

REPORT NUMBER TR-P23001-16-NC

**NEW CAR ASSESSMENT PROGRAM
FRONTAL BARRIER IMPACT TEST**

**HONDA OF CANADA
2003 ACURA MDX
SUV**

NHTSA NUMBER: M35301

**PREPARED BY:
KARCO ENGINEERING, LLC
9270 HOLLY ROAD
ADELANTO, CALIFORNIA 92301**



MARCH 13, 2003

FINAL REPORT

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Prepared by: _____
Mr. James E. Gorth, Project Engineer
KARCO Engineering, LLC

Date: March 21, 2003

Reviewed by: _____
Mr. Jerry L. Kratzke, Director of Operations
KARCO Engineering, LLC

Date: March 21, 2003

Approved by: _____
Mr. Frank D. Richardson, Program Manager
KARCO Engineering, LLC

Date: March 21, 2003

FINAL REPORT ACCEPTED BY:

Manager, New Car Assessment Program

Date of Acceptance

COTR, NCAP Frontal Impact Program

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<p>A 35mph (56.3 km/h) frontal barrier impact was conducted on a 2003 Acura MDX SUV at KARCO Engineering, LLC on 3/13/03. This test was conducted to obtain data indicant of FVMSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The impact velocity is 55.62 km/h. The ambient temperature at the barrier face at the time of impact is 24.4 degrees Celcius. The test vehicle sustained post-impact maximum static crush of 541 mm to the right of the vehicle centerline. The test vehicle is equipped with a 3-point continuous belt system and second generation supplemental airbags in both front outboard seating positions. With respect to FMVSS 208 "Occupant Crash Protection", the occupant injury criteria summary is as follows:</p>					
Measurement Description		Units	Threshold	Driver ATD	Pass. ATD
Head Injury Criteria (HIC)		N/A	1000	305.0	427.9
Max. Thorax Accel. (3 msec clip)		G's	60	48.4	47.3
Left Femur Force		Newtons	10000	-3312.3	-3427.8
Right Femur Force		Newtons	10000	-3517.5	-4112.0
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SECTION 1

PURPOSE AND SUMMARY OF TEST M35301

1.1 PURPOSE

This 35 mph (56.3 km/h) frontal barrier impact test is part of the Vehicle Barrier Impact Testing Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-01-D-02005. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for an impact speed in excess of the current 30 mph (48.3 km/h) requirements.

The 35 mph (56.3 km/h) frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards Laboratory Test procedure.

1.2 SUMMARY

A load cell barrier consisting of 36 load cells was impacted by a 2003 Acura MDX SUV at a velocity of 55.62 km/h. The test was performed at Karco Engineering, LLC on March 13, 2003.

One real-time and 19 high-speed cameras were used to document the frontal barrier impact event. Camera locations and other pertinent camera information can be found in this report.

Two Part 572E, 50th percentile male anthropomorphic test devices (ATDs), were placed in the driver and right-front passenger seating positions according to dummy placement instructions specified in the Laboratory Indicant Test Procedure.

Both ATDs were fully instrumented with head (primary and redundant), chest (primary and redundant) and pelvis triaxial accelerometers, chest displacement potentiometers, six-axis upper neck transducers, right/left femur load cells, and lower leg instrumentation. Load cells were also placed on the driver's and passenger's lap belts to measure pelvic section loading. The driver (position 1) ATD (Serial No. 35) and the right-front passenger (position 2) ATD (Serial No. 34) were calibrated prior to this test.

Ninety Three (93) channels of data were recorded using an on-board data acquisition system. Appendix A contains Pre and Post Test Photographs. Appendix B contains the vehicle and dummy response data traces. Appendix C contains Load Cell Barrier information. Appendix D contains the Instrumentation Data Channel assignments. Appendix E contains the Dummy Calibration Data and Appendix F contains the Child Restraint System (CRS).

There was 100 percent windshield retention and no intrusion into the protected zone of the windshield during the impact event. There was no Stoddard solvent leakage after the event or during any phase of the static rollover.

The maximum static crush of the vehicle was 541 mm and both the driver and the passenger side doors remained closed during the impact event and were operable after the impact.

The driver's visible contact points were as follows: The driver ATD head and chest contacted the airbag. The abdomen had no contact. Both knees contacted the knee bolster/steering column.

The passenger's visible contact points were as follows: The passenger ATD head, chest and abdomen contacted the airbag. Both knees contacted the glove box.

Occupant injury data is contained in table below.

OCCUPANT DATA SUMMARY

ATD Position	HIC	Clip (g)	Chest Disp (mm)	Left Femur (N)	Right Femur (N)	Belt Spool (mm)
Driver	305.0	48.4	-32.0	-3312.3	-3517.5	74.7
Passenger	427.9	47.3	-24.2	-3427.8	-4112.0	160.1

SECTION 2
OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03

CONVERSION FACTORS USED IN THIS REPORT*

Quantity	Typical Application	Std Units	Metric Unit	Multiply By
Mass	Vehicle Weight	lb	kg	0.4536
Linear Velocity	Impact Velocity	mile/h	km/h	1.609
Length or Distance	Measurements	in	mm	25.4
Volume	Fuel Systems	gal	liter	3.785
Volume	Small Fluids	oz	mL	29.573
Pressure	Tire Pressures	lbf/in ²	kPa	7.0
Volume	Liquid	gal	liter	3.785
Temperature	General Use	°F	°C	=(tf -32)/1.8
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf/ft	Nm	1.355

* Based on the Recommended Practice in SAE J916, May 85

**DATA SHEET NO. 1
CRASH TEST SUMMARY**

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03

PRIMARY IMPACT DATA

Measured Parameter	Units	Value
Velocity at Impact	km/h	55.62
Test Weight	kg	2227
Impact Angle	degrees	0
Average Rebound	mm	300
Maximum Static Crush	mm	541

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Driver	Passenger
Front Door Opening	Remained closed/latched, opened w/o tools	Remained closed/latched, opened w/o tools
Seat Track Shift (mm)	Remained closed/latched, opened w/o tools	Remained closed/latched, opened w/o tools
Seat Track Shift (mm)	None	10mm
Seat Back Failure	None	None

TEST DUMMY INFORMATION

Description	Driver	Passenger
Dummy Type / Serial No.	50% Male Hybrid III / No. 35	50% Male Hybrid III / No. 34
Head Contact	Airbag	Airbag
Chest Contact	Airbag	Airbag
Abdomen Contact	None	Airbag
Left Knee Contact	Knee Bolster/Steering Column	Glovebox
Right Knee Contact	Knee Bolster/Steering Column	Glovebox

16mm MOVIE COVERAGE

High Speed	19
Real Time	1
Total	20

DATA CHANNELS

Driver ATD Sensors	40
Passenger ATD Sensors	40
Belt Assessment Sensors	4
Vehicle Structure Accelerometers	9
Rigid Barrier Load Cells	36
Total	129

DATA SHEET NO. 2
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03

TEST VEHICLE INFORMATION

Make	Acura
Model	MDX
Body Style	SUV
NHTSA No.	M35301
VIN	2HNYD18763H513732
Color	Light Blue
Delivery Date	2/28/2003
Odometer Reading (mi.)	134
Dealer	Valencia Honda
Transmission	5 Speed Automatic
Final Drive	Rear
Type/No. Cylinders	V-6
Engine Displacement (L)	3.5
Engine Placement	Transverse
Roof Rack	Yes
Sunroof/T-Top	Yes
Tinted Glass	Yes
Traction Control	Yes
Power Brakes	Yes
Front Disc	Yes
Rear Disc	Yes

TEST VEHICLE OPTIONS

Anti-Lock Brakes (ABS)	Yes
All Wheel Drive	Yes
Power Steering	Yes
Driver Airbag	Yes
Driver Side Bag	No
Driver Head Bag	No
Pass. Airbag	Yes
Pass. Side Bag	No
Pass. Head Bag	No
Pre-tensioners	Yes
Load Limiters	Yes
Bucket Seats	Yes
Center Console	Yes
Air Cond.	Yes
AM/Fm Cassette	Yes
Tilt Steering	Yes
Power Door Locks	Yes
Power Windows	Yes
Power Seats	Yes
AM/FM Cassette	Yes
Other	

DATA FROM CERTIFICATION LABEL

Manufactured By	Honda of Canada	GVWR (kg)	2599
Date of Manufacture	January-03	GAWR Front (kg)	1311
		GAWR Rear (kg)	1336

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench	Split Bench	
Number of Occupants	2	3	2	7
Capacity Wt. (VCW) (kg)				525
Cargo Weight (RCLW) (kg)				49

DATA SHEET NO. 2.....(CONTINUED)
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2003 Acura MDX SUV
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NHTSA No.: M35301
 Test Date: 3/13/03

TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	245	245
Cold Pressure (kPa)	220	220
Recommend Tire Size	P235/65R17	P235/65R17
Tire Size on Vehicle	P235/65R17	P235/65R17
Tire Manufacturer	Michelin	Michelin
Treadwear	420	420
Traction	A	A
Temperature Grades	B	B
Tire Plies Sidewall	2	2
Tire Plies Body	2	2
Load Index/Speed Symbol	99 S	99 S
Tire Material	Polyester/Steel	Polyester/Steel
DOT Safety Code Right	DOT B9H2 FYTX 5002	DOT B9H2 FYTX 5002
DOT Safety Code Left	DOT B9H2 FYTX 5002	DOT B9H2 FYTX 5002

DATA SHEET NO. 2...(CONTINUED)
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2003 Acura MDX SUV
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NHTSA No.: M35301
 Test Date: 3/13/03

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	585	450		623	506	
Right	kg	568	428		609	489	
Ratio	%	56.8	43.2		55.3	44.7	
Totals	kg	1153	878	2031	1232	995	2227

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	2031
Weight of 2 P572 ATD's	kg	152
Rated Cargo/Luggage Weight (RCLW)	kg	49
Calculated Vehicle Target Weight (TVTW)	kg	2232

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	820	824	831	832	1166
As Tested	mm	803	810	810	816	1207

Vehicle Wheel base (mm): 2700

Weight of Ballast secured in cargo area (kg): 56

Vehicle Components Removed: rear lights, rear windows and 3rd row seats

* Ballast weight does not include cameras, instrumentation, and brake abort system.

FUEL SYSTEM DATA

Fuel System Capacity From Owner's Manual (L): 72.7

Usable Capacity Figure Furnished by COTR (L): 72.7

Actual Test Volume with entire fuel System Filled (L): 23.9*

Test Fluid Type: Stoddard Solvent ; Specific Gravity: 0.764

Kinematic Viscosity: as per ASTM Standard D484-71 ; Color: Purple

Is Vehicle Fuel Pump Electric or Mechanical?: Electric

If electric, does pump operate with ignition switch "ON" & engine "OFF"? Yes

Fuel System Particulars: * Note: Solvent level decreased to make target test weight

**DATA SHEET NO. 3
POST IMPACT DATA**

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03

SPEED TRAP DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	55.51 to 57.12	55.62
Trap No. 1 Entry Distance	mm	< 1524	1524
Trap No. 1 Exit Distance	mm	< 1524	305
Trap No. 2 Velocity (Redundant)	km/h	55.51 to 57.12	55.64
Trap No. 2 Entry Distance	mm	< 1524	1524
Trap No. 2 Exit Distance	mm	< 1524	305

VEHICLE STATIC CRUSH

Measured Parameter	Units	Pre-Test	Post-Test	Difference
Left Side	mm	4580	4180	-400
Center	mm	4775	4245	-530
Right Side	mm	4580	4226	-354

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	400
Center	mm	260
Right Side	mm	240
Average	mm	300

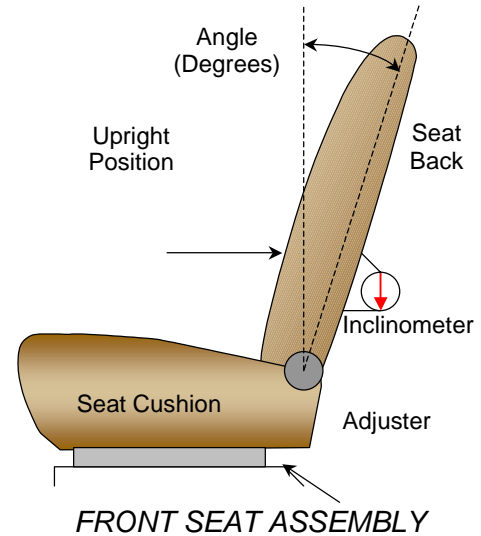
**DATA SHEET NO. 4
TEST VEHICLE INFORMATION**

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03

NOMINAL DESIGN RIDING POSITION

The driver and passenger seat backs are positioned to the manufacturers designated angle. The procedure is as follows: A special application tool with pointed probes is inserted through the fabric to make contact with the rigid portion of the lower seat frame assembly, approximately 13 inches above the pivot point of the seat back. An inclinometer is placed against the flat surface of the tool and the seat back angle is measured directly from the dial face.



SEAT BACK ANGLES

	Deg.
Driver w/seated Dummy	12
Passenger w/seated Dummy	12

SEAT FORE/AFT POSITIONS

The first or forward most position is counted as number one (1). The fore/aft position is set aft of the middle position for both the driver and passenger.

SEAT FORE/AFT POSITIONING

	Total Fore/Aft Travel	Placed in Position #
Driver Seat	214mm	107mm
Passenger Seat	224mm	112mm

SEAT BELT UPPER ANCHORAGE

Position number one (1) is the uppermost position.

SEAT BELT UPPER ANCHORAGE

	Total # of Positions	Placed in Position #
Driver Seat	4	2
Passenger Seat	4	2

DATA SHEET NO. 4...(CONTINUED)
TEST VEHICLE INFORMATION

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

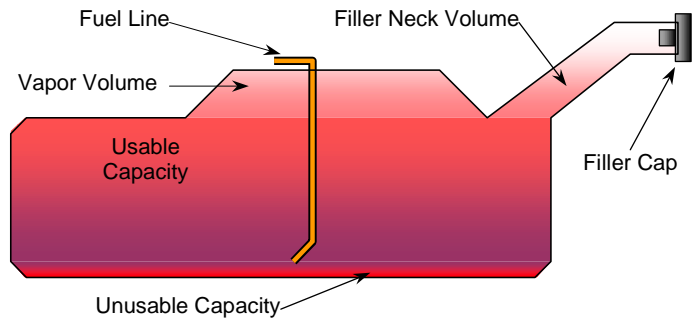
NHTSA No.: M35301
 Test Date: 3/13/03

FUEL TANK CAPACITY DATA

	Liters
Usable Capacity of "Standard Tank"	72.7
Usable Capacity of "Optional Tank"	N/A
Usable Capacity used for FMVSS 301	66.88 to 68.32
Actual Amount of Solvent Used	23.9*

* Note: Solvent level decreased to make target test weight

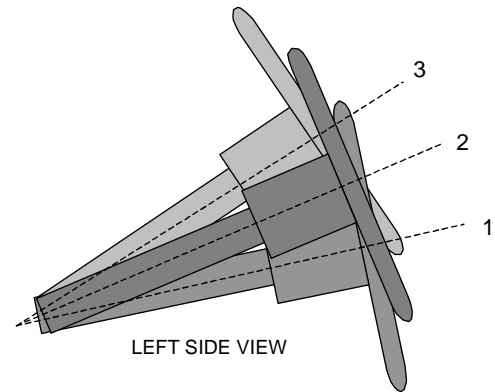
The test vehicle is equipped with an electric fuel pump. The fuel pump operates for approximately two seconds after the ignition is placed in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the left rear fender. The standard fuel tank occupies the area under the rear seat.



VEHICLE FUEL TANK ASSEMBLY

STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when moved through its full range of motion. An aluminum plate is placed across the rim of the steering wheel, an inclinometer is placed on the plate and the angle is measured.



STEERING COLUMN ASSEMBLY

STEERING COLUMN POSITIONS

	Degrees
Lowermost; position No. 1	26.5
Geometric center; position No. 2	28.0
Uppermost; position No. 3	29.5

DATA SHEET NO. 5
DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2003 Acura MDX SUV
Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
Test Date: 3/13/03

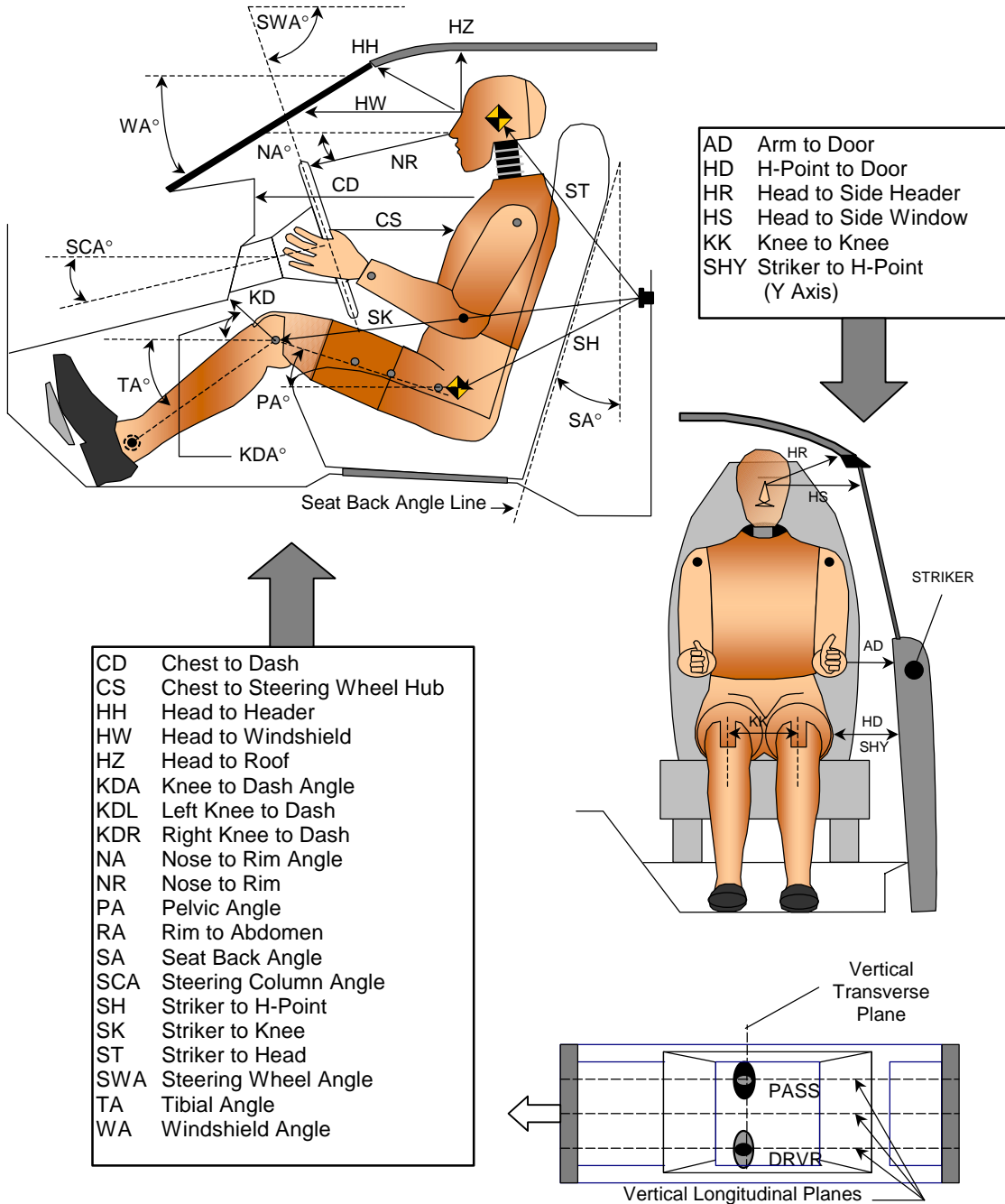
TEST DUMMY POSITION MEASUREMENTS

Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA	Windshield Angle		59		
SWA	Steering Wheel Angle		62.0		
SCA	Steering Column Angle		28.0		
SA	Seat Back Angle		12.0		12.0
HZ	Head to Roof (Z)	220	90	215	90
HH	Head to Header	370		390	
HW	Head to Windshield	685		687	
HR	Head to Side Header (Y)	295		300	
NR	Nose to Rim	382	14		
CD	Chest to Dash	550		560	
CS	Chest to Steering Hub	310			
RA	Rim to Abdomen	168			
KDL	Left Knee to Dash	145	7	130	
KDR	Right Knee to Dash	138		118	25
PA	Pelvic Angle		25		25
TA	Tibia Angle		52		50
KK	Knee to Knee (Y)	315		295	
ST	Striker to Head	605		625	1
SK	Striker to Knee	575	70	590	73
SH	Striker to H-Point	220		220	
SHY	Striker to H-Point (Y)	245		250	
HS	Head to Side Window	350		345	
HD	H-Point to Door (Y)	212		220	
AD	Arm to Door (Y)	120		65	

DATA SHEET NO. 5...(CONTINUED)
DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03



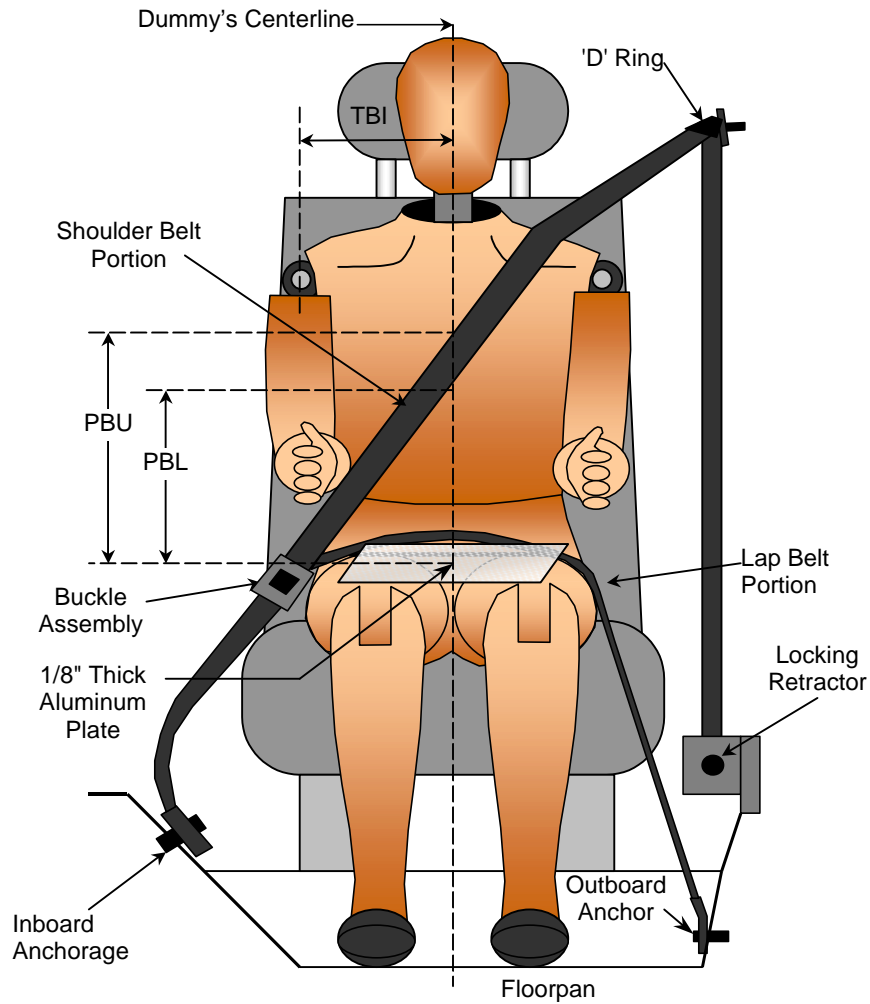
CD	Chest to Dash
CS	Chest to Steering Wheel Hub
HH	Head to Header
HW	Head to Windshield
HZ	Head to Roof
KDA	Knee to Dash Angle
KDL	Left Knee to Dash
KDR	Right Knee to Dash
NA	Nose to Rim Angle
NR	Nose to Rim
PA	Pelvic Angle
RA	Rim to Abdomen
SA	Seat Back Angle
SCA	Steering Column Angle
SH	Striker to H-Point
SK	Striker to Knee
ST	Striker to Head
SWA	Steering Wheel Angle
TA	Tibial Angle
WA	Windshield Angle

DUMMY MEASUREMENTS FOR FRONT SEAT OCCUPANTS

DATA SHEET NO. 6
SEATBELT POSITIONING DATA

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03



SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
TBI - Dummy C/L to Lap/Shoulder Belt Intersect	mm	260	245
PBU - Top surface of reference to belt upper edge	mm	320	320
PBL - Top surface of reference to belt lower edge	mm	250	250
Lap Belt tension	Newton's	10	10
Shoulder Belt tension	N/A	Retractor	Retractor

DATA SHEET NO. 7 - VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2003 Acura MDX SUV

NHTSA No.: M35301

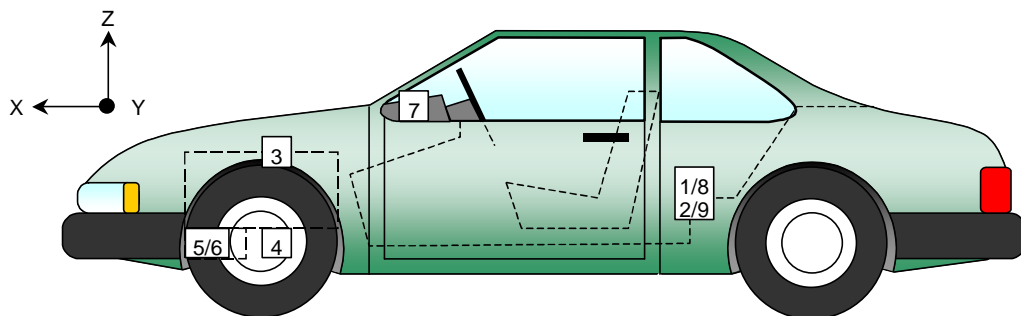
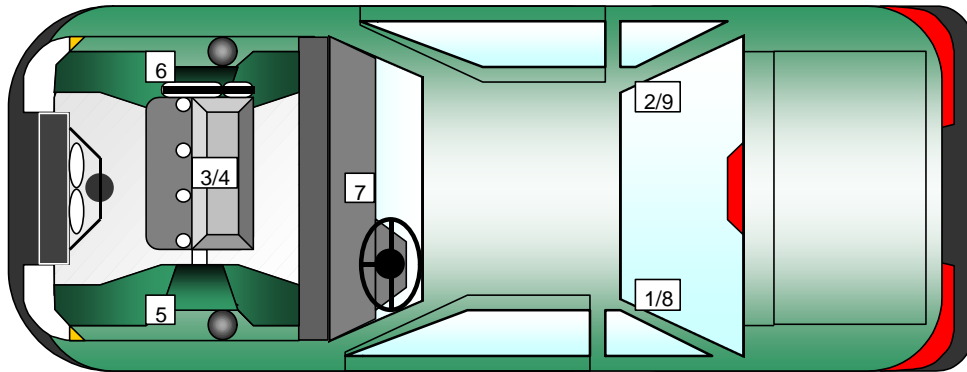
Test Program: 2003 NHTSA 35mph NCAP

Test Date: 3/13/03

VEHICLE ACCELEROMETER PEAK DATA AND PRE-TEST LOCATIONS

No.	Accelerometer Location	Measurements (mm)			Peak Values				
		X	Y	Z	Units	Max	Time	Min	Time
1	Left Rear X-Member	1910	-730	485	G's	1.8	131.6	-47.5	45.1
2	Right Rear X-Member	1910	715	485	G's	1.4	131.7	-50.1	45.2
3	Engine Top	4018	0	940	G's	37.4	47.2	-168.8	29.6
4	Engine Bottom	4140	330	120	G's	20.6	42.5	-146.6	30.4
5	Left Brake Caliper	3925	-845	355	G's	47.4	63.9	-98.5	38.7
6	Right Brake Caliper	3925	845	355	G's	61.6	69.2	-69.2	52.2
7	Instrument Panel	3300	0	1240	G's	23.5	91.0	-48.2	46.8
8	Left Rear X-Member (Z-Axis)	1865	-730	485	G's	10.7	40.4	-8.1	44.3
9	Right Rear X-Member (Z-Axis)	1865	715	485	G's	10.9	19.3	-6.6	30.4

Reference Planes: X=From Rear Surface of Vehicle, Y=Vehicle Centerline, Z=Ground Plane



DATA SHEET NO. 8 - HYBRID III ATD INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2003 Acura MDX SUV

NHTSA No.: M35301

Test Program: 2003 NHTSA 35mph NCAP

Test Date: 3/13/03

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	12.0	193.7	-44.1	74.8	5.8	256.9	-56.1	79.7
Head CG	Y	G's	3.6	152.2	-10.2	84.9	3.8	86.0	-5.4	79.4
Head CG	Z	G's	16.2	56.1	-10.0	93.1	28.9	79.0	-3.0	35.9
Head CG Resultant	N/A	G's	45.4	74.8			62.6	79.7		

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	3.4	188.1	-49.7	61.3	3.4	218.5	-49.1	71.9
Chest CG	Y	G's	5.8	80.5	-5.4	56.8	4.6	44.2	-13.2	78.2
Chest CG	Z	G's	7.0	47.8	-15.4	100.0	5.4	88.5	-6.2	105.4
Chest CG Resultant	N/A	G's	50.3	61.3			49.4	71.9		

FEMUR PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Femur	Z	Newtons	970.1	45.9	-3312.3	62.0	315.2	177.0	-3427.8	58.6
Right Femur	Z	Newtons	671.8	45.2	-3517.5	60.7	174.0	199.2	-4112.0	50.9

SEAT BELT SENSOR PEAK VALUES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Shoulder Belt Pullout	N/A	MM	74.7	86.7	-46.0	29.8	160.1	88.3	-44.5	30.1
Shoulder Belt Stretch	N/A	MM/CM	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
Lap Belt Force	N/A	Newtons	8583.8	60.2	1.6	0.0	6338.4	61.8	-0.4	0.0
Shoulder Belt Force	N/A	Newtons	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

1.) Not used with pre-tensioner

2.) Not installed

Location	Driver				Passenger			
	HIC	T ¹	T ²	Avg G	HIC	T ¹	T ²	Avg G
Head CG Primary	305.0	49.8	85.7	37.3	427.9	61.8	94.4	44.3

PRIMARY CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Primary	48.4	59.9	62.9	47.3	74.9	77.9

DATA SHEET NO. 8...(continued)

Test Vehicle: 2003 Acura MDX SUV

NHTSA No.: M35301

Test Program: 2003 NHTSA 35mph NCAP

Test Date: 3/13/03

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	13.1	90.1	-73.7	60.1	7.4	95.1	-54.9	54.6
Pelvis	Y	G's	8.4	83.3	-8.1	60.2	6.6	53.9	-9.9	84.9
Pelvis	Z	G's	3.4	249.2	-37.5	62.5	2.3	235.8	-30.2	58.8
Pelvis Resultant	N/A	G's	82.6	60.1			59.6	58.8		

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	355.3	65.5	-472.8	130.7	317.5	70.3	-439.6	112.0
Neck Force	Y	Newtons	156.6	142.3	-133.8	84.1	151.7	69.2	-199.6	146.9
Neck Force	Z	Newtons	1280.0	55.3	-367.2	99.0	1210.2	79.0	-170.9	101.5
Neck Force Resultant	N/A	Newtons	1288.1	56.0			1225.2	79.0		
Neck Moment	X	N•m	7.1	150.5	-10.2	51.8	9.0	76.9	-17.1	87.2
Neck Moment	Y	N•m	41.2	129.2	-17.5	85.7	35.5	96.3	-21.3	249.9
Neck Moment	Z	N•m	10.8	94.7	-5.4	149.9	1.2	238.7	-3.7	86.4
Neck Moment Resultant	N/A	N•m	41.2	129.2			35.5	96.3		

FOOT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Foot Aft	X	G's	10.2	93.1	-46.8	50.8	47.3	55.3	-181.3	42.1
Left Foot Aft	Z	G's	9.7	67.4	-20.6	77.8	51.1	42.2	-59.7	51.8
Left Foot Fore	Z	G's	11.1	12.4	-32.1	77.9	13.4	30.7	-179.4	43.1
Right Foot Aft	X	G's	13.6	92.8	-79.8	47.7	24.4	75.4	-164.9	48.6
Right Foot Aft	Z	G's	4.7	67.5	-85.4	46.5	29.9	77.5	-76.3	49.0
Right Foot Fore	Z	G's	12.3	97.2	-119.4	45.6	40.6	77.8	-93.5	48.5

1.) Passenger channel failed at 44.1 msec.

UPPER AND LOWER TIBIA PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Upper Moment	X	N•m	69.8	61.2	-12.6	188.2	2.9	17.5	-194.3	70.0
Left Upper Moment	Y	N•m	29.2	108.9	-85.8	52.6	75.6	71.9	-2.0	56.5
Right Upper Moment	X	N•m	6.1	47.1	-44.9	61.4	41.7	44.2	-33.2	80.1
Right Upper Moment	Y	N•m	25.1	101.3	-113.0	47.0	116.6	64.2	-12.9	27.7
Left Lower Moment	X	N•m	16.2	59.8	-6.1	248.7	13.1	152.2	-35.0	72.4
Left Lower Moment	Y	N•m	18.1	92.6	-43.8	53.3	99.2	42.2	-16.3	109.5
Left Lower Force	Z	Newtons	131.4	126.3	-878.5	22.1	328.4	127.1	-1739.0	47.2
Right Lower Moment	X	N•m	11.7	39.7	-12.8	57.2	16.5	57.8	-40.8	51.3
Right Lower Moment	Y	N•m	29.3	98.0	-45.6	47.8	90.8	82.6	-4.3	19.4
Right Lower Force	Z	Newtons	129.3	119.3	-2524.0	48.3	195.4	61.1	-2446.9	48.7

DATA SHEET NO. 8...(continued)

Test Vehicle: 2003 Acura MDX SUV

NHTSA No.: M35301

Test Program: 2003 NHTSA 35mph NCAP

Test Date: 3/13/03

CHEST PEAK DISPLACEMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	MM	0.2	4.1	-32.0	75.7	0.3	10.9	-24.2	78.1

HEAD REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	11.4	193.3	-44.4	74.8	5.1	257.1	-56.4	81.0
Head CG	Y	G's	3.2	144.3	-9.7	79.0	3.9	36.7	-5.0	65.0
Head CG	Z	G's	15.8	45.7	-9.4	92.7	29.0	79.3	-2.1	128.9
Head CG Resultant	N/A	G's	45.3	74.8			62.7	81.3		

CHEST REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	3.4	189.6	-49.4	61.4	3.4	218.4	-49.7	72.0
Chest CG	Y	G's	6.1	80.7	-5.4	51.8	4.8	44.2	-12.9	78.4
Chest CG	Z	G's	6.8	48.0	-15.4	100.3	5.3	88.7	-6.1	104.1
Chest CG Resultant	N/A	G's	50.0	61.4			49.9	72.0		

REDUNDANT HEAD INJURY CRITERIA (HIC)

Location	Driver				Passenger			
	HIC	T ¹	T ²	Avg G	HIC	T ¹	T ²	Avg G
Head CG Redundant	305.4	50.0	85.9	37.3	427.3	62.1	94.3	44.5

REDUNDANT CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Redundant	48.2	60.0	63.0	47.4	75.0	78.0

**DATA SHEET NO. 9
SEATBELT ASSESSMENT TEST DATA**

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03

SEAT BELT PLACEMENT MEASUREMENTS

Measurement Description	Units	Driver	Passenger
TBI - Dummy C/L to Lap/Shoulder Belt Intersect	mm	260	245
PBU -Top surface of reference to belt upper edge	mm	320	320
PBL - Top surface of reference to belt lower edge	mm	250	250
Lap Belt tension	Newton's	10	10
Shoulder Belt tension	N/A	Retractor	Retractor

BELT LENGTH DATA

Measurement Description	Units	Driver	Passenger
Retractor reel to 'D' ring	mm	825	825
Shoulder belt length as measured on ATD	mm	925	920
Lap belt length as measured on ATD	mm	860	885
Remainder of belt on reel	mm	710	830
Total belt length for continuous webbing systems	mm	3320	3460

SHOULDER BELT SPOOL-OFF DATA

Measurement Description	Units	Driver	Passenger
As determined mechanically	mm	30.0	115.0
As determined electronically	mm	74.7	160.1

BELT STRETCH DATA

Measurement Description	Units	Driver	Passenger
Electronically between shoulder belt load cell and "D" ring	mm/cm	*	*
Mechanically	mm/cm	N/A	N/A

*Not used with shoulder belt pre-tensioner systems.

DATA SHEET NO. 10
SUMMARY OF FMVSS 212 DATA

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03

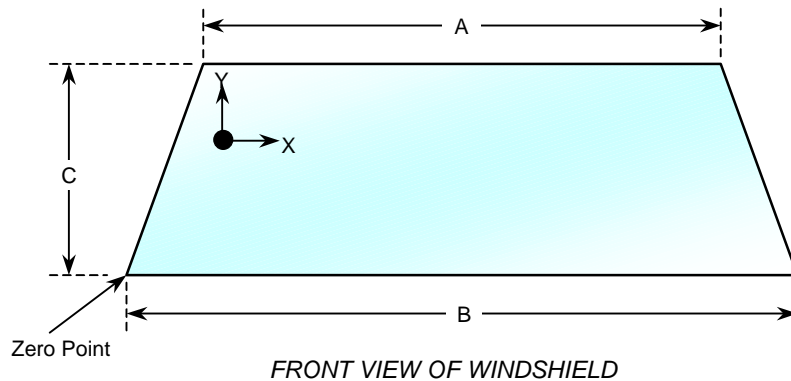
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with a rubber type adhesive. No molding covers the windshield periphery at any point.

The standard requires that the posttest retention measurement be a minimum of 75 percent of the pretest total periphery measurement for vehicles not equipped with occupant passive restraints and 50 percent for each side of the windshield for vehicles that are equipped with occupant passive restraints.

Temperature of windshield molding during test: 21.1 °C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test(mm)	Post-Test (mm)	% of Retention
Left Side	2255.0	2255.0	100
Right Side	2255.0	2255.0	100
Total	4510.0	4510.0	100



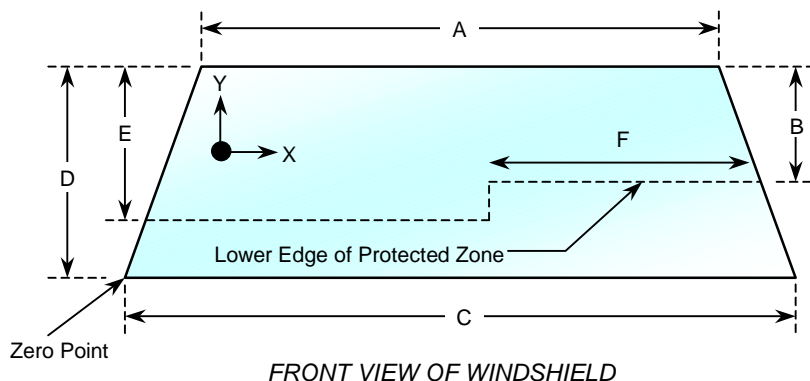
WINDSHIELD DIMENSIONS

Item	Units	Segment Length	Molding Width
A	mm	1280	15
B	mm	1590	0
C	mm	820	15
C	mm	820	15

DATA SHEET NO. 11
WINDSHIELD ZONE INTRUSION FMVSS 219 DATA (PARTIAL)

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03



**WINDSHIELD AND
 PROTECTED ZONE**

Item	Units	Value
A	mm	1280
B	mm	580
C	mm	1590
D	mm	820
E	mm	570
F	mm	510

AREA OF PROTECTED ZONE FAILURES

- A. Provide coordinates of the area that the protected zone was penetrated more than 0.25 in. by a vehicle component other than one that is normally in contact with the windshield.

X	Y
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

- B. Provide coordinates of the area beneath the protected zone that the inner surface of the windshield was penetrated by a vehicle component.

X	Y
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

DATA SHEET NO. 12
FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Test Vehicle: 2003 Acura MDX SUV NHTSA No.: M35301
Test Program: 2003 NHTSA 35mph NCAP Test Date: 3/13/03

Test Time: 1:05 PM Temperature at Test Time: 24.4 Deg. C

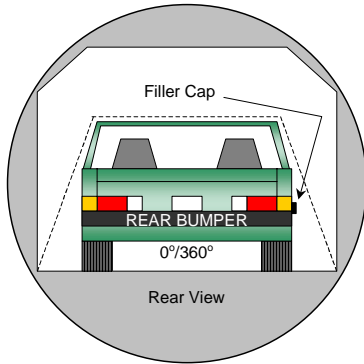
STODDARD SOLVENT SPILLAGE MEASUREMENTS

- A. From impact until vehicle motion ceases: 0.0 oz.
(Maximum Allowable = 1 ounce)
- B. For the 5 minute period after motion ceases: 0.0 oz.
(Maximum Allowable = 5 ounces)
- C. For the following 25 minutes: 0.0 oz.
(Maximum Allowable = 1 oz./minute)
- D. Spillage Location Details: No leakage occurred

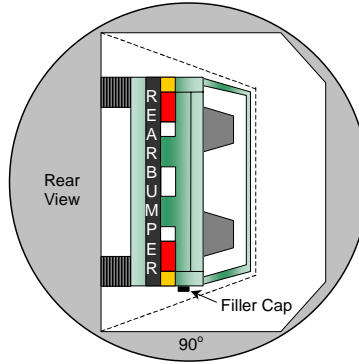
DATA SHEET NO. 13
FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

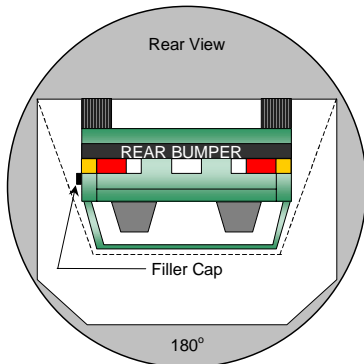
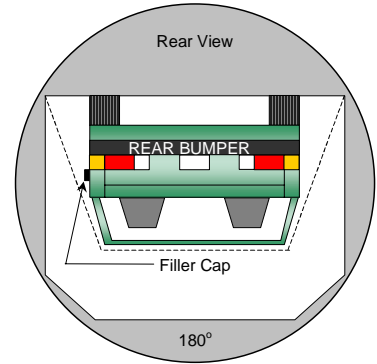
NHTSA No.: M35301
 Test Date: 3/13/03



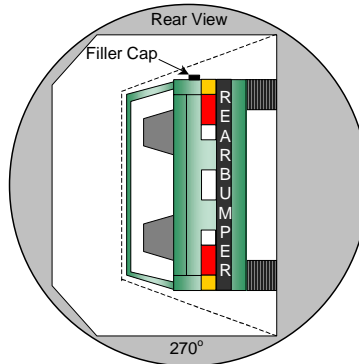
0° to 90°



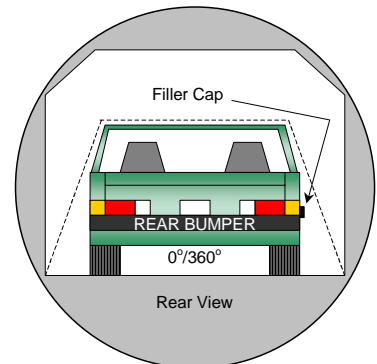
90° to 180°



180° to 270°



270° to 360°



1. The specified fixture rollover rate for each 90° of rotation is 60 to 120 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. No solvent leakage occurred during rollover.

DATA SHEET NO. 13....(CONTINUED)
FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03

SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	84	300	384
90° to 180°	79	300	379
180° to 270°	79	300	379
270° to 360°	78	300	378

FMVSS 301 SPILLAGE REQUIREMENT TABLE (oz.)

First 5 minutes	5.0
Sixth Minute	1.0
Seventh minute	1.0
Eighth Minute	1.0

ACTUAL TEST VEHICLE SOLVENT SPILLAGE (oz.)

Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eighth Minute
0° to 90°	0	0	0	0
90° to 180°	0	0	0	0
180° to 270°	0	0	0	0
270° to 360°	0	0	0	0

SOLVENT SPILLAGE LOCATION TABLE

Test Phase	SPILLAGE LOCATION
0° to 90°	None
90° to 180°	None
180° to 270°	None
270° to 360°	None

DATA SHEET NO. 14
VEHICLE MEASUREMENTS

Test Vehicle: 2003 Acura MDX SUV
Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
Test Date: 3/13/03

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
1	Total length of vehicle at centerline	mm	4775	4245	-530
2	RSOV to front of engine	mm	4319	4025	-294
3	RSOV to firewall centerline	mm	3758	3760	2
4	RSOV to leading edge of right door	mm	3300	3305	5
5	RSOV to leading edge of left door	mm	3303	3305	2
6	RSOV to lower leading edge of right door	mm	3280	3280	0
7	RSOV to lower leading edge of left door	mm	3282	3281	-1
8	RSOV to upper trailing edge of right door	mm	2260	2270	10
9	RSOV to upper trailing edge of left door	mm	2263	2270	7
10	RSOV to lower trailing edge of right door	mm	2270	2271	1
11	RSOV to lower trailing edge of left door	mm	2272	2275	3
12	RSOV to bottom of right 'A' pillar	mm	3291	3290	-1
13	RSOV to bottom of left 'A' pillar	mm	3291	3290	-1
14	RSOV to firewall on right side	mm	3841	3870	29
15	RSOV to firewall of left side	mm	3842	3864	22
16	RSOV to steering column	mm	2916	2880	-36
17	Center of steering column to left 'A' pillar	mm	453	450	-3
18	Center of steering column to headlining	mm	440	420	-20
19	RSOV to right side of front bumper	mm	4580	4226	-354
20	RSOV to left side of front bumper	mm	4580	4180	-400
21	Length of engine block	mm	440	440	0
RD	RSOV to right side of dash panel	mm	3106	3110	4
CD	RSOV to center of dash panel	mm	3078	3080	2
LD	RSOV to left side of dash panel	mm	3109	3110	1

DATA SHEET NO. 14.....(CONTINUED)
VEHICLE STRUCTURAL MEASUREMENTS

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03

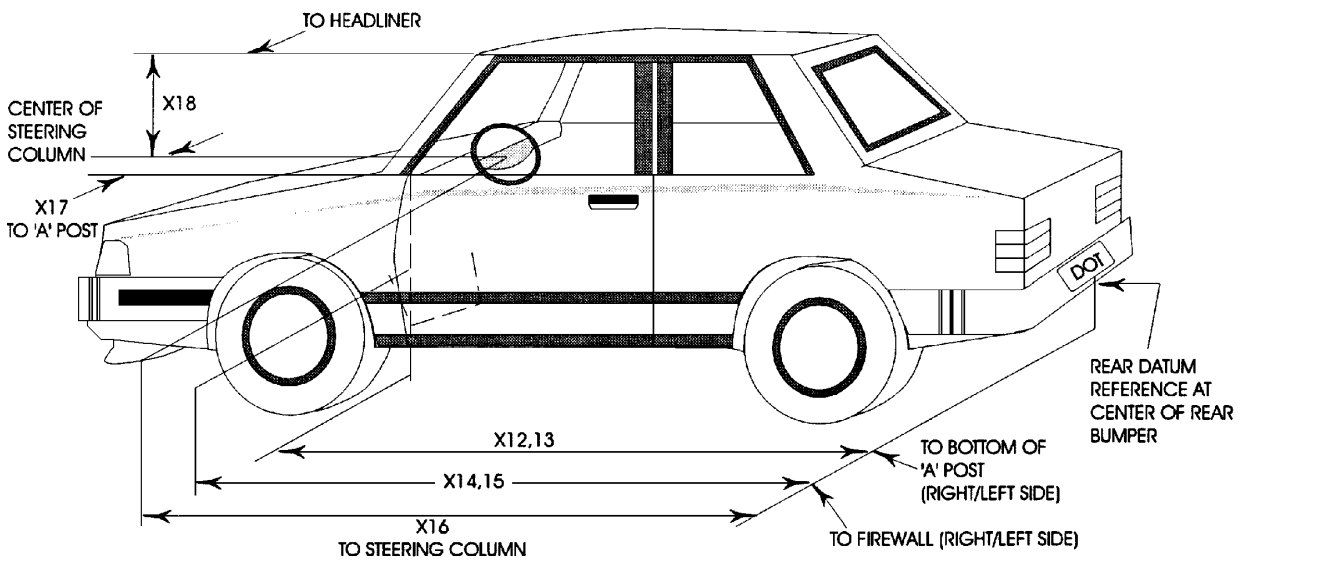
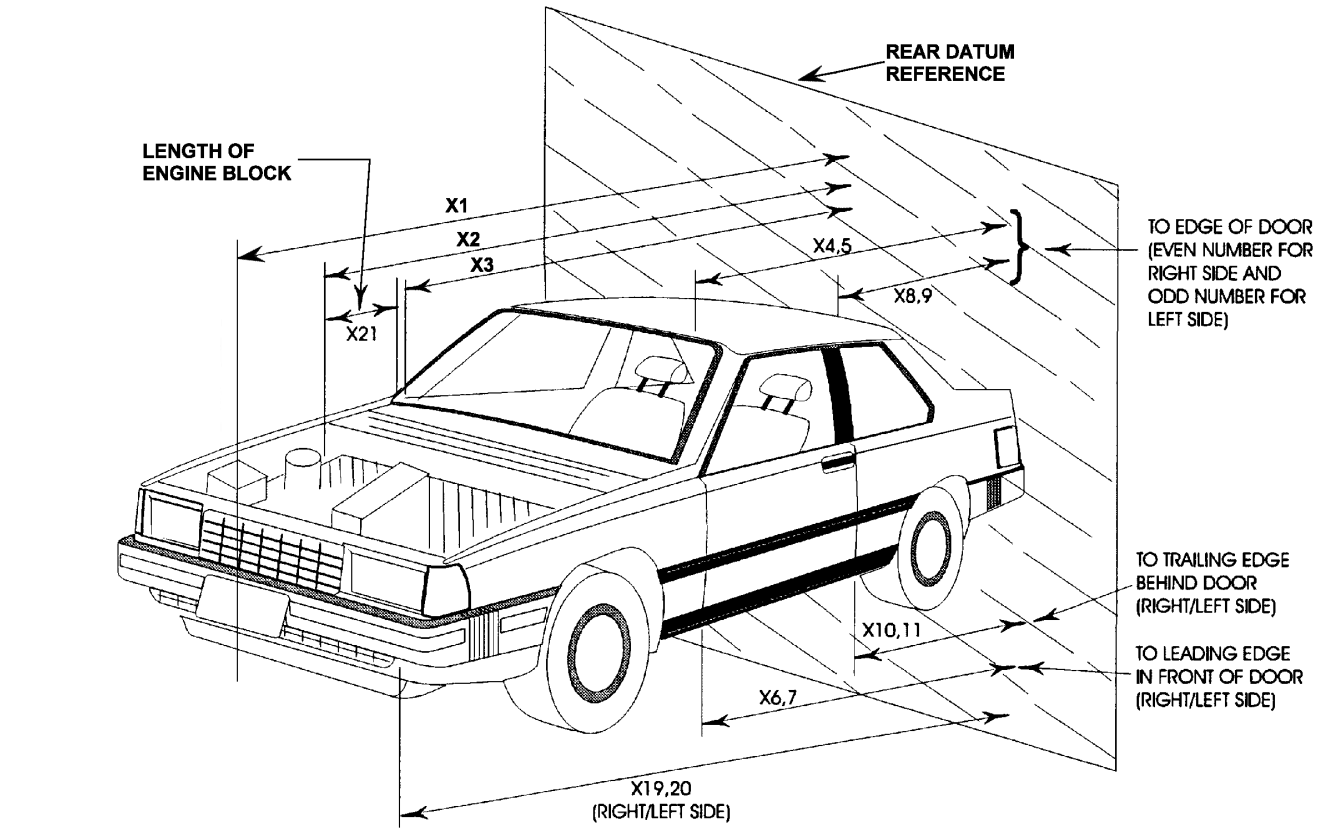
No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
1	Total Length	mm	4775	4245	-530
2	Total Width	mm	1922	1920	-2
3	Bumper Top Height	mm	848	950	102
4	Bumper Bottom Height	mm	380	440	60
5	Longitudinal Member Top Height	mm	597	584	-13
6	Longitudinal Member Bottom Height	mm	463	450	-13
7	Distance Between Longitudinal Members	mm	945	1005	60
8	Longitudinal Member Width	mm	134	134	0
9	Engine Top Height	mm	952	930	-22
10	Engine Bottom Height	mm	237	215	-22
11	Engine and Gear Box Width	mm	380	380	0
12	Front Bumper to Engine Distance	mm	456	180	-276
13	Front Shock Absorber Fixing Width	mm	419	426	7
14	Bonnet Leading Edge Height	mm	958	1120	162
15	Front Schock Absorber Fixing Width	mm	1245	1240	-5
16	Front Bumper to Front Axle Distance	mm	1002	550	-452
17	Front Axle to A-Pillar Distance	mm	503	410	-93
18	A-Pillar to B-Pillar Distance	mm	1029	1030	1
19	B-Pillar to Rear Axla Distance	mm	1181	1180	-1
20	B-Pillar to C-Pillar Distance	mm	906	905	-1
21	Roof Sill Bottom Height	mm	1531	1535	4
22	Roof Sill Top Heigth	mm	1655	1655	0
23	Floor Sill Bottom Height	mm	327	340	13
24	Floor Sill Top Height	mm	497	510	13

All Measurements in millimeters

DATA SHEET NO. 14...(CONTINUED)
VEHICLE MEASUREMENTS

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03



**DATA SHEET NO. 15
CAMERA LOCATIONS**

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03

No.	Camera View	Location (mm)			Angle (Deg.)	Film Plane to Head	Lens (mm)	Speed (fps)
		X	Y	Z				
1	Right Side, Real Time	18288	-22860	2540	10	N/A	17-70	24
2	Driver Overall	1930	8357	1321	4	7777	13	1030
2B	Driver Overall	1626	8230	1092	4	7668	17	No Time
3	Driver Close-up	1727	8230	1600	4	7667	35	980
4	3/4 Driver	6477	10185	4648	13	11046	35-85	1000
5	Steering Column	1524	8230	3404	20	7966	19	1000
6	Steering Column	1524	8230	2997	16	7866	19	1020
7	Passenger Overall	2057	-8306	1219	6	7723	14	1000
8	Passenger Close-up	1676	-8052	1219	4	7485	35	1020
9	3/4 Passenger	8026	-8941	2997	9	10342	80	960
10	Passenger Door	2438	-13106	1524	4	12527	50	1000
11	Overhead	610	0	6172	90	N/A	13	1000
12	Driver Front	-610	406	2743	40	N/A	12	870
13	Passenger Front	-610	406	2743	40	N/A	13	980
14	Pit Engine	762	0	-1499	90	N/A	10	850
15	Pit Gas Tank	3658	0	-1499	90	N/A	6	950
16	Driver Side Child	2642	8230	2286	15	7857	35	No Time
16B	Driver Side Child	2642	6096	1524	1	5653	25	500
17	Passenger Side Child	2438	-9144	2032	10	8763	25	No Time
17B	Passenger Side Child	2743	-8331	1524	1	7896	25	DNR

X - Barrier Face Y - Monorail Centerline Z - Ground DNR = Did Not Run

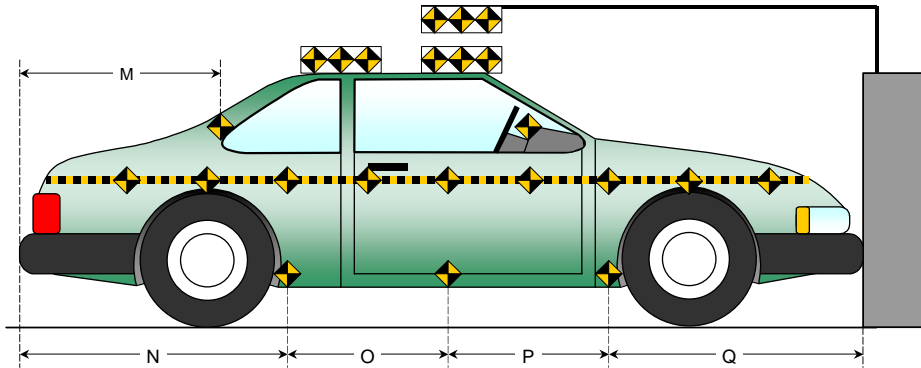
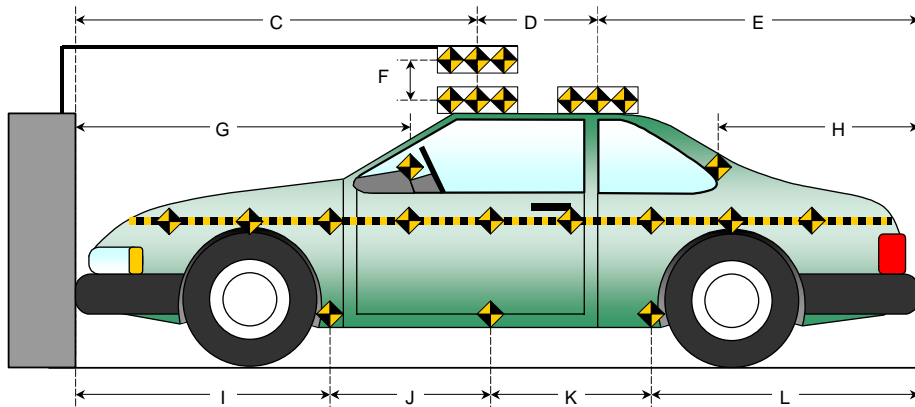
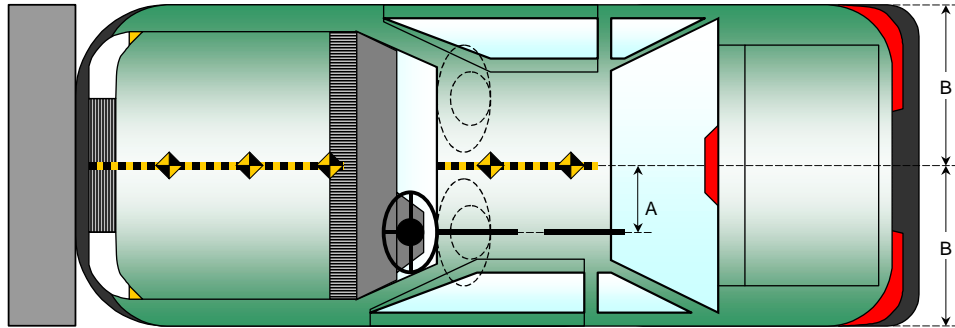
DATA SHEET NO. 16
PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03

All Dimensions
 in mm

Item	Value
A	520
B	975
C	2373
D	609
E	1790
F	155
G	1702
H	1319
I	1564
J	833
K	833
L	1572
M	1319
N	1572
O	833
P	833
Q	1564



DATA SHEET NO. 17
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

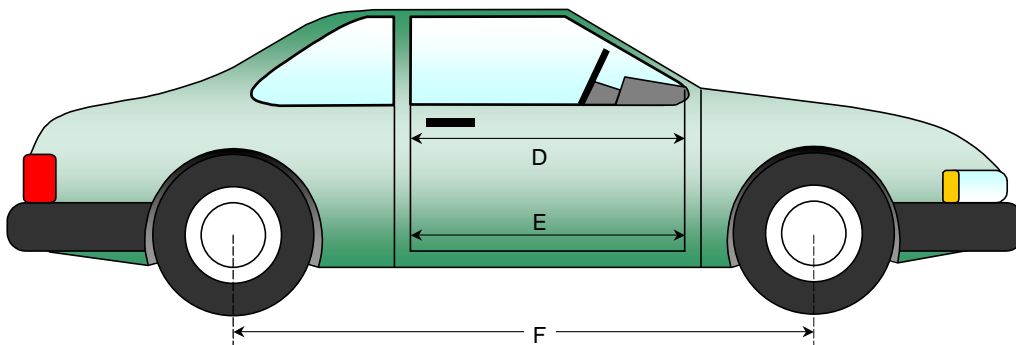
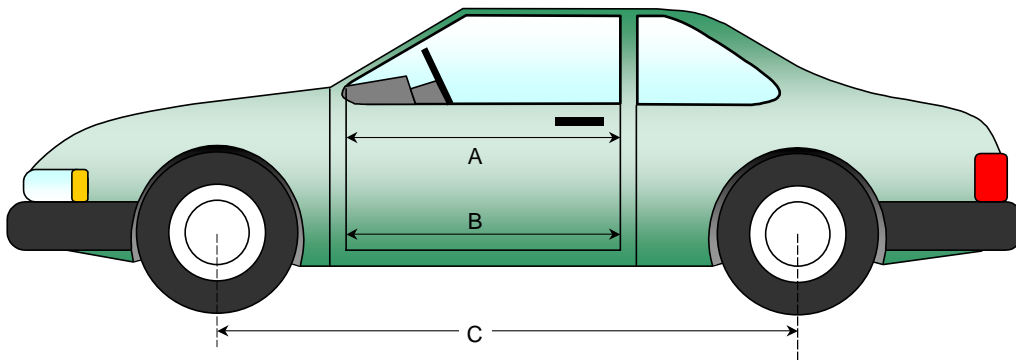
NHTSA No.: M35301
 Test Date: 3/13/03

DOOR OPENING WIDTH

Item	Description	Units	Pre-Test	Post-Test	Difference
A	Left Side Upper	mm	962	957	-5
B	Left Side Lower	mm	867	865	-2
D	Right Side Upper	mm	961	957	-4
E	Right Side Lower	mm	877	876	-1

WHEELBASE MEASUREMENTS

Item	Description	Units	Pre-Test	Post-Test	Difference
C	Left Side Wheel base	mm	2700	2660	-40
F	Right Side Wheel base	mm	2700	2664	-36



DATA SHEET NO. 17...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

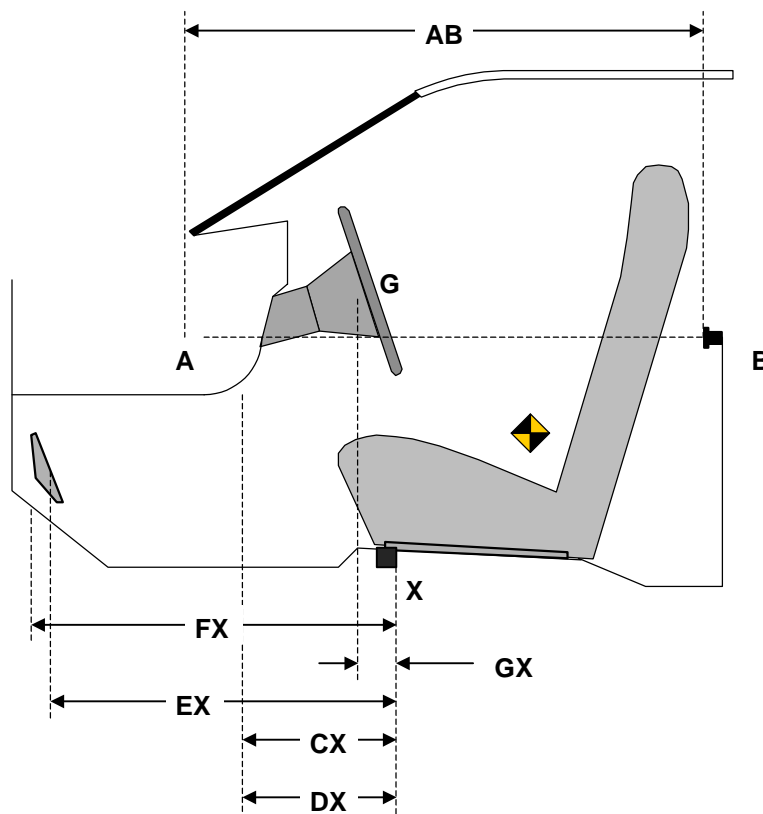
Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03

DRIVER COMPARTMENT INTRUSION

Item	Description	Units	Pre-Test	Post-Test	Difference
AB	Door Opening (Inside window jam)	mm	962	957	-5
CX	Left Knee Bolster to X	mm	273	280	7
DX	Right Knee Bolster to X	mm	267	273	6
EX	Brake Pedal to X	mm	569	500	-69
FX	Foot Rest to X	mm	564	545	-19
GX	Center of Steering Wheel Hub to X	mm	61	55	-6

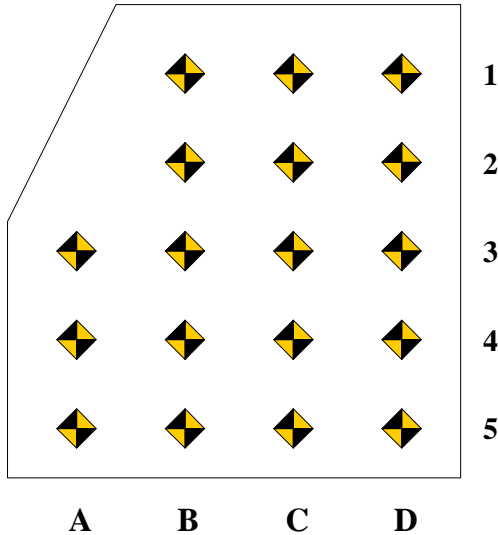
X = Left Front Seat Outboard Anchor Bolt Head



DATA SHEET NO. 17...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03



Measurement reference point for X and Z-axis is the forward outboard seat mounting bolt.

Columns A through D are evenly spaced.

Rows 1 and 2 are on the toe kick portion of the floor pan. Rows 3,4 and 5 are located on the most level portion of the floor pan.

Row 3 will be at the intersection of the toe kick and the level sections of the floor pan.

DRIVER FLOOR PAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1		668	665	676		612	615	646		-56	-50	-30
2		566	565	573		552	555	556		-14	-10	-17
3	464	463	464	469	460	462	465	456	-4	-1	1	-13
4	366	362	364	369	360	362	365	356	-6	0	1	-13
5	266	260	265	269	260	262	265	266	-6	2	0	-3

DRIVER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1		43	36	24		90	80	55		47	44	31
2		-7	-7	-20		15	10	-30		22	17	-10
3	-7	-17	-7	-8	-10	-18	0	0	-3	-1	7	8
4	-8	-17	-9	-20	-10	-30	-9	-27	-2	-13	0	-7
5	-5	15	-10	-16	-10	-27	-8	-30	-5	-42	2	-14

DATA SHEET NO. 17...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

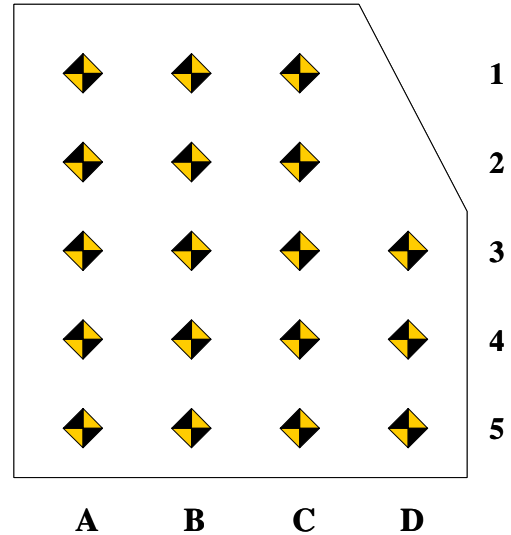
NHTSA No.: M35301
 Test Date: 3/13/03

Measurement reference point for X and Z axis is the forward outboard seat mounting bolt.

Columns A through D are evenly spaced.

Rows 1 and 2 are on the toe kick portion of the floor pan. Rows 3,4, and 5 are located on the most level portion of the floor pan.

Row 3 will be at the intersection of the toe kick and the level sections of the floor pan.



PASSENGER FLOOR PAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	641	637	640		625	599	595		-16	-38	-45	
2	541	537	542		530	539	545		-11	2	3	
3	442	437	442	452	440	452	450	458	-2	15	8	6
4	340	337	338	349	350	352	350	355	10	15	12	6
5	240	237	236	245	250	252	250	250	10	15	14	5

PASSENGER FLOOR PAN Z-AXIS

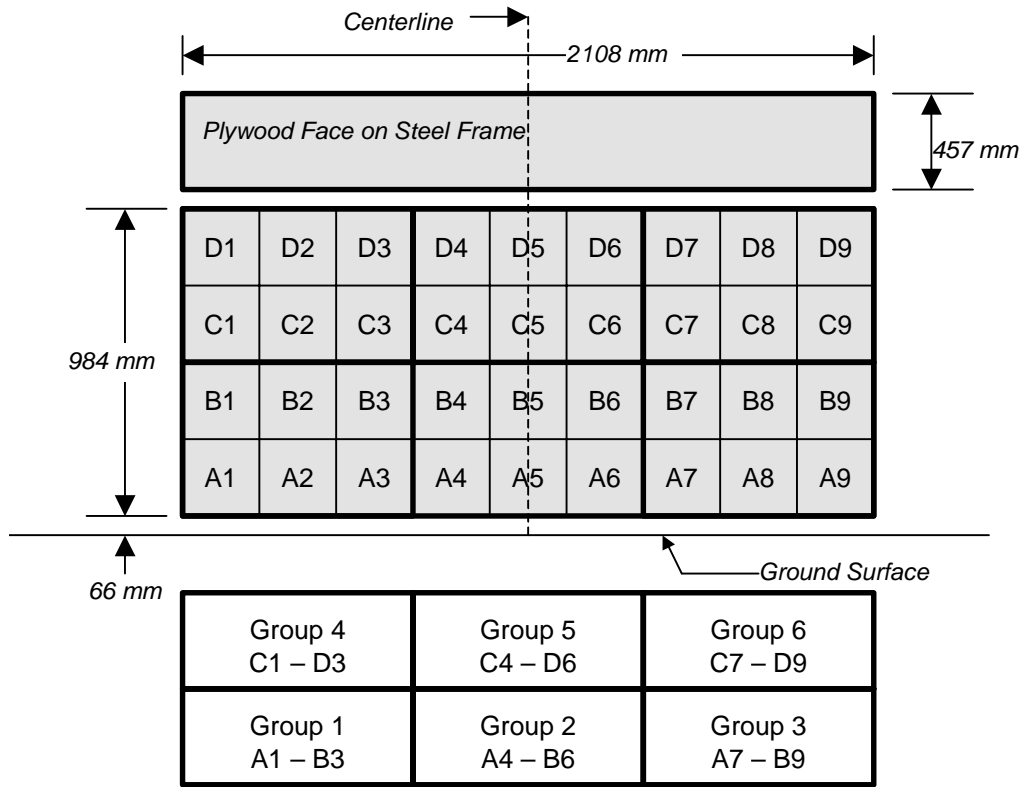
	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-22	26	24		-30	30	30		-8	4	6	
2	-20	-16	-18		-35	-35	-12		-15	-19	6	
3	-18	-19	-21	-20	-5	-11	-15	-30	13	8	6	-10
4	-24	-19	-20	-22	-35	-20	-20	-25	-11	-1	0	-3
5	-6	-15	-15	-19	0	-15	-15	-22	6	0	0	-3

DATA SHEET NO. 18
FIXED BARRIER LOAD CELL LOCATIONS

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03

36 Load Cell Rigid Barrier (NHTSA Standard)
Load Cell Locations on Fixed Barrier



6 Groups of 6 Load Cells Each

The Data is presented in Appendix C with the following requirements:

- 1.) Data from 36 individual load cells
- 2.) Sum data from 6 groupings shown above (6 cells/group)
- 3.) Total or sum of all 36 individual load cells
- 4.) Sum of all 36 individual load cells vs. vehicle dynamic crush

DATA SHEET NO. 19
ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03

VEHICLE INFORMATION

VIN: 2HNYD18763H513732 Wheel base (mm): 2700
 Vehicle Size Category: 4 Door Suv Test Weight (kg): 2227

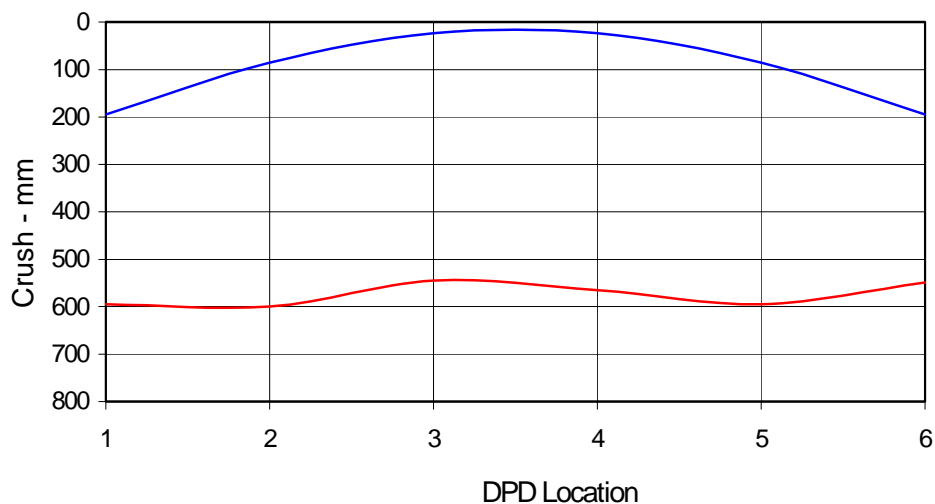
ACCELEROMETER DATA

Accelerometer Location: Left rear floor pan
 Cal. Procedure/Interval: 6 months / drop test
 Integration Algorithm: NHTSA Standard Linearity: Good
 Impact Velocity (km/h): 55.62
 Velocity Change (km/h): 72 Time of Separation (msec): 62.1

CRUSH PROFILE

Collision Deformation Classification: 12FDEW6 Midpoint of Damage: Vehicle Centerline
 Damage Region Length (mm): 1473 Impact Mode: Full Frontal

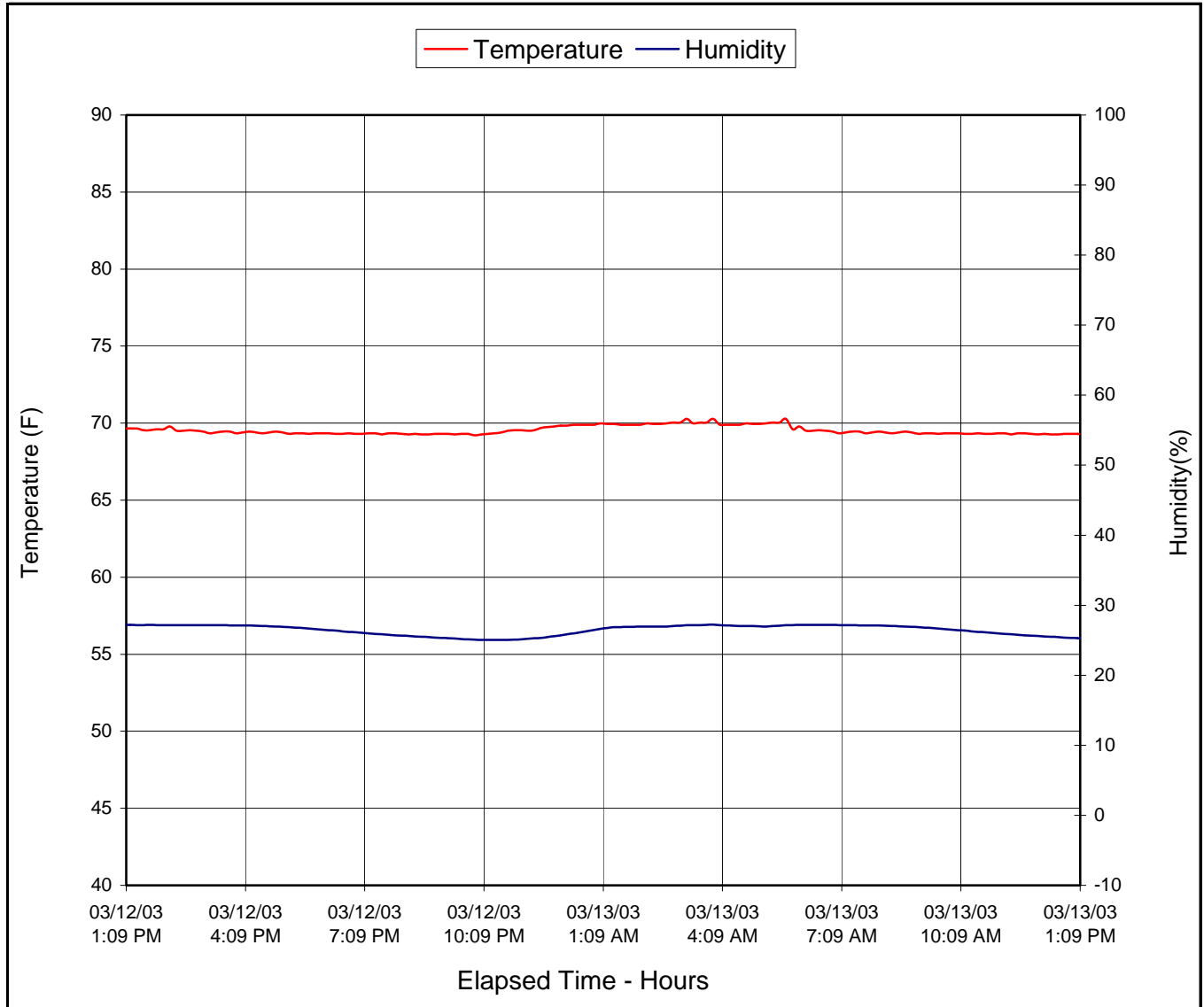
No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	195	595	-400
C2	Crush zone 2 on left side	mm	86	600	-514
C3	Crush zone 3 on left side	mm	24	545	-521
C4	Crush zone 4 on right side	mm	24	565	-541
C5	Crush zone 5 on right side	mm	86	595	-509
C6	Crush zone 6 at right side	mm	195	549	-354



DATA SHEET NO. 20
DUMMY/VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2003 Acura MDX SUV
Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
Test Date: 3/13/03



APPENDIX A

PHOTOGRAPHS

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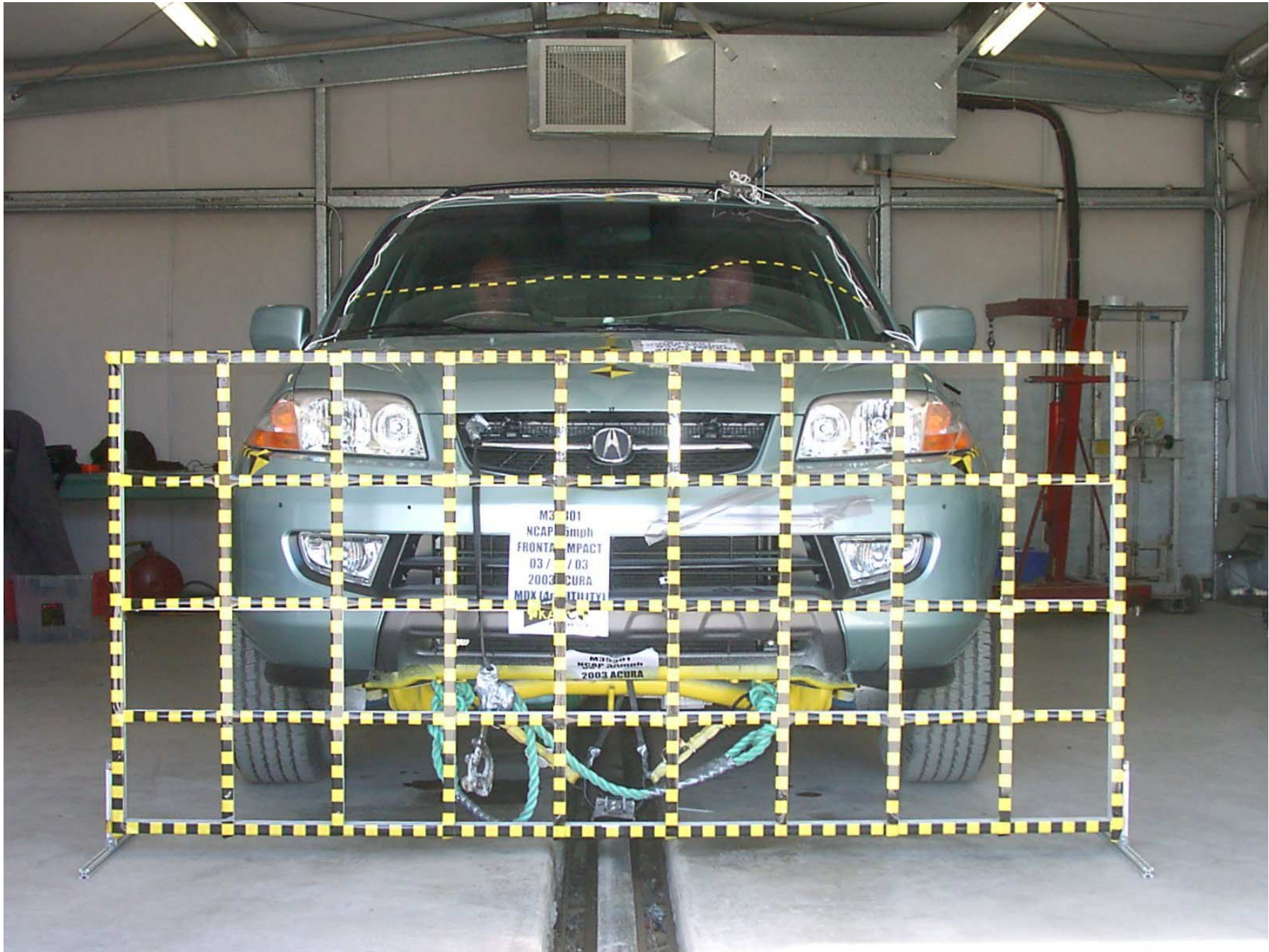


Figure A-1: Load Cell Location

MFD. BY HONDA OF CANADA MFG., 01/03
A DIVISION OF HONDA CANADA INC. CANADA
GVWR 5730LBS GAWR F 2890LBS R 2945LBS
THIS VEHICLE CONFORMS TO ALL APPLICABLE
FEDERAL MOTOR VEHICLE SAFETY,
AND THEFT PREVENTION STANDARDS IN EFFECT
ON THE DATE OF MANUFACTURE SHOWN ABOVE:

V.I.N. **2HNYD18763H513732**



MPV

Figure A-2: Vehicle Certification Label

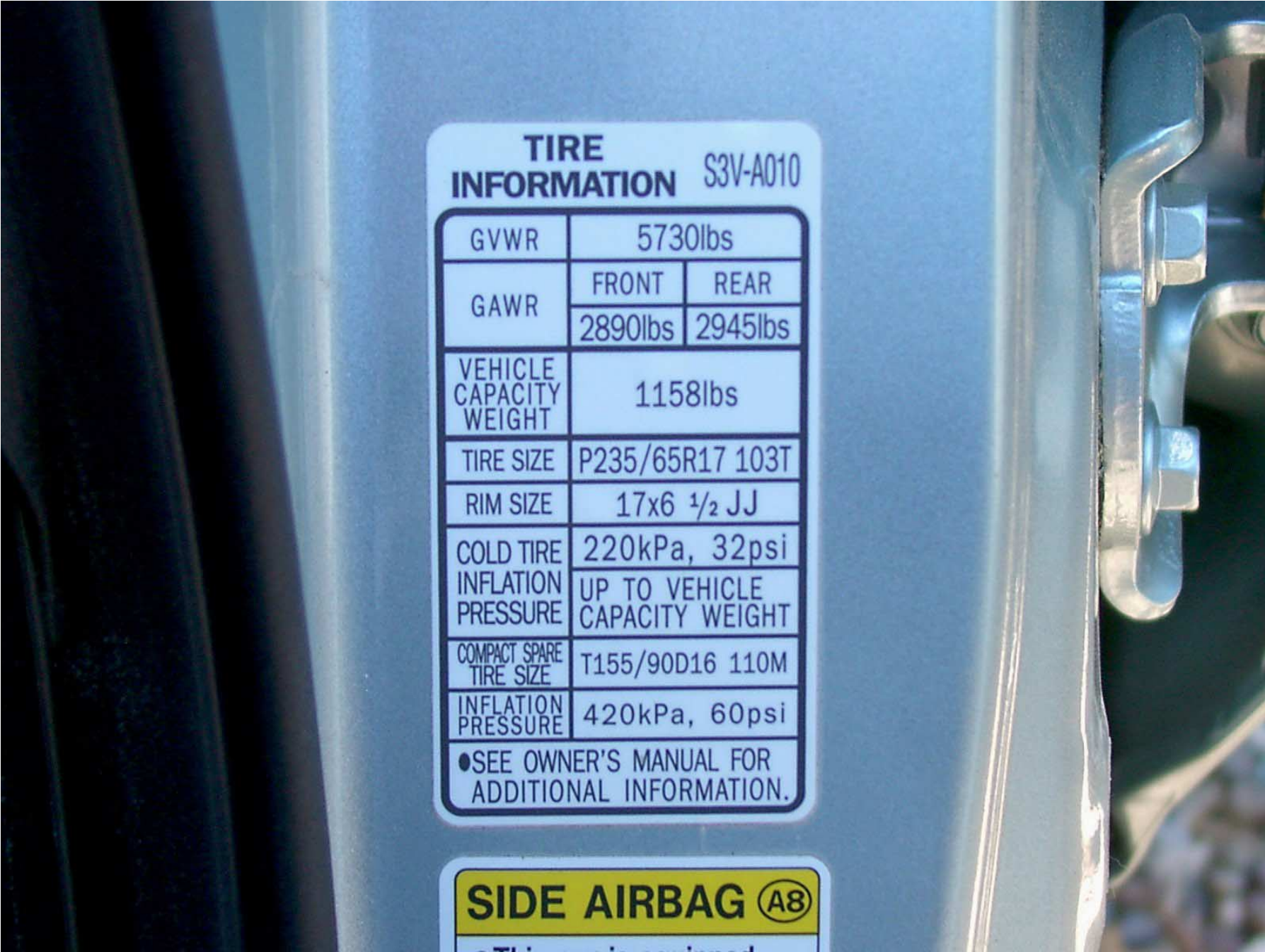


Figure A-3: Vehicle Tire Label



Figure A-4: Right Front $\frac{3}{4}$ View, As Received



A-5

TR-P23001-16-NC

Figure A-5: Left Rear $\frac{3}{4}$ View, as Received



Figure A-6: Pre-Test Front View



Figure A-7: Post-Test Front View (Vehicle Moved)



Figure A-8: Pre-Test Left Side View



Figure A-9: Post-Test Left Side View



Figure A-10: Pre-Test Right Side View



Figure A-11: Post-Test Right Side View



Figure A-12: Pre-Test Right Front 3/4 View



Figure A-13: Post-Test Right Front ¾ View (Vehicle Moved)



Figure A-14: Pre-Test Left Rear $\frac{3}{4}$ View



Figure A-15: Post-Test Left Rear ¾ View



Figure A-16: Left Rear $\frac{3}{4}$ View of Doors After Impact



Figure A-17: Right Rear 3/4 View of Doors After Impact

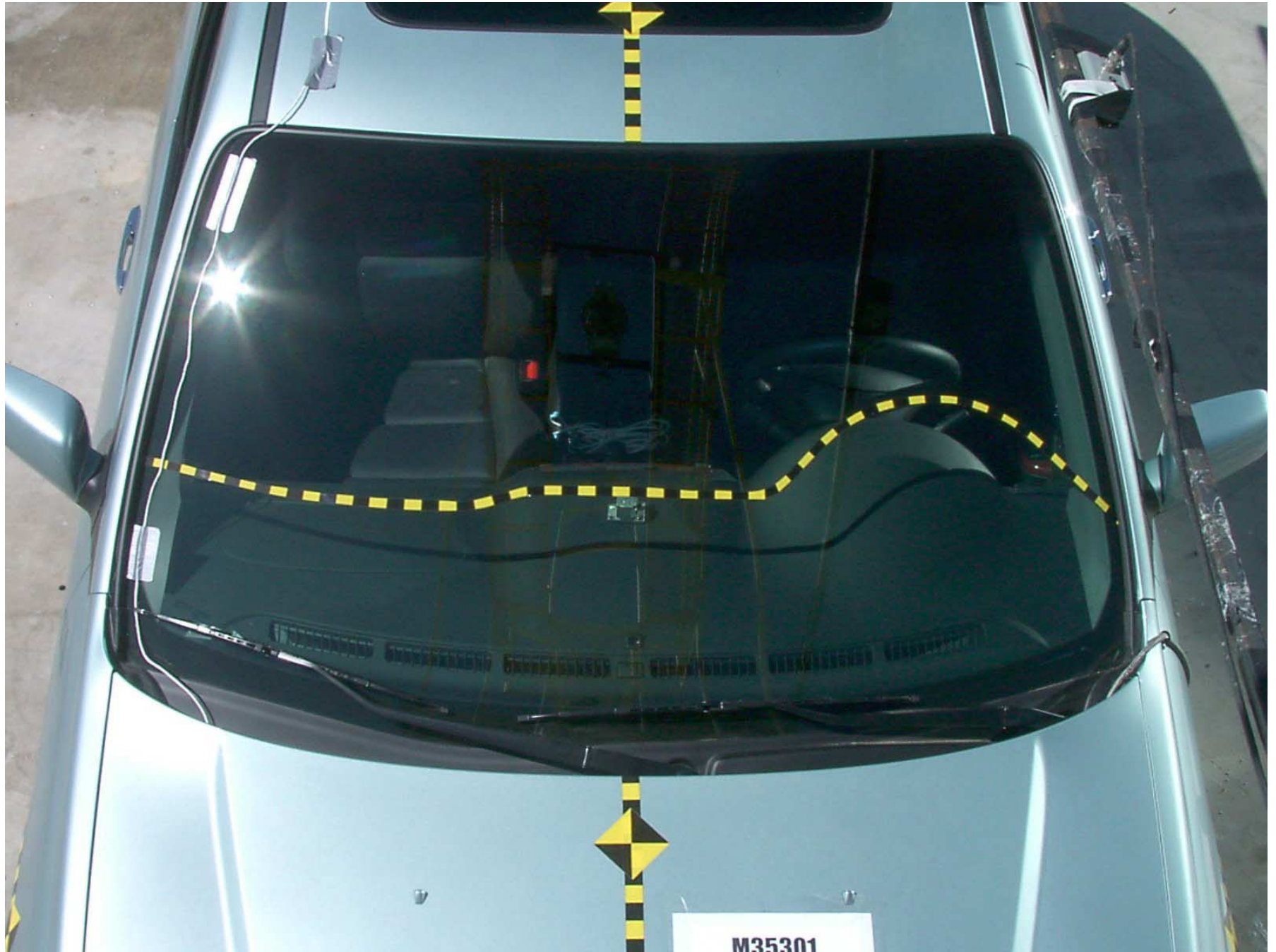


Figure A-18: Pre-Test Windshield View

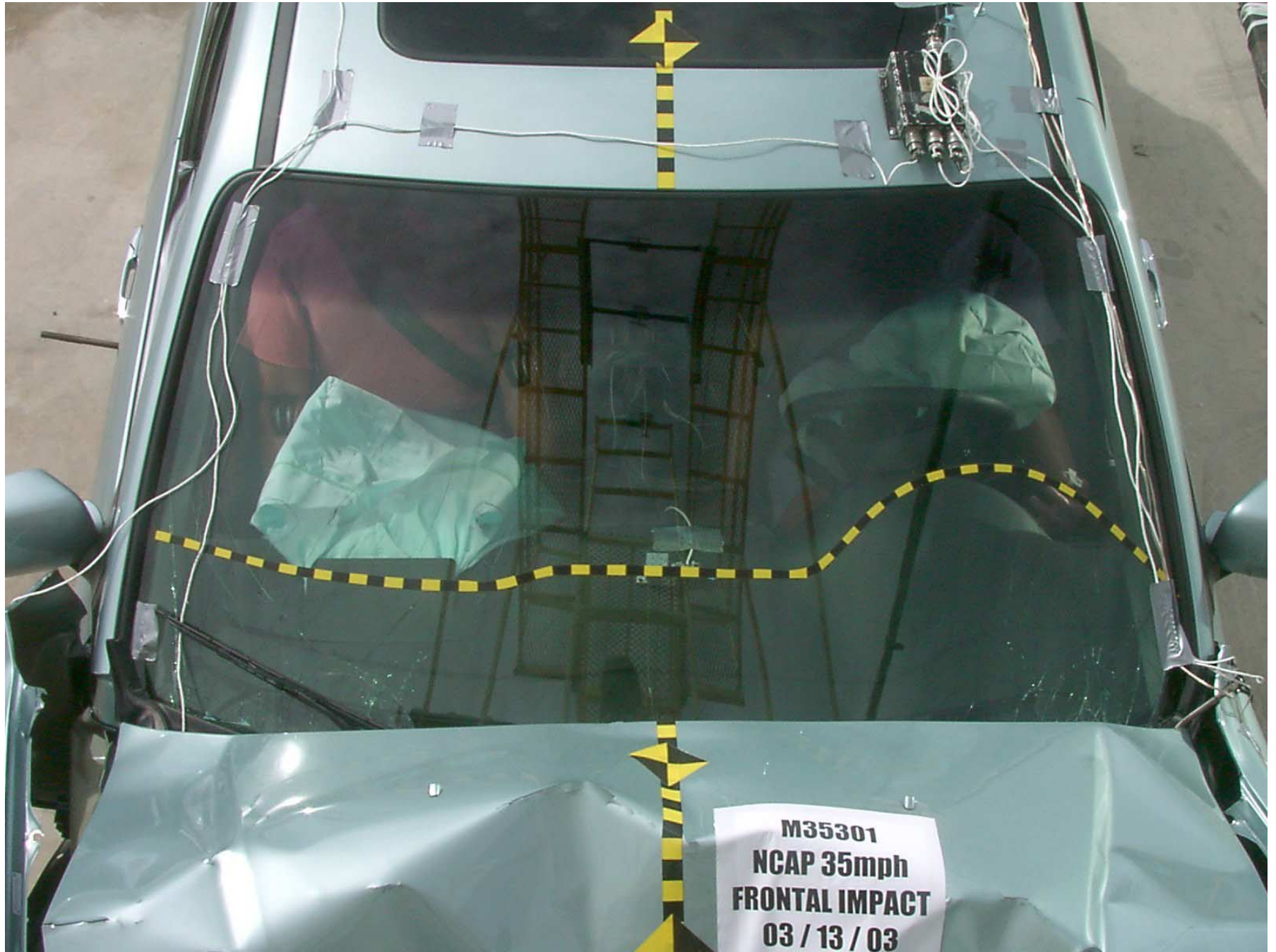


Figure A-19: Post-Test Windshield View



Figure A-20: Pre-Test Engine Compartment



Figure A-21: Post-Test Engine Compartment (Vehicle Moved)



Figure A-22: Pre-Test Fuel Cap



Figure A-23: Post-Test Fuel Cap



Figure A-24: Pre-Test Front Underbody View

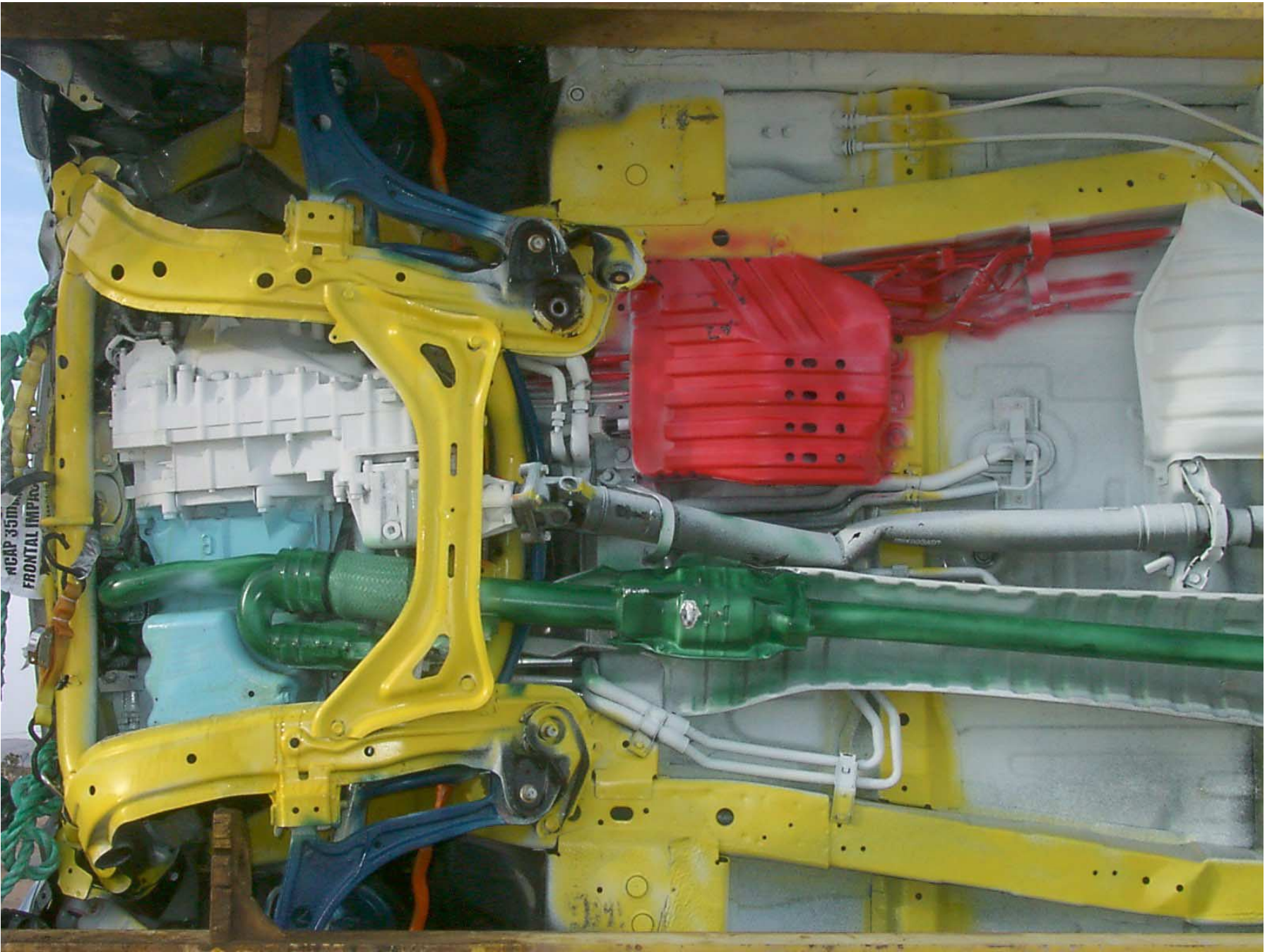


Figure A-25: Post-Test Front Underbody View

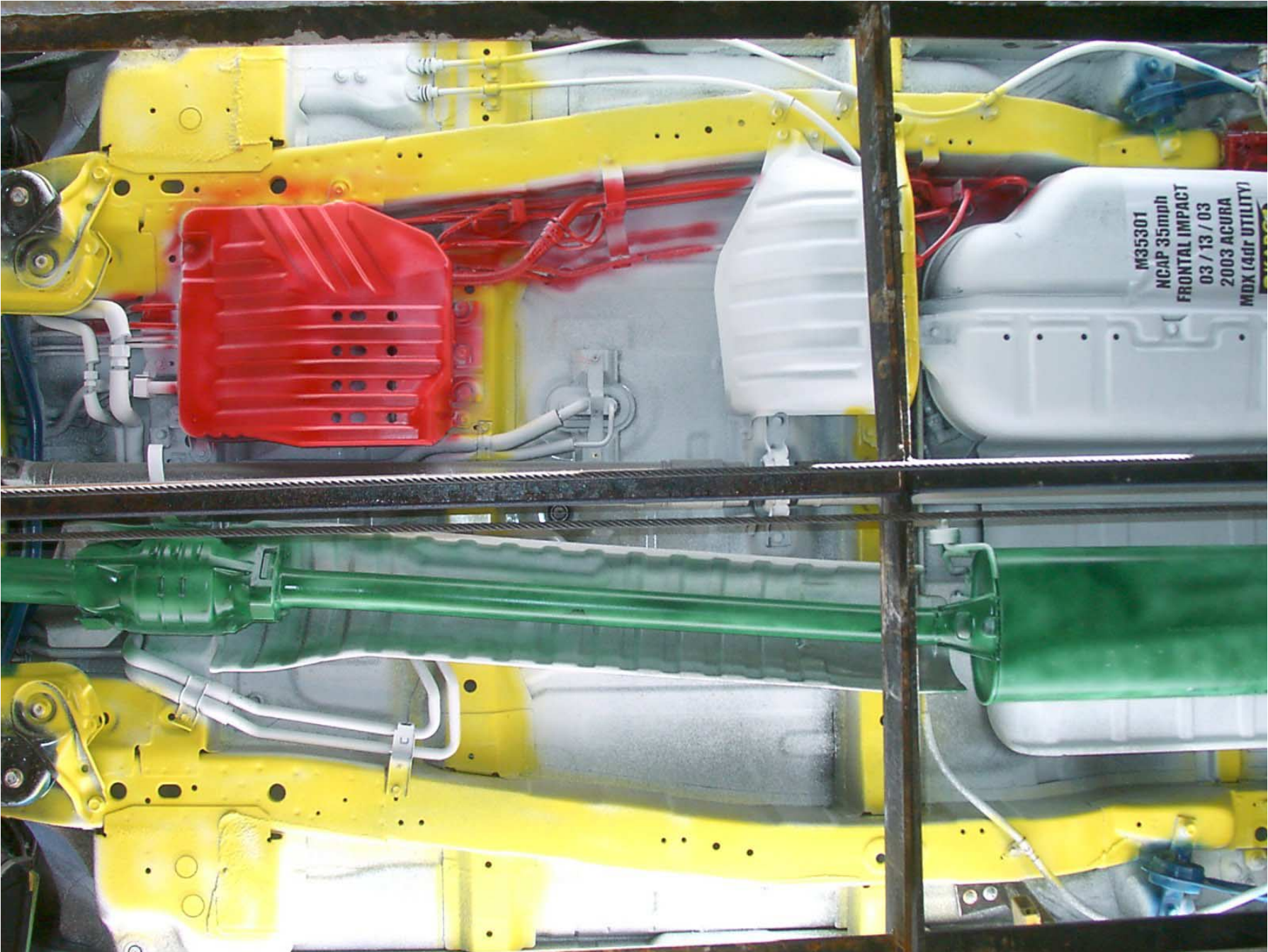


Figure A-26: Pre-Test Mid Underbody View

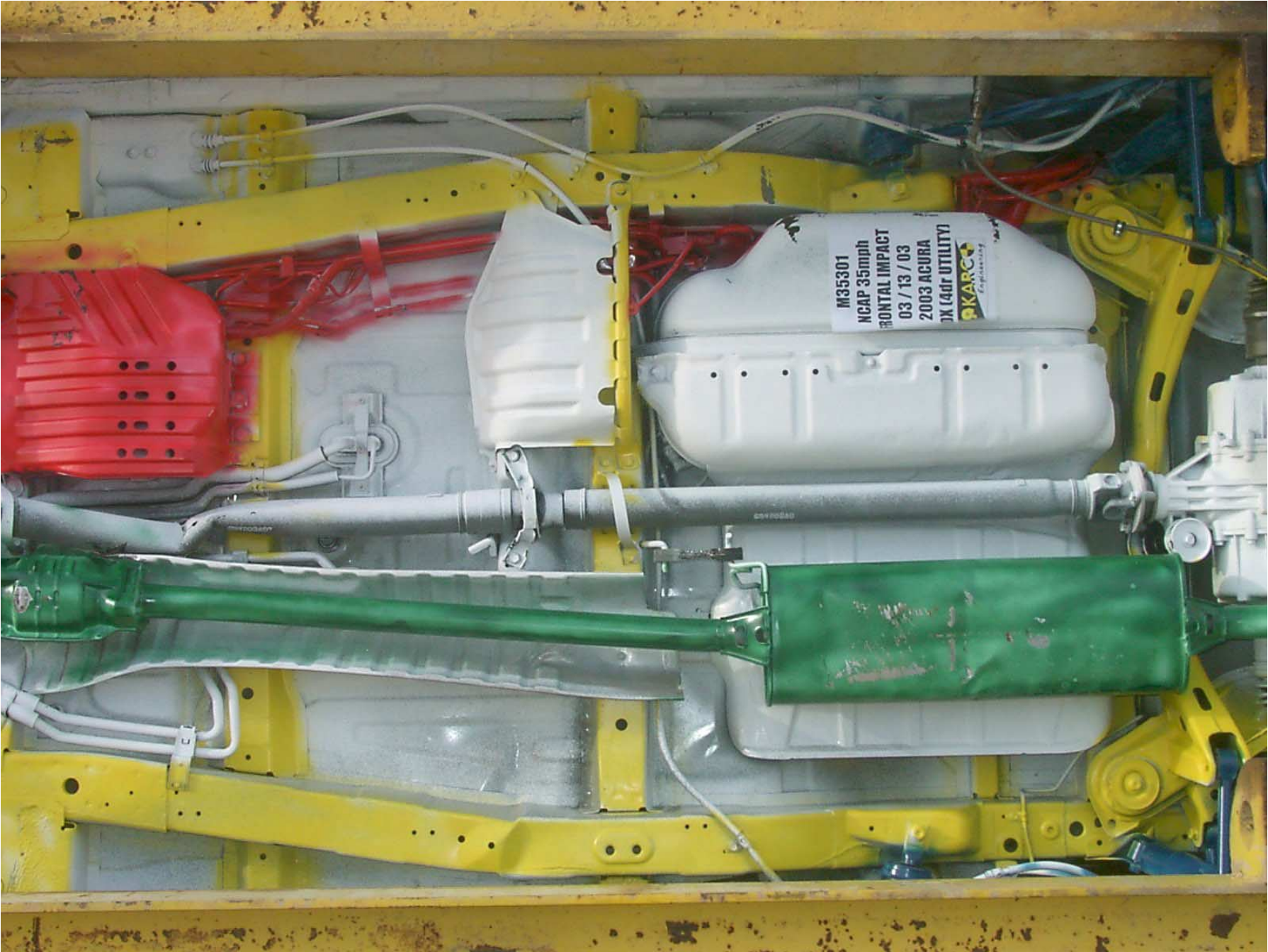


Figure A-27: Post-Test Mid Underbody View

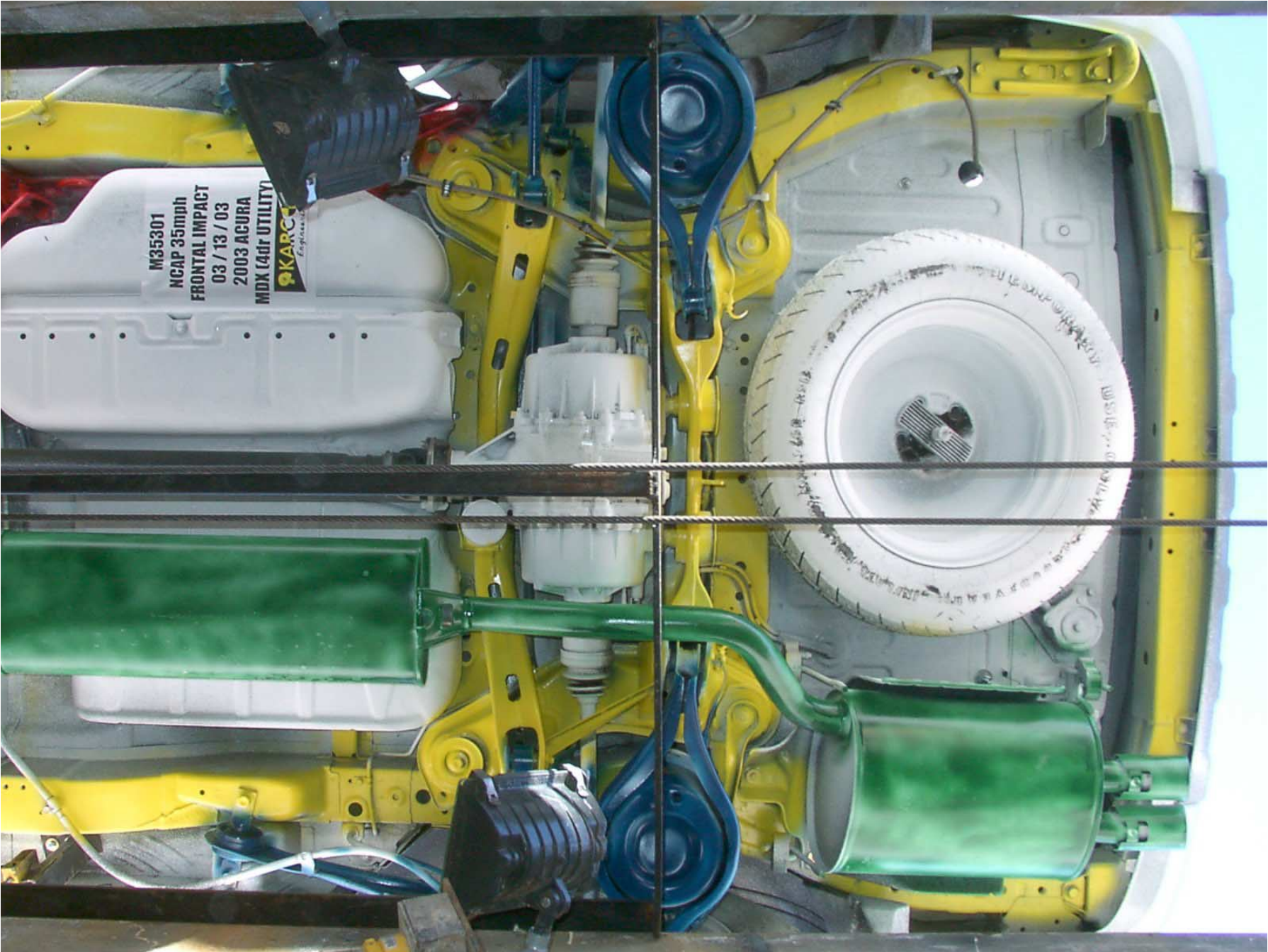


Figure A-28: Pre-Test Rear Underbody View

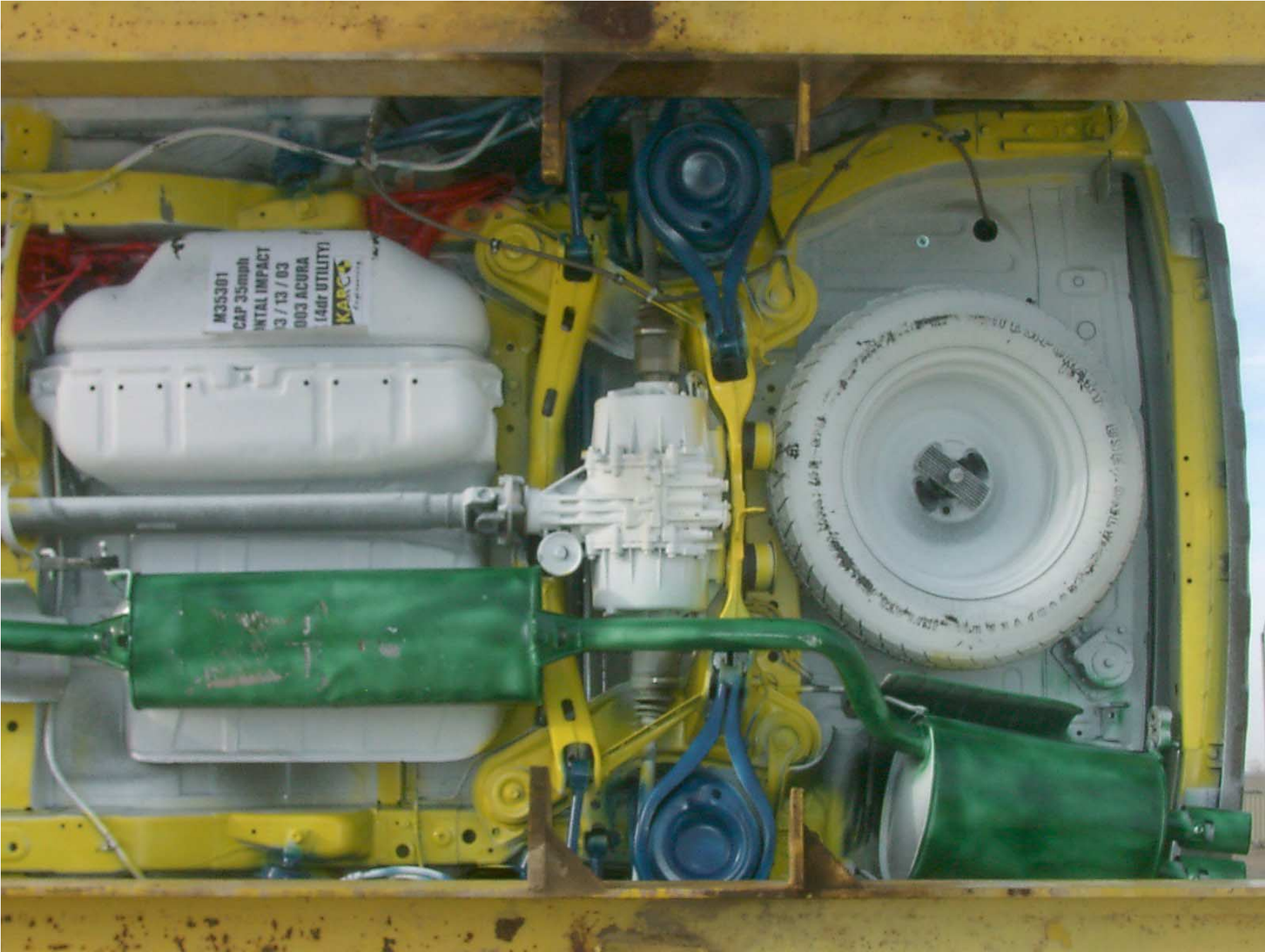


Figure A-29: Post-Test Rear Underbody View



Figure A-30: Pre-Test Driver Dummy Front View (Head Position)



Figure A-31: Post-Test Driver Dummy Front View (Head Position)



Figure A-32: Pre-Test Driver Dummy Front Through Window



Figure A-33: Post-Test Driver Dummy Front Through Window



Figure A-34: Pre-Test Driver Dummy Door Open



Figure A-35: Post-Test Driver Dummy Door Open

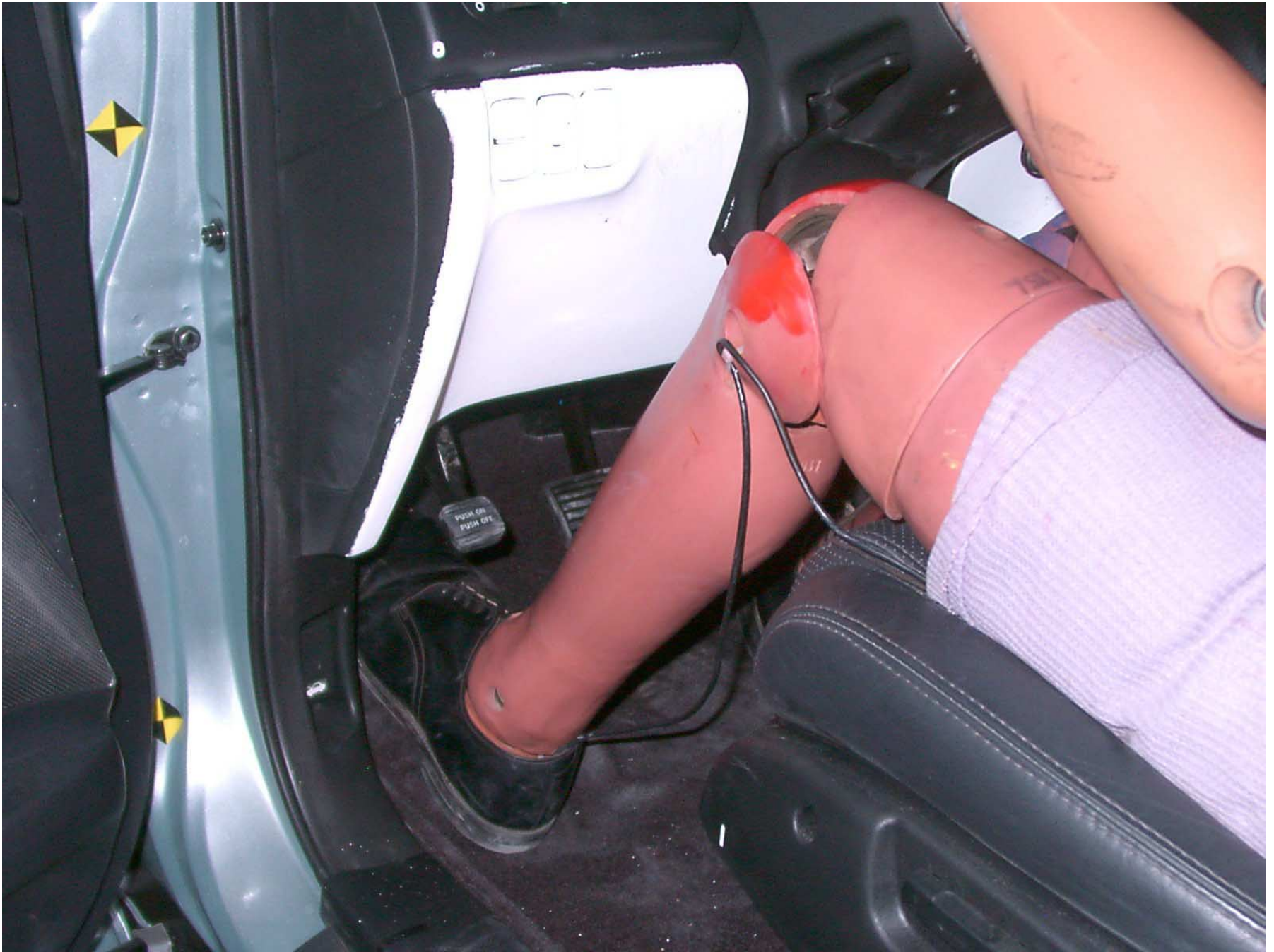


Figure A-36: Pre-Test Driver Dummy Feet



Figure A-37: Post-Test Driver Dummy Feet



Figure A-38: Pre-Test Driver Side Knee Bolster



Figure A-39: Post-Test Driver Side Knee Bolster



Figure A-40: Pre-Test Driver Side Floor Pan



Figure A-41: Post-Test Driver Side Floor Pan



Figure A-42: Post-Test Driver Dummy Head



Figure A-43: Post-Test Driver Dummy Contact to Air Bag



Figure A-44: Pre-Test Passenger Dummy Front View (Head Position)



Figure A-45: Post-Test Passenger Dummy Front View (Head Position)



Figure A-46: Pre-Test Passenger Dummy Front Through Window



Figure A-47: Post-Test Passenger Dummy Front Through Window



Figure A-48: Pre-Test Passenger Dummy Door Open



Figure A-49: Post-Test Passenger Dummy Door Open



Figure A-50: Pre-Test Passenger Dummy Feet



Figure A-51: Post-Test Passenger Dummy Feet



Figure A-52: Pre-Test Passenger Side Floor Pan



Figure A-53: Post-Test Passenger Side Floor Pan



Figure A-54: Pre-Test Passenger Side Knee Bolster



Figure A-55: Post-Test Passenger Side Knee Bolster



Figure A-56: Post-Test Passenger Dummy Head



Figure A-57: Post-Test Passenger Dummy Contact to Air Bag



Figure A-58: Vehicle on Rollover Device



Figure A-59: Vehicle During Impact

APPENDIX B

DATA PLOTS

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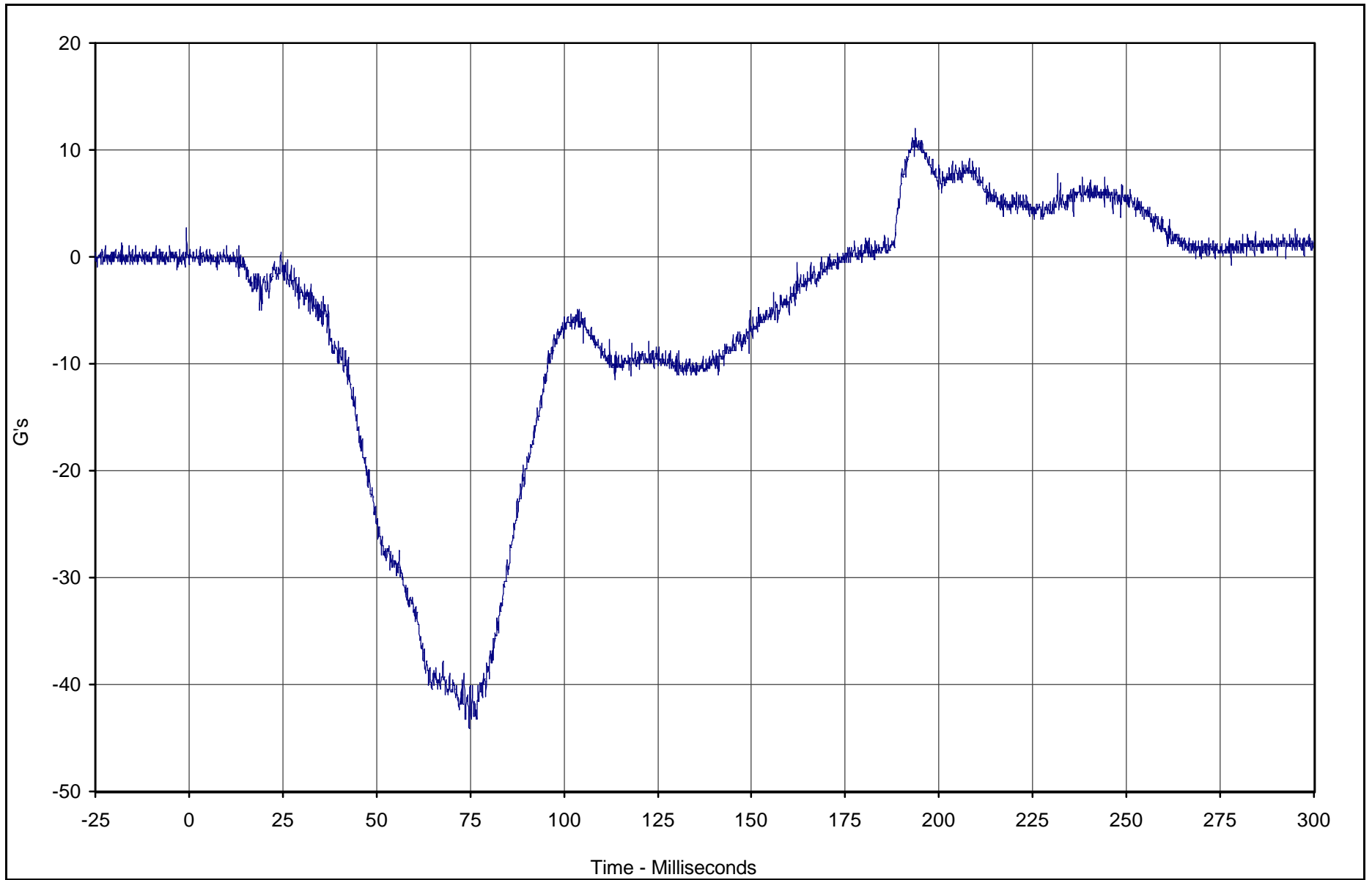
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B-144	Vehicle Left Rear Z	B-144
B-145	Vehicle Left Rear Z Velocity	B-145
B-146	Vehicle Left Rear Z Displacement	B-146
B-147	Vehicle Right Rear Z	B-147
B-148	Vehicle Right Rear Z Velocity	B-148
B-149	Vehicle Right Rear Z Displacement	B-149

B-1



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Primary X	001	FIL	G's	12.0	193.7	-44.1	74.8	1000



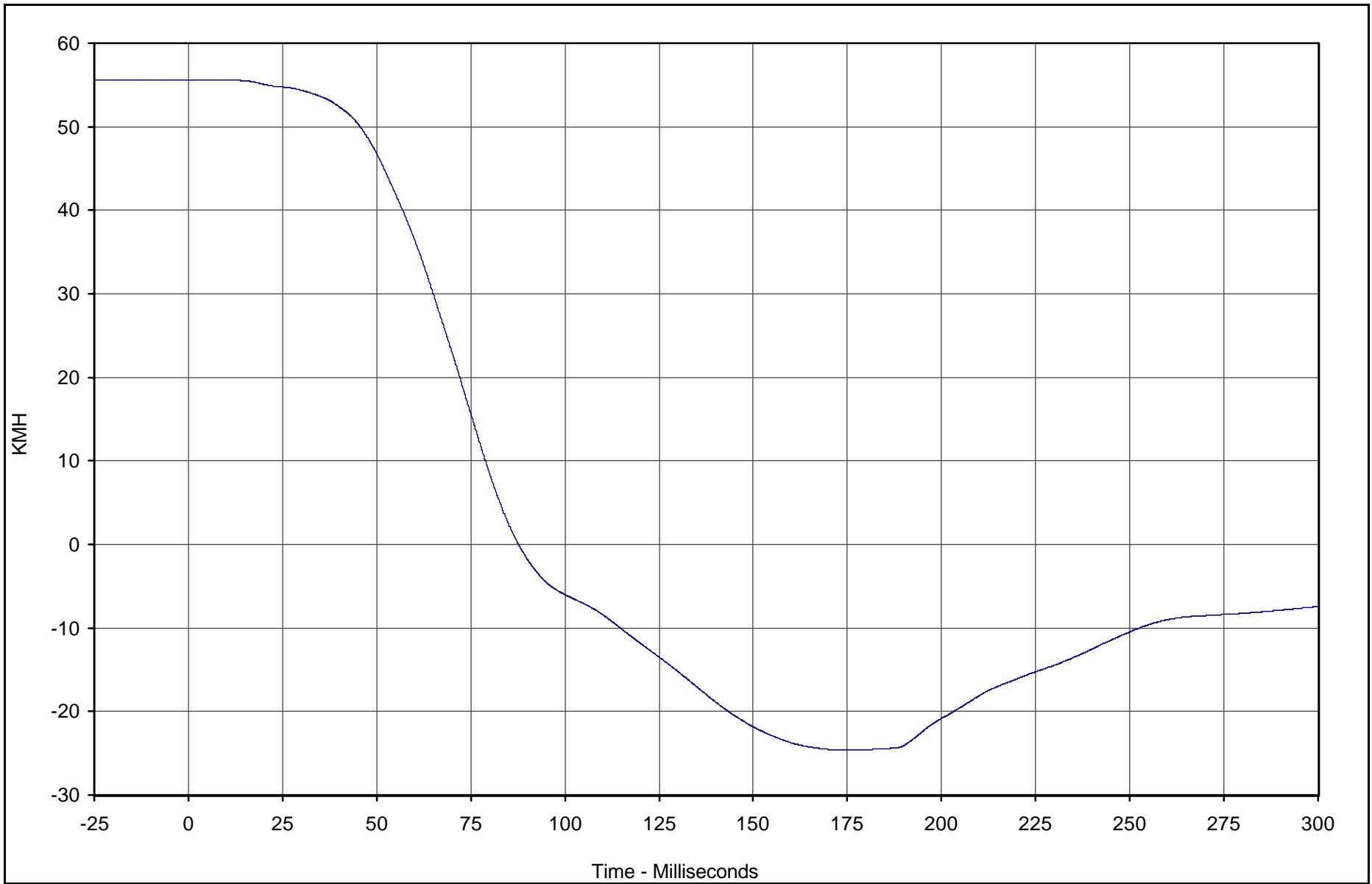
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Primary X Velocity	001	IN1	KMH	55.6	2.1	-24.6	174.9	180

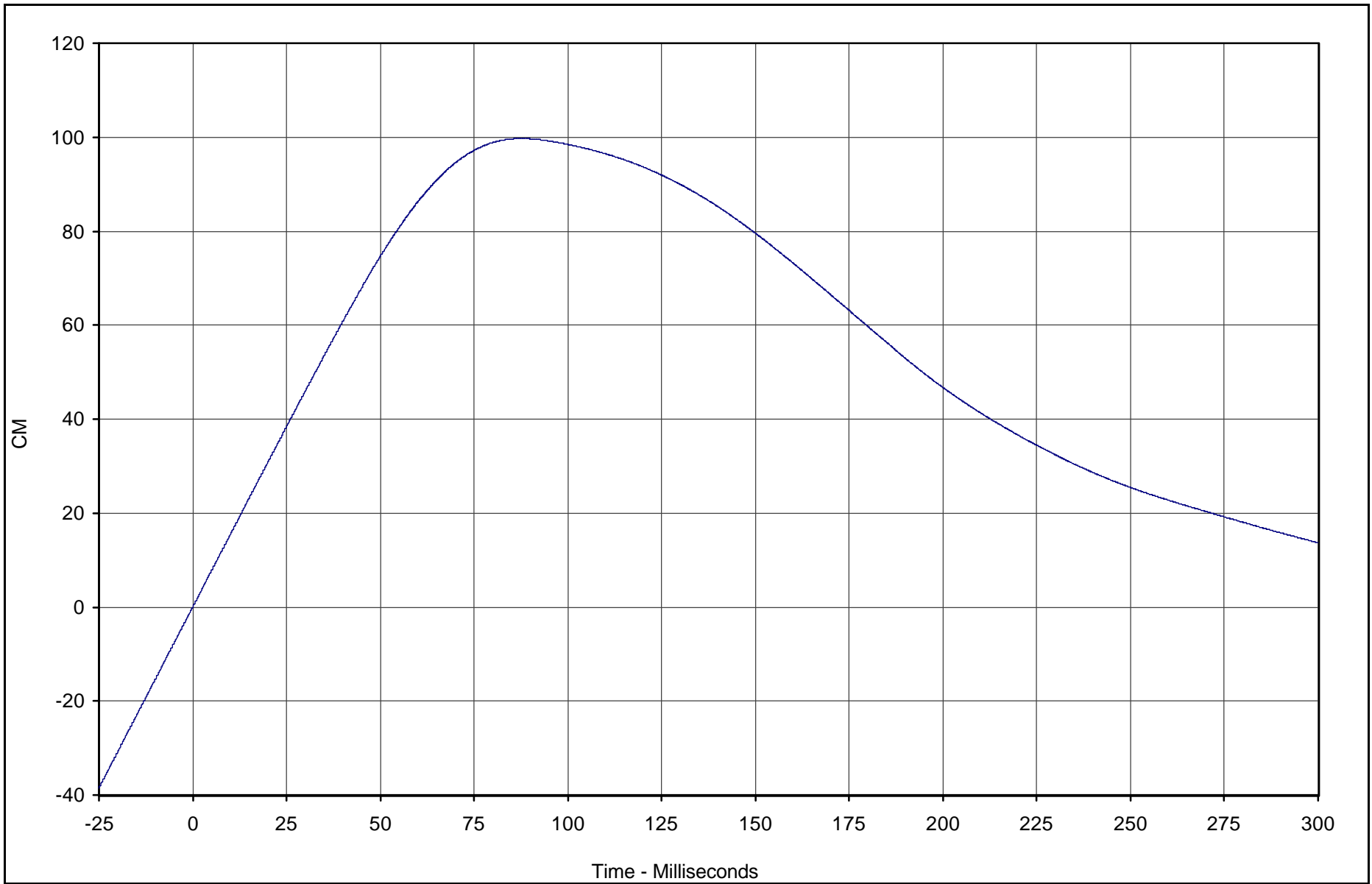


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Primary X Displ.	001	IN2	CM	99.7	87.7	0.0	0.0	180

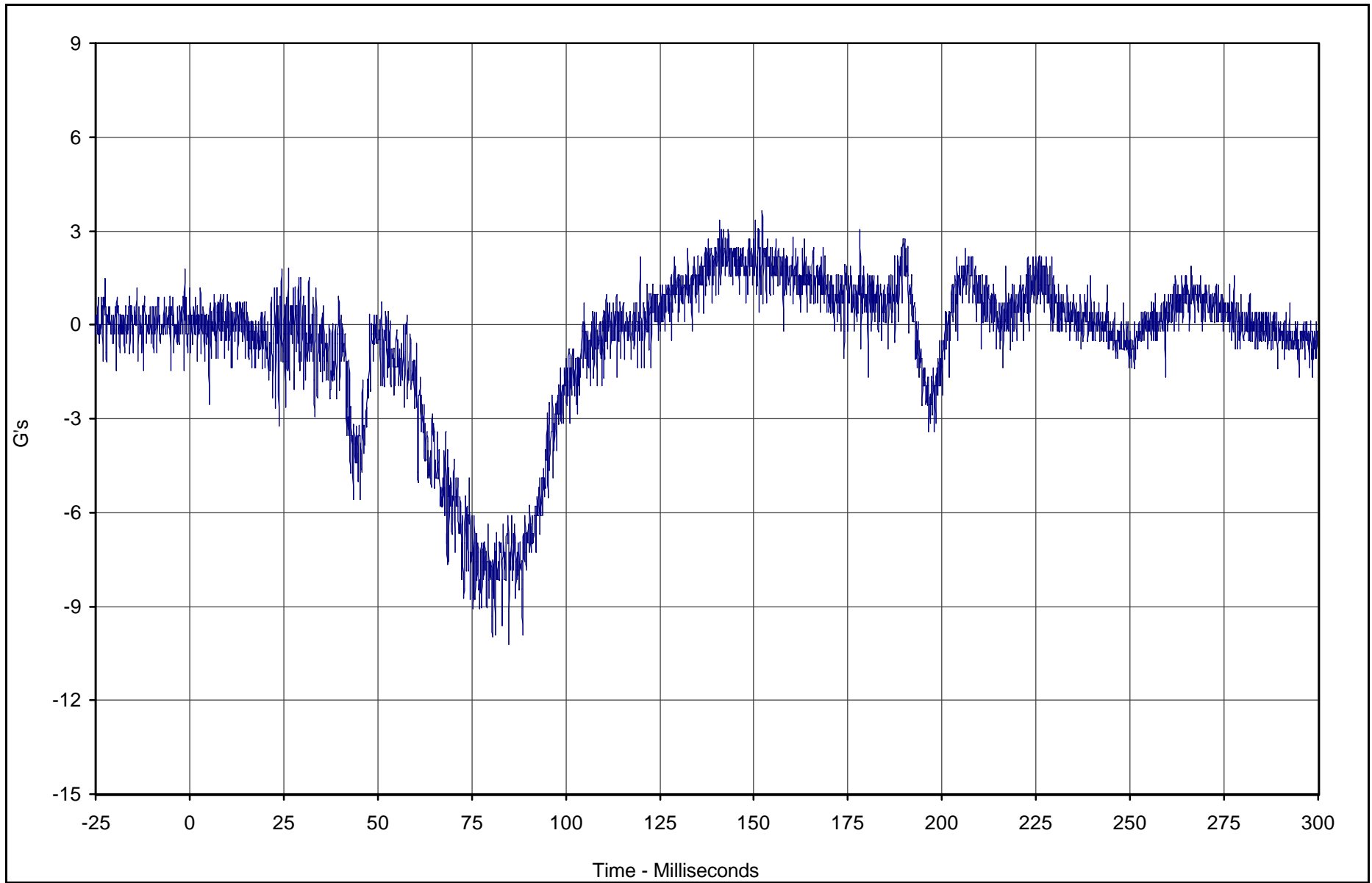


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Primary Y	002	FIL	G's	3.6	152.2	-10.2	84.9	1000

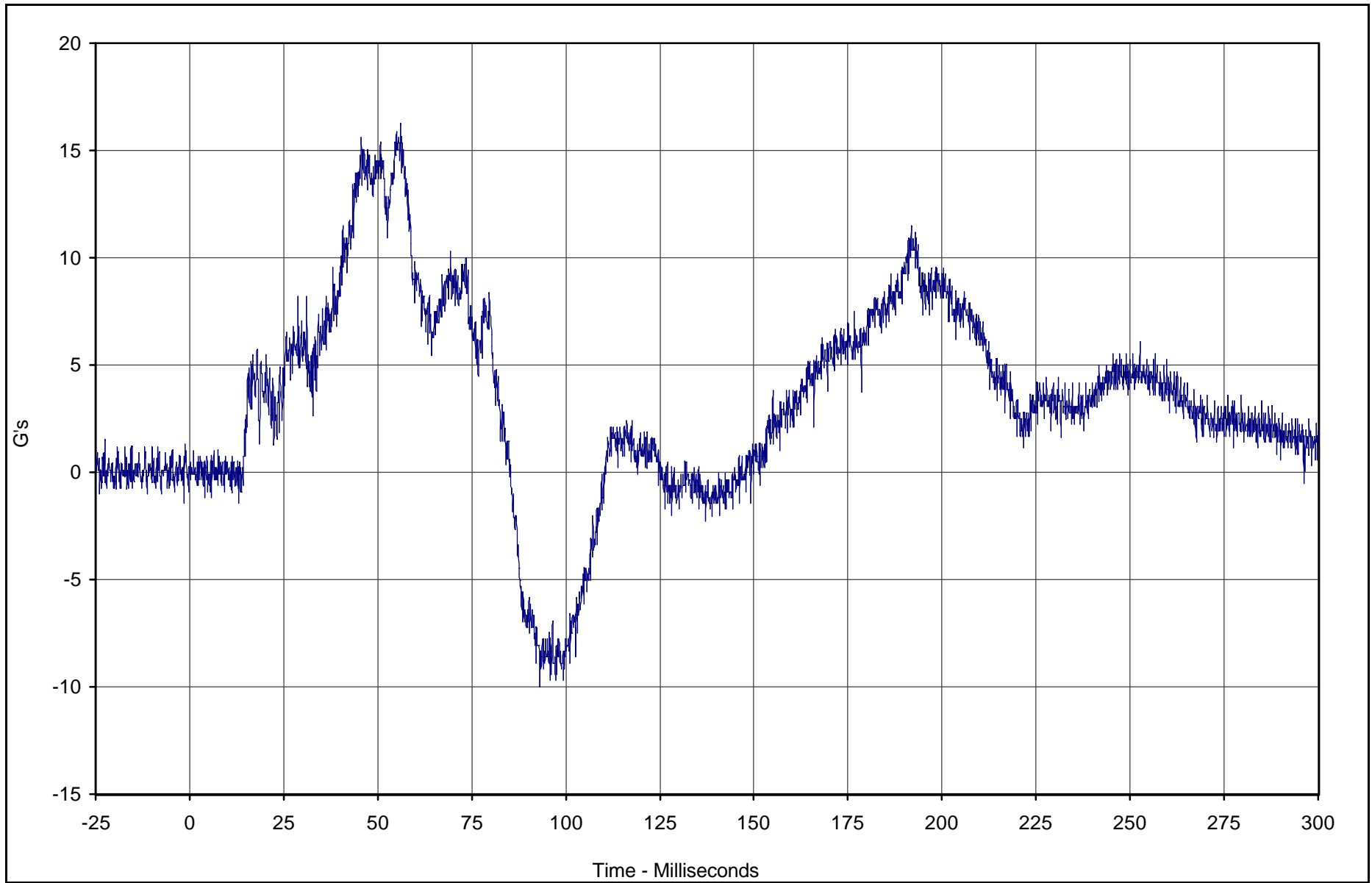


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Primary Z	003	FIL	G's	16.2	56.1	-10.0	93.1	1000

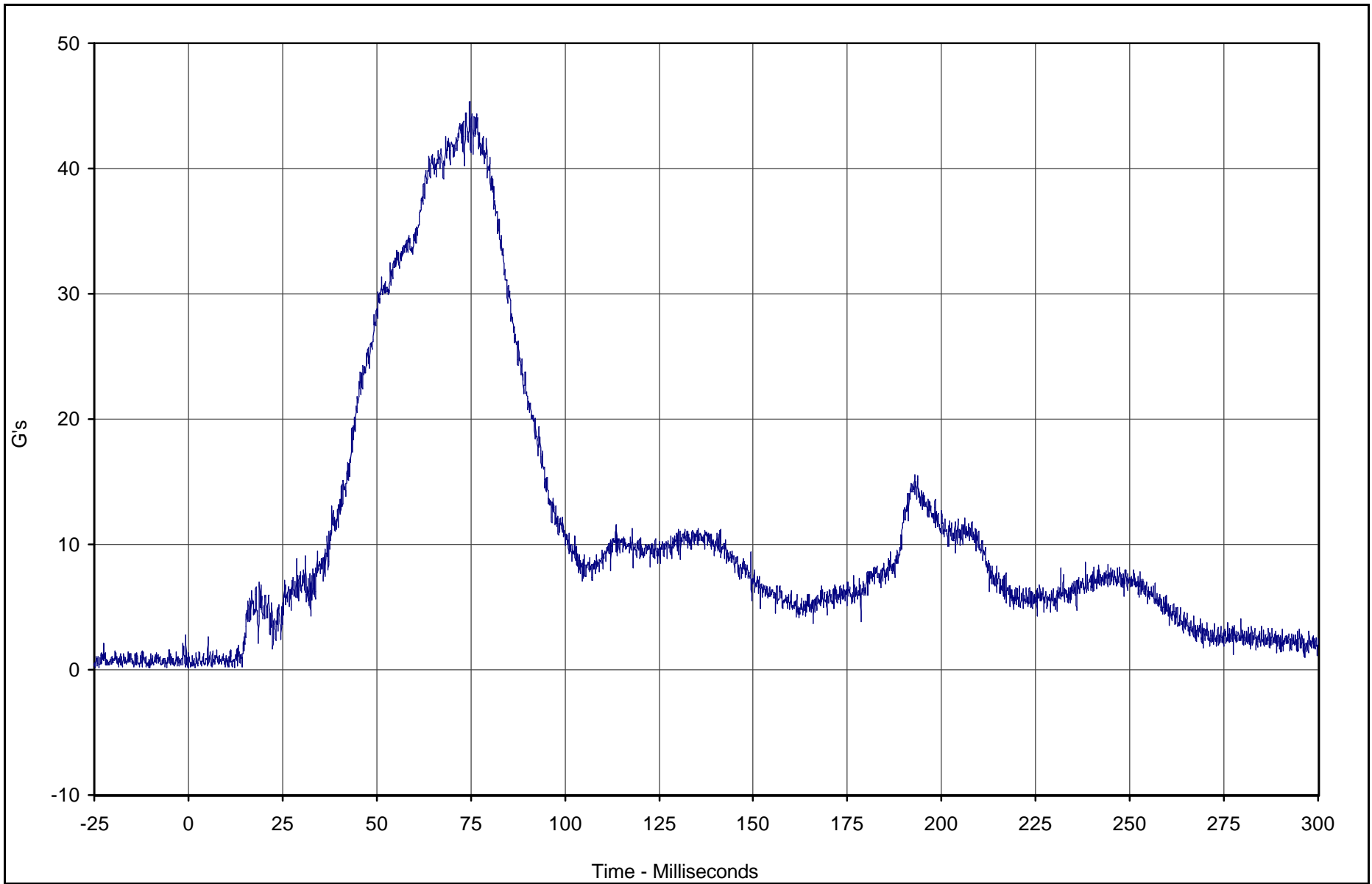


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Resultant Primary	001	RES	G's	45.4	74.8	0.1	1.8	1000



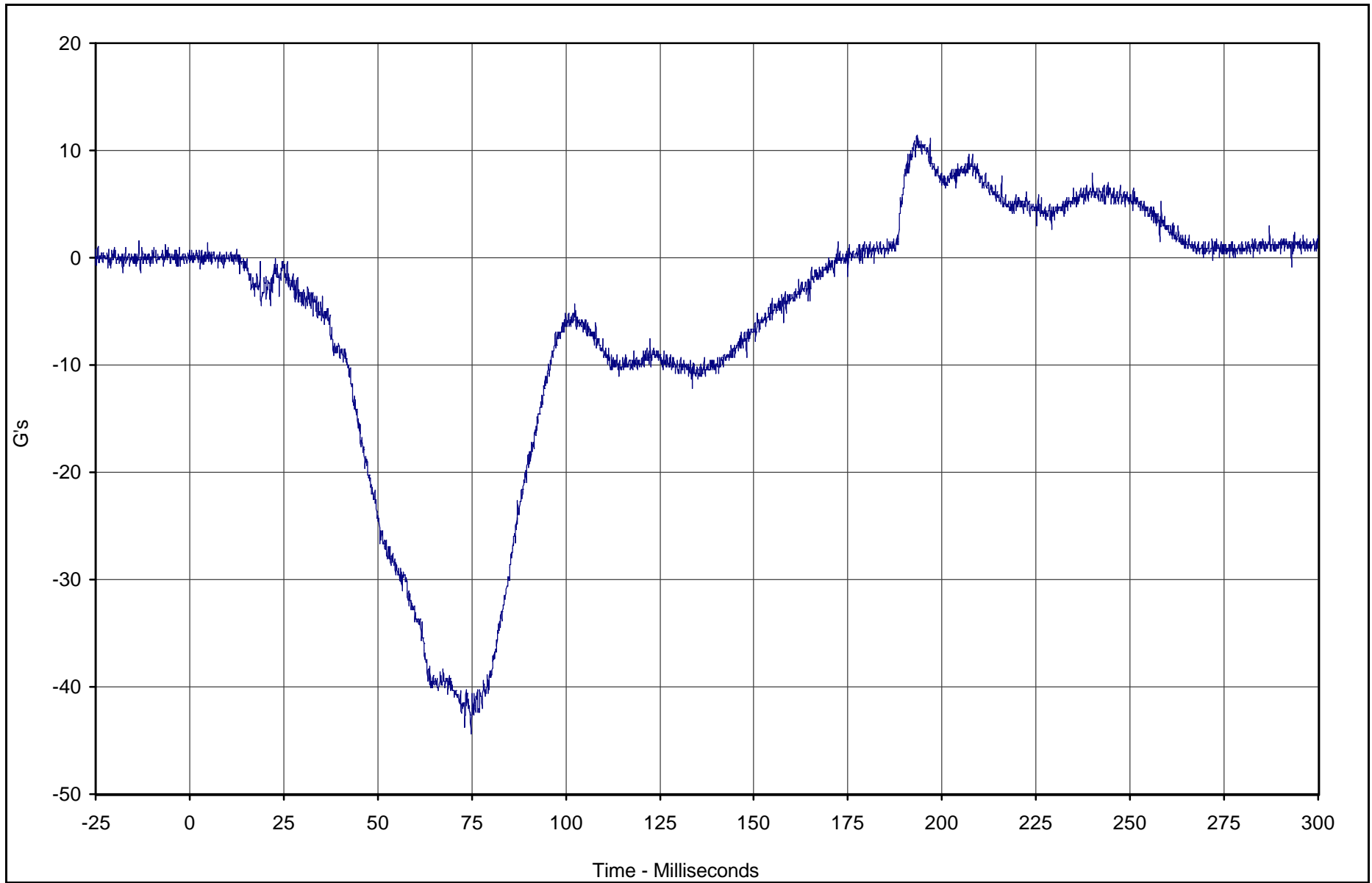
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

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Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Redundant X	004	FIL	G's	11.4	193.3	-44.4	74.8	1000



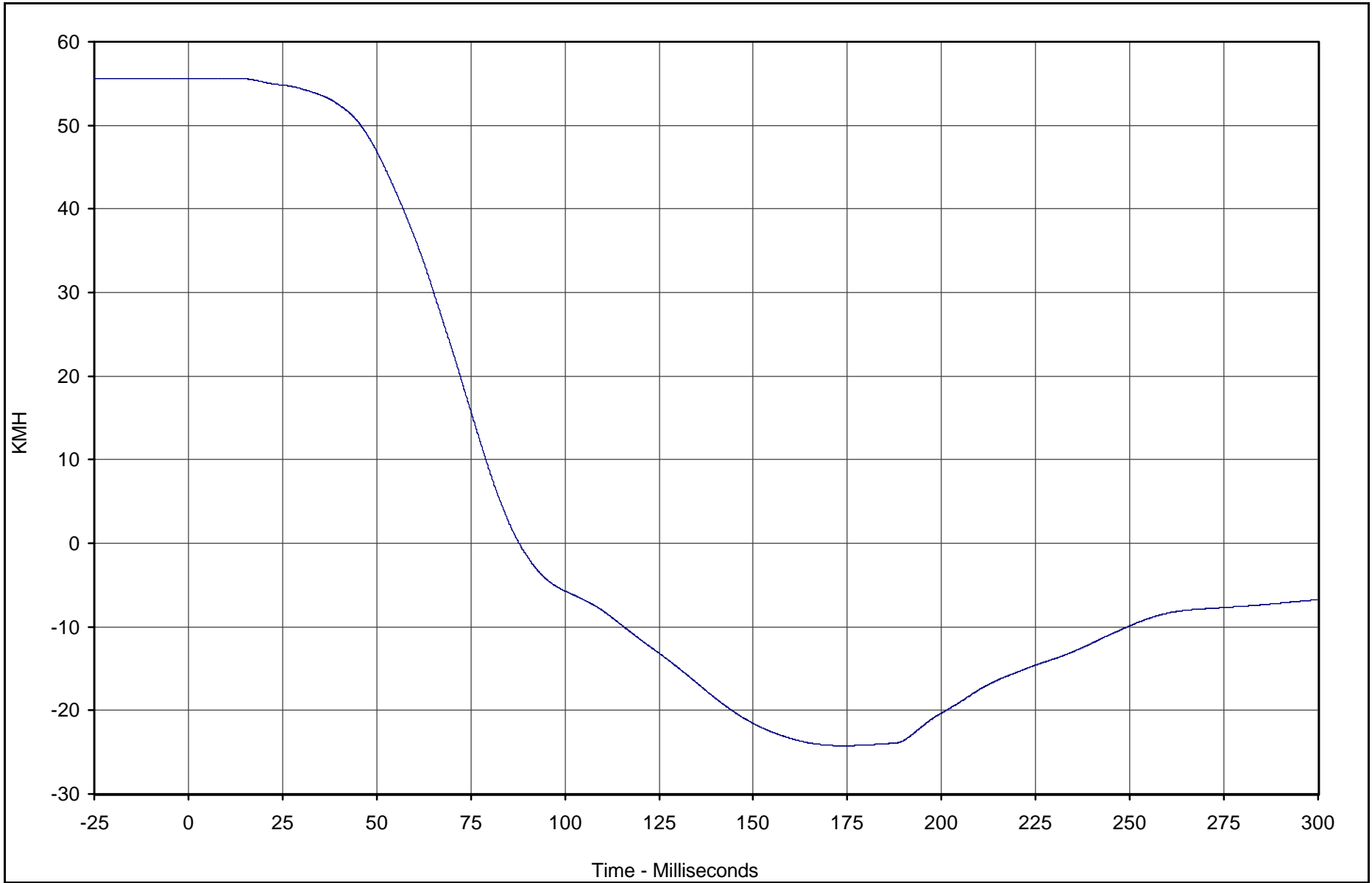
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Redundant X Velocity	004	IN1	KMH	55.6	6.8	-24.2	174.8	180

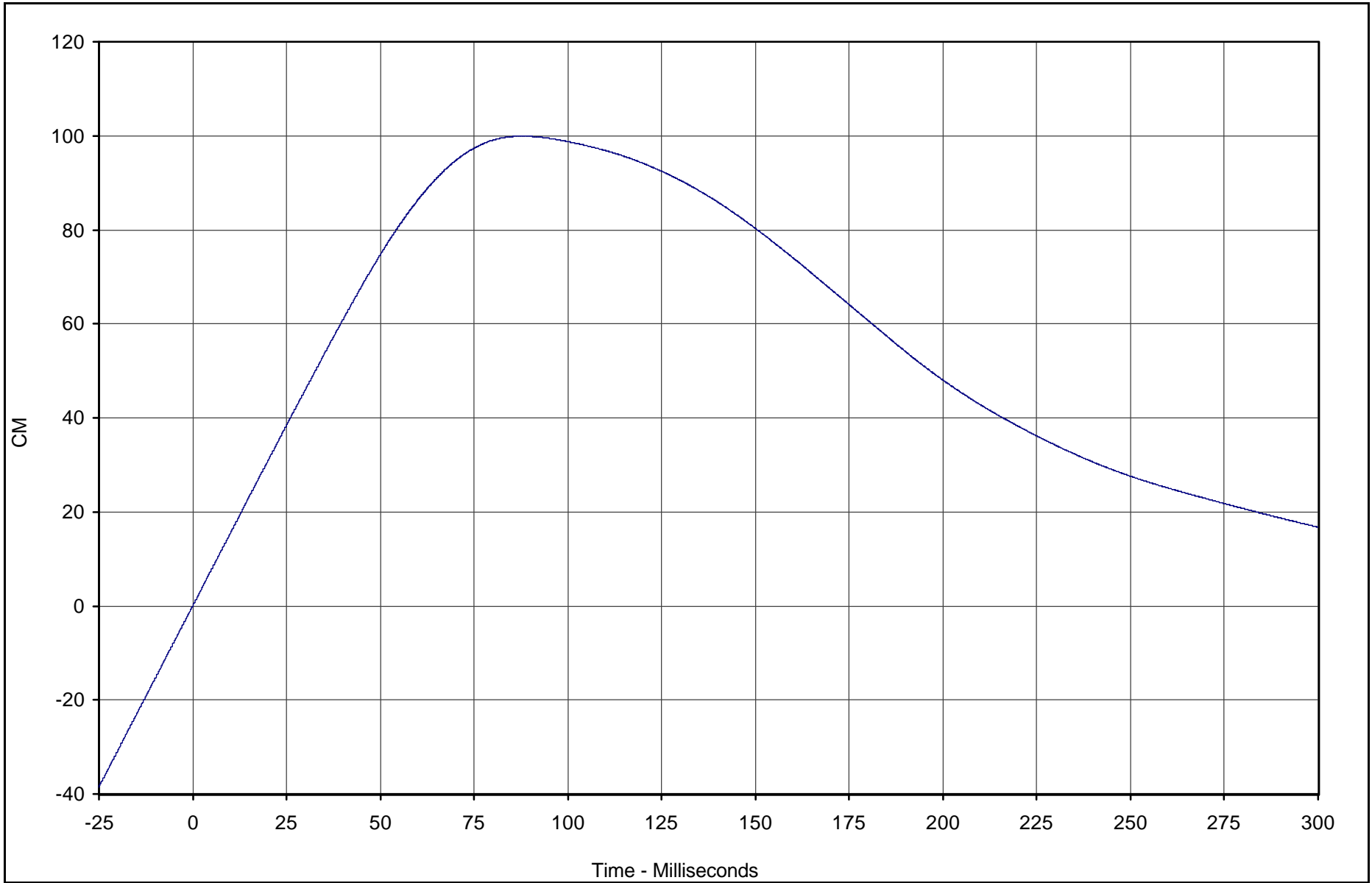


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Redundant X Displ.	004	IN2	CM	99.9	87.9	0.0	0.0	180



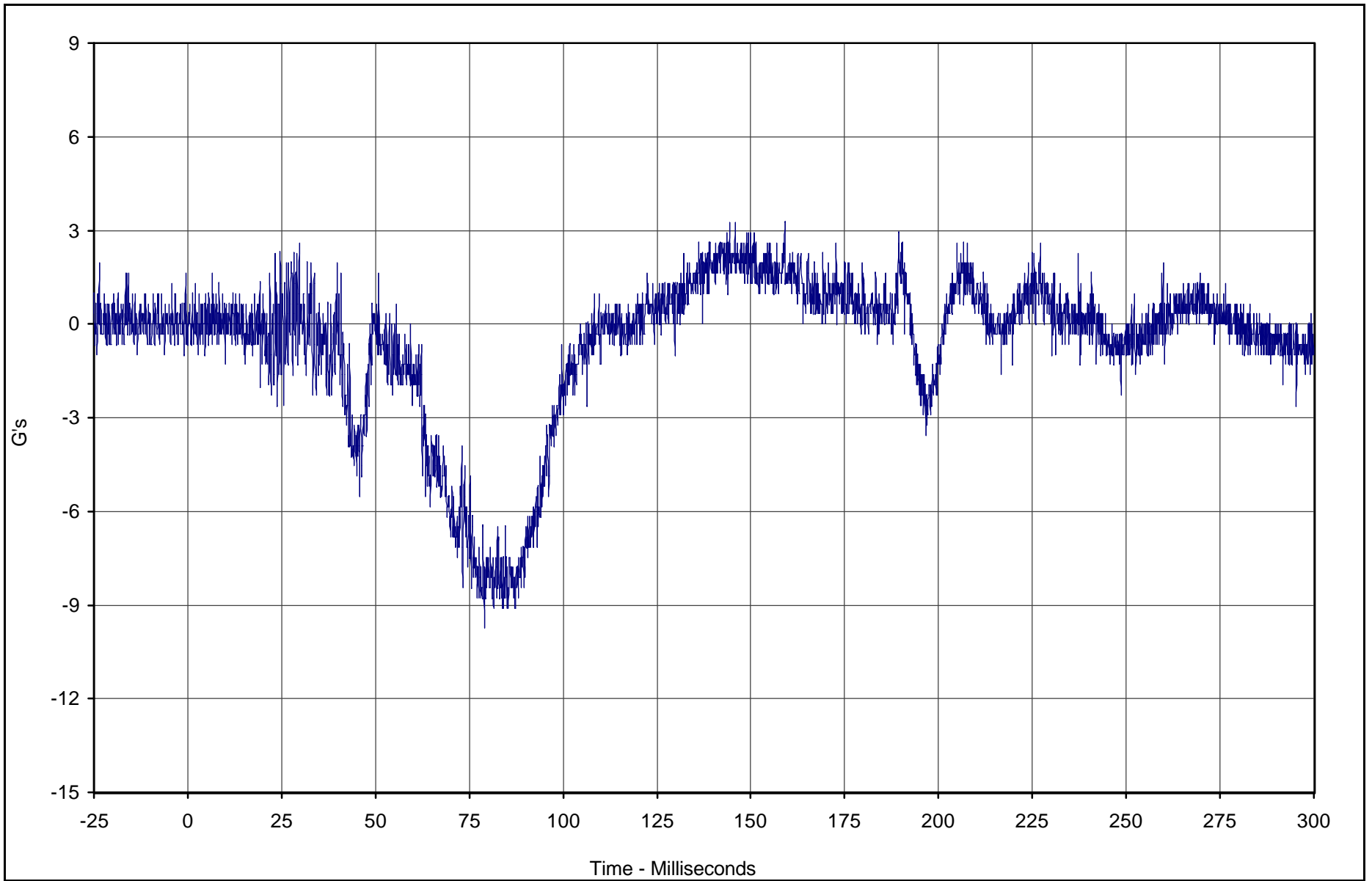
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

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Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Redundant Y	005	FIL	G's	3.2	144.3	-9.7	79.0	1000



Test Vehicle: 2003 Acura MDX SUV

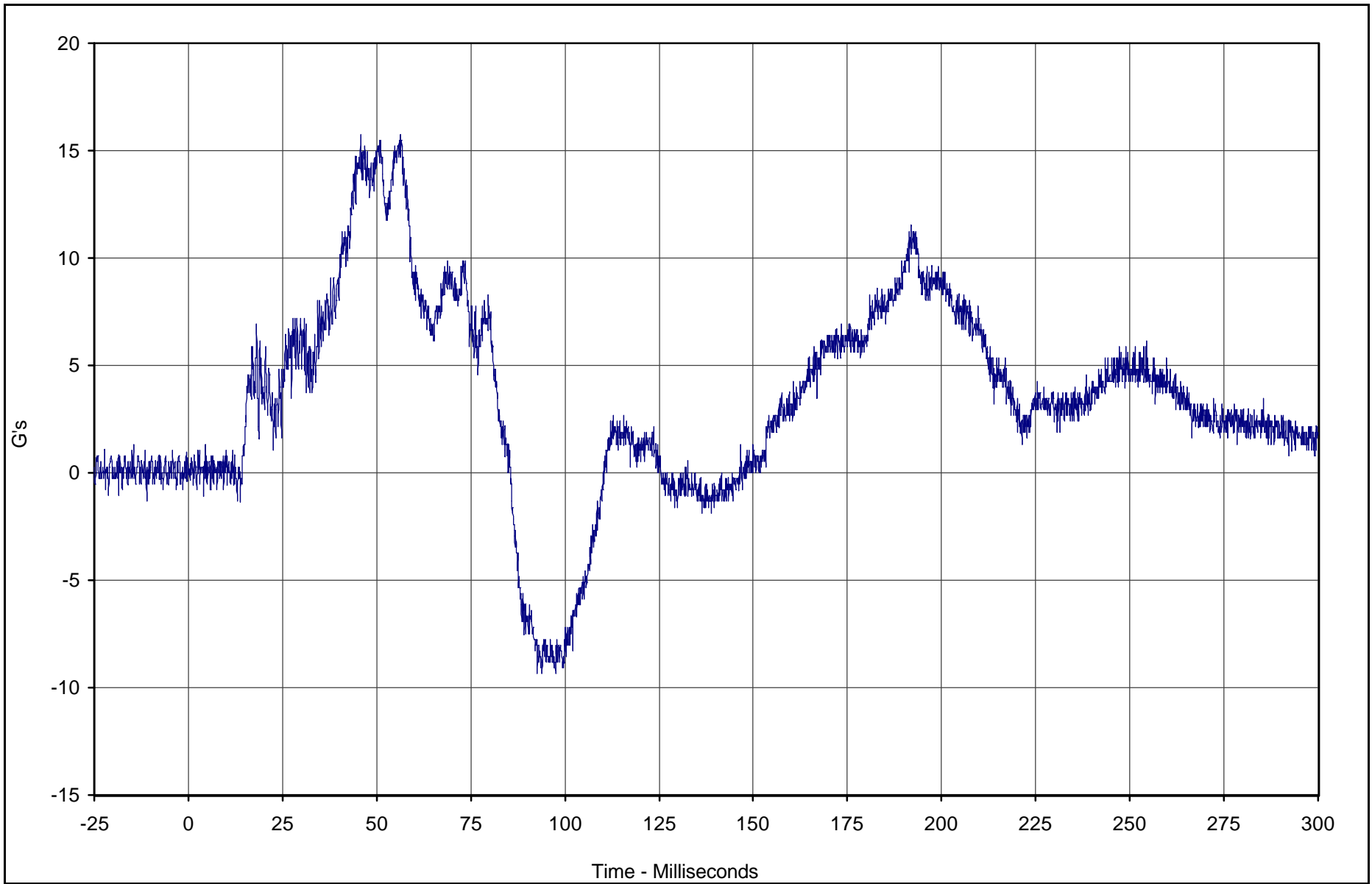
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-11



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Redundant Z	006	FIL	G's	15.8	45.7	-9.4	92.7	1000



