

REPORT NUMBER TR-P23001-07-NC

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

**JAGUAR CARS LIMITED
2003 JAGUAR X-TYPE
4 DOOR SEDAN**

NHTSA NUMBER: M30210

**PREPARED BY:
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FEBRUARY 7, 2003

FINAL REPORT

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Date of Acceptance

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16. Abstract					
<p>A 35mph (56.3 km/h) frontal barrier impact was conducted on a 2003 Jaguar X-Type 4 Door Sedan at KARCO Engineering, LLC on 2/7/03. This test was conducted to obtain data indicant of FVMSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The impact velocity is 55.72 km/h. The ambient temperature at the barrier face at the time of impact is 7.8 degrees Celcius. The test vehicle sustained post-impact maximum static crush of 413 mm to the left 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	408.4	623.6
Max. Thorax Accel. (3 msec clip)		G's	60	47.9	53.5
Left Femur Force		Newtons	10009	-1178.4	-3394.3
Right Femur Force		Newtons	10009	-3127.8	-4120.5
17. Key Words			18. Distribution Statement		
56.3 km/h NCAP Frontal Barrier Impact Test New Car Assessment Program (NCAP) 2003 Jaguar X-Type 4 Door Sedan NHTSA No. M30210			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		
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TABLE OF CONTENTS

Section	Description	Page
1	Purpose and Summary of Test M30210	1
2	Occupant and Vehicle Information/Data Sheets	3

Data Sheet	Description	Page
1	Crash Test Summary	4
2	General Test and Vehicle Parameter Data	5
3	Post Impact Data	8
4	Test Vehicle Information	9
5	Dummy Positioning in Vehicle	11
6	Seatbelt Positioning Data	13
7	Vehicle Accelerometer Location and Data Summary	14
8	Hybrid III ATD Injury Criteria and Sensor Data	15
9	Seatbelt Assessment Test Data	18
10	Summary of FMVSS 212 Data	19
11	Windshield Zone Intrusion FMVSS 219 Data (Partial)	20
12	FMVSS 301 Fuel System Integrity Post Impact Data	21
13	FMVSS 301 Static Rollover Data	22
14	Vehicle Measurements	24
15	Camera Locations	27
16	Photographic Reference Target Locations	28
17	Vehicle Intrusion Measurements	29
18	Fixed Barrier Load Cell Locations	33
19	Accident Investigation Division Data	34
20	Dummy/Vehicle Temperature Stabilization	35

Appendix	Description	Appendix
A	Photographs	A
B	Dummy and Vehicle Response Data Traces	B
C	Load Cell Barrier Data Traces	C
D	Instrumentation and Data Channel Assignments	D
E	Dummy Calibration Data Traces and Tables	E
F	Child Restraint System	F

SECTION 1
PURPOSE AND SUMMARY OF TEST M30210

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 Jaguar X-Type 4 Door Sedan at a velocity of 55.72 km/h. The test was performed at Karco Engineering, LLC on February 7, 2003. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

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. Seat belt load cells were also placed on the driver's and passenger's lap and shoulder belts to measure dummy torso and pelvic section loading. The driver (position 1) ATD (Serial No. 34) and the right-front passenger (position 2) ATD (Serial No. 35) were calibrated prior to this test.

Ninety Seven (97) channels of data were recorded using an on-board data acquisition system. Appendix A contains 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 413 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. No contact was made on the abdomen. The left knee contacted the knee bolster/dash and the right knee contacted the knee bolster.

The passenger's visible contact points were as follows: The passenger ATD head contacted the airbag and headrest. The chest contacted the airbag and belt and the 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	408.4	47.9	-32.0	-1178.4	-3127.8	410.6
Passenger	623.6	53.5	-37.5	-3394.3	-4120.5	331.6

SECTION 2
OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03

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 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03

PRIMARY IMPACT DATA

Measured Parameter	Units	Value
Velocity at Impact	km/h	55.72
Test Weight	kg	1777
Impact Angle	degrees	0
Average Rebound	mm	388
Maximum Static Crush	mm	413

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Driver	Passenger
Front Door Opening	Remained closed, opened w/o tools	Remained Closed, opened w/o tools
Rear Door Opening	Remained closed, opened w/o tools	Remained Closed, opened w/o tools
Seat Track Shift (mm)	20mm	7mm
Seat Back Failure	None	None

TEST DUMMY INFORMATION

Description	Driver	Passenger
Dummy Type/ Serial No.	50% Male Hybrid III / No. 34	50% Male Hybrid III / No. 35
Head Contact	Airbag	Airbag
Chest Contact	Airbag	Airbag/Belt
Abdomen Contact	None	Belt
Left Knee Contact	Knee Bolster/Dash	Glove Box
Right Knee Contact	Knee Bolster	Glove Box

16mm MOME COVERAGE

High Speed	19
Real Time	1
Total	20

DATA CHANNELS

Driver ATD Sensors	40
Passenger ATD Sensors	40
Belt Assessment Sensors	8
Vehicle Structure Accelerometers	9
Rigid Barrier Load Cells	36
Total	133

DATA SHEET NO. 2
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03

TEST VEHICLE INFORMATION

Make	Jaguar
Model	X-Type
Body Style	4 Door Sedan
NHTSA No.	M30210
VIN	SAJEB52D43XC91888
Color	White
Delivery Date	1/29/2003
Odometer Reading (mi.)	109
Dealer	Penske
Transmission	5-Speed Manual
Final Drive	Rear
Type/No. Cylinders	V-6
Engine Displacement (L)	2.5
Engine Placement	Transverse
Roof Rack	No
Sunroof/T-Top	No
Tinted Glass	No
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	Yes
Driver Head Bag	Yes
Pass. Airbag	Yes
Pass. Side Bag	Yes
Pass. Head Bag	Yes
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
Other	0
	0

DATA FROM CERTIFICATION LABEL

Manufactured By	Jaguar Cars Ltd	GWR (kg)	2075
Date of Manufacture	June-02	GAWR Front (kg)	1097
		GAWR Rear (kg)	978

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench	None	
Number of Occupants	2	3	N/A	5
Capacity Wt. (VCW) (kg)				502
Cargo Weight (RCLW) (kg)				60

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

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
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NHTSA No.: M30210
 Test Date: 2/7/03

TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	308	308
Cold Pressure (kPa)	224	224
Recommend Tire Size	205/55R16	205/55R16
Tire Size on Vehicle	205/55R16	205/55R16
Tire Manufacturer	Contiental	Contiental
Treadwear	360	360
Traction	A	A
Temperature Grades	A	A
Tire Plies Sidewall	2	2
Tire Plies Body	4	4
Load Index/Speed Symbol	111 S	111 S
Tire Material	Steel/ployester	Steel/ployester
DOT Safety Code Right	LMT-4-AXBU2202	LMT-4-AXBU2202
DOT Safety Code Left	LMT-4-AXBU2202	LMT-4-AXBU2202

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

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03

TEST VEHICLE WEIGHTS

	Units	As Delivered (<i>UVM</i>)			As Tested (<i>ATW</i>)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	467	316		506	375	
Right	kg	475	315		523	373	
Ratio	%	59.9	40.1		57.9	42.1	
Totals	kg	942	631	1573	1029	748	1777

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (<i>UVM</i>)	kg	1573
Weight of 2 P572 ATD's	kg	152
Rated Cargo/Luggage Weight (<i>RCLW</i>)	kg	60
Calculated Vehicle Target Weight (<i>TVTW</i>)	kg	1785

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	679	680	678	678	1087
As Tested	mm	658	660	648	650	1141

Vehicle Wheel base (mm): 2710
 Weight of Ballast secured in cargo area (kg): 66
 Vehicle Components Removed: Trunk, taillights, rear mufflers, spare tire and jack.

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

FUEL SYSTEM DATA

Fuel System Capacity From Owner's Manual (L): 61.3
 Usable Capacity Figure Furnished by COTR (L): 61.3
 Actual Test Volume with entire fuel System Filled (L): 38.0*
 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: Driver side filler door, tank mounted at rear.

*Note: Solvent level decreased to make target test weight.

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

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03

SPEED TRAP DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	55.51 to 57.12	55.72
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	55.74
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	4424	4170	-254
Center	mm	4665	4255	-410
Right Side	mm	4483	4215	-268

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	420
Center	mm	355
Right Side	mm	390
Average	mm	388

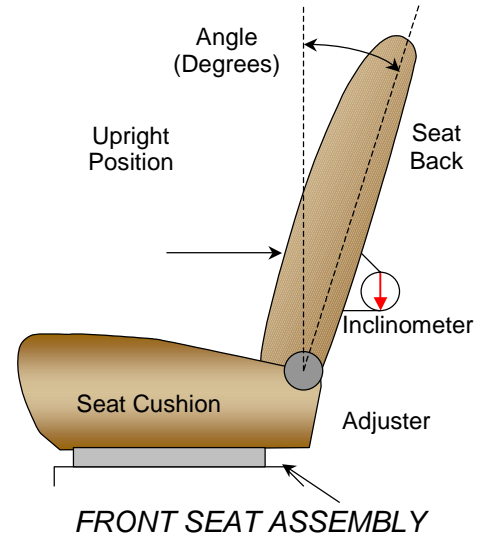
**DATA SHEET NO. 4
TEST VEHICLE INFORMATION**

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03

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	24
Passenger w/seated Dummy	24

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	205mm	102mm
Passenger Seat	15	8

SEAT BELT UPPER ANCHORAGE

Position number one (1) is the uppermost position.

SEAT BELT UPPER ANCHORAGE

	Total # of Positions	Placed in Position #
Driver Seat	5	3
Passenger Seat	5	3

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

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

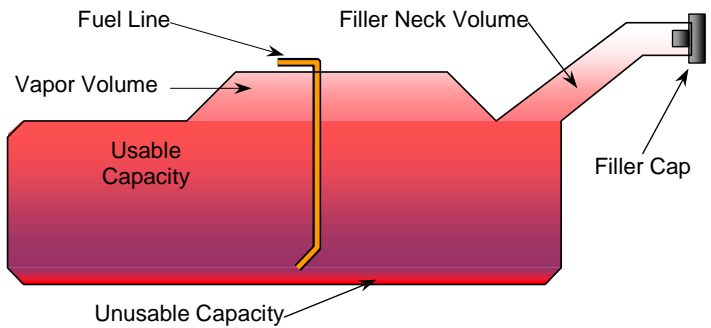
NHTSA No.: M30210
 Test Date: 2/7/03

FUEL TANK CAPACITY DATA

	Liters
Usable Capacity of "Standard Tank"	61.3
Usable Capacity of "Optional Tank"	N/A
Usable Capacity used for FMVSS 301	56.40 to 57.61
Actual Amount of Solvent Used	38.0*

*Solvent level decreased to make target test weight

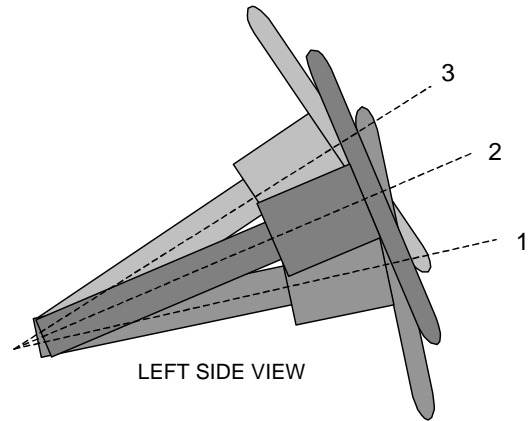
The test vehicle is equipped with an electric fuel pump. The fuel pump operates for approximately two seconds after the ignition is placed in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the right rear fender. The standard fuel tank occupies the area under the rear seat. Fuel lines run inside the right frame rail to the engine compartment.



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	18.5
Geometric center; position No. 2	21.0
Uppermost; position No. 3	23.5

DATA SHEET NO. 5
DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
Test Date: 2/7/03

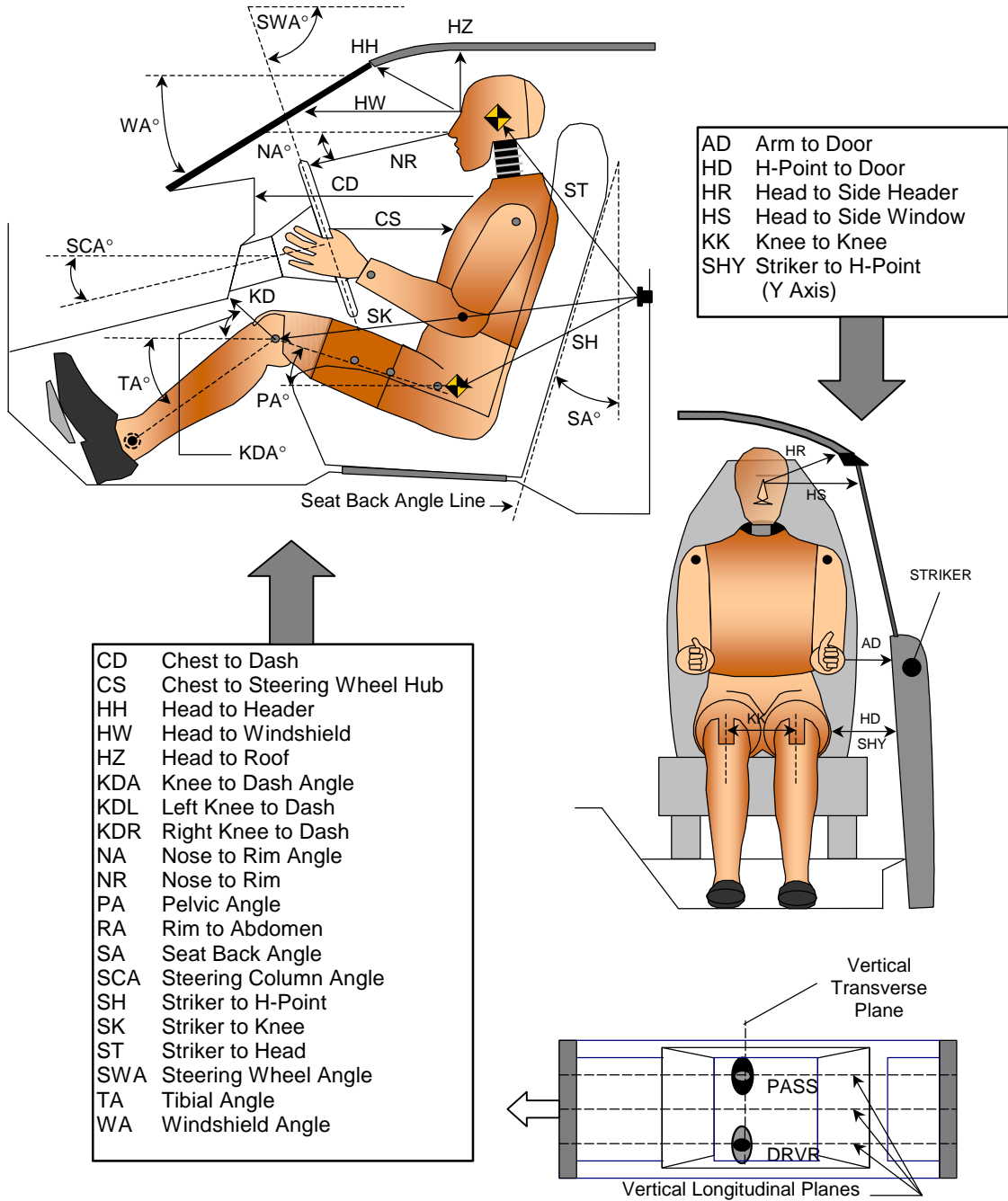
TEST DUMMY POSITION MEASUREMENTS

Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA	Windshield Angle		28		
SWA	Steering Wheel Angle		69		
SCA	Steering Column Angle		21		
SA	Seat Back Angle		24		24
HZ	Head to Roof (Z)	165	90	140	90
HH	Head to Header	365		330	
HW	Head to Windshield	625		582	
HR	Head to Side Header (Y)	245		245	
NR	Nose to Rim	398	15		
CD	Chest to Dash	560		555	
CS	Chest to Steering Hub	420			
RA	Rim to Abdomen	218			
KDL	Left Knee to Dash	160	12	145	
KDR	Right Knee to Dash	160		143	17
PA	Pelvic Angle		24		24
TA	Tibia Angle		43		42
KK	Knee to Knee (Y)	295		287	
ST	Striker to Head	595	7	620	4
SK	Striker to Knee	528	80	540	86
SH	Striker to H-Point	220		240	
SHY	Striker to H-Point (Y)	218		205	
HS	Head to Side Window	283		305	
HD	H-Point to Door (Y)	120		125	
AD	Arm to Door (Y)	130		115	

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

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03



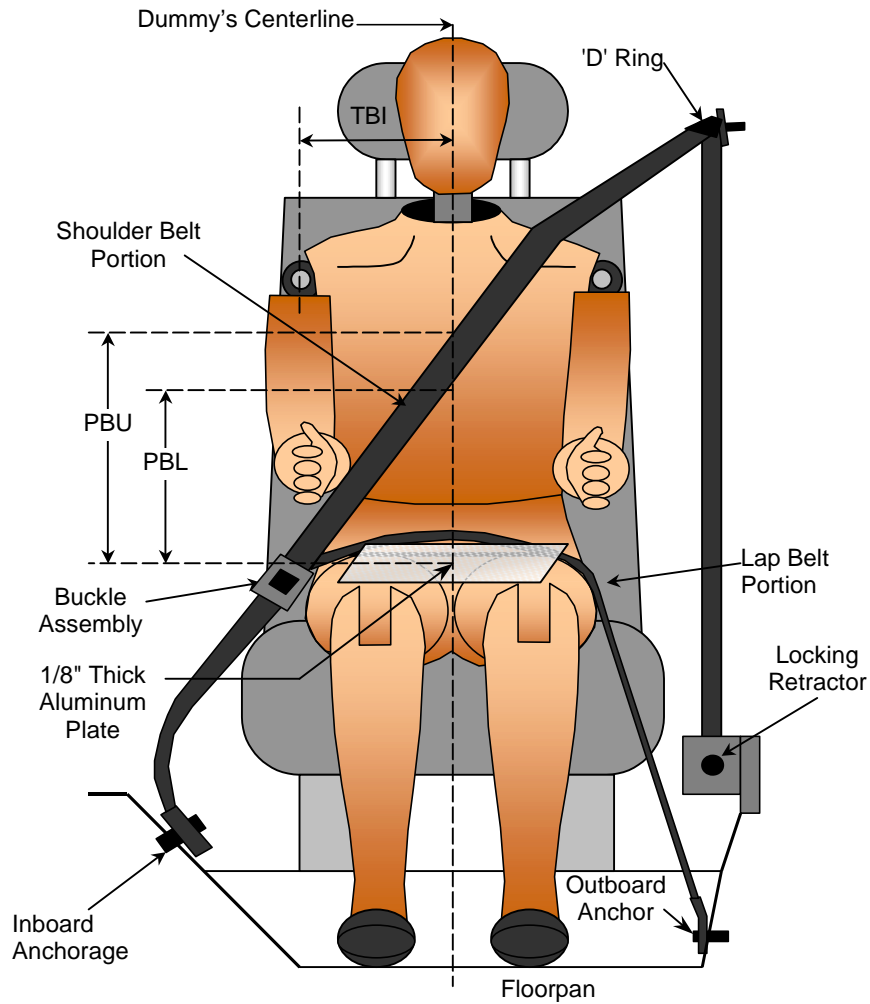
- CD Chest to Dash
- CS Chest to Steering Wheel Hub
- HH Head to Header
- HW Head to Windshield
- HZ Head to Roof
- KDA Knee to Dash Angle
- KDL Left Knee to Dash
- KDR Right Knee to Dash
- NA Nose to Rim Angle
- NR Nose to Rim
- PA Pelvic Angle
- RA Rim to Abdomen
- SA Seat Back Angle
- SCA Steering 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 Jaguar X-Type 4 Door Sedan
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NHTSA No.: M30210
 Test Date: 2/7/03



SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
TBI - Dummy C/L to Lap/Shoulder Belt Intersect	mm	235	265
PBU - Top surface of reference to belt upper edge	mm	315	320
PBL - Top surface of reference to belt lower edge	mm	245	245
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 Jaguar X-Type 4 Door Sedan

NHTSA No.: M30210

Test Program: 2003 NHTSA 35mph NCAP

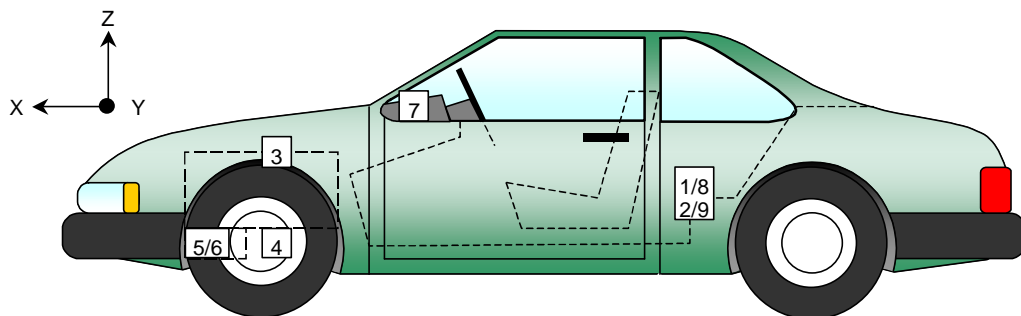
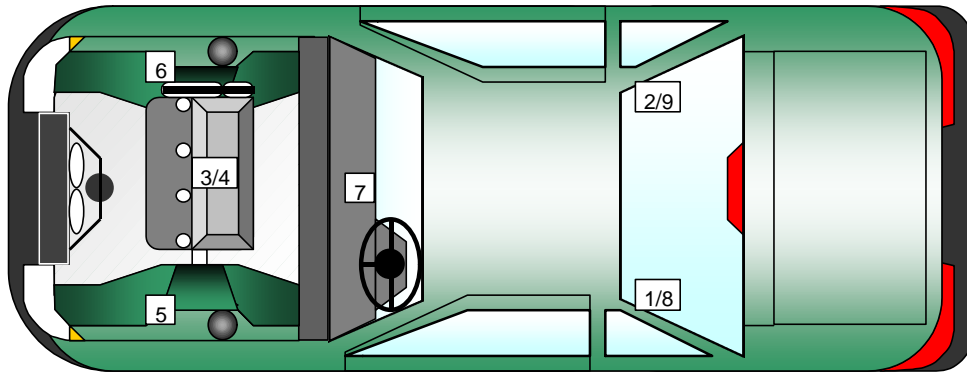
Test Date: 2/7/03

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	1960	-630	250	G's	1.1	87.0	-42.6	37.0
2	Right Rear X-Member	1960	630	250	G's	1.7	141.9	-48.1	36.9
3	Engine Top	3870	260	860	G's	64.6	47.6	-154.5	27.9
4	Engine Bottom	3830	155	175	G's	18.2	39.2	-112.3	22.5
5	Left Brake Caliper	3890	-750	310	G's	0.0	0.0	0.0	0.0
6	Right Brake Caliper	3890	750	310	G's	14.2	61.9	-117.0	41.4
7	Instrument Panel	3050	0	960	G's	26.0	91.5	-84.4	41.7
8	Left Rear X-Member (Z-Axis)	1840	-590	340	G's	9.2	55.0	-5.5	29.4
9	Right Rear X-Member (Z-Axis)	1840	590	340	G's	12.4	50.4	-8.1	63.2

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

1.) Channel failed, no data



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

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

NHTSA No.: M30210

Test Program: 2003 NHTSA 35mph NCAP

Test Date: 2/7/03

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	8.3	216.1	-54.7	77.0	17.5	217.5	-53.3	75.1
Head CG	Y	G's	30.5	84.8	-3.5	204.2	8.0	54.6	-11.1	77.0
Head CG	Z	G's	20.5	55.0	-1.4	0.9	31.3	67.5	-6.0	110.4
Head CG Resultant	N/A	G's	60.7	77.0			59.1	73.6		

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	3.8	263.0	-48.9	58.8	3.2	261.0	-55.9	58.6
Chest CG	Y	G's	5.2	78.7	-3.1	48.5	3.5	38.4	-7.3	82.0
Chest CG	Z	G's	8.8	54.0	-7.9	97.6	12.5	48.8	-9.7	94.8
Chest CG Resultant	N/A	G's	49.1	58.8			56.0	58.6		

FEMUR PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Femur	Z	Newtons	323.2	41.1	-1178.4	43.6	454.5	31.2	-3394.3	43.1
Right Femur	Z	Newtons	747.5	38.2	-3127.8	47.6	378.6	25.1	-4120.5	42.6

SEAT BELT SENSOR PEAK VALUES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Shoulder Belt Pullout	N/A	MM	410.6	85.2	0.1	4.0	331.6	75.2	-0.2	8.5
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	9153.6	61.2	-32.9	9.8	7837.4	55.7	1.4	0.0
Shoulder Belt Force	N/A	Newtons	6840.7	80.3	-48.7	187.1	8587.2	61.3	-29.3	174.1

1.) Not used with pre-tensioner

Location	Driver				Passenger			
	HIC	T ¹	T ²	Avg G	HIC	T ¹	T ²	Avg G
Head CG Primary	408.4	53.9	89.8	41.9	623.6	53.8	89.7	49.6

PRIMARY CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Primary	47.9	56.9	59.9	53.5	56.8	59.8

DATA SHEET NO. 8...(continued)

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

NHTSA No.: M30210

Test Program: 2003 NHTSA 35mph NCAP

Test Date: 2/7/03

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	4.6	94.9	-64.4	62.8	6.1	84.6	-65.1	42.7
Pelvis	Y	G's	12.3	76.9	-8.4	45.4	5.9	38.8	-9.9	78.6
Pelvis	Z	G's	2.7	204.2	-29.5	65.1	3.8	218.0	-25.4	62.8
Pelvis Resultant	N/A	G's	69.7	62.8			66.9	51.8		

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	740.4	58.6	-364.3	129.2	880.4	66.9	-388.7	108.6
Neck Force	Y	Newtons	434.4	122.7	-370.9	77.1	297.0	78.6	-266.4	118.1
Neck Force	Z	Newtons	1709.8	70.9	-244.3	277.3	1467.7	56.8	-279.1	232.1
Neck Force Resultant	N/A	Newtons	1771.7	74.6			1672.8	66.9		
Neck Moment	X	N•m	36.3	118.2	-5.0	184.4	13.1	55.7	-14.3	123.6
Neck Moment	Y	N•m	60.7	57.6	-17.8	211.3	59.9	66.9	-20.0	234.6
Neck Moment	Z	N•m	14.9	144.1	-37.9	95.2	19.2	91.6	-6.8	143.4
Neck Moment Resultant	N/A	N•m	62.6	57.7			60.6	66.9		

FOOT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Foot Aft	X	G's	32.7	68.0	-91.3	37.7	11.9	72.8	-190.5	37.6
Left Foot Aft	Z	G's	2.6	297.5	-78.6	38.0	11.4	51.9	-138.7	40.8
Left Foot Fore	Z	G's	32.7	29.2	-151.3	32.3	32.3	47.9	-180.5	37.1
Right Foot Aft	X	G's	28.1	69.0	-118.0	43.6	24.4	48.5	-113.8	37.0
Right Foot Aft	Z	G's	14.7	64.1	-214.2	44.3	5.1	48.5	-79.4	39.8
Right Foot Fore	Z	G's	74.5	55.8	-229.7	44.0	26.5	48.5	-136.5	36.1

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	130.5	38.7	-18.4	130.7	33.7	64.9	-78.4	42.5
Left Upper Moment	Y	N•m	1.2	283.8	-71.3	59.3	21.1	187.2	-232.7	39.2
Right Upper Moment	X	N•m	44.8	41.1	-26.2	63.3	82.0	70.1	-6.1	264.3
Right Upper Moment	Y	N•m	27.1	93.0	-178.7	44.9	16.6	178.2	-133.8	62.9
Left Lower Moment	X	N•m	0.0	0.0	0.0	0.0	66.9	47.0	-46.9	41.9
Left Lower Moment	Y	N•m	37.6	69.9	-29.9	35.9	50.0	41.5	-88.9	38.3
Left Lower Force	Z	Newtons	181.3	239.2	-3788.9	36.9	128.3	110.5	-6874.3	41.1
Right Lower Moment	X	N•m	17.2	41.6	-17.0	66.1	10.0	47.7	-59.5	70.6
Right Lower Moment	Y	N•m	135.1	58.4	-65.1	44.4	81.3	71.8	-43.7	37.1
Right Lower Force	Z	Newtons	159.8	171.2	-6580.2	46.2	106.2	142.3	-3576.0	42.2

1.) Driver channel failed, no data

DATA SHEET NO. 8...(continued)

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

NHTSA No.: M30210

Test Program: 2003 NHTSA 35mph NCAP

Test Date: 2/7/03

CHEST PEAK DISPLACEMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	MM	0.1	4.4	-32.0	67.0	0.3	2.0	-37.5	67.0

HEAD REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	12.2	239.2	-54.1	76.0	17.2	217.3	-53.9	76.2
Head CG	Y	G's	30.6	85.1	-8.9	239.2	8.3	30.8	-11.3	76.7
Head CG	Z	G's	21.1	54.9	-1.7	127.8	31.0	67.2	-4.5	110.4
Head CG Resultant	N/A	G's	60.1	76.9			58.9	73.1		

CHEST REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	3.7	264.9	-49.5	58.3	3.0	255.9	-56.6	58.5
Chest CG	Y	G's	5.8	78.7	-2.9	39.3	3.5	57.0	-7.3	80.1
Chest CG	Z	G's	8.4	41.0	-8.1	93.0	12.6	48.9	-9.5	94.8
Chest CG Resultant	N/A	G's	49.7	58.4			56.8	58.5		

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	396.3	53.4	89.3	41.4	628.7	53.9	89.8	49.8

REDUNDANT CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Redundant	48.2	56.8	59.8	54.0	56.5	59.5

DATA SHEET NO. 9
SEATBELT ASSESSMENT TEST DATA

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03

SEAT BELT PLACEMENT MEASUREMENTS

Measurement Description	Units	Driver	Passenger
TBI - Dummy C/L to Lap/Shoulder Belt Intersect	mm	235	265
PBU - Top surface of reference to belt upper edge	mm	315	320
PBL - Top surface of reference to belt lower edge	mm	245	245
Lap Belt tension	Newton's	10	10
Shoulder Belt tension	NA	Retractor	Retractor

BELT LENGTH DATA

Measurement Description	Units	Driver	Passenger
Retractor reel to 'D' ring	mm	710	710
Shoulder belt length as measured on ATD	mm	807	850
Lap belt length as measured on ATD	mm	607	650
Remainder of belt on reel	mm	860	775
Total belt length for continuous webbing systems	mm	2984	2985

SHOULDER BELT SPOOL-OFF DATA

Measurement Description	Units	Driver	Passenger
As determined mechanically	mm	265.0	275.0
As determined electronically	mm	410.6	331.6

BELT STRETCH DATA

Measurement Description	Units	Driver	Passenger
Electronically between shoulder belt load cell and "D" ring	mm/cm	*	*
Mechanically	mm/cm	0.00	0.00

*Not used with shoulder belt pre-tensioner systems.

**DATA SHEET NO. 10
SUMMARY OF FMVSS 212 DATA**

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03

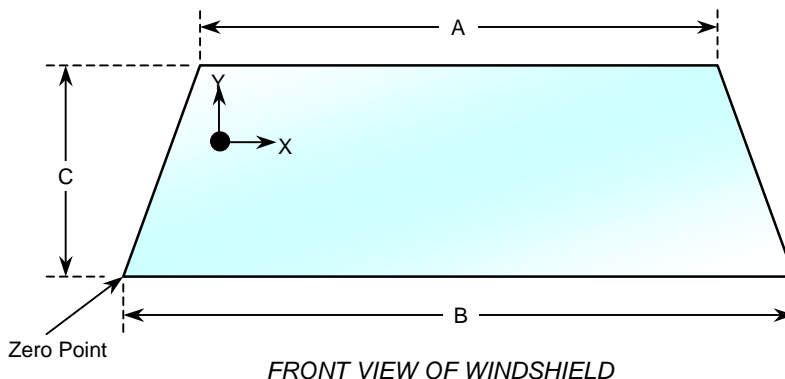
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with a rubber type adhesive. No molding covers the windshield periphery at any point.

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	2075.5	2075.5	100
Right Side	2075.5	2075.5	100
Total	4151.0	4151.0	100



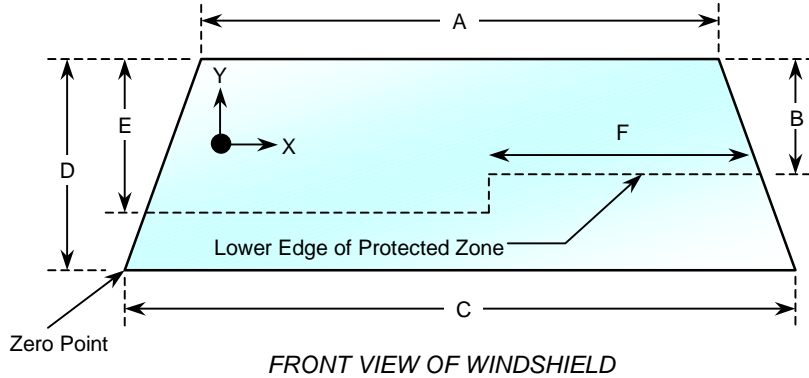
WINDSHIELD DIMENSIONS

Item	Units	Segment Length	Molding Width
A	mm	1137	8
B	mm	1430	0
C	mm	792	30
C	mm	792	30

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

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03



**WINDSHIELD AND
 PROTECTED ZONE**

Item	Units	Value
A	mm	1137
B	mm	340
C	mm	1430
D	mm	792
E	mm	422
F	mm	480

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 Jaguar X-Type 4 Door Sedan
Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
Test Date: 2/7/03

Test Time: 3:00 PM

Temperature at Test Time: 7.8 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.

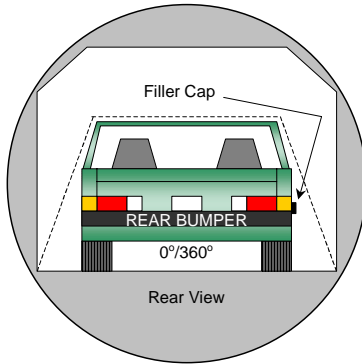
(Maximum Allowable = 1 oz./minute)

D. Spillage Location Details: No leakage occurred

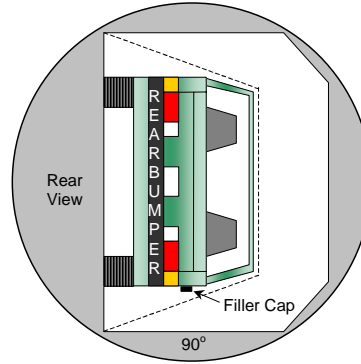
DATA SHEET NO. 13
FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

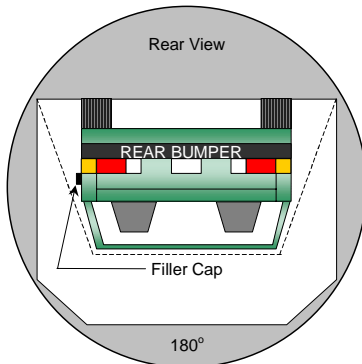
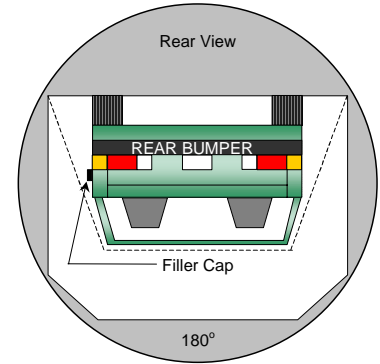
NHTSA No.: M30210
 Test Date: 2/7/03



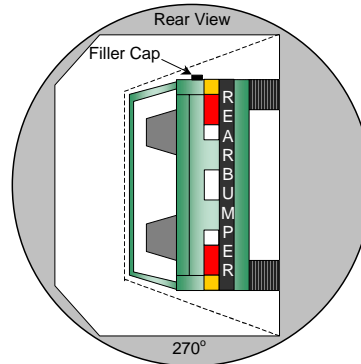
0° to 90°



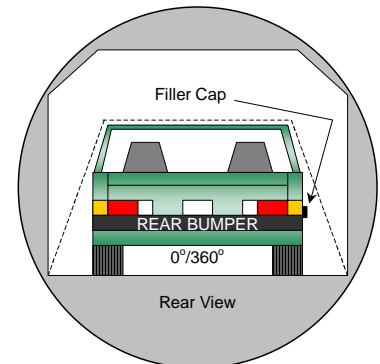
90° to 180°



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 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03

SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	77	300	377
90° to 180°	80	300	380
180° to 270°	77	300	377
270° to 360°	81	300	381

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 Jaguar X-Type 4 Door Sedan
Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
Test Date: 2/7/03

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
1	Total length of vehicle at centerline	mm	4665	4255	-410
2	RSOV to front of engine	mm	4150	4115	-35
3	RSOV to firewall centerline	mm	3644	3522	-122
4	RSOV to leading edge of right door	mm	3261	3255	-6
5	RSOV to leading edge of left door	mm	3260	3260	0
6	RSOV to lower leading edge of right door	mm	3233	3222	-11
7	RSOV to lower leading edge of left door	mm	3235	3230	-5
8	RSOV to upper trailing edge of right door	mm	2132	2122	-10
9	RSOV to upper trailing edge of left door	mm	2131	2130	-1
10	RSOV to lower trailing edge of right door	mm	2149	2135	-14
11	RSOV to lower trailing edge of left door	mm	2149	2145	-4
12	RSOV to bottom of right 'A' pillar	mm	3210	3206	-4
13	RSOV to bottom of left 'A' pillar	mm	3210	3206	-4
14	RSOV to firewall on right side	mm	3549	3509	-40
15	RSOV to firewall of left side	mm	3545	3530	-15
16	RSOV to steering column	mm	2777	2792	15
17	Center of steering column to left 'A' pillar	mm	420	415	-5
18	Center of steering column to headlining	mm	415	410	-5
19	RSOV to right side of front bumper	mm	4483	4215	-268
20	RSOV to left side of front bumper	mm	4424	4170	-254
21	Length of engine block	mm	475	475	0
RD	RSOV to right side of dash panel	mm	2972	2961	-11
CD	RSOV to center of dash panel	mm	2910	2952	42
LD	RSOV to left side of dash panel	mm	2977	2950	-27

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

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03

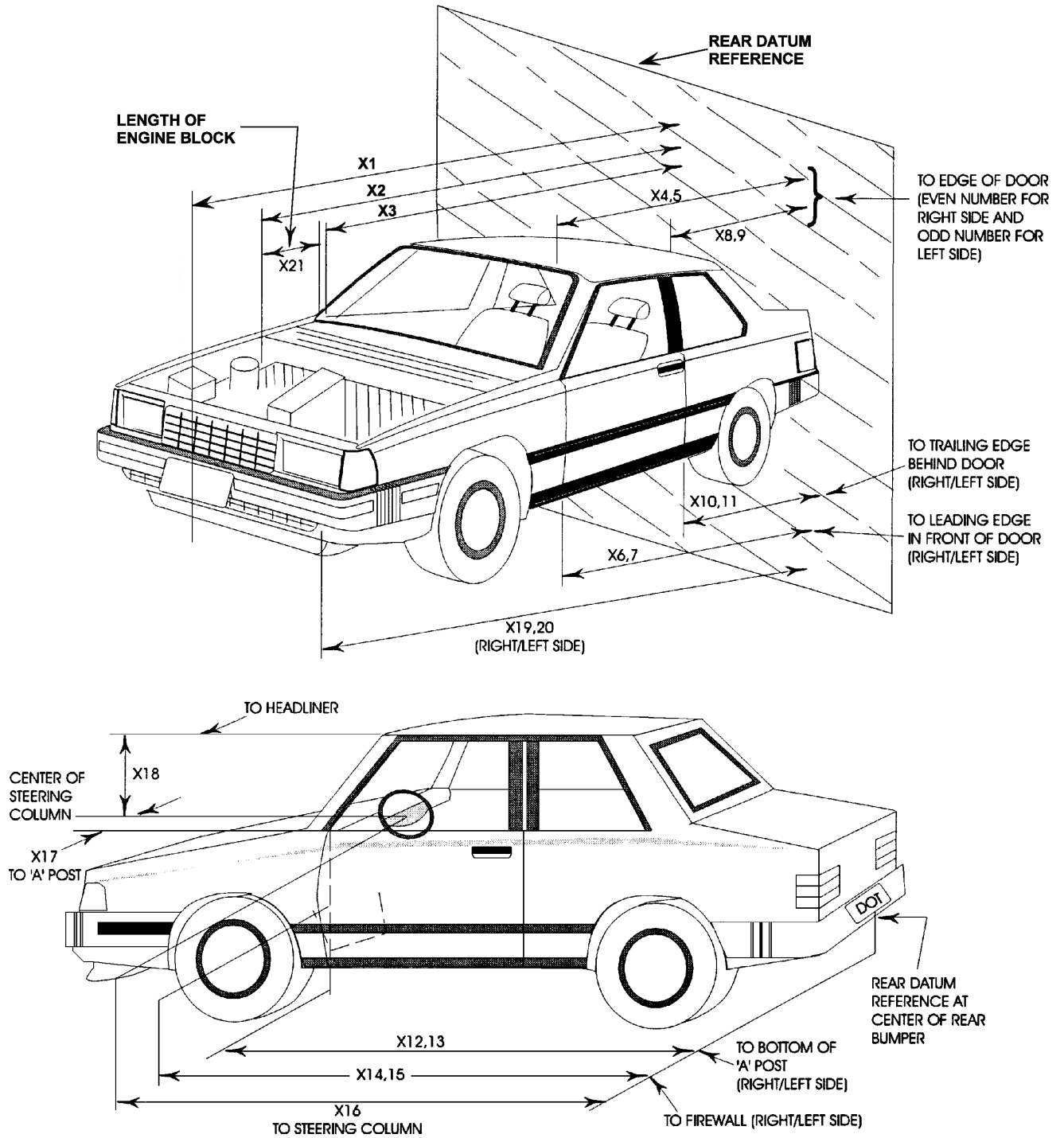
No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
1	Total Length	mm	4665	4255	-410
2	Total Width	mm	1773	1773	0
3	Bumper Top Height	mm	566	602	36
4	Bumper Bottom Height	mm	227	305	78
5	Longitudinal Member Top Height	mm	546	342	-204
6	Longitudinal Member Bottom Height	mm	454	240	-214
7	Distance Between Longitudinal Members	mm	984	850	-134
8	Longitudinal Member Width	mm	205	205	0
9	Engine Top Height	mm	661	845	184
10	Engine Bottom Height	mm	208	398	190
11	Engine and Gear Box Width	mm	475	475	0
12	Front Bumper to Engine Distance	mm	441	180	-261
13	Front Shock Absorber Fixing Width	mm	282	144	-138
14	Bonnet Leading Edge Height	mm	743	840	97
15	Front Schock Absorber Fixing Width	mm	1117	1120	3
16	Front Bumper to Front Axle Distance	mm	910	550	-360
17	Front Axle to A-Pillar Distance	mm	509	580	71
18	A-Pillar to B-Pillar Distance	mm	1110	1060	-50
19	B-Pillar to Rear Axla Distance	mm	1098	1095	-3
20	B-Pillar to C-Pillar Distance	mm	1067	1065	-2
21	Roof Sill Bottom Height	mm	1286	1280	-6
22	Roof Sill Top Heigth	mm	1404	1400	-4
23	Floor Sill Bottom Height	mm	192	200	8
24	Floor Sill Top Height	mm	354	324	-30

All Measurements in millimeters

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

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03



DATA SHEET NO. 15
CAMERA LOCATIONS

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
Test Date: 2/7/03

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	Left Side, No. 1	1930	8357	1321	-4	7855	13	1010
2B	Left Side, No. 1	1626	8230	1092	-4	7751	17	No Time
3	Left Side, No. 2	1727	8230	1600	-4	7742	35	980
4	Left Side, No. 3	6477	10185	4648	-13	11062	35-85	1000
5	Left Side, No. 4	1524	8230	3404	-20	8016	19	1040
6	Left Side, No. 5	1524	8230	2997	-16	7923	19	1050
7	Right Side, No. 1	2057	-8306	1219	-6	7802	14	1000
8	Right Side, No. 2	1676	-8052	1219	-4	7566	35	1040
9	Right Side, No. 3	8026	-8941	2997	-9	10358	80	890
10	Right Side, No. 4	2438	-13106	1524	-4	12601	50	920
11	Overhead Overall	610	0	6172	-90	N/A	13	1080
12	Front View, Driver	-610	406	2743	-40	N/A	12	No Time
13	Front View, Passenger	-610	406	2743	-40	N/A	13	No Time
14	Pit Camera, Engine	762	0	-1499	90	N/A	10	1100
15	Pit Camera, Fuel Tank	3658	0	-1499	90	N/A	6	No Time
16	Driver Side Child	2642	8230	2286	-15	7871	35	1010
16B	Driver Side Child	2642	6096	1524	-1	5673	25	510
17	Passenger Side Child	2438	-9144	2032	-10	8785	25	No Time
17B	Passenger Side Child	2743	-8331	1524	-1	7920	25	510

X - Barrier Face Y - Monorail Centerline Z - Ground

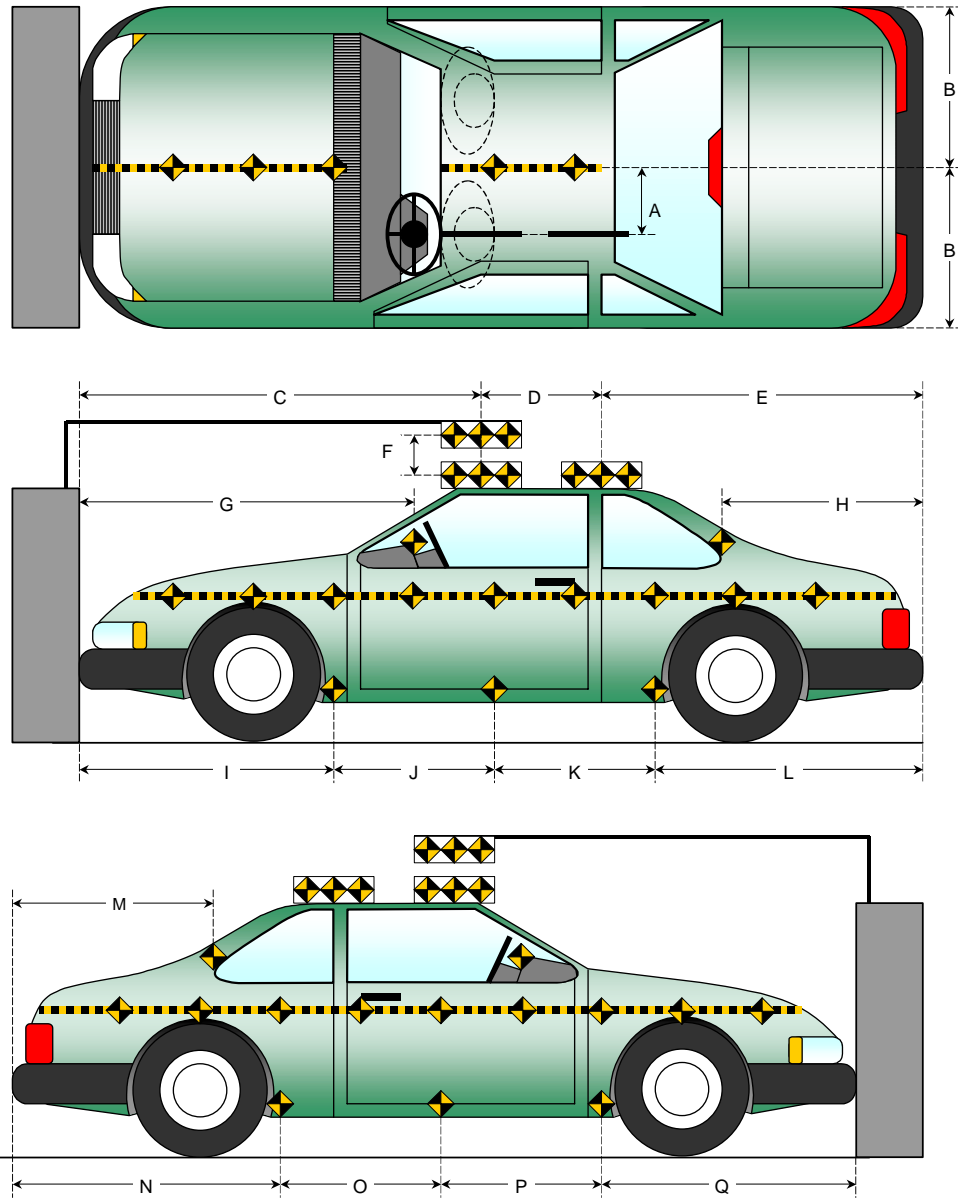
DATA SHEET NO. 16
PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03

All Dimensions
 in mm

Item	Value
A	375
B	893
C	1774
D	613
E	2289
F	155
G	1746
H	1083
I	1341
J	928
K	928
L	1479
M	1076
N	1479
O	928
P	928
Q	1341



DATA SHEET NO. 17
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

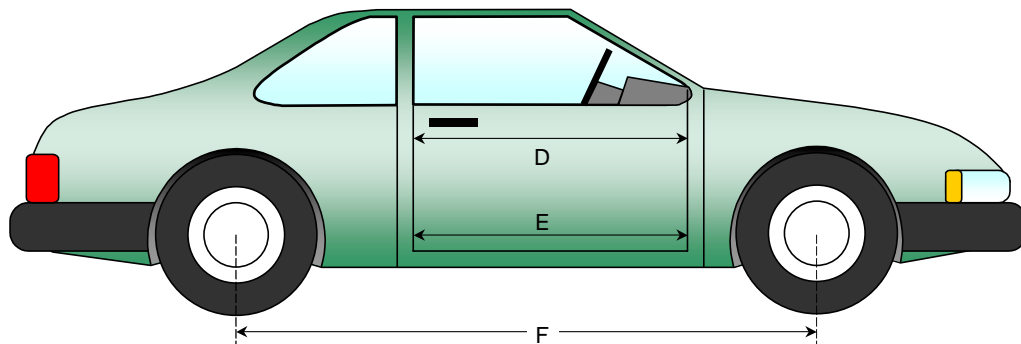
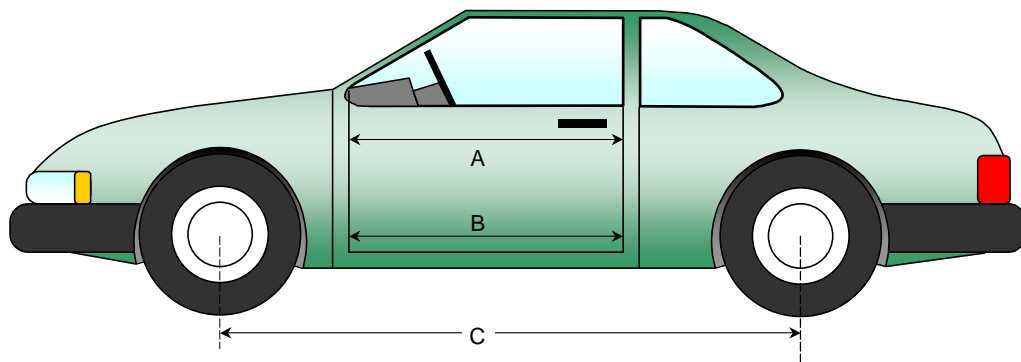
NHTSA No.: M30210
 Test Date: 2/7/03

DOOR OPENING WIDTH

Item	Description	Units	Pre-Test	Post-Test	Difference
A	Left Side Upper	mm	1008	995	-13
B	Left Side Lower	mm	941	930	-11
D	Right Side Upper	mm	1009	997	-12
E	Right Side Lower	mm	947	935	-12

WHEELBASE MEASUREMENTS

Item	Description	Units	Pre-Test	Post-Test	Difference
C	Left Side Wheel base	mm	2710	2680	-30
F	Right Side Wheel base	mm	2710	2680	-30



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

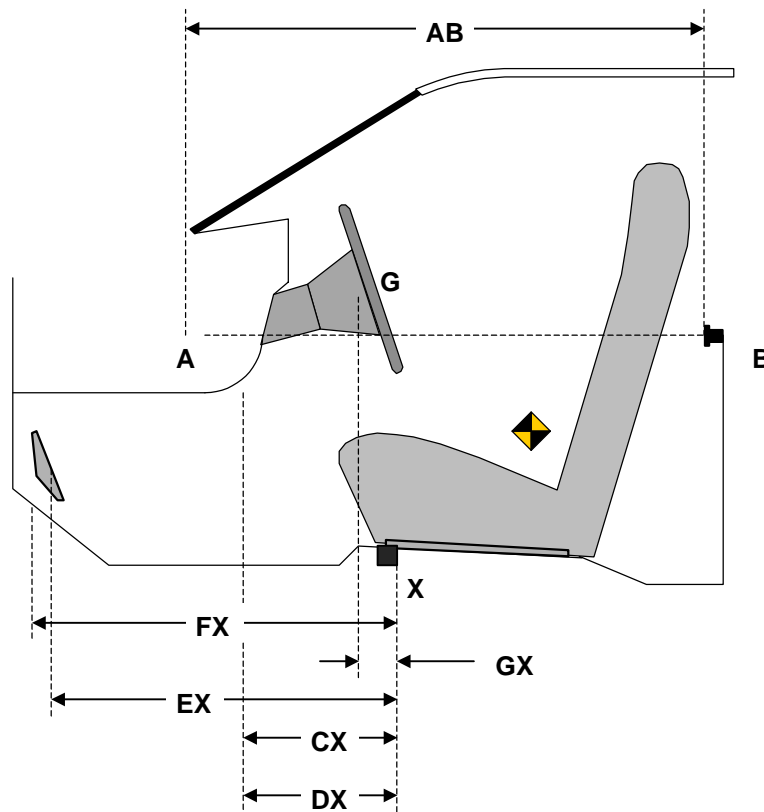
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03

DRIVER COMPARTMENT INTRUSION

Item	Description	Units	Pre-Test	Post-Test	Difference
AB	Door Opening (Inside window jam)	mm	1008	995	-13
CX	Left Knee Bolster to X	mm	285	245	-40
DX	Right Knee Bolster to X	mm	283	253	-30
EX	Brake Pedal to X	mm	587	480	-107
FX	Foot Rest to X	mm	616	605	-11
GX	Center of Steering Wheel Hub to X	mm	109	78	-31

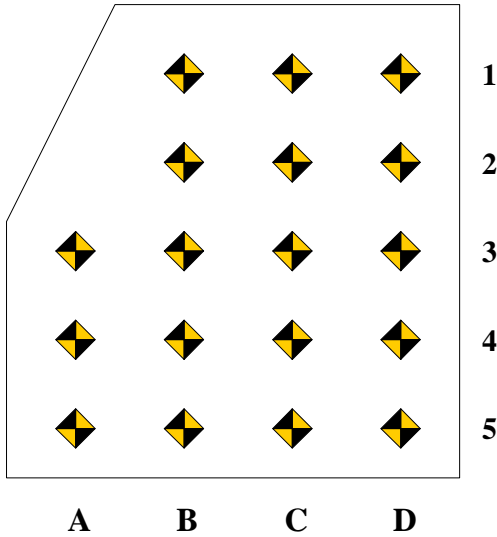
X = Left Front Seat Outboard Anchor Bolt Head



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

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03



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		722	720	719		680	684	686		-42	-36	-33
2		622	619	619		610	614	616		-12	-5	-3
3	529	522	519	518	522	520	524	521	-7	-2	5	3
4	424	422	418	418	422	420	422	420	-2	-2	4	2
5	324	322	318	316	322	320	320	318	-2	-2	2	2

DRIVER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1		30	26	24		28	29	30		-2	3	6
2		-30	-29	-28		-40	-44	-42		-10	-15	-14
3	-58	-50	-52	-50	-62	-65	-64	-63	-4	-15	-12	-13
4	-65	-50	-50	-48	-80	-65	-66	-65	-15	-15	-16	-17
5	-50	-54	-51	-58	-60	-62	-60	-62	-10	-8	-9	-4

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

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

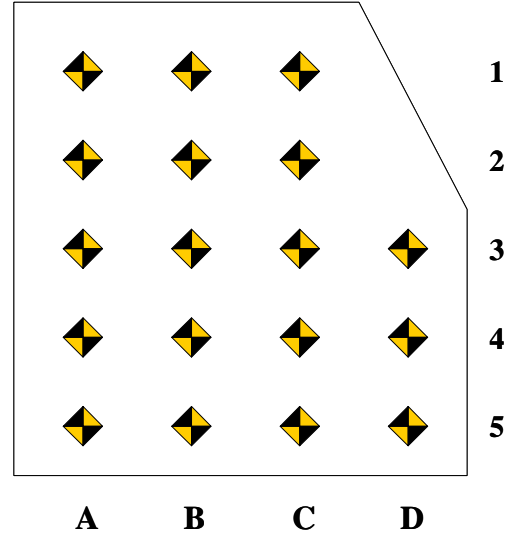
NHTSA No.: M30210
 Test Date: 2/7/03

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	757	756	753		674	659	650		-83	-97	-103	
2	654	655	655		635	614	615		-19	-41	-40	
3	555	555	554	553	555	554	556	558	0	-1	2	5
4	455	455	454	452	455	454	456	458	0	-1	2	6
5	355	354	354	352	355	354	356	358	0	0	2	6

PASSENGER FLOOR PAN Z-AXIS

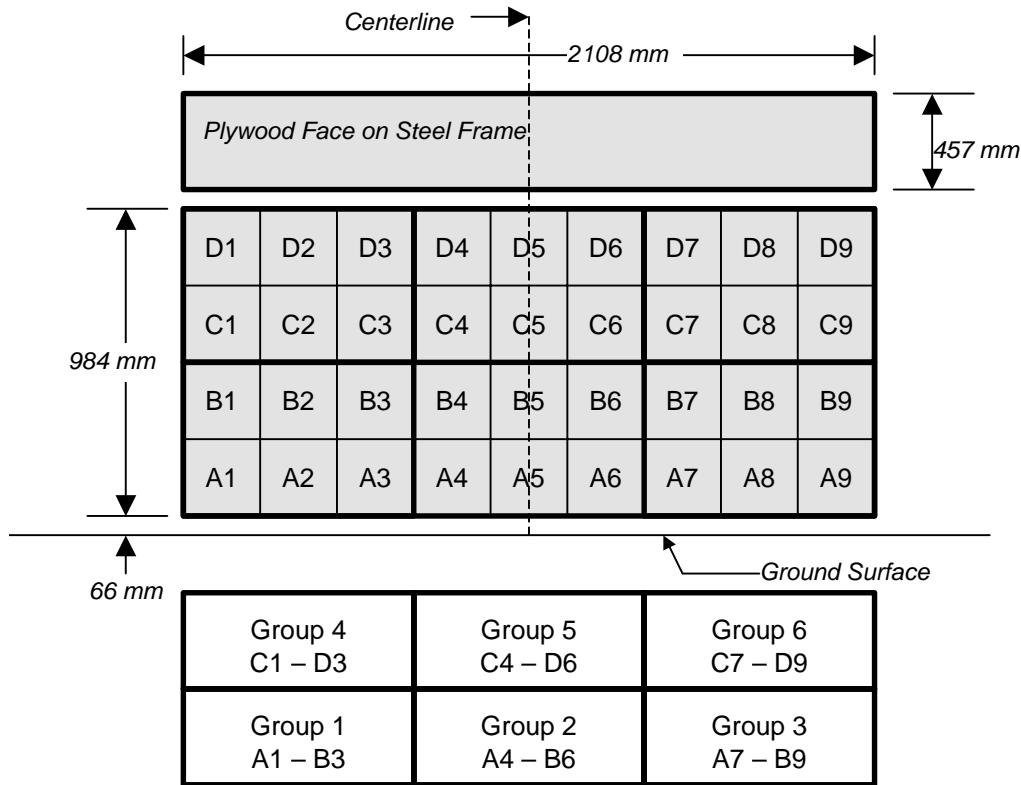
	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	59	48	43		80	70	65		21	22	22	
2	16	-9	-12		-20	-20	-20		-36	-11	-8	
3	-46	-48	-50	-49	-80	-76	-75	-73	-34	-28	-25	-24
4	-46	-52	-52	-50	-62	-63	-64	-64	-16	-11	-12	-14
5	-45	-60	-52	-52	-60	-60	-58	-58	-15	0	-6	-6

DATA SHEET NO. 18
FIXED BARRIER LOAD CELL LOCATIONS

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03

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 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03

VEHICLE INFORMATION

VIN: SAJEB52D43XC9188
 Vehicle Size Category: 4 Door Sedan

Wheel base (mm): 2710
 Test Weight (kg): 1777

ACCELEROMETER DATA

Accelerometer Location: Left rear floor pan
 Cal. Procedure/Interval: 6 months / drop test
 Integration Algorithm: NHTSA Standard
 Impact Velocity (km/h): 55.72
 Velocity Change (km/h): 63.9

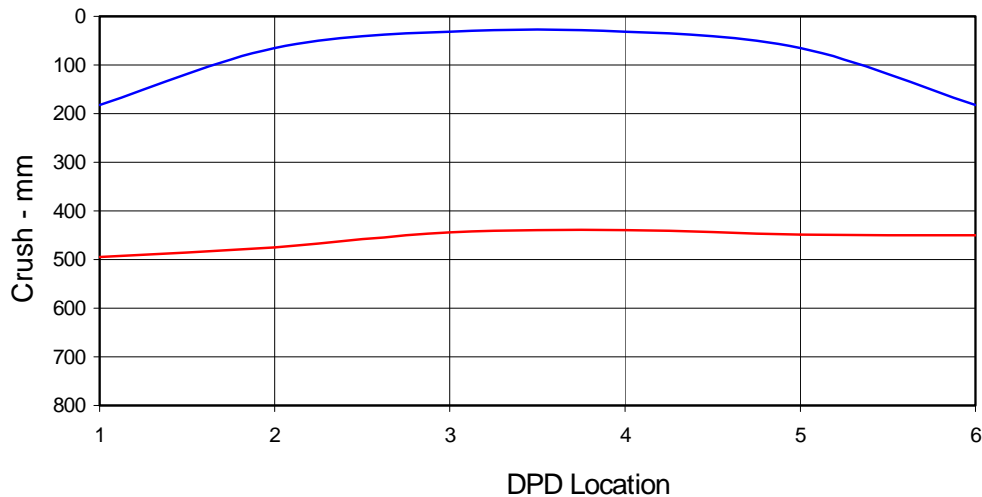
Linearity: Good

Time of Separation (msec): 61.1

CRUSH PROFILE

Collision Deformation Classification: 12FDEW6 Midpoint of Damage: Vehicle Centerline
 Damage Region Length (mm): 1393 Impact Mode: Full Frontal

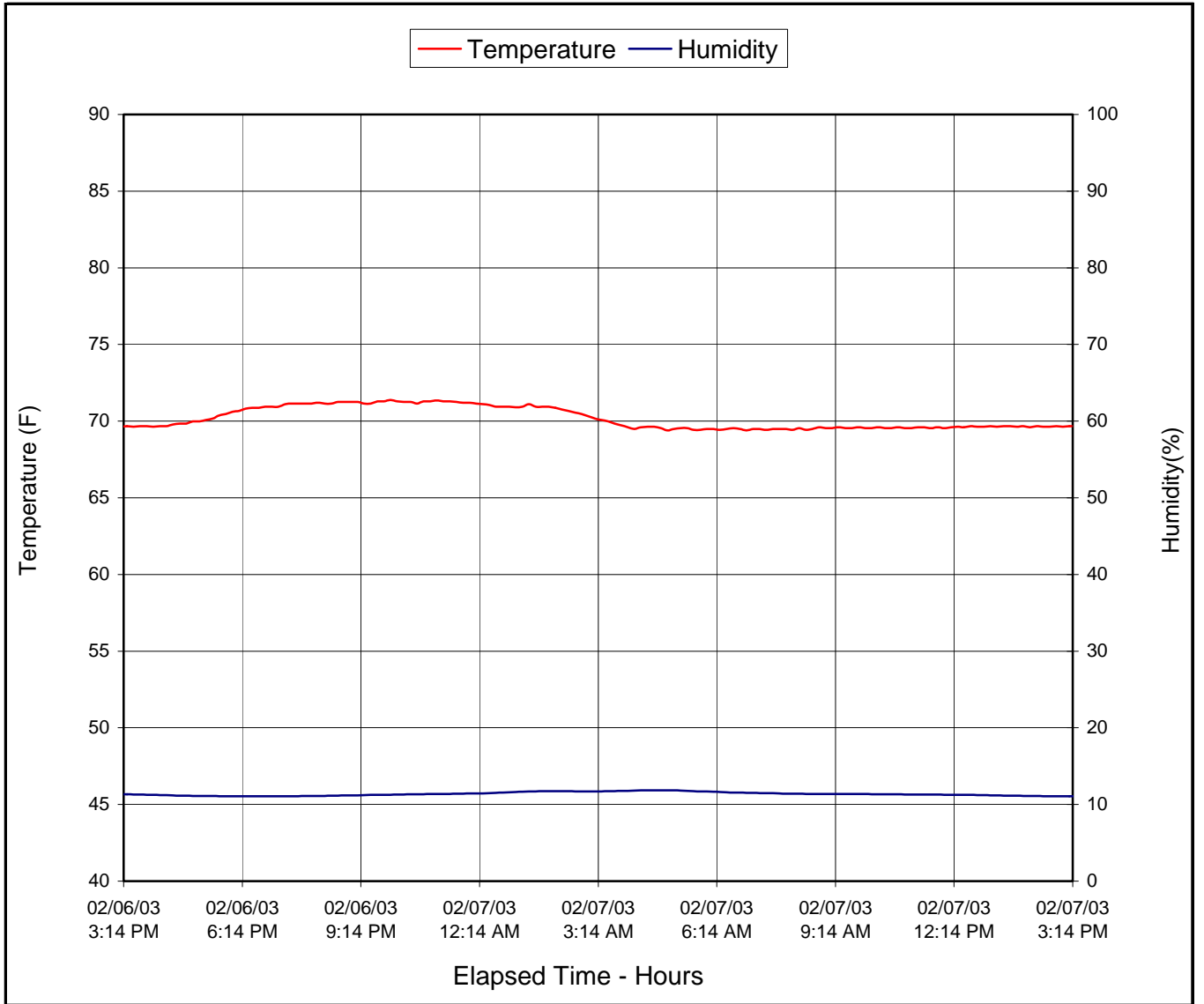
No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	182	495	-313
C2	Crush zone 2 on left side	mm	65	475	-410
C3	Crush zone 3 on left side	mm	31	444	-413
C4	Crush zone 4 on right side	mm	31	440	-409
C5	Crush zone 5 on right side	mm	65	449	-384
C6	Crush zone 6 at right side	mm	182	450	-268



DATA SHEET NO. 20
DUMMY/VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03



APPENDIX A

PHOTOGRAPHS

LIST OF PHOTOGRAPHS

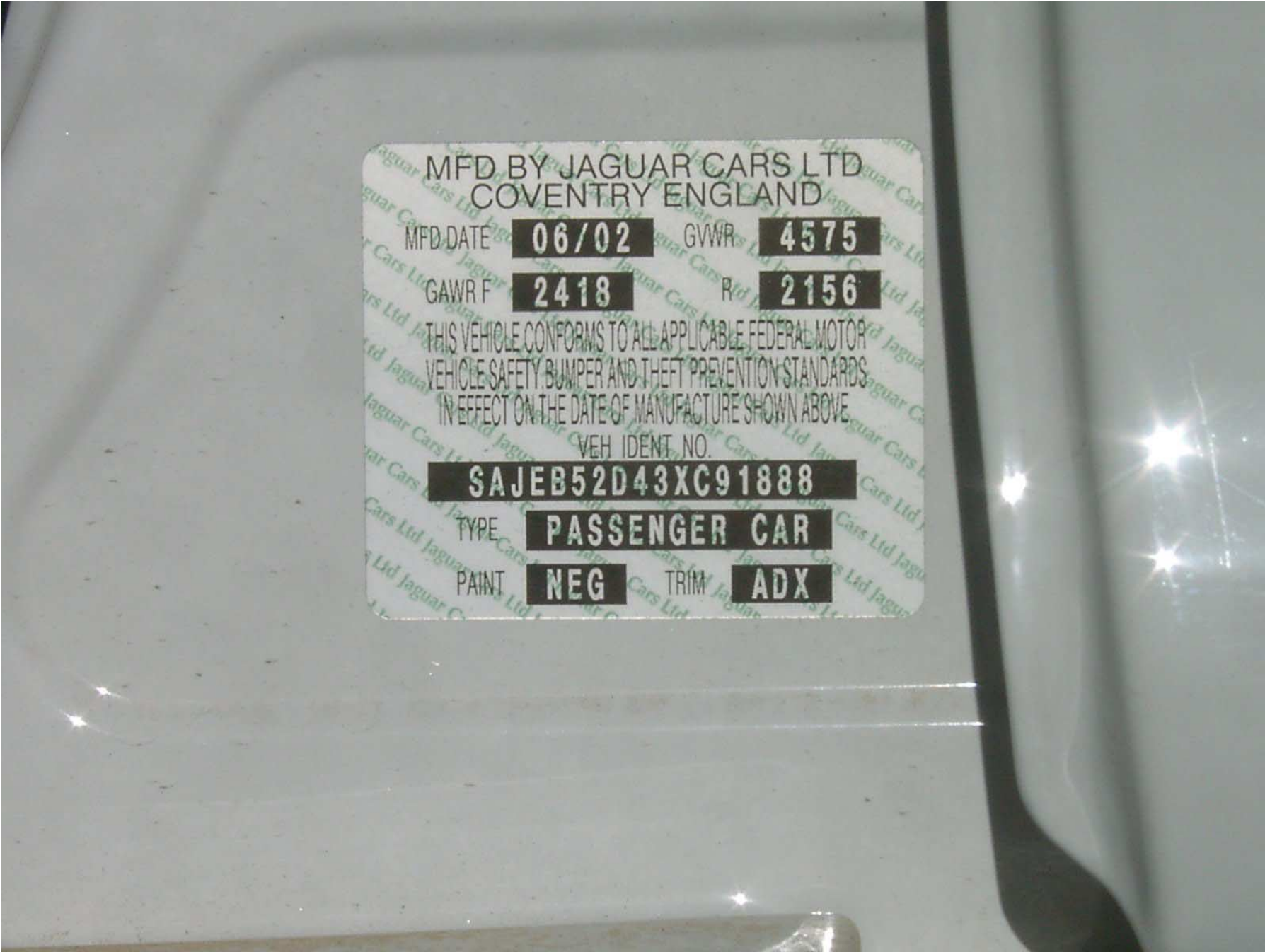
Figure		Page
A-1	Load Cell Location	A-1
A-2	Vehicle Certification Label	A-2
A-3	Vehicle Tire Label	A-3
A-4	Right Front $\frac{3}{4}$ View, As Received	A-4
A-5	Left Rear $\frac{3}{4}$ View, As Received	A-5
A-6	Pre-Test Front View	A-6
A-7	Post-Test Front View	A-7
A-8	Pre-Test Left Side View	A-8
A-9	Post-Test Left Side View	A-9
A-10	Pre-Test Right Side View	A-10
A-11	Post-Test Right Side View	A-11
A-12	Pre-Test Right Front $\frac{3}{4}$ View	A-12
A-13	Post-Test Right Front $\frac{3}{4}$ View	A-13
A-14	Pre-Test Left Rear $\frac{3}{4}$ View	A-14
A-15	Post-Test Left Rear $\frac{3}{4}$ View	A-15
A-16	Left Rear $\frac{3}{4}$ View of Doors After Impact	A-16
A-17	Right Rear $\frac{3}{4}$ View of Doors After Impact	A-17
A-18	Pre-Test Windshield View	A-18
A-19	Post-Test Windshield View	A-19
A-20	Pre-Test Engine Compartment	A-20
A-21	Post-Test Engine Compartment	A-21
A-22	Pre-Test Fuel Cap	A-22
A-23	Post-Test Fuel Cap	A-23
A-24	Pre-Test Front Underbody View	A-24
A-25	Post-Test Front Underbody View	A-25
A-26	Pre-Test Mid Underbody View	A-26
A-27	Post-Test Mid Underbody View	A-27
A-28	Pre-Test Rear Underbody View	A-28
A-29	Post-Test Rear Underbody View	A-29
A-30	Pre-Test Driver Dummy Front View (Head Position)	A-30
A-31	Post-Test Driver Dummy Front View (Head Position)	A-31
A-32	Pre-Test Driver Dummy Front Through Window	A-32
A-33	Post-Test Driver Dummy Front Through Window	A-33
A-34	Pre-Test Driver Dummy Door Open	A-34
A-35	Post-Test Driver Dummy Door Open	A-35

LIST OF PHOTOGRAPHS...(Continued)

<u>Figure</u>		<u>Page</u>
A-36	Pre-Test Driver Dummy Feet	A-36
A-37	Post-Test Driver Dummy Feet	A-37
A-38	Pre-Test Driver Side Knee Bolster	A-38
A-39	Post-Test Driver Side Knee Bolster	A-39
A-40	Pre-Test Driver Side Floor Pan	A-40
A-41	Post-Test Driver Side Floor Pan	A-41
A-42	Post-Test Driver Dummy Head	A-42
A-43	Post-Test Driver Dummy Contact to Air Bag	A-43
A-44	Pre-Test Passenger Dummy Front View (Head Position)	A-44
A-45	Post-Test Passenger Dummy Front View (Head Position)	A-45
A-46	Pre-Test Passenger Dummy Front Through Window	A-46
A-47	Post-Test Passenger Dummy Front Through Window	A-47
A-48	Pre-Test Passenger Dummy Door Open	A-48
A-49	Post-Test Passenger Dummy Door Open	A-49
A-50	Pre-Test Passenger Dummy Feet	A-50
A-51	Post-Test Passenger Dummy Feet	A-51
A-52	Pre-Test Passenger Side Floor Pan	A-52
A-53	Post-Test Passenger Side Floor Pan	A-53
A-54	Pre-Test Passenger Side Knee Bolster	A-54
A-55	Post-Test Passenger Side Knee Bolster	A-55
A-56	Post-Test Passenger Dummy Head	A-56
A-57	Post-Test Passenger Dummy Contact to Air Bag	A-57
A-58	Vehicle on Rollover Device	A-58
A-59	Vehicle During Impact	A-59



Figure A-1: Load Cell Location



MFD BY JAGUAR CARS LTD
COVENTRY ENGLAND

MFD DATE **06/02**

GVWR **4575**

GAWR F **2418**

R **2156**

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR
VEHICLE SAFETY BUMPER AND THEFT PREVENTION STANDARDS
IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

VEH IDENT NO.

SAJEB52D43XC91888

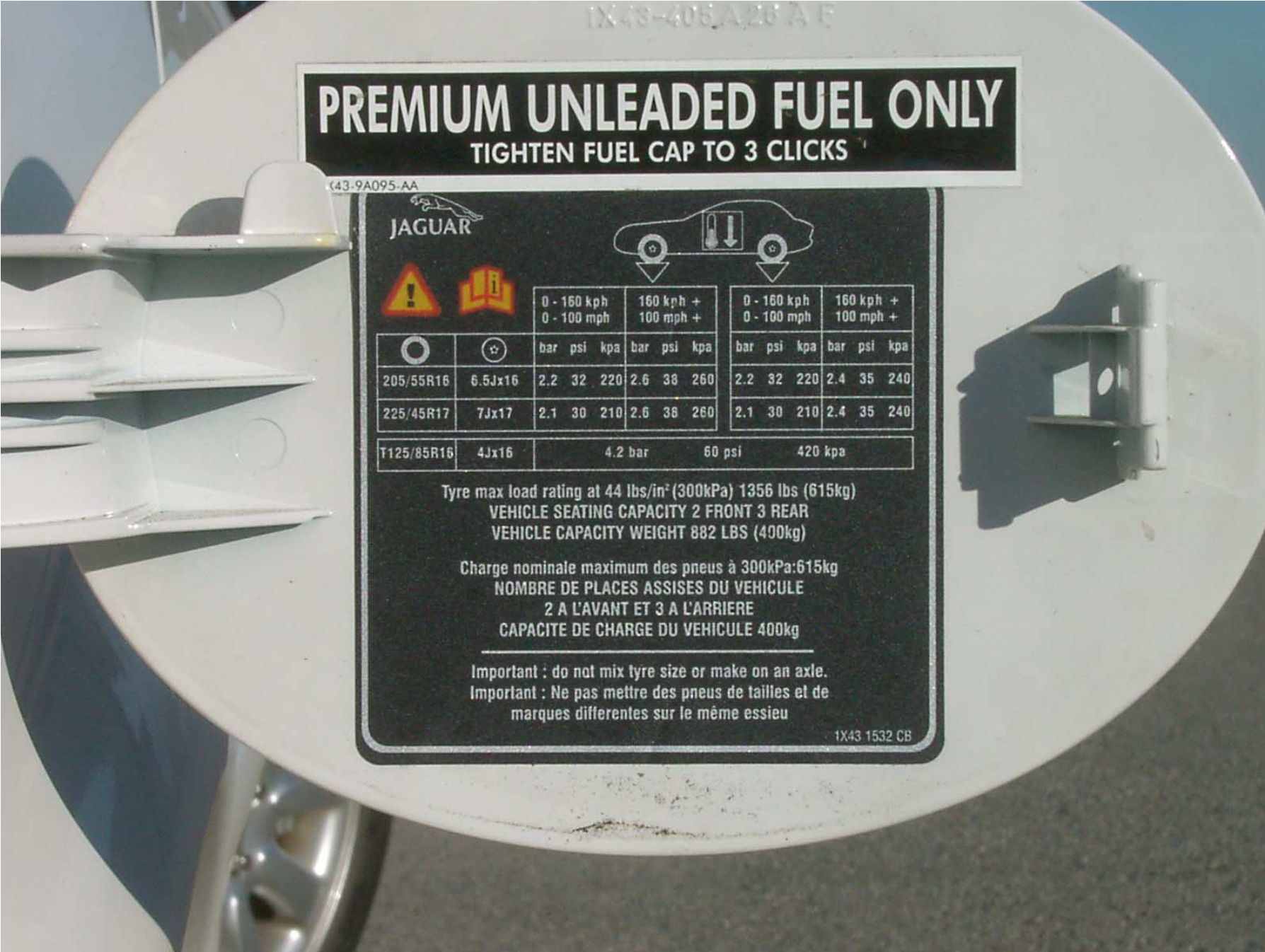
TYPE **PASSENGER CAR**

PAINT **NEG** TRIM **ADX**

A-2

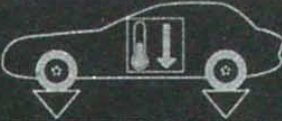
TR-P23001-07-NC

Figure A-2: Vehicle Certification Label



PREMIUM UNLEADED FUEL ONLY
TIGHTEN FUEL CAP TO 3 CLICKS

43-9A095-AA



Tire Size	Load Index	0 - 160 kph 0 - 100 mph			160 kph + 100 mph +			0 - 160 kph 0 - 100 mph			160 kph + 100 mph +		
		bar	psi	kpa	bar	psi	kpa	bar	psi	kpa	bar	psi	kpa
205/55R16	6.5Jx16	2.2	32	220	2.6	38	260	2.2	32	220	2.4	35	240
225/45R17	7Jx17	2.1	30	210	2.6	38	260	2.1	30	210	2.4	35	240
T125/85R16	4Jx16	4.2 bar			60 psi			420 kpa					

Tyre max load rating at 44 lbs/in² (300kPa) 1356 lbs (615kg)
VEHICLE SEATING CAPACITY 2 FRONT 3 REAR
VEHICLE CAPACITY WEIGHT 882 LBS (400kg)

Charge nominale maximum des pneus à 300kPa:615kg
NOMBRE DE PLACES ASSISES DU VEHICULE
2 A L'AVANT ET 3 A L'ARRIERE
CAPACITE DE CHARGE DU VEHICULE 400kg

Important : do not mix tyre size or make on an axle.
Important : Ne pas mettre des pneus de tailles et de
marques differentes sur le même essieu

1X43 1532 CB

Figure A-3: Vehicle Tire Label



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



A-5

TR-P23001-07-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 ¾ View



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



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



A-15

TR-P23001-07-NC

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



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

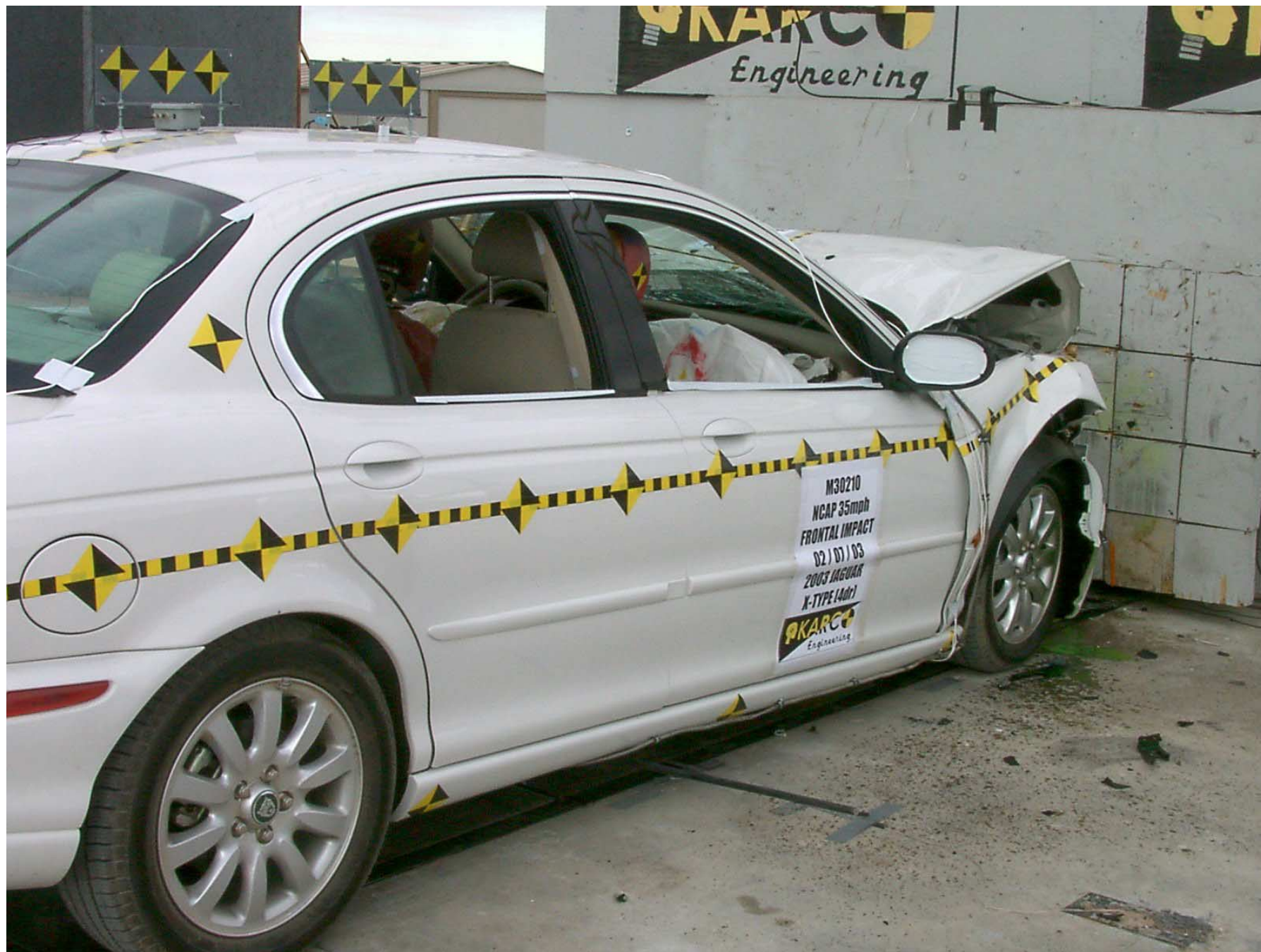


Figure A-17: Right Rear ¾ View of Doors After Impact



Figure A-18: Pre-Test Windshield View

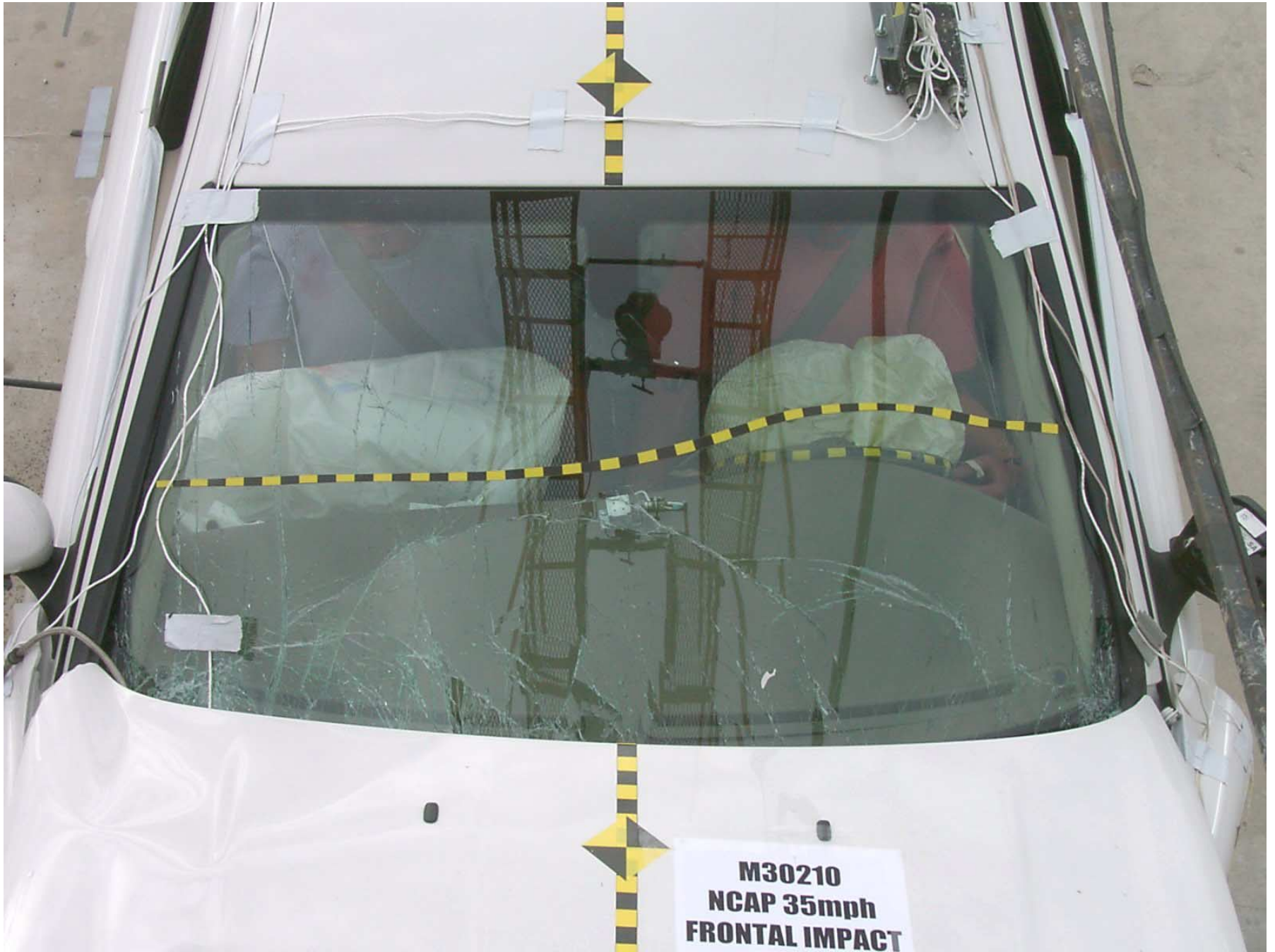


Figure A-19: Post-Test Windshield View

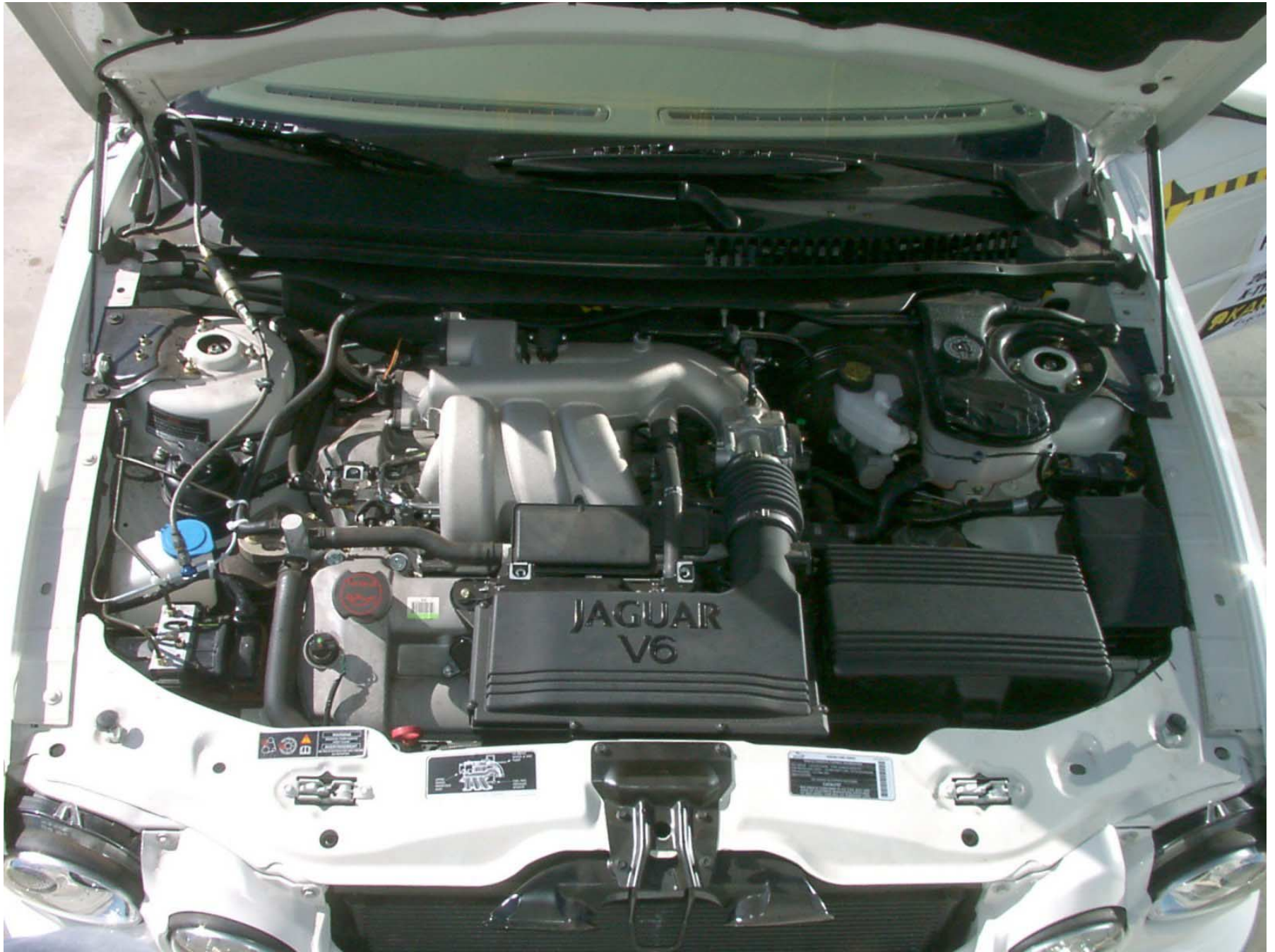


Figure A-20: Pre-Test Engine Compartment



Figure A-21: Post-Test Engine Compartment



Figure A-22: Pre-Test Fuel Cap



Figure A-23: Post-Test Fuel Cap

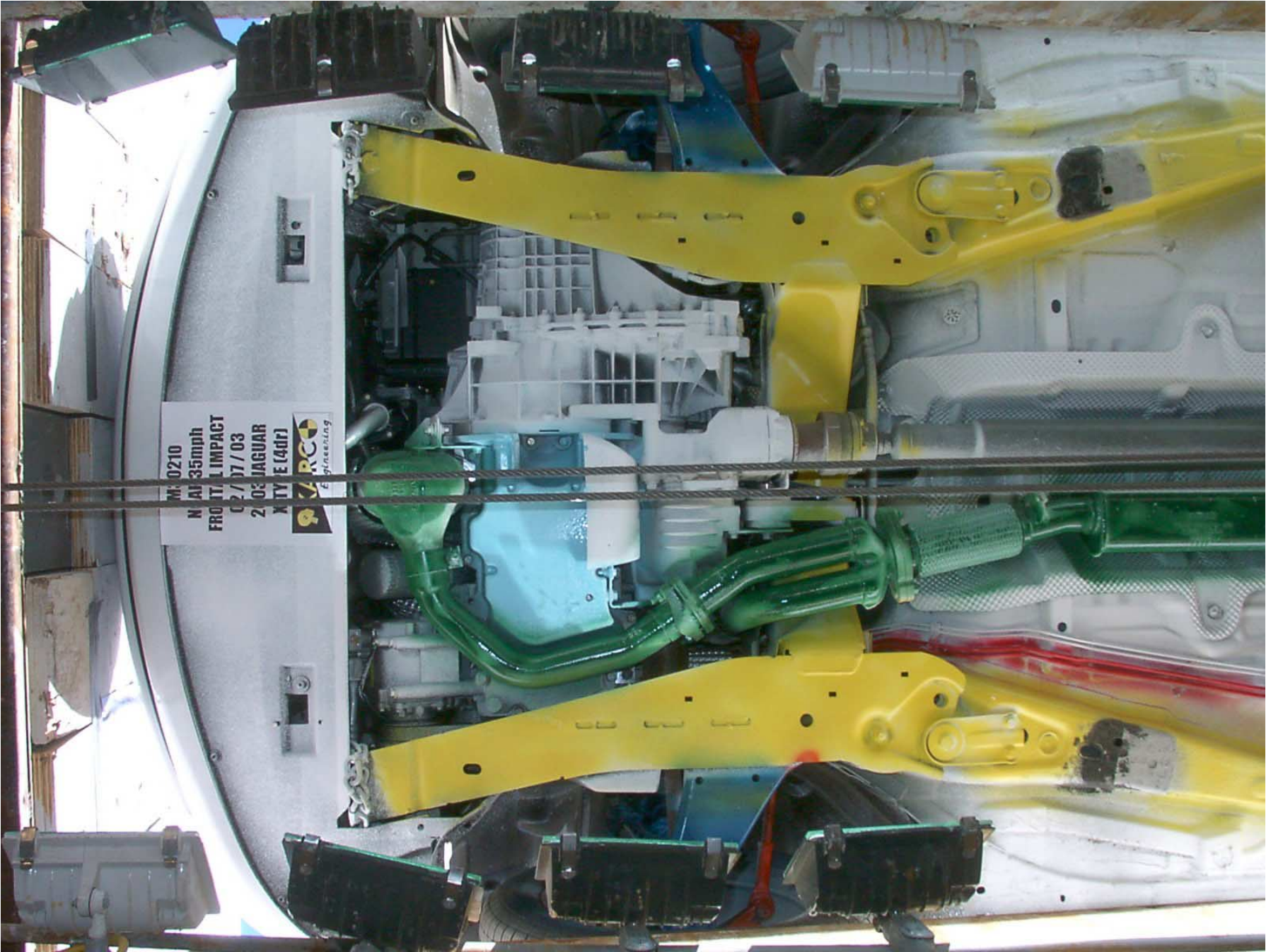


Figure A-24: Pre-Test Front Underbody View

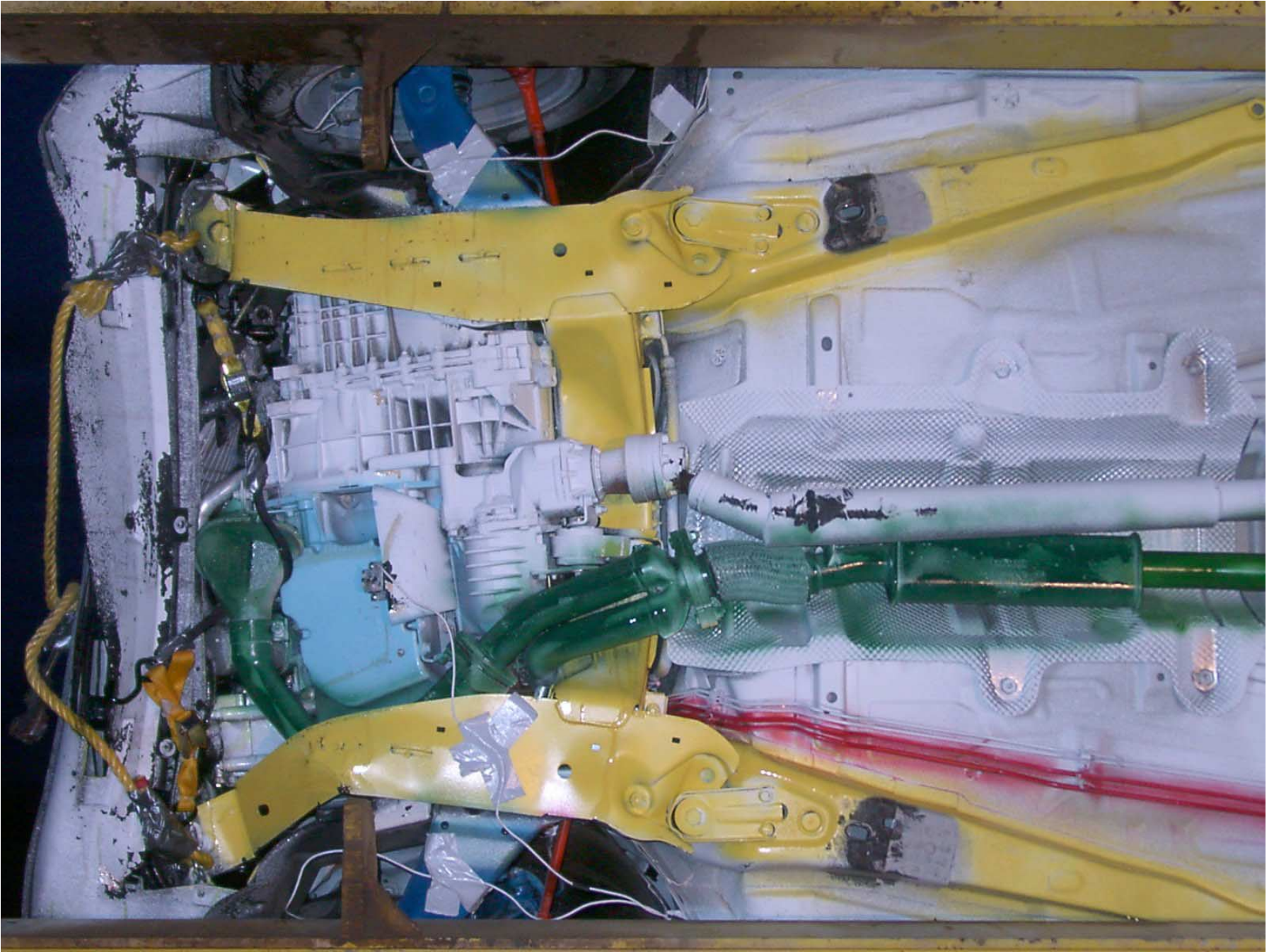


Figure A-25: Post-Test Front Underbody View

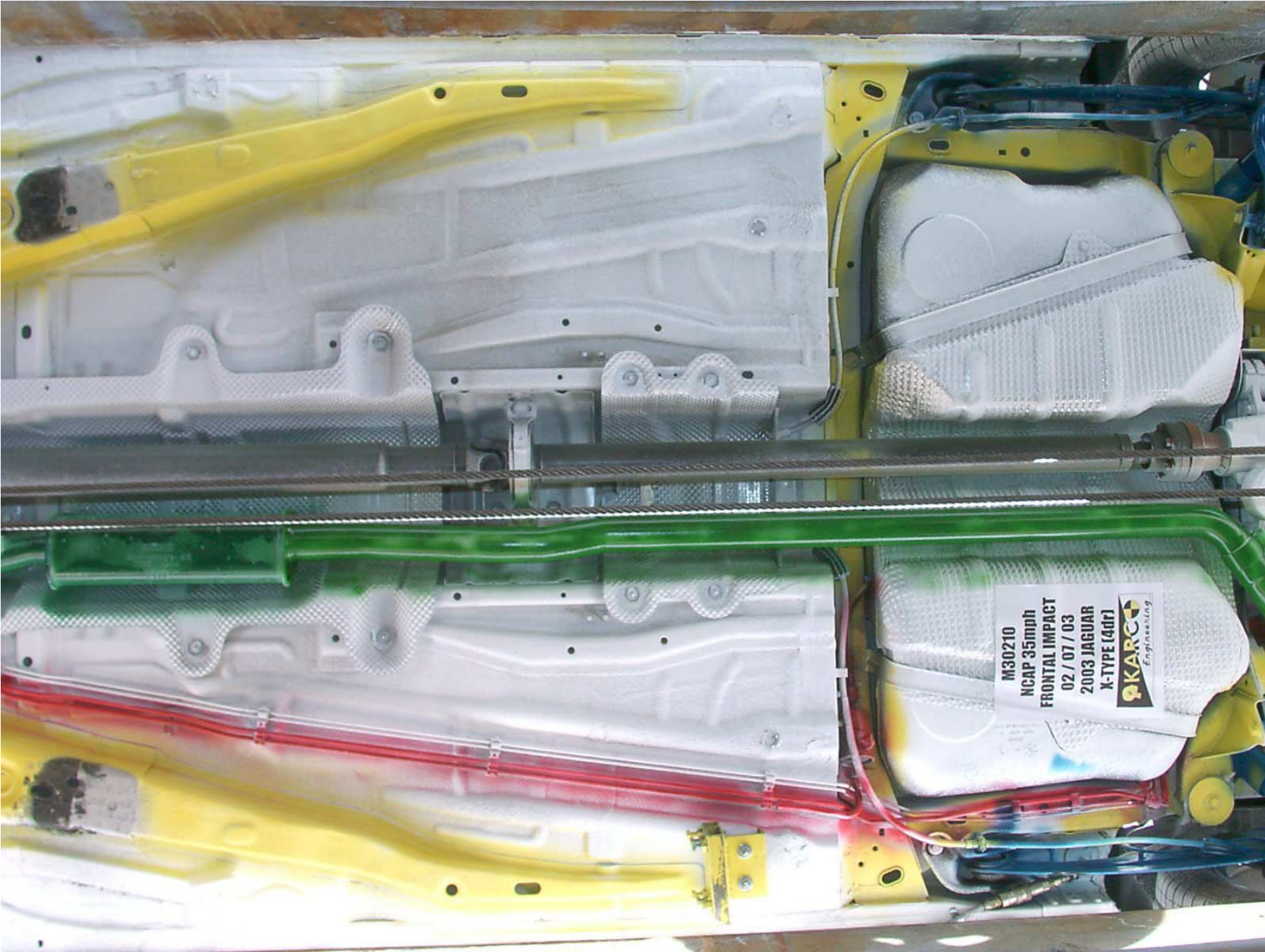


Figure A-26: Pre-Test Mid Underbody View

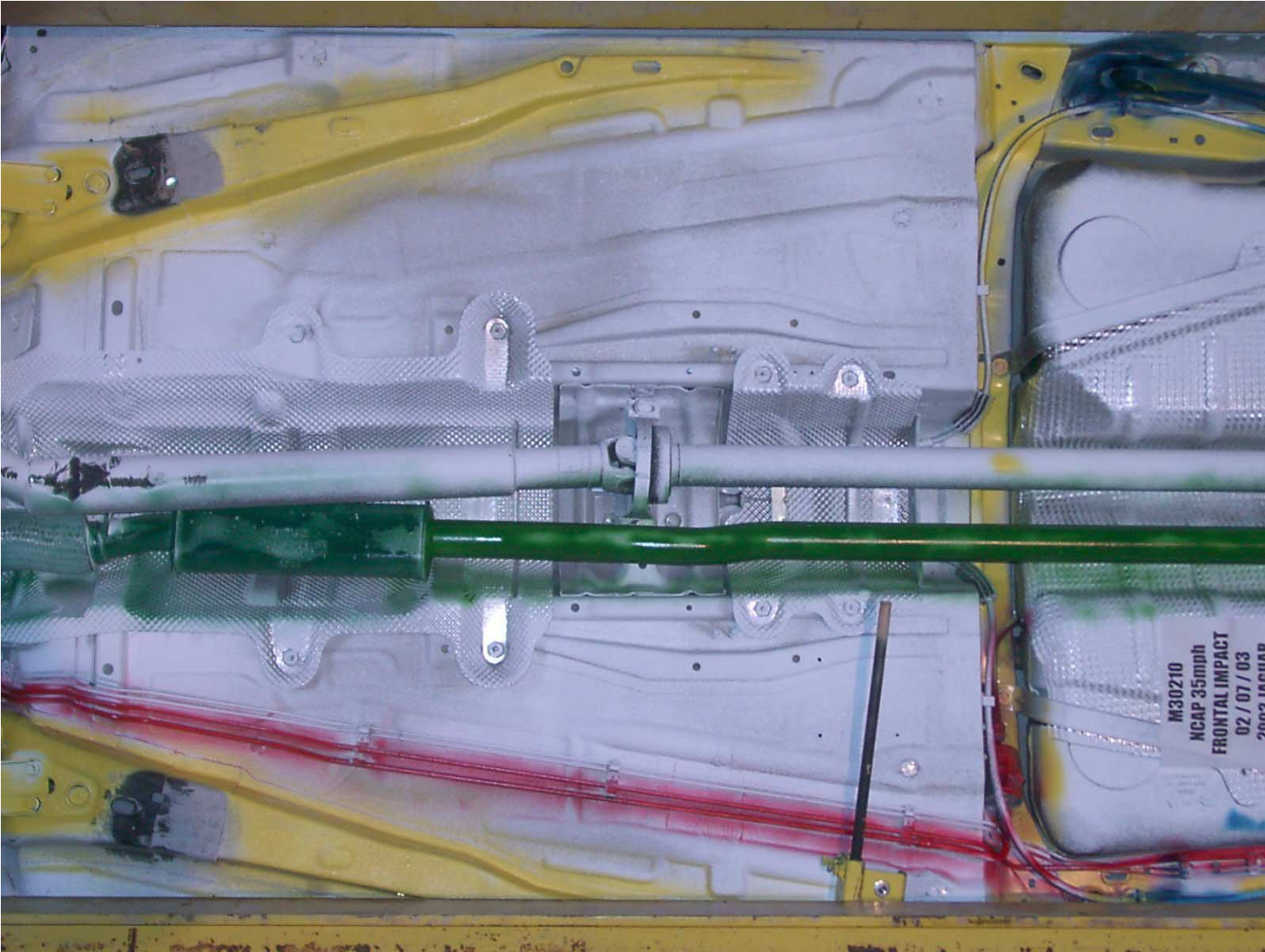


Figure A-27: Post-Test Mid Underbody View

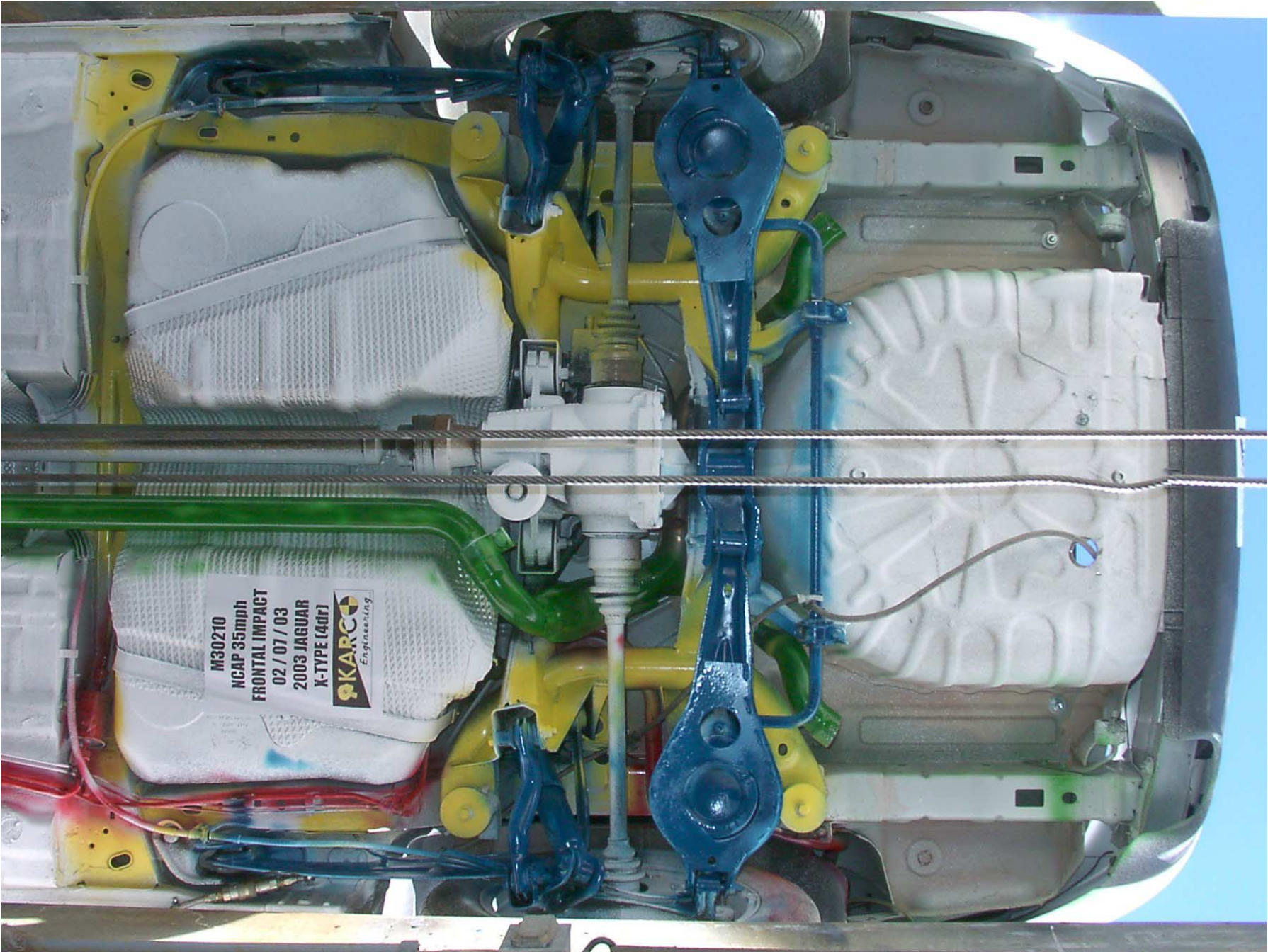


Figure A-28: Pre-Test Rear Underbody View

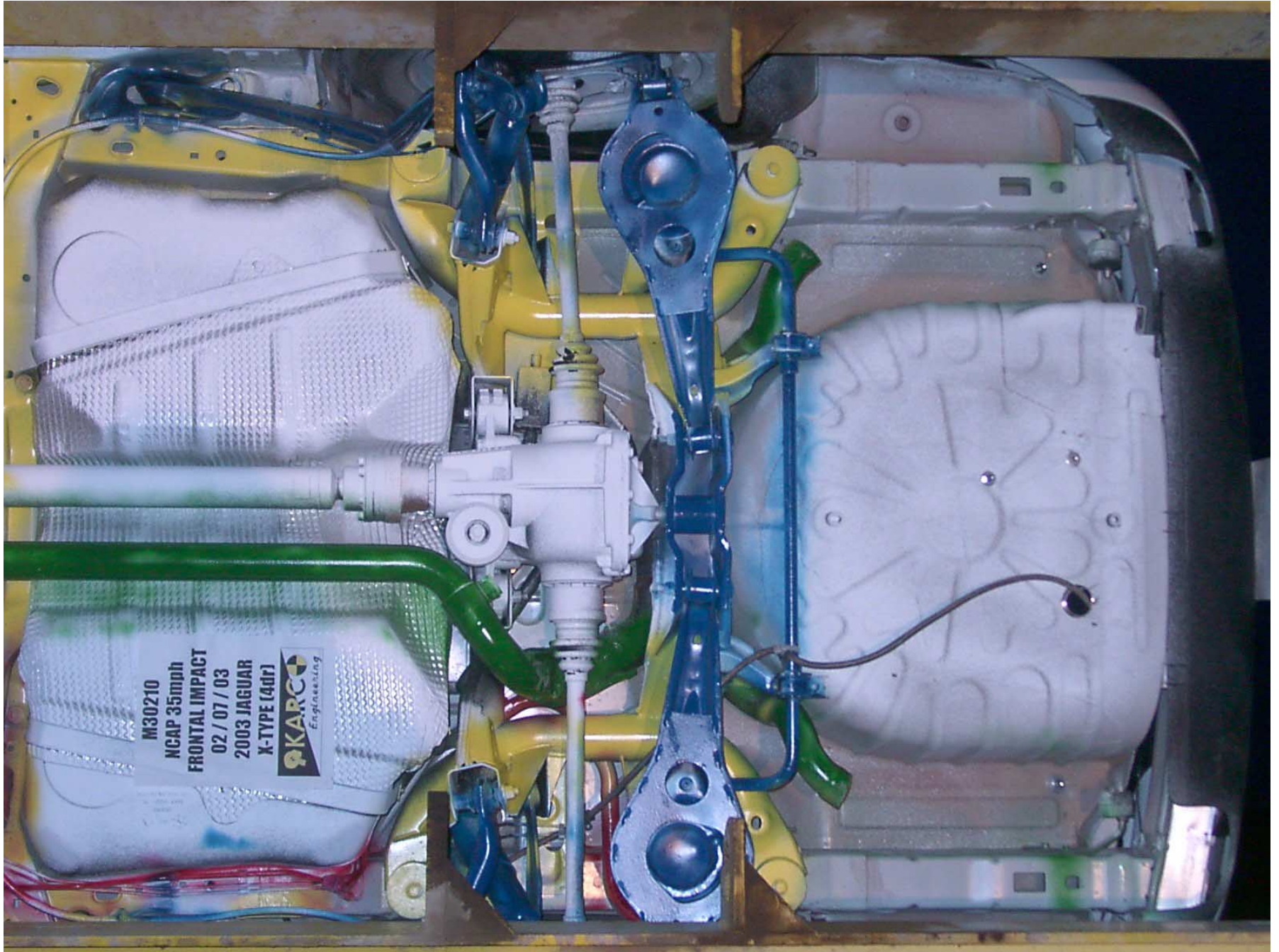


Figure A-29: Post-Test Rear Underbody View



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)



A-45

TR-P23001-07-NC

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

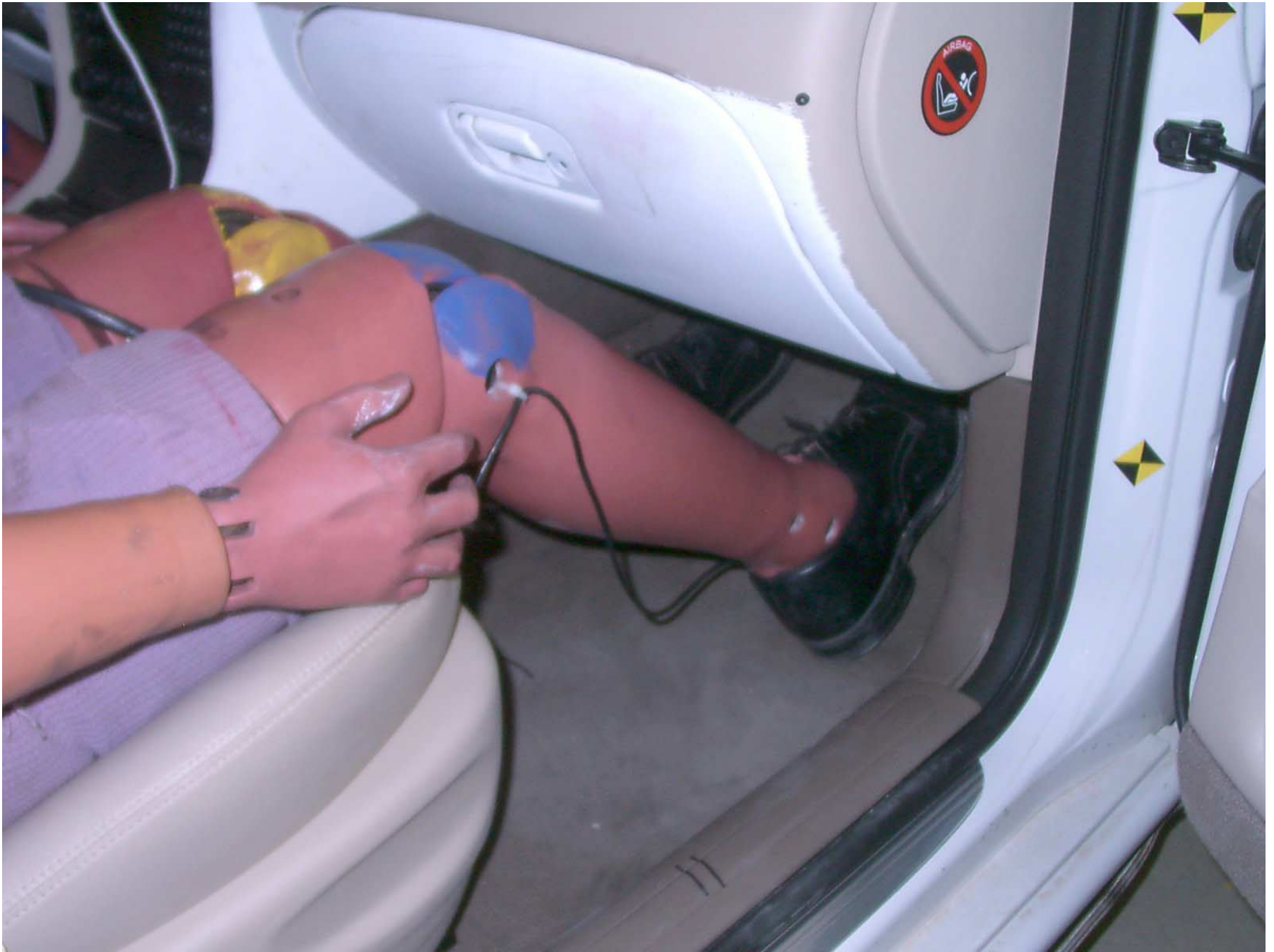


Figure A-50: Pre-Test Passenger Dummy Feet



Figure A-51: Post-Test Passenger Dummy Feet



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

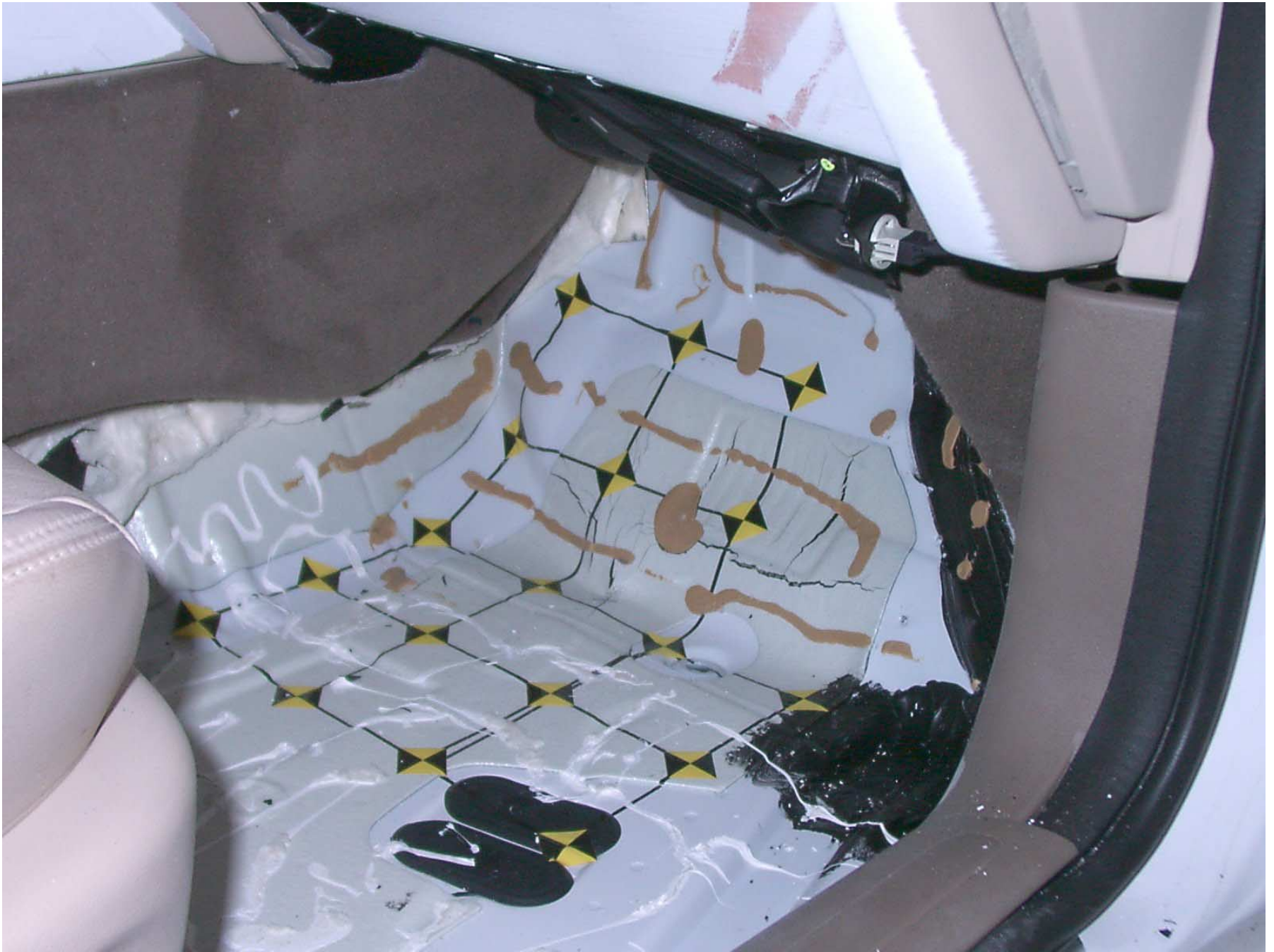


Figure A-53: Post-Test Passenger Side Floor Pan



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

LIST OF DATA PLOTS

Data Plot	Page
B-1	B-1
B-2	B-2
B-3	B-3
B-4	B-4
B-5	B-5
B-6	B-6
B-7	B-7
B-8	B-8
B-9	B-9
B-10	B-10
B-11	B-11
B-12	B-12
B-13	B-13
B-14	B-14
B-15	B-15
B-16	B-16
B-17	B-17
B-18	B-18
B-19	B-19
B-20	B-20
B-21	B-21
B-22	B-22
B-23	B-23
B-24	B-24
B-25	B-25
B-26	B-26
B-27	B-27
B-28	B-28
B-29	B-29
B-30	B-30
B-31	B-31
B-32	B-32
B-33	B-33

LIST OF DATA PLOTS...(Continued)

Data Plot	Page	
B-34	Driver Pelvis X	B-34
B-35	Driver Pelvis X Velocity	B-35
B-36	Driver Pelvis X Displacement	B-36
B-37	Driver Pelvis Y	B-37
B-38	Driver Pelvis Z	B-38
B-39	Driver Pelvis Resultant	B-39
B-40	Driver Left Femur Force	B-40
B-41	Driver Right Femur Force	B-41
B-42	Driver Left Upper Tibia Moment X	B-42
B-43	Driver Left Upper Tibia Moment Y	B-43
B-44	Driver Right Upper Tibia Moment X	B-44
B-45	Driver Right Upper Tibia Moment Y	B-45
B-46	Driver Left Lower Tibia Moment X	B-46
B-47	Driver Left Lower Tibia Moment Y	B-47
B-48	Driver Left Lower Tibia Force Z	B-48
B-49	Driver Right Lower Tibia Moment X	B-49
B-50	Driver Right Lower Tibia Moment Y	B-50
B-51	Driver Right Lower Tibia Force Z	B-51
B-52	Driver Left Foot Aft X	B-52
B-53	Driver Left Foot Aft Z	B-53
B-54	Driver Left Foot Fore Z	B-54
B-55	Driver Right Foot Aft X	B-55
B-56	Driver Right Foot Aft Z	B-56
B-57	Driver Right Foot Fore Z	B-57
B-58	Driver Lap Belt Force	B-58
B-59	Driver Shoulder Belt Force	B-59
B-60	Driver Shoulder Belt Pullout	B-60
B-61	Driver Shoulder Belt Elongation	B-61
B-62	Passenger Head Primary X	B-62
B-63	Passenger Head Primary X Velocity	B-63
B-64	Passenger Head Primary X Displacement	B-64
B-65	Passenger Head Primary Y	B-65
B-66	Passenger Head Primary Z	B-66
B-67	Passenger Head Resultant Primary	B-67

LIST OF DATA PLOTS...(Continued)

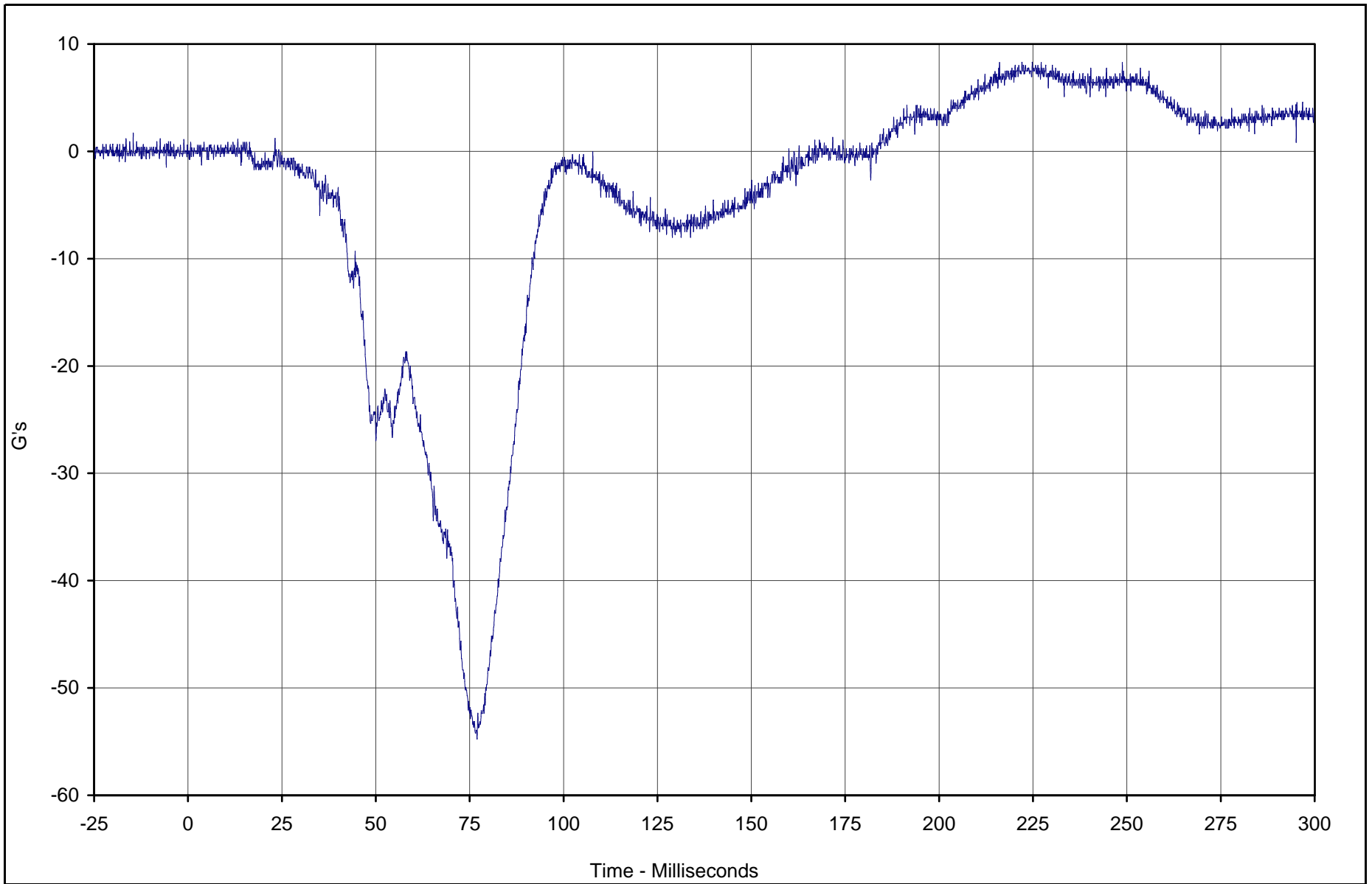
Data Plot	Page	
B-68	Passenger Head Redundant X	B-68
B-69	Passenger Head Redundant X Velocity	B-69
B-70	Passenger Head Redundant X Displacement	B-70
B-71	Passenger Head Redundant Y	B-71
B-72	Passenger Head Redundant Z	B-72
B-73	Passenger Head Resultant Redundant	B-73
B-74	Passenger Neck Force X	B-74
B-75	Passenger Neck Force Y	B-75
B-76	Passenger Neck Force Z	B-76
B-77	Passenger Neck Force Resultant	B-77
B-78	Passenger Neck Moment X	B-78
B-79	Passenger Neck Moment Y	B-79
B-80	Passenger Neck Moment Z	B-80
B-81	Passenger Neck Moment Resultant	B-81
B-82	Passenger Chest Primary X	B-82
B-83	Passenger Chest Primary X Velocity	B-83
B-84	Passenger Chest Primary X Displacement	B-84
B-85	Passenger Chest Primary Y	B-85
B-86	Passenger Chest Primary Z	B-86
B-87	Passenger Chest Primary Resultant	B-87
B-88	Passenger Chest Redundant X	B-88
B-89	Passenger Chest Redundant X Velocity	B-89
B-90	Passenger Chest Redundant X Displacement	B-90
B-91	Passenger Chest Redundant Y	B-91
B-92	Passenger Chest Redundant Z	B-92
B-93	Passenger Chest Redundant Resultant	B-93
B-94	Passenger Chest Displacement X	B-94
B-95	Passenger Pelvis X	B-95
B-96	Passenger Pelvis X Velocity	B-96
B-97	Passenger Pelvis X Displacement	B-97
B-98	Passenger Pelvis Y	B-98
B-99	Passenger Pelvis Z	B-99
B-100	Passenger Pelvis Resultant	B-100
B-101	Passenger Left Femur Force	B-101

LIST OF DATA PLOTS...(Continued)

Data Plot	Page	
B-102	Passenger Right Femur Force	B-102
B-103	Passenger Left Upper Tibia Moment X	B-103
B-104	Passenger Left Upper Tibia Moment Y	B-104
B-105	Passenger Right Upper Tibia Moment X	B-105
B-106	Passenger Right Upper Tibia Moment Y	B-106
B-107	Passenger Left Lower Tibia Moment X	B-107
B-108	Passenger Left Lower Tibia Moment Y	B-108
B-109	Passenger Left Lower Tibia Force Z	B-109
B-110	Passenger Right Lower Tibia Moment X	B-110
B-111	Passenger Right Lower Tibia Moment Y	B-111
B-112	Passenger Right Lower Tibia Force Z	B-112
B-113	Passenger Left Foot Aft X	B-113
B-114	Passenger Left Foot Aft Z	B-114
B-115	Passenger Left Foot Fore Z	B-115
B-116	Passenger Right Foot Aft X	B-116
B-117	Passenger Right Foot Aft Z	B-117
B-118	Passenger Right Foot Fore Z	B-118
B-119	Passenger Lap Belt Force	B-119
B-120	Passenger Shoulder Belt Force	B-120
B-121	Passenger Shoulder Belt Pullout	B-121
B-122	Passenger Shoulder Belt Elongation	B-122
B-123	Vehicle Left Rear X	B-123
B-124	Vehicle Left Rear X Velocity	B-124
B-125	Vehicle Left Rear X Displacement	B-125
B-126	Vehicle Right Rear X	B-126
B-127	Vehicle Right Rear X Velocity	B-127
B-128	Vehicle Right Rear X Displacement	B-128
B-129	Vehicle Engine Top	B-129
B-130	Vehicle Engine Top Velocity	B-130
B-131	Vehicle Engine Top Displacement	B-131
B-132	Vehicle Engine Bottom	B-132
B-133	Vehicle Engine Bottom Velocity	B-133
B-134	Vehicle Engine Bottom Displacement	B-134
B-135	Vehicle Left Brake Caliper	B-135
B-136	Vehicle Left Brake Caliper Velocity	B-136

LIST OF DATA PLOTS...(Continued)

<u>Data Plot</u>		<u>Page</u>
B-137	Vehicle Left Brake Caliper Displacement	B-137
B-138	Vehicle Right Brake Caliper	B-138
B-139	Vehicle Right Brake Caliper Velocity	B-139
B-140	Vehicle Right Brake Caliper Displacement	B-140
B-141	Vehicle Instrument Panel	B-141
B-142	Vehicle Instrument Panel Velocity	B-142
B-143	Vehicle Instrument Panel Displacement	B-143
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



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Primary X	001	FIL	G's	8.3	216.1	-54.7	77.0	1000



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

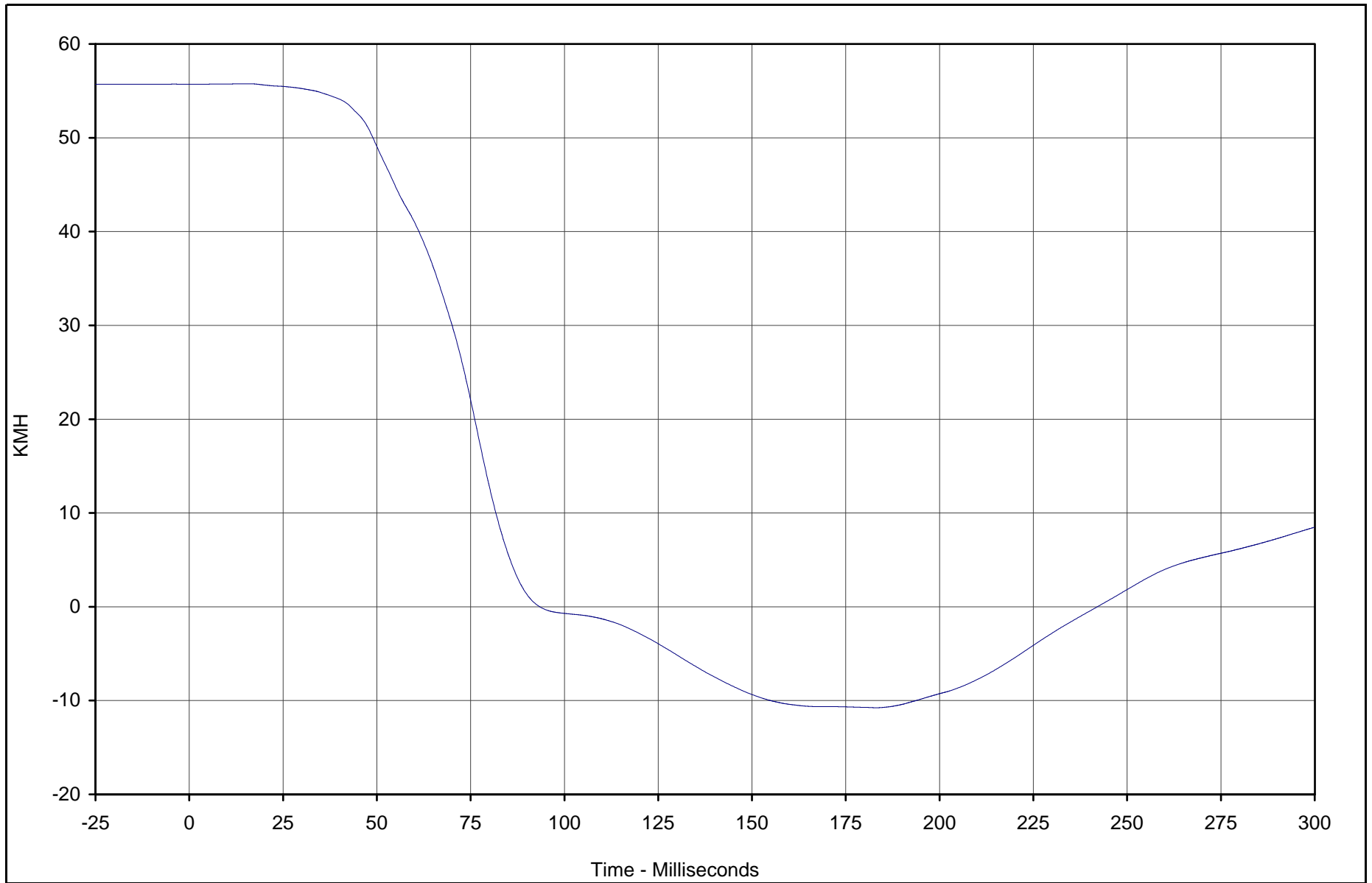
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-1

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Primary X Velocity	001	IN1	KMH	55.8	16.2	-10.8	183.2	180

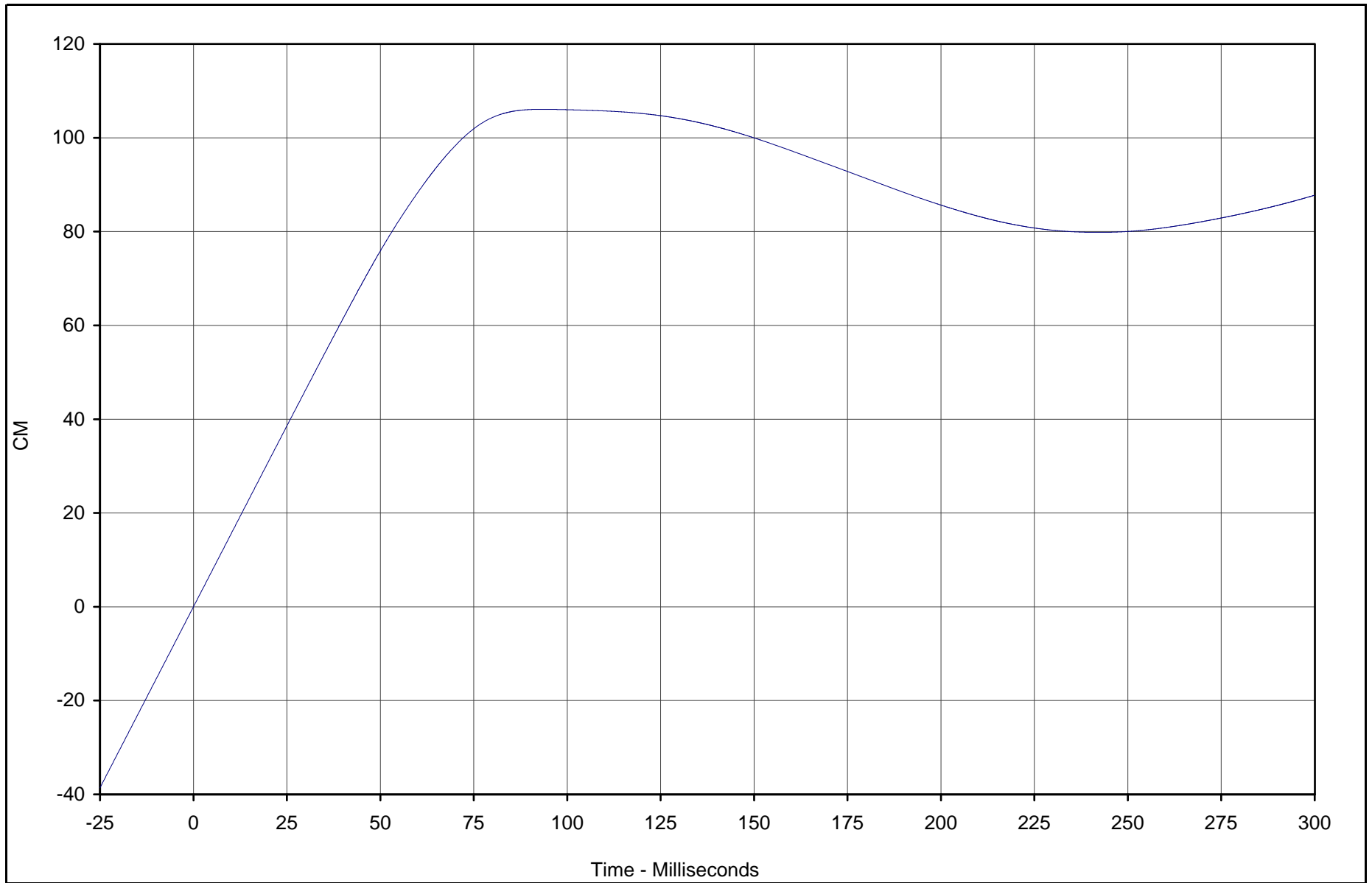


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Primary X Displ.	001	IN2	CM	106.1	93.4	0.0	0.0	180

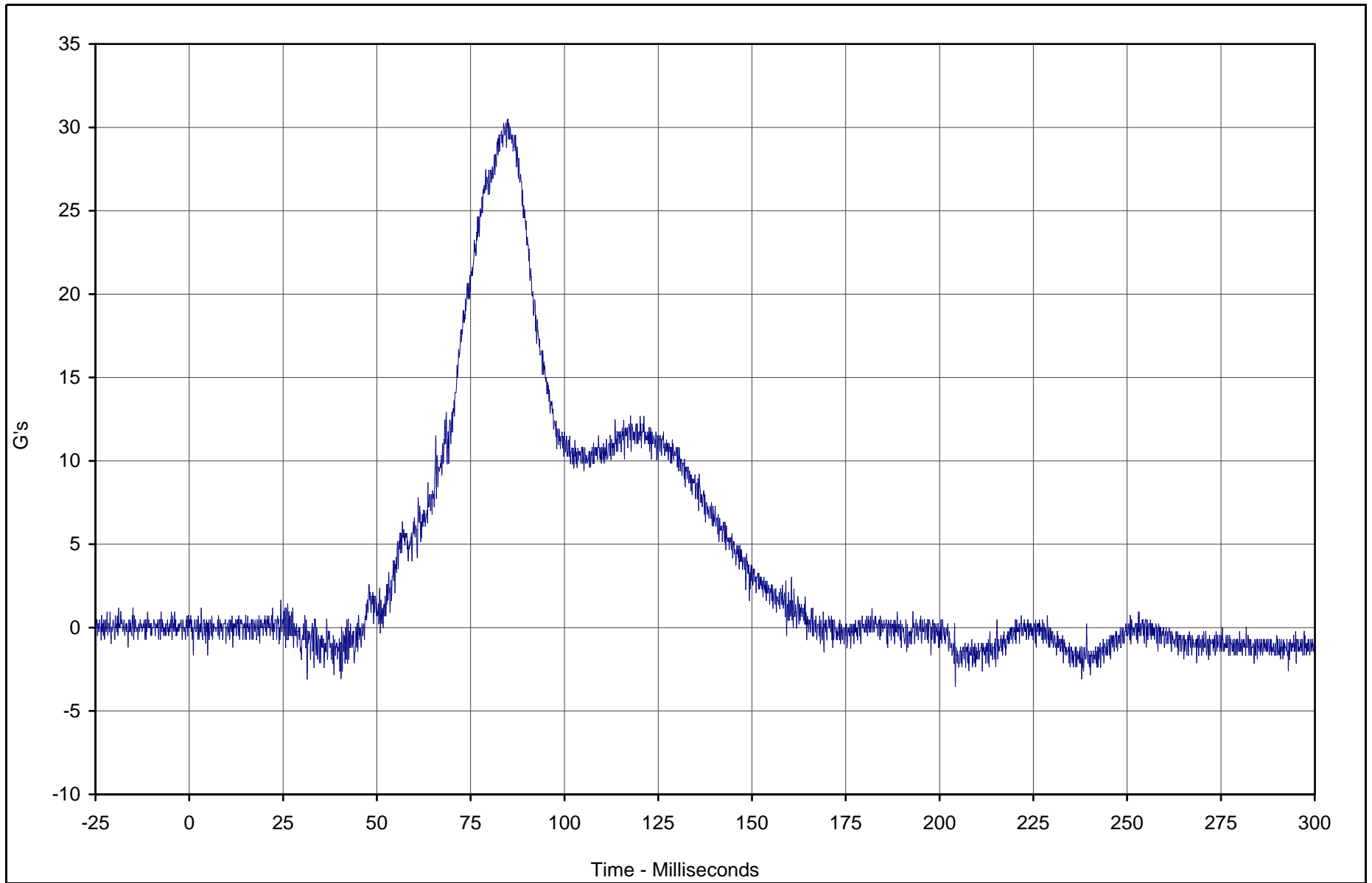


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Primary Y	002	FIL	G's	30.5	84.8	-3.5	204.2	1000

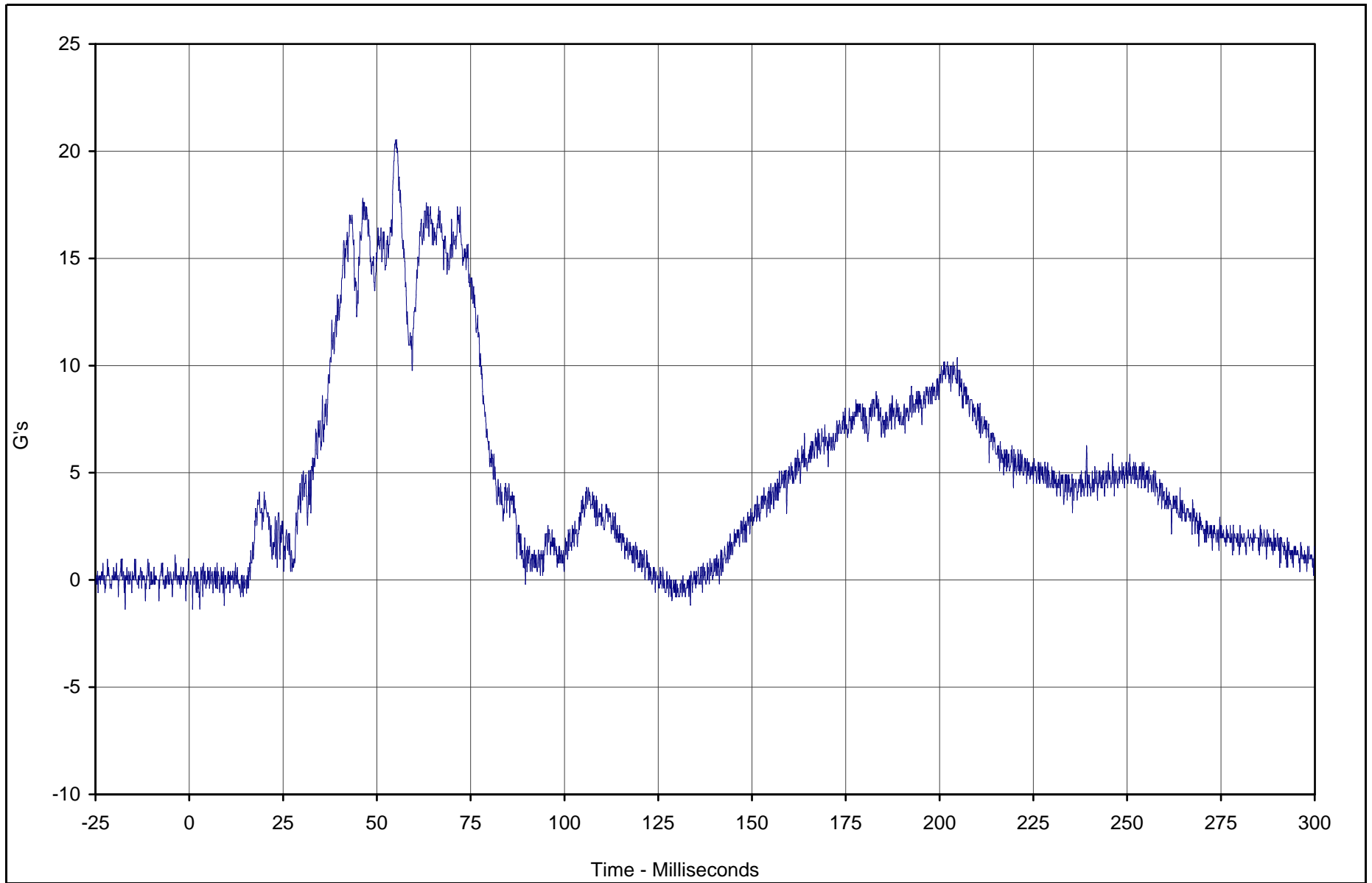


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Primary Z	003	FIL	G's	20.5	55.0	-1.4	0.9	1000

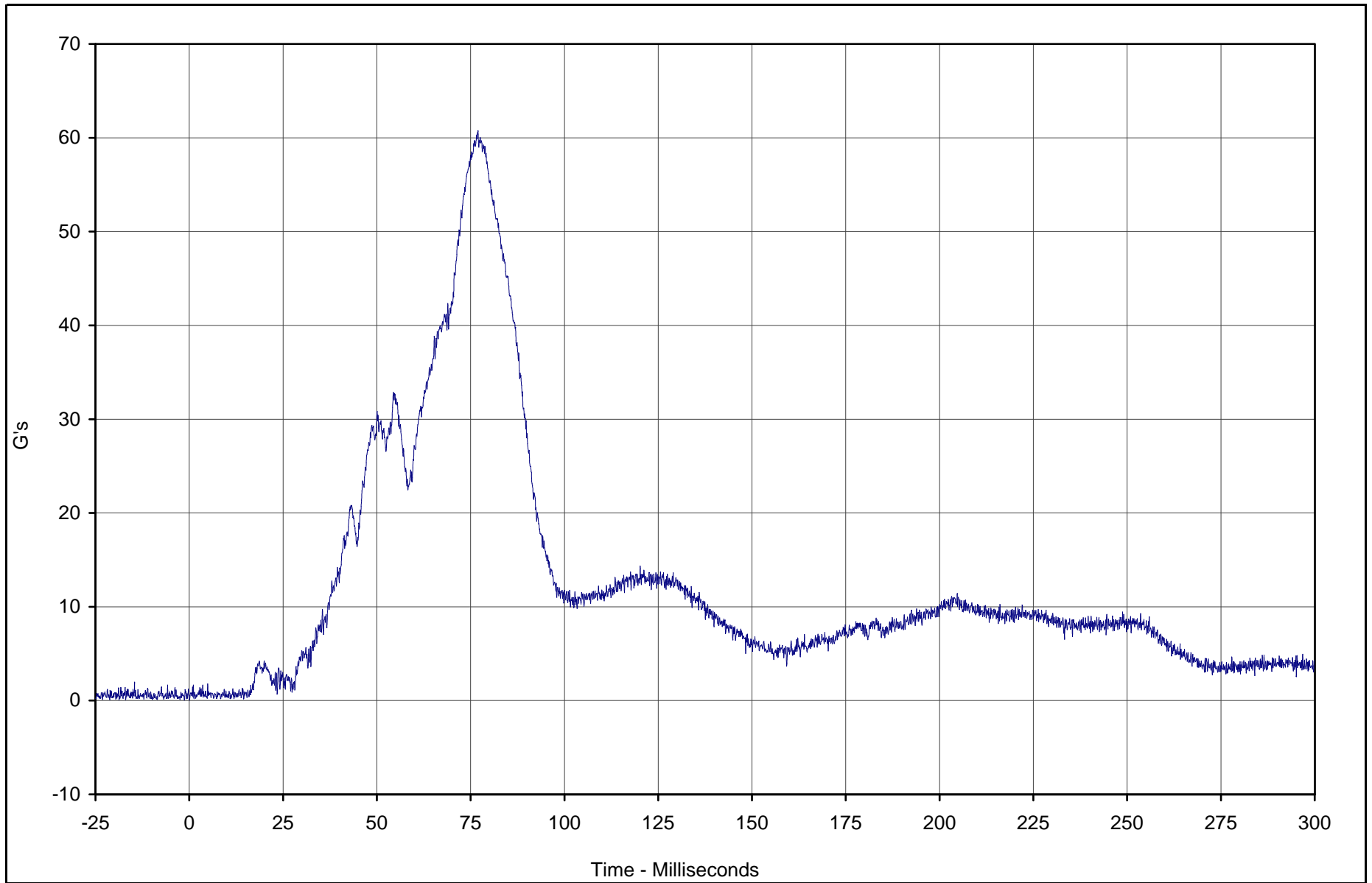


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Resultant Primary	001	RES	G's	60.7	77.0	0.1	0.1	1000

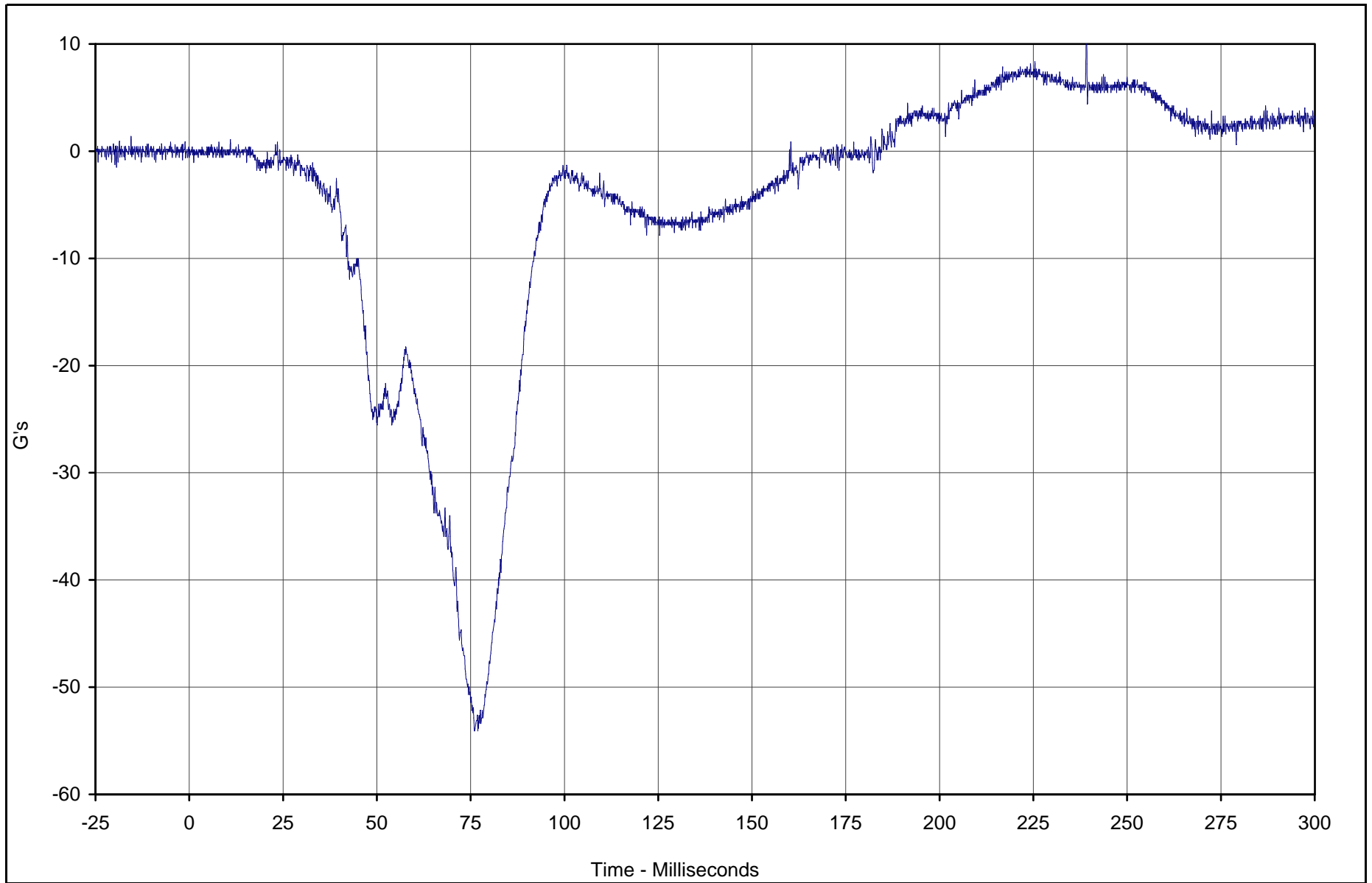


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Redundant X	004	FIL	G's	12.2	239.2	-54.1	76.0	1000

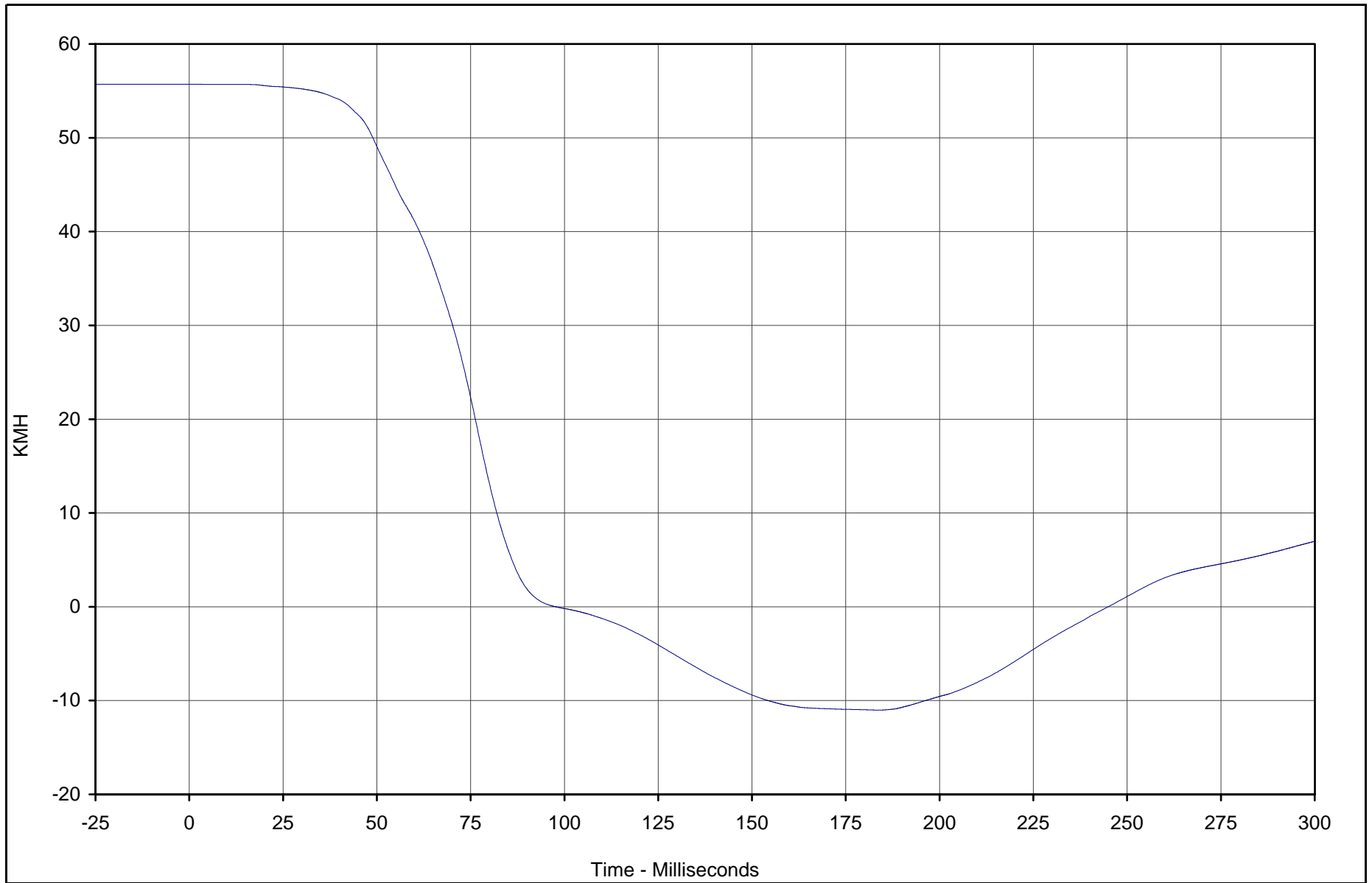


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Redundant X Velocity	004	IN1	KMH	55.7	0.0	-11.0	183.7	180

