

**REPORT NUMBER TR-P23106-10-NC**

**SIDE AIRBAG OCCUPANT RISK PROGRAM  
OCCUPANT OUT-OF-POSITION TESTS**

**NISSAN MOTOR CORPORATION  
2004 MAXIMA  
4 DOOR SEDAN**

**NHTSA NUMBER: M45200TWG2**

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



**JUNE 24, 2004**

**FINAL REPORT**

**PREPARED FOR:  
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NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION  
RULEMAKING  
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## Technical Report Documentation Page

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<b>16. Abstract</b>  A static side airbag deployment was conducted on a 2004 Nissan Maxima 4 Door Sedan at KARCO Engineering, LLC on 6/24/2004. This test was conducted to obtain data indicant of TWG Side Airbag Out-of-Position Injury criteria.			
Measurement Description	Units	Threshold	Hybrid III 6 Year Old ATD
Head Injury Criteria (HIC)	N/A	700	2.4
Max. Thorax Accel. (3 msec clip)	G's	60	21.1
<b>17. Key Words</b>  TWG Occupant Out-of-Position Test Section 3.3.2.1 New Car Assessment Program (NCAP) 2004 Nissan Maxima 4 Door Sedan NHTSA No. M45200TWG2		<b>18. Distribution Statement</b>  Copies of this report available from: NHTSA Technical Reference Division National Highway Traffic Safety Admin. 400 Seventh St., SW, Room 5111 Washington, D.C. 20590	
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## SECTION 1

### PURPOSE AND SUMMARY OF TEST M45200TWG2

#### 1.1 PURPOSE

This occupant out-of-position injury test is part of the Occupant Injury Risk from Deploying Side Airbags 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 occupant injury data for a side airbag deployment.

The occupant out-of-position side airbag test was conducted in accordance with the Technical Working Group Recommended Procedures for Evaluating Occupant Injury Risk from Deploying Side Airbags.

#### 1.2 SUMMARY

The effects of a seat-mounted torso airbag deployment in a 2004 Nissan Maxima 4-Door Sedan with an out-of-position Hybrid III 6 Year-Old Child dummy were evaluated. The test was performed at Karco Engineering, LLC on June 24, 2004. Pre- and post-test photographs of the vehicle and dummy can be found in Appendix A.

Two high-speed film and one digital cameras were used to document the side airbag deployment event. Camera locations and other pertinent camera information can be found on Data Sheet No.1 and Data Sheet No.6.

One Part 572N, Hybrid III 6 Year-Old child anthropomorphic test device (ATD), was placed in the front passenger seat, positioned facing forward according to the dummy placement instructions (3.3.3.5) in the July 2003 Revision of the Technical Working Group's 'Recommended Procedures for Evaluating Occupant Injury Risk from Deploying Side Airbags'.

The ATD was instrumented with head, chest and pelvis triaxial accelerometers, a chest displacement potentiometer, and a six-axis upper neck transducer.

Sixteen (16) channels of data were recorded using an on-board data acquisition system. Appendix A contains Photographs. Appendix B contains dummy response data traces. Appendix C contains the Instrumentation Data Channel assignments.

The passenger side doors remained closed during side air bag deployment and were operable after the deployment.

The Hybrid III 6 Year-Old Child Dummy's visible contact points were as follows: The airbag contacted the ATD's back at chest level. This contact point can be observed dynamically on the high-speed video recording of the event. During the test, the roof rail airbag did not deploy.

Occupant of Position Occupant injury data is contained in table below.

**OUT OF POSITION OCCUPANT DATA SUMMARY**

ATD Position	HIC	Clip (g)	Chest Disp (mm)
Passenger	2.4	21.1	1.8

Orientation of the Hybrid III 6Year-old Child Dummy was in the forward facing position leaning against the passenger door. The dummy spine was aligned with the deploying trajectory of the airbag. The lower legs were extended. Synthetic foam was used to raise the dummy. This orientation complies with section 3.3.3.5 of the Technical Working Group (TWG) recommendation in the Recommended Procedures for Evaluating Occupant Injury Risk from Deploying Side Airbags.

## SECTION 2

### OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

NHTSA No.: M45200TWG2

Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

Test Date: 6/24/04

#### 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 <sup>2</sup>	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**

**TEST SUMMARY**

Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

NHTSA No.: M45200TWG2

Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

Test Date: 6/24/04

**TEST DUMMY INFORMATION**

Description	Passenger Seat Inboard Facing
Dummy Type / Serial No.	027
Head Contact	No
Chest Contact	No
Abdomen Contact	No
Pelvis	No
Left Knee Contact	No
Right Knee Contact	No

Note: Curtain airbag did not blow.

**16mm MOVIE COVERAGE**

High Speed Film	2
High Speed Digital	1
Total	3

**DATA CHANNELS**

Child ATD Sensors	16
Belt Assessment Sensors	0
Vehicle Structure Accelerometers	0
Total	16

**DATA SHEET NO. 2**

**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

NHTSA No.: M45200TWG2

Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

Test Date: 6/24/04

**TEST VEHICLE INFORMATION**

Make	Nissan
Model	Maxima
Body Style	4-Door
NHTSA No.	M45200
VIN	1N4BA41E44C841028
Color	Copper
Delivery Date	8/25/03
Odometer Reading (mile)	11
Dealer	Empire Nissan
Transmission	4 Speed Automatic
Final Drive	Front
Type/Number Cylinders	V-6
Engine Displacement (L)	3.5
Engine Placement	Transverse

**TEST VEHICLE OPTIONS**

Driver Front Airbag	Yes
Driver Side Torso Airbag	Yes
Driver Side Head Airbag	Yes
Rear Pass. Airbag	No
Rear Pass.Torso Airbag	No
Rear Pass. Head Airbag	Yes
Power Brakes	Yes
Power Steering	Yes
Disc Brakes, Front	Yes
Disc Brakes, Rear	Yes
Anti-lock Brakes	Yes
Tilt Steering Wheel	Yes
Power Windows	Yes
Power Seats	Yes

**DATA FROM CERTIFICATION LABEL**

Manufactured By	Nissan Motor Company	GVWR (kg)	2062
Date of Manufacture	July-03	GAWR Front (kg)	1120
		GAWR Rear (kg)	951

**DATA FROM TIRE PLACARD**

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	308	308
Cold Pressure (kPa)	220	220
Recommend Tire Size	P245/45R18	P245/45R18
Tire Size on Vehicle	P245/45R18	P245/45R18
Tire Manufacturer	Goodyear	Goodyear

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bucket	None	
Number of Occupants	2	3	0	5
Capacity Wt. (VCW) (kg)				390
Cargo Weight (RCLW) (kg)				60

\* Vehicle had undergone New Car Assessment Program Side Impact Test on November 14, 2004

**DATA SHEET NO. 3**

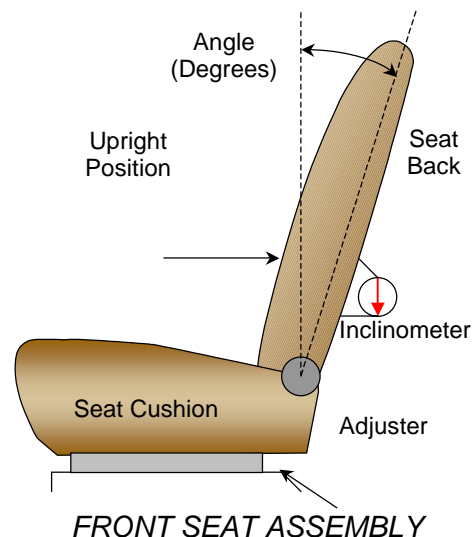
**TEST VEHICLE INFORMATION**

Test Vehicle: 2004 Nissan Maxima 4 Door Sedan  
 Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

NHTSA No.: M45200TWG2  
 Test Date: 6/24/04

**NOMINAL DESIGN RIDING POSITION**

The passenger seat back is 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**

Position	Deg.
Passenger w/ Dummy	11.7

**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 the driver seat.

**SEAT FORE/AFT POSITIONING**

	Total Fore/Aft Travel	Placed in Position #
Passenger Seat	236 mm	118 mm

**DATA SHEET NO. 4**

**DUMMY POSITIONING INFORMATION**

Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

NHTSA No.: M45200TWG2

Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

Test Date: 6/24/04

**TEST DUMMY POSITION MEASUREMENTS**

Code	Measurement Description	Hybrid III 3-Year-Old Child Dummy	
		Length (mm)	Angle (°)
SA	Seat Back Angle		11.7
AMW	Airbag Module Width	100	
ABW	Airbag Width	290	
AML	Airbag Module Length	235	
ABL	Airbag Length	540	
HD	Head CG to Door Panel/ Window	200	
HSC	Head to Seat Back Centerline	700	
HB	Head to B-Pillar	240	
HZ	Head to Roof (Z)	175	
HHD	Head to Header	330	
CD	Chest to Dash	550	
CS	Chest to Seatback	210	
RACL	Right Arm to Seatback Centerline	270	
LACL	Left Arm to Setback Centerline	65	
RA	Right Arm to Door Panel	50	
LA	Left Arm to Door Panel	280	
KK	Knee to Knee	140	
TT	Toe to Toe	135	
KSCR	Right Knee to Seat Cushion Centerline	165	
KSCL	Left Knee to Seat Cushion Centerline	290	
TSCR	Right Toe to Seat Cushion Centerline	90	
TSCL	Left Toe to Seat Cushion Centerline	0	

**DATA SHEET NO. 5 - 6 YEAR OLD HYBRID III ATD INJURY CRITERIA AND SENSOR DATA**

Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

NHTSA No.: M45200TWG2

Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

Test Date: 6/24/04

**HEAD PRIMARY PEAK ACCELERATIONS**

Location	Axis	Units	Pass.			
			Max	Time	Min	Time
Head CG	X	G's	7.6	19.7	-3.4	8.6
Head CG	Y	G's	0.9	261.0	-3.3	13.3
Head CG	Z	G's	6.7	13.9	-11.6	8.2
Head CG Resultant	N/A	G's	11.9	8.1		

**PRIMARY HEAD INJURY CRITERAS (HIC)**

Location	Pass.			
	HIC	T <sup>1</sup>	T <sup>2</sup>	Avg G
Head CG Primary (HIC15)	2.4	6.5	21.5	7.6

**CHEST PRIMARY PEAK ACCELERATIONS**

Location	Axis	Units	Pass.			
			Max	Time	Min	Time
Chest CG	X	G's	38.1	6.2	-1.8	19.4
Chest CG	Y	G's	1.7	3.8	-20.8	6.1
Chest CG	Z	G's	3.4	12.7	-6.3	6.1
Chest CG Resultant	N/A	G's	43.9	6.1		

**PRIMARY CHEST CLIP (3MSEC)**

Location	Pass.		
	CLIP	T <sup>1</sup>	T <sup>2</sup>
Chest CG Primary	21.1	4.7	7.7

**CHEST PEAK DISPLACEMENTS**

Location	Axis	Units	Pass.			
			Max	Time	Min	Time
Chest CG	X	MM	1.8	18.5	-2.8	10.3

**PELVIC PEAK ACCELERATIONS**

Location	Axis	Units	Pass.			
			Max	Time	Min	Time
Pelvis	X	G's	29.3	6.2	-4.3	25.4
Pelvis	Y	G's	4.7	5.3	-28.2	7.4
Pelvis	Z	G's	7.1	9.8	-14.3	5.5
Pelvis Resultant	N/A	G's	34.8	6.3		

**DATA SHEET NO. 5...(continued)**

Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

NHTSA No.: M45200TWG2

Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

Test Date: 6/24/04

**UPPER NECK PEAK FORCES AND MOMENTS**

Location	Axis	Units	Pass.			
			Max	Time	Min	Time
Neck Force	X	Newtons	172.6	19.5	-64.8	9.1
Neck Force	Y	Newtons	32.3	258.7	-66.1	13.3
Neck Force	Z	Newtons	174.4	14.2	-387.2	8.8
Neck Force Resultant	N/A	Newtons	390.3	8.8		
Neck Moment	X	Nm	5.4	11.8	-5.6	35.4
Neck Moment	Y	Nm	17.9	19.4	-8.4	42.4
Neck Moment	Z	Nm	1.8	66.2	-3.1	11.5
Neck Moment Resultant	N/A	Nm	18.1	19.4		

**DATA SHEET NO. 6**

**CAMERA LOCATIONS**

Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

NHTSA No.: M45200TWG2

Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

Test Date: 6/24/04

No.	Camera View	Location (mm)			Angle (Deg.)	Lens (mm)	Speed (fps)
		X	Y	Z			
1	High Speed Film Side View	280	3450	10	0.0	24	900
2	High Speed Film Front View	1530	100	41	7.0	9.00	1020
3	High Speed Digital Side View	80	3170	8	0.0	25	1000

\* Cameras aligned to center of seat back as reference

APPENDIX A  
PHOTOGRAPHS



A-1

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Figure A-1: Right Front ¾ View, As Received

**MANUFACTURED BY NISSAN MOTOR CO., LTD.**

DATE 07/03 GVWR 4546 LB  
GAWR FR. 2469 LB GAWR RR. 2097 LB

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR  
VEHICLE SAFETY, BUMPER AND THEFT PREVENTION STANDARDS  
IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.  
SEE OWNERS MANUAL FOR ADDITIONAL INFORMATION.