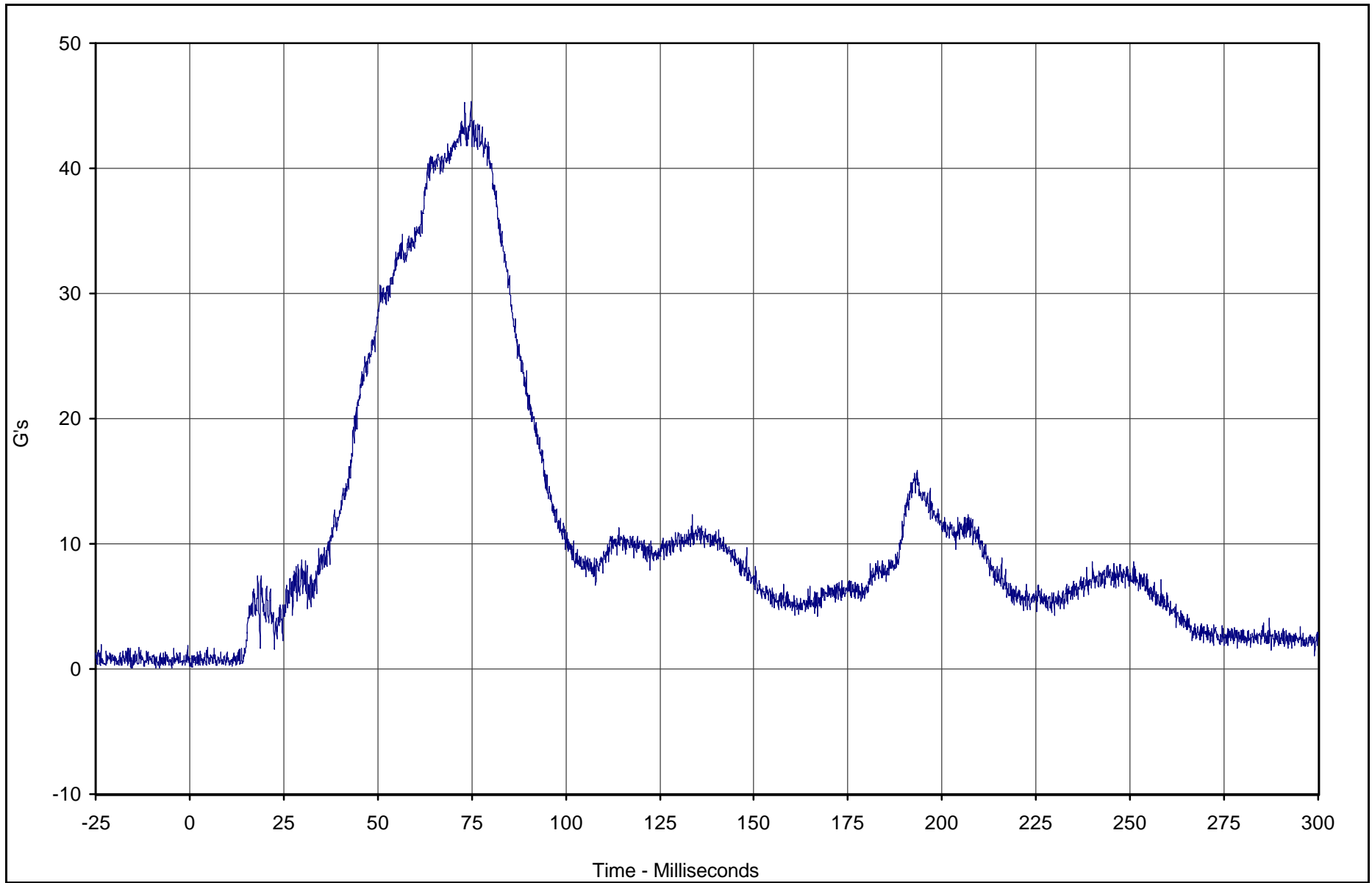
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Resultant Redundant	004	RES	G's	45.3	74.8	0.2	0.6	1000



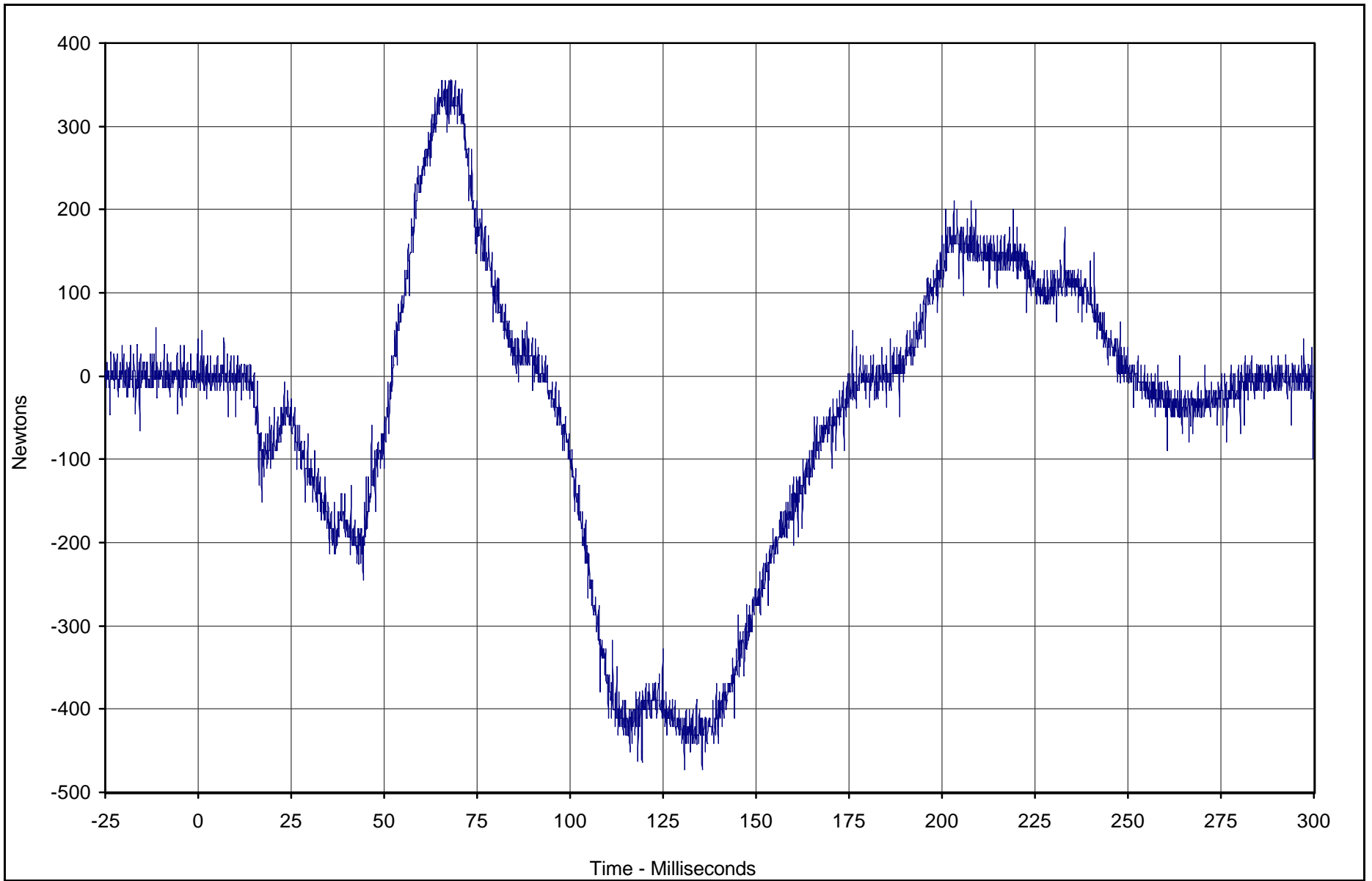
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-13



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Force X	007	FIL	Newtons	355.3	65.5	-472.8	130.7	1000



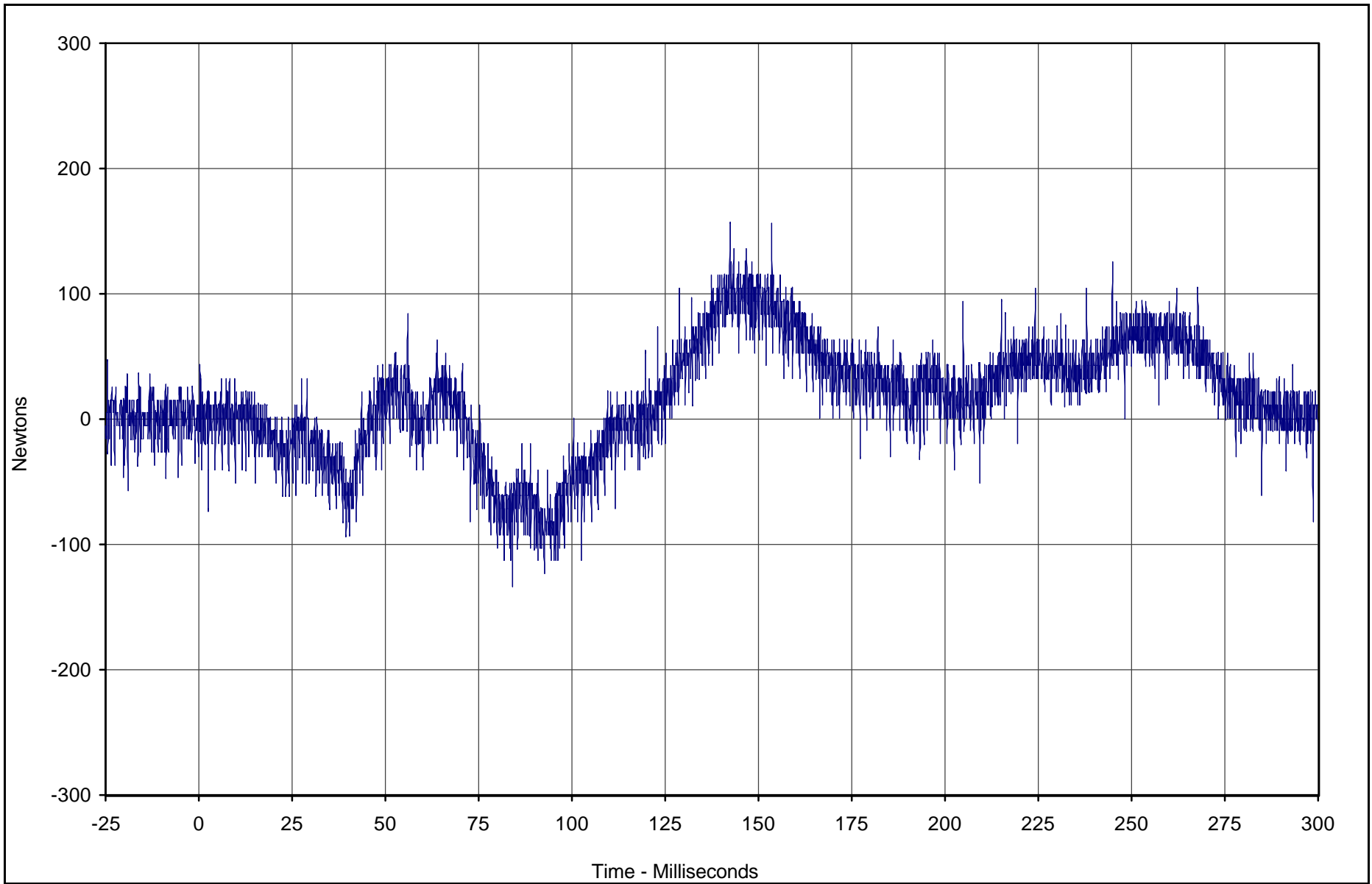
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Force Y	008	FIL	Newtons	156.6	142.3	-133.8	84.1	1000



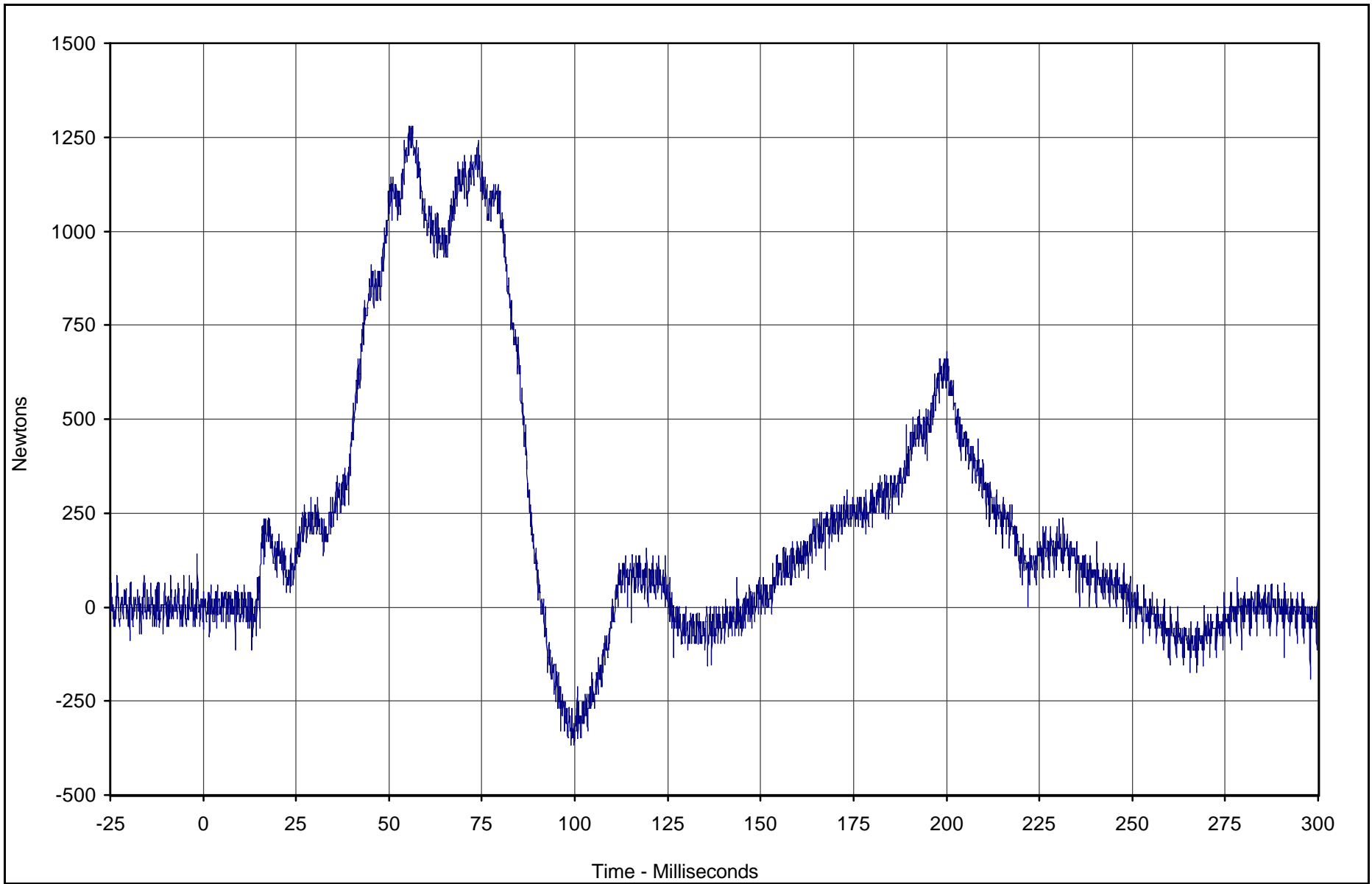
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

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Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Force Z	009	FIL	Newtons	1280.0	55.3	-367.2	99.0	1000



Test Vehicle: 2003 Acura MDX SUV

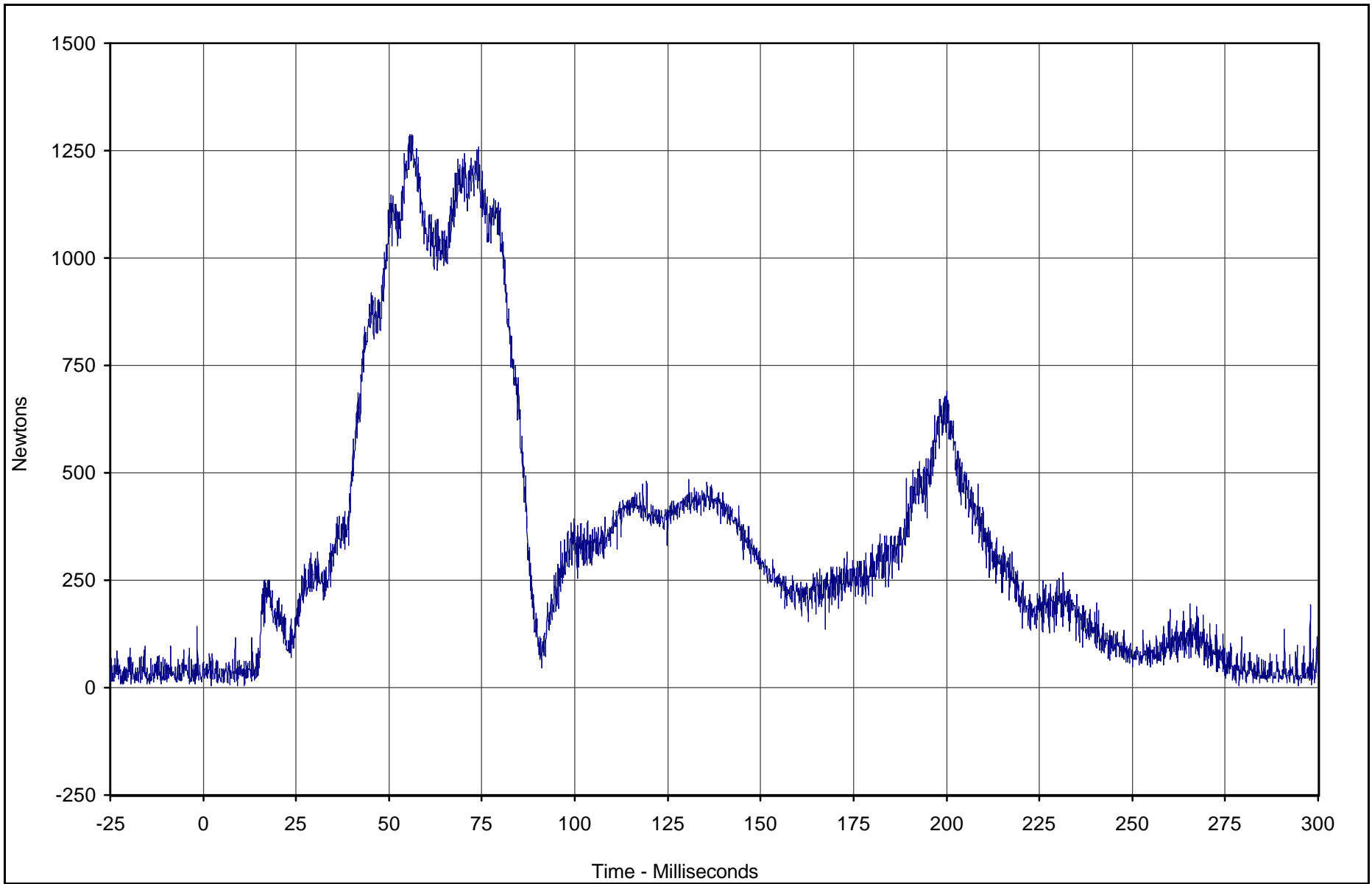
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

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B-16



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Force Resultant	007	RES	Newtons	1288.1	56.0	3.6	2.1	1000



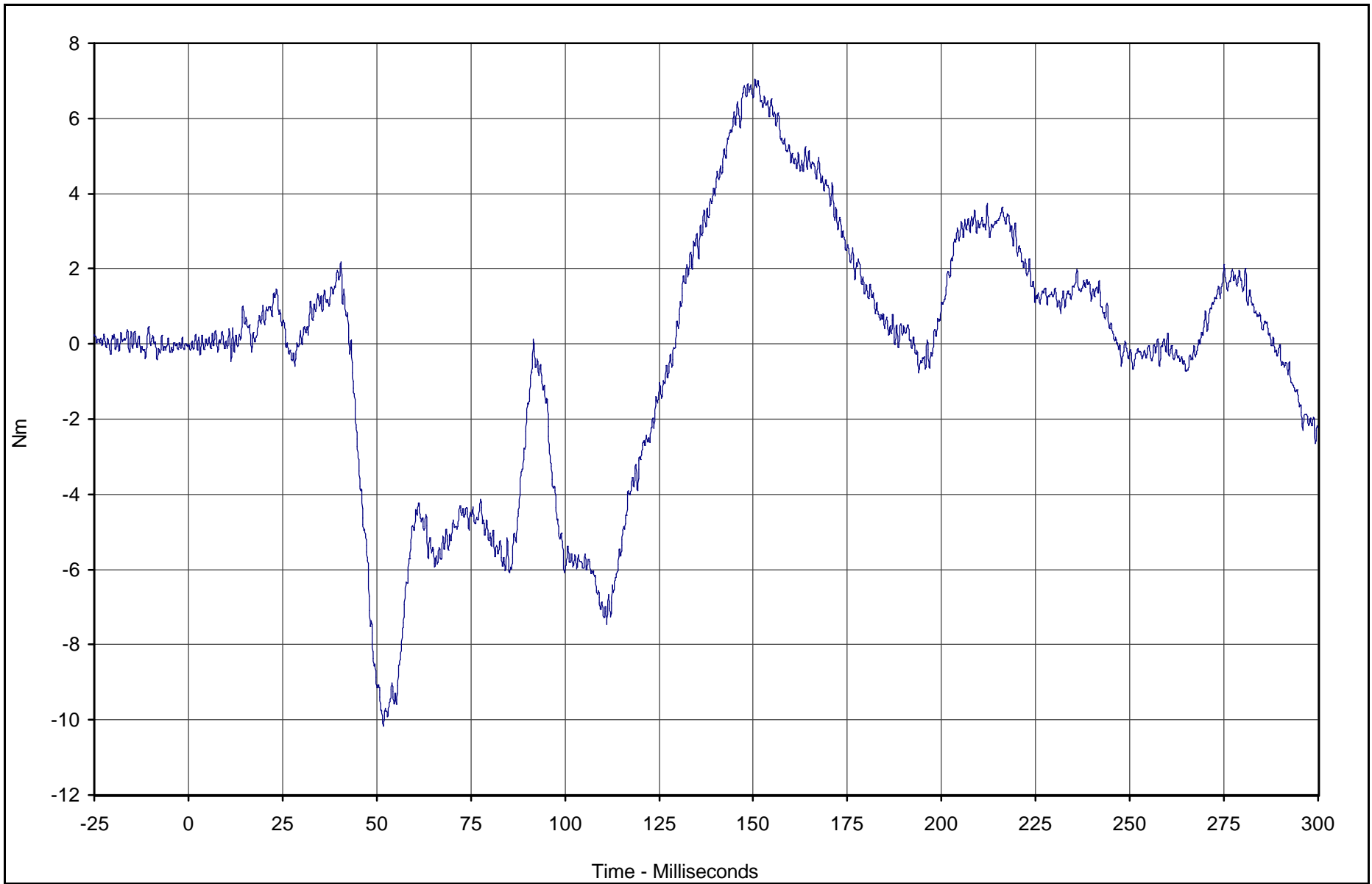
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Moment X	010	FIL	Nm	7.1	150.5	-10.2	51.8	600

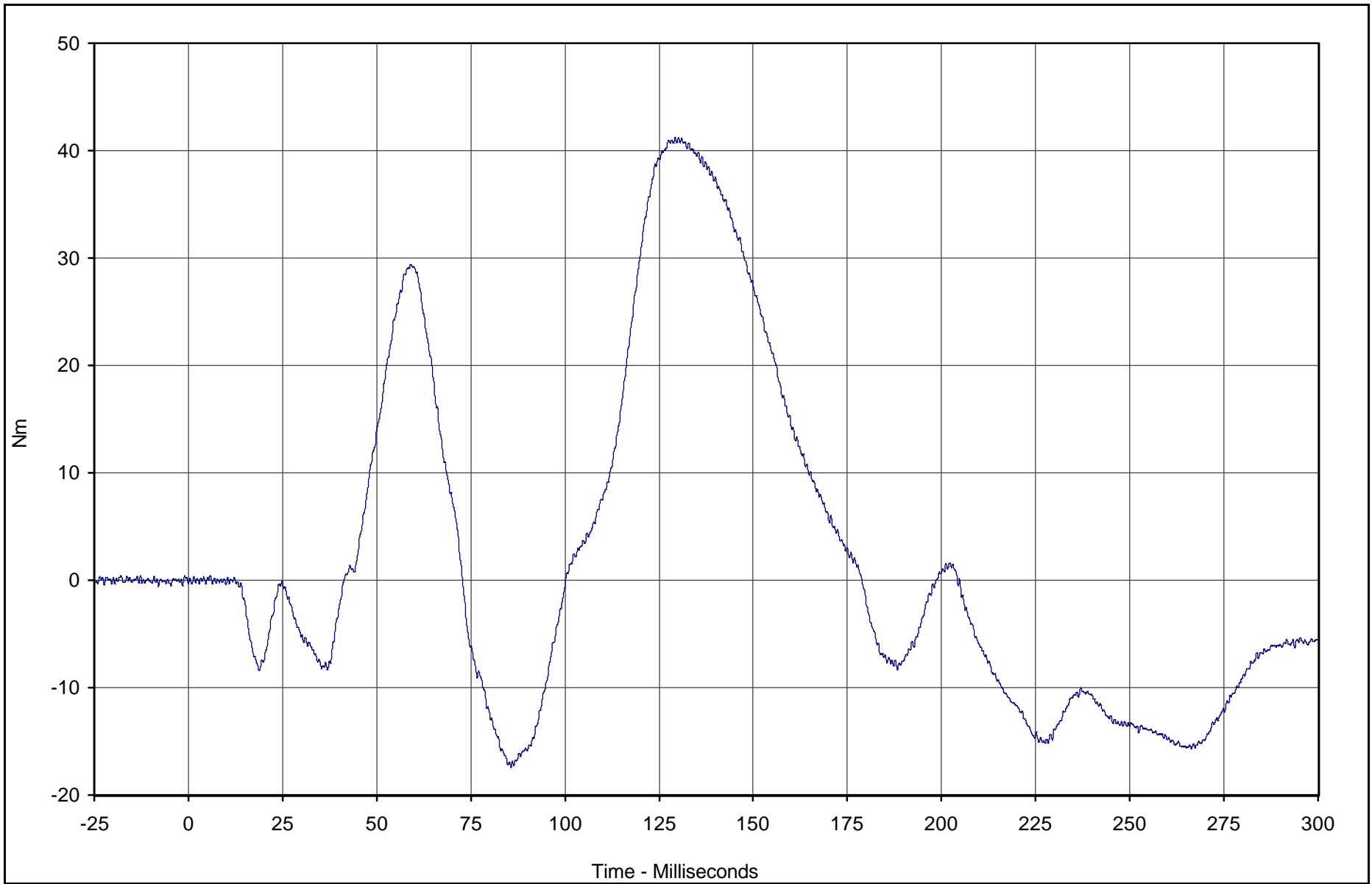


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Moment Y	011	FIL	Nm	41.2	129.2	-17.5	85.7	600

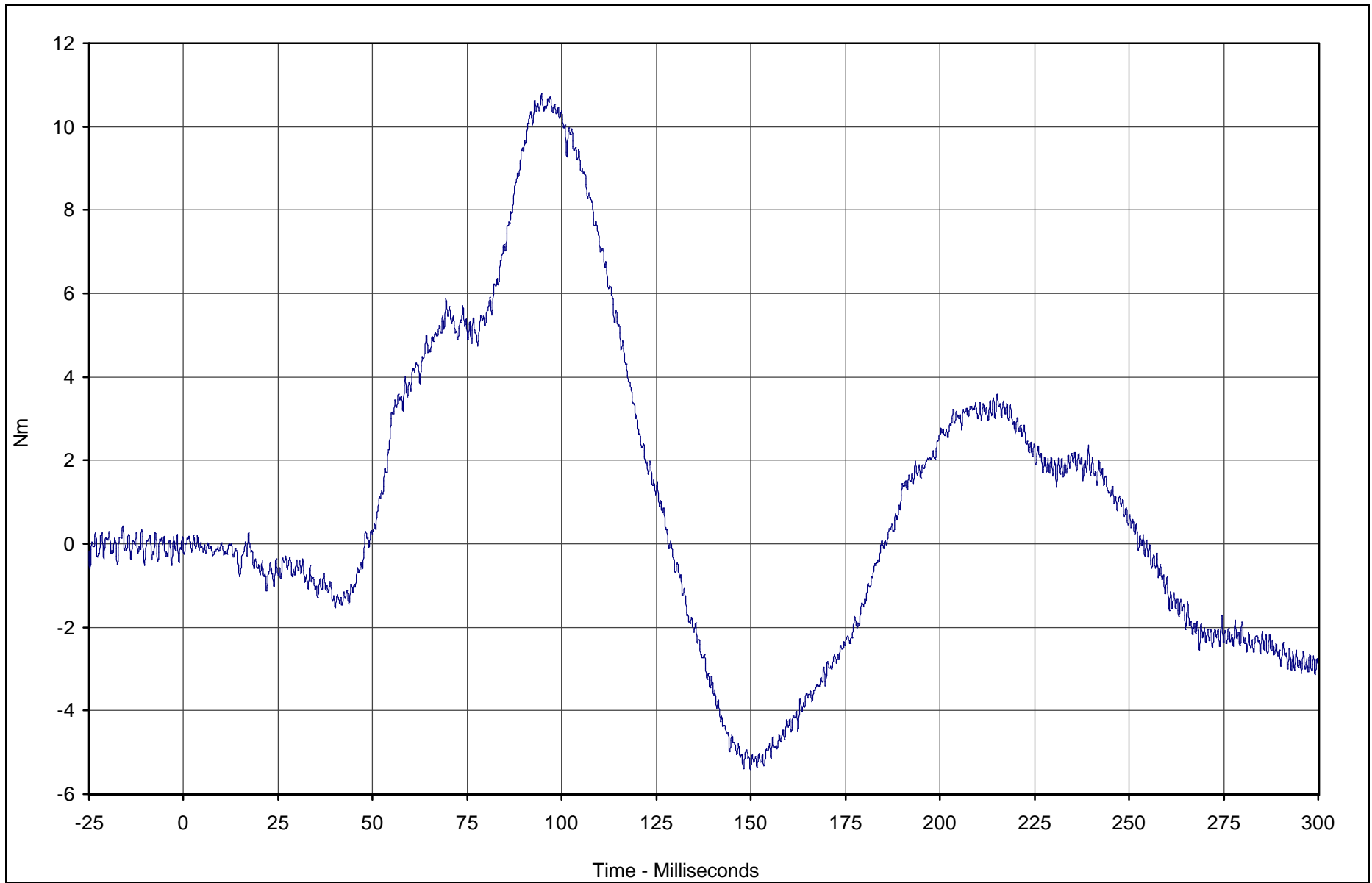


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Moment Z	012	FIL	Nm	10.8	94.7	-5.4	149.9	600



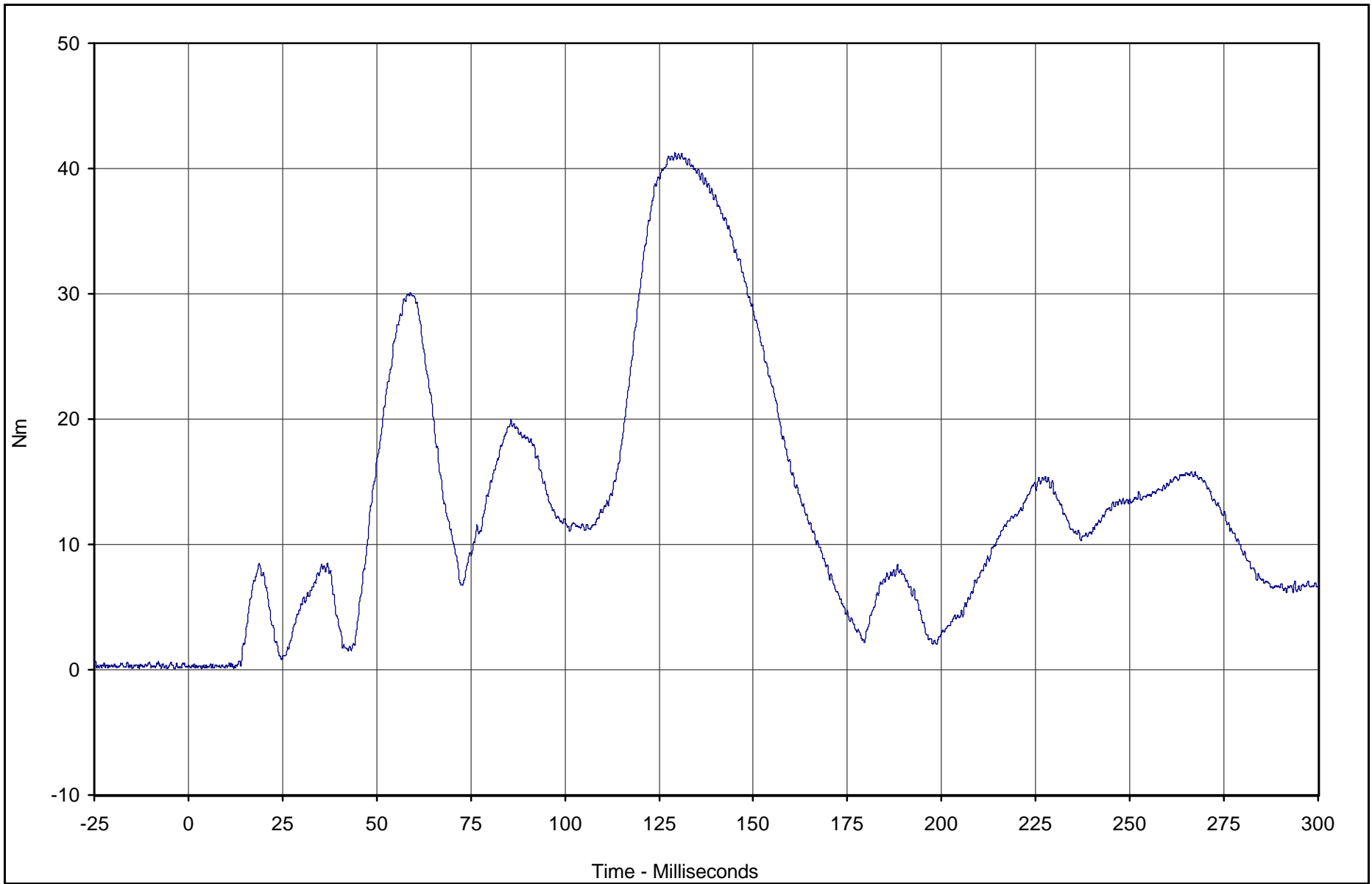
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

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Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Moment Resultant	010	RES	Nm	41.2	129.2	0.1	3.4	600



Test Vehicle: 2003 Acura MDX SUV

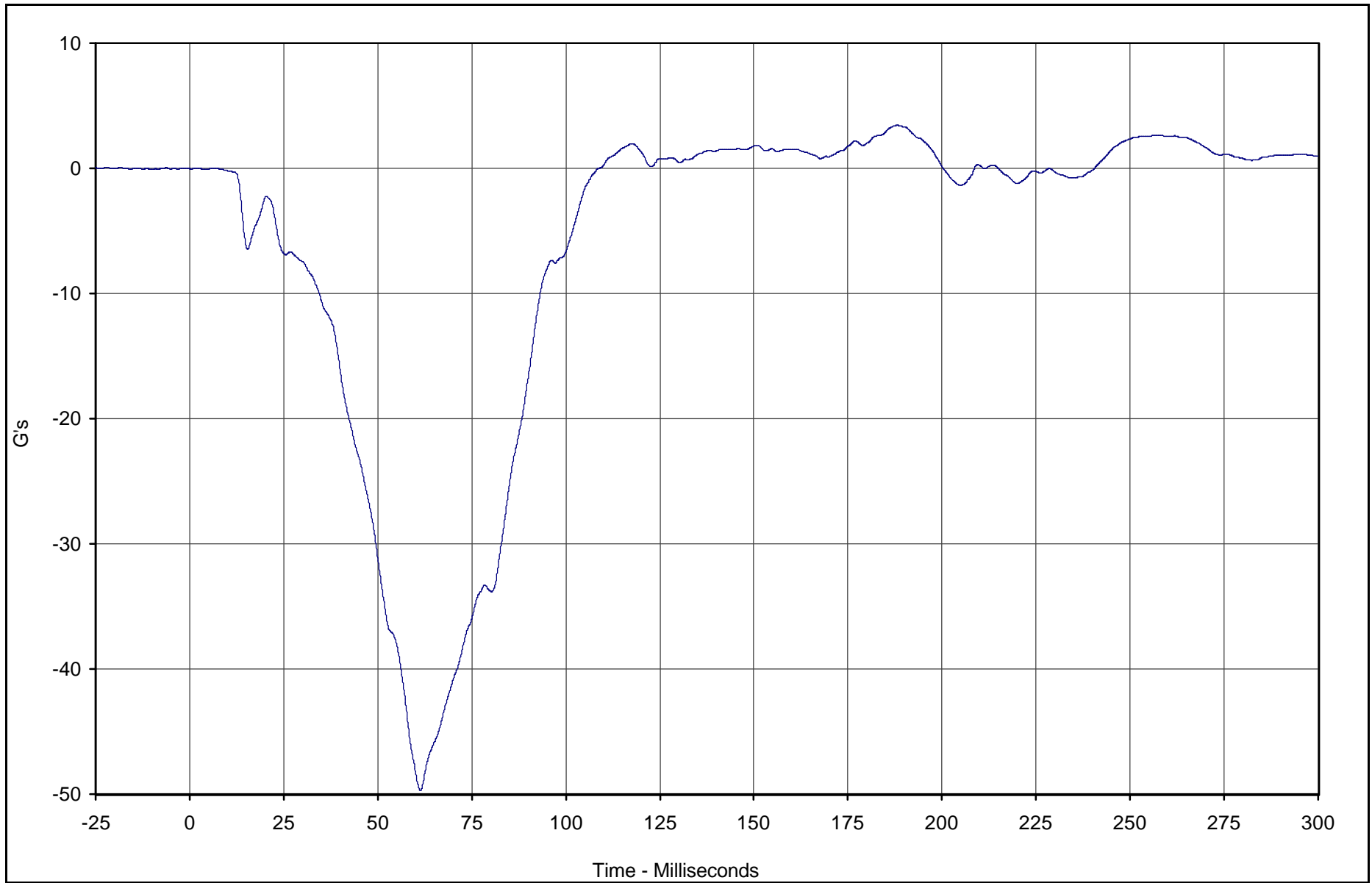
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

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Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Primary X	013	FIL	G's	3.4	188.1	-49.7	61.3	180



Test Vehicle: 2003 Acura MDX SUV

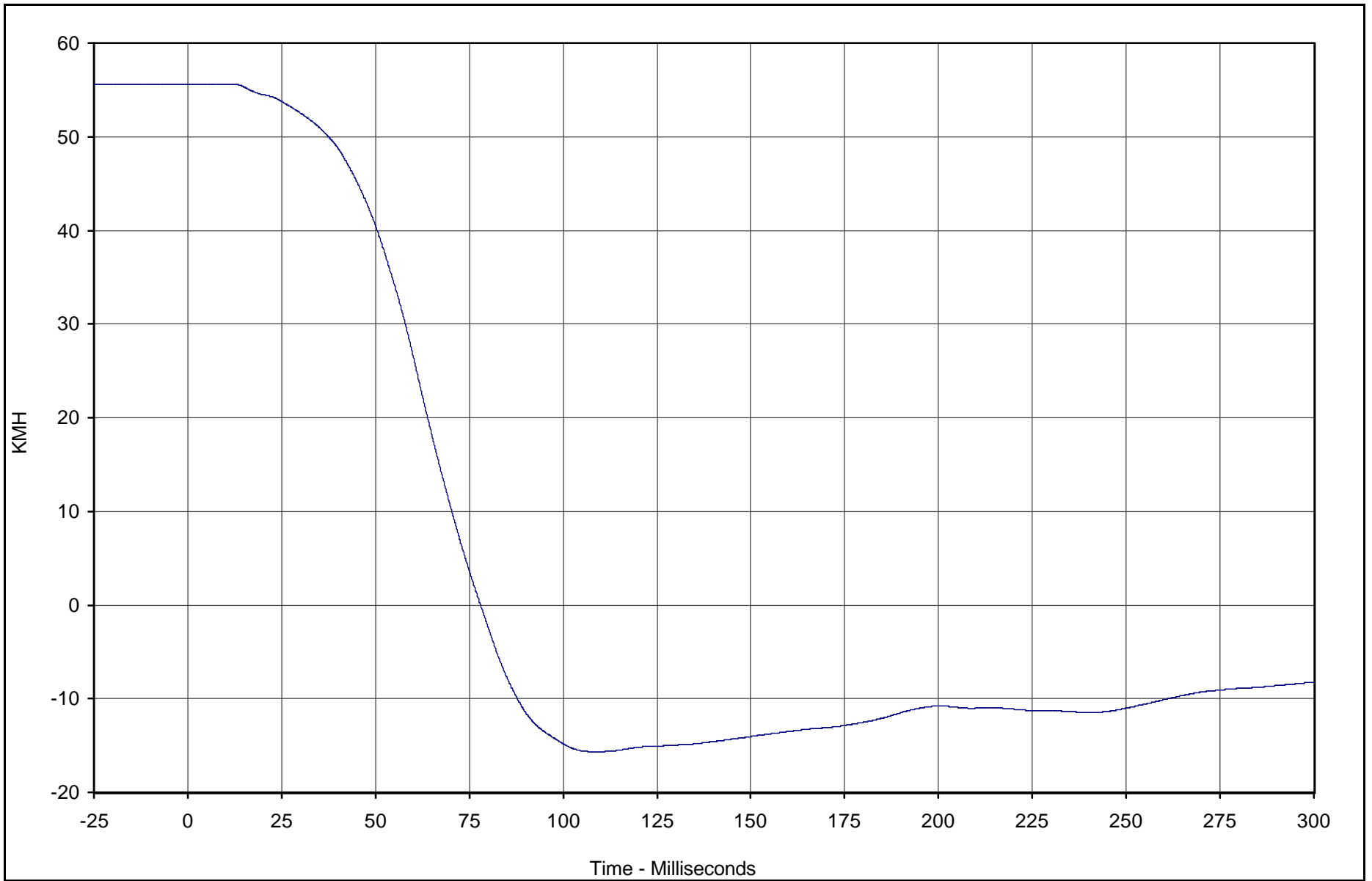
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

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B-22



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Primary X Velocity	013	IN1	KMH	55.6	0.0	-15.7	108.6	180



Test Vehicle: 2003 Acura MDX SUV

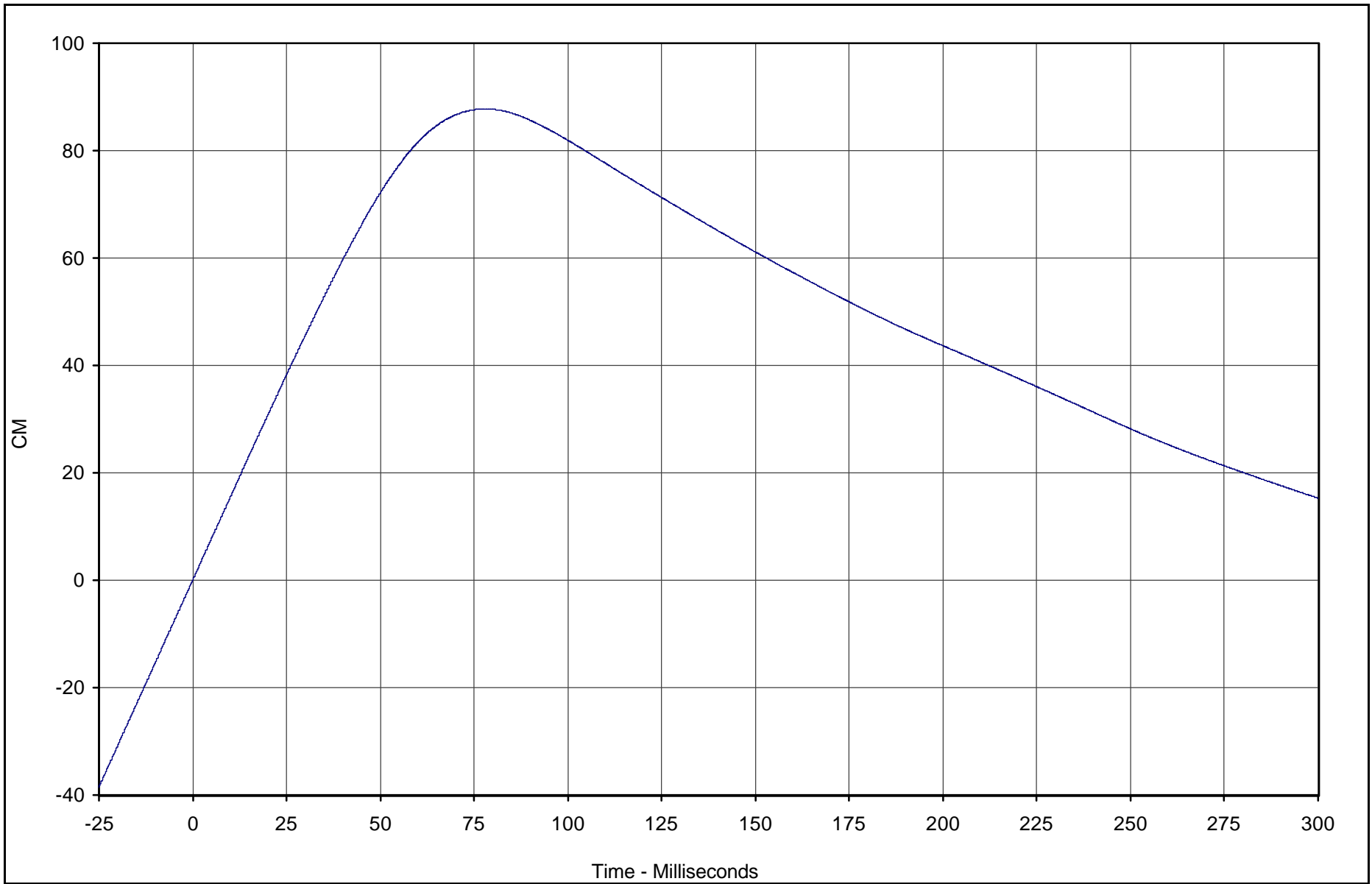
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

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TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Primary X Displ.	013	IN2	CM	87.8	78.0	0.0	0.0	180



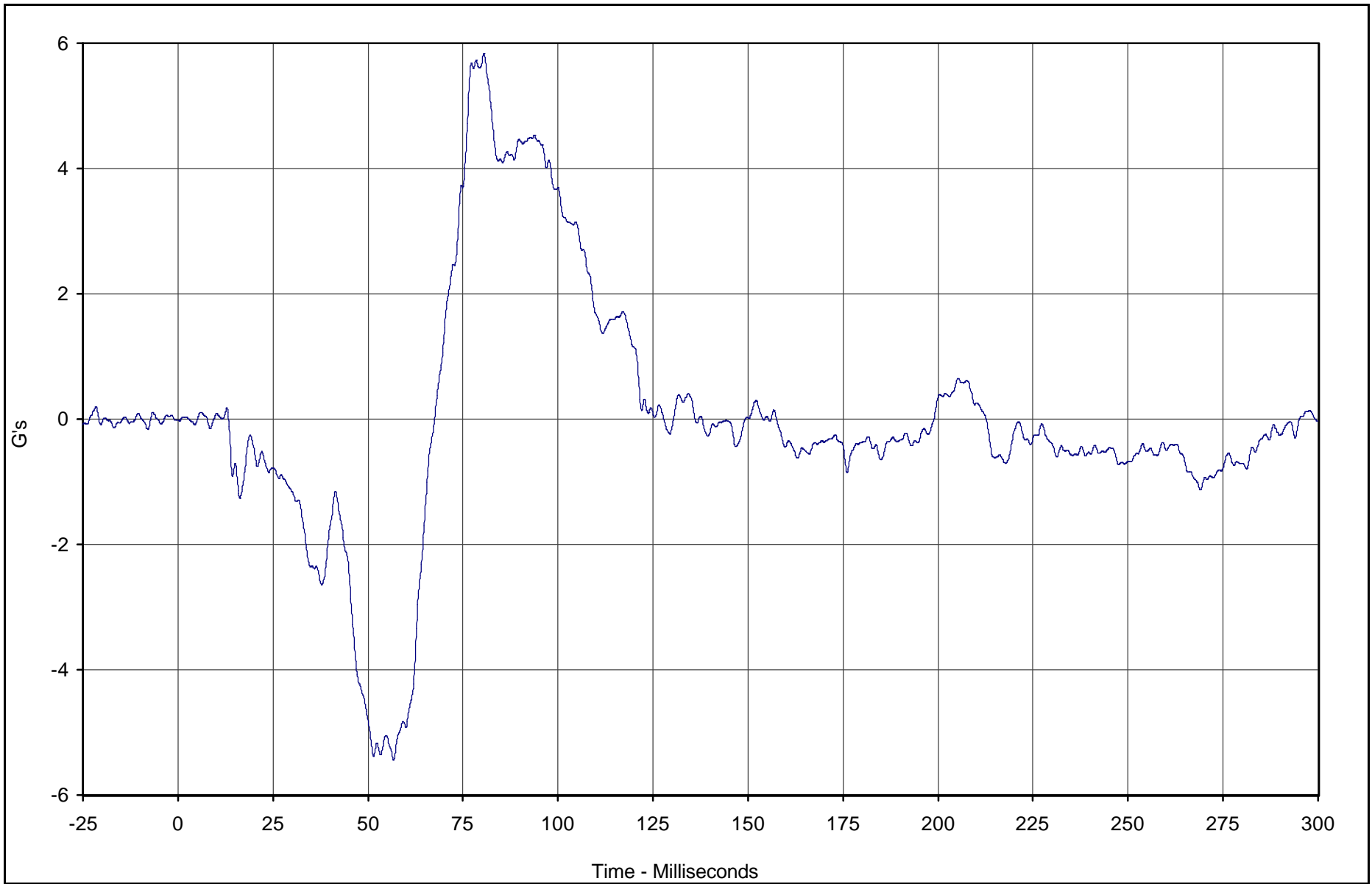
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

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Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Primary Y	014	FIL	G's	5.8	80.5	-5.4	56.8	180



Test Vehicle: 2003 Acura MDX SUV

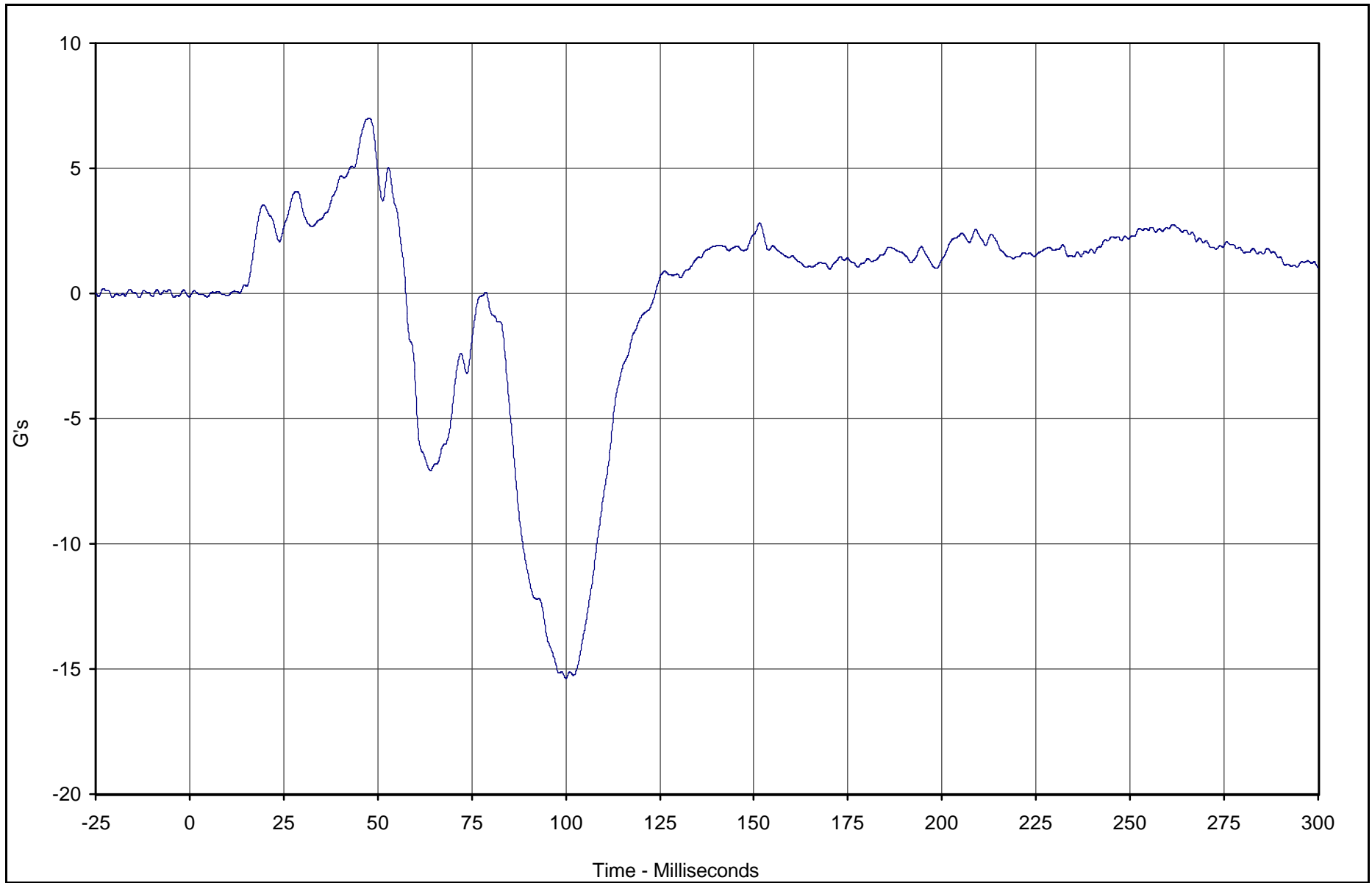
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

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Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Primary Z	015	FIL	G's	7.0	47.8	-15.4	100.0	180



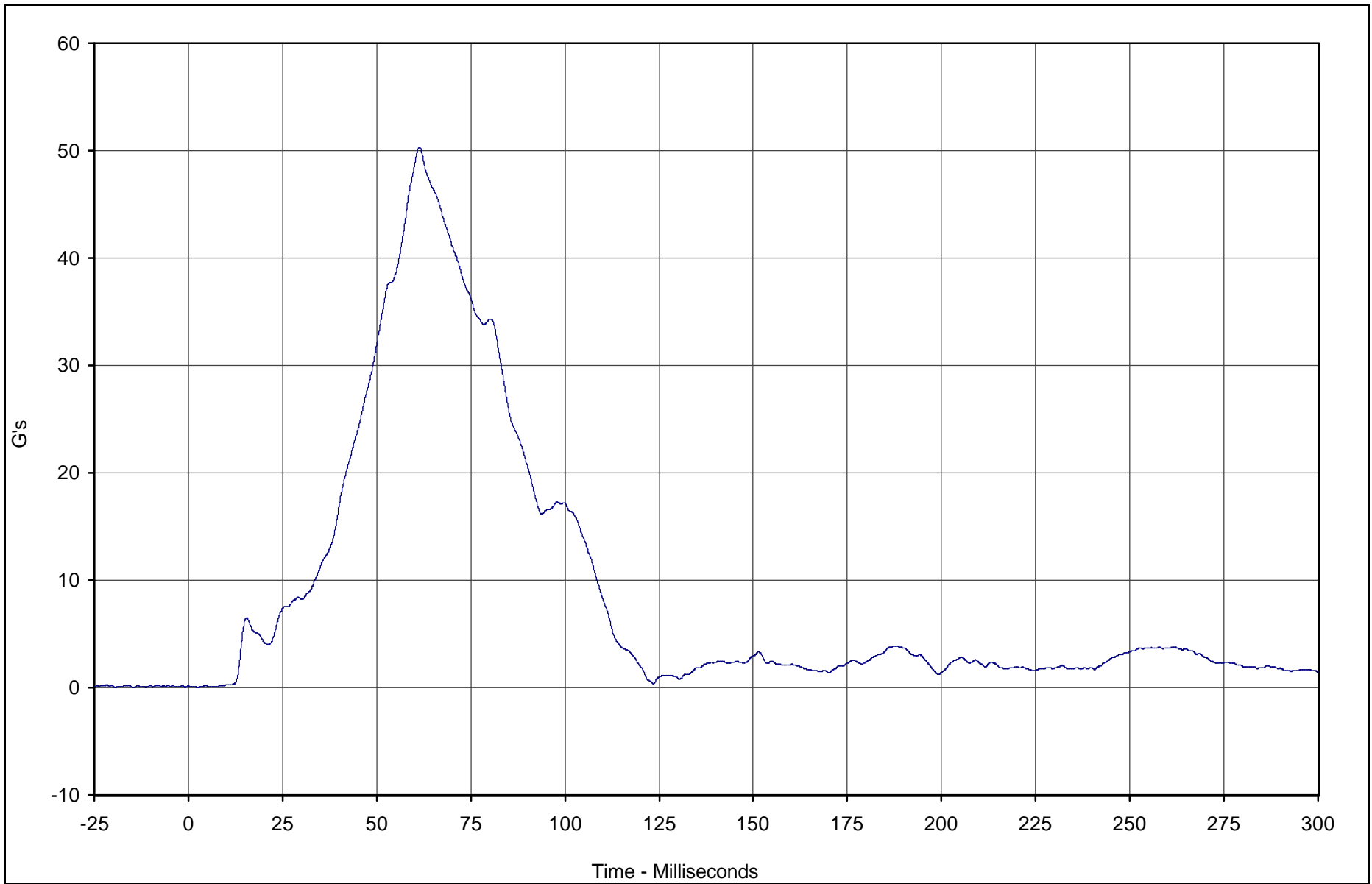
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Resultant Primary	013	RES	G's	50.3	61.3	0.0	2.6	180



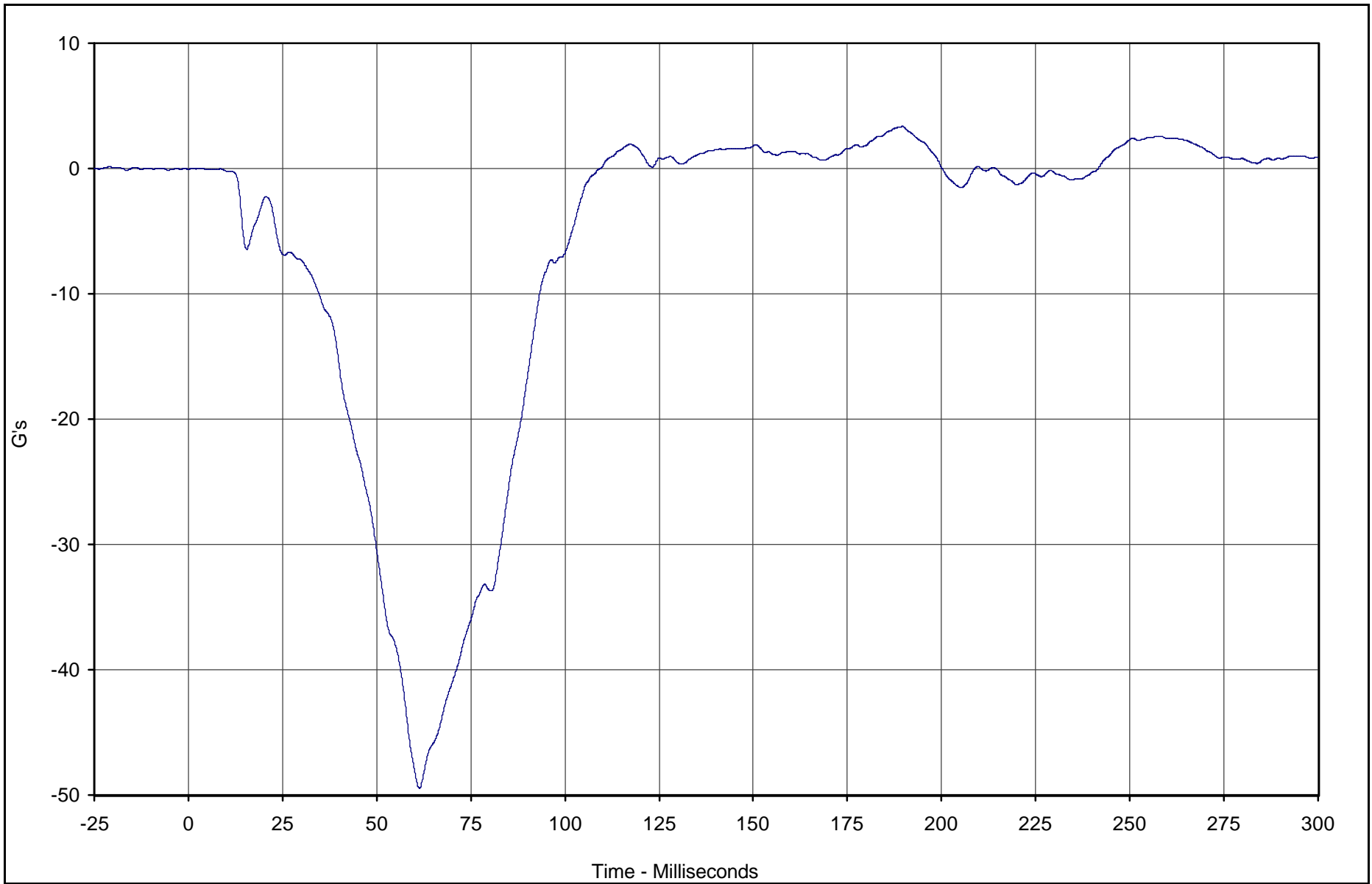
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

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Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Redundant X	016	FIL	G's	3.4	189.6	-49.4	61.4	180



Test Vehicle: 2003 Acura MDX SUV

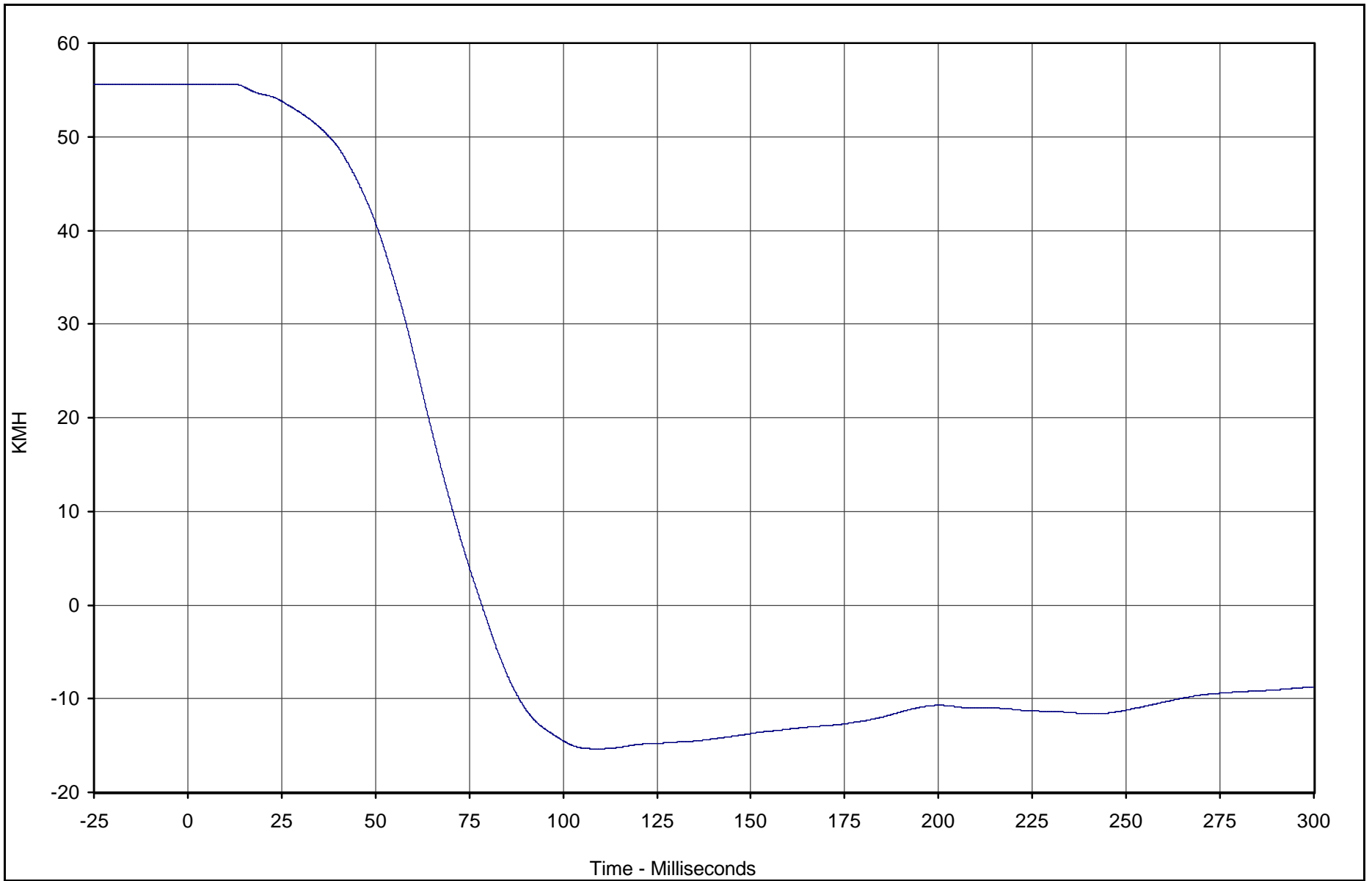
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

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Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Redundant X Velocity	016	IN1	KMH	55.6	0.0	-15.4	109.3	180



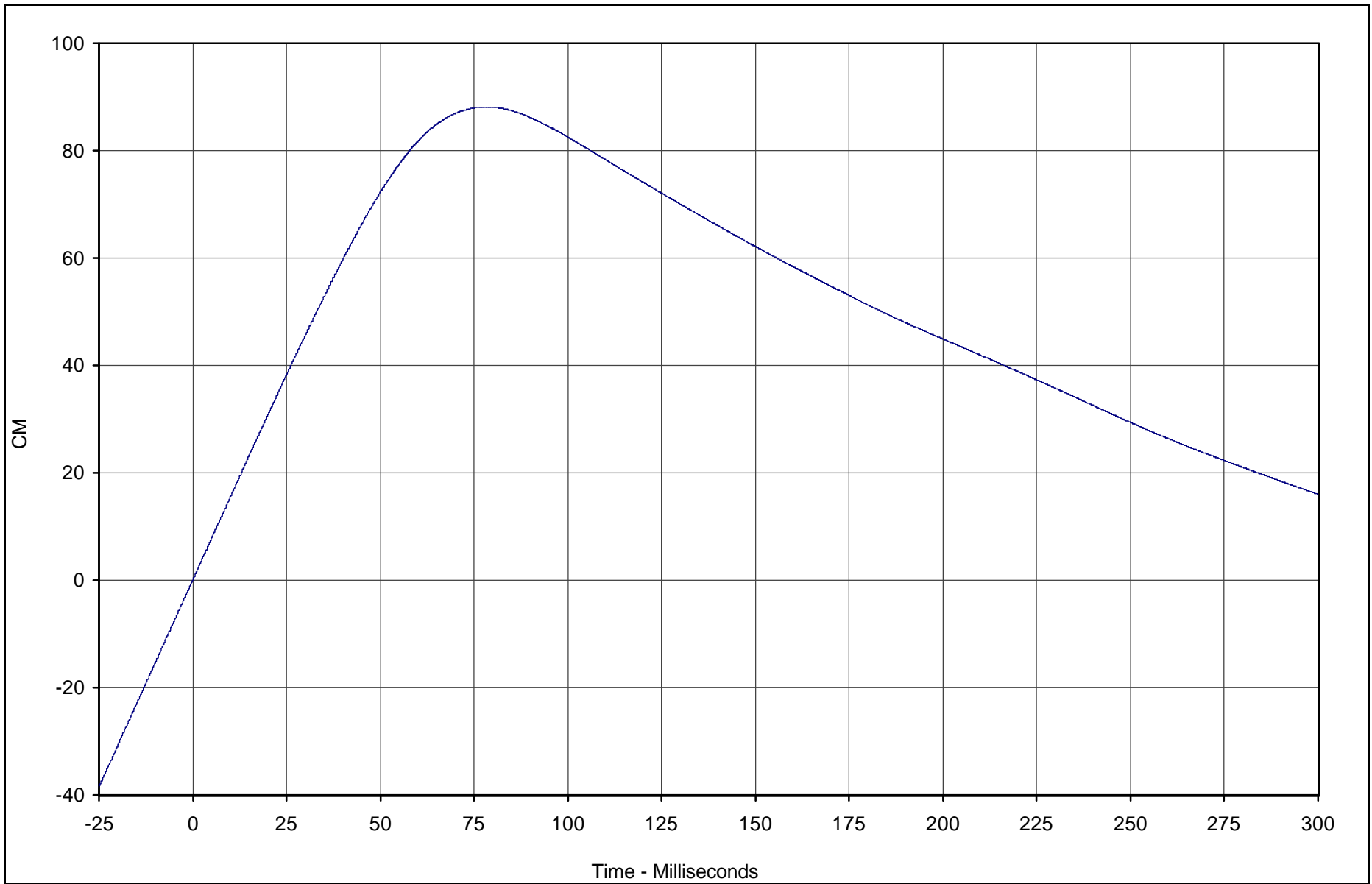
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Redundant X Displ.	016	IN2	CM	88.1	78.4	0.0	0.0	180



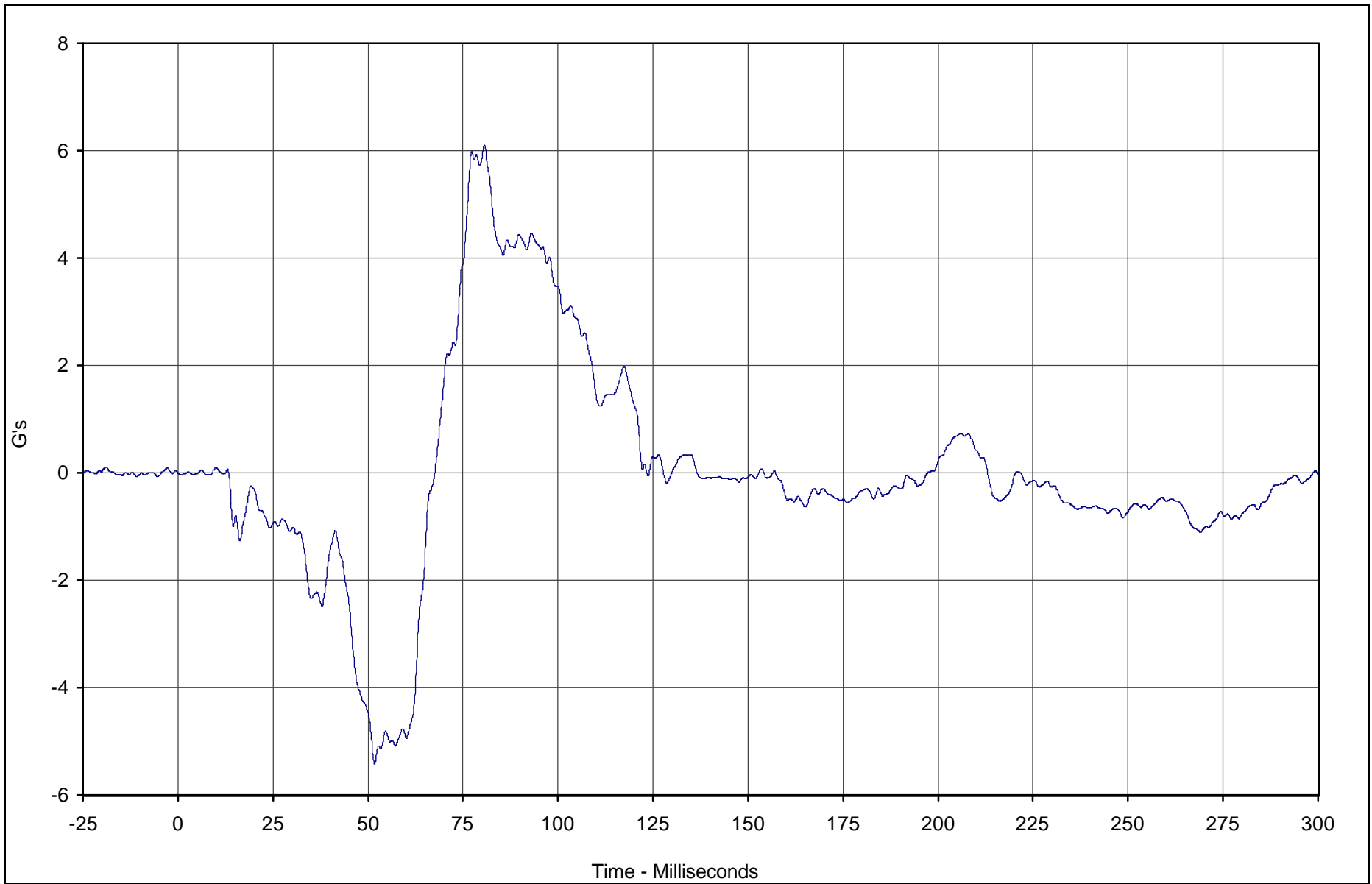
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

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Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Redundant Y	017	FIL	G's	6.1	80.7	-5.4	51.8	180



Test Vehicle: 2003 Acura MDX SUV

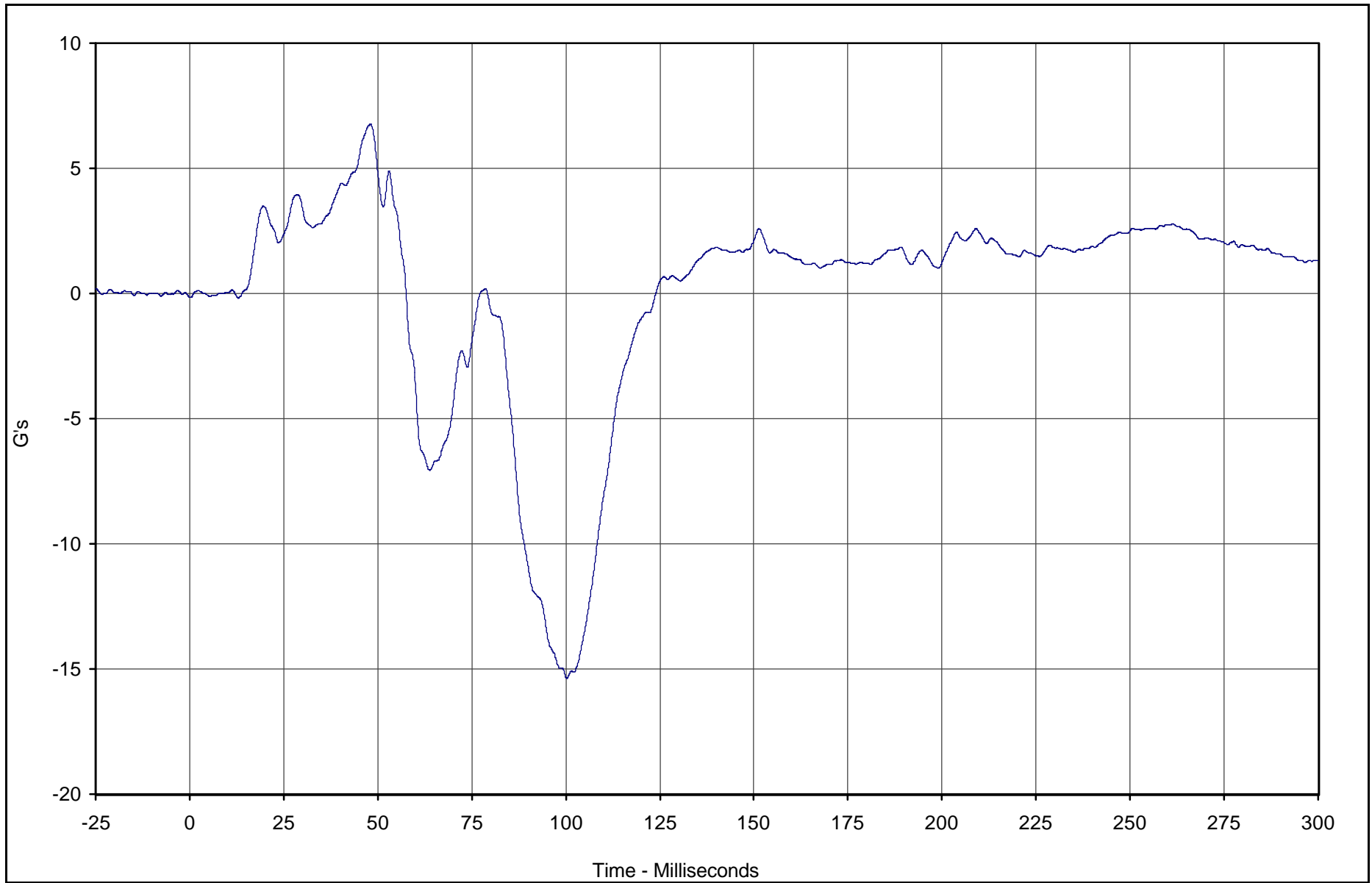
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-31



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Redundant Z	018	FIL	G's	6.8	48.0	-15.4	100.3	180



Test Vehicle: 2003 Acura MDX SUV

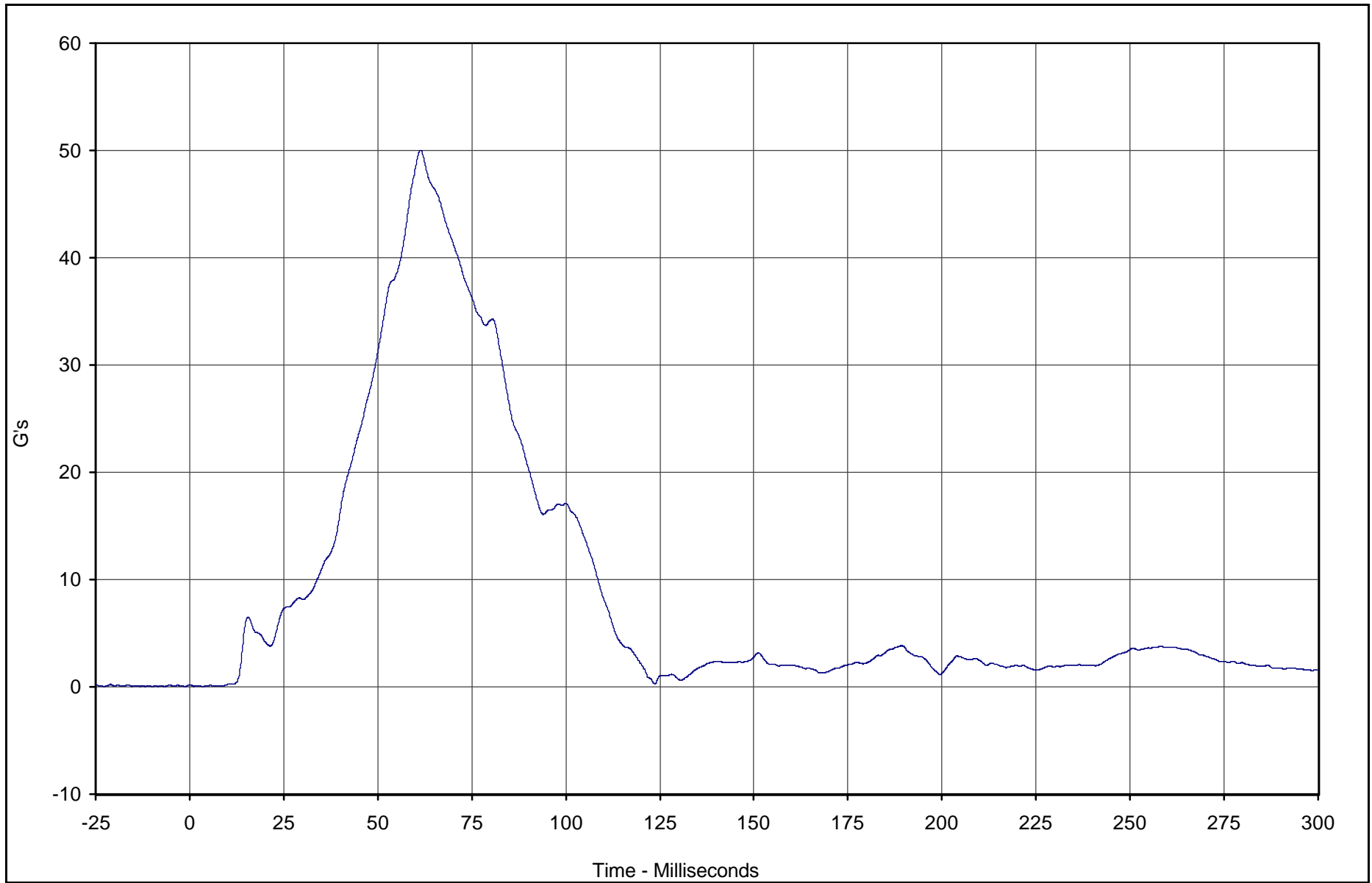
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

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B-32



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Resultant Redundant	016	RES	G's	50.0	61.4	0.0	3.4	180



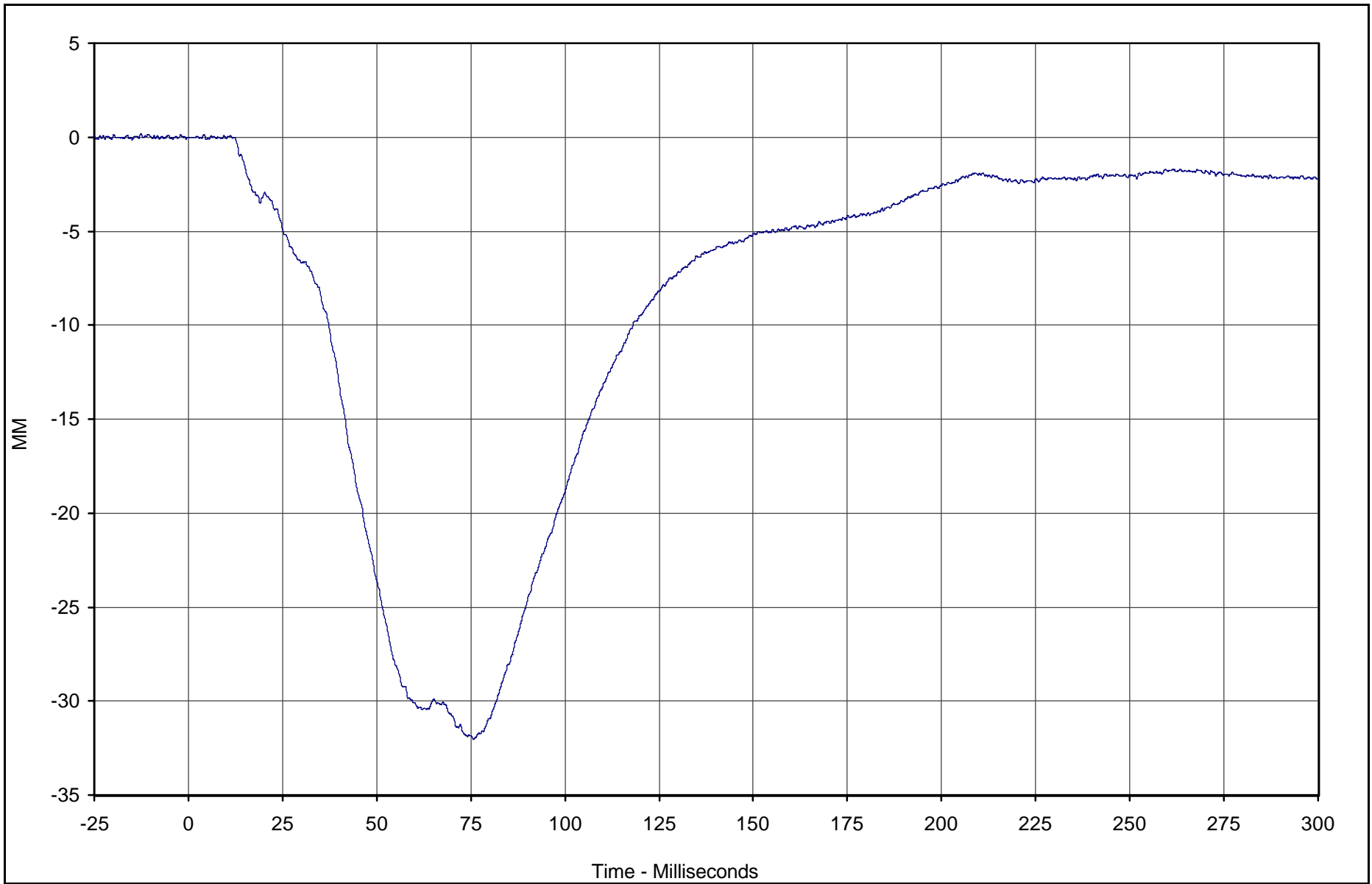
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Displacement X	019	FIL	MM	0.2	4.1	-32.0	75.7	600

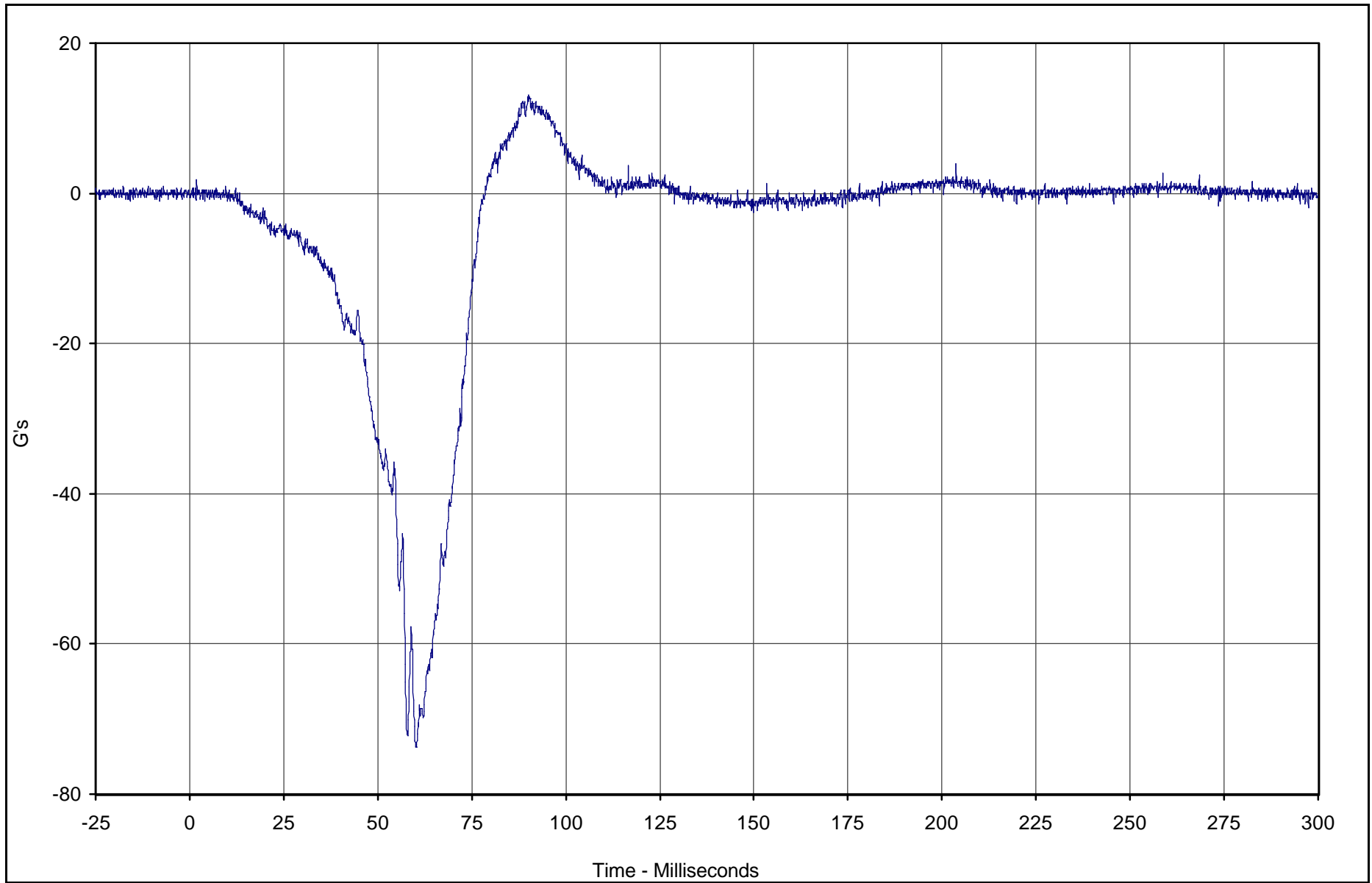


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Pelvis X	020	FIL	G's	13.1	90.1	-73.7	60.1	1000

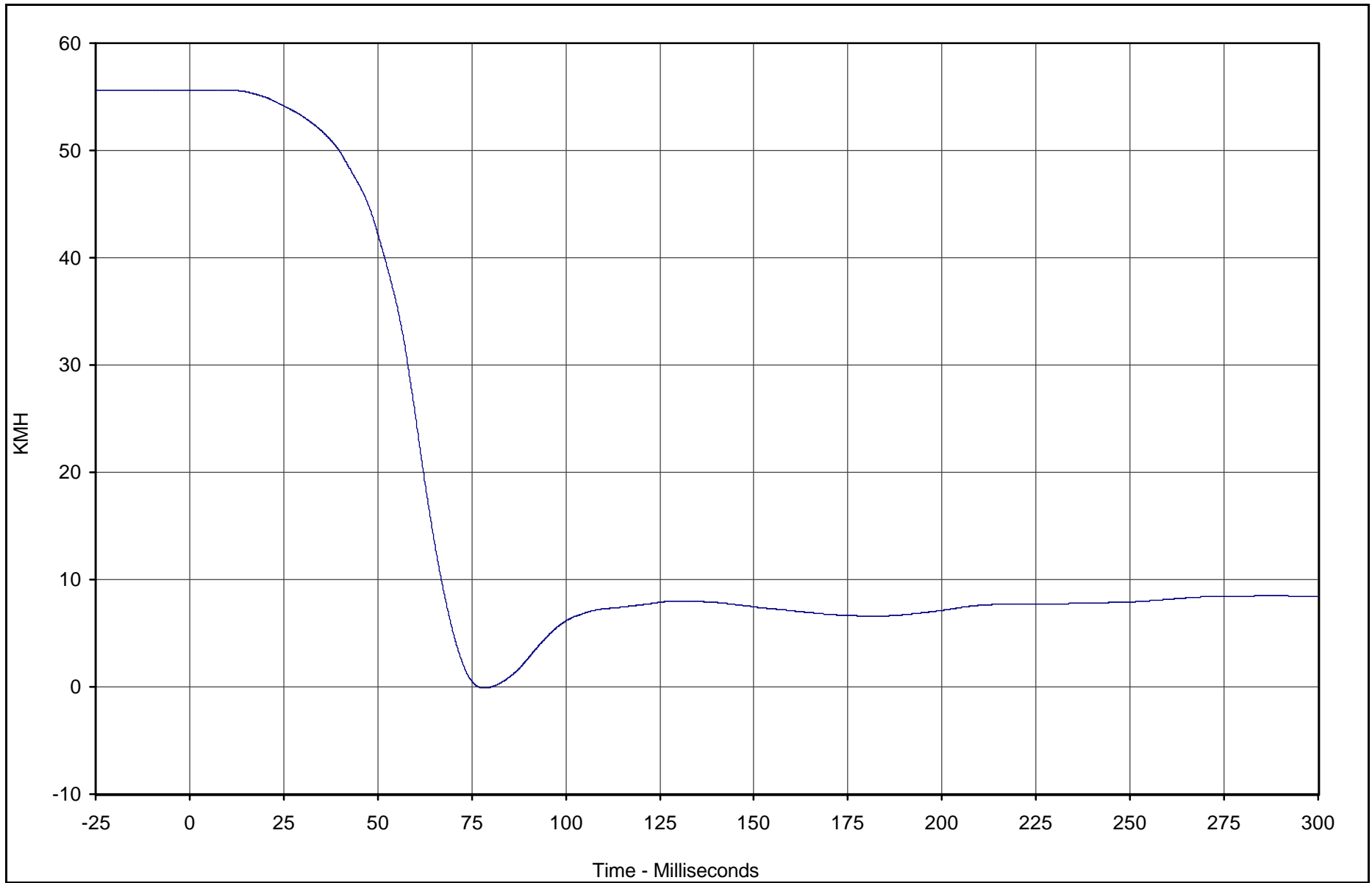


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Pelvis X Velocity	020	IN1	KMH	55.6	4.3	-0.1	78.4	180

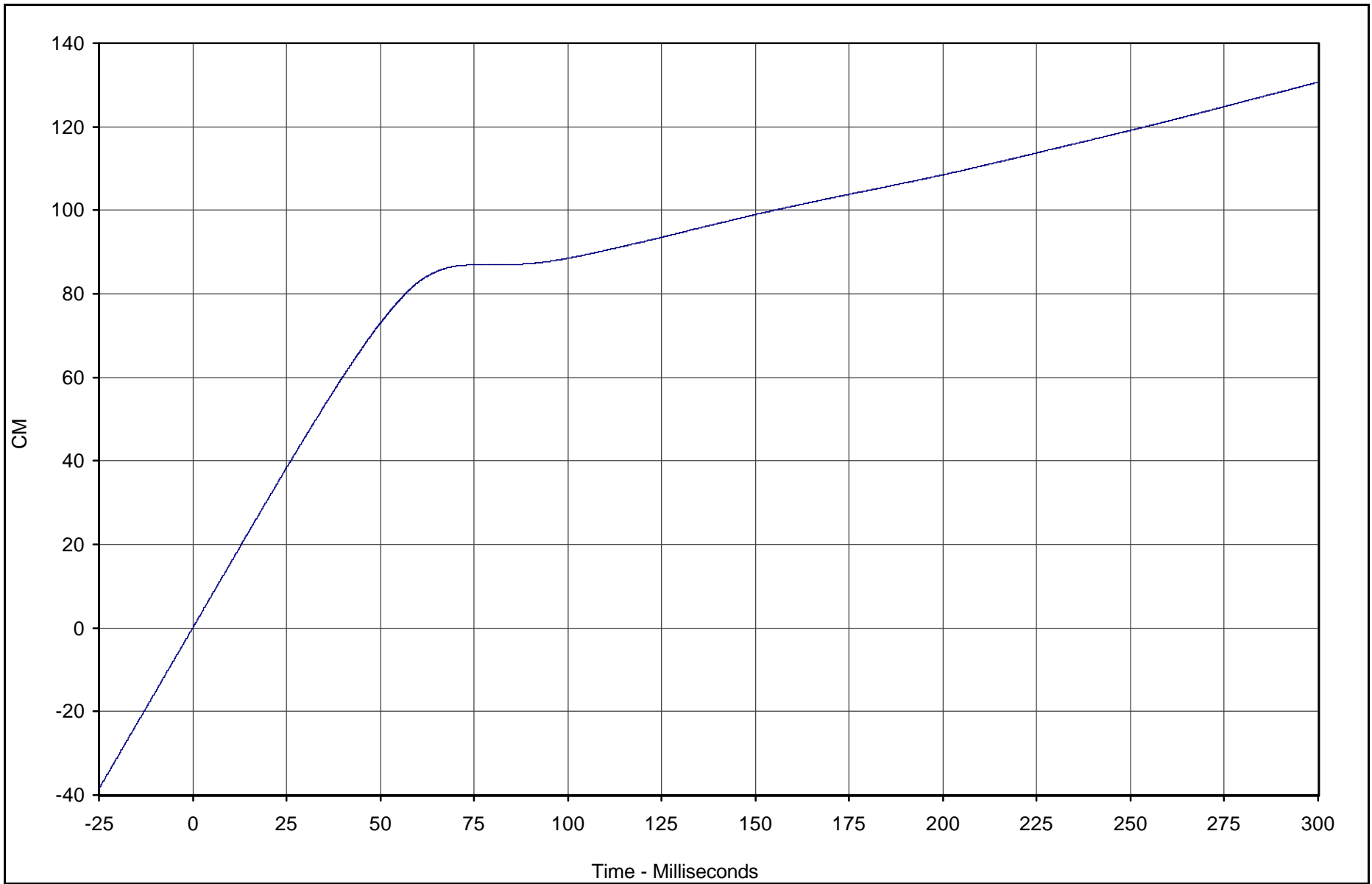


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Pelvis X Displ.	020	IN2	CM	130.7	299.9	0.0	0.0	180

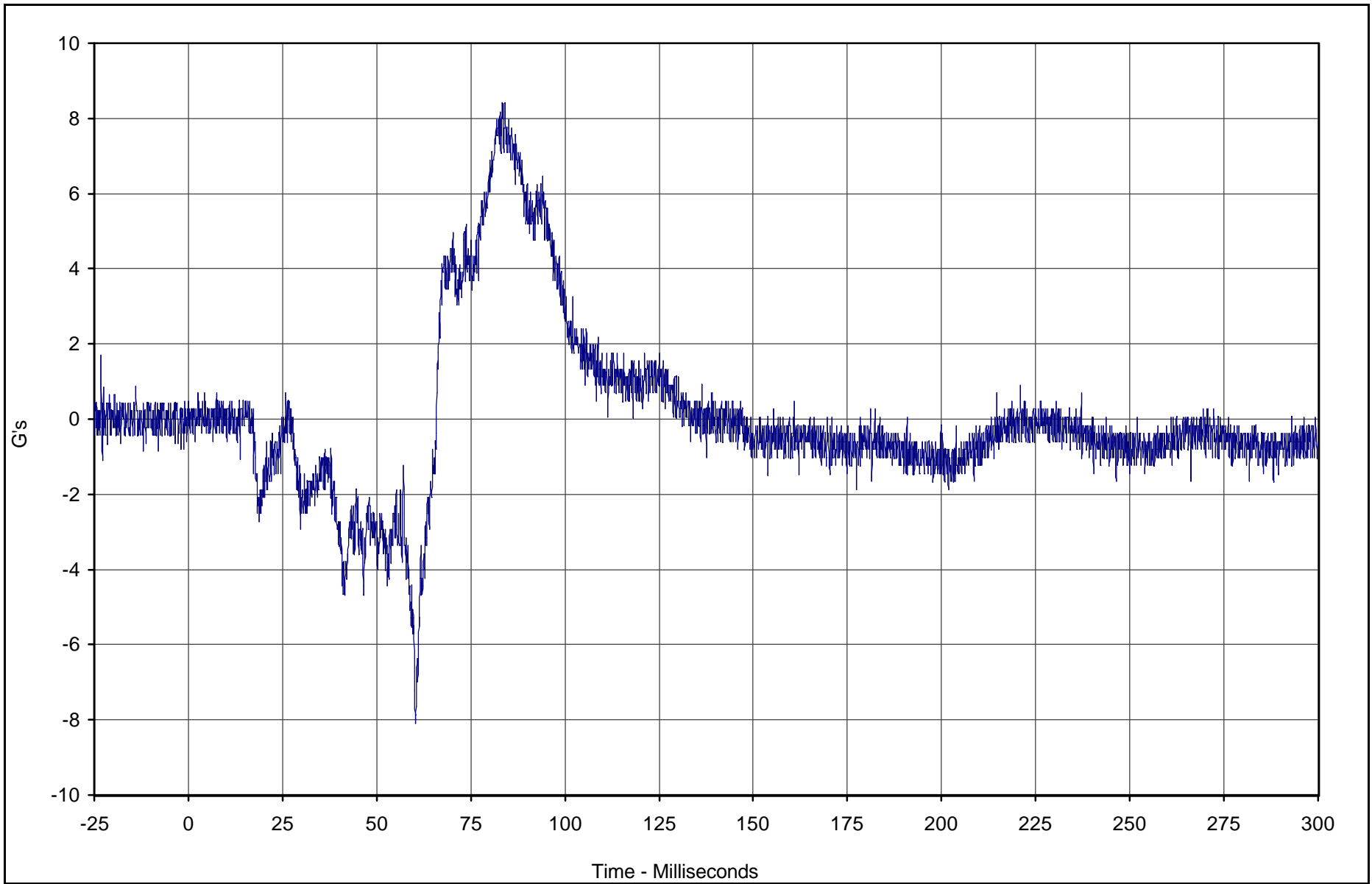


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Pelvis Y	021	FIL	G's	8.4	83.3	-8.1	60.2	1000

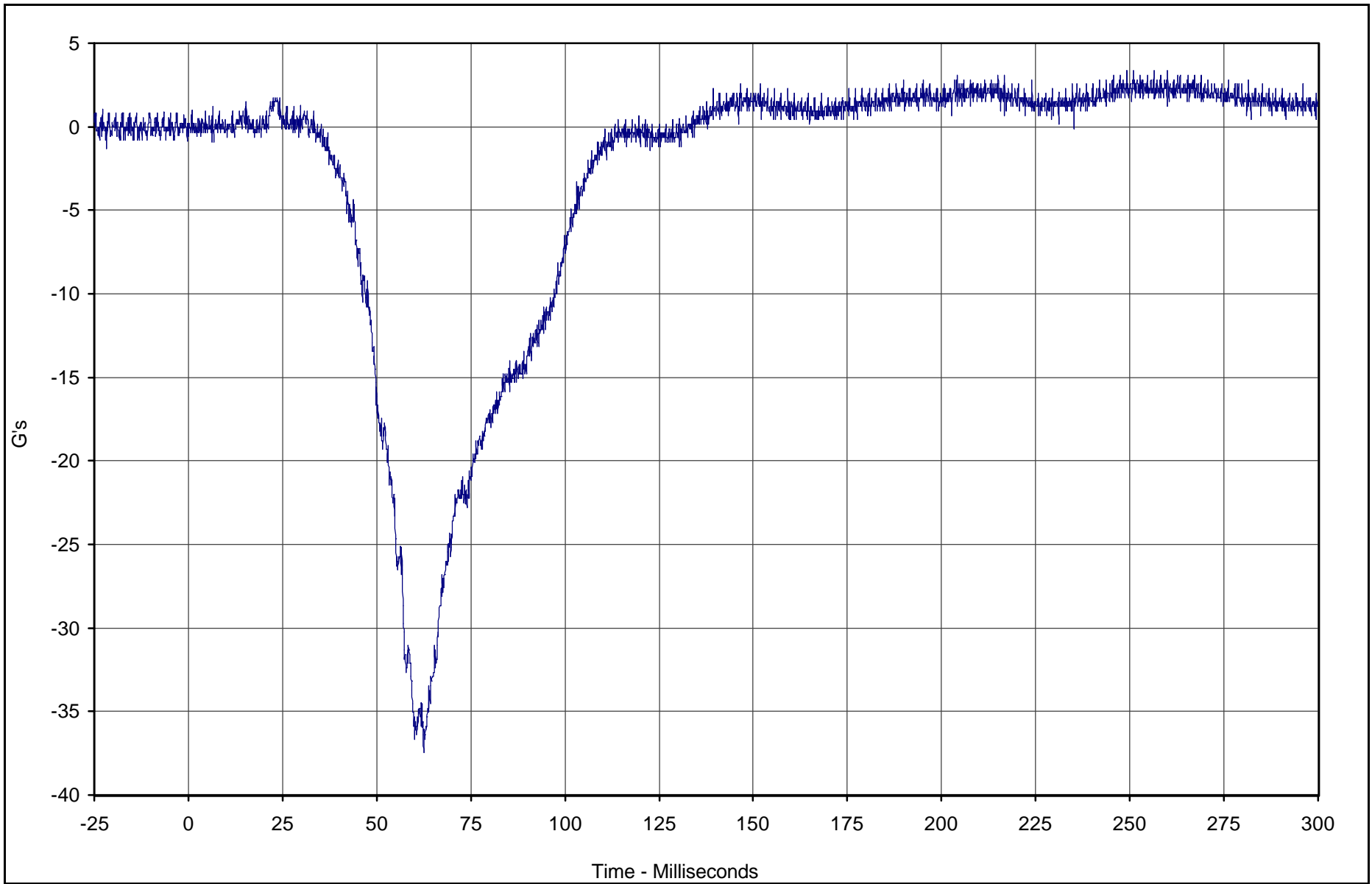


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Pelvis Z	022	FIL	G's	3.4	249.2	-37.5	62.5	1000

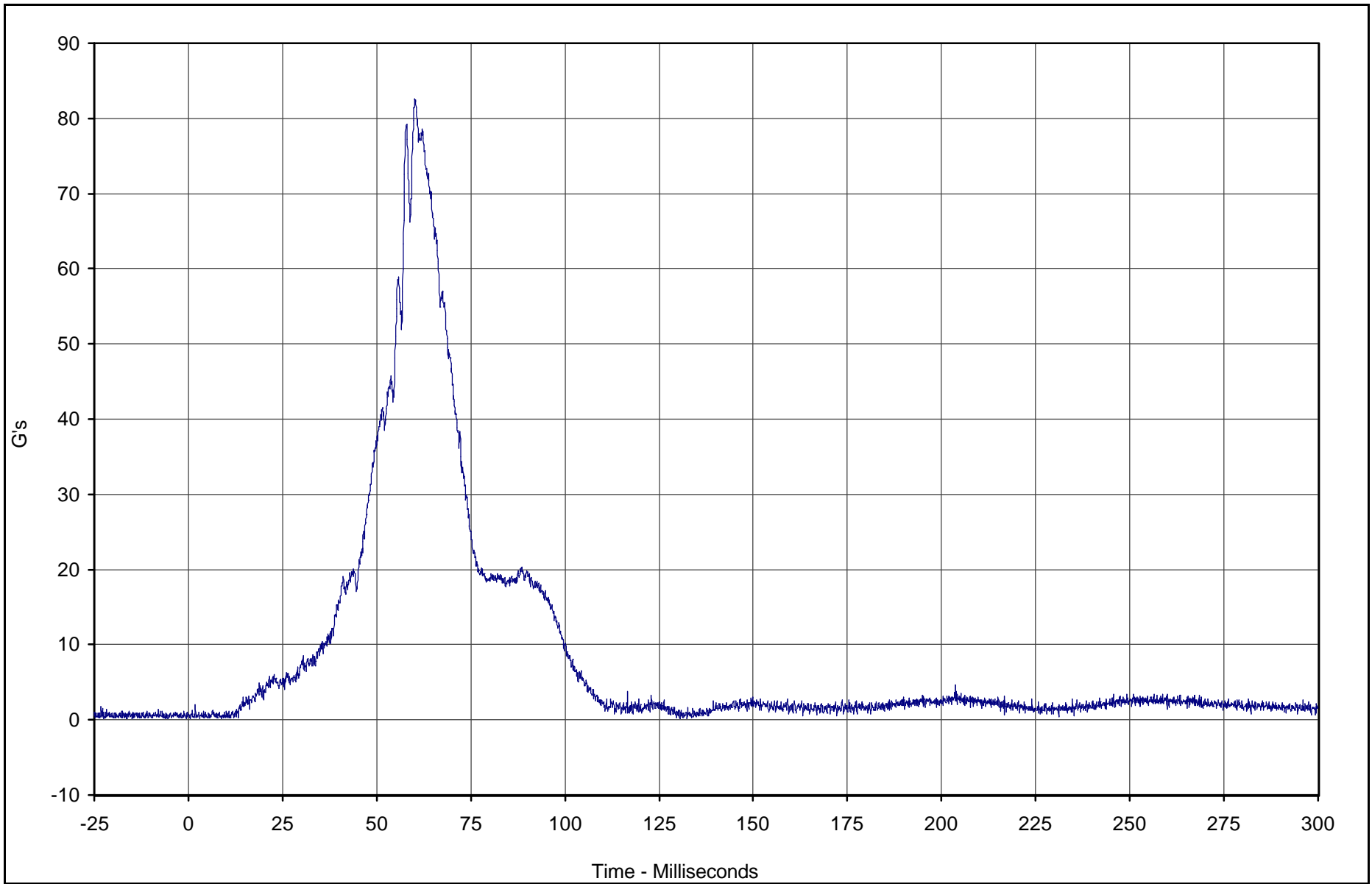


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Pelvis Resultant	023	RES	G's	82.6	60.1	0.1	0.5	1000



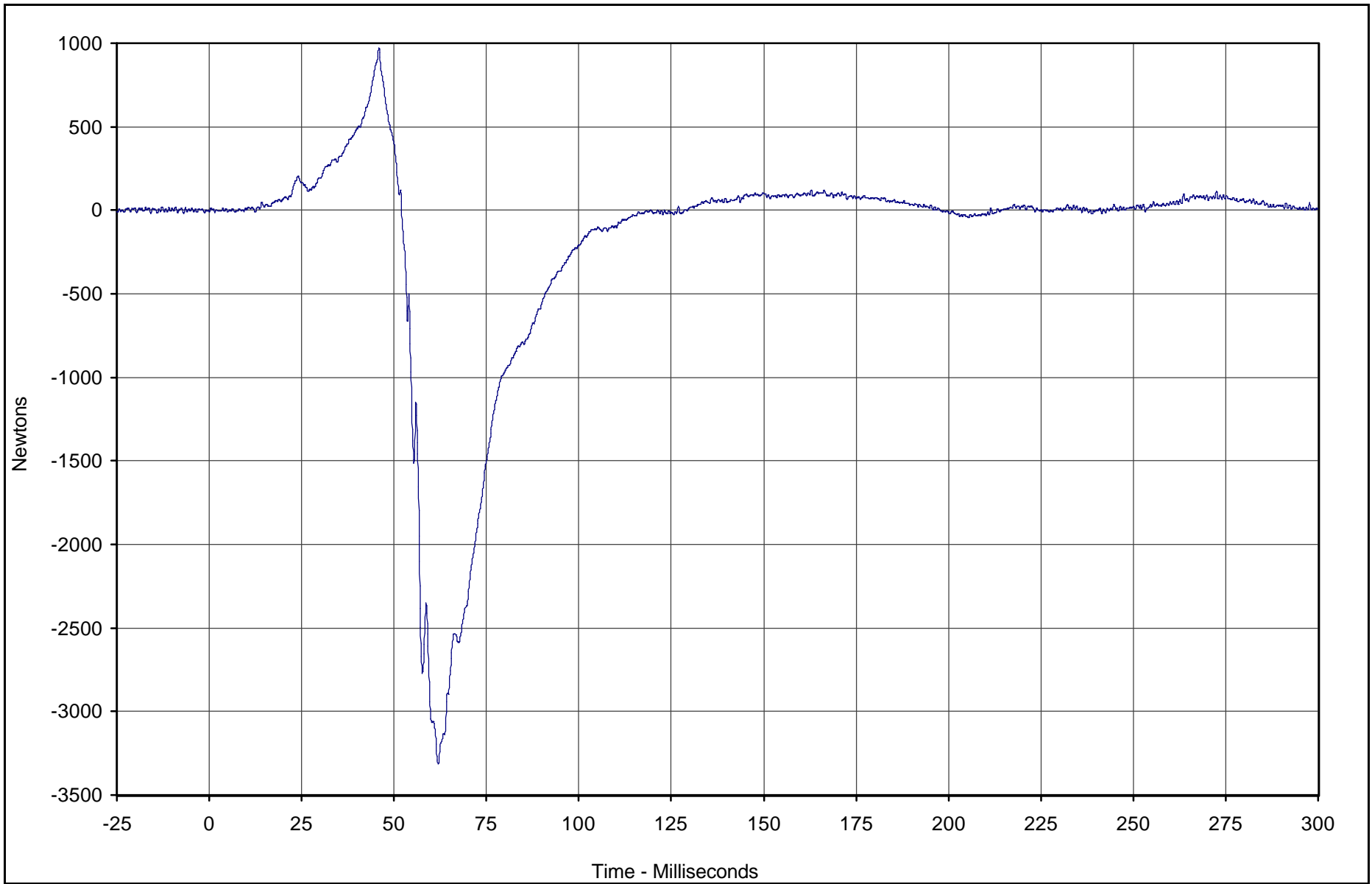
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

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Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Left Femur Force	023	FIL	Newtons	970.1	45.9	-3312.3	62.0	600



Test Vehicle: 2003 Acura MDX SUV

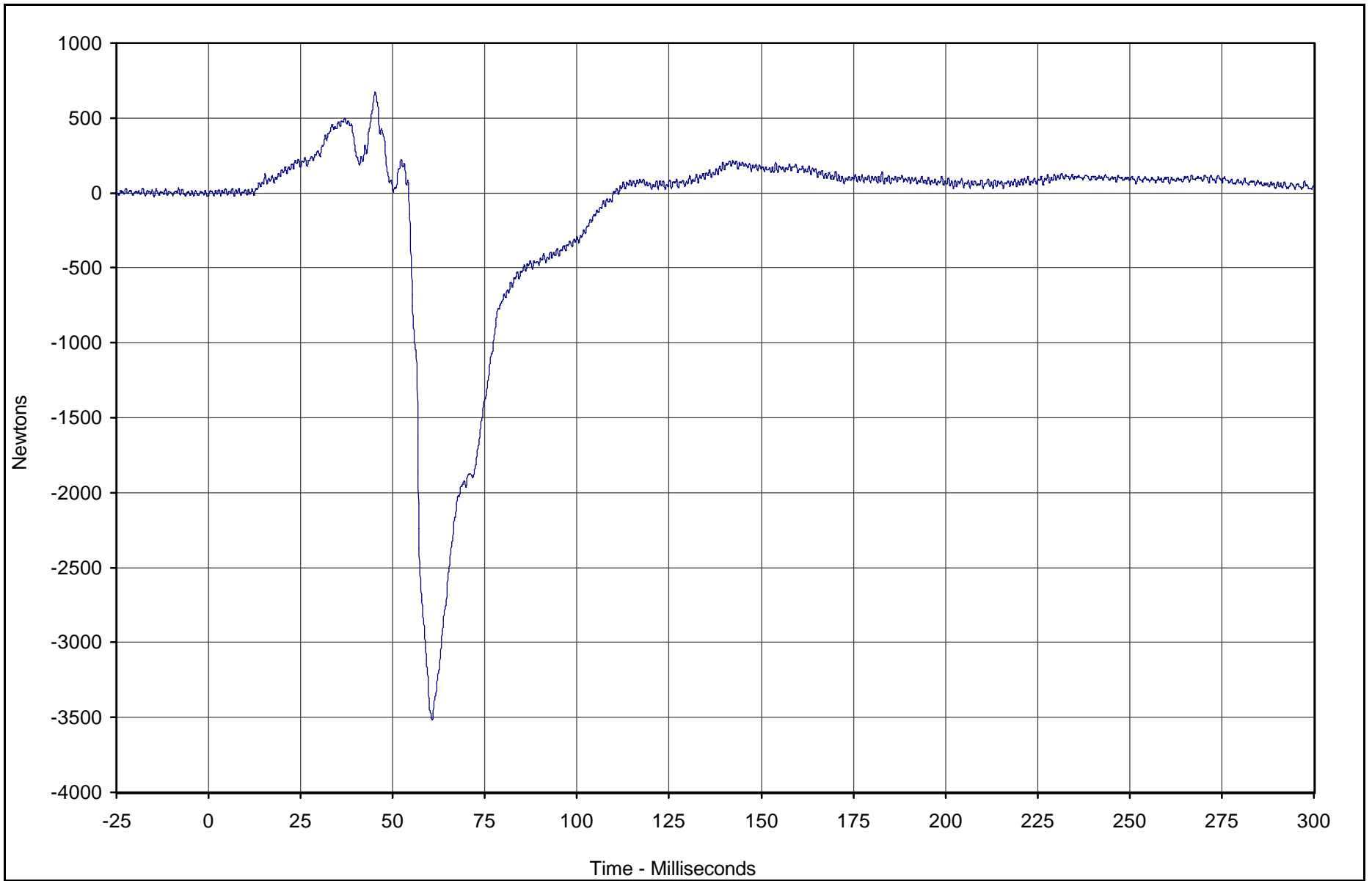
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

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Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Right Femur Force	024	FIL	Newtons	671.8	45.2	-3517.5	60.7	600



Test Vehicle: 2003 Acura MDX SUV

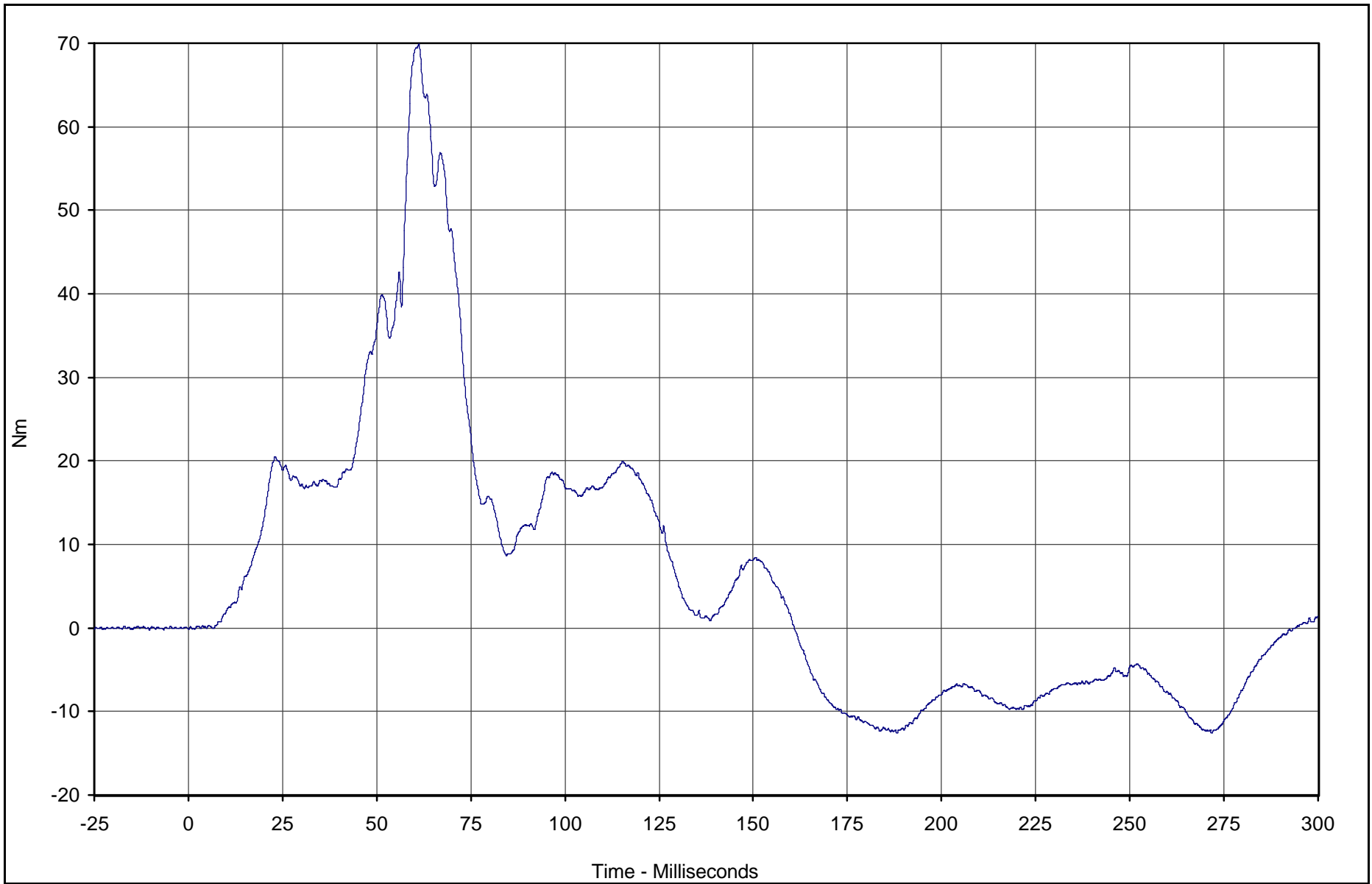
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

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B-42



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Left Upper Tibia Moment X	025	FIL	Nm	69.8	61.2	-12.6	188.2	600



Test Vehicle: 2003 Acura MDX SUV

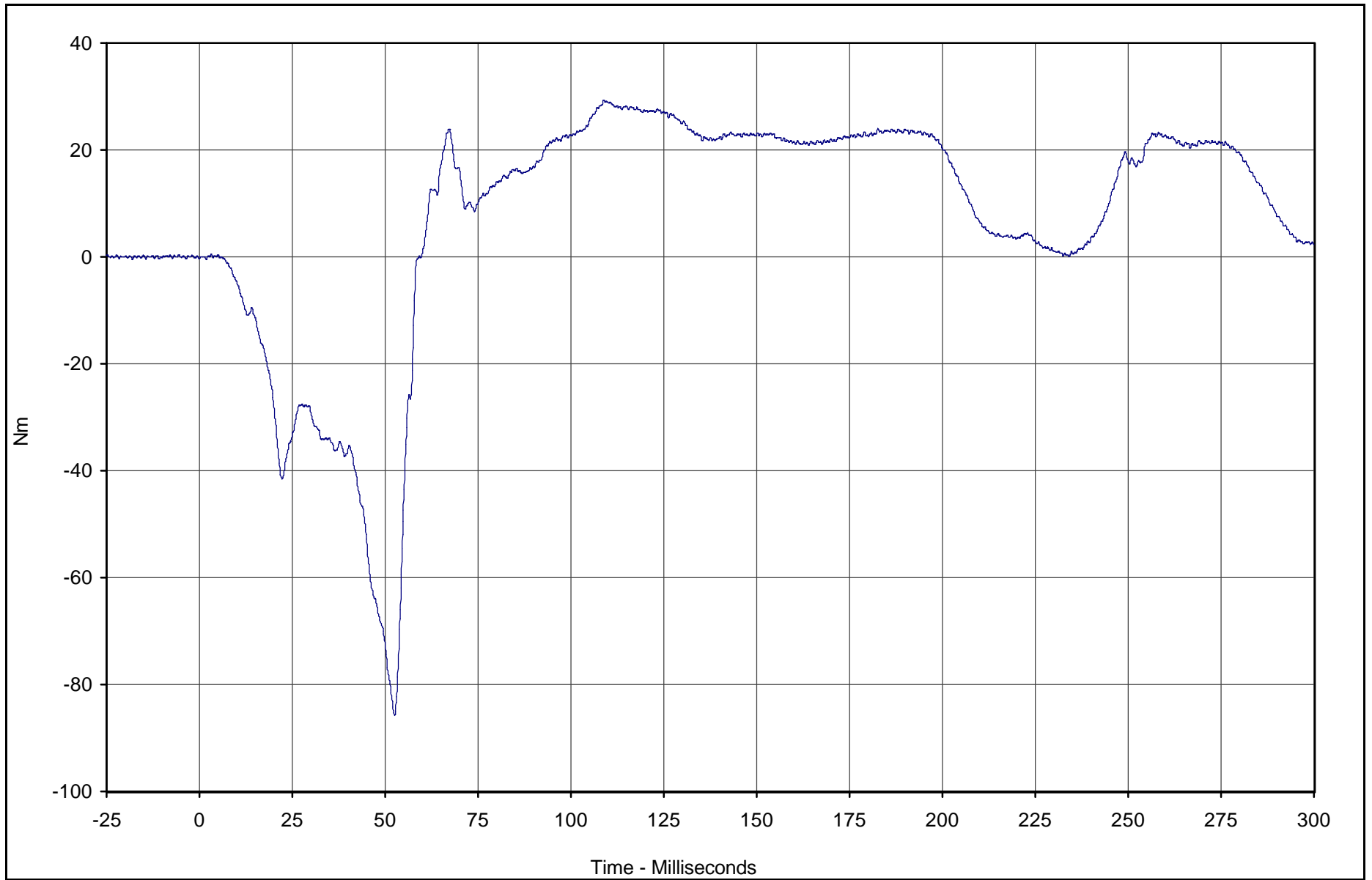
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-43



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Left Upper Tibia Moment Y	026	FIL	Nm	29.2	108.9	-85.8	52.6	600



Test Vehicle: 2003 Acura MDX SUV

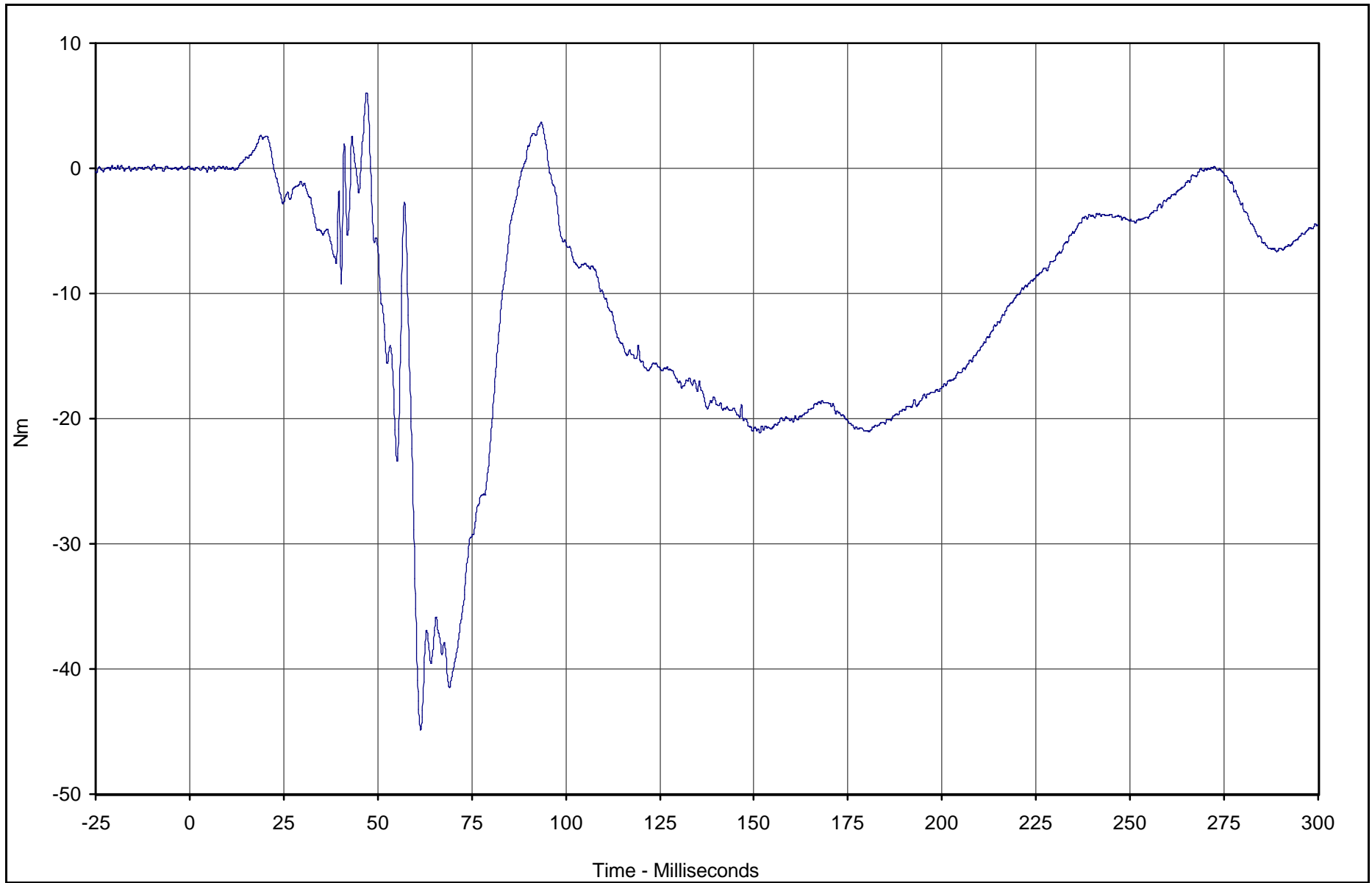
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-44



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Right Upper Tibia Moment X	027	FIL	Nm	6.1	47.1	-44.9	61.4	600



Test Vehicle: 2003 Acura MDX SUV

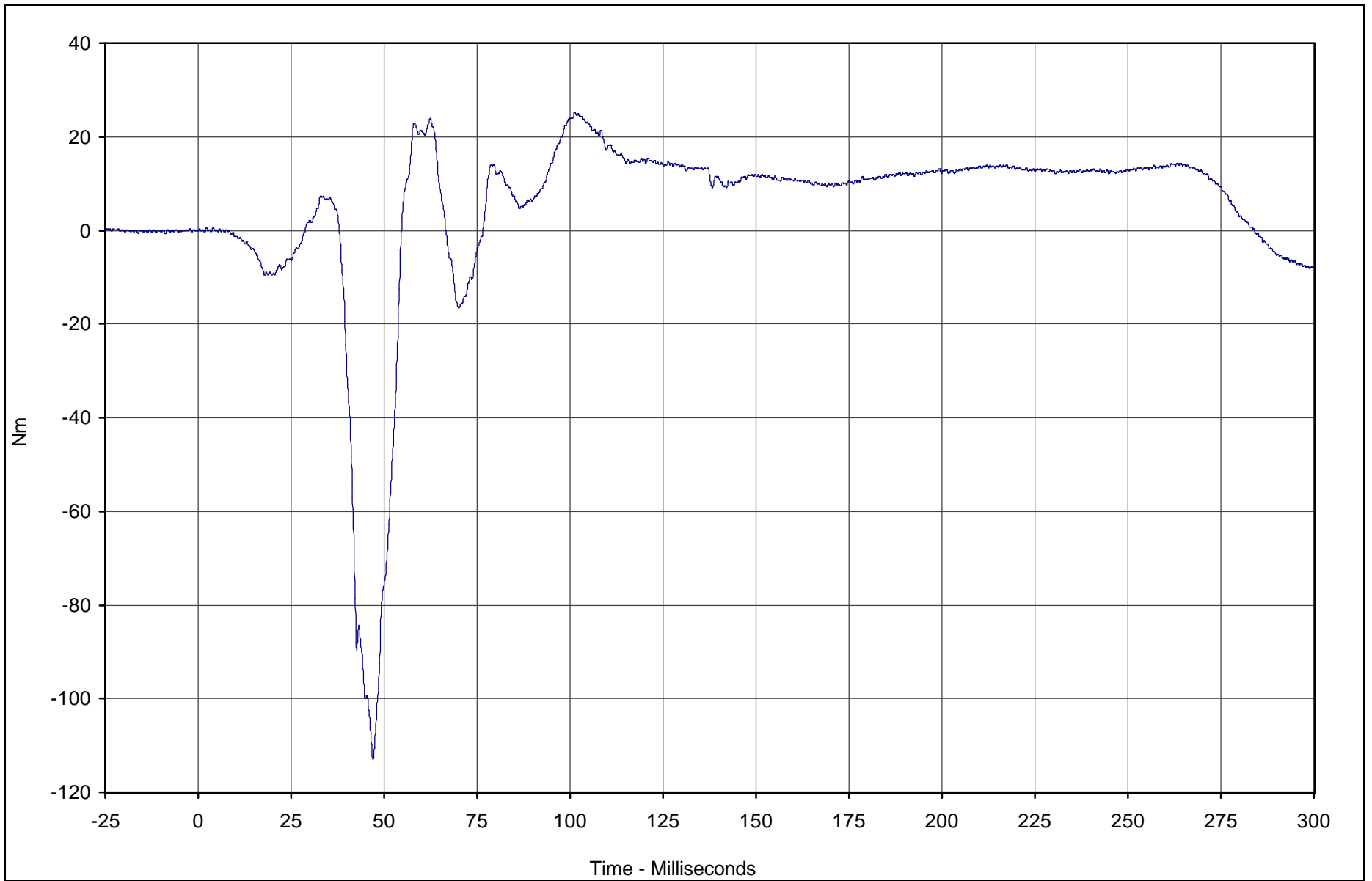
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-45



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Right Upper Tibia Moment Y	028	FIL	Nm	25.1	101.3	-113.0	47.0	600



Test Vehicle: 2003 Acura MDX SUV

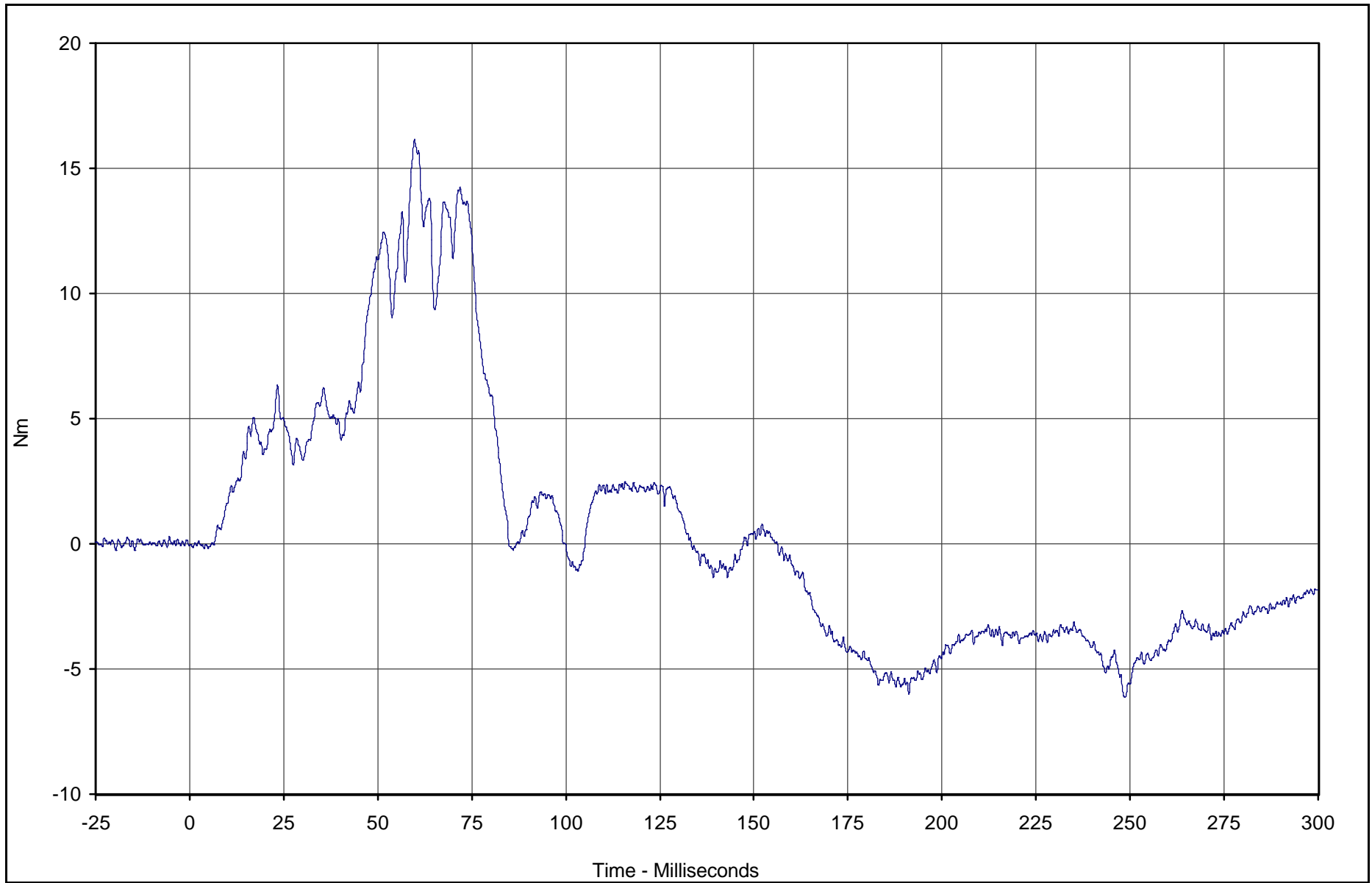
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-46



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Left Lower Tibia Moment X	029	FIL	Nm	16.2	59.8	-6.1	248.7	600



Test Vehicle: 2003 Acura MDX SUV

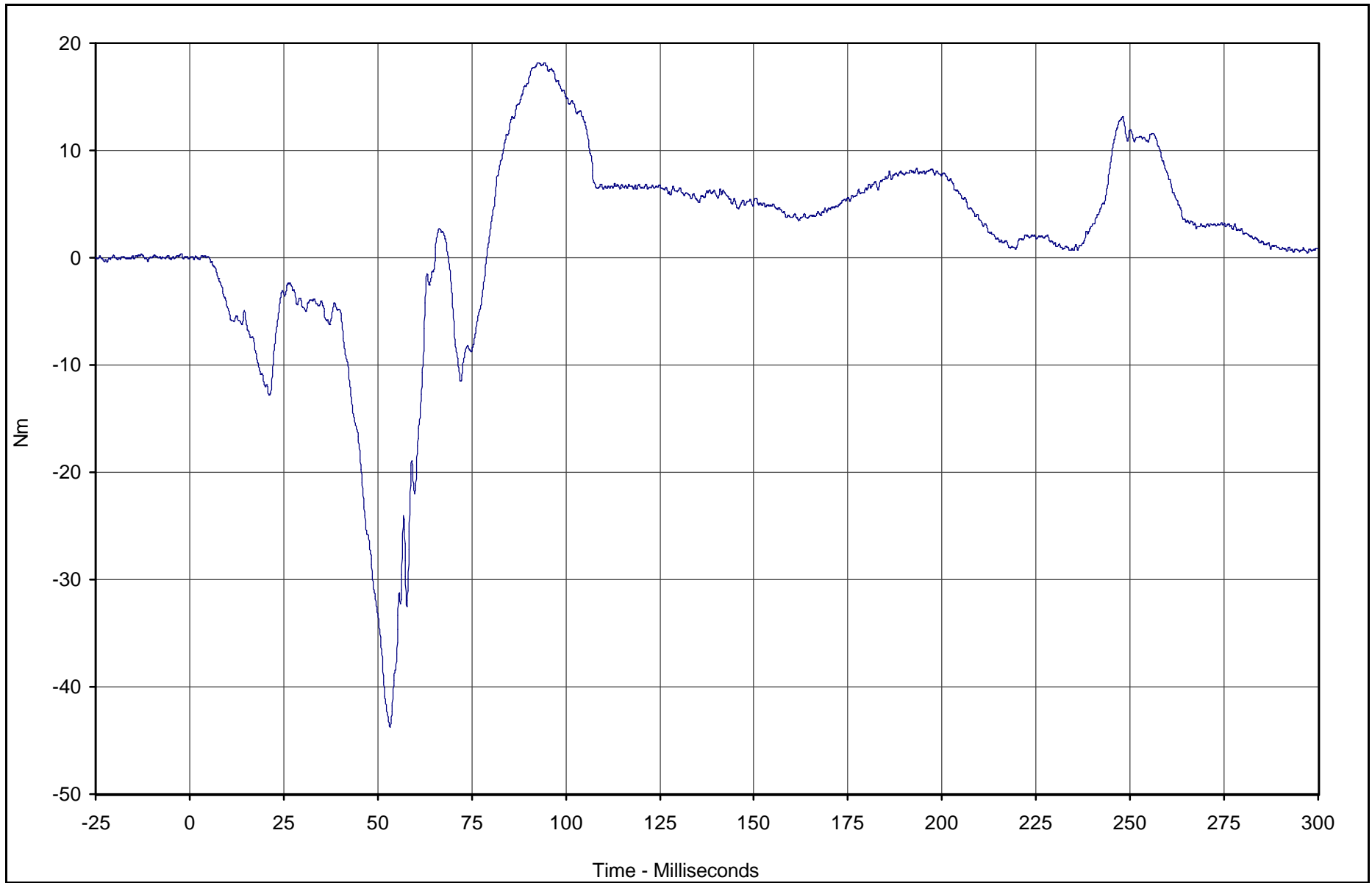
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-47



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Left Lower Tibia Moment Y	030	FIL	Nm	18.1	92.6	-43.8	53.3	600



Test Vehicle: 2003 Acura MDX SUV

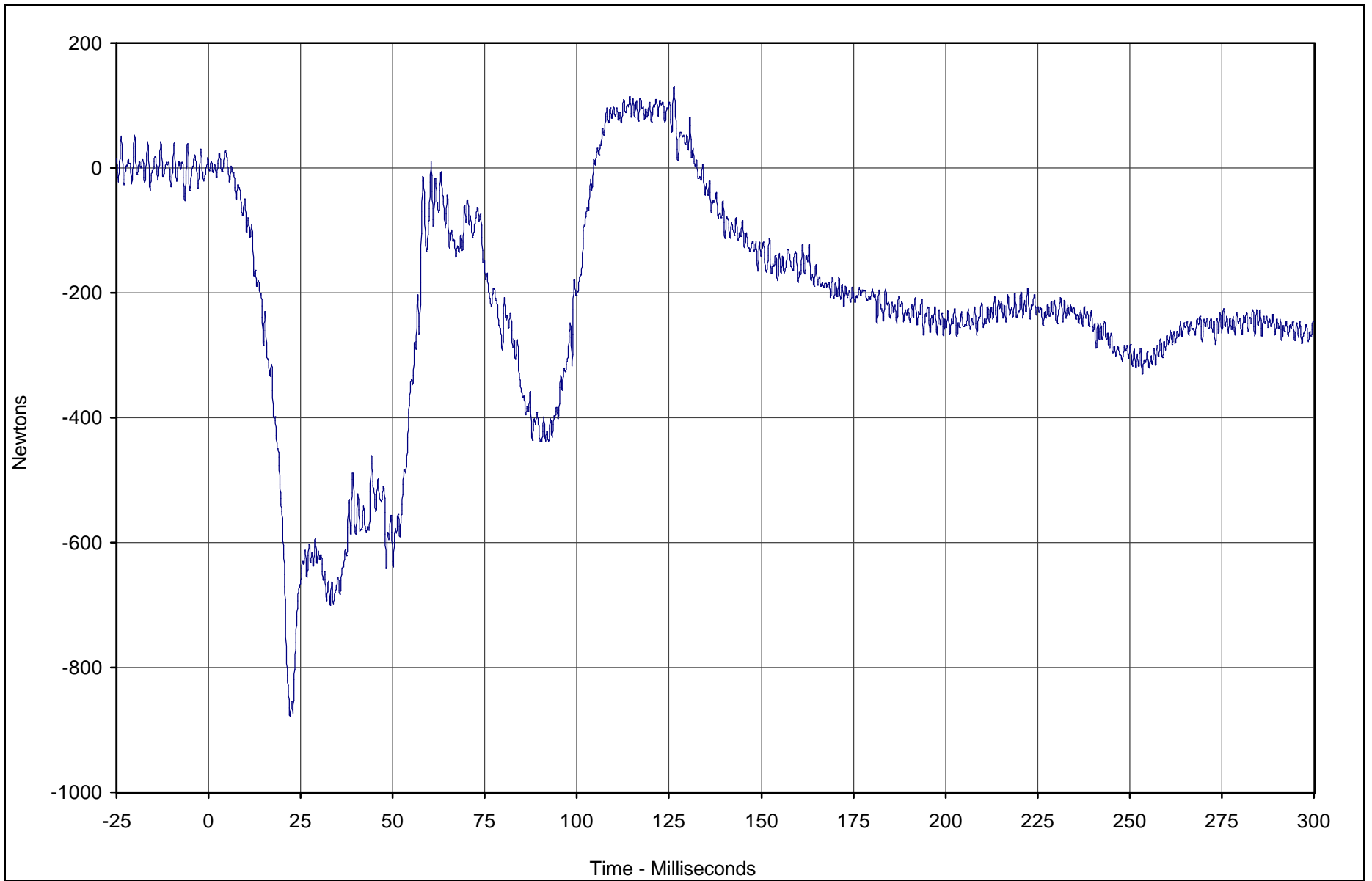
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-48



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Left Lower Tibia Force Z	031	FIL	Newtons	131.4	126.3	-878.5	22.1	600



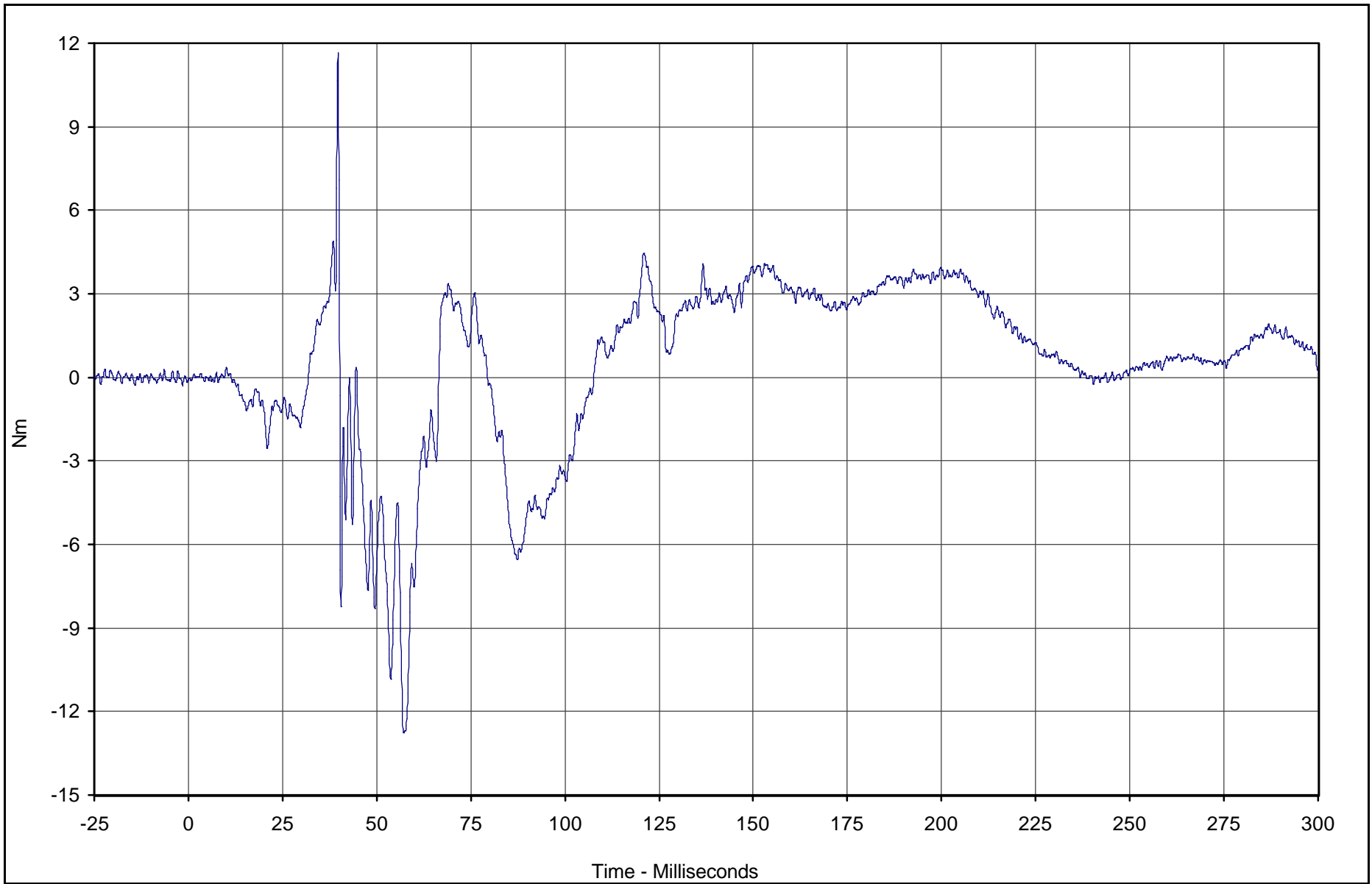
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Right Lower Tibia Moment X	032	FIL	Nm	11.7	39.7	-12.8	57.2	600



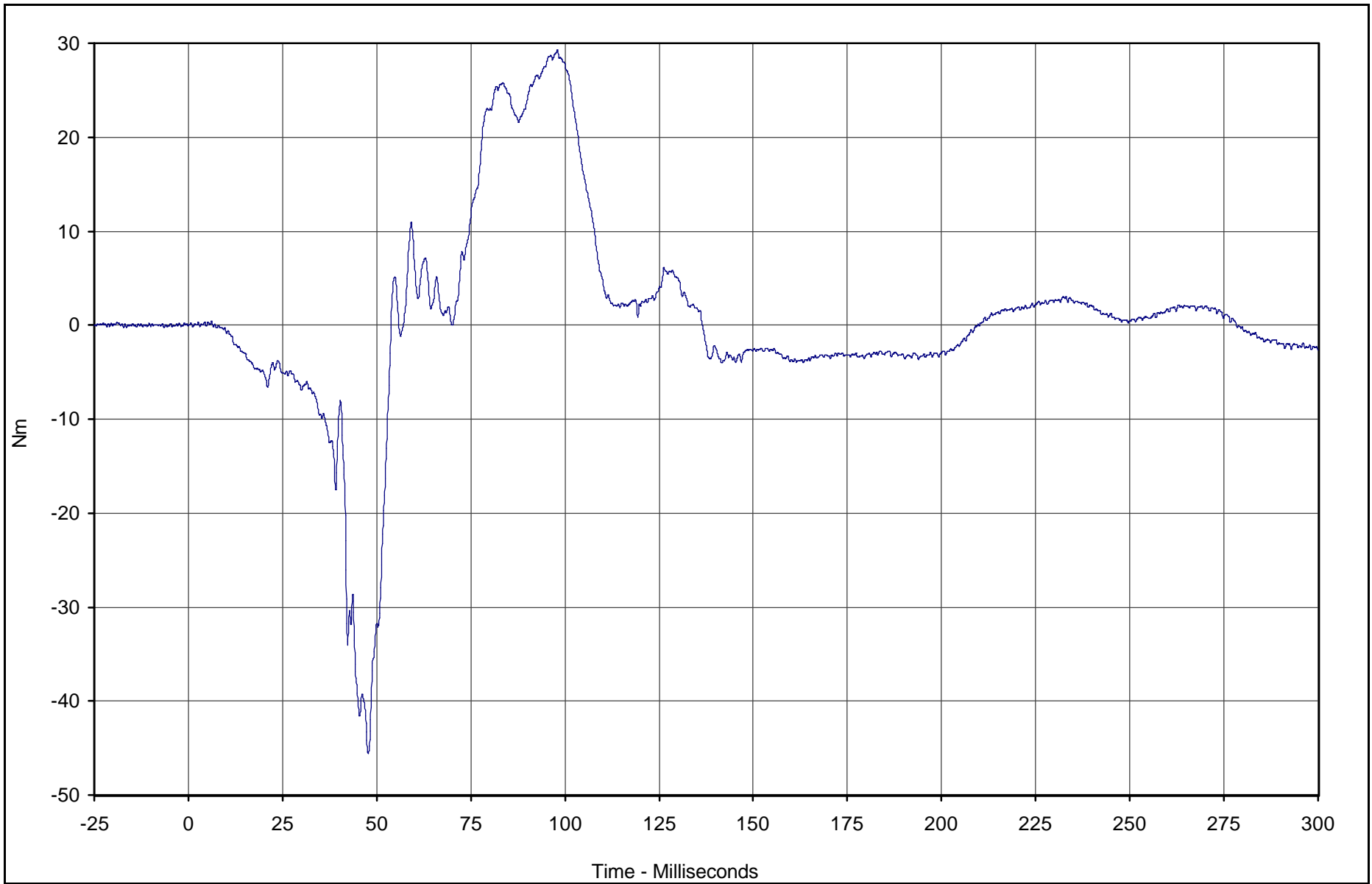
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-50



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Right Lower Tibia Moment Y	033	FIL	Nm	29.3	98.0	-45.6	47.8	600



Test Vehicle: 2003 Acura MDX SUV

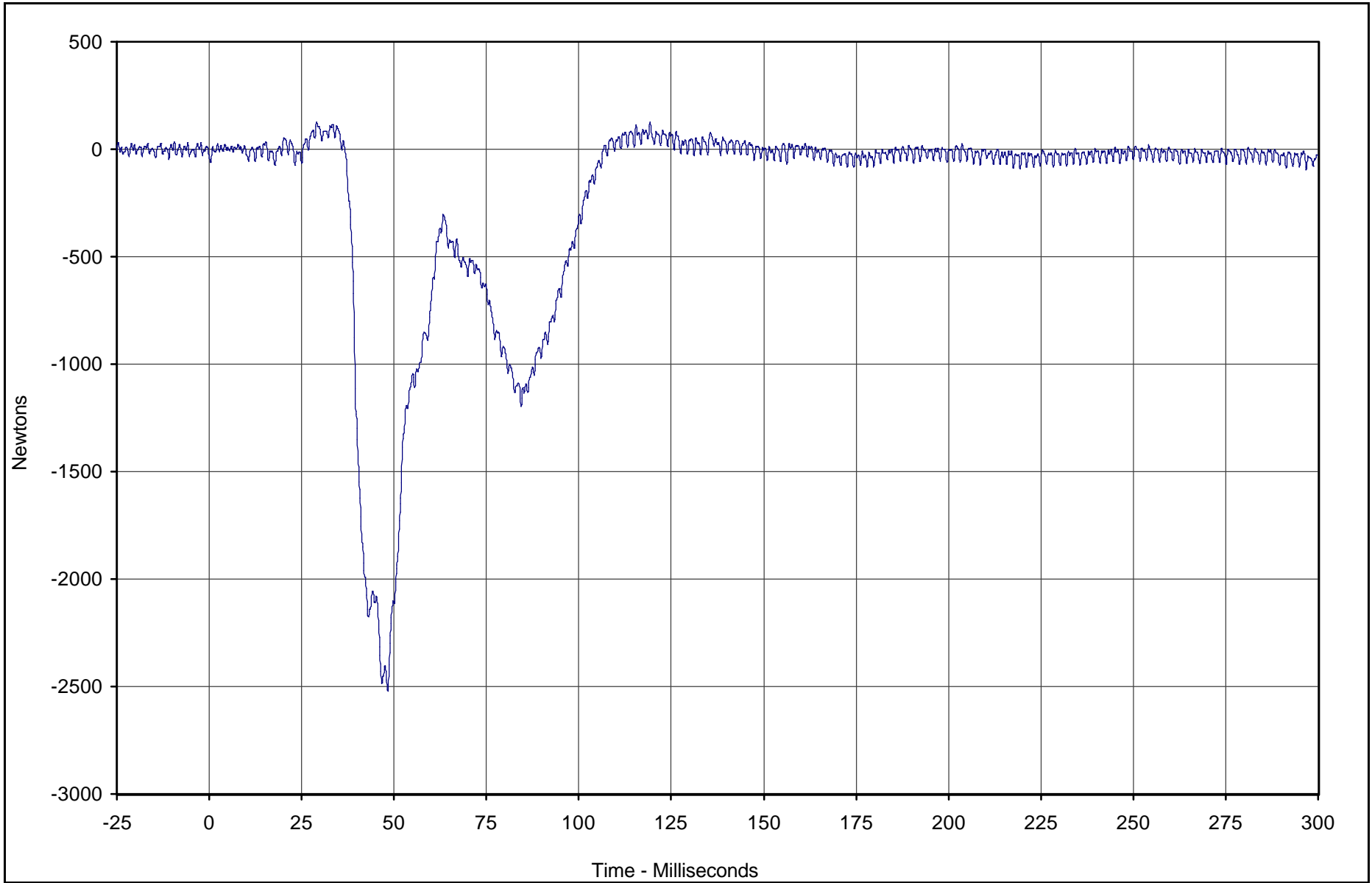
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-51



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Right Lower Tibia Force Z	034	FIL	Newtons	129.3	119.3	-2524.0	48.3	600



Test Vehicle: 2003 Acura MDX SUV

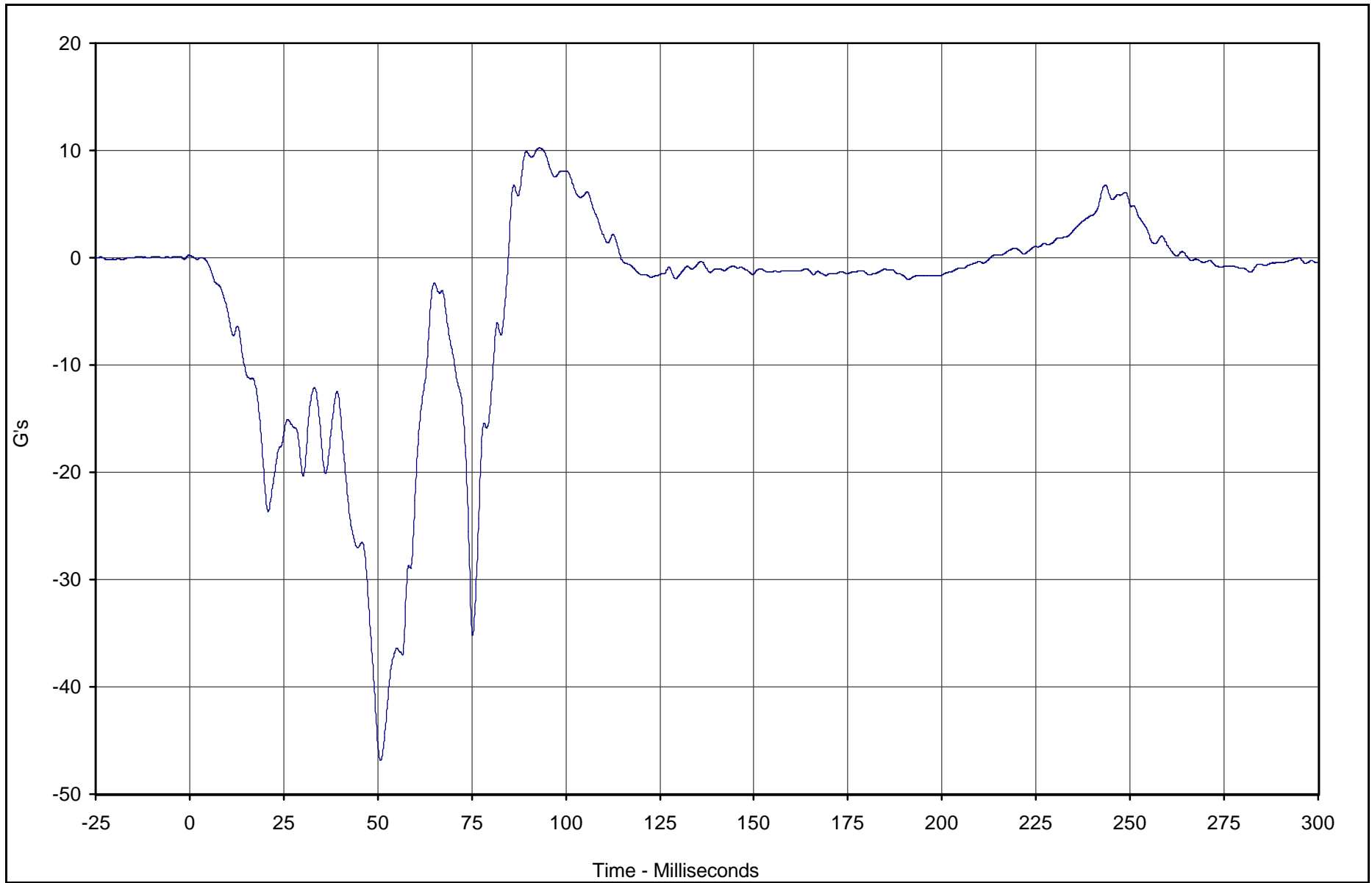
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-52



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Left Foot Aft X	035	FIL	G's	10.2	93.1	-46.8	50.8	180

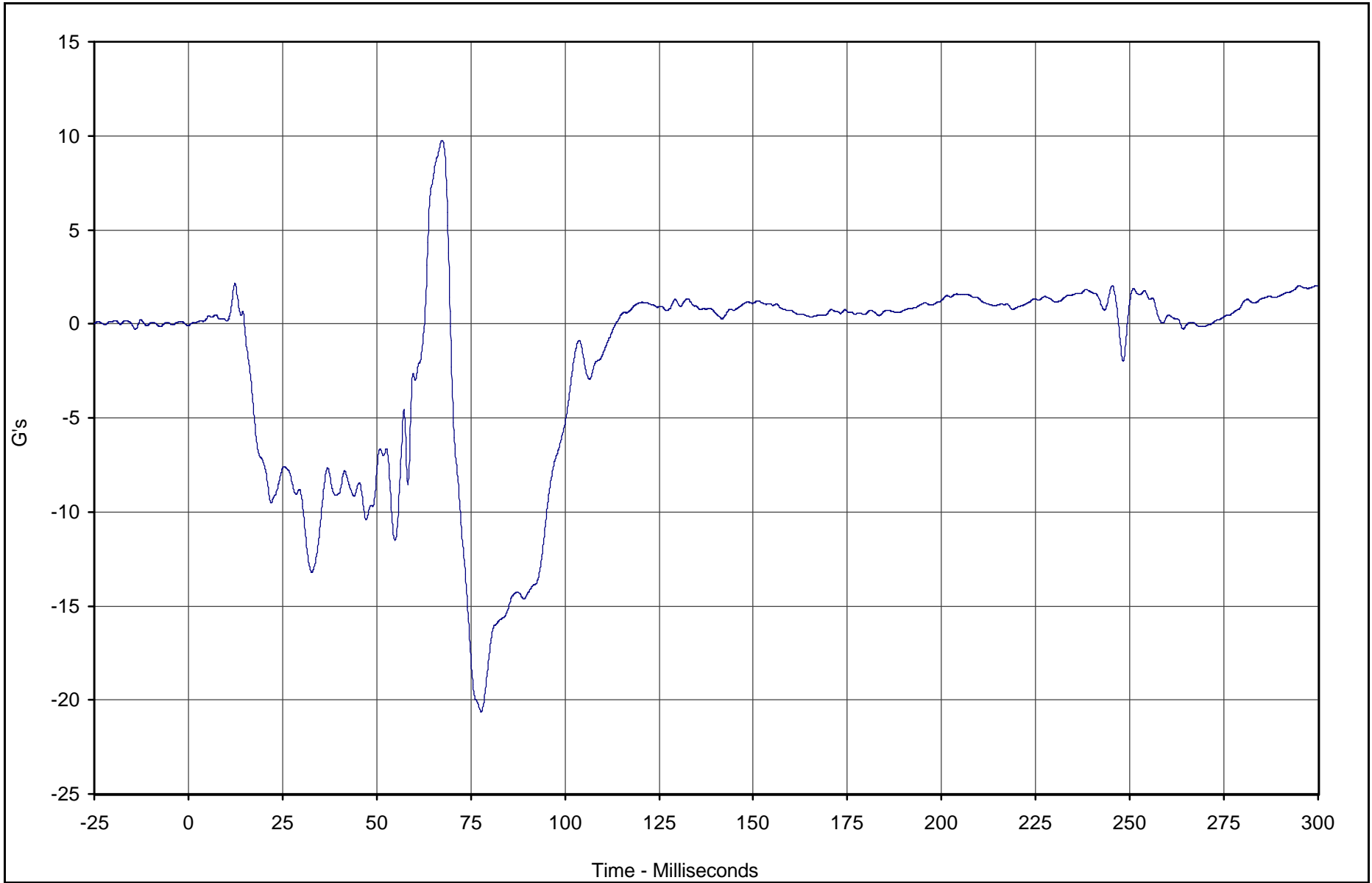


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Left Foot Aft Z	036	FIL	G's	9.7	67.4	-20.6	77.8	180

