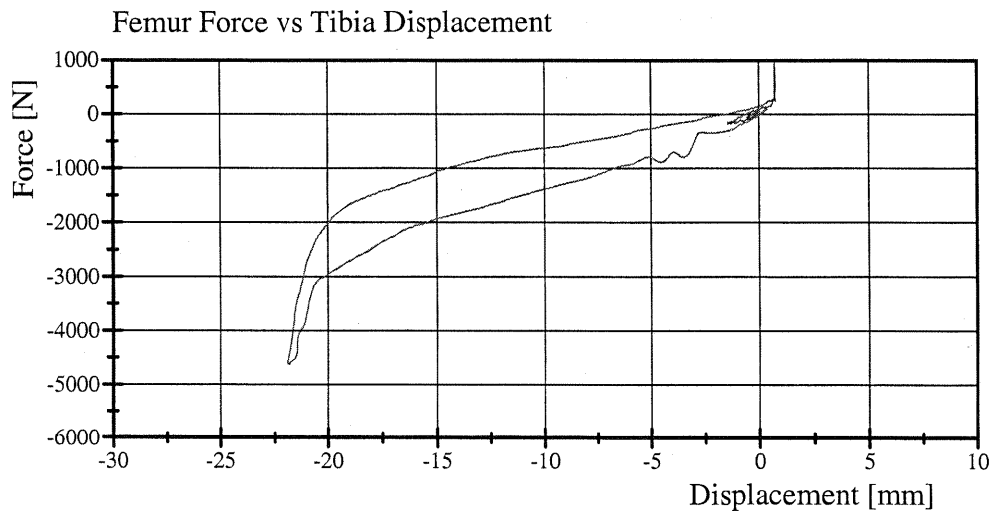
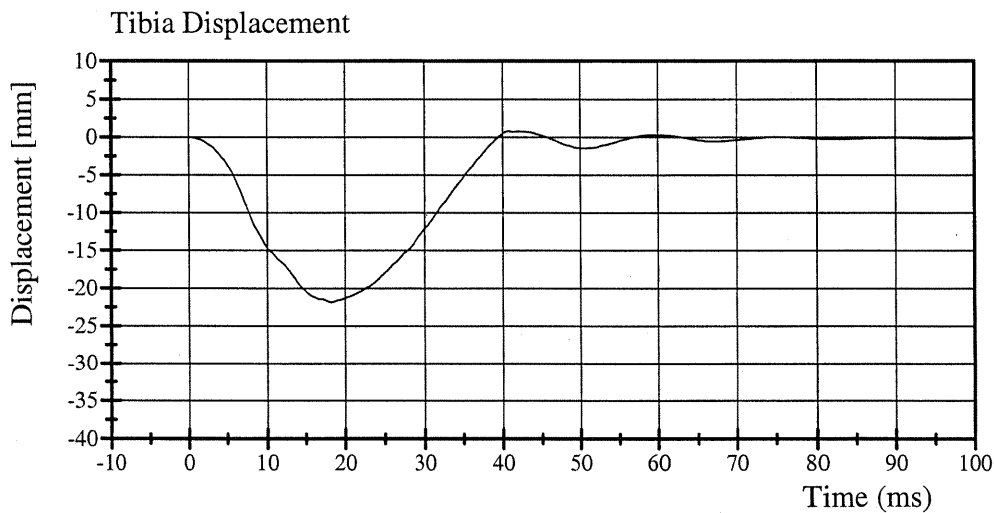
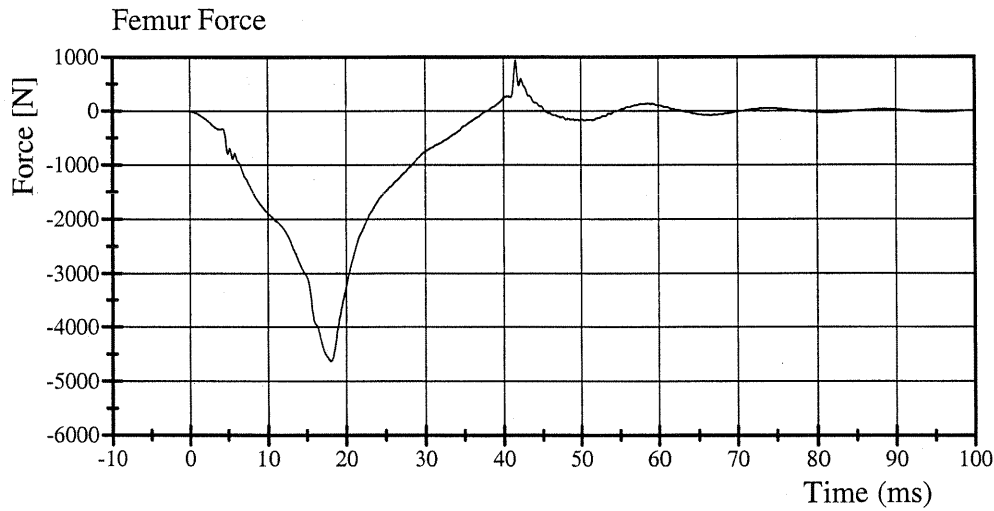


Transportation Research Center Inc.

572E Right Knee Slider Test

HIII 50th Male Serial No. 169 Calibration No. 17 - 1

Test Date 12/31/2002



Transportation Research Center Inc.

572E Left Knee Test

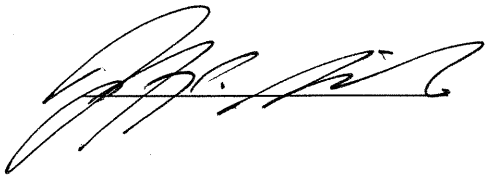
HIII 50th Male Serial No. 169 Calibration No. 17 - 1

Test Date 12/30/2002

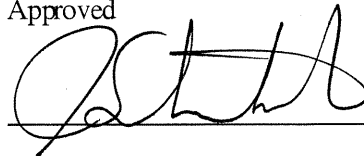
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	25 %	Yes
Pendulum Velocity	2.08 - 2.13 m/s	2.10 m/s	Yes
Maximum Pendulum Force	4716 - 5782 N	5255 N	Yes

Comments:

Technician



Approved



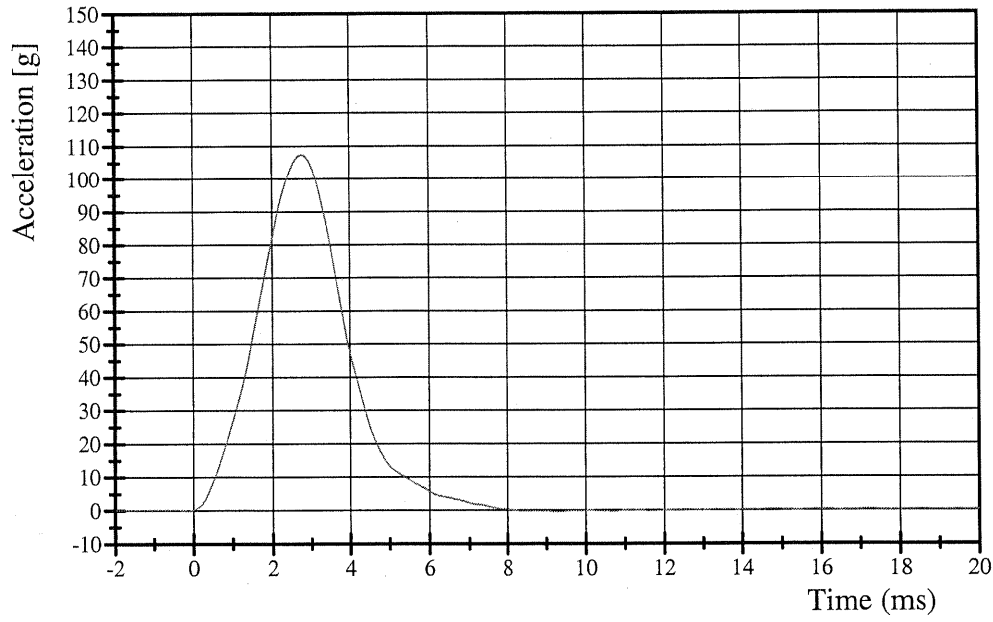
Transportation Research Center Inc.

572E Left Knee Test

HIII 50th Male Serial No. 169 Calibration No. 17 - 1

Test Date 12/30/2002

Pendulum Deceleration

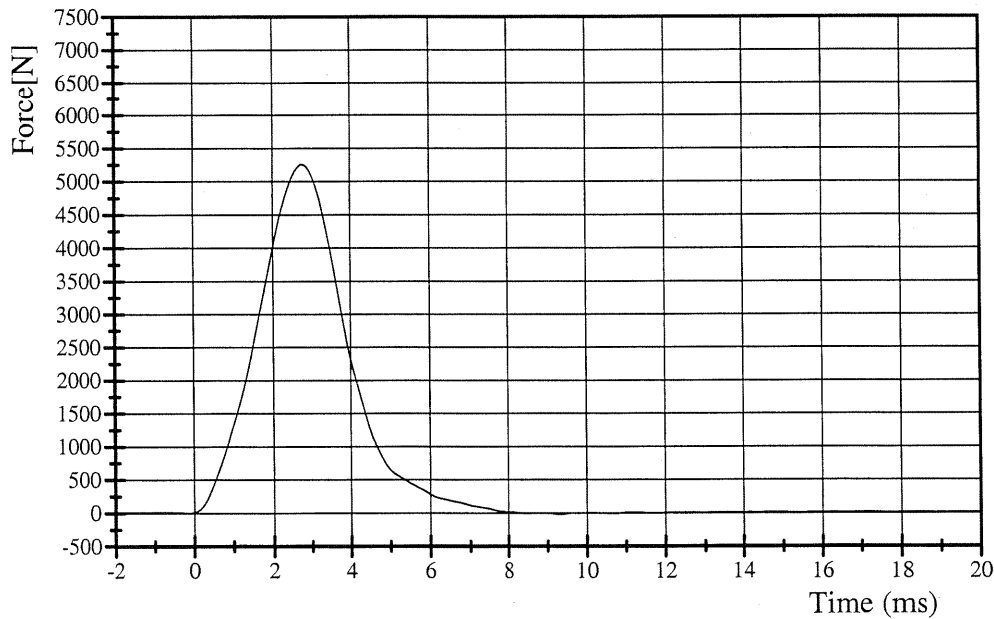


Filter Class: 600

Max: 107.4 g at 2.7 ms

Min: -0.4 g at 9.3 ms

Pendulum Force



Filter Class: 600

Max: 5255.1 N at 2.7 ms

Min: -21.1 N at 9.3 ms



Transportation Research Center Inc.

572E Right Knee Test

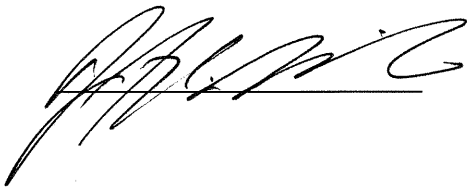
HIII 50th Male Serial No. 169 Calibration No. 17 - 1

Test Date 12/30/2002

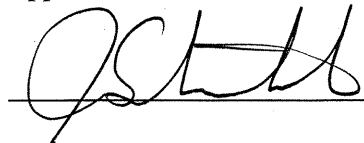
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	25 %	Yes
Pendulum Velocity	2.08 - 2.13 m/s	2.10 m/s	Yes
Maximum Pendulum Force	4716 - 5782 N	5188 N	Yes

Comments:

Technician



Approved



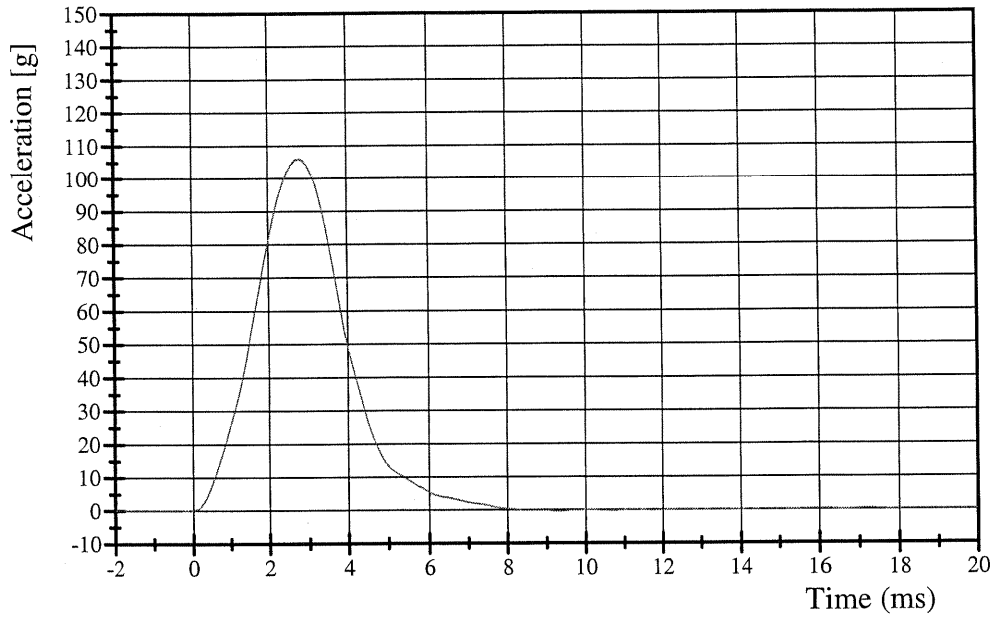
Transportation Research Center Inc.

572E Right Knee Test

HIII 50th Male Serial No. 169 Calibration No. 17 - 1

Test Date 12/30/2002

Pendulum Deceleration

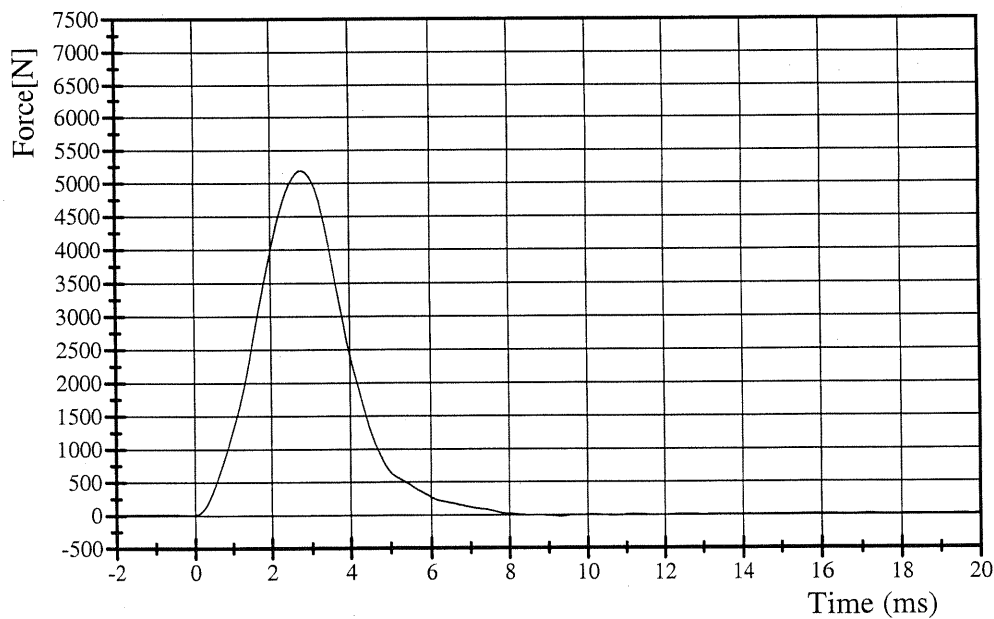


Filter Class: 600

Max: 106.0 g at 2.8 ms

Min: -0.4 g at 9.4 ms

Pendulum Force



Filter Class: 600

Max: 5187.5 N at 2.8 ms

Min: -20.4 N at 9.4 ms

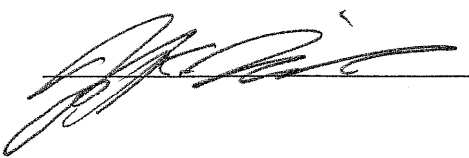
Pre-Test Dummy Configuration and Performance Verification Data

Bullet Vehicle Passenger Dummy S/N: 416

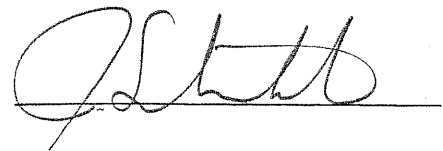
Transportation Research Center Inc.
5720 HIII 5th Dummy
External Dimensions
Serial No. 416 Calibration No. 17

Test Parameter	Dimension	Specification	Results	Pass
Total Sitting Height	A	774.7 - 800.1 mm	779 mm	Yes
Shoulder Pivot Height	B	431.8 - 457.2 mm	443 mm	Yes
Hip Pivot Height	C	81.3 - 86.3 mm	83 mm	Yes
Hip Pivot from Backline	D	144.8 - 149.8 mm	145 mm	Yes
Shoulder Pivot from Backline	E	68.6 - 83.8 mm	76 mm	Yes
Thigh Clearance	F	119.4 - 134.6 mm	123 mm	Yes
Back of Elbow to Wrist Pivot	G	243.9 - 259.0 mm	251 mm	Yes
Head Back to Backline	H	40.7 - 45.7 mm	45 mm	Yes
Shoulder to Elbow Length	I	276.9 - 297.1 mm	287 mm	Yes
Elbow Rest Height	J	182.9 - 203.2 mm	198 mm	Yes
Buttock Knee Length	K	520.7 - 546.1 mm	539 mm	Yes
Popliteal Height	L	355.6 - 375.9 mm	360 mm	Yes
Knee Pivot Height	M	393.7 - 419.1 mm	399 mm	Yes
Buttock Popliteal Height	N	414.1 - 439.4 mm	423 mm	Yes
Chest Depth without Jacket	O	175.3 - 190.5 mm	188 mm	Yes
Foot Length	P	218.5 - 233.6 mm	227 mm	Yes
Buttock to Knee Pivot Length	R	457.2 - 482.6 mm	466 mm	Yes
Head Breadth	S	137.2 - 147.3 mm	142 mm	Yes
Head Depth	T	177.8 - 187.9 mm	184 mm	Yes
Hip Breadth	U	299.8 - 314.9 mm	300 mm	Yes
Shoulder Breadth	V	350.6 - 365.7 mm	360 mm	Yes
Foot Breadth	W	78.8 - 93.9 mm	91 mm	Yes
Head Circumference	X	528.4 - 548.6 mm	546 mm	Yes
Chest Circumference with Jacket	Y	850.9 - 881.3 mm	872 mm	Yes
Waist Circumference	Z	759.5 - 789.9 mm	783 mm	Yes
Reference Location for Chest Circumference	AA	299.8 - 309.8 mm	305 mm	Yes
Reference Location for Waist Circumference	BB	160.1 - 170.1 mm	165 mm	Yes

Technician



Approved




Transportation Research Center Inc.

5720 Head Drop Test

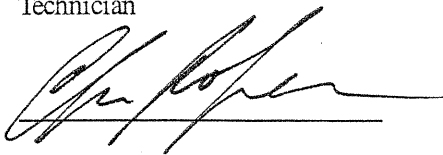
HIII 5th Female Serial No. 416 Calibration No. 17 - 1

Test Date 08/26/2002

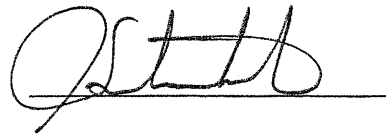
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	60 %	Yes
Peak Resultant Acceleration	250 - 300 g	288.8 g	Yes
Peak Lateral Acceleration	15 g Max	13.3 g	Yes
Is Acceleration Curve Unimodal?	Yes	Yes	Yes

Comments:

Technician



Approved

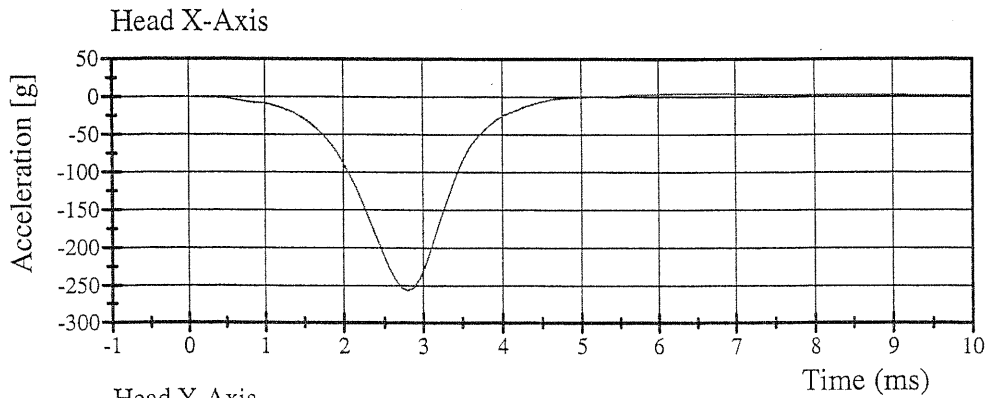


Transportation Research Center Inc.

5720 Head Drop Test

HIII 5th Female Serial No. 416 Calibration No. 17 - 1

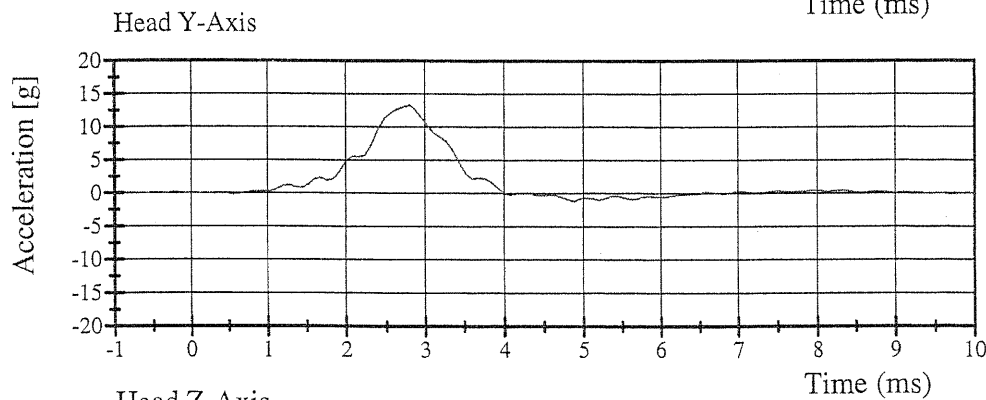
Test Date 08/26/2002



Filter Class: 1000

Max: 4.4 g at 6.5 ms

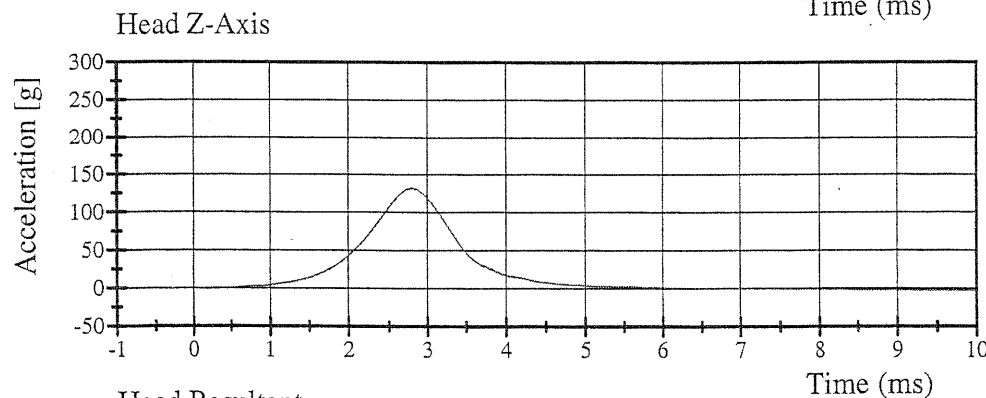
Min: -256.5 g at 2.8 ms



Filter Class: 1000

Max: 13.3 g at 2.8 ms

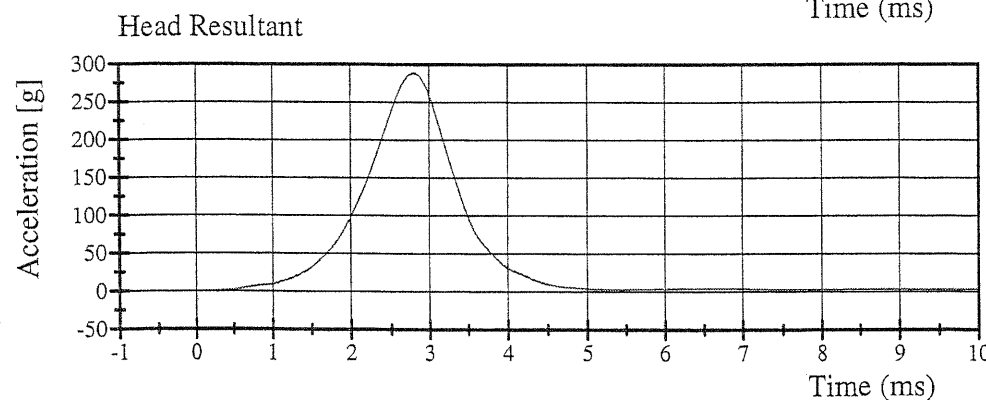
Min: -1.2 g at 4.9 ms



Filter Class: 1000

Max: 132.1 g at 2.8 ms

Min: -2.7 g at 9.9 ms



Filter Class: 1000

Max: 288.8 g at 2.8 ms

Min: 0.0 g at 2.6 ms



Transportation Research Center Inc.

5720 Neck Flexion Test - 6 Channel Transducer

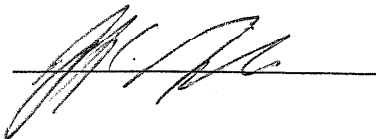
HIII 5th Female Serial No. 416 Calibration No. 17 - 1

Test Date 08/28/2002

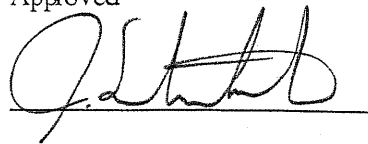
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	55 %	Yes
Impact Velocity	6.89 - 7.13 m/s	7.06 m/s	Yes
Integrated Pendulum Velocity			
10 ms	2.10 - 2.50 m/s	2.11 m/s	Yes
20 ms	4.00 - 5.00 m/s	4.21 m/s	Yes
30 ms	5.80 - 7.00 m/s	6.24 m/s	Yes
Peak D Plane Rotation	77 - 91 °	77.4 °	Yes
Peak Moment About Occipital Condyles (During time interval rotation is within specified corridors)	69.0 - 83.0 N·m	73.30 N·m	Yes
Positive Moment Decay Time To 10 N·m	80 - 100 ms	88.48 ms	Yes

Comments:

Technician



Approved



08.28.2002 13:53:36 462



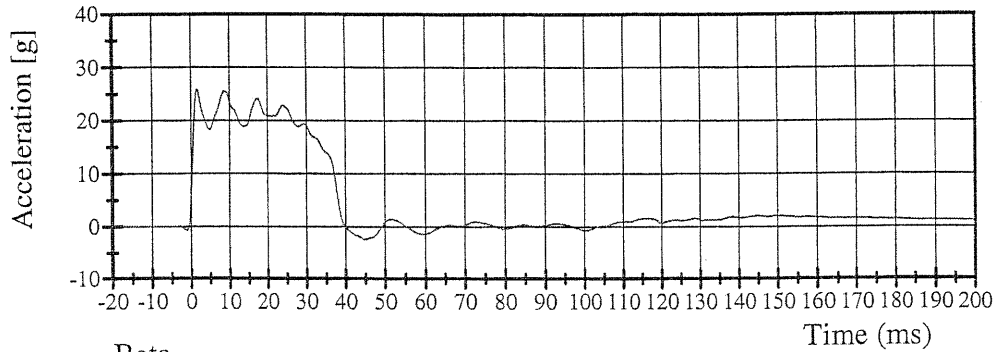
Transportation Research Center Inc.