VIN: 1N4BA41E44C841028 PASSENGER CAR

COLOR	TRIM	TRANS	AXLE	ENGINE
A19	G	RESF22A	GA24	VQ35DE 3498CC

MODEL: BLJALVN-EU5 118 02000



**1N4BA41E44C841028**

Figure A-2: Vehicle Certification Label

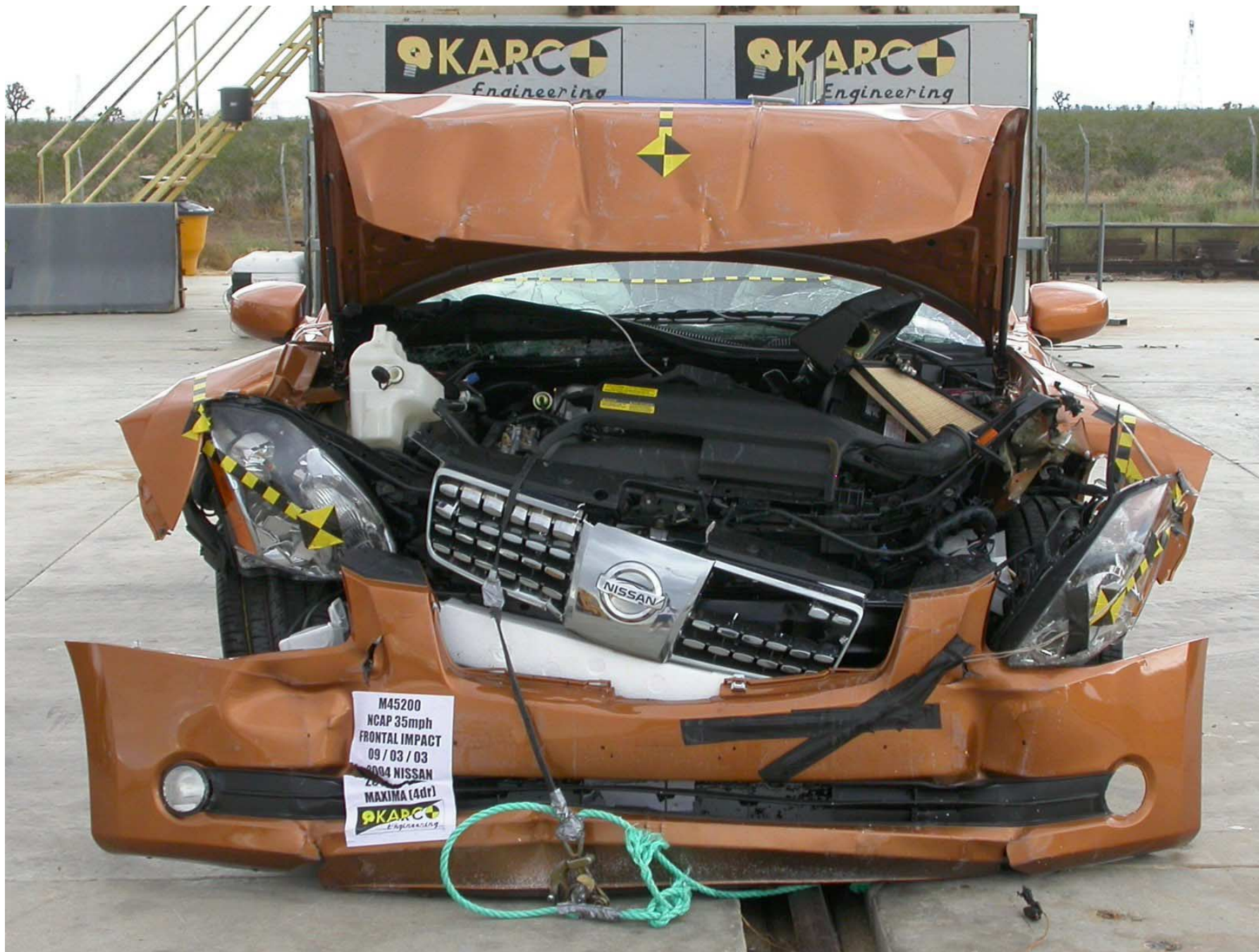


Figure A-3: Post-Test Front View of Prior Test



Figure A-4: Post-Test Left Side View of Prior Test



Figure A-5: Pre-Test Dummy Position, Left Side View



Figure A-6: Pre-Test Dummy Position,  $\frac{3}{4}$  View



Figure A-7: Pre-Test Dummy Position, Full Front View



Figure A-8: Post-Test Dummy Position and Airbag, Overhead View



Figure A-9: Post-Test Airbag, Left Side View

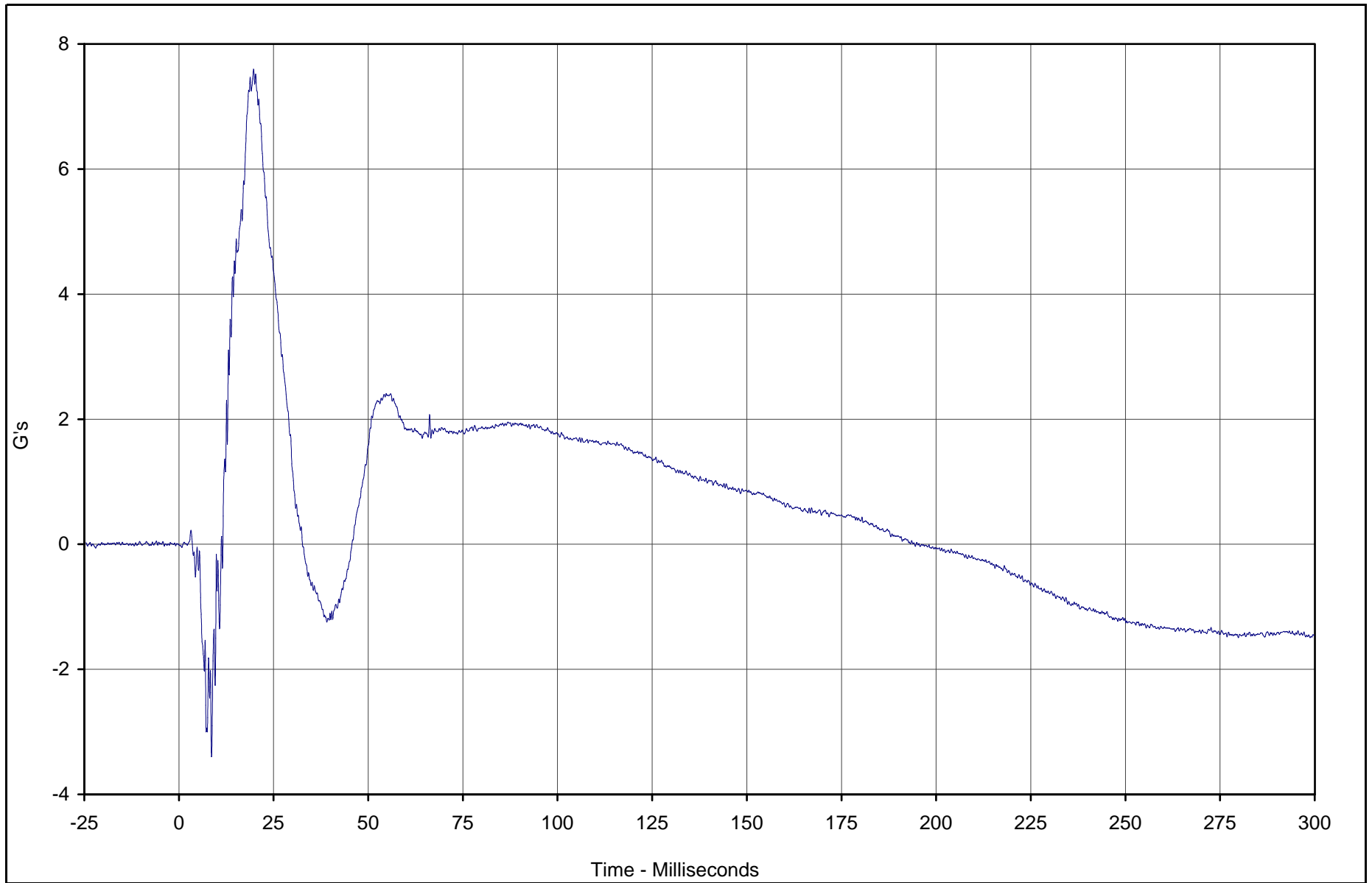


Figure A-10: Post-Test Airbag

## APPENDIX B

### DATA PLOTS

B-1



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Head X	001	FIL	G's	7.6	19.7	-3.4	8.6	1000



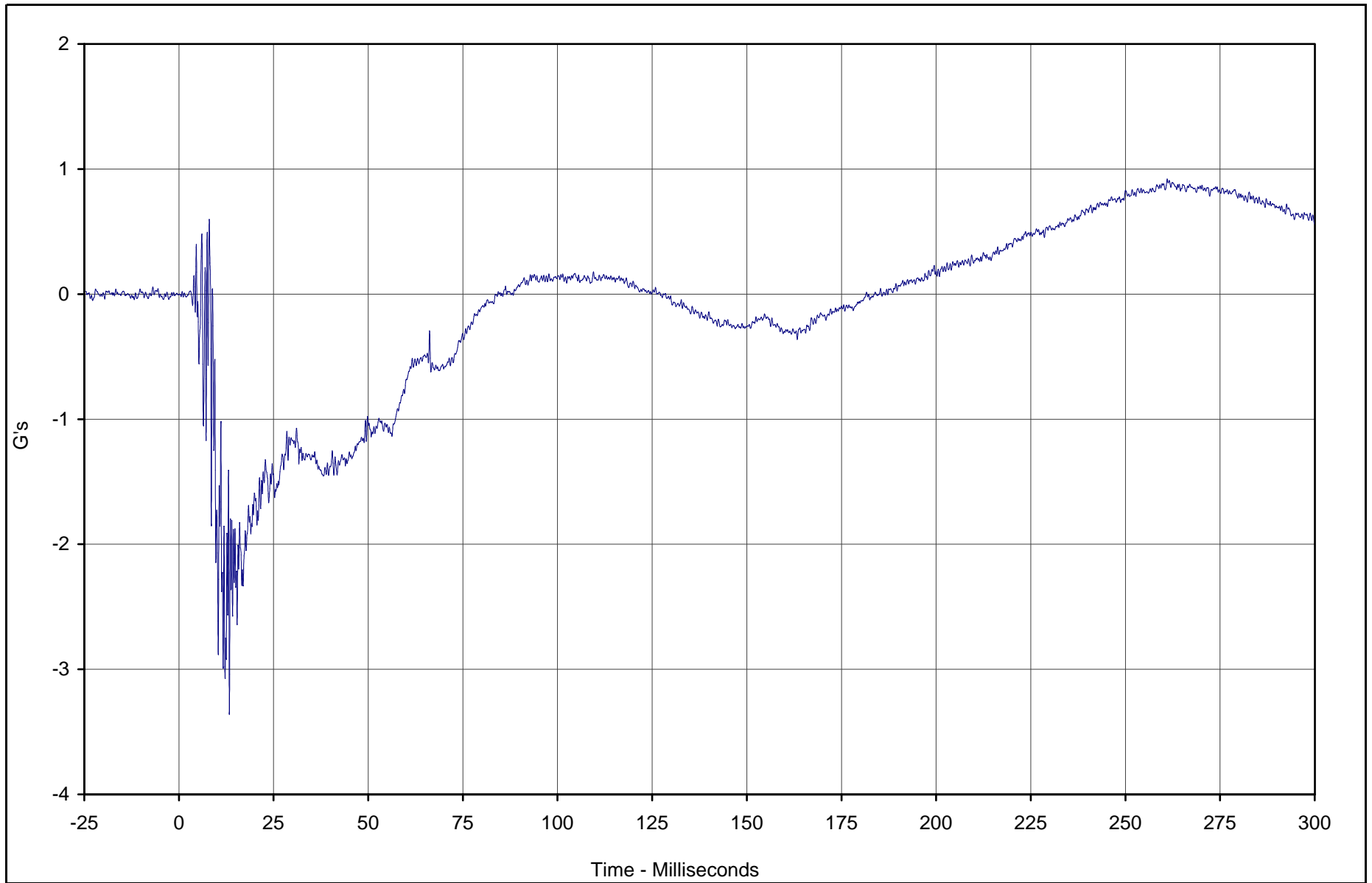
Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

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Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Head Y	002	FIL	G's	0.9	261.0	-3.3	13.3	1000