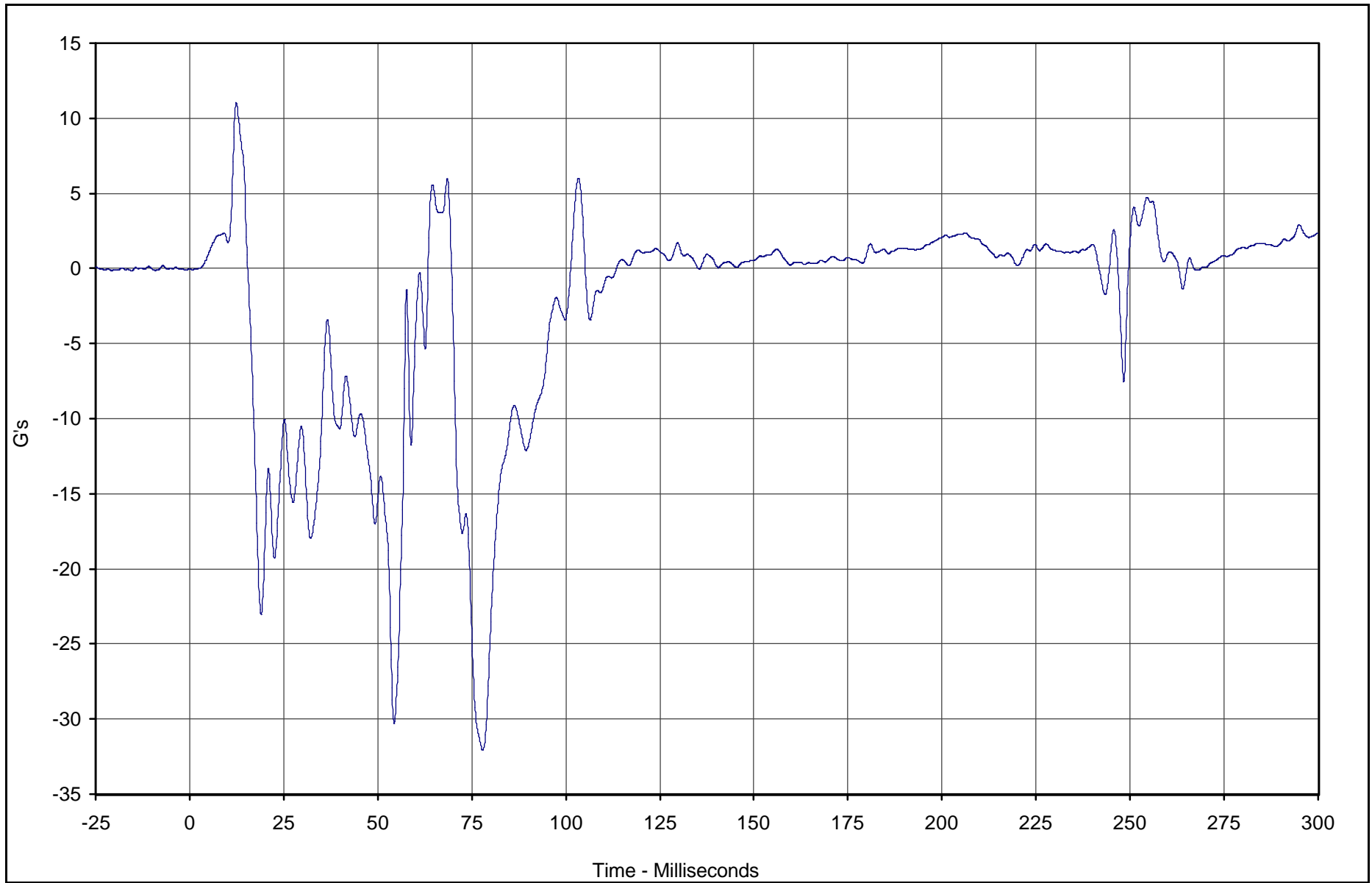


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Left Foot Fore Z	037	FIL	G's	11.1	12.4	-32.1	77.9	180



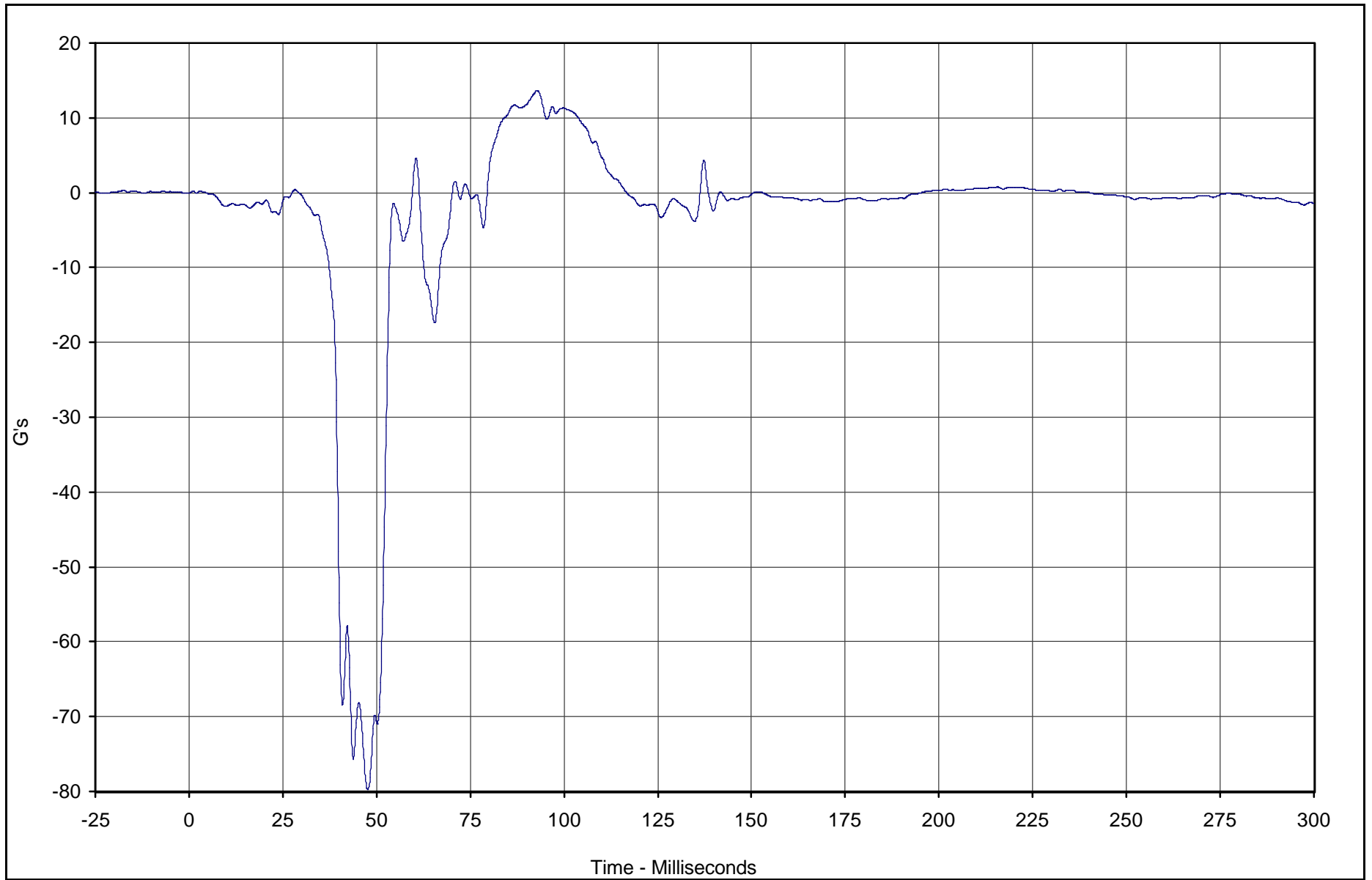
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-55



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Right Foot Aft X	038	FIL	G's	13.6	92.8	-79.8	47.7	180



Test Vehicle: 2003 Acura MDX SUV

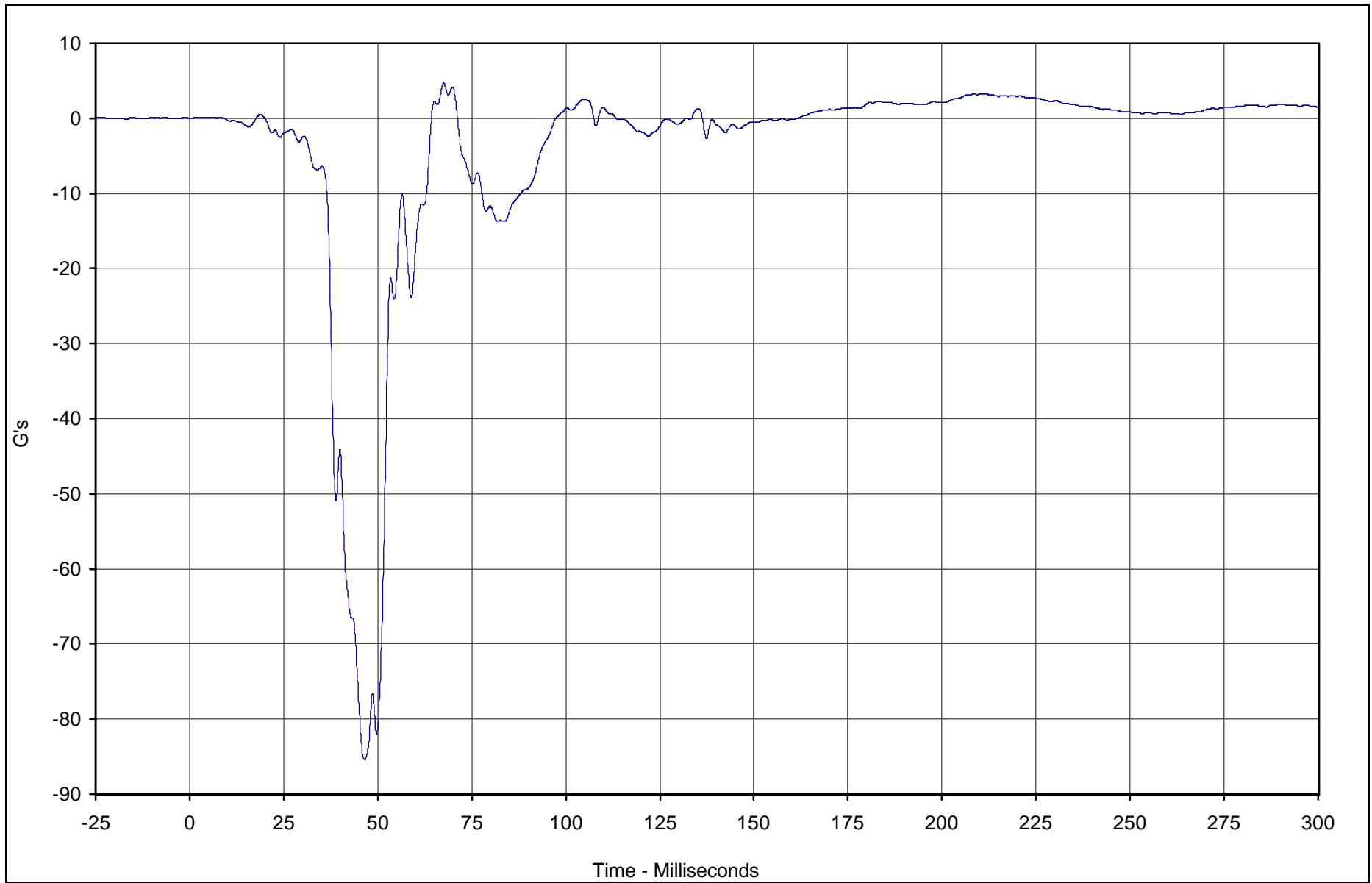
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-56



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Right Foot Aft Z	039	FIL	G's	4.7	67.5	-85.4	46.5	180



Test Vehicle: 2003 Acura MDX SUV

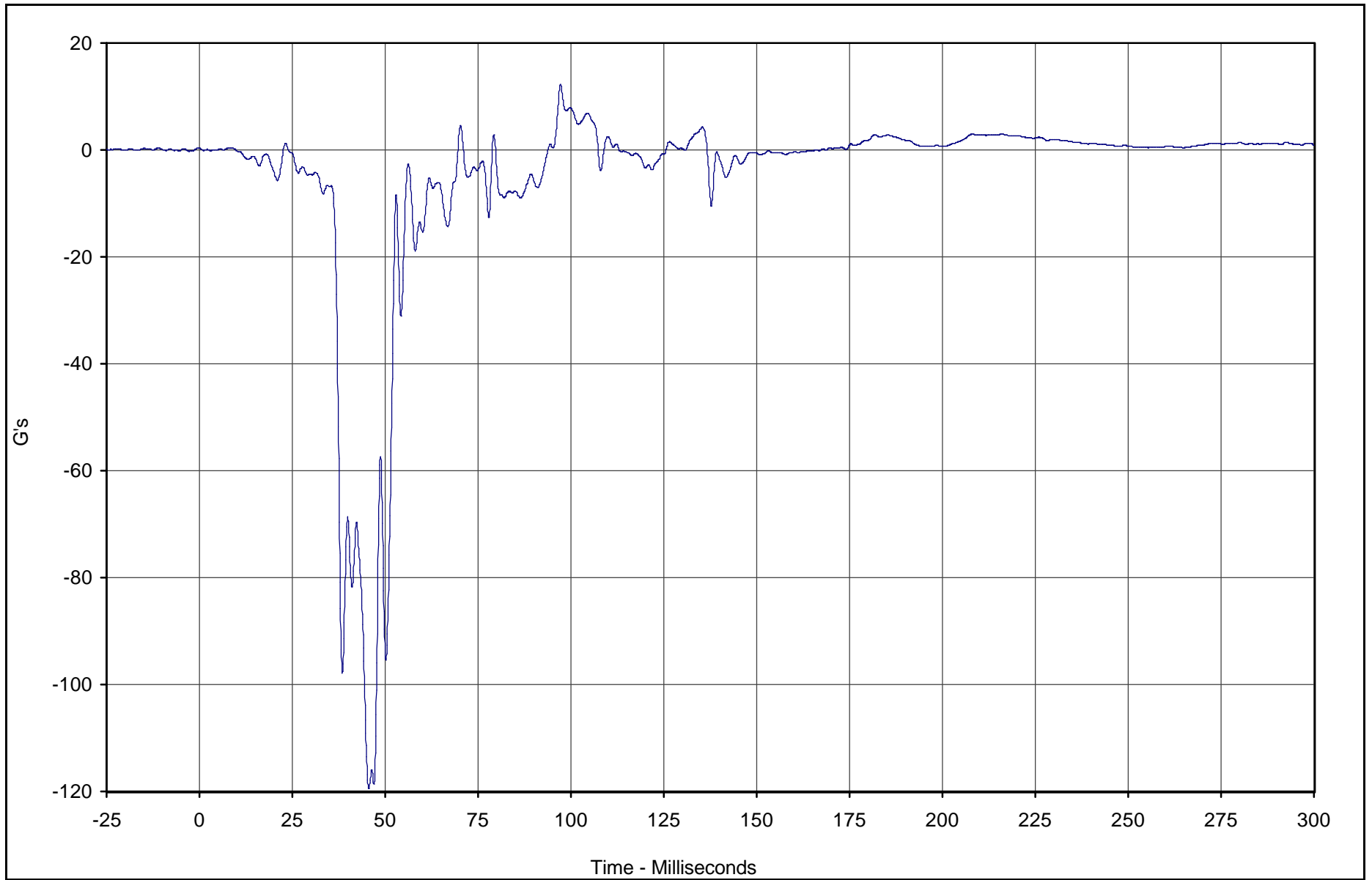
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-57



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Right Foot Fore Z	040	FIL	G's	12.3	97.2	-119.4	45.6	180



Test Vehicle: 2003 Acura MDX SUV

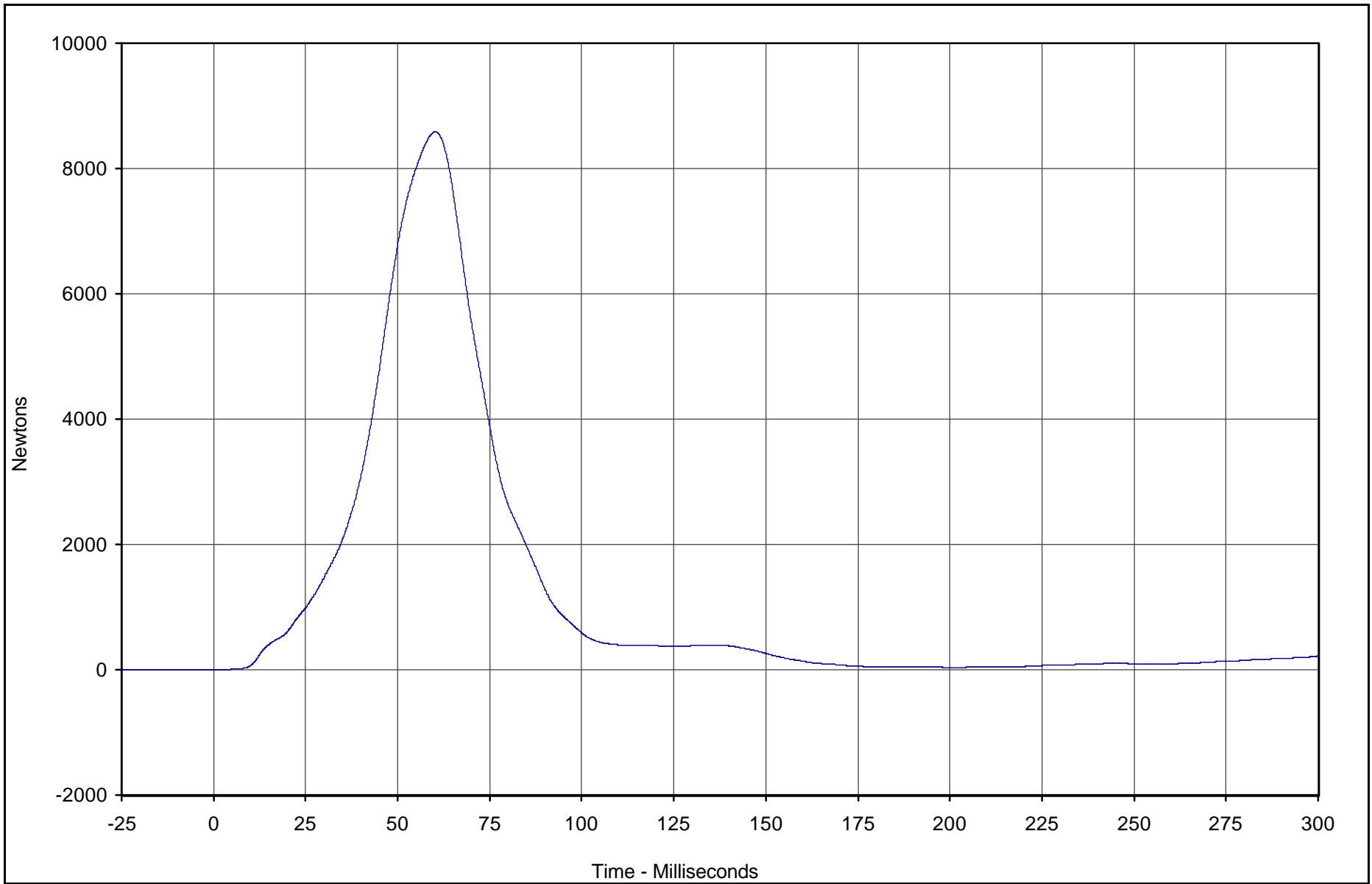
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-58



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Lap Belt Force	041	FIL	Newtons	8583.8	60.2	1.6	0.0	60



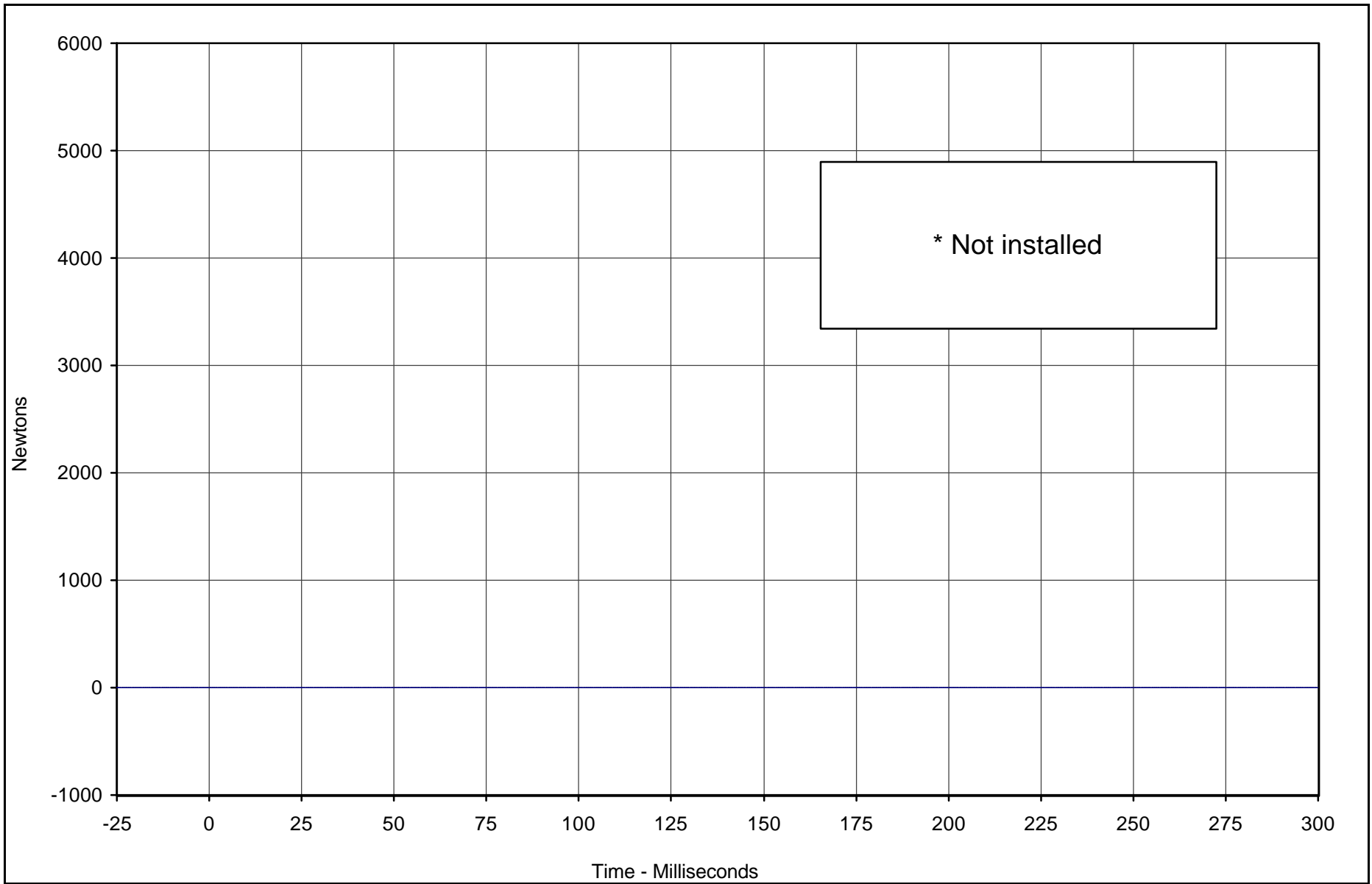
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC



* Not installed

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Shoulder Belt Force	042	FIL	Newtons	0.0	0.0	0.0	0.0	60



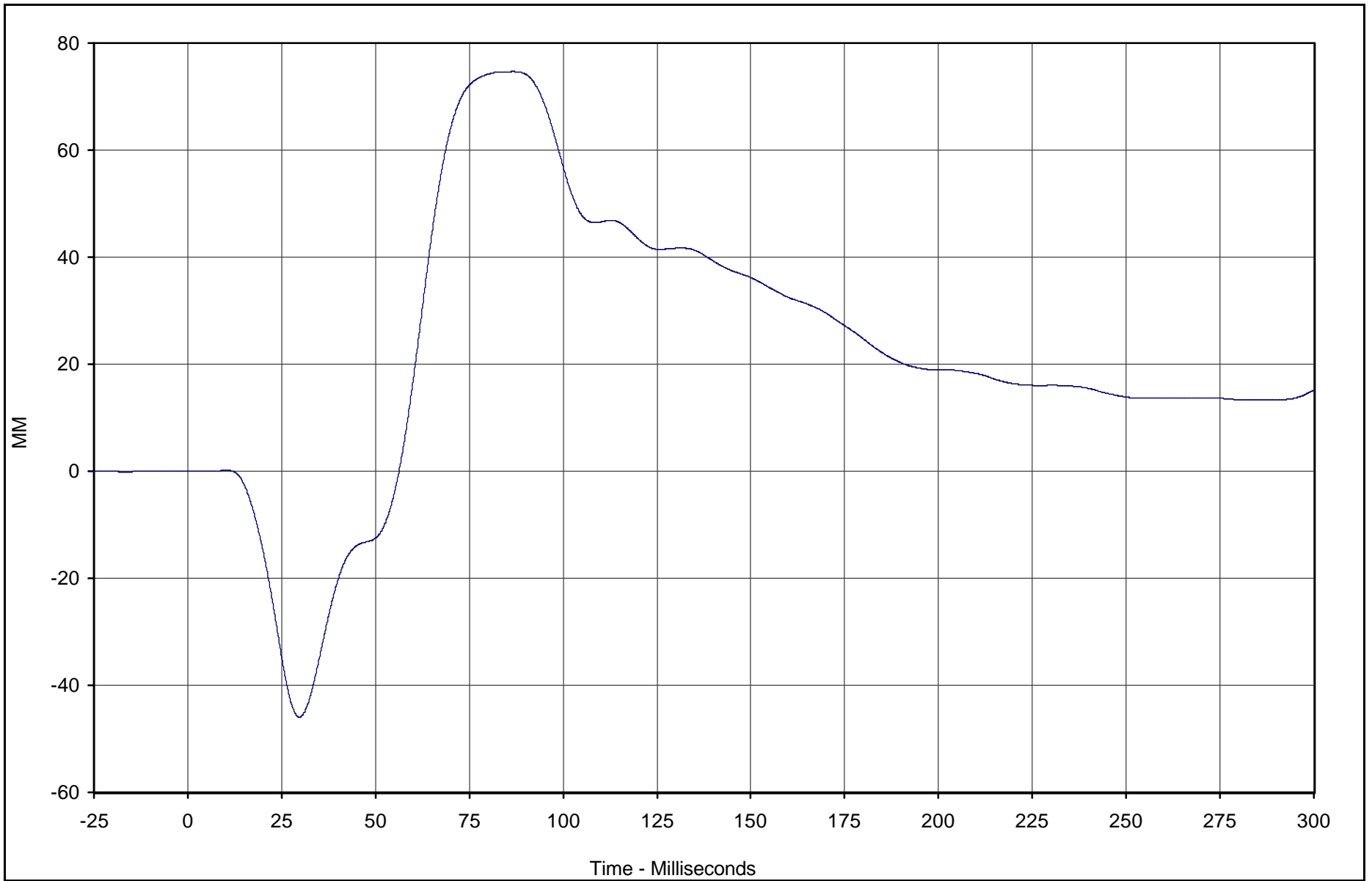
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-60



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Shoulder Belt Pullout	043	FIL	MM	74.7	86.7	-46.0	29.8	60



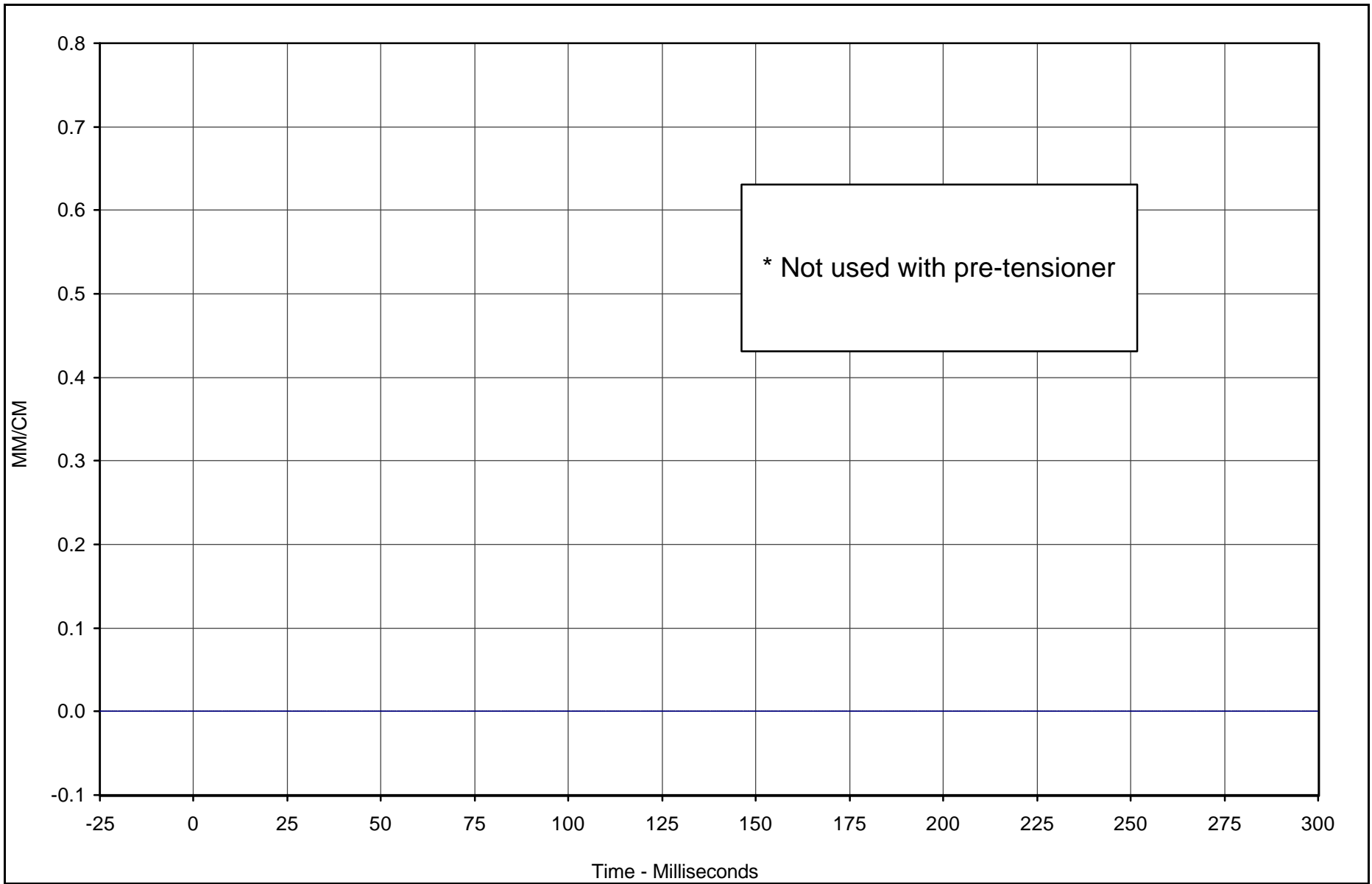
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC



* Not used with pre-tensioner

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Shoulder Belt Elongation	044	FIL	MM/CM	0.00	0.0	0.00	0.0	60



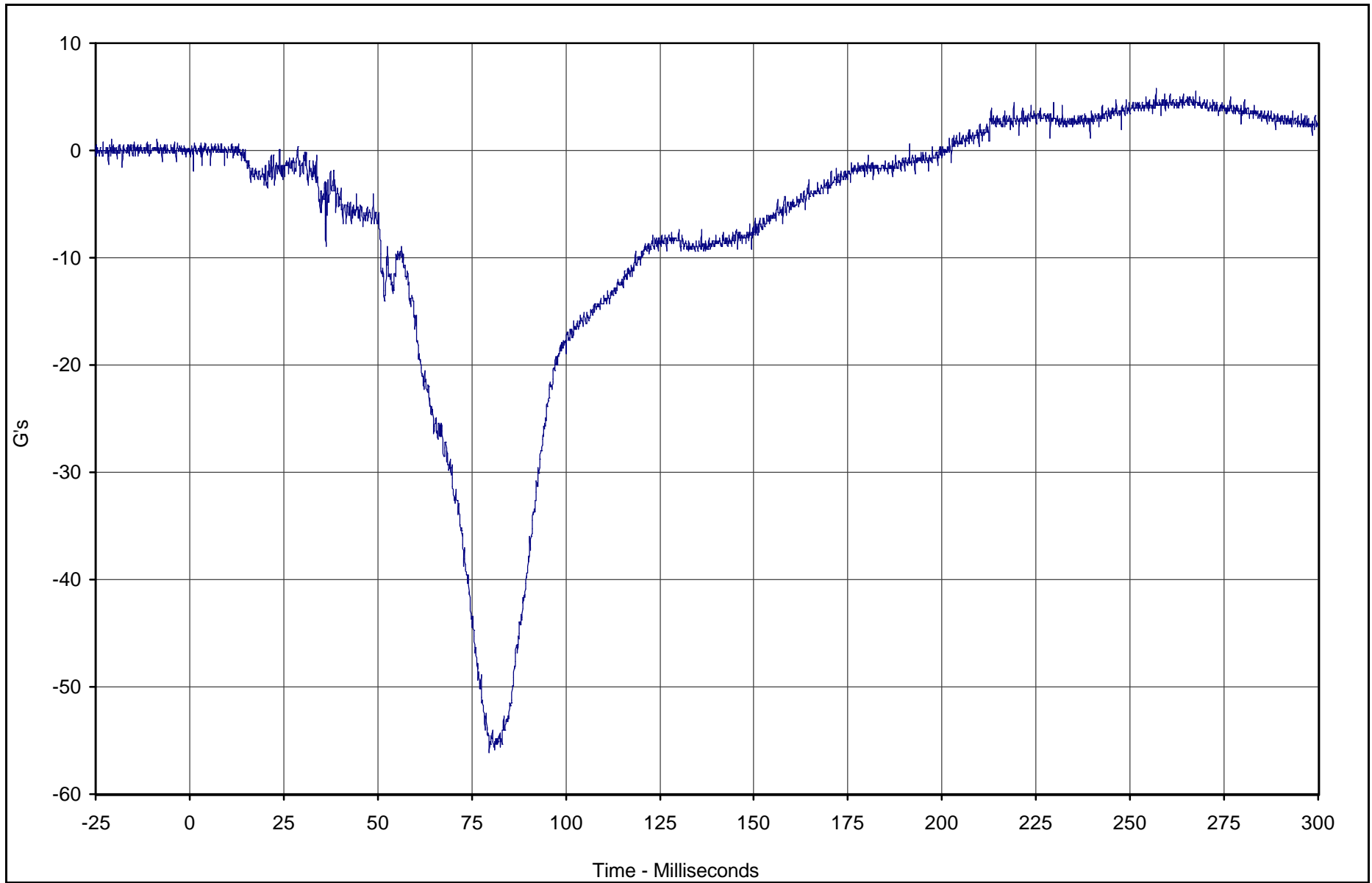
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-62



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Primary X	045	FIL	G's	5.8	256.9	-56.1	79.7	1000



Test Vehicle: 2003 Acura MDX SUV

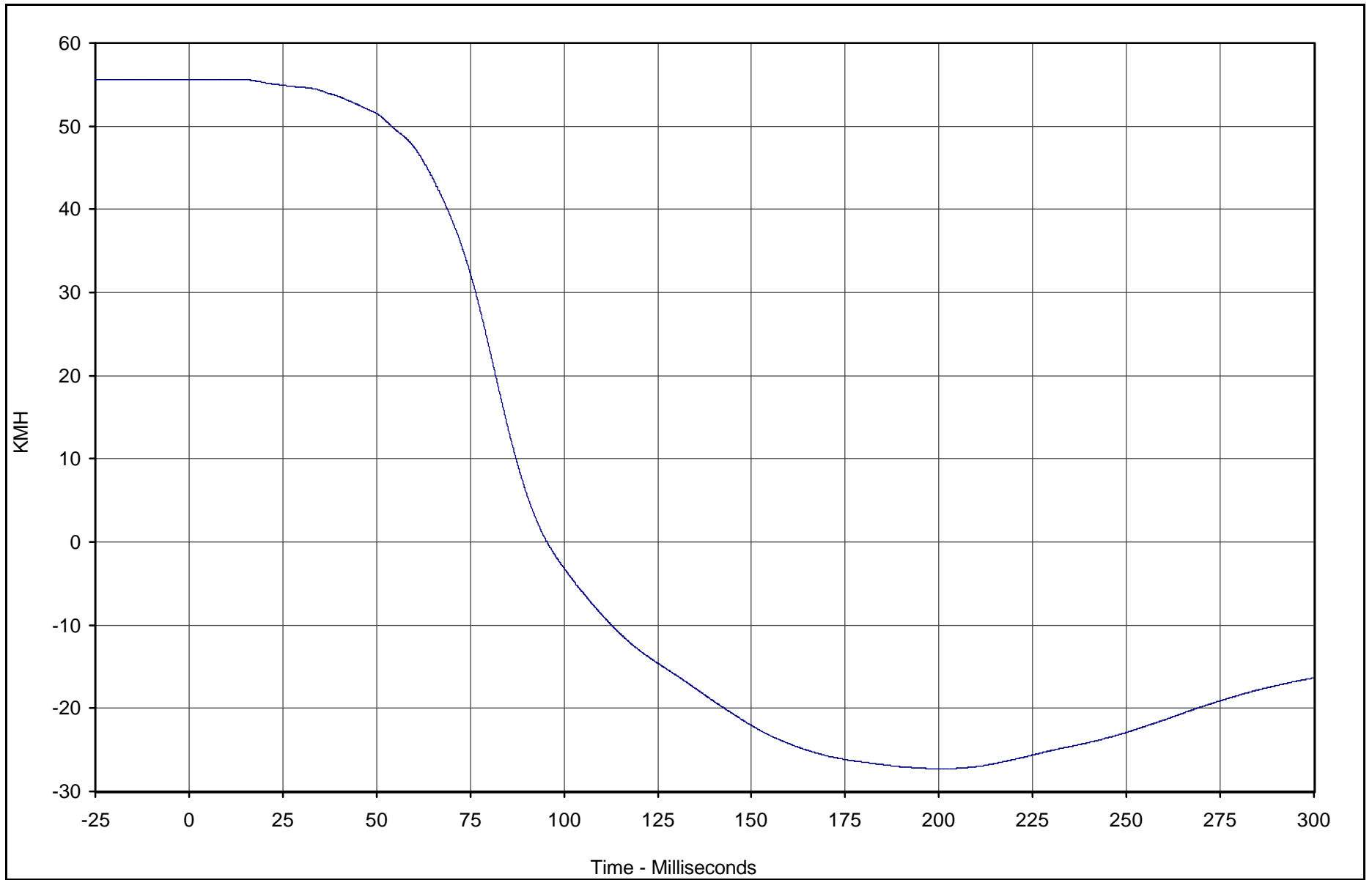
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-63



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Primary X Velocity	045	IN1	KMH	55.6	8.8	-27.3	201.0	180



Test Vehicle: 2003 Acura MDX SUV

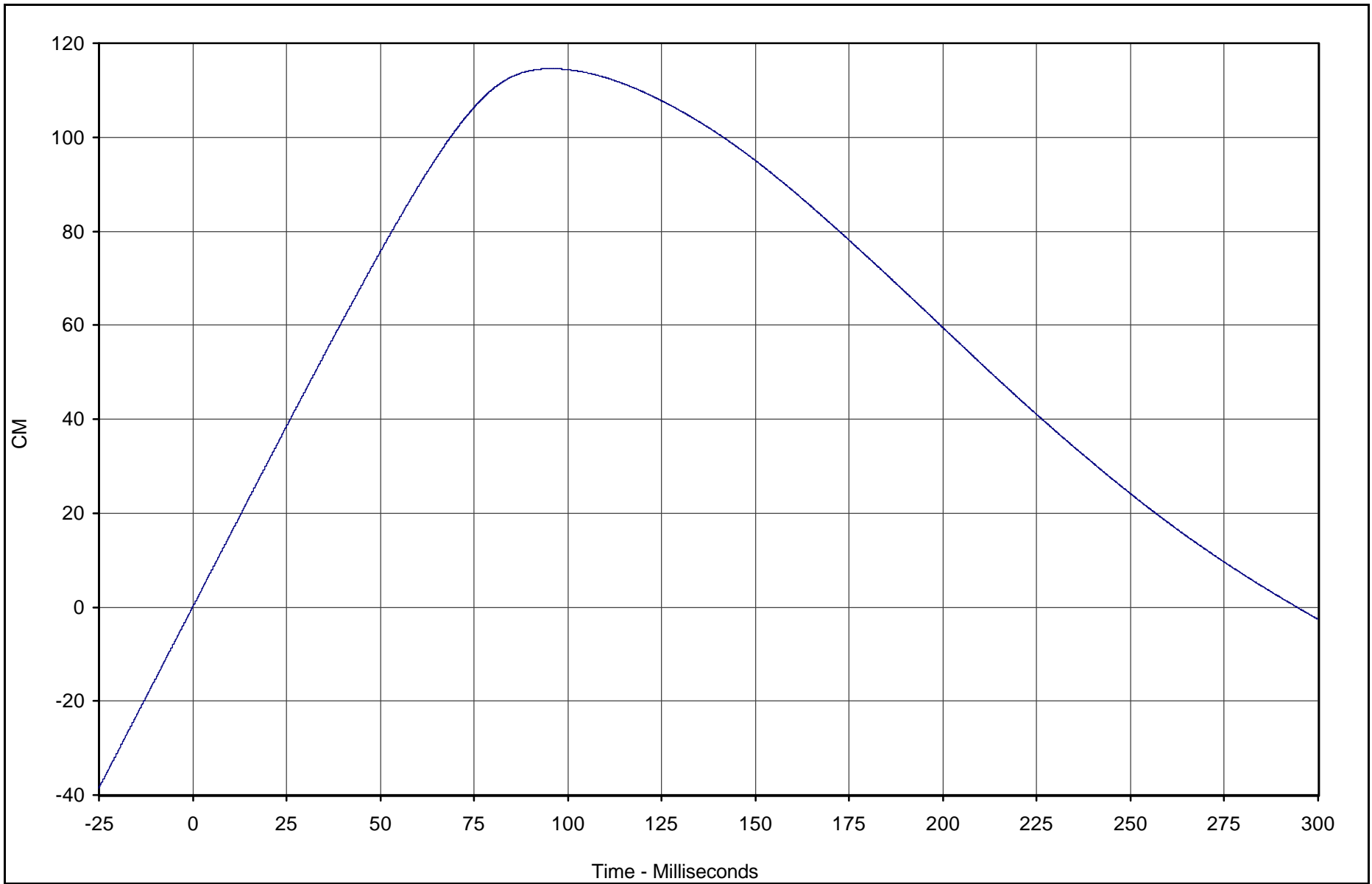
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-64



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Primary X Displ.	045	IN2	CM	114.6	95.5	-2.6	299.9	180



Test Vehicle: 2003 Acura MDX SUV

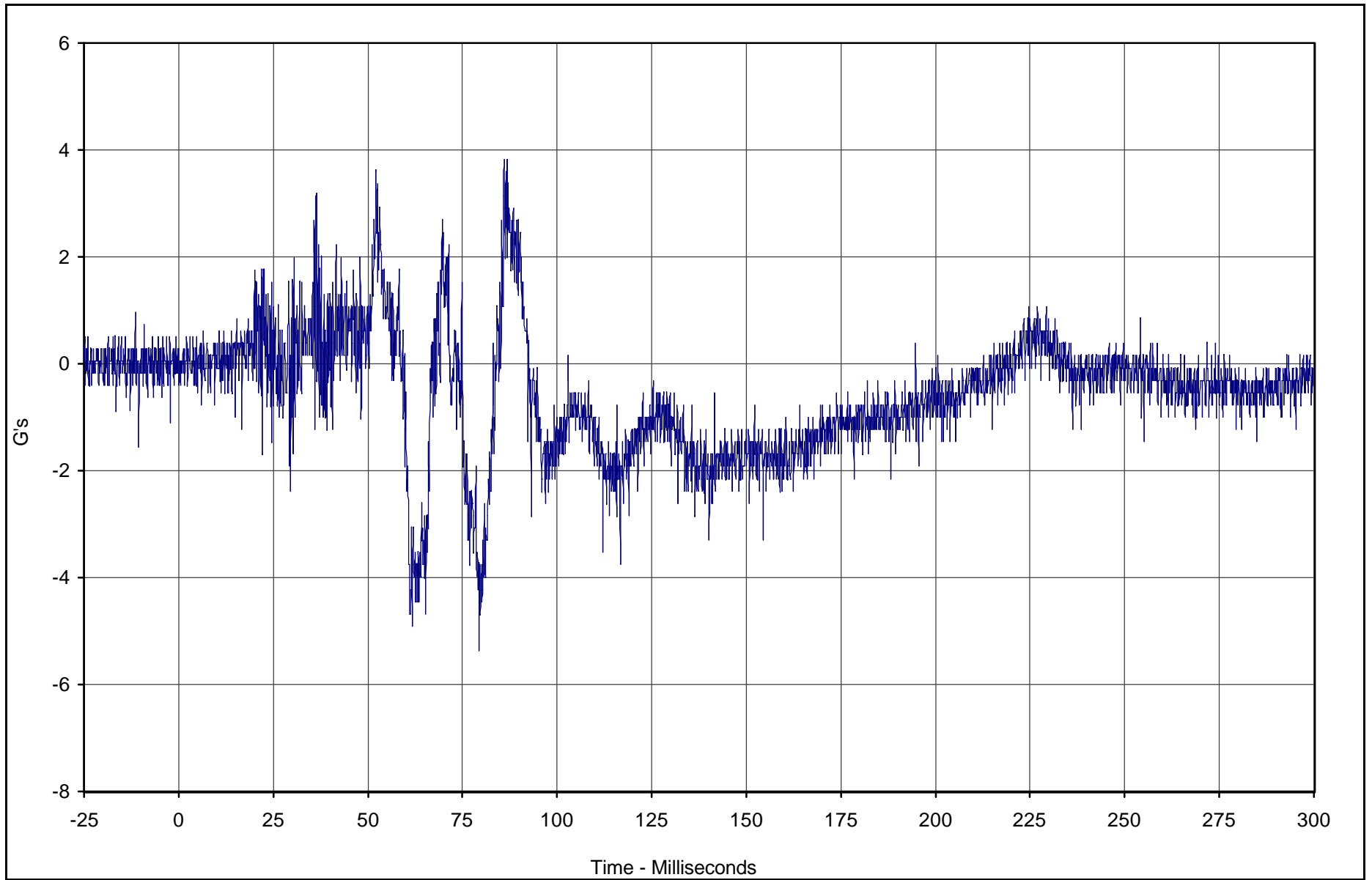
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-65



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Primary Y	046	FIL	G's	3.8	86.0	-5.4	79.4	1000

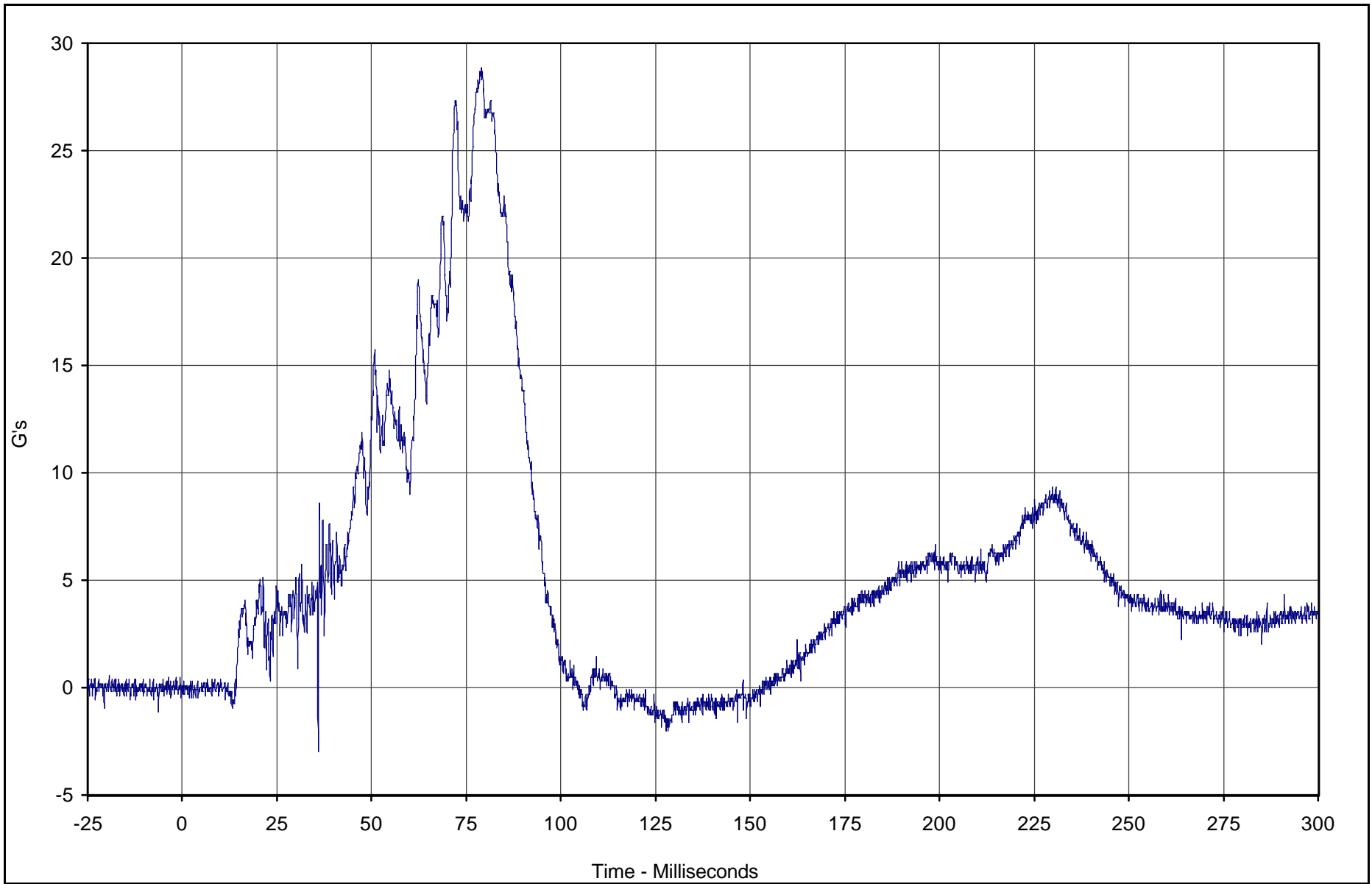


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Primary Z	047	FIL	G's	28.9	79.0	-3.0	35.9	1000



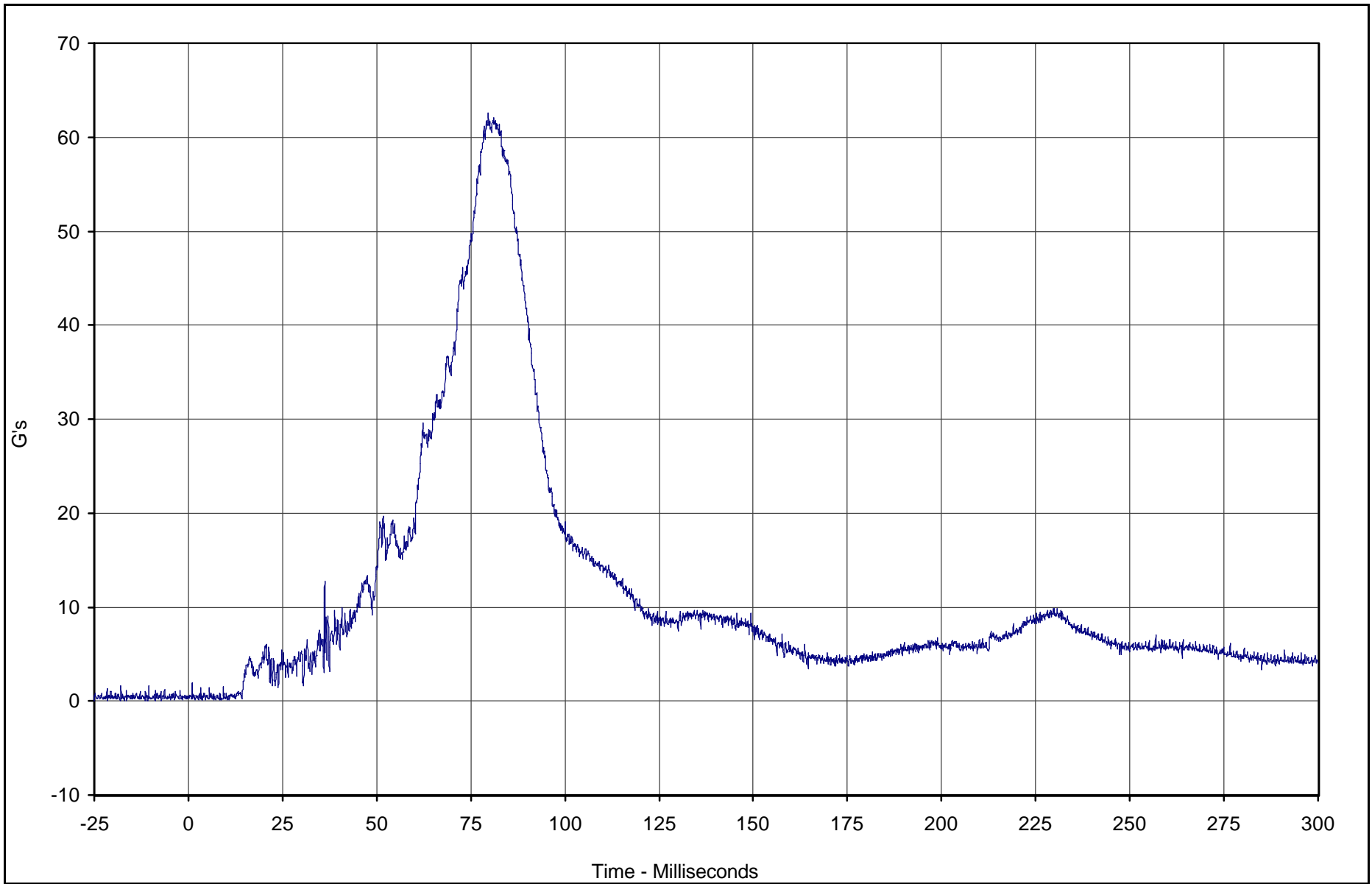
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-67



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Resultant Primary	045	RES	G's	62.6	79.7	0.1	6.8	1000



Test Vehicle: 2003 Acura MDX SUV

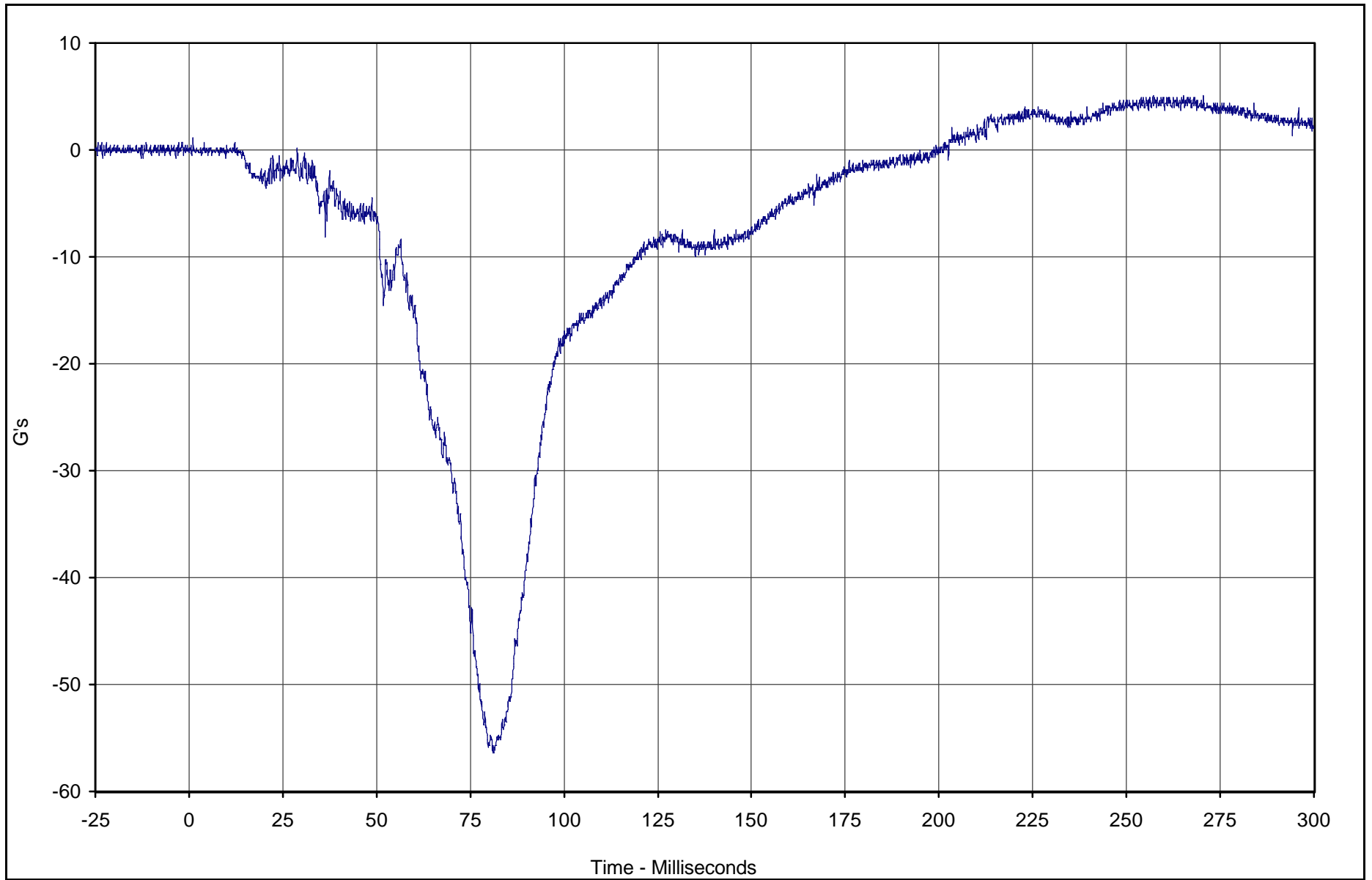
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-68



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Redundant X	048	FIL	G's	5.1	257.1	-56.4	81.0	1000



Test Vehicle: 2003 Acura MDX SUV

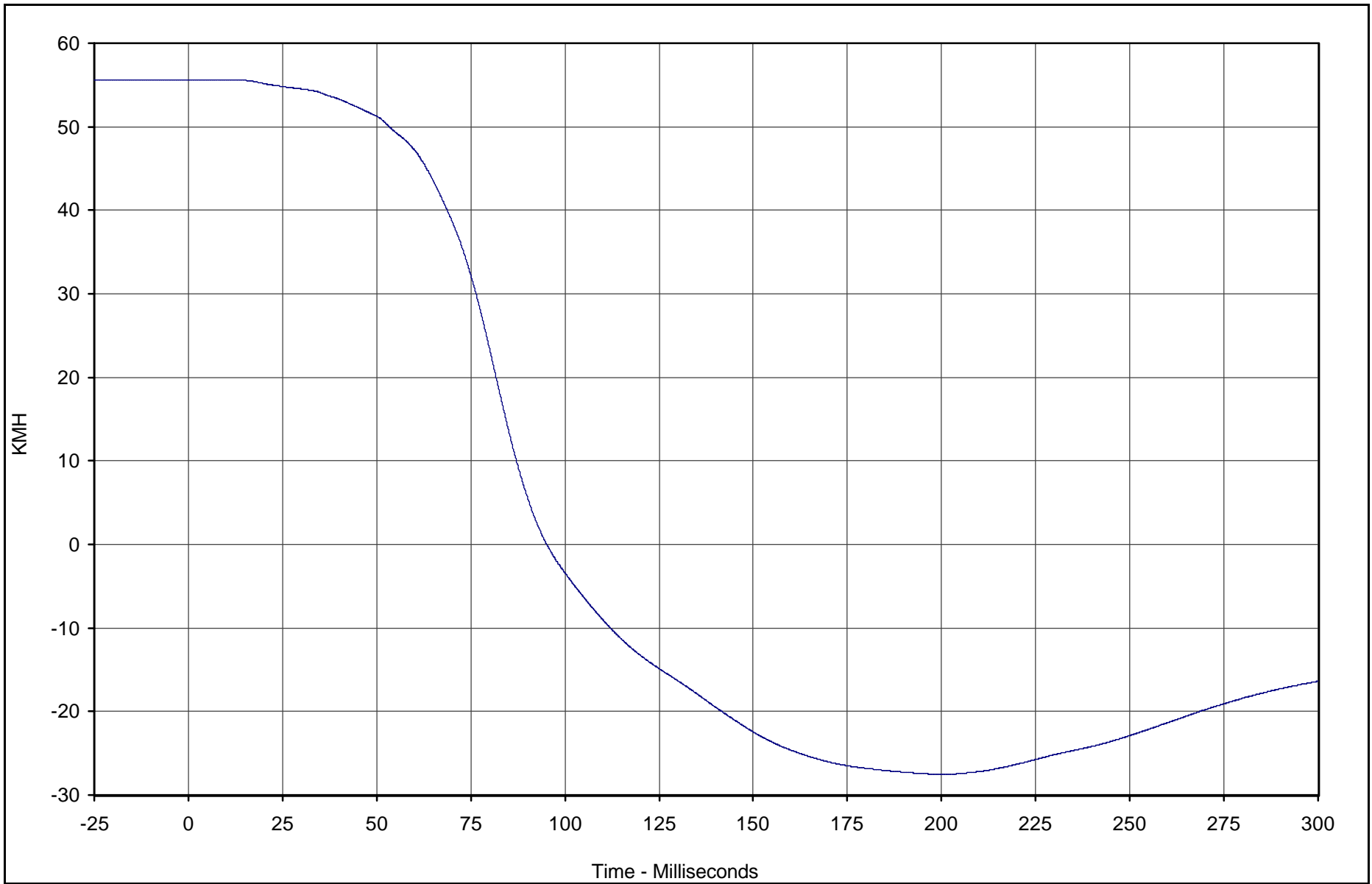
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-69



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Redundant X Velocity	048	IN1	KMH	55.6	1.7	-27.5	200.4	180



Test Vehicle: 2003 Acura MDX SUV

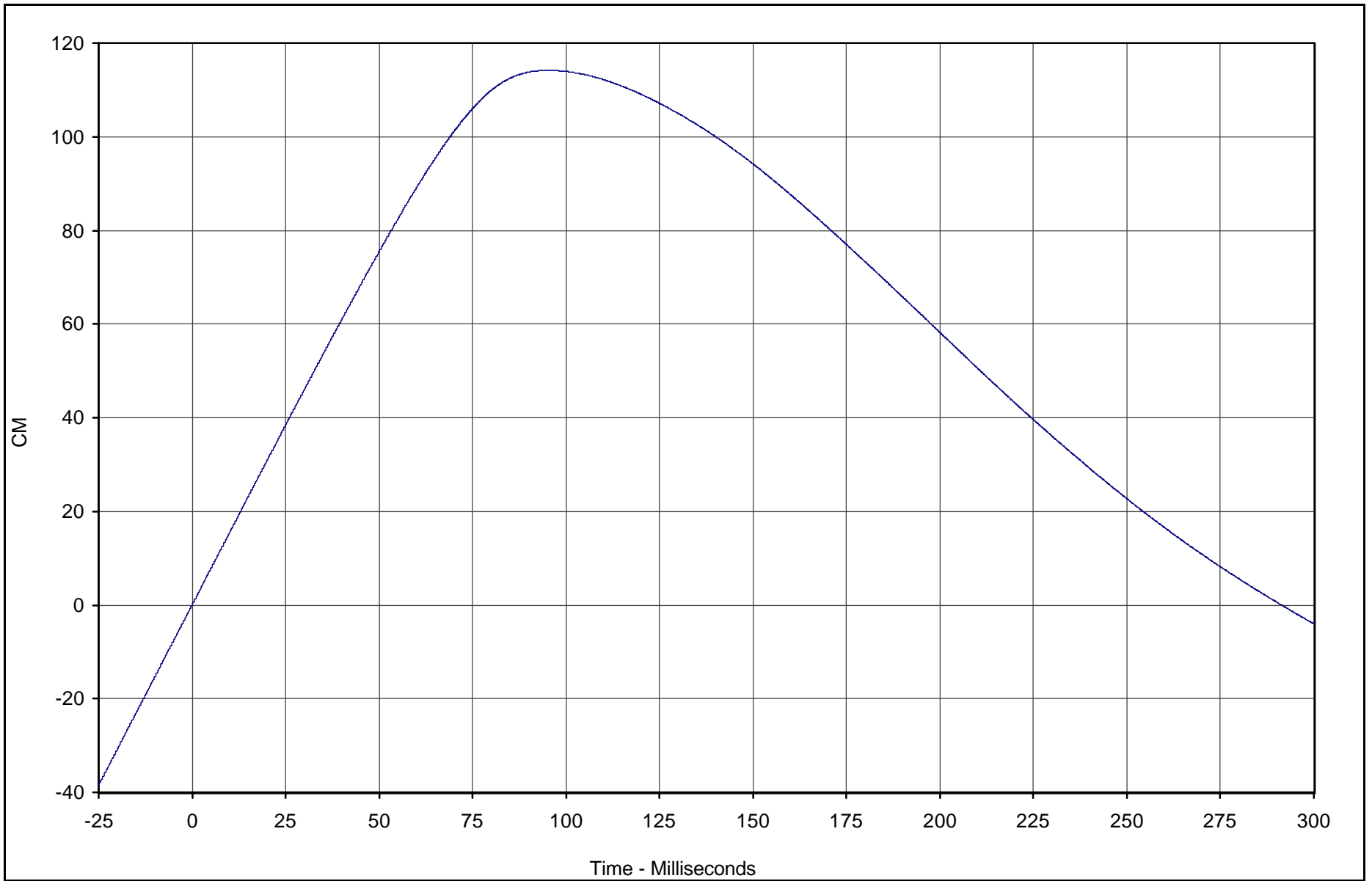
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-70



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Redundant X Displ.	048	IN2	CM	114.2	95.2	-4.0	299.9	180



Test Vehicle: 2003 Acura MDX SUV

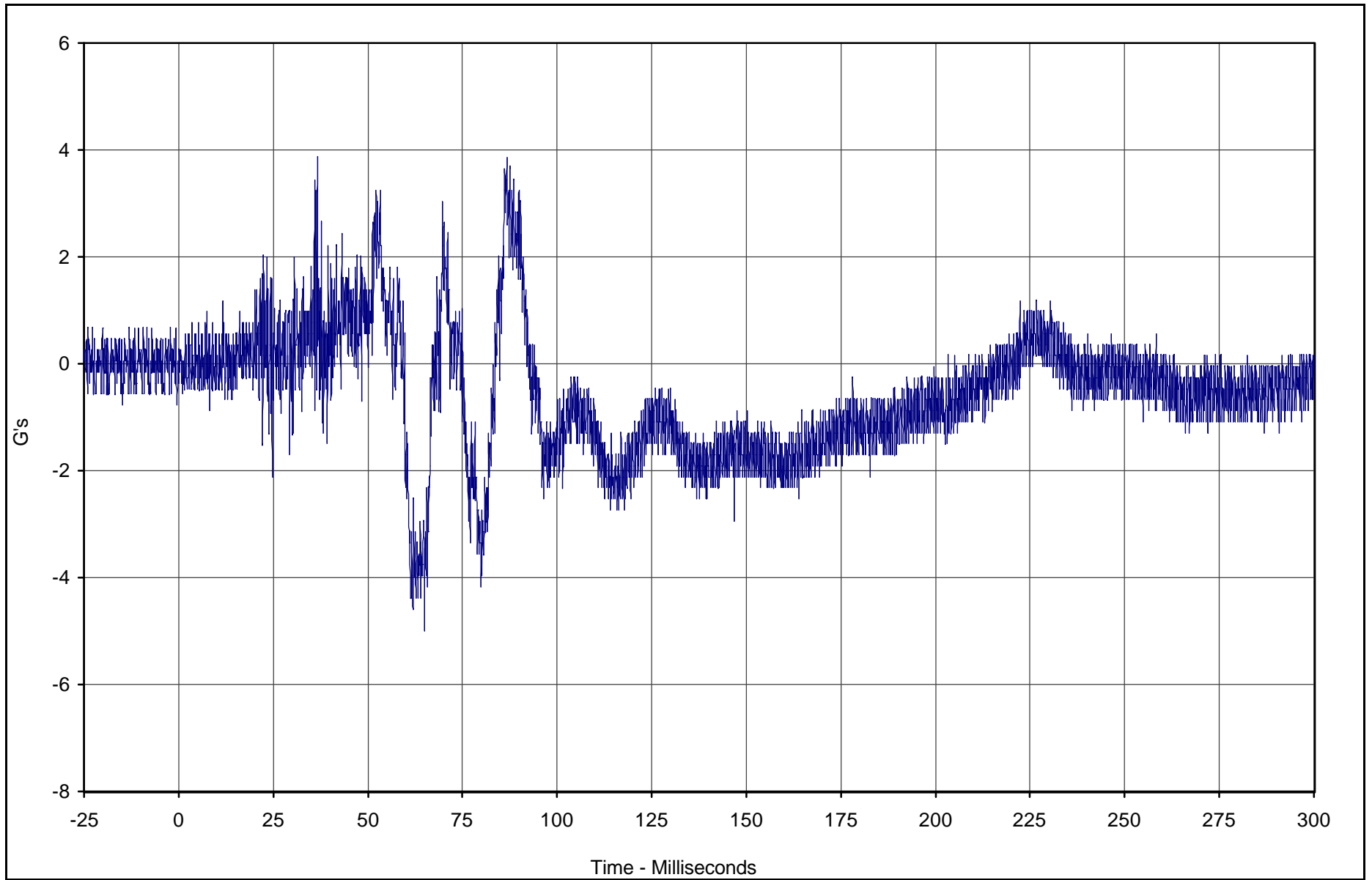
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-71



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Redundant Y	049	FIL	G's	3.9	36.7	-5.0	65.0	1000



Test Vehicle: 2003 Acura MDX SUV

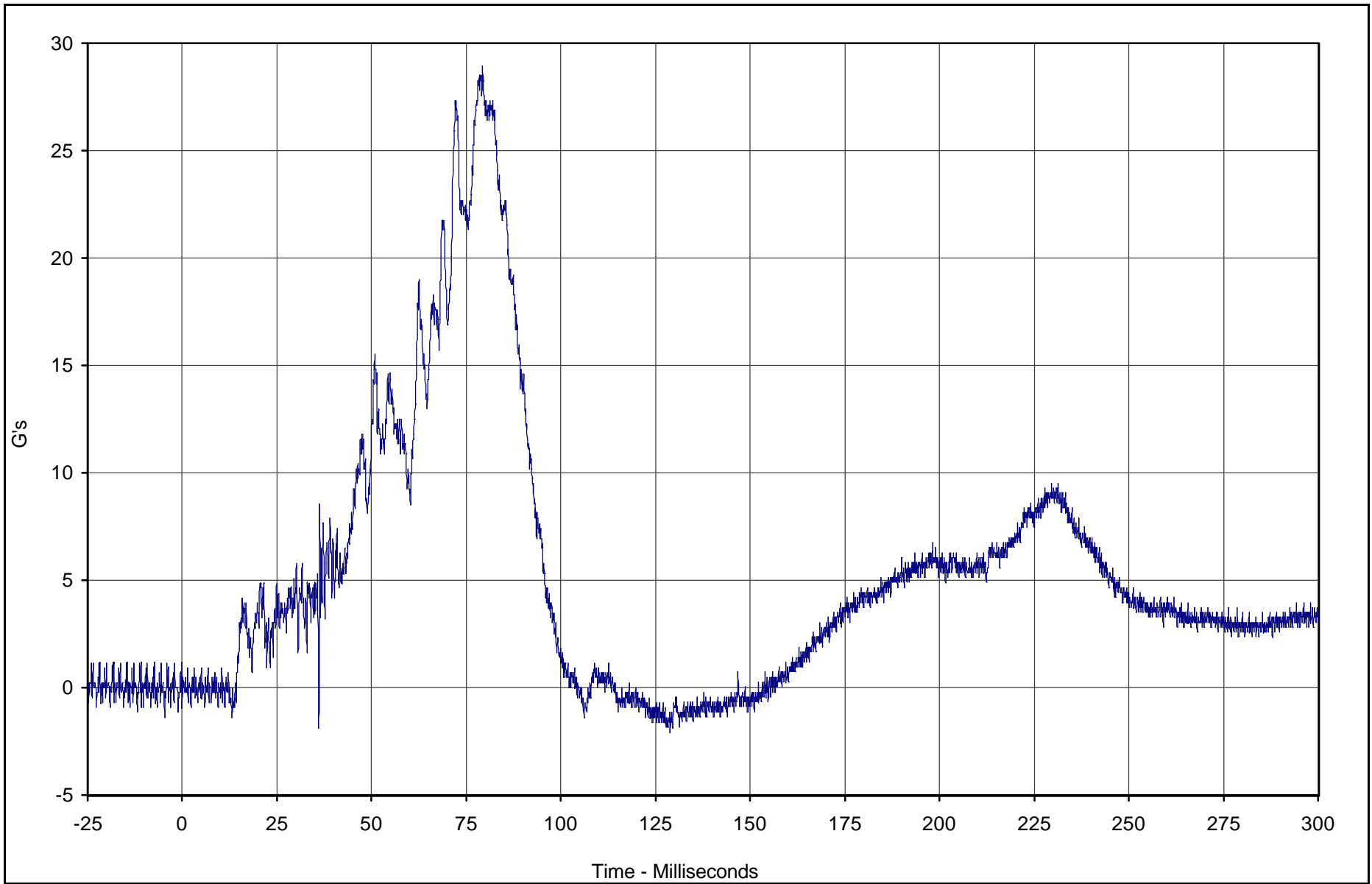
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-72



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Redundant Z	050	FIL	G's	29.0	79.3	-2.1	128.9	1000



Test Vehicle: 2003 Acura MDX SUV

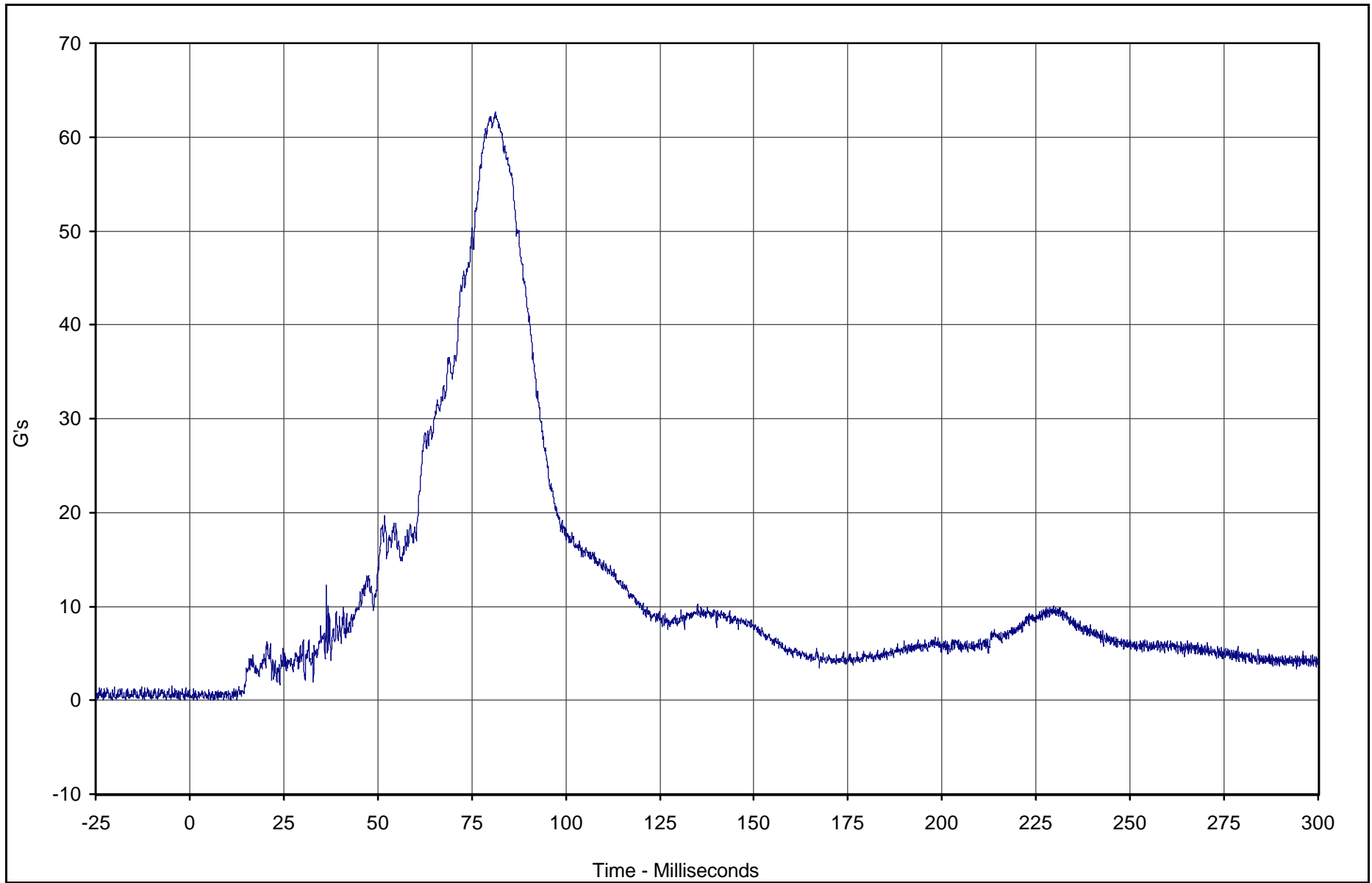
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-73



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Resultant Redundant	048	RES	G's	62.7	81.3	0.1	0.9	1000



Test Vehicle: 2003 Acura MDX SUV

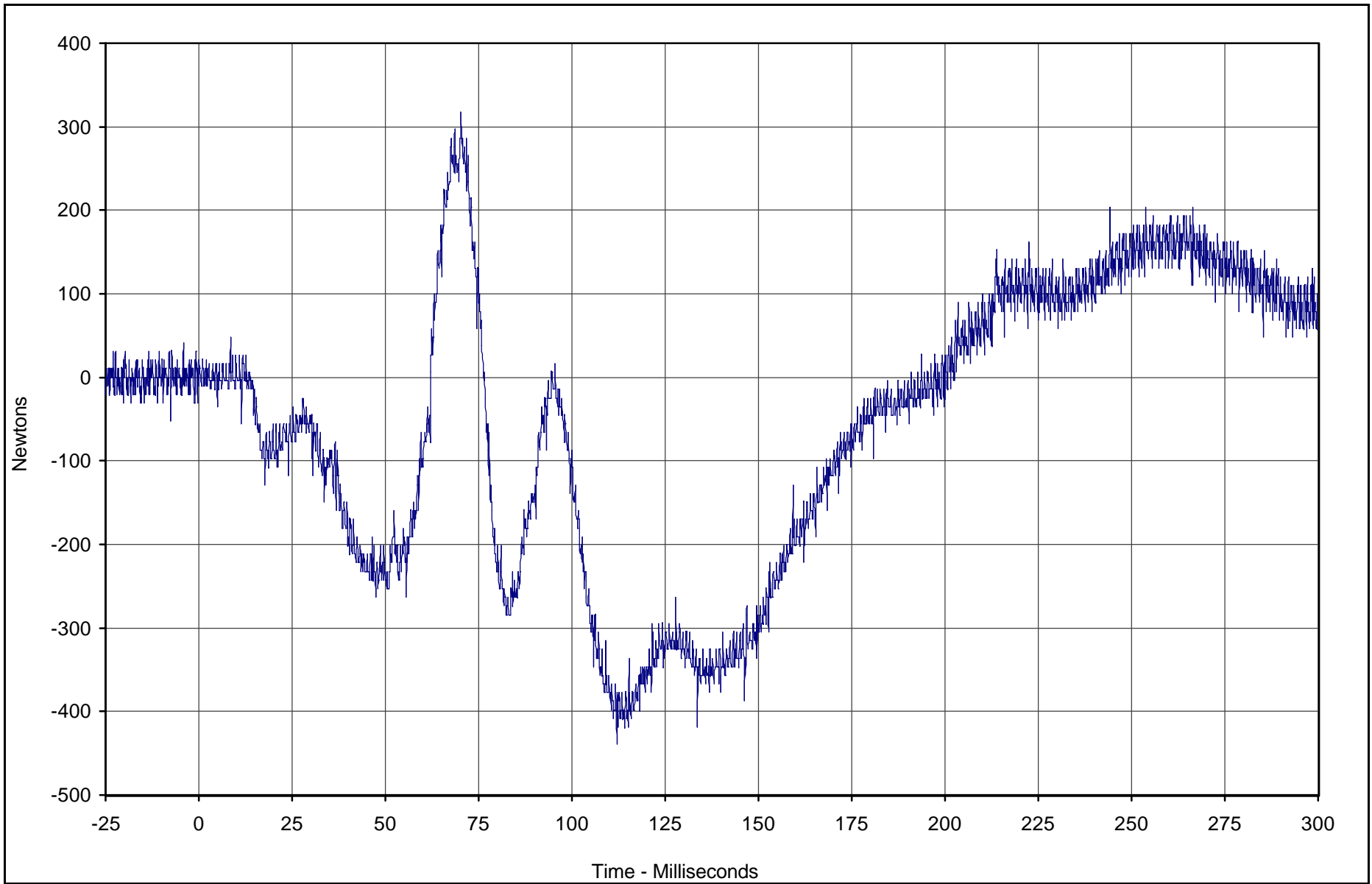
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-74



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Neck Force X	051	FIL	Newtons	317.5	70.3	-439.6	112.0	1000



Test Vehicle: 2003 Acura MDX SUV

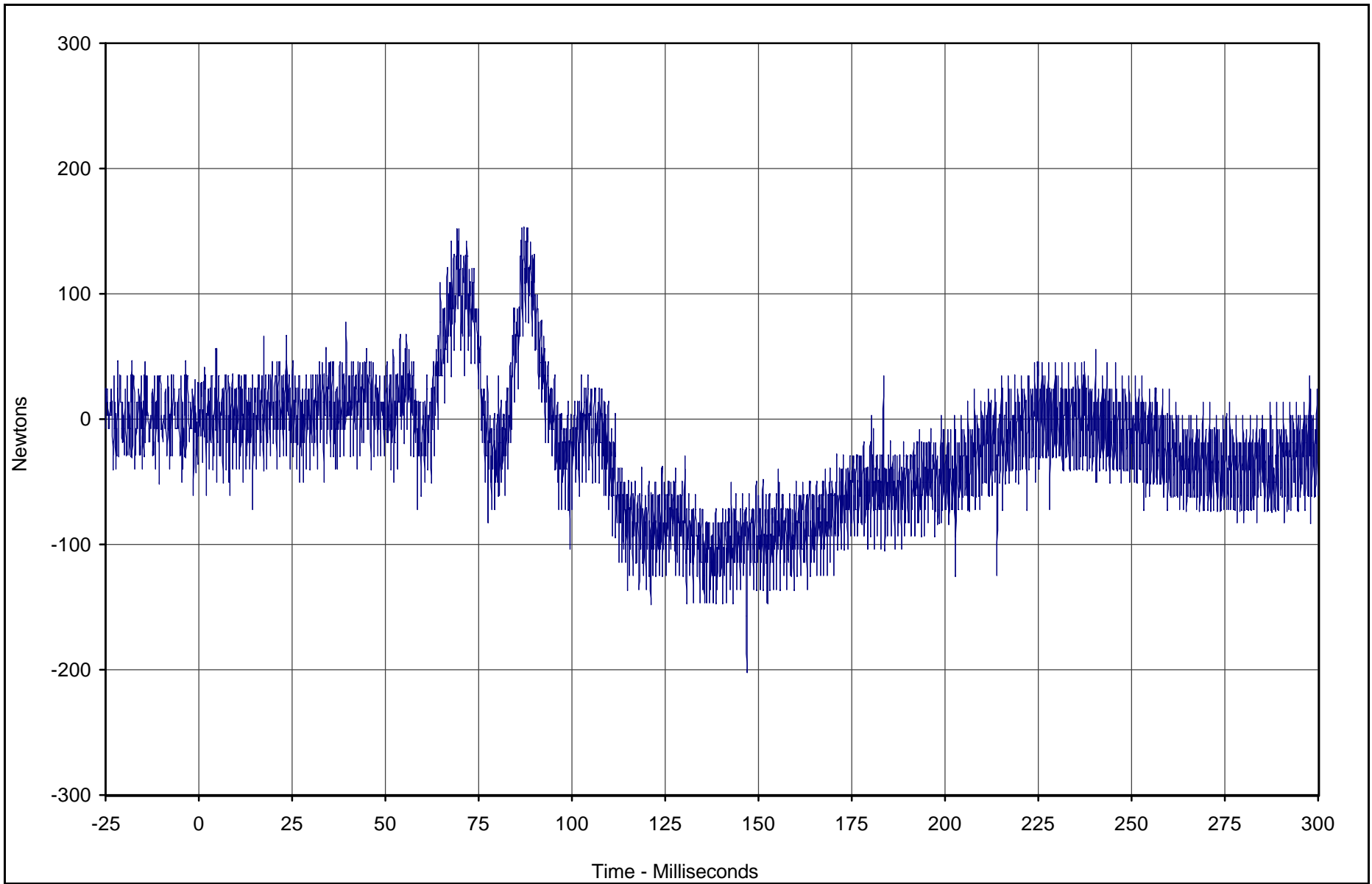
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-75



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Neck Force Y	052	FIL	Newtons	151.7	69.2	-199.6	146.9	1000



Test Vehicle: 2003 Acura MDX SUV

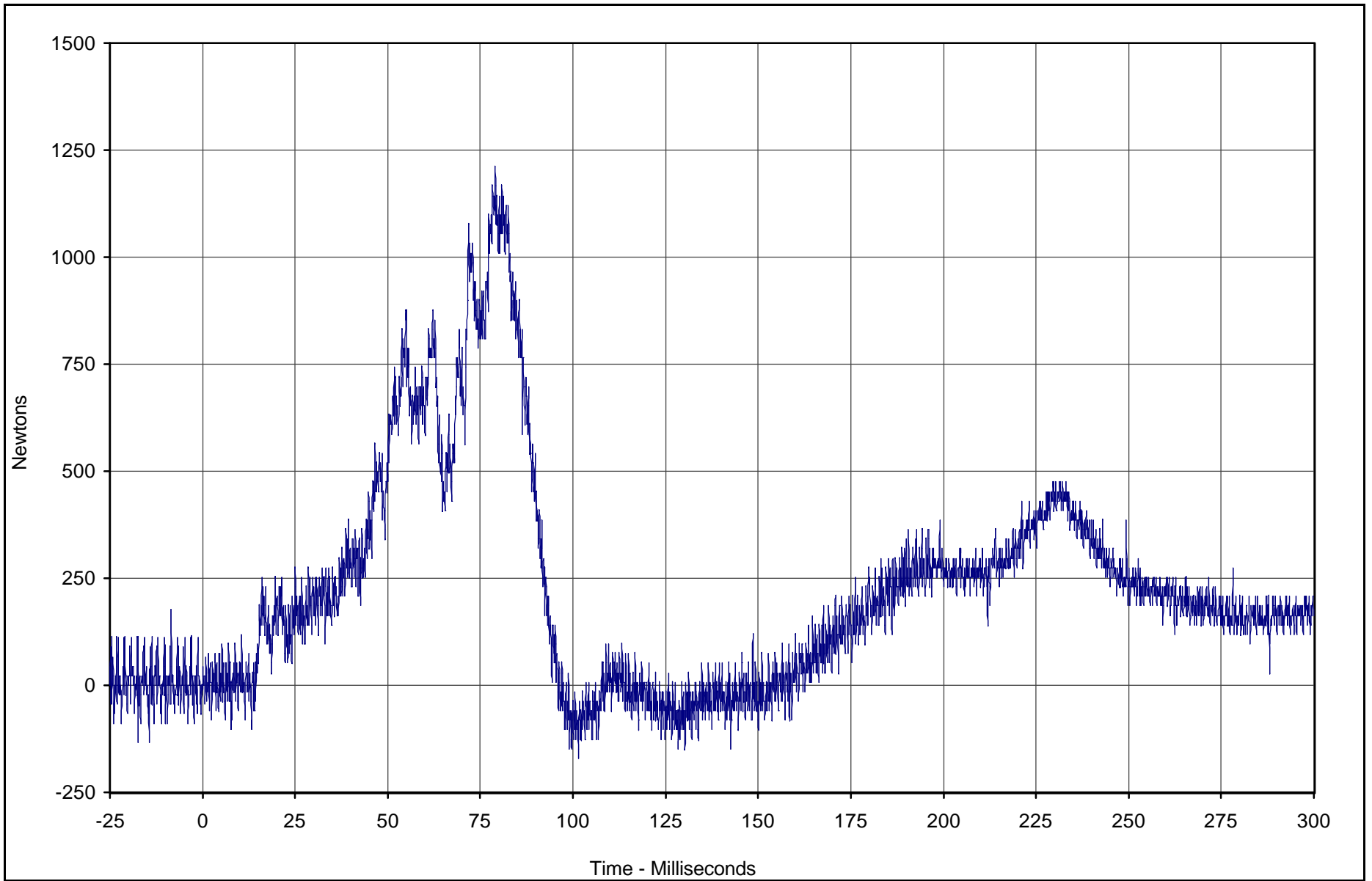
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-76



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Neck Force Z	053	FIL	Newtons	1210.2	79.0	-170.9	101.5	1000



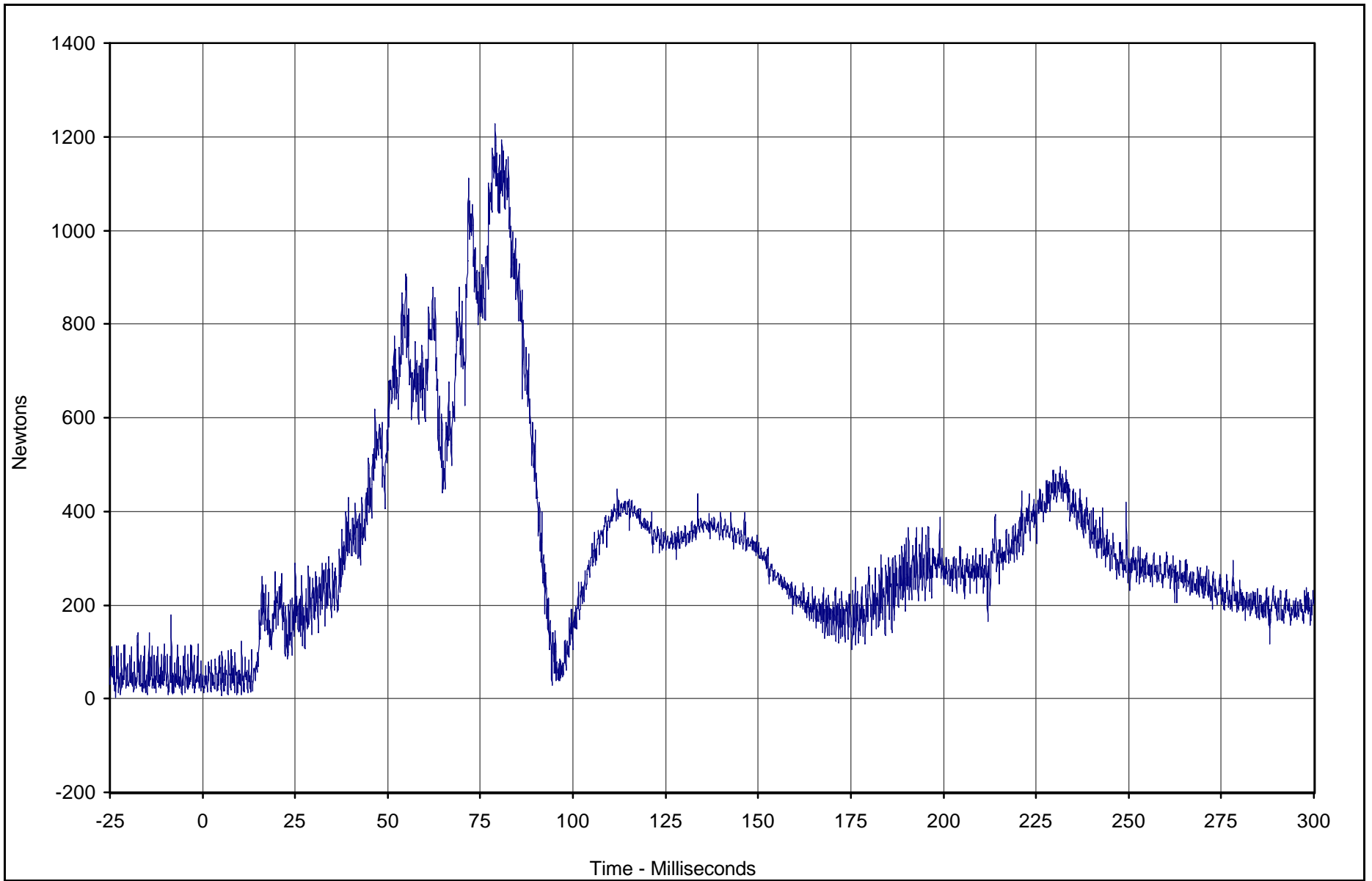
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-77



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Neck Force Resultant	051	RES	Newtons	1225.2	79.0	8.7	5.1	1000



Test Vehicle: 2003 Acura MDX SUV

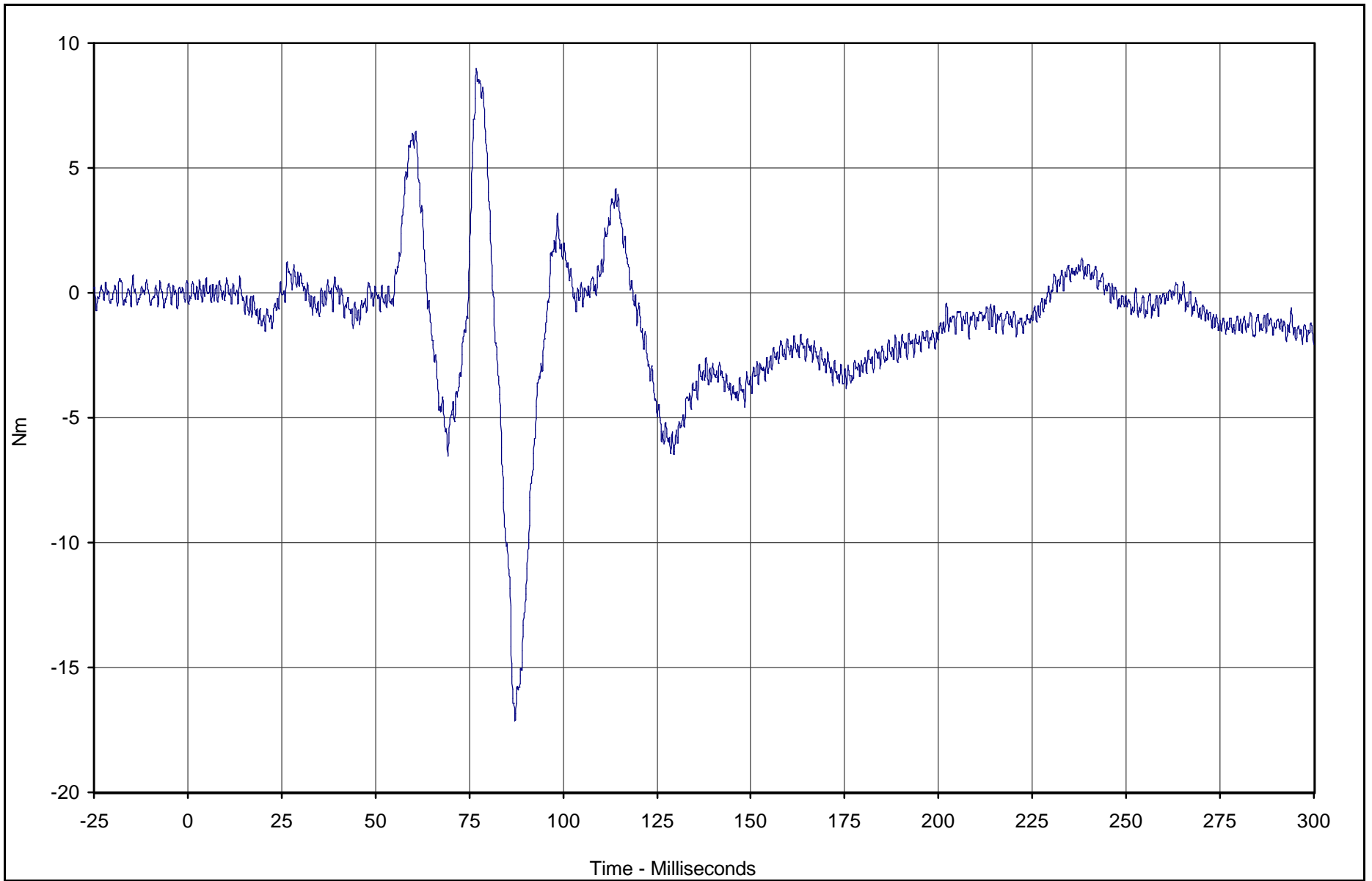
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-78



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Neck Moment X	054	FIL	Nm	9.0	76.9	-17.1	87.2	600



Test Vehicle: 2003 Acura MDX SUV

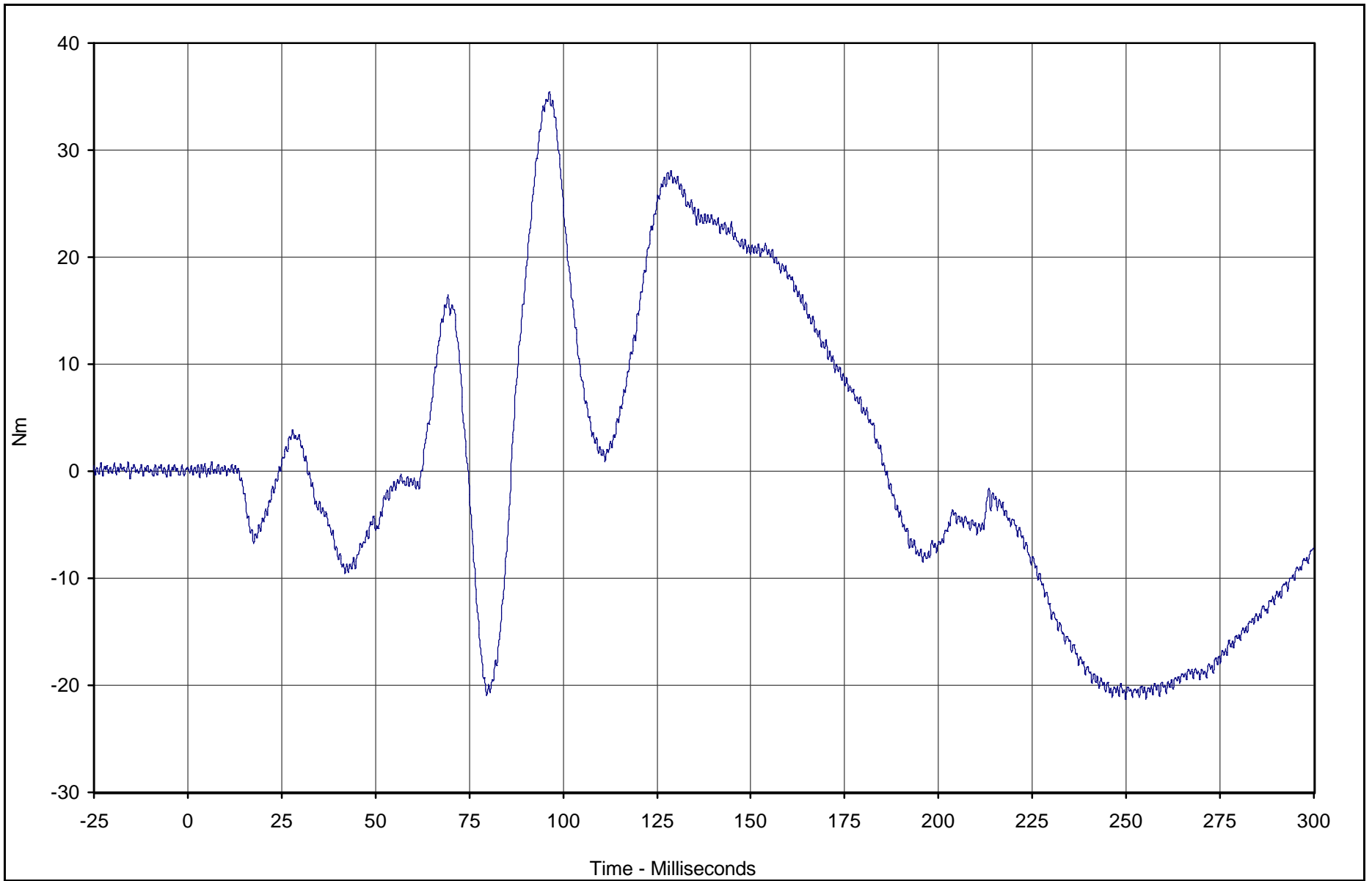
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-79



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Neck Moment Y	055	FIL	Nm	35.5	96.3	-21.3	249.9	600



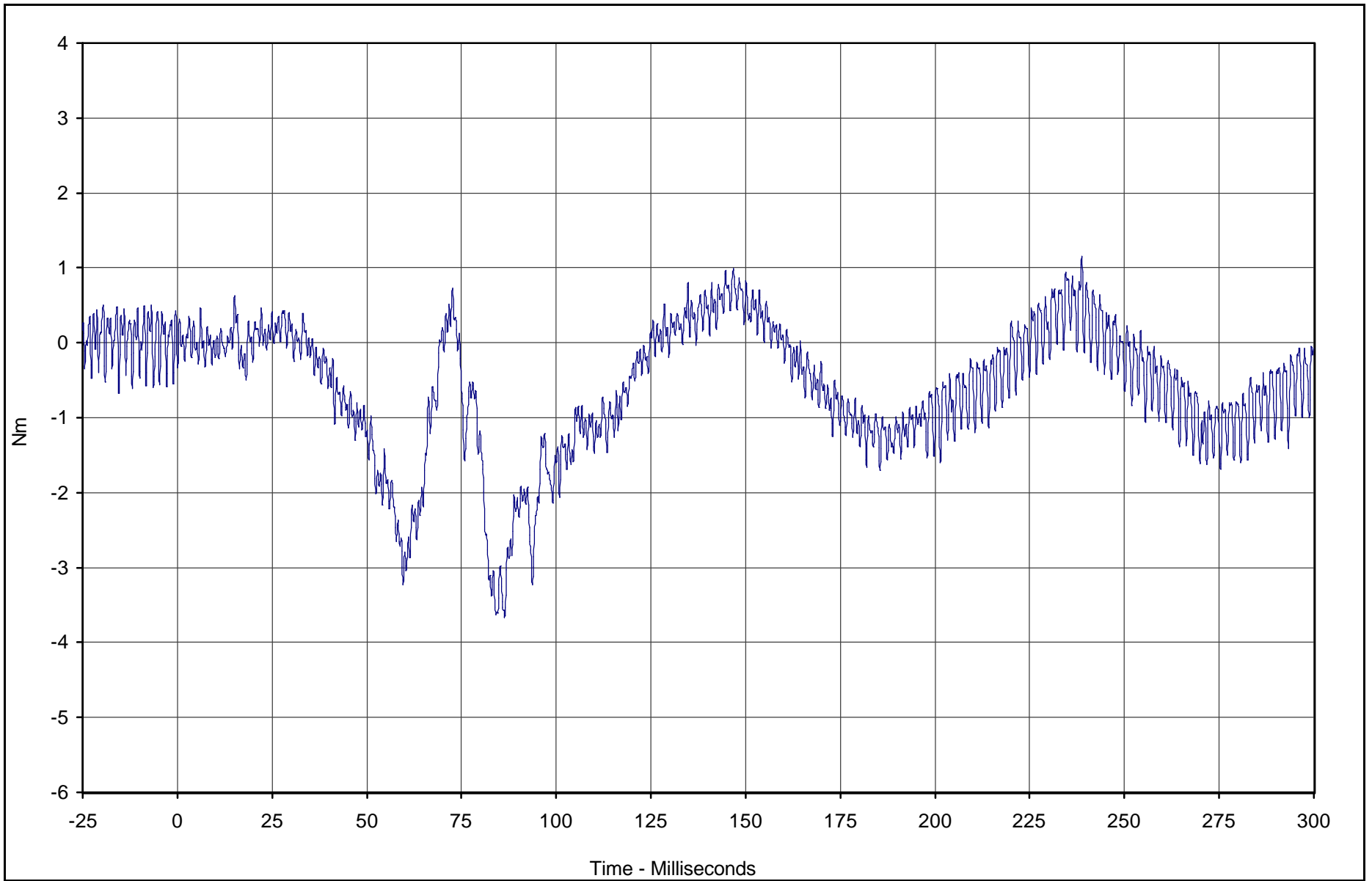
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Neck Moment Z	056	FIL	Nm	1.2	238.7	-3.7	86.4	600

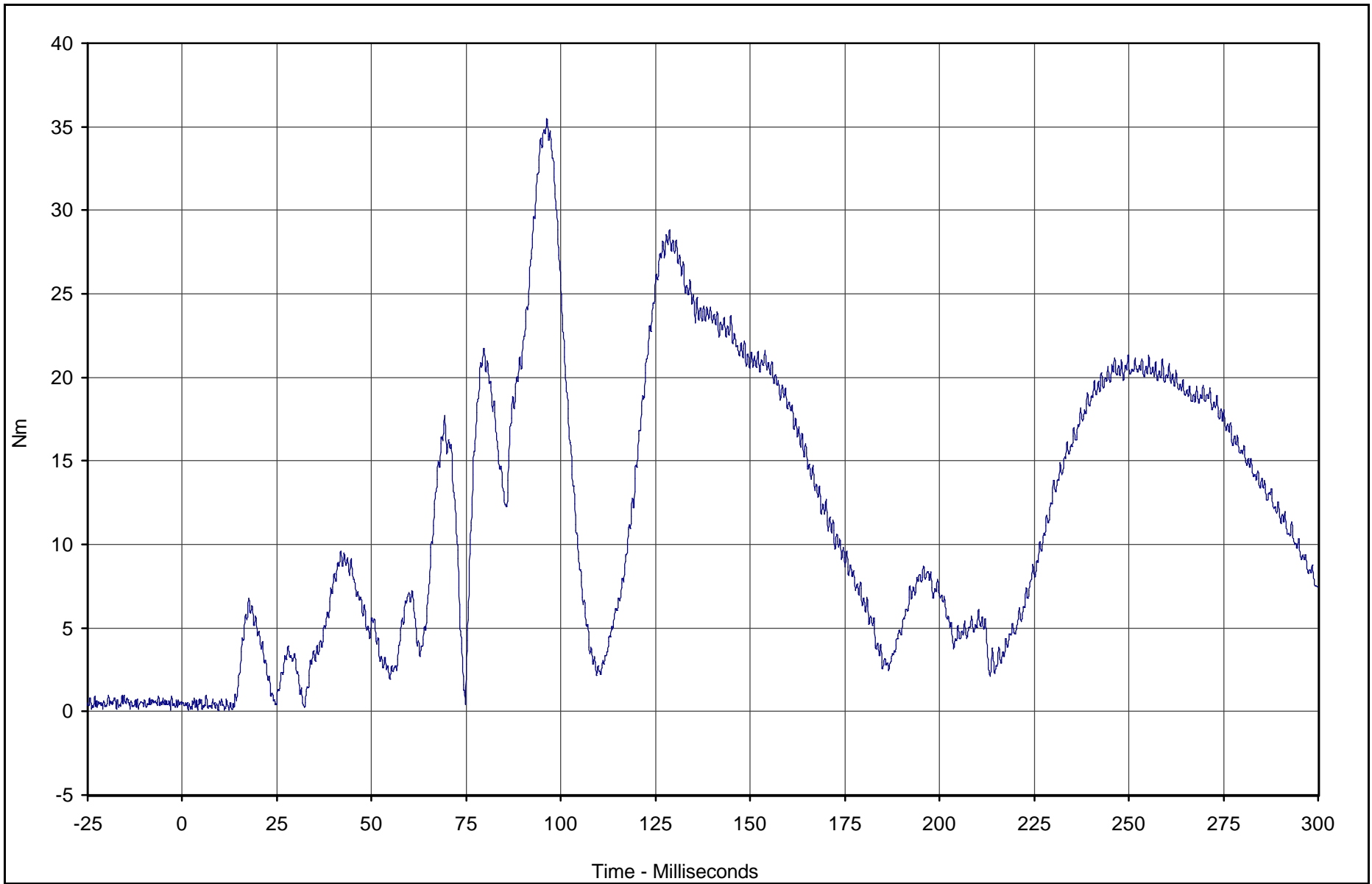


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Neck Moment Resultant	054	RES	Nm	35.5	96.3	0.1	4.0	600



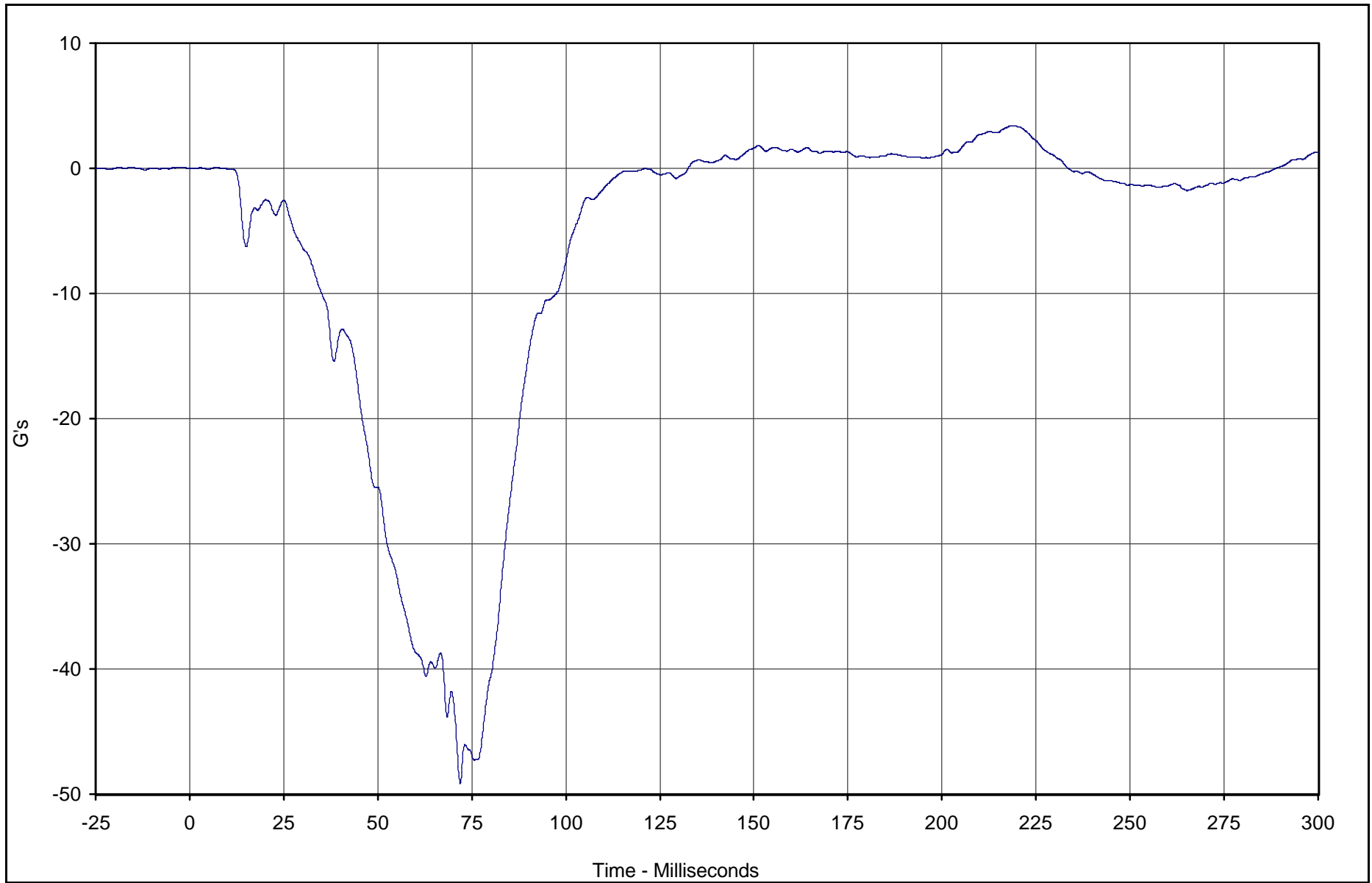
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-82



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Primary X	057	FIL	G's	3.4	218.5	-49.1	71.9	180



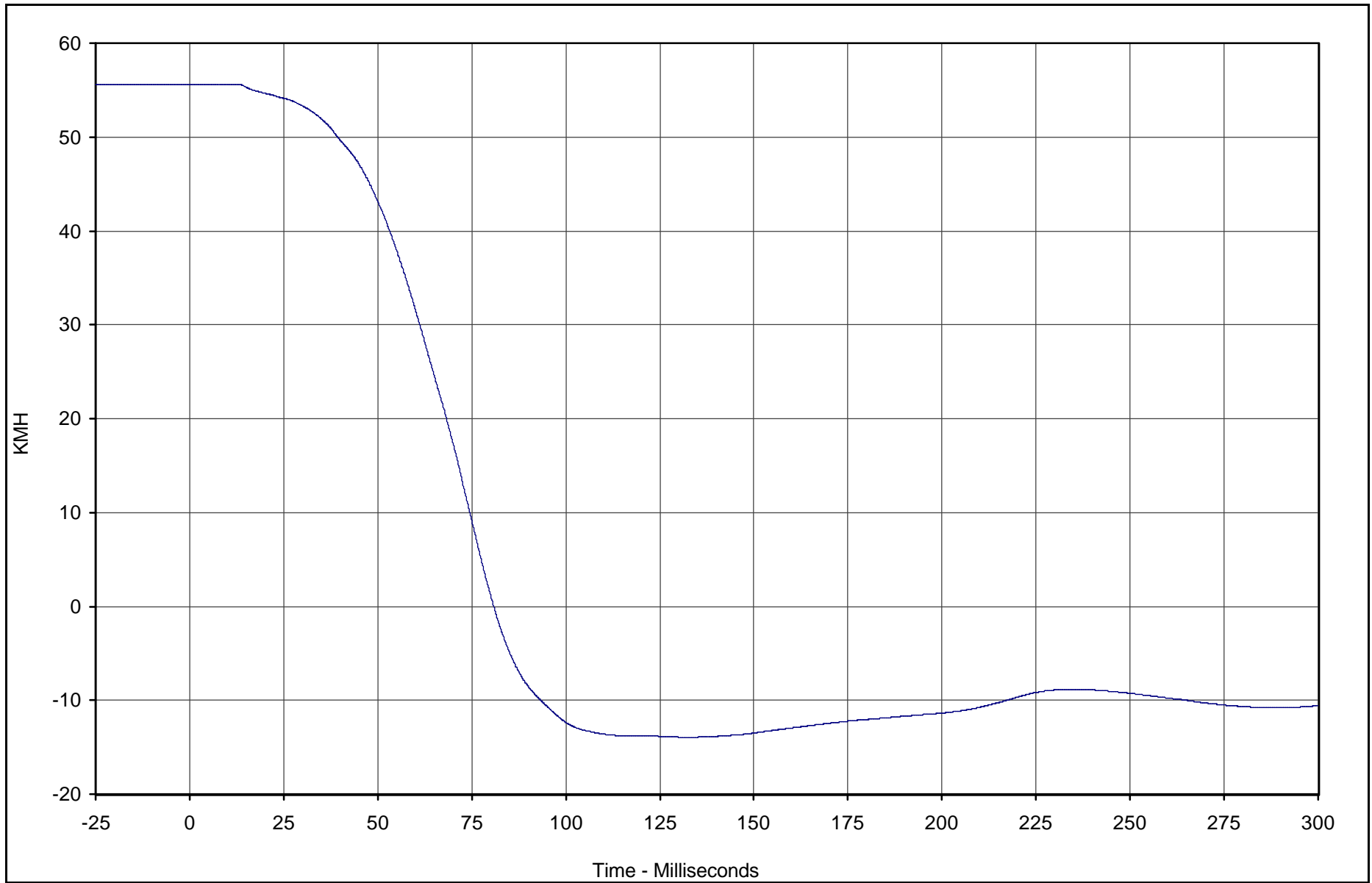
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Primary X Velocity	057	IN1	KMH	55.6	9.5	-14.0	132.5	180



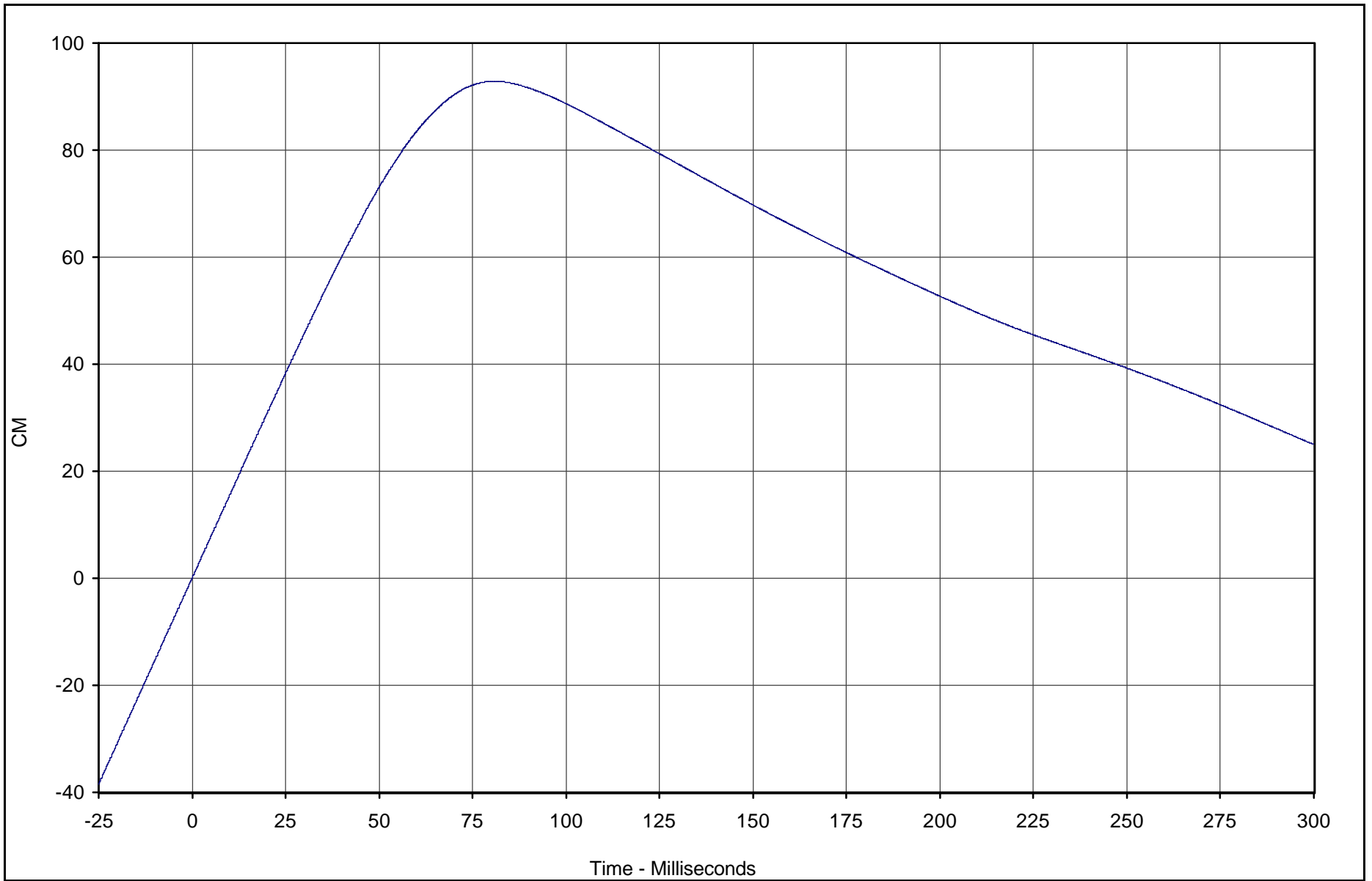
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-84



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Primary X Displ.	057	IN2	CM	92.9	80.9	0.0	0.0	180



Test Vehicle: 2003 Acura MDX SUV

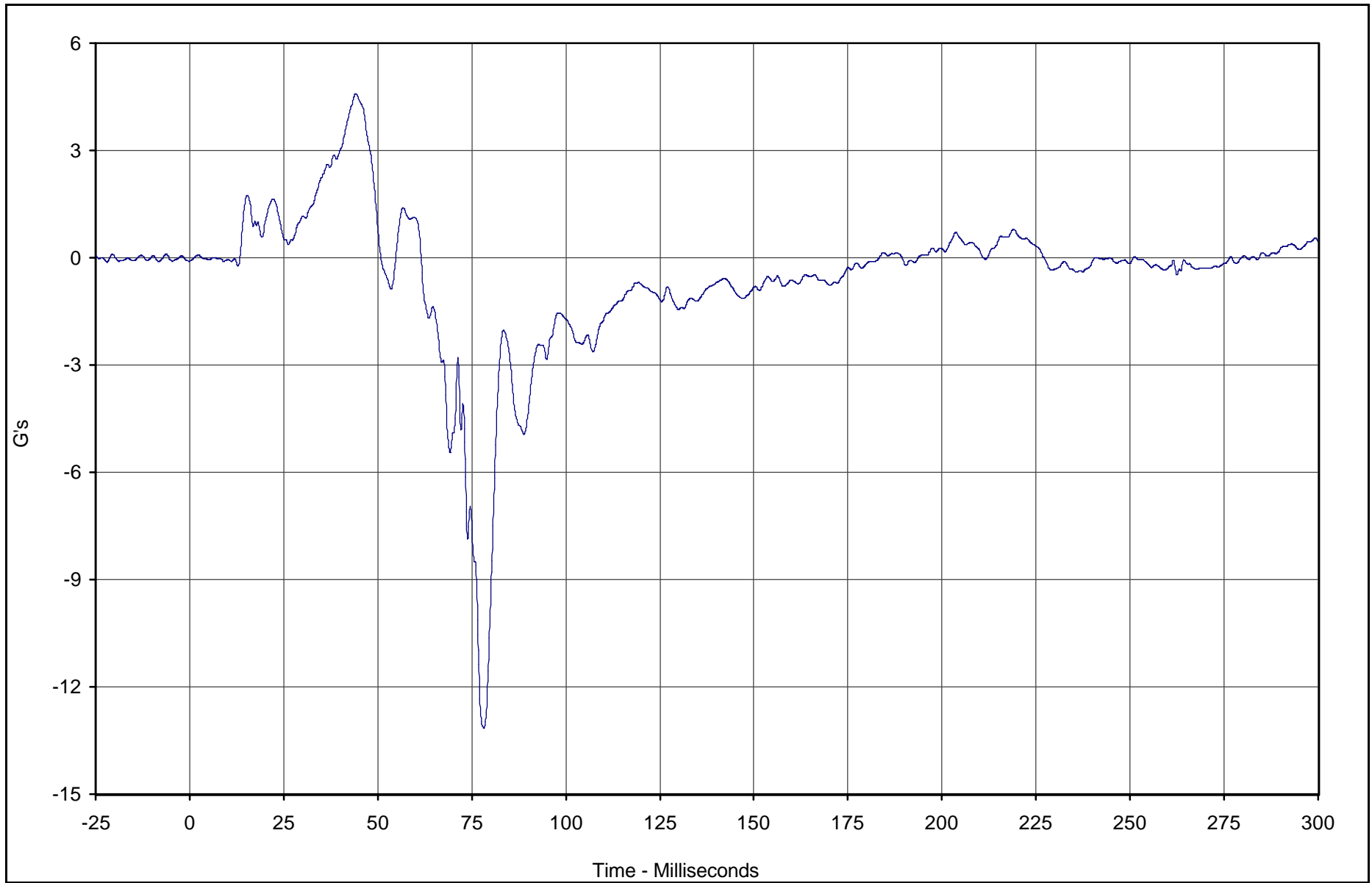
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-85



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Primary Y	058	FIL	G's	4.6	44.2	-13.2	78.2	180



Test Vehicle: 2003 Acura MDX SUV

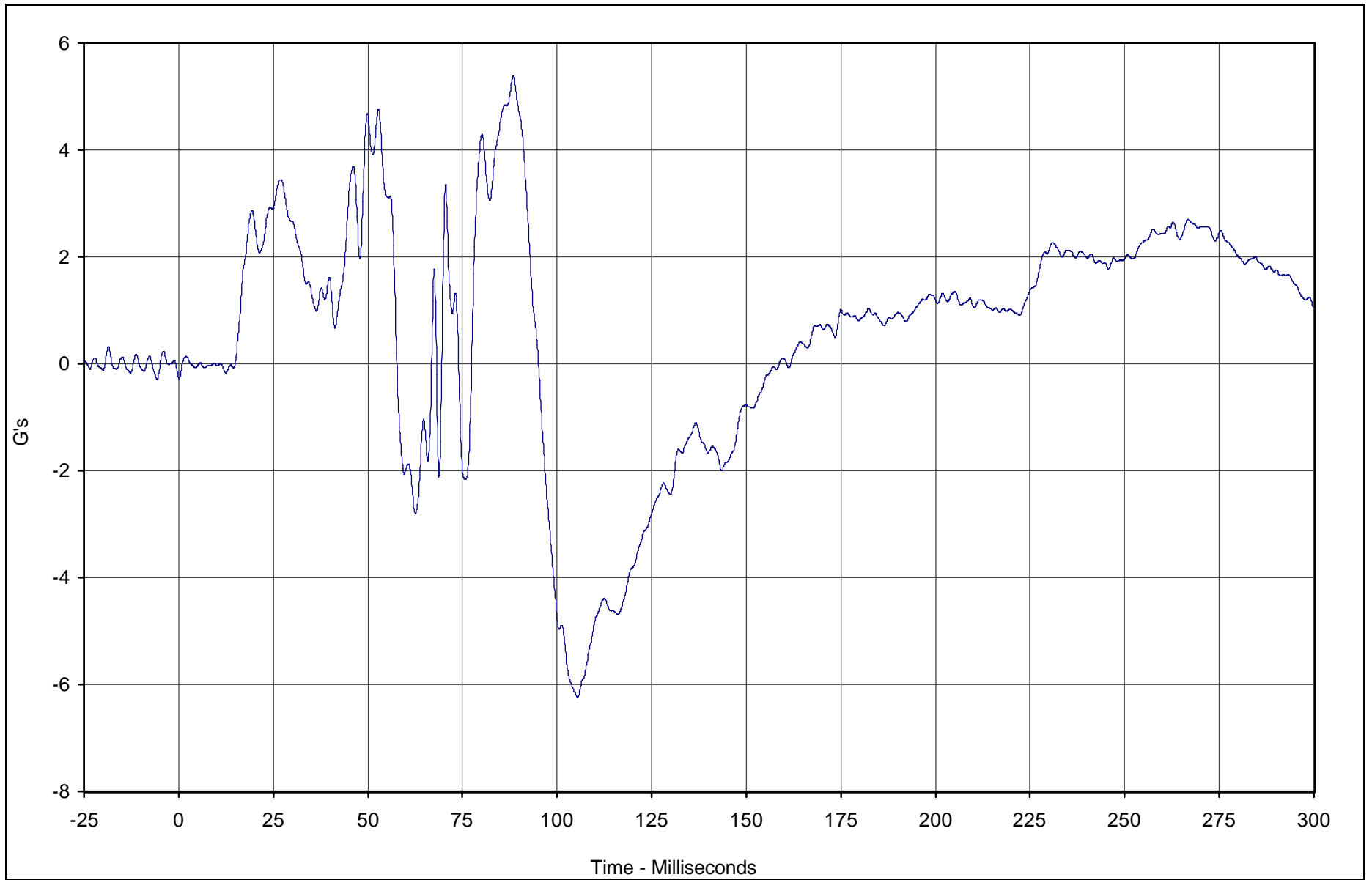
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-86



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Primary Z	059	FIL	G's	5.4	88.5	-6.2	105.4	180



Test Vehicle: 2003 Acura MDX SUV

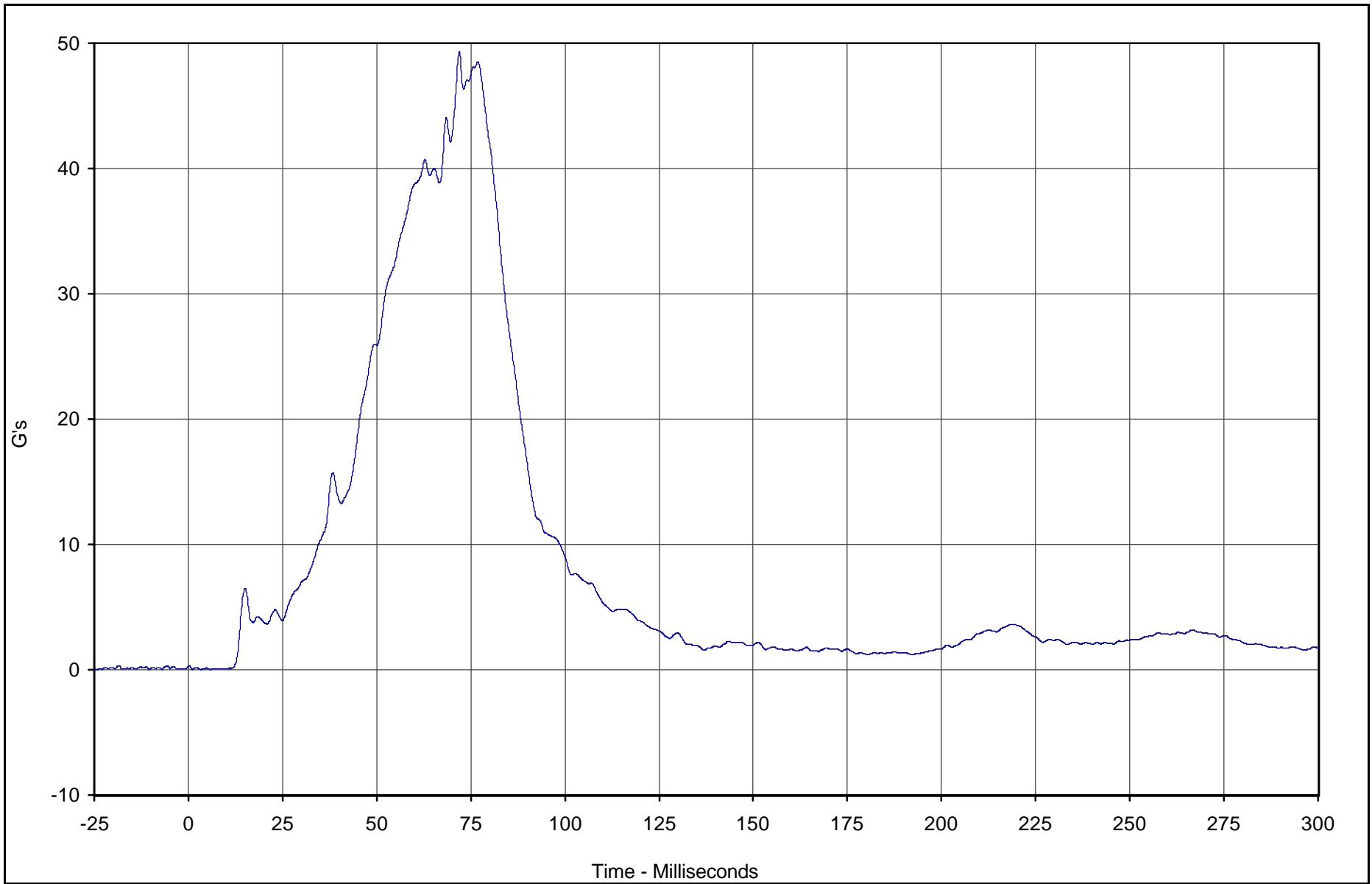
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-87



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Resultant Primary	057	RES	G's	49.4	71.9	0.0	6.0	180



Test Vehicle: 2003 Acura MDX SUV

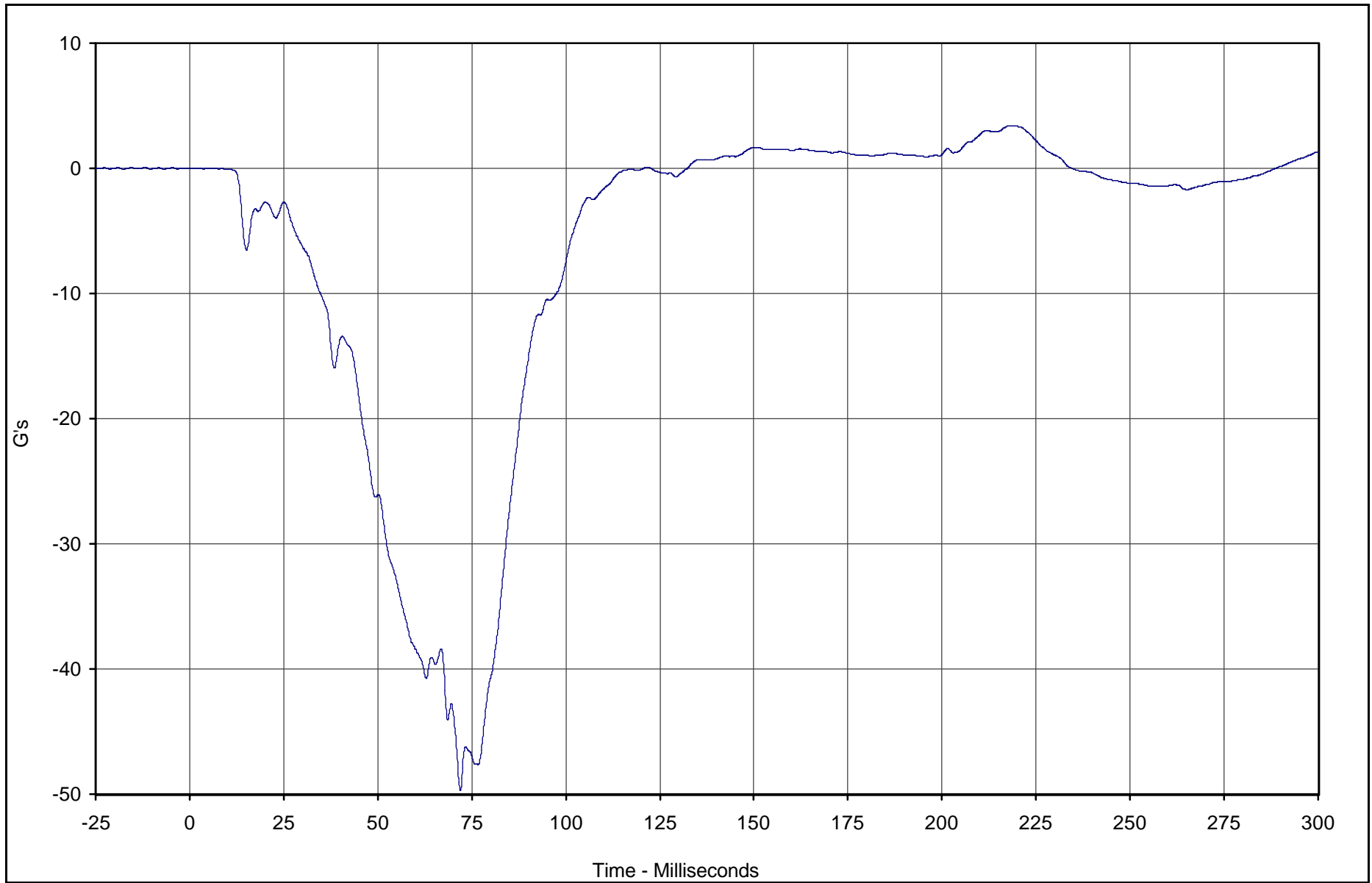
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-88



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Redundant X	060	FIL	G's	3.4	218.4	-49.7	72.0	180



Test Vehicle: 2003 Acura MDX SUV

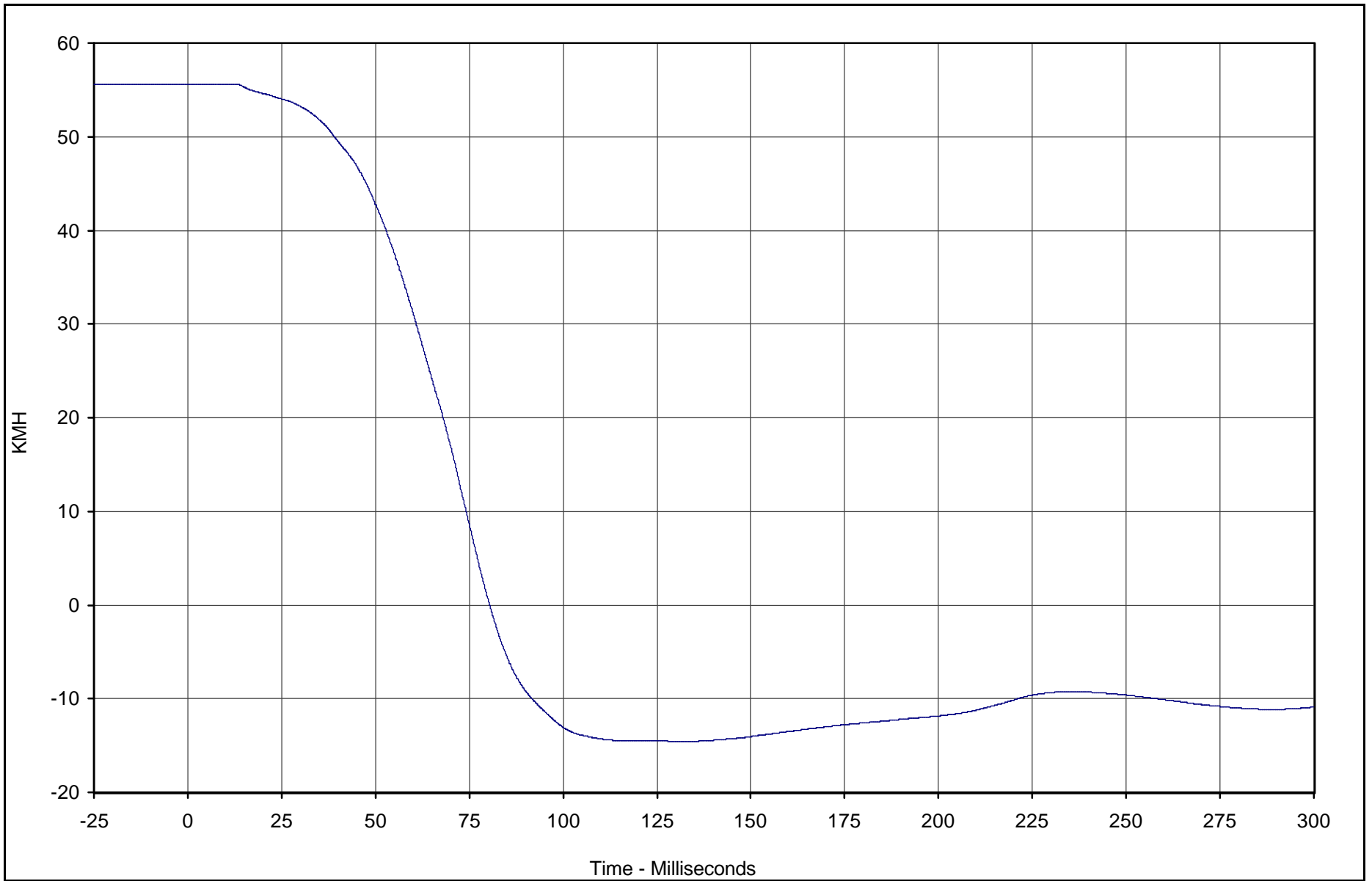
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-89



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Redundant X Velocity	060	IN1	KMH	55.6	0.0	-14.6	132.3	180



Test Vehicle: 2003 Acura MDX SUV

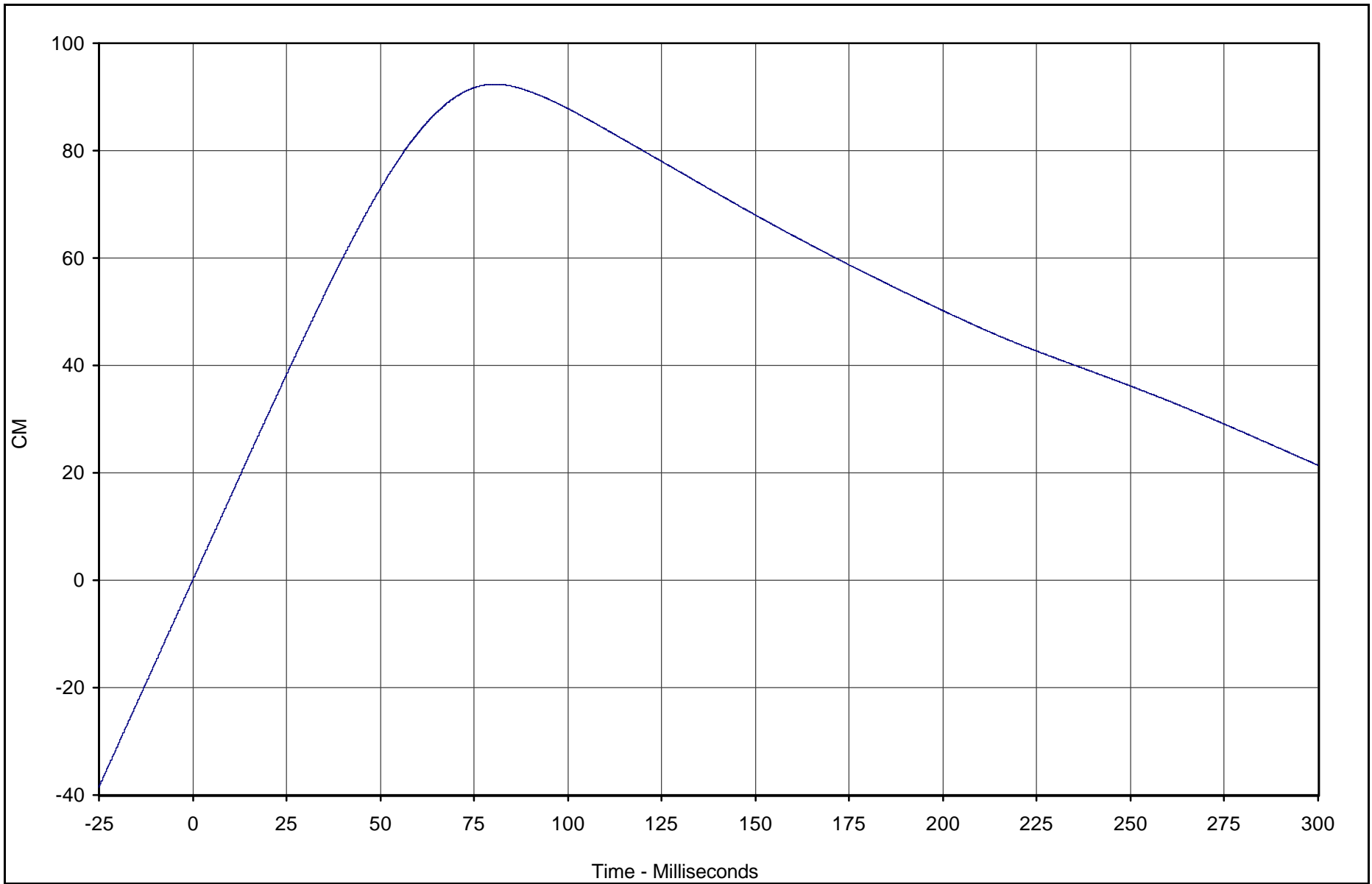
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-90



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Redundant X Displ.	060	IN2	CM	92.4	80.5	0.0	0.0	180



Test Vehicle: 2003 Acura MDX SUV

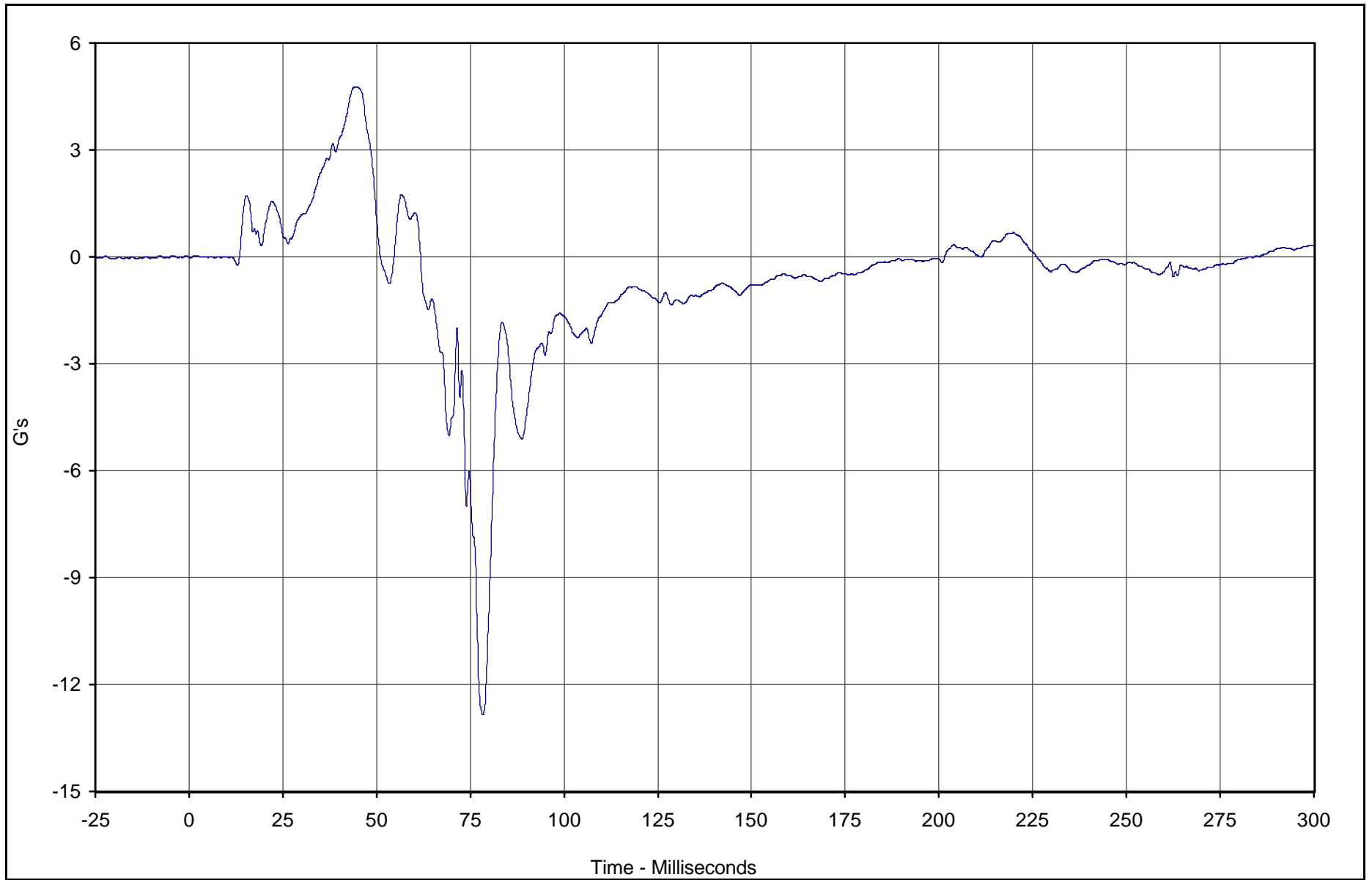
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-91



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Redundant Y	061	FIL	G's	4.8	44.2	-12.9	78.4	180



Test Vehicle: 2003 Acura MDX SUV

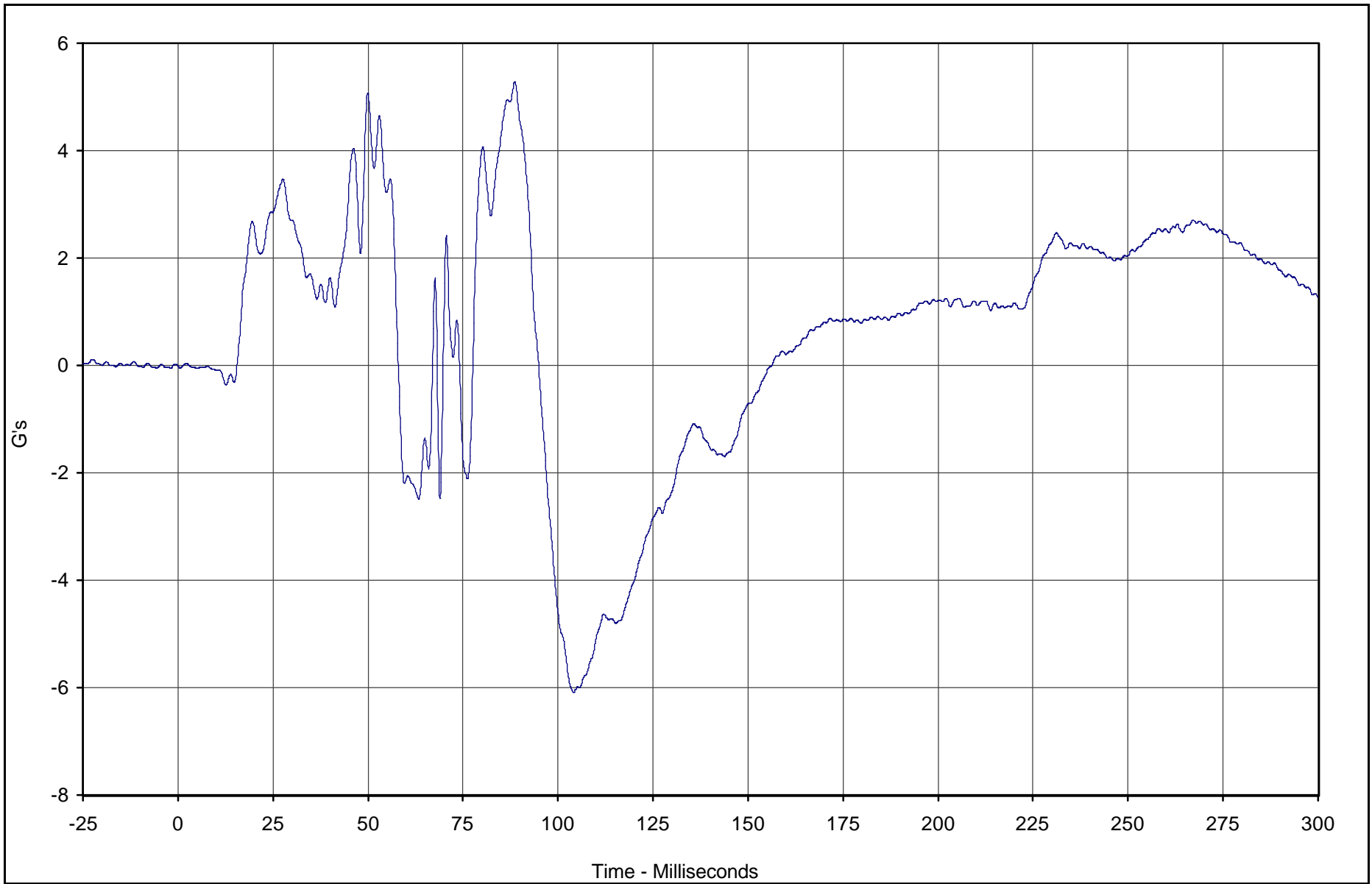
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-92



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Redundant Z	062	FIL	G's	5.3	88.7	-6.1	104.1	180



Test Vehicle: 2003 Acura MDX SUV

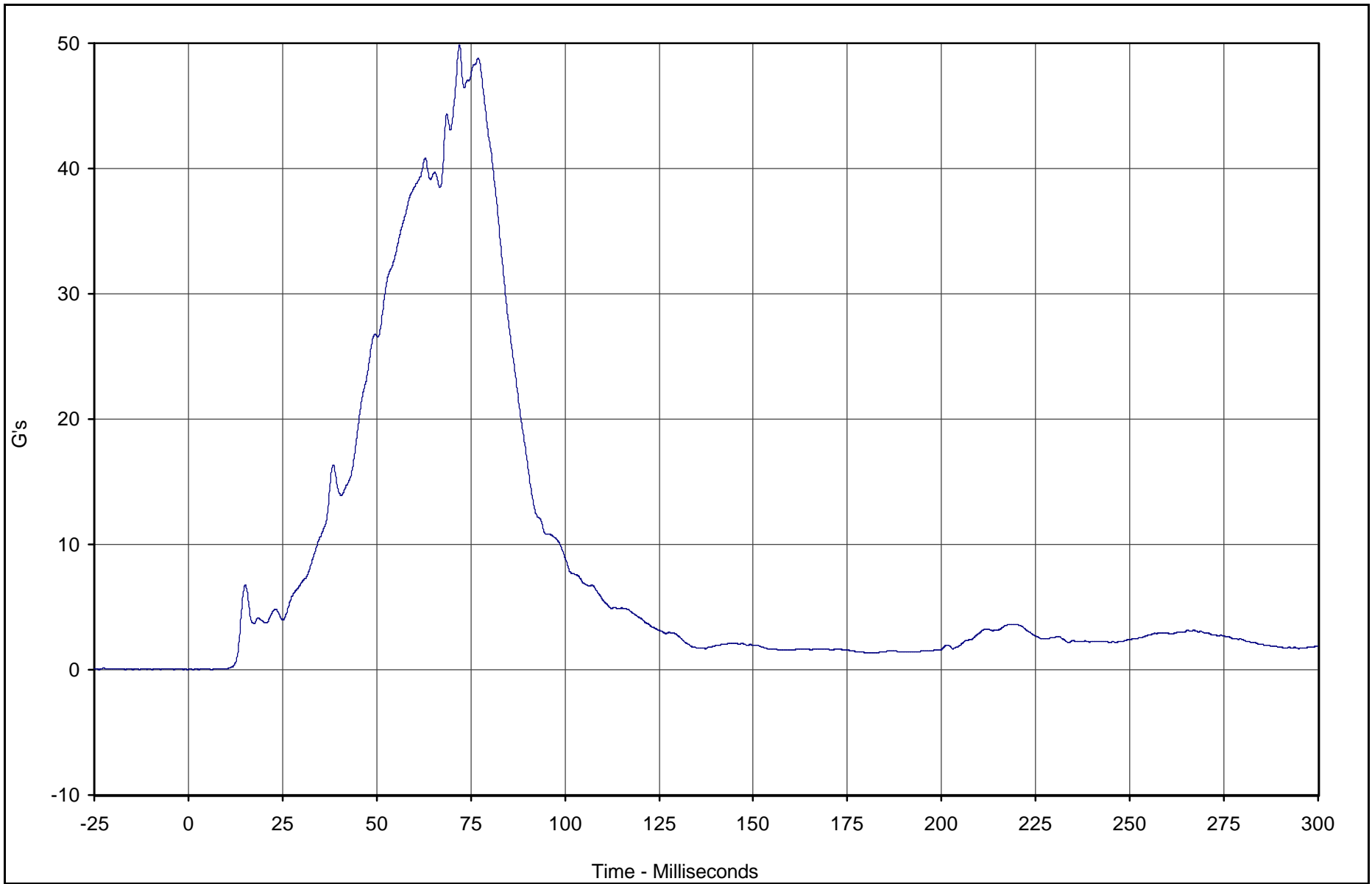
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-93



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Resultant Redundant	060	RES	G's	49.9	72.0	0.0	1.2	180



Test Vehicle: 2003 Acura MDX SUV

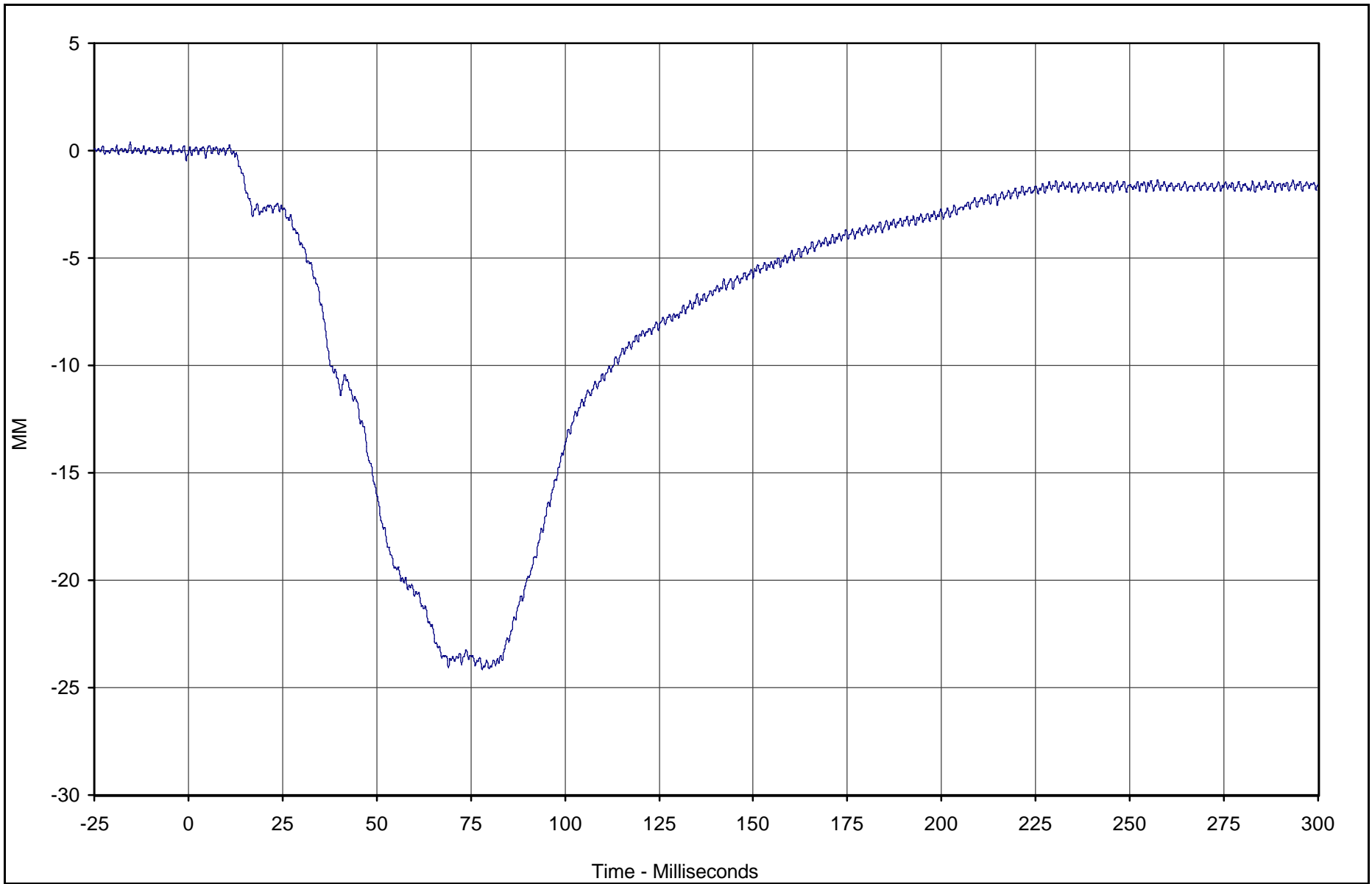
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-94



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Displacement X	063	FIL	MM	0.3	10.9	-24.2	78.1	600



Test Vehicle: 2003 Acura MDX SUV

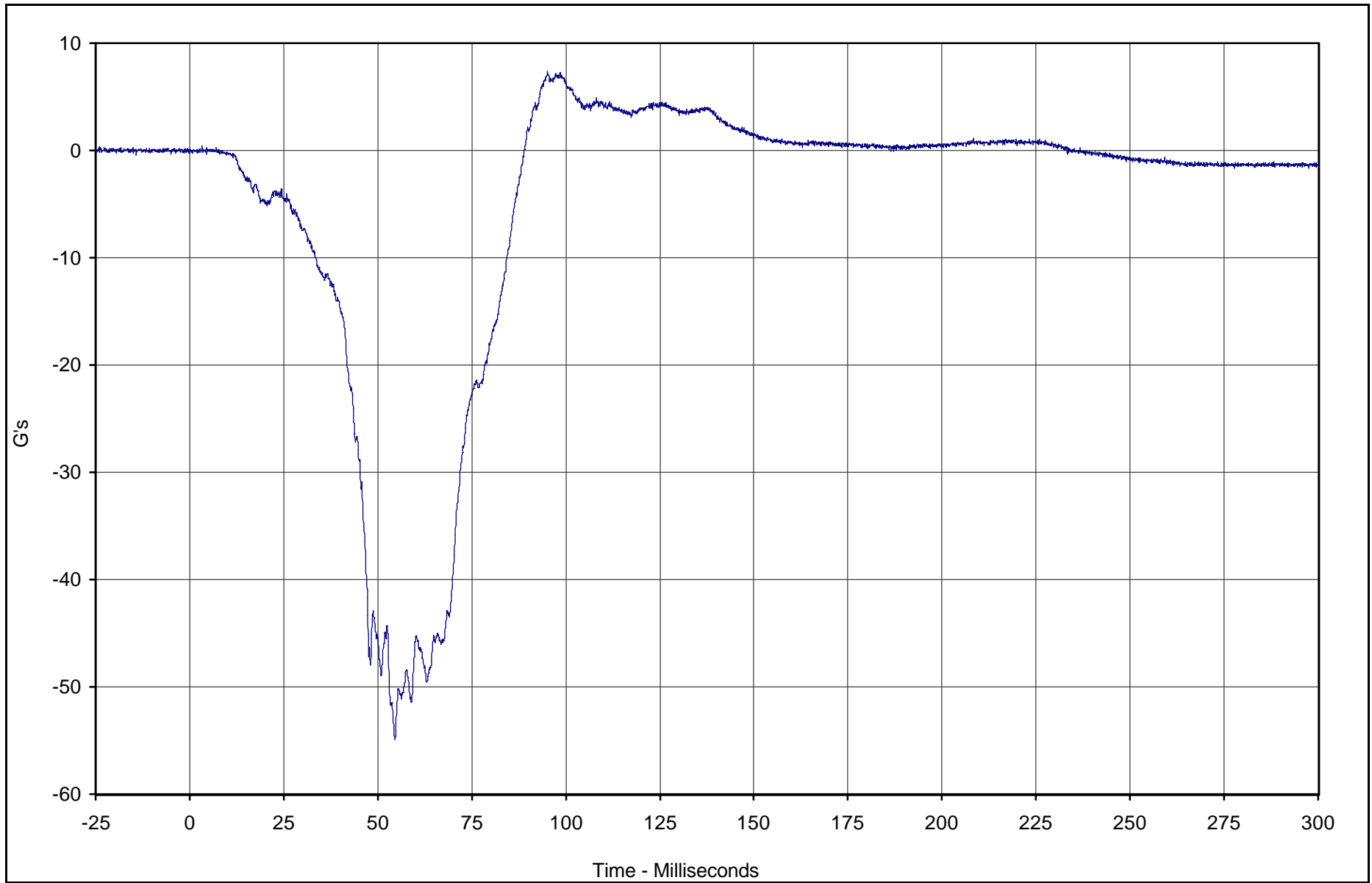
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-95