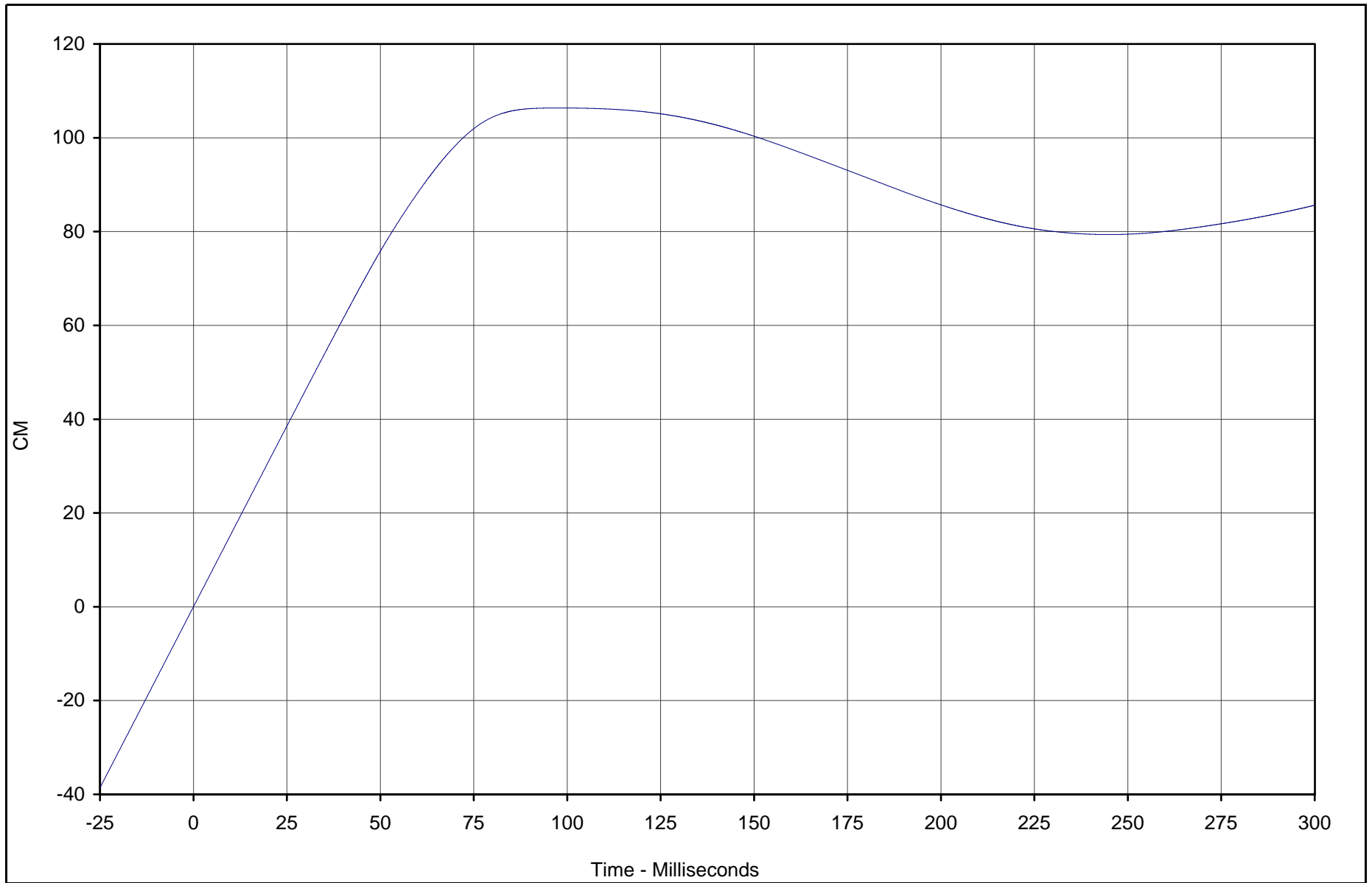


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Redundant X Displ.	004	IN2	CM	106.4	97.7	0.0	0.0	180

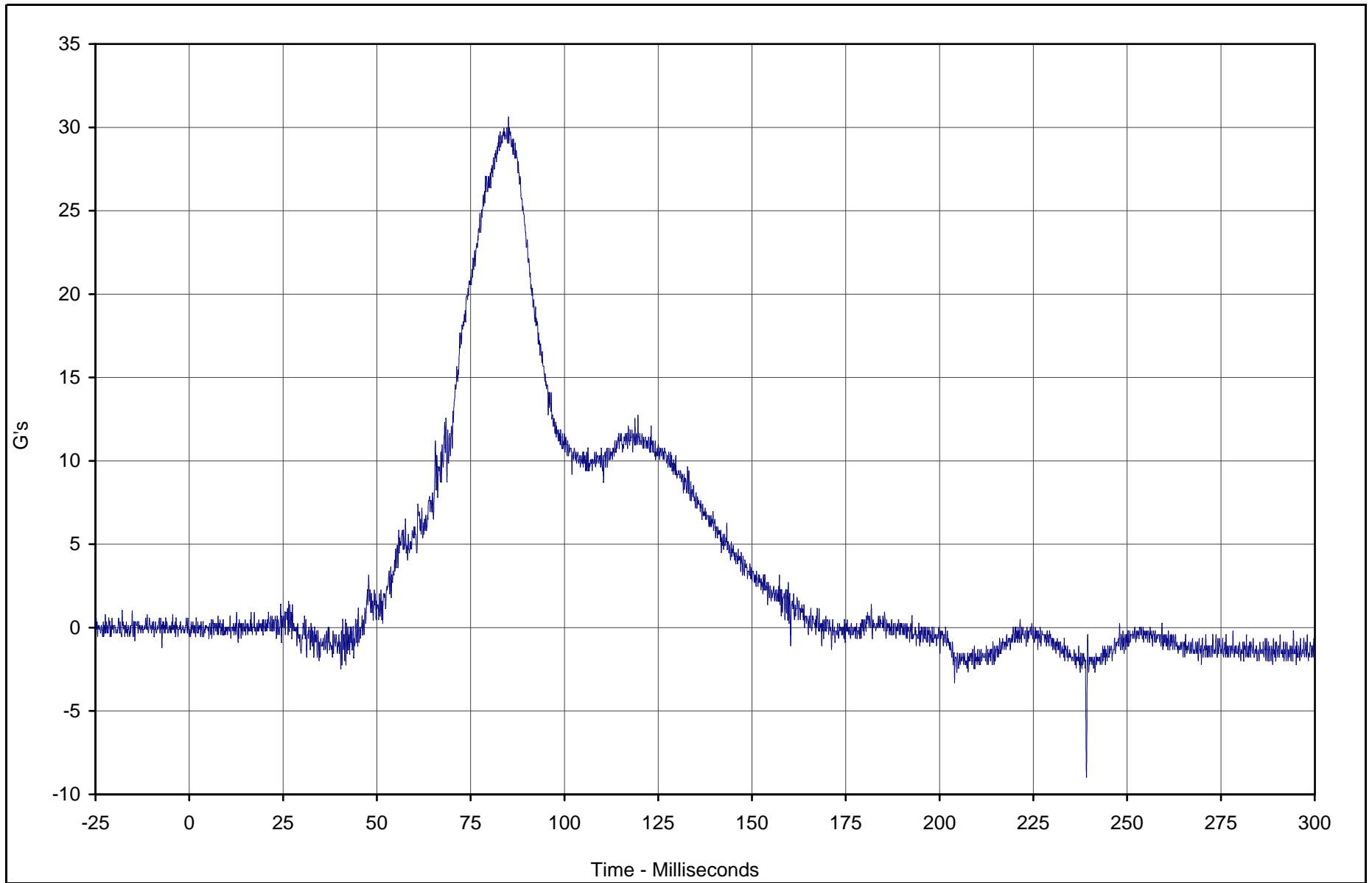


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Redundant Y	005	FIL	G's	30.6	85.1	-8.9	239.2	1000

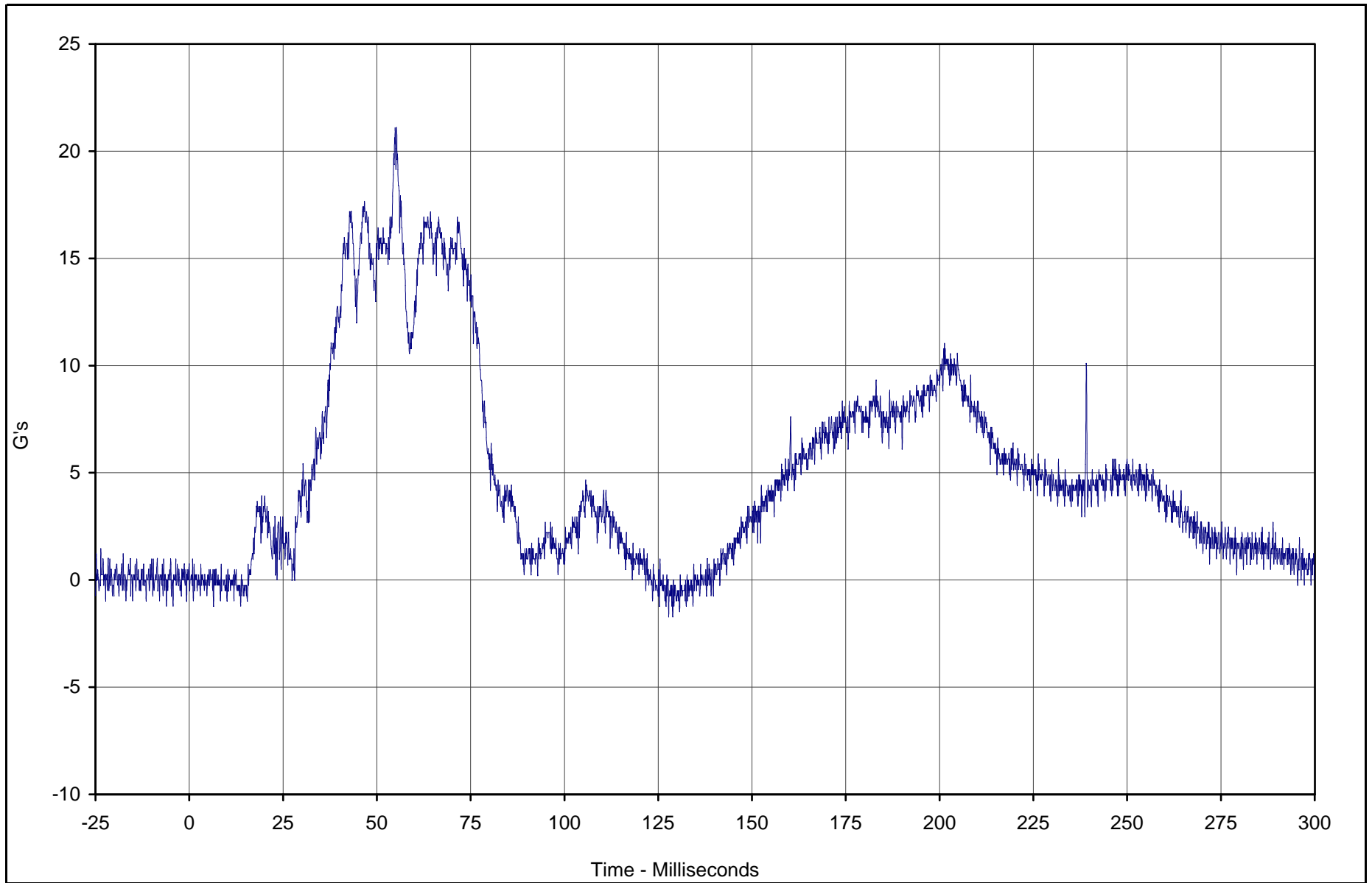


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Redundant Z	006	FIL	G's	21.1	54.9	-1.7	127.8	1000

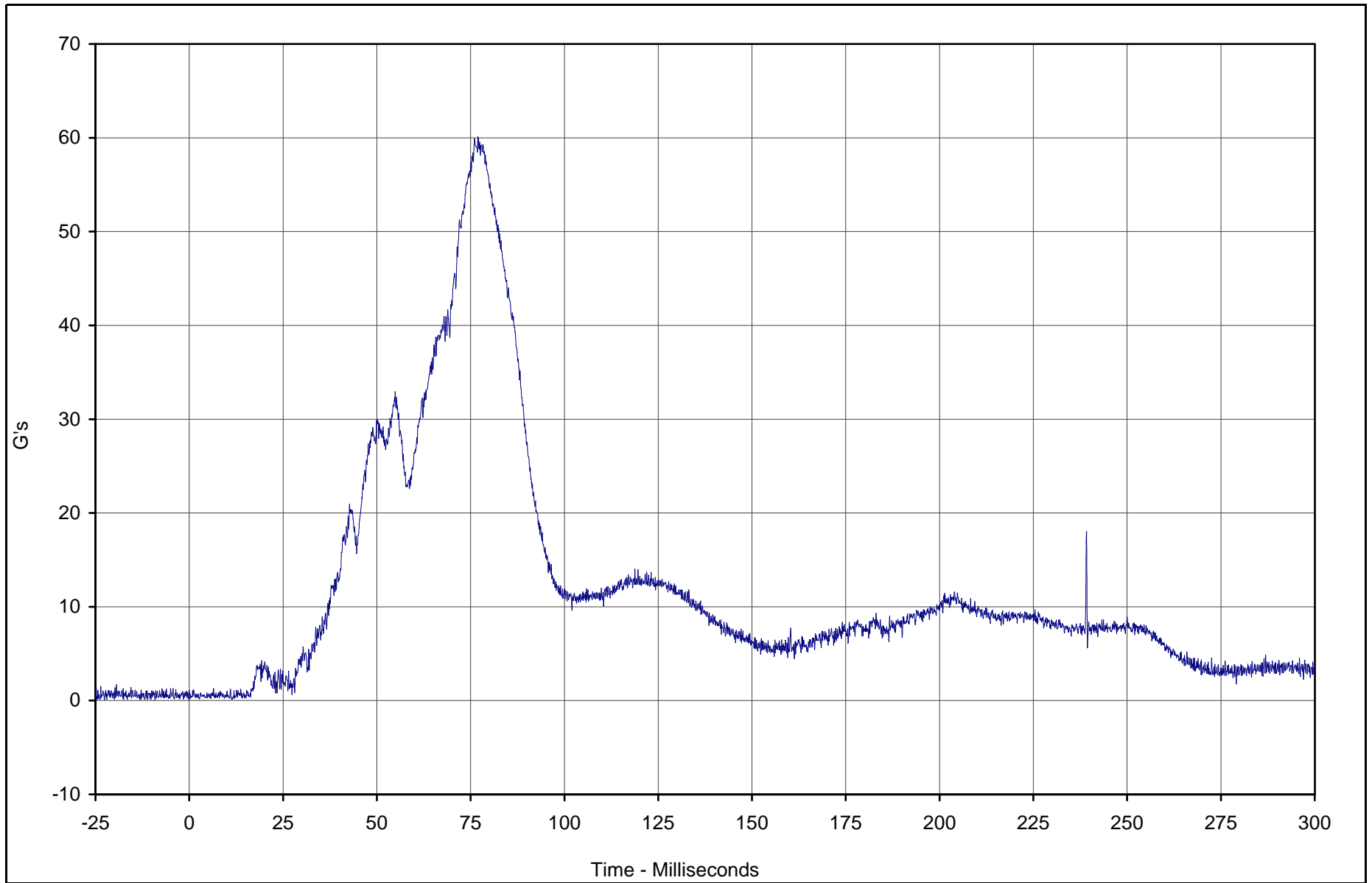


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Head Resultant Redundant	004	RES	G's	60.1	76.9	0.1	11.3	1000

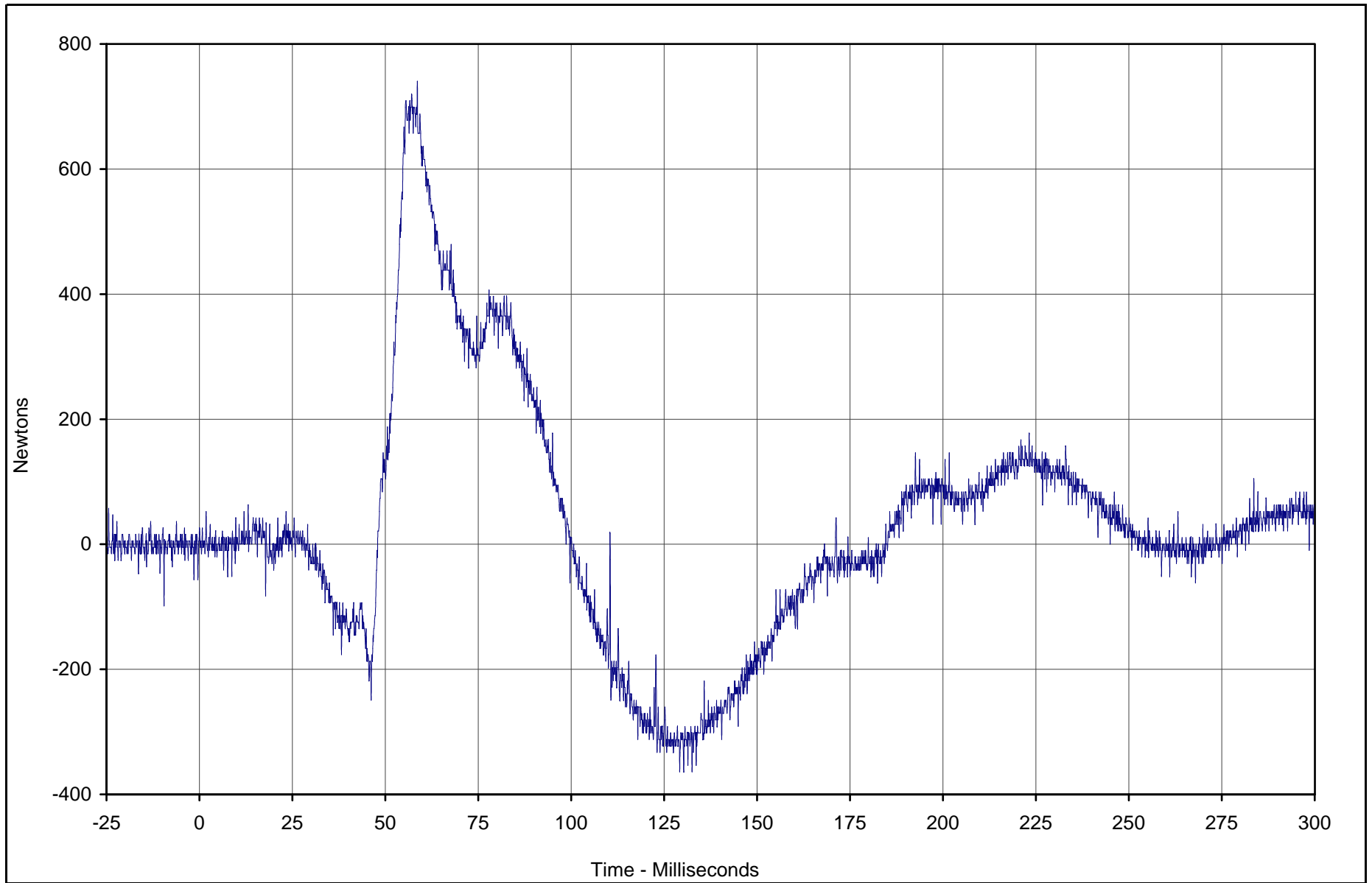


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Force X	007	FIL	Newtons	740.4	58.6	-364.3	129.2	1000

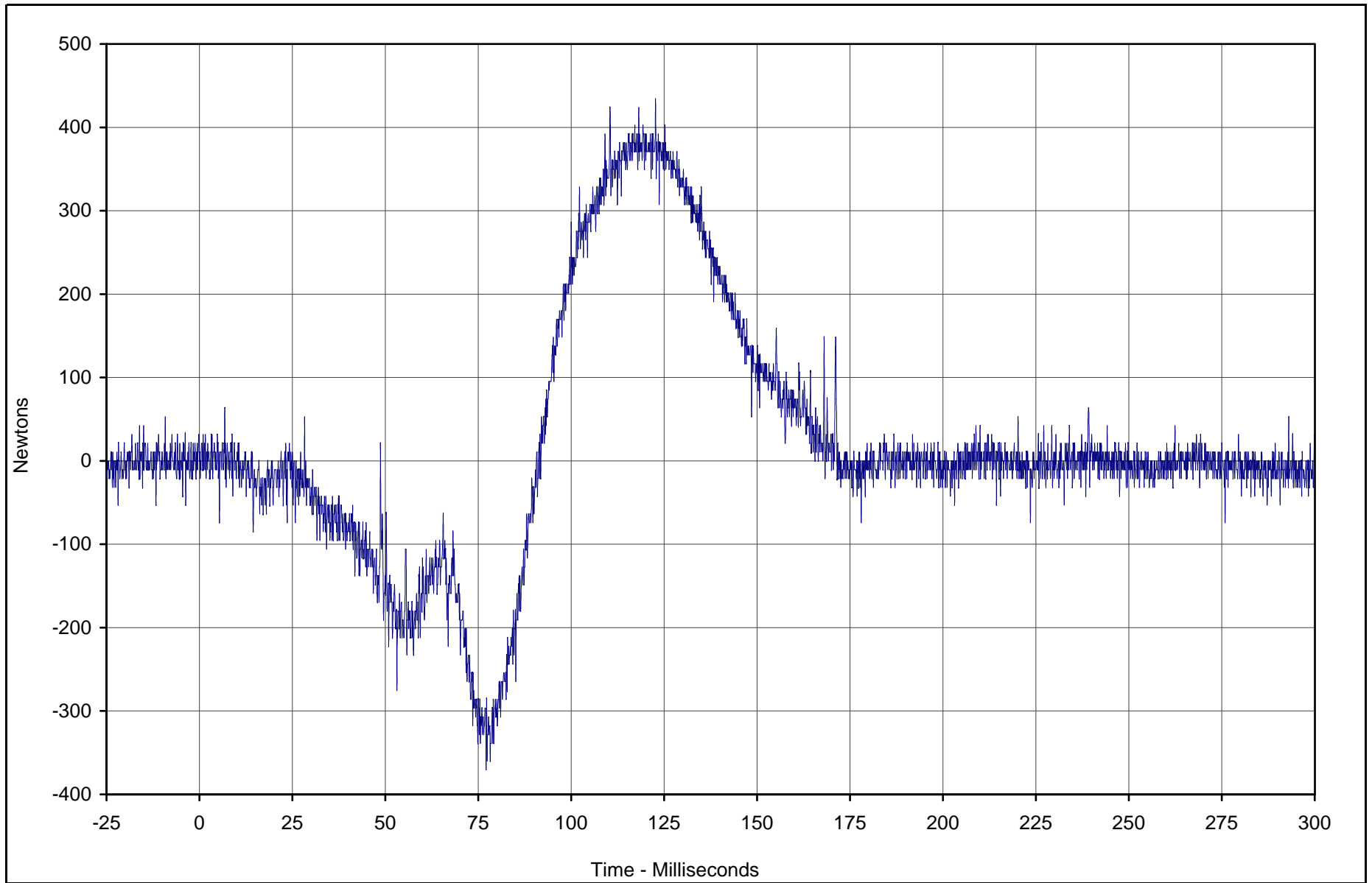


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Force Y	008	FIL	Newtons	434.4	122.7	-370.9	77.1	1000

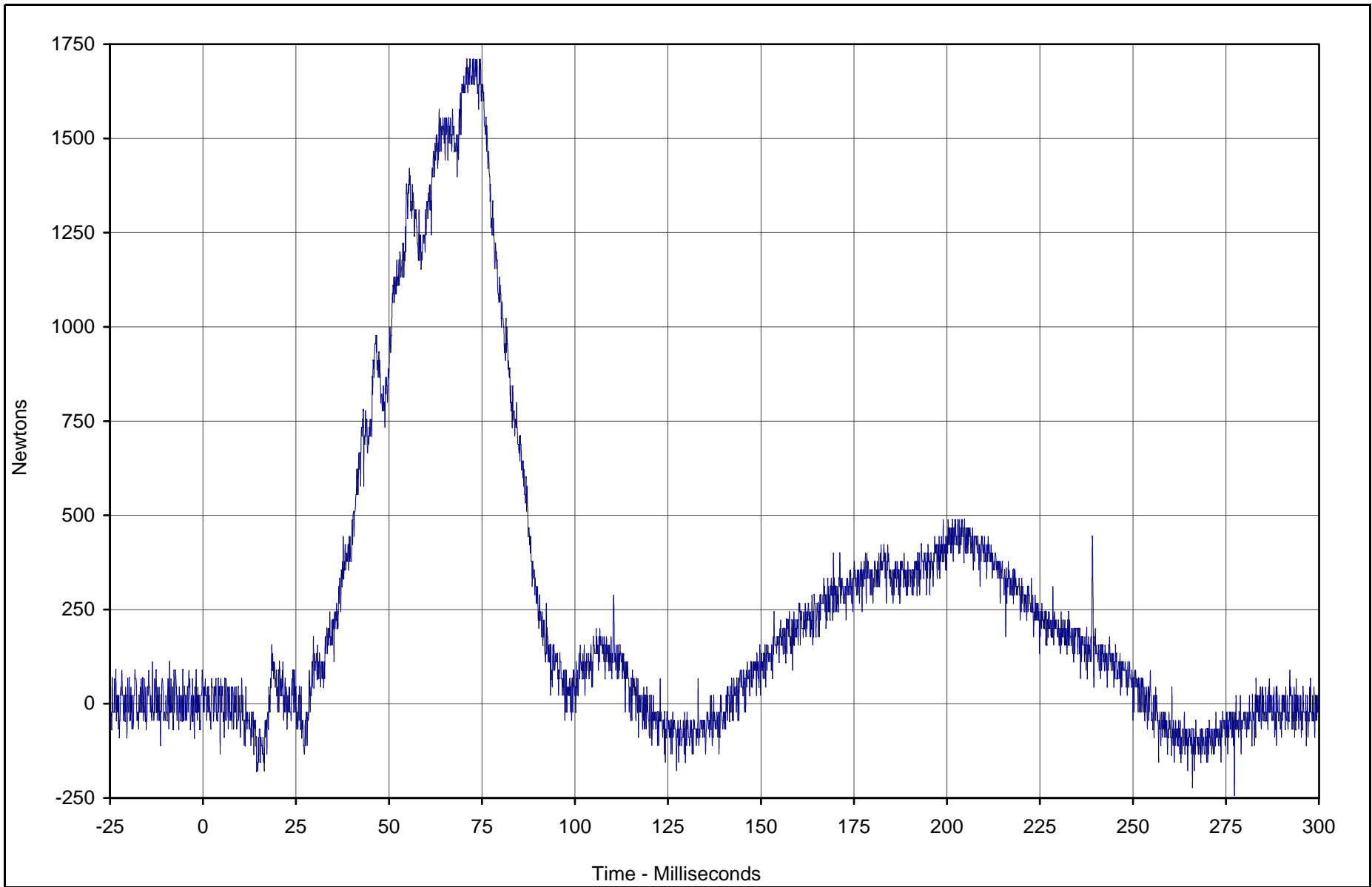


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Force Z	009	FIL	Newtons	1709.8	70.9	-244.3	277.3	1000

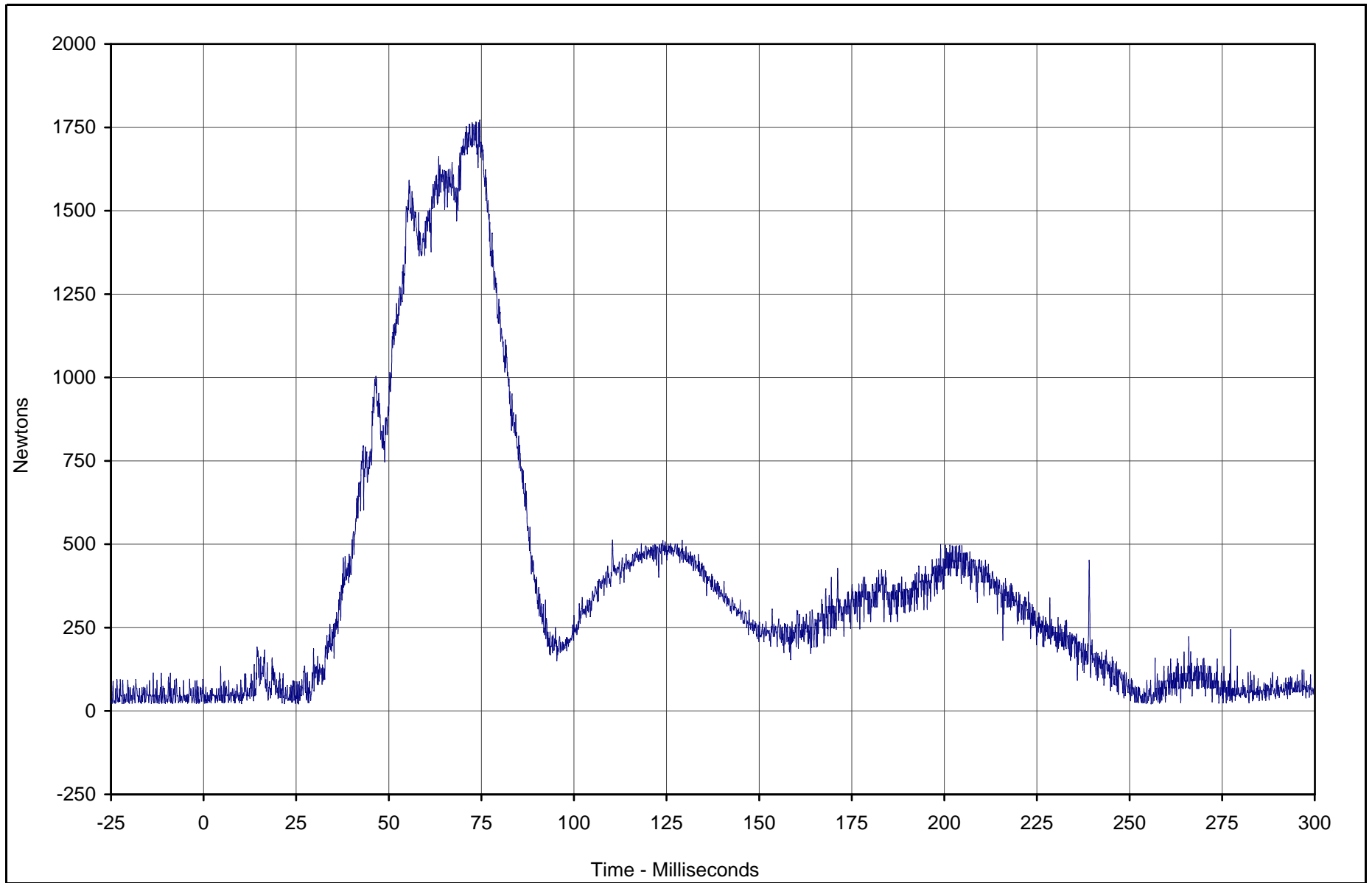


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Force Resultant	007	RES	Newtons	1771.7	74.6	22.2	10.3	1000

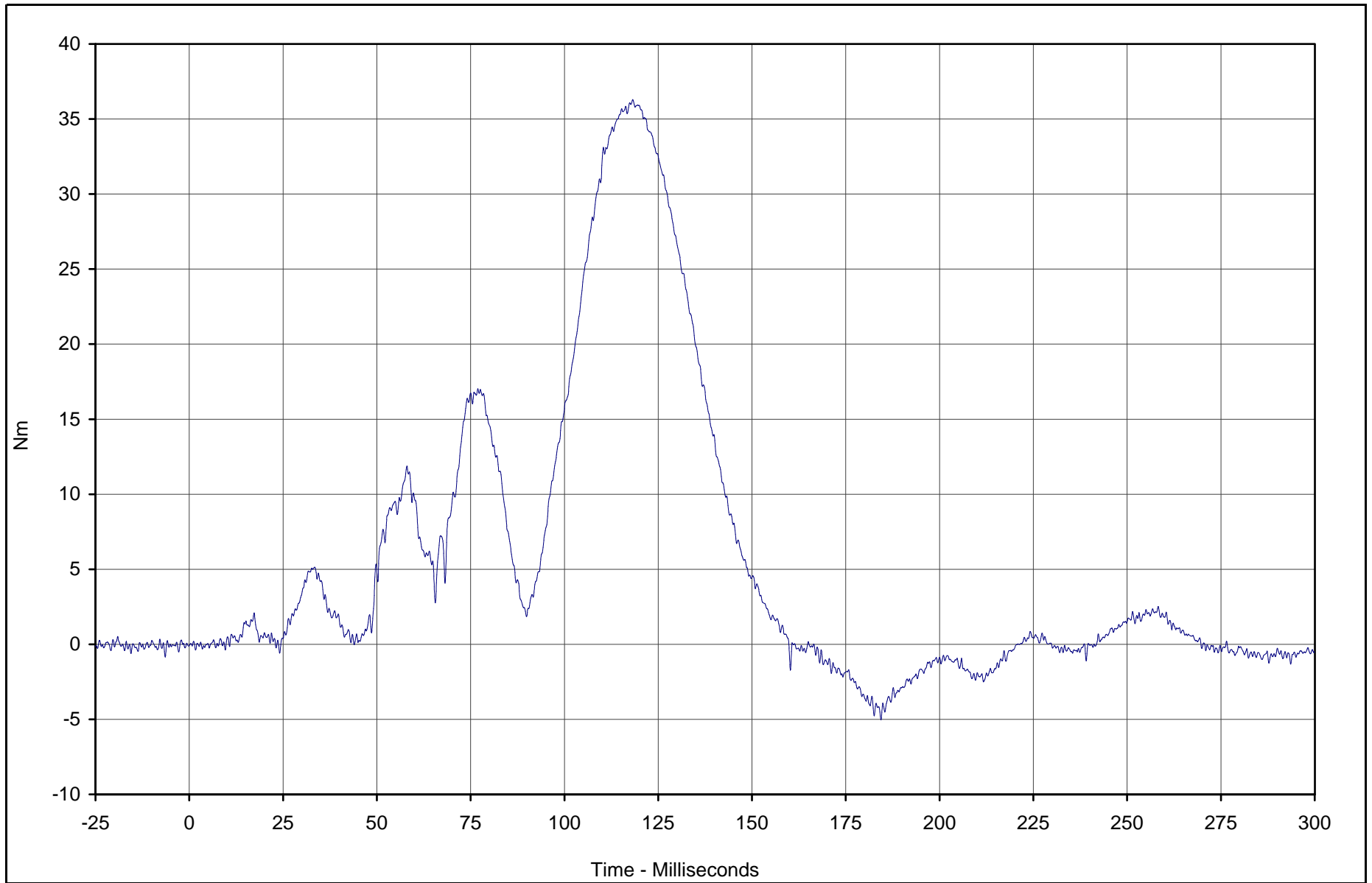


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Moment X	010	FIL	Nm	36.3	118.2	-5.0	184.4	600

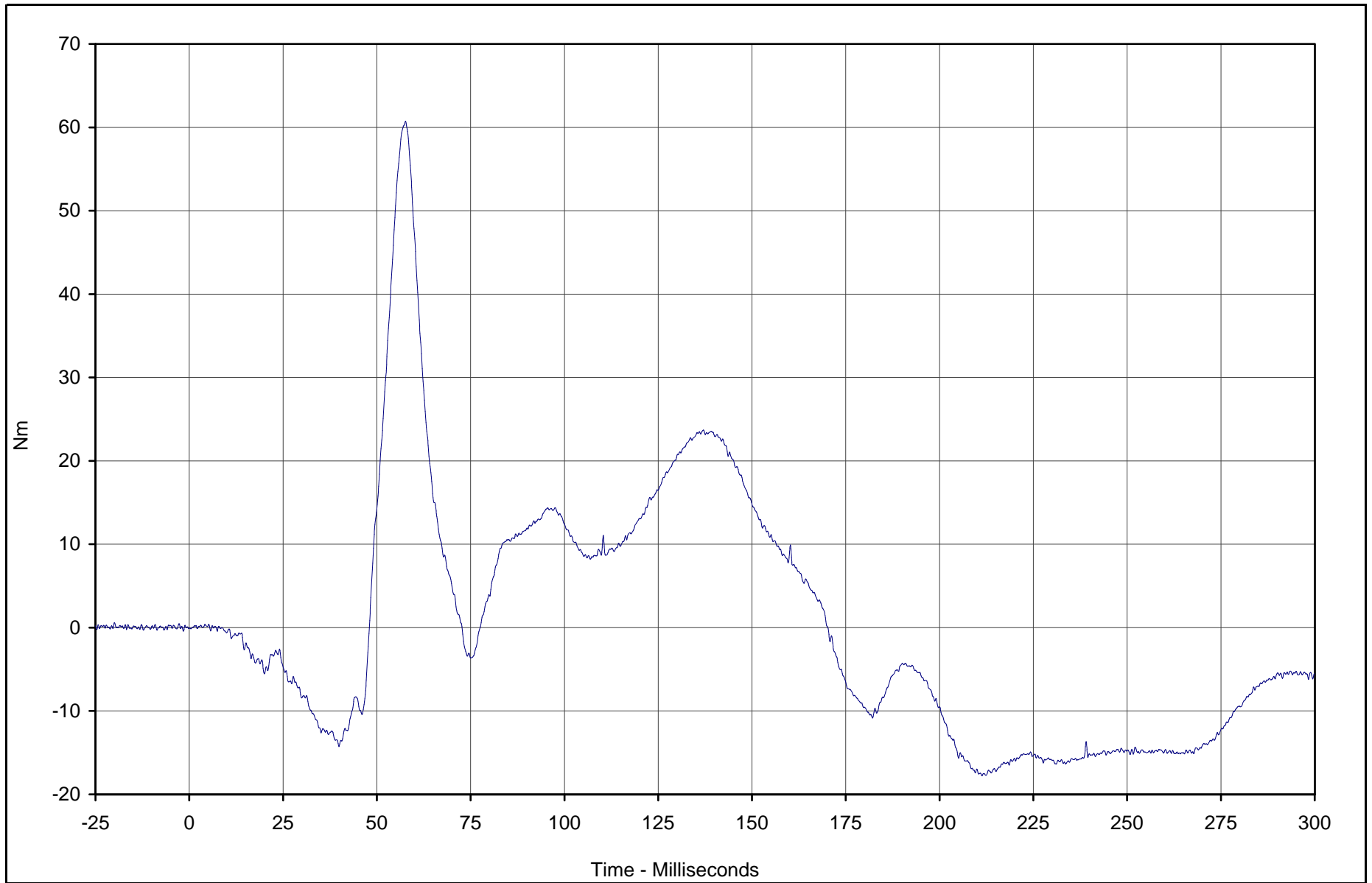


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Moment Y	011	FIL	Nm	60.7	57.6	-17.8	211.3	600

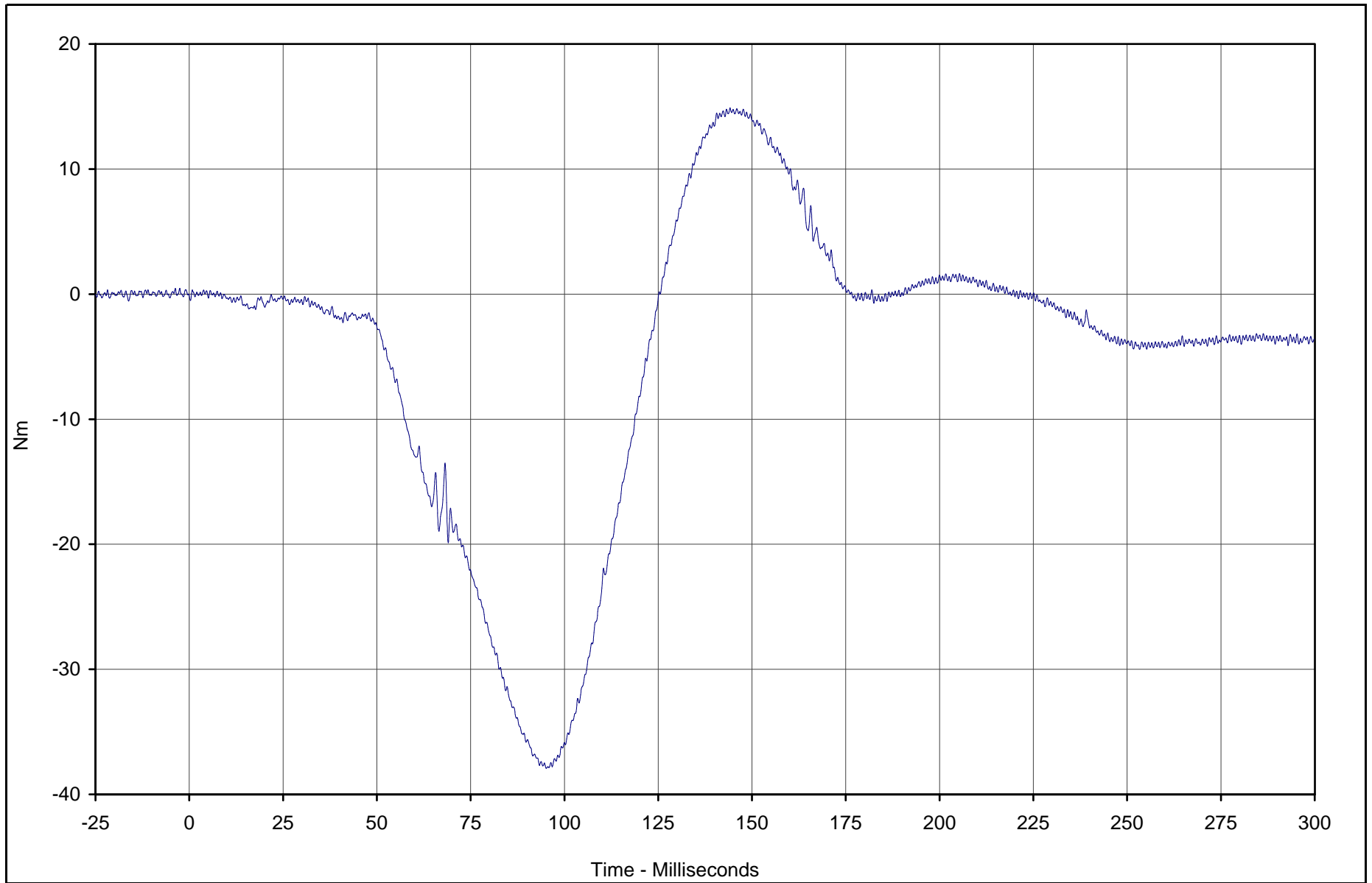


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Moment Z	012	FIL	Nm	14.9	144.1	-37.9	95.2	600

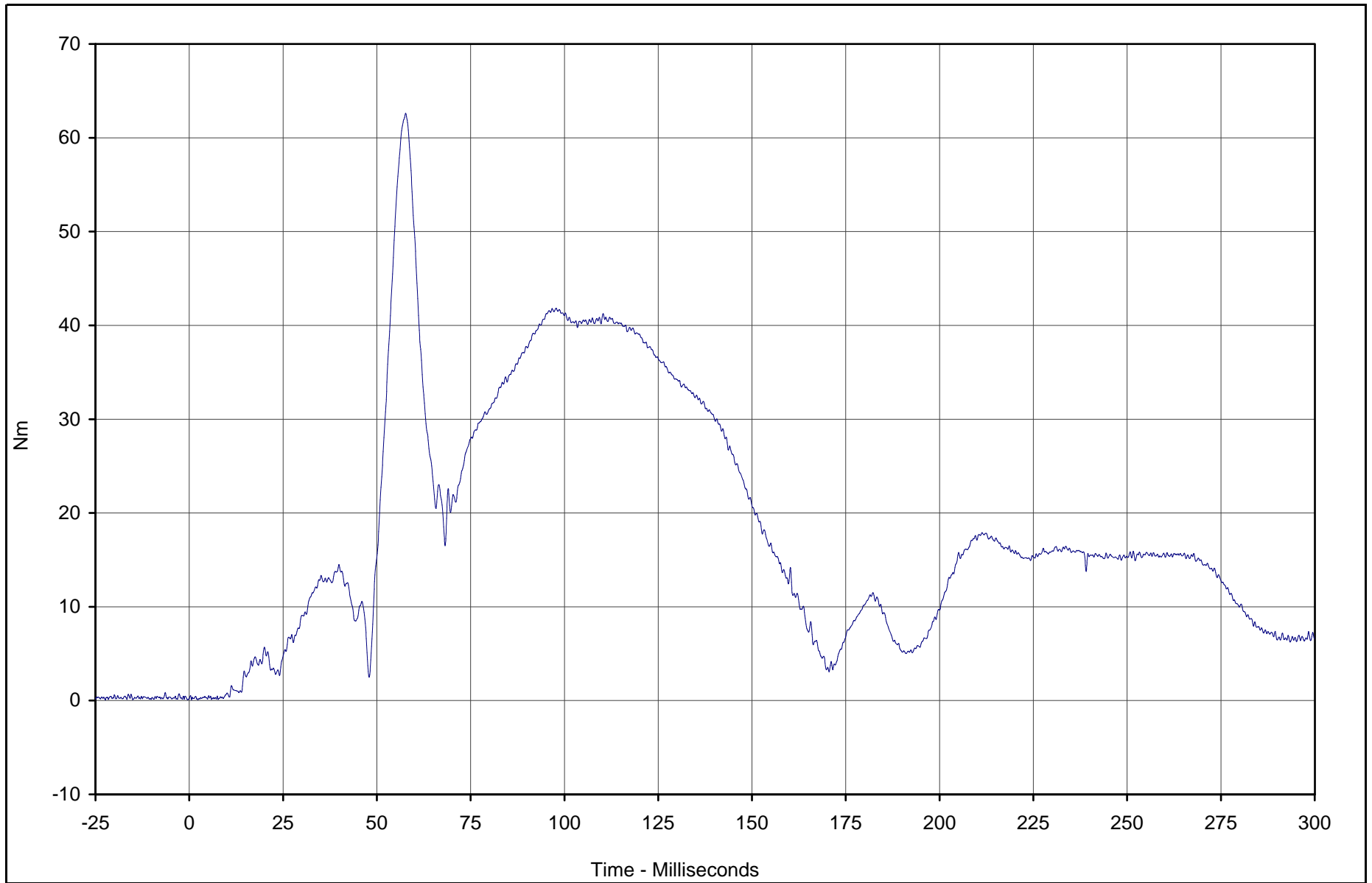


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Neck Moment Resultant	010	RES	Nm	62.6	57.7	0.1	2.3	600

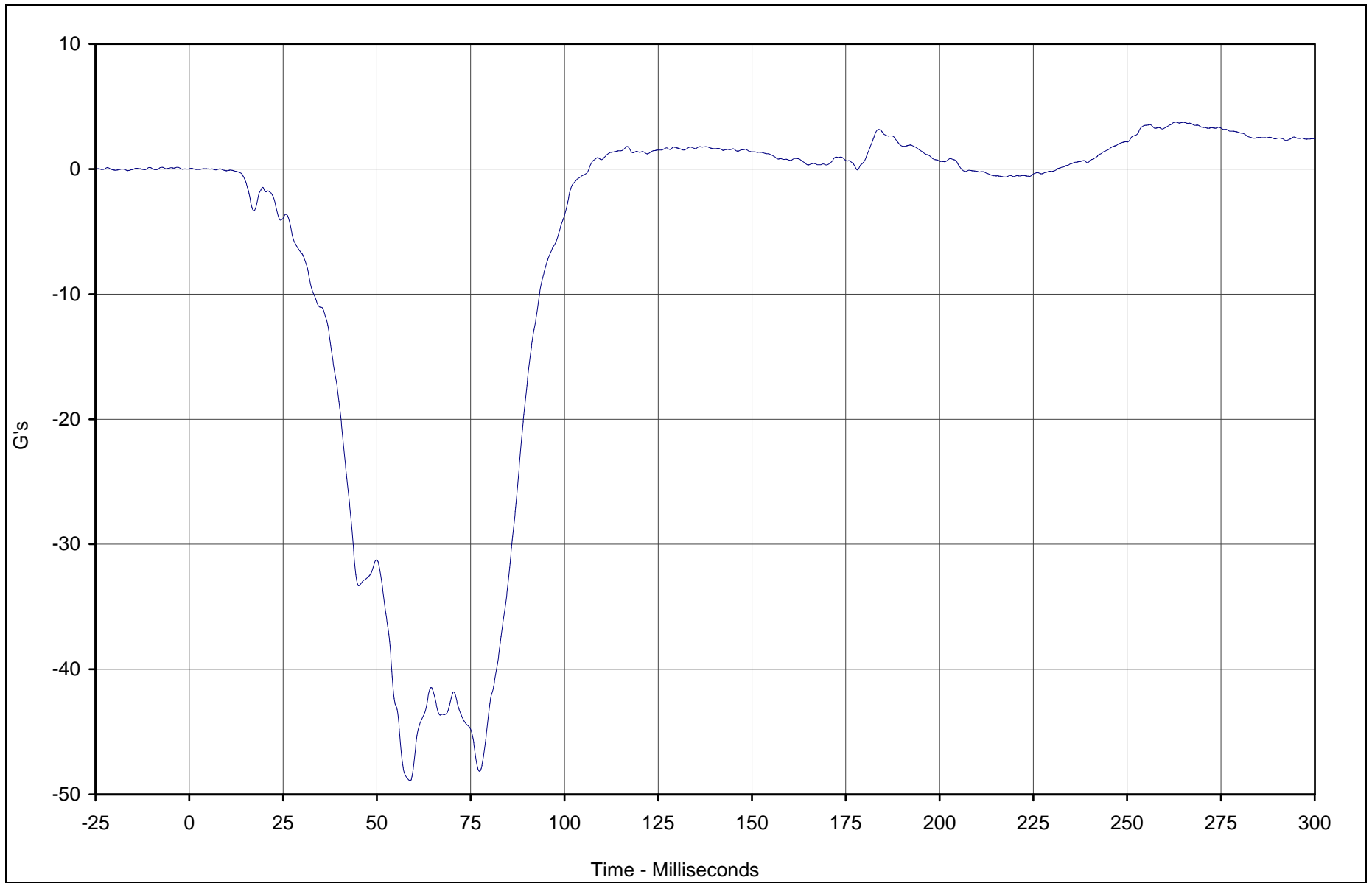


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Primary X	013	FIL	G's	3.8	263.0	-48.9	58.8	180



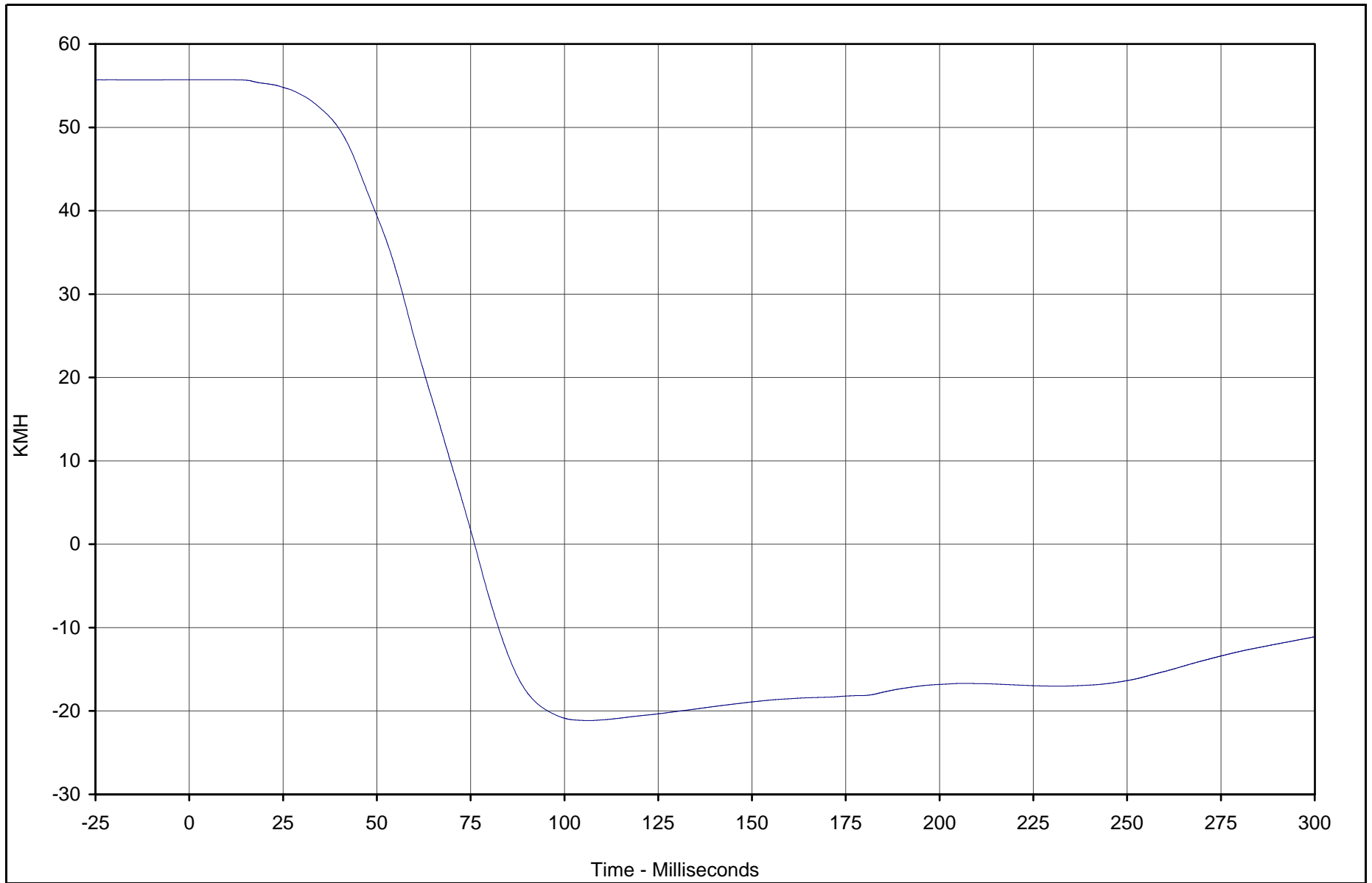
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-22



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Primary X Velocity	013	IN1	KMH	55.7	1.3	-21.2	106.5	180



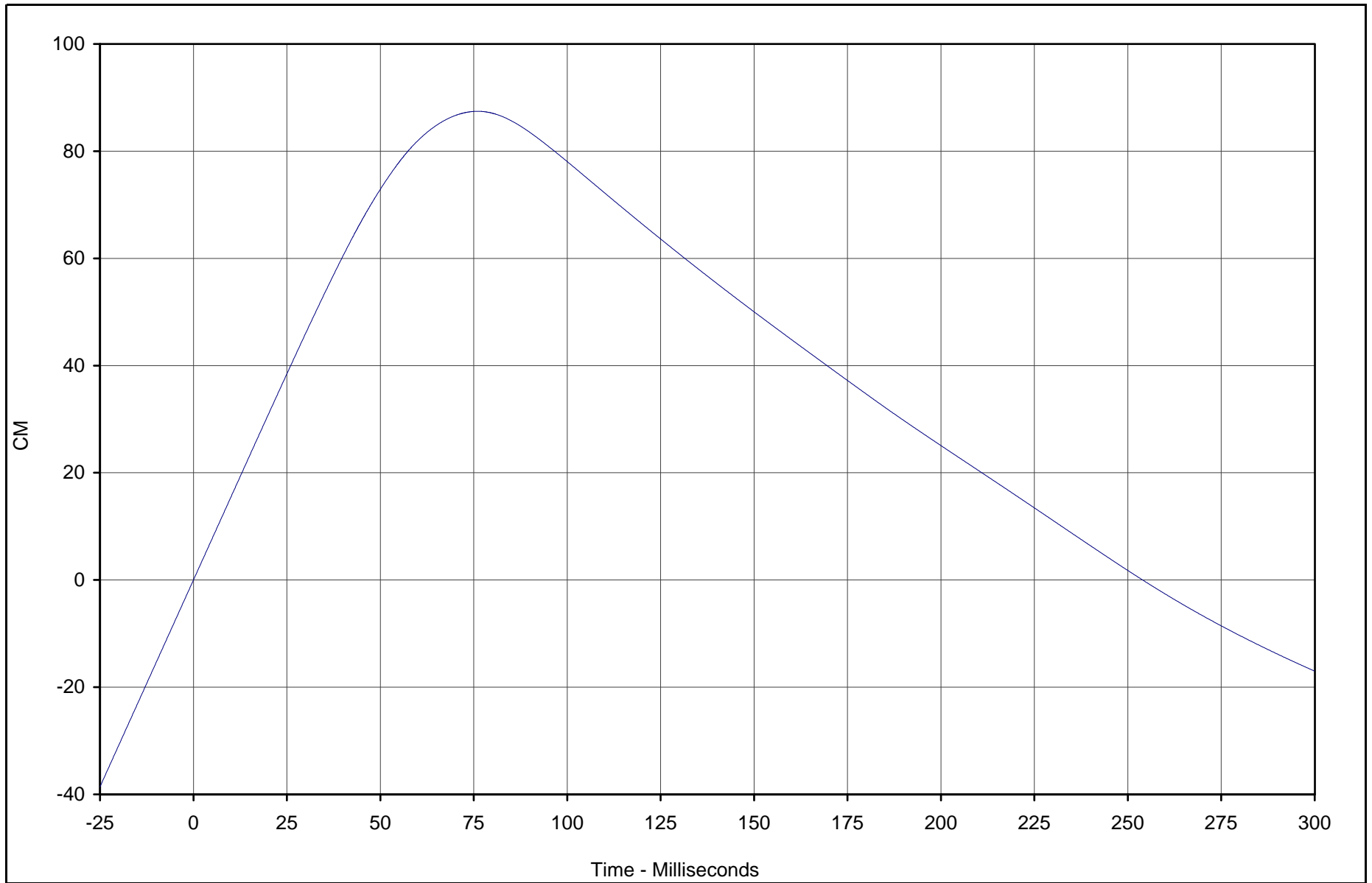
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Primary X Displ.	013	IN2	CM	87.4	76.1	-17.0	299.9	180



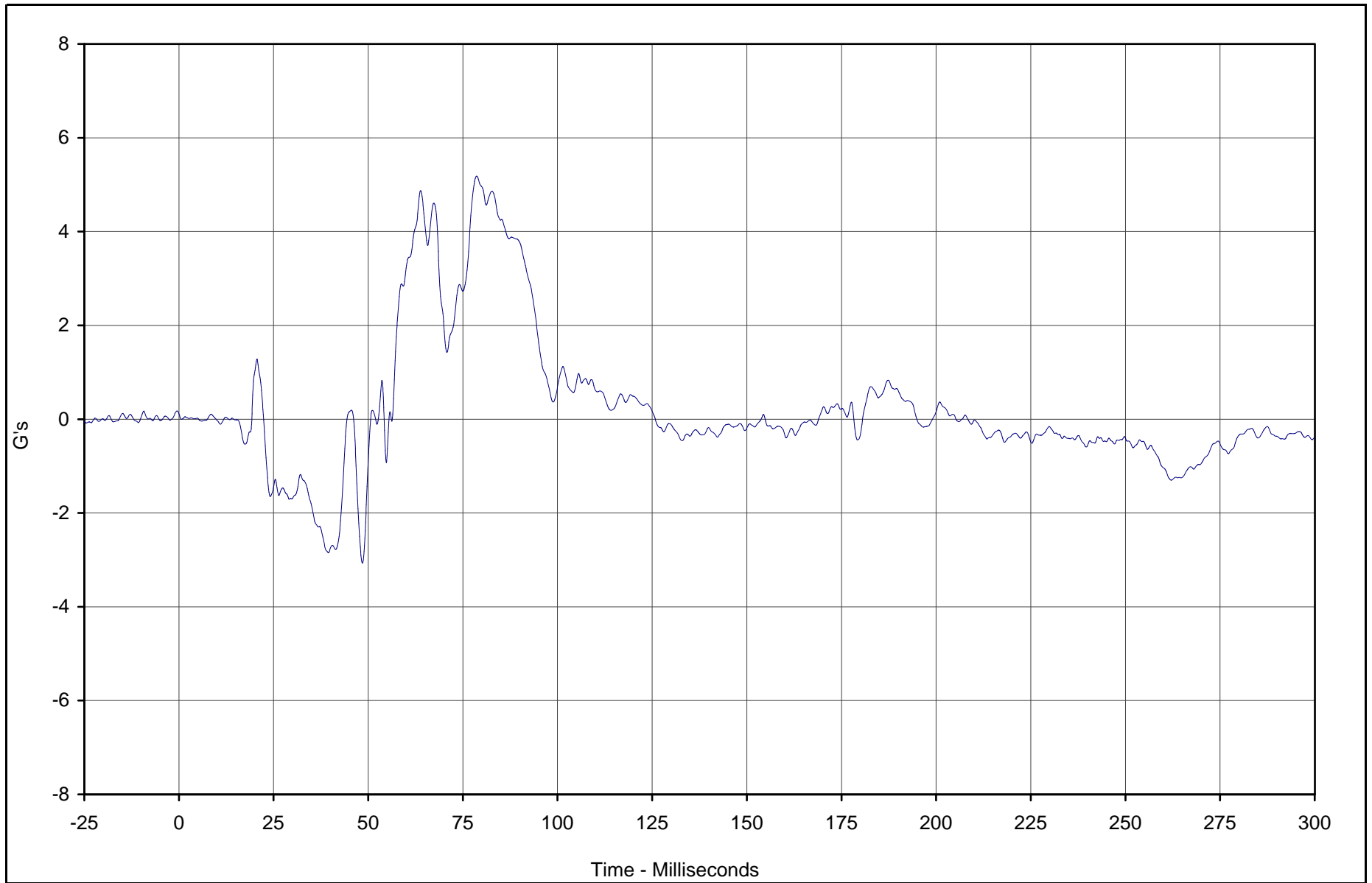
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-24



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Primary Y	014	FIL	G's	5.2	78.7	-3.1	48.5	180



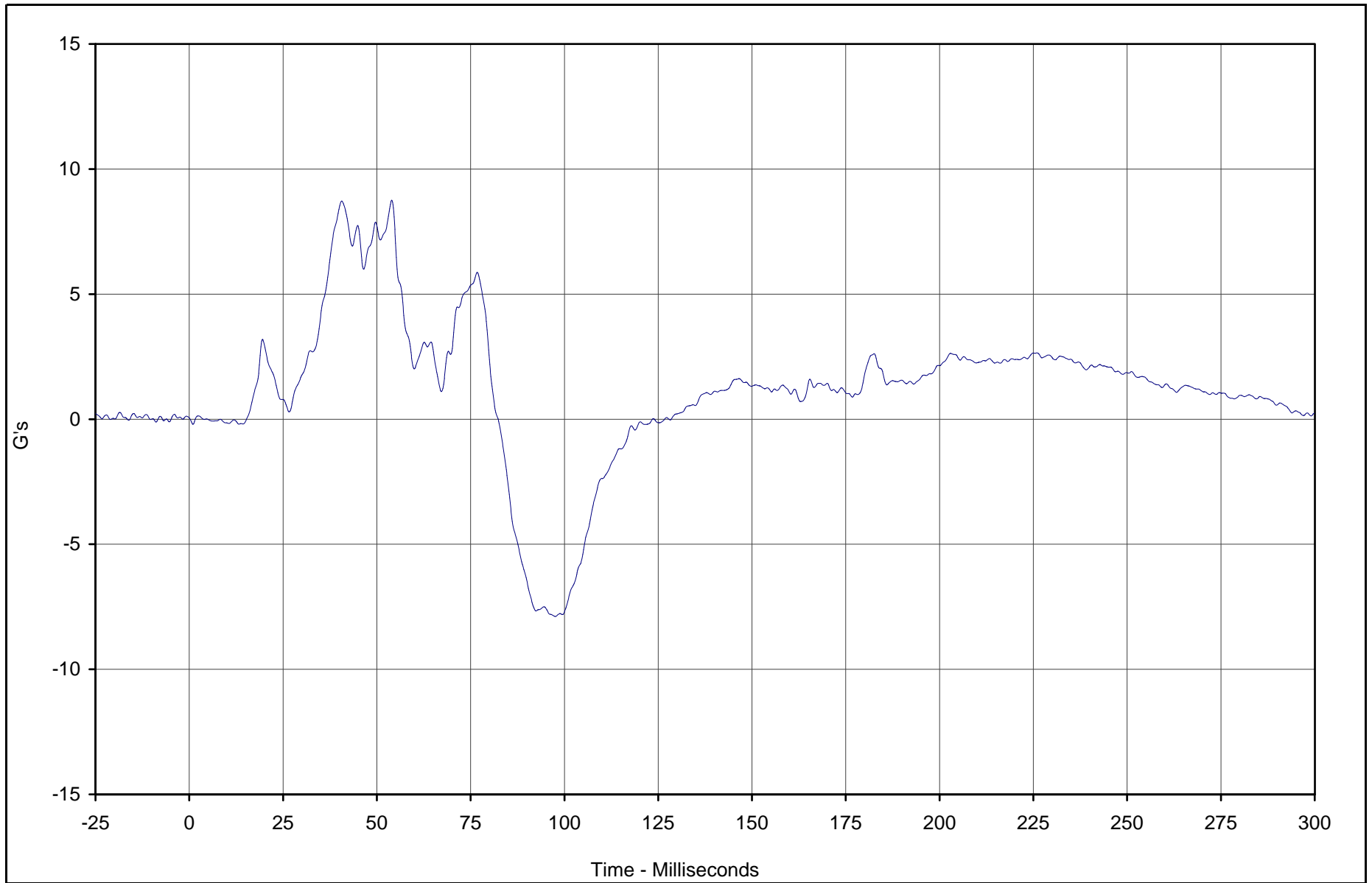
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Primary Z	015	FIL	G's	8.8	54.0	-7.9	97.6	180

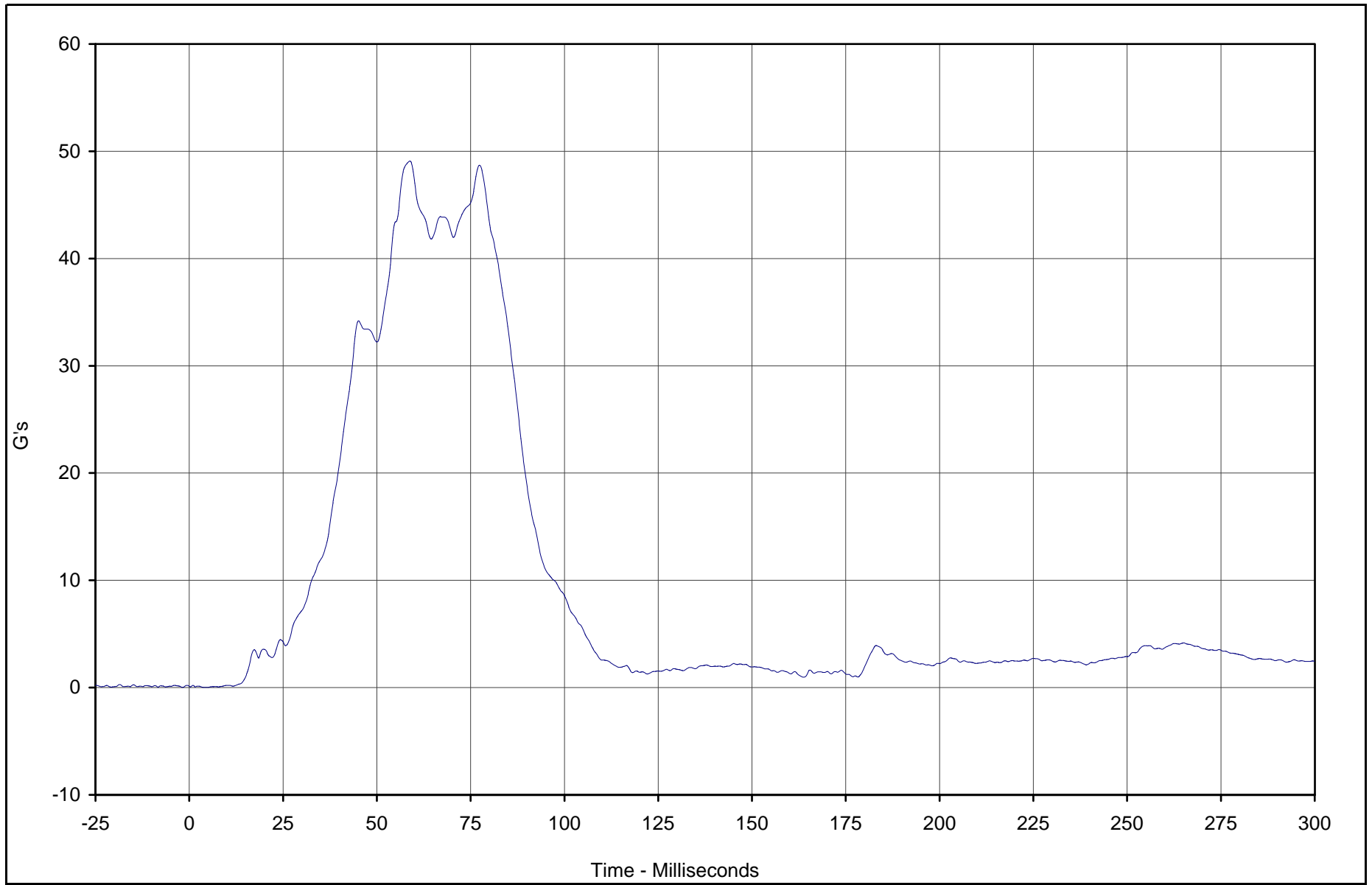


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Resultant Primary	013	RES	G's	49.1	58.8	0.0	3.7	180



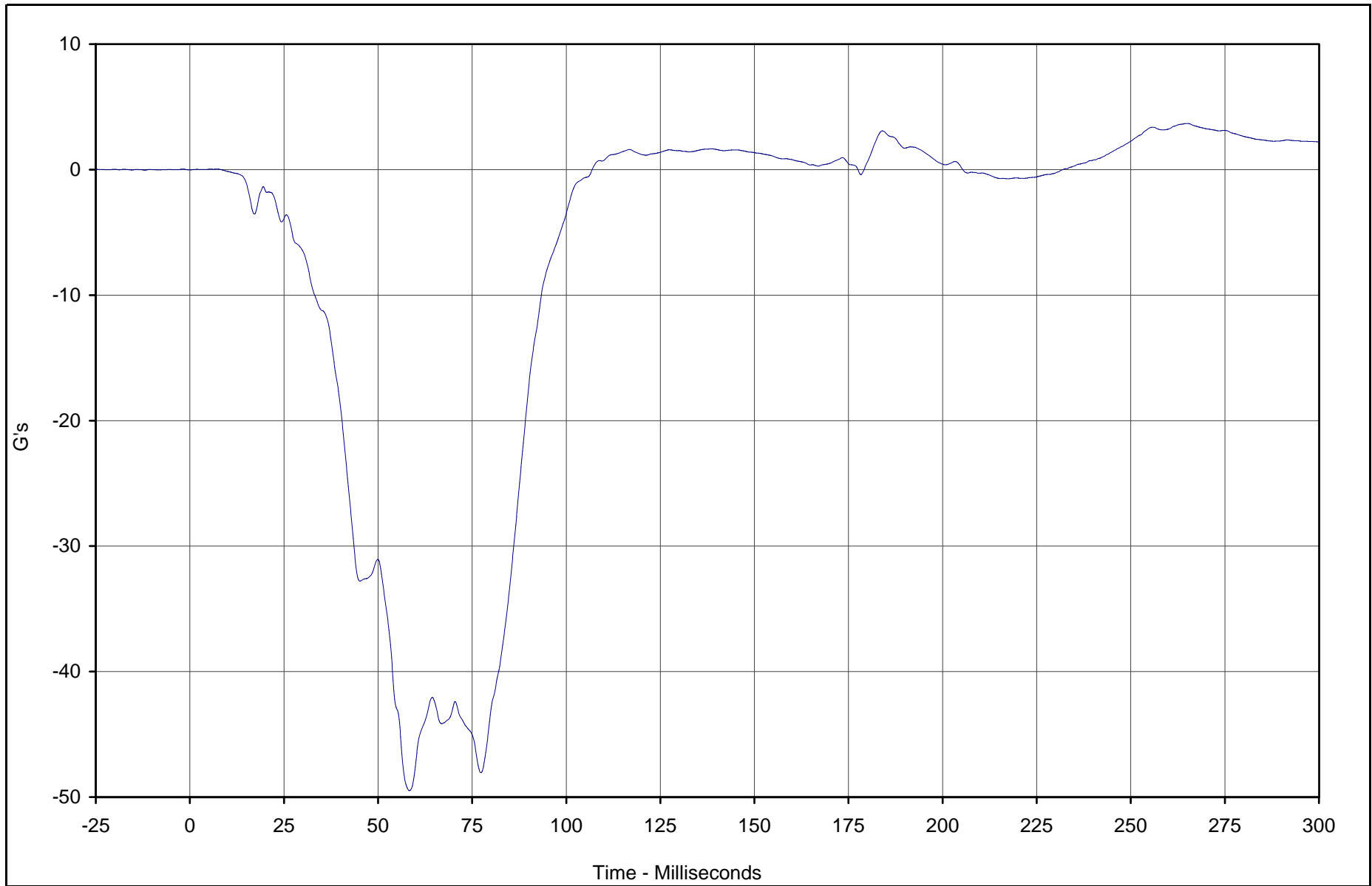
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-27



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Redundant X	016	FIL	G's	3.7	264.9	-49.5	58.3	180



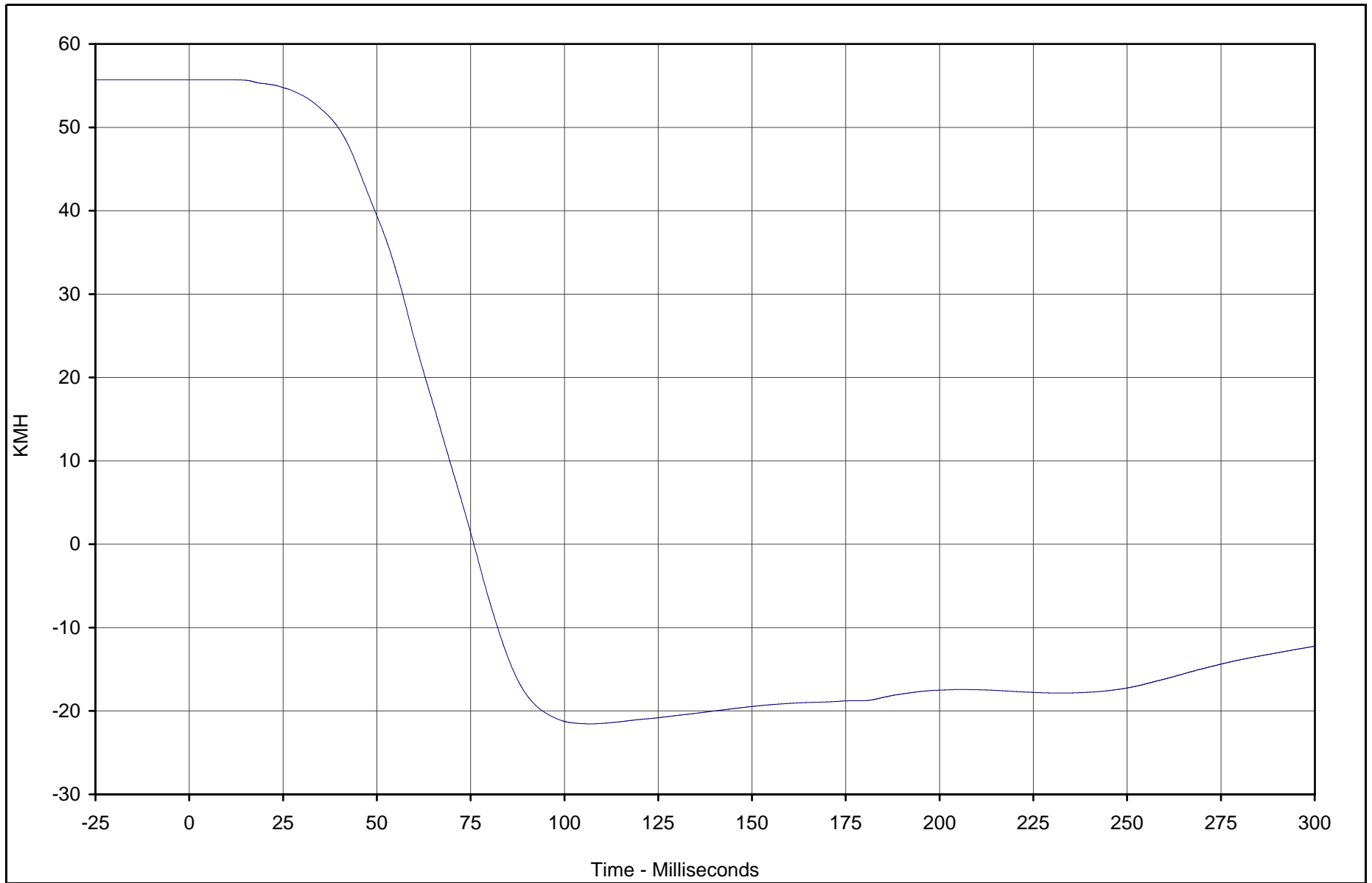
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Redundant X Velocity	016	IN1	KMH	55.7	8.3	-21.5	106.9	180

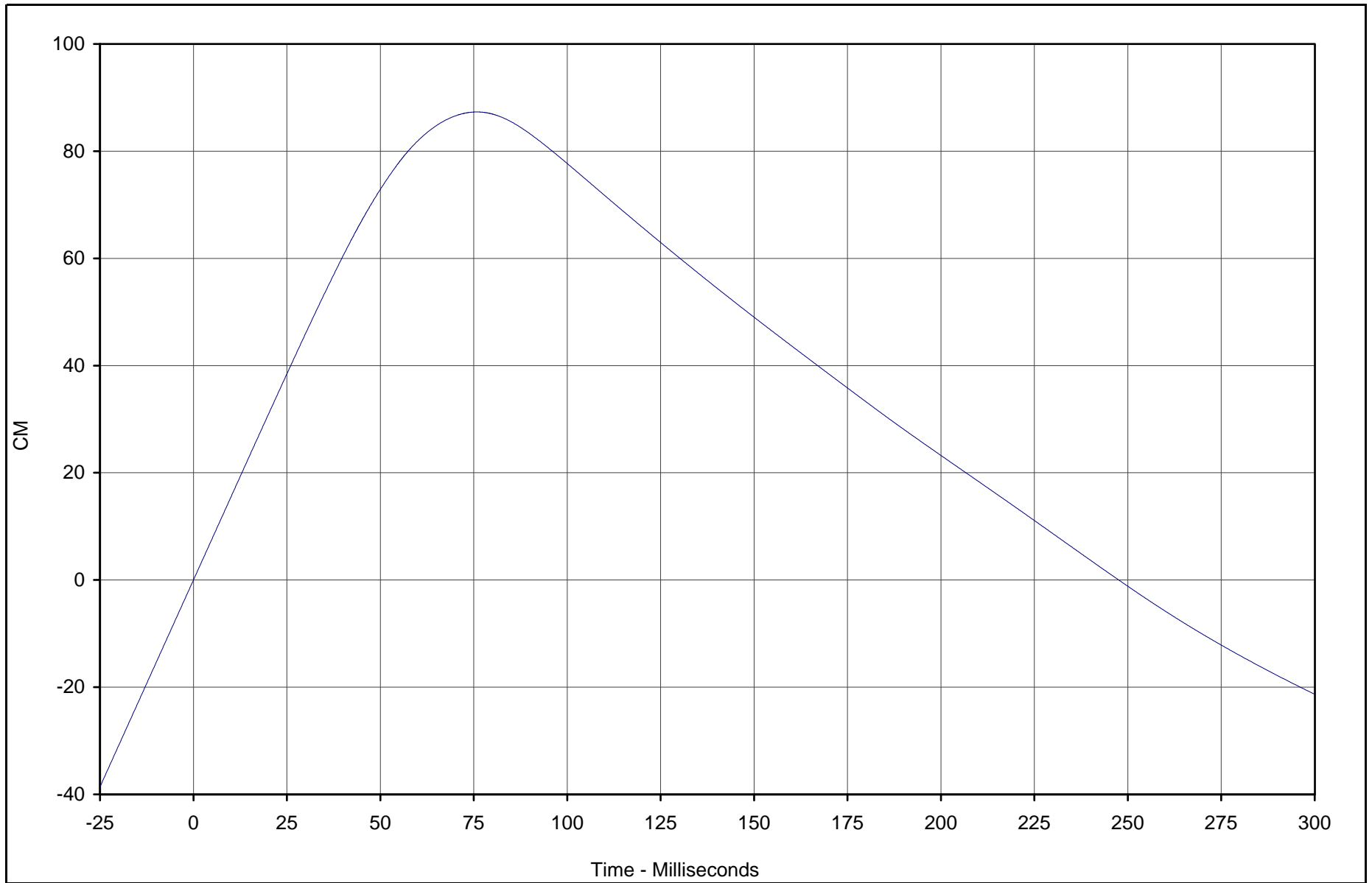


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Redundant X Displ.	016	IN2	CM	87.3	75.9	-21.3	299.9	180

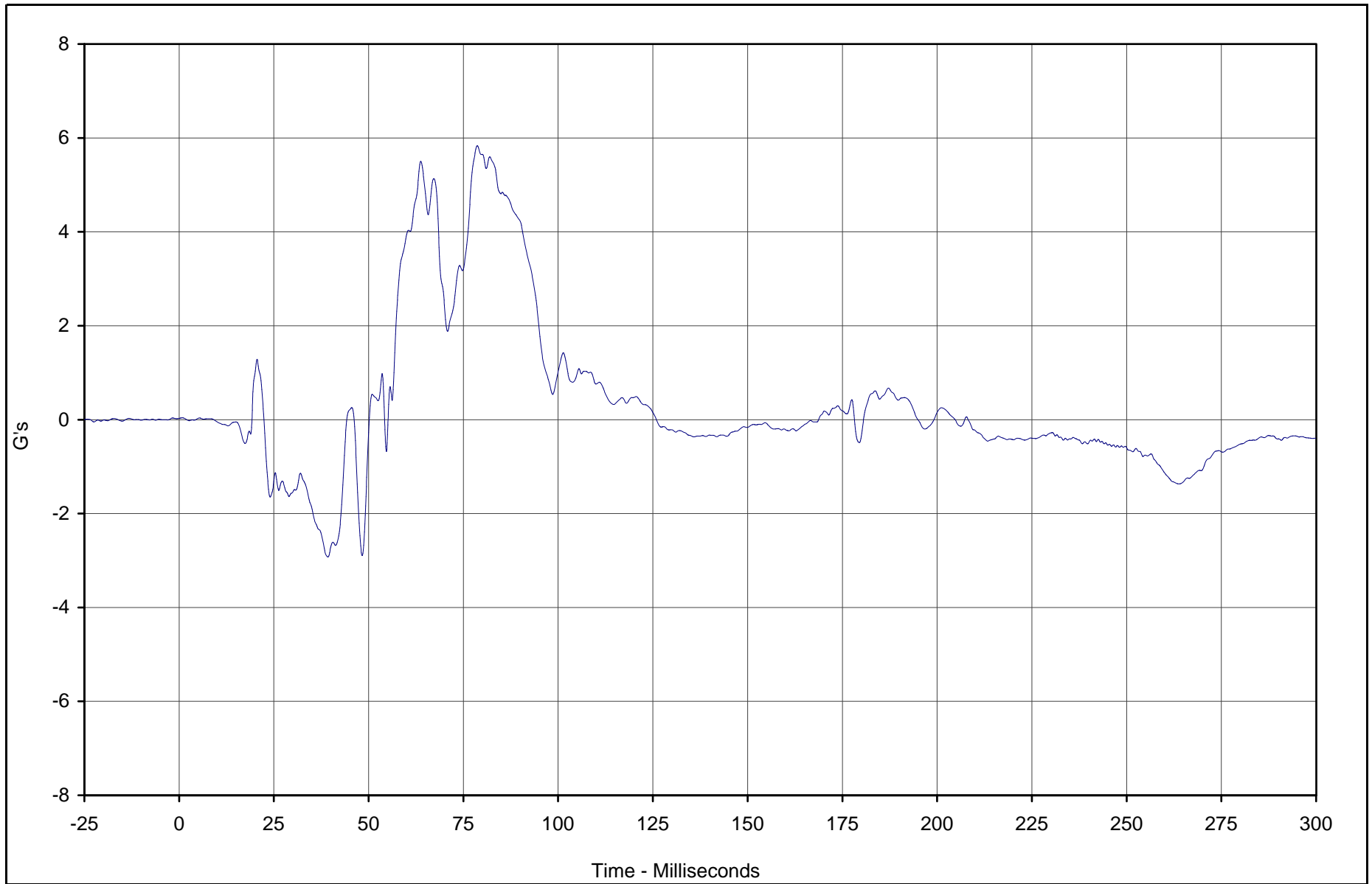


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Redundant Y	017	FIL	G's	5.8	78.7	-2.9	39.3	180

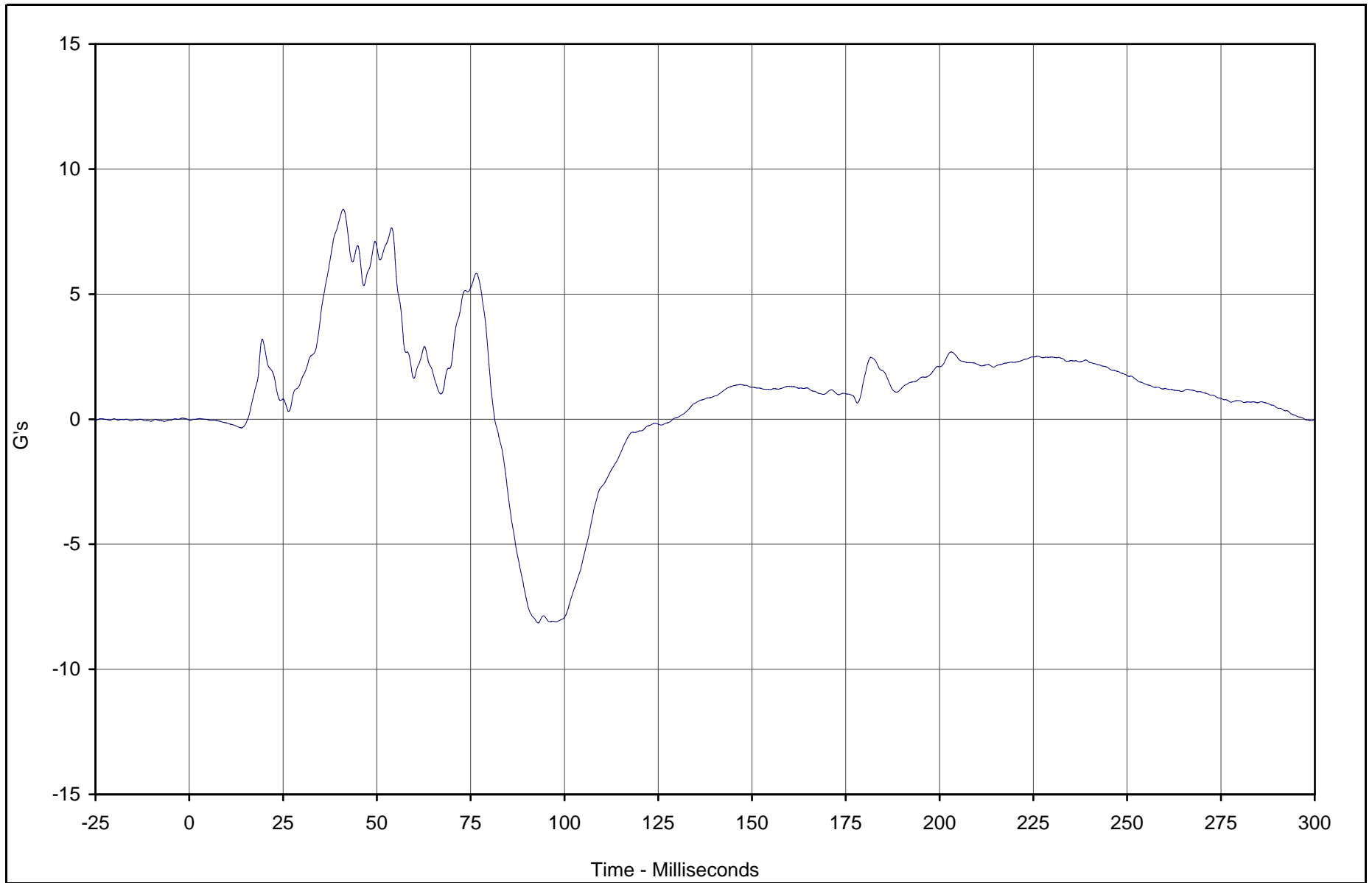


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Redundant Z	018	FIL	G's	8.4	41.0	-8.1	93.0	180

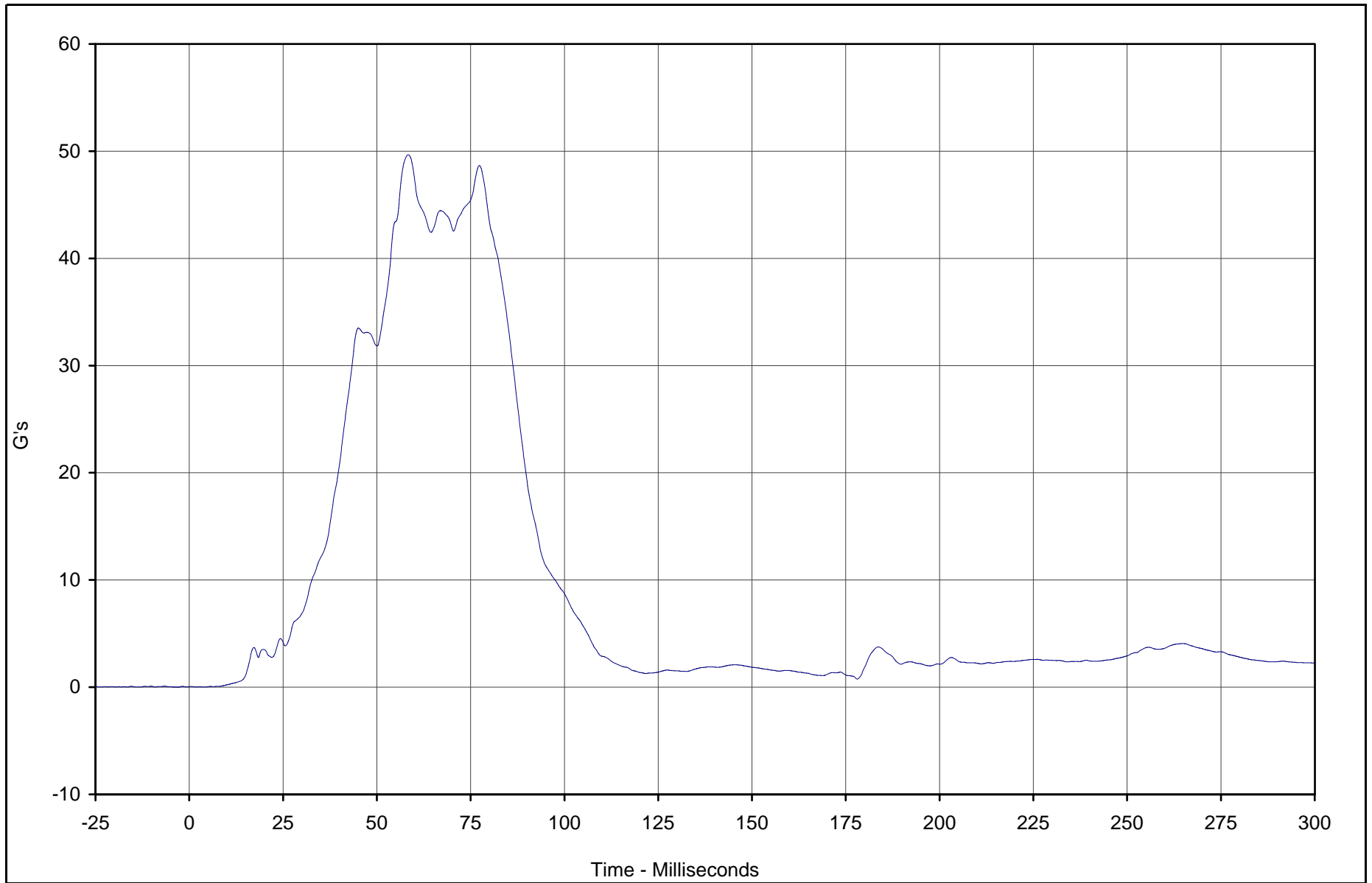


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Resultant Redundant	016	RES	G's	49.7	58.4	0.0	3.7	180

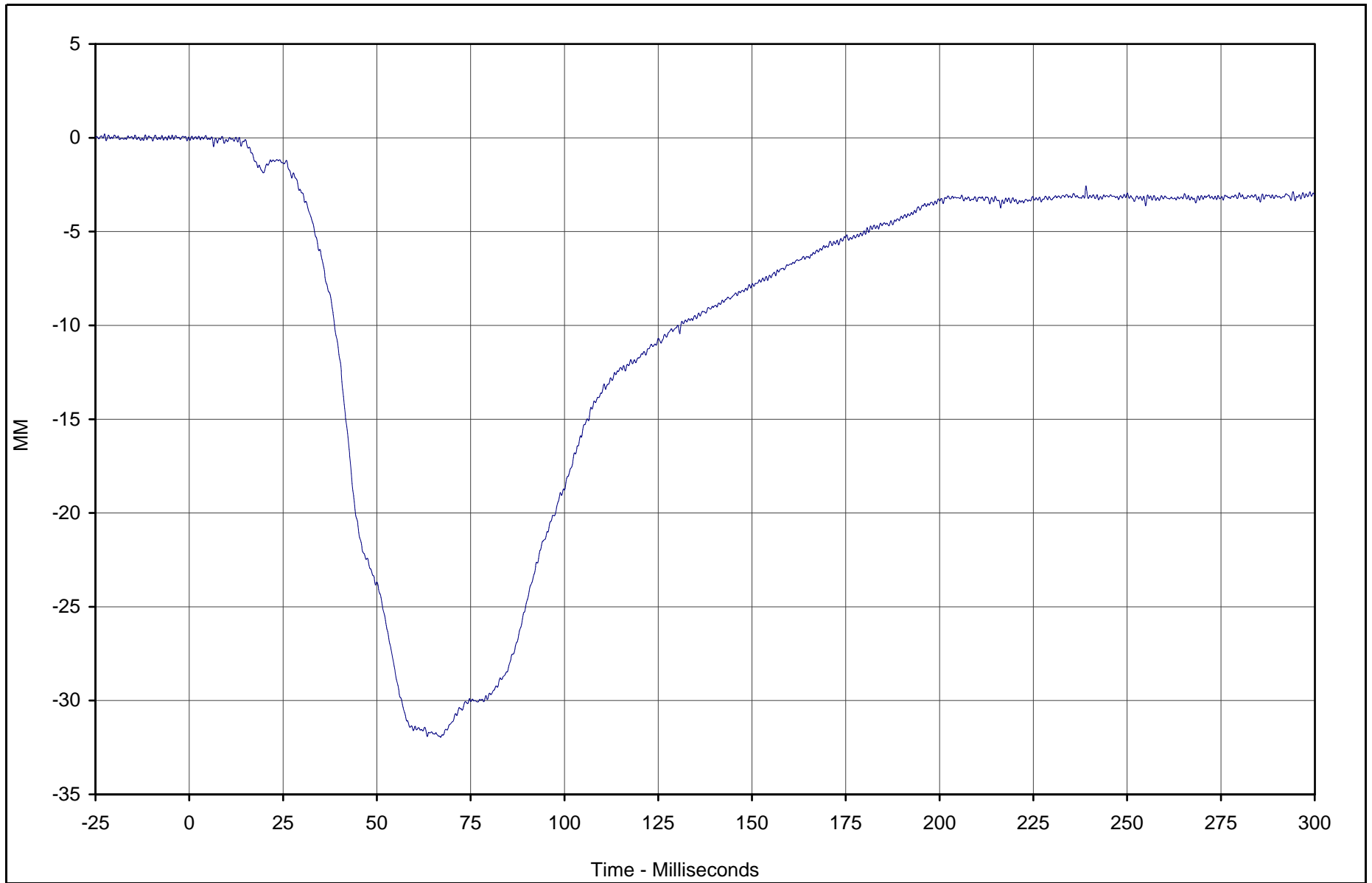


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Chest Displacement X	019	FIL	MM	0.1	4.4	-32.0	67.0	600

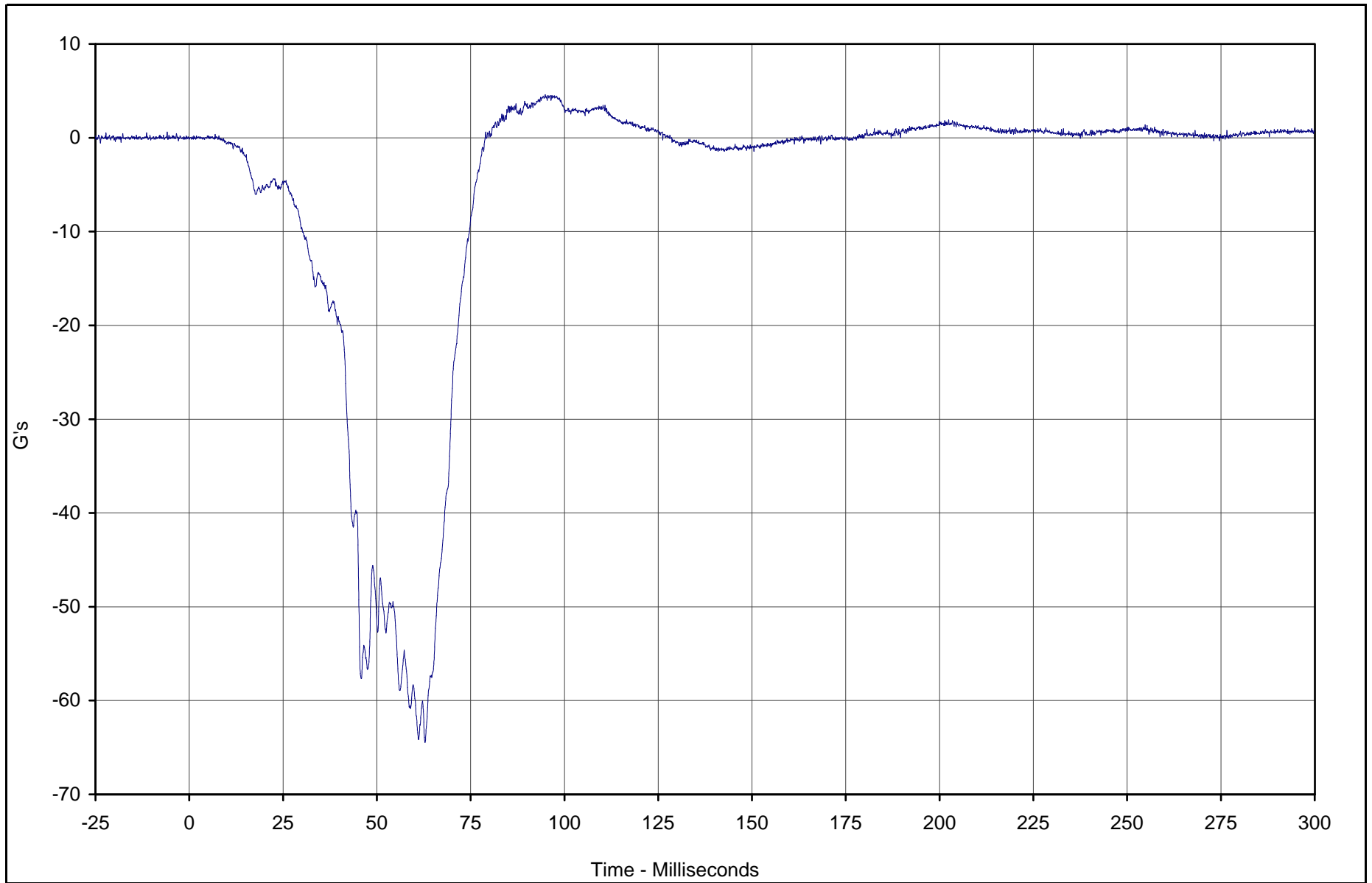


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Pelvis X	020	FIL	G's	4.6	94.9	-64.4	62.8	1000

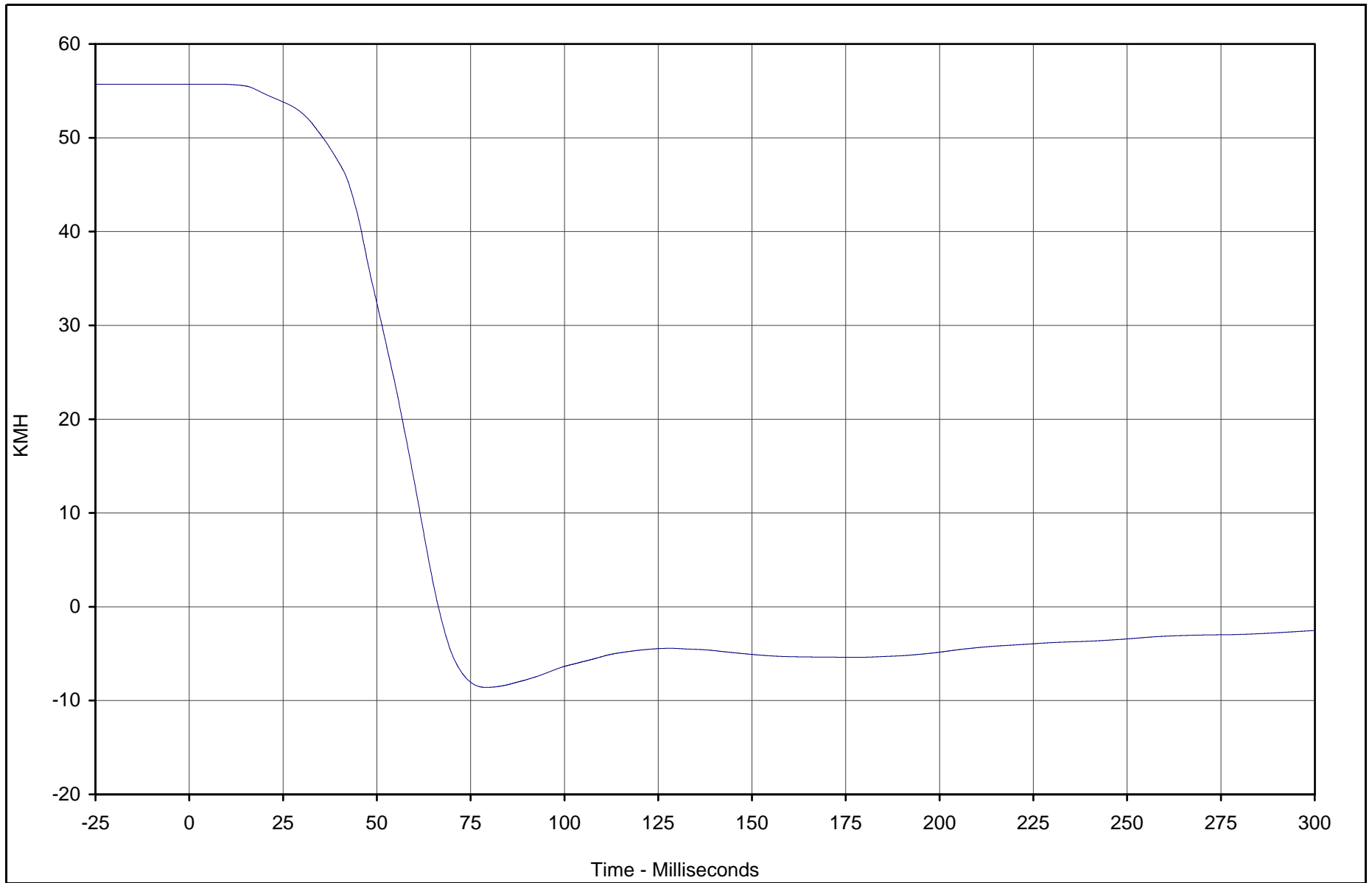


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Pelvis X Velocity	020	IN1	KMH	55.7	7.4	-8.6	79.1	180

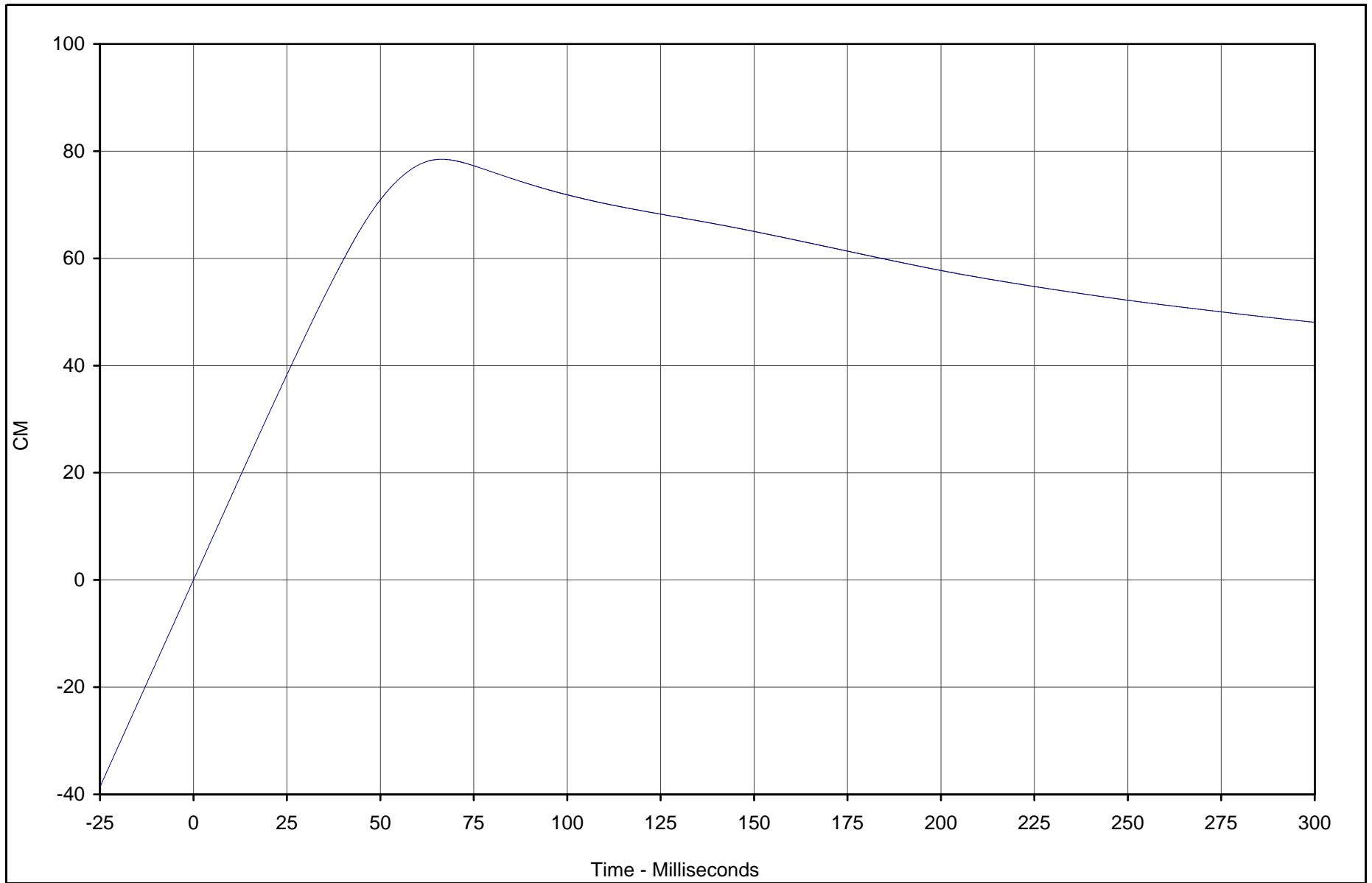


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Pelvis X Displ.	020	IN2	CM	78.5	66.4	0.0	0.0	180

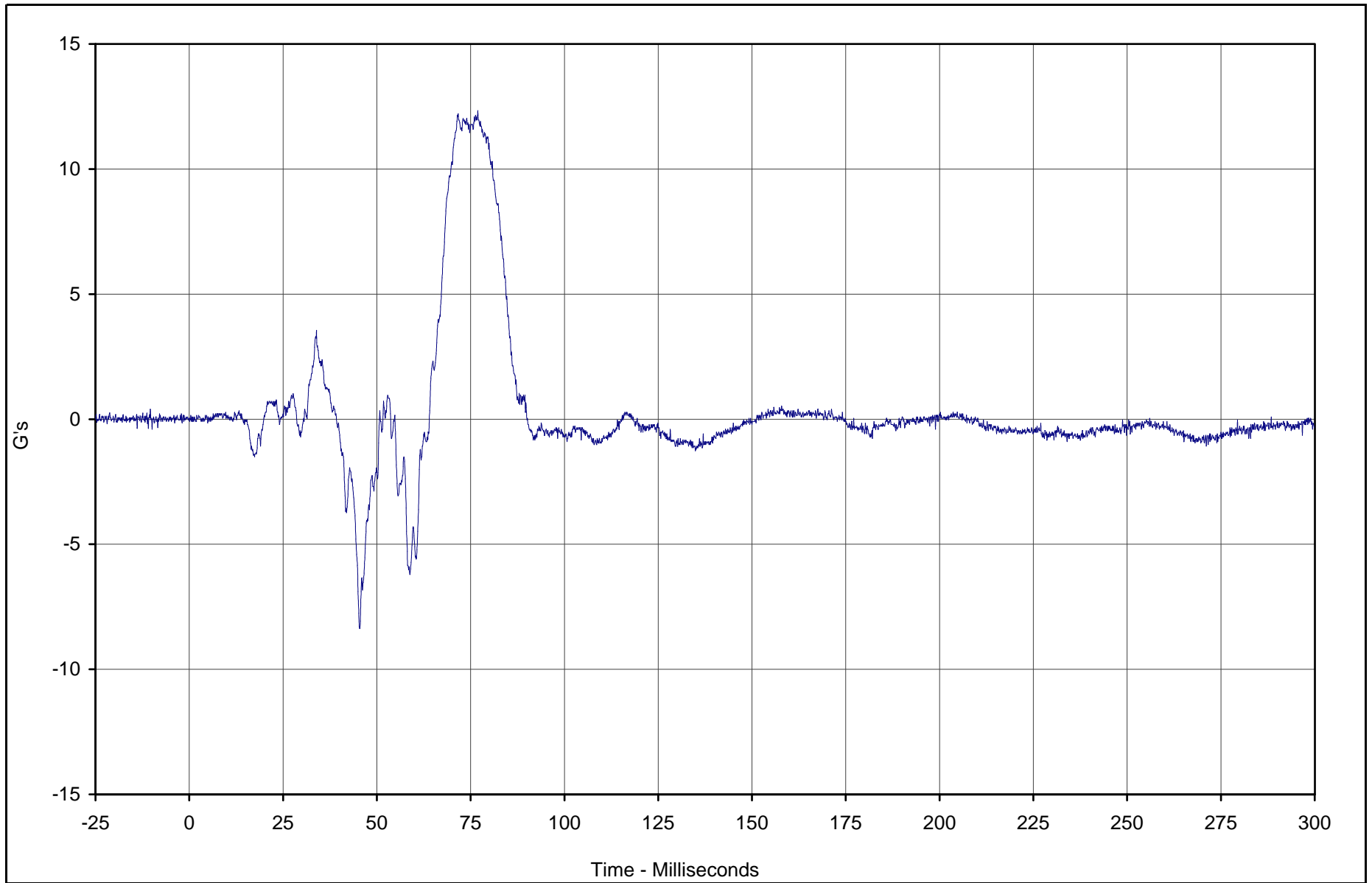


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Pelvis Y	021	FIL	G's	12.3	76.9	-8.4	45.4	1000

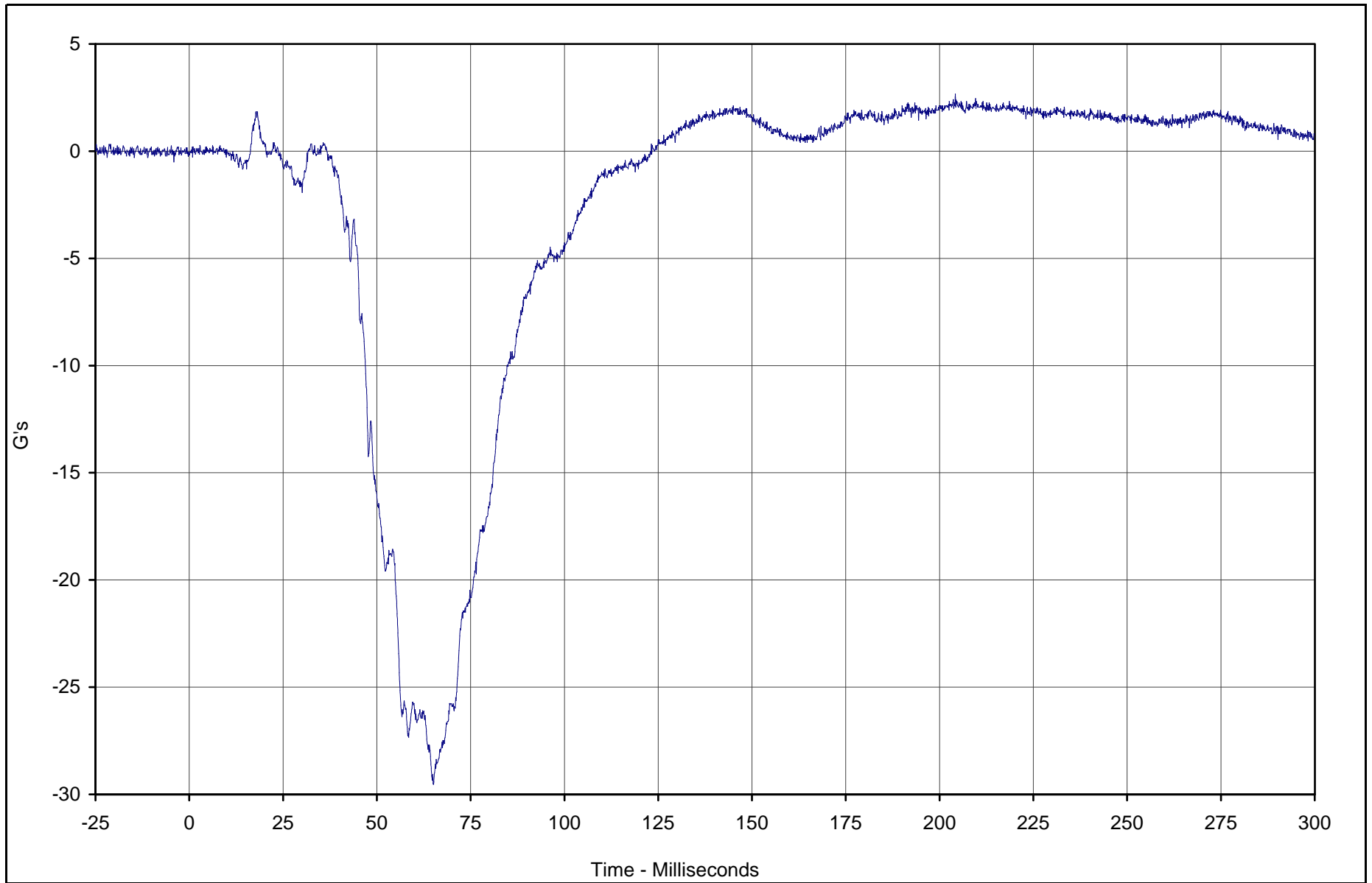


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

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NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Pelvis Z	022	FIL	G's	2.7	204.2	-29.5	65.1	1000

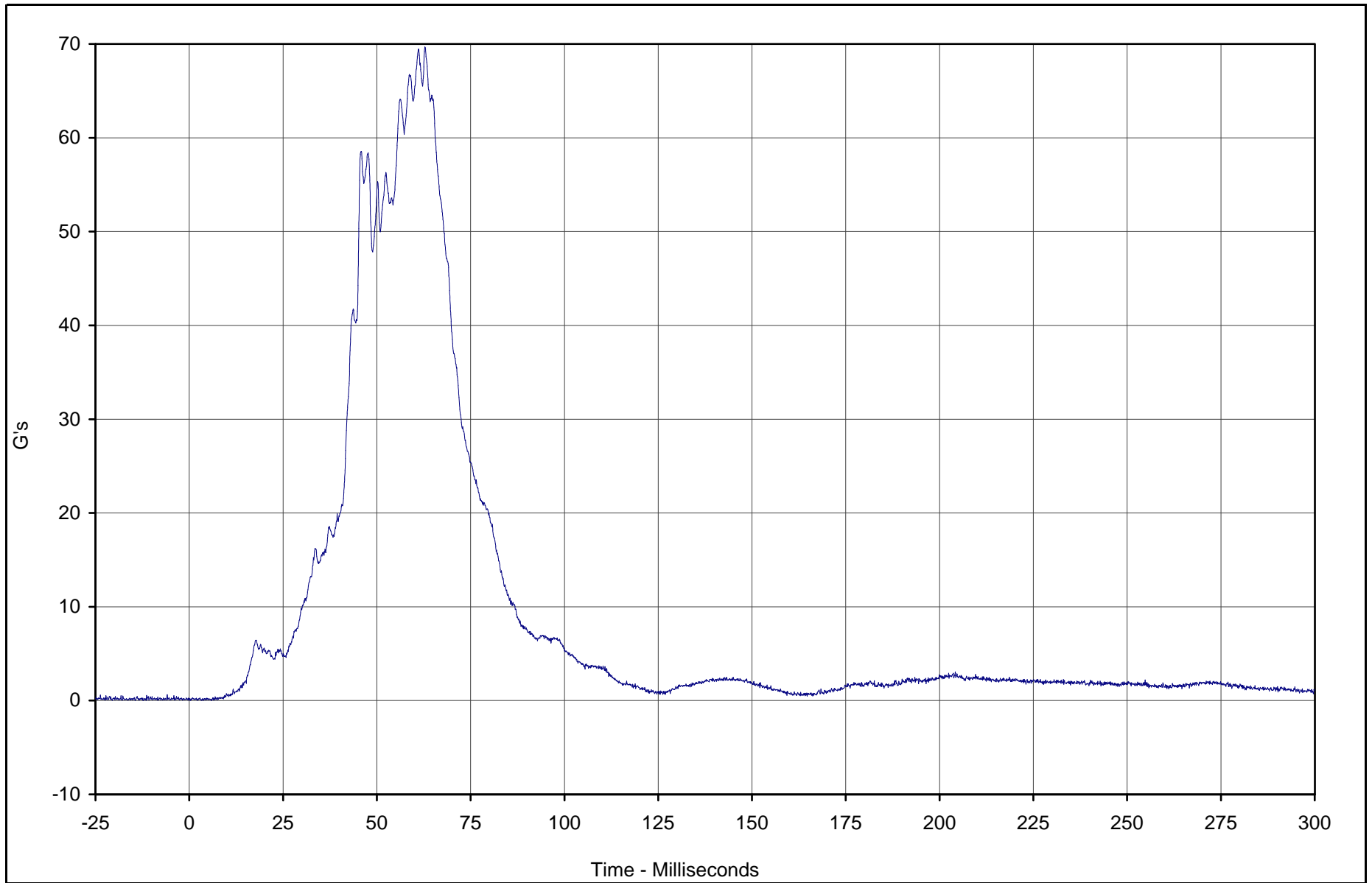


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Pelvis Resultant	023	RES	G's	69.7	62.8	0.0	0.3	1000



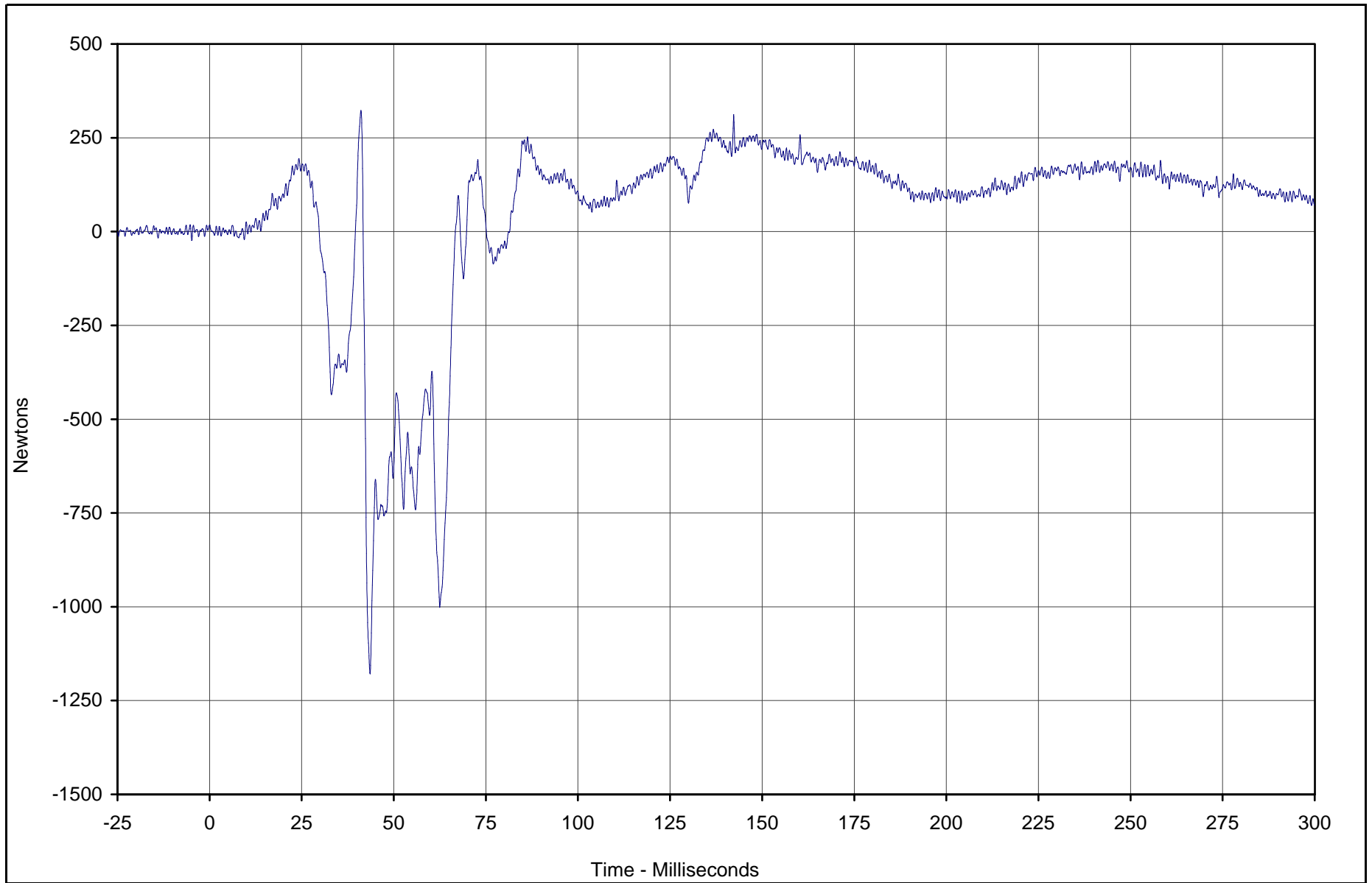
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-40



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Left Femur Force	023	FIL	Newtons	323.2	41.1	-1178.4	43.6	600



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

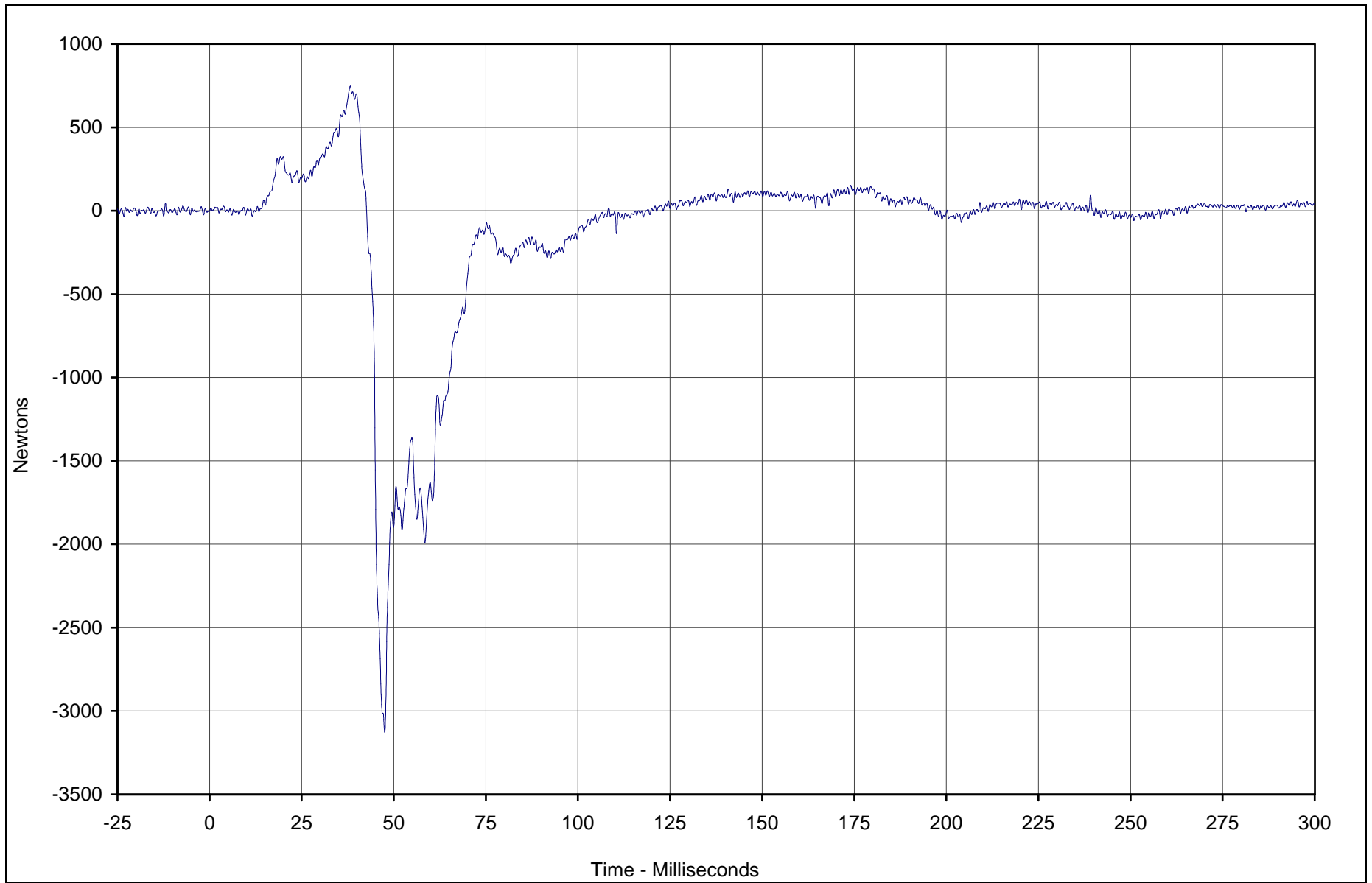
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

B-41



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Right Femur Force	024	FIL	Newtons	747.5	38.2	-3127.8	47.6	600



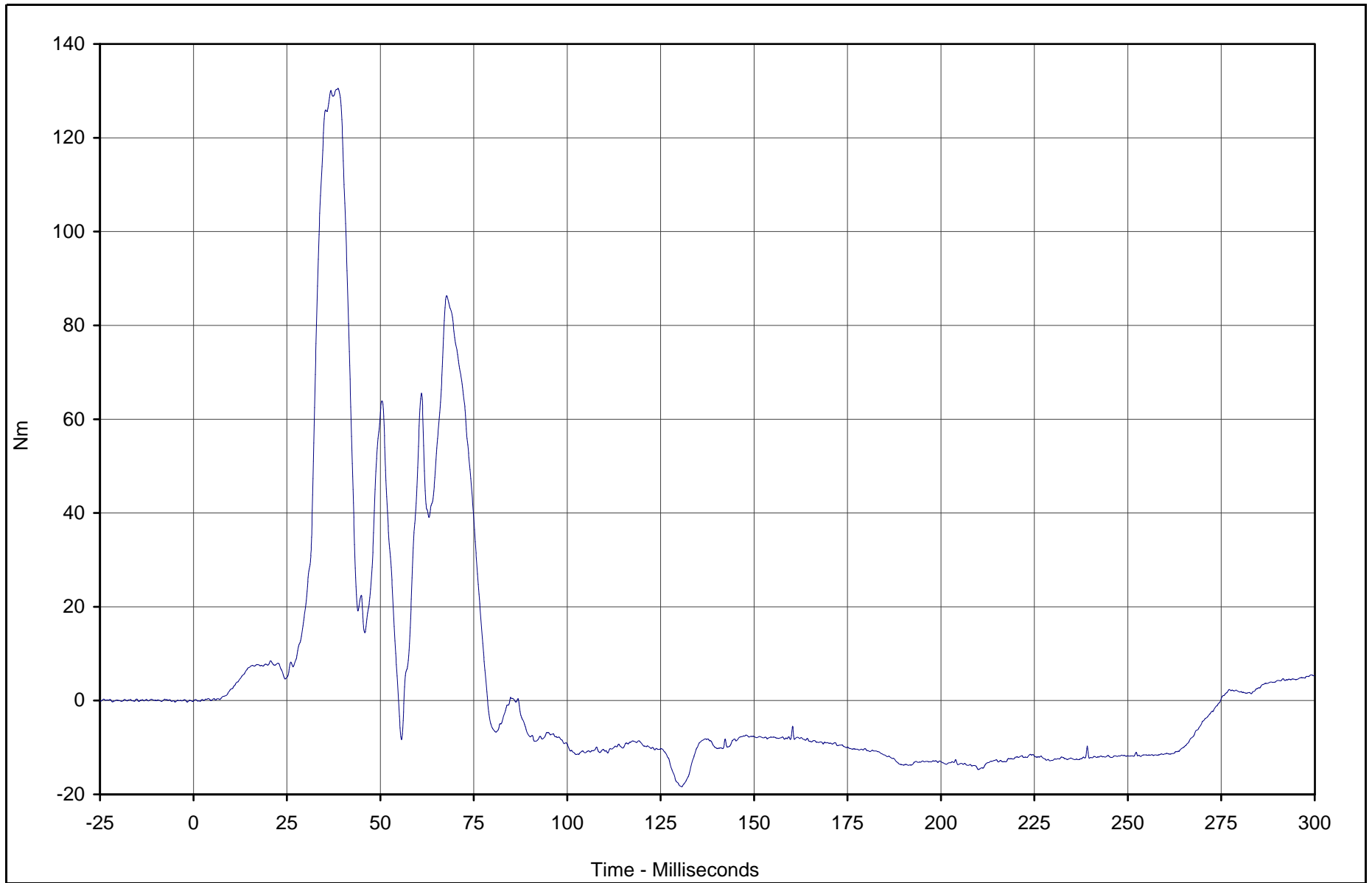
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Left Upper Tibia Moment X	025	FIL	Nm	130.5	38.7	-18.4	130.7	600

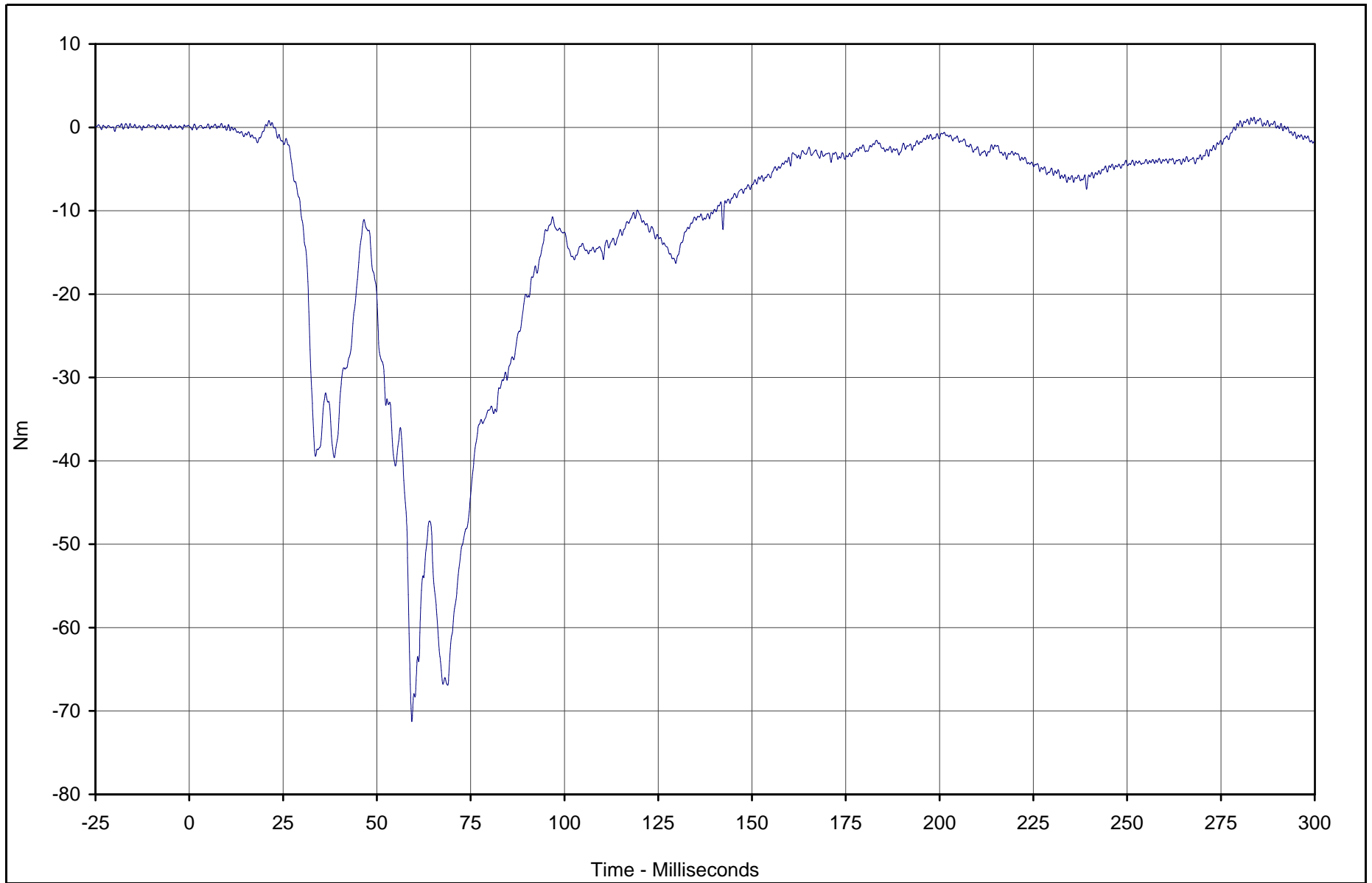


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Left Upper Tibia Moment Y	026	FIL	Nm	1.2	283.8	-71.3	59.3	600



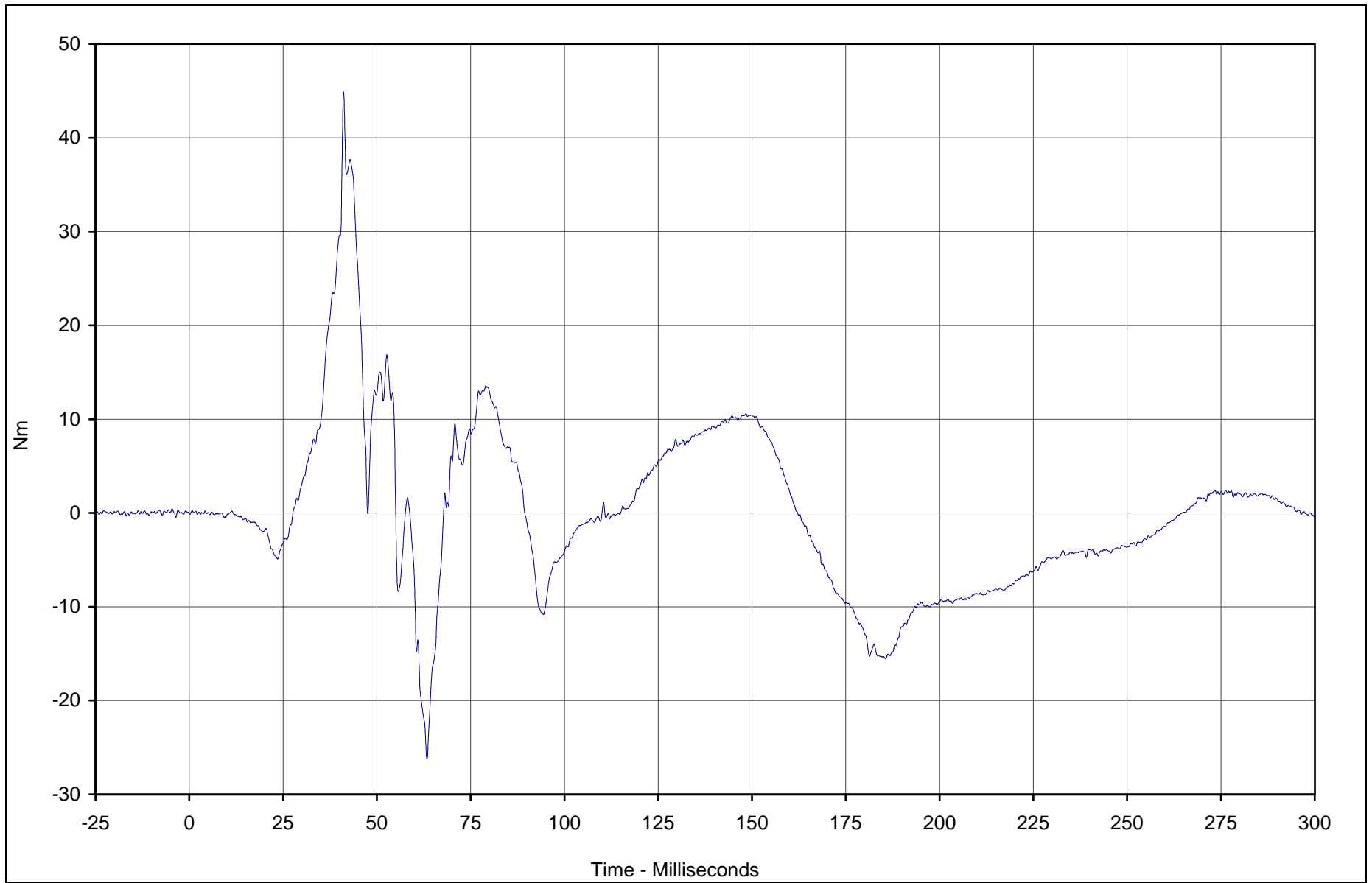
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-44



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Right Upper Tibia Moment X	027	FIL	Nm	44.8	41.1	-26.2	63.3	600



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

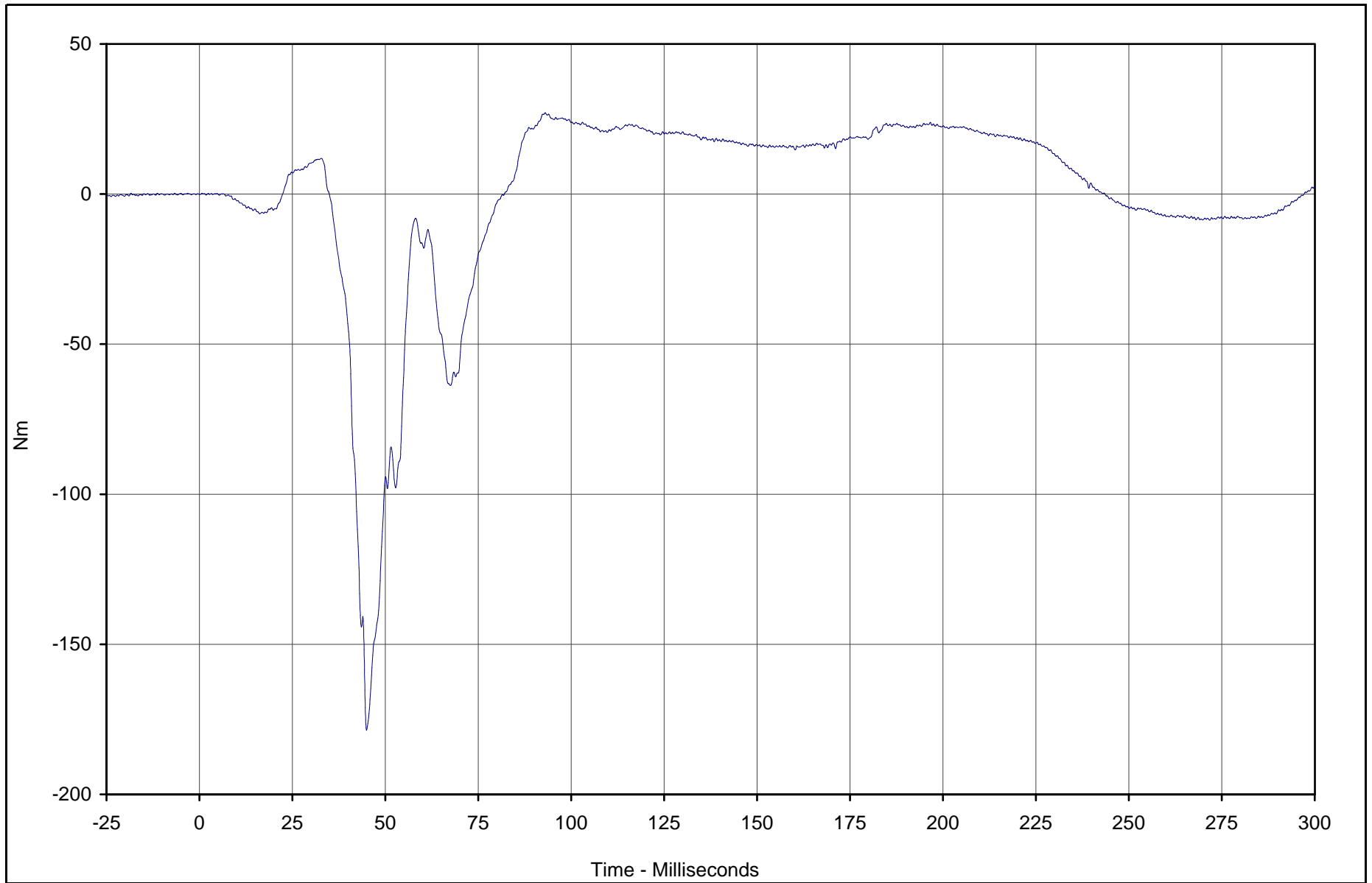
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

B-45



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Right Upper Tibia Moment Y	028	FIL	Nm	27.1	93.0	-178.7	44.9	600



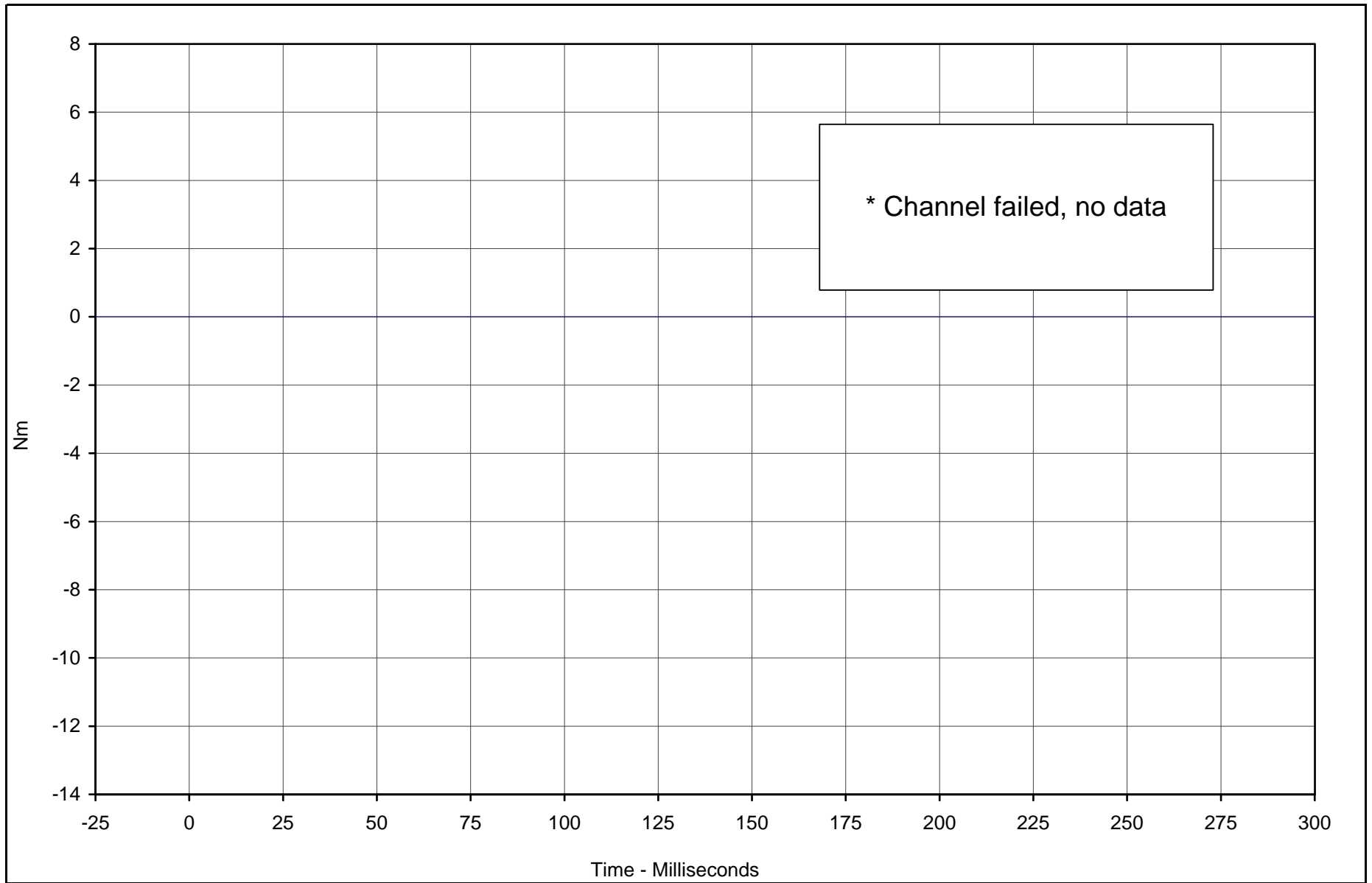
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



* Channel failed, no data

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Left Lower Tibia Moment X	029	FIL	Nm	0.0	0.0	0.0	0.0	600



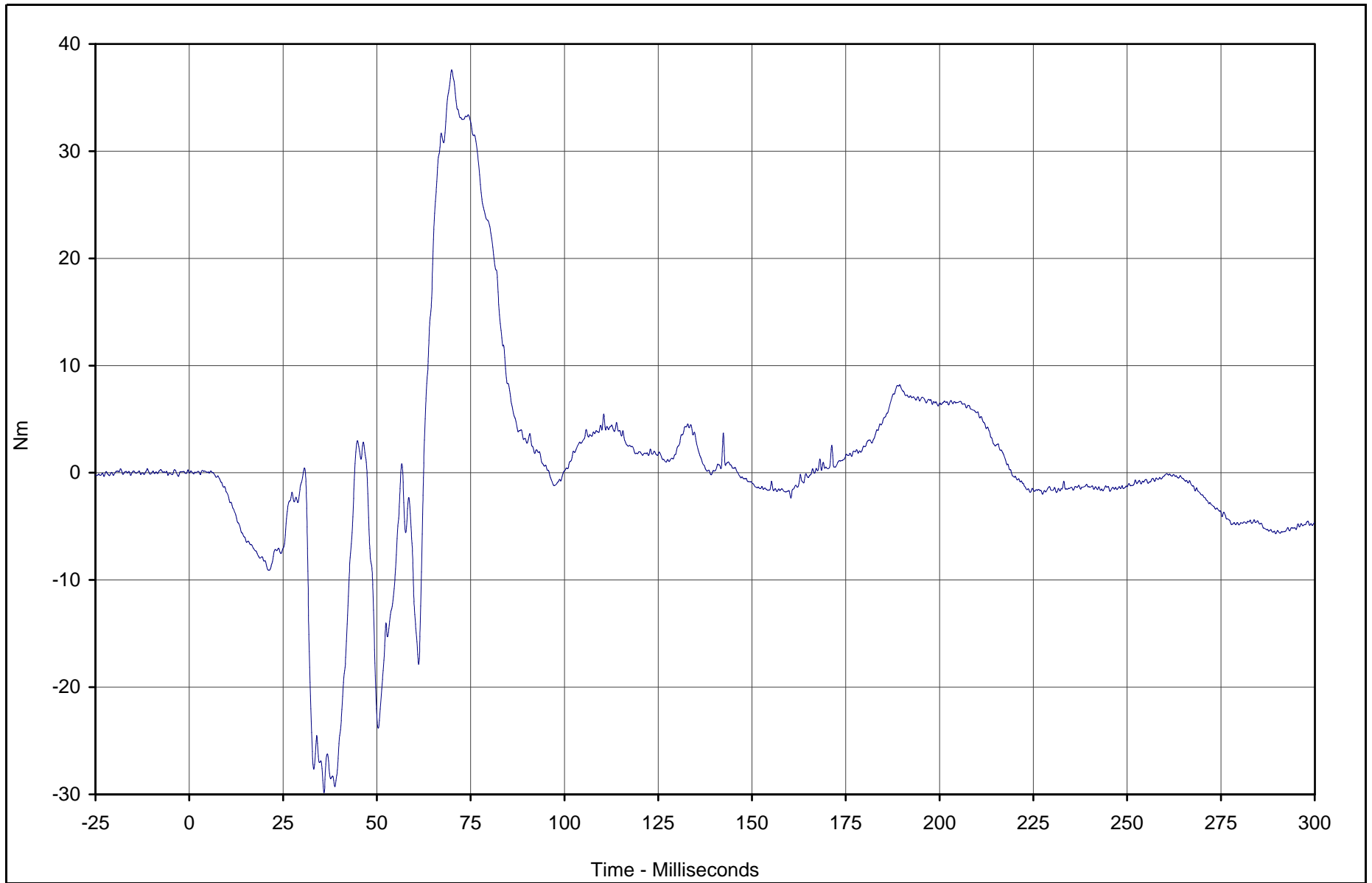
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-47



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Left Lower Tibia Moment Y	030	FIL	Nm	37.6	69.9	-29.9	35.9	600



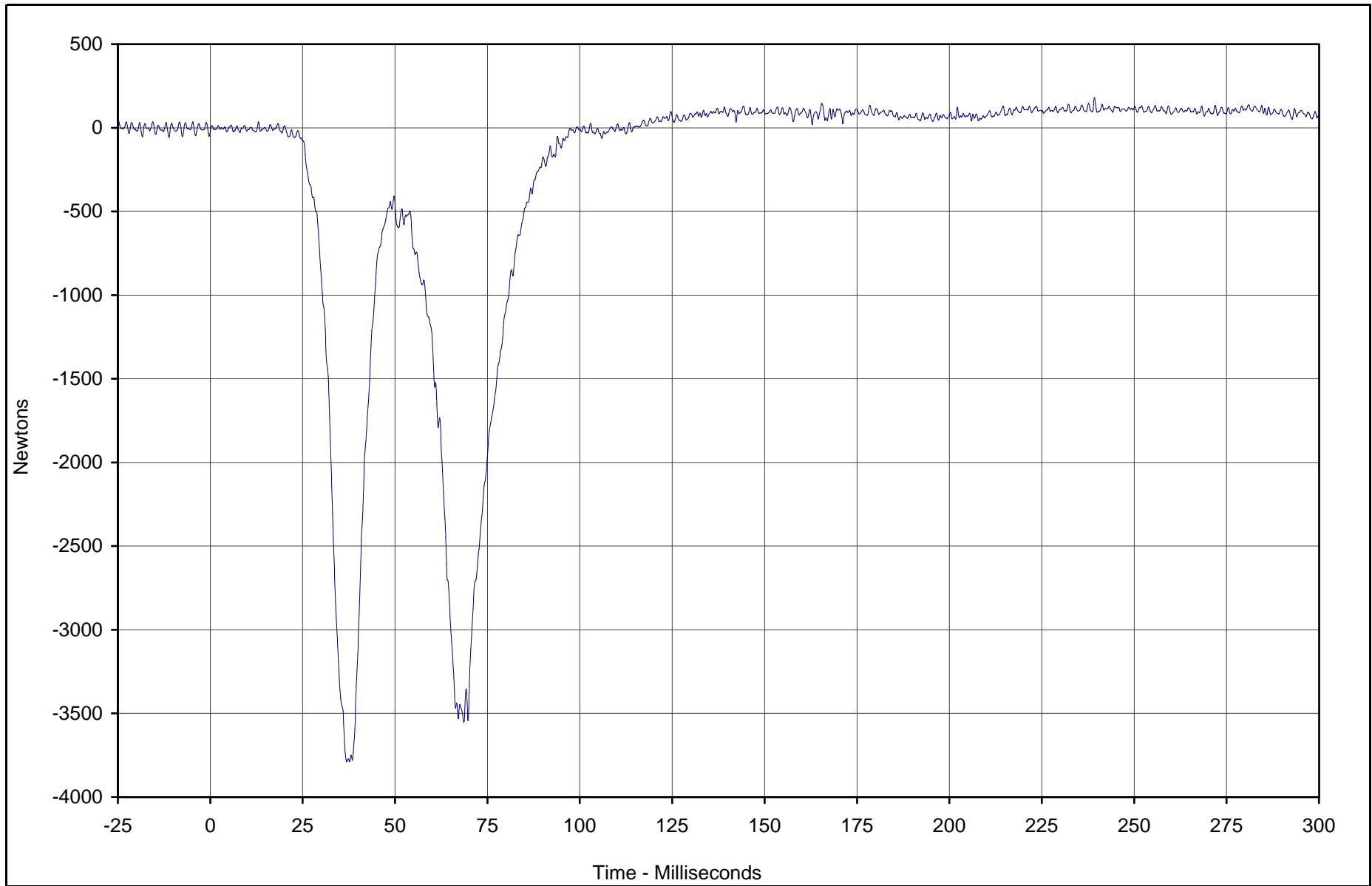
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Left Lower Tibia Force Z	031	FIL	Newtons	181.3	239.2	-3788.9	36.9	600



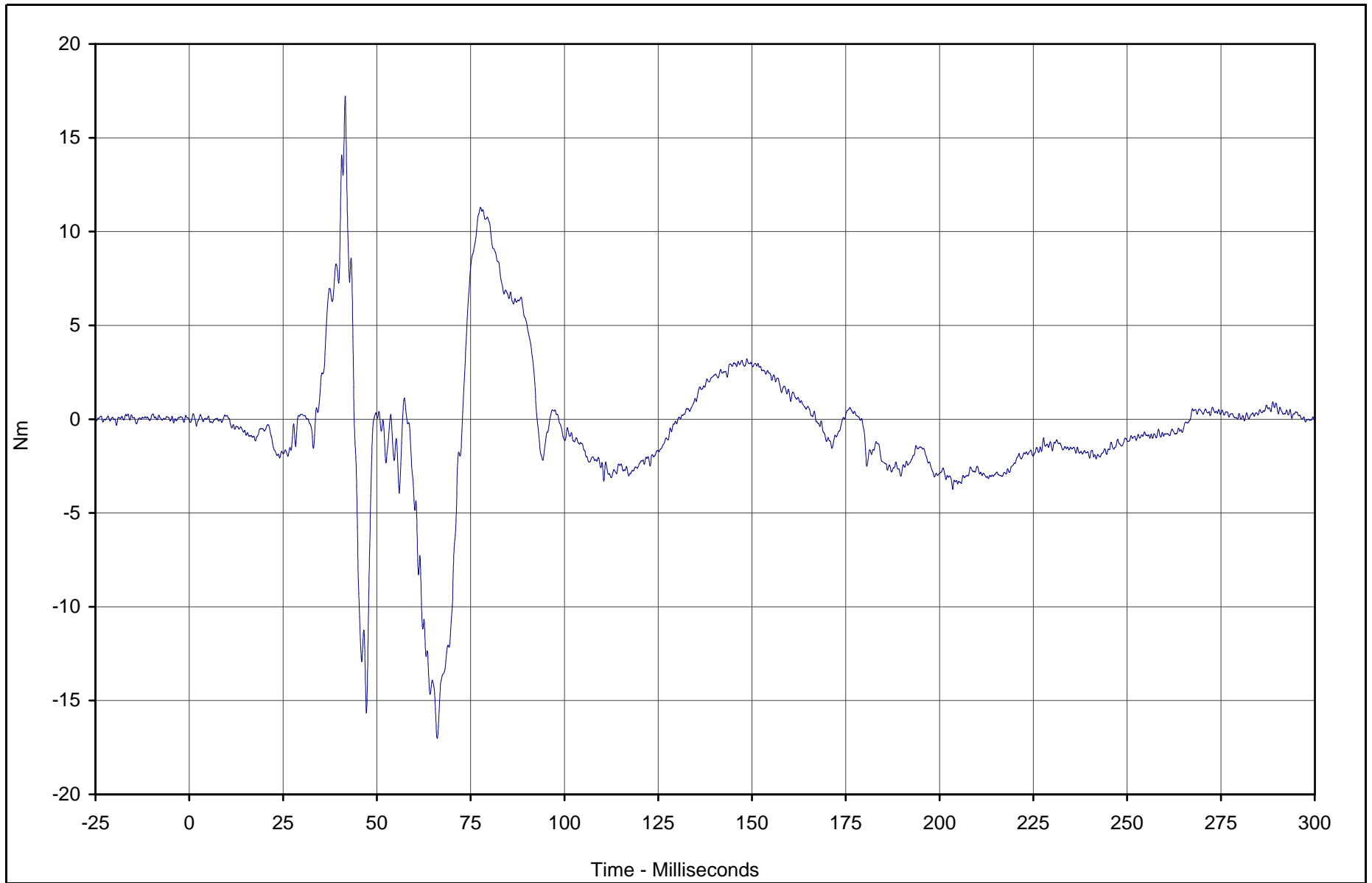
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-49



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Right Lower Tibia Moment X	032	FIL	Nm	17.2	41.6	-17.0	66.1	600



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

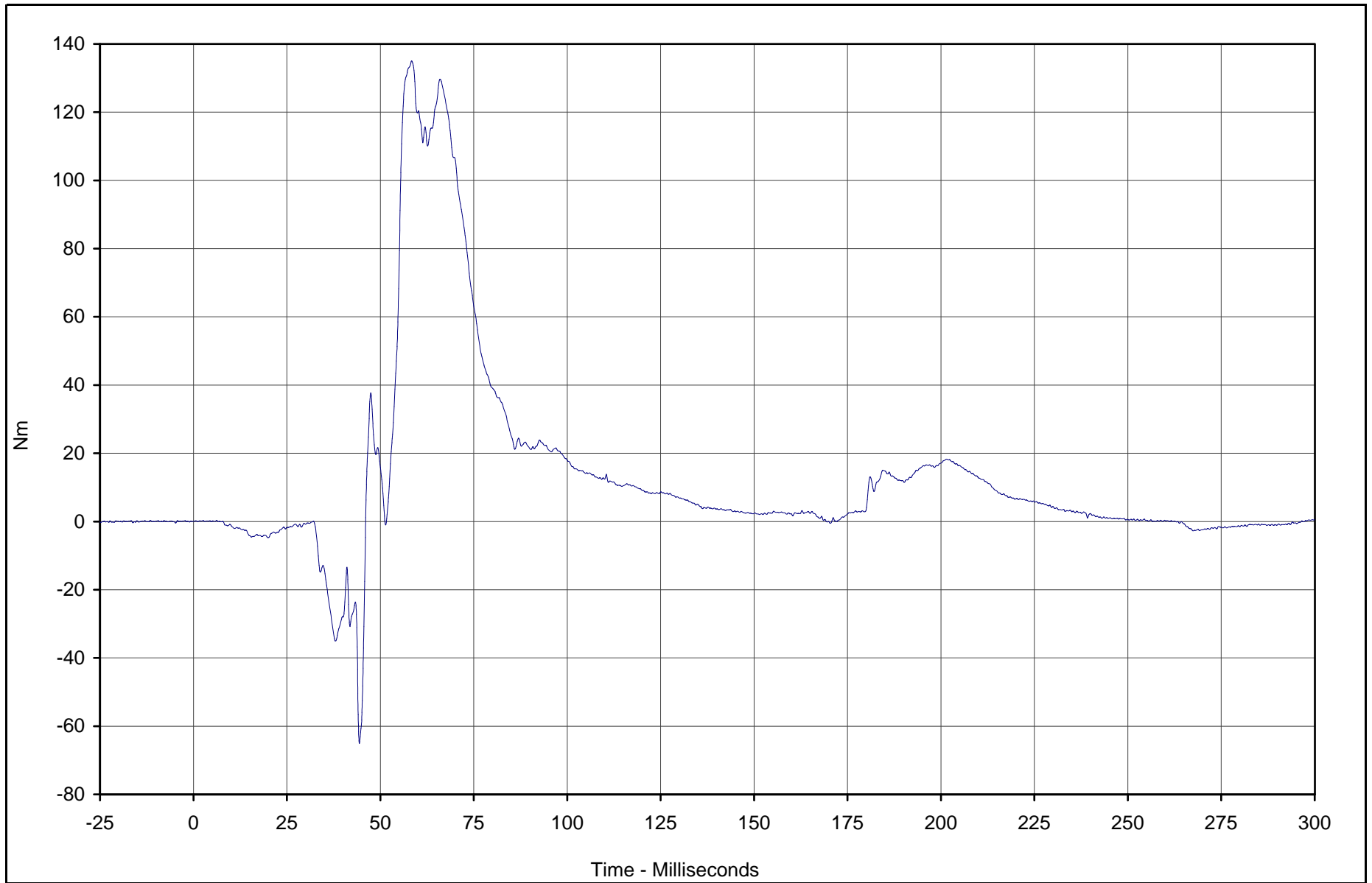
Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

B-50

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Right Lower Tibia Moment Y	033	FIL	Nm	135.1	58.4	-65.1	44.4	600