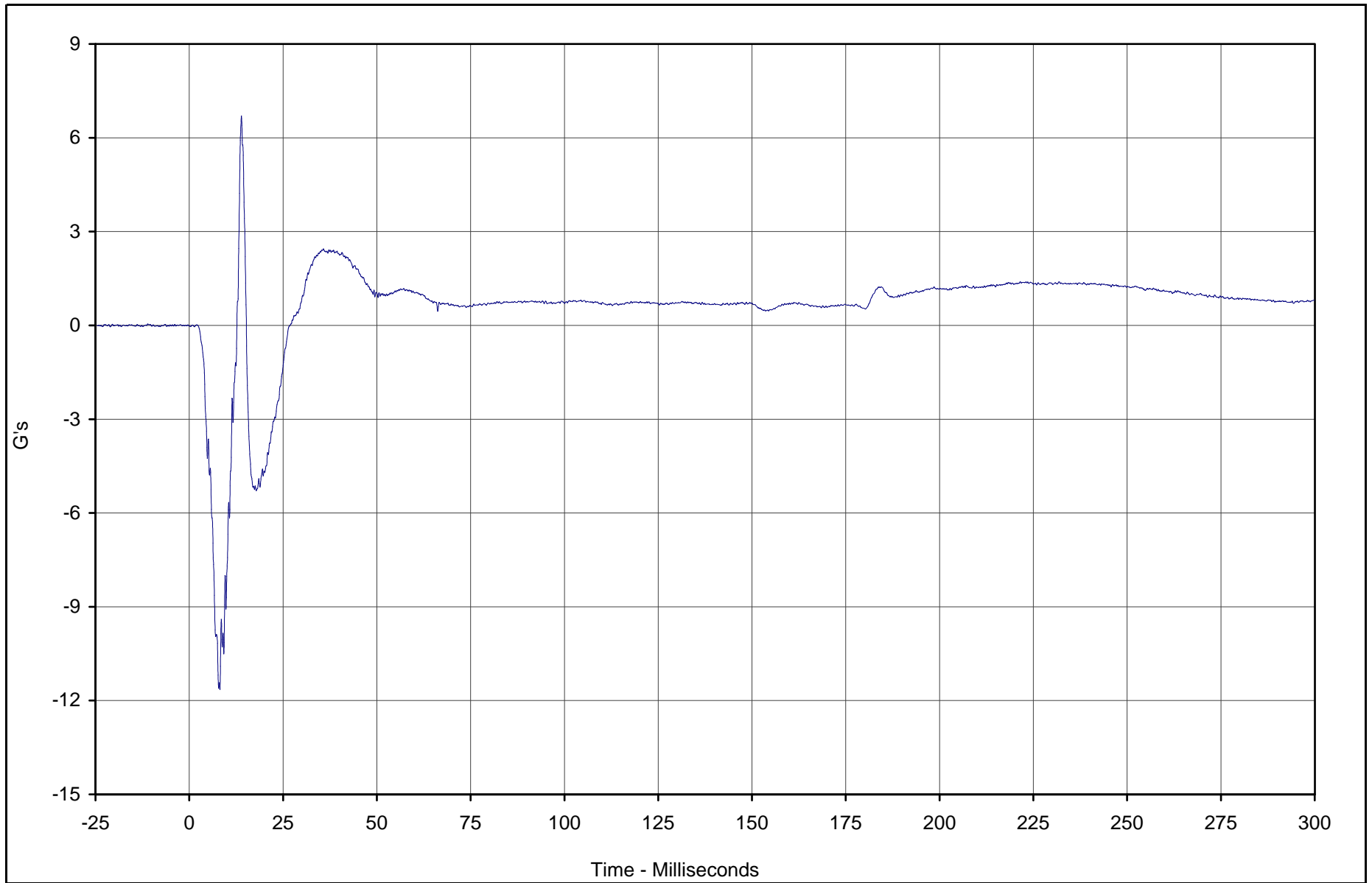


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Test Date: 6/24/04

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NHTSA No.: M45200TWG2



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Head Z	003	FIL	G's	6.7	13.9	-11.6	8.2	1000

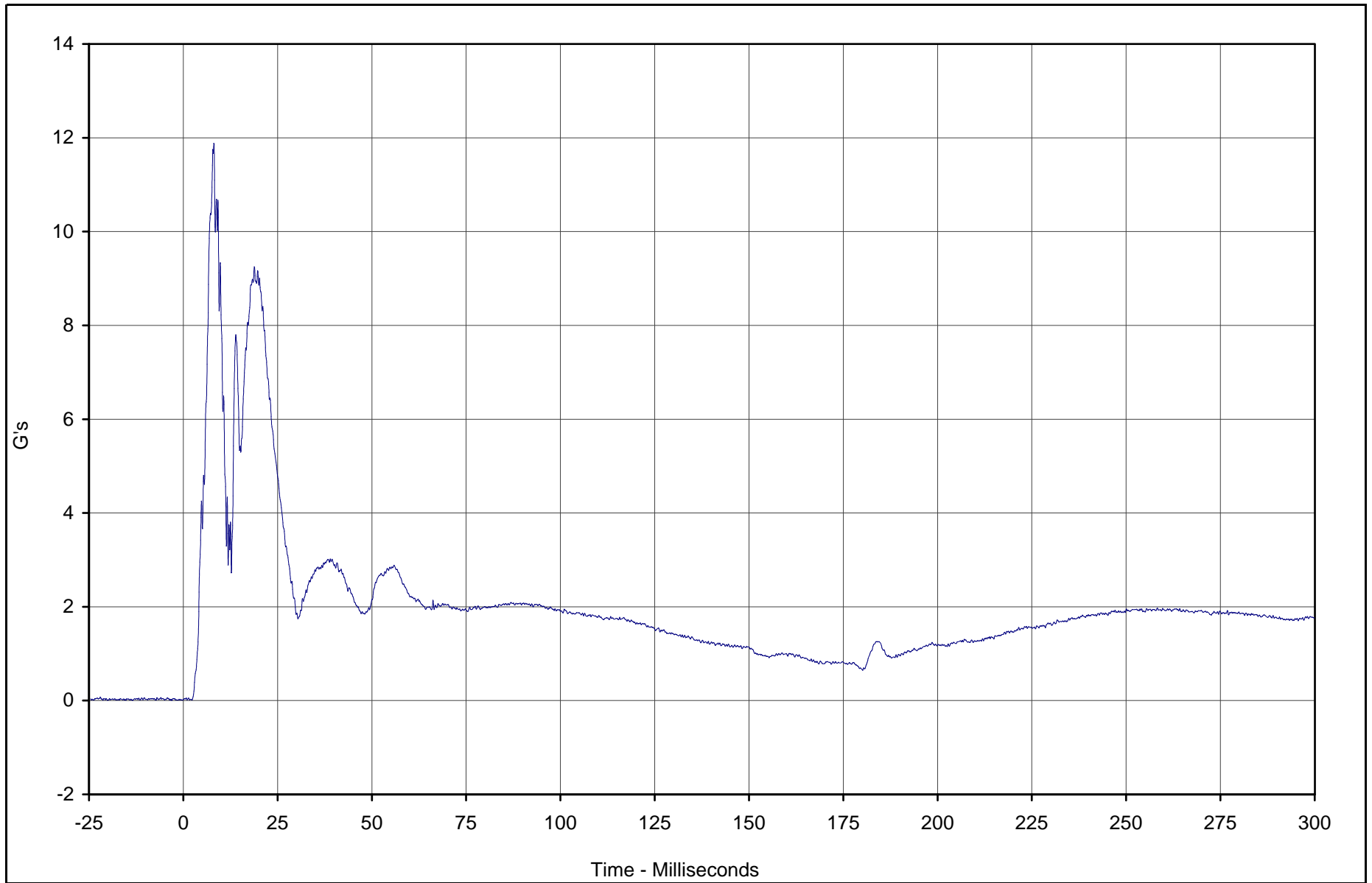


Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

Test Date: 6/24/04

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NHTSA No.: M45200TWG2



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Head Resultant	001	RES	G's	11.9	8.1	0.0	2.3	1000