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Pelvis X	064	FIL	G's	7.4	95.1	-54.9	54.6	1000



Test Vehicle: 2003 Acura MDX SUV

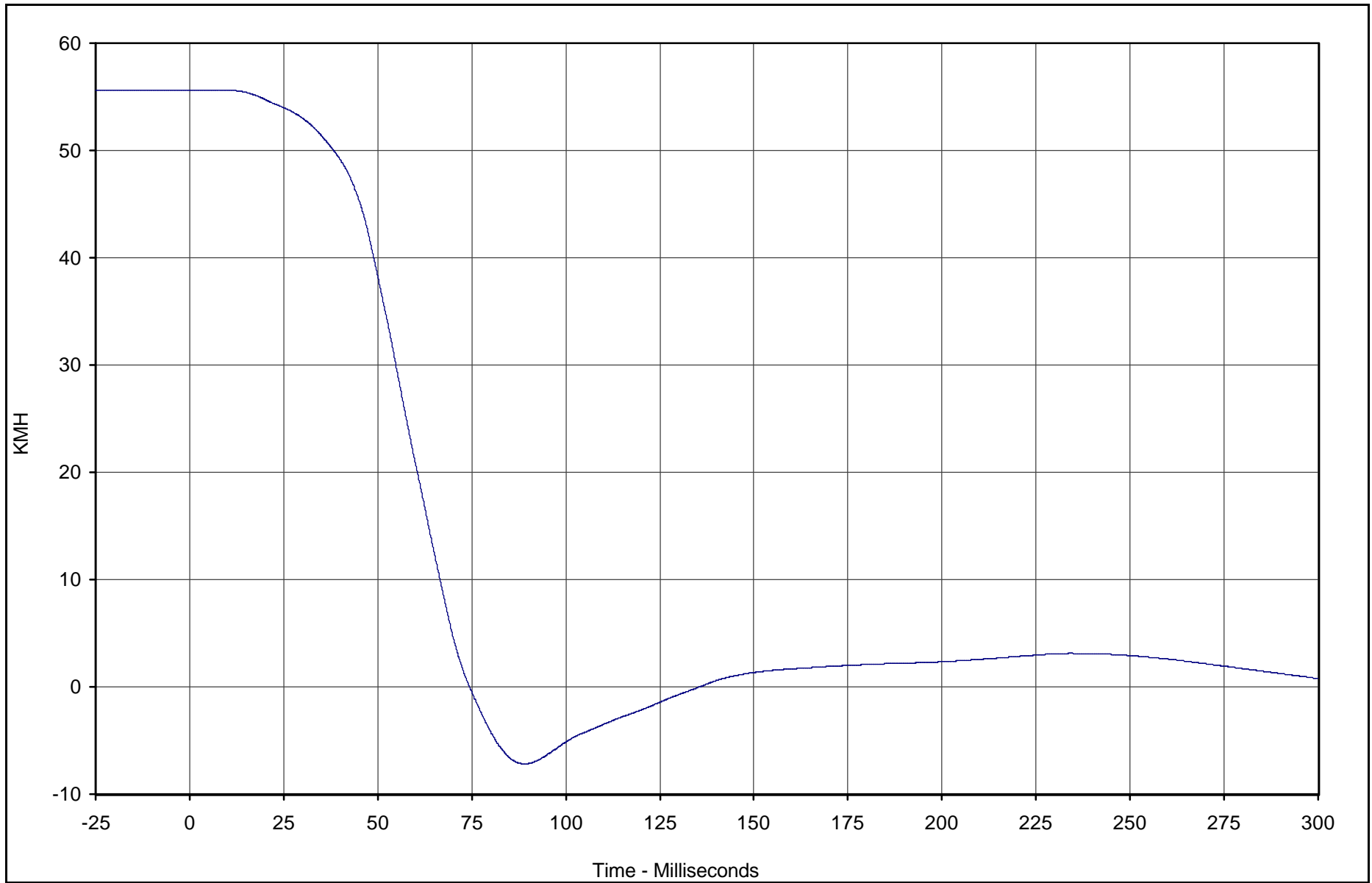
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-96



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Pelvis X Velocity	064	IN1	KMH	55.6	6.1	-7.2	89.0	180



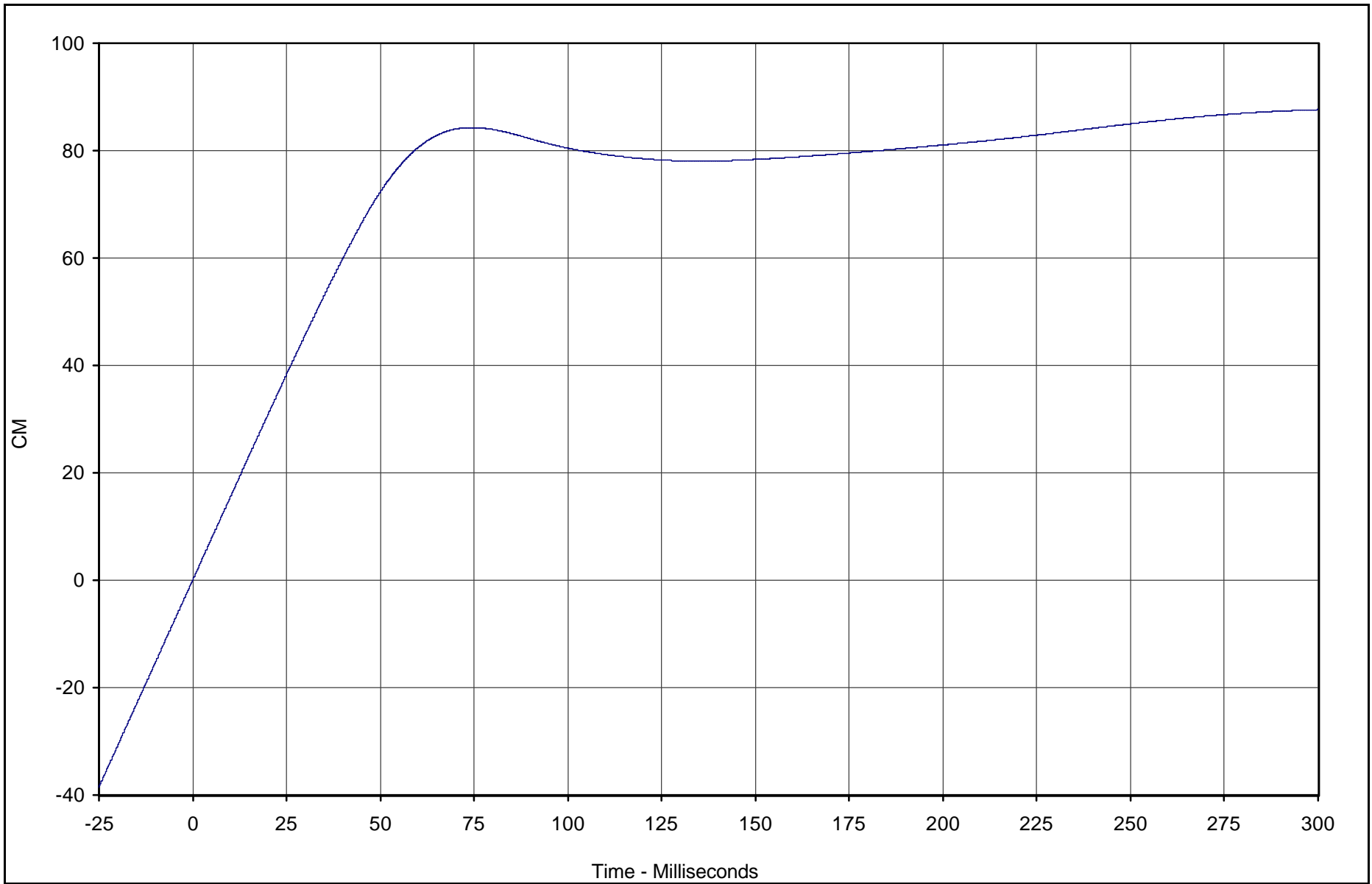
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-97



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Pelvis X Displ.	064	IN2	CM	87.6	299.9	0.0	0.0	180



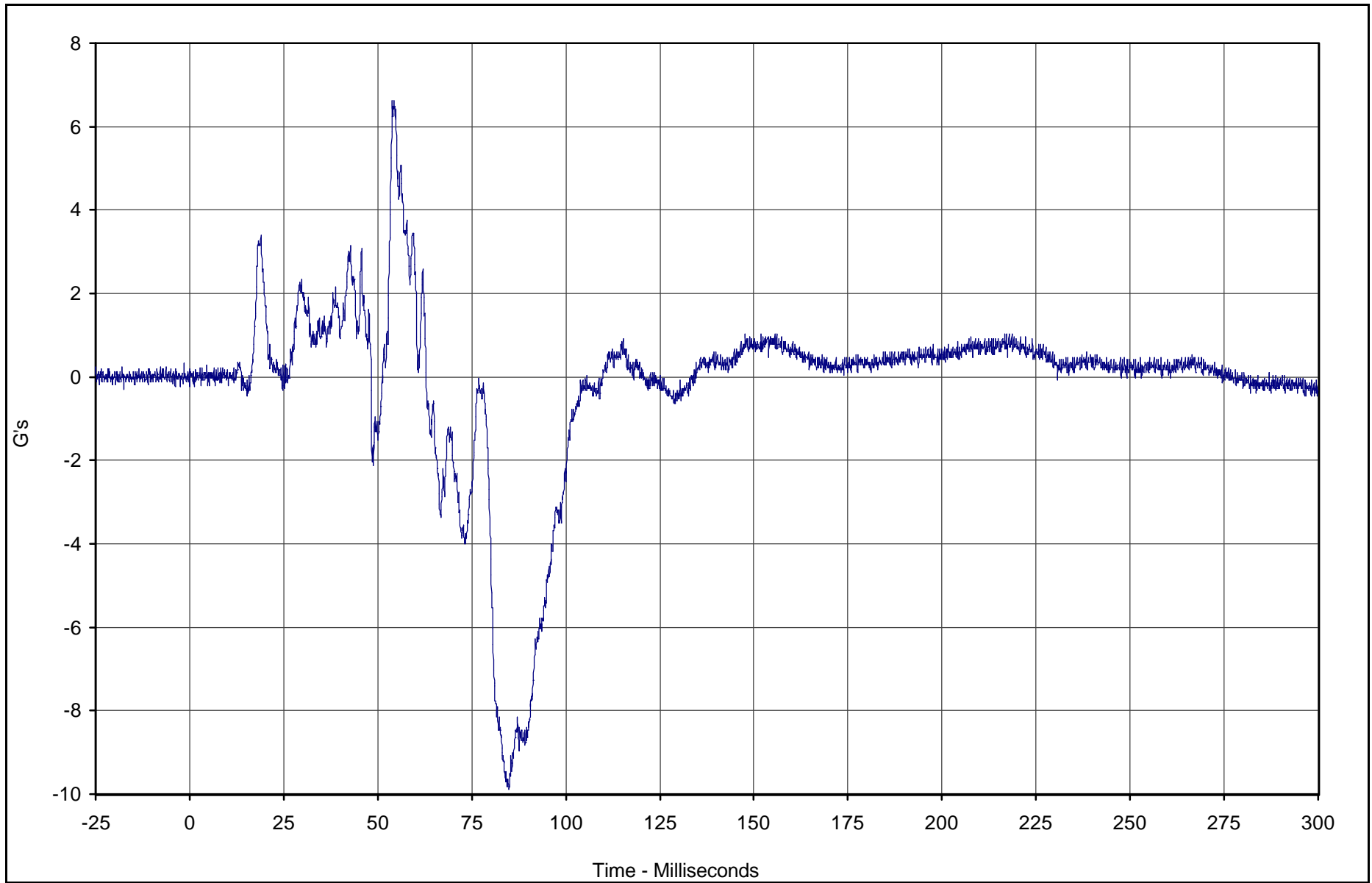
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-98



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Pelvis Y	065	FIL	G's	6.6	53.9	-9.9	84.9	1000



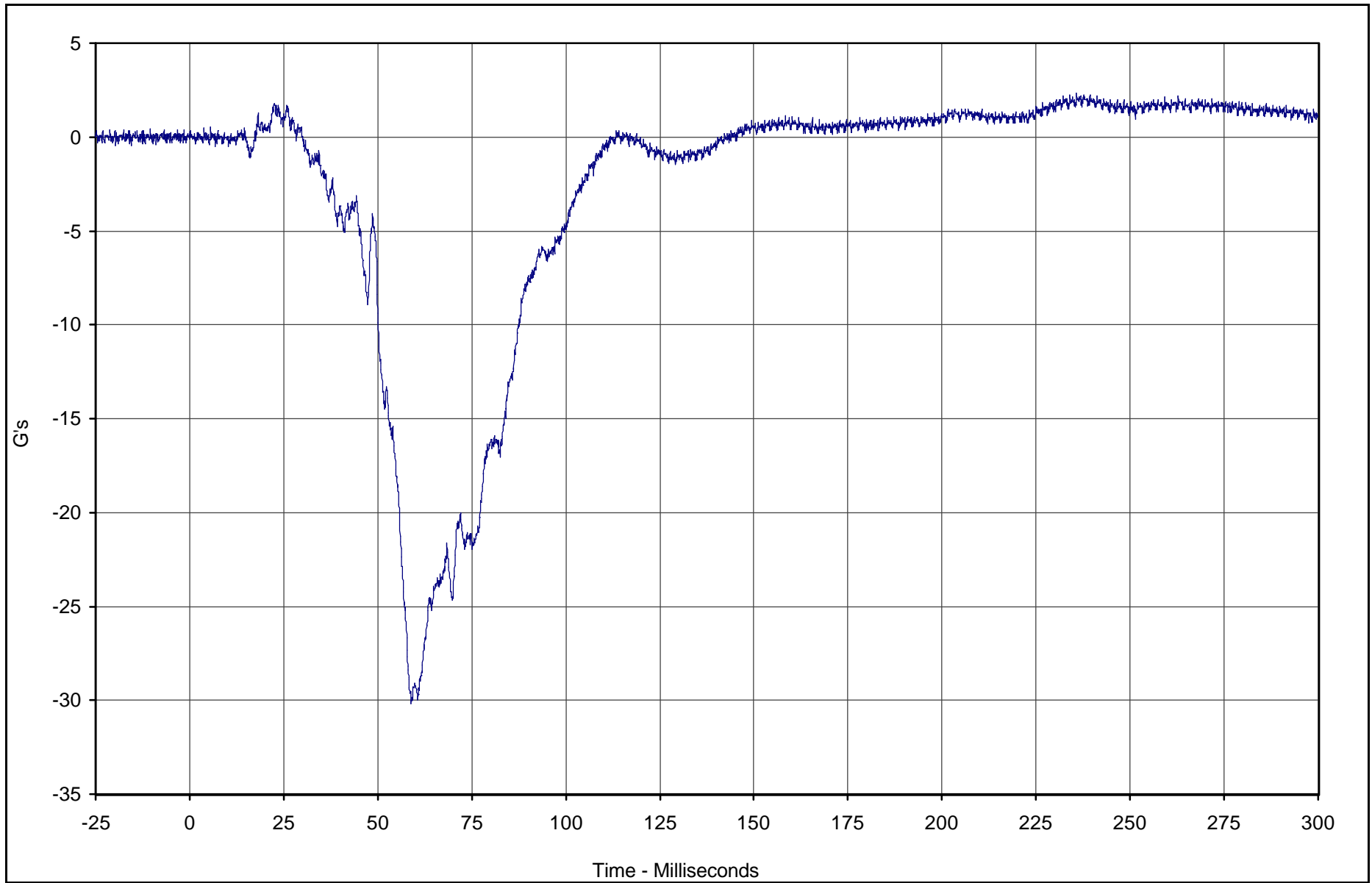
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Pelvis Z	066	FIL	G's	2.3	235.8	-30.2	58.8	1000



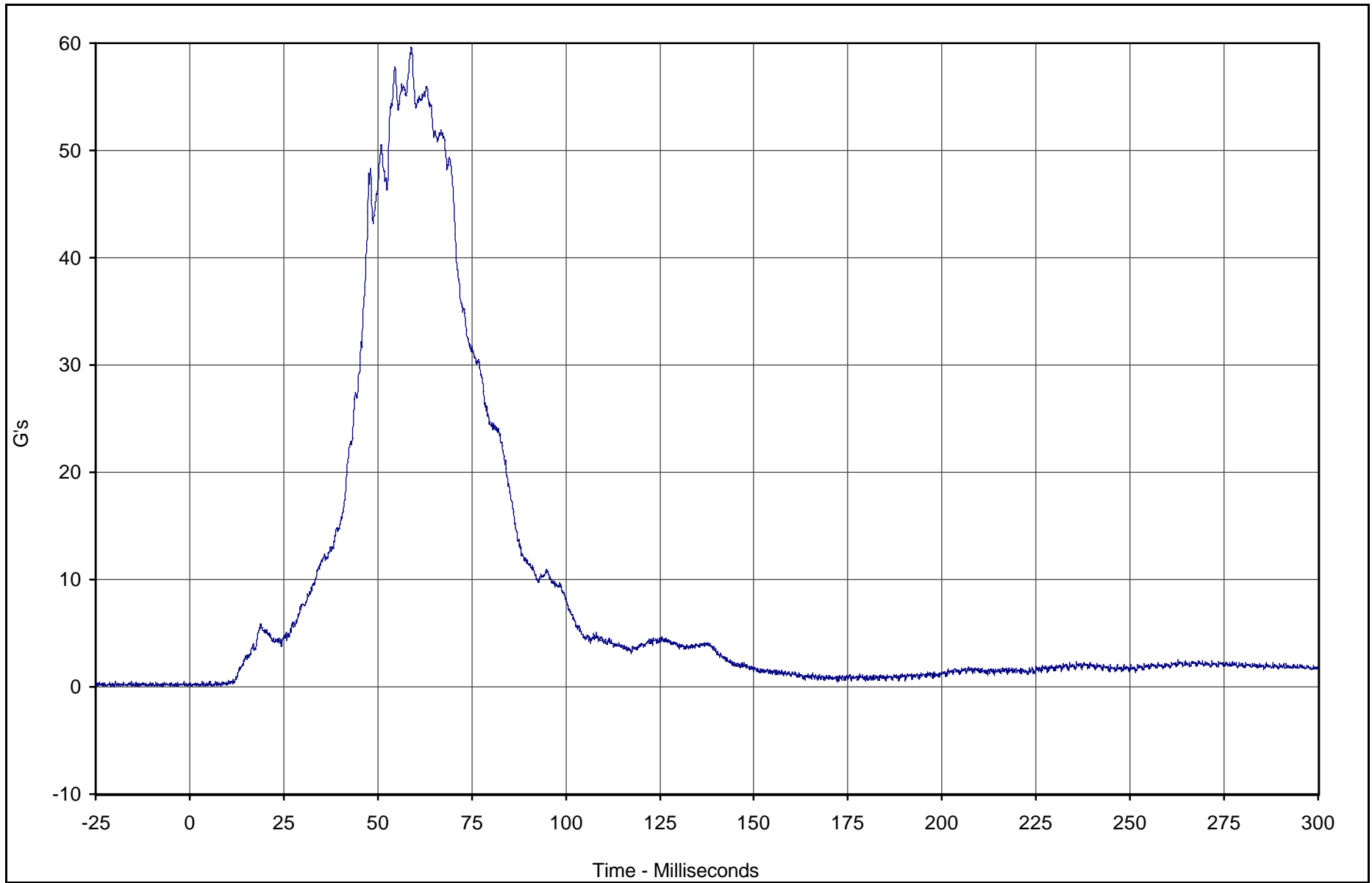
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-100



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Pelvis Resultant	066	RES	G's	59.6	58.8	0.1	2.9	1000



Test Vehicle: 2003 Acura MDX SUV

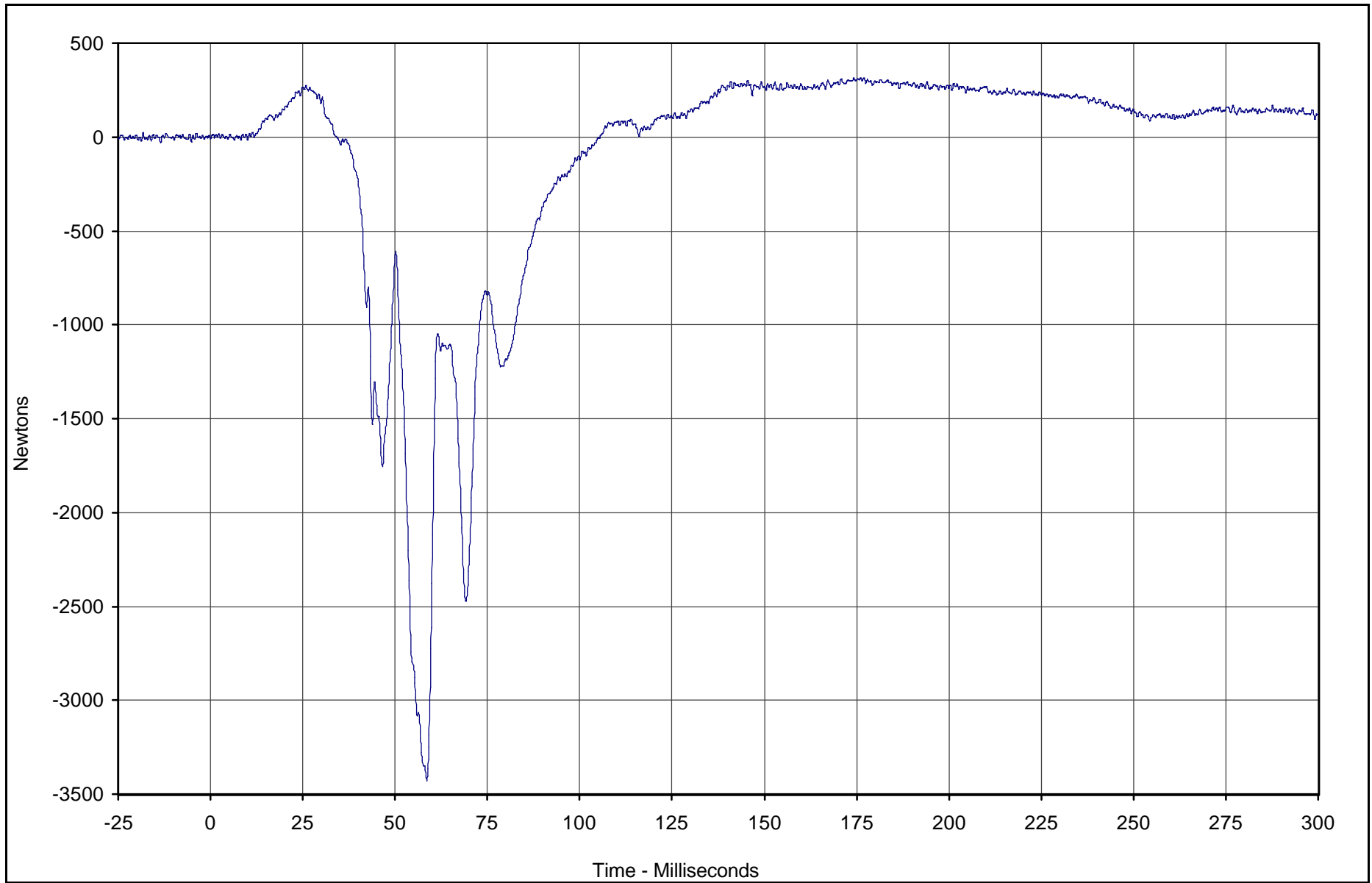
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-101



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Left Femur Force	067	FIL	Newtons	315.2	177.0	-3427.8	58.6	600



Test Vehicle: 2003 Acura MDX SUV

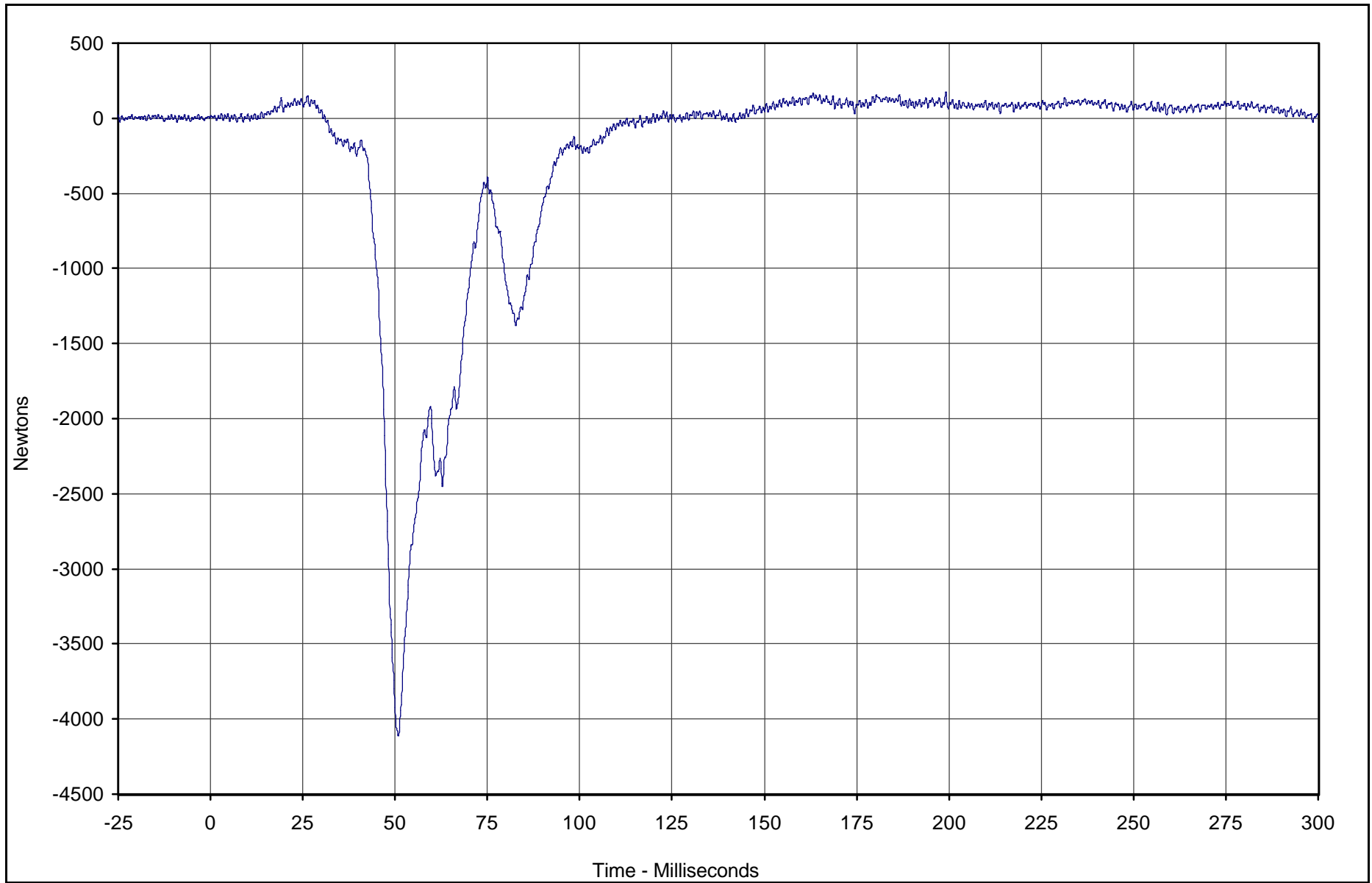
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-102



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Right Femur Force	068	FIL	Newtons	174.0	199.2	-4112.0	50.9	600



Test Vehicle: 2003 Acura MDX SUV

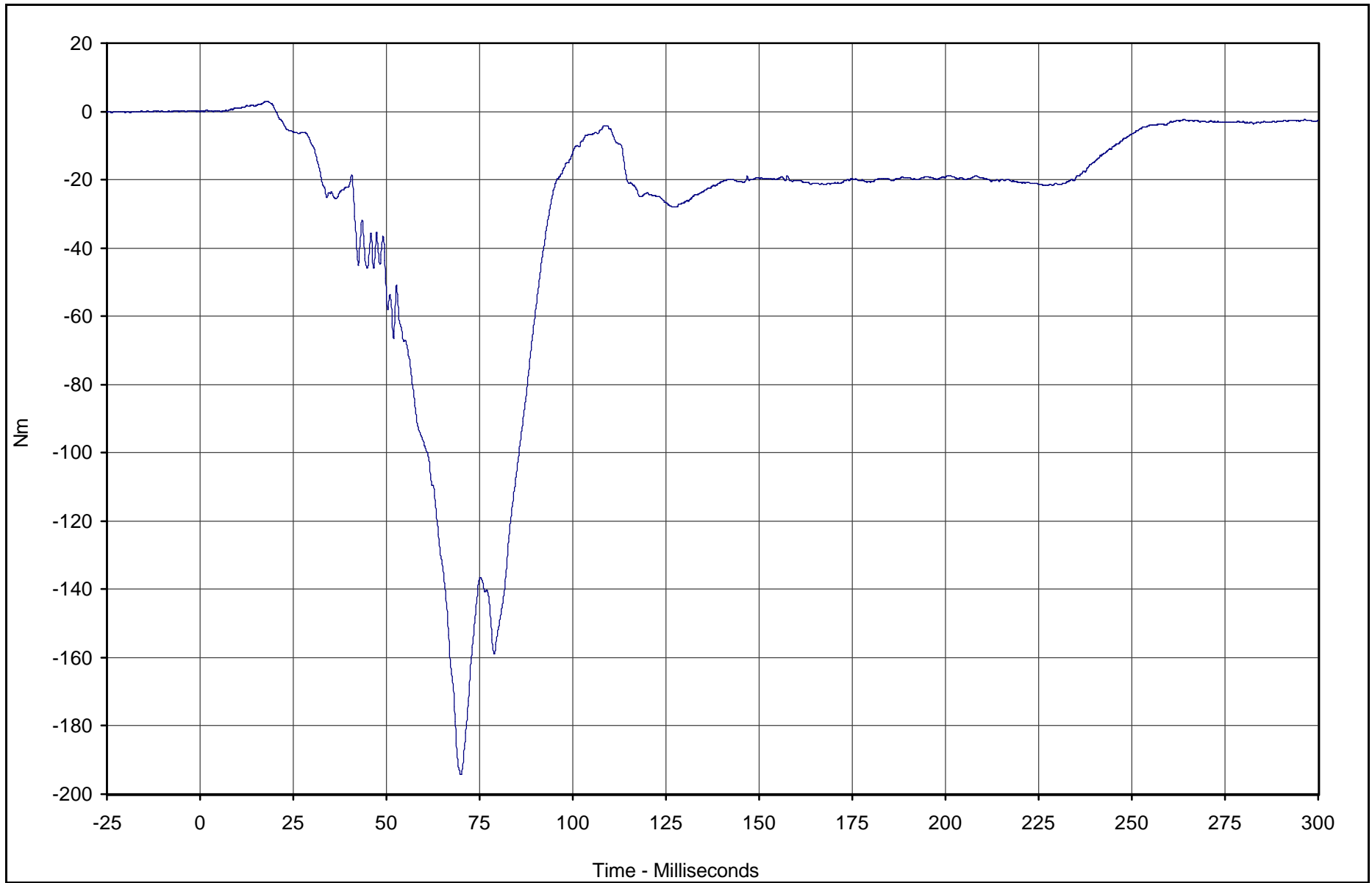
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-103



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Left Upper Tibia Moment X	069	FIL	Nm	2.9	17.5	-194.3	70.0	600



Test Vehicle: 2003 Acura MDX SUV

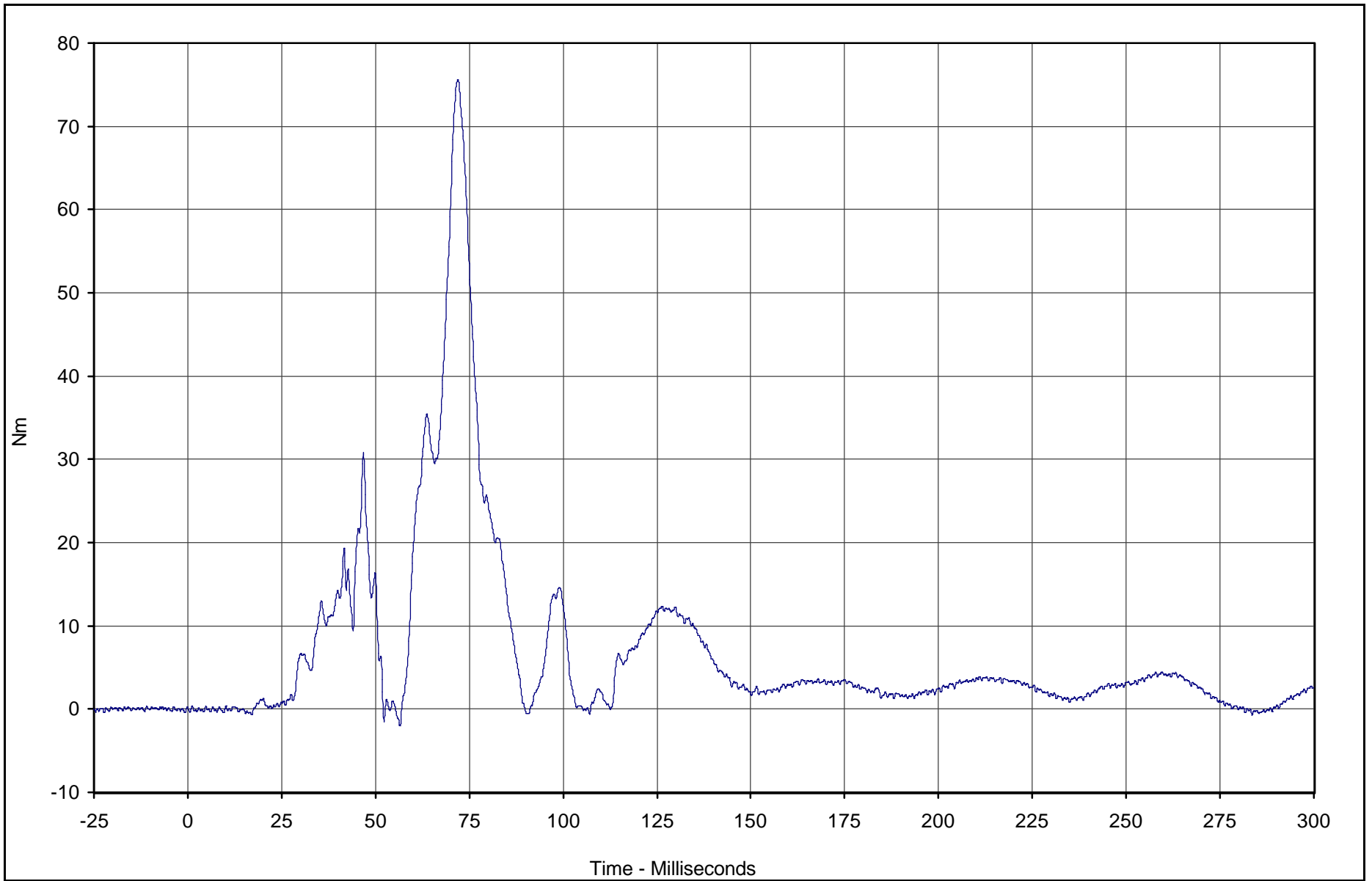
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-104



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Left Upper Tibia Moment Y	070	FIL	Nm	75.6	71.9	-2.0	56.5	600



Test Vehicle: 2003 Acura MDX SUV

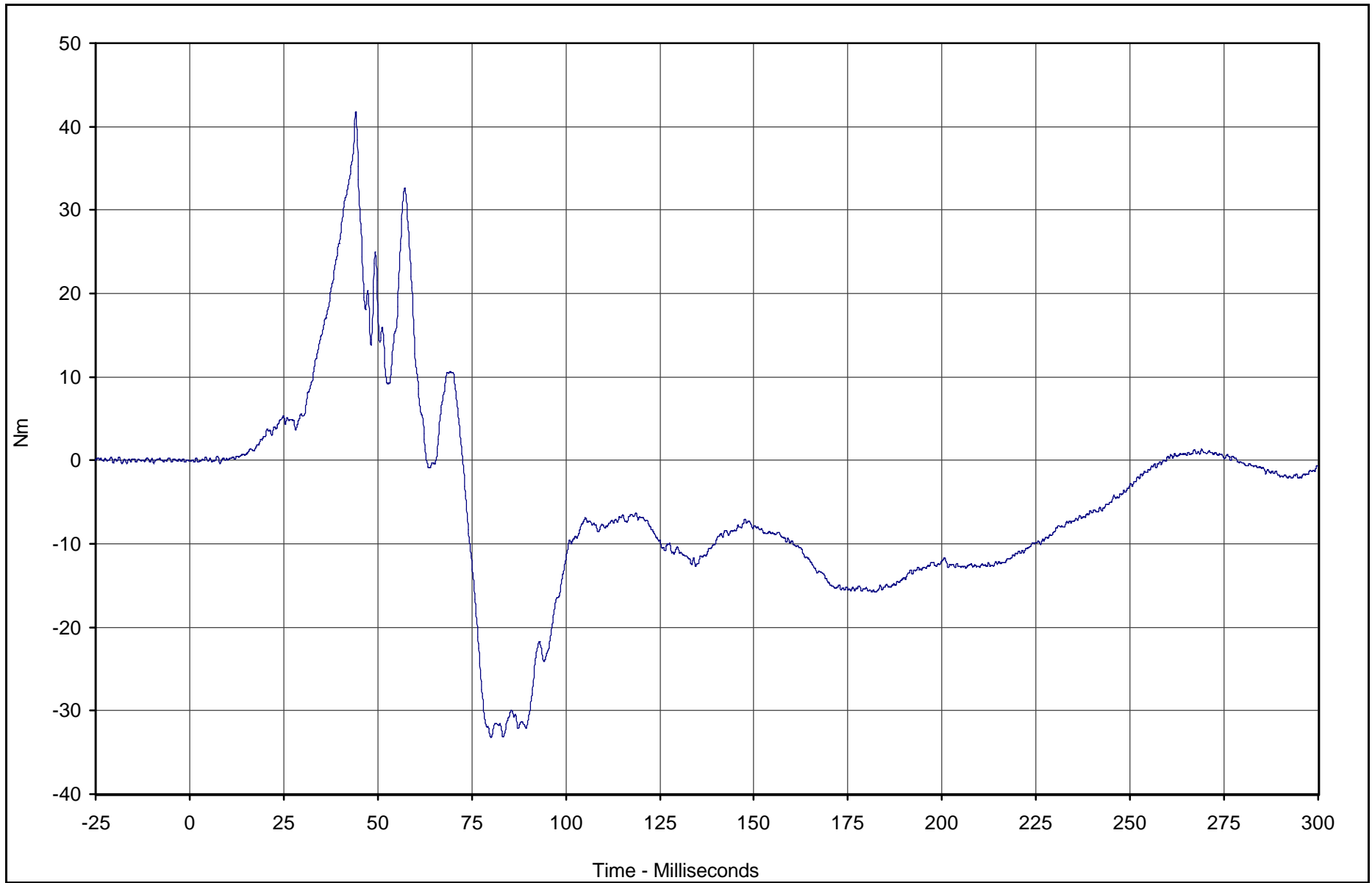
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-105



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Right Upper Tibia Moment X	071	FIL	Nm	41.7	44.2	-33.2	80.1	600



Test Vehicle: 2003 Acura MDX SUV

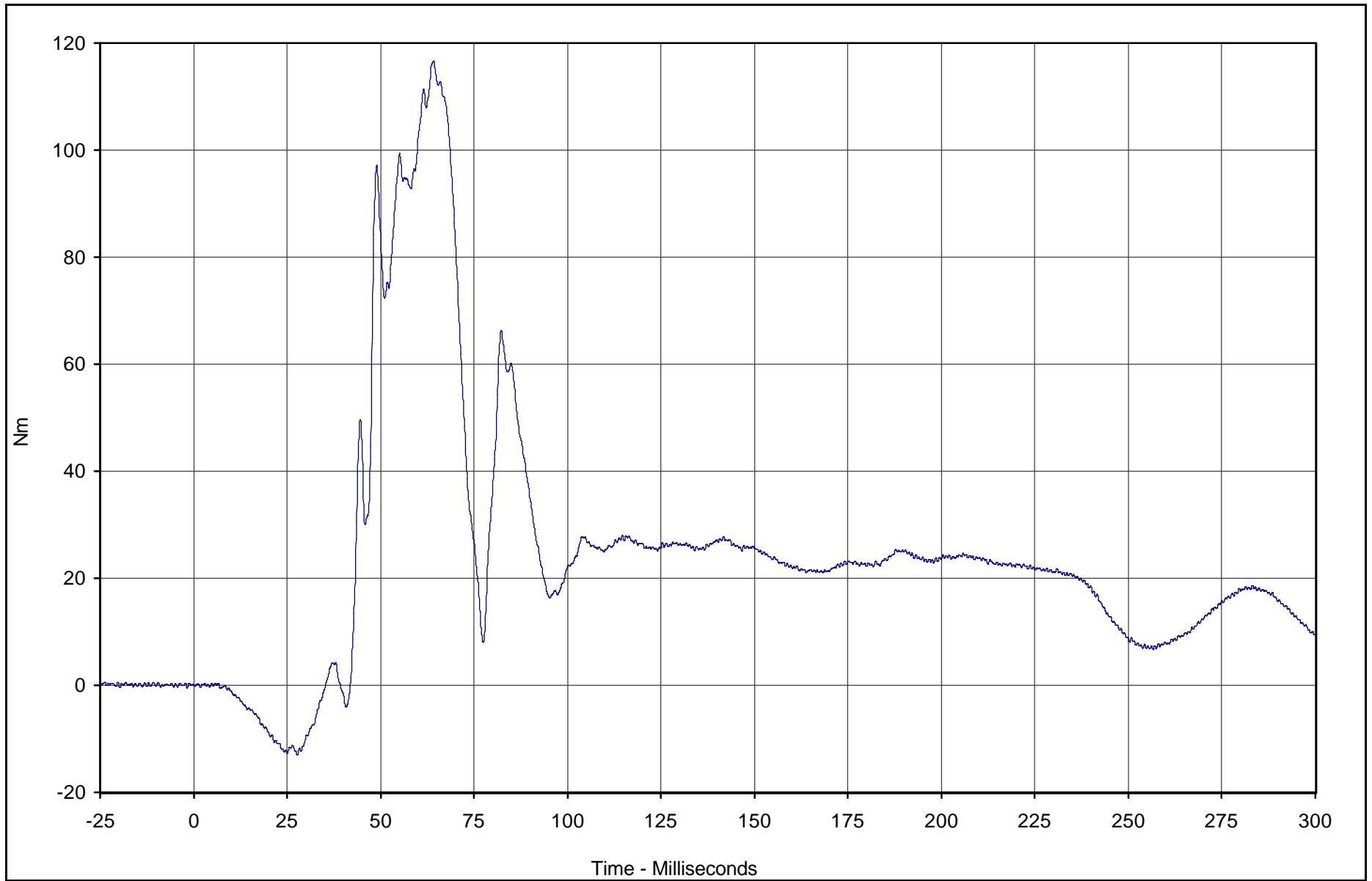
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-106



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Right Upper Tibia Moment Y	072	FIL	Nm	116.6	64.2	-12.9	27.7	600



Test Vehicle: 2003 Acura MDX SUV

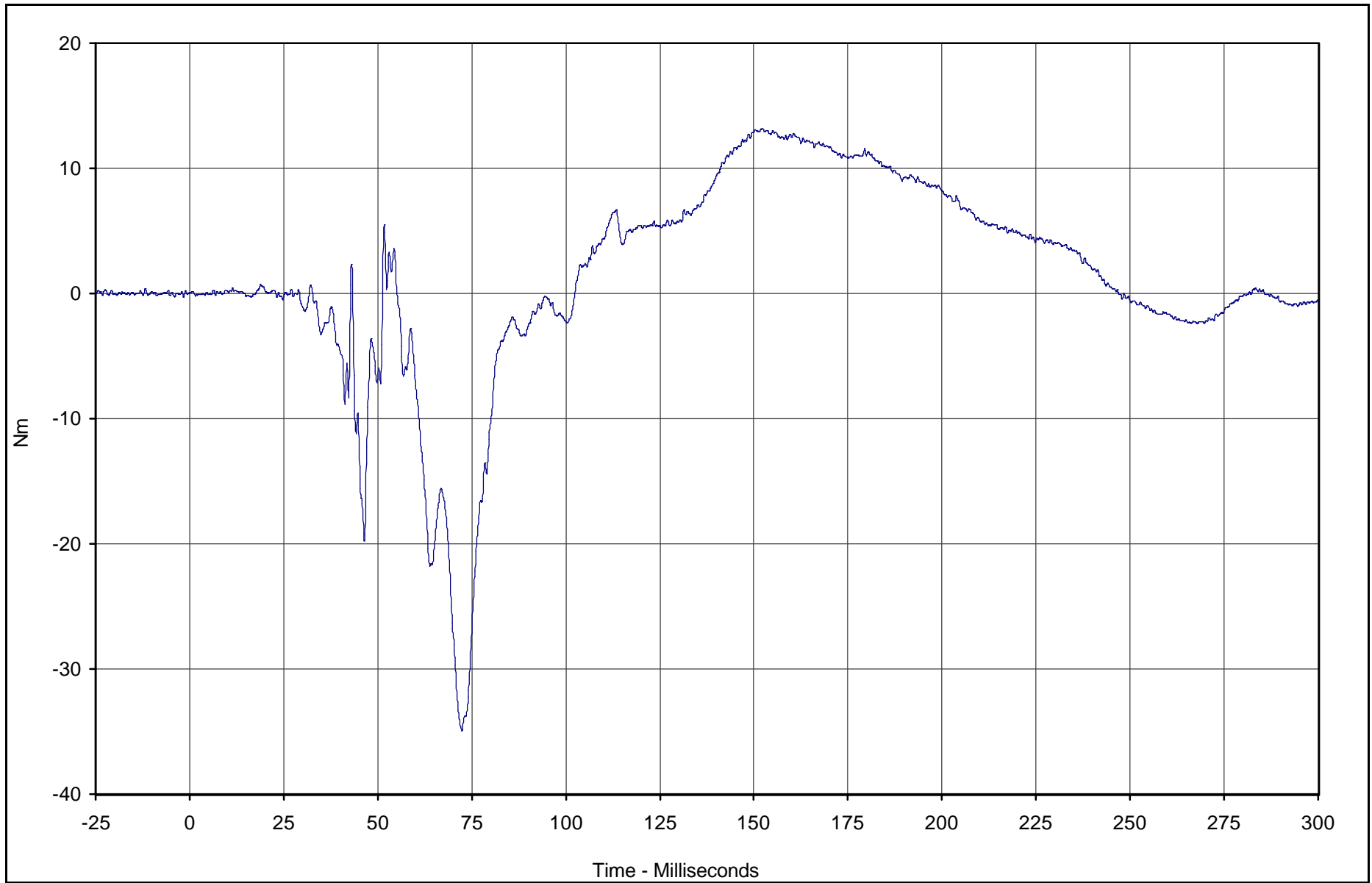
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-107



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Left Lower Tibia Moment X	073	FIL	Nm	13.1	152.2	-35.0	72.4	600



Test Vehicle: 2003 Acura MDX SUV

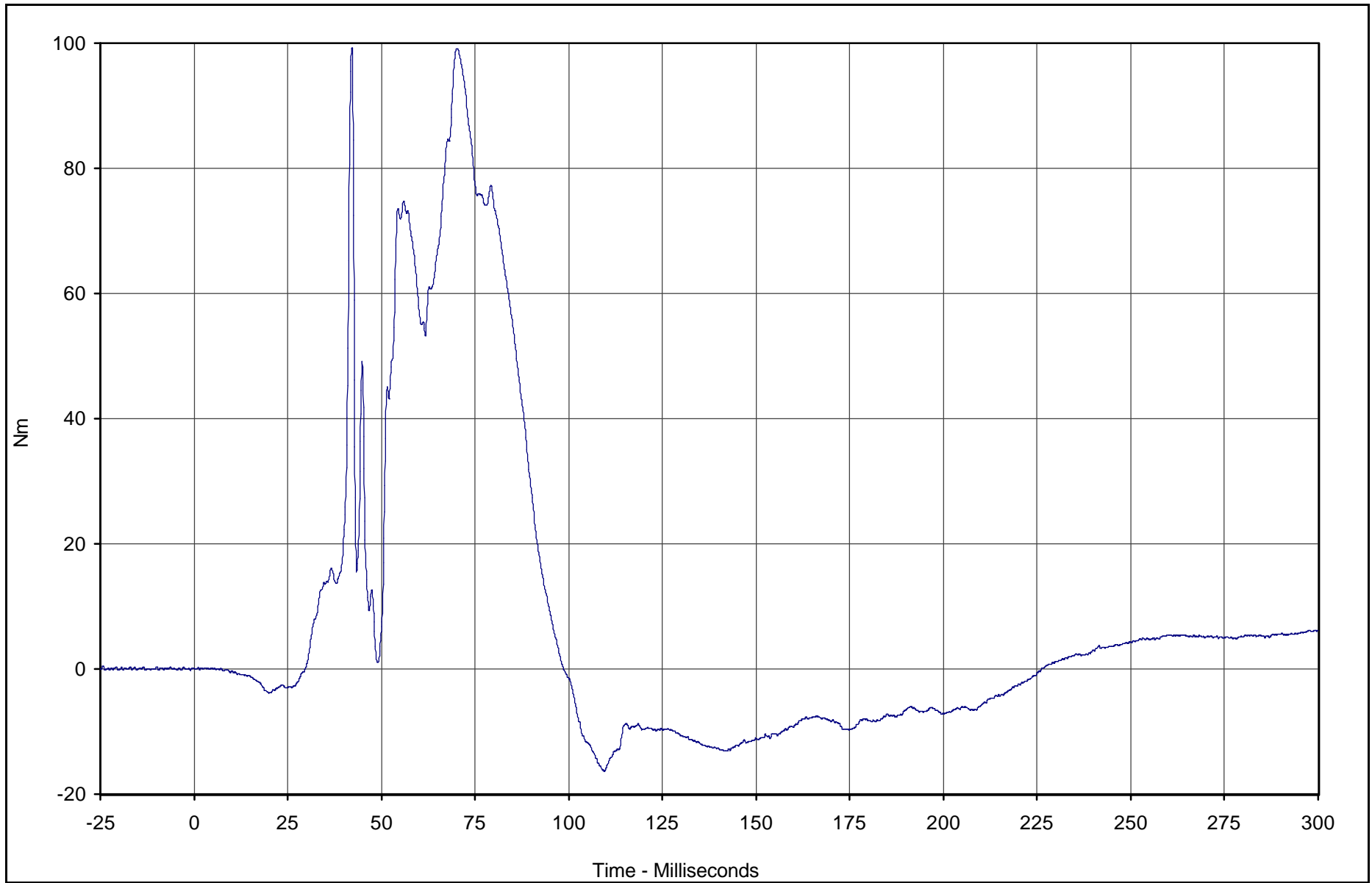
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-108



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Left Lower Tibia Moment Y	074	FIL	Nm	99.2	42.2	-16.3	109.5	600



Test Vehicle: 2003 Acura MDX SUV

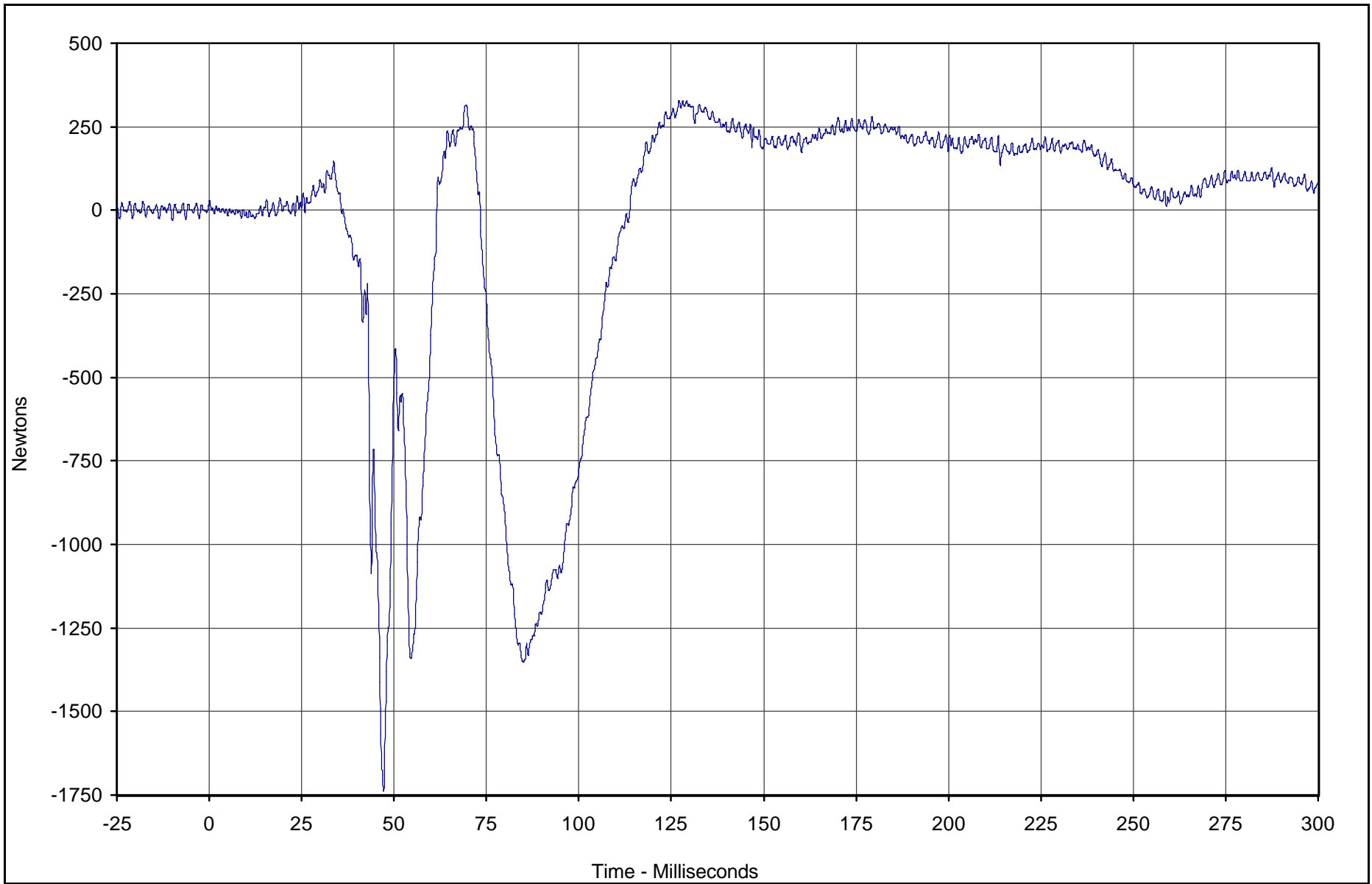
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-109



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Left Lower Tibia Force Z	075	FIL	Newtons	328.4	127.1	-1739.0	47.2	600



Test Vehicle: 2003 Acura MDX SUV

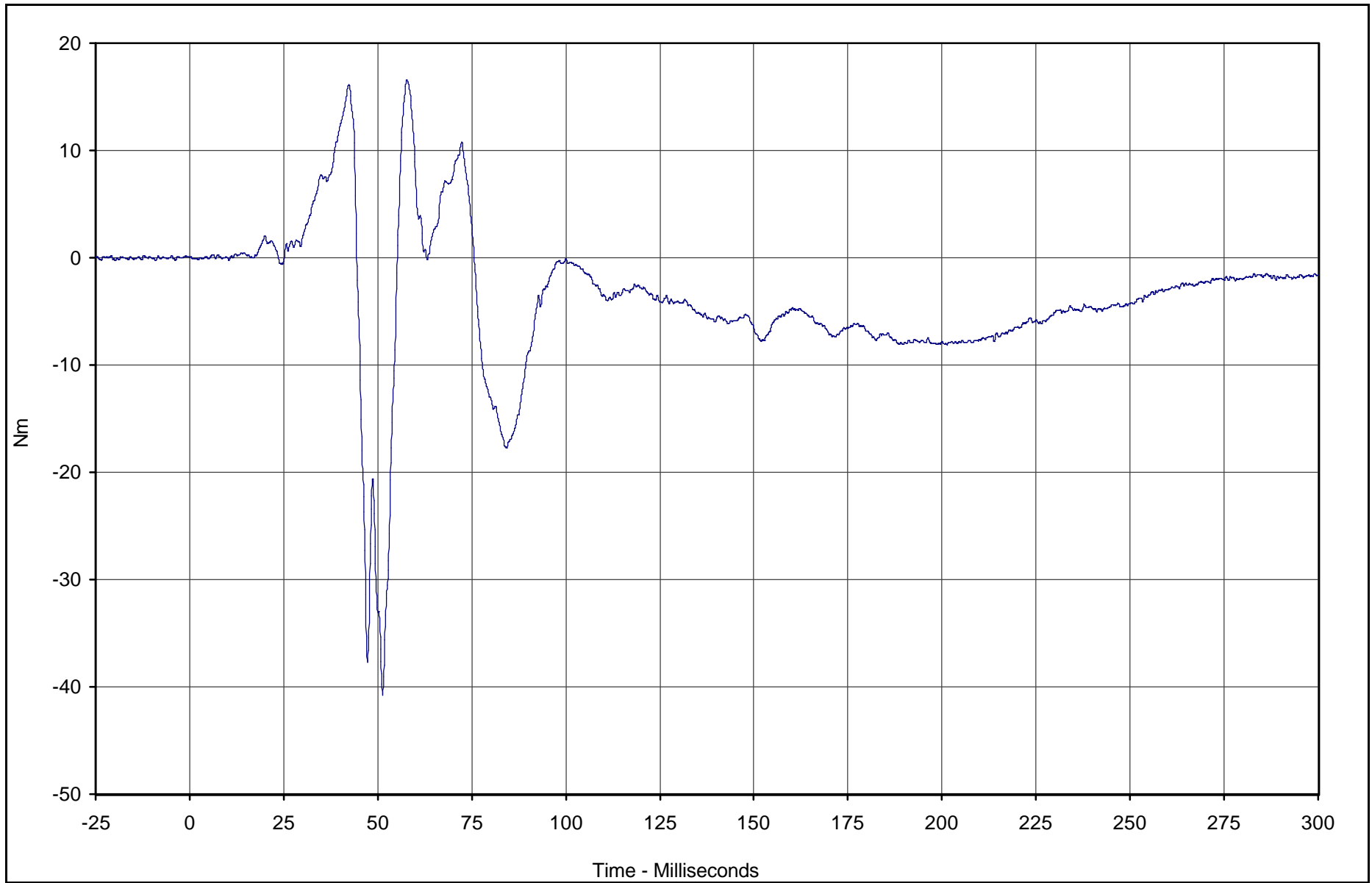
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-110



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Right Lower Tibia Moment X	076	FIL	Nm	16.5	57.8	-40.8	51.3	600



Test Vehicle: 2003 Acura MDX SUV

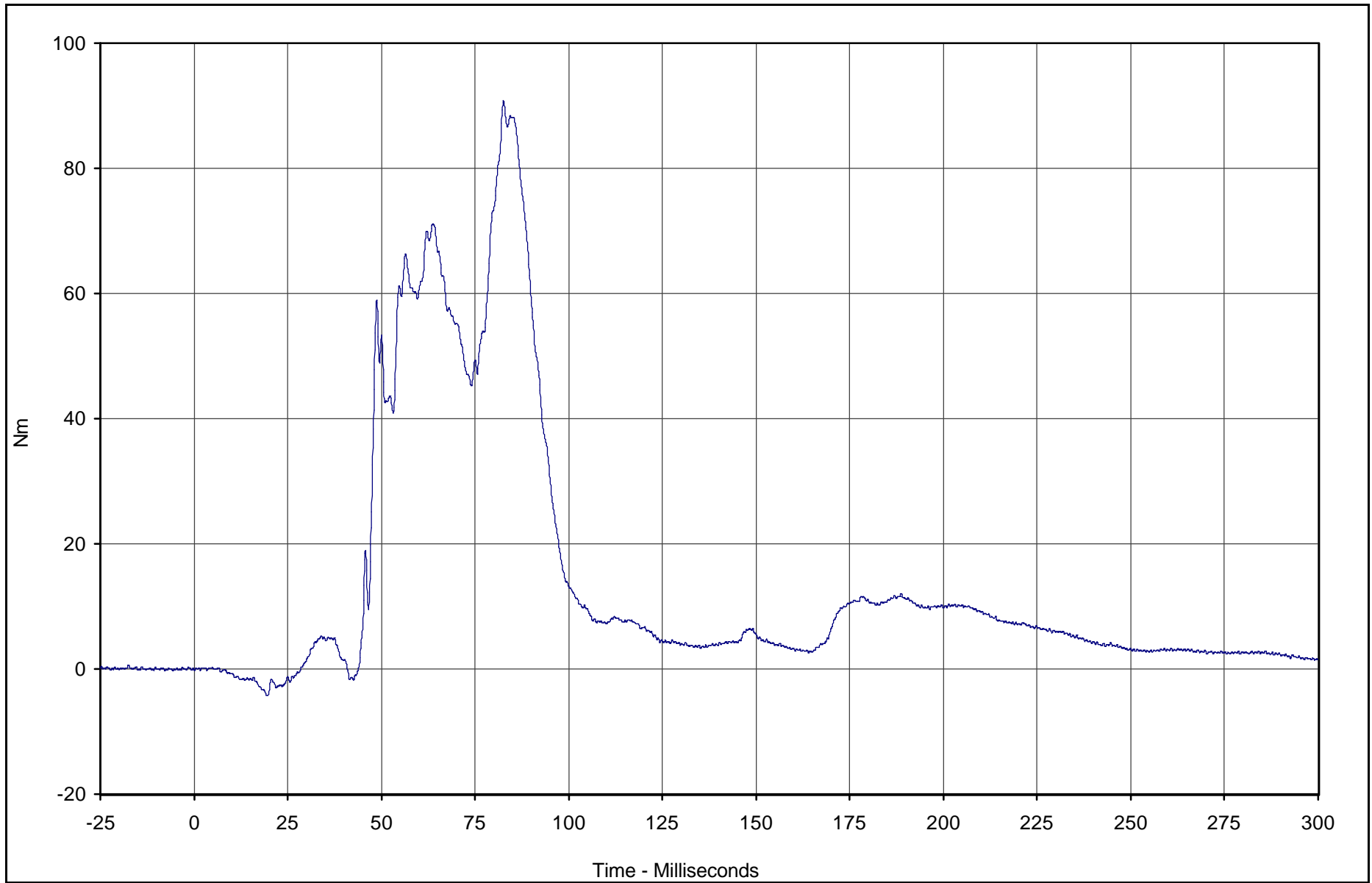
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-111



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Right Lower Tibia Moment Y	077	FIL	Nm	90.8	82.6	-4.3	19.4	600



Test Vehicle: 2003 Acura MDX SUV

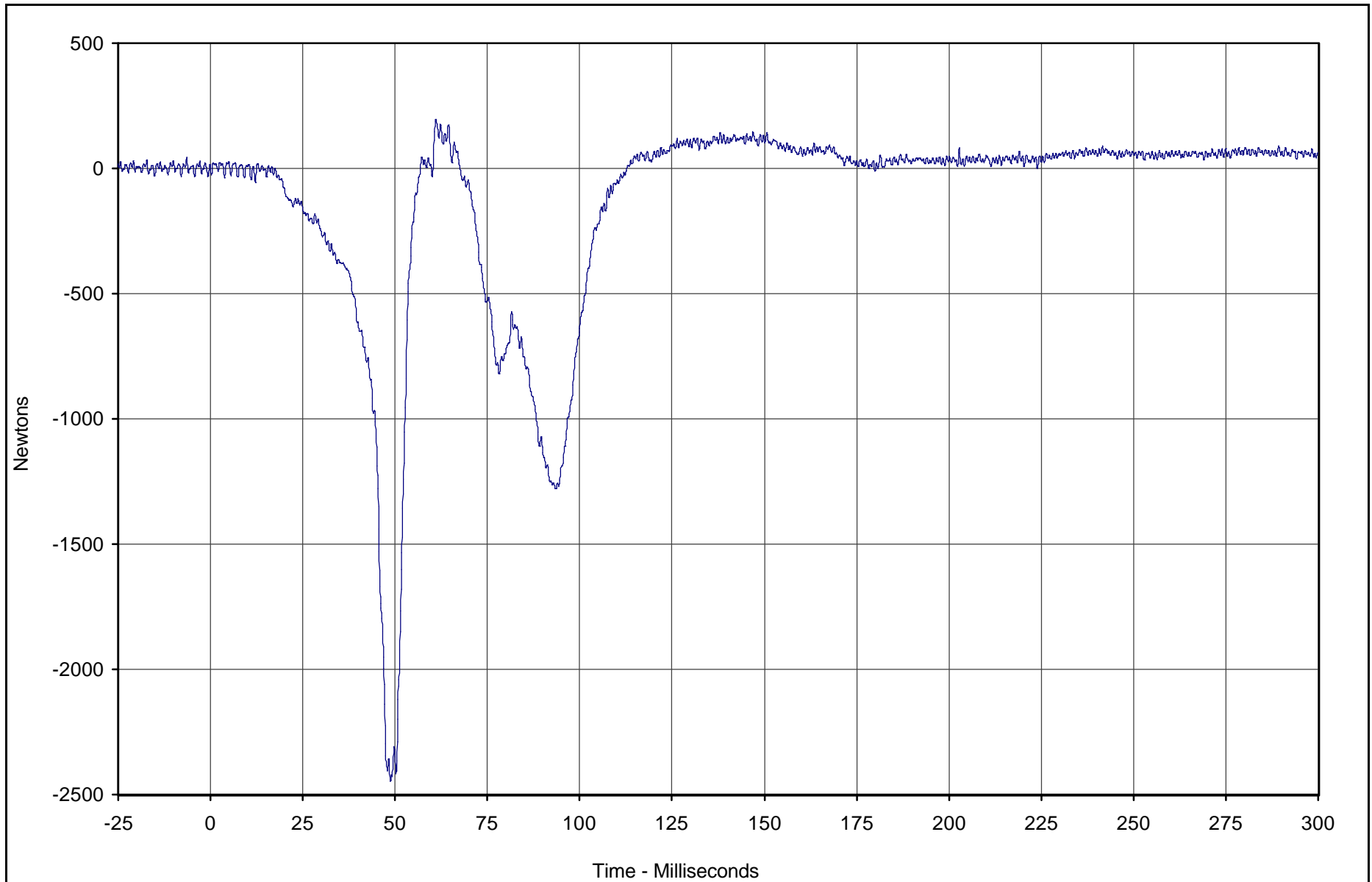
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-112



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Right lower Tibia Force Z	078	FIL	Newtons	195.4	61.1	-2446.9	48.7	600



Test Vehicle: 2003 Acura MDX SUV

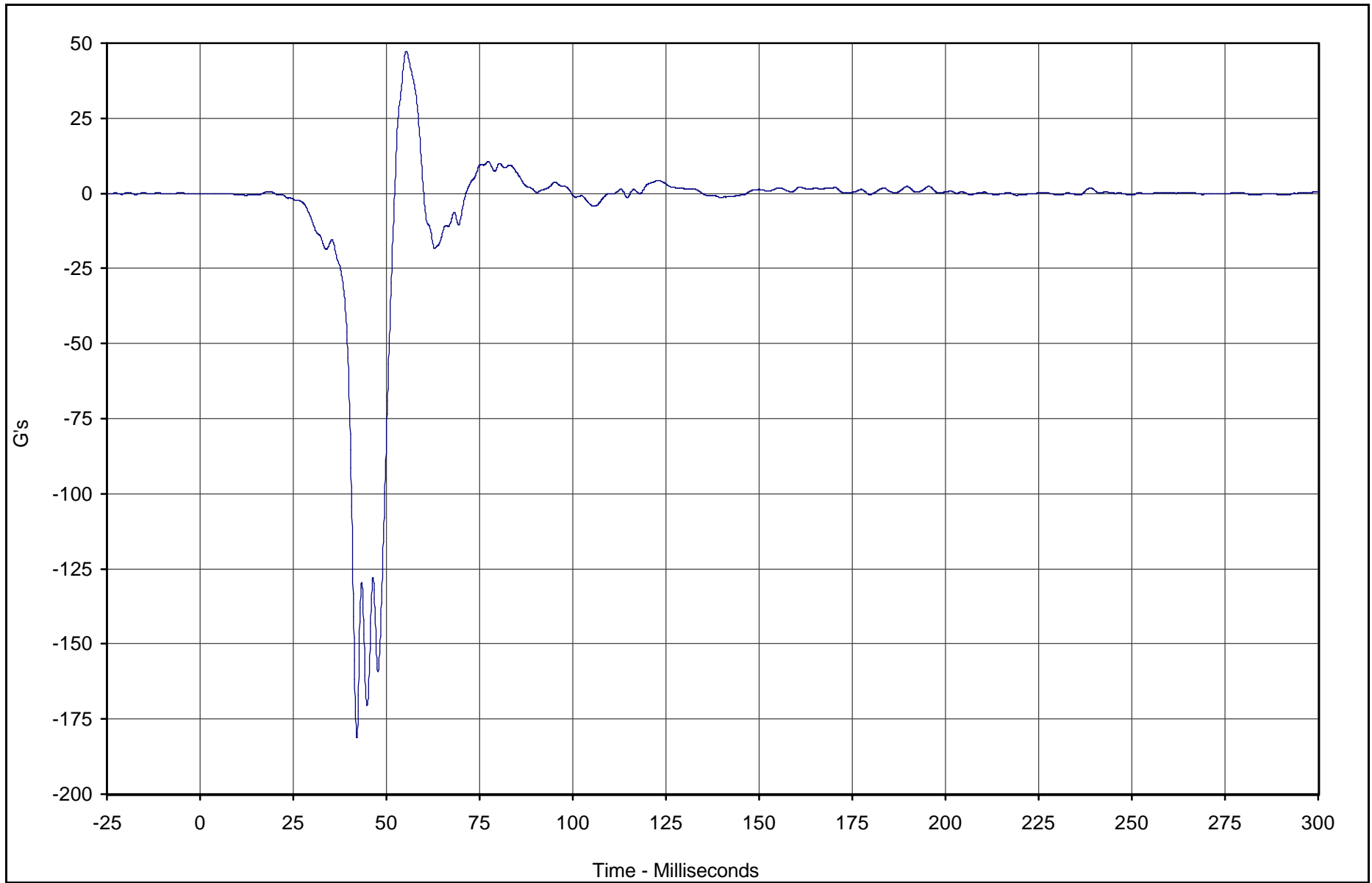
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-113



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Left Foot Aft X	079	FIL	G's	47.3	55.3	-181.3	42.1	180



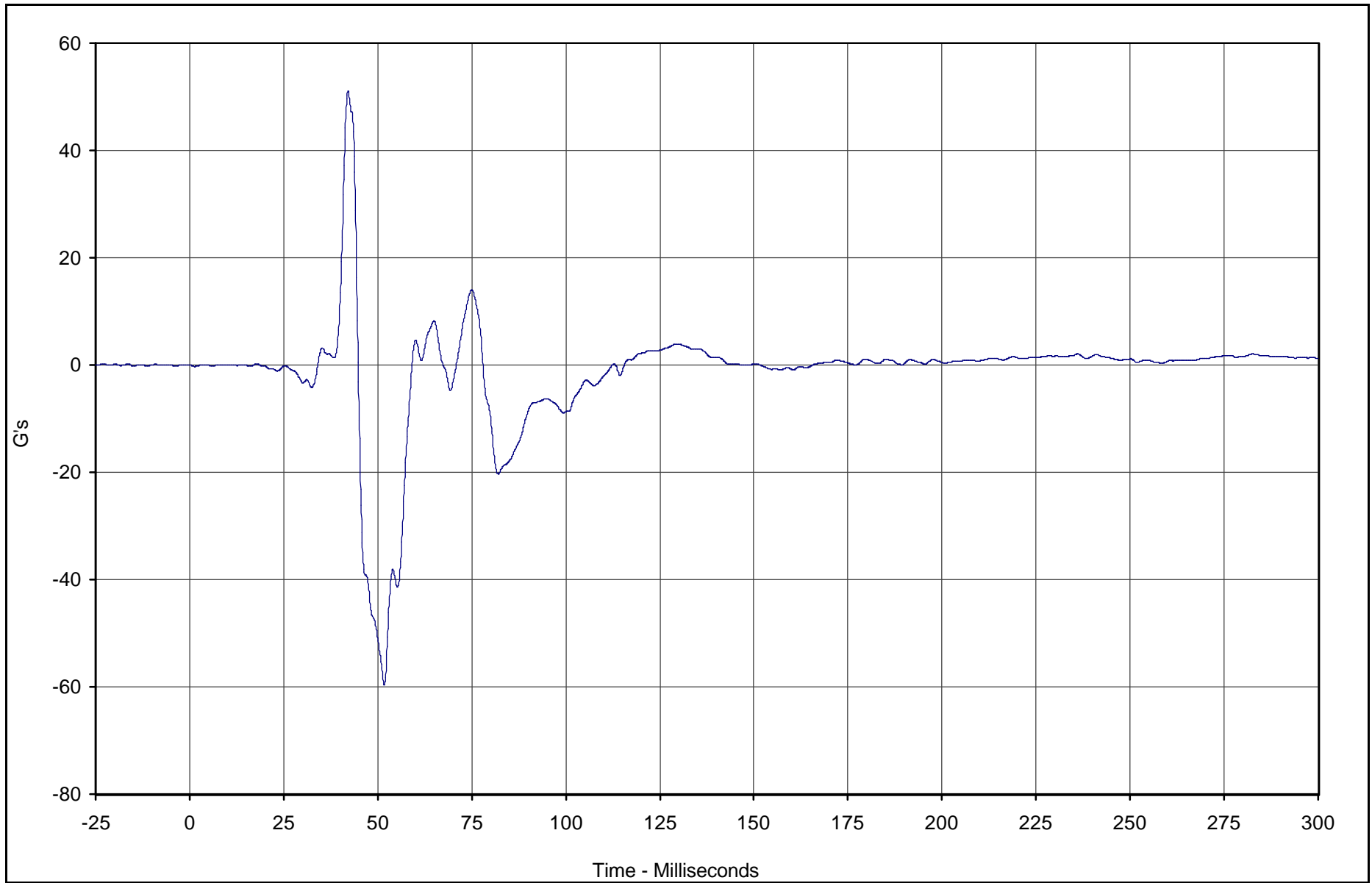
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-114



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Left Foot Aft Z	080	FIL	G's	51.1	42.2	-59.7	51.8	180



Test Vehicle: 2003 Acura MDX SUV

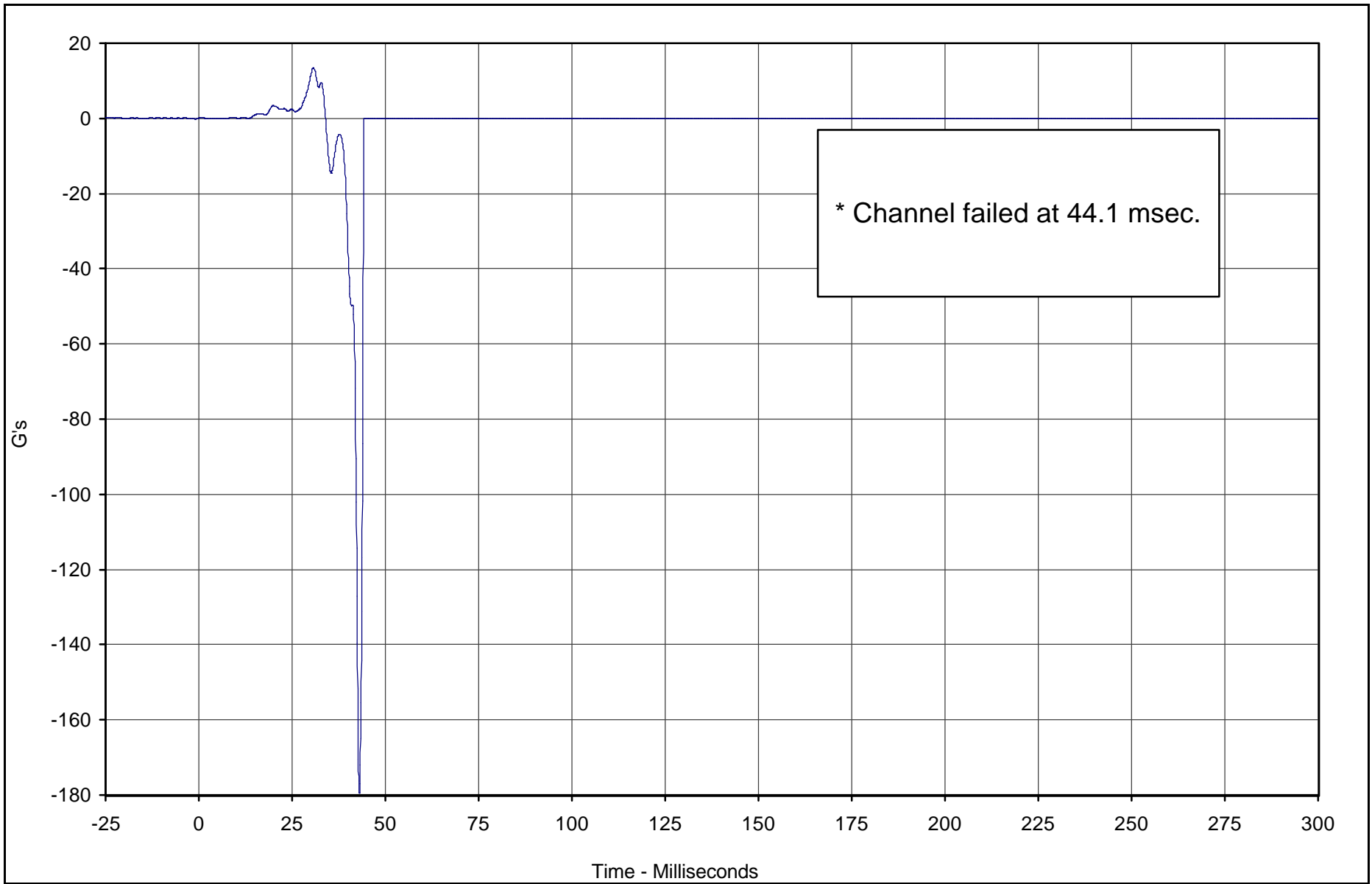
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-115



* Channel failed at 44.1 msec.

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Left Foot Fore Z	081	FIL	G's	13.4	30.7	-179.4	43.1	180



Test Vehicle: 2003 Acura MDX SUV

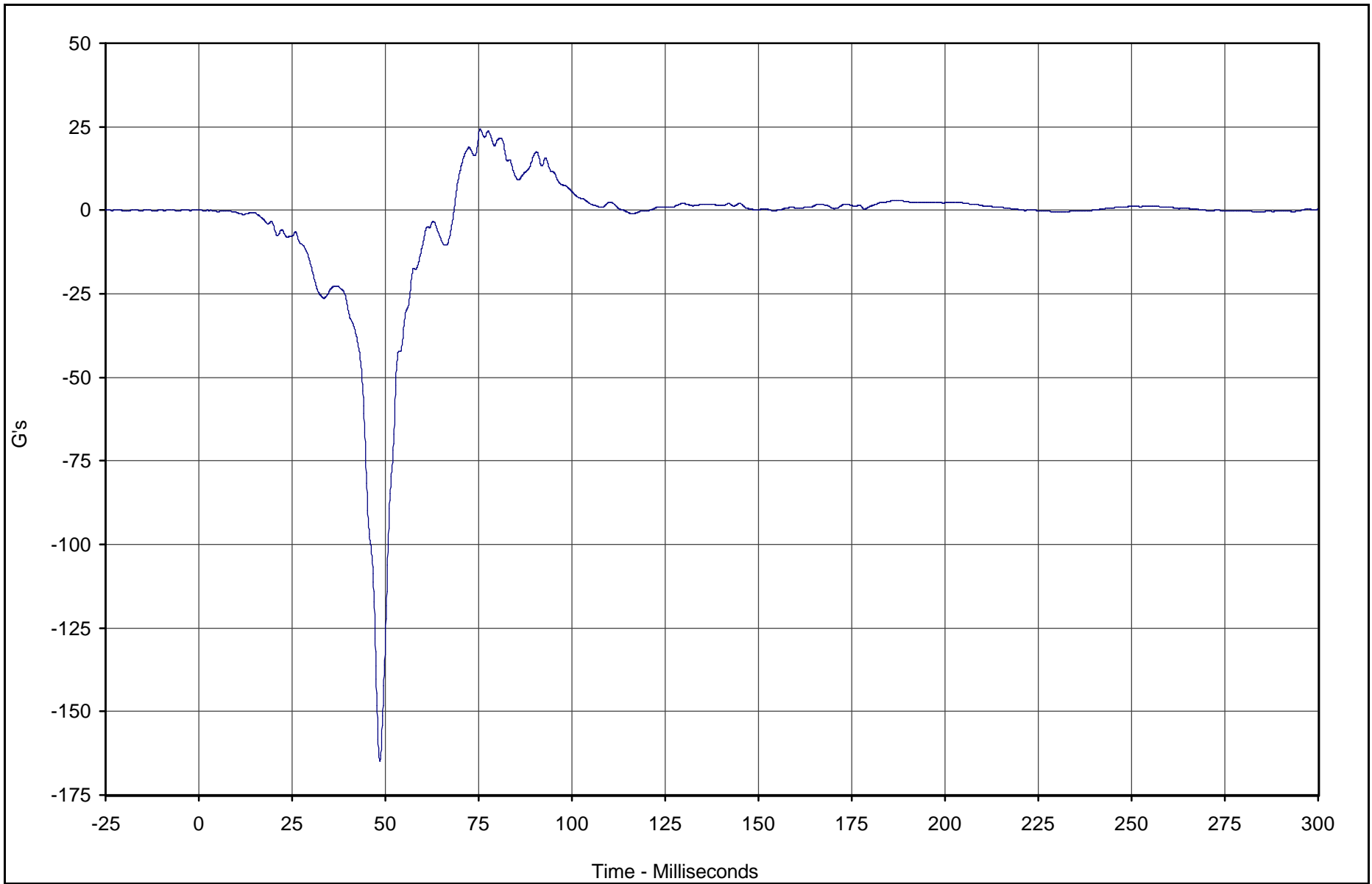
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-116



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Right Foot Aft X	082	FIL	G's	24.4	75.4	-164.9	48.6	180



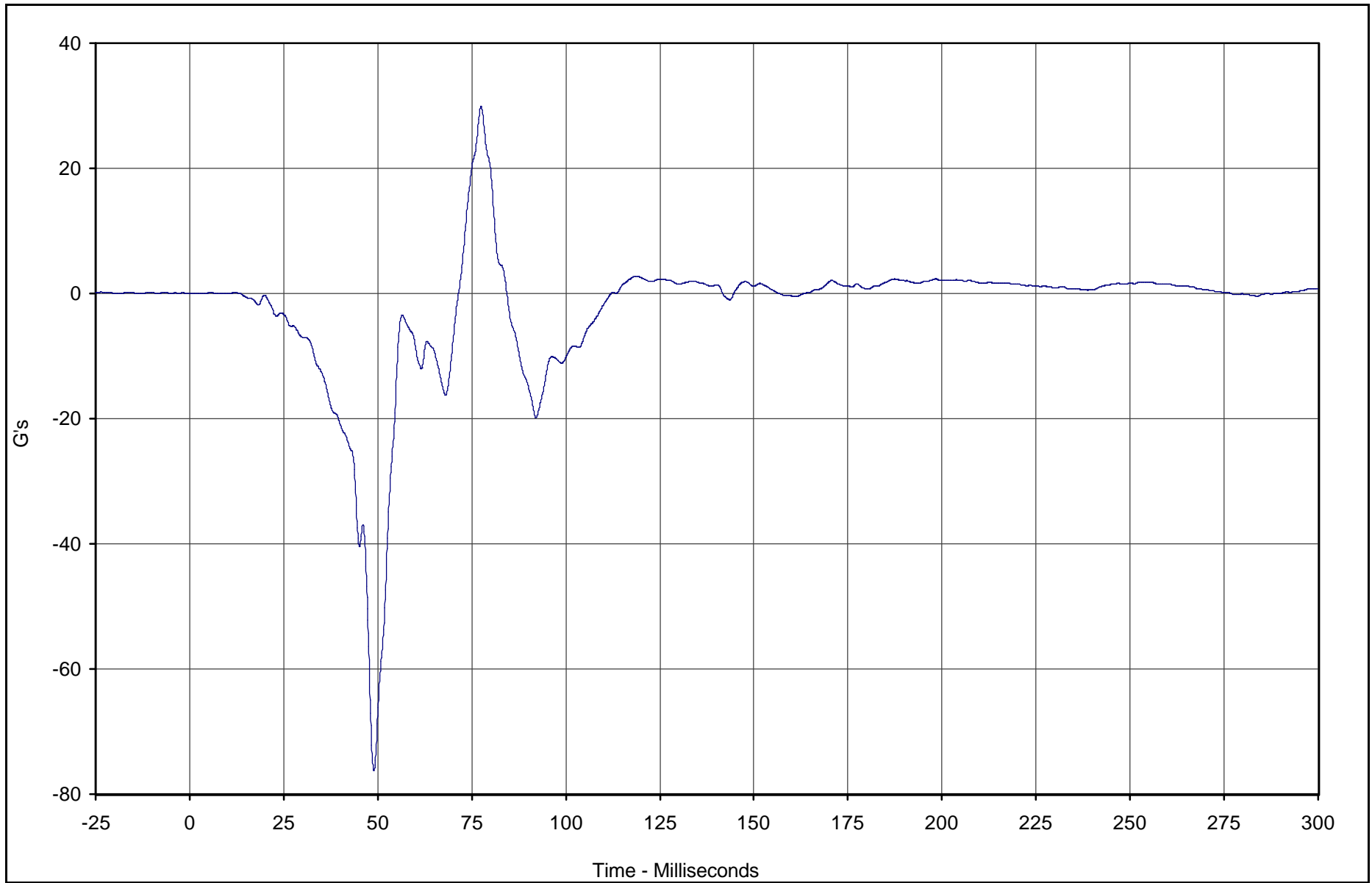
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-117



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Right Foot Aft Z	083	FIL	G's	29.9	77.5	-76.3	49.0	180



Test Vehicle: 2003 Acura MDX SUV

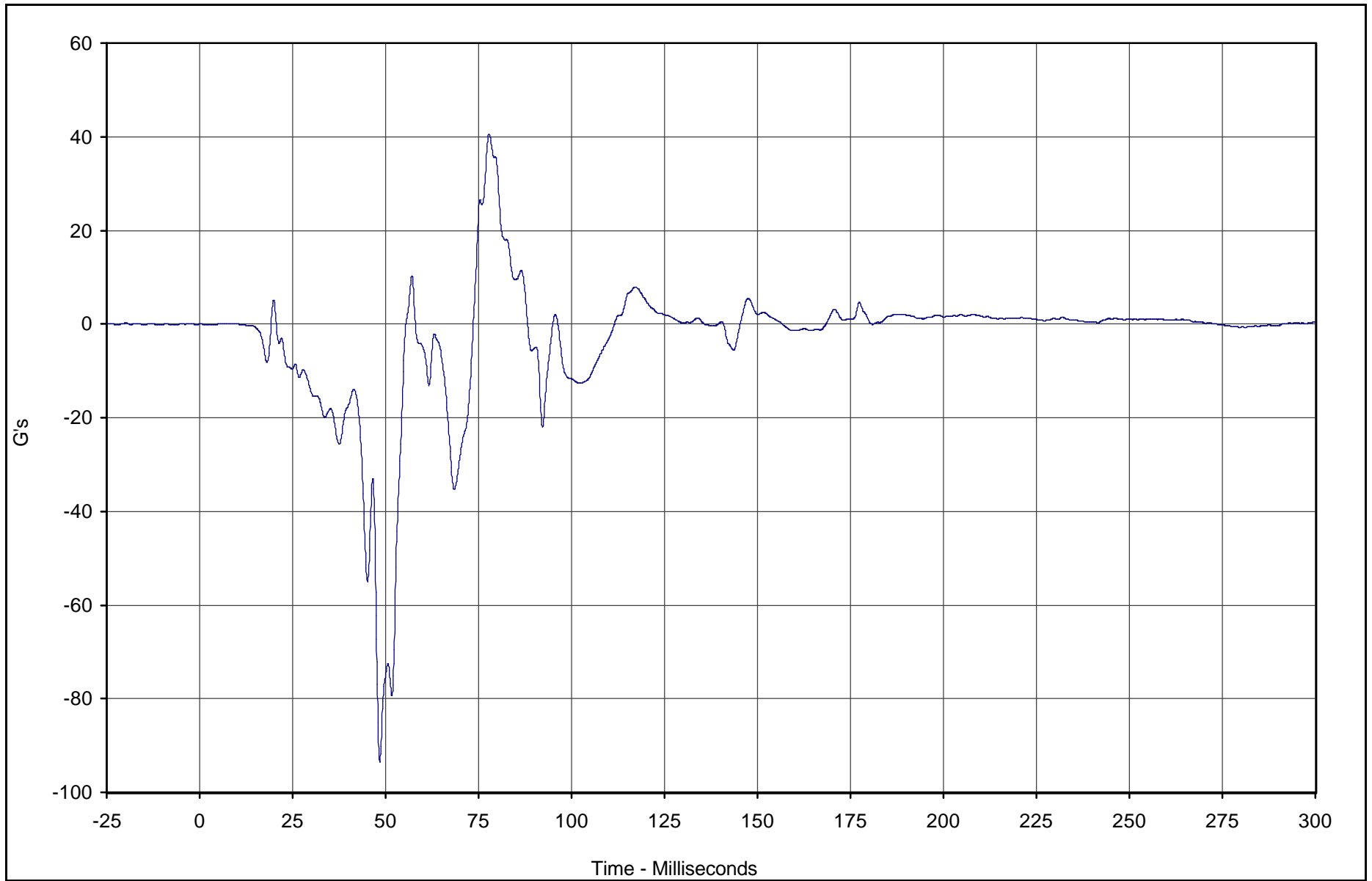
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-118



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Right Foot Fore Z	084	FIL	G's	40.6	77.8	-93.5	48.5	180



Test Vehicle: 2003 Acura MDX SUV

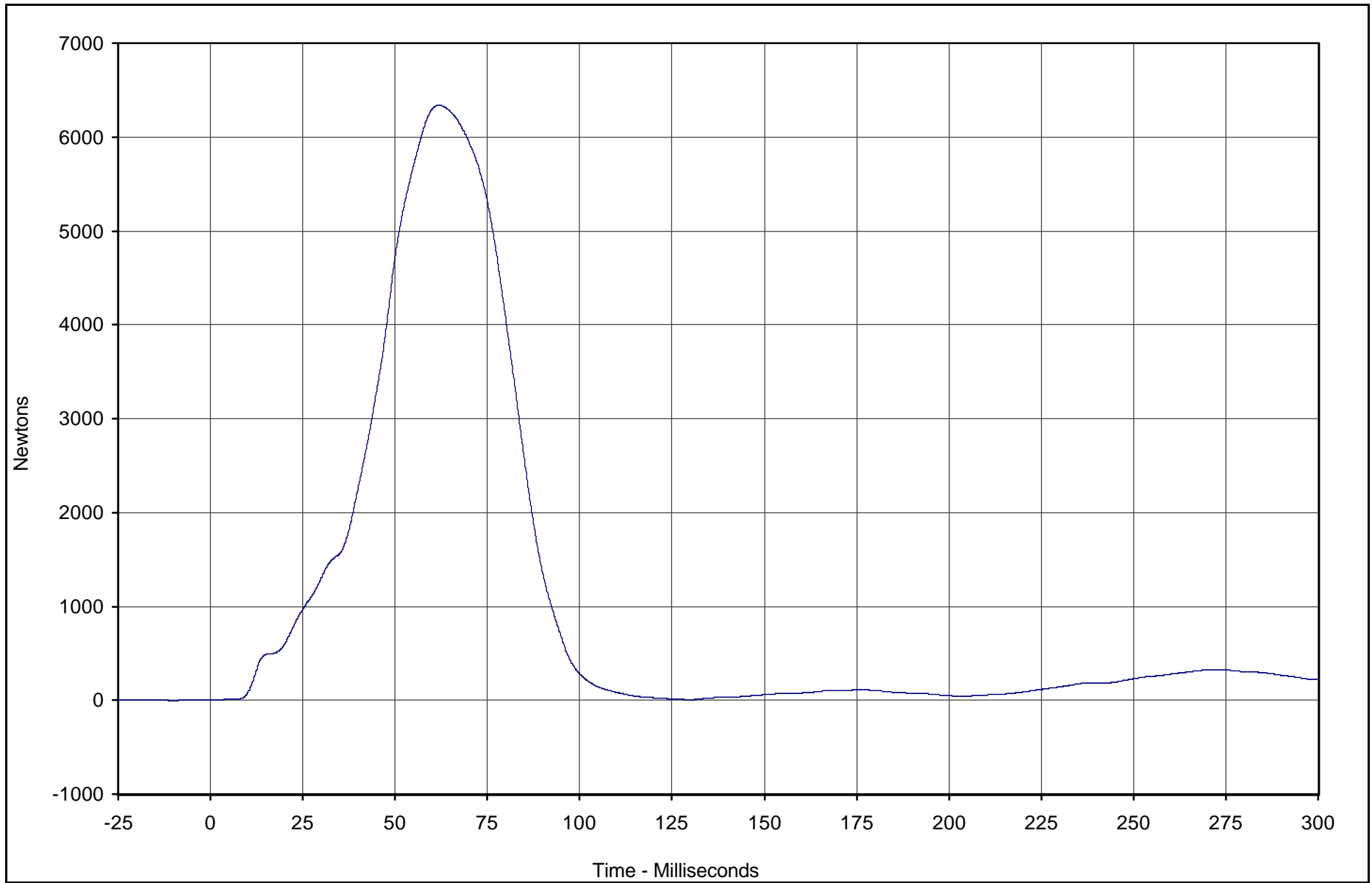
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-119



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Lap Belt Force	085	FIL	Newtons	6338.4	61.8	-0.4	0.0	60



Test Vehicle: 2003 Acura MDX SUV

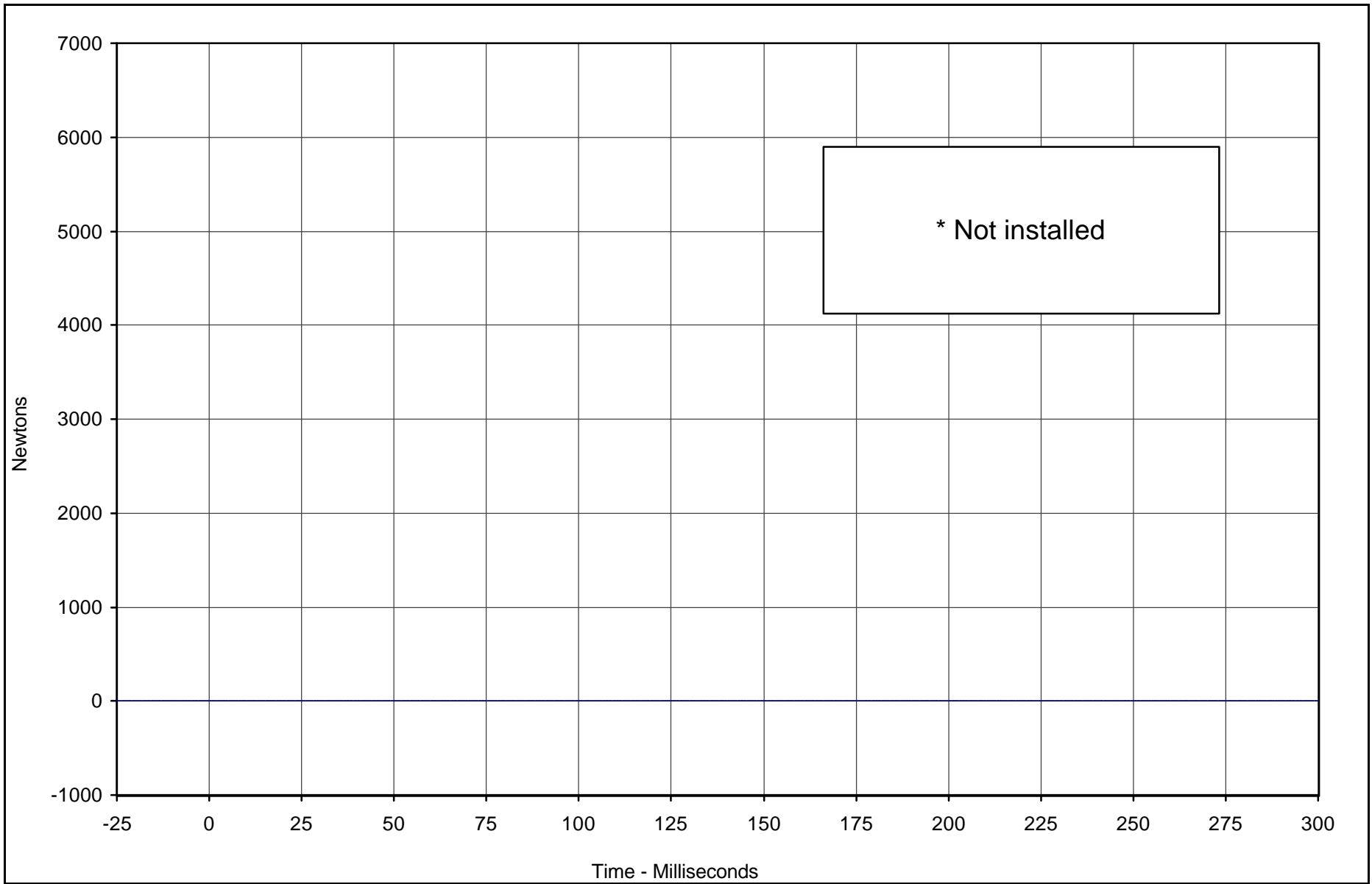
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-120



* Not installed

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Shoulder Belt Force	086	FIL	Newtons	0.0	0.0	0.0	0.0	60



Test Vehicle: 2003 Acura MDX SUV

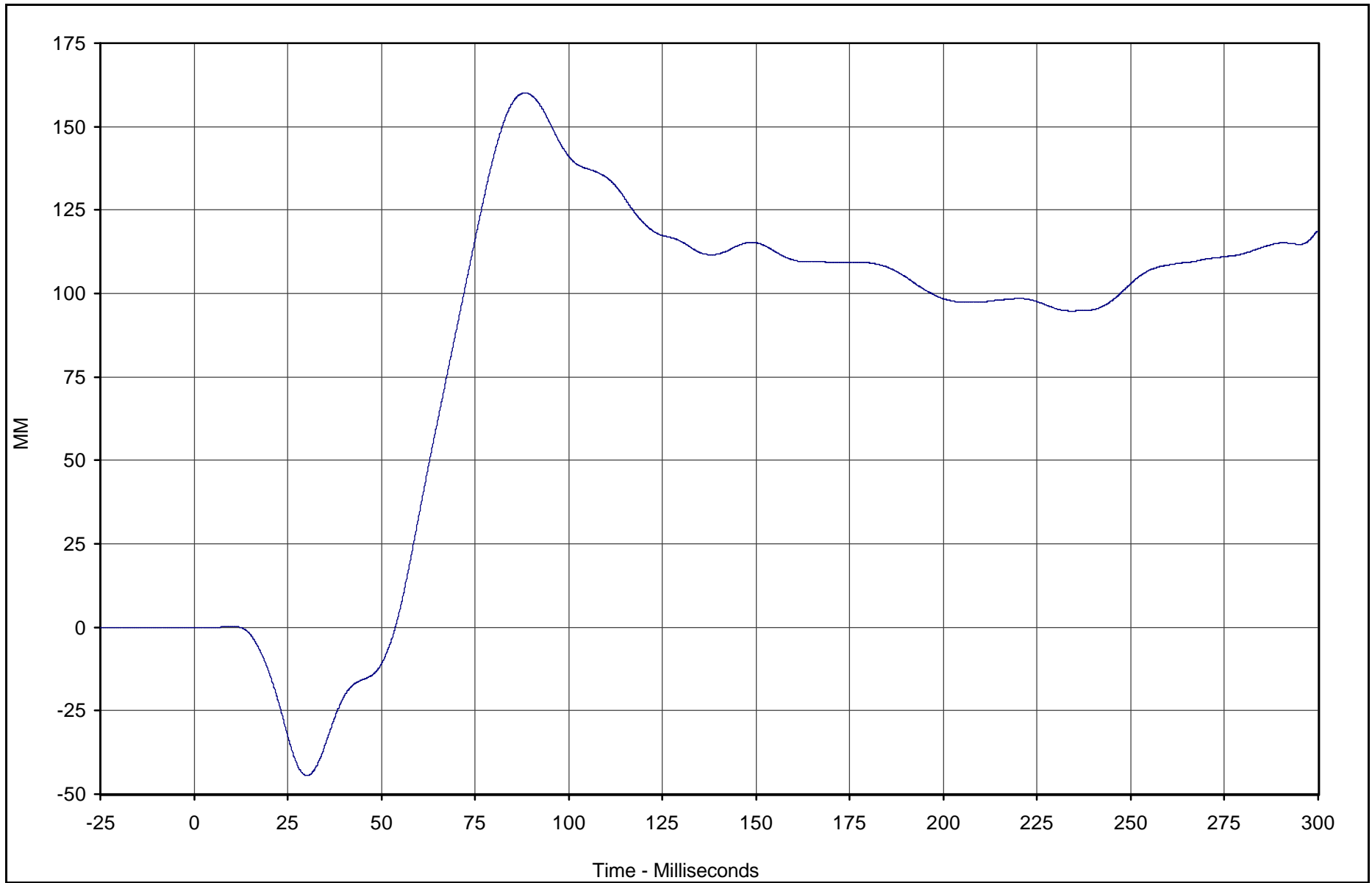
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-121



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Shoulder Belt Pullout	087	FIL	MM	160.1	88.3	-44.5	30.1	60



Test Vehicle: 2003 Acura MDX SUV

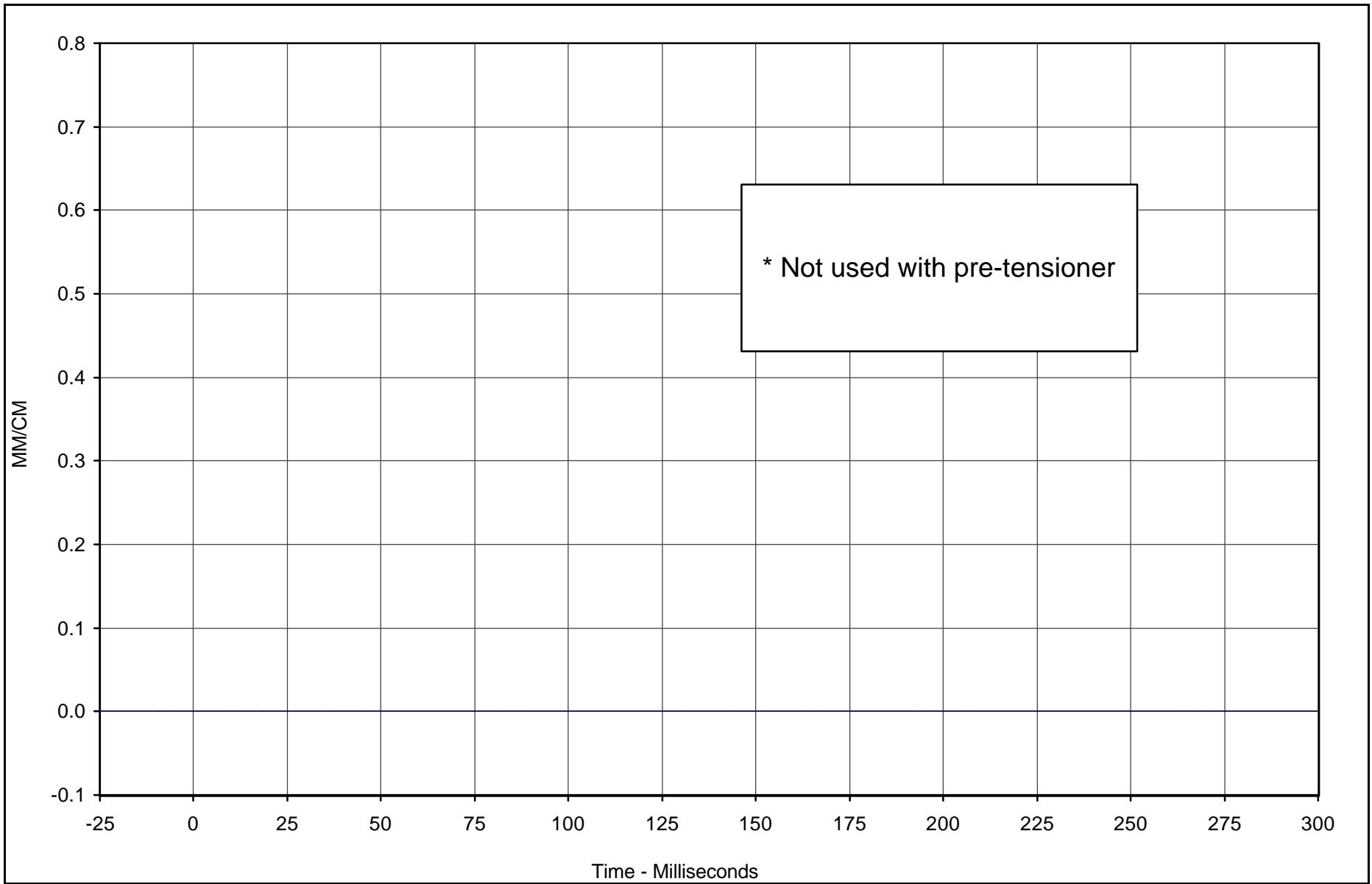
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-122



* Not used with pre-tensioner

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Shoulder Belt Elongation	088	FIL	MM/CM	0.00	0.0	0.00	0.0	60



Test Vehicle: 2003 Acura MDX SUV

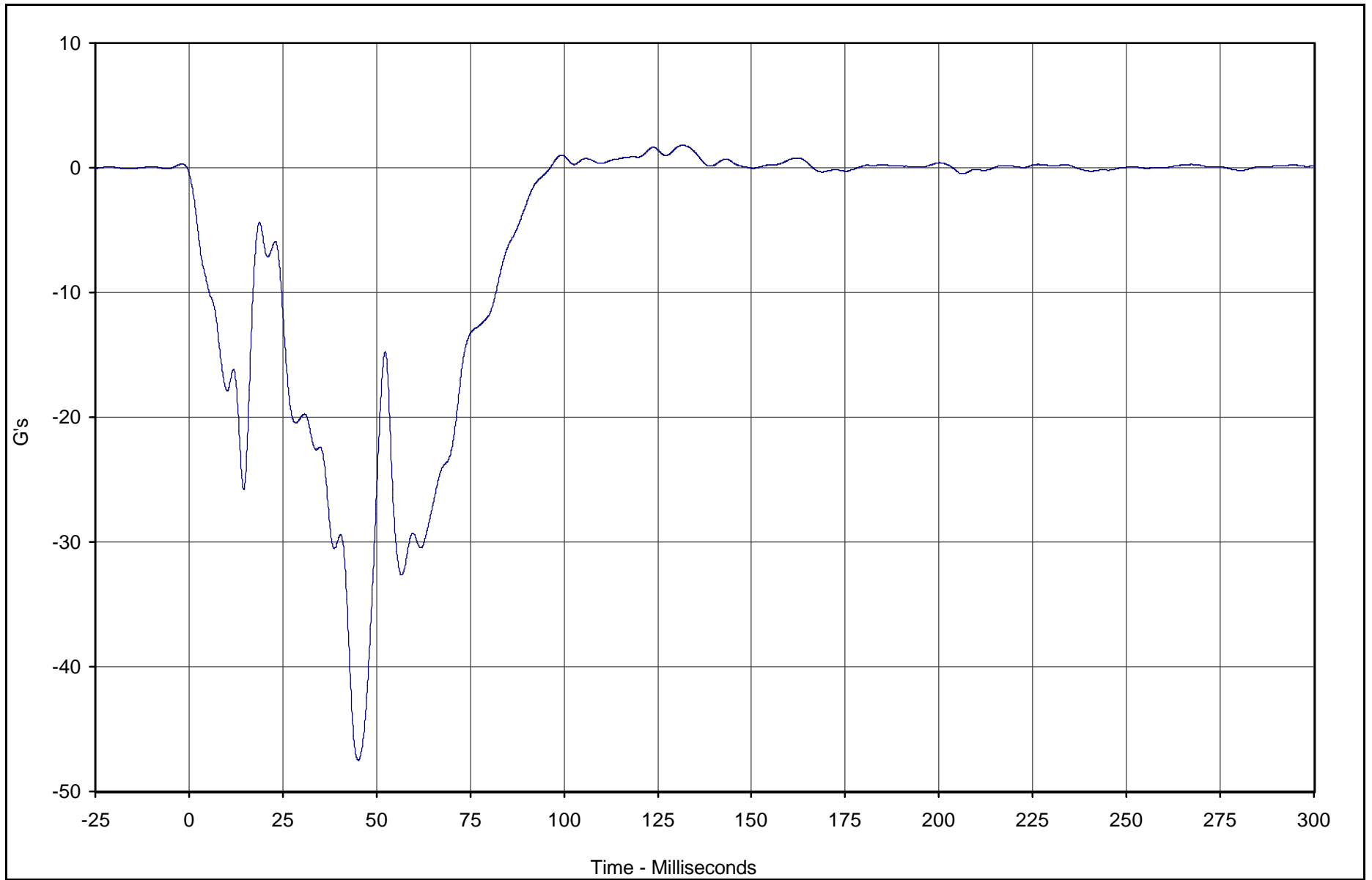
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-123



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Left Rear X	089	FIL	G's	1.8	131.6	-47.5	45.1	60



Test Vehicle: 2003 Acura MDX SUV

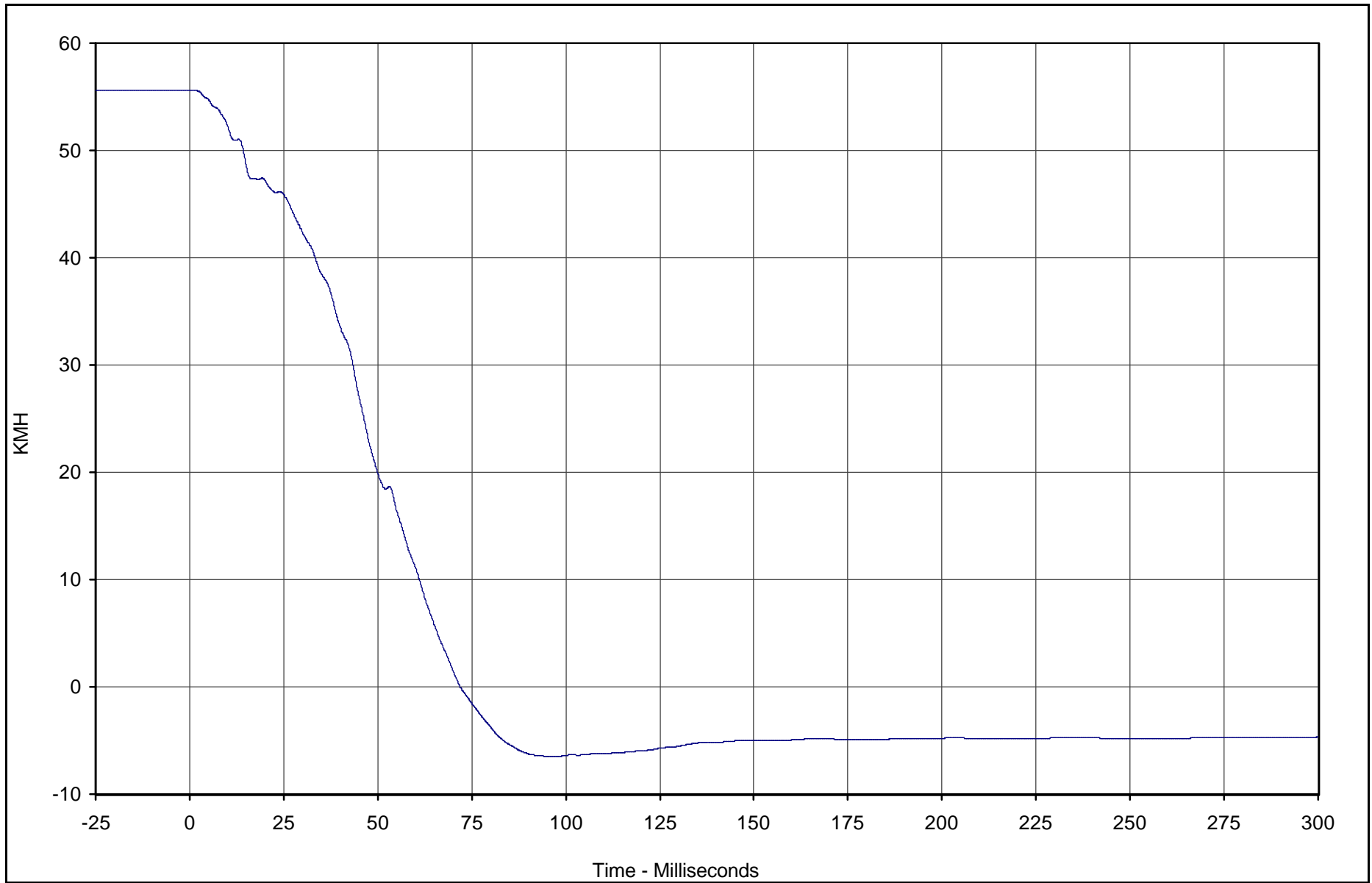
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-124



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Left Rear X Velocity	089	IN1	KMH	55.6	1.0	-6.5	97.1	180



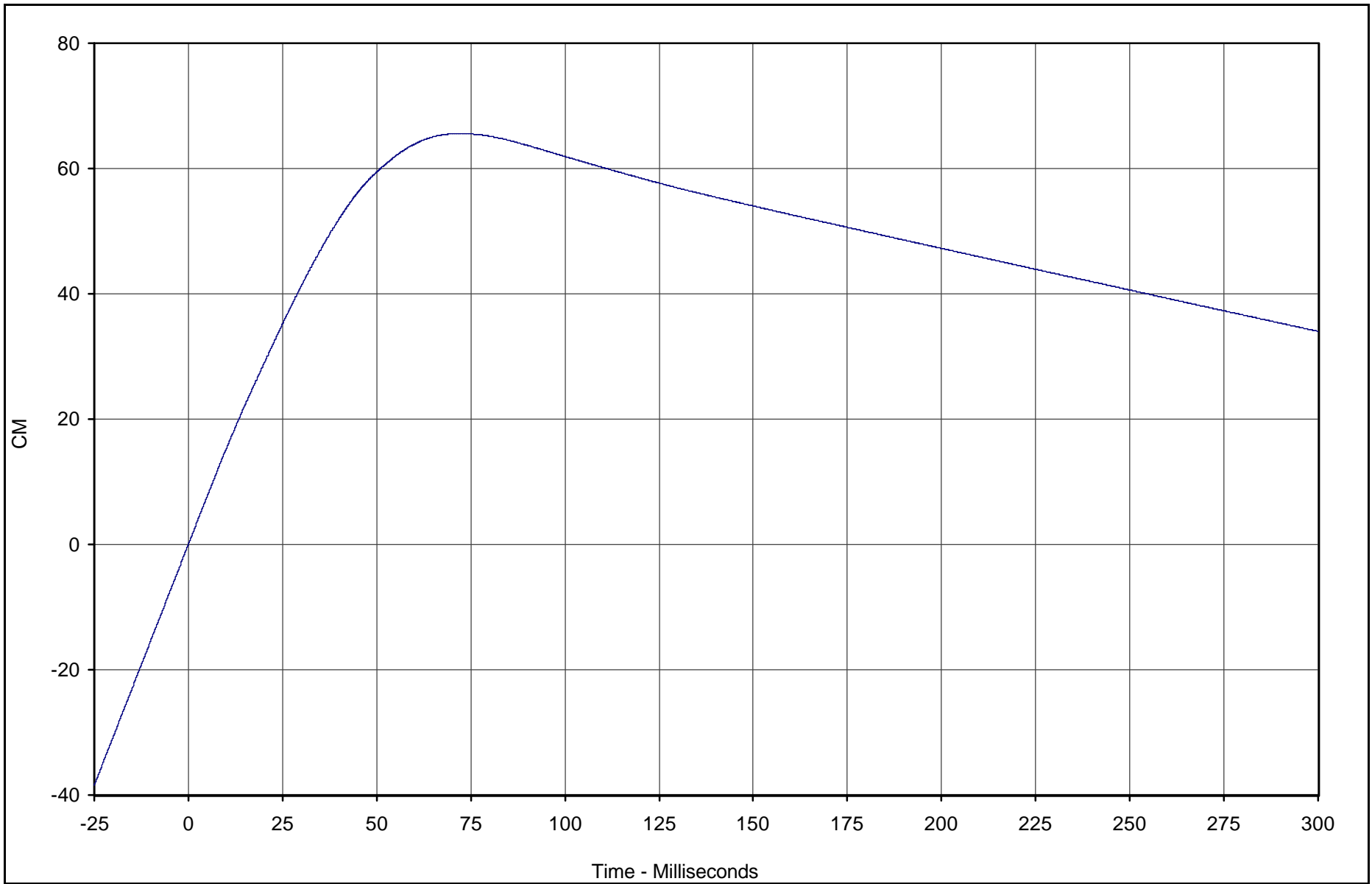
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-125



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Left Rear X Displ.	089	IN2	CM	65.6	71.9	0.0	0.0	180



Test Vehicle: 2003 Acura MDX SUV

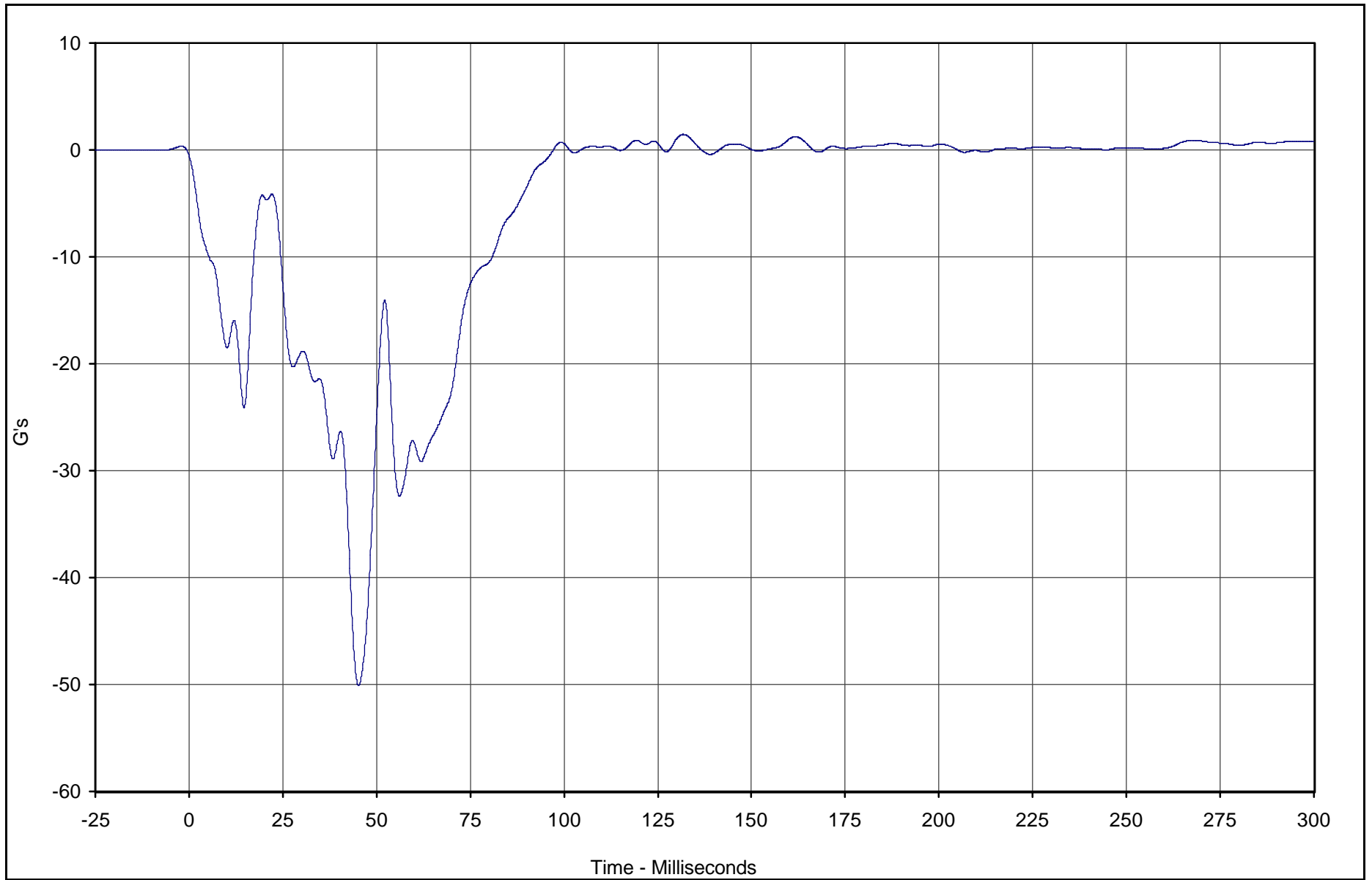
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-126



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Right Rear X	090	FIL	G's	1.4	131.7	-50.1	45.2	60



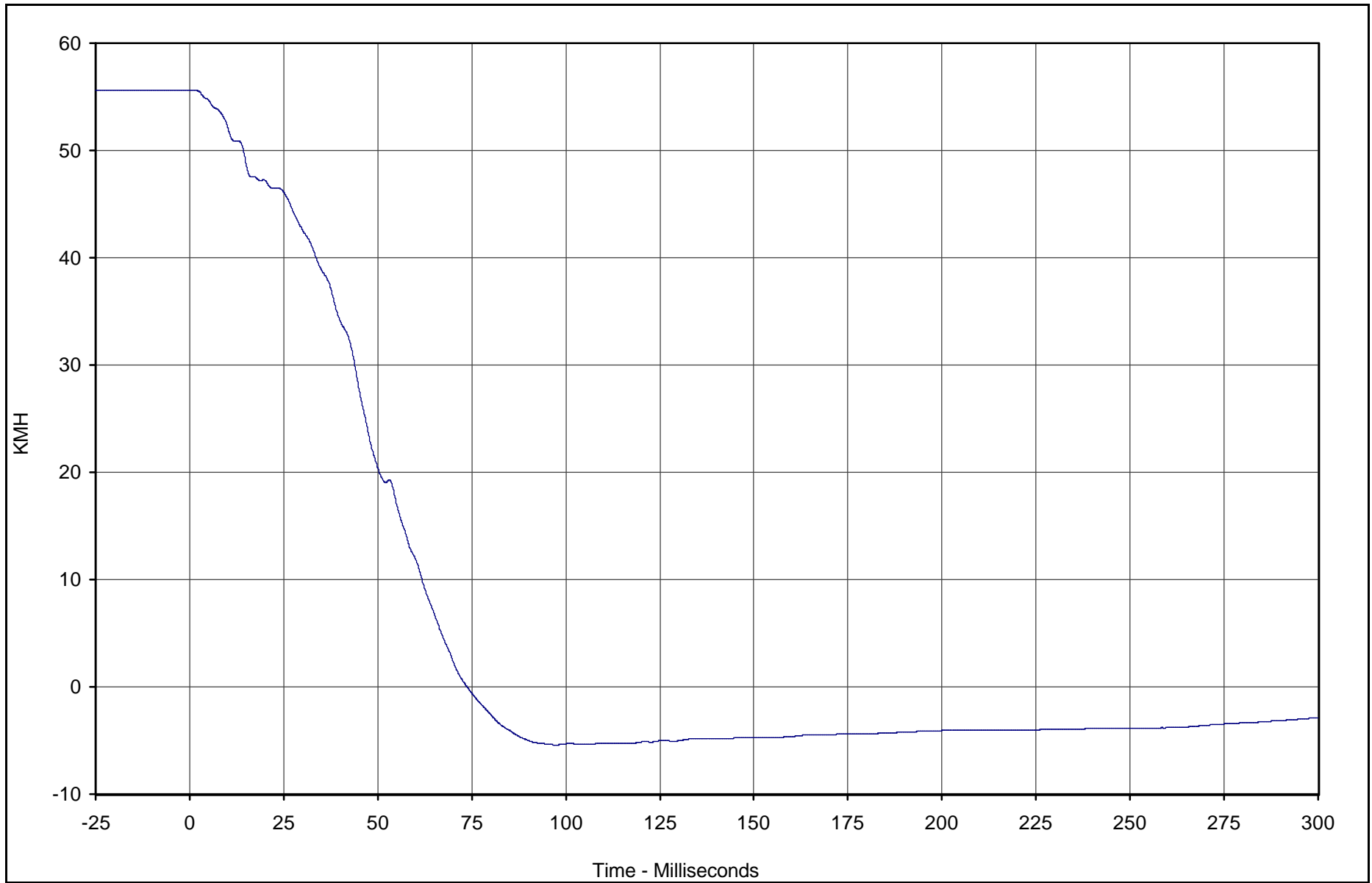
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-127



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Right Rear X Velocity	090	IN1	KMH	55.6	0.9	-5.4	97.3	180



Test Vehicle: 2003 Acura MDX SUV

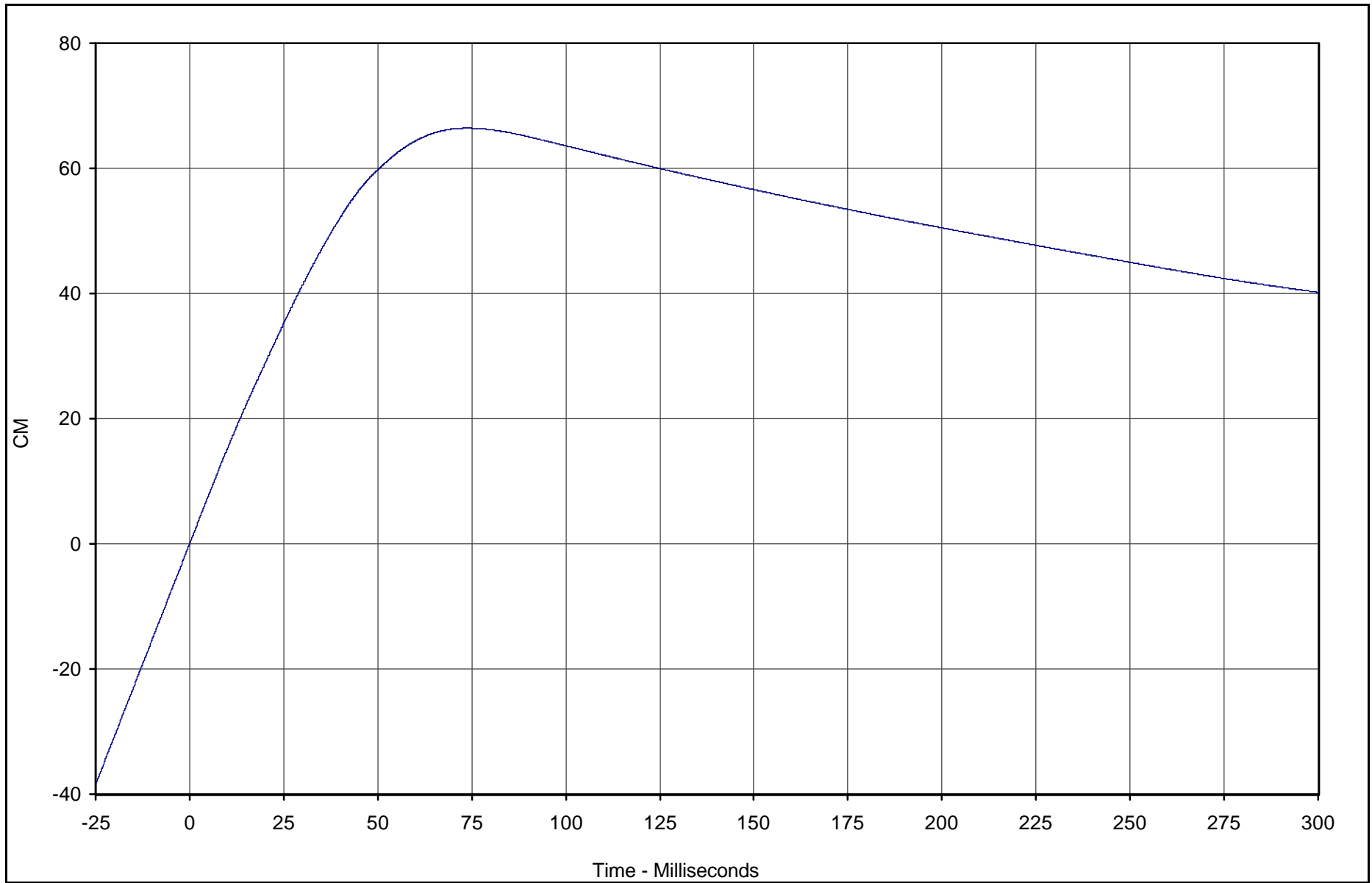
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-128



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Right Rear X Displ.	090	IN2	CM	66.4	73.8	0.0	0.0	180



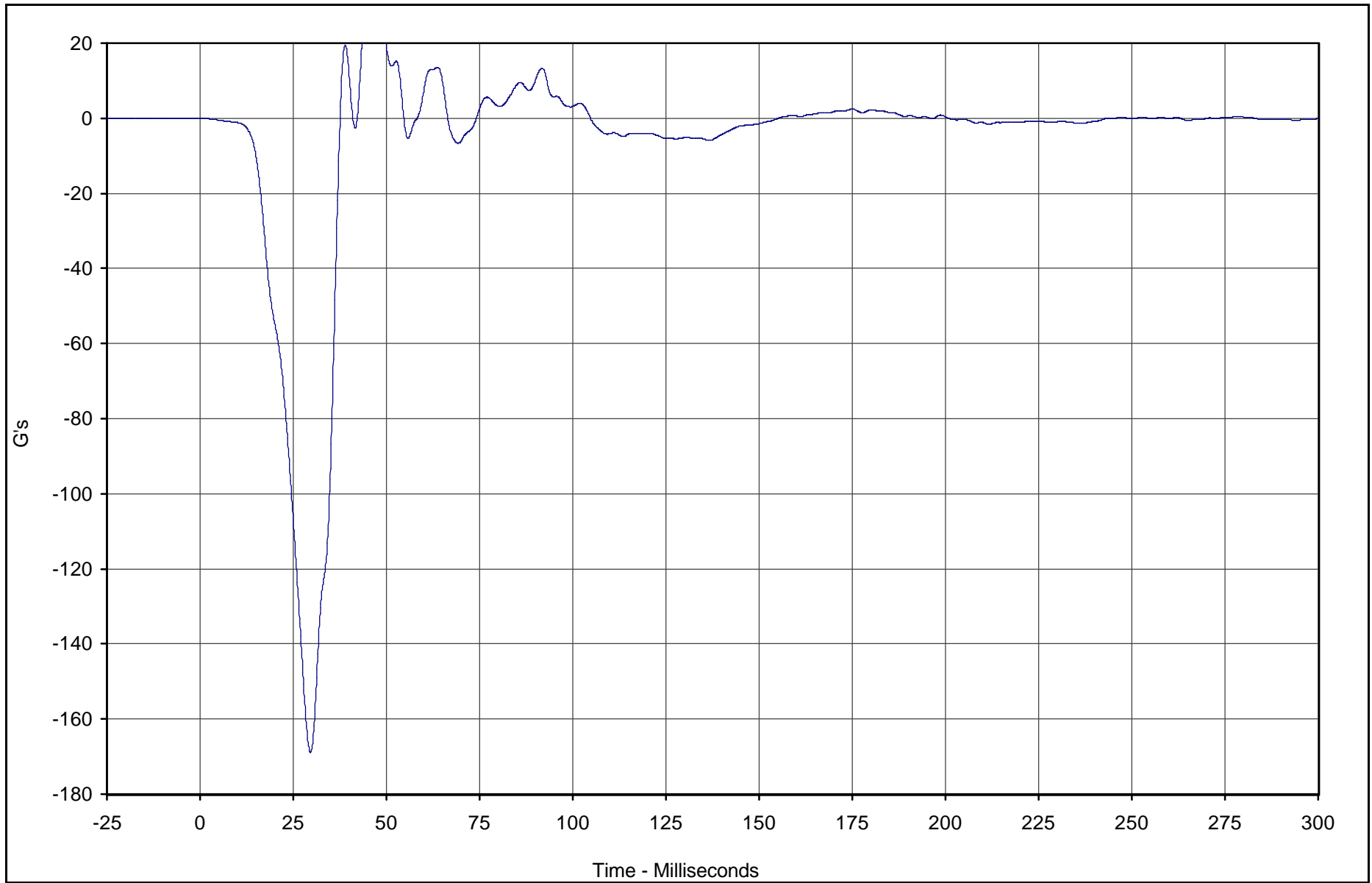
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-129



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Engine Top	091	FIL	G's	37.4	47.2	-168.8	29.6	60



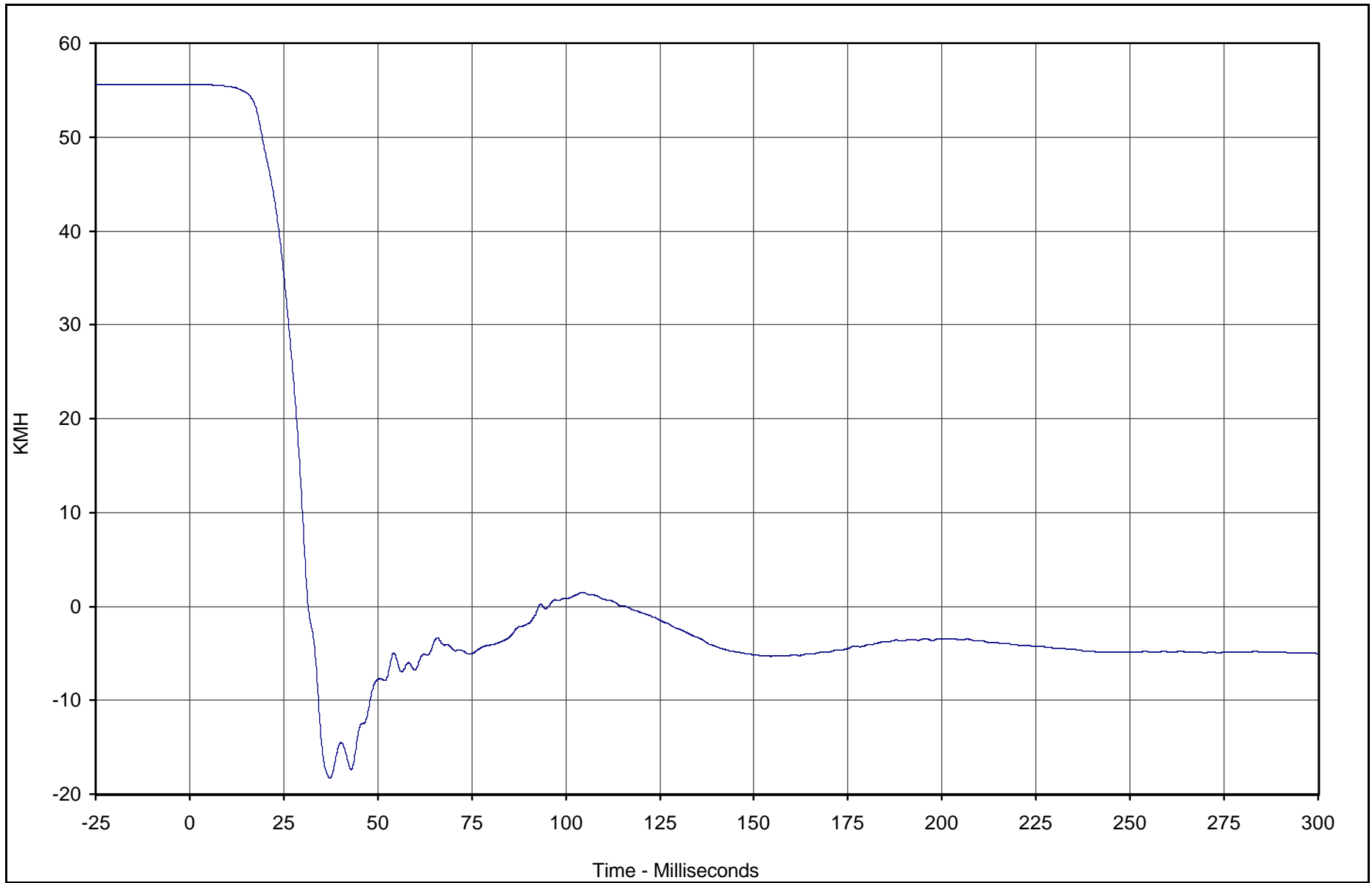
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-130



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Engine Top Velocity	091	IN1	KMH	55.6	1.8	-18.3	37.3	180



Test Vehicle: 2003 Acura MDX SUV

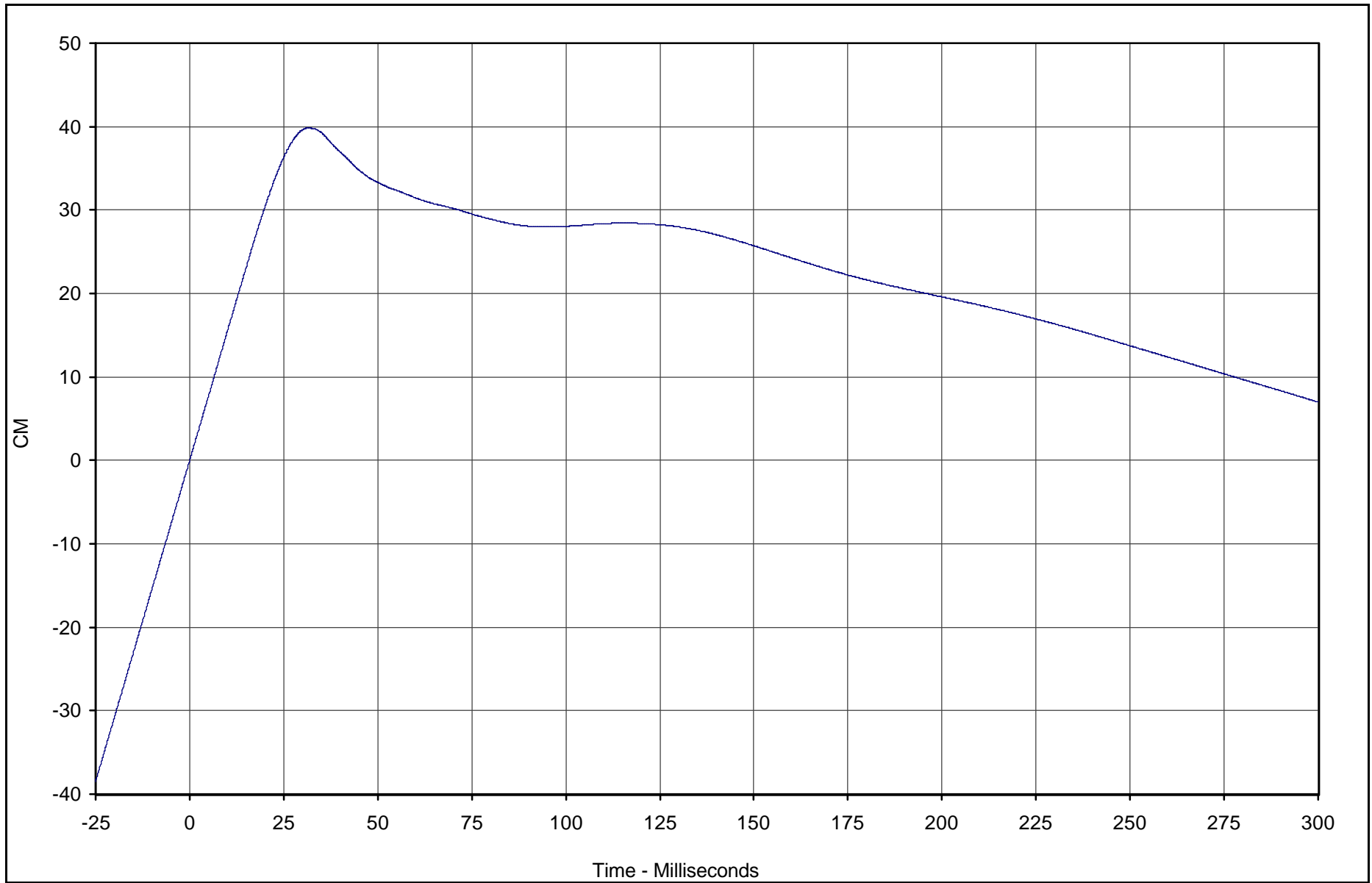
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-131



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Engine Top Displacement	091	IN2	CM	39.8	31.5	0.0	0.0	180



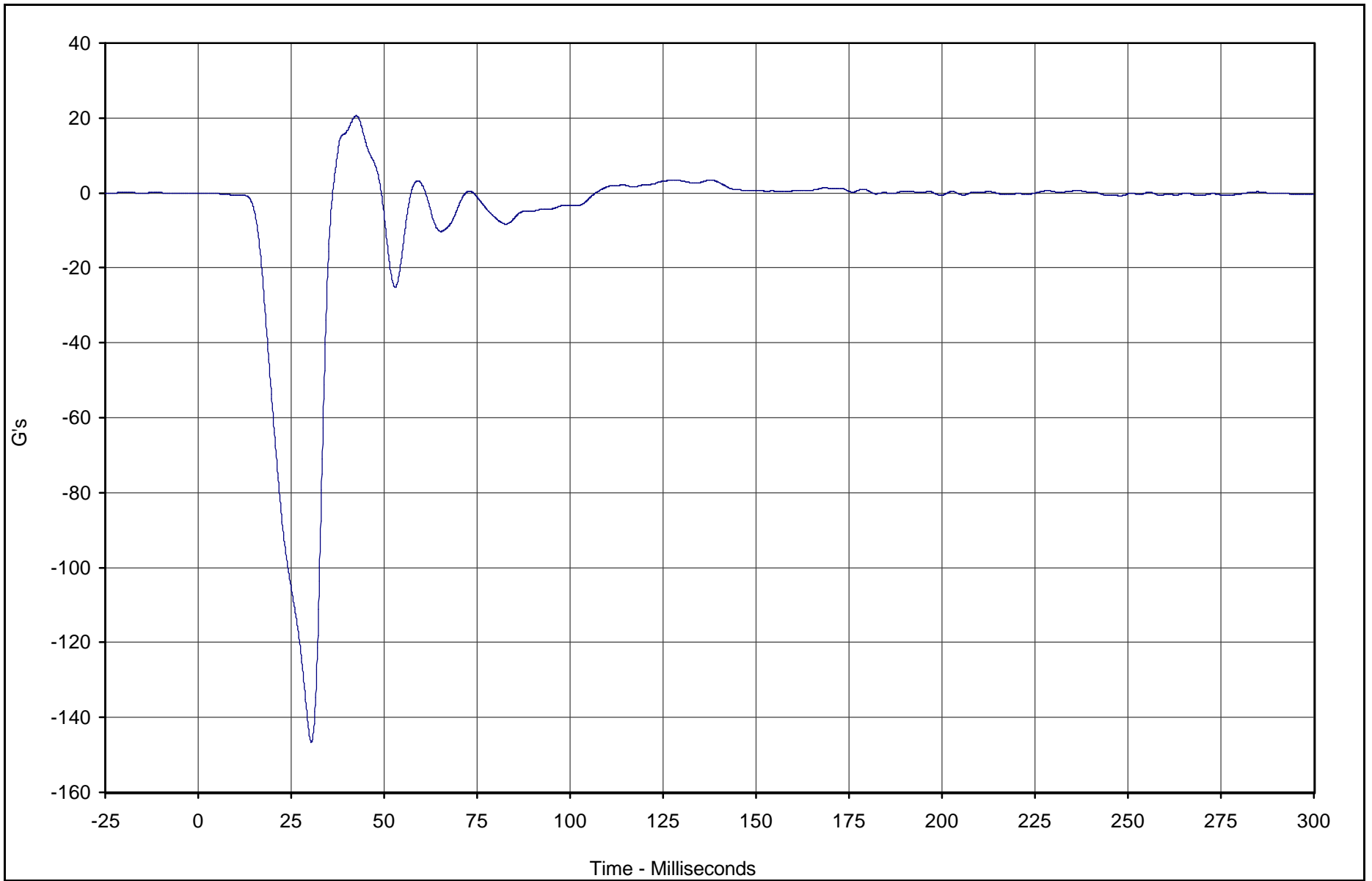
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-132



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Engine Bottom	092	FIL	G's	20.6	42.5	-146.6	30.4	60



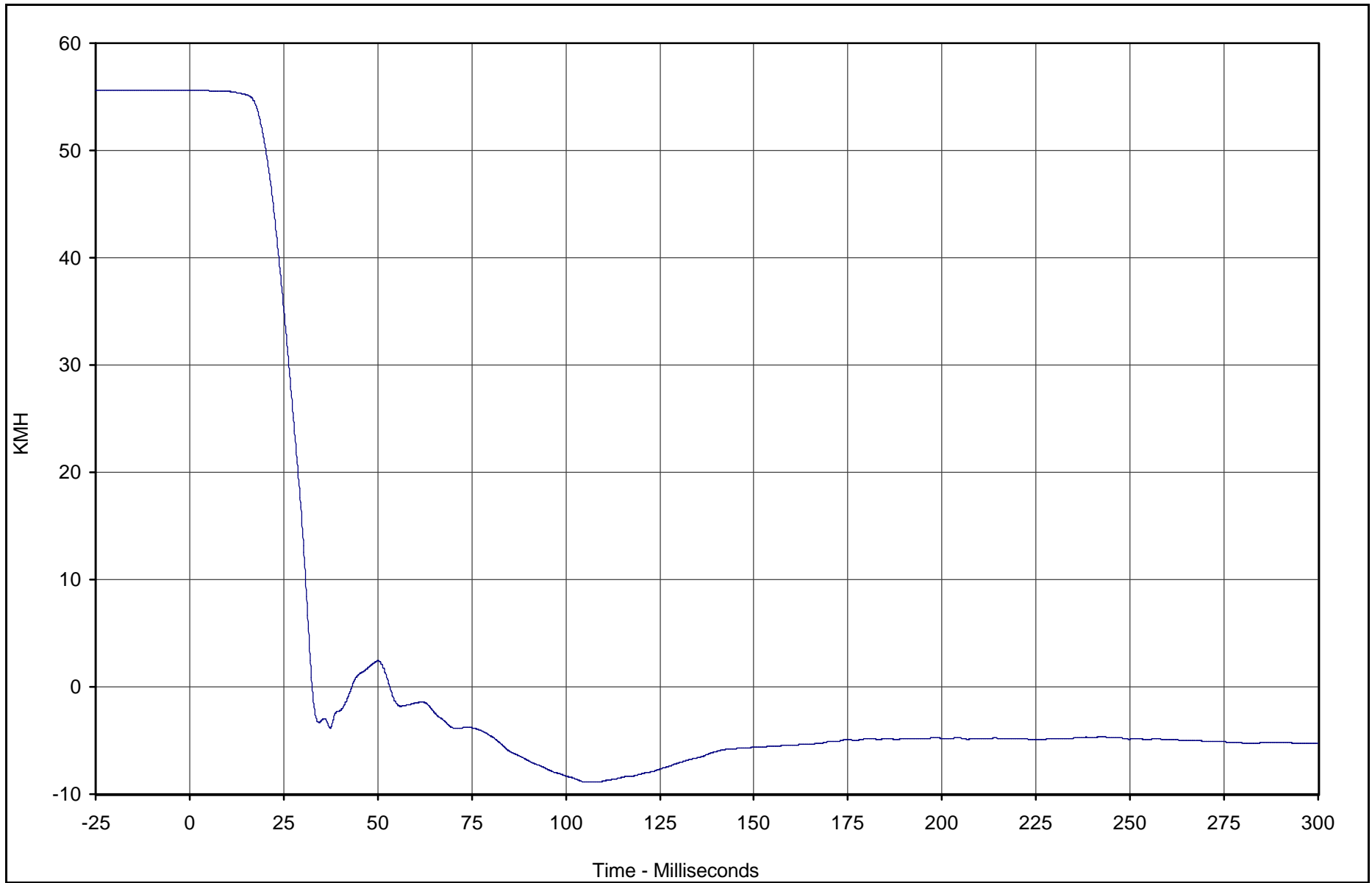
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-133



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Engine Bottom Velocity	092	IN1	KMH	55.6	0.0	-8.9	105.4	180



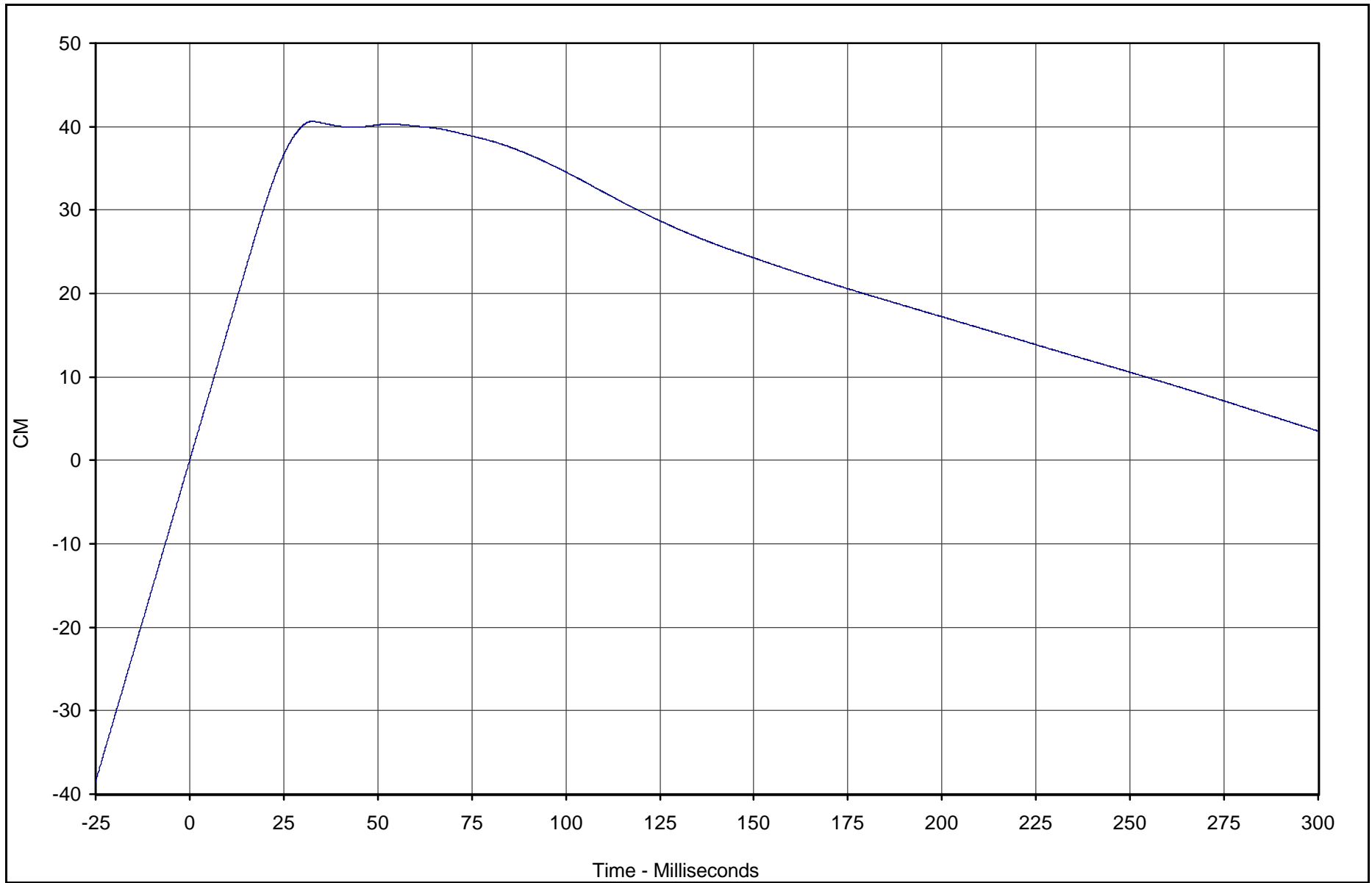
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-134



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Engine Bottom Displacement	092	IN2	CM	40.6	32.6	0.0	0.0	180



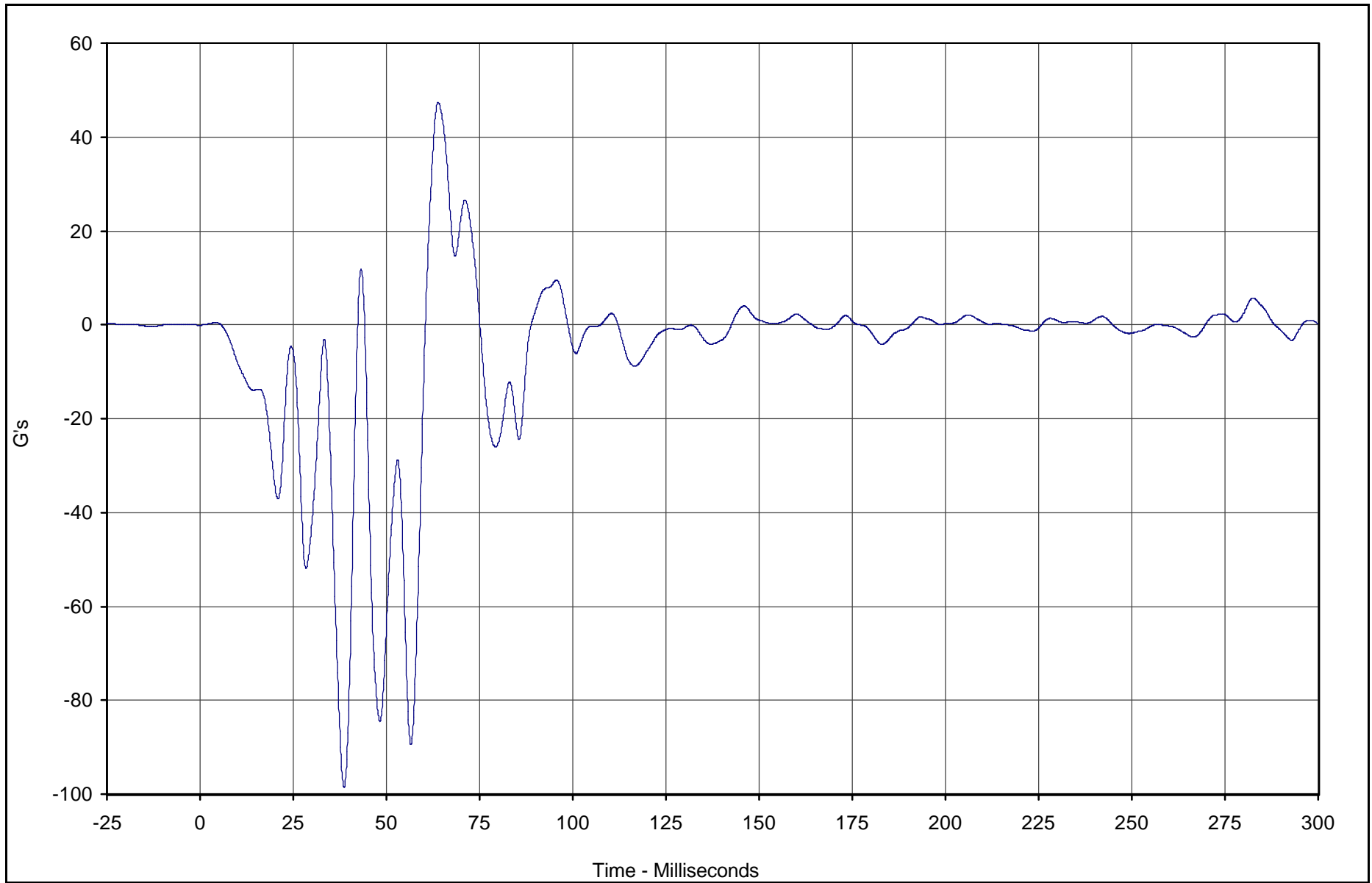
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-135



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Left Brake Caliper	093	FIL	G's	47.4	63.9	-98.5	38.7	60



Test Vehicle: 2003 Acura MDX SUV

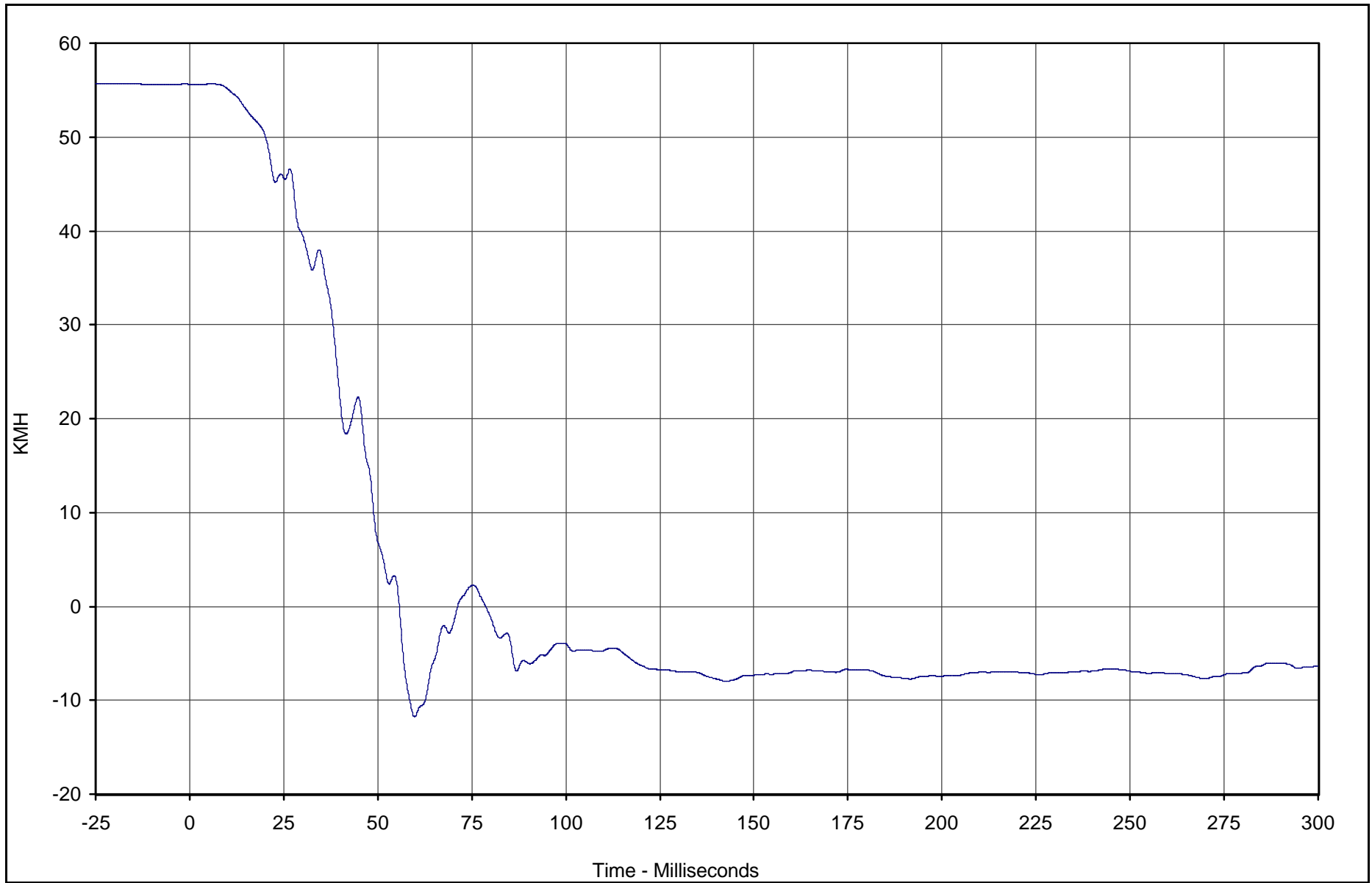
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-136



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Left Brake Caliper Velocity	093	IN1	KMH	55.7	5.7	-11.8	59.8	180



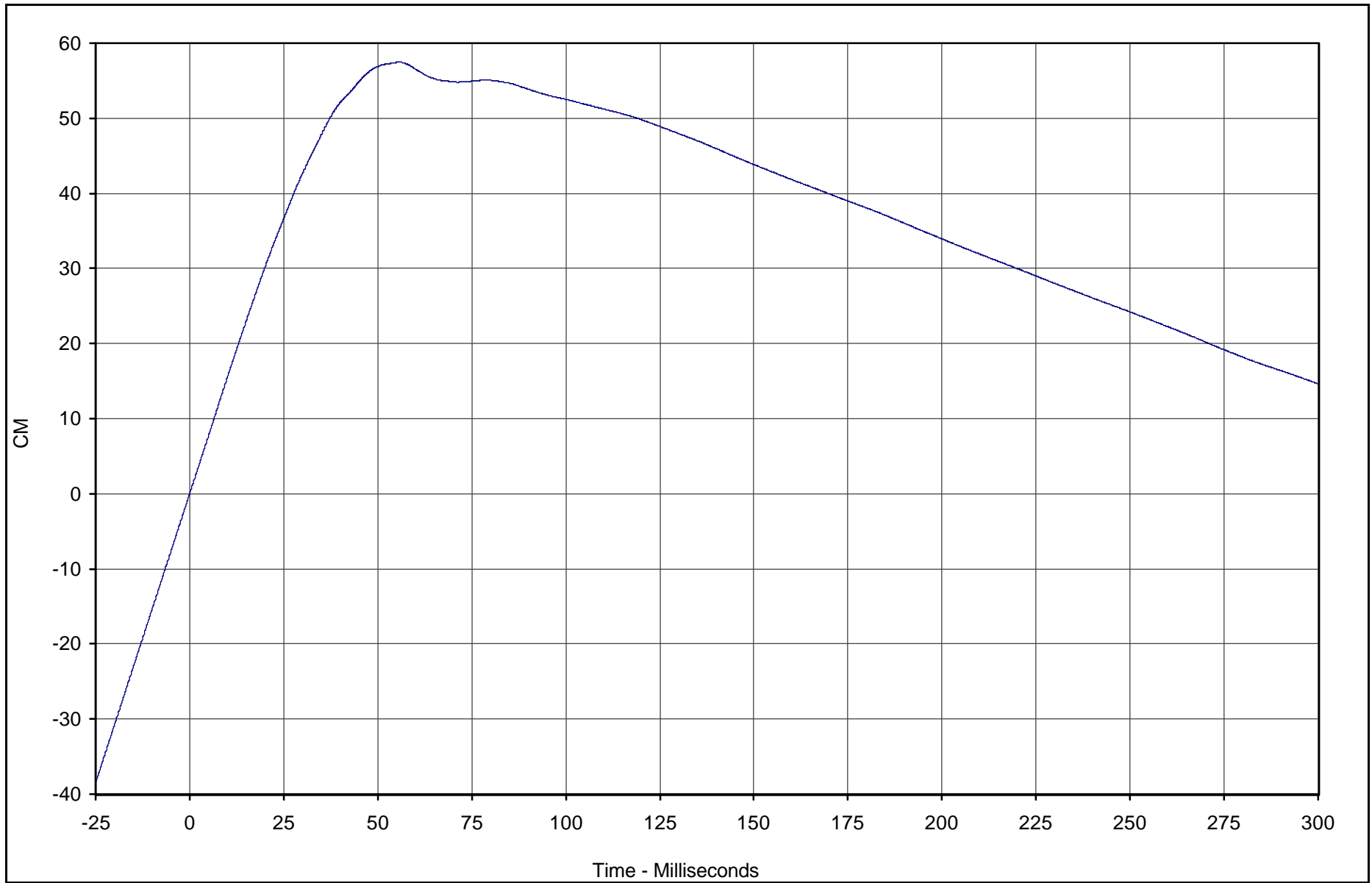
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-137