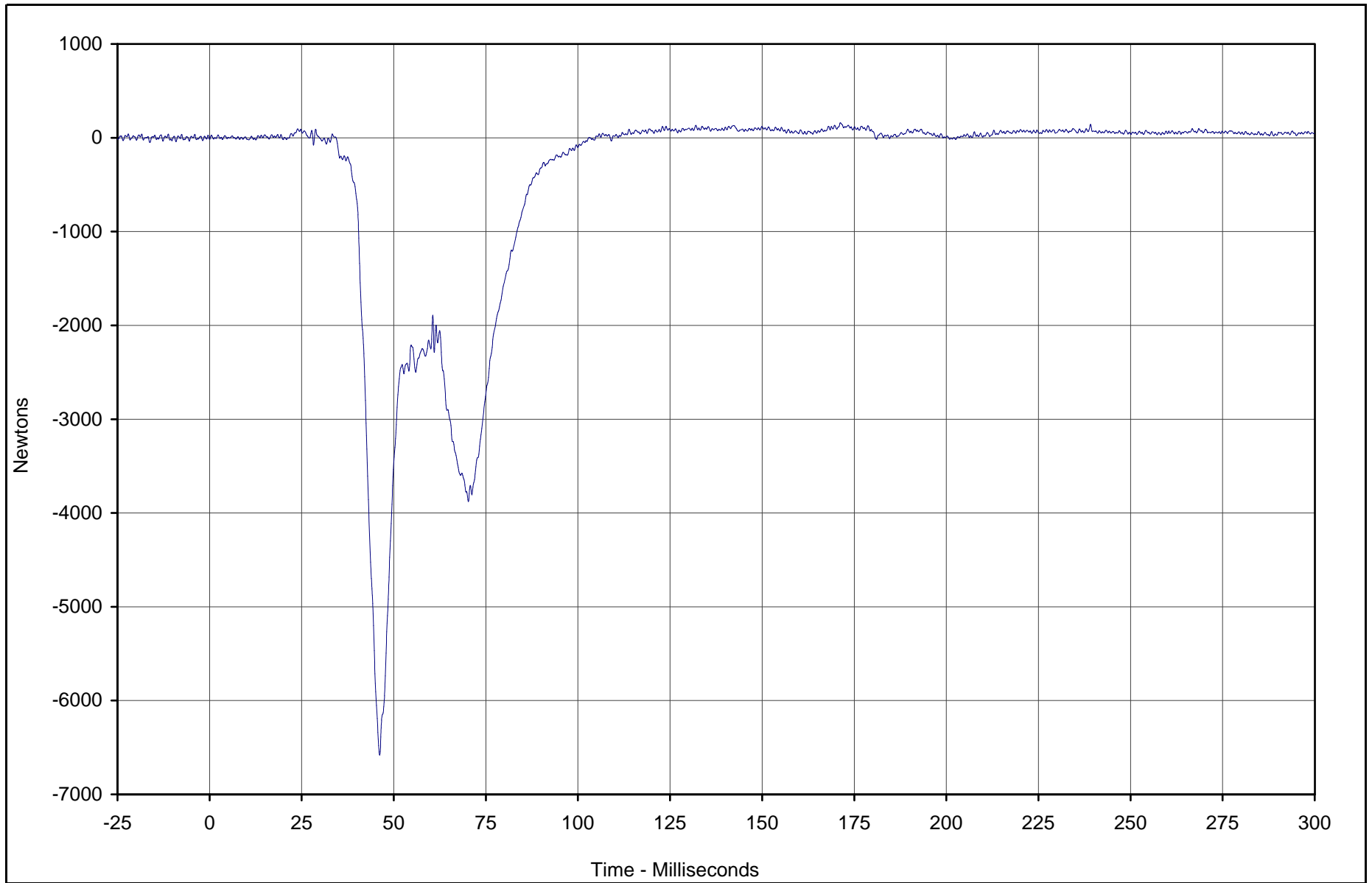
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-51



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Right Lower Tibia Force Z	034	FIL	Newtons	159.8	171.2	-6580.2	46.2	600

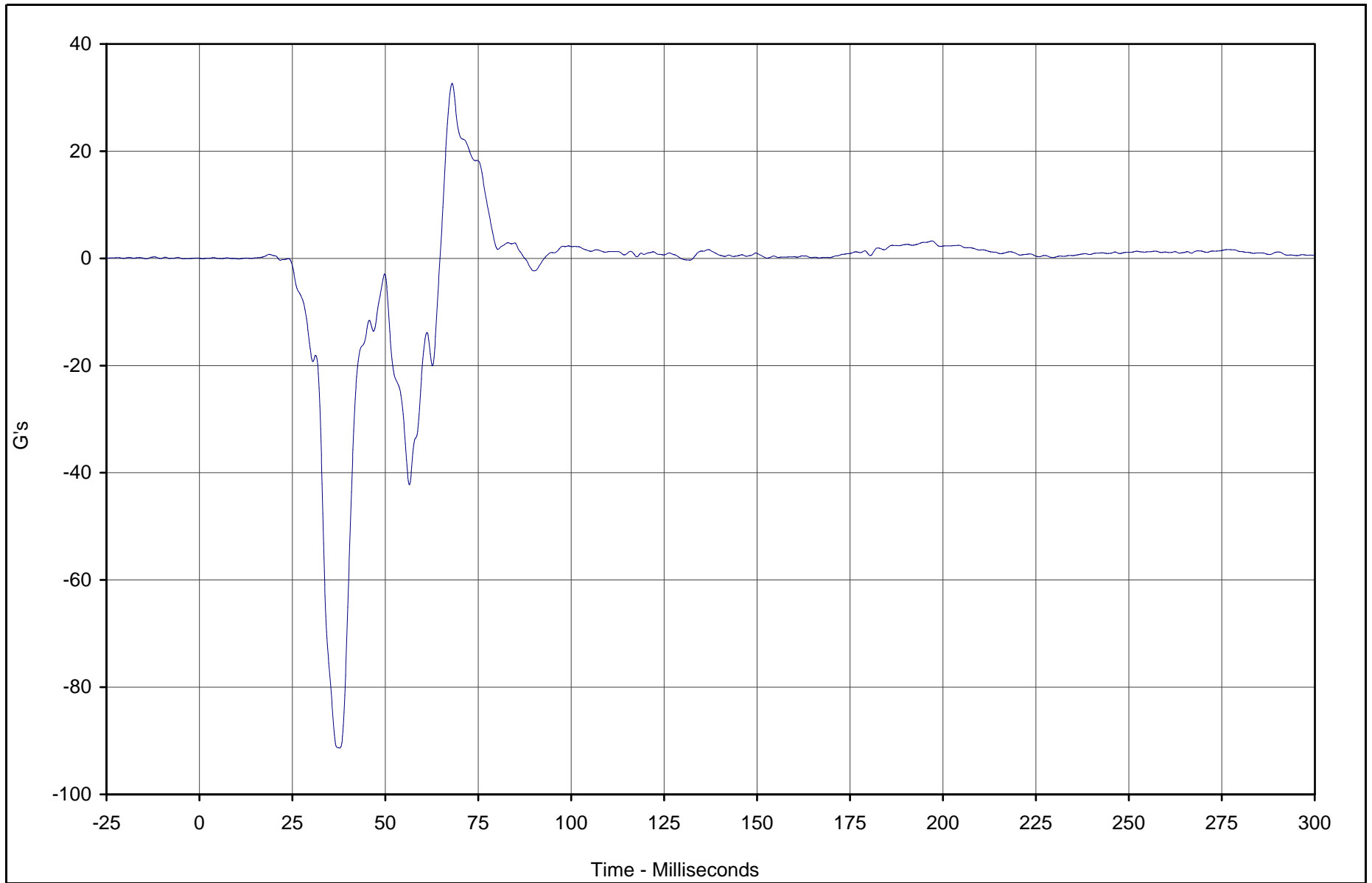


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Left Foot Aft X	035	FIL	G's	32.7	68.0	-91.3	37.7	180

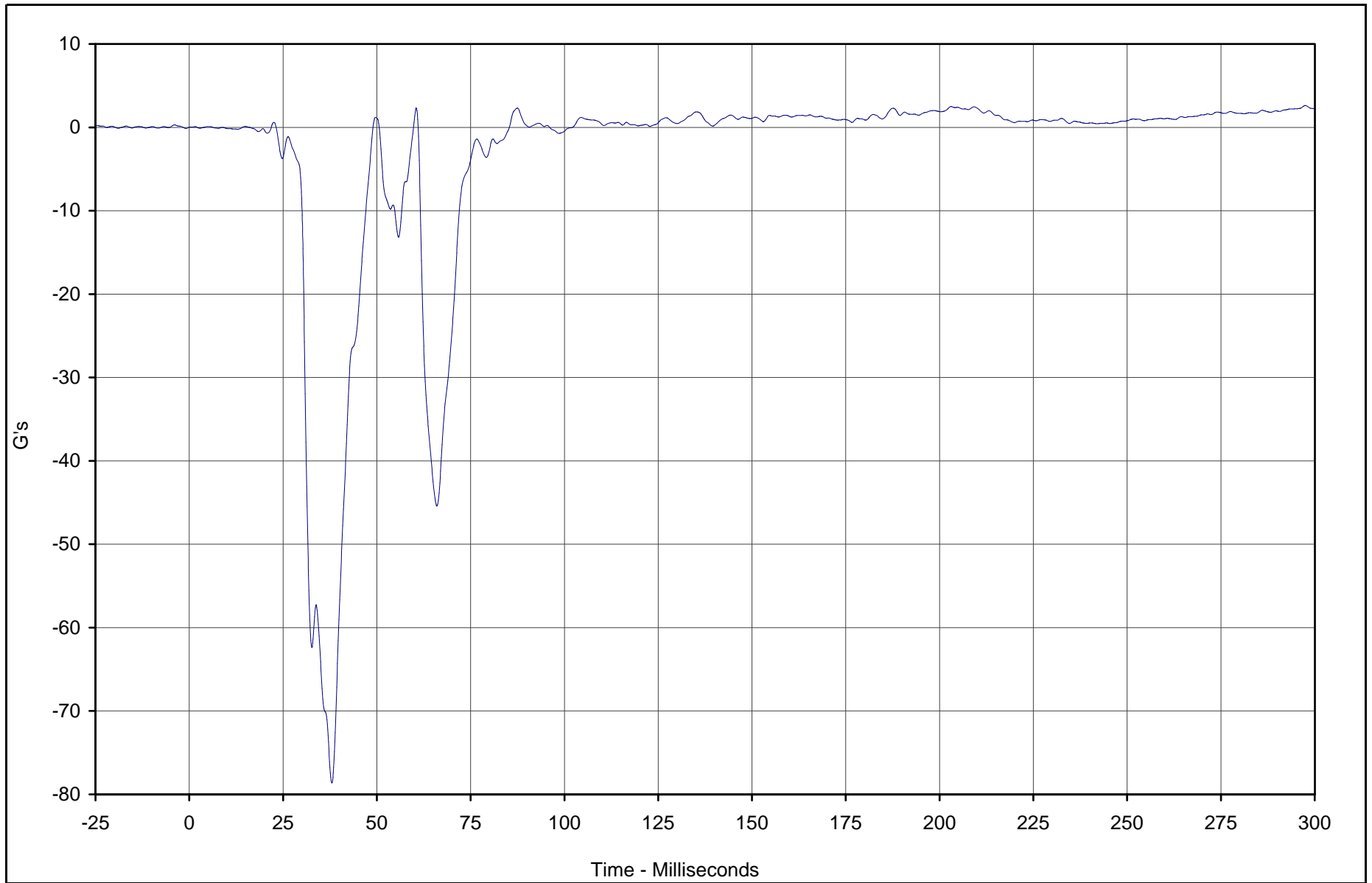


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Left Foot Aft Z	036	FIL	G's	2.6	297.5	-78.6	38.0	180



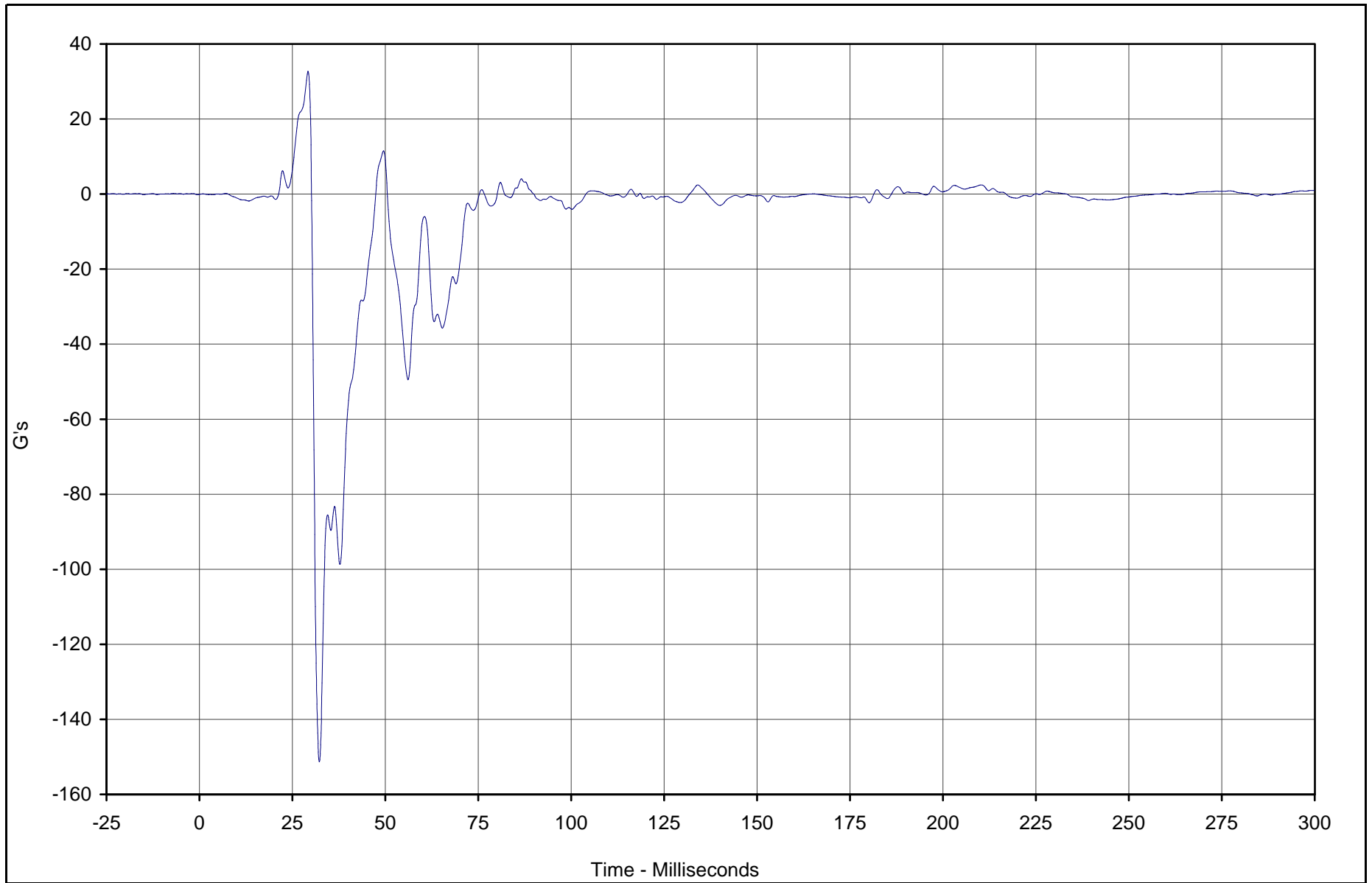
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-54



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Left Foot Fore Z	037	FIL	G's	32.7	29.2	-151.3	32.3	180

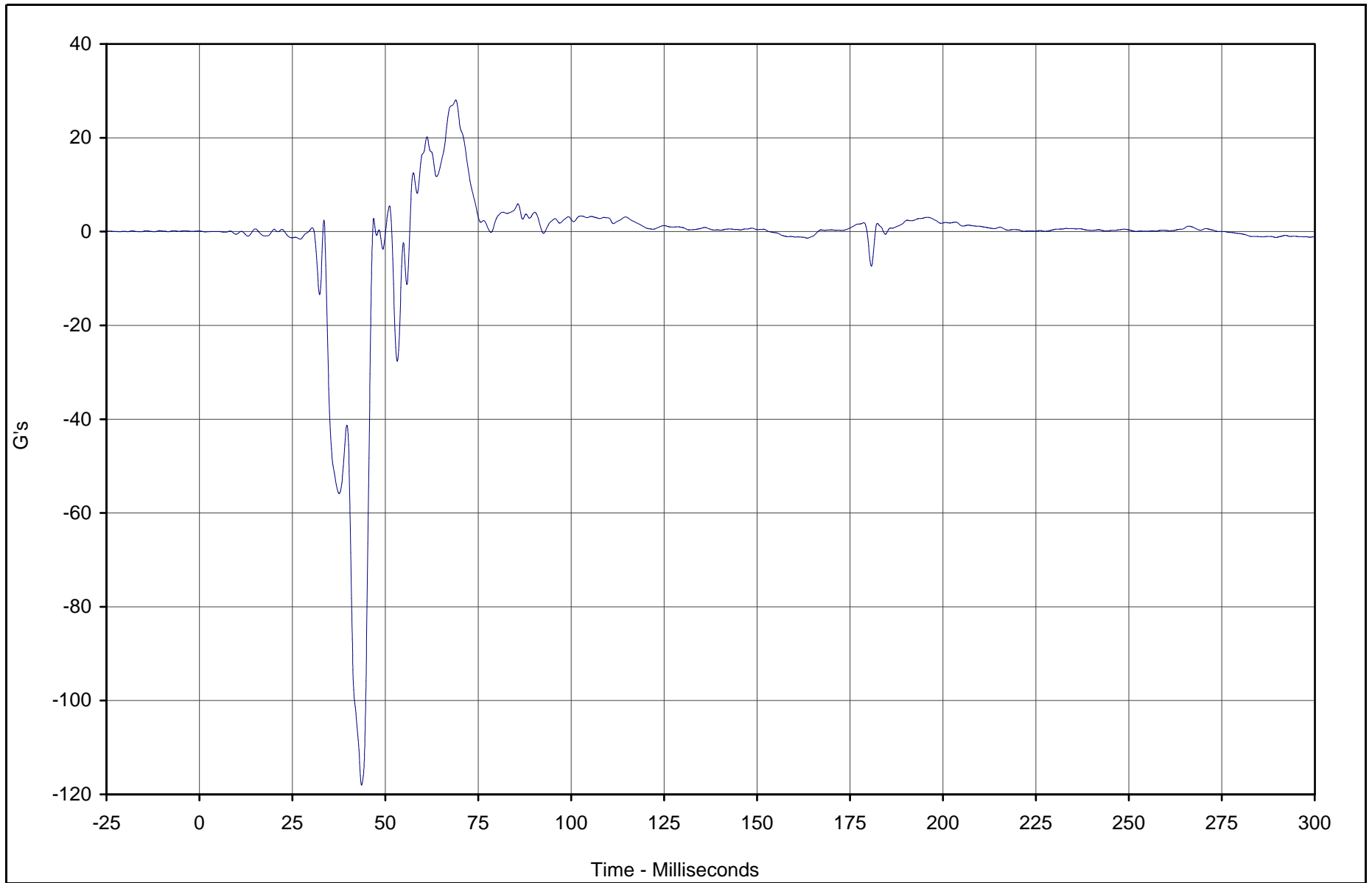


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Right Foot Aft X	038	FIL	G's	28.1	69.0	-118.0	43.6	180



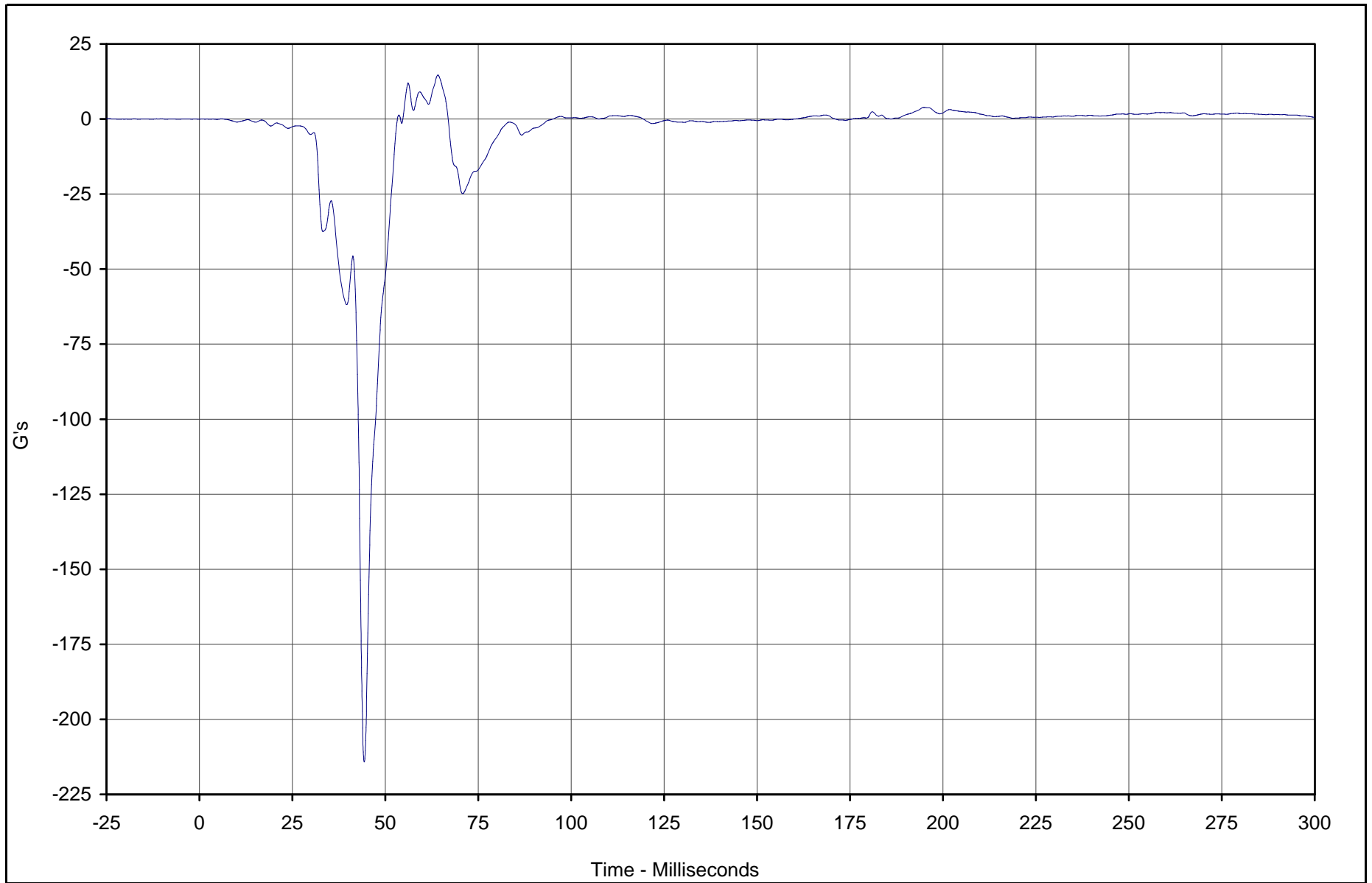
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-56



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Right Foot Aft Z	039	FIL	G's	14.7	64.1	-214.2	44.3	180



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

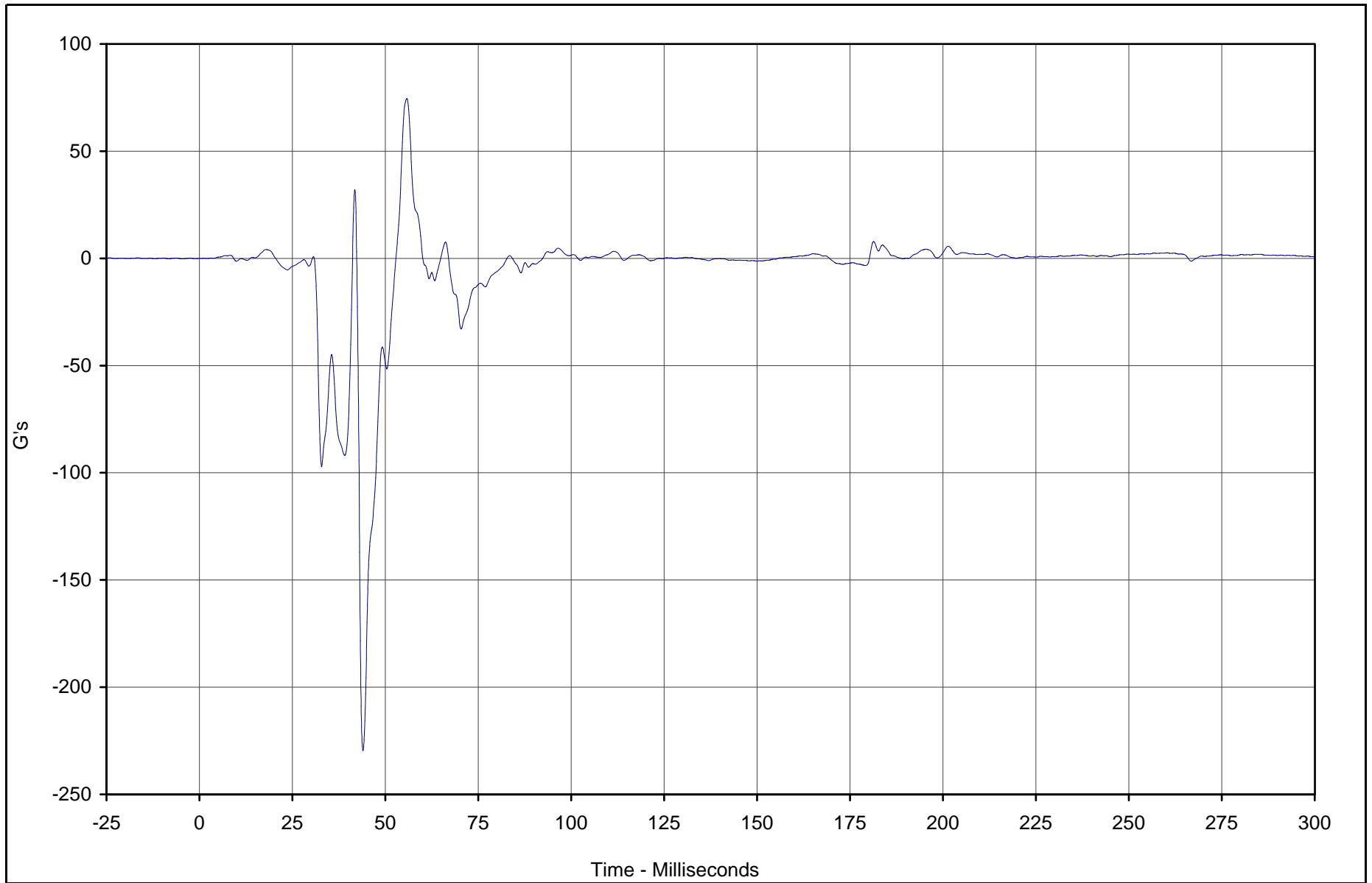
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

B-57



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Right Foot Fore Z	040	FIL	G's	74.5	55.8	-229.7	44.0	180



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

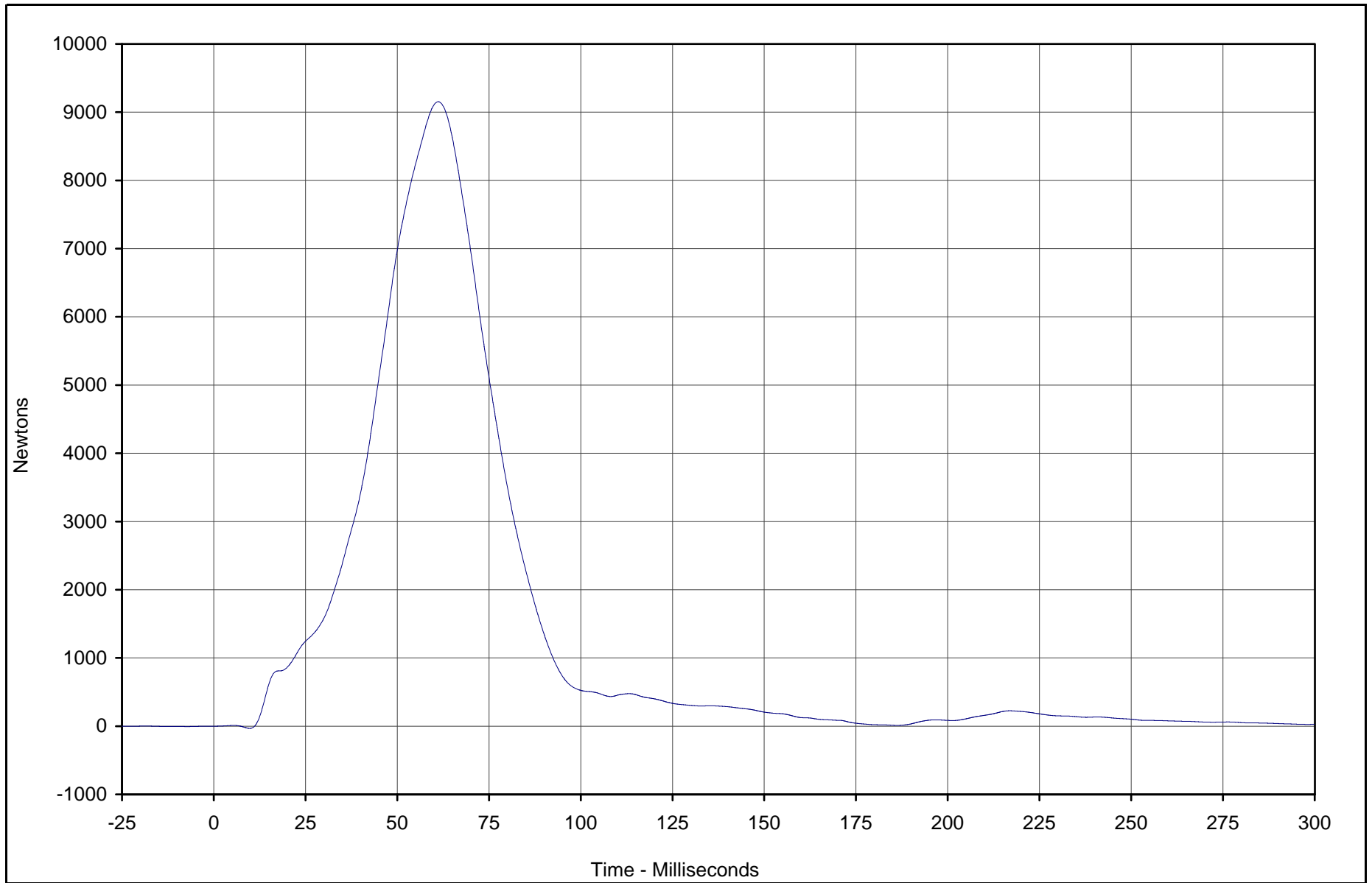
Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

B-58

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Lap Belt Force	041	FIL	Newtons	9153.6	61.2	-32.9	9.8	60

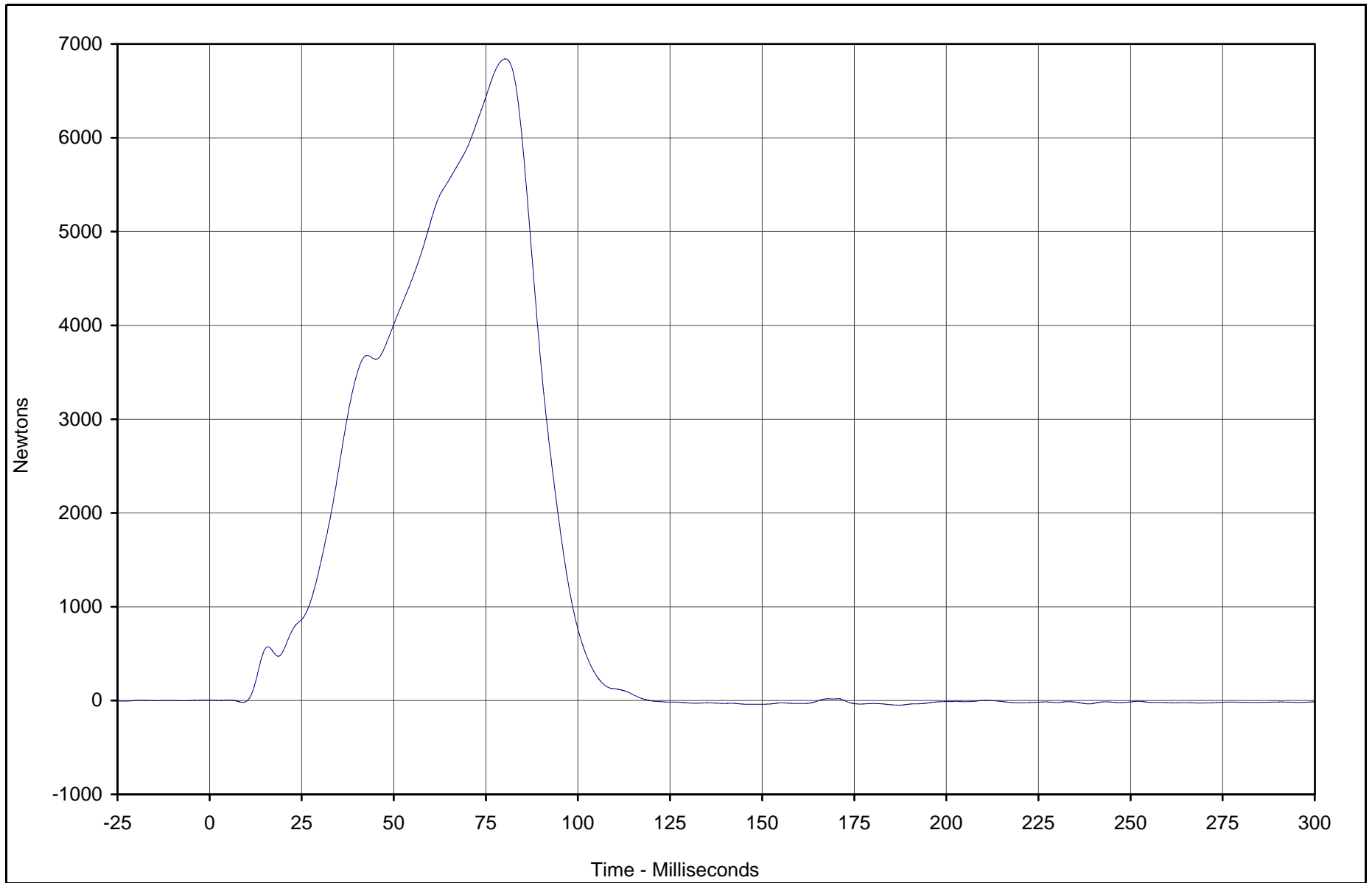


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Shoulder Belt Force	042	FIL	Newtons	6840.7	80.3	-48.7	187.1	60

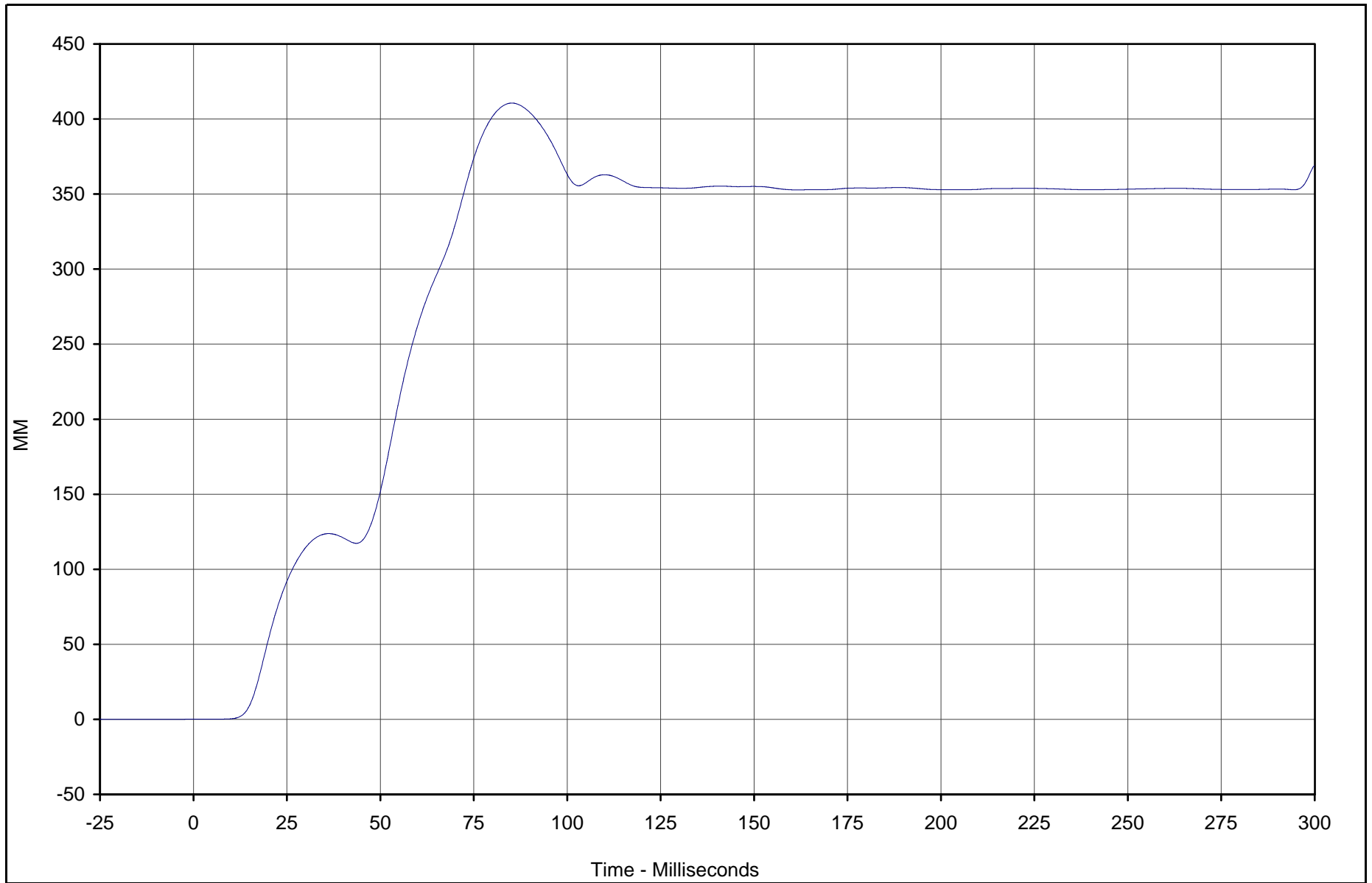


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Driver Shoulder Belt Pullout	043	FIL	MM	410.6	85.2	0.1	4.0	60

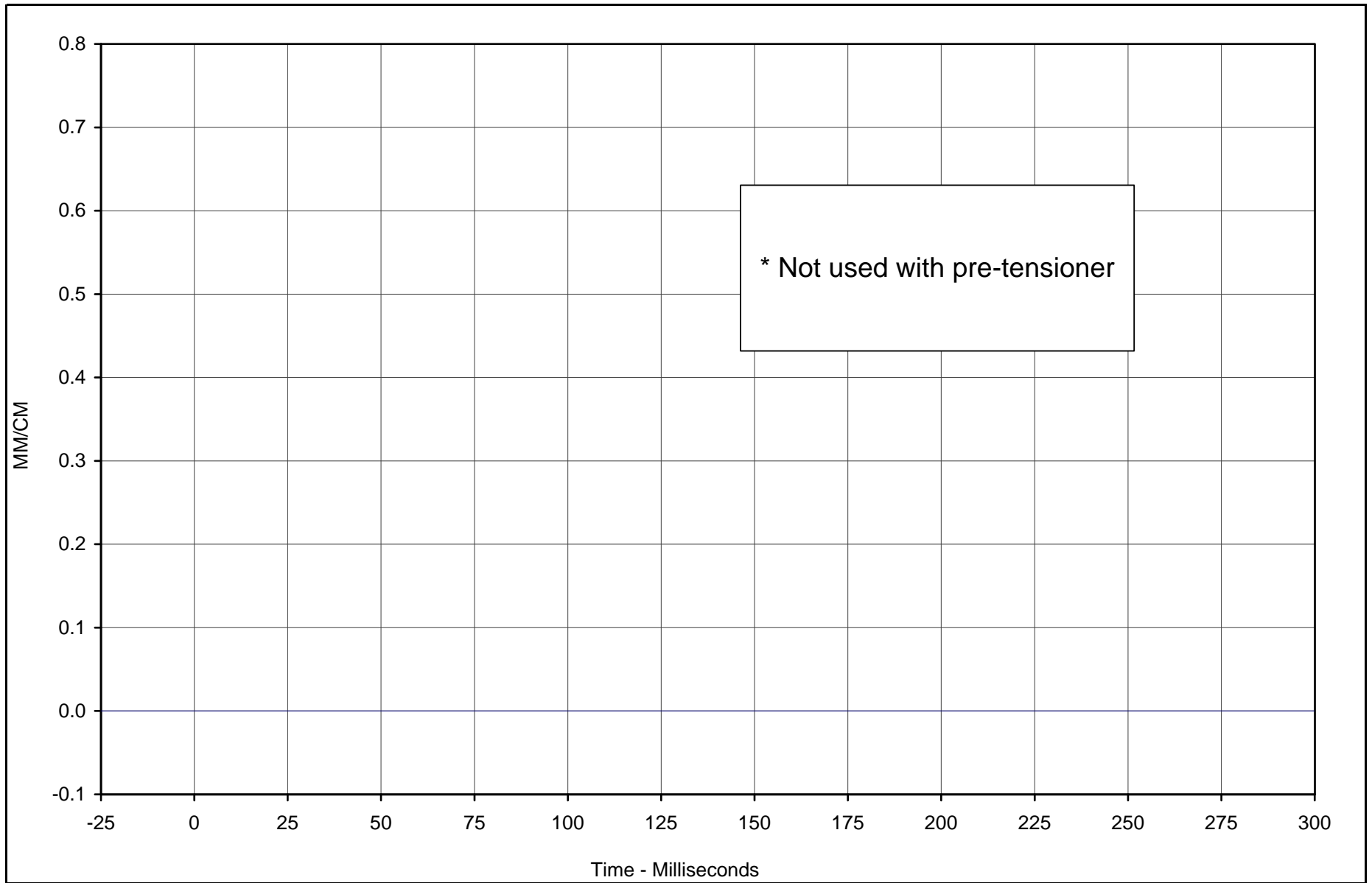


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



* 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 Jaguar X-Type 4 Door Sedan

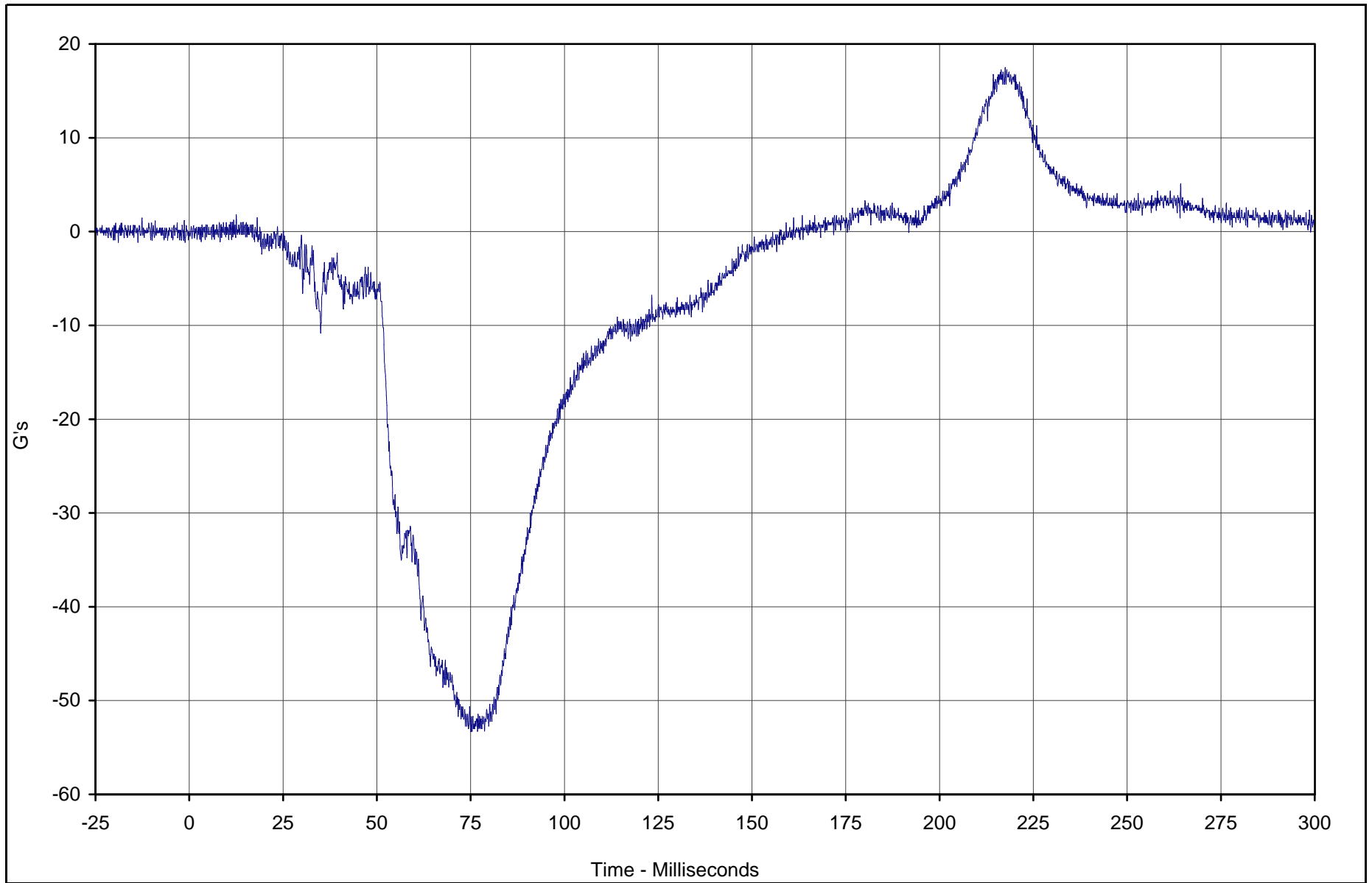
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-62

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Primary X	045	FIL	G's	17.5	217.5	-53.3	75.1	1000

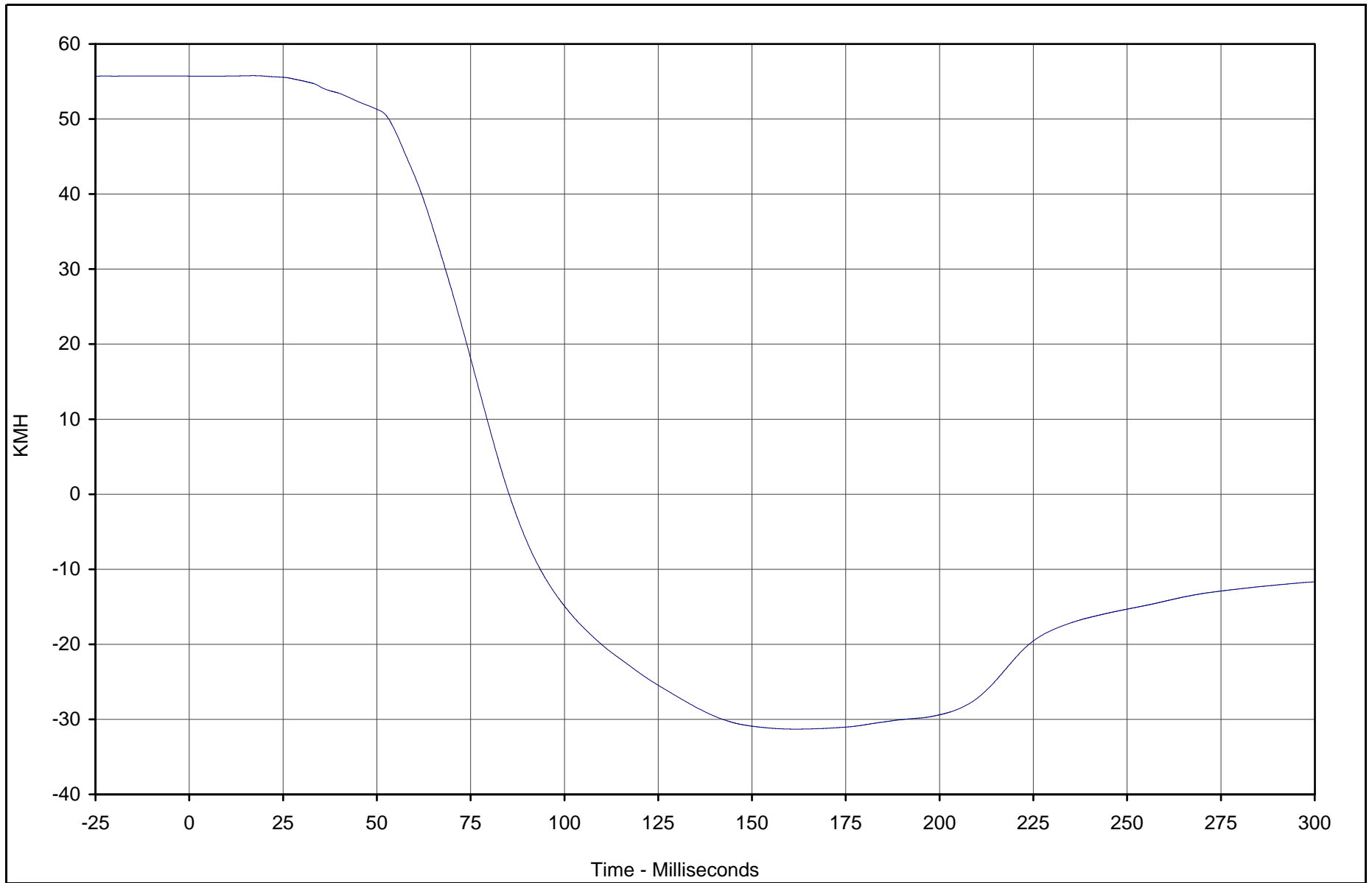


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Primary X Velocity	045	IN1	KMH	55.8	16.9	-31.3	161.7	180



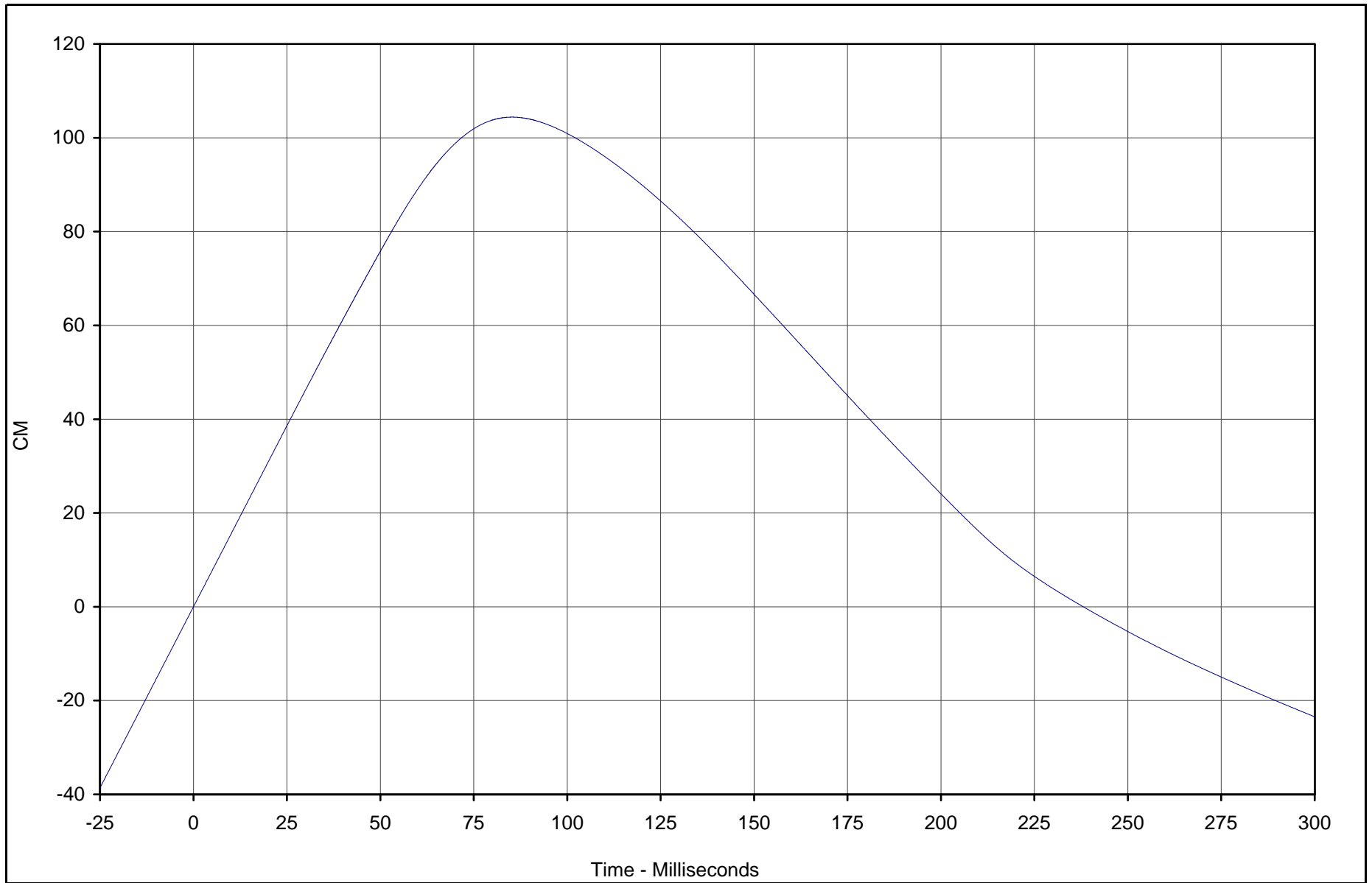
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-64



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Primary X Displ.	045	IN2	CM	104.4	85.2	-23.4	299.9	180



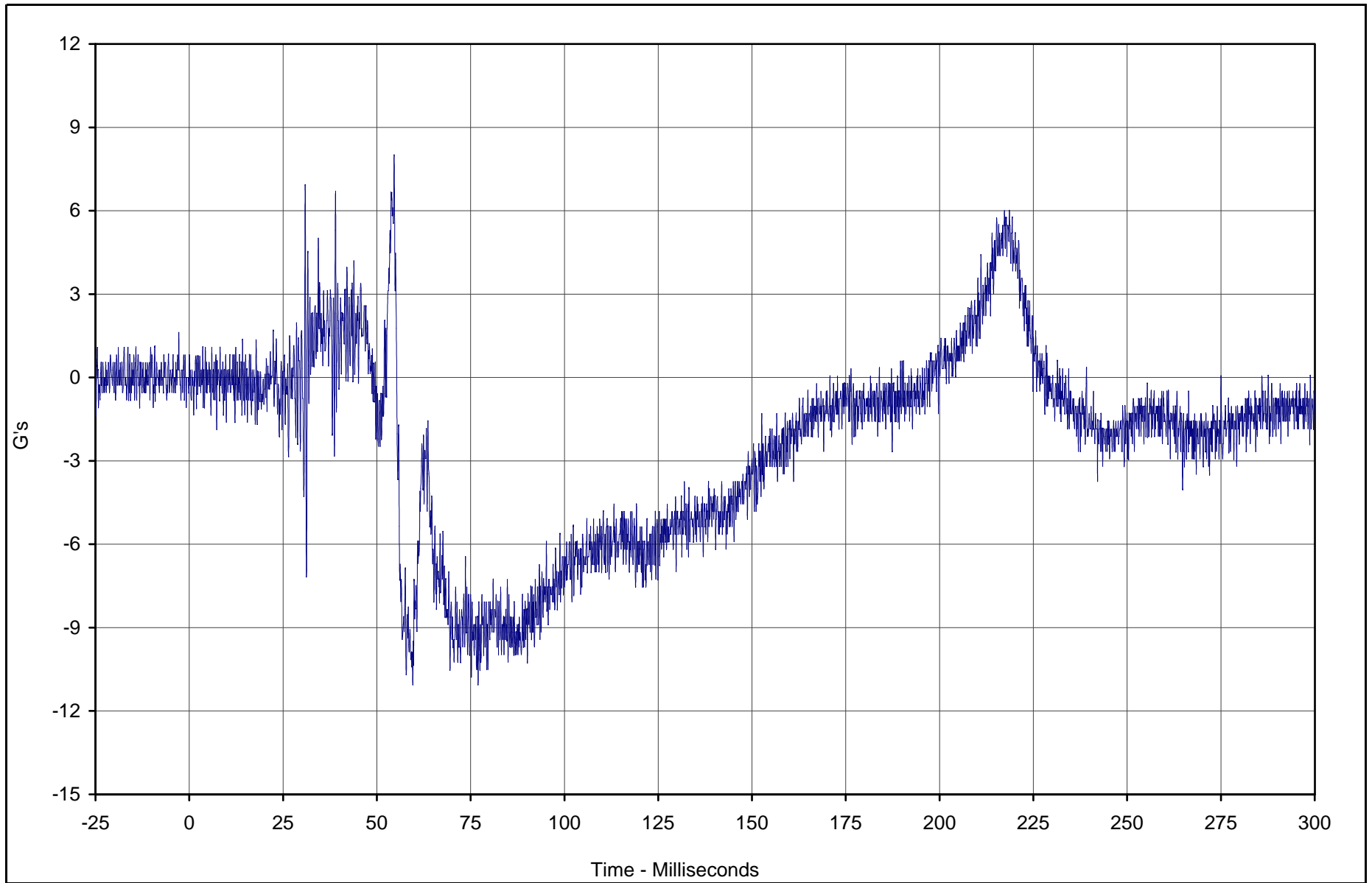
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Primary Y	046	FIL	G's	8.0	54.6	-11.1	77.0	1000

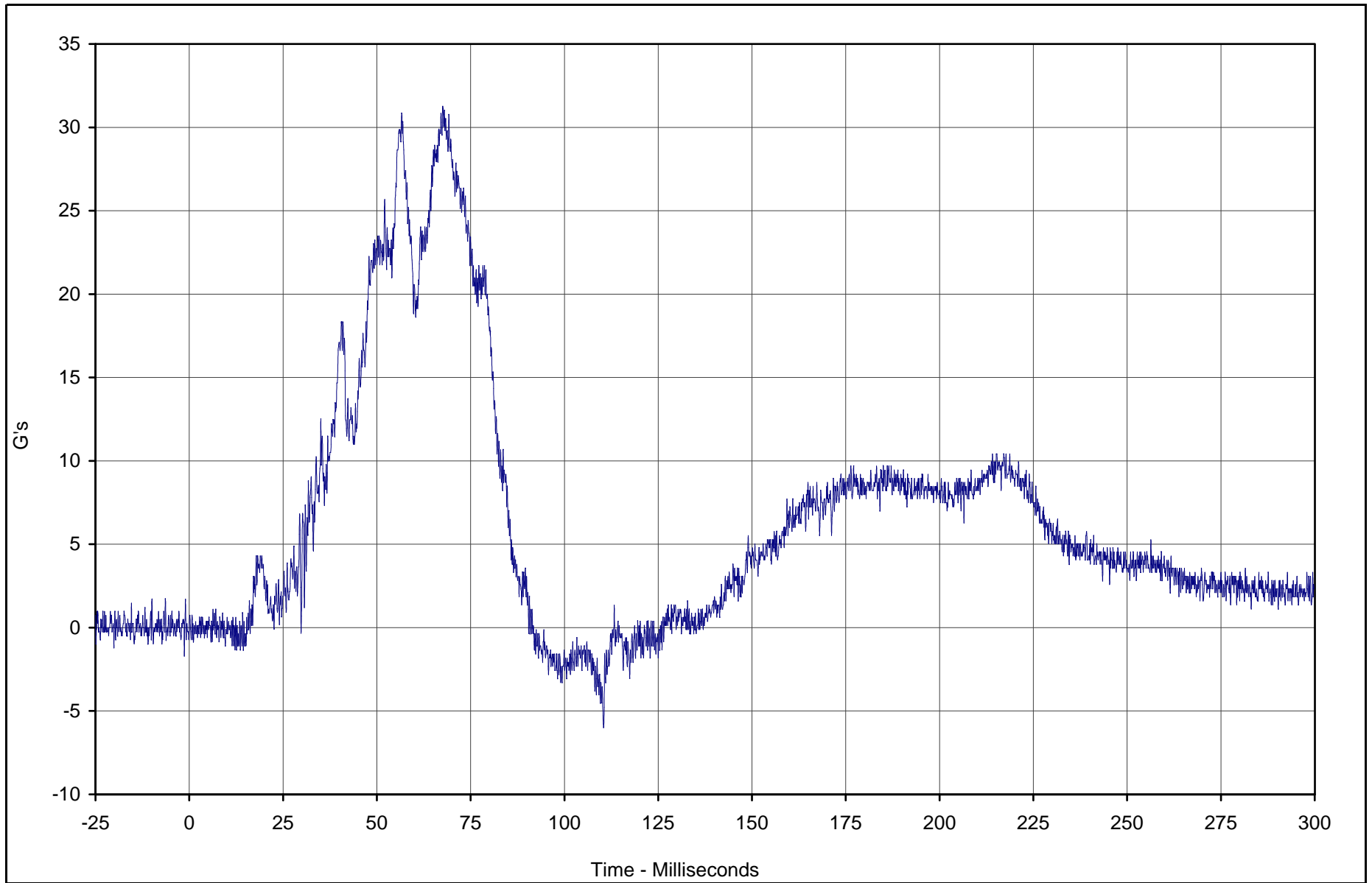


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Primary Z	047	FIL	G's	31.3	67.5	-6.0	110.4	1000



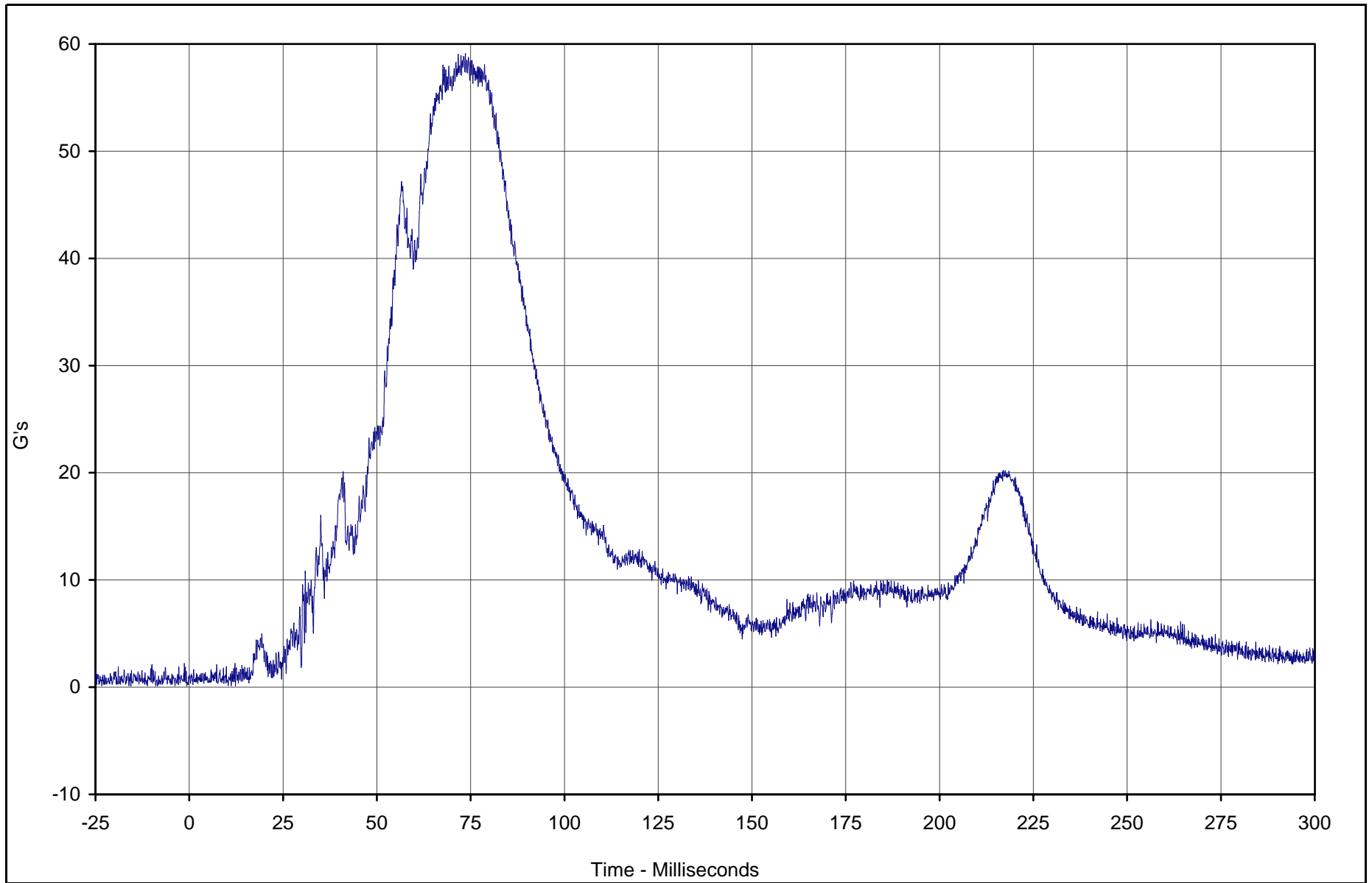
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-67



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Resultant Primary	045	RES	G's	59.1	73.6	0.1	11.2	1000



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

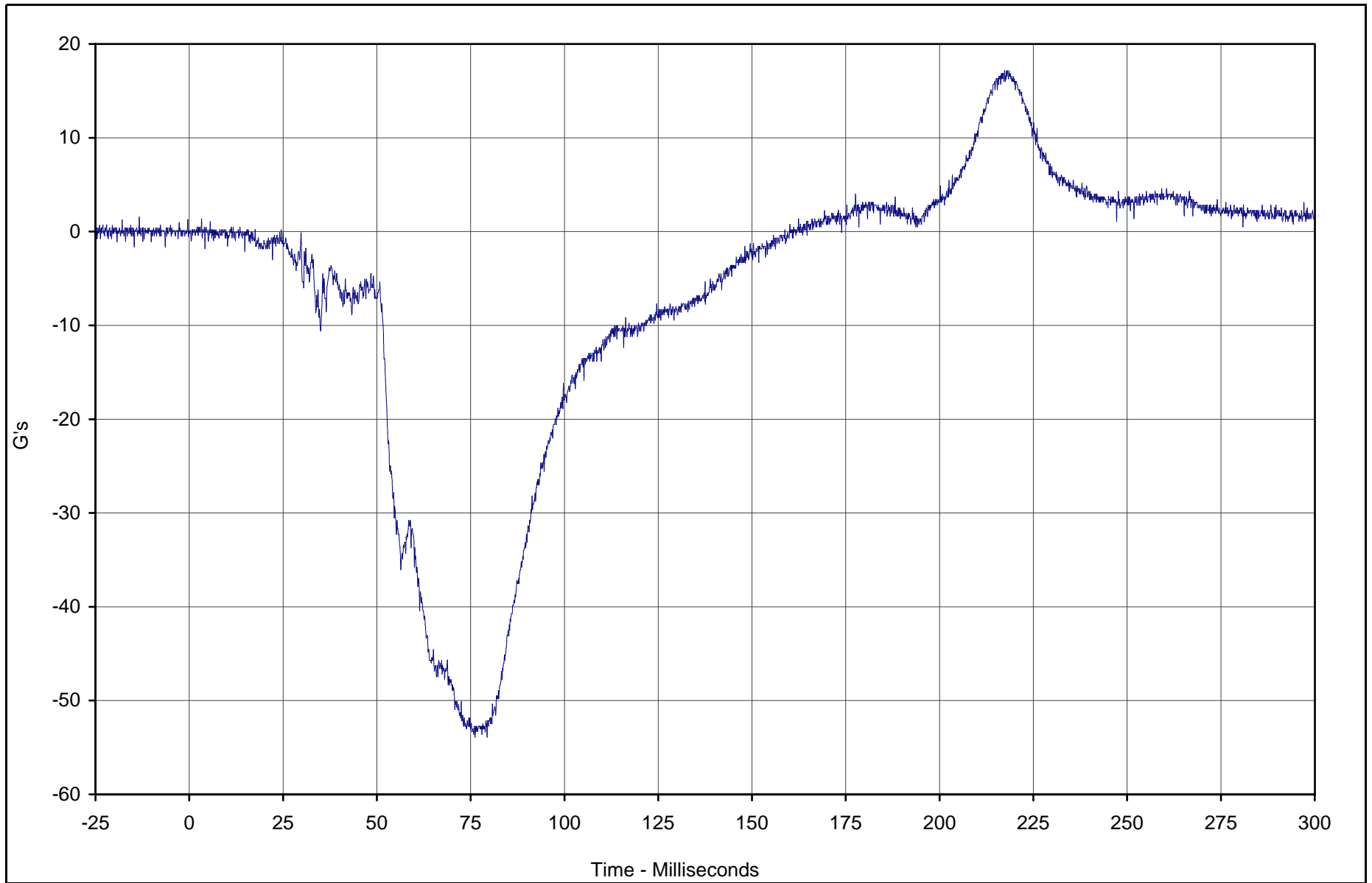
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

B-68



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Redundant X	048	FIL	G's	17.2	217.3	-53.9	76.2	1000



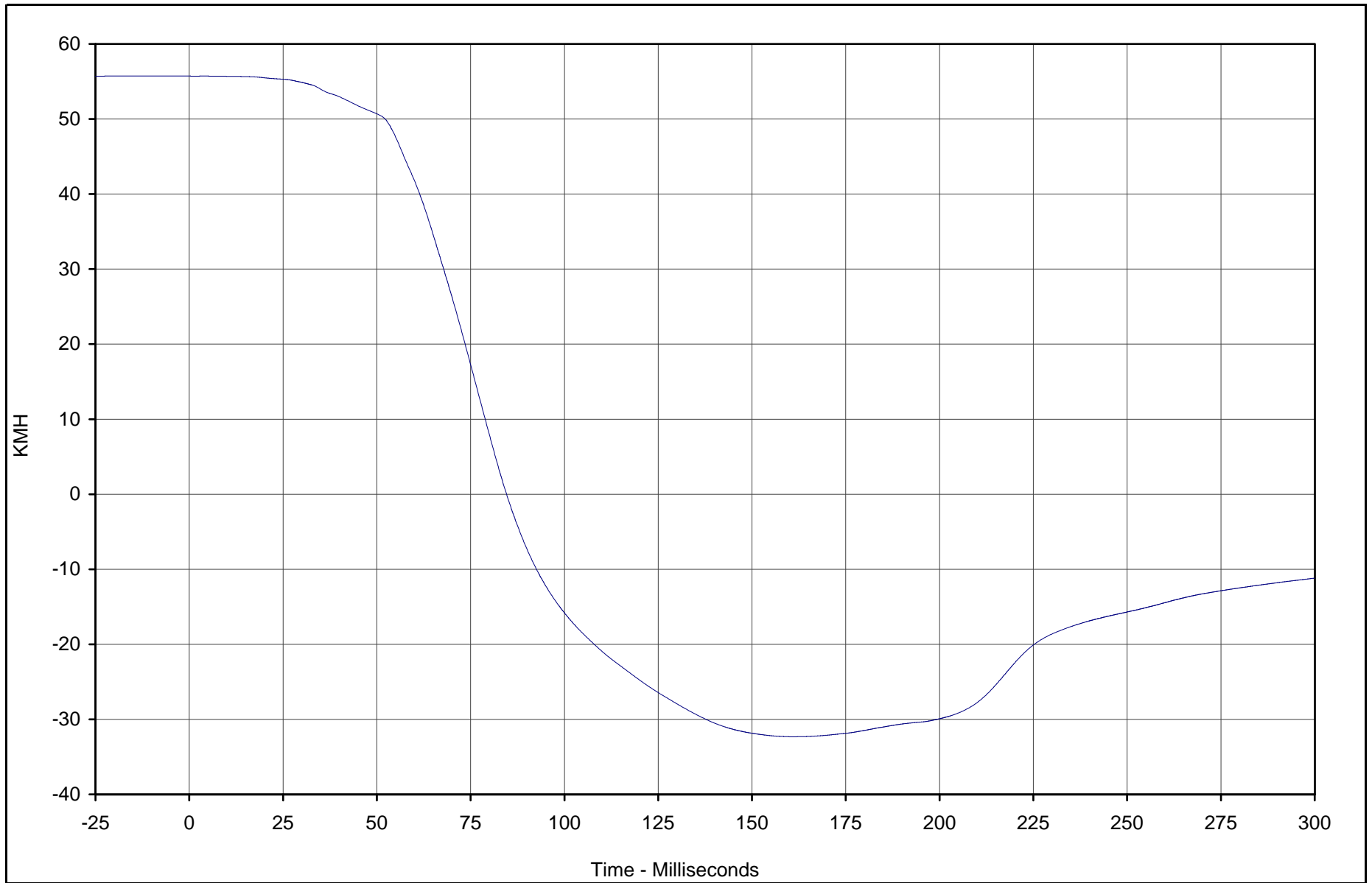
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Redundant X Velocity	048	IN1	KMH	55.7	3.8	-32.3	160.9	180



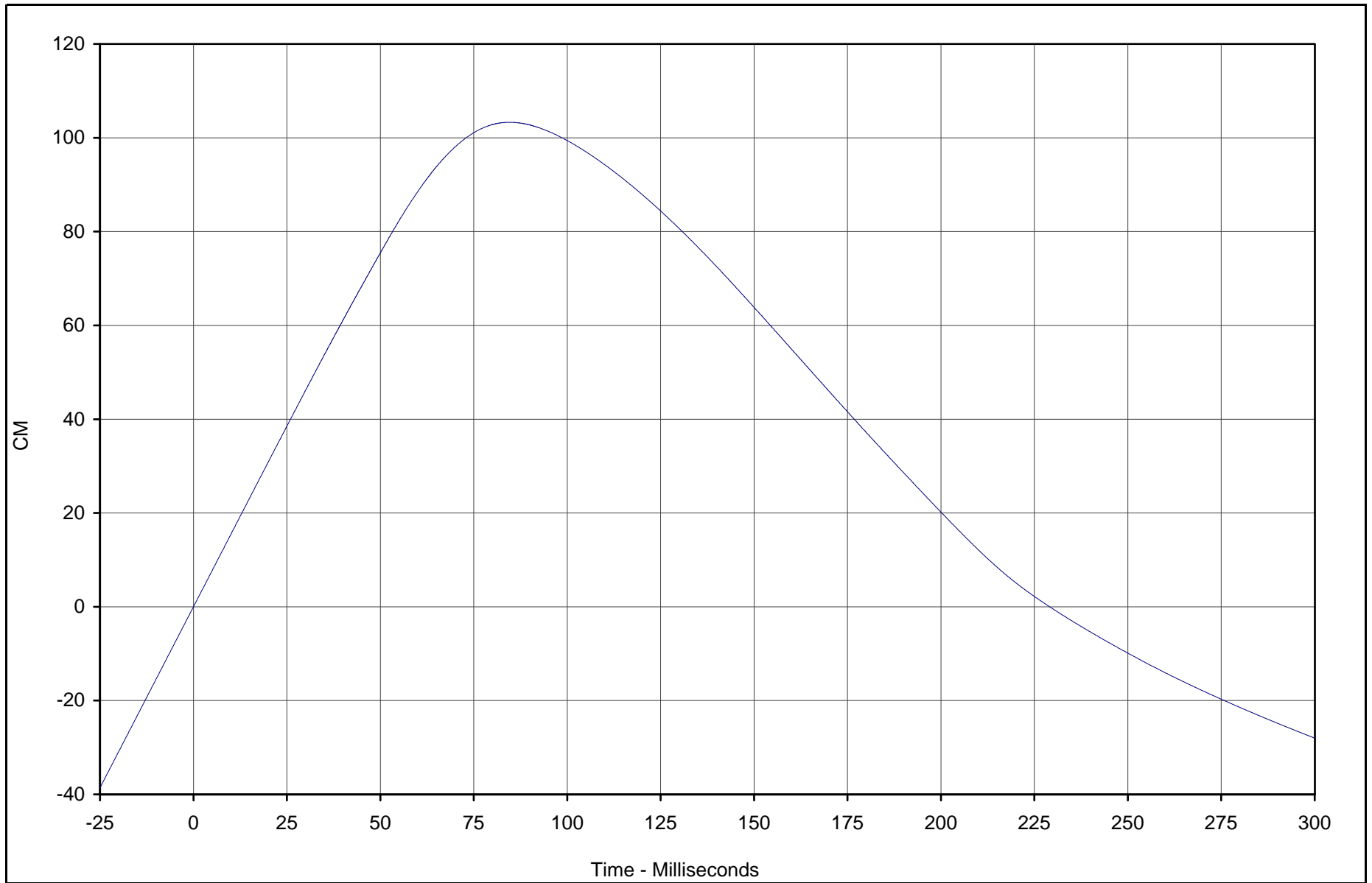
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-70



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Redundant X Displ.	048	IN2	CM	103.3	84.6	-28.0	299.9	180



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

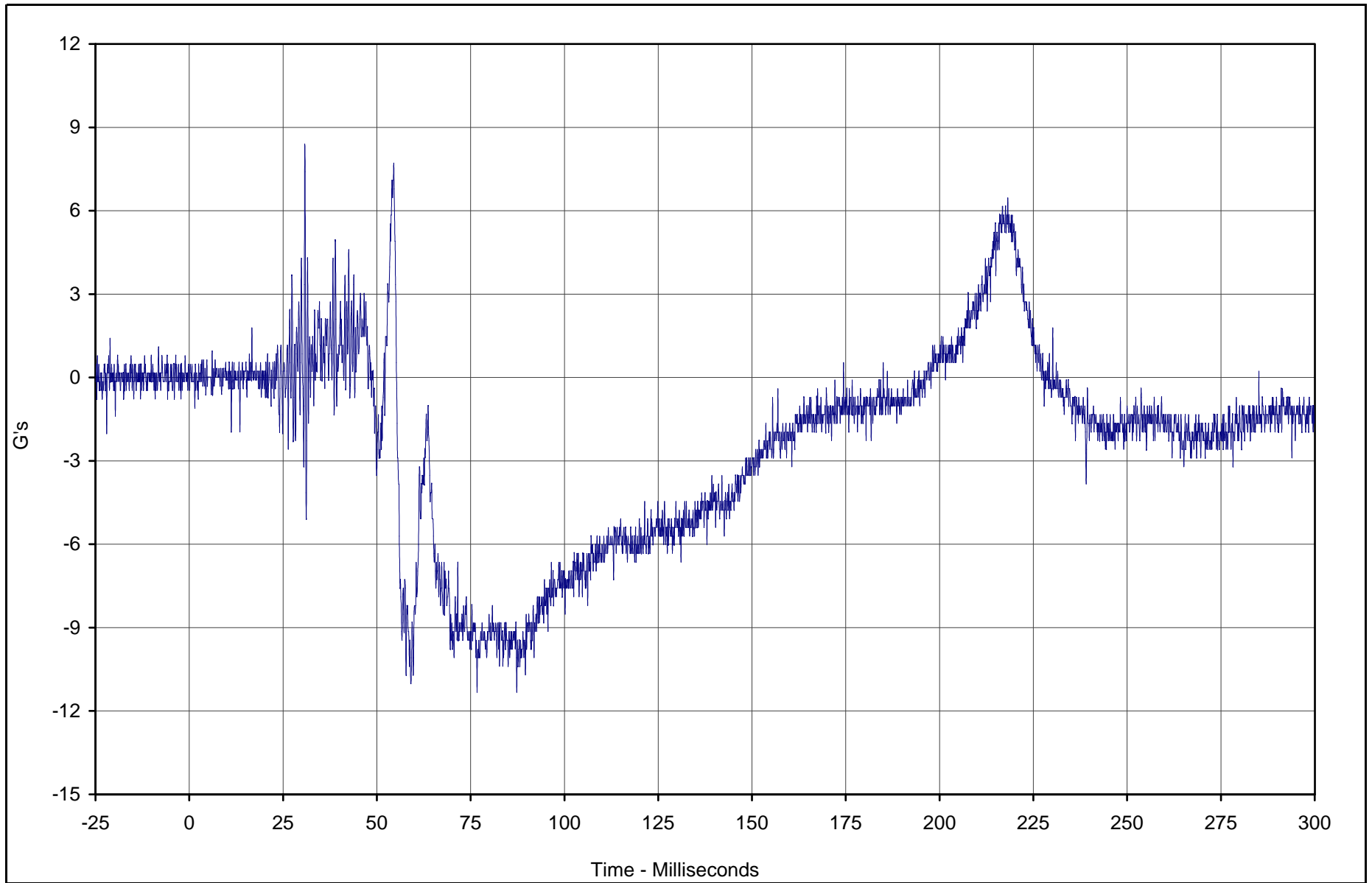
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

B-71



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Redundant Y	049	FIL	G's	8.3	30.8	-11.3	76.7	1000



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

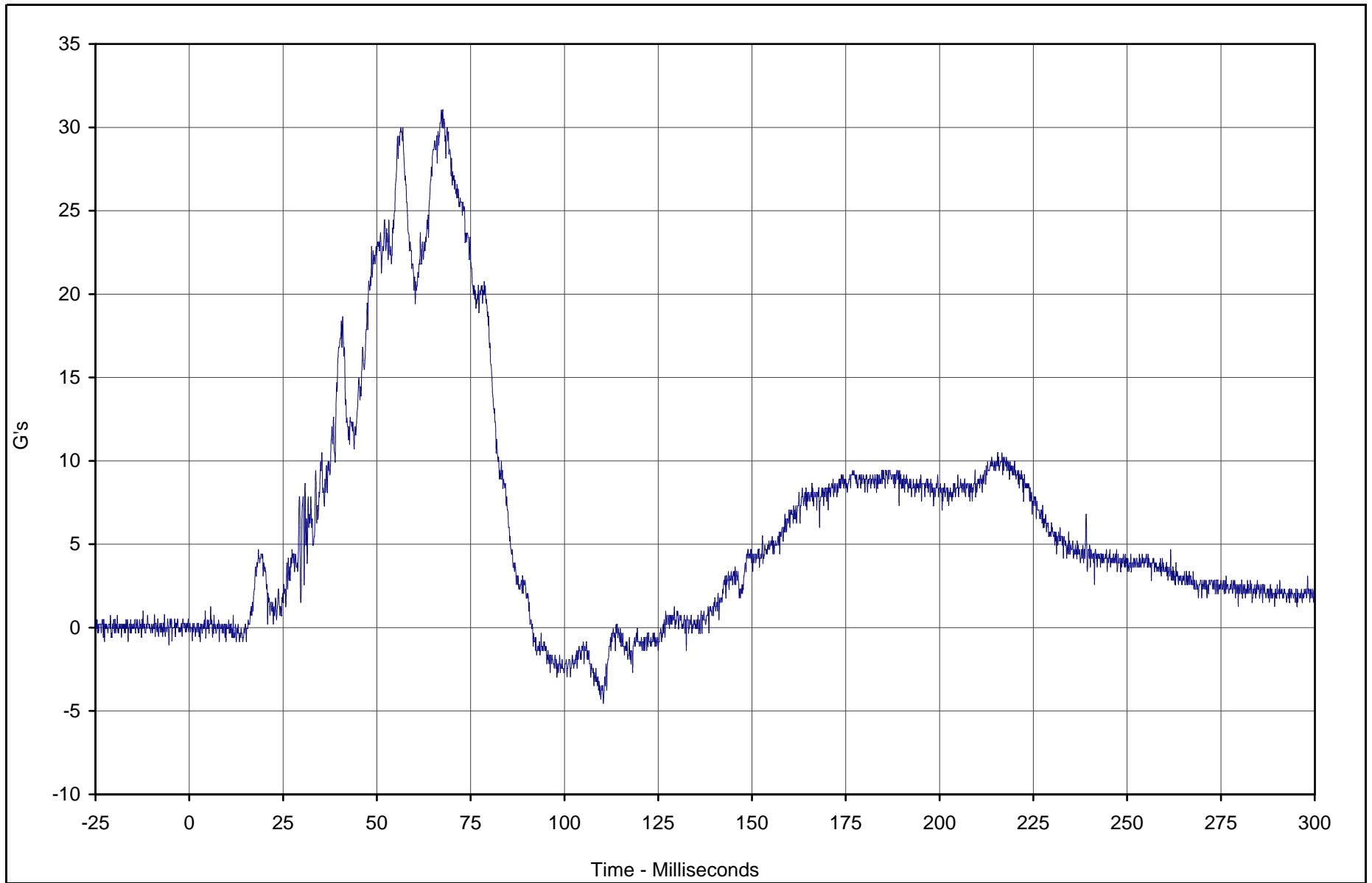
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

B-72



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Redundant Z	050	FIL	G's	31.0	67.2	-4.5	110.4	1000

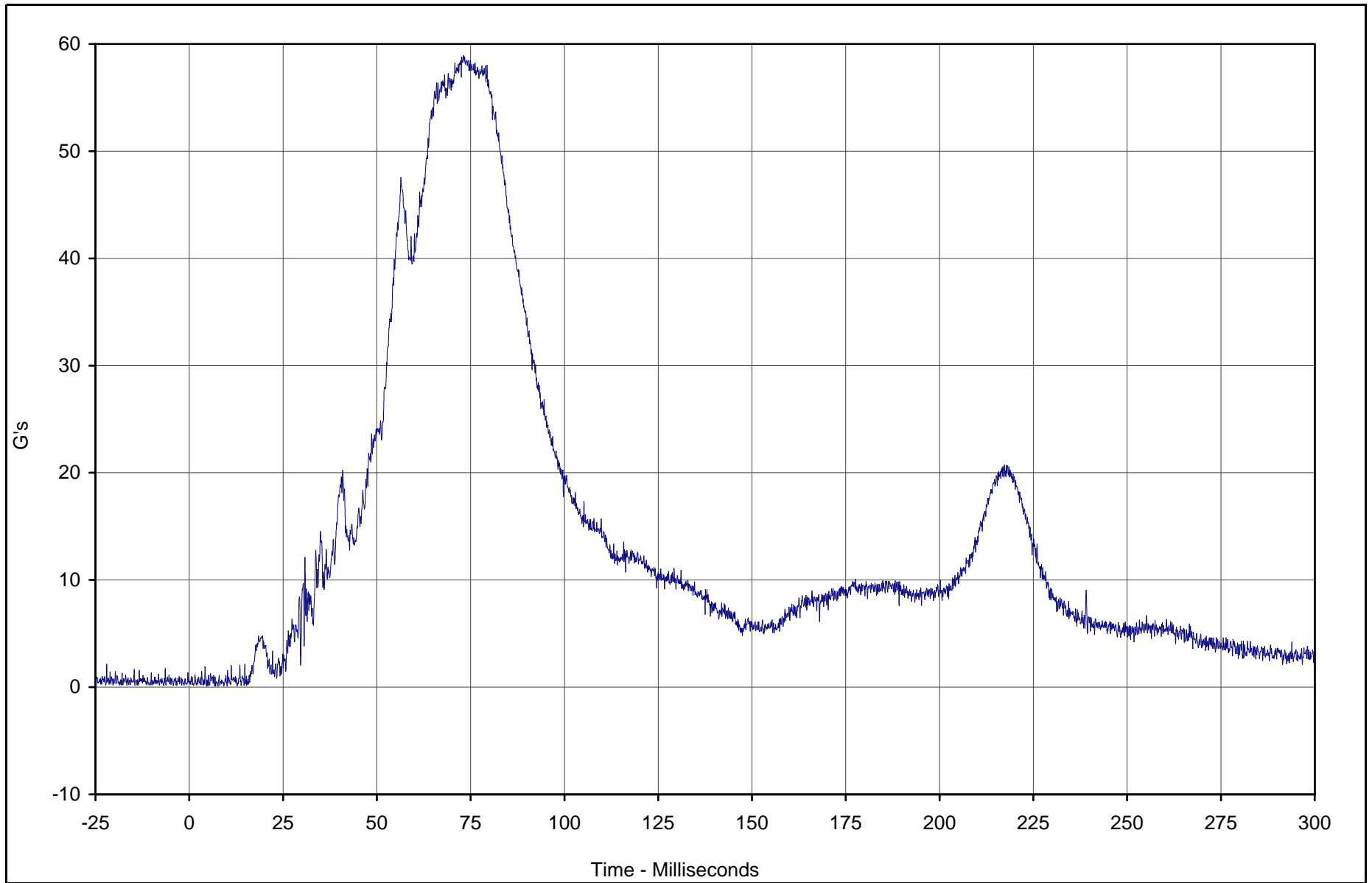


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Head Resultant Redundant	048	RES	G's	58.9	73.1	0.1	4.6	1000



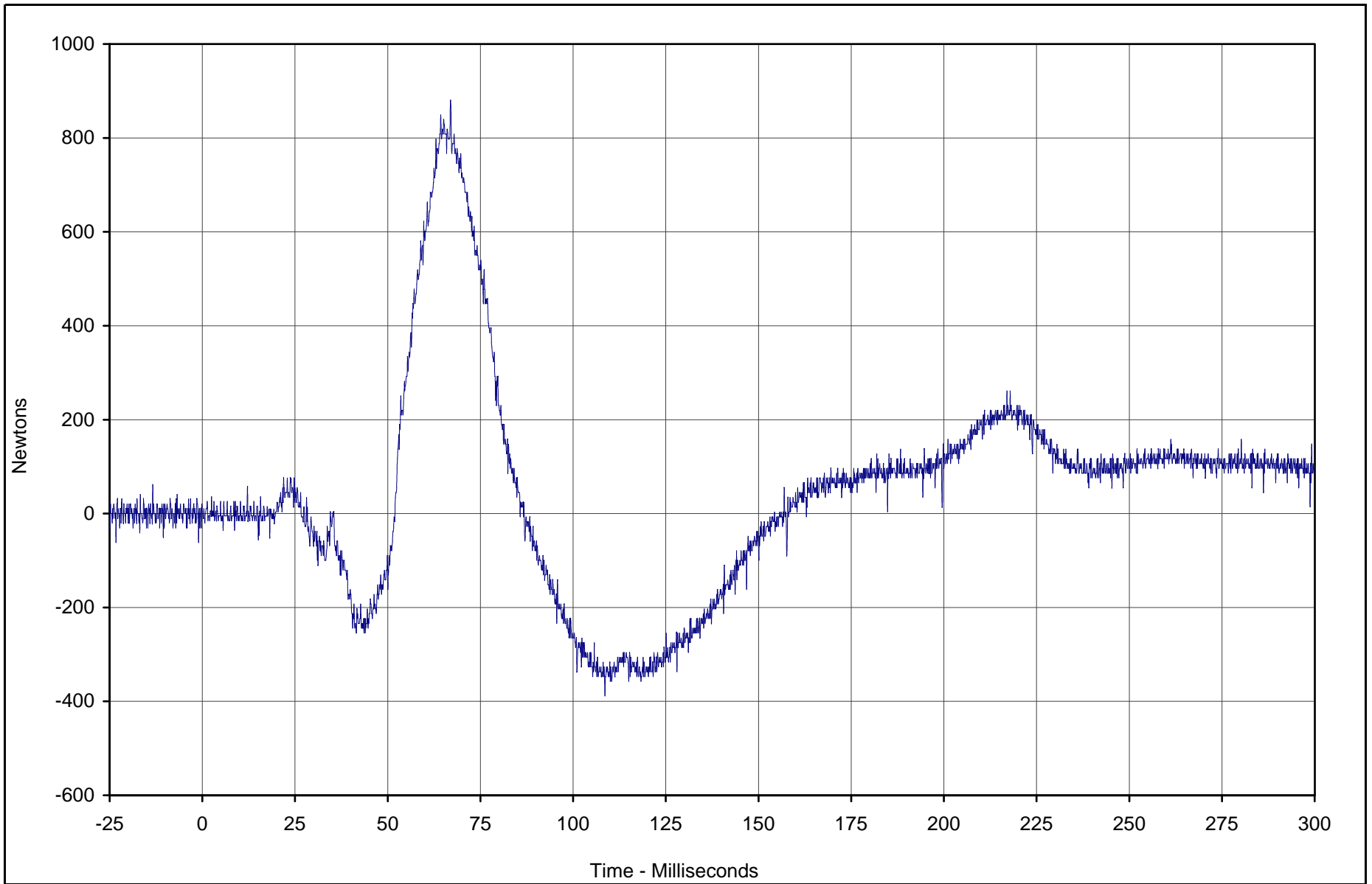
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-74



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Neck Force X	051	FIL	Newtons	880.4	66.9	-388.7	108.6	1000



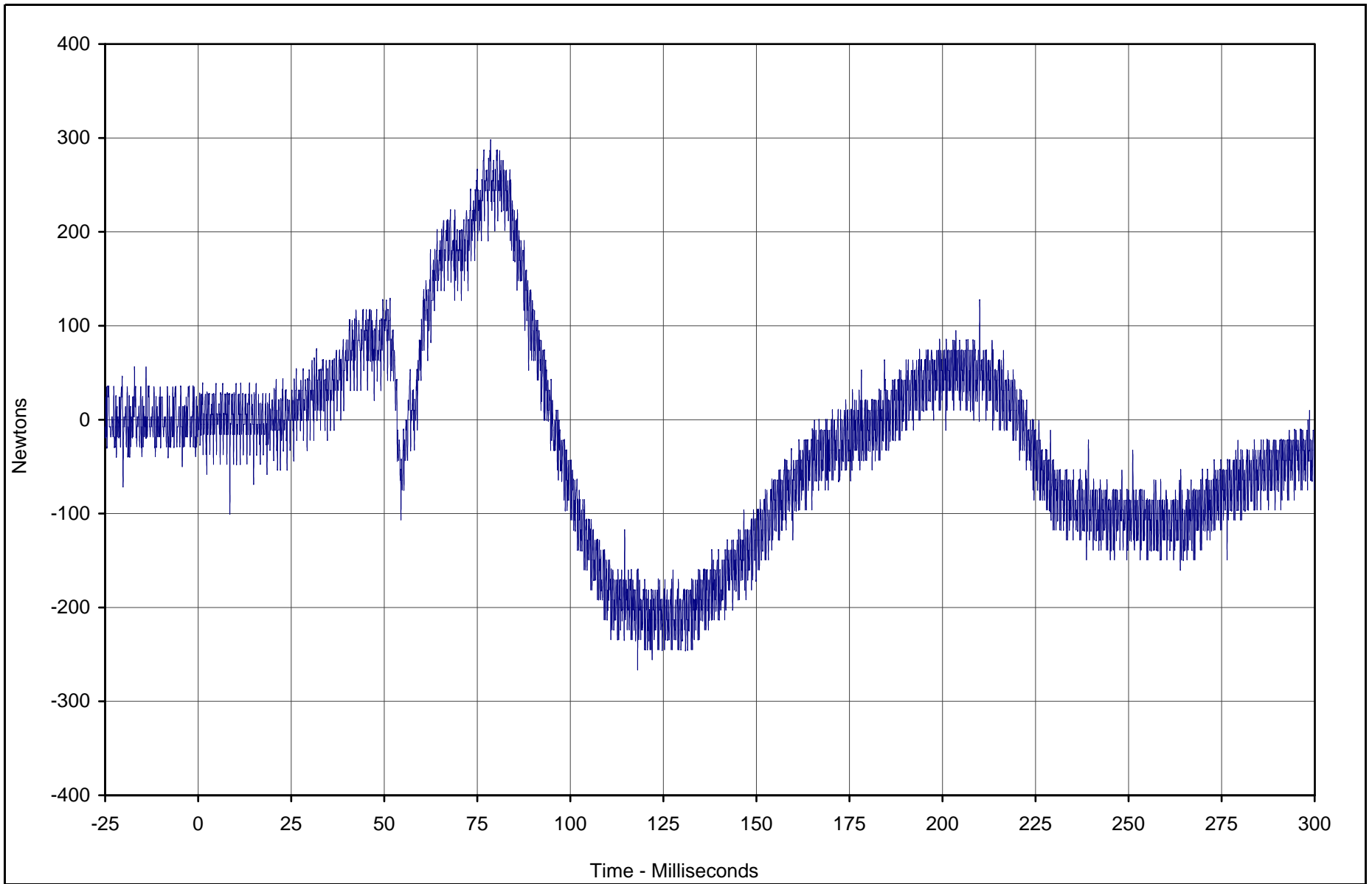
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Neck Force Y	052	FIL	Newtons	297.0	78.6	-266.4	118.1	1000

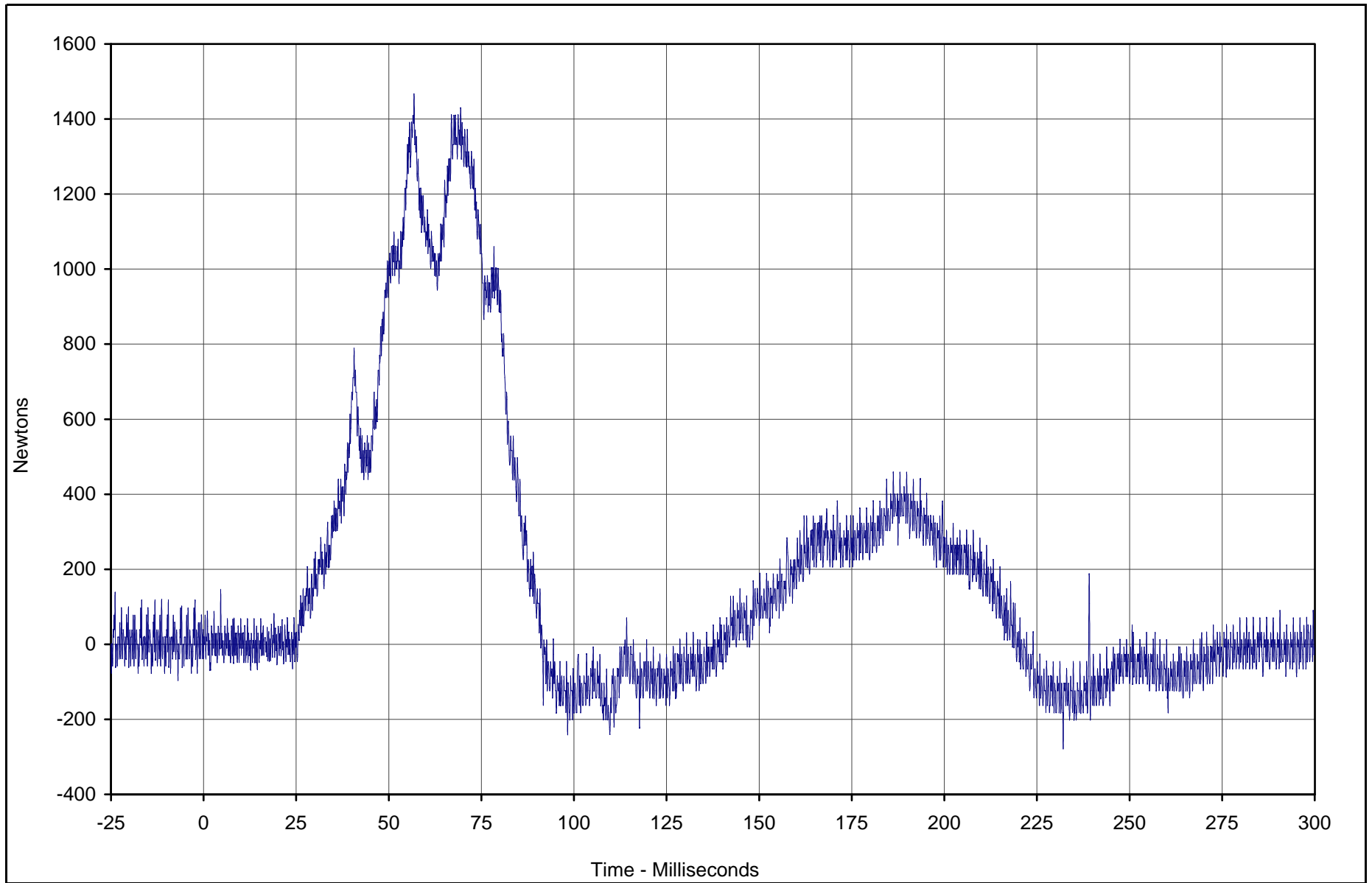


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Neck Force Z	053	FIL	Newtons	1467.7	56.8	-279.1	232.1	1000

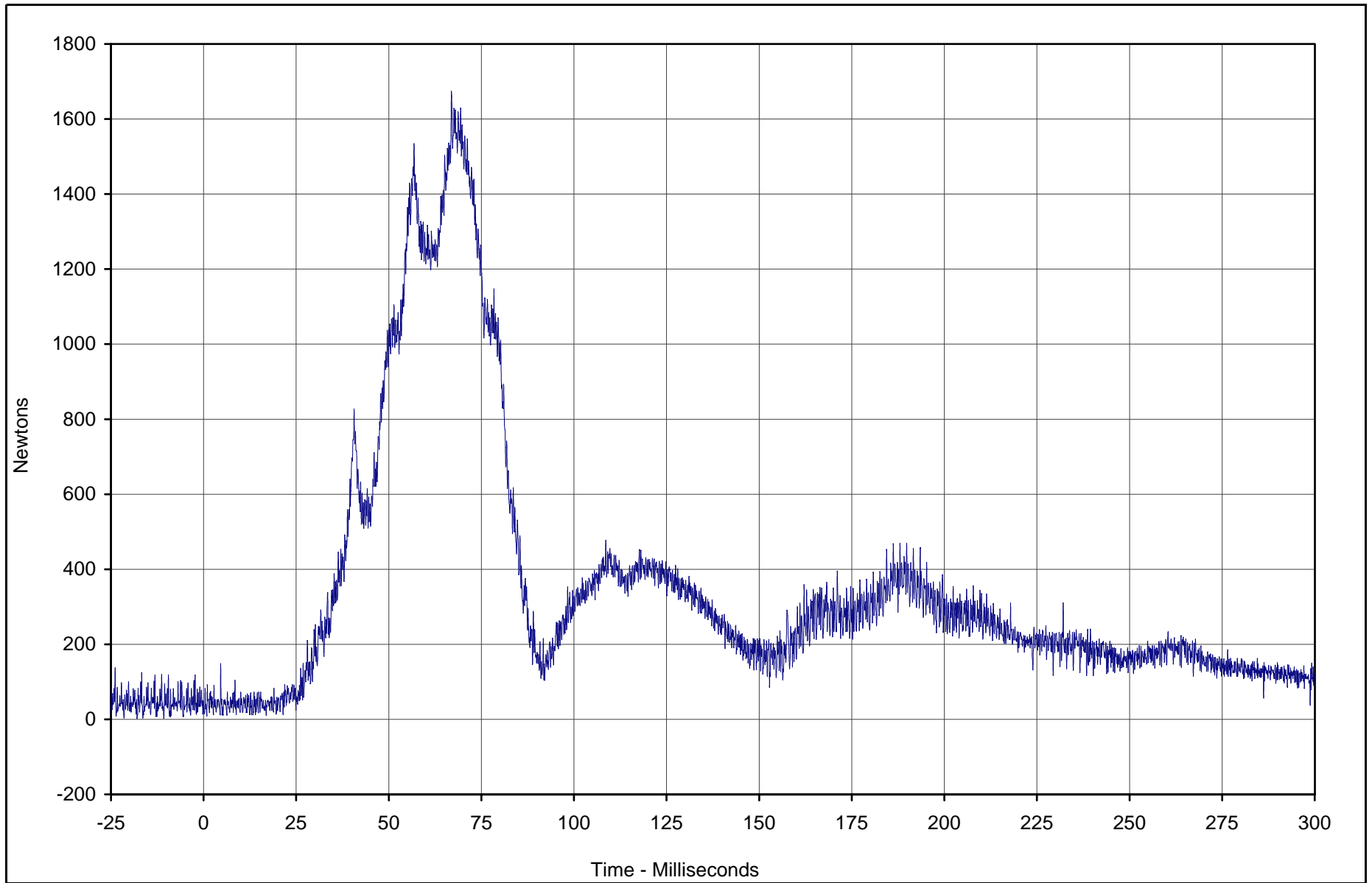


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Neck Force Resultant	051	RES	Newtons	1672.8	66.9	10.1	16.9	1000



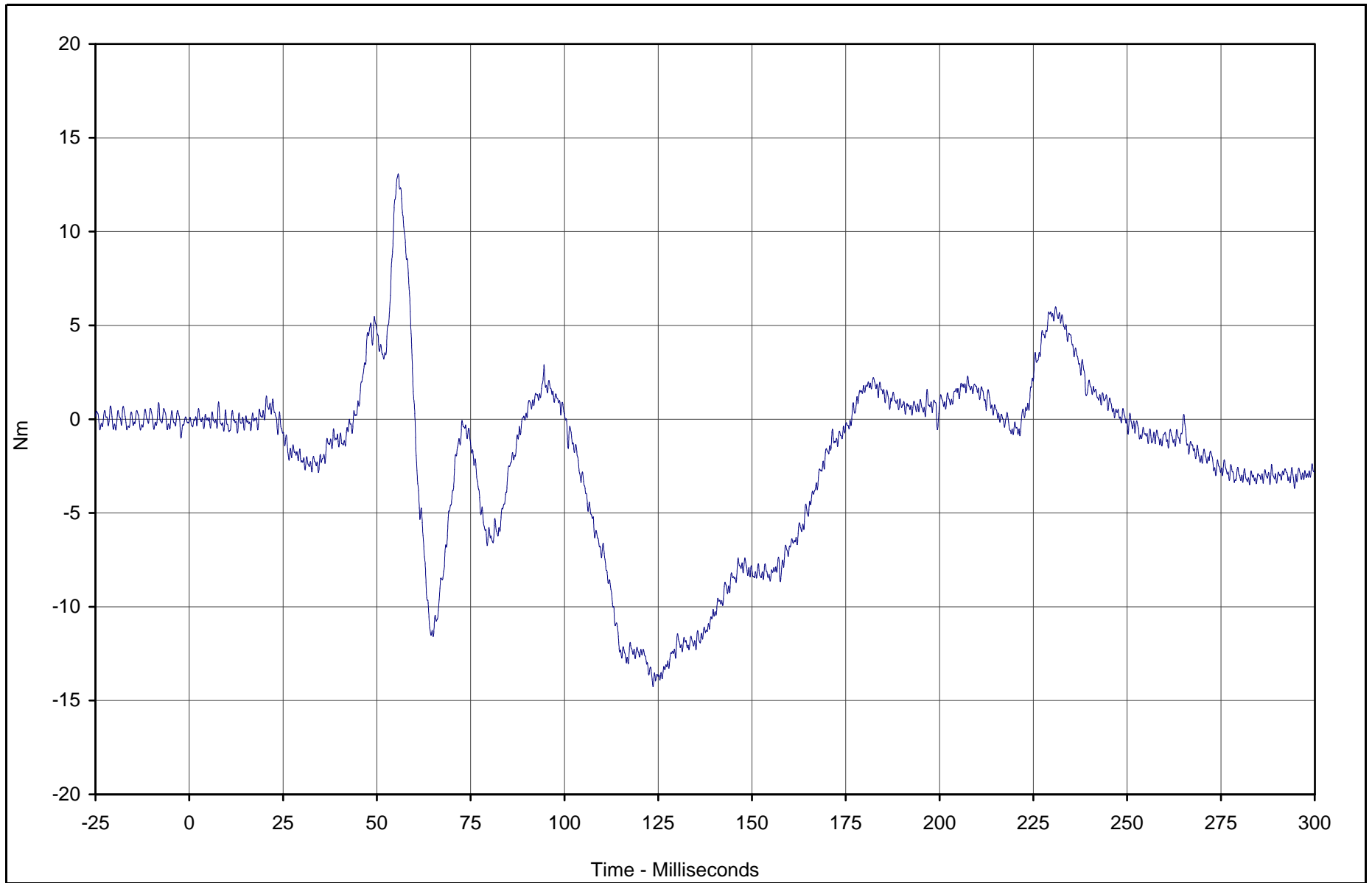
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-78



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Neck Moment X	054	FIL	Nm	13.1	55.7	-14.3	123.6	600



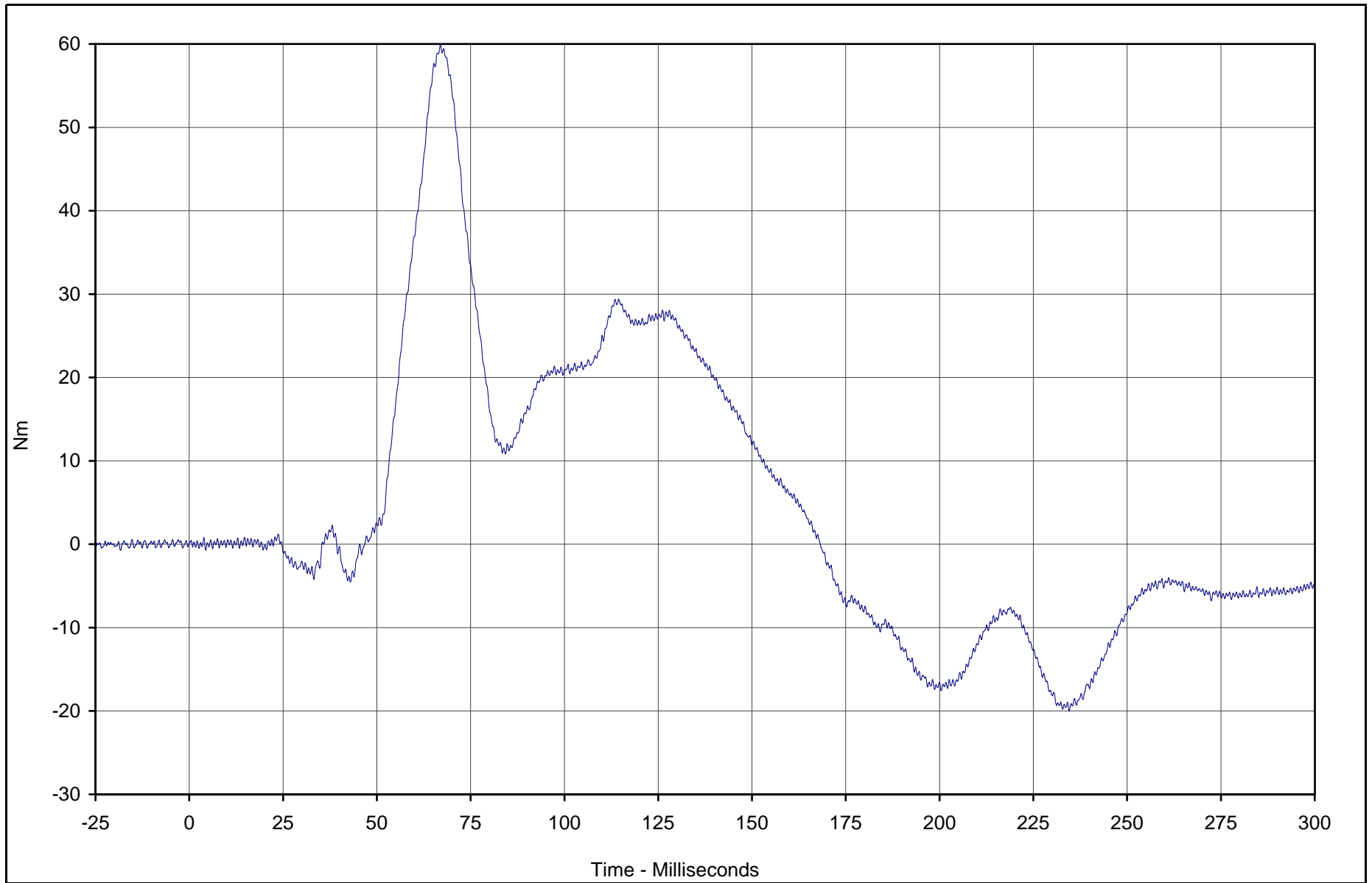
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Neck Moment Y	055	FIL	Nm	59.9	66.9	-20.0	234.6	600



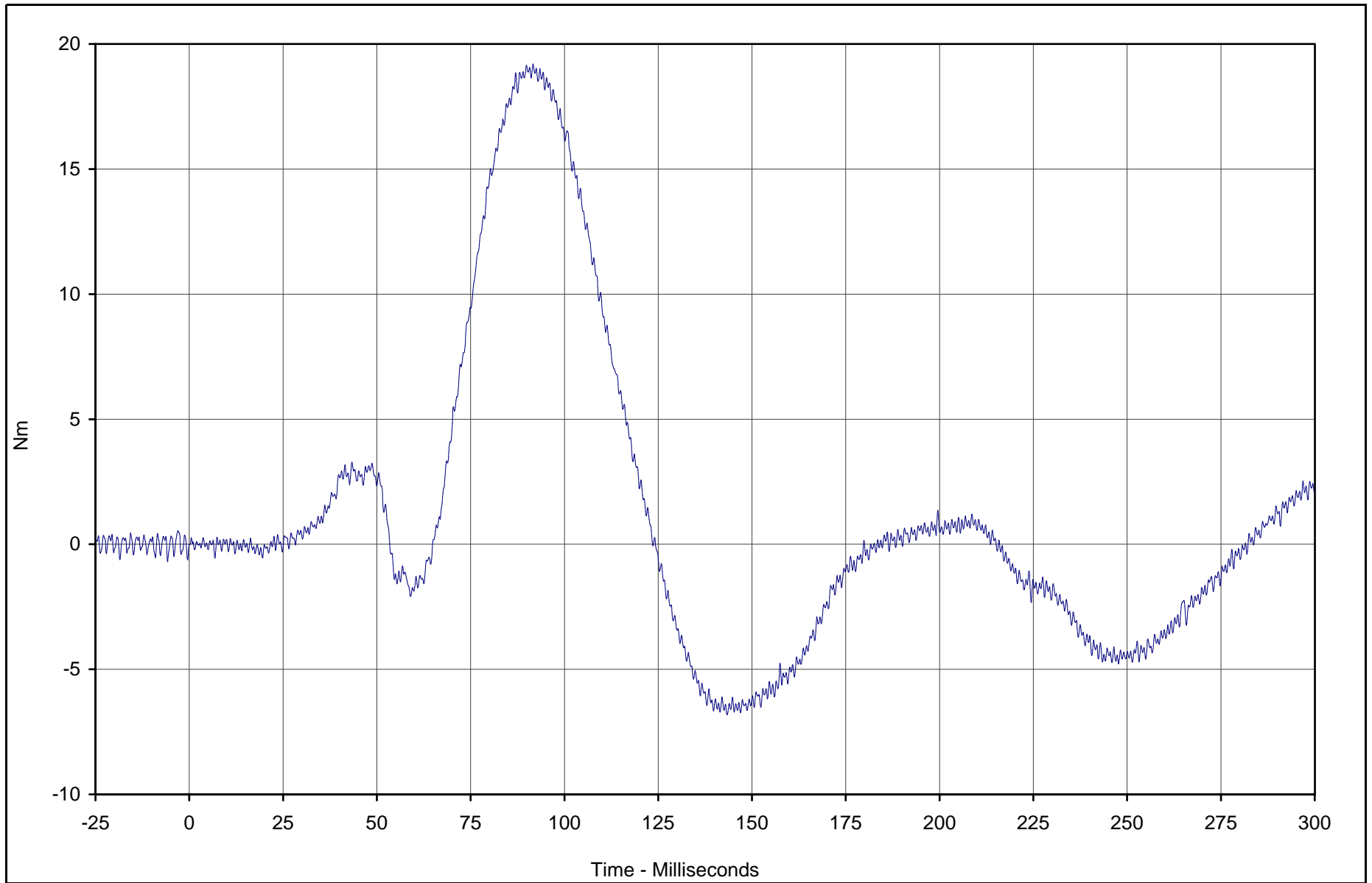
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-80



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Neck Moment Z	056	FIL	Nm	19.2	91.6	-6.8	143.4	600

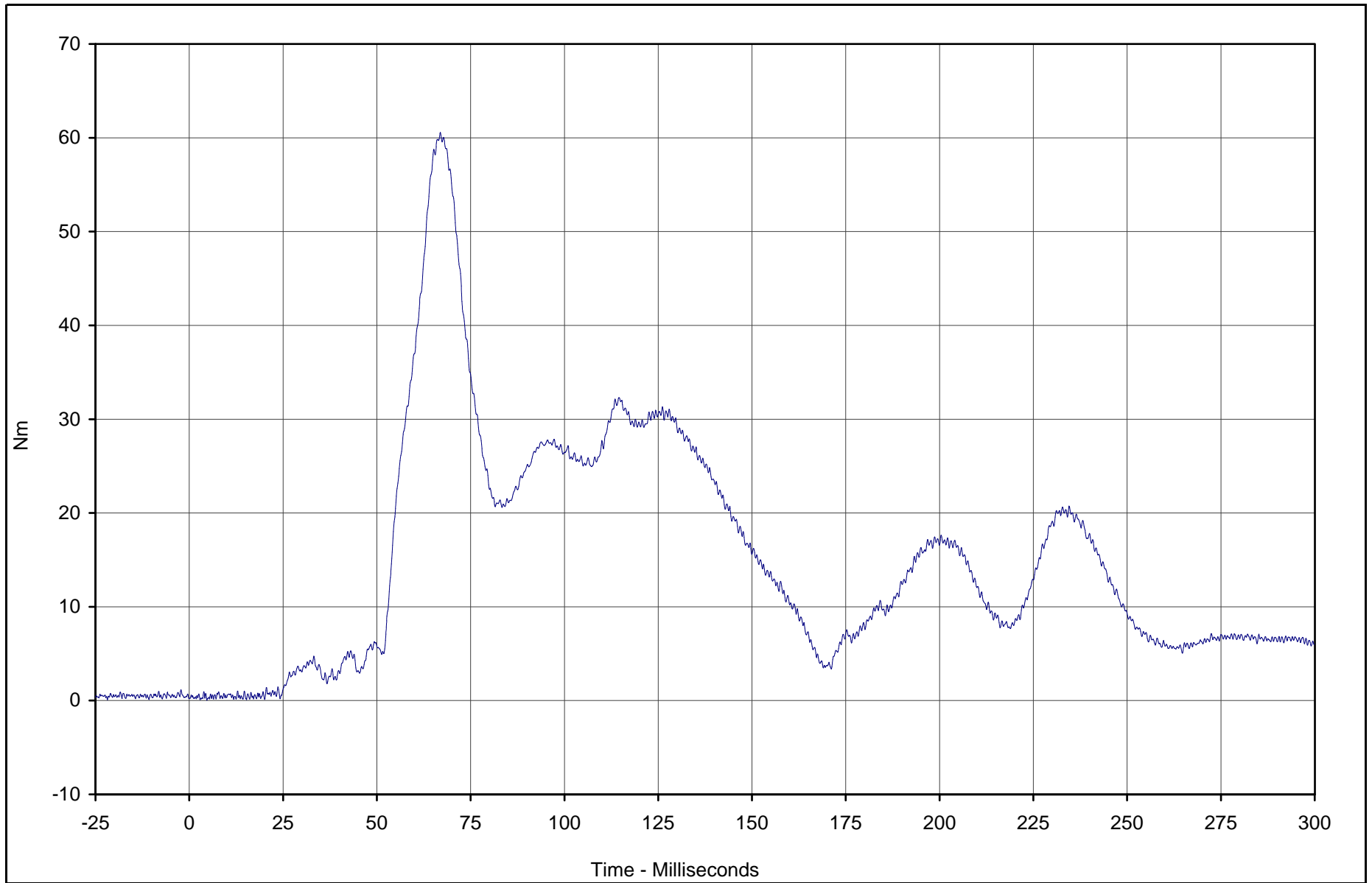


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Neck Moment Resultant	054	RES	Nm	60.6	66.9	0.0	4.7	600



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

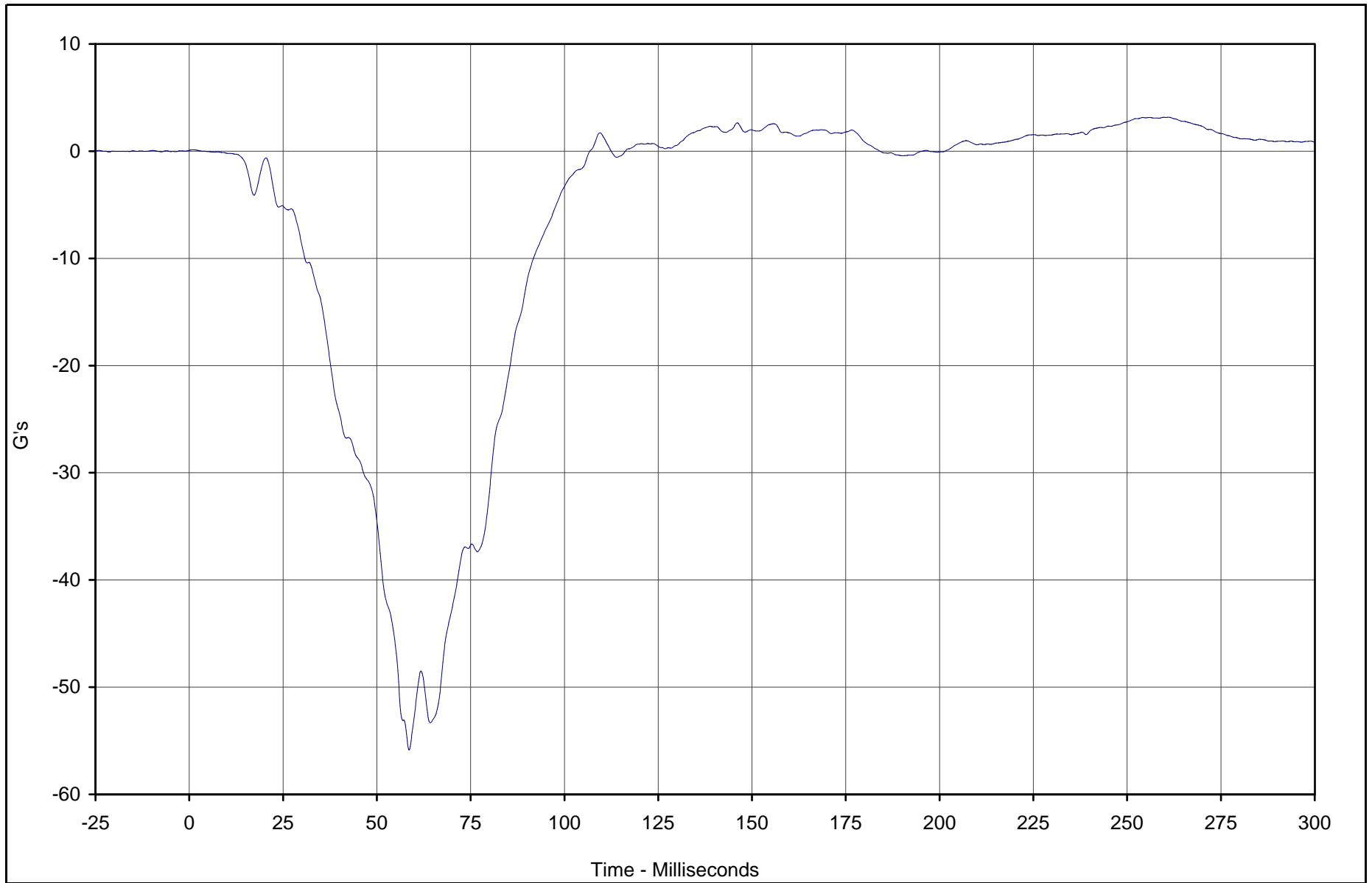
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-82

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Primary X	057	FIL	G's	3.2	261.0	-55.9	58.6	180



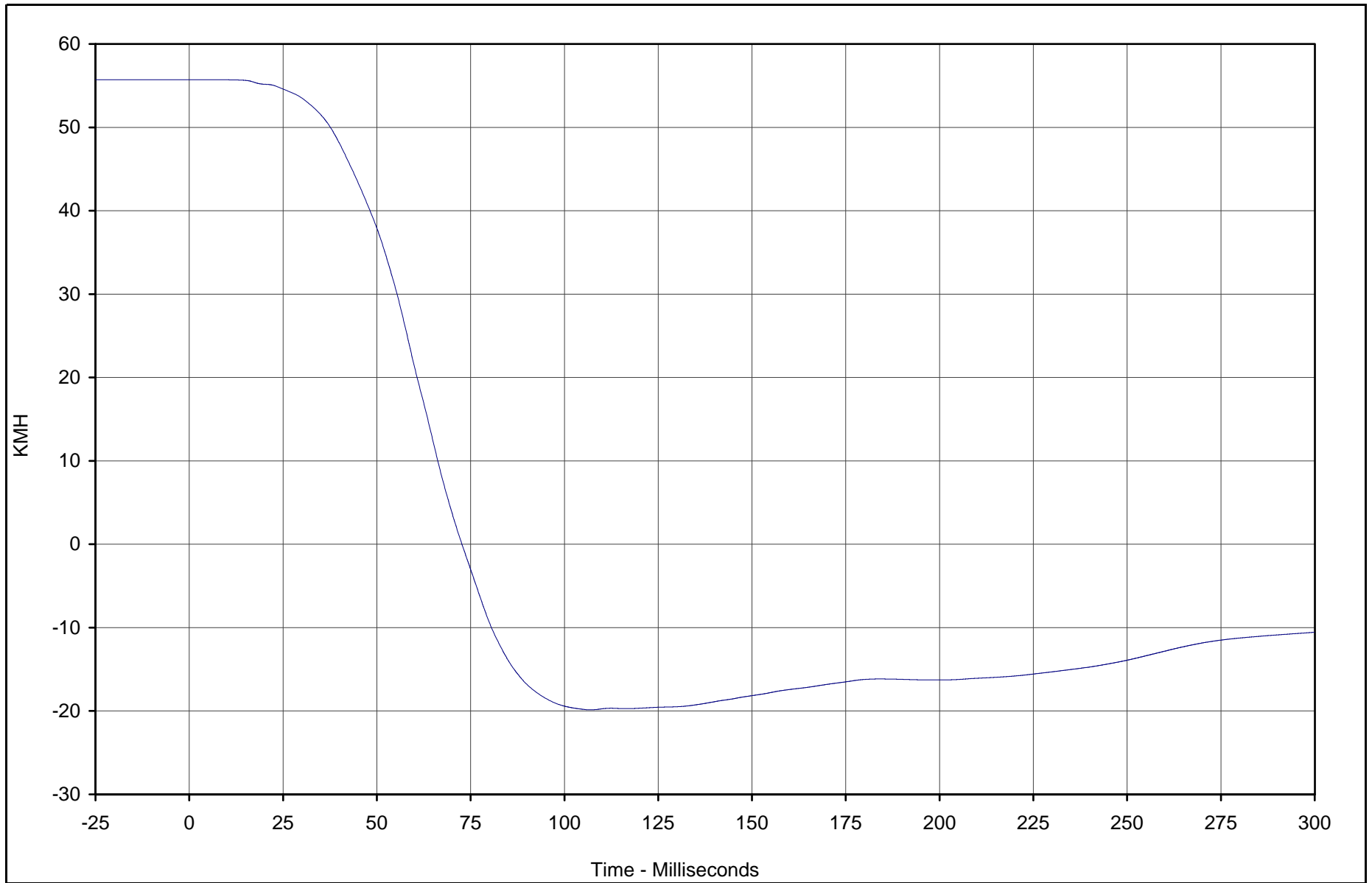
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-83



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Primary X Velocity	057	IN1	KMH	55.7	3.9	-19.8	106.7	180



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

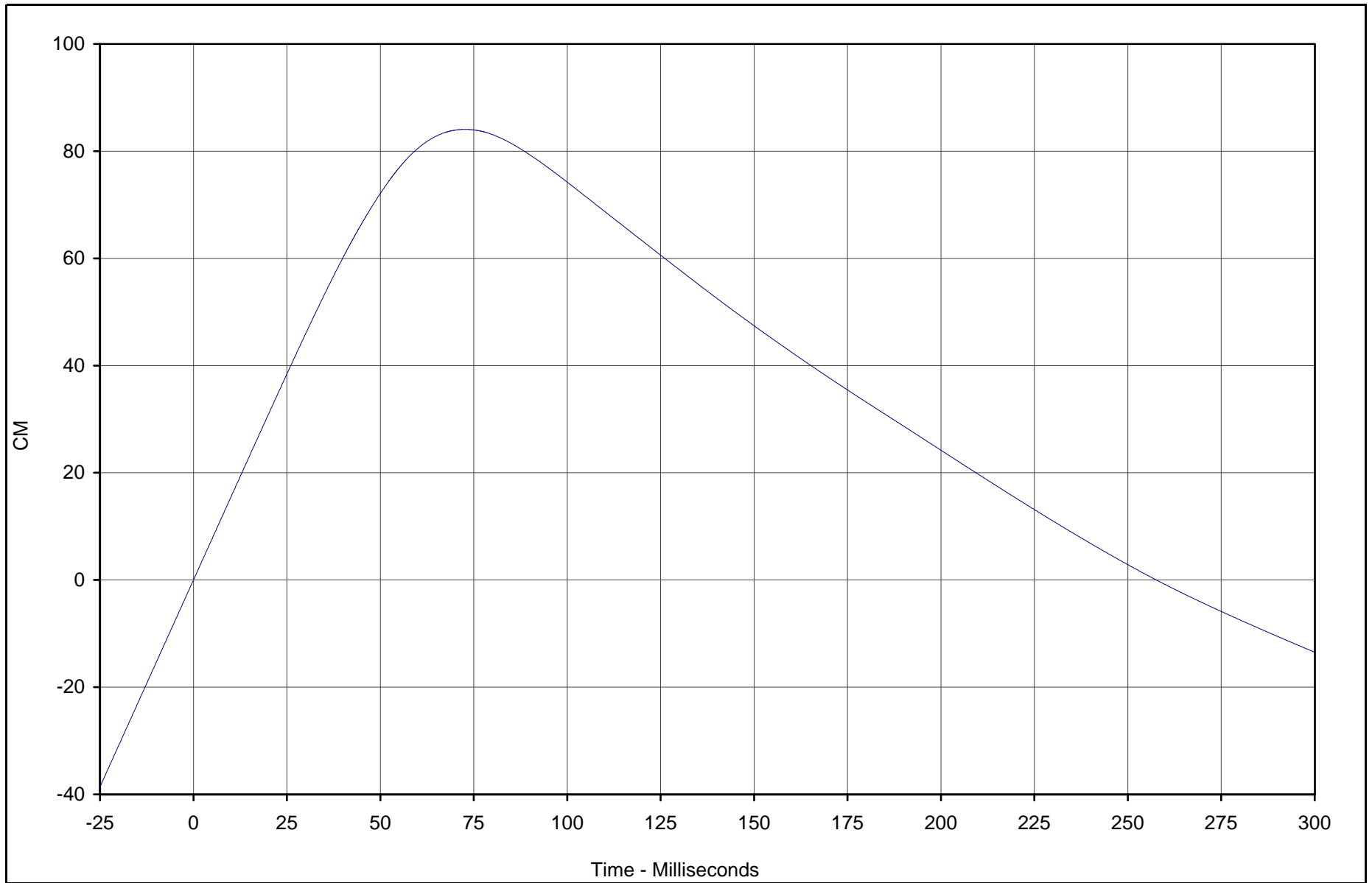
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

B-84



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Primary X Displ.	057	IN2	CM	84.1	72.7	-13.5	299.9	180



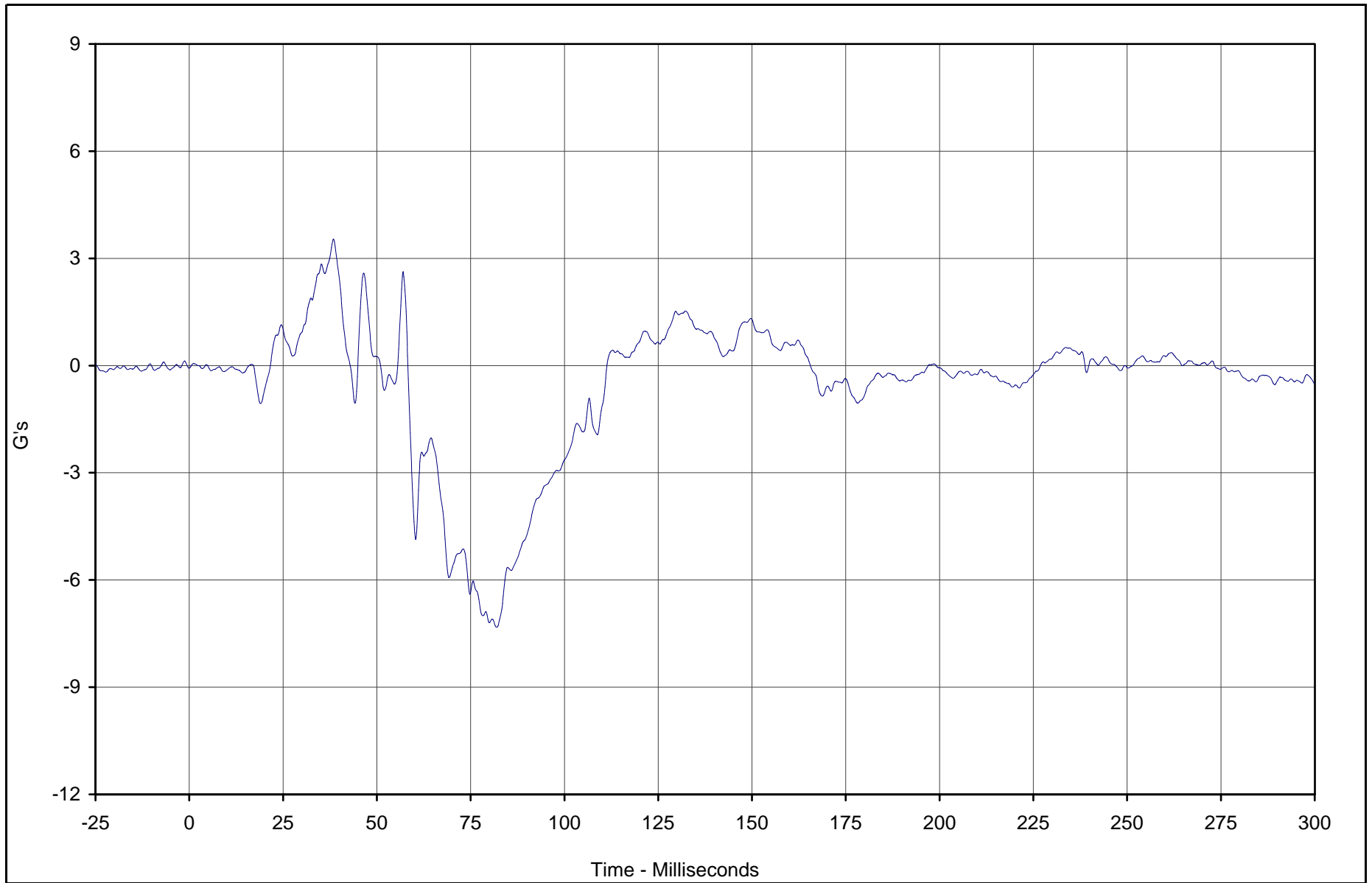
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Primary Y	058	FIL	G's	3.5	38.4	-7.3	82.0	180

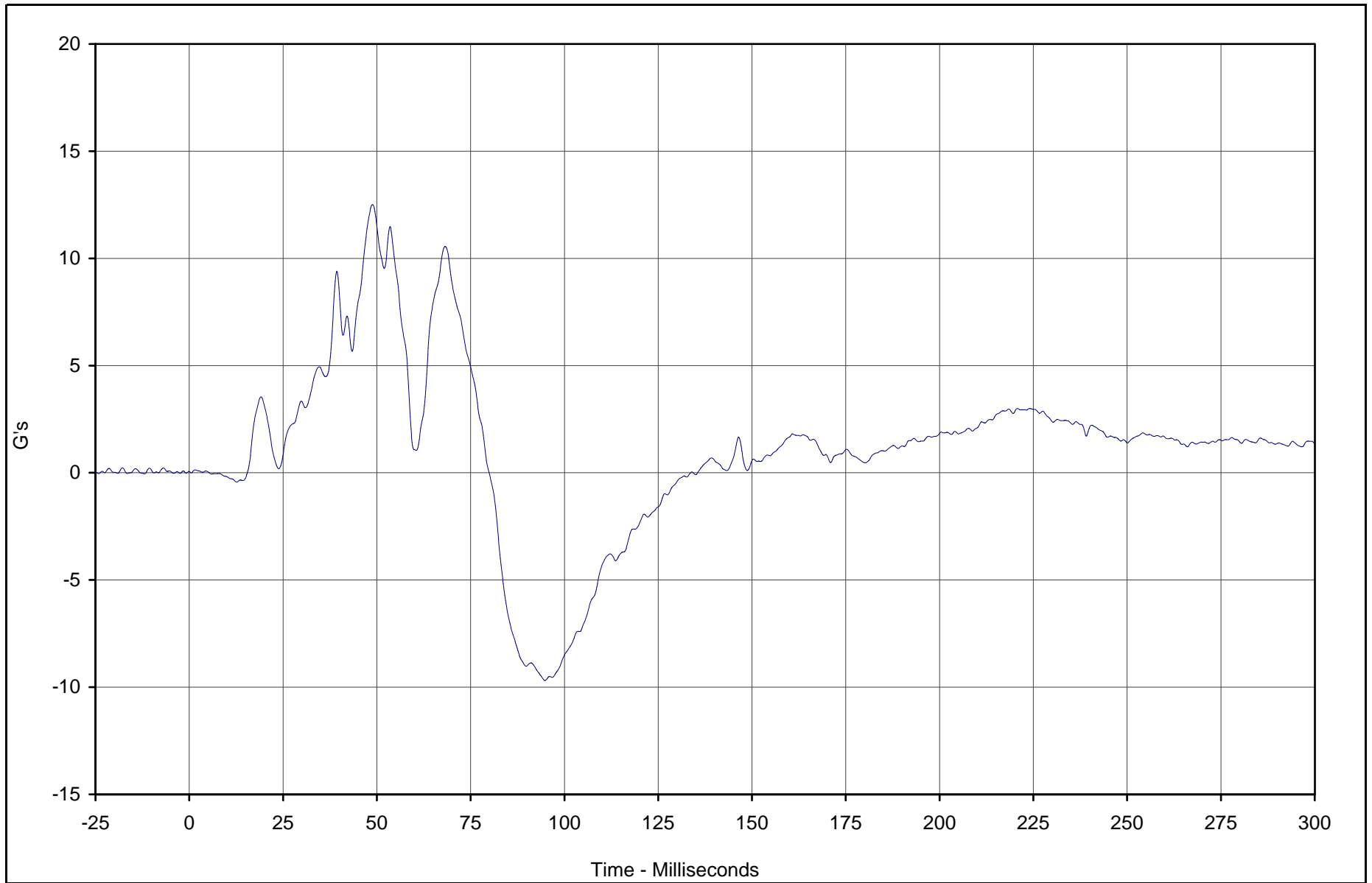


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Primary Z	059	FIL	G's	12.5	48.8	-9.7	94.8	180

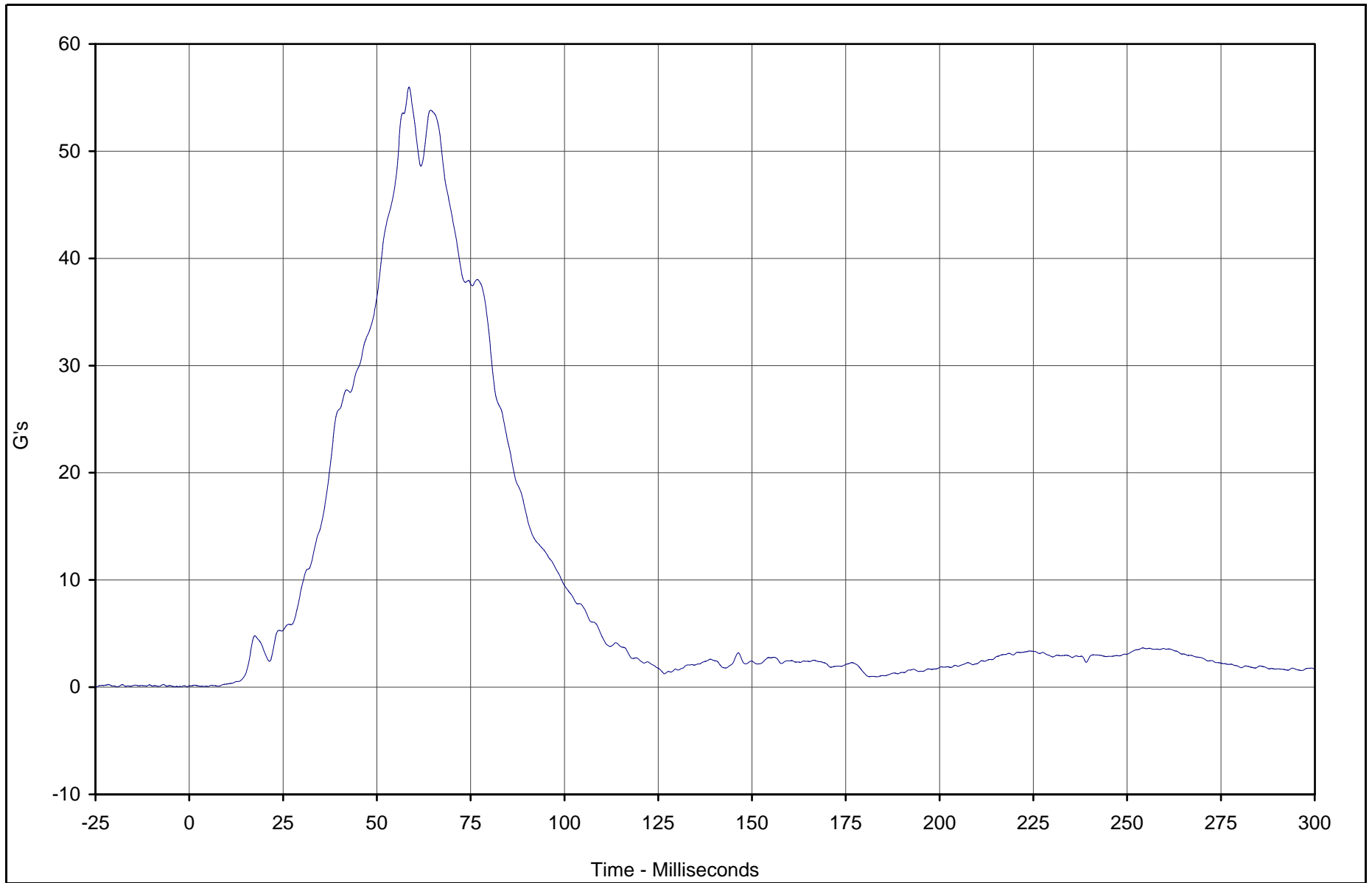


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Resultant Primary	057	RES	G's	56.0	58.6	0.1	5.0	180

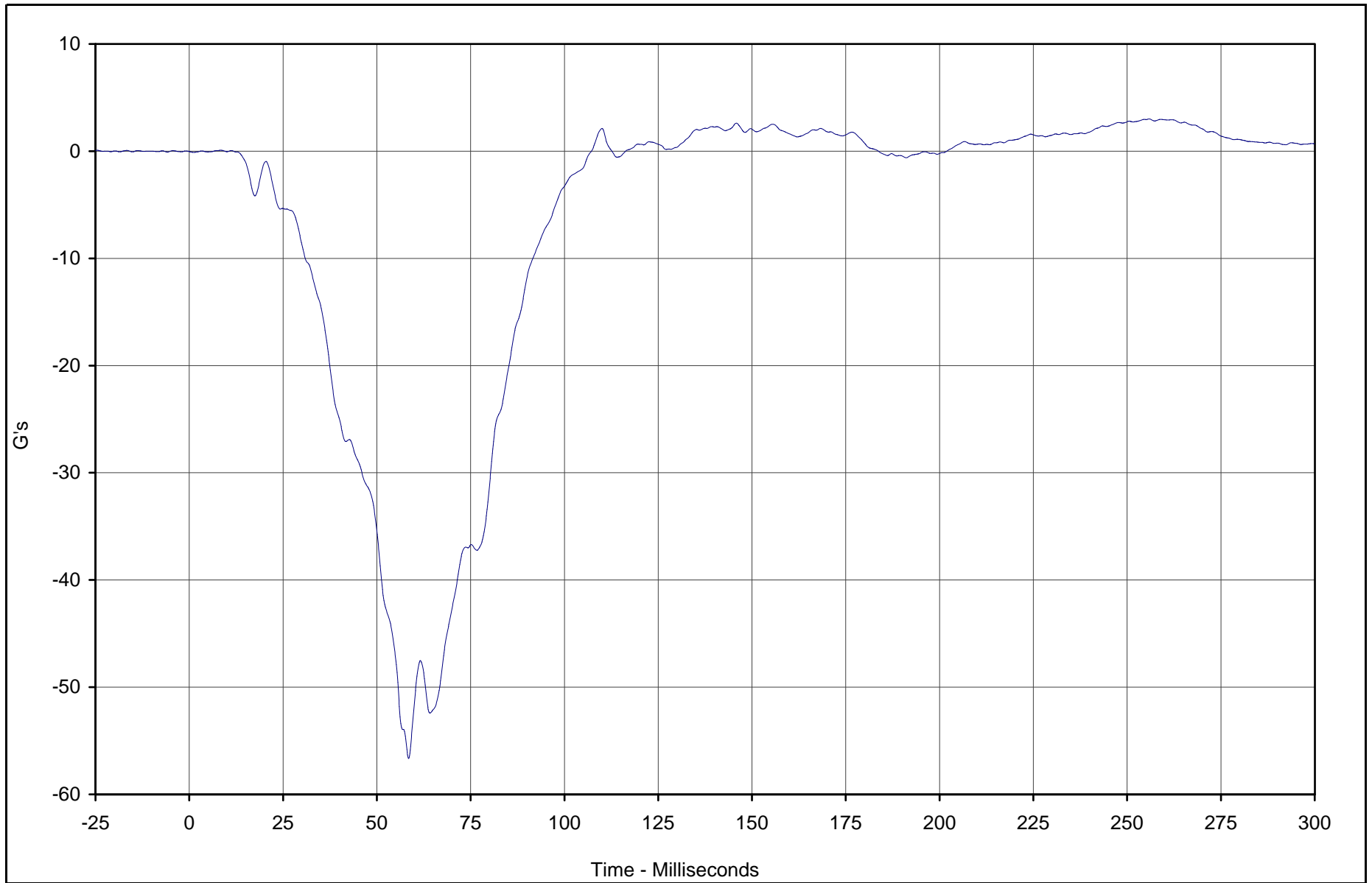


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Redundant X	060	FIL	G's	3.0	255.9	-56.6	58.5	180



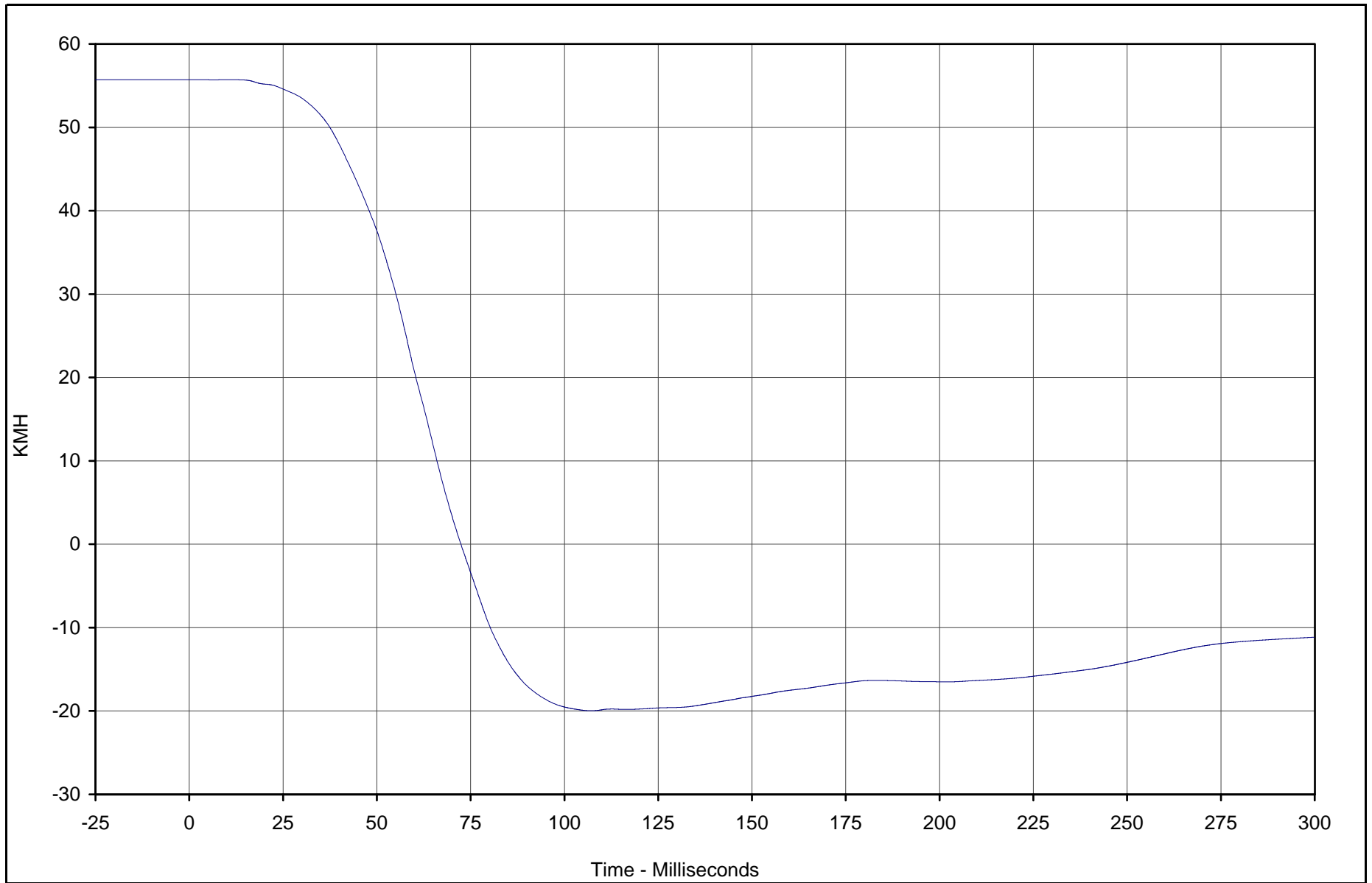
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-89



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Redundant X Velocity	060	IN1	KMH	55.7	0.0	-20.0	107.2	180



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

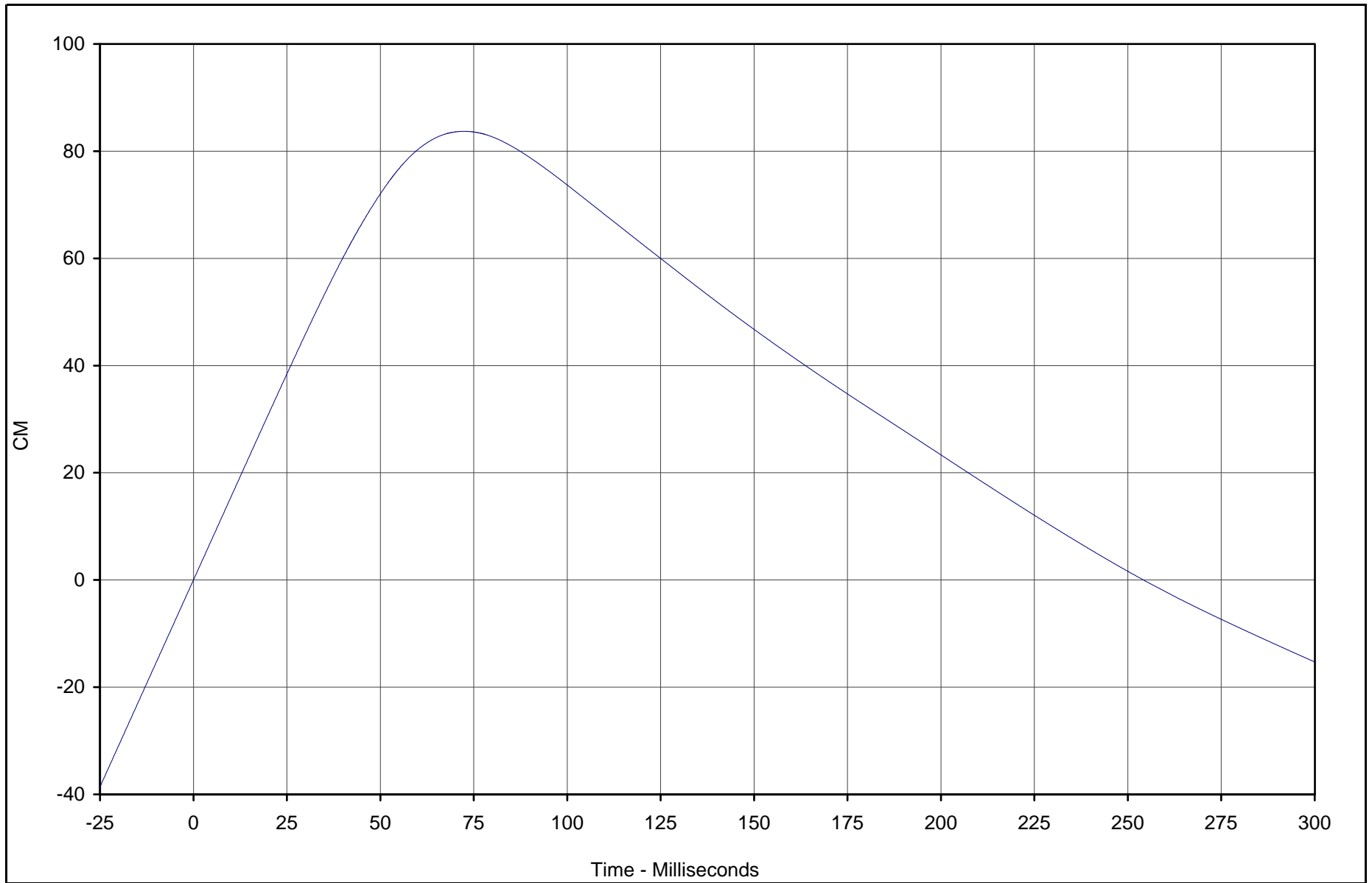
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

B-90



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Redundant X Displ.	060	IN2	CM	83.7	72.4	-15.3	299.9	180

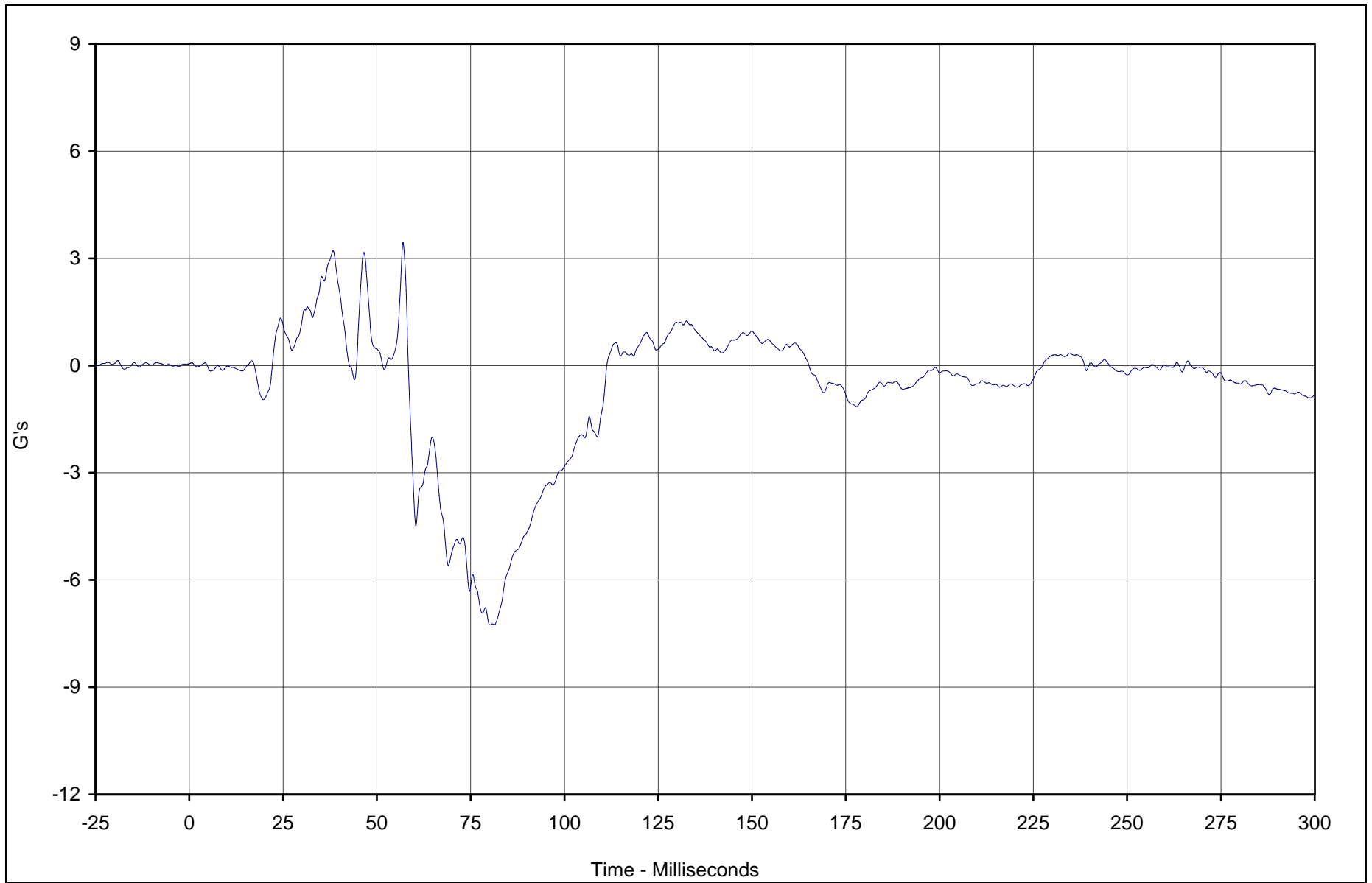


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Redundant Y	061	FIL	G's	3.5	57.0	-7.3	80.1	180



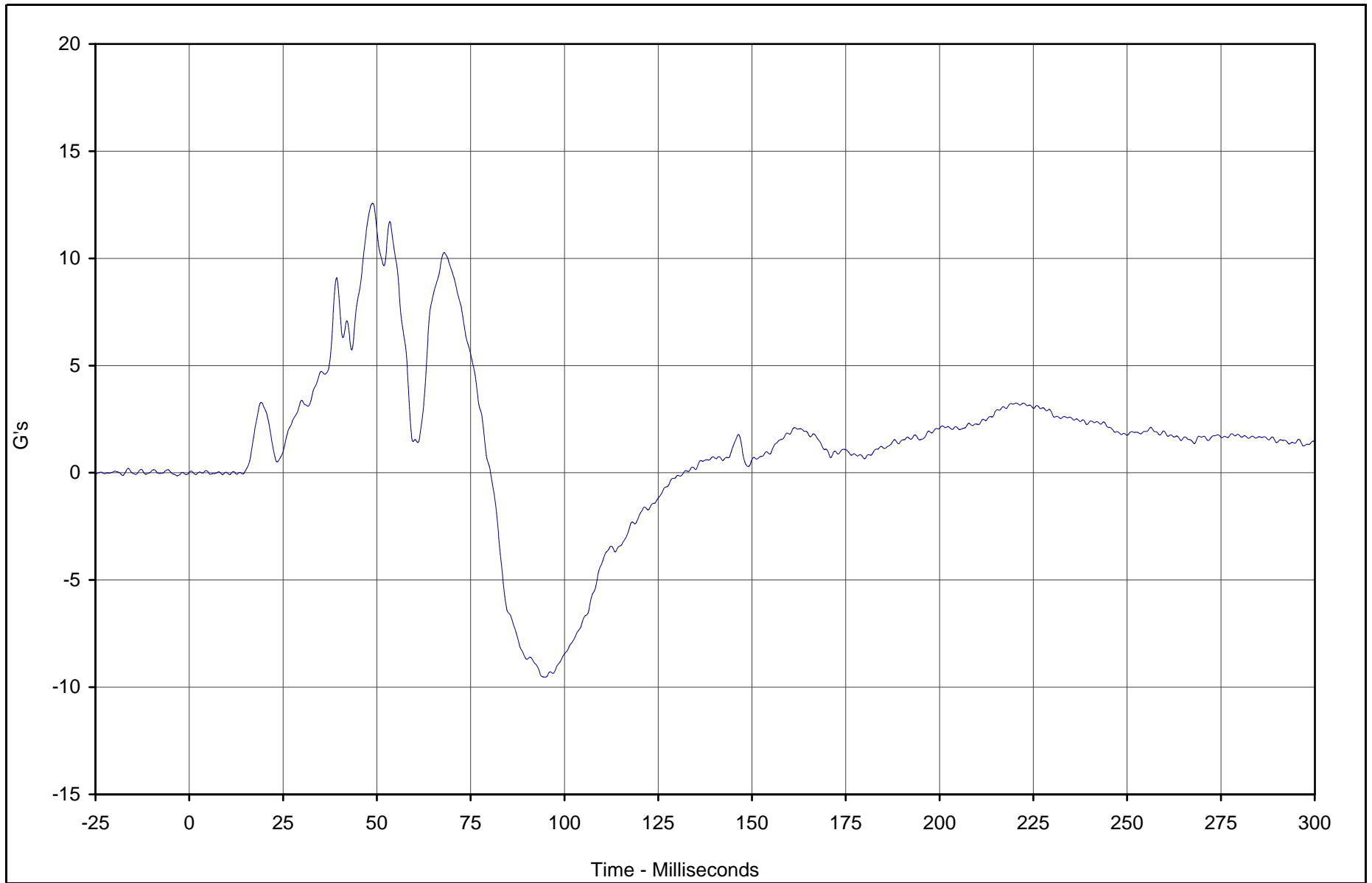
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-92



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Redundant Z	062	FIL	G's	12.6	48.9	-9.5	94.8	180