5720 Neck Flexion Test

HIII 5th Female Serial No. 416 Calibration No. 17 - 1

Test Date 08/28/2002

Pendulum Deceleration

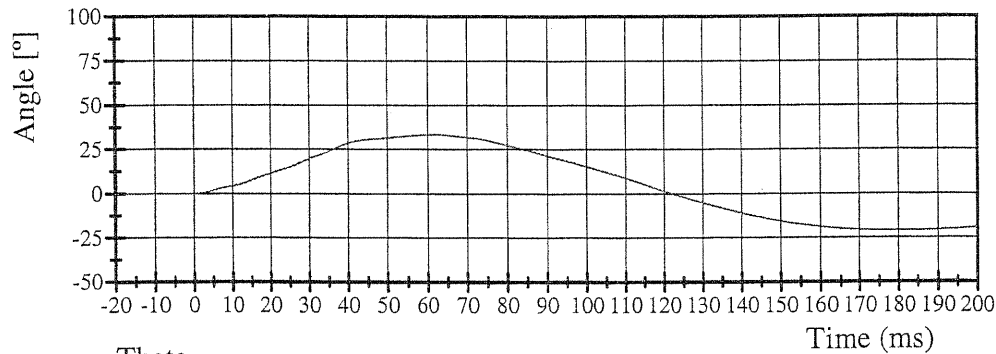


Filter Class: 180

Max: 25.9 g at 1.6 ms

Min: -2.4 g at 44.9 ms

Beta

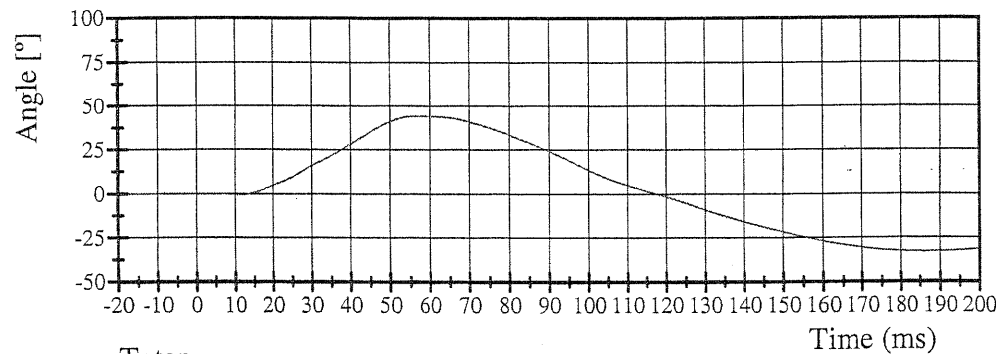


Filter Class: 60

Max: 33.5 ° at 61.9 ms

Min: -21.0 ° at 181.8 ms

Theta

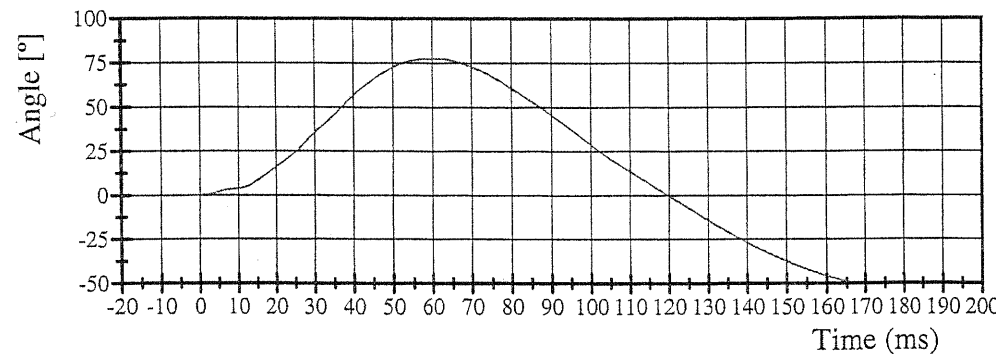


Filter Class: 60

Max: 44.2 ° at 57.0 ms

Min: -32.9 ° at 186.5 ms

Totan



Filter Class: 60

Max: 77.4 ° at 60.7 ms

Min: -53.8 ° at 184.5 ms

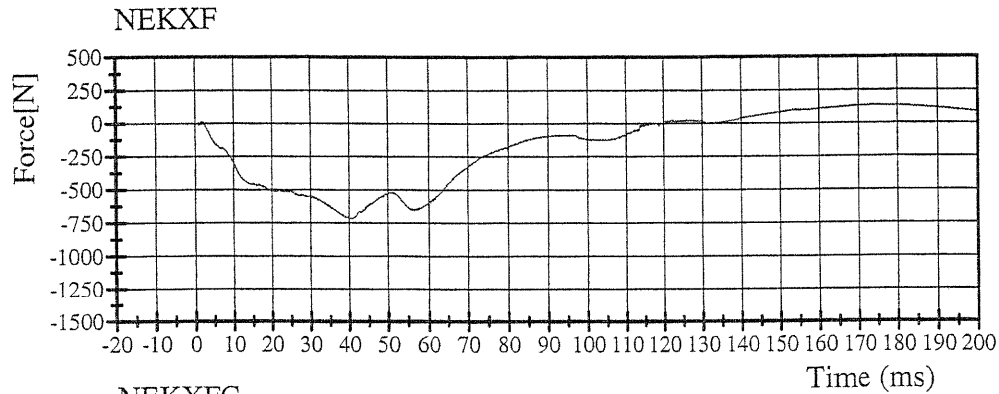


Transportation Research Center Inc.

5720 Neck Flexion Test

HIII 5th Female Serial No. 416 Calibration No. 17 - 1

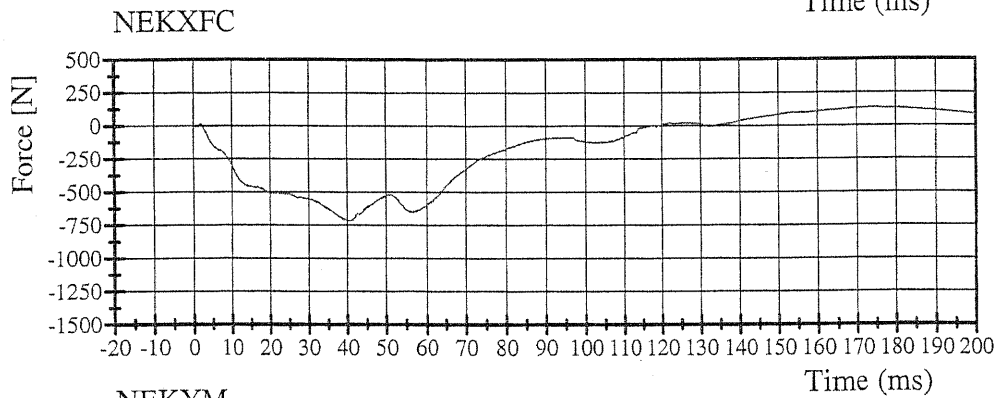
Test Date 08/28/2002



Filter Class: 1000

Max: 134.5 N at 174.7 ms

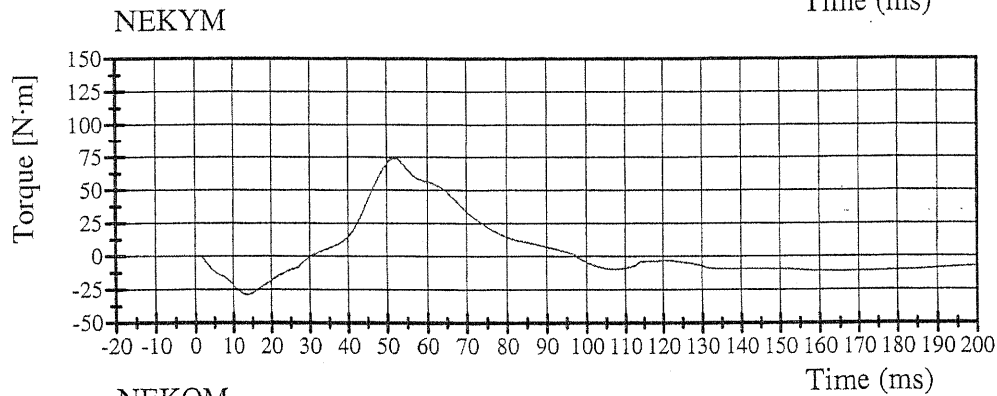
Min: -716.5 N at 40.2 ms



Filter Class: 600

Max: 133.6 N at 174.7 ms

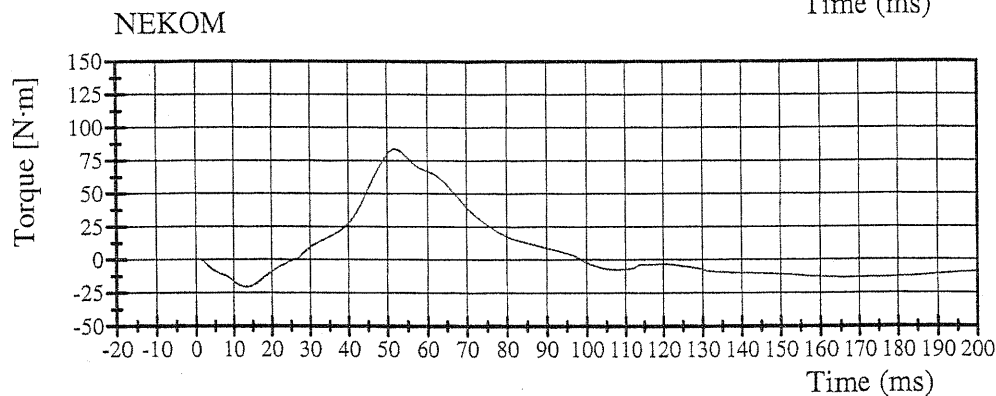
Min: -716.1 N at 40.2 ms



Filter Class: 600

Max: 74.2 N·m at 51.8 ms

Min: -28.8 N·m at 13.5 ms



Filter Class: 600

Max: 83.7 N·m at 51.9 ms

Min: -20.8 N·m at 13.4 ms



Transportation Research Center Inc.

5720 Neck Extension Test - 6 Channel Transducer

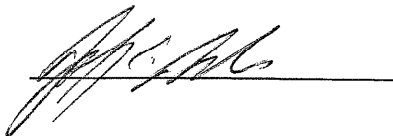
HIII 5th Female Serial No. 416 Calibration No. 17 - 1

Test Date 08/28/2002

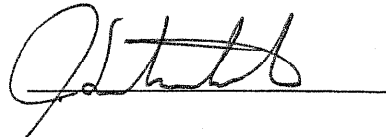
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	53 %	Yes
Impact Velocity	5.95 - 6.19 m/s	6.15 m/s	Yes
Integrated Pendulum Velocity			
10 ms	1.50 - 1.90 m/s	1.73 m/s	Yes
20 ms	3.10 - 3.90 m/s	3.47 m/s	Yes
30 ms	4.60 - 5.60 m/s	5.09 m/s	Yes
Peak D Plane Rotation	99 - 114 °	100.7 °	Yes
Peak Moment About Occipital Condyles (During time interval rotation is within specified corridors)	-65.0 - (-53.0) N·m	-60.47 N·m	Yes
Positive Moment Decay Time To -10 N·m	94 - 114 ms	102.32 ms	Yes

Comments:

Technician



Approved



08.28.2002 14:59:02 528

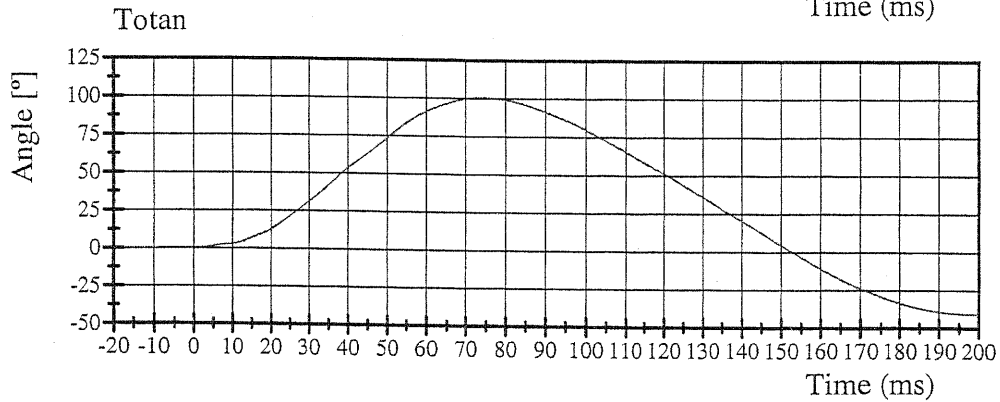
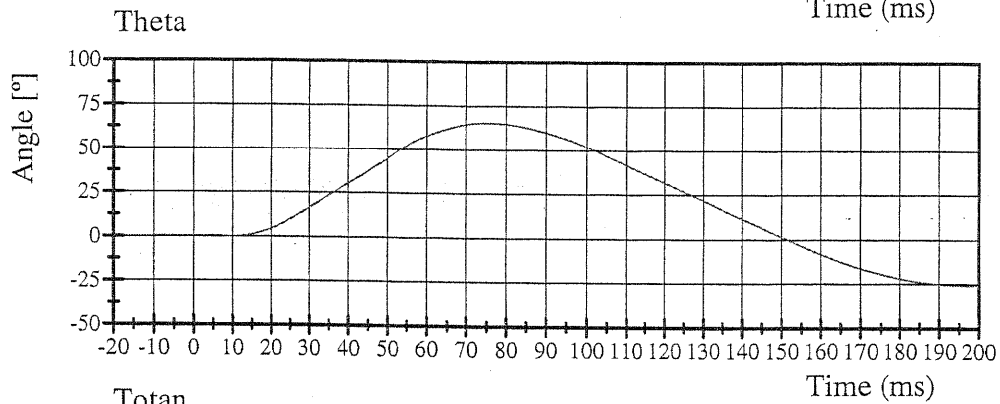
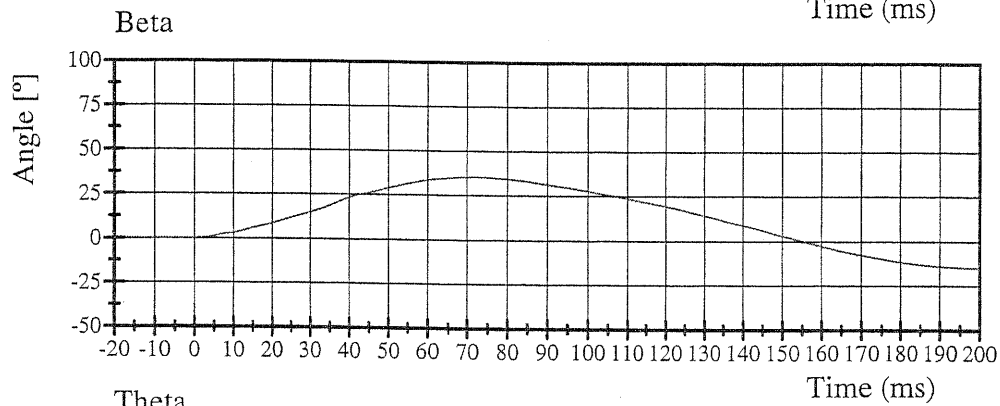
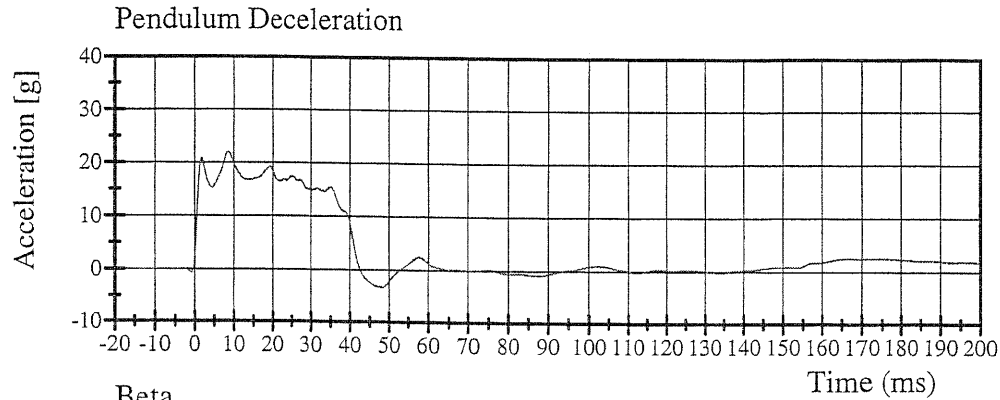


Transportation Research Center Inc.

5720 Neck Extension Test

HIII 5th Female Serial No. 416 Calibration No. 17 - 1

Test Date 08/28/2002



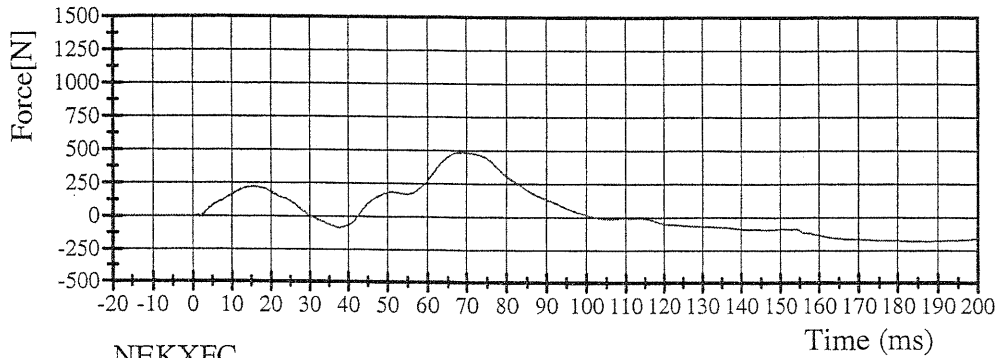
Transportation Research Center Inc.

5720 Neck Extension Test

HIII 5th Female Serial No. 416 Calibration No. 17 - 1

Test Date 08/28/2002

NEKXF

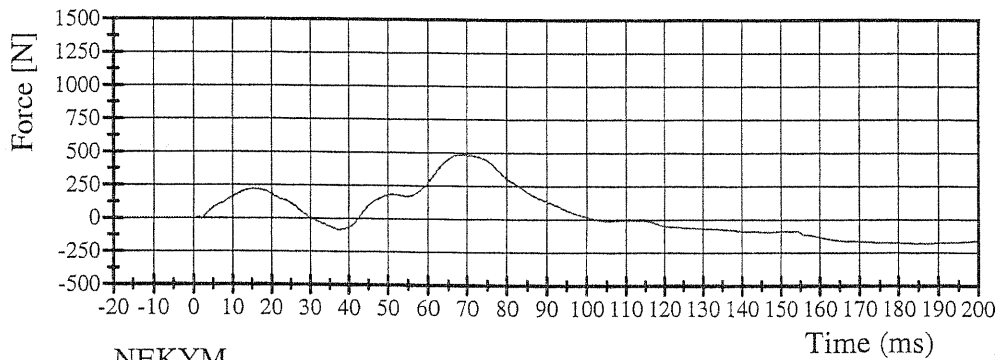


Filter Class: 1000

Max: 484.0 N at 69.0 ms

Min: -179.8 N at 186.9 ms

NEKXFC

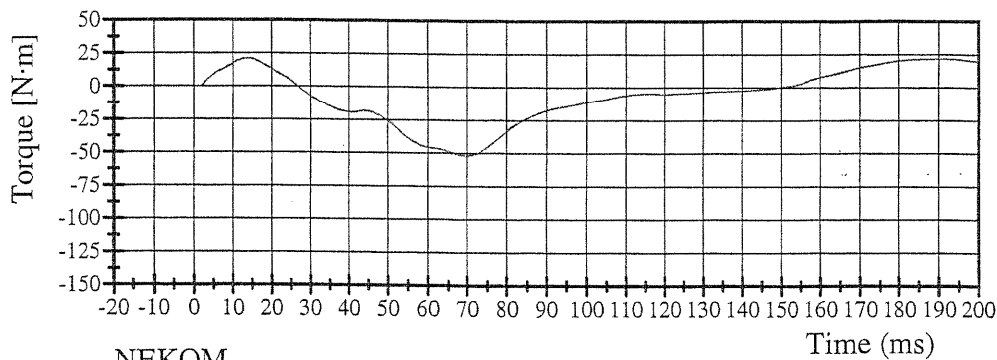


Filter Class: 600

Max: 483.7 N at 69.1 ms

Min: -179.7 N at 187.0 ms

NEKYM

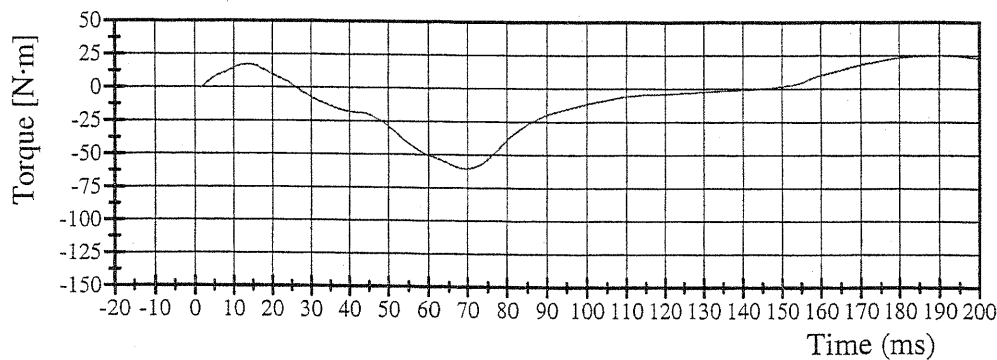


Filter Class: 600

Max: 21.9 N·m at 190.2 ms

Min: -51.9 N·m at 69.7 ms

NEKOM



Filter Class: 600

Max: 25.1 N·m at 190.1 ms

Min: -60.5 N·m at 69.5 ms



Transportation Research Center Inc.

5720 Thorax Test

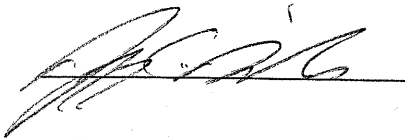
HIII 5th Female Serial No. 416 Calibration No. 17 - 1

Test Date 09/09/2002

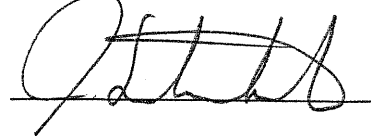
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Pendulum Velocity	6.59 - 6.83 m/s	6.63 m/s	Yes
Maximum Chest Deflection	-58.0 - (-50.0) mm	-56.6 mm	Yes
Peak Impact Probe Force Within Compression Corridor	3900 - 4400 N	4395 N	Yes
Internal Hysteresis	105 % Max.	93 %	Yes
Internal Hysteresis	69 - 85 %	72 %	Yes

Comments:

Technician



Approved



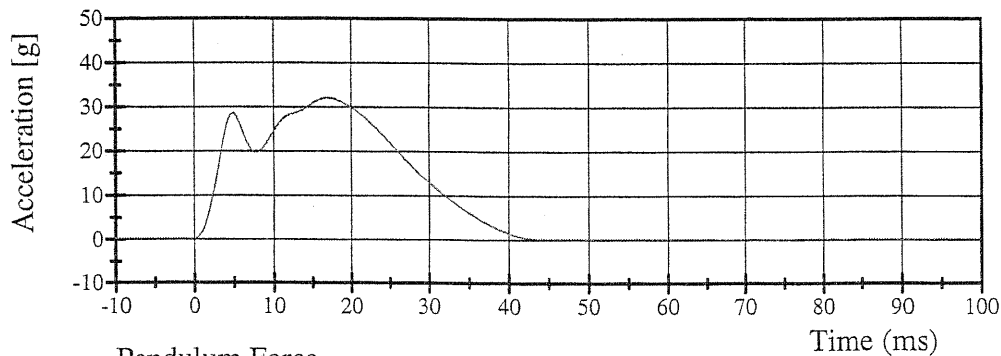
Transportation Research Center Inc.

5720 Thorax Test

HIII 5th Female Serial No. 416 Calibration No. 17 - 1

Test Date 09/09/2002

Pendulum Deceleration

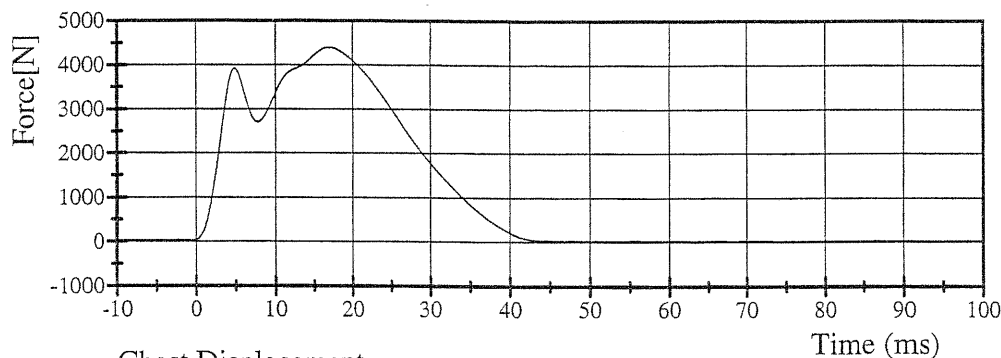


Filter Class: 180

Max: 32.1 g at 17.0 ms

Min: -0.0 g at -85.7 ms

Pendulum Force

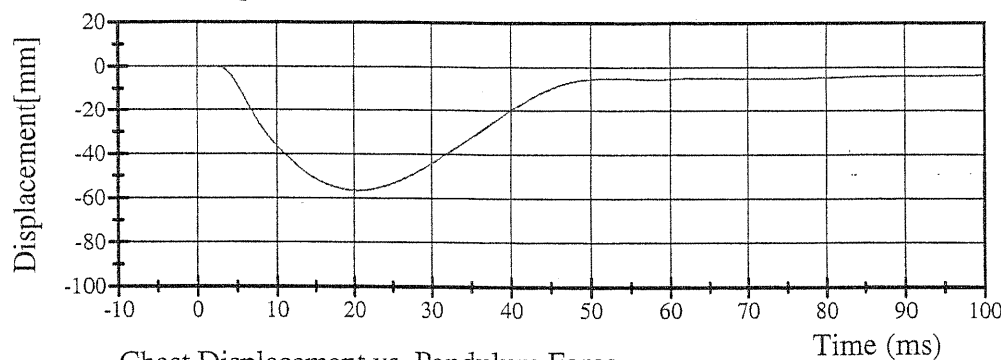


Filter Class: 180

Max: 4395.0 N at 17.0 ms

Min: -5.0 N at -85.7 ms

Chest Displacement

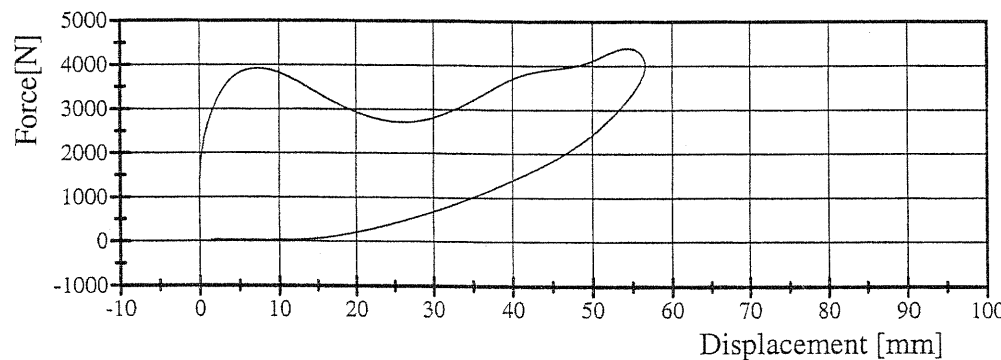


Filter Class: 180

Max: 0.1 mm at 1.8 ms

Min: -56.6 mm at 20.6 ms

Chest Displacement vs. Pendulum Force



TRANSPORTATION RESEARCH CENTER INC.

TORSO FLEXION TEST

HYBRID III SMALL FEMALE

CAL DATE: 30-Aug-02

TRC, INC. TEST NO: 416C17TF1 572 O SN416 TORSO FLEX CAL 17

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6 – 22.2 DEG. C	21.1 DEG. C
RELATIVE HUMIDITY	10 – 70 %	60 %
INITIAL ANGLE OF UNSUPPORTRATED DUMMY	<= 20 DEG. REFERENCED TO VERTICAL	12.5 DEG.
MAXIMUM FORCE AT 45 DEG. DURING 10 SECOND PERIOD	320 – 390 N	321.5 N
RETURN ANGLE		19.3 DEG.
DIFFERENCE BETWEEN RETURN ANGLE & INTIAL ANGLE	+/- 8 DEG. OF INTIAL ANGLE	6.8 DEG.

TEST MEETS SPECIFICATIONS

TECHNICIAN 

Transportation Research Center Inc.