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Left Brake Caliper Displ.	093	IN2	CM	57.5	55.7	0.0	0.0	180



Test Vehicle: 2003 Acura MDX SUV

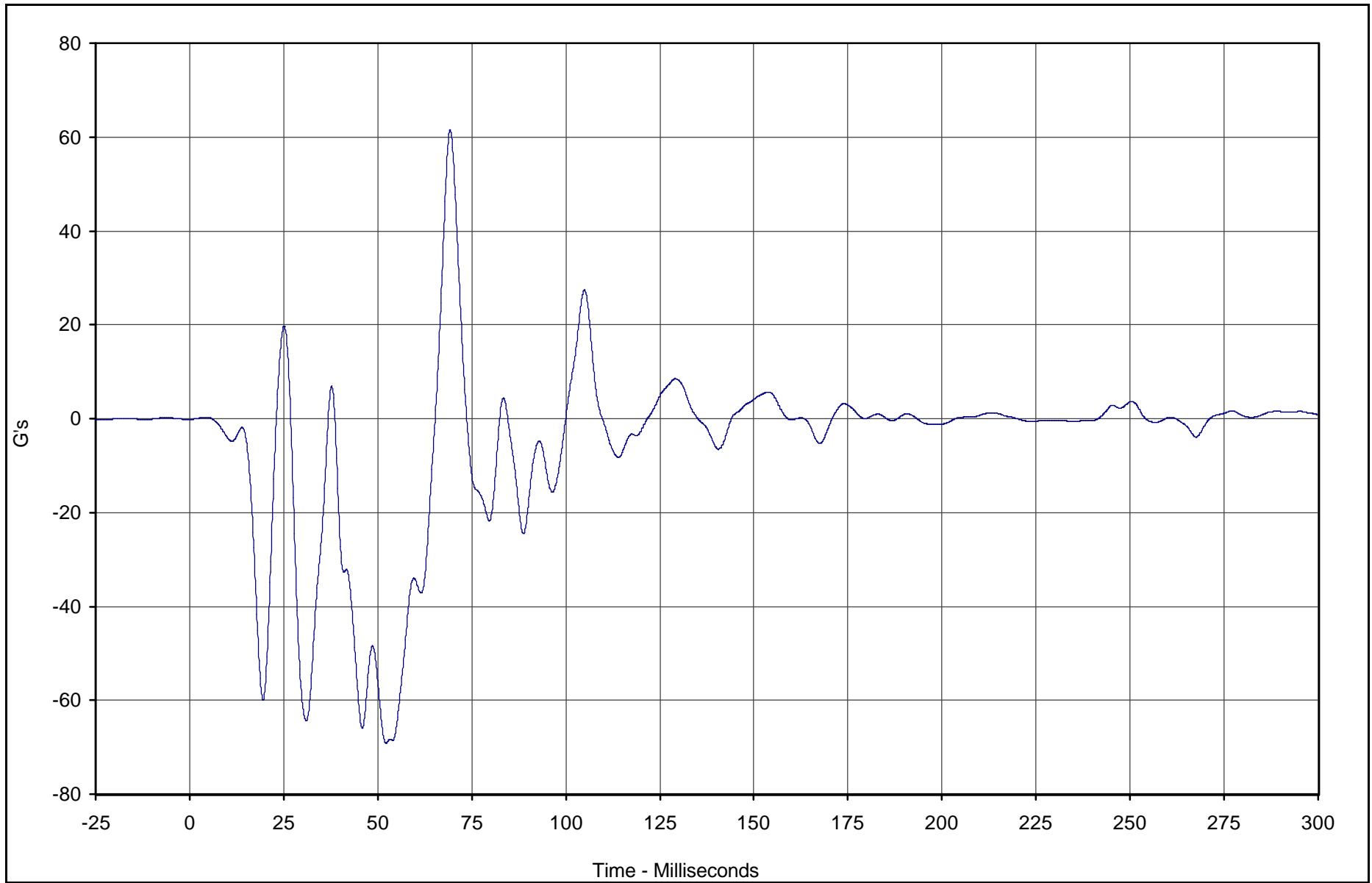
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-138



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Right Brake Caliper	094	FIL	G's	61.6	69.2	-69.2	52.2	60



Test Vehicle: 2003 Acura MDX SUV

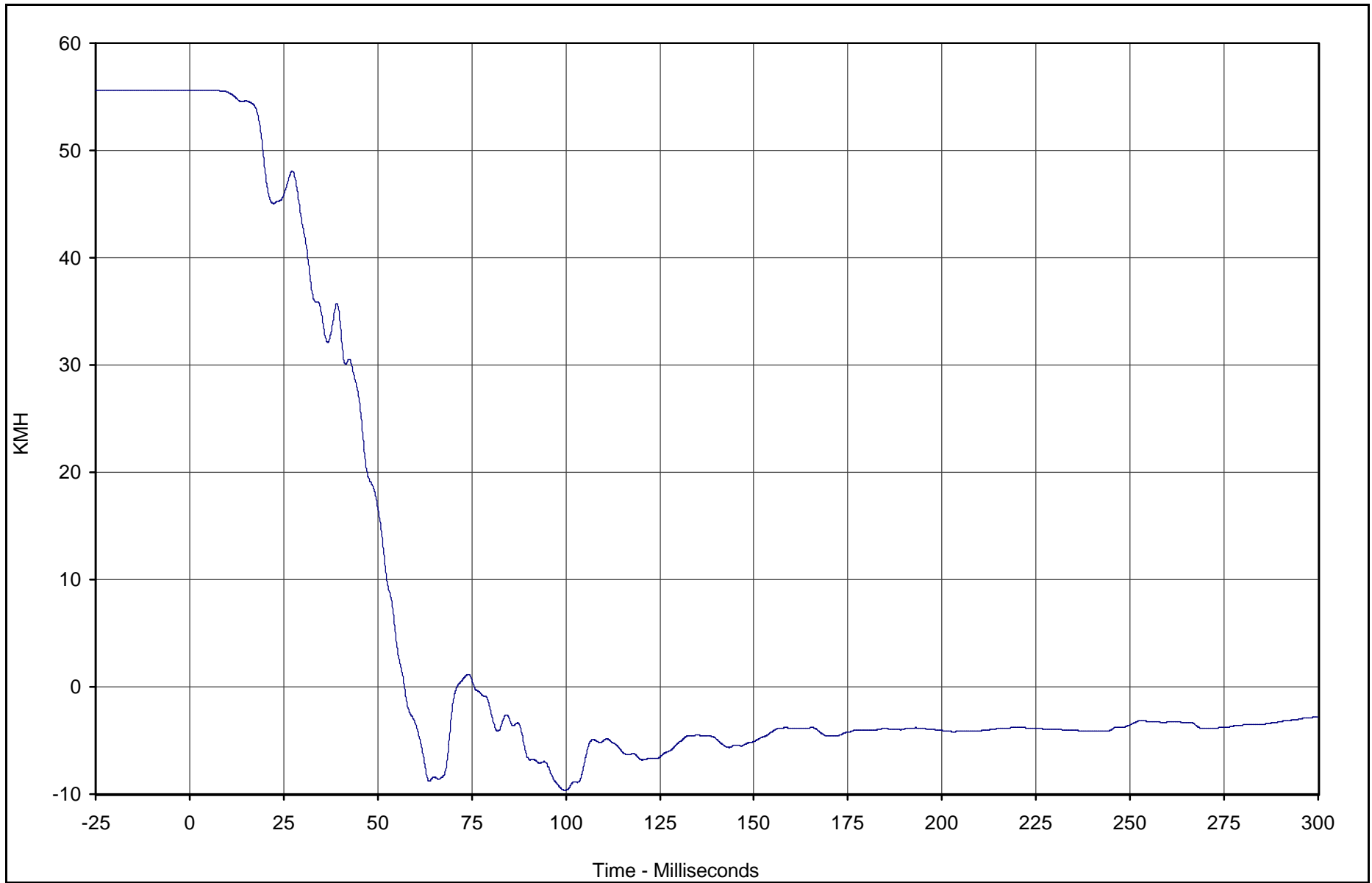
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-139



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Right Brake Caliper Velocity	094	IN1	KMH	55.6	5.9	-9.6	99.8	180



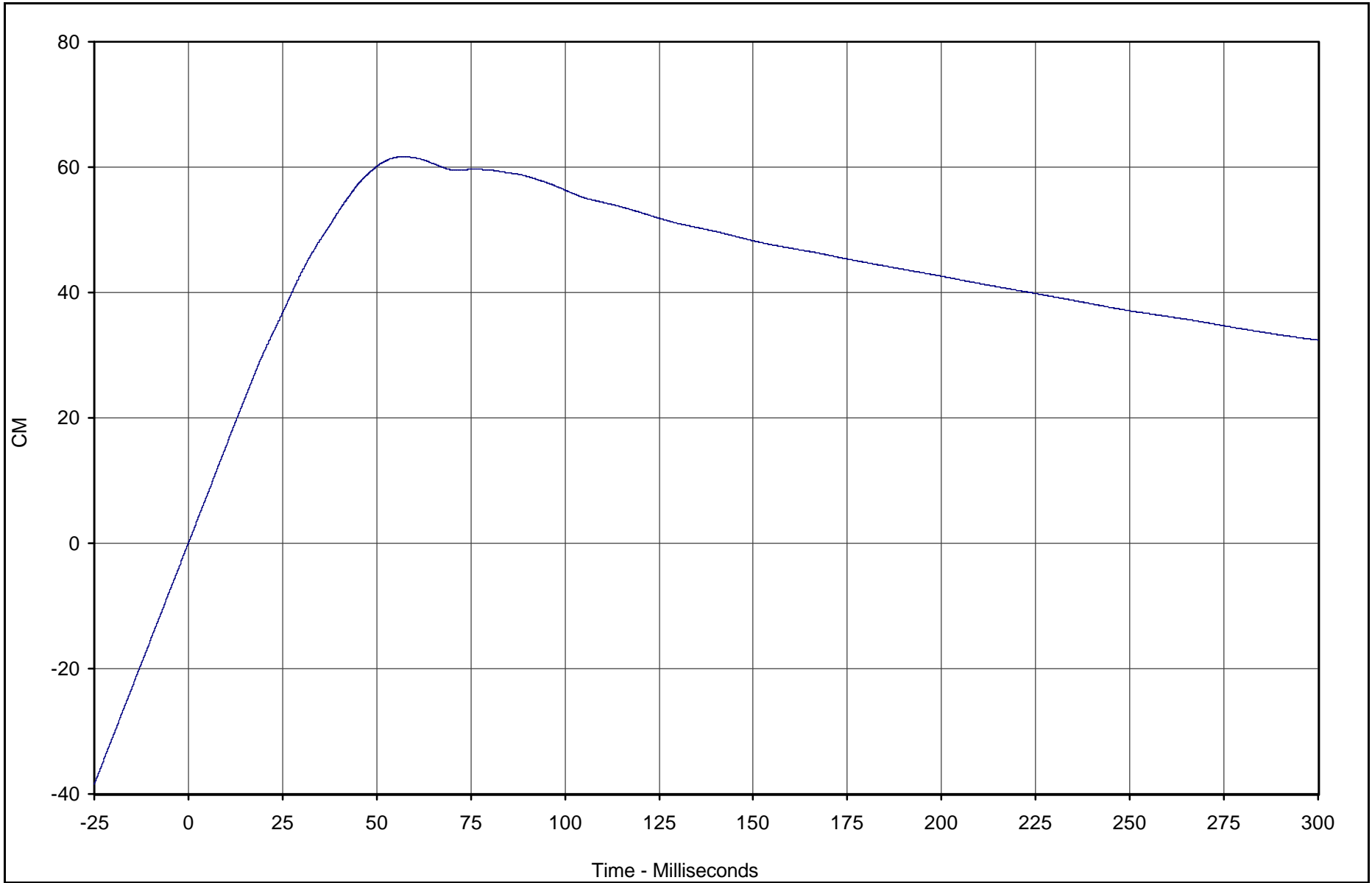
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-140



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Right Brake Caliper Displ.	094	IN2	CM	61.7	57.1	0.0	0.0	180



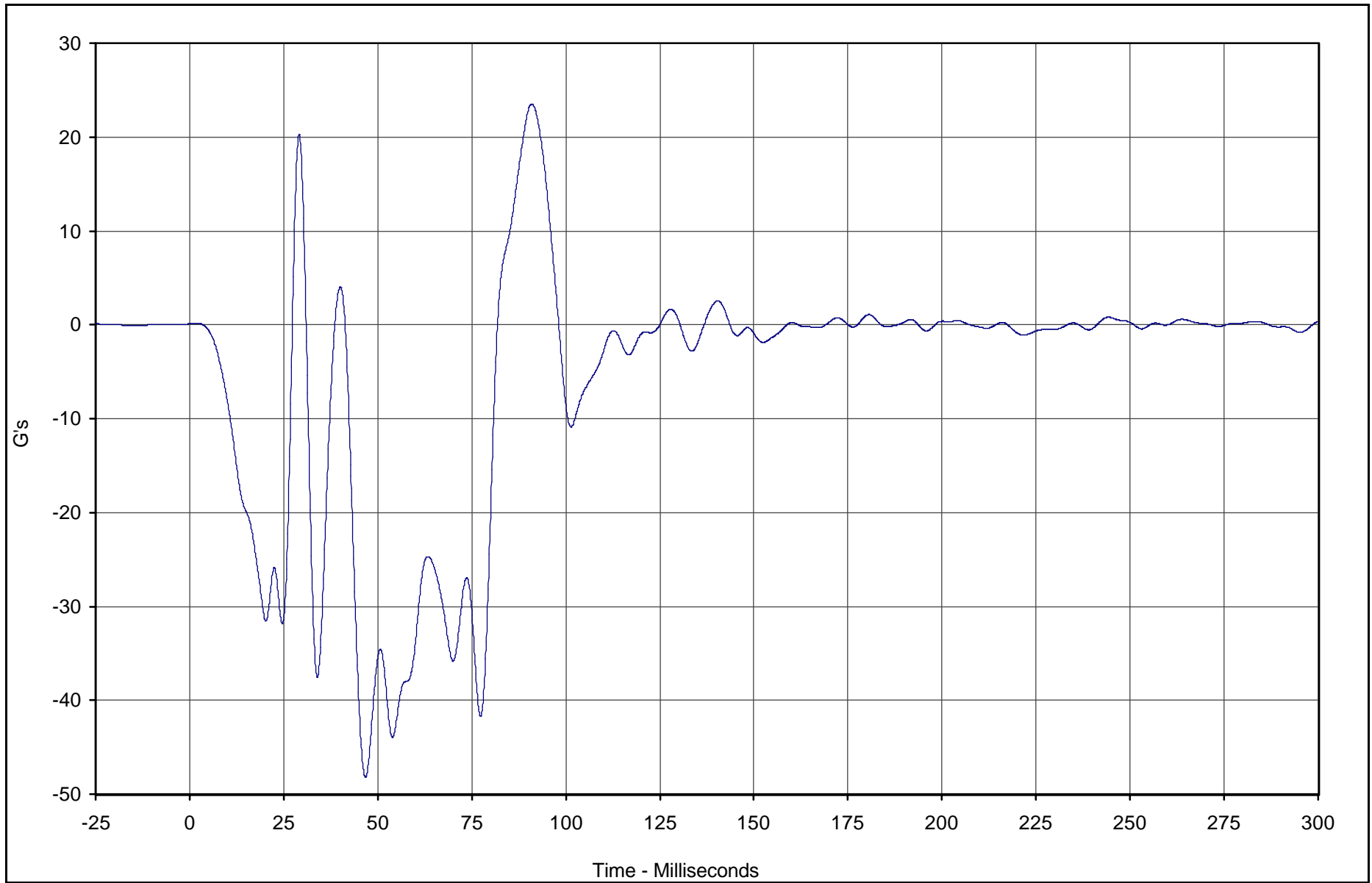
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-141



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Instrument Panel	095	FIL	G's	23.5	91.0	-48.2	46.8	60



Test Vehicle: 2003 Acura MDX SUV

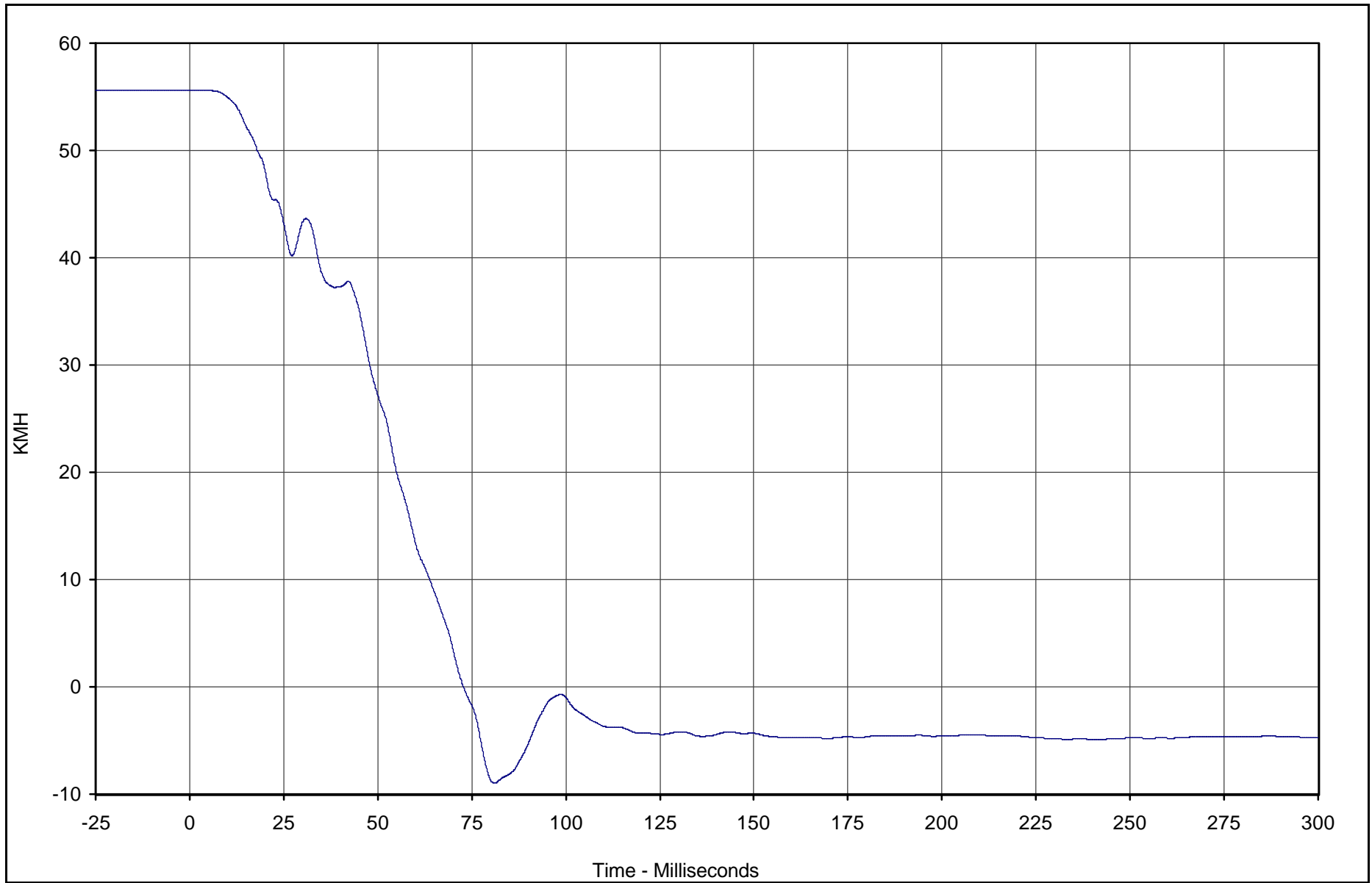
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-142



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Instrument Panel Velocity	095	IN1	KMH	55.6	3.6	-9.0	81.1	180



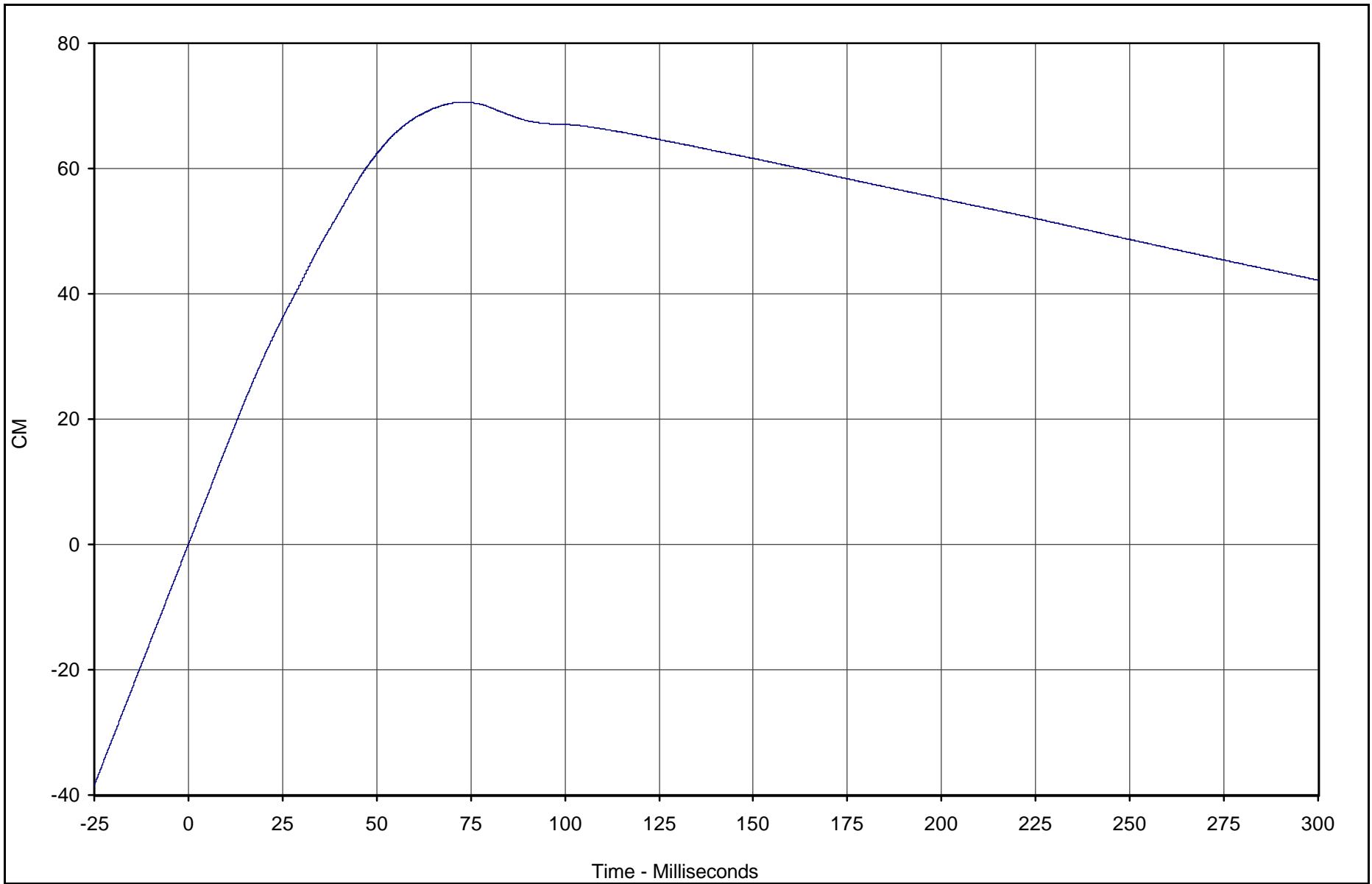
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-143



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Instrument Panel Displacement	095	IN2	CM	70.6	72.8	0.0	0.0	180



Test Vehicle: 2003 Acura MDX SUV

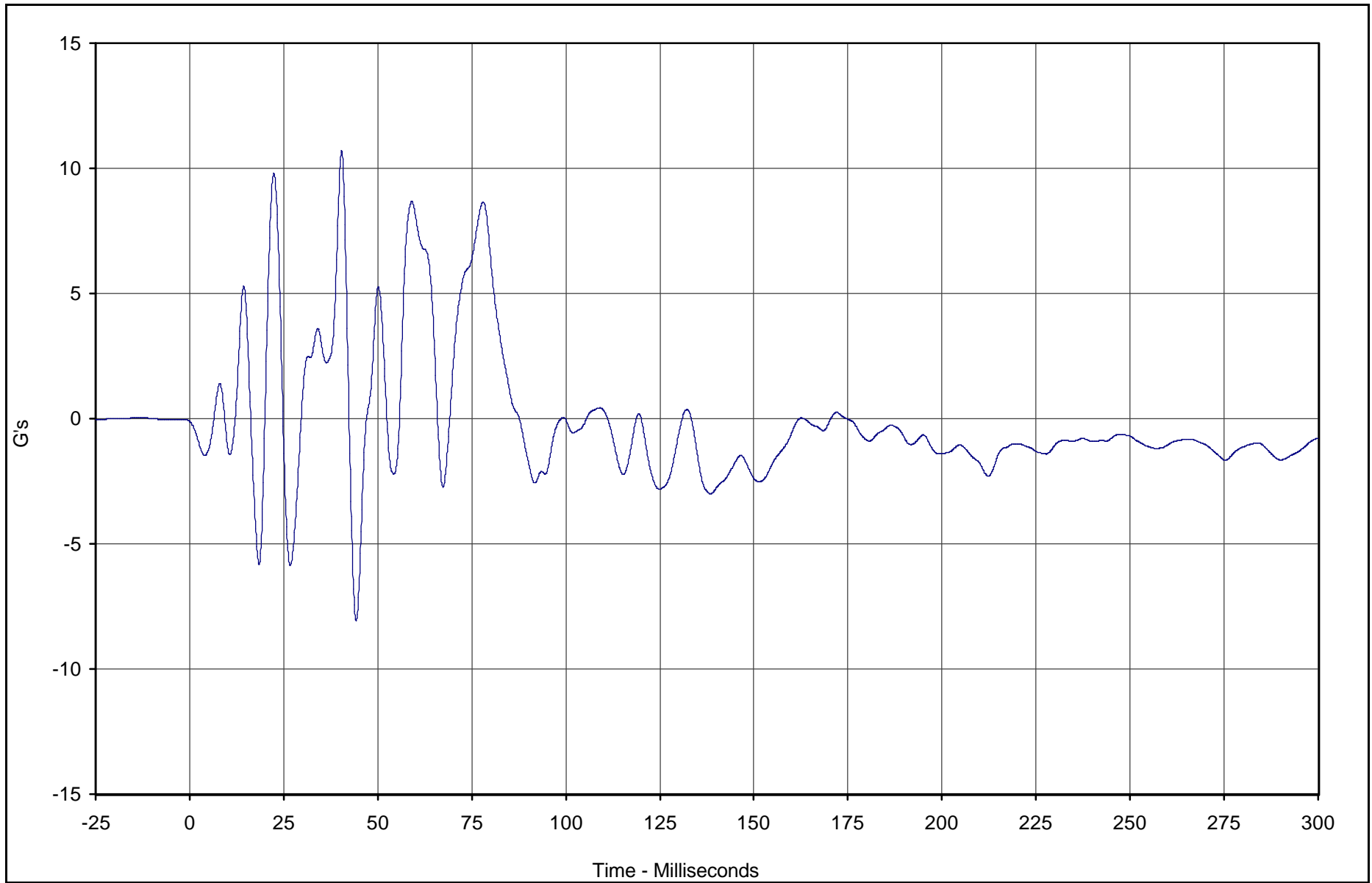
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-144



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Left Rear Z	096	FIL	G's	10.7	40.4	-8.1	44.3	60



Test Vehicle: 2003 Acura MDX SUV

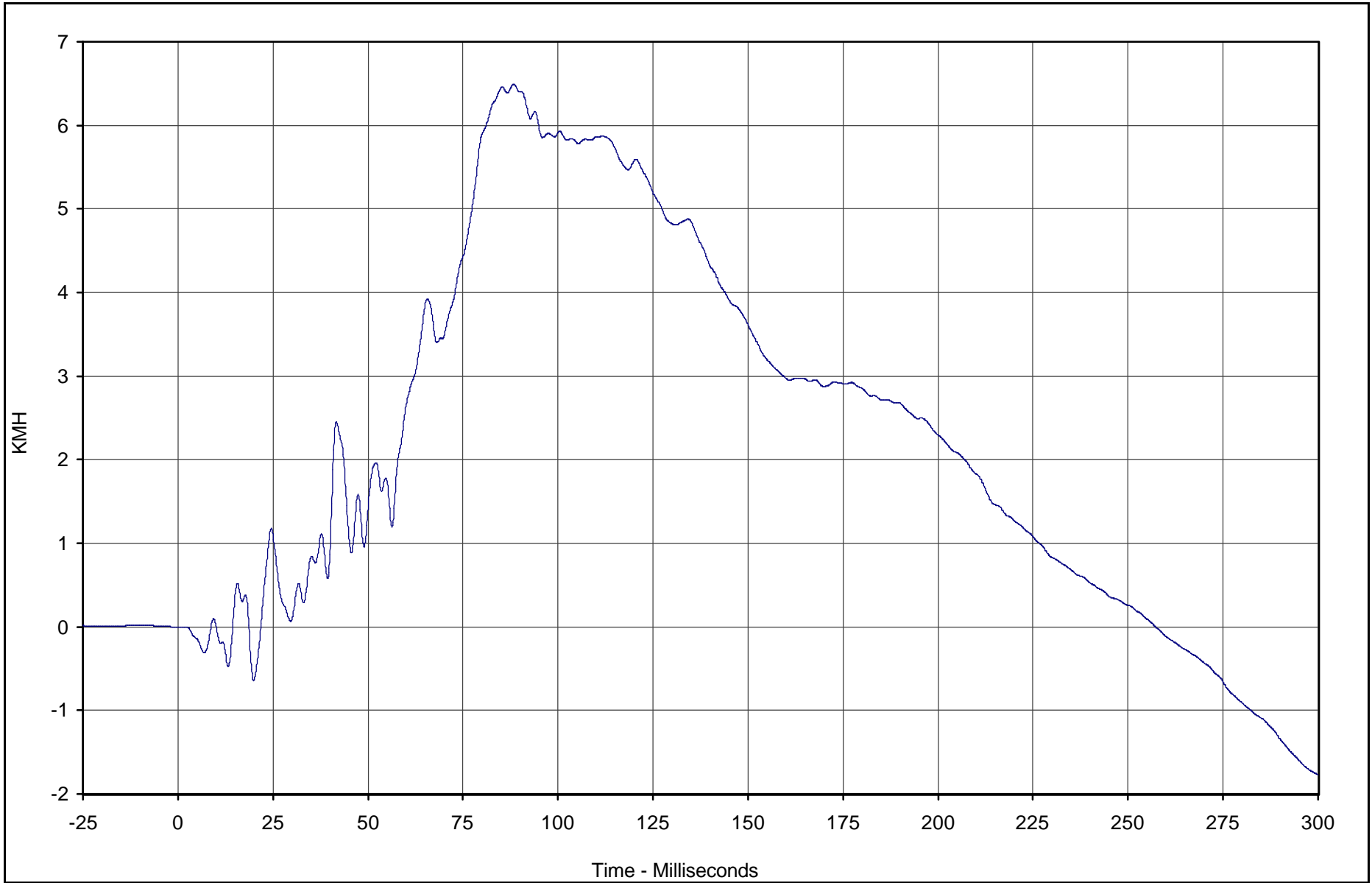
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-145



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Left Rear Z Velocity	096	IN1	KMH	6.5	88.3	-1.8	299.9	180



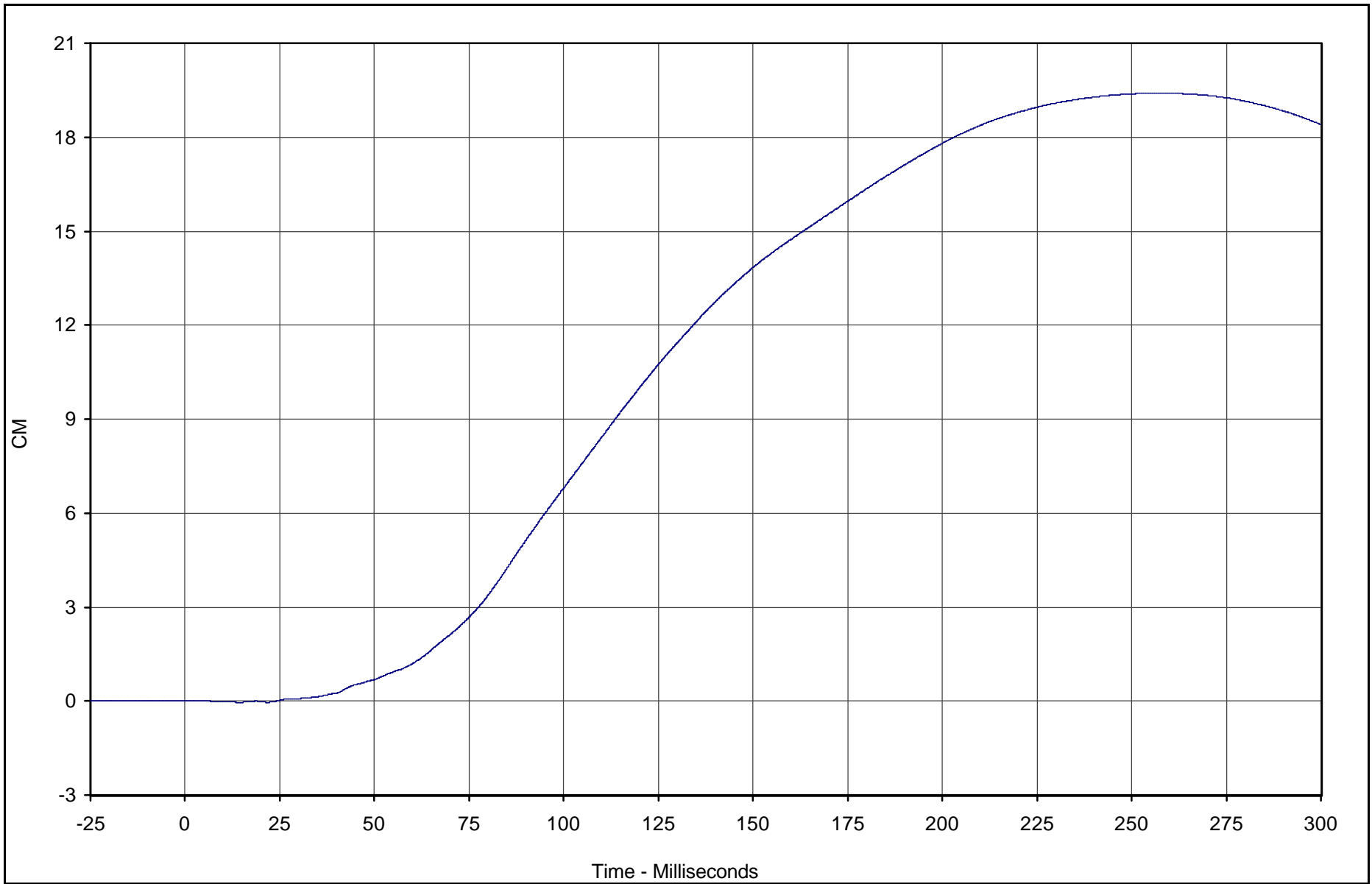
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

B-146



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Left Rear Z Displ.	096	IN2	CM	19.4	257.2	0.0	14.4	180



Test Vehicle: 2003 Acura MDX SUV

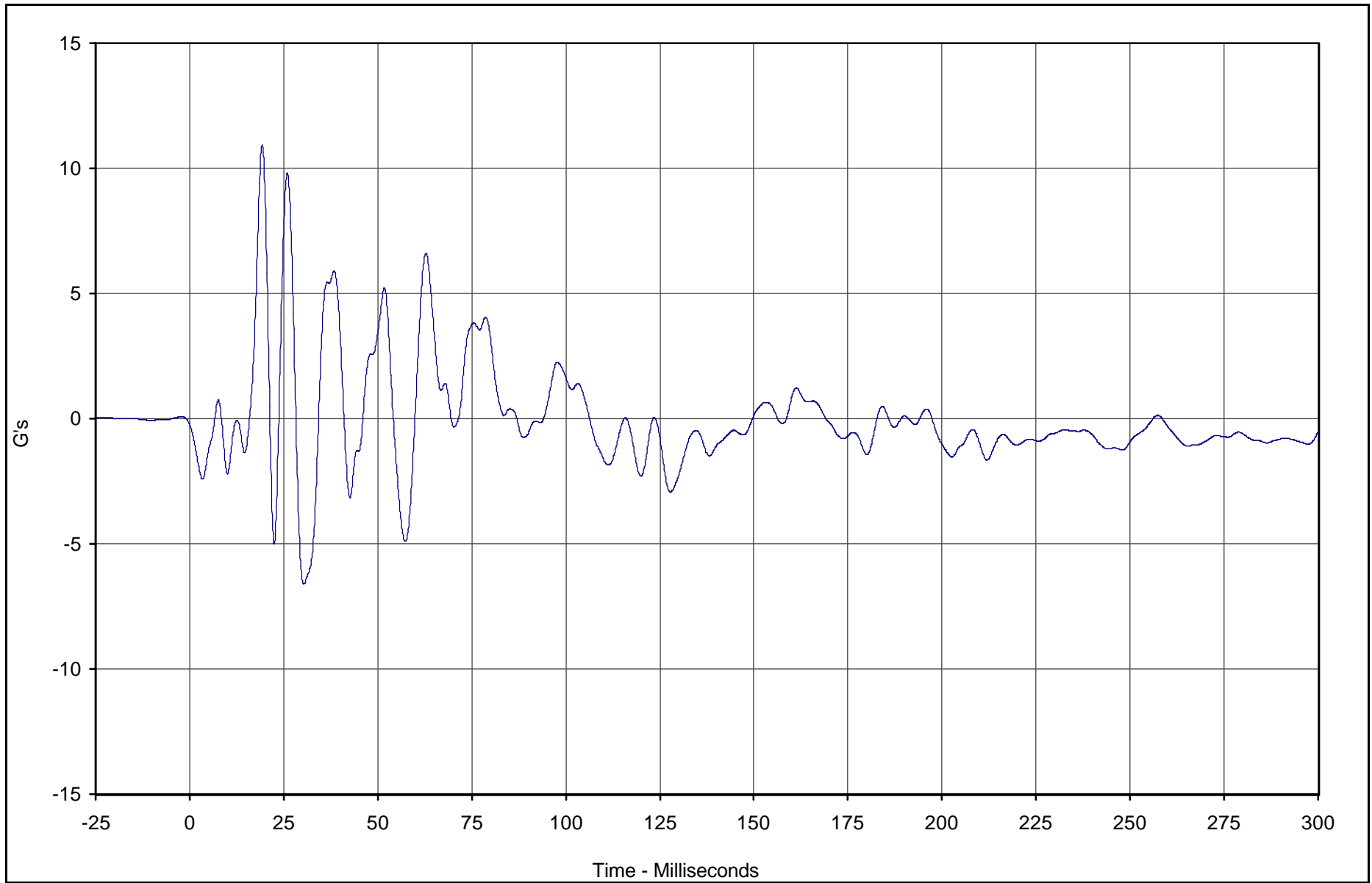
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-147



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Right Rear Z	097	FIL	G's	10.9	19.3	-6.6	30.4	60



Test Vehicle: 2003 Acura MDX SUV

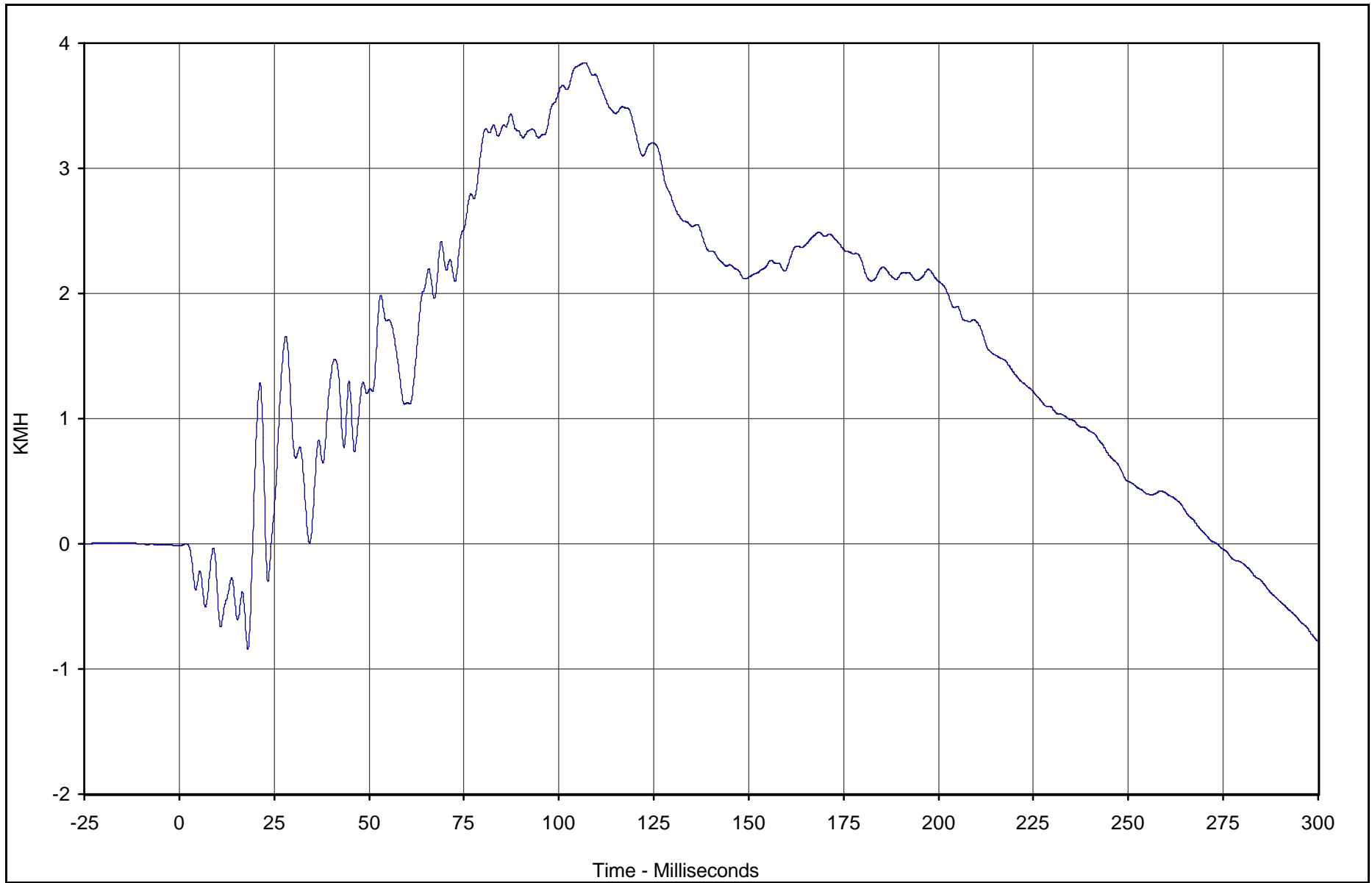
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-148



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Right Rear Z Velocity	097	IN1	KMH	3.8	106.8	-0.8	18.1	180



Test Vehicle: 2003 Acura MDX SUV

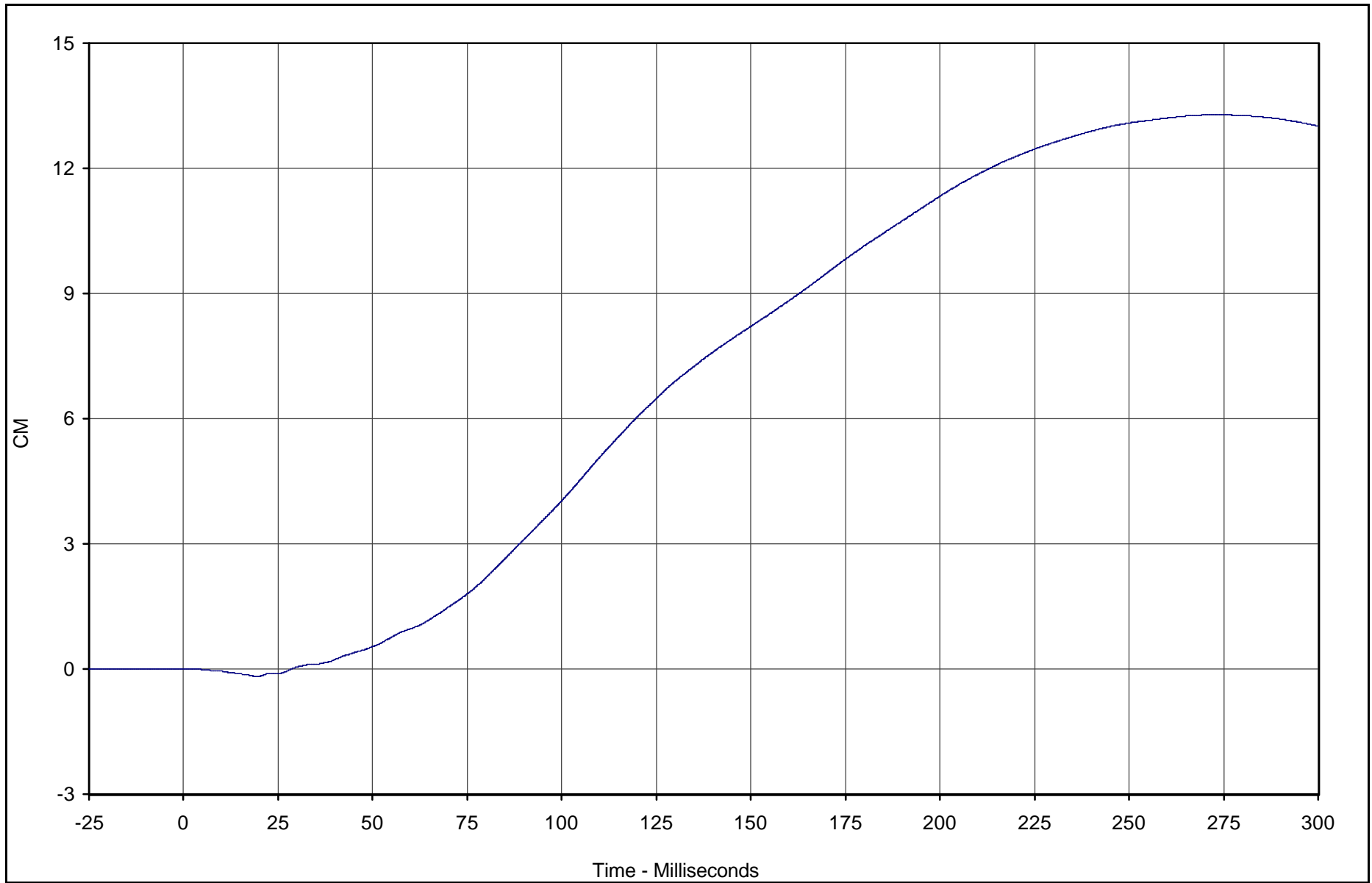
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

B-149



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Right Rear Z Displ.	097	IN2	CM	13.3	273.4	-0.2	19.4	180



Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

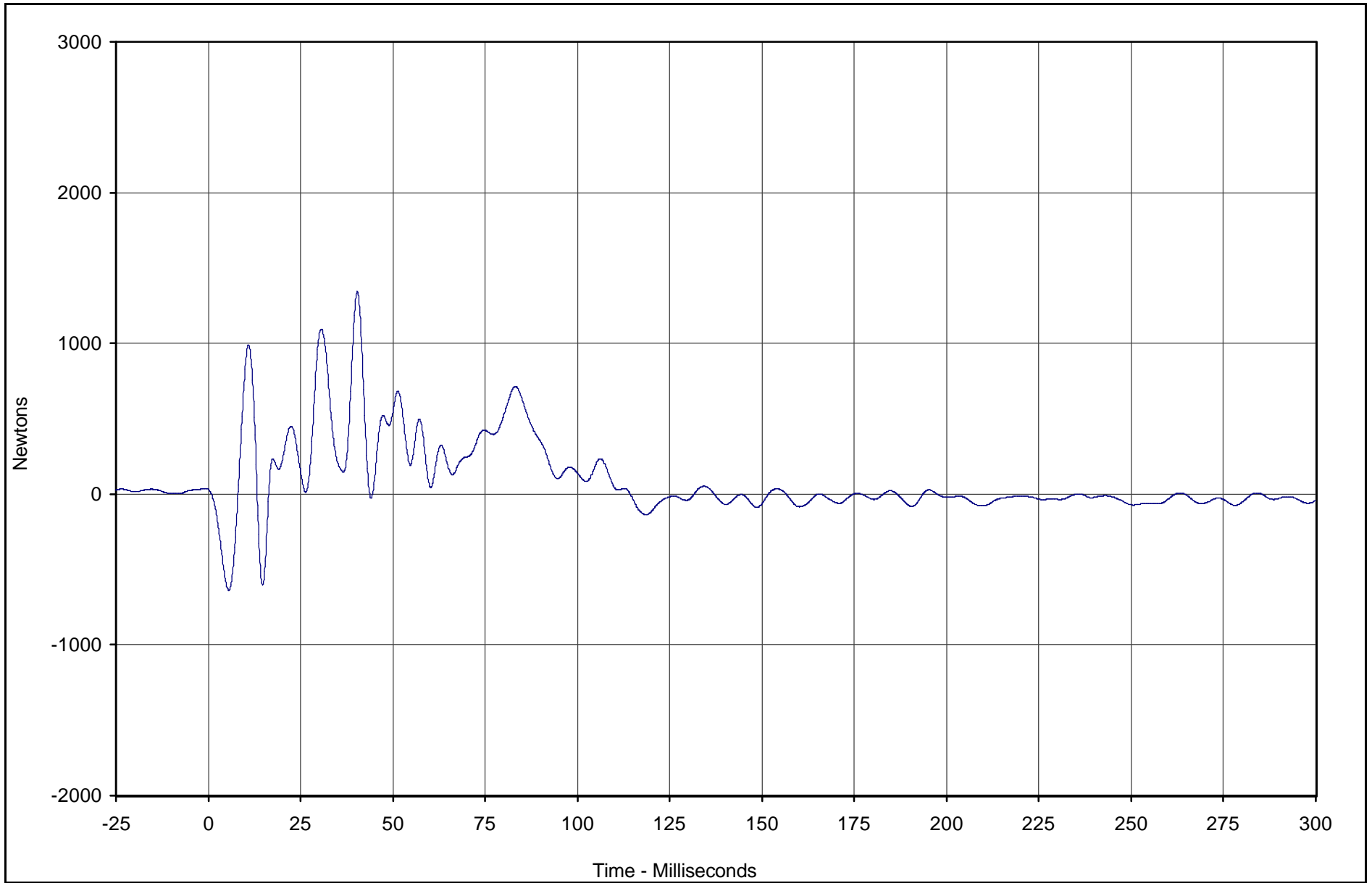
NHTSA No.: M35301

TR-P23001-16-NC

APPENDIX C

LOAD CELL BARRIER DATA PLOTS

C-1



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force A1	098	FIL	Newtons	1342.7	40.4	-638.1	5.6	60



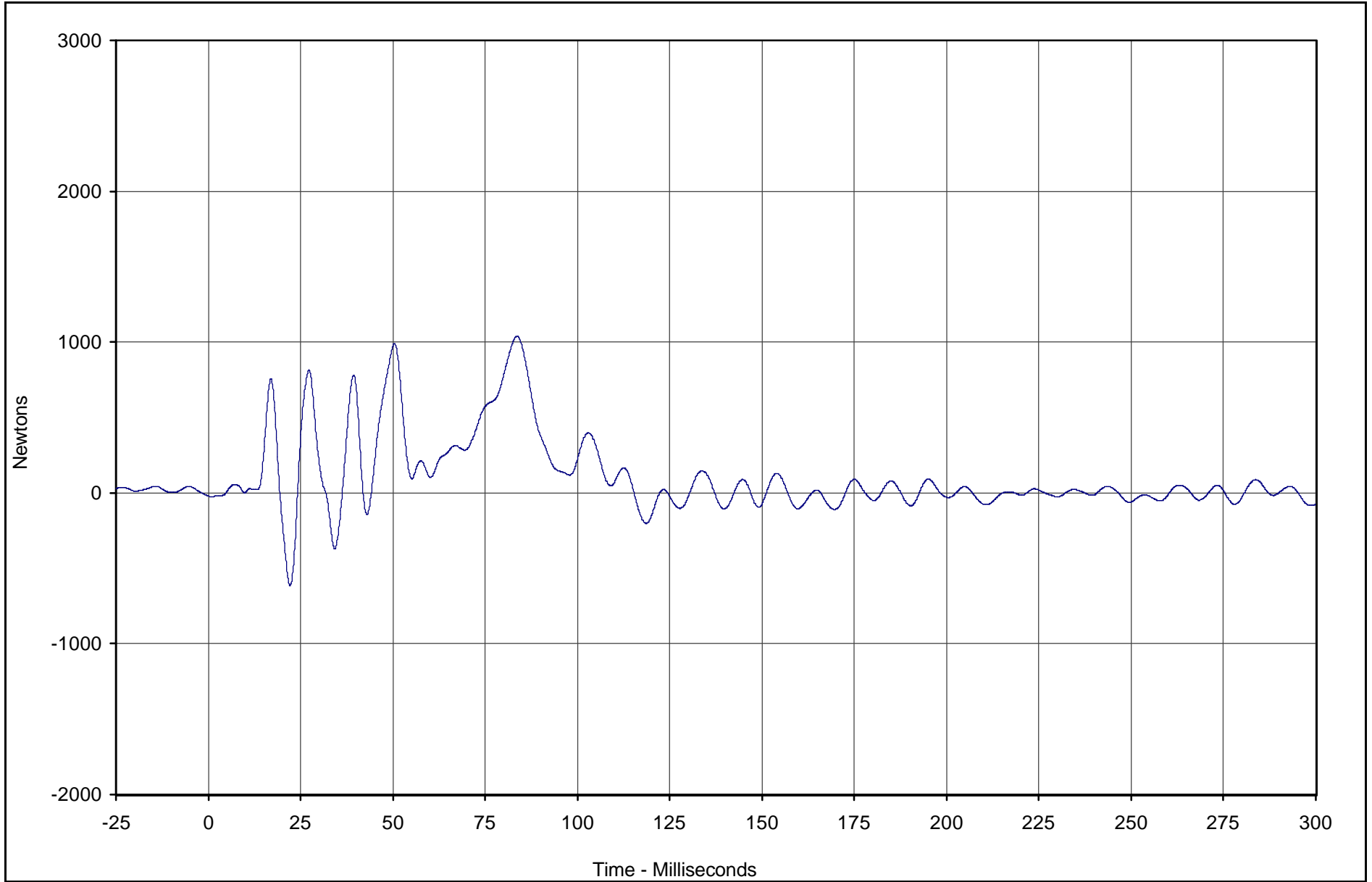
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-2



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force A2	099	FIL	Newtons	1037.7	83.6	-615.1	22.2	60



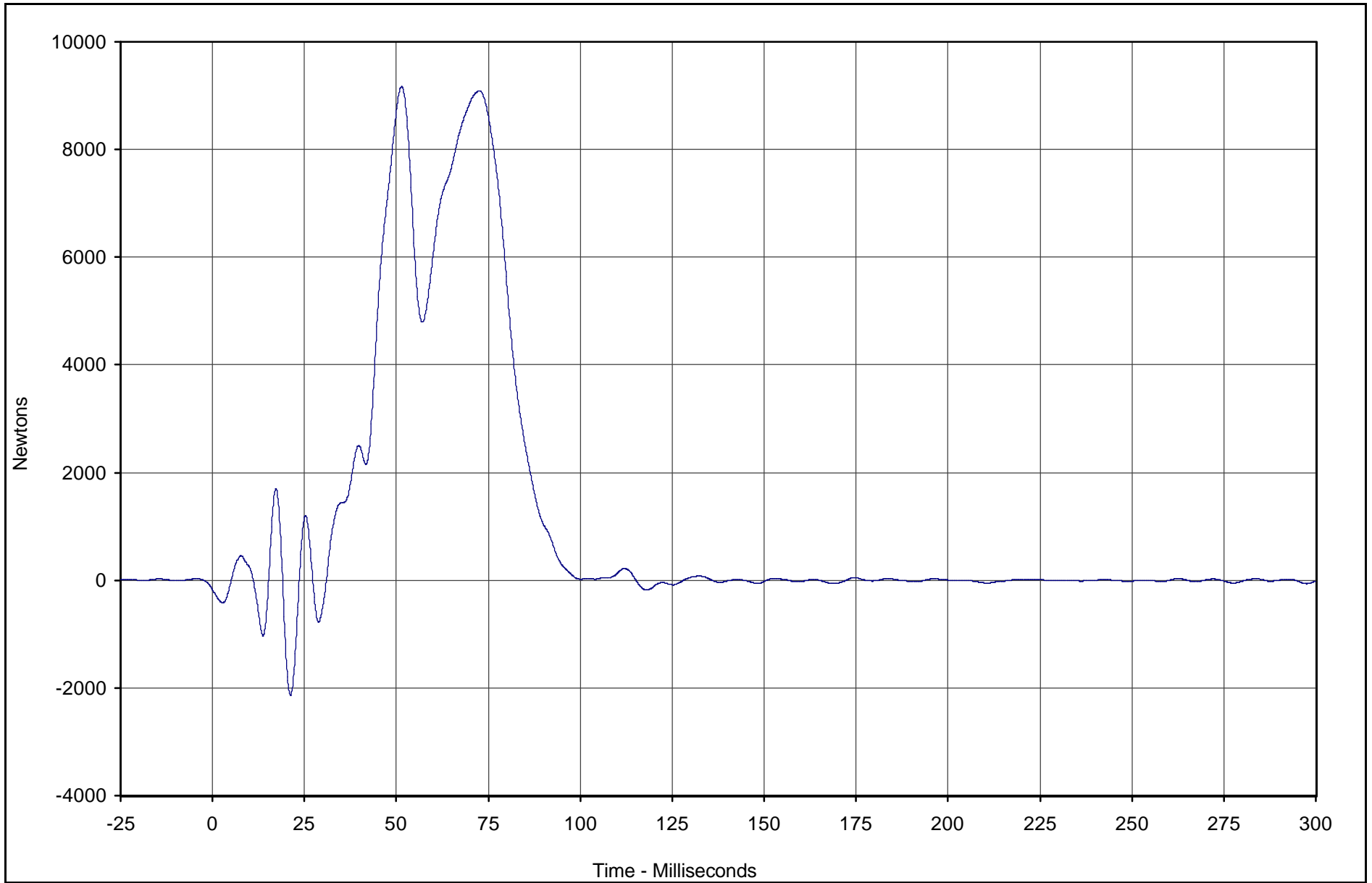
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-3



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force A3	100	FIL	Newtons	9167.3	51.4	-2137.4	21.2	60



Test Vehicle: 2003 Acura MDX SUV

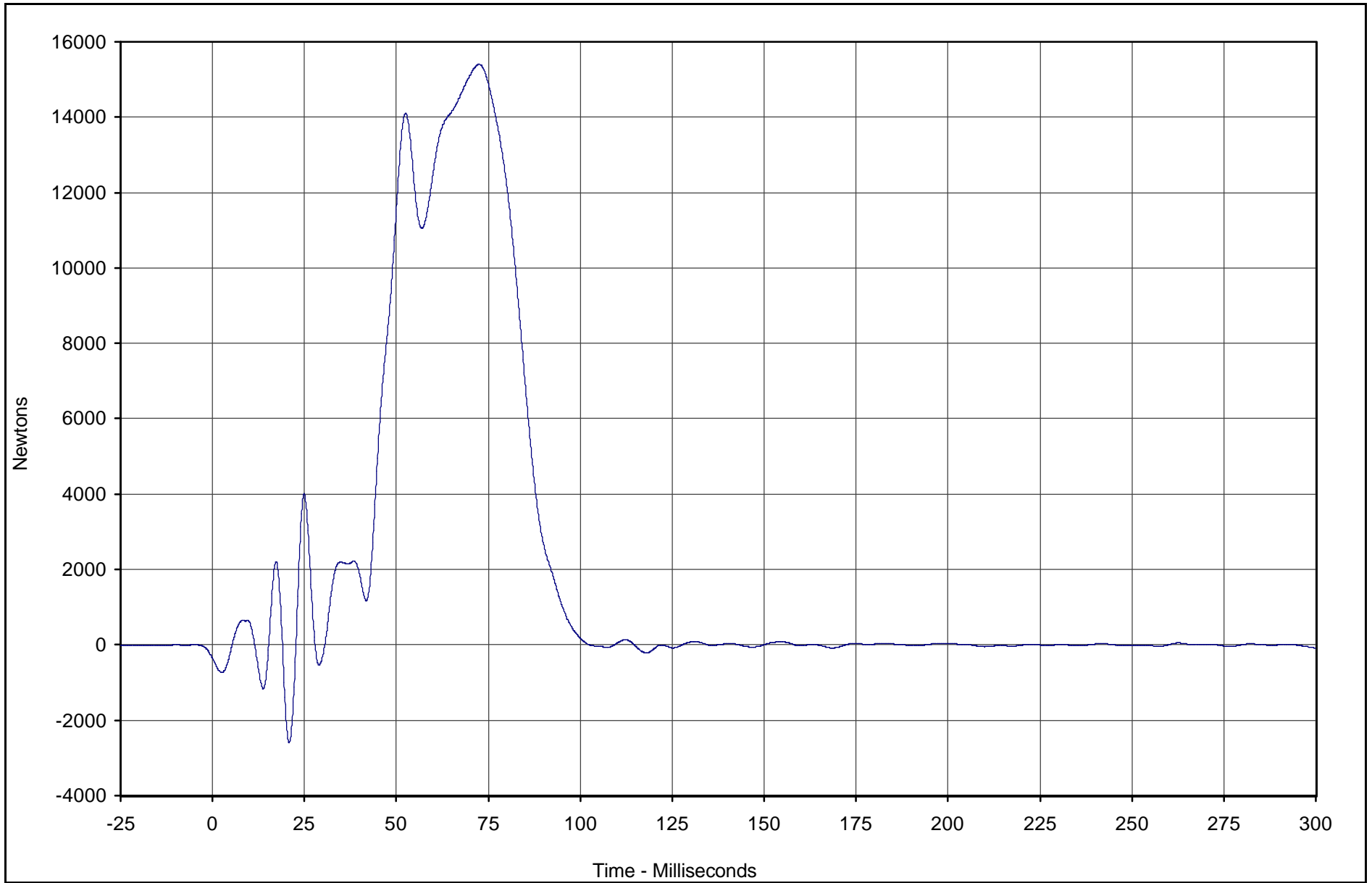
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

C-4



TR-P23001-16-NC

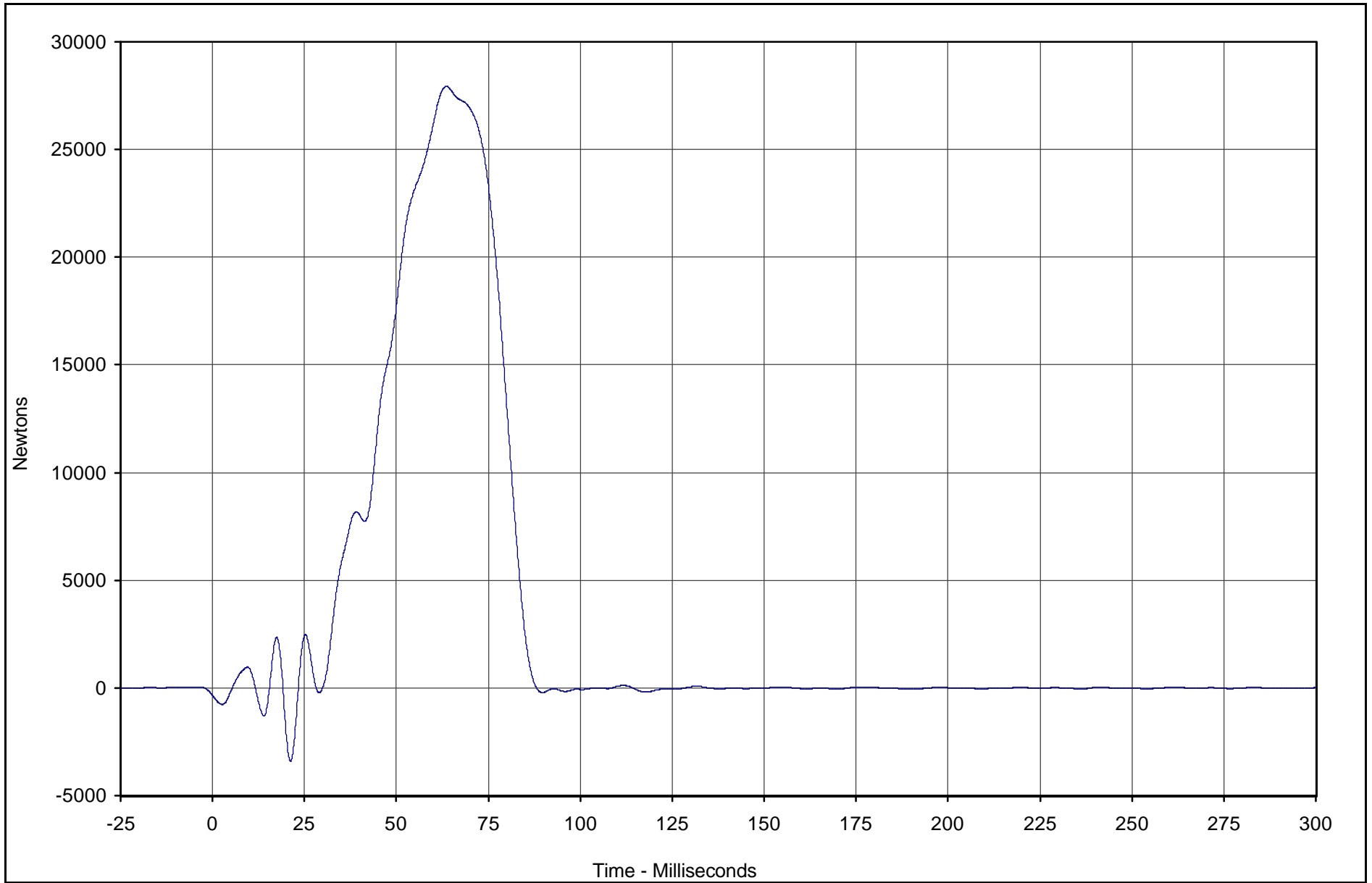
Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force A4	101	FIL	Newtons	15404.5	72.5	-2597.4	20.9	60



Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

Test Date: 3/13/03
 NHTSA No.: M35301

C-5



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force A5	102	FIL	Newtons	27931.7	63.6	-3394.6	21.2	60



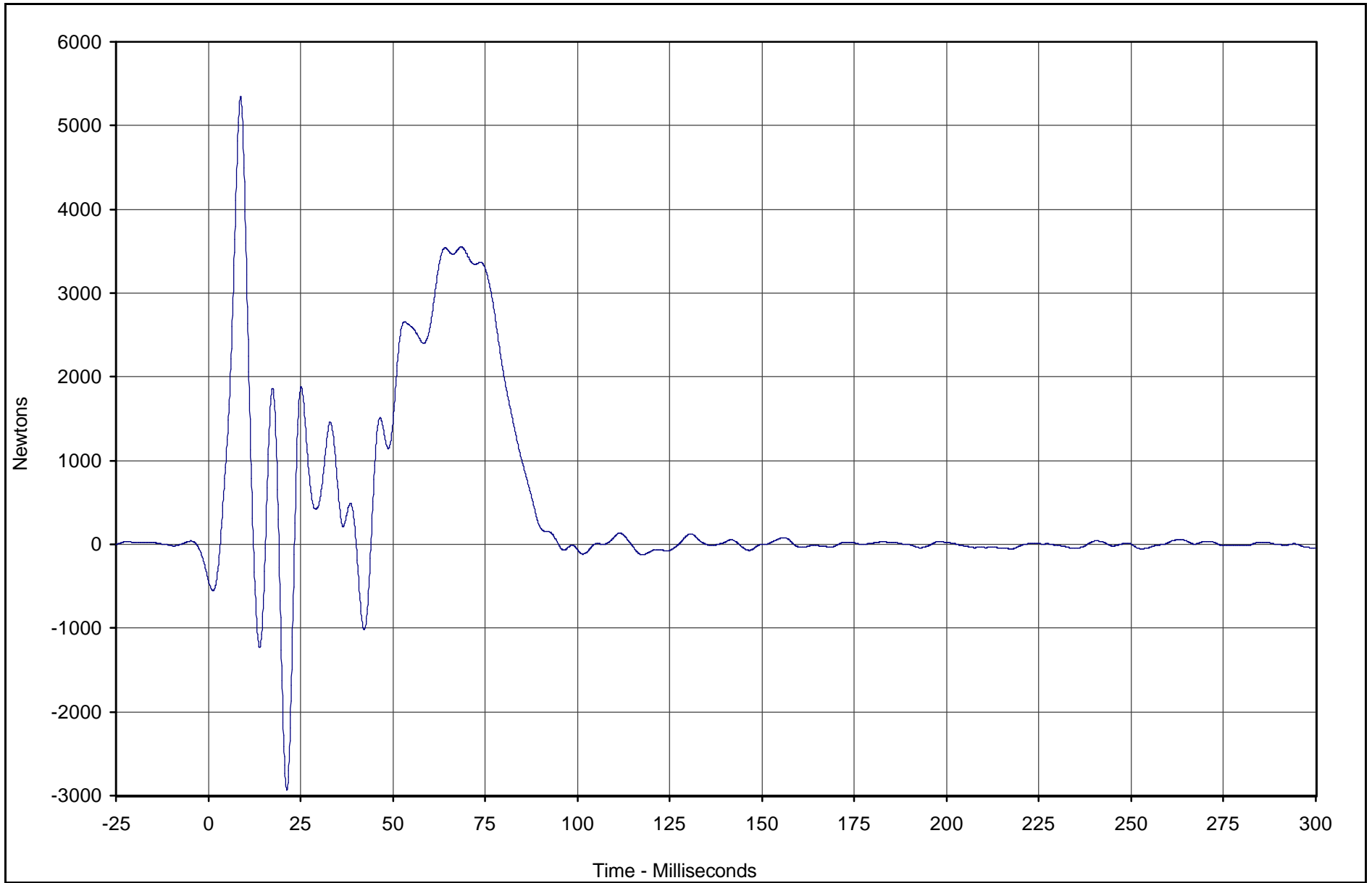
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-6



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force A6	103	FIL	Newtons	5346.2	8.8	-2937.1	21.3	60



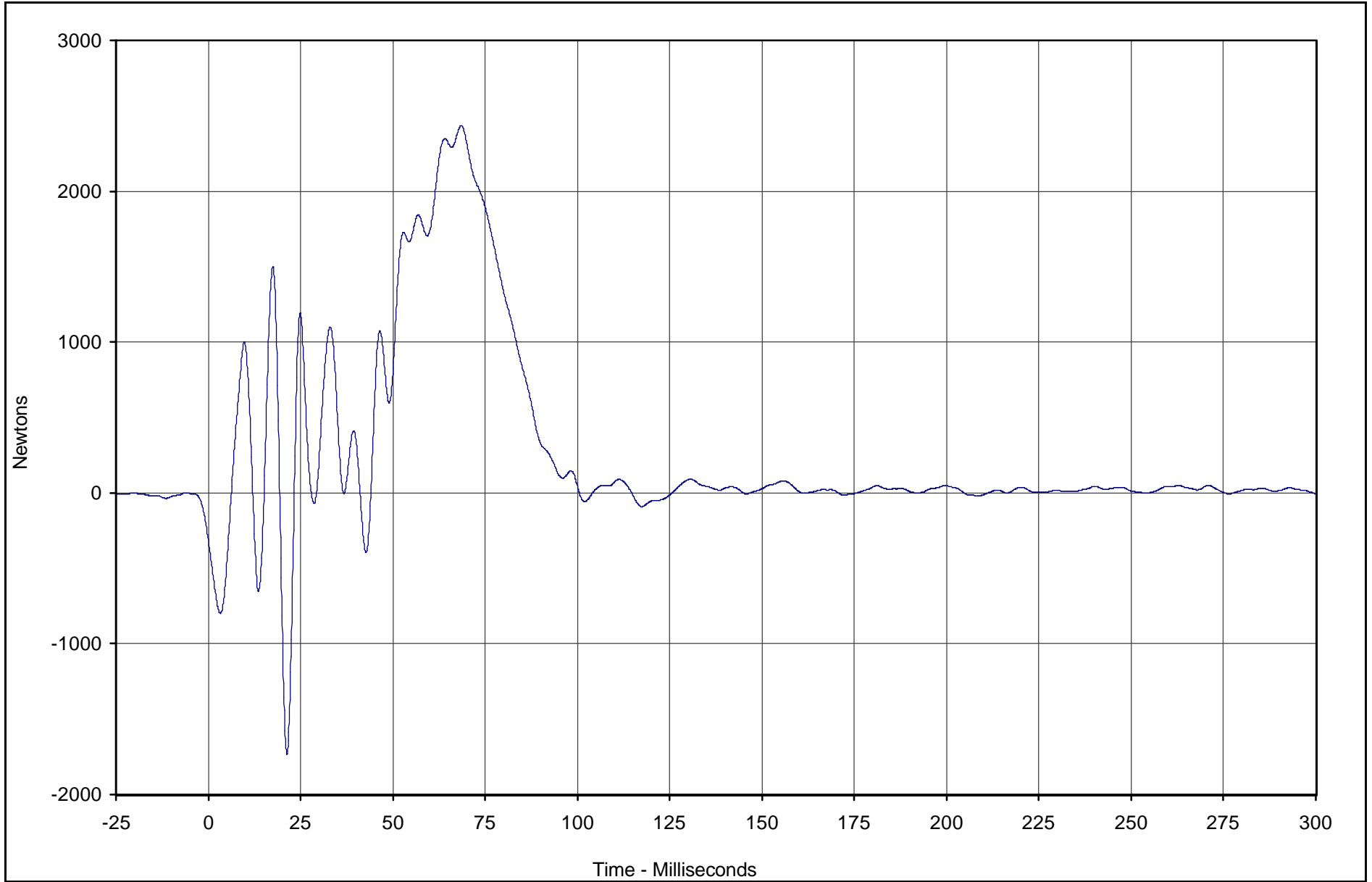
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-7



TR-P23001-16-NC

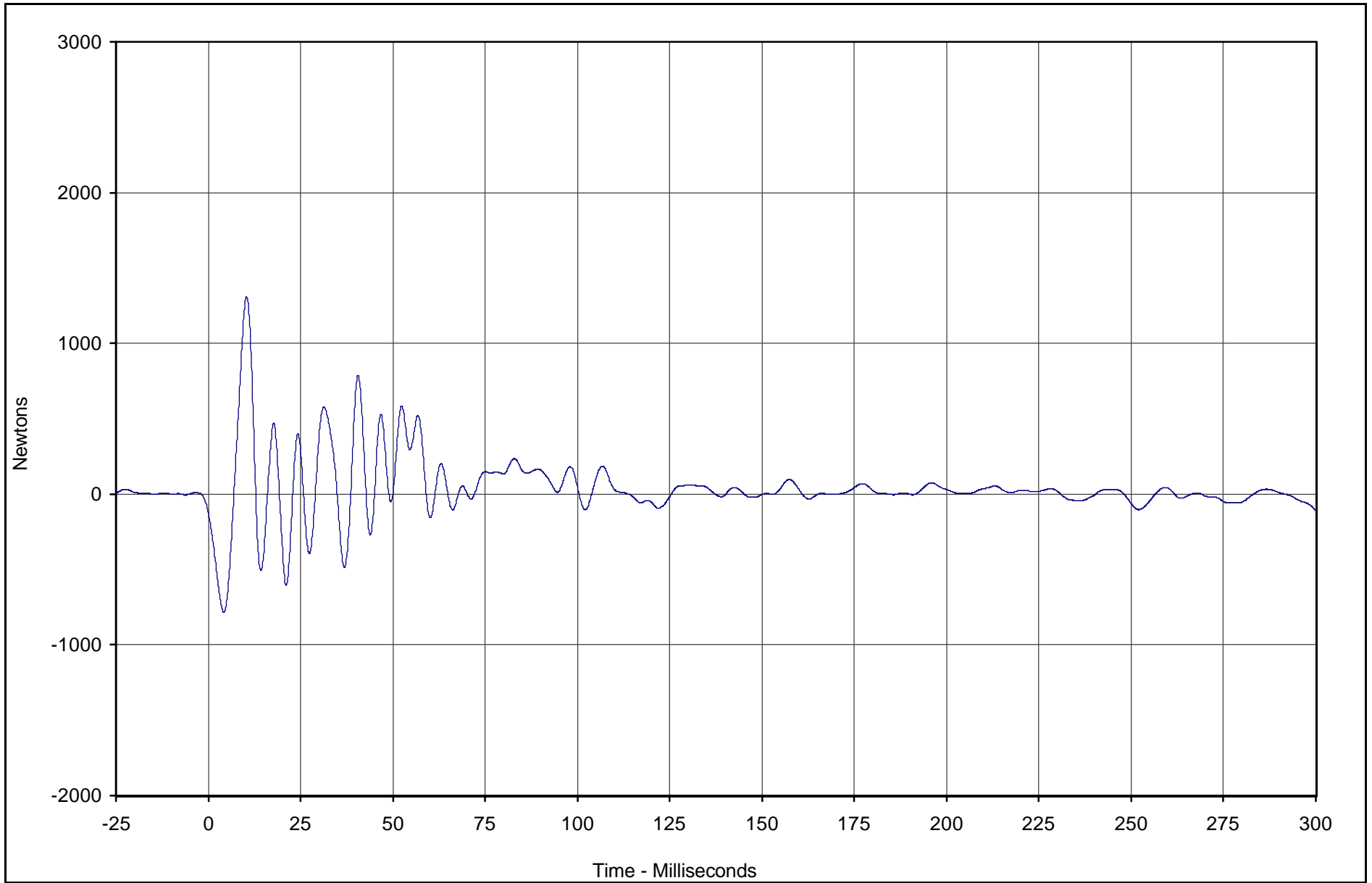
Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force A7	104	FIL	Newtons	2435.4	68.6	-1733.8	21.3	60



Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

Test Date: 3/13/03
 NHTSA No.: M35301

C-8



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force A8	105	FIL	Newtons	1309.8	10.4	-782.2	4.3	60



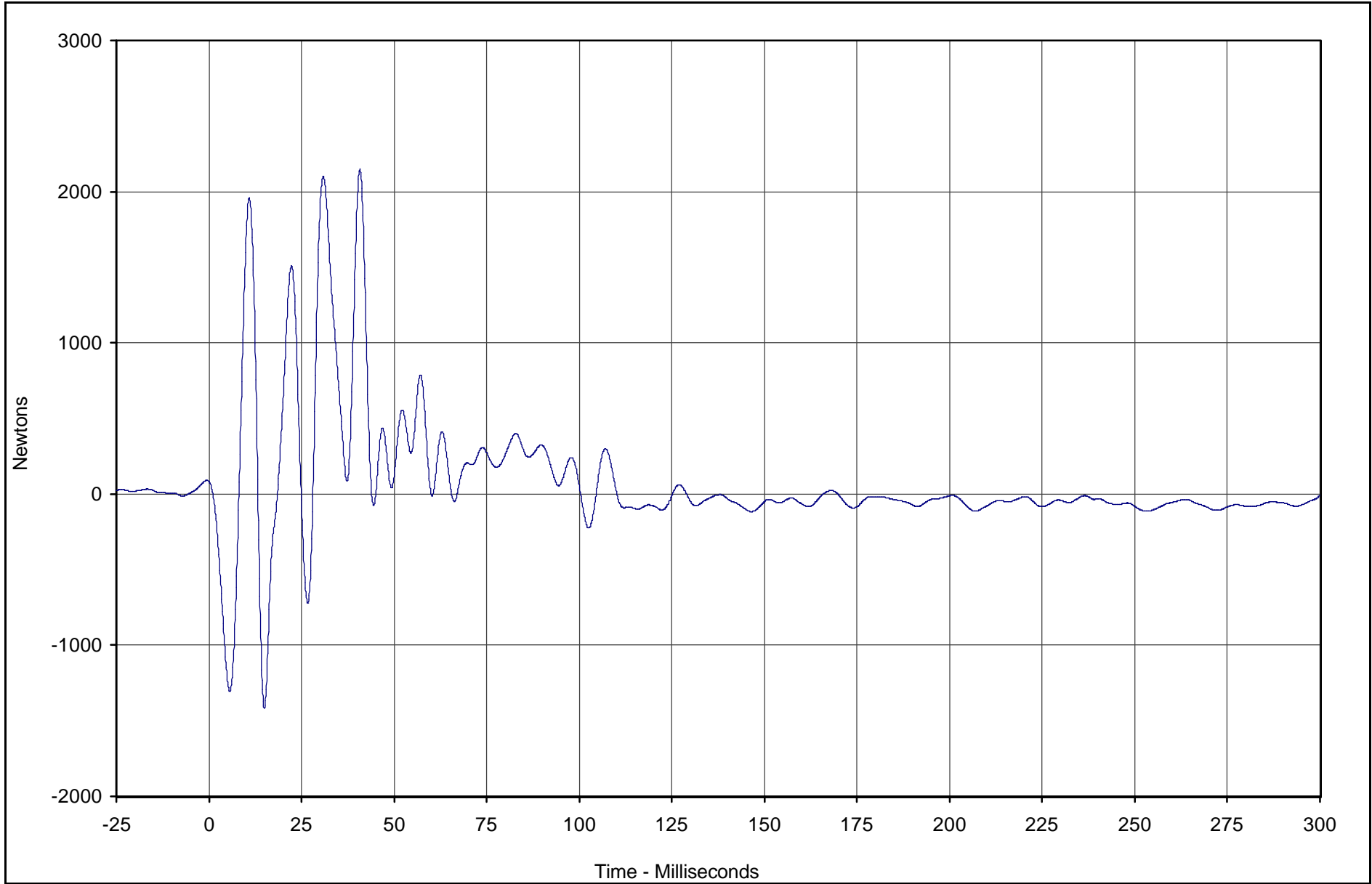
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-9



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force A9	106	FIL	Newtons	2149.0	40.8	-1417.9	15.0	60



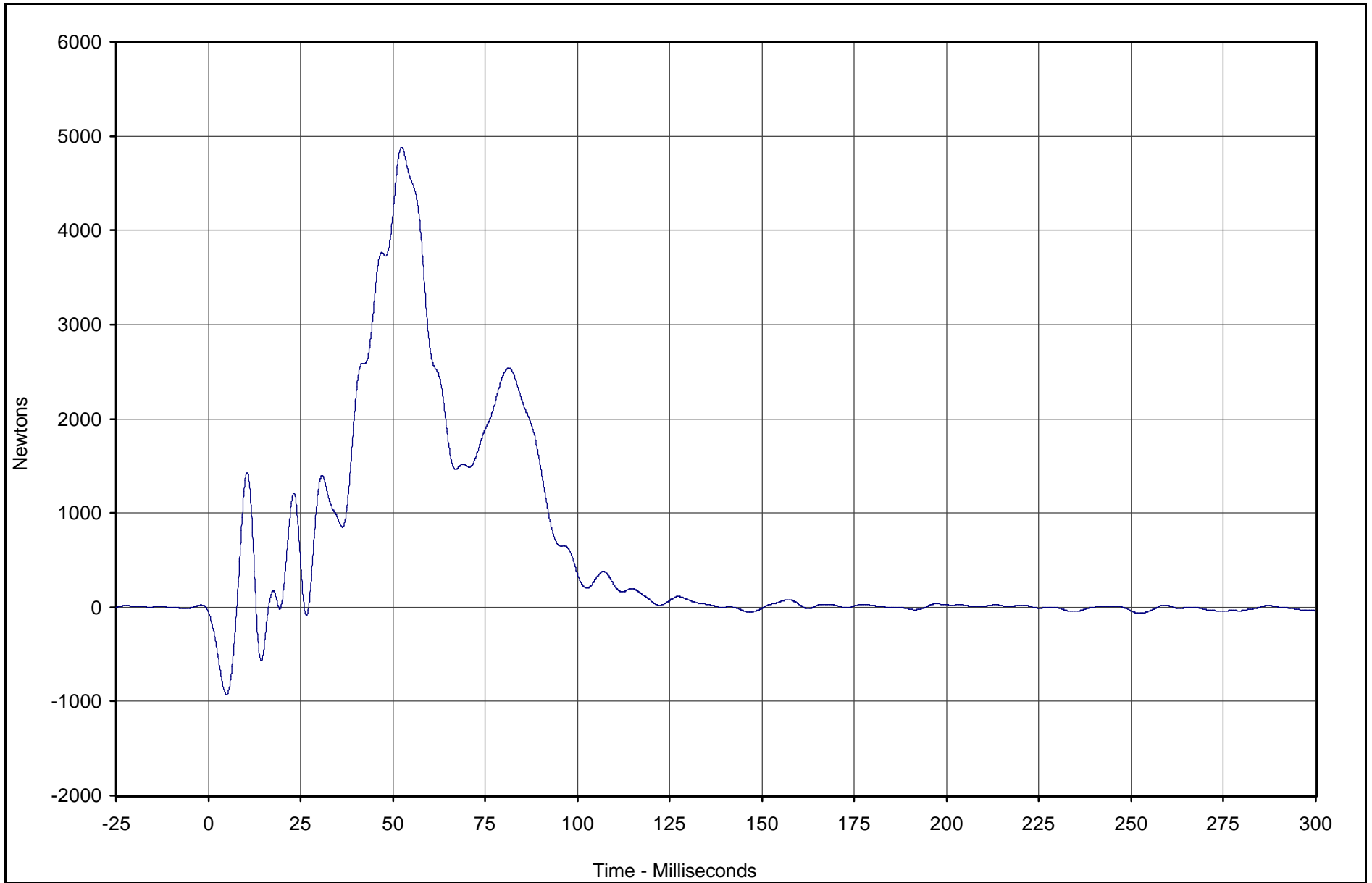
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-10



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force B1	107	FIL	Newtons	4878.1	52.4	-926.5	5.0	60



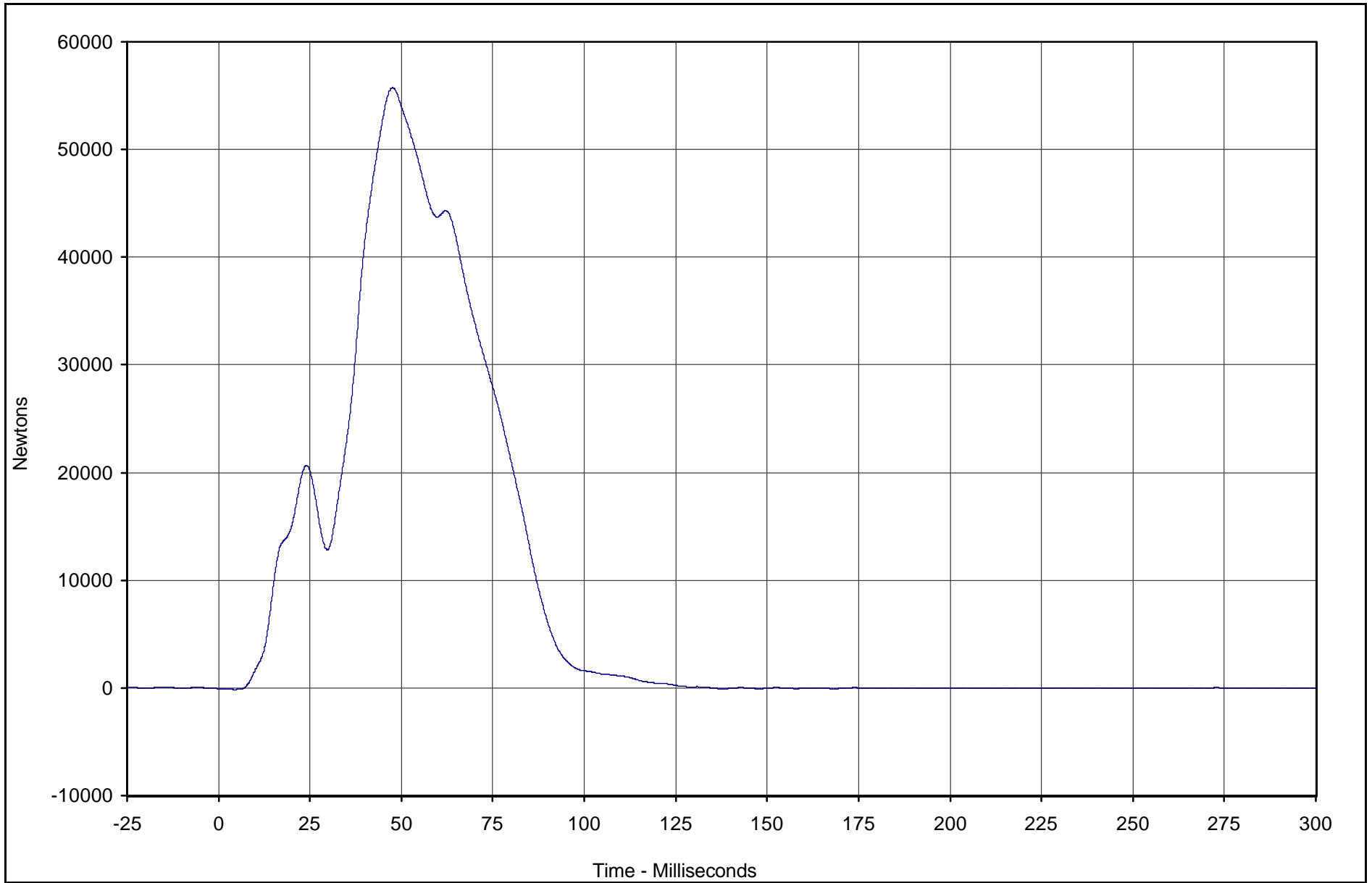
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-11



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force B2	108	FIL	Newtons	55740.7	47.6	-143.5	4.6	60



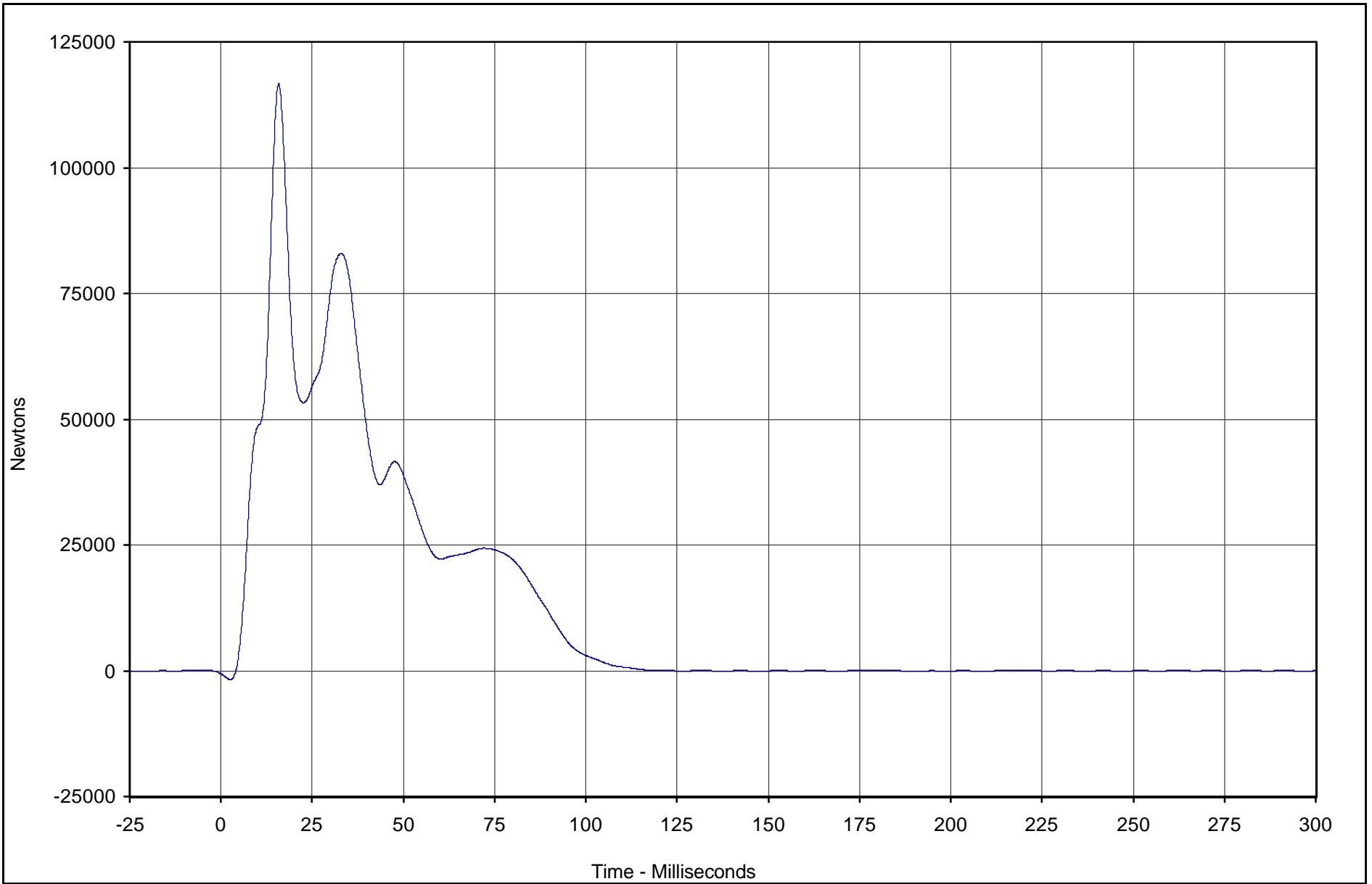
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-12



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force B3	109	FIL	Newtons	116780.3	15.8	-1744.0	2.6	60



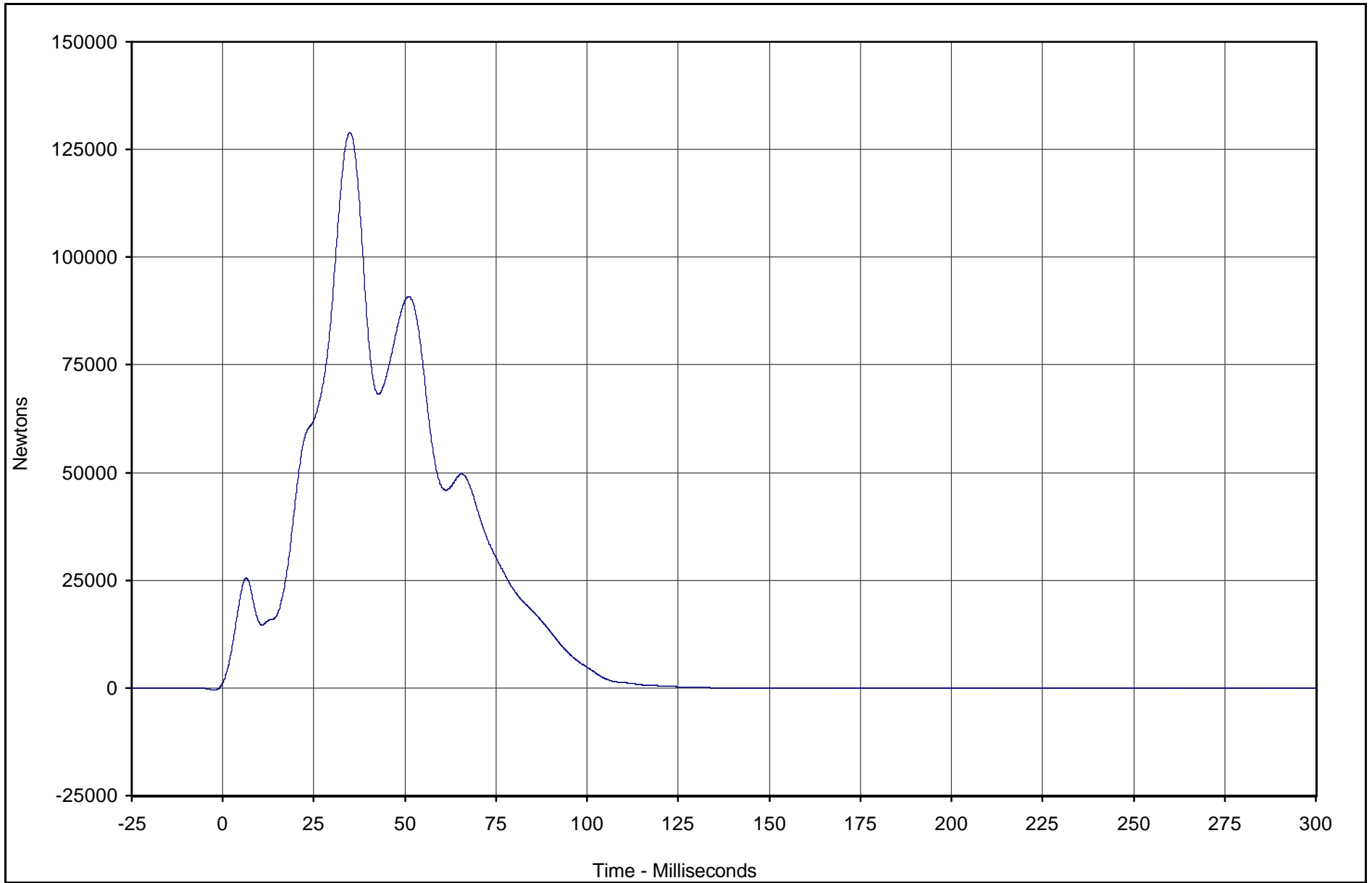
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-13



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force B4	110	FIL	Newtons	128900.5	34.9	-112.1	299.9	60



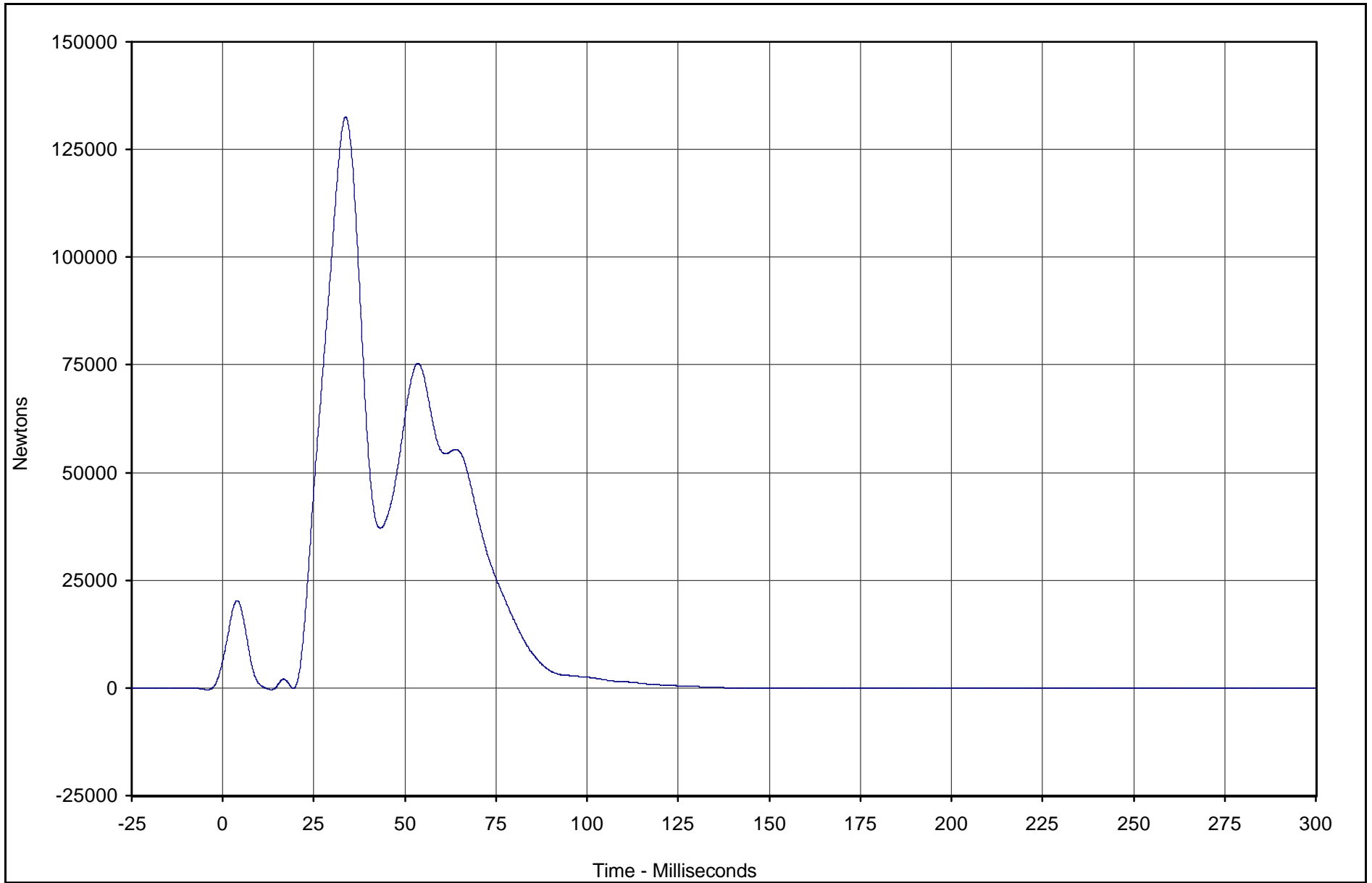
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-14



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force B5	111	FIL	Newtons	132549.1	33.7	-447.8	13.4	60



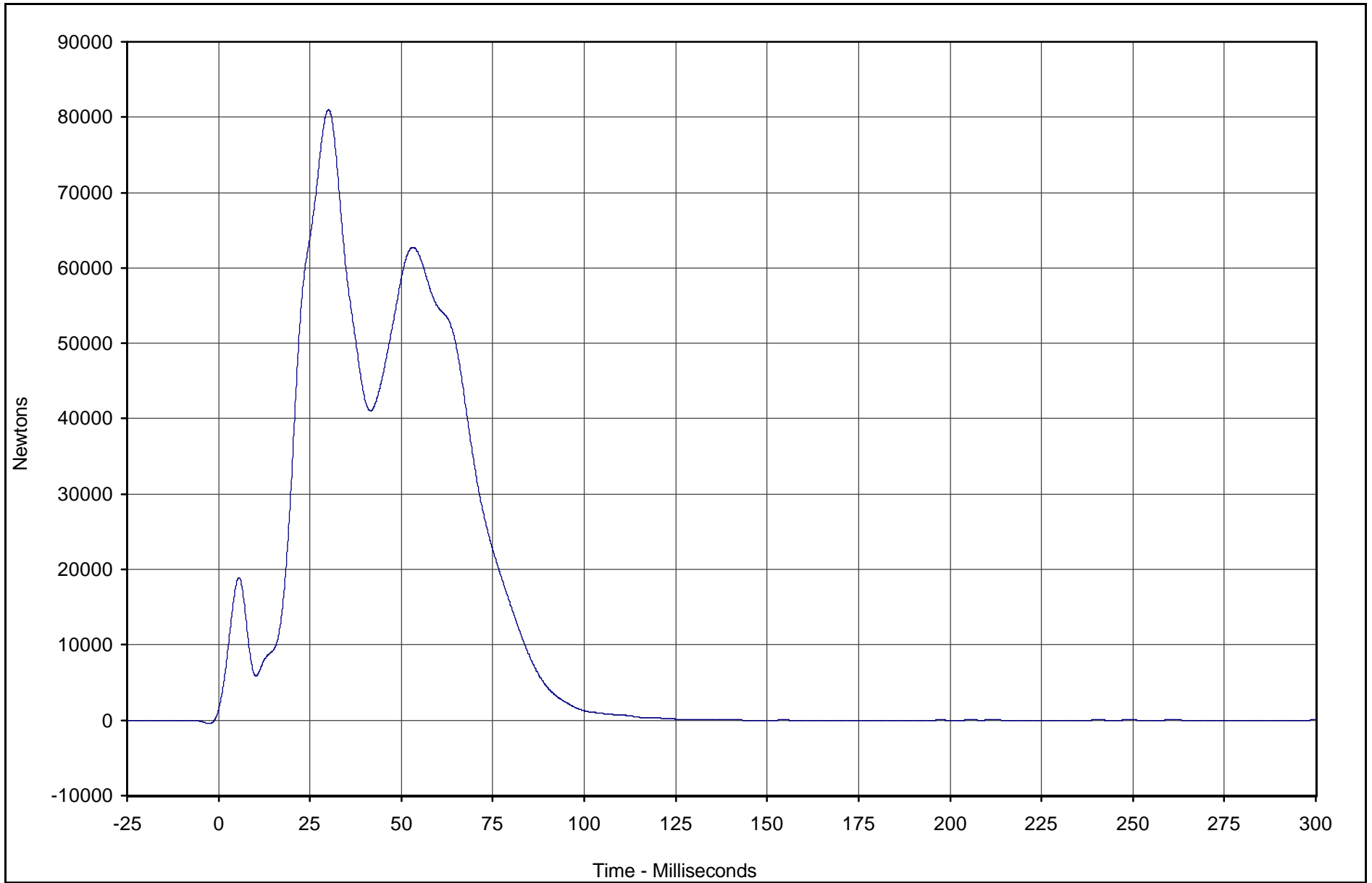
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-15



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force B6	112	FIL	Newtons	80979.9	30.1	-44.1	234.9	60



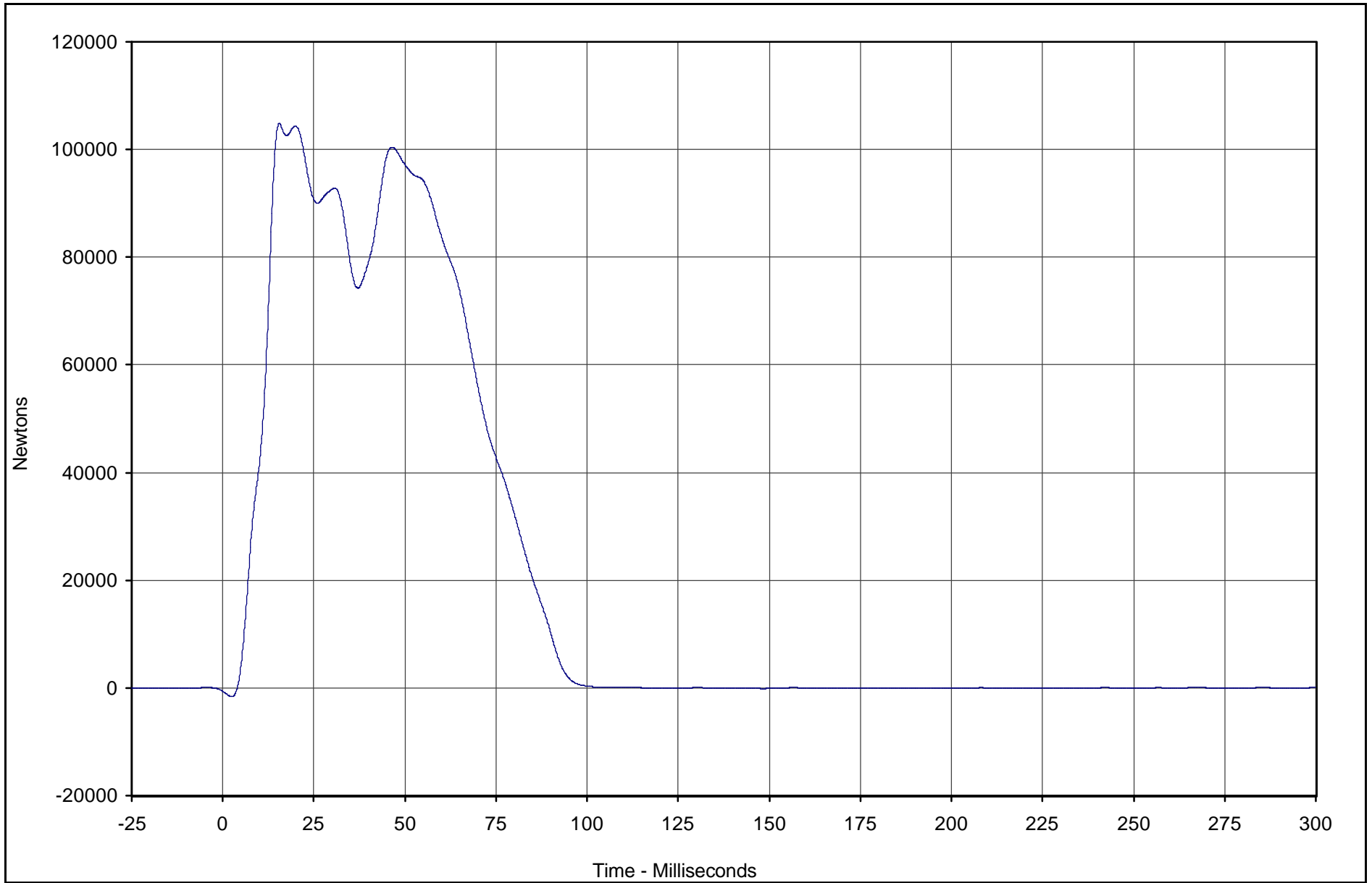
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-16



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force B7	113	FIL	Newtons	104819.3	15.5	-1638.9	2.4	60



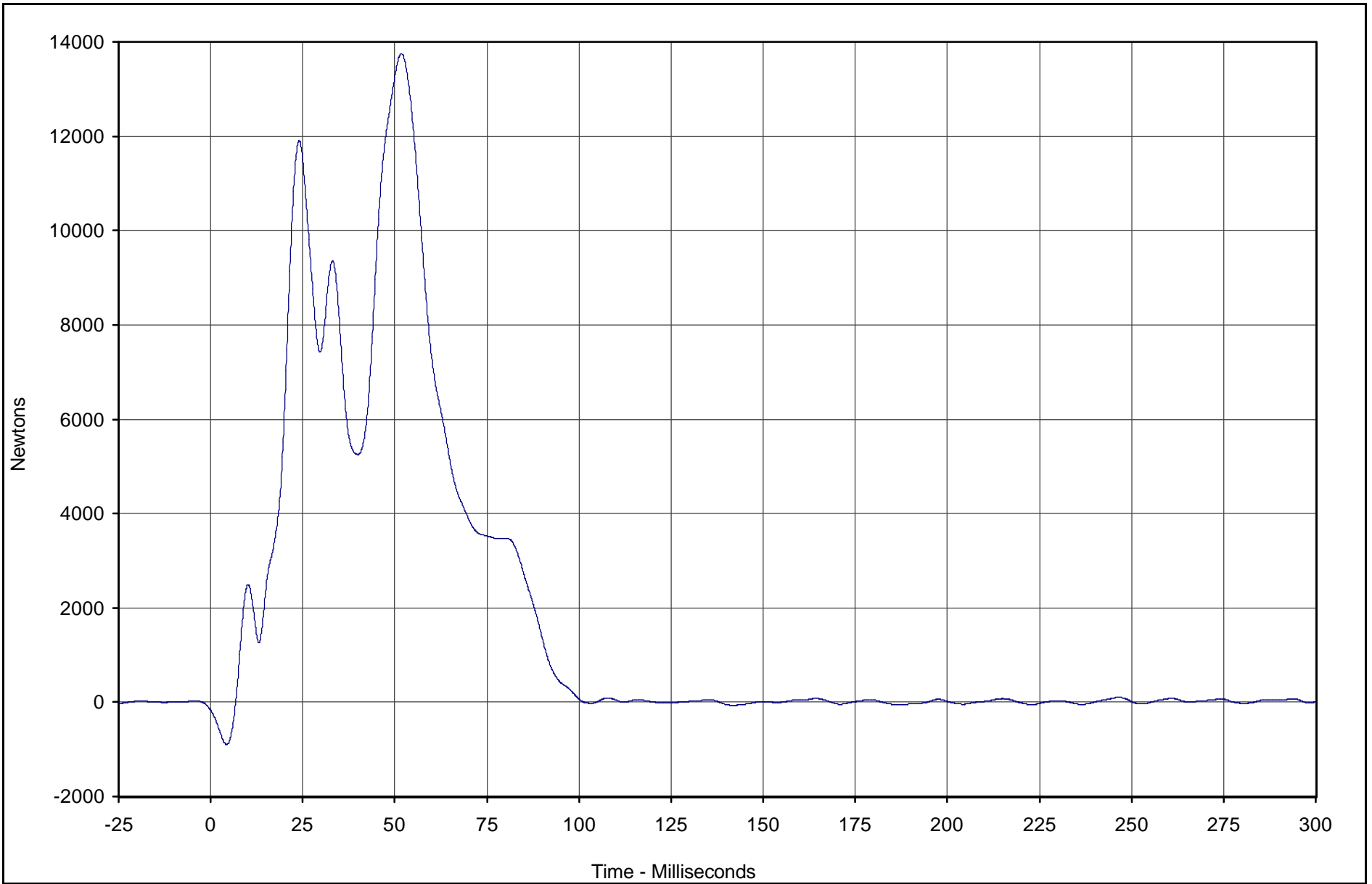
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-17



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force B8	114	FIL	Newtons	13748.9	51.8	-897.6	4.3	60



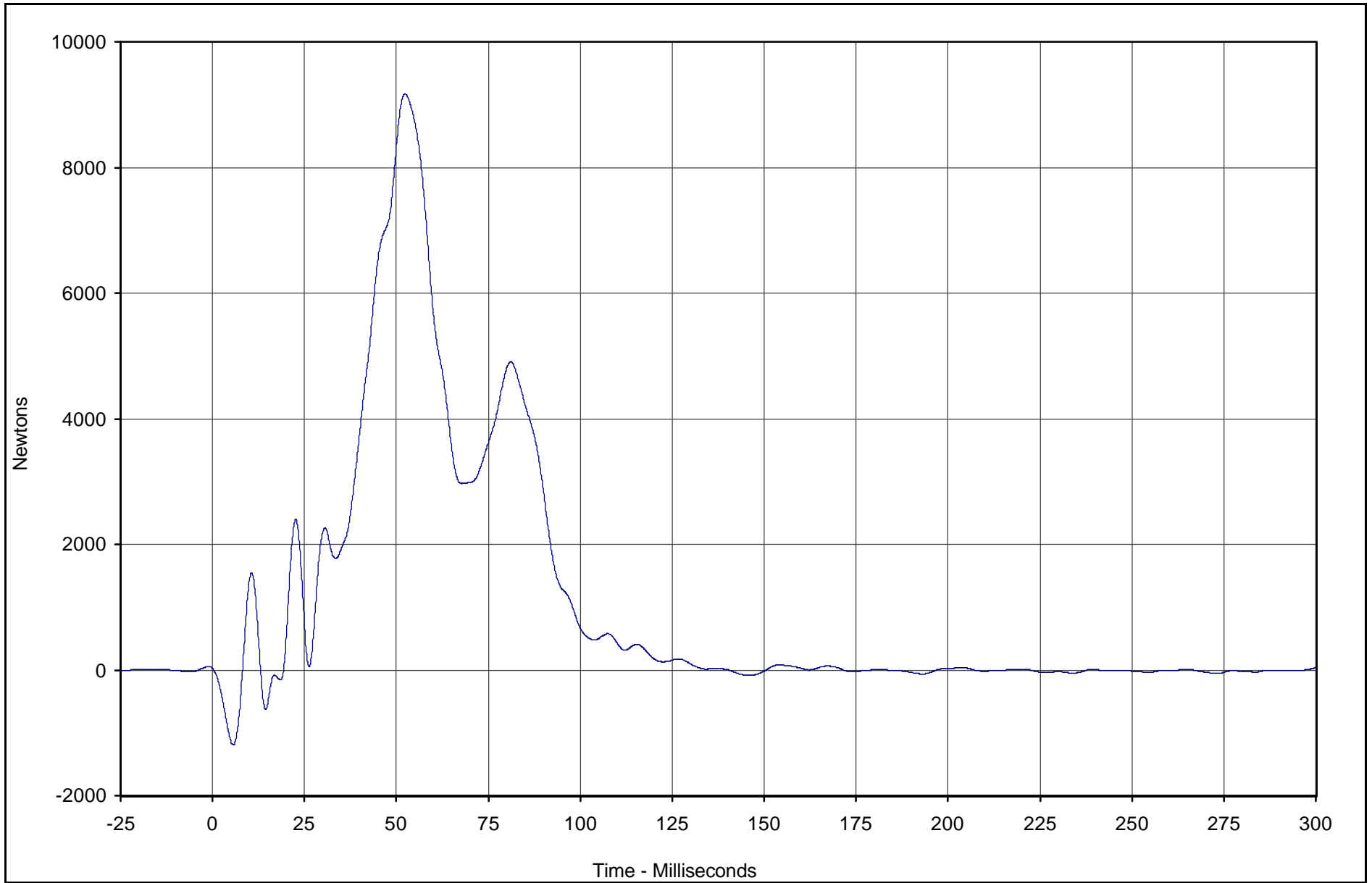
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-18



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force B9	115	FIL	Newtons	9170.8	52.4	-1194.6	5.6	60



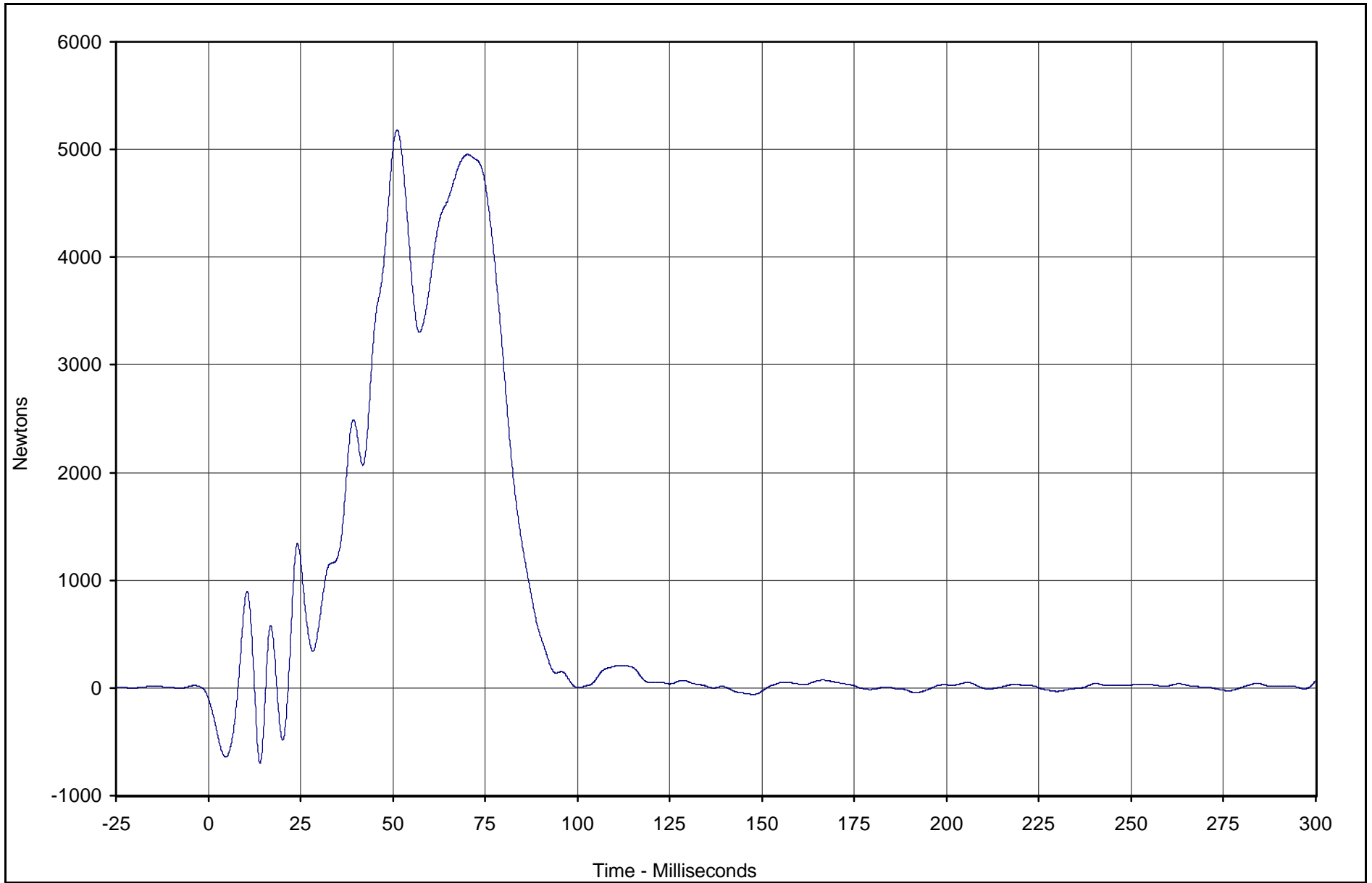
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-19



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force C1	116	FIL	Newtons	5178.5	51.1	-697.6	14.1	60



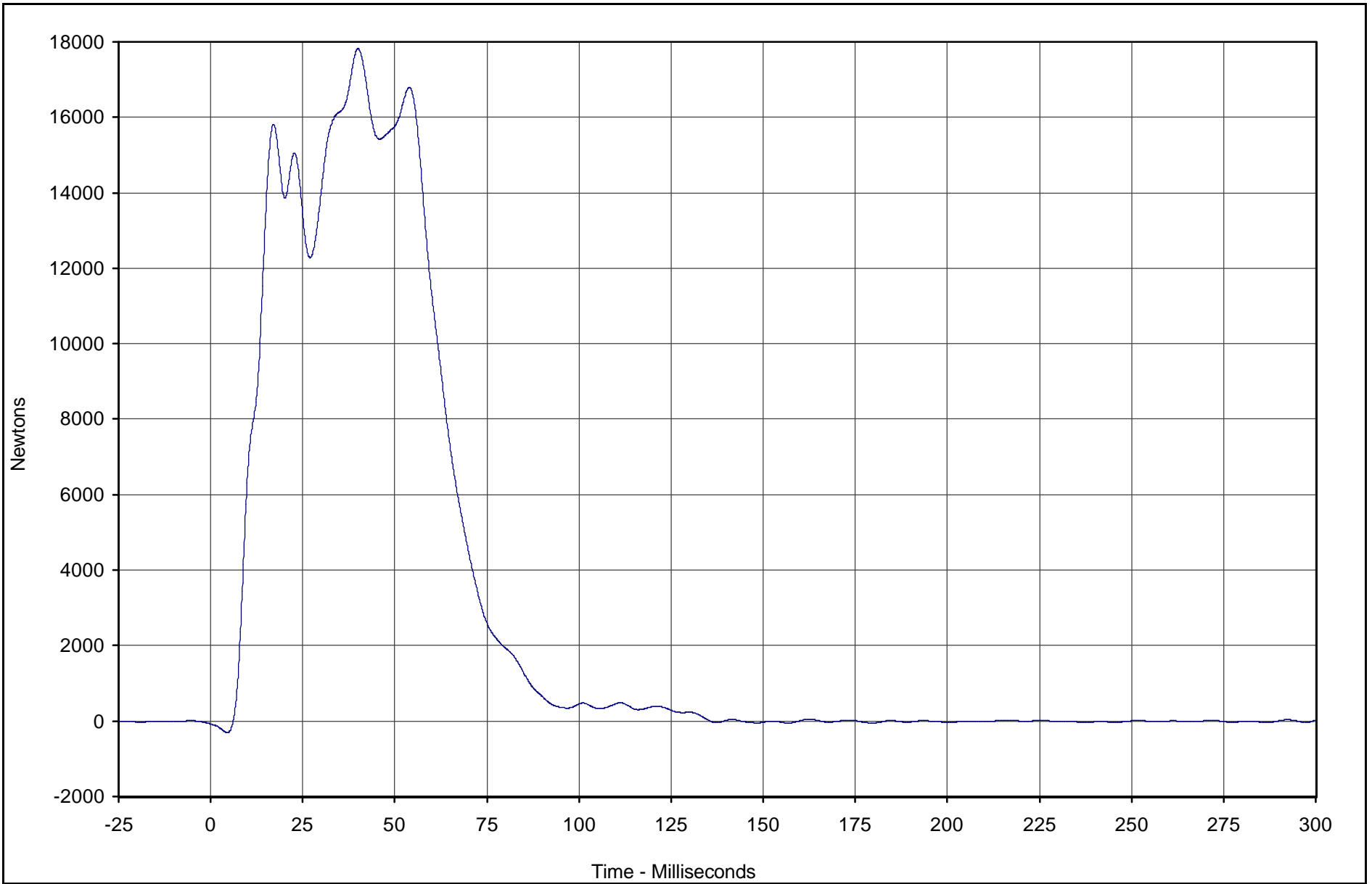
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-20



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force C2	117	FIL	Newtons	17822.3	40.0	-304.8	4.5	60



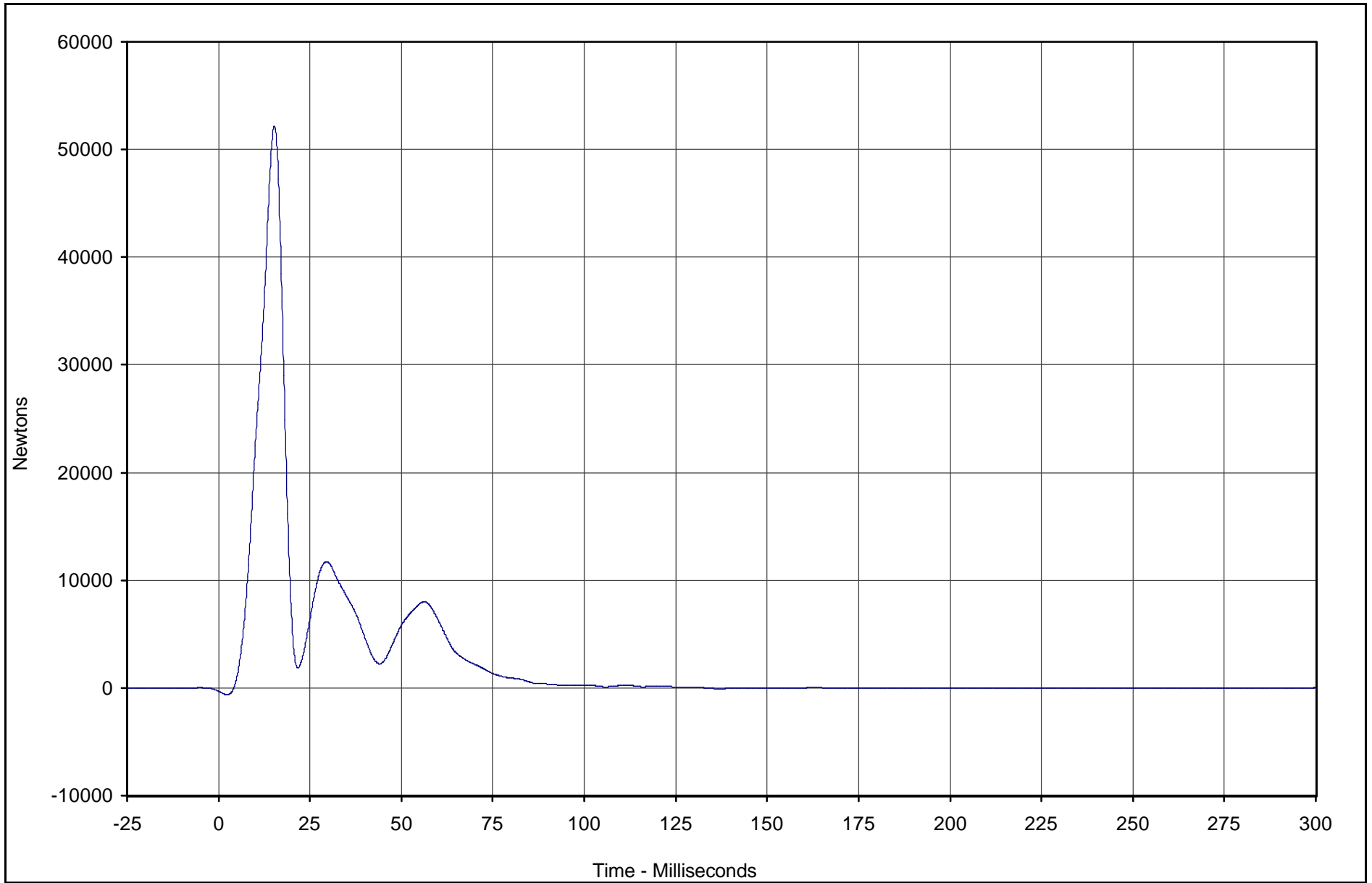
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-21



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force C3	118	FIL	Newtons	52186.7	15.3	-643.7	2.4	60



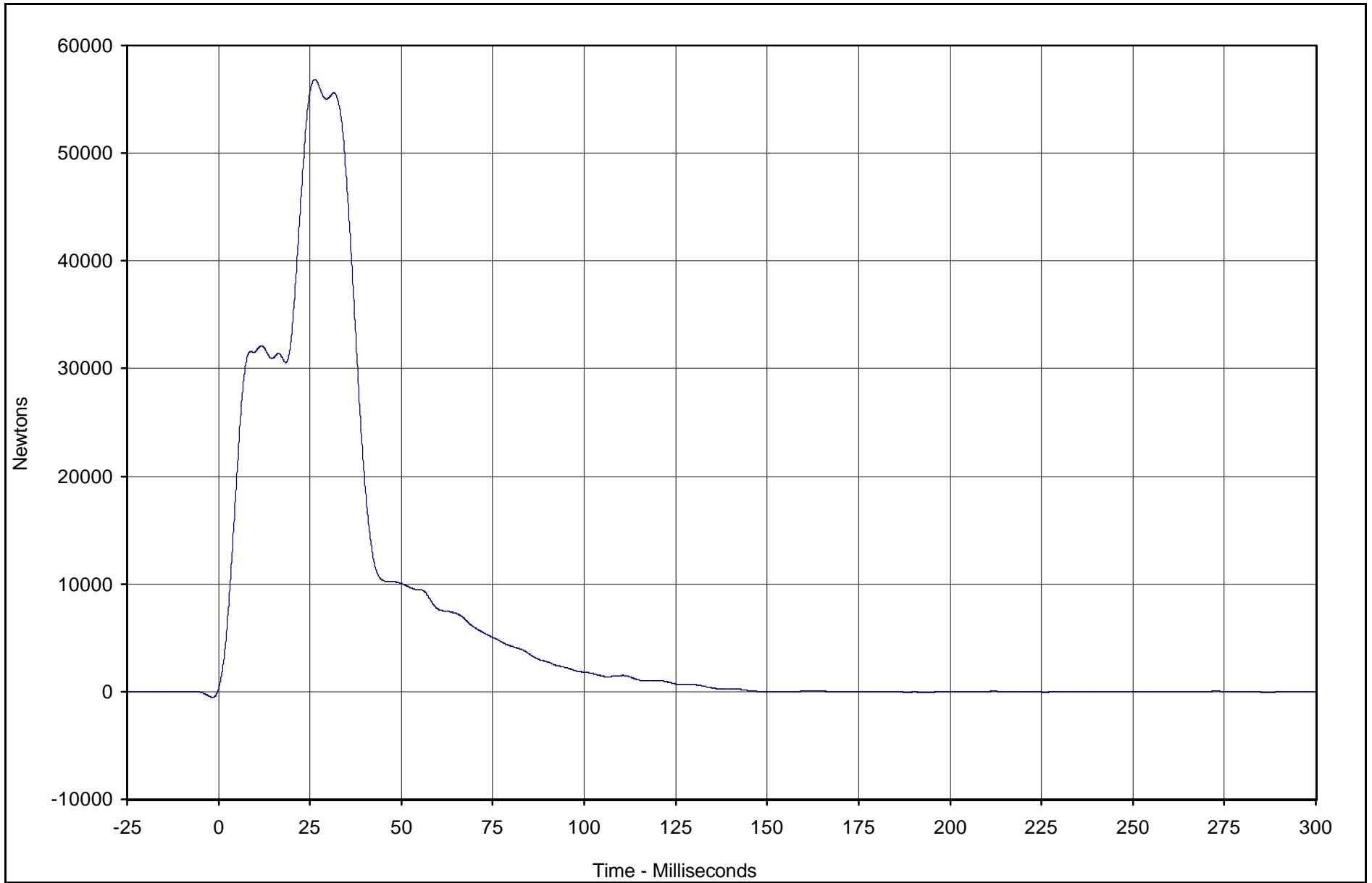
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-22



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force C4	119	FIL	Newtons	56830.0	26.3	-68.2	193.2	60



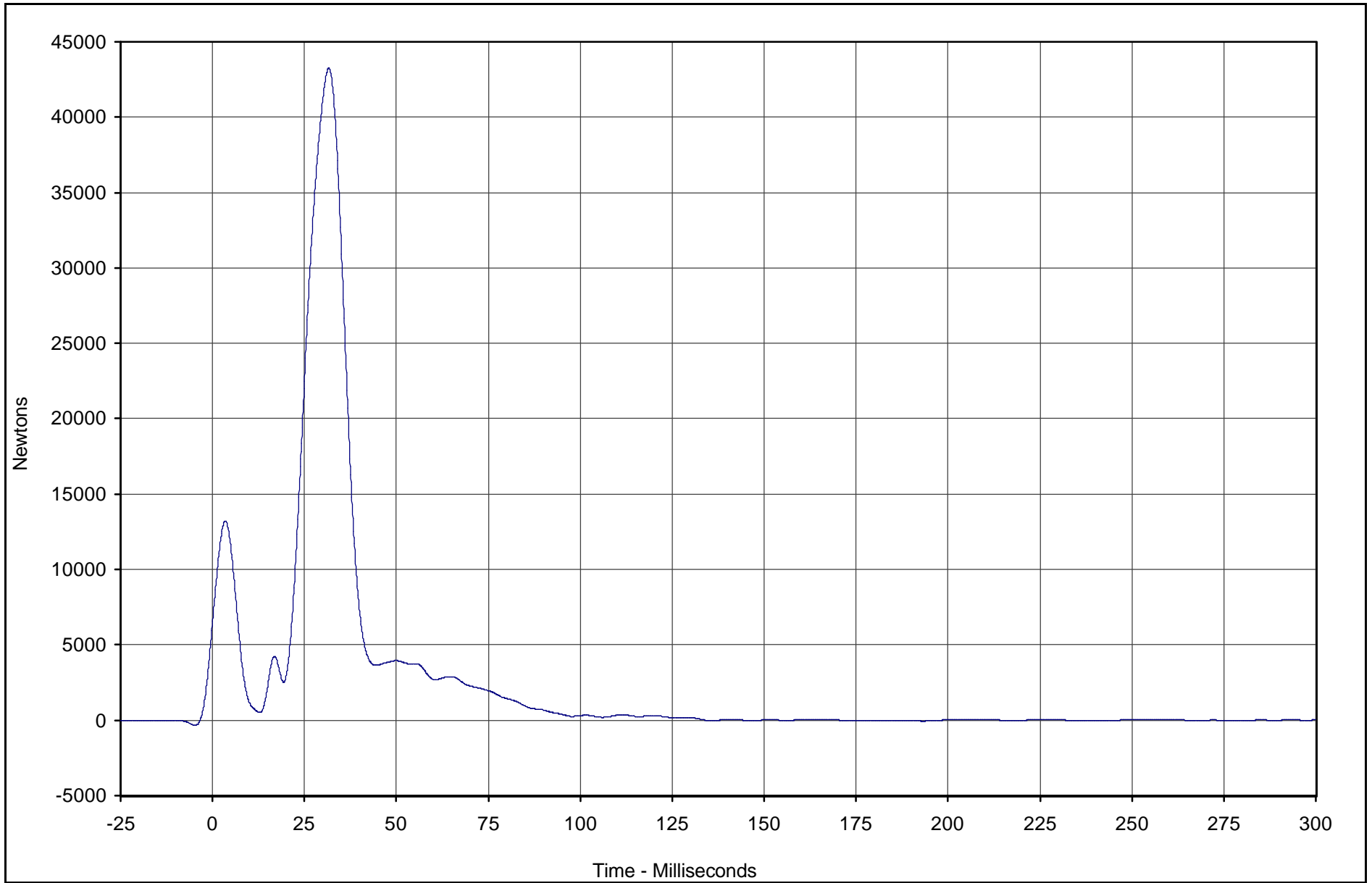
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-23



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force C5	120	FIL	Newtons	43254.1	31.6	-52.6	193.2	60



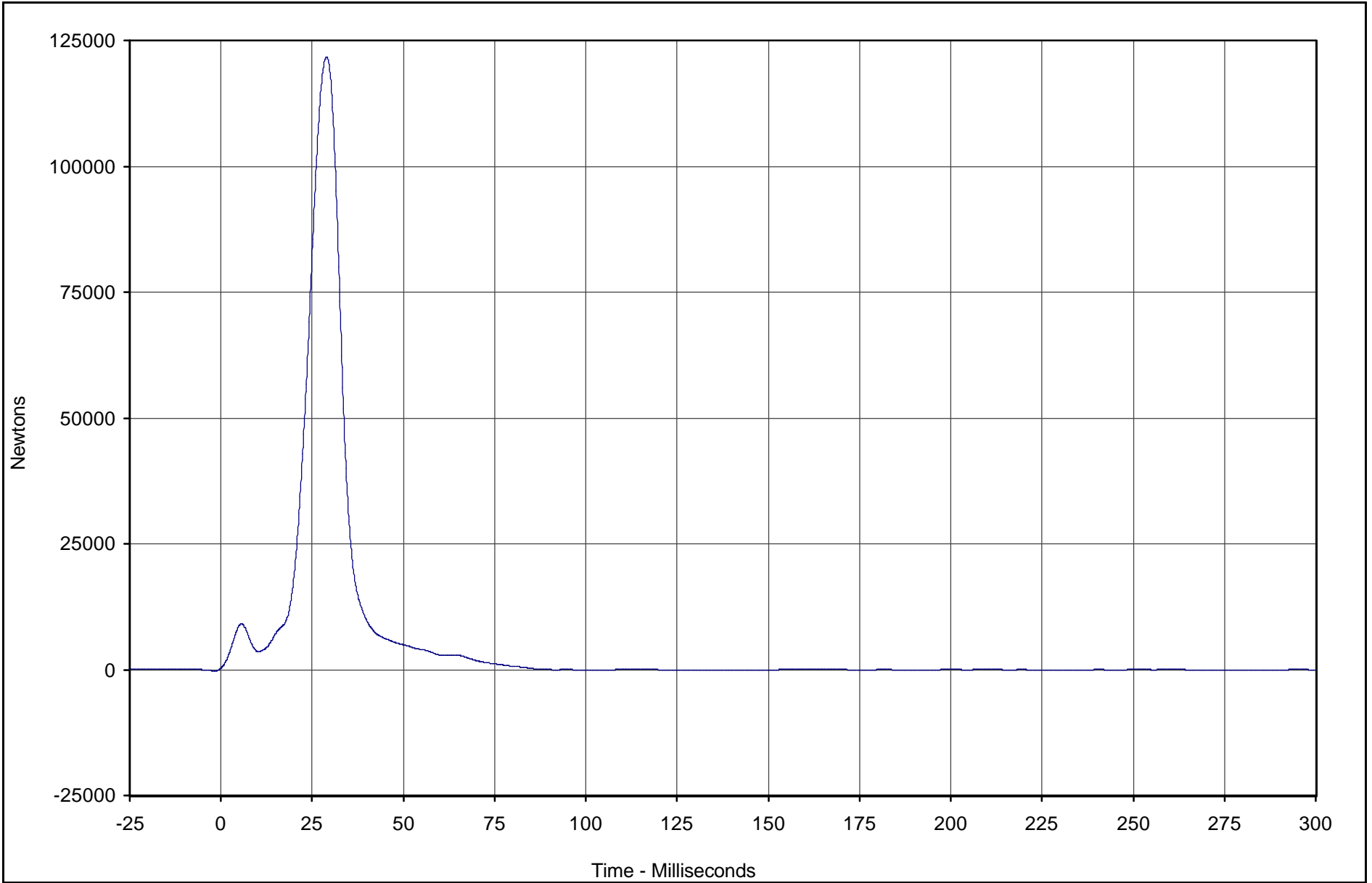
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-24



TR-P23001-16-NC

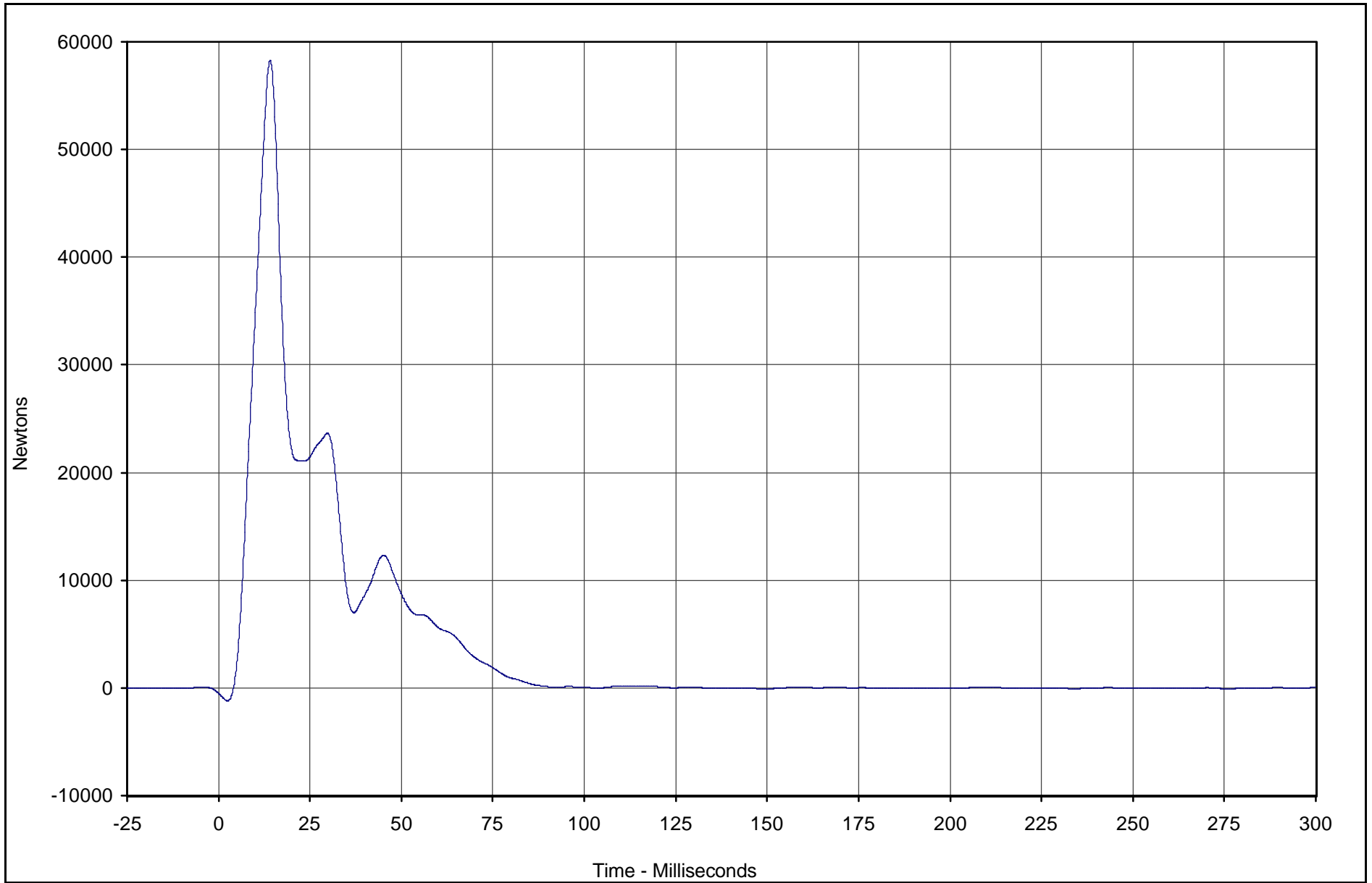
Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force C6	121	FIL	Newtons	121729.8	28.9	-150.1	144.5	60



Test Vehicle: 2003 Acura MDX SUV
Test Program: 2003 NHTSA 35mph NCAP

Test Date: 3/13/03
NHTSA No.: M35301

C-25



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force C7	122	FIL	Newtons	58262.8	14.1	-1198.1	2.5	60



Test Vehicle: 2003 Acura MDX SUV

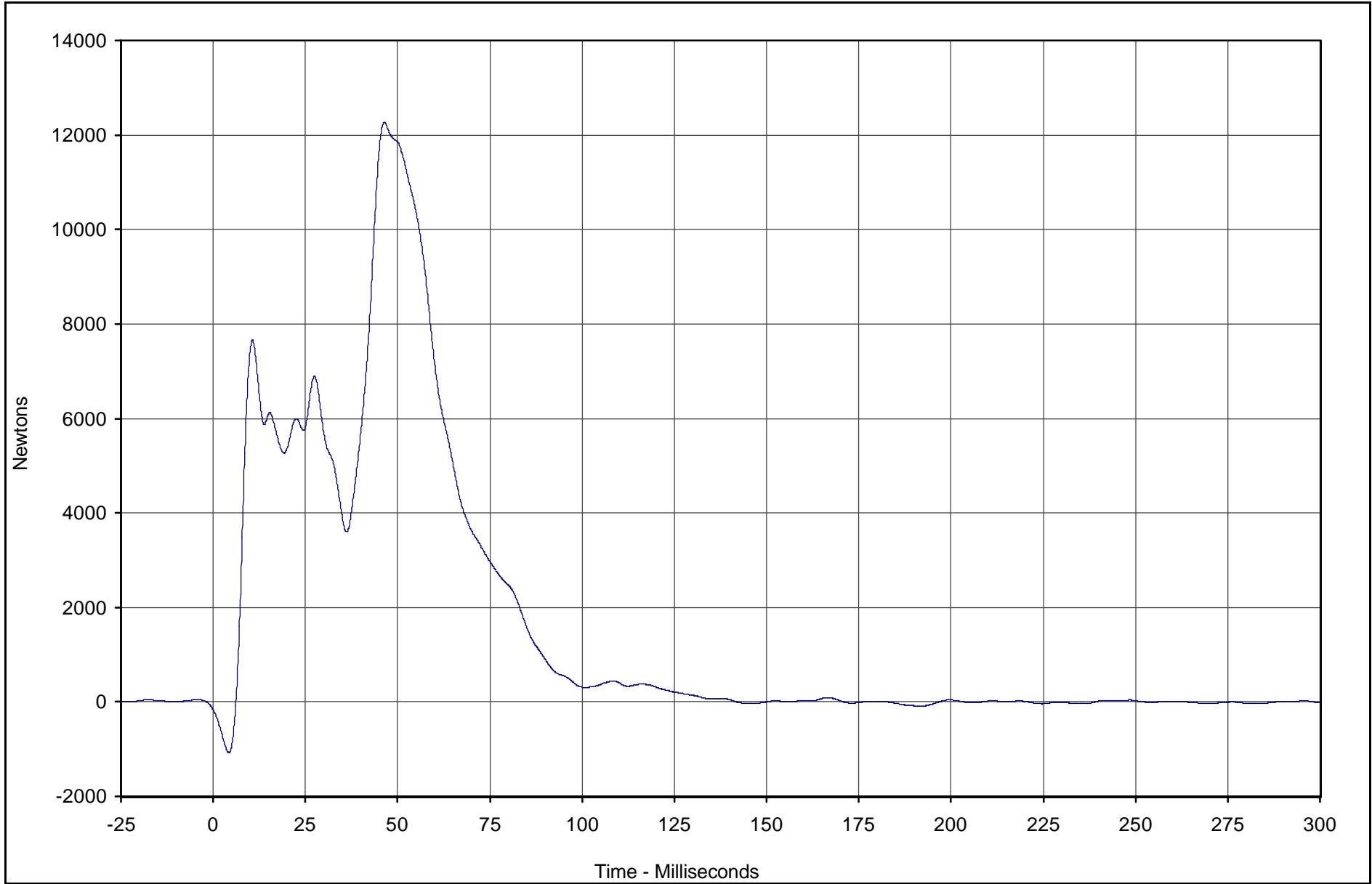
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-26

TR-P23001-16-NC

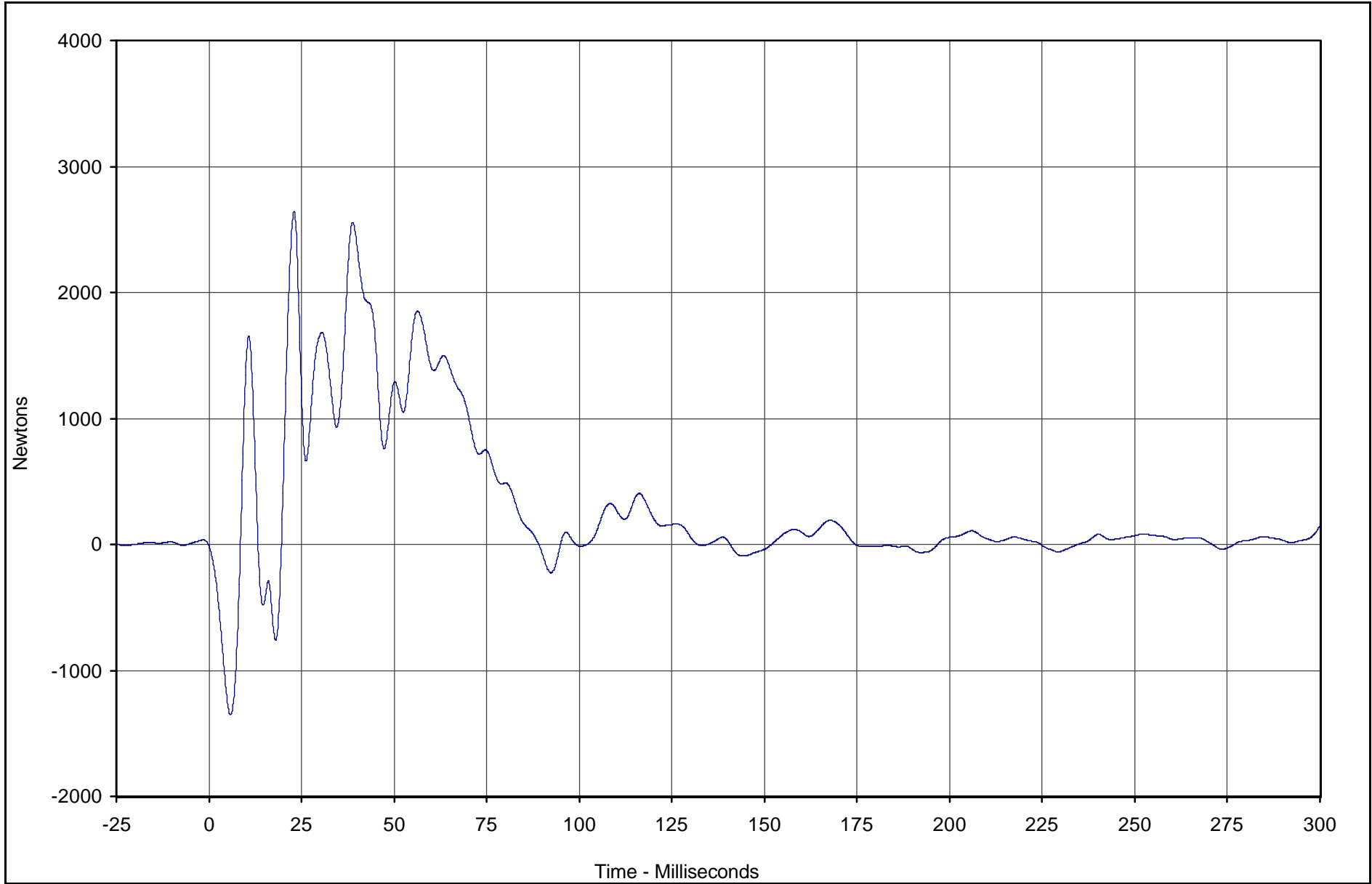


Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force C8	123	FIL	Newtons	12263.9	46.4	-1075.5	4.2	60



Test Vehicle: 2003 Acura MDX SUV
Test Program: 2003 NHTSA 35mph NCAP

Test Date: 3/13/03
NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force C9	124	FIL	Newtons	2643.3	23.0	-1353.5	5.9	60



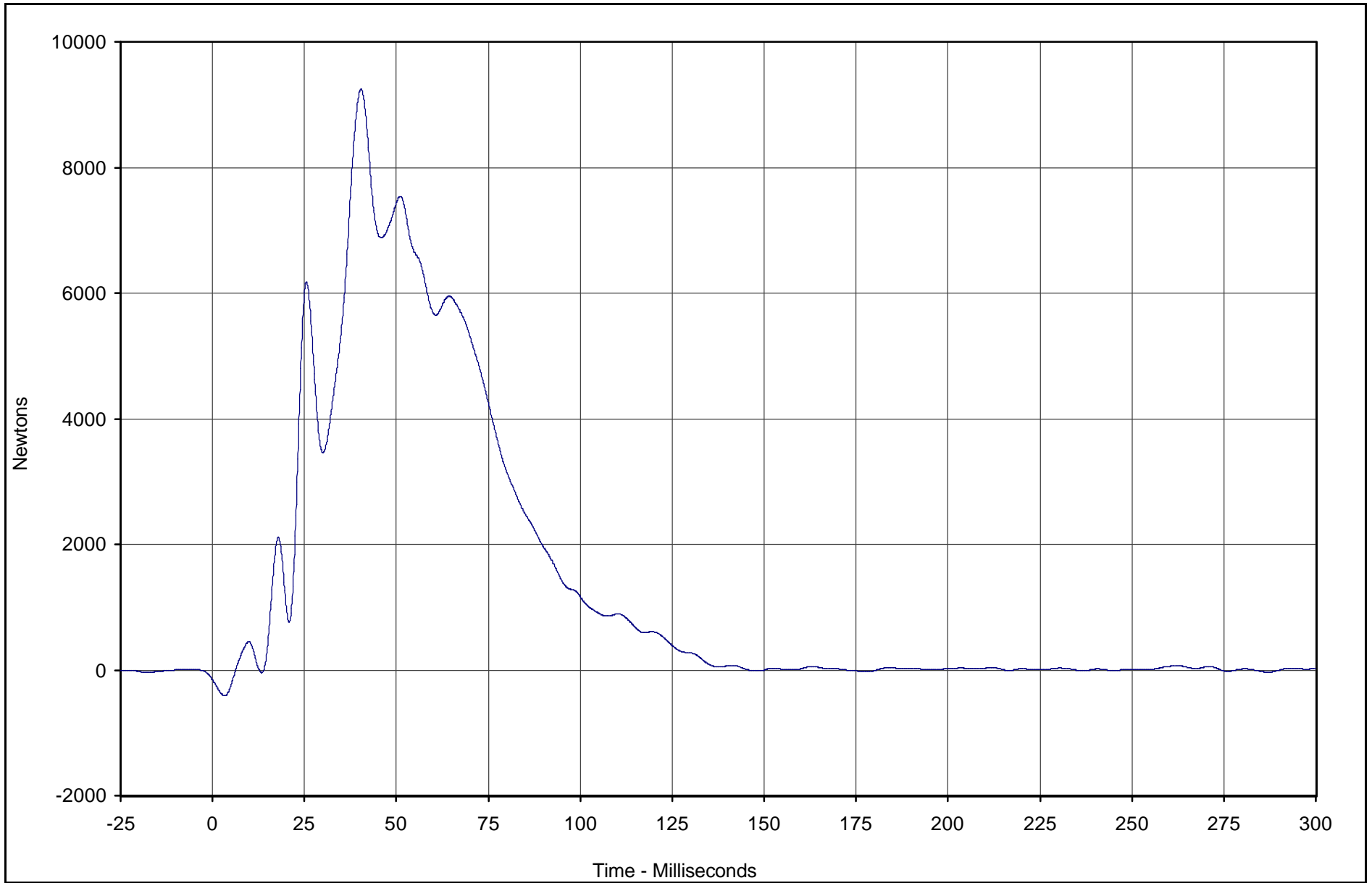
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-28



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force D1	125	FIL	Newtons	9248.5	40.4	-412.2	3.3	60

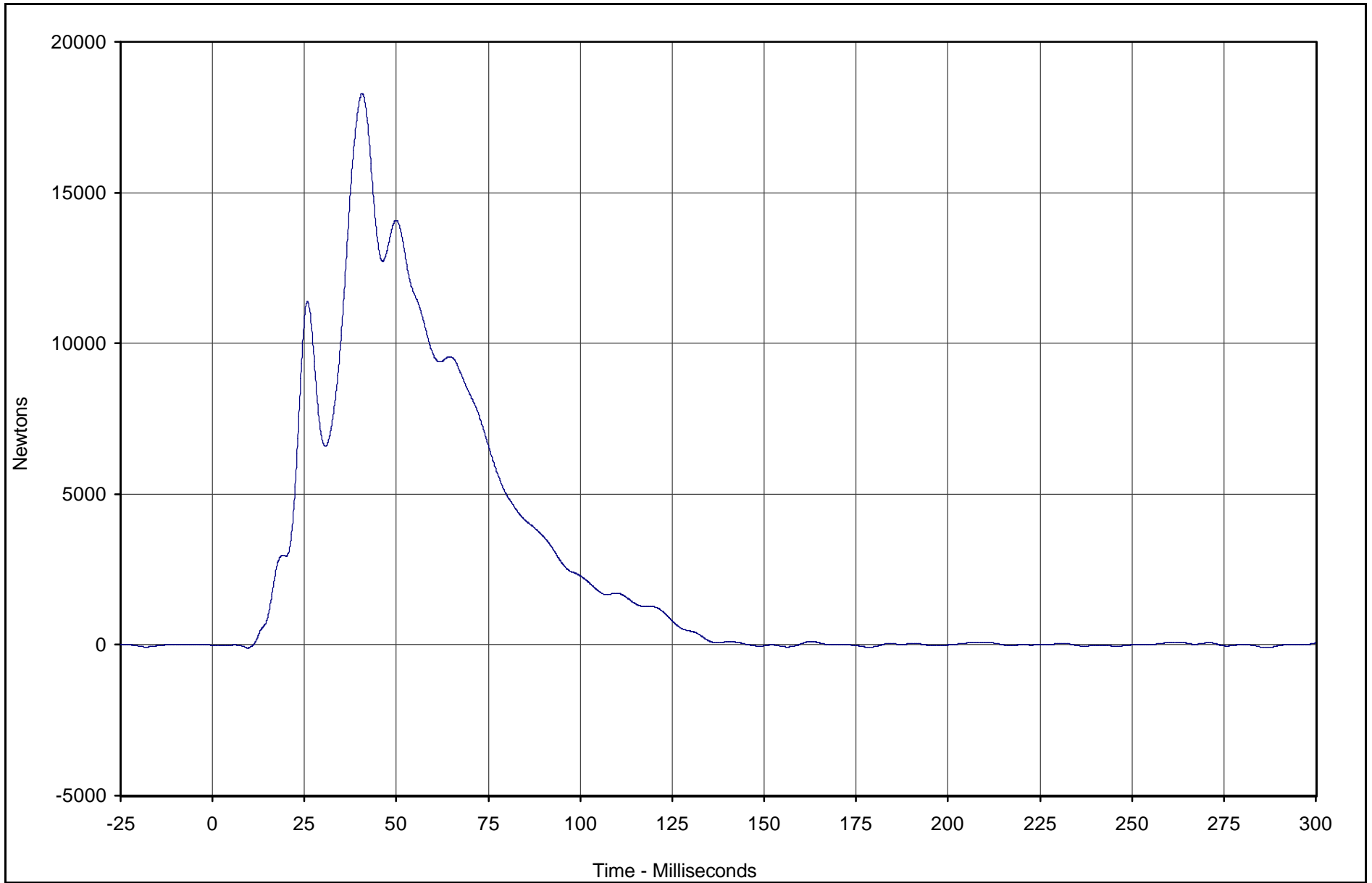


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force D2	126	FIL	Newtons	18281.2	40.7	-103.3	9.5	60



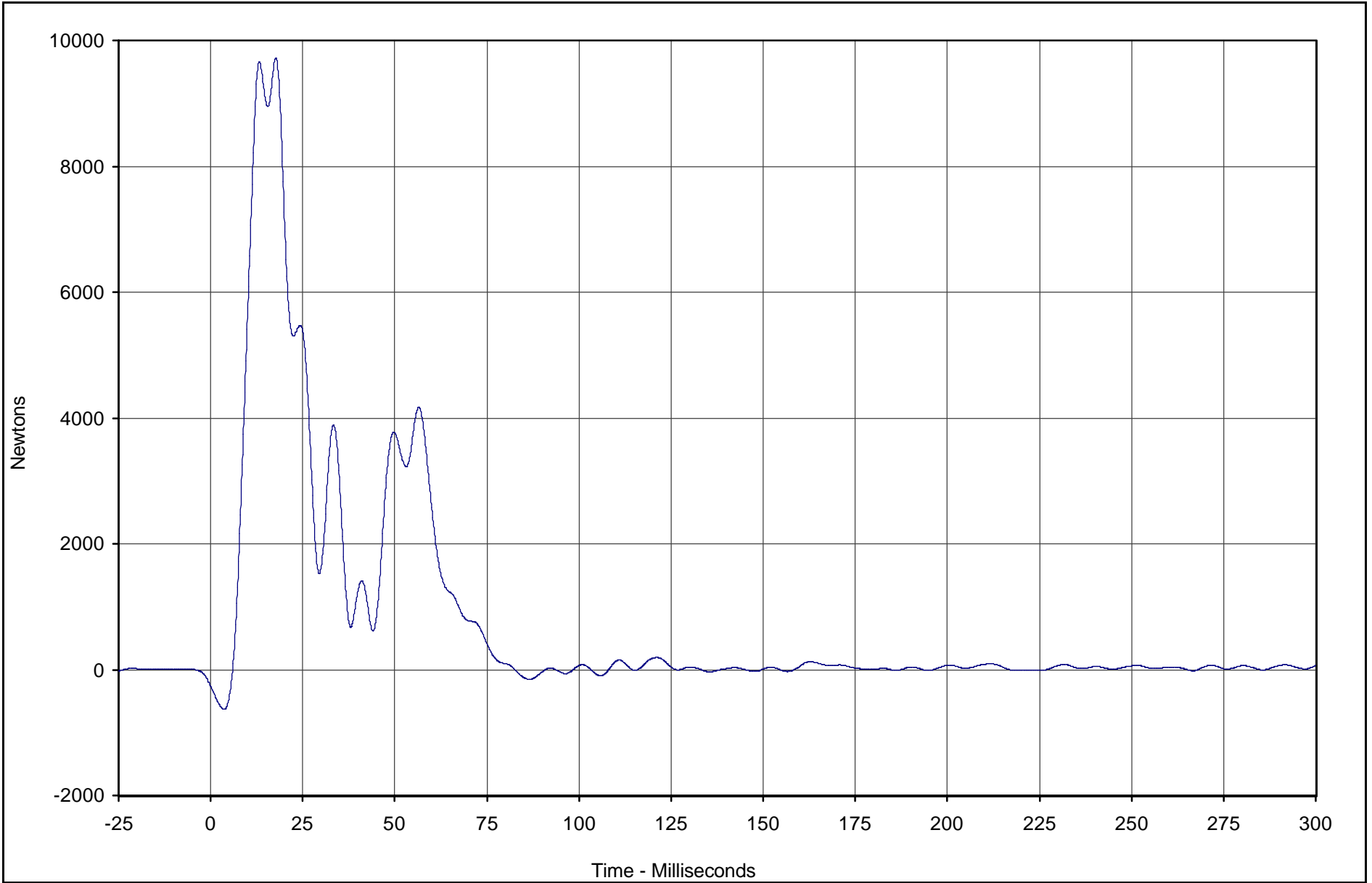
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-30