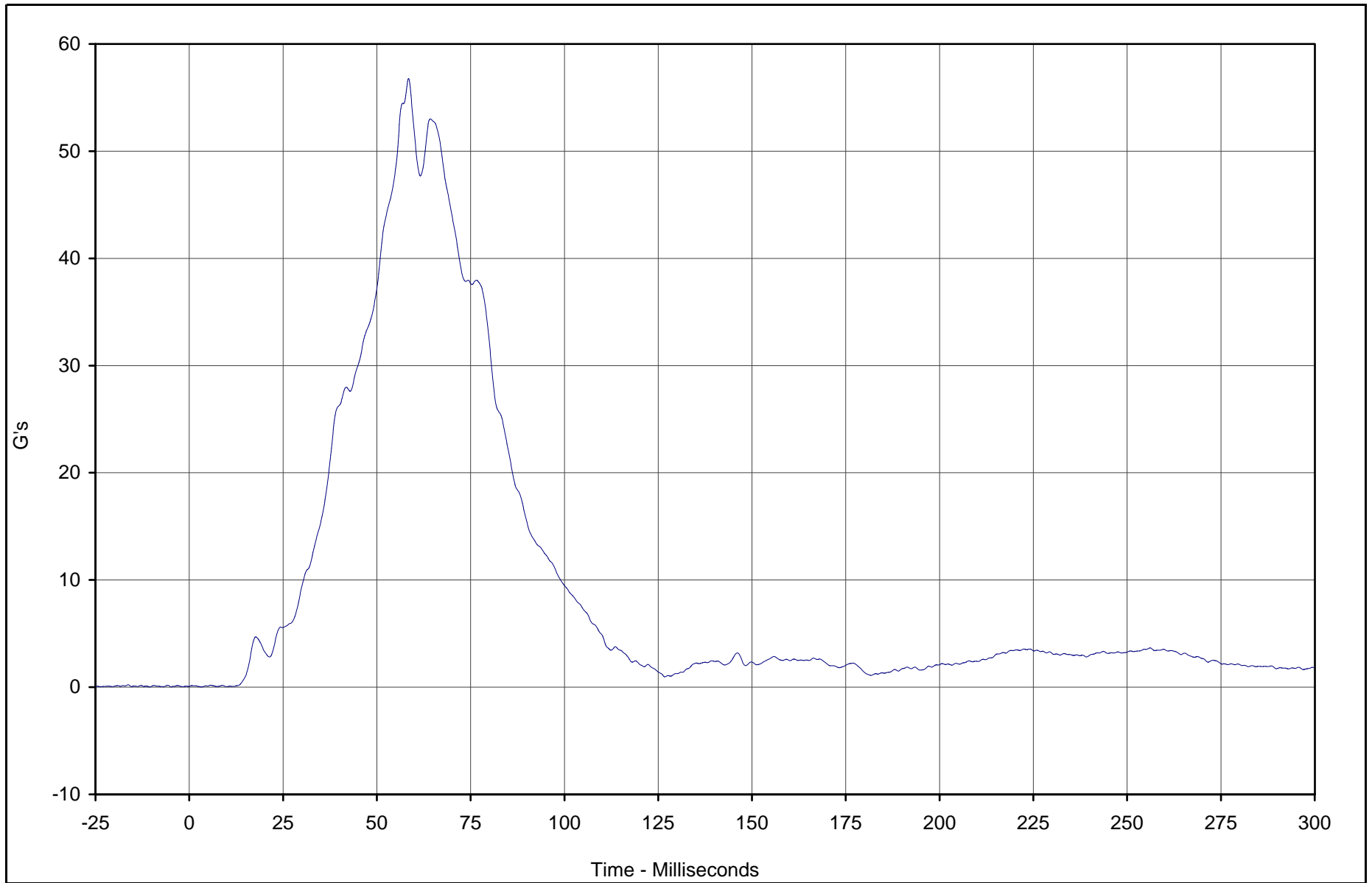
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Resultant Redundant	060	RES	G's	56.8	58.5	0.0	3.1	180



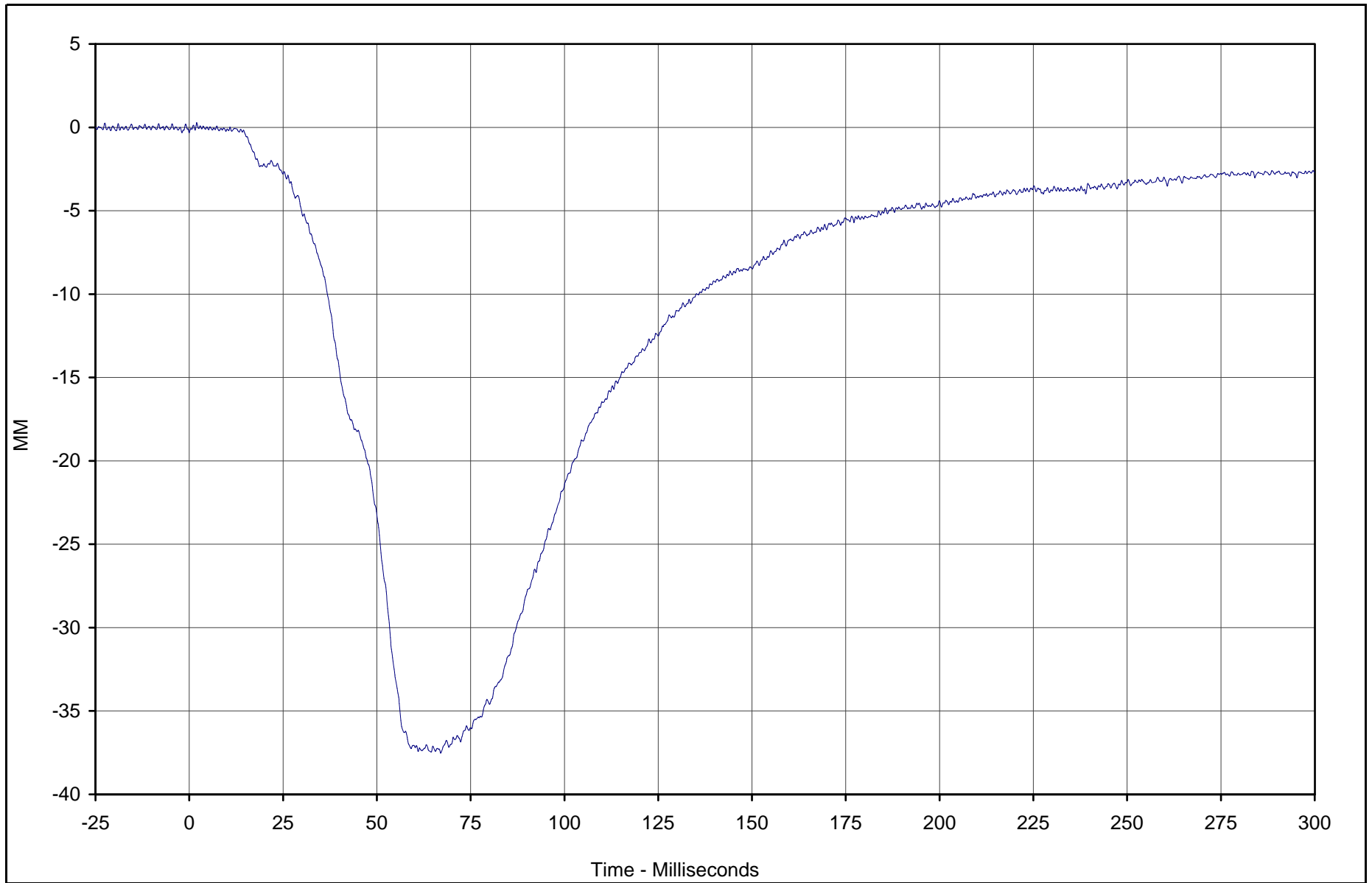
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-94



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Chest Displacement X	063	FIL	MM	0.3	2.0	-37.5	67.0	600



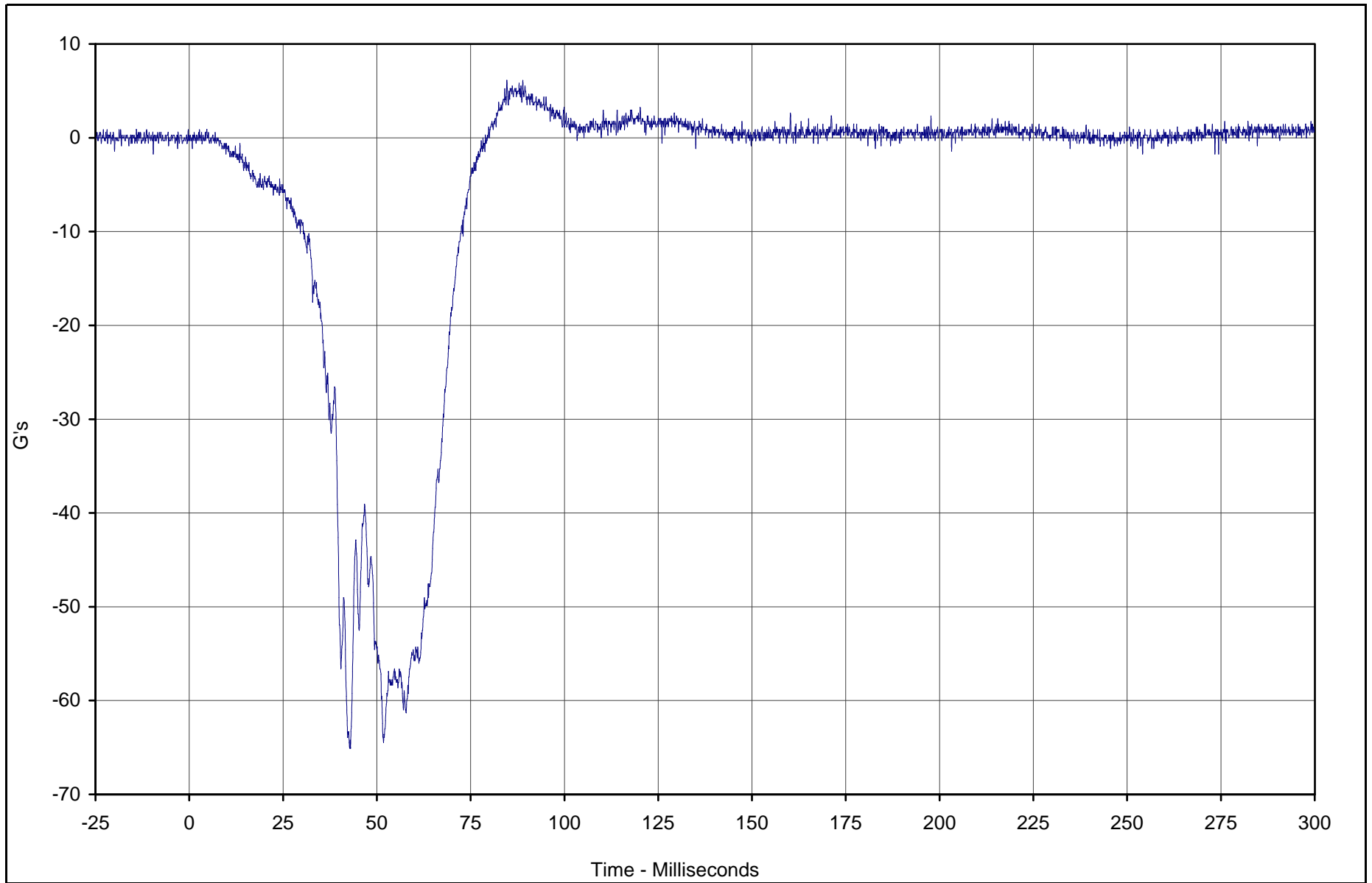
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Pelvis X	064	FIL	G's	6.1	84.6	-65.1	42.7	1000

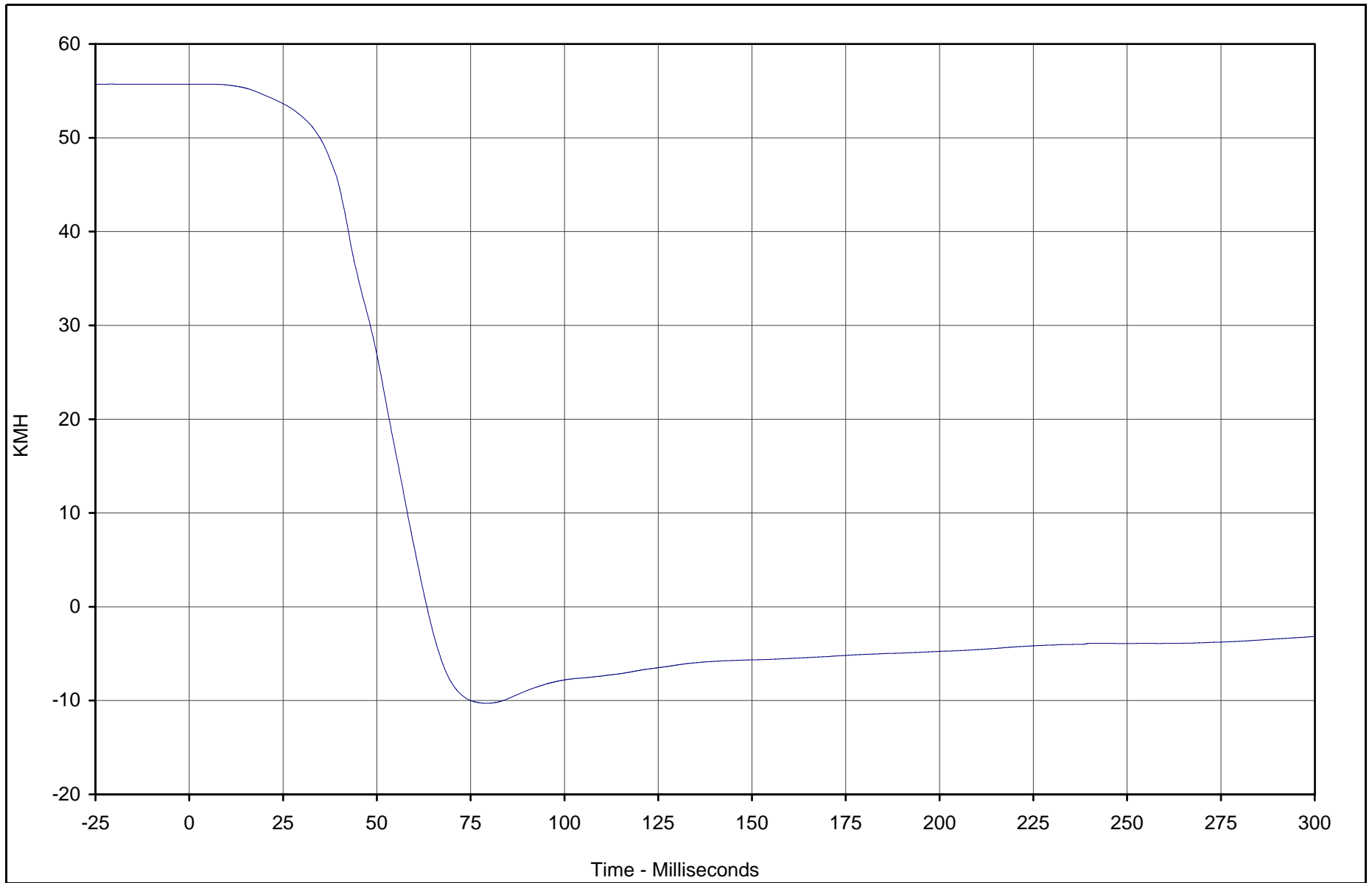


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Pelvis X Velocity	064	IN1	KMH	55.7	5.2	-10.3	79.4	180



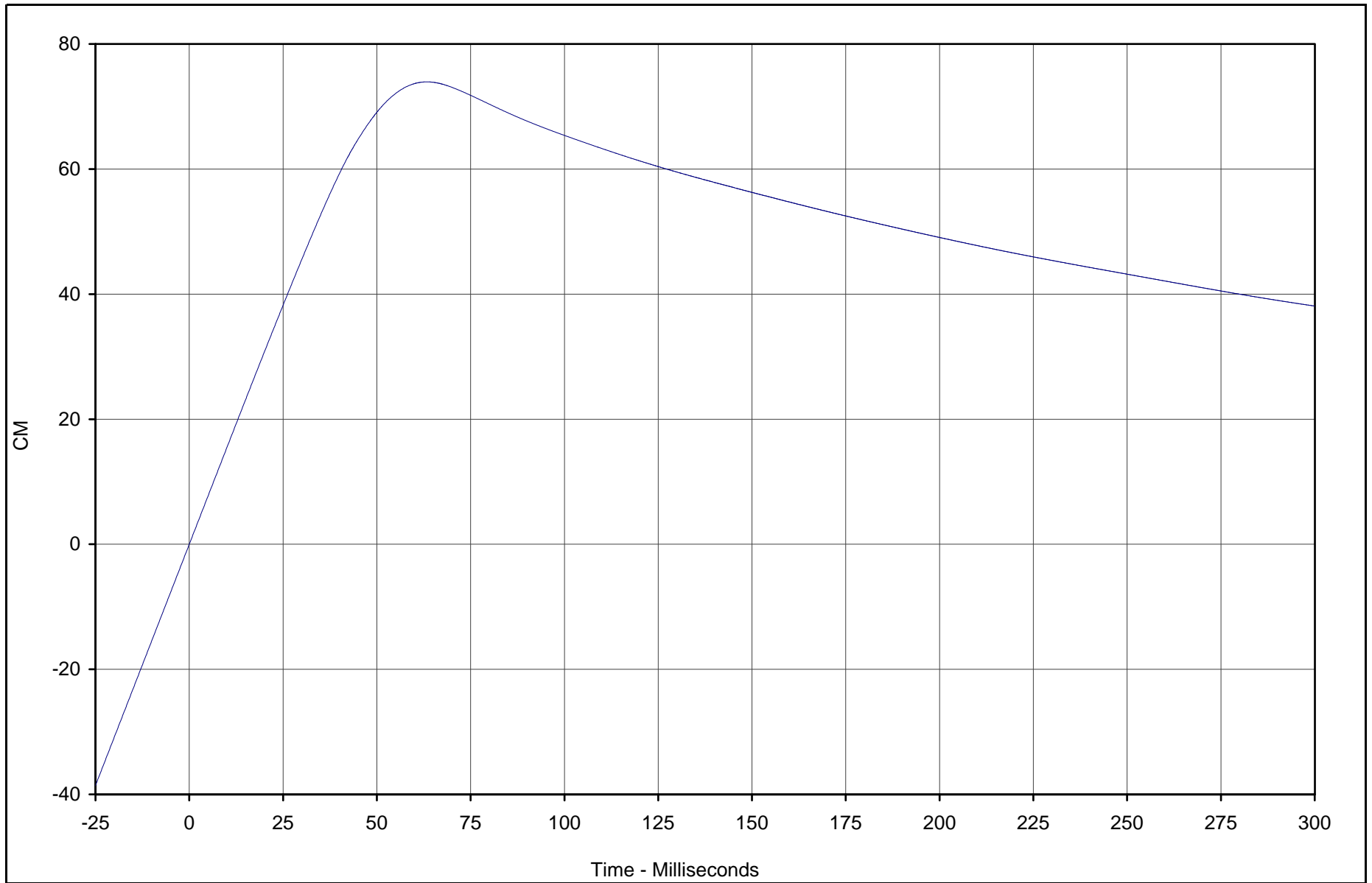
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-97



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Pelvis X Displ.	064	IN2	CM	73.9	63.3	0.0	0.0	180



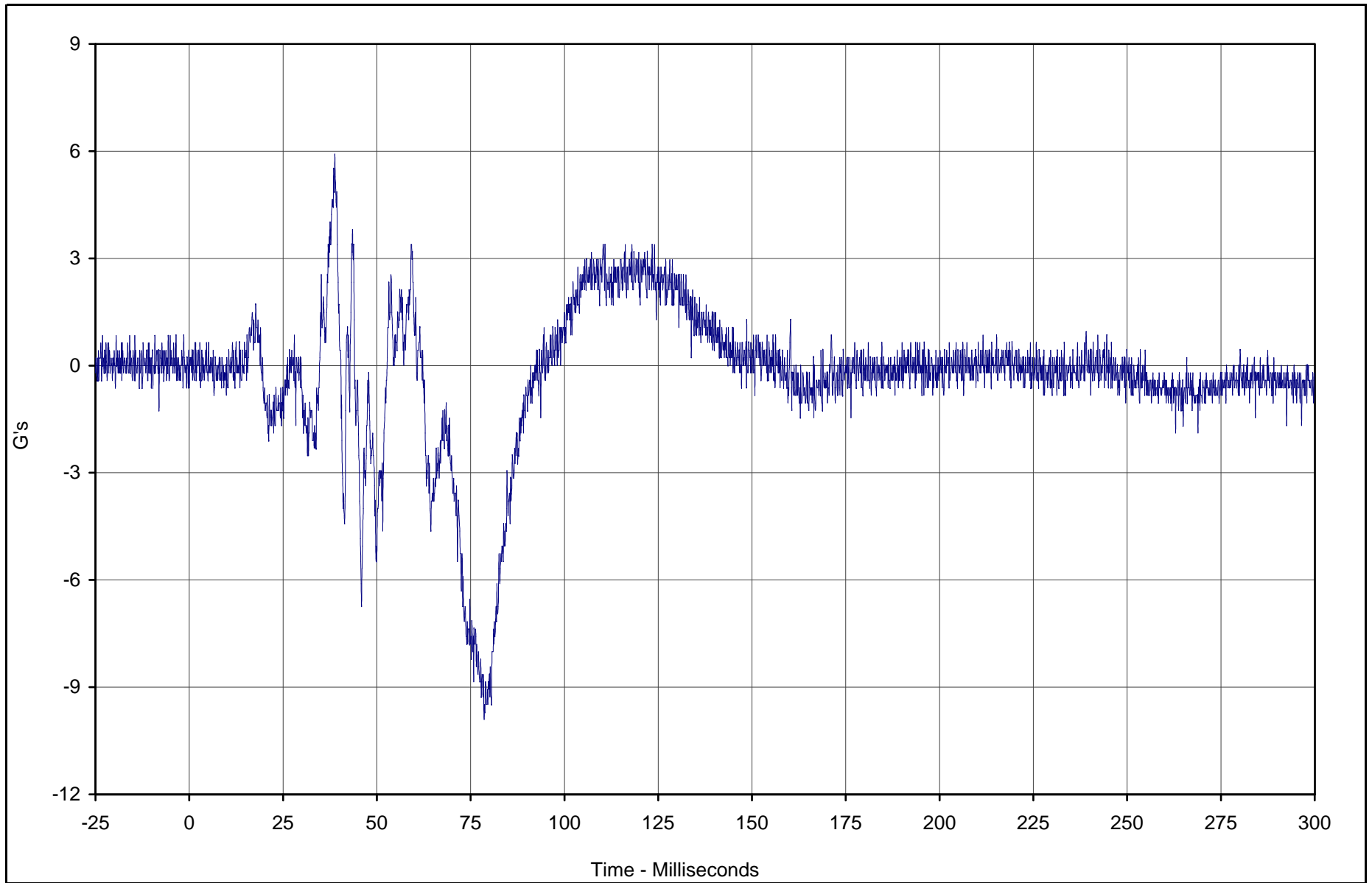
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Pelvis Y	065	FIL	G's	5.9	38.8	-9.9	78.6	1000



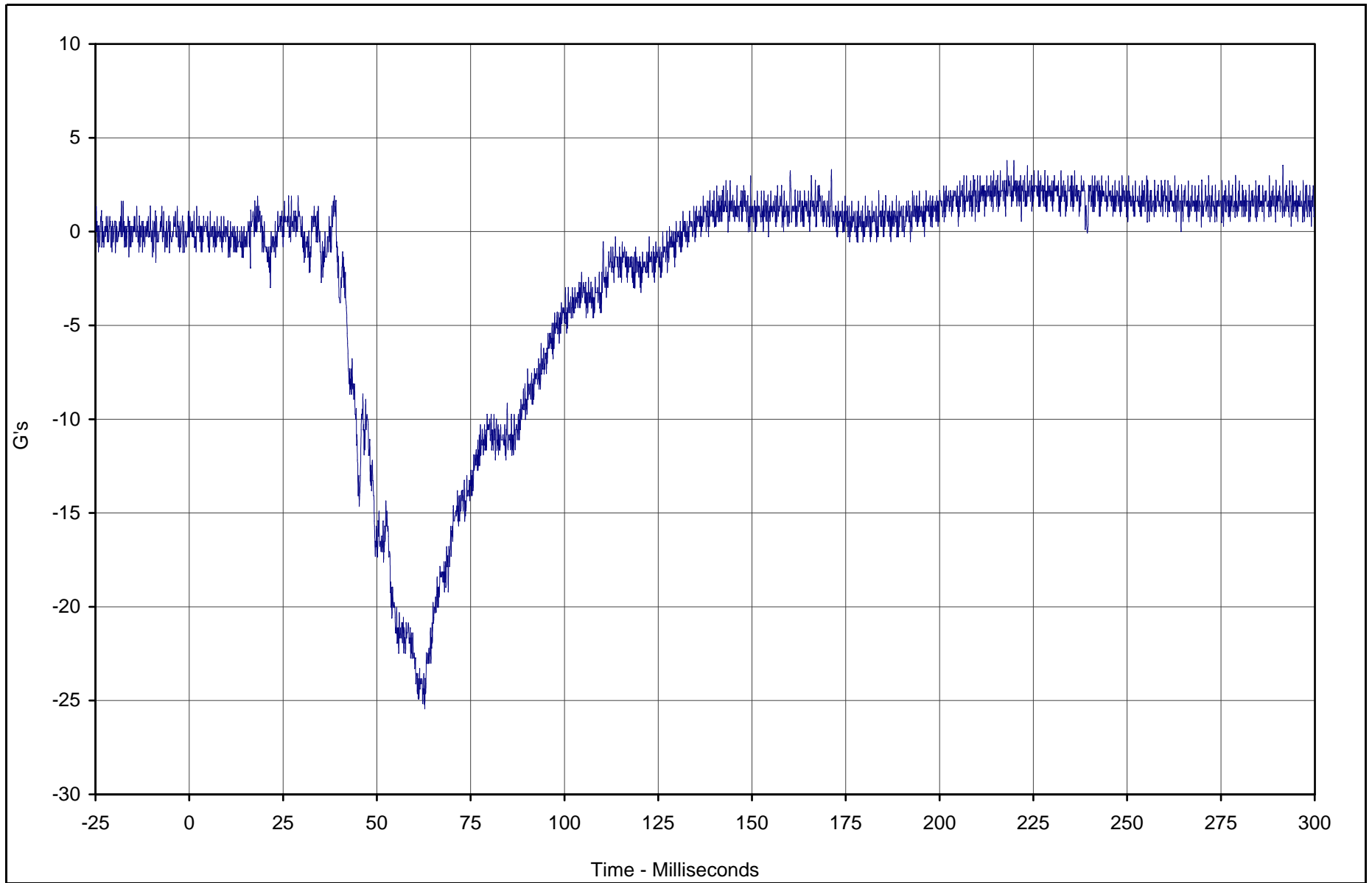
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-99



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Pelvis Z	066	FIL	G's	3.8	218.0	-25.4	62.8	1000



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

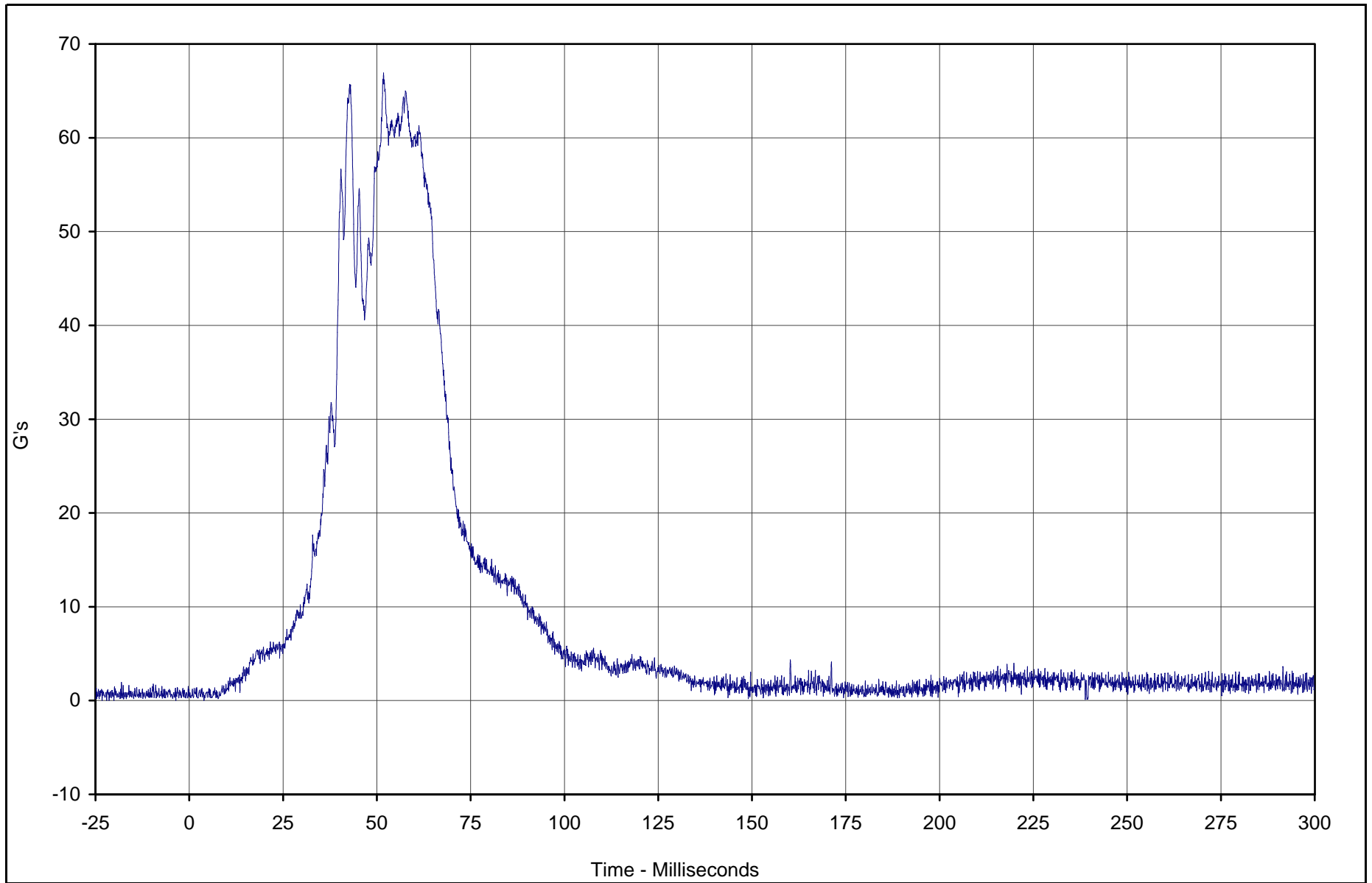
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

B-100



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Pelvis Resultant	066	RES	G's	66.9	51.8	0.0	3.9	1000



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

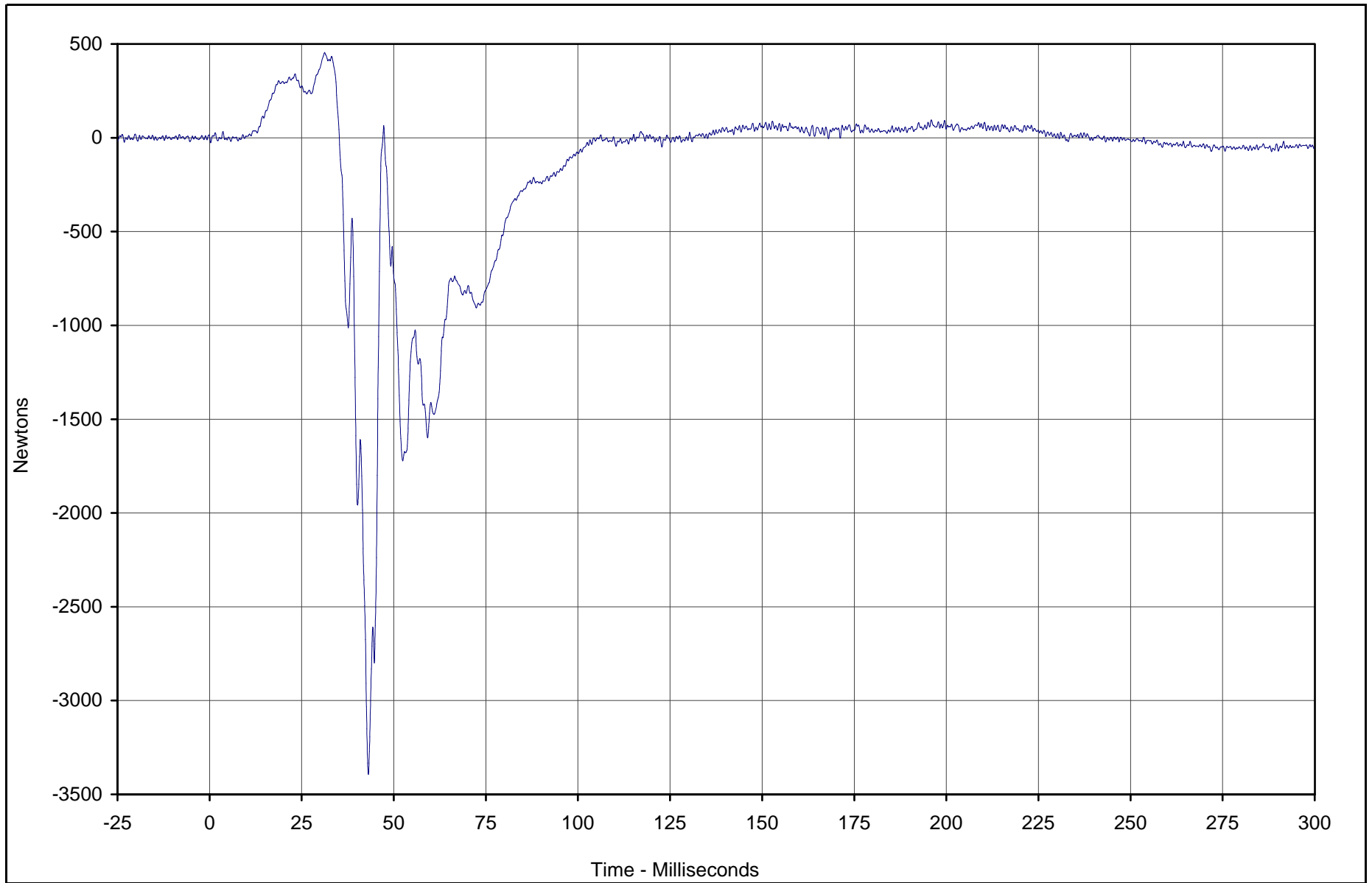
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

B-101



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Left Femur Force	067	FIL	Newtons	454.5	31.2	-3394.3	43.1	600



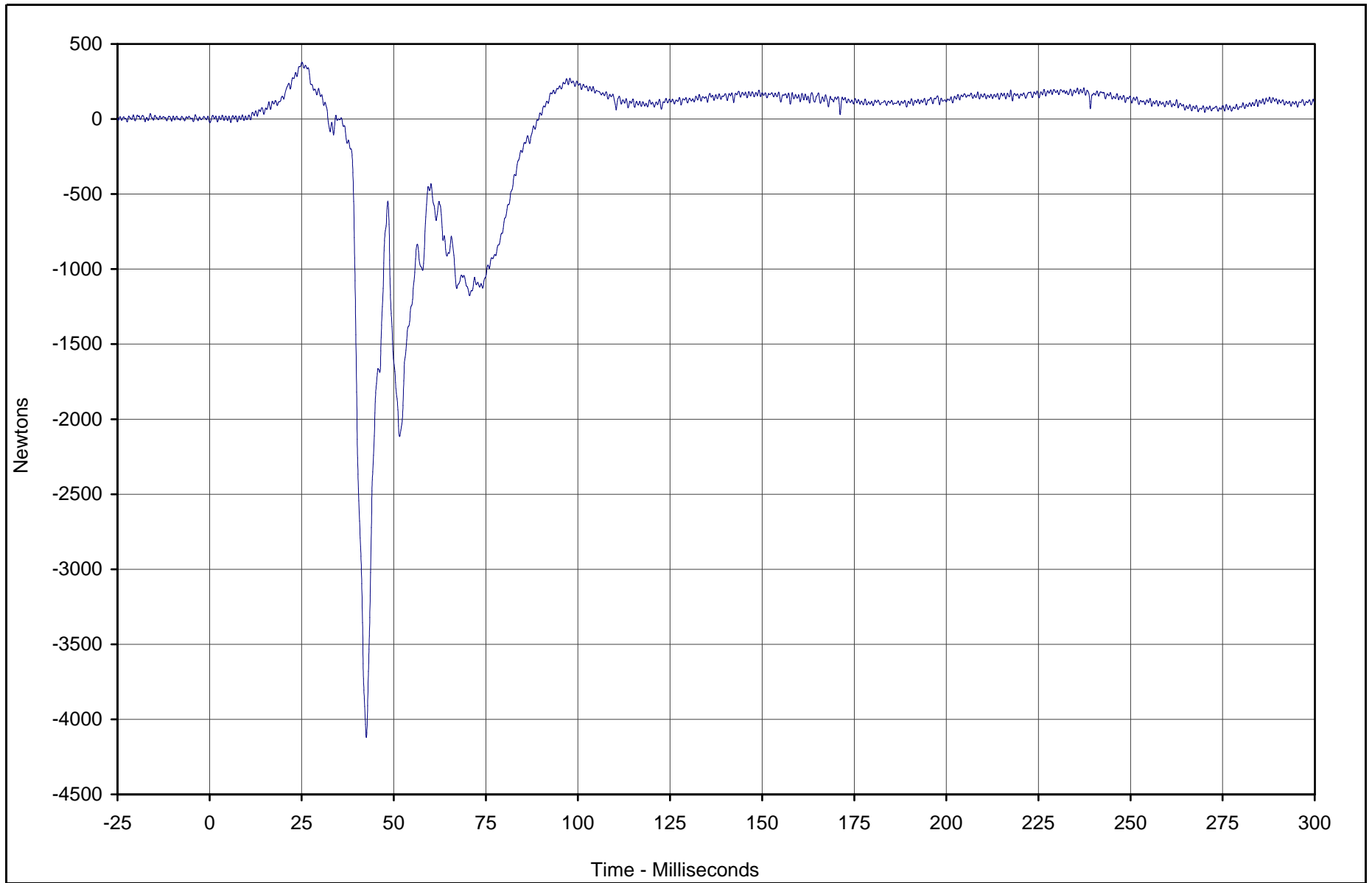
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-102



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Right Femur Force	068	FIL	Newtons	378.6	25.1	-4120.5	42.6	600

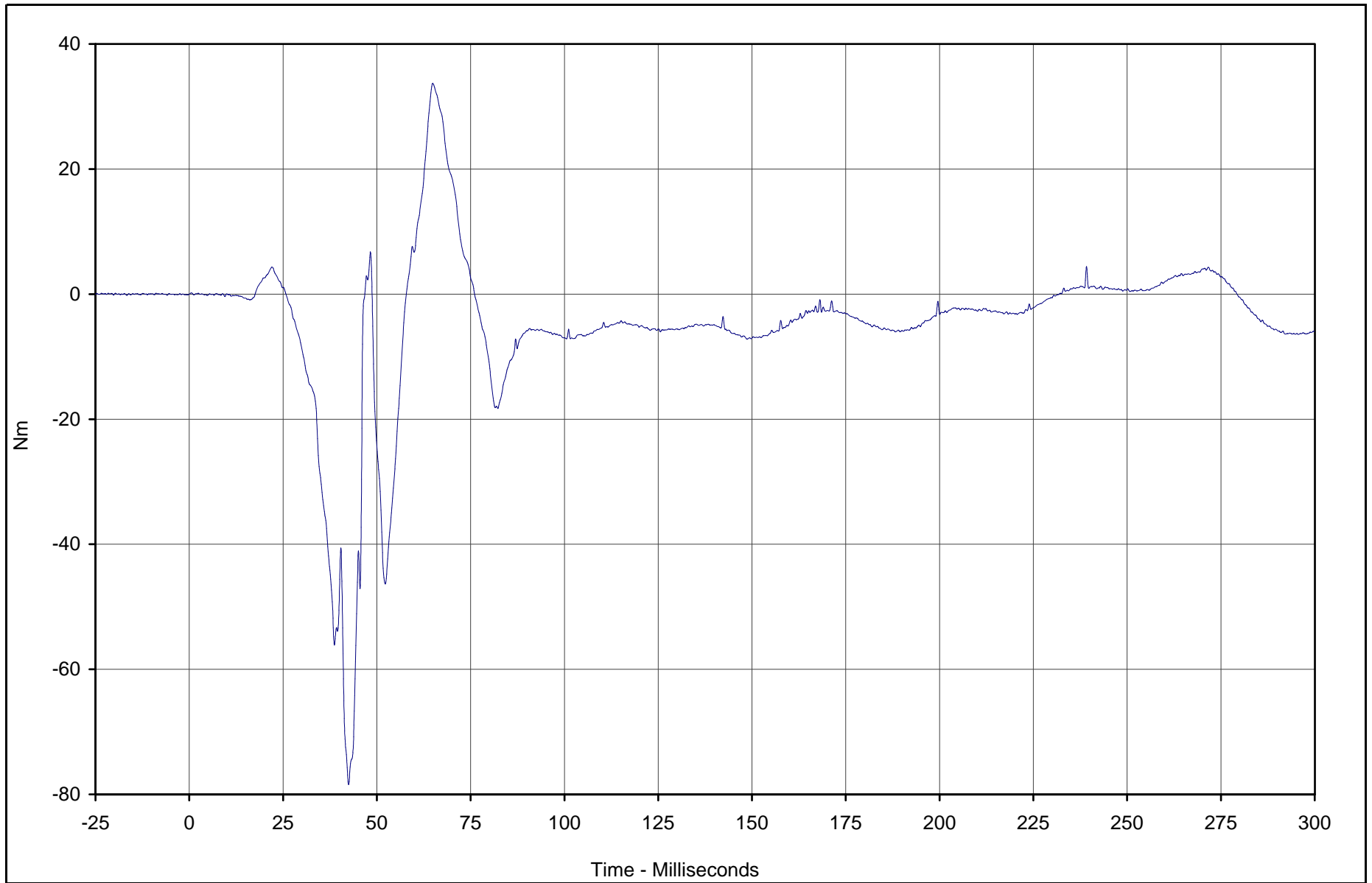


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Left Upper Tibia Moment X	069	FIL	Nm	33.7	64.9	-78.4	42.5	600



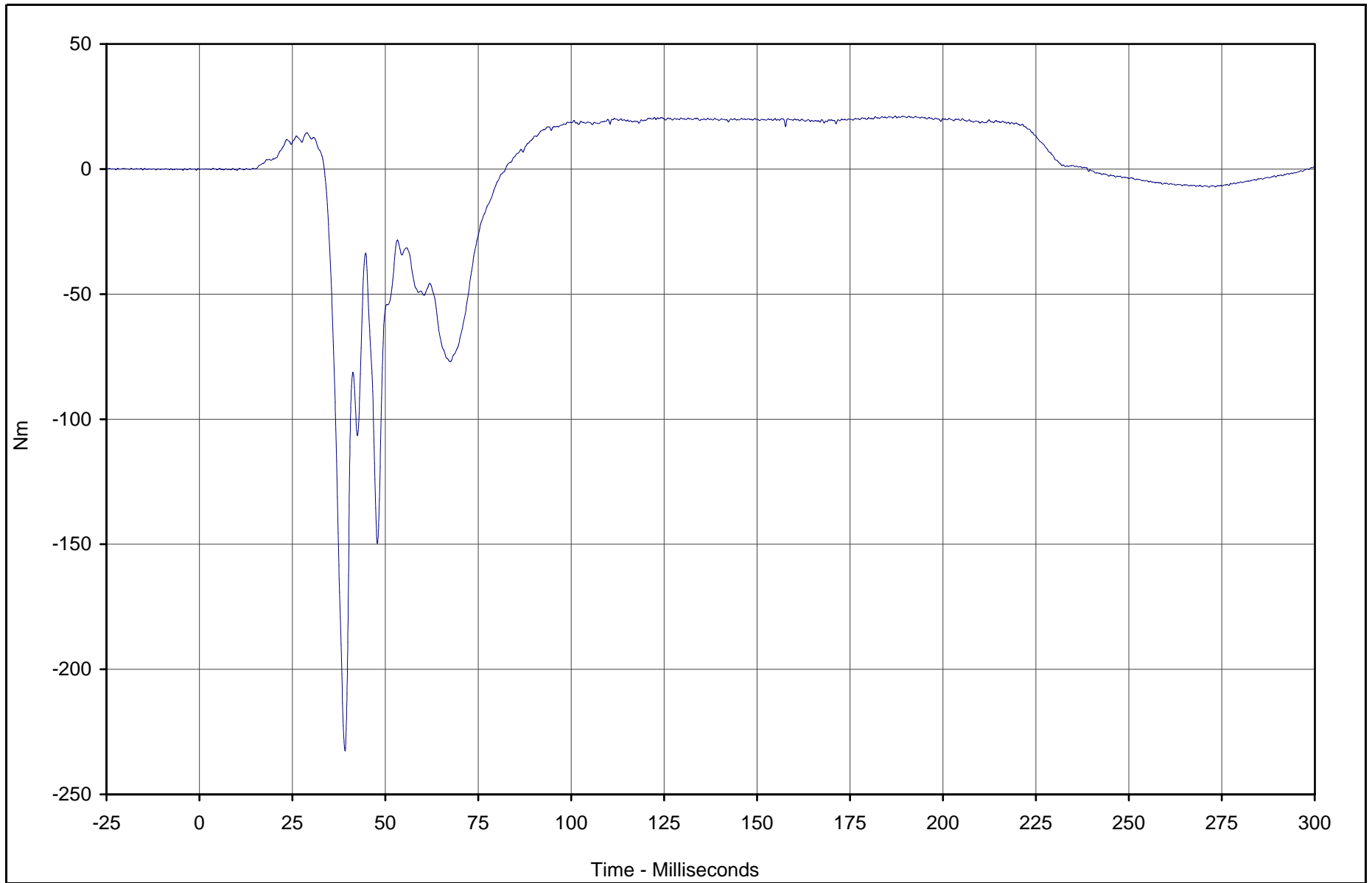
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-104



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Left Upper Tibia Moment Y	070	FIL	Nm	21.1	187.2	-232.7	39.2	600



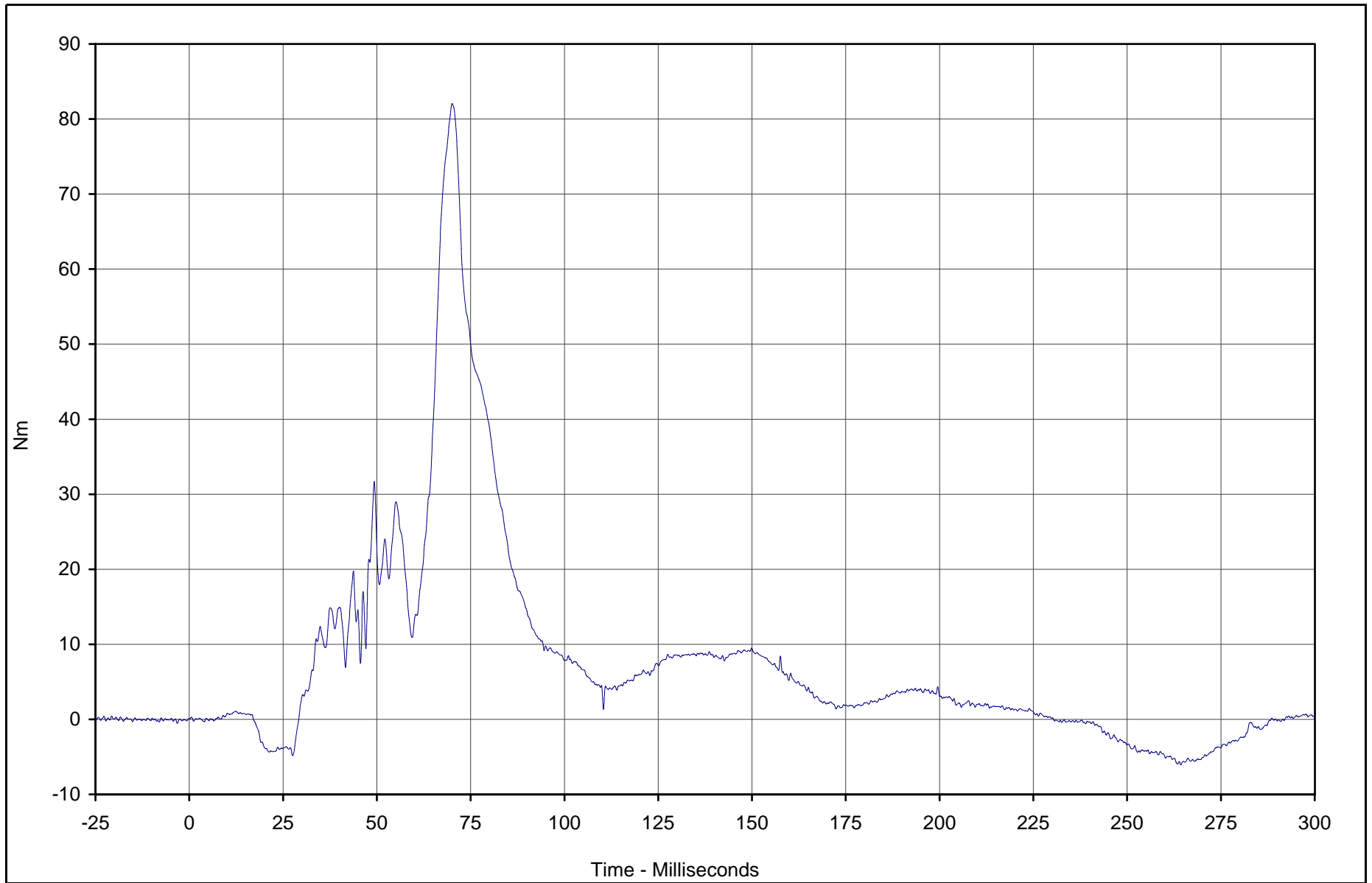
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Right Upper Tibia Moment X	071	FIL	Nm	82.0	70.1	-6.1	264.3	600

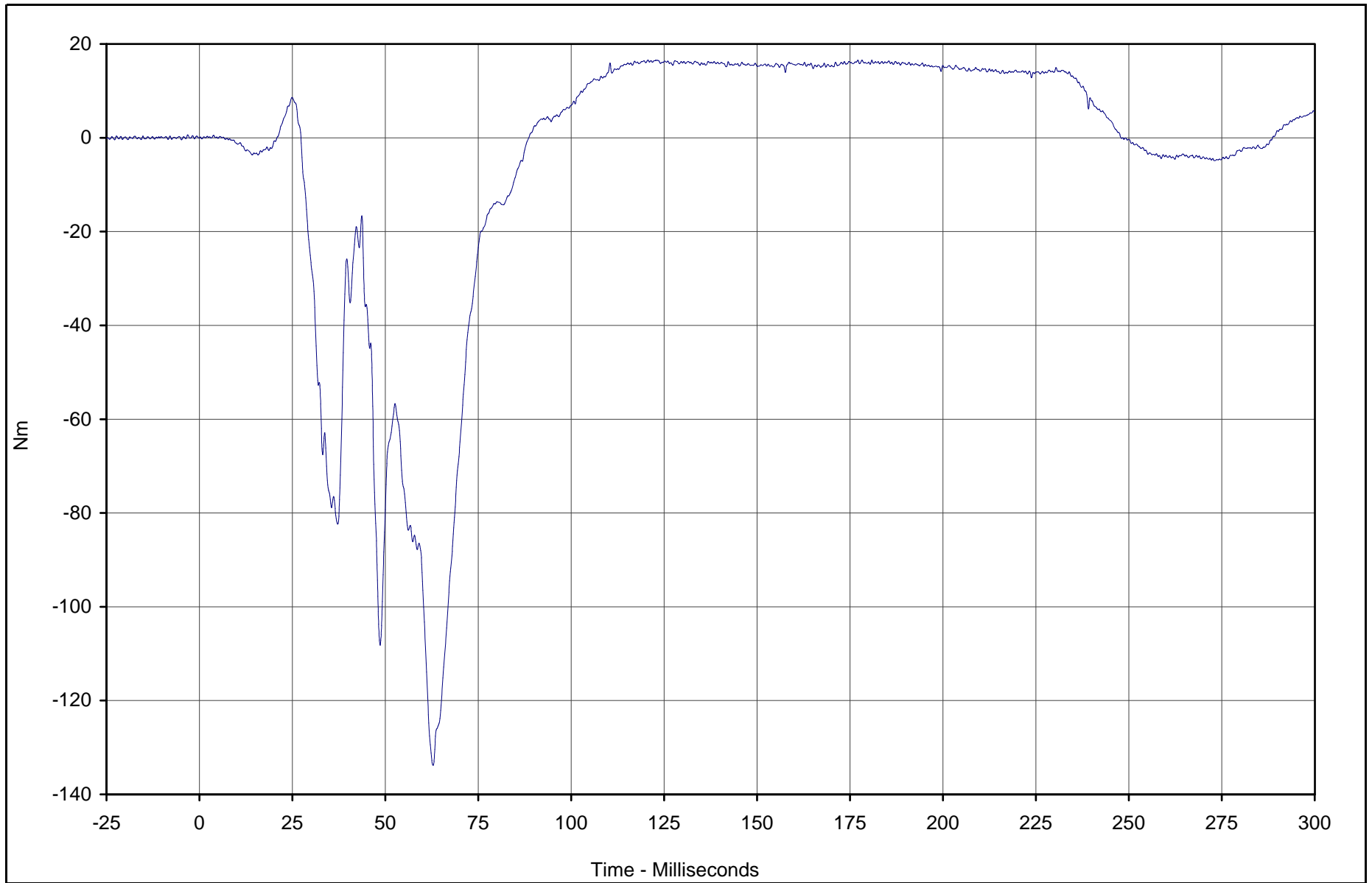


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Right Upper Tibia Moment Y	072	FIL	Nm	16.6	178.2	-133.8	62.9	600



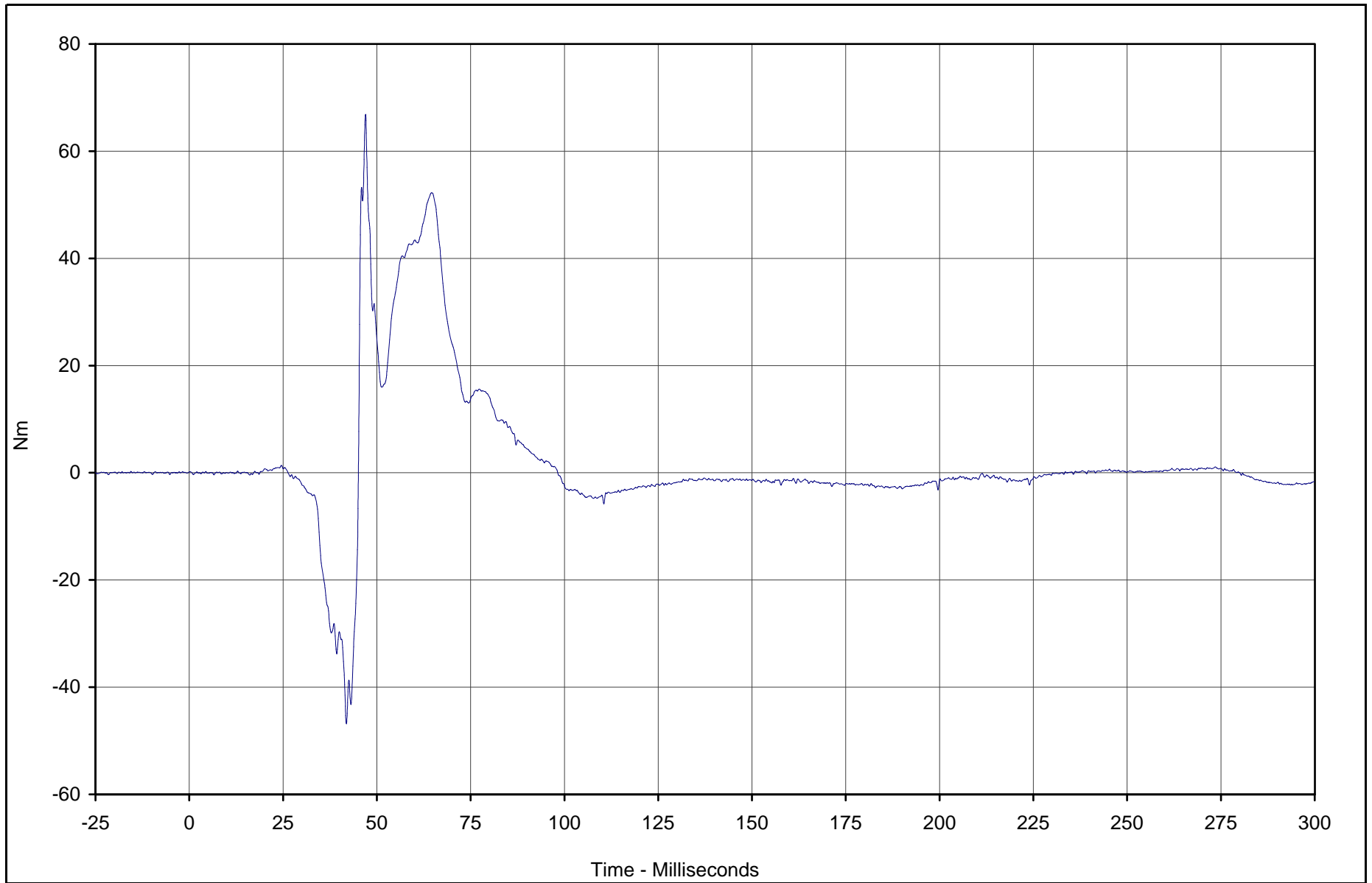
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-107



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Left Lower Tibia Moment X	073	FIL	Nm	66.9	47.0	-46.9	41.9	600



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

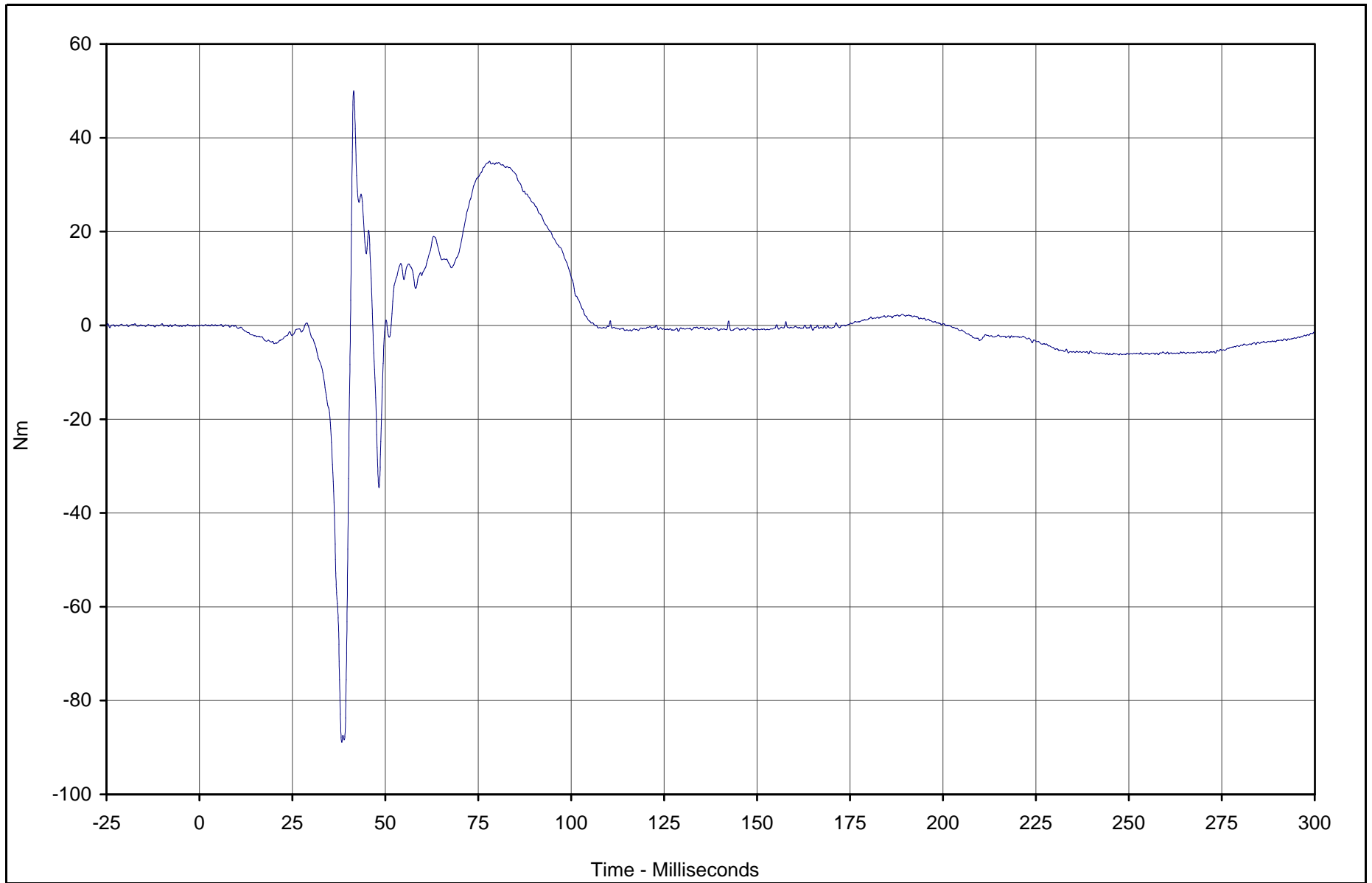
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

B-108



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Left Lower Tibia Moment Y	074	FIL	Nm	50.0	41.5	-88.9	38.3	600



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

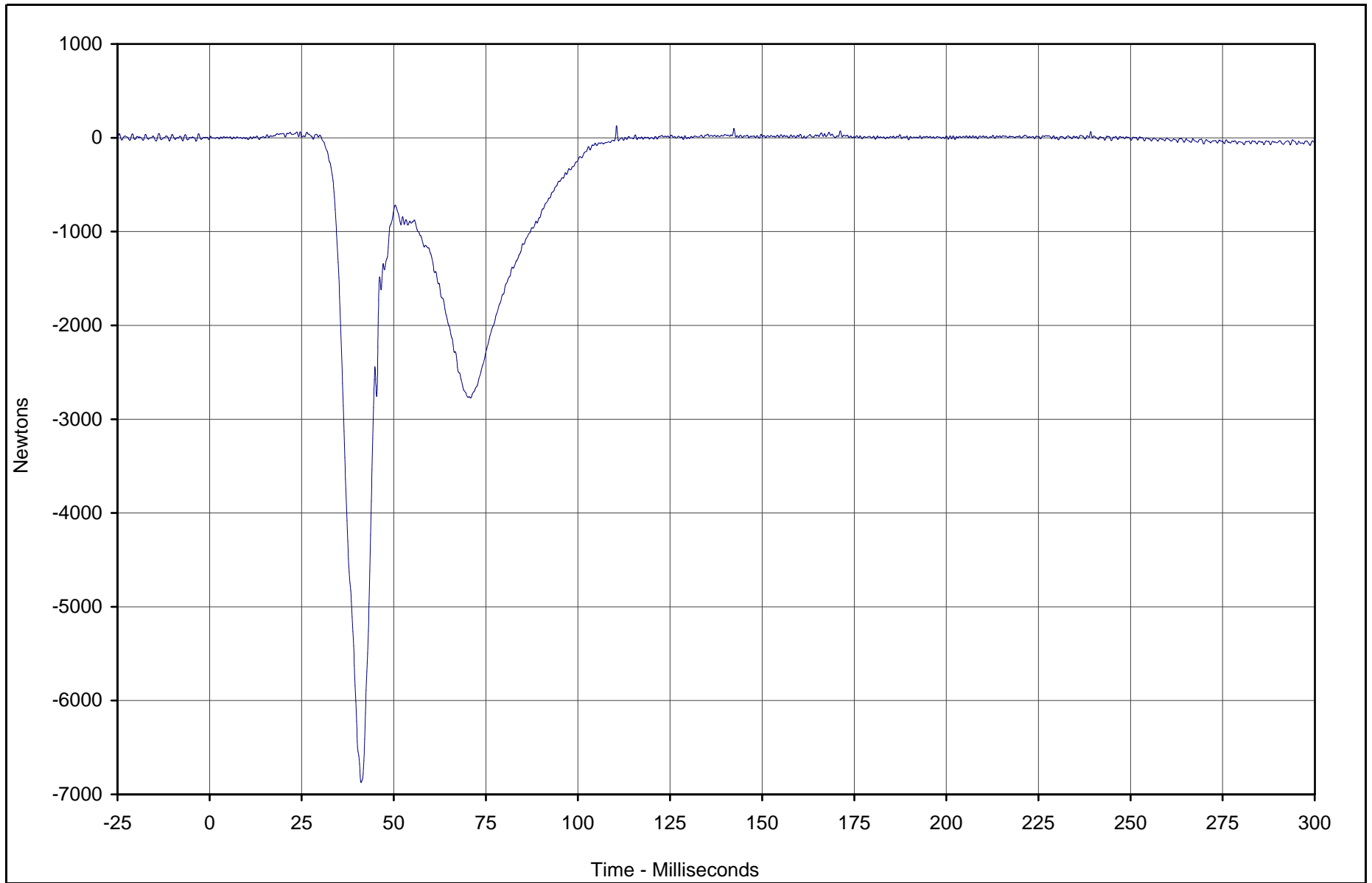
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

B-109



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Left Lower Tibia Force Z	075	FIL	Newtons	128.3	110.5	-6874.3	41.1	600



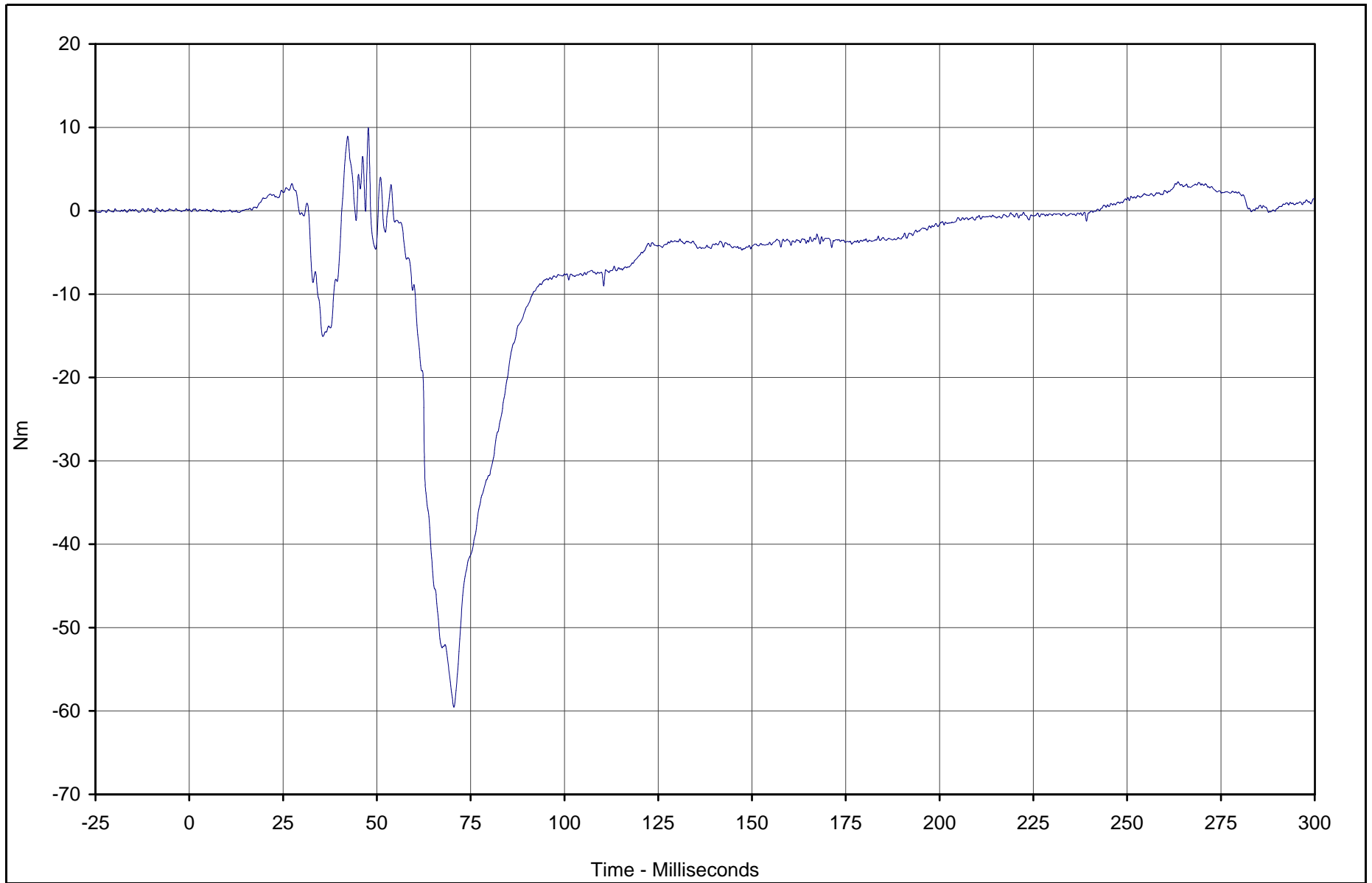
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-110



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Right Lower Tibia Moment X	076	FIL	Nm	10.0	47.7	-59.5	70.6	600



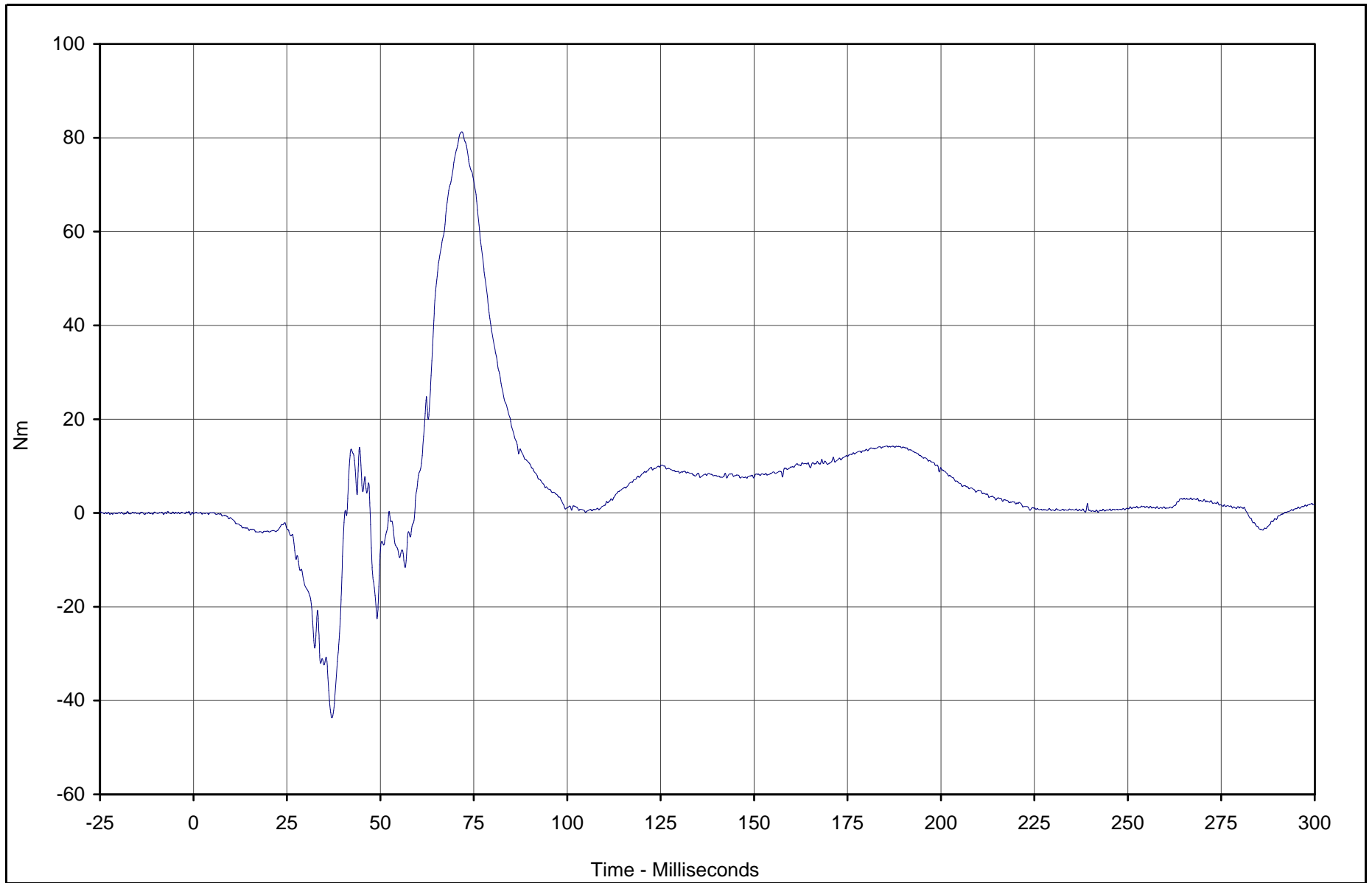
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-111



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Right Lower Tibia Moment Y	077	FIL	Nm	81.3	71.8	-43.7	37.1	600



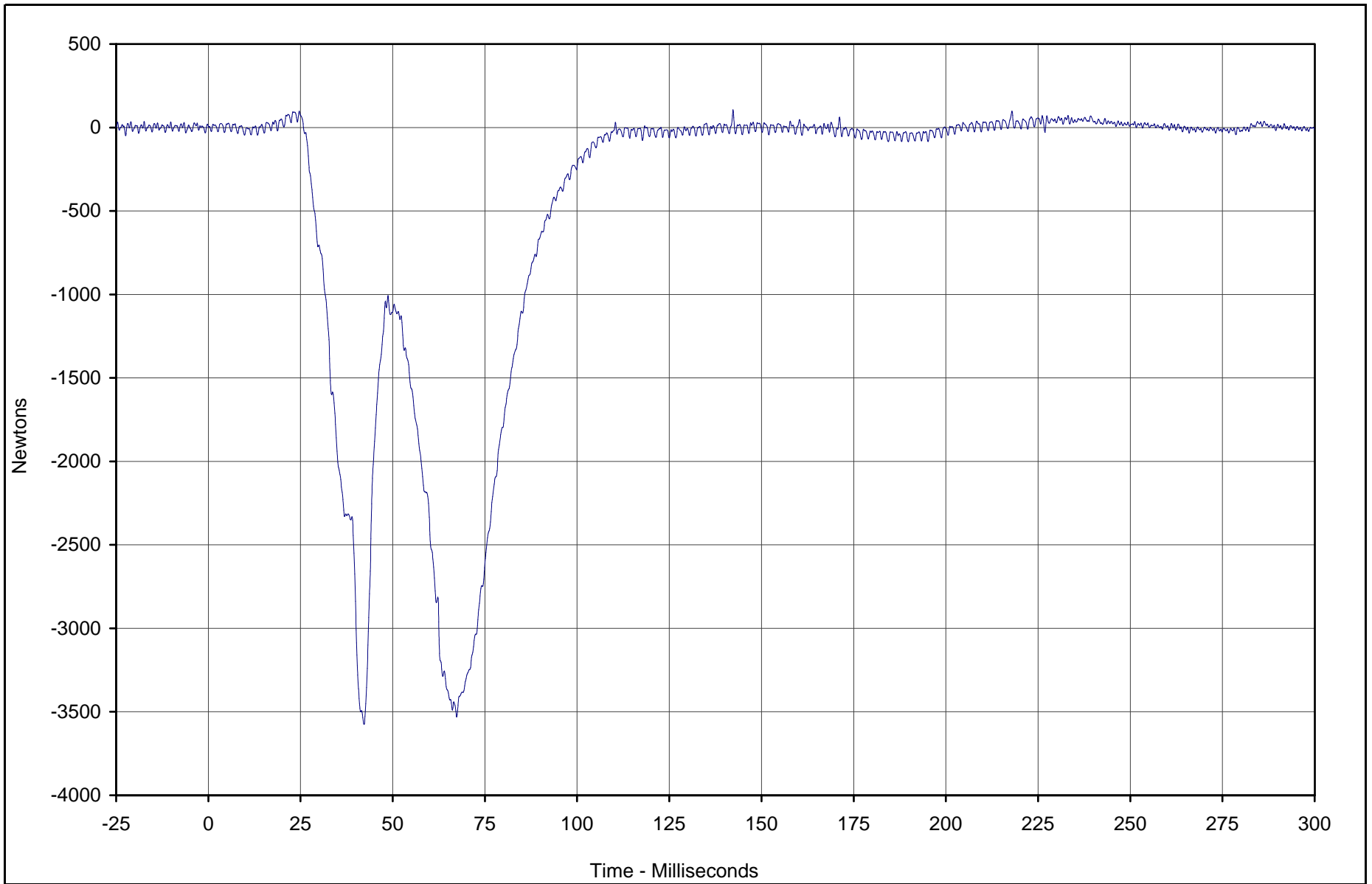
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Right lower Tibia Force Z	078	FIL	Newtons	106.2	142.3	-3576.0	42.2	600



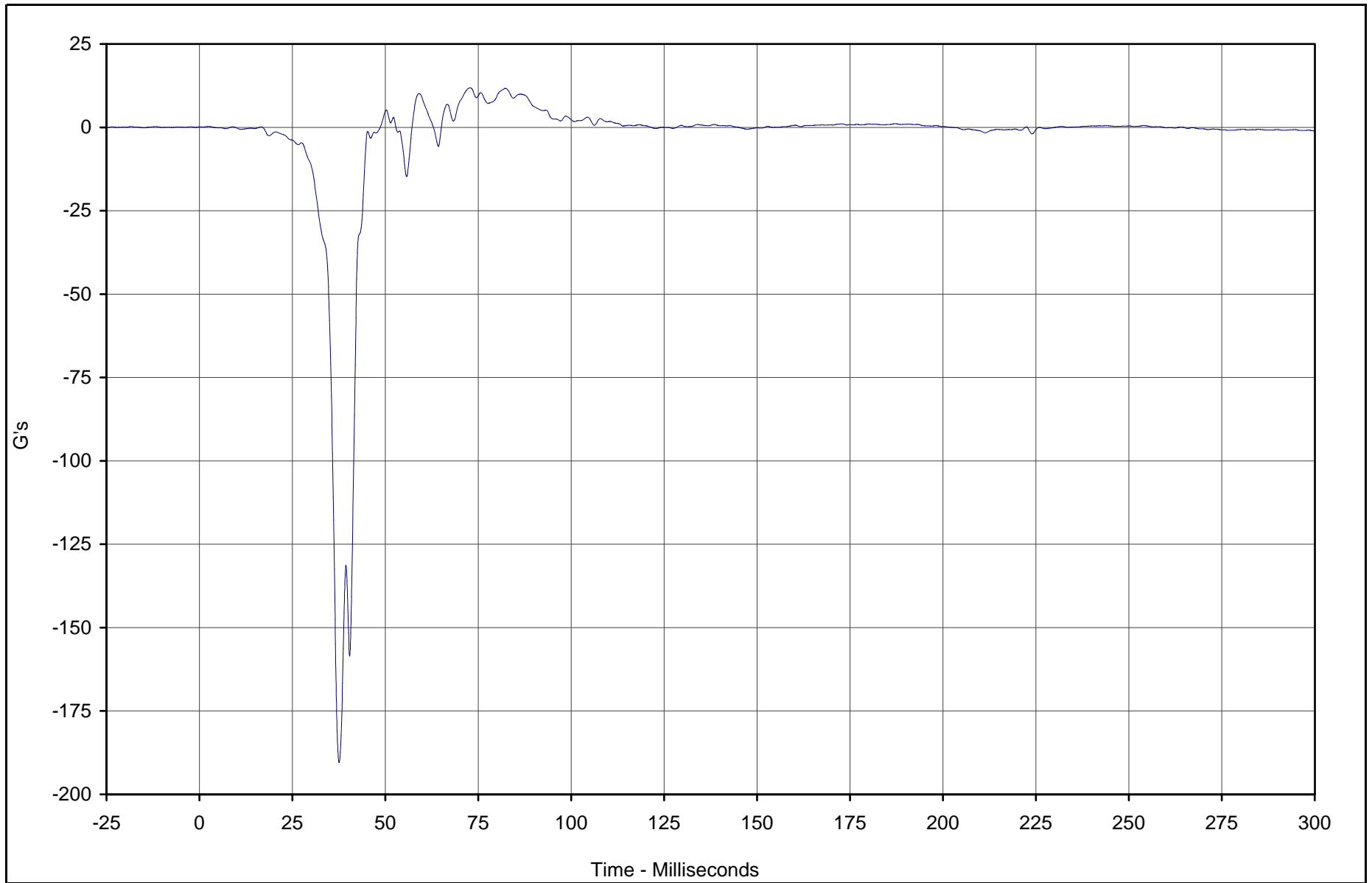
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-113



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Left Foot Aft X	079	FIL	G's	11.9	72.8	-190.5	37.6	180



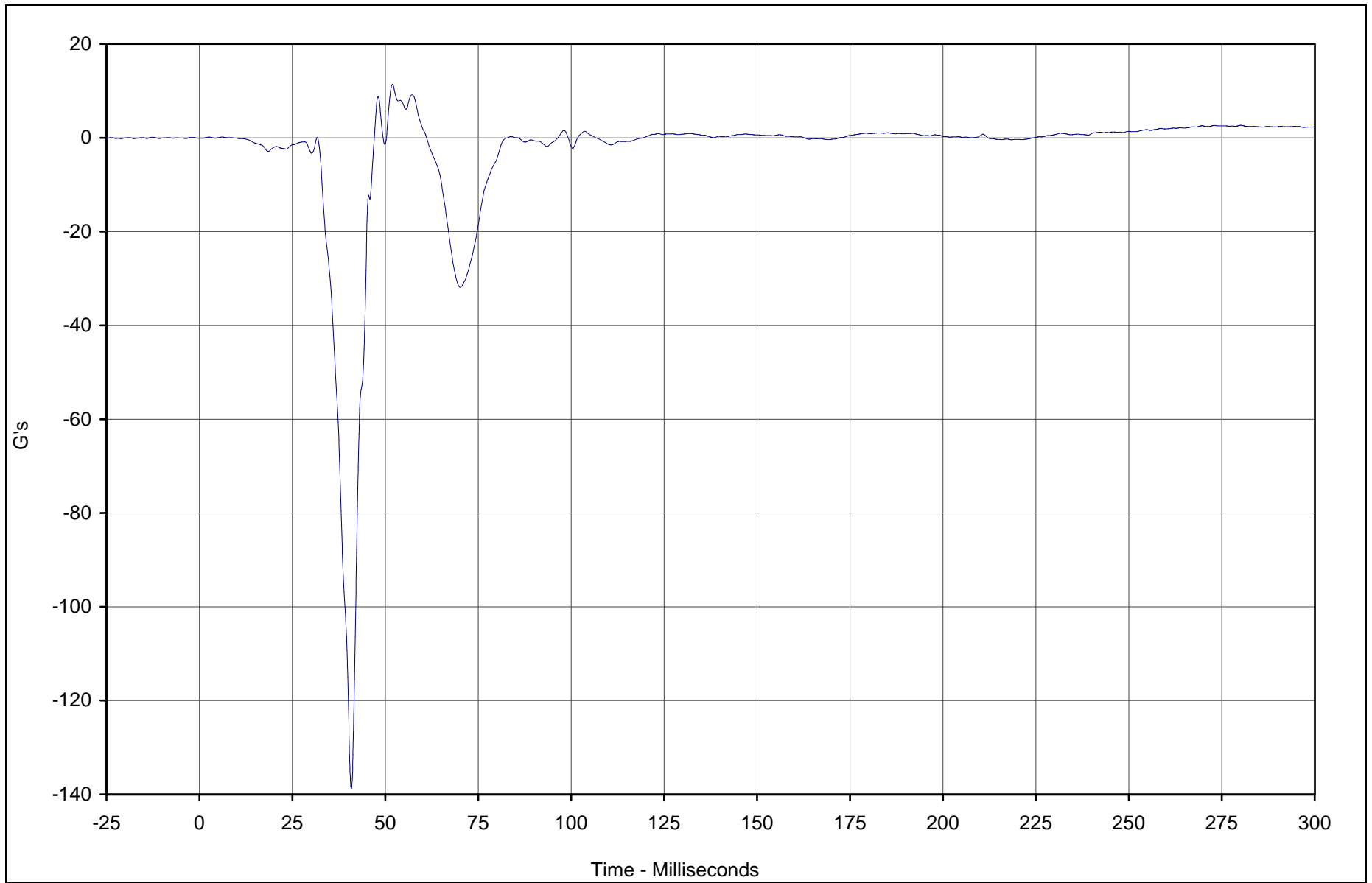
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-114



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Left Foot Aft Z	080	FIL	G's	11.4	51.9	-138.7	40.8	180



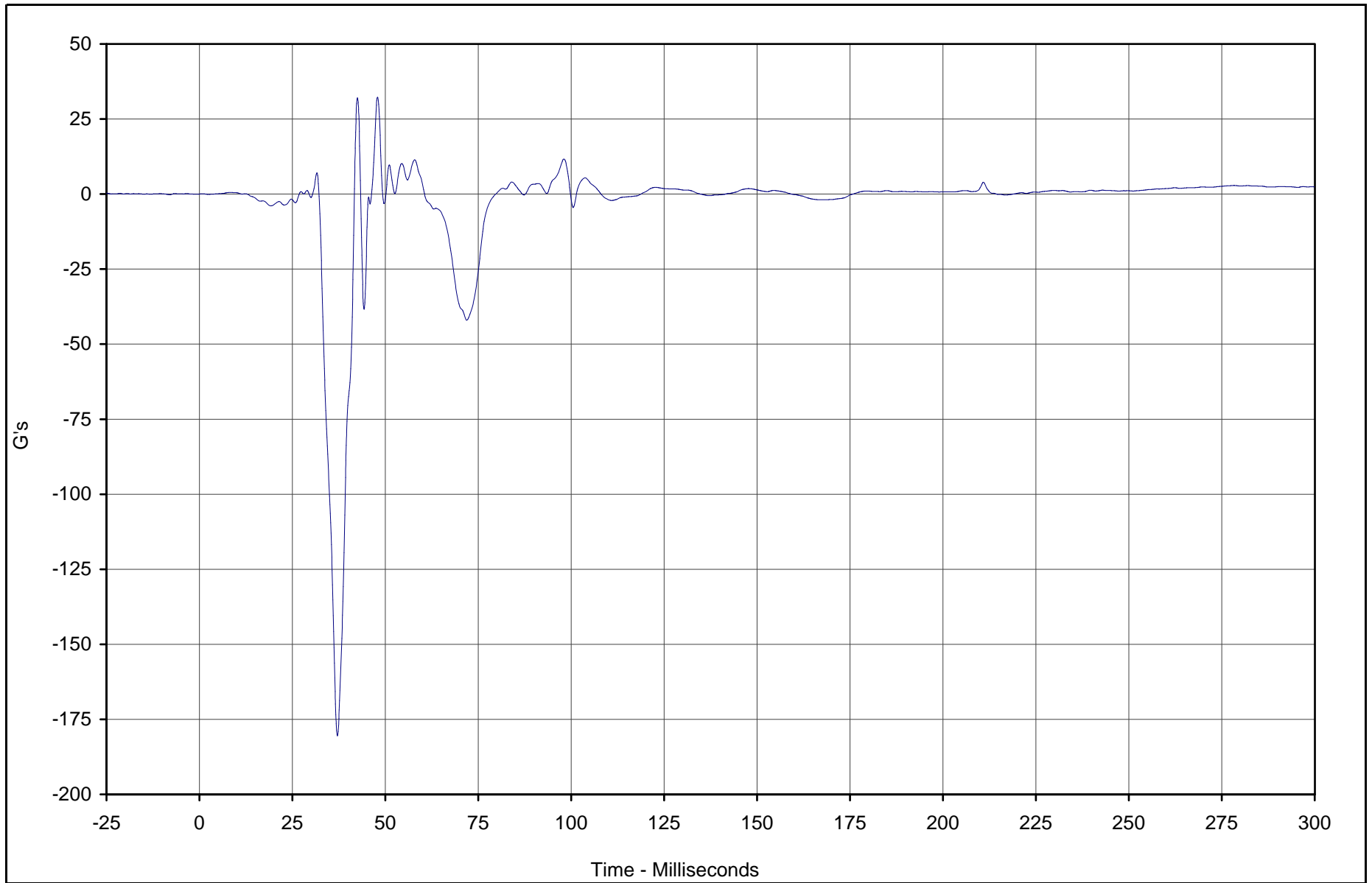
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-115



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Left Foot Fore Z	081	FIL	G's	32.3	47.9	-180.5	37.1	180



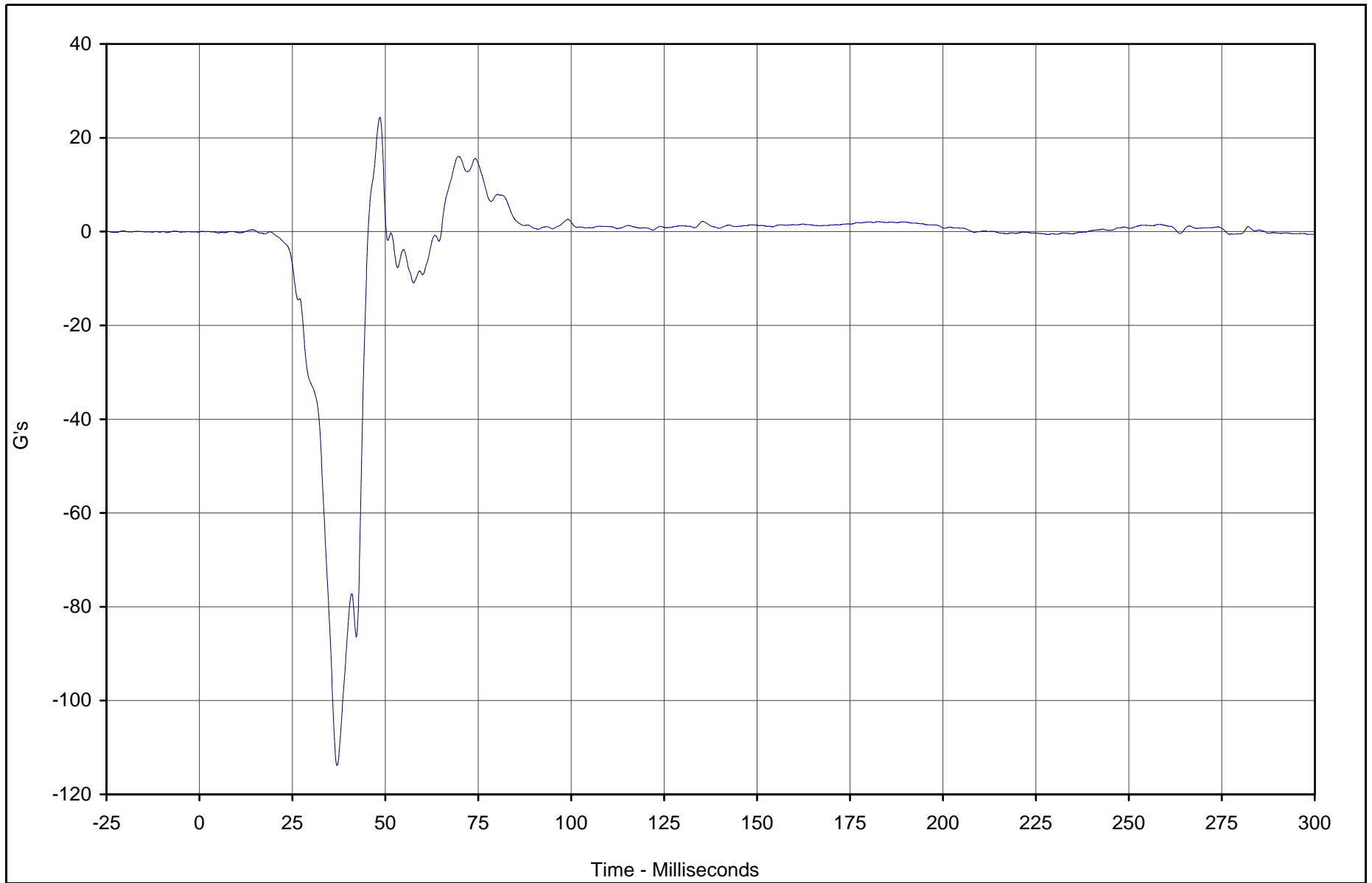
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Right Foot Aft X	082	FIL	G's	24.4	48.5	-113.8	37.0	180



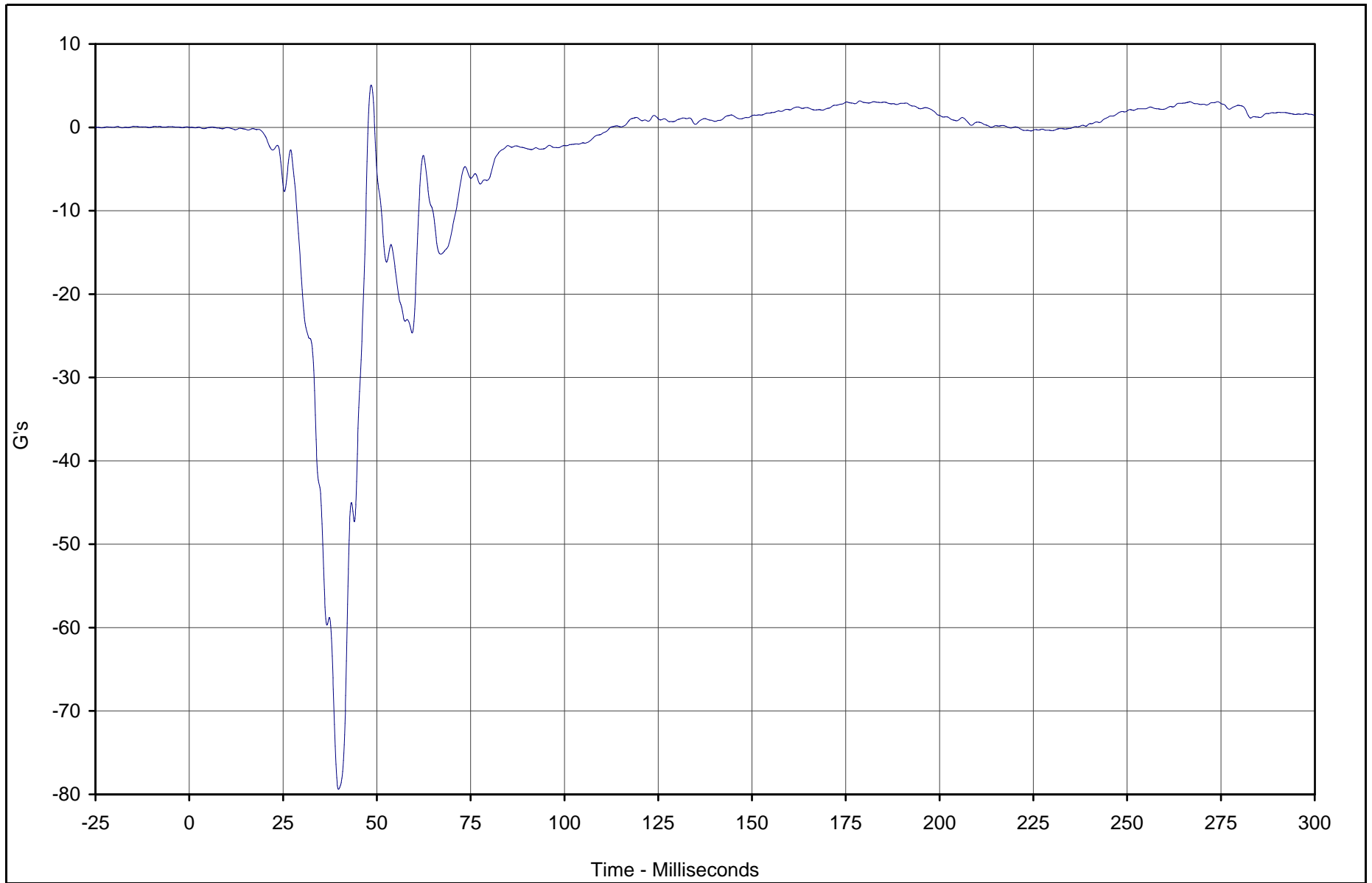
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-117



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Right Foot Aft Z	083	FIL	G's	5.1	48.5	-79.4	39.8	180



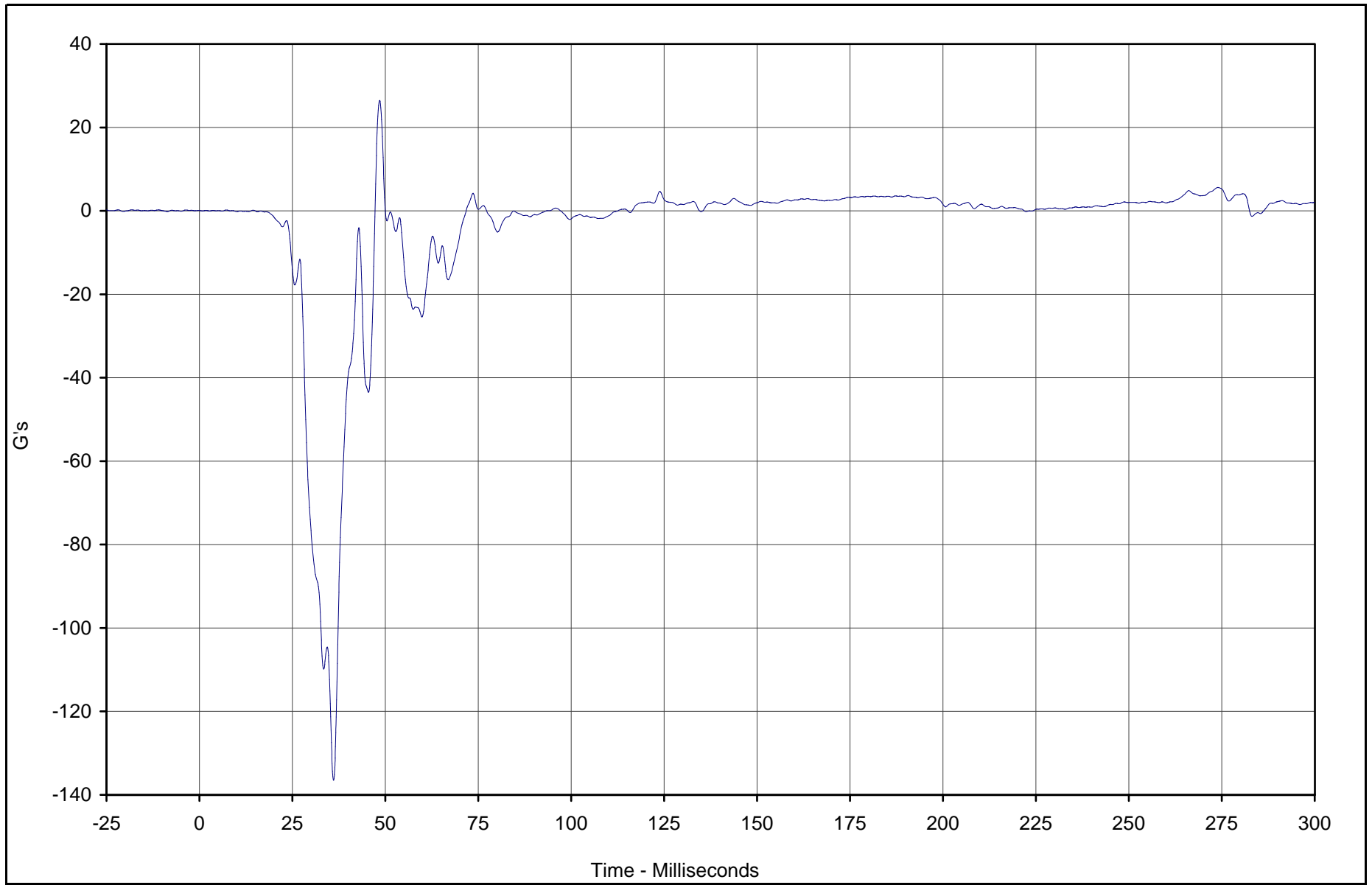
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Right Foot Fore Z	084	FIL	G's	26.5	48.5	-136.5	36.1	180

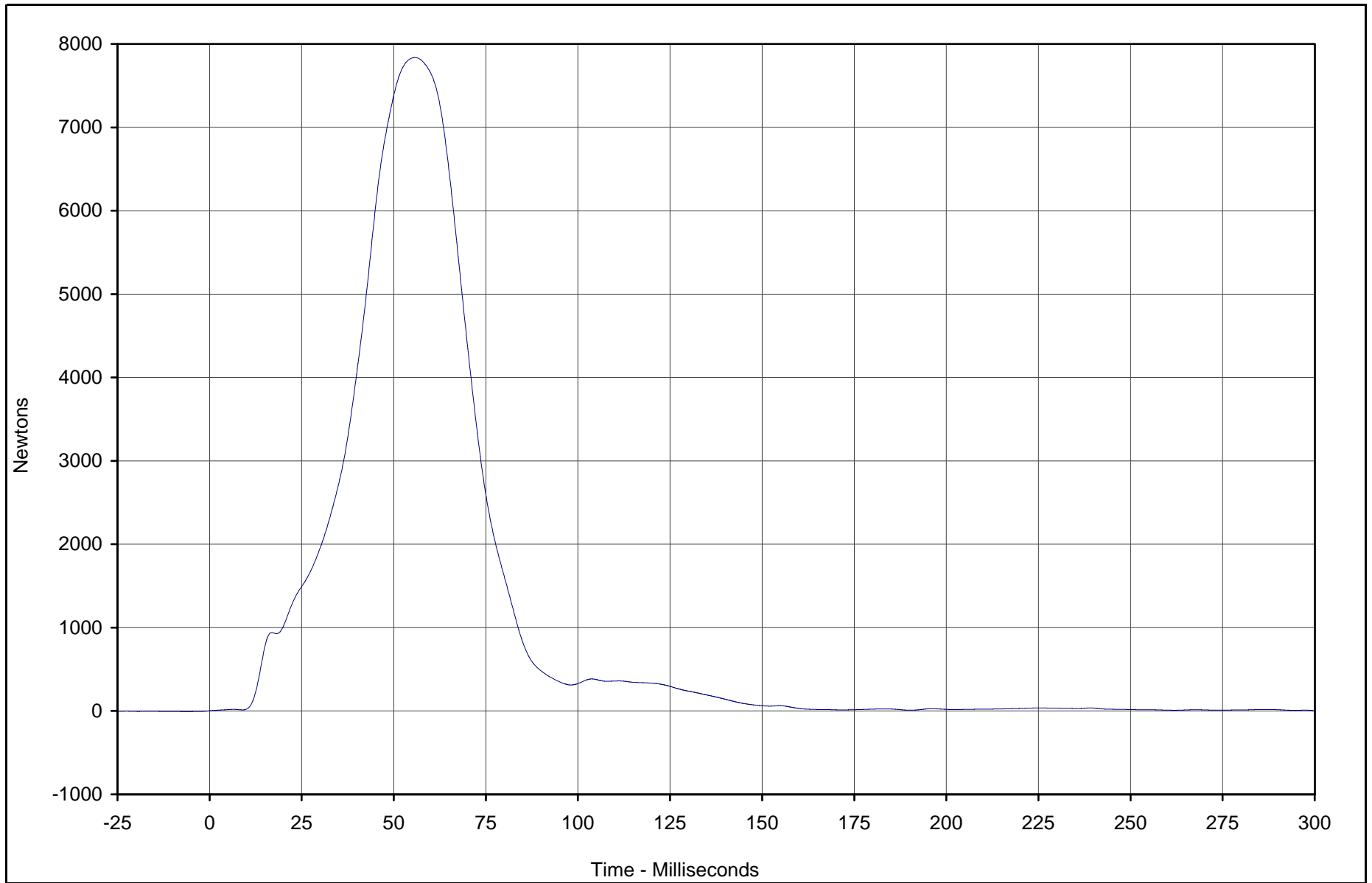


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Lap Belt Force	085	FIL	Newtons	7837.4	55.7	1.4	0.0	60



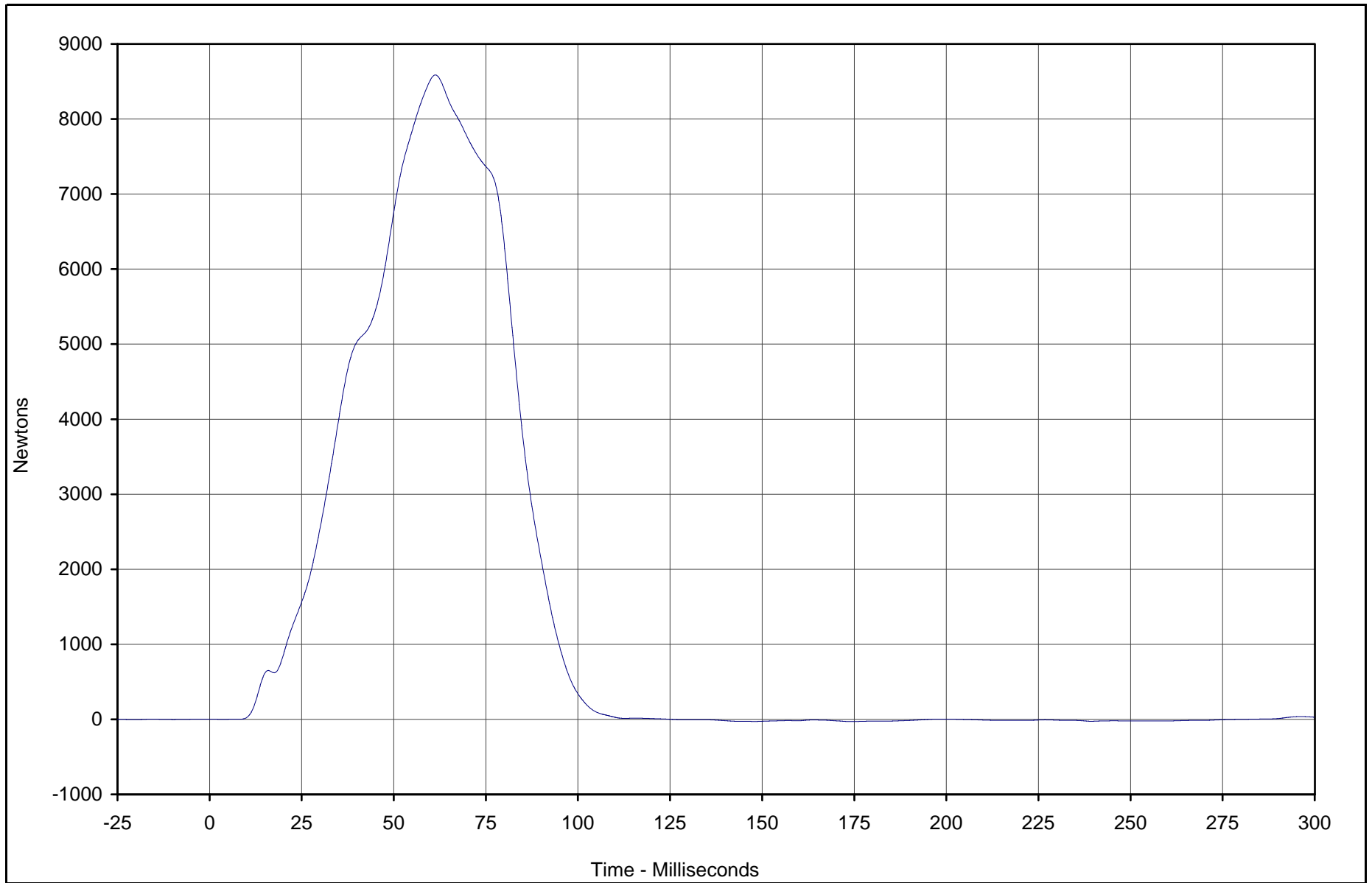
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-120



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Shoulder Belt Force	086	FIL	Newtons	8587.2	61.3	-29.3	174.1	60



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

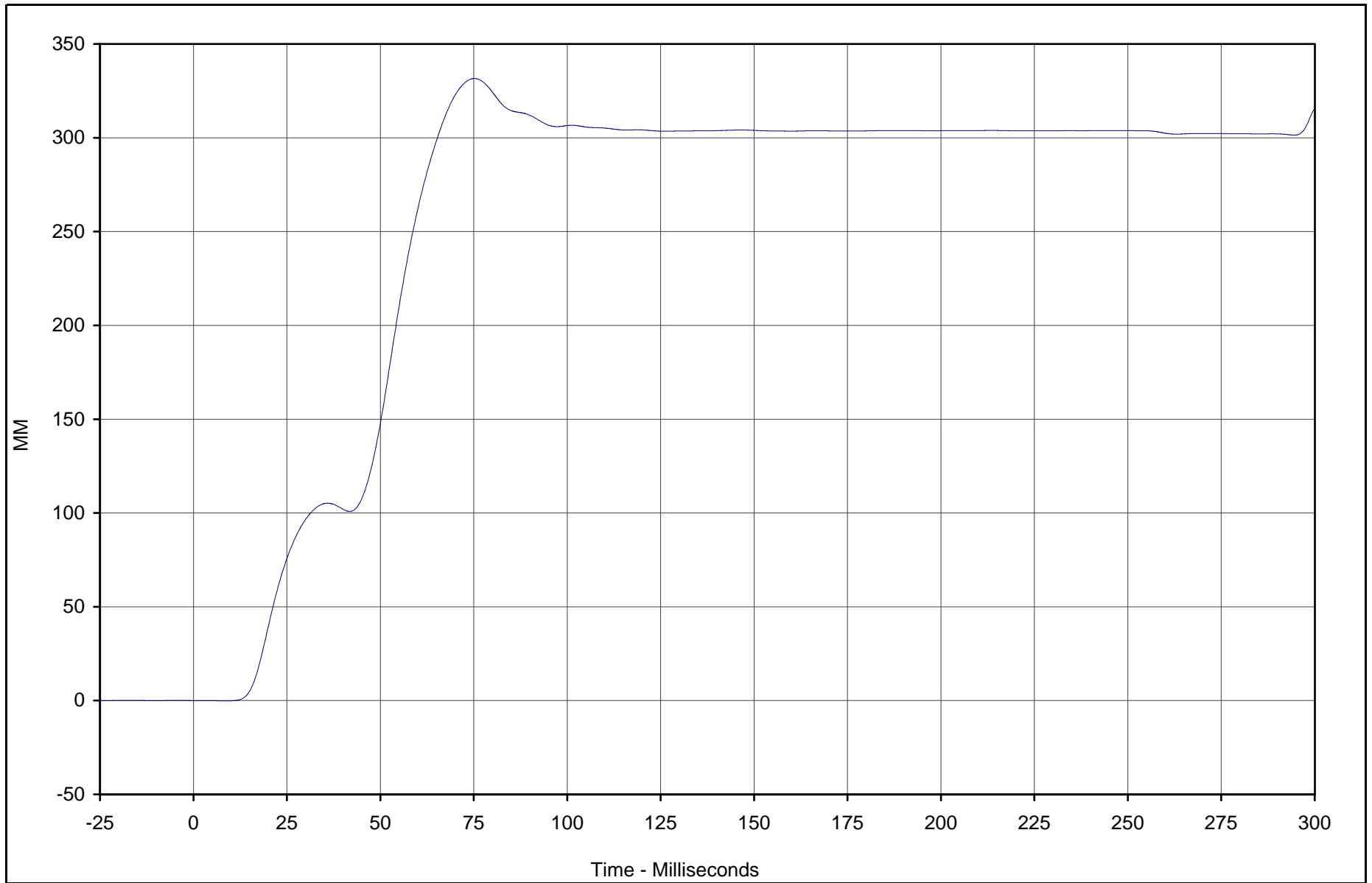
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

B-121



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Passenger Shoulder Belt Pullout	087	FIL	MM	331.6	75.2	-0.2	8.5	60



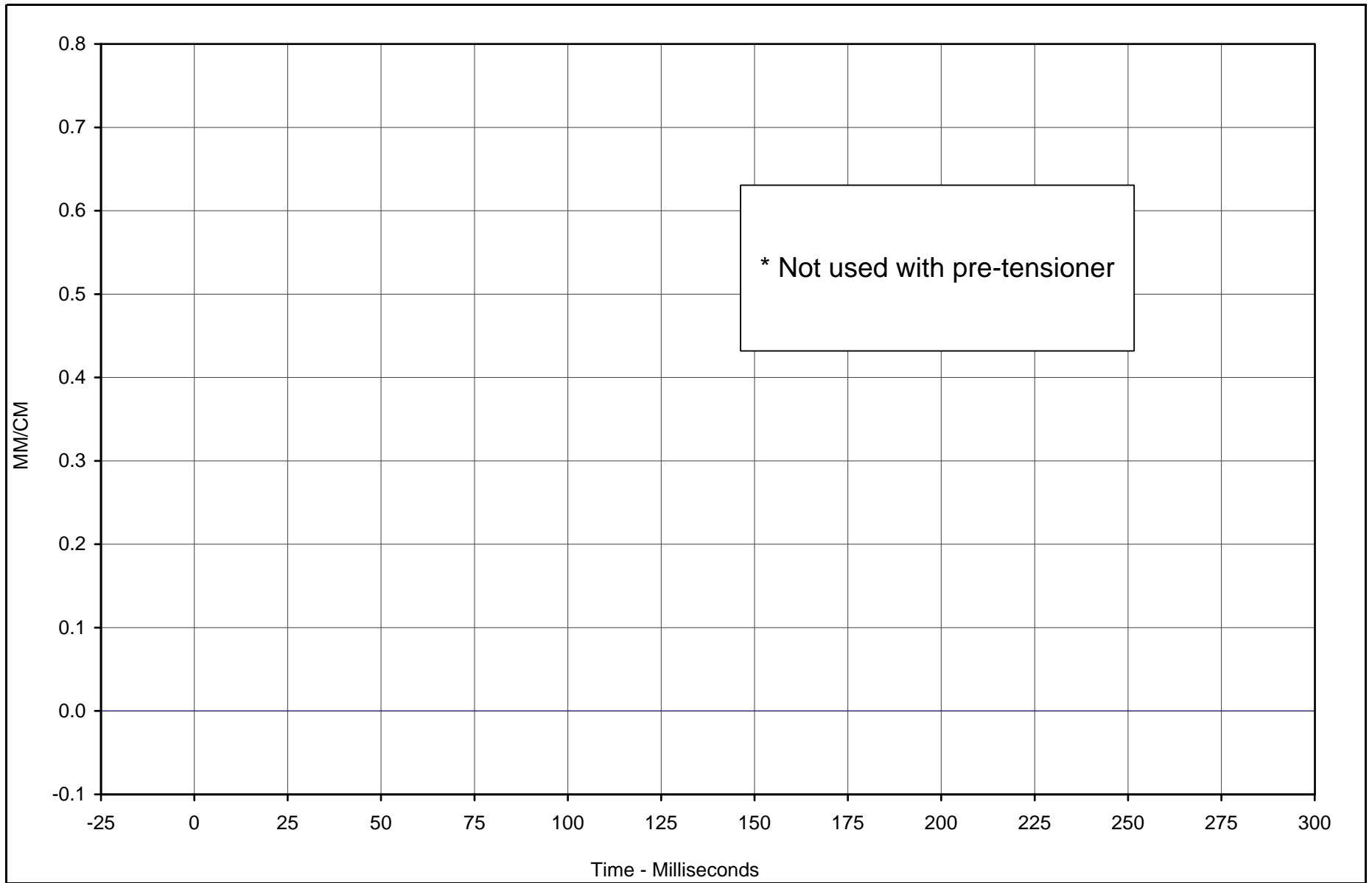
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

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 Jaguar X-Type 4 Door Sedan

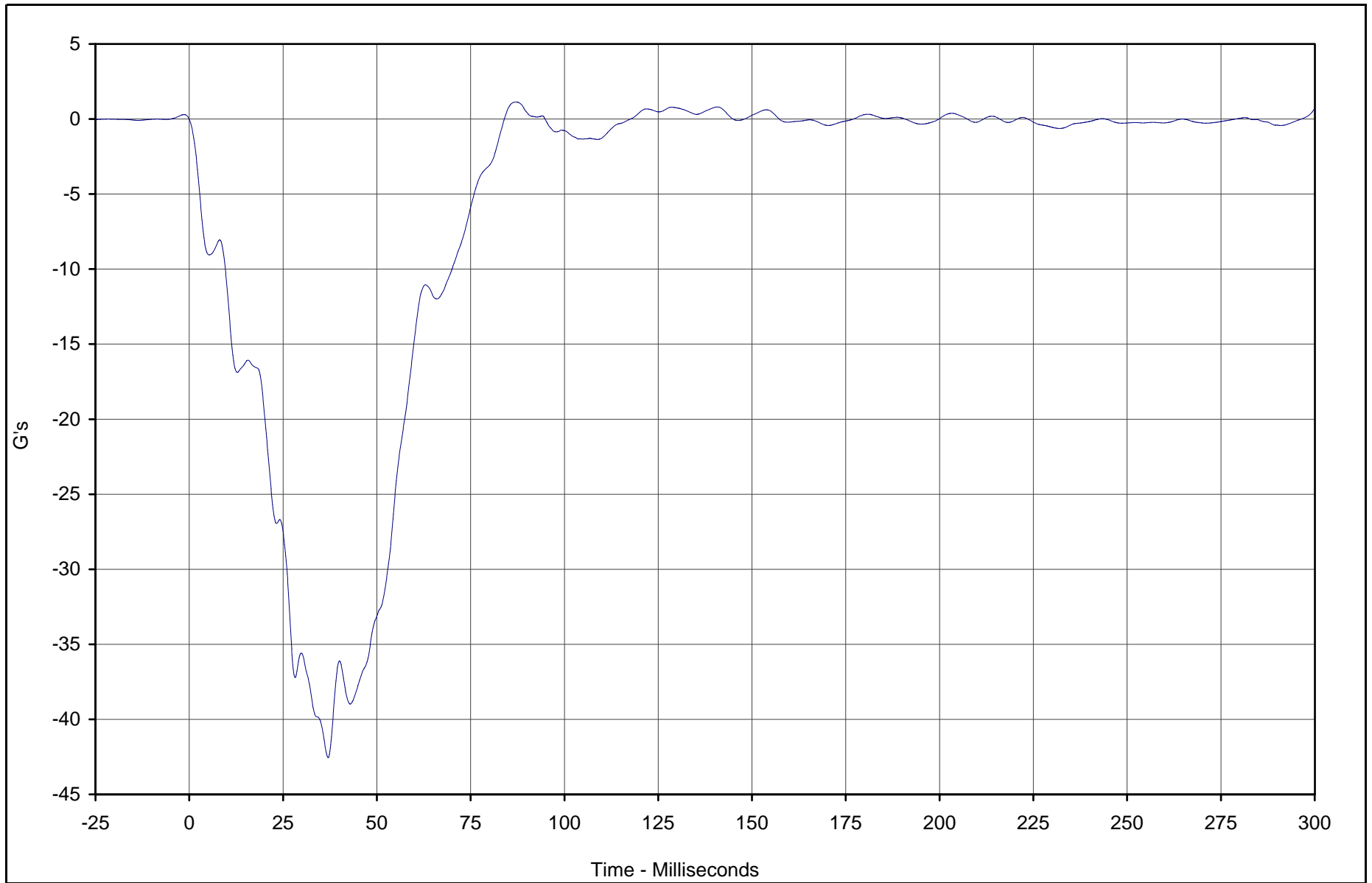
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

B-123



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Left Rear X	089	FIL	G's	1.1	87.0	-42.6	37.0	60



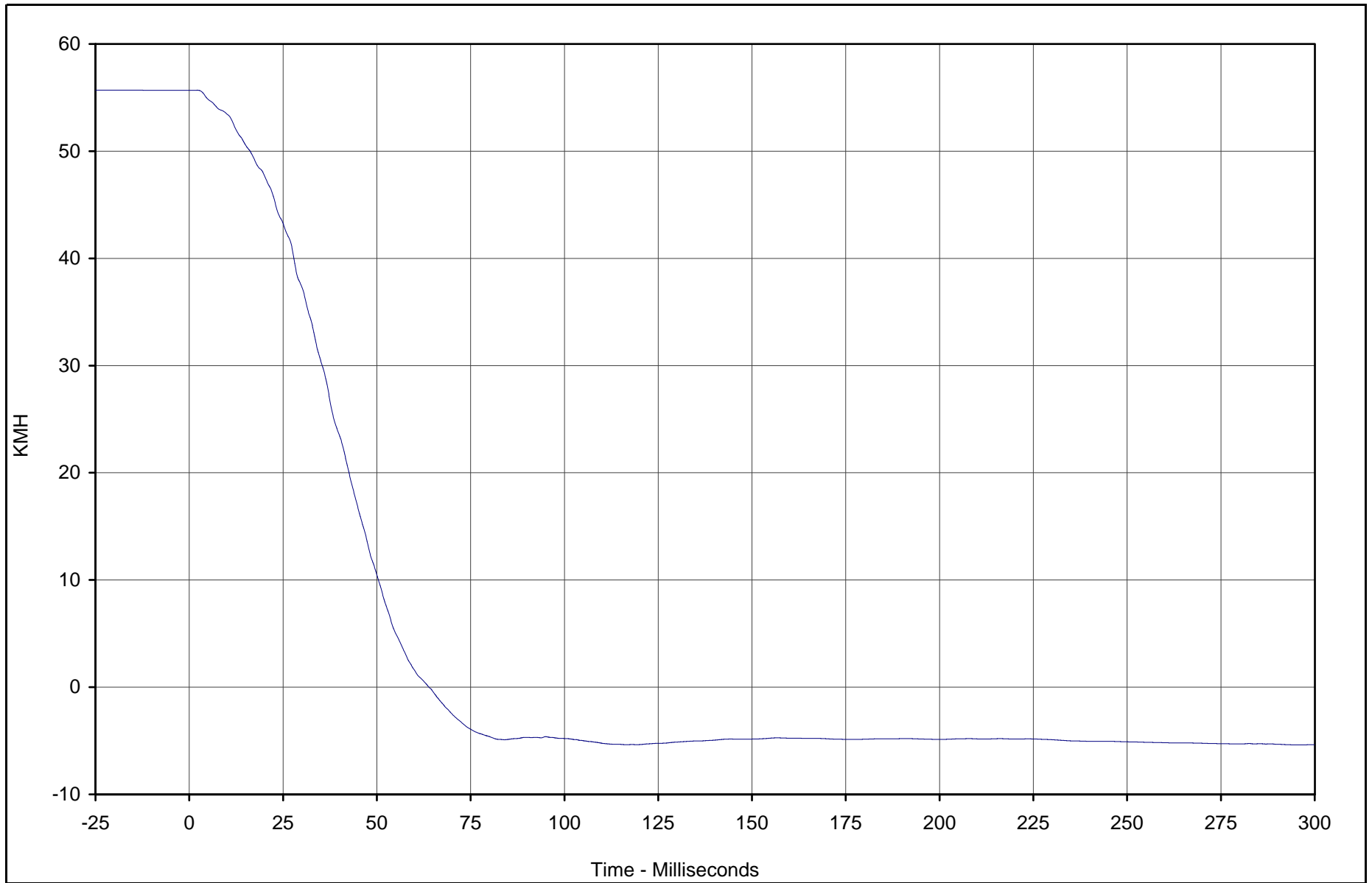
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-124



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Left Rear X Velocity	089	IN1	KMH	55.7	2.1	-5.4	296.4	180



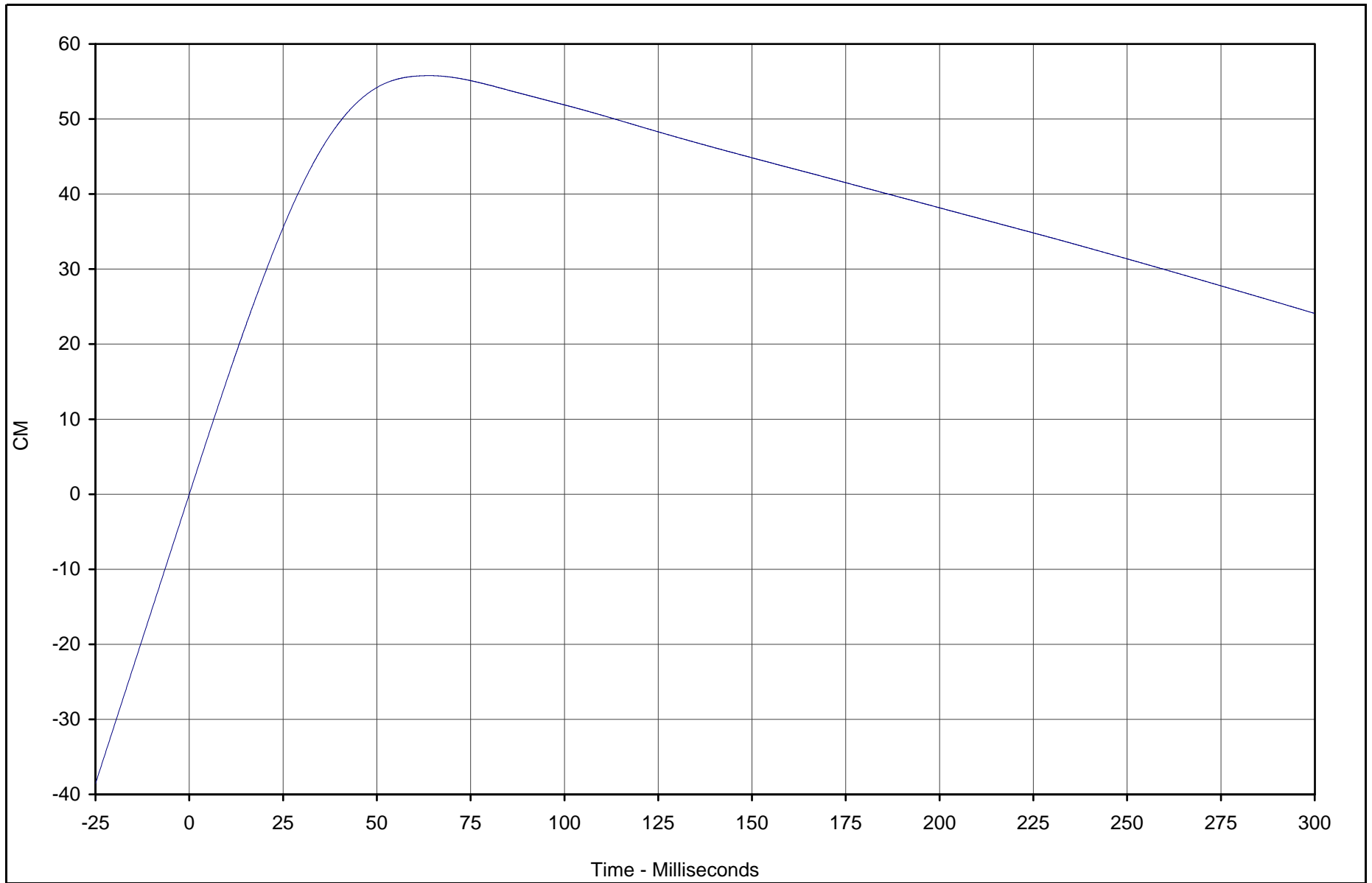
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-125



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Left Rear X Displ.	089	IN2	CM	55.8	63.9	0.0	0.0	180

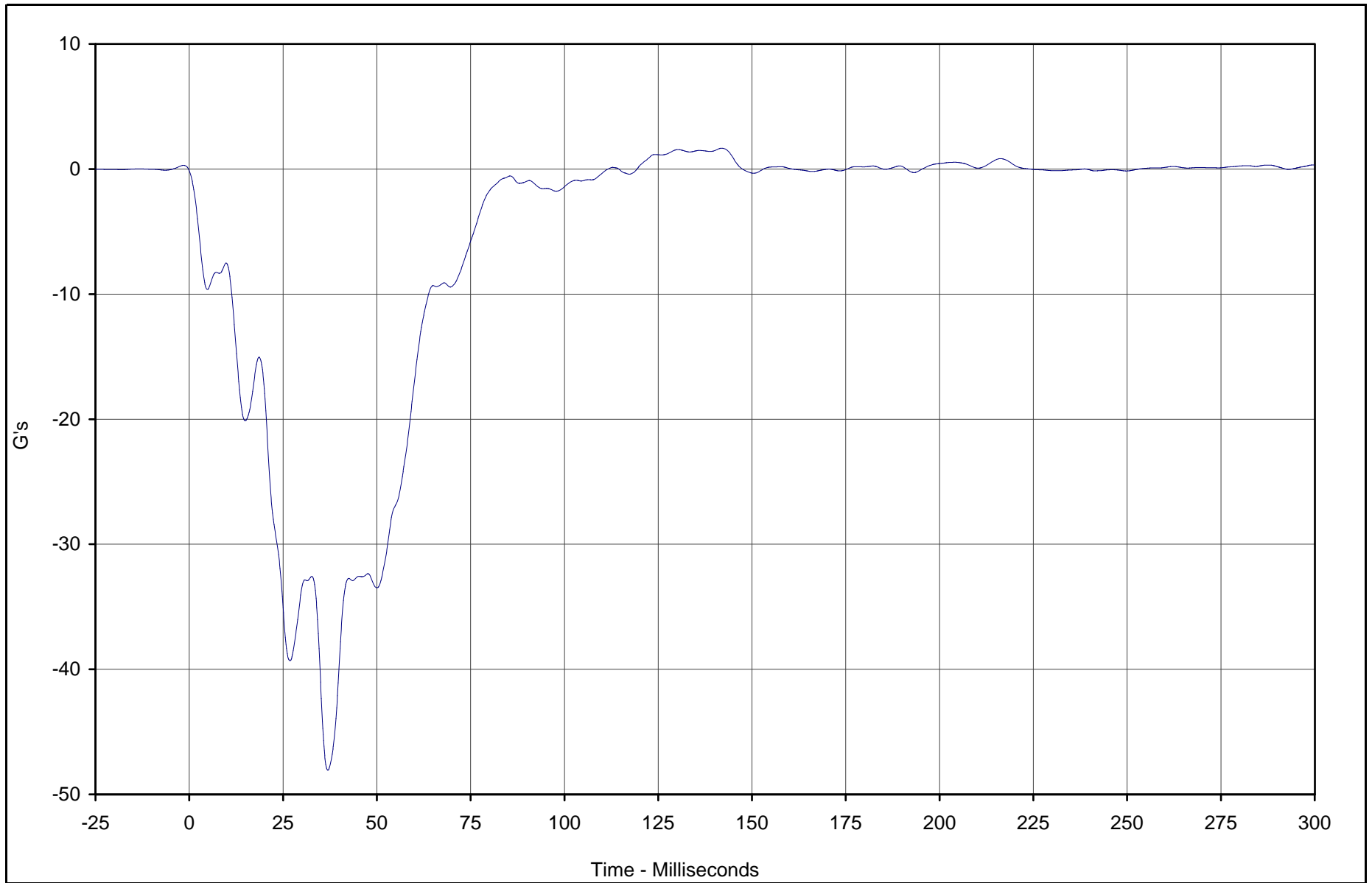


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Right Rear X	090	FIL	G's	1.7	141.9	-48.1	36.9	60



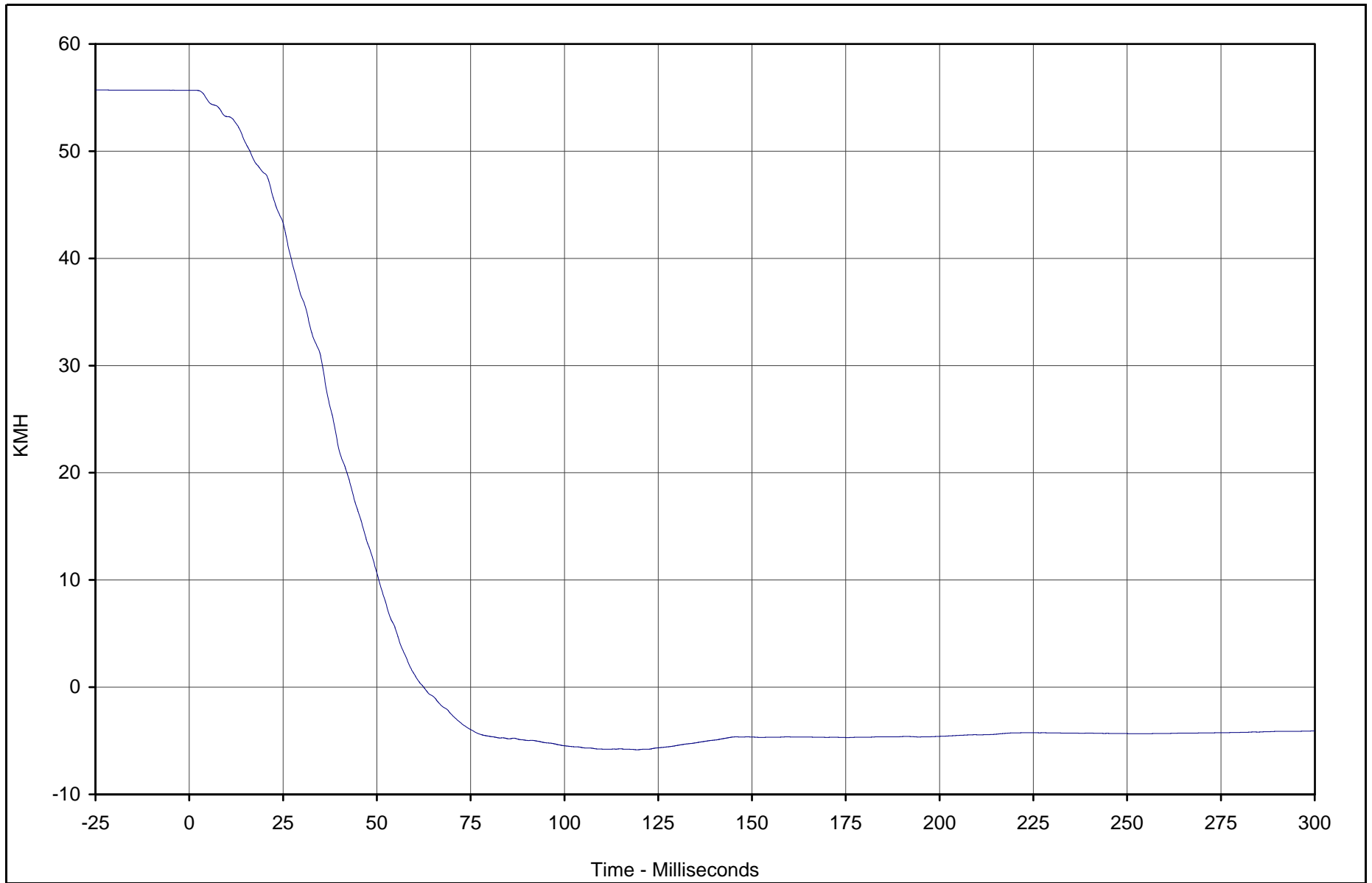
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-127



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Right Rear X Velocity	090	IN1	KMH	55.7	0.0	-5.8	119.4	180



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

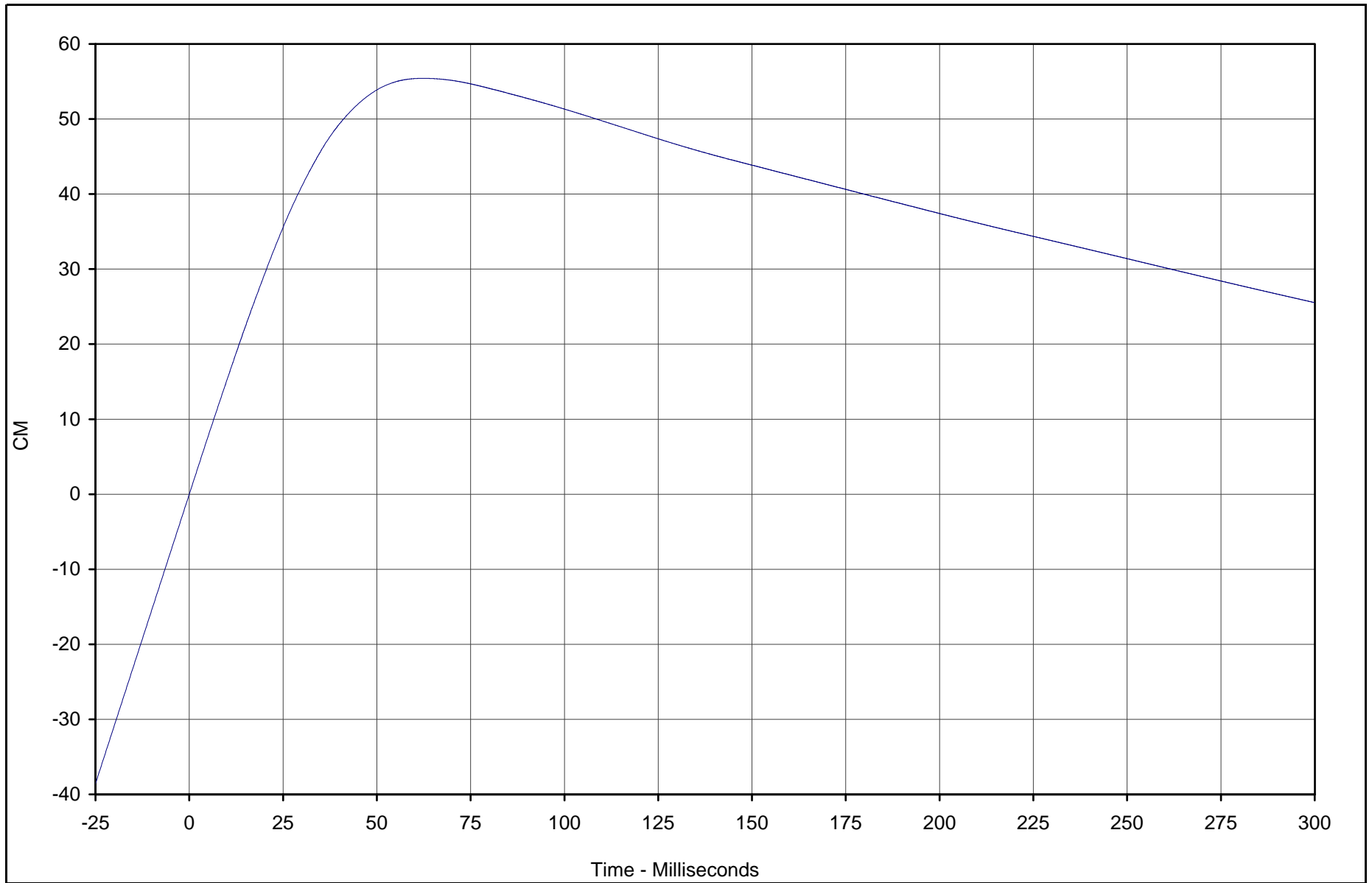
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-128

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Right Rear X Displ.	090	IN2	CM	55.4	62.5	0.0	0.0	180



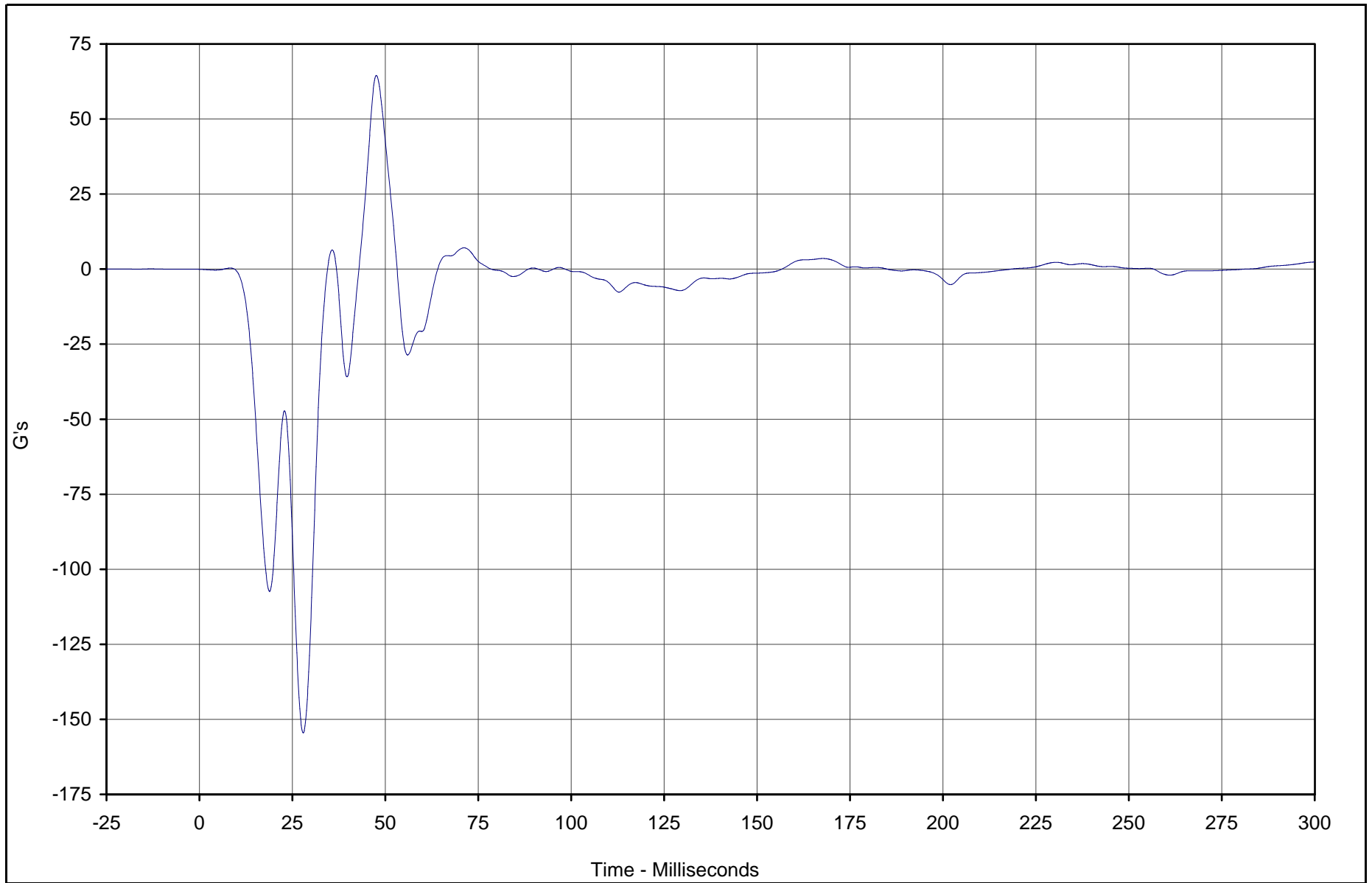
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-129



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Engine Top	091	FIL	G's	64.6	47.6	-154.5	27.9	60



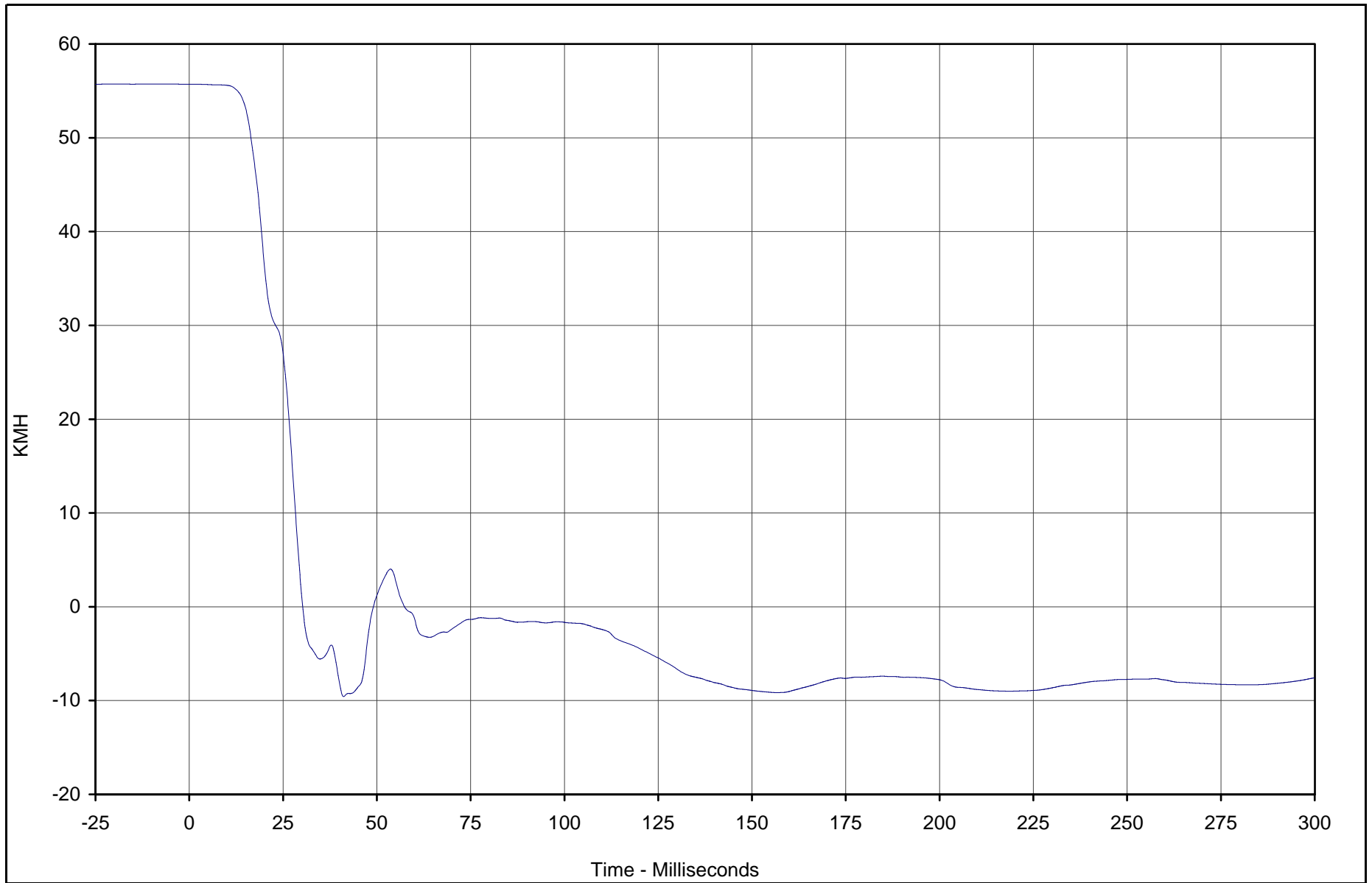
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-130



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Engine Top Velocity	091	IN1	KMH	55.7	0.0	-9.6	41.1	180



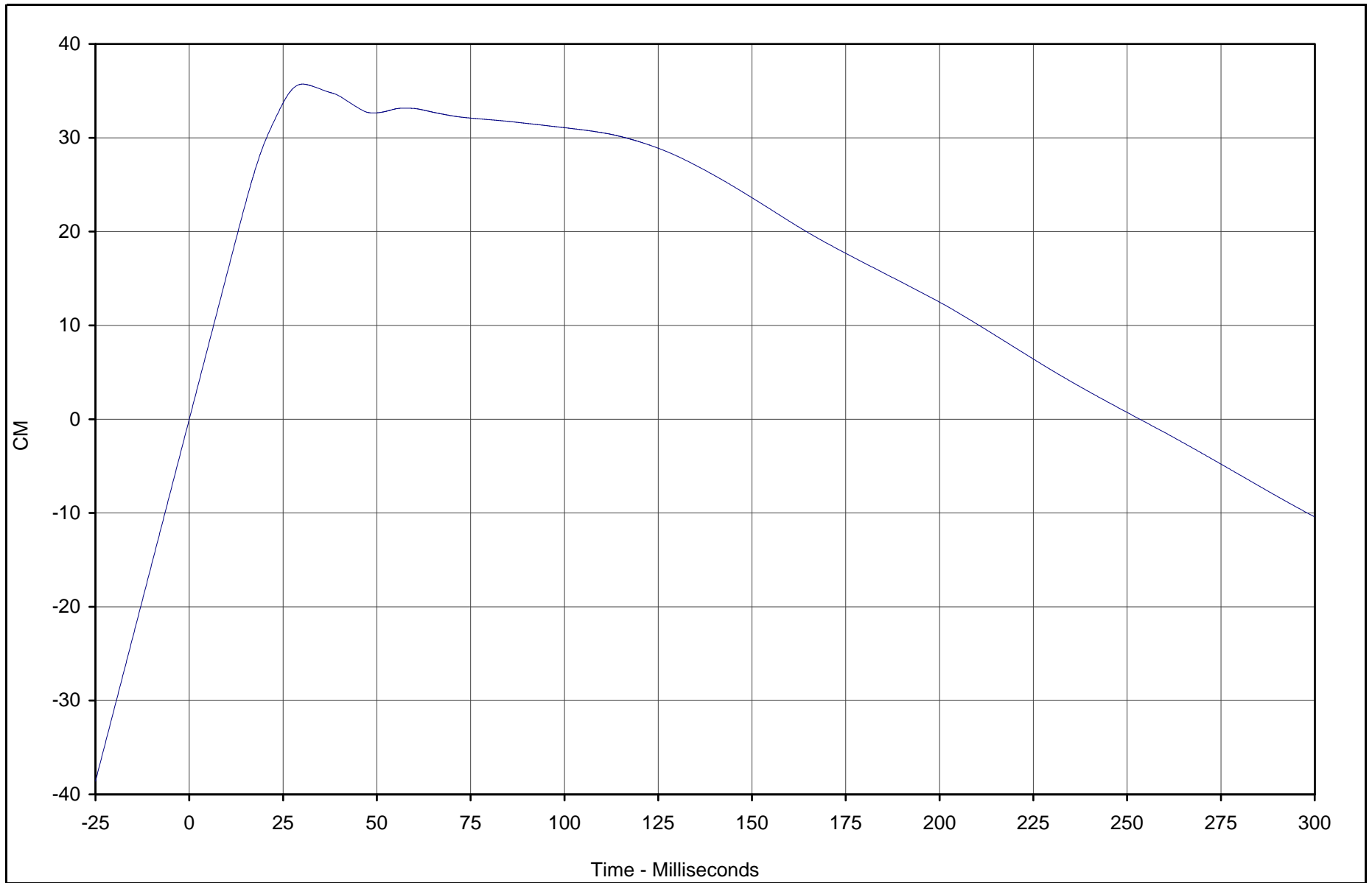
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-131



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Engine Top Displacement	091	IN2	CM	35.7	30.2	-10.4	299.9	180



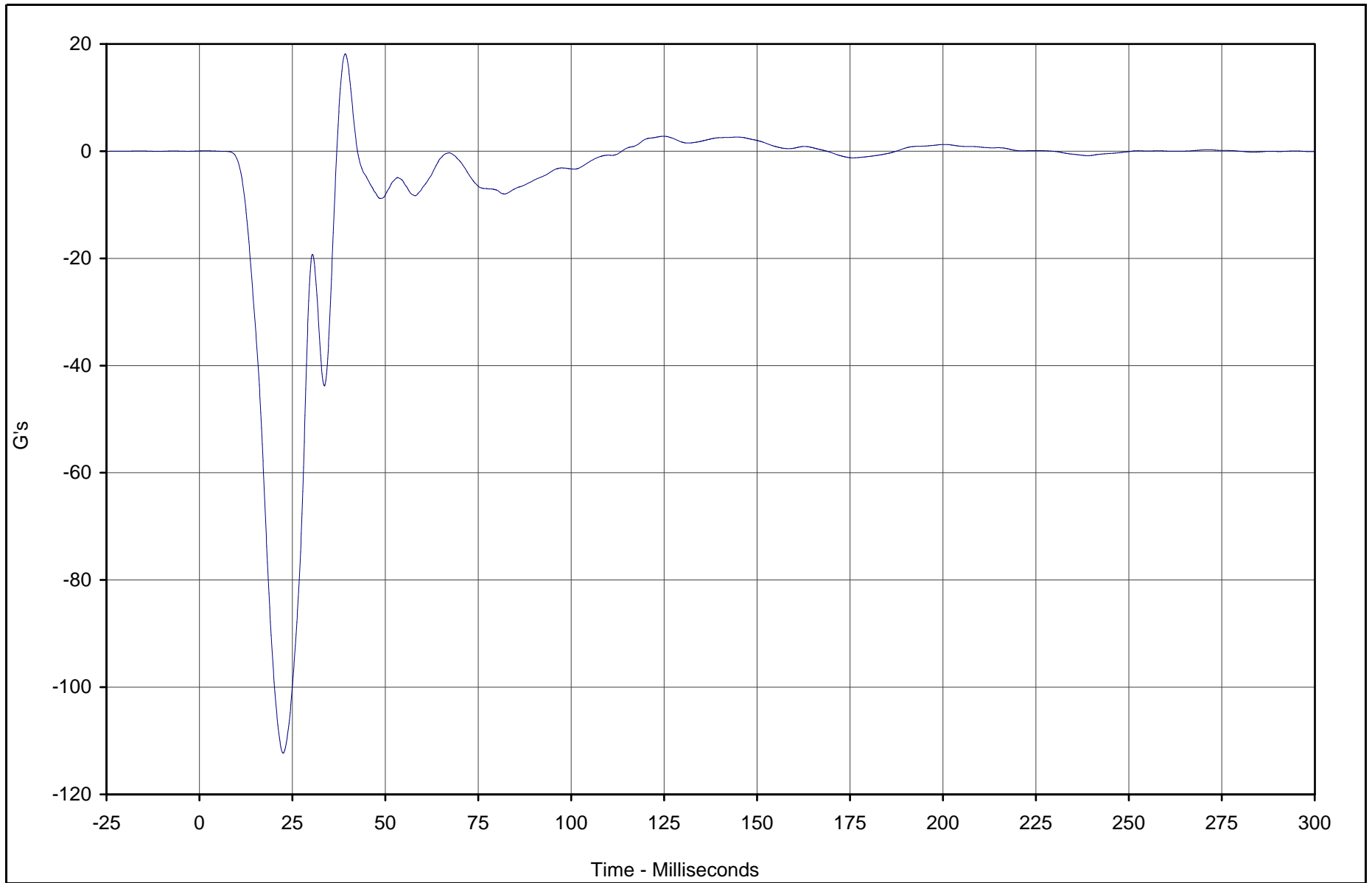
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-132



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Engine Bottom	092	FIL	G's	18.2	39.2	-112.3	22.5	60



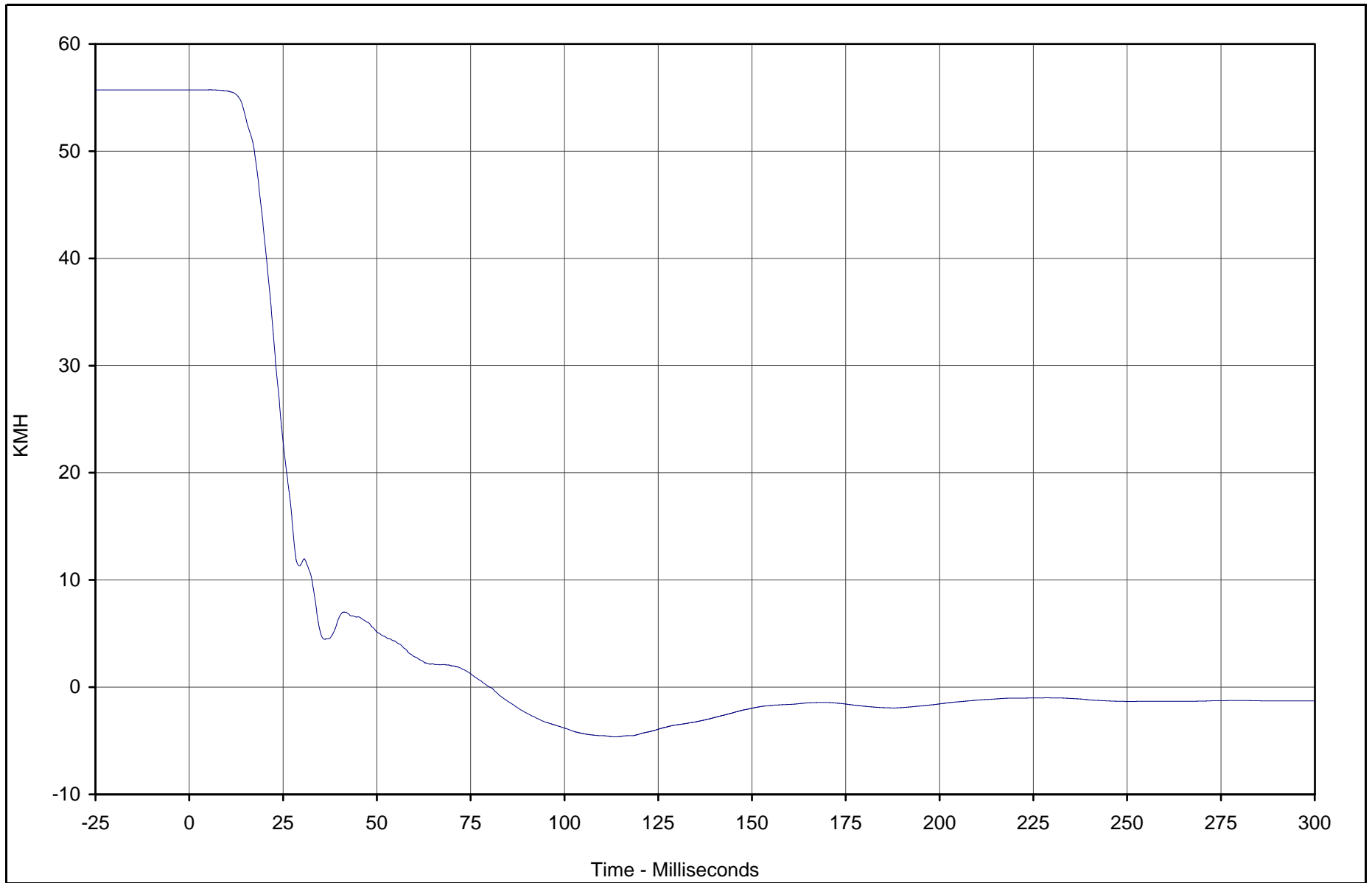
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-133



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Engine Bottom Velocity	092	IN1	KMH	55.7	5.5	-4.6	113.7	180



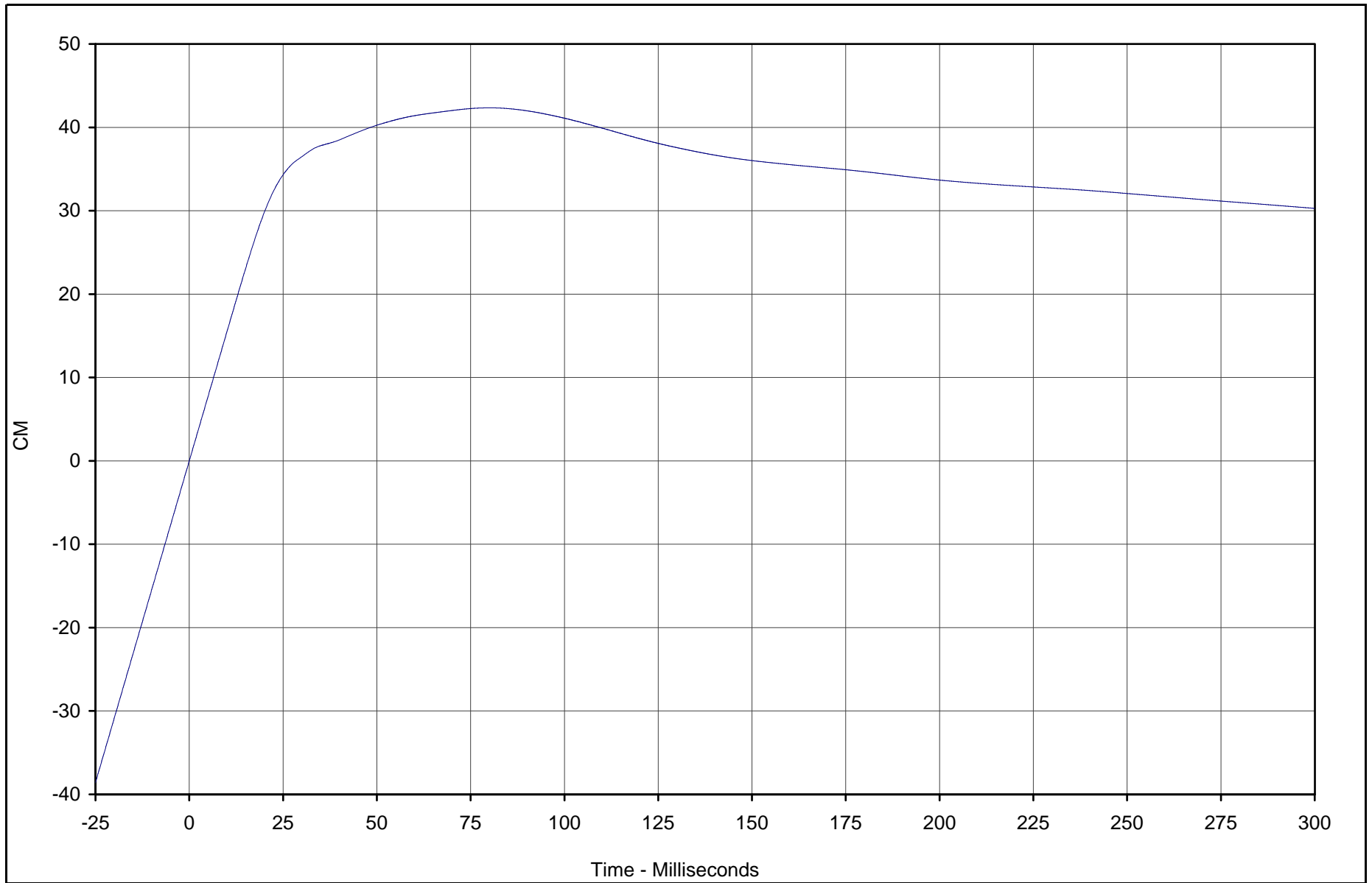
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-134



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Engine Bottom Displacement	092	IN2	CM	42.3	80.1	0.0	0.0	180