5720 Left Knee Slider Test

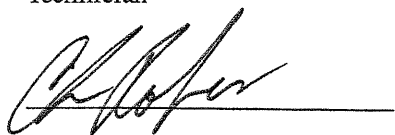
HIII 5th Female Serial No. 416 Calibration No. 17 - 1

Test Date 08/28/2002

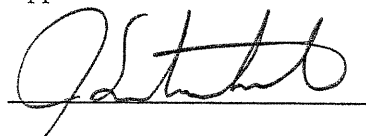
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	58 %	Yes
Pendulum Velocity	2.70 - 2.80 m/s	2.75 m/s	Yes
Knee Displacement	-15.5 - (-12.7) mm	-13.7 mm	Yes

Comments:

Technician



Approved

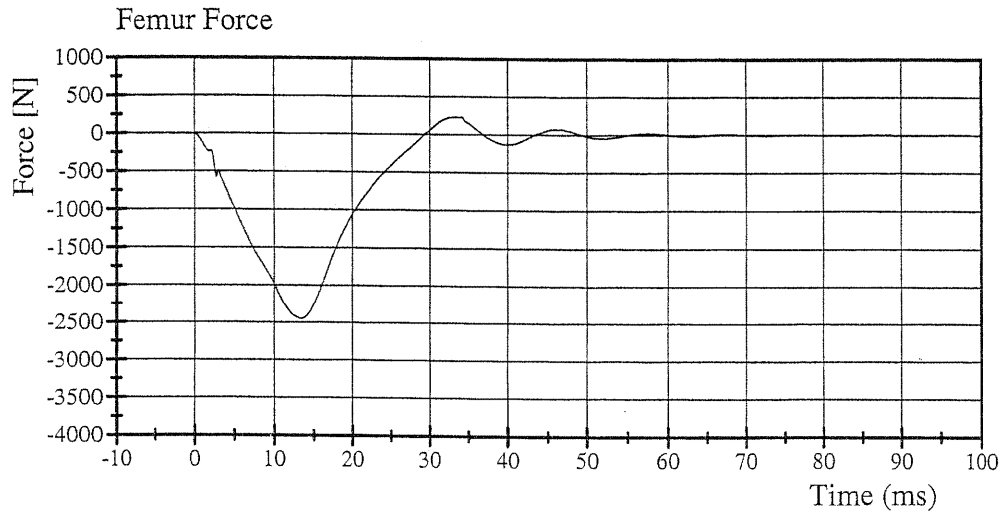


Transportation Research Center Inc.

5720 Left Knee Slider Test

HIII 5th Female Serial No. 416 Calibration No. 17 - 1

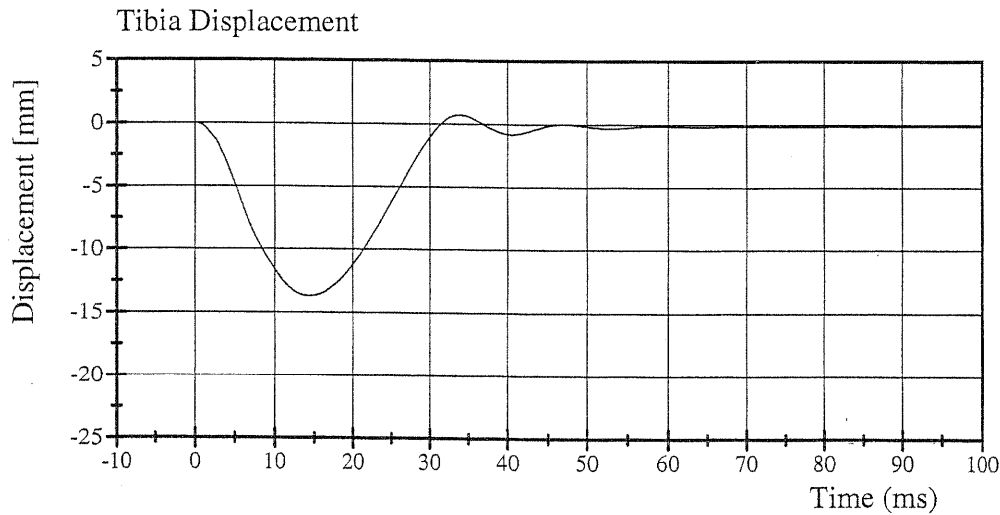
Test Date 08/28/2002



Filter Class: 600

Max: 231.2 N at 33.5 ms

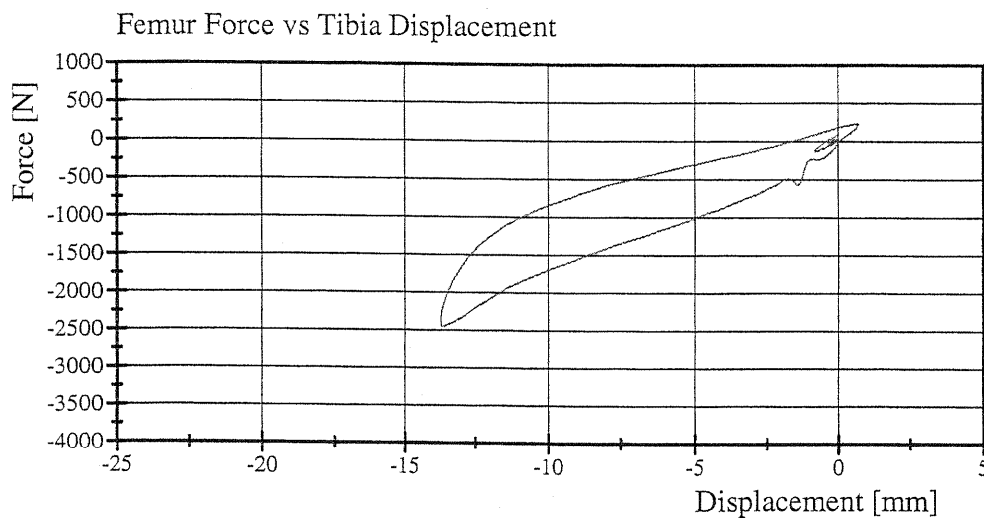
Min: -2449.0 N at 13.4 ms



Filter Class: 600

Max: 0.7 mm at 33.7 ms

Min: -13.7 mm at 14.3 ms



Transportation Research Center Inc.

5720 Right Knee Slider Test

HIII 5th Female Serial No. 416 Calibration No. 17 - 1

Test Date 08/28/2002

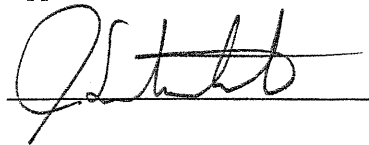
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	58 %	Yes
Pendulum Velocity	2.70 - 2.80 m/s	2.74 m/s	Yes
Knee Displacement	-15.5 - (-12.7) mm	-13.9 mm	Yes

Comments:

Technician



Approved

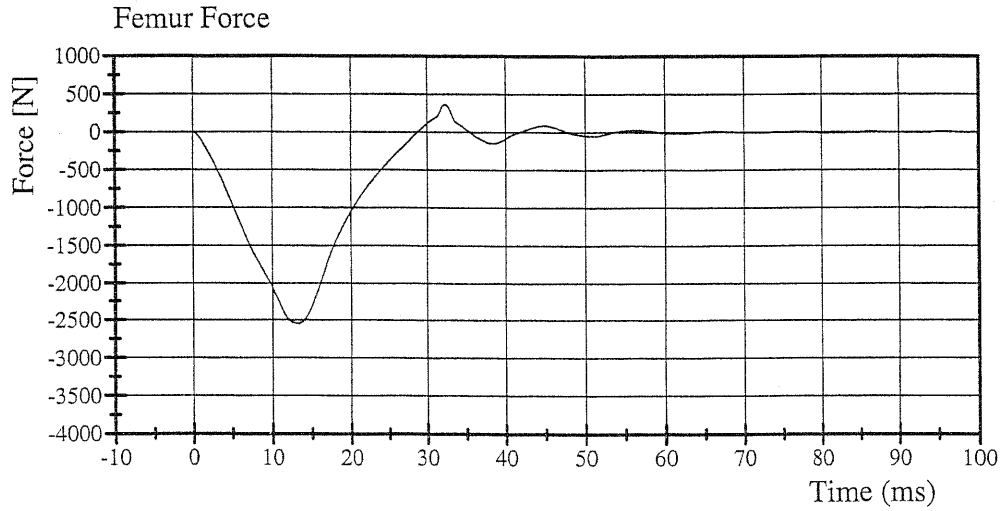


Transportation Research Center Inc.

5720 Right Knee Slider Test

HIII 5th Female Serial No. 416 Calibration No. 17 - 1

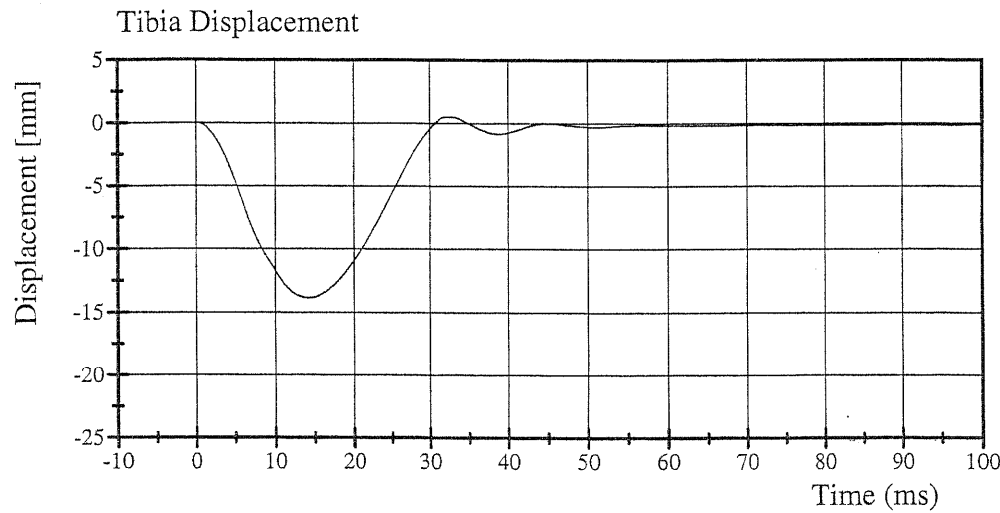
Test Date 08/28/2002



Filter Class: 600

Max: 360.5 N at 32.3 ms

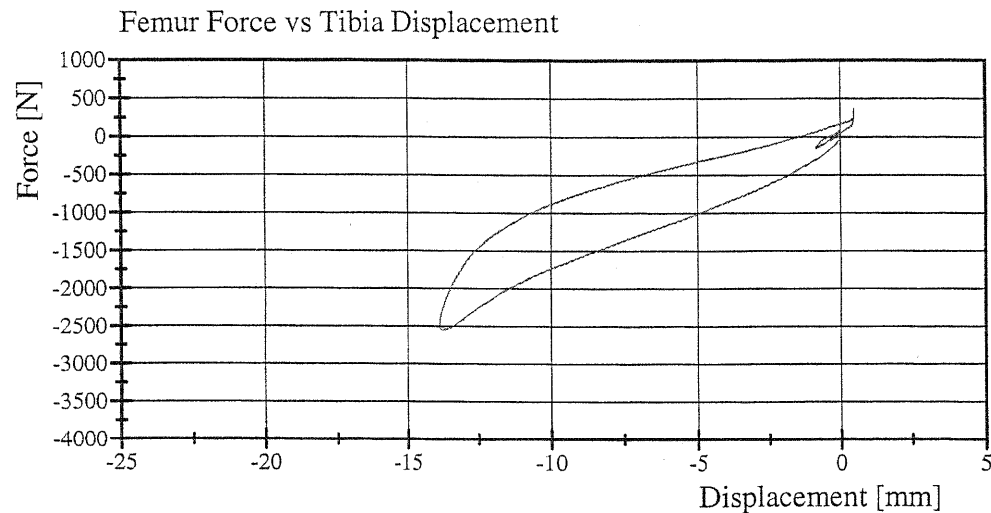
Min: -2546.2 N at 13.2 ms



Filter Class: 600

Max: 0.5 mm at 31.9 ms

Min: -13.9 mm at 14.2 ms



Transportation Research Center Inc.

5720 Left Knee Test

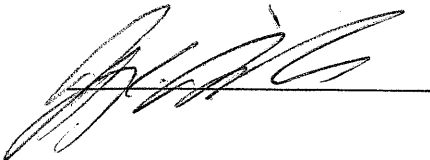
HIII 5th Female Serial No. 416 Calibration No. 17 - 1

Test Date 08/28/2002

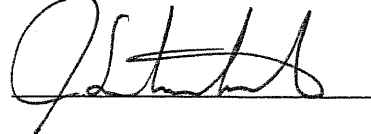
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	62 %	Yes
Pendulum Velocity	2.07 - 2.13 m/s	2.12 m/s	Yes
Maximum Pendulum Force	3450 - 4060 N	3935 N	Yes

Comments:

Technician



Approved

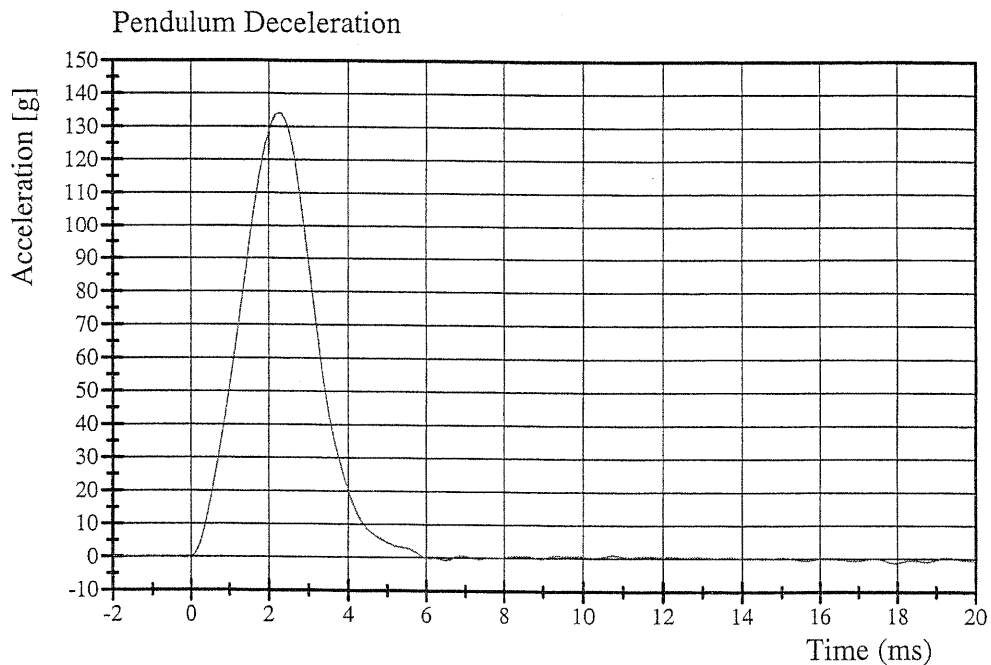


Transportation Research Center Inc.

5720 Left Knee Test

HIII 5th Female Serial No. 416 Calibration No. 17 - 1

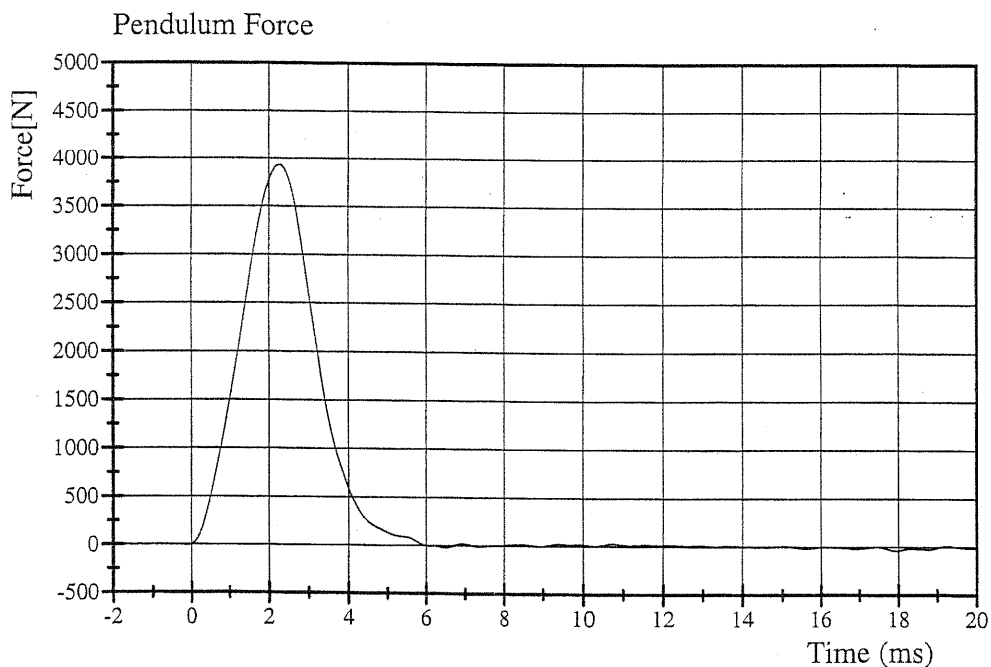
Test Date 08/28/2002



Filter Class: 600

Max: 134.2 g at 2.2 ms

Min: -1.3 g at 17.9 ms



Filter Class: 600

Max: 3935.0 N at 2.2 ms

Min: -39.2 N at 17.9 ms



Transportation Research Center Inc.

5720 Right Knee Test

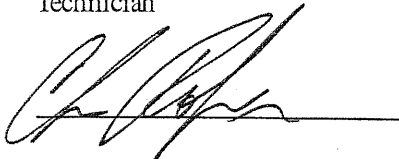
HIII 5th Female Serial No. 416 Calibration No. 17 - 1

Test Date 08/28/2002

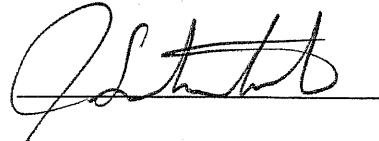
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	60 %	Yes
Pendulum Velocity	2.07 - 2.13 m/s	2.12 m/s	Yes
Maximum Pendulum Force	3450 - 4060 N	3663 N	Yes

Comments:

Technician



Approved

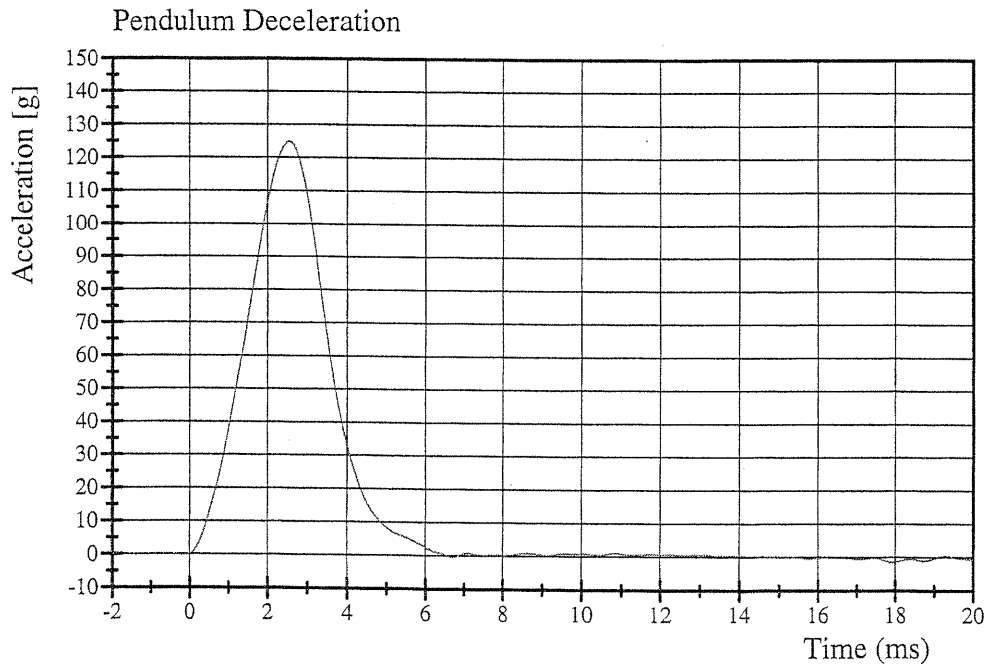


Transportation Research Center Inc.

5720 Right Knee Test

HIII 5th Female Serial No. 416 Calibration No. 17 - 1

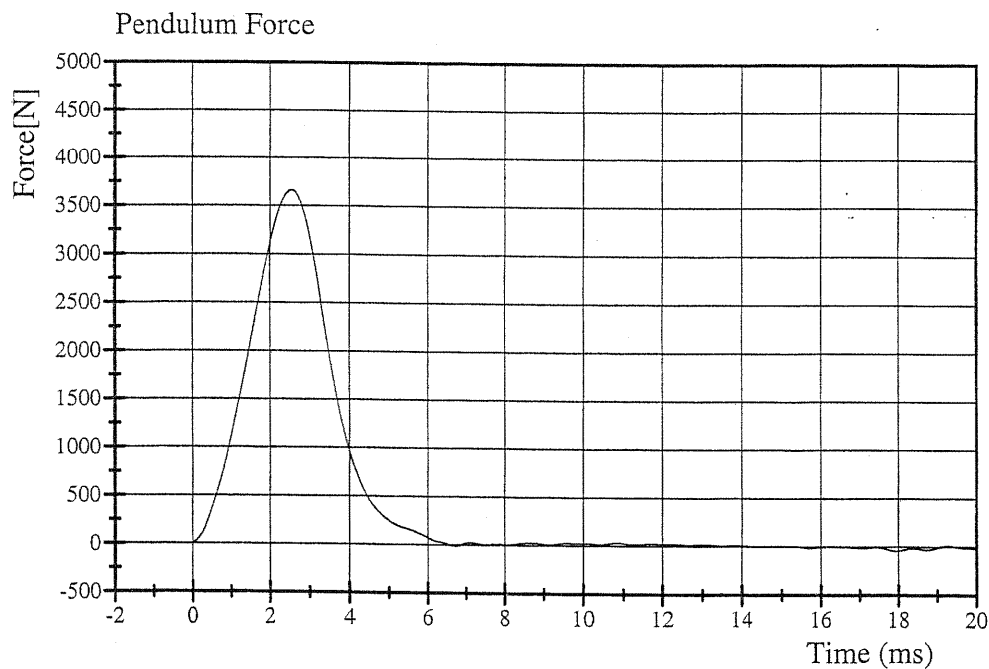
Test Date 08/28/2002



Filter Class: 600

Max: 124.9 g at 2.6 ms

Min: -1.5 g at 17.9 ms



Filter Class: 600

Max: 3662.9 N at 2.6 ms

Min: -42.8 N at 17.9 ms



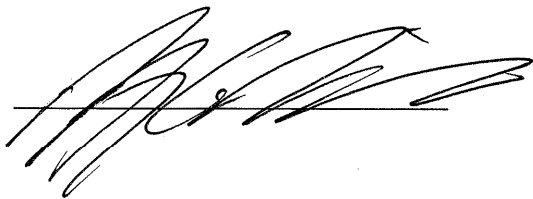
Post-Test Dummy Configuration and Performance Verification Data

Bullet Vehicle Passenger Dummy S/N: 416

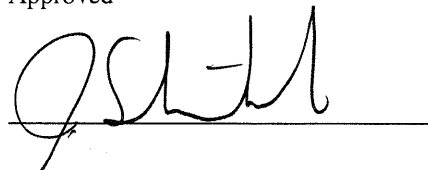
Transportation Research Center Inc.
5720 HIII 5th Dummy
External Dimensions
Serial No. 416 Calibration No. 18

Test Parameter	Dimension	Specification	Results	Pass
Total Sitting Height	A	774.7 - 800.1 mm	781 mm	Yes
Shoulder Pivot Height	B	431.8 - 457.2 mm	445 mm	Yes
Hip Pivot Height	C	81.3 - 86.3 mm	82 mm	Yes
Hip Pivot from Backline	D	144.8 - 149.8 mm	147 mm	Yes
Shoulder Pivot from Backline	E	68.6 - 83.8 mm	74 mm	Yes
Thigh Clearance	F	119.4 - 134.6 mm	126 mm	Yes
Back of Elbow to Wrist Pivot	G	243.9 - 259.0 mm	250 mm	Yes
Head Back to Backline	H	40.7 - 45.7 mm	43 mm	Yes
Shoulder to Elbow Length	I	276.9 - 297.1 mm	288 mm	Yes
Elbow Rest Height	J	182.9 - 203.2 mm	195 mm	Yes
Buttock Knee Length	K	520.7 - 546.1 mm	542 mm	Yes
Popliteal Height	L	355.6 - 375.9 mm	361 mm	Yes
Knee Pivot Height	M	393.7 - 419.1 mm	401 mm	Yes
Buttock Popliteal Height	N	414.1 - 439.4 mm	425 mm	Yes
Chest Depth without Jacket	O	175.3 - 190.5 mm	187 mm	Yes
Foot Length	P	218.5 - 233.6 mm	227 mm	Yes
Buttock to Knee Pivot Length	R	457.2 - 482.6 mm	465 mm	Yes
Head Breadth	S	137.2 - 147.3 mm	143 mm	Yes
Head Depth	T	177.8 - 187.9 mm	185 mm	Yes
Hip Breadth	U	299.8 - 314.9 mm	302 mm	Yes
Shoulder Breadth	V	350.6 - 365.7 mm	364 mm	Yes
Foot Breadth	W	78.8 - 93.9 mm	91 mm	Yes
Head Circumference	X	528.4 - 548.6 mm	547 mm	Yes
Chest Circumference with Jacket	Y	850.9 - 881.3 mm	870 mm	Yes
Waist Circumference	Z	759.5 - 789.9 mm	780 mm	Yes
Reference Location for Chest Circumference	AA	299.8 - 309.8 mm	305 mm	Yes
Reference Location for Waist Circumference	BB	160.1 - 170.1 mm	165 mm	Yes

Technician



Approved




Transportation Research Center Inc.

5720 Head Drop Test

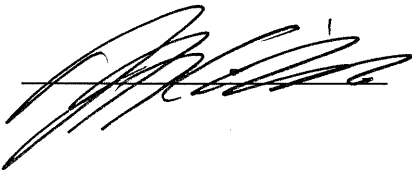
HIII 5th Female Serial No. 416 Calibration No. 18 - 1

Test Date 01/09/2003

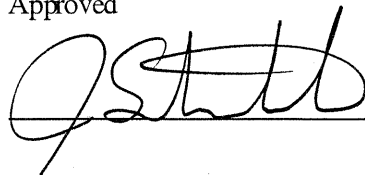
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	26 %	Yes
Peak Resultant Acceleration	250 - 300 g	273.7 g	Yes
Peak Lateral Acceleration	15 g Max	-1.5 g	Yes
Is Acceleration Curve Unimodal?	Yes	Yes	Yes

Comments:

Technician



Approved

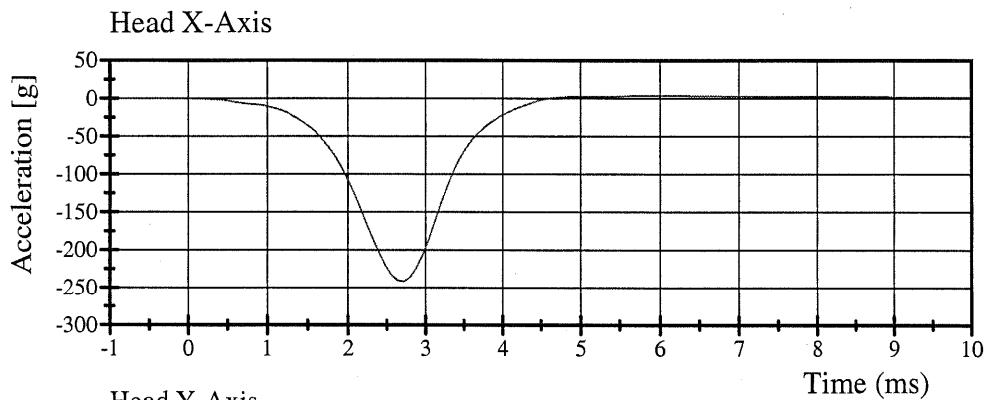


Transportation Research Center Inc.