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force D3	127	FIL	Newtons	9723.1	17.7	-632.6	3.6	60



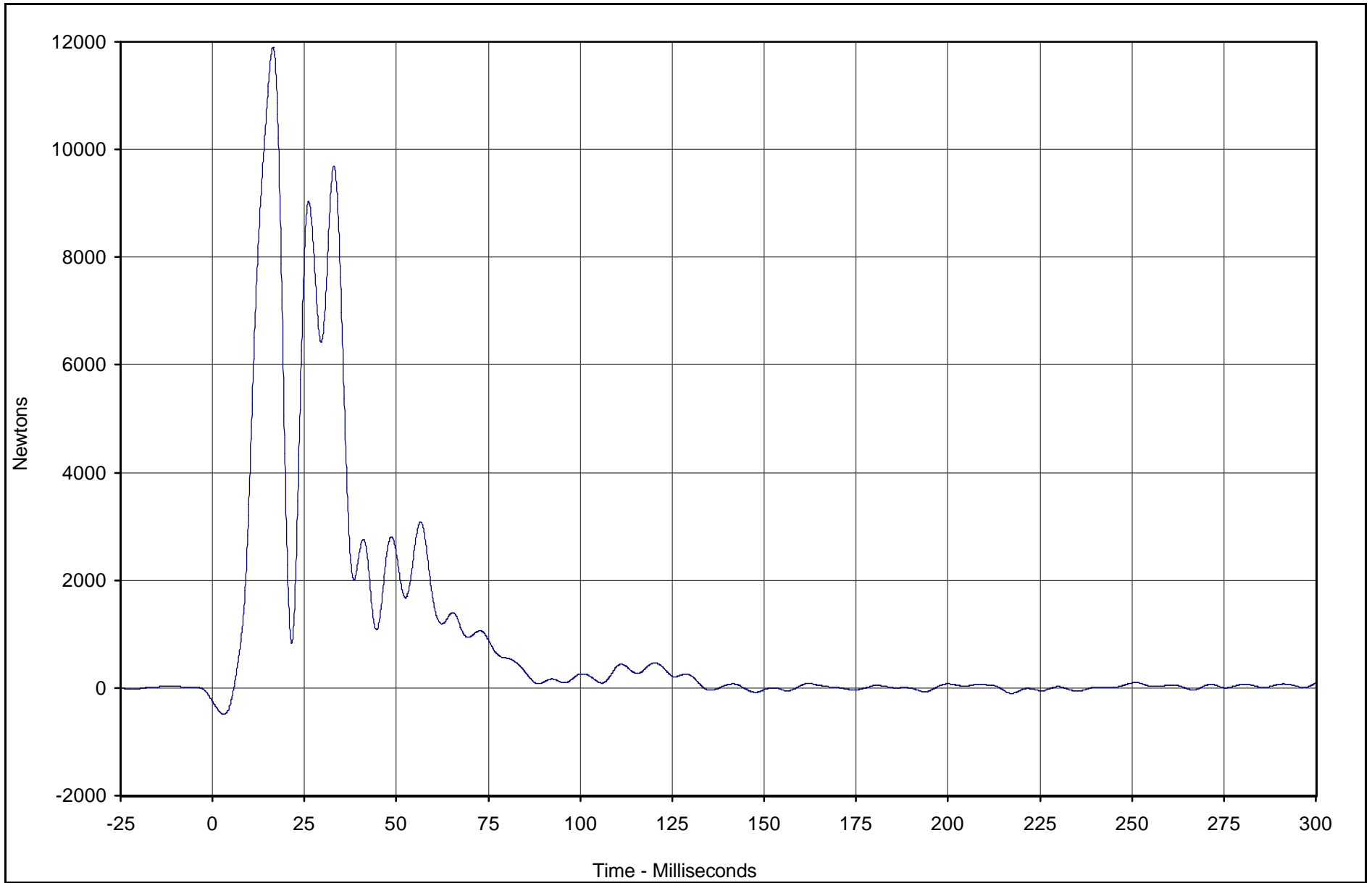
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-31



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force D4	128	FIL	Newtons	11900.9	16.5	-491.7	3.0	60



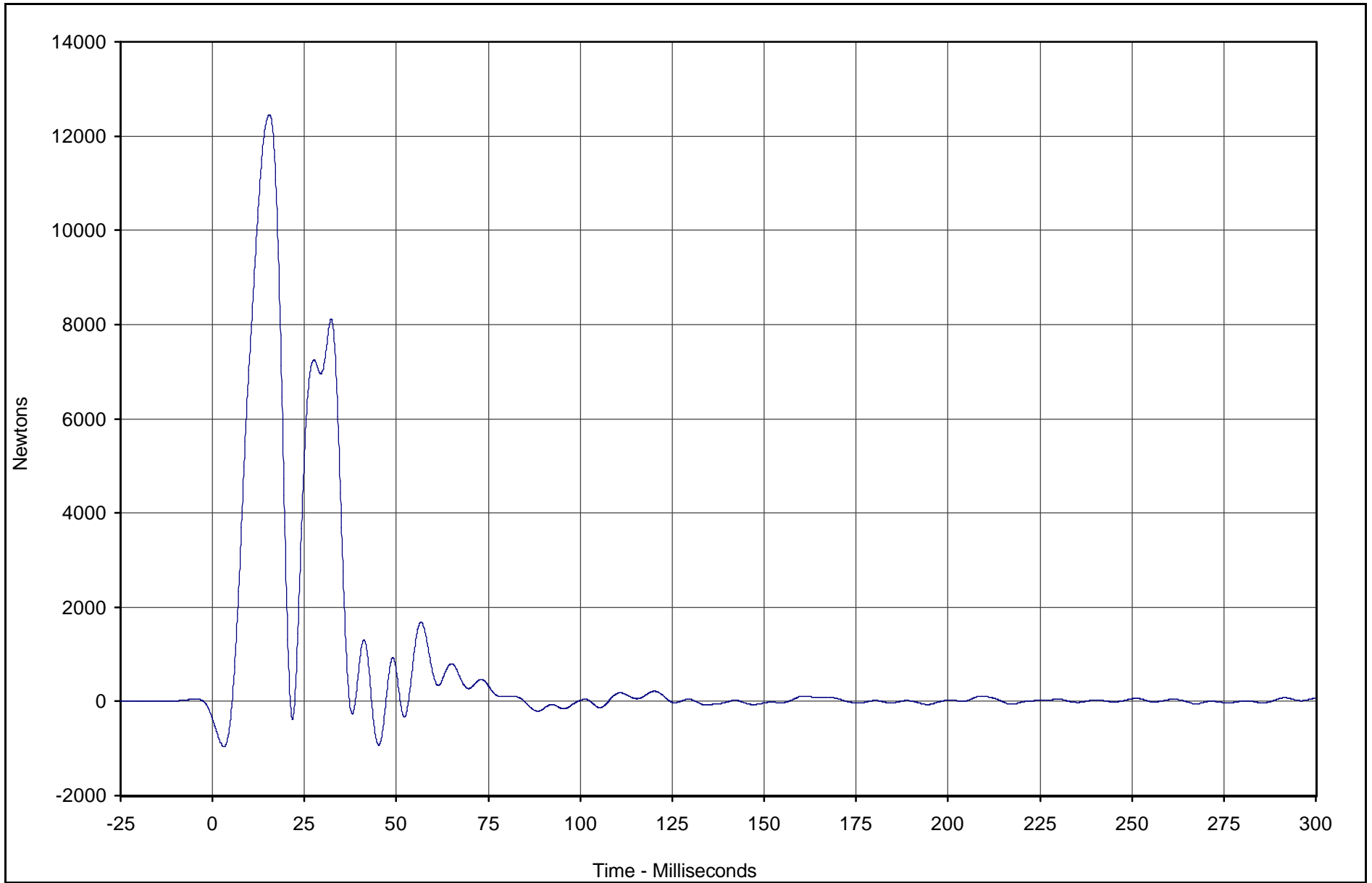
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-32



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force D5	129	FIL	Newtons	12448.4	15.5	-960.0	3.1	60

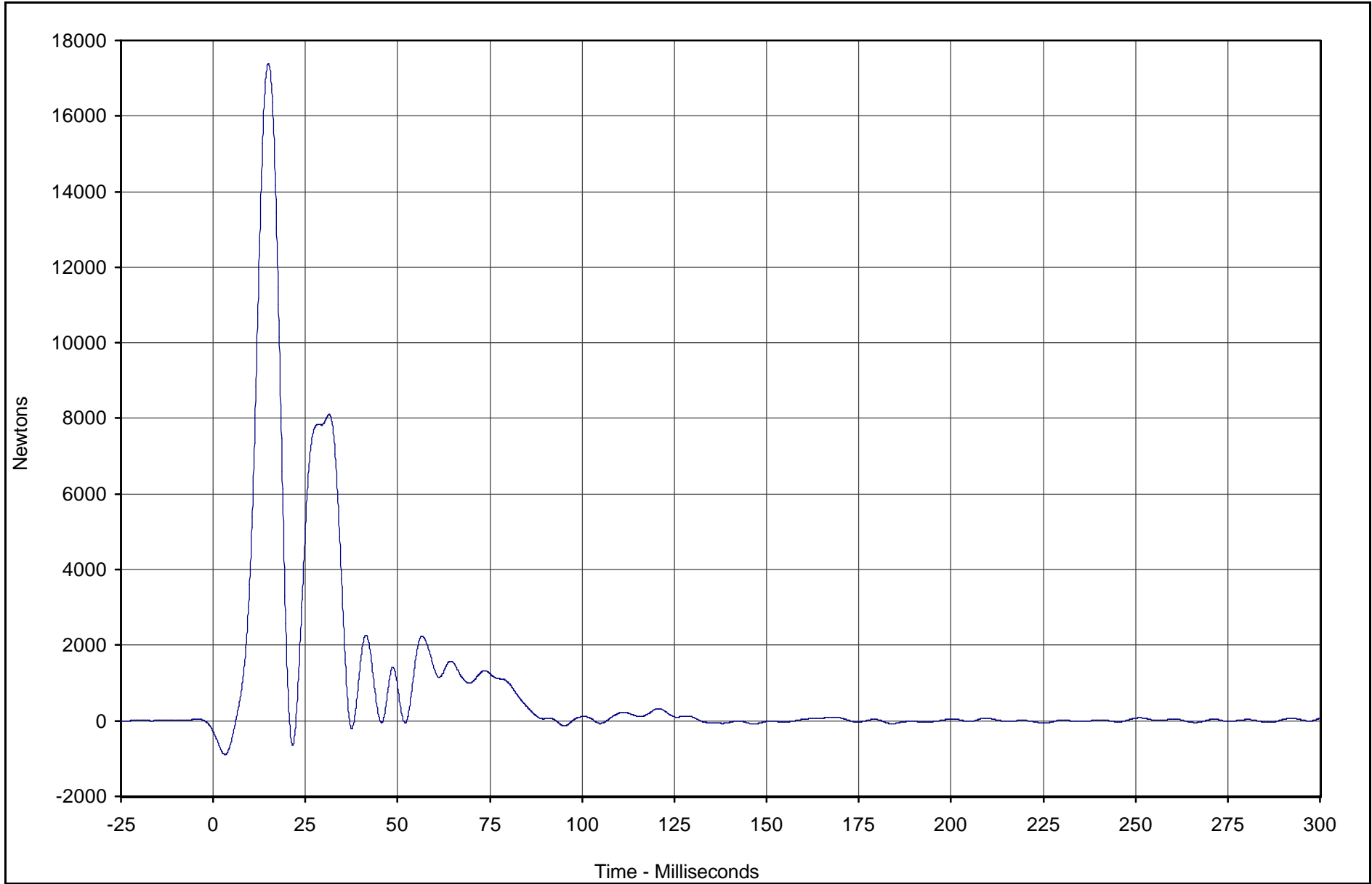


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force D6	130	FIL	Newtons	17396.8	15.0	-893.2	3.3	60



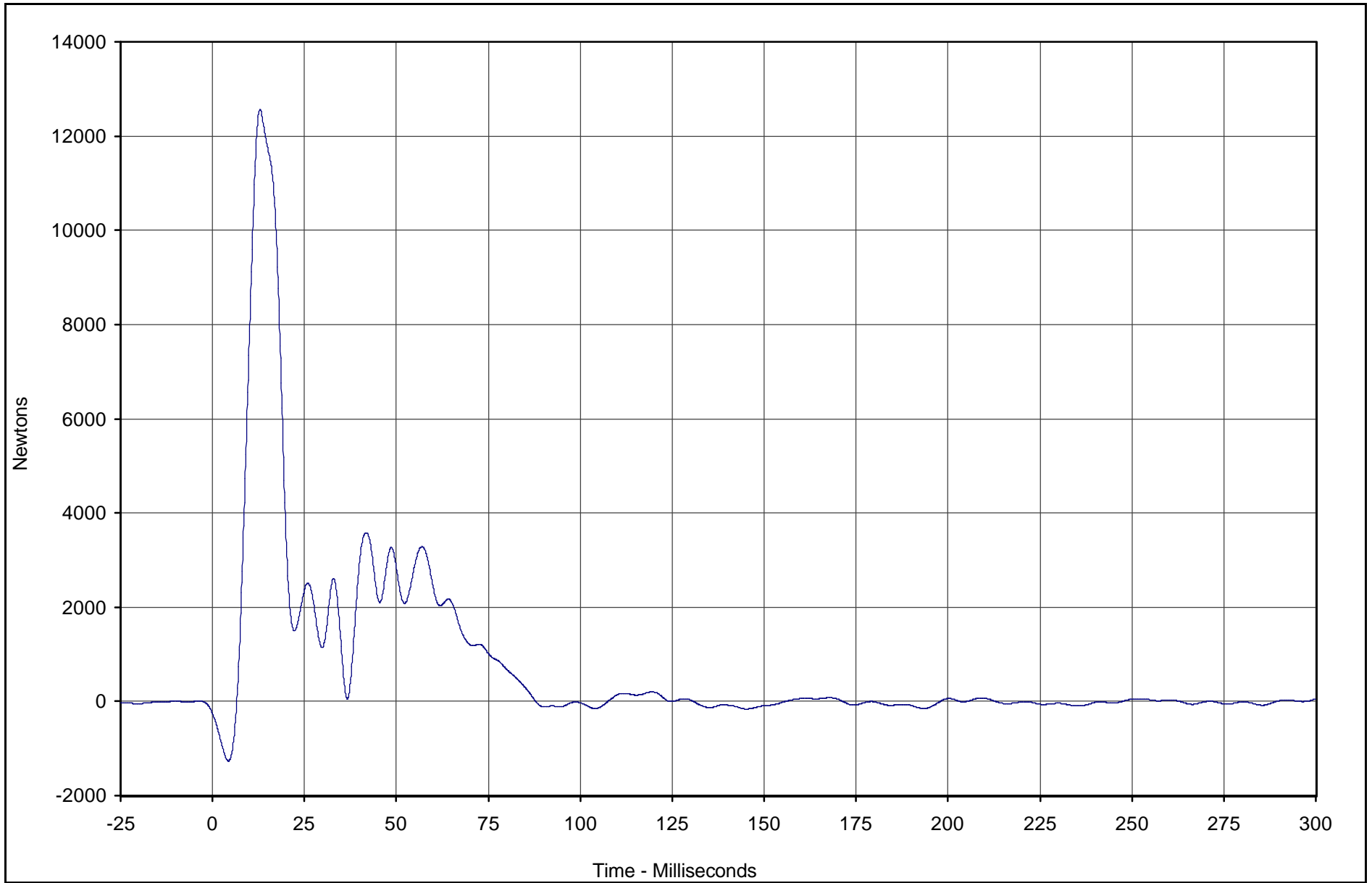
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-34



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force D7	131	FIL	Newtons	12567.5	12.9	-1265.9	4.3	60



Test Vehicle: 2003 Acura MDX SUV

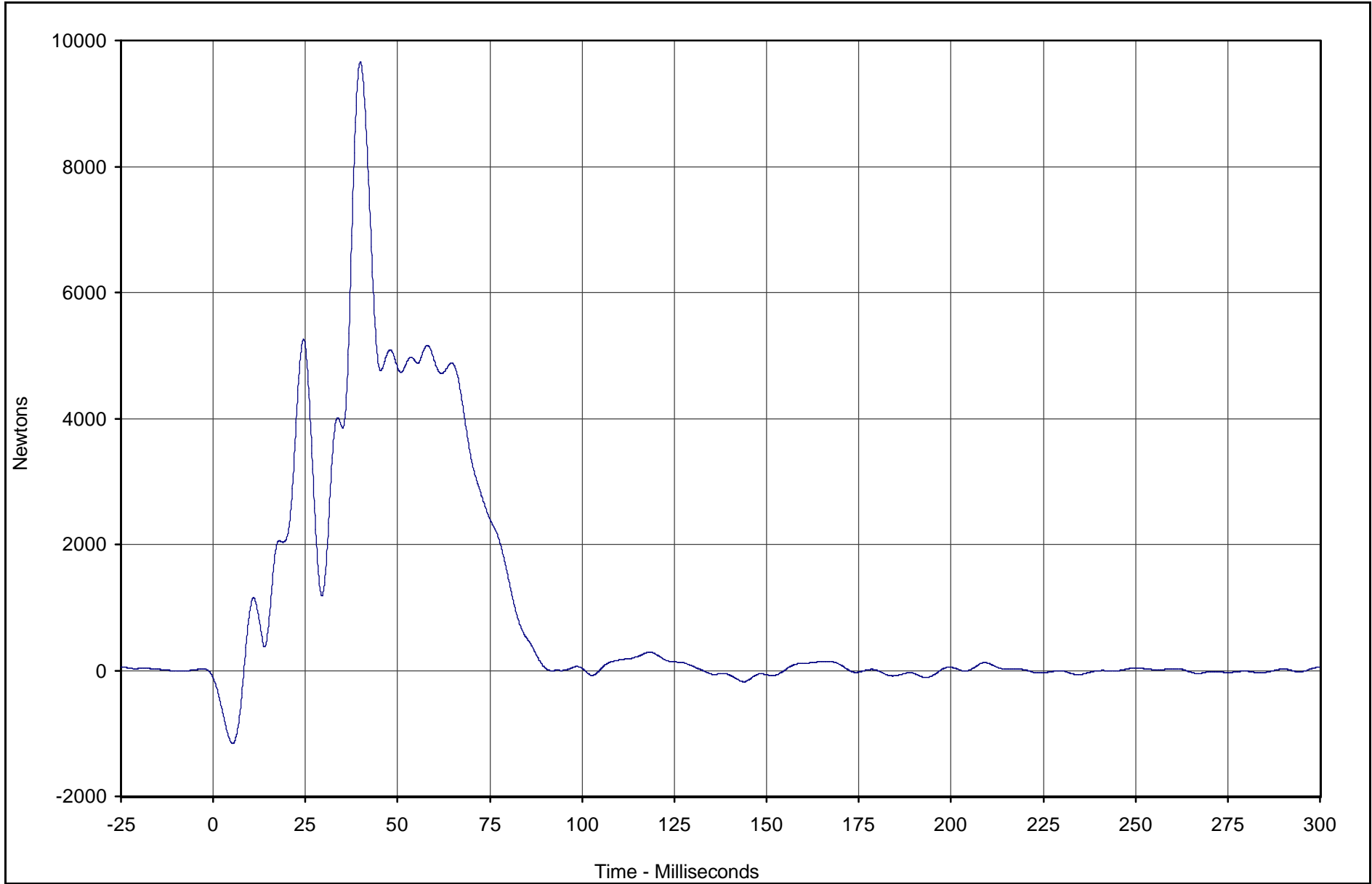
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-35

TR-P23001-16-NC



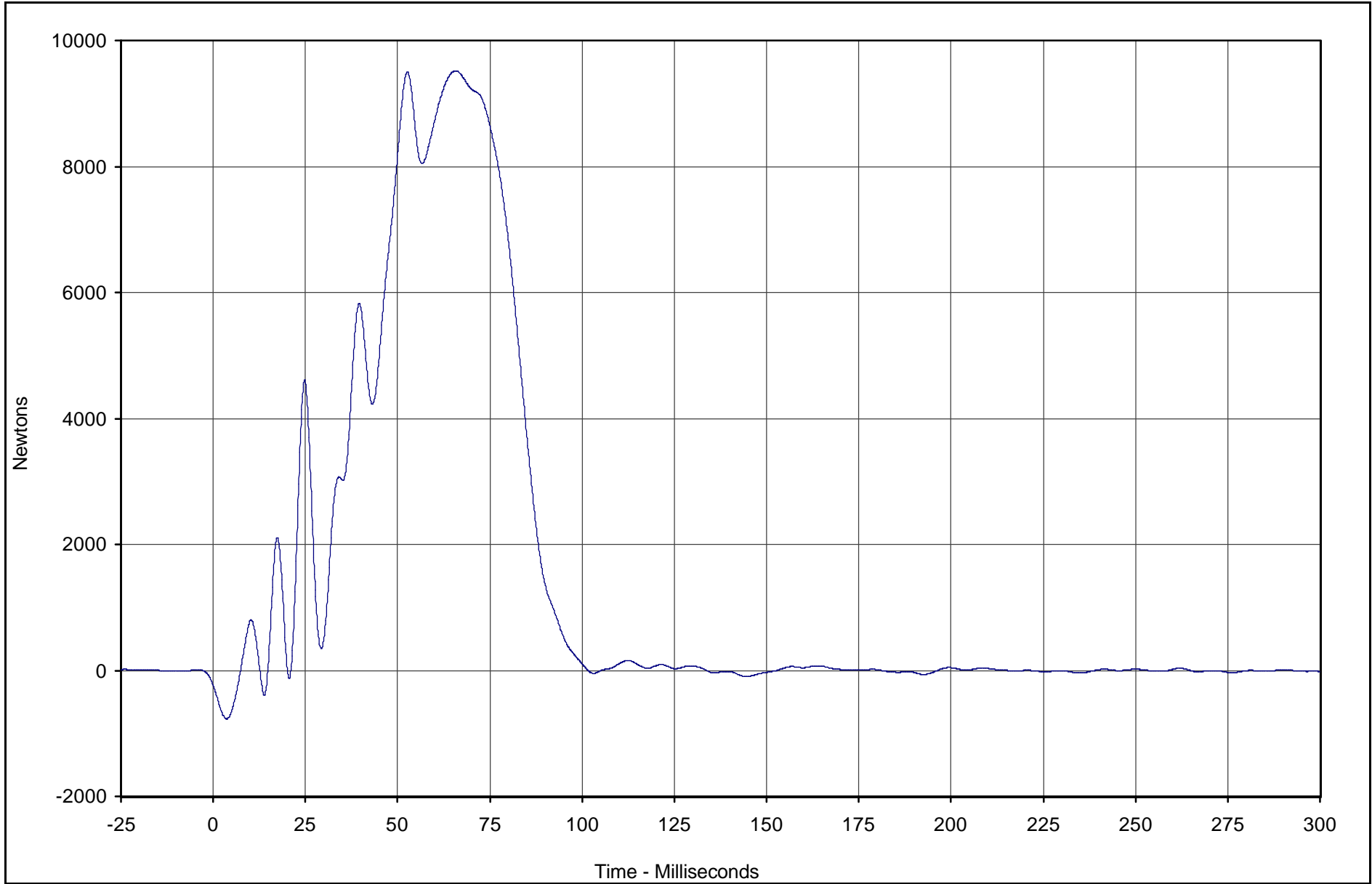
Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force D8	132	FIL	Newtons	9661.9	39.9	-1161.9	5.3	60



Test Vehicle: 2003 Acura MDX SUV
Test Program: 2003 NHTSA 35mph NCAP

Test Date: 3/13/03
NHTSA No.: M35301

C-36



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force D9	133	FIL	Newtons	9518.4	65.7	-770.0	3.7	60



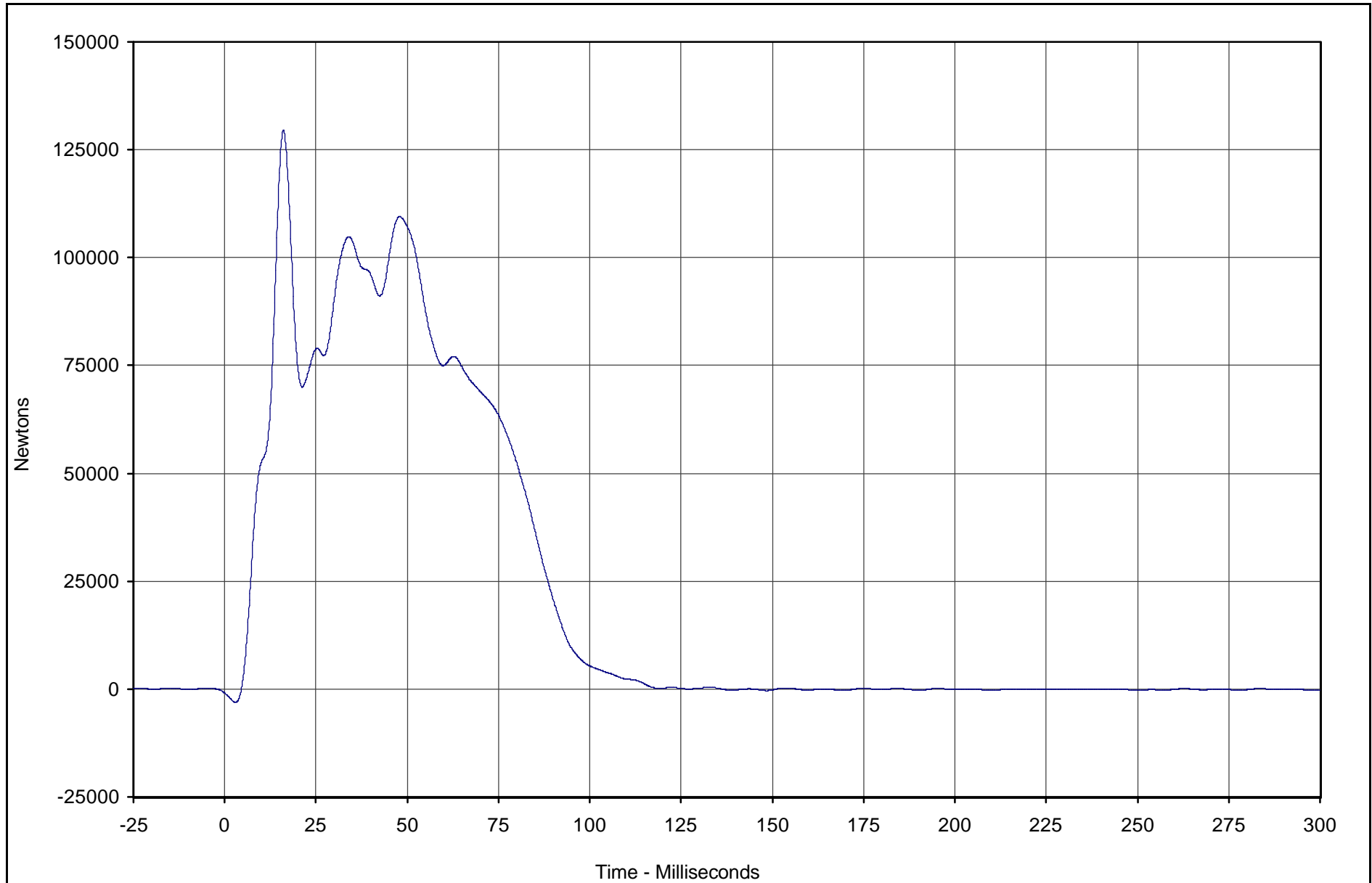
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force Sum Group 1	001	SUM	Newtons	129599.2	16.1	-3064.6	2.9	60



Test Vehicle: 2003 Acura MDX SUV

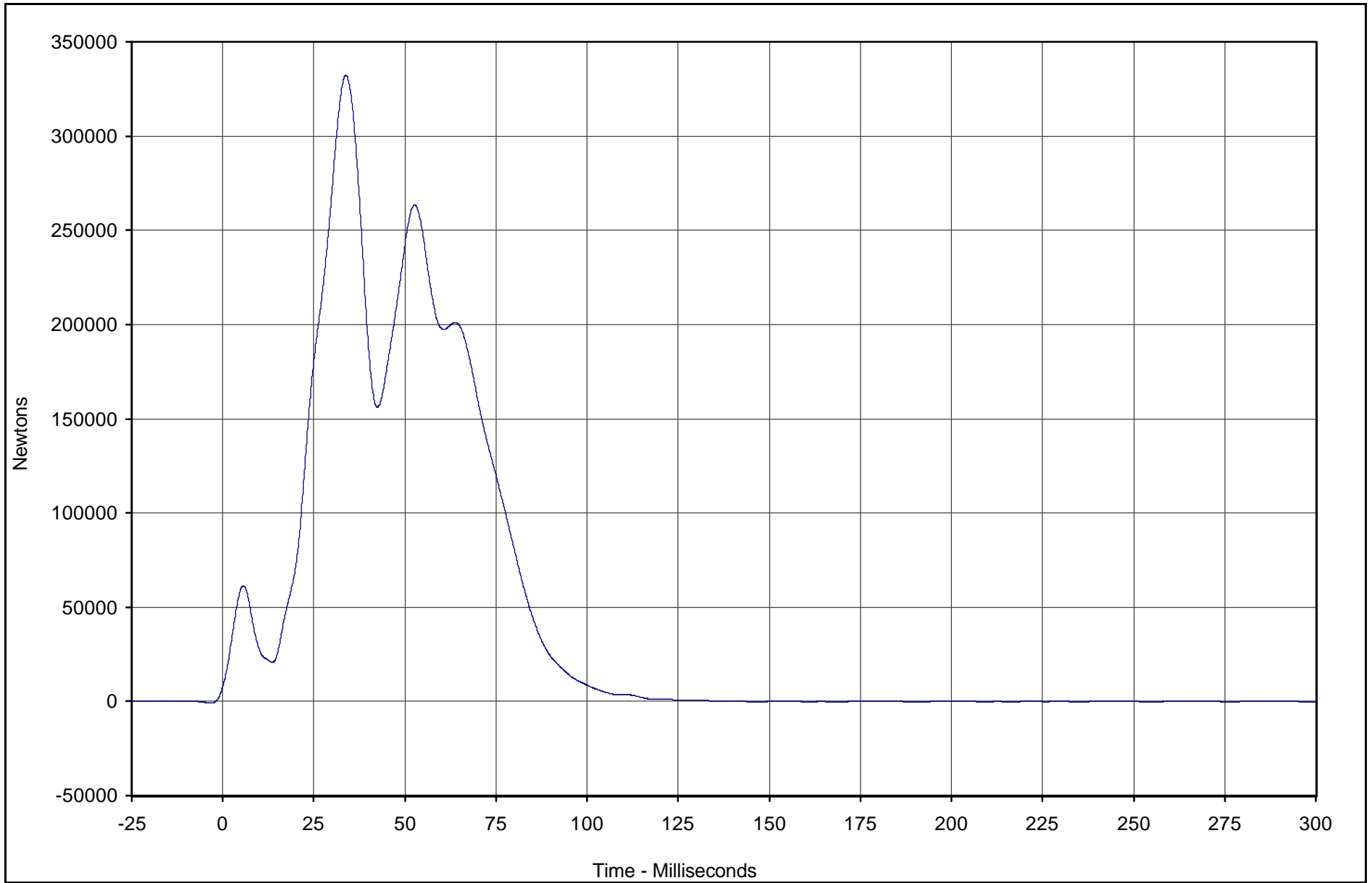
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-38

TR-P23001-16-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force Sum Group 2	002	SUM	Newtons	332134.6	33.8	-256.4	146.3	60



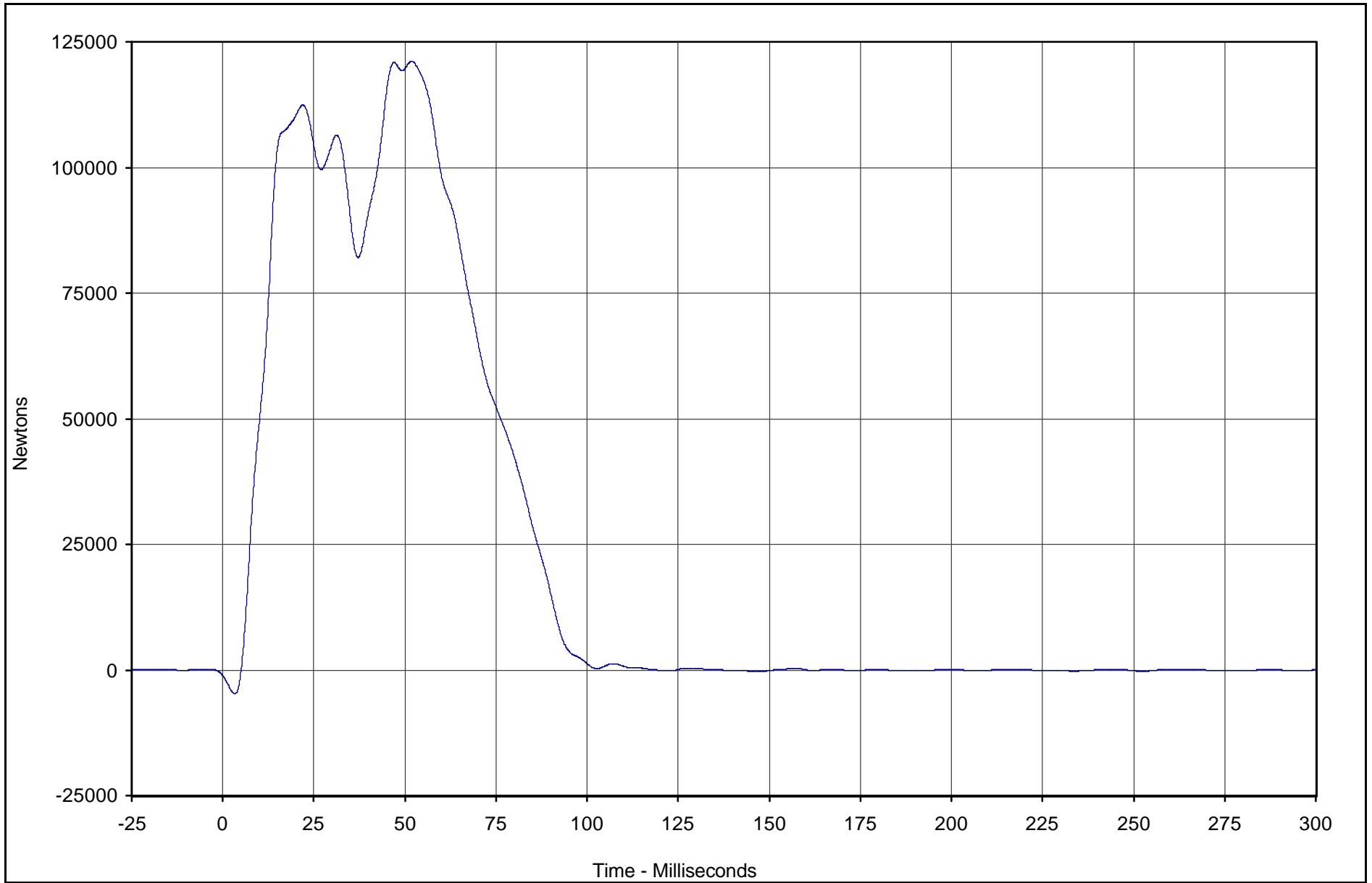
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-39



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force Sum Group 3	003	SUM	Newtons	121115.3	51.9	-4767.5	3.3	60



Test Vehicle: 2003 Acura MDX SUV

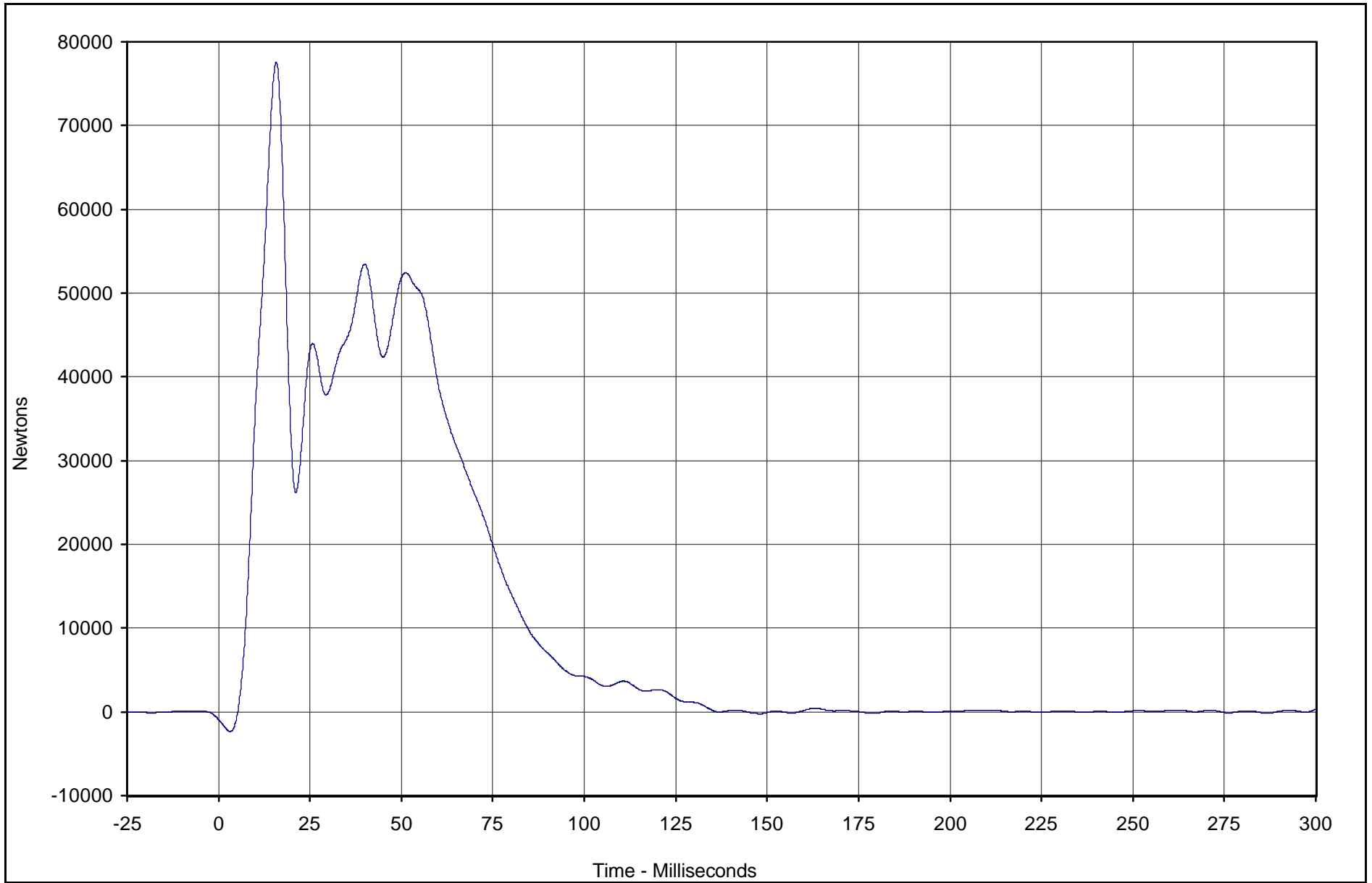
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-40

TR-P23001-16-NC



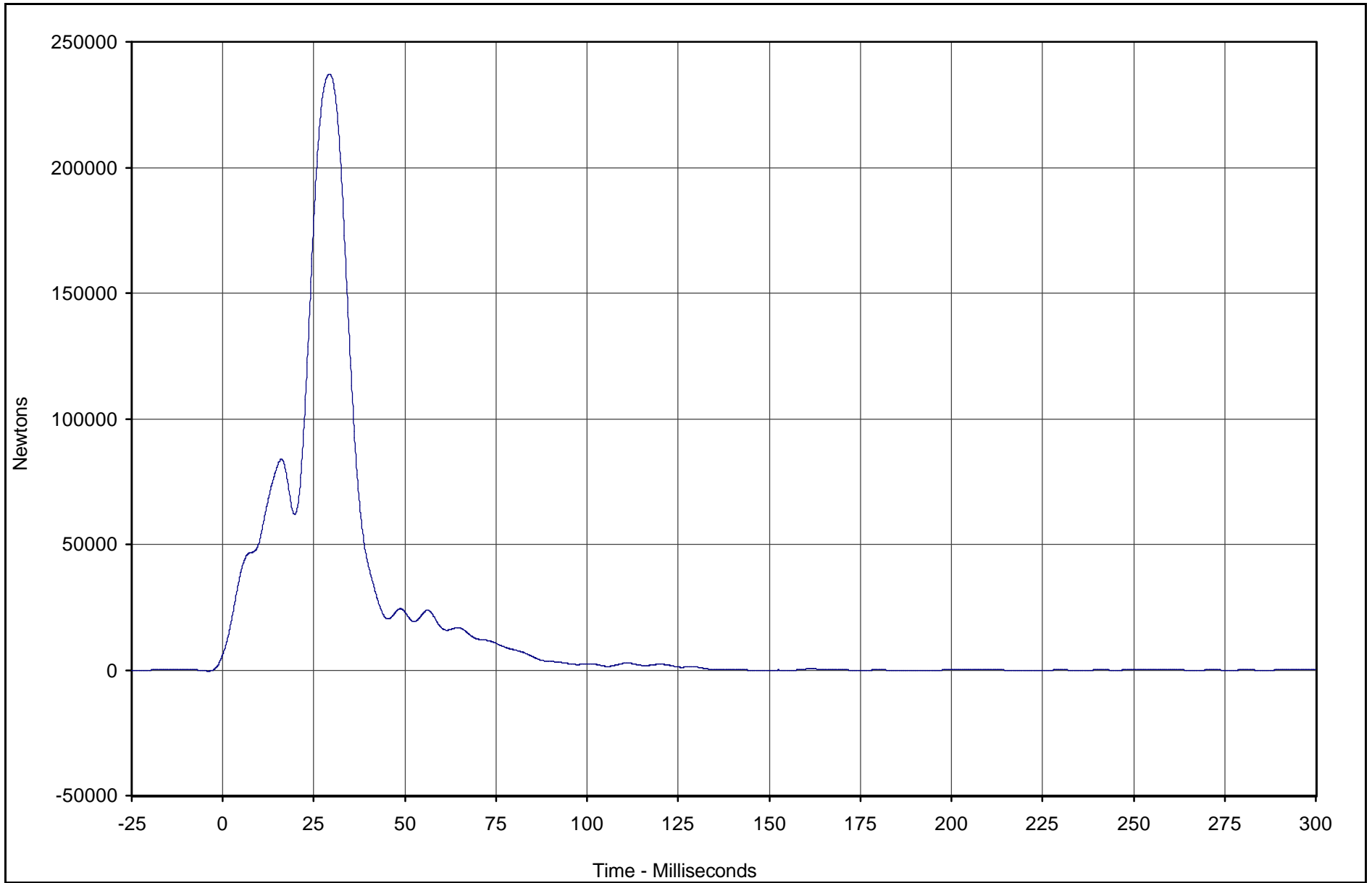
Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force Sum Group 4	004	SUM	Newtons	77557.6	15.8	-2367.9	3.2	60



Test Vehicle: 2003 Acura MDX SUV
Test Program: 2003 NHTSA 35mph NCAP

Test Date: 3/13/03
NHTSA No.: M35301

C-41



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force Sum Group 5	005	SUM	Newtons	237115.3	29.3	-359.1	193.3	60



Test Vehicle: 2003 Acura MDX SUV

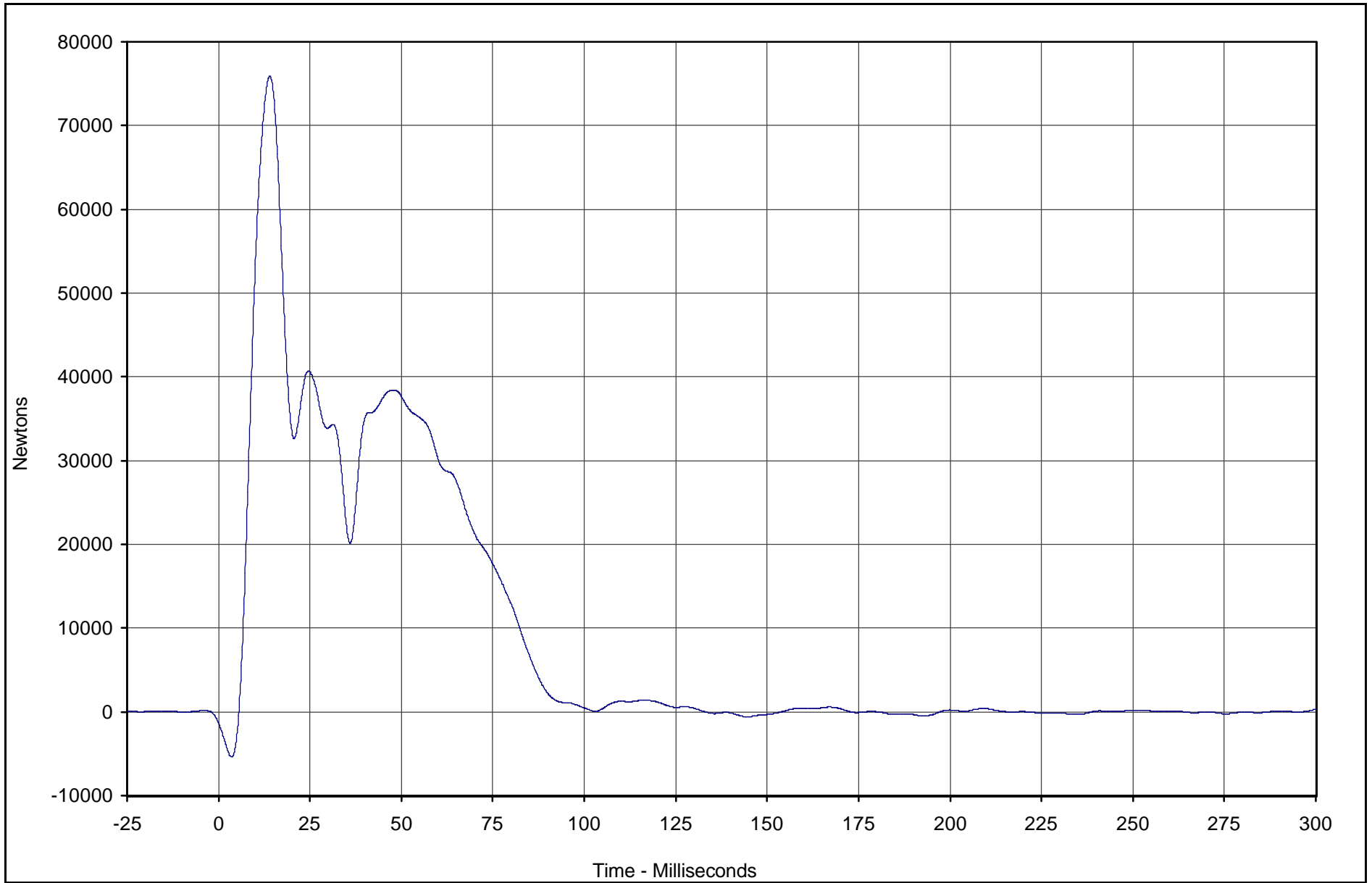
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-42

TR-P23001-16-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force Sum Group 6	006	SUM	Newtons	75876.7	14.1	-5380.3	3.6	60



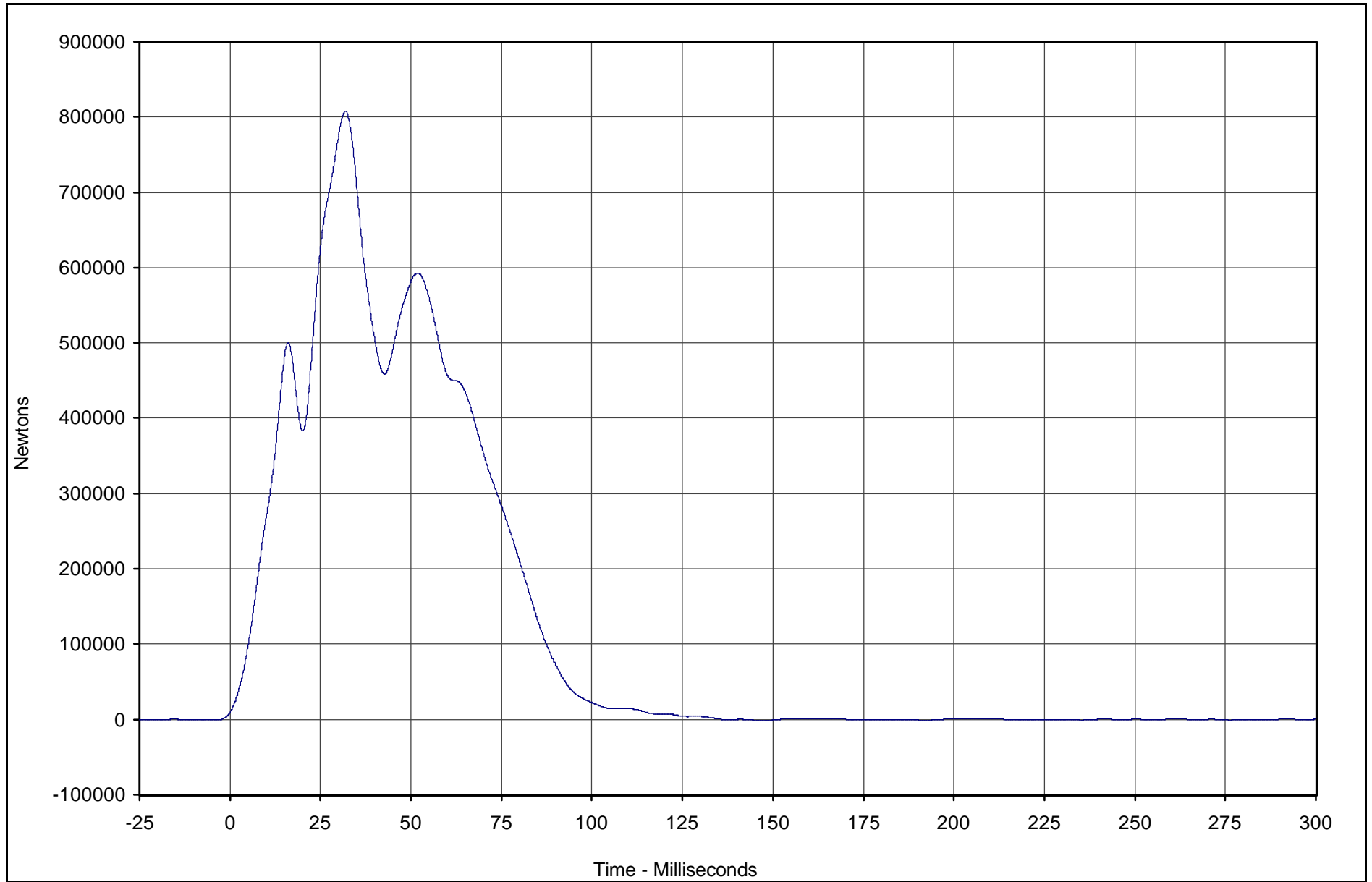
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-43



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force Total Sum	007	SUM	Newtons	807654	31.9	-1790.3	147.2	60



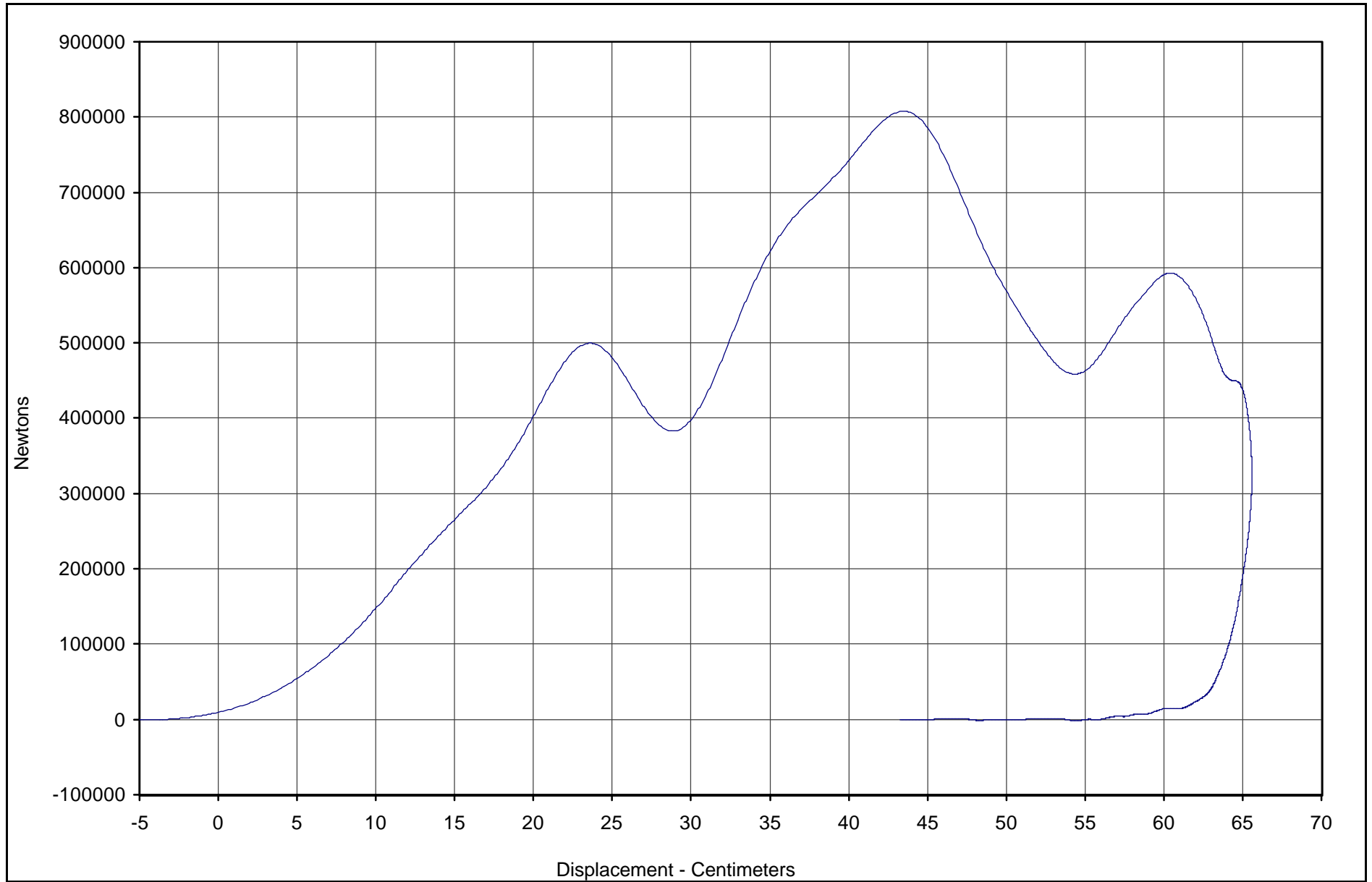
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

C-44



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	CM	Energy (Joules)	SAE Class
Barrier Force Total Sum vs. Displ.	001	XVY	Newtons	807654	43.5	285947	60



Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

BARRIER LOAD CELL SUMMARY DATA

Test Vehicle: 2003 Acura MDX SUV

NHTSA No.: M35301

Test Program: 2003 NHTSA 35mph NCAP

Test Date: 3/13/03

Location	Units	Max	Time	Min	Time
Barrier Force A1	Newtons	1342.7	40.4	-638.1	5.6
Barrier Force A2	Newtons	1037.7	83.6	-615.1	22.2
Barrier Force A3	Newtons	9167.3	51.4	-2137.4	21.2
Barrier Force A4	Newtons	15404.5	72.5	-2597.4	20.9
Barrier Force A5	Newtons	27931.7	63.6	-3394.6	21.2
Barrier Force A6	Newtons	5346.2	8.8	-2937.1	21.3
Barrier Force A7	Newtons	2435.4	68.6	-1733.8	21.3
Barrier Force A8	Newtons	1309.8	10.4	-782.2	4.3
Barrier Force A9	Newtons	2149.0	40.8	-1417.9	15.0
Barrier Force B1	Newtons	4878.1	52.4	-926.5	5.0
Barrier Force B2	Newtons	55740.7	47.6	-143.5	4.6
Barrier Force B3	Newtons	116780.3	15.8	-1744.0	2.6
Barrier Force B4	Newtons	128900.5	34.9	-112.1	299.9
Barrier Force B5	Newtons	132549.1	33.7	-447.8	13.4
Barrier Force B6	Newtons	80979.9	30.1	-44.1	234.9
Barrier Force B7	Newtons	104819.3	15.5	-1638.9	2.4
Barrier Force B8	Newtons	13748.9	51.8	-897.6	4.3
Barrier Force B9	Newtons	9170.8	52.4	-1194.6	5.6
Barrier Force C1	Newtons	5178.5	51.1	-697.6	14.1
Barrier Force C2	Newtons	17822.3	40.0	-304.8	4.5
Barrier Force C3	Newtons	52186.7	15.3	-643.7	2.4
Barrier Force C4	Newtons	56830.0	26.3	-68.2	193.2
Barrier Force C5	Newtons	43254.1	31.6	-52.6	193.2
Barrier Force C6	Newtons	121729.8	28.9	-150.1	144.5
Barrier Force C7	Newtons	58262.8	14.1	-1198.1	2.5
Barrier Force C8	Newtons	12263.9	46.4	-1075.5	4.2
Barrier Force C9	Newtons	2643.3	23.0	-1353.5	5.9
Barrier Force D1	Newtons	9248.5	40.4	-412.2	3.3
Barrier Force D2	Newtons	18281.2	40.7	-103.3	9.5
Barrier Force D3	Newtons	9723.1	17.7	-632.6	3.6
Barrier Force D4	Newtons	11900.9	16.5	-491.7	3.0
Barrier Force D5	Newtons	12448.4	15.5	-960.0	3.1
Barrier Force D6	Newtons	17396.8	15.0	-893.2	3.3
Barrier Force D7	Newtons	12567.5	12.9	-1265.9	4.3
Barrier Force D8	Newtons	9661.9	39.9	-1161.9	5.3
Barrier Force D9	Newtons	9518.4	65.7	-770.0	3.7
Barrier Force Sum Group 1	Newtons	129599.2	16.1	-3064.6	2.9
Barrier Force Sum Group 2	Newtons	332134.6	33.8	-256.4	146.3
Barrier Force Sum Group 3	Newtons	121115.3	51.9	-4767.5	3.3
Barrier Force Sum Group 4	Newtons	77557.6	15.8	-2367.9	3.2
Barrier Force Sum Group 5	Newtons	237115.3	29.3	-359.1	193.3
Barrier Force Sum Group 6	Newtons	75876.7	14.1	-5380.3	3.6
Barrier Force Total Sum	Newtons	807654.4	31.9	-1790.3	147.2

APPENDIX D

INSTRUMENTATION DATA CHANNEL ASSIGNMENTS

**2003 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D. Serial Number 35
3/13/03
2003 Acura MDX SUV**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
1	HEAD, PRIMARY	X	GPAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
2	HEAD, PRIMARY	Y	GPAC002	Accel., 1/2 bridge	Endevco	7264-2000	G
3	HEAD, PRIMARY	Z	GPAC003	Accel., 1/2 bridge	Endevco	7264-2000	G
4	HEAD, REDUNDANT	X	GPAC032	Accel., 1/2 bridge	Endevco	7264-2000	G
5	HEAD, REDUNDANT	Y	GPAC021	Accel., 1/2 bridge	Endevco	7264-2000	G
6	HEAD, REDUNDANT	Z	GPAC026	Accel., 1/2 bridge	Endevco	7264-2000	G
7	NECK FORCE	X	GPUN01FX	Load cell, six axis neck	R. A. Denton	1716A	N
8	NECK FORCE	Y	GPUN01FY	Load cell, six axis neck	R. A. Denton	1716A	N
9	NECK FORCE	Z	GPUN01FZ	Load cell, six axis neck	R. A. Denton	1716A	N
10	NECK MOMENT	X	GPUN01MX	Load cell, six axis neck	R. A. Denton	1716A	Nm
11	NECK MOMENT	Y	GPUN01MY	Load cell, six axis neck	R. A. Denton	1716A	Nm
12	NECK MOMENT	Z	GPUN01MZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
13	CHEST , PRIMARY	X	GPAC005	Accel., 1/2 bridge	Endevco	7264-2000	G
14	CHEST , PRIMARY	Y	GPAC011	Accel., 1/2 bridge	Endevco	7264-2000	G
15	CHEST , PRIMARY	Z	GPAC010	Accel., 1/2 bridge	Endevco	7264-2000	G
16	CHEST , REDUNDANT	X	GPAC034	Accel., 1/2 bridge	Endevco	7264-2000	G
17	CHEST , REDUNDANT	Y	GPAC023	Accel., 1/2 bridge	Endevco	7264-2000	G
18	CHEST , REDUNDANT	Z	GPAC020	Accel., 1/2 bridge	Endevco	7264-2000	G
19	CHEST DISPLACEMENT	X	GPCP002	Rotary Pot Chest	Servo	14CBI	MM
20	PELVIS, PRIMARY	X	GPAC025	Accel., 1/2 bridge	Endevco	7264-2000	G
21	PELVIS, PRIMARY	Y	GPAC022	Accel., 1/2 bridge	Endevco	7264-2000	G
22	PELVIS, PRIMARY	Z	GPAC019	Accel., 1/2 bridge	Endevco	7264-2000	G
23	LEFT FEMUR FORCE	Z	KEFF003	Load cell, Femur	R.A. Denton	2121	N
24	RIGHT FEMUR FORCE	Z	KEFF004	Load cell, Femur	R.A. Denton	2121	N

**2003 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D. Serial Number 35
3/13/03
2003 Acura MDX SUV**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
25	UP. TIBIA LEFT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
26	UP. TIBIA LEFT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
27	UP. TIBIA RIGHT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
28	UP. TIBIA RIGHT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
29	LWR. TIBIA LEFT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
30	LWR. TIBIA LEFT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
31	LWR. TIBIA LEFT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
32	LWR. TIBIA RIGHT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
33	LWR. TIBIA RIGHT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
34	LWR. TIBIA RIGHT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
35	FOOT LEFT, AFT	X	KEIC002X	Accel., Foot Triax	I.C. Sensor	3031-500	G
36	FOOT LEFT, AFT	Z	KEIC002Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
37	FOOT LEFT, FORE	Z	KEIC002Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
38	FOOT RIGHT, AFT	X	KEIC001X	Accel., Foot Triax	I.C. Sensor	3031-500	G
39	FOOT RIGHT, AFT	Z	KEIC001Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
40	FOOT RIGHT, FORE	Z	KEIC001Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
41	LAP BELT FORCE	X	KELC001	Load cell, Seat belt	Lebow	3371	N
42	SHOULDER BELT FORCE	X	KELC002	Load cell, Seat belt	Lebow	3371	N
43	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	MM
44	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

**2003 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Passenger A.T.D. Serial Number 34
3/13/03
2003 Acura MDX SUV**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
45	HEAD, PRIMARY	X	KEAC039	Accel.,1/2 bridge	Endevco	7264-2000	G
46	HEAD, PRIMARY	Y	KEAC038	Accel.,1/2 bridge	Endevco	7264-2000	G
47	HEAD, PRIMARY	Z	KEAC027	Accel.,1/2 bridge	Endevco	7264-2000	G
48	HEAD, REDUNDANT	X	KEAC031	Accel.,1/2 bridge	Endevco	7264-2000	G
49	HEAD, REDUNDANT	Y	KEAC032	Accel.,1/2 bridge	Endevco	7264-2000	G
50	HEAD, REDUNDANT	Z	KEAC026	Accel.,1/2 bridge	Endevco	7264-2000	G
51	NECK FORCE	X	GPUN02FX	Load cell, six axis neck	R. A. Denton	1716A	N
52	NECK FORCE	Y	GPUN02FY	Load cell, six axis neck	R. A. Denton	1716A	N
53	NECK FORCE	Z	GPUN02FZ	Load cell, six axis neck	R. A. Denton	1716A	N
54	NECK MOMENT	X	GPUN02MX	Load cell, six axis neck	R. A. Denton	1716A	Nm
55	NECK MOMENT	Y	GPUN02MY	Load cell, six axis neck	R. A. Denton	1716A	Nm
56	NECK MOMENT	Z	GPUN02MZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
57	CHEST , PRIMARY	X	GPAC031	Accel., 1/2 bridge	Endevco	7264-2000	G
58	CHEST , PRIMARY	Y	GPAC024	Accel., 1/2 bridge	Endevco	7264-2000	G
59	CHEST , PRIMARY	Z	GPAC029	Accel., 1/2 bridge	Endevco	7264-2000	G
60	CHEST , REDUNDANT	X	KEAC023	Accel.,1/2 bridge	Endevco	7264-200	G
61	CHEST , REDUNDANT	Y	KEAC022	Accel.,1/2 bridge	Endevco	7264-200	G
62	CHEST , REDUNDANT	Z	KEAC024	Accel.,1/2 bridge	Endevco	7264-200	G
63	CHEST DISPLACEMENT	X	GPCP001	Rotary Pot Chest	Servo	14CBI	MM
64	PELVIS, PRIMARY	X	KEAC019	Accel.,1/2 bridge	Endevco	7264-200	G
65	PELVIS, PRIMARY	Y	KEAC020	Accel.,1/2 bridge	Endevco	7264-200	G
66	PELVIS, PRIMARY	Z	KEAC021	Accel.,1/2 bridge	Endevco	7264-200	G
67	LEFT FEMUR FORCE	Z	KEFF001	Load cell, Femur	R.A. Denton	2121	N
68	RIGHT FEMUR FORCE	Z	KEFF002	Load cell, Femur	R.A. Denton	2121	N

**2003 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Passenger A.T.D. Serial Number 34
3/13/03
2003 Acura MDX SUV**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
69	UP. TIBIA LEFT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
70	UP. TIBIA LEFT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
71	UP. TIBIA RIGHT MOM.	X	GPUT09MX	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
72	UP. TIBIA RIGHT MOM.	Y	GPUT09MY	2 ch., Upper tibia gage	R. A. Denton	1583	Nm
73	LWR. TIBIA LEFT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
74	LWR. TIBIA LEFT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
75	LWR. TIBIA LEFT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
76	LWR. TIBIA RIGHT MOM.	X	GPLT09MX	3 ch., lower tibia gage	R. A. Denton	3093	Nm
77	LWR. TIBIA RIGHT MOM.	Y	GPLT09MY	3 ch., lower tibia gage	R. A. Denton	3093	Nm
78	LWR. TIBIA RIGHT FORCE	Z	GPLT09FZ	3 ch., lower tibia gage	R. A. Denton	3093	N
79	FOOT LEFT, AFT	X	KEIC003X	Accel., Foot Triax	I.C. Sensor	3031-500	G
80	FOOT LEFT, AFT	Z	KEIC003Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
81	FOOT LEFT, FORE	Z	KEIC003Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
82	FOOT RIGHT, AFT	X	KEIC004X	Accel., Foot Triax	I.C. Sensor	3031-500	G
83	FOOT RIGHT, AFT	Z	KEIC004Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
84	FOOT RIGHT, FORE	Z	KEIC004Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
85	LAP BELT FORCE	X	KELC003	Load cell, Seat belt	Lebow	3371	N
86	SHOULDER BELT FORCE	X	KELC004	Load cell, Seat belt	Lebow	3371	N
87	SHOULDER BELT SPOOL	X	KEPP001	Pullout pot	Celesco	PTX101-0030	CM
88	SHOULDER BELT ELONG.	X	KEEP001	Linear pot., belt stretch	E.T.I.	LCP8-10 10K	MM/CM

**2003 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Vehicle Accelerometers
3/13/03
2003 Acura MDX SUV**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
89	Left Rear	X	KEVA002	Accel., Pre-Amp	I.C.S/Karco	3031-500	G
90	Right Rear	X	KEVA006	Accel., Vehicle block	I.C. Sensor	3031-200	G
91	Engine Top	X	KEVA009	Accel., Vehicle block	I.C. Sensor	3031-500	G
92	Engine Bottom	X	KEVA007	Accel., Vehicle block	I.C. Sensor	3031-500	G
93	Left Brake Caliper	X	KEVA008	Accel., Vehicle block	I.C. Sensor	3031-500	G
94	Right Brake Caliper	X	KEVA012	Accel., Vehicle block	I.C. Sensor	3031-500	G
95	Instrument Panel	X	KEVA011	Accel., Vehicle block	I.C. Sensor	3031-200	G
96	Left Rear	Z	KEVA001	Accel., Vehicle block	I.C. Sensor	3031-500	G
97	Right Rear	Z	KEVA010	Accel., Vehicle block	I.C. Sensor	3031-200	G

**2003 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Rigid Load Cell Barrier
3/13/03
2003 Acura MDX SUV**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
98	BARRIER FORCE A1	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
99	BARRIER FORCE A2	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
100	BARRIER FORCE A3	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
101	BARRIER FORCE A4	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
102	BARRIER FORCE A5	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
103	BARRIER FORCE A6	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
104	BARRIER FORCE A7	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
105	BARRIER FORCE A8	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
106	BARRIER FORCE A9	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
107	BARRIER FORCE B1	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
108	BARRIER FORCE B2	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
109	BARRIER FORCE B3	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
110	BARRIER FORCE B4	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
111	BARRIER FORCE B5	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
112	BARRIER FORCE B6	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
113	BARRIER FORCE B7	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
114	BARRIER FORCE B8	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
115	BARRIER FORCE B9	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N

**2003 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Rigid Load Cell Barrier
3/13/03
2003 Acura MDX SUV**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
116	BARRIER FORCE C1	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
117	BARRIER FORCE C2	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
118	BARRIER FORCE C3	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
119	BARRIER FORCE C4	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
120	BARRIER FORCE C5	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
121	BARRIER FORCE C6	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
122	BARRIER FORCE C7	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
123	BARRIER FORCE C8	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
124	BARRIER FORCE C9	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
125	BARRIER FORCE D1	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
126	BARRIER FORCE D2	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
127	BARRIER FORCE D3	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
128	BARRIER FORCE D4	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
129	BARRIER FORCE D5	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
130	BARRIER FORCE D6	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
131	BARRIER FORCE D7	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
132	BARRIER FORCE D8	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N
133	BARRIER FORCE D9	X	BARRIER	Load Cell, LCB	Interface	1220-FS	N

APPENDIX E

DUMMY CALIBRATION DATA



Calibration Data Sheet Hybrid III 50th Percentile Male Knee Impact Test

ATD Serial No.: 034

Location: Left Knee

Test I.D.: RK06A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	N	4715 to 5782	5324	Pass
Overall Test Results				Pass

ATD Serial No.: 034

Location: Right Knee

Test I.D.: RK06D

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.11	Pass
Peak Probe Force	N	4715 to 5782	5315	Pass
Overall Test Results				Pass

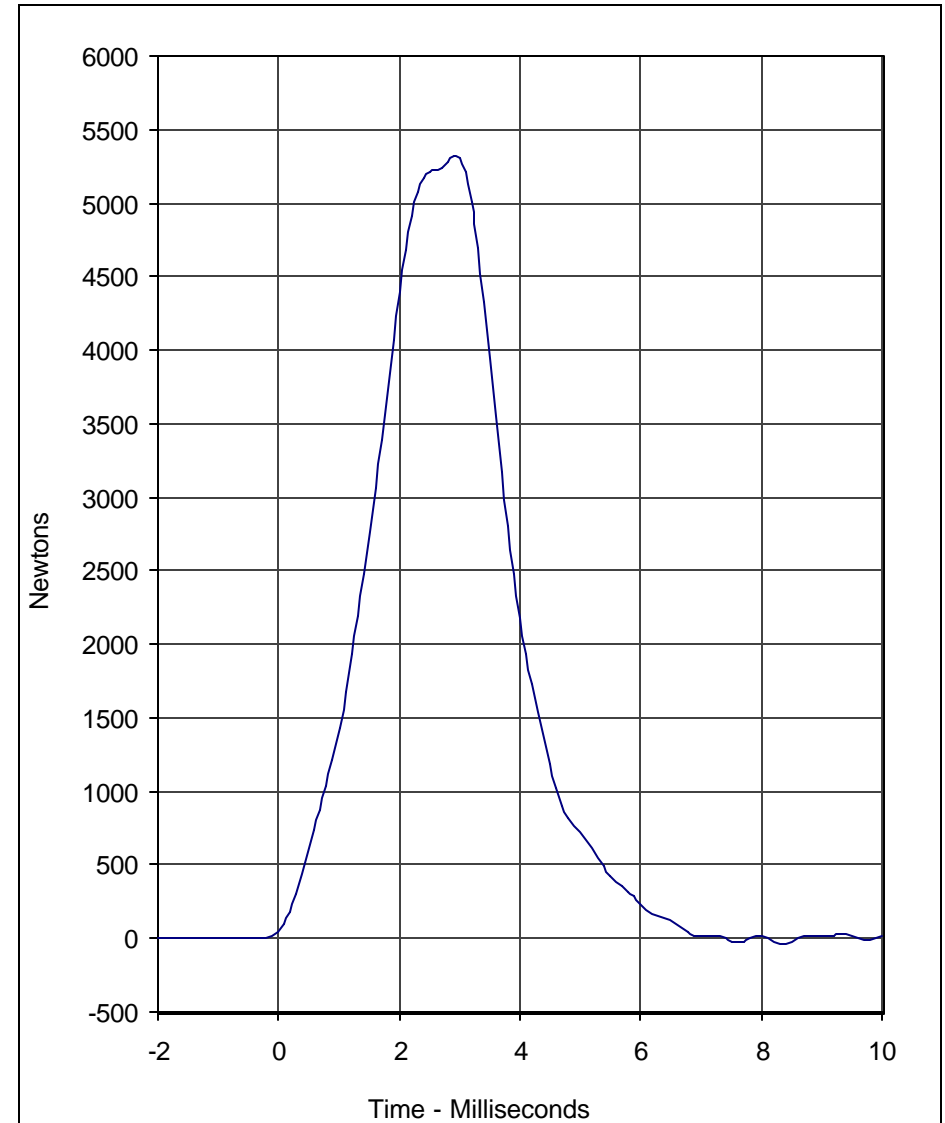
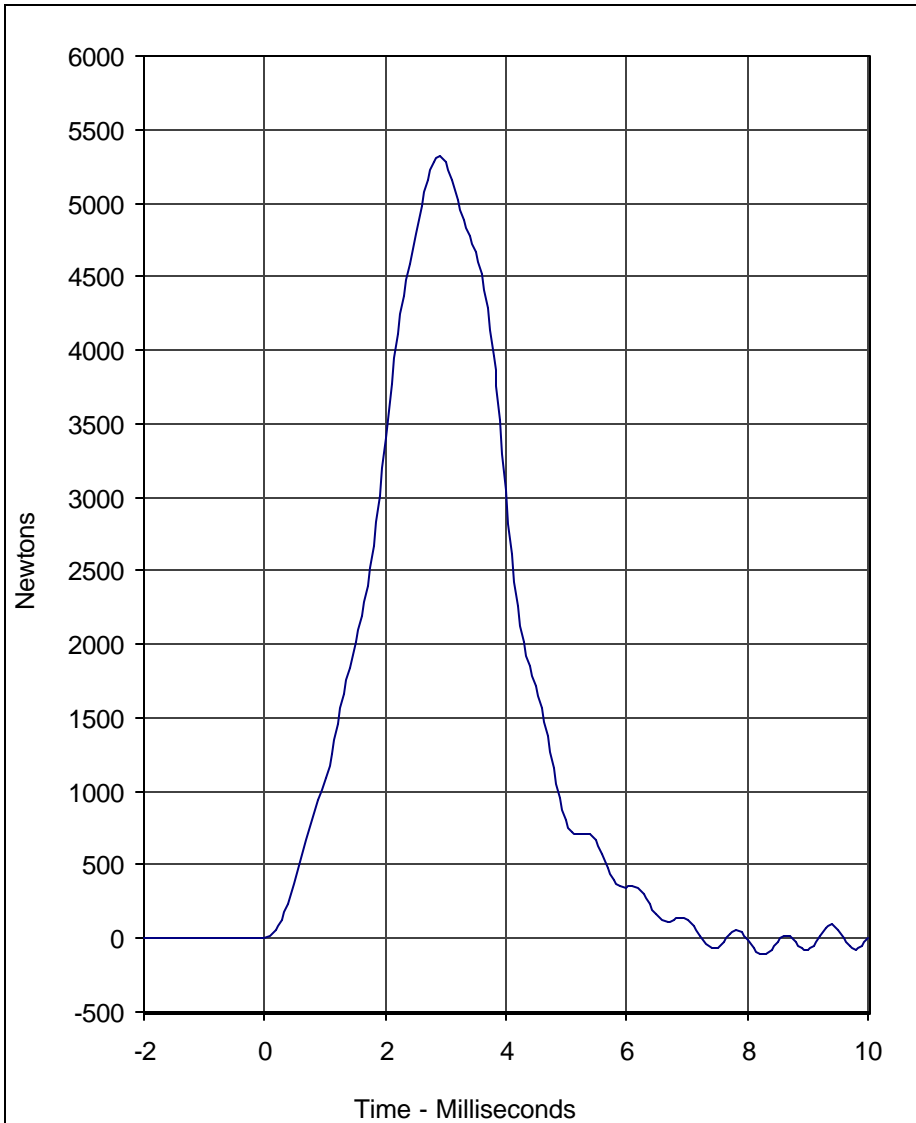
E-1

TR-P23001-16-NC

Laboratory Technician

March 12, 2003

Test Date



Curve Description	Location	Test I.D.	CURNO	Type
Probe Force	Left Knee	RK06A	001	FIL

Units	Max	Time	Min	Time	SAE Class
Newtons	5324.2	2.9	-111.1	8.3	600

Curve Description	Location	Test I.D.	CURNO	Type
Probe Force	Right Knee	RK06D	002	FIL

Units	Max	Time	Min	Time	SAE Class
Newtons	5315.0	2.9	-43.5	8.3	600

Test Program: Hybrid III 50th Percentile Male Knee Impact Test
 Test Date: 3/12/03

A.T.D. Serial No.: 034





Calibration Data Sheet Hybrid III 50th Percentile Male Head Drop Test

ATD Serial No.: 034

Test I.D.: HD04A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	248.6	Pass
Peak Lateral Acceleration	G's	≤15.0	10.1	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

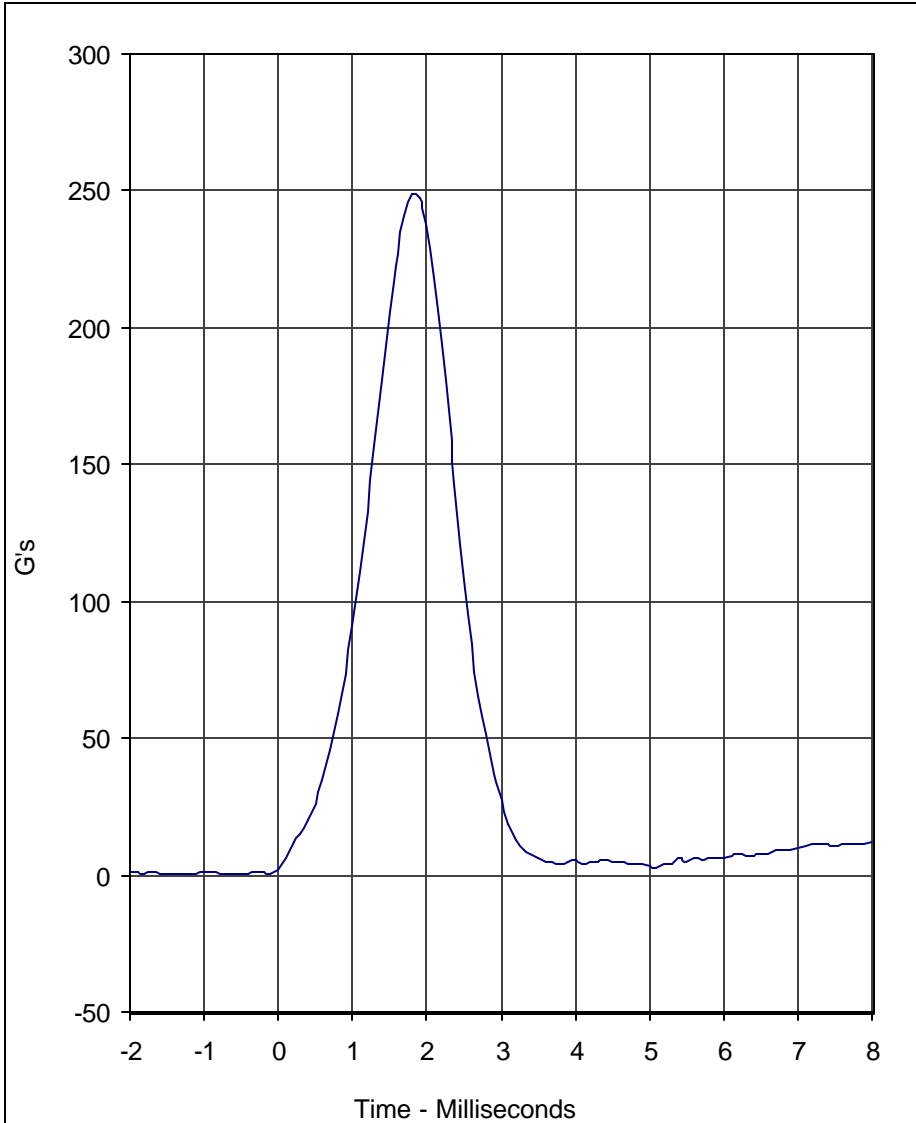
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TR-P23001-16-NC

Laboratory Technician

March 12, 2003

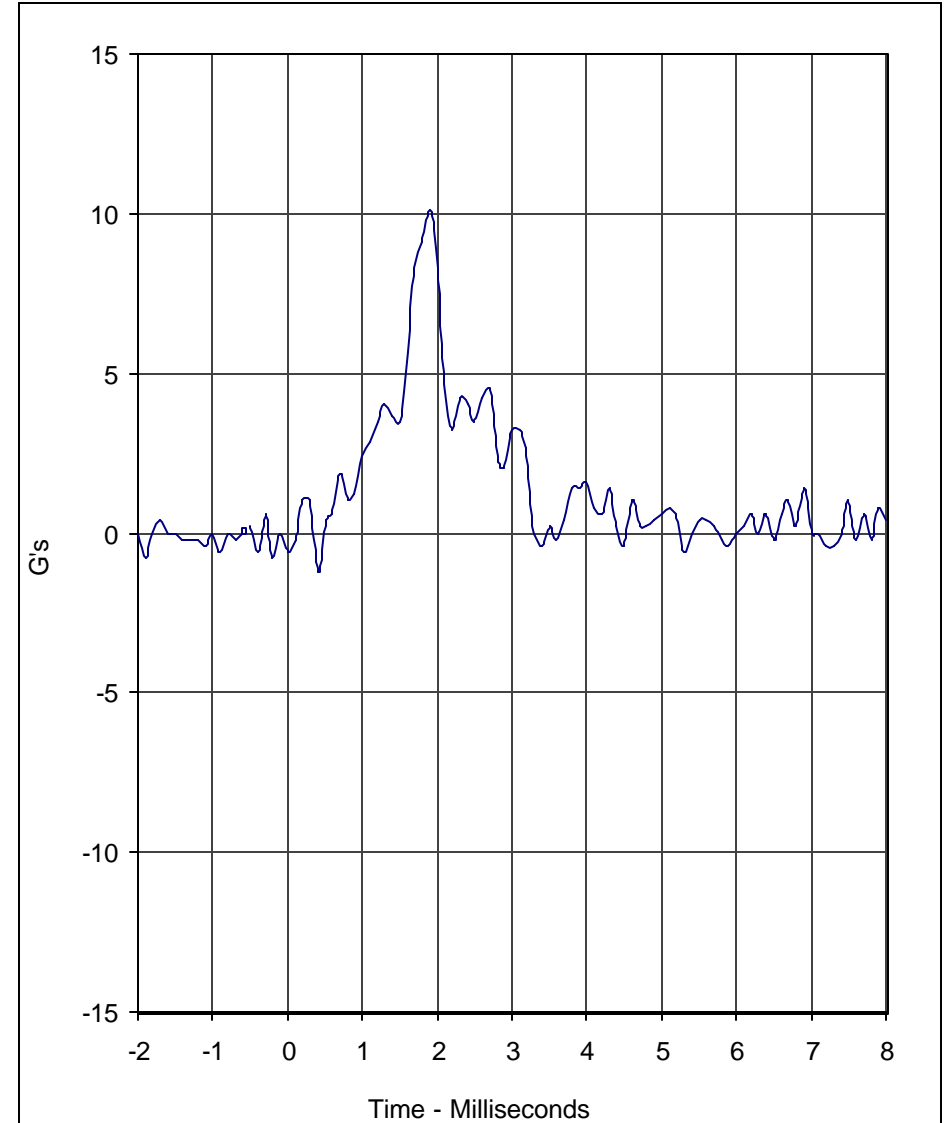
Test Date



Curve Description	CURNO	Type
Head Resultant	001	RES

Units	Max	Time	Min	Time	SAE Class
G's	248.6	1.8	0.2	-1.8	1000

Test Program: Hybrid III 50th Percentile Male Head Drop Test
 Test Date: 3/12/03



Curve Description	CURNO	Type
Head Y	002	FIL

Units	Max	Time	Min	Time	SAE Class
G's	10.1	1.9	-1.2	0.4	1000

A.T.D. Serial No.: 034
 Test I.D.: HD04A





Calibration Data Sheet Hybrid III 50th Percentile Male Thorax Impact Test

ATD Serial No.: 034

Test I.D.: CH01G

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.64	Pass
Peak Probe Force	Newtons	5159 to 5893	5608	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.61	Pass
Internal Hysteresis	%	69 to 85	78.5	Pass
Overall Test Results				Pass

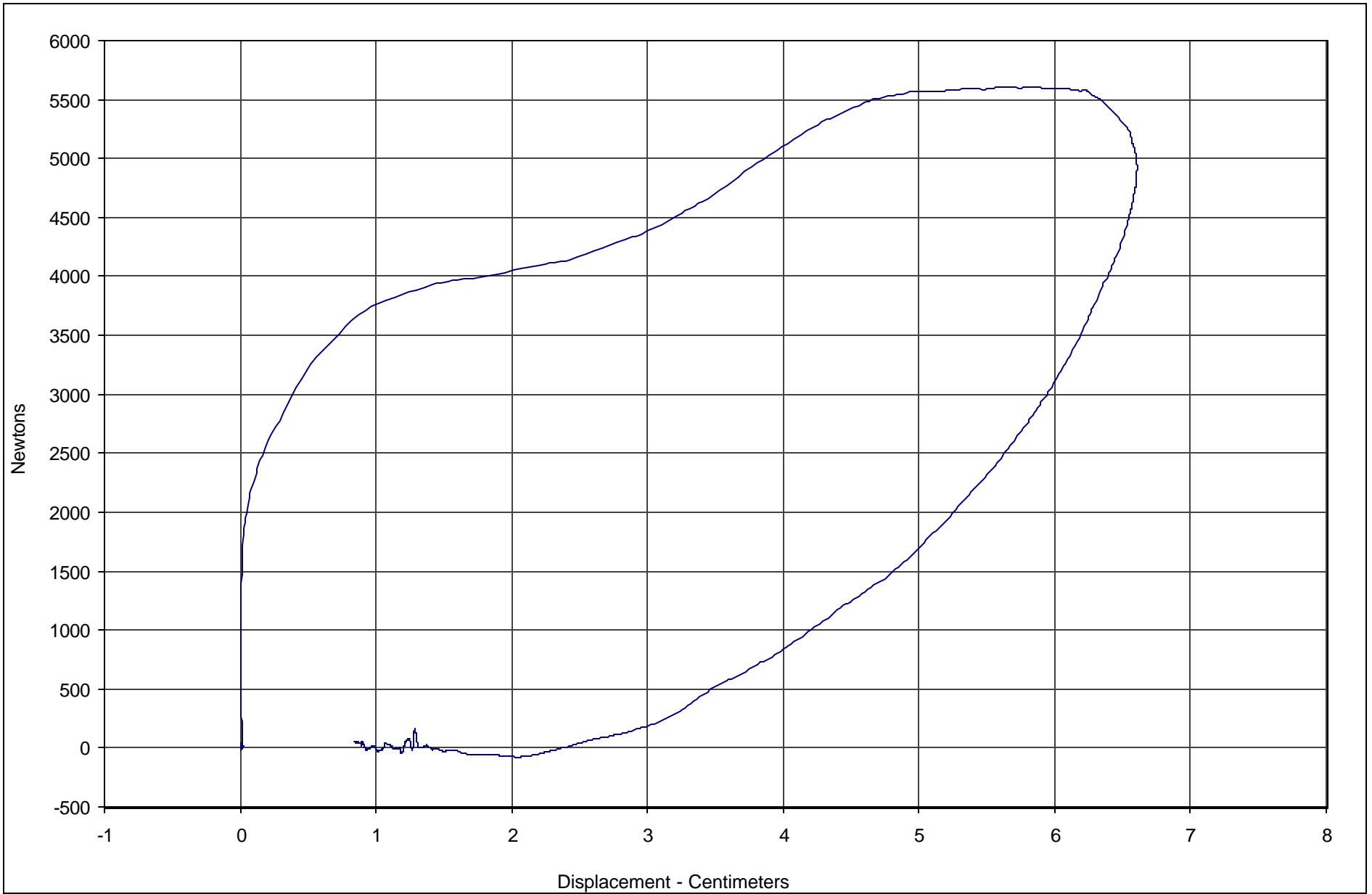
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TR-P23001-16-NC

Laboratory Technician

March 12, 2003

Test Date



Curve Description	CURNO	Type	Hysteresis	Peak Chest Displ.	Peak Probe Force	SAE Class
Probe Force vs. Chest Displacement	001	FIL	78.5	6.61	5607.5	180



Test Program: Hybrid III 50th Percentile Male Thorax Impact

A.T.D. Serial No.: 034

Test Date: 3/12/03

Test I.D.: CH01G



Calibration Data Sheet Hybrid III 50th Percentile Male Neck Flexion Test

ATD Serial No.: 034

Test I.D.: NF09A

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.11	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	23.1	Pass
	20 Msec.	G's	17.6 to 22.6	19.7	Pass
	30 Msec.	G's	12.5 to 18.5	17.4	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	17.4	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	39.0	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	67.4	Pass
	Time	Msec.	57.0 to 64.0	60.4	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	116.8	Pass
Moment About Occipital Condyle	Maximum	Nm	84.1 to 108.5	92.3	Pass
	Time	Msec.	47.0 to 58.0	51.8	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	98.5	Pass
Overall Test Results					Pass

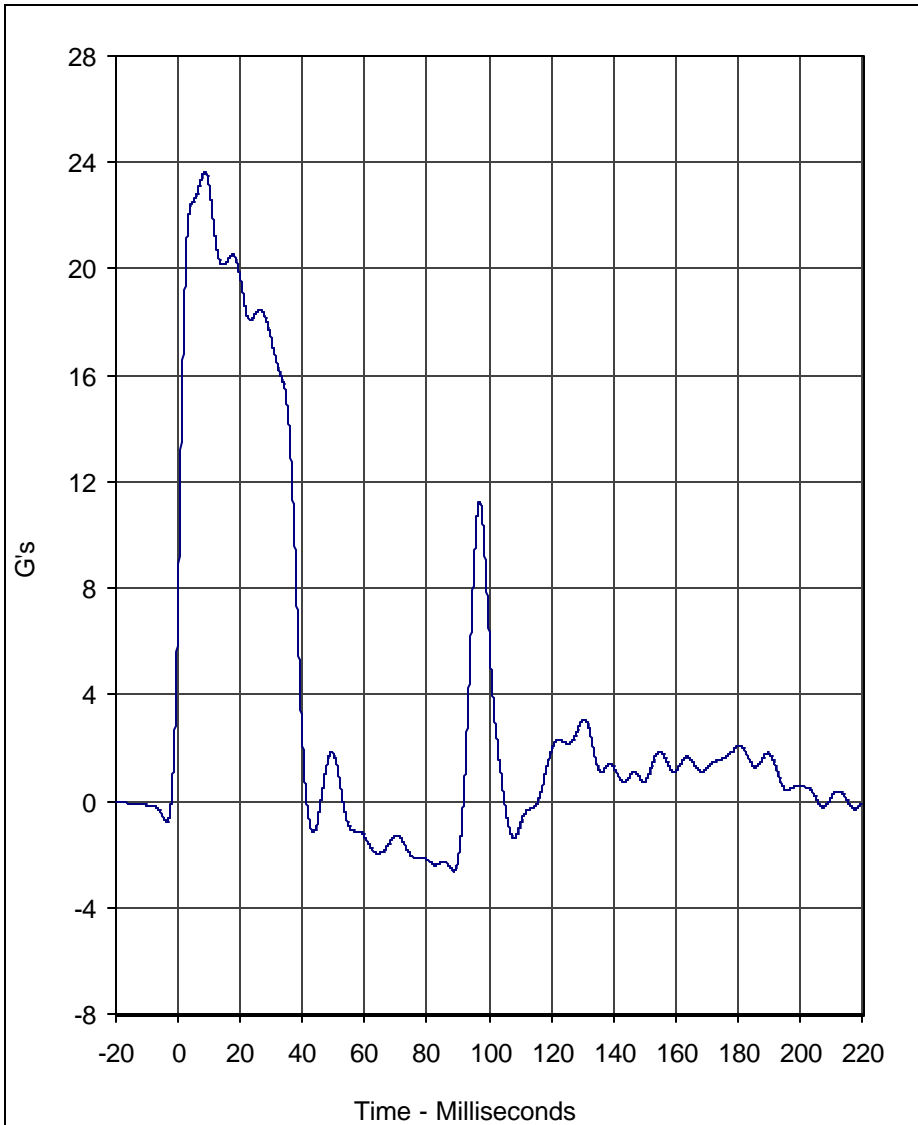
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TR-P23001-16-NC

Laboratory Technician

March 12, 2003

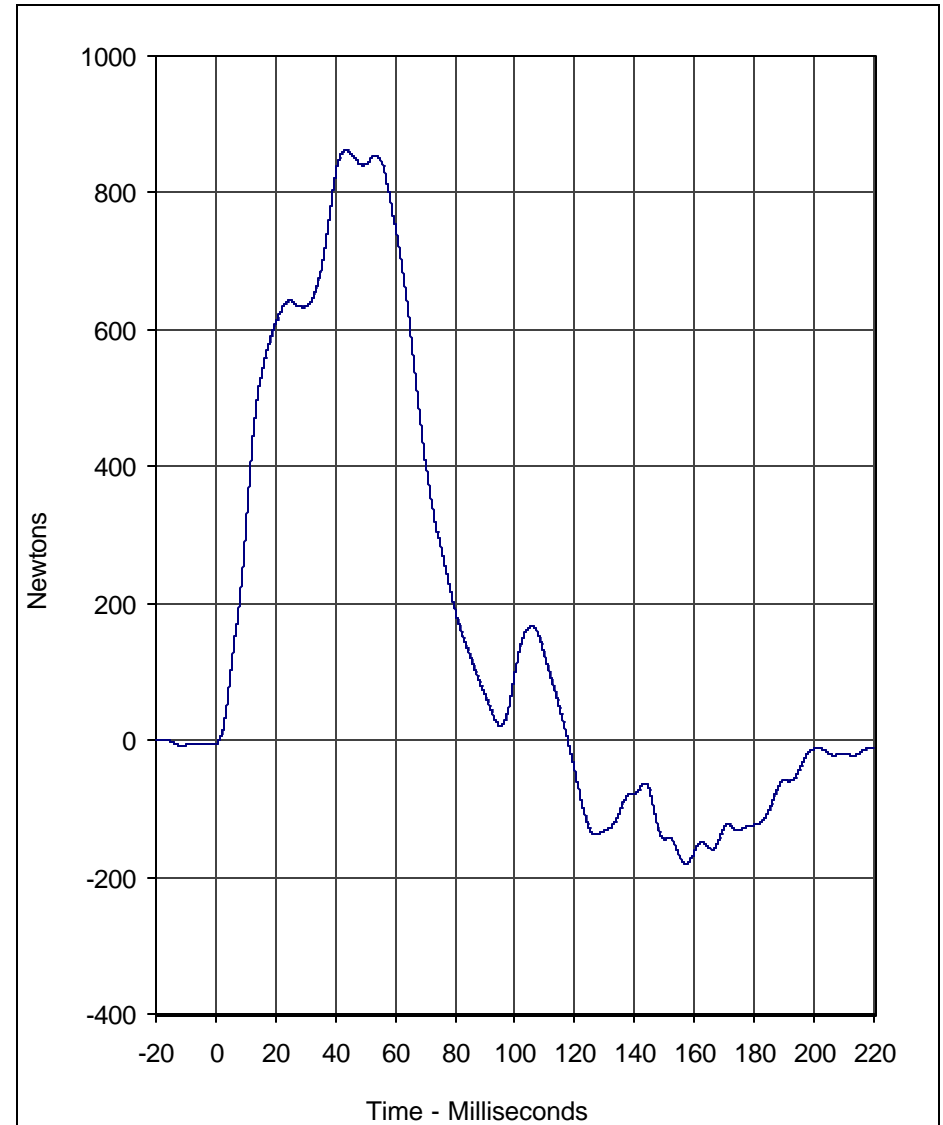
Test Date



Curve Description	CURNO	Type
Pendulum Deceleration	001	FIL

Units	Max	Time	Min	Time	SAE Class
G's	23.7	8.6	-2.6	88.7	60

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 Test Date: 3/12/03

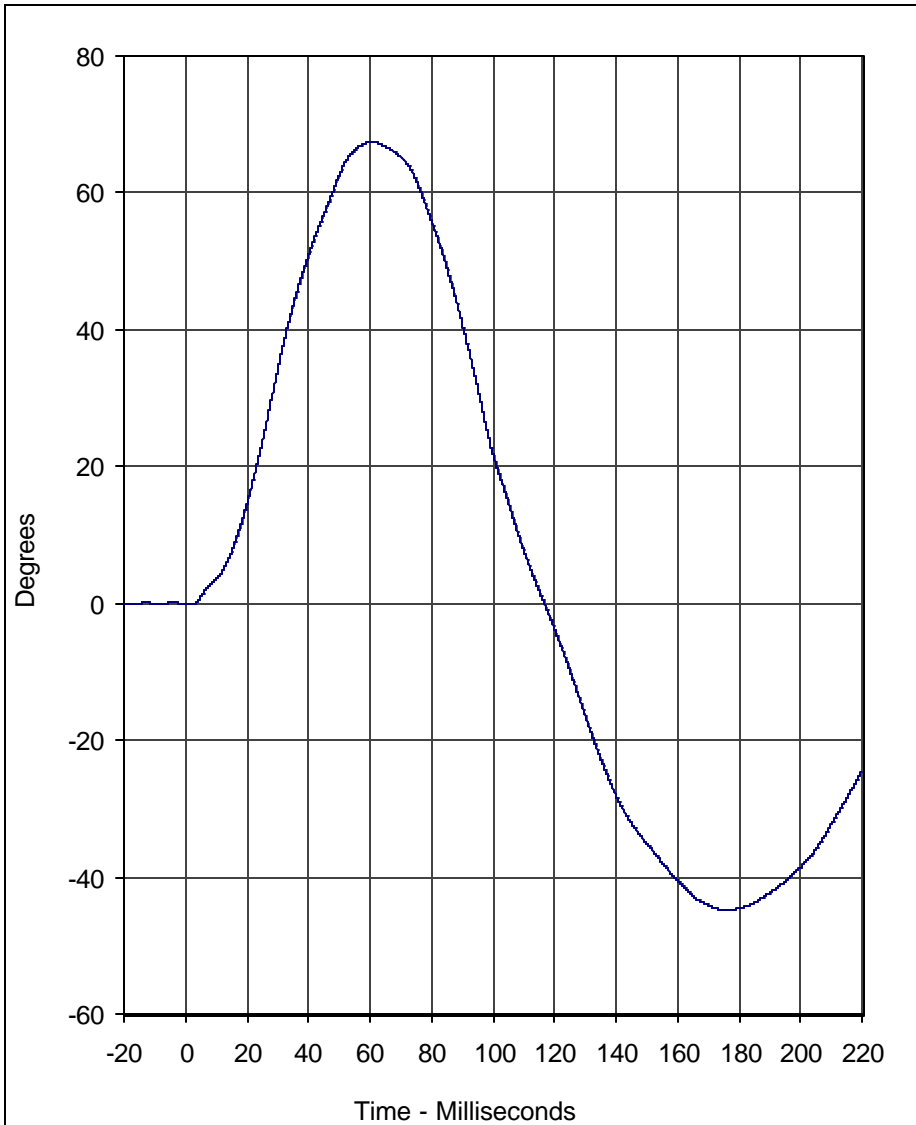


Curve Description	CURNO	Type
Neck Force X	002	FIL

Units	Max	Time	Min	Time	SAE Class
Newtons	862.1	43.3	-181.1	157.1	60

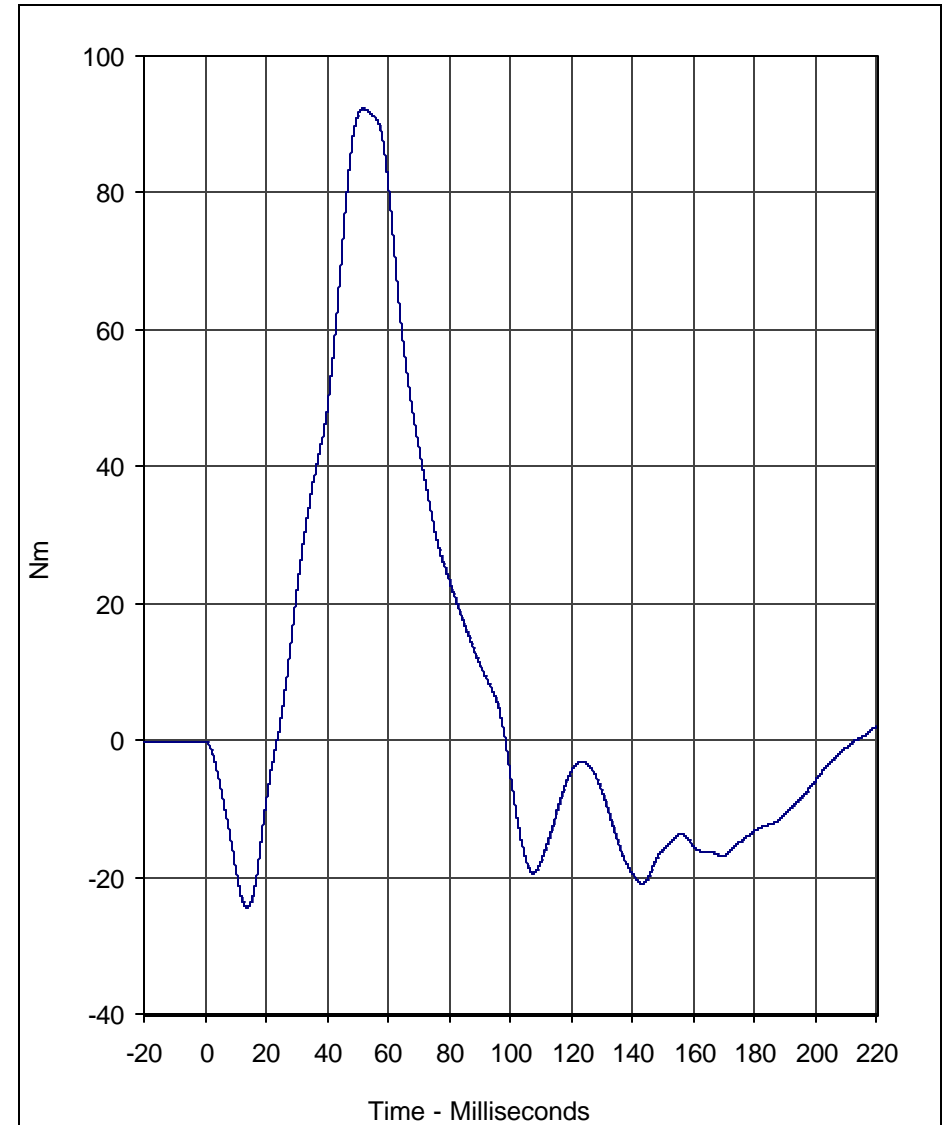
A.T.D. Serial No.: 034
 Test I.D.: NF09A





Curve Description	CURNO	Type
"D" Plane Rotation	003	FIL

Units	Max	Time	Min	Time	SAE Class
Degrees	67.4	60.4	-44.8	175.9	60



Curve Description	CURNO	Type
Moment About Occipital Condyle	004	FIL

Units	Max	Time	Min	Time	SAE Class
Nm	92.3	51.8	-24.5	13.8	60

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 Test Date: 3/12/03

A.T.D. Serial No.: 034
 Test I.D.: NF09A





Calibration Data Sheet

Hybrid III 50th Percentile Male Neck Extension Test

ATD Serial No.: 034

Test I.D.: NE04A

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.02	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.4	Pass
	20 Msec.	G's	14.0 to 19.0	16.2	Pass
	30 Msec.	G's	11.0 to 16.0	14.4	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	14.4	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	44.2	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	94.9	Pass
	Time	Msec.	72.0 to 82.0	82.0	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	154.8	Pass
Moment About Occipital Condyle	Maximum	Nm	-52.9 to- 79.9	-75.9	Pass
	Time	Msec.	65.0 to 79.0	70.9	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	141.4	Pass
Overall Test Results					Pass

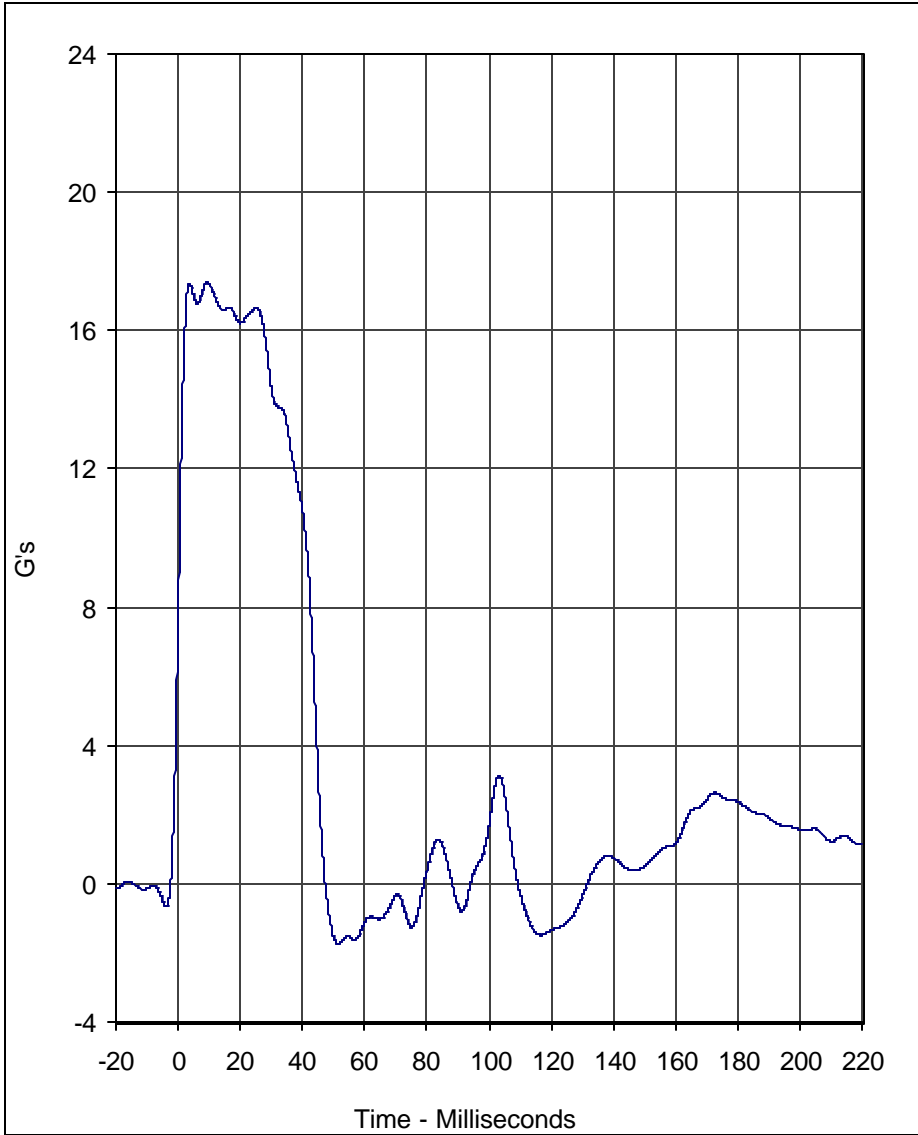
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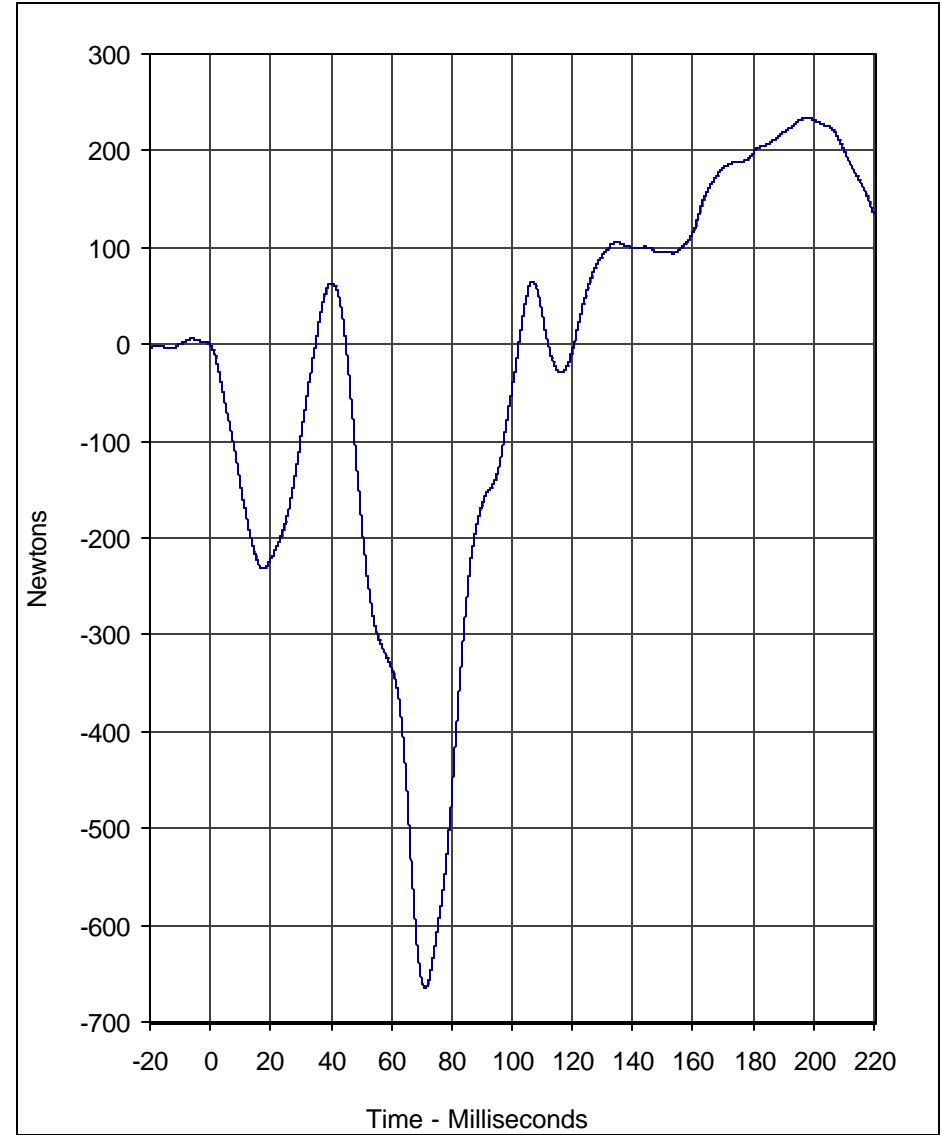
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Curve Description				CURNO	Type
Pendulum Deceleration				001	FIL

Units	Max	Time	Min	Time	SAE Class
G's	17.4	9.4	-1.7	51.5	60

Test Program: Hybrid III 50th Percentile Male Neck Extension Test
 Test Date: 3/12/03

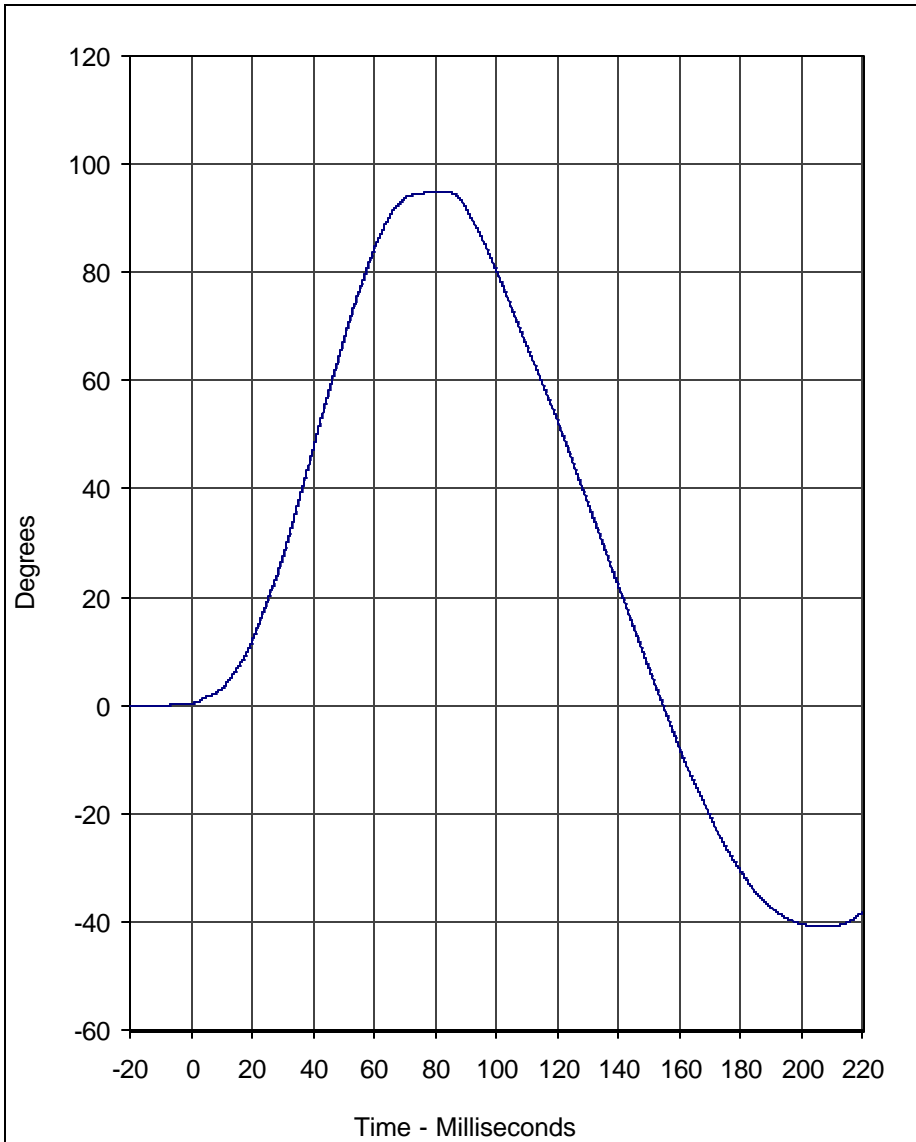


Curve Description				CURNO	Type
Neck Force X				002	FIL

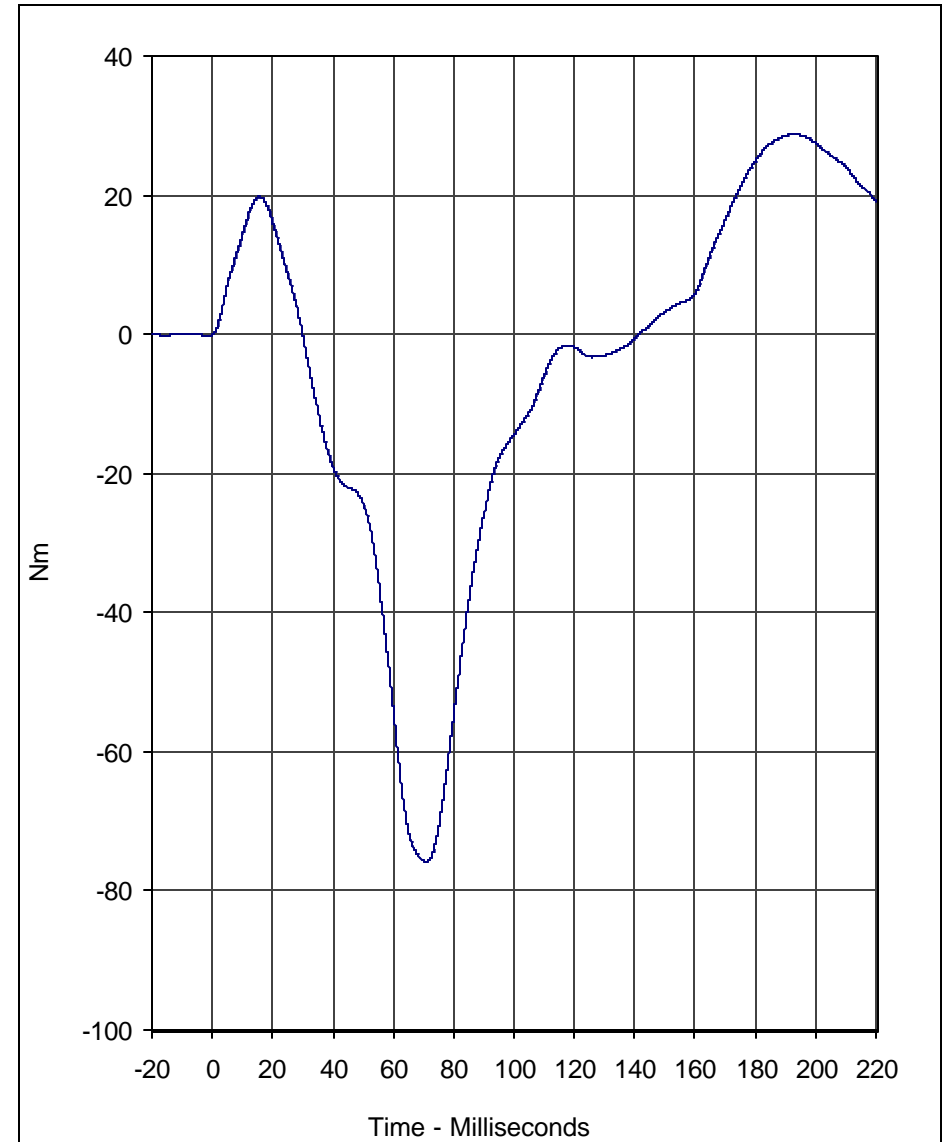
Units	Max	Time	Min	Time	SAE Class
Newtons	233.6	197.8	-665.3	71.2	60

A.T.D. Serial No.: 034
 Test I.D.: NE04A





Curve Description				CURNO	Type
"D" Plane Rotation				003	FIL
Units	Max	Time	Min	Time	SAE Class
Degrees	94.9	83.2	-40.9	206.0	60



Curve Description				CURNO	Type
Moment About Occipital Condyle				004	FIL
Units	Max	Time	Min	Time	SAE Class
Nm	28.7	192.9	-75.9	70.9	60

Test Program: Hybrid III 50th Percentile Male Neck Extension Test
 Test Date: 3/12/03

A.T.D. Serial No.: 034
 Test I.D.: NE04A





Calibration Data Sheet Hybrid III 50th Percentile Male External Measurements

ATD Serial No.: 034

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
A - Total sitting height	mm	879 to 889	880	Pass
B - Shoulder pivot height	mm	505 to 521	520	Pass
C - "H" point height	mm	84 to 89	85	Pass
D - "H" point from seat back	mm	135 to 140	135	Pass
E - Shoulder pivot from back	mm	84 to 94	90	Pass
F - Thigh clearance	mm	140 to 155	150	Pass
G - Elbow back to wrist pivot	mm	290 to 305	295	Pass
H - Skull cap to back line	mm	41 to 46	45	Pass
I - Shoulder to elbow length	mm	330 to 345	340	Pass
J - Elbow rest height	mm	190 to 211	210	Pass
K - Buttock to knee length	mm	579 to 604	600	Pass
L - Popliteal length	mm	429 to 455	450	Pass
M - Knee pivot height	mm	485 to 500	490	Pass
N - Buttock popliteal length	mm	452 to 477	465	Pass
O - Chest depth	mm	213 to 229	215	Pass
P - Foot length	mm	251 to 267	265	Pass
V - Shoulder breadth	mm	422 to 437	430	Pass
W - Foot breadth	mm	91 to 107	100	Pass
Y - Chest circumference	mm	970 to 1001	975	Pass
Z - Waist circumference	mm	836 to 866	860	Pass
AA - Location for chest circumference	mm	429 to 434	430	Pass
BB - Location for waist circumference	mm	226 to 231	230	Pass
Overall Test Results				Pass

Laboratory Technician

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Test Date

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Calibration Data Sheet Hybrid III 50th Percentile Male Knee Impact Test

ATD Serial No.: 035

Location: Left Knee

Test I.D.: RK10B

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	N	4715 to 5782	5422	Pass
Overall Test Results				Pass

ATD Serial No.: 035

Location: Right Knee

Test I.D.: RK10B

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.11	Pass
Peak Probe Force	N	4715 to 5782	5422	Pass
Overall Test Results				Pass

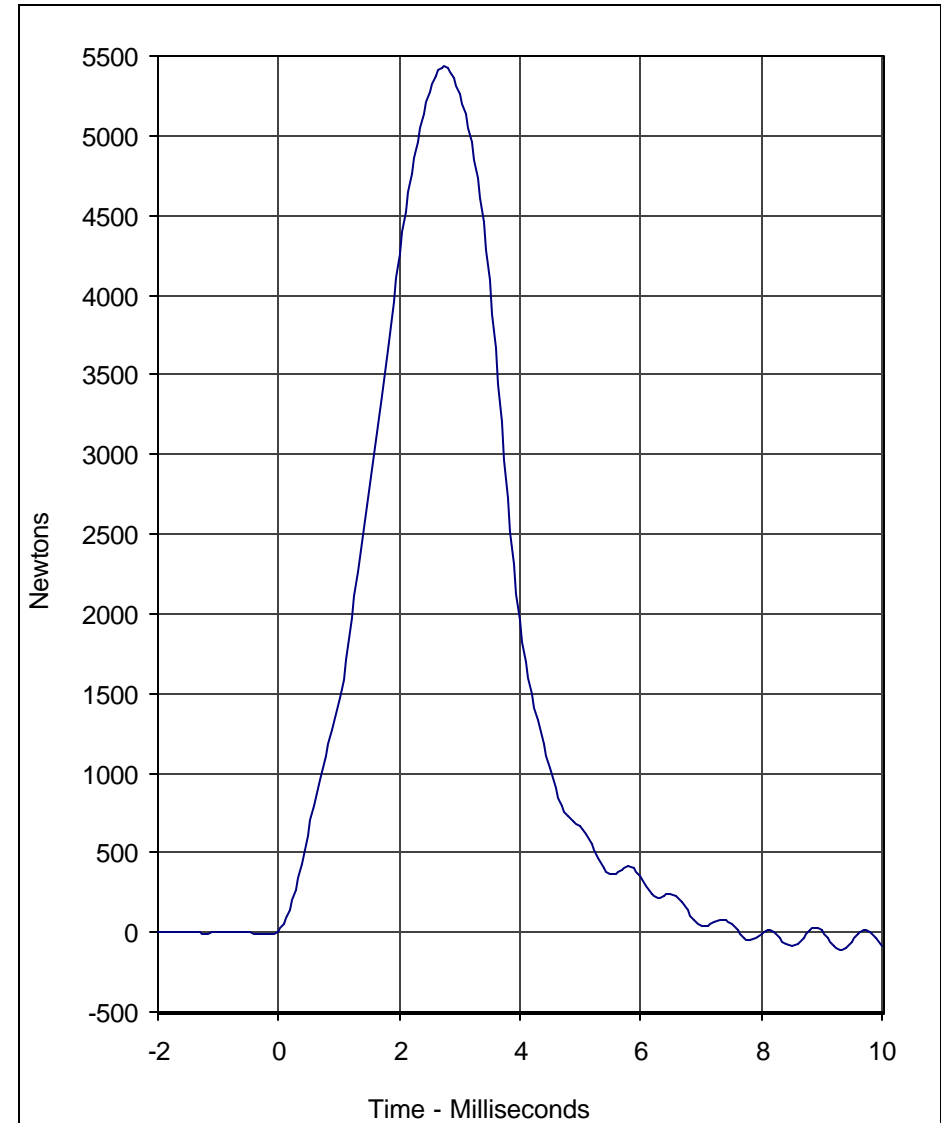
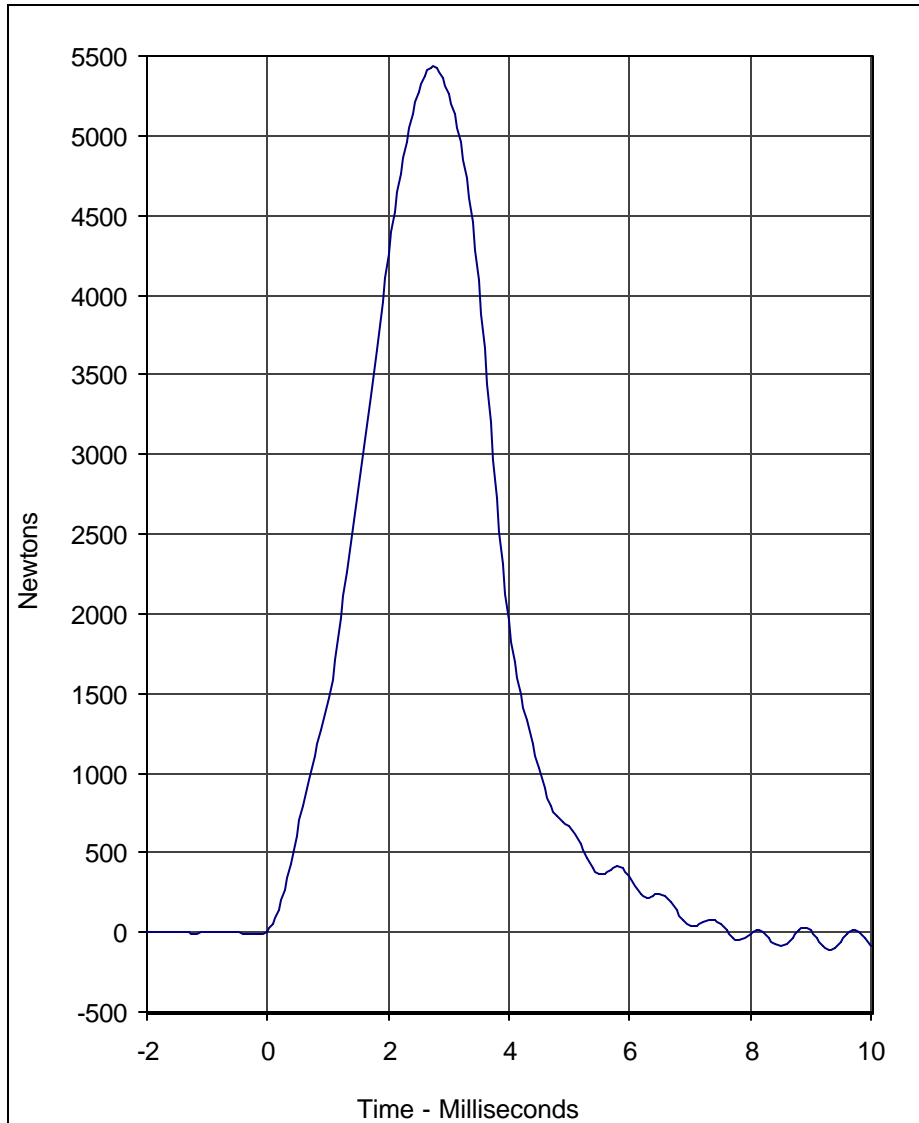
Laboratory Technician

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Curve Description	Location	Test I.D.	CURNO	Type
Probe Force	Left Knee	RK10B	001	FIL

Units	Max	Time	Min	Time	SAE Class
Newtons	5421.8	2.7	-109.3	9.3	600

Curve Description	Location	Test I.D.	CURNO	Type
Probe Force	Right Knee	RK10B	002	FIL

Units	Max	Time	Min	Time	SAE Class
Newtons	5421.8	2.7	-109.3	9.3	600

Test Program: Hybrid III 50th Percentile Male Knee Impact Test
 Test Date: 3/12/03

A.T.D. Serial No.: 035





Calibration Data Sheet Hybrid III 50th Percentile Male Head Drop Test

ATD Serial No.: 035

Test I.D.: HD05A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	255.5	Pass
Peak Lateral Acceleration	G's	≤15.0	9.2	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

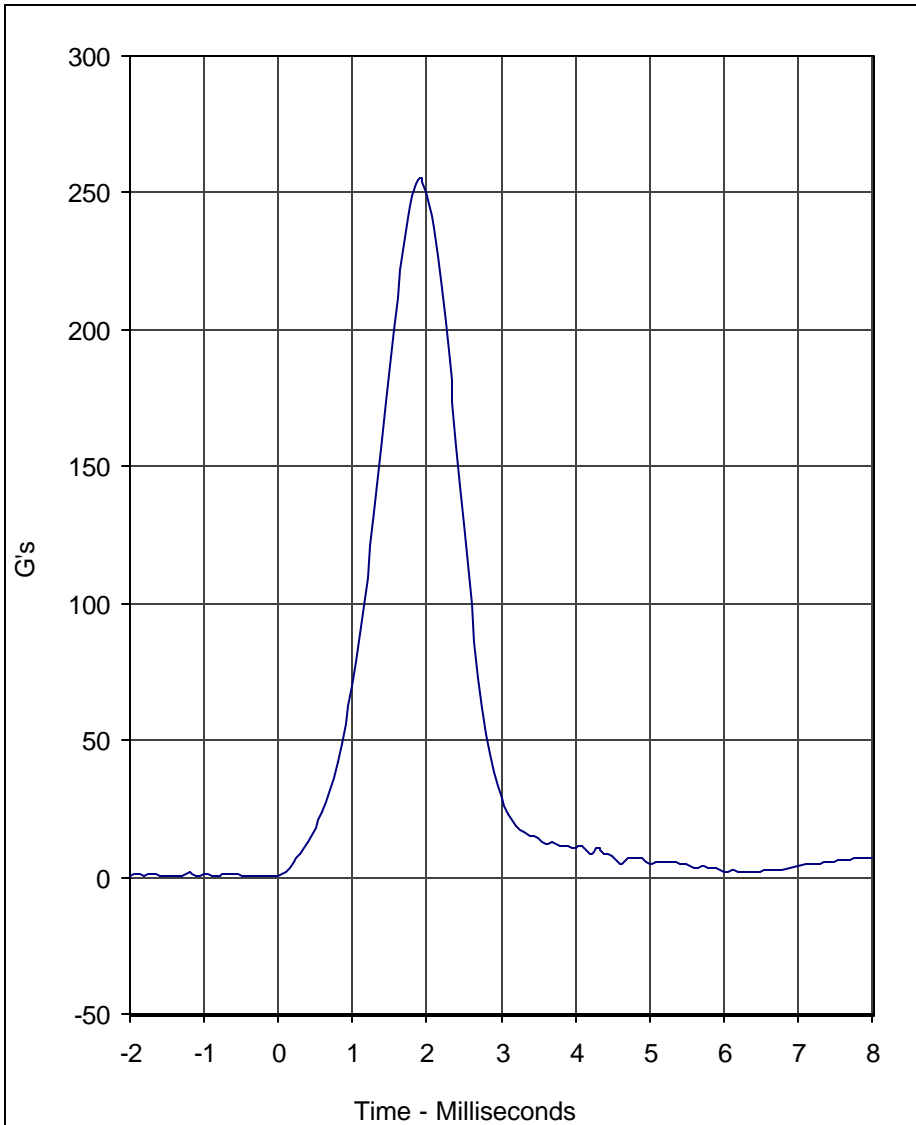
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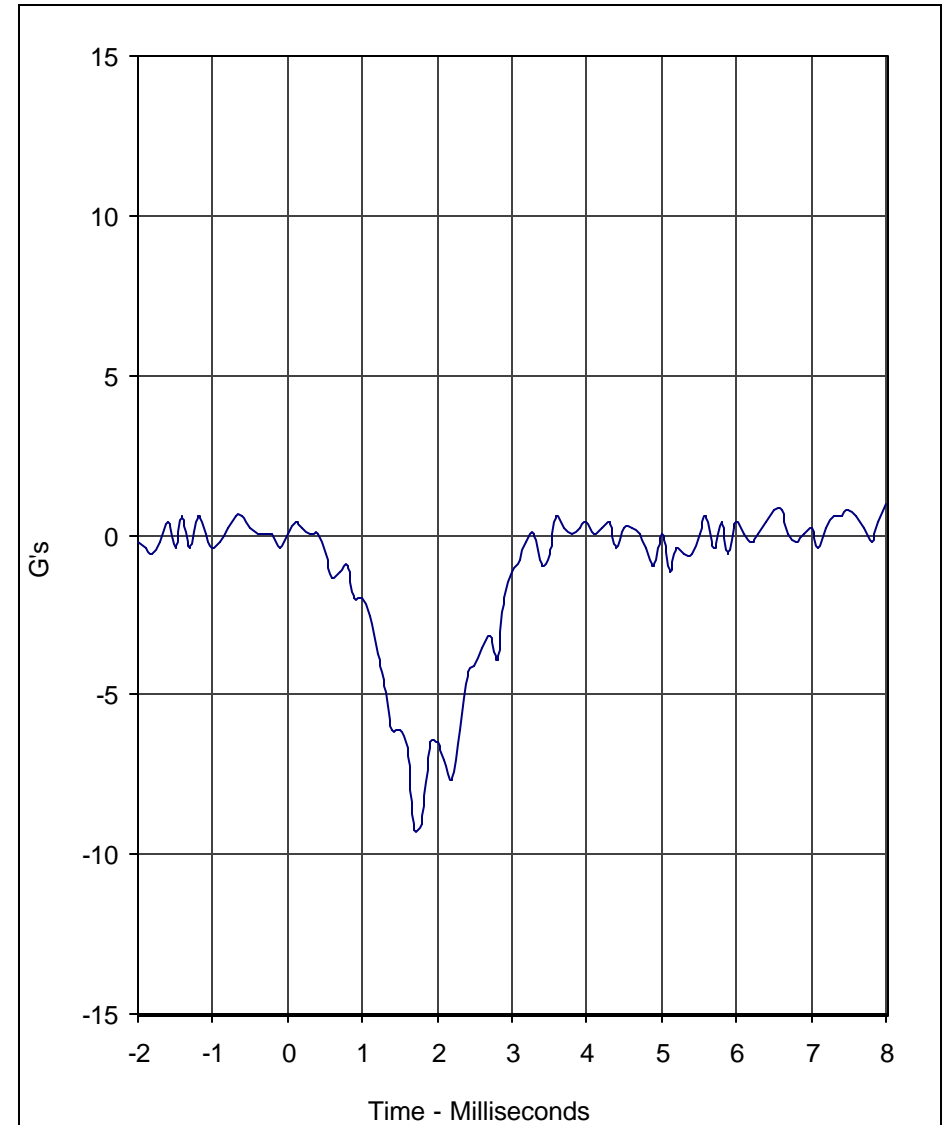
Test Date



Curve Description	CURNO	Type
Head Resultant	001	RES

Units	Max	Time	Min	Time	SAE Class
G's	255.5	1.9	0.1	-0.4	1000

Test Program: Hybrid III 50th Percentile Male Head Drop Test
 Test Date: 3/12/03



Curve Description	CURNO	Type
Head Y	002	FIL

Units	Max	Time	Min	Time	SAE Class
G's	0.6	-1.4	-9.2	1.7	1000

A.T.D. Serial No.: 035
 Test I.D.: HD05A





Calibration Data Sheet Hybrid III 50th Percentile Male Thorax Impact Test

ATD Serial No.: 035

Test I.D.: CH01H

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.64	Pass
Peak Probe Force	Newtons	5159 to 5893	5610	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.47	Pass
Internal Hysteresis	%	69 to 85	77.1	Pass
Overall Test Results				Pass

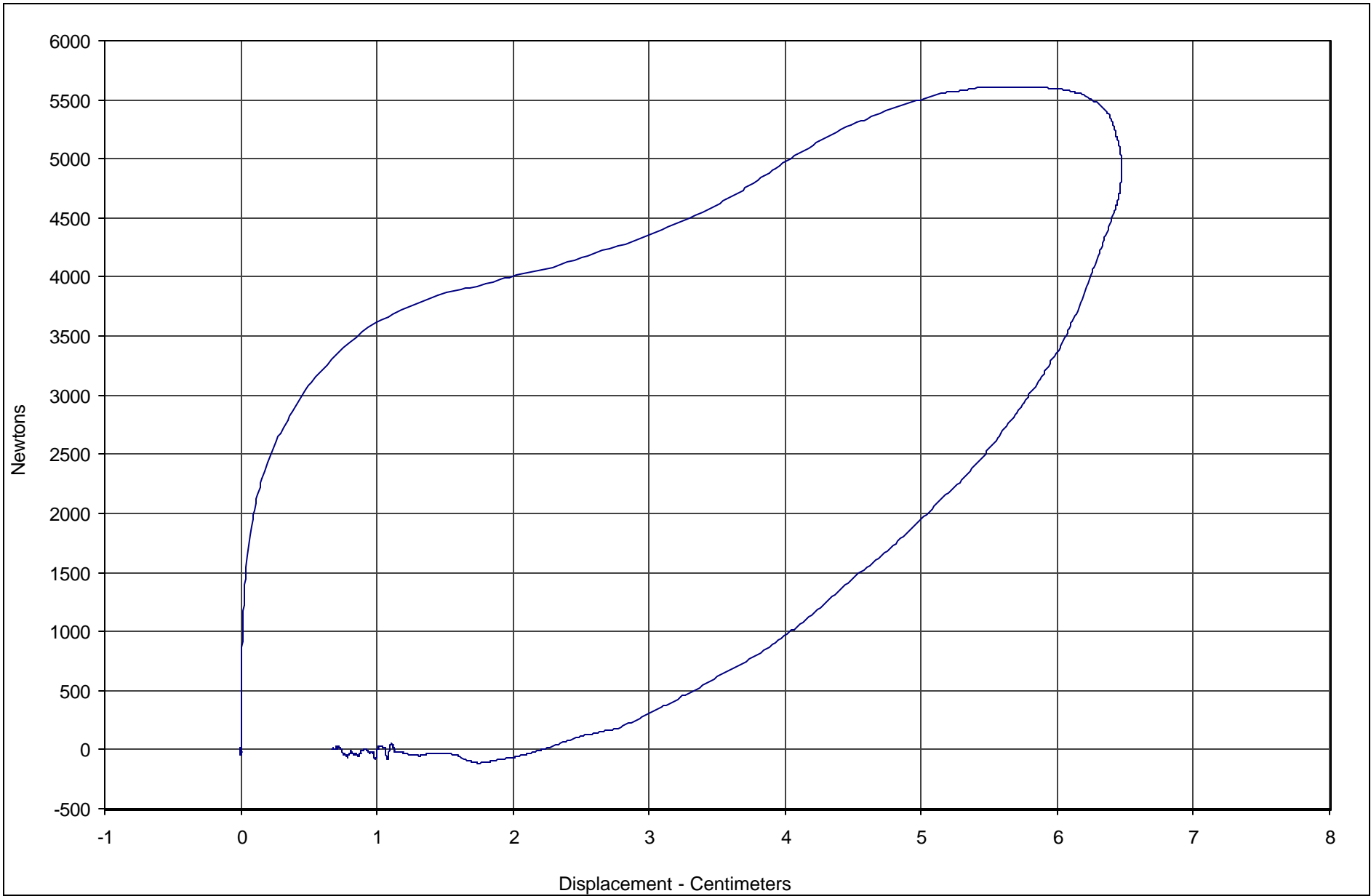
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Test Date



Curve Description	CURNO	Type	Hysteresis	Peak Chest Displ.	Peak Probe Force	SAE Class
Probe Force vs. Chest Displacement	001	FIL	77.1	6.47	5610.0	180



Test Program: Hybrid III 50th Percentile Male Thorax Impact

A.T.D. Serial No.: 035

Test Date: 3/12/03

Test I.D.: CH01H



Calibration Data Sheet Hybrid III 50th Percentile Male Neck Flexion Test

ATD Serial No.: 035

Test I.D.: NF09B

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.11	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	23.0	Pass
	20 Msec.	G's	17.6 to 22.6	20.0	Pass
	30 Msec.	G's	12.5 to 18.5	17.9	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	17.9	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	36.9	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	64.9	Pass
	Time	Msec.	57.0 to 64.0	57.4	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	113.1	Pass
Moment About Occipital Condyle	Maximum	Nm	84.1 to 108.5	88.7	Pass
	Time	Msec.	47.0 to 58.0	54.1	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	97.0	Pass
Overall Test Results					Pass

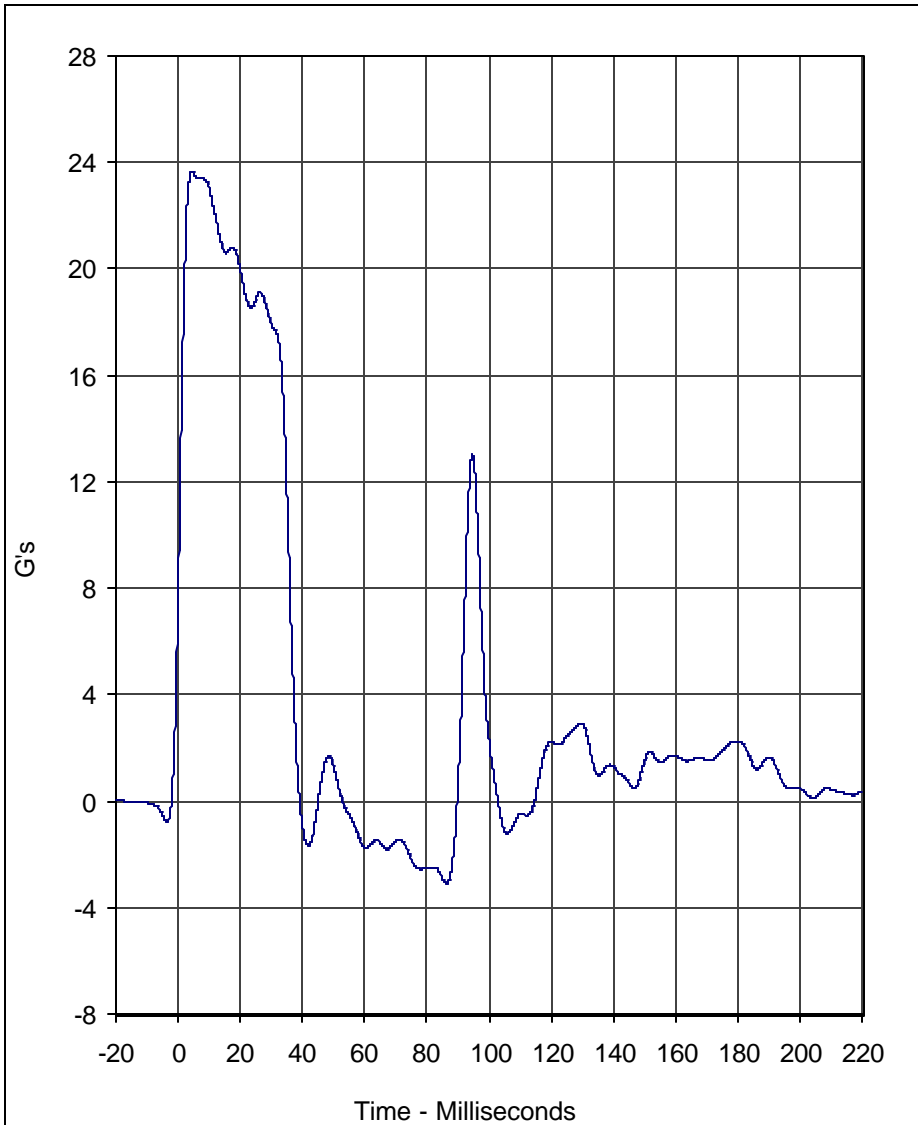
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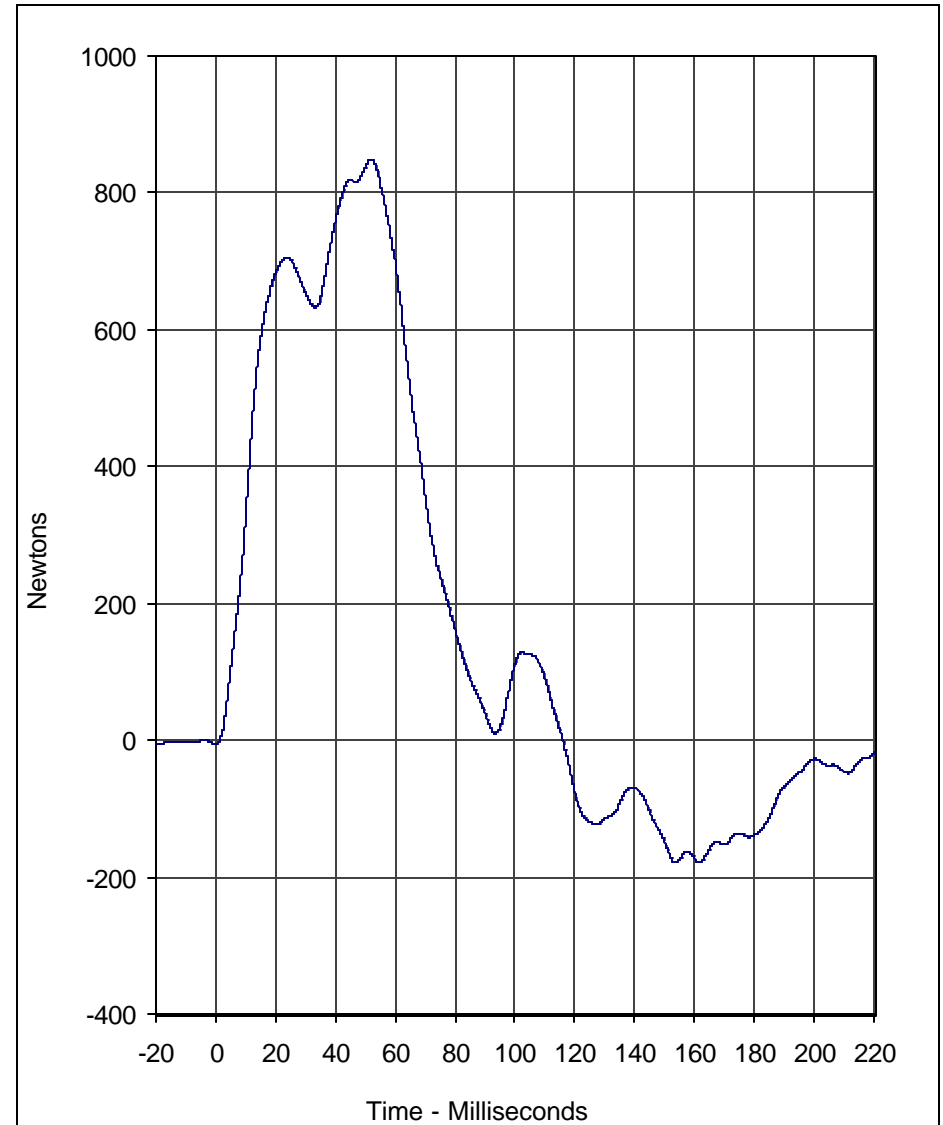
March 12, 2003

Test Date



Curve Description	CURNO	Type
Pendulum Deceleration	001	FIL

Units	Max	Time	Min	Time	SAE Class
G's	23.7	4.4	-3.1	86.4	60



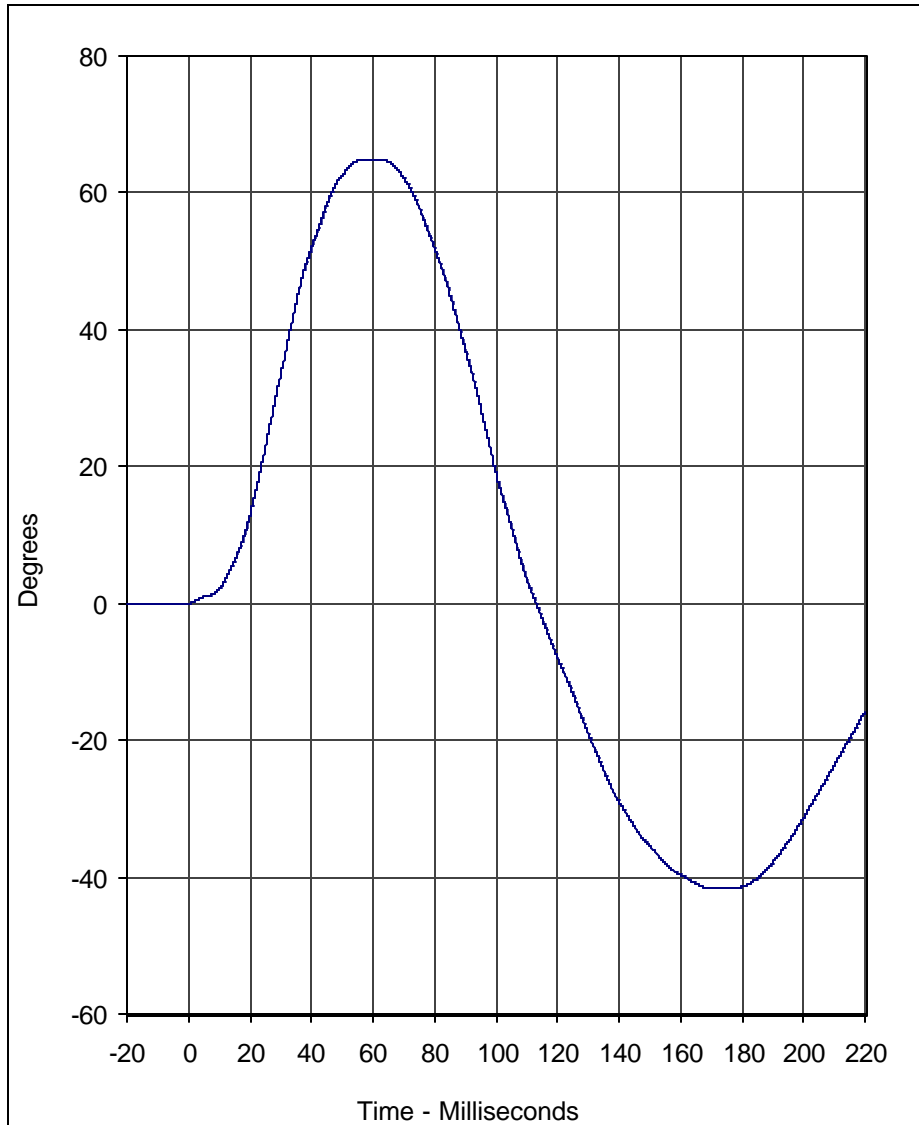
Curve Description	CURNO	Type
Neck Force X	002	FIL

Units	Max	Time	Min	Time	SAE Class
Newtons	848.9	51.9	-179.1	153.7	60

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 Test Date: 3/12/03

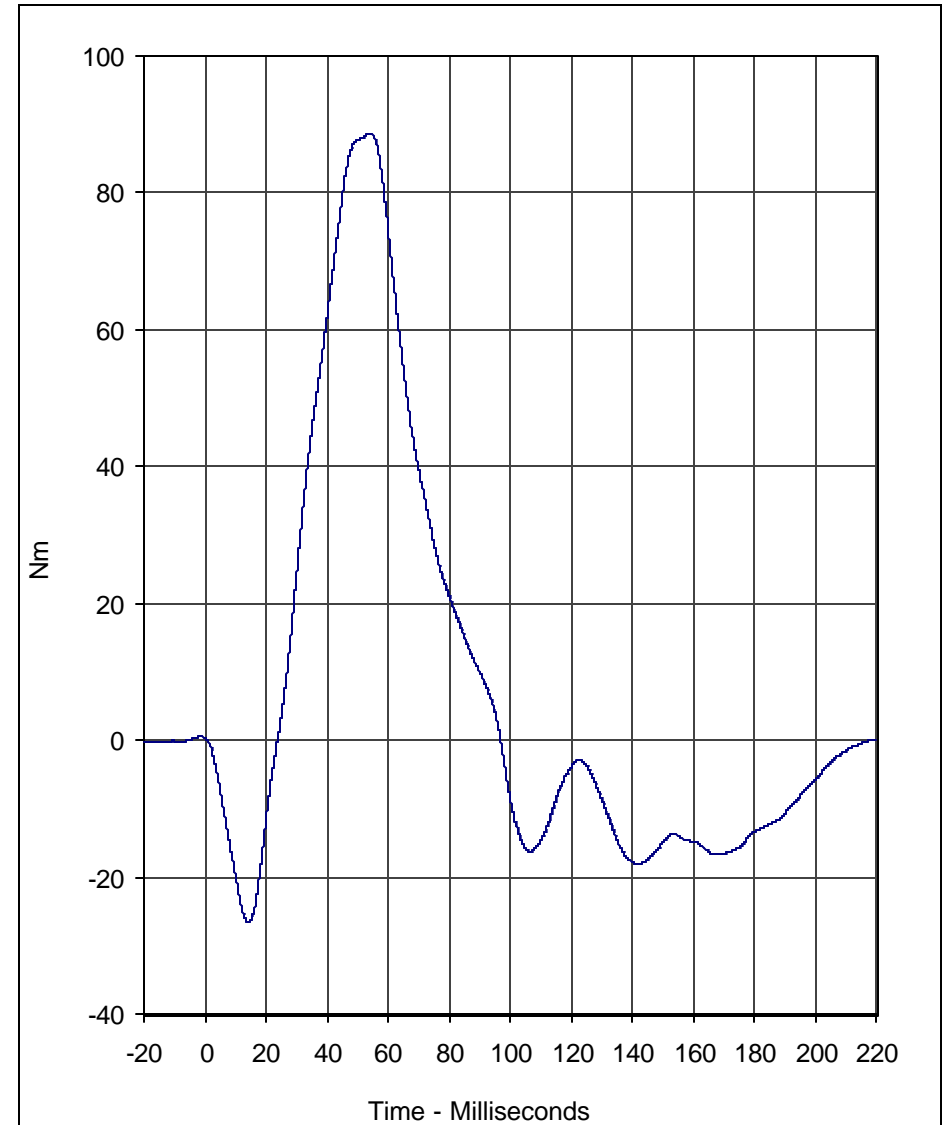
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 Test I.D.: NF09B





Curve Description	CURNO	Type
"D" Plane Rotation	003	FIL

Units	Max	Time	Min	Time	SAE Class
Degrees	64.9	57.4	-41.7	175.7	60



Curve Description	CURNO	Type
Moment About Occipital Condyle	004	FIL

Units	Max	Time	Min	Time	SAE Class
Nm	88.7	54.1	-26.6	14.2	60

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 Test Date: 3/12/03

A.T.D. Serial No.: 035
 Test I.D.: NF09B





Calibration Data Sheet Hybrid III 50th Percentile Male Neck Extension Test

ATD Serial No.: 035

Test I.D.: NE04N

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.02	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	19.4	Pass
	20 Msec.	G's	14.0 to 19.0	16.8	Pass
	30 Msec.	G's	11.0 to 16.0	15.5	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.5	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	43.9	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	96.9	Pass
	Time	Msec.	72.0 to 82.0	78.2	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	149.1	Pass
Moment About Occipital Condyle	Maximum	Nm	-52.9 to- 79.9	-74.7	Pass
	Time	Msec.	65.0 to 79.0	67.2	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	136.8	Pass
Overall Test Results					Pass

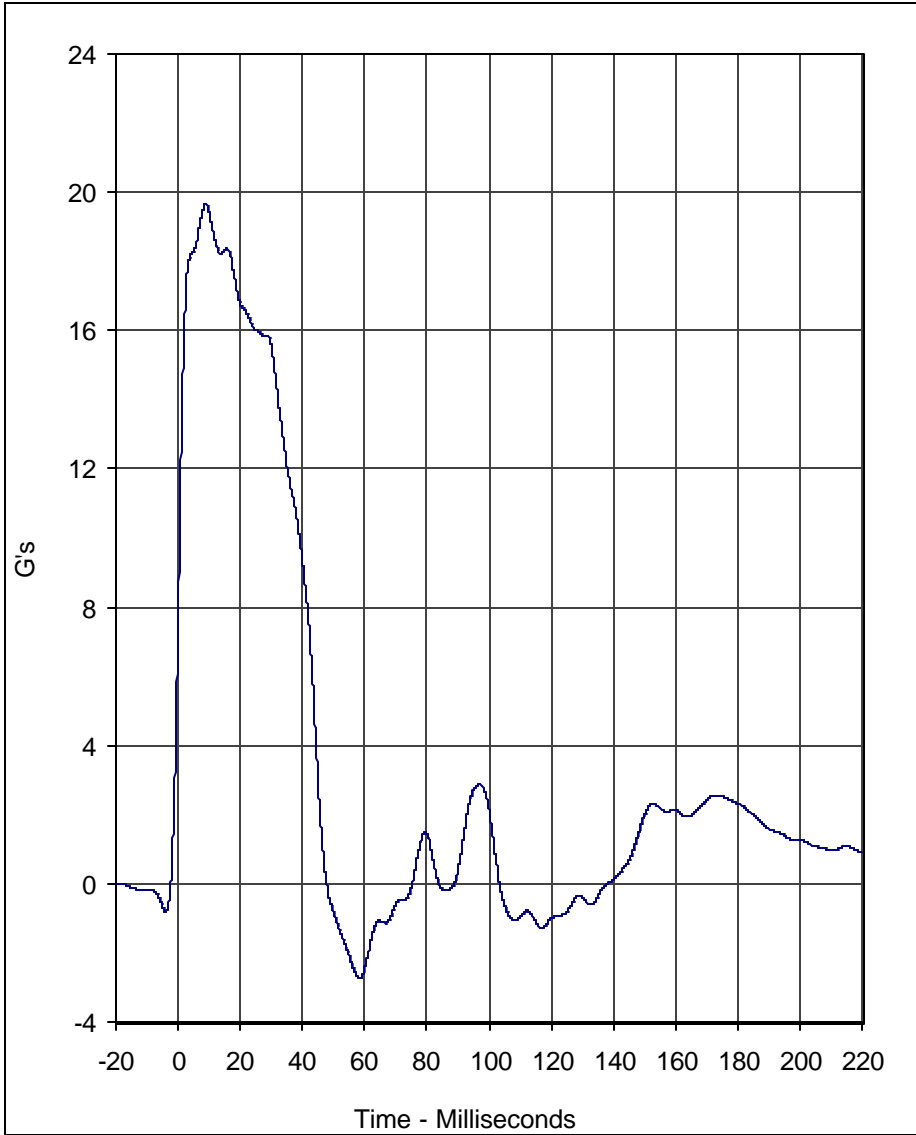
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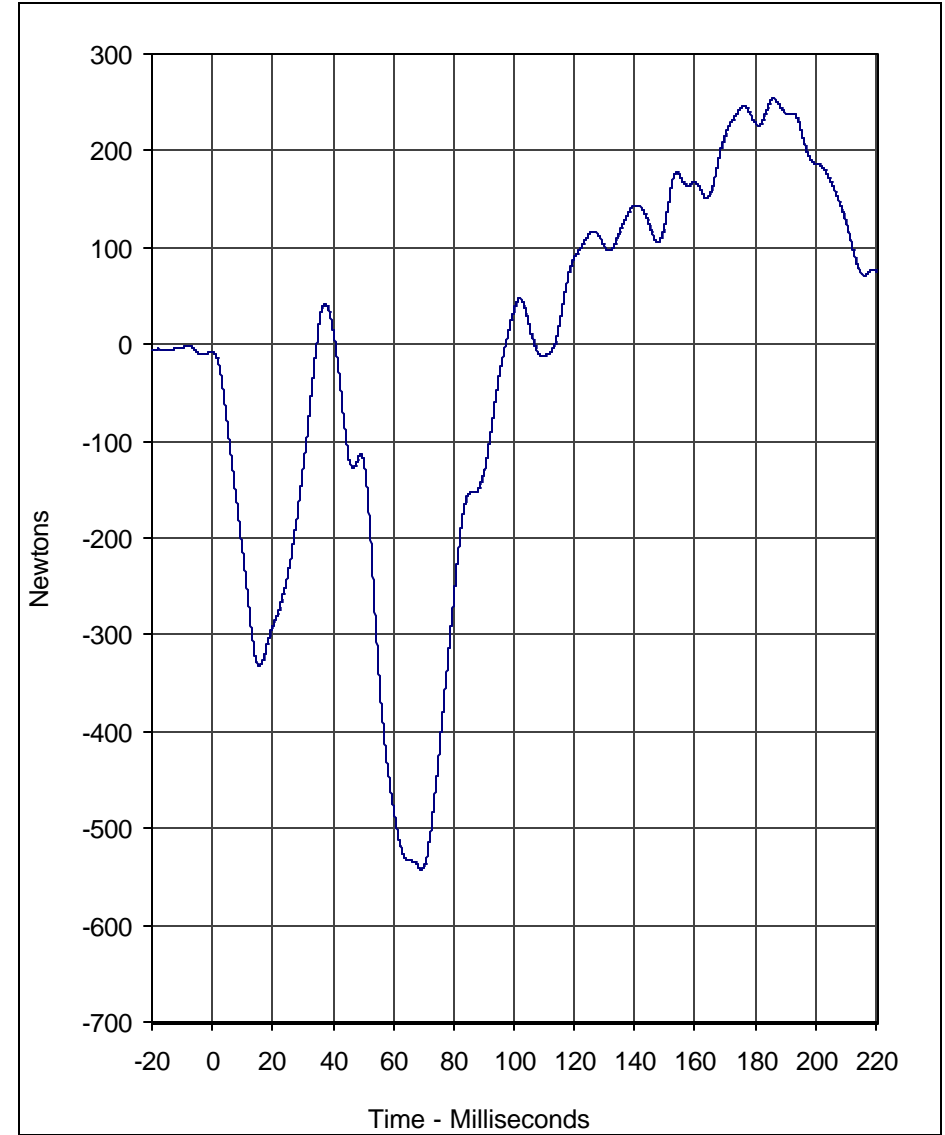
March 12, 2003

Test Date



Curve Description				CURNO	Type
Pendulum Deceleration				001	FIL

Units	Max	Time	Min	Time	SAE Class
G's	19.7	8.8	-2.7	58.3	60



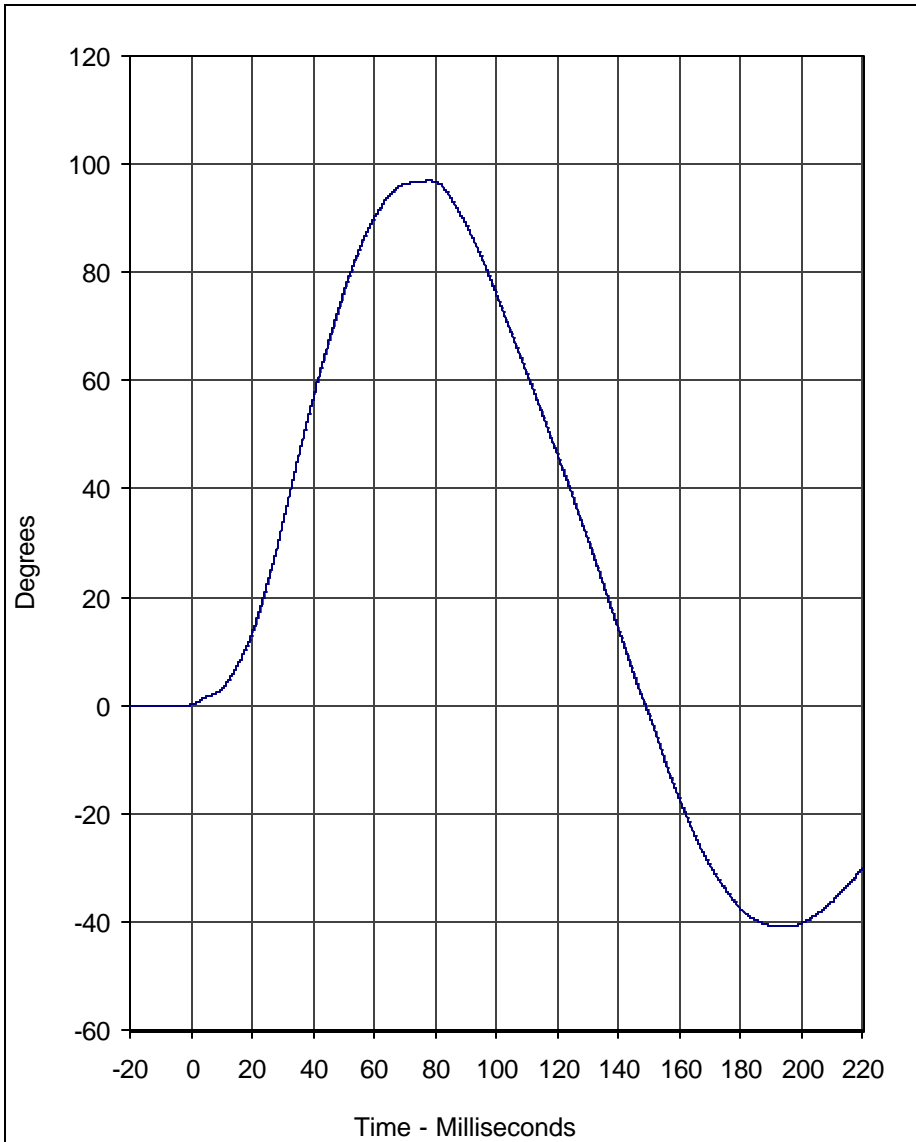
Curve Description				CURNO	Type
Neck Force X				002	FIL

Units	Max	Time	Min	Time	SAE Class
Newtons	254.2	186.0	-542.3	69.4	60

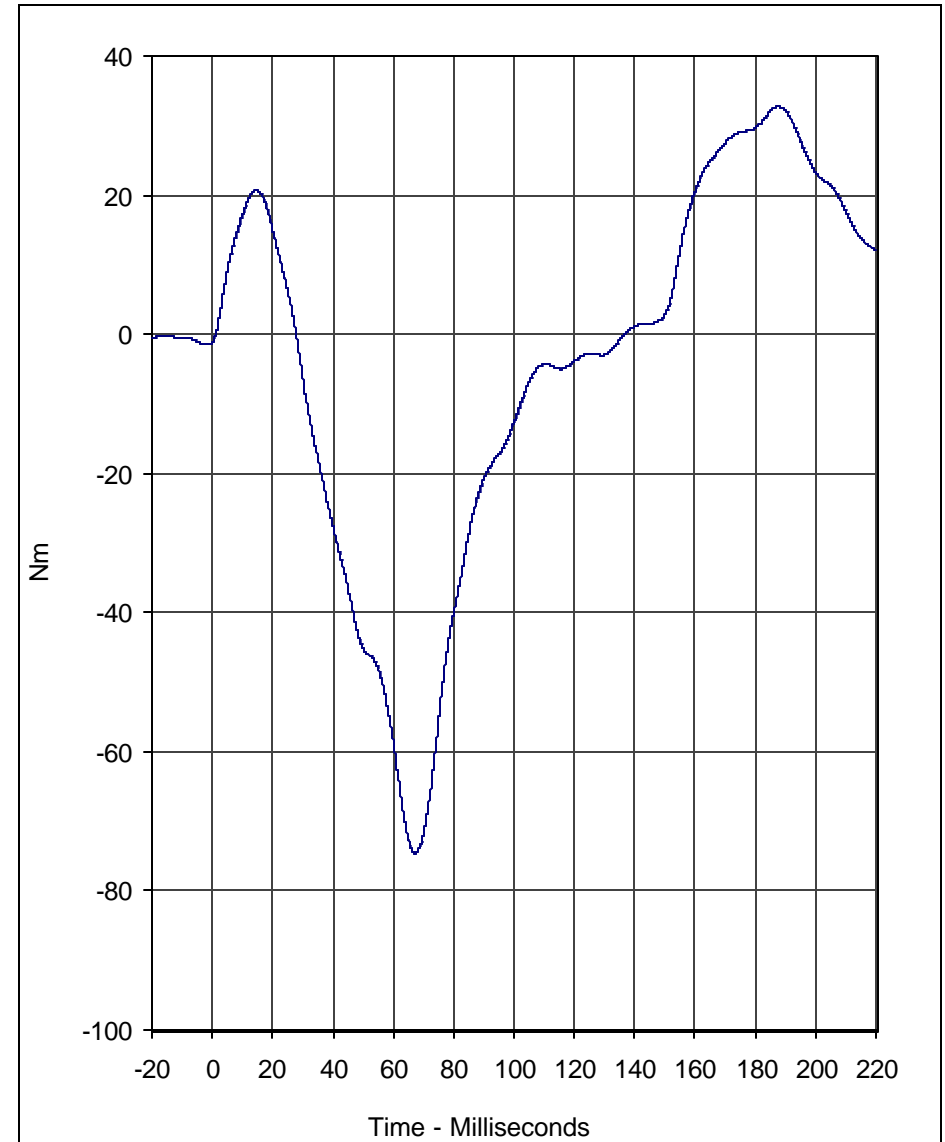
Test Program: Hybrid III 50th Percentile Male Neck Extension Test
 Test Date: 3/12/03

A.T.D. Serial No.: 035
 Test I.D.: NE04N





Curve Description				CURNO	Type
"D" Plane Rotation				003	FIL
Units	Max	Time	Min	Time	SAE Class
Degrees	96.9	78.2	-40.9	193.1	60



Curve Description				CURNO	Type
Moment About Occipital Condyle				004	FIL
Units	Max	Time	Min	Time	SAE Class
Nm	32.7	67.2	-74.7	187.7	60

Test Program: Hybrid III 50th Percentile Male Neck Extension Test
 Test Date: 3/12/03

A.T.D. Serial No.: 035
 Test I.D.: NE04N





Calibration Data Sheet Hybrid III 50th Percentile Male External Measurements

ATD Serial No.: 035

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
A - Total sitting height	mm	879 to 889	880	Pass
B - Shoulder pivot height	mm	505 to 521	520	Pass
C - "H" point height	mm	84 to 89	85	Pass
D - "H" point from seat back	mm	135 to 140	135	Pass
E - Shoulder pivot from back	mm	84 to 94	90	Pass
F - Thigh clearance	mm	140 to 155	145	Pass
G - Elbow back to wrist pivot	mm	290 to 305	300	Pass
H - Skull cap to back line	mm	41 to 46	45	Pass
I - Shoulder to elbow length	mm	330 to 345	340	Pass
J - Elbow rest height	mm	190 to 211	210	Pass
K - Buttock to knee length	mm	579 to 604	600	Pass
L - Popliteal length	mm	429 to 455	450	Pass
M - Knee pivot height	mm	485 to 500	490	Pass
N - Buttock popliteal length	mm	452 to 477	465	Pass
O - Chest depth	mm	213 to 229	225	Pass
P - Foot length	mm	251 to 267	265	Pass
V - Shoulder breadth	mm	422 to 437	430	Pass
W - Foot breadth	mm	91 to 107	100	Pass
Y - Chest circumference	mm	970 to 1001	975	Pass
Z - Waist circumference	mm	836 to 866	860	Pass
AA - Location for chest circumference	mm	429 to 434	430	Pass
BB - Location for waist circumference	mm	226 to 231	230	Pass
Overall Test Results				Pass

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March 12, 2003

Test Date

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APPENDIX F

CHILD RESTRAINT SYSYTEM

REPORT NUMBER TR-P23001-16-NC

**NEW CAR ASSESSMENT PROGRAM
FRONTAL BARRIER IMPACT TEST**

**HONDA OF CANADA
2003 ACURA MDX
SUV**

NHTSA NUMBER: M35301

**PREPARED BY:
KARCO ENGINEERING, LLC
9270 HOLLY ROAD
ADELANTO, CALIFORNIA 92301**



MARCH 13, 2003

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
RULEMAKING
OFFICE OF CRASHWORTHINESS STANDARDS
MAIL CODE: NVS-111
400 SEVENTH STREET, SW, ROOM 5311
WASHINGTON, D.C. 20590**

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Prepared by: _____ Date: March 24, 2003
Mr. James E. Gorth, Project Engineer
KARCO Engineering, LLC

Reviewed by: _____ Date: March 24, 2003
Mr. Jerry L. Kratzke, Director of Operations
KARCO Engineering, LLC

Approved by: _____ Date: March 24, 2003
Mr. Frank D. Richardson, Program Manager
KARCO Engineering, LLC

FINAL REPORT ACCEPTED BY:

Manager, New Car Assessment Program

Date of Acceptance

COTR, NCAP Frontal Impact Program

Date of Acceptance

Technical Report Documentation Page

1. Report No. TR-P23001-16-NC	2. Government Accession No.	3. Recipients Catalog No.		
4. Title and Subtitle Final Report of Evenflo Vanguard 5 Convertible Final Report of Evenflo Vanguard 5 Convertible NHTSA No. M35301	5. Report Date March 21, 2003		6. Performing Organization Code KAR	
	7. Authors Mr. James E. Gorth, Project Engineer, Karco Mr. Frank Richardson, Project Manager, Karco			
8. Performing Organization Report No. TR-P23001-16-NC		9. Performing Organization Name and Address KARCO Engineering, LLC 9270 Holly Road Adelanto, CA 92301		
10. Work Unit No.		11. Contract or Grant No. DTNH22-01-D-02005		
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Rulemaking Office of Crashworthiness Standards Mail Code: NVS-111 400 Seventh Street, SW, Room 5311 Washington, D.C 20590		13. Type of Report and Period Covered Final Test Report Option Year 2		
		14. Sponsoring Agency Code DOT/NHTSA/NRM/OCS/NVS 111		
15. Supplementary Notes				
16. Abstract A frontal test was conducted on the subject CRS's Evenflo Vanguard 5 Convertible in conjunction with frontal NCAP testing on a 2003 Acura MDX SUV. This test was conducted at Karco Engineering, LLC on March 13, 2003				
Measurement Description		Units	Left Rear	Right Rear
Head Injury Criteria (HIC) 36		N/A	611.3	599.4
Head Injury Criteria (HIC) 15		N/A	318.4	463.3
3 M sec. Chest Clip		G's	47.1	48.7
Peak Chest Displacement		mm	N/A	-13.7
17. Key Words 56.3 km/h NCAP Frontal Barrier Impact Test New Car Assessment Program (NCAP) 2003 Acura MDX SUV NHTSA No. M35301			18. Distribution Statement Copies of this report available from: NHTSA Technical Reference Division National Highway Traffic Safety Admin. 400 Seventh St., SW, Room 5108 Washington, D.C. 20590	
19. Security Classification (this report)	20. Security Classification (this page)	21. No. Pages	22. Price	
Unclassified	Unclassified	128		

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SECTION F-1

PURPOSE AND SUMMARY OF TEST M35301

The purpose of this test is to obtain CRS performance data during an NCAP (35mph) frontal impact test.