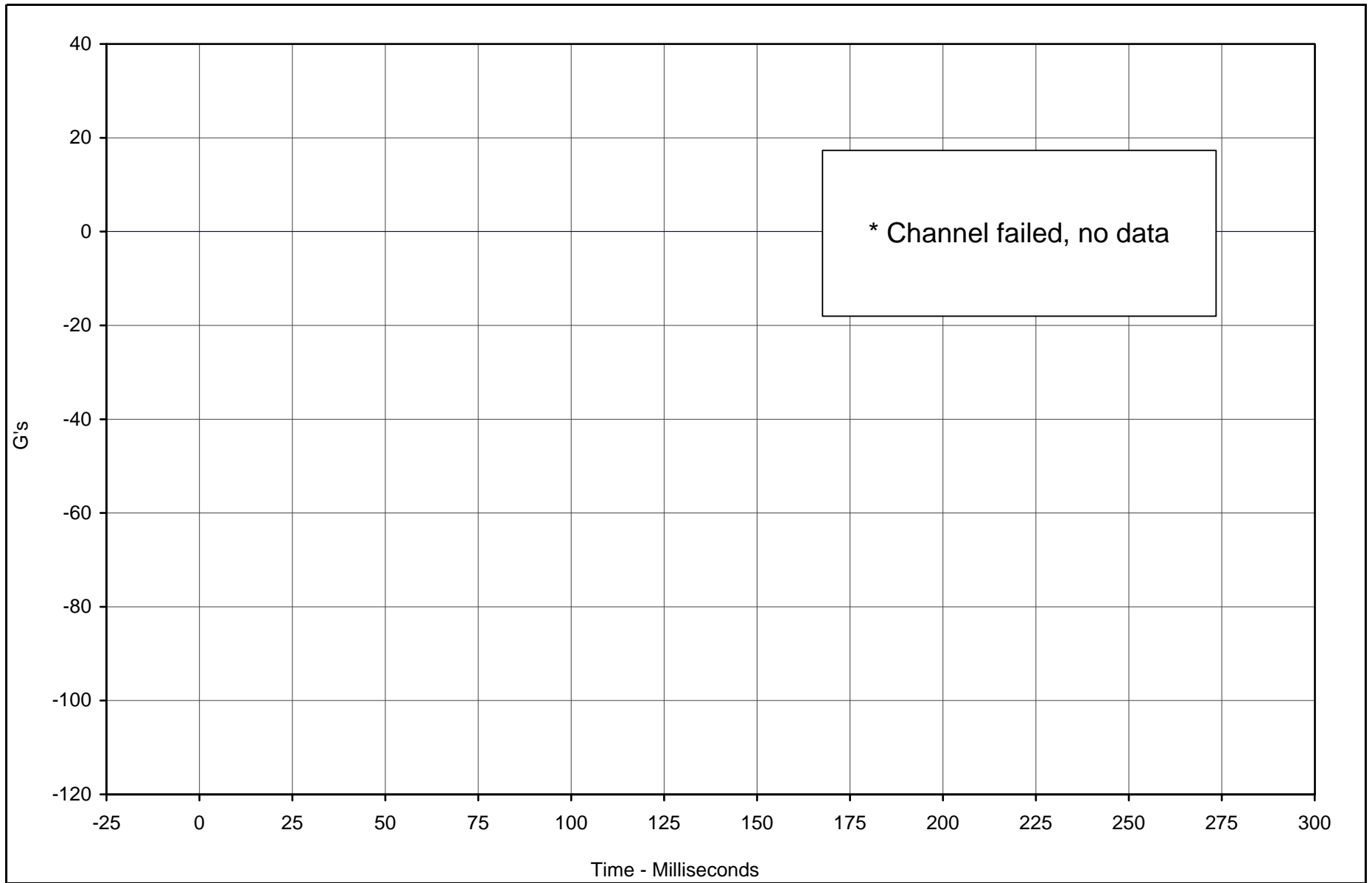
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-135



* Channel failed, no data

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Left Brake Caliper	093	FIL	G's	0.0	0.0	0.0	0.0	60



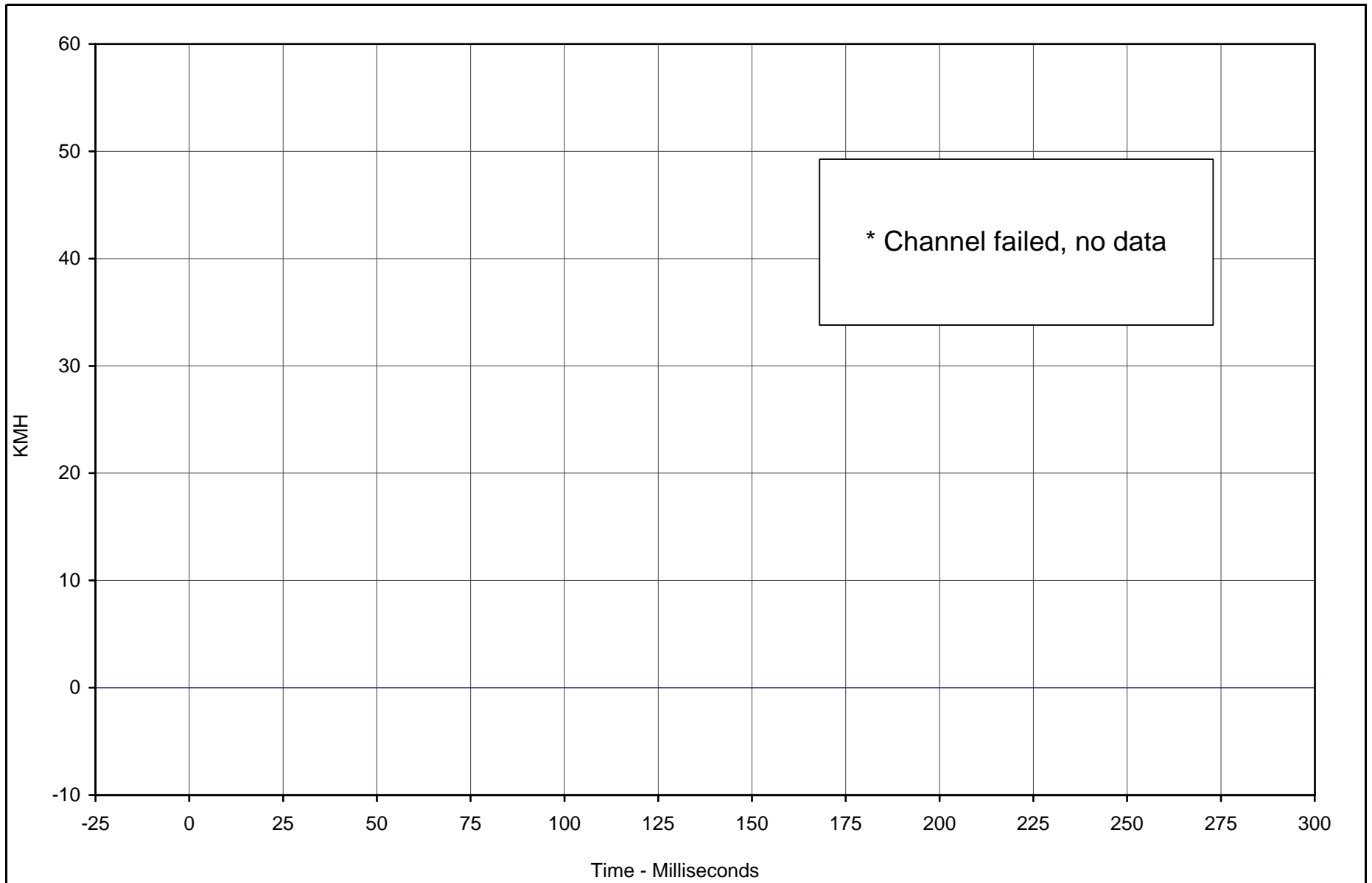
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



* Channel failed, no data

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Left Brake Caliper Velocity	093	IN1	KMH	0.0	0.0	0.0	0.0	180

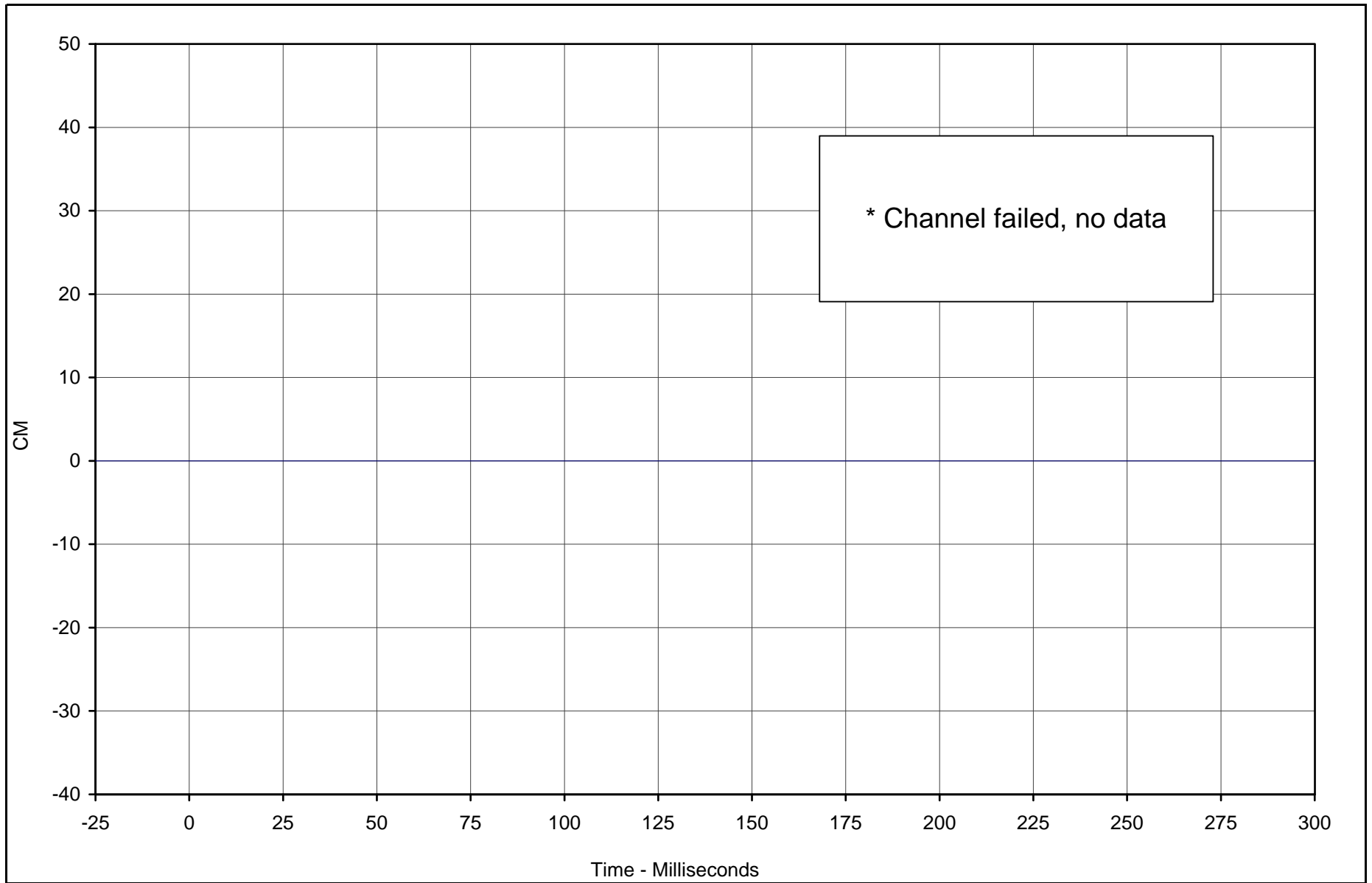


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



* Channel failed, no data

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



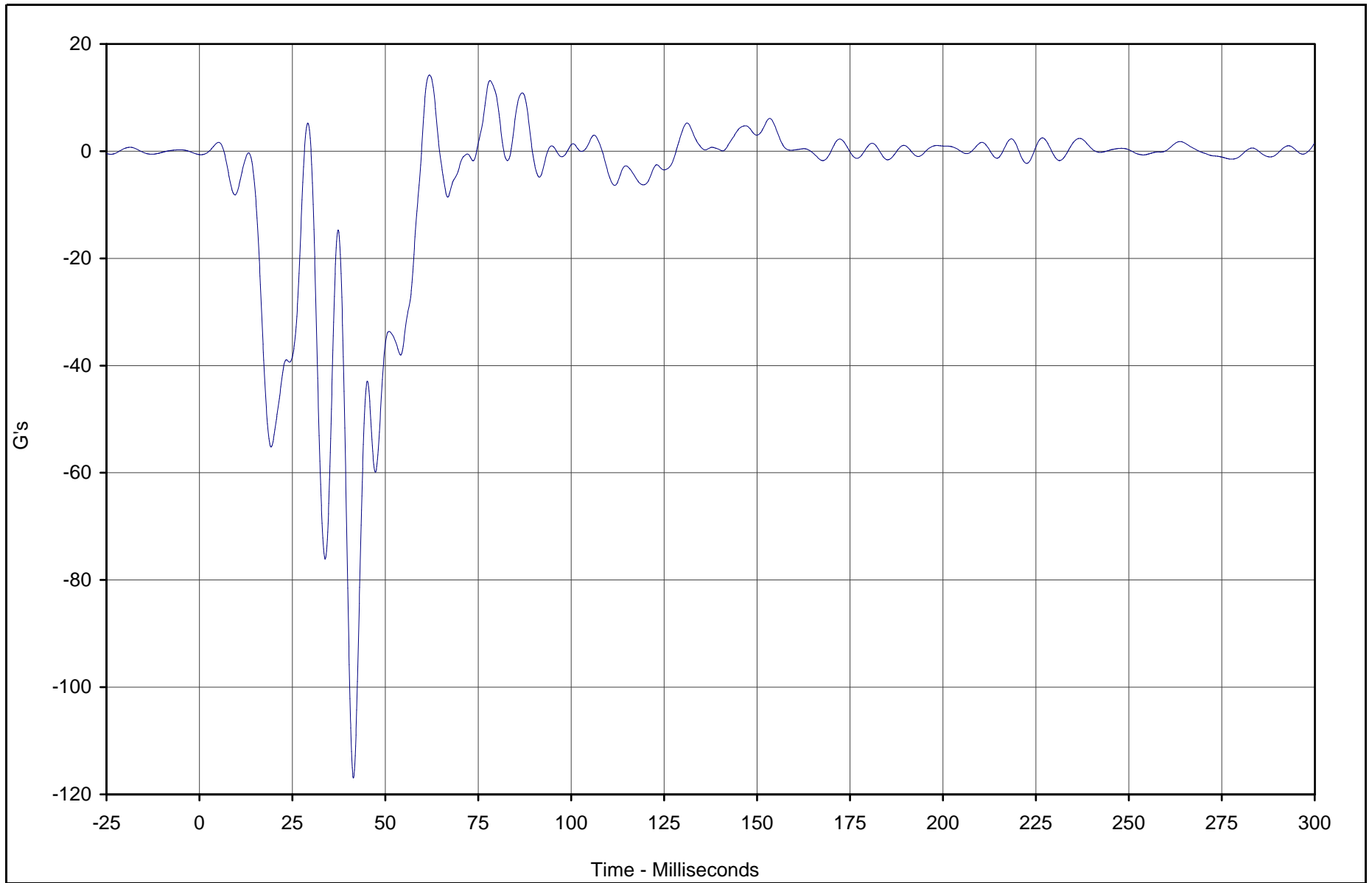
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-138



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Right Brake Caliper	094	FIL	G's	14.2	61.9	-117.0	41.4	60



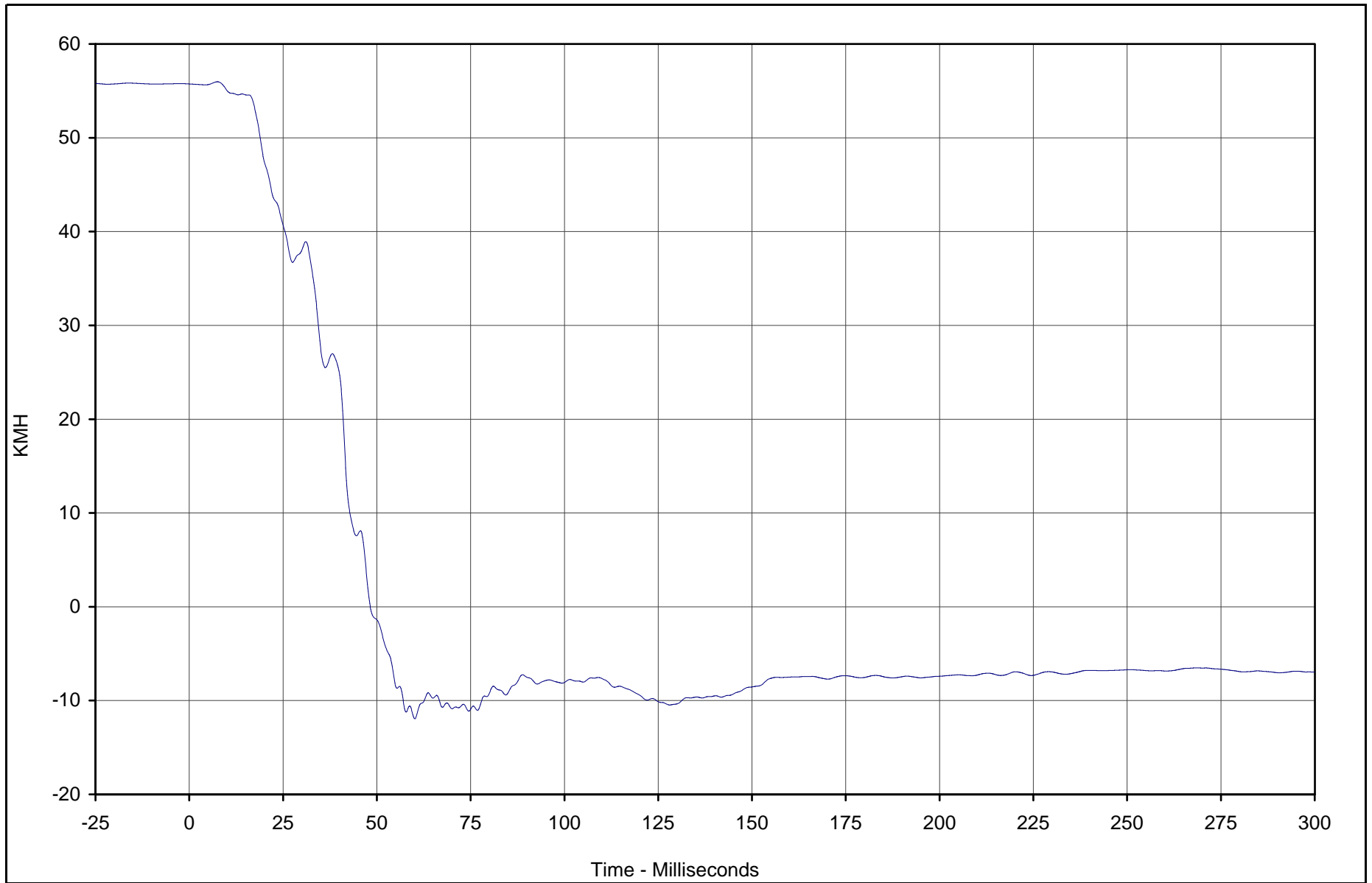
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-139



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Right Brake Caliper Velocity	094	IN1	KMH	56.0	7.5	-11.9	60.1	180



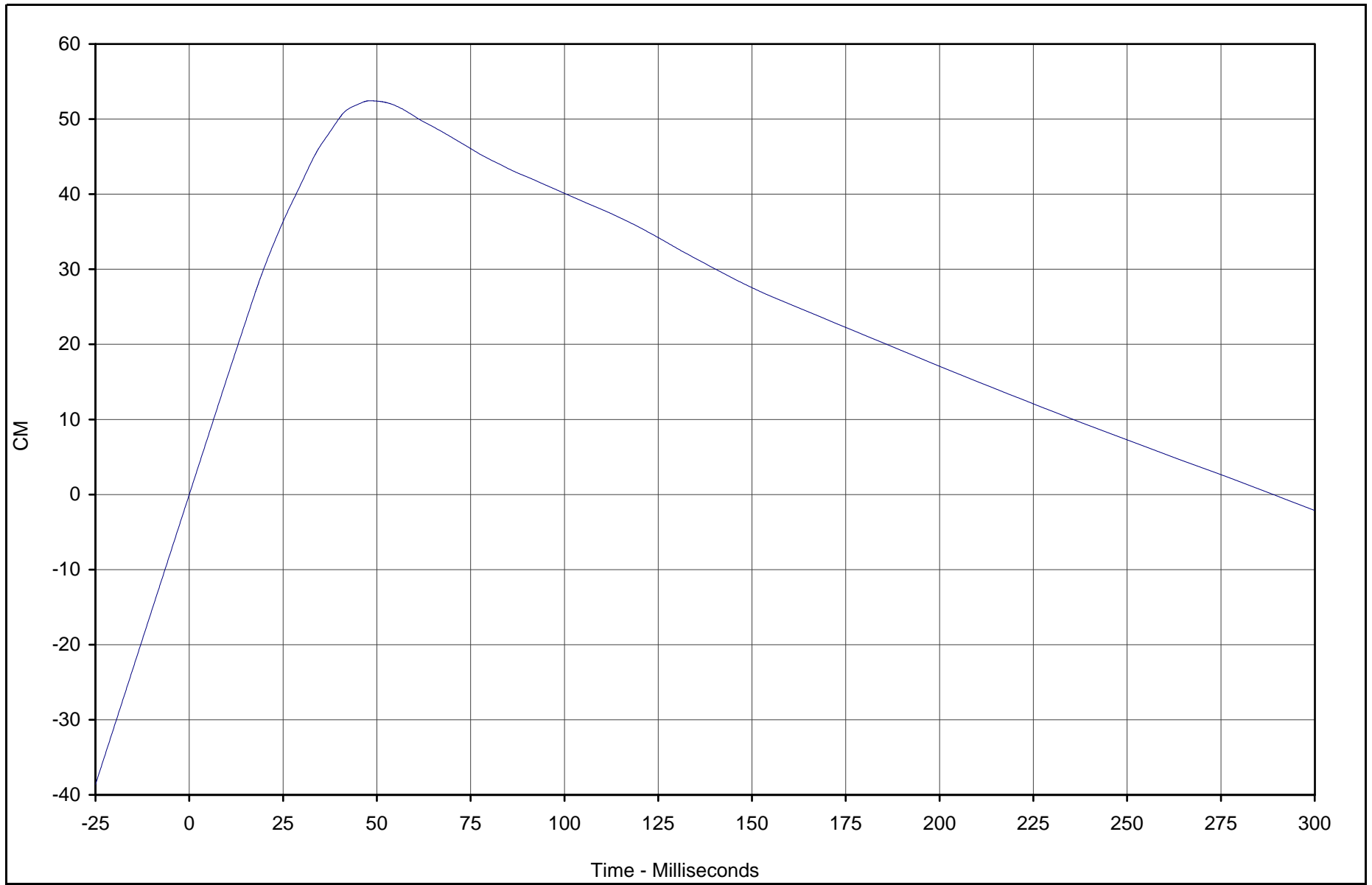
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-140



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Right Brake Caliper Displ.	094	IN2	CM	52.4	48.3	-2.1	299.9	180



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

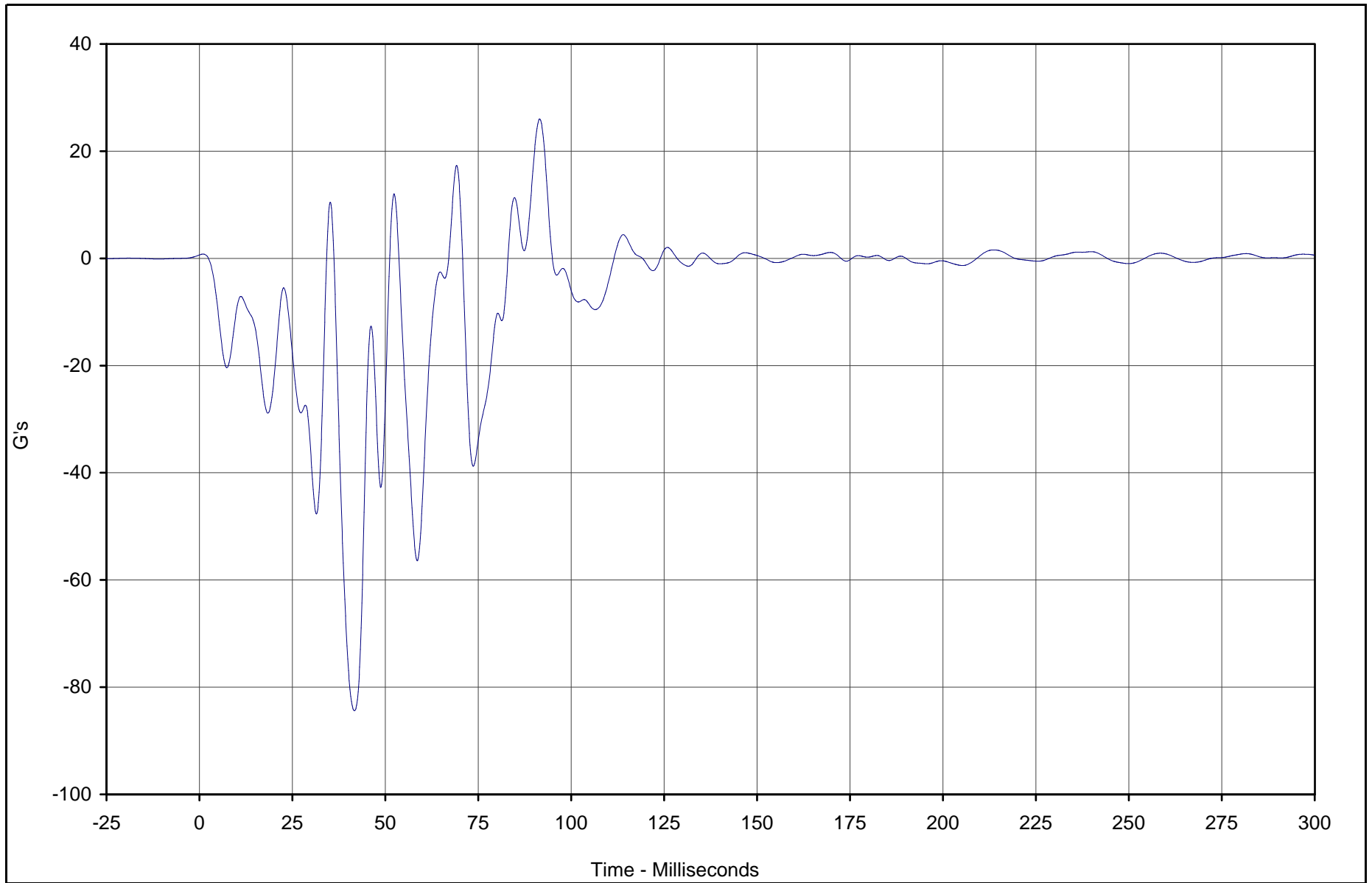
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

B-141



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Instrument Panel	095	FIL	G's	26.0	91.5	-84.4	41.7	60



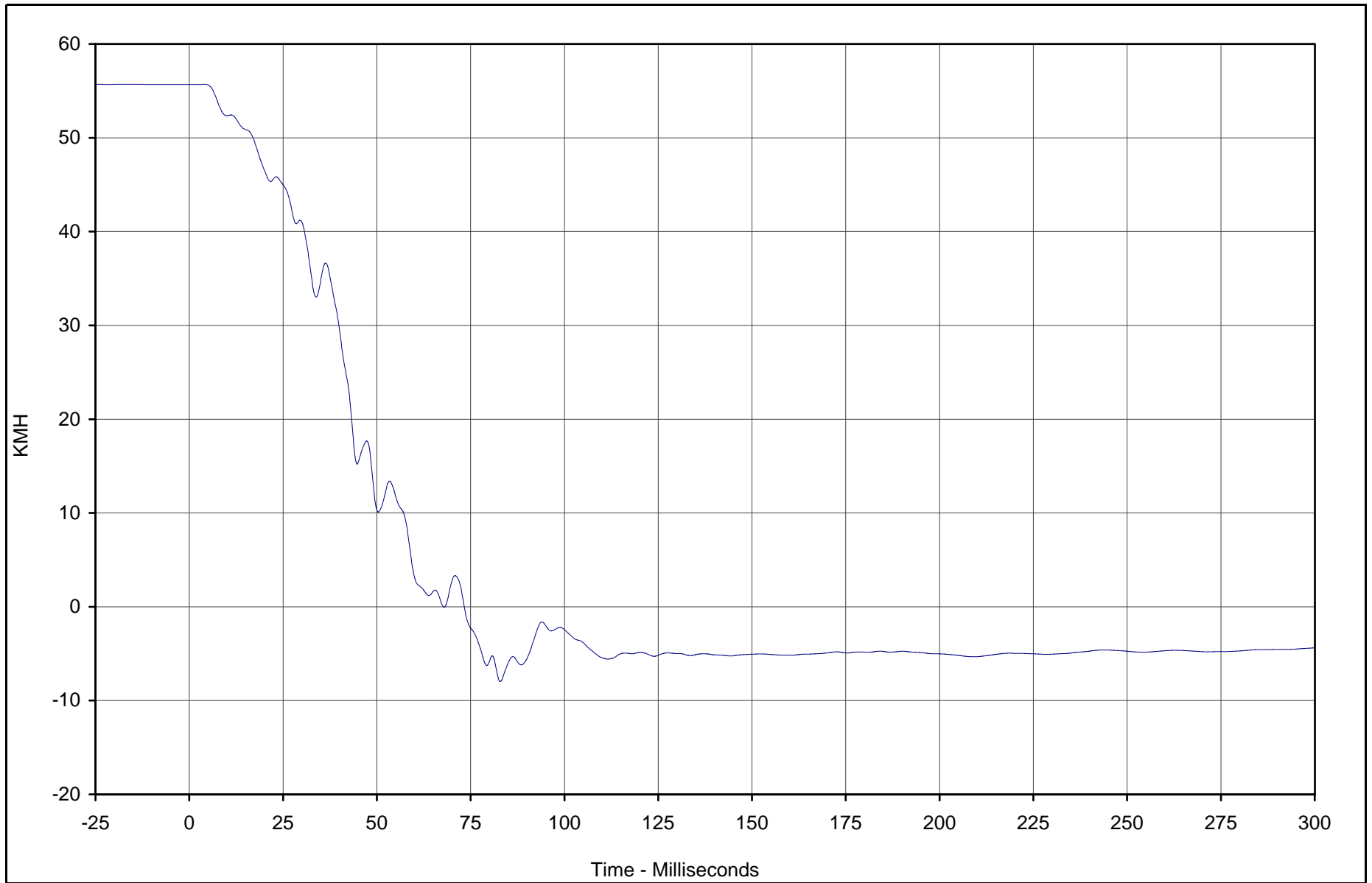
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-142



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Instrument Panel Velocity	095	IN1	KMH	55.7	4.0	-8.0	82.9	180



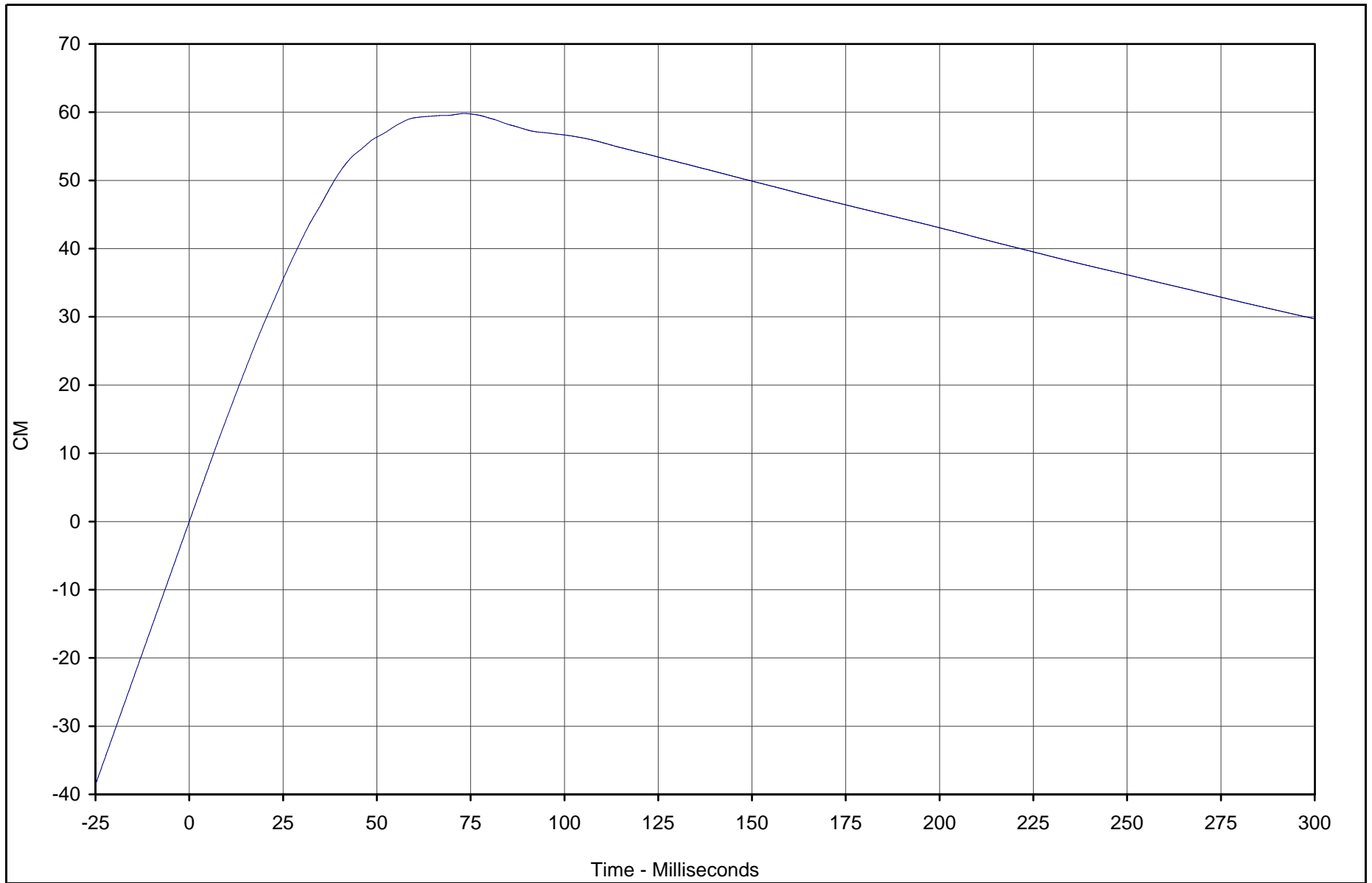
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-143



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Instrument Panel Displacement	095	IN2	CM	59.8	73.3	0.0	0.0	180



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

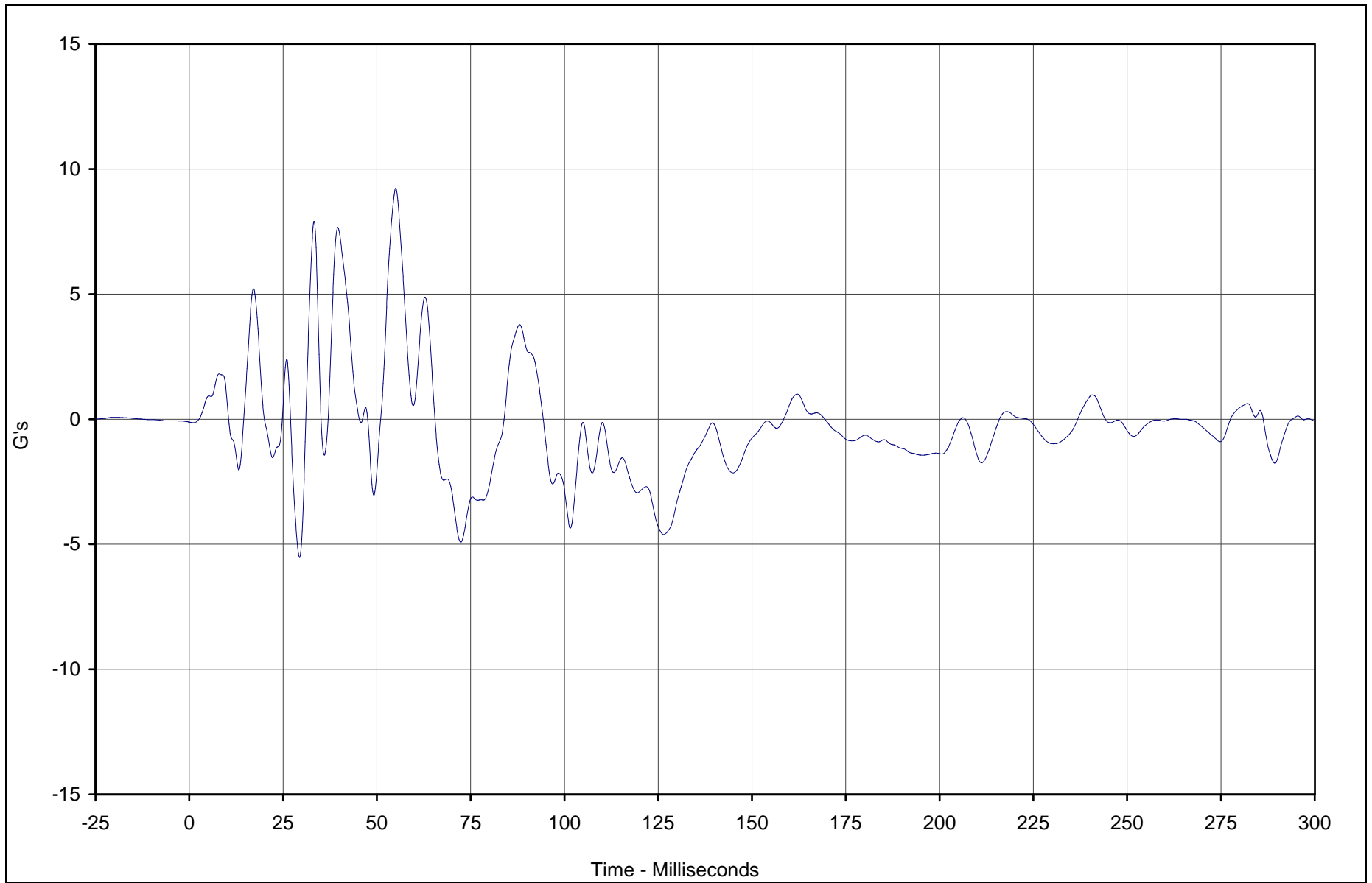
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

B-144



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Left Rear Z	096	FIL	G's	9.2	55.0	-5.5	29.4	60



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

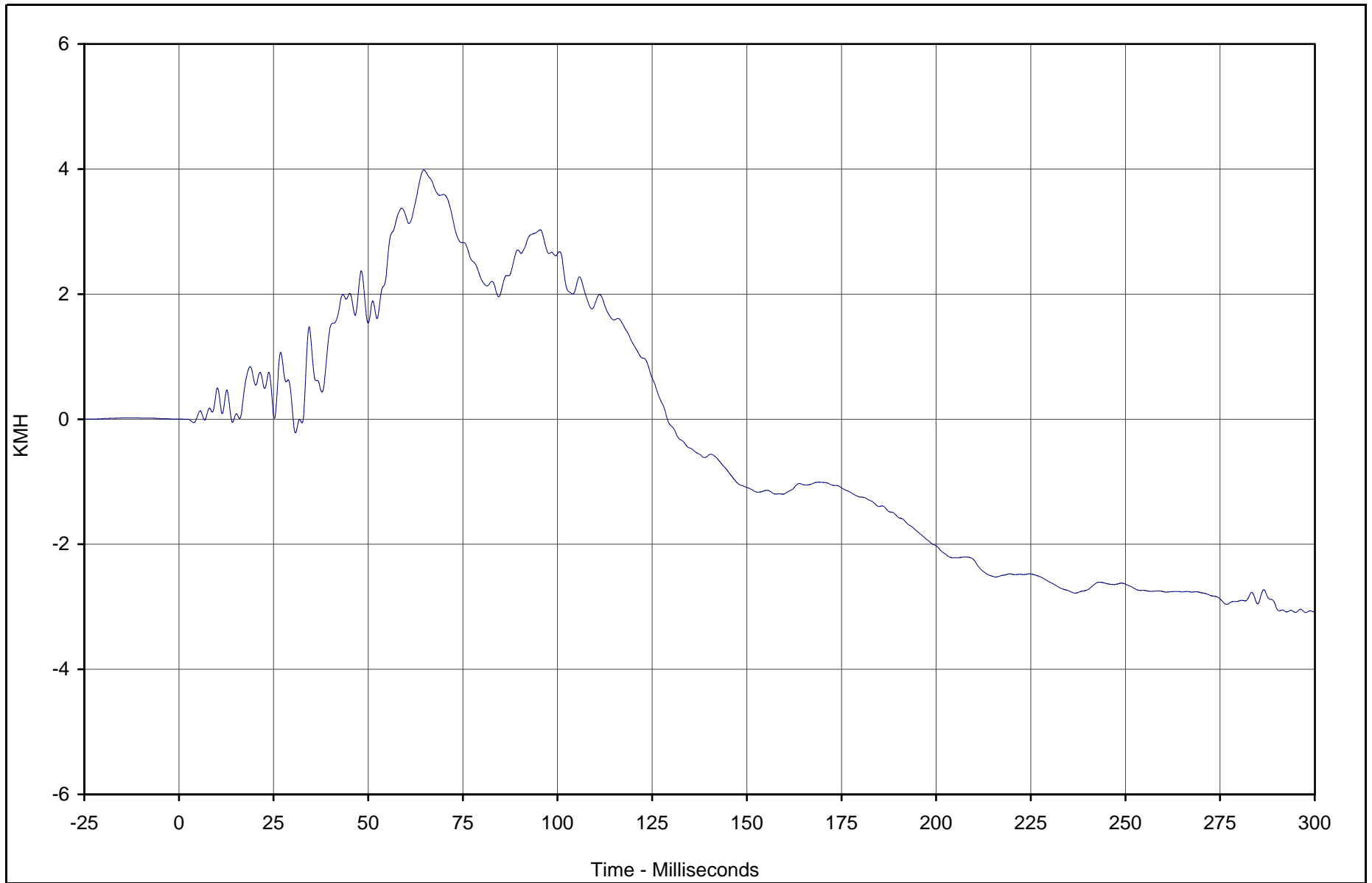
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

B-145



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Left Rear Z Velocity	096	IN1	KMH	4.0	64.7	-3.1	297.6	180



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

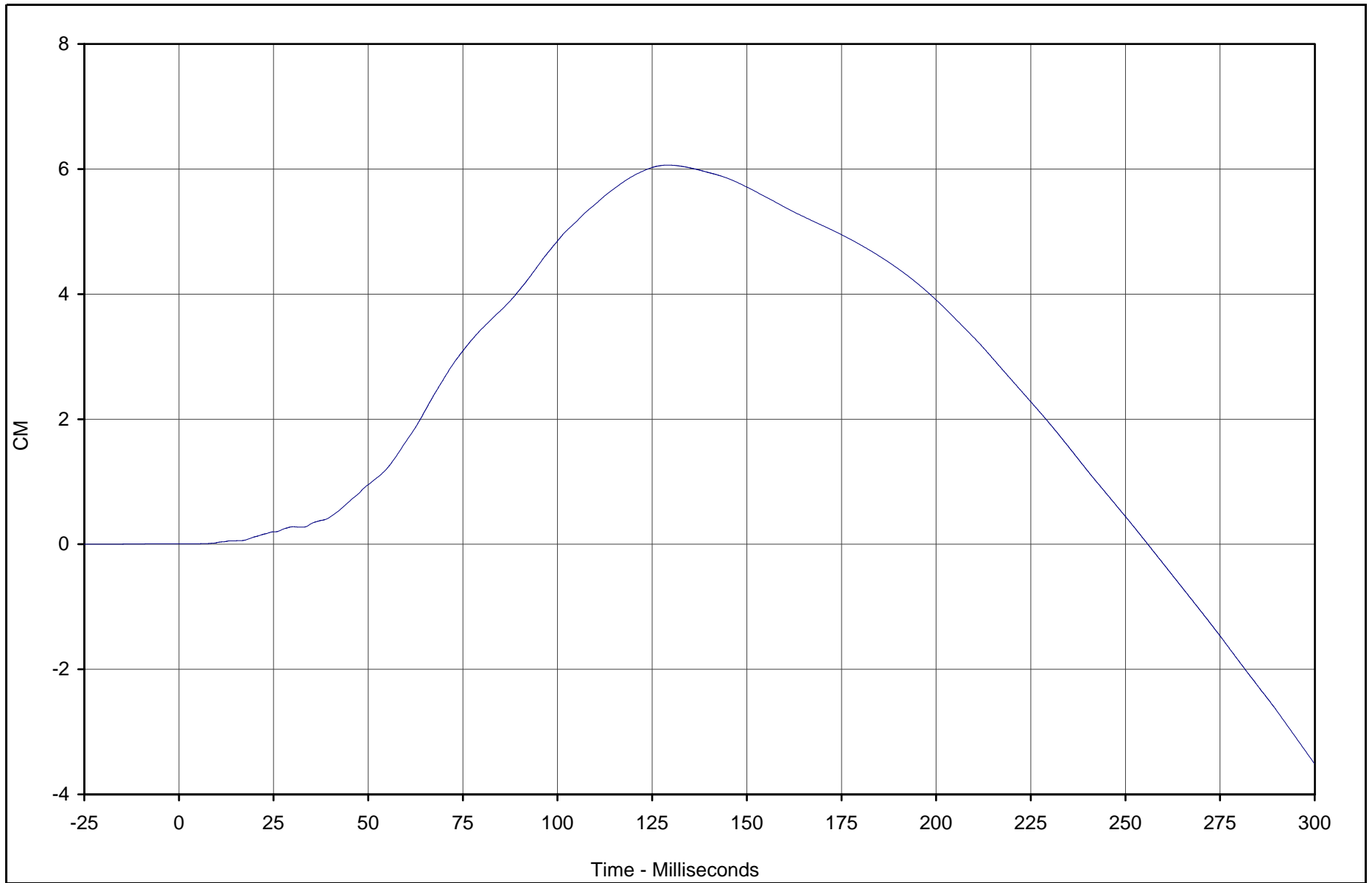
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

B-146



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Left Rear Z Displ.	096	IN2	CM	6.1	129.0	-3.5	299.9	180



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

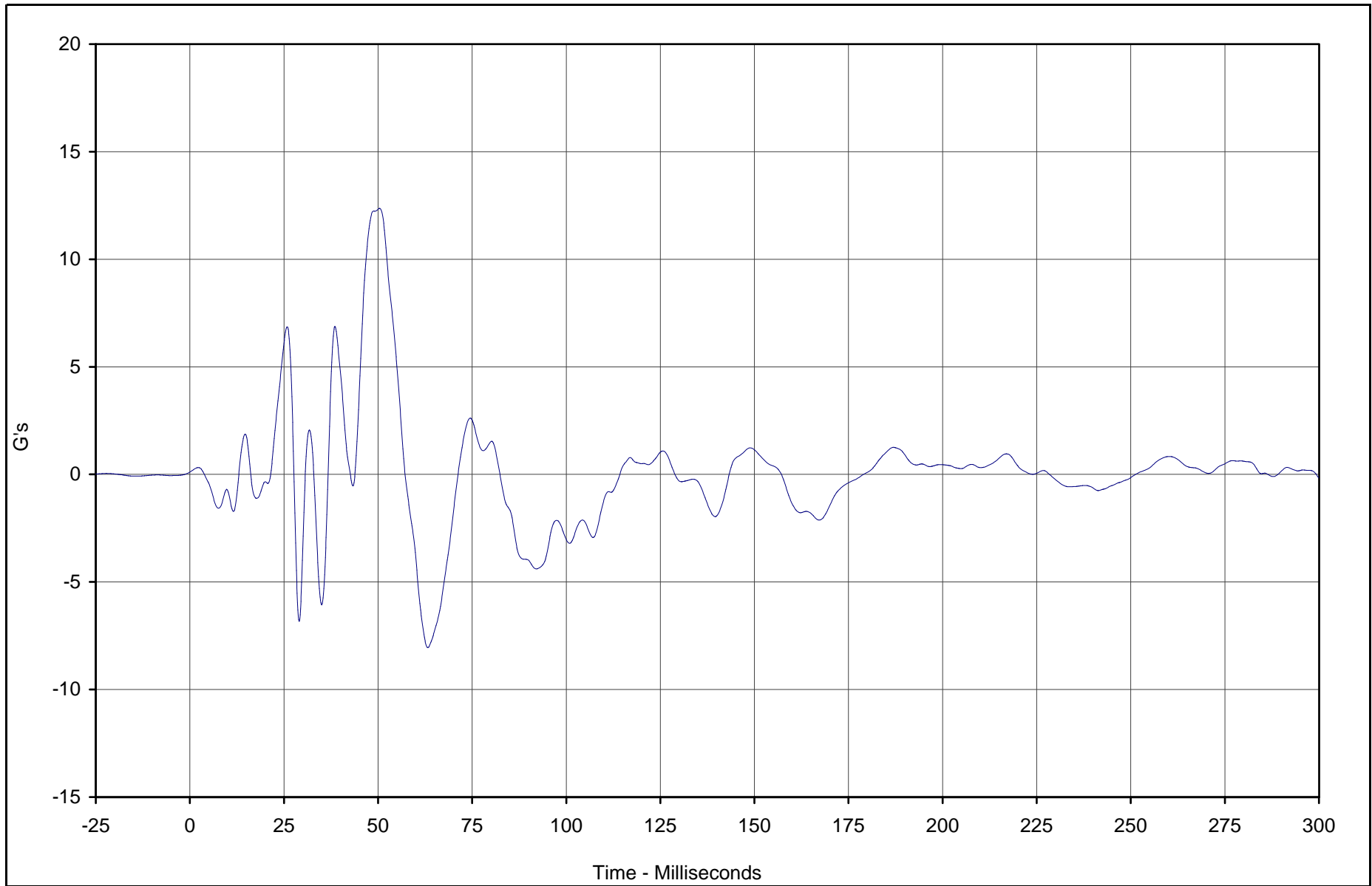
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

B-147



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Right Rear Z	097	FIL	G's	12.4	50.4	-8.1	63.2	60



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

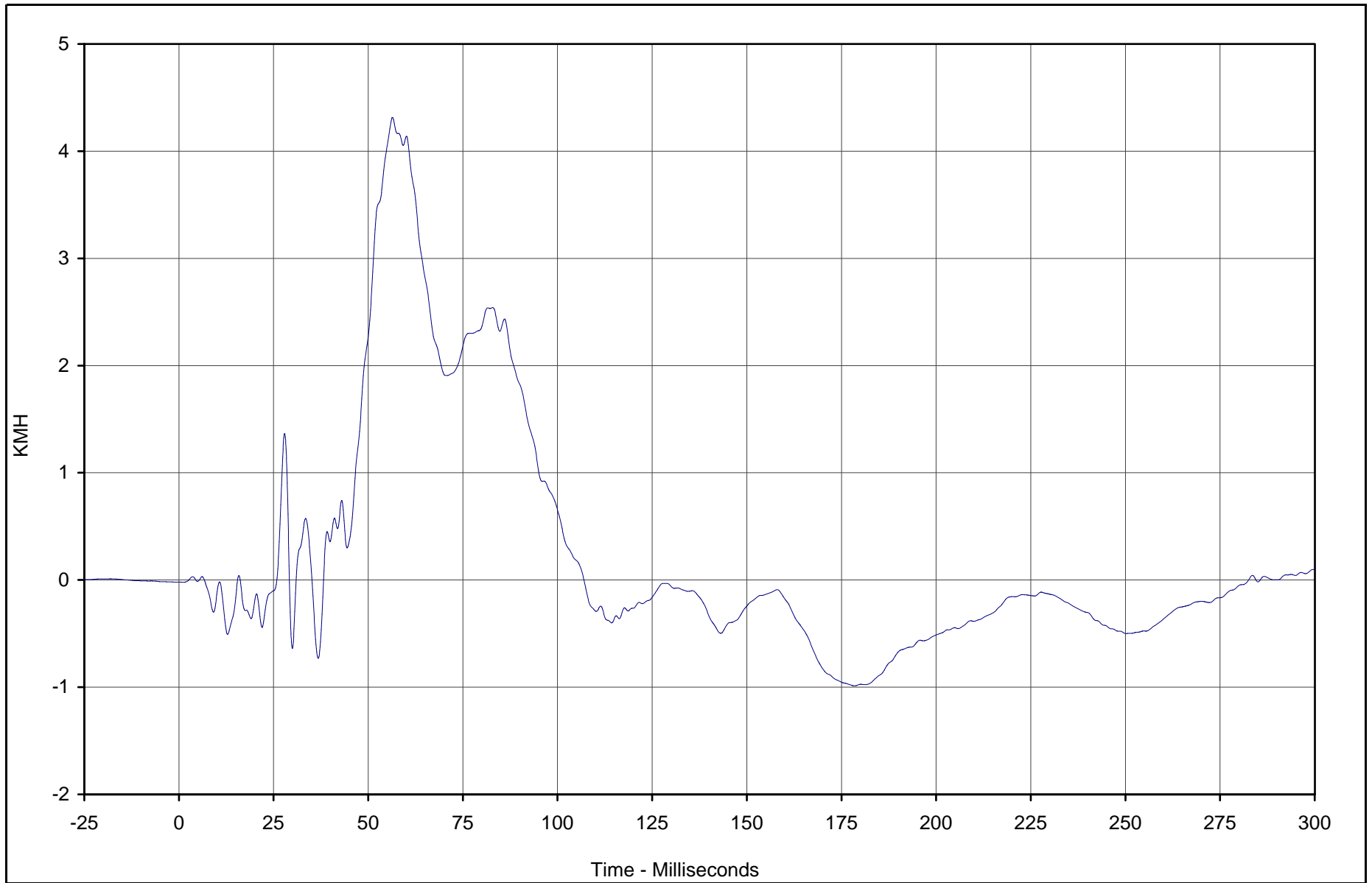
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

B-148



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Right Rear Z Velocity	097	IN1	KMH	4.3	56.4	-1.0	178.5	180



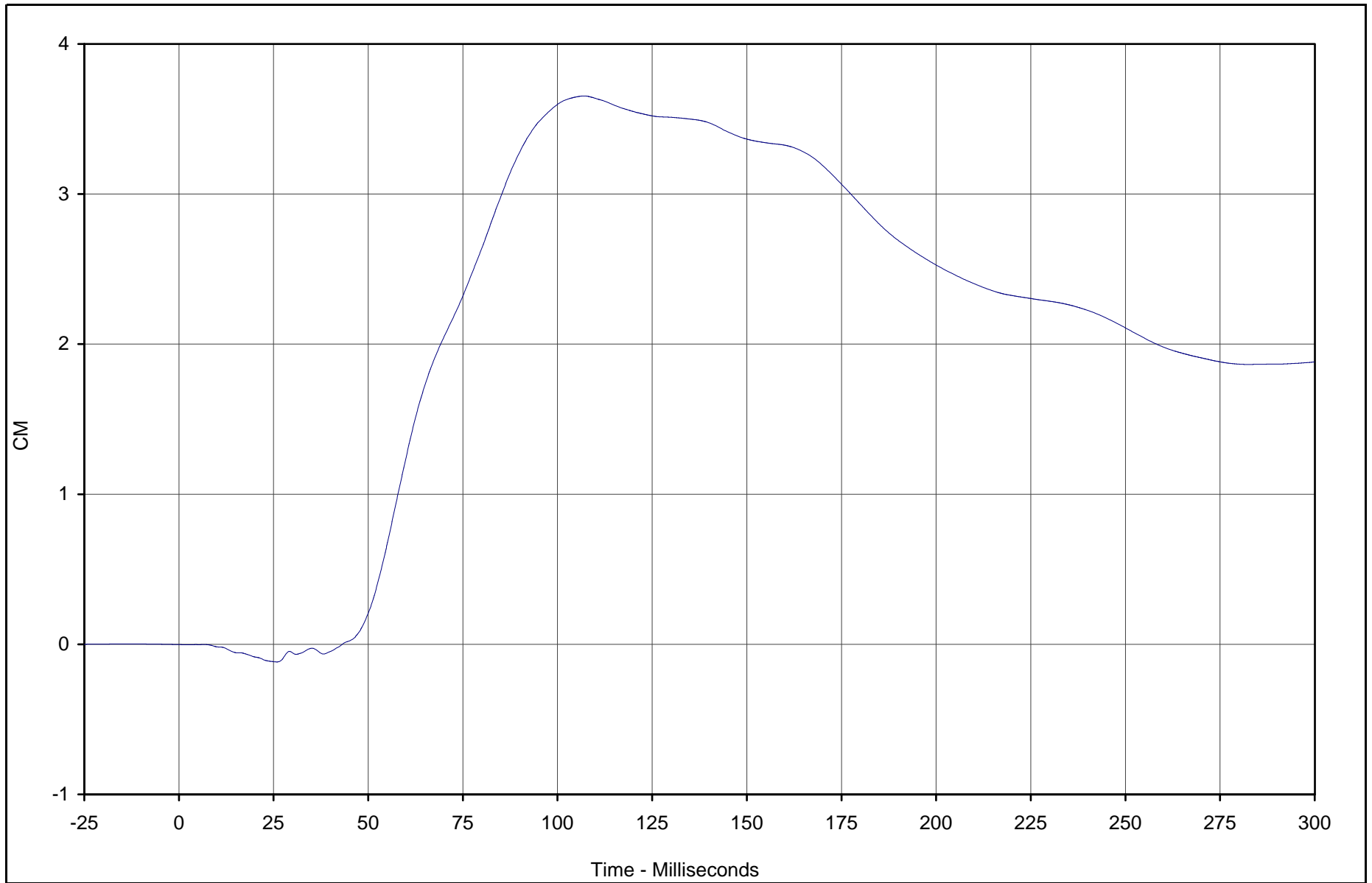
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

B-149



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Vehicle Right Rear Z Displ.	097	IN2	CM	3.7	107.0	-0.1	25.8	180



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

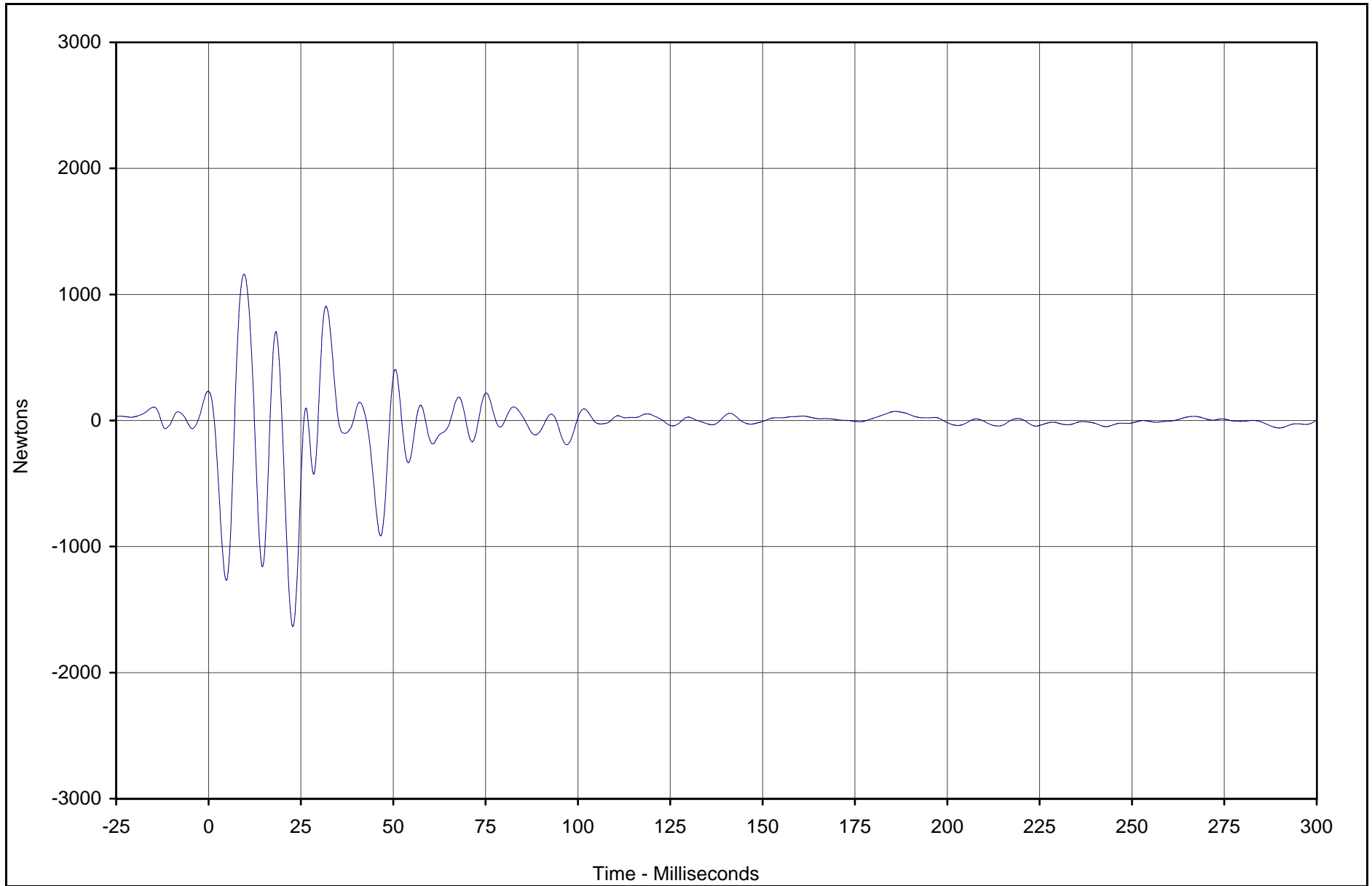
NHTSA No.: M30210

TR-P23001-07-NC

APPENDIX C

LOAD CELL BARRIER DATA PLOTS

C-1



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force A1	098	FIL	Newtons	1160.1	9.6	-1634.3	22.8	60



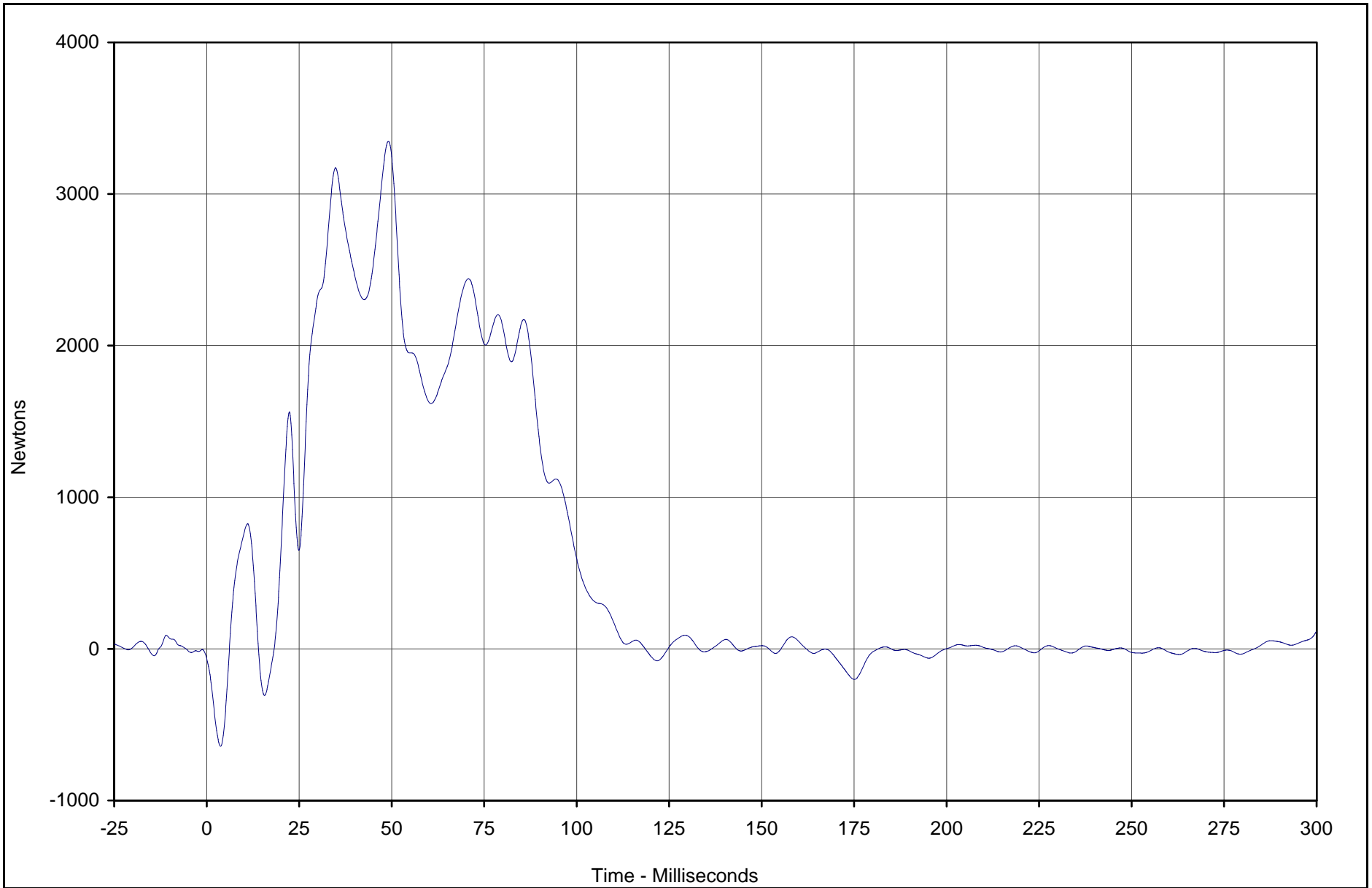
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

C-2



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force A2	099	FIL	Newtons	3349.2	49.1	-641.7	3.8	60

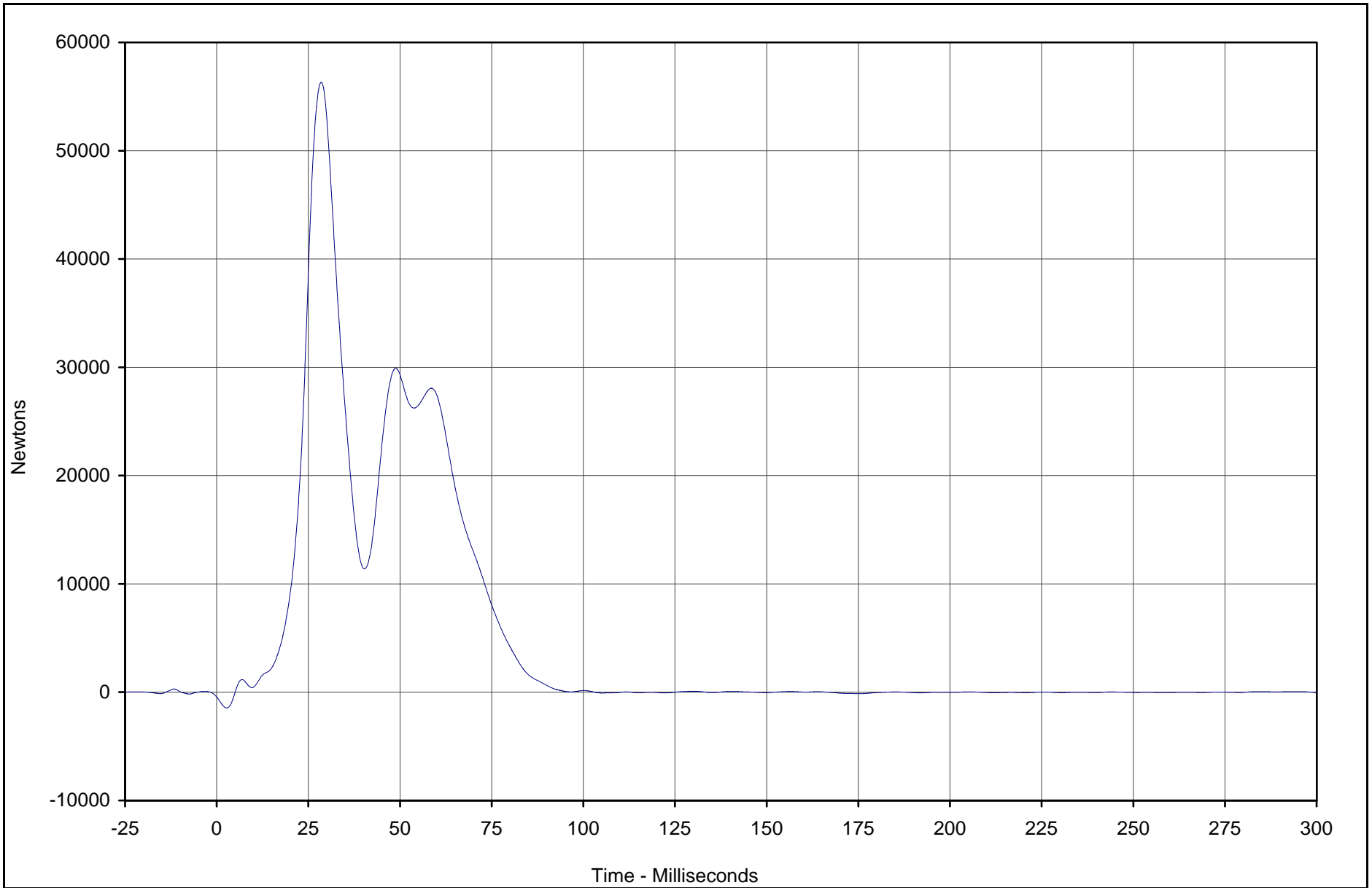


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force A3	100	FIL	Newtons	56338.6	28.5	-1454.8	2.8	60



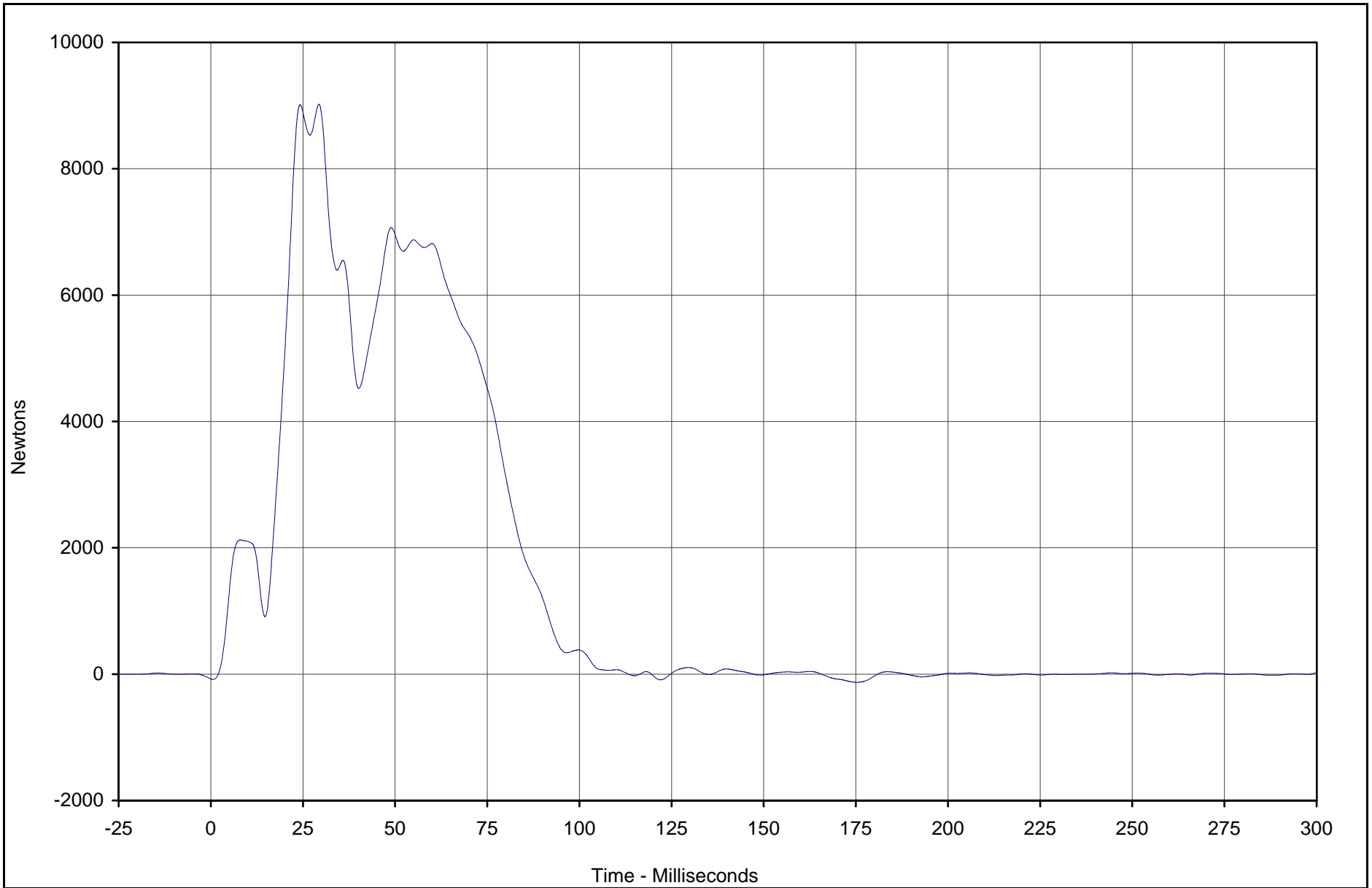
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

C-4



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force A4	101	FIL	Newtons	9019.2	29.3	-129.9	175.2	60



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

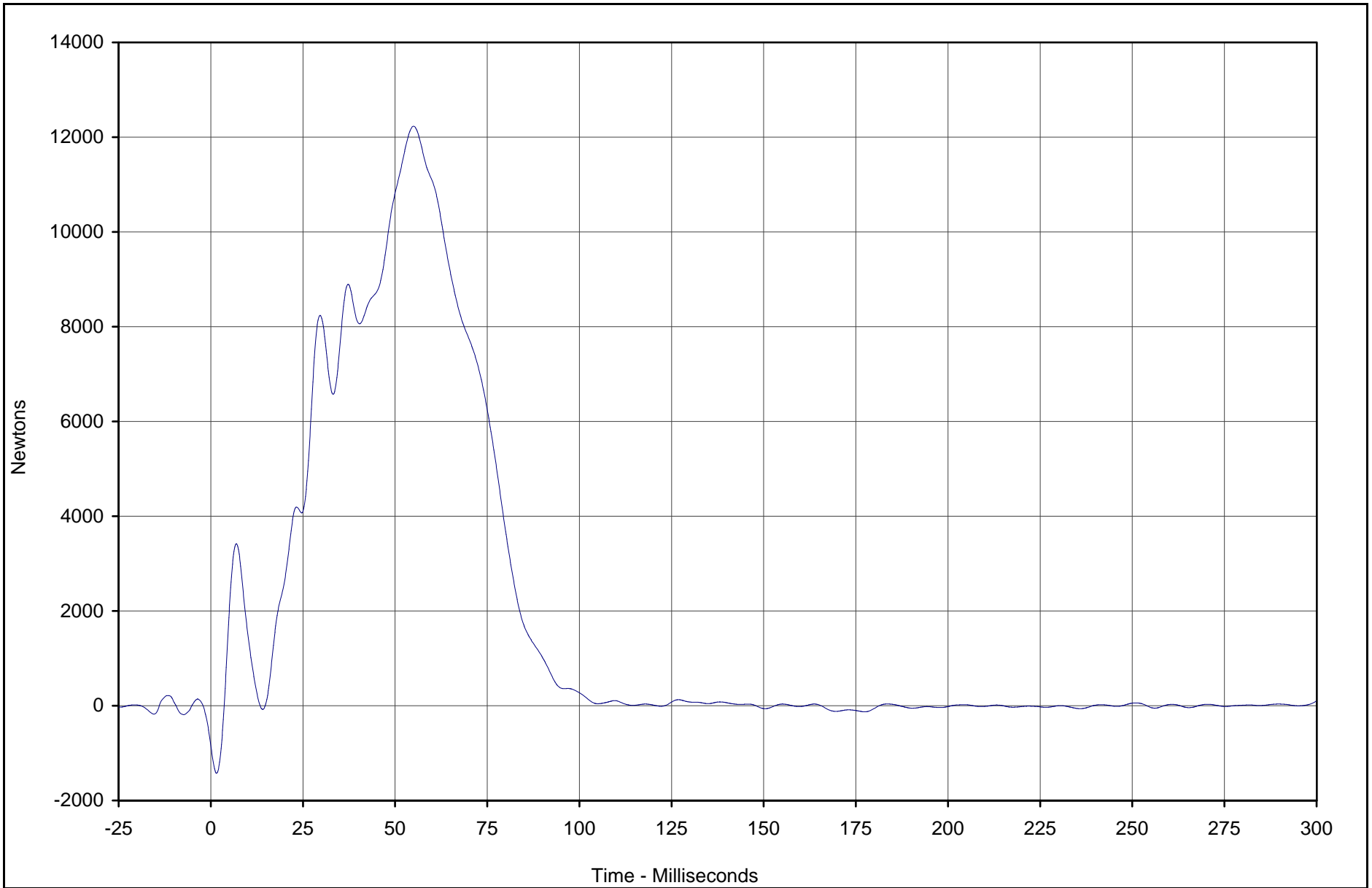
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

C-5



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force A5	102	FIL	Newtons	12231.1	55.0	-1424.2	1.6	60



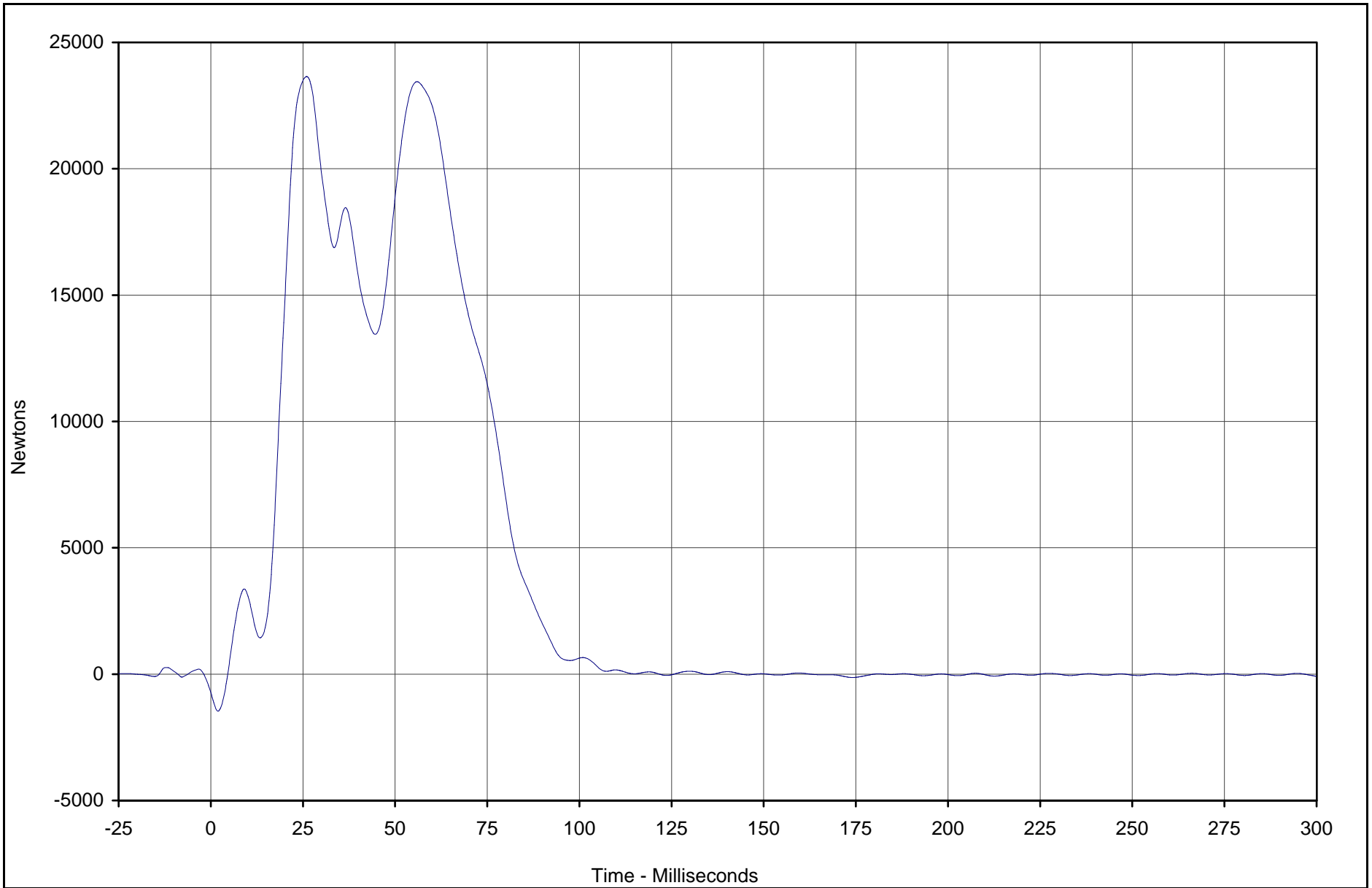
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

C-6



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force A6	103	FIL	Newtons	23649.6	26.0	-1462.7	2.0	60

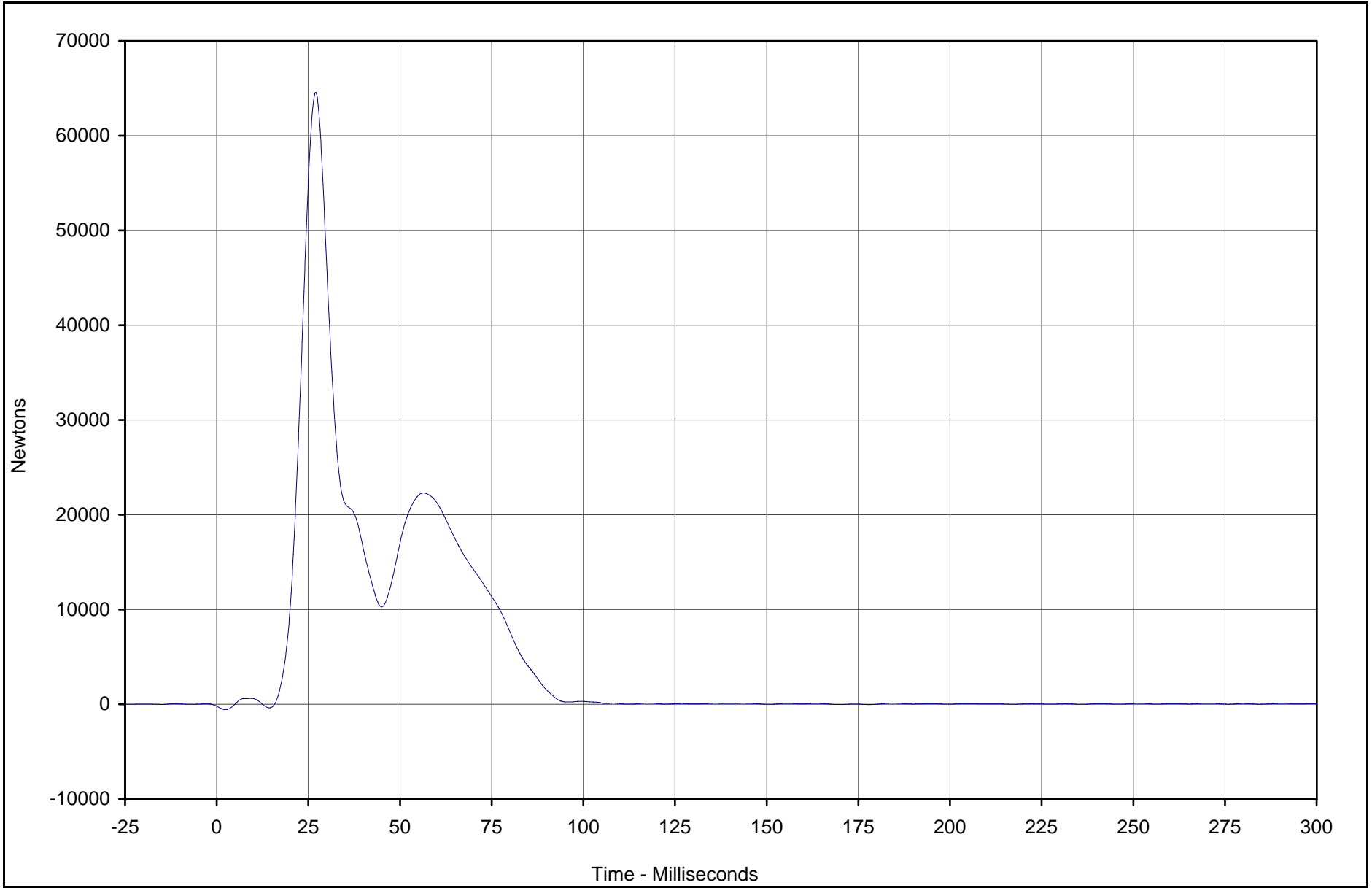


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force A7	104	FIL	Newtons	64569.3	27.0	-563.6	2.4	60

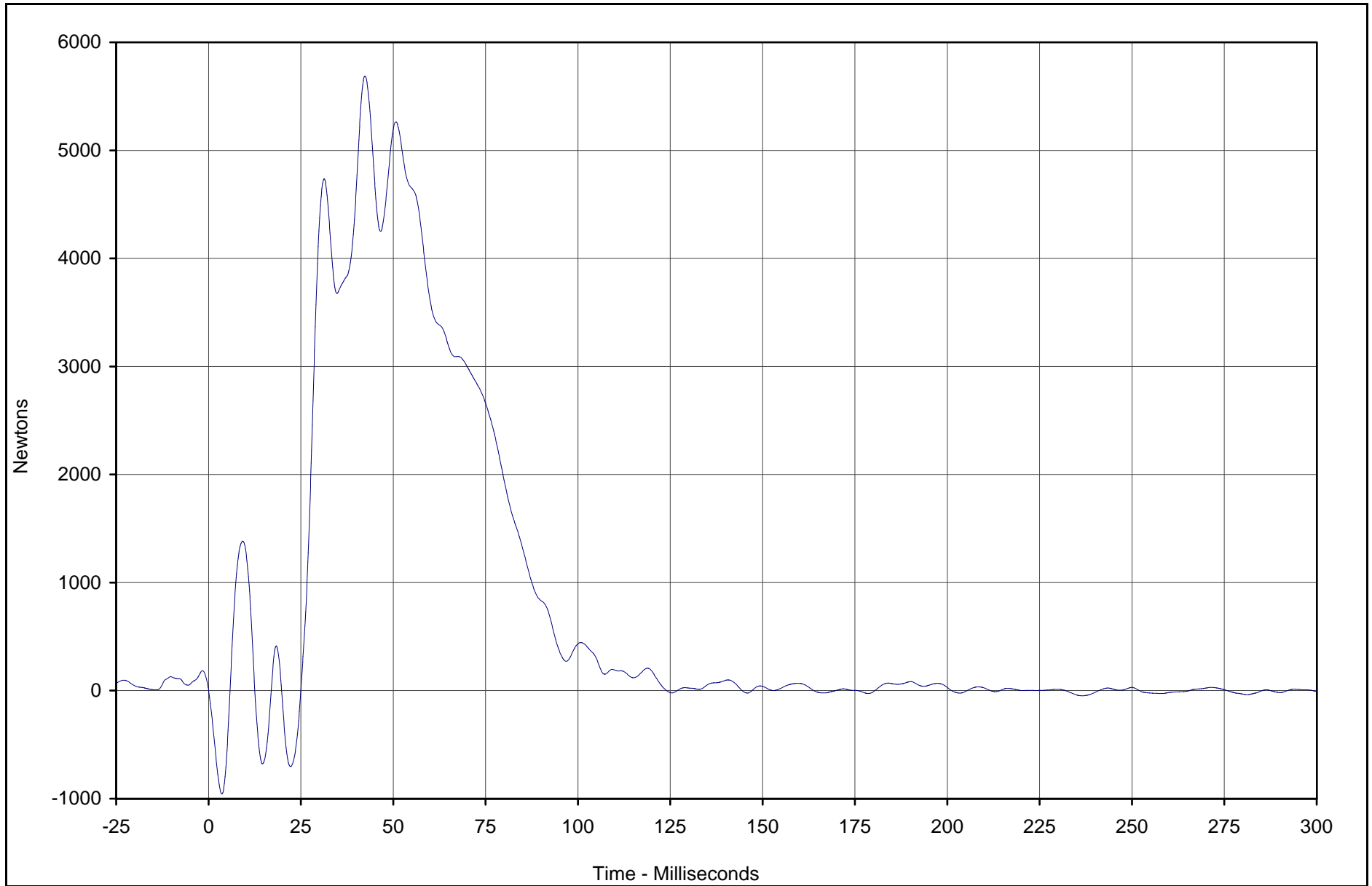


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force A8	105	FIL	Newtons	5688.0	42.3	-956.6	3.6	60

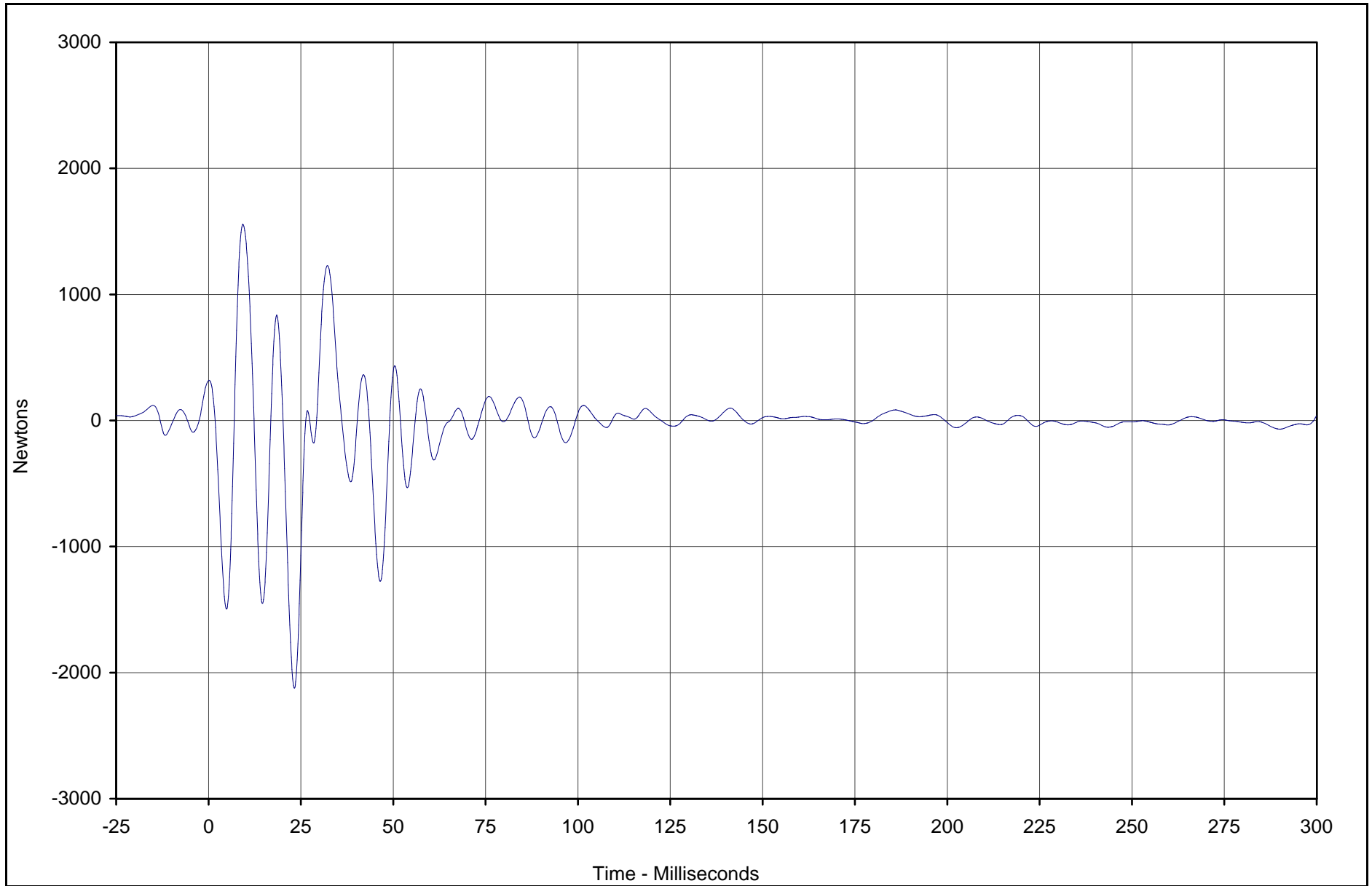


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force A9	106	FIL	Newtons	1556.3	9.3	-2122.9	23.2	60



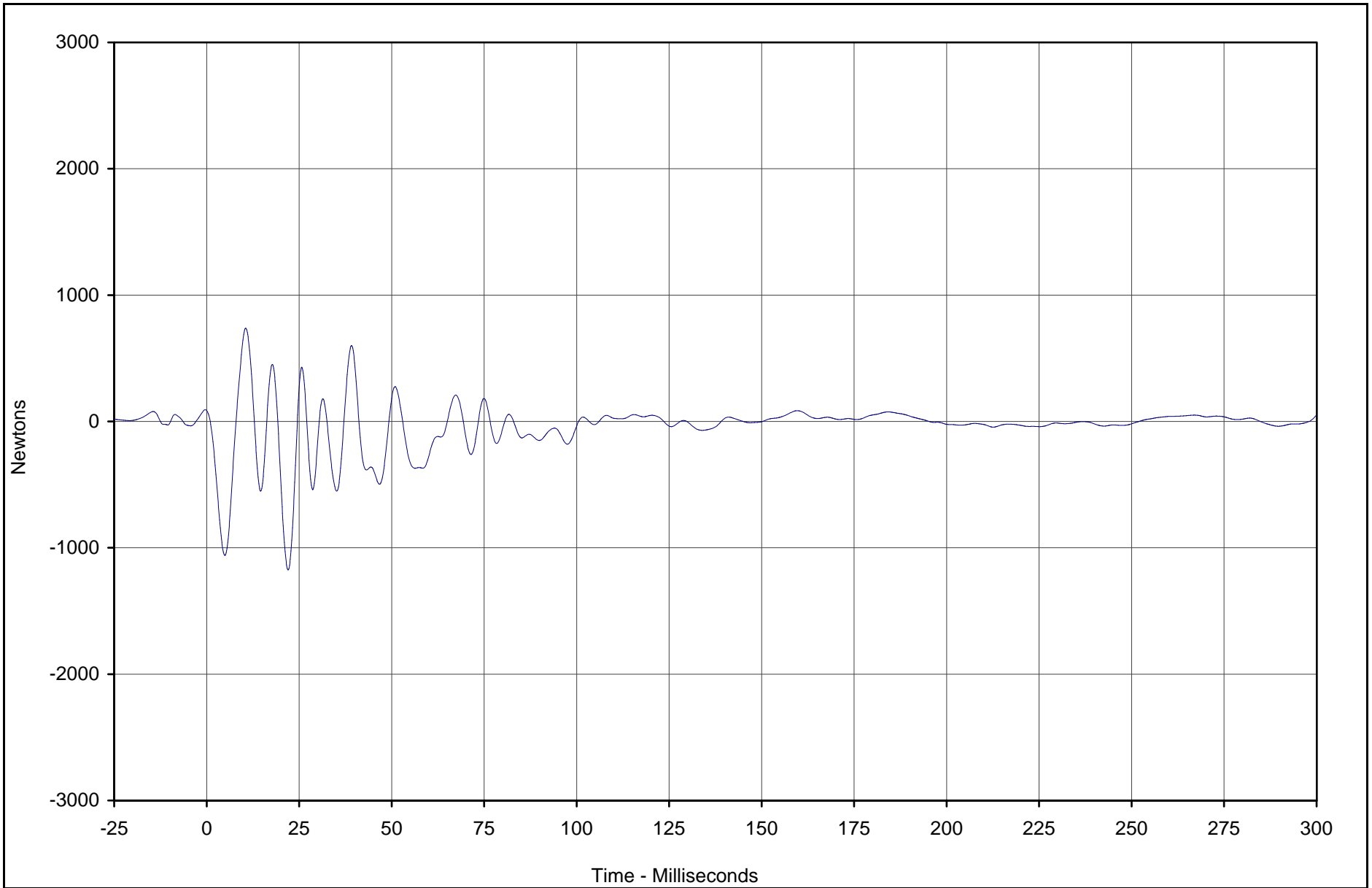
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

C-10



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force B1	107	FIL	Newtons	737.7	10.5	-1175.1	22.0	60



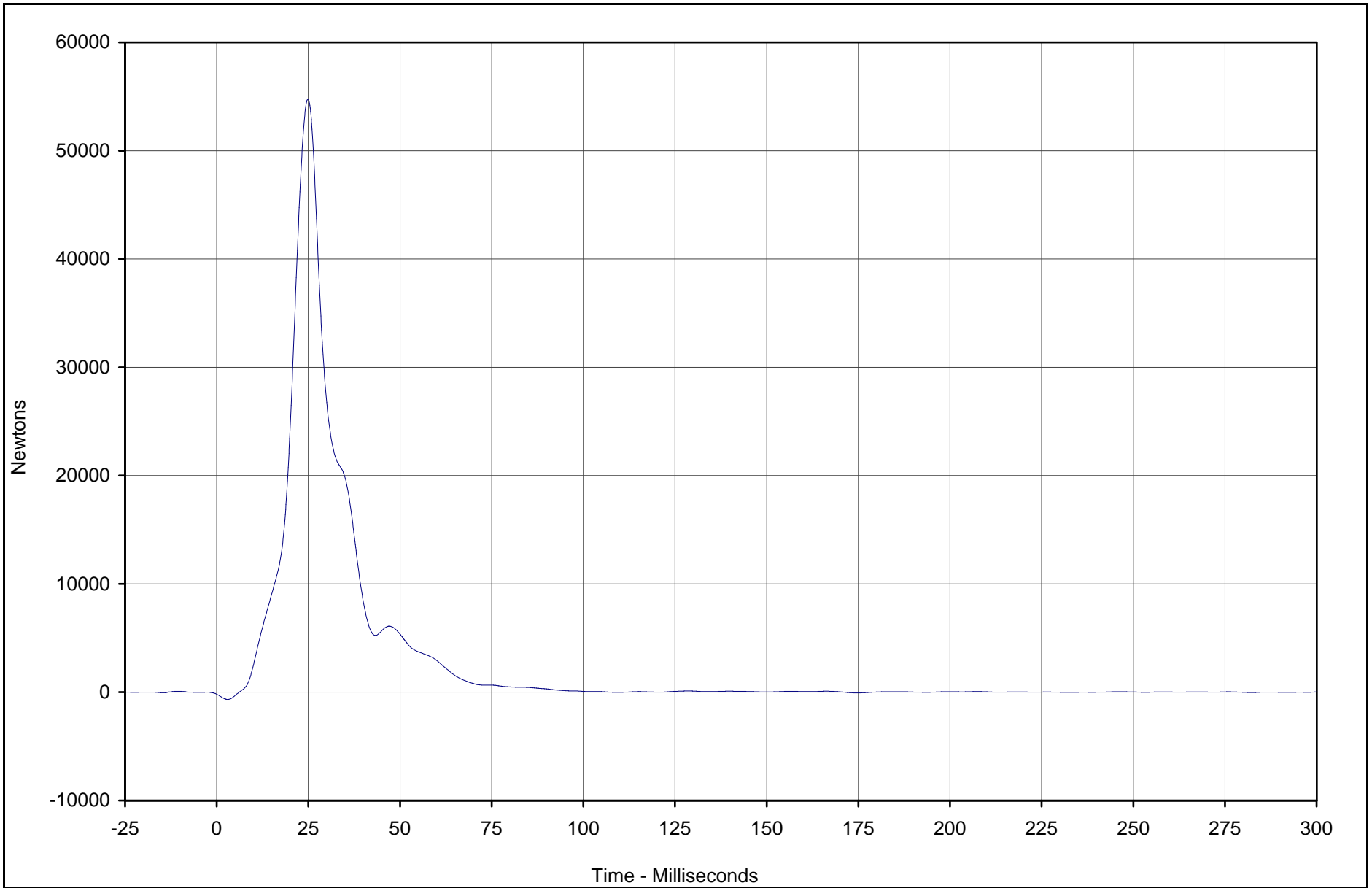
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

C-11



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force B2	108	FIL	Newtons	54785.9	24.9	-669.4	3.0	60

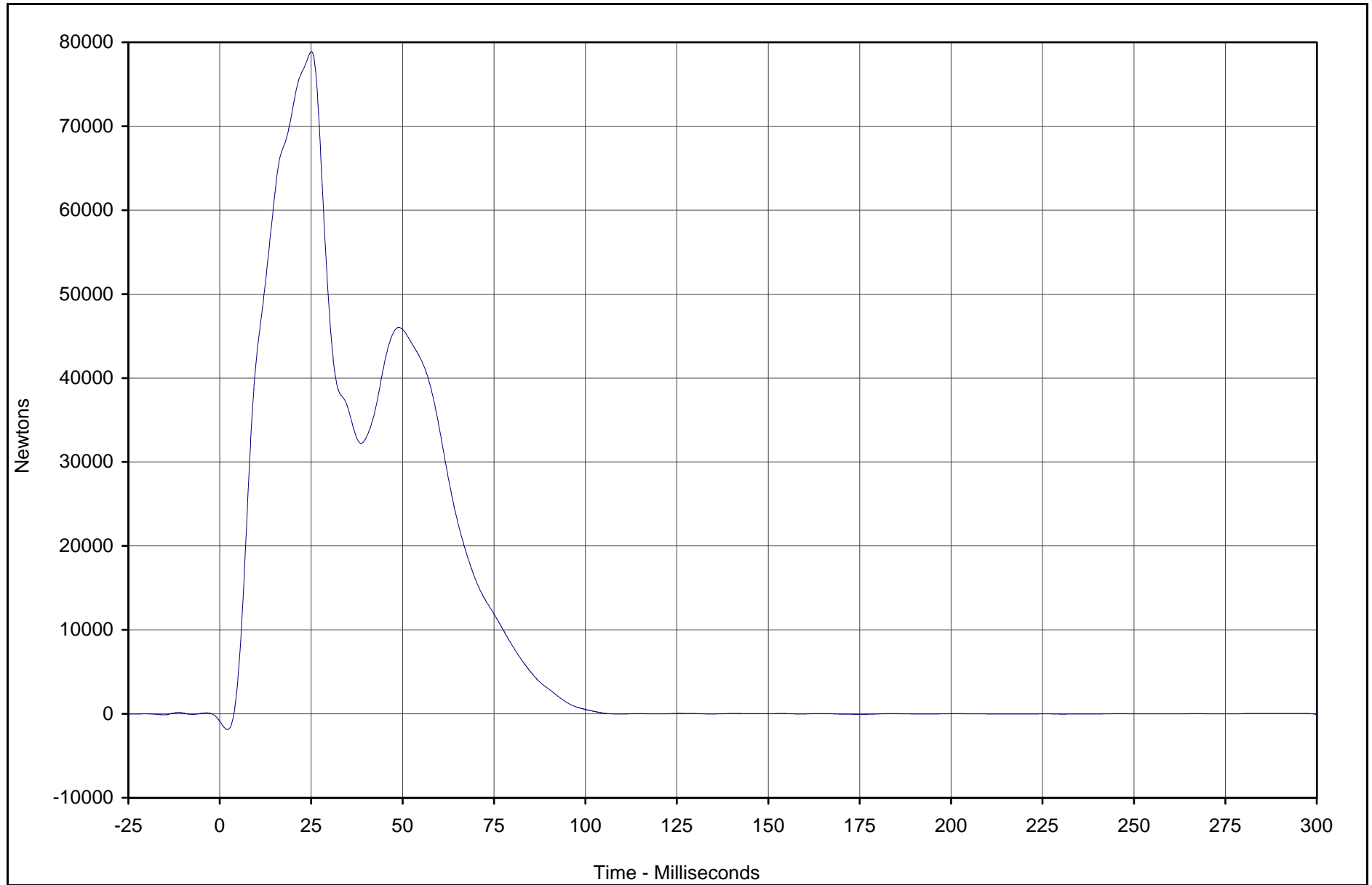


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force B3	109	FIL	Newtons	78890.1	25.1	-1869.5	2.1	60

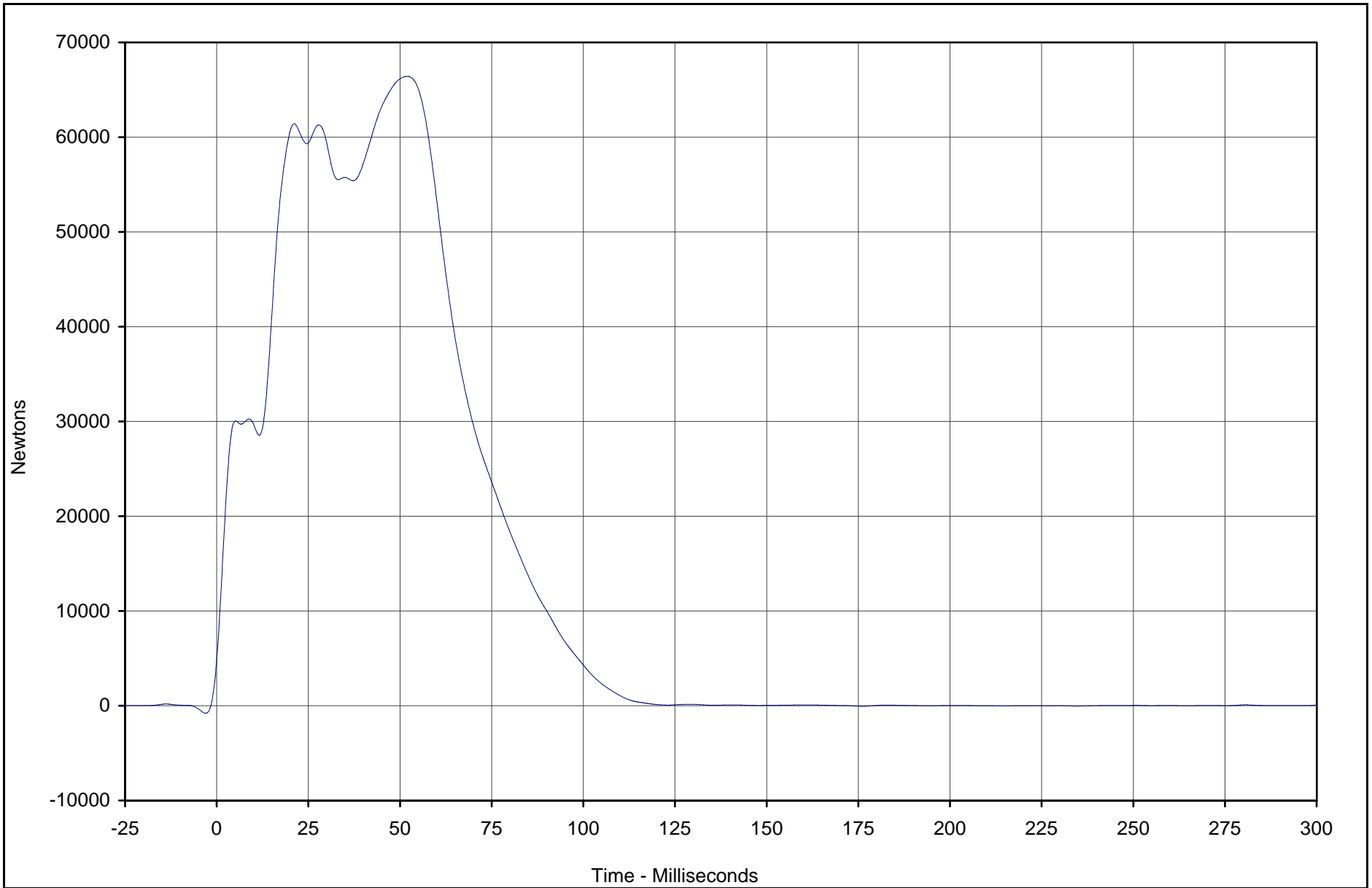


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force B4	110	FIL	Newtons	66423.4	52.0	-53.9	176.1	60

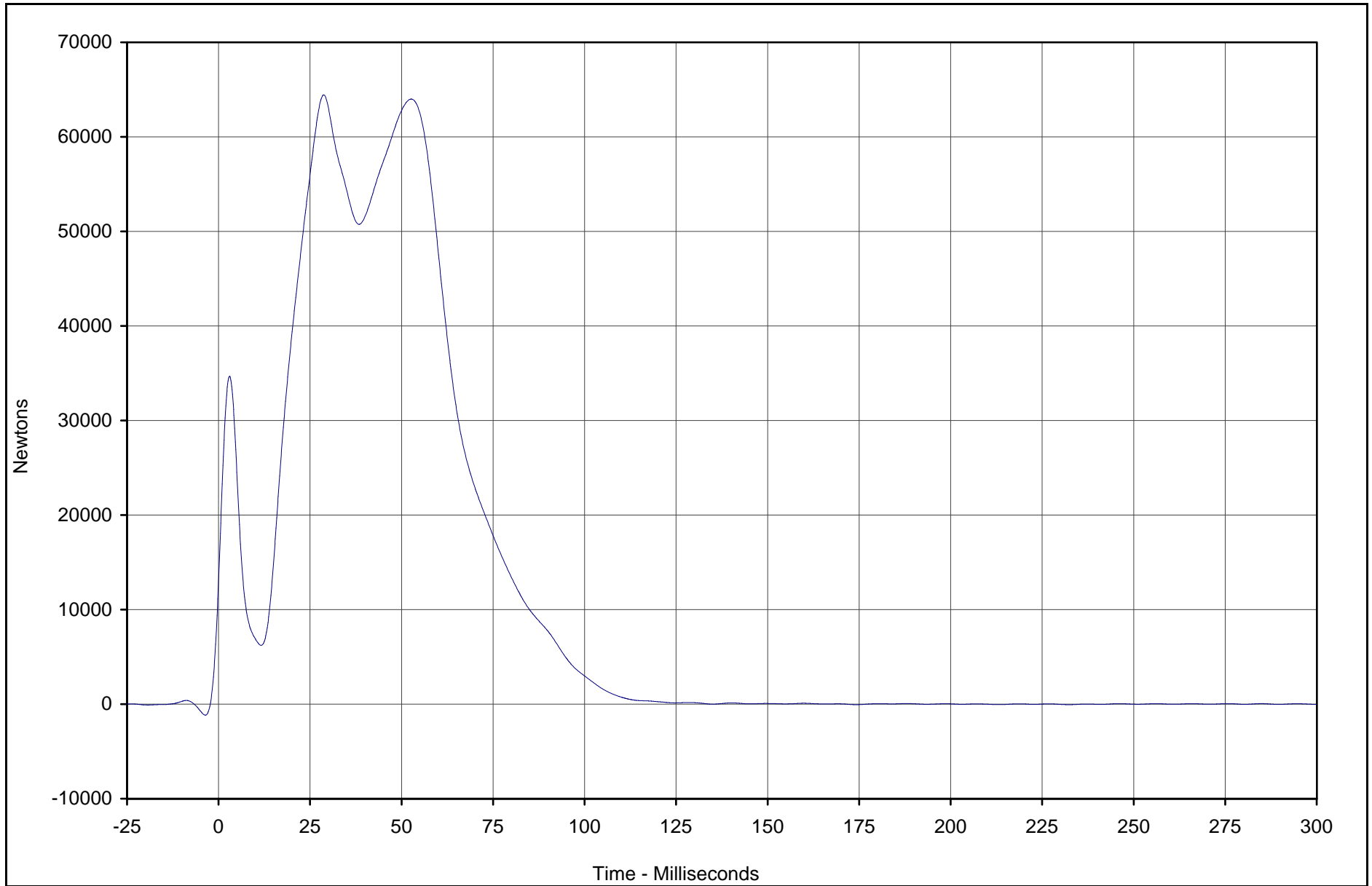


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force B5	111	FIL	Newtons	64441.1	28.7	-56.8	174.1	60

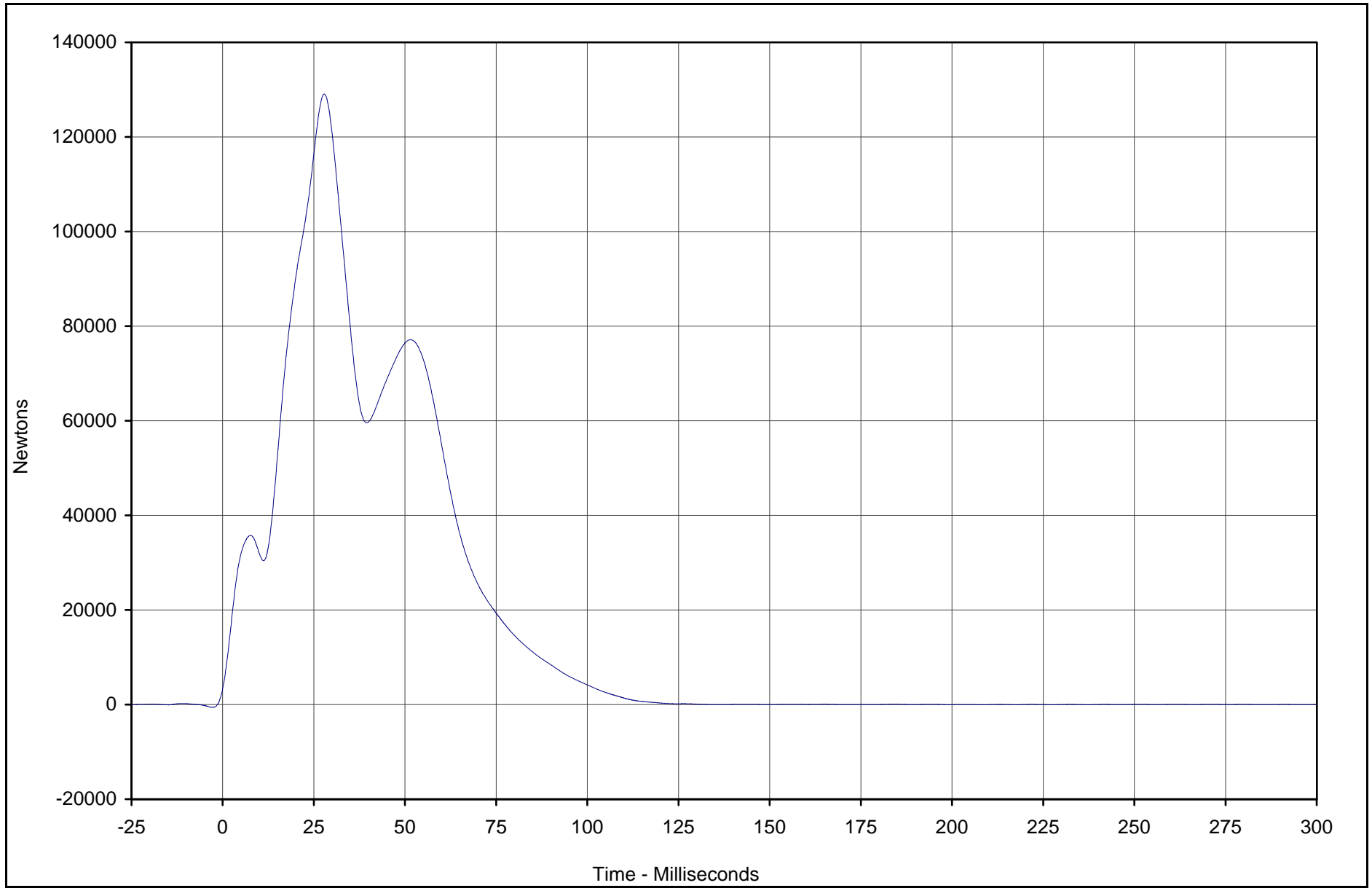


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force B6	112	FIL	Newtons	129064.2	27.9	-40.3	217.3	60

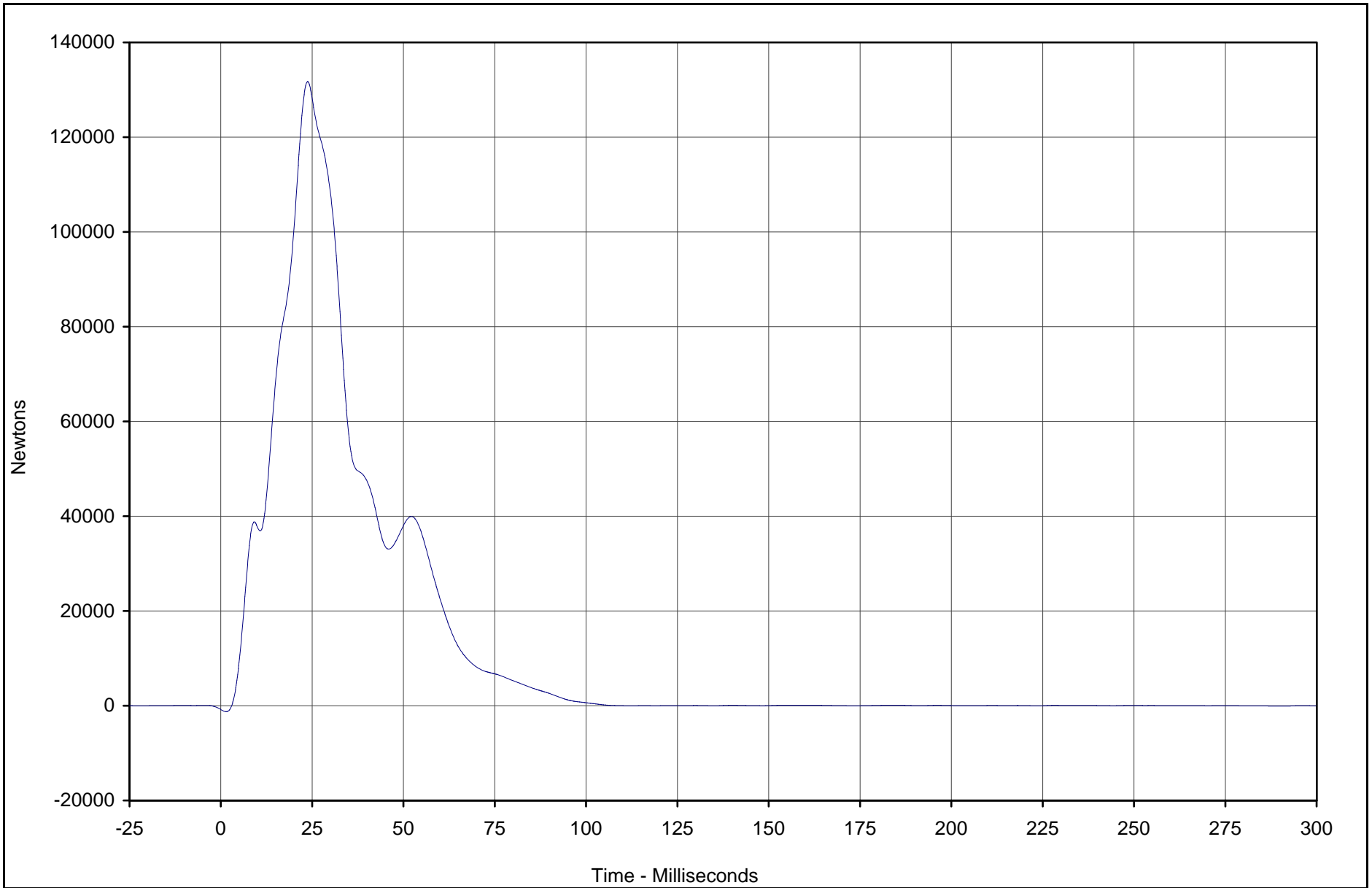


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force B7	113	FIL	Newtons	131745.4	23.8	-1257.5	1.5	60

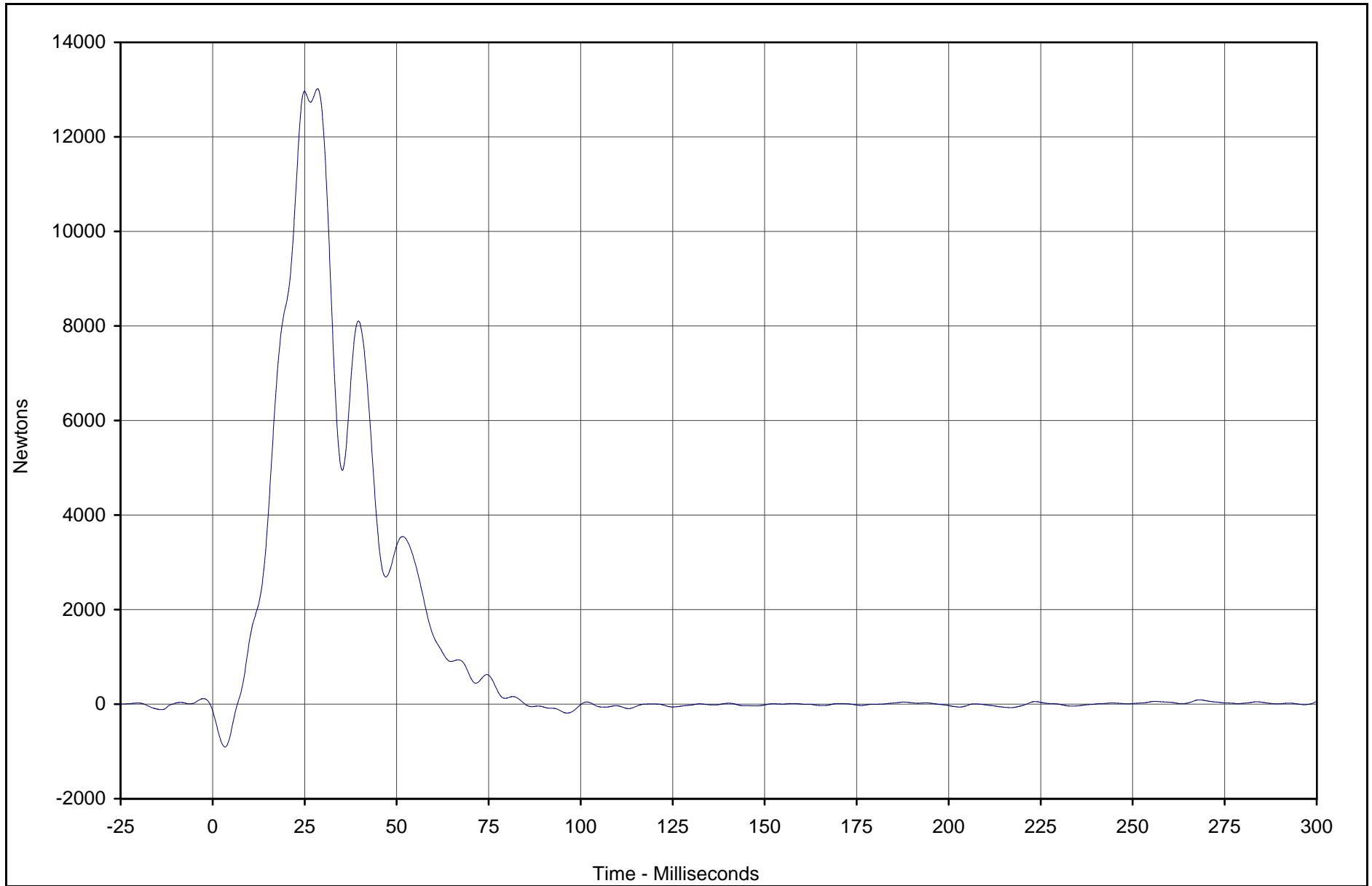


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force B8	114	FIL	Newtons	13018.6	28.5	-907.5	3.3	60

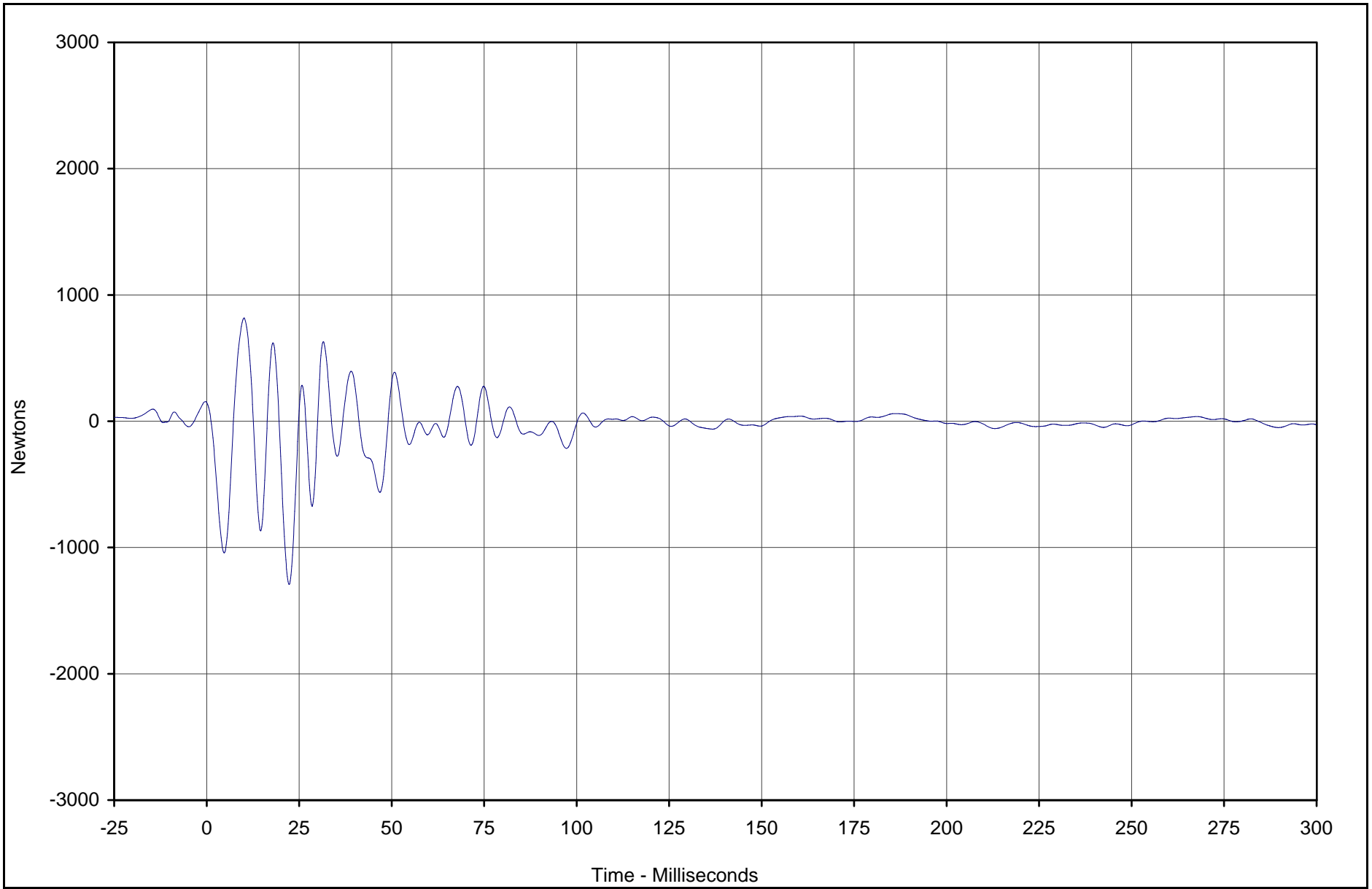


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force B9	115	FIL	Newtons	817.4	10.1	-1292.6	22.3	60

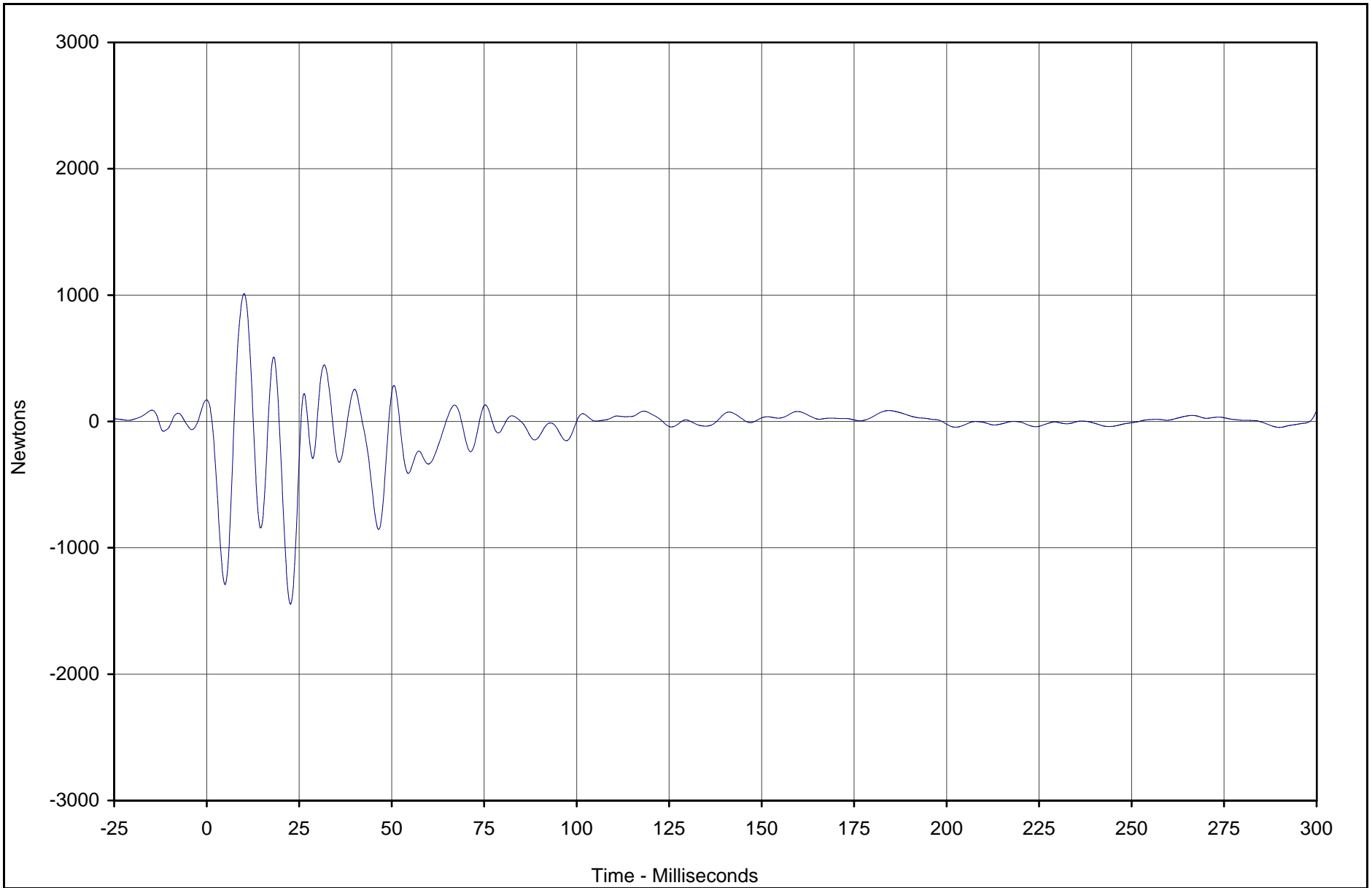


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force C1	116	FIL	Newtons	1012.5	10.1	-1445.6	22.6	60



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

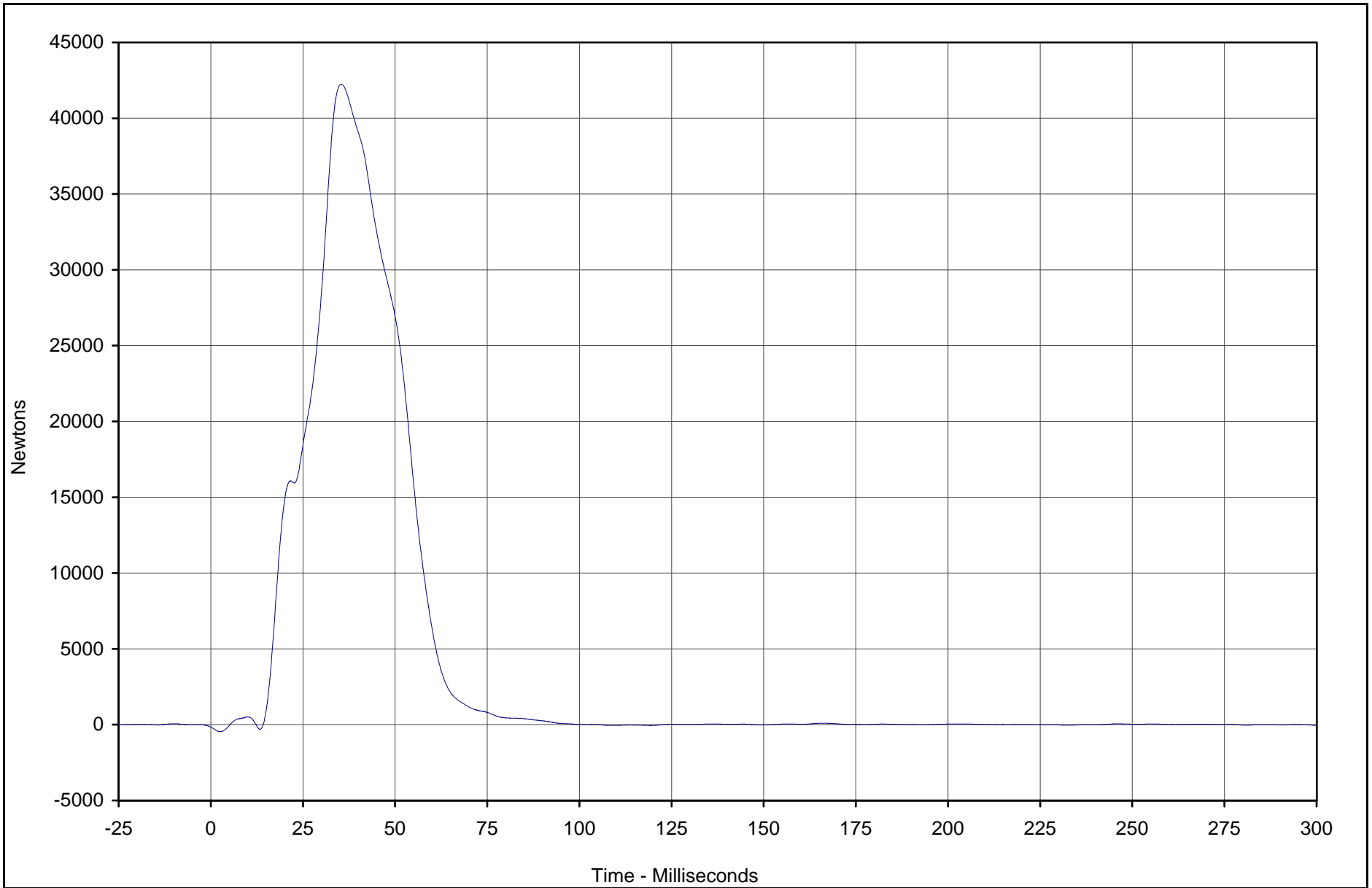
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

C-20

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force C2	117	FIL	Newtons	42241.8	35.4	-451.9	2.5	60

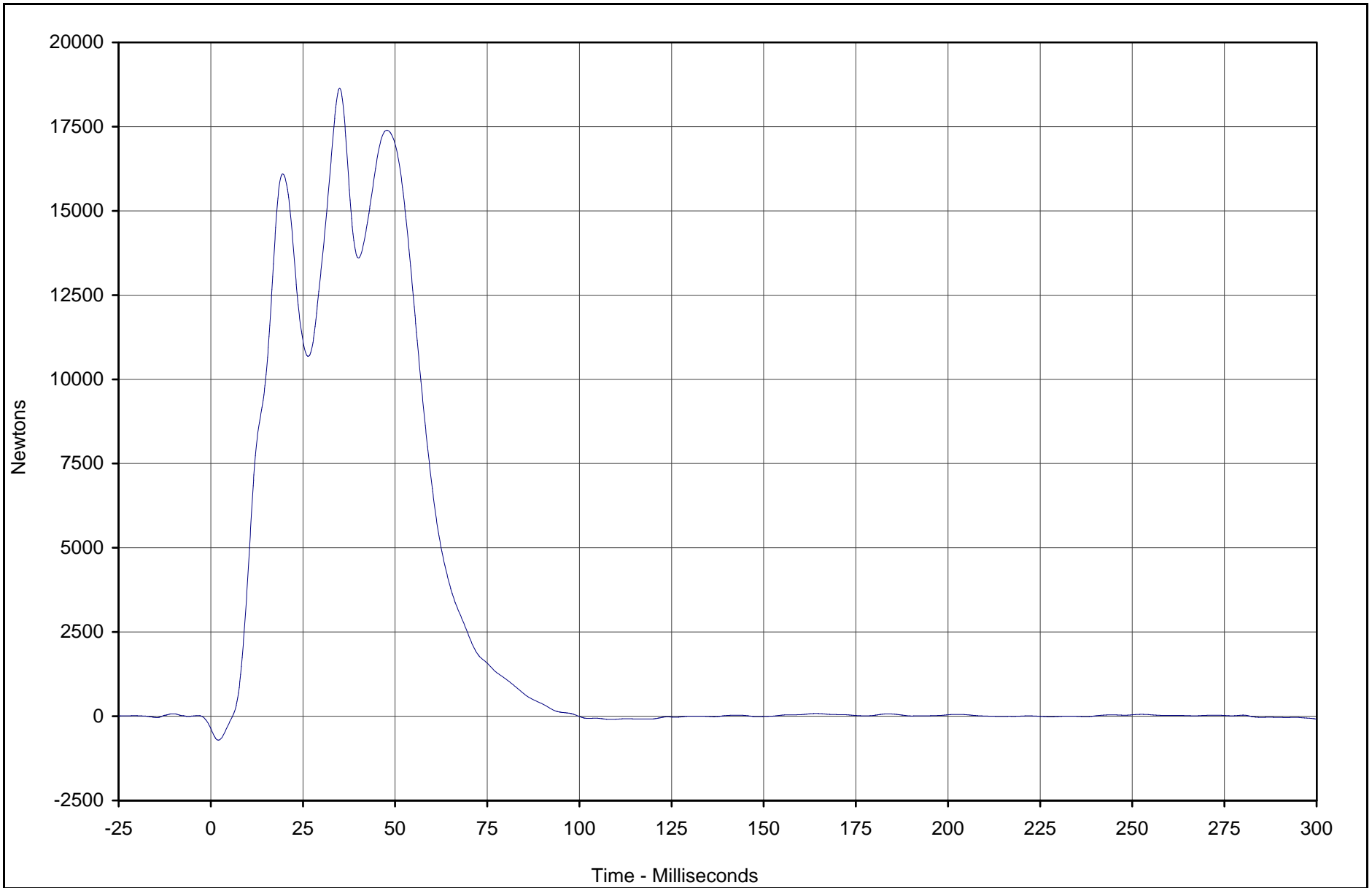


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force C3	118	FIL	Newtons	18637.7	34.9	-707.8	2.0	60



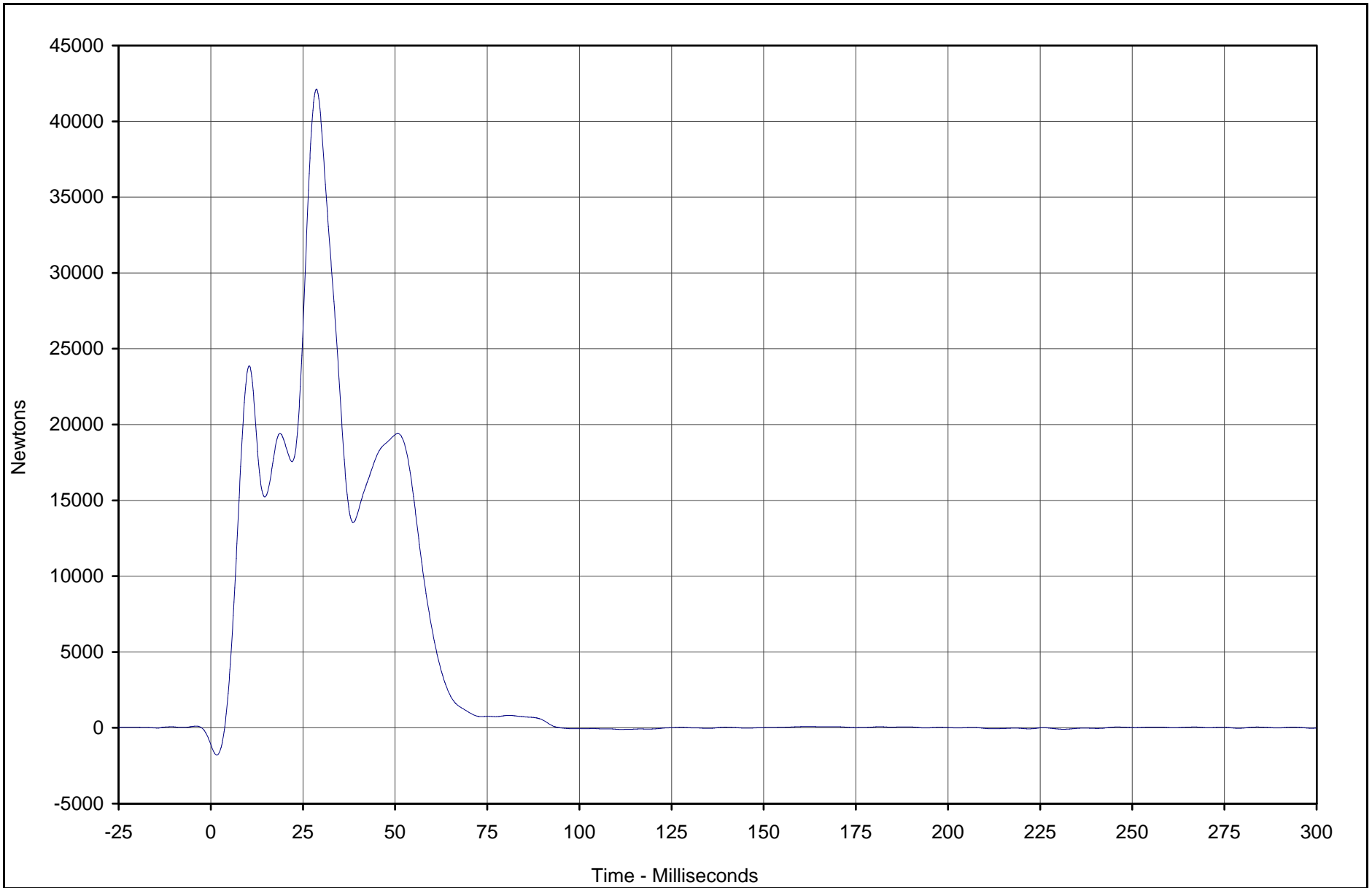
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

C-22



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force C4	119	FIL	Newtons	42120.3	28.7	-1800.6	1.6	60



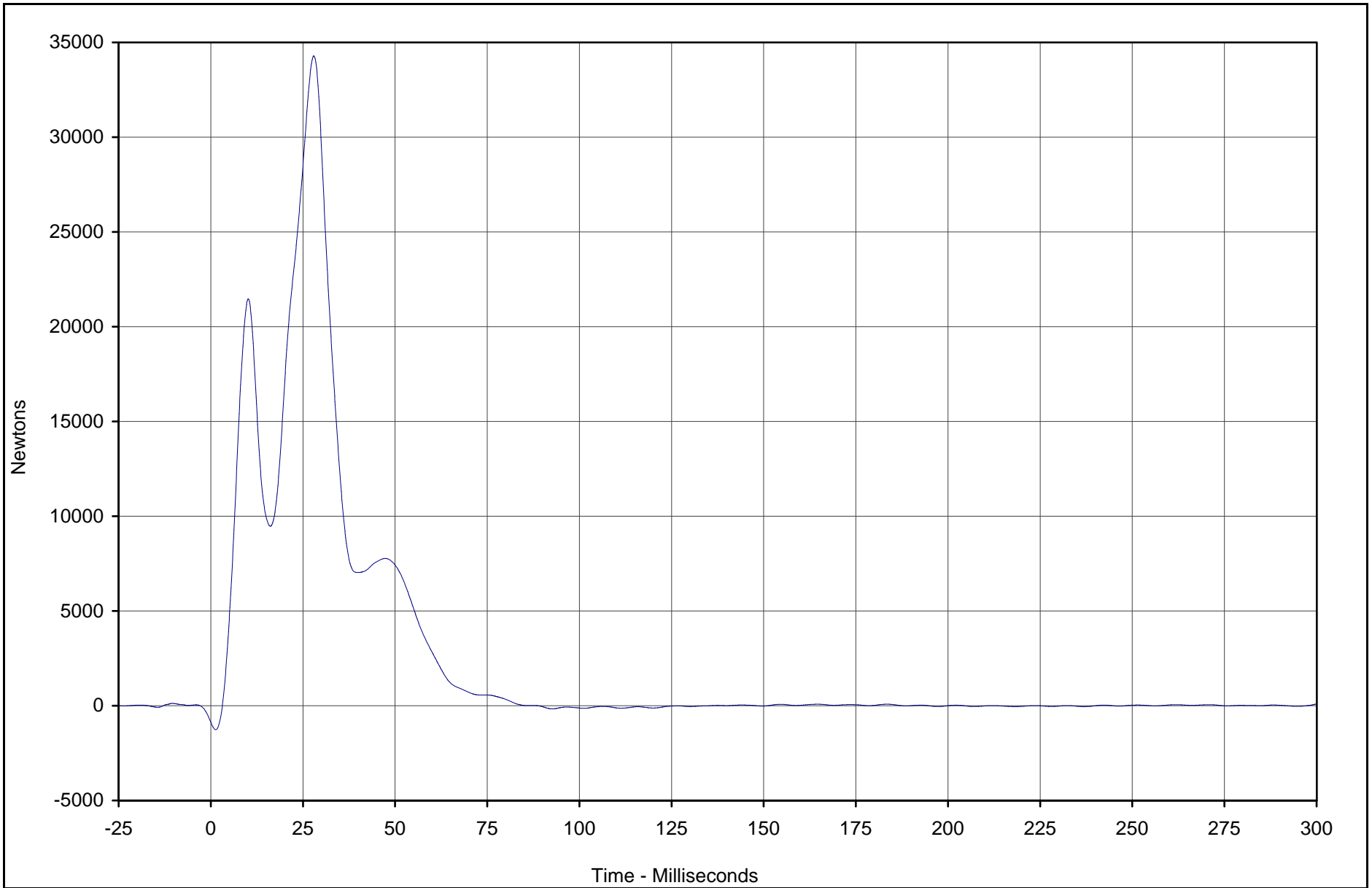
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

C-23



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force C5	120	FIL	Newtons	34288.6	27.9	-1263.8	1.3	60



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

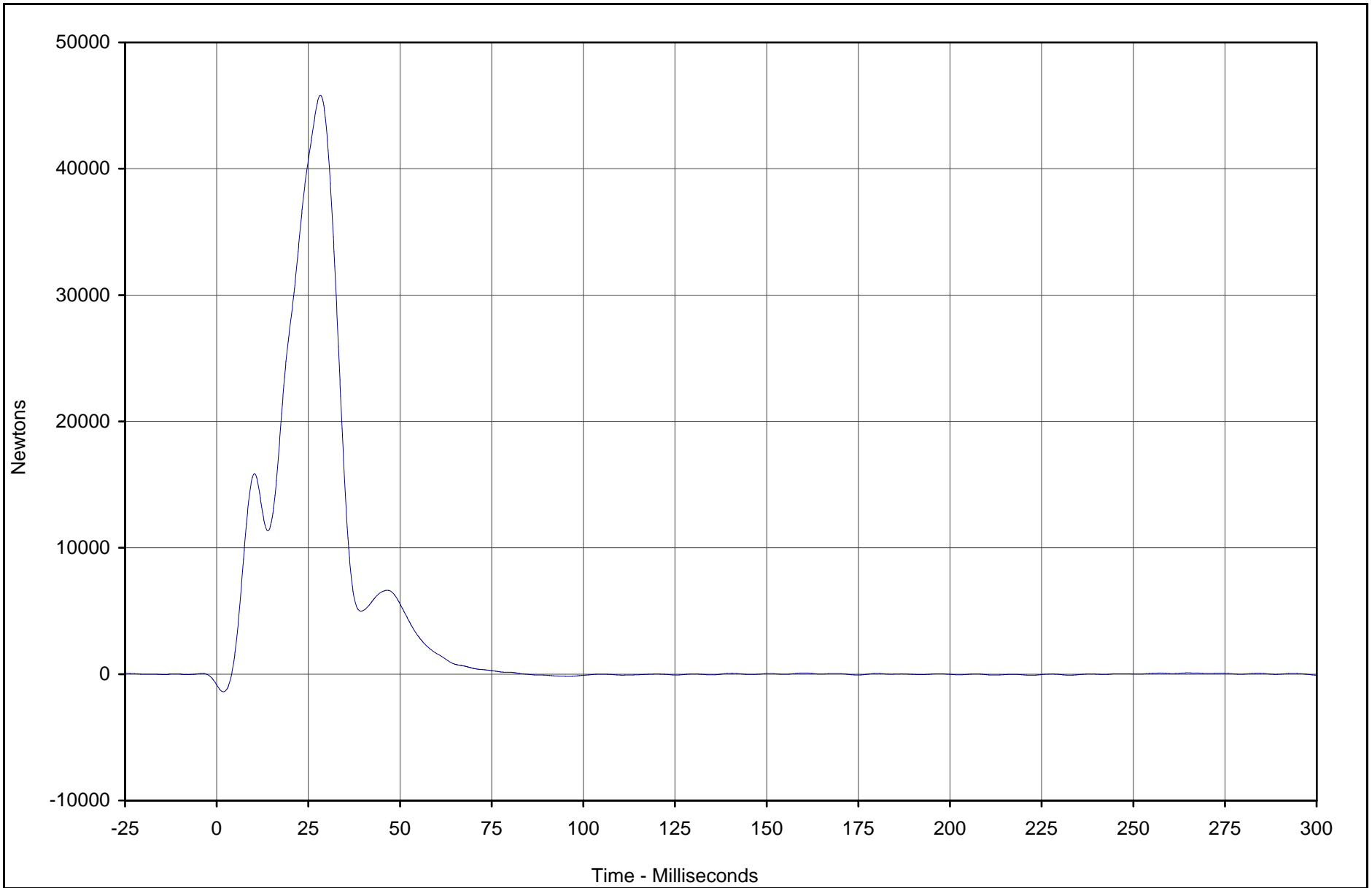
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

C-24



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force C6	121	FIL	Newtons	45828.7	28.3	-1394.9	1.8	60



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

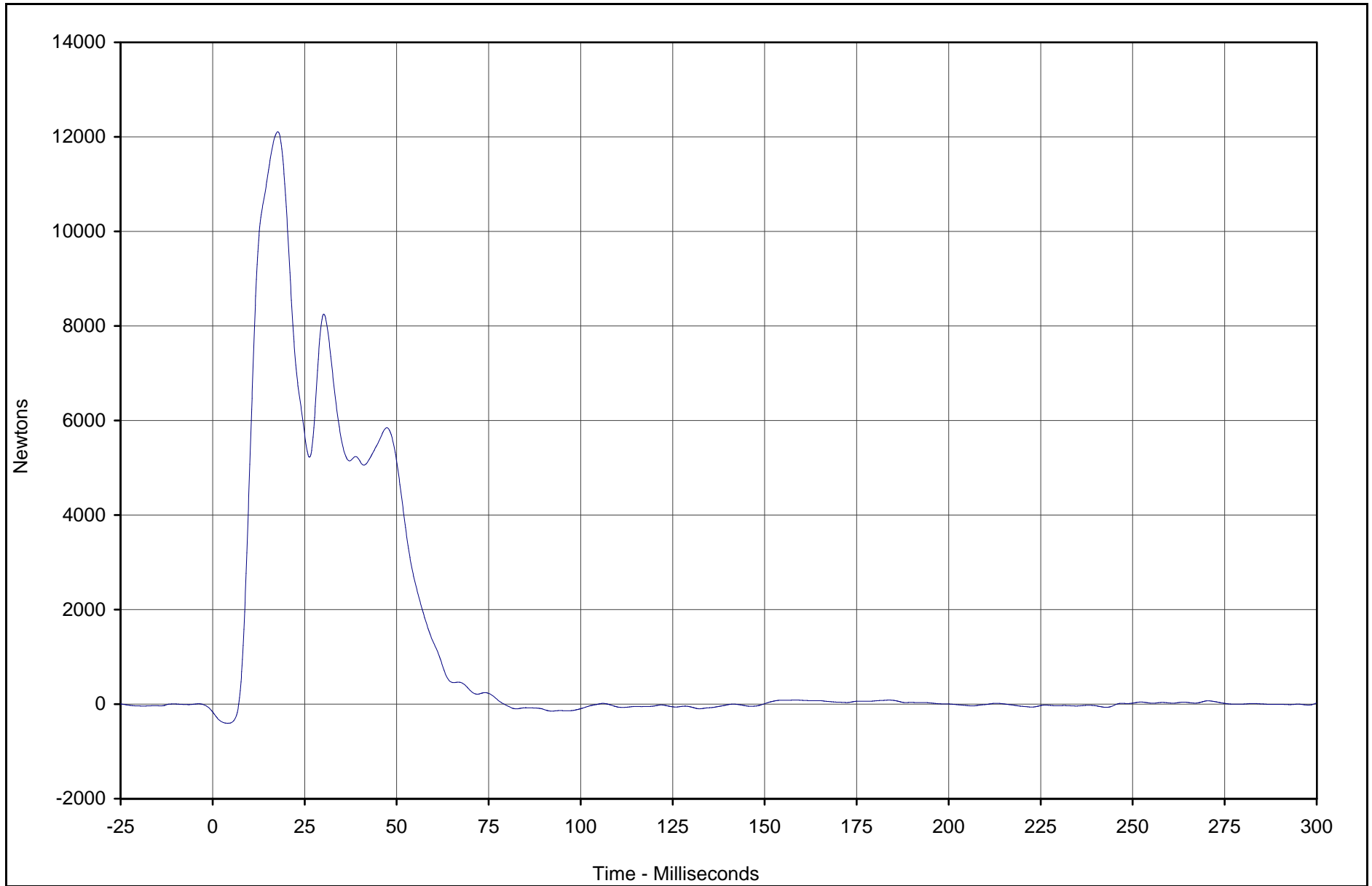
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

C-25



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force C7	122	FIL	Newtons	12109.4	17.7	-404.7	4.1	60



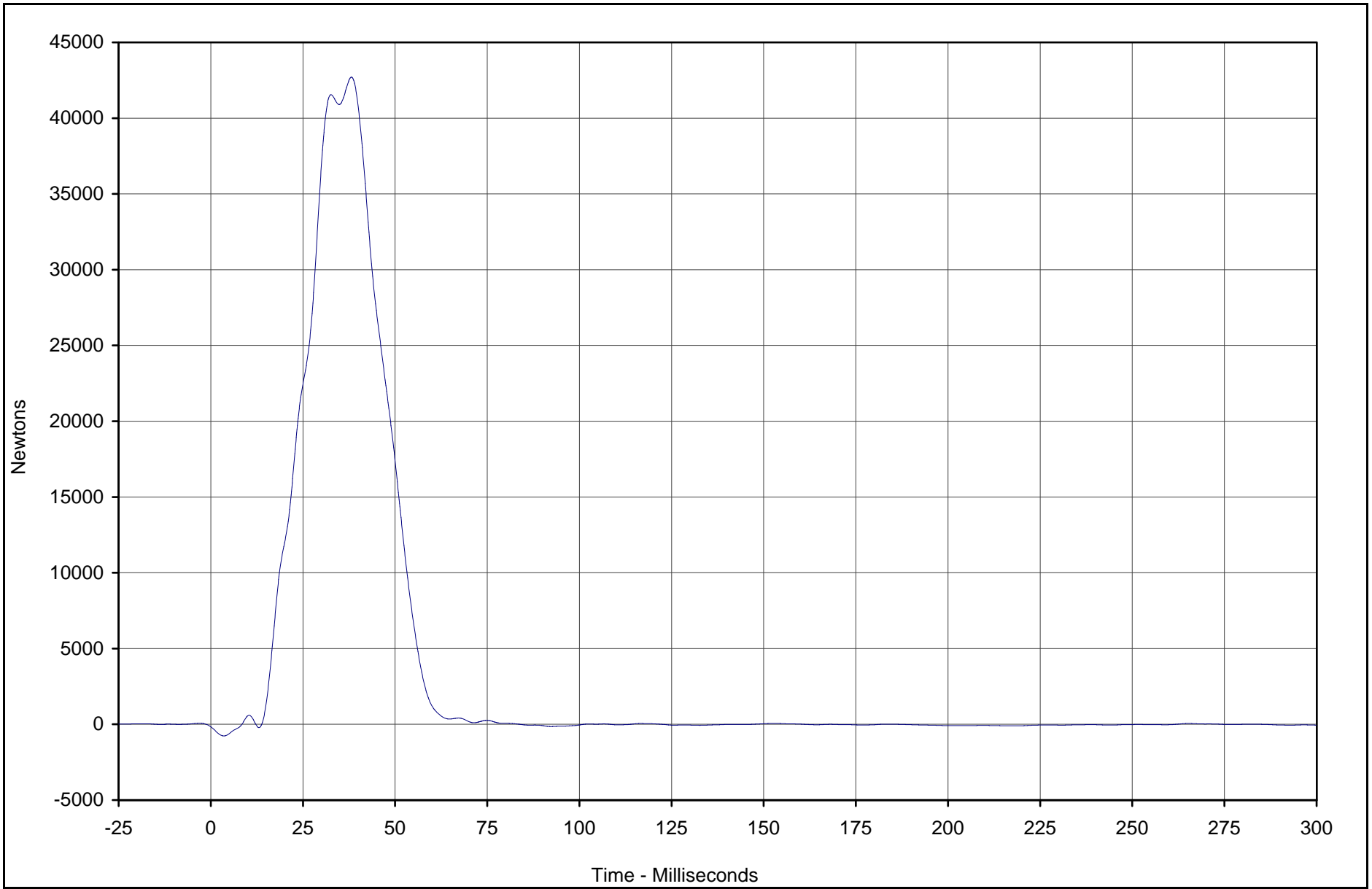
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force C8	123	FIL	Newtons	42709.7	38.2	-766.9	3.6	60

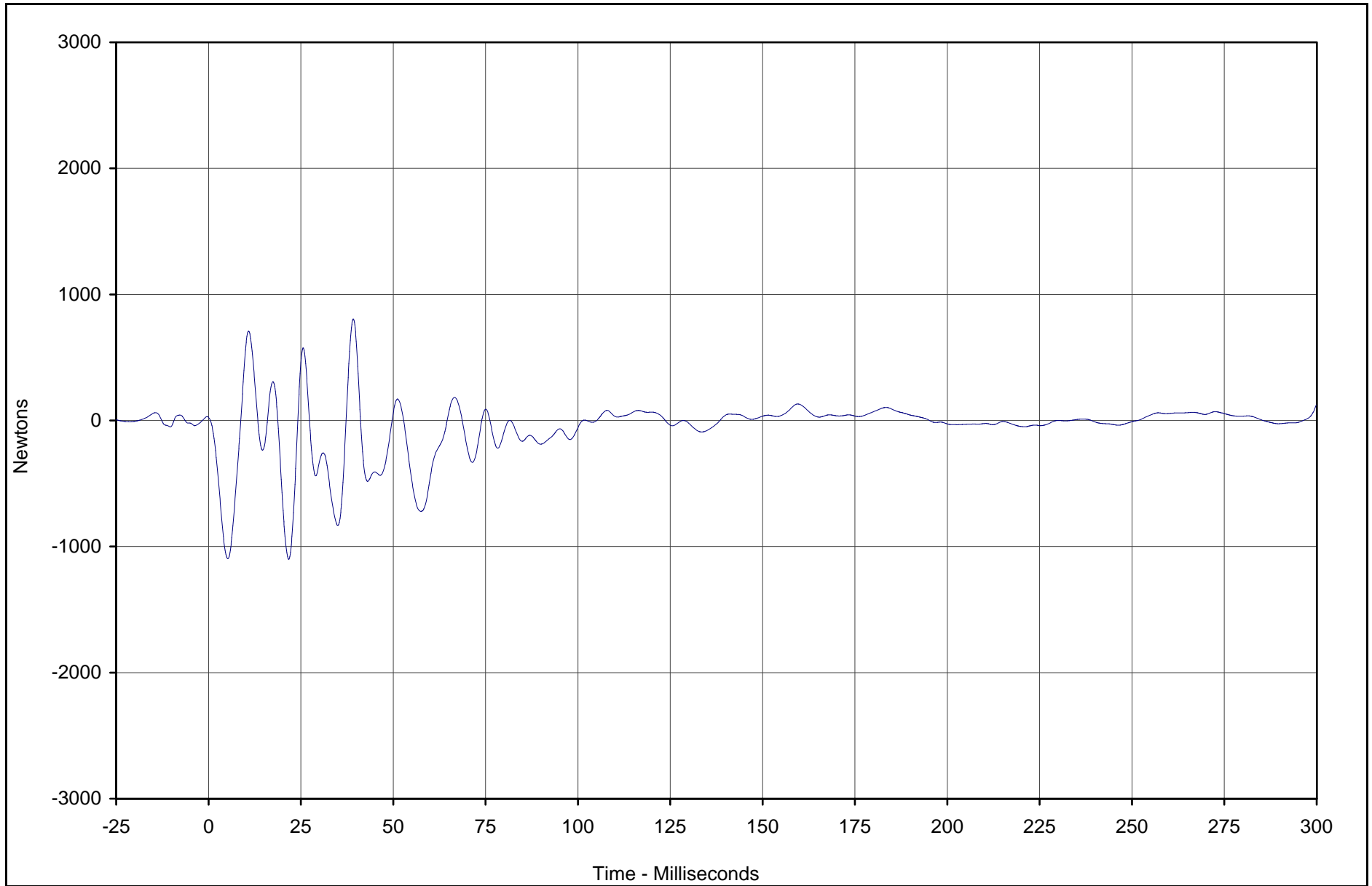


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force C9	124	FIL	Newtons	805.9	39.2	-1100.8	21.7	60