5720 Head Drop Test

HIII 5th Female Serial No. 416 Calibration No. 18 - 1

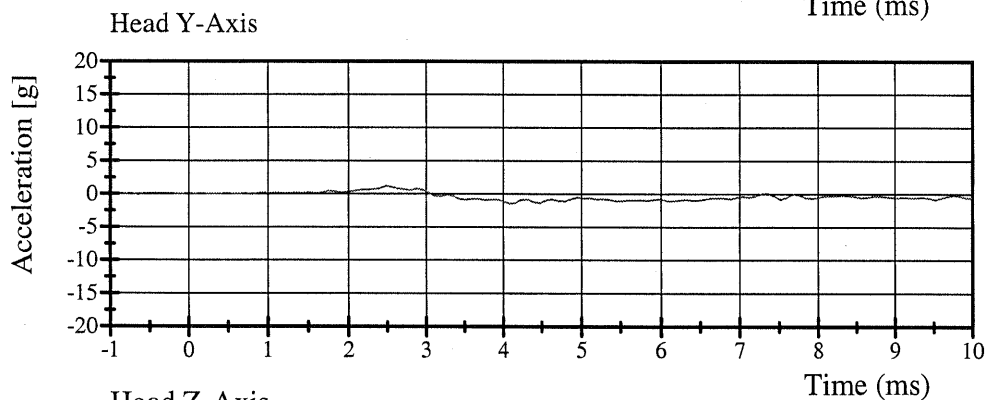
Test Date 01/09/2003



Filter Class: 1000

Max: 4.0 g at 5.8 ms

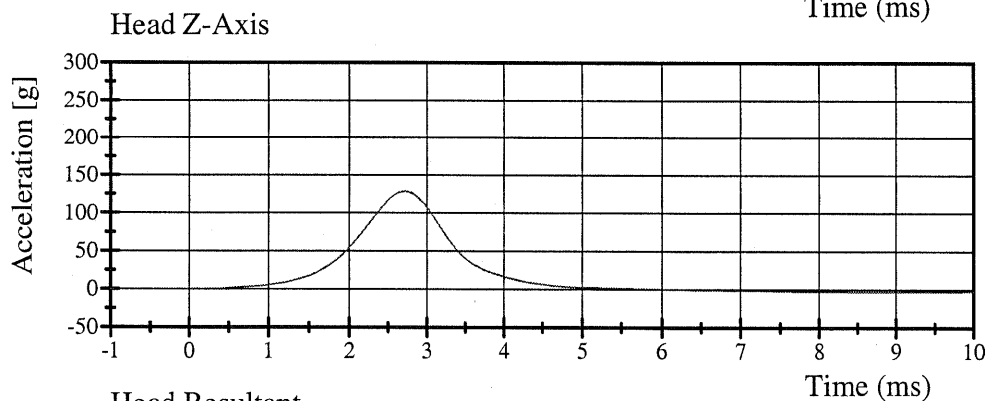
Min: -241.5 g at 2.7 ms



Filter Class: 1000

Max: 1.2 g at 2.5 ms

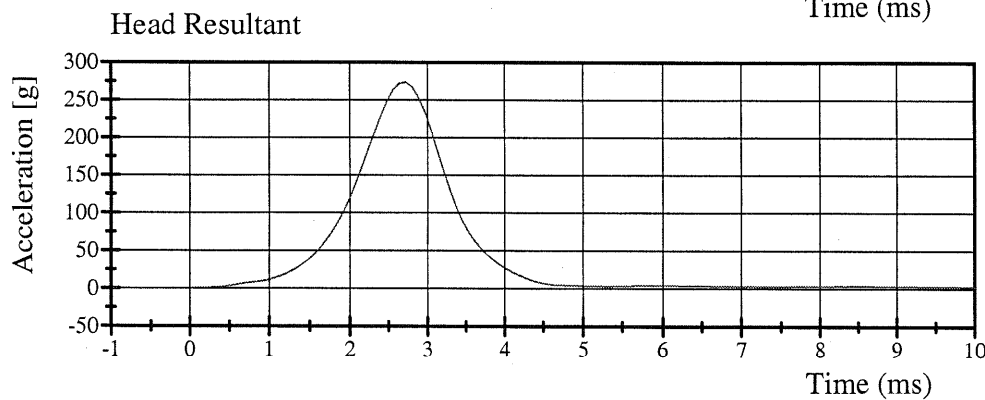
Min: -1.5 g at 4.1 ms



Filter Class: 1000

Max: 128.8 g at 2.7 ms

Min: -2.8 g at 8.5 ms



Filter Class: 1000

Max: 273.7 g at 2.7 ms

Min: 0.0 g at 1.0 ms

Transportation Research Center Inc.

5720 Neck Flexion Test - 6 Channel Transducer

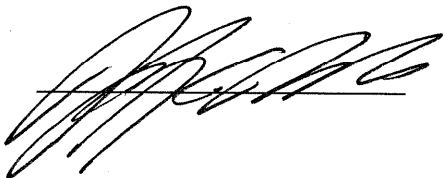
HIII 5th Female Serial No. 416 Calibration No. 18 - 2

Test Date 01/09/2003

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	25 %	Yes
Impact Velocity	6.89 - 7.13 m/s	7.06 m/s	Yes
Integrated Pendulum Velocity			
10 ms	2.10 - 2.50 m/s	2.30 m/s	Yes
20 ms	4.00 - 5.00 m/s	4.39 m/s	Yes
30 ms	5.80 - 7.00 m/s	6.21 m/s	Yes
Peak D Plane Rotation	77 - 91 °	80.5 °	Yes
Peak Moment About Occipital Condyles (During time interval rotation is within specified corridors)	69.0 - 83.0 N·m	81.70 N·m	Yes
Positive Moment Decay Time To 10 N·m	80 - 100 ms	88.16 ms	Yes

Comments:

Technician



Approved

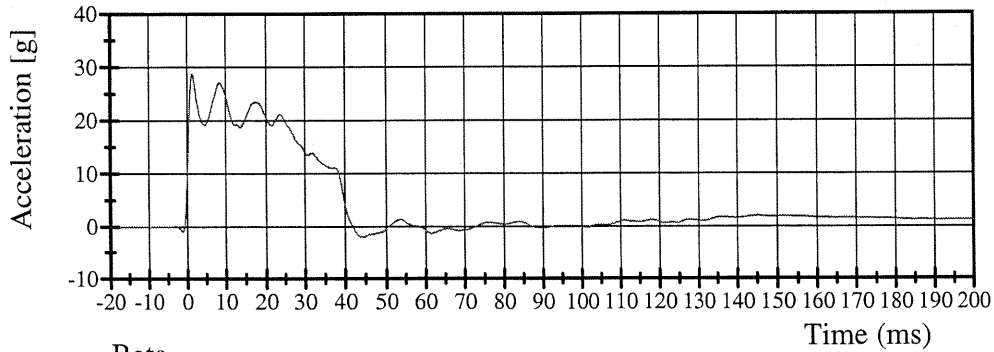
Transportation Research Center Inc.

5720 Neck Flexion Test

HIII 5th Female Serial No. 416 Calibration No. 18 - 2

Test Date 01/09/2003

Pendulum Deceleration

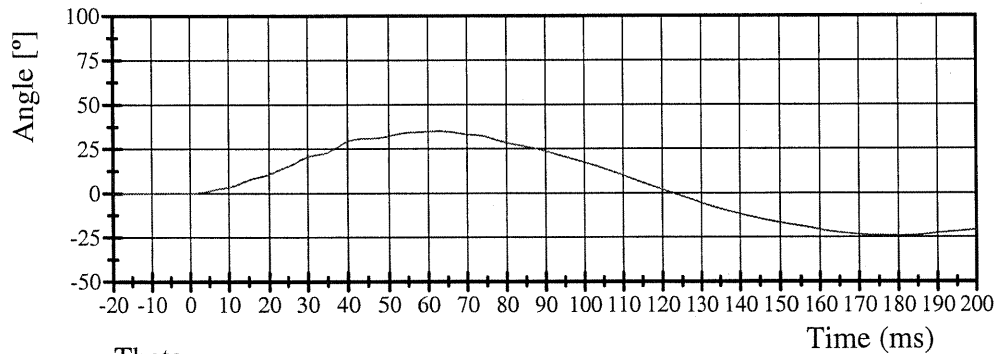


Filter Class: 180

Max: 28.8 g at 1.4 ms

Min: -1.9 g at 44.6 ms

Beta

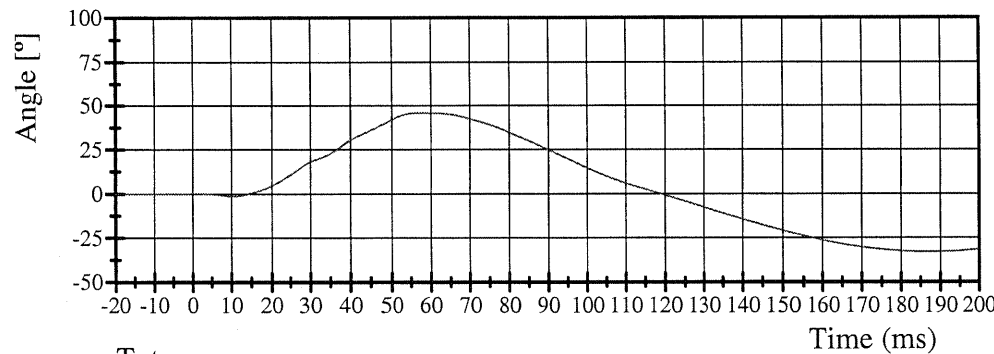


Filter Class: 60

Max: 35.0 ° at 62.8 ms

Min: -24.1 ° at 180.8 ms

Theta

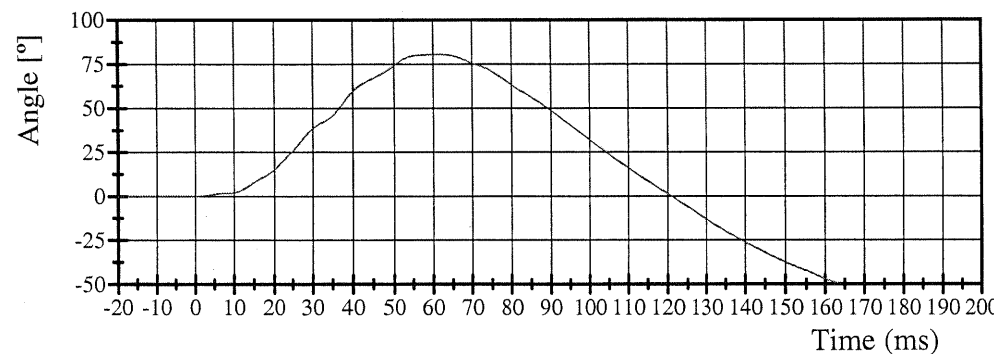


Filter Class: 60

Max: 45.8 ° at 57.0 ms

Min: -33.0 ° at 187.0 ms

Totan



Filter Class: 60

Max: 80.5 ° at 61.6 ms

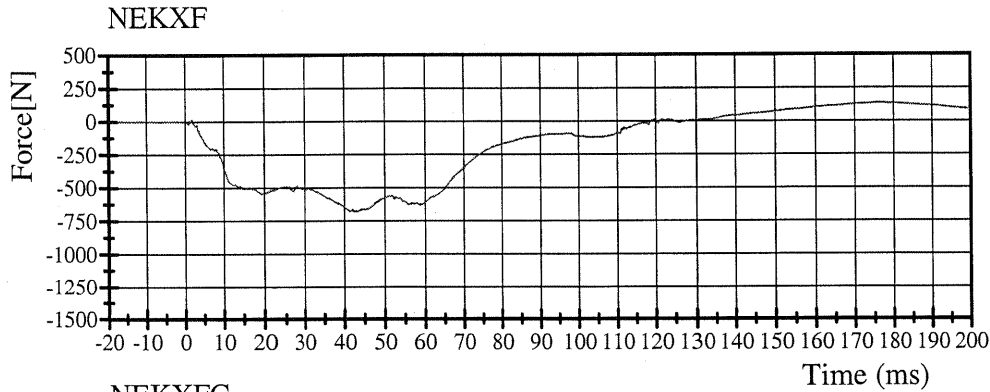
Min: -56.8 ° at 183.0 ms

Transportation Research Center Inc.

5720 Neck Flexion Test

HIII 5th Female Serial No. 416 Calibration No. 18 - 2

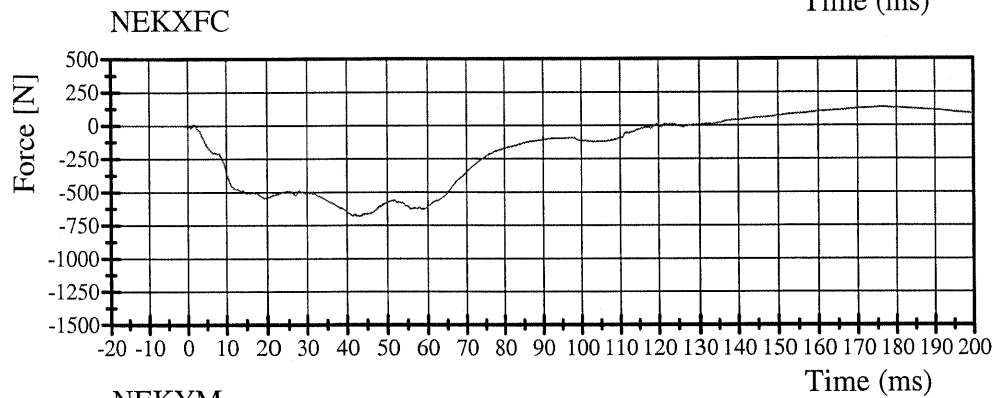
Test Date 01/09/2003



Filter Class: 1000

Max: 134.6 N at 177.1 ms

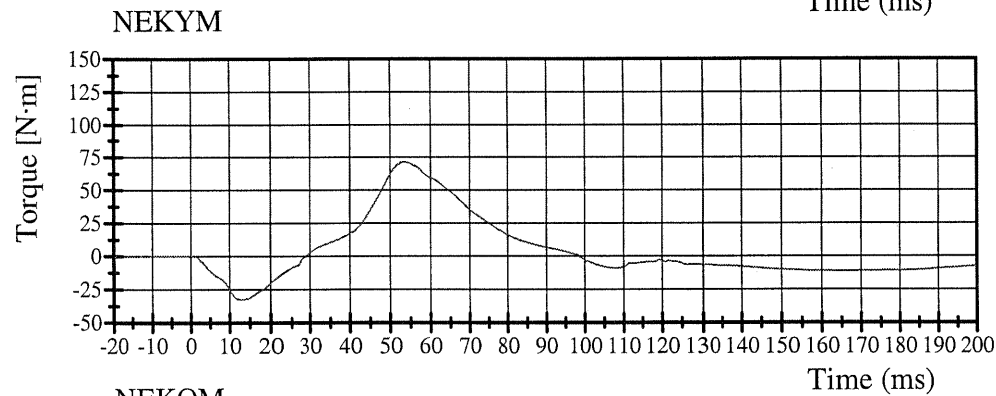
Min: -681.4 N at 43.4 ms



Filter Class: 600

Max: 133.9 N at 177.2 ms

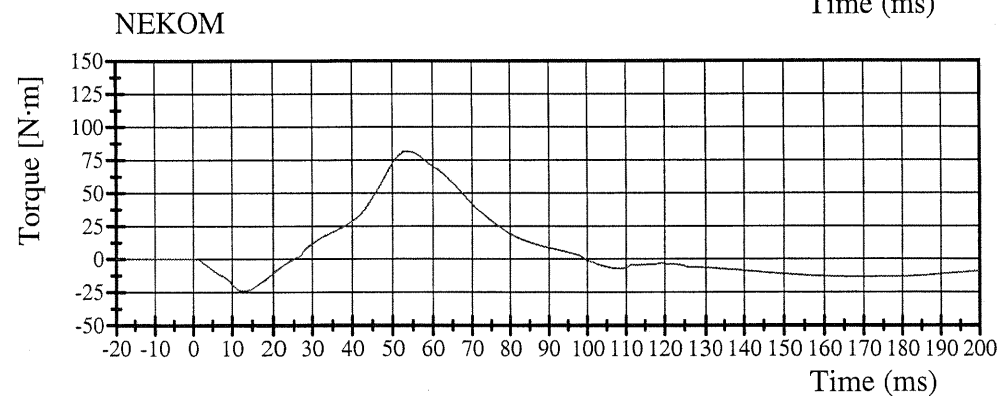
Min: -680.5 N at 43.4 ms



Filter Class: 600

Max: 71.4 N·m at 53.7 ms

Min: -32.6 N·m at 13.4 ms



Filter Class: 600

Max: 81.7 N·m at 53.8 ms

Min: -24.0 N·m at 12.6 ms

Transportation Research Center Inc.

5720 Neck Extension Test - 6 Channel Transducer

HIII 5th Female Serial No. 416 Calibration No. 18 - 1

Test Date 01/09/2003

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	27 %	Yes
Impact Velocity	5.95 - 6.19 m/s	6.15 m/s	Yes
Integrated Pendulum Velocity			
10 ms	1.50 - 1.90 m/s	1.71 m/s	Yes
20 ms	3.10 - 3.90 m/s	3.37 m/s	Yes
30 ms	4.60 - 5.60 m/s	4.89 m/s	Yes
Peak D Plane Rotation	99 - 114 °	103.3 °	Yes
Peak Moment About Occipital Condyles (During time interval rotation is within specified corridors)	-65.0 - (-53.0) N·m	-57.03 N·m	Yes
Positive Moment Decay Time To -10 N·m	94 - 114 ms	103.28 ms	Yes

Comments:

Technician



Approved

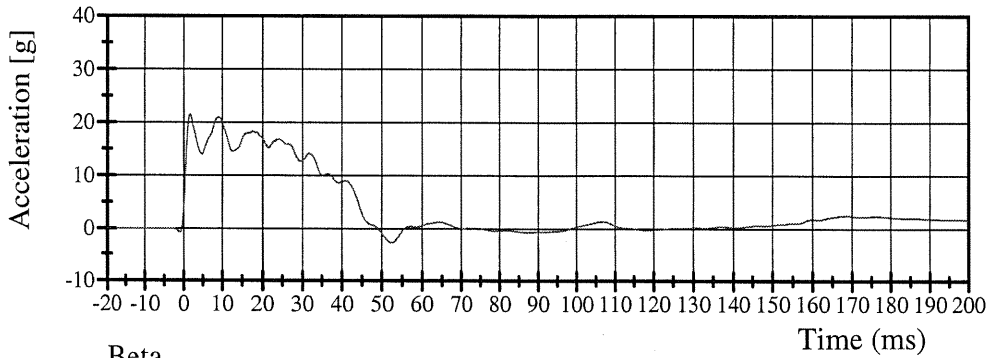
Transportation Research Center Inc.

5720 Neck Extension Test

HIII 5th Female Serial No. 416 Calibration No. 18 - 1

Test Date 01/09/2003

Pendulum Deceleration

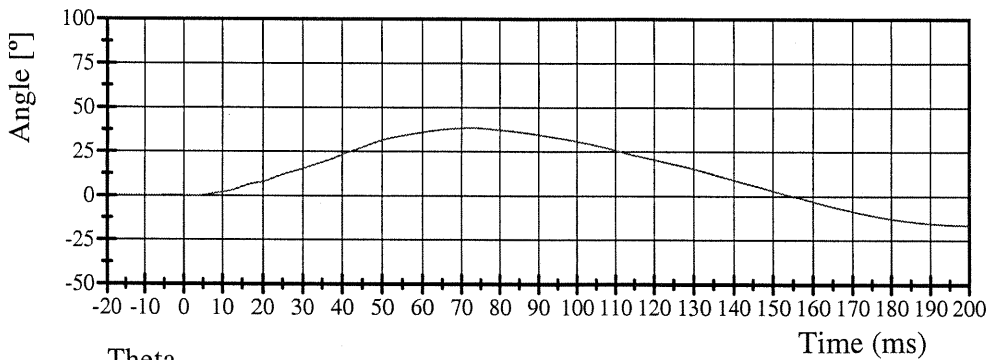


Filter Class: 180

Max: 21.5 g at 1.7 ms

Min: -2.6 g at 52.4 ms

Beta

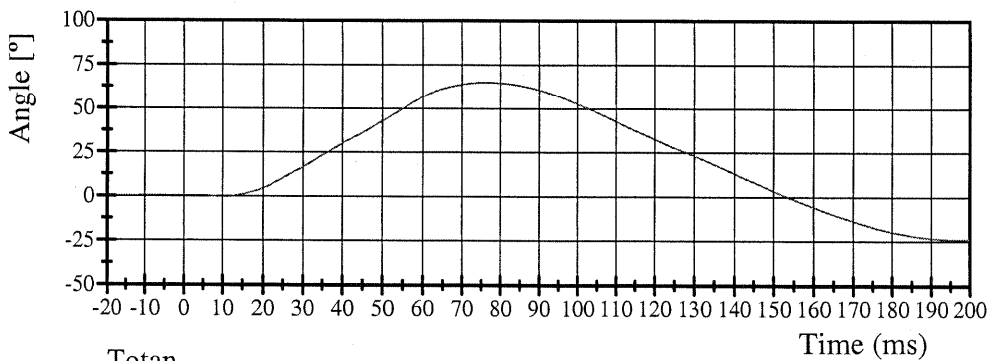


Filter Class: 60

Max: 38.5 ° at 72.8 ms

Min: -16.4 ° at 200.8 ms

Theta

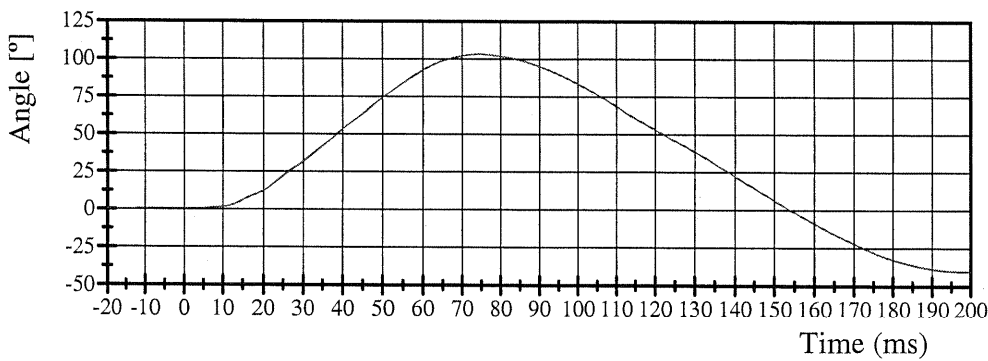


Filter Class: 60

Max: 65.0 ° at 76.0 ms

Min: -24.0 ° at 198.2 ms

Totan



Filter Class: 60

Max: 103.3 ° at 74.5 ms

Min: -40.3 ° at 199.4 ms



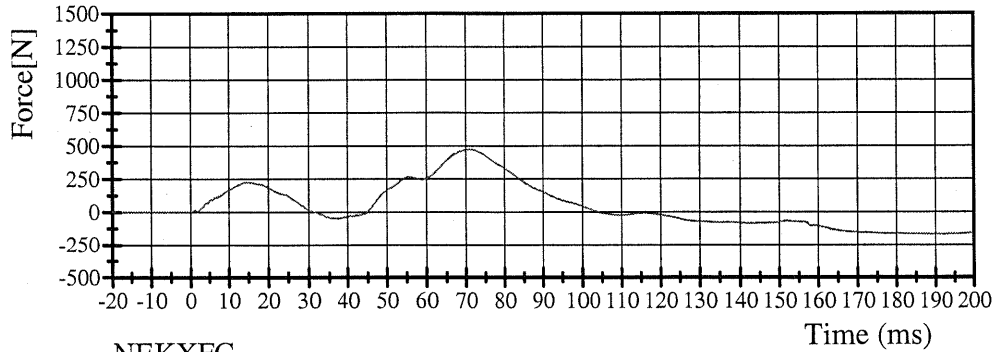
Transportation Research Center Inc.

5720 Neck Extension Test

HIII 5th Female Serial No. 416 Calibration No. 18 - 1

Test Date 01/09/2003

NEKXF

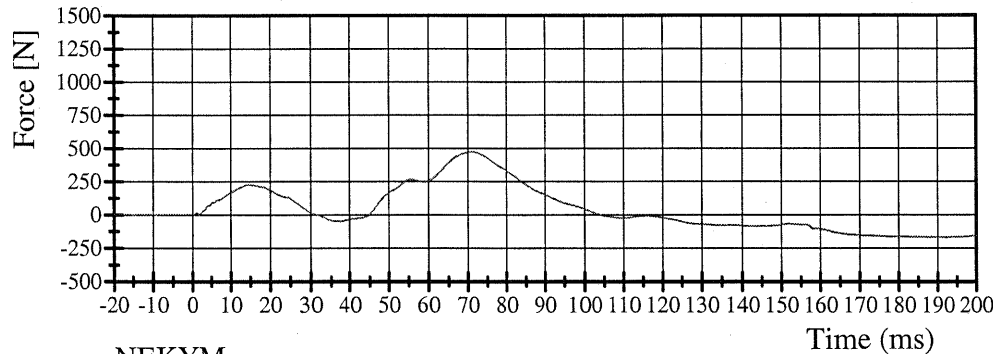


Filter Class: 1000

Max: 473.9 N at 70.9 ms

Min: -170.9 N at 192.2 ms

NEKXFC

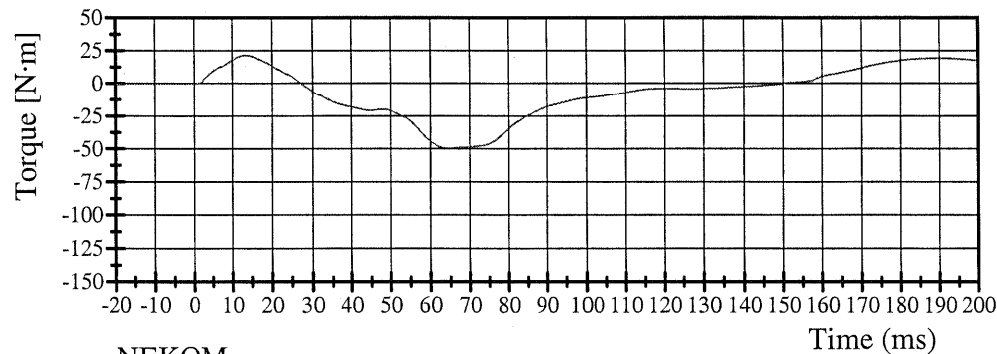


Filter Class: 600

Max: 473.3 N at 71.0 ms

Min: -170.4 N at 192.2 ms

NEKYM

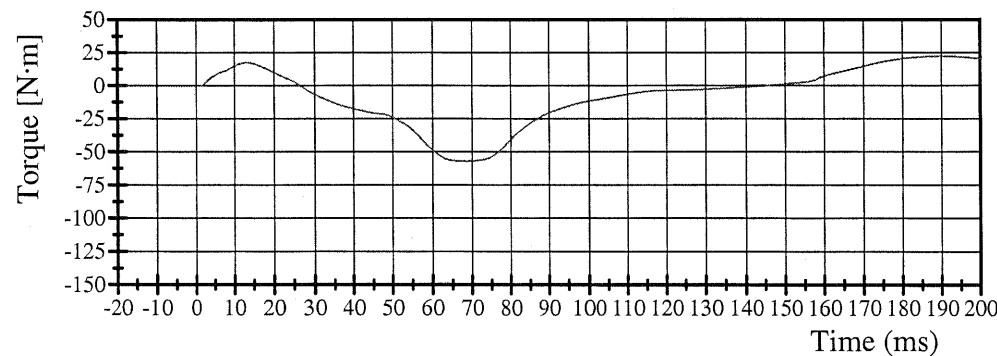


Filter Class: 600

Max: 21.5 N·m at 13.4 ms

Min: -49.6 N·m at 64.5 ms

NEKOM



Filter Class: 600

Max: 22.3 N·m at 189.9 ms

Min: -57.0 N·m at 68.7 ms

Transportation Research Center Inc.

5720 Thorax Test

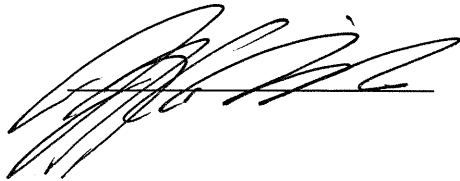
HIII 5th Female Serial No. 416 Calibration No. 18 - 1

Test Date 01/09/2003

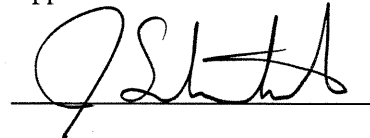
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Pendulum Velocity	6.59 - 6.83 m/s	6.63 m/s	Yes
Maximum Chest Deflection	-58.0 - (-50.0) mm	-56.7 mm	Yes
Peak Impact Probe Force Within Compression Corridor	3900 - 4400 N	4300 N	Yes
Peak Force Between 18 mm and 50 mm	4600 N	4078 N	Yes
Internal Hysteresis	69 - 85 %	73 %	Yes

Comments:

Technician



Approved



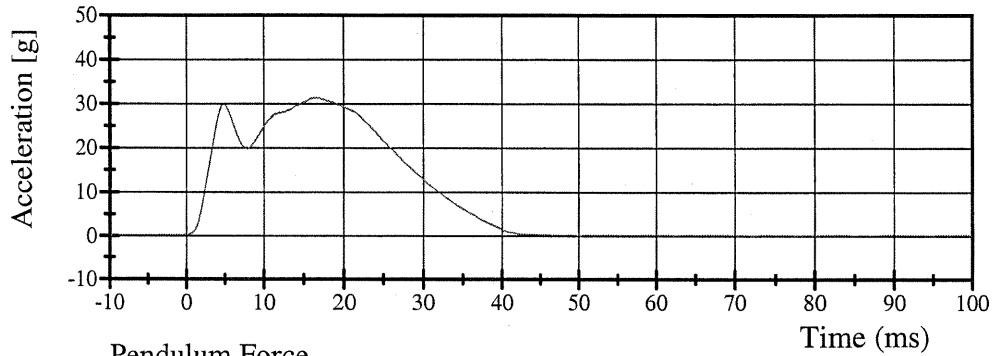
Transportation Research Center Inc.