The 55.62 km/h NCAP frontal impact test was conducted in accordance with the Office of Crashworthiness Standards (OCS) NCAP Laboratory Test Procedure.

SUMMARY

The three year old child dummy and the CRABI were instrumented with head, chest, and pelvic triaxial accelerometers. In addition, chest displacement and upper and lower six axial neck force and moment load cell sensors were utilized. Triaxial accelerometers were installed on the CRS and a load cell on the upper tether.

The right rear (Position 3) child dummy (Serial No. 082) and the left rear (Position 4) CRABI dummy (Serial No. 090) were calibrated prior to this test. Child dummy certification information is found in Section F-5.

CHILD DUMMY VALUES

	HIC36 Values	HIC15 Values	3 Msec Chest Clip	Peak Chest Disp.
Left Rear Child	611.3	318.4	47.1	N/A
Right Rear Child	599.4	463.3	48.7	-13.7

SECTION F-1

DATA SHEET NO.1.....CRASH TEST SUMMARY

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03

TEST DUMMY INFORMATION

Description	Position #3 CRS	Position # 4 CRS
Manufacturer	Evenflo	Evenflo
Model Name	Vanguard 5	Vanguard 5
Serial No.	3691261 P1	3691261 P1
Type	Convertible	Convertible
Forward/Rearward	Forward	Rearward

VISIBLE DUMMY CONTACT POINTS

Description	Position #3 CRS	Position # 4 CRS
Head Contact	CRS, Headrest, Retaining Clip	Retaining clip to chin
Chest Contact	Harness	Harness
Abdomen Contact	Harness	Harness
Left Knee Contact	None	None
Right Knee Contact	None	None
Left Toe contact	None	None
Right Toe Contact	None	None

POST TEST DOOR OPENING

Description	Front	Rear
Left Side Doors	Remained closed, opened w/o tools	Remained closed, opened w/o tools
Right Side Doors	Remained closed, opened w/o tools	Remained closed, opened w/o tools
Hatch/Other Door	None	None

POST TEST SEAT DATA

Location	Seat Movement (mm)	Seat Back Failure
Left Front	None	None
Right Front	None	None
Left Rear	None	None
Right Rear	None	None

CAMERA COVERAGE

High Speed	4
Real Time	0
Total	4

SECTION F-1

DATA SHEET NO. 2.....CRS PARAMETER DATA

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03

TEST VEHICLE WEIGHTS

	Units	As Delivered			As Tested		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	585	450		623	506	
Right	kg	568	428		609	489	
Ratio	%	56.8	43.2		55.3	44.7	
Totals	kg	1153	878	2031	1232	995	2227

TARGET TEST WEIGHT CALCULATION

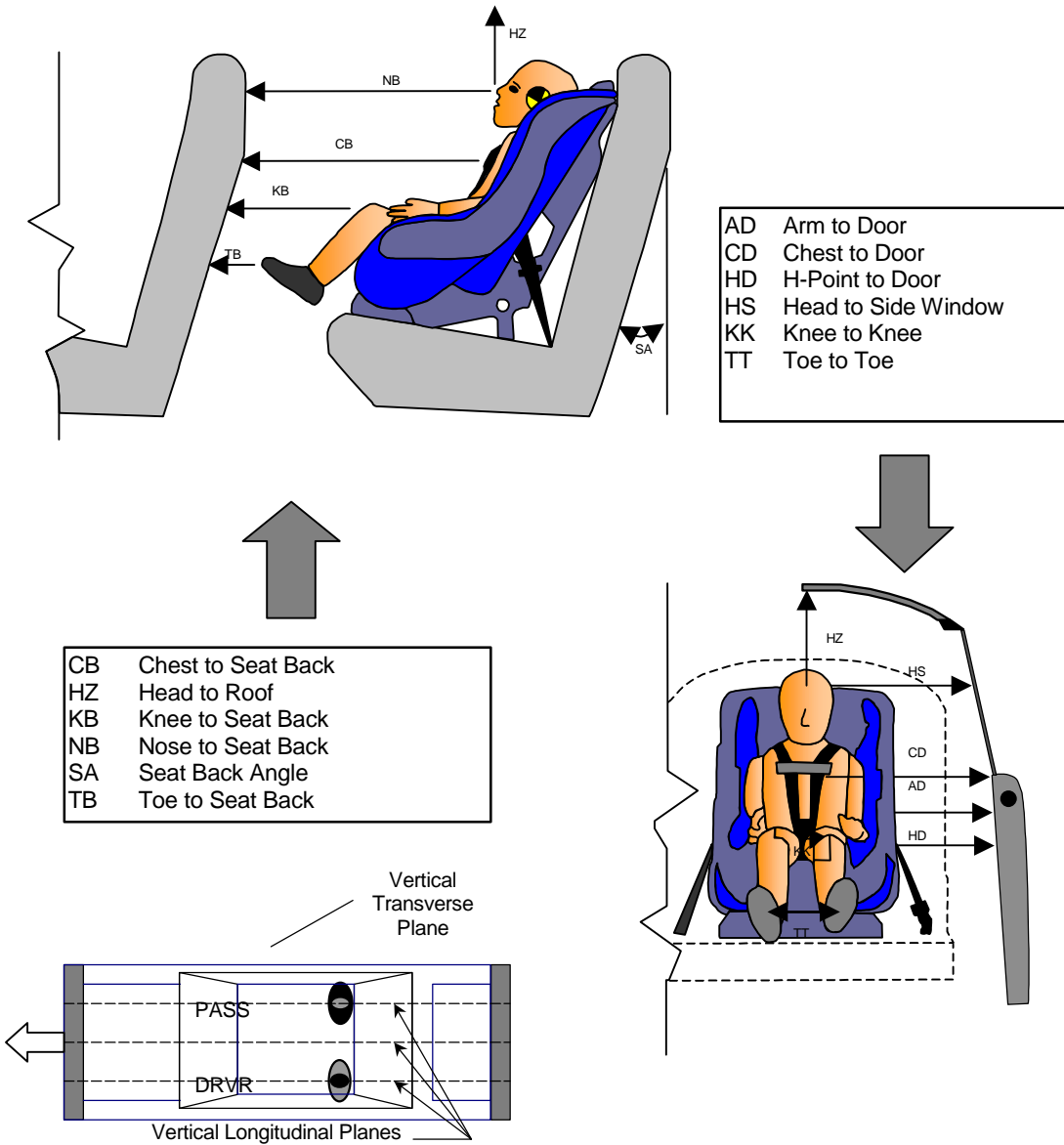
Measured Parameter	Units	Value
Total Delivered Weight (<i>UVW</i>)	kg	2031
Weight of 2 P572 ATD's	kg	152
Rated Cargo/Luggage Weight (<i>RCLW</i>)	kg	49
Calculated Vehicle Target Weight (<i>TVTW</i>)	kg	2232

SECTION F-1

DATA SHEET NO. 3CHILD DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03



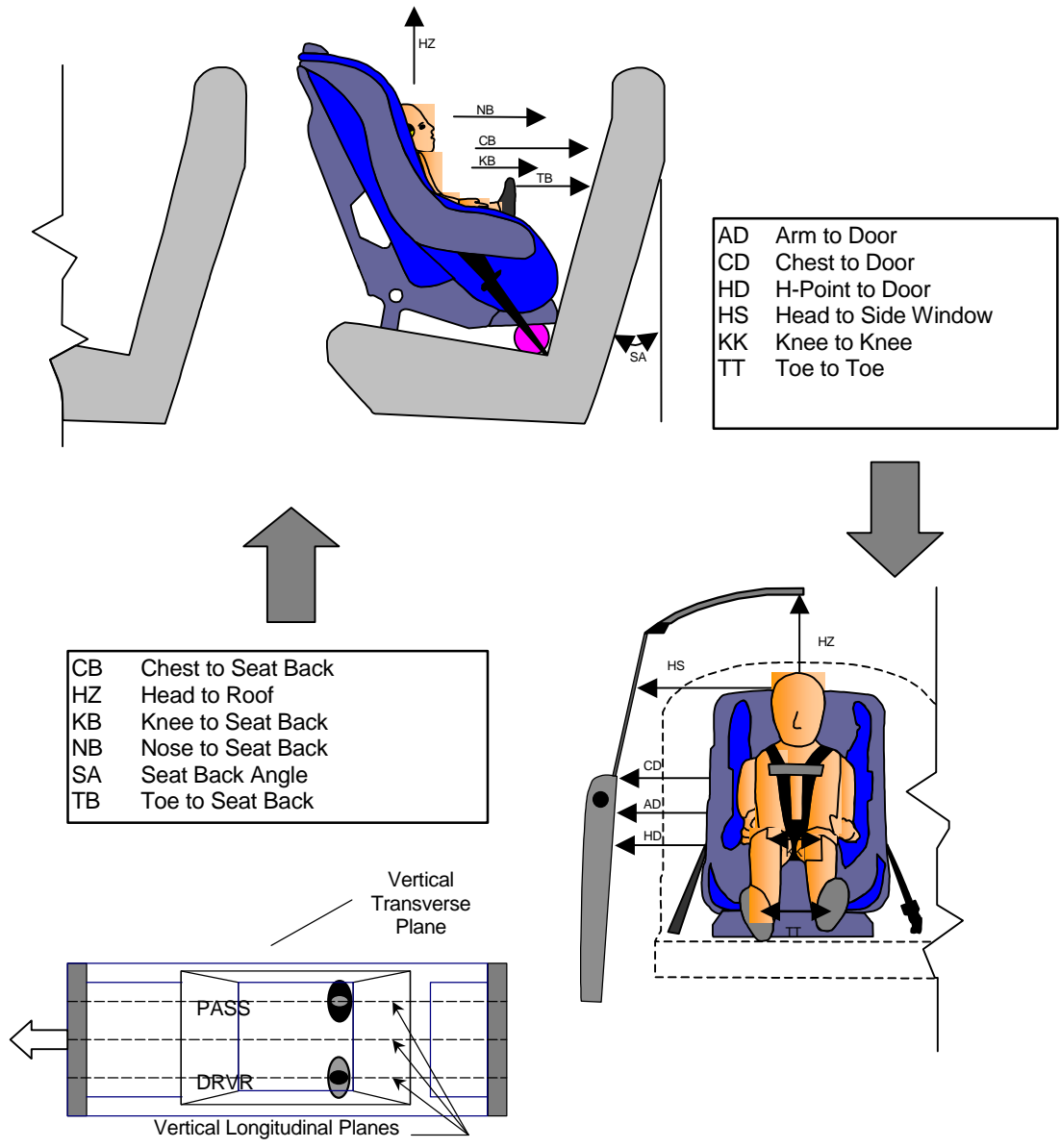
DUMMY MEASUREMENTS FOR REAR SEAT OCCUPANTS

SECTION F-1

DATA SHEET NO. 3CHILD DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03



DUMMY MEASUREMENTS FOR REAR SEAT OCCUPANTS

SECTION F-1

DATA SHEET NO. 3CHILD DUMMY POSITIONING IN VEHICLE...(continued)

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03

CHILD DUMMY POSITION MEASUREMENTS

Code	Measurement	P3 CRS (082)		P4 CRS (090)	
		Pre-Test	Post-test	Pre-Test	Post-test
SA	Seat Back Angle	28	28	28	28
HZ	Head to Roof (Z)	405	385	435	425
CD	Chest to Dash	380	380	380	375
KK	Knee to Knee (Y)	235	295	255	245
HS	Head to Side Window	300	295	295	300
HD	H-Point to Door (Y)	375	368	425	410
AD	Arm to Door (Y)	612	712	490	500
NB	Nose to Seat Back	560	690	415	428
CB	Chest to Seat Back	170	185	155	130
FF	Foot to Foot	190	200	120	100
KB-LEFT	Knee to Seat Back	415	473	205	220
KB-RIGHT	Knee to Seat Back	415	473	210	215
TB-LEFT	Toe to Seat Back	90	200	100	133
TB-RIGHT	Toe to Seat Back	95	180	95	130

DATA SHEET NO. 4 - 3 YEAR OLD HYBRID III ATD INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2003 Acura MDX SUV

NHTSA No.: M35301

Test Program: 2003 NHTSA 35mph NCAP

Test Date: 3/13/03

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Right Rear (3 Yr.)				Left Rear (CRABI)			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	130.1	185.5	-27.7	117.5	48.1	78.2	-6.7	299.5
Head CG	Y	G's	8.8	116.5	-14.9	186.2	2.3	77.8	-6.4	69.5
Head CG	Z	G's	57.8	91.6	-12.3	48.1	45.5	60.3	-7.2	101.0
Head CG Resultant	N/A	G's	136.7	185.5			55.9	60.3		

PRIMARY HEAD INJURY CRITERAS (HIC)

Location	Right Rear (3 Yr.)				Left Rear (CRABI)			
	HIC	T ¹	T ²	Avg G	HIC	T ¹	T ²	Avg G
Head CG Primary (HIC36)	599.4	71.3	107.3	48.8	611.3	53.7	89.7	49.2
Head CG Primary (HIC15)	463.3	182.4	187.2	97.8	318.4	54.9	69.9	53.8

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Right Rear (3 Yr.)				Left Rear (CRABI)			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	9.2	233.7	-37.7	85.3	43.3	78.6	-7.4	239.8
Chest CG	Y	G's	2.4	174.1	-3.7	83.8	3.3	78.4	-4.6	60.5
Chest CG	Z	G's	18.5	188.0	-36.4	66.8	33.9	55.3	-6.2	96.9
Chest CG Resultant	N/A	G's	51.3	66.2			48.2	55.3		

PRIMARY CHEST CLIP (3MSEC)

Location	Right Rear (3 Yr.)			Left Rear (CRABI)		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Primary	48.7	64.8	67.8	47.1	53.8	56.8

CHEST PEAK DISPLACEMENTS

Location	Axis	Units	Right Rear (3 Yr.)				Left Rear (CRABI)			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	MM	0.0	29.5	-13.7	108.2				

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Right Rear (3 Yr.)				Left Rear (CRABI)			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	6.9	162.9	-52.9	73.1	34.2	59.6	-10.7	169.9
Pelvis	Y	G's	5.5	82.6	-5.9	75.0	9.3	78.9	-3.6	185.2
Pelvis	Z	G's	23.1	187.6	-33.0	60.1	48.7	55.9	-5.2	167.2
Pelvis Resultant	N/A	G's	57.4	73.1			57.1	57.3		

DATA SHEET NO. 4...(continued)

Test Vehicle: 2003 Acura MDX SUV

NHTSA No.: M35301

Test Program: 2003 NHTSA 35mph NCAP

Test Date: 3/13/03

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Right Rear (3 Yr.)				Left Rear (CRABI)			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	53.4	260.7	-627.3	117.7	129.2	96.7	-248.2	61.9
Neck Force	Y	Newtons	40.7	125.1	-52.9	77.8	20.9	111.3	-28.3	83.0
Neck Force	Z	Newtons	1795.9	88.8	-343.6	47.1	1282.5	61.4	-91.3	108.2
Neck Force Resultant	N/A	Newtons	1857.7	88.8			1306.2	61.4		
Neck Moment	X	Nm	3.9	128.3	-3.9	181.9	1.3	83.4	-1.1	175.8
Neck Moment	Y	Nm	4.9	154.9	-10.8	61.7	7.5	97.6	-9.5	61.3
Neck Moment	Z	Nm	1.3	61.4	-1.6	96.0	1.0	291.0	-0.9	210.9
Neck Moment Resultant	N/A	Nm	10.9	61.6			9.6	61.3		

LOWER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Right Rear (3 Yr.)				Left Rear (CRABI)			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	196.5	185.1	-700.1	92.3				
Neck Force	Y	Newtons	84.1	61.7	-104.3	88.7				
Neck Force	Z	Newtons	1331.2	90.2	-429.4	46.9				
Neck Force Resultant	N/A	Newtons	1497.0	91.7						
Neck Moment	X	Nm	5.8	140.7	-8.2	84.7				
Neck Moment	Y	Nm	89.0	86.3	-12.4	185.0				
Neck Moment	Z	Nm	3.8	139.2	-11.7	84.8				
Neck Moment Resultant	N/A	Nm	90.0	86.3						

CHILD SEAT TETHER BELT SENSOR PEAK VALUES

Location	Axis	Units	Right Rear (3 Yr.)				Left Rear (CRABI)			
			Max	Time	Min	Time	Max	Time	Min	Time
Tether Belt Force	N/A	Newtons	333.9	75.7	-45.6	202.1	0.0	0.0	0.0	0.0

1.) Not installed

CHILD SEAT ACCELEROMETER PEAK VALUES

Location	Axis	Units	Right Rear (3 Yr.)				Left Rear (CRABI)			
			Max	Time	Min	Time	Max	Time	Min	Time
Child Seat	X	G's	13.7	212.5	-57.4	58.7	5.8	192.6	-46.2	48.0
Child Seat	Y	G's	4.3	236.3	-5.4	73.0	22.5	72.3	-17.5	67.4
Child Seat	Z	G's	21.7	62.0	-21.2	46.8	0.0	0.0	0.0	0.0
Child Seat Resultant	N/A	G's	59.6	58.8			46.2	48.0		

1.) Left rear passenger channel failed, no data

SECTION F-1

DATA SHEET NO. 5.....CRS PERFORMANCE DATA

Test Vehicle: 2003 Acura MDX SUV
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301
 Test Date: 3/13/03

Location	Serial # Position # 3		Serial # Position # 4	
	Damage	Remarks	Damage	Remarks
Upper Tether Strap	No	None	No	None
Upper Tether Buckle	No	None	No	None
Upper Tether Hook	No	None	No	None
Veh. Upper Tether Anchor	No	None	No	None
Lower Anchor Strap	No	None	No	None
Lower Anchor Buckle	No	None	No	None
Lower Anchor Hooks	No	None	No	None
Veh. Lower CRS Anchors	No	None	No	None
5 Point Harness Connections	No	None	No	None
Cracks on CRS	No	None	No	None
Fabric Tears on CRS	No	None	No	None
Vehicle Seat Structure	No	None	No	None
Vehicle Seat Fabric Tears	No	None	Yes	Bottom Seat Cushion
Child Dummy	No	None	No	None

SECTION F-1

DATA SHEET NO. 6.....CRS CAMERA DATA

Test Vehicle: 2003 Acura MDX SUV

NHTSA No.: M35301

Test Program: 2003 NHTSA 35mph NCAP

Test Date: 3/13/03

No.	Camera View	Location (mm)			Angle (Deg.)	Film Plane to Head	Lens (mm)	Speed (fps)
		X	Y	Z				
1	Driver Side Child	2642	8230	2286	15	7857	35	No Time
2	Driver Side Child	2642	6096	1524	1	5653	25	500
3	Passenger Side Child	2438	-9144	2032	10	8763	25	No Time
4	Passenger Side Child	2743	-8331	1524	1	7896	25	DNR

X - Barrier Face Y - Monorail Centerline Z - Ground DNR = Did Not Run

SECTION F-2

PHOTOGRAPHS

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20	Pre-Test Rear View of Position 4 CRS	F2-20
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26	Pre-Test position 4 Front View	F2-26
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29	Post-Test Position 4 Left Side View	F2-29
30	Pre-Test Position 4 Right Side View	F2-30
31	Post-Test Position 4 Right Side View	F2-31
32	Post-Test Position 4 Contact Point (Front of Left Rear Seat)	F2-32



Figure F2-1: Close-up View Position 3 CRS Label



Figure F2-2: Pre-Test Frontal View of Position 3 CRS



Figure F2-3: Post-Test Frontal View of Position 3 CRS



Figure F2-4: Pre-Test Rear View of Position 3 CRS



Figure F2-5: Post-Test Rear View of Position 3 CRS



Figure F2-6: Pre-Test Left Side View of Position 3 CRS



Figure F2-7: Post-Test Left Side View of Position 3 CRS



Figure F2-8: Pre-Test Right Side View of Position 3 CRS



Figure F2-9: Post-Test Right Side View of Position 3 CRS



Figure F2-10: Pre-Test Position 3 Front View



Figure F2-11: Post-Test Position 3 Front View



Figure F2-12: Pre-Test Position 3 Left Side View



Figure F2-13: Post-Test Position 3 Left Side View



Figure F2-14: Pre-Test Position 3 Right Side View



Figure F2-15: Post-Test Position 3 Right Side View



Figure F2-16: Post-Test Position 3 Contact Point (Back of Right Front Seat)

S PRODUCT AFTER DECEMBER

Manufactured in 22NOV02

Model # 3691261 P1



Figure F2-17: Close-up View Position 4 CRS Label



Figure F2-18: Pre-Test Frontal View of Position 4 CRS



Figure F2-19: Post-Test Front View of Position 4 CRS



Figure F2-20: Pre-Test Rear View of Position 4 CRS



Figure F2-21: Post-Test Rear View of Position 4 CRS



Figure F2-22: Pre-Test Left Side View of Position 4 CRS



Figure F2-23: Post-Test Left Side View of Position 4 CRS



Figure F2-24: Pre-Test Right Side View of Position 4 CRS



Figure F2-26: Pre-Test Position 4 Front View



Figure F2-27: Post-Test Position 4 Front View



Figure F2-28: Pre-Test Position 4 Left Side View



Figure F2-29: Post-Test Position 4 Left Side View



Figure F2-30: Pre-Test Position 4 Right Side View



Figure F2-31: Post-Test Position 4 Right Side View



Figure F2-32: Post-Test Position 4 Contact Point (Front of Left Rear Seat)

SECTION F-3

CHILD DUMMY RESPONSE AND CRS DATA TRACES

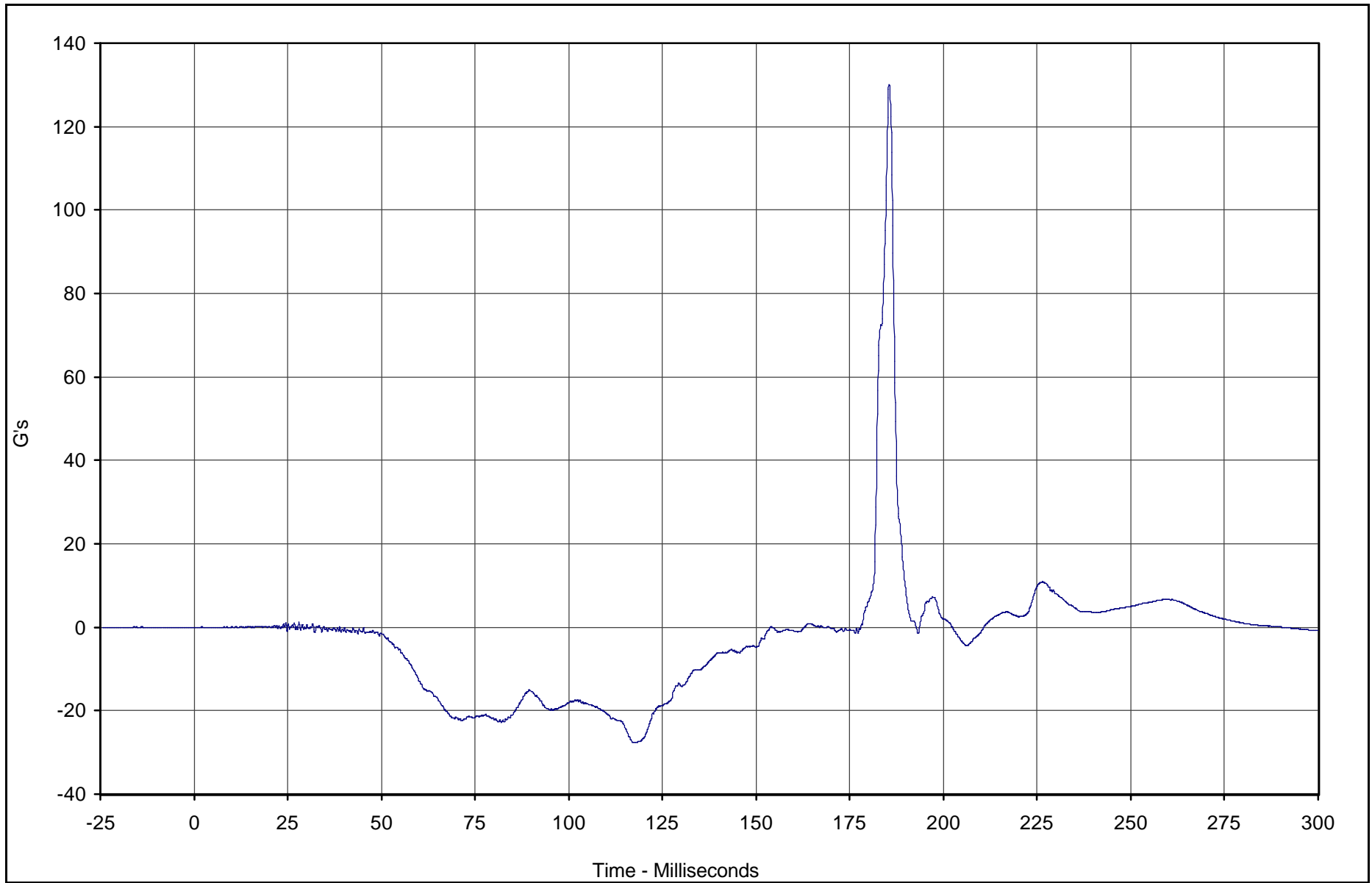
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F3-1



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Head X	134	FIL	G's	130.1	185.5	-27.7	117.5	1000



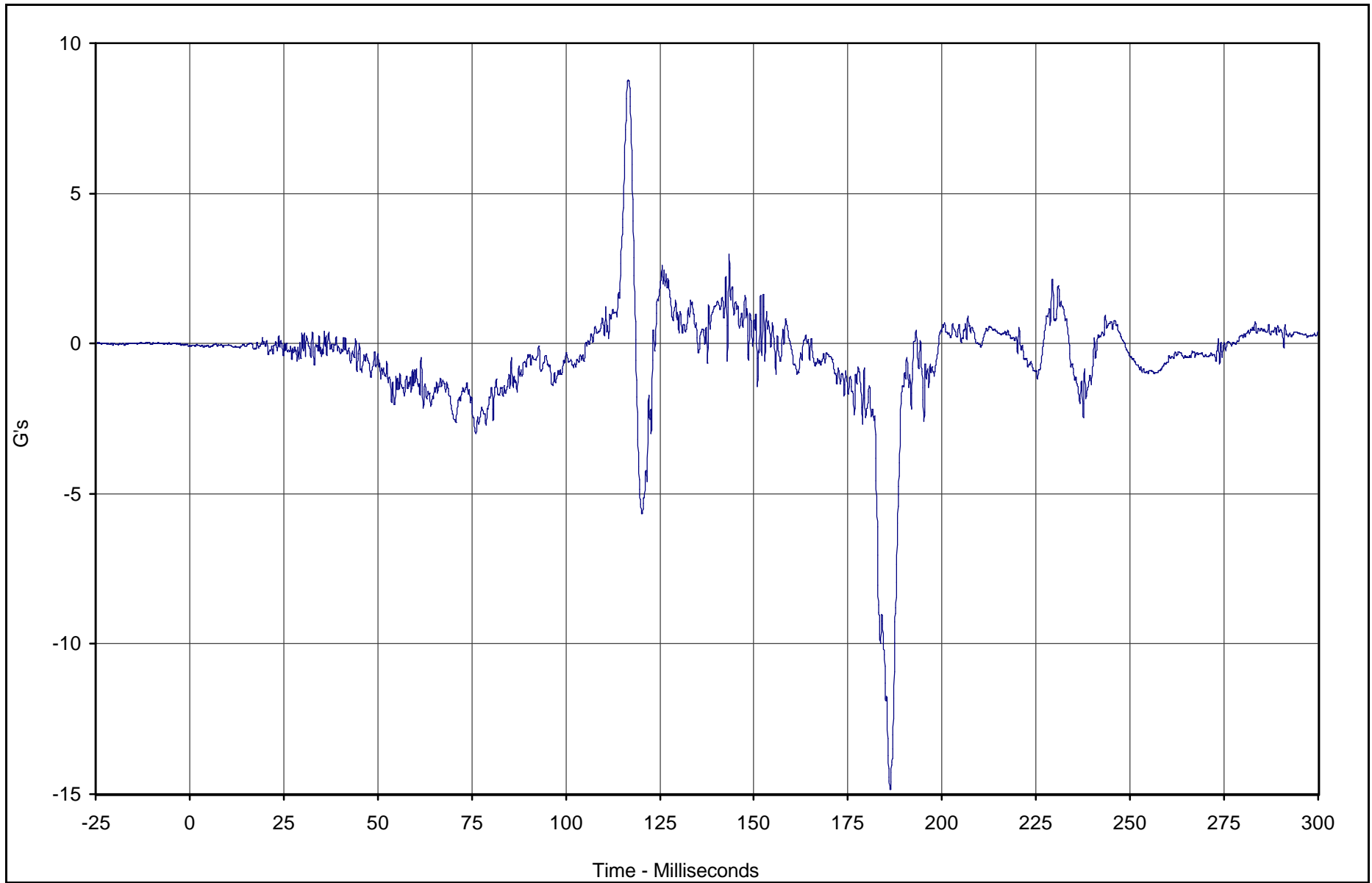
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Head Y	135	FIL	G's	8.8	116.5	-14.9	186.2	1000



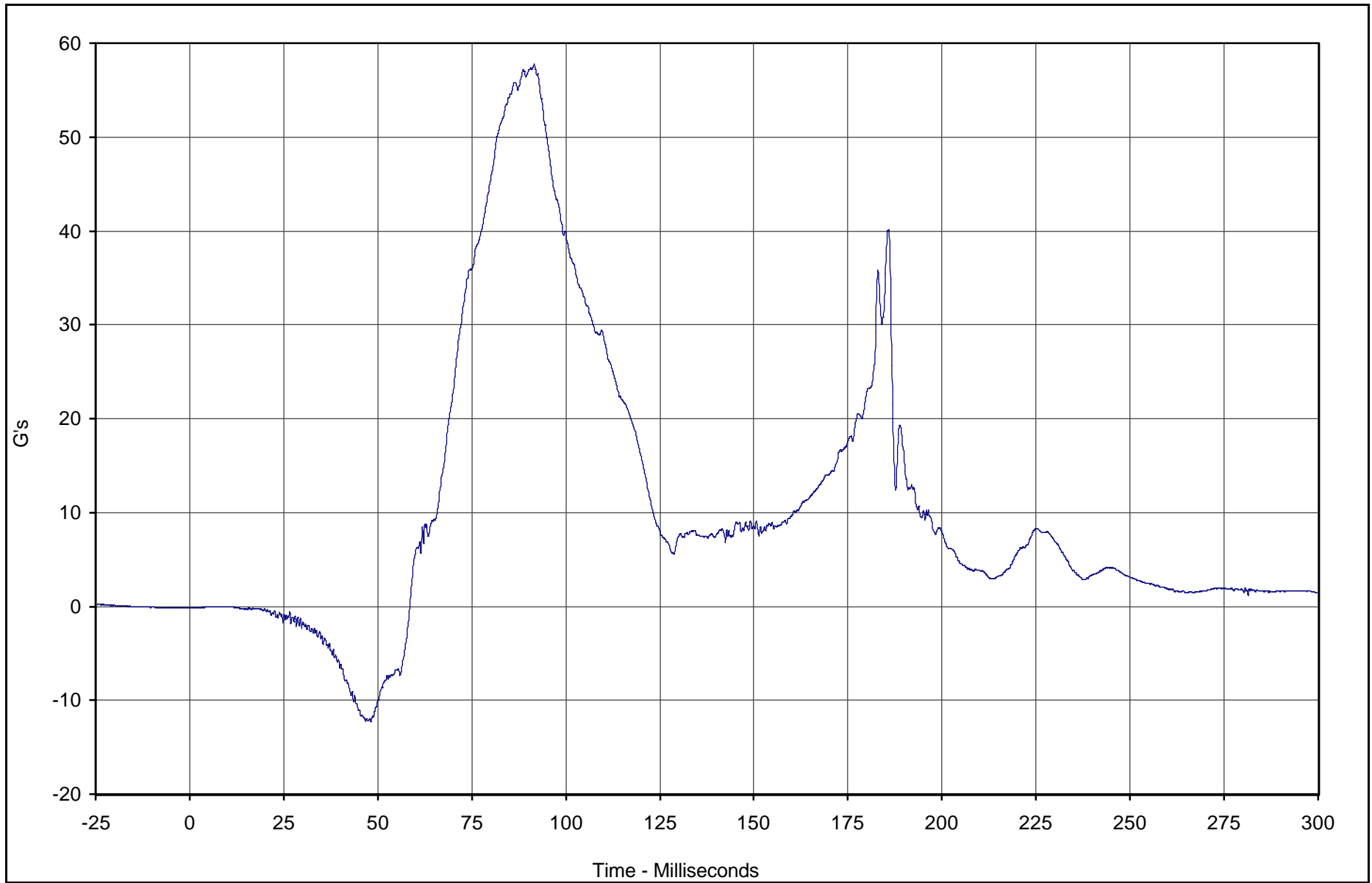
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

F3-3



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Head Z	136	FIL	G's	57.8	91.6	-12.3	48.1	1000



Test Vehicle: 2003 Acura MDX SUV

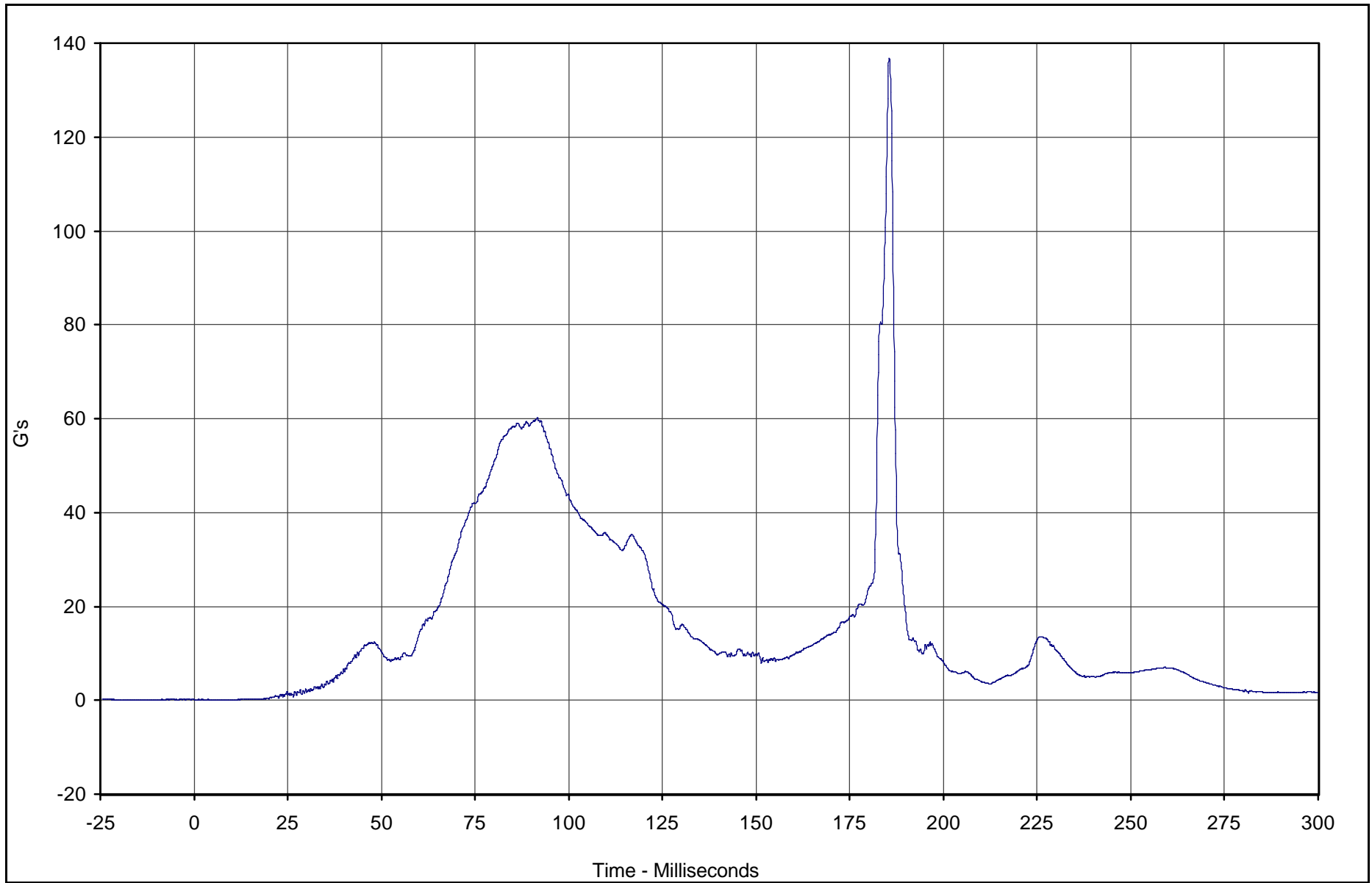
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-4



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Head Resultant	134	RES	G's	136.7	185.5	0.0	9.3	1000



Test Vehicle: 2003 Acura MDX SUV

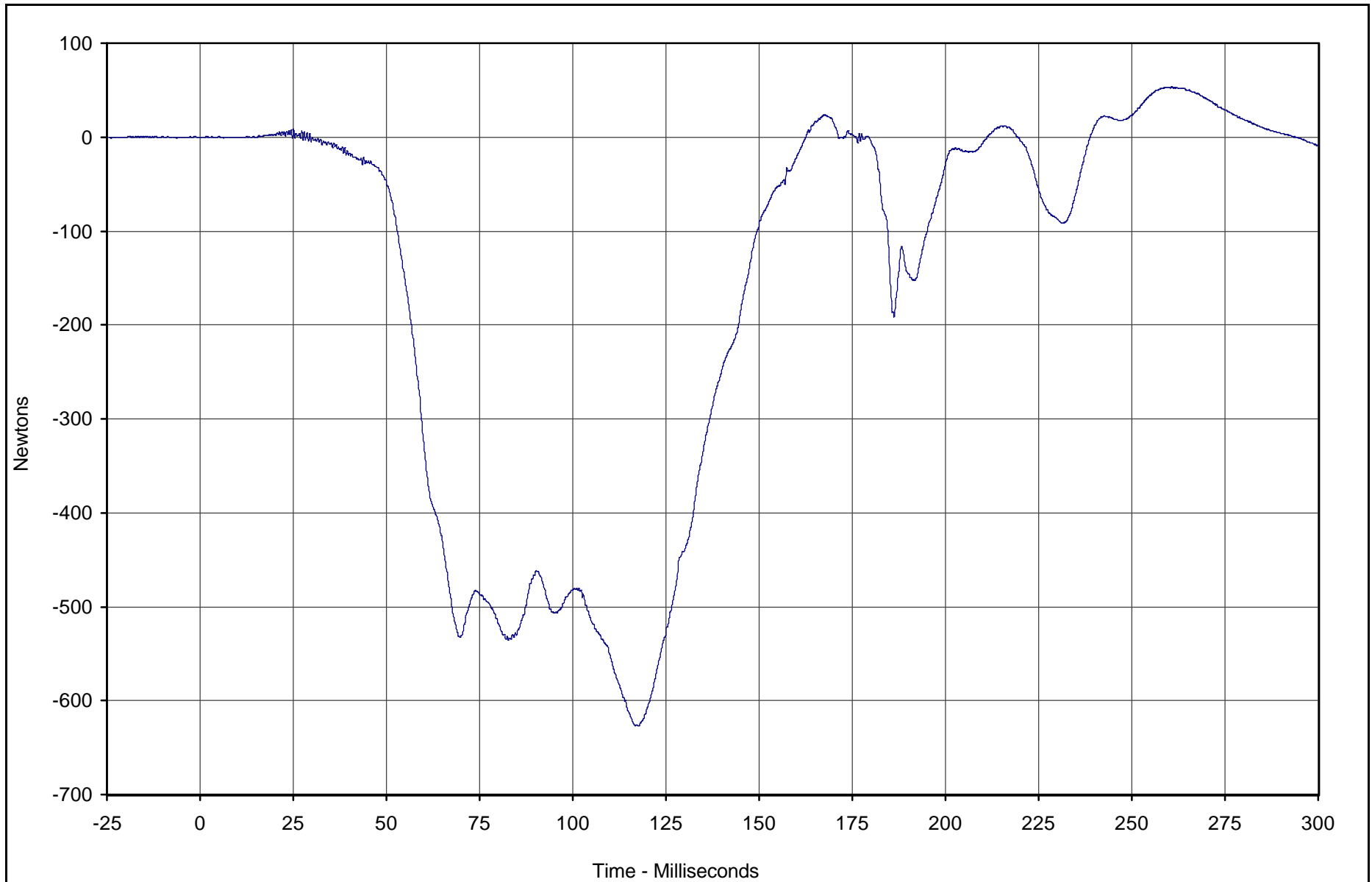
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-5



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Upper Neck Force X	137	FIL	Newtons	53.4	260.7	-627.3	117.7	1000



Test Vehicle: 2003 Acura MDX SUV

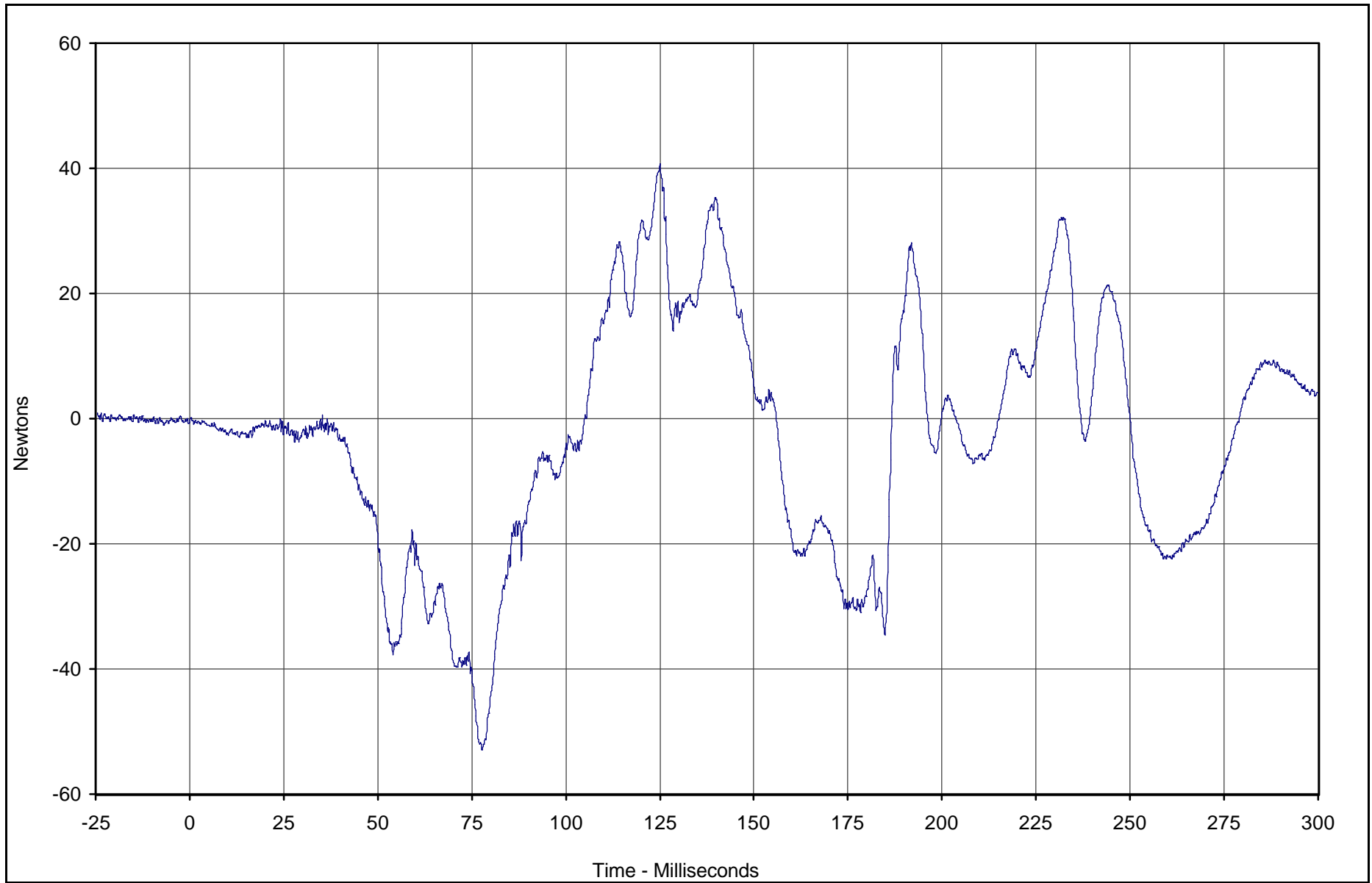
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-6



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Upper Neck Force Y	138	FIL	Newtons	40.7	125.1	-52.9	77.8	1000



Test Vehicle: 2003 Acura MDX SUV

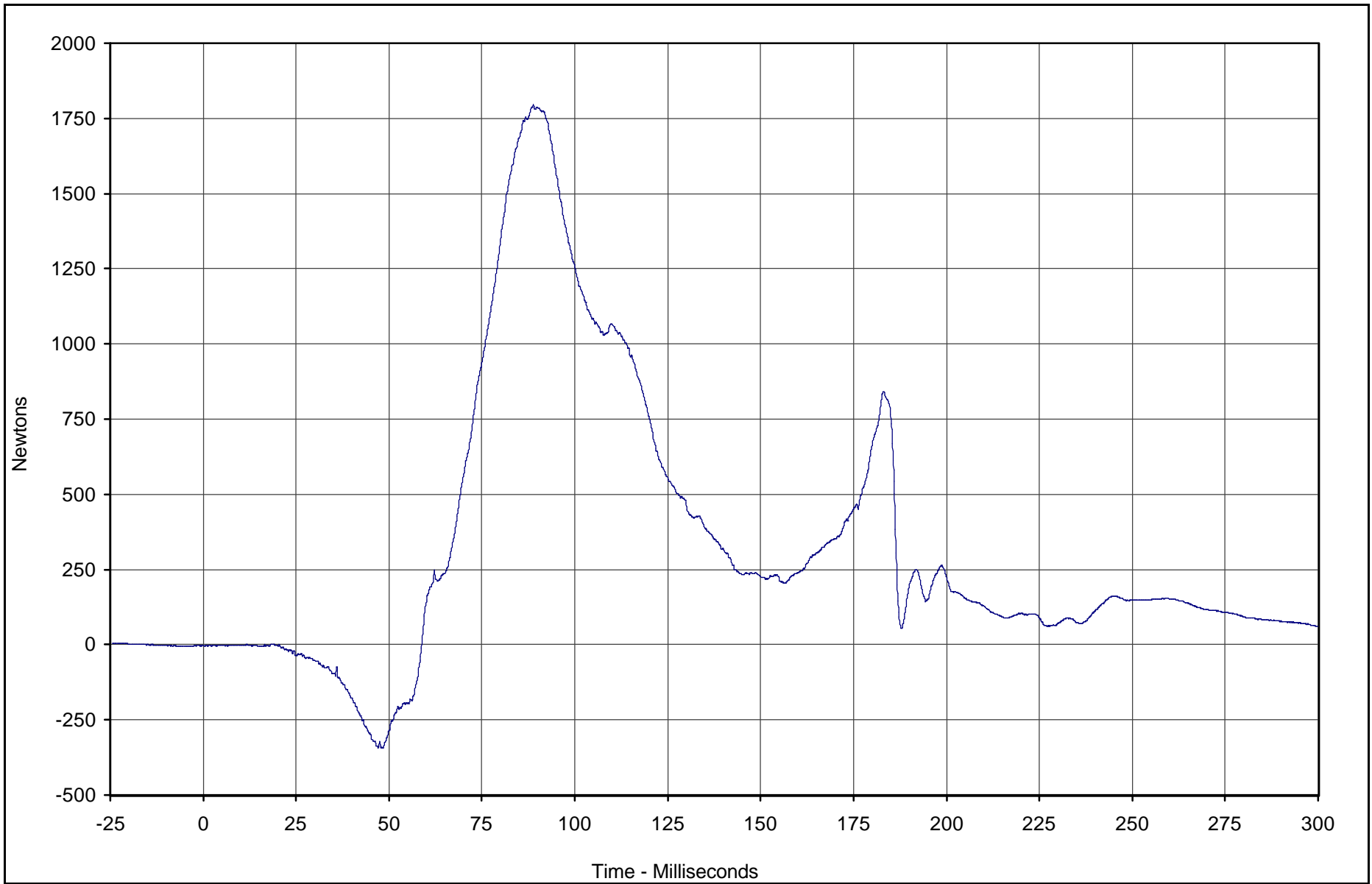
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-7



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Upper Neck Force Z	139	FIL	Newtons	1795.9	88.8	-343.6	47.1	1000



Test Vehicle: 2003 Acura MDX SUV

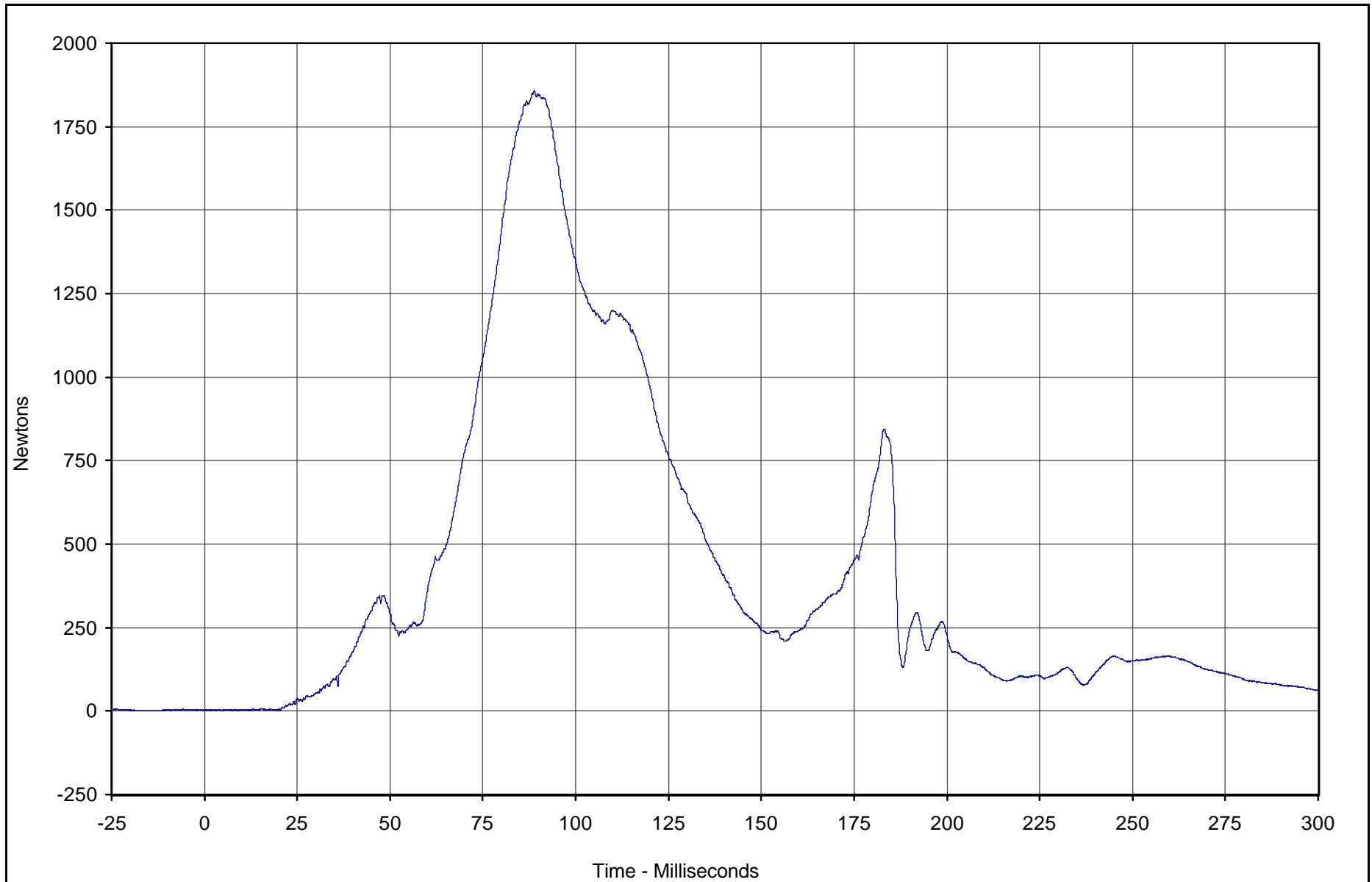
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-8



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Upper Neck Force Res.	137	RES	Newtons	1857.7	88.8	1.8	0.9	1000



Test Vehicle: 2003 Acura MDX SUV

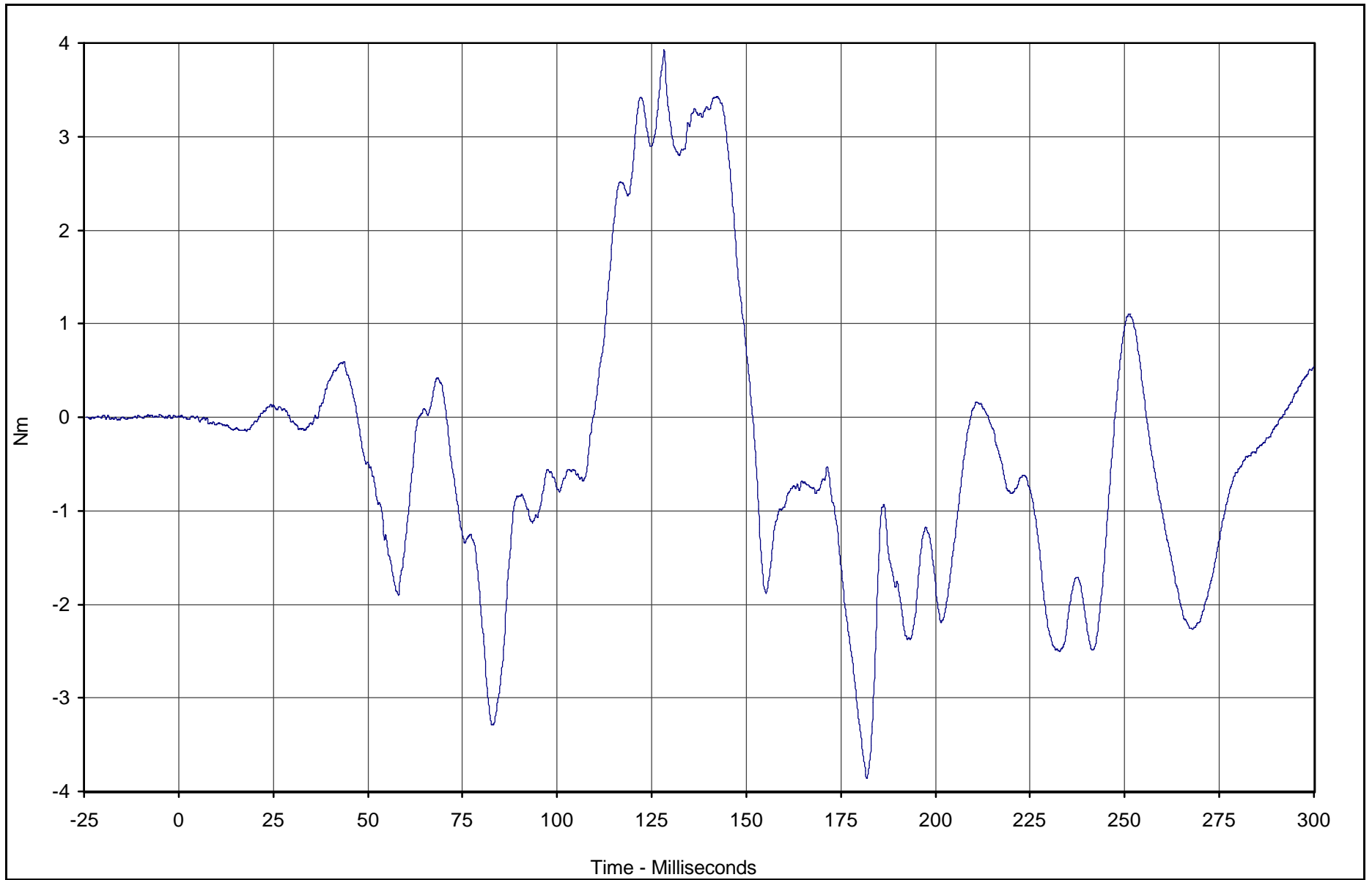
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-9



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Upper Neck Moment X	140	FIL	Nm	3.9	128.3	-3.9	181.9	600



Test Vehicle: 2003 Acura MDX SUV

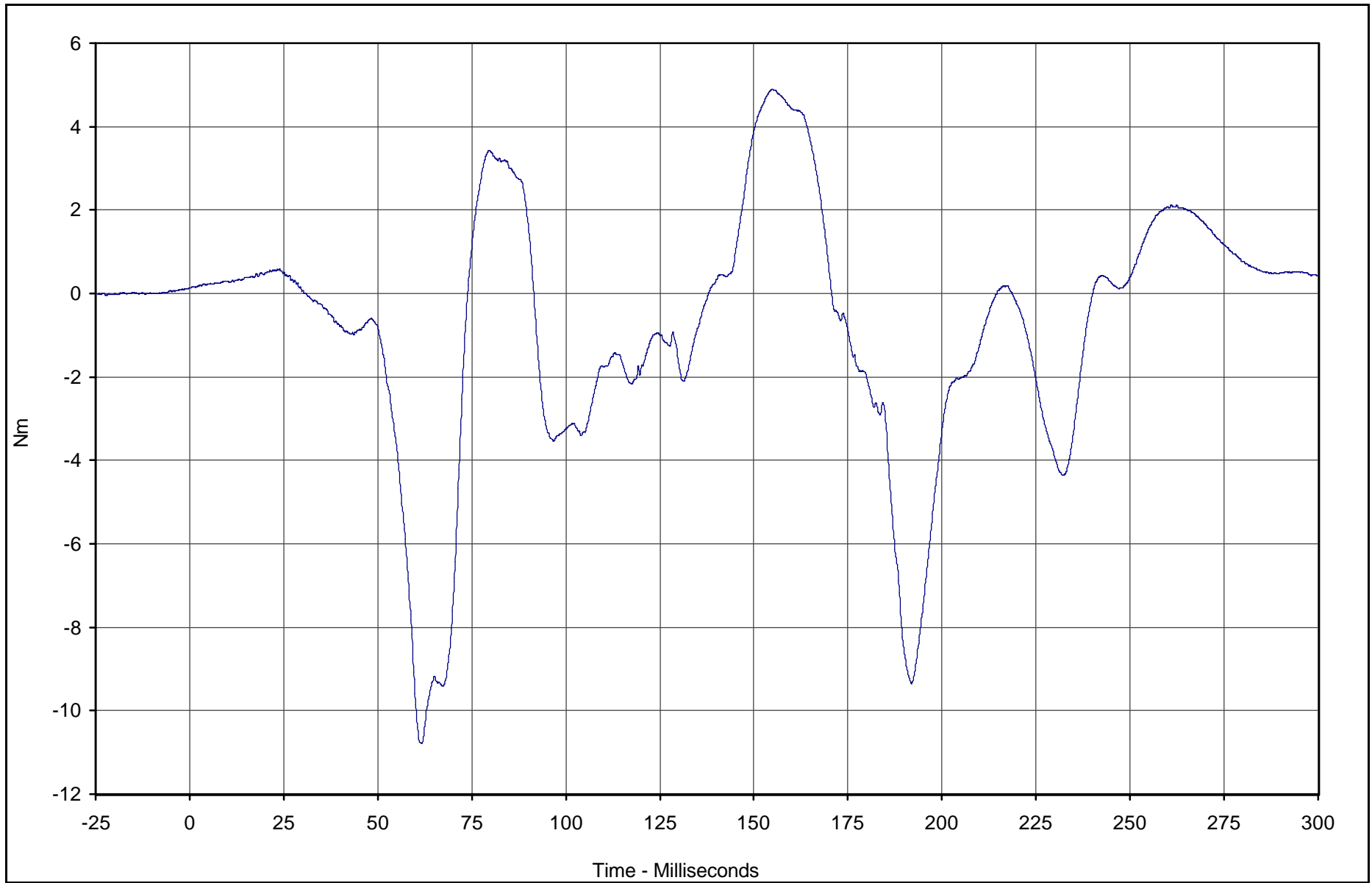
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-10



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Upper Neck Moment Y	141	FIL	Nm	4.9	154.9	-10.8	61.7	600



Test Vehicle: 2003 Acura MDX SUV

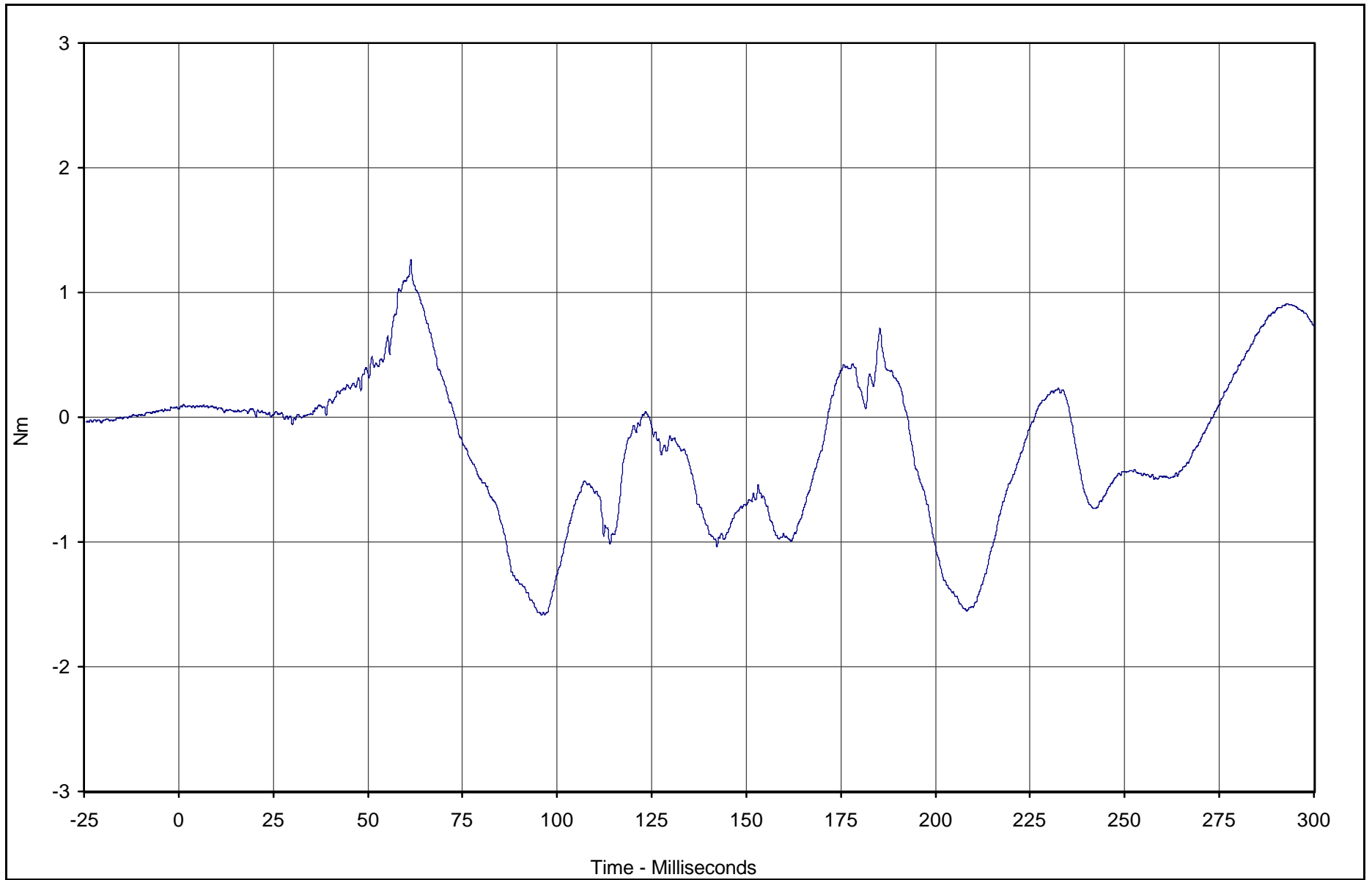
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-11



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Upper Neck Moment Z	142	FIL	Nm	1.3	61.4	-1.6	96.0	600



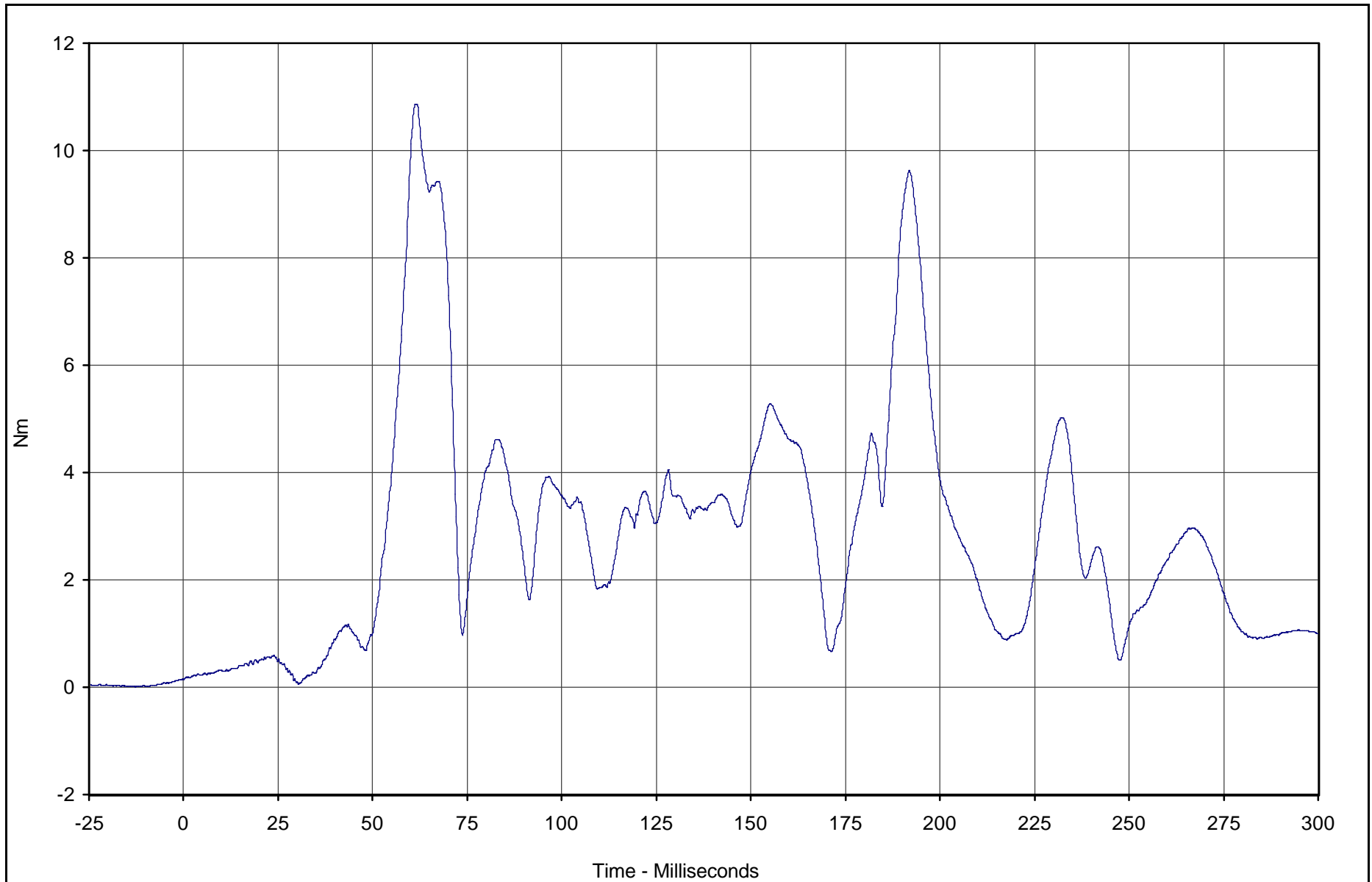
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Upper Neck Mom Res.	140	RES	Nm	10.9	61.6	0.1	30.4	600

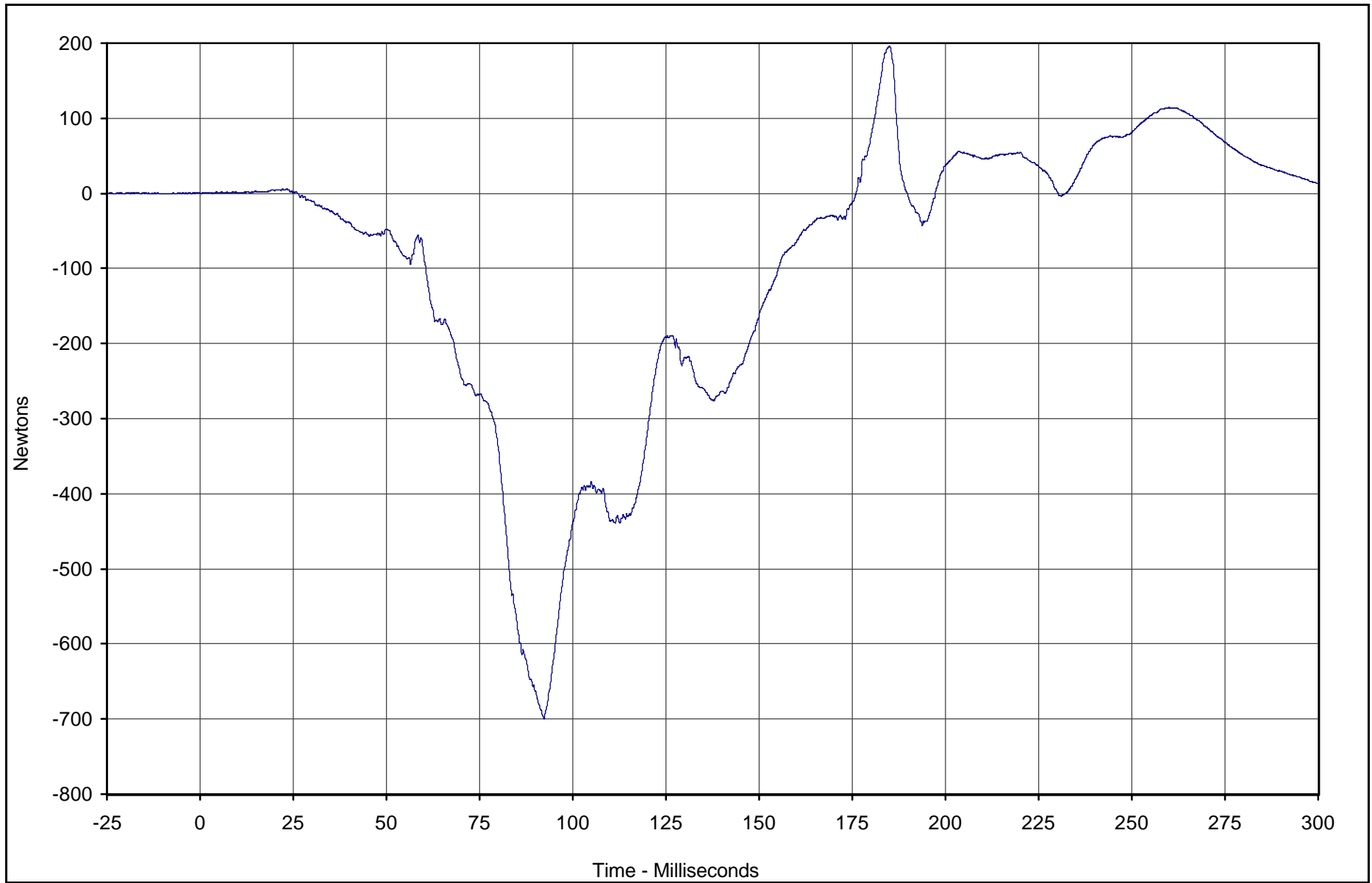


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Lower Neck Force X	143	FIL	Newtons	196.5	185.1	-700.1	92.3	1000

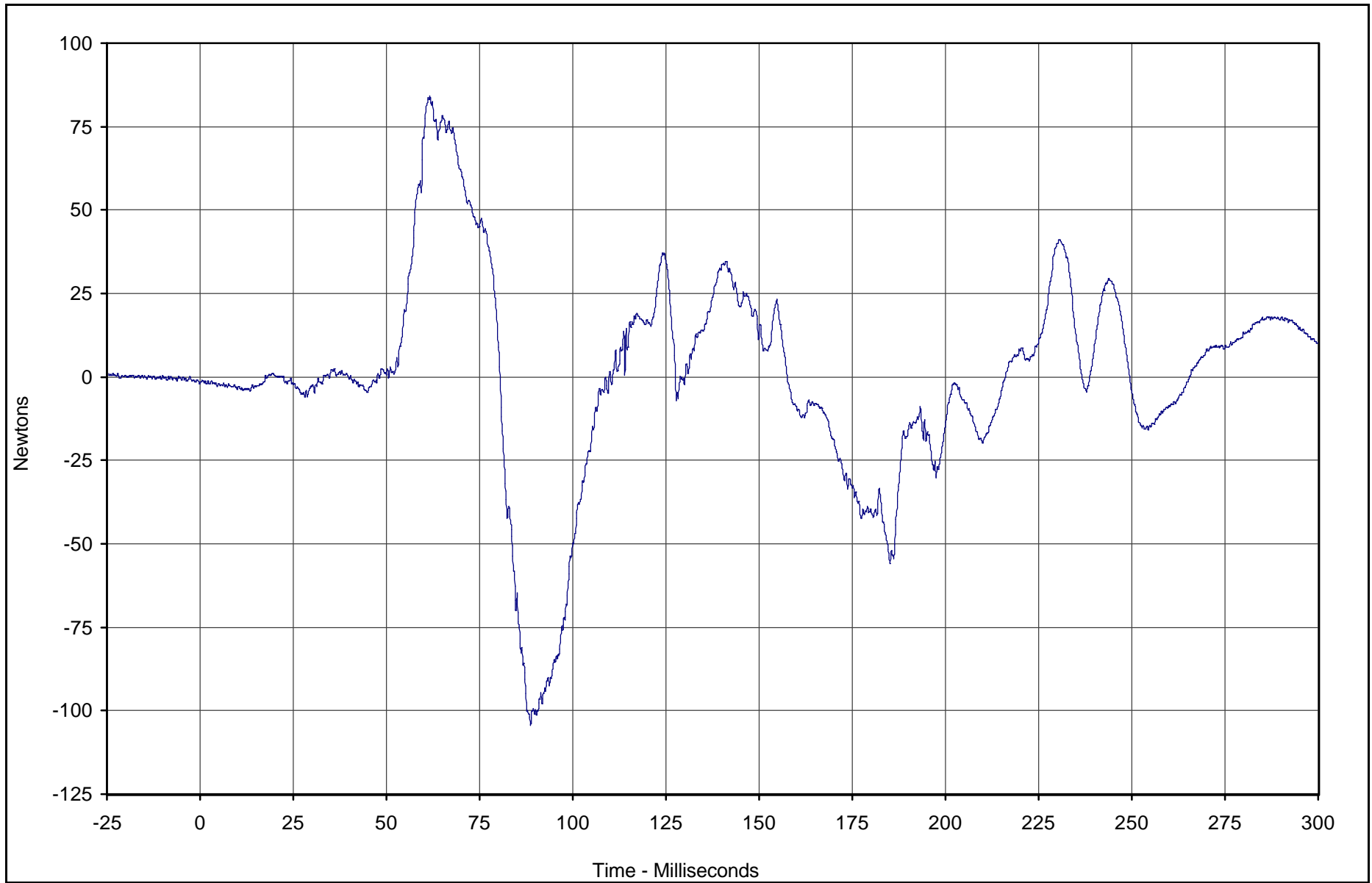


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Lower Neck Force Y	144	FIL	Newtons	84.1	61.7	-104.3	88.7	1000



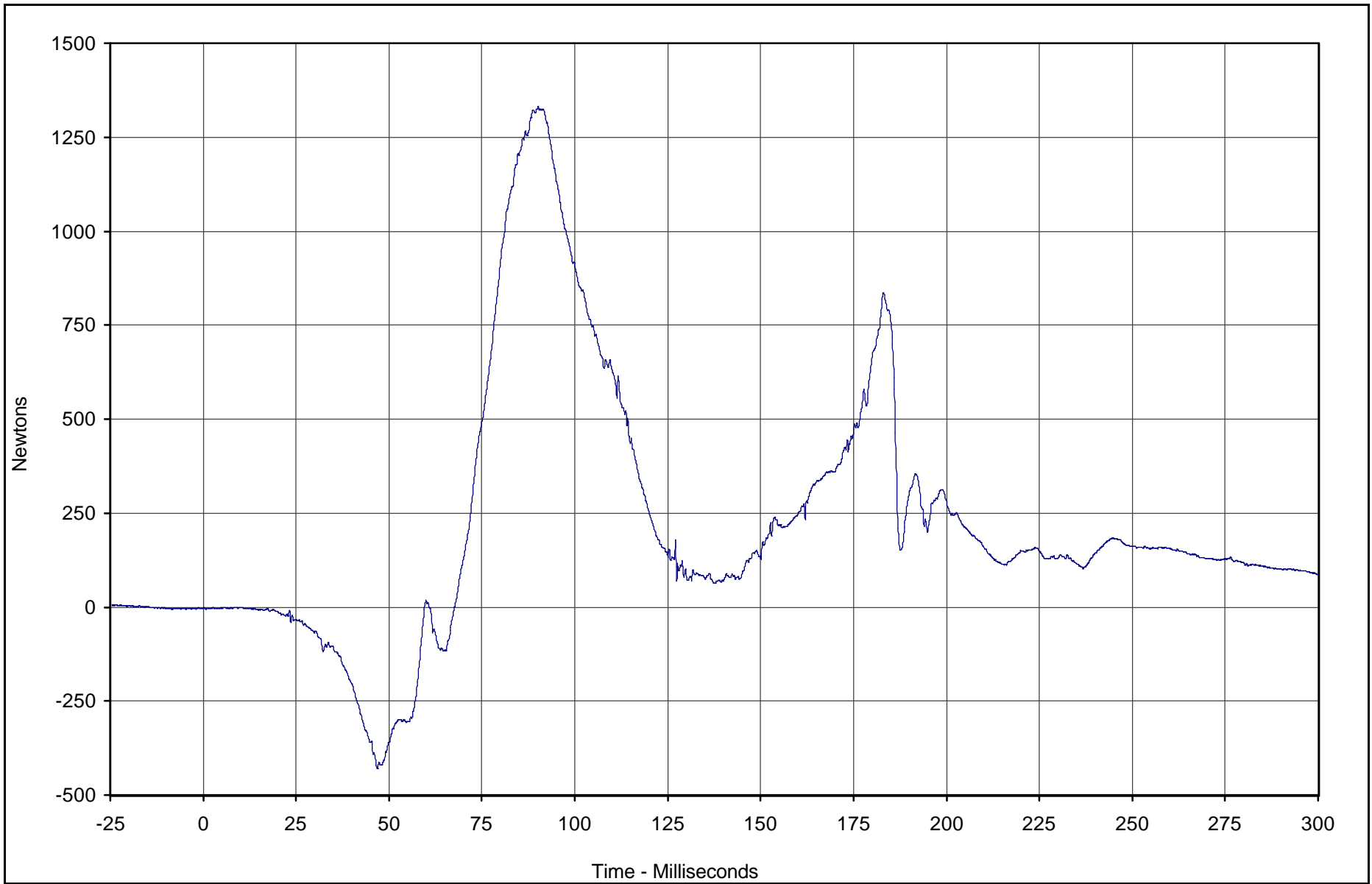
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

F3-15



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Lower Neck Force Z	145	FIL	Newtons	1331.2	90.2	-429.4	46.9	1000

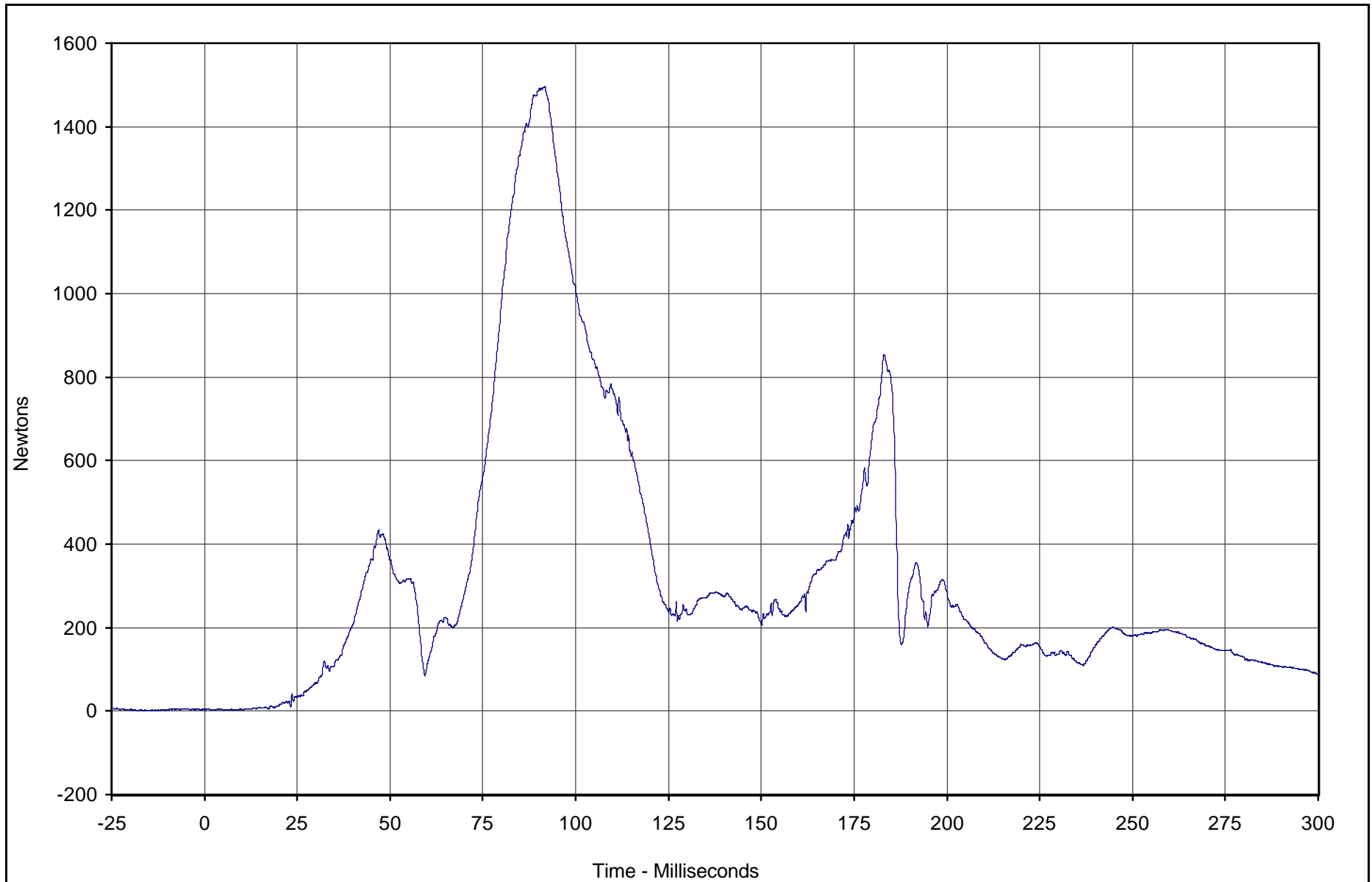


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Lower Neck Force Res.	143	RES	Newtons	1497.0	91.7	1.6	0.2	1000

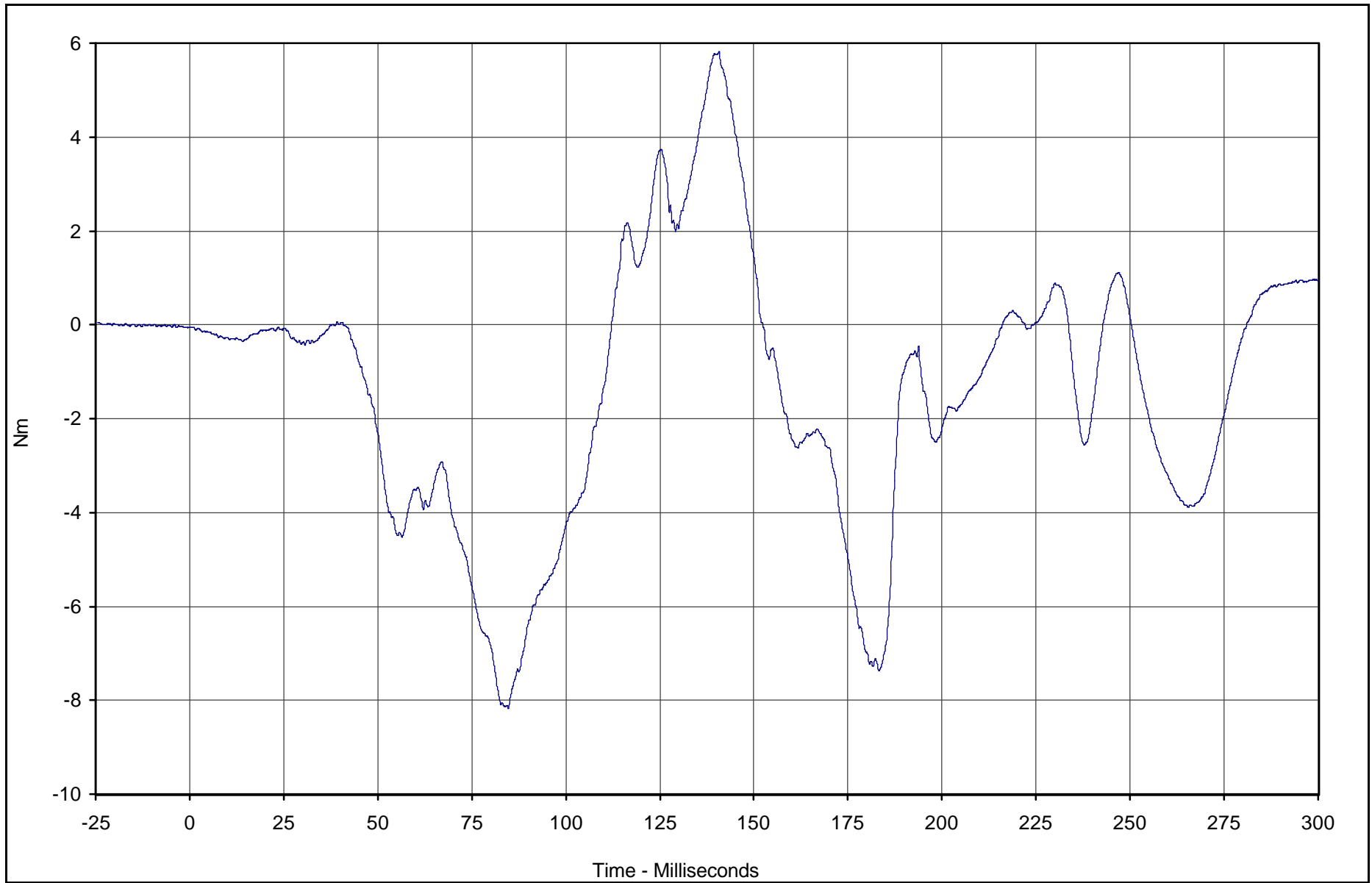


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Lower Neck Moment X	146	FIL	Nm	5.8	140.7	-8.2	84.7	600



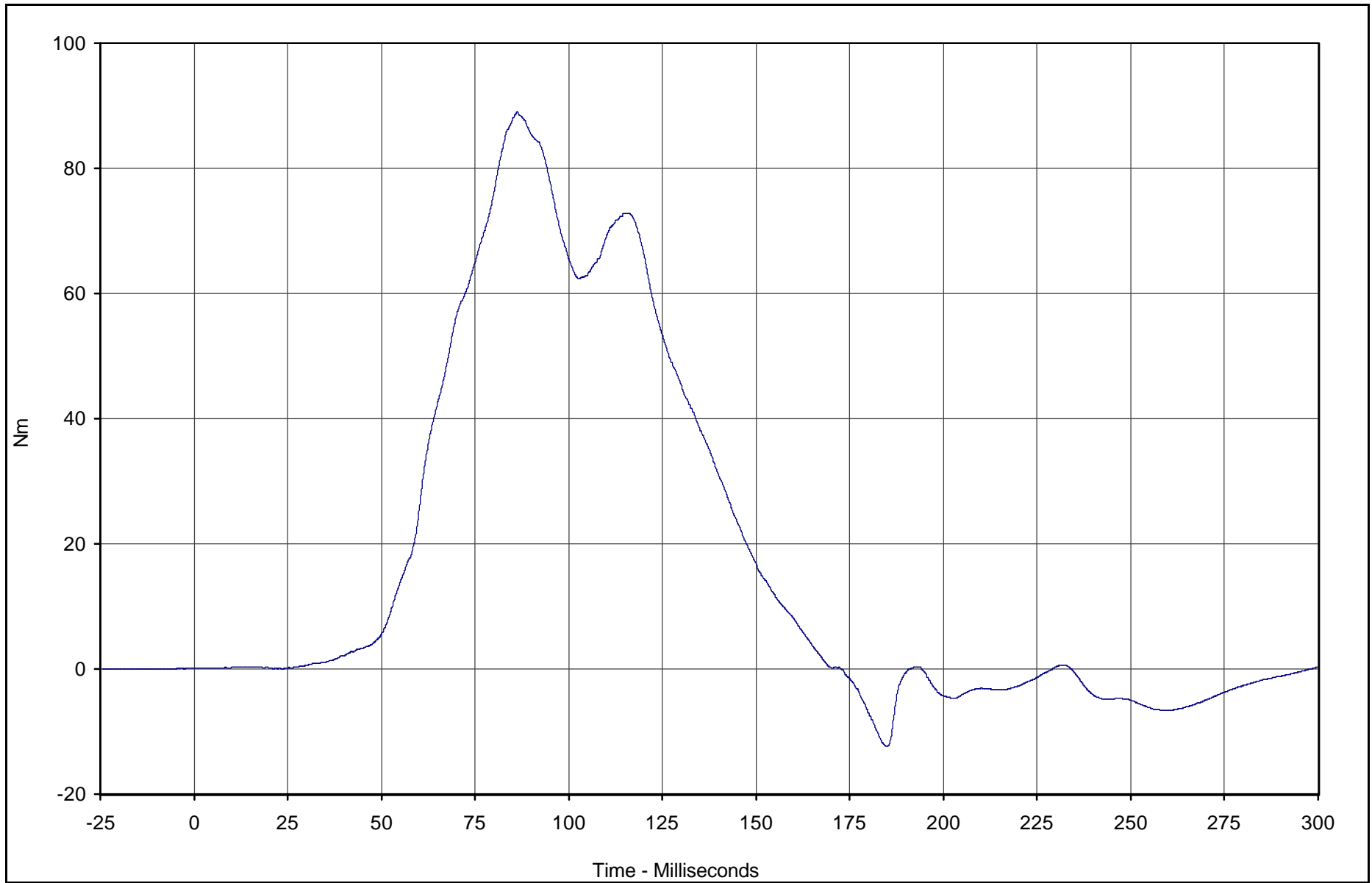
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

F3-18



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Lower Neck Moment Y	147	FIL	Nm	89.0	86.3	-12.4	185.0	600



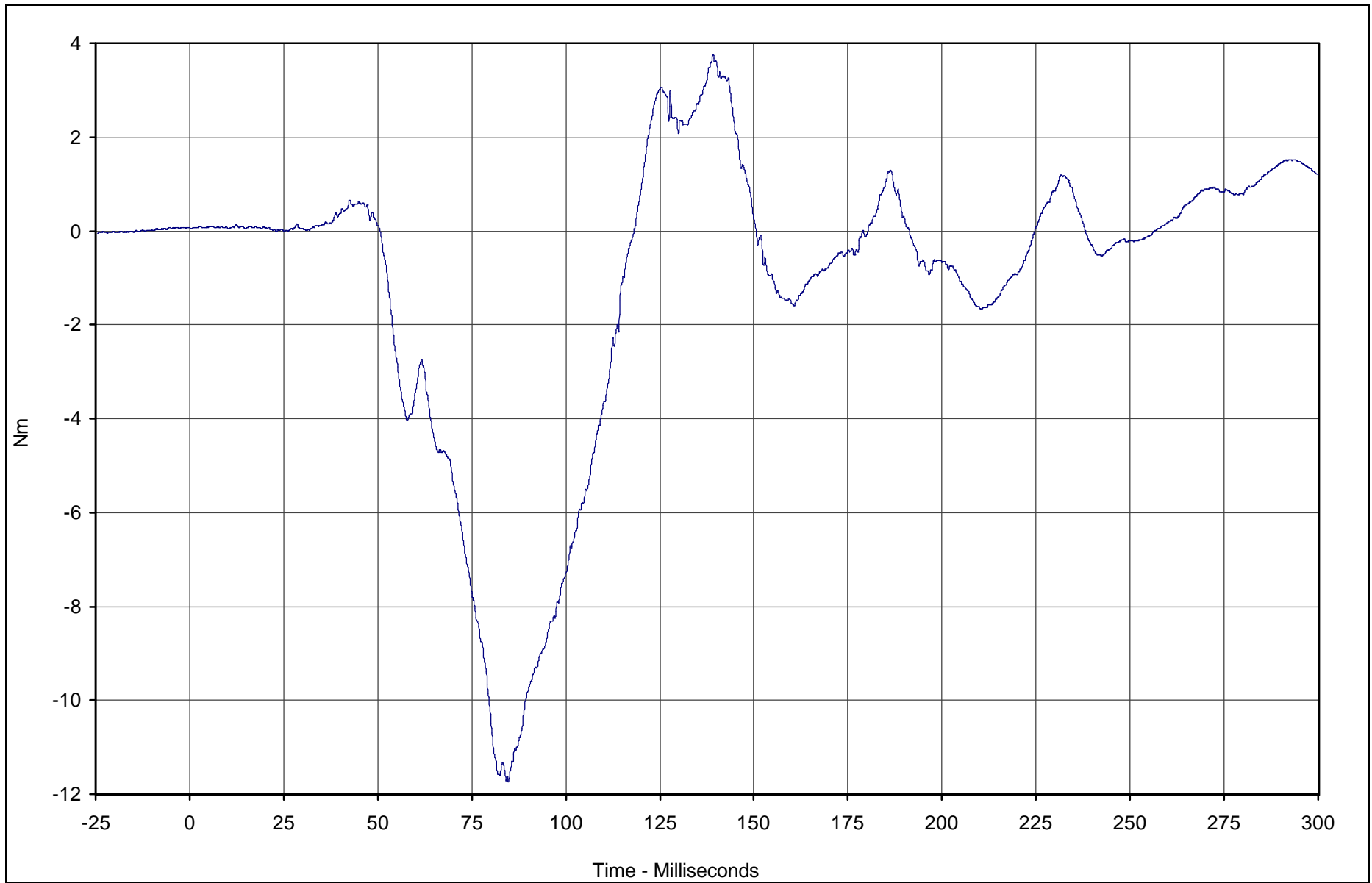
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Lower Neck Moment Z	148	FIL	Nm	3.8	139.2	-11.7	84.8	600



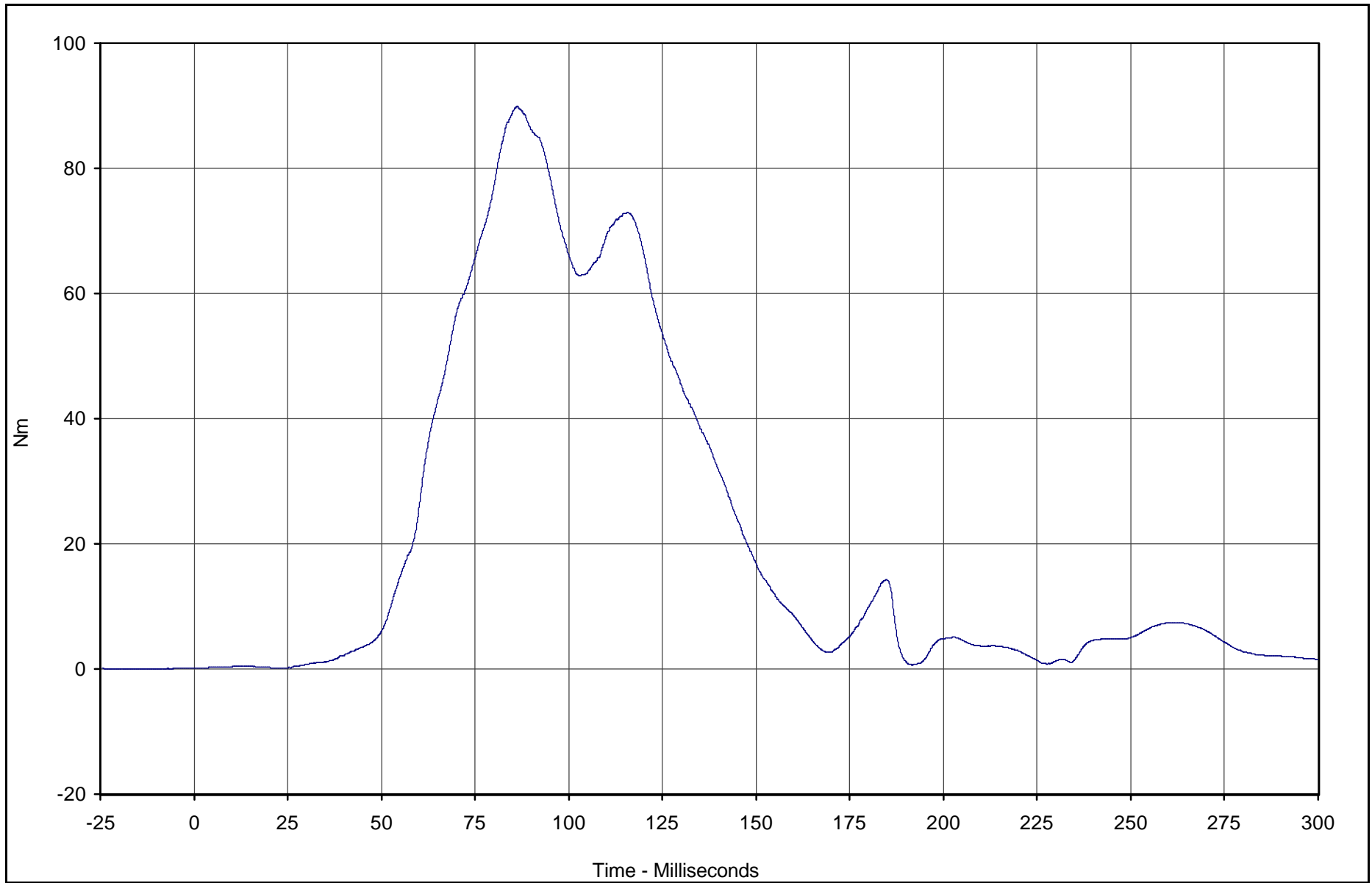
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

F3-20



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Lower Neck Mom Res.	146	RES	Nm	90.0	86.3	0.1	23.5	600



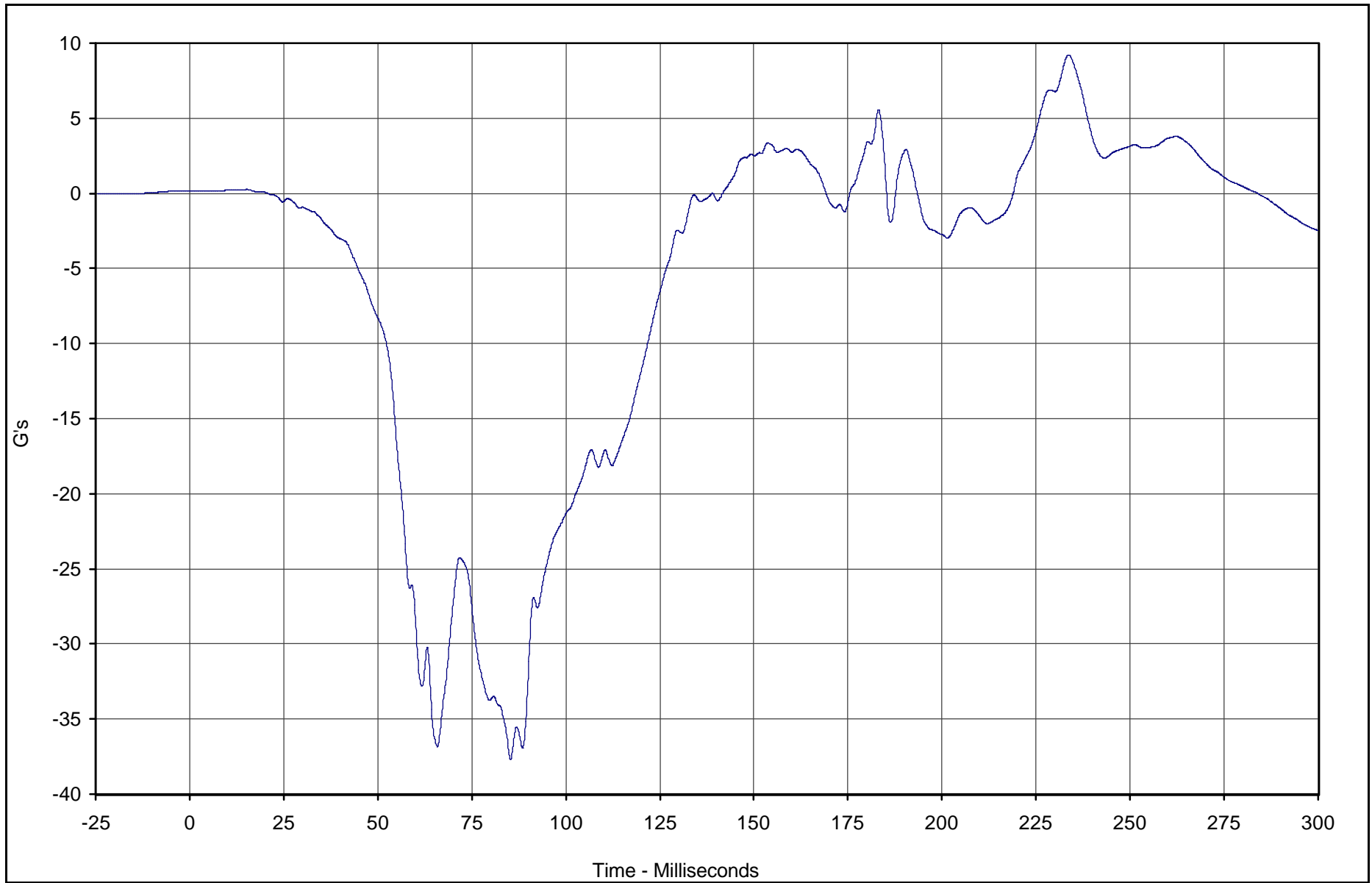
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

F3-21



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Chest X	149	FIL	G's	9.2	233.7	-37.7	85.3	180



Test Vehicle: 2003 Acura MDX SUV

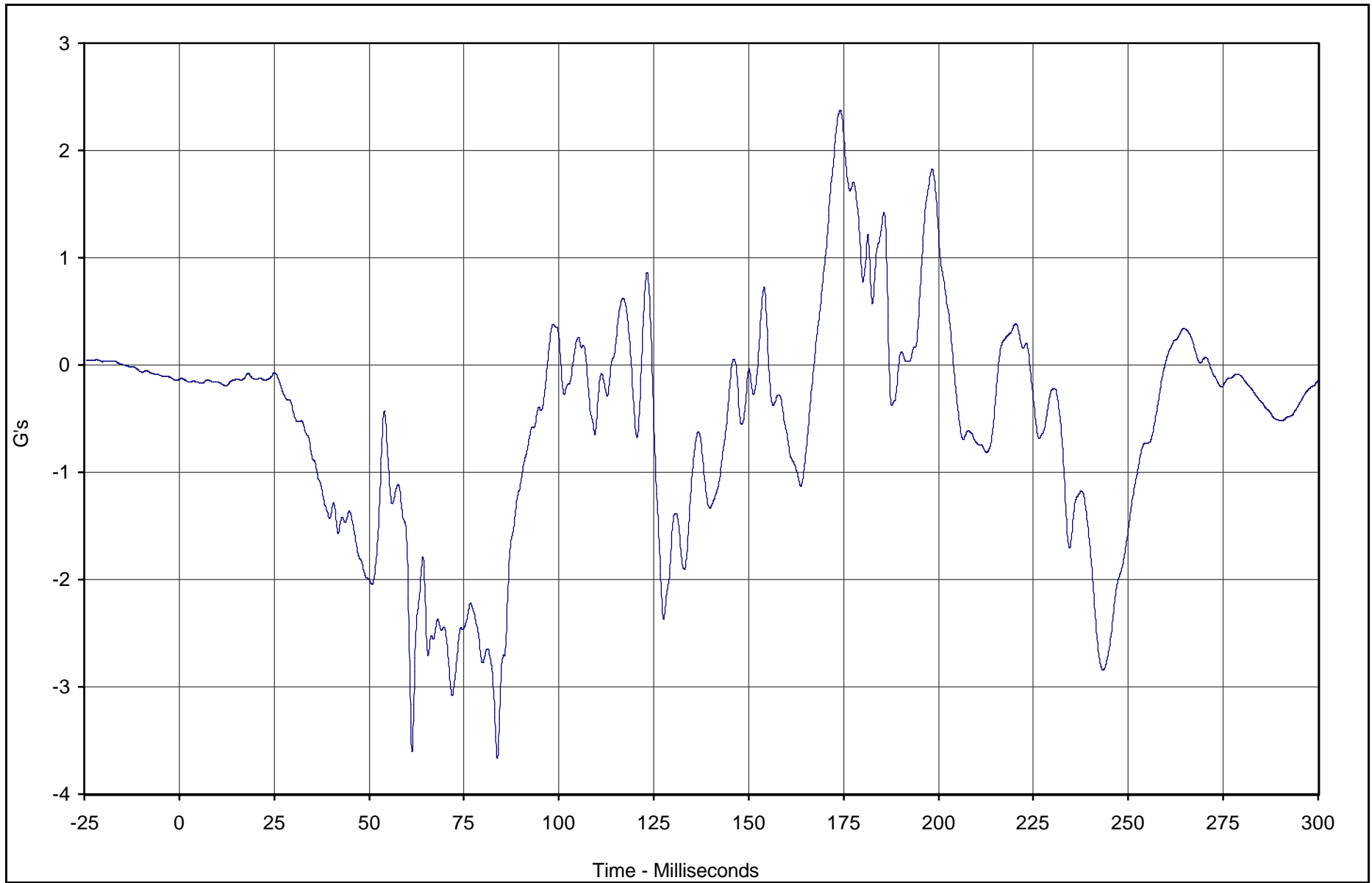
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-22



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Chest Y	150	FIL	G's	2.4	174.1	-3.7	83.8	180



Test Vehicle: 2003 Acura MDX SUV

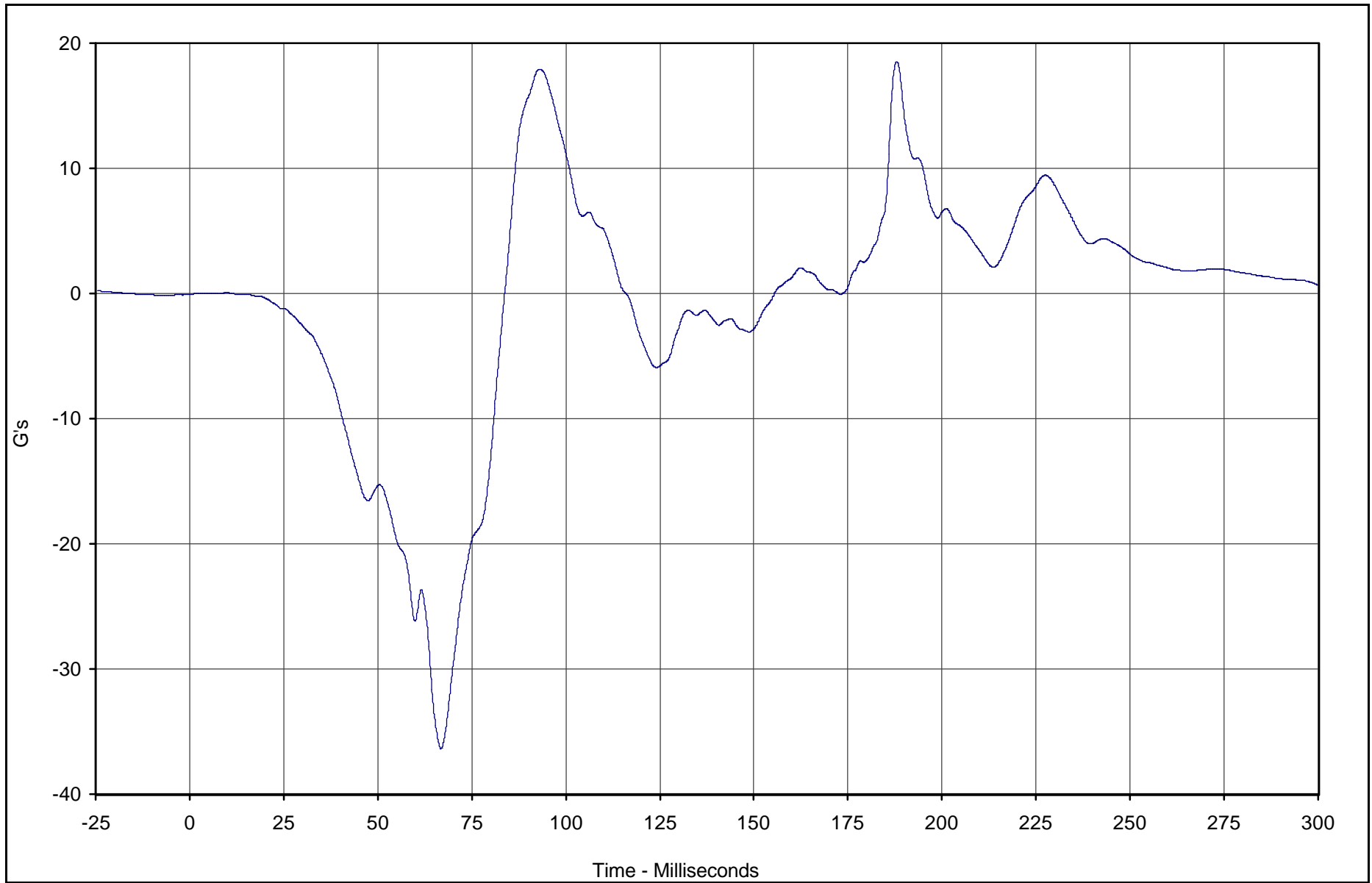
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-23



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Chest Z	151	FIL	G's	18.5	188.0	-36.4	66.8	180



Test Vehicle: 2003 Acura MDX SUV

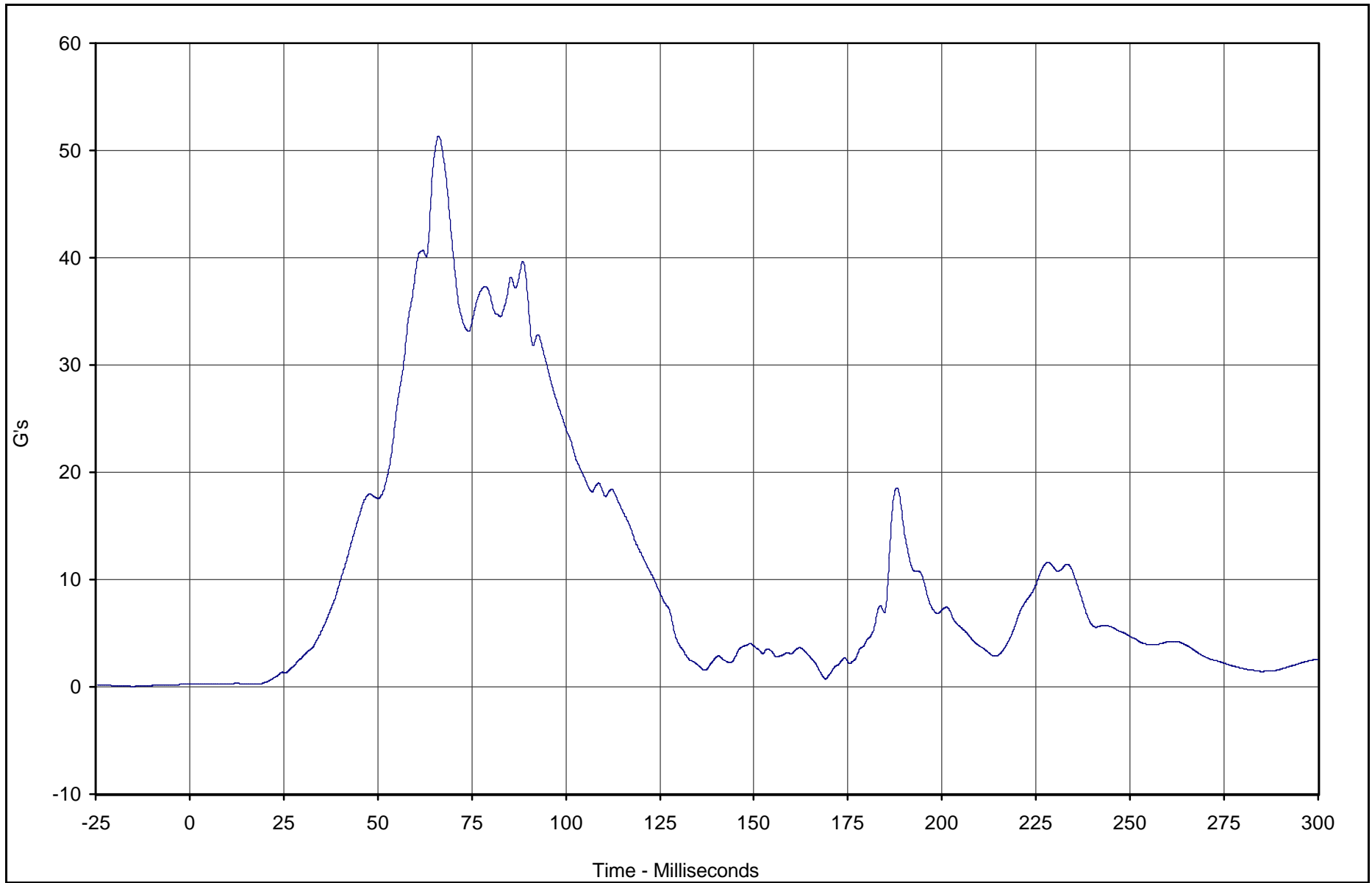
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-24



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Chest Resultant	149	RES	G's	51.3	66.2	0.2	7.2	180



Test Vehicle: 2003 Acura MDX SUV

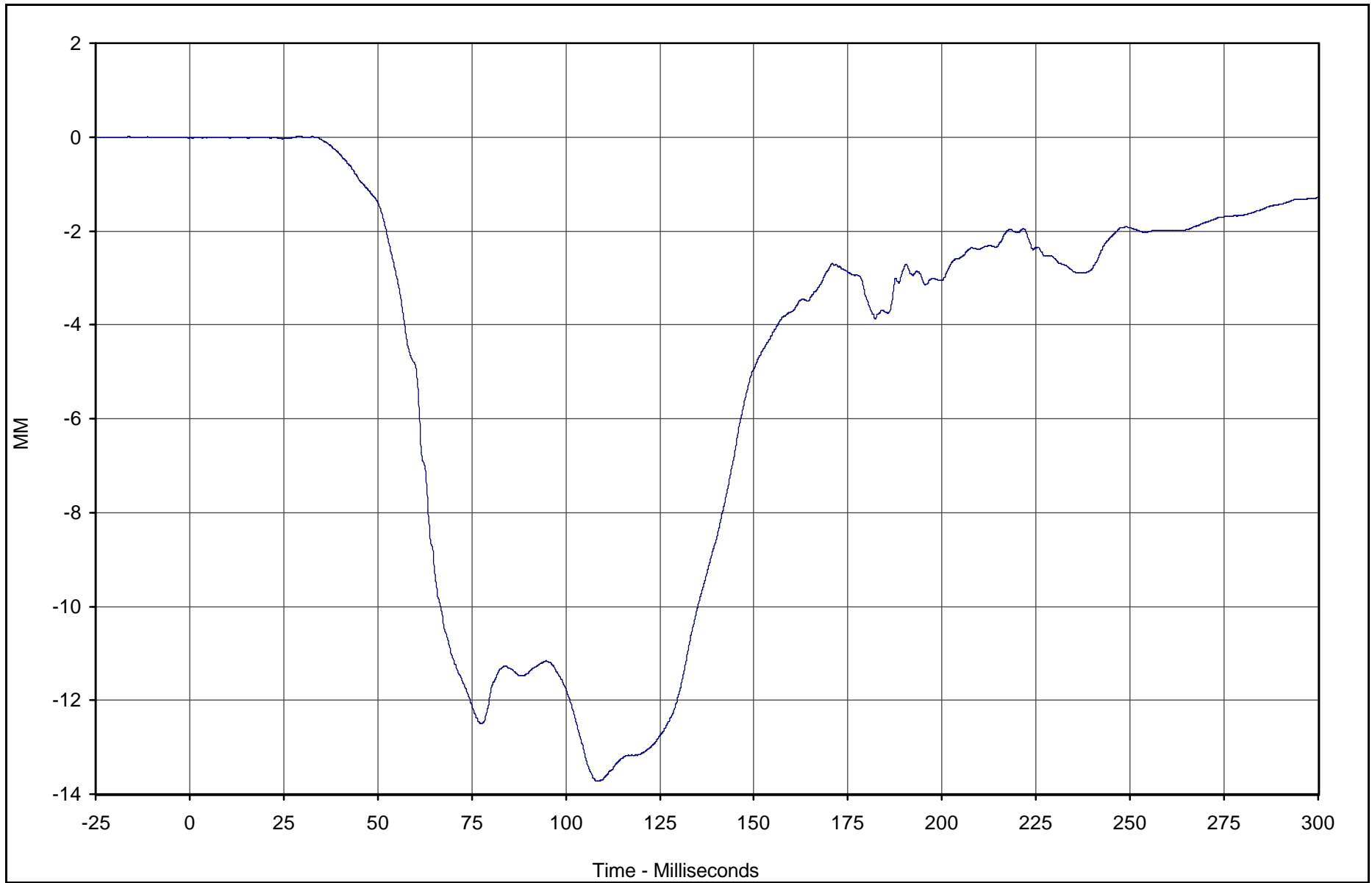
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-25



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Chest Deflection	152	FIL	MM	0.0	29.5	-13.7	108.2	600



Test Vehicle: 2003 Acura MDX SUV

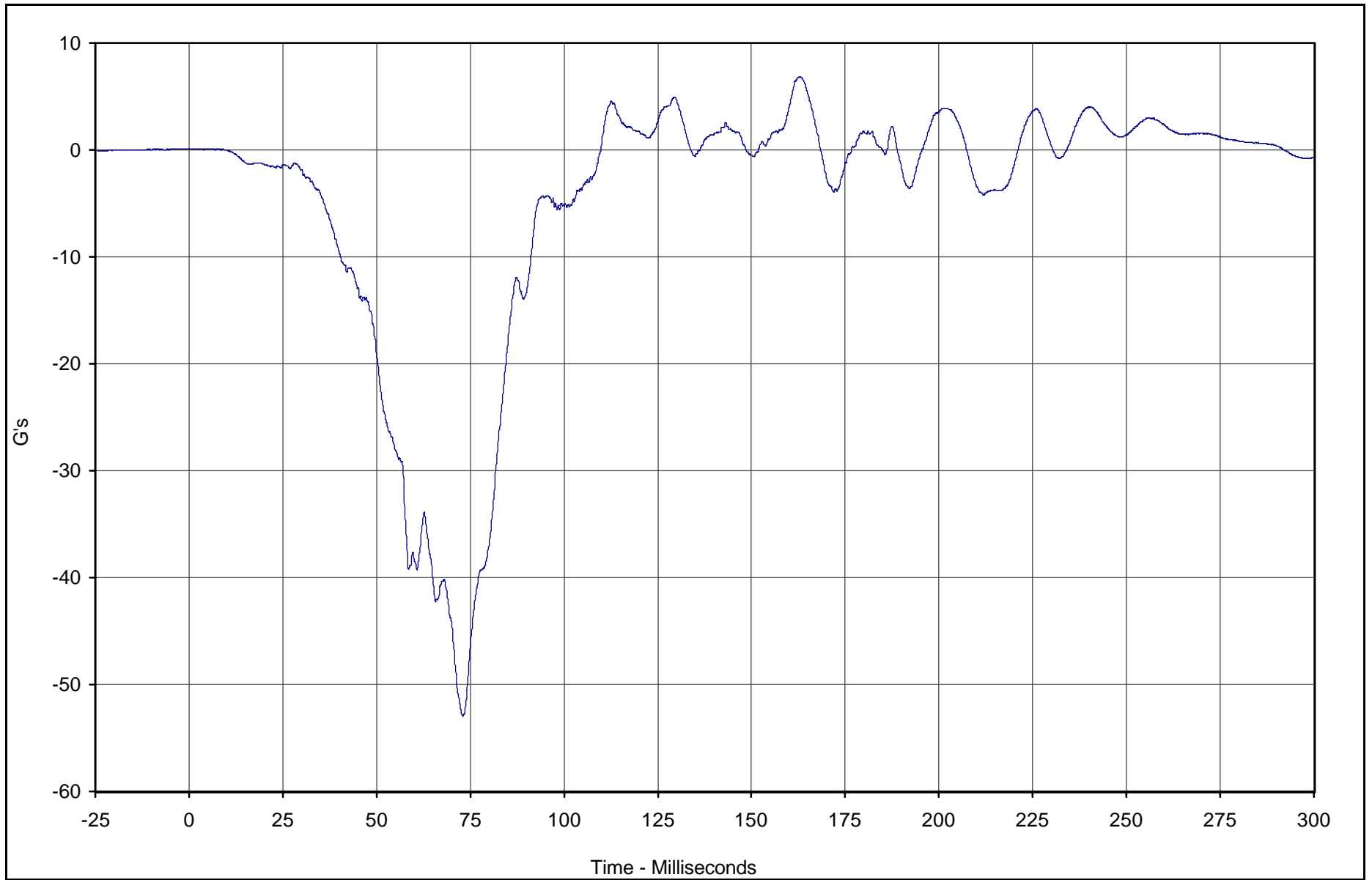
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-26



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Pelvis X	153	FIL	G's	6.9	162.9	-52.9	73.1	1000



Test Vehicle: 2003 Acura MDX SUV

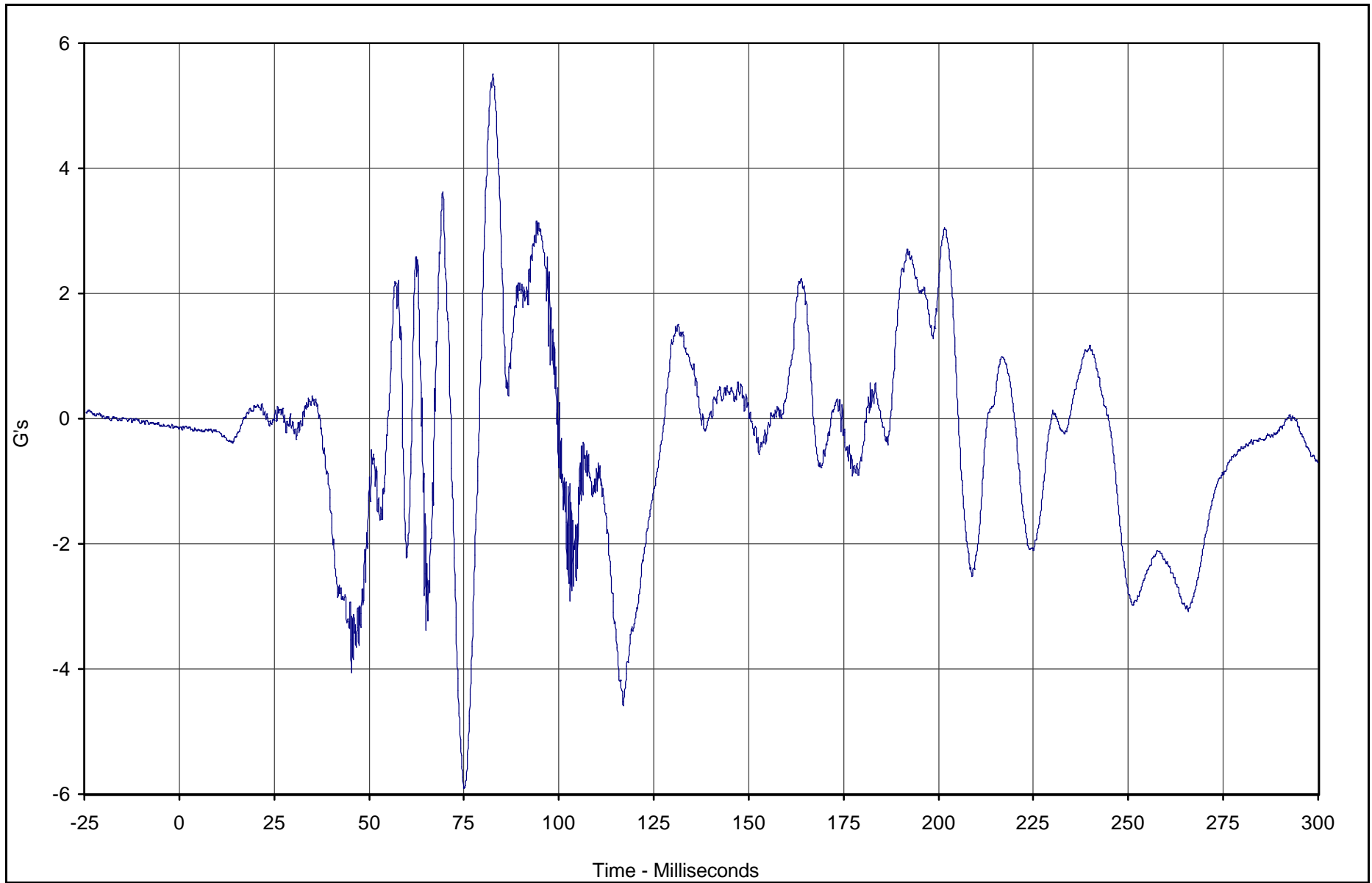
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-27



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Pelvis Y	154	FIL	G's	5.5	82.6	-5.9	75.0	1000



Test Vehicle: 2003 Acura MDX SUV

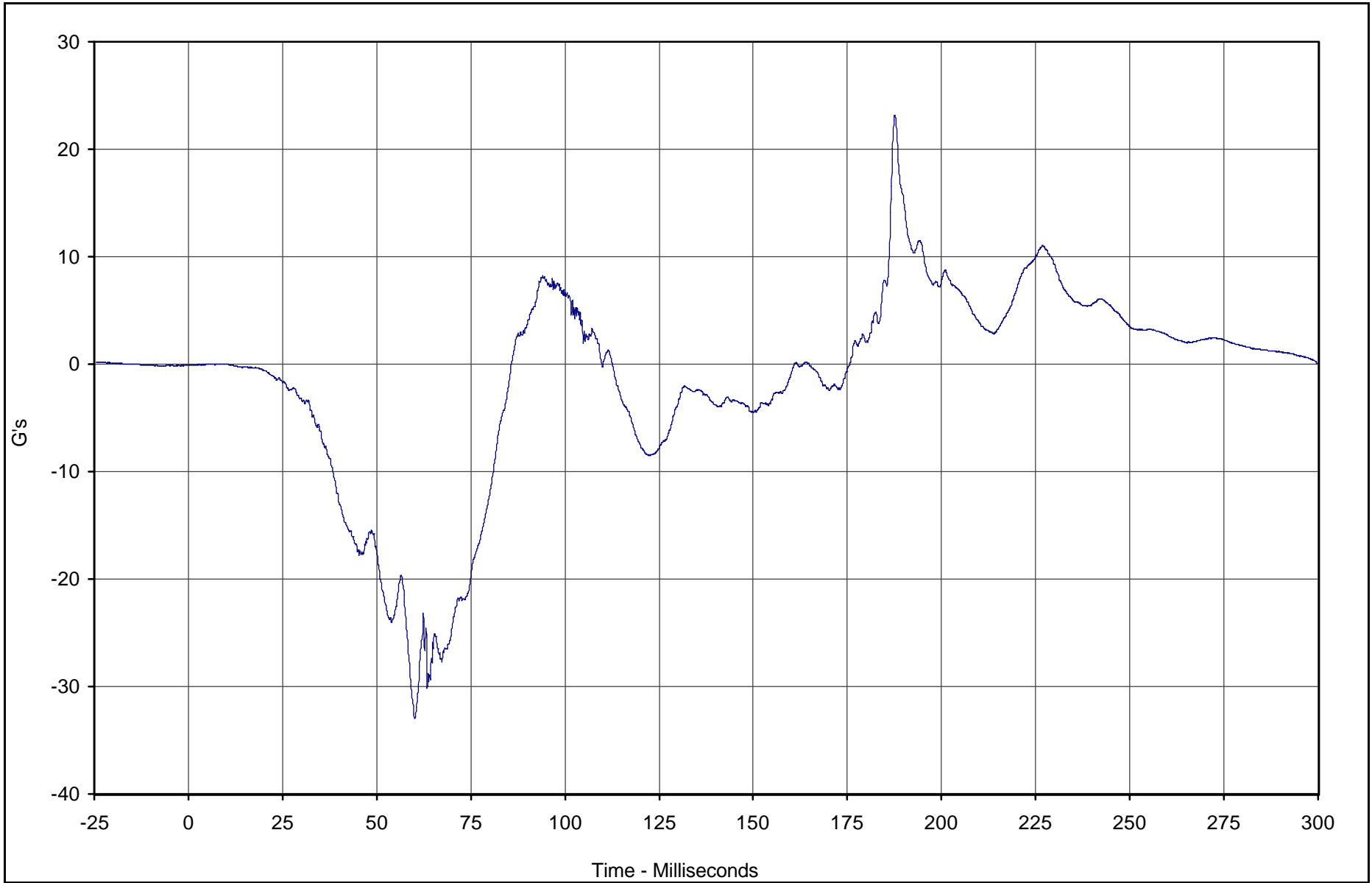
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-28



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Pelvis Z	155	FIL	G's	23.1	187.6	-33.0	60.1	1000



Test Vehicle: 2003 Acura MDX SUV

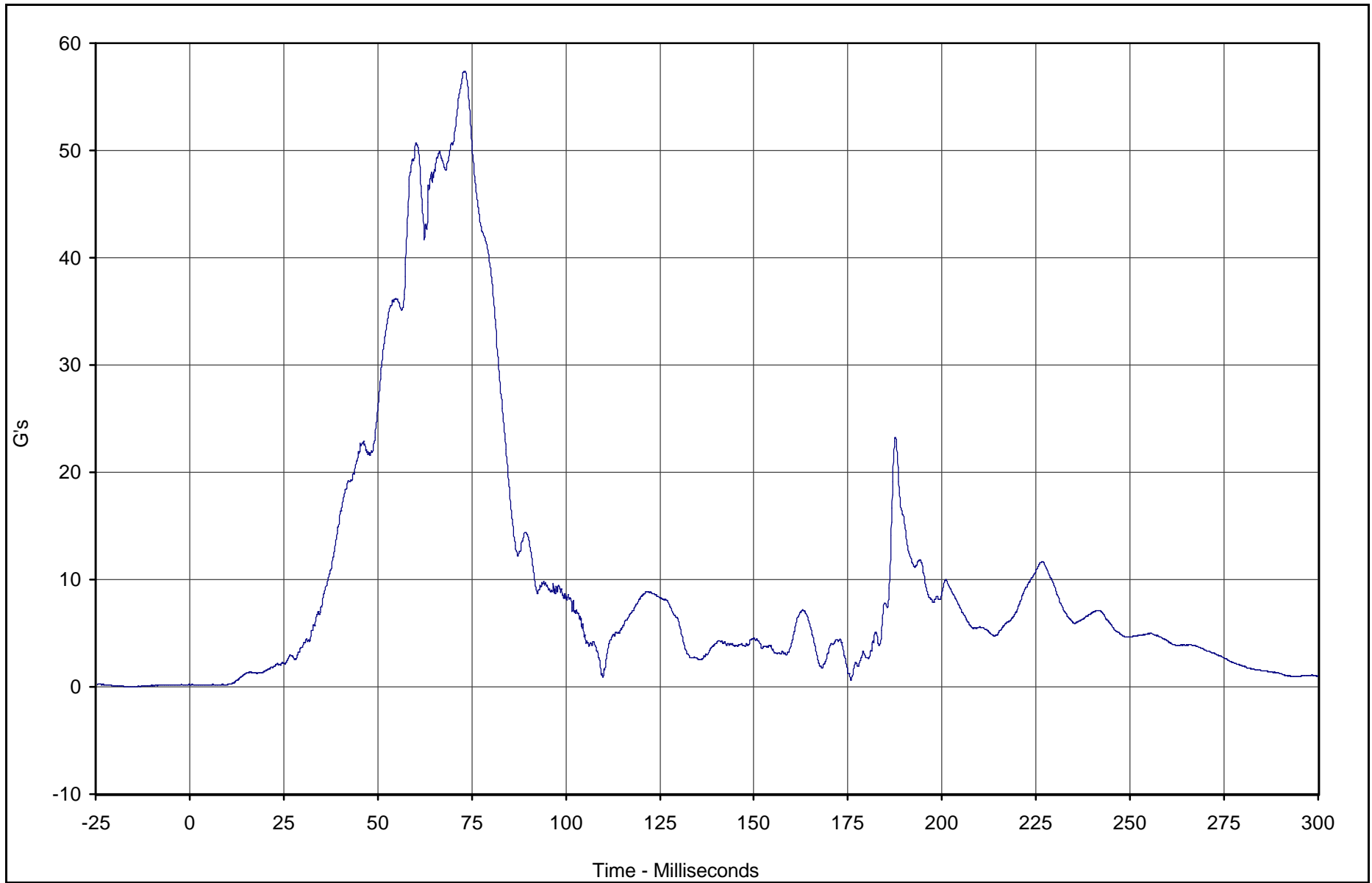
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-29



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Pelvis Resultant	153	RES	G's	57.4	73.1	0.2	2.6	1000



Test Vehicle: 2003 Acura MDX SUV

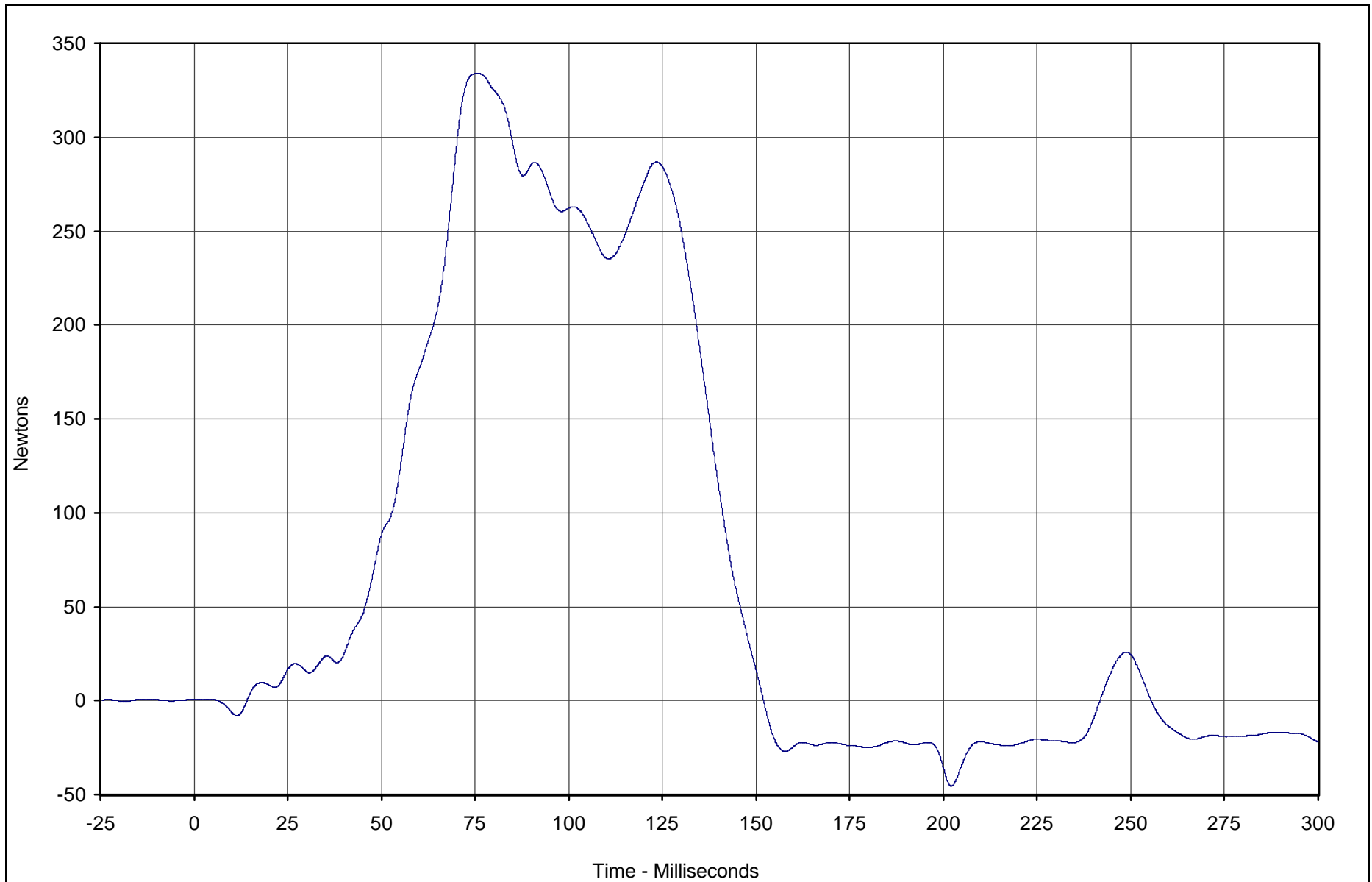
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-30



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Seat Tether Load	156	FIL	Newtons	333.9	75.7	-45.6	202.1	60



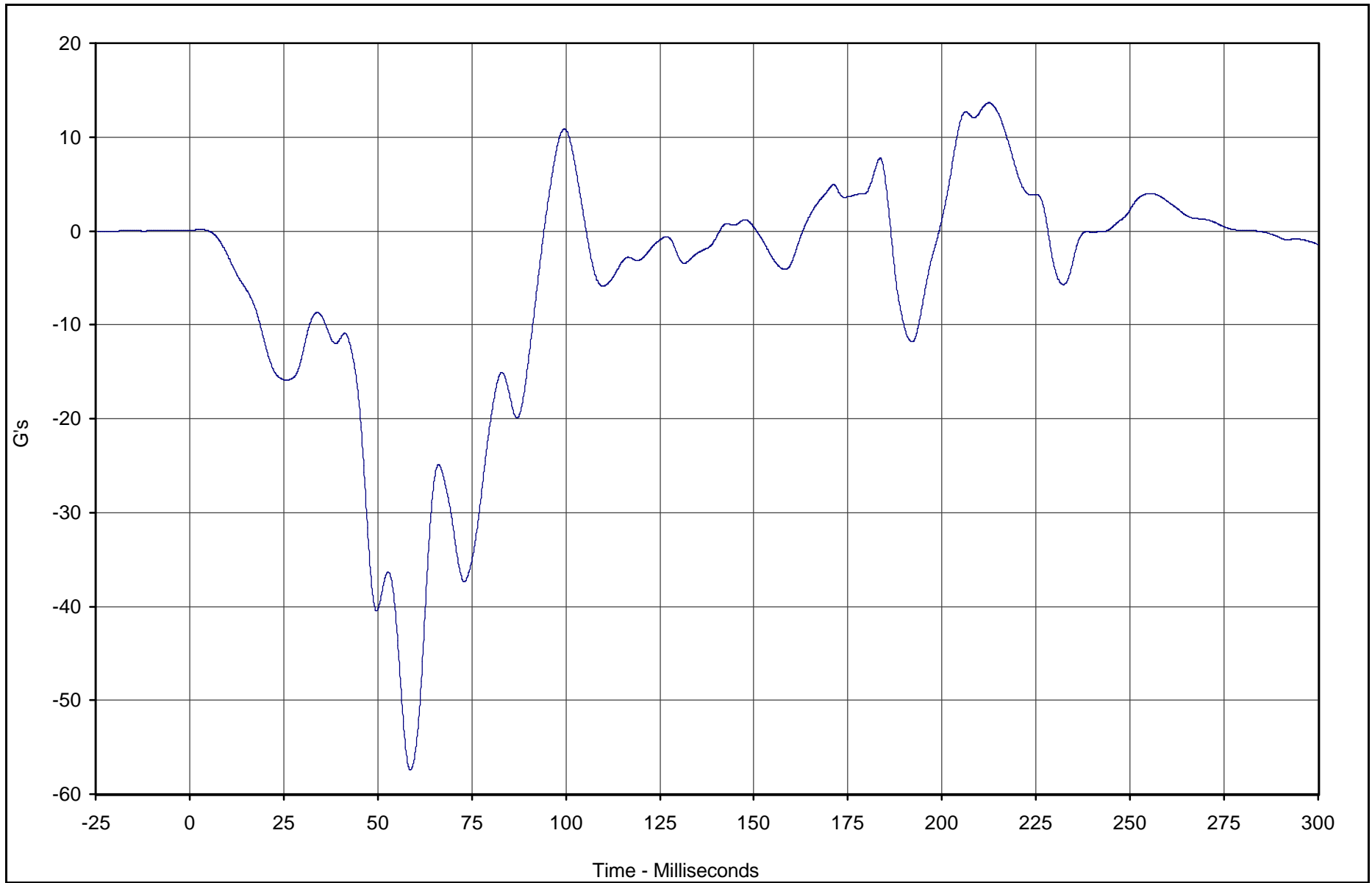
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Child Seat X	157	FIL	G's	13.7	212.5	-57.4	58.7	60



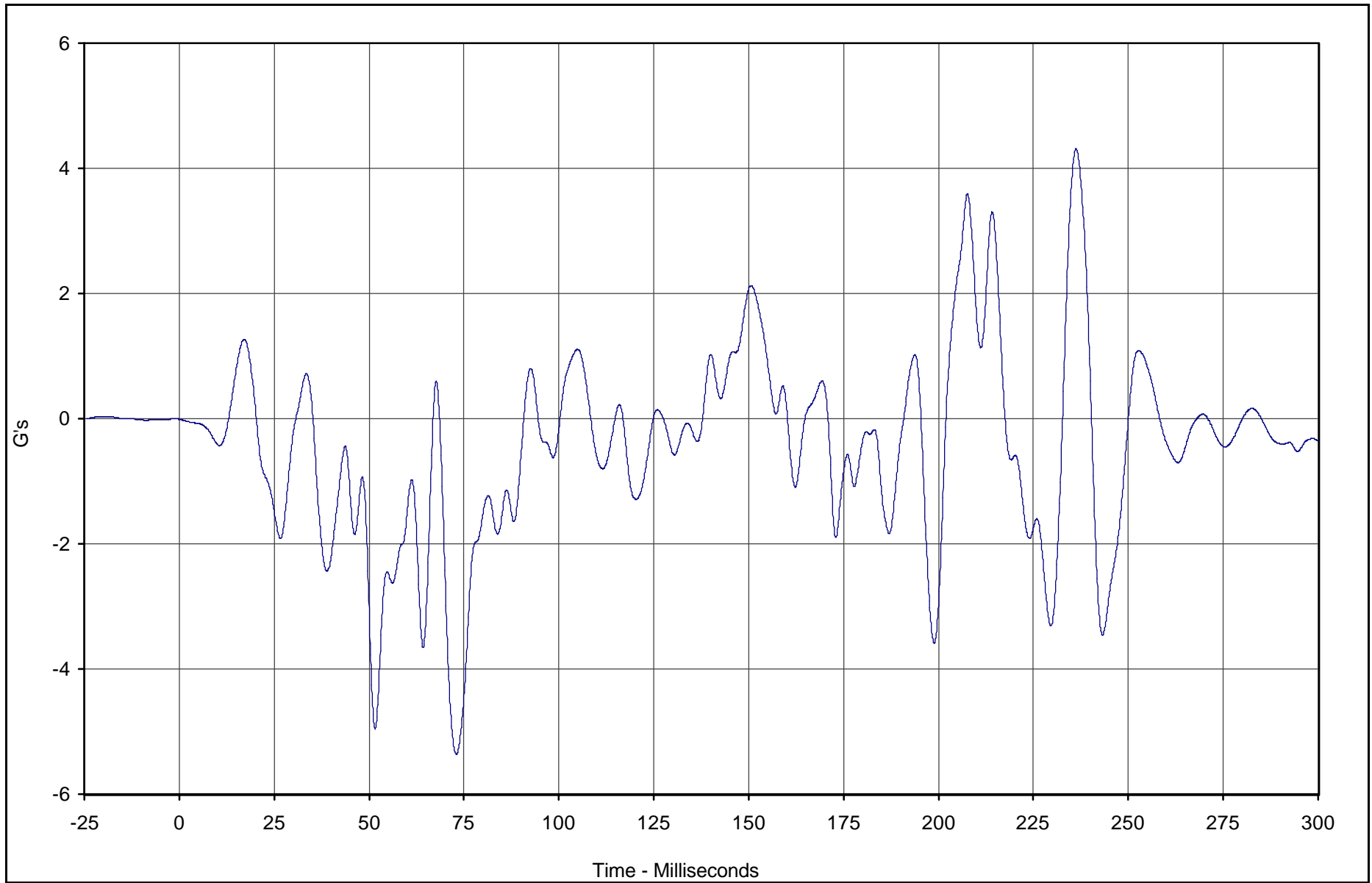
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

F3-32



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Child Seat Y	158	FIL	G's	4.3	236.3	-5.4	73.0	60



Test Vehicle: 2003 Acura MDX SUV

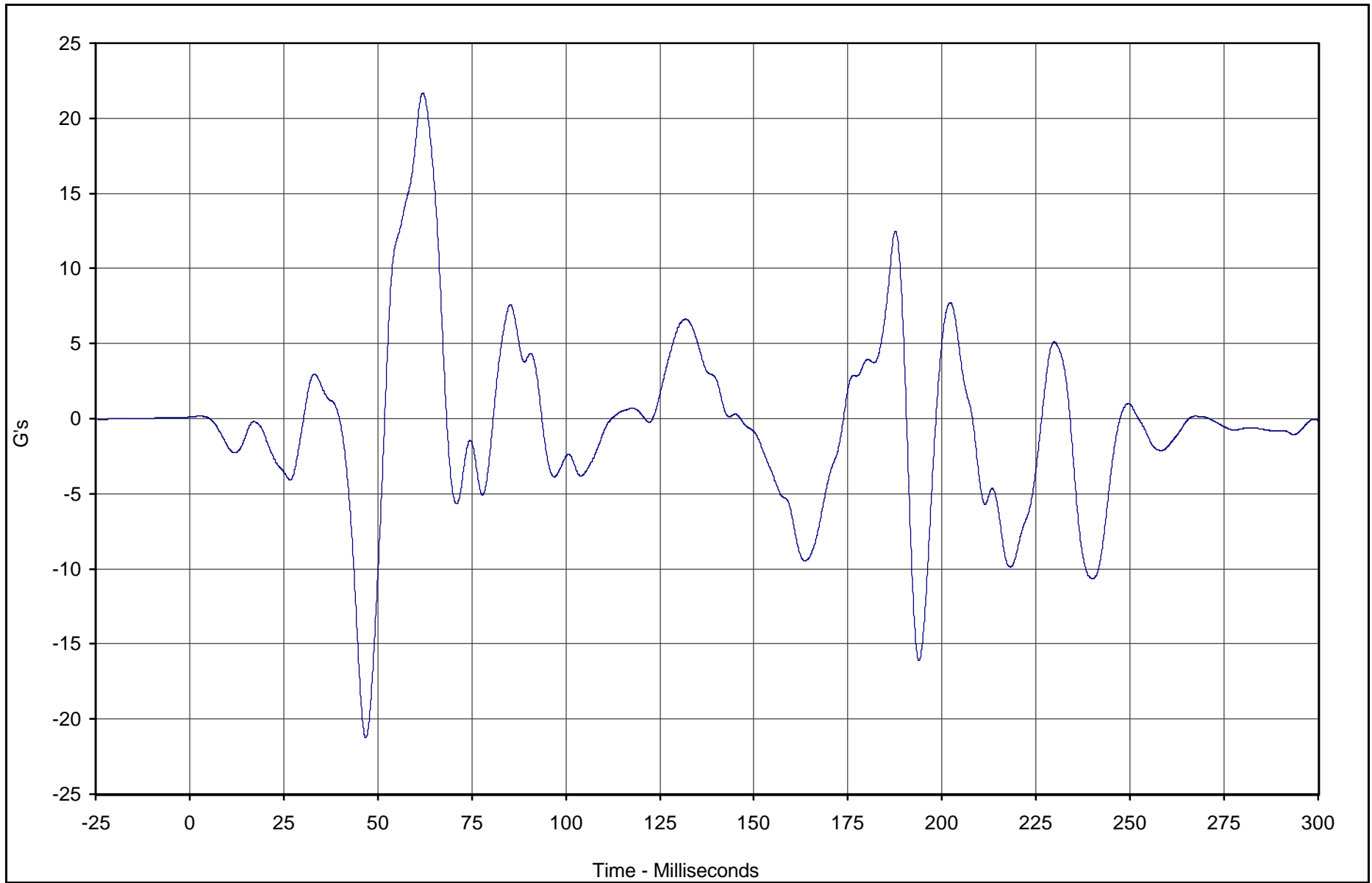
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-33