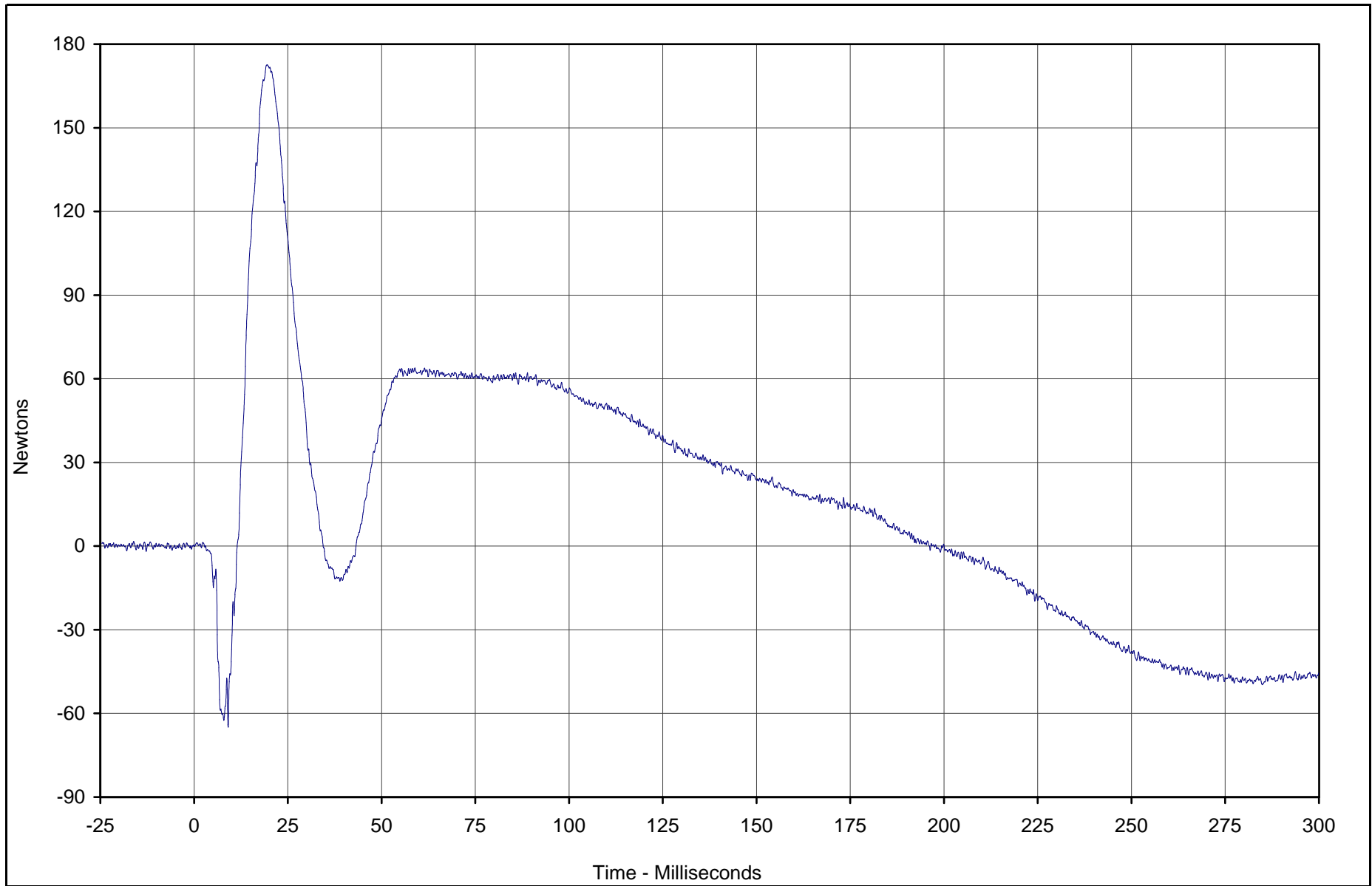


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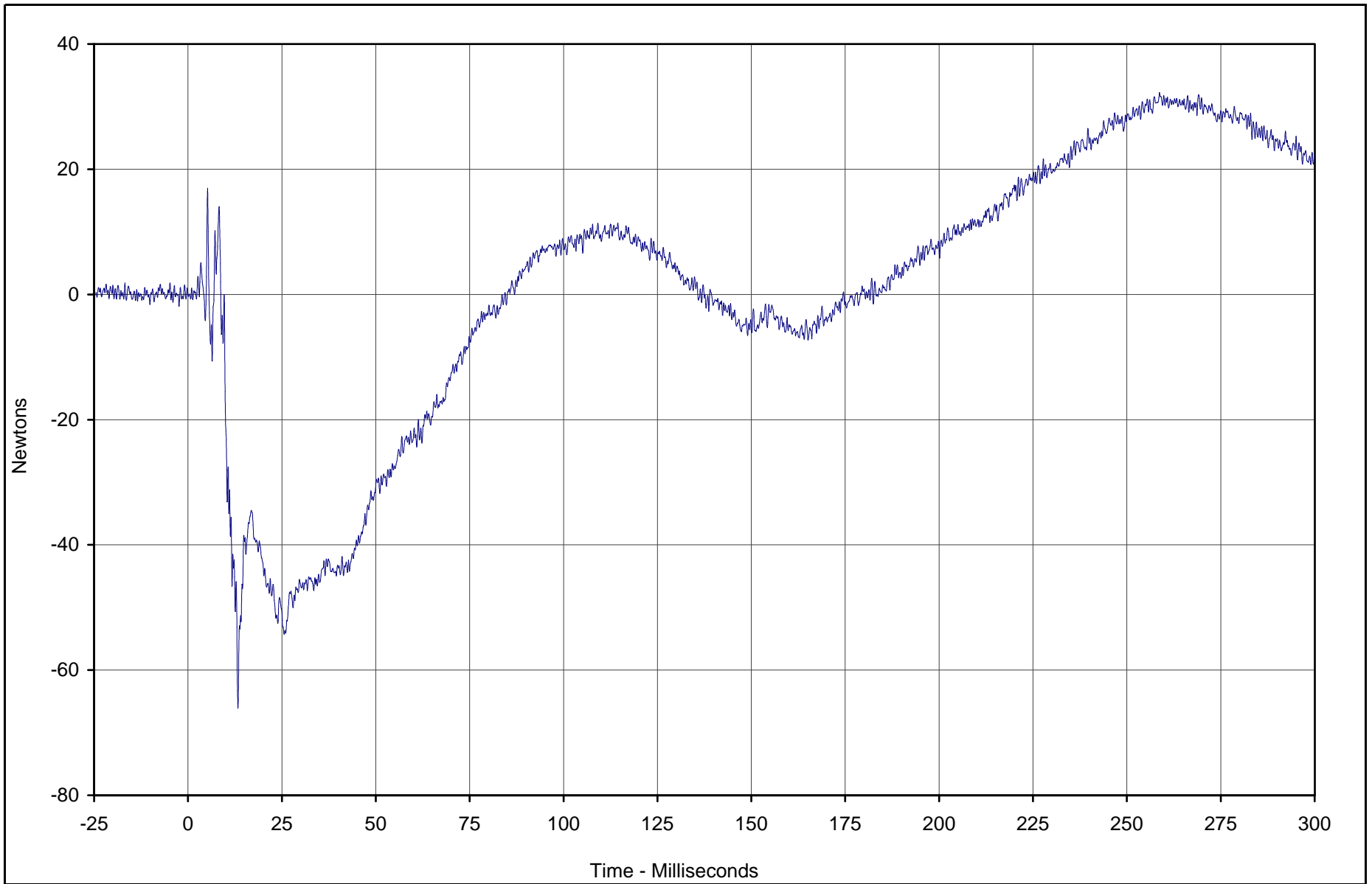


Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Upper Neck Force X	004	FIL	Newtons	172.6	19.5	-64.8	9.1	1000



Test Vehicle: 2004 Nissan Maxima 4 Door Sedan  
 Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

Test Date: 6/24/04  
 NHTSA No.: M45200TWG2



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Upper Neck Force Y	005	FIL	Newtons	32.3	258.7	-66.1	13.3	1000



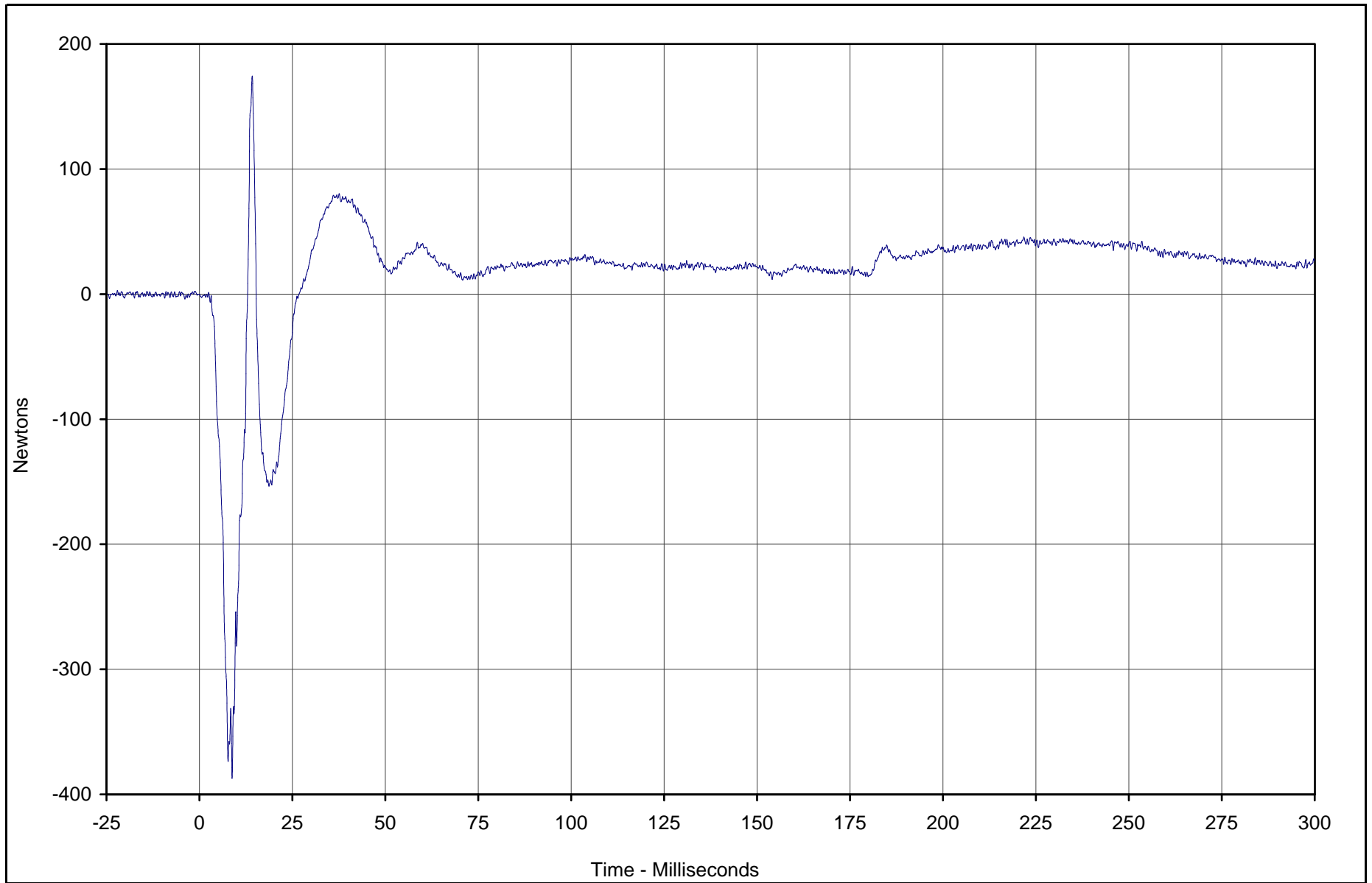
Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

Test Date: 6/24/04

Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

NHTSA No.: M45200TWG2

B-7



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Upper Neck Force Z	006	FIL	Newtons	174.4	14.2	-387.2	8.8	1000



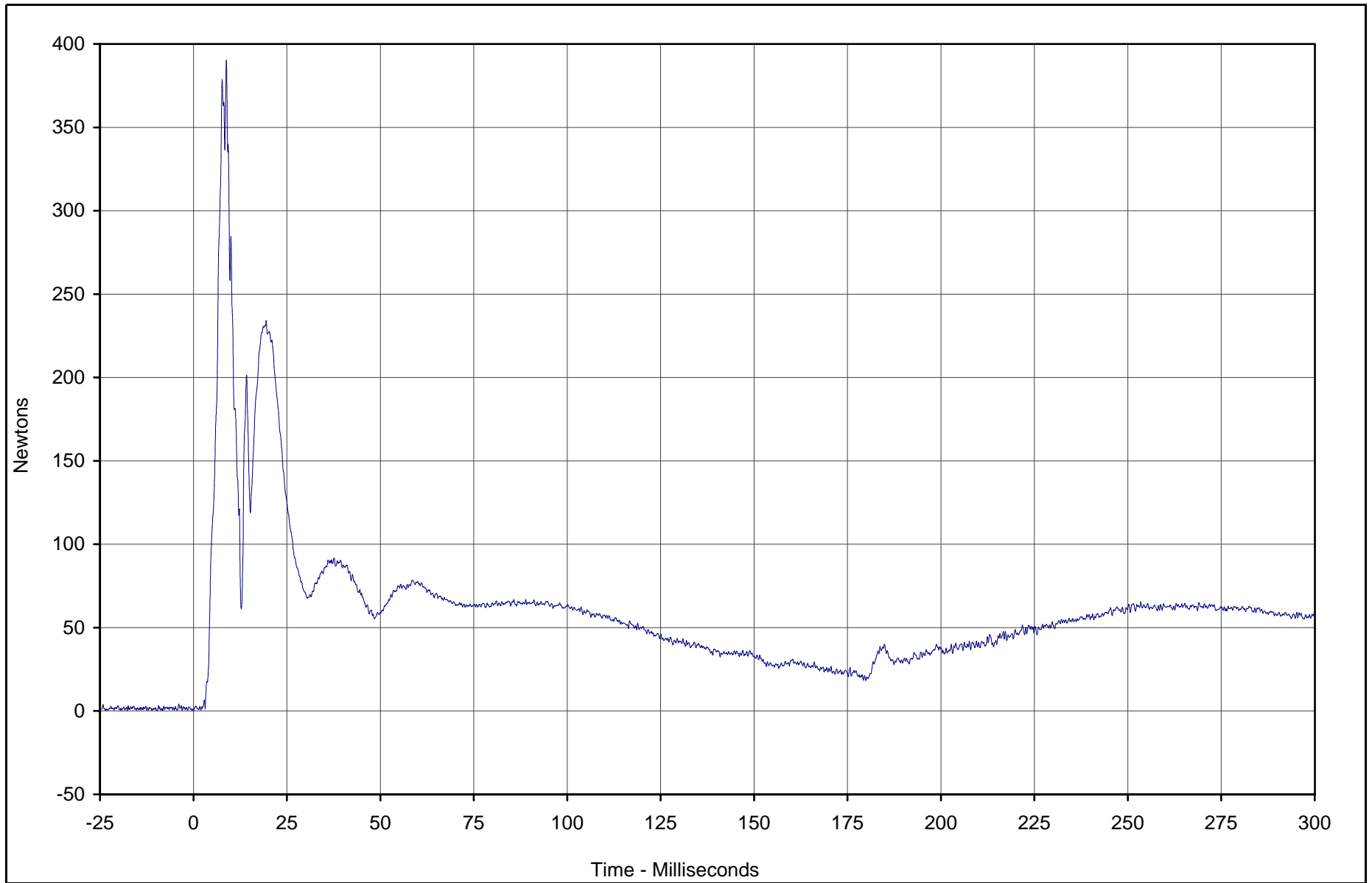
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Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Upper Neck Force Resultant	004	RES	Newtons	390.3	8.8	0.3	0.0	1000



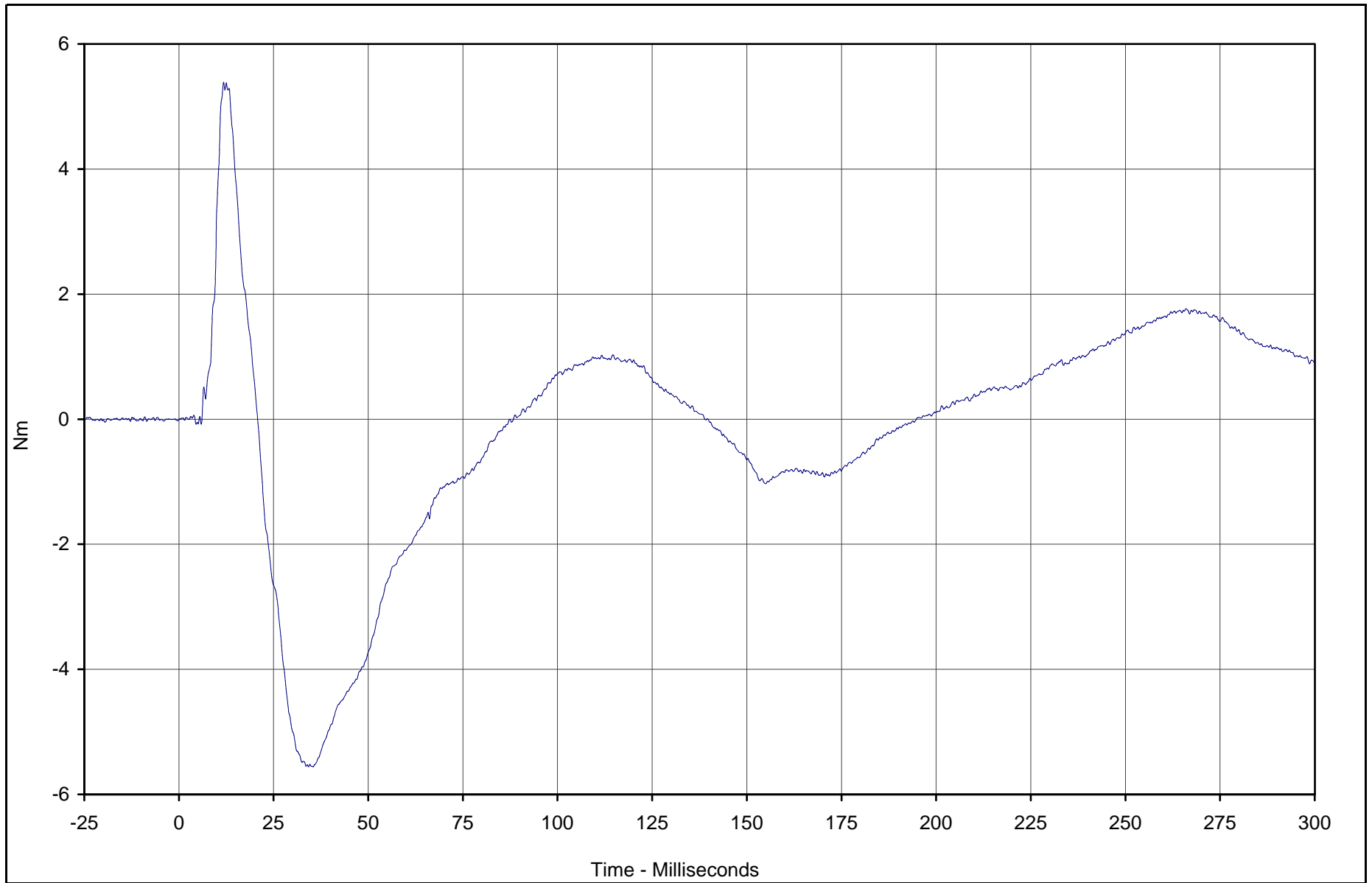
Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