5720 Thorax Test

HIII 5th Female Serial No. 416 Calibration No. 18 - 1

Test Date 01/09/2003

Pendulum Deceleration

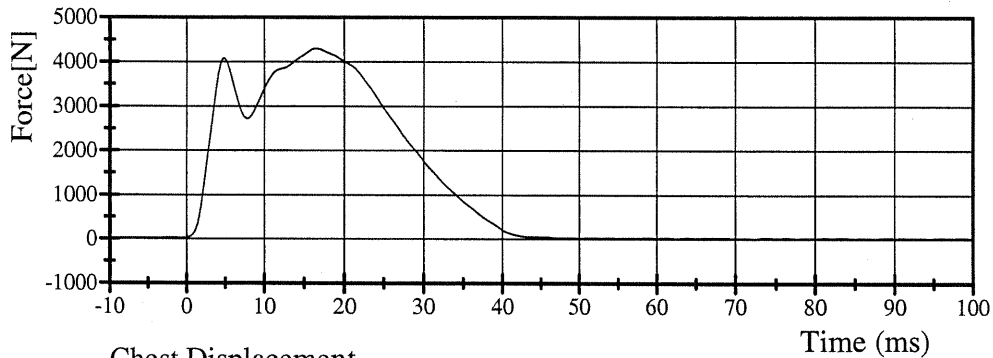


Filter Class: 180

Max: 31.4 g at 16.6 ms

Min: -0.4 g at 387.1 ms

Pendulum Force

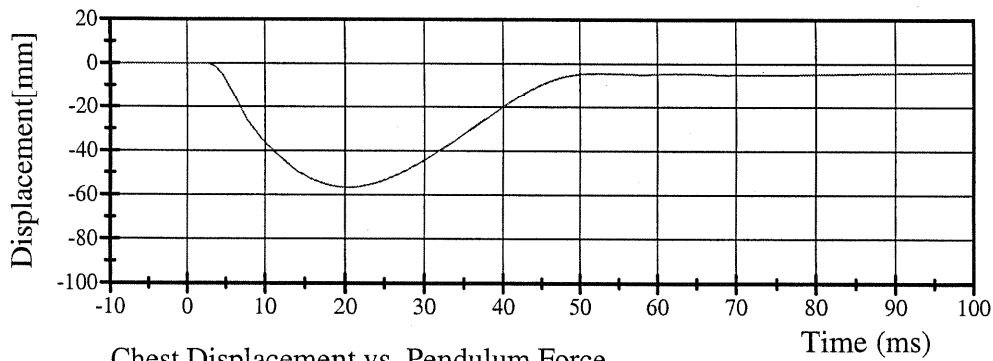


Filter Class: 180

Max: 4300.2 N at 16.6 ms

Min: -50.3 N at 387.1 ms

Chest Displacement

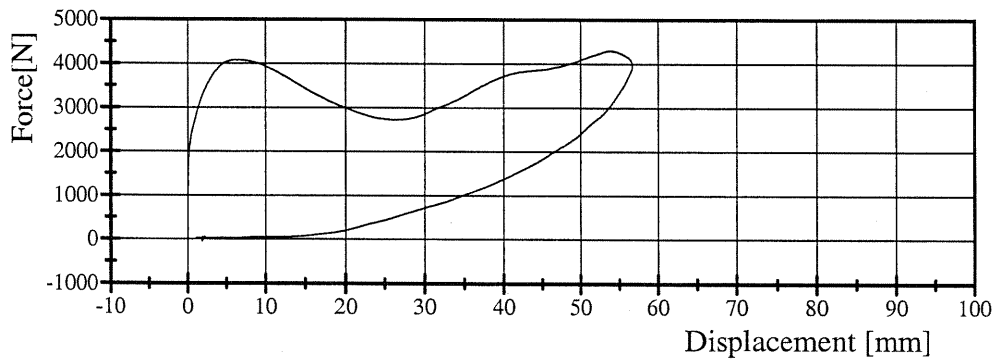


Filter Class: 600

Max: 0.0 mm at -55.5 ms

Min: -56.7 mm at 20.5 ms

Chest Displacement vs. Pendulum Force



TRANSPORTATION RESEARCH CENTER INC.

TORSO FLEXION TEST

HYBRID III SMALL FEMALE

CAL DATE: 02-Jan-03

TRC, INC. TEST NO: 416C18TF1 572 O SN421 TORSO FLEX CAL 18

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6 – 22.2° C	21.7 ° C
RELATIVE HUMIDITY	10 – 70 %	20 %
INITIAL ANGLE OF UNSUPPORTTED DUMMY	<= 20° REFERENCED TO VERTICAL	17.4 °
MAXIMUM FORCE AT 45 DEG. DURING 10 SECOND PERIOD	320 – 390 N	344.9 N
RETURN ANGLE		24.4 °
DIFFERENCE BETWEEN RETURN ANGLE & INTIAL ANGLE	+/- 8 ° OF INTIAL ANGLE	7.0 °
RATE	0.5° - 1.5°/sec	0.98 °/sec

TEST MEETS SPECIFICATIONS

TECHNICIAN 

Transportation Research Center Inc.

5720 Left Knee Slider Test

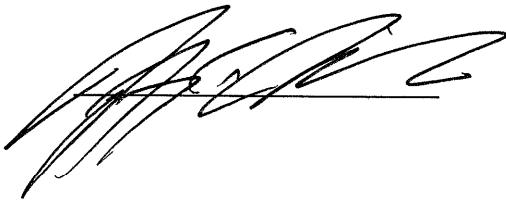
HIII 5th Female Serial No. 416 Calibration No. 18 - 1

Test Date 12/31/2002

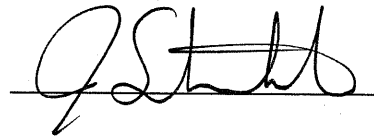
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	41 %	Yes
Pendulum Velocity	2.70 - 2.80 m/s	2.75 m/s	Yes
Knee Displacement	-15.5 - (-12.7) mm	-13.9 mm	Yes

Comments:

Technician



Approved

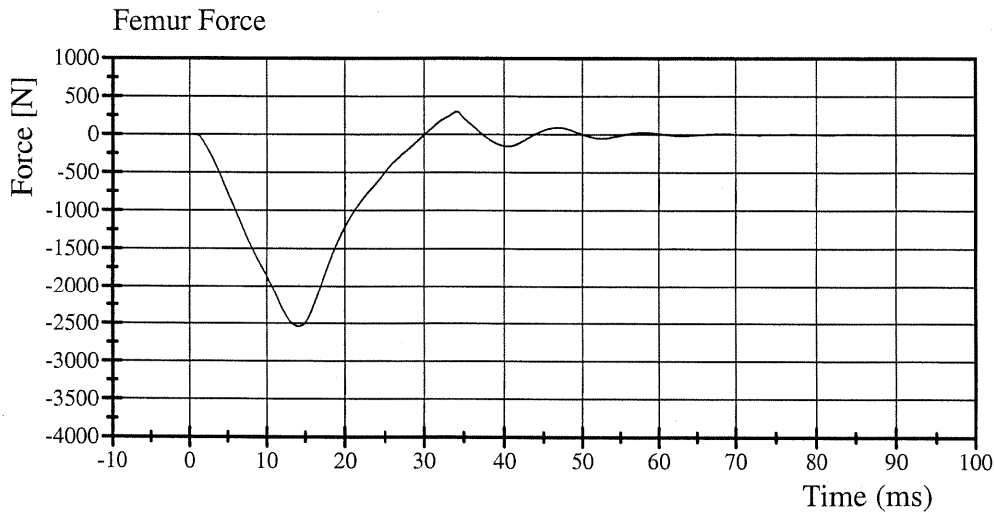


Transportation Research Center Inc.

5720 Left Knee Slider Test

HIII 5th Female Serial No. 416 Calibration No. 18 - 1

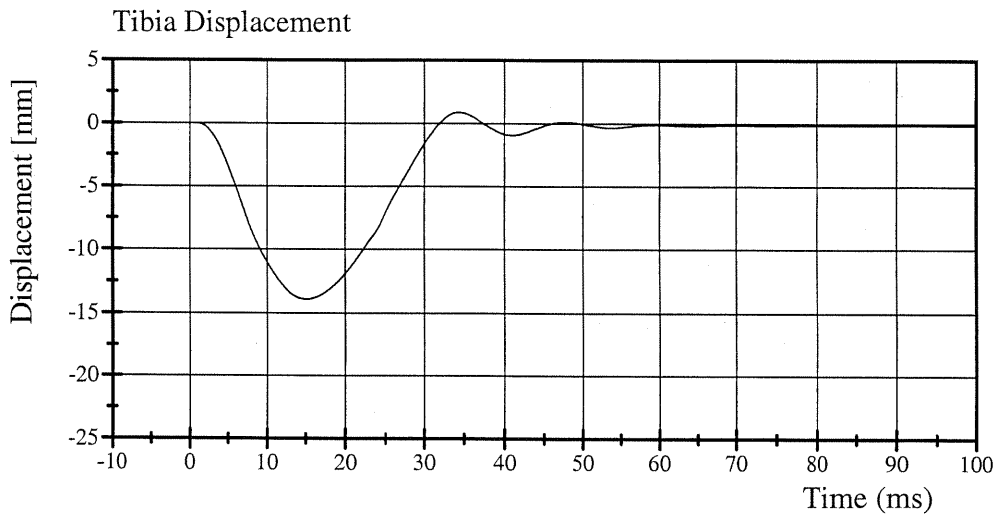
Test Date 12/31/2002



Filter Class: 600

Max: 300.0 N at 34.1 ms

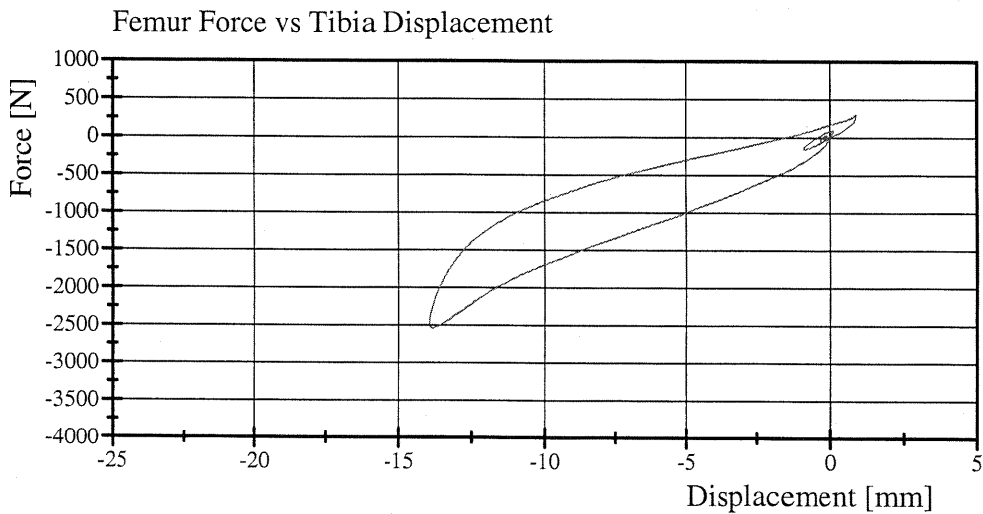
Min: -2540.9 N at 14.1 ms



Filter Class: 600

Max: 0.9 mm at 34.3 ms

Min: -13.9 mm at 15.2 ms



Transportation Research Center Inc.

5720 Right Knee Slider Test

HIII 5th Female Serial No. 416 Calibration No. 18 - 1

Test Date 01/02/2003

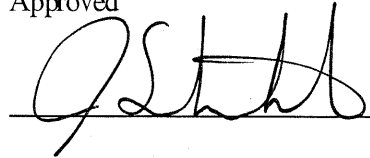
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	19 %	Yes
Pendulum Velocity	2.70 - 2.80 m/s	2.74 m/s	Yes
Knee Displacement	-15.5 - (-12.7) mm	-12.8 mm	Yes

Comments:

Technician



Approved

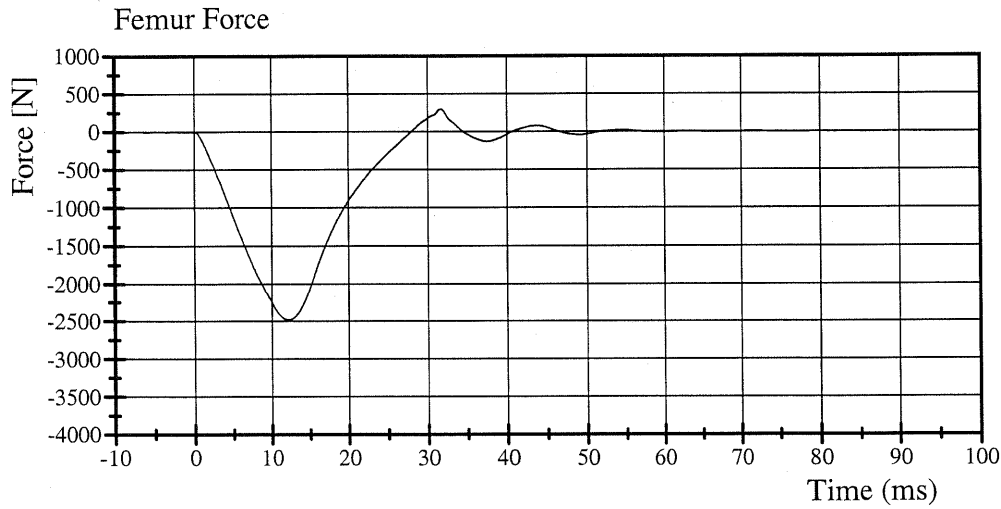


Transportation Research Center Inc.

5720 Right Knee Slider Test

HIII 5th Female Serial No. 416 Calibration No. 18 - 1

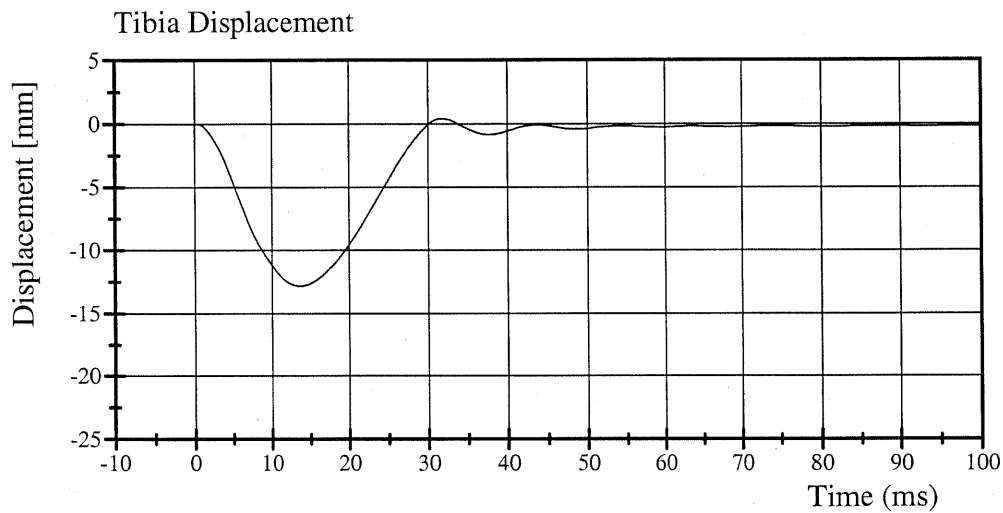
Test Date 01/02/2003



Filter Class: 600

Max: 299.1 N at 31.7 ms

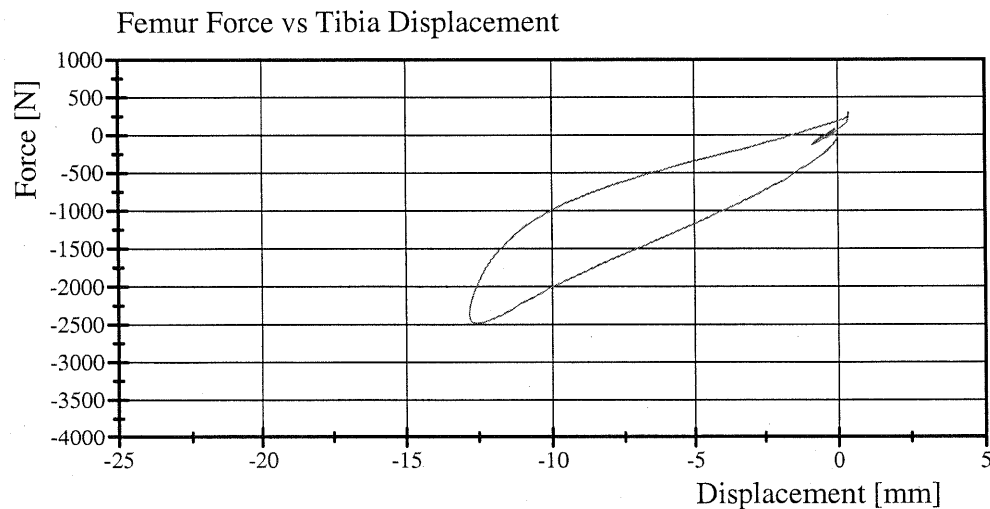
Min: -2480.6 N at 12.2 ms



Filter Class: 600

Max: 0.4 mm at 31.5 ms

Min: -12.8 mm at 13.8 ms



Transportation Research Center Inc.

5720 Left Knee Test

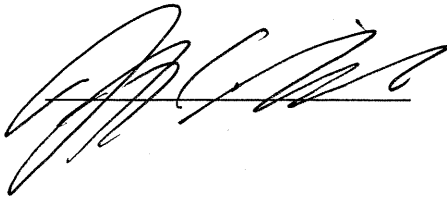
HIII 5th Female Serial No. 416 Calibration No. 18 - 1

Test Date 01/09/2003

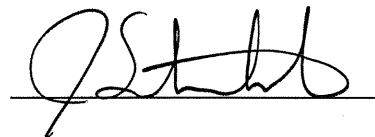
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	29 %	Yes
Pendulum Velocity	2.07 - 2.13 m/s	2.08 m/s	Yes
Maximum Pendulum Force	3450 - 4060 N	3691 N	Yes

Comments:

Technician



Approved



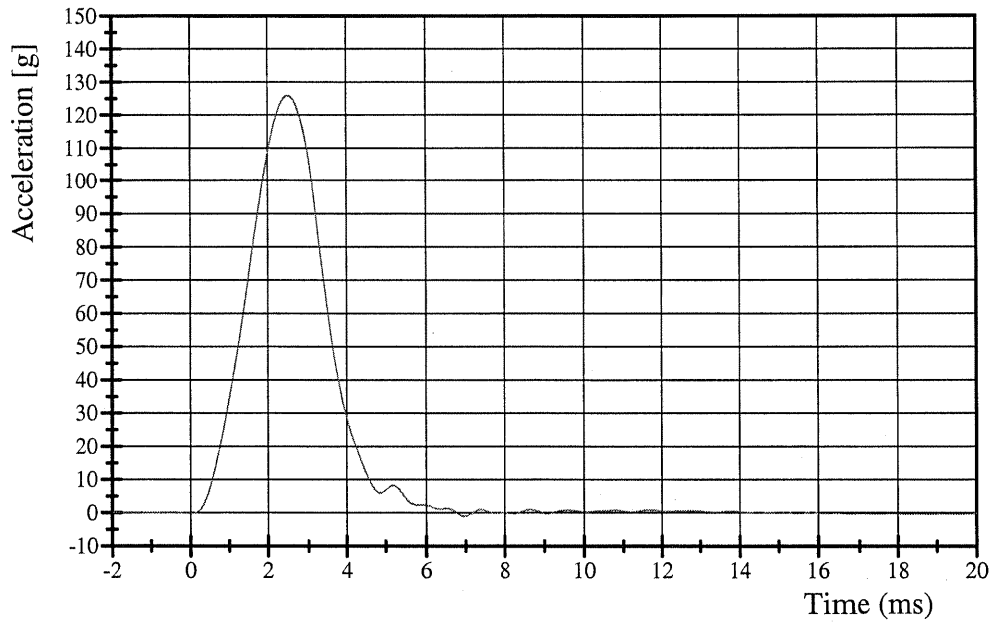
Transportation Research Center Inc.

5720 Left Knee Test

HIII 5th Female Serial No. 416 Calibration No. 18 - 1

Test Date 01/09/2003

Pendulum Deceleration

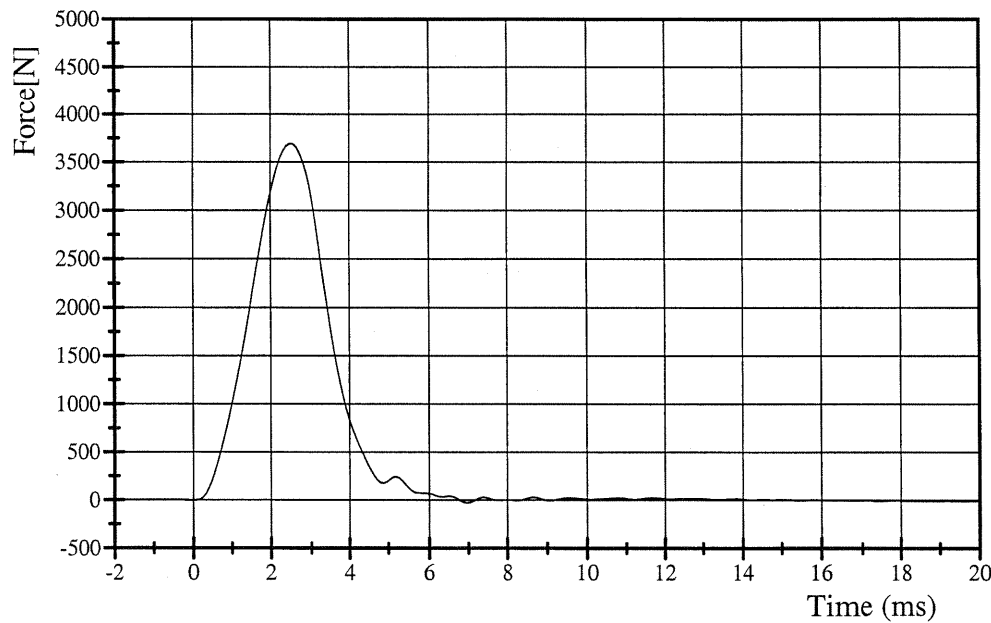


Filter Class: 600

Max: 125.9 g at 2.5 ms

Min: -1.0 g at 7.0 ms

Pendulum Force



Filter Class: 600

Max: 3690.5 N at 2.5 ms

Min: -30.2 N at 7.0 ms



Transportation Research Center Inc.

5720 Right Knee Test

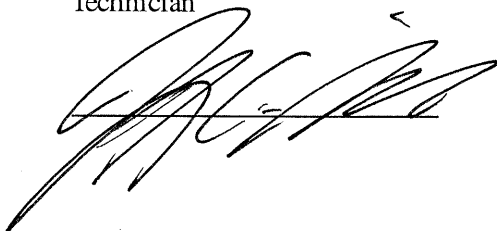
HIII 5th Female Serial No. 416 Calibration No. 18 - 1

Test Date 01/09/2003

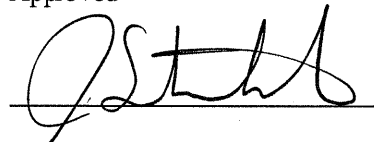
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	29 %	Yes
Pendulum Velocity	2.07 - 2.13 m/s	2.10 m/s	Yes
Maximum Pendulum Force	3450 - 4060 N	3807 N	Yes

Comments:

Technician



Approved



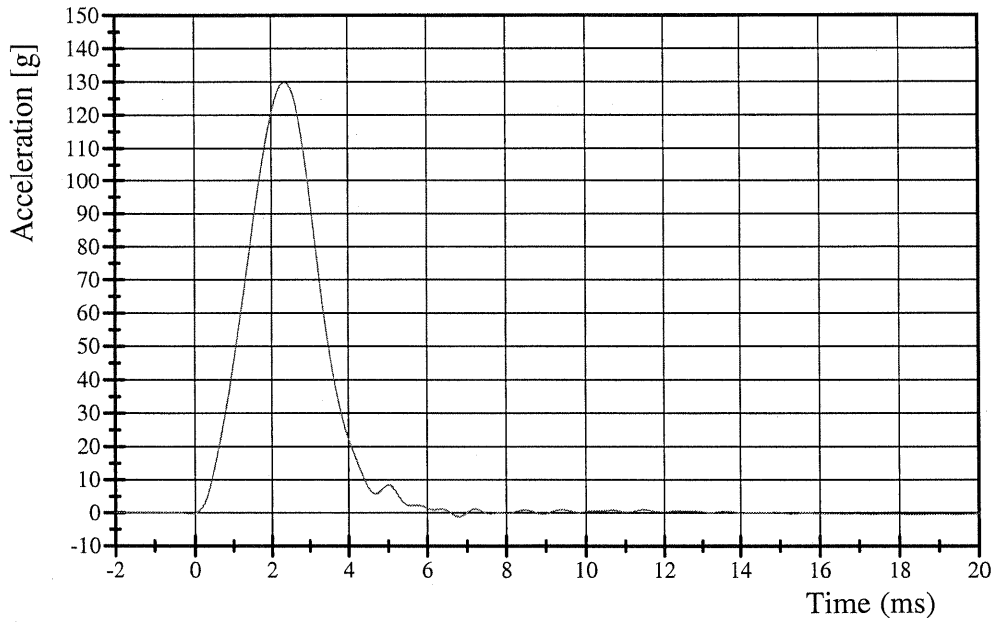
Transportation Research Center Inc.

5720 Right Knee Test

HIII 5th Female Serial No. 416 Calibration No. 18 - 1

Test Date 01/09/2003

Pendulum Deceleration

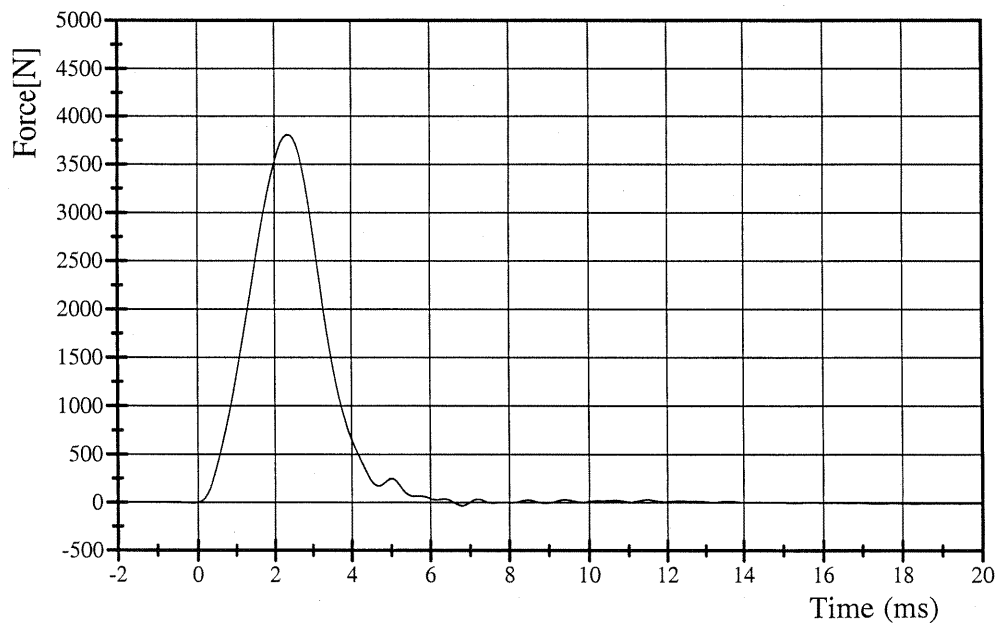


Filter Class: 600

Max: 129.8 g at 2.3 ms

Min: -1.2 g at 6.8 ms

Pendulum Force



Filter Class: 600

Max: 3807.2 N at 2.3 ms

Min: -34.7 N at 6.8 ms

Appendix D

Test Equipment and Instrumentation Calibration Information

Sign Convention
SAE J211 MAR95

Accelerometers:
+X: Forward
+Y: Rightward
+Z: Downward

Potentiometers:
+Chest longitudinal deflection: Outward
+Chest lateral deflection: Leftward
+Seat belt displacement: Outward
+Seat belt extension: Elongation
+Knee slider displacement: Distance between femur and tibia
increased (in relation to a seated
dummy)

Rotation potentiometers:
+About the X-axis: Left foot-eversion
Right foot-inversion
+About the Y-axis: Left/right foot-dorsiflexion
+About the Z-axis: Left foot-internal
Right foot-external

Load cells:
+Femur force: Tension
+Seat belt force: Tension
+Barrier force: Tension

Neck load cells:
+X force: Head pushed rearward
+Y force: Head pushed leftward
+Z force: Head pulled upward (tension on neck)
+X moment: Left ear rotating toward left shoulder
+Y moment: Chin rotating toward chest
+Z moment: Chin rotating toward left shoulder

Tibia load cells:
+X force: Ankle forward, knee rearward
+Y force: Ankle rightward, knee leftward
+Z force: Tension
+X moment: Bottom of tibia moving leftward
+Y moment: Bottom of tibia moving rearward

Frequency Response Classes
SAE J211 MAR95

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

Description Of Timing Marks On TRC Inc. High-Speed Film

All TRC Inc. high-speed cameras are equipped with red LEDs which put timing marks on the right edge of the film. TRC Inc. 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.