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Child Seat Z	159	FIL	G's	21.7	62.0	-21.2	46.8	60



Test Vehicle: 2003 Acura MDX SUV

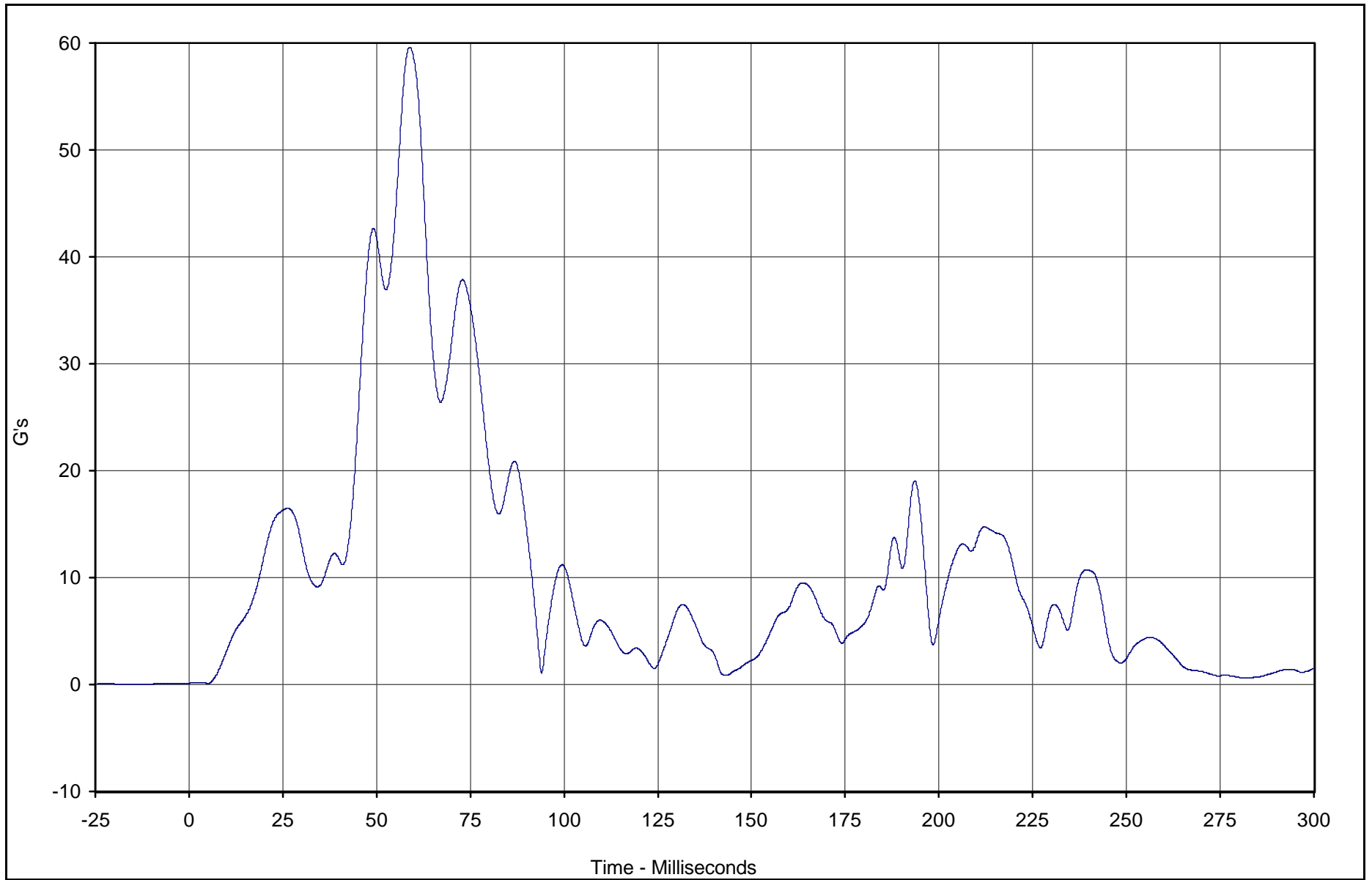
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-34



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Car Seat Resultant	157	RES	G's	59.6	58.8	0.1	5.1	60



Test Vehicle: 2003 Acura MDX SUV

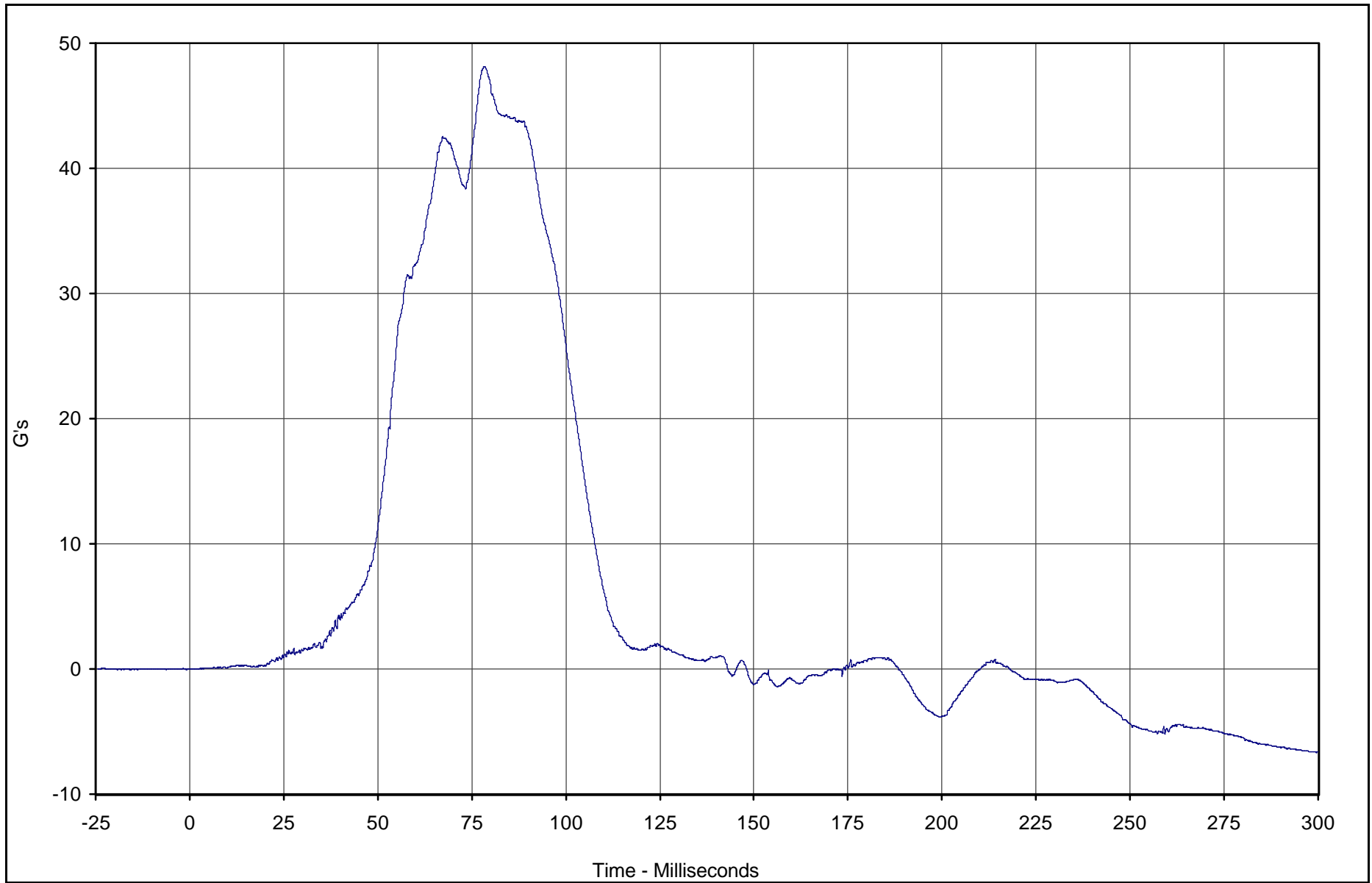
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-35



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Head X	160	FIL	G's	48.1	78.2	-6.7	299.5	1000



Test Vehicle: 2003 Acura MDX SUV

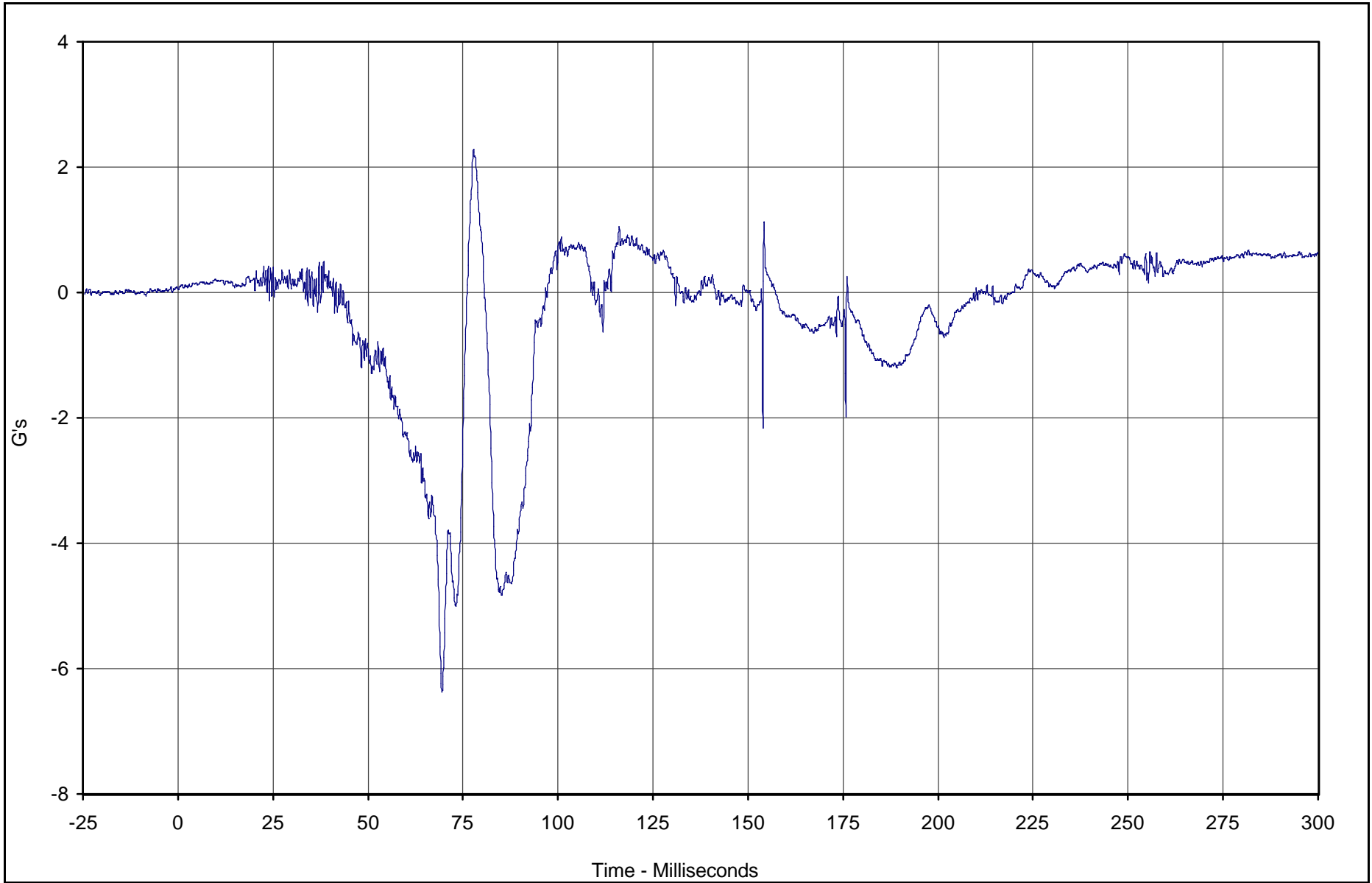
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-36



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Head Y	161	FIL	G's	2.3	77.8	-6.4	69.5	1000



Test Vehicle: 2003 Acura MDX SUV

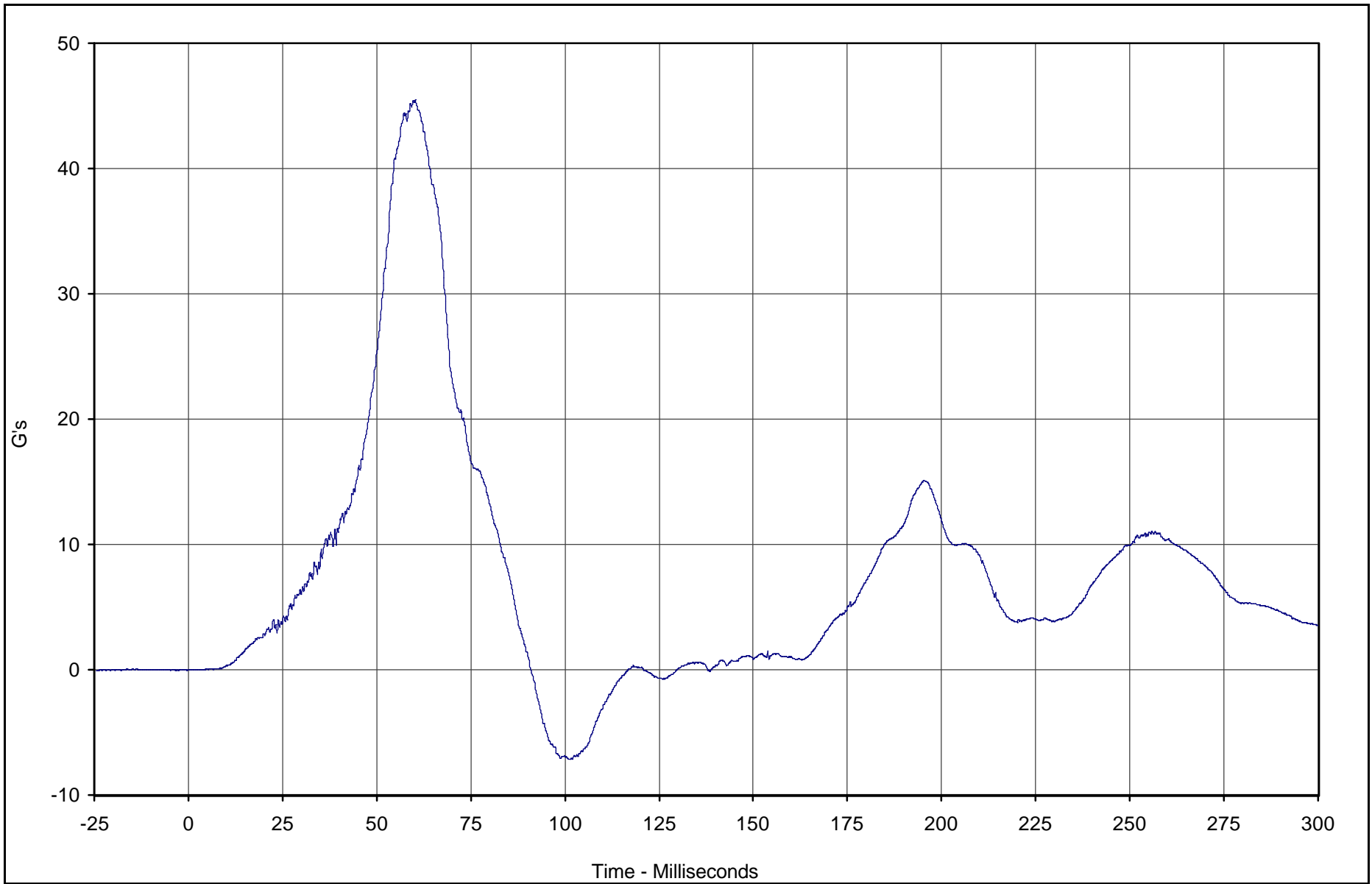
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-37



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Head Z	162	FIL	G's	45.5	60.3	-7.2	101.0	1000



Test Vehicle: 2003 Acura MDX SUV

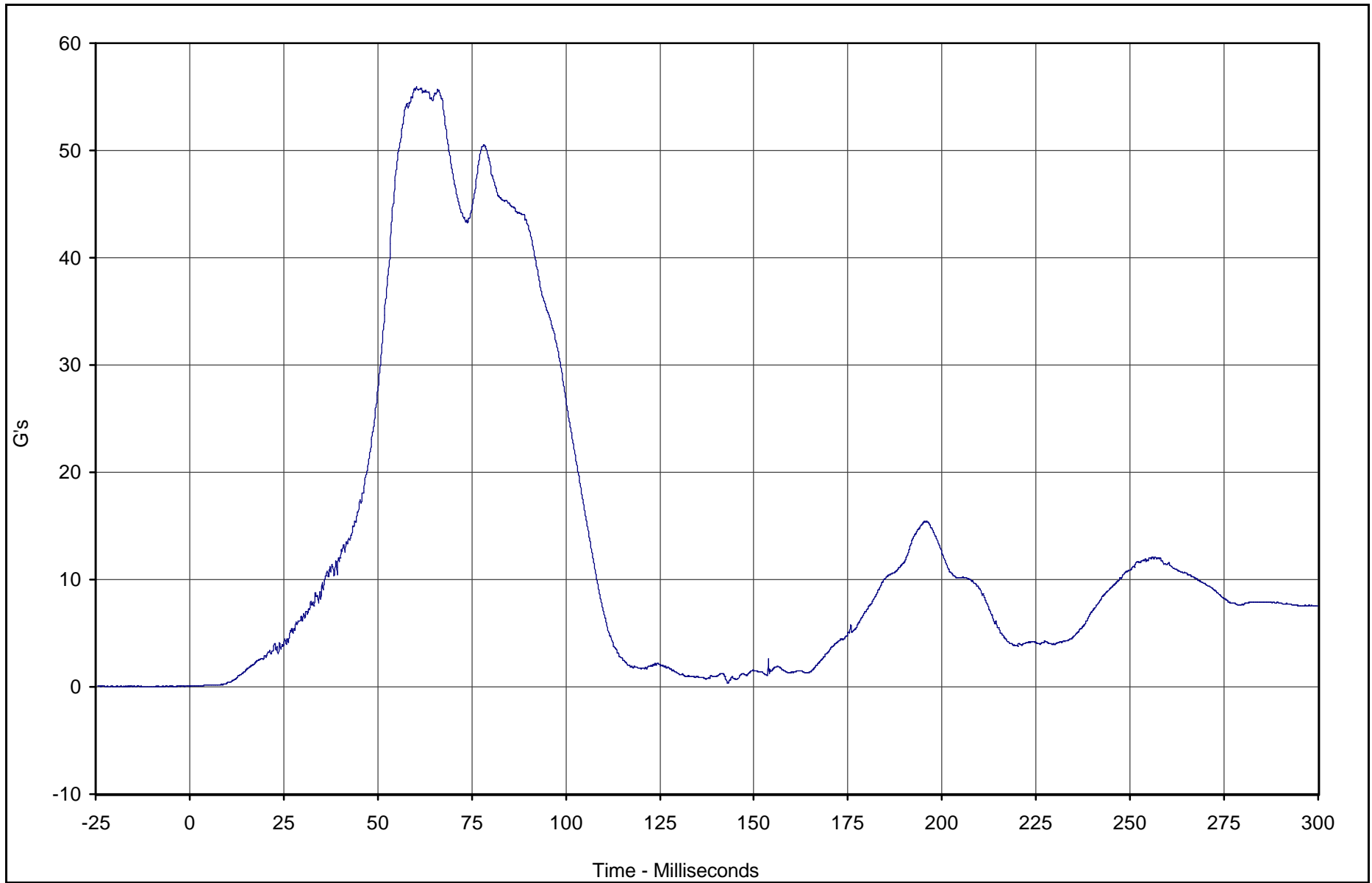
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-38



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Head Resultant	160	RES	G's	55.9	60.3	0.0	0.1	1000



Test Vehicle: 2003 Acura MDX SUV

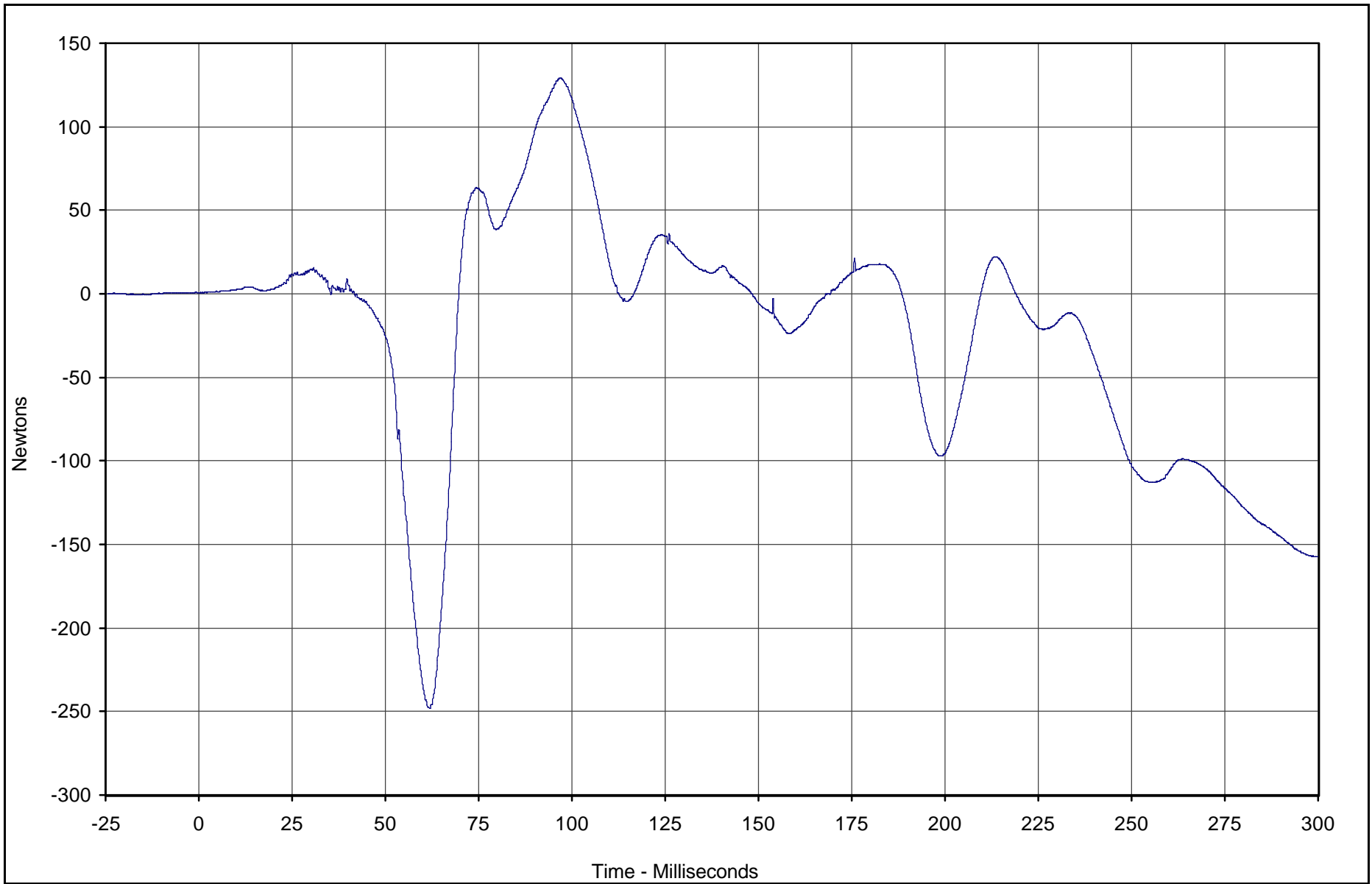
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-39



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Upper Neck Force X	163	FIL	Newtons	129.2	96.7	-248.2	61.9	1000



Test Vehicle: 2003 Acura MDX SUV

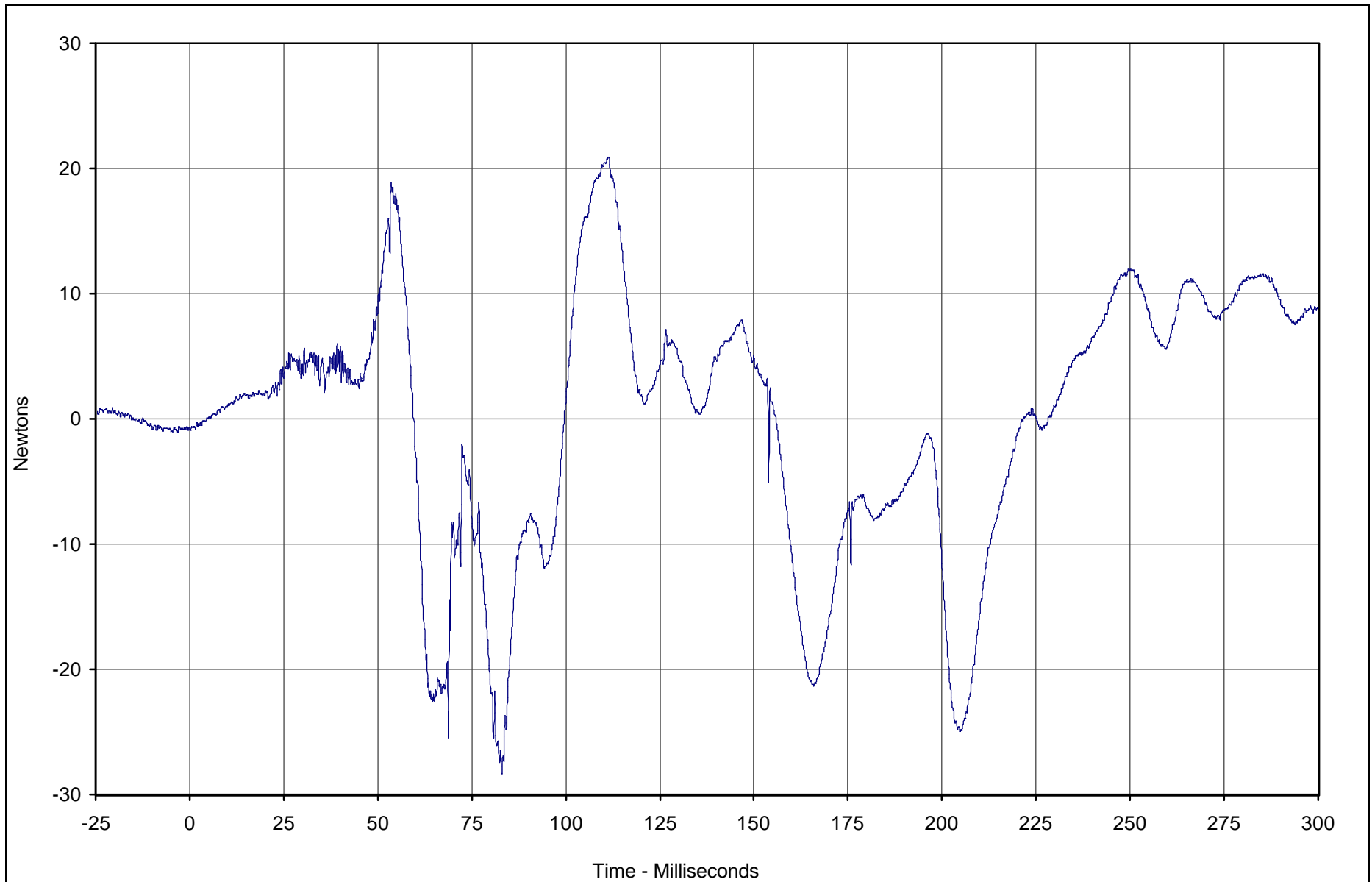
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-40



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Upper Neck Force Y	164	FIL	Newtons	20.9	111.3	-28.3	83.0	1000



Test Vehicle: 2003 Acura MDX SUV

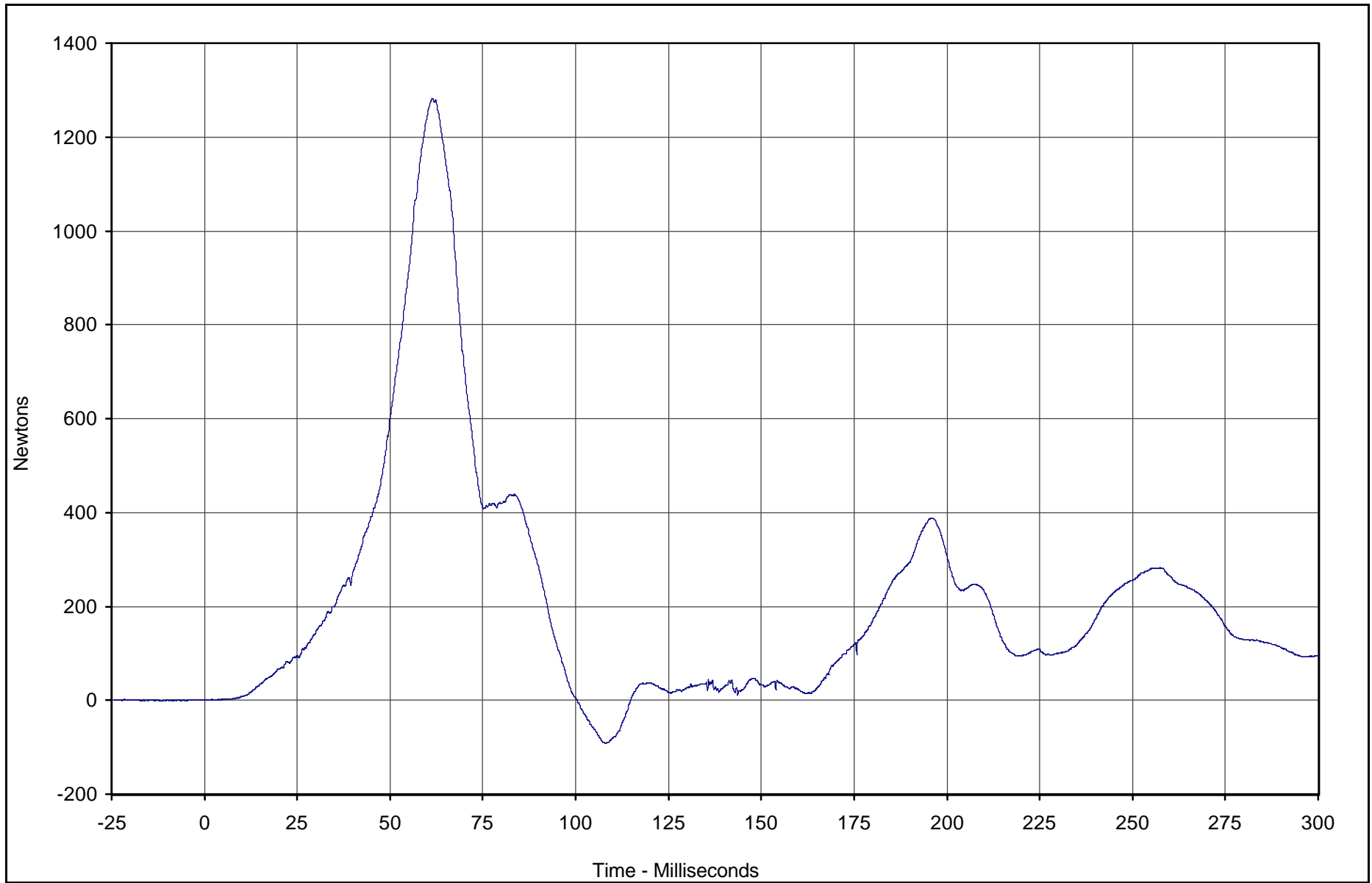
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-41



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Upper Neck Force Z	165	FIL	Newtons	1282.5	61.4	-91.3	108.2	1000



Test Vehicle: 2003 Acura MDX SUV

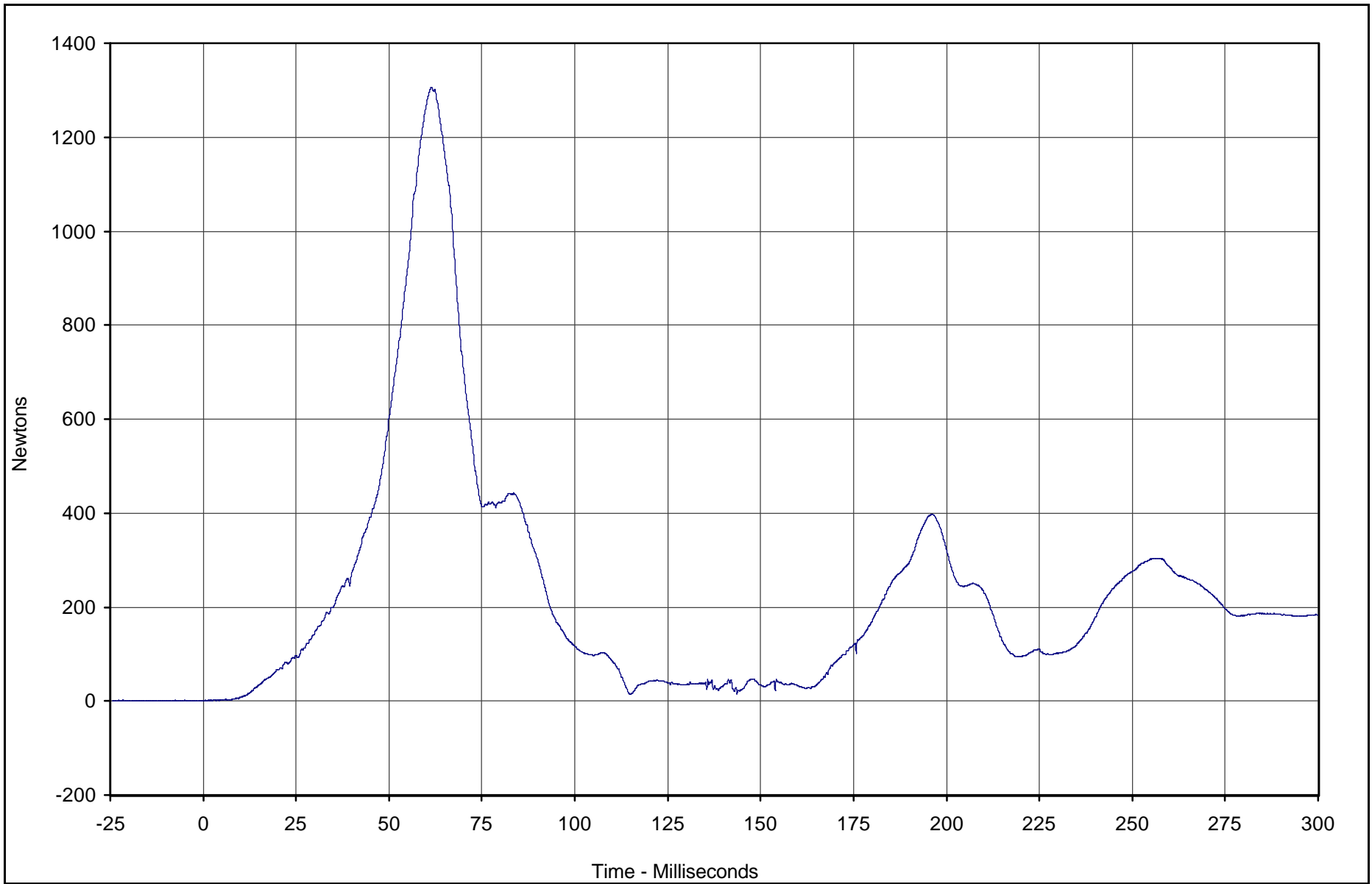
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-42



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Upper Neck Force Res.	163	RES	Newtons	1306.2	61.4	1.0	2.3	1000



Test Vehicle: 2003 Acura MDX SUV

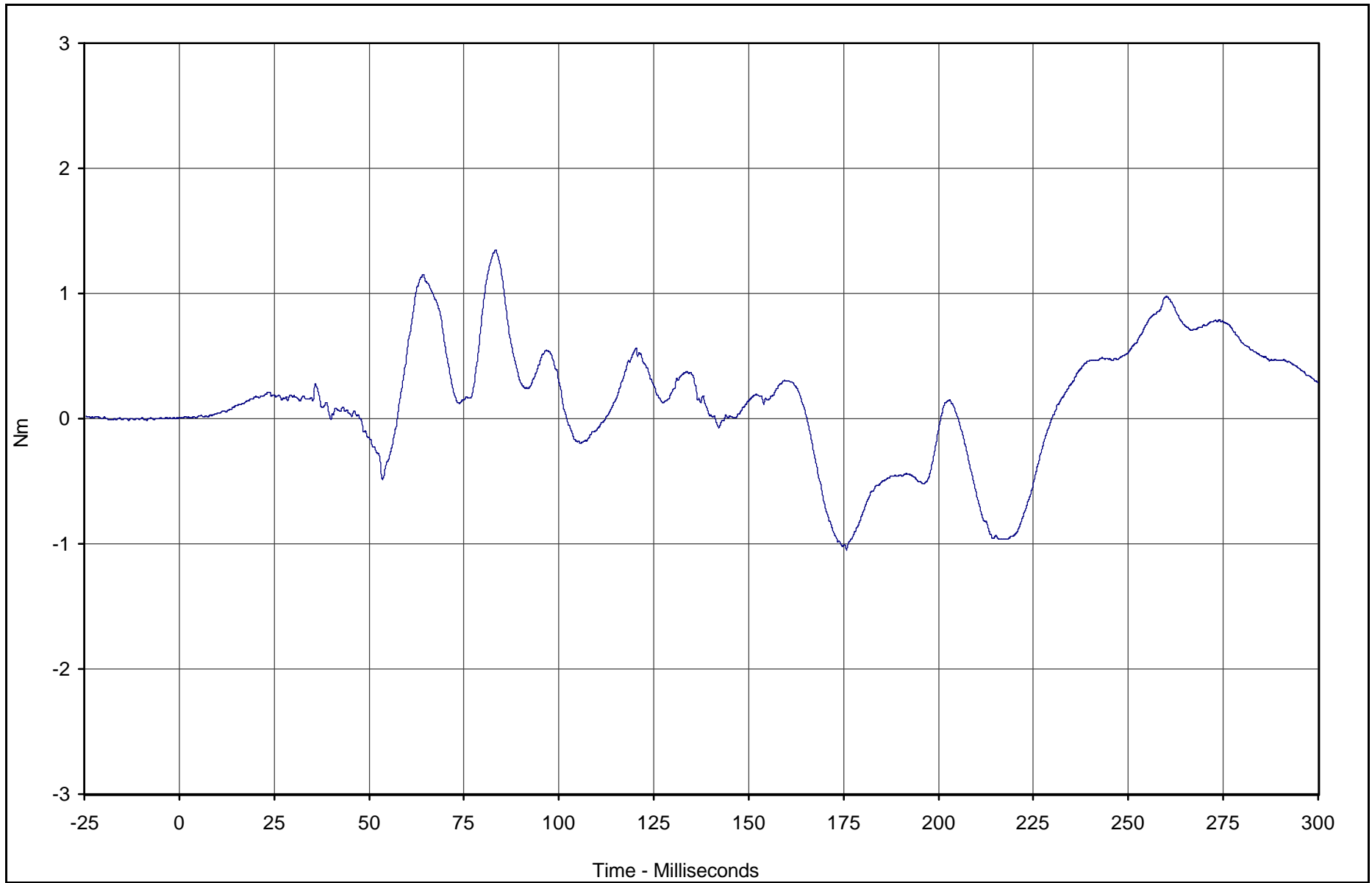
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-43



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Upper Neck Moment X	166	FIL	Nm	1.3	83.4	-1.1	175.8	600



Test Vehicle: 2003 Acura MDX SUV

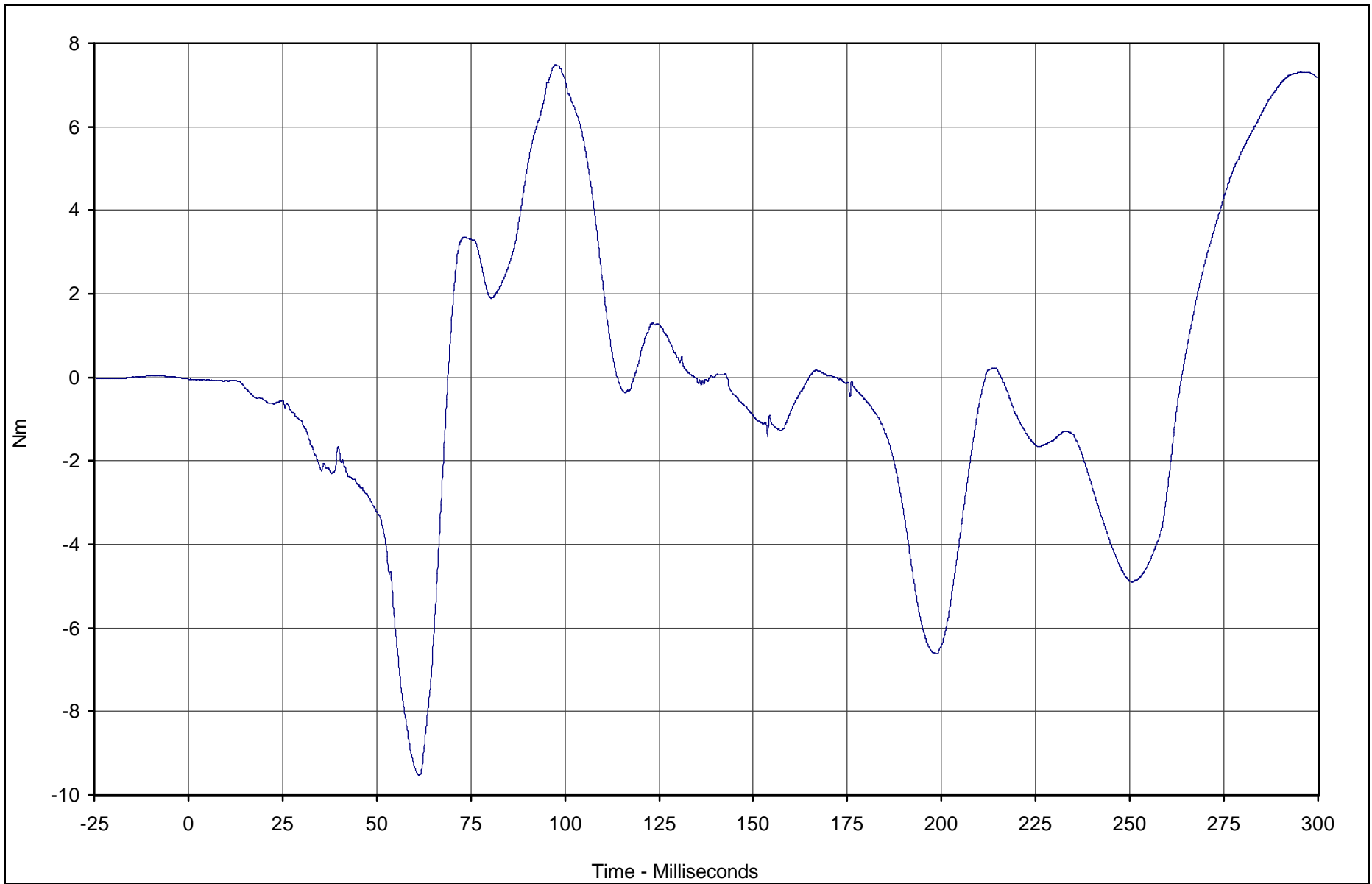
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-44



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Upper Neck Moment Y	167	FIL	Nm	7.5	97.6	-9.5	61.3	600



Test Vehicle: 2003 Acura MDX SUV

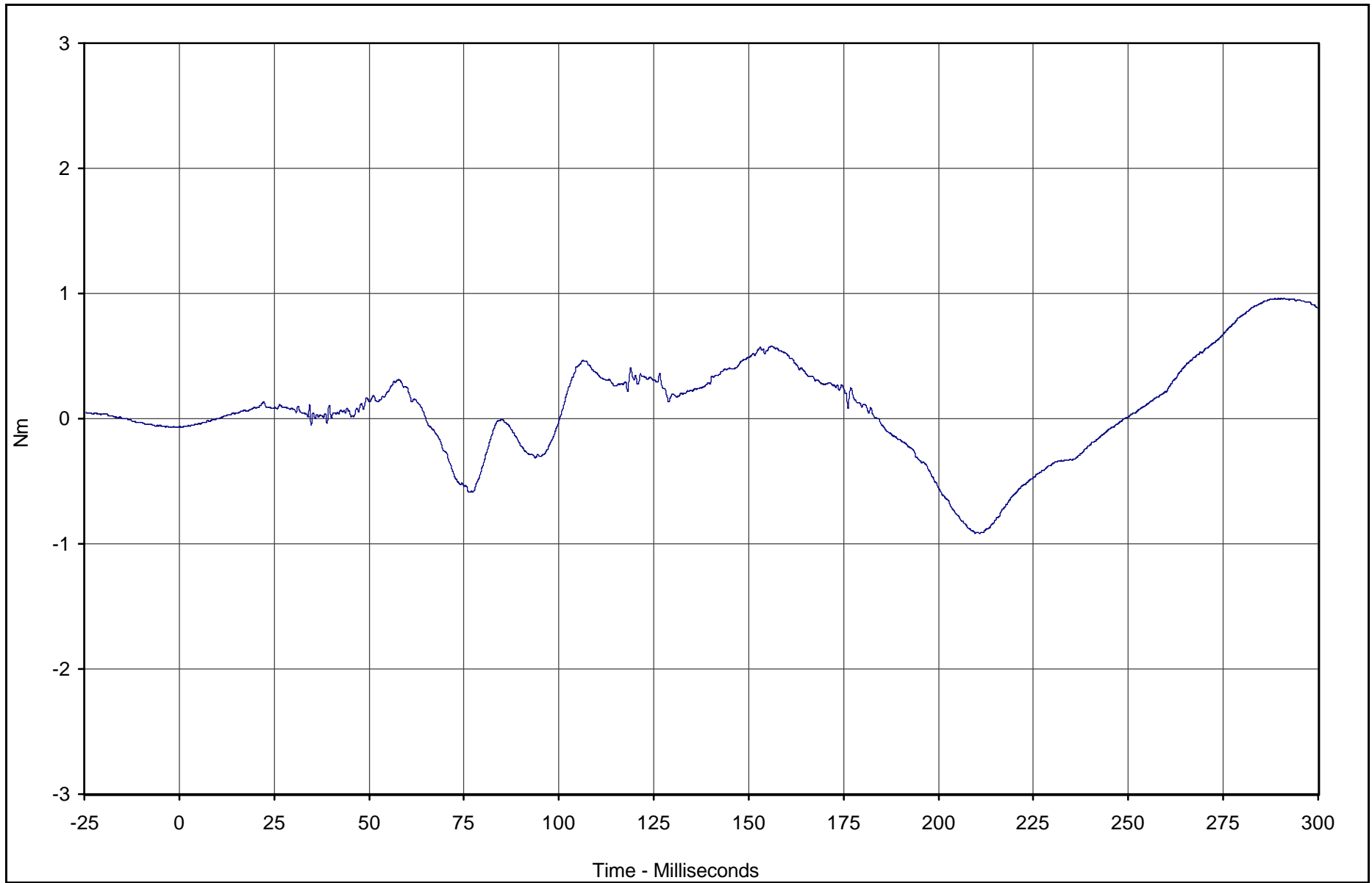
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-45



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Upper Neck Moment Z	168	FIL	Nm	1.0	291.0	-0.9	210.9	600



Test Vehicle: 2003 Acura MDX SUV

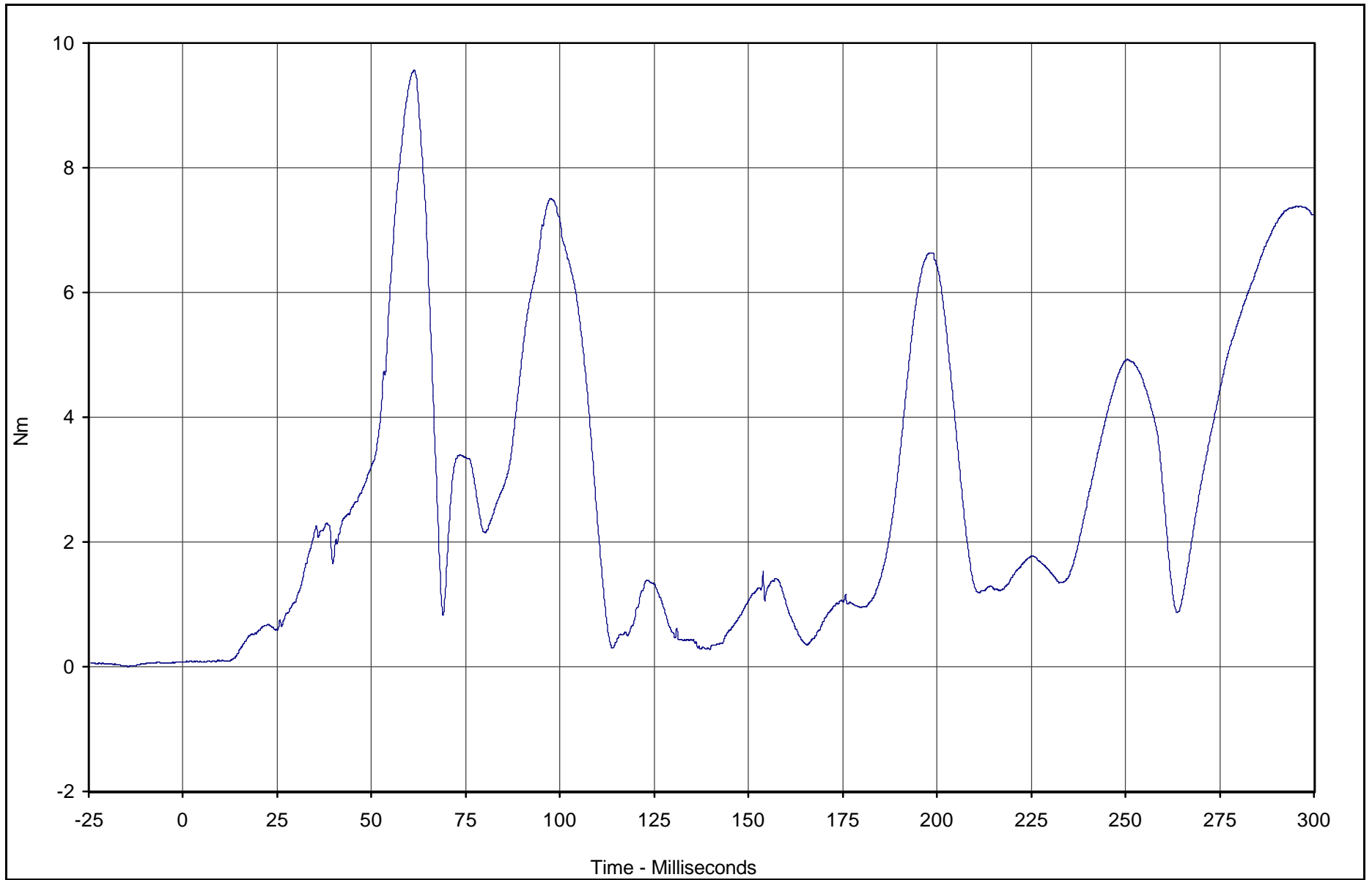
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-46



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Upper Neck Mom Res.	166	RES	Nm	9.6	61.3	0.1	5.1	600



Test Vehicle: 2003 Acura MDX SUV

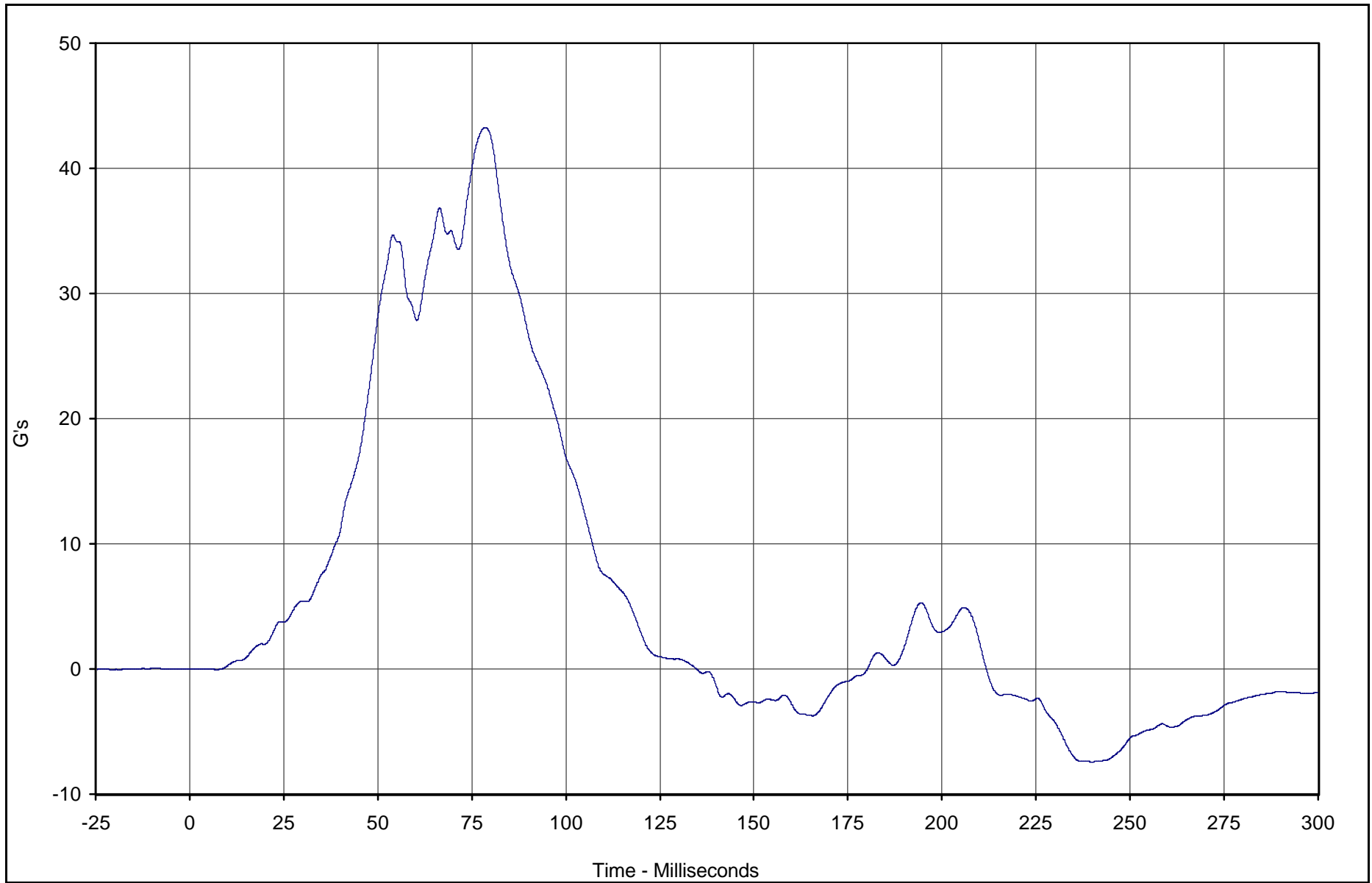
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-47



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Chest X	169	FIL	G's	43.3	78.6	-7.4	239.8	180



Test Vehicle: 2003 Acura MDX SUV

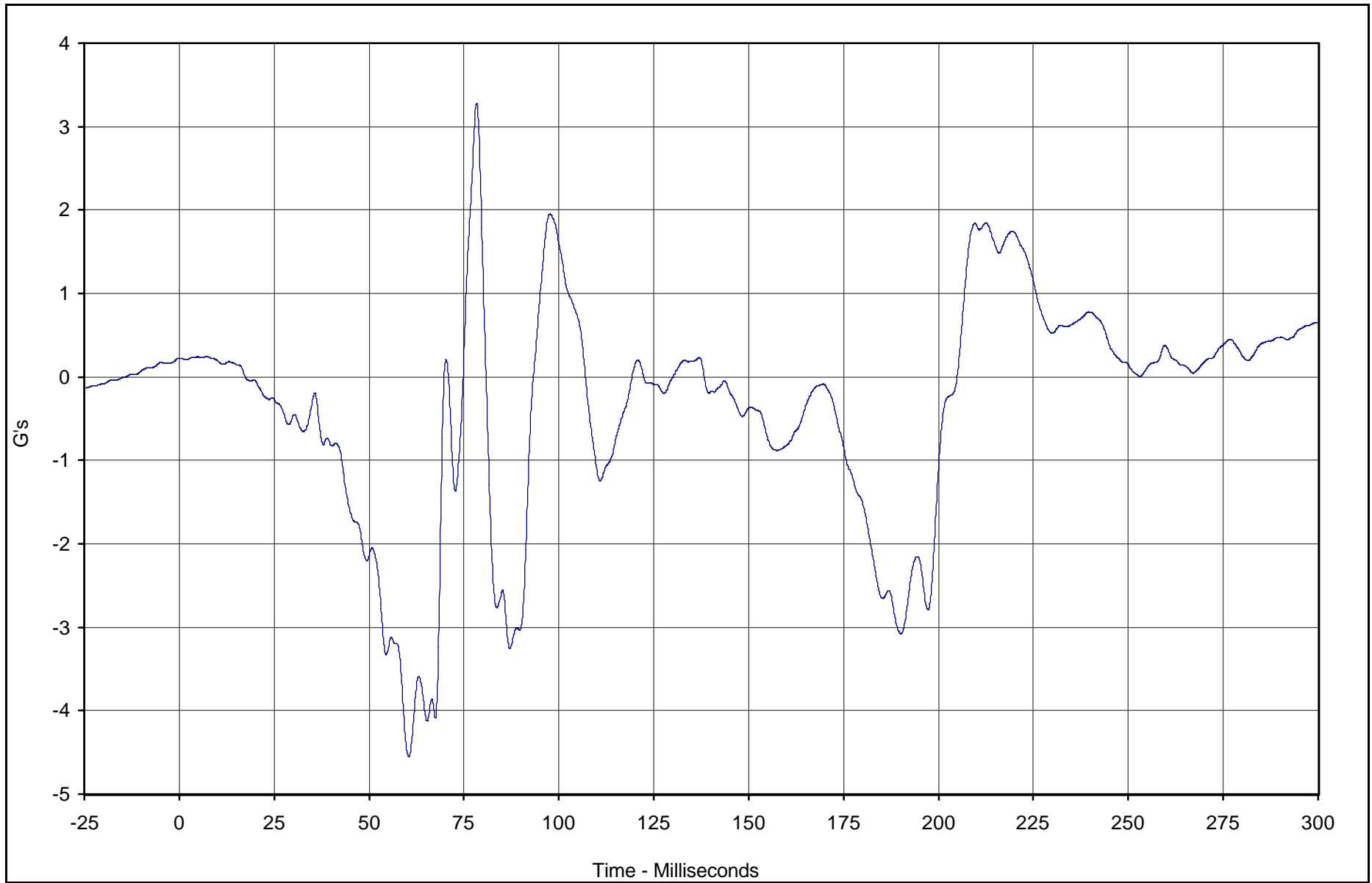
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-48



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Chest Y	170	FIL	G's	3.3	78.4	-4.6	60.5	180



Test Vehicle: 2003 Acura MDX SUV

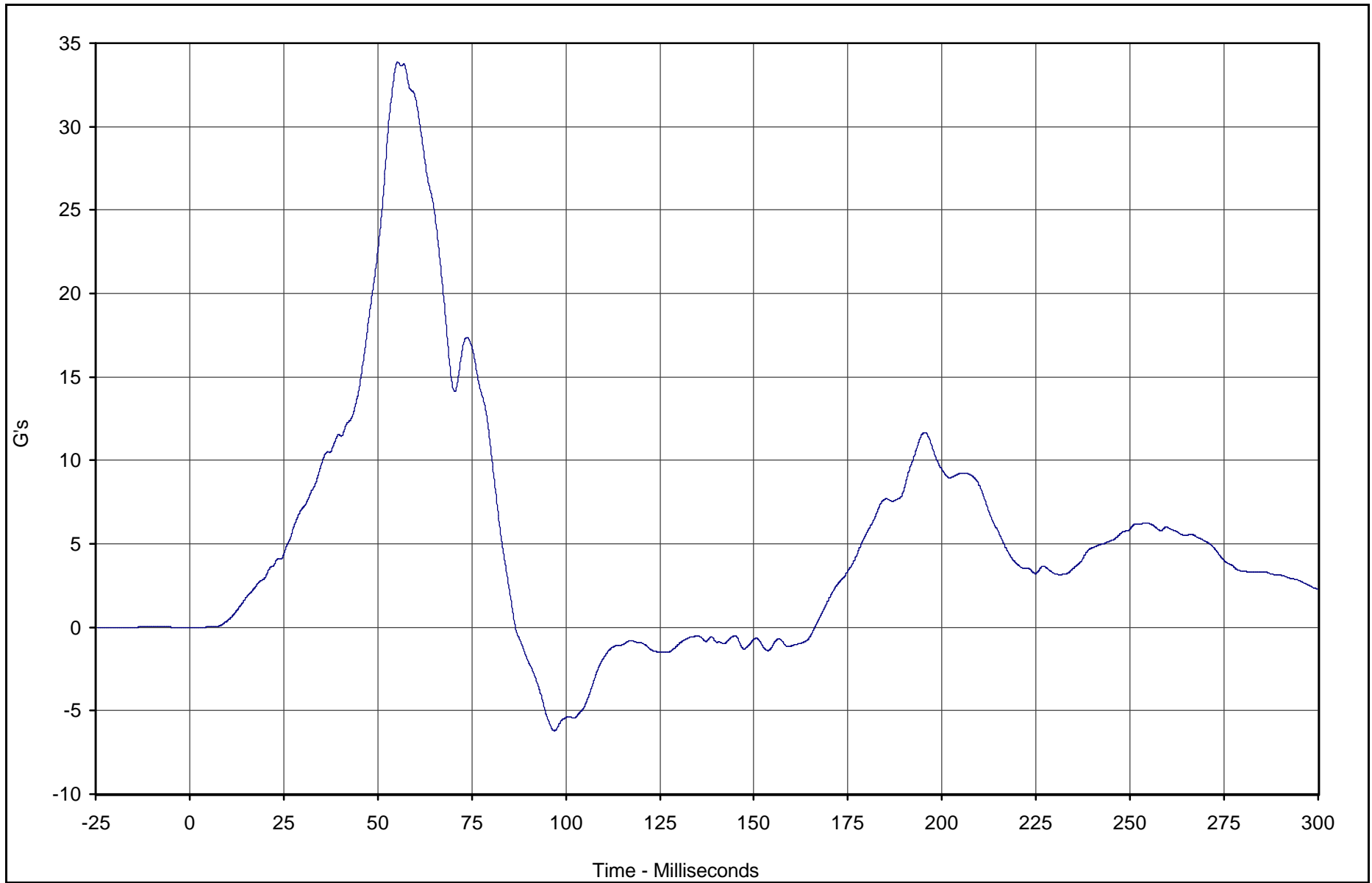
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-49



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Chest Z	171	FIL	G's	33.9	55.3	-6.2	96.9	180



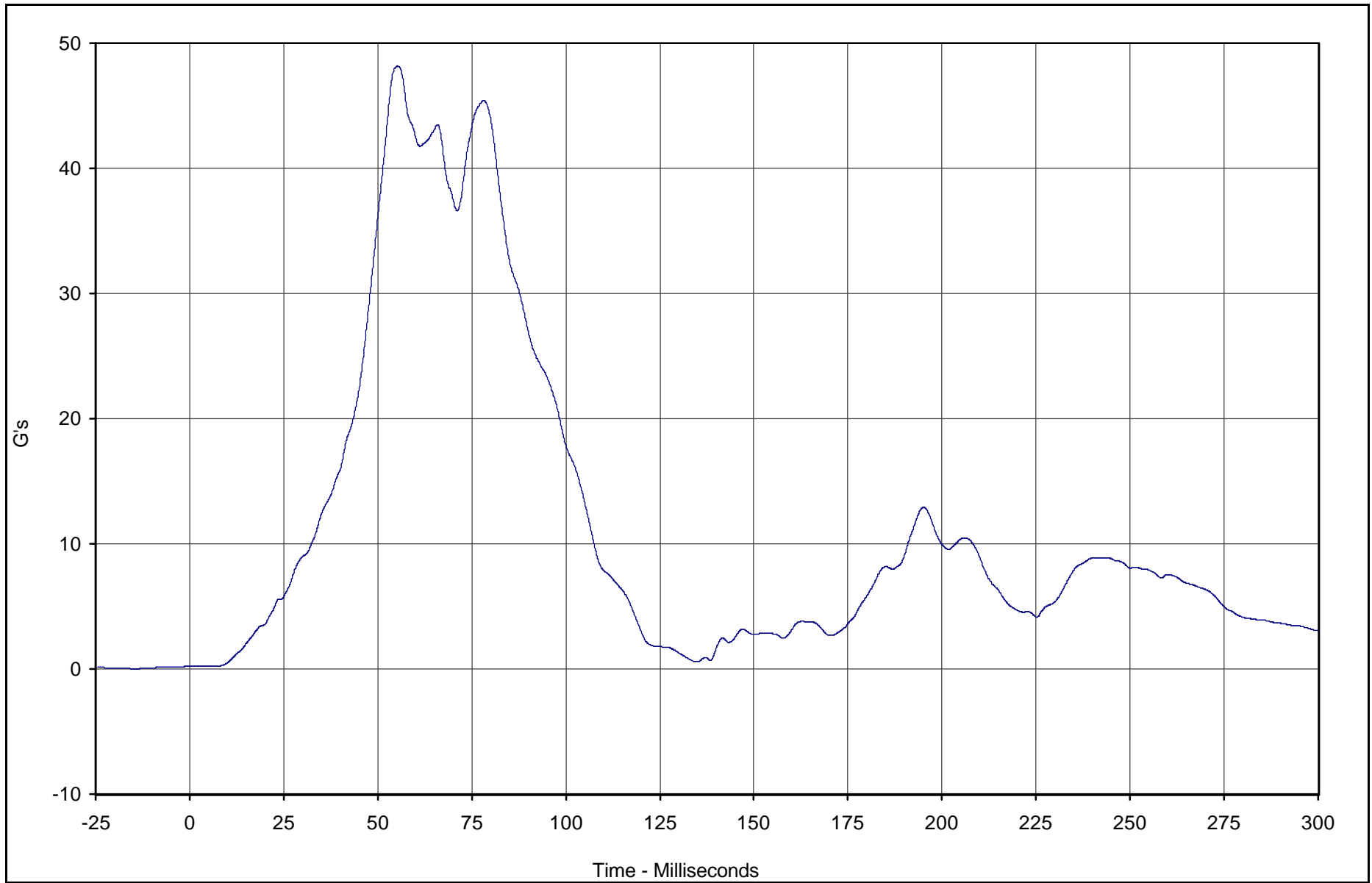
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

F3-50



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Chest Resultant	169	RES	G's	48.2	55.3	0.2	1.8	180



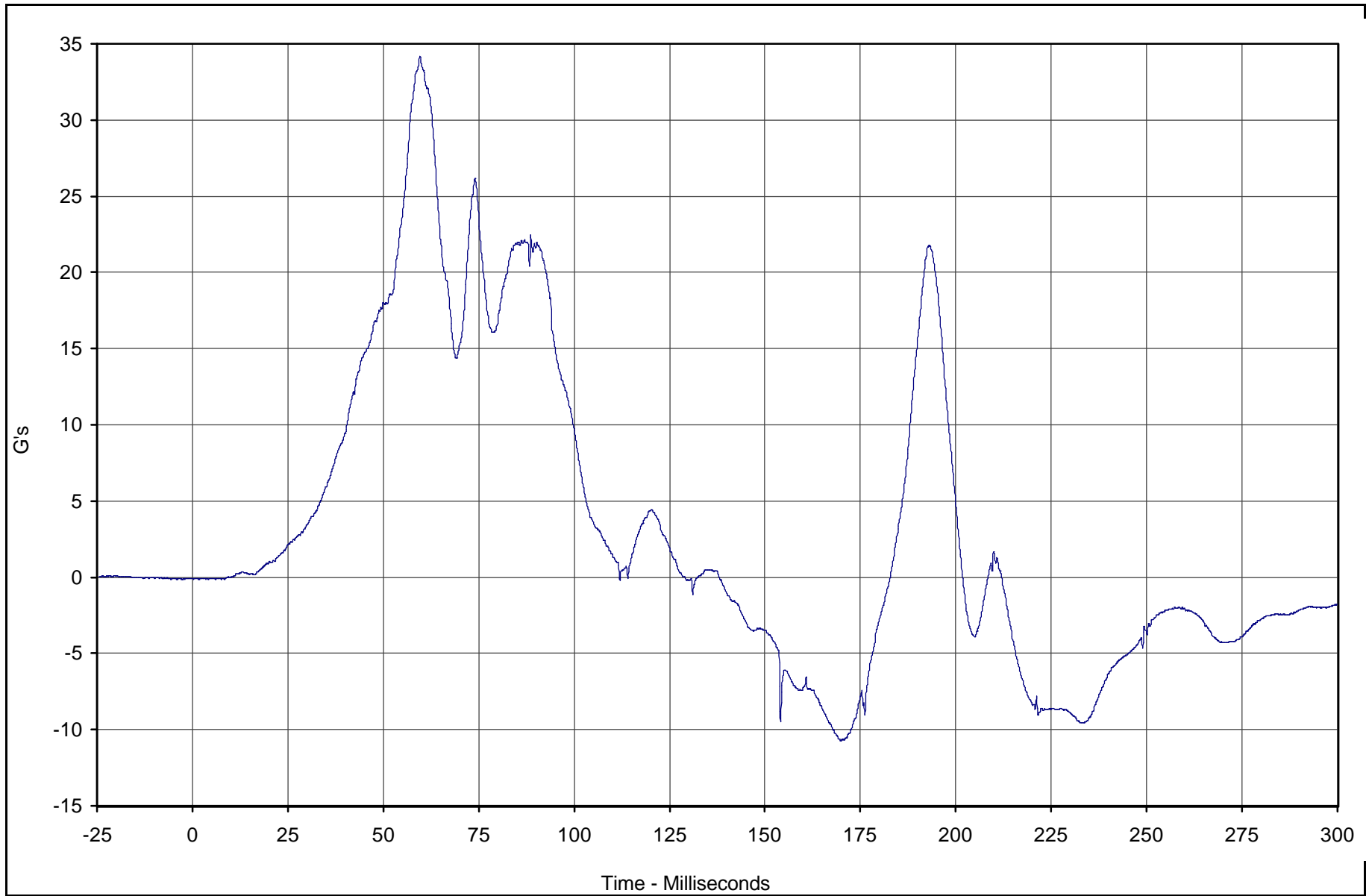
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

F3-51



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Pelvis X	172	FIL	G's	34.2	59.6	-10.7	169.9	1000



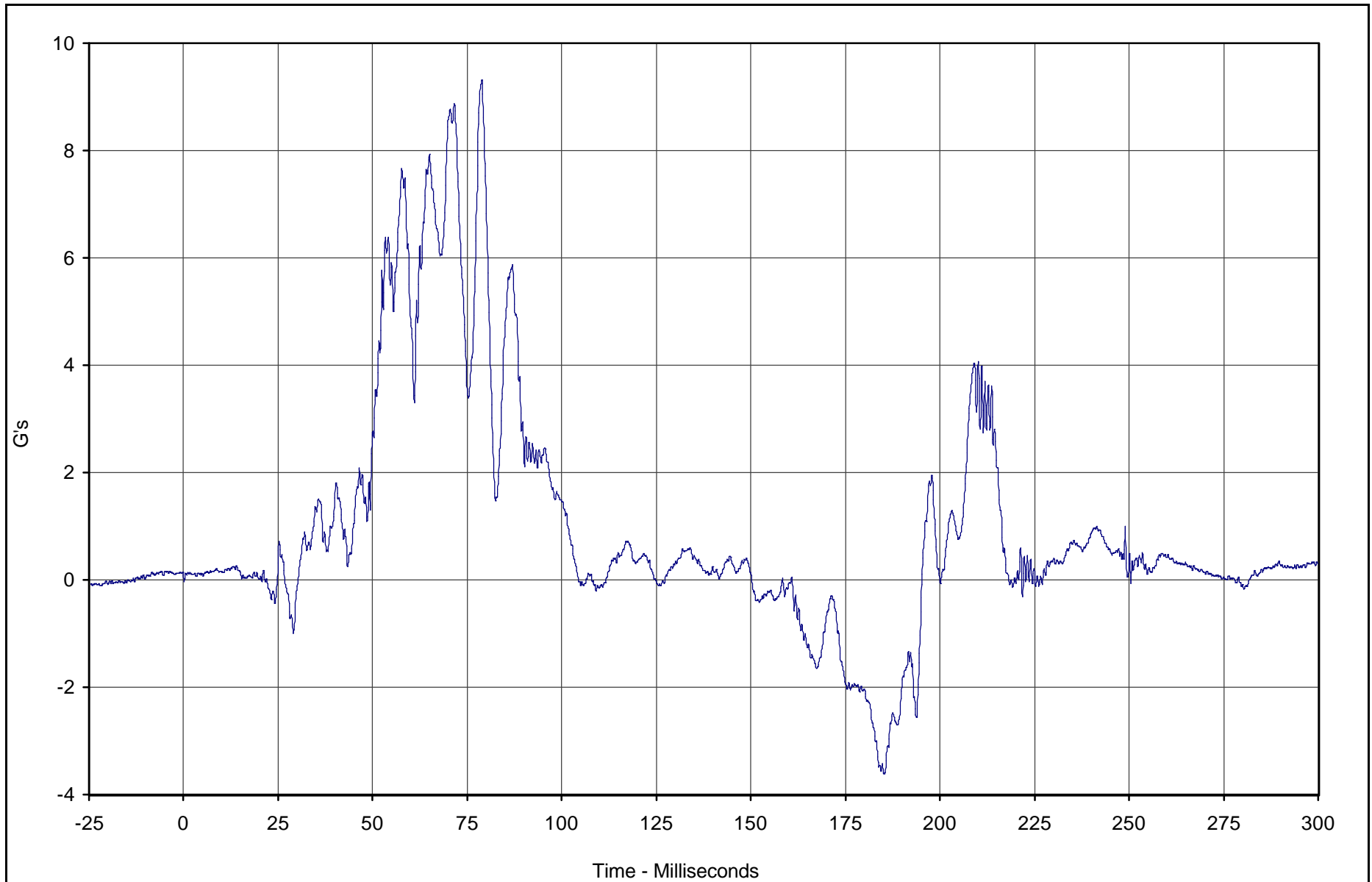
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

F3-52



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Pelvis Y	173	FIL	G's	9.3	78.9	-3.6	185.2	1000



Test Vehicle: 2003 Acura MDX SUV

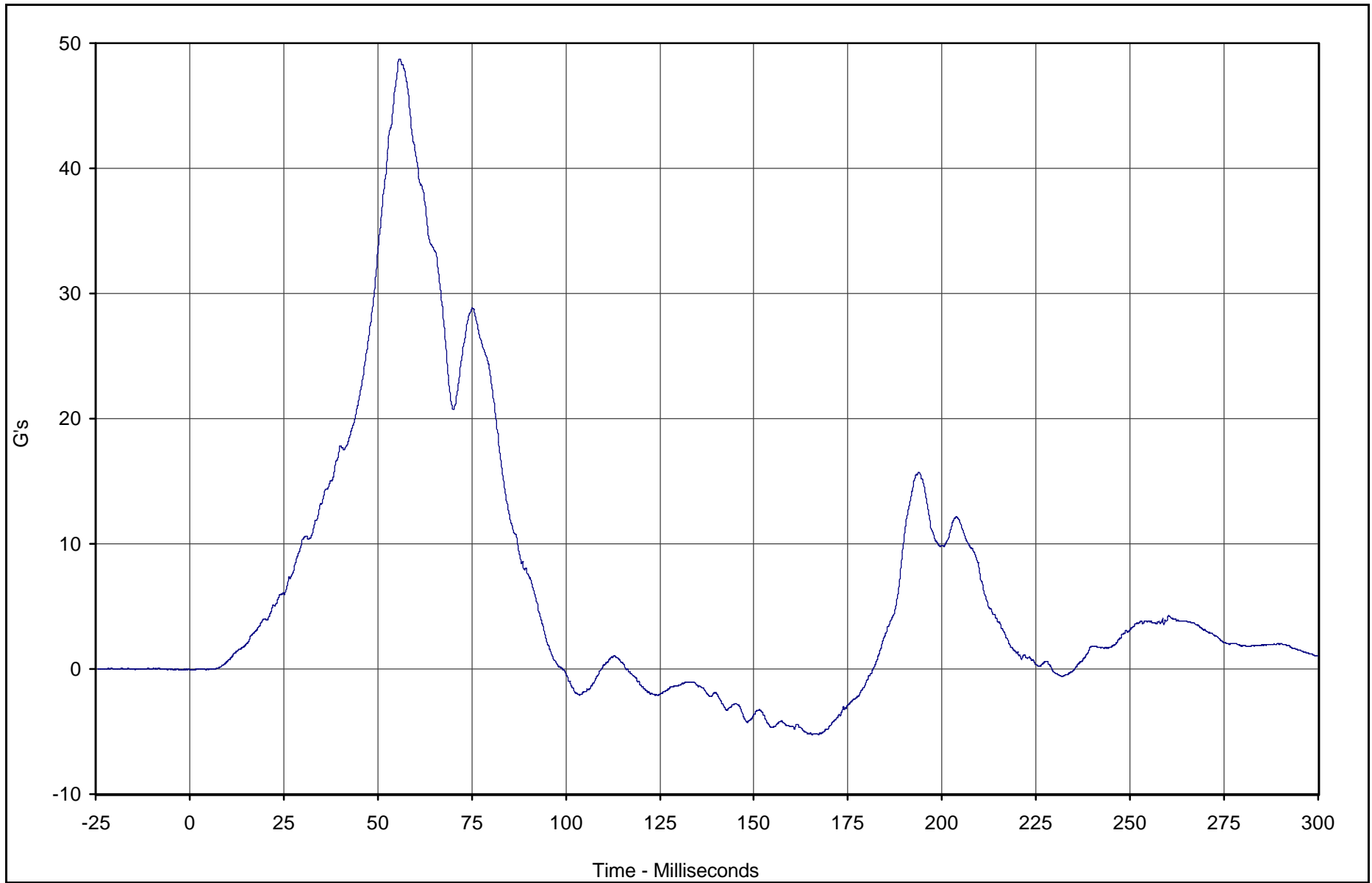
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-53



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Pelvis Z	174	FIL	G's	48.7	55.9	-5.2	167.2	1000



Test Vehicle: 2003 Acura MDX SUV

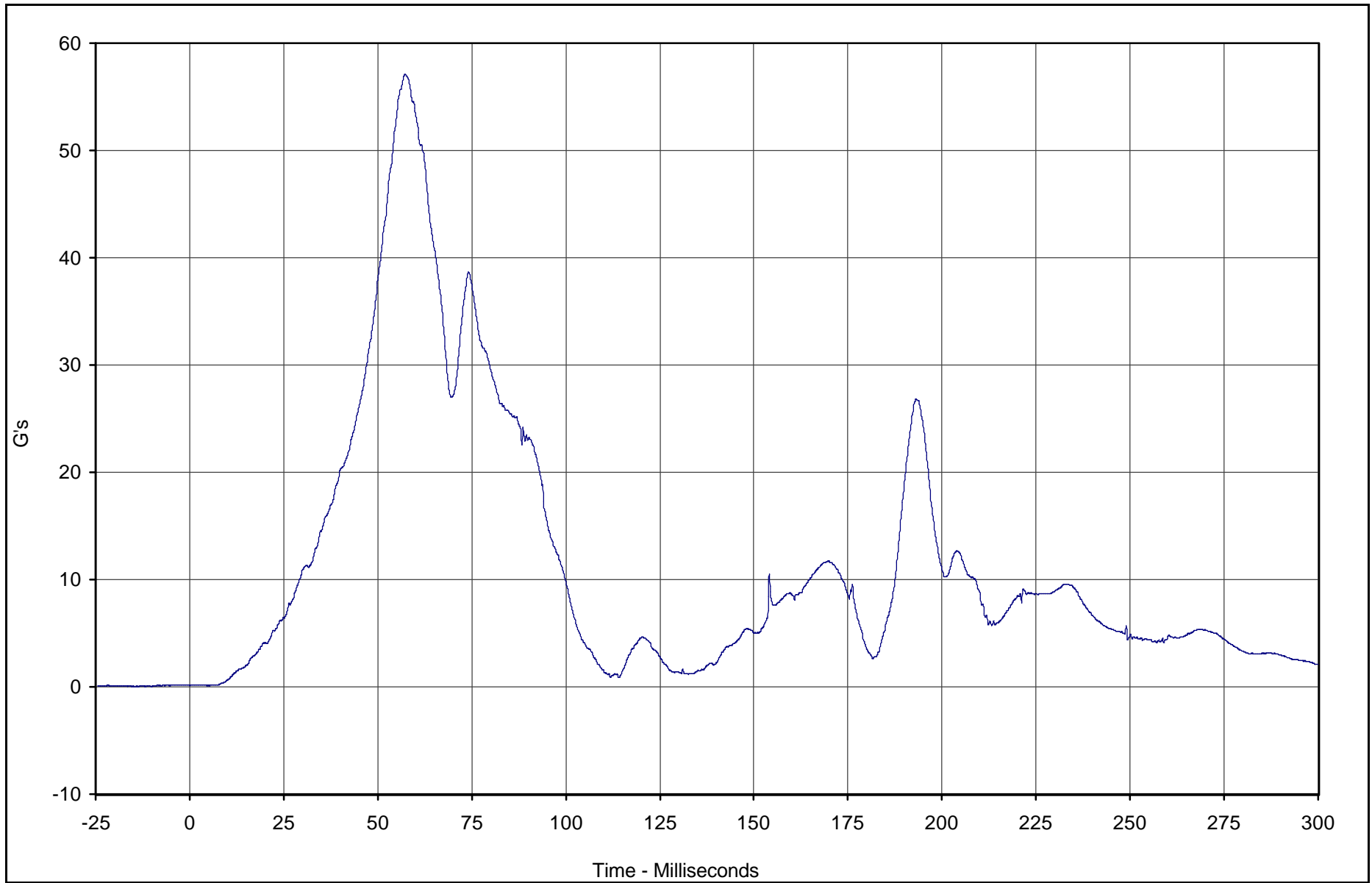
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-54



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Pelvis Resultant	172	RES	G's	57.1	57.3	0.1	5.2	1000

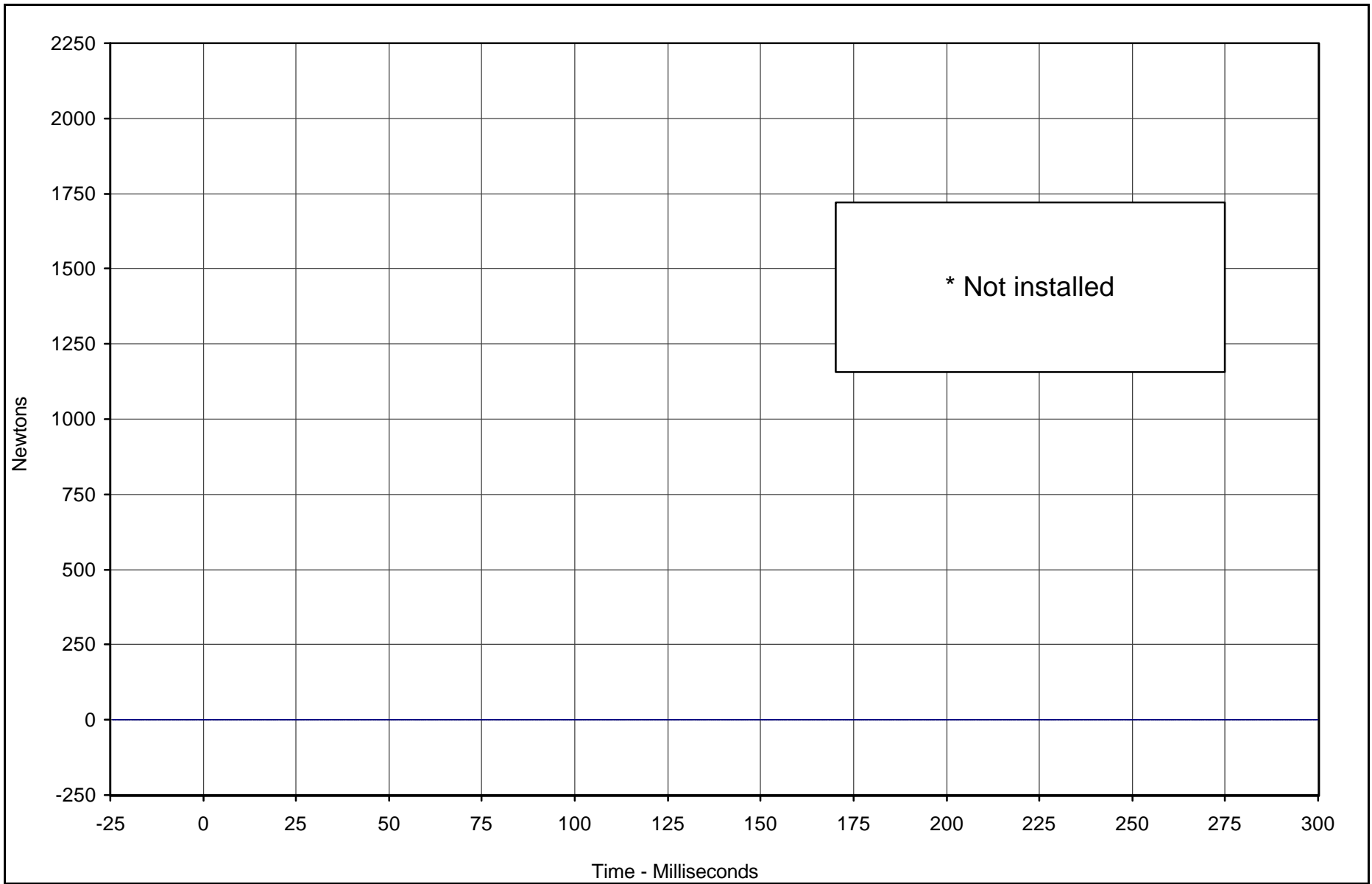


Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301



* Not installed

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Child Seat Tether Load	175	FIL	Newtons	0.0	0.0	0.0	0.0	60



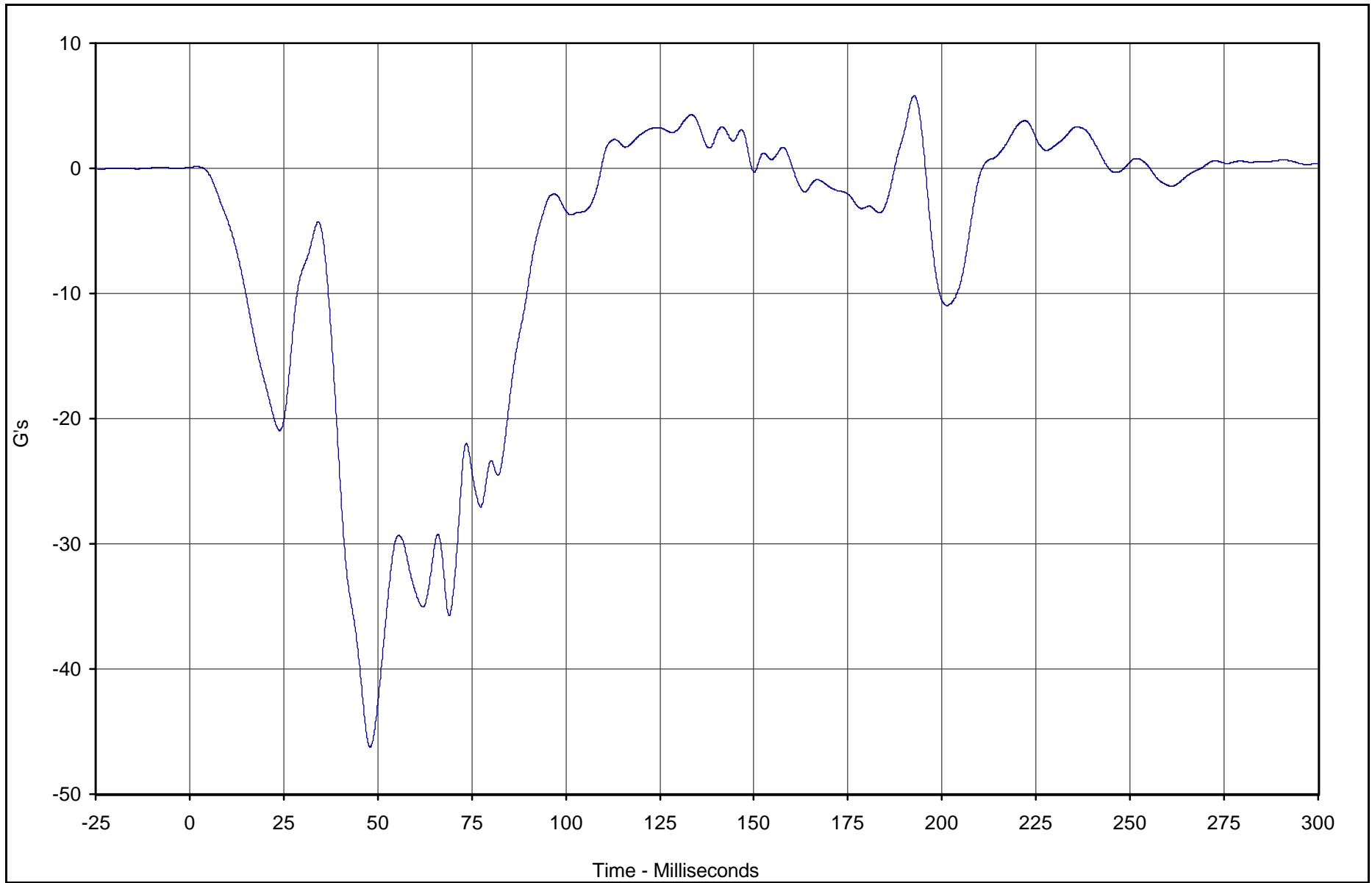
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

F3-56



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Child Seat X	176	FIL	G's	5.8	192.6	-46.2	48.0	60



Test Vehicle: 2003 Acura MDX SUV

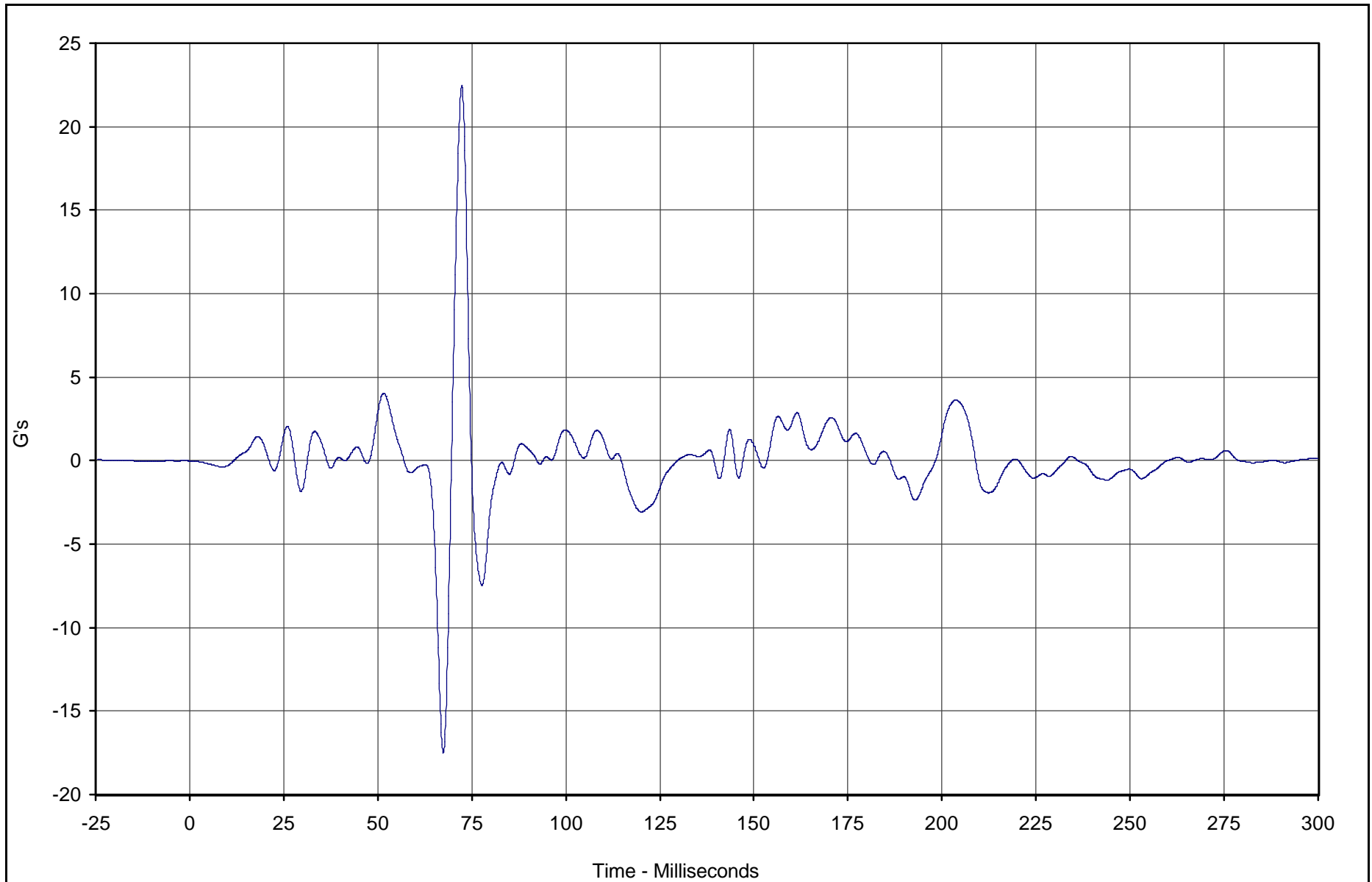
Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC

F3-57



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Child Seat Y	177	FIL	G's	22.5	72.3	-17.5	67.4	60



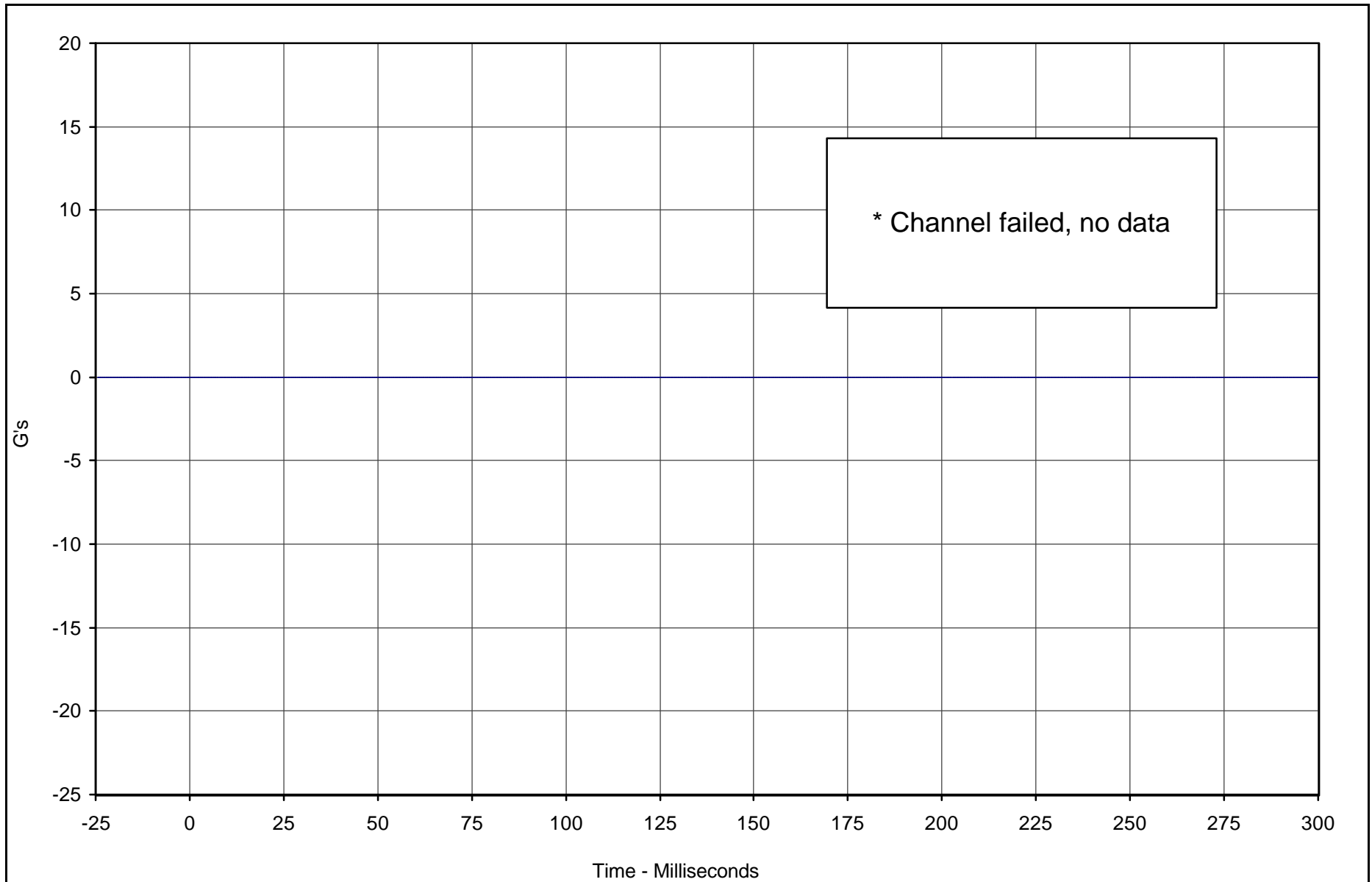
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

TR-P23001-16-NC



* Channel failed, no data

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Child Seat Z	178	FIL	G's	0.0	0.0	0.0	0.0	60



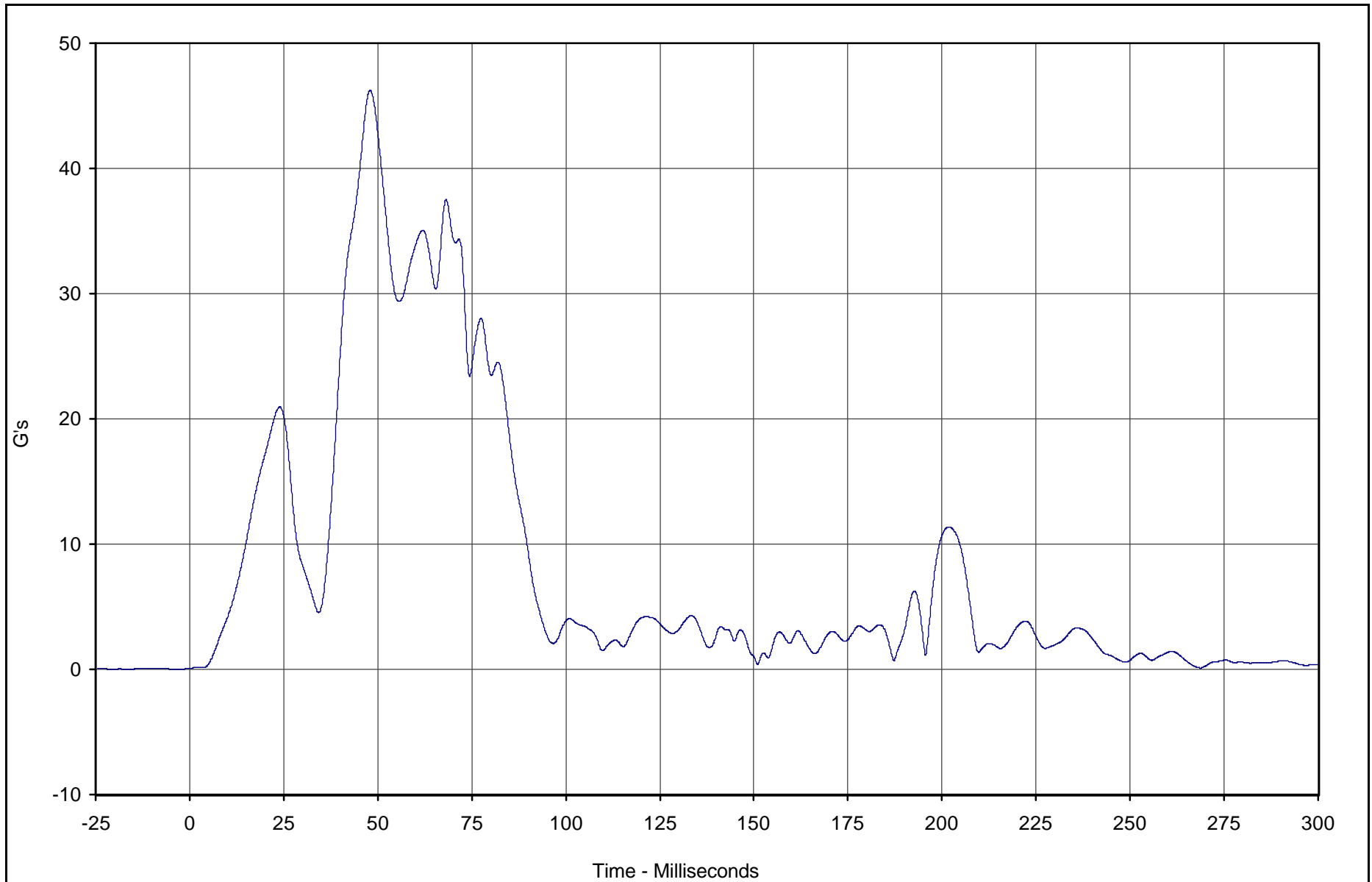
Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

F3-59



TR-P23001-16-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Car Seat Resultant	176	RES	G's	46.2	48.0	0.1	0.0	60



Test Vehicle: 2003 Acura MDX SUV

Test Date: 3/13/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M35301

SECTION F-4

CHILD DUMMY INSTRUMENTATION INFORMATION

**2003 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Right Rear Child (3 Yr.) A.T.D. Serial Number 082
3/13/03
2003 Acura MDX SUV**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
134	HEAD, PRIMARY	X	GPAC050	Accel.,1/2 bridge	Endevco	7264-2000	G
135	HEAD, PRIMARY	Y	GPAC051	Accel.,1/2 bridge	Endevco	7264-2000	G
136	HEAD, PRIMARY	Z	GPAC052	Accel.,1/2 bridge	Endevco	7264-2000	G
137	UPPER NECK FORCE	X	082UNFX	Load cell, six axis neck	R. A. Denton	IF-234	N
138	UPPER NECK FORCE	Y	082UNFY	Load cell, six axis neck	R. A. Denton	IF-234	N
139	UPPER NECK FORCE	Z	082UNFZ	Load cell, six axis neck	R. A. Denton	IF-234	N
140	UPPER NECK MOMENT	X	082UNMX	Load cell, six axis neck	R. A. Denton	IF-234	Nm
141	UPPER NECK MOMENT	Y	082UNMY	Load cell, six axis neck	R. A. Denton	IF-234	Nm
142	UPPER NECK MOMENT	Z	082UNMZ	Load cell, six axis neck	R. A. Denton	IF-234	Nm
143	LOWER NECK FORCE	X	082LNFX	Load cell, six axis neck	R. A. Denton	3303	N
144	LOWER NECK FORCE	Y	082LNFY	Load cell, six axis neck	R. A. Denton	3303	N
145	LOWER NECK FORCE	Z	082LNFZ	Load cell, six axis neck	R. A. Denton	3303	N
146	LOWER NECK MOMENT	X	082LNMX	Load cell, six axis neck	R. A. Denton	3303	Nm
147	LOWER NECK MOMENT	Y	082LNMY	Load cell, six axis neck	R. A. Denton	3303	Nm
148	LOWER NECK MOMENT	Z	082LNMZ	Load cell, six axis neck	R. A. Denton	3303	Nm
149	CHEST , PRIMARY	X	2116-A11	Accel., Full Bridge	Entran	2000JF	G
150	CHEST , PRIMARY	Y	2116-A14	Accel., Full Bridge	Entran	2000JF	G
151	CHEST , PRIMARY	Z	2116-A23	Accel., Full Bridge	Entran	2000JF	G
152	CHEST DISPLACEMENT	X	082CP	Rotary Pot Chest	Servo	14CBI	MM
153	PELVIS, PRIMARY	X	2116-A12	Accel., Full Bridge	Entran	2000JF	G
154	PELVIS, PRIMARY	Y	2116-A19	Accel., Full Bridge	Entran	2000JF	G
155	PELVIS, PRIMARY	Z	2116-A17	Accel., Full Bridge	Entran	2000JF	G
156	CAR SEAT TETHER	X	BL112	Load cell, Seat belt	FGP	FN4060	N
157	CAR SEAT	X	KETX1A	Accel.,1/2 bridge	I.C. Sensor	7264-200	G
158	CAR SEAT	Y	KETX1B	Accel.,1/2 bridge	I.C. Sensor	7264-200	G
159	CAR SEAT	Z	KETX1C	Accel.,1/2 bridge	I.C. Sensor	7264-200	G

E4-1

TR-P23001-16-NC

**2003 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Left Rear CRABI Serial Number 090
3/13/03
2003 Acura MDX SUV**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
160	HEAD, PRIMARY	X	2116-A09	Accel., Full Bridge	Entran	2000JF	G
161	HEAD, PRIMARY	Y	2116-A04	Accel., Full Bridge	Entran	2000JF	G
162	HEAD, PRIMARY	Z	2116-A10	Accel., Full Bridge	Entran	2000JF	G
163	UPPER NECK FORCE	X	090UNFX	Load cell, six axis neck	R. A. Denton	IF-954	N
164	UPPER NECK FORCE	Y	090UNFY	Load cell, six axis neck	R. A. Denton	IF-954	N
165	UPPER NECK FORCE	Z	090UNFZ	Load cell, six axis neck	R. A. Denton	IF-954	N
166	UPPER NECK MOMENT	X	090UNMX	Load cell, six axis neck	R. A. Denton	IF-954	Nm
167	UPPER NECK MOMENT	Y	090UNMY	Load cell, six axis neck	R. A. Denton	IF-954	Nm
168	UPPER NECK MOMENT	Z	090UNMZ	Load cell, six axis neck	R. A. Denton	IF-954	Nm
169	CHEST , PRIMARY	X	2116-A05	Accel., Full Bridge	Entran	2000JF	G
170	CHEST , PRIMARY	Y	2116-A13	Accel., Full Bridge	Entran	2000JF	G
171	CHEST , PRIMARY	Z	2116-A24	Accel., Full Bridge	Entran	2000JF	G
172	PELVIS, PRIMARY	X	2116-N10	Accel., Full Bridge	Entran	2000JF	G
173	PELVIS, PRIMARY	Y	2116-A45	Accel., Full Bridge	Entran	2000JF	G
174	PELVIS, PRIMARY	Z	2116-A22	Accel., Full Bridge	Entran	2000JF	G
175	CAR SEAT TETHER	X	BL113	Load cell, Seat belt	FGP	FN4060	N
176	CAR SEAT	X	KETX4A	Accel.,1/2 bridge	I.C. Sensor	7264-200	G
177	CAR SEAT	Y	KETX4B	Accel.,1/2 bridge	I.C. Sensor	7264-200	G
178	CAR SEAT	Z	KETX4C	Accel.,1/2 bridge	I.C. Sensor	7264-200	G

SECTION F-5

CHILD DUMMY CALIBRATION INFORMATION



Calibration Data Sheet Hybrid III 3 Year Old Head Drop Test

ATD Serial No.: 082

Test I.D.: HD03C

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	250.0 to 280.0	269.1	Pass
Peak Lateral Acceleration	G's	≤15.0	10.3	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<10	3.6	Pass
Overall Test Results				Pass

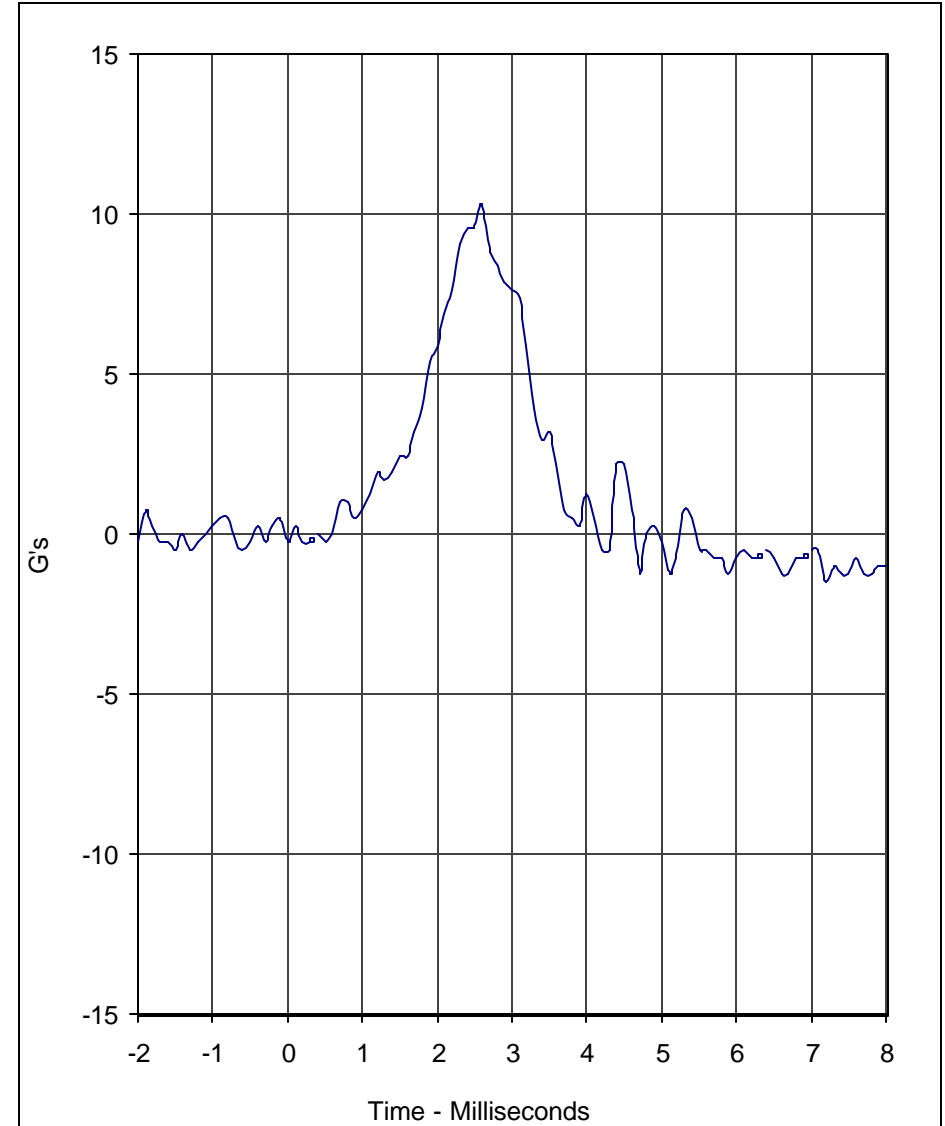
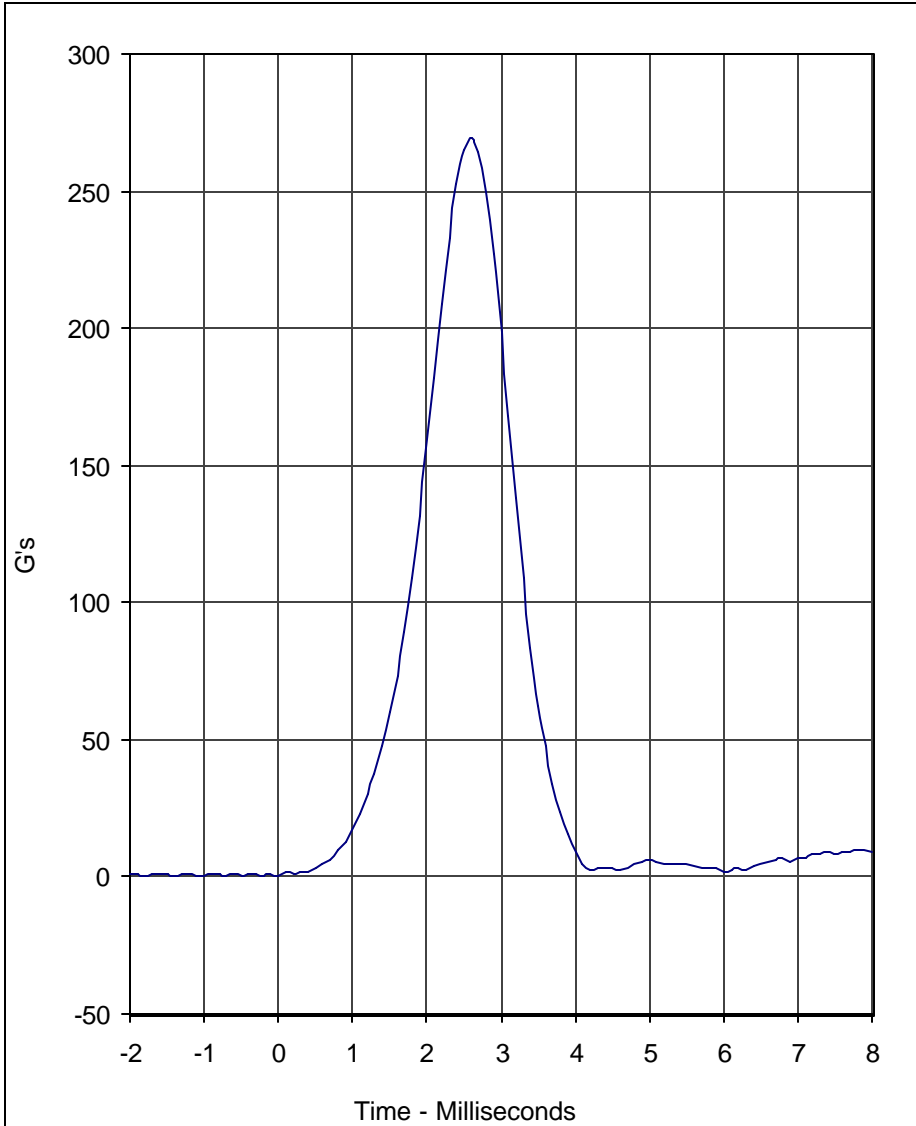
F5-1

TR-P23001-16-NC7

Laboratory Technician

March 12, 2003

Test Date



Curve Description				CURNO	Type
Head Resultant				001	RES

Curve Description				CURNO	Type
Head Y				002	FIL

Units	Max	Time	Min	Time	SAE Class
G's	269.1	2.6	0.2	-1.8	1000

Units	Max	Time	Min	Time	SAE Class
G's	10.3	2.6	-1.2	4.7	1000

Test Program: Hybrid III 3 Year Old Head Drop Test
 Test Date: 3/12/03

A.T.D. Serial No.: 082
 Test I.D.: HD03C





Calibration Data Sheet

Hybrid III 3 Year Old

Thorax Impact Test

ATD Serial No.: 082

Test I.D.: CH03G

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	5.9 to 6.1	6.10	Pass
Peak Chest Compression	MM	32 to 38	35.8	Pass
Peak Probe Force Between 32 and 38 MM	Newtons	680 to 810	804.0	Pass
Peak Probe Force Between 12.5 and 32 MM	Newtons	≤860	788.8	Pass
Internal Hysteresis	%	65 to 85	70.1	Pass
Overall Test Results				Pass

F5-3

TR-P23001-16-NC

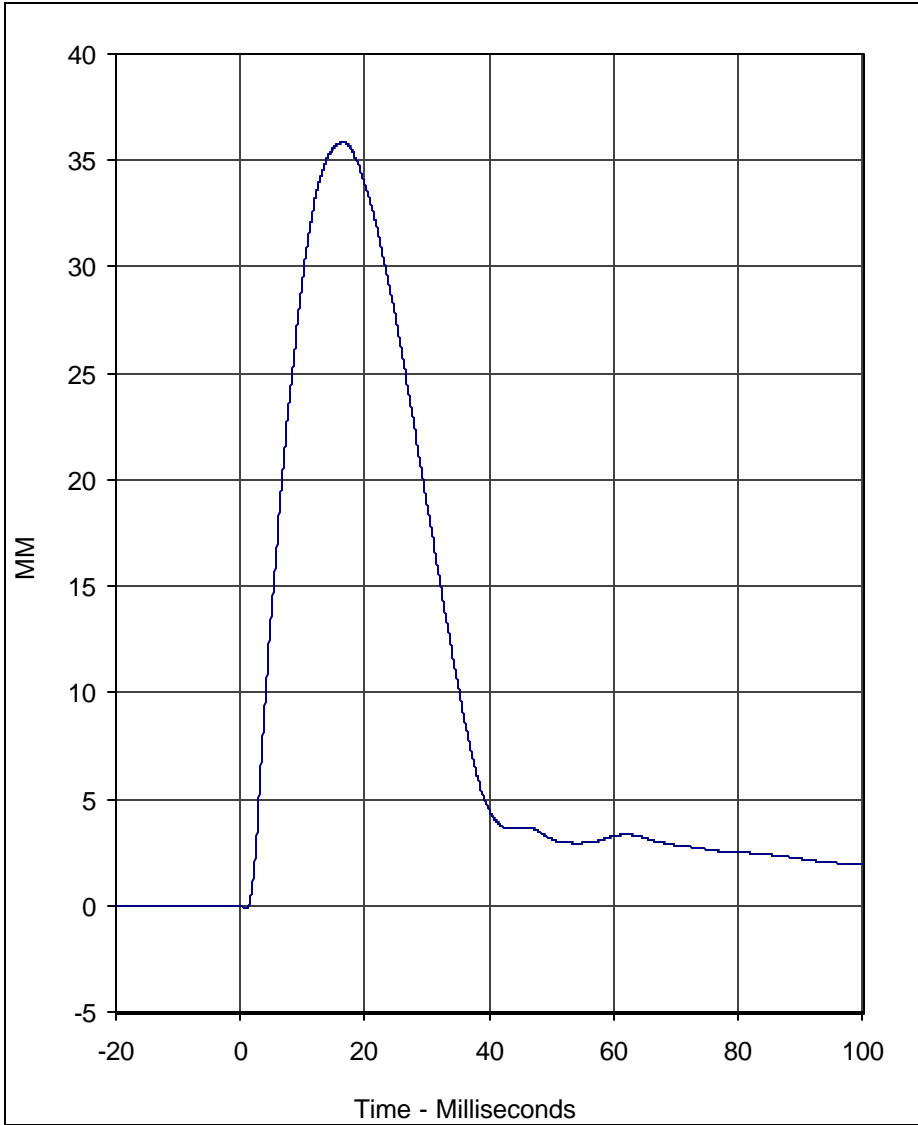
Laboratory Technician

March 12, 2003

Test Date

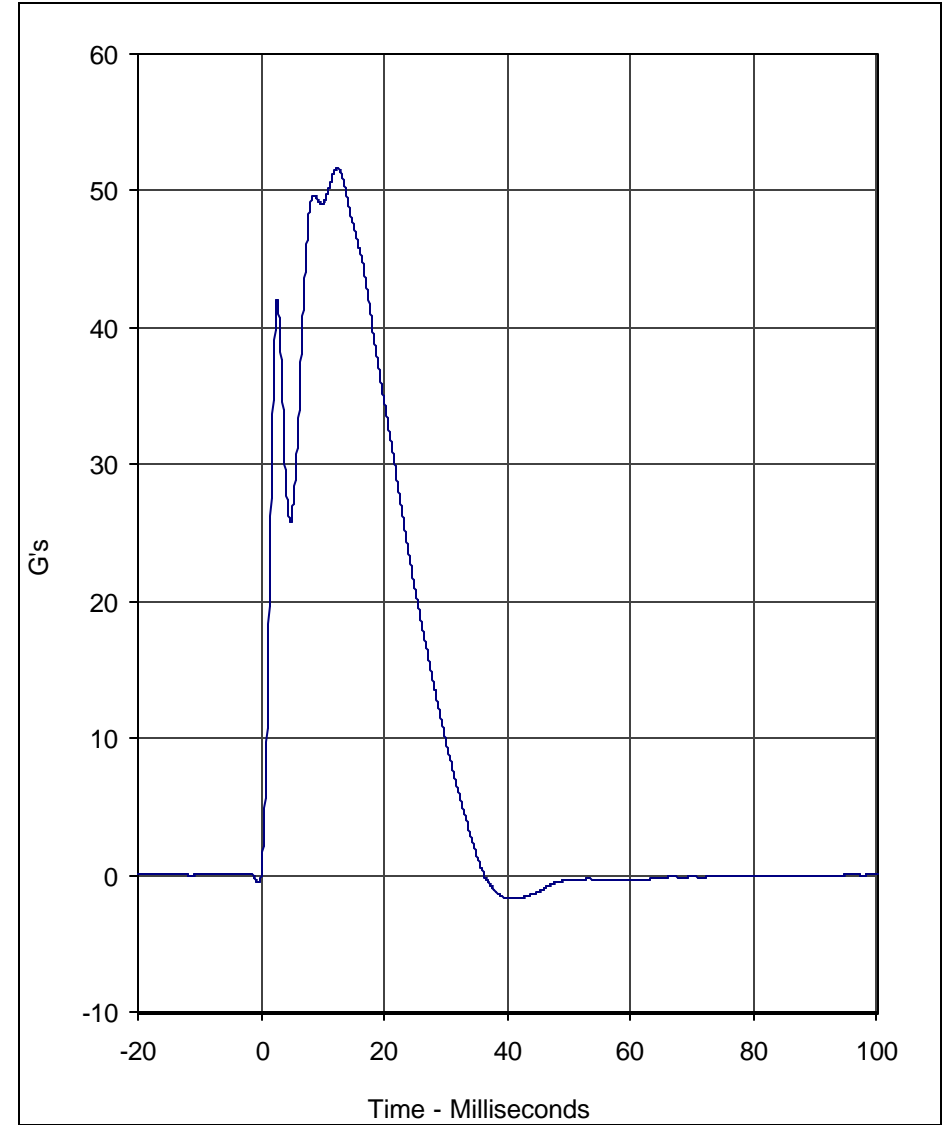
F5-4

TR-P23001-16-NC



Curve Description	CURNO	Type
Chest Compression	001	FIL

Units	Max	Time	Min	Time	SAE Class
MM	35.8	16.5	-0.1	0.8	180



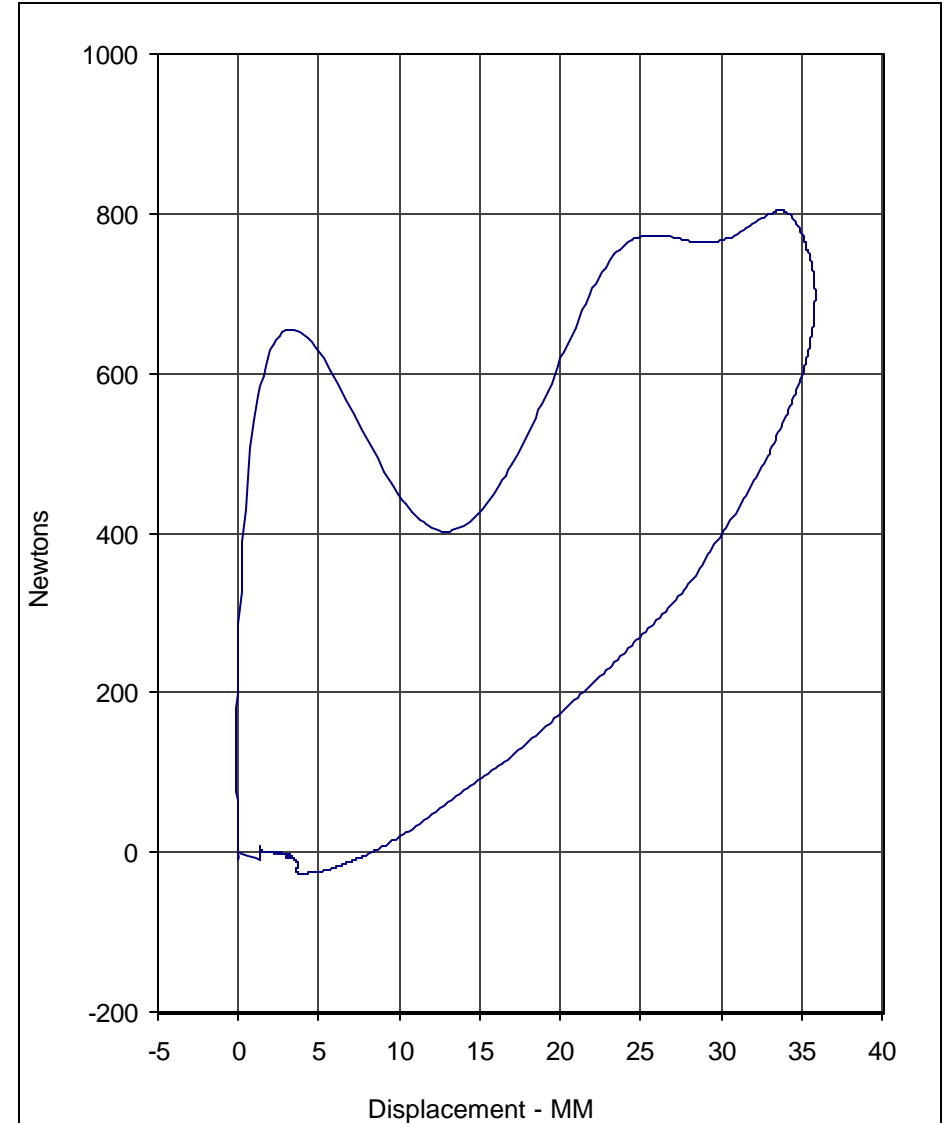
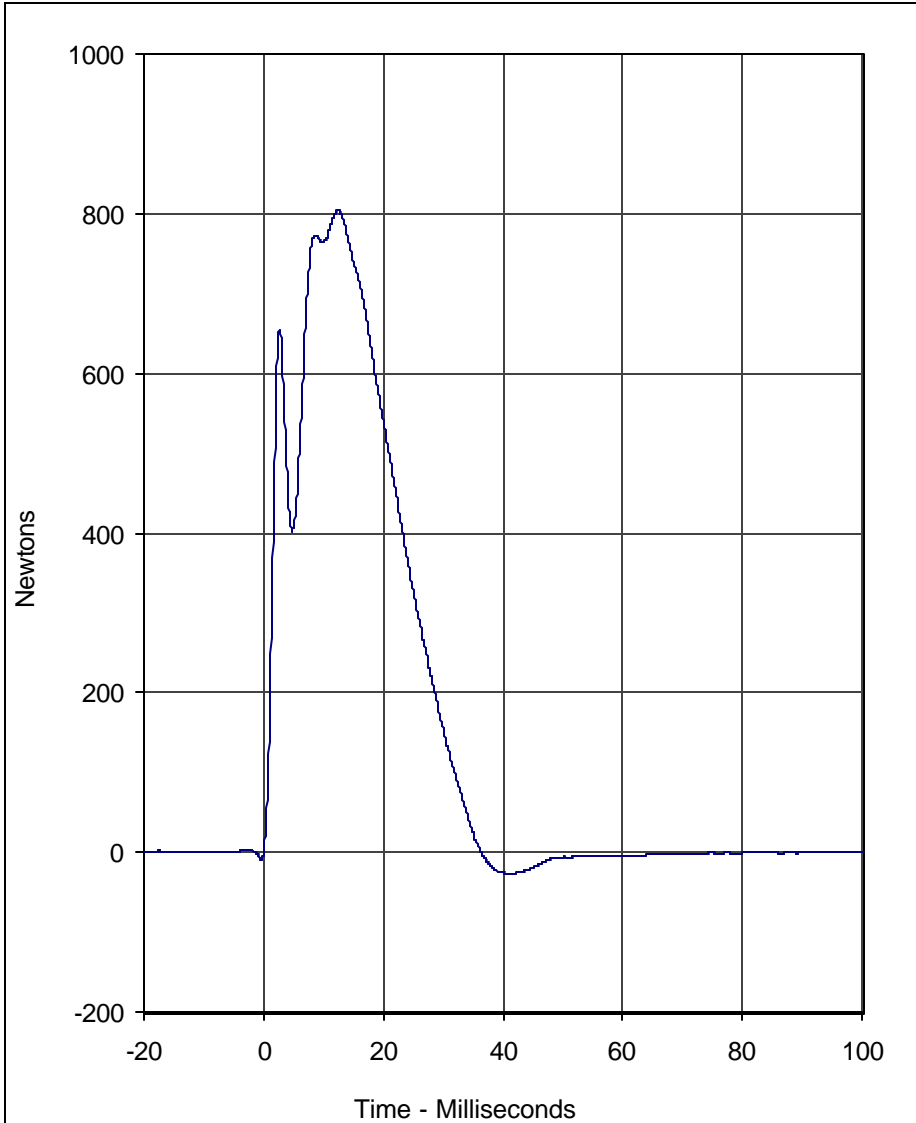
Curve Description	CURNO	Type
Probe Acceleration	002	FIL

Units	Max	Time	Min	Time	SAE Class
G's	51.6	12.5	-1.7	41.8	180

Test Program: Hybrid III 3 Year Old Thorax Impact
 Test Date: 3/12/03

A.T.D. Serial No.: 082
 Test I.D.: CH03G





Curve Description	CURNO	Type
Probe Force	003	FIL

Curve Description	CURNO	Type
Probe Force vs. Chest Displacement	004	FIL

Units	Max	Time	Min	Time	SAE Class
Newtons	804.0	12.5	-26.3	41.8	180

Units	Hysteresis	SAE Class
%	70.3	180

Test Program: Hybrid III 3 Year Old Thorax Impact
 Test Date: 3/12/03

A.T.D. Serial No.: 082
 Test I.D.: CH03G





Calibration Data Sheet

Hybrid III 3 Year Old

Neck Flexion Test

ATD Serial No.: 082

Test I.D.: NF03A

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.40 to 5.60	5.50	Pass
Pendulum Deceleration	10 Msec.	m/s	2.0 to 2.7	2.0	Pass
	20 Msec.	m/s	3.0 to 4.0	3.7	Pass
	30 Msec.	m/s	4.0 to 5.1	4.7	Pass
"D" Plane Rotation	Maximum	Degrees	70.0 to 82.0	76.9	Pass
Peak Moment in Rotation	Maximum	Nm	42.0 to 53.0	43.5	Pass
Positive Moment Decay, Time to 10Nm		Msec.	60.0 to 80.0	72.0	Pass
Overall Test Results					Pass

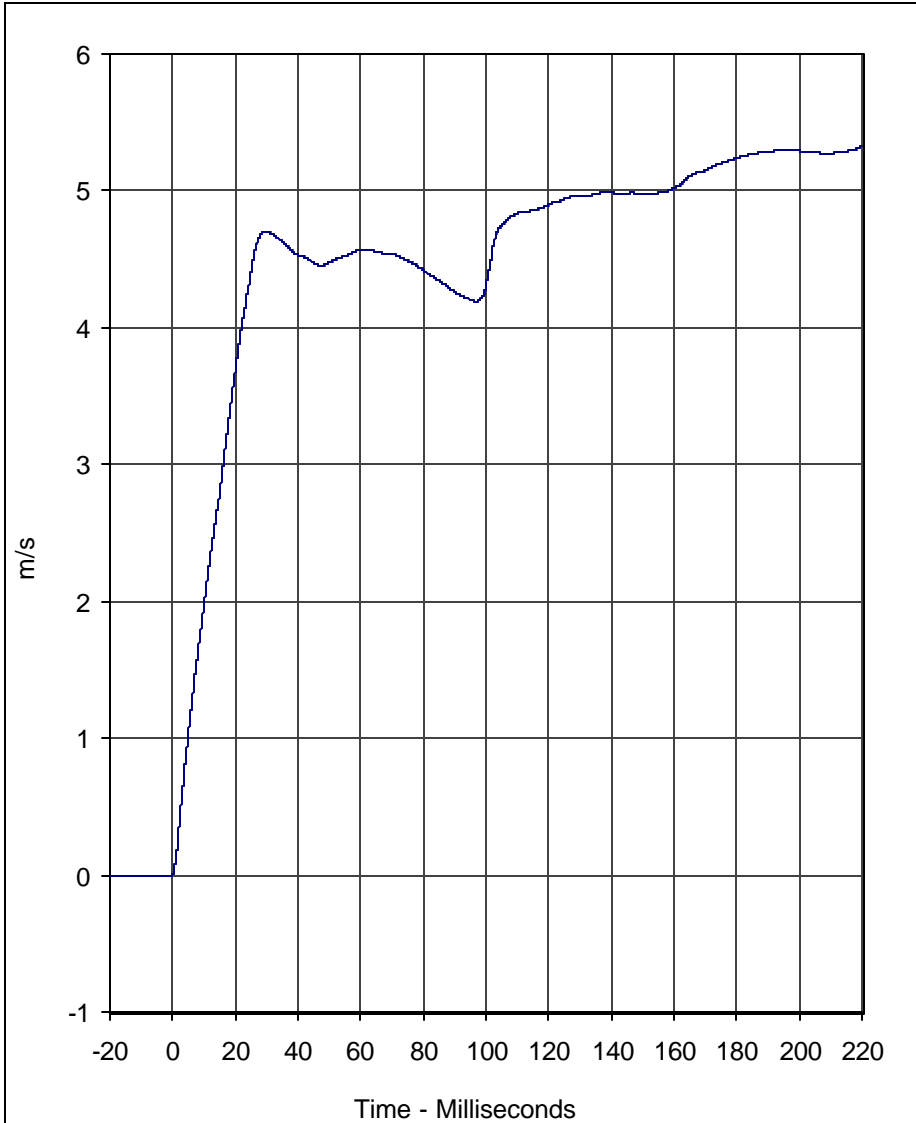
F5-6

TR-P23001-16-NC

Laboratory Technician

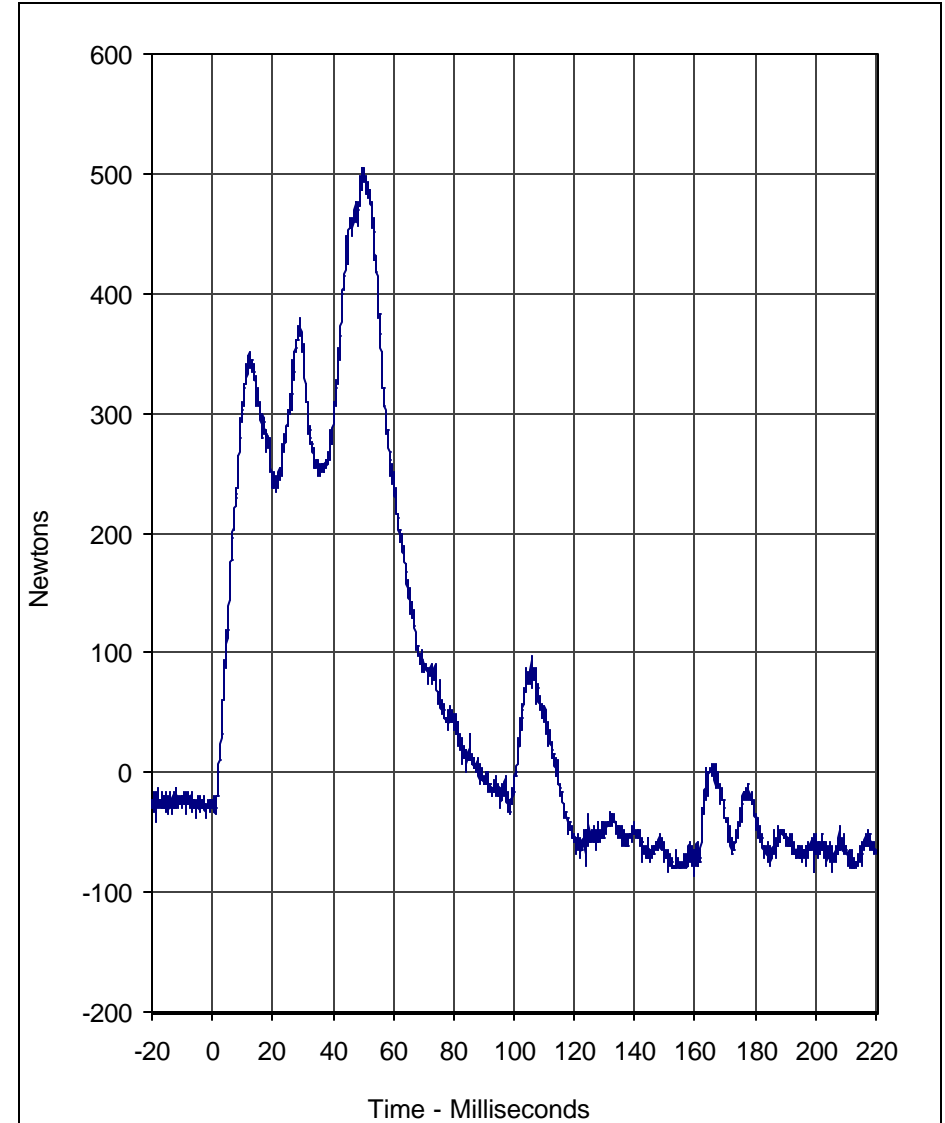
March 12, 2003

Test Date



Curve Description	CURNO	Type
Pendulum Velocity	001	FIL

Units	Max	Time	Min	Time	SAE Class
m/s	5.3	220.0	0.0	-0.6	180



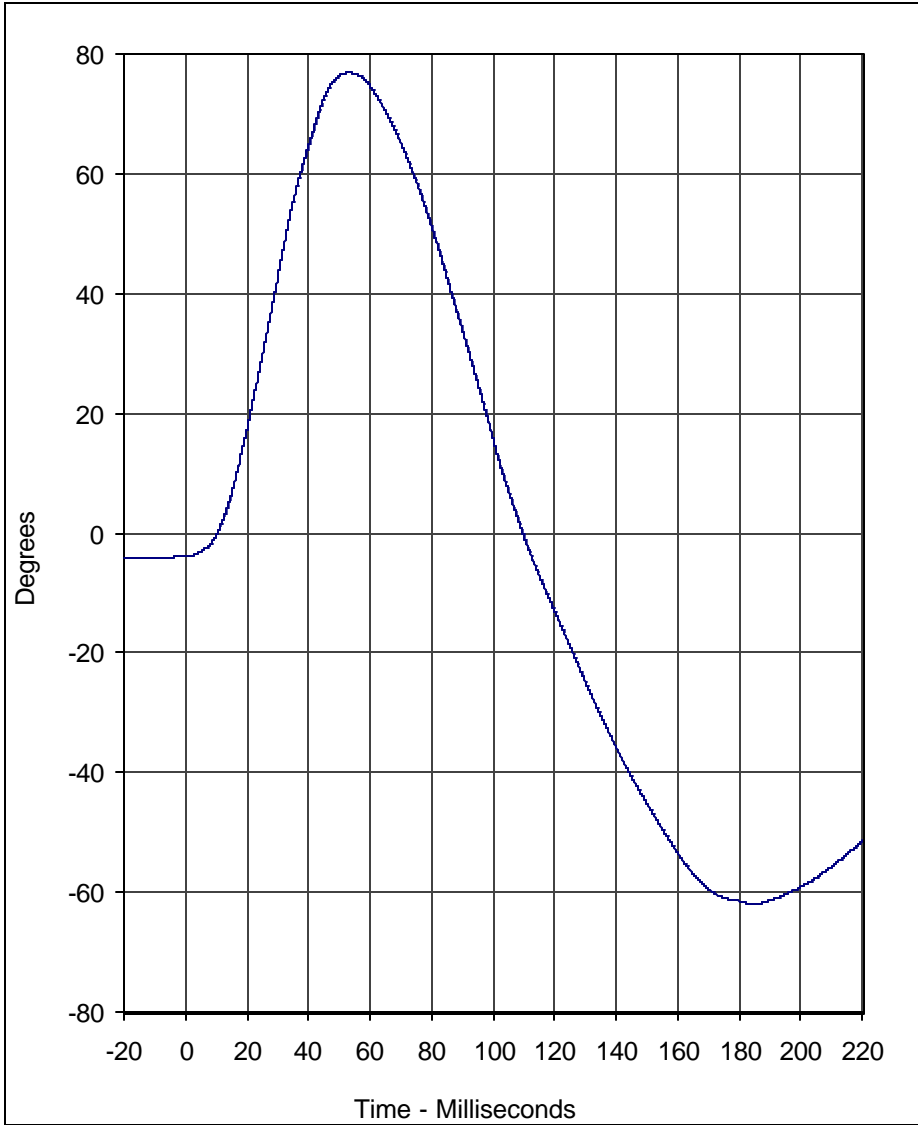
Curve Description	CURNO	Type
Neck Force X	002	FIL

Units	Max	Time	Min	Time	SAE Class
Newtons	505.4	49.5	-86.9	159.6	1000

Test Program: 3 Year Old Hybrid III Neck Flexion Test
 Test Date: 3/12/03

A.T.D. Serial No.: 082
 Test I.D.: NF03A

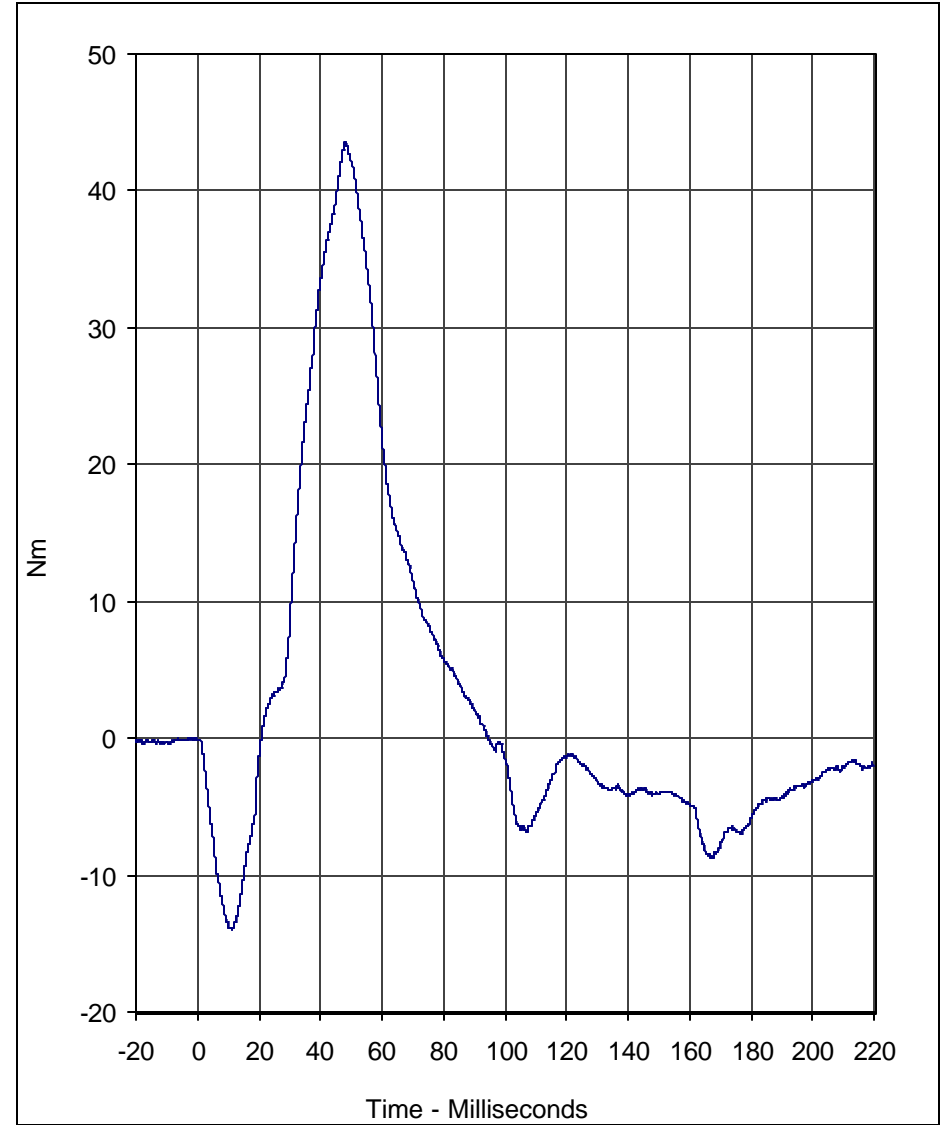




Curve Description	CURNO	Type
"D" Plane Rotation	003	FIL

Units	Max	Time	Min	Time	SAE Class
Degrees	76.9	53.2	-62.0	185.0	60

Test Program: 3 Year Old Hybrid III Neck Flexion Test
 Test Date: 3/12/03



Curve Description	CURNO	Type
Neck Moment Y	002	FIL

Units	Max	Time	Min	Time	SAE Class
Nm	43.5	48.1	-14.0	11.1	600

A.T.D. Serial No.: 082
 Test I.D.: NF03A





Calibration Data Sheet

Hybrid III 3 Year Old

Neck Flexion Test

ATD Serial No.: 082

Test I.D.: NE03D

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	3.55 to 3.75	3.60	Pass
Pendulum Deceleration	10 Msec.	m/s	1.0 to 1.4	1.2	Pass
	20 Msec.	m/s	1.9 to 2.5	2.4	Pass
	30 Msec.	m/s	2.8 to 3.5	2.9	Pass
"D" Plane Rotation	Maximum	Degrees	83.0 to 93.0	87.5	Pass
Peak Moment in Rotation	Maximum	Nm	-43.7 to -53.3	-51.3	Pass
Positive Moment Decay, Time to 10Nm		Msec.	60.0 to 80.0	67.3	Pass
Overall Test Results					Pass

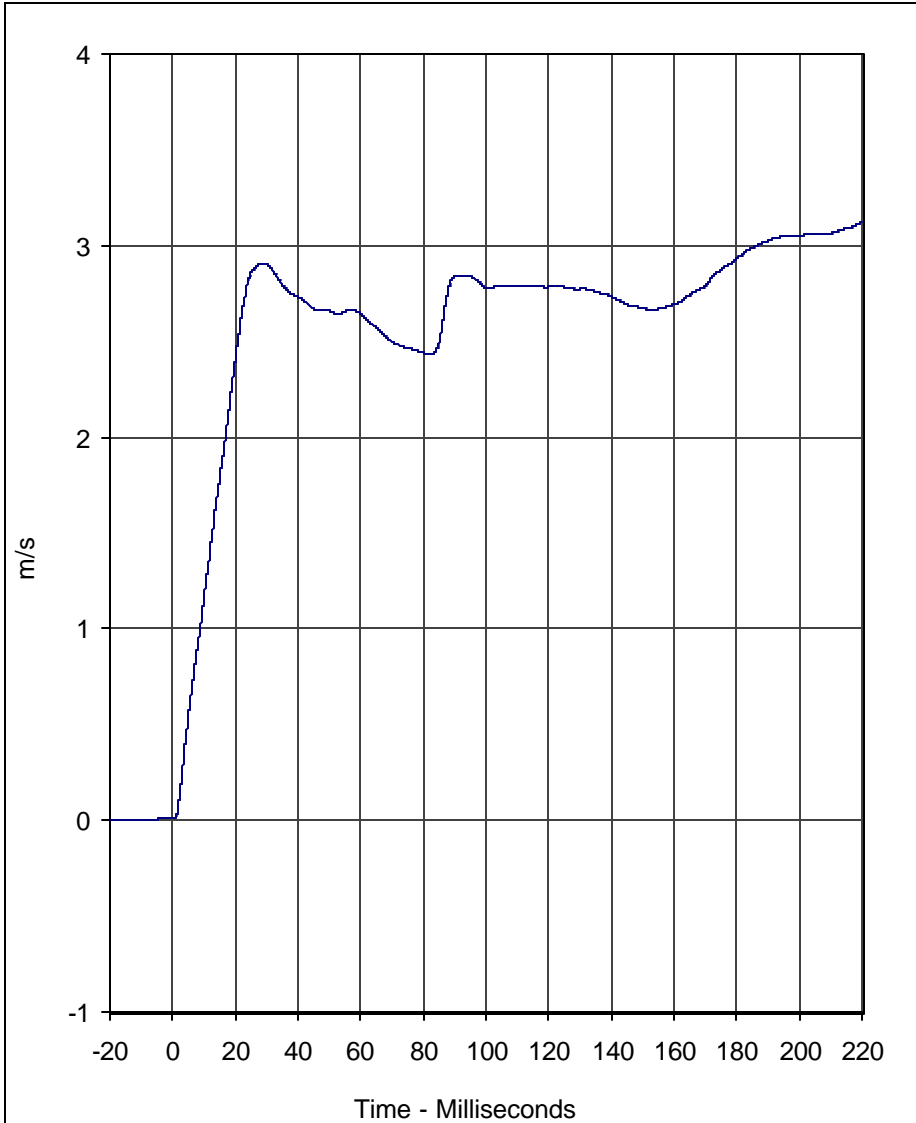
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TR-P23001-16-NC

Laboratory Technician

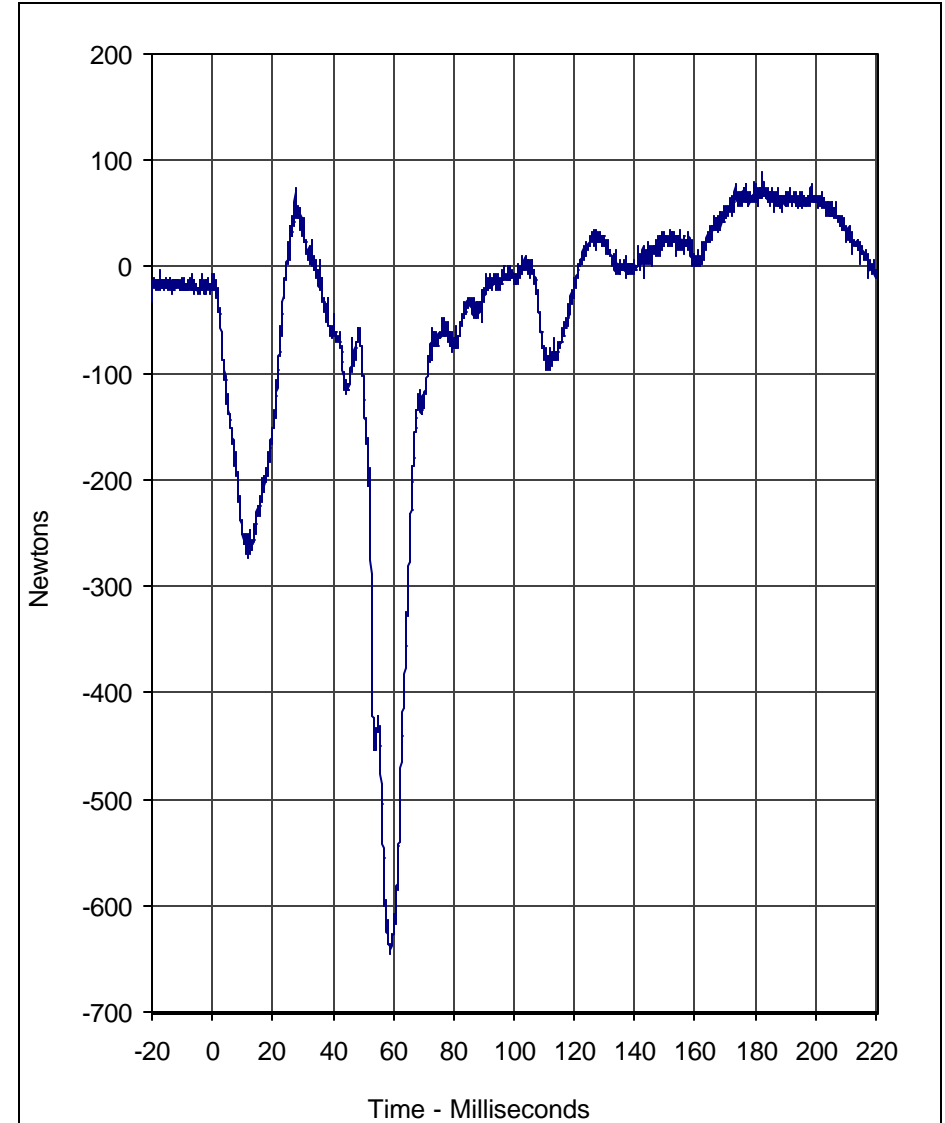
March 12, 2003

Test Date



Curve Description	CURNO	Type
Pendulum Velocity	001	FIL

Units	Max	Time	Min	Time	SAE Class
m/s	3.1	220.0	0.0	-20.0	180



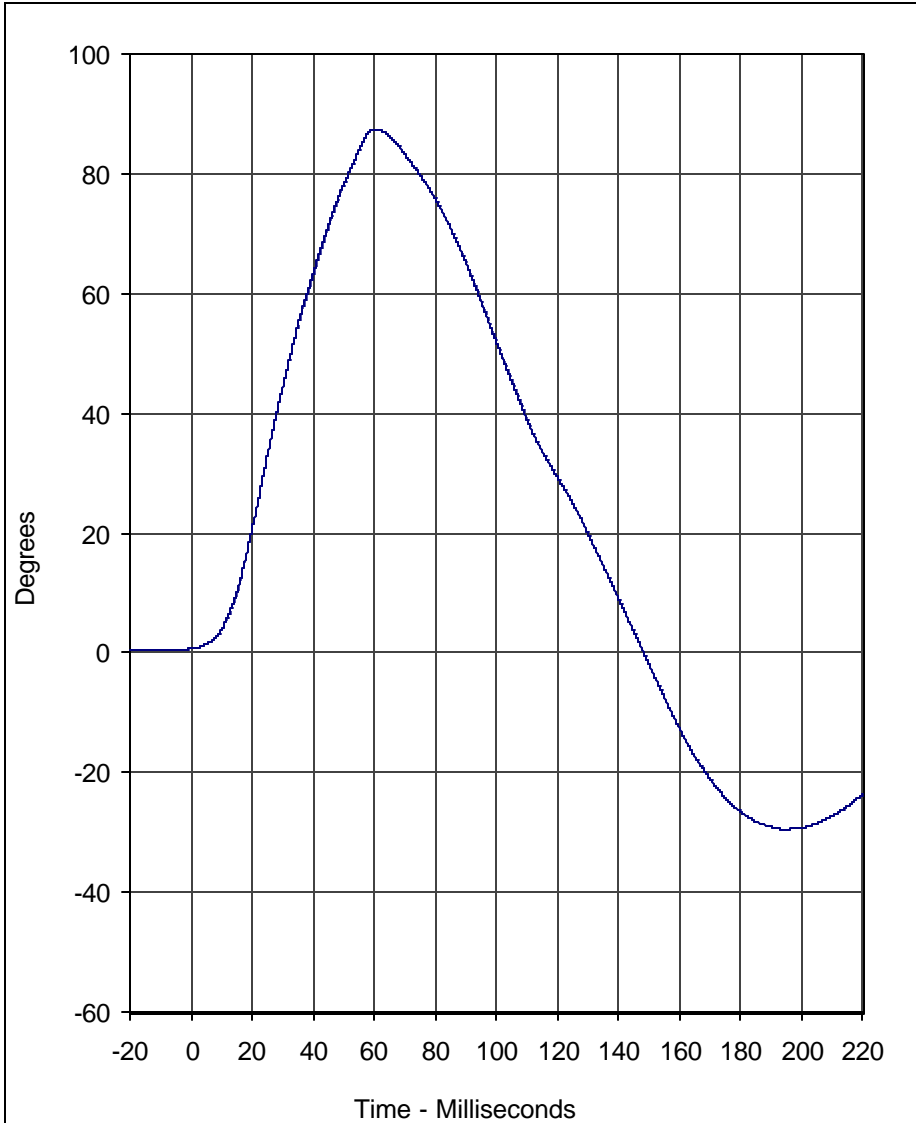
Curve Description	CURNO	Type
Neck Force X	002	FIL

Units	Max	Time	Min	Time	SAE Class
Newtons	90.0	182.5	-646.0	59.2	1000

Test Program: 3 Year Old Hybrid III Neck Extension Test
 Test Date: 3/12/03

A.T.D. Serial No.: 082
 Test I.D.: NE03D

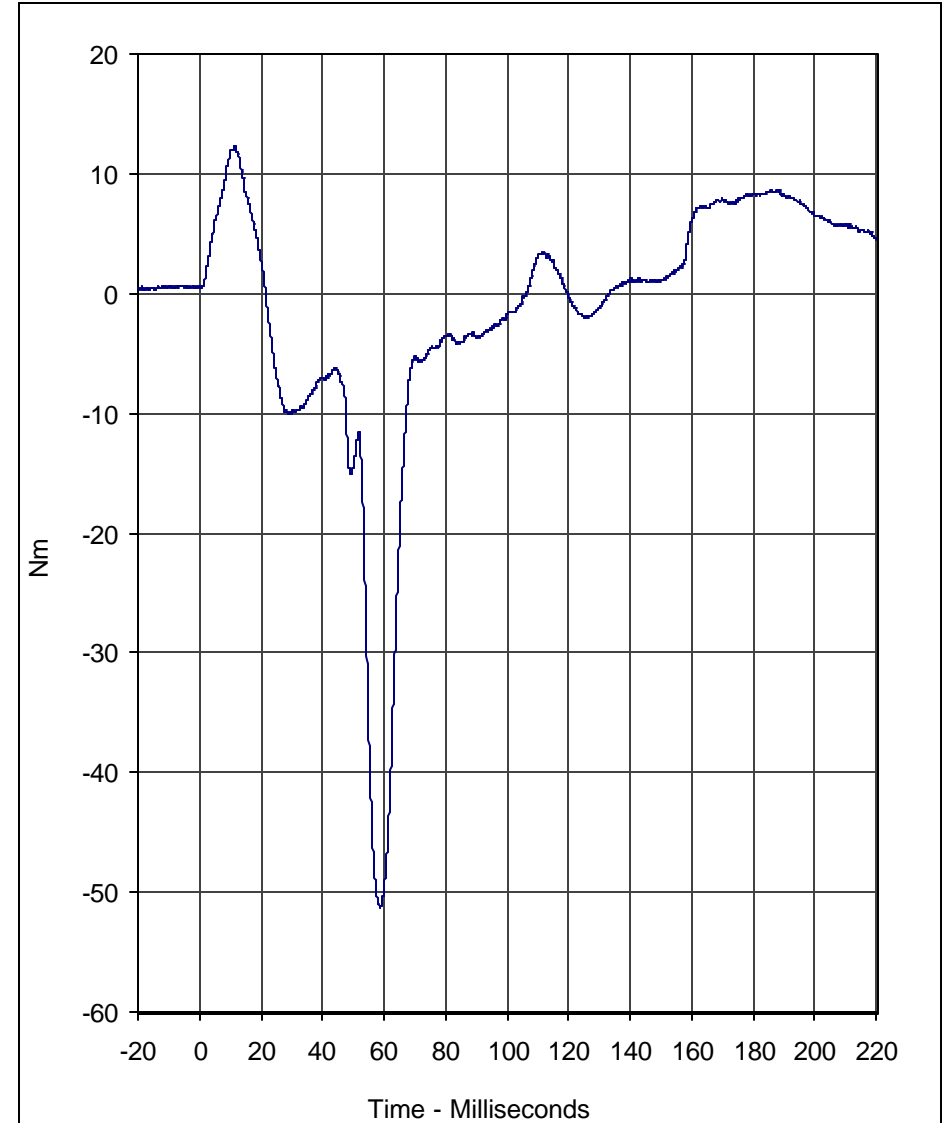




Curve Description	CURNO	Type
"D" Plane Rotation	003	FIL

Units	Max	Time	Min	Time	SAE Class
Degrees	87.5	60.4	-29.5	194.8	60

Test Program: 3 Year Old Hybrid III Neck Extension Test
 Test Date: 3/12/03



Curve Description	CURNO	Type
Neck Moment Y	002	FIL

Units	Max	Time	Min	Time	SAE Class
Nm	12.3	11.5	-51.3	58.8	600

A.T.D. Serial No.: 082
 Test I.D.: NE03D





Calibration Data Sheet Hybrid III 3 Year Old Torso Flexion Test

ATD Serial No.: 082

Test I.D.: TF03G

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Initial reference plane angle	Degrees	≤15.0	7.3	Pass
Peak Force at 45 +/-0.5 degrees	Newtons	130.0 to 180.0	156.8	Pass
Torso rotation rate	deg/sec	0.5 to 1.5	1.2	Pass
Final reference plane angle	Degrees	+/-10	8.2	Pass
Overall Test Results				Pass

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TR-P23001-16-NC

Laboratory Technician

March 12, 2003

Test Date



Calibration Data Sheet Hybrid III 3 Year Old External Measurements

ATD Serial No.: 082

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
A - Total sitting height	mm	539 to 554	550	Pass
B - Shoulder pivot height	mm	307 to 323	310	Pass
C - "H" point height	mm	34 to 45	40	Pass
D - "H" point from backline	mm	57 to 67	65	Pass
E - Shoulder pivot from back	mm	61 to 71	65	Pass
F - Thigh clearance	mm	81 to 91	90	Pass
G - Elbow back to wrist pivot	mm	247 to 263	255	Pass
H - Skull cap to back line	mm	48 to 58	50	Pass
I - Shoulder to elbow length	mm	185 to 201	195	Pass
J - Elbow rest height	mm	134 to 149	145	Pass
K - Buttock to knee length	mm	285 to 300	290	Pass
L - Popliteal length	mm	219 to 234	230	Pass
M - Knee pivot height	mm	242 to 257	250	Pass
N - Buttock popliteal length	mm	218 to 233	225	Pass
O - Chest depth with jacket	mm	139 to 154	145	Pass
P - Foot length	mm	138 to 148	145	Pass
R - Buttock to knee pivot length	mm	251 to 262	260	Pass
S - Head Breadth	mm	128 to 144	140	Pass
T - Head Depth	mm	167 to 183	180	Pass
U - Hip breadth	mm	201 to 216	215	Pass
V - Shoulder breadth	mm	237 to 252	250	Pass
W - Foot breadth	mm	54 to 64	60	Pass
X - Head circumference	mm	500 to 516	510	Pass
Y - Chest circumference with jacket	mm	527 to 553	535	Pass
Z - Waist circumference	mm	527 to 553	545	Pass
AA - Location for chest circumference	mm	249 to 259	255	Pass
BB - Location for waist circumference	mm	160 to 170	165	Pass
Overall Test Results				Pass

FS-13

TR-P23001-16-NC

Laboratory Technician

March 12, 2003

Test Date

HYBRID III 12 MONTH OLD CRABI S/N 090 CALIBRATED BY VRTC PRIOR TO TEST PROGRAM