Test Date: 6/24/04

Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

NHTSA No.: M45200TWG2

B-9



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Upper Neck Moment X	007	FIL	Nm	5.4	11.8	-5.6	35.4	600



Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

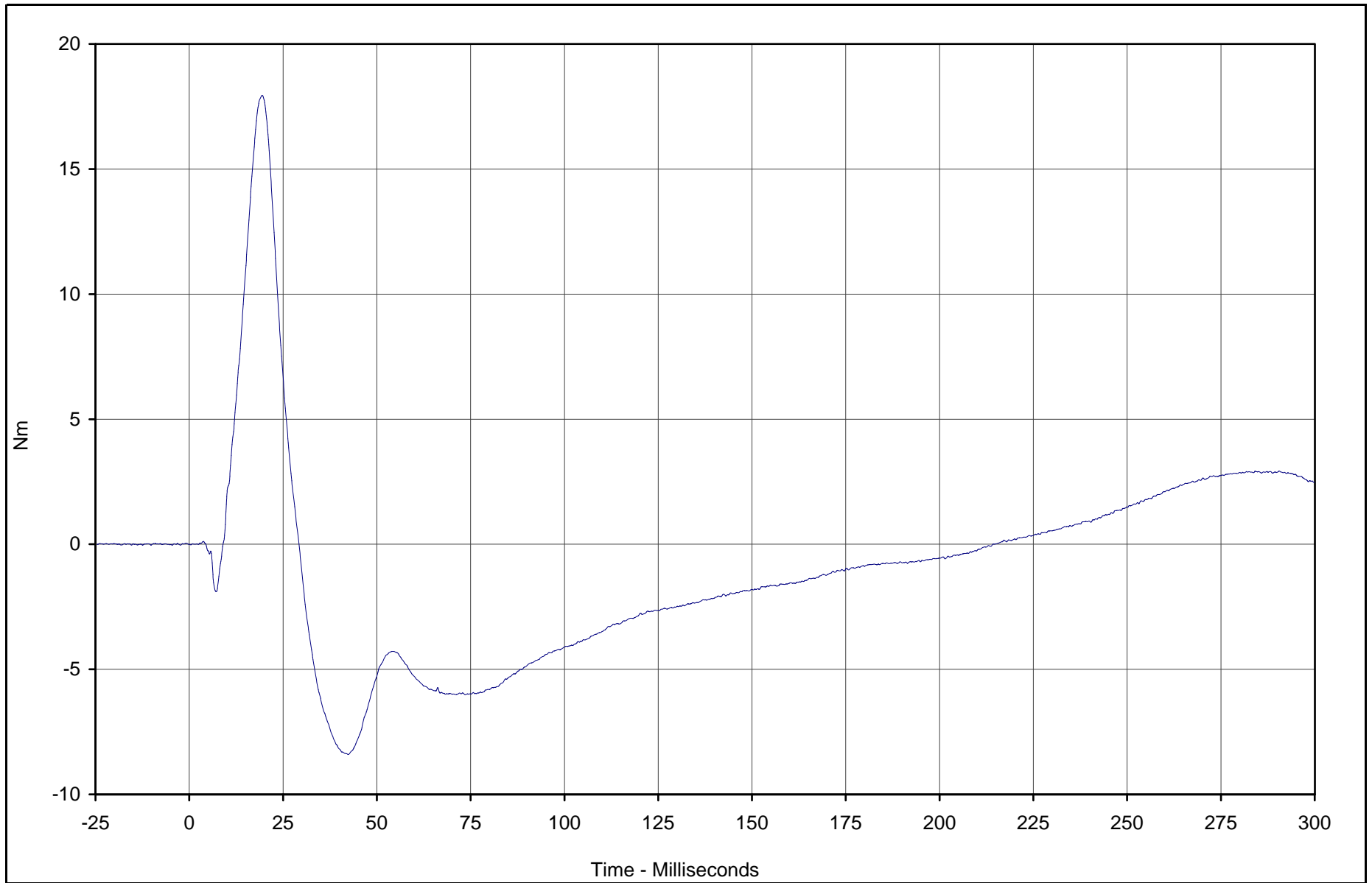
Test Date: 6/24/04

Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

NHTSA No.: M45200TWG2

TR-P23106-10-NC

B-10



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Upper Neck Moment Y	008	FIL	Nm	17.9	19.4	-8.4	42.4	600



Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

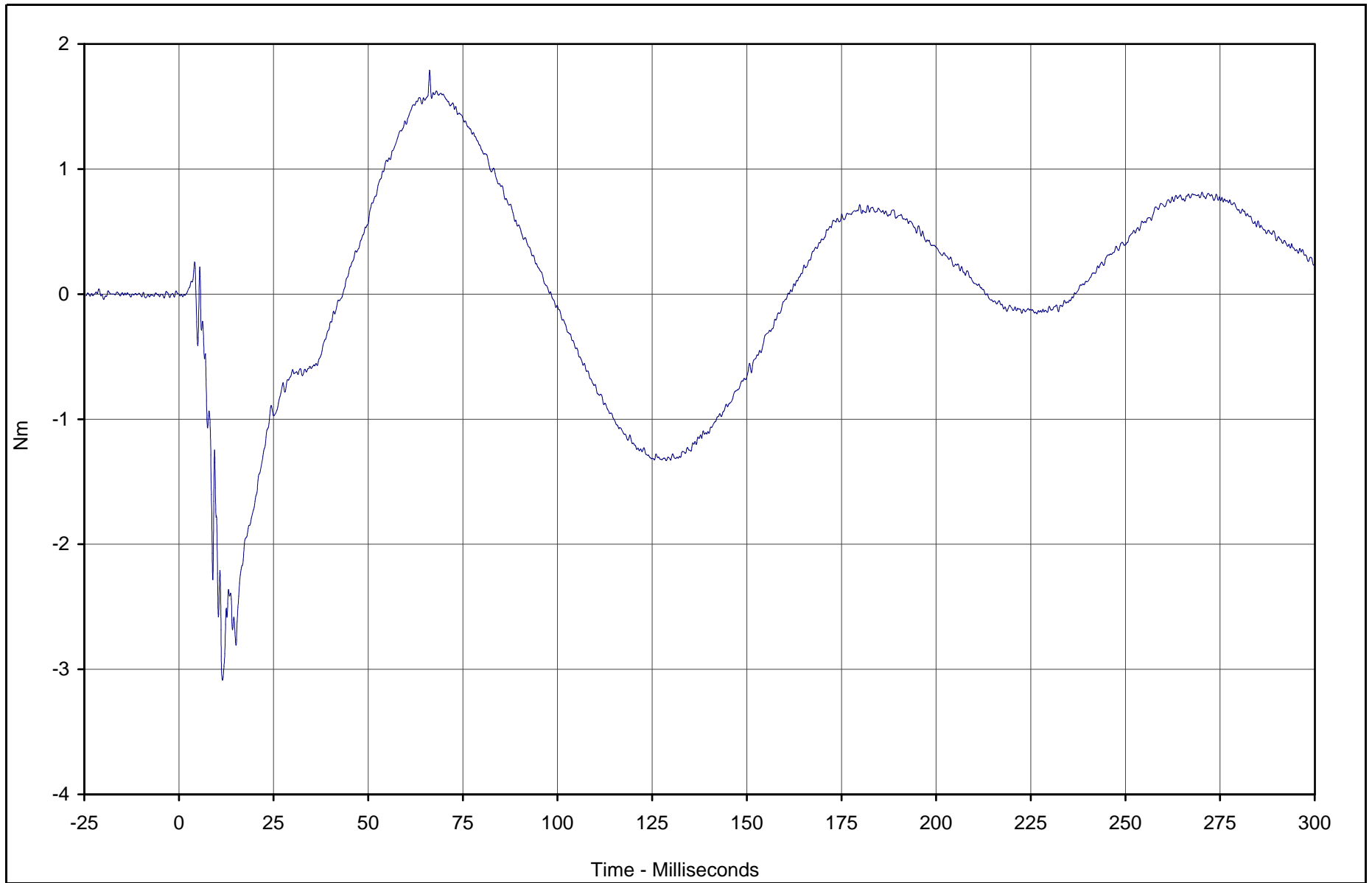
Test Date: 6/24/04

Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

NHTSA No.: M45200TWG2

TR-P23106-10-NC

B-11



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Upper Neck Moment Z	009	FIL	Nm	1.8	66.2	-3.1	11.5	600



Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

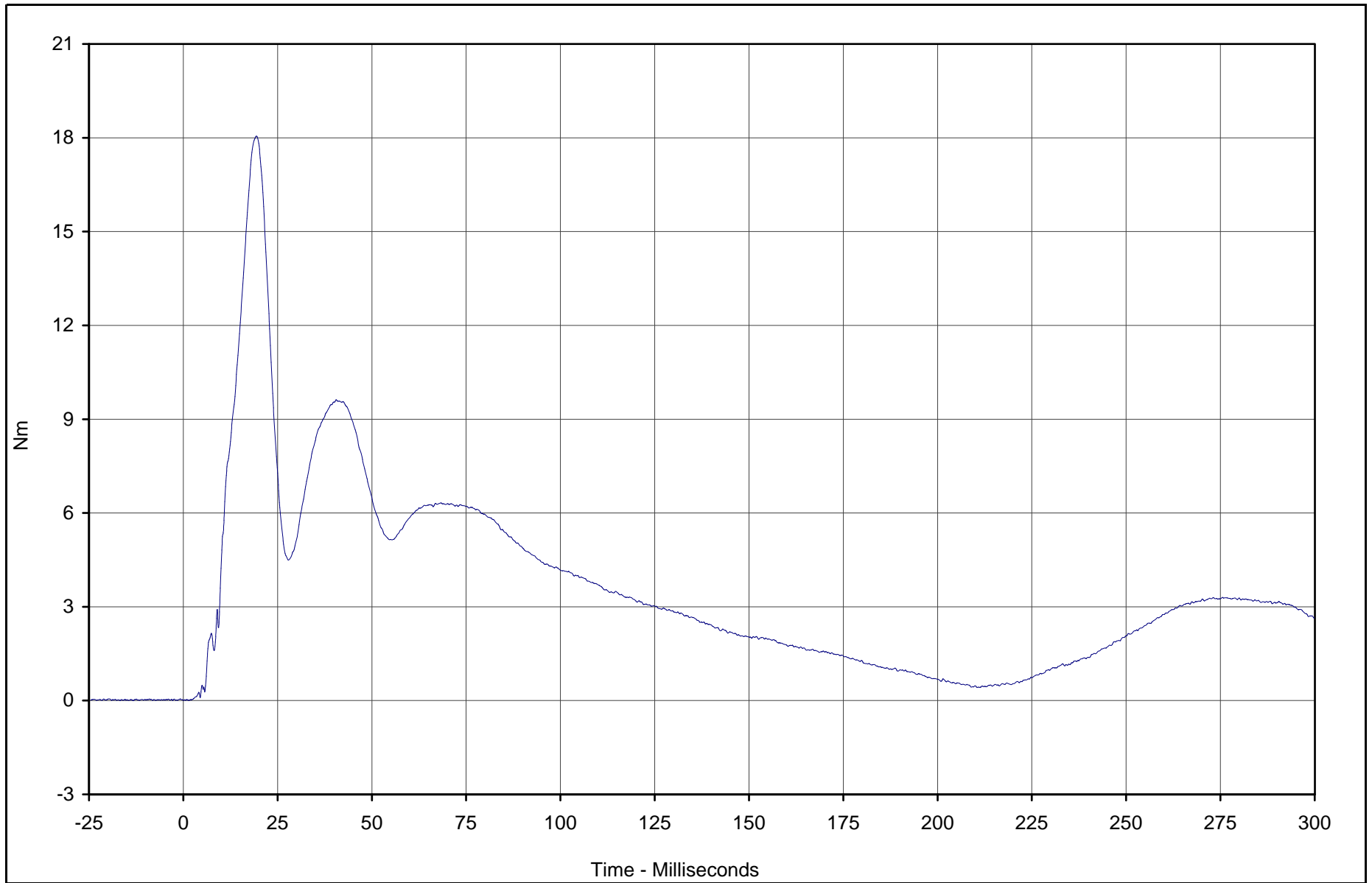
Test Date: 6/24/04

Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

NHTSA No.: M45200TWG2

TR-P23106-10-NC

B-12



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Upper Neck Moment Resultant	007	RES	Nm	18.1	19.4	0.0	1.3	600