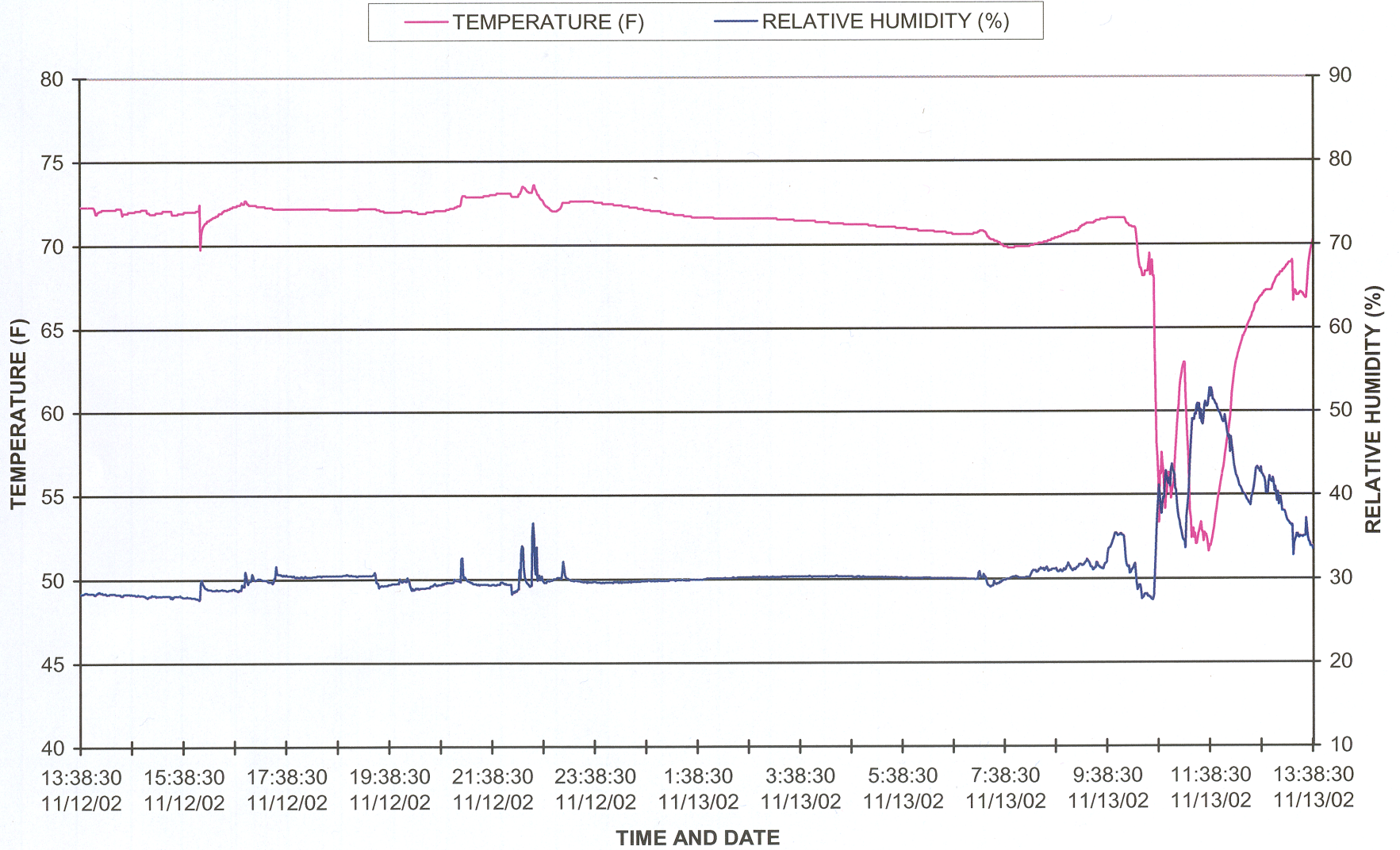
The timing marks appear on the film as small red marks on the right edge of the film. Round marks are left by the Photosonic and Stalex cameras while horizontal bars are left by the Hycam, Locam, and Fastax II cameras.

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

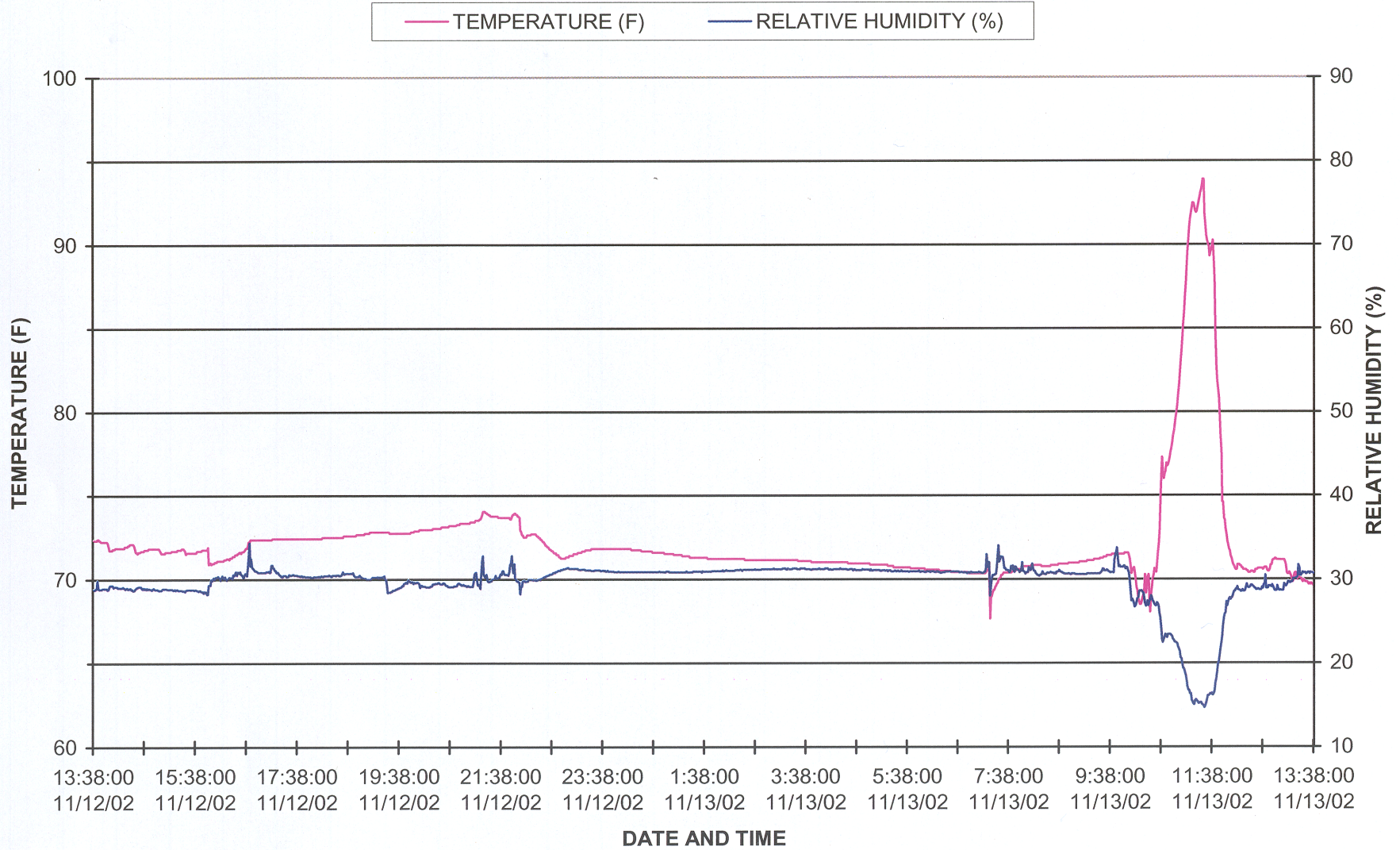
1. Every frame will have **one** LED appear in it. This indicates a *millisecond* pulse.
2. Every ten frames will have **two** LEDs appear in it. These indicate a *millisecond* pulse plus a *hundredth of a second* pulse.
3. Every one hundred frames will have **three** LEDs appear in it. These indicate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

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.

TARGET VEHICLE TEMPERATURE AND RELATIVE HUMIDITY CHART 021113



BULLET VEHICLE TEMPERATURE AND RELATIVE HUMIDITY CHART 021113



The direction column on the following sheets describes the transducer output as mounted and wired in the test location. The polarity column indicates whether a polarity change occurred during data acquisition to conform to J211 MAR95. See Report Sign Convention sheet for description of data output as presented in the report: occasionally channels have been adjusted in post-acquisition processing to conform to J211 MAR95.

Channel Report

11/13/2002 9:32:17 AM

Name of Test 021113

System K3600

Name of DAU DAU0

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol.	Cal.	Group	Mfg.	Model	
0000	EVENT	SYNCO	SYNCO		10.24	V	+ 10/15/2002	---	-1	TRC	Event
0001	J20083	HEDXGA	Head Accel X	Rwd	1203.8702	g	- 5/24/2002	OK	169v	Endevco	7264-2000T
0002	J19843	HEDYGA	Head Accel Y	Lft	1203.0075	g	- 5/24/2002	OK	169v	Endevco	7264-2000T
0003	J20027	HEDZGA	Head Accel Z	Up	1198.5439	g	- 5/24/2002	OK	169v	Endevco	7264-2KM5T
0004	1716A-782-FX	NEKXFA	Neck Force X	Hd	13338.003	N	- 5/30/2002	OK	169v	Denton	1716A
0005	1716A-782-FY	NEKYFA	Neck Force Y	Hd	13358.829	N	+ 5/30/2002	OK	169v	Denton	1716A
0006	1716A-782-FZ	NEKZFA	Neck Force Z	Hd	20011.553	N	+ 5/30/2002	OK	169v	Denton	1716A
0007	1716A-782-MX	NEKXMA	Neck Moment X	Rt Ear	423.49857	N·m	- 5/30/2002	OK	169v	Denton	1716A
0008	1716A-782-MY	NEKYMA	Neck Moment Y	Chn	424.23483	N·m	+ 5/30/2002	OK	169v	Denton	1716A
0009	1716A-782-MZ	NEKZMA	Neck Moment Z	Chn	423.51205	N·m	+ 5/30/2002	OK	169v	Denton	1716A
0010	J23757	CSTXGA	Chest Accel X	Fwd	599.31757	g	+ 5/24/2002	OK	169v	Endevco	7264-2000T
0011	J21989	CSTYGA	Chest Accel Y	Lft	601.26006	g	- 5/24/2002	OK	169v	Endevco	7264-2KM5T
0012	J35747	CSTZGA	Chest Accel Z	Up	602.63653	g	- 5/24/2002	OK	169v	Endevco	7264-2000TZ
0013	14CB1-2847-169	CSTXDA	Chest Deflection X	Strnm	102.03095	mm	+ 6/6/2002	OK	169v	Servo	14CB1-2847
0014	J36741	PEVXGA	Pelvis Accel X	Rwd	598.78138	g	- 5/24/2002	OK	169v	Endevco	7264-2000TZ
0015	J36605	PEVYGA	Pelvis Accel Y	Lft	597.68397	g	- 5/24/2002	OK	169v	Endevco	7264-2000TZ
0016	AAMD7	PEVZGA	Pelvis Accel Z	Up	596.56972	g	- 5/24/2002	OK	169v	Endevco	7264-2000LC
0017	1914-0261-FX	LFMXFA	Left Femur Force X	Knee	20043.875	N	- 5/24/2002	OK	169v	Denton	1914
0018	1914-0261-FY	LFMYFA	Left Femur Force Y	Knee	20037.545	N	+ 5/24/2002	OK	169v	Denton	1914
0019	1914-0261-FZ	LFMZFA	Left Femur Force Z	Knee	33361.064	N	+ 5/24/2002	OK	169v	Denton	1914
0020	1914-0261-MX	LFMXMA	Left Femur Moment X	Knee	508.75255	N·m	- 5/24/2002	OK	169v	Denton	1914
0021	1914-0261-MY	LFMYMA	Left Femur Moment Y	Knee	508.52406	N·m	+ 5/24/2002	OK	169v	Denton	1914
0022	1914-0261-MZ	LFMZMA	Left Femur Moment Z	Tib	509.01555	N·m	+ 5/24/2002	OK	169v	Denton	1914
0023	1914A-383-FX	RFMXFA	Right Femur Force X	Knee	20039.527	N	- 5/24/2002	OK	169v	Denton	1914A
0024	1914A-383-FY	RFMYFA	Right Femur Force Y	Knee	20017.163	N	+ 5/24/2002	OK	169v	Denton	1914A
0025	1914A-383-FZ	RFMZFA	Right Femur Force Z	Knee	33365.199	N	+ 5/24/2002	OK	169v	Denton	1914A
0026	1914A-383-MX	RFMXMA	Right Femur Moment X	Knee	508.55788	N·m	- 5/24/2002	OK	169v	Denton	1914A
0027	1914A-383-MY	RFMYMA	Right Femur Moment Y	Knee	509.40946	N·m	+ 5/24/2002	OK	169v	Denton	1914A
0028	1914A-383-MZ	RFMZMA	Right Femur Moment Z	Tib	509.04461	N·m	+ 5/24/2002	OK	169v	Denton	1914A
0029	150-0121VR-171	KNLXDA	Left Knee Displacement	Tib	28.758390	mm	- 6/13/2002	OK	169v	SpaceAge	150-0121VR

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0030	150-0121VL-210	KNRXDA	Right Knee Displacement	Tib	22.515391	mm	-	6/13/2002	OK	169v	SpaceAge	150-0121VL
0031	02A02-F02	HEDXGB	Head Accel X	Fwd	1199.9062	g	+	8/1/2002	OK	416v	Entran	EGE-73B6Q-200
0032	02A18-N10	HEDYGB	Head Accel Y	Lft	1210.6737	g	-	8/1/2002	OK	416v	Entran	EGE-73B6Q-200
0033	02A09-F15	HEDZGB	Head Accel Z	Up	1197.3807	g	-	8/1/2002	OK	416v	Entran	EGE-73B6Q-200
0034	01L26-F02	HEDXRB	Head Accel Red X	Rwd	1205.7839	g	-	8/1/2002	OK	416v	Entran	EGE-73B6Q-200
0035	02A09-F13	HEDYRB	Head Accel Red Y	Lft	1187.9901	g	-	8/5/2002	OK	416v	Entran	EGE-73B6Q-200
0036	02A16-A06	HEDZRB	Head Accel Red Z	Up	1196.5412	g	-	8/1/2002	OK	416v	Entran	EGE-73B6Q-200
0037	IF-205-161-FX	NEKXFB	Neck Force X	Hd	13338.750	N	-	3/18/2002	OK	416v	FTSS	IF-205
0038	IF-205-161-FY	NEKYFB	Neck Force Y	Hd	13338.786	N	+	3/18/2002	OK	416v	FTSS	IF-205
0039	IF-205-161-FZ	NEKZFB	Neck Force Z	Hd	20027.556	N	+	3/18/2002	OK	416v	FTSS	IF-205
0040	IF-205-161-MX	NEKXMB	Neck Moment X	Rt Ear	423.58502	N·m	-	3/18/2002	OK	416v	FTSS	IF-205
0041	IF-205-161-MY	NEKYMB	Neck Moment Y	Chin	424.34279	N·m	+	3/18/2002	OK	416v	FTSS	IF-205
0042	IF-205-161-MZ	NEKZMB	Neck Moment Z	Chn	423.65464	N·m	+	3/18/2002	OK	416v	FTSS	IF-205
0043	02A16-A04	CSTXGB	Chest Accel X	Fwd	602.28562	g	+	8/1/2002	OK	416v	Entran	EGE-73B6Q-200
0044	C02B19-F02	CSTYGB	Chest Accel Y	Lft	598.86893	g	-	8/1/2002	OK	416v	Entran	EGE-73B6Q-200
0045	C02B19-F06	CSTZGB	Chest Accel Z	Up	597.88637	g	-	8/1/2002	OK	416v	Entran	EGE-73B6Q-200
0046	B02A25-N08	CSTXRB	Chest Accel Red X	Rwd	597.46776	g	-	8/1/2002	OK	416v	Entran	EGE-73B6Q-200
0047	01L17-F09	CSTYRB	Chest Accel Red Y	Lft	598.88644	g	-	8/1/2002	OK	416v	Entran	EGE-73B6Q-200
0048	C02B19-F04	CSTZRB	Chest Accel Red Z	Up	600.93896	g	-	8/1/2002	OK	416v	Entran	EGE-73B6Q-200
0049	14CB1-2897-416	CSTXDB	Chest Deflection X 516	Strnm	98.566265	mm	+	6/18/2001	---	416v	Servo	14CB1-2897
0050	C02B19-F03	PEVXGB	Pelvis Accel X	Rwd	601.17887	g	-	8/1/2002	OK	416v	Entran	EGE-73B6Q-200
0051	02A16-A27	PEVYGB	Pelvis Accel Y	Lft	600.09376	g	-	8/1/2002	OK	416v	Entran	EGE-73B6Q-200
0052	C02B19-F01	PEVZGB	Pelvis Accel Z	Up	602.05191	g	-	8/1/2002	OK	416v	Entran	EGE-73B6Q-200
0053	2430-736	LFMZFB	Left Femur Force Z #8	Knee	20010.993	N	+	3/18/2002	OK	416v	GSE	2430
0054	2430-742	RFMZFB	Right Femur Force Z 507	Knee	20018.276	N	+	3/18/2002	OK	416v	GSE	2430
0055	150-0121VR-555	KNLXDB	Left Knee Displacement	Tib	43.132134	mm	-	5/8/2002	OK	416v	SpaceAge	150-0121VR
0056	150-0121VL-548	KNRXDB	Right Knee Displacement	Tib	43.923990	mm	-	5/8/2002	OK	416v	SpaceAge	150-0121VL
0057	P23840	VCGXGA	VEHICLE CG X-AXIS	FWD	1006.2893	g	+	8/28/2002	OK	-1	Endevco	7264C-2K-2-180
0058	P23817	VCGYGA	VEHICLE CG Y-AXIS	LT	1006.6454	g	-	8/28/2002	OK	-1	Endevco	7264C-2K-2-180
0059	P24018	VCGZGA	VEHICLE CG Z-AXIS	UP	1010.5396	g	-	8/27/2002	OK	-1	Endevco	7264C-2K-2-180
0060	P24343	RDKXGA	REAR DECK X-AXIS	FWD	1006.2893	g	+	7/25/2002	OK	-1	Endevco	7264C-2K-2-180
0061	P23615	RDKYGA	REAR DECK Y-AXIS	LT	989.87887	g	-	8/16/2002	OK	-1	Endevco	7264C-2K-2-180
0062	P23811	RDKZGA	REAR DECK Z-AXIS	UP	1004.7095	g	-	8/15/2002	OK	-1	Endevco	7264C-2K-2-180
0063	J39522	LFSXGA	LEFT FRONT SILL X-AXIS	FWD	1488.5019	g	+	10/28/2002	OK	-1	Endevco	7264-2000TZ
0064	J41130	LFSYGA	LEFT FRONT SILL Y-AXIS	LT	1486.2119	g	-	10/30/2002	OK	-1	Endevco	7264-2000TZ

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0065	J38432	LRSXGA	LEFT REAR SILL X-AXIS	FWD	1524.4447	g	+	6/19/2002	OK	-1	Endevco	7264-2000TZ
0066	J27415	LRSYGA	LEFT REAR SILL Y-AXIS	LT	1482.8544	g	-	6/19/2002	OK	-1	Endevco	7264-2000TZ
0067	J35719	RFSXGA	RIGHT FRONT SILL X-AXIS	FWD	595.62587	g	+	9/10/2002	OK	-1	Endevco	7264-2000TZ
0068	J35794	RFSYGA	RIGHT FRONT SILL Y-AXIS	LT	604.10128	g	-	9/5/2002	OK	-1	Endevco	7264-2000TZ
0069	P23664	RRSXGA	RIGHT REAR SILL X-AXIS	RR	596.14947	g	-	8/16/2002	OK	-1	Endevco	7264C-2K-2-180
0070	P23618	RRSYGA	RIGHT REAR SILL Y-AXIS	RR	596.69486	g	-	8/13/2002	OK	-1	Endevco	7264C-2K-2-180
0071	J36554	ENGXGA	ENGINE TOP X-AXIS ACCEL.	FWD	599.70014	g	+	8/27/2002	OK	-1	Endevco	7264-2000TZ
0072	J39915	ENGYGA	ENGINE TOP Y-AXIS	LT	1515.8916	g	-	6/5/2002	OK	-1	Endevco	7264-2000TZ
0073	J41087	ENGXGB	ENGINE BOTTOM X-AXIS	FWD	1495.5804	g	+	6/6/2002	OK	-1	Endevco	7264-2000TZ
0074	J41089	ENGYGB	ENGINE BOTTOM Y-AXIS	RT	1484.5312	g	+	6/4/2002	OK	-1	Endevco	7264-2000TZ
0075	P23823	DPCXGA	INSTRUMENT PANEL	FWD	1004.9264	g	+	9/4/2002	OK	-1	Endevco	7264C-2K-2-180
0076	P23985	DPCYGA	INSTRUMENT PANEL	LT	1003.1544	g	-	9/4/2002	OK	-1	Endevco	7264C-2K-2-180
0077	J40744	LRXXGA	LEFT REAR SEAT	FWD	1002.6338	g	+	10/30/2002	OK	-1	Endevco	7264-2000TZ
0078	J35563	LRXYGA	LEFT REAR SEAT	LT	999.90235	g	-	8/15/2002	OK	-1	Endevco	7264-2000TZ
0079	J23983	RRXXGA	RIGHT REAR SEAT	RR	598.09590	g	-	11/5/2002	OK	-1	Endevco	7264-2000TZ
0080	J34630	RRXYGA	RIGHT REAR SEAT	RT	601.27771	g	+	8/1/2002	OK	-1	Endevco	7264-2000TZ
0081	ABFire1	DABETA	DRIVER AIRBAG EVENT -	A	5.12	V	+	8/20/2002	OK	-1	FLUKE	Y8101A
0082	ABFire2	PABETA	PASSENGER AIRBAG EVENT	F	5.12	V	+	8/20/2002	OK	-1	FLUKE	Y8101A

Channel Report

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Name of Test 021113

System K3600

Name of DAU DAU1

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range		Pol.	Cal.	Group	Mfg.	Model	
1001	J17649	HEDXG1	Head Accel X	Rwd	1184.0751	g	-	5/24/2002	OK	168v	Endevco	7264-2KM5T
1002	AJ454	HEDYG1	Head Accel Y	Lft	1195.1447	g	-	5/24/2002	OK	168v	Endevco	7264-2000T
1003	J14189	HEDZG1	Head Accel Z	Up	1189.8675	g	-	5/24/2002	OK	168v	Endevco	7264-2000T
1004	P17196	HEDXR1	Head Accel Red X	Rwd	1187.0536	g	-	1/25/2002	---	168v	Endevco	7264C-2KLC-2-
1005	B02A25-N05	HEDYR1	Head Accel Red Y	Lft	1210.0586	g	-	2/8/2002	OK	168v	Entran	EGE-73B6Q-200
1006	01G25-N09	HEDZR1	Head Accel Red Z	Up	1212.7528	g	-	1/24/2002	OK	168v	Entran	EGE-73B6Q-200
1007	1716A-851-FX	NEKXF1	Neck Force X	Hd	13329.236	N	-	5/29/2002	OK	168v	Denton	1716A
1008	1716A-851-FY	NEKYF1	Neck Force Y	Hd	13329.530	N	+	5/29/2002	OK	168v	Denton	1716A
1009	1716A-851-FZ	NEKZF1	Neck Force Z	Hd	20045.227	N	+	5/29/2002	OK	168v	Denton	1716A
1010	1716A-851-MX	NEKXM1	Neck Moment X	Rt Ear	424.21628	N·m	-	5/29/2002	OK	168v	Denton	1716A
1011	1716A-851-MY	NEKYM1	Neck Moment Y	Chn	423.71713	N·m	+	5/29/2002	OK	168v	Denton	1716A
1012	1716A-851-MZ	NEKZM1	Neck Moment Z	Chn	423.80316	N·m	+	5/29/2002	OK	168v	Denton	1716A
1013	J35921	CSTXG1	Chest Accel X	Fwd	601.70168	g	+	5/24/2002	OK	168v	Endevco	7264-2000TZ
1014	AJ7F7	CSTYG1	Chest Accel Y	Lft	597.08454	g	-	5/24/2002	OK	168v	Endevco	7264-2000T
1015	J36723	CSTZG1	Chest Accel Z	Up	597.09847	g	-	5/24/2002	OK	168v	Endevco	7264-2000TZ
1016	99H30-Z14	CSTXR1	Chest Accel Red X	Rwd	602.40255	g	-	4/25/2002	OK	168v	Entran	EGE-73BQE0-20
1017	98H14-K05	CSTYR1	Chest Accel Red Y	Lft	599.48247	g	-	4/25/2002	OK	168v	Entran	EGE-73BQ-2000
1018	98H13-F03	CSTZR1	Chest Accel Red Z	Up	600.08673	g	-	4/25/2002	OK	168v	Entran	EGE-73BQ-2000
1019	14CB1-2847-168	CSTXD1	Chest Deflection X	Strnm	101.85558	mm	+	6/5/2002	OK	168v	Servo	14CB1-2847
1020	ACCY2	PEVXG1	Pelvis Accel X	Rwd	601.36246	g	-	5/24/2002	OK	168v	Endevco	7264-2000T
1021	J27490	PEVYG1	Pelvis Accel Y	Lft	600.66401	g	-	5/24/2002	OK	168v	Endevco	7264-2KM5T
1022	J21963	PEVZG1	Pelvis Accel Z	Up	604.09415	g	-	5/24/2002	OK	168v	Endevco	7264-2KM5T
1023	1914A-362-FX	LFMXF1	Left Femur Force X	Knee	20035.751	N	-	5/24/2002	OK	168v	Denton	1914A
1024	1914A-362-FY	LFMYF1	Left Femur Force Y	Knee	20015.190	N	+	5/24/2002	OK	168v	Denton	1914A
1025	1914A-362-FZ	LFMZF1	Left Femur Force Z	Knee	33334.982	N	+	5/24/2002	OK	168v	Denton	1914A
1026	1914A-362-MX	LFMXM1	Left Femur Moment X	Knee	508.62541	N·m	-	5/24/2002	OK	168v	Denton	1914A
1027	1914A-362-MY	LFMYM1	Left Femur Moment Y	Knee	509.30827	N·m	+	5/24/2002	OK	168v	Denton	1914A
1028	1914A-362-MZ	LFMZM1	Left Femur Moment Z	Tib	508.04911	N·m	+	5/24/2002	OK	168v	Denton	1914A
1029	1914A-376-FX	RFMXF1	Right Femur Force X	Knee	20005.300	N	-	5/24/2002	OK	168v	Denton	1914A
1030	1914A-376-FY	RFMYF1	Right Femur Force Y	Knee	20010.348	N	+	5/24/2002	OK	168v	Denton	1914A