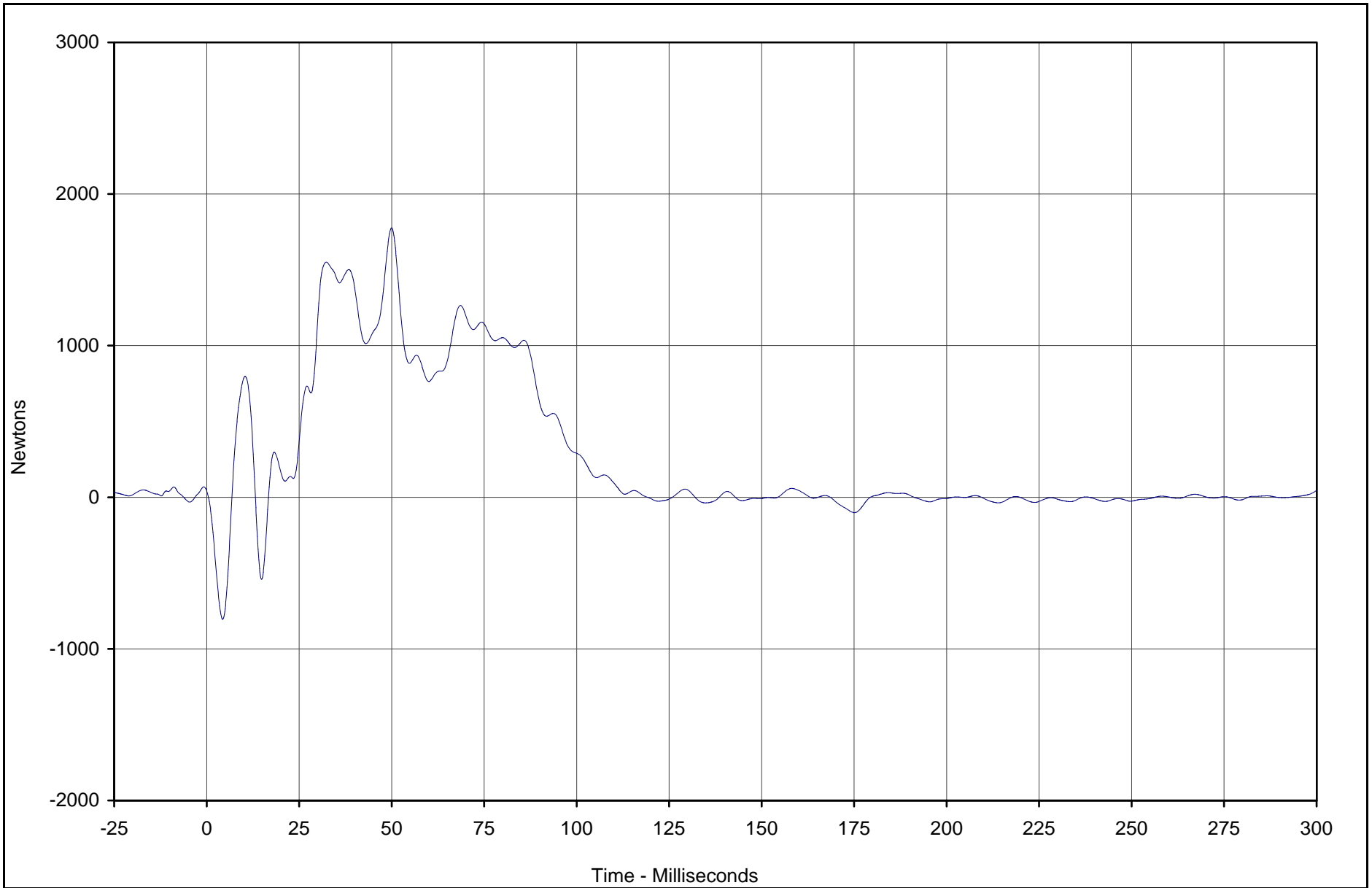


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force D1	125	FIL	Newtons	1777.0	50.0	-805.2	4.3	60

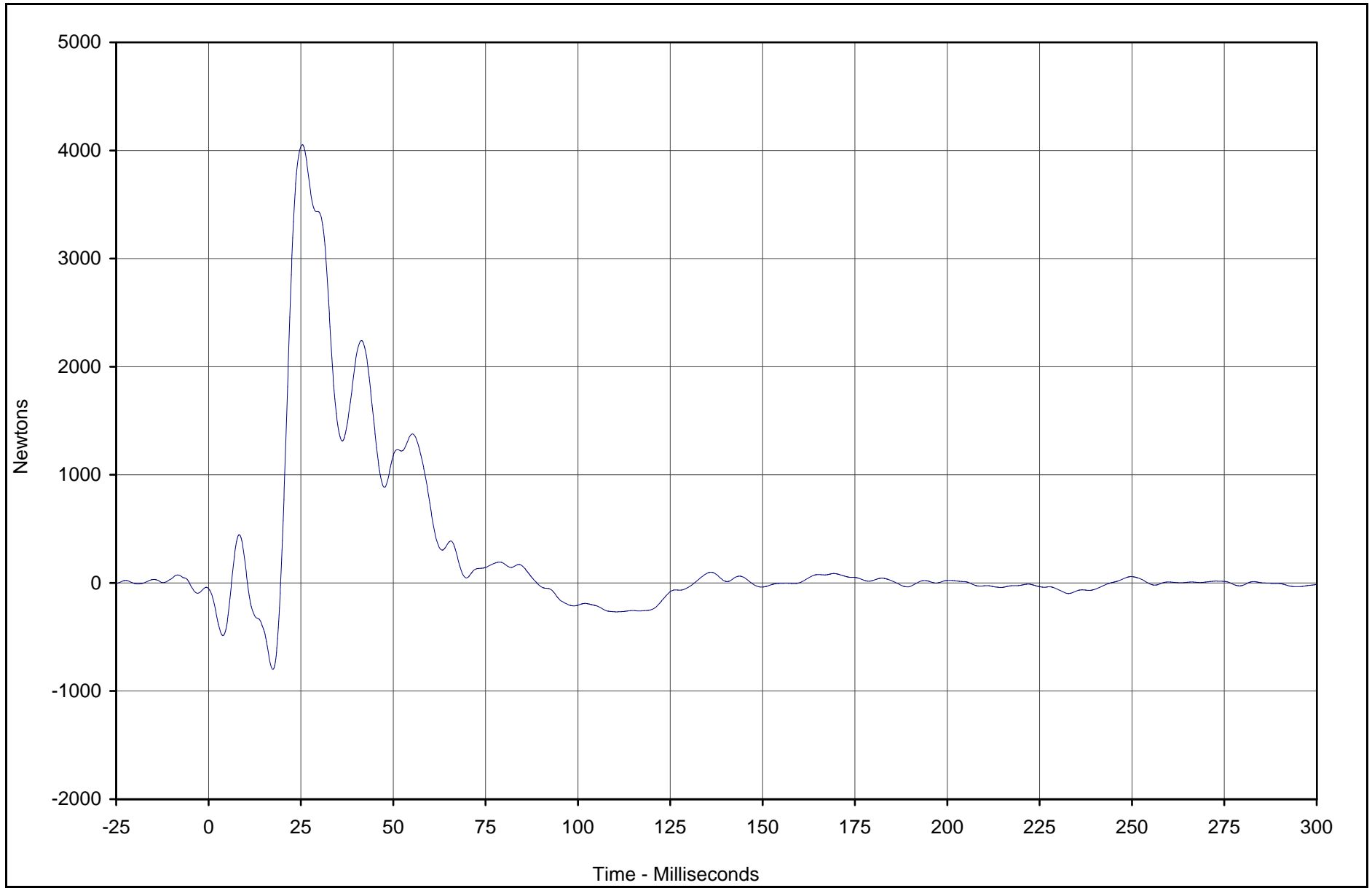


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force D2	126	FIL	Newtons	4053.7	25.4	-800.3	17.4	60



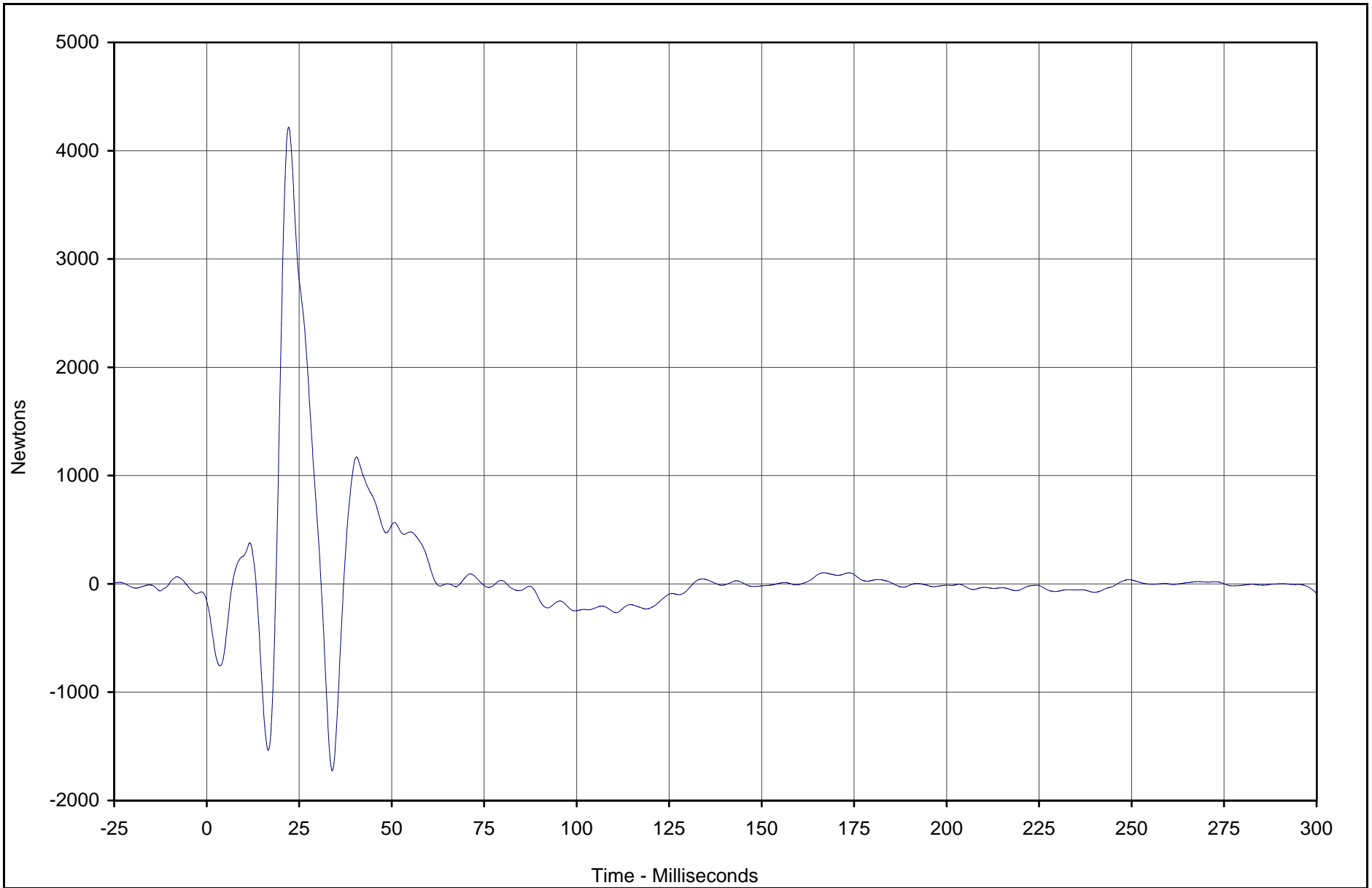
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

C-30



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force D3	127	FIL	Newtons	4216.6	22.2	-1725.9	33.9	60

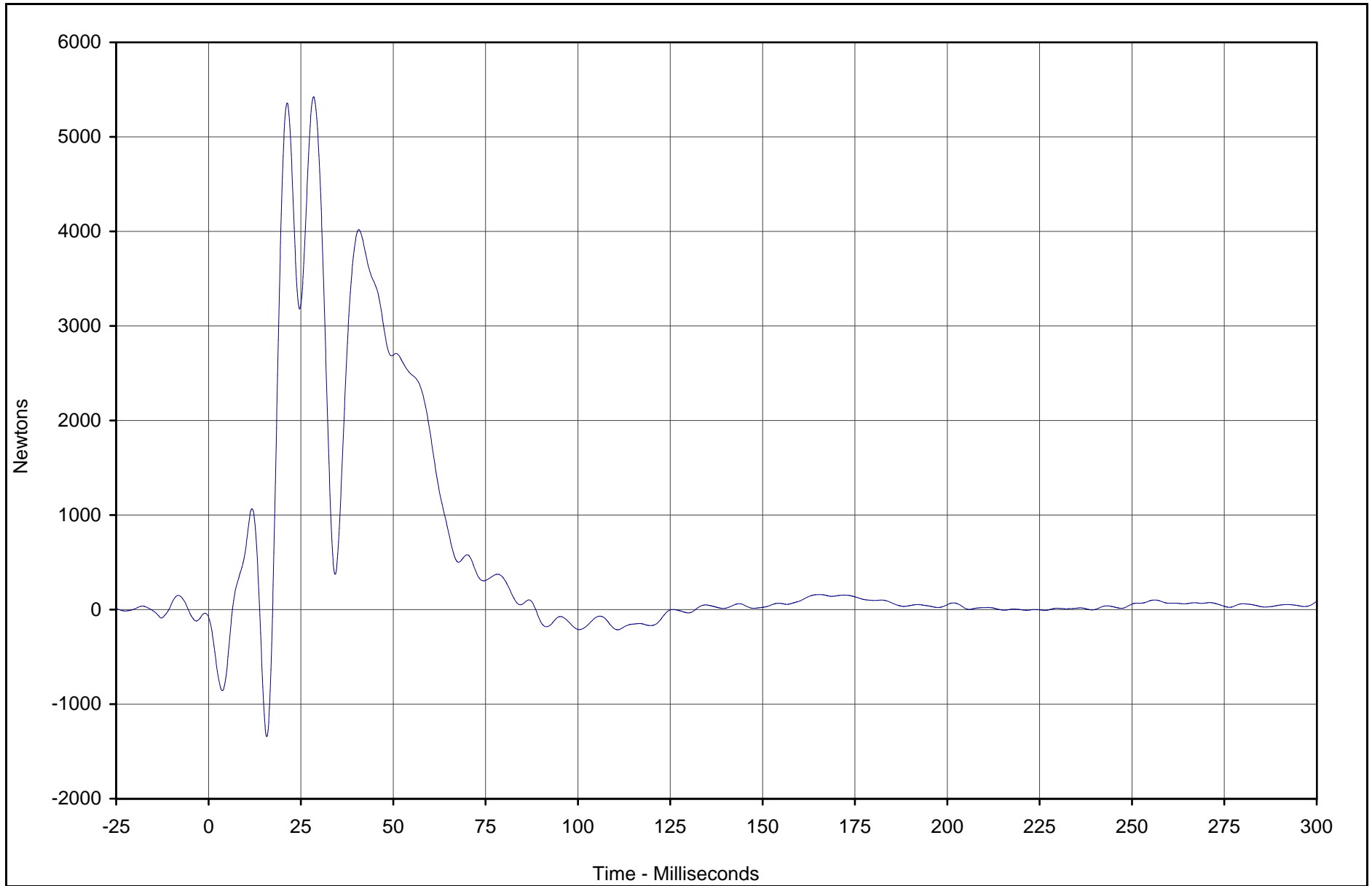


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force D4	128	FIL	Newtons	5423.1	28.4	-1343.8	15.8	60

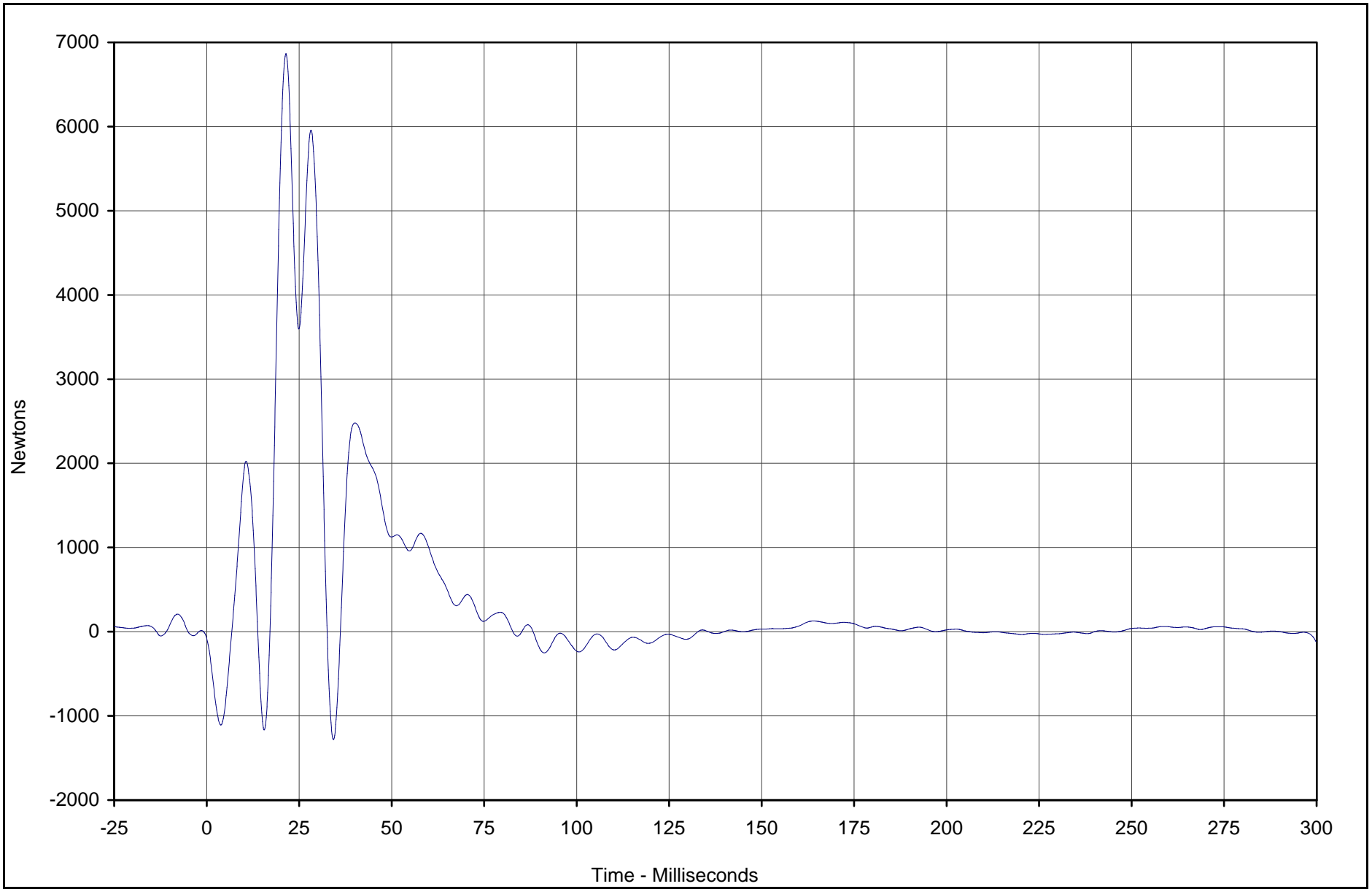


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force D5	129	FIL	Newtons	6865.7	21.4	-1280.7	34.3	60

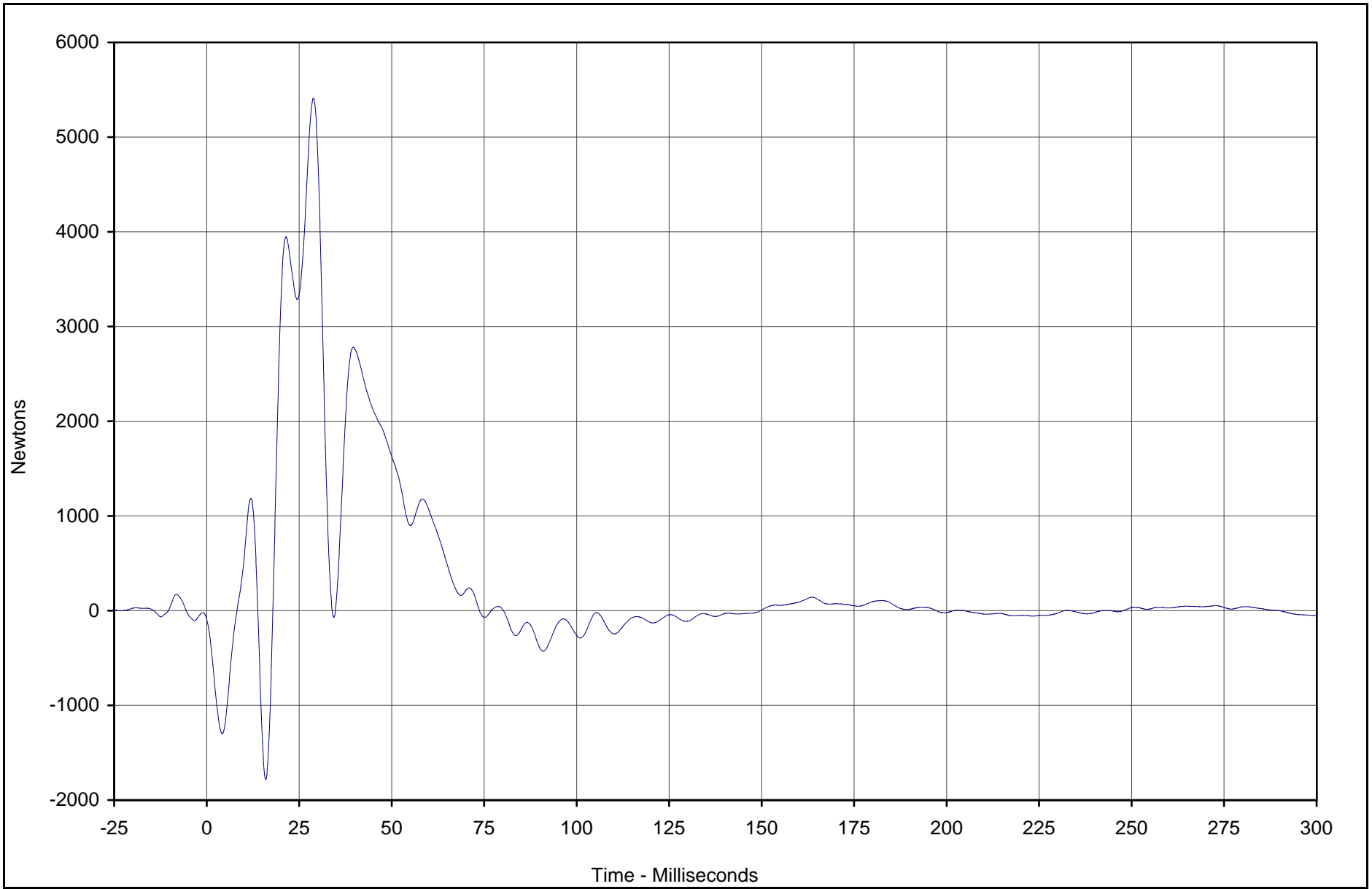


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force D6	130	FIL	Newtons	5411.5	28.9	-1781.7	16.0	60

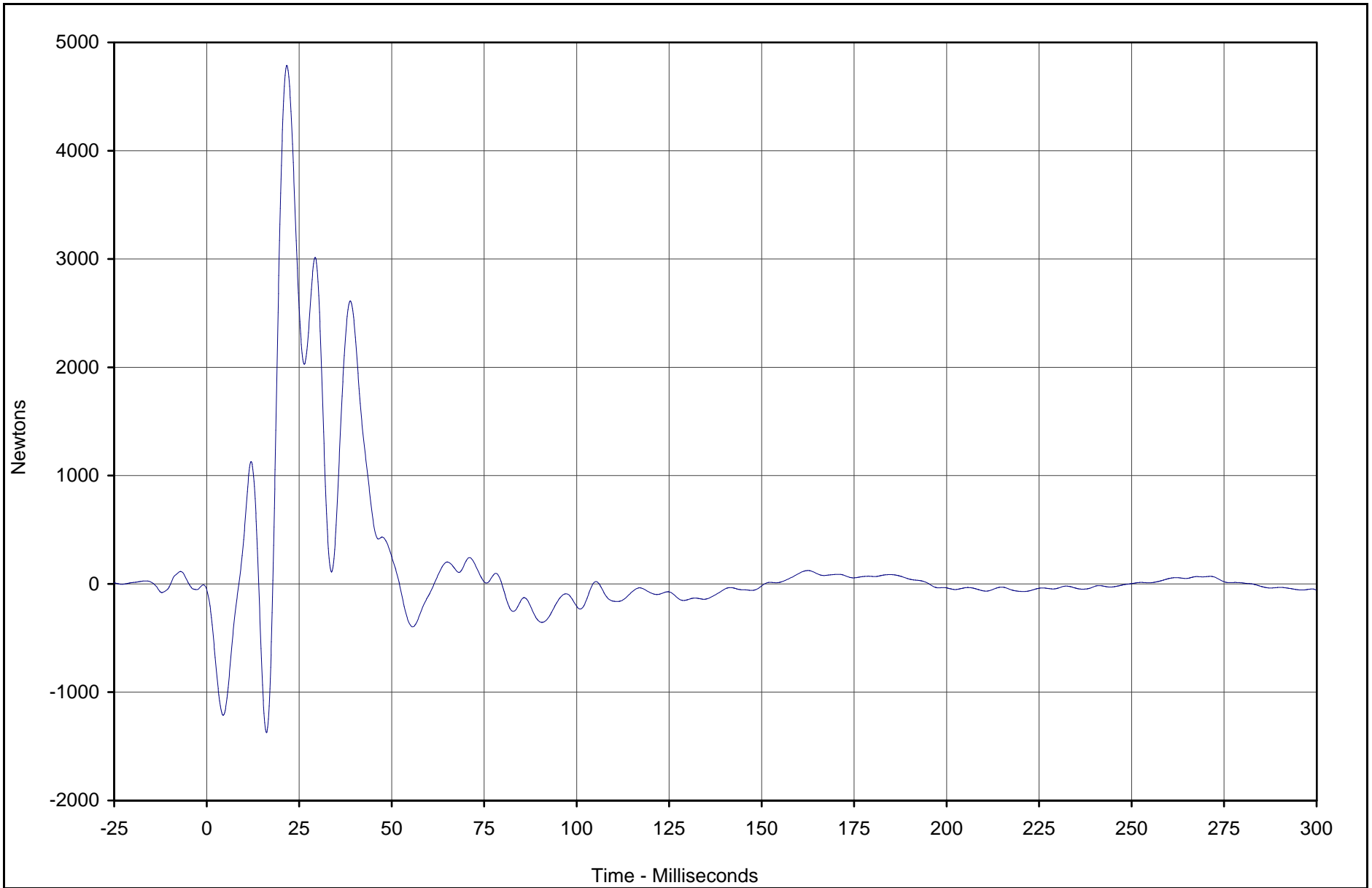


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force D7	131	FIL	Newtons	4787.2	21.7	-1372.1	16.2	60



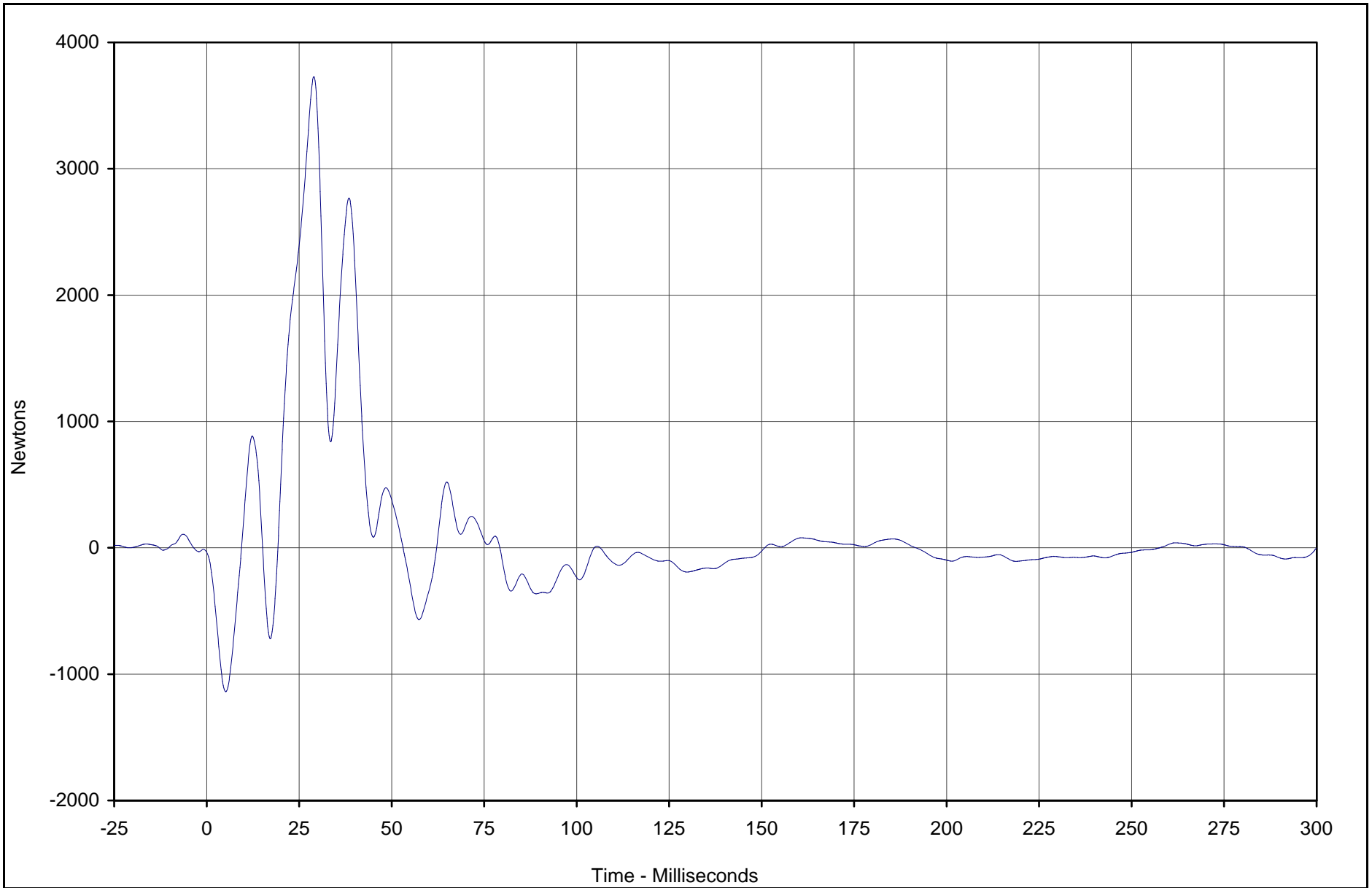
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

C-35



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force D8	132	FIL	Newtons	3728.8	29.0	-1138.9	5.2	60



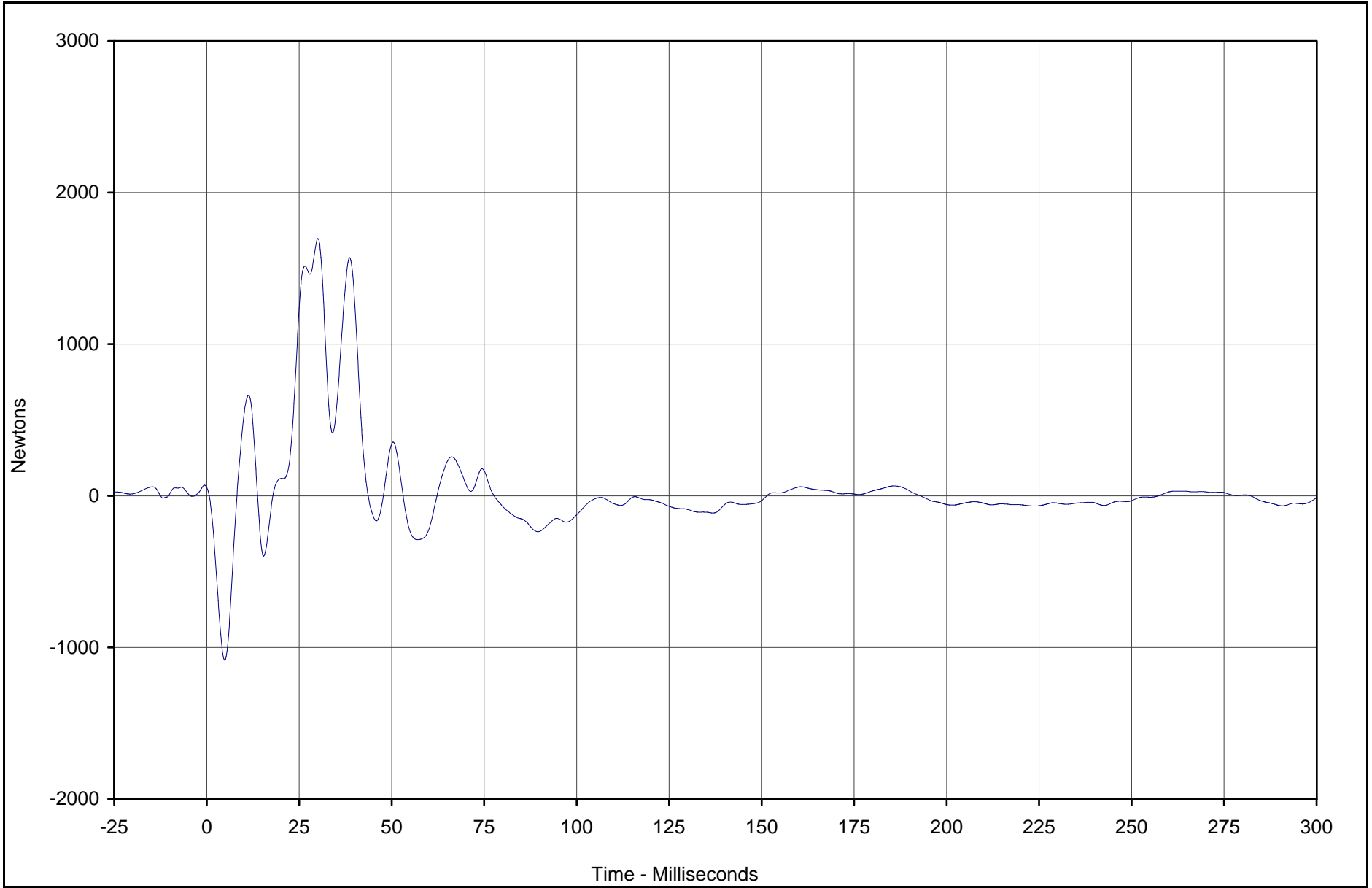
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force D9	133	FIL	Newtons	1696.4	30.1	-1084.4	4.9	60

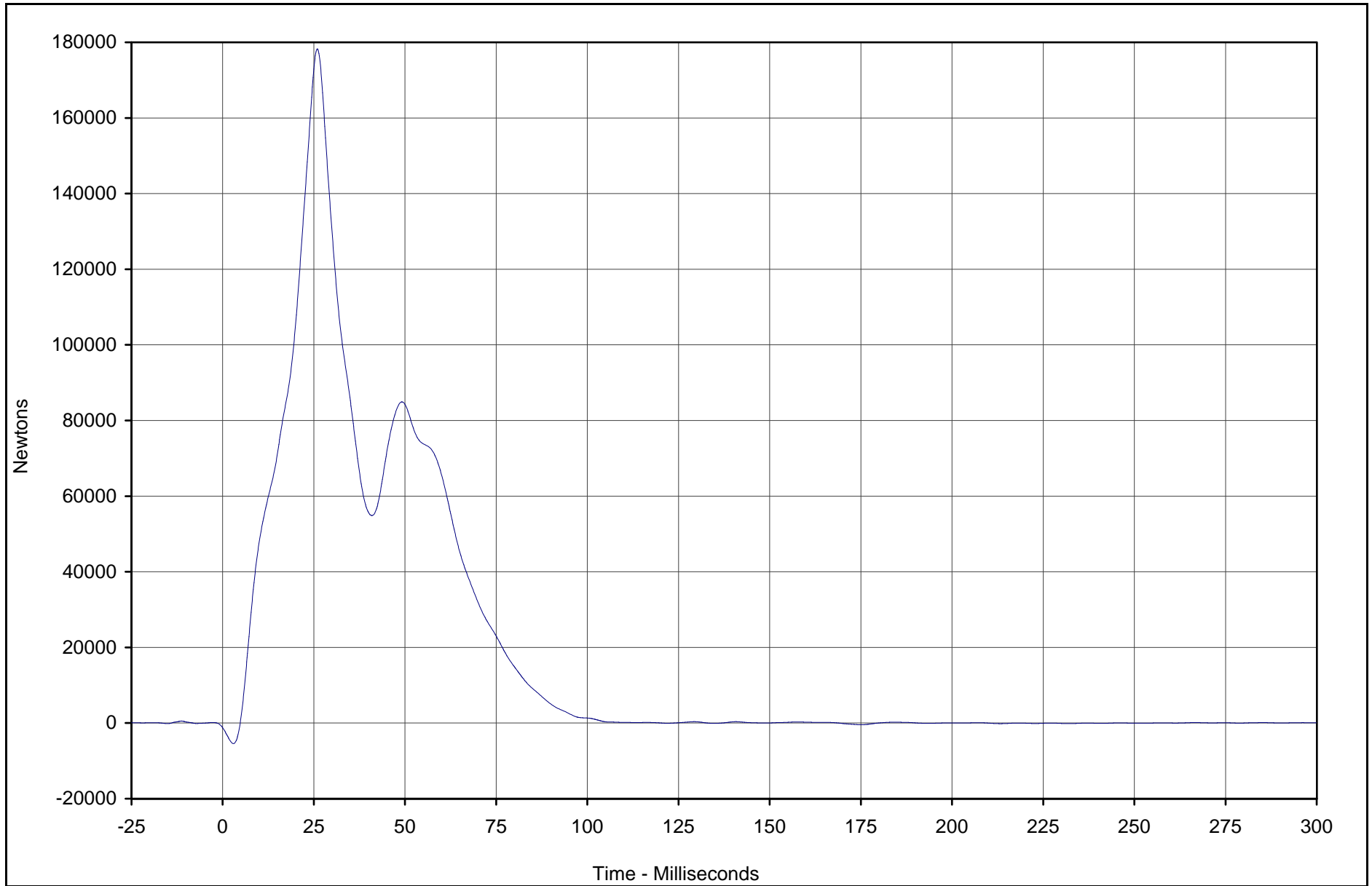


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force Sum Group 1	001	SUM	Newtons	178247.0	26.0	-5426.0	2.9	60

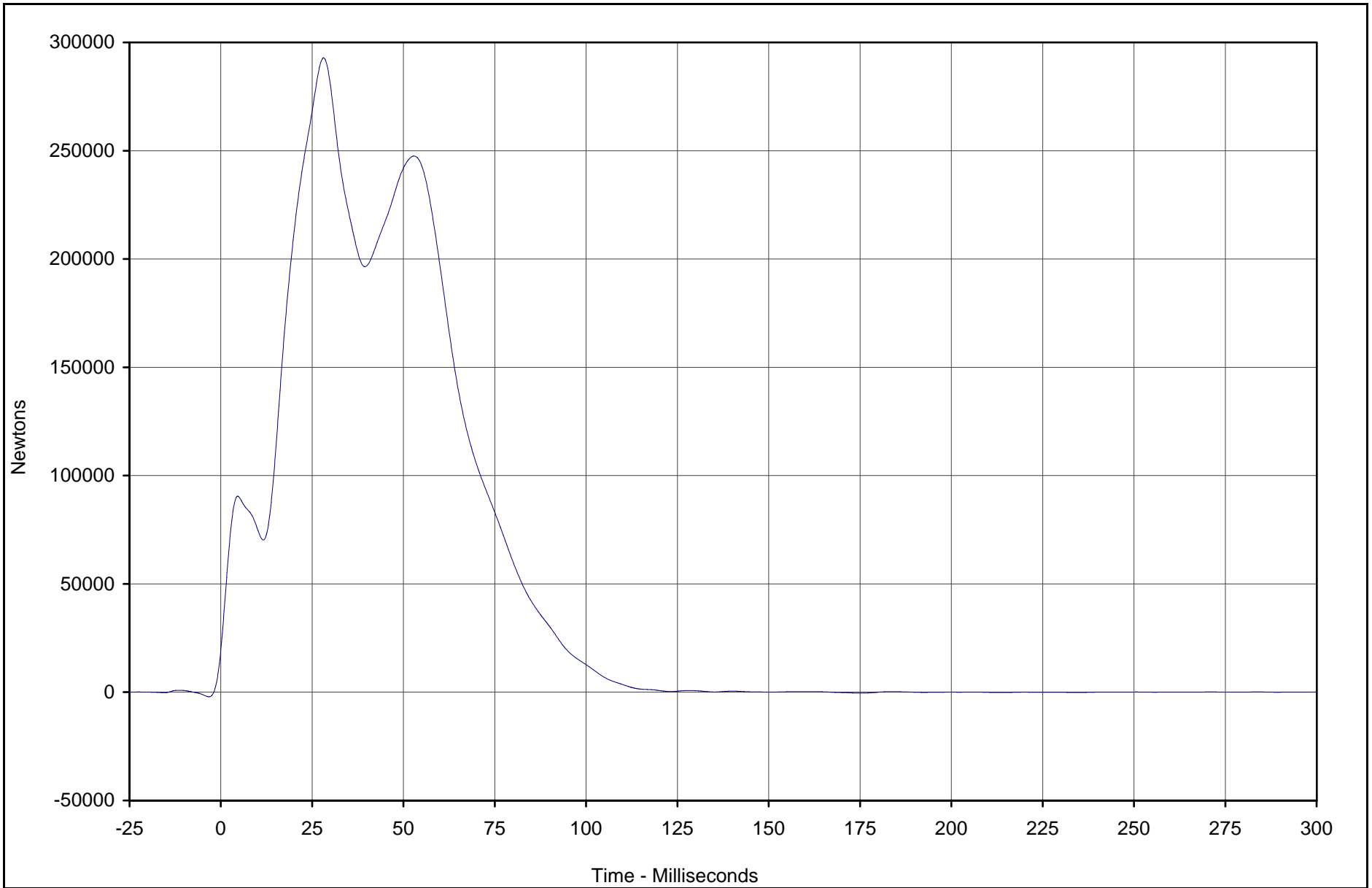


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force Sum Group 2	002	SUM	Newtons	292867.8	28.1	-445.2	175.0	60

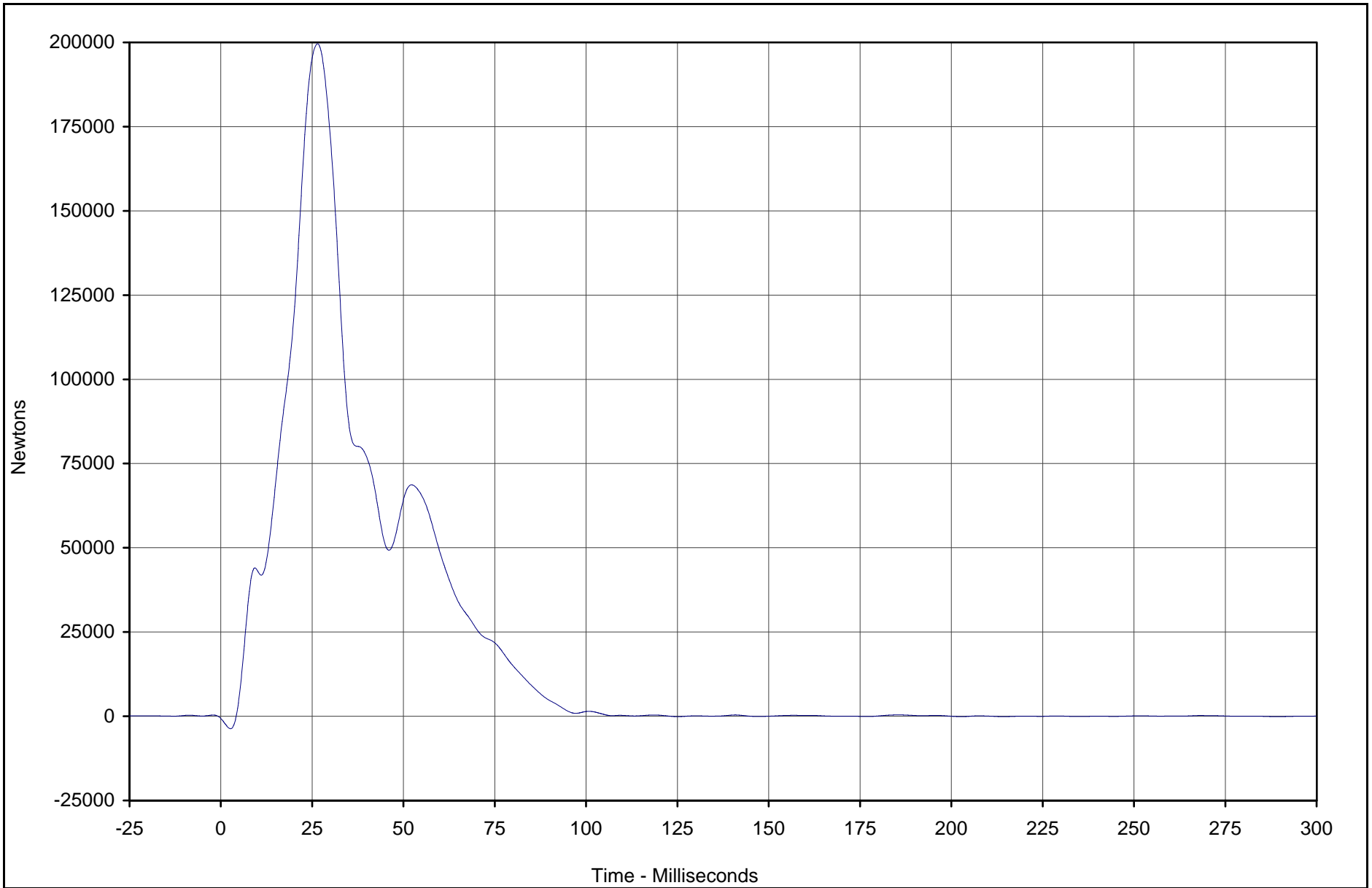


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force Sum Group 3	003	SUM	Newtons	199581.2	26.5	-3707.2	2.6	60



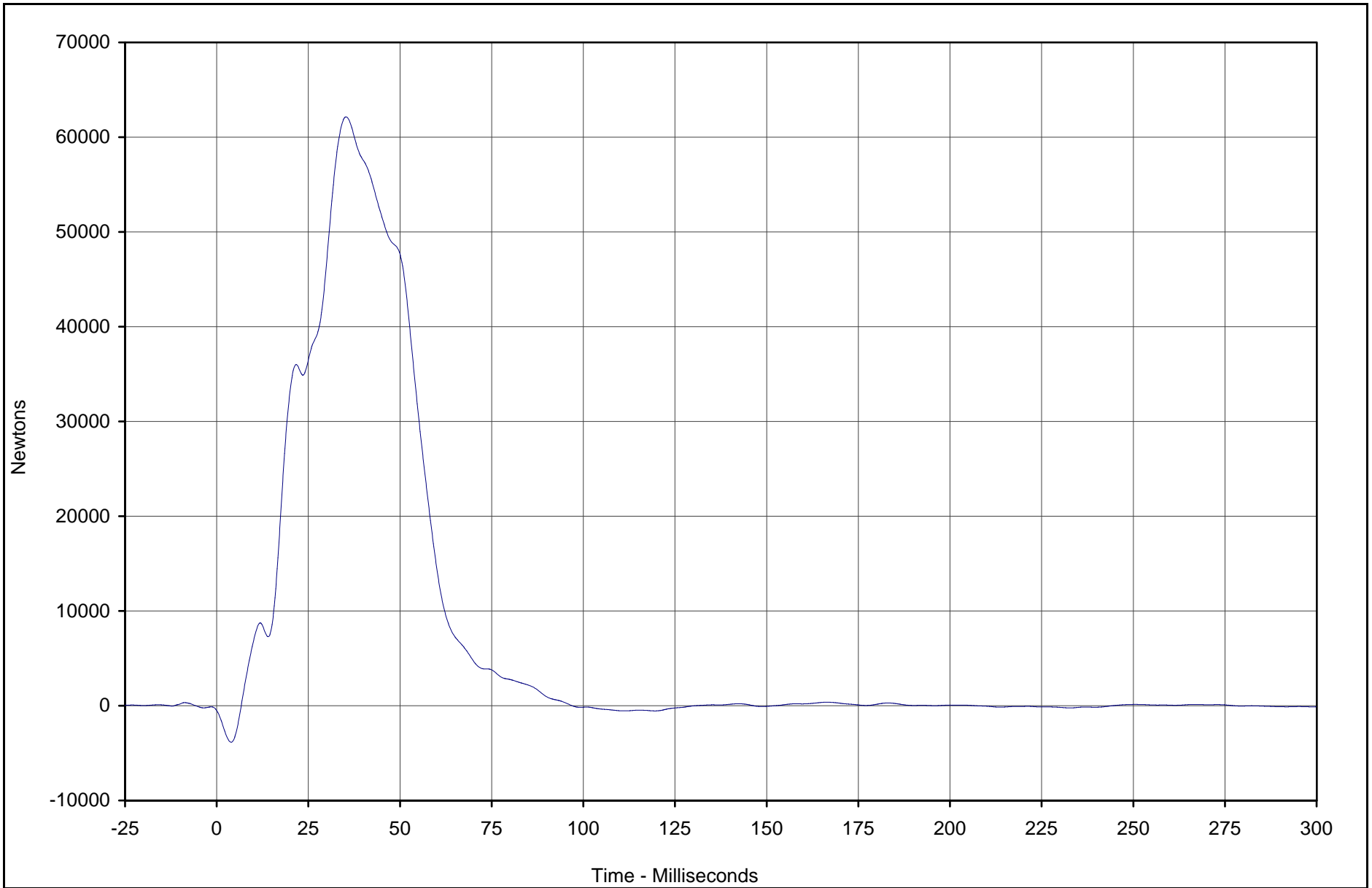
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

C-40



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force Sum Group 4	004	SUM	Newtons	62144.5	35.3	-3852.2	3.9	60



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

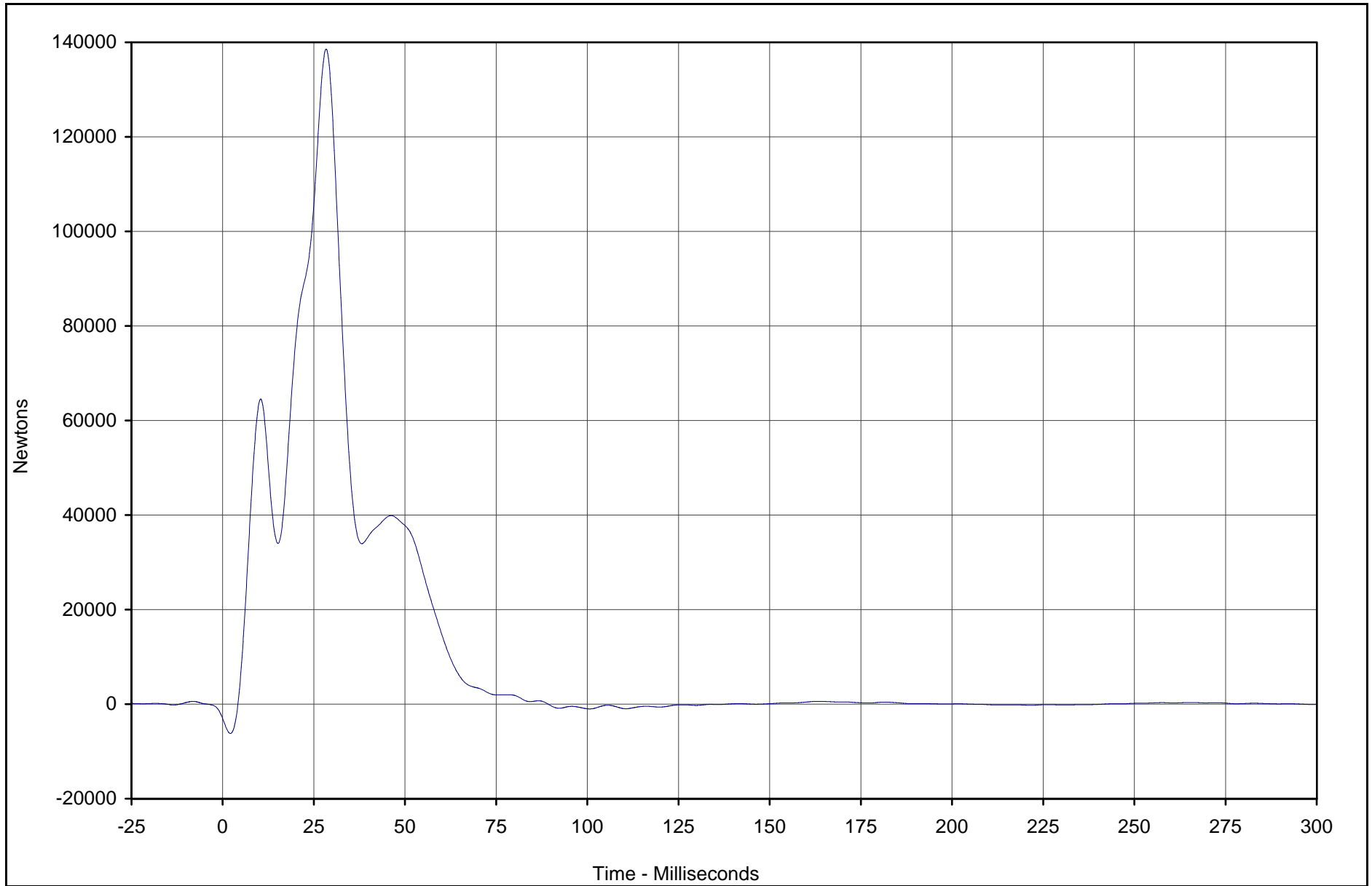
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

C-41

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force Sum Group 5	005	SUM	Newtons	138582.2	28.4	-6206.4	2.1	60



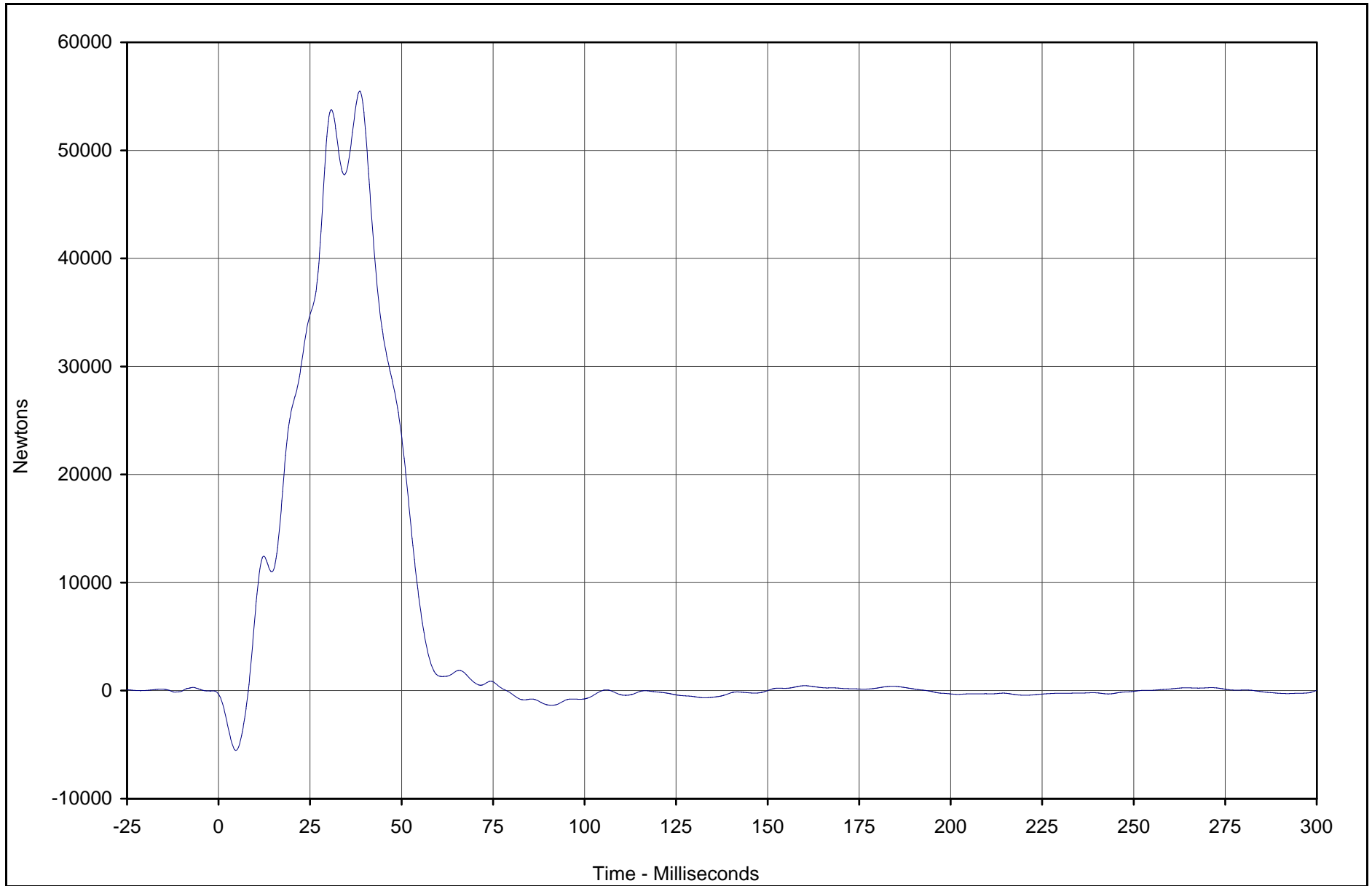
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

C-42



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force Sum Group 6	006	SUM	Newtons	55482.8	38.6	-5529.1	4.7	60



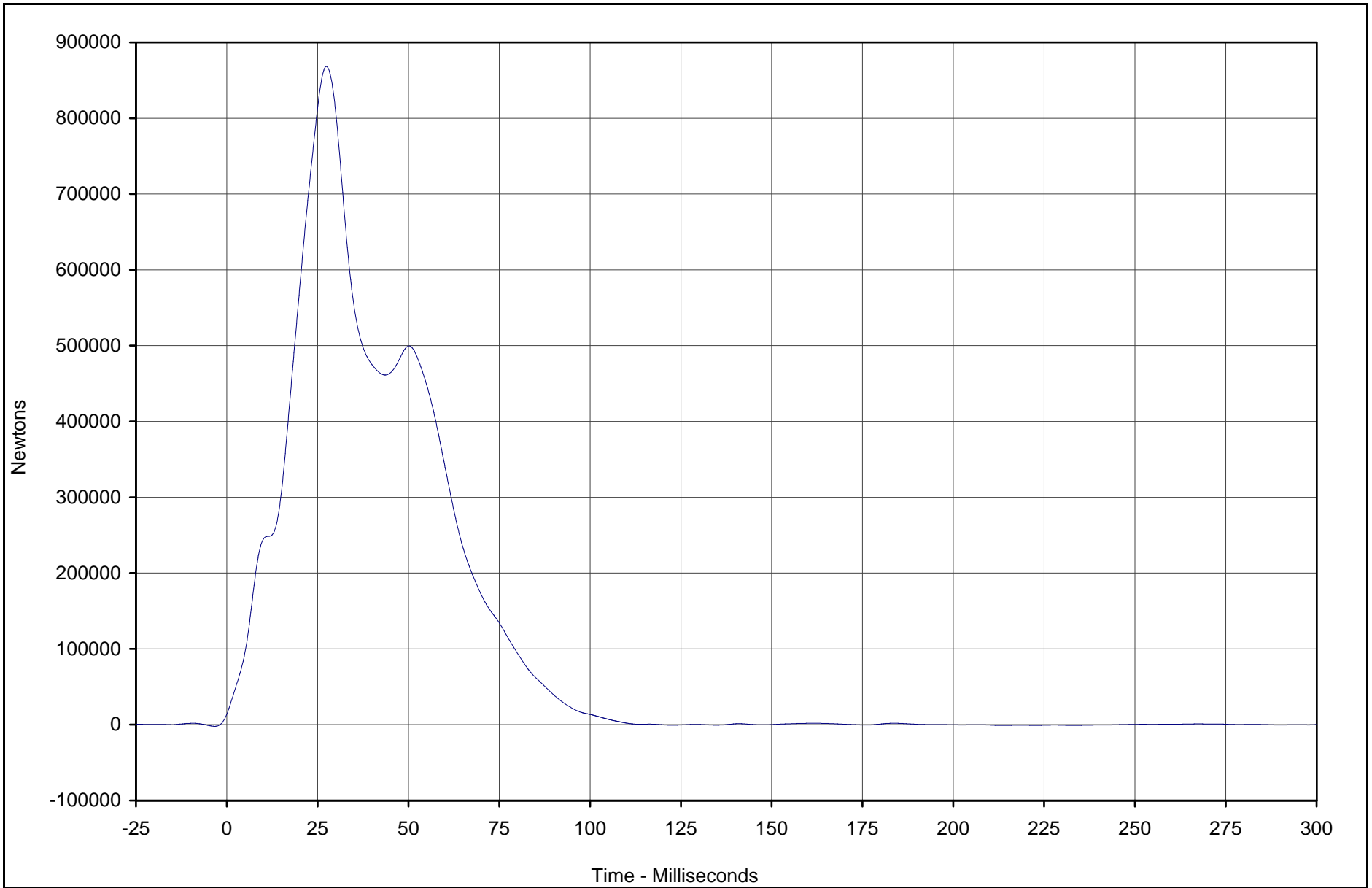
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Barrier Force Total Sum	007	SUM	Newtons	868288	27.4	-942.0	233.2	60

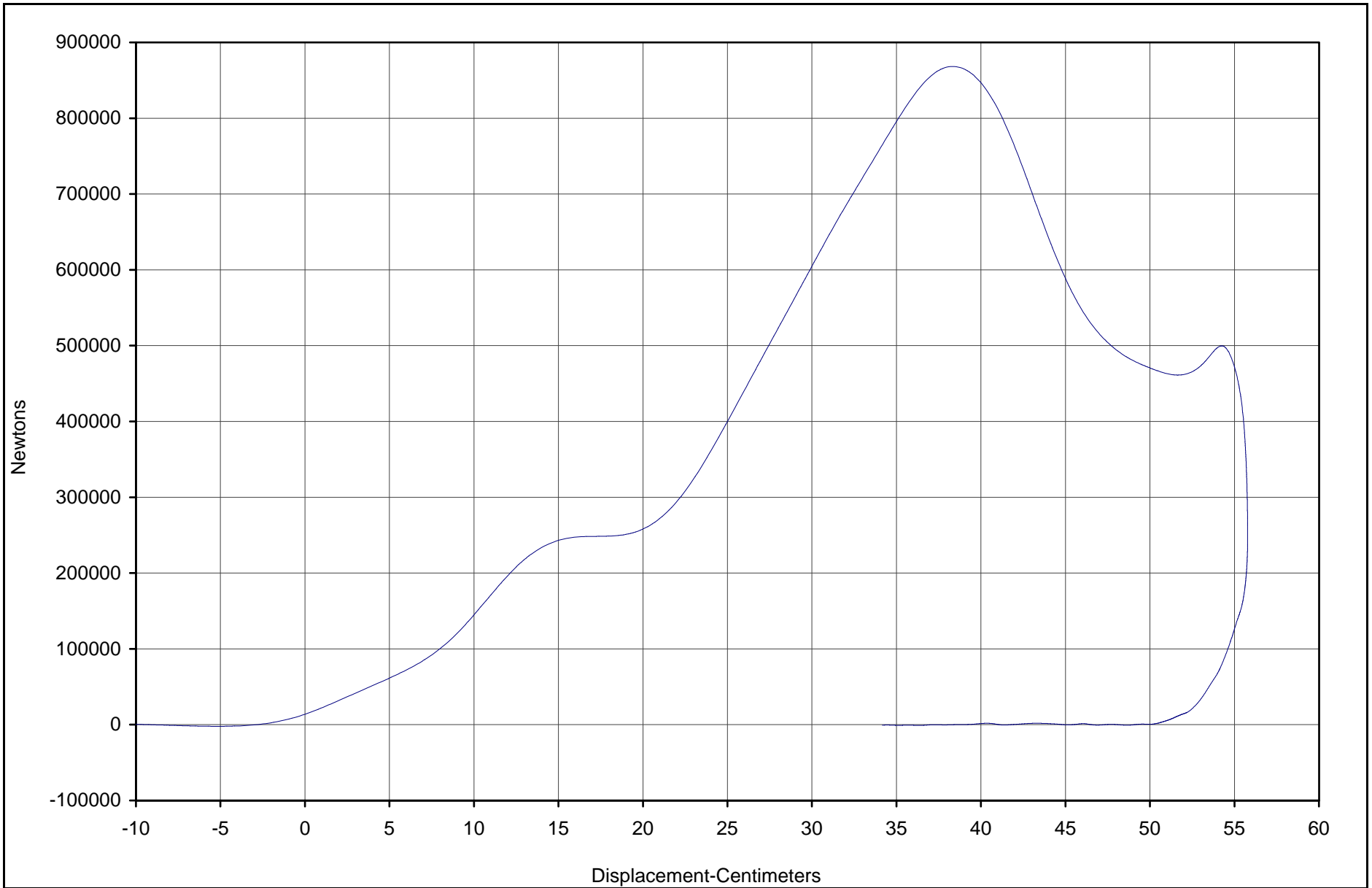


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	CM	Energy (Joules)	SAE Class
Barrier Force Total Sum vs. Displ.	001	XVY	Newtons	868288	38.3	233659	60



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

BARRIER LOAD CELL SUMMARY DATA

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

NHTSA No.: M30210

Test Program: 2003 NHTSA 35mph NCAP

Test Date: 2/7/03

Location	Units	Max	Time	Min	Time
Barrier Force A1	Newtons	1160.1	9.6	-1634.3	22.8
Barrier Force A2	Newtons	3349.2	49.1	-641.7	3.8
Barrier Force A3	Newtons	56338.6	28.5	-1454.8	2.8
Barrier Force A4	Newtons	9019.2	29.3	-129.9	175.2
Barrier Force A5	Newtons	12231.1	55.0	-1424.2	1.6
Barrier Force A6	Newtons	23649.6	26.0	-1462.7	2.0
Barrier Force A7	Newtons	64569.3	27.0	-563.6	2.4
Barrier Force A8	Newtons	5688.0	42.3	-956.6	3.6
Barrier Force A9	Newtons	1556.3	9.3	-2122.9	23.2
Barrier Force B1	Newtons	737.7	10.5	-1175.1	22.0
Barrier Force B2	Newtons	54785.9	24.9	-669.4	3.0
Barrier Force B3	Newtons	78890.1	25.1	-1869.5	2.1
Barrier Force B4	Newtons	66423.4	52.0	-53.9	176.1
Barrier Force B5	Newtons	64441.1	28.7	-56.8	174.1
Barrier Force B6	Newtons	129064.2	27.9	-40.3	217.3
Barrier Force B7	Newtons	131745.4	23.8	-1257.5	1.5
Barrier Force B8	Newtons	13018.6	28.5	-907.5	3.3
Barrier Force B9	Newtons	817.4	10.1	-1292.6	22.3
Barrier Force C1	Newtons	1012.5	10.1	-1445.6	22.6
Barrier Force C2	Newtons	42241.8	35.4	-451.9	2.5
Barrier Force C3	Newtons	18637.7	34.9	-707.8	2.0
Barrier Force C4	Newtons	42120.3	28.7	-1800.6	1.6
Barrier Force C5	Newtons	34288.6	27.9	-1263.8	1.3
Barrier Force C6	Newtons	45828.7	28.3	-1394.9	1.8
Barrier Force C7	Newtons	12109.4	17.7	-404.7	4.1
Barrier Force C8	Newtons	42709.7	38.2	-766.9	3.6
Barrier Force C9	Newtons	805.9	39.2	-1100.8	21.7
Barrier Force D1	Newtons	1777.0	50.0	-805.2	4.3
Barrier Force D2	Newtons	4053.7	25.4	-800.3	17.4
Barrier Force D3	Newtons	4216.6	22.2	-1725.9	33.9
Barrier Force D4	Newtons	5423.1	28.4	-1343.8	15.8
Barrier Force D5	Newtons	6865.7	21.4	-1280.7	34.3
Barrier Force D6	Newtons	5411.5	28.9	-1781.7	16.0
Barrier Force D7	Newtons	4787.2	21.7	-1372.1	16.2
Barrier Force D8	Newtons	3728.8	29.0	-1138.9	5.2
Barrier Force D9	Newtons	1696.4	30.1	-1084.4	4.9
Barrier Force Sum Group 1	Newtons	178247.0	26.0	-5426.0	2.9
Barrier Force Sum Group 2	Newtons	292867.8	28.1	-445.2	175.0
Barrier Force Sum Group 3	Newtons	199581.2	26.5	-3707.2	2.6
Barrier Force Sum Group 4	Newtons	62144.5	35.3	-3852.2	3.9
Barrier Force Sum Group 5	Newtons	138582.2	28.4	-6206.4	2.1
Barrier Force Sum Group 6	Newtons	55482.8	38.6	-5529.1	4.7
Barrier Force Total Sum	Newtons	868287.7	27.4	-942.0	233.2

APPENDIX D

INSTRUMENTATION DATA CHANNEL ASSIGNMENTS

**2003 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D. Serial Number 34
2/7/03
2003 Jaguar X-Type 4 Door Sedan**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
1	HEAD, PRIMARY	X	KEAC039	Accel., 1/2 bridge	Endevco	7264-2000	G
2	HEAD, PRIMARY	Y	KEAC038	Accel., 1/2 bridge	Endevco	7264-2000	G
3	HEAD, PRIMARY	Z	KEAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
4	HEAD, REDUNDANT	X	KEAC031	Accel., 1/2 bridge	Endevco	7264-2000	G
5	HEAD, REDUNDANT	Y	KEAC032	Accel., 1/2 bridge	Endevco	7264-2000	G
6	HEAD, REDUNDANT	Z	KEAC026	Accel., 1/2 bridge	Endevco	7264-2000	G
7	NECK FORCE	X	GPUN02FX	Load cell, six axis neck	R. A. Denton	1716A	N
8	NECK FORCE	Y	GPUN02FY	Load cell, six axis neck	R. A. Denton	1716A	N
9	NECK FORCE	Z	GPUN02FZ	Load cell, six axis neck	R. A. Denton	1716A	N
10	NECK MOMENT	X	GPUN02MX	Load cell, six axis neck	R. A. Denton	1716A	Nm
11	NECK MOMENT	Y	GPUN02MY	Load cell, six axis neck	R. A. Denton	1716A	Nm
12	NECK MOMENT	Z	GPUN02MZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
13	CHEST , PRIMARY	X	GPAC031	Accel., 1/2 bridge	Endevco	7264-2000	G
14	CHEST , PRIMARY	Y	GPAC024	Accel., 1/2 bridge	Endevco	7264-2000	G
15	CHEST , PRIMARY	Z	GPAC029	Accel., 1/2 bridge	Endevco	7264-2000	G
16	CHEST , REDUNDANT	X	KEAC023	Accel., 1/2 bridge	Endevco	7264-200	G
17	CHEST , REDUNDANT	Y	KEAC022	Accel., 1/2 bridge	Endevco	7264-200	G
18	CHEST , REDUNDANT	Z	KEAC024	Accel., 1/2 bridge	Endevco	7264-200	G
19	CHEST DISPLACEMENT	X	GPCP001	Rotary Pot Chest	Servo	14CBI	MM
20	PELVIS, PRIMARY	X	KEAC019	Accel., 1/2 bridge	Endevco	7264-200	G
21	PELVIS, PRIMARY	Y	KEAC020	Accel., 1/2 bridge	Endevco	7264-200	G
22	PELVIS, PRIMARY	Z	KEAC021	Accel., 1/2 bridge	Endevco	7264-200	G
23	LEFT FEMUR FORCE	Z	KEFF001	Load cell, Femur	R.A. Denton	2121	N
24	RIGHT FEMUR FORCE	Z	KEFF002	Load cell, Femur	R.A. Denton	2121	N

D-1

TR-P23001-07-NC

**2003 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Driver A.T.D. Serial Number 34
2/7/03
2003 Jaguar X-Type 4 Door Sedan**

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	KEIC003X	Accel., Foot Triax	I.C. Sensor	3031-500	G
36	FOOT LEFT, AFT	Z	KEIC003Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
37	FOOT LEFT, FORE	Z	KEIC003Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
38	FOOT RIGHT, AFT	X	KEIC004X	Accel., Foot Triax	I.C. Sensor	3031-500	G
39	FOOT RIGHT, AFT	Z	KEIC004Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
40	FOOT RIGHT, FORE	Z	KEIC004Z	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	CM
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 35
2/7/03
2003 Jaguar X-Type 4 Door Sedan**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
45	HEAD, PRIMARY	X	GPAC027	Accel., 1/2 bridge	Endevco	7264-2000	G
46	HEAD, PRIMARY	Y	GPAC002	Accel., 1/2 bridge	Endevco	7264-2000	G
47	HEAD, PRIMARY	Z	GPAC003	Accel., 1/2 bridge	Endevco	7264-2000	G
48	HEAD, REDUNDANT	X	GPAC032	Accel., 1/2 bridge	Endevco	7264-2000	G
49	HEAD, REDUNDANT	Y	GPAC021	Accel., 1/2 bridge	Endevco	7264-2000	G
50	HEAD, REDUNDANT	Z	GPAC026	Accel., 1/2 bridge	Endevco	7264-2000	G
51	NECK FORCE	X	GPUN01FX	Load cell, six axis neck	R. A. Denton	1716A	N
52	NECK FORCE	Y	GPUN01FY	Load cell, six axis neck	R. A. Denton	1716A	N
53	NECK FORCE	Z	GPUN01FZ	Load cell, six axis neck	R. A. Denton	1716A	N
54	NECK MOMENT	X	GPUN01MX	Load cell, six axis neck	R. A. Denton	1716A	Nm
55	NECK MOMENT	Y	GPUN01MY	Load cell, six axis neck	R. A. Denton	1716A	Nm
56	NECK MOMENT	Z	GPUN01MZ	Load cell, six axis neck	R. A. Denton	1716A	Nm
57	CHEST , PRIMARY	X	GPAC005	Accel., 1/2 bridge	Endevco	7264-2000	G
58	CHEST , PRIMARY	Y	GPAC011	Accel., 1/2 bridge	Endevco	7264-2000	G
59	CHEST , PRIMARY	Z	GPAC010	Accel., 1/2 bridge	Endevco	7264-2000	G
60	CHEST , REDUNDANT	X	GPAC034	Accel., 1/2 bridge	Endevco	7264-2000	G
61	CHEST , REDUNDANT	Y	GPAC023	Accel., 1/2 bridge	Endevco	7264-2000	G
62	CHEST , REDUNDANT	Z	GPAC020	Accel., 1/2 bridge	Endevco	7264-2000	G
63	CHEST DISPLACEMENT	X	GPCP002	Rotary Pot Chest	Servo	14CBI	MM
64	PELVIS, PRIMARY	X	GPAC025	Accel., 1/2 bridge	Endevco	7264-2000	G
65	PELVIS, PRIMARY	Y	GPAC022	Accel., 1/2 bridge	Endevco	7264-2000	G
66	PELVIS, PRIMARY	Z	GPAC019	Accel., 1/2 bridge	Endevco	7264-2000	G
67	LEFT FEMUR FORCE	Z	KEFF003	Load cell, Femur	R.A. Denton	2121	N
68	RIGHT FEMUR FORCE	Z	KEFF004	Load cell, Femur	R.A. Denton	2121	N

**2003 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Passenger A.T.D. Serial Number 35
2/7/03
2003 Jaguar X-Type 4 Door Sedan**

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	KEIC002X	Accel., Foot Triax	I.C. Sensor	3031-500	G
80	FOOT LEFT, AFT	Z	KEIC002Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
81	FOOT LEFT, FORE	Z	KEIC002Z	Accel., Foot Triax	I.C. Sensor	3031-500	G
82	FOOT RIGHT, AFT	X	KEIC001X	Accel., Foot Triax	I.C. Sensor	3031-500	G
83	FOOT RIGHT, AFT	Z	KEIC001Y	Accel., Foot Triax	I.C. Sensor	3031-500	G
84	FOOT RIGHT, FORE	Z	KEIC001Z	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	MM
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
2/7/03
2003 Jaguar X-Type 4 Door Sedan**

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
2/7/03
2003 Jaguar X-Type 4 Door Sedan**

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
2/7/03
2003 Jaguar X-Type 4 Door Sedan**

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.: LK01A

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	5149	Pass
Overall Test Results				Pass

ATD Serial No.: 034

Location: Right Knee

Test I.D.: RK01A

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	5069	Pass
Overall Test Results				Pass

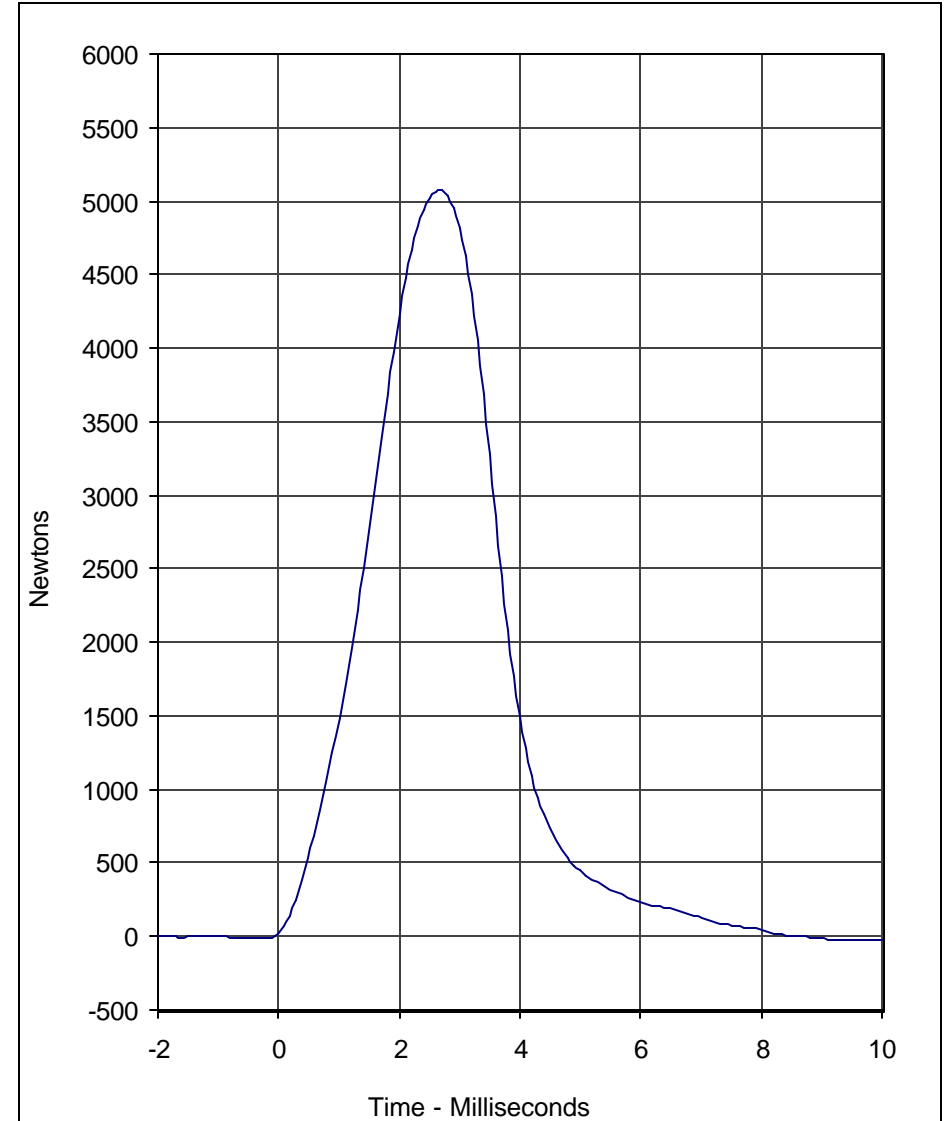
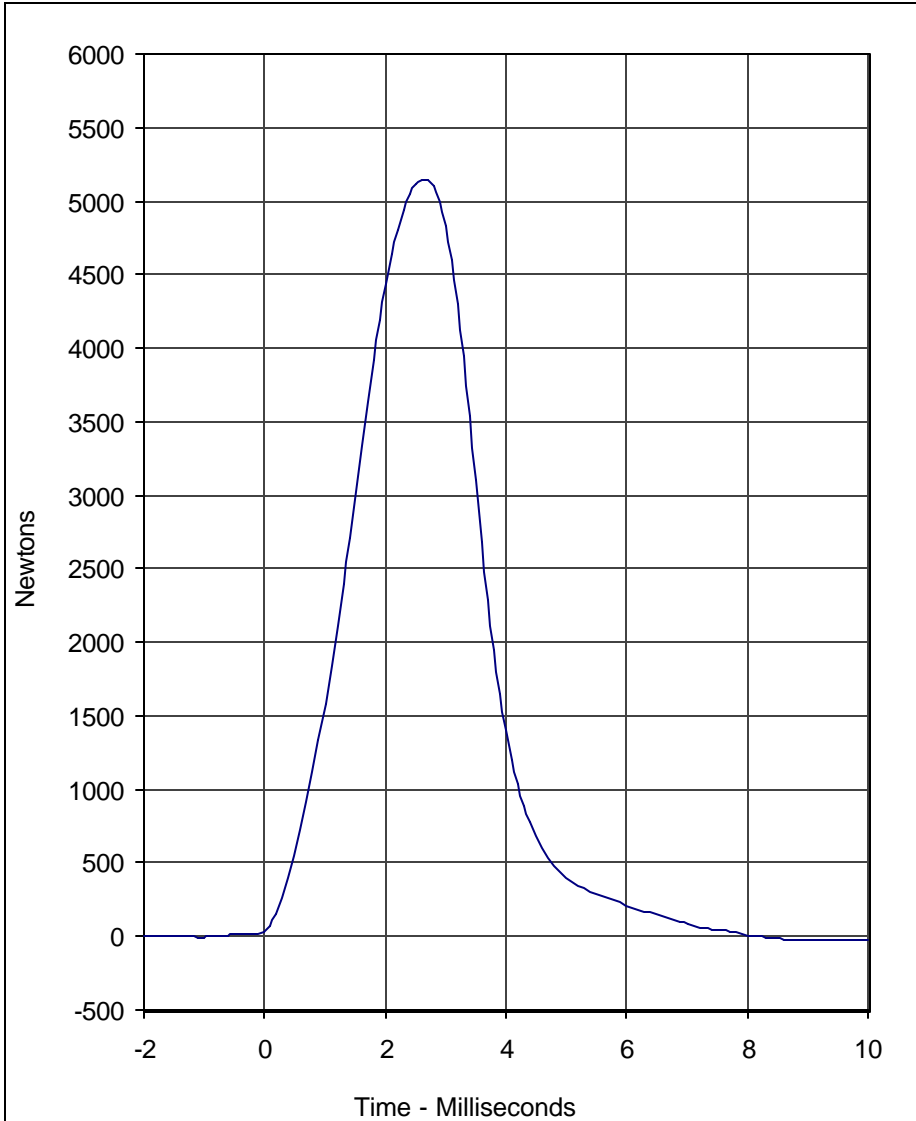
Laboratory Technician

January 20, 2003

Test Date

E-1

TR-P23001-07-NC



Curve Description	Location	Test I.D.	CURNO	Type
Probe Force	Left Knee	LK01A	001	FIL

Units	Max	Time	Min	Time	SAE Class
Newtons	5149.0	2.6	-29.6	8.9	600

Curve Description	Location	Test I.D.	CURNO	Type
Probe Force	Right Knee	RK01A	002	FIL

Units	Max	Time	Min	Time	SAE Class
Newtons	5069.4	2.7	-26.6	9.3	600

Test Program: Hybrid III 50th Percentile Male Knee Impact Test
 Test Date: 1/20/03

A.T.D. Serial No.: 034





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

ATD Serial No.: 034

Test I.D.: HD01A

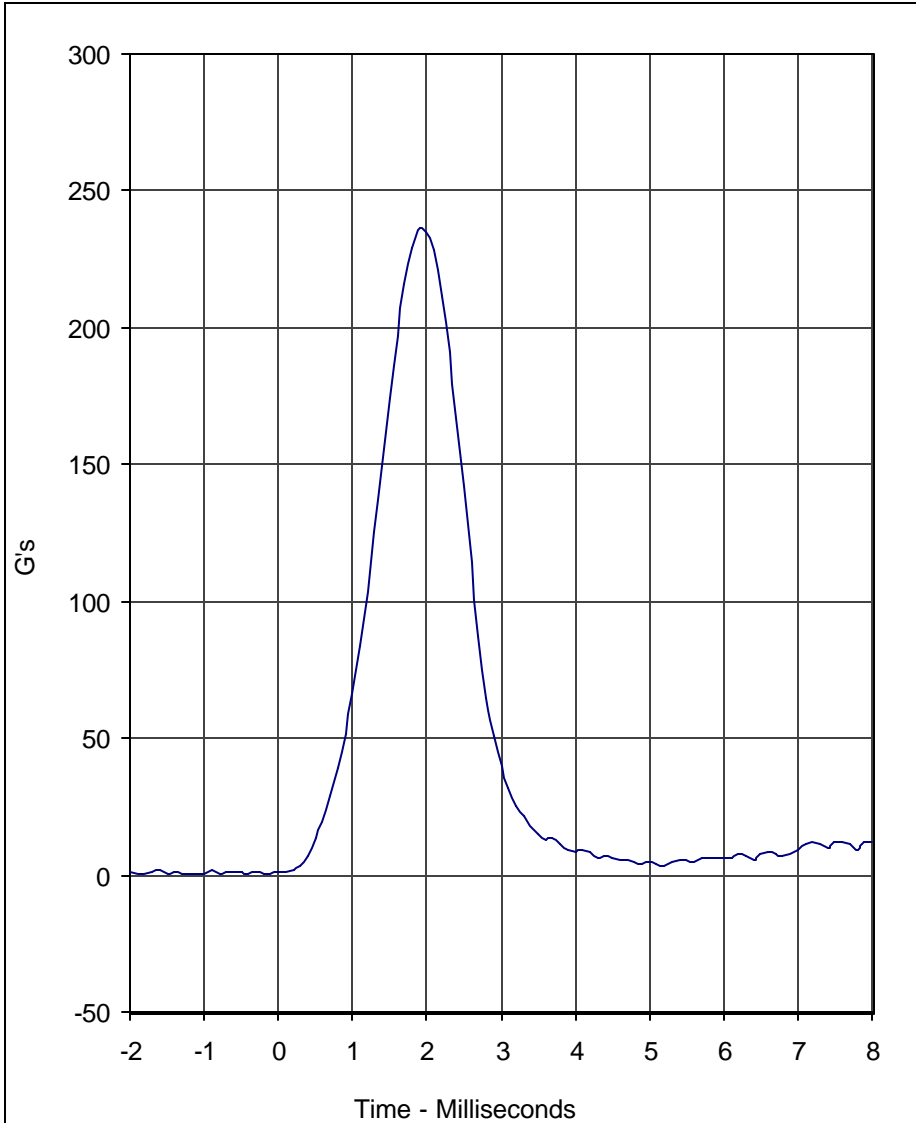
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	236.4	Pass
Peak Lateral Acceleration	G's	≤15.0	12.3	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

E-3

TR-P23001-07-NC

Laboratory Technician

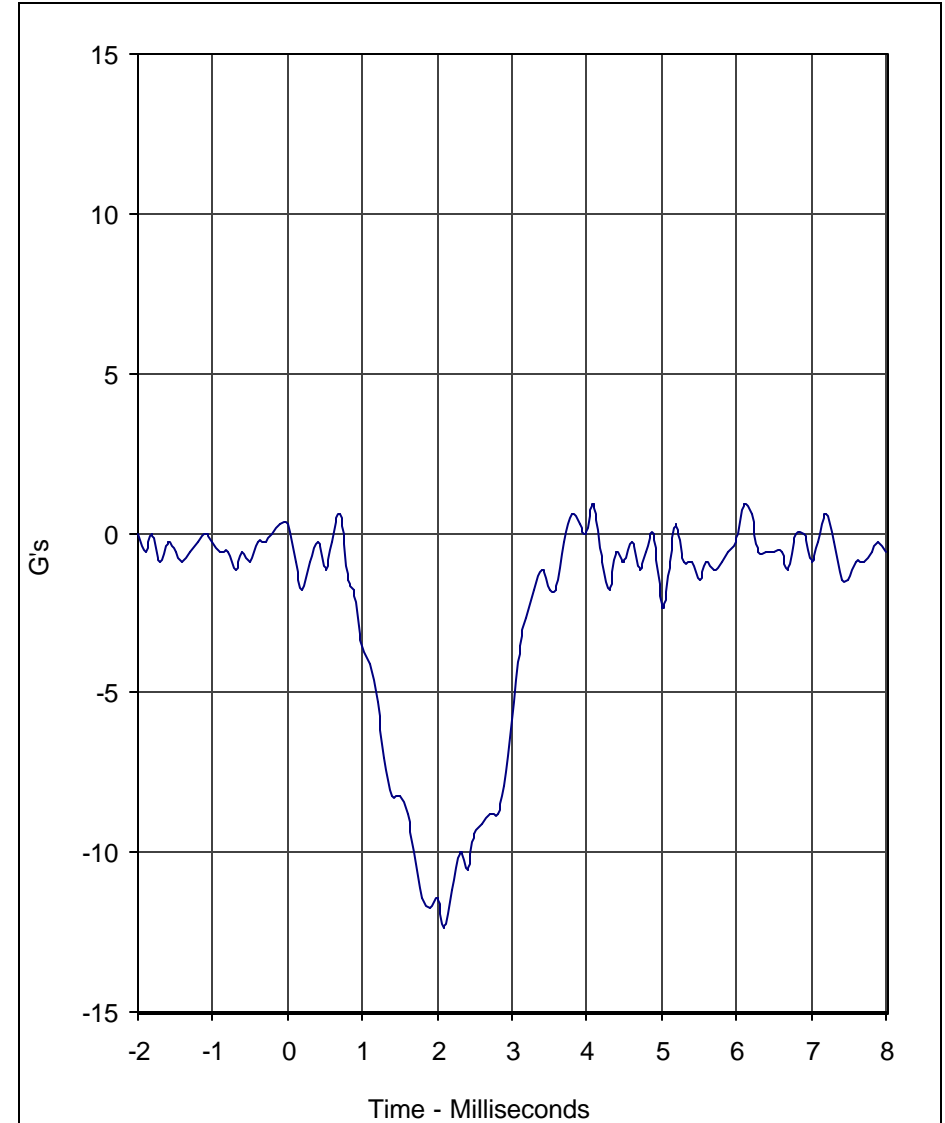
January 20, 2003
Test Date



Curve Description	CURNO	Type
Head Resultant	001	RES

Units	Max	Time	Min	Time	SAE Class
G's	236.4	1.9	0.4	-0.2	1000

Test Program: Hybrid III 50th Percentile Male Head Drop Test
 Test Date: 1/20/03



Curve Description	CURNO	Type
Head Y	002	FIL

Units	Max	Time	Min	Time	SAE Class
G's	0.9	4.1	-12.3	2.1	1000

A.T.D. Serial No.: 034
 Test I.D.: HD01A





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

ATD Serial No.: 034

Test I.D.: CH01A

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	6.74	Pass
Peak Probe Force	Newtons	5159 to 5893	5850	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.45	Pass
Internal Hysteresis	%	69 to 85	80.6	Pass
Overall Test Results				Pass

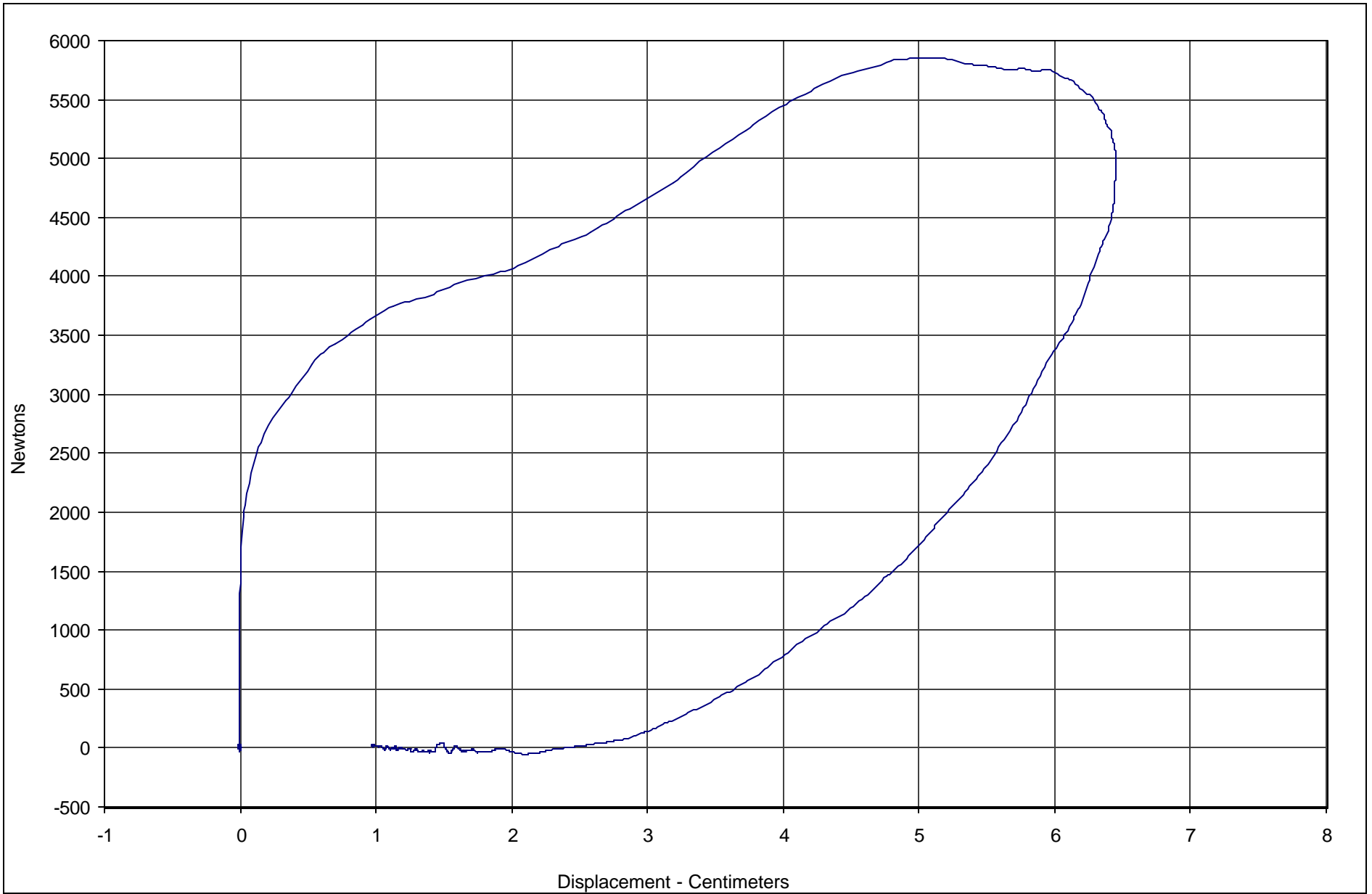
E-5

TR-P23001-07-NC

Laboratory Technician

January 21, 2003

Test Date



Curve Description	CURNO	Type	Hysteresis	Peak Chest Displ.	Peak Probe Force	SAE Class
Probe Force vs. Chest Displacement	001	FIL	80.6	6.45	5849.6	180



Test Program: Hybrid III 50th Percentile Male Thorax Impact

A.T.D. Serial No.: 034

Test Date: 1/21/03

Test I.D.: CH01A



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

ATD Serial No.: 034

Test I.D.: NF01A

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	6.92	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.8	Pass
	20 Msec.	G's	17.6 to 22.6	20.2	Pass
	30 Msec.	G's	12.5 to 18.5	17.0	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	17.0	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	38.5	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	66.2	Pass
	Time	Msec.	57.0 to 64.0	59.2	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	116.0	Pass
Moment About Occipital Condyle	Maximum	Nm	84.1 to 108.5	92.9	Pass
	Time	Msec.	47.0 to 58.0	55.3	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	98.6	Pass
Overall Test Results					Pass

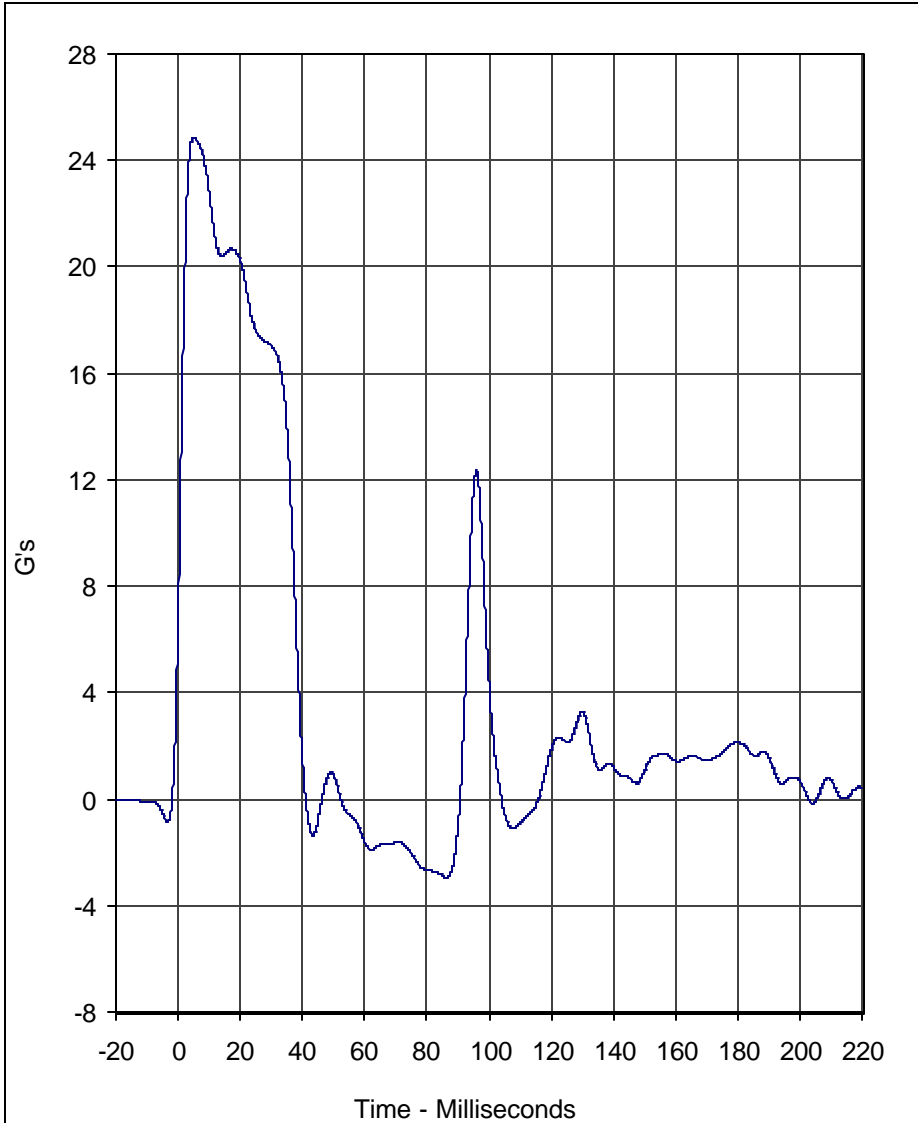
E-7

TR-P23001-07-NC

Laboratory Technician

January 21, 2003

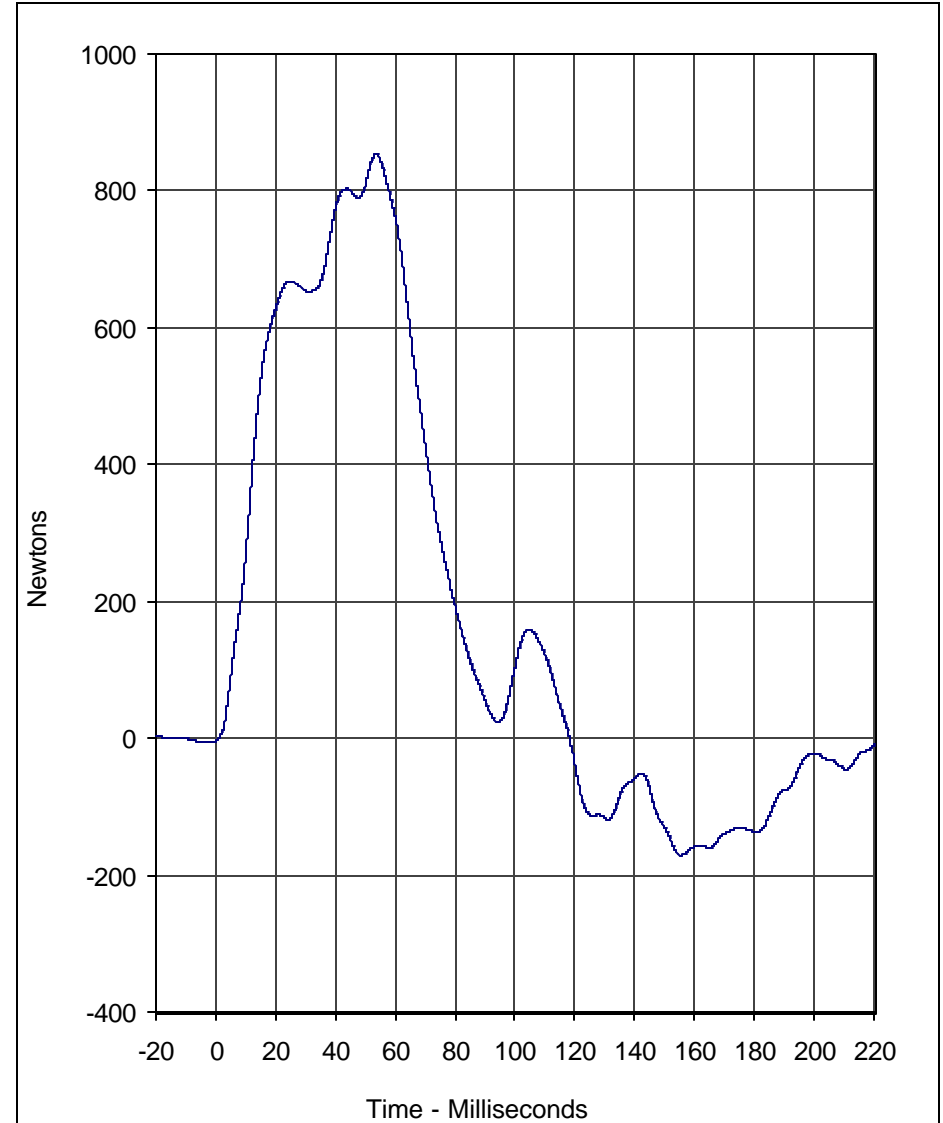
Test Date



Curve Description	CURNO	Type
Pendulum Deceleration	001	FIL

Units	Max	Time	Min	Time	SAE Class
G's	24.8	5.0	-3.0	86.4	60

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 Test Date: 1/21/03

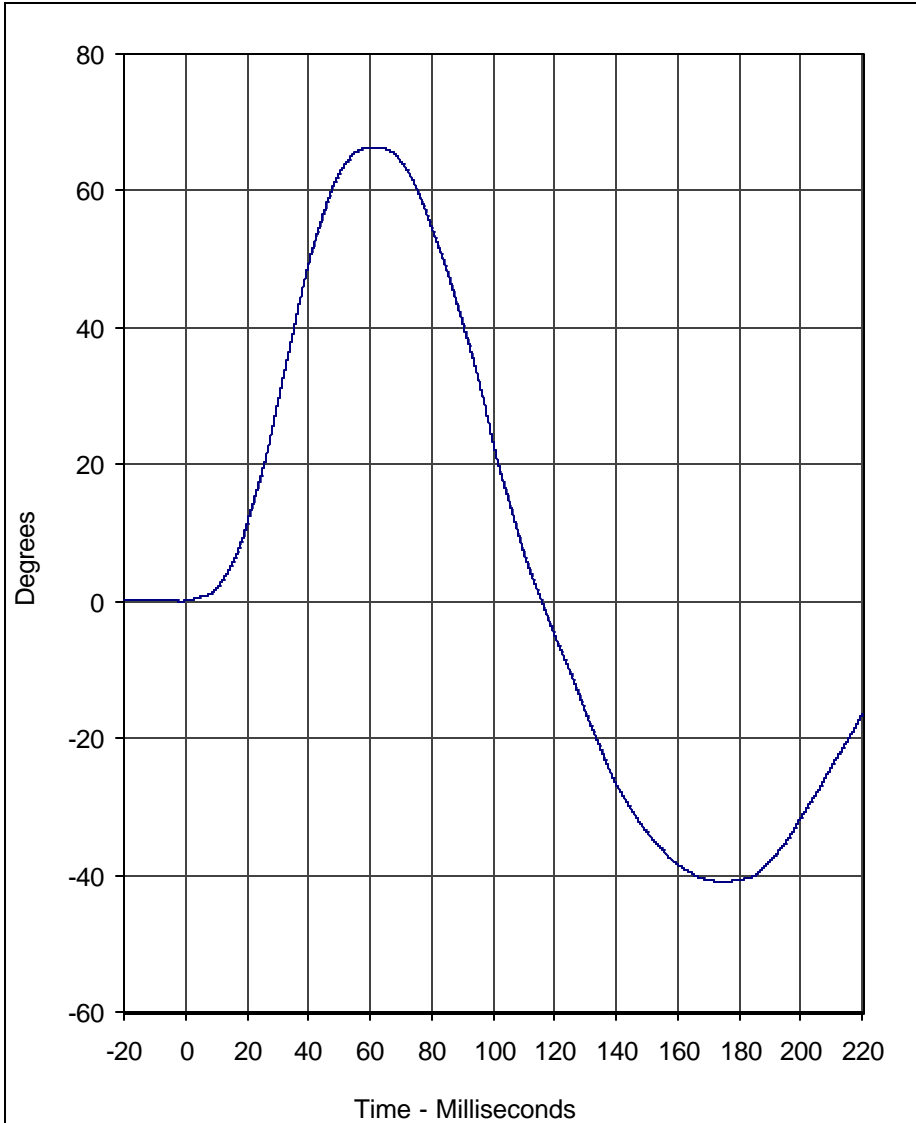


Curve Description	CURNO	Type
Neck Force X	002	FIL

Units	Max	Time	Min	Time	SAE Class
Newtons	853.4	53.6	-171.4	155.5	60

A.T.D. Serial No.: 034
 Test I.D.: NF01A

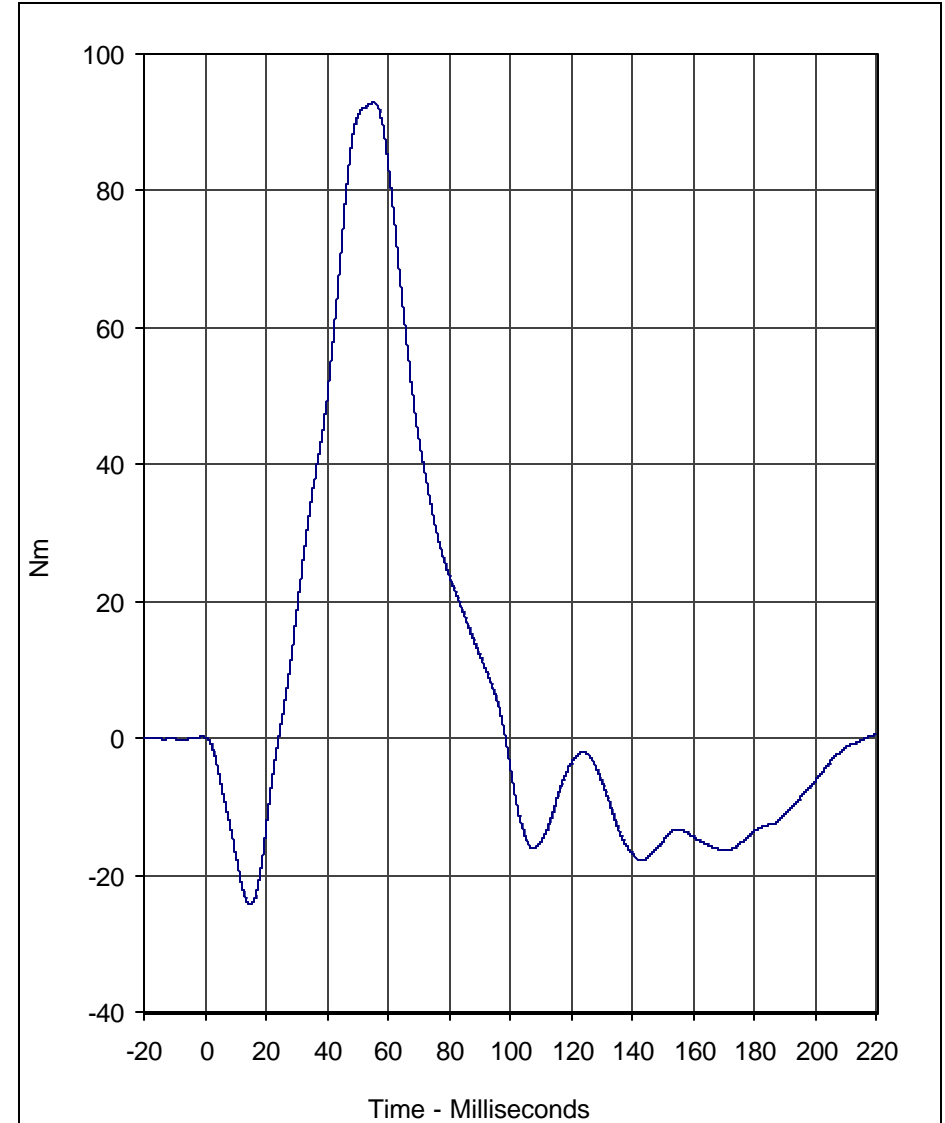




Curve Description	CURNO	Type
"D" Plane Rotation	003	FIL

Units	Max	Time	Min	Time	SAE Class
Degrees	66.2	59.2	-40.9	175.3	60

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 Test Date: 1/21/03



Curve Description	CURNO	Type
Moment About Occipital Condyle	004	FIL

Units	Max	Time	Min	Time	SAE Class
Nm	92.9	55.3	-24.3	14.9	60

A.T.D. Serial No.: 034
 Test I.D.: NF01A





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

ATD Serial No.: 034

Test I.D.: NE01A

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	6.08	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.8	Pass
	20 Msec.	G's	14.0 to 19.0	17.1	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	42.3	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	97.3	Pass
	Time	Msec.	72.0 to 82.0	79.4	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	159.5	Pass
Moment About Occipital Condyle	Maximum	Nm	-52.9 to- 79.9	-68.7	Pass
	Time	Msec.	65.0 to 79.0	70.3	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	145.1	Pass
Overall Test Results					Pass

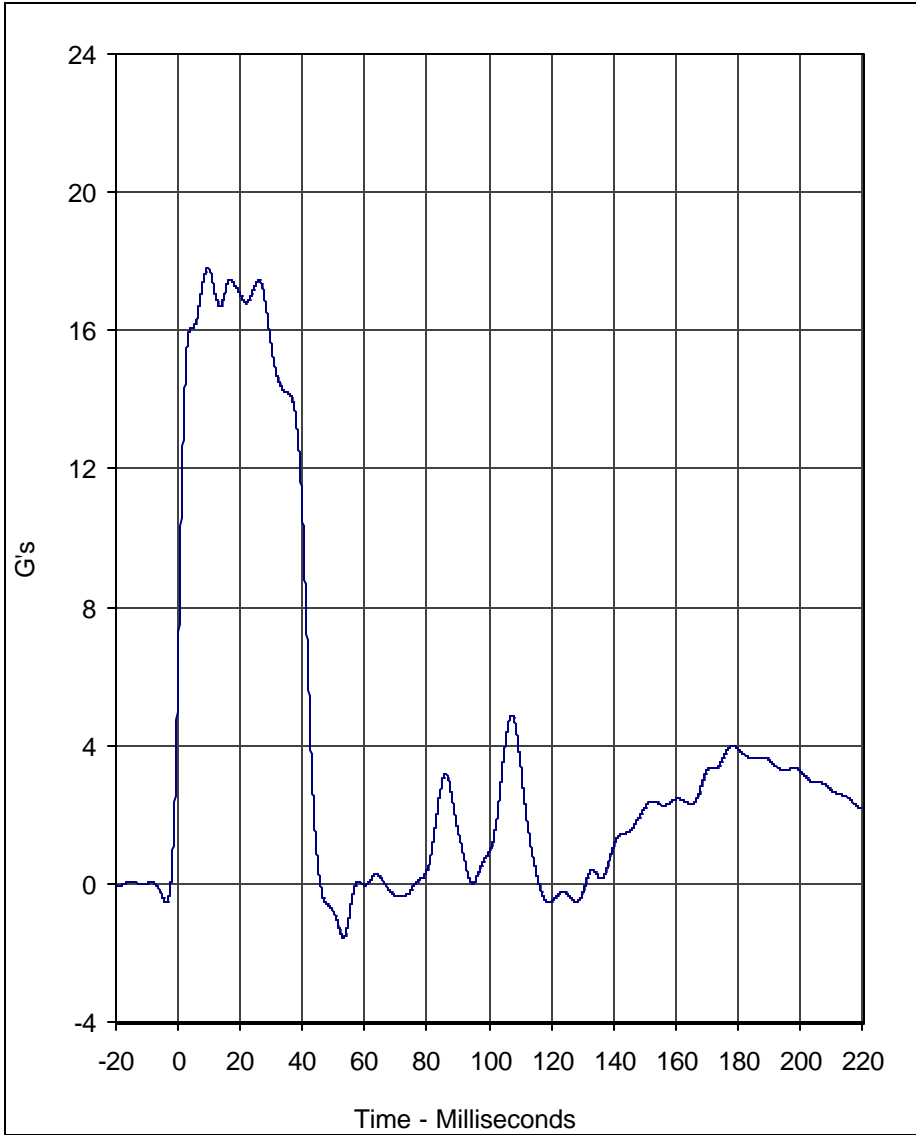
E-10

TR-P23001-07-NC

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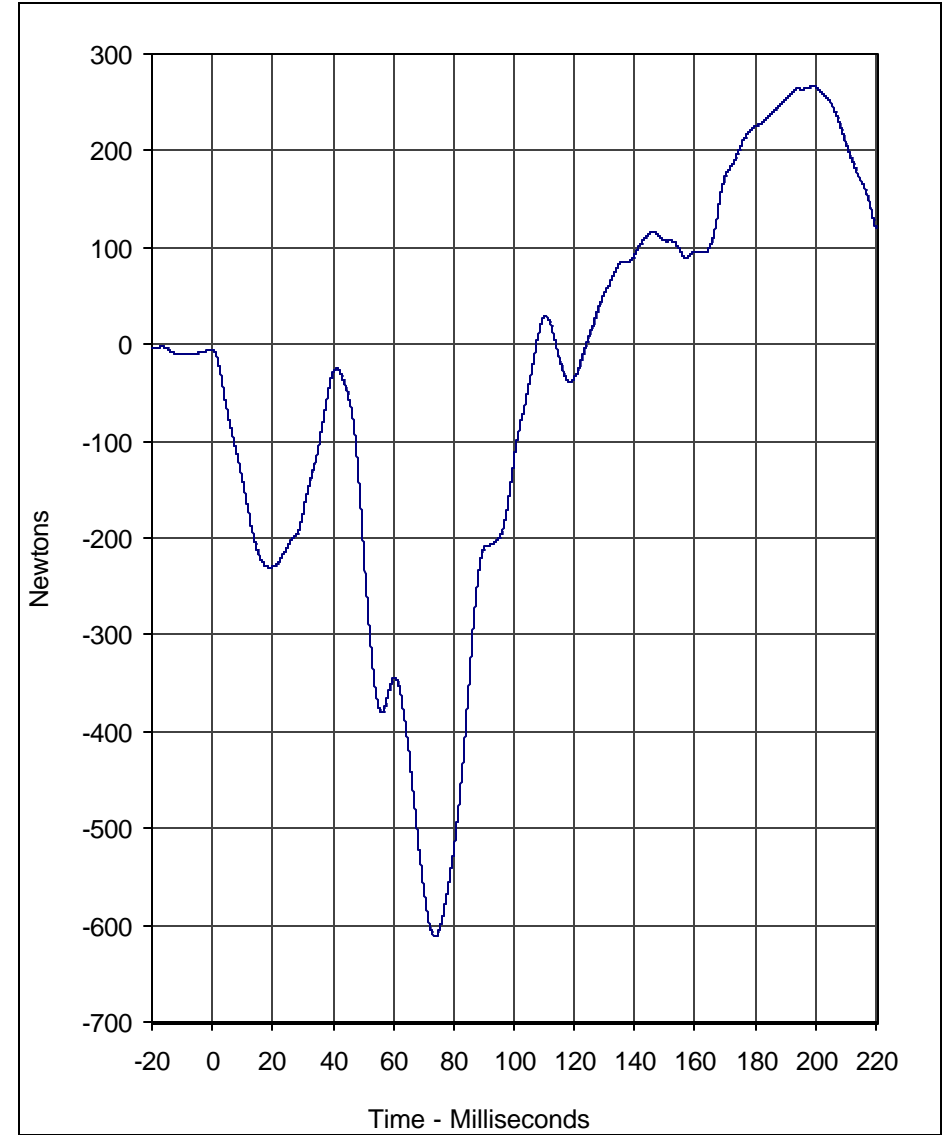
January 21, 2003

Test Date



Curve Description				CURNO	Type
Pendulum Deceleration				001	FIL

Units	Max	Time	Min	Time	SAE Class
G's	17.8	9.6	-1.6	53.2	60



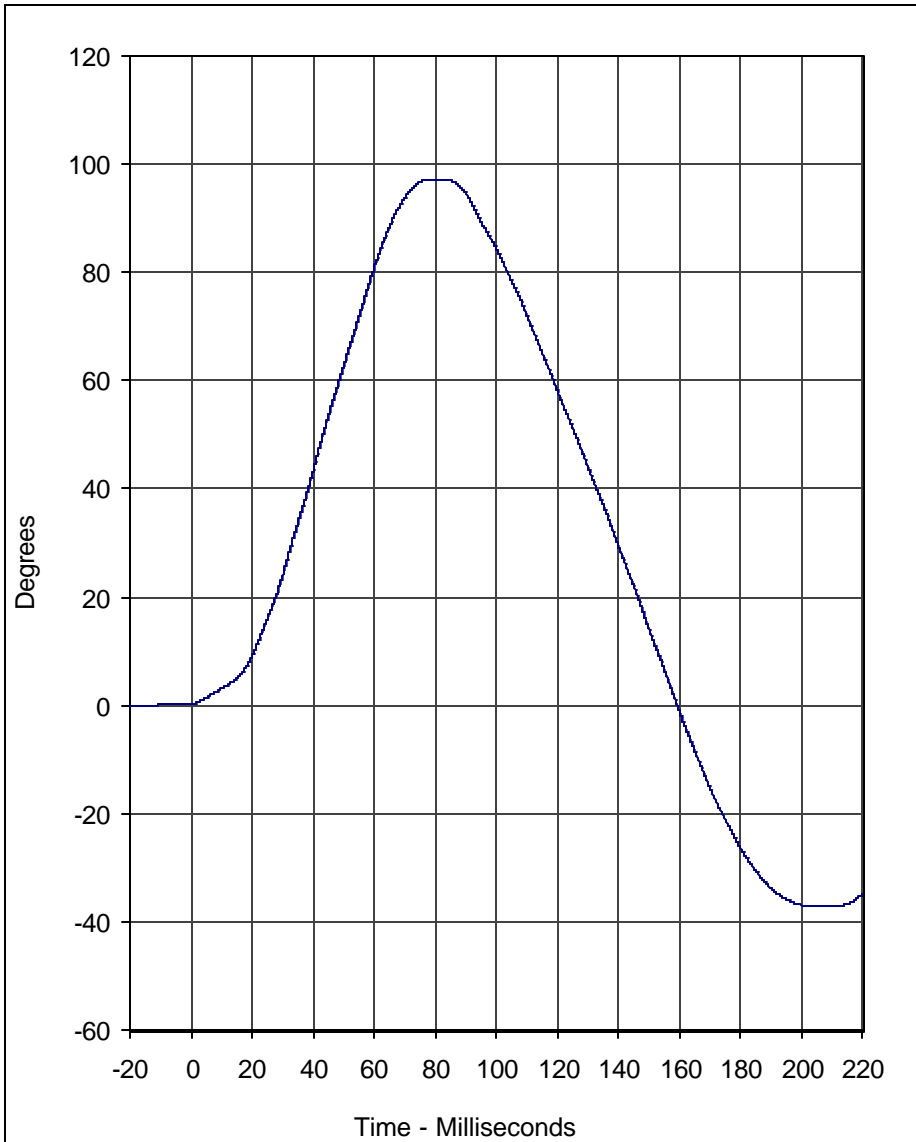
Curve Description				CURNO	Type
Neck Force X				002	FIL

Units	Max	Time	Min	Time	SAE Class
Newtons	266.6	198.9	-611.7	73.8	60

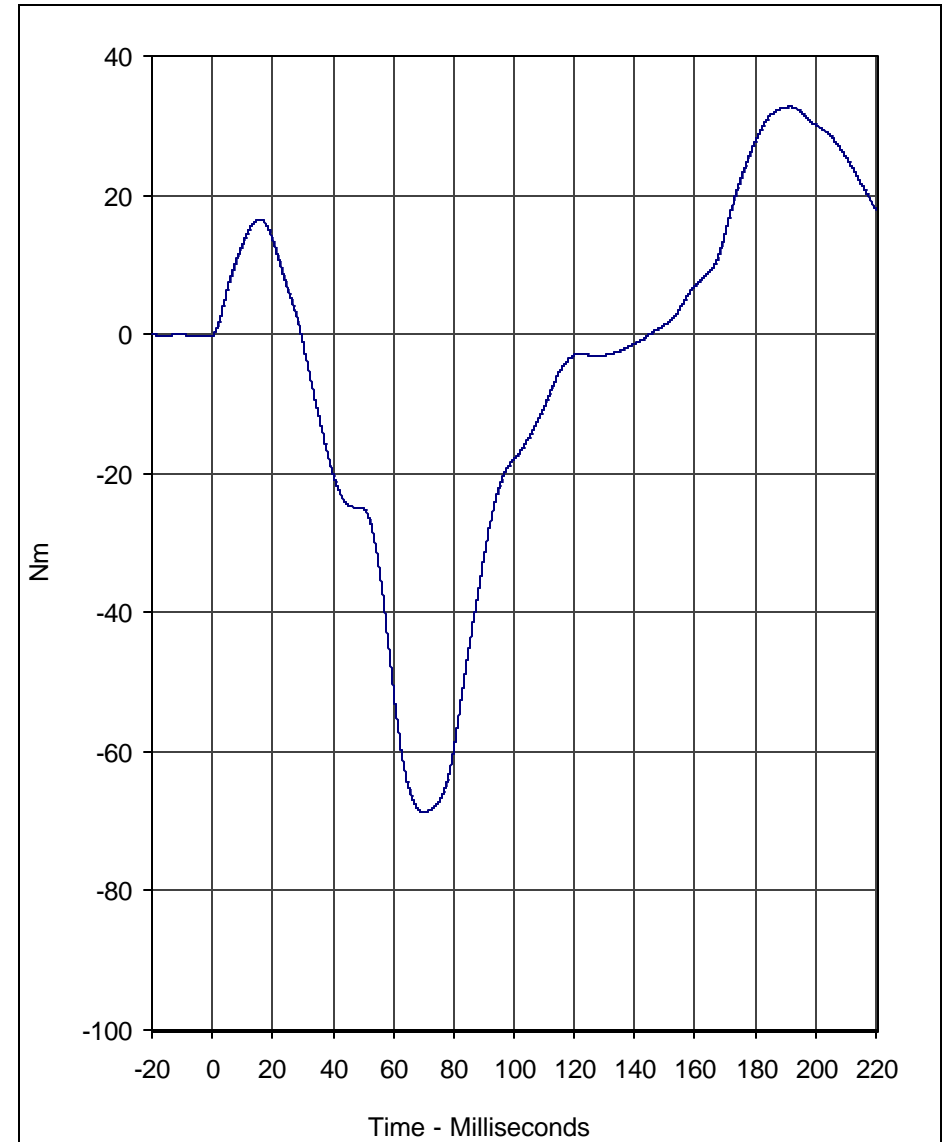
Test Program: Hybrid III 50th Percentile Male Neck Extension Test
 Test Date: 1/21/03

A.T.D. Serial No.: 034
 Test I.D.: NE01A





Curve Description				CURNO	Type
"D" Plane Rotation				003	FIL
Units	Max	Time	Min	Time	SAE Class
Degrees	97.3	79.4	-37.1	206.5	60



Curve Description				CURNO	Type
Moment About Occipital Condyle				004	FIL
Units	Max	Time	Min	Time	SAE Class
Nm	32.7	191.5	-68.7	70.3	60

Test Program: Hybrid III 50th Percentile Male Neck Extension Test
 Test Date: 1/21/03

A.T.D. Serial No.: 034
 Test I.D.: NE01A





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	885	Pass
B - Shoulder pivot height	mm	505 to 521	510	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	445	Pass
M - Knee pivot height	mm	485 to 500	495	Pass
N - Buttock popliteal length	mm	452 to 477	460	Pass
O - Chest depth	mm	213 to 229	225	Pass
P - Foot length	mm	251 to 267	255	Pass
V - Shoulder breadth	mm	422 to 437	430	Pass
W - Foot breadth	mm	91 to 107	105	Pass
Y - Chest circumference	mm	970 to 1001	1000	Pass
Z - Waist circumference	mm	836 to 866	850	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

January 21, 2003

Test Date

E-13

TR-P23001-07-NC



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

ATD Serial No.: 035

Location: Left Knee

Test I.D.: RK01B

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	2.09	Pass
Peak Probe Force	N	4715 to 5782	5242	Pass
Overall Test Results				Pass

ATD Serial No.: 035

Location: Right Knee

Test I.D.: RK01B

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	5242	Pass
Overall Test Results				Pass

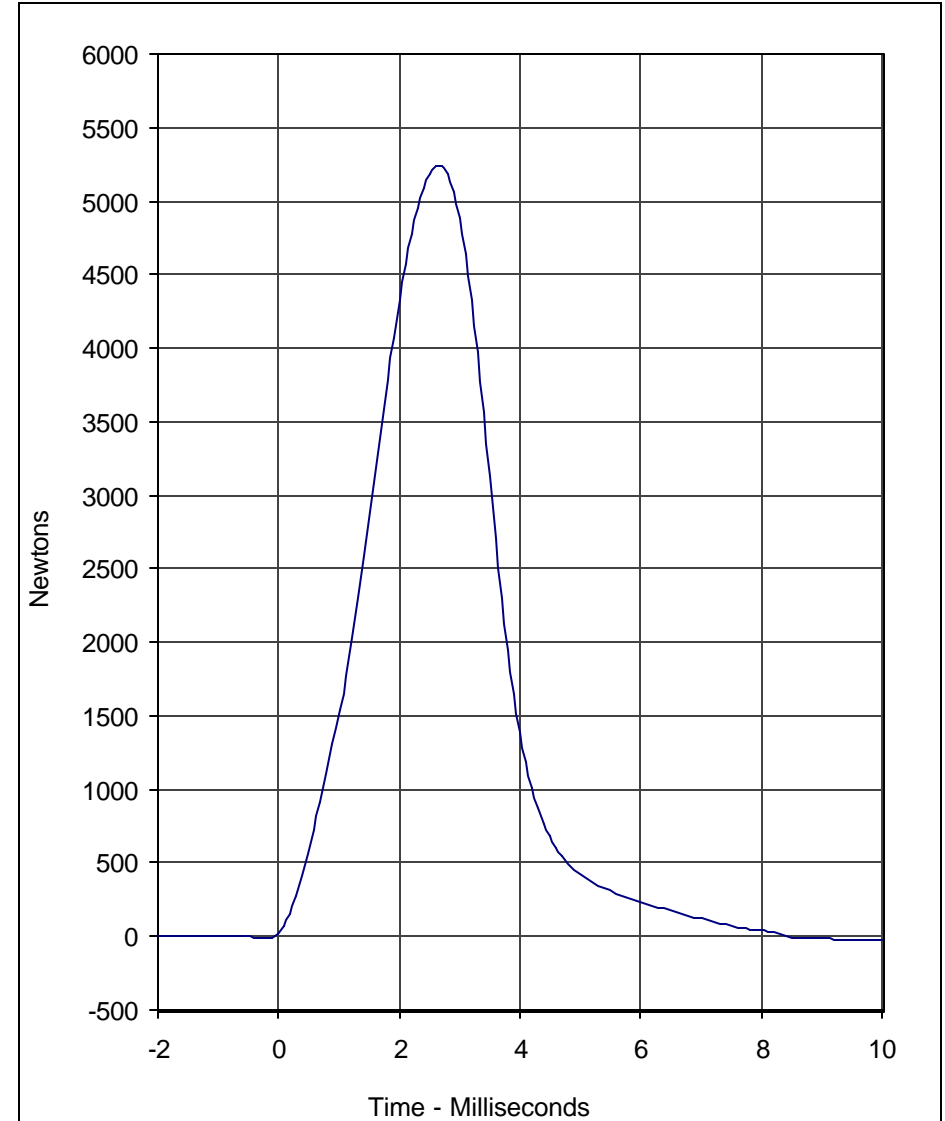
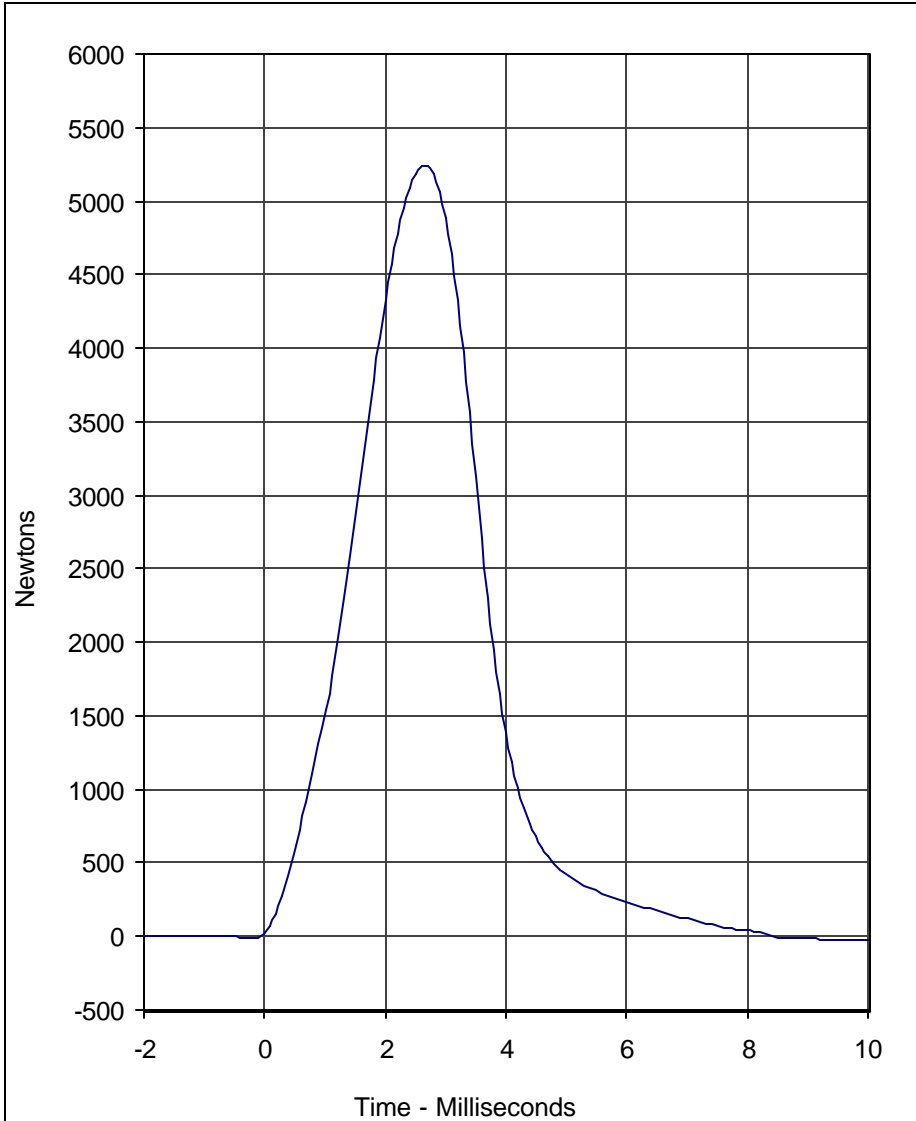
Laboratory Technician

January 20, 2003

Test Date

E-14

TR-P23001-07-NC



Curve Description	Location	Test I.D.	CURNO	Type
Probe Force	Left Knee	RK01B	001	FIL

Units	Max	Time	Min	Time	SAE Class
Newtons	5241.7	2.7	-27.1	9.6	600

Curve Description	Location	Test I.D.	CURNO	Type
Probe Force	Right Knee	RK01B	002	FIL

Units	Max	Time	Min	Time	SAE Class
Newtons	5241.7	2.7	-27.1	9.6	600

Test Program: Hybrid III 50th Percentile Male Knee Impact Test
 Test Date: 1/20/03

A.T.D. Serial No.: 035





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

ATD Serial No.: 035

Test I.D.: HD01B

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	241.7	Pass
Peak Lateral Acceleration	G's	≤15.0	8.2	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

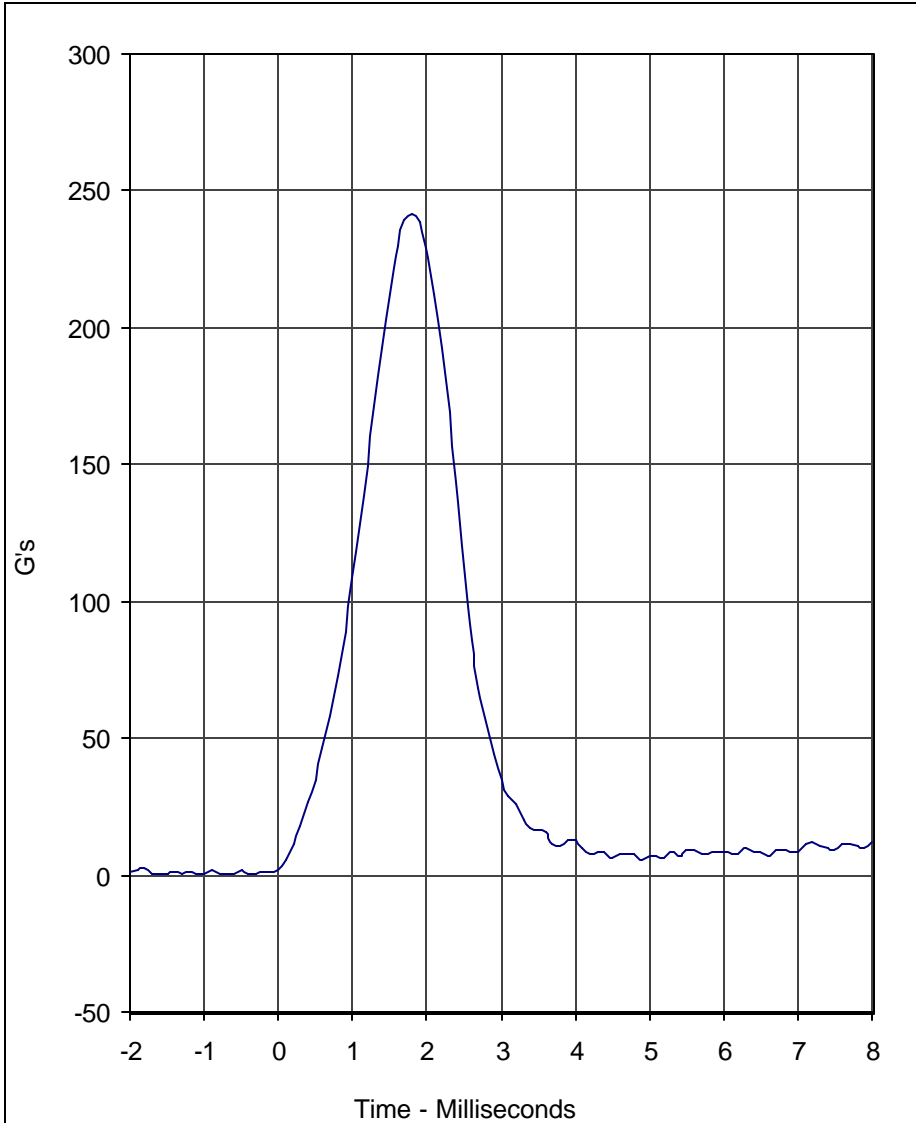
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TR-P23001-07-NC

Laboratory Technician

January 20, 2003

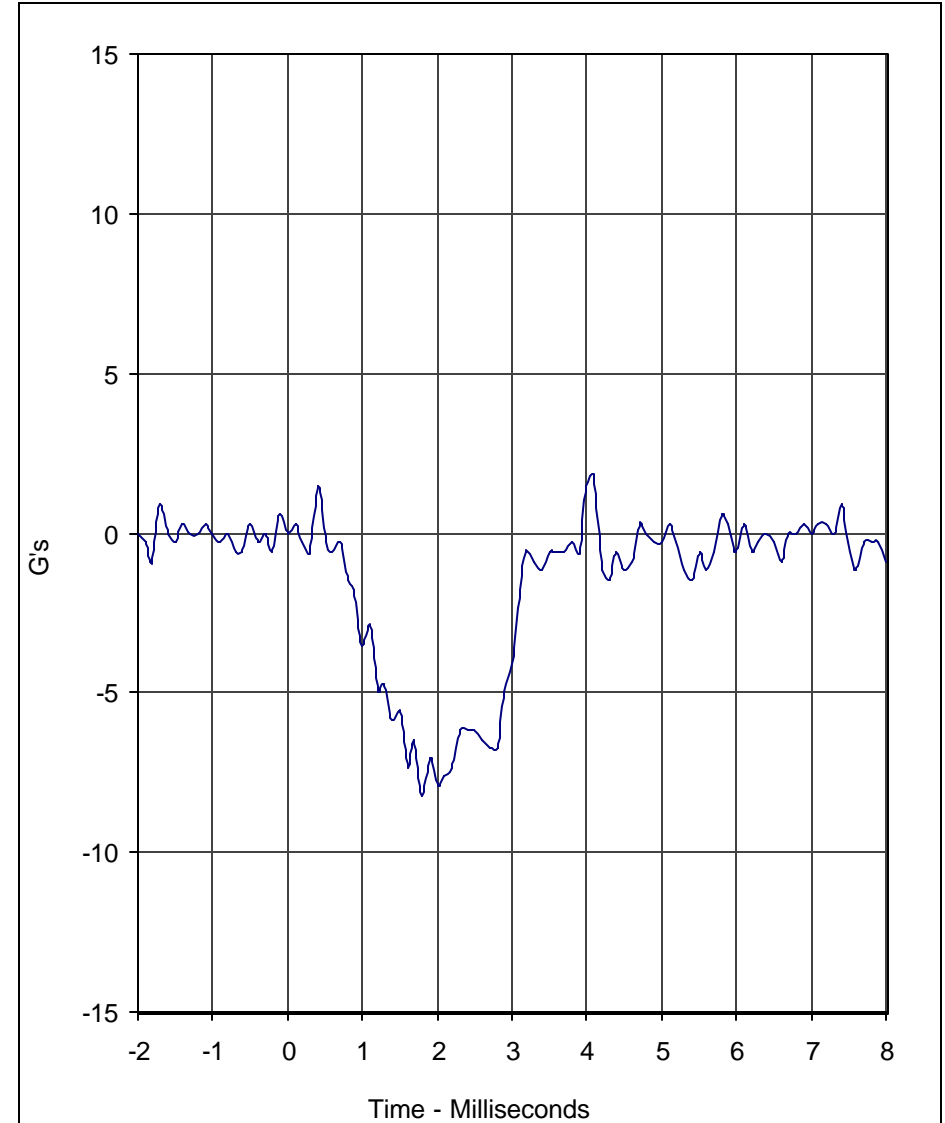
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Curve Description	CURNO	Type
Head Resultant	001	RES

Units	Max	Time	Min	Time	SAE Class
G's	241.7	1.8	0.5	-1.1	1000

Test Program: Hybrid III 50th Percentile Male Head Drop Test
 Test Date: 1/20/03



Curve Description	CURNO	Type
Head Y	002	FIL

Units	Max	Time	Min	Time	SAE Class
G's	1.8	4.1	-8.2	1.8	1000

A.T.D. Serial No.: 035
 Test I.D.: HD01B





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

ATD Serial No.: 035

Test I.D.: CH01B

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	5633	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.66	Pass
Internal Hysteresis	%	69 to 85	79.8	Pass
Overall Test Results				Pass

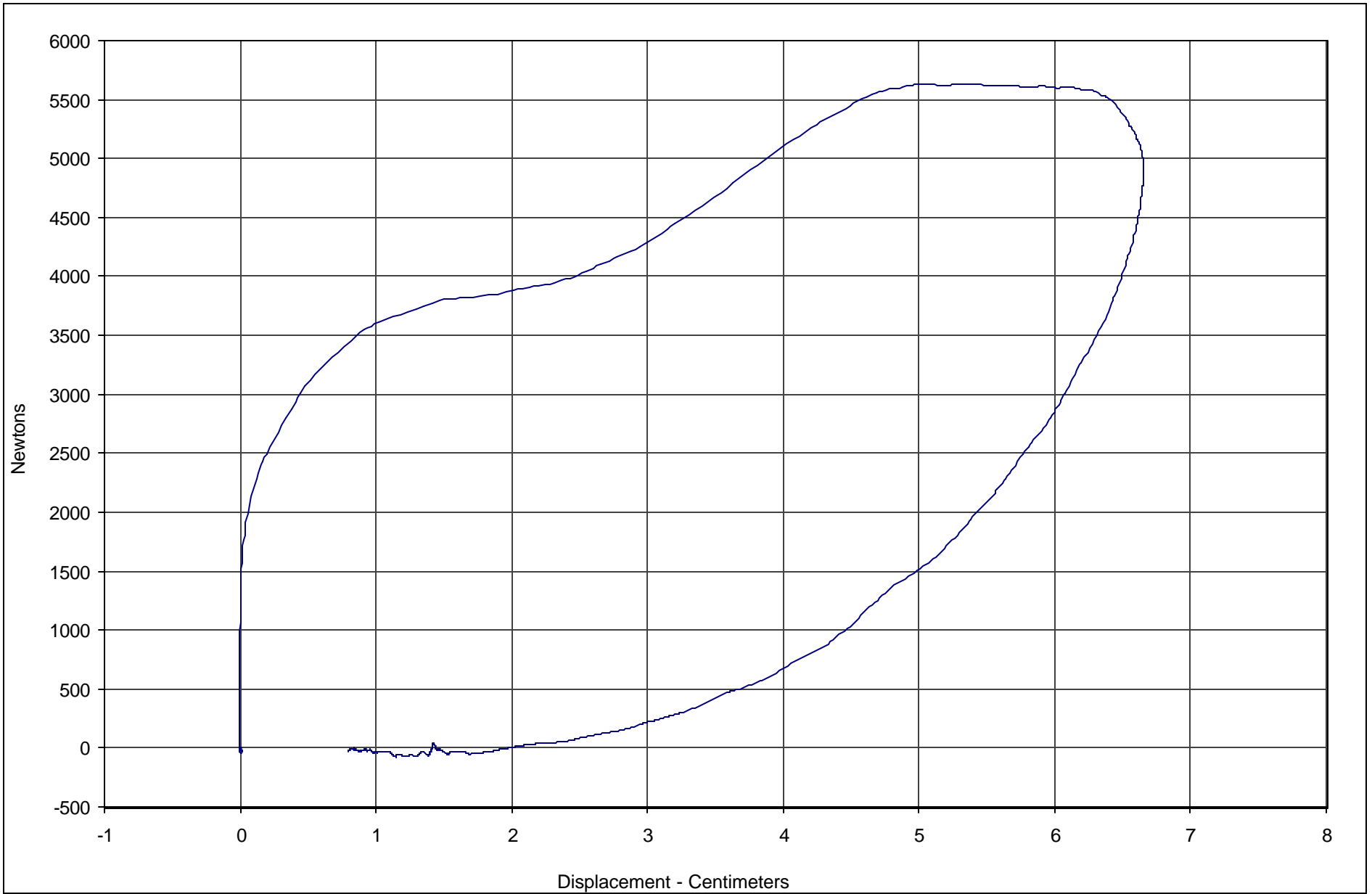
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TR-P23001-07-NC

Laboratory Technician

January 21, 2003

Test Date



Curve Description	CURNO	Type	Hysteresis	Peak Chest Displ.	Peak Probe Force	SAE Class
Probe Force vs. Chest Displacement	001	FIL	79.8	6.66	5632.7	180



Test Program: Hybrid III 50th Percentile Male Thorax Impact

A.T.D. Serial No.: 035

Test Date: 1/21/03

Test I.D.: CH01B



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

ATD Serial No.: 035

Test I.D.: NF02A

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	7.10	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.7	Pass
	20 Msec.	G's	17.6 to 22.6	21.1	Pass
	30 Msec.	G's	12.5 to 18.5	17.8	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	17.8	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	39.2	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	68.0	Pass
	Time	Msec.	57.0 to 64.0	60.3	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	115.2	Pass
Moment About Occipital Condyle	Maximum	Nm	84.1 to 108.5	88.4	Pass
	Time	Msec.	47.0 to 58.0	51.7	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	97.9	Pass
Overall Test Results					Pass

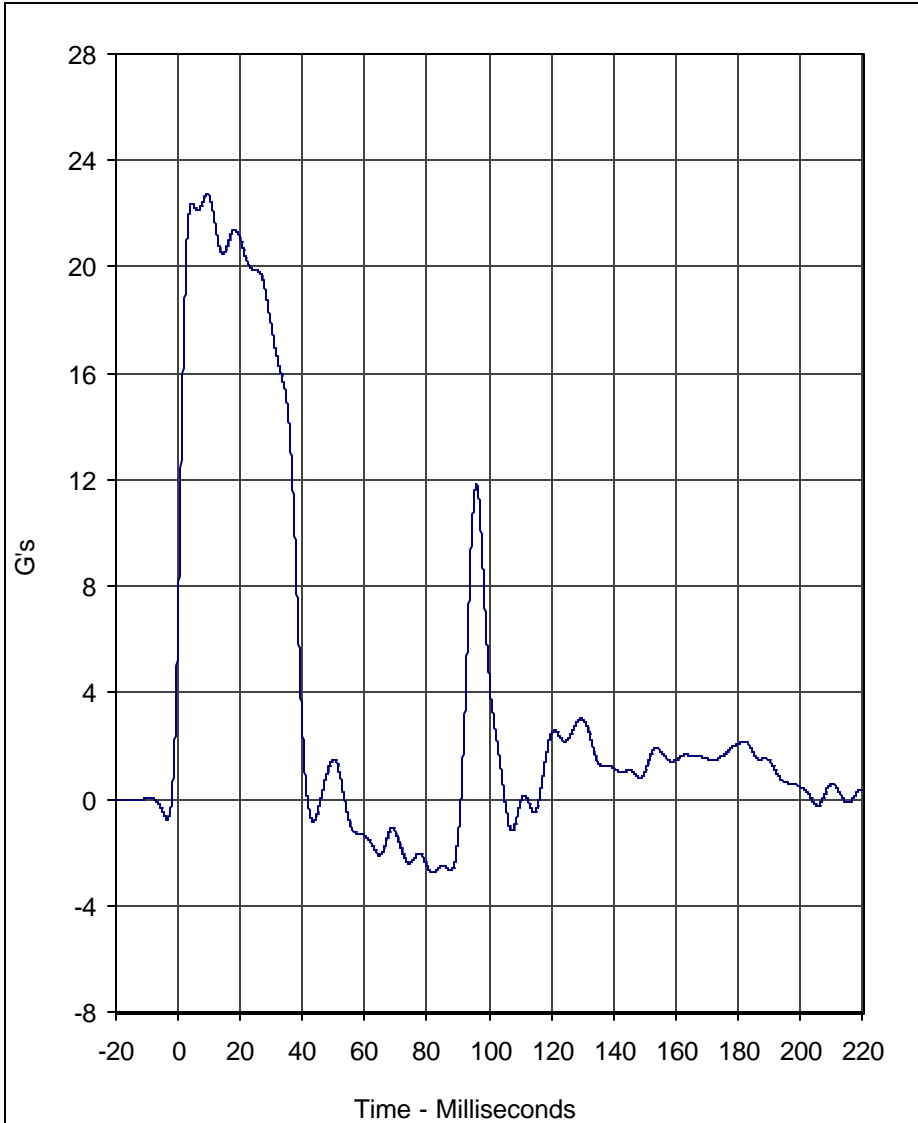
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TR-P23001-07-NC

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January 21, 2003

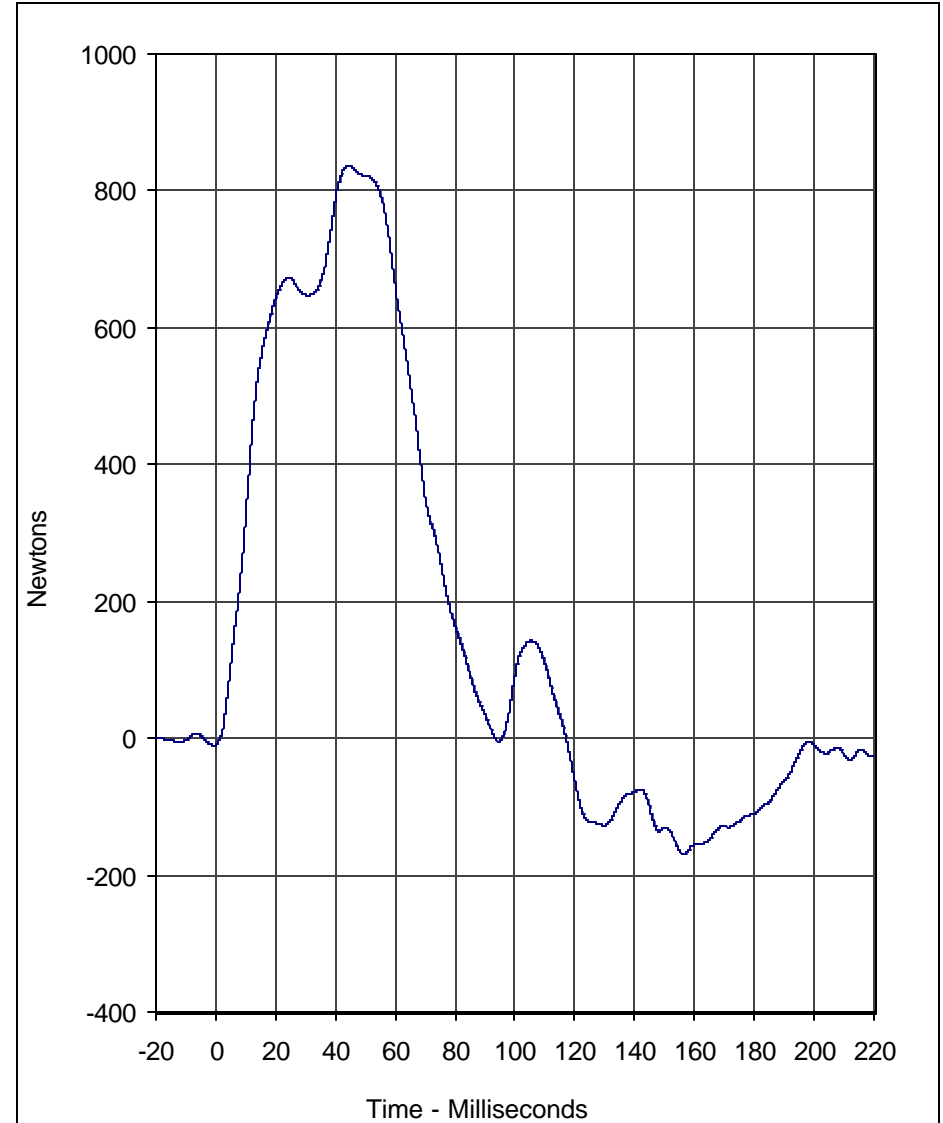
Test Date



Curve Description	CURNO	Type
Pendulum Deceleration	001	FIL

Units	Max	Time	Min	Time	SAE Class
G's	22.8	9.5	-2.8	81.8	60

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 Test Date: 1/21/03

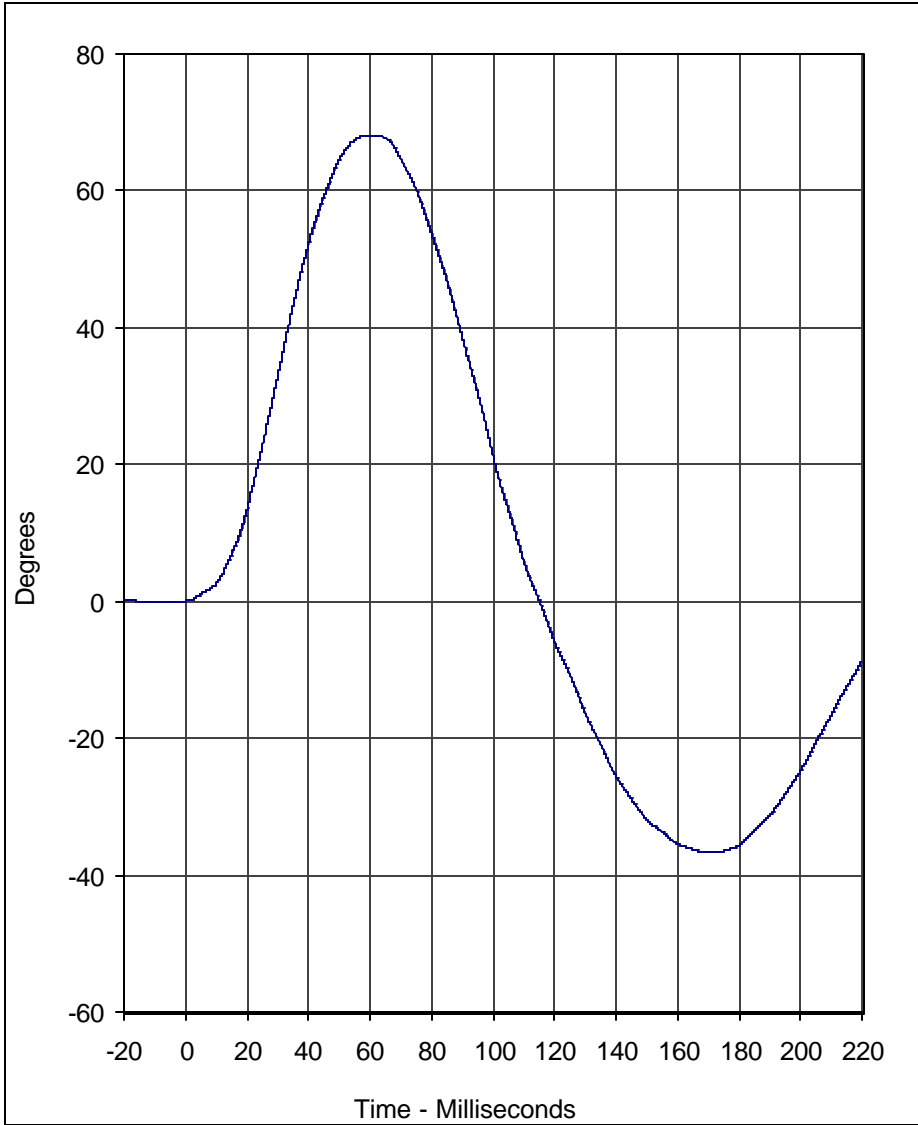


Curve Description	CURNO	Type
Neck Force X	002	FIL

Units	Max	Time	Min	Time	SAE Class
Newtons	836.7	44.5	-169.3	156.3	60

A.T.D. Serial No.: 035
 Test I.D.: NF02A

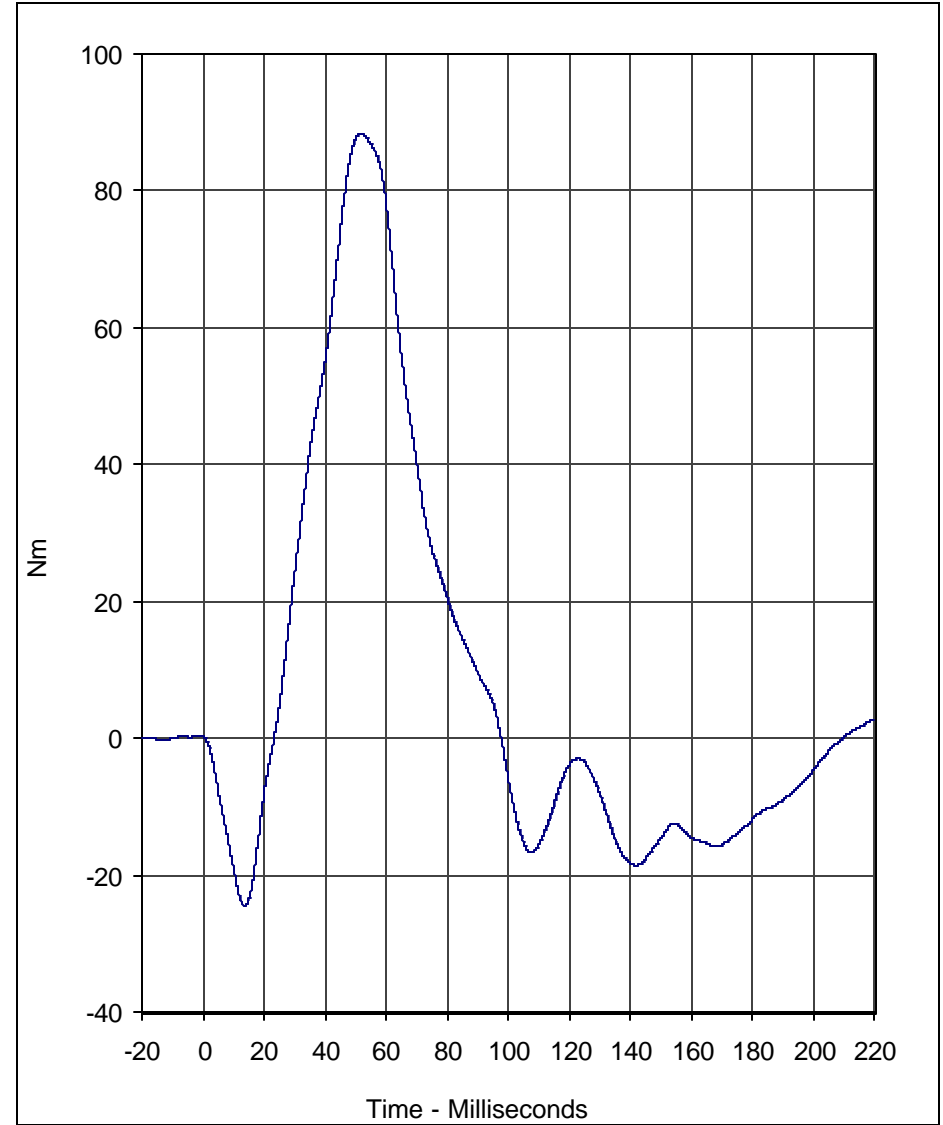




Curve Description	CURNO	Type
"D" Plane Rotation	003	FIL

Units	Max	Time	Min	Time	SAE Class
Degrees	68.0	60.3	-36.7	170.1	60

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 Test Date: 1/21/03



Curve Description	CURNO	Type
Moment About Occipital Condyle	004	FIL

Units	Max	Time	Min	Time	SAE Class
Nm	88.4	51.7	-24.5	13.7	60

A.T.D. Serial No.: 035
 Test I.D.: NF02A





Calibration Data Sheet

Hybrid III 50th Percentile Male Neck Extension Test

ATD Serial No.: 035

Test I.D.: NE02A

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	19.2	Pass
	20 Msec.	G's	14.0 to 19.0	16.9	Pass
	30 Msec.	G's	11.0 to 16.0	15.9	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.9	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	42.4	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	94.7	Pass
	Time	Msec.	72.0 to 82.0	78.9	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	148.0	Pass
Moment About Occipital Condyle	Maximum	Nm	-52.9 to- 79.9	-76.8	Pass
	Time	Msec.	65.0 to 79.0	68.0	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	137.8	Pass
Overall Test Results					Pass

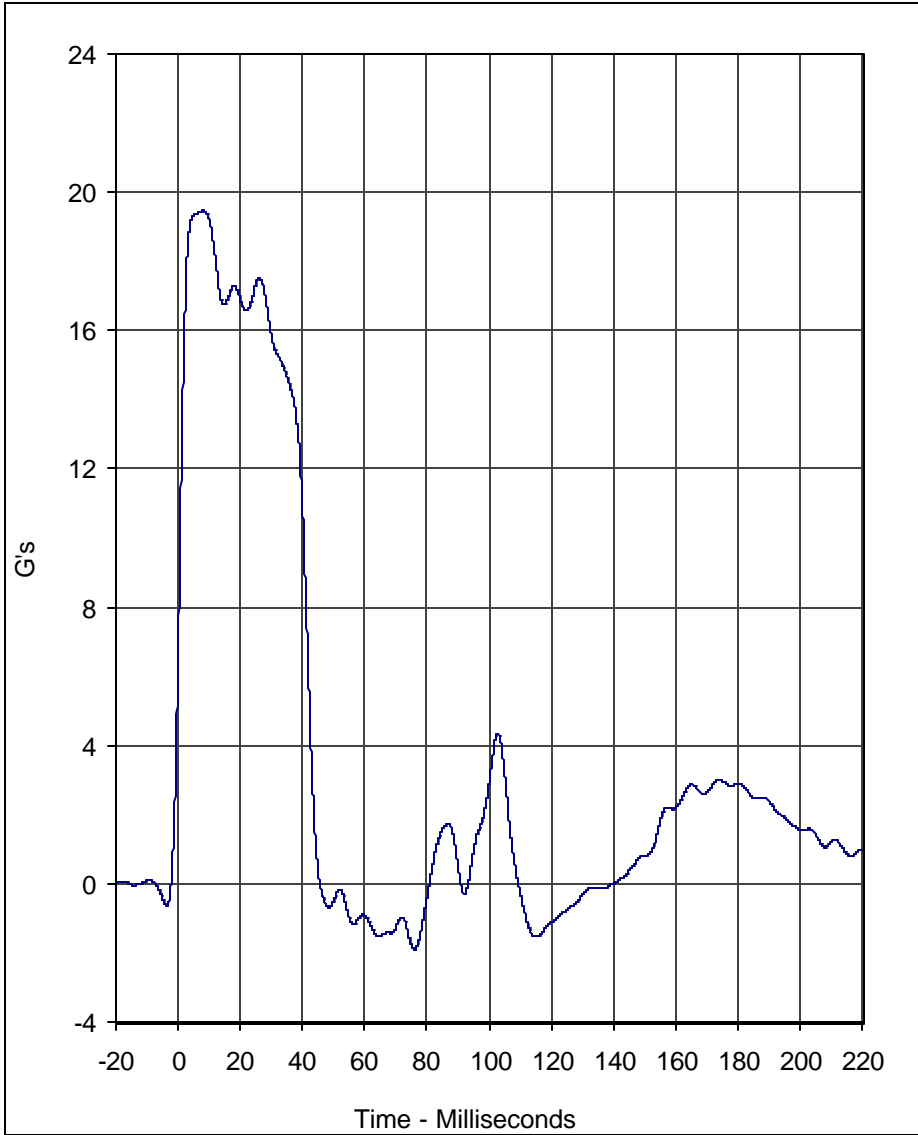
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TR-P23001-07-NC

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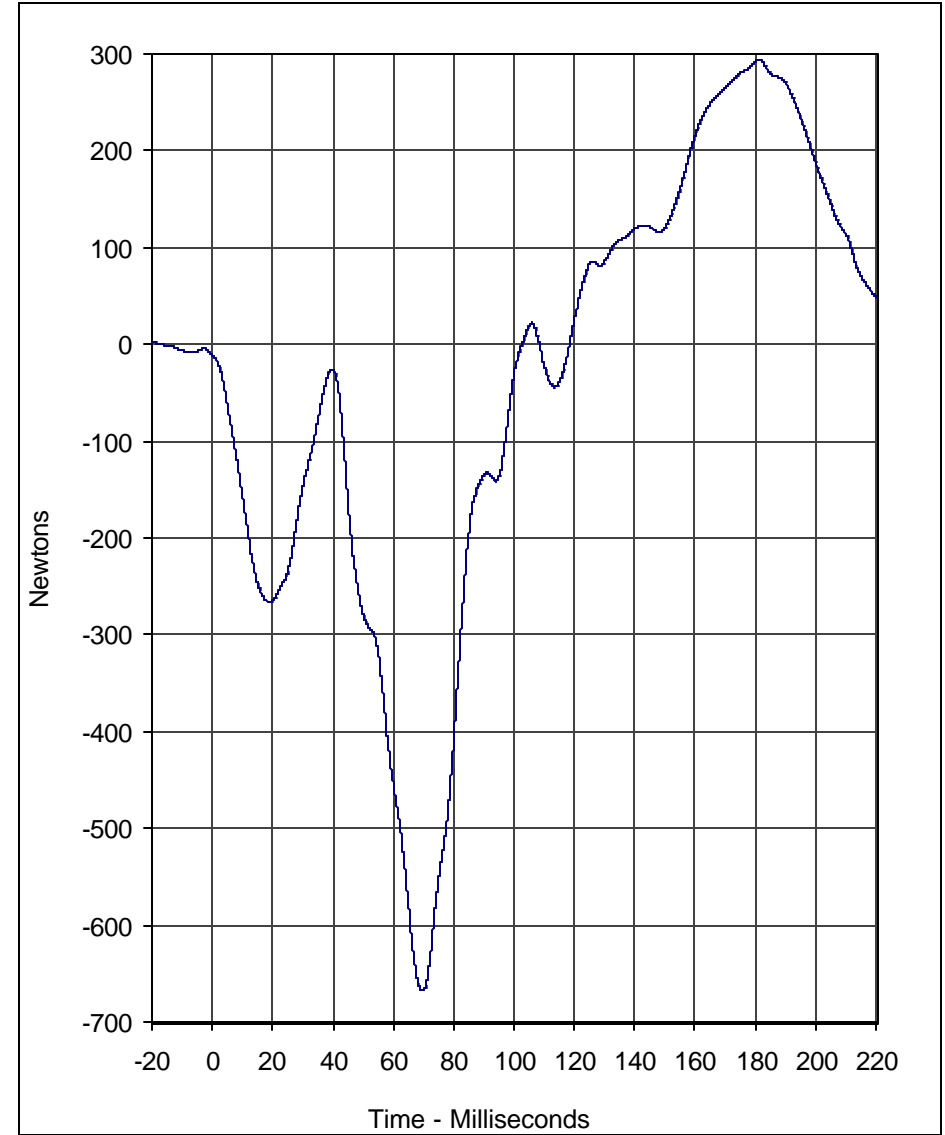
January 21, 2003

Test Date



Curve Description				CURNO	Type
Pendulum Deceleration				001	FIL

Units	Max	Time	Min	Time	SAE Class
G's	19.5	8.2	-1.9	76.0	60



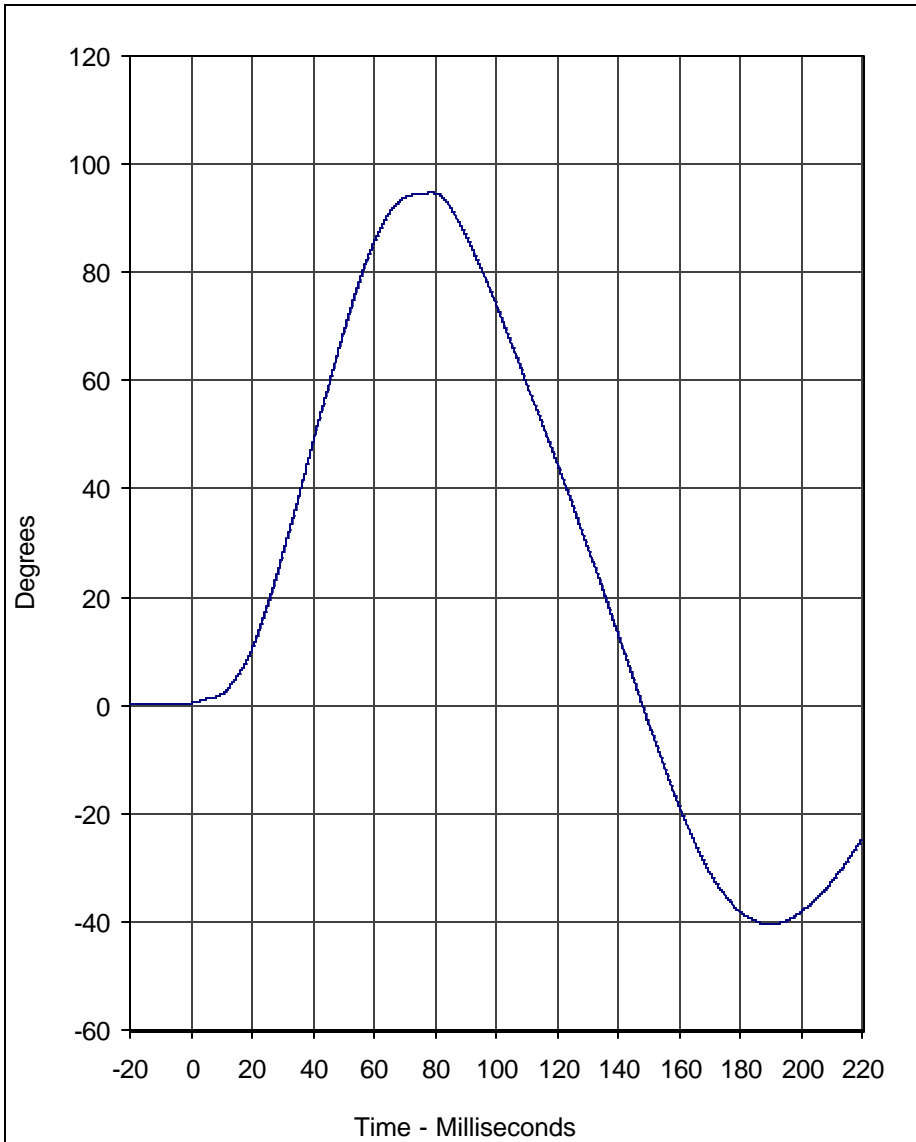
Curve Description				CURNO	Type
Neck Force X				002	FIL

Units	Max	Time	Min	Time	SAE Class
Newtons	294.2	181.3	-667.8	69.7	60

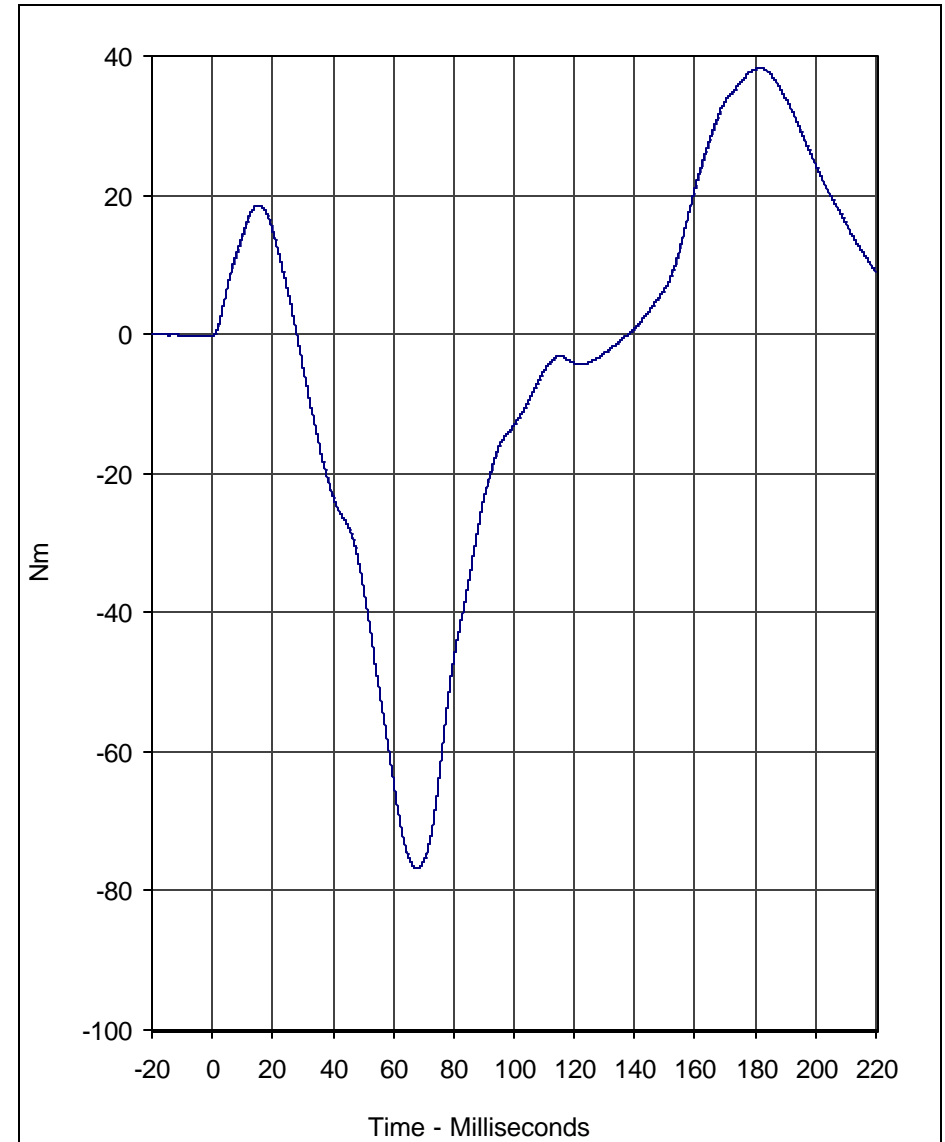
Test Program: Hybrid III 50th Percentile Male Neck Extension Test
 Test Date: 1/21/03

A.T.D. Serial No.: 035
 Test I.D.: NE02A





Curve Description				CURNO	Type
"D" Plane Rotation				003	FIL
Units	Max	Time	Min	Time	SAE Class
Degrees	94.7	78.9	-40.5	189.7	60



Curve Description				CURNO	Type
Moment About Occipital Condyle				004	FIL
Units	Max	Time	Min	Time	SAE Class
Nm	38.3	181.5	-76.8	68.0	60

Test Program: Hybrid III 50th Percentile Male Neck Extension Test
 Test Date: 1/21/03

A.T.D. Serial No.: 035
 Test I.D.: NE02A





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	510	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	335	Pass
J - Elbow rest height	mm	190 to 211	195	Pass
K - Buttock to knee length	mm	579 to 604	595	Pass
L - Popliteal length	mm	429 to 455	450	Pass
M - Knee pivot height	mm	485 to 500	500	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	260	Pass
V - Shoulder breadth	mm	422 to 437	430	Pass
W - Foot breadth	mm	91 to 107	95	Pass
Y - Chest circumference	mm	970 to 1001	1000	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

January 21, 2003

Test Date

APPENDIX F

CHILD RESTRAINT SYSYEM

REPORT NUMBER TR-P23001-07-NC

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

**JAGUAR CARS LIMITED
2003 JAGUAR X-TYPE
4 DOOR SEDAN**

NHTSA NUMBER: M30210

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



FEBRUARY 7, 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**

This final test report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, in response to Contract Number DTNH22-01-D-02005.