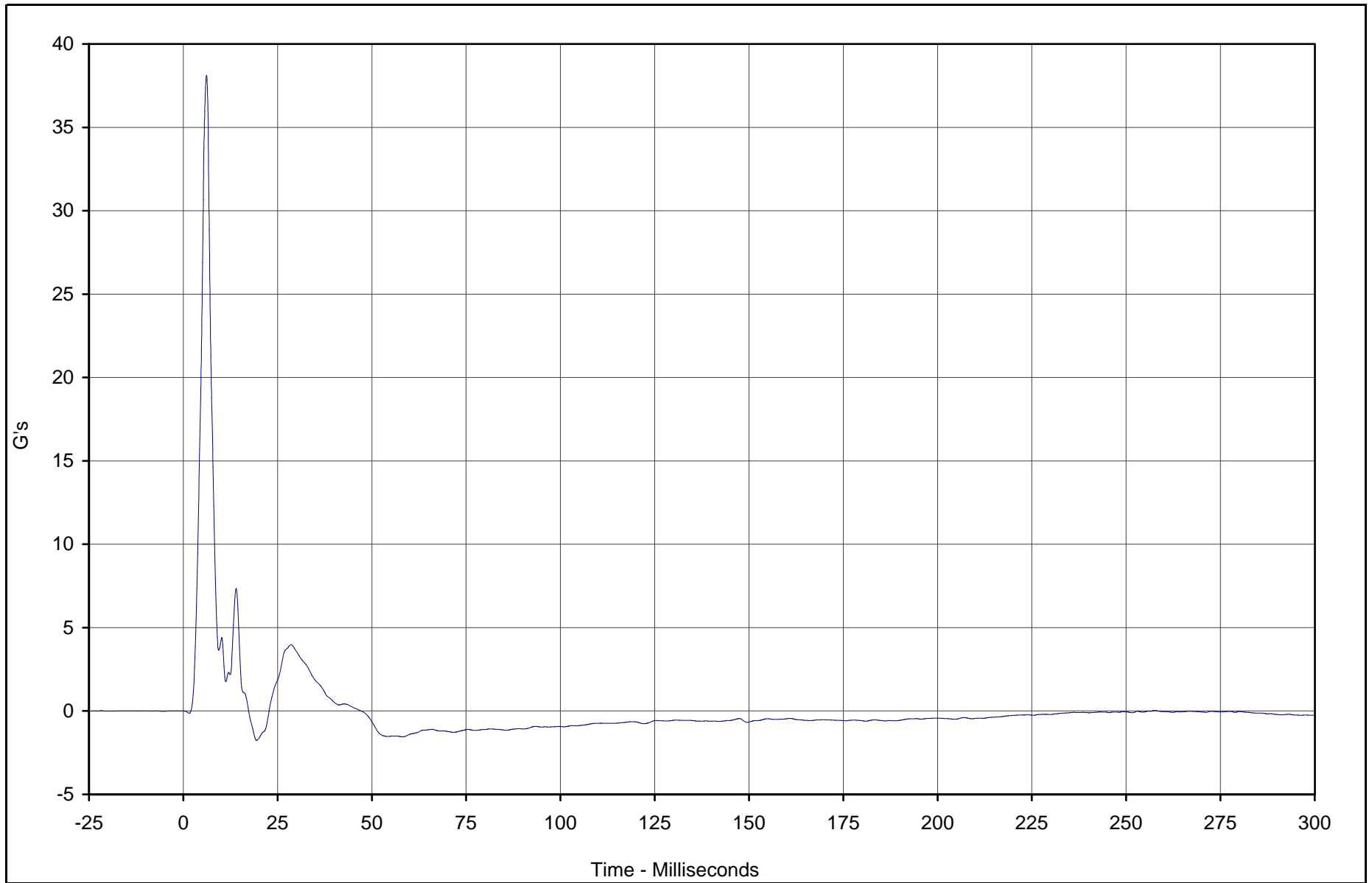
Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

Test Date: 6/24/04

Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

NHTSA No.: M45200TWG2

TR-P23106-10-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Chest X	010	FIL	G's	38.1	6.2	-1.8	19.4	180



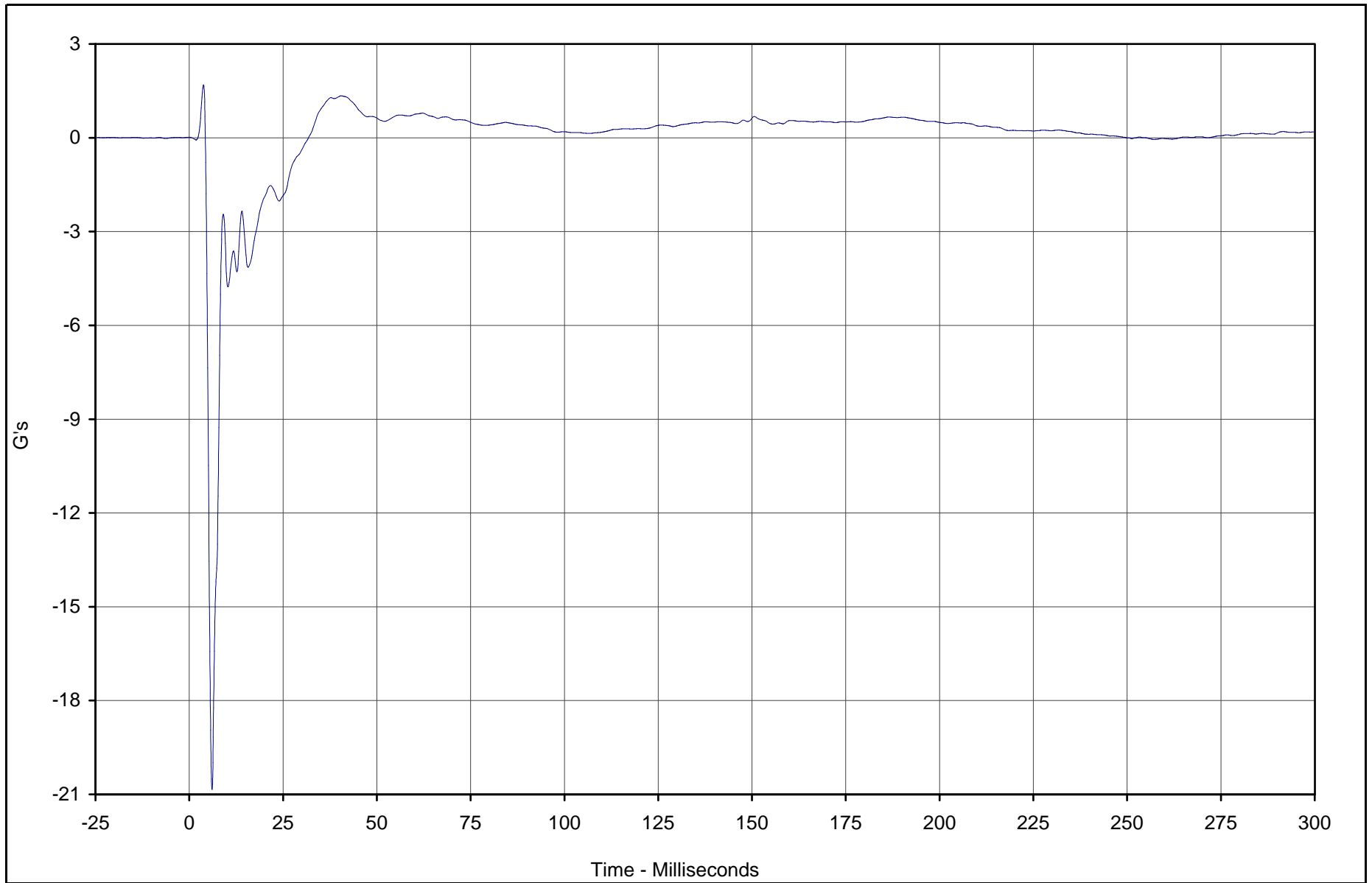
Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

Test Date: 6/24/04

Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

NHTSA No.: M45200TWG2

B-14



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Chest Y	011	FIL	G's	1.7	3.8	-20.8	6.1	180



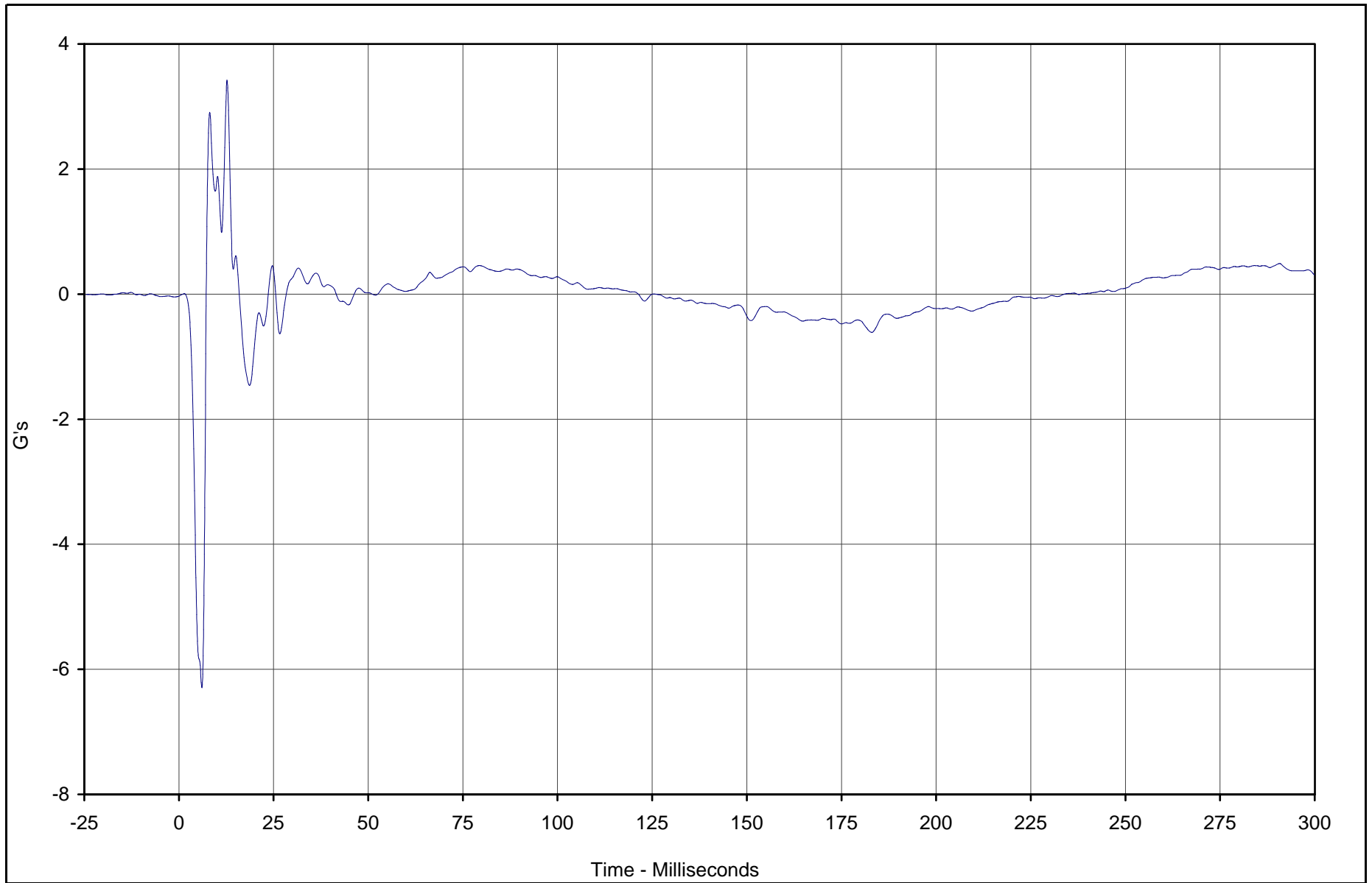
Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

Test Date: 6/24/04

Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

NHTSA No.: M45200TWG2

TR-P23106-10-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Chest Z	012	FIL	G's	3.4	12.7	-6.3	6.1	180