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1031	1914A-376-FZ	RFMZF1	Right Femur Force Z	Knee	33337.253	N	+	5/24/2002	OK	168v	Denton	1914A
1032	1914A-376-MX	RFMXM1	Right Femur Moment X	Knee	508.76683	N·m	-	5/24/2002	OK	168v	Denton	1914A
1033	1914A-376-MY	RFMYM1	Right Femur Moment Y	Knee	508.69127	N·m	+	5/24/2002	OK	168v	Denton	1914A
1034	1914A-376-MZ	RFMZM1	Right Femur Moment Z	Tib	509.68327	N·m	+	5/24/2002	OK	168v	Denton	1914A
1035	150-0121VR-180	KNLXD1	Left Knee Displacement	Tib	29.039759	mm	-	6/13/2002	OK	168v	SpaceAge	150-0121VR
1036	3115-268-FZ	TBLZF1	Left Upper Tibia Force Z	Tib	16678.773	N	+	5/29/2002	OK	168v	Denton	3115
1037	3115-268-MX	TBLXM1	Left Upper Tibia Moment X	Tib	593.07741	N·m	-	5/29/2002	OK	168v	Denton	3115
1038	3115-268-MY	TBLYM1	Left Upper Tibia Moment Y	Tib	591.89956	N·m	+	5/29/2002	OK	168v	Denton	3115
1039	3287-196-FZ	ANLZF1	Left Lower Tibia Force Z	Ank	16671.821	N	+	5/29/2002	OK	168v	Denton	3287
1040	3287-196-MX	ANLXM1	Left Lower Tibia Moment X	Ank	592.39487	N·m	-	5/29/2002	OK	168v	Denton	3287
1041	3287-196-MY	ANLYM1	Left Lower Tibia Moment Y	Ank	593.25315	N·m	+	5/29/2002	OK	168v	Denton	3287
1042	150-0121VL-181	KNRXD1	Right Knee Displacement	Tib	22.301594	mm	-	6/13/2002	OK	168v	SpaceAge	150-0121VL
1043	3115-274-FZ	TBRZF1	Right Upper Tibia Force Z	Tib	16684.475	N	+	5/29/2002	OK	168v	Denton	3115
1044	3115-274-MX	TBRXM1	Right Upper Tibia Moment X	Tib	592.48250	N·m	-	5/29/2002	OK	168v	Denton	3115
1045	3115-274-MY	TBRYM1	Right Upper Tibia Moment Y	Tib	591.94838	N·m	+	5/29/2002	OK	168v	Denton	3115
1046	3287-185-FZ	ANRZF1	Right Lower Tibia Force Z	Ank	16690.936	N	+	5/29/2002	OK	168v	Denton	3287
1047	3287-185-MX	ANRXM1	Right Lower Tibia Moment X	Ank	593.76938	N·m	-	5/29/2002	OK	168v	Denton	3287
1048	3287-185-MY	ANRYM1	Right Lower Tibia Moment Y	Ank	594.01359	N·m	+	5/29/2002	OK	168v	Denton	3287
1049	P23626	VCGXG1	VEHICLE CG X-AXIS	FWD	1004.7490	g	+	8/13/2002	OK	-1	Endevco	7264C-2K-2-180
1050	P23805	VCGYG1	VEHICLE CG Y-AXIS	RT	997.07887	g	+	8/16/2002	OK	-1	Endevco	7264C-2K-2-180
1051	P23848	VCGZG1	VEHICLE CG Z-AXIS	UP	1000.8601	g	-	8/16/2002	OK	-1	Endevco	7264C-2K-2-180
1052	P23929	RDKXG1	REAR DECK X-AXIS	FWD	990.75041	g	+	9/4/2002	OK	-1	Endevco	7264C-2K-2-180
1053	P23809	RDKYG1	REAR DECK Y-AXIS	RT	999.10236	g	+	8/16/2002	OK	-1	Endevco	7264C-2K-2-180
1054	P23806	RDKZG1	REAR DECK Z-AXIS	UP	995.95393	g	-	8/15/2002	OK	-1	Endevco	7264C-2K-2-180
1055	P23942	LFSXG1	LEFT FRONT SILL X-AXIS	FWD	1492.5373	g	+	9/4/2002	OK	-1	Endevco	7264C-2K-2-180
1056	P23865	LFSYG1	LEFT FRONT SILL Y-AXIS	RT	1503.4061	g	+	9/4/2002	OK	-1	Endevco	7264C-2K-2-180
1057	J41150	LRSXG1	LEFT REAR SILL X-AXIS	RR	1480.3249	g	-	10/24/2002	OK	-1	Endevco	7264-2000TZ
1058	J36154	LRSYG1	LEFT REAR SILL Y-AXIS	RT	1489.8879	g	+	10/24/2002	OK	-1	Endevco	7264-2000TZ
1059	P23973	RFSXG1	RIGHT FRONT SILL X-AXIS	FWD	599.70014	g	+	9/4/2002	OK	-1	Endevco	7264C-2K-2-180
1060	P23835	RFSYG1	RIGHT FRONT SILL Y-AXIS	LT	599.37720	g	-	8/15/2002	OK	-1	Endevco	7264C-2K-2-180
1061	J41027	RRSXG1	RIGHT REAR SILL X-AXIS	RR	601.26006	g	-	8/19/2002	OK	-1	Endevco	7264-2000TZ
1062	AAL44	RRSYG1	RIGHT REAR SILL Y-AXIS	LT	602.21832	g	-	9/10/2002	OK	-1	Endevco	7264-2000TZ
1063	J38421	ENGXG1	ENGINE BOTTOM X-AXIS	FWD	603.80206	g	+	7/15/2002	OK	-1	Endevco	7264-2000TZ
1064	J40975	ENGYG1	ENGINE BOTTOM Y-AXIS	RT	1500.0146	g	+	9/28/2002	OK	-1	Endevco	7264-2000TZ
1065	P23619	ENGXG2	ENGINE BOTTOM X-AXIS	RR	1483.9504	g	-	8/9/2002	OK	-1	Endevco	7264C-2K-2-180

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1066	P23877	ENGYG2	ENGINE BOTTOM Y-AXIS	LT	1486.6434	g	-	8/16/2002	OK	-1	Endevco	7264C-2K-2-180
1067	J41123	DPCXG1	INSTRUMENT PANEL	FWD	1013.4098	g	+	10/8/2002	OK	-1	Endevco	7264-2000TZ
1068	J40561	DPCYG1	INSTRUMENT PANEL	LT	999.80472	g	-	9/28/2002	OK	-1	Endevco	7264-2000TZ
1069	J35834	LRXXG1	LEFT REAR SEAT	FWD	1005.5975	g	+	10/28/2002	OK	-1	Endevco	7264-2000TZ
1070	J36709	LRXYG1	LEFT REAR SEAT	RT	1015.0271	g	+	10/28/2002	OK	-1	Endevco	7264-2000TZ
1071	J17501	RRXXG1	RIGHT REAR SEAT	RR	595.38345	g	-	10/28/2002	OK	-1	Endevco	7264-2000TZ
1072	J36192	RRXYG1	RIGHT REAR SEAT	RT	600.15003	g	+	8/27/2002	OK	-1	Endevco	7264-2000TZ
1073	ABFire3	DABET1	DRIVER AIRBAG EVENT	8	5.12	V	+	8/20/2002	OK	-1	FLUKE	Y8101A
1074	EVENT1	SYNC1	SYNC1		10.24	V	+	10/15/2002	OK	-1	TRC	Event

Dummy 168v Type HIII 50TH Description VRTC - 168v HIII 50TH ICAL'd 1-24-02 (DKS 11-05-02)J211

Chsname	Location	Model	Name	Manufacturer	Sens./mV/V/U	Fullscale	Caldate	Pos Output	Flip
HEDXG	Head Accel X	7264-2KM5T	J17649	Endevco	0.03203 g	2000	5/24/02	Rwd	1
HEDYG	Head Accel Y	7264-2000T	AJ454	Endevco	0.02856 g	2000	5/24/02	Lft	1
HEDZG	Head Accel Z	7264-2000T	J14189	Endevco	0.0331 g	2000	5/24/02	Up	1
HEDXR	Head Accel Red X S39	7264C-2KLC-2-	P17196	Endevco	0.02104 g	2000	1/25/02	Rwd	1
HEDYR	Head Accel Red Y	EGE-73B6Q-20	B02A25-N05	Entran	0.02064 g	2000	2/8/02	Lft	1
HEDZR	Head Accel Red Z	EGE-73B6Q-20	01G25-N09	Entran	0.01919 g	2000	1/24/02	Up	1
NEKXF	Neck Force X	1716A	1716A-851-FX	Denton	0.000193999 N	8896.4	5/29/02	Hd Fd,Cst Rr	1
NEKYF	Neck Force Y	1716A	1716A-851-FY	Denton	0.000188289 N	8896.4	5/29/02	Hd Lt,Cst Rt	0
NEKZF	Neck Force Z	1716A	1716A-851-FZ	Denton	0.000147643 N	13344.6	5/29/02	Hd Up,Cst Dn	0
NEKXM	Neck Moment X	1716A	1716A-851-MX	Denton	0.005989735 N-m	282.5	5/29/02	Rt Ear to Rt Shld	1
NEKYM	Neck Moment Y	1716A	1716A-851-MY	Denton	0.005981947 N-m	282.5	5/29/02	Chn to Strnm	0
NEKZM	Neck Moment Z	1716A	1716A-851-MZ	Denton	0.008568142 N-m	282.5	5/29/02	Chn to Lt Shld	0
CSTXG	Chest Accel X	7264-2000TZ	J35921	Endevco	0.03039 g	2000	5/24/02	Fwd	0
CSTYG	Chest Accel Y	7264-2000T	AJ7F7	Endevco	0.0343 g	2000	5/24/02	Lft	1
CSTZG	Chest Accel Z	7264-2000TZ	J36723	Endevco	0.02522 g	2000	5/24/02	Up	1
CSTXR	Chest Accel Red X	EGE-73BQE0-2	99H30-Z14	Entran	0.02073 g	2000	4/25/02	Rwd	1
CSTYR	Chest Accel Red Y	EGE-73BQ-200	98H14-K05	Entran	0.01743 g	2000	4/25/02	Lft	1
CSTZR	Chest Accel Red Z	EGE-73BQ-200	98H13-F03	Entran	0.02081 g	2000	4/25/02	Up	1
CSTXD	Chest Deflection X	14CB1-2847	14CB1-2847-168	Servo	1.11705 mm	100	6/5/02	Strnm Away Frm Spn	0
PEVXG	Pelvis Accel X	7264-2000T	ACCY2	Endevco	0.02365 g	2000	5/24/02	Rwd	1
PEVYG	Pelvis Accel Y	7264-2KM5T	J27490	Endevco	0.02214 g	2000	5/24/02	Lft	1
PEVZG	Pelvis Accel Z	7264-2KM5T	J21963	Endevco	0.0253 g	2000	5/24/02	Up	1
LFMXF	Left Femur Force X	1914A	1914A-362-FX	Denton	0.000143968 N	13344	5/24/02	Knee Dn,Fem Up	1
LFMYF	Left Femur Force Y	1914A	1914A-362-FY	Denton	0.000144523 N	13344	5/24/02	Knee Rt,Fem Lt	0
LFMZF	Left Femur Force Z	1914A	1914A-362-FZ	Denton	0.000059074 N	22240	5/24/02	Knee Fd,Pel Rr	0
LFMXM	Left Femur Moment X	1914A	1914A-362-MX	Denton	0.004464012 N-m	339	5/24/02	Knee Rt,Hld Fem	1

Chsname	Location	Model	Name	Manufacturer	Sens./mV/V/U	Fullscale	Caldate	Pos Output	Flip
LFMYM	Left Femur Moment Y	1914A	1914A-362-MY	Denton	0.004409145 N·m	339	5/24/02	Knee Up,Hld Fem	0
LFMZM	Left Femur Moment Z	1914A	1914A-362-MZ	Denton	0.00790413 N·m	339	5/24/02	Tib Lt,Hld Pel	0
RFMXF	Right Femur Force X	1914A	1914A-376-FX	Denton	0.000146666 N	13344	5/24/02	Knee Dn,Fem Up	1
RFMYF	Right Femur Force Y	1914A	1914A-376-FY	Denton	0.000146629 N	13344	5/24/02	Knee Rt,Fem Lt	0
RFMZf	Right Femur Force Z	1914A	1914A-376-FZ	Denton	0.000059876 N	22240	5/24/02	Knee Fd,Pel Rr	0
RFMXM	Right Femur Moment X	1914A	1914A-376-MX	Denton	0.004443068 N·m	339	5/24/02	Knee Rt,Hld Fem	1
RFMYM	Right Femur Moment Y	1914A	1914A-376-MY	Denton	0.003790977 N·m	339	5/24/02	Knee Up,Hld Fem	0
RFMZM	Right Femur Moment Z	1914A	1914A-376-MZ	Denton	0.006787469 N·m	339	5/24/02	Tib Lt,Hld Pel	0
KNLXD	Left Knee Displacement	150-0121VR	150-0121VR-18026	SpaceAge	23.508 mm	40	6/13/02	Tib Rr,Hld Fem	1
TBLZF	Left Upper Tibia Force Z	3115	3115-268-FZ	Denton	0.0000946 N	11120.6	5/29/02	Tib Dn,Knee Up	0
TBLXM	Left Upper Tibia Moment X	3115	3115-268-MX	Denton	0.007285179 N·m	395.4	5/29/02	Tib Rt,Hld Knee	1
TBLYM	Left Upper Tibia Moment Y	3115	3115-268-MY	Denton	0.007361801 N·m	395.4	5/29/02	Tib Fd,Hld Knee	0
ANLZF	Left Lower Tibia Force Z	3287	3287-196-FZ	Denton	0.000094932 N	11120.5	5/29/02	Ank Dn,Knee Up	0
ANLXM	Left Lower Tibia Moment X	3287	3287-196-MX	Denton	0.007515551 N·m	395.4	5/29/02	Ank Rt,Hld Knee	1
ANLYM	Left Lower Tibia Moment Y	3287	3287-196-MY	Denton	0.007504678 N·m	395.4	5/29/02	Ank Fd,Hld Knee	0
KNRXD	Right Knee Displacement	150-0121VL	150-0121VL-18123	SpaceAge	22.958 mm	40	6/13/02	Tib Rr,Hld Fem	1
TBRZF	Right Upper Tibia Force Z	3115	3115-274-FZ	Denton	0.00009486 N	11120.6	5/29/02	Tib Dn,Knee Up	0
TBRXM	Right Upper Tibia Moment X	3115	3115-274-MX	Denton	0.007417687 N·m	395.4	5/29/02	Tib Rt,Hld Knee	1
TBRYM	Right Upper Tibia Moment Y	3115	3115-274-MY	Denton	0.007392652 N·m	395.4	5/29/02	Tib Fd,Hld Knee	0
ANRZF	Right Lower Tibia Force Z	3287	3287-185-FZ	Denton	0.000095265 N	11120.5	5/29/02	Ank Dn,Knee Up	0
ANRXM	Right Lower Tibia Moment X	3287	3287-185-MX	Denton	0.007630864 N·m	395.4	5/29/02	Ank Rt,Hld Knee	1
ANRYM	Right Lower Tibia Moment Y	3287	3287-185-MY	Denton	0.007560817 N·m	395.4	5/29/02	Ank Fd,Hld Knee	0

Dummy	169v-	Type	HIII 50TH	Description	VRTC - 169v HIII 50TH ICAL'd 5-24-02 (DKS 9-13-02)J211				
Chsname	Location	Model	Name	Manufacturer	Sens./mV/V/U	Fullscale	Caldate	Pos Output	Flip
HEDXG	Head Accel X	7264-2000T	J20083	Endevco	0.02181	g 2000	5/24/02	Rwd	1
HEDYG	Head Accel Y	7264-2000T	J19843	Endevco	0.0224	g 2000	5/24/02	Lft	1
HEDZG	Head Accel Z	7264-2KM5T	J20027	Endevco	0.02589	g 2000	5/24/02	Up	1
NEKXF	Neck Force X	1716A	1716A-782-FX	Denton	0.000190504	N 8896	5/30/02	Hd Fd,Cst Rr	1
NEKYF	Neck Force Y	1716A	1716A-782-FY	Denton	0.000186052	N 8896	5/30/02	Hd Lt,Cst Rt	0
NEKZF	Neck Force Z	1716A	1716A-782-FZ	Denton	0.000096548	N 13344	5/30/02	Hd Up,Cst Dn	0
NEKXM	Neck Moment X	1716A	1716A-782-MX	Denton	0.005812389	N·m 282.5	5/30/02	Rt Ear to Rt Shld	1
NEKYM	Neck Moment Y	1716A	1716A-782-MY	Denton	0.005816283	N·m 282.5	5/30/02	Chn to Strmm	0
NEKZM	Neck Moment Z	1716A	1716A-782-MZ	Denton	0.008224071	N·m 282.5	5/30/02	Chn to Lt Shld	0
CSTXG	Chest Accel X	7264-2000T	J23757	Endevco	0.02801	g 2000	5/24/02	Fwd	0
CSTYG	Chest Accel Y	7264-2KM5T	J21989	Endevco	0.02333	g 2000	5/24/02	Lft	1
CSTZG	Chest Accel Z	7264-2000TZ	J35747	Endevco	0.02832	g 2000	5/24/02	Up	1
CSTXD	Chest Deflection X	14CB1-2847	14CB1-2847-169	Servo	1.11513	mm 100	6/6/02	Strmm Away Frm Spn	0
PEVXG	Pelvis Accel X	7264-2000TZ	J36741	Endevco	0.02311	g 2000	5/24/02	Rwd	1
PEVYG	Pelvis Accel Y	7264-2000TZ	J36605	Endevco	0.02677	g 2000	5/24/02	Lft	1
PEVZG	Pelvis Accel Z	7264-2000LC	AAMD7	Endevco	0.02682	g 2000	5/24/02	Up	1
LFMXF	Left Femur Force X	1914	1914-0261-FX	Denton	0.000144725	N 13344	5/24/02	Knee Dn,Fem Up	1
LFMYF	Left Femur Force Y	1914	1914-0261-FY	Denton	0.000145182	N 13344	5/24/02	Knee Rt,Fem Lt	0
LFMZf	Left Femur Force Z	1914	1914-0261-FZ	Denton	0.000053289	N 22240	5/24/02	Knee Fd,Pel Rr	0
LFMXM	Left Femur Moment X	1914	1914-0261-MX	Denton	0.004356637	N·m 339	5/24/02	Knee Rt,Hld Fem	1
LFMYM	Left Femur Moment Y	1914	1914-0261-MY	Denton	0.004435398	N·m 339	5/24/02	Knee Up,Hld Fem	0
LFMZM	Left Femur Moment Z	1914	1914-0261-MZ	Denton	0.007827729	N·m 339	5/24/02	Tib Lt,Hld Pel	0
RFMXF	Right Femur Force X	1914A	1914A-383-FX	Denton	0.000147685	N 13344	5/24/02	Knee Dn,Fem Up	1
RFMYF	Right Femur Force Y	1914A	1914A-383-FY	Denton	0.00014785	N 13344	5/24/02	Knee Rt,Fem Lt	0
RFMZf	Right Femur Force Z	1914A	1914A-383-FZ	Denton	0.00006006	N 22240	5/24/02	Knee Fd,Pel Rr	0
RFMXM	Right Femur Moment X	1914A	1914A-383-MX	Denton	0.004435103	N·m 339	5/24/02	Knee Rt,Hld Fem	1

Chsname	Location	Model	Name	Manufacturer	Sens./mV/V/U	Fullscale	Caldate	Pos Output	Flip
RFMYM	Right Femur Moment Y	1914A	1914A-383-MY	Denton	0.004437463	N·m 339	5/24/02	Knee Up,Hld Fem	0
RFMZM	Right Femur Moment Z	1914A	1914A-383-MZ	Denton	0.008078761	N·m 339	5/24/02	Tib Lt,Hld Pel	0
KNLXD	Left Knee Displacement	150-0121VR	150-0121VR-17169	SpaceAge	23.738	mm 40	6/13/02	Tib Rt,Hld Fem	1
KNRXD	Right Knee Displacement	150-0121VL	150-0121VL-21033	SpaceAge	22.74	mm 40	6/13/02	Tib Rt,Hld Fem	1

Dummy 416v- Type HYBRID III 5th Description VRTC - 416v HYBRID III 5th w/o THOR LEGS ICAL'd 6-1-01(DKS 9-13-02)J211

Chsname	Location	Type	Model	Name	Manufacturer	Sens./mV/V/U	Fullscale	Caldate	Pos Output	Flip
HEDXG	Head Accel X		EGE-73B6Q-20	02A02-F02	Entran	0.0251	2000	8/1/02	Fwd	0
HEDYG	Head Accel Y		EGE-73B6Q-20	02A18-N10	Entran	0.01967	2000	8/1/02	Lft	1
HEDZG	Head Accel Z		EGE-73B6Q-20	02A09-F15	Entran	0.02138	2000	8/1/02	Up	1
HEDXR	Head Accel Red X		EGE-73B6Q-20	01L26-F02	Entran	0.02022	2000	8/1/02	Rwd	1
HEDYR	Head Accel Red Y		EGE-73B6Q-20	02A09-F13	Entran	0.01959	2000	8/5/02	Lft	1
HEDZR	Head Accel Red Z		EGE-73B6Q-20	02A16-A06	Entran	0.01945	2000	8/1/02	Up	1
NEKXF	Neck Force X		IF-205	IF-205-161-FX	FTSS	0.000187241	8896	3/18/02	Hd Fd,Cst Rr	1
NEKYF	Neck Force Y		IF-205	IF-205-161-FY	FTSS	0.000180632	8896	3/18/02	Hd Lt,Cst Rt	0
NEKZF	Neck Force Z		IF-205	IF-205-161-FZ	FTSS	0.000092626	13344	3/18/02	Hd Up,Cst Dn	0
NEKXM	Neck Moment X		IF-205	IF-205-161-MX	FTSS	0.005668142	282.5	3/18/02	Rt Ear to Rt Shld	1
NEKYM	Neck Moment Y		IF-205	IF-205-161-MY	FTSS	0.005759292	282.5	3/18/02	Chin to Strmm	0
NEKZM	Neck Moment Z		IF-205	IF-205-161-MZ	FTSS	0.00836354	282.5	3/18/02	Chn to Lt Shld	0
CSTXG	Chest Accel X		EGE-73B6Q-20	02A16-A04	Entran	0.02099	2000	8/1/02	Fwd	0
CSTYG	Chest Accel Y		EGE-73B6Q-20	C02B19-F02	Entran	0.01879	2000	8/1/02	Lft	1
CSTZG	Chest Accel Z		EGE-73B6Q-20	C02B19-F06	Entran	0.01903	2000	8/1/02	Up	1
CSTXR	Chest Accel Red X		EGE-73B6Q-20	B02A25-N08	Entran	0.0197	2000	8/1/02	Rwd	1
CSTYR	Chest Accel Red Y		EGE-73B6Q-20	01L17-F09	Entran	0.01943	2000	8/1/02	Lft	1
CSTZR	Chest Accel Red Z		EGE-73B6Q-20	C02B19-F04	Entran	0.01775	2000	8/1/02	Up	1
CSTXD	Chest Deflection X	516	14CB1-2897	14CB1-2897-416	Servo	1.5983	100	6/18/01	Strmm Away Frm Spn	0
PEVXG	Pelvis Accel X		EGE-73B6Q-20	C02B19-F03	Entran	0.01756	2000	8/1/02	Rwd	1
PEVYG	Pelvis Accel Y		EGE-73B6Q-20	02A16-A27	Entran	0.0216	2000	8/1/02	Lft	1
PEVZG	Pelvis Accel Z		EGE-73B6Q-20	C02B19-F01	Entran	0.01955	2000	8/1/02	Up	1
LFMZF	Left Femur Force Z	#8	2430	2430-736	GSE	0.000069527	13344	3/18/02	Knee Fd,Pel Rr	0
RFMZP	Right Femur Force Z	507	2430	2430-742	GSE	0.000066867	13344	3/18/02	Knee Fd,Pel Rr	0
KNLXD	Left Knee Displacement		150-0121VR	150-0121VR-5556	SpaceAge	23.741	40	5/8/02	Tib Rr,Hld Fem	1
KNRXD	Right Knee Displacement		150-0121VL	150-0121VL-5482	SpaceAge	23.313	40	5/8/02	Tib Rr,Hld Fem	1

Appendix E

INSIA Report on Structural Measurements

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

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March, 1999

REPORT DOCUMENTATION PAGE**Title:**

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

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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.

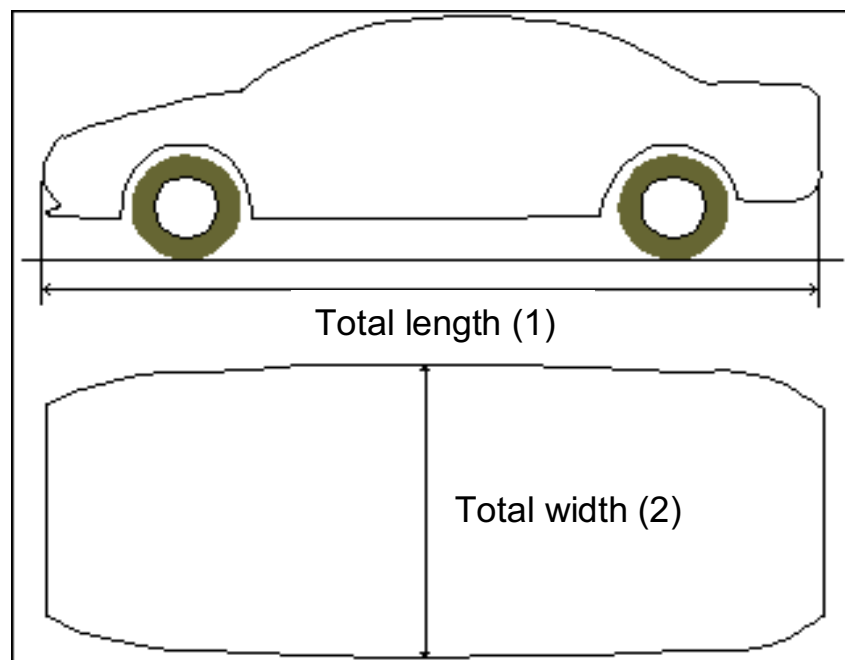


Figure 1.- Definition of the main resistant elements. General dimensions.

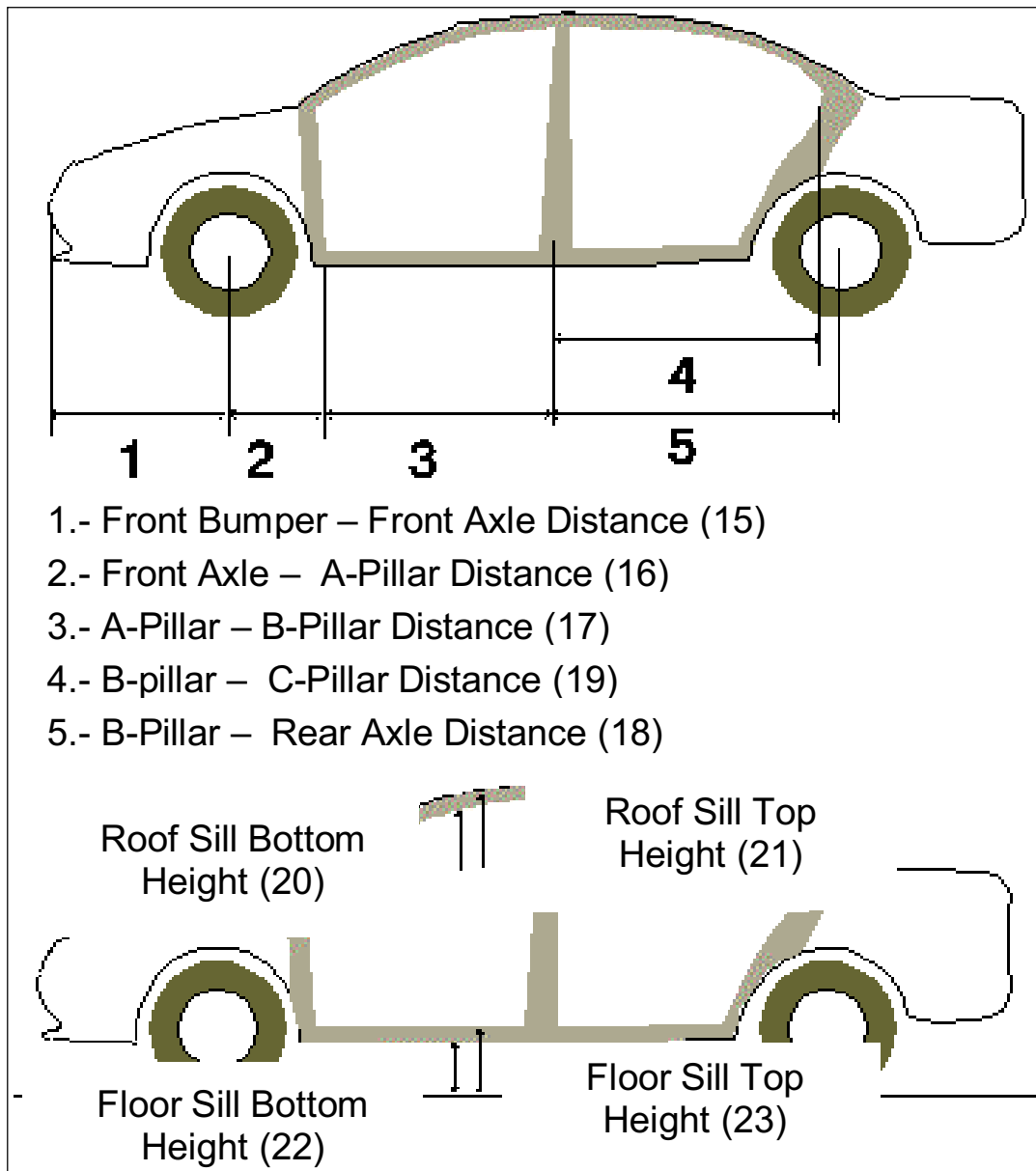


Figure 2.- Definition of the main resistant elements. Side elements.