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Date: February 12, 2003

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Mr. Jerry L. Kratzke, Director of Operations
KARCO Engineering, LLC

Date: February 12, 2003

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

Date: February 12, 2003

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-P23001-07-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. M30210		5. Report Date February 12, 2003		6. Performing Organization Code KAR	
		8. Performing Organization Report No. TR-P23001-07-NC			
7. Authors Mr. James E. Gorth, Project Engineer, Karco Mr. Frank Richardson, Project Manager, Karco		10. Work Unit No.			
9. Performing Organization Name and Address KARCO Engineering, LLC 9270 Holly Road Adelanto, CA 92301		11. Contract or Grant No. DTNH22-01-D-02005			
		13. Type of Report and Period Covered Final Test Report Option Year 2			
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		14. Sponsoring Agency Code DOT/NHTSA/NRM/OCS/NVS 111			
		15. Supplementary Notes			
16. Abstract A CRS test was performed in conjunction with a New Car Assessment Program (NCAP) load cell barrier test. This test was conducted at Karco Engineering, LLC on February 7, 2003.					
Measurement Description		Units		Left Rear	Right Rear
Head Injury Criteria (HIC) 36		N/A		990.9	714.3
Head Injury Criteria (HIC) 15		N/A		506.5	561.3
3 msec. Chest Clip		G's		65.4	50.0
Peak Chest Displacement		mm		N/A	-16.3
17. Key Words 56.3 km/h NCAP Frontal Barrier Impact Test New Car Assessment Program (NCAP) 2003 Jaguar X-Type 4 Door Sedan NHTSA No. M30210			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
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TABLE OF CONTENTS

<u>Section</u>	<u>Description</u>	<u>Page</u>
F-1	Purpose and Summary of Test M30210	1
	Data Sheets:	
	1. Crash Test Summary	2
	2. CRS Parameter Data	3
	3. Child Dummy Positioning In Vehicle	4
	4. 3 Year Old Hybrid III ATD Injury Criteria and Sensor Data	7
	5. CRS Performance Data	9
	6. CRS Camera Data	10
F-2	Photographs	F-1 thru F-31
F-3	Child Dummy Response and CRS Data Traces	F3-1 thru F3-68
F-4	Child Dummy Instrumentation Information	F4-1 thru F4-2
F-5	Child Dummy Calibration Information	F5-1 thru F5-26

SECTION F-1

PURPOSE AND SUMMARY OF TEST M30210

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

The 55.72 km/h NCAP frontal impact test was conducted in accordance with the Office of Crashworthiness Standards (OCS) NCAP Laboratory Test Procedure.

SUMMARY

Both the three year old and CRABI child dummies were instrumented with head, chest and pelvic triaxial accelerometers. A chest displacement potentiometer and a lower neck load cell were used on the 3yr. old dummy. Upper neck load cells were used on both dummies. Triaxial accelerometers were installed on the CRS.

The right rear (Position 3) child dummy (Serial No. 082) was calibrated prior to this test. The left rear (Position No. 4) child dummy (Serial No. 090) was 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	990.9	506.5	65.4	
Right Rear Child	714.3	561.3	50.0	-16.3

SECTION F-1

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

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03

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	Chin to Chest	CRS
Chest Contact	Chin	None
Abdomen Contact	Harness	None
Left Knee Contact	None	None
Right Knee Contact	None	None
Left Toe contact	Seatback	None
Right Toe Contact	Seatback	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	1
Total	5

SECTION F-1

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

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

NHTSA No.: M30210

Test Program: 2003 NHTSA 35mph NCAP

Test Date: 2/7/03

TEST VEHICLE WEIGHTS

	Units	As Delivered			As Tested		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	467	316		506	375	
Right	kg	475	315		523	373	
Ratio	%	59.9	40.1		57.9	42.1	
Totals	kg	942	631	1573	1029	748	1777

TARGET TEST WEIGHT CALCULATION

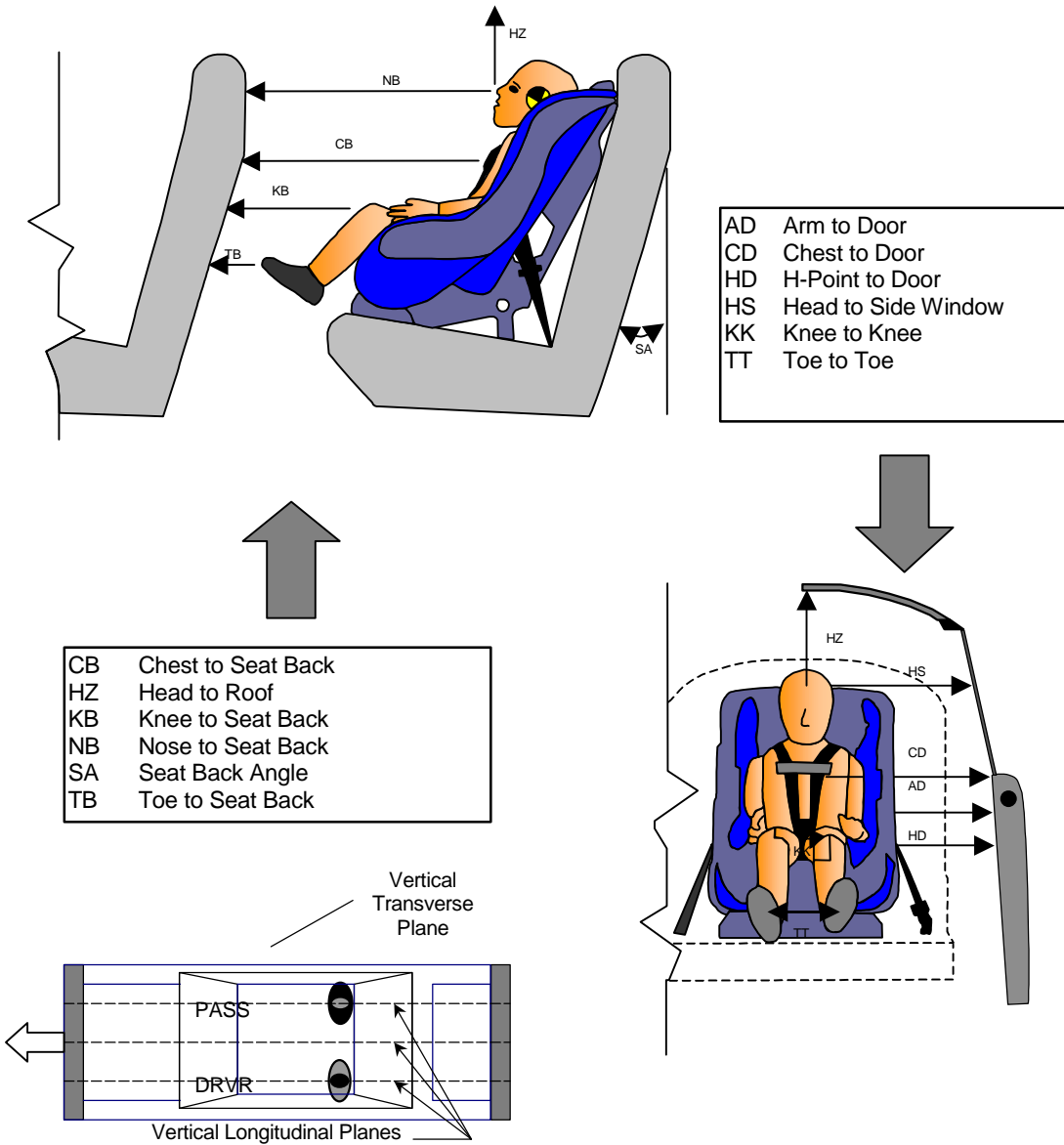
Measured Parameter	Units	Value
Total Delivered Weight (<i>UVW</i>)	kg	1573
Weight of 2 P572 ATD's	kg	152
Rated Cargo/Luggage Weight (<i>RCLW</i>)	kg	60
Calculated Vehicle Target Weight (<i>TVTW</i>)	kg	1785

SECTION F-1

DATA SHEET NO. 3CHILD DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03



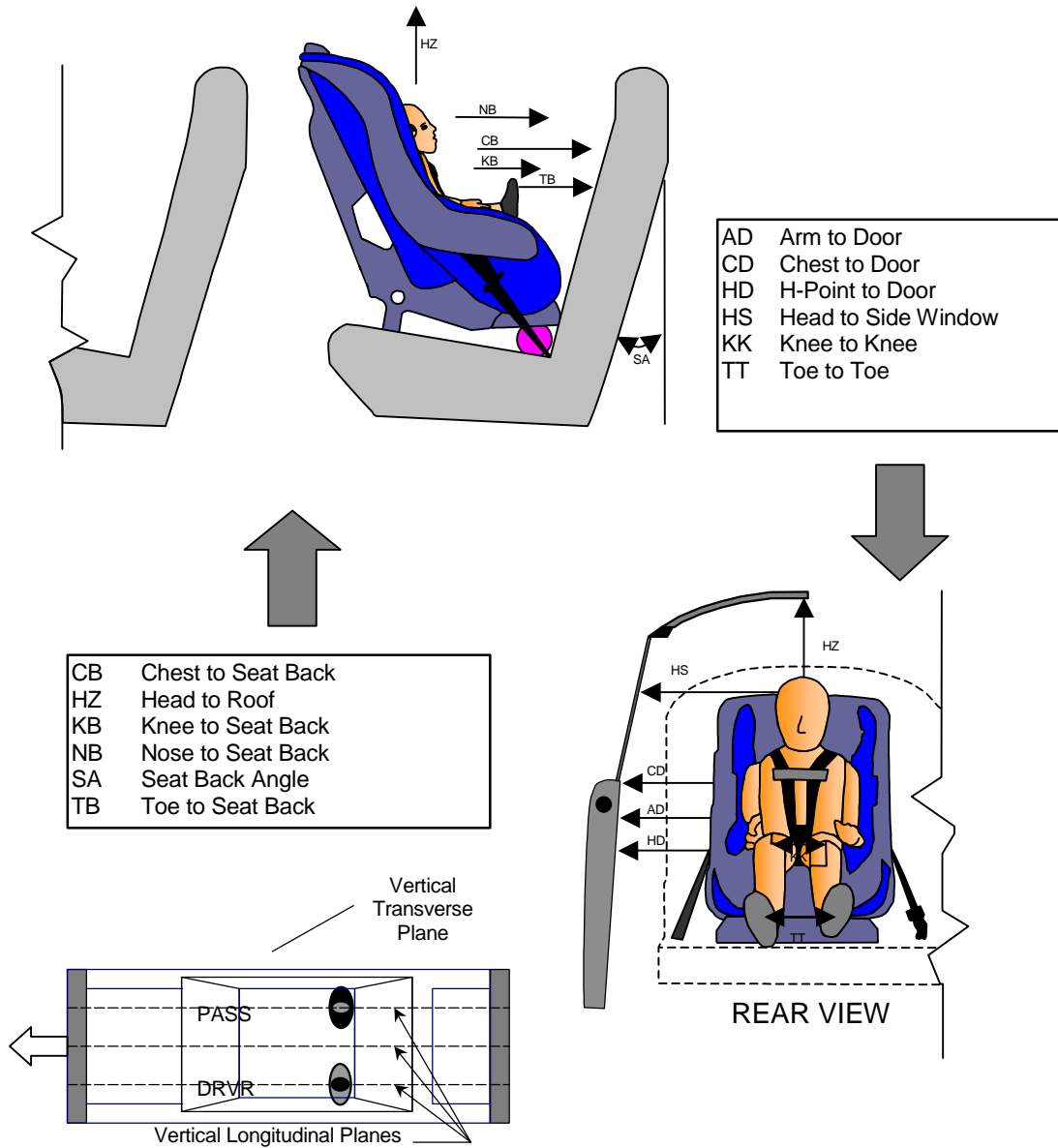
DUMMY MEASUREMENTS FOR REAR SEAT OCCUPANTS

SECTION F-1

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

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03



DUMMY MEASUREMENTS FOR REAR SEAT OCCUPANTS

SECTION F-1

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

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03

CHILD DUMMY POSITION MEASUREMENTS

Code	Measurement	P3 CRS (082)		P4 CRS (090)	
		Pre-Test	Post-test	Pre-Test	Post-test
SA	Seat Back Angle				
HZ	Head to Roof (Z)	308	245	370	410
CD	Chest to Dash	335	355	350	365
KK	Knee to Knee (Y)	220	218	240	230
HS	Head to Side Window	275	280	295	300
HD	H-Point to Door (Y)	330	315	400	385
AD	Arm to Door (Y)	558	655	565	630
NB	Nose to Seat Back	545	635	445	500
CB	Chest to Seat Back	180	195	180	165
FF	Foot to Foot	195	248	170	140
KB-LEFT	Knee to Seat Back	365	428	250	295
KB-RIGHT	Knee to Seat Back	370	450	260	295
TB-LEFT	Toe to Seat Back	75	143	100	220
TB-RIGHT	Toe to Seat Back	75	140	110	240

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

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

NHTSA No.: M30210

Test Program: 2003 NHTSA 35mph NCAP

Test Date: 2/7/03

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	54.1	177.8	-35.2	96.4	64.8	74.5	-6.3	288.3
Head CG	Y	G's	12.3	100.6	-17.3	96.0	4.8	64.1	-5.2	71.1
Head CG	Z	G's	69.3	73.8	-11.6	43.6	64.5	59.9	-11.6	95.5
Head CG Resultant	N/A	G's	73.8	73.8			76.0	61.5		

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)	714.3	61.5	97.5	52.3	990.9	47.4	83.4	59.6
Head CG Primary (HIC15)	561.3	65.5	80.5	67.4	506.5	55.6	70.6	64.7

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	10.7	192.0	-48.9	76.0	58.3	55.4	-7.6	234.8
Chest CG	Y	G's	5.2	63.2	-4.6	79.2	5.3	278.7	-9.6	56.0
Chest CG	Z	G's	14.1	186.9	-39.6	52.9	41.8	49.0	-10.5	93.3
Chest CG Resultant	N/A	G's	52.4	54.6			70.9	55.4		

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	50.0	52.5	55.5	65.4	54.0	57.0

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	0.1	25.4	-16.3	68.3				

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	10.5	218.8	-68.9	55.8	71.6	55.9	-10.6	237.7
Pelvis	Y	G's	8.4	61.6	-7.5	71.9	9.1	55.3	-7.1	49.0
Pelvis	Z	G's	15.5	187.5	-71.3	51.1	66.9	55.7	-5.5	94.3
Pelvis Resultant	N/A	G's	91.1	51.1			98.1	55.8		

DATA SHEET NO. 4...(continued)

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

NHTSA No.: M30210

Test Program: 2003 NHTSA 35mph NCAP

Test Date: 2/7/03

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	34.4	221.0	-643.4	75.4	41.3	89.4	-777.1	56.3
Neck Force	Y	Newtons	87.7	97.0	-52.5	102.7	52.9	51.4	-66.7	96.5
Neck Force	Z	Newtons	2231.7	73.9	-363.2	188.3	1296.4	53.1	-343.7	94.8
Neck Force Resultant	N/A	Newtons	2316.9	74.0			1506.9	56.4		
Neck Moment	X	Nm	8.6	80.9	-3.6	215.9	2.7	88.9	-1.7	283.1
Neck Moment	Y	Nm	5.6	61.4	-17.7	192.6	7.2	299.9	-28.3	55.6
Neck Moment	Z	Nm	2.4	130.4	-3.8	101.4	1.5	49.0	-1.3	96.4
Neck Moment Resultant	N/A	Nm	17.8	192.6			28.4	55.6		

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	195.3	178.8	-969.0	74.2				
Neck Force	Y	Newtons	58.8	191.5	-115.3	62.1				
Neck Force	Z	Newtons	1482.5	73.6	-415.5	43.6				
Neck Force Resultant	N/A	Newtons	1762.1	74.0						
Neck Moment	X	Nm	14.1	79.0	-6.3	212.7				
Neck Moment	Y	Nm	111.3	74.4	-13.2	178.8				
Neck Moment	Z	Nm	6.9	79.6	-5.9	103.7				
Neck Moment Resultant	N/A	Nm	111.5	74.5						

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	0.0	0.0	0.0	0.0	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	13.3	194.6	-56.5	56.5	17.6	212.9	-67.0	52.0
Child Seat	Y	G's	4.0	73.5	-4.7	184.1	9.4	212.2	-17.5	206.0
Child Seat	Z	G's	18.9	51.4	-13.4	70.2	35.1	204.9	-28.3	212.0
Child Seat Resultant	N/A	G's	57.6	56.8			73.1	52.0		

SECTION F-1

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

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan
 Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210
 Test Date: 2/7/03

CRS PERFORMANCE DATA

Location	Serial # Position # 3		Serial # Position # 4	
	Damage	Remarks	Damage	Remarks
Upper Tether Strap	Yes	None	N/A	N/A
Upper Tether Buckle	No	None	N/A	N/A
Upper Tether Hook	No	None	N/A	N/A
Veh. Upper Tether Anchor	No	None	N/A	N/A
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	No	None
Child Dummy	No	None	No	None

SECTION F-1

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

Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

NHTSA No.: M30210

Test Program: 2003 NHTSA 35mph NCAP

Test Date: 2/7/03

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	Left Side, No. 1	2642	8230	2286	-15	7871	35	1010
3	Left Side, No. 2	2642	6096	1524	-1	5673	25	510
4	Left Side, No. 3	2438	-9144	2032	-10	8785	25	No Time
5	Left Side, No. 4	2743	-8331	1524	-1	7920	25	510

X - Barrier Face Y - Monorail Centerline Z - Ground

SECTION F-2

PHOTOGRAPHS

LIST OF PHOTOGRAPHS CRS #3

<u>Figure</u>		<u>Page</u>
1	Close-up View Position 3 CRS Label	F-1
2	Pre-Test Frontal View of Position 3 CRS	F-2
3	Post-Test Frontal View of Position 3 CRS	F-3
4	Pre-Test Rear View of Position 3 CRS	F-4
5	Post-Test Rear View of Position 3 CRS	F-5
6	Pre-Test Left Side View of Position 3 CRS	F-6
7	Post-Test Left Side View of Position 3 CRS	F-7
8	Pre-Test Right Side View of Position 3 CRS	F-8
9	Post-Test Right Side View of Position 3 CRS	F-9
10	Pre-Test position 3 Front View	F-10
11	Post-Test Position 3 Front View	F-11
12	Pre-Test Position 3 Left Side View	F-12
13	Post-Test Position 3 Left Side View	F-13
14	Pre-Test Position 3 Right Side View	F-14
15	Post-Test Position 3 Right Side View	F-15

LIST OF PHOTOGRAPHS CRS #4

<u>Figure</u>		<u>Page</u>
16	Close-up View Position 4 CRS Label	F-16
17	Pre-Test Frontal View of Position 4 CRS	F-17
18	Post-Test Frontal View of Position 4 CRS	F-18
19	Pre-Test Rear View of Position 4 CRS	F-19
20	Post-Test Rear View of Position 4 CRS	F-20
21	Pre-Test Left Side View of Position 4 CRS	F-21
22	Post-Test Left Side View of Position 4 CRS	F-22
23	Pre-Test Right Side View of Position 4 CRS	F-23
24	Post-Test Right Side View of Position 4 CRS	F-24
25	Pre-Test position 4 Front View	F-25
26	Post-Test Position 4 Front View	F-26
27	Pre-Test Position 4 Left Side View	F-27
28	Post-Test Position 4 Left Side View	F-28
29	Pre-Test Position 4 Right Side View	F-29
30	Post-Test Position 4 Right Side View	F-30



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



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



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



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



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



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



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



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



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



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



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



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



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



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



Figure F-16: Post-Test Position 3 Right Side View

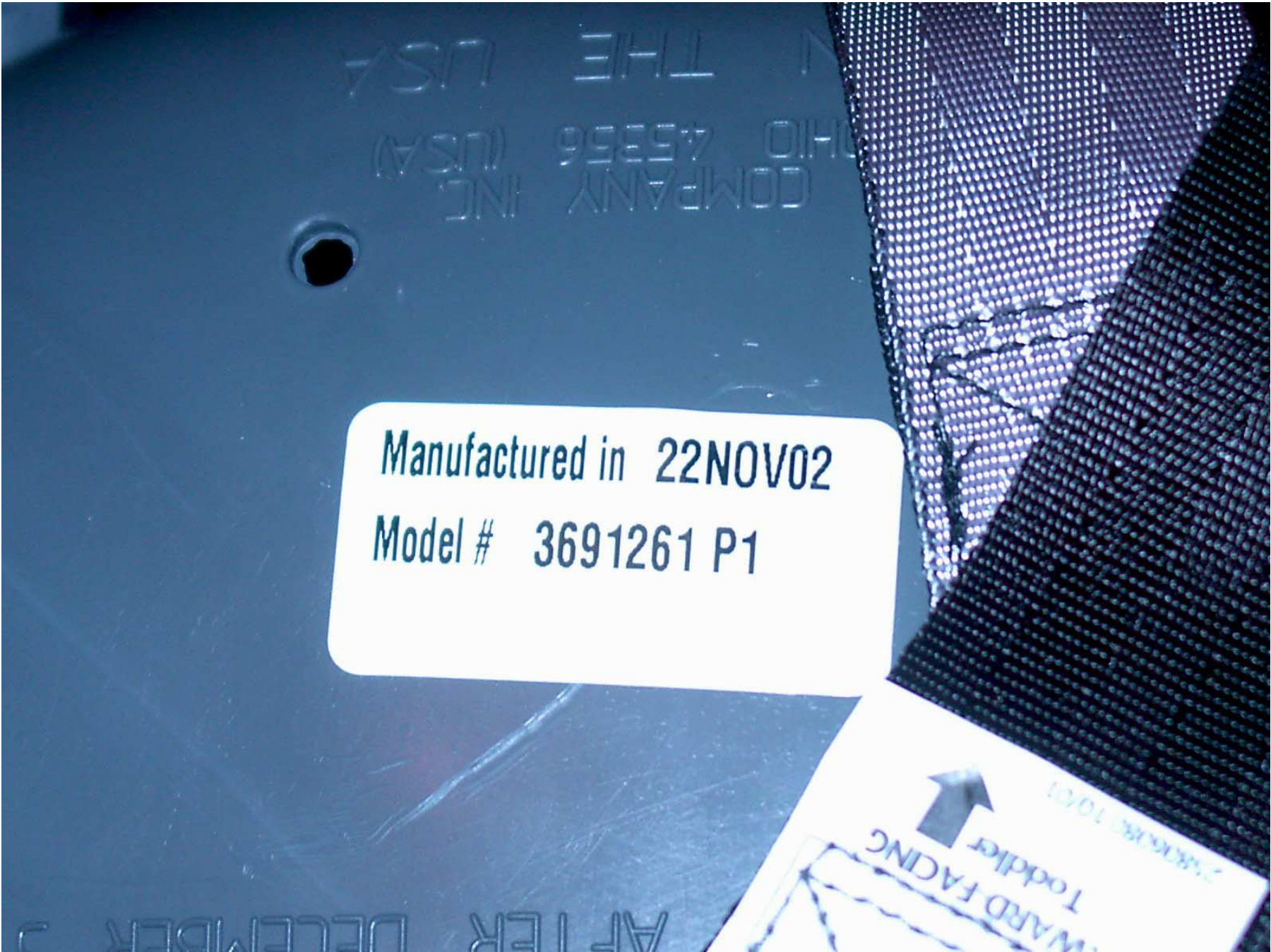


Figure F-16: Close-up View Position 4 CRS Label



Figure F-17: Pre-Test Frontal View of Position 4 CRS



Figure F-18: Post-Test Frontal View of Position 4 CRS



Figure F-19: Pre-Test Rear View of Position 4 CRS



Figure F-20: Post-Test Rear View of Position 4 CRS



Figure F-21: Pre-Test Left Side View of Position 4 CRS



Figure F-22: Post-Test Left Side View of Position 4 CRS



Figure F-23: Pre-Test Right Side View of Position 4 CRS



Figure F-24: Post-Test Right Side View of Position 4 CRS



Figure F-25: Pre-Test Position 4 Front View



Figure F-26: Post-Test Position 4 Front View



Figure F-27: Pre-Test Position 4 Left Side View



Figure F-28: Post-Test Position 4 Left Side View



Figure F-29: Pre-Test Position 4 Right Side View



Figure F-30: Post-Test Position 4 Right Side View

SECTION F-3

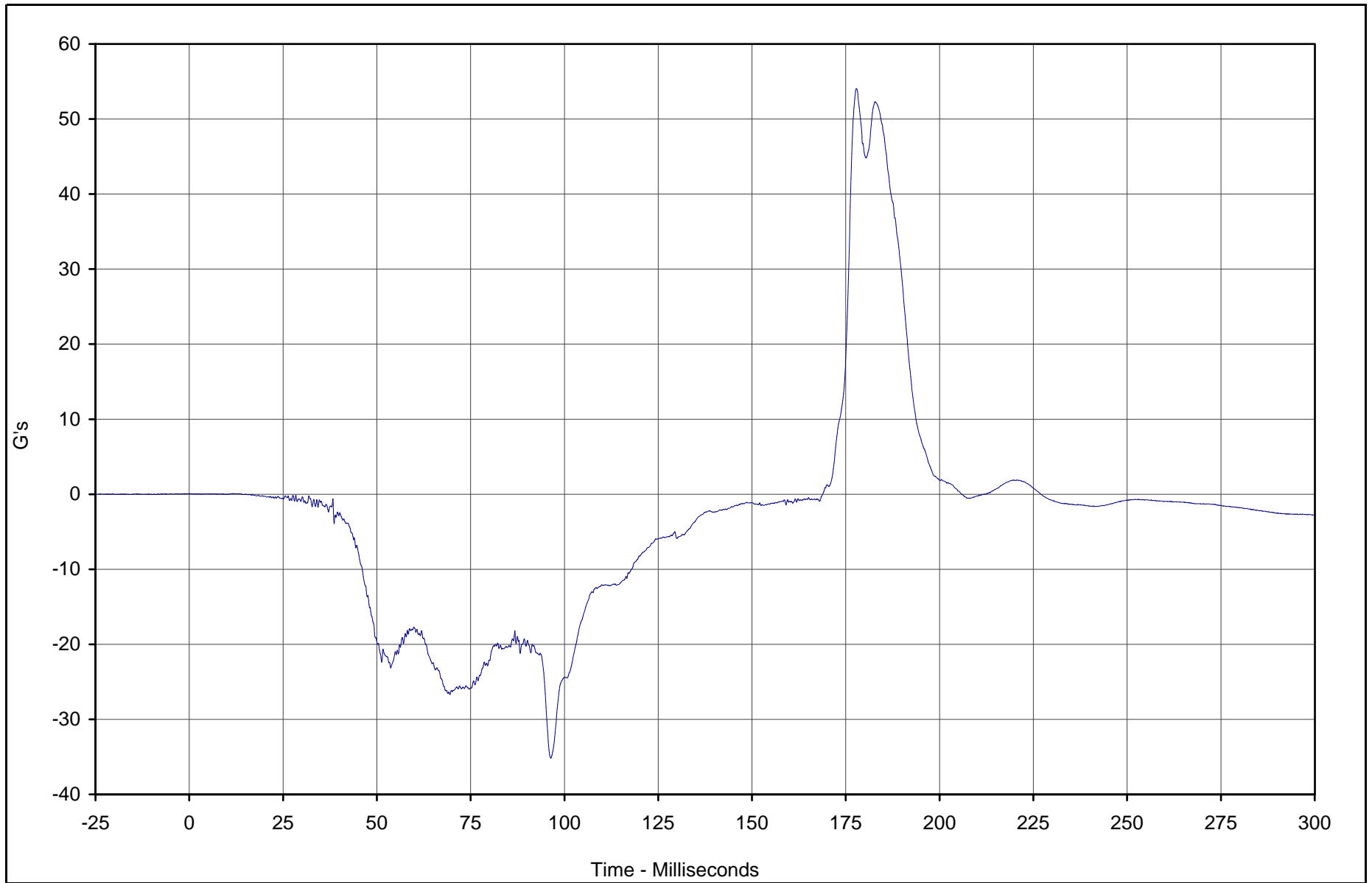
CHILD DUMMY RESPONSE AND CRS DATA TRACES

LIST OF DATA PLOTS

Data Plot	Page	
F3-1	Right Rear (3 Yr.) Head X	F3-1
F3-2	Right Rear (3 Yr.) Head Y	F3-2
F3-3	Right Rear (3 Yr.) Head Z	F3-3
F3-4	Right Rear (3 Yr.) Head Resultant	F3-4
F3-5	Right Rear (3 Yr.) Upper Neck Force X	F3-5
F3-6	Right Rear (3 Yr.) Upper Neck Force Y	F3-6
F3-7	Right Rear (3 Yr.) Upper Neck Force Z	F3-7
F3-8	Right Rear (3 Yr.) Upper Neck Force Resultant	F3-8
F3-9	Right Rear (3 Yr.) Upper Neck Moment X	F3-9
F3-10	Right Rear (3 Yr.) Upper Neck Moment Y	F3-10
F3-11	Right Rear (3 Yr.) Upper Neck Moment Z	F3-11
F3-12	Right Rear (3 Yr.) Upper Neck Moment Resultant	F3-12
F3-13	Right Rear (3 Yr.) Lower Neck Force X	F3-13
F3-14	Right Rear (3 Yr.) Lower Neck Force Y	F3-14
F3-15	Right Rear (3 Yr.) Lower Neck Force Z	F3-15
F3-16	Right Rear (3 Yr.) Lower Neck Force Resultant	F3-16
F3-17	Right Rear (3 Yr.) Lower Neck Moment X	F3-17
F3-18	Right Rear (3 Yr.) Lower Neck Moment Y	F3-18
F3-19	Right Rear (3 Yr.) Lower Neck Moment Z	F3-19
F3-20	Right Rear (3 Yr.) Lower Neck Moment Resultant	F3-20
F3-21	Right Rear (3 Yr.) Chest X	F3-21
F3-22	Right Rear (3 Yr.) Chest Y	F3-22
F3-23	Right Rear (3 Yr.) Chest Z	F3-23
F3-24	Right Rear (3 Yr.) Chest Resultant	F3-24
F3-25	Right Rear (3 Yr.) Chest Deflection	F3-25
F3-26	Right Rear (3 Yr.) Pelvis X	F3-26
F3-27	Right Rear (3 Yr.) Pelvis Y	F3-27
F3-28	Right Rear (3 Yr.) Pelvis Z	F3-28
F3-29	Right Rear (3 Yr.) Pelvis Resultant	F3-29
F3-30	Right Rear (3 Yr.) Seat Tether Load	F3-30
F3-31	Right Rear (3 Yr.) Car Seat X	F3-31
F3-32	Right Rear (3 Yr.) Car Seat Y	F3-32
F3-33	Right Rear (3 Yr.) Car Seat Z	F3-33
F3-34	Right Rear (3 Yr.) Car Seat Resultant	F3-34

LIST OF DATA PLOTS CRS #3

<u>Data Plot</u>		<u>Page</u>
F3-35	Left Rear (Crab I) Head X	F3-35
F3-36	Left Rear (Crab I) Head Y	F3-36
F3-37	Left Rear (Crab I) Head Z	F3-37
F3-38	Left Rear (Crab I) Head Resultant	F3-38
F3-39	Left Rear (Crab I) Upper Neck Force X	F3-39
F3-40	Left Rear (Crab I) Upper Neck Force Y	F3-40
F3-41	Left Rear (Crab I) Upper Neck Force Z	F3-41
F3-42	Left Rear (Crab I) Upper Neck Force Resultant	F3-42
F3-43	Left Rear (Crab I) Upper Neck Moment X	F3-43
F3-44	Left Rear (Crab I) Upper Neck Moment Y	F3-44
F3-45	Left Rear (Crab I) Upper Neck Moment Z	F3-45
F3-46	Left Rear (Crab I) Upper Neck Moment Resultant	F3-46
F3-47	Left Rear (Crab I) Chest X	F3-47
F3-48	Left Rear (Crab I) Chest Y	F3-48
F3-49	Left Rear (Crab I) Chest Z	F3-49
F3-50	Left Rear (Crab I) Chest Resultant	F3-50
F3-51	Left Rear (Crab I) Pelvis X	F3-51
F3-52	Left Rear (Crab I) Pelvis Y	F3-52
F3-53	Left Rear (Crab I) Pelvis Z	F3-53
F3-54	Left Rear (Crab I) Pelvis Resultant	F3-54
F3-55	Left Rear (Crab I) Seat Tether Load	F3-55
F3-56	Left Rear (Crab I) Car Seat X	F3-56
F3-57	Left Rear Car Seat Y	F3-57
F3-58	Left Rear Car Seat Z	F3-58
F3-59	Left Rear Car Seat Resultant	F3-59



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Head X	134	FIL	G's	54.1	177.8	-35.2	96.4	1000

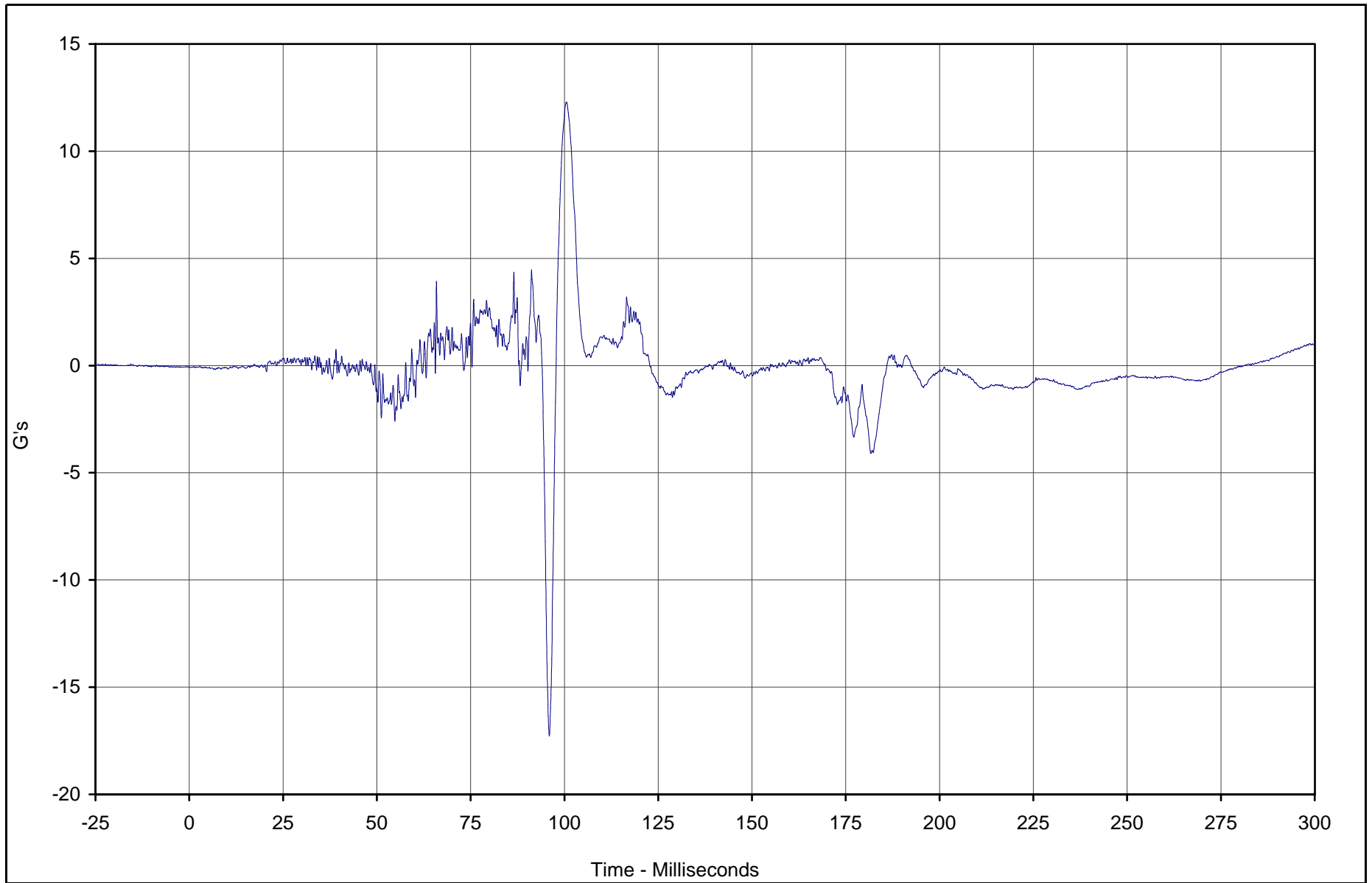


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Head Y	135	FIL	G's	12.3	100.6	-17.3	96.0	1000



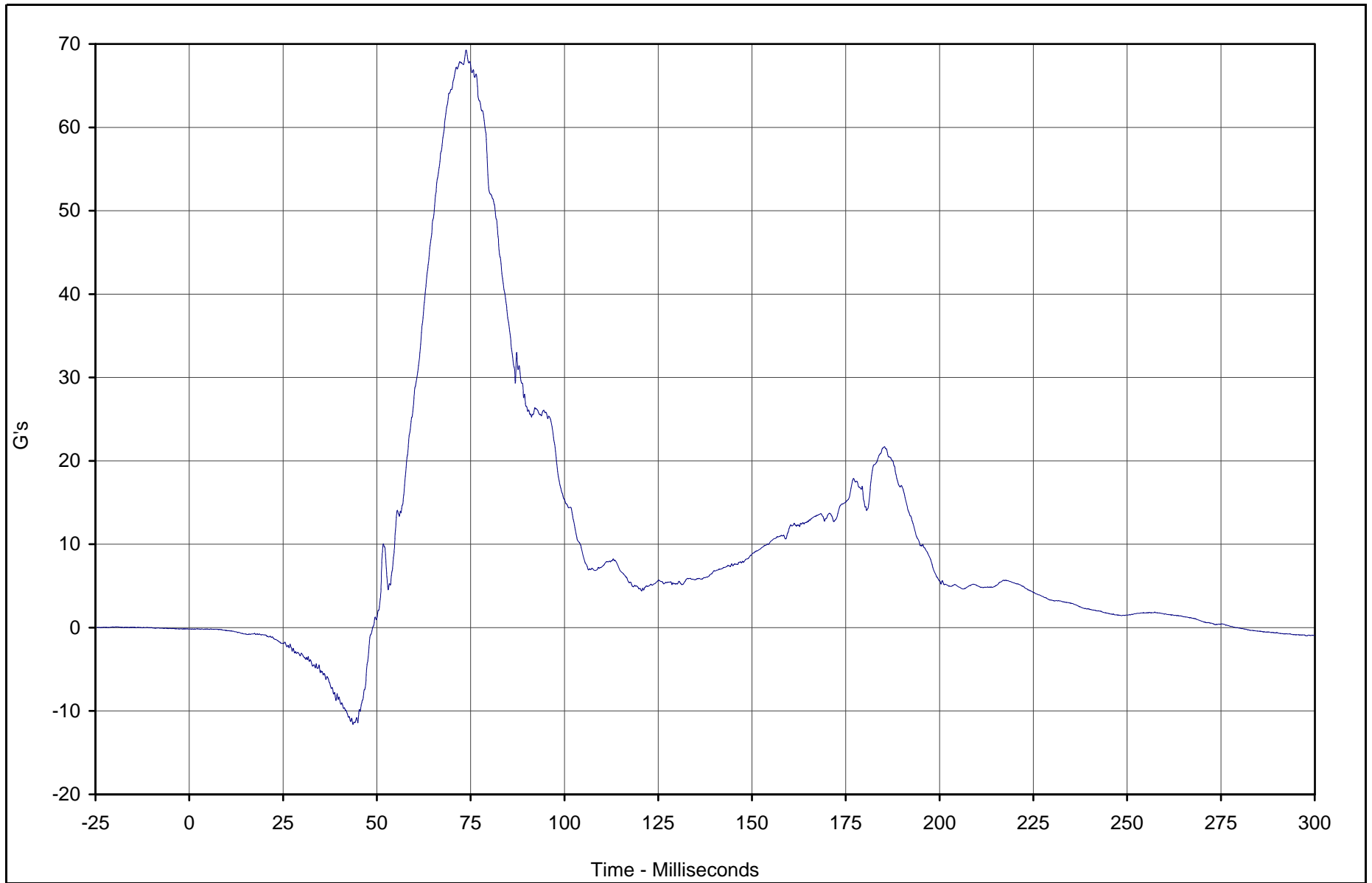
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

F3-3



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Head Z	136	FIL	G's	69.3	73.8	-11.6	43.6	1000



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

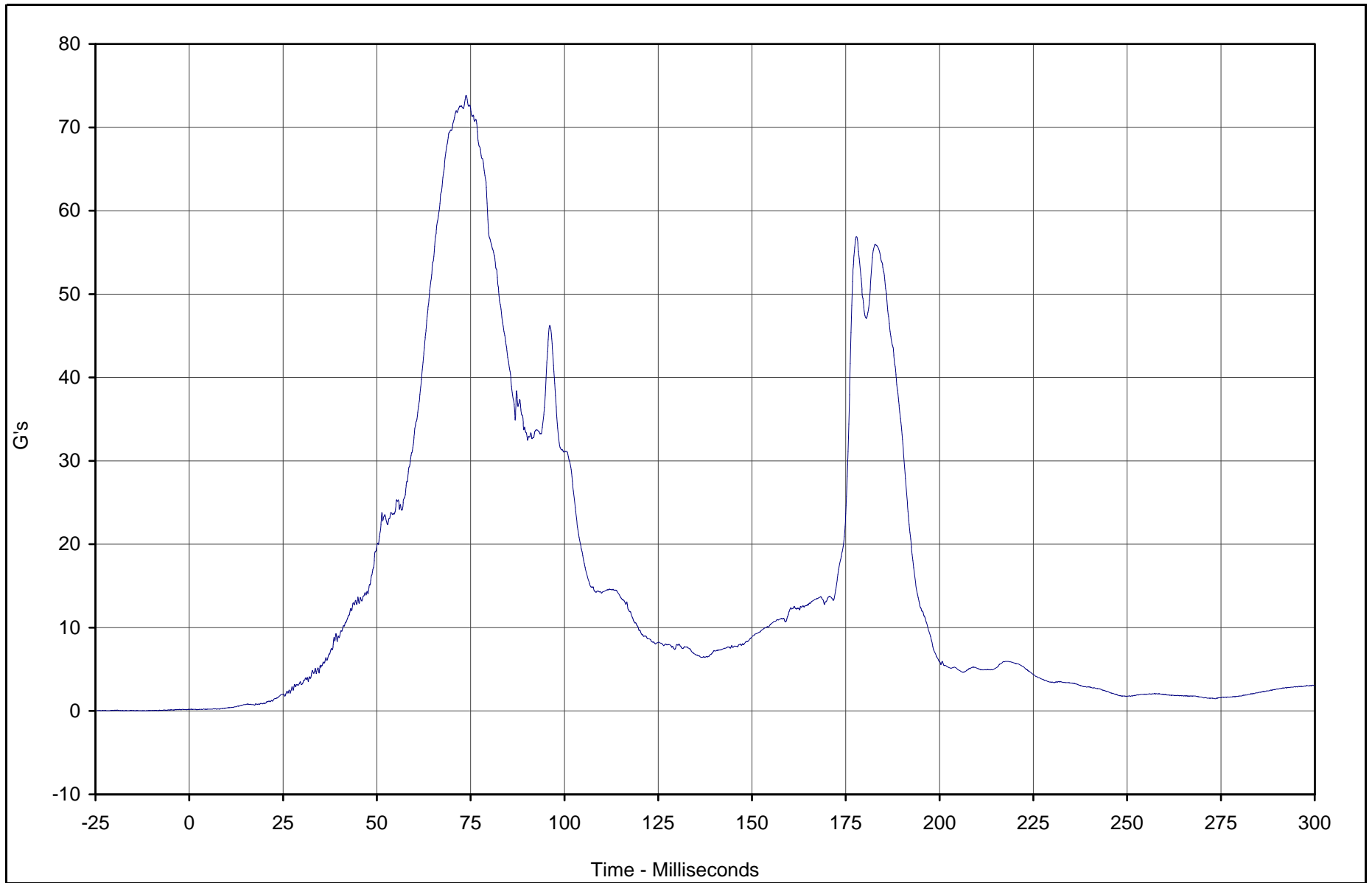
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

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F3-4



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Head Resultant	134	RES	G's	73.8	73.8	0.2	2.0	1000



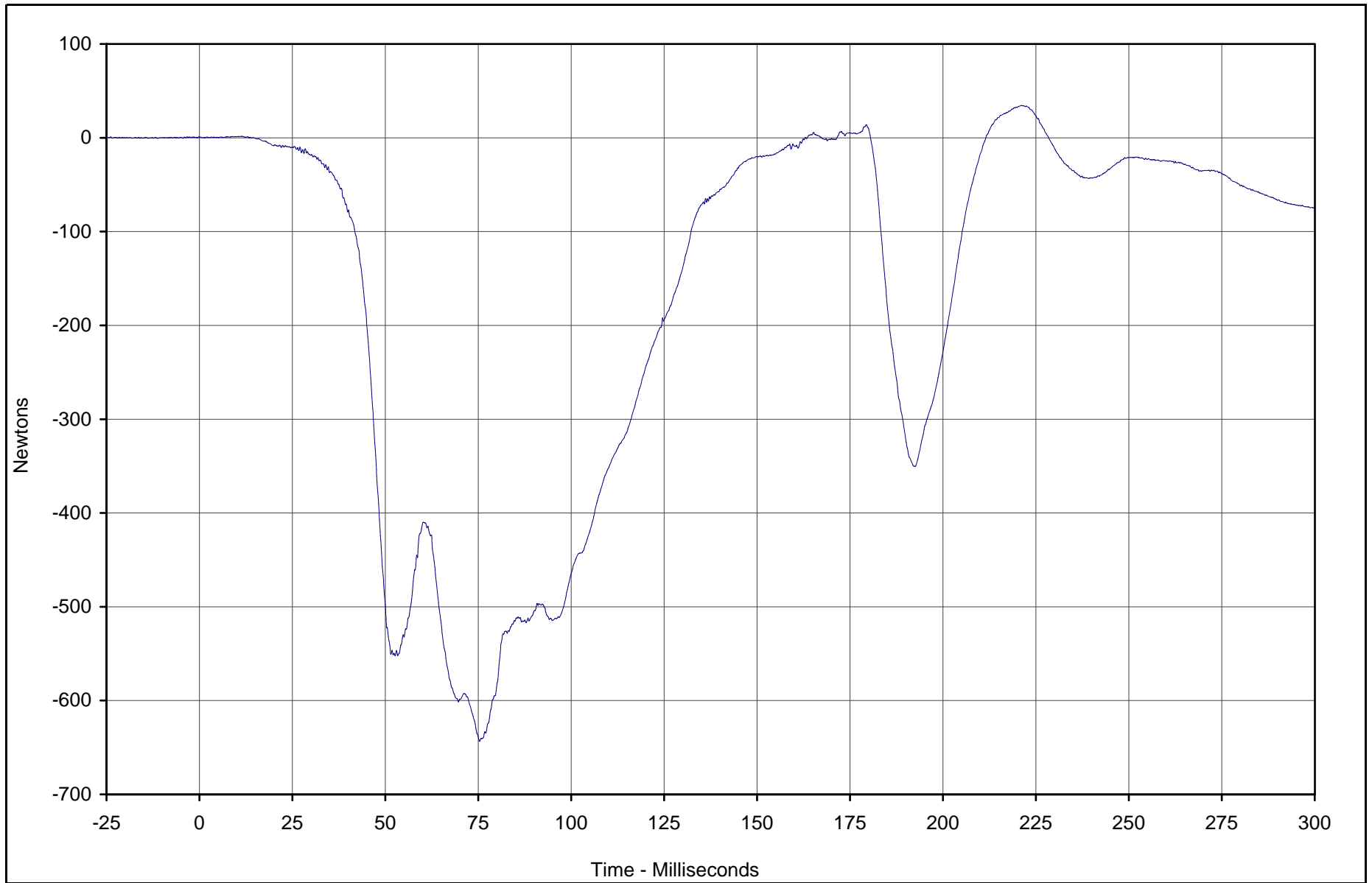
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Upper Neck Force X	137	FIL	Newtons	34.4	221.0	-643.4	75.4	1000

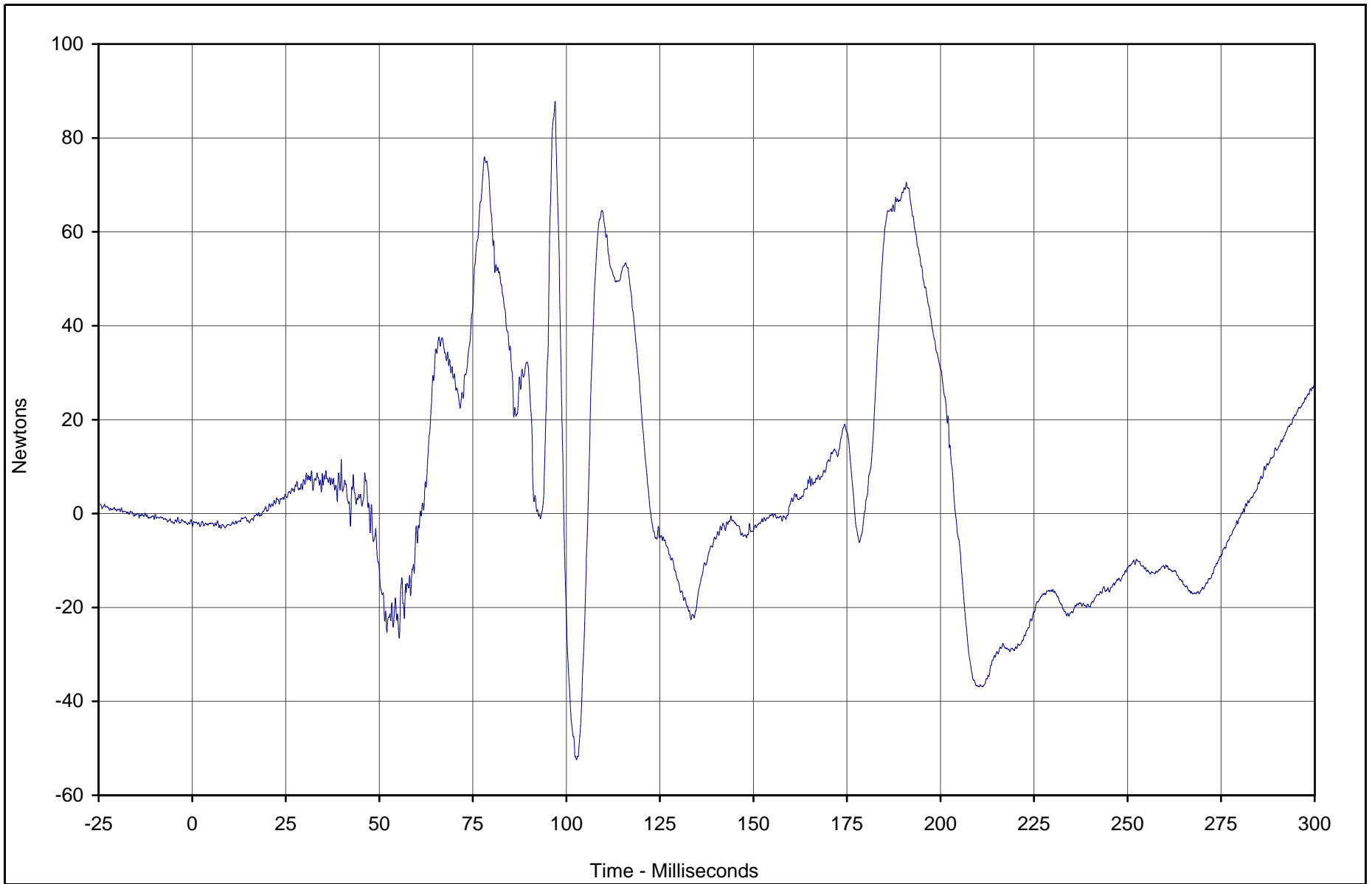


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Upper Neck Force Y	138	FIL	Newtons	87.7	97.0	-52.5	102.7	1000

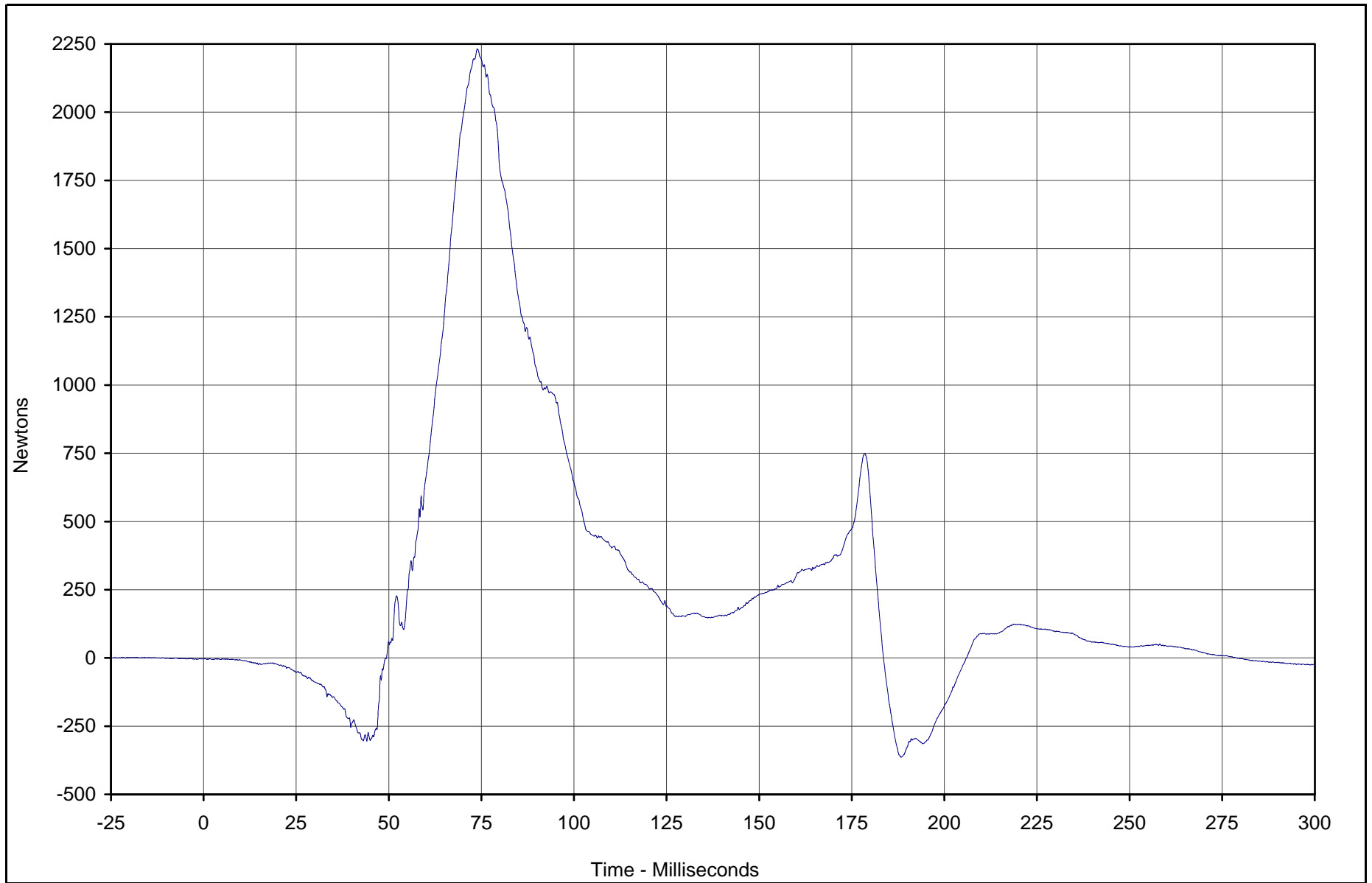


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Upper Neck Force Z	139	FIL	Newtons	2231.7	73.9	-363.2	188.3	1000

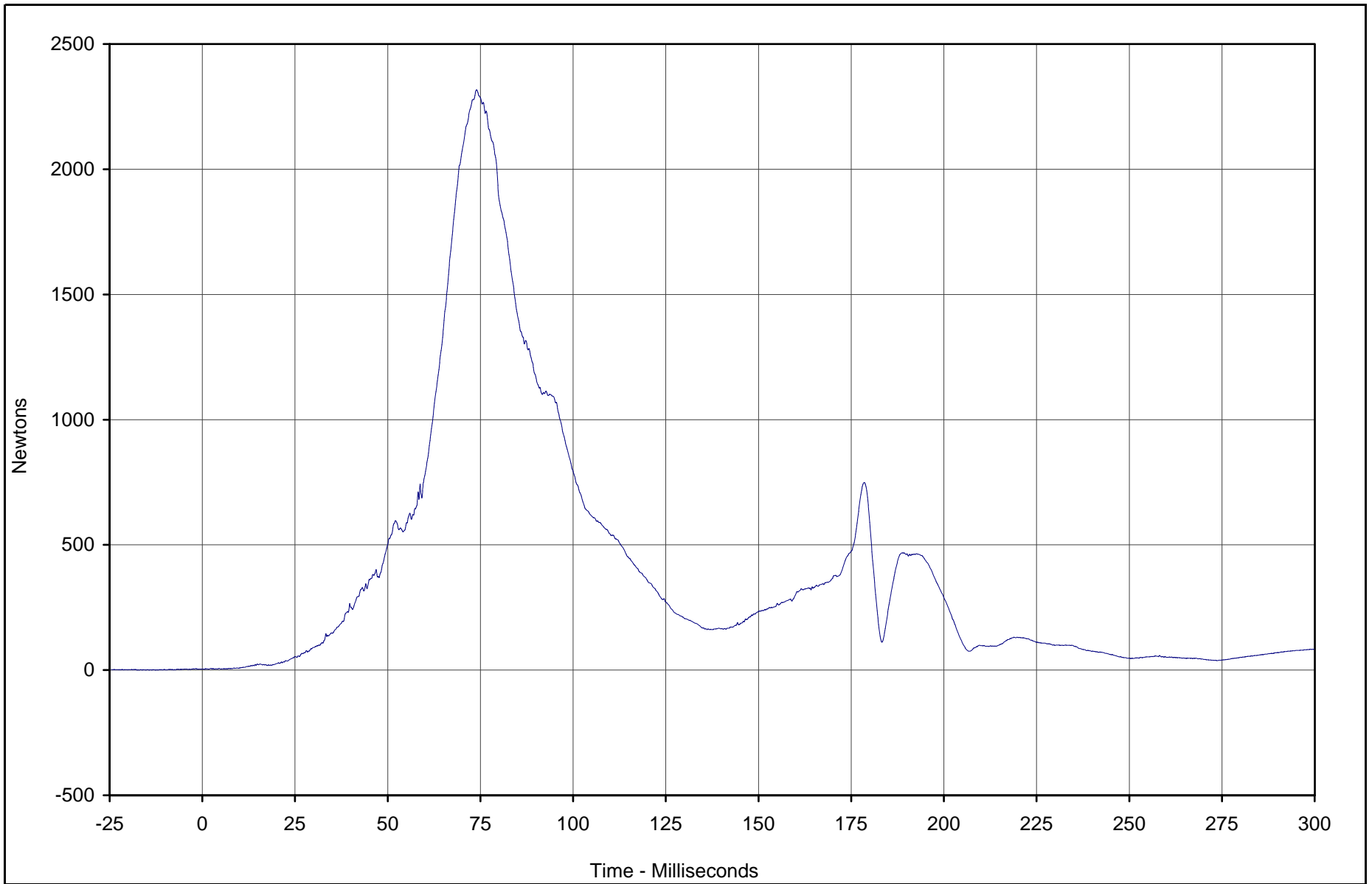


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Upper Neck Force Res.	137	RES	Newtons	2316.9	74.0	3.4	0.6	1000



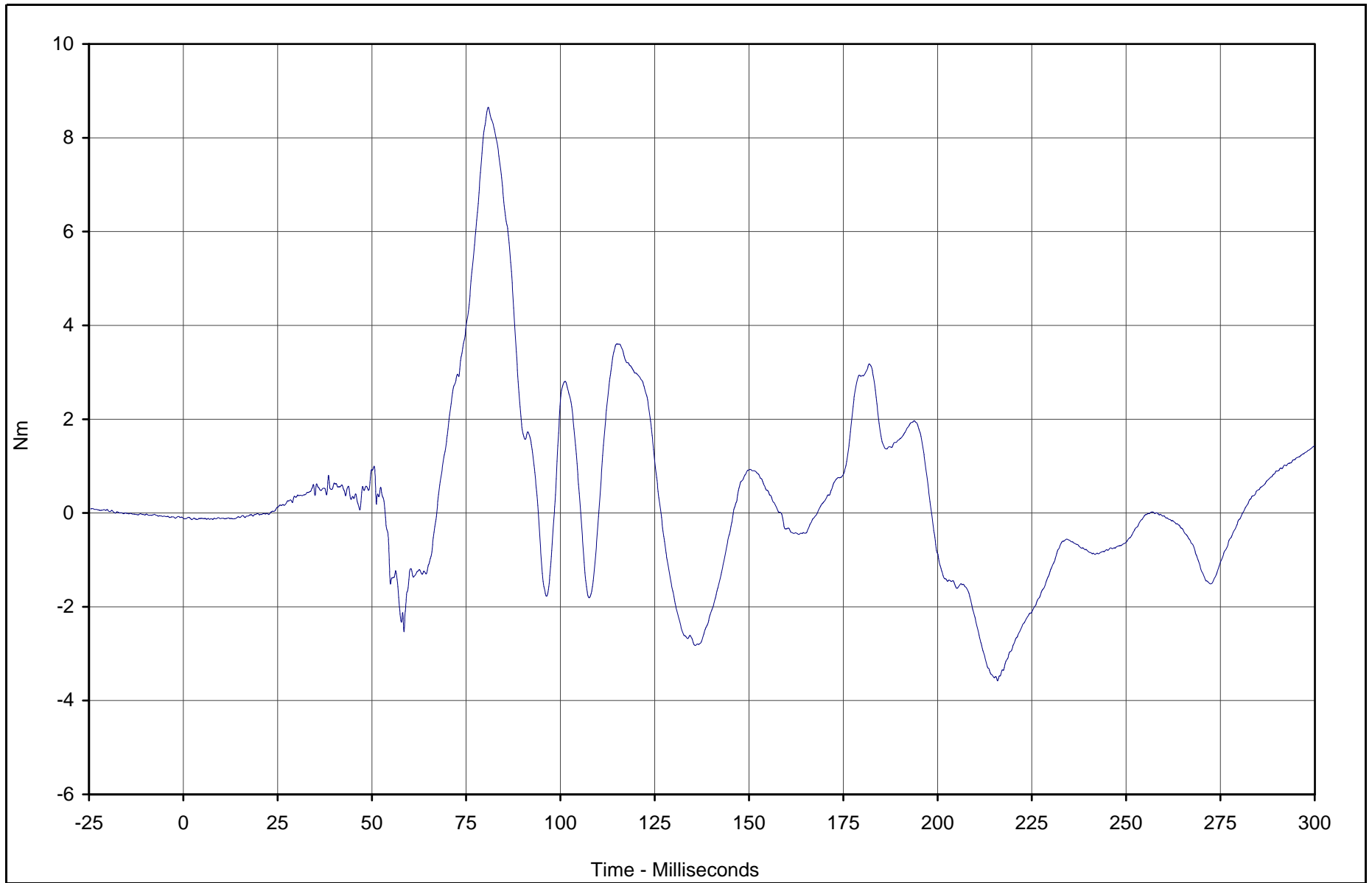
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

F3-9



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Upper Neck Moment X	140	FIL	Nm	8.6	80.9	-3.6	215.9	600



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

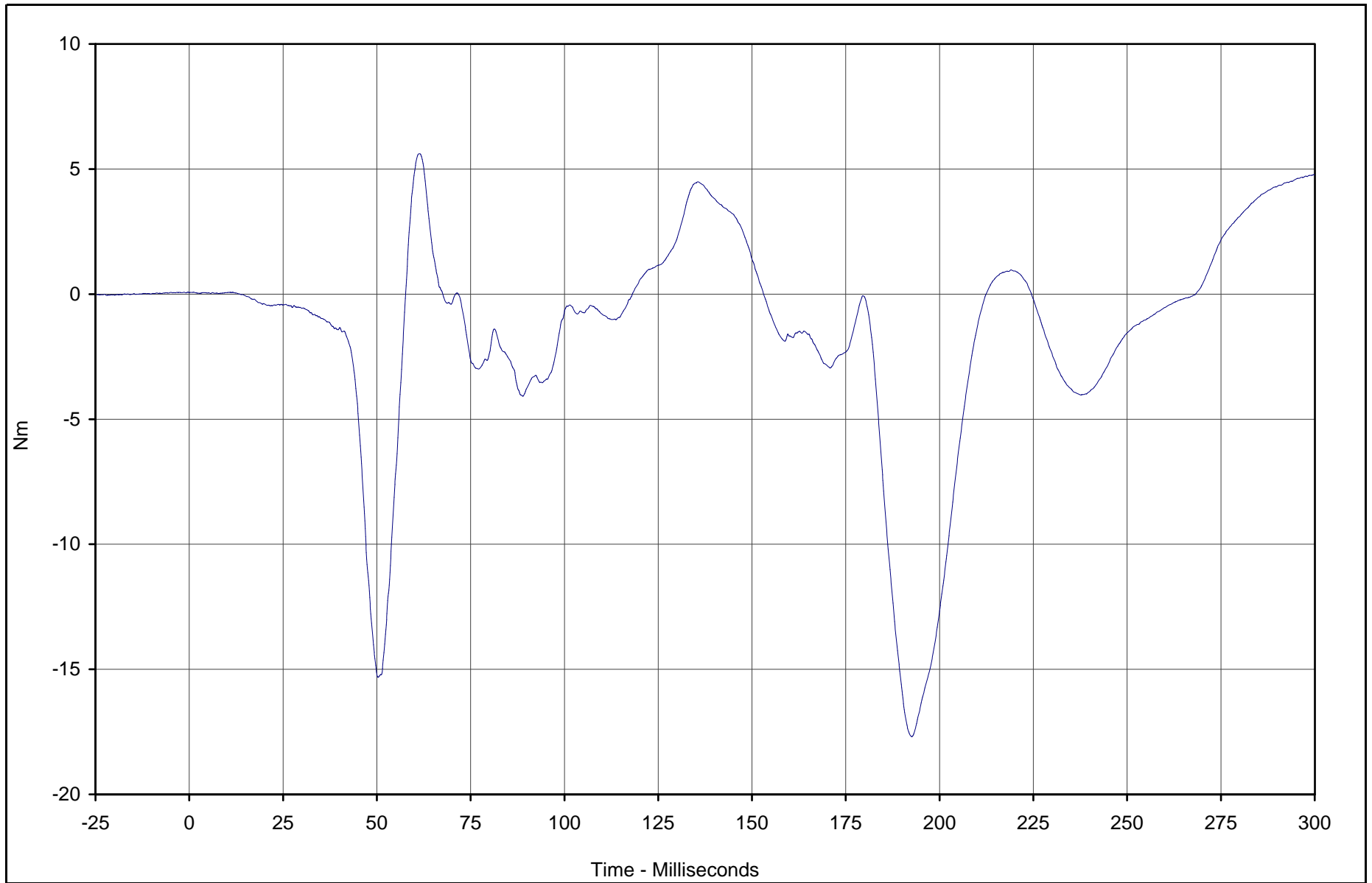
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-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	5.6	61.4	-17.7	192.6	600



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

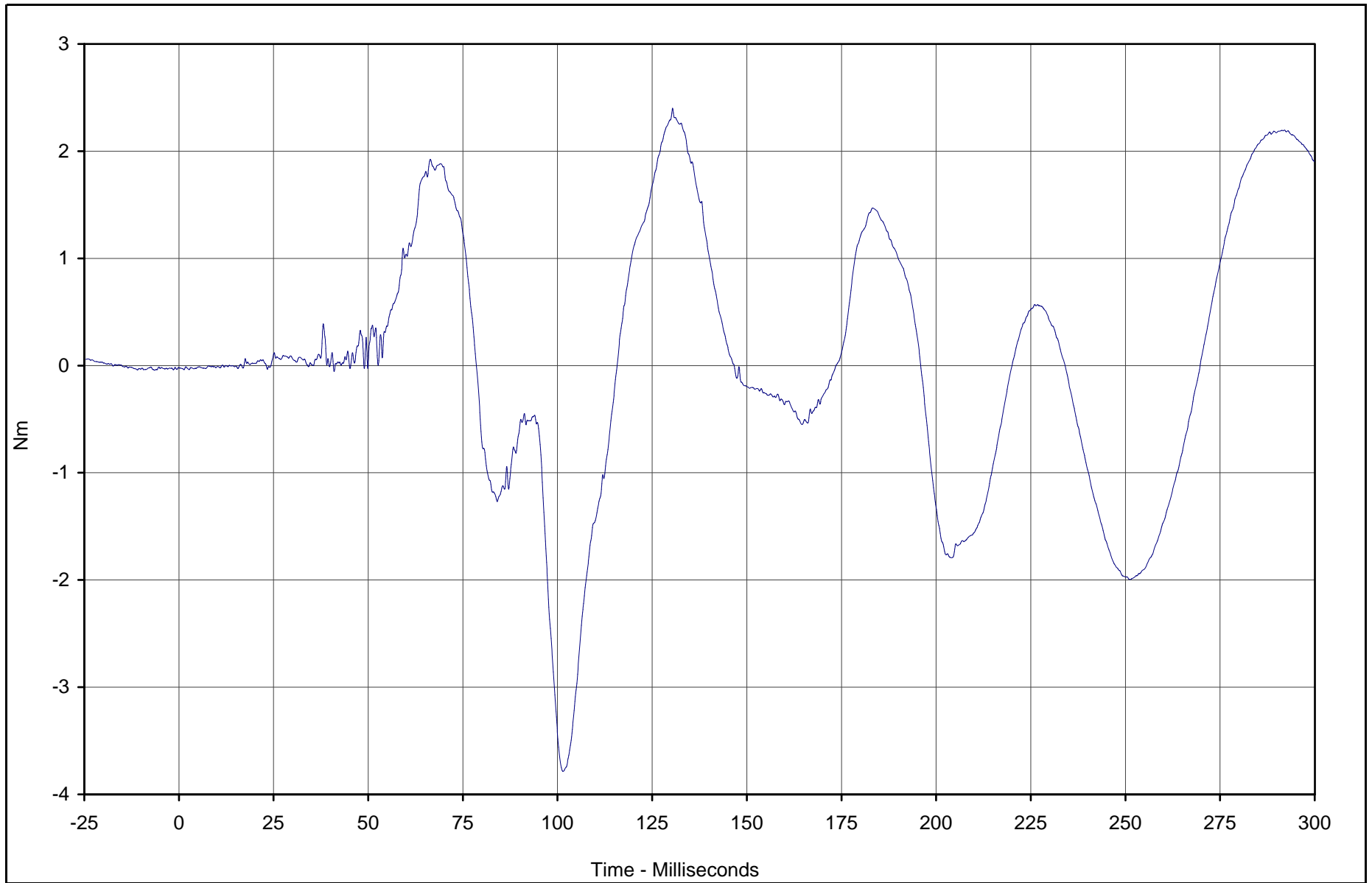
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-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	2.4	130.4	-3.8	101.4	600



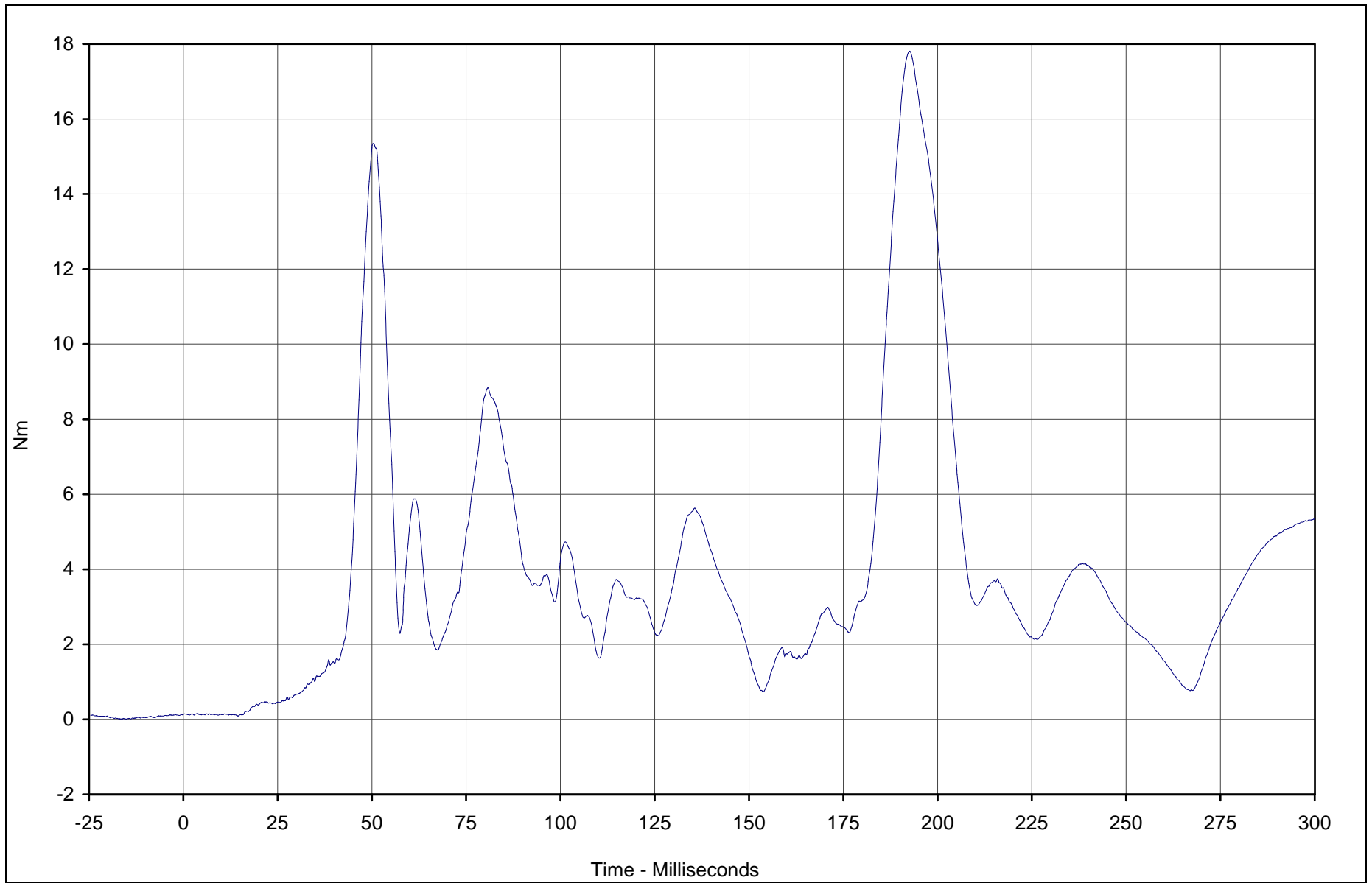
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Upper Neck Mom Res.	140	RES	Nm	17.8	192.6	0.1	14.5	600

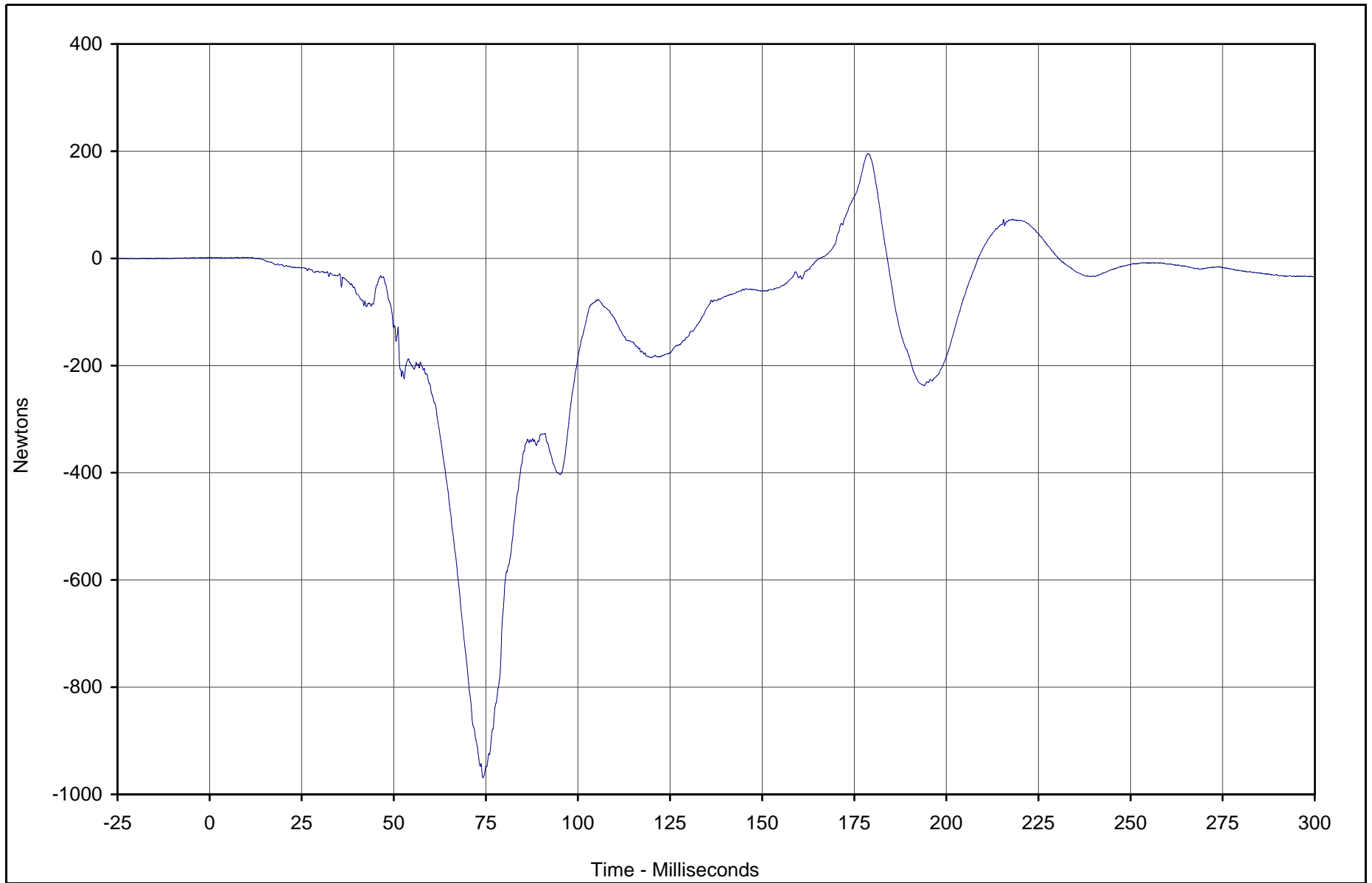


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Lower Neck Force X	143	FIL	Newtons	195.3	178.8	-969.0	74.2	1000

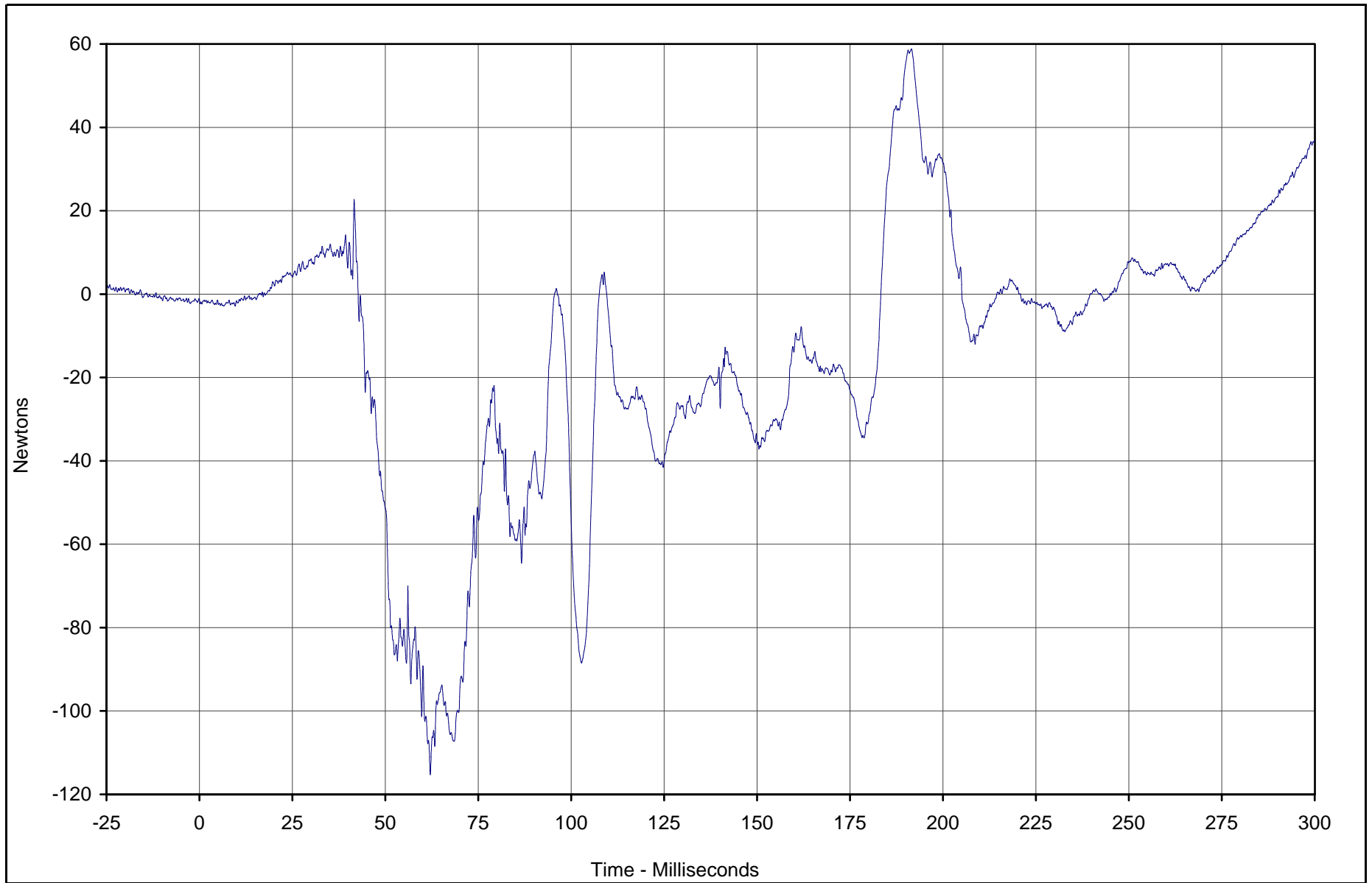


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Lower Neck Force Y	144	FIL	Newtons	58.8	191.5	-115.3	62.1	1000

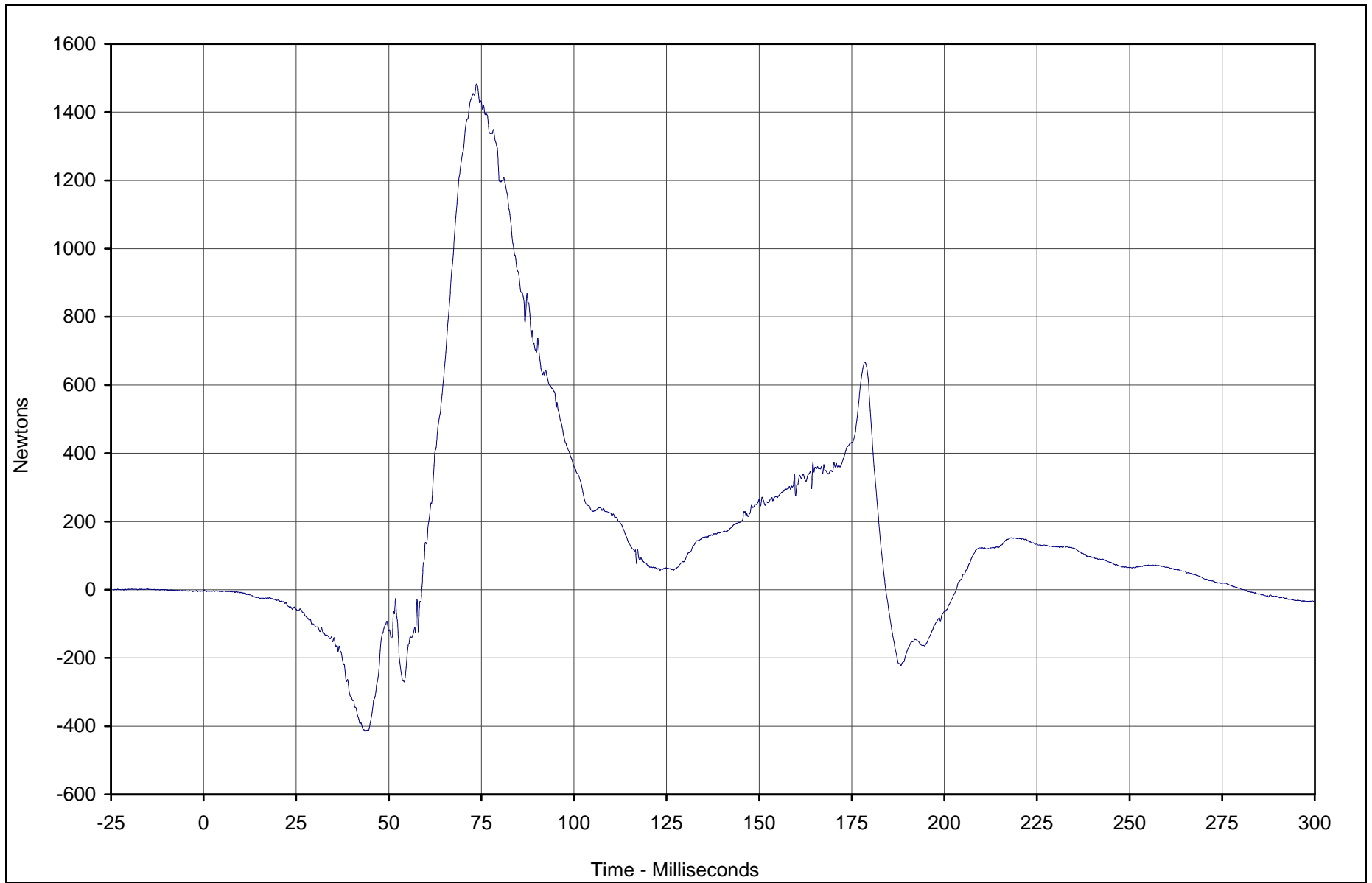


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Lower Neck Force Z	145	FIL	Newtons	1482.5	73.6	-415.5	43.6	1000

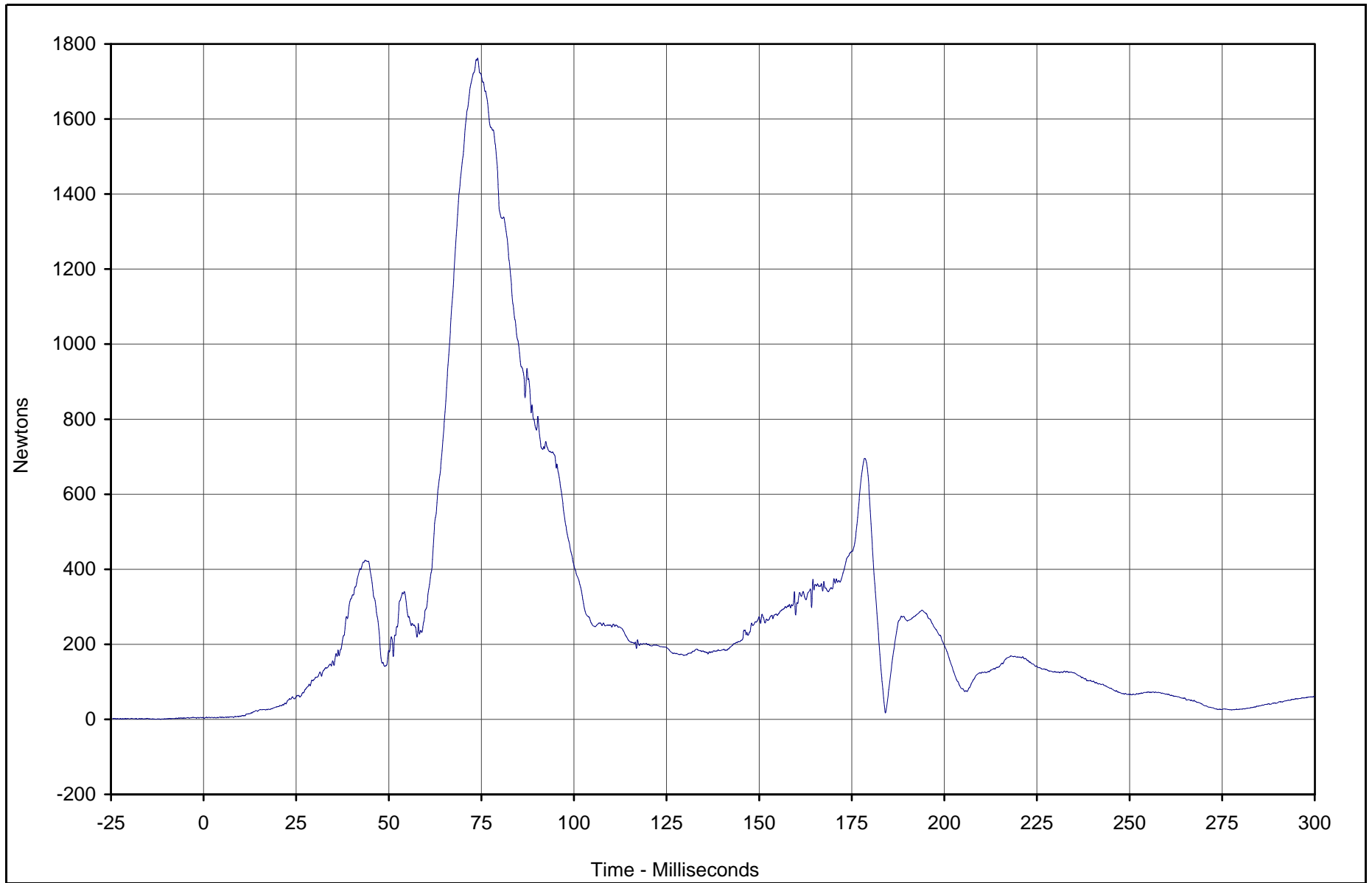


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Lower Neck Force Res.	143	RES	Newtons	1762.1	74.0	2.6	0.1	1000

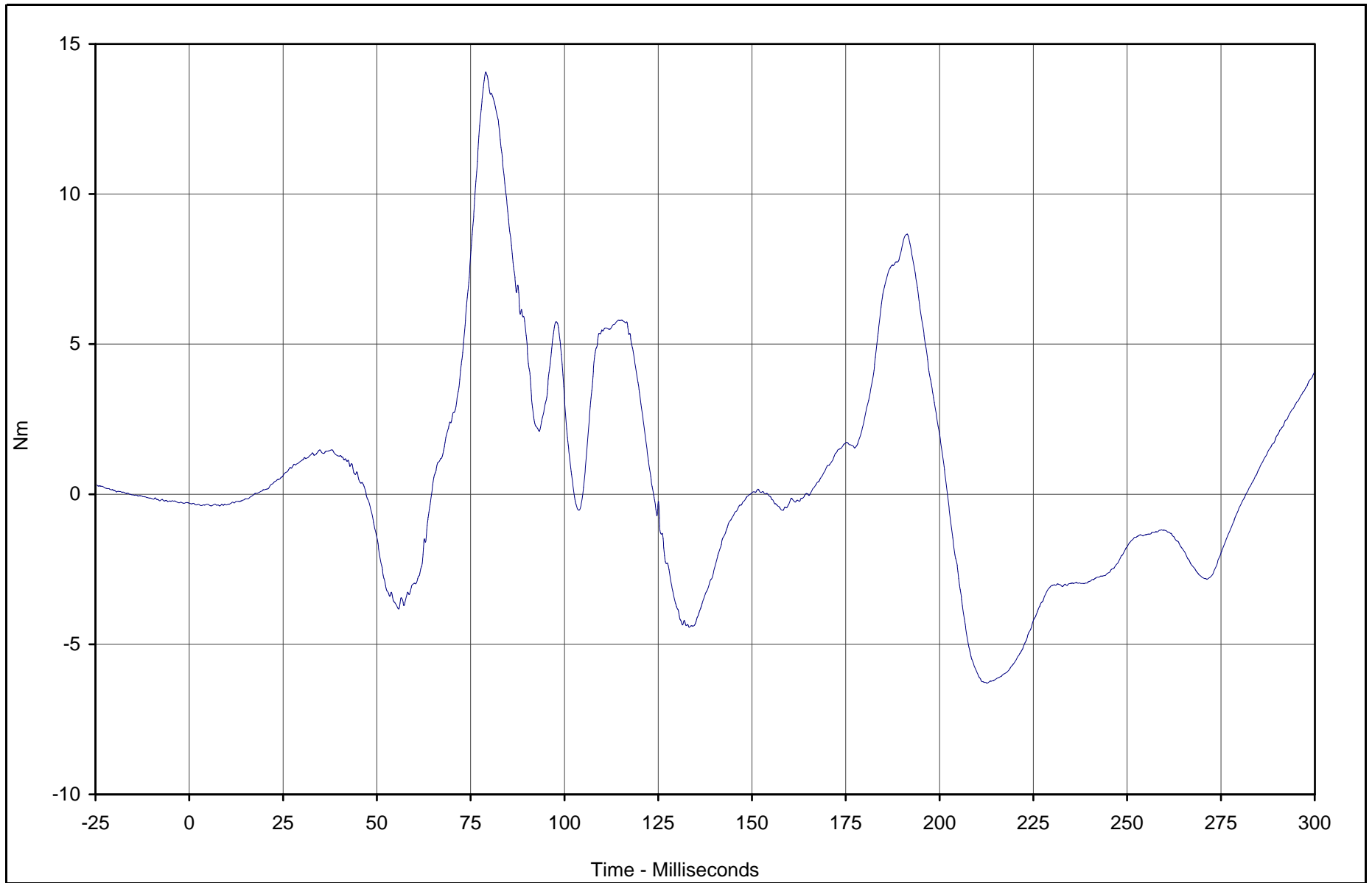


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Lower Neck Moment X	146	FIL	Nm	14.1	79.0	-6.3	212.7	600

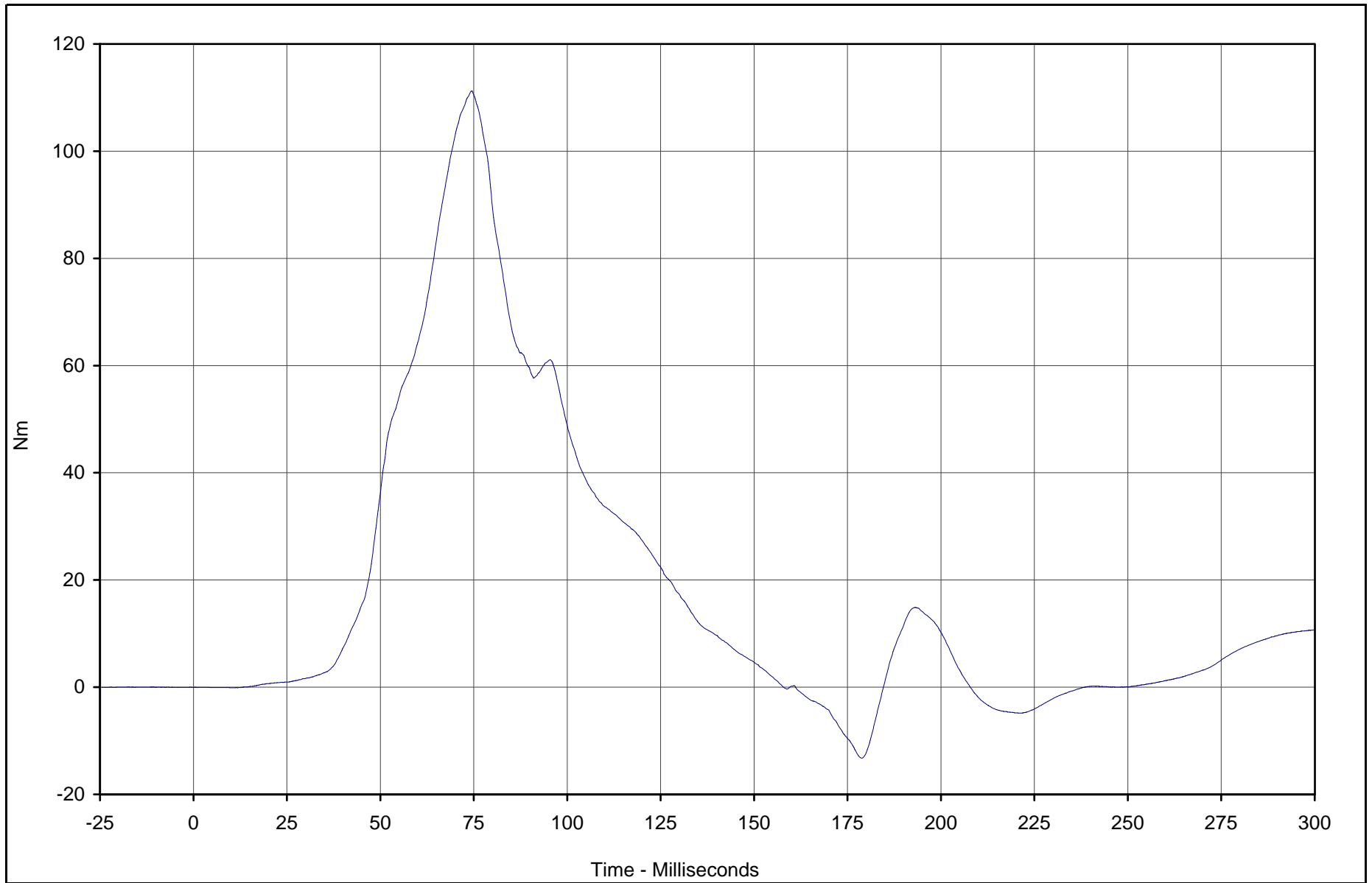


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Lower Neck Moment Y	147	FIL	Nm	111.3	74.4	-13.2	178.8	600



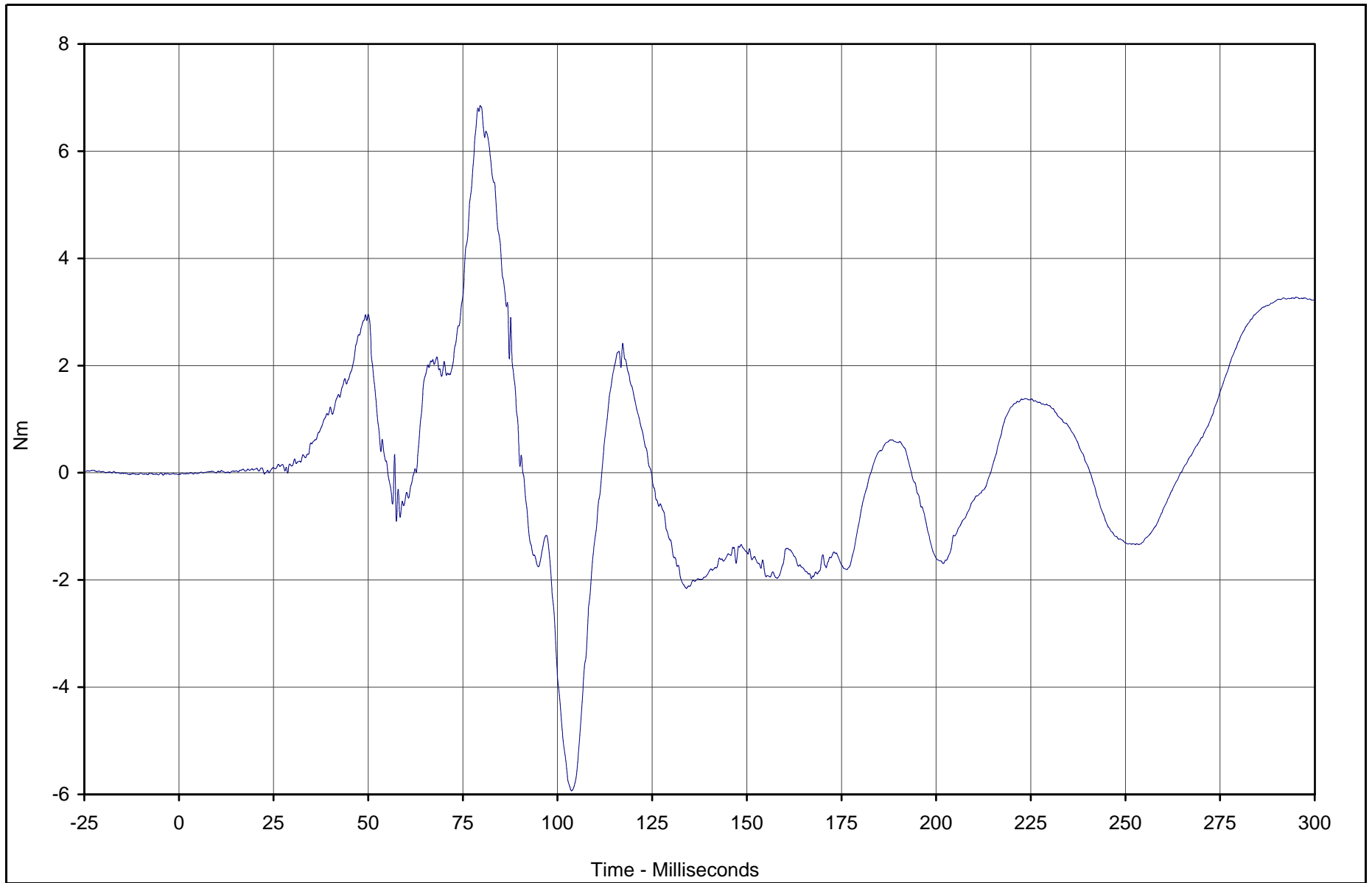
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

F3-19



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Lower Neck Moment Z	148	FIL	Nm	6.9	79.6	-5.9	103.7	600



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

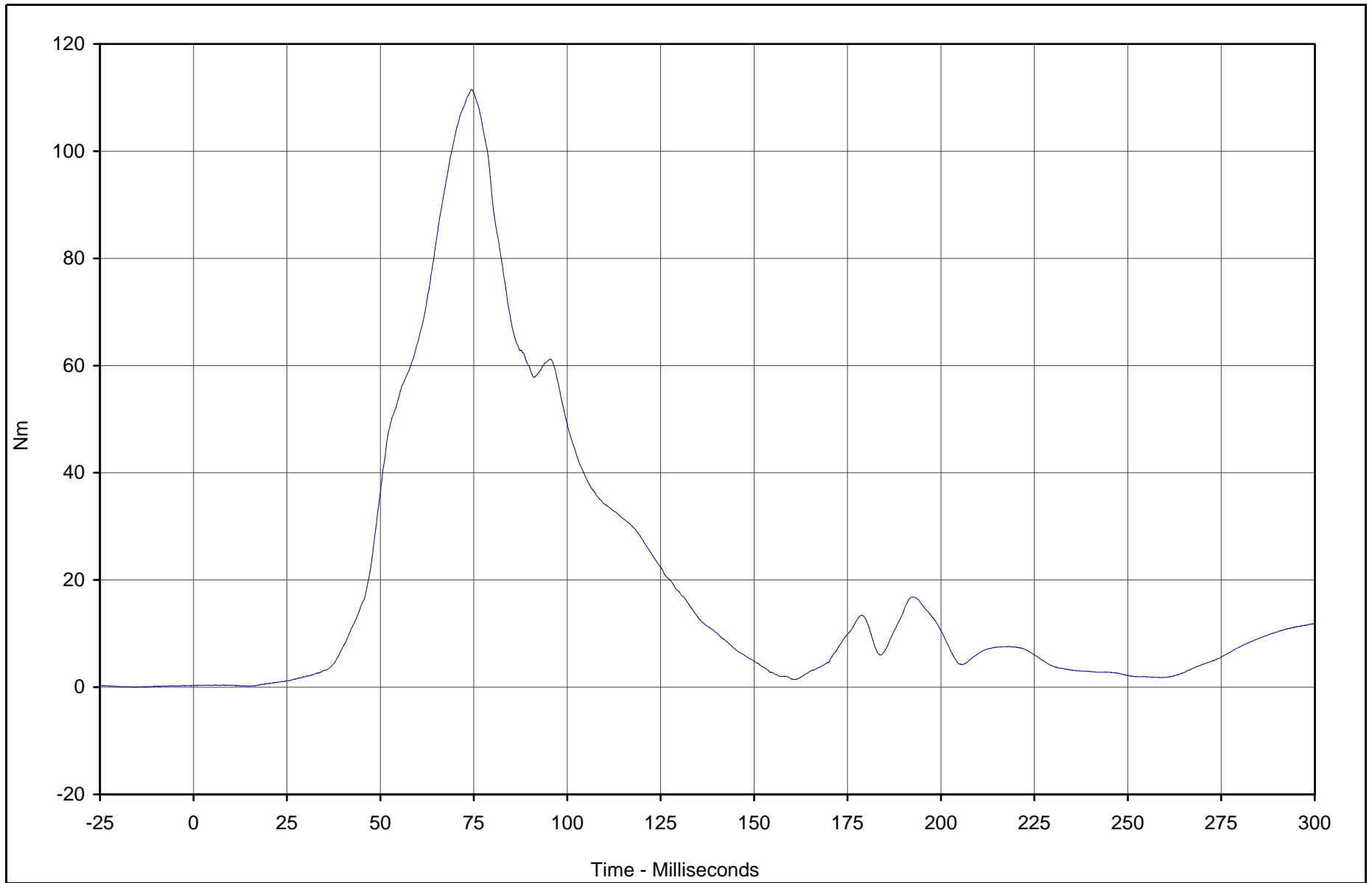
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

F3-20



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Lower Neck Mom Res.	146	RES	Nm	111.5	74.5	0.2	14.8	600



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

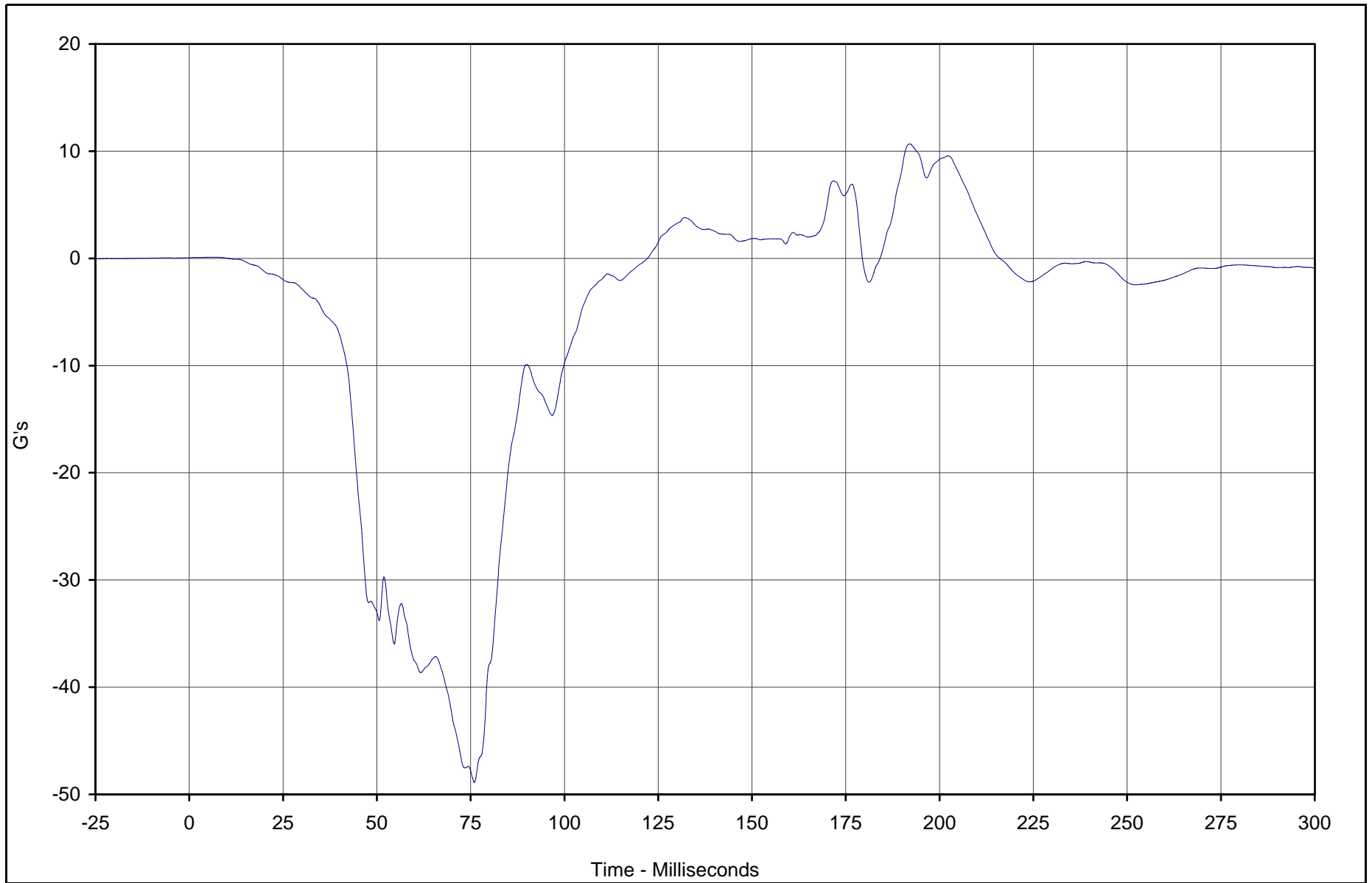
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

F3-21



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Chest X	149	FIL	G's	10.7	192.0	-48.9	76.0	180



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

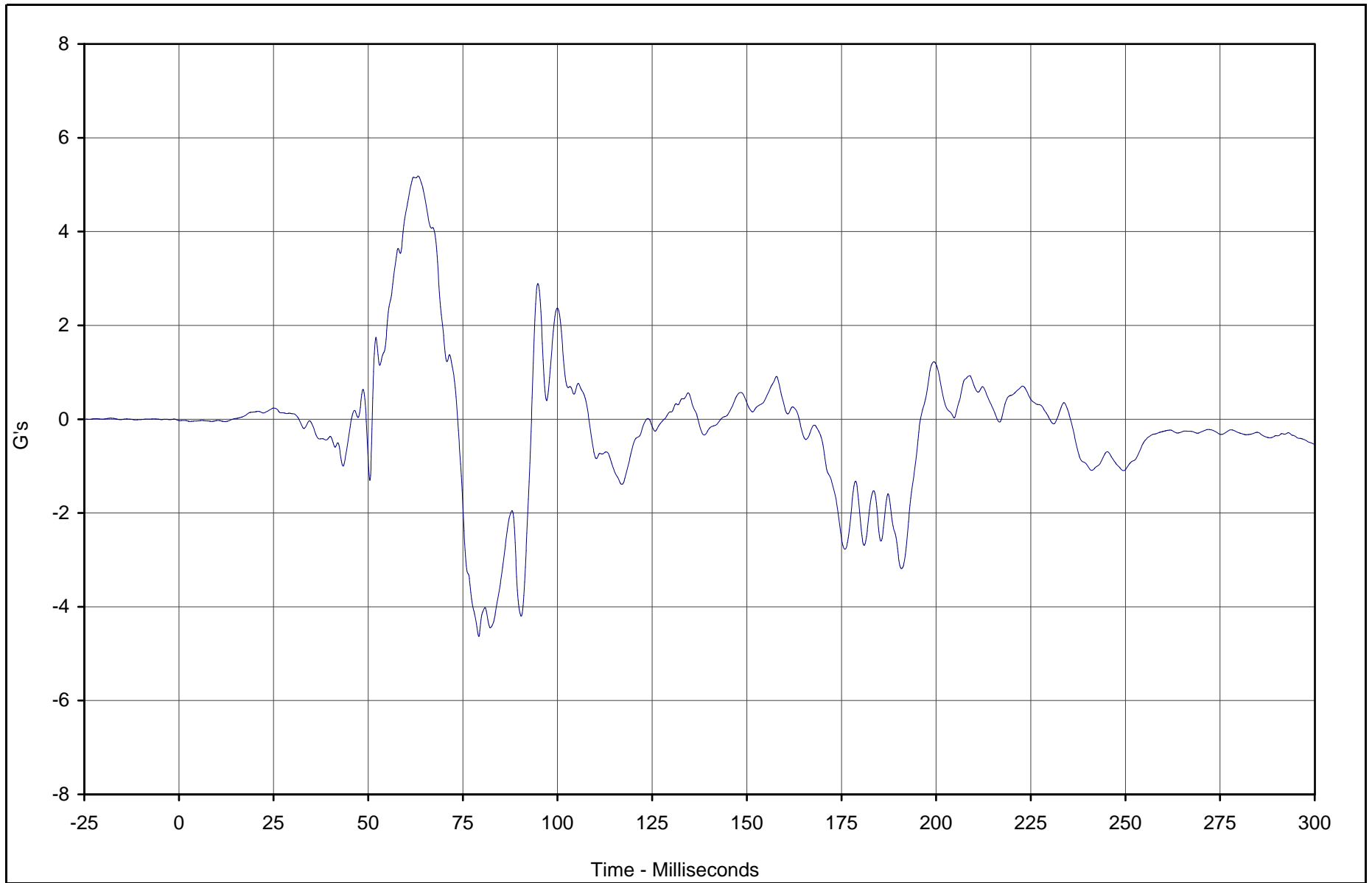
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

F3-22



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Chest Y	150	FIL	G's	5.2	63.2	-4.6	79.2	180



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

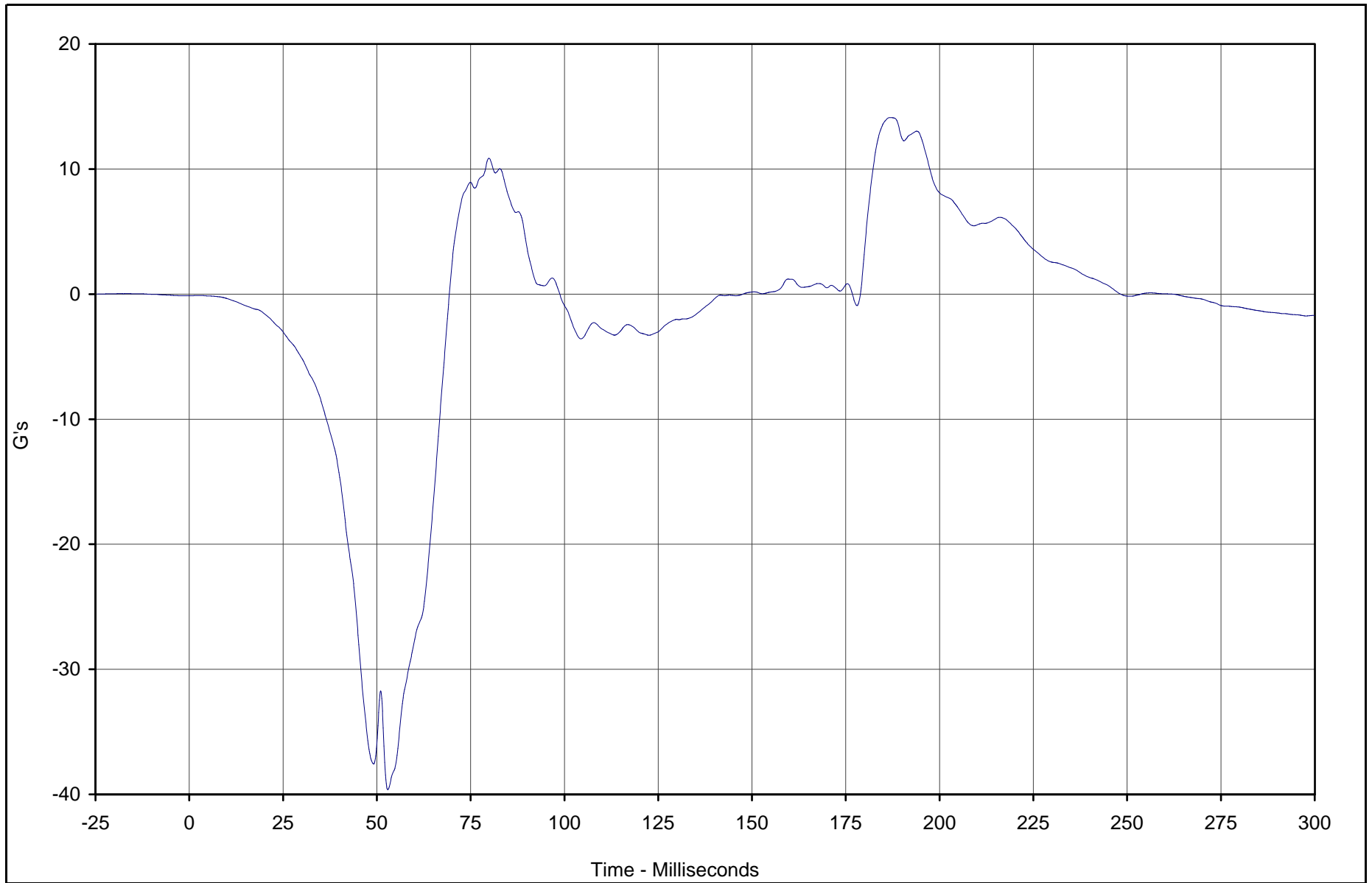
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

F3-23



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Chest Z	151	FIL	G's	14.1	186.9	-39.6	52.9	180



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

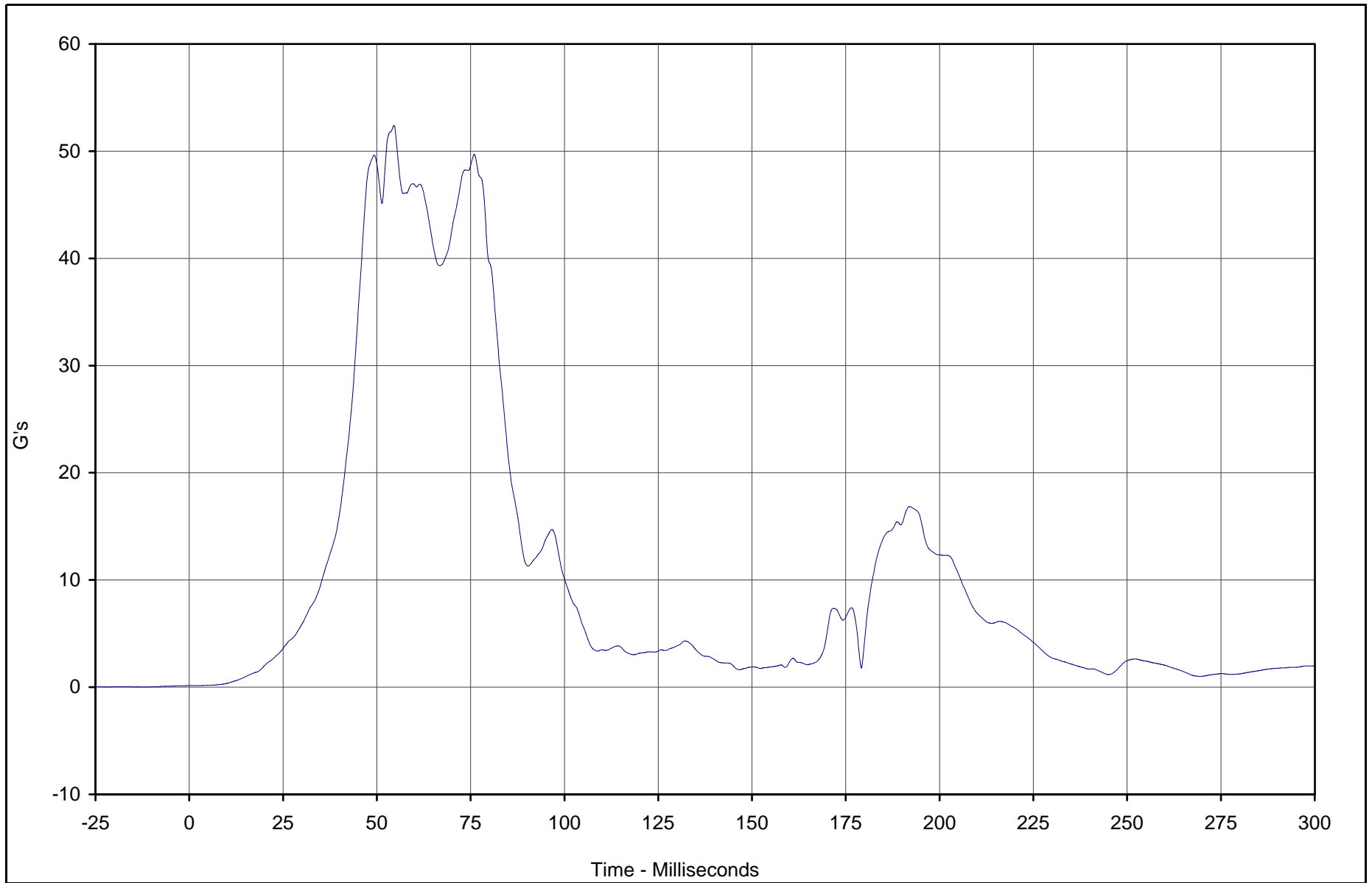
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

F3-24



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Chest Resultant	149	RES	G's	52.4	54.6	0.1	1.7	180



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

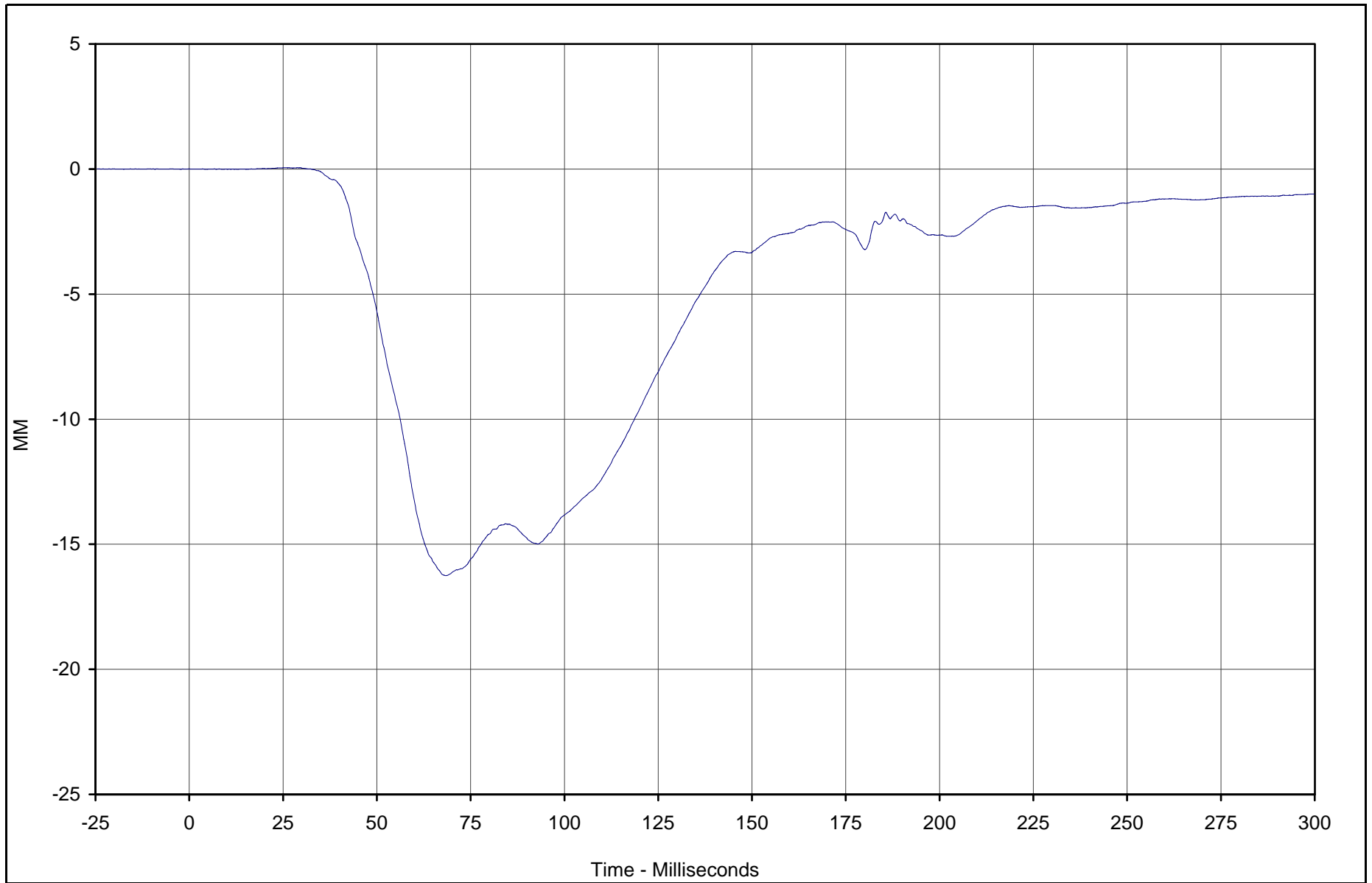
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

F3-25



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Chest Deflection	152	FIL	MM	0.1	25.4	-16.3	68.3	600



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

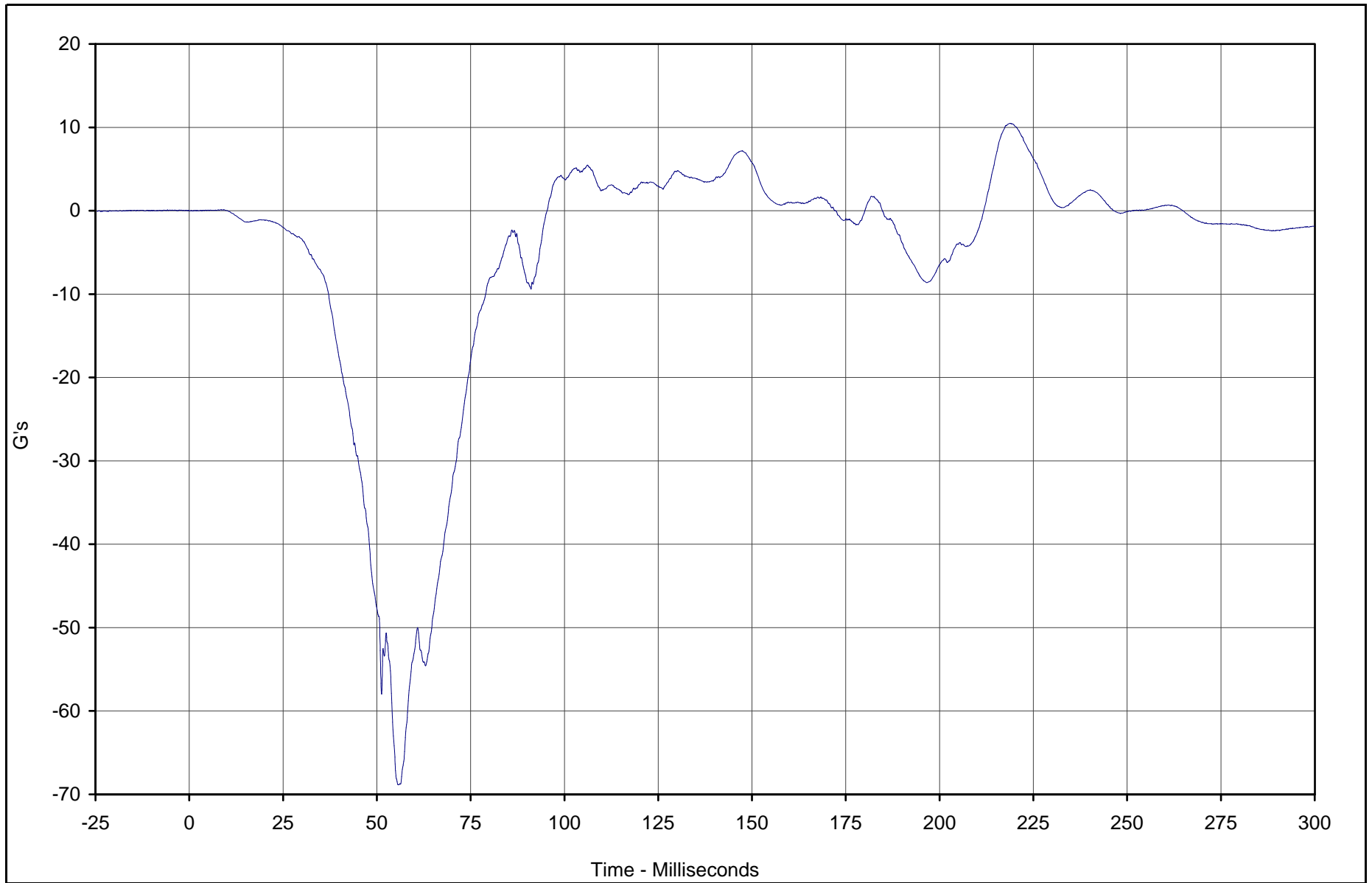
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

F3-26



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Pelvis X	153	FIL	G's	10.5	218.8	-68.9	55.8	1000



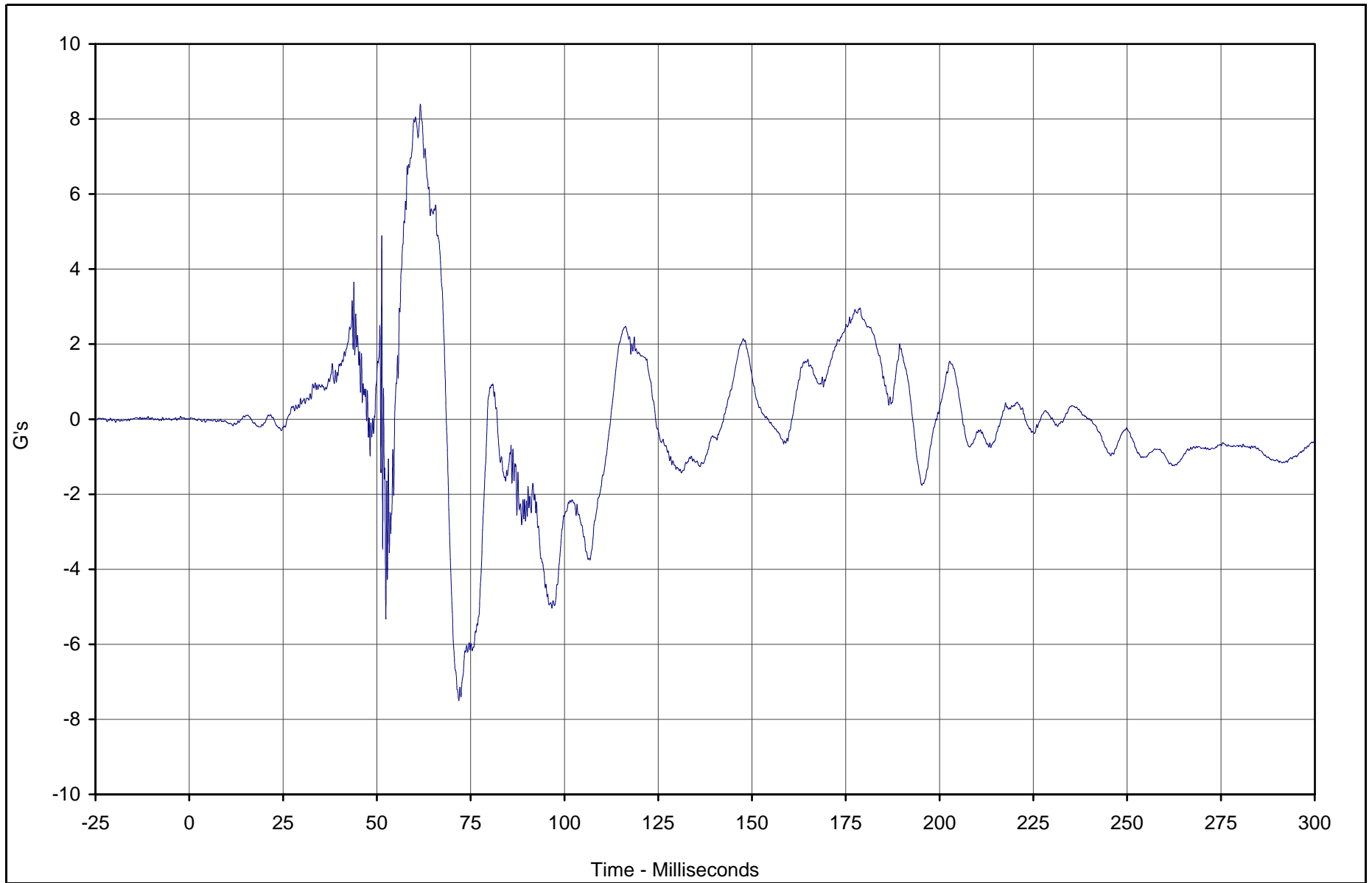
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Pelvis Y	154	FIL	G's	8.4	61.6	-7.5	71.9	1000



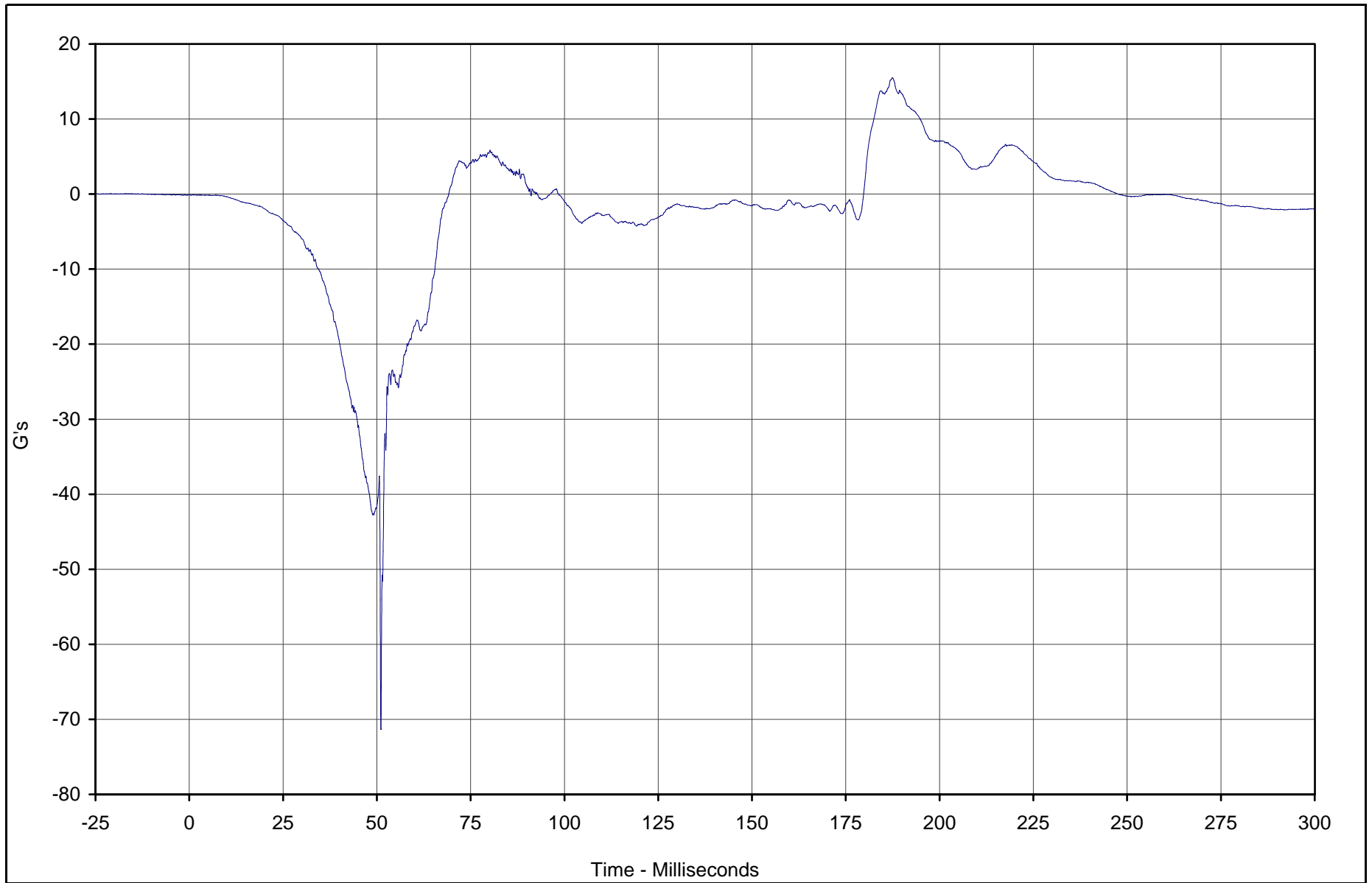
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

F3-28



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Pelvis Z	155	FIL	G's	15.5	187.5	-71.3	51.1	1000



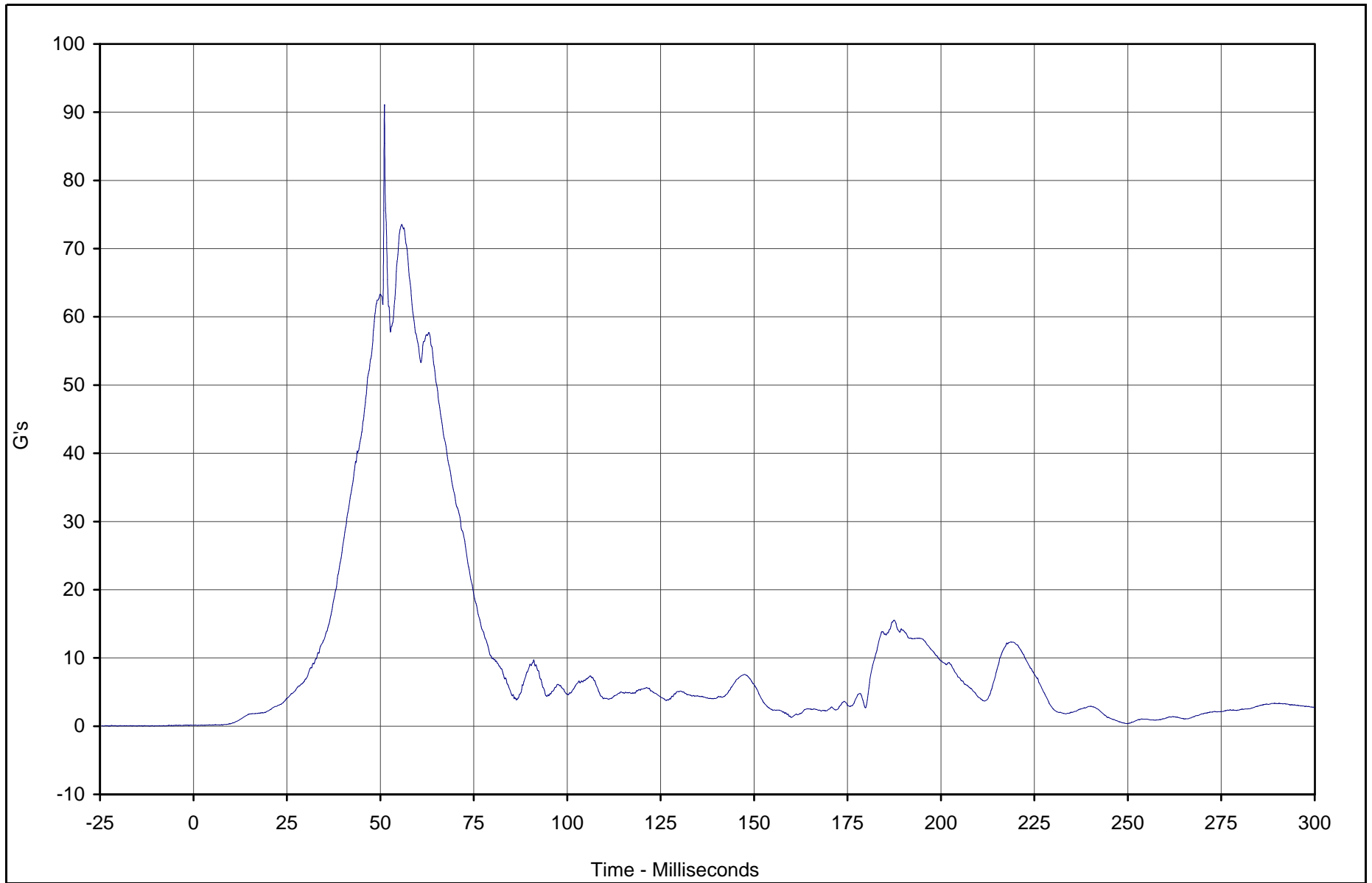
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Pelvis Resultant	153	RES	G's	91.1	51.1	0.1	1.0	1000

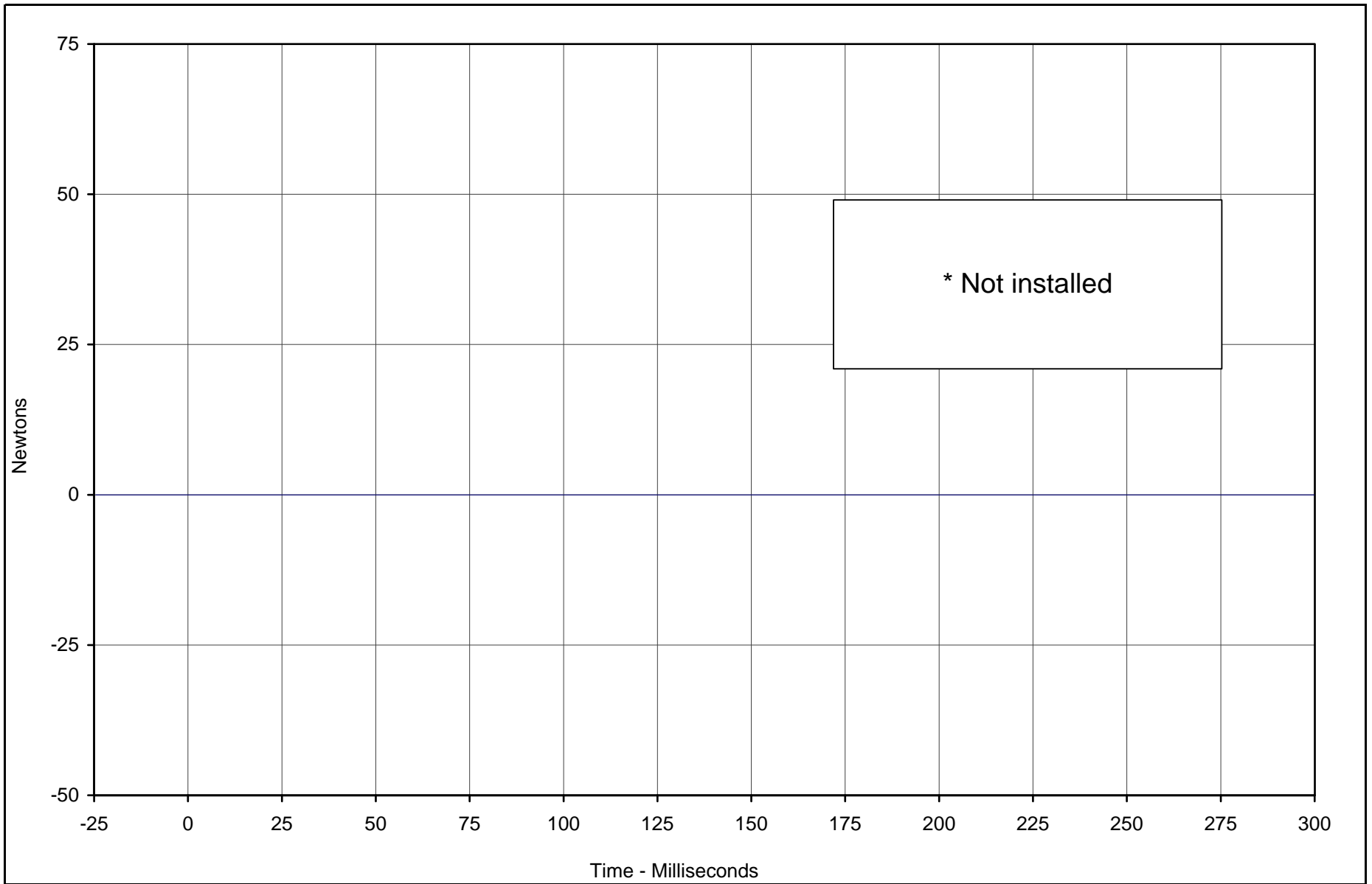


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



* Not installed

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Seat Tether Load	156	FIL	Newtons	0.0	0.0	0.0	0.0	60

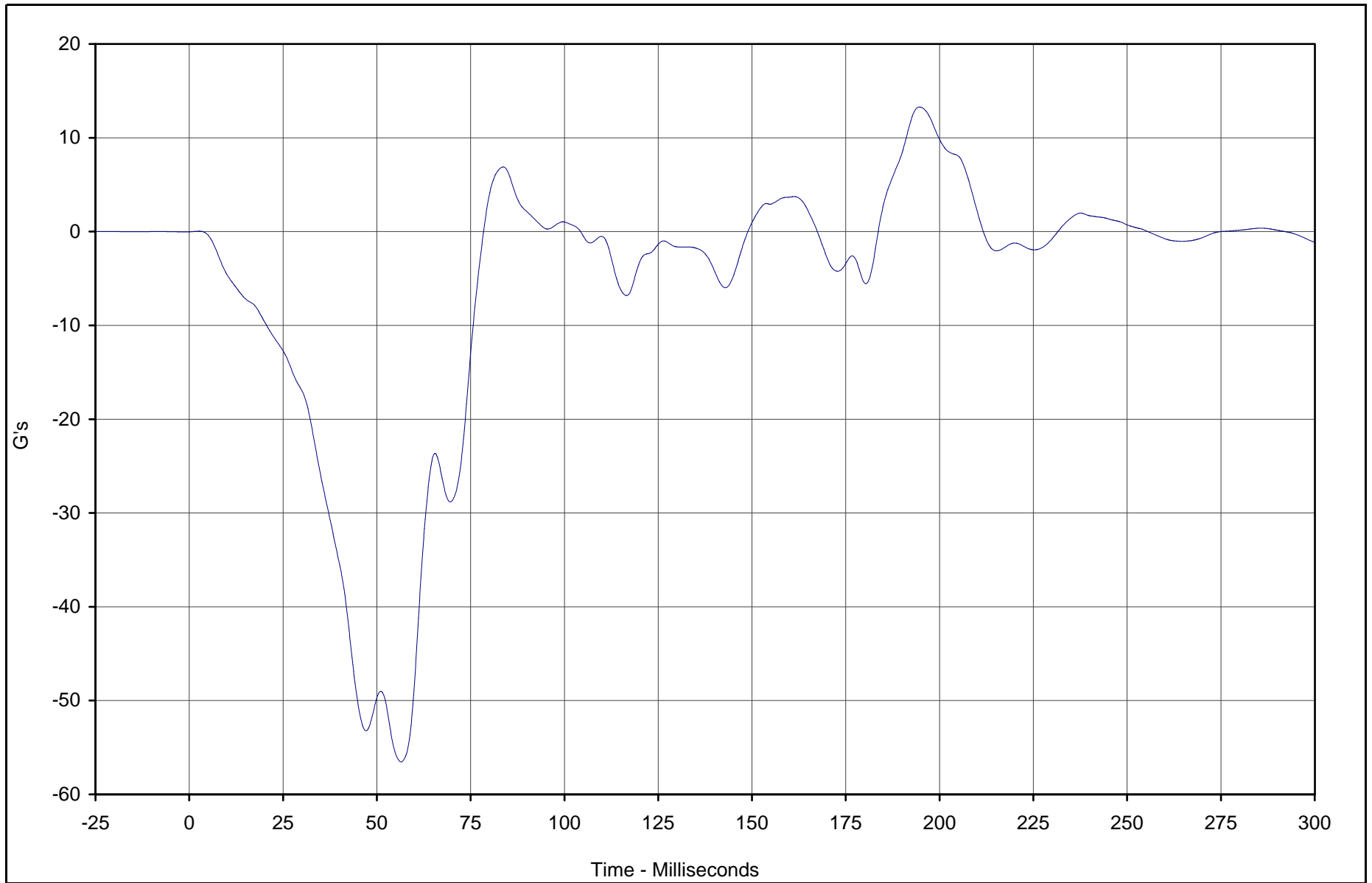


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Car Seat X	157	FIL	G's	13.3	194.6	-56.5	56.5	60