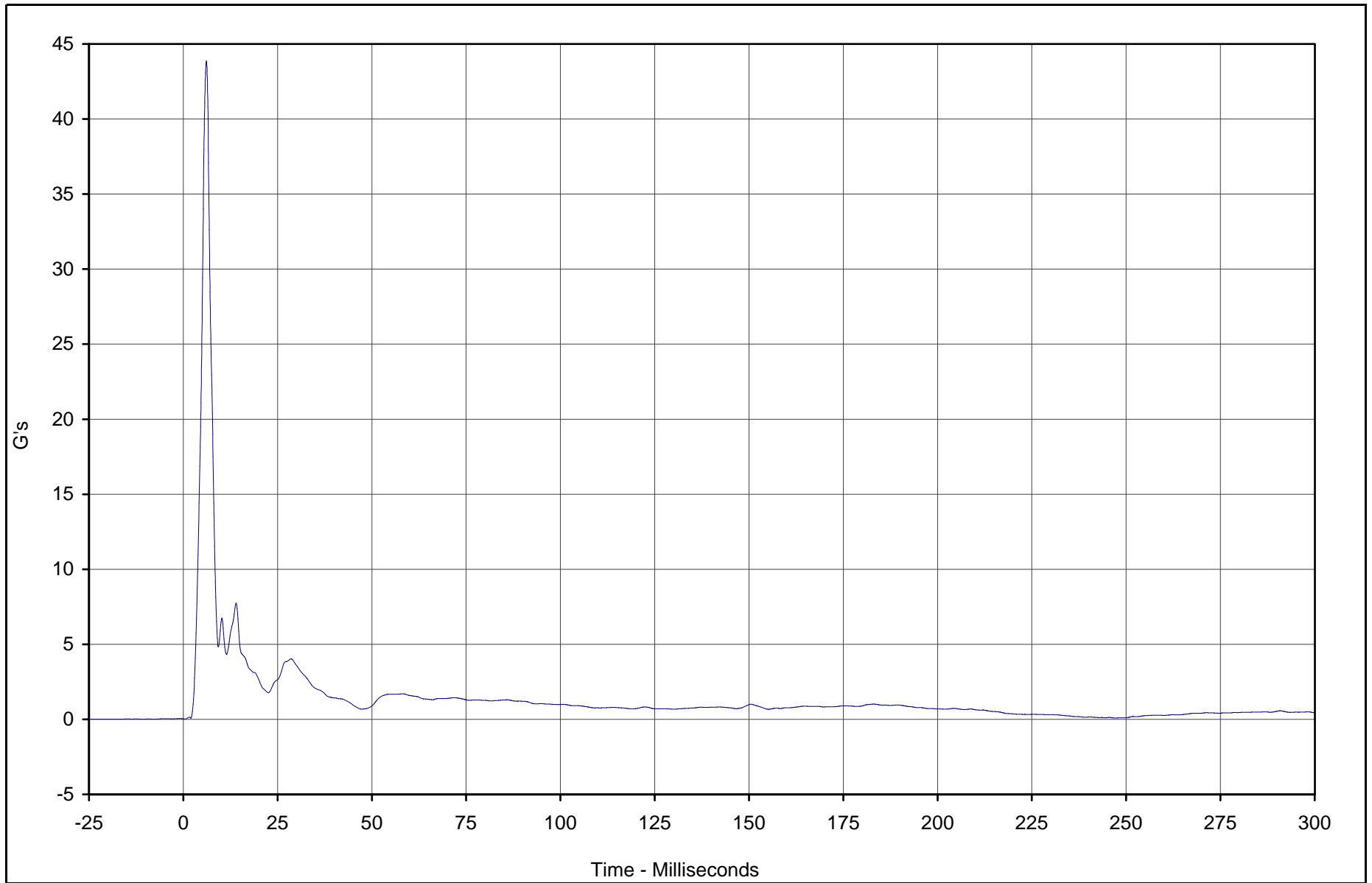
Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

Test Date: 6/24/04

Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

NHTSA No.: M45200TWG2

B-16



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Chest Resultant	010	RES	G's	43.9	6.1	0.0	0.5	180



Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

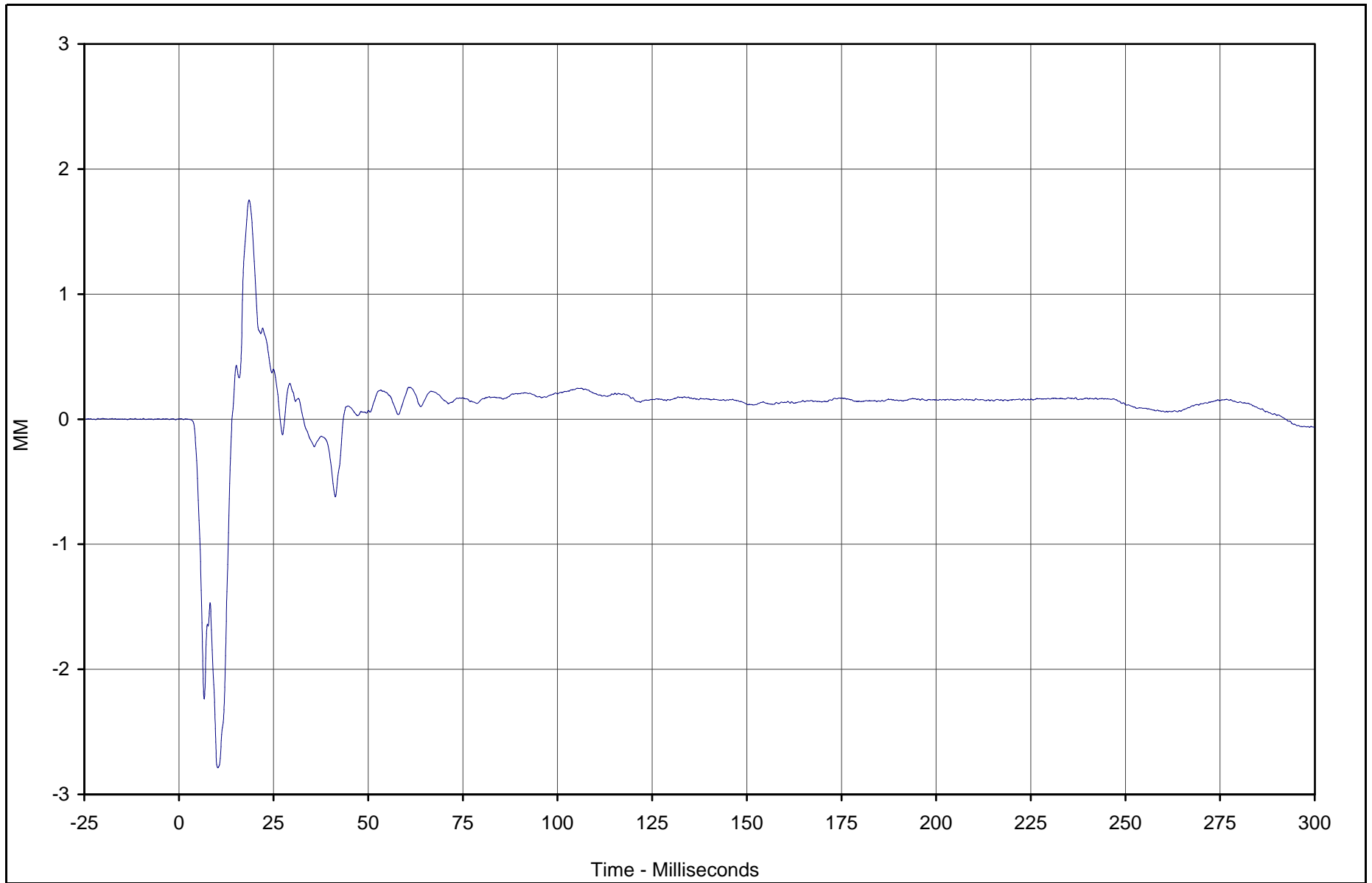
Test Date: 6/24/04

Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

NHTSA No.: M45200TWG2

TR-P23106-10-NC

B-17



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Chest Deflection	013	FIL	MM	1.8	18.5	-2.8	10.3	600



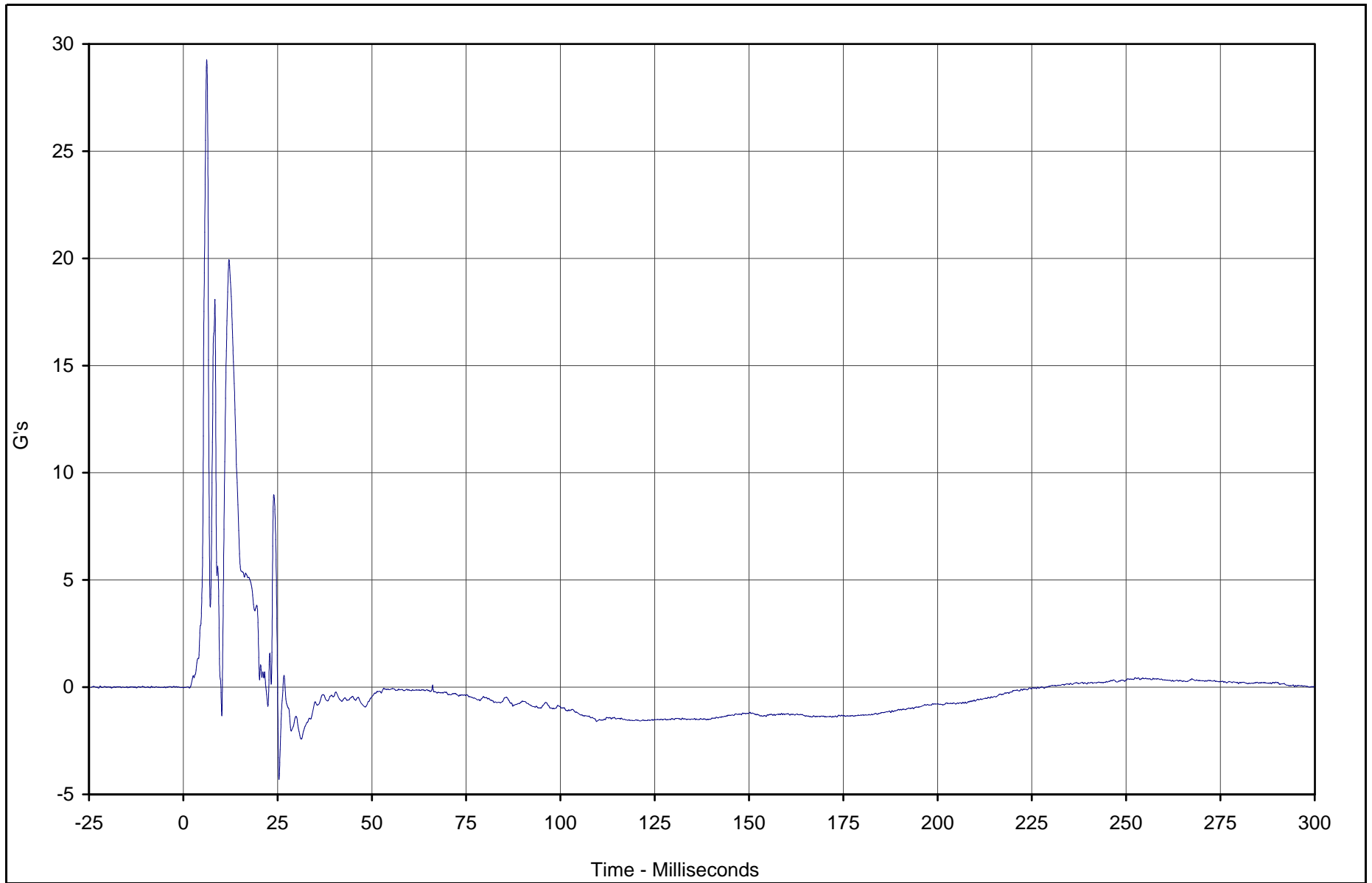
Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

Test Date: 6/24/04

Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

NHTSA No.: M45200TWG2

TR-P23106-10-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Pelvis X	014	FIL	G's	29.3	6.2	-4.3	25.4	1000



Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

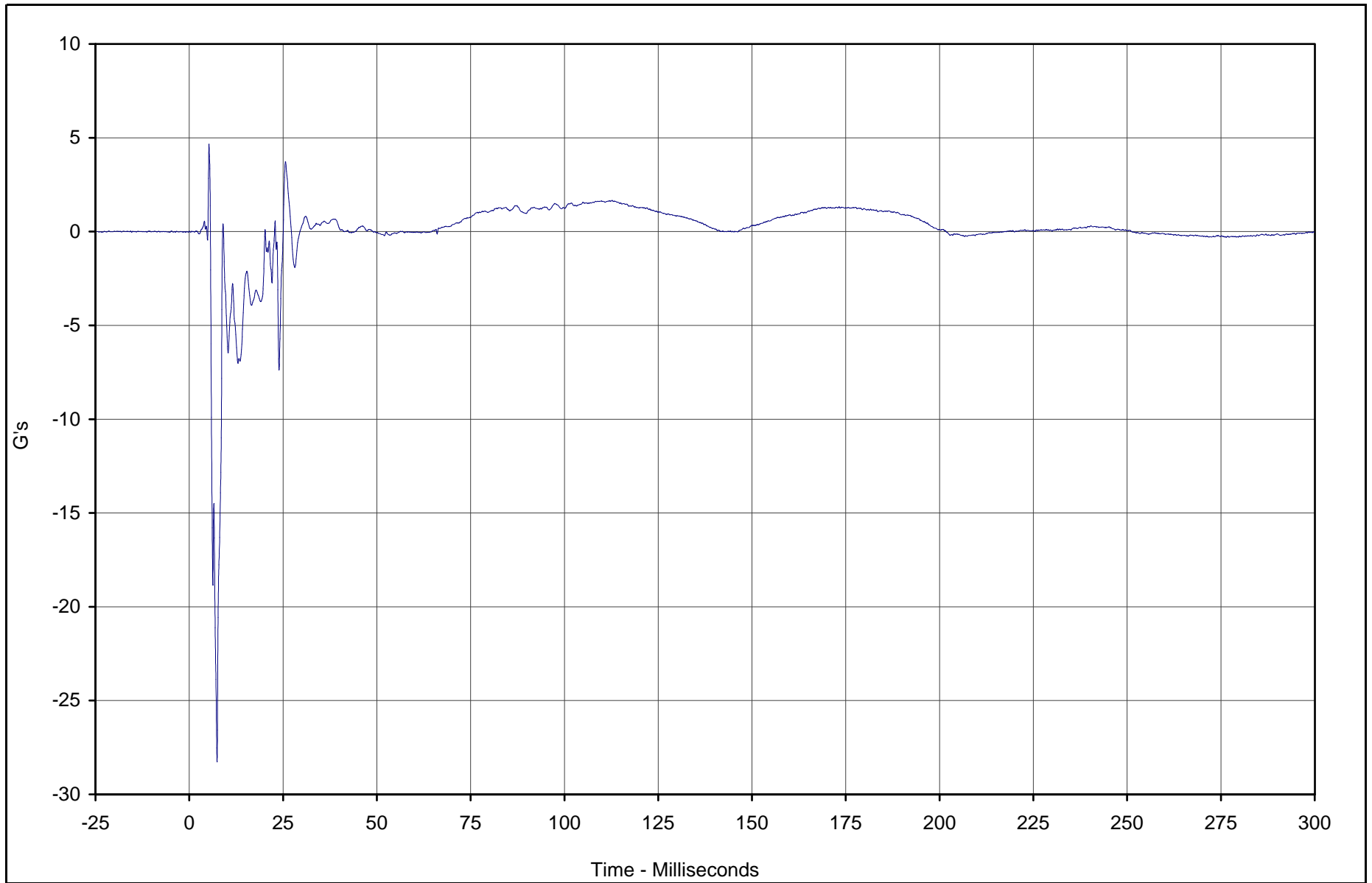
Test Date: 6/24/04

Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

NHTSA No.: M45200TWG2

B-19

TR-P23106-10-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Pelvis Y	015	FIL	G's	4.7	5.3	-28.2	7.4	1000



Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

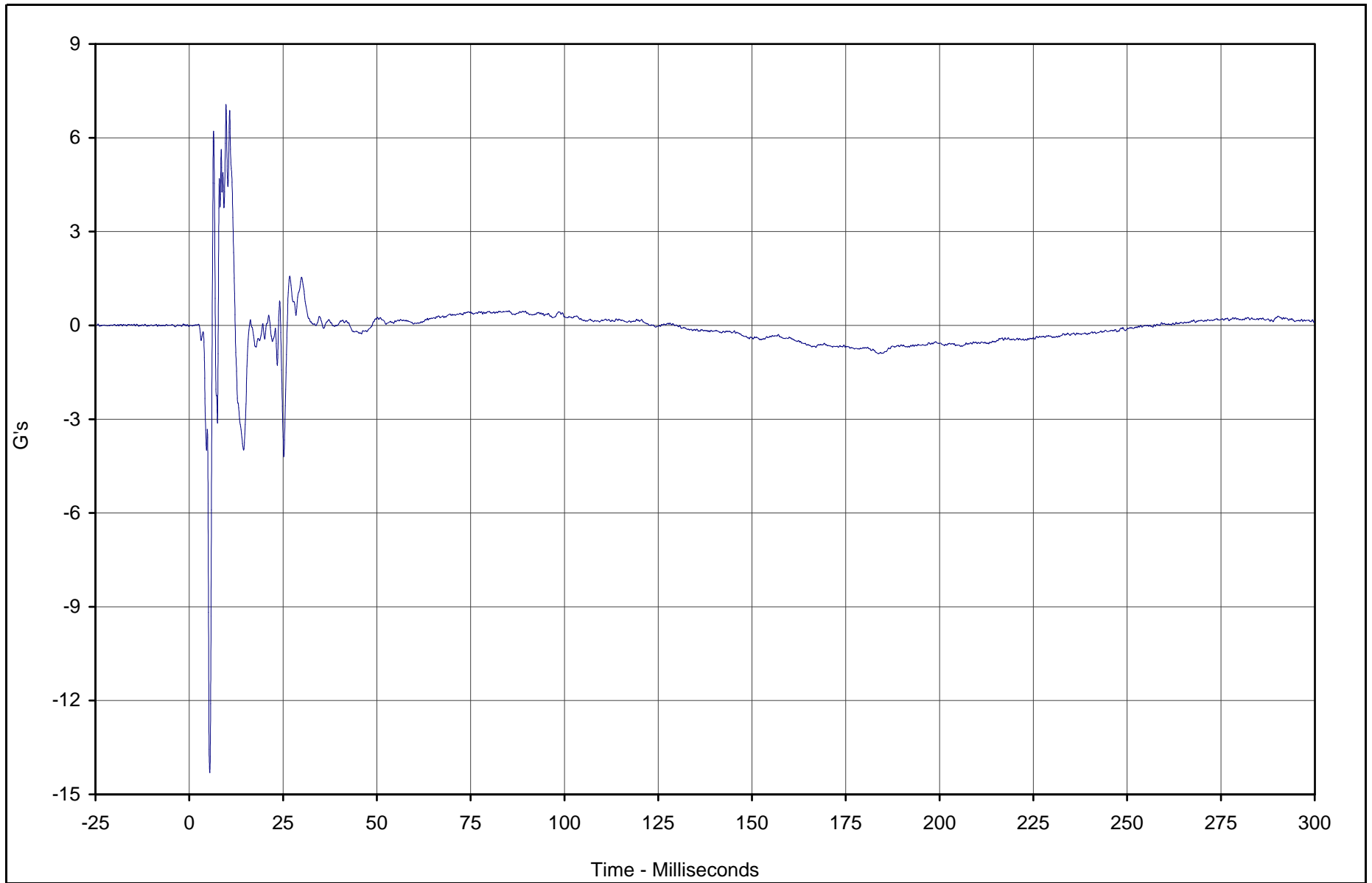
Test Date: 6/24/04

Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

NHTSA No.: M45200TWG2

B-20

TR-P23106-10-NC



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Pelvis Z	016	FIL	G's	7.1	9.8	-14.3	5.5	1000



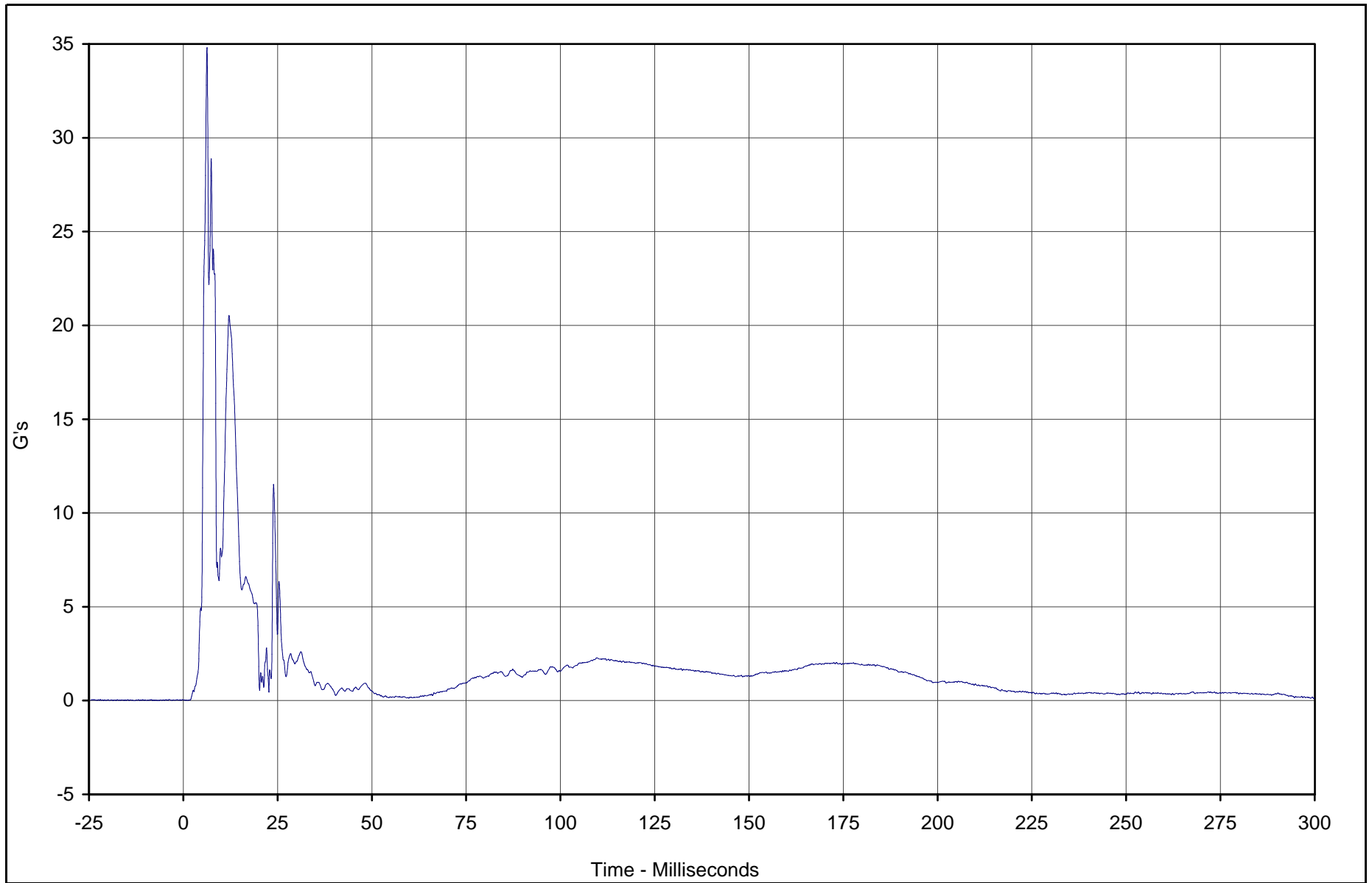
Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

Test Date: 6/24/04

Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

NHTSA No.: M45200TWG2

B-21



Curve Description	CURNO	Type	Units	Max	Time	Min	Time	SAE Class
Pass. Pelvis Resultant	014	RES	G's	34.8	6.3	0.0	1.2	1000



Test Vehicle: 2004 Nissan Maxima 4 Door Sedan

Test Date: 6/24/04

Test Program: TWG Testing (Forward Facing Hybrid III 6 Yr.)

NHTSA No.: M45200TWG2

TR-P23106-10-NC

APPENDIX C

INSTRUMENTATION DATA CHANNEL ASSIGNMENTS

**TWG Testing (Forward Facing Hybrid III 6 Yr.)  
Instrumentation Data Channel Assignments  
A.T.D. Serial Number 027  
6/24/04  
2004 Nissan Maxima 4 Door Sedan**

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
1	HEAD, PRIMARY	X	027HDX	Accel., 1/2 bridge	Endevco	7264-2000	G
2	HEAD, PRIMARY	Y	027HDY	Accel., 1/2 bridge	Endevco	7264-2000	G
3	HEAD, PRIMARY	Z	027HDZ	Accel., 1/2 bridge	Endevco	7264-2000	G
4	UPPER NECK FORCE	X	027UNFX	Load cell, six axis neck	R. A. Denton	IF-234	N
5	UPPER NECK FORCE	Y	027UNFY	Load cell, six axis neck	R. A. Denton	IF-234	N
6	UPPER NECK FORCE	Z	027UNFZ	Load cell, six axis neck	R. A. Denton	IF-234	N
7	UPPER NECK MOMENT	X	027UNMX	Load cell, six axis neck	R. A. Denton	IF-234	Nm
8	UPPER NECK MOMENT	Y	027UNMY	Load cell, six axis neck	R. A. Denton	IF-234	Nm
9	UPPER NECK MOMENT	Z	027UNMZ	Load cell, six axis neck	R. A. Denton	IF-234	Nm
10	CHEST , PRIMARY	X	027CHX	Accel., Full Bridge	Entran	2000JF	G
11	CHEST , PRIMARY	Y	027CHY	Accel., Full Bridge	Entran	2000JF	G
12	CHEST , PRIMARY	Z	027CHZ	Accel., Full Bridge	Entran	2000JF	G
13	CHEST DISPLACEMENT	X	027CP	Rotary Pot Chest	Servo	14CBI	MM
14	PELVIS, PRIMARY	X	027PELX	Accel., Full Bridge	Entran	2000JF	G
15	PELVIS, PRIMARY	Y	027PELY	Accel., Full Bridge	Entran	2000JF	G
16	PELVIS, PRIMARY	Z	027PELZ	Accel., Full Bridge	Entran	2000JF	G

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TR-P23106-10-NC