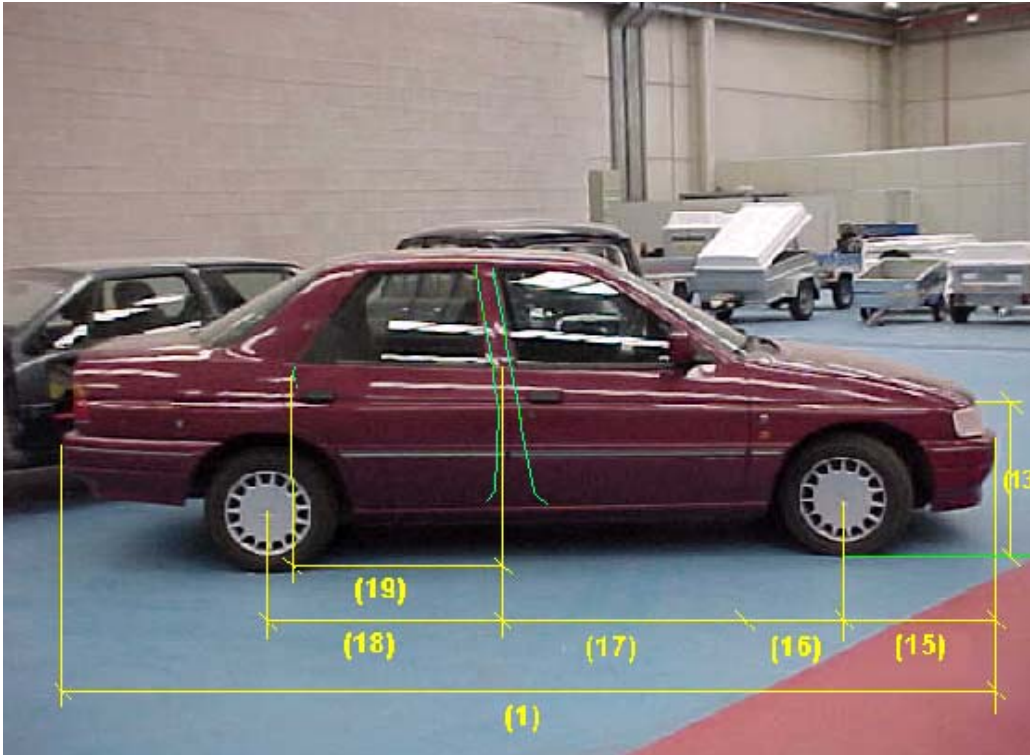
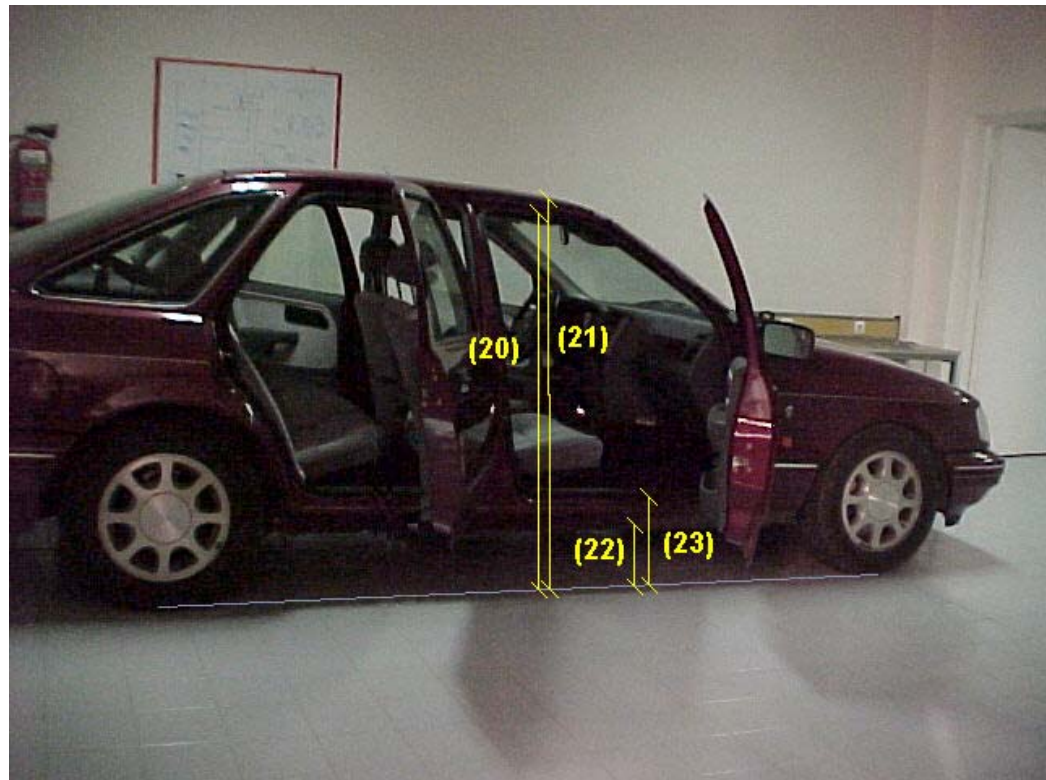


Figure 3.-
Measurements of
the side resistant
elements (outer).

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



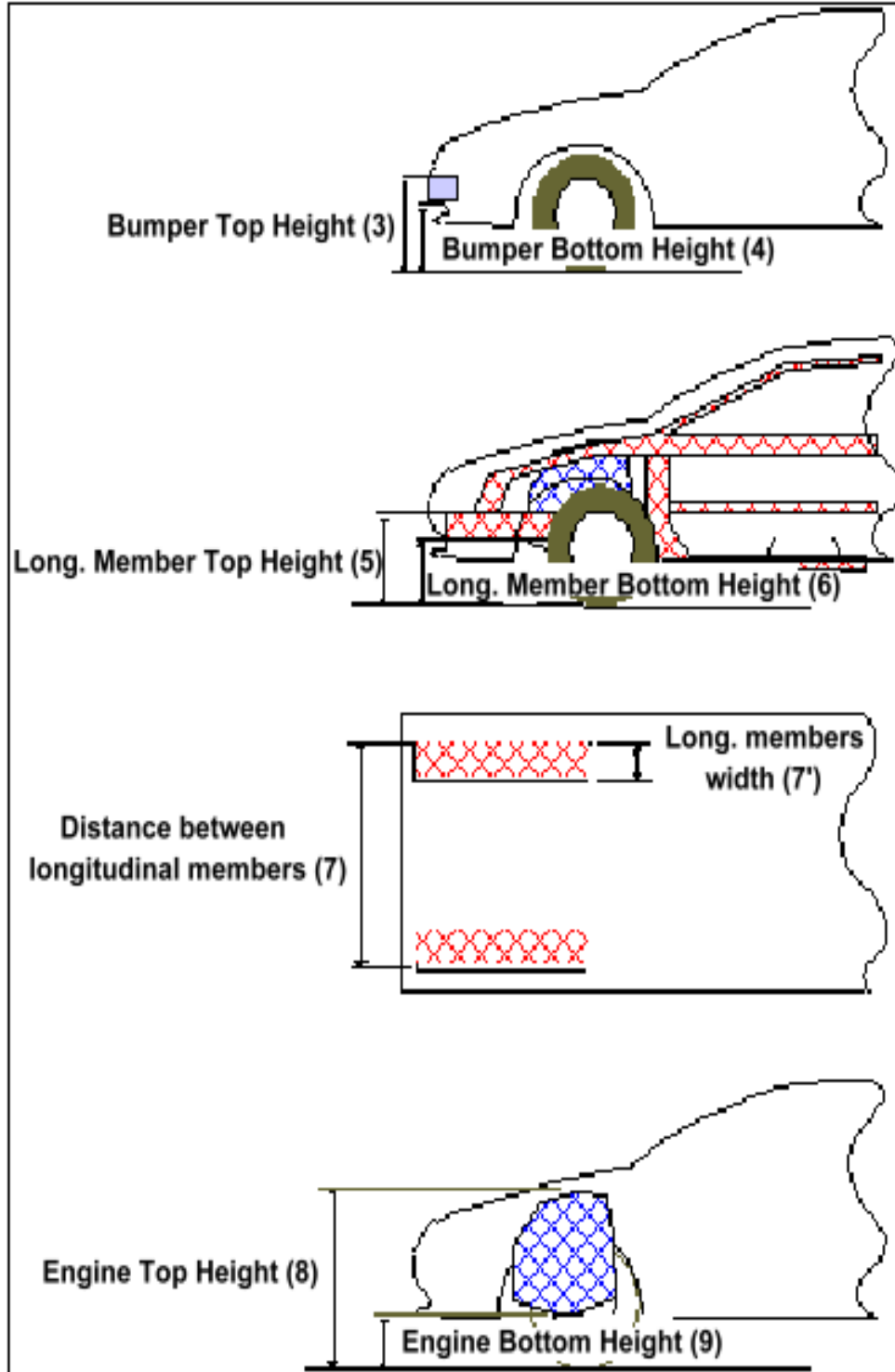


Figure 5.- Definition of the main resistant elements. Front elements.

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

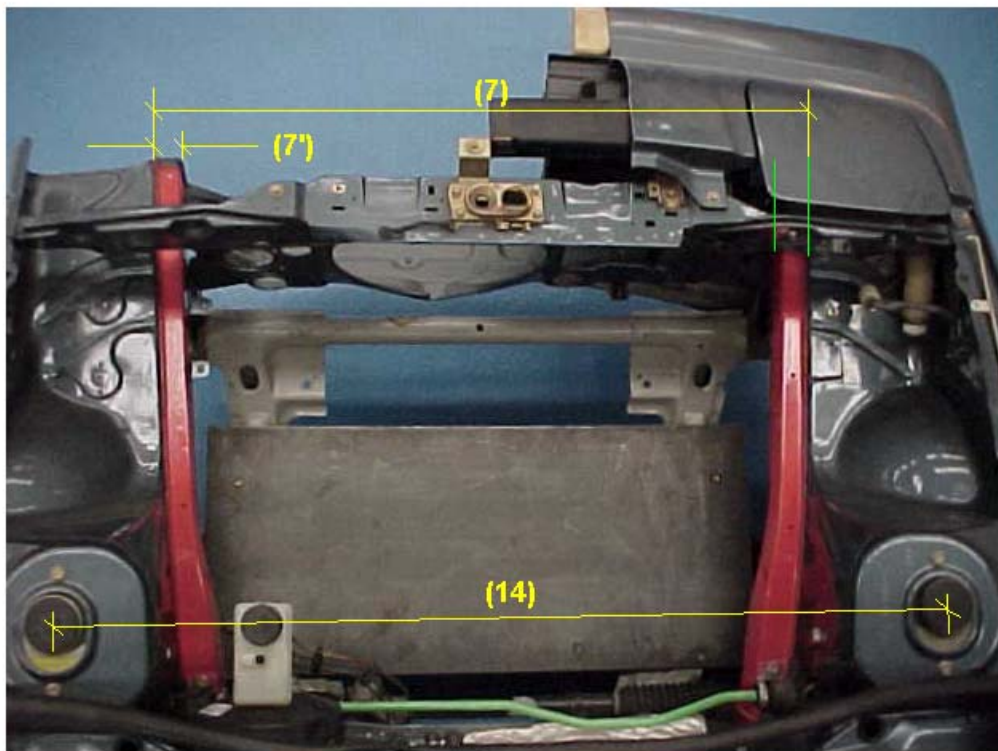
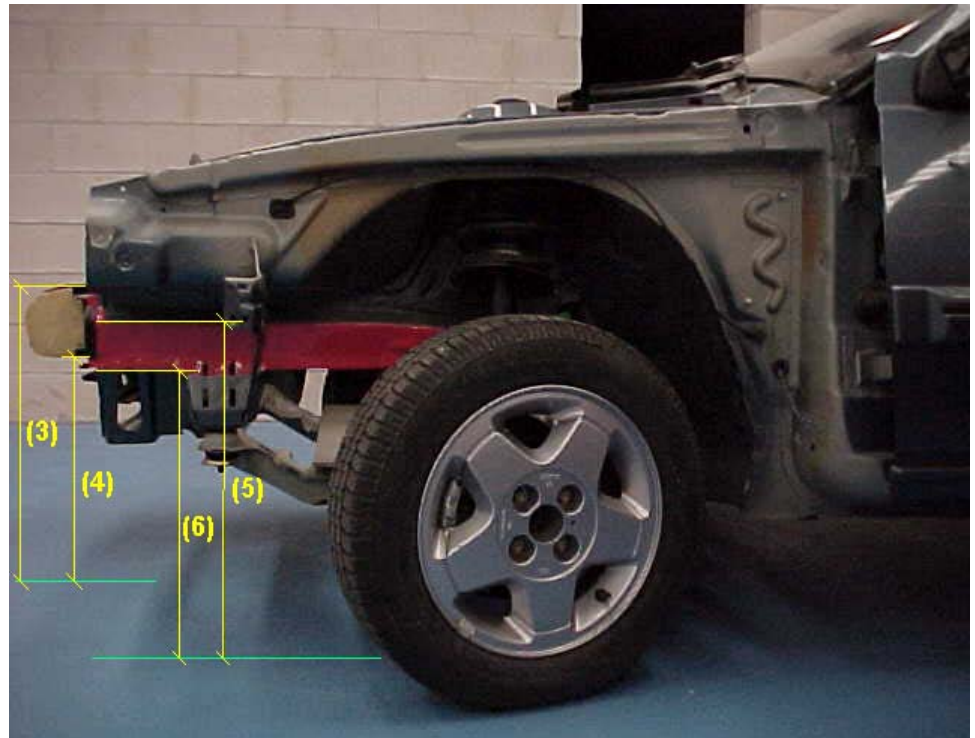


Figure 7.-
Measurements
of the main
resistant
elements. Front
elements 2.

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

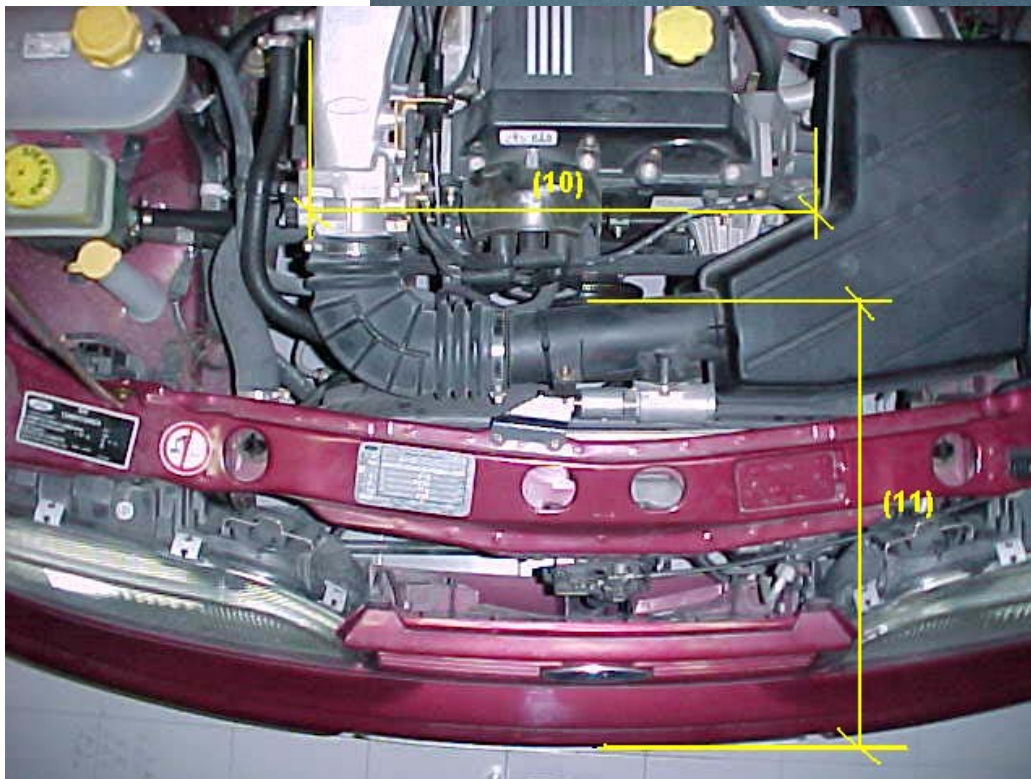
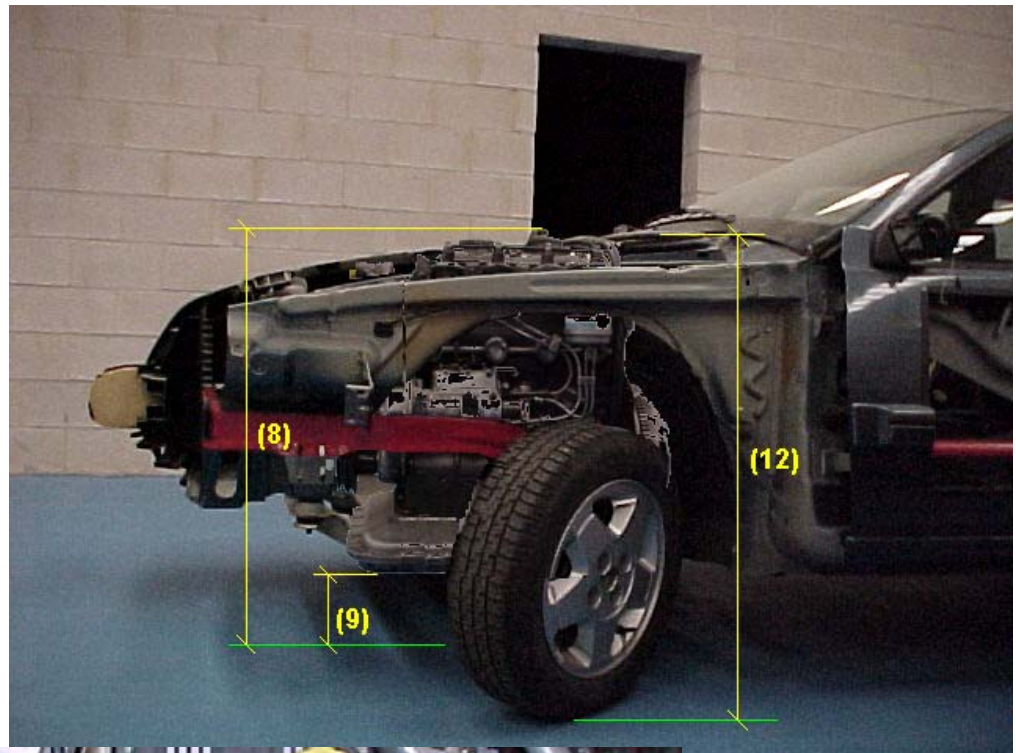


Figure 9.-
Definition of
the main
resistant
elements. Front
elements
(Longitudinal
engine).

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

Vehicle Manufacturer's Information

Dummy Clearance Measurements

Test Number: CF99011
Vehicle Make/Model: Mitsubishi Montero Sport
Vehicle Model Year: 1999
Seat Type: Manually adjusted bucket seat (fore/aft, height, and seat back angle)

Manufacturer's Specifications

Seat Back Information: Reclined rearward to the 6th locking position from most upright locking position; 23 degrees, as measured on lower outboard seat frame

Upper Belt Anchorage: Set to midpoint of 5 positions

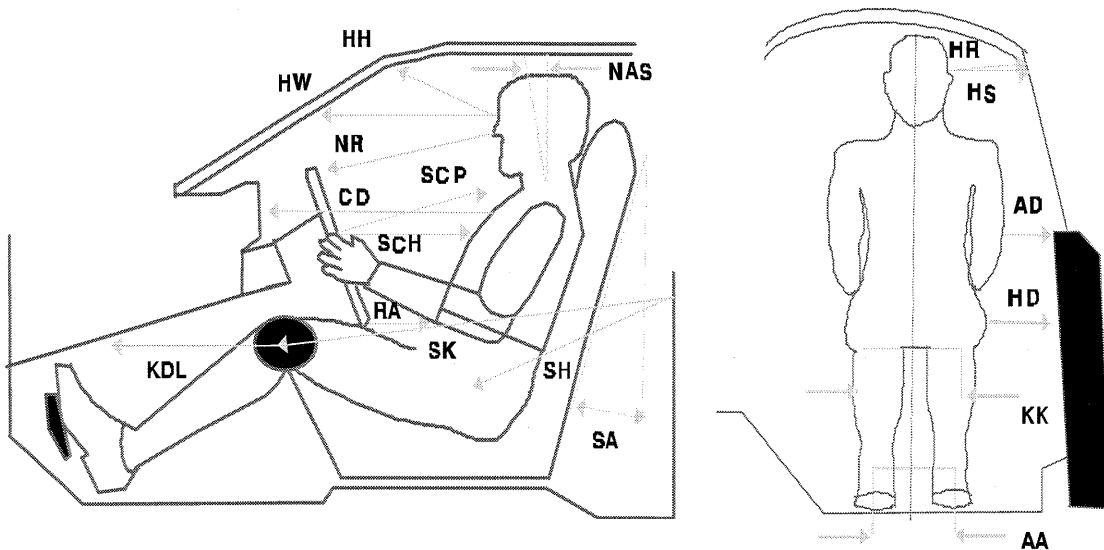
Steering Column Adjustment: Set to midpoint of tilt adjustment range

Location	Code	Measure	Location	Code	Measure
Head to header	HH	443	Neck angle, torso 90	NAT90	19.6°
Head to windshield	HW	630	Neck angle, seated*	NAS	4.1°
Nose to rim	NR	433	Torso angle (NAT90 – NAS)	TA	15.5°
Chest to dash	CD	631	Striker to knee**	SK	547
Rim to abdomen	RA	180	Striker to knee angle**	SKA	2.0°
Knee to dash, left	KDL	191	Striker to H-point, horizontal	SHH	157
Knee to dash, right	KDR	182	Striker to H-point, vertical	SHV	90
Steering wheel to chest, horizontal	SCH	305	Ankle to ankle	AA	312
Steering wheel to chest, perpendicular	SCP	396	Knee to knee	KK	323
Steering wheel to chest, reference	SCR	378	Arm to door	AD	109
Hub to chest, minimum	HCM	258	H-point to door	HD	165
Pelvic angle	PA	25.0°	Head to A-pillar	HA	550
Seat back angle	SA	23.1°	Head to roof	HR	210
			Head to side window	HS	229

All distance measurements are in millimeters (mm).

* Dummy's neck bracket was adjusted to -3.5 degrees to achieve a level instrumentation plane.

** These measurements were made in a vertical plane containing the striker and parallel to the driver door sill.



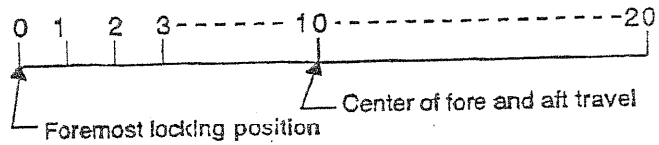
96 HONDA ACCORD COU
NSA-31JMG IR1683

g. (cont.)

(4) Position of adjustable seats (S6.3)

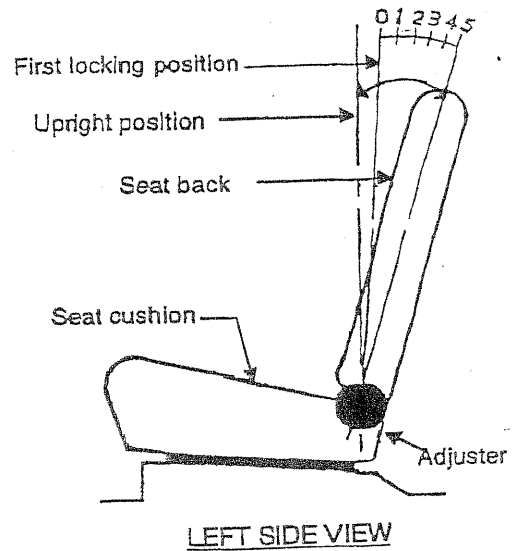
10th steps from the Foremost locking position for Passenger's seat. Fit and Controlled to use power SW of Driver's seat to the same position as passenger's seat.

Locking position of side adluster



(5) Position of adjustable seat backs (S6.4)

Nominal design riding position is located with seat back adjusted to the 5th latch position from the first locking position.

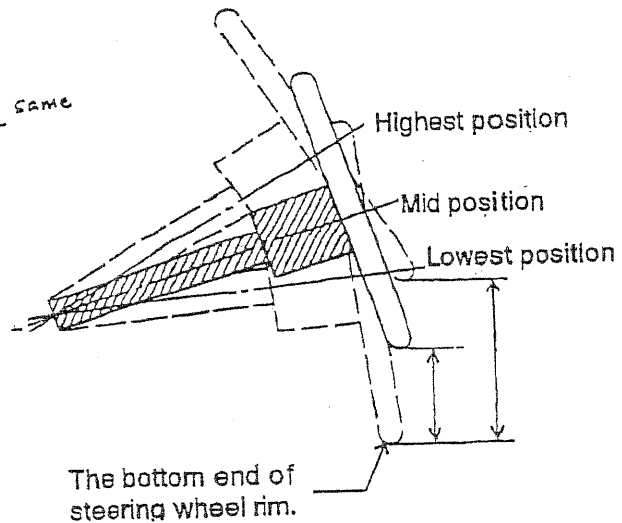


(6) Position of adjustable steering wheel (S6.5)

- A : 1.76 inch (Highest position)
- B : 0.87 inch (Mid position)

94-97 same
4962-NCAP

STEERING COULUMN ASSEMBLY



96 HONDA ACCORD C
 NSA-31JMG IR1683

g. Information and data relating to the test conditions (S6)

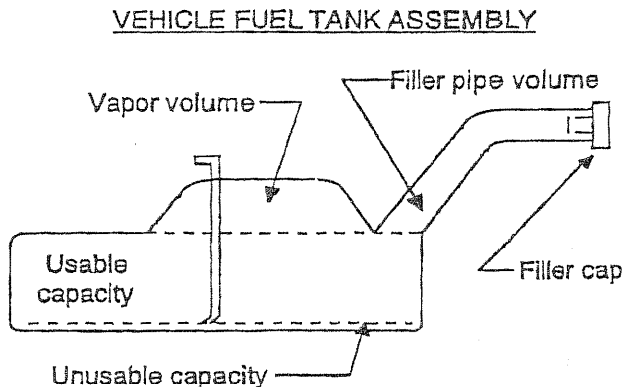
(1) Test weight measured at each wheel (S6.1)

Fr.: 1896 lbs.
Rr.: 1506 lbs.

(2) Fuel tank capacity and the amount of Stoddard solvent added (S6.1)

Usable capacity : 17.0 gallons.

Amount of Stoddard solvent : 15.8 gallons.



(3) Vehicle test attitude immediately prior to testing including measurements to the reference points in the "as delivered" and "fully loaded" conditions (S6.2)

Wheel Opening Height Unit : inch

	Front		Rear	
	L	R	L	R
As delivered	27.2	27.4	27.1	27.0
Fully loaded	26.4	27.4	24.9	25.9