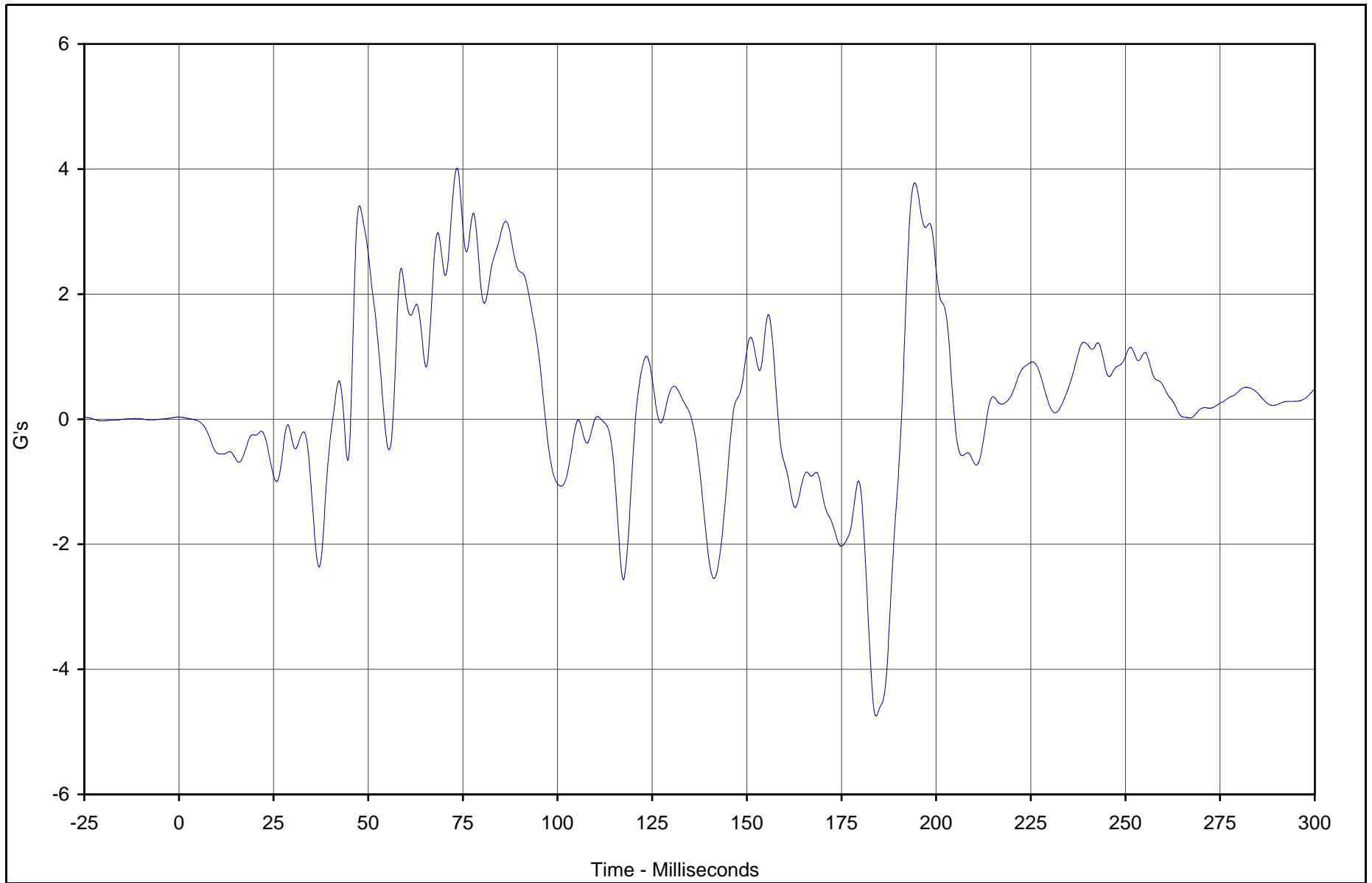
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

F3-32



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Car Seat Y	158	FIL	G's	4.0	73.5	-4.7	184.1	60



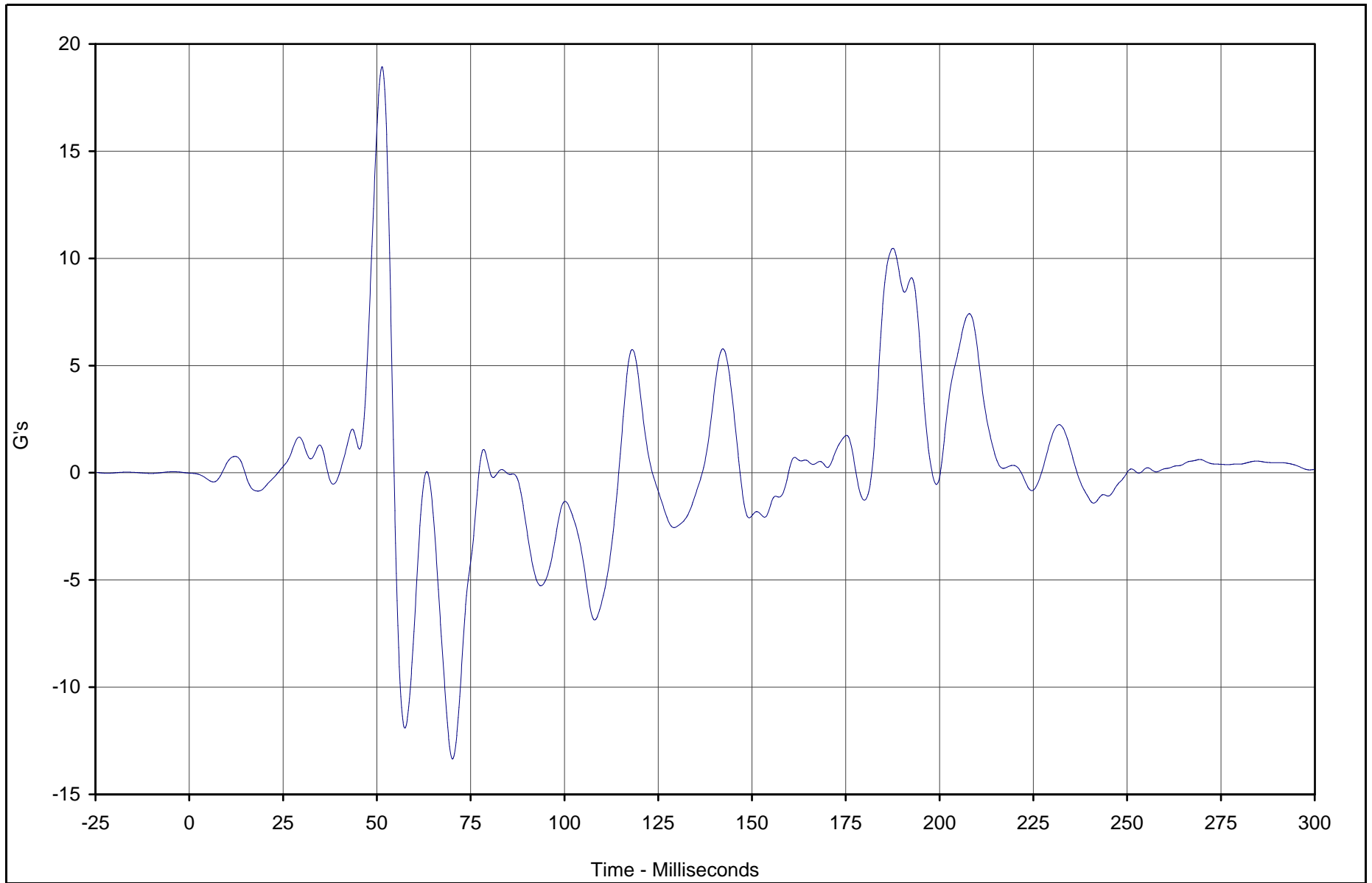
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Car Seat Z	159	FIL	G's	18.9	51.4	-13.4	70.2	60

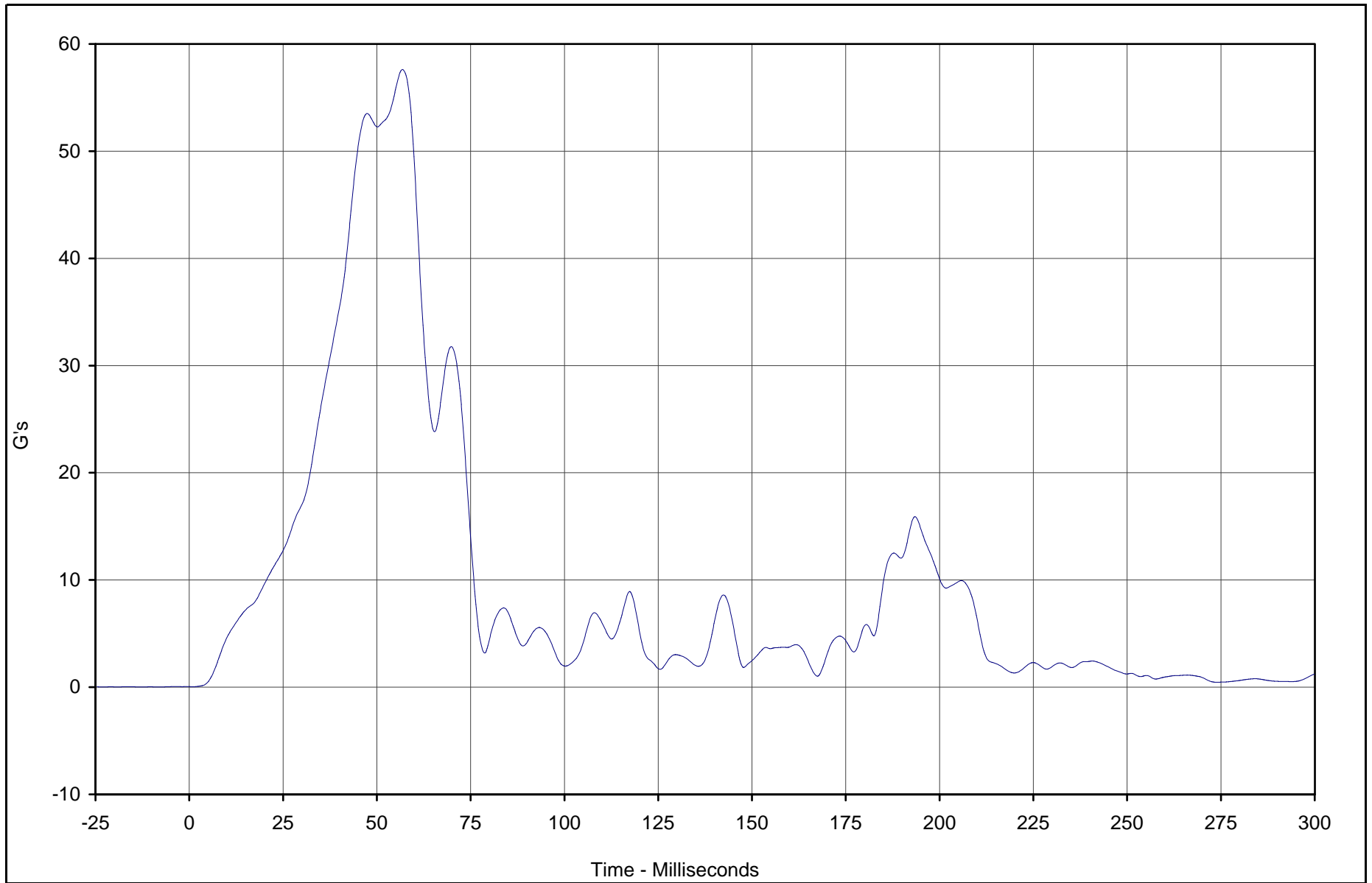


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Right Rear (3 Yr.) Car Seat Resultant	157	RES	G's	57.6	56.8	0.0	1.1	60

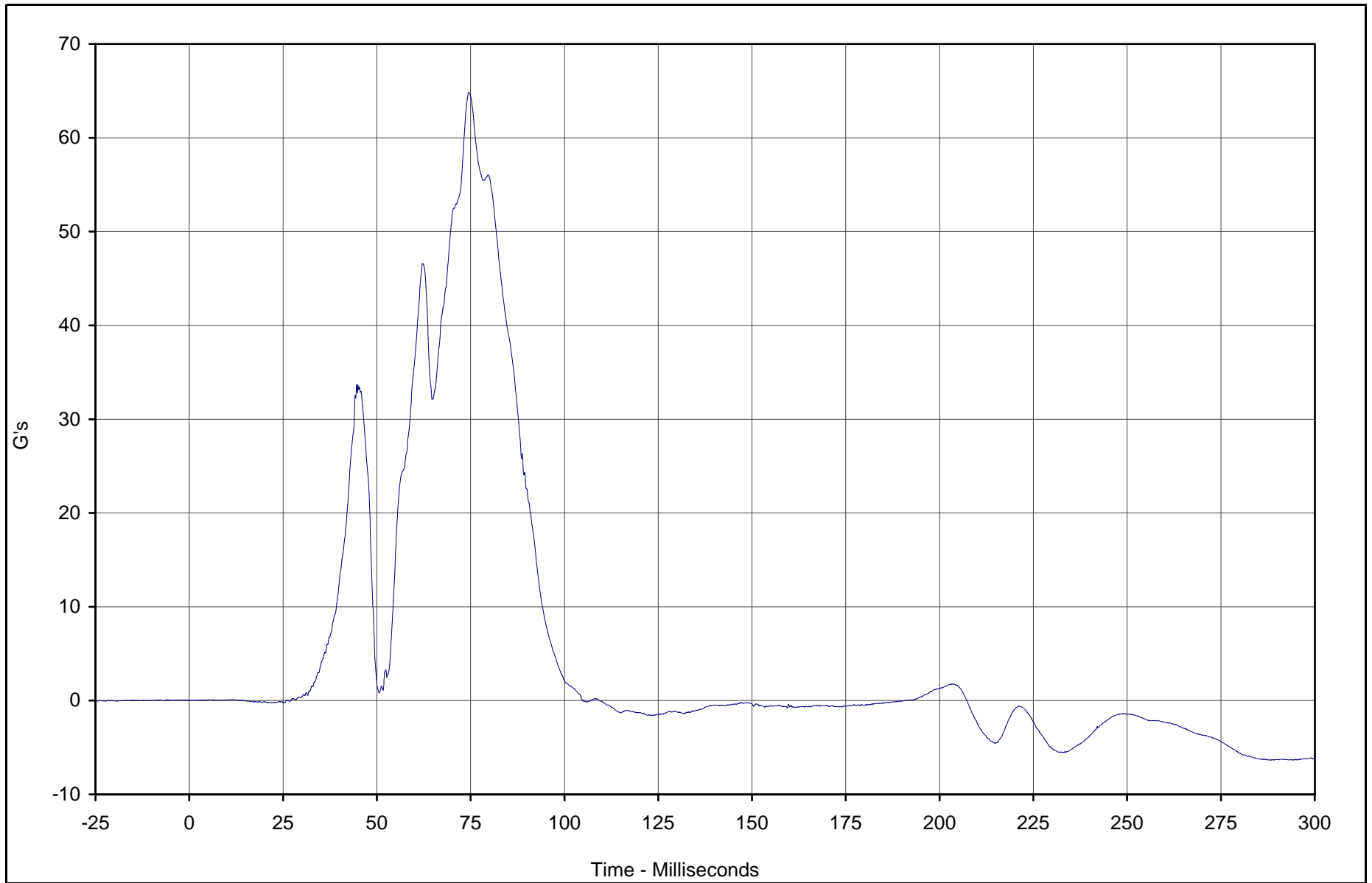


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Head X	160	FIL	G's	64.8	74.5	-6.3	288.3	1000

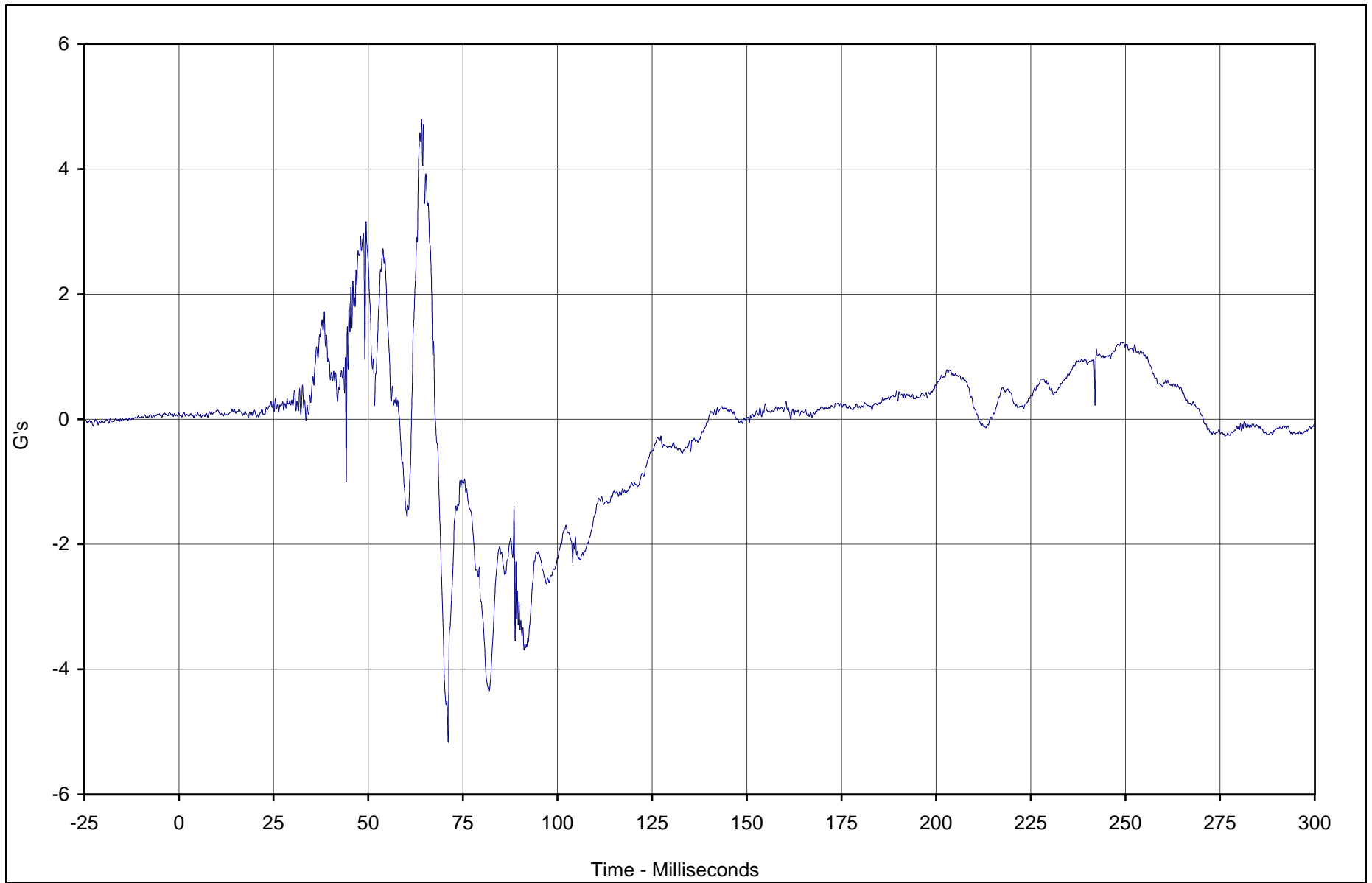


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Head Y	161	FIL	G's	4.8	64.1	-5.2	71.1	1000

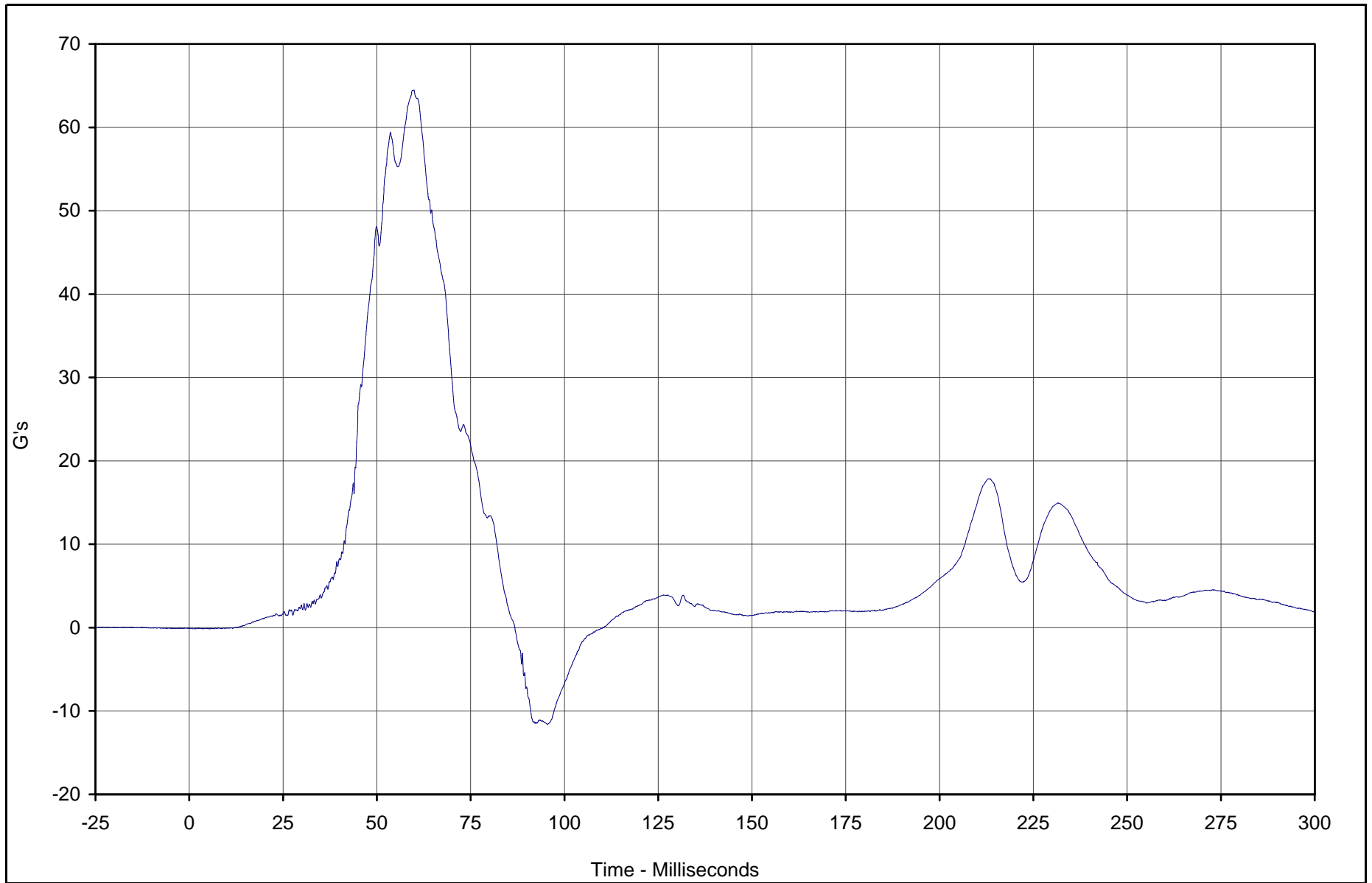


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Head Z	162	FIL	G's	64.5	59.9	-11.6	95.5	1000

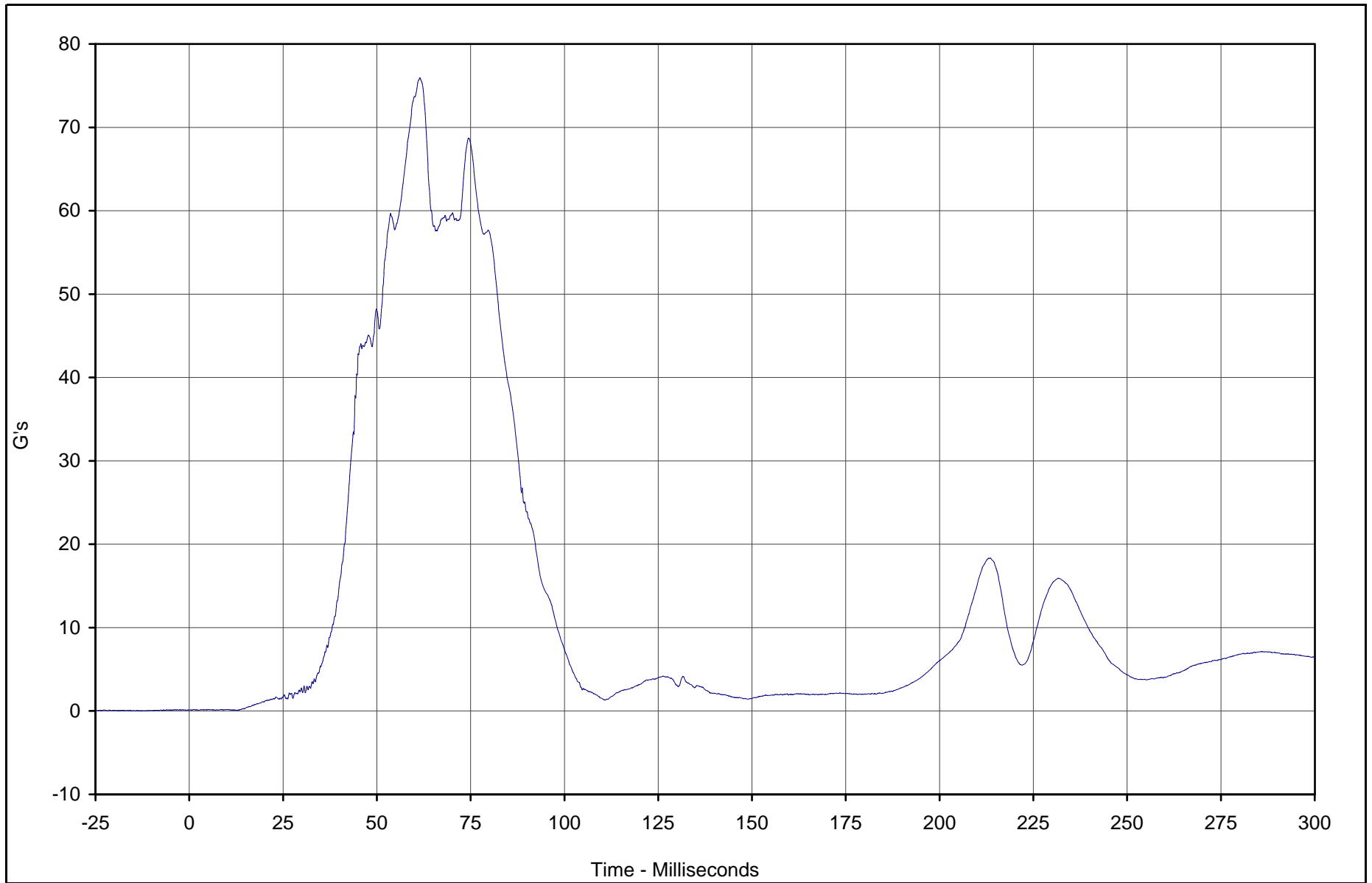


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Head Resultant	160	RES	G's	76.0	61.5	0.1	12.7	1000

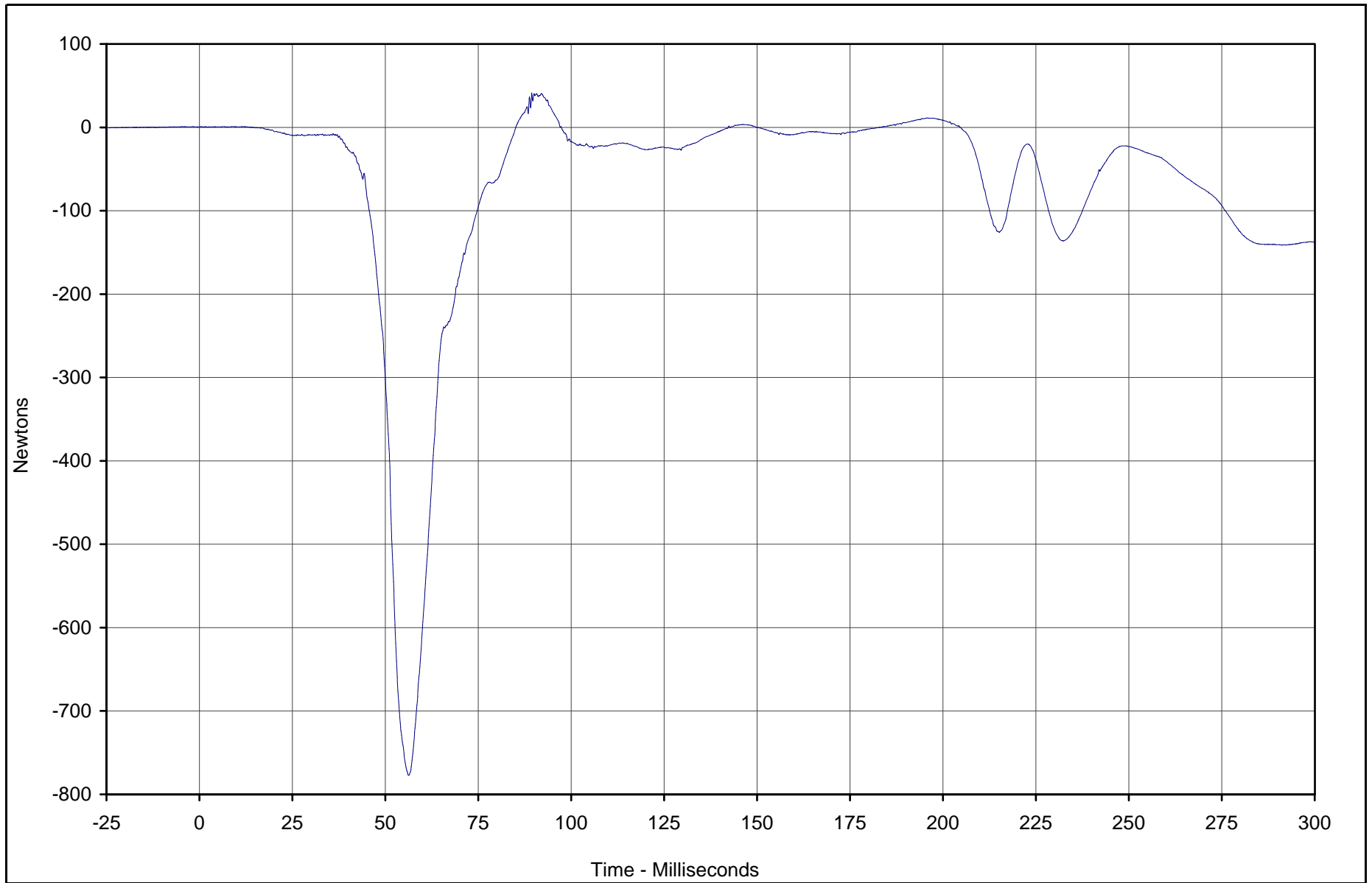


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Upper Neck Force X	163	FIL	Newtons	41.3	89.4	-777.1	56.3	1000

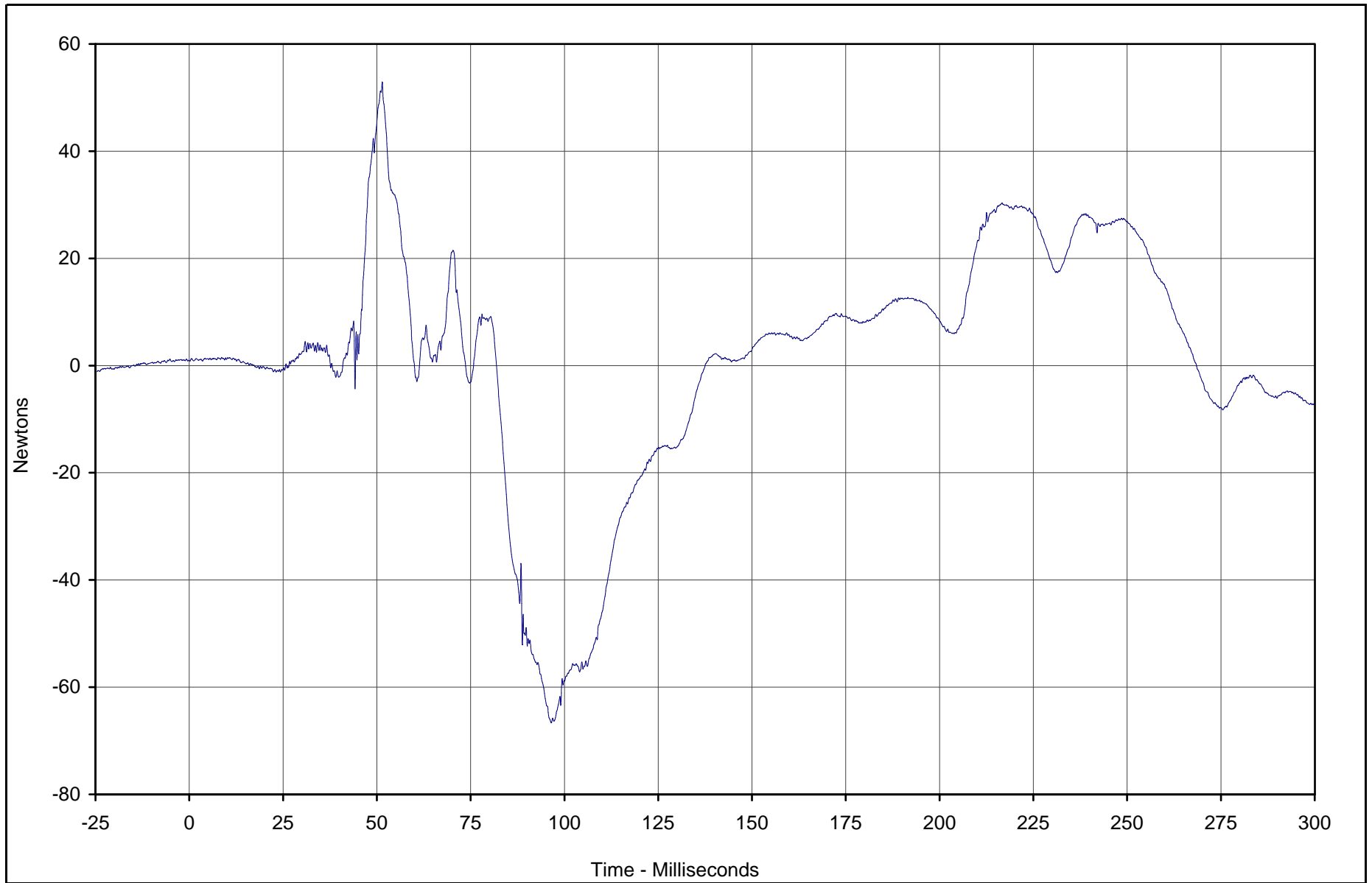


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Upper Neck Force Y	164	FIL	Newtons	52.9	51.4	-66.7	96.5	1000



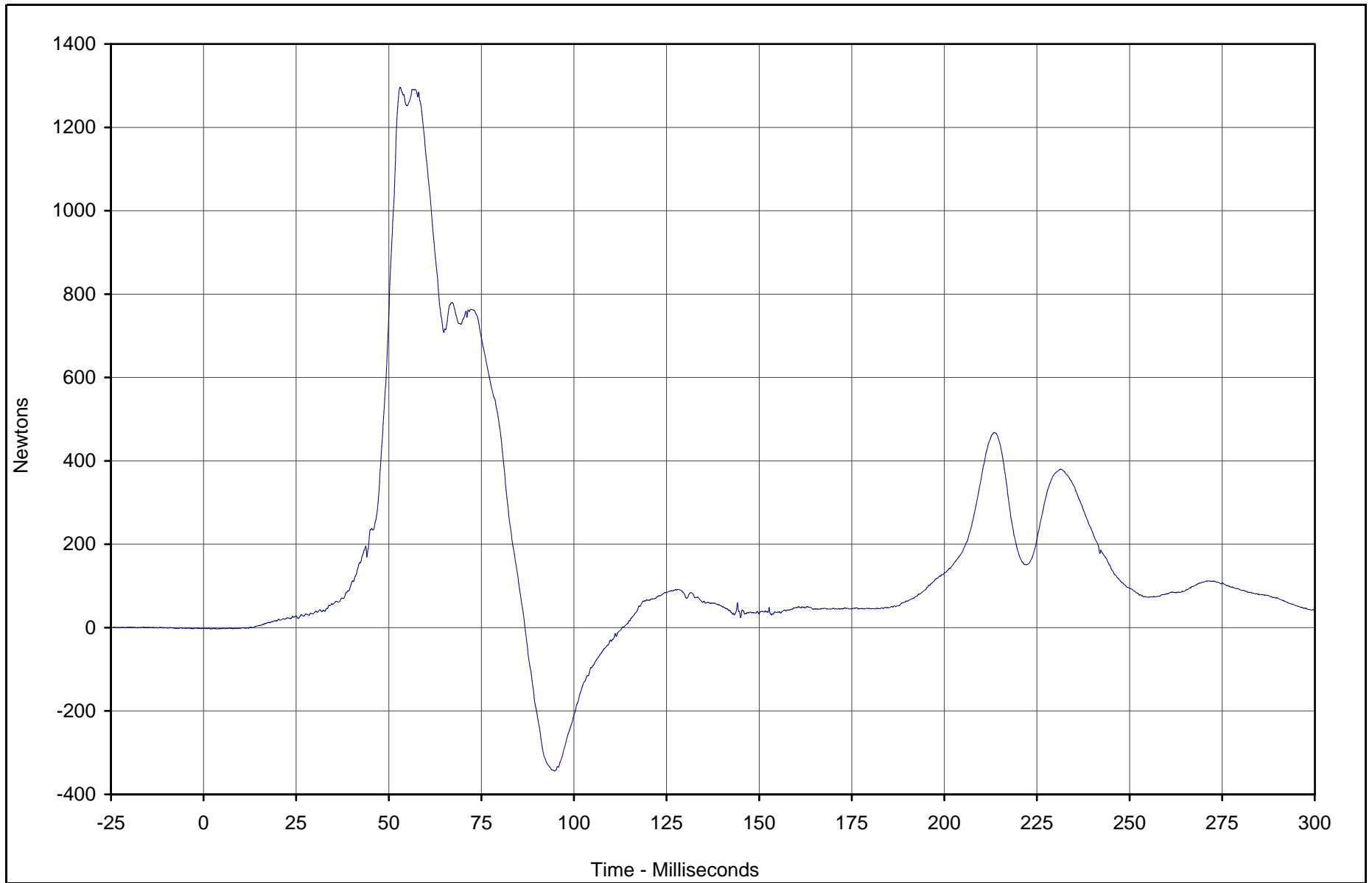
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

F3-41



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Upper Neck Force Z	165	FIL	Newtons	1296.4	53.1	-343.7	94.8	1000



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

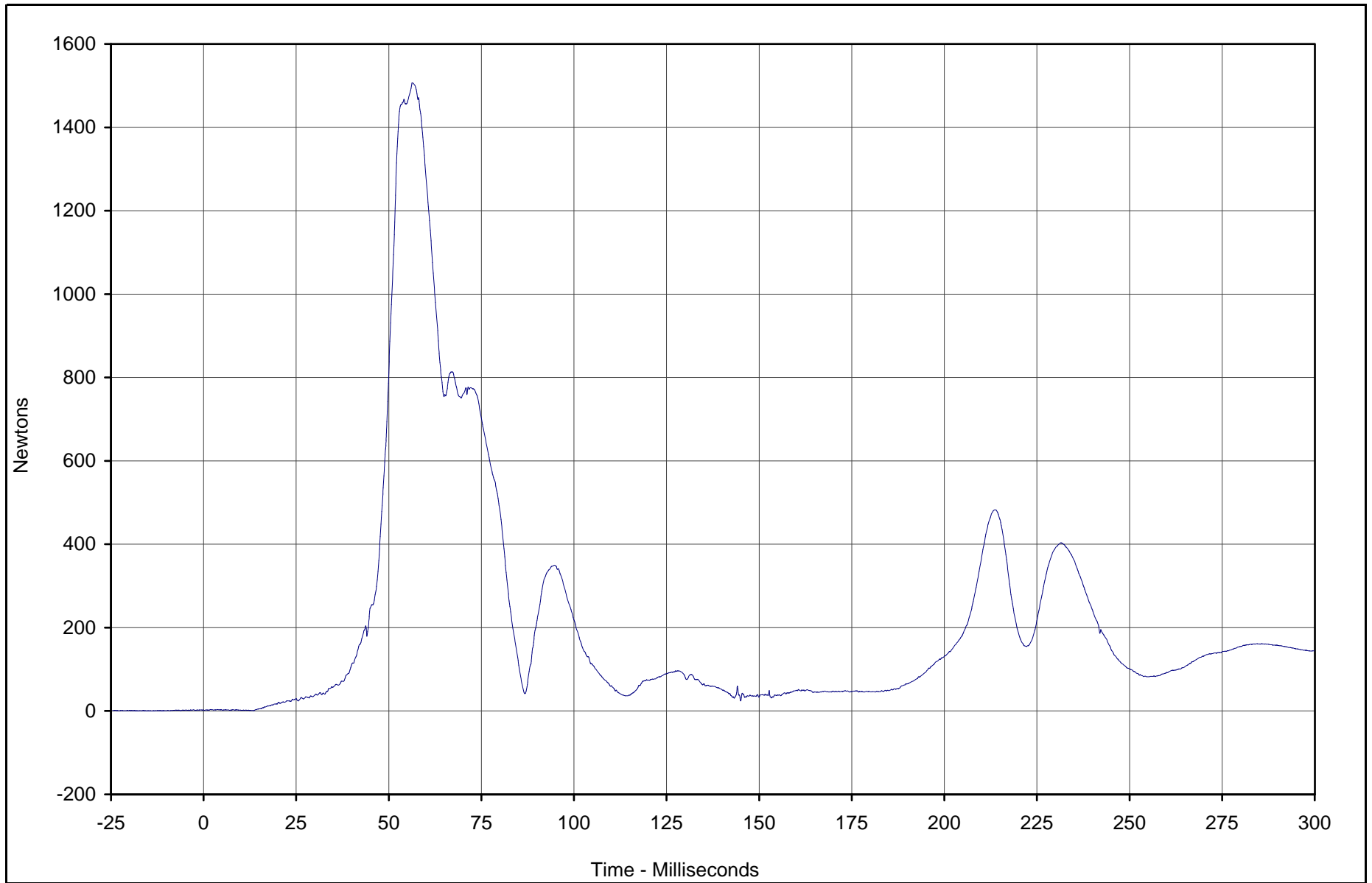
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

F3-42



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Upper Neck Force Res.	163	RES	Newtons	1506.9	56.4	0.9	13.6	1000



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

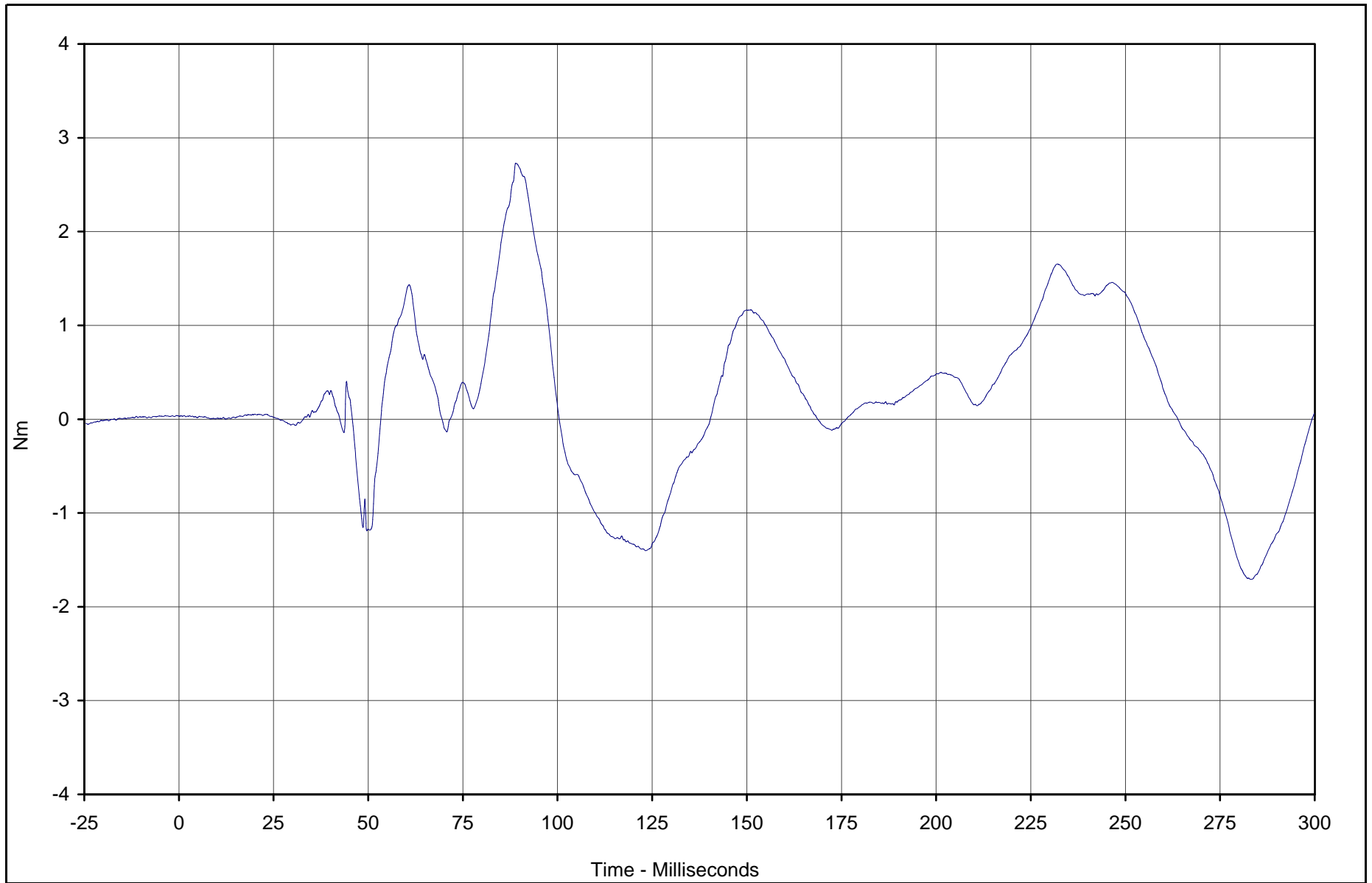
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

F3-43



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Upper Neck Moment X	166	FIL	Nm	2.7	88.9	-1.7	283.1	600



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

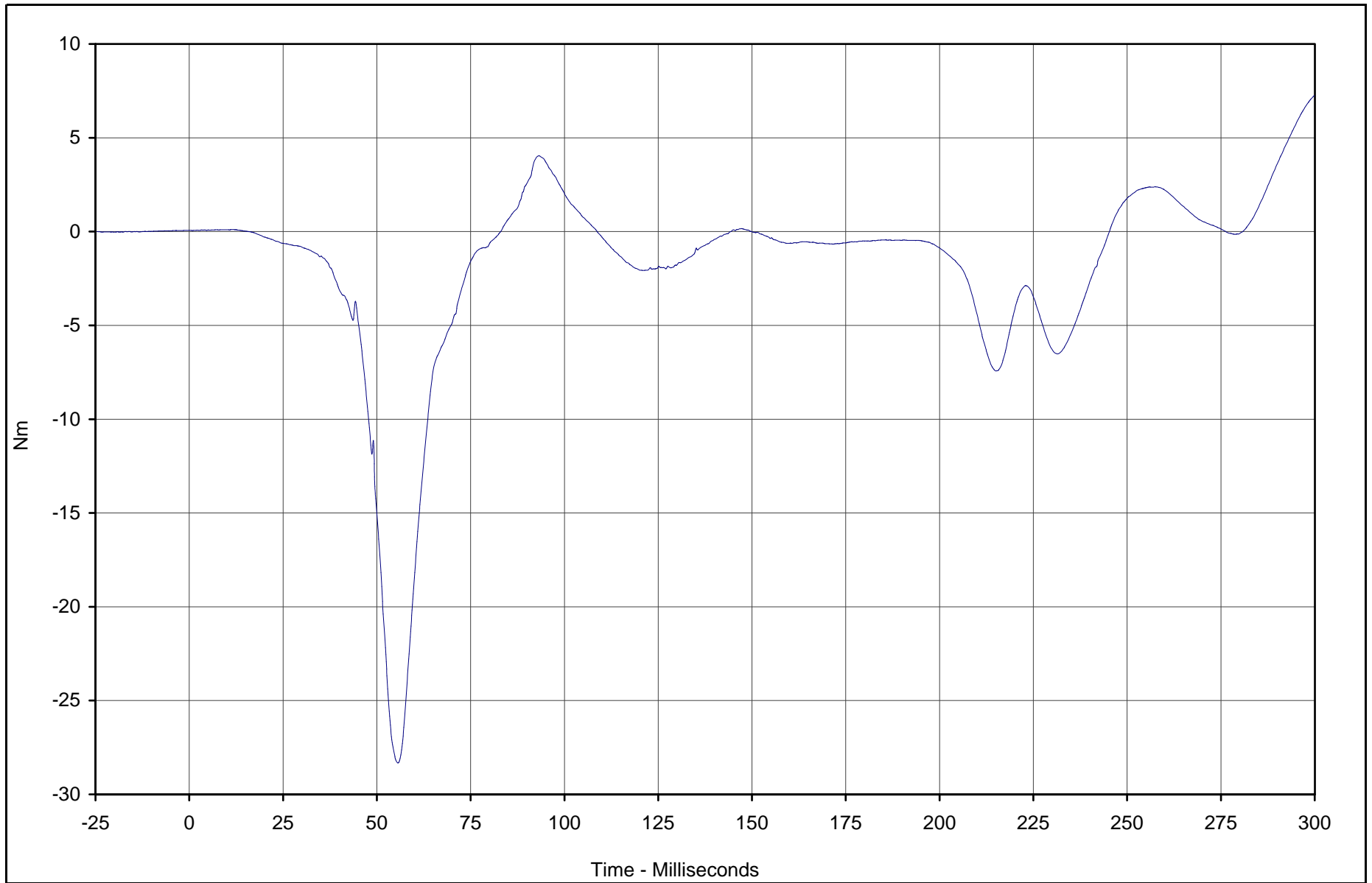
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

F3-44



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Upper Neck Moment Y	167	FIL	Nm	7.2	299.9	-28.3	55.6	600



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

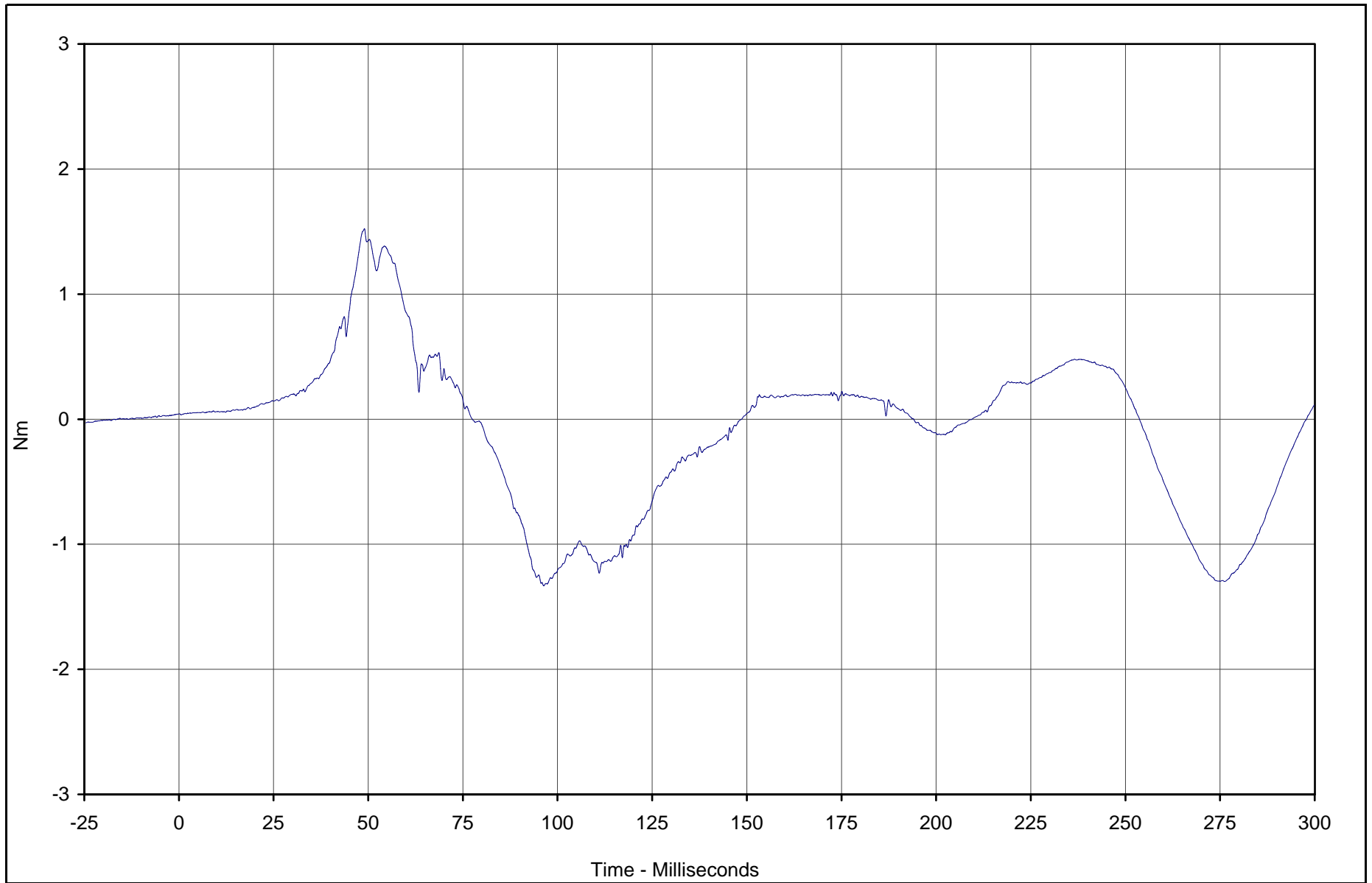
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

F3-45



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Upper Neck Moment Z	168	FIL	Nm	1.5	49.0	-1.3	96.4	600



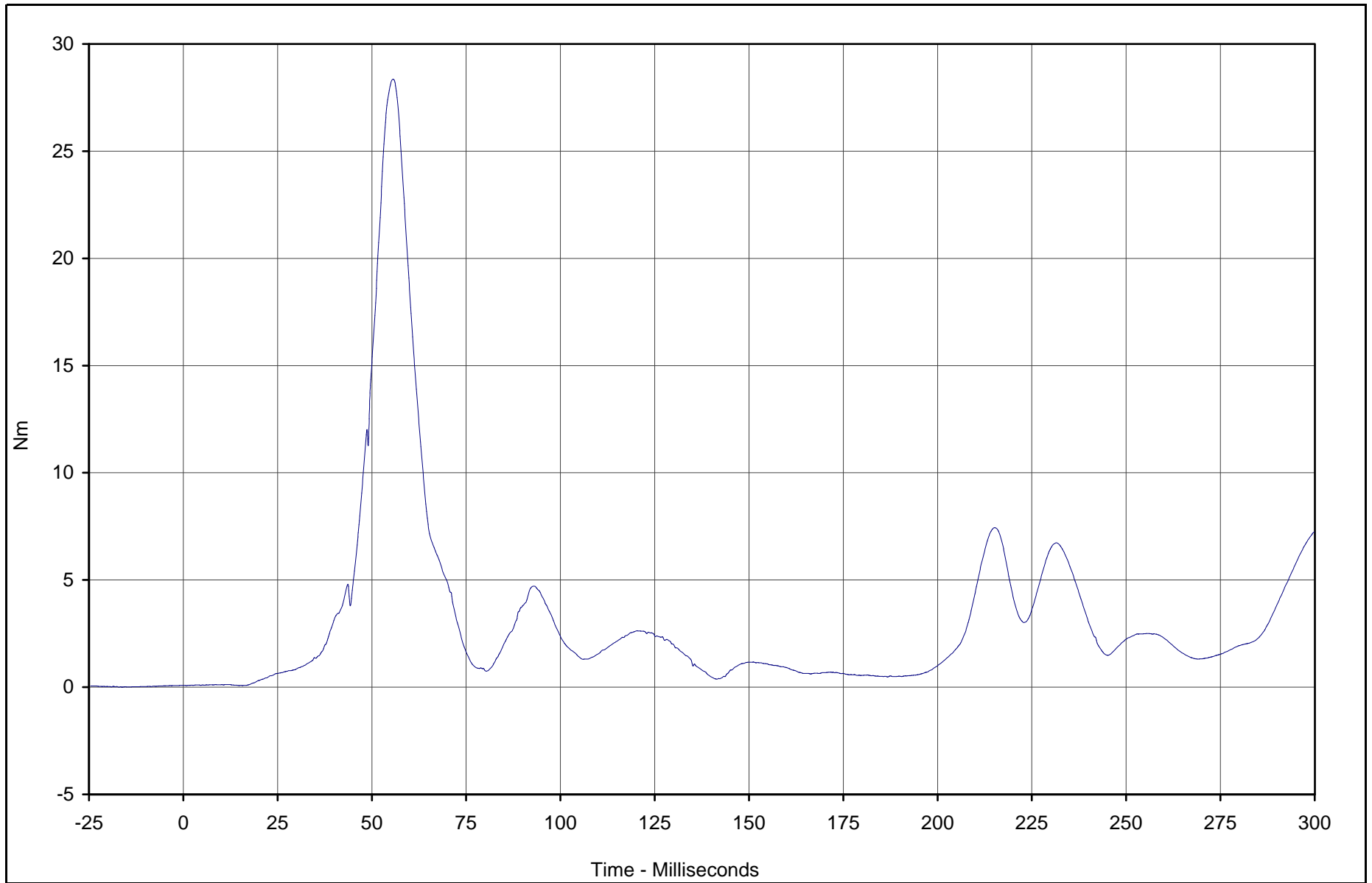
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Upper Neck Mom Res.	166	RES	Nm	28.4	55.6	0.1	0.8	600

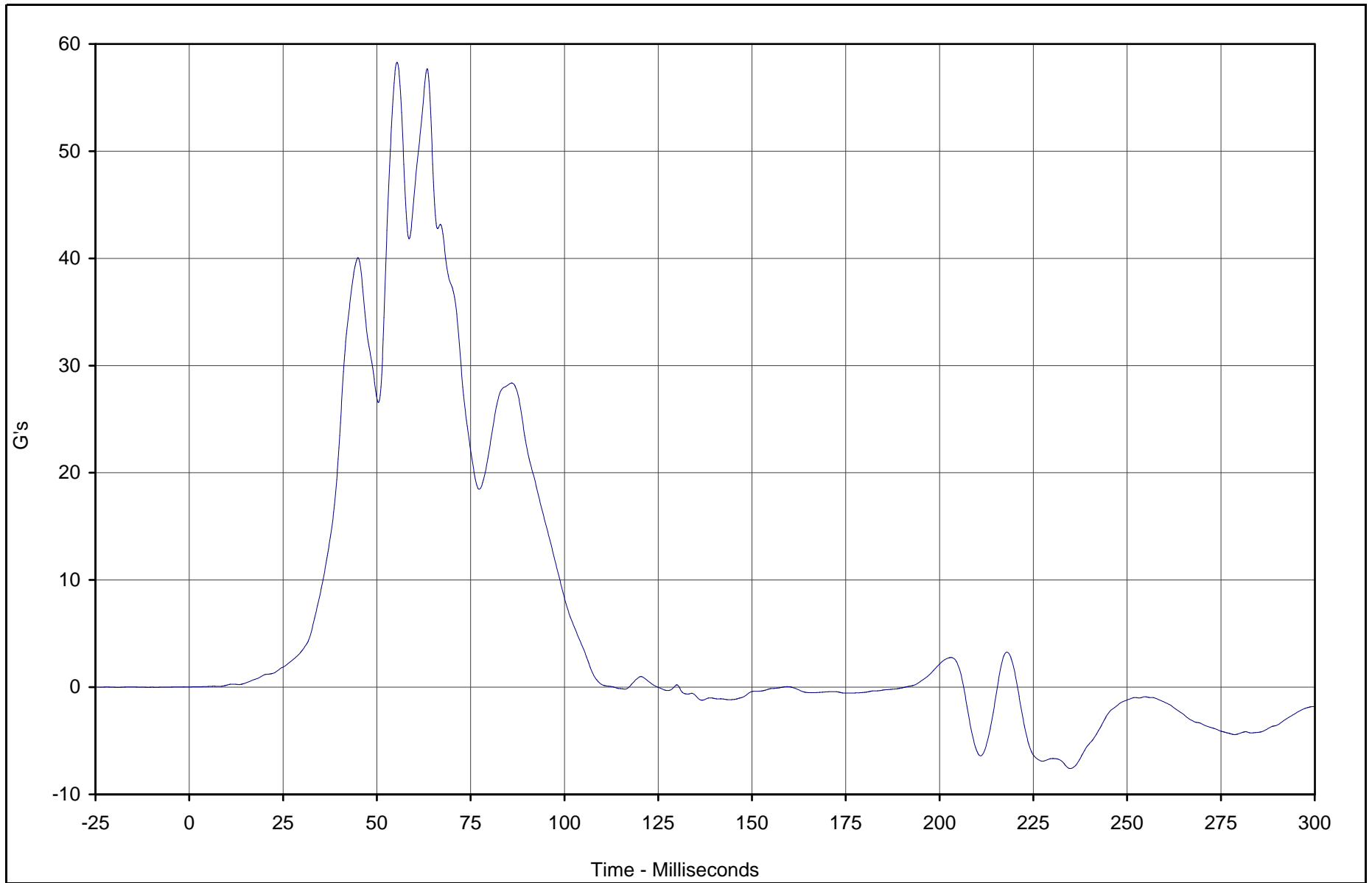


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Chest X	169	FIL	G's	58.3	55.4	-7.6	234.8	180



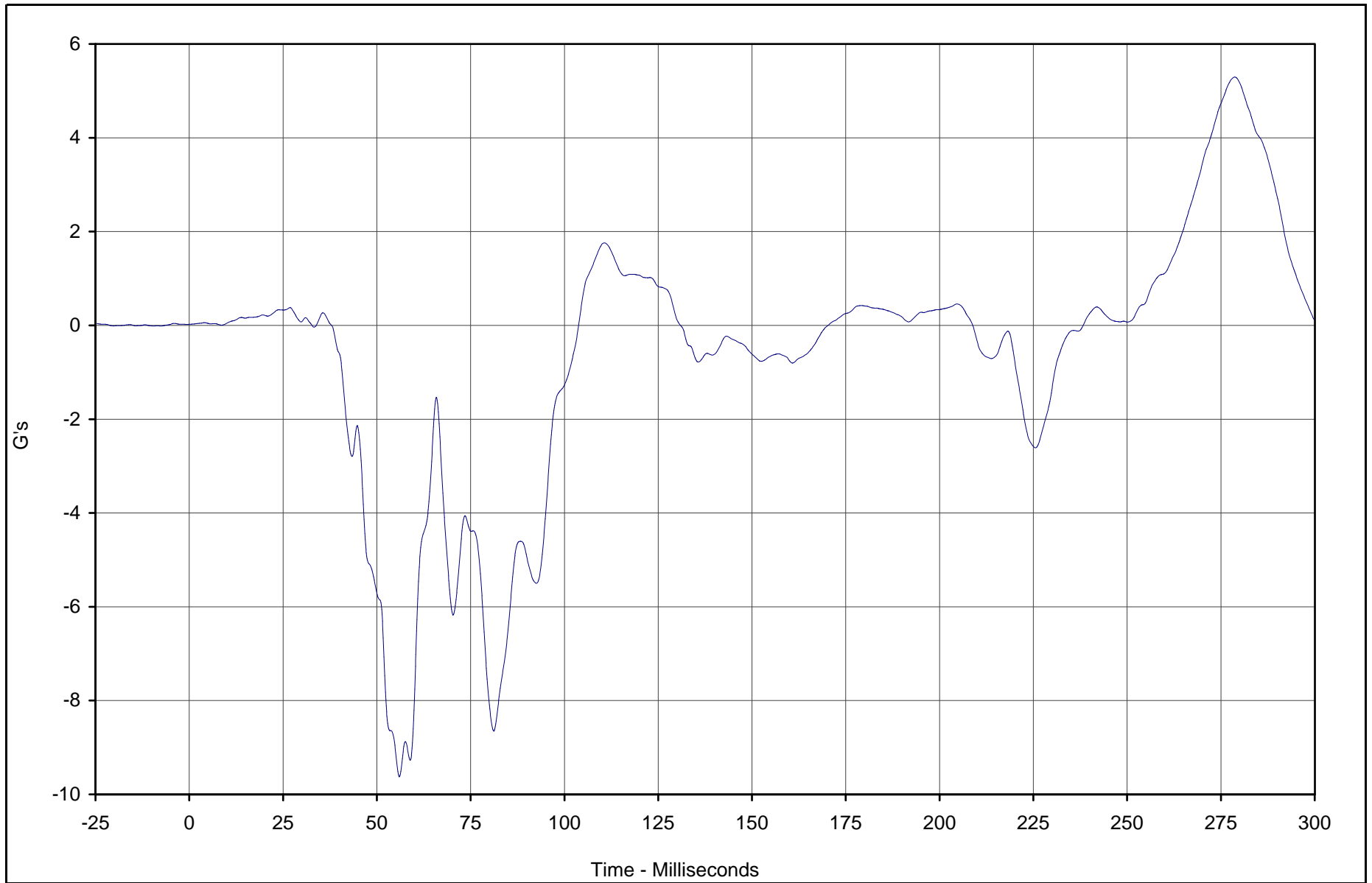
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

F3-48



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Chest Y	170	FIL	G's	5.3	278.7	-9.6	56.0	180



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

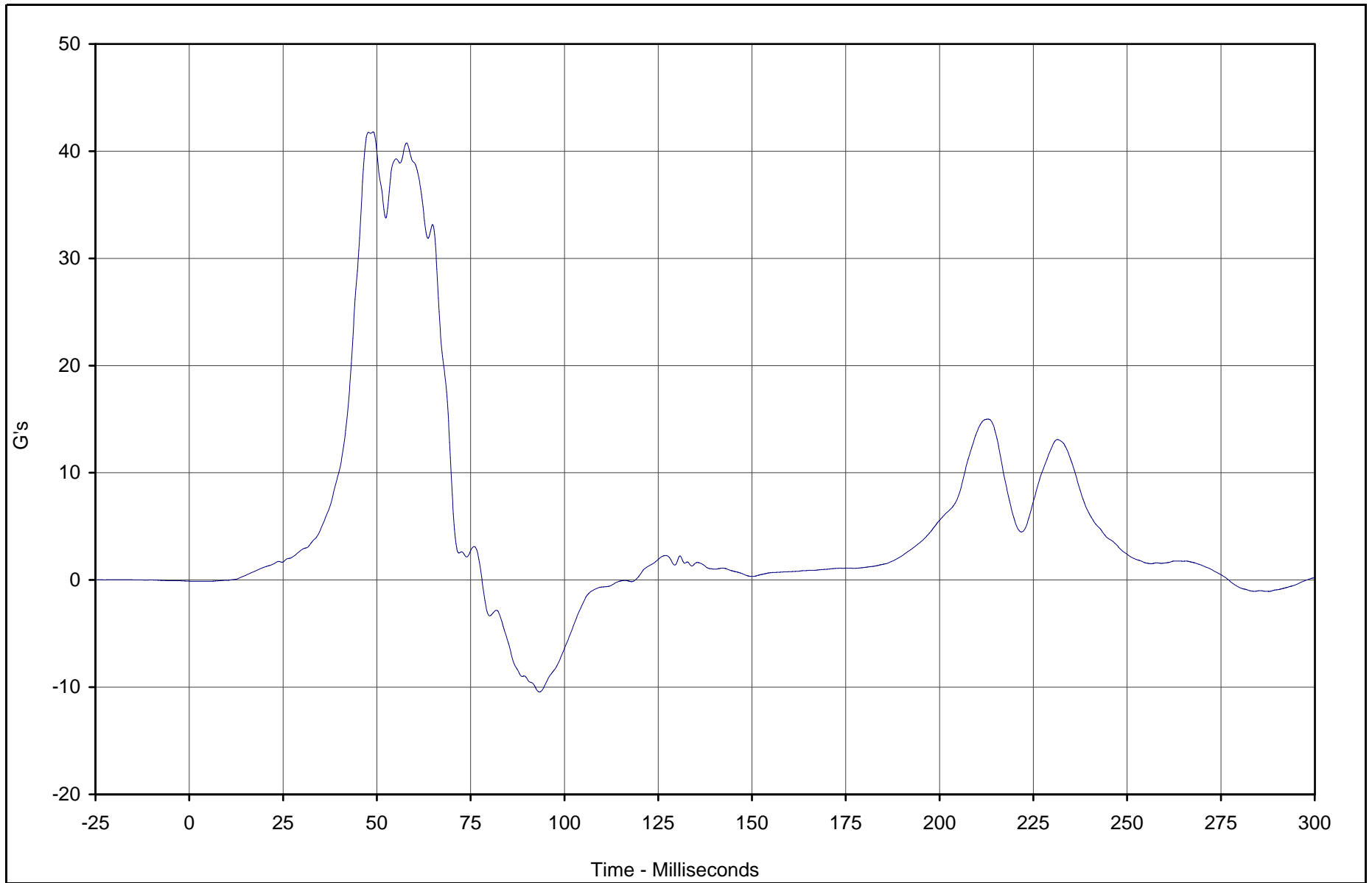
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

F3-49



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Chest Z	171	FIL	G's	41.8	49.0	-10.5	93.3	180



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

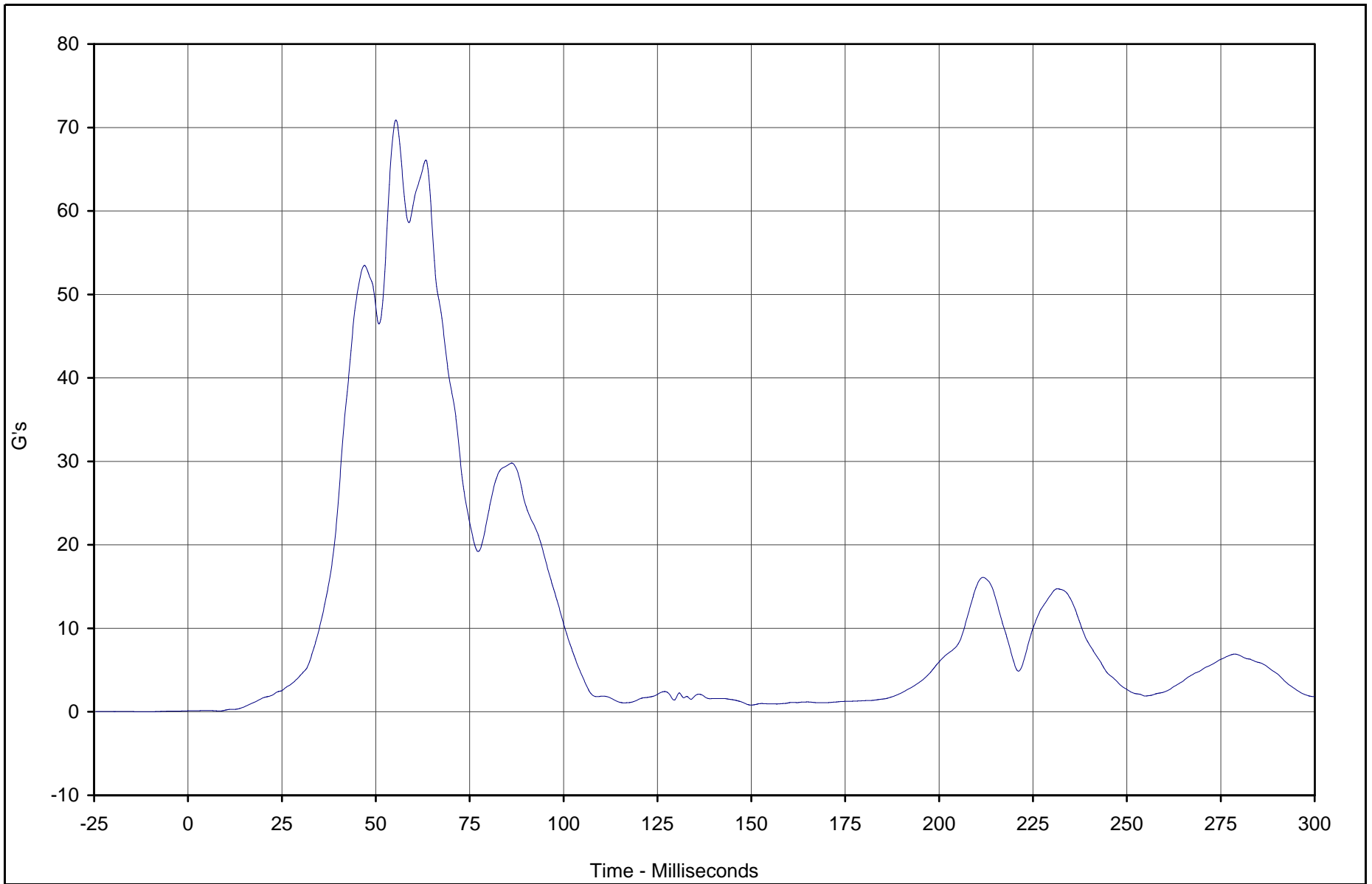
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

F3-50



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Chest Resultant	169	RES	G's	70.9	55.4	0.1	8.4	180



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

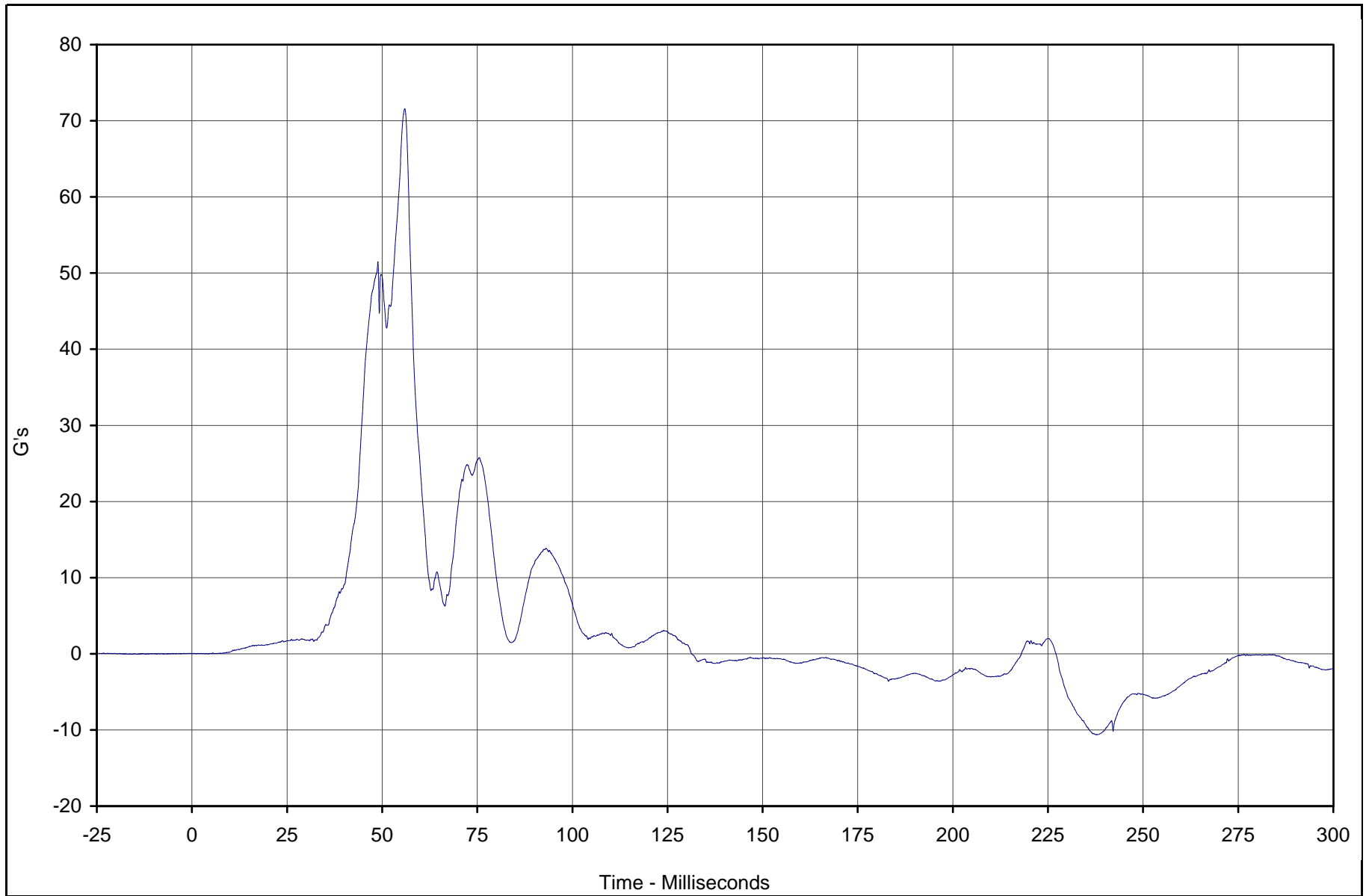
Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC

F3-51



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Pelvis X	172	FIL	G's	71.6	55.9	-10.6	237.7	1000



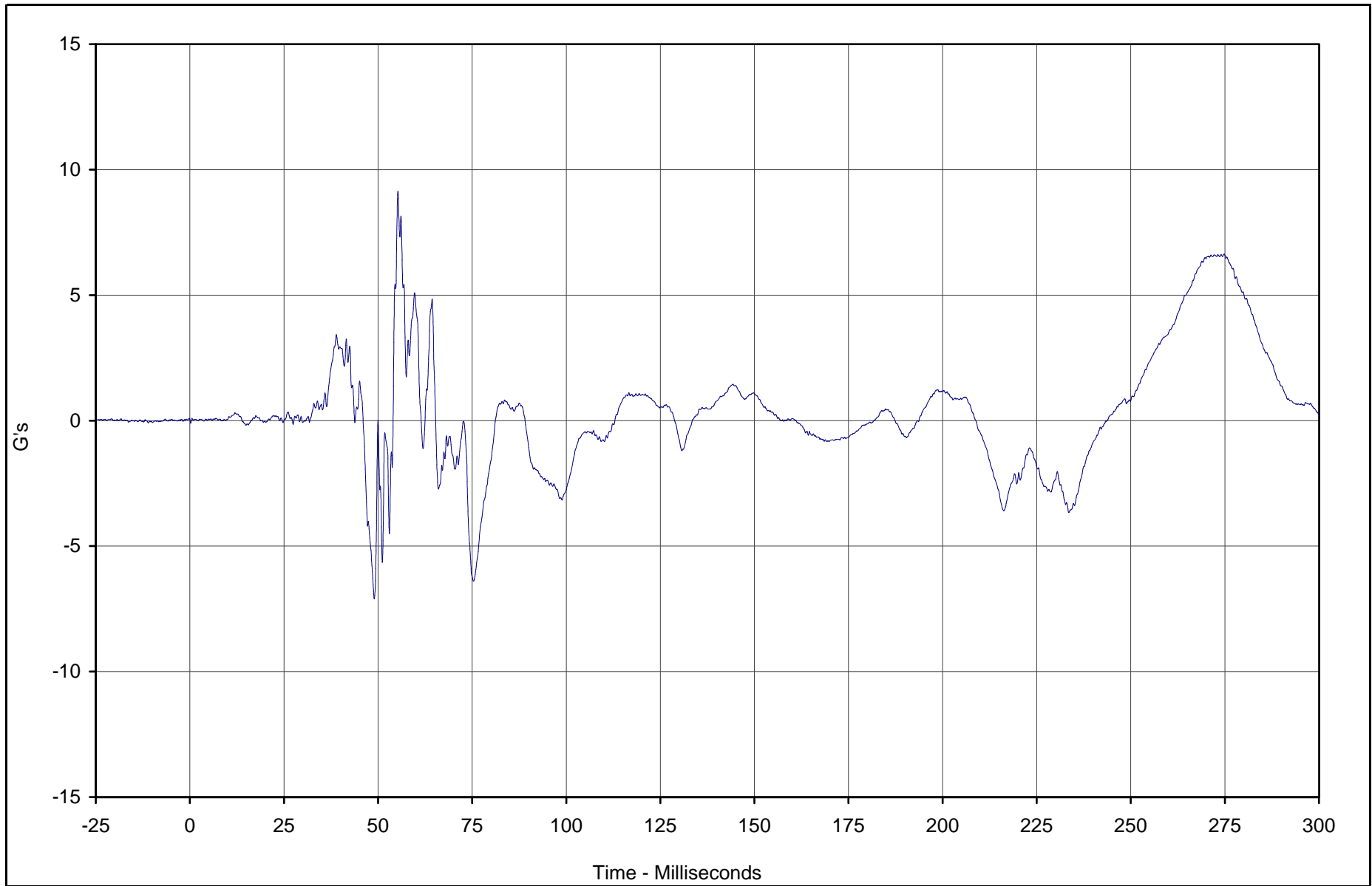
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

F3-52



TR-P23001-07-NC

Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Pelvis Y	173	FIL	G's	9.1	55.3	-7.1	49.0	1000

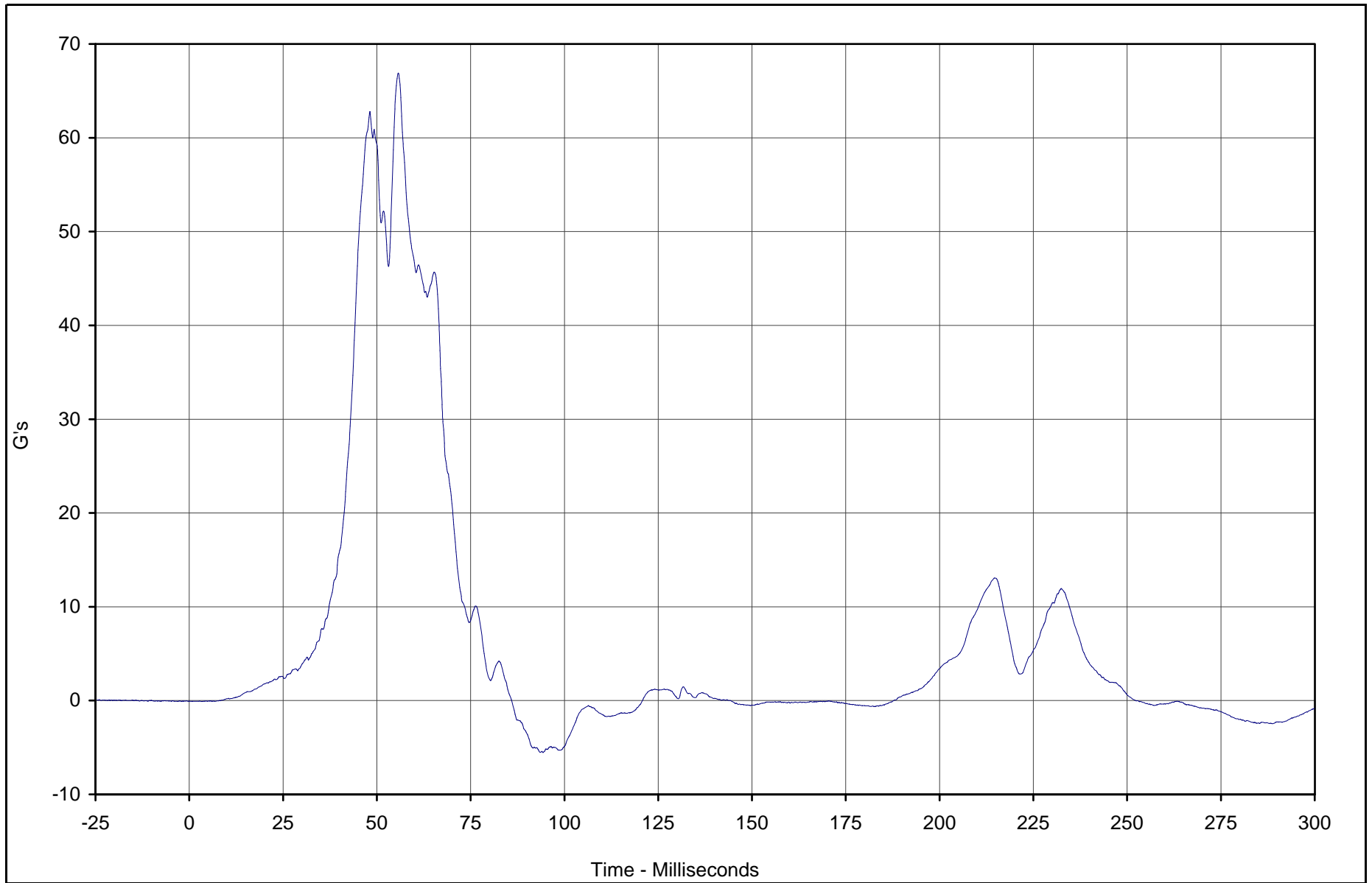


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Pelvis Z	174	FIL	G's	66.9	55.7	-5.5	94.3	1000

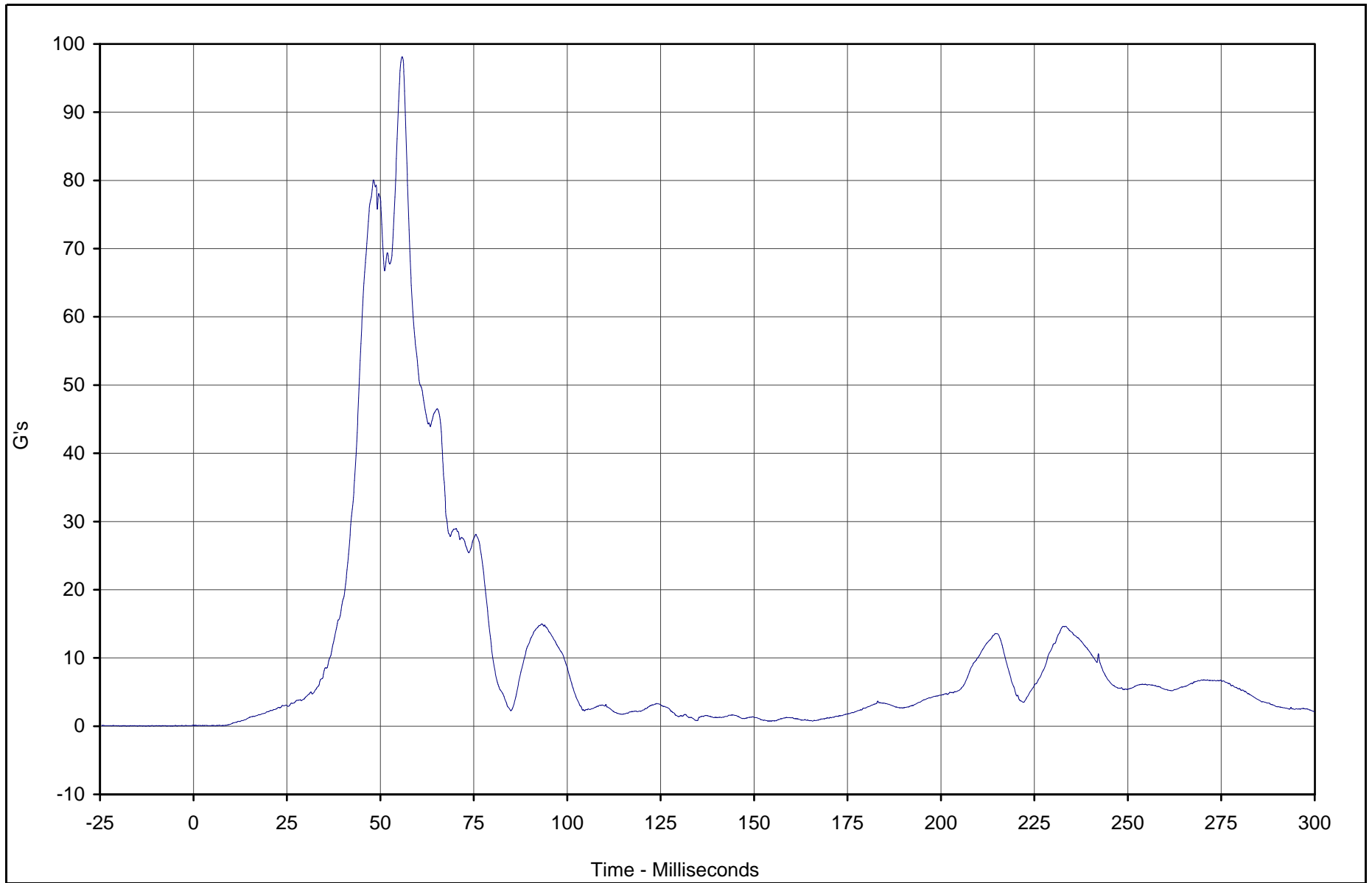


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Pelvis Resultant	172	RES	G's	98.1	55.8	0.1	5.8	1000

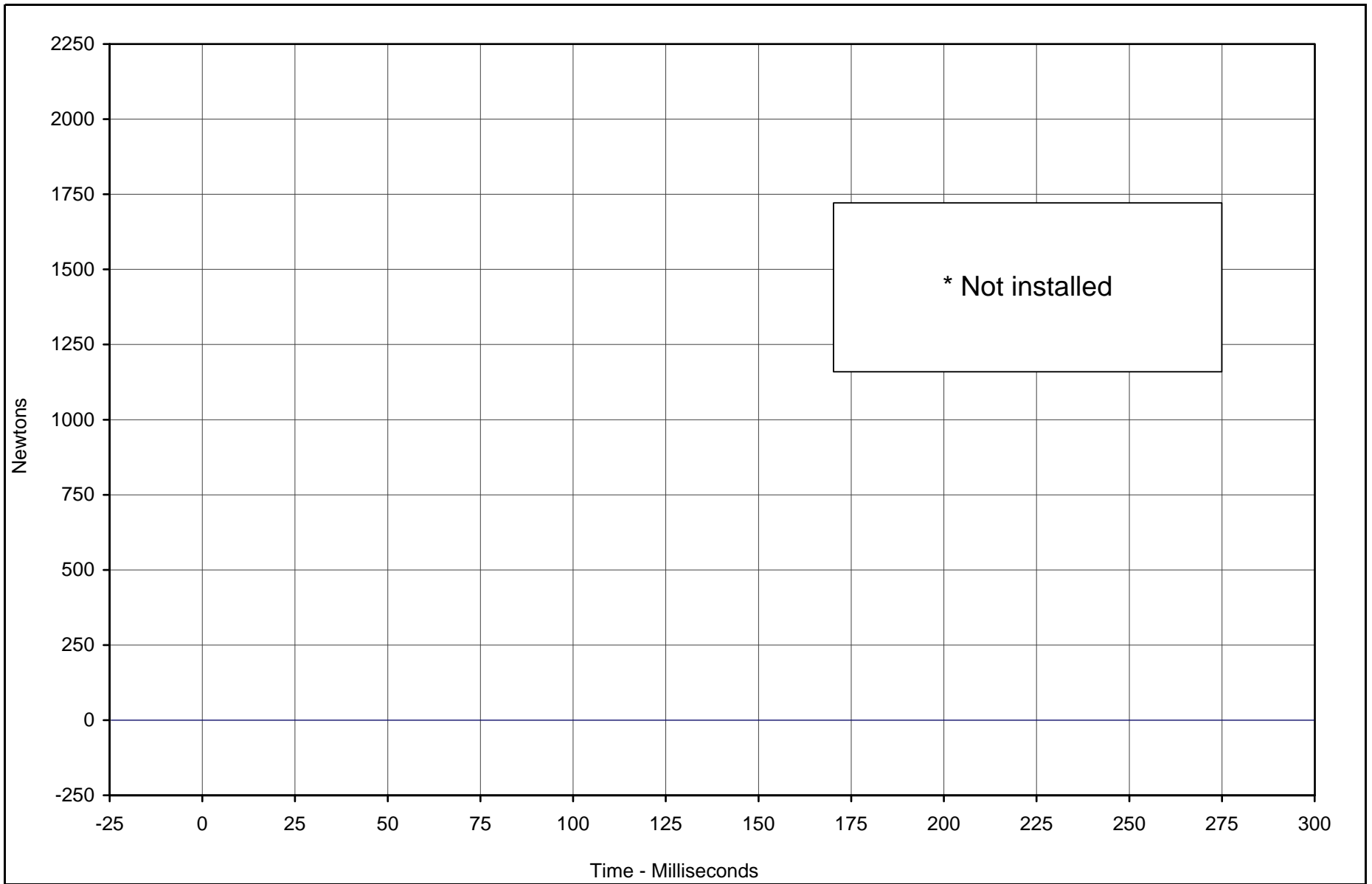


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



* Not installed

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

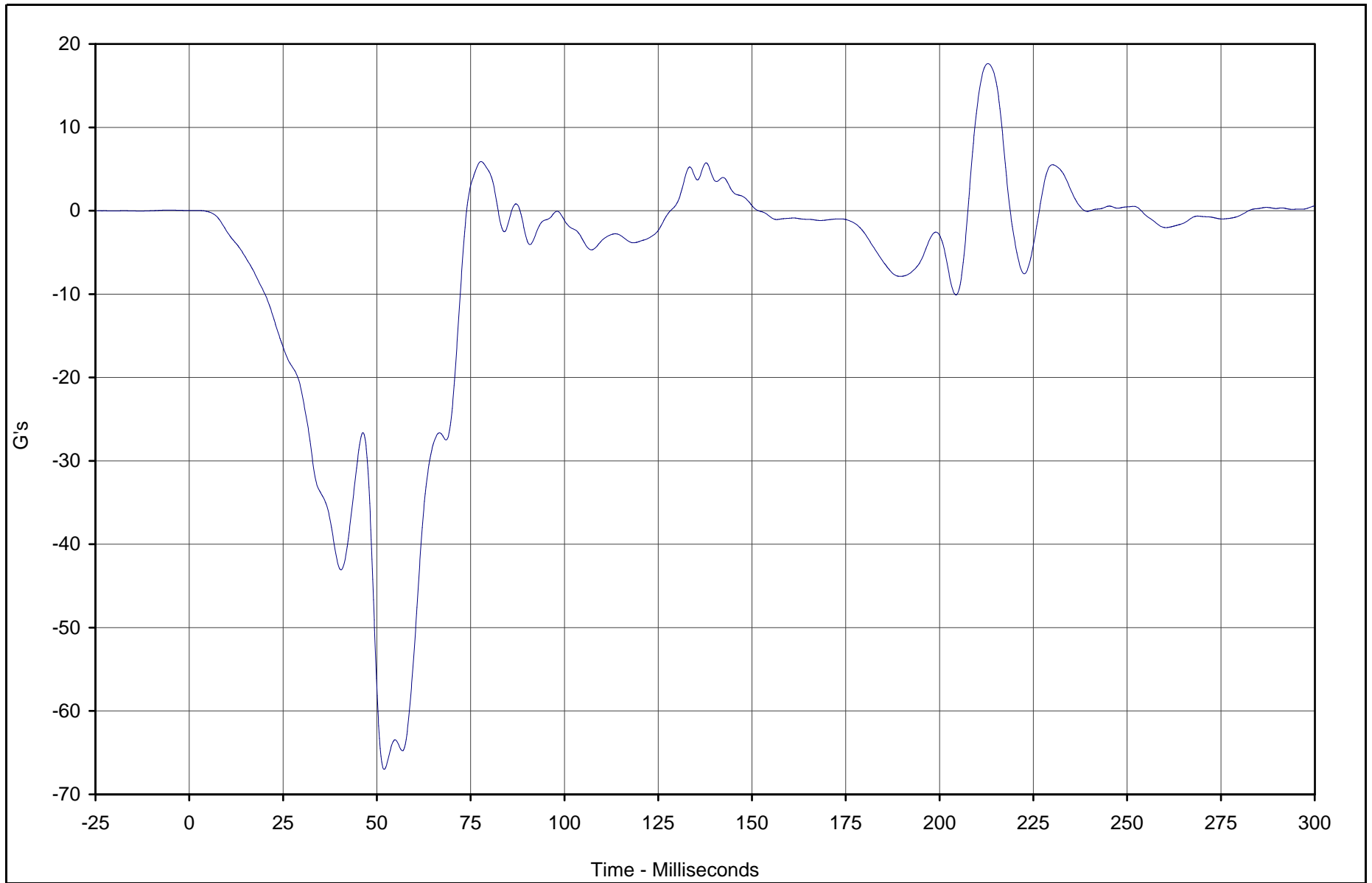


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Car Seat X	176	FIL	G's	17.6	212.9	-67.0	52.0	60



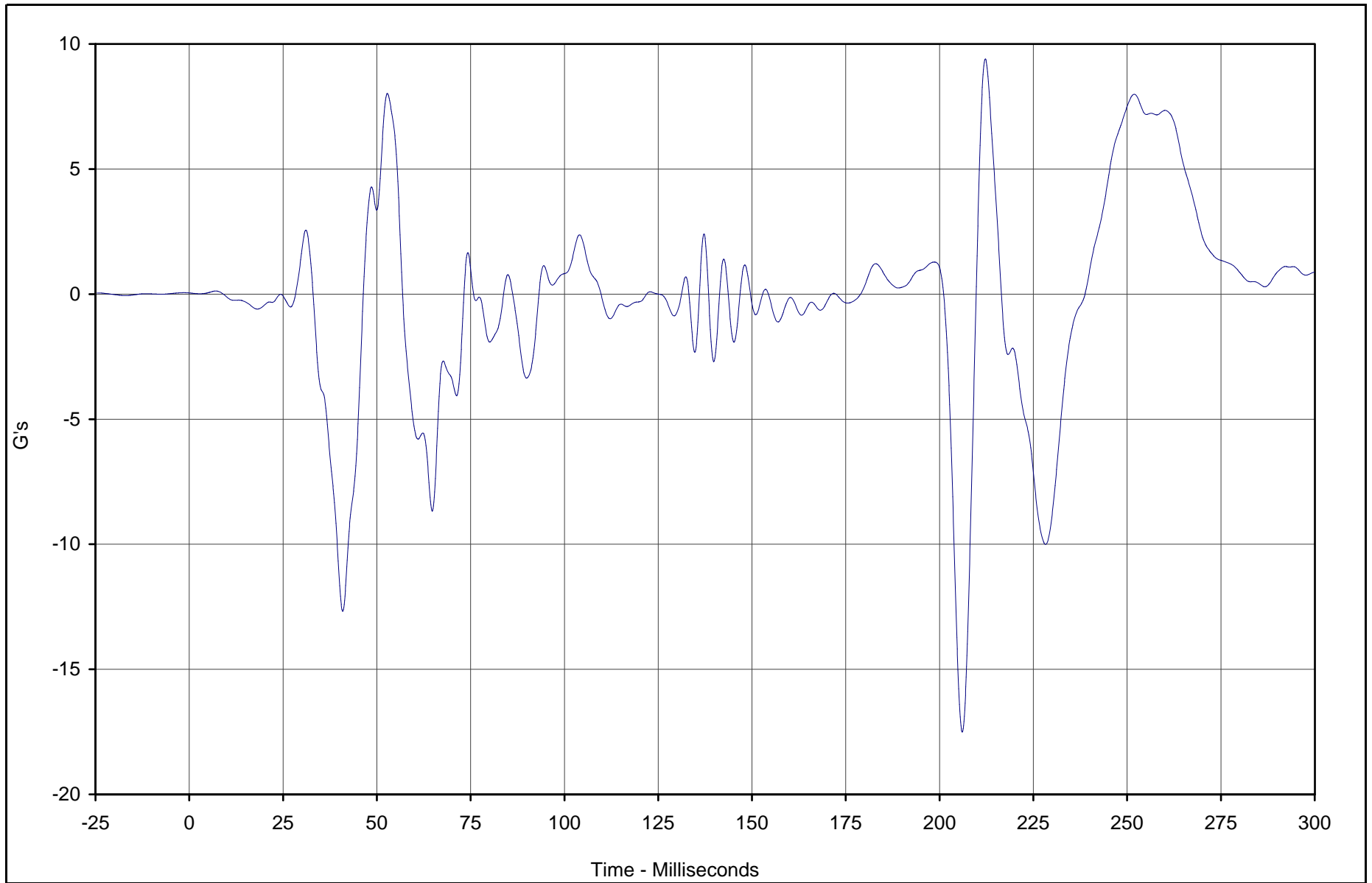
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

F3-57



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Car Seat Y	177	FIL	G's	9.4	212.2	-17.5	206.0	60



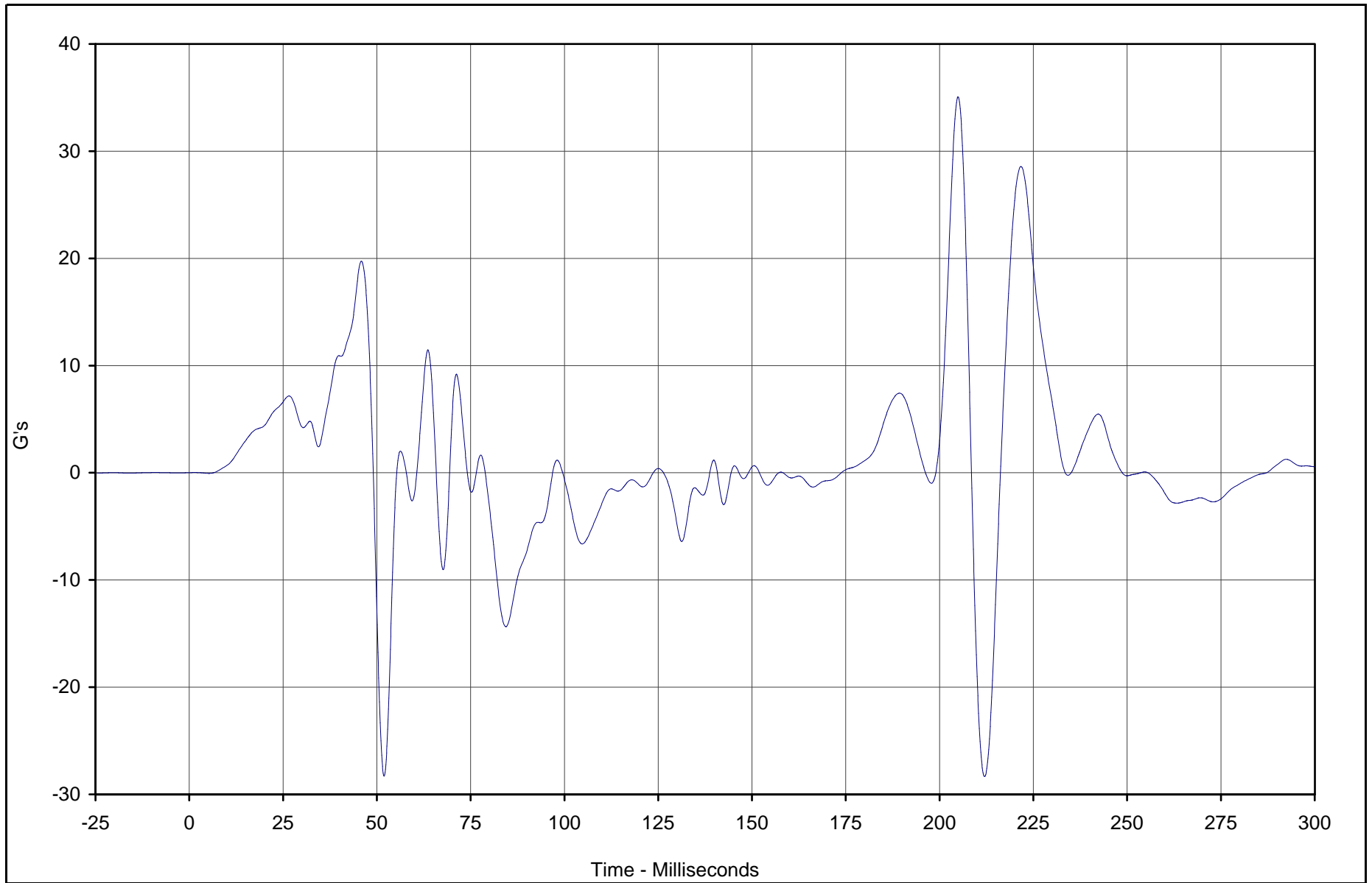
Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

TR-P23001-07-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Car Seat Z	178	FIL	G's	35.1	204.9	-28.3	212.0	60

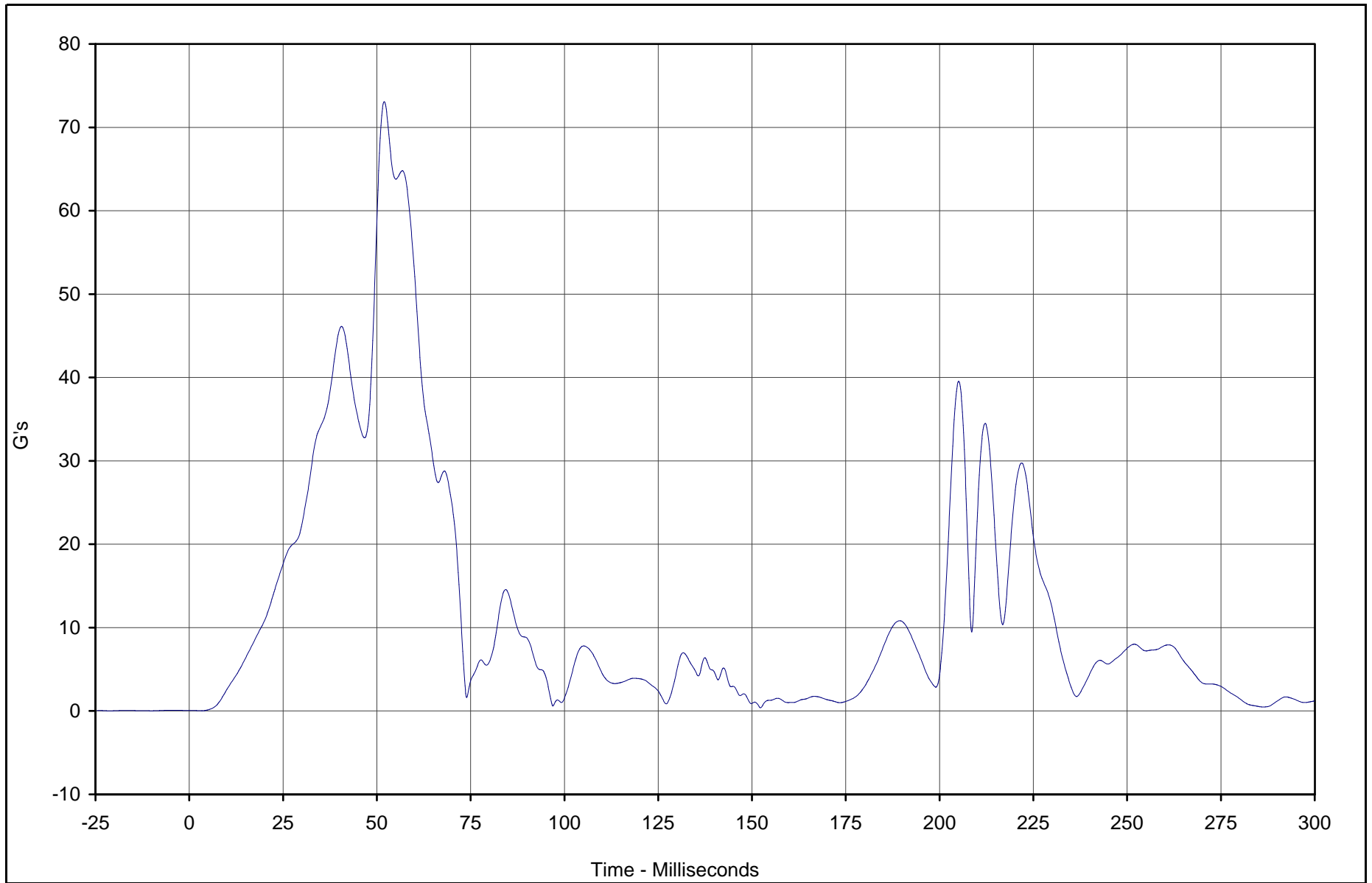


Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Left Rear (CRABI) Car Seat Resultant	176	RES	G's	73.1	52.0	0.0	3.4	60



Test Vehicle: 2003 Jaguar X-Type 4 Door Sedan

Test Date: 2/7/03

Test Program: 2003 NHTSA 35mph NCAP

NHTSA No.: M30210

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
2/7/03
2003 Jaguar X-Type 4 Door Sedan**

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-P23001-07-NC

**2003 NHTSA 35mph NCAP
Instrumentation Data Channel Assignments
Left Rear CRABI Serial Number 090
2/7/03
2003 Jaguar X-Type 4 Door Sedan**

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.: 3HD03

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	277.1	Pass
Peak Lateral Acceleration	G's	≤15.0	6.5	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<10	2.7	Pass
Overall Test Results				Pass

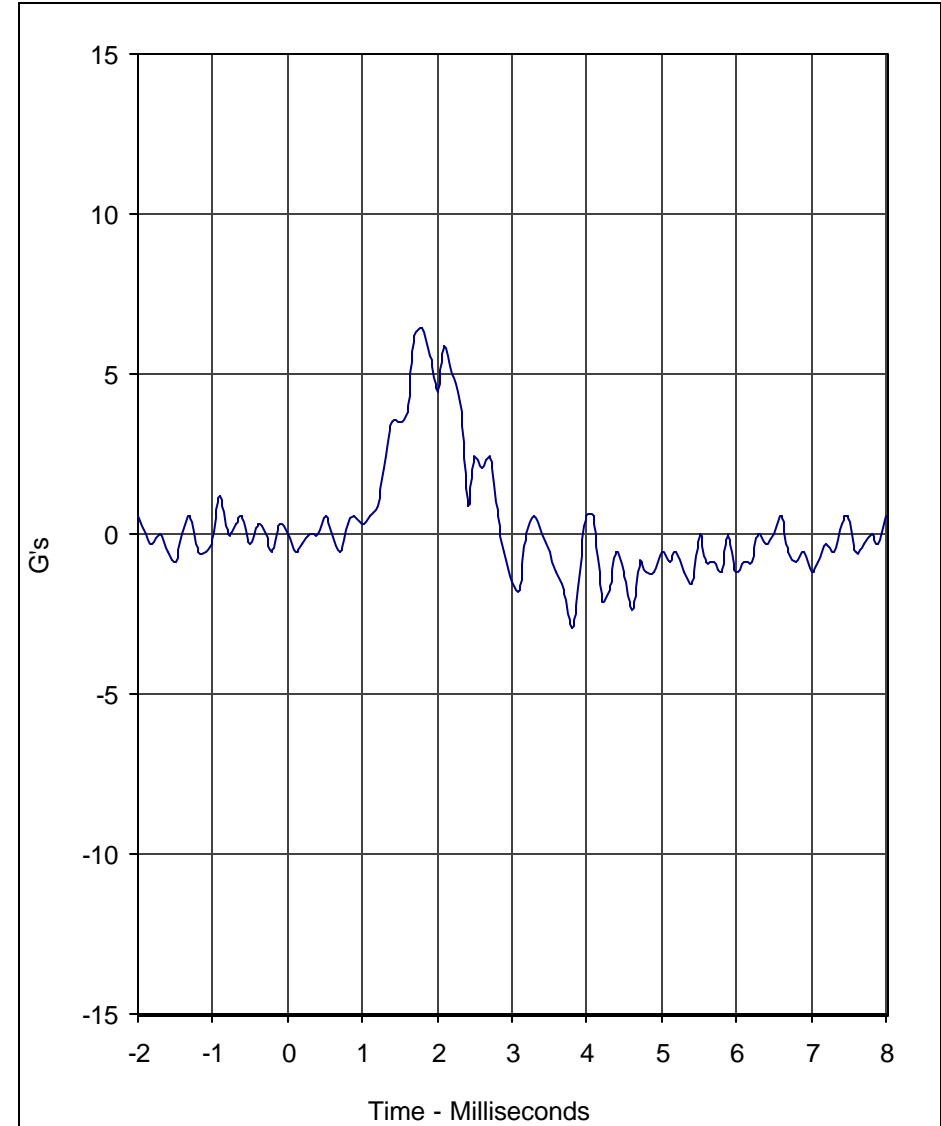
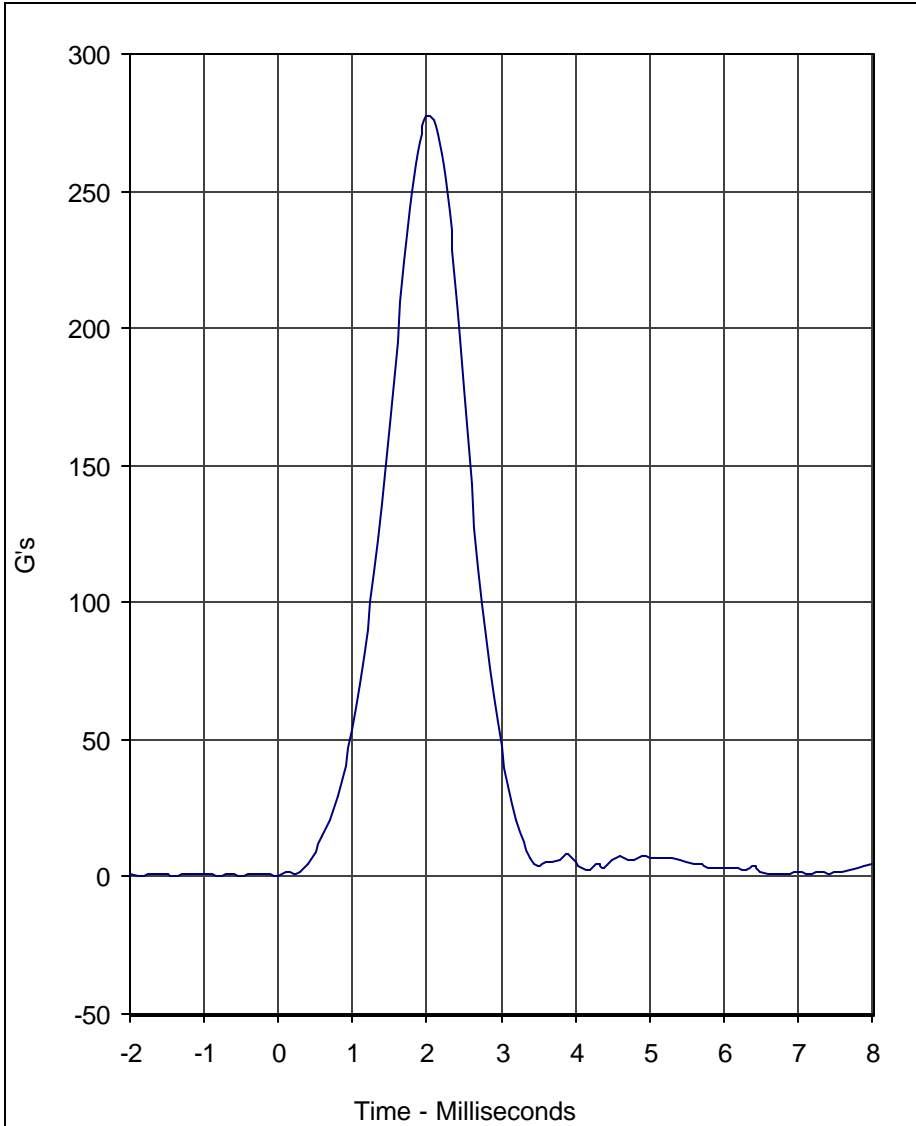
F5-1

TR-P23001-07-NC

Laboratory Technician

January 22, 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	277.1	2.0	0.3	-1.4	1000

Units	Max	Time	Min	Time	SAE Class
G's	6.5	1.8	-2.9	3.8	1000

Test Program: Hybrid III 3 Year Old Head Drop Test
 Test Date: 1/22/03

A.T.D. Serial No.: 082
 Test I.D.: 3HD03





Calibration Data Sheet

Hybrid III 3 Year Old

Thorax Impact Test

ATD Serial No.: 082

Test I.D.: CH017

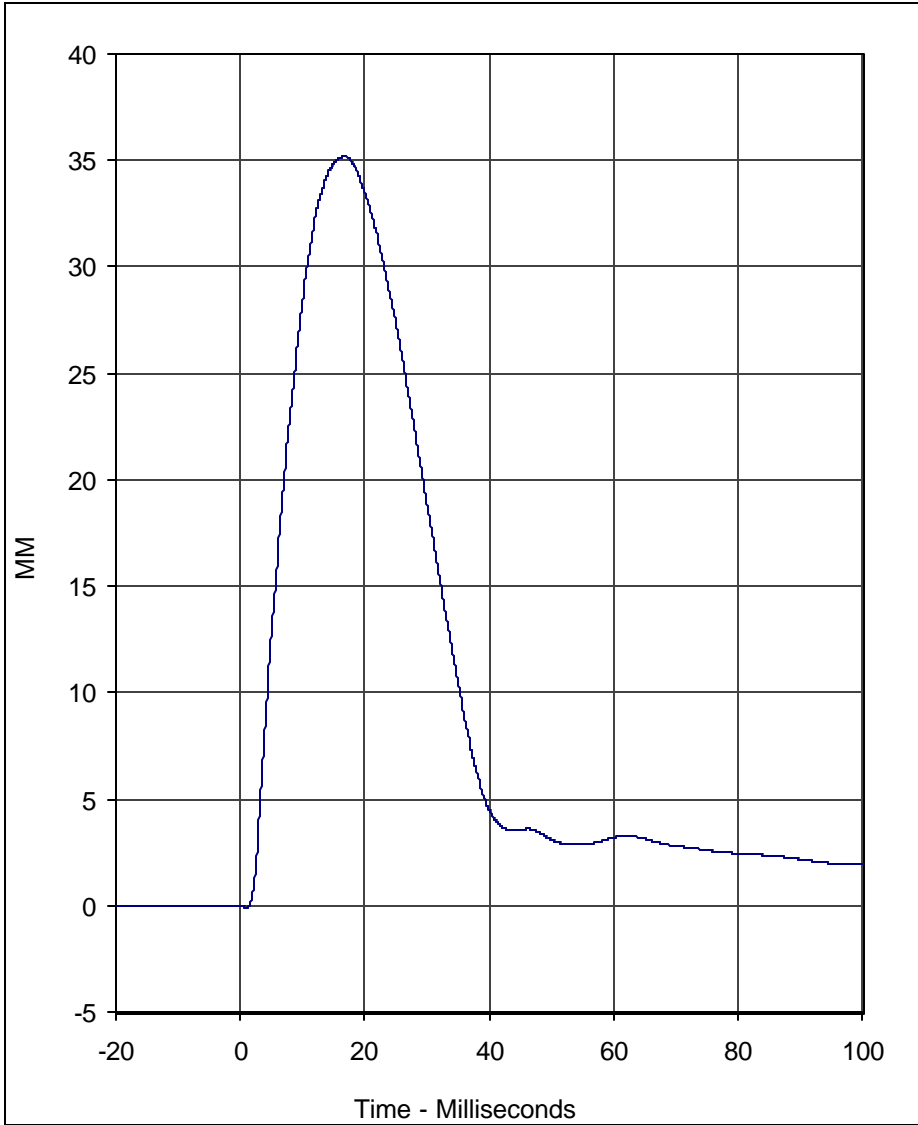
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	5.9 to 6.1	6.06	Pass
Peak Chest Compression	MM	32 to 38	35.2	Pass
Peak Probe Force Between 32 and 38 MM	Newtons	680 to 810	751.7	Pass
Peak Probe Force Between 12.5 and 32 MM	Newtons	≤860	743.9	Pass
Internal Hysteresis	%	65 to 85	70.1	Pass
Overall Test Results				Pass

F5-3

TR-P23001-07-NC

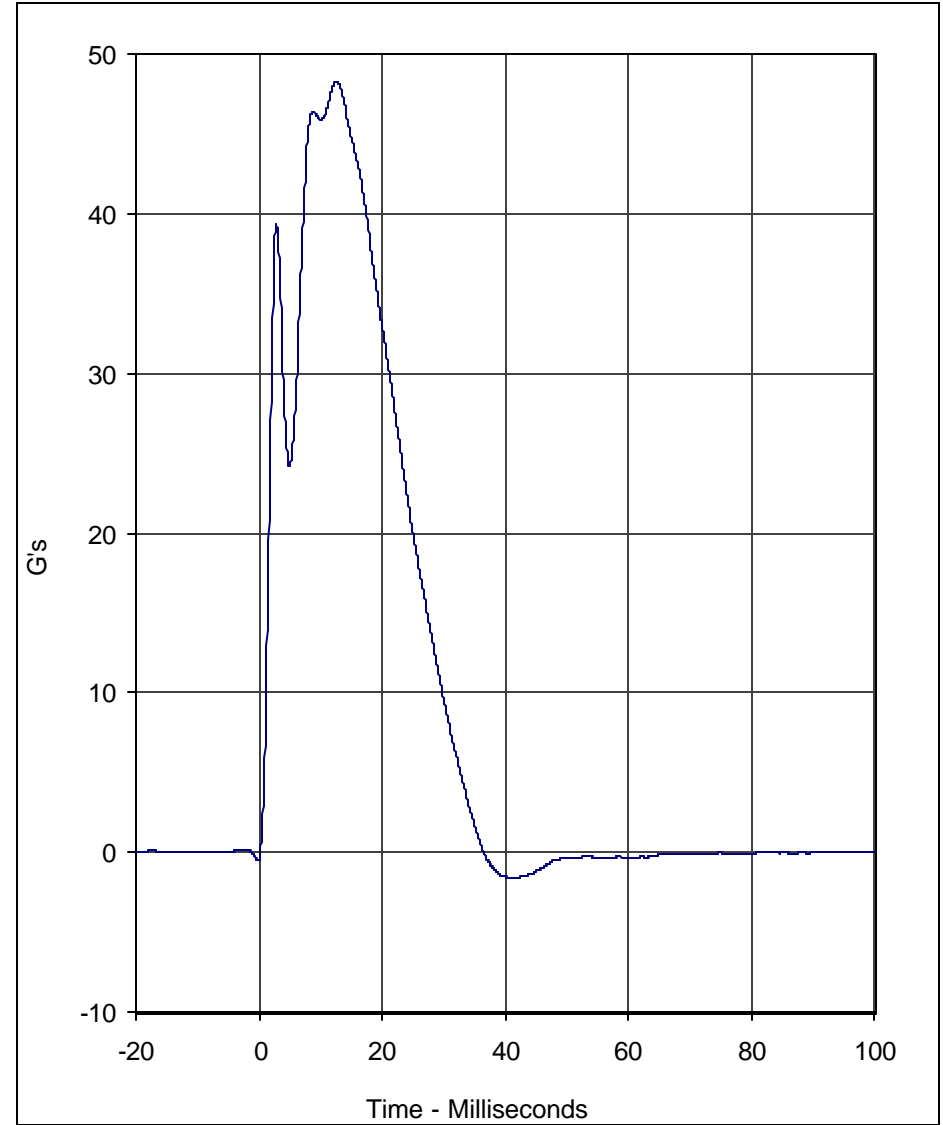
Laboratory Technician

January 22, 2003
Test Date



Curve Description	CURNO	Type
Chest Compression	001	FIL

Units	Max	Time	Min	Time	SAE Class
MM	35.2	16.7	-0.1	1.0	180



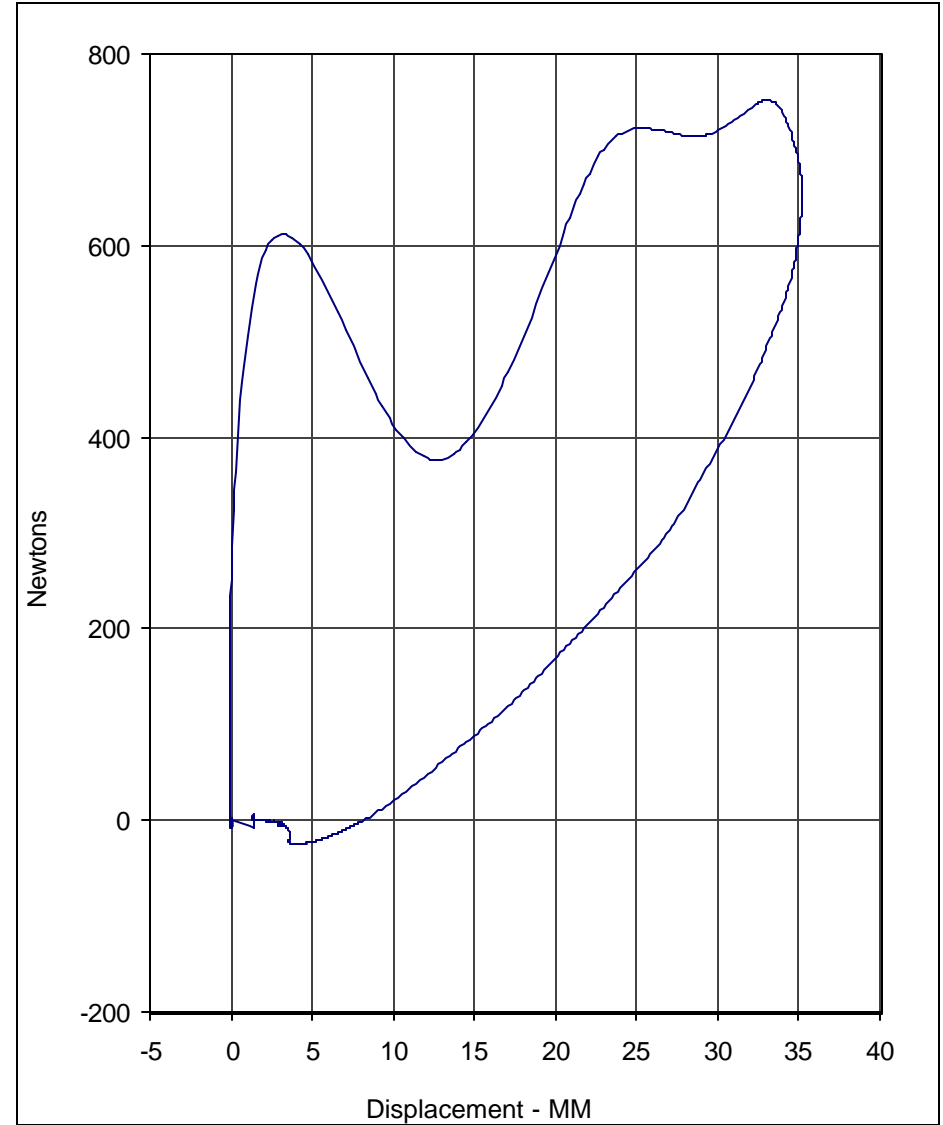
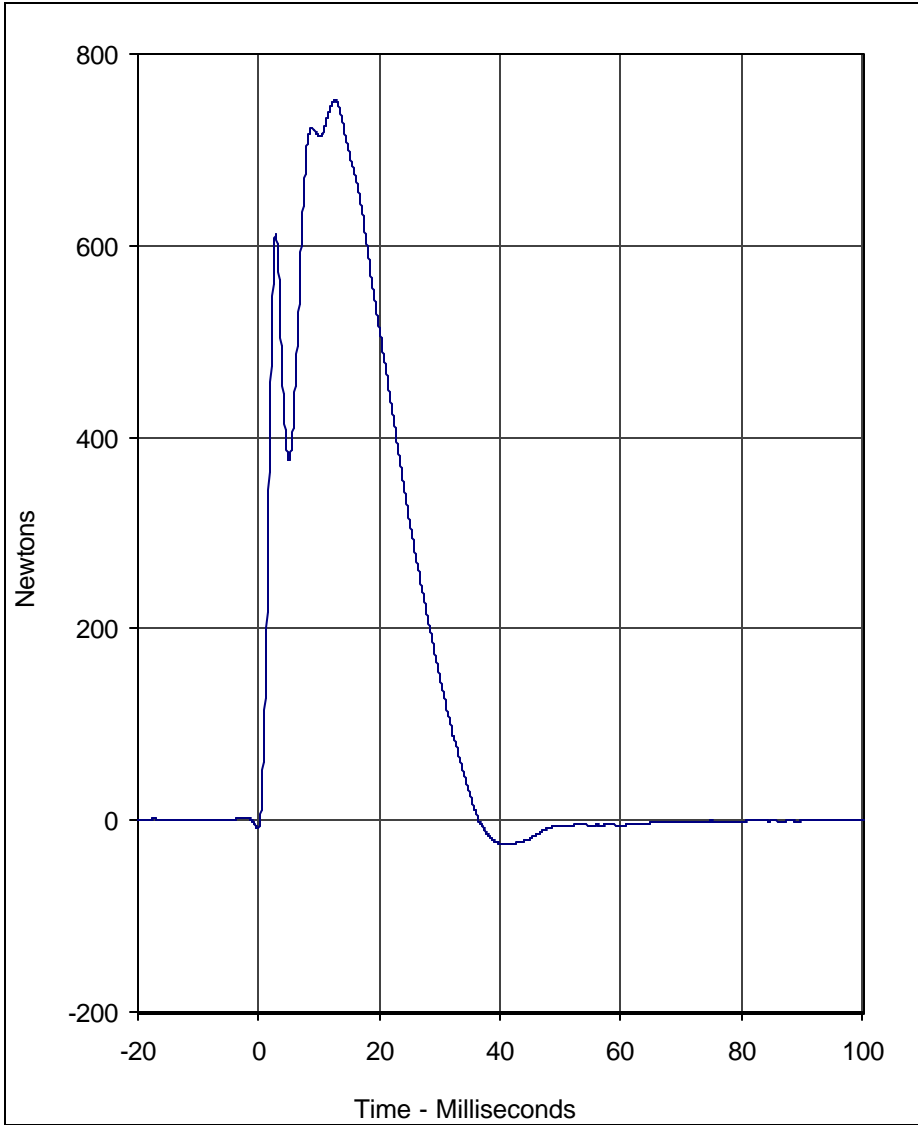
Curve Description	CURNO	Type
Probe Acceleration	002	FIL

Units	Max	Time	Min	Time	SAE Class
G's	48.3	12.7	-1.6	42.0	180

Test Program: Hybrid III 3 Year Old Thorax Impact
 Test Date: 1/22/03

A.T.D. Serial No.: 082
 Test I.D.: CH017





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	751.7	12.7	-24.6	42.0	180

Units	Hysteresis	SAE Class
%	70.3	180

Test Program: Hybrid III 3 Year Old Thorax Impact
 Test Date: 1/22/03

A.T.D. Serial No.: 082
 Test I.D.: CH017





Calibration Data Sheet

Hybrid III 3 Year Old

Neck Flexion Test

ATD Serial No.: 082

Test I.D.: 3C09A

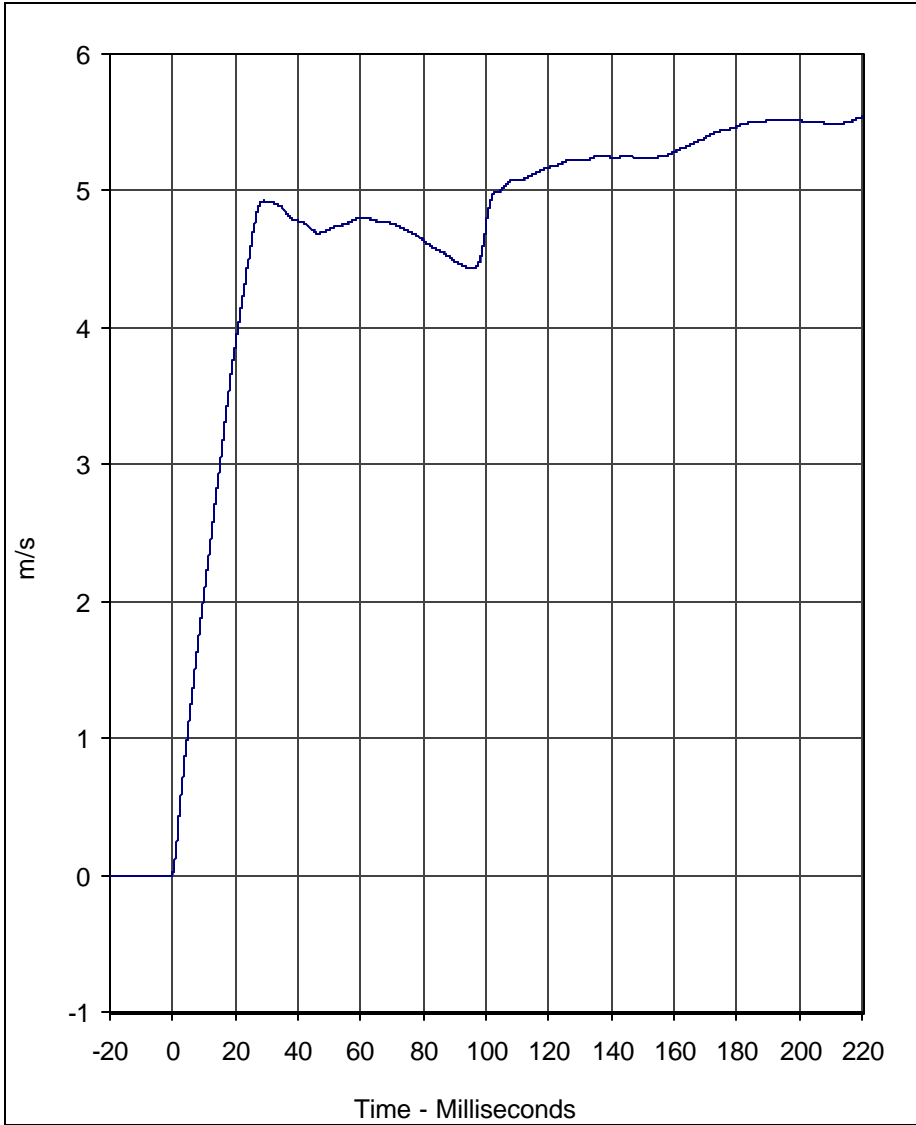
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.40 to 5.60	5.43	Pass
Pendulum Deceleration	10 Msec.	m/s	2.0 to 2.7	2.0	Pass
	20 Msec.	m/s	3.0 to 4.0	3.9	Pass
	30 Msec.	m/s	4.0 to 5.1	4.9	Pass
"D" Plane Rotation	Maximum	Degrees	70.0 to 82.0	75.4	Pass
Peak Moment in Rotation	Maximum	Nm	42.0 to 53.0	50.8	Pass
Positive Moment Decay, Time to 10Nm		Msec.	60.0 to 80.0	75.3	Pass
Overall Test Results					Pass

F5-6

TR-P23001-07-NC

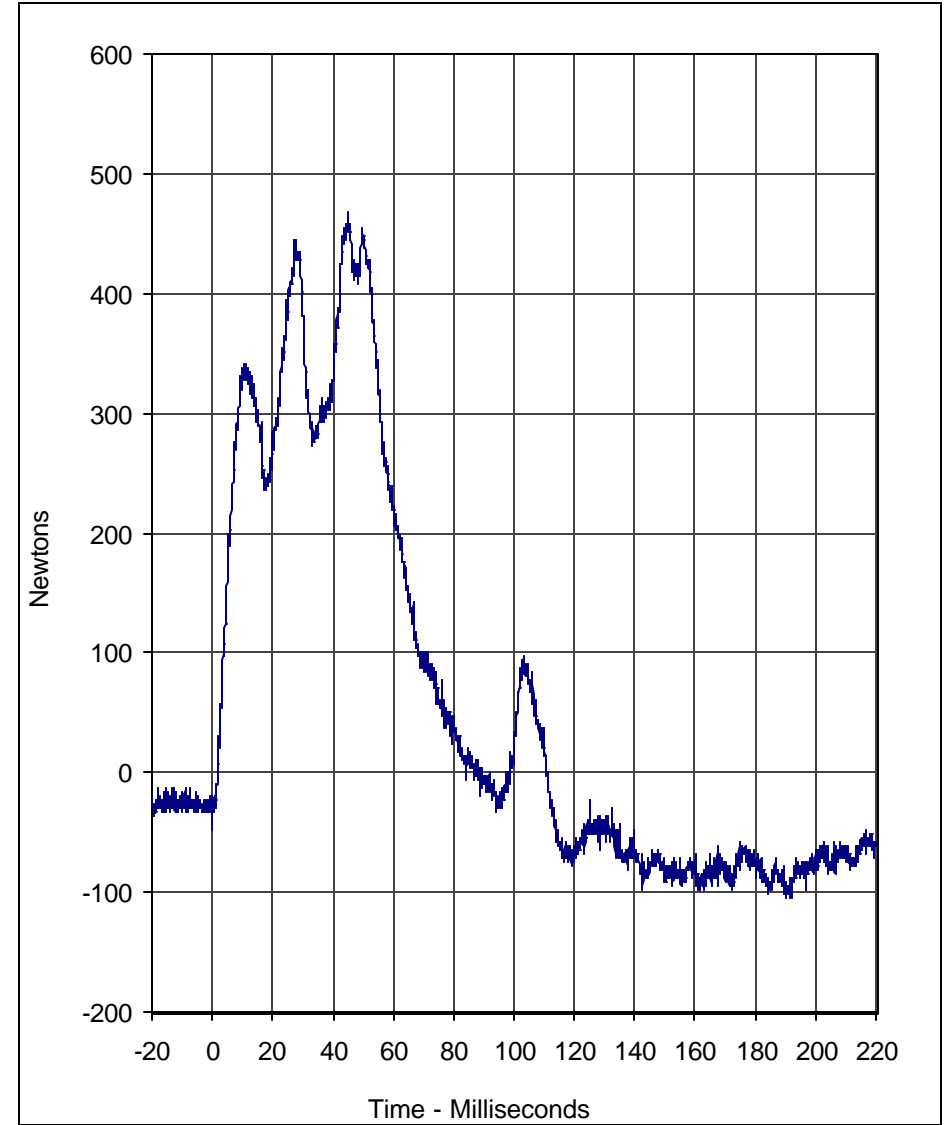
Laboratory Technician

January 24, 2003
Test Date



Curve Description	CURNO	Type
Pendulum Velocity	001	FIL

Units	Max	Time	Min	Time	SAE Class
m/s	5.5	220.0	0.0	-0.9	180



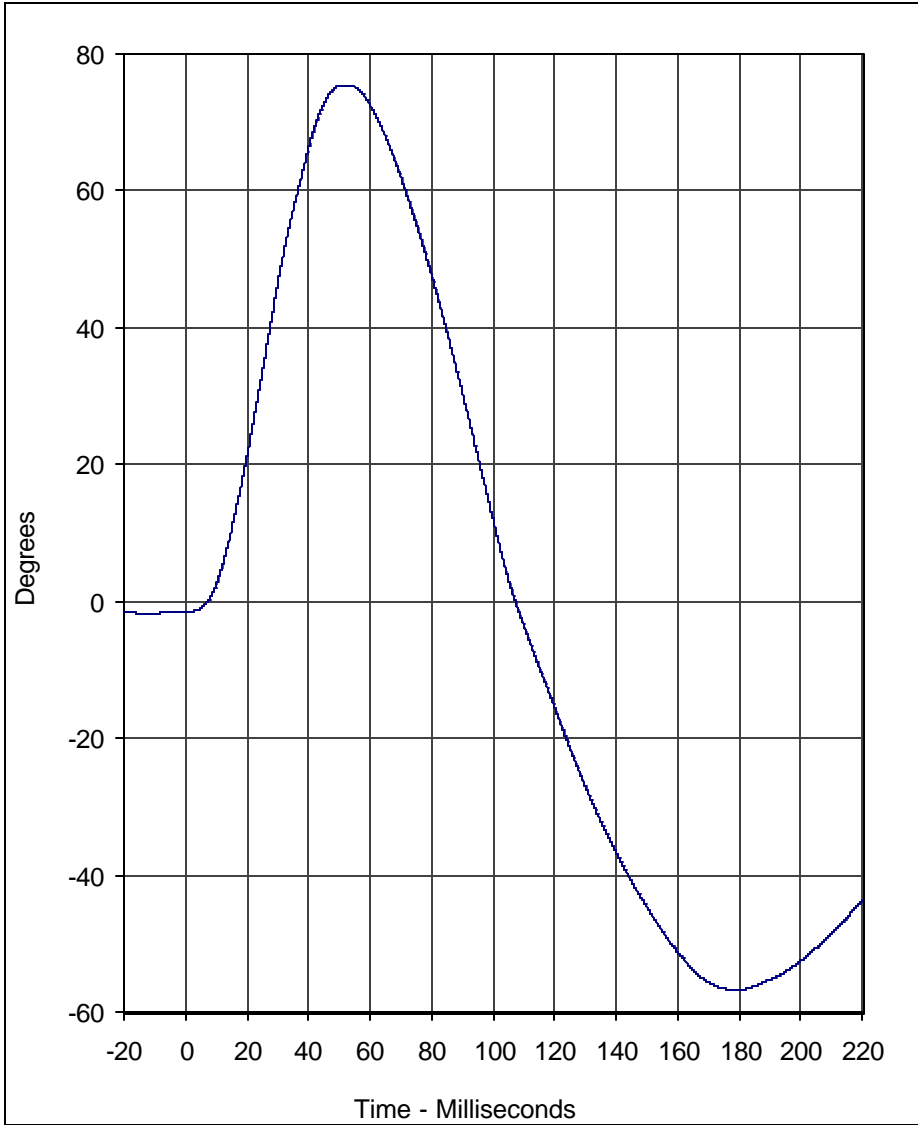
Curve Description	CURNO	Type
Neck Force X	002	FIL

Units	Max	Time	Min	Time	SAE Class
Newtons	468.5	45.0	-104.5	190.1	1000

Test Program: 3 Year Old Hybrid III Neck Flexion Test
 Test Date: 1/24/03

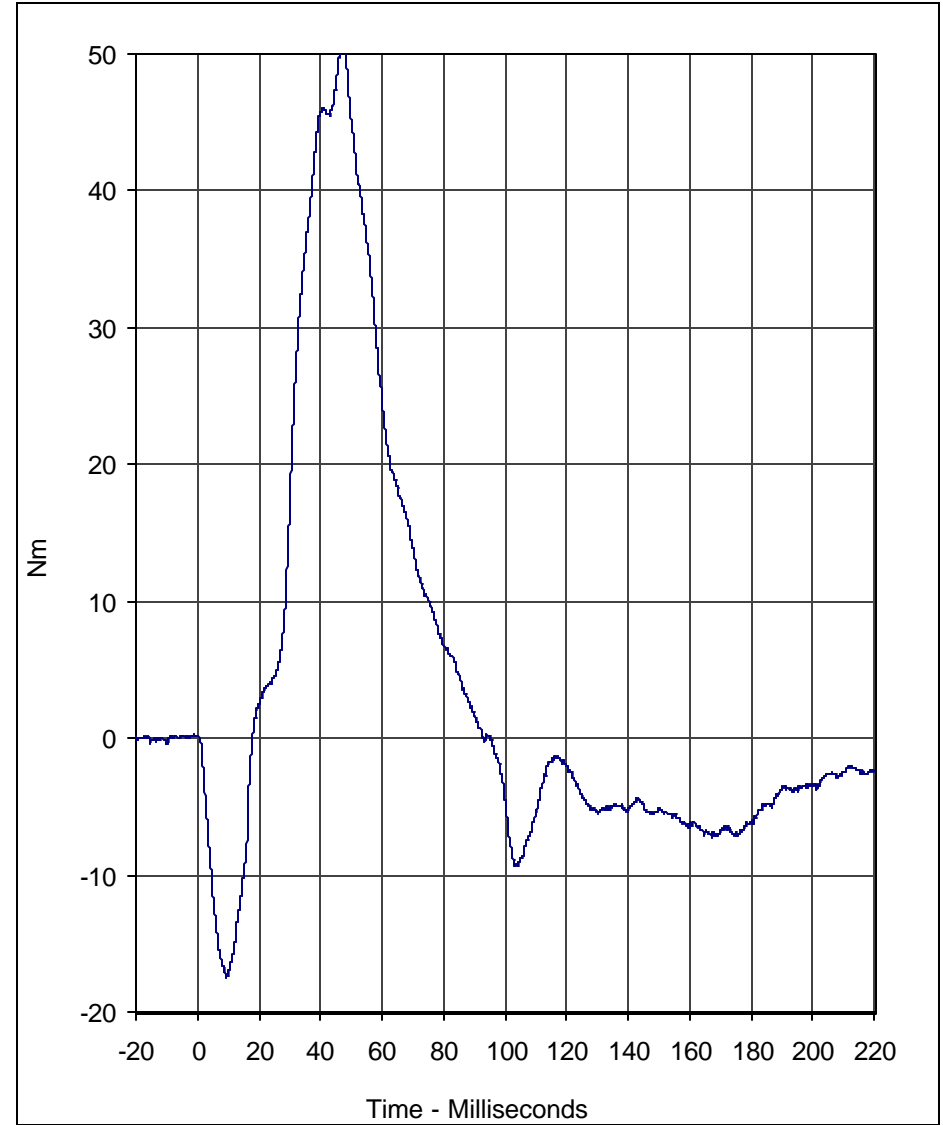
A.T.D. Serial No.: 082
 Test I.D.: 3C09A





Curve Description	CURNO	Type
"D" Plane Rotation	003	FIL

Units	Max	Time	Min	Time	SAE Class
Degrees	75.4	52.4	-56.8	179.3	60



Curve Description	CURNO	Type
Neck Moment Y	002	FIL

Units	Max	Time	Min	Time	SAE Class
Nm	50.8	47.1	-17.4	9.3	600

Test Program: 3 Year Old Hybrid III Neck Flexion Test
 Test Date: 1/24/03

A.T.D. Serial No.: 082
 Test I.D.: 3C09A





Calibration Data Sheet

Hybrid III 3 Year Old Neck Extension Test

ATD Serial No.: 082

Test I.D.: 3C067

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	3.72	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	91.7	Pass
Peak Moment in Rotation	Maximum	Nm	-43.7 to -53.3	-51.6	Pass
Positive Moment Decay, Time to 10Nm		Msec.	60.0 to 80.0	68.8	Pass
Overall Test Results					Pass

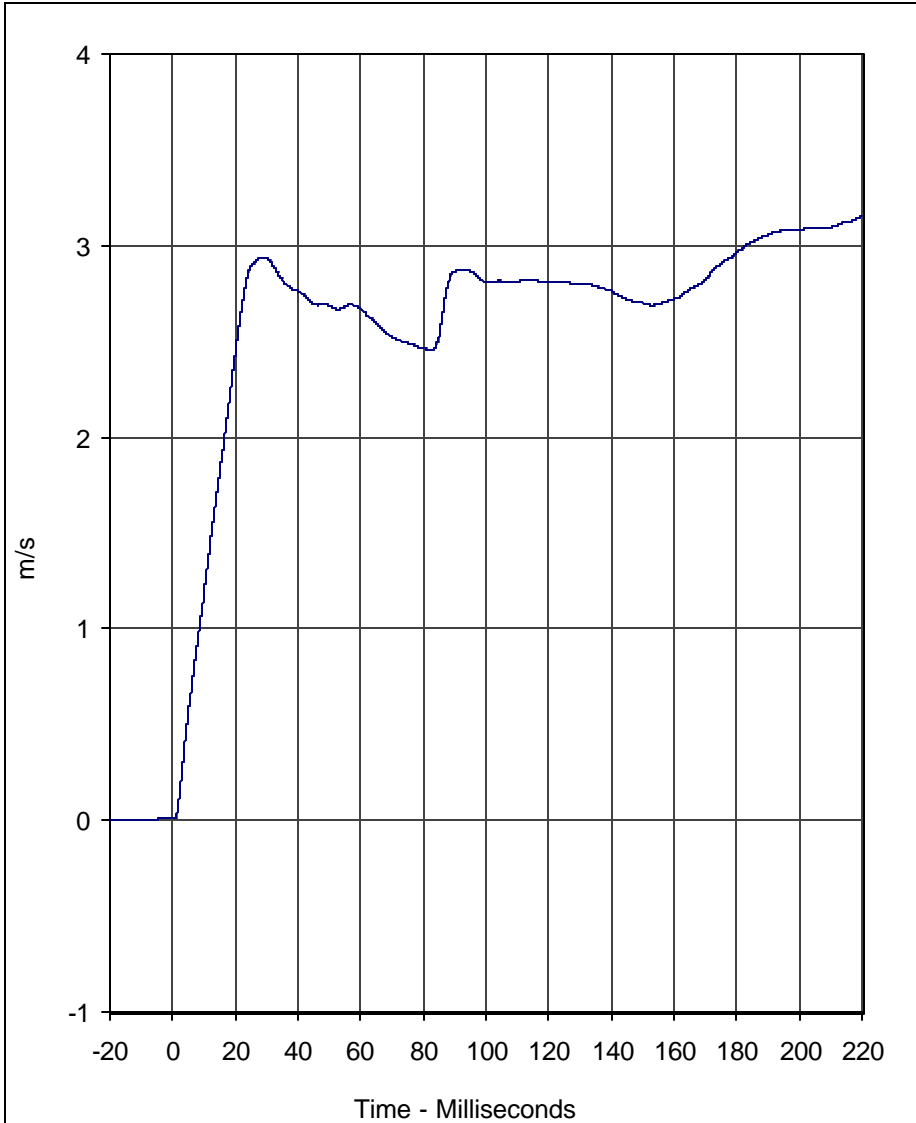
F5-9

TR-P23001-07-NC

Laboratory Technician

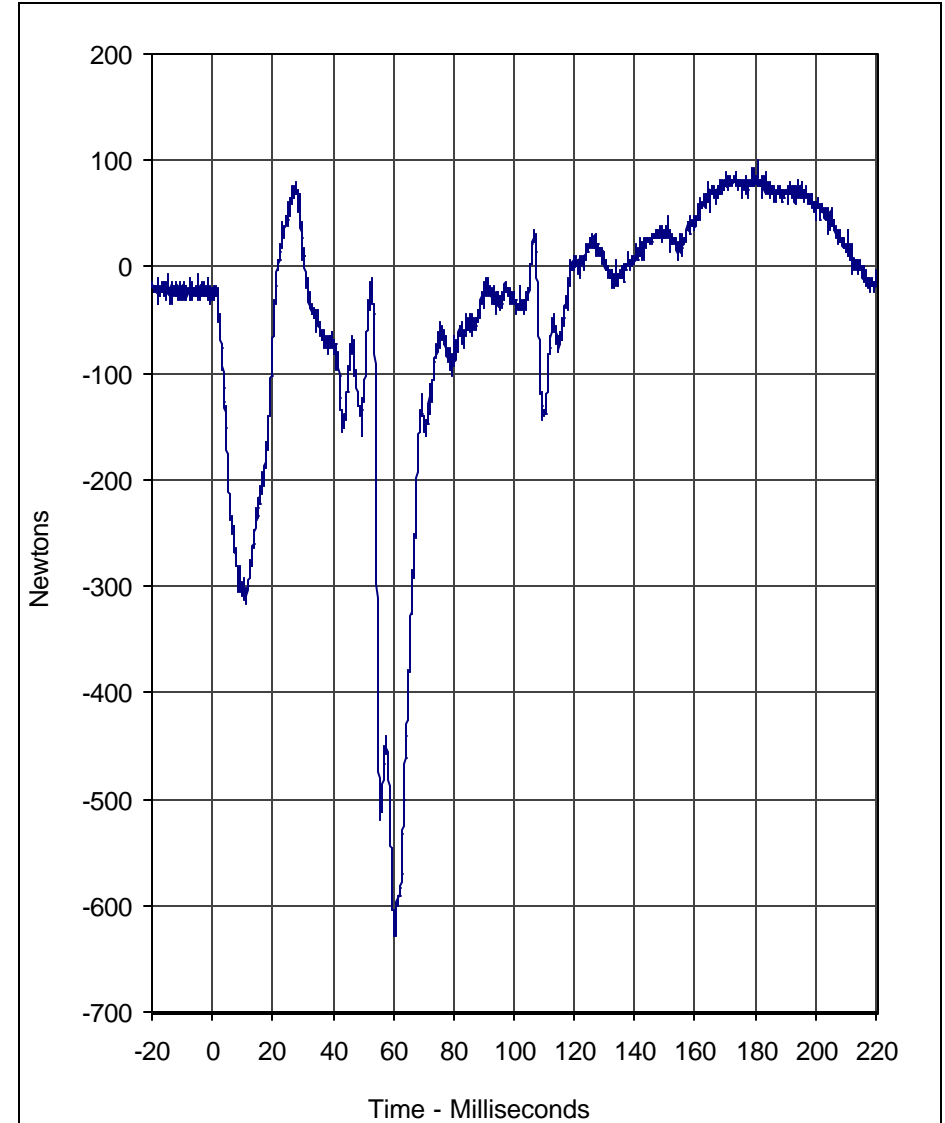
January 23, 2003

Test Date



Curve Description	CURNO	Type
Pendulum Velocity	001	FIL

Units	Max	Time	Min	Time	SAE Class
m/s	3.2	220.0	0.0	-20.0	180



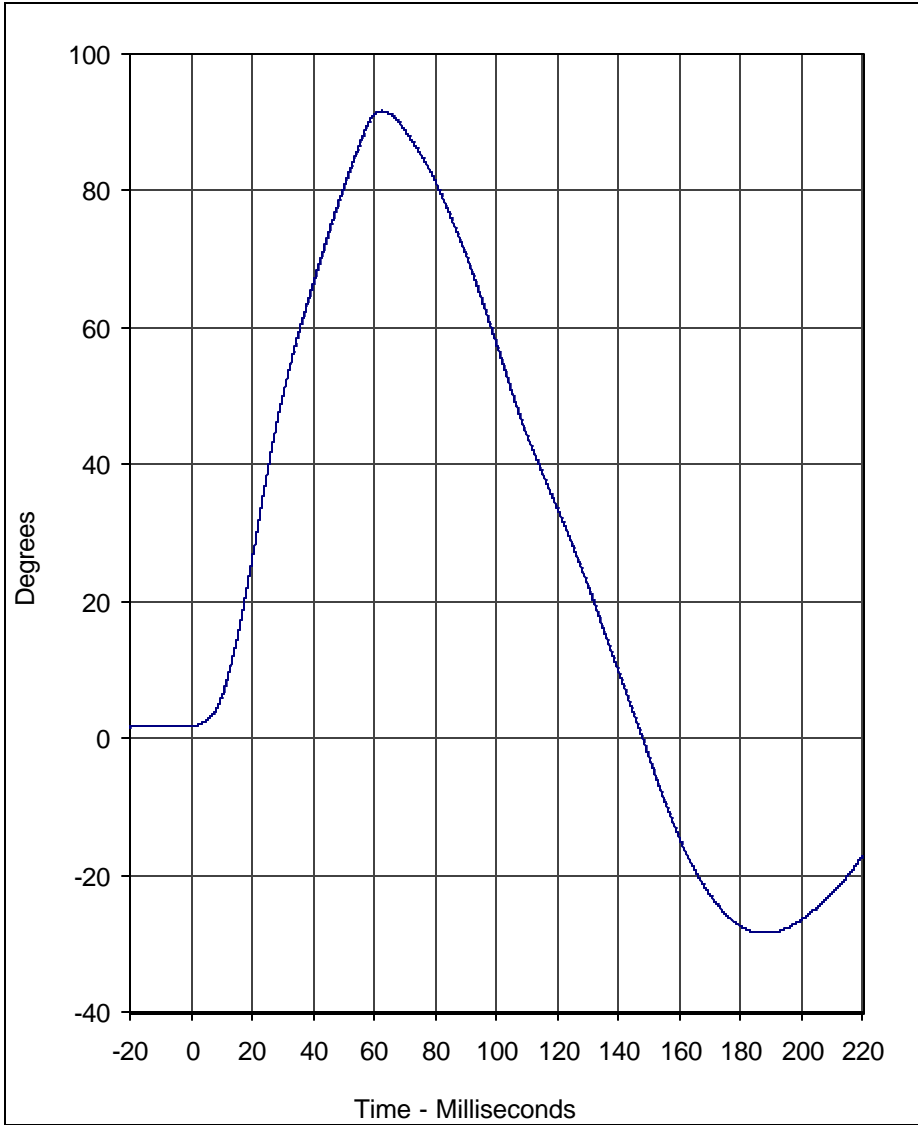
Curve Description	CURNO	Type
Neck Force X	002	FIL

Units	Max	Time	Min	Time	SAE Class
Newtons	99.7	180.9	-628.8	60.5	1000

Test Program: 3 Year Old Hybrid III Neck Extension Test
 Test Date: 1/23/03

A.T.D. Serial No.: 082
 Test I.D.: 3C067

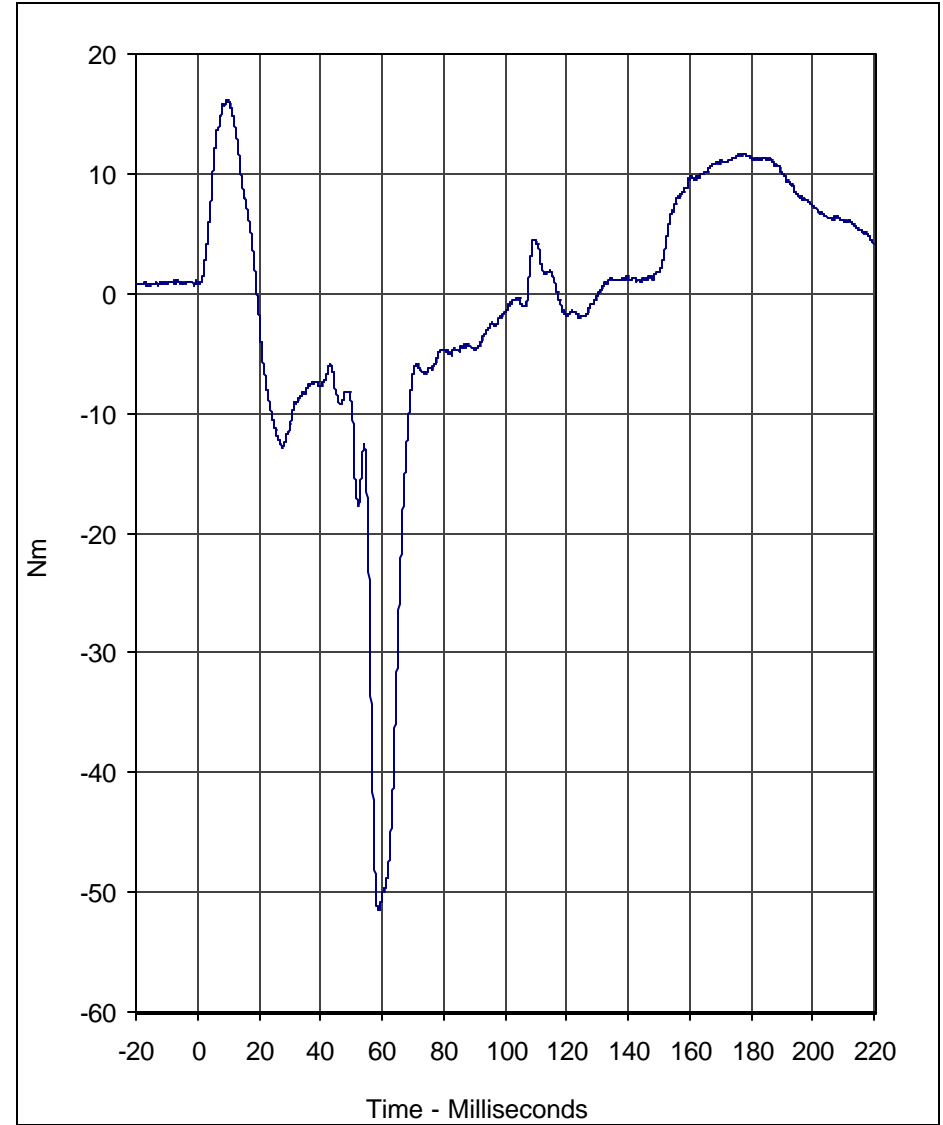




Curve Description	CURNO	Type
"D" Plane Rotation	003	FIL

Units	Max	Time	Min	Time	SAE Class
Degrees	91.7	62.6	-28.4	188.3	60

Test Program: 3 Year Old Hybrid III Neck Extension Test
 Test Date: 1/23/03



Curve Description	CURNO	Type
Neck Moment Y	002	FIL

Units	Max	Time	Min	Time	SAE Class
Nm	16.1	9.4	-51.6	59.0	600

A.T.D. Serial No.: 082
 Test I.D.: 3C067





Calibration Data Sheet

Hybrid III 3 Year Old

Torso Flexion Test

ATD Serial No.: 082

Test I.D.: TF091

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	5.2	Pass
Peak Force at 45 +/-0.5 degrees	Newtons	130.0 to 180.0	165.7	Pass
Torso rotation rate	deg/sec	0.5 to 1.5	0.7	Pass
Final reference plane angle	Degrees	+/-10	5.1	Pass
Overall Test Results				Pass

F5-12

TR-P23001-07-NC

Laboratory Technician

January 24, 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	320	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	85	Pass
G - Elbow back to wrist pivot	mm	247 to 263	255	Pass
H - Skull cap to back line	mm	48 to 58	55	Pass
I - Shoulder to elbow length	mm	185 to 201	200	Pass
J - Elbow rest height	mm	134 to 149	140	Pass
K - Buttock to knee length	mm	285 to 300	300	Pass
L - Popliteal length	mm	219 to 234	225	Pass
M - Knee pivot height	mm	242 to 257	255	Pass
N - Buttock popliteal length	mm	218 to 233	220	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	255	Pass
S - Head Breadth	mm	128 to 144	140	Pass
T - Head Depth	mm	167 to 183	170	Pass
U - Hip breadth	mm	201 to 216	205	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	515	Pass
Y - Chest circumference with jacket	mm	527 to 553	535	Pass
Z - Waist circumference	mm	527 to 553	550	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-P23001-07-NC

Laboratory Technician

January 24, 2003
Test Date

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